GE Healthcare

EchoPAC PC Turnkey

Service Manual

Important Precautions

TRANSLATION POLICY

WARNING
(EN)

THIS SERVICE MANUAL IS AVAILABLE IN ENGLISH ONLY.

- IF A CUSTOMER'S SERVICE PROVIDER REQUIRES A LANGUAGE OTHER THAN ENGLISH, IT IS THE CUSTOMER'S RESPONSIBILITY TO PROVIDE TRANSLATION SERVICES.
- DO NOT ATTEMPT TO SERVICE THE EQUIPMENT UNLESS THIS SERVICE MANUAL HAS BEEN CONSULTED AND IS UNDERSTOOD.
- FAILURE TO HEED THIS WARNING MAY RESULT IN INJURY TO THE SERVICE PROVIDER, OPERATOR OR PATIENT FROM ELECTRIC SHOCK, MECHANICAL OR OTHER HAZARDS.

AVERTISSEMENT
(FR)

CE MANUEL DE MAINTENANCE N'EST DISPONIBLE QU'EN ANGLAIS.

- SI LE TECHNICIEN DU CLIENT A BESOIN DE CE MANUEL DANS UNE AUTRE LANGUE QUE L'ANGLAIS, C'EST AU CLIENT QU'IL INCOMBE DE LE FAIRE TRADUIRE.
- NE PAS TENTER D'INTERVENTION SUR LES ÉQUIPEMENTS TANT QUE LE MANUEL SERVICE N'A PAS ÉTÉ CONSULTÉ ET COMPRIS.
- LE NON-RESPECT DE CET AVERTISSEMENT PEUT ENTRAÎNER CHEZ LE TECHNICIEN, L'OPÉRATEUR OU LE PATIENT DES BLESSURES DUES À DES DANGERS ÉLECTRIQUES, MÉCANIQUES OU AUTRES.

WARNUNG
(DE)

DIESES KUNDENDIENST-HANDBUCH EXISTIERT NUR IN ENGLISCHER SPRACHE.

- FALLS EIN FREMDER KUNDENDIENST EINE ANDERE SPRACHE BENÖTIGT, IST ES AUFGABE DES KUNDEN FÜR EINE ENTSPRECHENDE ÜBERSETZUNG ZU SORGEN.
- VERSUCHEN SIE NICHT, DAS GERÄT ZU REPARIEREN, BEVOR DIESES KUNDENDIENST-HANDBUCH NICHT ZU RATE GEZOGEN UND VERSTANDEN WURDE.
- WIRD DIESE WARNUNG NICHT BEACHTET, SO KANN ES ZU VERLETZUNGEN DES KUNDENDIENSTTECHNIKERS, DES BEDIENERS ODER DES PATIENTEN DURCH ELEKTRISCHE SCHLÄGE, MECHANISCHE ODER SONSTIGE GEFAHREN KOMMEN.

AVISO
(ES)

ESTE MANUAL DE SERVICIO SÓLO EXISTE EN INGLÉS.

- **SI ALGÚN PROVEEDOR DE SERVICIOS AJENO A GEHC SOLICITA UN IDIOMA QUE NO SEA EL INGLÉS, ES RESPONSABILIDAD DEL CLIENTE OFRECER UN SERVICIO DE TRADUCCIÓN.**
- **NO SE DEBERÁ DAR SERVICIO TÉCNICO AL EQUIPO, SIN HABER CONSULTADO Y COMPRENDIDO ESTE MANUAL DE SERVICIO.**
- **LA NO OBSERVANCIA DEL PRESENTE AVISO PUEDE DAR LUGAR A QUE EL PROVEEDOR DE SERVICIOS, EL OPERADOR O EL PACIENTE SUFRAN LESIONES PROVOCADAS POR CAUSAS ELÉCTRICAS, MECÁNICAS O DE OTRA NATURALEZA.**

ATENÇÃO
(PT-Br)

ESTE MANUAL DE ASSISTÊNCIA TÉCNICA SÓ SE ENCONTRA DISPONÍVEL EM INGLÊS.

- **SE QUALQUER OUTRO SERVIÇO DE ASSISTÊNCIA TÉCNICA, QUE NÃO A GEHC, SOLICITAR ESTES MANUAIS NOUTRO IDIOMA, É DA RESPONSABILIDADE DO CLIENTE FORNECER OS SERVIÇOS DE TRADUÇÃO.**
- **NÃO TENTE REPARAR O EQUIPAMENTO SEM TER CONSULTADO E COMPREENDIDO ESTE MANUAL DE ASSISTÊNCIA TÉCNICA.**
- **O NÃO CUMPRIMENTO DESTE AVISO PODE POR EM PERIGO A SEGURANÇA DO TÉCNICO, OPERADOR OU PACIENTE DEVIDO A' CHOQUES ELÉTRICOS, MECÂNICOS OU OUTROS.**

AVISO
(PT-pt)

ESTE MANUAL DE ASSISTÊNCIA ESTÁ DISPONÍVEL APENAS EM INGLÊS.

- **SE QUALQUER OUTRO SERVIÇO DE ASSISTÊNCIA TÉCNICA, QUE NÃO A GEHC, SOLICITAR ESTES MANUAIS NOUTRO IDIOMA, É DA RESPONSABILIDADE DO CLIENTE FORNECER OS SERVIÇOS DE TRADUÇÃO.**
- **NÃO TENTE EFECTUAR REPARAÇÕES NO EQUIPAMENTO SEM TER CONSULTADO E COMPREENDIDO PREVIAMENTE ESTE MANUAL.**
- **A INOBSERVÂNCIA DESTE AVISO PODE RESULTAR EM FERIMENTOS NO TÉCNICO DE ASSISTÊNCIA, OPERADOR OU PACIENTE EM CONSEQUÊNCIA DE CHOQUE ELÉCTRICO, PERIGOS DE ORIGEM MECÂNICA, BEM COMO DE OUTROS TIPOS.**

AVVERTENZA
(IT)

IL PRESENTE MANUALE DI MANUTENZIONE È DISPONIBILE SOLTANTO IN INGLESE.

- **SE UN ADDETTO ALLA MANUTENZIONE ESTERNO ALLA GEHC RICHIEDE IL MANUALE IN UNA LINGUA DIVERSA, IL CLIENTE È TENUTO A PROVVEDERE DIRETTAMENTE ALLA TRADUZIONE.**
- **SI PROCEDA ALLA MANUTENZIONE DELL'APPARECCHIATURA SOLO DOPO AVER CONSULTATO IL PRESENTE MANUALE ED AVERNE COMPRESO IL CONTENUTO.**
- **NON TENERE CONTO DELLA PRESENTE AVVERTENZA POTREBBE FAR COMPIERE OPERAZIONI DA CUI DERIVINO LESIONI ALL'ADDETTO ALLA MANUTENZIONE, ALL'UTILIZZATORE ED AL PAZIENTE PER FOLGORAZIONE ELETTRICA, PER URTI MECCANICI OD ALTRI RISCHI.**

HOIATUS
(ET)

KÄESOLEV TEENINDUSJUHEND ON SAADAVAL AINULT INGLISE KEELES.

- **KUI KLIENDITEENINDUSE OSUTAJA NÕUAB JUHENDIT INGLISE KEELEST ERINEVAS KEELES, VASTUTAB KLIENT TÕLKETEENUSE OSUTAMISE EEST.**
- **ÄRGE ÜRITAGE SEADMEID TEENINDADA ENNE EELNEVALT KÄESOLEVA TEENINDUSJUHENDIGA TUTVUMIST JA SELLEST ARU SAAMIST.**
- **KÄESOLEVA HOIATUSE EIRAMINE VÕIB PÕHJUSTADA TEENUSEOSUTAJA, OPERAATORI VÕI PATSIENDI VIGASTAMIST ELEKTRILÖÖGI, MEHAANILISE VÕI MUU OHU TAGAJÄRJEL.**

VAROITUS
(FI)

TÄMÄ HUOLTO-OHJE ON SAATAVILLA VAIN ENGLANNIKSI.

- **JOS ASIAKKAAN PALVELUNTARJOAJA VAATII MUUTA KUIN ENGLANNINKIELISTÄ MATERIAALIA, TARVITTAVAN KÄÄNNÖKSEN HANKKIMINEN ON ASIAKKAAN VASTUULLA.**
- **ÄLÄ YRITÄ KORJATA LAITTEISTOA ENNEN KUIN OLET VARMASTI LUKENUT JA YMMÄRTÄNYT TÄMÄN HUOLTO-OHJEEN.**
- **MIKÄLI TÄTÄ VAROITUSTA EI NOUDATETA, SEURAUKSENA VOI OLLA PALVELUNTARJOAJAN, LAITTEISTON KÄYTTÄJÄN TAI POTILAAN VAHINGOITTUMINEN SÄHKÖISKUN, MEKAANISEN VIAN TAI MUUN VAARATILANTEEN VUOKSI.**

ΠΡΟΕΙΔΟΠΟΙΗΣΗ
(EL)

ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕΡΒΙΣ ΔΙΑΤΙΘΕΤΑΙ ΣΤΑ ΑΓΓΛΙΚΑ ΜΟΝΟ.

- **ΕΑΝ ΤΟ ΑΤΟΜΟ ΠΑΡΟΧΗΣ ΣΕΡΒΙΣ ΕΝΟΣ ΠΕΛΑΤΗ ΑΠΑΙΤΕΙ ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕ ΓΛΩΣΣΑ ΕΚΤΟΣ ΤΩΝ ΑΓΓΛΙΚΩΝ, ΑΠΟΤΕΛΕΙ ΕΥΘΥΝΗ ΤΟΥ ΠΕΛΑΤΗ ΝΑ ΠΑΡΕΧΕΙ ΥΠΗΡΕΣΙΕΣ ΜΕΤΑΦΡΑΣΗΣ.**
- **ΜΗΝ ΕΠΙΧΕΙΡΗΣΕΤΕ ΤΗΝ ΕΚΤΕΛΕΣΗ ΕΡΓΑΣΙΩΝ ΣΕΡΒΙΣ ΣΤΟΝ ΕΞΟΠΛΙΣΜΟ ΕΚΤΟΣ ΕΑΝ ΕΧΕΤΕ ΣΥΜΒΟΥΛΕΥΤΕΙ ΚΑΙ ΕΧΕΤΕ ΚΑΤΑΝΟΗΣΕΙ ΤΟ ΠΑΡΟΝ ΕΓΧΕΙΡΙΔΙΟ ΣΕΡΒΙΣ.**
- **ΕΑΝ ΔΕ ΛΑΒΕΤΕ ΥΠΟΨΗ ΤΗΝ ΠΡΟΕΙΔΟΠΟΙΗΣΗ ΑΥΤΗ, ΕΝΔΕΧΕΤΑΙ ΝΑ ΠΡΟΚΛΗΘΕΙ ΤΡΑΥΜΑΤΙΣΜΟΣ ΣΤΟ ΑΤΟΜΟ ΠΑΡΟΧΗΣ ΣΕΡΒΙΣ, ΣΤΟ ΧΕΙΡΙΣΤΗ Ή ΣΤΟΝ ΑΣΘΕΝΗ ΑΠΟ ΗΛΕΚΤΡΟΠΛΗΞΙΑ, ΜΗΧΑΝΙΚΟΥΣ Ή ΑΛΛΟΥΣ ΚΙΝΔΥΝΟΥΣ.**

FIGYELMEZTETÉS
(HU)

EZEN KARBANTARTÁSI KÉZIKÖNYV KIZÁRÓLAG ANGOL NYELVEN ÉRHETŐ EL.

- **HA A VEVŐ SZOLGÁLTATÓJA ANGOLTÓL ELTÉRŐ NYELVRE TART IGÉNYT, AKKOR A VEVŐ FELELŐSSÉGE A FORDÍTÁS ELKÉSZÍTTETÉSE.**
- **NE PRÓBÁLJA ELKEZDENI HASZNÁLNI A BERENDEZÉST, AMÍG A KARBANTARTÁSI KÉZIKÖNYVBEN LEÍRTAKAT NEM ÉRTELMEZTÉK.**
- **EZEN FIGYELMEZTETÉS FIGYELMEN KÍVÜL HAGYÁSA A SZOLGÁLTATÓ, MŰKÖDTETŐ VAGY A BETEG ÁRAMÜTÉS, MECHANIKAI VAGY EGYÉB VESZÉLYHELYZET MIATTI SÉRÜLÉSÉT EREDMÉNYEZHETI.**

ÞESSI ÞJÓNUSTUHANDBÓK ER EINGÖNGU FÁANLEG Á ENSKU.

- **EF ÞJÓNUSTUAÐILI VIÐSKIPTAMANNS ÞARFNAST ANNARS TUNGUMÁLS EN ENSKU, ER ÞAÐ Á ÁBYRGÐ VIÐSKIPTAMANNS AÐ ÚTVEGA ÞÝÐINGU.**
- **REYNIÐ EKKI AÐ ÞJÓNUSTA TÆKIÐ NEMA EFTIR AÐ HAFA SKOÐAÐ OG SKILIÐ ÞESSA ÞJÓNUSTUHANDBÓK.**
- **EF EKKI ER FARIÐ AÐ ÞESSARI VIÐVÖRUN GETUR ÞAÐ VALDIÐ MEIÐSLUM ÞJÓNUSTUVEITANDA, STJÓRNANDA EÐA SJÚKLINGS VEGNA RAFLOSTS, VÉLRÆNNAR EÐA ANNARRAR HÆTTU.**

VIÐVÖRUN (IS)

TENTO SERVISNÍ NÁVOD EXISTUJE POUZE V ANGLICKÉM JAZYCE.

- **V PŘÍPADĚ, ŽE POSKYTOVATEL SLUŽEB ZÁKAZNÍKŮM POTŘEBUJE NÁVOD V JINÉM JAZYCE, JE ZAJIŠTĚNÍ PŘEKLADU DO ODPOVÍDAJÍCÍHO JAZYKA ÚKOLEM ZÁKAZNÍKA.**
- **NEPROVÁDĚJTE ÚDRŽBU TOHOTO ZAŘÍZENÍ, ANIŽ BYSTE SI PŘEČETLI TENTO SERVISNÍ NÁVOD A POCHOPILI JEHO OBSAH.**
- **V PŘÍPADĚ NEDODRŽOVÁNÍ TÉTO VÝSTRAHY MŮŽE DOJÍT ÚRAZU ELEKTRICKÁM PROUDEM PRACOVNÍKA POSKYTOVATELE SLUŽEB, OBSLUŽNÉHO PERSONÁLU NEBO PACIENTŮ VLIVEM ELEKTRICKÉHOP PROUDU, RESPEKTIVE VLIVEM K RIZIKU MECHANICKÉHO POŠKOZENÍ NEBO JINÉMU RIZIKU.**

VÝSTRAHA (CS)

DENNE SERVICEMANUAL FINDES KUN PÅ ENGELSK.

- **HVIS EN KUNDES TEKNIKER HAR BRUG FOR ET ANDET SPROG END ENGELSK, ER DET KUNDENS ANSVAR AT SØRGE FOR OVERSÆTTELSE.**
- **FORSØG IKKE AT SERVICERE UDSTYRET MEDMINDRE DENNE SERVICEMANUAL ER BLEVET LÆST OG FORSTÅET.**
- **MANGLENDE OVERHOLDELSE AF DENNE ADVARSEL KAN MEDFØRE SKADE PÅ GRUND AF ELEKTRISK, MEKANISK ELLER ANDEN FARE FOR TEKNIKEREN, OPERATØREN ELLER PATIENTEN.**

ADVARSEL (DA)

DEZE ONDERHOUDSHANDLEIDING IS ENKEL IN HET ENGELS VERKRIJGBAAR.

- **ALS HET ONDERHOUDSPERSONEEL EEN ANDERE TAAL VEREIST, DAN IS DE KLANT VERANTWOORDELIJK VOOR DE VERTALING ERVAN.**
- **PROBEER DE APPARATUUR NIET TE ONDERHOUDEN VOORDAT DEZE ONDERHOUDSHANDLEIDING WERD GERAADPLEEGD EN BEGREPEN IS.**
- **INDIEN DEZE WAARSCHUWING NIET WORDT OPGEVOLGD, ZOU HET ONDERHOUDSPERSONEEL, DE OPERATOR OF EEN PATIËNT GEWOND KUNNEN RAKEN ALS GEVOLG VAN EEN ELEKTRISCHE SCHOK, MECHANISCHE OF ANDERE GEVAREN.**

WAARSCHUWING (NL)

ŠĪ APKALPES ROKASGRĀMATA IR PIEEJAMA TIKAI ANGĻU VALODĀ.

**BRĪDINĀJUMS
(LV)**

- **JA KLIENTA APKALPES SNIEDZĒJAM NEPIECIEŠAMA INFORMĀCIJA CITĀ VALODĀ, NEVIS ANGĻU, KLIENTA PIENĀKUMS IR NODROŠINĀT TULKOŠANU.**
- **NEVEICIET APRĪKOJUMA APKALPI BEZ APKALPES ROKASGRĀMATAS IZLASĪŠANAS UN SAPRAŠANAS.**
- **ŠĪ BRĪDINĀJUMA NEIEVĒROŠANA VAR RADĪT ELEKTRISKĀS STRĀVAS TRIECIENA, MEHĀNISKU VAI CITU RISKU IZRAISĪTU TRAUMU APKALPES SNIEDZĒJAM, OPERATORAM VAI PACIENTAM.**

ŠIS EKSPLOATAVIMO VADOVAS YRA IŠLEISTAS TIK ANGLŲ KALBA.

**ĮSPĖJIMAS
(LT)**

- **JEI KLIENTO PASLAUGŲ TEIKĖJUI REIKIA VADOVO KITA KALBA – NE ANGLŲ, VERTIMU PASIRŪPINTI TURI KLIENTAS.**
- **NEMĖGINKITE ATLIKTI ĮRANGOS TECHNINĖS PRIEŽIŪROS DARBŲ, NEBENT VADOVAUTUMĖTĖS ŠIUO EKSPLOATAVIMO VADOVU IR JĮ SUPRASTUMĖTE**
- **NEPAISANT ŠIO PERSPĖJIMO, PASLAUGŲ TEIKĖJAS, OPERATORIUS AR PACIENTAS GALI BŪTI SUŽEISTAS DĖL ELEKTROS SMŪGIO, MECHANINIŲ AR KITŲ PAVOJŲ.**

DENNE SERVICEHÅNDBOKEN FINNES BARE PÅ ENGELSK.

**ADVARSEL
(NO)**

- **HVIS KUNDENS SERVICELEVERANDØR TRENGER ET ANNET SPRÅK, ER DET KUNDENS ANSVAR Å SØRGE FOR OVERSETTELSE.**
- **IKKE FORSØK Å REPARERE UTSTYRET UTEN AT DENNE SERVICEHÅNDBOKEN ER LEST OG FORSTÅTT.**
- **MANGLENDE HENSYN TIL DENNE ADVARSELEN KAN FØRE TIL AT SERVICELEVERANDØREN, OPERATØREN ELLER PASIENTEN SKADES PÅ GRUNN AV ELEKTRISK STØT, MEKANISKE ELLER ANDRE FARER.**

NINIEJSZY PODRĘCZNIK SERWISOWY DOSTĘPNY JEST JEDYNIE W JĘZYKU ANGIELSKIM.

**OSTRZEŻENIE
(PL)**

- **JEŚLI FIRMA ŚWIADCZĄCA KLIENTOWI USŁUGI SERWISOWE WYMAGA UDOSTĘPNIENIA PODRĘCZNIKA W JĘZYKU INNYM NIŻ ANGIELSKI, OBOWIĄZEK ZAPEWNIENIA STOSOWNEGO TŁUMACZENIA SPOCZYWA NA KLIENCIE.**
- **NIE PRÓBOWAĆ SERWISOWAĆ NINIEJSZEGO SPRZĘTU BEZ UPRZEDNIEGO ZAPOZNANIA SIĘ Z PODRĘCZNIKIEM SERWISOWYM.**
- **NIEZASTOSOWANIE SIĘ DO TEGO OSTRZEŻENIA MOżE GROZIĆ OBRAŻENIAMI CIAŁA SERWISANTA, OPERATORA LUB PACJENTA W WYNIKU PORAŻENIA PRĄDEM, URAZU MECHANICZNEGO LUB INNEGO RODZAJU ZAGROŻEŃ.**

ATENȚIE (RO)

ACEST MANUAL DE SERVICE ESTE DISPONIBIL NUMAI ÎN LIMBA ENGLEZĂ.

- DACĂ UN FURNIZOR DE SERVICII PENTRU CLIENȚI NECESITĂ O ALTĂ LIMBĂ DECÂT CEA ENGLEZĂ, ESTE DE DATORIA CLIENTULUI SĂ FURNIZEZE O TRADUCERE.
- NU ÎNCERCAȚI SĂ REPARAȚI ECHIPAMENTUL DECÂT ULTERIOR CONSULTĂRII ȘI ÎNȚELEGERII ACESTUI MANUAL DE SERVICE.
- IGNORAREA ACESTUI AVERTISMENT AR PUTEA DUCE LA RĂNIREA DEPANATORULUI, OPERATORULUI SAU PACIENTULUI ÎN URMA PERICOLELOR DE ELECTROCUTARE, MECANICE SAU DE ALTĂ NATURĂ.

ОСТОРОЖНО! (RU)

ДАННОЕ РУКОВОДСТВО ПО ОБСЛУЖИВАНИЮ ПРЕДОСТАВЛЯЕТСЯ ТОЛЬКО НА АНГЛИЙСКОМ ЯЗЫКЕ.

- ЕСЛИ СЕРВИСНОМУ ПЕРСОНАЛУ КЛИЕНТА НЕОБХОДИМО РУКОВОДСТВО НЕ НА АНГЛИЙСКОМ ЯЗЫКЕ, КЛИЕНТУ СЛЕДУЕТ САМОСТОЯТЕЛЬНО ОБЕСПЕЧИТЬ ПЕРЕВОД.
- ПЕРЕД ОБСЛУЖИВАНИЕМ ОБОРУДОВАНИЯ ОБЯЗАТЕЛЬНО ОБРАТИТЕСЬ К ДАННОМУ РУКОВОДСТВУ И ПОЙМИТЕ ИЗЛОЖЕННЫЕ В НЕМ СВЕДЕНИЯ.
- НЕСОБЛЮДЕНИЕ УКАЗАННЫХ ТРЕБОВАНИЙ МОЖЕТ ПРИВЕСТИ К ТОМУ, ЧТО СПЕЦИАЛИСТ ПО ТЕХОБСЛУЖИВАНИЮ, ОПЕРАТОР ИЛИ ПАЦИЕНТ ПОЛУЧАТ УДАР ЗЛЕКТРИЧЕСКИМ ТОКОМ, МЕХАНИЧЕСКУЮ ТРАВМУ ИЛИ ДРУГОЕ ПОВРЕЖДЕНИЕ.

ПРЕДУПРЕЖДЕНИЕ (BG)

ТОВА СЕРВИЗНО РЪКОВОДСТВО Е НАЛИЧНО САМО НА АНГЛИЙСКИ ЕЗИК.

- АКО ДОСТАВЧИКЪТ НА СЕРВИЗНИ УСЛУГИ НА КЛИЕНТ СЕ НУЖДАЕ ОТ ЕЗИК, РАЗЛИЧЕН ОТ АНГЛИЙСКИ, ЗАДЪЛЖЕНИЕ НА КЛИЕНТА Е ДА ПРЕДОСТАВИ ПРЕВОДАЧЕСКА УСЛУГА.
- НЕ СЕ ОПИТВАЙТЕ ДА ИЗВЪРШВАТЕ СЕРВИЗНО ОБСЛУЖВАНЕ НА ТОВА ОБОРУДВАНЕ, ОСВЕН ВСЛУЧАЙ, ЧЕ СЕРВИЗНОТО РЪКОВОДСТВО Е ПРОЧЕТЕНО И СЕ РАЗБИРА.
- НЕСПАЗВАНЕТО НА ТОВА ПРЕДУПРЕЖДЕНИЕ МОЖЕ ДА ДОВЕДЕ ДО НАРАНЯВАНЕ НА ДОСТАВЧИКА НА СЕРВИЗНИ УСЛУГИ, НА ОПЕРАТОРА ИЛИ ПАЦИЕНТА ВСЛЕДСТВИЕНА ТОКОВ УДАР, МЕХАНИЧНИ ИЛИ ДРУГИ РИСКОВЕ.

UPOZORENJE (SR)

OVAJ PRIRUČNIK ZA SERVISIRANJE DOSTUPAN JE SAMO NA ENGLESKOM JEZIKU.

- AKO KLIJENTOV SERVISER ZAHTEVA JEZIK KOJI NIJE ENGLESKI, ODGOVORNOST JE NA KLIJENTU DA PRUŽI USLUGE PREVOĐENJA.
- NEMOJTE POKUŠAVATI DA SERVISIRATE OPREMU AKO NISTE PROČITALI I RAZUMELI PRIRUČNIK ZA SERVISIRANJE.
- AKO NE POŠTUJETE OVO UPOZORENJE, MOŽE DOĆI DO POVREĐIVANJA SERVISERA, OPERATERA ILI PACIJENTA UZROKOVANOG ELEKTRIČNIM UDAROM, MEHANIČKIM I DRUGIM OPASNOSTIMA.

**OPOZORILO
(SL)**

TA SERVISNI PRIROČNIK JE NA VOLJO SAMO V ANGLEŠČINI.

- ČE PONUDNIK SERVISNIH STORITEV ZA STRANKO POTREBUJE NAVODILA V DRUGEM JEZIKU, JE ZA PREVOD ODGOVORNA STRANKA SAMA.
- NE POSKUŠAJTE SERVISIRATI OPREME, NE DA BI PREJ PREBRALI IN RAZUMELI SERVISNI PRIROČNIK.
- ČE TEGA OPOZORILA NE UPOŠTEVATE, OBSTAJA NEVARNOST ELEKTRIČNEGA UDARA, MEHANSKIH ALI DRUGIH NEVARNOSTI IN POSLEDIČNIH POŠKODB PONUDNIKA SERVISNIH STORITEV, UPORABNIKA OPREME ALI PACIENTA.

**UPOZORENJE
(HR)**

OVAJ SERVISNI PRIRUČNIK DOSTUPAN JE SAMO NA ENGLESKOM JEZIKU.

- AKO KLIJENTOV SERVISER ZAHTIJEVA JEZIK KOJI NIJE ENGLESKI, ODGOVORNOST KLIJENTA JE PRUŽITI USLUGE PREVOĐENJA.
- NEMOJTE POKUŠAVATI SERVISIRATI OPREMU AKO NISTE PROČITALI I RAZUMJELI SERVISNI PRIRUČNIK.
- AKO NE POŠTUJETE OVO UPOZORENJE, MOŽE DOĆI DO OZLJEDE SERVISERA, OPERATERA ILI PACIJENTA PROUZROČENE STRUJNIM UDAROM, MEHANIČKIM I DRUGIM OPASNOSTIMA.

**UPOZORNENIE
(SK)**

TÁTO SERVISNÁ PRÍRUČKA JE K DISPOZÍCII LEN V ANGLIČTINE.

- AK ZÁKAZNÍKOV POSKYTOVATEĽ SLUŽIEB VYŽADUJE INÝ JAZYK AKO ANGLIČTINU, POSKYTNUTIE PREKLADATEĽSKÝCH SLUŽIEB JE ZODPOVEDNOSŤOU ZÁKAZNÍKA.
- NEPOKÚŠAJTE SA VYKONÁVAŤ SERVIS ZARIADENIA SKÔR, AKO SI NEPREČÍTATE SERVISNÚ PRÍRUČKU A NEPOROZUMIETE JEJ.
- ZANEDBANIE TOHTO UPOZORNENIA MÔŽE VYÚSTIŤ DO ZRANENIA POSKYTOVATEĽA SLUŽIEB, OBSLUHUJÚCEJ OSOBY ALEBO PACIENTA ELEKTRICKÝM PRÚDOM, PRÍPADNE DO MECHANICKÉHO ALEBO INÉHO NEBEZPEČENSTVA.

**VARNING
(SV)**

DEN HÄR SERVICEHANDBOKEN FINNS BARA TILLGÄNGLIG PÅ ENGELSKA.

- OM EN KUNDS SERVICETEKNIKER HAR BEHOV AV ETT ANNAT SPRÅK ÄN ENGELSKA ANSVARAR KUNDEN FÖR ATT TILLHANDAHÅLLA ÖVERSÄTTNINGSTJÄNSTER.
- FÖRSÖK INTE UTFÖRA SERVICE PÅ UTRUSTNINGEN OM DU INTE HAR LÄST OCH FÖRSTÅR DEN HÄR SERVICEHANDBOKEN.
- OM DU INTE TAR HÄNSYN TILL DEN HÄR VARNINGEN KAN DET RESULTERA I SKADOR PÅ SERVICETEKNIKERN, OPERATÖREN ELLER PATIENTEN TILL FÖLJD AV ELEKTRISKA STÖTAR, MEKANISKA FAROR ELLER ANDRA FAROR.

**DİKKAT
(TR)**

BU SERVİS KILAVUZU YALNIZCA İNGİLİZCE OLARAK SAĞLANMIŞTIR.

- **EĞER MÜŞTERİ TEKNİSYENİ KILAVUZUN İNGİLİZCE DIŞINDAKİ BİR DİLDE OLMASINI İSTERSE, KILAVUZU TERCÜME ETTİRMEK MÜŞTERİNİN SORUMLULUĞUNDADIR.**
- **SERVİS KILAVUZUNU OKUYUP ANLAMADAN EKİPMANLARA MÜDAHALE ETMEYİNİZ.**
- **BU UYARININ GÖZ ARDI EDİLMESİ, ELEKTRİK ÇARPMASI YA DA MEKANİK VEYA DİĞER TÜRDEN KAZALAR SONUCUNDA TEKNİSYENİN, OPERATÖRÜN YA DA HASTANIN YARALANMASINA YOL AÇABİLİR.**

**警告
(JA)**

このサービスマニュアルには英語版しかありません。

GEHC 以外でサービスを担当される業者が英語以外の言語を要求される場合、翻訳作業はその業者の責任で行うものとさせていただきます。

このサービスマニュアルを熟読し理解せずに、装置のサービスを行わないで下さい。

この警告に従わない場合、サービスを担当される方、操作員あるいは患者さんが、感電や機械的又はその他の危険により負傷する可能性があります。

**警告
(繁體中文)
Traditional
Chinese**

本服務手冊僅提供英文版。

- 如顧客之服務提供者需要英文版以外之語言，顧客需自行負擔其翻譯服務之責任。

- 在查閱並了解本服務手冊之內容前，請勿試圖維修本設備。

- 未確實遵守本警告，可能導致服務提供者、操作者或病患遭受電擊、機械危險或其他傷害。

注意：
(ZH-CN)

本维修手册仅存有英文本。

非 GEHC 公司的维修员要求非英文本的维修手册时，

客户需自行负责翻译。

未详细阅读和完全了解本手册之前，不得进行维修。

忽略本注意事项会对维修员，操作员或病人造成触

电，机械伤害或其他伤害。

경고
(KO)

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  위험을 가할 수 있습니다.

DAMAGE IN TRANSPORTATION

All packages should be closely examined at time of delivery. If damage is apparent write "Damage In Shipment" on ALL copies of the freight or express bill BEFORE delivery is accepted or "signed for" by a GE representative or hospital receiving agent. Whether noted or concealed, damage MUST be reported to the carrier immediately upon discovery, or in any event, within 14 days after receipt, and the contents and containers held for inspection by the carrier. A transportation company will not pay a claim for damage if an inspection is not requested within this 14 day period.

CERTIFIED ELECTRICAL CONTRACTOR STATEMENT - FOR USA ONLY

All electrical Installations that are preliminary to positioning of the equipment at the site prepared for the equipment shall be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations and testing shall be performed by qualified GE Healthcare personnel. In performing all electrical work on these products, GE will use its own specially trained field engineers. All of GE's electrical work on these products will comply with the requirements of the applicable electrical codes.

The purchaser of GE equipment shall only utilize qualified personnel (i.e., GE's field engineers, personnel of third-party service companies with equivalent training, or licensed electricians) to perform electrical servicing on the equipment.

OMISSIONS & ERRORS

If there are any omissions, errors or suggestions for improving this documentation, please contact the GE Healthcare Global Documentation Group with specific information listing the system type, manual title, part number, revision number, page number and suggestion details.

Mail the information to:

Service Documentation,
GE Vingmed Ultrasound AS
P.O.Box: 141
NO 3191 HORTEN
NORWAY

GE Healthcare employees should use TrackWise to report service documentation issues. These issues will then be in the internal problem reporting tool and communicated to the writer.

SERVICE SAFETY CONSIDERATIONS

⚠ **DANGER** **DANGEROUS VOLTAGES, CAPABLE OF CAUSING DEATH, ARE PRESENT IN THIS EQUIPMENT. USE EXTREME CAUTION WHEN HANDLING, TESTING AND ADJUSTING.**

⚠ **WARNING** *Use all Personal Protection Equipment (PPE) such as gloves, safety shoes, safety glasses, and kneeling pad, to reduce the risk of injury.*

For a complete review of all safety requirements, see Chapter 1, Section 1-3 "Safety Considerations" on page 1-10 in this manual.

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Revision History

REVISION	DATE	REASON FOR CHANGE
A	25.Oct..2001	M3 Release
B	8.April.2002	M4 Release
C	27.SEP. 2002	BT'02 - M4 Document update
D	5. JUN. 2003	BT'03 - M3 Document Update
01	21. SEP. 2004	BT'04 - M3 release (software version V4.0.0). Both EchoPAC PC Turnkey Dimension and EchoPAC PC Turnkey Turnkey are covered in this manual. This revision of the manual replaces all EP091298 manuals with letter revisions.
2	18. AUG.2005	Updated per BT'05 - M3 (software version v5.0)
3	9. NOV. 2005	Updated per BT'05 - M4 (software version v5.1)
4	04. MAY 2006	Updated per BT06 - M3, software version v6.0
5	23. NOV. 2006	Updated per software version v6.1.
6	15.Oct. 2007	Updated per BT'08 - M3 Software v7.x
7	Oct. 2008	Updated per BT'09
8	JUNE 2011	Updated per BT'11
9	**JAN 2012**	**Updated per BT'12**

List of Effected Pages

PAGES	REVISION	PAGES	REVISION	PAGES	REVISION
Title Page	9	3-1 to 3-132	9	8-1 to 8-224	9
Front Matter i to xii	9	4-1 to 4-32	9	9-1 to 9-74	9
Table of Content - TOC (Generated list)	9	5-1 to 5-38	9	10-1 to 10-10	9
1-1 to 1-16	9	6-1 to 6-4	9	Index (Generated list)	9
2-1 to 2-18	9	7-1 to 7-56	9	Back Cover	N/A

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Chapter 1
Introduction

Section 1-1
Overview

1-1-1   Purpose of Chapter 1

This chapter describes important issues related to safely servicing **EchoPAC PC Turnkey** . The service provider must read and understand all the information presented here before installing or servicing a unit.

Table 1-1   Chapter Contents

1-1-2   Purpose of Service Manual

This Service Manual provides installation and service information for the EchoPAC PC Turnkey and contains the following chapters:

1.) **Chapter 1 - Introduction:** Contains a content summary and warnings.

2.) **Chapter 2 - Site Preparations:** Contains any pre-installation requirements for the EchoPAC PC Turnkey .

3.) **Chapter 3 - System Setup:** Contains the EchoPAC PC Turnkey installation procedure with installation checklist.

4.) **Chapter 4 - General Procedures and Functional Checks:** Contains functional checks that must be performed as part of the installation, or as required during servicing and periodic maintenance.

5.) **Chapter 5 - Components and Functions (Theory)**: Contains block diagrams and functional explanations of the EchoPAC PC Turnkey electronics.

6.) **Chapter 6 - Service Adjustments:** Contains instructions on how to make any available adjustments to the EchoPAC PC Turnkey .

7.) **Chapter 7 - Diagnostics/Troubleshooting:** Provides procedures for running and diagnostic or related routines for the EchoPAC PC Turnkey .

8.) **Chapter 8 - Replacement Procedures:** Provides disassembly procedures and reassembly procedures for all changeable FRU.

9.) **Chapter 9 - Renewal Parts**: Contains a complete list of replacement parts for the EchoPAC PC Turnkey .

10.)**Chapter 10 - Care & Maintenance:** Provides periodic maintenance procedures for the EchoPAC PC Turnkey .

1-1-3   Typical Users of the Service Manual

- Service Personnel (installation, maintenance, etc.).
- Hospital's Service Personnel. Third party Service institutions.
- Architects (Some parts of the Site Preparation Section).

1-1-4   EchoPAC PC Turnkey models covered by this manual:

Liquid Crystal Display (LCD)

Cathode Ray Tube (CRT)
Display with Keyboard, Mouse,
MO and ZIP

EchoPAC PC Tower.
Several PC models have been
used for EPPC.
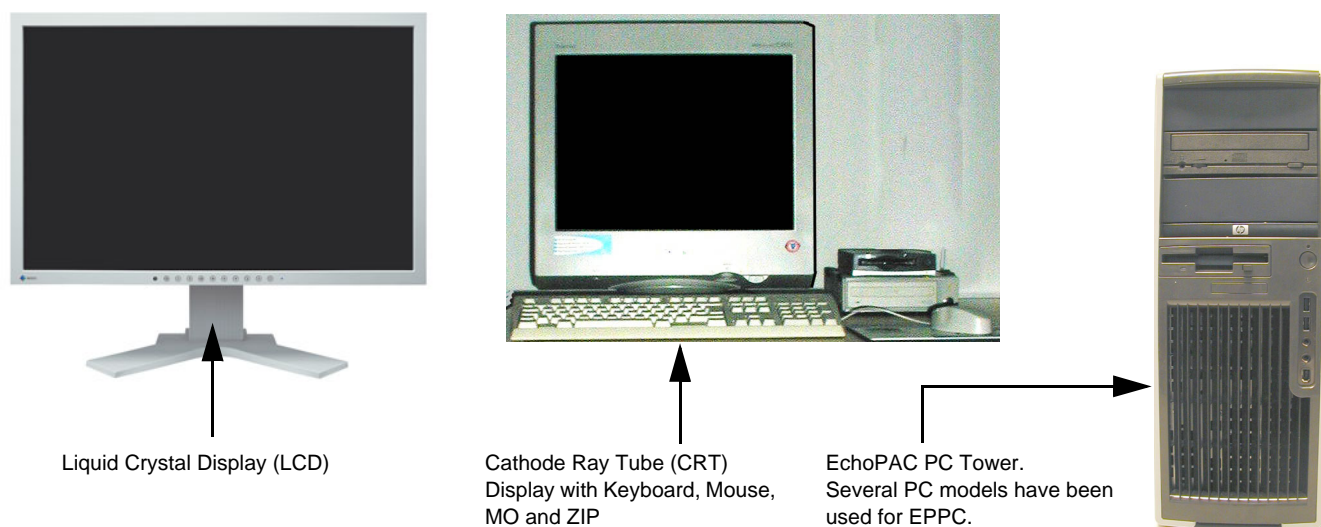
Figure 1-1   EchoPAC PC Computer Overview

1-1-4-1   EchoPAC Dimension - BT'11

.

Table 1-2 EchoPAC Dimension - BT'11

GE VINGMED PART NUMBER	DESCRIPTION	VOLTAGE	COMMENTS
EY100262	ECHOPAC PC WORKSTATION WITH 22" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	H45561JA ONLY FOR SALE IN JAPAN

1-1-4-2   EchoPAC Dimension - BT'09

.

Table 1-3 EchoPAC Dimension - BT'09

GE VINGMED PART NUMBER	DESCRIPTION	VOLTAGE	COMMENTS
EY100010	ECHOPAC PC WORKSTATION WITH 22" LCD or 21" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	H45551PD The 22" monitor replaced the 21" monitor in January 2009.

1-1-4-3   EchoPAC Dimension - BT'08

Table 1-4 EchoPAC Dimension - BT'08

GE VINGMED PART NUMBER	DESCRIPTION	VOLTAGE	COMMENTS
EQ100190 (HPxw4600)	EchoPAC PC Workstation WITH 22" LCD or 21" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	The 22" monitor replaced the 21" monitor in January 2009.
EQ100095 (HP xw4400)	EchoPAC PC Workstation WITH 21" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	
EQ100040	ECHOPAC PC WORKSTATION WITH 17" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	CAT # H45551DF

1-1-4-4   EchoPAC Dimension - BT'06

Table 1-5 EchoPAC Dimension - BT'06

GE VINGMED PART NUMBER	DESCRIPTION	VOLTAGE	COMMENTS
EP000930	ECHOPAC PC WORKSTATION WITH 17" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	CAT # H45541NG
EP000840	ECHOPAC PC WORKSTATION WITH 21" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	CAT # H45541GA

1-1-4-5   EchoPAC Dimension - BT'05

Table 1-6 EchoPAC Dimension - BT'05

GE VINGMED PART NUMBER	DESCRIPTION	VOLTAGE	COMMENTS
EP000736	ECHOPAC PC WORKSTATION WITH 17" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	CAT # H45531ZB

1-1-4-6   EchoPAC Dimension - BT'04

NOTE: *Starting from BT'04, the Uninterruptible Power Supply (UPS) is an option that must be ordered separate.*

.

Table 1-7 EchoPAC Dimension - BT'04

GE VINGMED PART NUMBER	DESCRIPTION	VOLTAGE	COMMENTS
EP000613	ECHOPAC PC WORKSTATION WITH 19" CRT MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	CAT # H45531KA
EP000614	ECHOPAC PC WORKSTATION WITH 17" LCD MONITOR	SELECT CORRECT VOLTAGE ON PC CABINET	CAT # H45531KB

1-1-4-7   EchoPAC PC Turnkey - BT'01, BT'02 and BT'03

NOTE: *The Uninterruptible Power Supply (UPS) is included.*

.

Table 1-8 EchoPAC PC Turnkey - BT'01, BT'02 and BT'03

GE VINGMED PART NUMBER	DESCRIPTION	VOLTAGE	COMMENTS
EP000300	ECHOPAC PC WORKSTATION WITH 19" CRT MONITOR	230 VAC	
EP000320	ECHOPAC PC WORKSTATION WITH 17" LCD MONITOR OR 15" LCD MONITOR	230 VAC	
EP000370	ECHOPAC PC WORKSTATION WITH 19" CRT MON.	115 VAC	
EP000380	ECHOPAC PC WORKSTATION WITH 17" LCD MONITOR OR 15" LCD MONITOR	115 VAC	
EP000410	ECHOPAC PC WORKSTATION WITH 19" CRT	100 VAC	(For Japan)
EP000420	ECHOPAC PC WORKSTATION WITH 17" LCD MONITOR OR 15" LCD MONITOR	100 VAC	(For Japan)

1-1-4-8 Operation System History

- EchoPAC PC, introduced 2001, run on a Personal Computer (PC) with Microsoft Windows 2000 Professional operating system. (BT'01, BT'02 and BT'03)
- From BT'04 (software v4.0), the Microsoft Windows XP embedded operating system is used.

1-1-4-9 Workstation Models

| HP Z200 | HP xw4600 / HP xw4400 | HP xw4300/ xw4200/xw4100 | COMPAQ EVO W4000 | COMPAQ DeskPro Workstation 300 |

Figure 1-2 Workstation models used for EchoPAC PC Turnkey

1-1-4-10 Compatibility

- Files from Vivid E9, Vivid 7, Vivid 4, Vivid 3 / Vivid 3 N (BT'03 software and later), Vivid q and Vivid *i* / Vivid *i* n can be analyzed and handled. (Software version dependant).
- DICOM files from other ultrasound scanners are also supported.

NOTE: EchoPAC PC files ARE NOT compatible with, and will not run on any EchoPAC MAC.

NOTE: Please use an EchoPAC PC Turnkey with an MO drive, with the MACvue option (MacDrive 7) installed, to read files directly from EchoPAC MAC or from MAC formatted MO disks. EchoPAC PC can also open EchoPAC MAC examinations stored on a server.

1-1-4-11 How to Turn the EchoPAC Workstation ON/OFF

See 4-2-1 "Power On/Boot Up" on page 4-2 and 4-2-2 "Power OFF" on page 4-4.

1-1-4-12 How to Check for Hardware/Software Version, Options

See Section 4-3 "Functional Check" on page 4-16.

1-1-5 Purpose of Operator Manual(s)

The Operator Manual(s) should be fully read and understood before operating the **EchoPAC PC Turnkey** and also kept near the workstation for quick reference.

Section 1-2
Important Conventions

1-2-1   Conventions used in this book

Model Designations.

This manual covers the **EchoPAC PC Turnkey Workstation**, see 1-1-4 "EchoPAC PC Turnkey models covered by this manual:" on page 1-3

Icons.

Pictures, or icons, are used wherever they reinforce the printed message. The icons, labels and conventions used on the product and in the service information are described in this chapter.

Safety Precaution Messages.

Various levels of safety precaution messages may be found on the equipment and in the service information. The different levels of concern are identified by a flag word that precedes the precautionary message. Known or potential hazards are labeled in one of three ways

:

⚠ **DANGER**   **DANGER IS USED TO INDICATE THE PRESENCE OF A HAZARD THAT WILL CAUSE SEVERE PERSONAL INJURY OR DEATH IF THE INSTRUCTIONS ARE IGNORED.**

⚠ **WARNING**   *WARNING IS USED TO INDICATE THE PRESENCE OF A HAZARD THAT CAN CAUSE SEVERE PERSONAL INJURY AND PROPERTY DAMAGE IF INSTRUCTIONS ARE IGNORED.*

⚠ **CAUTION**   **Caution is used to indicate the presence of a hazard that will or can cause minor personal injury and property damage if instructions are ignored.**

⚠ **NOTICE**   Equipment Damage Possible

Notice is used when a hazard is present that can cause property damage but has absolutely no personal injury risk. Example:

Disk drive will crash.

NOTE: *Notes are used to provide important information about an item or a procedure. Be sure to read the notes; the information contained in a note can often save you time or effort.*

1-2-2 Standard Hazard Icons

Important information will always be preceded by the exclamation point ⚠ contained within a triangle, as seen throughout this chapter. In addition to text, several different graphical icons (symbols) may be used to make you aware of specific types of hazards that could possibly cause harm. Even if a symbol isn't used in this manual, it is included for your reference.

Table 1-9   Standard Hazard Icons

ELECTRICAL	MECHANICAL	RADIATION
⚡	🖐️⚙️	☢️
LASER	**HEAT**	**PINCH**
✴️ LASER LIGHT	⚠️	🖐️

Some others make you aware of specific procedures that should be followed.

Table 1-10   Standard Icons that indicates that a special procedure is to be used

AVOID STATIC ELECTRICITY	LOCK OUT / TAG OUT (LOTO)	WEAR EYE PROTECTION
🔻	🏷️ LOTO (Lock Out Tag Out) Follow GE and regulatory LOTO requirements during all service work. (LOTO requirements in the USA are enforced by OSHA.)	👓 EYE PROTECTION OR 🥽
HAND PROTECTION	**FOOT PROTECTION**	
🧤	👢	

1-2-3   Product Icons

The following table describes the purpose and location of safety labels and other important information provided on the equipment.

Table 1-11   Product Icons

LABEL/SYMBOL	PURPOSE/MEANING	LOCATION
Identification and Rating Plate	Manufacturer's name and address Date of manufacture Model and serial numbers Electrical ratings	Rear of pc near power inlet
Type/Class Label	Used to indicate the degree of safety or protection.	
	This symbol indicates that waste electrical and electronic equipment must not be disposed of as unsorted municipal waste and must be collected separately. Please contact an authorized representative of the manufacturer for information concerning the decommissioning of your equipment.	

Section 1-3
Safety Considerations

1-3-1   Introduction

The following safety precautions must be observed during all phases of operation, service and repair of this equipment. Failure to comply with these precautions or with specific warnings elsewhere in this manual, violates safety standards of design, manufacture and intended use of the equipment.

1-3-2   Human Safety

Operating personnel must not remove any outer covers.

Servicing should be performed by authorized personnel only.

1-3-3   Mechanical Safety

⚠ **WARNING** *BECAUSE OF THE LIMITED ACCESS TO CABINETS AND EQUIPMENT IN THE FIELD, PLACING PEOPLE IN AWKWARD POSITIONS, AT LEAST TWO - 2 PERSONS ARE NEEDED WHEN LIFTING ANYTHING OVER 16 KG (35 LBS).*

⚠ **WARNING** *THE 19 INCH CRT DISPLAY NEEDS TO BE LIFTED BY TWO PERSONS WHENEVER THIS IS CALLED FOR.*

⚠ **CAUTION** **Special care should be taken when transporting the unit in a vehicle:**
- Eject any Magneto Optical disk from the MO Drive (if installed).
- Remove and seal any unsealed ink cartridges before moving the network printer.

⚠ **CAUTION** **Keep the heat venting holes on the monitor unobstructed to avoid overheating of the monitor.**

1-3-4   Electrical Safety

1-3-4-1   Safe Practices

To minimize shock hazard, the equipment chassis must be connected to an electrical ground. The system is equipped with a three-conductor AC power cable. This must be plugged into an approved electrical outlet with safety ground. If an extension cord is used with the system, make sure that the total current rating of the system does not exceed the extension cord rating.

The power outlet used for this equipment should not be shared with other types of equipment.

Both the system power cable and the power connector meet international electrical standards.

⚠ **WARNING** *Connecting the EchoPAC PC Workstation Units to the wrong voltage level will most likely destroy them.*

1-3-5 Labels Locations

Table 1-12   GE Labels   sheet 1 of 2
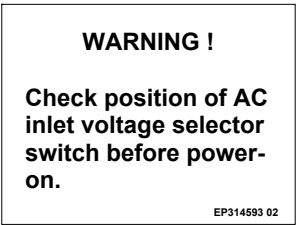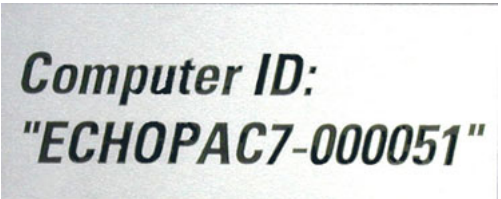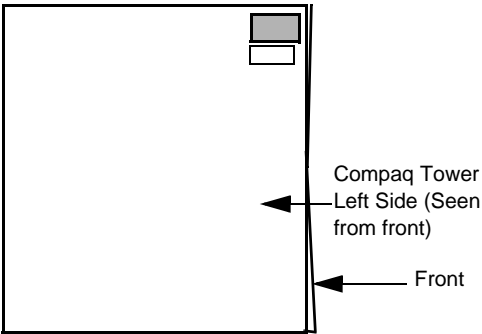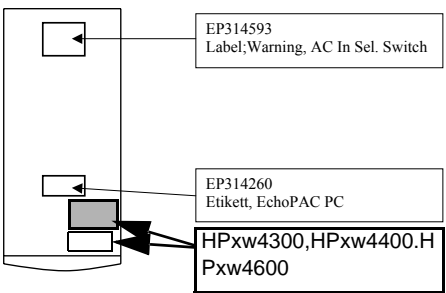
PART NUMBER	DESCRIPTION	ILLUSTRATION
EP314593	LABEL. WARNING AC IN SELECTOR SWITCH	**WARNING !** **Check position of AC inlet voltage selector switch before power-on.** EP314593 02
EP314260	GE ID Label (Example)	**Computer ID: "ECHOPAC7-000051"**

N/A	**LOCATION OF LABELS ABOVE:**
	- EP314593
	  (HP xw4100 / xw4200 / xw4300)/ xw4400 /xw4600
	- EP314260
	  (Used on all workstations)
		LOCATION ON COMPAQ TOWER DW300 AND EVO W4000
		
		Compaq Tower Left Side (Seen from front)
		Front
		
		LOCATION ON HP xw4100/HP xw4200/HP xw4300 HPxw4400 HPxw4600
		
		Top view
		EP314593 Label;Warning, AC In Sel. Switch
		EP314260 Etikett, EchoPAC PC
		HPxw4300,HPxw4400.HPxw4600

Table 1-12   GE Labels (cont'd) sheet 2 of 2

PART NUMBER	DESCRIPTION	ILLUSTRATION
EP314407 EY314423	Label, Software Version (Box) The label indicates the software version. (Two label examples are listed/ illustrated)	**V7.1.0** **V.112.0**
FD314109-02	LCD MONITOR MERCURY HG (English / Chinese)	**Hg** LAMP CONTAINS MERCURY, DISPOSE ACCORDING TO STATE/LOCAL LAW. 灯泡含 水银. 请按当地法律处理。

1-3-6   Dangerous Procedure Warnings

Warnings, such as the example below, precede potentially dangerous procedures throughout this manual. Instructions contained in the warnings must be followed.

⚠️ **DANGER**   **DANGEROUS VOLTAGES, CAPABLE OF CAUSING DEATH, ARE PRESENT IN THIS EQUIPMENT. USE EXTREME CAUTION WHEN HANDLING, TESTING AND ADJUSTING.**

⚠️ **WARNING** *EXPLOSION WARNING*

DO NOT OPERATE THE EQUIPMENT IN AN EXPLOSIVE ATMOSPHERE. OPERATION OF ANY ELECTRICAL EQUIPMENT IN SUCH AN ENVIRONMENT CONSTITUTES A DEFINITE SAFETY HAZARD.

⚠️ **WARNING** *DO NOT SUBSTITUTE PARTS OR MODIFY EQUIPMENT*

BECAUSE OF THE DANGER OF INTRODUCING ADDITIONAL HAZARDS, DO NOT INSTALL SUBSTITUTE PARTS OR PERFORM ANY UNAUTHORIZED MODIFICATION OF THE EQUIPMENT.

1-3-7   Lockout/Tagout (LOTO) Requirements

Figure 1-3   Lockout/Tagout Sign

LOTO - Follow GE and regulatory LOTO requirements during all service work. (LOTO requirements in the USA are enforced by OSHA.)

Ensure that you are in total control of the plug.

Section 1-4
EMC, EMI, and ESD

1-4-1   What is EMC?

Electromagnetic compatibility describes a level of performance of a device within its electromagnetic environment. This environment consists of the device itself and its surroundings including other equipment, power sources and persons with which the device must interface. Inadequate compatibility results when a susceptible device fails to perform as intended due interference from its environment or when the device produces unacceptable levels of emission to its environment. This interference is often referred to as radio–frequency or electromagnetic interference (RFI/EMI) and can be radiated through space or conducted over interconnecting power of signal cables. In addition to electromagnetic energy, EMC also includes possible effects from electrical fields, magnetic fields, electrostatic discharge and disturbances in the electrical power supply.

1-4-2   Electrostatic Discharge (ESD) Prevention

⚠️ **WARNING** *DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:*

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

1-4-3   CE Compliance

OEM Workstations distributed by GE Vingmed Ultrasound together with EchoPAC SW conforms to applicable EMC requirements as declared by the OEM manufacturer."

"Applicable standards, regulations and directives include but may not be limited to:"

EU / EEA: 89/336/EEC
Japan: VCCI - Voluntary Control Council for Interference by IT Equipment
USA: CFR 47, Part 15
Canada: ICES-003
Australia/New Zealand: AS/NZS 2064, AS/NZS 3548
China GB9254-1988, GB17625-1998 Harmonic

NOTE: *For CE Compliance, it is critical that all covers, screws, shielding, gaskets, mesh, clamps, are in good condition, installed tightly without skew or stress. Proper installation following all comments noted in this service manual is required in order to achieve full EMC performance.*

Section 1-5
Customer Assistance

1-5-1   Contact Information

If this equipment does not work as indicated in this service manual or in the user manual, or if you require additional assistance, please contact the local distributor or appropriate support resource, as listed below.

Before you call, identify the following information, and acquire image (Alt+D) to send to the Customer Care team:

1.) System ID.
2.) Software version.
3.) Date and time of occurrence.
4.) Sequence of events leading to issue.
5.) Is the issue reproduceable?
6.) Imaging mode, probe, preset/application.
7.) Media brand, speed, capacity, type.
8.) Select **Alt+D** and save the screen dump results (secondary image capture, cine loop, 4D multi-volume loop).

Table 1-13   Phone numbers for Customer Assistance

LOCATION	PHONE NUMBER	
USA GE Medical Systems Ultrasound Service Engineering 9900 Innovation Drive Wauwatosa, WI 53226	Service: On-site Service Parts Application Support	1-800-437-1171 1-800-558-2040 1-800-682-5327 or 1-262-524-5698
Canada		1-800-668-0732
Latin America	Service Application Support	1-800-321-7937 1-262-524-5698
Europe (OLC- EMEA) GE Ultraschall Deutschland GmbH Beethovenstraße 239 Postfach 11 05 60, D-42655 Solingen Germany	OLC - EMEA Phone: +49 (0)212 2802 - 652 +33 1 3083 1300 Fax: +49 (0) 212 2802 - 431	

Online Services Ultrasound Asia
            Australia
            China
            India
            Japan
            Korea
            Singapore
	Phone: +(61) 1-800-647-855
	            +(86) 800-810-8188
	            +(91) 1800-425-8025
	            +(81) 42-648-2940
	            +(82) 2620 13585
	            +(95) 6277-3444	

1-5-2   Product Supplier

Table 1-14   Product Supplier

SUPPLIER	PHONE NUMBER	FAX NUMBER
GE Vingmed Ultrasound A/S Strandpromenaden 45 P.O. Box: 141 NO 3191 HORTEN NORWAY	(+47) 3302 1100	(+47) 3302 1350

Chapter 2
Site Preparations

Section 2-1
Overview

2-1-1   Purpose of Chapter 2

This chapter provides the information required to plan and prepare for the installation of a EchoPAC PC Turnkey . Included are descriptions of the facility and electrical needs to be met by the purchaser of the unit.

Table 2-1   Contents in Chapter 2

SECTION	DESCRIPTION	PAGE NUMBER
2-1	Overview	2-1
2-2	General Console Requirements	2-2
2-3	Facility Needs	2-12
2-4	Environmental Dangers	2-14
2-5	Networking Pre-installation Requirements	2-16

Section 2-2
General Console Requirements

2-2-1   Environmental Requirements

Table 2-2   HP Z200 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	5 ^{o}C to 35 ^{o}C (40 ^{o}F to 95 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)
Humidity	8% to 85% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing
Altitude	10,000ft/3,000 m	30,000ft/9,100 m	30,000ft/9,100 m	30,000ft/9,100 m

Table 2-3   HP xw4600 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	5 ^{o}C to 35 ^{o}C (40 ^{o}F to 95 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)
Humidity	8% to 85% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing
Altitude	10,000ft/3,000 m	30,000ft/9,100 m	30,000ft/9,100 m	30,000ft/9,100 m

Table 2-4   HP xw4400 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	5 ^{o}C to 35 ^{o}C (40 ^{o}F to 95 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)	-40 ^{o}C to 60 ^{o}C (-40 ^{o}F to 140 ^{o}F)
Humidity	8% to 85% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing
Altitude	10,000ft/3,000 m	30,000ft/9,100 m	30,000ft/9,100 m	30,000ft/9,100 m

Table 2-5   HP xw4300 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	5 ^{o}C to 35 ^{o}C (40 ^{o}F to 95 ^{o}F)	-20 ^{o}C to 60 ^{o}C (-4 ^{o}F to 140 ^{o}F)	-20 ^{o}C to 60 ^{o}C (-4 ^{o}F to 140 ^{o}F)	-20 ^{o}C to 60 ^{o}C (-4 ^{o}F to 140 ^{o}F)
Humidity	8% to 85% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing
Altitude	10,000ft/3,000 m	30,000ft/9,100 m	30,000ft/9,100 m	30,000ft/9,100 m

Table 2-6   HP xw4200 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	5 °C to 35 °C (40 °F to 95 °F)	-20 °C to 60 °C (-4 °F to 140 °F)	-20 °C to 60 °C (-4 °F to 140 °F)	-20 °C to 60 °C (-4 °F to 140 °F)
Humidity	8% to 85% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing	8% to 90% non-condensing
Altitude	10,000ft/3,048 m	30,000ft/9,100 m	30,000ft/9,100 m	30,000ft/9,100 m

Table 2-7   HP xw4100 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	10 °C to 35 °C (50 °F to 95 °F)	-20 °C to 60 °C (-4 °F to 140 °F)	-20 °C to 60 °C (-4 °F to 140 °F)	-20 °C to 60 °C (-4 °F to 140 °F)
Humidity	15% to 80% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Altitude	10,000ft/3,048 m	15,000ft/4,572 m	15,000ft/4,572 m	15,000ft/4,572 m

Table 2-8   SAMSUNG SYNCMASTER 720

	Operating	Non-Operating	Storage	Transport
Temperature	10 °C - 40 °C (50 °F to 104 °F)	-20 °C - 45 °C (-4 °F to 113 °F)	-20 °C - 45 °C (-4 °F to 113 °F)	-20 °C - 45 °C (-4 °F to 113 °F)
Humidity	10% to 80% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
Altitude	Information not available	Information not available	Information not available	Information not available

Table 2-9   EIZO LCD Monitor type L371

	Operating	Non-Operating	Storage	Transport
Temperature	0 to 35 °C 32 to 95 °F	-20 to 60 °C (- 4 to 140 °F)	-20 to 60 °C (- 4 to 140 °F)	-20 to 60 °C (- 4 to 140 °F)
Humidity	30% to 80% non-condensing	30% to 80% non-condensing	30% to 80% non-condensing	30% to 80% non-condensing
Altitude	Information not available	Information not available	Information not available	Information not available

Table 2-10   COMPAQ W4000 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	10 ^{o}C to 35 ^{o}C (50 ^{o}F to 95 ^{o}F)	-20 ^{o}C to 60 ^{o}C (-4 ^{o}F to140 ^{o}F)	-20 ^{o}C to 60 ^{o}C (-4 ^{o}F to140 ^{o}F)	-20 ^{o}C to 60 ^{o}C (-4 ^{o}F to140 ^{o}F)
Humidity	10% to 90% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95 non-condensing
Altitude	10,000ft/3,048 m	30,000ft/9,144 m	30,000 ft./9,144 m	30,000 ft./9,144 m

Table 2-11   COMPAQ DESKPRO DW300 Workstation

	Operating	Non-Operating	Storage	Transport
Temperature	10 to 35 ^{o}C 50 to 95 ^{o}F	-20° to 60°C -4° to140^{o}F	-20° to 60°C -4° to140^{o}F	-20° to 60°C -4° to140^{o}F
Humidity	8% to 90% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95 non-condensing
Altitude	10,000ft/3,048 m	30,000ft/9,144 m	30,000 ft./9,144 m	30,000 ft./9,144 m

Table 2-12   EIZO LCD Monitor type L365

	Operating	Non-Operating	Storage	Transport
Temperature	0 to 35 ^{o}C (32 to 95 ^{o}F)	-20 to 60 ^{o}C (-4 το 140°F)	-20 to 60 ^{o}C (- 4 to 140 ^{o}F)	-20 to 60 ^{o}C (- 4 to 140 ^{o}F)
Humidity	30% to 80% non-condensing	30% to 80% non-condensing	30% to 80% non-condensing	30% to 80% non-condensing
Altitude	Information not available	Information not available	Information not available	Information not available

2-2-1 Environmental Requirements (cont'd)

Table 2-13   Sony CRT Monitor type CPD-G420S

	Operating	Non-Operating	Storage	Transport
Temperature	10 to 40 ^{o}C 50 to 104 ^{o}F	- 40 to 60 ^{o}C (- 40 to 140 ^{o}F	- 40 to 60 ^{o}C (- 40 to 140 ^{o}F	- 40 to 60 ^{o}C (- 40 to 140 ^{o}F)
Humidity	10% to 80% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
Altitude	Information not available	Information not available	Information not available	Information not available

Table 2-14   HP T750 UPS

	Operating	Non-Operating	Storage	Transport
Temperature	10 to 40 ^{o}C 50 to 104 ^{o}F	0 to 25°C 32 to 77 ^{o}F	0 to 25°C 32 to 77 ^{o}F	-25 to 55 ^{o}C -13 to 131 ^{o}F
Humidity	20% to 80% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
Altitude	Up to 6,562ft (2000m)	Up to 30,000 ft. (9,144 m)	Up to 30,000 ft. (9,144 m)	Up to 30,000 ft. (9,144 m)

Table 2-15   HP 700 UPS

	Operating	Non-Operating	Storage	Transport
Temperature	10 to 40 ^{o}C 50 to 104 ^{o}F UL tested at 25°C(77°F)	-15 to 55 ^{o}C -5 to 131 ^{o}F	-15 to 55 ^{o}C -5 to 131 ^{o}F	-15 to 55 ^{o}C -5 to 131 ^{o}F
Humidity	20% to 80% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
Altitude	Up to10,000 ft. (3048m)	Up to 30,000 ft. (9,144 m)	Up to 30,000 ft. (9,144 m)	Up to 30,000 ft. (9,144 m)

2-2-1   **Environmental Requirements** (cont'd)

Table 2-16   Sony External 5.25" MO Drive(Made Option in BT'08)

	Operating	Non-Operating	Storage	Transport
Temperature	5 to 45 ^{o}C 41 to 113 ^{o}F	-30 to 60 ^{o}C -22 to 140 ^{o}F	-30 to 60 ^{o}C -22 to 140 ^{o}F	-30 to 60 ^{o}C -22 to 140 ^{o}F
Humidity	10% to 90% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing	5% to 95% non-condensing
Altitude	-305 to 4,572m -1,000 to 15,000ft	-305 to 12,192 m -1,000 to 40,000ft	-305 to 12,192 m -1,000 to 40,000ft	-305 to 12,192 m -1,000 to 40,000ft

2-2-1-1   **Cooling**

The cooling requirement for the EchoPAC PC is within the range 1400 to 2600 BTU/hr. This depends on whether a CRT monitor or LCD monitor is used, and which hardware options that are installed. See Table 2-17 "EchoPAC PC Standard Hardware" on page 2-7 and Table 2-18 "EchoPAC PC Optional Hardware" on page 2-8 for detailed BTU/hr.

The BTU/hr. value relates to the maximum operational power consumption of the EchoPAC PC Workstation. The table data does not cover the cooling needed for lights, people, or other equipment in the room. Each person in the room adds an additional 300 BTU/hr. demand on the cooling system

.

Table 2-17   EchoPAC PC Standard Hardware

	PART	UPS [1]	PC [2]	CRT	LCD	Modem option	Switch	9.1 GByte MO [3]	
	BTU/HR	120	905	478	103	164	246	287	
	Power (W)	35	265	140	35	48	72	84	Total BTU/HR
EchoPAC PC Models	**EY100262 EY100010**	x	x		x			x	1415
	EQ100190 EQ100095 EP000930/ EP000840/ EP000736 + UPS	x	x		x		x	x	1661
	EP000930/ EP000840/ EP000736 wo/ UPS		x		x		x	x	1541
	EP000614 + UPS	x	x		x		x	x	1661
	EP000613 + UPS	x	x	x			x	x	2036
	EP000614 wo/ UPS		x		x		x	x	1541
	EP000613 wo/ UPS		x	x			x	x	1916
	EP000420	x	x		x	x	x	x	1825
	EP000410	x	x	x		x	x	x	2200
	EP000380	x	x		x	x	x	x	1825
	EP000370	x	x	x		x	x	x	2200
	EP000320	x	x		x	x	x	x	1825
	EP000300	x	x	x		x	x	x	2200

[1] High Voltage and Low Voltage UPS have same BTU/HR: 120 BTU/HR

[2] The cooling demand depends on workstation model and may vary slightly between models

[3] Made Option in BT*08.

2-2-1-1   **Cooling** (cont'd)

Table 2-18   EchoPAC PC Optional Hardware

PART	ZIP	3.5 MO (Not available from BT'08)	Printer	Modem	
BTU/HR	9	82	287	164	
Power (W)	2.5	24	84	48	Total BTU/HR
All	x	x	x	X	542

2-2-1-2   **Lighting**

Bright light is needed for system installation, updates and repairs. However, operator comfort may be optimized if the room light is subdued and indirect. Therefore a combination lighting system (dim/bright) is recommended. Keep in mind that lighting controls and dimmers can be a source of EMI which could degrade image quality.

⚠ **CAUTION**   **These controls should be selected to minimize possible interference**

2-2-2   **Time and Manpower Requirements**

Site preparation takes time. Begin Pre setup checks as soon as possible, if possible, six weeks before delivery, to allow enough time to make any changes.

Table 2-19   Average Installation Time

DESCRIPTION	AVERAGE SETUP TIME	COMMENTS
Unpacking	15 minutes	2 persons
Checking delivery	15 minutes	1 person
Placing EchoPAC PC Turnkey WORKSTATION	1.0 hour	1 person 2 PERSONS NEEDED FOR LIFTING THE PC AND THE LCD MONITOR FROM THE CRATE AND POSITION IT.
Connectivity and setup	1.0 hour or more, depending on location's requirements	1 person

2-2-3   Electrical Requirements

2-2-3-1   EchoPAC PC Turnkey Power Requirements

Electrical Specifications for EchoPAC PC Turnkey .

Table 2-20   Electrical Specifications for EchoPAC PC Turnkey

GEVU P/N	Voltage	Tolerances	Current	Frequency
EY100262	100-240 VAC	±10%	4 A @ 100 VAC	50-60 Hz
EY100010	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EQ100190	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EQ100095	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EP000930	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EP000840	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EP000736	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EP000614	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EP000613	100/110/230 VAC	±10%	8/8/4 A	50-60 Hz
EP000420	100 VAC	±10%	8 A	50-60 Hz
EP000410	100 VAC	±10%	8 A	50-60 Hz
EP000380	110 VAC	±10%	8 A	50-60 Hz
EP000370	110 VAC	±10%	8 A	50-60 Hz
EP000320	230 VAC	±10%	4 A	50-60 Hz
EP000300	230 VAC	±10%	4 A	50-60 Hz

2-2-3-2   Inrush Current

- 230 VAC: 4A
- 100 VAC: 8A

2-2-3-3   Site Circuit Breaker

It is recommended that the conventional branch circuit breaker for EchoPAC PC be readily accessible.

2-2-3-4   Site Power Outlets - EchoPAC PC with UPS

The AC power outlet must be less than 1.2 meters (3.9 feet) from the EchoPAC PC Turnkey UPS.

NOTE: Electrical installation must meet all current local, state, and national electrical codes.

2-2-3-5   Power Stability Requirements (when UPS is used)

Voltage drop-out: Max 10 ms.

UPS Unit: Models for the following voltages are available:

- 100-120 VAC
- 230 VAC

2-2-3-6   Site Power Outlets - EchoPAC PC without UPS

The AC power outlet must be less than 1.2 meters (3.9 feet) from the EchoPAC PC Turnkey computer.

Power outlets are needed for the:

- computer (PC)
- monitor
- 3.5" MOD (Not available from BT'08)
- Ethernet switch
- external peripherals (i.e. color network printer)

Electrical installation must meet all current local, state, and national electrical codes.

2-2-3-7   Power Backup time (when UPS is used)

Table 2-21   Estimated UPS Power Backup Times Chart

Load (VA)	Load (Watts)	Estimated Battery Runtime (Minutes)
200	128	38
300	192	27
500	320	14
600	402	9
700	500	6

Power Backup times are estimates for typical applications. Actual performance will depend on load and battery condition.

Table 2-22   Estimated Load EchoPAC PC

Devices	(VA)
Monitor (LCD)	100
Monitor (CRT)	265
PC	140
5.25" MO Drive (Option from BT'08)	84
Ethernet Switch	72
Total Load	561

The UPS has two batteries with capacity to continue power delivery for 10 minutes to approved connected parts after a non requested power source brownout.

Power Transients (when the UPS is used)

Less than 25% of nominal peak voltage for less than 1 millisecond for any type of transient, including line frequency, synchronous, asynchronous, or aperiodic transients.

2-2-4   EMI Limitations

Computers are susceptible to Electromagnetic Interference (EMI) from radio frequencies, magnetic fields, and transients in the air or wiring. They also generate EMI. The EchoPAC PC Turnkey complies with limits as stated on the EMC label. However there is no guarantee that interference will not occur in a particular installation.

Possible EMI sources should be identified before the unit is installed.

Electrical and electronic equipment may produce EMI unintentionally as the result of a defect. These sources include:

- light dimmers
- portable phones.

The presence of a broadcast station or broadcast van may also cause interference.

2-2-4-1   EMI Prevention Tips

Table 2-23   General EMI Prevention/abatement

EMI Rule	Details
Be aware of RF sources	Keep the unit at least 5 meters or 15 feet away from other EMI sources. Special shielding may be required to eliminate interference problems caused by high frequency, high powered radio or video broadcast signals.
Ground the unit	Poor grounding is the most likely reason a unit will have noisy images. Check grounding of the power cord and power outlet.
Take care with cellular phones	Cellular phones may transmit a 5 V/m signal; that could cause image artifacts.

Section 2-3
Facility Needs

2-3-1   Purchaser Responsibilities

The work and materials needed to prepare the site is the responsibility of the purchaser. Delay, confusion, and waste of manpower can be avoided by completing pre installation work before delivery. Use the Pre installation checklist to verify that all needed steps have been taken. Purchaser responsibility includes:

- Procuring the materials required.
- Completing the preparations before delivery of the EchoPAC PC Turnkey .
- Paying the costs for any alterations and modifications not specifically provided in the sales contract.

NOTE: *All electrical installations that are preliminary to the positioning of the equipment at the site prepared for the equipment must be performed by licensed electrical contractors. Other connections between pieces of electrical equipment, calibrations, and testing must also be performed by qualified personnel. The products involved (and the accompanying electrical installations) are highly sophisticated and special engineering competence is required. All electrical work on these products must comply with the requirements of applicable electrical codes. The purchaser of GE equipment must only utilize qualified personnel to perform electrical servicing on the equipment.*

The desire to use a non–listed or customer provided product or to place an approved product further from the workstation than the interface kit allows presents challenges to the installation team. To avoid delays during installation, such variances should be made known to the individuals or group performing the installation at the earliest possible date (preferably prior to the purchase).

The workstation suite must be clean prior to delivery of the machine. Carpet is not recommended because it collects dust and creates static. Potential sources of EMI (electromagnetic interference) should also be investigated before delivery. Dirt, static, and EMI can negatively impact system reliability.

2-3-2   Required Features

- Dedicated single branch power outlet of adequate amperage (see *Table 2-20 "Electrical Specifications for EchoPAC PC Turnkey" on page 2-9*) meeting all local and national codes which is located less than 1.5 m (5 ft.) from the workstation's proposed location.
- Proposed location for the workstation is at least 0.3 m (1 ft.) from the wall for cooling.
- Power outlet and place for any external peripheral are within 2 m (6.6ft) of each other with peripheral within 1 m of the unit to connect cables.
- Power outlets for test equipment within 1 m (3.3 ft.) of PC.
- An Analog phone line is required for Insite/ILinq.
- An Ethernet network wall jack is required if EchoPAC PC and Scanner is located in different rooms.

2-3-3   Desirable Features

- Circuit breaker for dedicated power outlet is easily accessible.
- Dual level lighting (bright and dim).
- Lockable cabinet ordered by GE for its software and proprietary manuals.

2-3-4 Minimal Floor Plan Suggestion

Workstation parts

A dedicated Ethernet network wall outlet

3 Dedicated Power outlets

UPS

A dedicated analog phone jack for iLink modem

243,84 cm

76 cm

DESK

304.8 cm
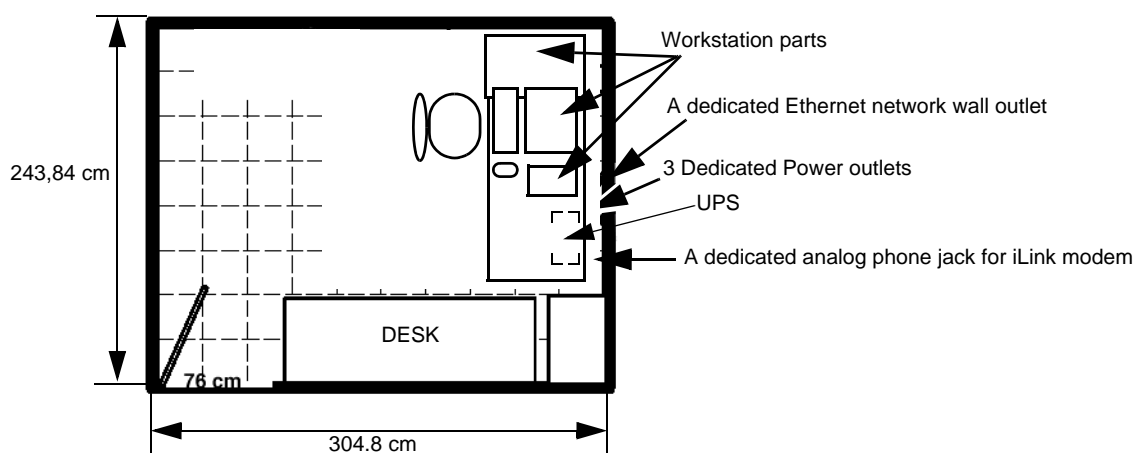
Figure 2-1 Minimal Floor Plan Suggestion for EchoPAC PC Turnkey

2-3-5 Suggested Floor Plan

A dedicated Ethernet network wall outlet

3 Dedicated Power outlets

A dedicated Analog Telephone jack

EchoPAC PC Turnkey parts

UPS

Hot & Cold water

A dedicated Ethernet network wall outlet

A dedicated Power outlet

A dedicated analog phone jack for iLink modem

243,84 cm

1.5m

105cm

609.6 cm
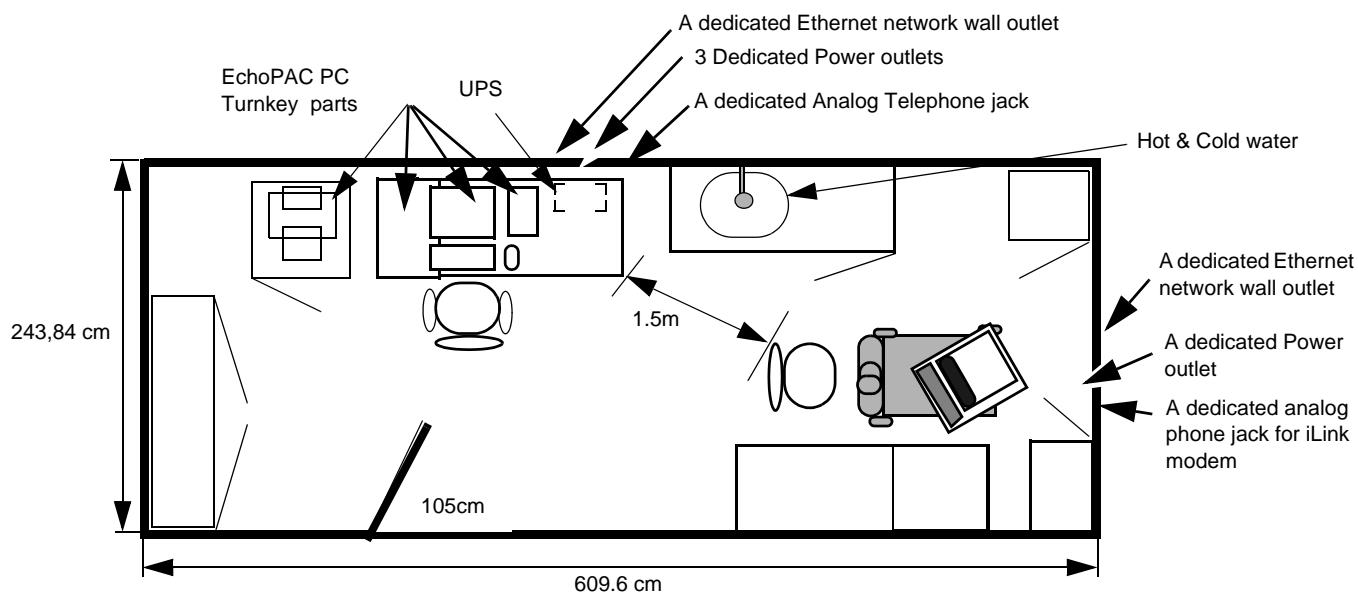
Figure 2-2 Suggested Room with EchoPAC PC and Ultrasound Scanner

Section 2-4
Environmental Dangers

⚠ **WARNING** *ALL DEVICES MEETING IEC60950 MUST BE KEPT OUTSIDE OF THE PATIENT ENVIRONMENT, AS DEFINED IN IEC60601-1-1, UNLESS IT, ACCORDING TO IEC60601-1-1, IS EQUIPPED WITH:*

A) ADDITIONAL PROTECTIVE EARTH

OR

B) EXTRA ISOLATING TRANSFORMER

Commercial devices such as laser cameras, printers, VCRs and external monitors, usually exceed allowable leakage current limits and, when plugged into separate AC outlets, are in violation of patient safety standards. Suitable electrical isolation of such external AC outlets, or providing the device with extra protective earth, will be required in order to meet UL60601-1 (UL2601-1) and IEC60601-1 standards for electrical leakage.

2-4-1   Patient Vicinity UL60601-1 replaces UL 2601-1(USA)

2.12.101

In area in which patients are normally cared for, the patient vicinity is the space with surfaces likely to be contacted by the patient or attendant who can touch the patient. This encloses a space within the room 1.83 m (6 ft.) beyond the perimeter of the bed (examination table, dental chair, treatment booth, and the like) in its intended location, and extending vertically 2.29 m (7.5 ft.) above the floor.
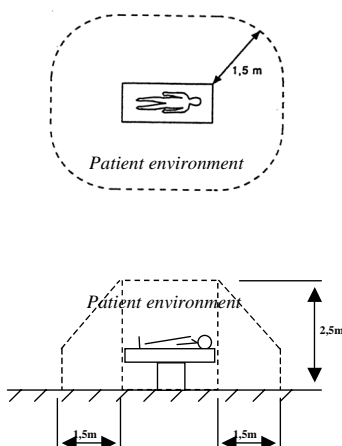
Figure 2-3   Patient safety information

2-4-2   Patient Environment IEC60601-1

Sub clause 2.204

Such an area is an environment in which medical diagnosis, monitoring or treatment is carried out. It is very difficult to attach unique dimensions to the PATIENT ENVIROMENT.

In practice a distance of 2,5 m (8.2 ft.) above the floor on which the medical personnel stand and a horizontal distance of 1,5 m (4.9 ft.) have justified themselves as indicative of the dimensions of the Patient Environment.

The patient environment/vicinity will be depicted as a dashed line in this procedure. See example below.
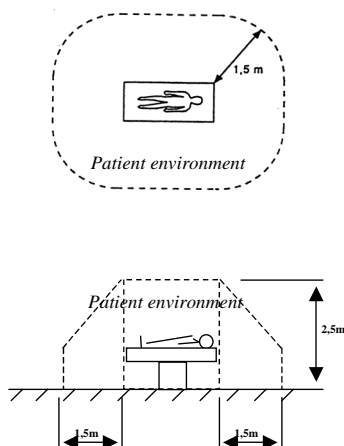
Figure 2-4   Patient safety information

Section 2-5
Networking Pre-installation Requirements

2-5-1   EchoPAC PC Turnkey Connected to Hospital's Network or Separate Network

Supported networks:

• 10, 100 or 1000 Megabit network can be used.

2-5-2   Stand Alone Network

If EchoPAC PC Turnkey is to be used in a separate network together with a Vivid E9, Vivid 7, Vivid S5N, Vivid S6N or Vivid 3N and a network printer with no connection to the Hospital's network the predefined factory settings should be used.

2-5-3   Integrated into Hospital Network

If EchoPAC PC is to be on the Hospital network, two new IP addresses need to be given from the hospital network administrator. One for EchoPAC and one for Insite.

2-5-4   DICOM Network Option Pre-installation Requirements

To configure the EchoPAC PC Turnkey to work with other network connections, the site's network administrator must provide information to complete the form on page *2-17*. Ensure that there are no spaces in any field of the form except for those fields under PHYSICAL LOCATION. Entries must include:

• Verify that there is a Conformance Statement that documents the DICOM server you are about to use supports Ultrasound images.
• A host name, local port number, AE Title, IP address and Net Mask for the EchoPAC PC Turnkey .
• The IP addresses for the default gateway and other routers at the site for ROUTING INFORMATION.
• The host name, IP address, port and AE Title for each device the site wants connected to the EchoPAC PC Turnkey for DICOM APPLICATION INFORMATION. A field for the make (manufacturer) and the revision of the device, is also included. This information may be useful for error solving.

2-5-5   Insite ExC Requirements

• A secure connection via Ethernet. Connection and access via VPN over Ethernet to the GE server on the Internet is required.

EchoPAC PC
Host Name   **Local Port**   **IP Address**

AE Title   **Net Mask**

ROUTING INFORMATION

Destination
IP Addresses

GATEWAY IP Addresses

Default

ROUTER1
ROUTER2
ROUTER3

DICOM APPLICATION INFORMATION

	NAME	MAKE/REVISION	AE TITLE	IP ADDRESSES	PORT
Store 1					
Store 2					
Store 3					
Store 4					
Store 5					
Store 6					
Worklist					
Storage Commit					
MPPS					

Figure 2-5   Worksheet for DICOM Network Information

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Chapter 3
System Setup

Section 3-1
Overview

3-1-1   Purpose of Chapter 3

This chapter contains information needed to install the EchoPAC PC Turnkey workstation and its peripherals, including:

* how to receive and unpack the equipment
* how to file a damage or loss claim
* how to prepare the facility and unit of the actual installation
* how to install and configure the unit and its peripherals

Table 3-1   Contents in Chapter 3

SECTION	DESCRIPTION	PAGE NUMBER
3-1	Overview	3-1
3-2	Setup Reminders	3-2
3-3	Receiving the EchoPAC PC Turnkey	3-4
3-4	Unpacking the Equipment	3-9
3-5	Preparing for Setup	3-19
3-6	Completing the setup	3-20
3-7	Configuration	3-45
3-8	Connectivity Setup - Software v112.x, v110.x and v108.x	3-62
3-9	Connectivity Setup - BT'04, BT'05, BT'06 and BT'08 Software	3-92
3-10	Use of EchoPAC BT-04 with Vivid 3, Vivid 3N and Vivid 4	3-120
3-11	Connectivity Setup - Software v3.x	3-125
3-12	Connectivity Setup - Software v2.x	3-128
3-13	Installation Paperwork	3-131

Section 3-2
Setup Reminders

3-2-1   Average Setup Time

For time and personnel estimates for the installation(s) see 2-2-2 "Time and Manpower Requirements" on page 2-8.

3-2-2   Setup Warnings

⚠ **CAUTION** **Please read this procedure before unpacking the EchoPAC PC Turnkey Workstation.**

⚠ **DANGER** **WHEN USING ANY TEST INSTRUMENT THAT IS CAPABLE OF OPENING THE AC GROUND LINE (I.E., METER'S GROUND SWITCH IS OPEN), DON'T TOUCH THE UNIT!**

⚠ **DANGER** **TO PREVENT ELECTRICAL SHOCK, CONNECT THE UNIT TO A PROPERLY GROUNDED POWER OUTLET. DO NOT USE A THREE TO TWO PRONG ADAPTER. THIS DEFEATS SAFETY GROUNDING.**

⚠ **WARNING** *BECAUSE OF THE LIMITED ACCESS TO CABINETS AND EQUIPMENT IN THE FIELD, PLACING PEOPLE IN AWKWARD POSITIONS, AT LEAST TWO - 2 PERSONS ARE NEEDED WHEN LIFTING ANYTHING OVER 16 KG (35 LB).*

⚠ **WARNING** *DO NOT PLACE THE ECHOPAC PC WORKSTATION INSIDE THE PATIENT ENVIRONEMENT. (REFER TO LOCAL REGULATIONS AND IEC 60601-1-1)*
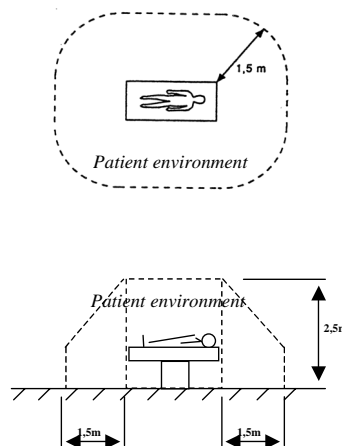
Figure 3-1   Patient Safety Information

3-2-2   Setup Warnings (cont'd)

⚠️ **WARNING** *REMEMBER TO USE RELEVANT PERSONAL PROTECTION EQUIPMENT (PPE) DURING UNPACKING/PACKING AND INSTALLATION OF THE EQUIPMENT. CHECK WITH YOUR LOCAL EHS REPRESENTATIVE.*

⚠️ **CAUTION** **If the unit is very cold or hot, do not turn on its power until it has had a chance to acclimate to its operating environment.**

Table 3-2   EchoPAC PC Turnkey Acclimate Time

	KEEP STORAGE TEMPERATURE WITHIN THESE LIMITS																					
ºC	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	60	70
ºF	-40	-31	-22	-13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	140	149
Hours	20	18	16	14	12	10	8	6	4	2	0	0	0	0	0	0	0	2	4	6	8	10

⚠️ **CAUTION** **OPERATOR MANUAL(S)**

The User Manual(s) should be fully read and understood before operating the EchoPAC PC Turnkey and kept near the unit for quick reference.

3-2-3   UPS & EchoPAC PC Turnkey Electrical Specifications

• Verify that the EchoPAC PC Turnkey and the UPS, if included, are delivered with the correct voltage.
See Table 2-20, "Electrical Specifications for EchoPAC PC Turnkey," on page 2-9.

⚠️ **WARNING** *CONNECTING A UPS TO A WRONG VOLTAGE LEVEL DESTROYS THE UPS.*

Section 3-3
Receiving the EchoPAC PC Turnkey

3-3-1   The Tilt & Shock Indicators

3-3-1-1   Overview

Improper handling during transportation may harm the equipment inside the package even if the package itself is undamaged.

To make it easier to detection if the handling during transportation has been improper, a set of Tilt & Shock indicators have been attached to the transportation box.

3-3-1-2   Position of the Tilt & Shock Indicators

The Tilt & Shock indicators have been attached to the side of the transportation box as illustrated in the figure below.
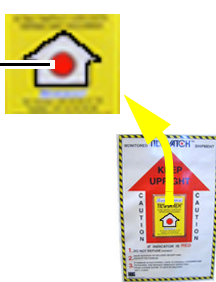
Figure 3-2   Tilt & Shock indicators's position on one side of transportation box

3-3-2   Examine All Packages

Examine all packages closely at time of delivery, as described in the procedure below.

Table 3-3   Examine All Packages

STEP	TASK	ILLUSTRATIONS
1	Is damage apparent? • If *yes*; continue with the instructions in subsection 3-3-5 - Damage in Transportation. • If no; continue with step 2.	
2	Is the Shock Indicator red colored inside the middle of the indicator, or is it missing? • If *yes*: The Shock Indicator has been activated. Continue with the instructions in subsection 3-3-3 - If Shock Indicator has triggered or is missing, before you continue with the next step. • If *no*; continue with the next step.	RED COLOR
3	Is the Tilt Indicator red colored inside the middle of the indicator, or is it missing? • If *yes*: The Tilt Indicator has been trigged. Continue with the instructions in subsection 3-3-4 - If Tilt Indicator has triggered or is missing, before you continue with the next step. • If *no*; continue with the next step.	RED COLOR
4	The two upper hinges on the Front Side and the Rear Side of the wooden transportation bow has been sealed with red plastic seals, marked GE Vingmed Ultrasound and a serial number. Verify that the four red plastic seals are intact at arrival. **If seals are broken:** If broken, it indicates that the container may have been opened after it left the manufacturer. Please make a note on the receiving papers before you sign for the reception.	

3-3-3   If Shock Indicator has triggered or is missing

Table 3-4   Shock Indicator has triggered or is missing

STEP	TASK
1	**If the Shock Indicator is missing:** Note on the shipping papers at the time of receipt that the Shock Indicator label is missing. **If the Shock Indicator has triggered:** Note on the shipping papers at the time of receipt that the Shock Indicator label was activated.
2	Inspect the product for possible concealed damage.

3-3-4   If Tilt Indicator has triggered or is missing

Table 3-5   Shock Indicator has triggered or is missing

STEP	TASK
1	**If the Tilt Indicator is missing:** Note on the shipping papers at the time of receipt that the Tilt Indicator label is missing. **If the Tilt Indicator has triggered:** Note on the shipping papers at the time of receipt that the Tilt Indicator label was activated.
2	Inspect the product for possible concealed damage.

3-3-5   Damage in Transportation

Follow this procedure if damage is apparent, or if the Tilt & Drop Indicators show failure:

Table 3-6   Damage in Transportation

STEP	TASK
1	Write "Damage In Shipment" on ALL copies of the freight or express bill BEFORE delivery is accepted or "signed for" by a GE representative or hospital receiving agent.
2	Report the damage to the carrier. • Whether noted or concealed, damage MUST be reported to the carrier immediately upon discovery, or in any event, within 14 days after receipt, and the contents and containers held for inspection by the carrier. • A transportation company will not pay a claim for damage if an inspection is not requested within this 14 day period.

Section 3-4
Unpacking the Equipment

⚠ **WARNING** *CRT MONITOR: AT LEAST TWO PERSONS ARE NEEDED WHEN LIFTING THE CRT MONITOR. ANYTHING OVER 16 KG (35 LBS) REQUIRES TWO PEOPLE.*

⚠ **CAUTION** **PLEASE READ THIS PROCEDURE BEFORE UNPACKING THE EchoPAC PC Turnkey .**

3-4-1   Shipment Description

From the factory all EchoPAC PC Turnkey parts are packed in the original packaging and put into a wooden box. The wooden box is locked and sealed.

3-4-2   Remove the Top Cover (Lid)

HINGES, TWO AT EACH SIDE OF THE WOODEN BOX.

Figure 3-3   Open the Wooden Box

1.) Un-hitch the four hinges that fasten the top lid to the box.
2.) Remove the lid.

3-4-3   Remove the Side Cover

1.) Unscrew the four Phillips screws on the hinges sides and remove the side cover with the four angle irons still fastened on it.

SIDE COVER

ANGLE IRON

REMOVE FOUR (4x) PHILLIPS
SCREWS, ONE ON EACH ANGLE IRON.

Figure 3-4   Side Cover removal

2.) Remove the contents which are the EchoPAC PC parts in cardboard boxes.

- WHEN THE NETWORK PRINTER AND
THE 3.5" MO DRIVE (Option from BT'08)
ARE INCLUDED IN THE DELIVERY,
THEY GO INTO THE SAME WOODEN
BOX AS THE LCD MONITOR DELIVERY.

Unpack the articles
from the box.

Figure 3-5   Box with Side Cover removed

3-4-4   Parts Check

3-4-4-1   PC, Monitor, Alphanumeric Keyboard and Mouse
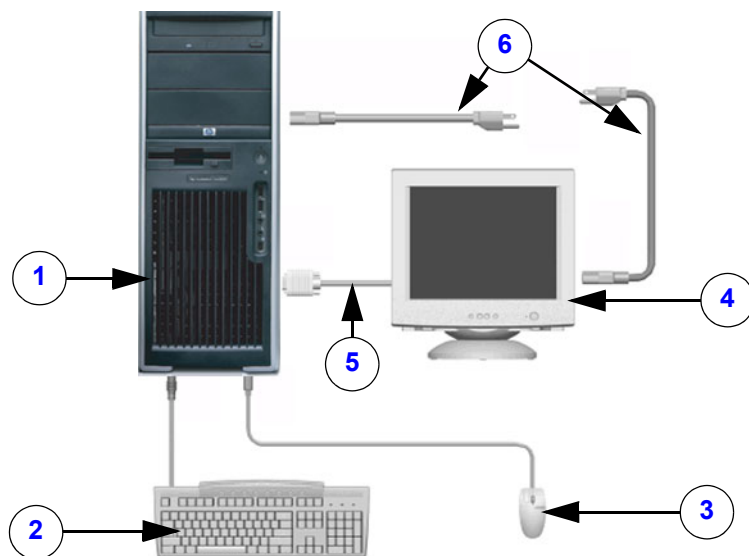
Figure 3-6   Workstation overview (colors on parts may vary)

Table 3-7   PC, Monitor, Keyboard and Mouse parts

ITEM	NAME	QTY.	☑	COMMENTS
1	HP xw4600 ^w/ EchoPAC PC SW & Label	1		Without internal 5.25" MO Drive (Option From BT'08)
2	Alphanumeric Keyboard	1		Several localized versions are available: English (US), Norwegian, Swedish/Finnish, Danish, French, German, Italian, Spanish, Portuguese, Japanese, Dutch, Greek, Russian and English (UK)
3	Mouse for PC	1		
4	Monitor, LCD	1		Two LCD monitors are optional.
5	Monitor Signal cable	2		One for the DGI (Digital Graphic Interface) connector and one for the VGA connector.
6	Power Cables	3		

3-4-4-2   LCD Monitor, Typical Contents

NOT ILLUSTRATED
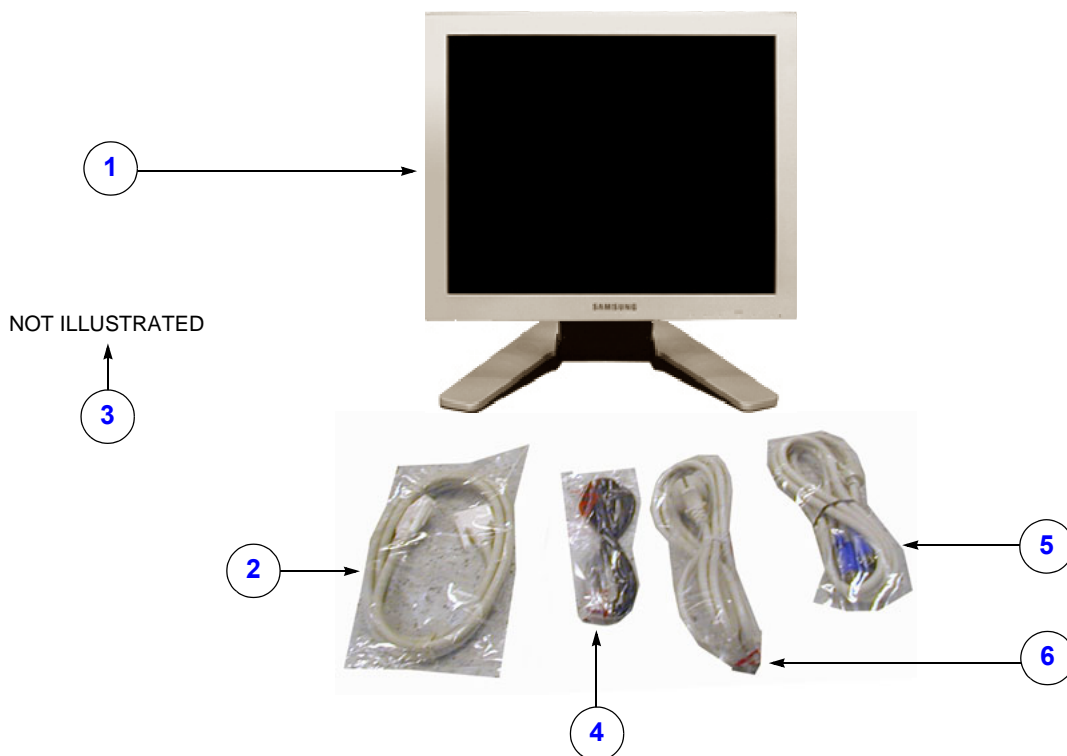
Figure 3-7   Parts In The LCD Delivery

Table 3-8   LCD Monitor Parts List

ITEM	NAME	QTY.	☑	COMMENTS
1	Monitor, LCD	1		
2	Signal Cable (RS232 or USB)	1		
3	Documentation	1		
4	DVI Monitor Cable VGA CABLE (FOR MONITOR)	1 1		ONLY ONE CABLE SHOWN IN ILLUSTRATION
5	Power Cable USA	1		
6	Power Cable EU	1		

3-4-4-3   EchoPAC PC Software Box

Figure 3-8   EchoPAC PC Box with CDs, and Mouse Pad

Table 3-9   EchoPAC PC Box with CDs, Manuals and Mouse Pad

ITEM	NAME	QTY.	☑	COMMENTS
1	ECHOPAC PC BOX	1		
2	MOUSE PAD	1		

Table 3-10   CD-ROMs in the EchoPAC PC Box

ITEM	NAME	QTY.	☑	COMMENTS
1.	SYSTEM SOFTWARE CD-ROM	1		PC MODEL DEPENDANT
2.	APPLICATION SOFTWARE CD-ROM	1		DEPENDING ON THE CURRENT SOFTWARE VERSION, EXTRA CD-ROM(s) WITH SOFTWARE PATCHES MAY BE INCLUDED
3.	4D LV FUNCTION SOFTWARE	1		To be installed on all units with software version v6.x. The software is used by the option: 4D LV FUNCTION.
4.	CD EPPC MANUALS MULTILING	1		**NOTE: Some countries require Hard Copy Manuals.**
	ECHOPAC PC USER MANUAL		INCLUDED ON THE CD-ROM *CD EPPC MANUALS MULTILING*	*Available languages:* English, French, Portuguese, German, Italian, Spanish, Japanese, Chinese, Greek, Finnish, Danish, Swedish, Norwegian, Dutch, Russian, Polish.
	VIVID7/ECHOPAC PC 4D/MULTIPLANE IMAGING USER MANUAL			*Available languages:* English, French, Portuguese, German, Italian, Spanish, Japanese, Chinese, Greek, Finnish, Danish, Swedish, Norwegian, Dutch, Russian, Polish.
	ECHOPAC PC SERVICE MANUAL			*Available language:* English.

3-4-4-4   Uninterruptible Power Supply (UPS) Option

From the introduction of EchoPAC PC until the introduction of BT'04 (software version v4.0), the UPS T700 was included in all shipments. After the release of BT'04, the UPS became an option.

3-4-4-5   HP UPS T750 G2

NOTE: *The T750 G2 replaces T750.*

The T750 G2 is available in three versions:

- 066E0617 - T750-2 NA - North America
- 066E0618 - T750-2 INT'L - International
- 066E0619 - T750-2 JPN - Japan

3-4-4-6   HP UPS T750

NOTE: *The T750 replaced the T700.*

The T750 is available in two versions:

- 066E0615 - UPS T750 LOW VOLT. HP - FOR USA & JAPAN
- 066E0616 - UPS T750 HIGH VOLT. HP - INTERNATIONAL

3-4-4-7   HP/COMPAQ UPS T700

NOTE: *Starting with the introduction of software v4.0, the UPS became optional*

The T700 UPS has been delivered in three versions:

- EP100634 - T700 NA - North America
- EP100635 - T700 INT'L - International
- EP100636 - T700 JPN - Japan

Table 3-11   UPS T700 Models

UPS MODEL	KIT PART NUMBER	UNIT PART NUMBER	SERIES NUMBER	COMMENTS
T700 NA	204015-001	204016-001	EO3016	North America; low voltage; Tower with non-detachable six-foot power cord with NEMA 5-15 plug
T700 JPN	204015-291	204016-191	EO3016j	Japan; low voltage; Tower with non-detachable six-foot power cord with NEMA 5-15 plug
T700 H INT'L	204015-B31	204016-002	EO3016i	International; high voltage; Tower with 10A, IEC-320 input connector

The contents for a T700 UPS delivery is shown on the next page.

3-4-4-7   HP/COMPAQ UPS T700 (cont'd)

Figure 3-9   HP/COMPAQ T700 UPS Kit Overview (Example)

Table 3-12   HP/COMPAQ UPS Kit

ITEM	NAME	QTY	☑	COMMENTS
1	T700 UPS	1		Models available for 230 VAC, 110 VAC and 100 VAC
2	Power Input Cable	1		- 100 VAC and 110 VAC: Power Cable is part of unit. - 230 VAC: Power Input Cable per Country standard
3	UPS Shielded and 2.05 m long Power output cables with 3 - Pronged/Holed Male/Female Connectors	4		UPS Shielded and 2.05 m long Power output cables with 3 - Pronged/Holed Male/Female Connectors
4	Serial Cable	1		
5	Documentation package with software CD etc.	1		

3-4-4-8 Ethernet Switch Overview
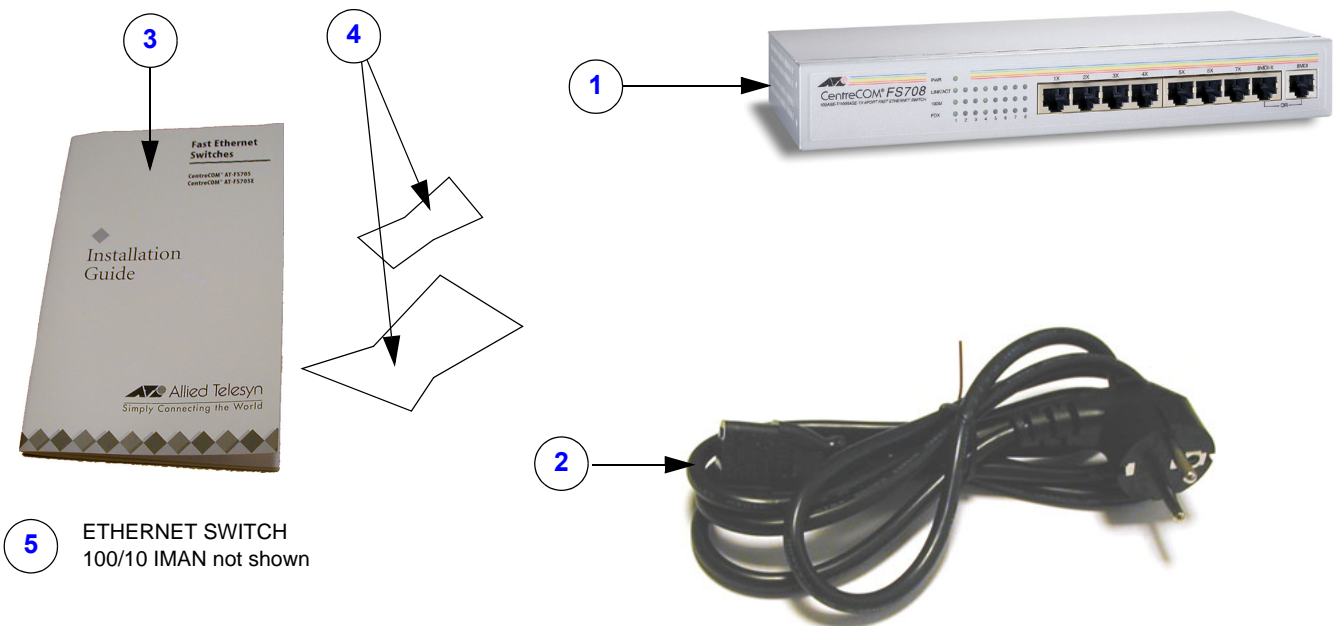
Figure 3-10 Ethernet Switch Parts Identification

Table 3-13 Ethernet Switch Parts Table

ITEM	NAME	QTY	☑	COMMENTS
1	ETHERNET SWITCH, 8 PORTS	1		
2	POWER CABLE USA POWER CABLE, EUROPE	1		
3	INSTALLATION GUIDE	1		
4	WALL MOUNTING HARDWARE	1		
5	ETHERNET SWITCH 100/10 IMAN	1		Not shown in illustration.

3-4-5   Storage Options

The following storage devices are available for the EchoPAC PC Turnkey :

- IOMEGA Ultramax Desktop Hard Drive with RAID1
  (this is a data protection, mirrored hard disk)
- DVD-R / CD-R drive
- USB FlashCard

The following storage devices have been delivered with, and are supported by the EchoPAC PC Turnkey software, but are no longer available for sale:

- 5.25" Magneto Optical Drive
- 3.5" Magneto Optical Drive
- Zip drive

Related information:

- Installation instructions/directions are included later in this chapter
-

3-4-6 External Peripherals for Connection to Ethernet (TCP/IP Network)

When installing a new external printer, connected via Ethernet (TCP/IP Network), please refer to the respective Installation manuals in the table below.

Table 3-14 Printer models and Installation manuals / instructions

POS	PRINTER MODEL	MANUAL DIRECTION NUMBER	COMMENTS
1	HP OfficeJet Pro 8000	GA294652	
2	HP OfficeJet PRO K5400dn	GA294652	Obsolete from factory
3	HP OfficeJet PRO K550	GA294652	Obsolete from factory
4	HP Color LaserJet 3600n	GA294652	Obsolete from factory
5	HP Color LaserJet CP2025n	GA294652	
6	HP Inkjet 1200DTN	GA294652	Use FC194654 as a reference
7	HP Inkjet 1100DTN	GA294652	Obsolete from factory Use EP194599 as a reference
8	HP Deskjet 6127	GA294652	Obsolete from factory Use EP194516 as a reference
9	HP Deskjet 990 Cxi	GA294652	Obsolete from factory Use EP194422 as a reference
10	LEXMARK C762N	FC194475	
11	LEXMARK C752N	FC194475	Obsolete from factory
12	LEXMARK C750N	FC194252	Obsolete from factory
13	EPSON 980N	EP091298 (see: chapter 3)	Obsolete from factory

Additional Information

See: Section 9-12 "Peripherals - External" on page 9-41.

Section 3-5
Preparing for Setup

3-5-1   EMI Protection

This unit has been designed to minimize the effects of Electro Magnetic Interference (EMI). Many of the covers, shields, and screws are provided primarily to protect the system from image artifacts caused by this interference. For this reason, it is imperative that all covers and hardware are installed and secured before the unit is put into operation.

Section 3-6
Completing the setup

3-6-1   System Specifications

3-6-1-1   System Requirements Verification
- Verify that the site meets the requirements listed in Section 2-3 "Facility Needs" on page 2-12
- Verify that the specifications below don't conflict with any on-site conditions.

3-6-1-2   Physical Dimensions
The physical dimensions for the EchoPAC PC Turnkey 's main parts are summarized in:

- Table 3-15 "Workstation's Physical Dimensions" on page 3-20.
- Table 3-16 "Monitors's Physical Dimensions" on page 3-21.
- Table 3-17 "UPS' Physical Dimensions" on page 3-21.

Table 3-15   Workstation's Physical Dimensions

UNIT DESCRIPTION	WIDTH	HEIGHT	DEPTH	UNIT
HP Z200	17.78	45.43	44.76	cm
	7	17.9	17.6	Inches
HP xw4300, HP xw4400, HP xw4600	17	45	45.7	cm
	6.7	17.7	18	Inches
HP xw4200	16.8	45	45.6	cm
	6.6	17.7	17.9	Inches
HP xw4100	16.8	45.0	45.6	cm
	6.6	17.7	17.9	Inches
COMPAQ EVO W4000	17	45	44	cm
	6.7	17.7	17.3	Inches
COMPAQ DESKPRO W300	16.7	45.2	43	cm
	6.6	17.8	16.9	Inches

3-6-1-2   Physical Dimensions (cont'd)

Table 3-16   Monitors's Physical Dimensions

UNIT DESCRIPTION	WIDTH	HEIGHT	DEPTH	UNIT
22" LCD MONITOR FlexScan S2233W	51.1	43.9 - 52.1	20.85	cm
	20.1	17.3 - 20.5	8,2	Inches
21" LCD MONITOR SyncMaster 214T	46.9	46.62	22.85	cm
	18.5	18.4	9.0	Inches
19" CRT MONITOR	45.1	47.1	46.1	cm
	17.75	18.5	18.1	Inches
17" LCD MONITOR SAMSUNG SYNCMASTER 720T	38.8	32.3 (panel) 40.63 (with base)	5.04 (panel) 21.57 (with base)	cm
	15.3	12.7 (panel) 16.0 (with base)	2.0 (panel) 8.5 (with base)	Inches
17" LCD MONITOR SAMSUNG SYNCMASTER 172T	38.5	39.5	21.6	cm
	15.2	15.6	8.5	Inches
15" LCD MONITOR	39.7 (width base) 31.9 (width panel)	39.7	19.3 (depth base) 7.7 (depth panel)	cm
	15.6 (width base) 12.55 (width panel)	15.6	7.6 (depth base) 3 (depth panel)	Inches

Table 3-17   UPS' Physical Dimensions

UNIT DESCRIPTION	WIDTH	DEPTH	HEIGHT	UNIT
UPS T750 G2 SERIES UPS MODELS	15.0	33.3	19.3	cm
	5.9	13.1	7.6	Inches
UPS T750 SERIES UPS MODELS	17.0	22.5	25.9	cm
	6.69	8.88	10.19	Inches
UPS T700 SERIES UPS MODELS	11.7	3.76	16.3	cm
	4.6	14.8	6.4	inches

3-6-1-3   **Weight**

Table 3-18   Weight of Parts

MODEL	WEIGHT [KG]	WEIGHT [LBS]
EchoPAC PC Turnkey WITH 22" LCD MONITOR	25.6	56.2
EchoPAC PC Turnkey WITH 21" LCD MONITOR	24.8	54
EchoPAC PC Turnkey WITH CRT MONITOR	39.1	85
EchoPAC PC Turnkey WITH 17" LCD MONITOR	21.7	48
T750 SERIES UPS MODELS	13.6	30
T700 SERIES UPS MODELS	10	22
SONY 19" CRT MONITOR	25.5	55
COMPAQ DESKPRO WORKSTATION 300	13.6	30
COMPAQ EVO WORKSTATION W4000	9.1	20
HP xw4100/xw4200/xw4300/xw4400	16	35
EIZO LCD MONITOR L365	4.1	9
EIZO LCD MONITOR L371	5.7	12.6
MODEM	0.224	8 oz.
ETHERNET SWITCH	0.725	1.59

3-6-1-4   **Acoustic Noise level**

Less than 70dB(A) according to DIN 45635 - 19 - 01 - KL2.

3-6-2   Installing the EchoPAC PC Turnkey workstation

3-6-2-1   Place the Parts Ergonomically Correct
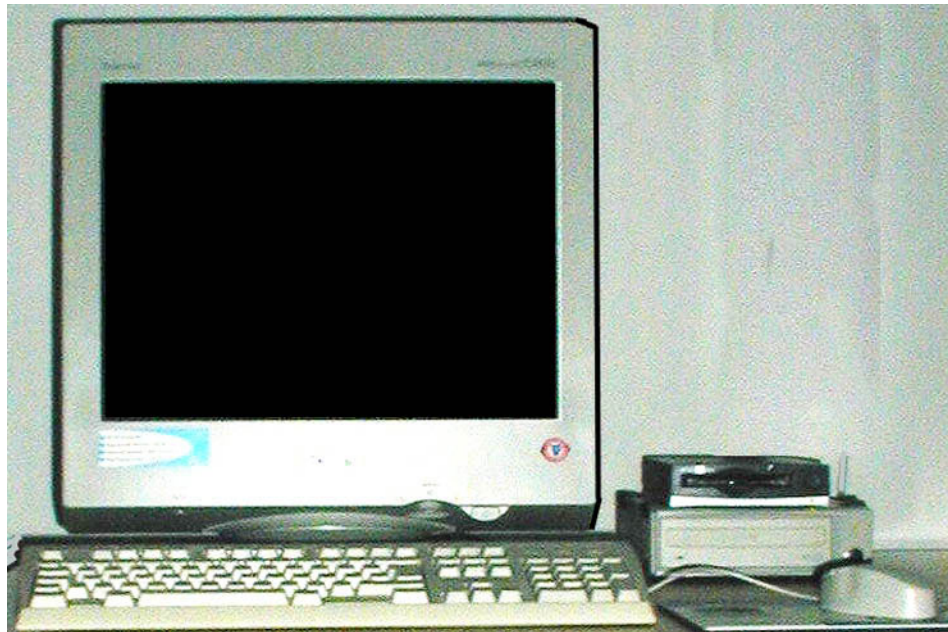
Figure 3-11   Monitor, Alphanumeric Keyboard, Mouse, MO Drive etc.

1.) Place the monitor, alphanumeric keyboard, mouse, peripherals, desk and stool ergonomically correct and place the computer either on the floor below the desk or on the desk top.

| HP Z200 | HP xw4600 / HP xw4400 | HP xw4300/ xw4200/xw4100 | COMPAQ EVO W4000 | COMPAQ DeskPro Workstation 300 |
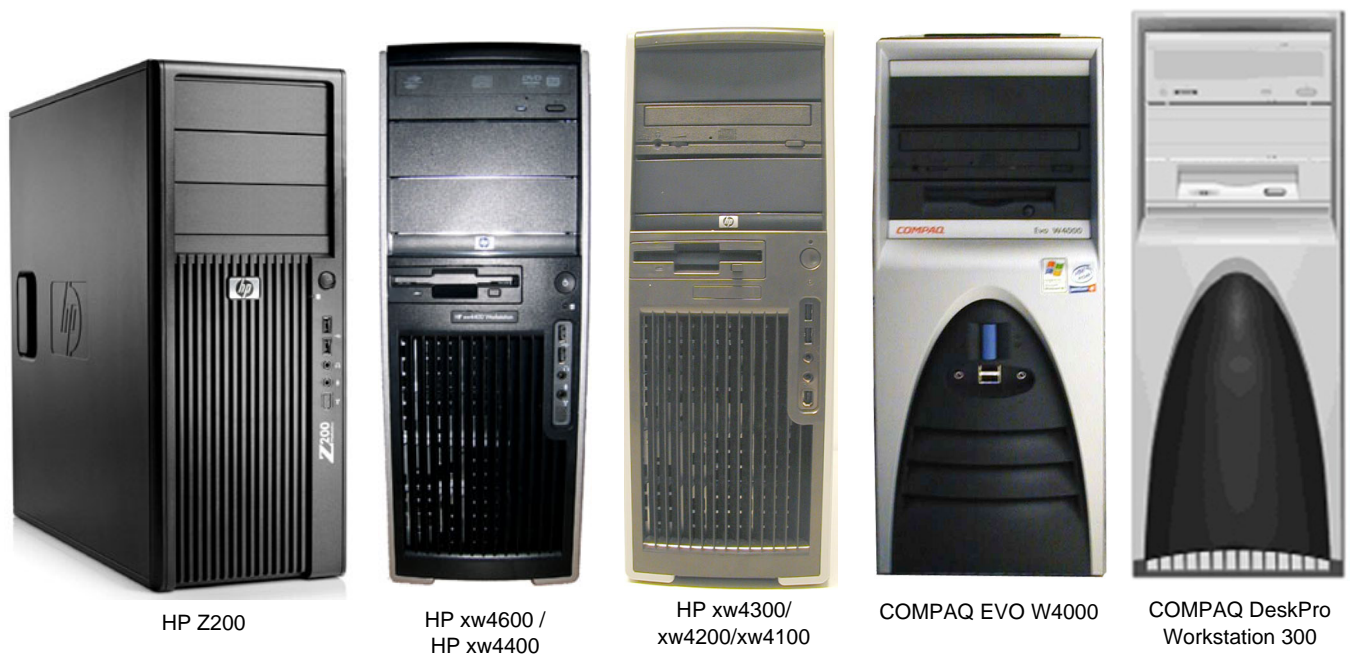
Figure 3-12   Workstation models used for EchoPAC PC Turnkey

3-6-2-2 **Connectors at Rear of HP Z200 workstation**
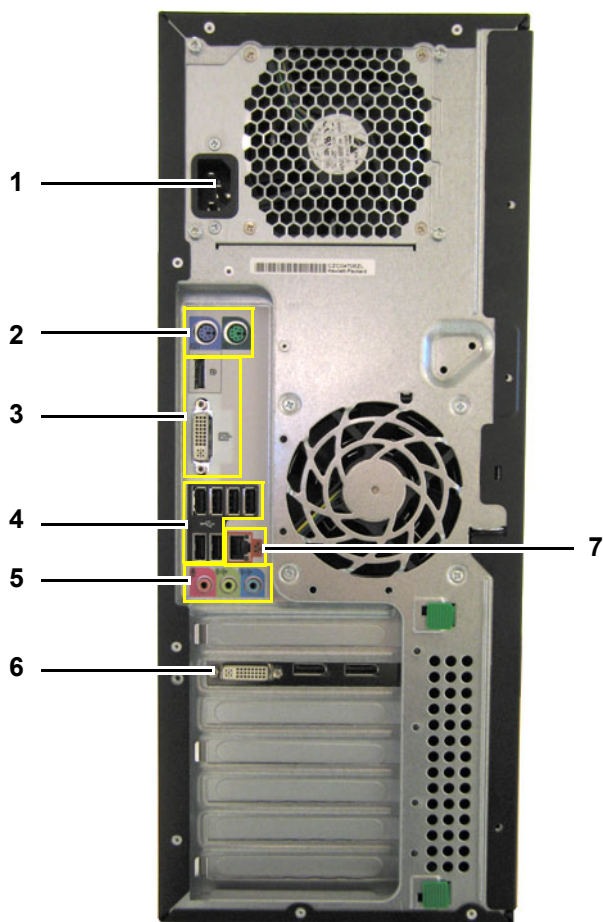
Figure 3-13   Connectors at Rear of HP Z200

Table 3-19   Connectors at Rear of HP Z200

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	AC POWER IN	5	AUDIO IN/OUT (NOT USED)
2	PS2 CONNECTORS FOR ALPHANUMERIC KEYBOARD AND MOUSE	6	LCD MONITOR INTERFACE
3	NOT USED	7	NETWORK INTERFACE
4	USB PORTS (6x)		

3-6-2-3   Connectors at Rear of HP xw4x00
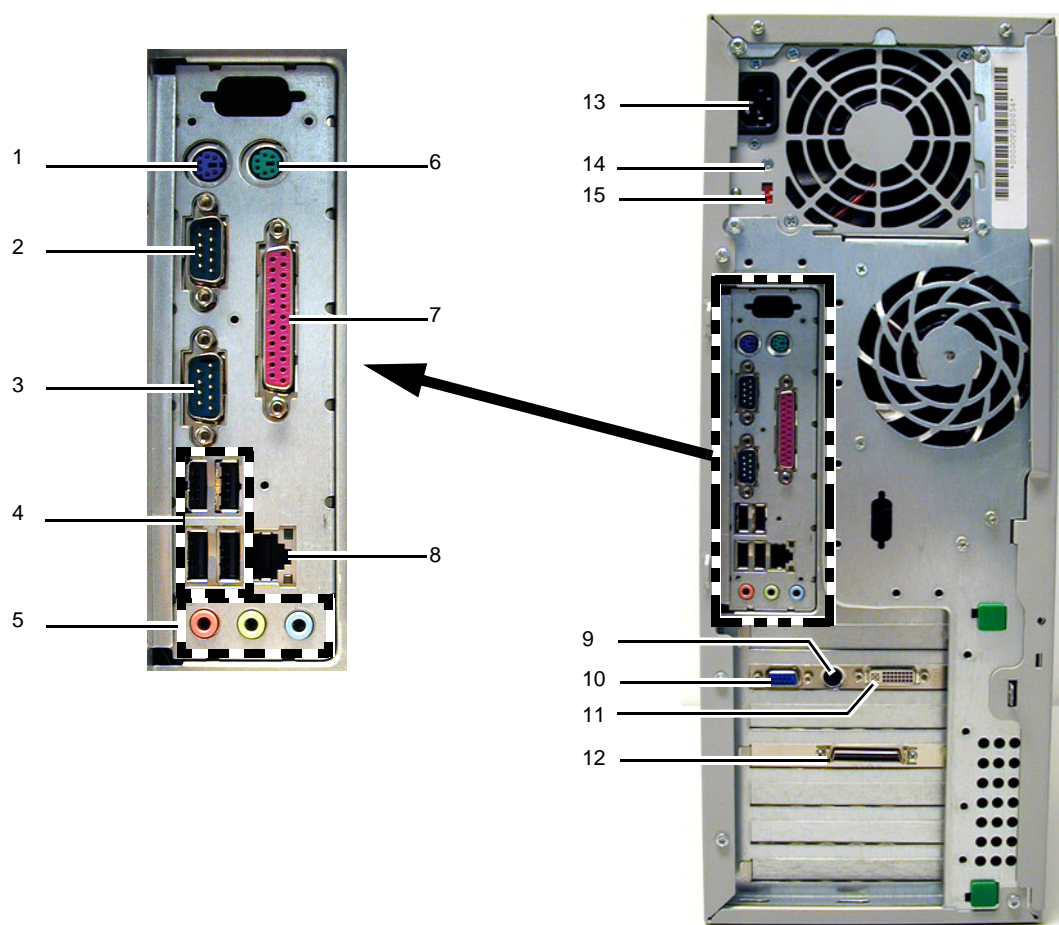
Figure 3-14   Connectors at Rear of HP xw4100/xw4200/xw4300/xw4400/xw4600

Table 3-20   Connectors at Rear of HP xw4100/ xw4200/ xw4300/ xw4400/ xw4600

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	PS2 CONNECTOR FOR ALPHANUMERIC KEYBOARD	9	VIDEO OUT (NOT USED)
2	RS-232/C FOR UPS	10	SVGA MONITOR INTERFACE USED FOR CRT MONITOR OR FOR LCD MONITOR IN A TWO-MONITOR SOLUTION.
3	RS-232/C FOR iLINK MODEM (OPTION)	11	LCD MONITOR INTERFACE
4	USB PORTS (4x)	12	SCSI INTERFACE (HP xw4100 ONLY)
5	AUDIO IN/OUT (NOT USED)	13	AC POWER IN
6	PS2 CONNECTOR FOR MOUSE	14	STATUS LED
7	PARALELLE PORT (SOFTWARE OPTION DONGLE)	15	AC VOLTAGE SELECTOR
8	NETWORK INTERFACE	16	GRAPHICS CARD FOR 3D (Option for BT'04. Not illustrated)

3-6-2-4   Connectors at Rear of COMPAQ Evo 4000
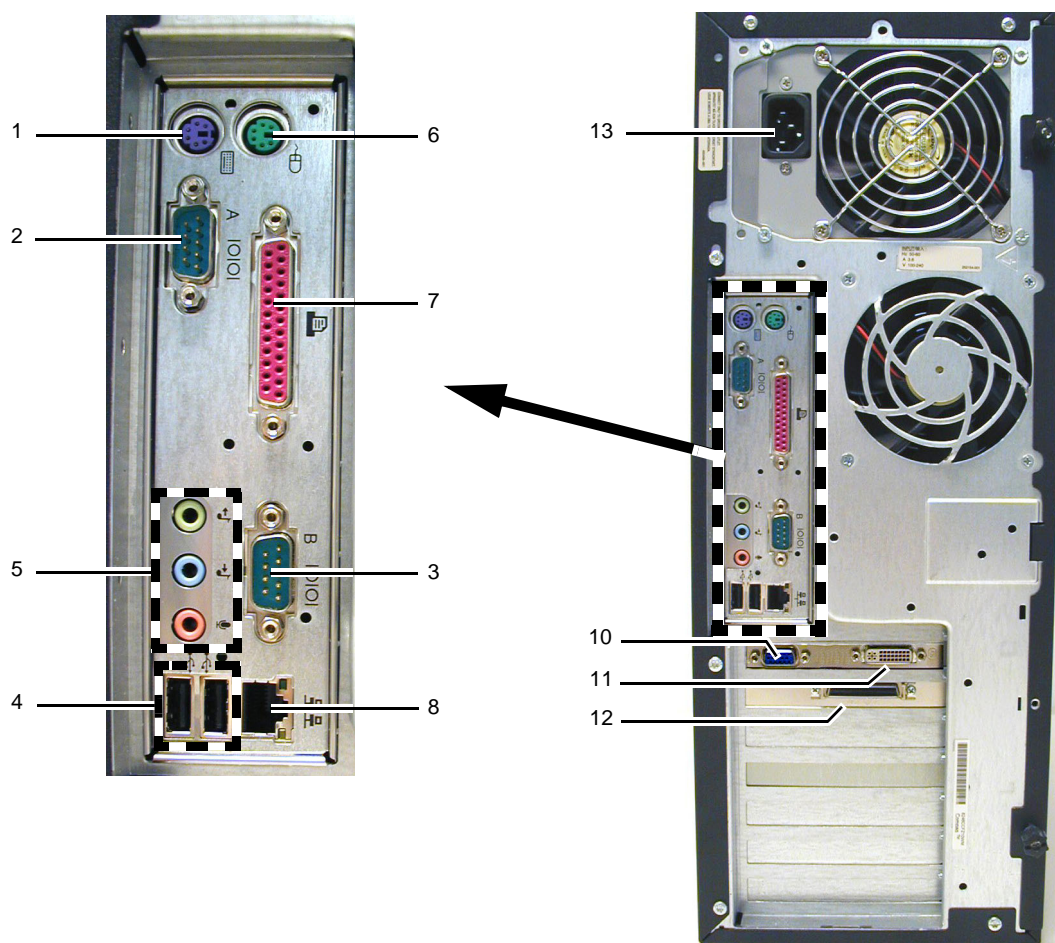
Figure 3-15   Connectors at Rear of COMPAQ Evo 4000

Table 3-21   Connectors at Rear of COMPAQ Evo 4000

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	PS2 CONNECTOR FOR ALPHANUMERIC KEYBOARD	8	NETWORK INTERFACE
2	RS-232/C FOR UPS	9	NOT USED ON THIS COMPUTER
3	RS-232/C FOR iLINK MODEM (OPTION)	10	SVGA MONITOR INTERFACE USED FOR CRT MONITOR OR FOR LCD MONITOR IN A TWO-MONITOR SOLUTION.
4	USB PORTS (2x)	11	LCD MONITOR INTERFACE
5	AUDIO IN/OUT (NOT USED)	12	SCSI INTERFACE
6	PS2 CONNECTOR FOR MOUSE	13	AC POWER IN
7	PARALELLE PORT (SOFTWARE OPTION DONGLE)	14	NOT USED ON THIS COMPUTER
		15	NOT USED ON THIS COMPUTER

3-6-2-5   Connectors at Rear of COMPAQ W300
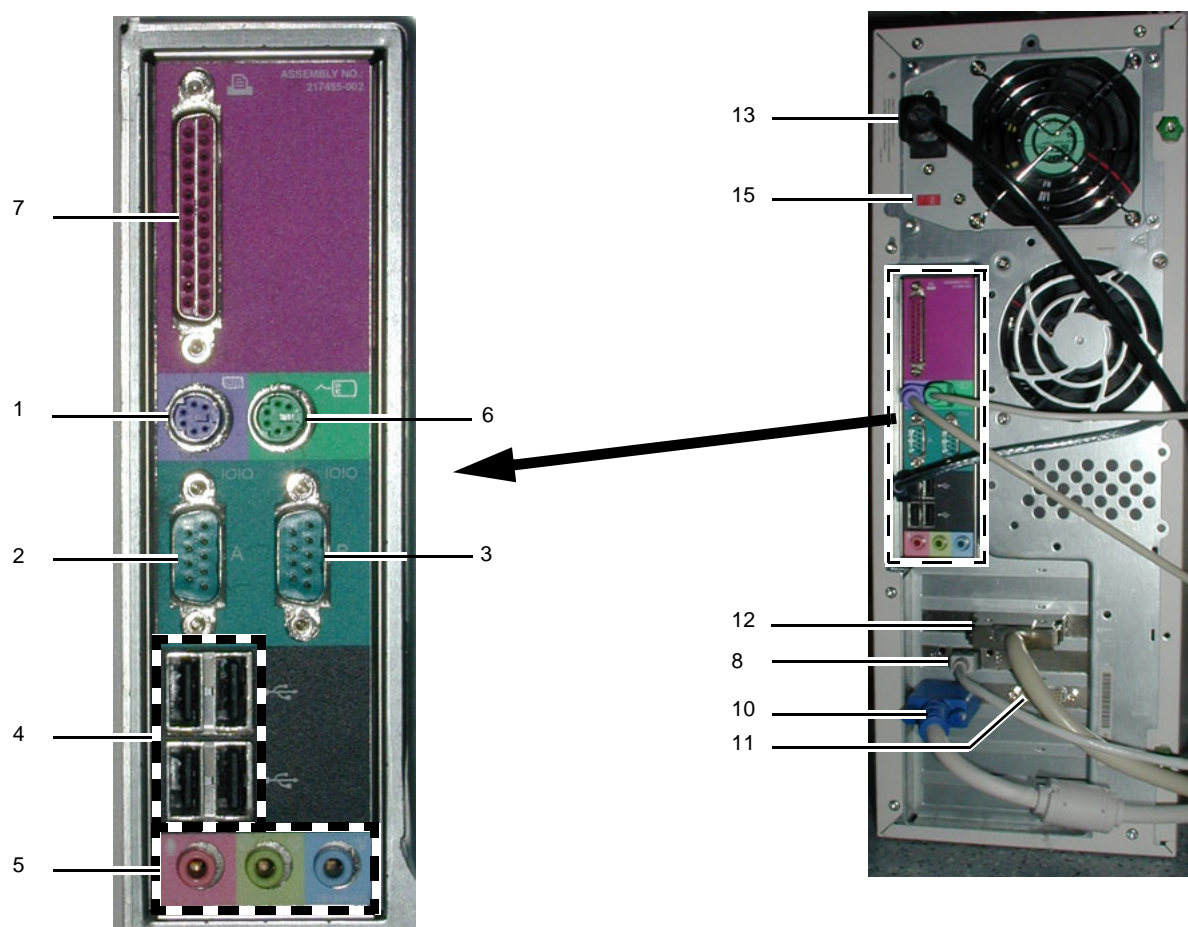
Figure 3-16   Connectors at Rear of COMPAQ W300

Table 3-22   Connectors at Rear of HP xw4100

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	PS2 CONNECTOR FOR ALPHANUMERIC KEYBOARD	8	NETWORK INTERFACE
2	RS-232/C FOR UPS	9	VIDEO OUT (NOT USED)
3	RS-232/C FOR iLINK MODEM (OPTION)	10	CRT MONITOR INTERFACE
4	USB PORTS (4x)	11	LCD MONITOR INTERFACE
5	AUDIO IN/OUT (NOT USED)	12	SCSI INTERFACE
6	PS2 CONNECTOR FOR MOUSE	13	AC POWER IN
7	PARALELLE PORT (SOFTWARE OPTION DONGLE)	14	NOT USED ON THIS COMPUTER
		15	AC VOLTAGE SELECTOR

3-6-2-6   Connect the Signal Cables to the workstation

Overview

Different PC models have been used as EchoPAC PC workstation. The rear panel layout and number of connectors, are varying between the different PC models. For illustrations of the different PCs's rear panels, see;

- Figure 3-13 "Connectors at Rear of HP Z200" on page 3-24
- Figure 3-14 "Connectors at Rear of HP xw4100/xw4200/xw4300/xw4400/xw4600" on page 3-25
- Figure 3-15 "Connectors at Rear of COMPAQ Evo 4000" on page 3-26
- Figure 3-16 "Connectors at Rear of COMPAQ W300" on page 3-27

Installing the Signal Cables on the Rear of the PC

The procedure below describes how to connect the cables from the different parts to the rear side of the PC:

1.) Connect the alphanumeric keyboard (blue or purple plug) to the blue or purple PS2 connector (connector #1 in illustration).

2.) Connect the mouse (green plug) to the green PS2 connector (connector #6 in illustration).

3.) Two different types of Software Option Dongle have been delivered, one type plugs into the parallel port, the other type plugs into a USB port;

   a.) **Parallel type:** Plug the Software Option Dongle into the parallel connector (connector #7 in illustration).

   b.) **USB type:** Plug the Software Option Dongle into one of the USB ports (#4 in illustration)

4.) If UPS is installed: Connect the RS-232/C cable from the UPS to the serial port (connector #2 in illustration).

5.) OPTIONAL: Connect the RS-232/C modem cable to the serial port (connector #3 in illustration).

6.) **5.25 MO drive**.
   For:

   - **HP xw4100, COMPAQ W4000** and **COMPAQ DW300**:
     Connect the SCSI cable from the 5.25 MO drive to the SCSI connector (connector #12 in illustration).

   - **HP xw4200** and **xw4300**:
     The MO is integrated in the computer shelf.

   - **HP xw4600** and **xw4400**:
     The external MO was available as an option on BT'08 and BT'09, but is now discontinued.

NOTE: *If replacing a workstation with SCSI interface and 5.25 MO drive, you can move the parts over to the new workstation for continued use of the MO.*

7.) Connect network cable to the network connector (connector #8 in the illustration)

3-6-2-6   Connect the Signal Cables to the workstation (cont'd)

    8.) Connect the monitor(s):

- Software v6.x and v5.x: The workstation is delivered with either one or two Liquid Crystal Display (LCD) monitors. Each monitor is delivered with two cables, one for the DVI interface and one for the VGA interface.

  * **One LCD monitor**: Connect the DVI monitor cable to the LCD monitor interface (connector #11 in illustration)

  * **Two LCD monitors**: Connect one monitor cable (DVI) to the LCD monitor interface (connector #11 in illustration)
    - Connect the other monitor cable (VGA) to the SVGA monitor interface (connector #10 in illustration)

- Software v4.x and below: The workstation is delivered with either a Cathode Ray Tube (CRT) monitor or a Liquid Crystal Display (LCD) monitor.

  * **CRT**: Connect the monitor cable to the CRT monitor interface (connector #10 in illustration)

  * **LCD**: Connect the monitor cable to the LCD monitor interface (connector #11 in illustration)

3-6-2-6   Connect the Signal Cables to the workstation (cont'd)

Installing Power to the Monitor(s)

The LCD screen(s) gets its power from a power converter.

1.) Connect the power converter's out cable to the LCD screen
2.) Connect the mains power to the power converter.

The CRT Screen plugs direct to the mains voltage.

• Plug the CRT mains power plug into the UPS, if available, or direct to a mains power outlet.

Installing AC Power Cable to the Rear of the PC

⚠ **CAUTION** **Always verify that a unit's power rating (voltage) is within the voltage on the site before connecting power to the unit. Failing to do so, will most likely result in damage to the unit.**

1.) Verify that the power rating for the unit confirms to the rating on-site. If needed, adjust AC voltage setting (#15 in illustration where applicable) to the on-site voltage.
2.) Connect the female end of the PC Power Cable to the AC voltage connector (connector #13 in illustration).

3-6-2-7 **Connections on the Uninterruptible Power Supply (UPS)**

- For installation instructions for the T750 and T750 G2 UPS, see:
  HP T750 UPS Installation Manual, Direction Number EP294824.

- For installation instructions for the T700 UPS, see description starting below.

AC Power to Monitor

1.) Connect the Monitor Power Cable to one of the power outlets on the UPS.

Figure 3-17   Monitor power connection at UPS rear (International version shown)

Connections from PC

Two cables are needed between the UPS and the PC; one signal cable and one AC Power cable.

1.) Connect the male end of the PC Power Cable to one of the Power Sockets on the UPS.
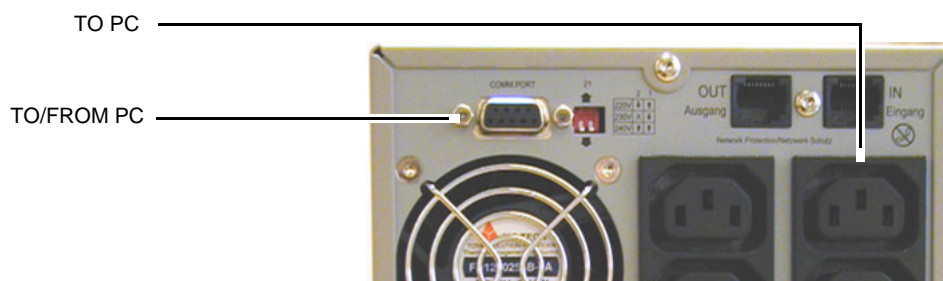
Figure 3-18   Signal and Power connections between PC rear and UPS rear

2.) Connect the serial signal cable (from the PC) to the serial connector marked A at the rear of the UPS.

3-6-2-8   COMPAQ T700 UPS Connections

1.) Make sure that the UPS is disconnected from any power source and turned completely OFF. If not turned off, do it where shown below.
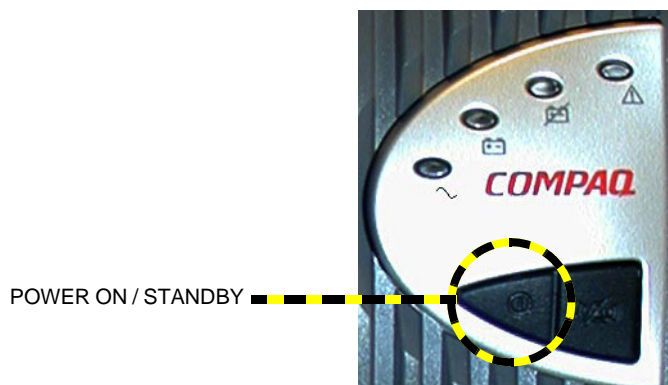
POWER ON / STANDBY

Figure 3-19   Power ON/Standby button

2.) Connect a serial cable between the UPS communications port and Port A, at rear of PC.

PC to UPS
Communications Port

Voltage Configuration
DIP Switches
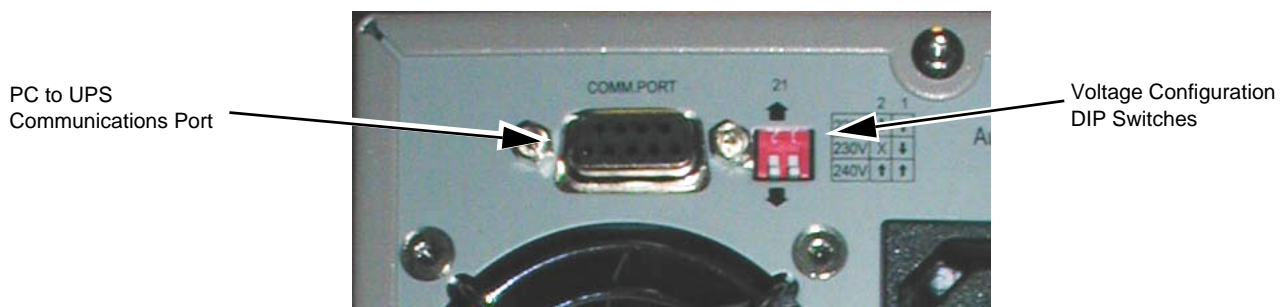
Figure 3-20   UPS Communications Port and Power Output Setup DIP switch locations

3.) Set the UPS Voltage Configuration DIP Switches to the position for correct output power.

⚠ **NOTICE** IMPORTANT: The UPS T700 JPN model does not include the voltage configuration rear panel DIP switches, as this model may not be altered from the 100V configuration setting.

Figure 3-21   Voltage configuration DIP switches

3-6-2-8   **COMPAQ T700 UPS Connections** (cont'd)

NORTH AMERICA MODEL			
OUTPUT VOLTAGE	INPUT VOLTAGE RANGE	DIP SWITCH 2	DIP SWITCH 1
110V	99V to 116V	ON or OFF	ON
120V *	108V to 127V *	ON or OFF	OFF

Table 3-23   UPS DIP Switch Setup, North American Model

INTERNATIONAL MODEL			
OUTPUT VOLTAGE	INPUT VOLTAGE RANGE	DIP SWITCH 2	DIP SWITCH 1
220V	198V to 233V	OFF	ON
230V *	207V to 243V *	ON or OFF	OFF
240V	216V to 254V	ON	ON

Table 3-24   UPS DIP Switch Setup, International Model

NOTE: ** Indicates default setting.*

NOTE: *DIP switch settings indicating "ON or OFF" specify that the DIP switch may be placed in either the ON or the OFF position. This also applies to the "X" on the rear panel of each unit (indicating that the DIP switch may be positioned ON or OFF).*

NOTE: *UPS must be completely switched off and disconnected from external power source when doing this.*
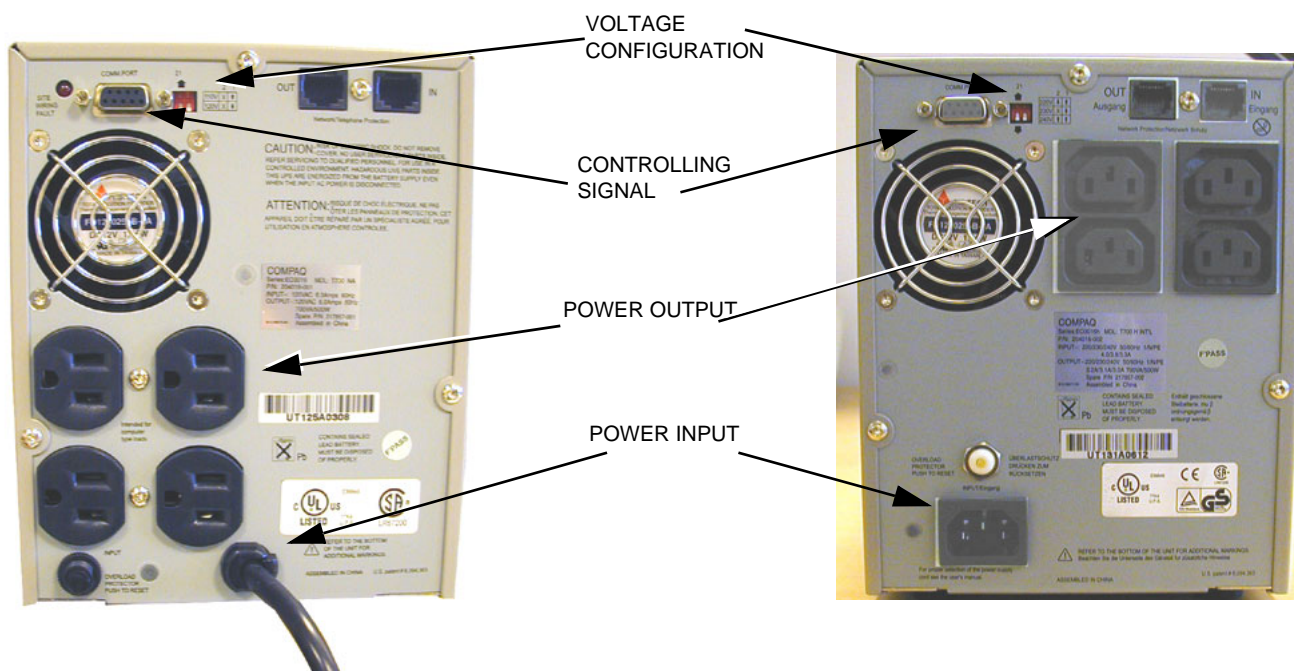
Figure 3-22   UPS Rear View, USA versions (left) and international version (right)

3-6-2-8   COMPAQ T700 UPS Connections (cont'd)

4.) Connect 4 Power Output cables between the UPS and PC, Monitor, Modem and MO-Drive.

5.) Connect a Power Input cable from the UPS input socket and the wall output.
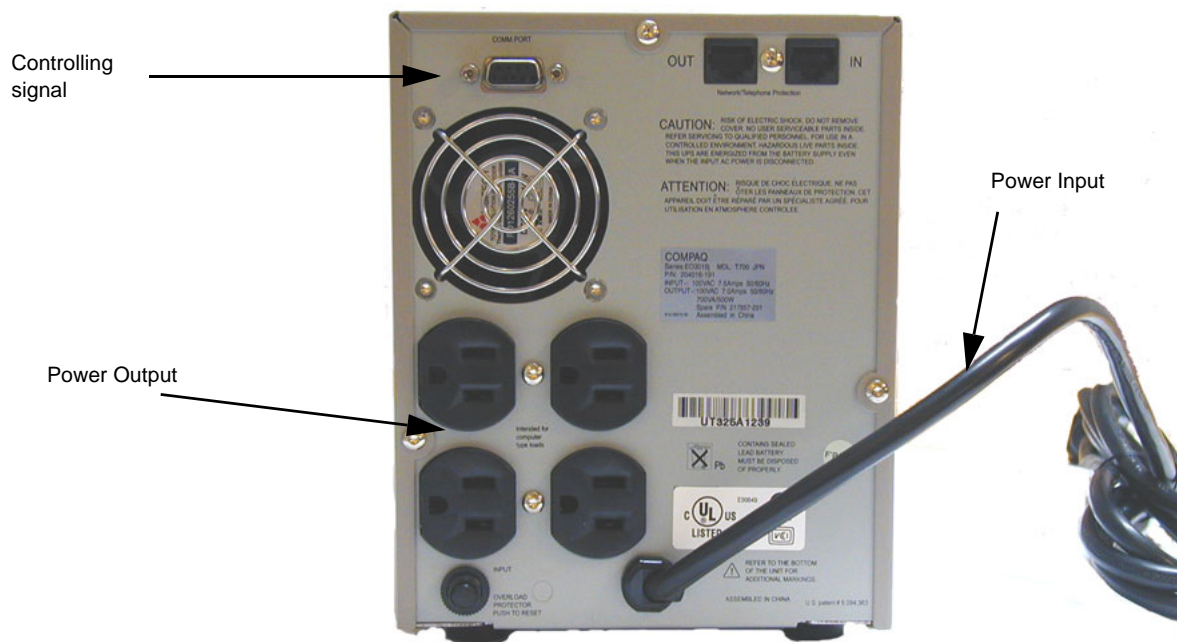
Figure 3-23   UPS Rear view, Japanese model

When the site loses power and the UPS kicks in it is programmed to gracefully allow the PC to save anything being worked on and shut down the PC and its connected units before it shuts down itself.

3-6-2-9   UPS T700 Front Panel Controls
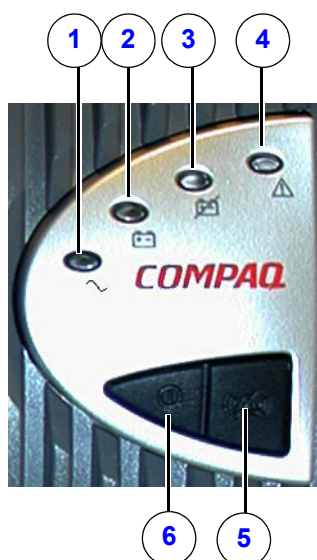
Figure 3-24   UPS front panel LED display and controls

The front panel includes the following LED indicators and button controls:

Table 3-25   UPS Functionality table

ITEM	DESCRIPTION	ACTIVITY
1	UTILITY LED	LIT = UPS ON UNLIT = UPS OFF
2	ON BATTERY/LOW BATTERY	BATTERY WORK STATUS
3	BAD BATTERY	BATTERY QUALITY STATUS
4	GENERAL ALARM/OVERLOAD INDICATOR	INDICATOR
5	TEST/ALARM RESET BUTTON	SELF-TEST/ALARM RESET CHOICE
6	ON/STANDBY BUTTON	OPERATE/STANDBY MODE CHOICE

3-6-2-10   SONY 5.25" External MO-Drive Connections

NOTE: *The external 5.25" MO drive became an option for BT'08 and BT'09 and is now discontinued.*

- Connected externally on xw4400, xw4100, W4000 and W300.
- Mounted and Connected internally on xw4300 and xw4200.

NOTE: *If replacing a workstation with SCSI interface and 5.25 MO drive, you can move the parts over to the new workstation for continued use of the MO.*

5.25" MO Drive DIP Switch Settings - SONY (Option from BT'08)

The DIP switch settings on the 5.25" MO drive may need adjustments when adding (or removing) another SCSI device.
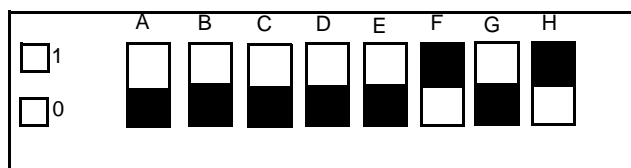
Figure 3-25   Dip Switches on 5.25" MO Drive

Table 3-26   DIP Switch settings on a 5.25 MO drive

SWITCH	MODE	DEFAULT SETTING	1	0
A	Parity Check	OFF	SCSI Parity Check is disabled	SCSI Parity Check is disabled
B	Device Type	OFF	Peripheral device type 00H (Direct Access Device)	Peripheral device type 07H (Optical Memory Device)
C	Write Cache control	OFF	Disable Write Cache	Enable Write Cache
D	Ultra SCSI control	OFF	Ultra SCSI compatible	Not Ultra SCSI compatible
E	Force Verify	OFF	All write Operations are verified.(with a verify pass)	All operations are normal operations (without a verify pass
F	Terminator	SEE BELOW THIS TABLE	The automatic terminator is on	The automatic terminator is off
G	Auto spin-up	OFF	Disk input does not cause the spindle motor to rotate	Disk input causes the spindle motor to spin
H	Manual eject	ON	Inserted Disk is not ejected when the Eject key is pressed	Inserted disk is ejected when the Eject key is pressed

Set Switch F to ON If...

- the 5.25 MO drive is the only externally connected device.
- the 5.25 MO drive is the last device in an externally connected SCSI chain, without external terminator.

Set Switch F to OFF If...

- the 5.25 MO drive is not the last device in the chain
- an external terminator is used

3-6-2-10 SONY 5.25" External MO-Drive Connections (cont'd)

5.25" MO Drive SCSI ID Setting **(Option fromBT'08)**

Figure 3-26   MO-Drive SCSI ID

1.) Use a thin screw driver above and below number to adjust.

2.) Set the SCSI ID to 4.

Figure 3-27   MO-Drive Cable Connections

3.) Connect a Power Cable between the MO-Drive and the wall outlet (or UPS, if present).

⚠ **CAUTION** **It is recommended that the SCSI cables's total length be less than 3 m long when connecting up to 4 SCSI devices. In all other cases maximum should be less than 1.5 m.**

Keep the SCSI bus termination well maintained. Only the last unit on the SCSI bus should have termination.

4.) Connect the SCSI Cable between the MO-Drive and the PC SCSI connector.

5.) Press the below shown button to turn On the Drive.

Figure 3-28   MO-Drive Power up

3-6-2-11   Ethernet Switch

1.) Connect non crossed Ethernet cables between the Ethernet switch and the EchoPAC PC's network port, the network printer's network port and Vivid scanners's network ports as shown below.
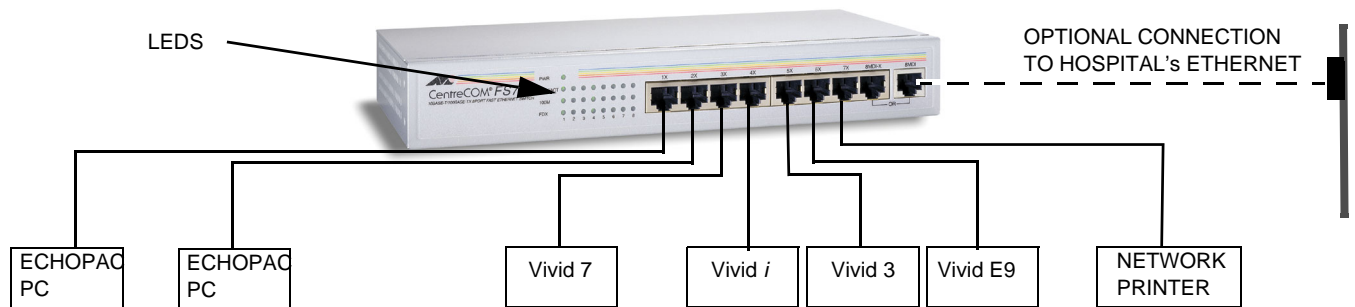
Figure 3-29   Ethernet Switch Connections (example)

3-6-3   Power On/Boot Up

Table 3-27   Boot Up   sheet 1 of 2
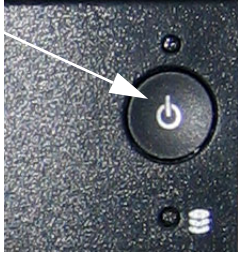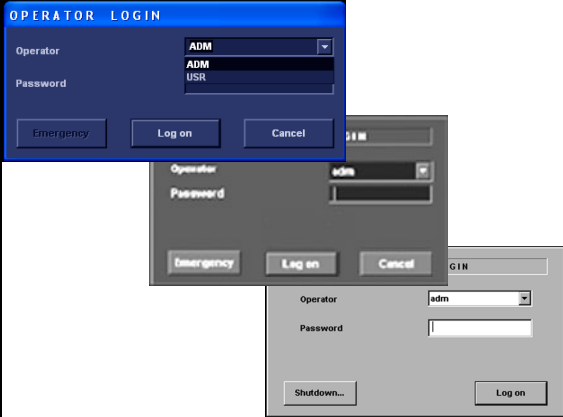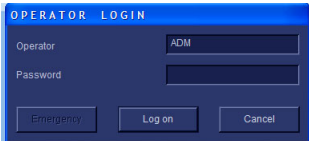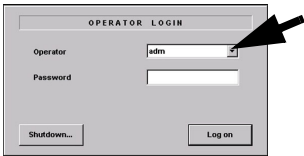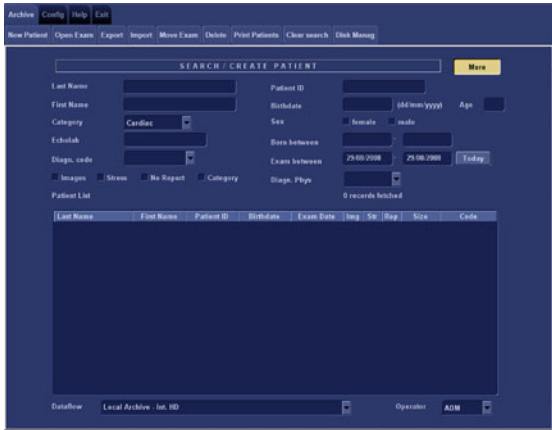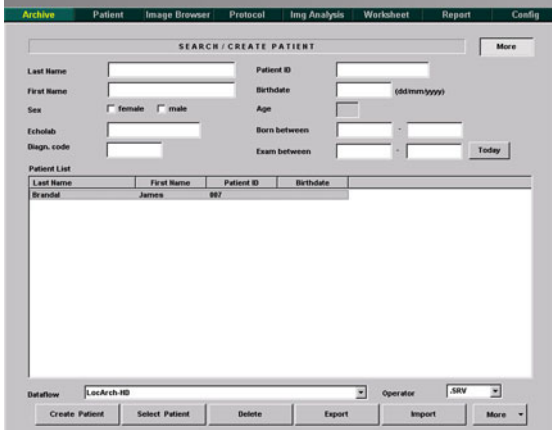
STEP	TASK	EXPECTED RESULT AND COMMENTS
1	Turn ON the Power switch. 	The workstation boots. (Typical time to boot: 1 minute 25 seconds or less, depending on workstation model and software version) The EchoPAC PC Log-on dialog appears. Operator Login Window with either two or three buttons, depending on software version.
2	• On newer software: type the **User Name**, i.e **adm,** or • On older software: Select the down-arrow to the right of the Operator field, to view the Operator pull-down menu with a list of users, then select **ADM** from the pull-down menu. • Type the password (if set).	From the factory, two users are defined: - adm - usr **Regarding the password:** - **For software v5.x and lower**, the default password has been left blank for both users, so you may try to log on without any password. - If the logon fails, you may try to use the password **service** - As a last resort, contact the hospital's network administrator (or person responsible for the ultrasound unit), and ask for the password. - **Starting with software version v6.0**, the password for the user **ADM** is: **ulsadm** - It is possible for the administrator (*ADM*) to make new users and establish unique passwords for each user, but don't do it now. The **Emergency** button stores data only from current patient examination.

Table 3-27   Boot Up (cont'd) sheet 2 of 2

STEP	TASK	EXPECTED RESULT AND COMMENTS
3	Select **Log on**.	Search / Create Patient input screen appears.

3-6-4   Software Option Configuration

3-6-4-1   Software Option - Introduction

It is possible to add Software Options to the EchoPAC PC Turnkey .

For a list of available software options, please refer to:

To enable a software option, you'll need an alphanumeric string (password) specially made for the Software Option Dongle delivered with the EchoPAC PC Turnkey workstation.

3-6-4-2   Software Option Dongle - Introduction

A Software Option Dongle is included with the EchoPAC PC Turnkey workstation. It plugs into one of the USB connectors. (On early EchoPAC PC models, a dongle for the parallel port was used.

A Password enables the software option or combination of software options.

Dongle for installation on an
USB Port
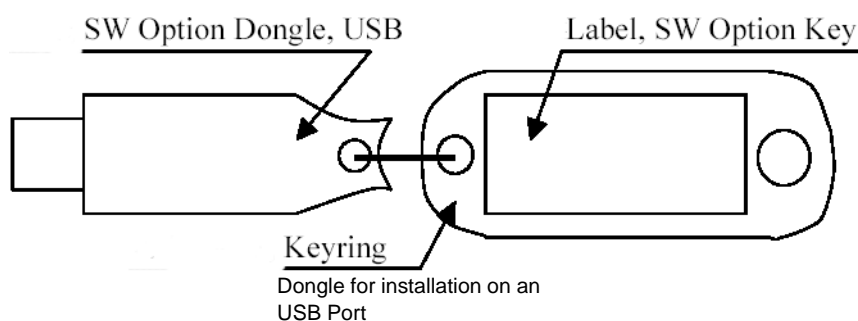
Figure 3-30   Software Option Dongle

3-6-4-3   Installing the Software Option Dongle

Use this procedure the first time a software option license is installed on the EchoPAC PC Turnkey workstation.

1.) Turn OFF the workstation.
2.) Plug the Software Option Dongle into one of the USB ports on the workstation.
3.) Turn ON the workstation.

3-6-4-4   **Initiating a Software Option**

A password (alphanumeric option string) enables a software option or a combination of software options. The password is specific for each EchoPAC PC Turnkey workstation.

Initiate Software Option(s)

1.) Select **Config** and log on as **ADM**.
2.) Select **Admin**.
3.) Select the **System Admin** tab.
4.) Select **New** to open the **New Key** dialog where you type the **Software Option String** (Alphanumeric String).
5.) Type the **Software Option String**.
6.) Select **OK** to save the new setting.
7.) Close the **Config** window.

3-6-5 Stereo 3D Glasses (Option from BT'08)

Used for 3D stereo viewing of 3D images shown on the Scanner and on EchoPAC PC.

Spectacle Casing

Anacrome 3D Glasses

Anacrome 3D Glasses clip on flips
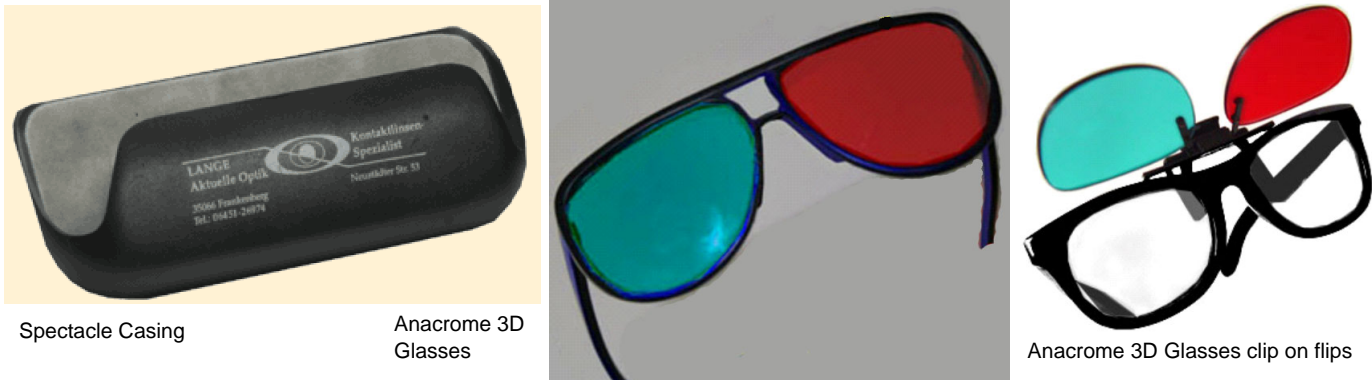
Figure 3-31   3D Visualization Kit parts

Table 3-28   FD200123 Stereo Glasses for 3D Visualization kit.

Part Number	Description	Qty
066E0370	Spectacle Casing	1
O66E0371	Anacrome 3D Glasses	4
066E0372	Anacrome 3D Glasses clip on flips	1

Section 3-7
Configuration

3-7-1   Overview

Table 3-29   Contents in Section 3-7 - Configuration

3-7-2 General Setup

3-7-2-1 Select the System Settings Screen

1.) Power on the EchoPAC workstation and log on as **ADM**. For details, refer to: 3-6-3 "Power On/Boot Up" on page 3-40.
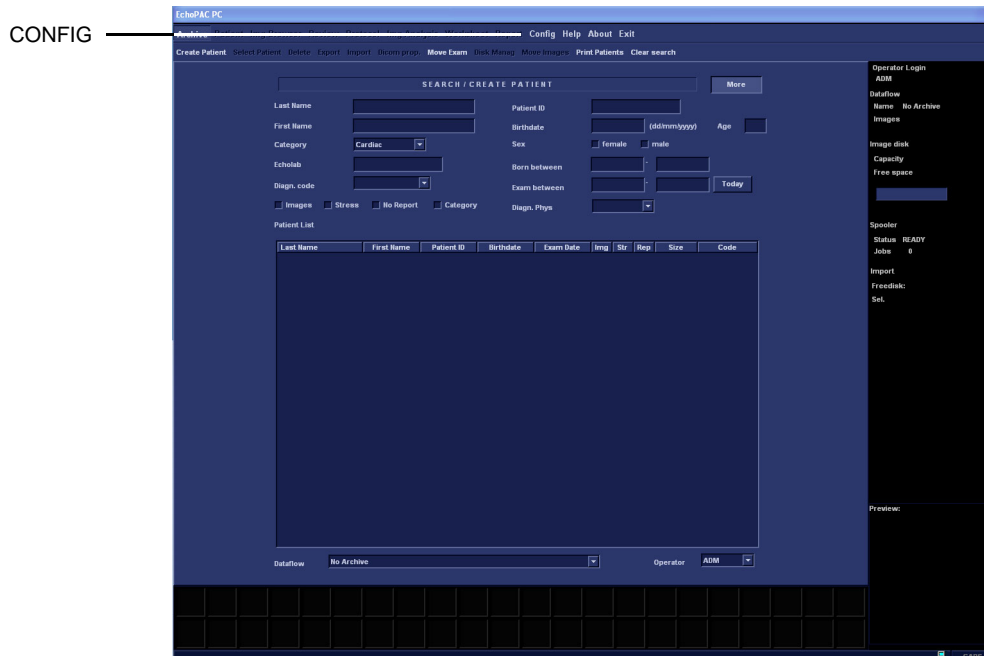
CONFIG ———

Figure 3-32 Search / Create Patient input screen

2.) Select **Config** to display the **Imaging and Analysis - Global Level** screen.

3.) Select **System** to display the **System Settings** screen.
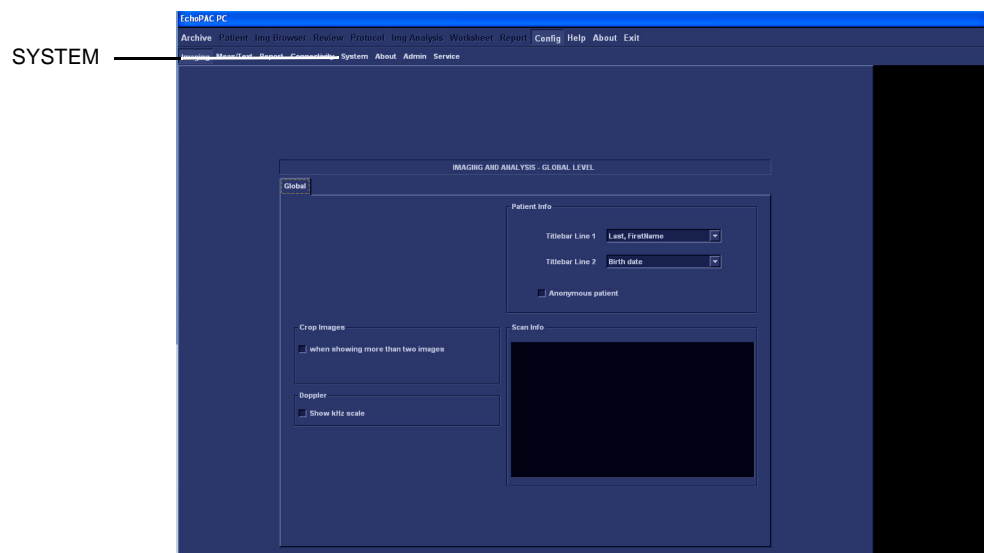
SYSTEM ———

Figure 3-33 Imaging and Analysis - Global Level screen

3-7-2 **General Setup** (cont'd)

.

Figure 3-34   System Settings screen

3-7-2-2 **Enter Location**

These steps describe how to fill in the Location area on the **Settings** tab.

1.) Click once within the **Hospital** field and type the name of the hospital.

2.) Click once within the **Department** field and type the name of the department.

.

Figure 3-35   System Settings screen

3-7-2-3 **Date and Time Adjustments**

These steps describe how to change the Date and Time.

NOTE: *The time must be manually adjusted for "daylight savings" periods.*

NOTE: *Changes will be effective only after rebooting the system.*

- **Date**: select the correct date from the pop-up window.
- **Time**: Press the arrow head buttons to set the time (hour minute and second).
- **Time Format**: select the desired format (24 or 12 AM/PM) from the pop-up menu.
- **Date Format**: select the desired format (EU or US) from the pop-up menu.
- **Default Century**: select the desired format (1900, 2000 or None) from the pop-up menu.

  1900: the number 19 is automatically displayed when entering the year in the patient date of birth (to edit century, press **Backspace** twice).

  2000: the number 20 is automatically displayed when entering the year in the patient date of birth (to edit century, press **Backspace** twice).

  None: the four digits have to be typed when entering the year in the patient date of birth.
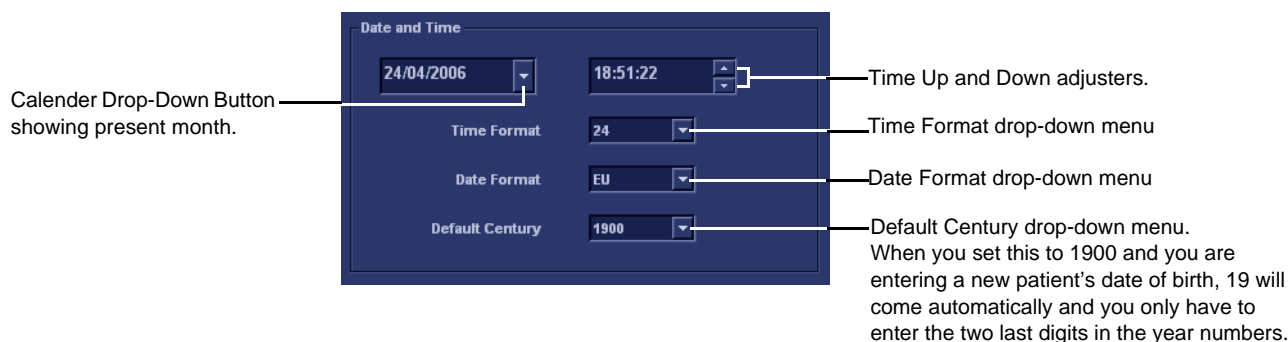
Figure 3-36   Date and Time setup

3-7-2-4   Language Selection

This step describe how to change the Language.

- Select your preferred language from the Language drop-down menu
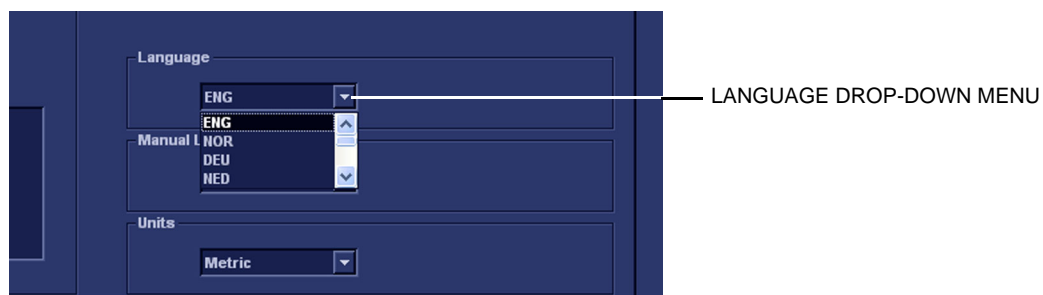
Figure 3-37   Language setup

3-7-2-5   **Online Manual Language**

- Select your preferred User Manual Language from the Manual Language drop-down menu

  MANUAL LANGUAGE DROP-DOWN MENU

Figure 3-38   Online User Manual Language setup

3-7-2-6   **Units of Measure**

This step describes how to select SI - or US Units of Measure.

- Use the drop down menu to select correct Units of measure.

  MEASURING UNITS DROP-DOWN MENU

Figure 3-39   Measuring Units selection

3-7-2-7   **Service Screen Setup**

Table 3-30   Available parameters on the Service screen

FUNCTION	SOFTWARE v2x/v3.x/v4.x/ v5.0	SOFTWARE v5.1 and beyond	PROCEDURE
SELECT KEYBOARD LANGUAGE	X	X	3-7-2-8 "Alphanumeric Keyboard Configuration Procedure" on page 3-51
SELECT/ADD PRINTER	X	X	Please follow the instructions in respective installation manual.
CONFIGURE ECHOPAC FOR USE WITH TWO MONITORS	NOT AVAILABLE	X	3-7-2-9 "Adjust Monitor Settings" on page 3-53

3-7-2-7   Service Screen Setup (cont'd)

1.) Enter at EchoPAC PC Log-on as the **Adm** user with administration rights.

2.) Select **Config** on the top command row, shown below, to do configurations.
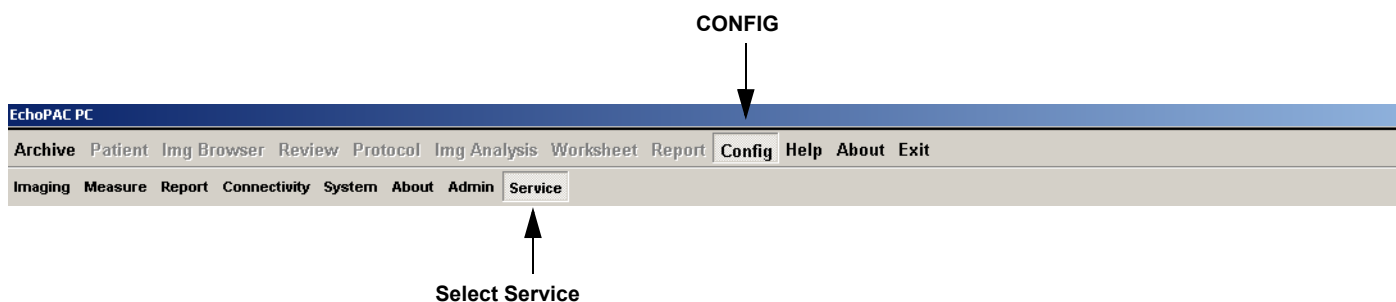
Figure 3-40   Select Config and then select Service

3.) Select **Service** on the next upper command row.
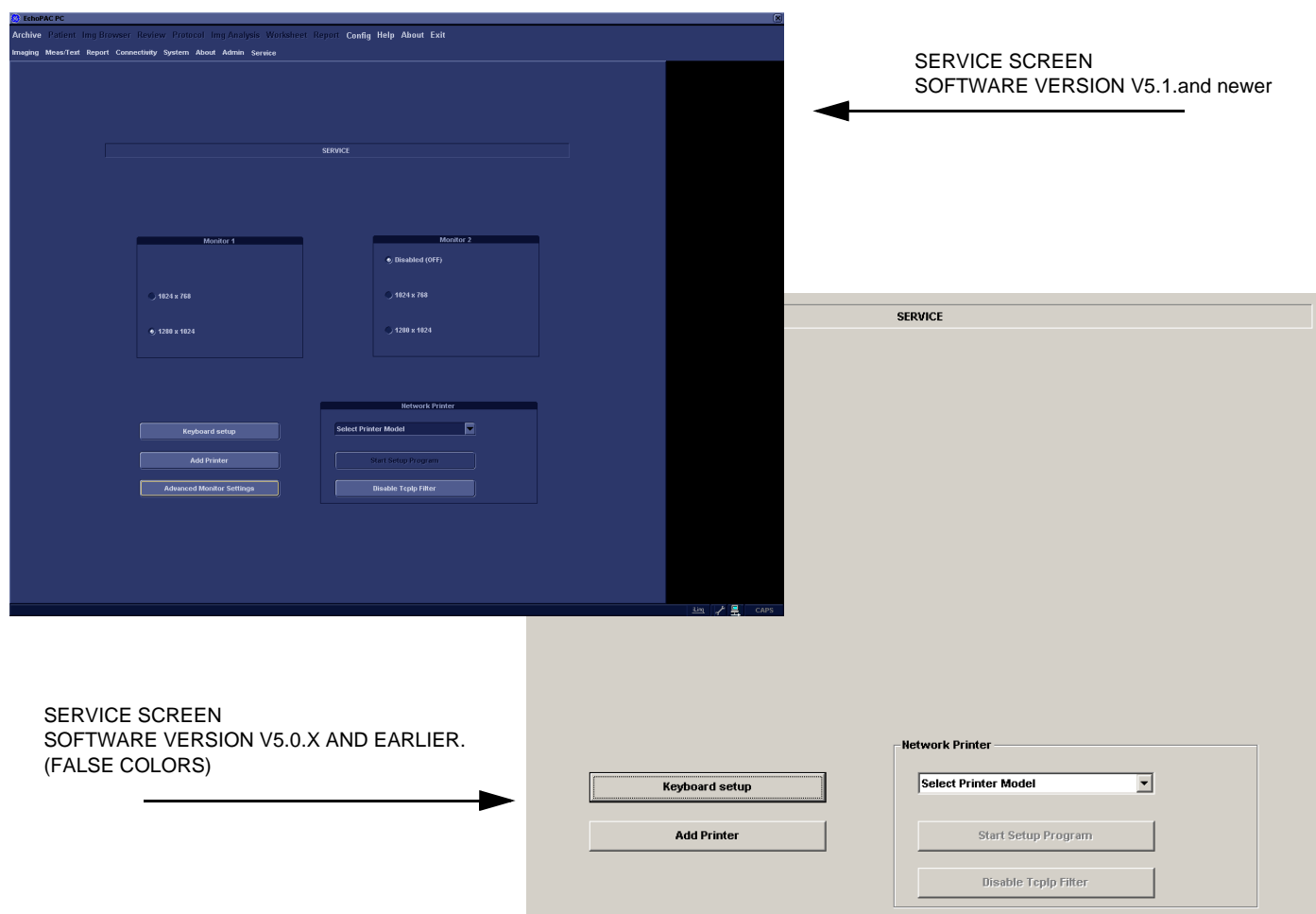
Figure 3-41   Service Screen

3-7-2-8   Alphanumeric Keyboard Configuration Procedure

NOTE: *This Procedure is not required if the alphanumeric keyboard is a US keyboard, since the default setting is set to US English keyboards.*

SELECT KEYBOARD SETUP.
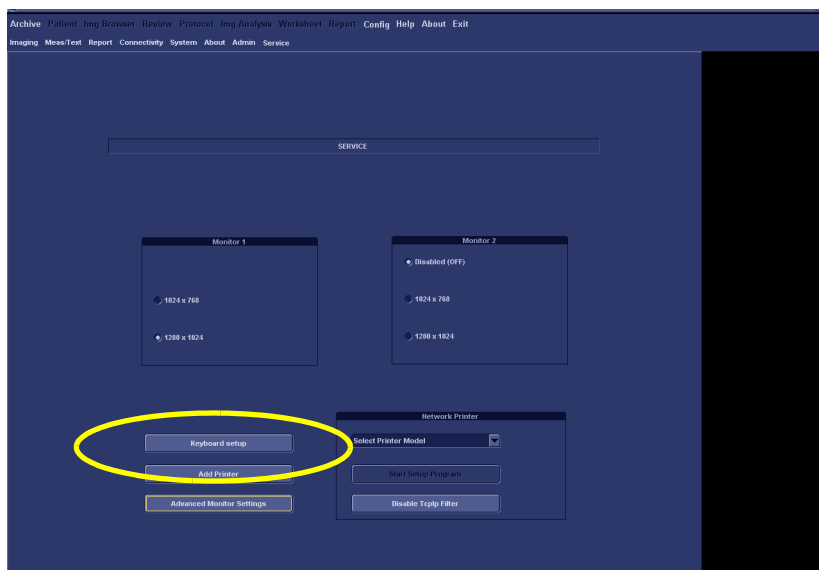
Figure 3-42   Select Keyboard Setup

1.) Select **Keyboard setup**, see Figure 3-42 "Select Keyboard Setup" on page 3-51, to display the **Keyboard Properties** dialog, see Figure 3-43 "Keyboard Properties" on page 3-51
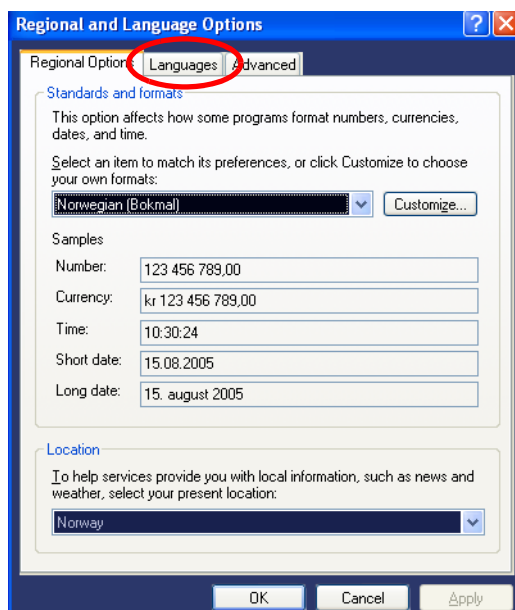
Figure 3-43   Keyboard Properties

3-7-2-8   **Alphanumeric Keyboard Configuration Procedure** (cont'd)

2.) Select **Languages**, to display the program languages screen.

3.) Use the **Language used in menus and dialogs** scroll bar to find the correct language for your use.
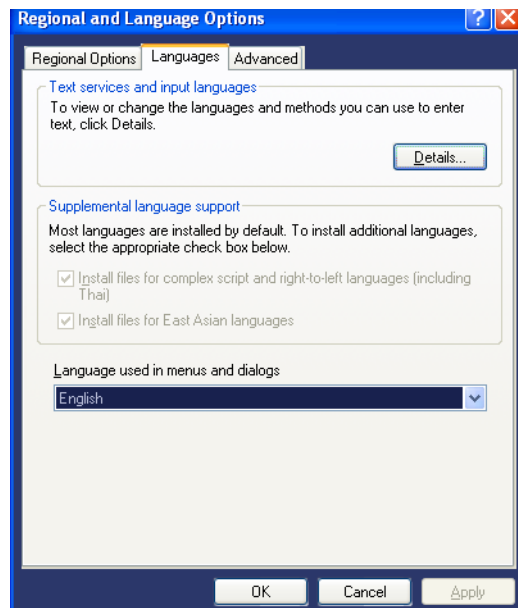
Figure 3-44   Printer Properties Window

4.) Click on **Apply** to confirm your selection.

5.) Click on **OK**.

6.) Reboot EchoPAC PC to get the full effect of the changes.

3-7-2-9   Adjust Monitor Settings

As standard, EchoPAC PC Turnkey is delivered with one monitor.

Optionally, a second monitor is added on the right side of the original monitor to view "Findings" used to complete the report.

The standard setup is that the left monitor will be used for image review and will continue to use the digital video cable, while the right monitor will be connected to the computer's second video output.

If the computer has one digital video port and one analog video port, ensure that you connect the digital video port to the "image monitor".

The detailed setup instructions are included on the next pages:

NOTE: *The right hand display is only used by EchoPAC when you select **Findings** from the **Image Analysis** screen as illustrated below.*
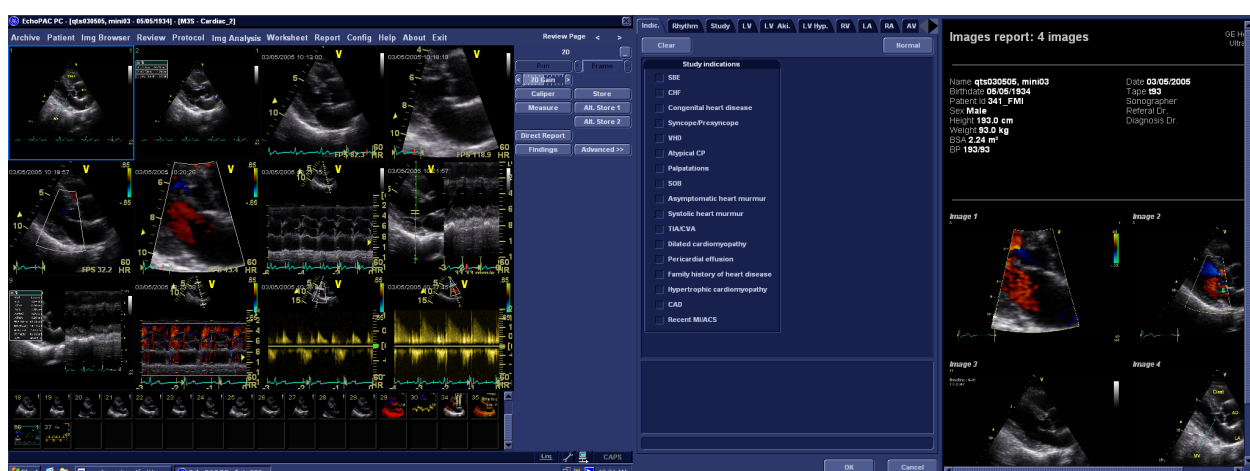
Figure 3-45   Screen captures from both monitors.

3-7-2-9   Adjust Monitor Settings (cont'd)

Eizo FlexScan S2231WSE and software version v108.x and higher

Please see: 6-5-2 "Adjusting the EIZO FlexScan S2231WSE" on page 6-3.

Software Version v5.1 to v7.x.x

1.) Select **Config > Service** to display the **Service** screen.

DISABLE MONITOR 2

SELECT MONITOR
RESOLUTION.
- SELECTING A RESOLUTION
FOR MONITOR 2 WILL,
DEPENDING ON THE GRAPHICS
CARD, ENABLE IT. SEE TEXT
BELOW IF IT DOESN'T ENABLE.

ADVANCED MONITOR
SETTINGS
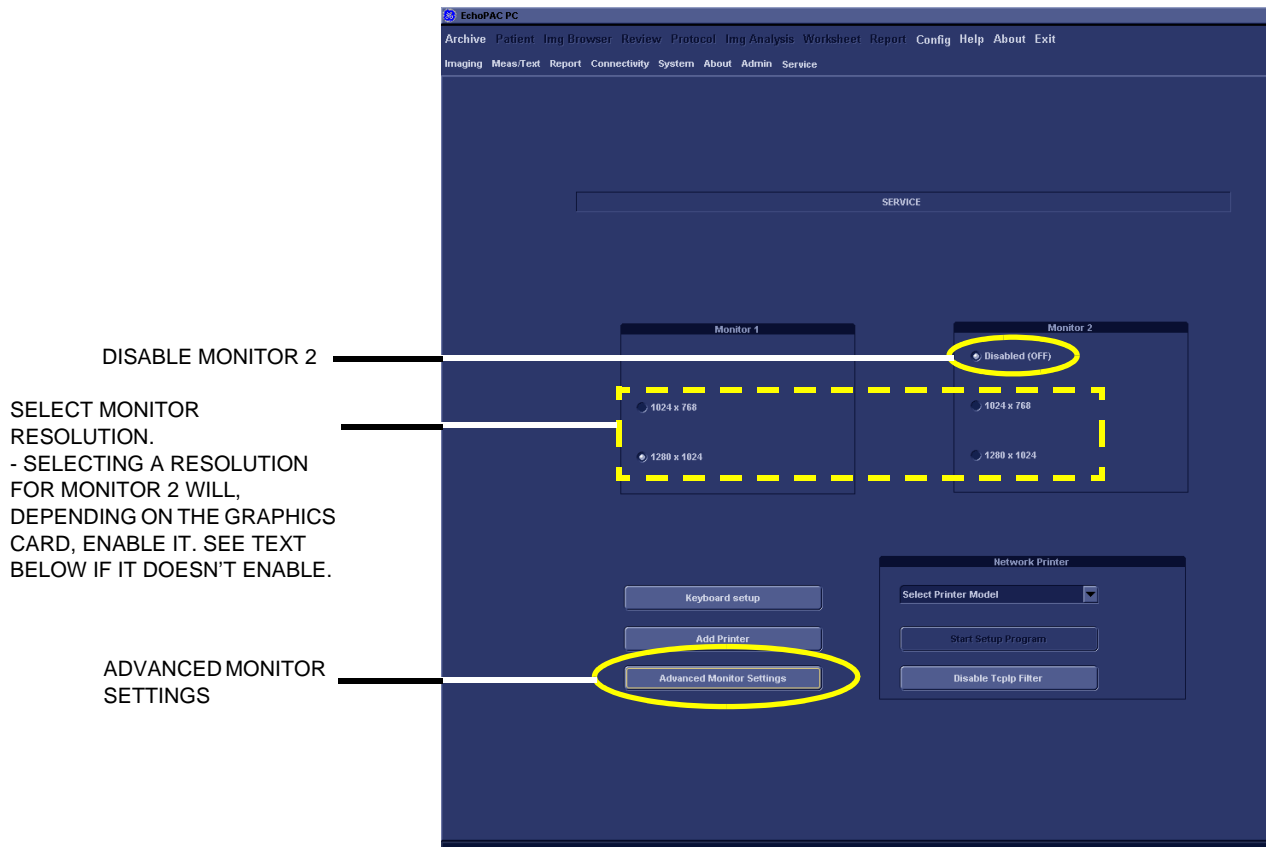
Figure 3-46   Service Screen

In the **Service** screen, you can set the resolution for the monitor(s).

2.) Use the respective radio buttons to set the resolution for the two monitors as preferred by the customer. Selecting a resolution for monitor 2 will, depending on the graphics card, enable it. If monitor 2 isn't enabled this way, follow the procedure in step 3:

3-7-2-9   Adjust Monitor Settings (cont'd)

   3.) **Only If Needed:**

      a.) Select **Advanced Monitor Settings** to get access to the **Display Properties** control panel
          where you can adjust monitor parameters.
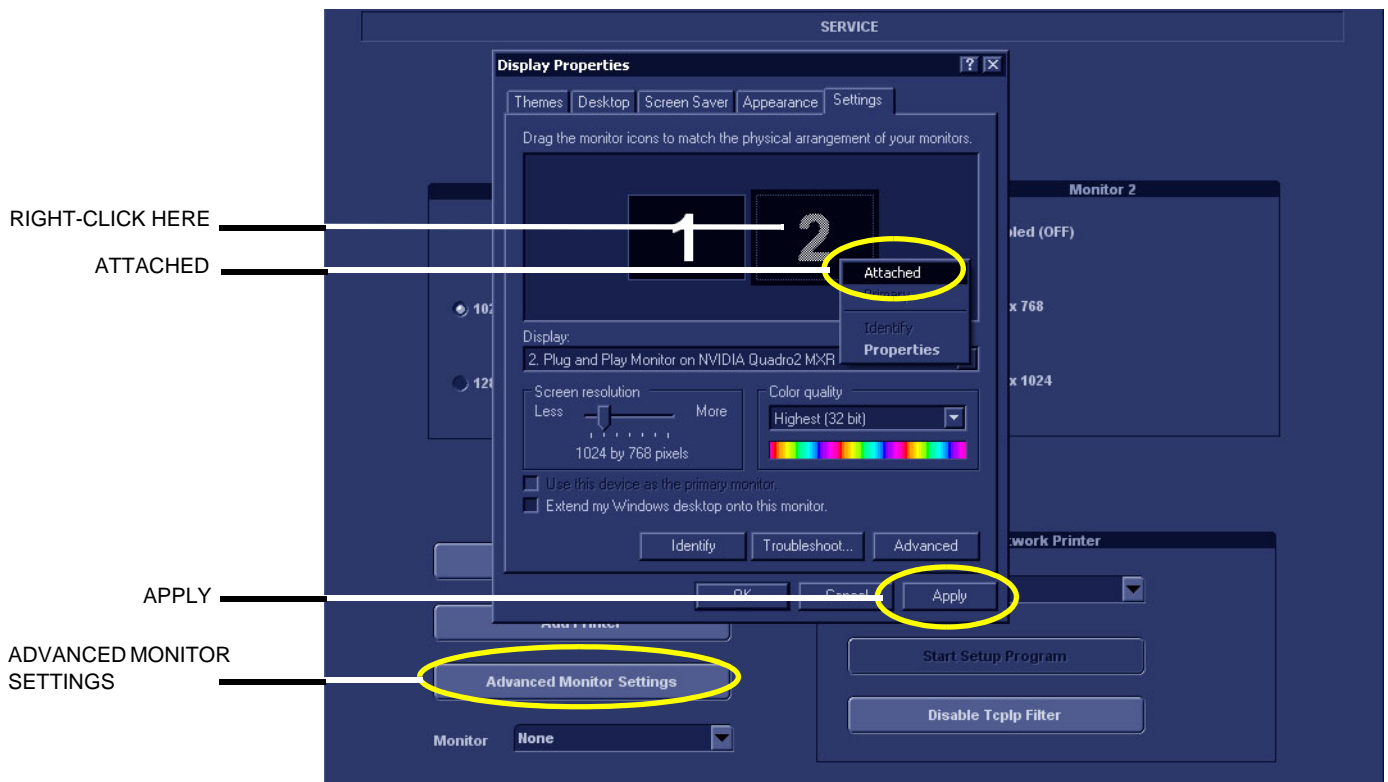
Figure 3-47   Display Properties

      b.) Right-click on the digit "**2**" in the **Display Properties** control panel.

      c.) Select **Attached** from the pop-up menu. This will activate Monitor 2.

      d.) If not already checked, put a check mark in the field in front of the text **Extend my Windows
          desktop onto this monitor**.

      e.) Select **Apply** to save the changes.

      f.) Use the respective radio buttons to set the resolution for the two monitors as preferred by the
          customer.

   4.) When finished, select **Ctrl+Alt+R** (on the keyboard) and select **Restart Application** to restart the
       EchoPAC PC application. This will ensure that the Findings will be displayed on monitor 2.

   5.) Select the **Disabled (OFF)** radio button if you need to disable Monitor 2.

   6.) If you want to interchange the content on the two monitors, this can be done by clicking the screen
       with one number (ref: Figure 3-47 and Figure 3-48) and drag it to the opposite side of the other
       number and then click **Apply** and restart the EchoPAC Application (**Ctrl+Alt+R**).
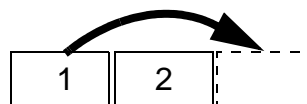
Figure 3-48   Interchange monitor content

Please contact GE Service for set-up assistance.

3-7-3   Optional Peripherals/Peripherals Connection

3-7-3-1   3.5" MO Drive with USB Interface

NOTE: *Discontinued delivery for EchoPAC PC Turnkey in 2007.*

- FUJITSU 2300 U2, Introduced late 2005
- FUJITSU 1300 U2, Introduced late 2004

Please refer to the FUJITSU DynaMO 1300 and 2300 Drives for EPC and Mac - Installation Manual, Direction Number FC194209 revision 4 (or later), for installation instructions.

3-7-3-2   3.5" MO Drive with SCSI Interface

NOTE: *Discontinued delivery for EchoPAC PC Turnkey in 2007.*

Please refer to "EchoPAC PC and Mac FUJITSU DynaMO 1300 Drive - Installation Manual", Direction Number FC194209, for installation and SCSI termination instructions.

3-7-3-3   USB Flash Card (USB Drive)

NOTE: *Support for USB Flash Card was introduced in software version v4.0.*

If you need to order a USB Flash Cards, please refer to:

Connect the Flash Card

Plug the Flash Card into one of the USB sockets on the computer.

- HP Z200, HP xw4600, HP xw4400, HP xw4300, xw4200 and xw4100 have USB sockets available both on the front and the back of the computer.
- COMPAQ EVO W4000 has USB sockets at the rear of the computer.

3-7-3-4   Zip Drive

NOTE: *The Zip drive was phased out from product deliveries in 2004.*

Connect Zip Drive to Workstation

USB CABLE

CONNECT TO
WORKSTATION

CONNECT THE USB CABLE TO USB
SOCKET AT REAR OF THE ZIP DRIVE.

Figure 3-49   USB Connection between workstation and ZIP

1.) Connect one end of the USB cable to USB connector on the rear of the ZIP Drive.

2.) Connect the other end of the USB cable to the indicated USB connector at the rear of the
    workstation. This turns ON the ZIP.

CONNECT USB CABLE
FROM ZIP DRIVE TO THIS
CONNECTOR ON REAR OF
HP XW4100
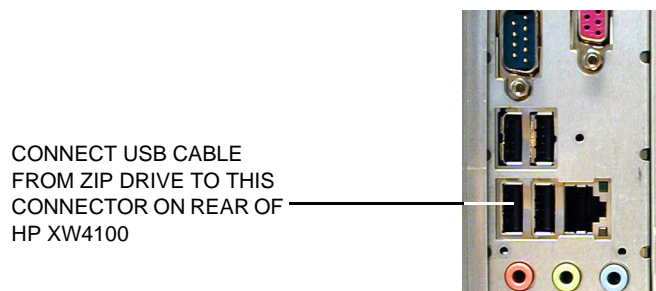
Figure 3-50   Connect USB Cable from ZIP drive to HP XW4100

CONNECT USB CABLE
FROM ZIP DRIVE TO THIS
CONNECTOR ON REAR OF
EVO W4000
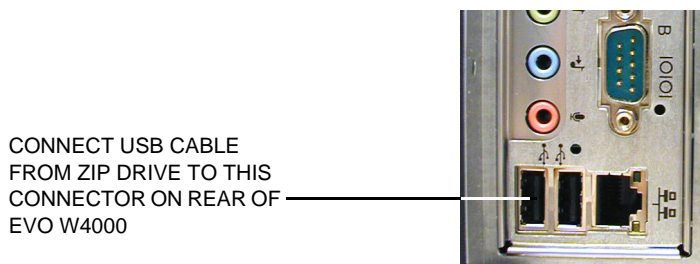
Figure 3-51   Connect USB Cable from ZIP drive to COMPAQ Evo W4000

3-7-3-4   Zip Drive (cont'd)

CONNECT USB CABLE
FROM ZIP DRIVE TO THIS
CONNECTOR ON REAR OF
W300
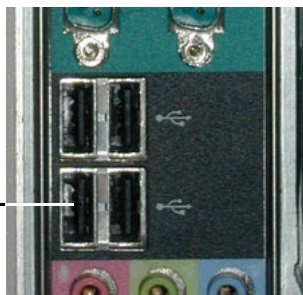
Figure 3-52   Connect USB Cable from ZIP drive to COMPAQ DESKPRO WORKSTATION 300

3-7-3-5   Network Printers (Optional)

These printers are connected via the TCP/IP network.

Color Printer, HP OfficeJet PRO K550

- Installation of the software needed for the Color Printer HP OfficeJet PRO K550 is described in the Printer Driver Installation manual, Direction Number FC294837.

HP Color LaserWriter Network Printer.

These versions are available:

- 100 VAC:
    * HP Color LaserJet 3600n
- 110 VAC:
    * HP Color LaserJet 3600n
- 220 VAC:
    * HP Color LaserJet 3600n
- Installation of the software needed for the HP Color LaserJet 3600n is described in the Printer Driver Installation manual, Direction Number FC294837.

Color Printer, HP Inkjet 1200DTN

NOTE: *HP Inkjet 1200DTN replaced HP Inkjet 1100DTN.*

Installation instructions are available in the **HP Inkjet 1200 Installation Manual for EchoPAC PC and Vivid 7**, Direction Number FC194654.

Lexmark Color LaserWriter Network Printer.

These versions are available:

- 100 VAC:
    * Lexmark c762 Color Printer
    * Lexmark c752 Color Printer (Obsolete)
    * Lexmark c750 Color Printer (Obsolete)
- 110 VAC:
    * Lexmark c762 Color Printer
    * Lexmark c752 Color Printer (Obsolete)
    * Lexmark c750 Color Printer (Obsolete)
- 220 VAC:
    * Lexmark c762 Color Printer
    * Lexmark c752 Color Printer (Obsolete)
    * Lexmark c750 Color Printer (Obsolete)
- Installation of the **Lexmark c762n Color Printer** and **Lexmark c752n Color Printer** is described in **Lexmark c752n/c762n Color Printer Installation Manual**, Direction Number FC194475.
- Installation of the **Lexmark c750n Color Printer** is described in **Lexmark c750 Color Printer Installation Manual**, Direction Number FC194252.

3-7-3-5   Network Printers (Optional) (cont'd)

Color Printer, HP Inkjet 1100DTN

NOTE: *HP Inkjet 1100DTN replaced HP Deskjet 6127. It is obsolete from the factory.*

Installation instructions are available in the **HP Inkjet 1100 Installation Manual for EchoPAC PC and Vivid 7**, Direction Number EP194599.

Color Printer, HP Deskjet 6127 (Obsolete from factory)

Installation instructions are available in the **HP Deskjet 6127 Installation Manual for EchoPAC PC and Vivid 7**, Direction Number EP194516.

Color Printer, HP Deskjet 990 Cxi Network Printer

NOTE: *This printer replaced the EPSON 980N printer. It is now obsolete from the factory.*

Installation instructions are available in the **HP Deskjet 990 Cxi Network Printer Installation Manual**, Direction Number EP194422.

The printer has been delivered in two versions:

-   EP100422, 110 VAC.
-   EP100423, 220 VAC.

Color Inkjet Printer, EPSON 980N. (Obsolete)

Installation instructions are available in the **EchoPAC PC Service Manual,** Direction Number EP091298.

3-7-3-6   Replacement Peripherals

For replacement peripherals see:

*   Section 9-11 "Peripherals - Internal" on page 9-40
*   Section 9-12 "Peripherals - External" on page 9-41

Section 3-8
Connectivity Setup - Software v112.x, v110.x and v108.x

NOTE: *If connected to a stand-alone (private) network (Peer-to-Peer network with a Vivid 7 or Vivid E9 scanner, an EchoPAC PC workstation and an optional network printer), you should use default delivery settings.*

3-8-1   Introduction

To be able to use the network functions when connected to a hospital network, the workstation must have a proper network address.

- Before you can set up the workstation, you need to collect some information. Figure 2-5 "Worksheet for DICOM Network Information" on page 2-17 can be used for gathering this information. Typical source for this information is the Network Administrator.
- Follow the steps below to prepare the workstation for use on the network.

3-8-2   Reveal/Change settings on TCP/IP Set-up Screen (sw. v108.x and higher)

1.) Select **CONFIG** and if not already logged on as administrator (adm), log on as *adm*.

2.) If not already selected, select **Connectivity** from the screen.

3.) Select the TCP/IP TAB (it is named **Tcpip**) to reveal the present TCP/IP settings and do necessary changes.

⚠ **NOTICE**   **If possible, do not change** the **Computer Name**. If you change the Computer Name, you will loose the access to all images in the Local Archive (on the internal hard disk drive). If you must change the Computer Name, please refer to 3-8-3 "Set the Workstation's Network Information (software v108.x and higher)" on page 3-64.

DETAILED DICOM LOG:
SELECT TO TURN **DETAILED DICOM LOG** ON.
(IT WILL BE TURNED OFF AFTER A RESTART)

COMPUTER NAME / AE TITLE:
FOR EchoPAC PC Turnkey , THIS NAME IS ON THE FORM: *EchoPAC7-00NNNN*, WHERE "00NNNN" IS A NUMBER (NNNN IS THE UNIT'S SERIAL NUMBER).
PORT NO:
DEFAULT PORT NUMBER: 104

REMOTE ARCHIVE SETUP AREA:
IP SETTINGS AREA FOR A REMOTE ARCHIVE.
EXAMPLE: *ECHOPAC PC (ECHOPAC7)*.
DEFAULT SETUP:
REMOTE ARCHIVE IP-ADDR: **10.0.0.4**
REMOTE ARCHIVE NAME (THE NAME OF THE workstation OR SERVER WITH THE REMOTE ARCHIVE): **ECHOPAC7-000001**

ADVANCED SETTINGS:
USE **ADVANCED SETTINGS** IF YOU NEED TO CHANGE EchoPAC PC Turnkey 's IP SETTINGS OR TURN DHCP ON OR OFF.

SAVE SETTINGS
SELECT **SAVE SETTINGS** TO ARCHIVE ANY CHANGES YOU HAVE DONE TO THE TCP/IP SETTINGS

Figure 3-53 TCP/IP Overview screen for EchoPAC PC Turnkey

3-8-3   Set the Workstation's Network Information (software v108.x and higher)

In the IP settings area of the screen, enter the;

1.) The workstation's AE Title must be entered in the DICOM server's setup.

.

AE TITLE

Port No:
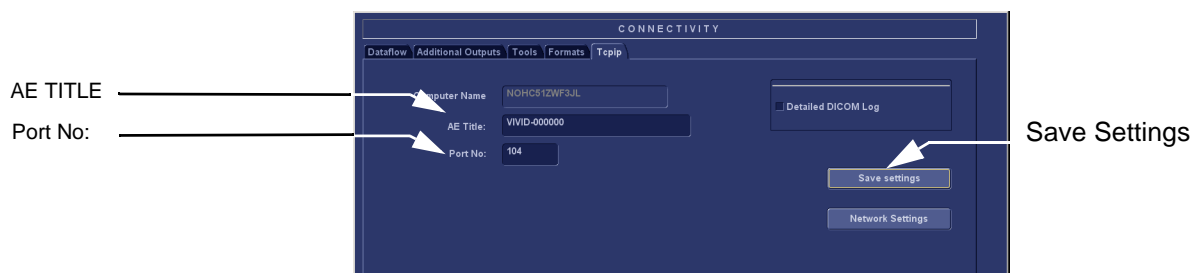
Save Settings

Figure 3-54   TCP/IP Set-up for EchoPAC PC Turnkey

2.) Press **Save Settings** to save the new settings where shown in Figure 3-54 "TCP/IP Set-up for EchoPAC PC Turnkey" on page 3-64. This will display a Warning Dialog as shown in Figure 3-55 "Warning" on page 3-64.

Figure 3-55   Warning

3.) Select **Ok** to save your changes or **Cancel** to return without saving any changes.
4.) The new settings are saved to a common settings file. After a restart, the settings are also included in other screens.
5.) Restart EchoPAC PC Turnkey to activate the changes, then continue.

3-8-3   Set the Workstation's Network Information (software v108.x and higher) (cont'd)

.
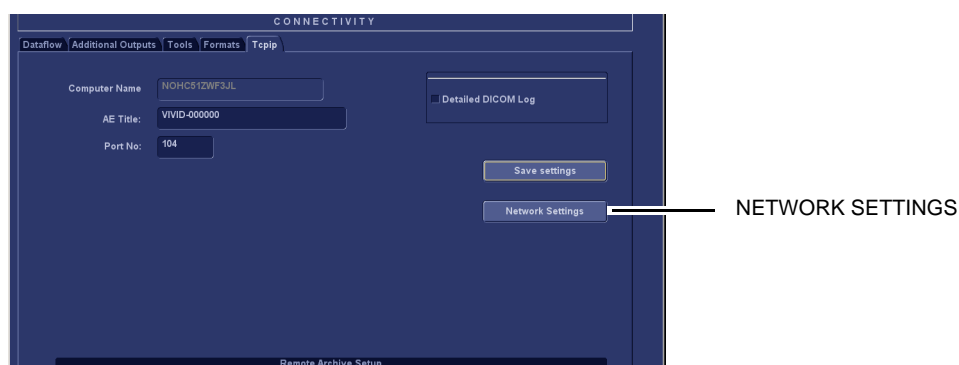
Figure 3-56 Select Advanced Settings

6.) When in the **Tcpip (**TCP/IP) screen, select **Network Settings** to display the **Network Connections** screen.

Figure 3-57 Network Connections screen

7.) Right-click **Local Area Connection** and select **Properties** from the pop-up menu**.** This will display the **Local Area Connection Properties** screen.
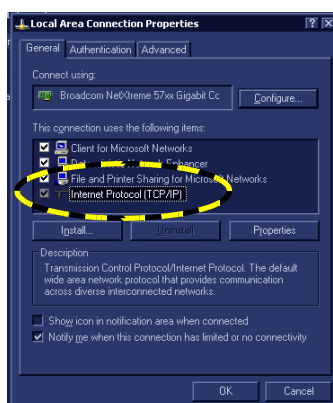
Figure 3-58 Local Area Connection Properties

8.) Select (highlight) **Internet Protocol (TCP/IP)** and select **Properties** to display the **Internet Protocol (TCP/IP) Properties** screen.

3-8-3 **Set the Workstation's Network Information (software v108.x and higher)** (cont'd)

Figure 3-59 Internet Protocol (TCP/IP) Properties screen
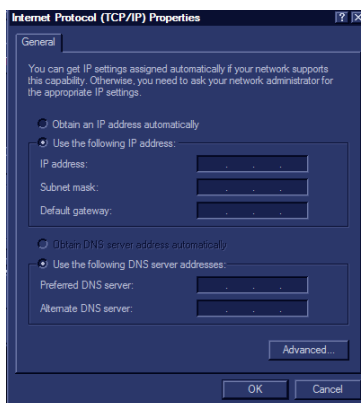
The **Internet Protocol (TCP/IP) Properties** screen is used to set the following parameters:

- If using DHCP:

   Check the **Obtain an IP address automatically** check box.

- If not using DHCP:

   a.) Un-check the **Obtain an IP address automatically** check box, and enter the:

      * IP Address for EchoPAC PC Turnkey . (Default IP Address setting from factory: 10.0.0.3).
      * Subnet Mask for EchoPAC PC Turnkey . (Default Subnet Mask setting from factory: 255.255.255.0).
      * IP address for Default Gateway. (Default Gateway setting from factory IP address: 0.0.0.0).

   b.) Select **OK** to keep your changes or **Cancel** to close the **Internet Protocol (TCP/IP) Properties** screen without keeping any changes.

   c.) Select **OK** to close (and save) the **Local Area Connection Properties** dialog.

   d.) Select the "x" in the upper right corner to close the **Network Connections** window.

3-8-4   DHCP Setup (software v108.x and higher)

NOTE: *In most cases DHCP is turned off on EchoPAC PC Turnkey .*

3-8-4-1   Pre-Requisite
  • Software version v108.x and higher

3-8-4-2   Turn DHCP ON
Follow the instructions below to configure the EchoPAC PC Turnkey to use DHCP.

.
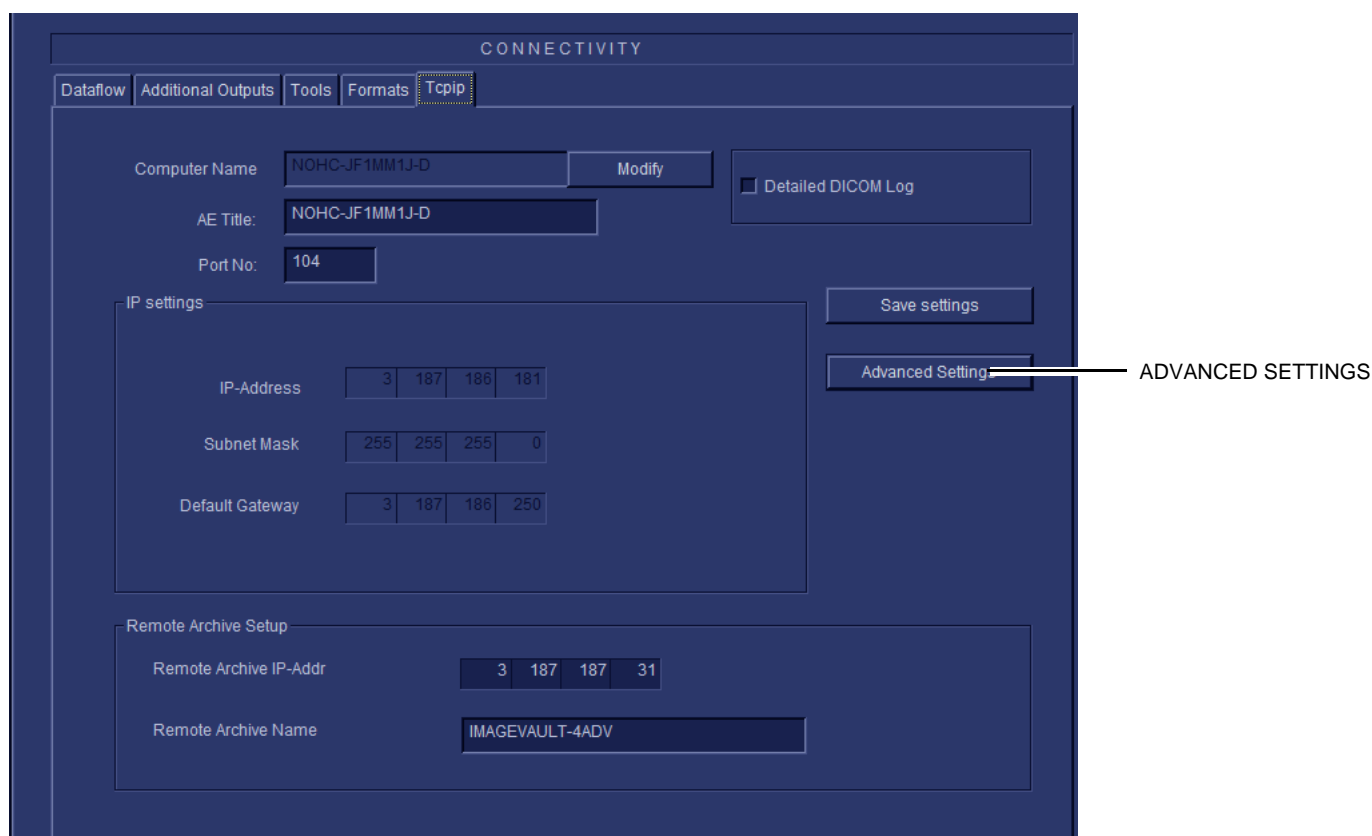
Figure 3-60   Advanced settings

1.) Select the **TCP/IP** screen.
2.) When in the **TCP/IP** screen, select **Advanced Settings** to display the **Network and Dial-up Connections** screen, see Figure 3-61 "Network connections" on page 3-68.

3-8-4-2   Turn DHCP ON (cont'd)
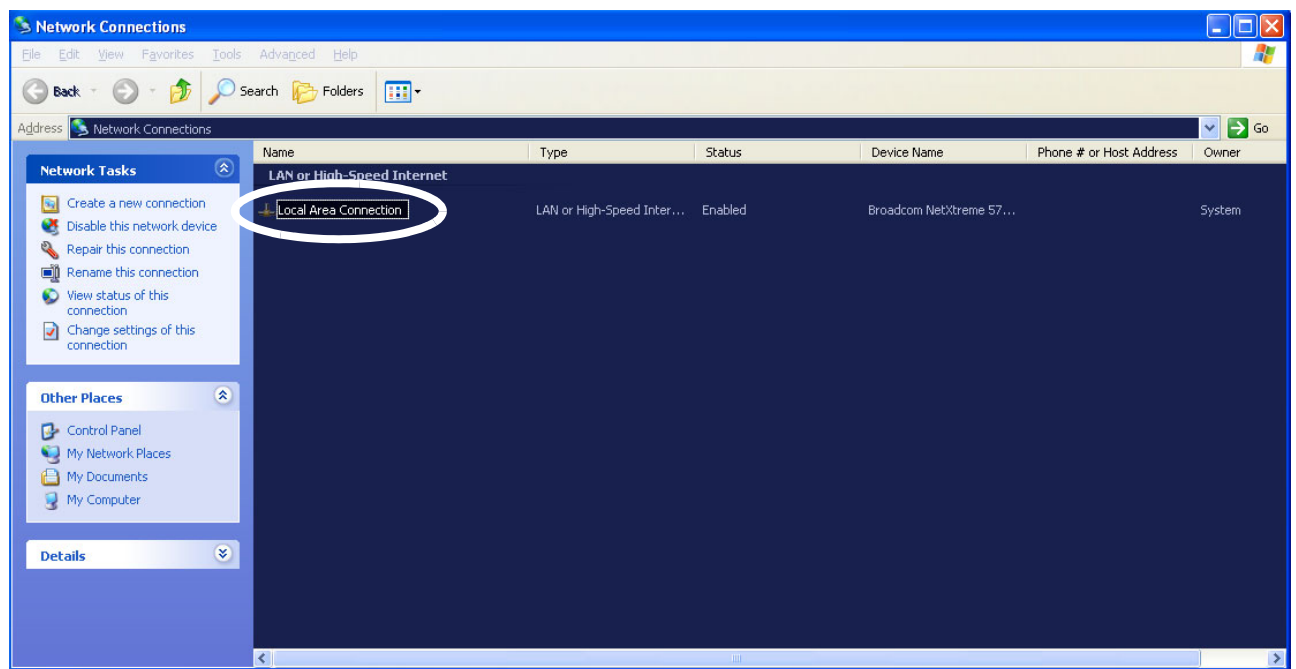
Figure 3-61   Network connections

3.) Select **Local Area Connection**

4.) Right click and select **Properties** to display the **Local Connection Properties**
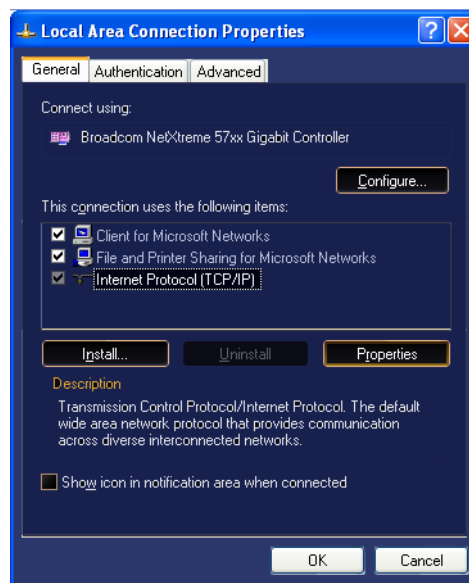
Figure 3-62   Select Internet Protocol (TCP/IP)

5.) Scroll down to **Internet Protocol (TCP/IP)** and select it

6.) Select **Properties**

3-8-4-2   Turn DHCP ON (cont'd)
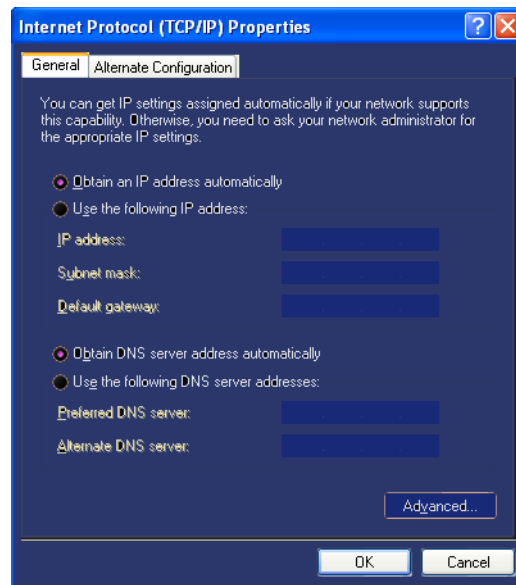
Figure 3-63   Obtain an IP address automatically

7.) Select **Obtain an IP address automatically** to turn **DHCP** ON.

8.) Select **OK** to confirm your selection.

3-8-5   Set up Connection to a DICOM Server in a Network (v108.x and higher)

In this case the EchoPAC PC Turnkey is configured to work with a DICOM server in a network environment.

3-8-5-1   Overview

To connect to the DICOM server, the following information has to be entered in the EchoPAC PC Turnkey :

- The DICOM server IP address.
- The DICOM server port number.
- The DICOM server AE title (the server application's name).
- Name of Device.

3-8-5-2   DICOM Server IP Address Setting in EchoPAC PC Turnkey

1.) Press **Config** (**F2**) and log on as *adm*.
2.) Select **Connectivity** (in the lower part of the window).
3.) Select the **Dataflow** tab.
4.) Select the arrow to the right for the Name field to list all dataflows in a pull-down menu.
5.) Select the dataflow you want to configure from the Dataflow Name pull-down list.
6.) Select the first device in the **Selected devices** field (so it is highlighted) and then select **Properties** to display the Properties dialog.
7.) Select the IP-Address down-arrow to choose the correct server from the pull-down menu.

NOTE: *It is not possible to change the setting in the IP-Address field by editing it. See description below, starting with step 8, to change the setting.*

8.) Follow the steps below to change the IP-Address settings:

    a.) From the **Ip-Address** pull-down menu, select **<Modify>** to display the **IPs** dialog.
    b.) Select the server you want to modify from the **IPs** dialog and then select **Modify**.
    c.) Edit the name and/or the IP address of the server.
    d.) Select **OK** to save the new settings and close the dialog.
    e.) Select **OK** to close the IPs dialog to return to the Properties dialog.
    f.) Enter the DICOM server AE Title. This entry is case sensitive and must match exactly.
    g.) Enter the DICOM server Port.No (Port Number)
    h.) For some DICOM Servers, the default timeout setting (30) is too low.
    i.) Select OK to close the properties dialog and save changes.

3-8-5   Set up Connection to a DICOM Server in a Network (v108.x and higher) (cont'd)

3-8-5-3   Verify the Network Connection to a Device
Follow the steps below to do a first test (TCP-IP Ping) of the connection:

1.) Select the "Smiley" button to Ping the server.

NOTE: *The smiley checks if the remote server is accessible (ping). It is not a DICOM Echo (DICOM ping), so it does not check AE title or port number.*

2.) If the network connection to the server is OK, it will be illustrated by a smiling "Smiley" 😊.
   A sad Smiley indicates that the network connection is failing.
   Typical causes:
   - Network cable not connected.
   - Configuration error(s).

3-8-5-4   Verify the Connection to a Device

1.) Select (highlight) the device you want to verify the connection to.

NOTE: *You can only check one device at a time.*

2.) Select **Check** to start the verification process of the connection to the device.
   The verification process may use some amount of time (several seconds).
   When done, a Warning may be displayed on screen for some seconds. When the Warning has closed, a sign is displayed in front of the device, indicating if the test passed (green check-mark) or failed (red **X**).

NOTE: *If the Check button fails directly, the AE Title is probably wrong.*
   If the Check button fails after a long time (corresponding to the timeout), the IP address or Port Number is probably wrong.

In the illustration below, the message indicates that the pinging of the server worked fine (line 1), but the application on the server didn't respond (line 2).

Figure 3-64   Warning - Check status

3-8-5   **Set up Connection to a DICOM Server in a Network (v108.x and higher)** (cont'd)

3-8-5-5   **DICOM Storage Set Up**

1.) Select **Dicom storage**.
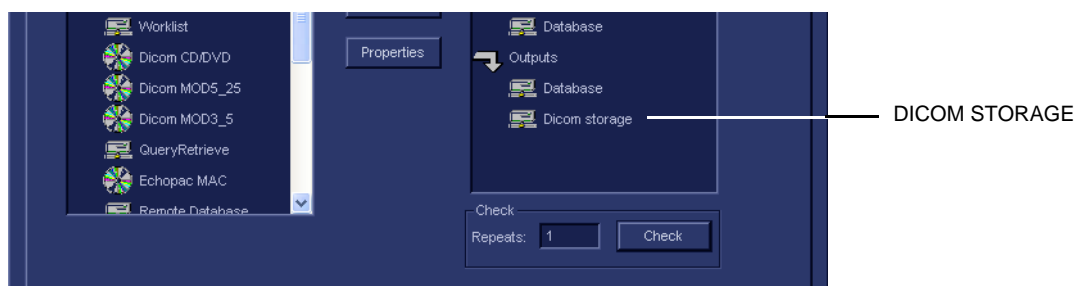
Figure 3-65   Select Dicom storage

2.) Select Properties to display the **DICOM Storage properties** screen.
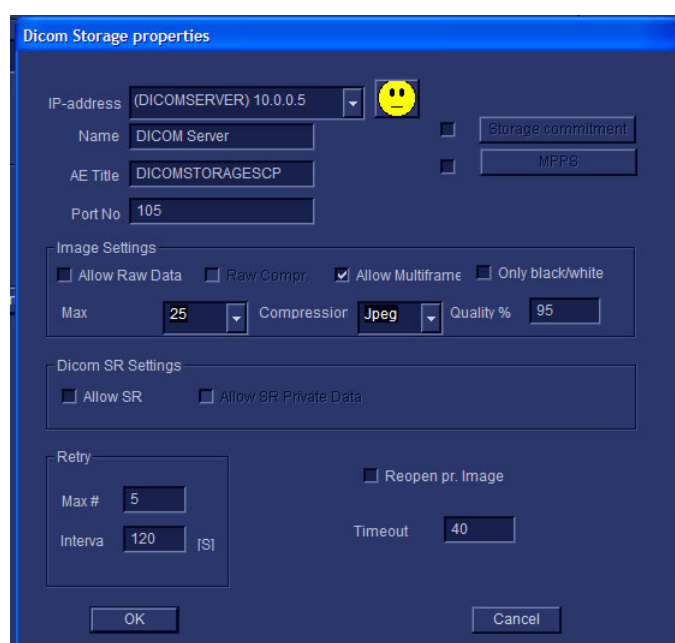
Figure 3-66   DICOM Storage Properties

3-8-5   Set up Connection to a DICOM Server in a Network (v108.x and higher) (cont'd)

3-8-5-6   DICOM Storage Properties Adjustments

IP-address

1.) Select the down-arrow at the *IP-Address* pull-down menu to select the *DICOM Storage server*.

2.) Select **<Modify>** from the pull-down menu if you need to modify the server's parameters or add a new server. This will bring up the **IPs** dialog.

    If no changes are needed, continue with step 7.

3.) To modify any of the settings, select the server you want to modify, and then select **Modify**. This will bring up the **Enter name and Ip** dialog.

4.) In the **Enter name and Ip** dialog you can modify the server's name and IP-address.

    - Select **OK** to save the new settings and close the dialog.
    - **Select Cancel** to close the dialog without saving the changes.

5.) If you want to add a new server, select **Add** in the **IPs** dialog.

    a.) Type the server's name and IP-address in the **Enter name and Ip** dialog.

    b.) Select **OK** to save the new settings and close the dialog. **Cancel** will close the dialog without saving the changes.

6.) Follow these steps if you want to delete any of the servers from the list:

    a.) Select the server you want to delete, and then select **Delete**. This will bring up a warning where you are asked if you want to delete the server from the list.

    b.) Select **OK** to confirm or **Cancel** if you don't want to delete the server.

7.) Next, verify the other settings and parameters as described below.

Name

Raw data Storage - Name of service.

AE Title

DICOMSTORAGESCP - The DICOM server's AE Title.

Port No

Verify / set the DICOM server's **Port Number**.

3-8-5-6   DICOM Storage Properties Adjustments (cont'd)

Image Settings

- Allow Raw Data - default ON (checked)
- Raw Compr. - default OFF (unchecked)
- Allow Multiframe - default ON (checked)
- Only Black and White - default OFF (unchecked)
- Max Framerate - The pull-down menu gives you these choices;
    - 25 - 25 pictures per second
    - 30 - 30 pictures per second
    - Full - the scanning frame rate
- Compression - The pull-down menu gives you these choices;
    - Jpeg - JPEG/JPG compression (Default)
    - None - (un-compressed data with huge files)
    - Rle - RLE compression
- Quality% - Set the wanted quality%. Default value is 95%.
    - If files are stored with a quality lower than 95% they will occupy less space, but loose some quality.
    - If files are stored with a quality above 95% thee files will grow much bigger without almost no quality change.

Retry

- Max # - The number of times the software will try to connect if the connection doesn't succeed the first time(s).
- Interval - The interval in seconds between each attempt to connect.

Smiley

Select the Smiley button to ping the server. If the network connection is OK, the Smiley will smile, if the connection fail, the Smiley will turn sad.

NOTE: The smiley checks if the remote server is accessible (ping). It is not a DICOM Echo (DICOM ping), so it does not check AE title or port number.

3-8-5-6   DICOM Storage Properties Adjustments (cont'd)

Reopen per Image

If **Reopen per image** is enabled, Vivid 7 will create a new connection (association) for each image. This may be useful for DICOM servers that do not accept different image types in the same association.

Storage Commitment

If you want to enable Storage Commitment, check the check-box and click on the button **Storage Commitment**.

In the dialog, enter IP address, Name, AE Title and Port Number.

Figure 3-67   Storage Commitment

MPPS

MPPS is not used by EchoPAC PC Turnkey .

3-8-5-6 DICOM Storage Properties Adjustments (cont'd)

- **DICOM SR**

  If SR is enabled, all M&A that is supported by DICOM is sent to the DICOM server (in a separate job).

- **Allow SR Private Data** (introduced with software v6.0)

  By default, this function is disabled.

  Allow SR Private Data is intended for receivers that can handle "Private Data", like the CA-1000.

- **Signed Doppler velocities**. The Default setting is: Disabled. this means that Sins of Doppler velocities are removed in Dicom SR

Figure 3-68   Dicom Storage properties
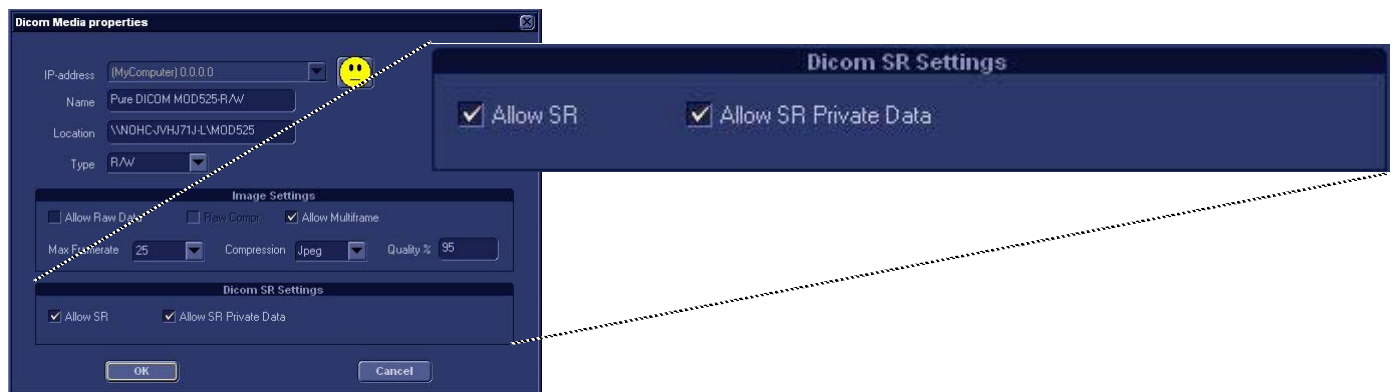
Figure 3-69   Dicom Media properties

3-8-5-6   DICOM Storage Properties Adjustments (cont'd)
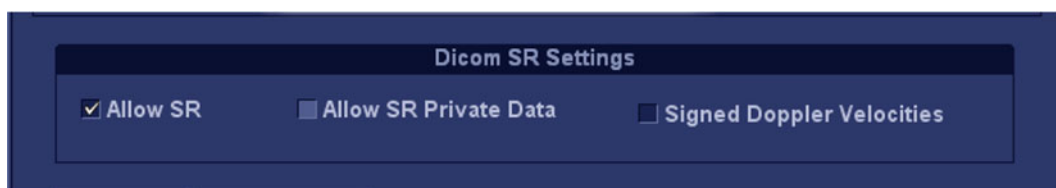
Figure 3-70   Dicom SR Settings BT'09

- Retry
  - Max # - The number of times the software will try to connect if the connection doesn't succeed the first time(s).
  - Interval - The interval in seconds between each attempt to connect.

Time-out

Adjust timeout setting.

The retry settings for DICOM Storage are by default for mobile (off-line) use. They ensure that jobs in the spooler will be sent automatically if the user reconnects within the total retry period. If the customer does not have the mobile case, you can reduce the number of retries and the interval. This will make the job fail faster if there is a network or server problem (and let the user forward the job to another server if desired).

Starting with software v6.0, this function has been changed:

The Retry settings can be used to make jobs retry on bad networks. There is no need to set retries for mobile (off-line) use.

OK/Cancel

- Select **OK** to save all changes. The changes will take place after the scanner has been restarted.
- Select **Cancel** to return without saving any changes.

3-8-6   Export Configuration (software v108.x and higher)

The destination for Export of patient records to Excel, HL7 (not for software version v6.x) and MPEG must be configured prior to use. This is done from the *Dataflow screen*.

3-8-6-1   Contents in this sub-section

3-8-6-2   Setup on the Remote Share (software v108.x and higher)

Required setup on the remote share:

1.) Add user/password
2.) Set Share permissions
3.) Set Security permissions

NOTE: *The User on the remote share must have all rights/controls for the shared folder.*

- The following default network user is predefined on EchoPAC PC Turnkey :
  - **User: E1c2h3o4C5l6i7e8n9t**
  - **Password: u1l3t5r7a**
- It is possible to set a secondary user if required by the remote share.
  For instructions, see: 3-8-6-3 "Configurable Remote Path User (software v108.x and higher)" on page 3-79.

NOTE: *The default User / Password is always used as primary log in credential. No attempt is made to use the secondary user if log in succeeds using the primary.*

3-8-6-3   Configurable Remote Path User (software v108.x and higher)

NOTE: *Avoid the use of special characters when configuring Remote Path User.*

NOTE: *The default User / Password is always used as primary log in credential. No attempt is made to use the secondary if log in succeeds using the primary.*

NOTE: *The configurable user and password is used for all remote paths configurable throughout the system as secondary log in credential.*

NOTE: *The User on the remote share must have all rights/controls for the shared folder.*

Follow these steps to set up a **Secondary Remote Path User:**

1.)   Select **Config/F2** to log on as **ADM**. (Default password: **ulsadm**).
      For a detailed description, see:

2.)   Select **Connectivity** > **Tools**.

Figure 3-71   Secondary Remote Path User

3.)   Enter the User and Password in the respective fields.

NOTE: *The field "User" can either be on the form "username", or "domain\username".*

3-8-6-4   Display the Dataflow screen (software v108.x and higher)

Follow these steps to Display the Dataflow Screen:

1.) Press **CONFIG (F2)** and log on as administrator.

2.) Select **Connectivity** > **Dataflow**.

The *Dataflow sheet* is displayed, see Figure 3-72 "The Dataflow sheet" on page 3-80.

3.) Select the dataflow **Misc. Export** in the **Name** pull-down menu.
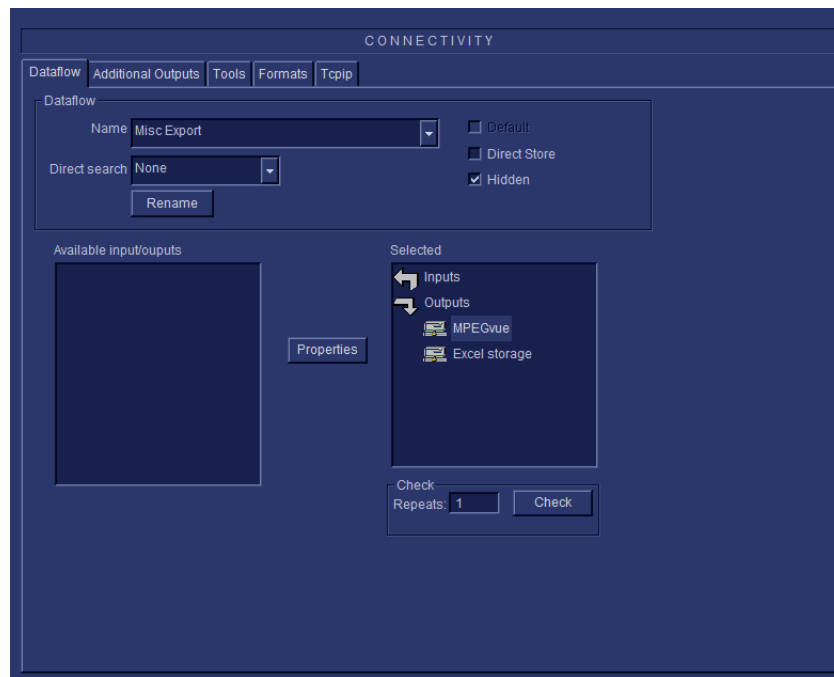
Figure 3-72   The Dataflow sheet

3-8-6-5   **Export to Excel - configuration (software v108.x and higher)**

1.) Select the **Excel storage** device in the *Selected devices pane* and press **Properties**.
The *Excel properties window* is displayed.
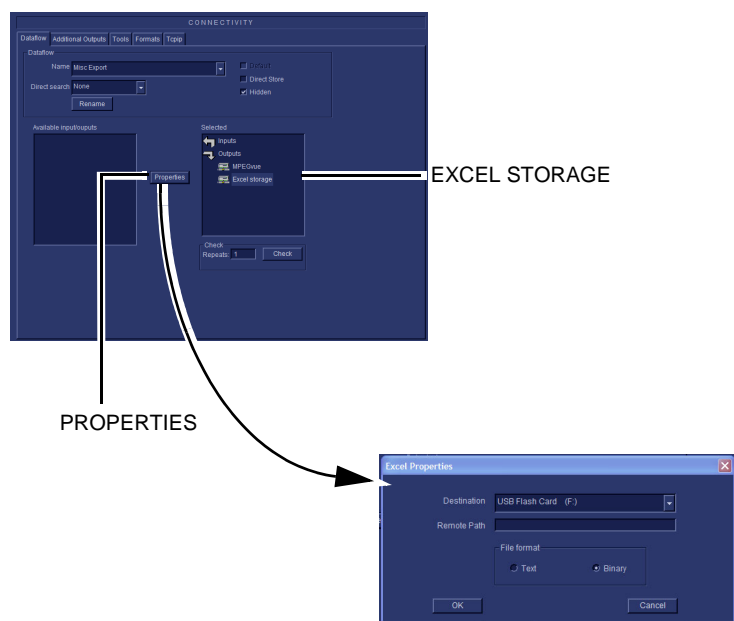
Figure 3-73   The Excel properties window

2.) Select a removable media or a network volume remote path as the destination in the Destination pull-down menu.

NOTE: *Remote paths for network volumes must be entered once in the Remote path field before they can be selected from the Destination Pull-down menu.*

3.) Select **OK.**
4.) Press **CONFIG** (**F2**) if you want to quit Config.

3-8-6-6   **Export to MPEGVue - configuration (software v108.x and higher)**

1.) Select the **MPEGVue** device in the *Selected devices* pane and press **Properties**.
The *MPEGVue properties window* is displayed.
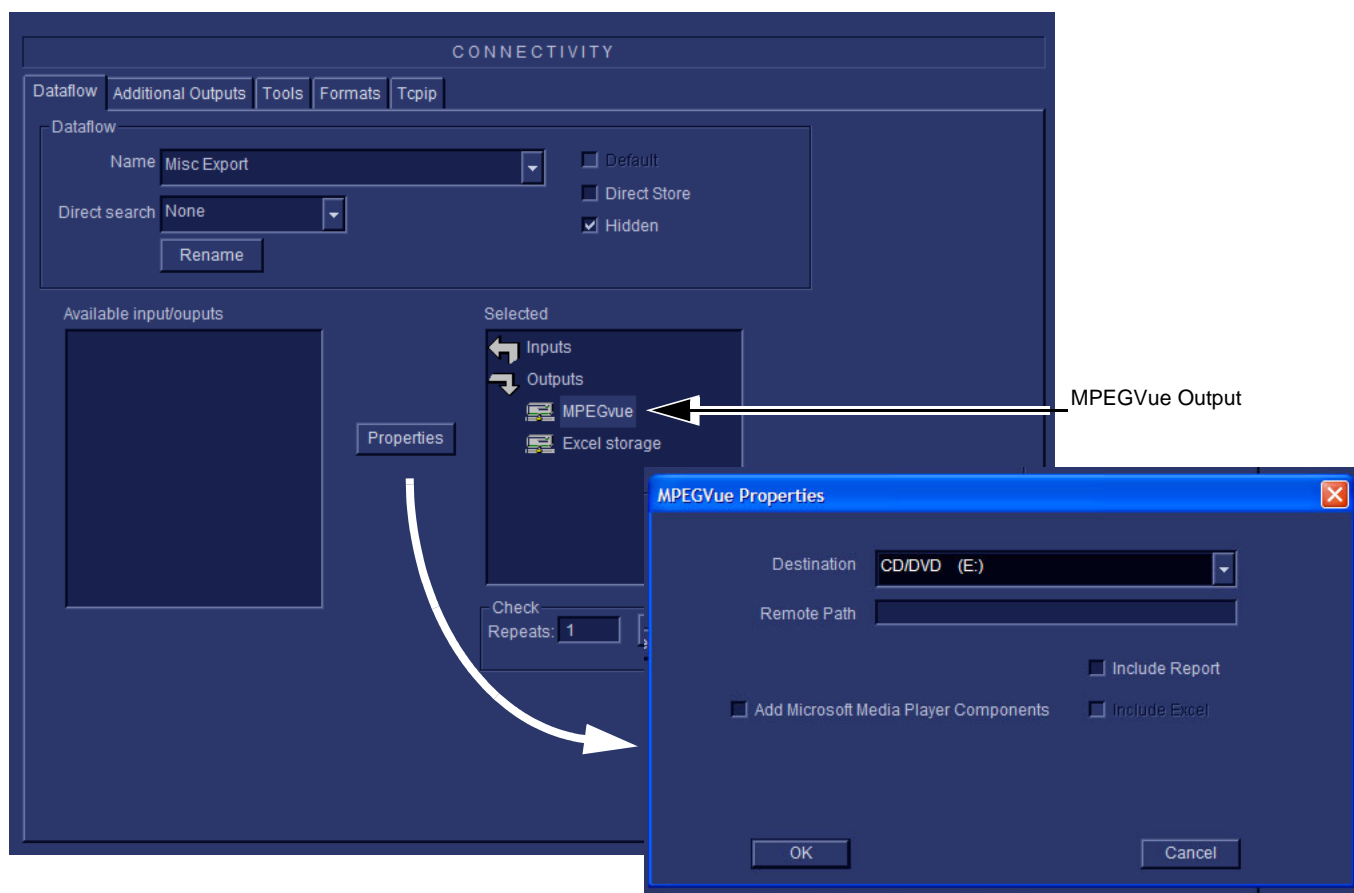
Figure 3-74   The MPEGVue properties window

2.) Select a removable media or a network volume remote path as the destination in the *Destination Pull-down menu*.

NOTE: *Remote paths of network volumes must be entered once in the Remote path field before they can be selected from the Destination Pull-down menu.*

3.) Check the options as required.
4.) Select **OK**.
5.) Press **CONFIG** (**F2**) if you want to exit Configuration.

3-8-7 Setup a Dataflow for use with a USB drive (software v108.x and higher)

Use this prosedure to configure for use with either a USB Flashcard (Memstick) or an external USB harddisk.

1.) Press **CONFIG (F2)** and log on as administrator.

2.) Select **Connectivity** > **Dataflow**.

   The *Dataflow sheet* is displayed, see Figure 3-72 "The Dataflow sheet" on page 3-80.

3.) Select the dataflow **USB Harddisk/Memstick** in the **Name** pull-down menu.
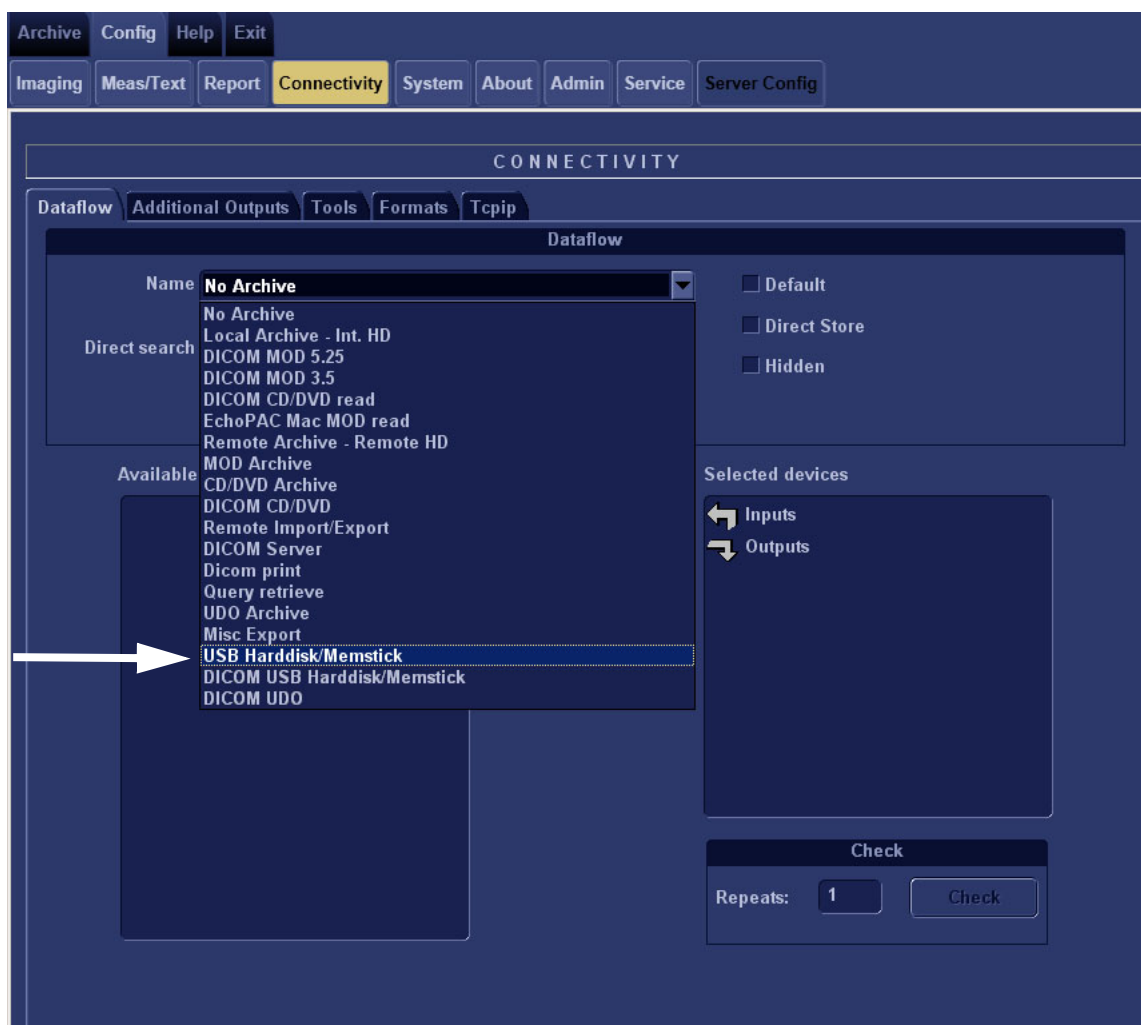
Figure 3-75   Select dataflow

3-8-7 **Setup a Dataflow for use with a USB drive (software v108.x and higher)** (cont'd)
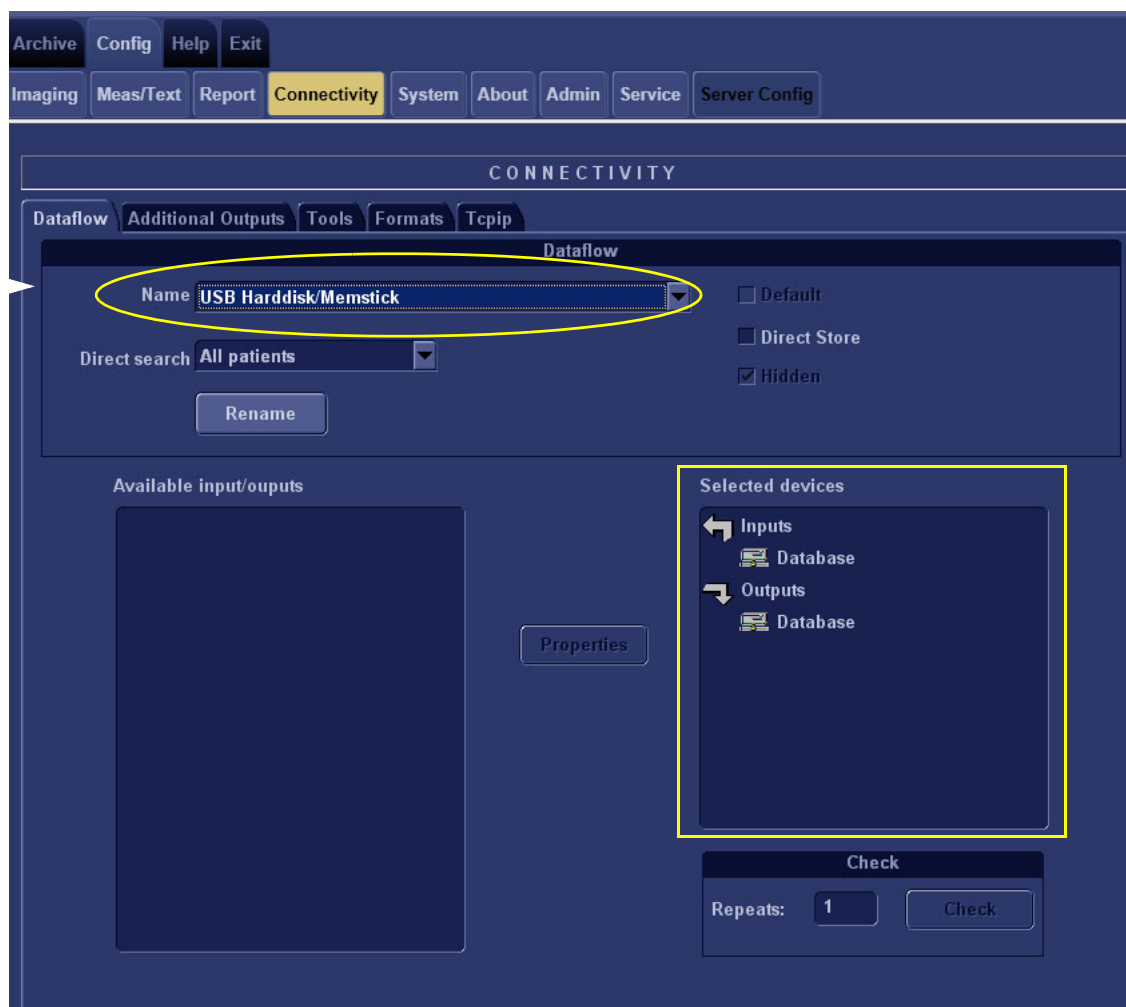
Figure 3-76   Dataflow has been selected

When the **USB Harddisk/Memstick** dataflow has been selected, it is displayed as shown above.

3-8-8   Query/Retrieve (Q/R) Setup for Software v108.x and higher

3-8-8-1   Overview

The Query/Retrieve function makes it possible to search for and retrieve DICOM data from a DICOM server for further analysis on the EchoPAC PC Turnkey .

NOTE: *You may have to set up EchoPAC PC Turnkey as a destination on the server.*

3-8-8-2   Query/Retrieve Setup on the EchoPAC PC Turnkey

1.) Press **Config** (**F2**) and log on as *adm*.

2.) Select Connectivity

3.) Select Dataflow

4.) Select Query Retrieve from the Name pull-down menu
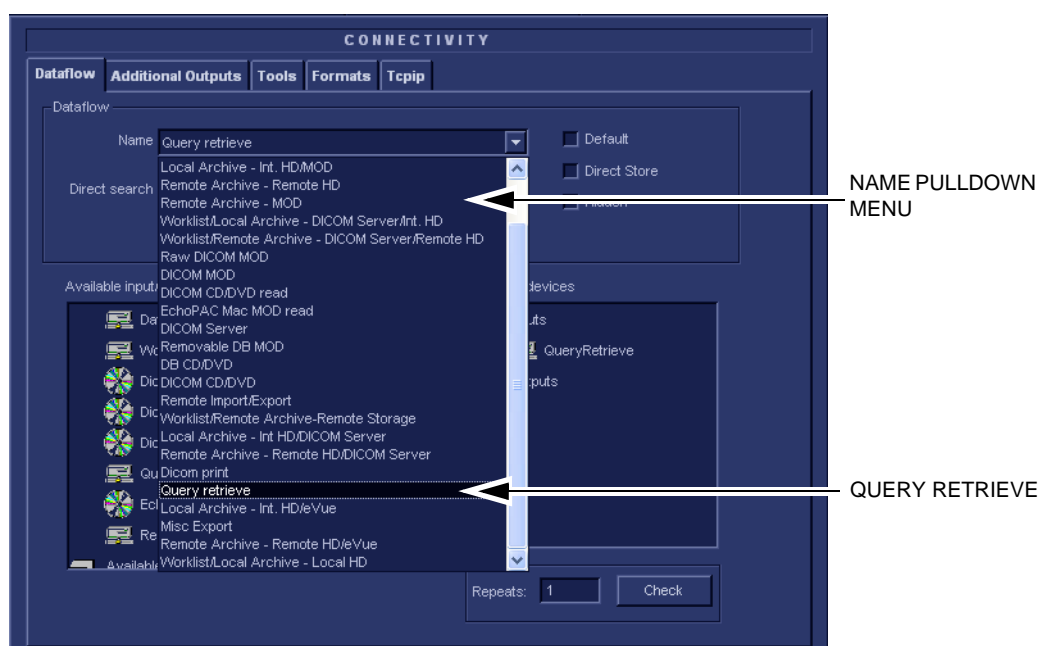
Figure 3-77   Select Query Retrieve

3-8-8-2   **Query/Retrieve Setup on the EchoPAC PC Turnkey** (cont'd)

In Figure 3-78 "Query/Retrieve workflow" on page 3-86, the selected dataflow, Query/Retrieve, is shown.
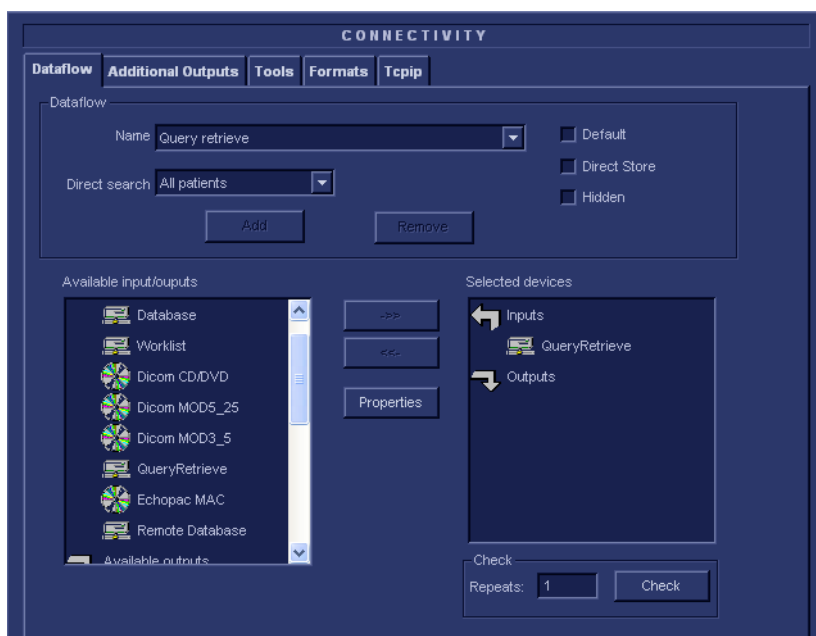
Figure 3-78   Query/Retrieve workflow

5.)   Select QueryRetrieve so it is highlighted and then select Properties to display the Properties dialog.
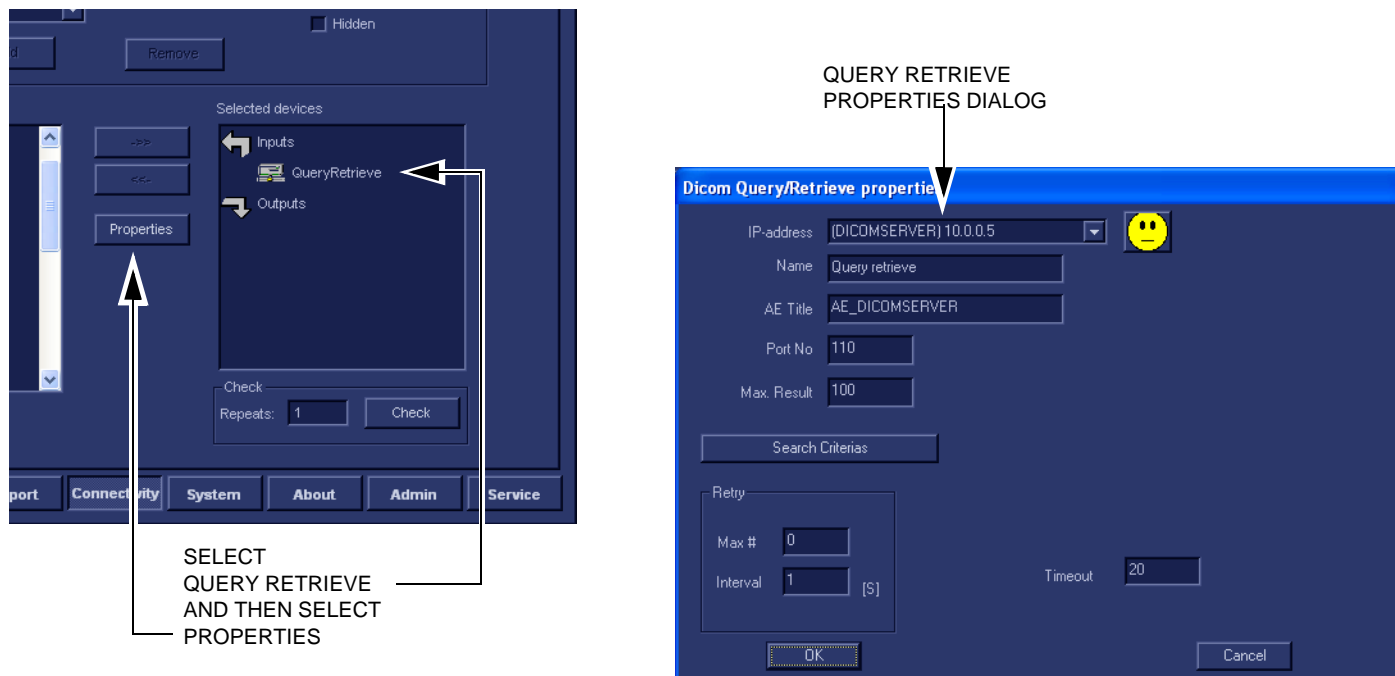
Figure 3-79   Select Query/Retrieve's Properties

3-8-8-2 **Query/Retrieve Setup on the EchoPAC PC Turnkey** (cont'd)
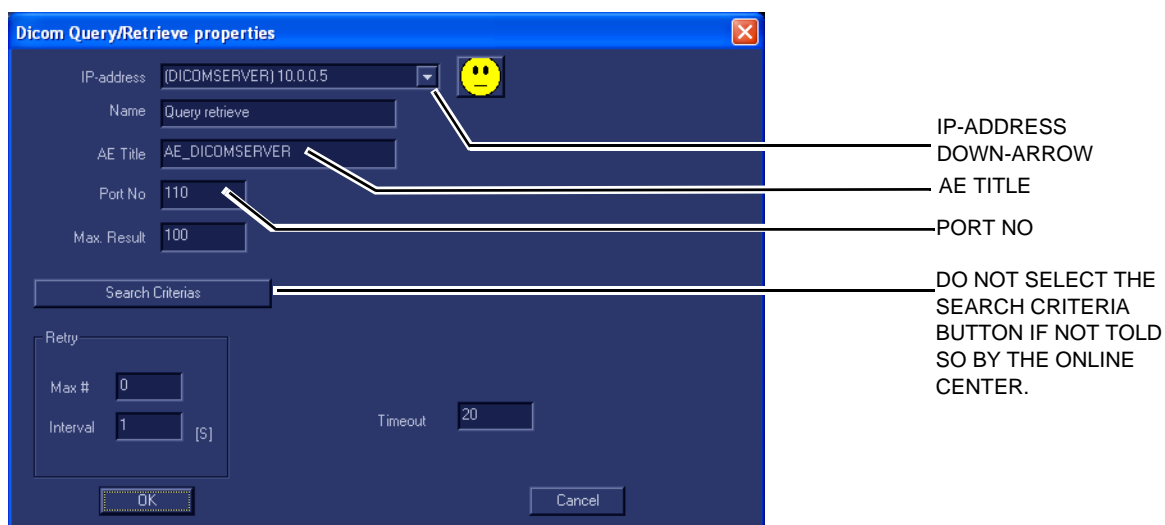
Figure 3-80   DICOM Query/Retrieve properties

6.) Select the IP-address down-arrow to choose the DICOM Query/Retrieve server from the pull-down menu. In some cases, the server to use is the same as used for DICOM Storage.

If the server to use is missing from the list, select <Modify> from the pull-down menu and edit the setup for one of the predefined servers.

7.) Enter the correct AE Title and Port Number for the DICOM Query/Retrieve server in the respective fields in the Query/Retrieve screen.

3-8-8-2   **Query/Retrieve Setup on the EchoPAC PC Turnkey** (cont'd)

Change Search Criterias

It is possible to set up special Search Criterias for DICOM Query/Retrieve. In most cases you may leave the Search Criterias as is, and skip this adjustment.

Follow the steps below to change the Search Criterias parameters:

1.) Select Search Criterias

Figure 3-81   Select Search Criterias

2.) Select the correct tag from the Select Tag pull-down menu.
3.) If needed, type in the value.
4.) Select Add to List
5.) Select OK to close the Search Criterias window.

3-8-8-3   Query/Retrieve Verification
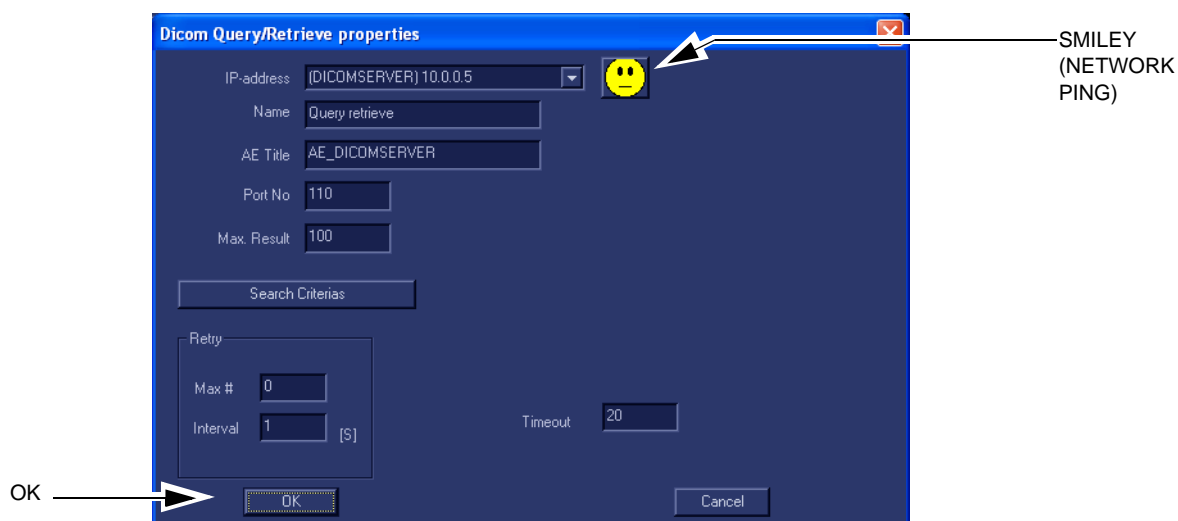
Figure 3-82   DICOM Query/Retrieve properties

Follow the steps below to do a first test (TCP-IP Ping) of the connection:

1.) Select **Query retrieve** and then select **Properties**.

2.) Select the "Smiley" button to Ping the server.

NOTE: *The smiley checks if the remote server is accessible (ping). It is not a DICOM Echo (DICOM ping), so it does not check AE title or port number.*

3.) If the network connection to the server is OK, it will be illustrated by an smiling "Smiley" .
     A sad Smiley indicates that the network connection is failing.
     Typical causes:
     -      Network cable not connected.
     -      Configuration error(s).

4.) When ready, select OK to close the DICOM Query/Retrieve properties and save changes.

3-8-8-3   **Query/Retrieve Verification** (cont'd)

Follow the steps below to test the DICOM Query/Retrieve workflow:

NOTE: *This check uses both Ping and DICOM Ping.*
                 - Ping is used to verify the TCP/IP connection to the server.
                 - DICOM Ping is used to verify that the DICOM application is answering.
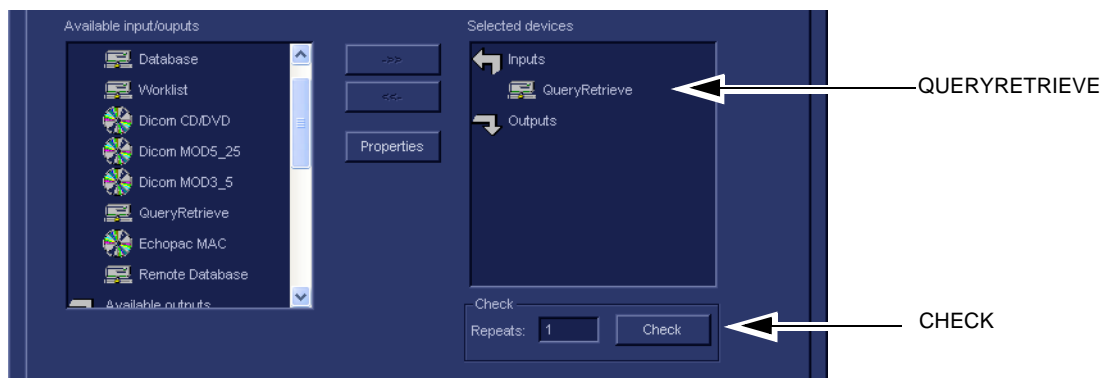
Figure 3-83   Check the DICOM Query/Retrieve workflow

1.) Select QueryRetrieve from the Selected devices list.

2.) Select Check.

  - If the test pass, a pop-up dialog, reporting the results as OK, is displayed, see Figure 3-84 "Test (Check) Passed" on page 3-90.
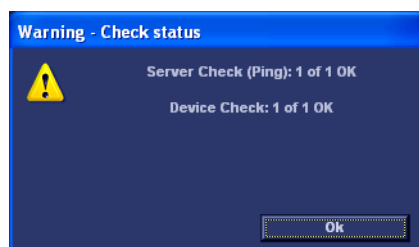
Figure 3-84   Test (Check) Passed

  - Select OK to continue.
    A green check mark to the left of the Selected devices indicates that the test was successfully passed.

Figure 3-85   Test (Check) Passed

3-8-8-3   **Query/Retrieve Verification** (cont'd)

Follow the steps below to test the DICOM Query/Retrieve workflow: (cont'd)

-    If the test fails, a pop-up dialog reporting the results as "0 of 1 OK" is displayed. In the example in Figure 3-86 "Test (Check) Fails directly" on page 3-91, the warning message pop up almost at once, and it states that for the Server Check (Ping), 1 of 1 is OK but the Device Check failed (0 of 1 OK). This indicates that the network connection functions OK, but the application on the remote server is not answering.
     If the test fails directly, as described in this example, the AE Title is probably wrong.
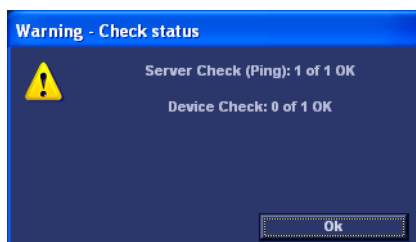
Figure 3-86   Test (Check) Fails directly

A red "X" to the left of the Selected devices indicates that the test failed, but it doesn't indicate the cause.

Figure 3-87   Test (Check) Passed

-    If the Check button fails after a long time (corresponding to the timeout), the Warning will look like the example in Figure 3-88 "Both Tests Failed" on page 3-91, where both tests failed.
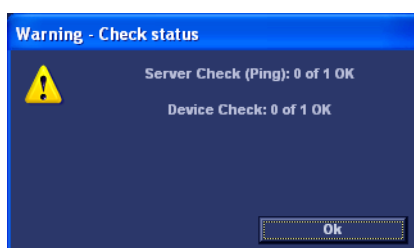
Figure 3-88   Both Tests Failed

In this case, the IP address or Port Number is probably wrong.

If Retrieve is Failing...

If Retrieve is failing but Query is functioning, verify if the scanner has been registered as an receiver on the server.

•   **BT12/**EchoPAC PC Turnkey with software version v108 to v112.

BT'09, BT'11 and BT'12BT'09, BT'11 and BT'12

Section 3-9
Connectivity Setup - BT'04, BT'05, BT'06 and BT'08 Software

NOTE: *If connected to a stand-alone (private) network (Peer-to-Peer network with a Vivid 7 scanner, an EchoPAC PC workstation and an optional network printer), you should use default delivery settings.*

3-9-1   Introduction

To be able to use the network functions when connected to a hospital network, the workstation must have a proper network address.

*   Before you can set up the workstation, you need to collect some information. The Figure 2-5 "Worksheet for DICOM Network Information" on page 2-17 can be used for gathering this information. Typical source for this information is the Network Administrator.
*   Follow the steps below to prepare the workstation for use on the network.

3-9-2   Select TCP/IP Set-up Screen and Reveal & Change Settings

1.) Select **CONFIG** and if not already logged on as administrator (adm), log on as *adm*.

2.) If not already selected, select **Connectivity** from the screen.

3.) Select the TCP/IP TAB (it is named **Tcpip**) to reveal the present TCP/IP settings and do necessary changes.

Detailed DICOM Log:
Creates a detailed DICOM related report log. Should be used if DICOM issues are registered.

COMPUTER NAME:
FOR EchoPAC PC Turnkey , THIS NAME IS ON THE FORM:
EchoPAC7-00NNNN, WHERE "00NNNN" IS A NUMBER (NNNN IS THE UNIT'S SERIAL NUMBER).

IP SETTINGS: 10.0.0.4
IP SETTINGS AREA FOR THE EchoPAC PC Turnkey .

REMOTE ARCHIVE SETUP AREA:
IP SETTINGS AREA FOR A REMOTE ARCHIVE.
EXAMPLE: ECHOSERVER (ECHOSERV7).
DEFAULT SETUP:
REMOTE ARCHIVE IP-ADDR: 10.0.0.3
REMOTE ARCHIVE NAME: ECHOSERV7-000001

Figure 3-89   TCP/IP Set-up screen for EchoPAC PC Turnkey , Overview (Example)

3-9-3   Set the Workstation's Network Information

In the IP settings area of the screen, enter the;

1.) IP Address for workstation. (Default IP Address from factory: 10.0.0.4).

2.) Subnet Mask for workstation. (Default Subnet Masks from factory: 255.255.255.0).

3.) IP address for Default Gateway. (Default Gateways from factory IP address: 0.0.0.0).

4.) In addition the workstation's AE Title must be entered in the DICOM server's setup.

NOTE: *The use of Common Service Platform is not compatible with use of DHCP. If DHCP is turned on, Common Service Platform will be disabled.*

.

Figure 3-90   TCP/IP Set-up for EchoPAC PC Turnkey

3-9-4   Save the New Settings

1.) Press **Save Settings** to save the new settings.

.

Figure 3-91   Save New TCP/IP settings

2.) The new settings are saved to a common settings file. After a restart, the settings are also included in other screens.

3.) Restart EchoPAC PC Turnkey to activate the changes.

3-9-5   Advanced Settings (Introduced with software v4.0)

Advanced Settings give you access to the **Network and Dial-up Connections** screen where you can set up special network connections and adjust settings for network connectivity.

For EchoPAC PC Turnkey , this key is used to get access to the DHCP configuration.

NOTE: *The use of Common Service Platform is not compatible with use of DHCP. If DHCP is turned ON, Common Service Platform will be disabled.*

.

Figure 3-92   Advanced settings

3-9-6   DHCP Setup

3-9-6-1   Pre-Requisite
- Software version v4.0 (or above)

NOTE: *The use of Common Service Platform is not compatible with use of DHCP. If DHCP is turned on, Common Service Platform will be disabled.*

3-9-6-2   Turn DHCP ON
Follow the instructions below to configure the EchoPAC PC Turnkey to use DHCP.
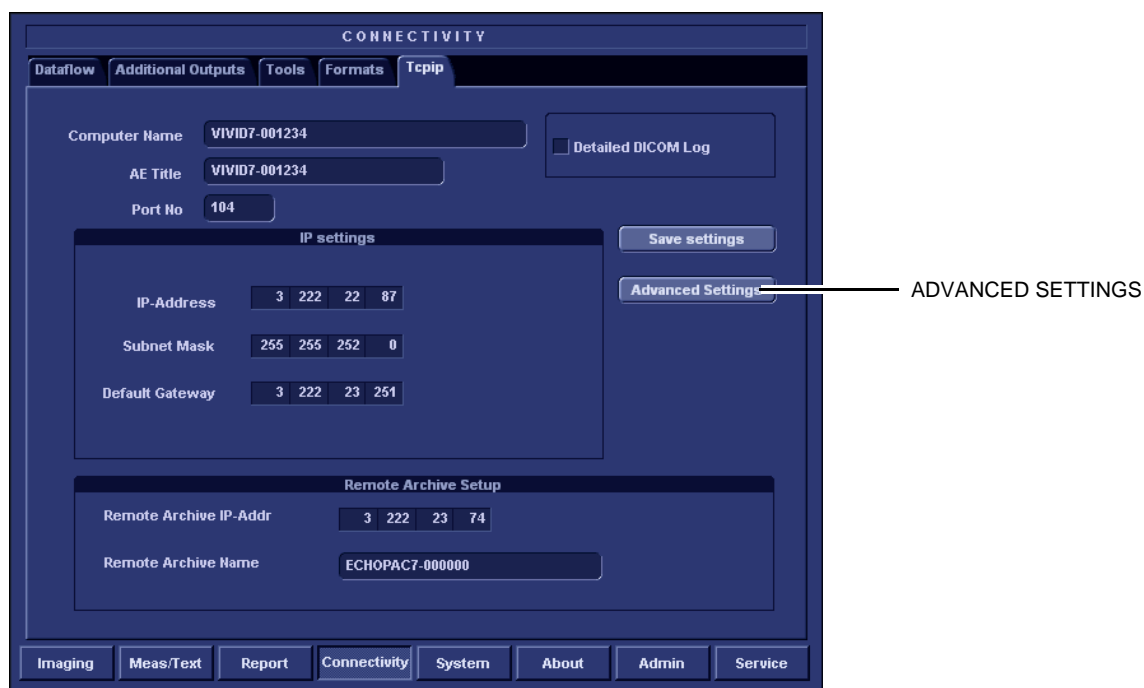
Figure 3-93   Advanced settings

1.) Select the **TCP/IP** screen.
2.) When in the **TCP/IP** screen, select **Advanced Settings** to display the **Network and Dial-up Connections** screen, see Figure 3-61 "Network connections" on page 3-68.

3-9-6-2 **Turn DHCP ON** (cont'd)
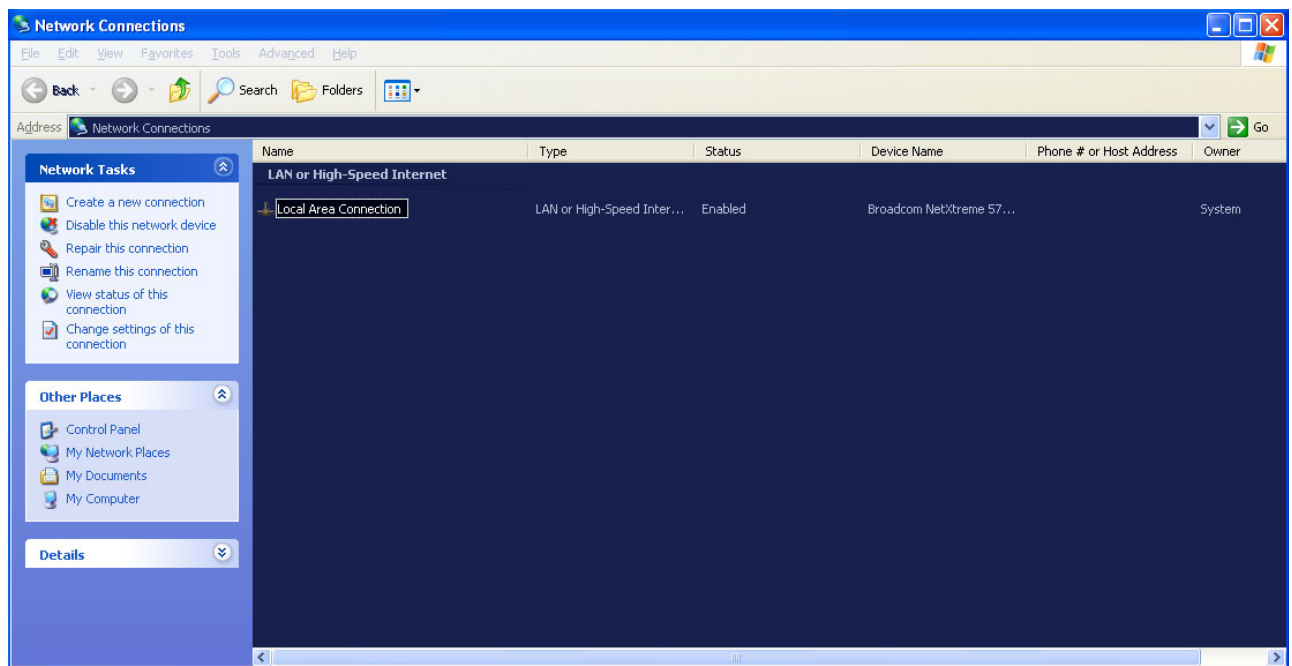
Figure 3-94   Network connections

3.) Select **Local Area Connection**

4.) Right click and select **Properties** to display the **Local Connection Properties**

Figure 3-95   Select Internet Protocol (TCP/IP)

5.) Scroll down to **Internet Protocol (TCP/IP)** and select it

6.) Select **Properties**

3-9-6-2   Turn DHCP ON (cont'd)
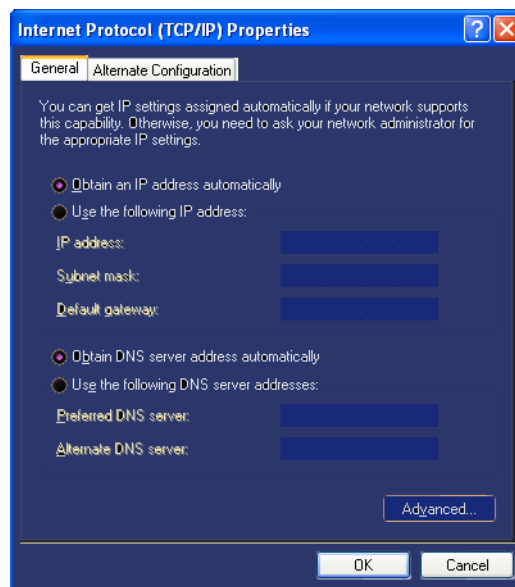
Figure 3-96   Obtain an IP address automatically

7.) Select **Obtain an IP address automatically** to turn **DHCP** ON.

8.) Select **OK** to confirm your selection.

3-9-7   Set the Remote Archive's Network Information

To be able to connect to a remote archive, on a remote computer or server, you must configure VIVID E9 to communicate with it.

In the Remote Archive Setup area of the screen (see example in Figure 3-59 "Internet Protocol (TCP/IP) Properties screen" on page 3-66), enter the;

1.) Remote Archive IP address. (Default IP Address from factory: 10.0.0.4).

2.) Remote Archive Name. (Default Remote Archive Name from factory: ECHOPAC7-000001).
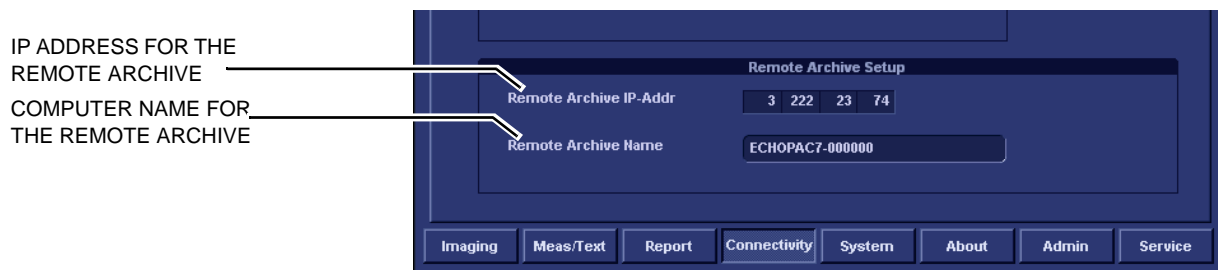
Figure 3-97   TCP/IP Set-up for EchoPAC PC Turnkey

3-9-8   Save the New Settings

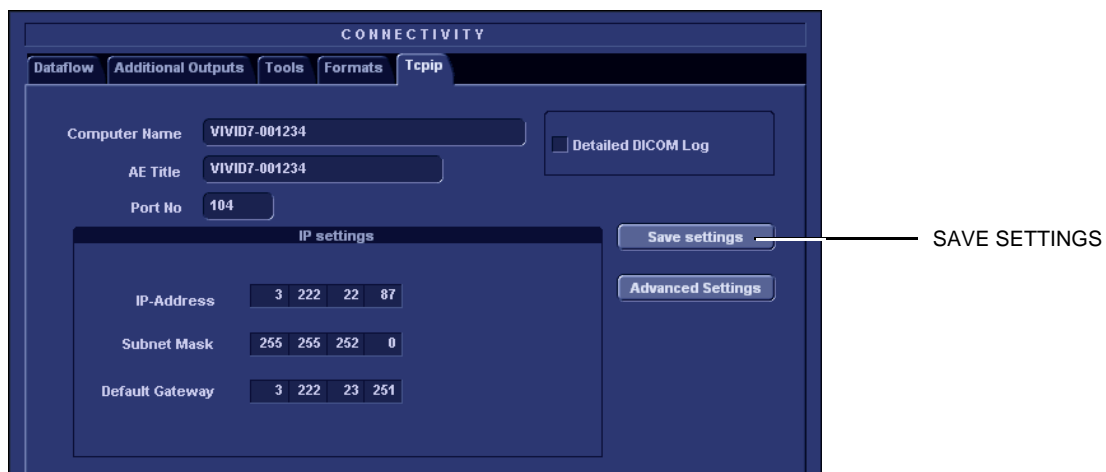1.) Press **Save Settings** to save the new settings.

Figure 3-98   Save New TCP/IP settings

2.) The new settings are saved to a common settings file. After a restart, the settings are also included in other screens.

3.) Restart EchoPAC PC Turnkey to activate the changes.

3-9-9   Set up Connection to a DICOM Server in a Network

In this case the EchoPAC PC Turnkey is configured to work with a DICOM server in a network environment.

3-9-9-1   Overview

To connect to the DICOM server, the following information has to be entered in the EchoPAC PC Turnkey :

- The DICOM server IP address.
- The DICOM server port number.
- The DICOM server AE title (the server application's name).
- Name of Device.

3-9-9-2   DICOM Server IP Address Setting in EchoPAC PC Turnkey

1.) Press **Config** (**F2**) and log on as *adm*.
2.) Select **Connectivity** (in the lower part of the window).
3.) Select the **Dataflow** tab.
4.) Select the arrow to the right for the Name field to list all dataflows in a pull-down menu.
5.) Select the dataflow you want to configure from the Dataflow Name pull-down list.
6.) Select the first device in the **Selected devices** field (so it is highlighted) and then select **Properties** to display the Properties dialog.
7.) Select the IP-Address down-arrow to choose the correct server from the pull-down menu.

NOTE: *It is not possible to change the setting in the IP-Address field by editing it. See description below, starting with step 8, to change the setting.*

8.) Follow the steps below to change the IP-Address settings:

   a.) From the **Ip-Address** pull-down menu, select **<Modify>** to display the **IPs** dialog.
   b.) Select the server you want to modify from the **IPs** dialog and then select **Modify**.
   c.) Edit the name and/or the IP address of the server.
   d.) Select **OK** to save the new settings and close the dialog.
   e.) Select **OK** to close the IPs dialog to return to the Properties dialog.
   f.) Enter the DICOM server AE Title. This entry is case sensitive and must match exactly.
   g.) Enter the DICOM server Port.No (Port Number)
   h.) For some DICOM Servers, the default timeout setting (30) is too low.
   i.) Select OK to close the properties dialog and save changes.

3-9-9-3   Verify the Network Connection to a Device

Follow the steps below to do a first test (TCP-IP Ping) of the connection:

1.) Select the "Smiley" button to Ping the server.

NOTE: *The smiley checks if the remote server is accessible (ping). It is not a DICOM Echo (DICOM ping), so it does not check AE title or port number.*

2.) If the network connection to the server is OK, it will be illustrated by a smiling "Smiley" 😃.
A sad Smiley indicates that the network connection is failing.
Typical causes:

   -      Network cable not connected.
   -      Configuration error(s).

3-9-9-4   Verify the Connection to a Device

1.) Select (highlight) the device you want to verify the connection to.

NOTE: *You can only check one device at a time.*

2.) Select **Check** to start the verification process of the connection to the device.
The verification process may use some amount of time (several seconds).
When done, a Warning may be displayed on screen for some seconds. When the Warning has closed, a sign is displayed in front of the device, indicating if the test passed (green check-mark) or failed (red X).

NOTE: *If the Check button fails directly, the AE Title is probably wrong.*
If the Check button fails after a long time (corresponding to the timeout), the IP address or Port Number is probably wrong.

In the illustration below, the message indicates that the pinging of the server worked fine (line 1), but the application on the server didn't respond (line 2).

Figure 3-99   Warning - Check status

3-9-9-5 DICOM Storage Set Up

1.) Select **Dicom storage**.
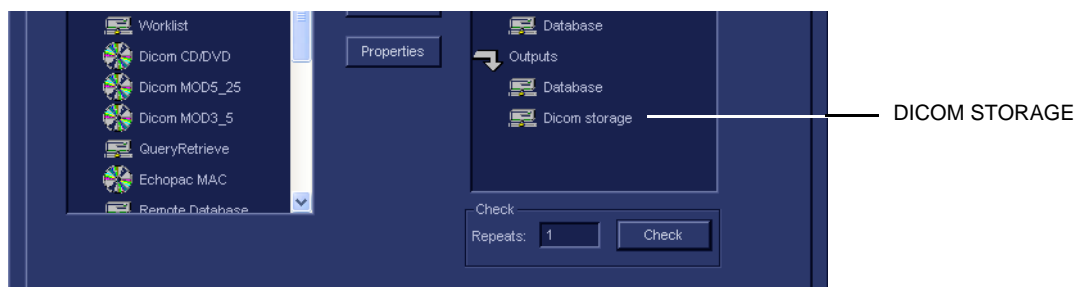
Figure 3-100 Select Dicom storage

2.) Select Properties to display the **DICOM Storage properties** screen.
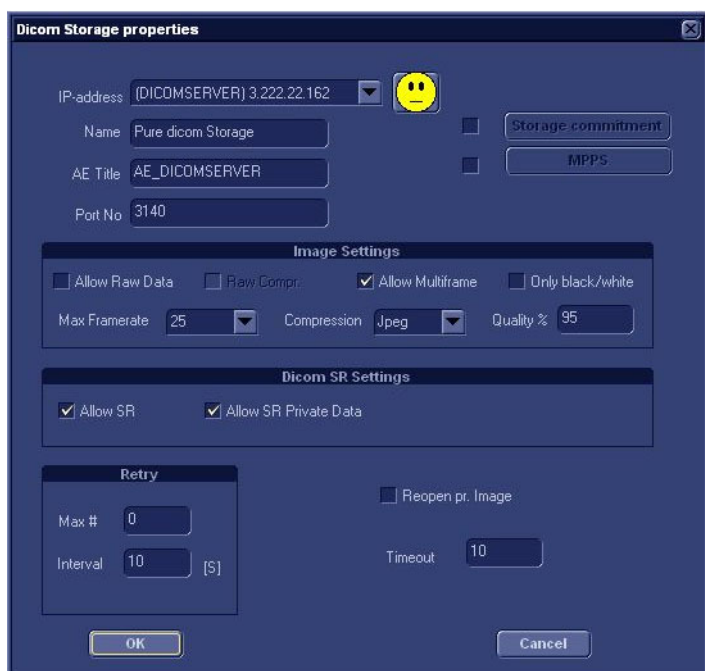
SOFTWARE VERSION v6.x
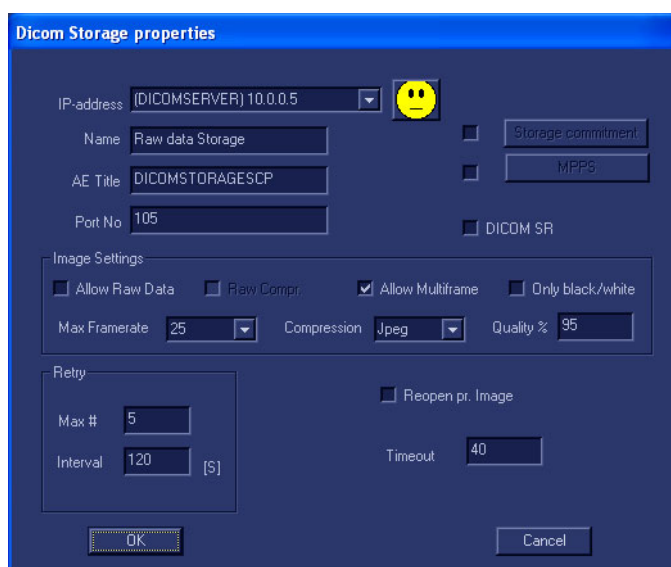
SOFTWARE VERSION v5.x

Figure 3-101 DICOM Storage Properties

3-9-9-6   **DICOM Storage Properties Adjustments**

IP-address

1.) Select the down-arrow at the *IP-Address* pull-down menu to select the *DICOM Storage server*.

2.) Select **<Modify>** from the pull-down menu if you need to modify the server's parameters or add a new server. This will bring up the **IPs** dialog.

   If no changes are needed, continue with step 7.

3.) To modify any of the settings, select the server you want to modify, and then select **Modify**. This will bring up the **Enter name and Ip** dialog.

4.) In the **Enter name and Ip** dialog you can modify the server's name and IP-address.

   -     Select **OK** to save the new settings and close the dialog.

   -     **Select Cancel** to close the dialog without saving the changes.

5.) If you want to add a new server, select **Add** in the **IPs** dialog.

   a.) Type the server's name and IP-address in the **Enter name and Ip** dialog.

   b.) Select **OK** to save the new settings and close the dialog. **Cancel** will close the dialog without saving the changes.

6.) Follow these steps if you want to delete any of the servers from the list:

   a.) Select the server you want to delete, and then select **Delete**. This will bring up a warning where you are asked if you want to delete the server from the list.

   b.) Select **OK** to confirm or **Cancel** if you don't want to delete the server.

7.) Next, verify the other settings and parameters as described below.

Name

Raw data Storage - Name of service.

AE Title

DICOMSTORAGESCP - The DICOM server's AE Title.

Port No

Verify / set the DICOM server's **Port Number**.

3-9-9-6   **DICOM Storage Properties Adjustments** (cont'd)

Image Settings

- Allow Raw Data - default ON (checked)
- Raw Compr. - default OFF (unchecked)
- Allow Multiframe - default ON (checked)
- Only Black and White - default OFF (unchecked)
- Max Framerate - The pull-down menu gives you these choices;
    - 25 - 25 pictures per second
    - 30 - 30 pictures per second
    - Full - the scanning frame rate
- Compression - The pull-down menu gives you these choices;
    - Jpeg - JPEG/JPG compression (Default). JPEG is not lossless.
    - None - (un-compressed data with huge files)

NOTE: *If you are using compression None, it is strongly advised to reduce Frame Rate to 25 or 30 to avoid truncating loops.*

    - Rle - Run Length Encoding. This is lossless compression.
- Quality% - Set the wanted quality%. Default value is 95%.
    - If files are stored with a quality lower than 95% they will occupy less space, but loose some quality.

NOTE: *Setting the quality% too low may add so much artifacts to the images that they cannot be used for diagnosis.*

    - If files are stored with a quality above 95% the files will grow much bigger without almost no quality change.

Retry

- Max # - The number of times the software will try to connect if the connection doesn't succeed the first time(s).
- Interval - The interval in seconds between each attempt to connect.

Smiley

Select the Smiley button to ping the server. If the network connection is OK, the Smiley will smile, if the connection fail, the Smiley will turn sad.

NOTE: *The smiley checks if the remote server is accessible (ping). It is not a DICOM Echo (DICOM ping), so it does not check AE title or port number.*

3-9-9-6   DICOM Storage Properties Adjustments (cont'd)

Reopen per Image

If Reopen per image is enabled, Vivid 7 will create a new connection (association) for each image. This may be useful for DICOM servers that do not accept different image types in the same association.

Storage Commitment

If you want to enable Storage Commitment, check the check-box and click on the button "Storage Commitment".

In the dialog, enter IP address, Name, AE Title and Port Number.

Figure 3-102   Storage Commitment

MPPS

MPPS is not used by EchoPAC PC Turnkey .

3-9-9-6   **DICOM Storage Properties Adjustments** (cont'd)

DICOM SR

If SR is enabled, all M&A that is supported by DICOM is sent to the DICOM server (in a separate job).

Allow SR Private Data (introduced with software v6.0)

By default, this function is disabled.

Allow SR Private Data is intended for receivers that can handle "Private Data", like the CA-1000.

In the examples in Figure 3-68 and Figure 3-69 (below), **Allow SR Private Data** has been enabled.

Figure 3-103   Dicom Storage properties
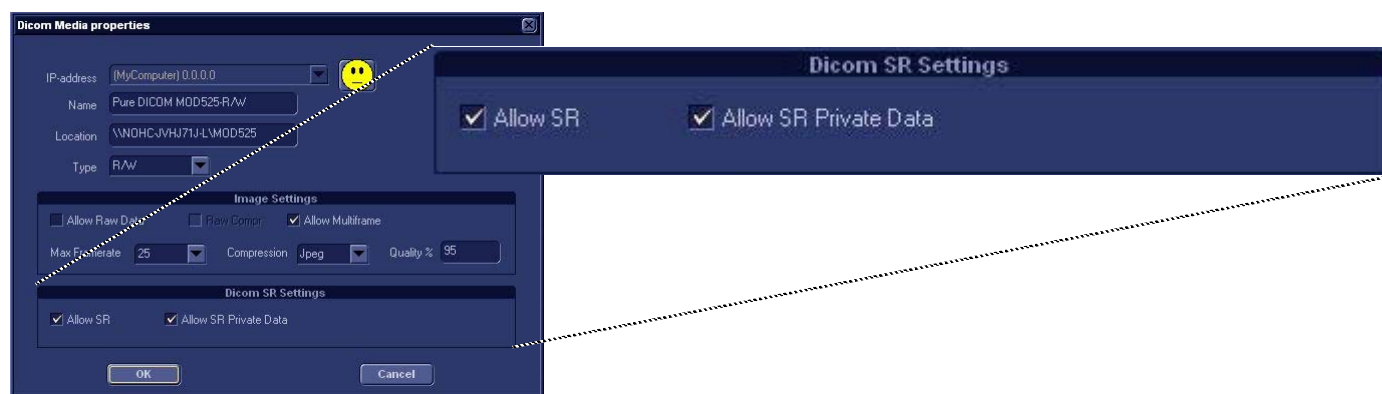
Figure 3-104   Dicom Media properties

3-9-9-6 **DICOM Storage Properties Adjustments** (cont'd)

Time-out

Adjust timeout setting.

The retry settings for DICOM Storage are by default for mobile (off-line) use. They ensure that jobs in the spooler will be sent automatically if the user reconnects within the total retry period. If the customer does not have the mobile case, you can reduce the number of retries and the interval. This will make the job fail faster if there is a network or server problem (and let the user forward the job to another server if desired).

Starting with software v6.0, this function has been changed:

The Retry settings can be used to make jobs retry on bad networks. There is no need to set retries for mobile (off-line) use.

OK/Cancel

- Select **OK** to save all changes. The changes will take place after the scanner has been restarted.
- Select **Cancel** to return without saving any changes.

3-9-10   Export Configuration

The destination for Export of patient records to Excel, HL7 (not for software version v6.x) and MPEG must be configured prior to use. This is done from the *Dataflow screen*.

NOTE: *Required setup on the remote share:*
        User: E1c2h3o4C5l6i7e8n9t
        Password: u1l3t5r7a

3-9-10-1   Display the Dataflow Screen

Follow these steps to Display the Dataflow Screen:

1.) Press **CONFIG (F2)** and log on as administrator.

2.) Select **Connectivity** > **Dataflow**.

The *Dataflow sheet* is displayed, see Figure 3-72 "The Dataflow sheet" on page 3-80.

3.) Select the dataflow **Misc. Export** in the **Name** pull-down menu.
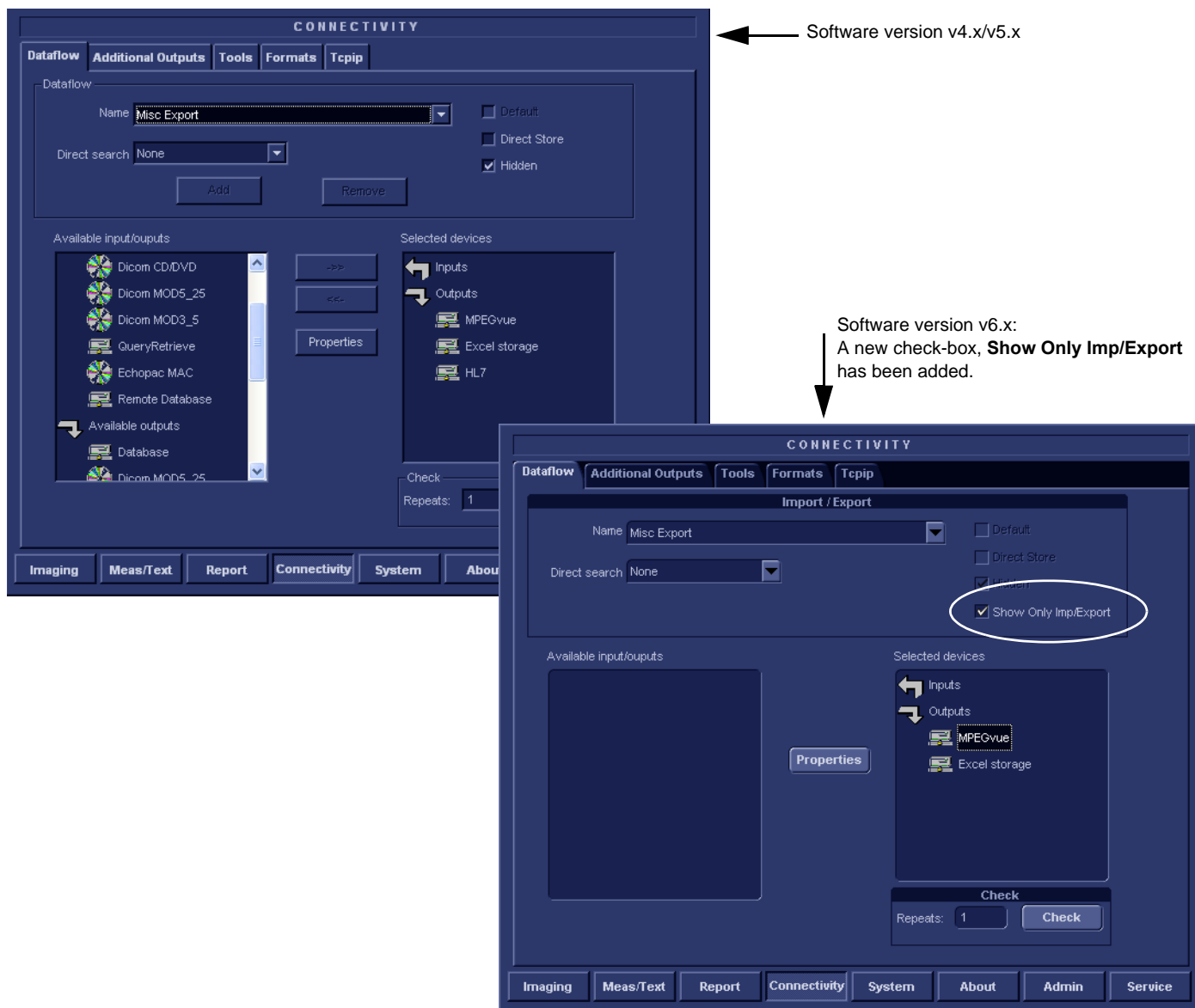
Figure 3-105   The Dataflow sheet

3-9-10-2   Export to Excel Configuration

1.) Select the **Excel storage** device in the *Selected devices pane* and press **Properties**.
The *Excel properties window* is displayed.
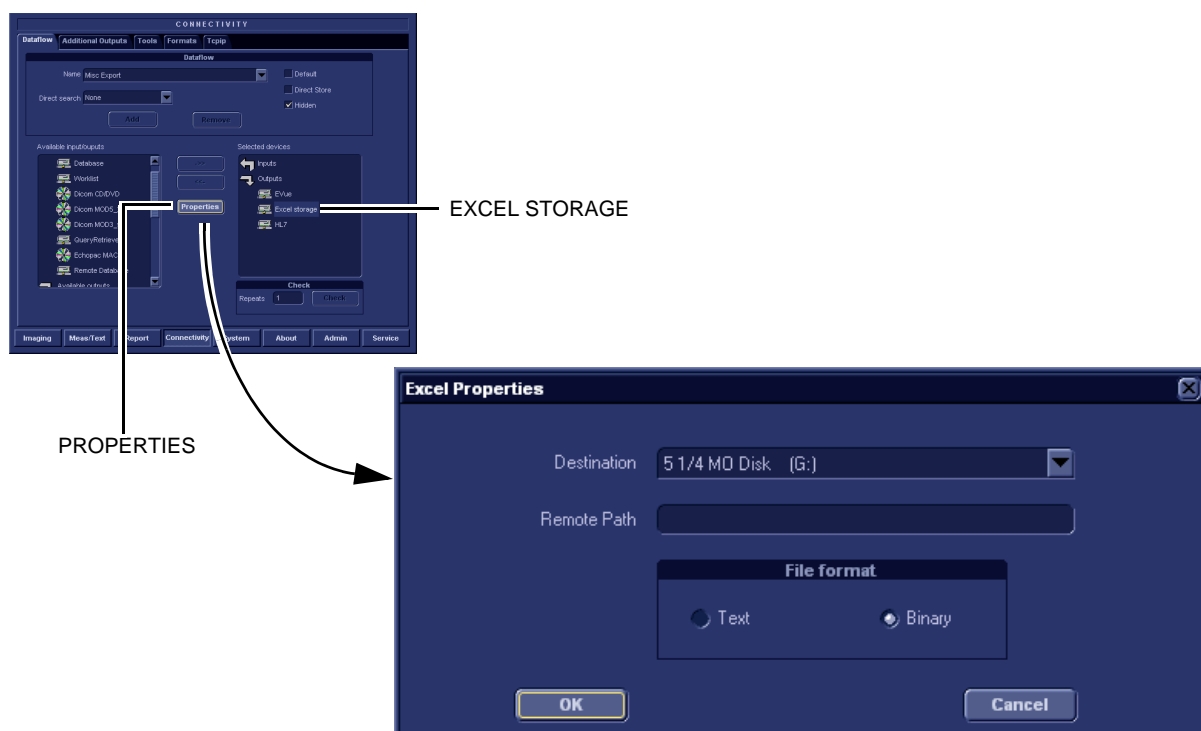
Figure 3-106   The Excel properties window

2.) Select a removable media or a network volume remote path as the destination in the Destination pull-down menu.

NOTE: Remote paths for network volumes must be entered once in the Remote path field before they can be selected from the Destination Pull-down menu.

3.) Select **OK.**
4.) Press **CONFIG** (**F2**) if you want to quit Config.

3-9-10-3   Export to HL7 - Configuration

NOTE: *HL7 is not available for software v6.x.*

1.) Select the **HL7** device in the *Selected devices pane* and press **Properties**.
The *HL7 properties window* is displayed.
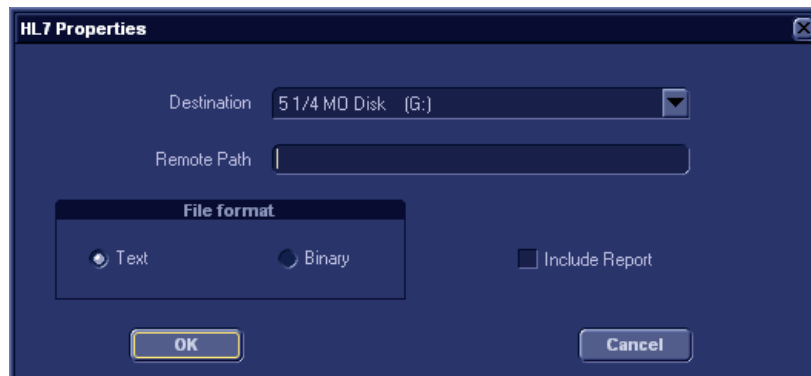
Figure 3-107   The HL7 properties window

2.) When configuring this feature for the first time, the path for the HL7 export destination must be entered in the *Remote path* field (format: **\\server-name\share-name**).

3.) Select **OK.**

NOTE: *Required setup on the remote share:*
User: E1c2h3o4C5l6i7e8n9t
Password: u1l3t5r7a

4.) Press **Config (F2)** if you want to exit from *Configuration*.

3-9-10-4   Export to MPEGVue Configuration

1.) Select the **MPEGVue** device in the *Selected devices* pane and press **Properties**.
The *MPEGVue properties window* is displayed.
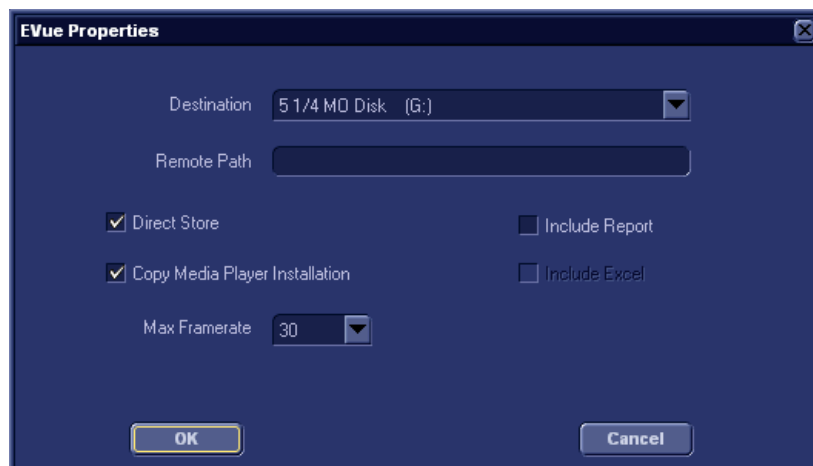
Figure 3-108   The MPEGVue properties window

2.) Select a removable media or a network volume remote path as the destination in the *Destination Pull-down menu*.

NOTE: Remote paths of network volumes must be entered once in the Remote path field before they can be selected from the Destination Pull-down menu.

3.) Check the options as required.
4.) Select OK.
5.) Press CONFIG (F2) if you want to exit Configuration.

3-9-11   Query/Retrieve (Q/R) Setup for Software v7.x

3-9-11-1   Overview

The Query/Retrieve function makes it possible to search for and retrieve DICOM data from a DICOM server for further analysis on the EchoPAC PC Turnkey .

NOTE: *You may have to set up EchoPAC PC Turnkey as a destination on the server.*

3-9-11-2   Query/Retrieve setup on EchoPAC PC Turnkey with software v7.x

1.) Press **Config** (**F2**) and log on as *adm*.

2.) Select Connectivity

3.) Select Dataflow

4.) Select Query Retrieve from the Name pull-down menu
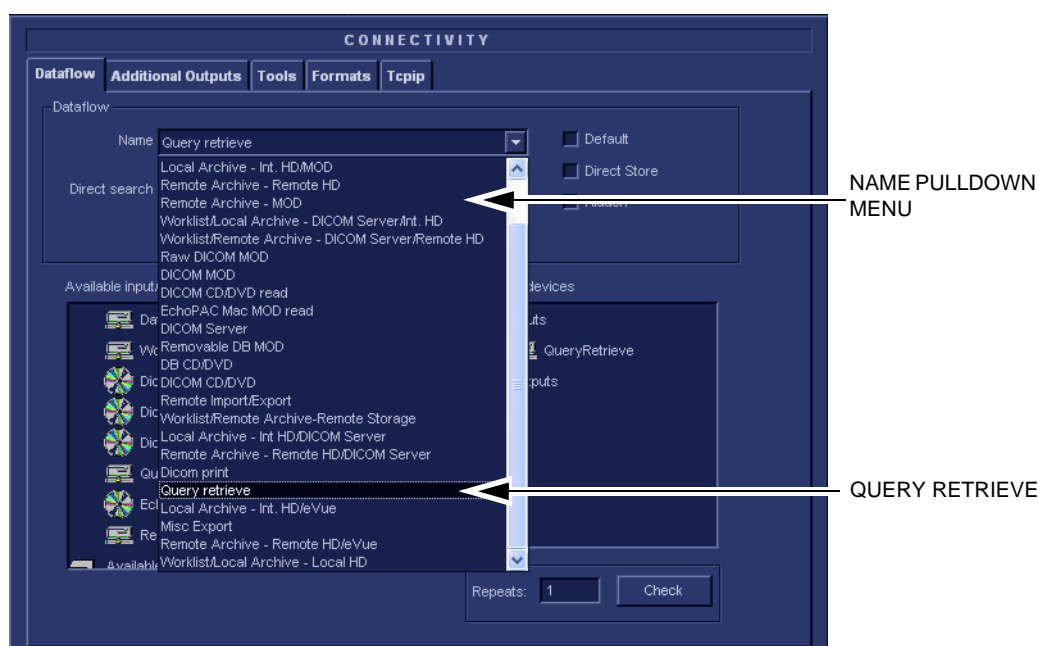
Figure 3-109   Select Query Retrieve

3-9-11-2   Query/Retrieve setup on EchoPAC PC Turnkey with software v7.x (cont'd)

In Figure 3-78 "Query/Retrieve workflow" on page 3-86, the selected dataflow, Query/Retrieve, is shown.
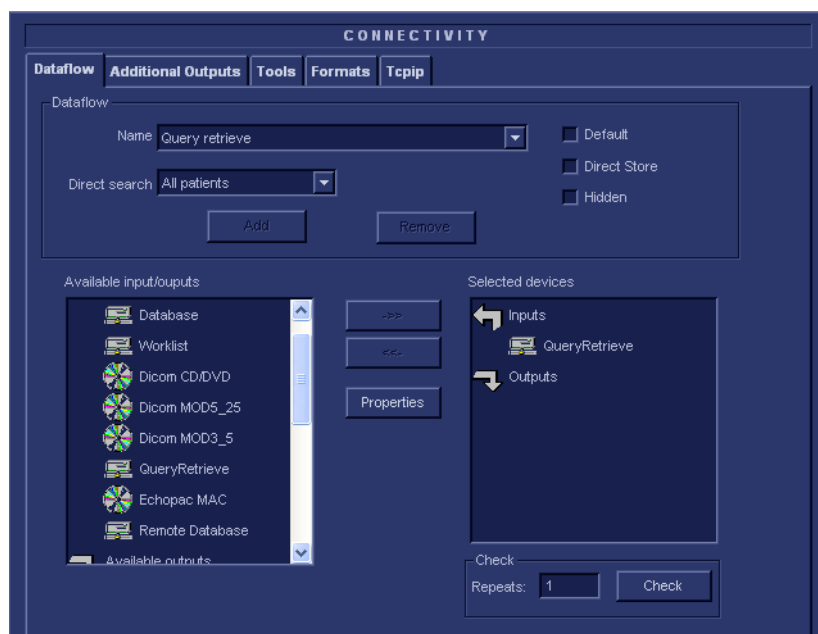
Figure 3-110   Query/Retrieve workflow
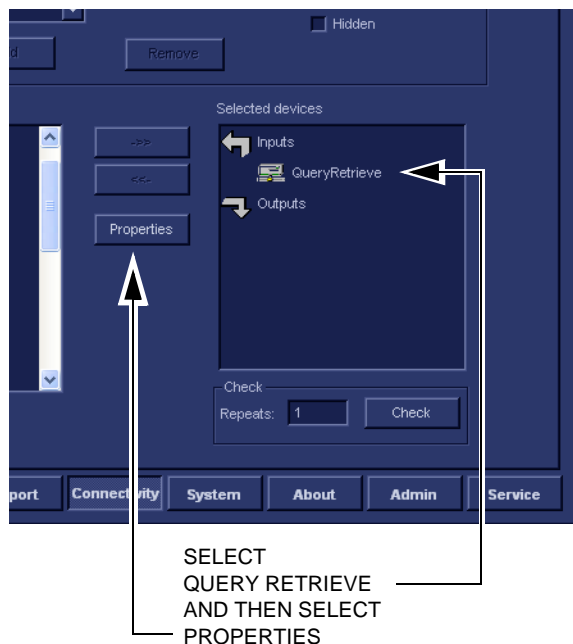
5.) Select QueryRetrieve so it is highlighted and then select Properties to display the Properties dialog.
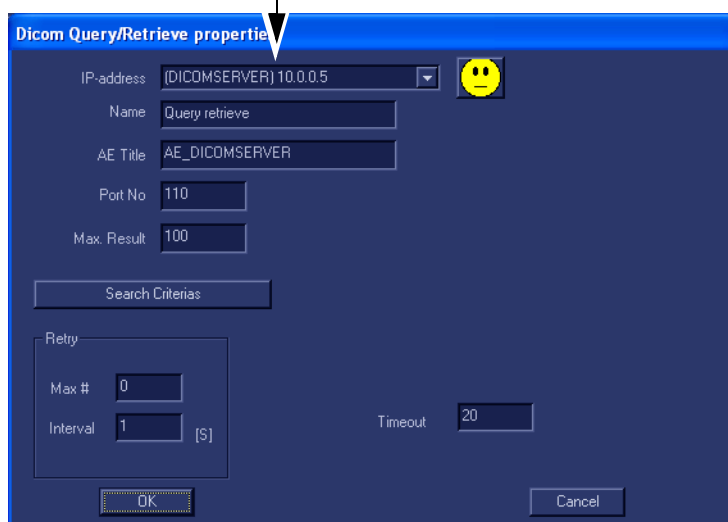
Figure 3-111   Select Query/Retrieve's Properties

3-9-11-2 **Query/Retrieve setup on EchoPAC PC Turnkey with software v7.x** (cont'd)
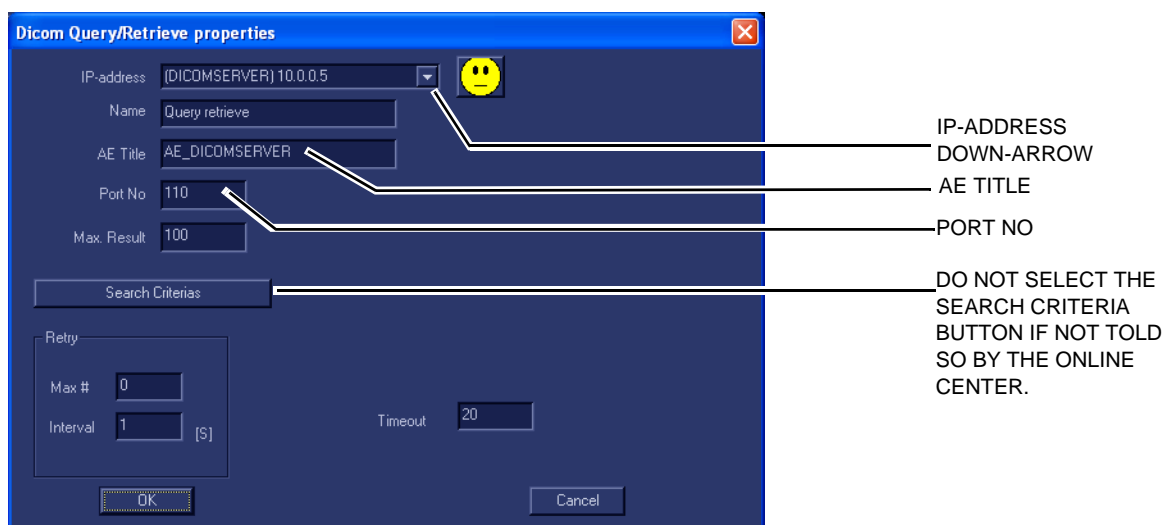
Figure 3-112   DICOM Query/Retrieve properties

6.) Select the IP-address down-arrow to choose the DICOM Query/Retrieve server from the pull-down menu. In some cases, the server to use is the same as used for DICOM Storage.

If the server to use is missing from the list, select <Modify> from the pull-down menu and edit the setup for one of the predefined servers.

7.) Enter the correct AE Title and Port Number for the DICOM Query/Retrieve server in the respective fields in the Query/Retrieve screen.

3-9-11-2   **Query/Retrieve setup on EchoPAC PC Turnkey with software v7.x** (cont'd)

Change Search Criterias

It is possible to set up special Search Criterias for DICOM Query/Retrieve. In most cases you may leave the Search Criterias as is, and skip this adjustment.

Follow the steps below to change the Search Criterias parameters:

1.) Select Search Criterias

Figure 3-113   Select Search Criterias

2.) Select the correct tag from the Select Tag pull-down menu.
3.) If needed, type in the value.
4.) Select Add to List
5.) Select OK to close the Search Criterias window.

3-9-11-3   Query/Retrieve Verification
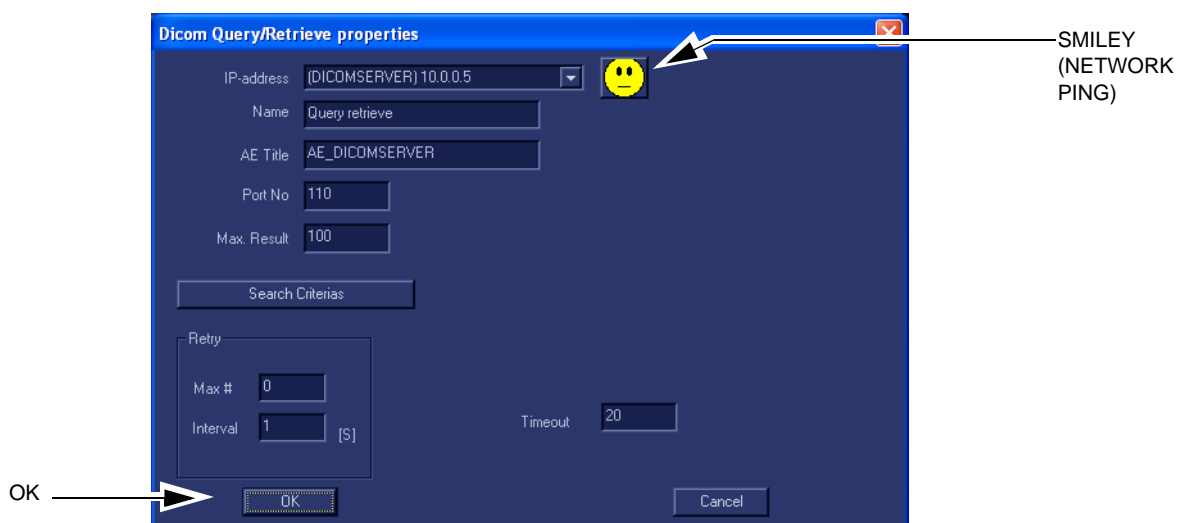
Figure 3-114   DICOM Query/Retrieve properties

Follow the steps below to do a first test (TCP-IP Ping) of the connection:

1.) Select **Query retrieve** and then select **Properties**.

2.) Select the "Smiley" button to Ping the server.

NOTE: The smiley checks if the remote server is accessible (ping). It is not a DICOM Echo (DICOM ping), so it does not check AE title or port number.

3.) If the network connection to the server is OK, it will be illustrated by a smiling "Smiley" 😊.
A sad Smiley indicates that the network connection is failing.
Typical causes:
-    Network cable not connected.
-    Configuration error(s).

4.) When ready, select OK to close the DICOM Query/Retrieve properties and save changes.

3-9-11-3 **Query/Retrieve Verification** (cont'd)

Follow the steps below to test the DICOM Query/Retrieve workflow:

NOTE: *This check uses both Ping and DICOM Ping.*
- Ping is used to verify the TCP/IP connection to the server.
- DICOM Ping is used to verify that the DICOM application is answering.
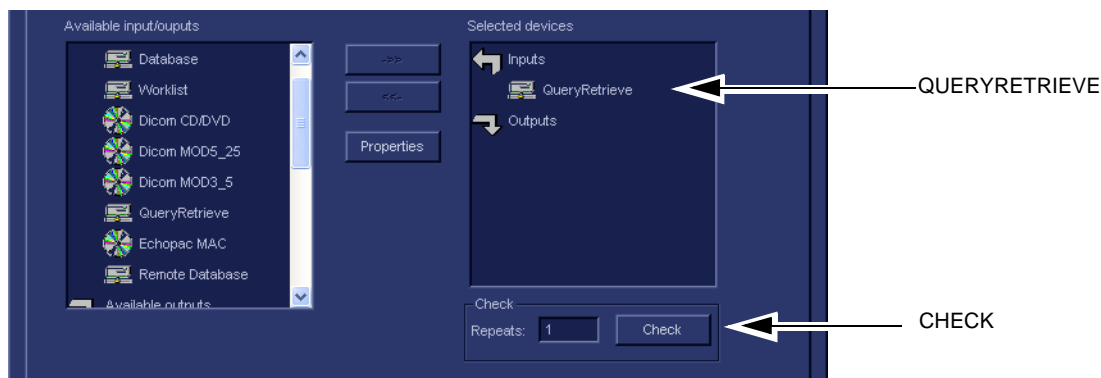
Figure 3-115 Check the DICOM Query/Retrieve workflow

1.) Select QueryRetrieve from the Selected devices list.

2.) Select Check.

  - If the test pass, a pop-up dialog, reporting the results as OK, is displayed, see Figure 3-84 "Test (Check) Passed" on page 3-90.
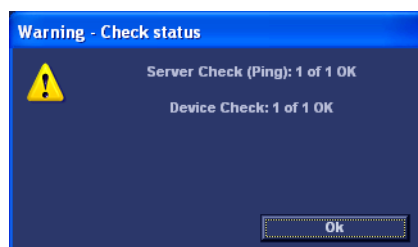
Figure 3-116 Test (Check) Passed

  - Select OK to continue.
    A green check mark to the left of the Selected devices indicates that the test was successfully passed.

Figure 3-117 Test (Check) Passed

3-9-11-3   **Query/Retrieve Verification** (cont'd)

Follow the steps below to test the DICOM Query/Retrieve workflow: (cont'd)

- If the test fails, a pop-up dialog reporting the results as "0 of 1 OK" is displayed. In the example in the warning message pop up almost at once, and it states that for the Server Check (Ping), 1 of 1 is OK but the Device Check failed (0 of 1 OK). This indicates that the network connection functions OK, but the application on the remote server is not answering.

   If the test fails directly, as described in this example, the AE Title is probably wrong.

Figure 3-118   Test (Check) Fails directly

A red "X" to the left of the Selected devices indicates that the test failed, but it doesn't indicate the cause.

Figure 3-119   Test (Check) Passed

- If the Check button fails after a long time (corresponding to the timeout), the Warning will look like the example in , where both tests failed.
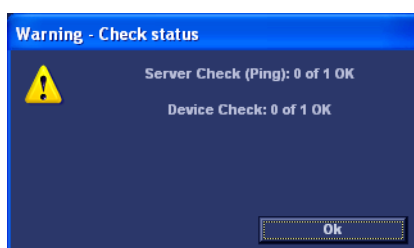
Figure 3-120   Both Tests Failed

In this case, the IP address or Port Number is probably wrong.

If Retrieve is Failing...

If Retrieve is failing but Query is functioning, verify if the scanner has been registered as an receiver on the server.

Section 3-10
Use of EchoPAC BT-04 with Vivid 3, Vivid 3N and Vivid 4

NOTE: *A patch for Vivid 3, Vivid 3N and Vivid 4 will be available at the end of Q1 2005. Use this workaround until the Patch Software is available.*

3-10-1   Workaround

    1.) Power ON Boot-up.

    2.) Log on as ADM.

    3.) Select Config.

    4.) Select Connectivity.

    5.) Select TCP/IP.
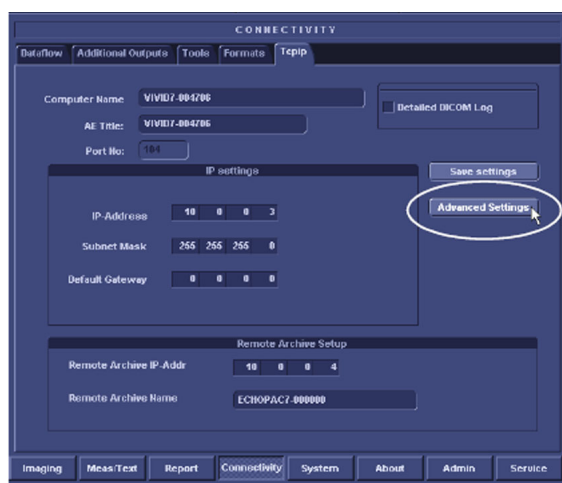
Figure 3-121   Advanced settings selection

    6.) Select Advanced Settings.

    7.) Highlight Local Area Connections.
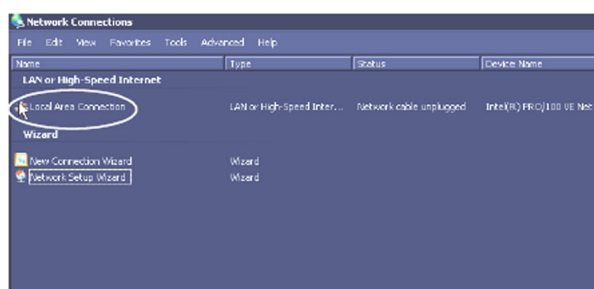
Figure 3-122   Advanced Settings screen

3-10-1   **Workaround** (cont'd)

     8.)   Right-click to select Properties.
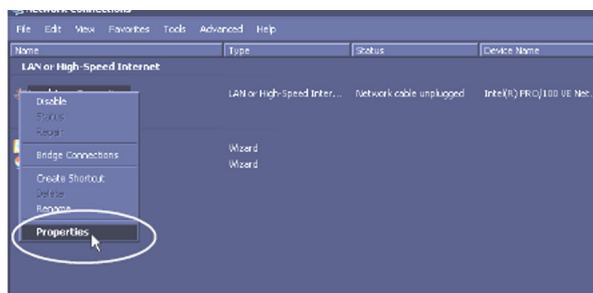
Figure 3-123   Local Area Network Properties selection

     9.)   Scroll down and select Internet Protocol (TCP/IP).
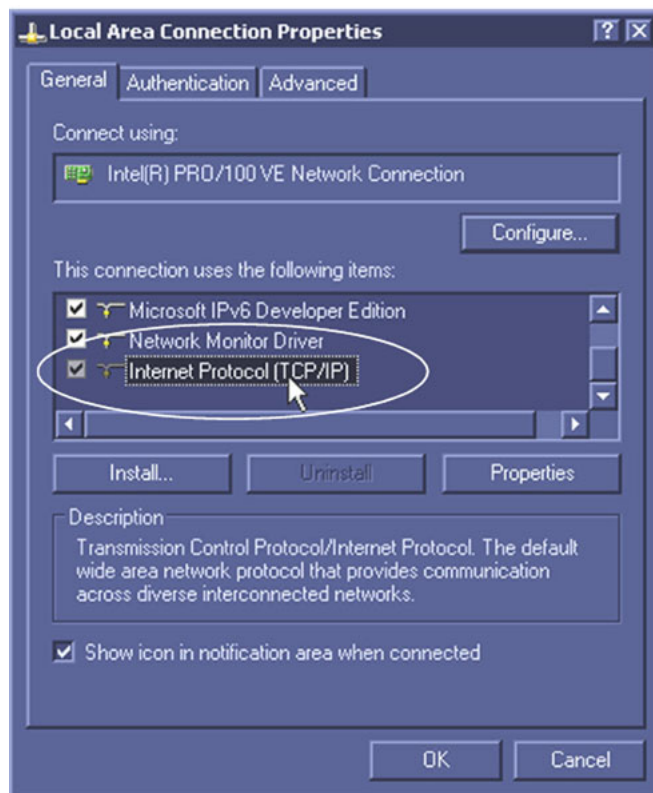
Figure 3-124   Highlighting Internet Protocol

3-10-1   Workaround (cont'd)

   10.) Select Properties.
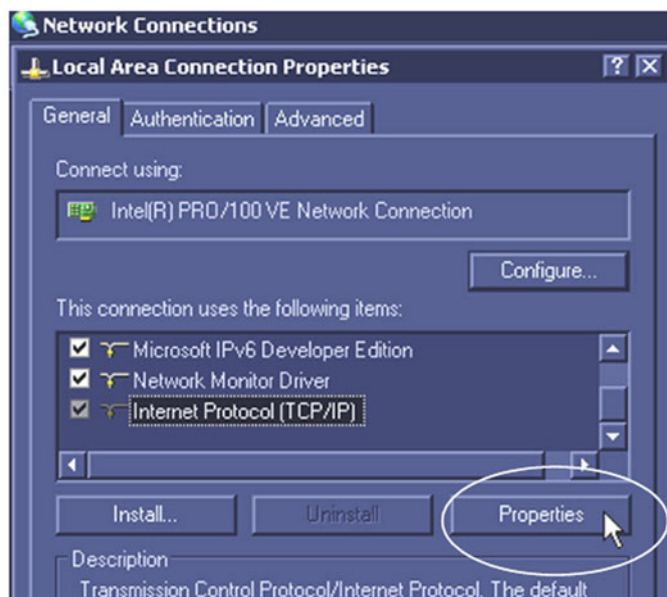
Figure 3-125   Internet Protocol Properties selection

   11.) From the pop-up page, select Advanced.

Figure 3-126   Advanced Selection

3-10-1   Workaround (cont'd)

> 12.) Then select Options.
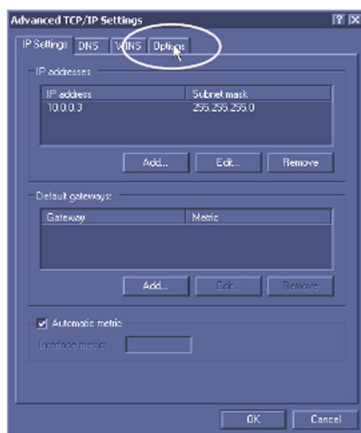
Figure 3-127   Options Selection

> 13.) Highlight TCP/IP Filtering.
> 14.) Select Properties.
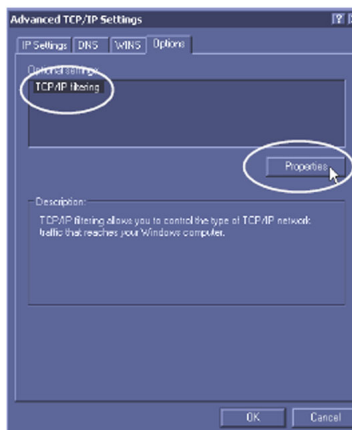
Figure 3-128   TCP/IP Filtering Properties selection

> 15.) Select Permit All.
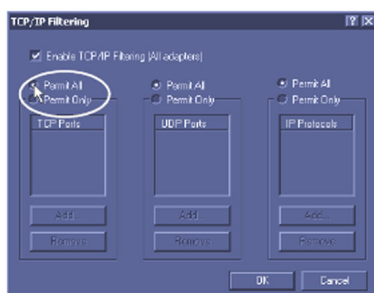
Figure 3-129   Permit All Selection

3-10-1 Workaround (cont'd)

16.) De-select TCP/IP filtering.
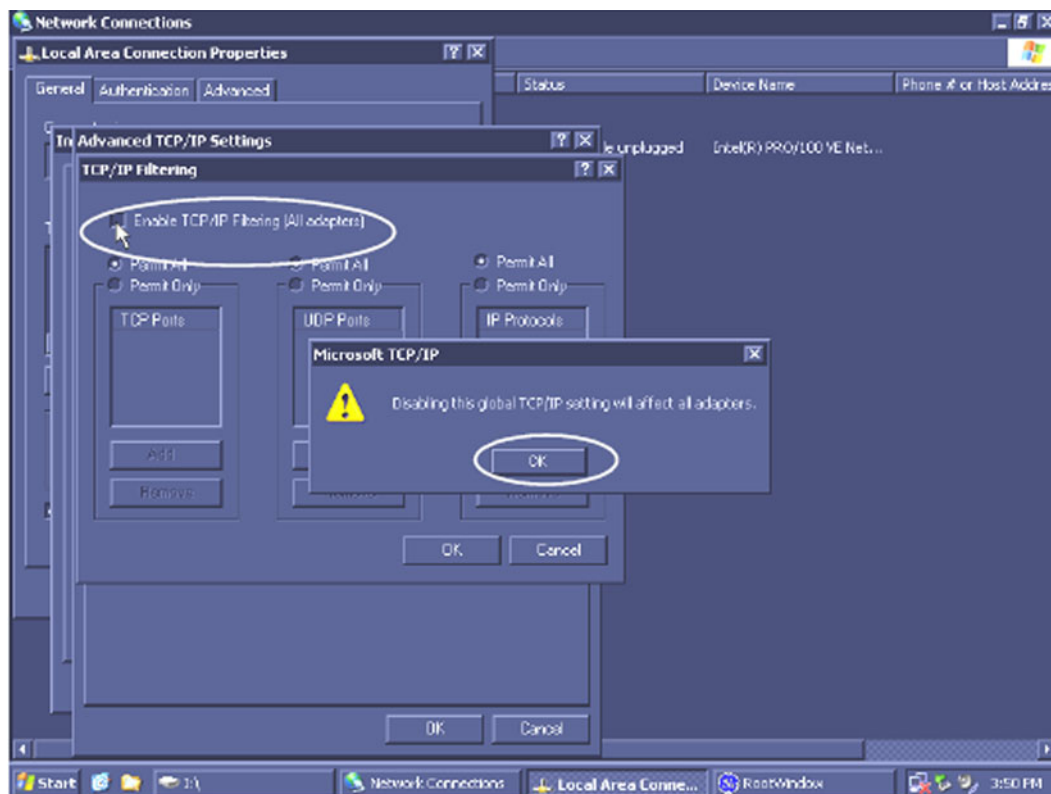
Figure 3-130   Disable TCP/IP

17.) Select **OK** on Warning Dialog.

18.) Select OK.

Figure 3-131   OK selection to Exit

19.) Exit and Reboot.

NOTE: Need to note that this procedure will need to be repeated if base software is reloaded.

Section 3-11
Connectivity Setup - Software v3.x

NOTE: *If connected to a stand-alone (private) network (Peer-to-Peer network with a Vivid 7 scanner, an EchoPAC PC workstation and an optional network printer), you should use default delivery settings.*

3-11-1   Introduction

To be able to use the network functions when connected to a hospital network, the workstation must have a proper network address.

- Before you can set up the workstation, you need to collect some information. The Figure 2-5 "Worksheet for DICOM Network Information" on page 2-17 can be used for gathering this information. Typical source for this information is the Network Administrator.
- Follow the steps below to prepare the workstation for use on the network.

3-11-2   Select TCP/IP Set-up Screen and Reveal & Change Settings

1.) Press **CONFIG** and if not already logged on as administrator (adm), log on as *adm*.
2.) If not already selected, select Connectivity from the bottom row of "buttons" on the screen.
3.) Select the TCP/IP TAB (it is named **Tcpip**) to reveal the present TCP/IP settings and do necessary changes.

.

Computer Name:
For EchoPAC PC Turnkey , this name is on the form: *ECHOPAC7-00nnnn*, where "00nnnn" is a number (nnnn is the scanner's serial number).

IP Settings:
IP Settings area for the EchoPAC PC Turnkey workstation.

Remote Archive Setup area:
IP settings area for a Remote Archive.
Example: EchoServer.

NOTE
The AETitles field and the Port field are only available on BT'03 software (and beyond).

Figure 3-132   TCP/IP Set-up screen for EchoPAC PC Turnkey , Overview (Example)

3-11-3   Set the Workstation's Network Information

In the IP settings area of the screen, enter the;

1.) IP Address for workstation. (Default IP Address from factory: 10.0.0.4).
2.) Subnet Mask for workstation. (Default Subnet Masks from factory: 255.255.255.0).
3.) IP address for Default Gateway. (Default Gateways from factory IP address: 0.0.0.0).
4.) In addition the scanner's AE Title must be entered in the DICOM server's setup.

.

Figure 3-133   TCP/IP Set-up for EchoPAC PC Turnkey

3-11-4   Save the New Settings

1.) Press **Save Settings** to save the new settings.

.
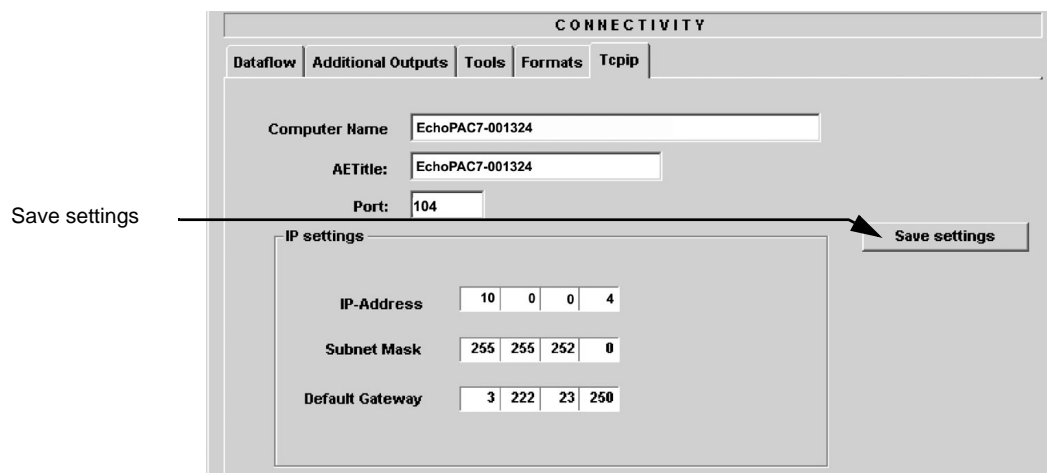
Figure 3-134   Save New TCP/IP settings

2.) The new settings are saved to a common settings file. After a restart, the settings are also included in other screens.

3.) Restart EchoPAC PC Turnkey to activate the changes.

Section 3-12
Connectivity Setup - Software v2.x

NOTE: *If connected to a stand-alone (private) network (Peer-to-Peer network with a Vivid 7 scanner, an EchoPAC PC workstation and an optional network printer), you should use default delivery settings.*

3-12-1 Introduction

To be able to use the network functions when connected to a hospital network, the workstation must have a proper network address.

- Before you can set up the workstation, you need to collect some information. The Figure 2-5 "Worksheet for DICOM Network Information" on page 2-17 can be used for gathering this information. Typical source for this information is the Network Administrator.
- Follow the steps below to prepare the workstation for use on the network.

3-12-2 Select TCP/IP Set-up Screen and Reveal & Change Settings

1.) Press **CONFIG** and if not already logged on as administrator (adm), log on as *adm*.
2.) If not already selected, select Connectivity from the bottom row of "buttons" on the screen.
3.) Select the TCP/IP TAB (it is named **Tcpip**) to reveal the present TCP/IP settings and do necessary changes.
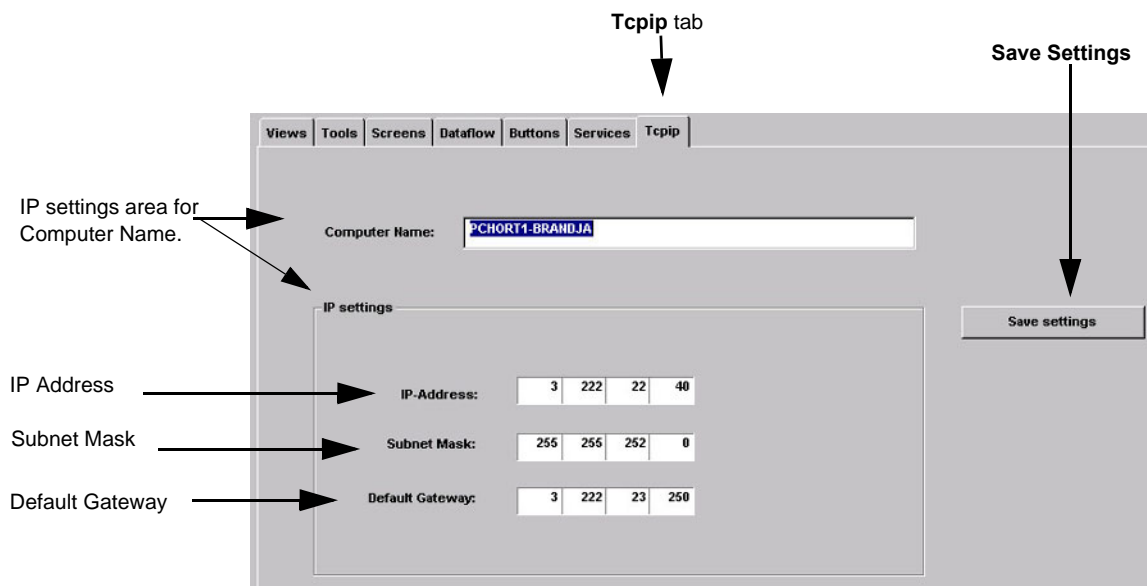
Figure 3-135 TCPIP Set-up

3-12-3   Pre-Defined Dataflows Setup

1.) To display the Pre-defined Dataflows on the Views window press the **Dataflow** Button.
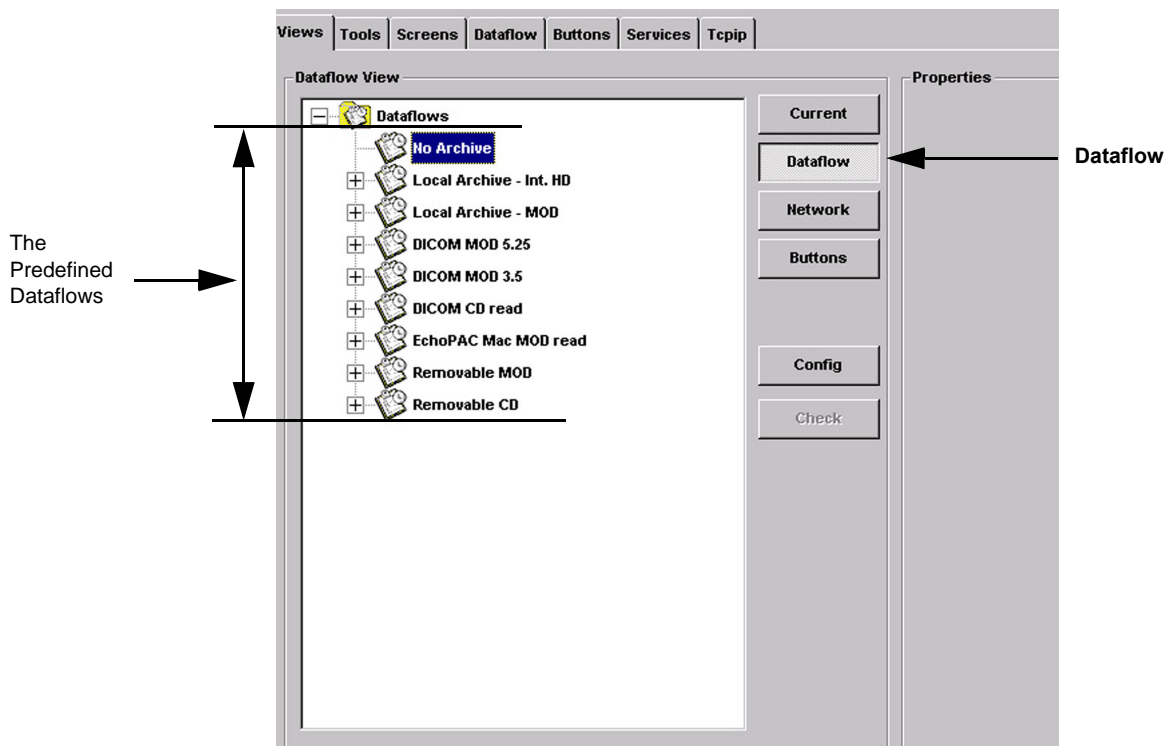
Figure 3-136   Views screen showing Predefined Dataflows

2.) Click on the Local Archive Int.HD Tick off box, click on the My computer Tick off box and Highlight Local Archive Int.HD as shown below.

3.) Press the Config Button to display the Services screen contents for the Highlighted Service.
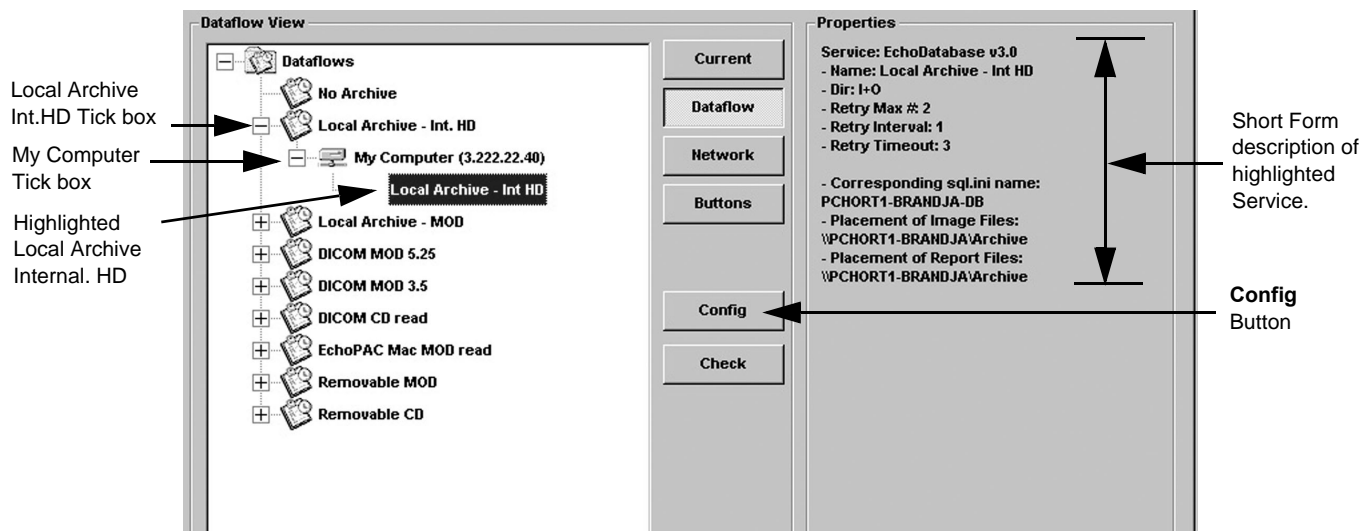
Figure 3-137   Example of a dataflow study

3-12-3   Pre-Defined Dataflows Setup (cont'd)

4.) Study the Service setup.

NAME OF SERVICE —

CORRESPONDING
SQL.ini.name*

PLACEMENT OF IMAGE
FILES FROM SCANNER
TRANSFER.

PLACEMENT OF
REPORT DATA FILES
FROM SCANNER
TRANSFER.

Figure 3-138   Services example showing the predefined services setup.

*SQL.ini name = is the SQL-database start name for this service.

Section 3-13
Installation Paperwork

NOTE: *During and after installation, the documentation (i.e. User Manuals, Installation Manuals, etc.) for the workstation and the peripheral units must be kept as part of the original system documentation. This ensures that all relevant safety and user information is available during the operation and service of the complete system.*

3-13-1   User Manual(s)

Verify that the correct User's Manual(s) per software (sw) revision and language, for the products are included. See Section 9-15 "Product Manuals" on page 9-56 for lists of User's Documents.

3-13-2   Product Locator Installation Card

NOTE: *The Product Locator Installation Card shown may not be the same as the provided Product Locator card.*

From the factory, a sheet with five Product Locator cards for transportation and one for Installation are included.

Figure 3-139   Product Locator Installation Card (Example)

Chapter 4
General Procedures and Functional Checks

Section 4-1
Overview

4-1-1   Purpose of Chapter 4

This chapter is designed to give the reader the ability to test the major EchoPAC PC Turnkey functions. During new installations and Update Installations this chapter can be a great asset in determining if the EchoPAC PC Turnkey equipment is working as it should.

Table 4-1   Contents in Chapter 4

SECTION	DESCRIPTION	PAGE NUMBER
4-1	Overview	4-1
4-2	General Procedures	4-2
4-3	Functional Check	4-16
4-4	Application Turnover Check List	4-28
4-5	Diagnostics	4-29
4-6	Power Supply	4-30
4-7	Site Log	4-31

4-1-2   Special Equipment Requirements

• MO/CD with still pictures of CRT and LCD monitor test screens
• MO/CD with Images and cineloops for function check out
• Empty media (DVD, CD or MO Disk)

4-1-3   Other Requirements

• Knowledge of Right-hand Mouse key for displayed menu with various storage formats and media choices.

Section 4-2
General Procedures

4-2-1   Power On/Boot Up

Table 4-2   Boot Up   sheet 1 of 2
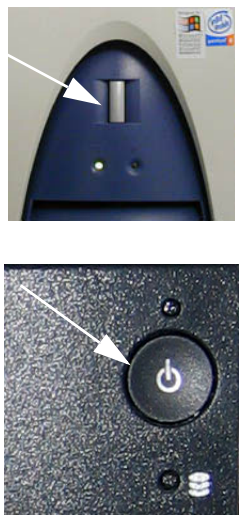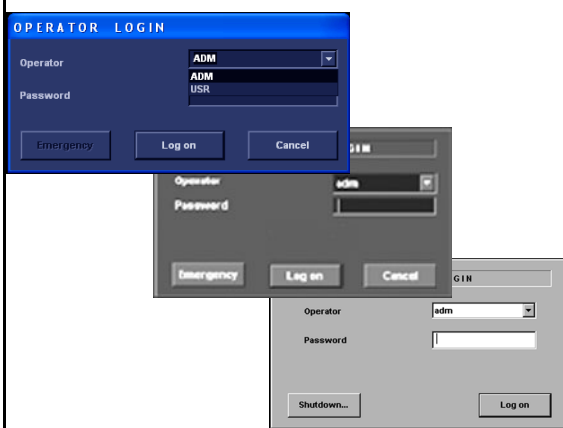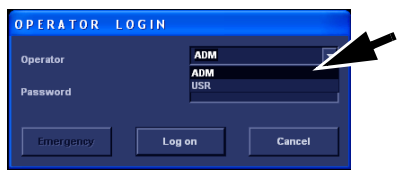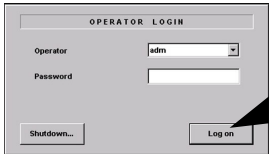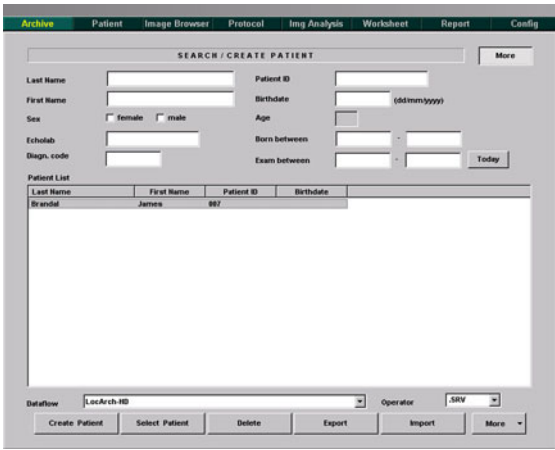
STEP	TASK	EXPECTED RESULT AND COMMENTS
1	Turn ON the Power switch.	The workstation boots. (Typical time to boot: 1 minute 25 seconds or less, depending on workstation model and software version) The EchoPAC PC Log-on dialog appears. Operator Login Window with either two or three buttons, depending on software version.
2	a) Select the down-arrow to the right of the Operator field to view the Operator pull-down menu with a list of users- b) Select **ADM** from the pull-down menu.	From the factory, two users are defined: - adm - usr **Regarding the password:** - **For software v5.x and lower**, the default password has been left blank for both users, so you may try to log on without any password. - If the logon fails, you may try to use the password **service** - As a last resort, contact the hospital's network administrator (or person responsible for the ultrasound unit), and ask for the password. - **Starting with software version v6.0**, the password for the user **ADM** is: **ulsadm** - It is possible for the administrator (*ADM*) to make new users and establish unique passwords for each user, but don't do it now. The **Emergency** button stores data only from current patient examination.

Table 4-2   Boot Up (cont'd) sheet 2 of 2

STEP	TASK	EXPECTED RESULT AND COMMENTS
3	Select **Log on**.	Search / Create Patient input screen appears.

4-2-2   Power OFF

Table 4-3   Steps to Shut down

Step	Task	Expected Result
1	Select **Exit.** It is located to the far right in the upper menu bar.	The Shutdown dialog is displayed on the screen. The following choices are available: - **Logoff** (Logoff is used to log off the current user.) - **Shutdown** (Shutdown is used to turn off the unit.) - **Cancel** (Cancel is used to return to the previous task.)
2	Select **Shutdown** to turn off the unit.	The EchoPAC PC Turnkey workstation shuts down. Typical time to shut down may vary from less than 30 seconds up to more than one and a half minute, depending on PC model and software version.

4-2-3   Space Management (software version v4.x-v7.x and v108.x/v110.x)

Please refer to the User Manual.

4-2-4   Logging On as adm

4-2-5   Labelling Removable Media

Be sure to mark and label all removable media in a consistent way, to keep track of the removable media.

4-2-6   Recording important Settings and Parameters

4-2-6-1   Record Software Option Strings - Software v108.x and higher

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Press **Config** (**F2**) and log on as *adm*.
2.) From the **Admin** tab, select **SYSTEM ADMIN**.
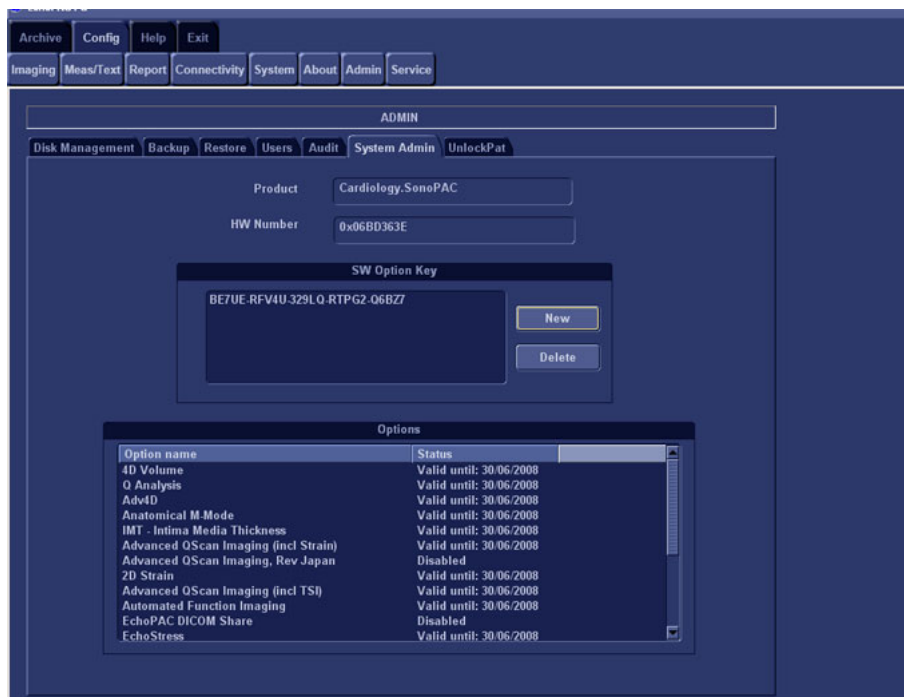
Figure 4-1   System Admin

3.) Record SW Options Keys from the SW Options Key window.

⚠ **WARNING** *Make sure that the SW Option Keys (passwords) have been recorded correctly. If the key is incorrect, you will not be able to log on after the software loading has been completed. The password is case sensitive. Hyphens must also be recorded. There may be more than one password.*

Table 4-4   Software Option Strings

SW OPTIONS STRINGS

4-2-7 Record TCP/IP Settings - Software v108.x and higher

1.) Select **CONNECTIVITY**.

2.) Select the **TCPIP** tab.

Figure 4-2   TCP/IP <u>Example</u> Settings

3.) Record the **Computer Name** and **AE Title** in Table 4-5 "Record BT'09 settings from TCP/IP screen" on page 4-6.

Table 4-5   Record BT'09 settings from TCP/IP screen

PARAMETER	VALUE
Computer Name	EchoPAC7-00 _ _ _ _
AE Title	EchoPAC7-00 _ _ _ _
IP Settings	
DHCP	ACTIVE: __
IP Address	_ _ _ . _ _ _ . _ _ _
Subnet mask	_ _ _ . _ _ _ . _ _ _
Default Gateway	_ _ _ . _ _ _ . _ _ _
Remote Archive Setup	
Remote Archive IP-Address	_ _ _ . _ _ _ . _ _ _
Remote Archive Name	

4-2-7   **Record TCP/IP Settings - Software v108.x and higher** (cont'd)

4.) If the unit has software version v5.0 (or higher), and DHCP is in use, recording of the rest of the TCP/IP settings can be skipped, since they are provided from the DHCP server each time the workstation is powered on.
See next page for instructions on how to verify if DHCP has been enabled.

Follow the steps below to verify if DHCP has been activated:

a.) From the **Tcpip** screen, select **Network Settings**.

Figure 4-3   TCP/IP screen showing network settings selection

b.) Select **Local Area Connection.**
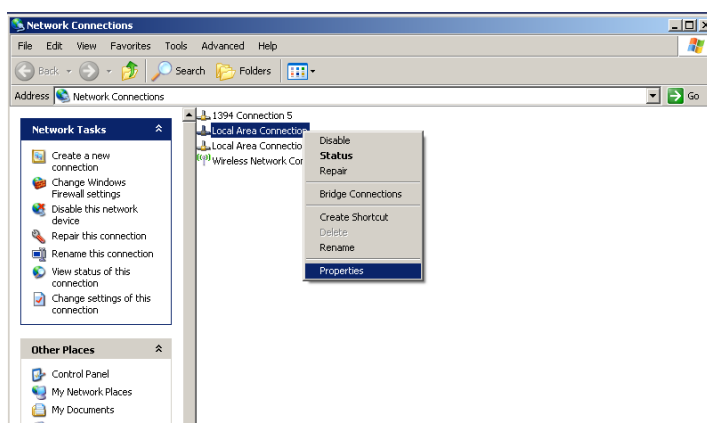
Figure 4-4   Network Connections window showing Properties selection

c.) Right click and select **Properties** to display the **Local Connection Properties.**

4-2-7   Record TCP/IP Settings - Software v108.x and higher (cont'd)

d.) Scroll down to **Internet Protocol (TCP/IP)**.
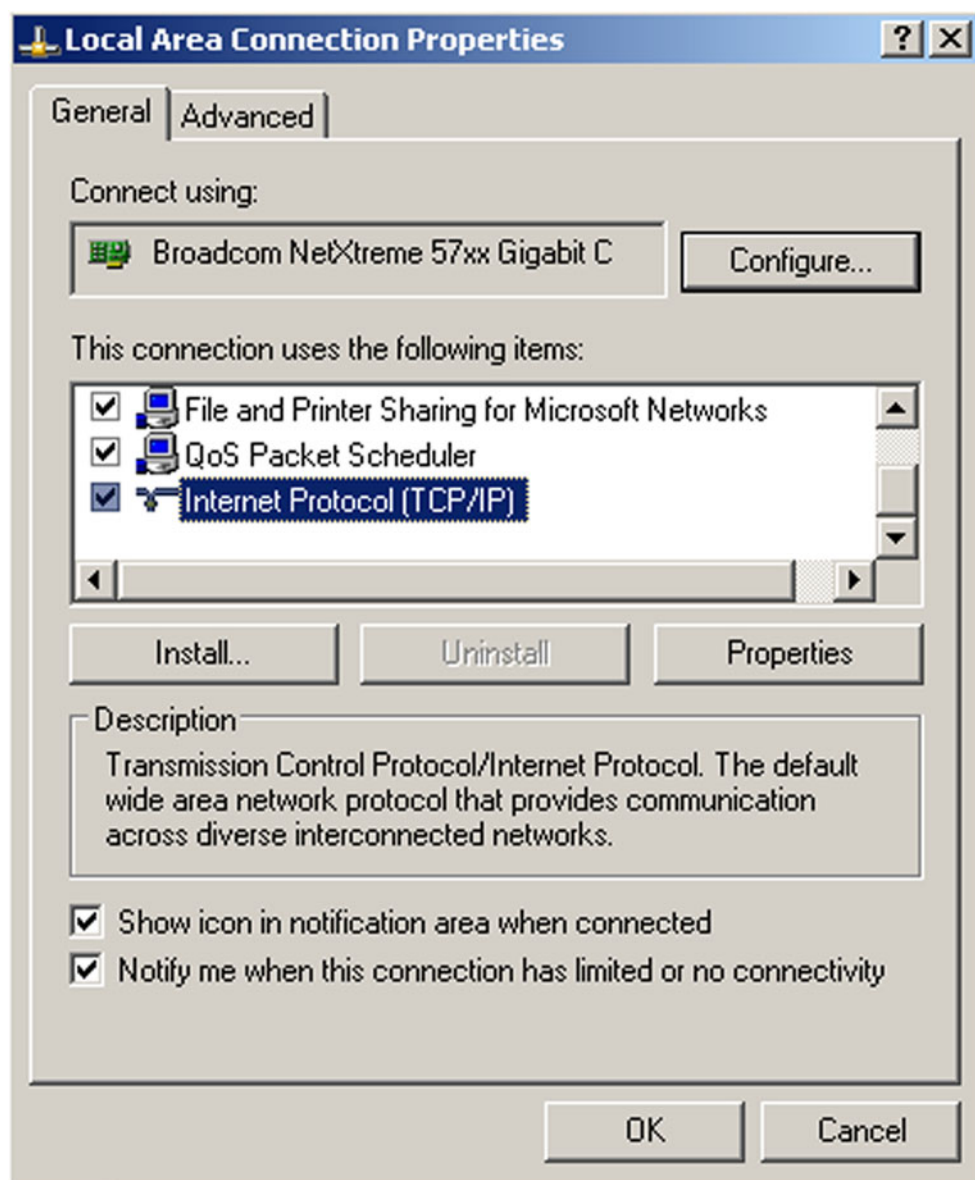
Figure 4-5   Dialog showing Internet Protocol menu position

e.) Select **Properties** shown in **Figure 4-6 "Internet Protocol (TCP/IP) Properties" on page 4-9.**

4-2-7 **Record TCP/IP Settings - Software v108.x and higher** (cont'd)

f.) Check if **Obtain an IP address automatically** has been selected which means that DHCP is enabled.
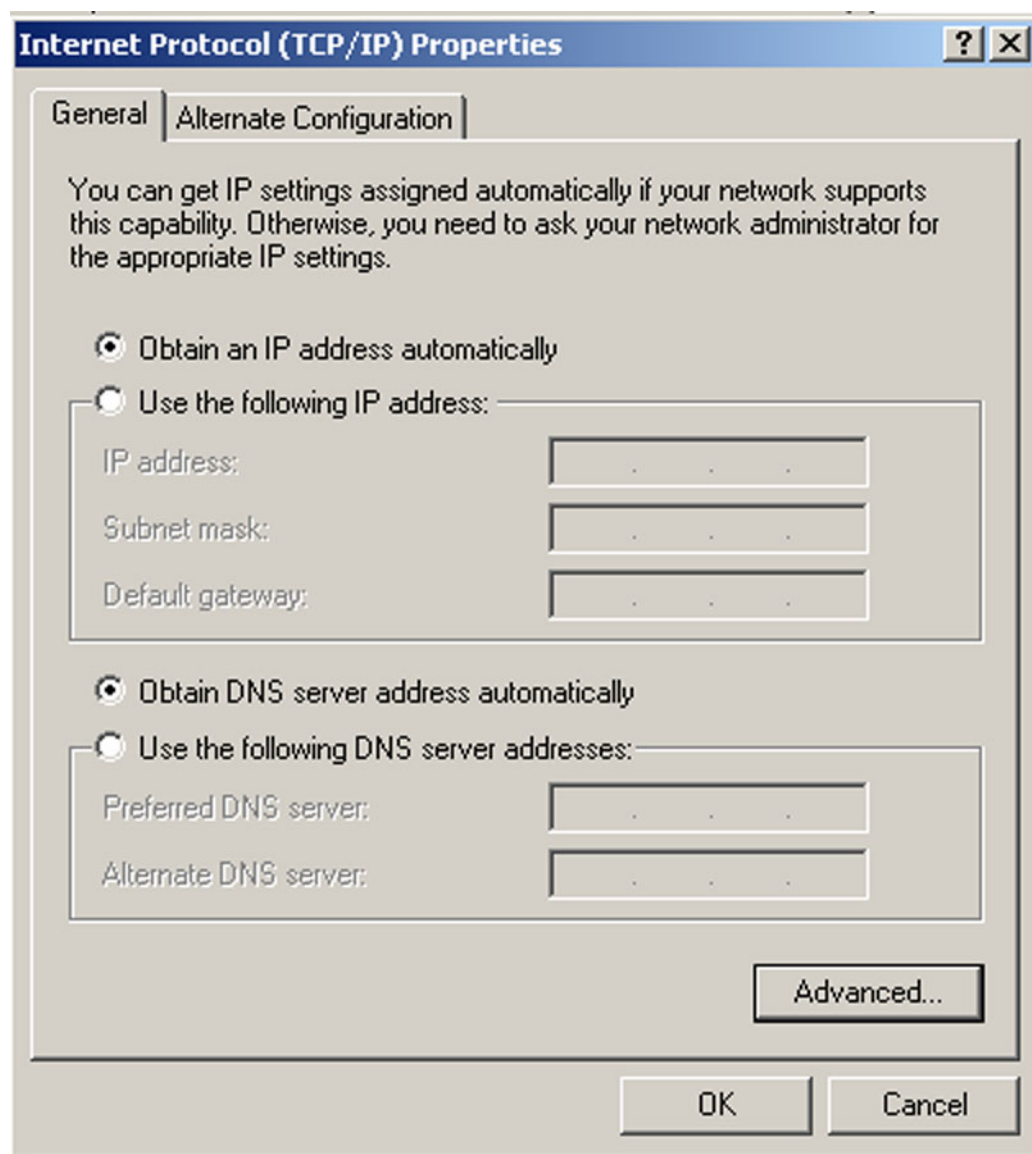
Figure 4-6   Internet Protocol (TCP/IP) Properties

g.) To double check this, select **Advanced** to display the **Advanced TCP/IP settings** shown in Figure 4-7 "Advanced TCP/IP settings Dialog showing DHCP enabled" on page 4-10. This displays that DHCP is enabled

4-2-7   Record TCP/IP Settings - Software v108.x and higher (cont'd)

Figure 4-7   Advanced TCP/IP settings Dialog showing DHCP enabled

h.) If **Obtain an IP address automatically** has been selected, you only need to record that it is active in Table 4-5 "Record BT'09 settings from TCP/IP screen" on page 4-6.
Next, continue with 4-2-8 "Record Default Dataflow - Software v108.x and higher" on page 4-11.

4-2-8   Record Default Dataflow - Software v108.x and higher

1.) In the **Connectivity** window, select **Dataflow**.

2.) Verify that **Default Dataflow** is selected.

3.) Record the **Default Dataflow** in Table 4-6 "Record Default Dataflow Name" on page 4-11.
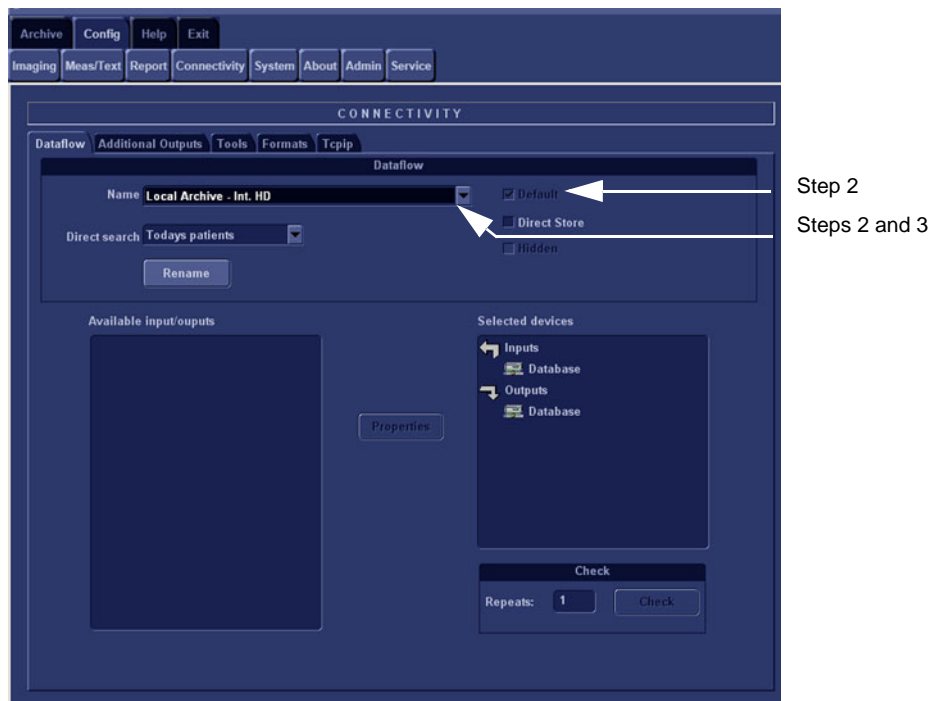
Figure 4-8   Connectivity dialog

Table 4-6   Record Default Dataflow Name

Default Dataflow Name

4-2-9   Record Standard Printer Settings - Software v108.x and higher

1.) In the **Connectivity** window, Select **Additional Outputs**.

2.) Select **Advanced on the Printer Setup area.**
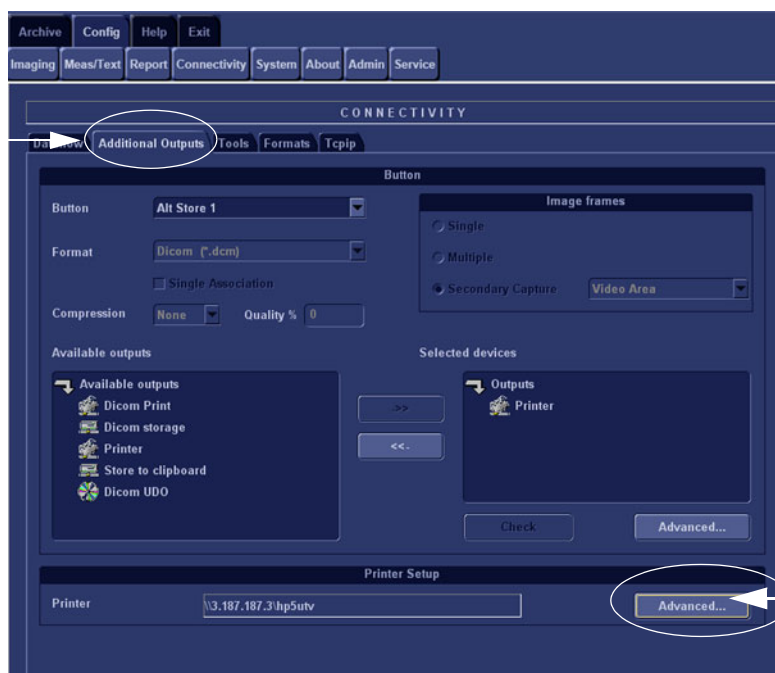
Figure 4-9   Advanced selection

3.) This Displays the **Printer Properties** Dialog from the Printer scroll down menu.
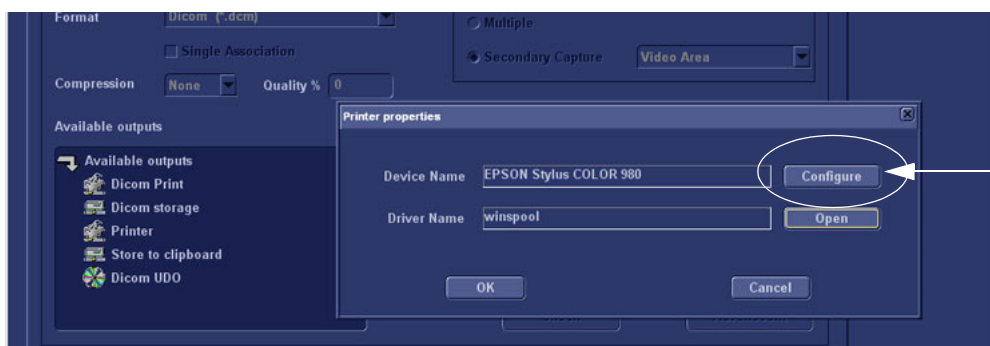
Figure 4-10   Printer Properties Dialog

4.) Select **Configure**

4-2-9   **Record Standard Printer Settings - Software v108.x and higher** (cont'd)

This opens the Print Setup dialog
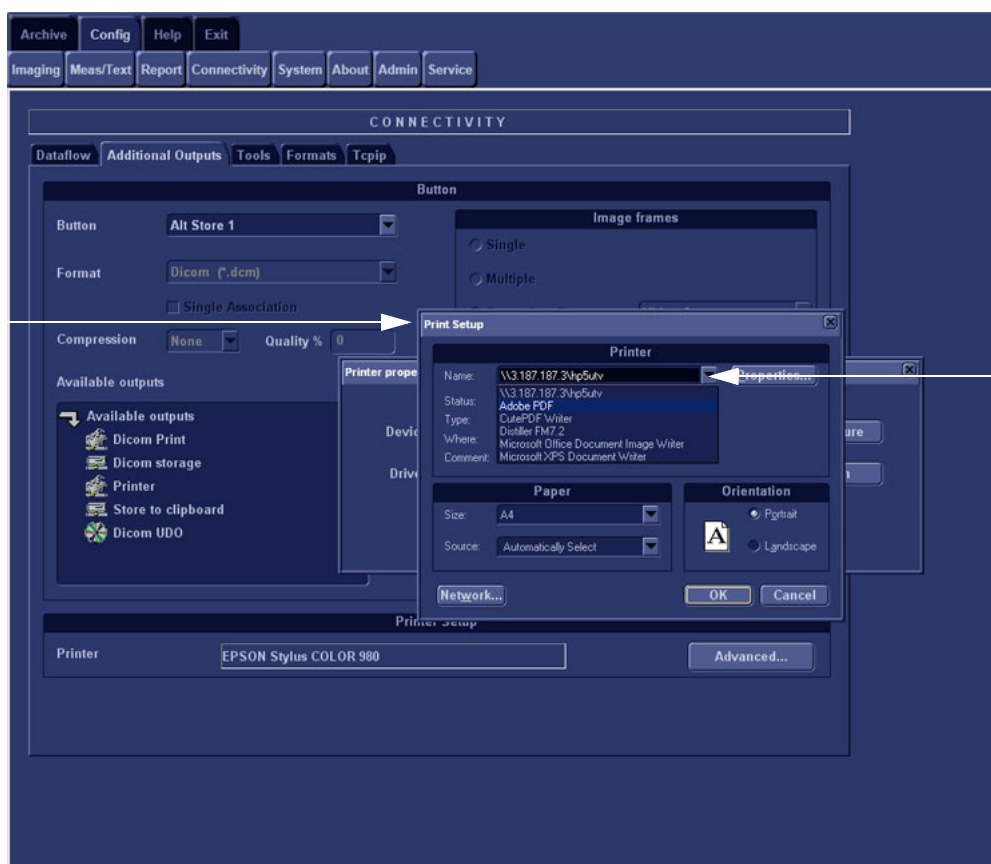
Figure 4-11   Printer Setup

5.) Record **correct Printer Name on the drop down menu.**

6.) Record correct Paper Size Paper Source and Orientation.

Table 4-7   Printer details

Printer Name or IP Address	Port Number

4-2-9   Record Standard Printer Settings - Software v108.x and higher (cont'd)
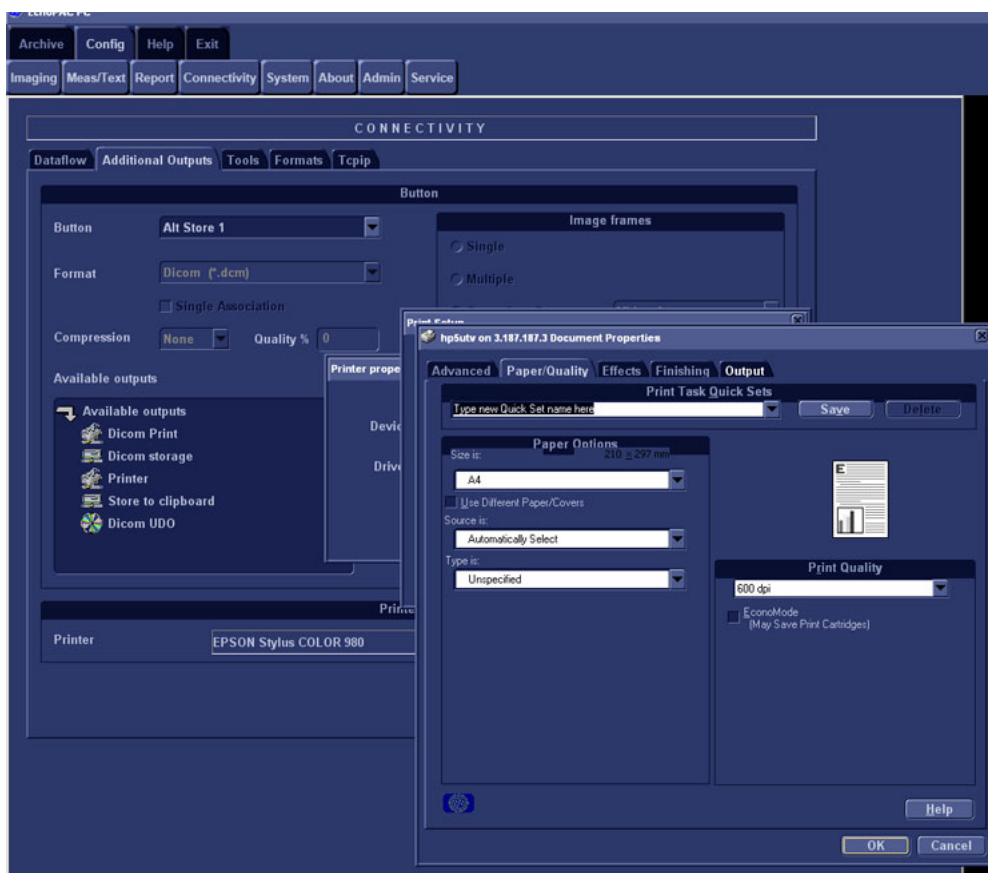
Figure 4-12   Document properties Dialog

7.) Close all windows with an **OK selection**.

4-2-10   Record Software Versions - Software v108.x and higher

1.) Select **About**.
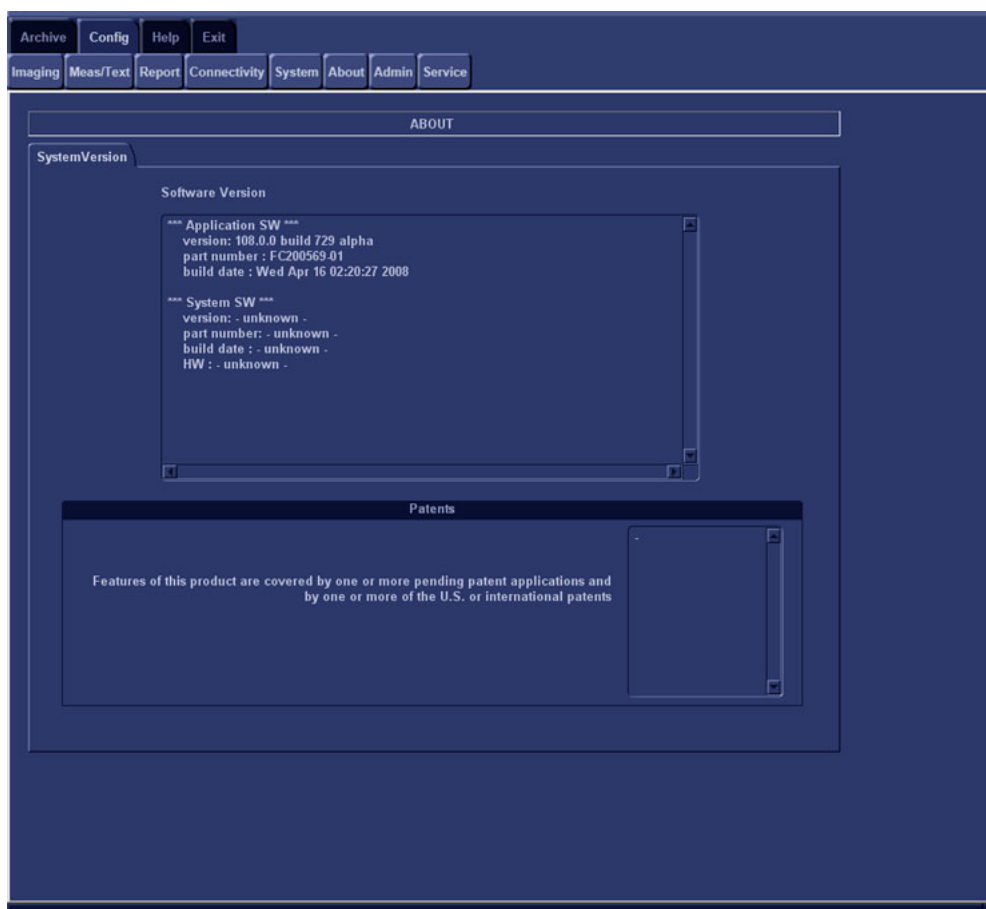
Figure 4-13   Information available on the About tab

2.) Record *Application Software* version in Table 4-8 "Record Software versions." on page 4-15.

3.) Record *System Software* version in Table 4-8 "Record Software versions." on page 4-15.

Table 4-8   Record Software versions.

DESCRIPTION	RECORD SOFTWARE VERSION
APPLICATION SOFTWARE VERSION	
SYSTEM SOFTWARE VERSION	

Section 4-3
Functional Check

4-3-1 UPS Checks

NOTE: *For workstations with software version V4.0.0 and above, the UPS is optional.*

- If no UPS is present, continue with .
- If the HP T750 UPS is used, please see: *HP T750 UPS Installation Manual*, Direction Number EP294824.
- If the COMPAQ T700 UPS is used, continue with the procedure below.

4-3-1-1 Introduction

Before anything can be checked you have to check that the power delivery capabilities are present. This is done on the UPS. The UPS delivers power to the EchoPAC PC Turnkey workstation and some of its units.

4-3-1-2 Precautions

⚠️ **WARNING** *To reduce the risk of electric shock from Earth (ground) conductor leakage current:*

- Do not operate an UPS that is disconnected from its power source.

- Disconnect any network protected devices from the UPS before disconnecting the UPS from utility power.

- Use the TEST/ALARM RESET button to test the batteries rather than unplugging the UPS. See for more information.

4-3-1-3   UPS Front Panel Controls

Figure 4-14   UPS front panel LED display and controls

The front panel includes the following LED indicators and button controls:

Table 4-9   UPS Functionality table

ITEM	DESCRIPTION	ACTIVITY
1	UTILITY LED	LIT = UPS ON UNLIT = UPS OFF
2	ON BATTERY/LOW BATTERY	BATTERY WORK STATUS
3	BAD BATTERY	BATTERY QUALITY STATUS
4	GENERAL ALARM/OVERLOAD INDICATOR	INDICATOR
5	TEST/ALARM RESET BUTTON	SELF-TEST/ALARM RESET CHOICE
6	ON/STANDBY BUTTON	OPERATE/STANDBY MODE CHOICE

4-3-1-4   Check the Modes of Operation

1.) Check Standby Mode by pressing ON/STANDBY button (6).

- No power is available at the UPS output receptacles.
- The UPS charges the batteries as necessary.
- Front panel LEDs (1-4) not illuminated.

2.) Check Operate Mode by pressing ON/STANDBY button.

- Power is available at the UPS output receptacles.
- The UPS charges the batteries as necessary.
- Utility LED illuminated solid green.

4-3-1-5   Initiate a Self Test

1.) Make sure that source Power is delivered to the UPS.
2.) Place the UPS in Standby mode.
3.) Press key number 5 to initiate a self-test.
4.) Press key number 5 to silence any audio alarm.

4-3-2   Power ON/OFF Checks

When it is necessary to check out Power ON and Power OFF on the PC, this is carried out as described in these procedures:

- For a description on how to power up the unit, see 4-2-1 "Power On/Boot Up" on page 4-2.
- For a description on how to power down the unit, see page 4-2-2 "Power OFF" on page 4-4.

4-3-3   Network Check

4-3-3-1   Introduction

This procedure describes how to check the network cable connections between the Workstation, the Switch, the Scanner and Printer.

4-3-3-2   Network Cable Check
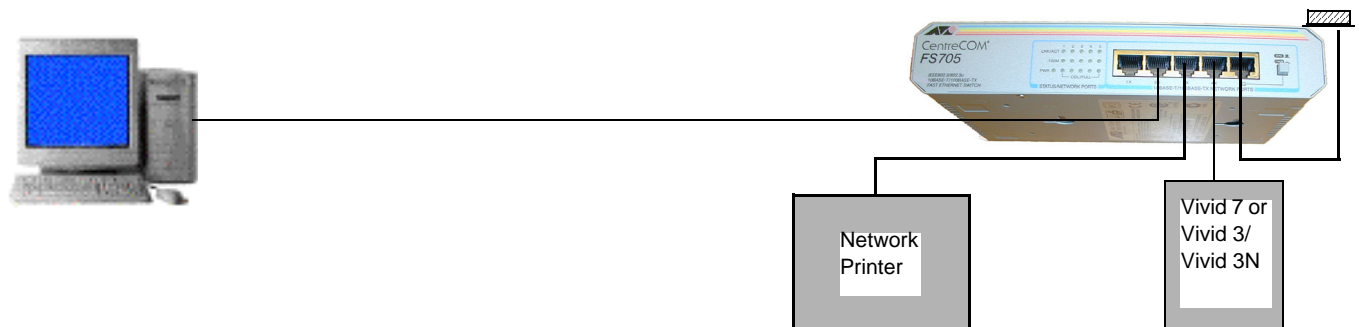
Figure 4-15   A typical EchoPAC PC Turnkey network.

1.) First of all check that LEDS as shown on the following illustrations are lit.

Check that these LEDS are lit.
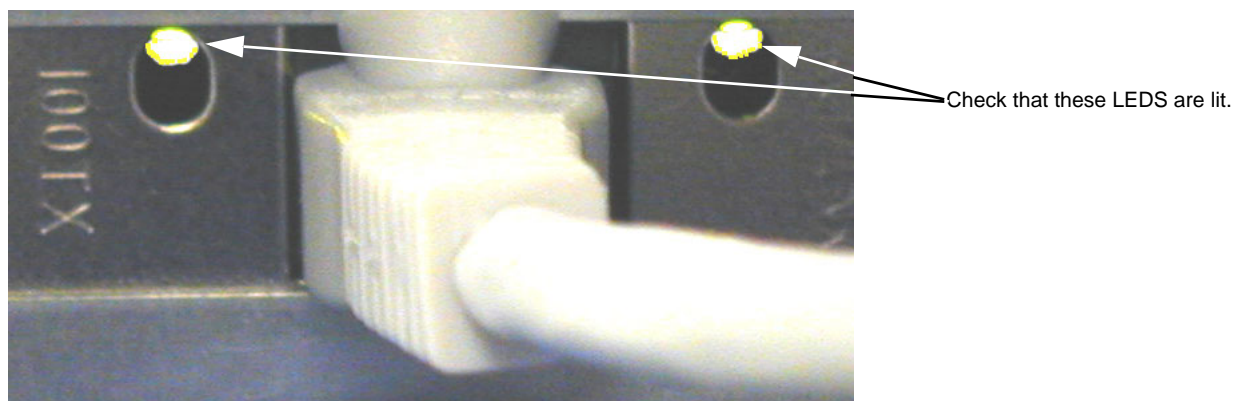
Figure 4-16   The Link LED and 100 TX Detector LED at the rear of the PC.

4-3-3 Network Check (cont'd)

Link/Active
LED Blink/
Constant

100 Megabit
Detector LED

Power LED

Check that these LEDS are Lit.
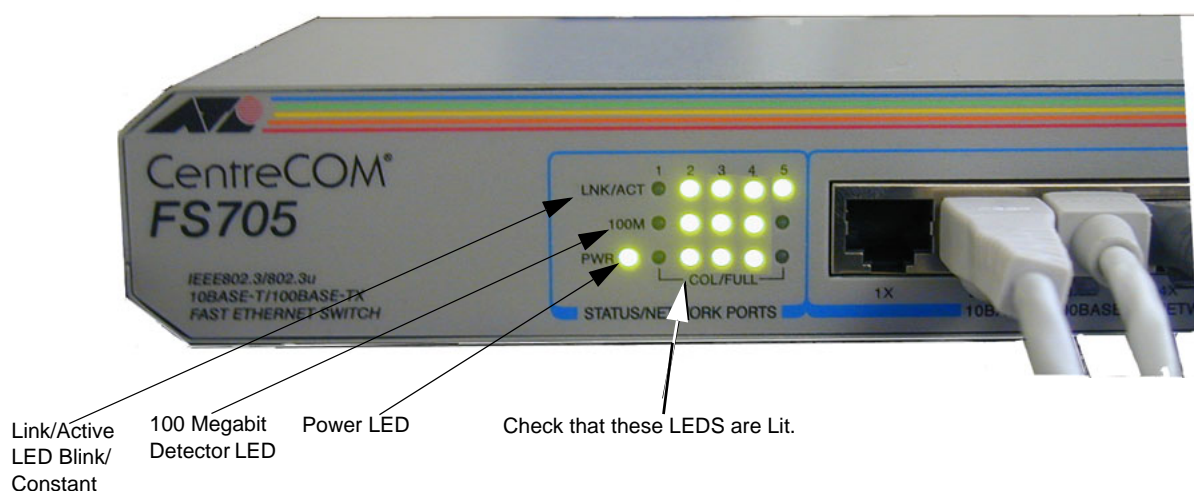
Figure 4-17   Communication LEDS on Ethernet switch

Check that these LEDS are
Lit.

Figure 4-18   Link LED and 100 Megabit Detector LEDs at the rear of the Networks Printer

NOTE: *The Scanners do not have these signal verifying LEDs so they cannot be checked in this manner. Check communications with the scanner as described on the following pages. The RED LED is on when initializing or there is an error detection.*

4-3-4 MO Drives Check

4-3-4-1 5.25" Magneto Optical Drive Check

⚠️ **NOTICE** **Never move the unit with a disk in the Magneto Optical Disk Drive because the drive actuator will not be locked and the Magneto Optical Disk Drive could break.**

BUSY LED

On/Off button

Do Not Use this **Eject Button**
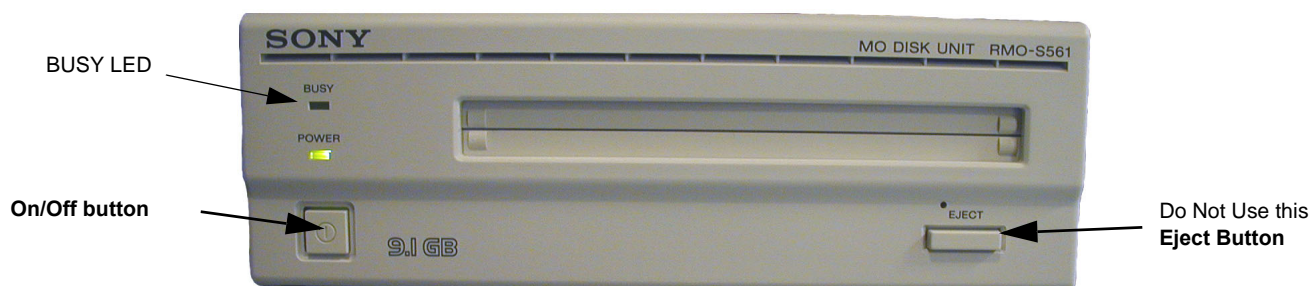
Figure 4-19   MO-Drive Front

Table 4-10   MO Disk Drive check list

Step	Task	Expected Result(s)
1.	Before installing an MO media in the Magneto Optical (MO) Disk Drive, check the MO disk for loose hardware or damaged labels which could jam inside the MO Disk Drive. Also ensure that the slide switch in one corner of the media is set so that the disk is write enabled (disk hole closed).	
2.	Insert the disk into the MO Disk Drive with the label facing up.	Check that there is activity in the Busy LED.
3.	Eject a disk from the MO Disk Drive. Ejection method: Press **Alt** + **E** on the alphanumeric keyboard.	The MO Disk is ejected.

⚠️ **WARNING** *Never eject an MO Disk when entering text in an EchoPAC PC Patient Report. This will Erase the Report. This Concerns EchoPAC PC Work Stations with Software v 3.x.x.*

4-3-5   3.5" MO-Drive Option Check

4-3-5-1   Preparations

- An available patient data File or scanned Images to store to Disk and retrieve.
- An empty formatted Disk.

4-3-5-2   Using 3.5" Magneto Optical Drive (Option)

Do Not Use this **Eject Button**.

On/Off button

BUSY LED
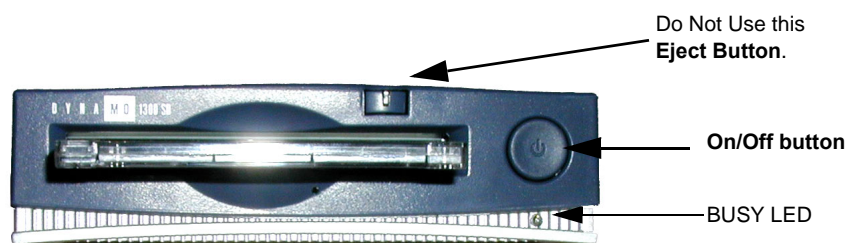
Figure 4-20   MO-Drive Front

Table 4-11   Using 3.5" MO Disk Drive

Step	Task	Expected Result(s)
1.	Before installing an MO media in the Magneto Optical (MO) Disk Drive, check the MO disk for loose hardware or damaged labels which could jam inside the MO Disk Drive. Also ensure that the slide switch in one corner of the media is set so that the disk is write enabled (disk hole closed).	
2.	Insert the disk into the MO Disk Drive with the label facing up.	Check that there is activity in the Busy LED.
3.	Eject a disk from the MO Disk Drive. Ejection method: Press **Alt** + **E** on the alphanumeric keyboard.	The MO Disk is ejected.

4-3-6   Formatting MO/ZIP/CD-R/DVD-R/Flash Card

Please refer to the appropriate EchoPAC PC User's Manual or User's Guide for formatting instructions.
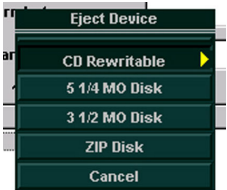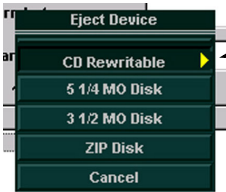
4-3-7   CD-R/DVD-R Check

4-3-7-1   Using CD-R/DVD-R

CD-R/DVD-R

DON'T USE THE EJECT BUTTON. THE CD/DVD WILL BE EJECTED BY THE APPLICATION SOFTWARE.

Figure 4-21   CD-R/DVD-R Drive

Table 4-12   Checking the CD-R/DVD-R

Step	Task	Expected Result(s)
1.	Press **Alt+E** keys on the alphanumeric keyboard to eject the disk tray for media input.	The Eject Device menu appears. This menu covers the Eject of all storage media from EchoPAC PC Turnkey and a possibility to Cancel.
2.	Select CD Re-writable.	The disk tray opens.
3.	Put a CD-R disk in the disk tray with the label side facing up.	
4.	Press the **Eject** button once.	• The disk tray closes. • The disk is available for reading/writing after a few seconds.

4-3-8   ZIP Option Check

4-3-8-1   Preparations

- An available patient data File or scanned Images to store to Disk and retrieve.
- An empty formatted Disk.

4-3-8-2   Using the ZIP Drive (Option)

Do Not Use this **Eject Button**.

Figure 4-22   ZIP Drive Option Front

Table 4-13   ZIP Drive function check

Step	Task	Expected Result(s)
1.	Before installing an ZIP media in the Drive, check the ZIP media for loose hardware or damaged labels which could jam inside the Drive. Also ensure that the slide switch in one corner of the media is set so that the disk is write enabled (disk hole closed).	
2.	Insert the disk into the ZIP Media with the label facing up.	See the media move
3.	To Eject a media from the ZIP Drive. Ejection method: Press **Alt** + **E** on the alphanumeric keyboard.	The media is ejected.

4-3-8-3   Formatting ZIP media

Please refer to the appropriate EchoPAC PC User's Manual or User's Guide for formatting instructions.

4-3-9   Network Printer (Option) Check

4-3-9-1   Prerequisite
- The network printer must be the default printer.
- A scanned image.

4-3-9-2   Test

1.) Make a Report with the scanned image.
2.) Select **Print**. The report should start printing.

4-3-10   Archiving and Loading Presets

For descriptions, see the user manual/user guide.

4-3-11   Alphanumeric Keyboard Shortcuts Check

Table 4-14   Overview of EchoPAC Shortcut checks

STEP	CHECK	EXPECTED RESULT
1	Press the Esc Key with "Save" and "Cancel" buttons in all dialogs/ windows.	Same as "Cancel".
2	Press the Esc Key in all menus.	Same as Exit, i.e. get out of the menu.
3	Pressing the Esc Key in general.	Same as "EXIT" button on Idunn front panel.
4	Press the Esc Key when in Img. Analysis screen.	Go to Image Browser screen.
5	Press the Esc Key when in Patient screen (patient info or exam-list).	Go to Patient Browser screen.
6	Press the Esc Key when in Protocol screen.	EXIT and go to Patient screen.
7	Press the Esc Key when in Config screen.	Go to Patient screen (implicit save of what you have done).
8	Press the Esc Key when in HELP.	Go back to where you came from.
9	Press the F1 & F2 Function Keys in Image Analysis screen.	Select previous/next image (has meaning only if more than one image displayed).
'10	Press the F3 & F4 Function Keys in Image Analysis screen, 2D cine loop selected, loop running.	Adjust replay speed, slower(F3) faster(F4).
11	Press the F3 & F4 Function Keys in Image Analysis screen, 2D cine loop selected, loop stopped.	Step frame by frame, previous frame(F3) – next frame(F4).
12	Press the F3 & F4 Function Keys in Image Analysis screen, Doppler spectrum selected.	Baseline shift.
13	Press the F5 & F6 Function Keys in Image Analysis screen, Doppler spectrum selected.	Change horizontal sweep, reduce(F5) – increase(F6).
14	Press the F5 & F6 Function Keys in Image Analysis screen, M-Mode selected.	> Change horizontal sweep, reduce(F5) – increase(F6).
15	Press the F7 & F8 Function Keys in Image Analysis screen, M-Mode selected.	Zoom, decrease(F7) – increase(F8).
16	Press the F7 & F8 Function Keys in Image Analysis screen, 2D selected.	Zoom, decrease(F7) – increase(F8).
17	Press the F9 & F10 Function Keys in Image Analysis screen.	Adjust COMPRESS for active mode, reduce(F9) – increase(F10).
18	Press the F11 & F12 Function Keys in Image Analysis screen.	Adjust REJECT for active mode, reduce(F11) – increase(F12).
19	Press the Alt – A Keys in Image Analysis screen.	Same as "TEXT", brings up the Annotation menu.
20	Press the Alt – P Keys.	Print. To a PC printer, active window.
21	Press the Alt – E Keys.	Eject Disk.
22	Press the Alt – S Keys	Enter DICOM spooler screen.
23	Press the CTRL-ALT-DEL Keys in computer halt situation.	RESTART Computer.

4-3-12   Mode Function Checks

If the need arise to do such checks, please refer to the EchoPAC PC User Manual.

For available manuals, see:

Section 4-4
Application Turnover Check List

Complete these checks before returning the workstation to customer for use:

4-4-1   Software Configuration Checks

Table 4-15   Software Configuration Checks

STEP	TASK	CHECK (✔)
1	Check Date and Time setting.	
2	Check that Location (Hospital Name & Department) is correct.	
3	Check that correct Units are chosen.	
4	Check Language settings.	
6	Check Manual Language settings.	
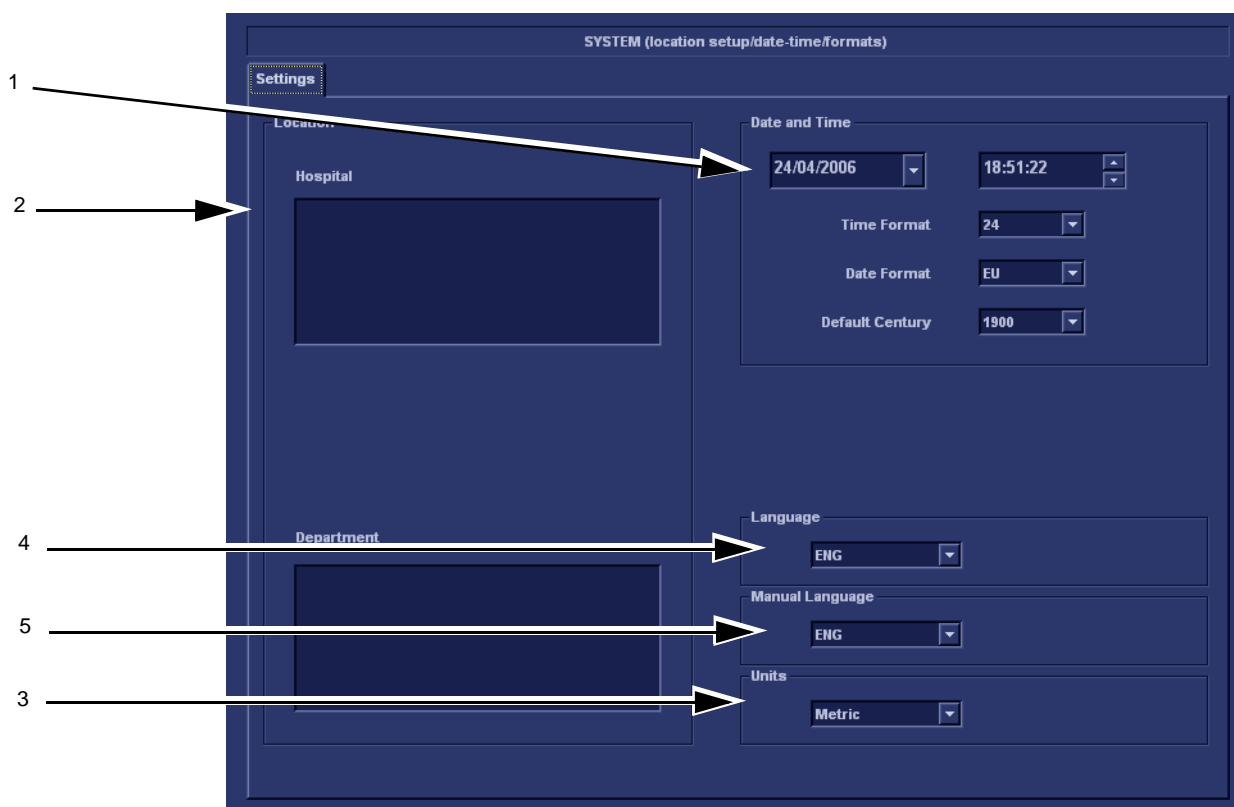
Figure 4-23   Check Date, Time and Location (Hospital Name), Language, Units

Section 4-5
Diagnostics

To start the Service Diagnostics, see: Section 7-6 "Common Service Diagnostics Interface (Ultrasound Interface)" on page 7-7.

4-5-1   Service Software Menu

Please refer to: 7-7-2 "Diagnostics" on page 7-20.

4-5-2   Diagnostics Test Menu

Please refer to: 7-8-2 "PC Diagnostics (Non-Interactive Tests)" on page 7-24.

4-5-3   Utilities Menu

Please refer to: 7-8-4 "Utilities" on page 7-35.

Section 4-6
Power Supply

4-6-1   Power Supply Test Procedure

There is no need to do any special tests on the Power Supply.

4-6-2   Power Supply Adjustment

4-6-2-1   Input Voltage

The correct AC mains voltage should have been selected during installation, see "Installing AC Power Cable to the Rear of the PC" on page 3-30.

To test the Uninterruptible Power Supply (UPS), if installed, see 4-3-1 "UPS Checks" on page 4-16.

4-6-2-2   Output Voltage

There are no adjustments for the output voltage from the power supply.

Section 4-7
Site Log

Table 4-16   Site Log   sheet 1 of 2

DATE	SERVICE PERSON	PROBLEM	COMMENTS

Table 4-16   Site Log (cont'd) sheet 2 of 2

DATE	SERVICE PERSON	PROBLEM	COMMENTS

Chapter 5
Components and Functions (Theory)

Section 5-1
Overview

5-1-1   Purpose of Chapter 5

This chapter explains EchoPAC PC Turnkey Turnkey's system concepts, component arrangement, and subsystem function.

Table 5-1   Contents in Chapter 5

Section 5-2
General Information (Major Components)

5-2-1   Introduction

The EchoPAC PC Turnkey workstation is a stand-alone workstation (personal computer) with a dedicated software application called EchoPAC PC. The EchoPAC PC software is used for analyzing ultrasound examinations and measurements from an ultrasound scanner.

The EchoPAC PC Turnkey workstation has a network port for connecting via Ethernet, so ultrasound scanners can store examination data to the EchoPAC PC Turnkey workstation, and it can export data via the network to printers and to external servers for data storage.

Internal and optional external storage devices are available for locally storage of scan data and measurements.

5-2-2   List of Major Components

- Workstation (Personal Computer). See page 5-3 for details.
- Monitors (CRT / LCD). See page 5-8 for details.
- Alphanumeric Keyboard. See page 5-11 for details.
- Mouse. See page 5-11 for details.
- Uninterruptible Power Supply (UPS) (Option since 2004). See page 5-23 for details.
- 5.25" MO-Drive. See page 5-13 for details.
- 3.5" MO-Drive (Option). See page 5-13 for details.
- USB Flash Card (Requires software v4.0 or higher) See page 5-18 for details.
- Zip drive (Option). See page 5-18 for details.
- Network Printer (Option). See page 5-21 for details.
- Modem (Option). See page 5-22 for details.
- Ethernet switch. See page 5-27 for details.

Section 5-3
EchoPAC PC Turnkey description

5-3-1   General Description

Dedicated workstations (PCs), configured for the EchoPAC PC Turnkey requirements, are used to run the EchoPAC PC Turnkey application.

The workstation is controlled via an extended keyboard and a mouse.

It receives the patient data from an ultrasound scanner, either via a network connection from the scanner or from a database, or from optional storage media like MO disks, ZIP disks, CD / DVD discs or USB Flash Cards.

NOTE: Not all storage media / storage units are available for all workstation models.

One, or optional two monitors, are used to view the examinations.

The results can be printed as a report to an optional network printer or it can be stored via the network to a database or to MO Disk(s) or other supported storage media.

5-3-2 Workstation Models Used for EchoPAC PC Turnkey

Five different workstation models have been used for EchoPAC PC Turnkey

- HP Z200 (phased into production line in 2011).
- HP xw4600 (phased into production line in 2008).
- HP xw4400 (phased into production in 2007)
- HP xw4300 (phased into production in 2006)
- HP xw4200 (phased into production in early 2005)
- HP xw4100 (introduced in 2003)
- COMPAQ EVO W4000 (two versions of this model have been used, 1.8 GHz and 2.35 GHz)
- COMPAQ DeskPro Workstation 300.

| HP Z200 | HP xw4600 / HP xw4400 | HP xw4300/ xw4200/xw4100 | COMPAQ EVO W4000 | COMPAQ DeskPro Workstation 300 |
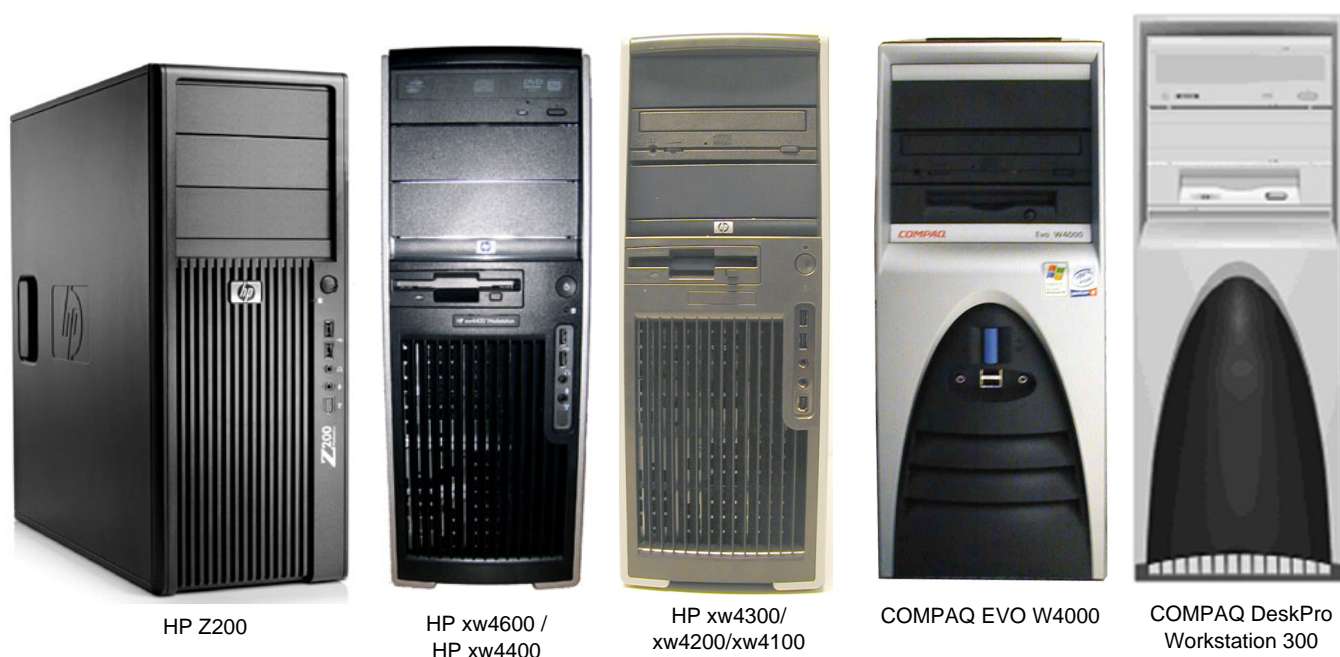
Figure 5-1   Workstation models used for EchoPAC PC Turnkey

5-3-2-1   General Technical Specifications for the Workstations

- Main Processor - Pentium IV 1.4 GHz or greater

- 512 MB RAM or greater

- Hard Disk Capacity: 36.4 GBytes or greater

- Internal Archive space: 23 GBytes or greater

- CD R/W – 12x or greater

- HP xw4200 and later: CD-RW/DVD Combo Drive

NOTE: *CD/DVD read/write (many) recording is not supported by the EchoPAC PC software, but write once is supported.*

5-3-3   Software Requirements

For information about the software, please refer to: .

5-3-4   EchoPAC PC Turnkey Interconnections

This is an overview of the EchoPAC PC Turnkey interconnections.
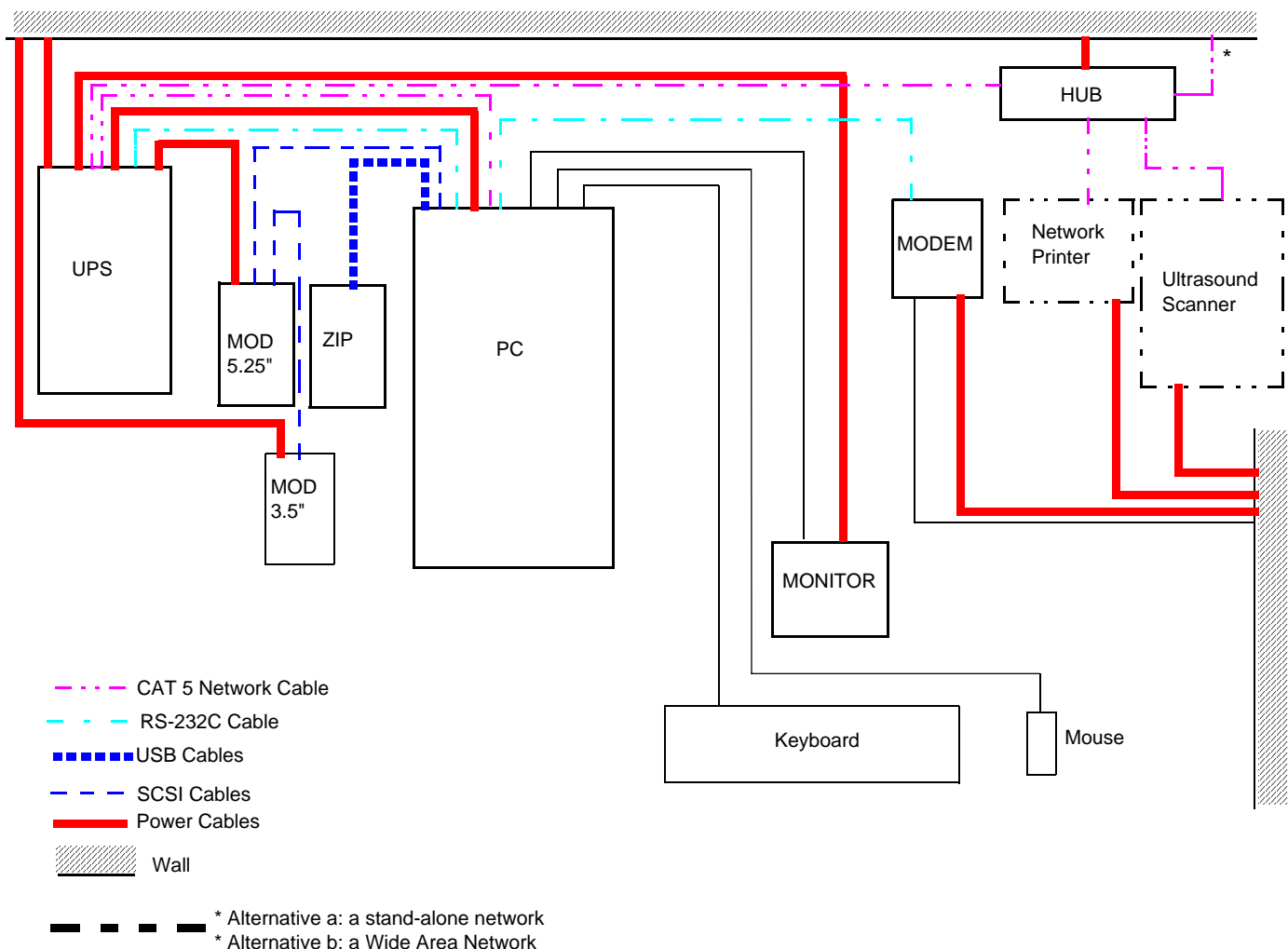
Figure 5-2   Workstation Power and Signal Cable Overview

Section 5-4
Video Specifications

- Video Resolution: 1024 × 768
- Analog RGB or DVI Digital (optional)

Section 5-5
Monitors for use with EchoPAC PC Turnkey workstations

5-5-1   Overview

Several monitor models have been delivered:

- The 22" LCD monitor was introduced January 2009.

- The 21" LCD monitor was introduced for BT'06, in 2006. Two monitors available as option.
- 19" CRT monitor was used from the introduction of the product 2001 to 2006.
- 17" LCD monitor was introduced in 2003. Two monitors available as option since 2005.
- 15" LCD monitor was used as an option from the introduction of the product in 2001 to 2003.

5-5-2   Theoretical Description - Monitors

The Monitors receive stable rated power from the UPS and display a video signal from the PC.
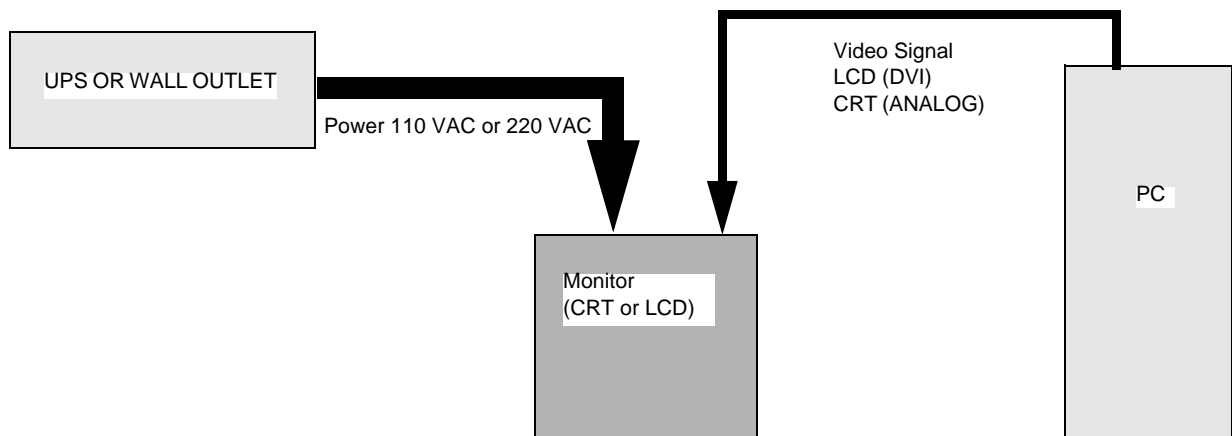
Figure 5-3   Monitors Power and Signal cabling information.

5-5-3   Cathode Ray Tube (CRT) Monitor

5-5-3-1   Technical Specifications

HP 9500

- Manufacturer & Model Name: HP9010 A S9500
- 19" screen, 1600×1200 maximum resolution
- Aperture Grille pitch: 0.26 mm
- Refresh Rate: 50 to 160 Hz
- Visual Area 18" diagonal
- Size (H×W×D): 47.0 × 45.5 × 47.5 cm (18.5 × 17.9 × 18.7 in)
- Weight: 20.0 kg (44.0 lbs)

SONY, CPD-6420

- Manufacturer & Model Name: SONY, CPD-6420
- 19" screen, 1600×1200 maximum resolution
- Aperture Grille pitch 0.24-0.25 mm
- Refresh Rate: 48 to 170 Hz
- Visual Area 365 (H) × 274 (V) mm
- Size (W×H×D): 45.1 × 47.1 × 46.1 cm (17.7 × 18.5 × 18.1 in)
- Weight: 57.3 lbs/ 25.5 kg

5-5-4   Liquid Crystal Display (LCD) Monitors

5-5-4-1   Technical Specifications, LCD Monitors

EIZO FlexScan S2231WSE

- Manufacturer & Model Name: Eizo: FlexScan S2231WSE
- 22" screen, 0.282 mm pixel pitch
- 16,7 million colors
- Viewing Angle: Horizontal: 178°, Vertical: 178° (at contrast ratio 10:1)
- Active Display Size: 473.8 mm (W) × 296.1 mm (H)
- Size (W×H×D): 50.7 × 33.3 × 9.0 cm
- Weight: 8.4 kg
- Warranty information:
    - Eizo provides 5 years Global limited warranty for the Eizo FlexScan S2231WSE. Detailed warranty terms can be found on: http://www.eizo.com/support/warranty/index.asp
    - Local Eizo distributors/affiliates
      Local distributors or affiliates can be identified from this link:
      http://www.eizo.com/contact/index.asp

EIZO FlexScan L568ASK

- Manufacturer & Model Name: EIZO, FlexScan L568ASK
- 17" screen, 0.264 × 0264 mm pixel pitch
- 16,7 million colors
- Viewing Angle: Horizontal: 178°, Vertical: 178° (at contrast ratio 10:1)
- Active Display Size: 338 mm (W) × 270 mm (H)
- Size (W×H×D): 36.2 × 28,0 - 40,6 × 20.0 cm
- Weight: 5.6 kg

SAMSUNG, SYNCMASTER 172T

- Manufacturer & Model Name: SAMSUNG, SYNCMASTER 172T
- 17" screen, TFT/LCD, 0.264 × 0.264 mm pixel pitch
- 16,2 million colors
- Viewing Angle: Horizontal: 170°, Vertical: 170°
- Active Display Size: 17"
- Size (Set with stand) (W×H×D): 385mm × 395.3mm × 216mm
- Weight: 4.7 kg

SAMSUNG, SYNCMASTER 720T

- Manufacturer & Model Name: SAMSUNG, SYNCMASTER 720T
- 17" LCD, 1280 × 1024

5-5-4-1   **Technical Specifications, LCD Monitors** (cont'd)

EIZO, FLEXSCAN L371

- Manufacturer & Model Name: EIZO, FlexScan L371
- 15" screen, 0.297× 0297 mm pixel pitch
- 16,7 million colors
- Viewing Angle: Horizontal: 140°, Vertical: 120°
- Active Display Size 304 mm (W) × 228 mm (H)
- Size (W×H×D): 15.6" × 15.6" × 7.8" / 39. 7 × 39.7 × 19.3 cm
- Weight: 12.8 lbs/ 5.7 kg

EIZO, FLEXSCAN L365

- Manufacturer & Model Name: EIZO, FlexScan L365
- 15" screen, 0.297 × 0297 mm pixel pitch
- 16 million colors
- Viewing Angle: H: 160°, V: 150° (at contrast ratio 1:5)
- Display Area 304mm (H) × 228 mm (V) (11.9" (H) × 8.9" (V)) (Viewable image size: 380 mm (14.9")
- Dimensions: 340 mm (W) × 369 mm (H) × 157 mm (D) (13.4"(W) × 14.5"(H) × 6.2"(D))
- Dimensions (without stand): 340 mm (W) × 301 mm (H) × 48 mm (D) (13.4"(W) × 11.6"(H) × 1.9"(D))
- Weight 4.1 kg (9.0 lbs.)

Section 5-6
Alphanumeric Keyboard & Mouse

5-6-1   Theoretical Description

With the keyboard and Mouse Controls, Functions and text are entered and sent to the PC. There they are interpreted and translated into Digital or analog signal and presented on the Monitor.
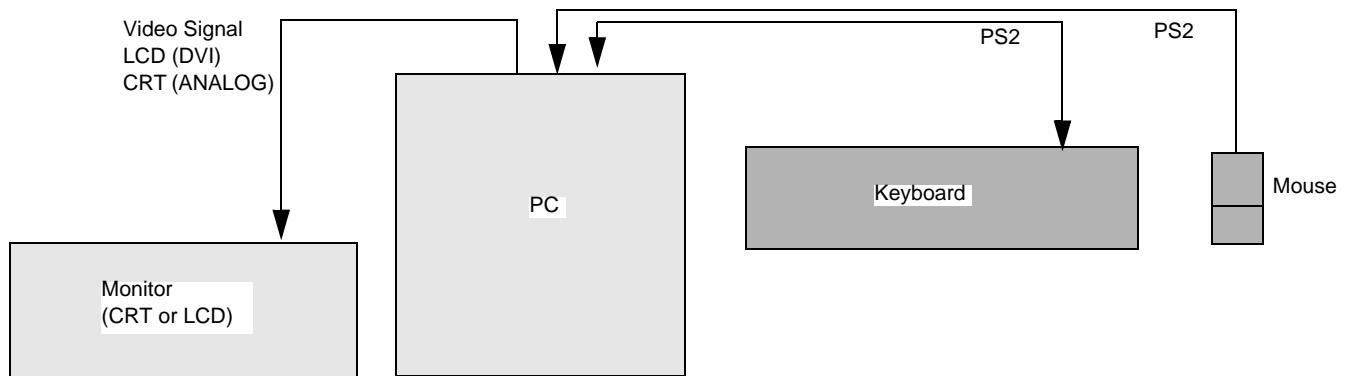
Figure 5-4   Keyboard & Mouse Signal cabling information

5-6-2   Alphanumeric Keyboard

Several language versions are available, see .

5-6-3   Mouse

A standard PS2 compatible mouse is used.

Section 5-7
Peripherals

5-7-1 Overview

The following peripherals are covered by this section:

5-7-2   Magneto Optical Drives (MO Drive)

Both internal and external 5.25" MO drives and external 3.5" MO drives have been delivered with EchoPAC PC Turnkey .

NOTE: *If replacing a workstation with SCSI interface and 5.25 MO drive, you can move the parts over to the new workstation for continued use of the MO.*

5-7-2-1   5.25" MO drives - internal

- The internal 5.25" MO drive has been delivered with HP xw4300 and HP xw4200.

  In the cases where any of these workstations have been replaced, the internal MO drive (and the SCSI interface board) may have been moved over to the new workstation, so the internal 5.25" MO drive may also be found in some HP xw4400, HP xw4600 and HP Z200 workstations.

- Power supply: The internal 5.25" MO drive get power from the workstation's (internal) power supply.
- Supported 5.25" media:
    - 5,2 GBytes (2,048 bytes/sector)
    - 9.1 GBytes (software dependant)
    - 8,6 GBytes
    - 2,3 GBytes

5-7-2-2   5.25" MO drives - external

NOTE: The external 5.25" MO was available as an option on BT'08 and BT'09, but is now discontinued.

- The external 5.25" MO drive is connected to the workstation via a SCSI interface.
- The external 5.25" MO drive has been delivered with COMPAQ DW300, COMPAQ W4000, HP xw4100 and HP xw4400 workstations. It was delivered as an option for BT'08 and BT'09 deliveries.

  In the cases where a workstation with a SCSI interface and 5.25" MO has been replaced, the external MO drive (and the SCSI interface) may have been moved over to the new workstation, so the external 5.25" MO drive may also be in use with some of the other workstations, like the HP xw4600 and the HP Z200.

- Size - External MO-Drive: (W x H x D): 8.3" x 2.7" x 11.5" / 21.1 x 7.0 x 29.3 cm
- Weight - External MO-Drive: 10.9 lbs/ 4.9 kg
- Power supply: The external 5.25" MO drive receives power from the wall outlet or via the UPS, if present.
- Supported 5.25" media:
    - 5,2 GBytes (2,048 bytes/sector)
    - 9.1 GBytes (software dependant)
    - 8,6 GBytes
    - 2,3 GBytes

5-7-2-3   3.5" MO drives - external on the USB bus

- The 3.5" MO drive with USB interface was delivered as an option for HP xw4300 and HP xw4200 workstations. The sale was discontinued for BT'08 and later.
  - FUJITSU 2300U2 was introduced late 2005
  - FUJITSU 1300U2 was introduced late 2004
- For installation and configuration instructions, please refer to the *FUJITSU DynaMO 1300 and 2300 Drives for EPC and Mac - Installation Manual*, Part Number FC194209.

5-7-2-4   3.5" MO drives - external on the SCSI bus

- The 3.5" MO drive with SCSI interface was delivered with the COMPAQ W300, COMPAQ W4000 and HP xw4100 workstations.
- The following models have been delivered:
  - FUJITSU 1300SF
  - FUJITSU 1300SD
- For installation and configuration instructions, please refer to the: *Fujitsu DynaMO 1300 and 2300 Drives - Installation Manual*, Direction Number FC194209.
- Power supply: The 3.5" MO drive with SCSI interface, get its power from an AC power adapter. It is either connected direct to the SCSI adapter on the workstation, or if a 5.25" MO drive is present, it is connected to the extra SCSI connector on the 5.25" MO drive.

5-7-2-5   Signal flow
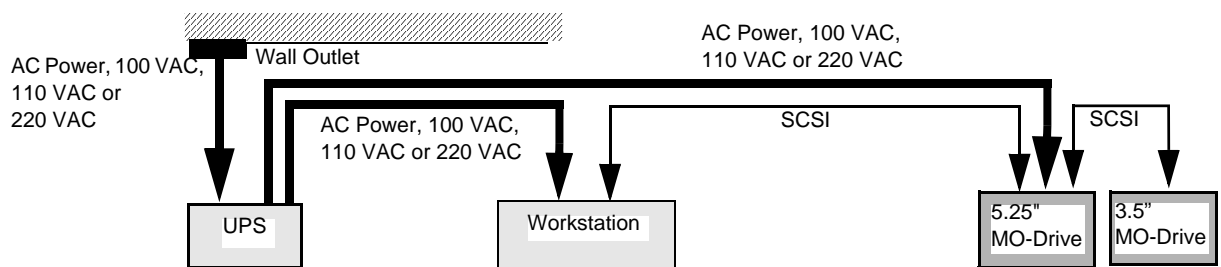
Figure 5-5   Magneto Optical Drives Power and Signal cabling information

5-7-2-6   **The SCSI IDs**

To be able to address the correct device, SCSI IDs are used.

A SCSI ID is an address number (0 through 7) assigned to a SCSI device. In a SCSI chain, each device must have an individual ID number.

Normal Assignment

- SCSI ID 0 to the computer's internal boot hard disk (if it is a SCSI hard disk.)
- SCSI ID 7 to the SCSI host adapter itself.
  To confirm the SCSI ID of the adapter, please read the user's guide of your SCSI host adapter.

Vendor Defaults

- 5.52" MO Drive SCSI ID: 4
  The ID may have been changed to 1, either before shipping, or at installation time at the customer.
- 3.5" MO Drive SCSI ID: 2

In case you have already assigned a used ID to another SCSI device, you have to change the SCSI ID of the MO so each ID is unik.

5-7-2-7   **Connecting Other SCSI devices with the MO Drives**

You can connect several SCSI devices to one SCSI host adapter. This is called a "SCSI chain". You can connect up to five other SCSI devices with the MO in a single SCSI chain. When connecting SCSI devices, the last device in the SCSI chain should be a device with the fastest data transfer rate, also the last device in the SCSI chain should be terminated.

For any SCSI chain, the total length of all the SCSI cables should not exceed 6 meters (19.6 feet). We strongly recommend that each SCSI cable in the chain does not exceed 1 meter (3.3 feet).

5-7-2-8   5.25" MO Drive DIP switch settings
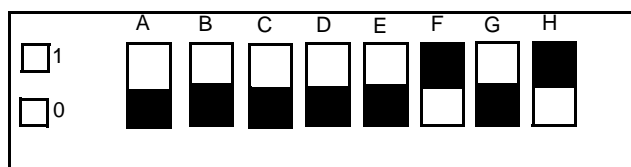
Figure 5-6   Dip Switches on 5.25" MO Drive

Table 5-2   DIP switch settings

DIP SWITCH	MODE	1	0
A	Parity Check	SCSI Parity Check is disabled	SCSI Parity Check is enabled
B	Device Type	Peripheral device type 00H (Direct Access Device)	Peripheral device type 07H (Optical Memory Device)
C	Write Cache control	Disable Write Cache	Enable Write Cache
D	Ultra SCSI control	Ultra SCSI compatible	Not Ultra SCSI compatible
E	Force Verify	All write Operations are verified.(with a verify pass)	All operations are normal operations (without a verify pass
F	Terminator	The automatic terminator is on	The automatic terminator is off
G	Auto spin-up	Disk input does not cause the spindle motor to rotate	Disk input causes the spindle motor to rotate.
H	Manual eject	Inserted Disk is not ejected when the Eject button is pressed	Inserted disk is ejected when the Eject button is pressed

NOTE: When another SCSI device is connected to the MO Drive, change DIP F from 1 to 0, since the termination always should be on the last connected device.
For more information about correct termination of SCSI chain units, please refer to: EchoPAC PC MO Installation Manual, (label on cover: "Fujitsu DynaMO 1300 SF Drive Installation Manual"), Direction # FC194209.

5-7-2-9   3,5" MO Drive Setting

NOTE: *This description is valid for FUJITSU, DynaMO 1300SD, shipped before July 2002, ONLY.*
For information about the DynaMO 1300SF MO drive, shipped after July 2002, see the
EchoPAC PC MO Installation Manual, (label on cover: "Fujitsu DynaMO 1300 SF Drive
Installation Manual"), Direction # FC194209.

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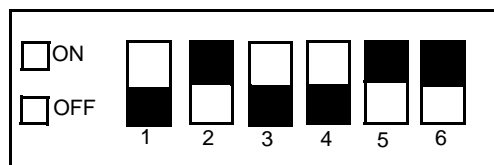
Figure 5-7   Dip Switch 3,5 MO Drive

Table 5-3   Table of Dip Switch settings

Switch	Mode	ON	OFF
1	Device type Mode	Hard Disk Drive Mode	MO-Drive Mode
2	Automatic spindle stop mode	Automatic Spindle Stop Enabled to save power	Automatic Spindle Stop disabled to rotate continuously until power shutdown
3	Macintosh or EchoPAC PC Mode	Macintosh Mode	EchoPAC PC Mode
4	SCAM Mode	Mode enabled	Mode disabled
5	Write Cache Mode	Mode enabled	Mode disabled
6	Terminator Mode ON OFF	Terminate ON when only MOD or last MOD in Chain	Terminate OFF when not only or last MOD in chain

- Device type mode (Default Setting: off).
- This switch configures the MO as either an optical storage device or a hard disk drive device. When using your MO with any of its supported operating systems, we recommend that you use the default setting, optical storage device. Some other operating system environments may require this switch be set to hard disk type (on position). Consult your operating system documentation for details.
- Automatic spindle stop mode (Default Setting: on).
- When this setting is on, the drive automatically stops the disk to save power when not in use. When this setting is off, the drive keeps the disk rotating while the MO drive is power on.
- SCAM mode (Default Setting: off).
- If your SCSI host adapter supports SCAM, and you wish SCAM enable, move this switch to (on).
- Write cache mode (Default Setting: on).
- The MO has a 2 MB internal cache. Best write performance can be achieved by the default setting (on).
- Under extreme circumstances, such as very dirty environments, write cache enable may cause disk corruption. If you use your MO drive under these extreme circumstances, we recommend this switch be set to (off).

5-7-3   USB Flash Card

NOTE: *Support for USB FLASH CARD was introduced in software version v4.0.*

NOTE: *There are no special requirements to a USB Flash Card used for EchoPAC PC Turnkey , but to ensure that the USB Flash Card can be legally used on the Vivid E9 or Vivid 7 ultrasound scanner, one of the listed models should be used.*

- Kingston DataTraveler 410 8GB
- SanDisk Cruzer Slice 4GB
- Transcend USB Memory Key 2GB
- Kingston DataTraveler Elite 256 MB
- Sandisk Cruzer Micro 256 MB
- Twin MOS K24-256MB Mobile Disk III

Related information:

5-7-4   Zip drive

- Option used for EchoPAC PC workstations with software v3.x and below, on HP xw4100, COMPAQ W300 and COMPAQ W4000.
- Storage capasity: 250 MB
- The Zip Drive receives power via the USB cable from the PC.
- The EchoPAC PC can generate standard PC format image and video clip files (JPEG and AVI) and these can be exported to the ZIP drive, and reviewed on a standard PC.
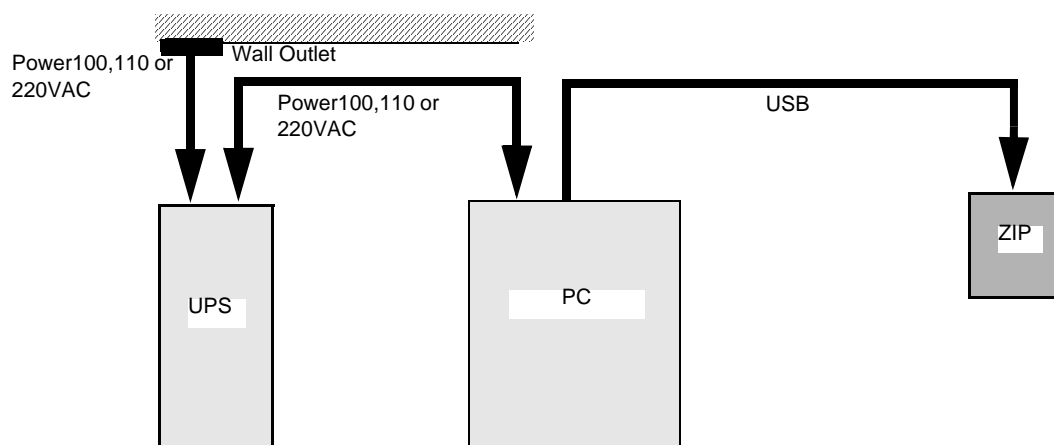
Figure 5-8   ZIP Power and Signal cabling information

5-7-5   Optical Drives (DVD / CD) Overview

5-7-5-1   DVD/CD R/W Drive

The DVD/CD R/W Drive is located inside the workstation (HP Z200 / xw4600 / xw4400 / xw4300 / xw4200).

It can be used to store data on CD-R discs and on DVD+R discs.

NOTE: *DVD R/W, DVD -R and CD R/W aren't supported by the EchoPAC PC software.*

The drive is also used when reloading or upgrading the software.

5-7-5-2   CD R/W Drive

The CD R/W Drive is located inside the workstation (COMPAQ W300, COMPAQ W4000 and HP xw4100).

Can be used to store data on CD-R discs.

NOTE: *CD R/W isn't supported by the EchoPAC PC software.*

The drive is also used when reloading or upgrading the software.

5-7-5-3   Workstation models and CD/DVD Interface

Table 5-4   Interface for CD/DVD

Workstation	PATA (EIDE / IDE / ATA / Ultra ATA)	SATA	DRIVE TYPE
HP Z200		YES	DVD/CD R/W
HP xw4600		YES	DVD/CD R/W
HP xw4400	YES		DVD/CD R/W
HP xw4300	YES		DVD/CD R/W
HP xw4200	YES		DVD/CD R/W
HP xw4100	YES		- CD R/W (from the introduction) - DVD R/W (introduced late 2004)
COMPAQ W4000	YES		CD R/W
COMPAQ DW300	YES		CD R/W

Related information:

- Formatting the media: Please refer to the User Manual/User Guide
- Checking/testing the CD-R/DVD-R:
  - 4-3-7 "CD-R/DVD-R Check" on page 4-23
  - 7-8-2-4 "CD/DVD Drive Test" on page 7-27
- Troubleshooting:
  7-8-14 "Reliability problem: Disk management, DVD on HP xw4400" on page 7-54
- Replacement Procedure:
  Section 8-16 "CD / DVD Drive Replacement Procedure" on page 8-211
- Spare Parts: Section 9-10 "Workstation service parts" on page 9-38

5-7-6   3 1/2" Floppy Disk, 1.44 MB

Located inside the workstation.

Floppy Disks are not supported by the EchoPAC PC software.

5-7-7   External Hard Drives

5-7-7-1   IOMEGA Ultramax Desktop Hard Drive

This is an external USB hard disk with RAID1 data protection mirrored hard disk, with 1 TB storage capasity.

Software requirements: v108.x and higher.

Related information:

- Installation and Replacement Instructions:
  "Iomega Ultramax Desktop Hard Drive Installation Manual",
  Direction Number: EY194147
- Spare Parts: Section 9-12 "Peripherals - External" on page 9-41

5-7-7-2   Hard Disk Drive kit used for W4000 and W300 workstations

NOTE: *The Hard Disk Drive Kit has only been used for the COMPAQ ESO W4000 and the COMPAQ DeskPro W300 workstations.*

The 146 Gigabytes External Hard Disk Drive was used to increase hard disk capacity when the internal Hard Disk Space was to small.

See *External Hard Disk Drive Installation Manual*, Direction # EP294502, for installation instructions for the External Hard Disk Drive.

5-7-8   Network Color Printer(s)

5-7-8-1   Overview of Current Available Printers
- Color Laser Printers
    - HP Color LaserJet CP2025n Printer

        See: *Printer Driver Installation Manual*, Direction Number FC294837, for software installation and set-up instructions

    - HP Color LaserJet 3600n

        See: *Printer Driver Installation Manual for EchoPAC PC and Vivid 7*, Direction Number FC294837, for software installation and set-up instructions

    - LEXMARK c762n

        See: *LEXMARK Color Printer C752N/C762N Installation Manual for EchoPAC PC and Vivid 7*, Direction Number FC194475, for installation instructions for this printer.

- Color Ink Printers
    - Color Printer HP OfficeJet Pro 8000

        See: *Printer Driver Installation Manual*, Direction Number FC294837, for software installation and set-up instructions

5-7-8-2   Obsolete Network Printers
- HP OfficeJet PRO K550

    See: *Printer Driver Installation Manual*, Direction Number FC294837, for software installation and set-up instructions

- HP InkJet 1200dtn

    See: *HP Inkjet 1200 Installation Manual for EchoPAC PC and Vivid 7*, Direction Number EP194654, for installation instructions for this printer.

- HP Inkjet Printer 1100dtn (OBSOLETE)

- HP Deskjet 6127 (OBSOLETE)

- HP Deskjet 990Cxi (OBSOLETE)

- EPSON 980N (OBSOLETE)

- LEXMARK Color Printer c752n (OBSOLETE)

- LEXMARK Color Printer c750n (OBSOLETE)

Section 5-8
Modem (option)

The modem was included to be able to connect to inSite and for use by the Service Platform. It was phased out in 2004.

5-8-1 Technical Specifications, Modem Unit

- Manufacturer & Model Name: MultiTech Systems, Multi Modem ZBA
- 56k Modem
- Data Format: serial, binary, asynchronous
- Flow control XON/XOFF (software), RTS/CTS (hardware)
- Size (WxHxD): 4.3" x 1.2" x 5.8" / 10.8 x 2.9 x 14.8 cm
- Weight: 0.5 lbs/ 0.22 kg

5-8-2 Theoretical Description

The Modem Receives power via a dedicated wall outlet. It is the telephonic link between the Workstation and the GE online centre. It communicates with the PC over an RS232 interface.
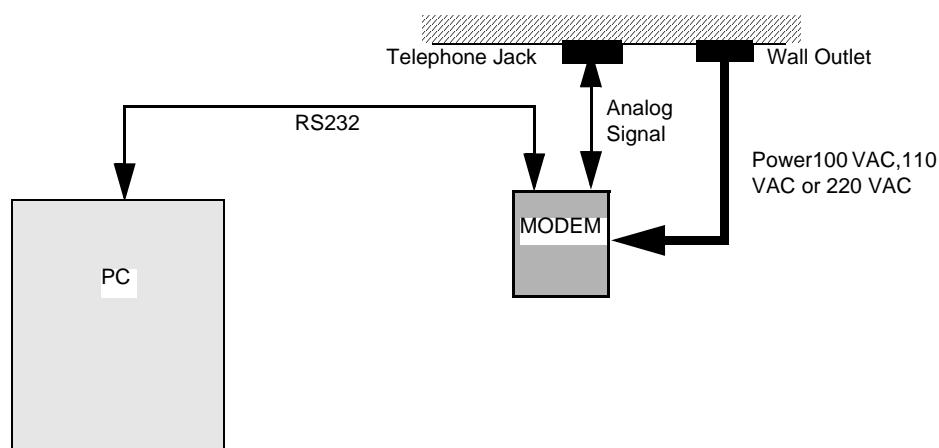
Figure 5-9   Modem Power and Signal cabling information

Section 5-9
Power Distribution

5-9-1   Uninterruptible Power Supply (UPS) Overview

NOTE: *From the introduction of EchoPAC PC, the UPS was delivered standard with all workstations.*

NOTE: *Starting from BT'04 release, the UPS was made an option.*

These UPS models have been used:

- HP T750-2 (Replaced HP T750).
- HP T750 (introduced as a replacement for COMPAQ T700)
- COMPAQ T700 (from the introduction of EchoPAC PC in 2001 to late 2005)

For EchoPAC PC Turnkey workstations delivered before June 2004, the UPS was a standard part of the delivery

NOTE: *After the introduction of software version v4.0.0 (BT'04), the UPS unit is an option.*

NOTE: *The batteries in the UPS are rated for a 3—5 year service life. The length of service life varies, depending on the frequency of usage and ambient temperature. Batteries used beyond expected service life will often have severely reduced runtimes. Replace bateries at least every 5 years to keep units running at peak efficiency.*

- For more information about the HP T750, see:
  - 5-9-2 "HP T750 Uninterruptible Power Supply (UPS)" on page 5-24
  - 5-9-2-1 "Technical Specifications, HP T750" on page 5-24
  - 5-9-2-2 "Theoretical Description, HP T750" on page 5-24
- For installation instructions, see:
  HP T750 UPS Installation Manual for EchoPAC PC, Direction Number: EP294824.

5-9-2   HP T750 Uninterruptible Power Supply (UPS)

5-9-2-1   Technical Specifications, HP T750

- Manufacturer & Model Name: HP, T750
- 100-120 and 220-240 VAC voltage range models
- 50/60 Hz frequency
- Online efficiency 95%
- Size (WxDxH): 16.98 x 22.54 x 25.87 cm (6.69 x 8.88 x 10.19 in)
- Weight: 13.6 kg / 30 lb

5-9-2-2   Theoretical Description, HP T750

Two UPS models are available. One model is for use with 100-120 VAC and the other model is for use with 220-240 VAC. The UPS receives mains power from the wall outlet and delivers power output from six receptacles to the connected equipment. (Workstation, monitor ethernet switch etc.)
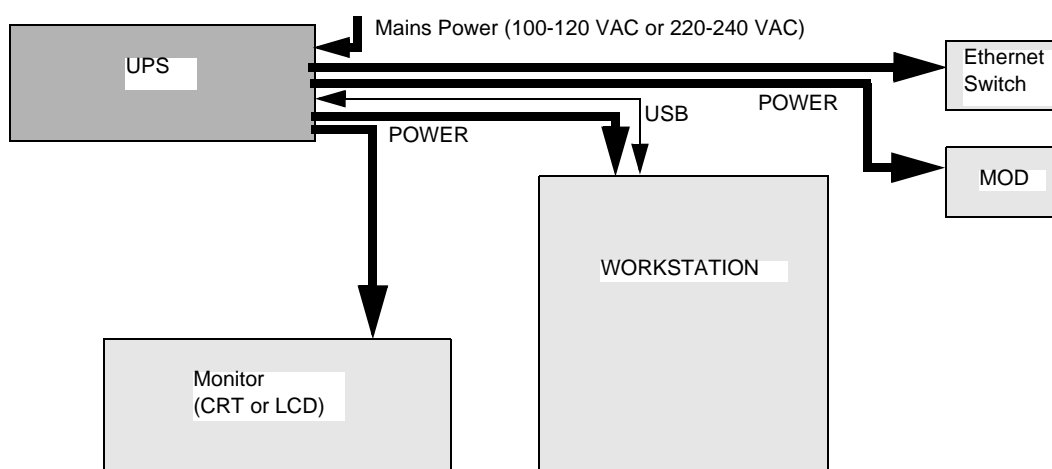
Figure 5-10   UPS Power cabling information

5-9-3   COMPAQ T700 Uninterruptible Power Supply (UPS)

5-9-3-1   Technical Specifications, COMPAQ, T700 UPS
- Manufacturer & Model Name: COMPAQ, T700
- 100, 120 and 230 V voltage range models
- 50/60 Hz frequency
- Online efficiency 95%
- Size (WxHxD): 5.9" x 7.6" x 13.4" / 15. 0 x 19.3 x 34.0 cm
- Weight: 27 lbs/ 12 kg

5-9-3-2   Theoretical Description, COMPAQ, T700 UPS
Three UPS models are available. These are 110-120VAC, 220-240VAC and 100VAC types.The UPS receives its correct Source Power from any nearby wall Outlet where you can connect the attached power cord type 5-15R(USA) or through a loose cord via the IEC320 C13 Power input receptacle for international models. The UPS delivers power output 110 VAC (USA) or 220 VAC (INTNL) or 100 VAC (Japan) from 4 receptacles to the PC, the Monitor, the MOD and the Ethernet Switch.
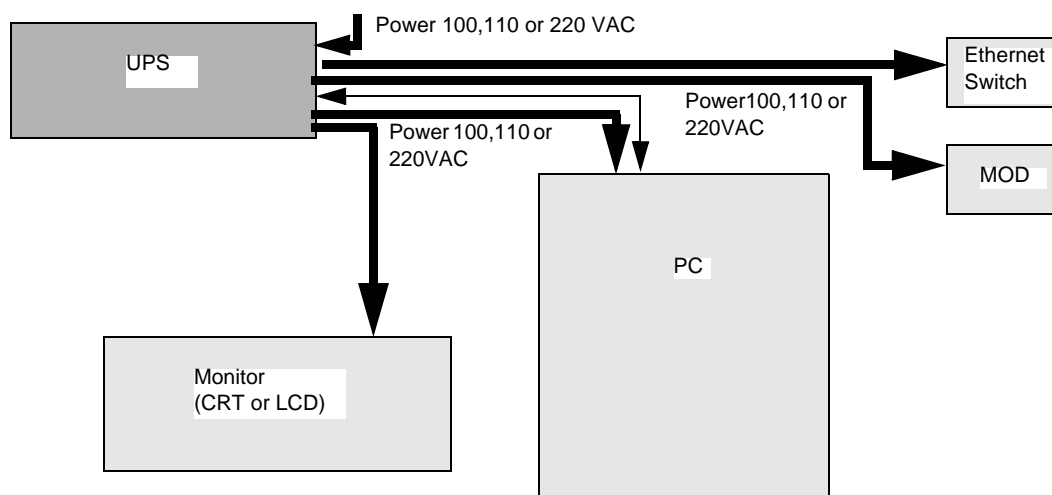
Figure 5-11   UPS Power cabling information

5-9-3-3   Power Source Brownout, COMPAQ, T700 UPS
If mains power brownout occurs during EchoPAC use, the UPS gives short evenly emitted high pitched sounds, the power LED (Green) goes OFF, the battery LED (Yellow) is lit to signal that battery power is in use, and a message about this and time left before automatically complete shut down is displayed on the screen.

5-9-3   COMPAQ T700 Uninterruptible Power Supply (UPS) (cont'd)

5-9-3-4   Reaction Handling, COMPAQ, T700 UPS

The use of the backup power from the UPS leaves time to safely save any unsaved activity in EchoPAC PC and time to turn monitor, PC, modem and MO drive OFF.

Normal Operation   Battery Operation   UPS Message
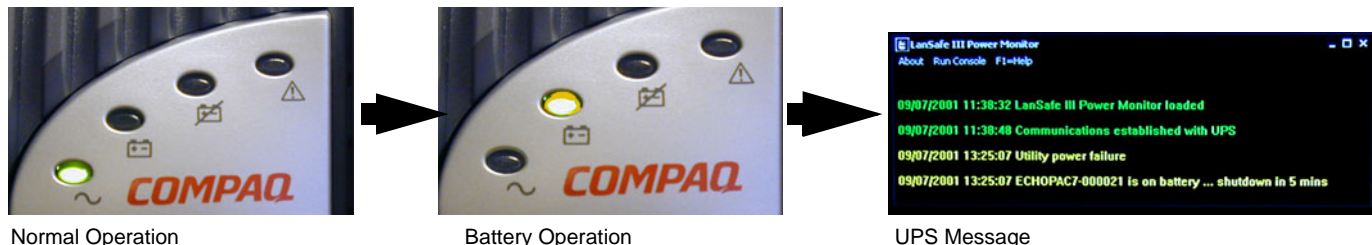
Figure 5-12   Viewable steps in Power Break Down

5-9-3-5   No Reaction handling, COMPAQ, T700 UPS

The UPS program message counts the minutes left until there are none left and presents a new Dialog where you are given entry options for a shutdown. If this still doesn't happen it waits a few seconds and executes the shutdown automatically. If you haven't saved your EchoPAC PC activity then it is lost.

5-9-3-6   Battery Breakdown, COMPAQ, T700 UPS

When the battery breaks down, power runs straight through the UPS and is delivered to the units as if there was nothing wrong at all, and the battery can be changed.

Section 5-10
Network - TCP-IP Interconnection

5-10-1 Ethernet Switch

5-PORT SWITCH

8-PORT SWITCH

Figure 5-13 Network Switches

5-10-1-1 Technical Specifications

- Manufacturer & Model Name:
  - Allied Telesyn, AT-FS705, 5-port non managed 10/100TX switch
  or
  - Allied Telesyn, AT-FS708, 8-port non managed 10/100TX switch
- MAC Addresses:
  - AT-FS705: Up to 1024
  - AT-FS708: Up to 4096
- Internal power supply - Power Characteristics:
  - Input Voltage: 100 - 240 VAC (50/60 Hz)
  - Input current: 0.4 A
- Size, (W x H x D):
  - AT-FS705: 5.9" x 1.2" x 5,2" / 13.1 cm x 3.0 cm x 12.3 cm
  - AT-FS708: 9.8" x 1.4" x 4.6" / 24.9 cm x 3.6 cm x 11.6 cm
- Weight:
  - AT-FS705: 2.36 lbs/ 1.05 kg
  - AT-FS708: 2.0 lbs/ 0.9 kg

5-10-1-2   **Theoretical Description**

The Ethernet Switch is the EchoPAC PC Turnkey Workstation interface to the hospital network or a junction to connect at in a Stand-alone Network. It is powered by the UPS.
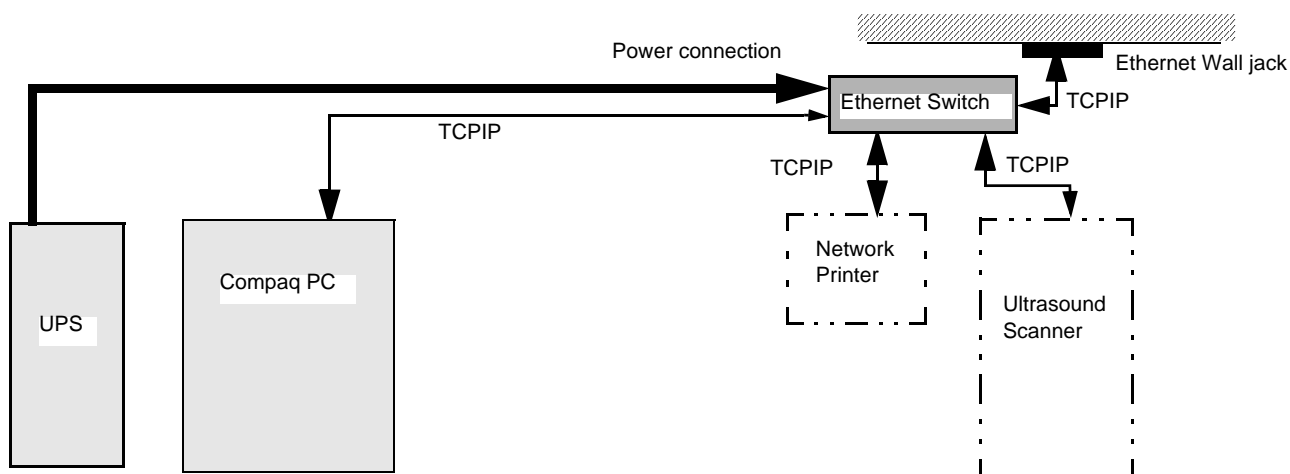
Figure 5-14   Ethernet Network Switch Signal and Power Cabling information

Section 5-11
Software Theory

5-11-1   Introduction

A product like the EchoPAC PC Turnkey has a huge amount of features implemented in software. The intention with this section is to give you a brief overview of the software used on EchoPAC PC Turnkey .

The EchoPAC PC Turnkey application can be used for:

- Ultrasound data analysis
- Making Report(s)
- Storage of the data and reports

EchoPAC PC handles:

- DICOM format ultrasound images.
- Raw Data format images which are transferred from GE Ultrasound scanners.

The EchoPAC application program sets up links to the images and patient data, which are stored on the EchoPAC PC hard drive in a Sybase database.

Transferred studies, images and cine loops in DICOM and Raw Data formats are stored in a sub folder called ARCHIVE on the local EchoPAC PC hard drive. The ARCHIVE Folder has an IMAGES sub folder and a PATIENT DATA sub folder. The EchoPAC PC LocArch-HD dataflow handles all traffic into these, and is automatically setup when installing the EchoPAC Application software. Stored Studies can be opened locally, analyzed, reported on and moved to alternative storage with the application functionality, or remotely on a Scanner which has a dataflow connection to the EchoPAC PC.

From EchoPAC PC studies are saved in DICOM format and placed onto DICOM formatted Magneto Optical Disks. These studies are also saved as Raw Data.

5-11-2   System Software

Special versions of the System Software CDs has been made for each PC model used in EchoPAC PC Turnkey 's.

Depending on Application Software version, the System Software is based on either:

- Windows XP Embedded (for Application Software version v4.0 (and higher))

or

- Windows 2000 (for Application Software version v1.x, v2.x and v3.x)

5-11-3   Application Software

- Application software v3.x, v4.x, v5.x, v6.x., etc.

5-11-4   Software Patches

Sometimes, usually in-between ordinary software releases, there may be issued "Software Patches". A Software Patch may be a new version of one or a few files that fixes an issue that have been found after the last released software was released. Sometimes Software Patches are used to install new files like new software drivers for peripherals.

5-11-5   Dataflows Available in EchoPAC PC

These dataflows are available in EchoPAC PC:

Table 5-5   Dataflows available in EchoPAC PC

DATAFLOW	DESCRIPTION	COMMENT
No Archive	Makes it possible to do an examination without storing the data to the archive	- No data input. - Nothing is stored.
LocalArchive-Int.HD	**Local Archive Internal Harddrive.** The local database is used for patient archiving. Images are stored to internal harddrive	- Local database. - Images stored to local hard drive.
LocalArchive-MOD	**Local Archive Magneto Optical Disk** The local database is used for patient archiving. Images are stored to a MOD	- Local database. - Images stored to local MO-disk.
RemoteArch-RemoteHD	**Remote Archive Remote Harddrive** A remote database either on another EchoPAC workstation or on EchoServer, is used for patient archiving. Images are stored to a network image volume, either on the internal HD on another EchoPAC workstation or on the EchoServer volume.	- Remote Database. - Images stored to remote volume.
RemoteArchive-MOD	**Remote Archive Remote Harddrive** A remote database either on another EchoPAC workstation or on EchoServer, is used for patient archiving. Images are stored to a MOD	- Remote Database. - Images stored to local MO-disk. **IMPORTANT:** This dataflow cannot be used with an ImageVault 3.0 server.
DICOM MOD 3.5	**DICOM 3.5" Magneto Optical Disk** Read DICOM media from the 3.5" MO drive.	Images may be added as pure DICOM.
DICOM MOD 5.25	**DICOM 5.25" Magneto Optical Disk** Read DICOM media from the 5.25" MO drive.	Images may be added as pure DICOM.
DICOM CD read	Read DICOM media from the CD-drive	
EchoPAC MAC MOD read	**EchoPAC Macintosh Magneto Optical Disk Read** To read 5.25" MO-disks (raw data) from System FiVe/Vivid 5/EchoPAC (Mac).	- Only images can be read. **IMPORTANT:** - The MOD must be PC-formatted. - To be able to read Macintosh formatted disks, the MACvue option is needed. - The MACvue option must be installed by a GE representative.
DICOM PRINT	Send images to a DICOM printer	Images on the clipboard are sent to the DICOM printer upon ending the exam.
Query Retrieve	Retrieve images from a DICOM server	

5-11-6   Configuration Management

This subsection describes the configuration management package of EchoPAC PC.

The EchoPAC PC configuration package enables the user to customize the global configuration for the workstation and the application-specific settings.

A dataflow is a user-defined set of services (e.g. DICOM services like storage, worklist, print management...etc). By selecting a pre-defined dataflow, EchoPAC will be automatically configured according to the services associated to the selected dataflow.

The dataflow concept enables the user to fully configure the workstation to optimally meet the user's needs and in the same time keep user interface unchanged (for example, the procedure for storing data to a DICOM media and/or to a local archive will be the same, only the selection of the dataflows will be different).

5-11-7   Database

The database running on the EchoPAC PC is a multiuser type. The multiuser database has the possibility to have several clients logged on at the same time. However, for the EchoPAC PC there is a limitation. The maximum clients allowed on a EchoPAC PC are 2, meaning only two users or devices can be logged on at the same time. The restrictions of having 2 client only, also affects number of devices there is possible to connect. Theoretically you can connect as many EchoPAC PC in a TCP IP network as you want, but only two, including the EchoPAC PC itself (one additional device) can be logged on at the same time.

To be able to connect multiple scanners and EchoPAC PC workstations together, a natural solution would be to use a server, which has the possibility of connecting several clients (devices) at the same time.

5-11-8 Global Platform Connectivity - The "Dataflow" Concept

5-11-8-1 Dataflow Description

The dataflows are visible for the end user. These define the input- and output- sources for the data. Both patient-administrative data and image data. There are several predefined dataflows for the EchoPAC PC. A system may have one or more dataflows for the user to choose from. The user selects current dataflow in the patient screen on the system. The dataflows can also be hidden, to avoid unused dataflows to appear on screen. This is done by enable the hidden box in the dataflow menu.

The dataflow defines for example the following:

- Where to store images (MOD, network volume, internal hard drive etc.)
- Any DICOM server where images should be stored.
- Which database to use.
- etc.

5-11-8-2 Device Description

A device is a physical device that this system will communicate with.

A device can be:

- A DICOM Printer
- A DICOM Server
- An EchoPAC PC workstation
- etc.

The list of devices can be configured, and the system may have one or more defined devices. The system itself ("My Computer") is always present and cannot be removed.

A device is defined by a name, AE Title and IP address.

5-11-8-3 Service Description

A service is for example a DICOM Service class on our own database (EchoDatabase). Each device may have one or more services. This is not necessarily all services offered by that device, but those services that THIS SYSTEM will use against that device.

Service Type

The following services are supported:

- DICOM Verification SCU & SCP
- DICOM Storage SCU (US, US-MF & Secondary Capture)
- DICOM Print SCU
- DICOM Media (5.25" MOD) FSC, FSU & FSR
- DICOM Storage Commitment SCU
- EchoPAC Media (To read MO-disks created by EchoPAC (Mac))
- EchoDatabase (Our own database. Always with raw data image storage included.)

5-11-8-3   **Service Description** (cont'd)

In addition there are some services relevant for configuration of the "Alt Store 1" and "Alt Store 2" keys:

- Standard Print (PC printer)
- Video Print
- Image to buffer (Store raw data image to clipboard/buffer)

The "Alt Store 1" and "Alt Store 2" keys may be configured using the defined services, and they are independent from the current dataflow.

5-11-8-4   **Summary**

A system can have one or more dataflows available, so called "one-to-many" combinations.

A dataflow is configured by using one or more of the current defined services. A service is defined by a name, which service type, and which device it's connected to.

The system contains one or more dataflows, and each dataflow is built up of one or more defined services.
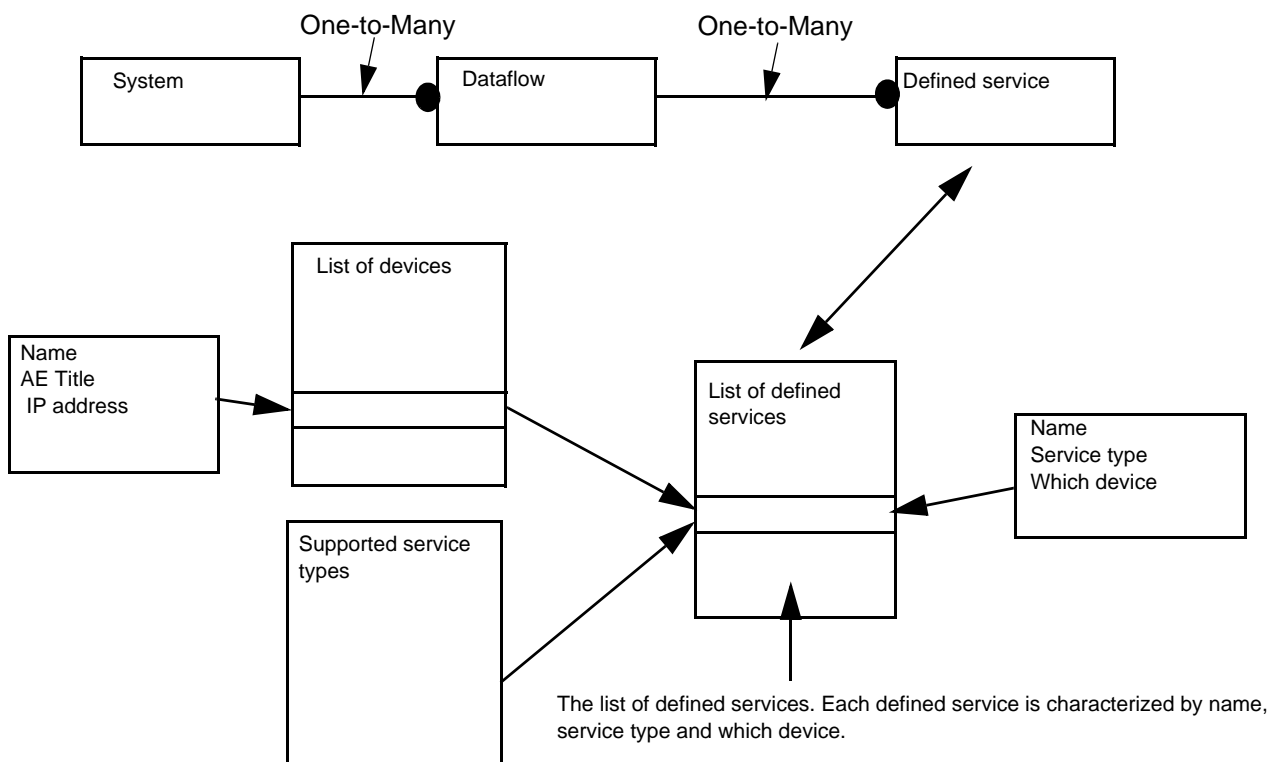
Figure 5-15   Data flows Block diagram

5-11-9   PRIMARY and SECONDARY Status of a DICOM Device

A dataflow can have many output services. Only one of them can be PRIMARY. The reason for this is that the PRIMARY service defines the image format and contents.

5-11-10   Direct Store on a Dataflow

When DIRECT STORE is selected on DATAFLOW, images are stored directly to the destination device according to the dataflow settings and configurations, as they occur.

For a DICOM device, this means that the image is sent immediately to the spooler which is a DICOM queue or buffer. From there it is immediately sent to the DICOM device, as a background task.

When DIRECT STORE is not selected, the images are first sent to the internal clipboard/buffer.

5-11-11   Adjust Image per Association and Study per Association

To adjust IMAGE PER ASSOCIATION and STUDY PER ASSOCIATION, activate the check-box named "Reopen pr. image" on the Services setup screen.

5-11-12   Study per Association

In study per association it is possible to have one active study at a time.

To send studies to a DICOM device, the data must be fed through a spooler first. The spooler output is one image at a time.

5-11-13   Software Options

- MACvue

  The MACvue option makes it possible to open examinations from a Macintosh formatted 5.25" MOD. This may be needed when getting images from an EchoPAC Macintosh workstation or from an integrated Macintosh in a System FiVe or Vivid 5 ultrasound scanner.

Section 5-12
Service Platform

5-12-1 Introduction

The Service Platform contains a set of software modules that are common to all PC back end ultrasound and cardiology systems. This web-enabled technology provides linkage to e-Services, e-Commerce, and the center, making GE's scanners more e-enabled than ever. The Common Service Platform will increase service productivity and reduce training and service costs.

5-12-2 *iLinq ExC* Interactive Platform Features

Many of the services of the Common Service Platform come from its integration with *iLinq*. The following sections contain a brief introduction of *iLinq ExC's* features.

5-12-2-1   WEB Server/Browser

The Service Platform and other service software use the *Apache* web server and either Internet Explorer or the Netscape browser, depending on the software level.

5-12-2-2   Connectivity

This feature provides basic connectivity between the unit and the OnLine Center (OLC).

5-12-2-3   Access

The *iLinq ExC* is activated by the OnLine center.

5-12-2-4   Contact GE

Allows a one-button touch for the user to contact the OnLine Center and describe problems with their scanner in an easy and convenient way.

5-12-2-5   Interactive Application

The main application is displayed in the form of HTML pages whenever the browser starts. This is the entry point for any user to start any *iLinq* application.

5-12-3   Global Service User Interface (GSUI)

GSUI is the pattern for the user interface. This interface standard will be followed by all modalities to achieve a common look-and-feel for service software across all GEMS products.

5-12-3-1   Internationalization

The user interfaces provided by the service platform are designed for GE personnel and as such are in English only. At this time there is no multi-lingual capability built into the Common Service Interface.

5-12-3-2   Service Login

Press the button with the wrench icon(   ) in the status bar at the bottom of the scanner console.
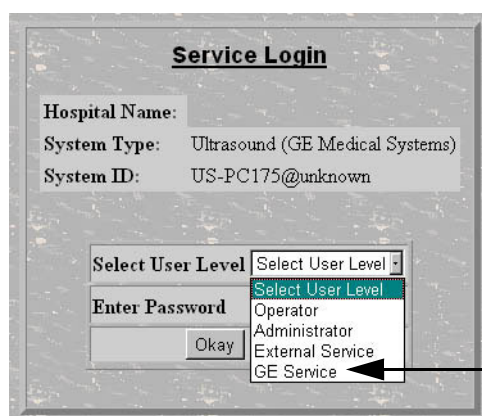
Figure 5-16   Service Logon

5-12-3-3   Access / Security

The service interface has different access and security user levels. Users are only granted access to the tools they are authorized to use.

Table 5-6   Access Authorization

User Level	Access Authorization
Operator	These service tools are normally used in-house and are protected with a special scanner configuration that is not allowed to leave the facility.
Administrator	Use the OnLine Center access method provided by *iLinq*.
External Service	Access is protected by a password.

Except for *iLinq*, all access to the service interface is via the Network port. A modem connected to EchoPAC PC Turnkey is specifically intended for *iLinq* use.

Every access request, whether successful or not, will be logged into a service access log that is viewable to authorized users.

See for more information on InSite and the Global Service User Interface

5-12-3-4   Configuration

The Serial Interface is configured on-site after Installation. An IP address is required by the hospital network administration. If connected to a local Network the Configuration is done on the utility menu.

5-12-4   Restart EchoPAC PC Turnkey After Diagnostics

Always shutdown the system and reboot after a diagnostics session.

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Chapter 6
Service Adjustments

Section 6-1
Overview

Table 6-1   Contents in Chapter 6

Section 6-2
Date and Time Adjustments

Section 6-3
Adjust Timeout for DICOM Servers

If you are experiencing problems with slow responses from DICOM servers, increase the timeout in the DICOM server properties dialog.

Problems with slow responses may result in images being re-sent automatically and low transfer rates.

The retry settings for DICOM Storage are by default for mobile (off-line) use. They ensure that jobs in the spooler will be sent automatically if the user reconnects within the total retry period. If the customer does not have the mobile case, you can reduce the number of retries and the interval. This will make the job fail faster if there is a network or server problem (and let the user forward the job to another server if desired).

Starting with software v6.0, this function has been changed:

The Retry settings can be used to make jobs retry on bad networks. There is no need to set retries for mobile (off-line) use.

Section 6-4
Monitor Adjustments

6-4-1   Adjusting Brightness and Contrast

If needed, adjust brightness and contrast according to the location's light conditions. These adjustments are done from the control buttons on the front of the monitor.

To adjust Brightness and Contrast

Refer to the monitor's original documentation, delivered with the monitor, for detailed information for a particular monitor.

Section 6-5
LCD Monitors

6-5-1   General adjustments for LCDs

Brightness should be reduced from 100% to approximately 70% on all LCD's in order to increase life span and image quality.

LCD screens should always be switched off when they are not in use.

6-5-2   Adjusting the EIZO FlexScan S2231WSE

Buttons on the monitor's front, starting from the lefthand side:

1.) Volume control - Down
2.) Volume control - Up
3.) Input signal selection
4.) Mode
5.) Enter
6.) Control
    -     Left
    -     Down
    -     Up
    -     Right
7.) Power

Please refer to the monitor's documentation if you need setup or adjustment instructions.

6-5-3   Adjusting the EIZO FlexScan S1721

Factory default should be used, the only adjustment that is needed is Brightness. Brightness should be set according to customer preference.

Adjust Brightness by using arrows on the LCD Monitor.

Section 6-6
CRT Monitors

6-6-1   Adjustment of HP s9500 CRT monitor

If the shipment includes the "HP s9500" 19" CRT monitor, there are certain settings to be done with the monitor prior to shipment in order to optimize the image quality. The following procedure must be followed.

6-6-1-1   Buttons on monitor front

On the front of the monitor there are three buttons. From left to right those are:

- "Menu" - button
- "-"– button
- "+" – button

These three buttons are to be used in the following step-by-step procedure:

6-6-1-2   Adjustment Procedure

1.) Press the "Menu" button.
2.) Press the "+" button until the color temperature menu is highlighted, indicated by a thermometer symbol.
3.) Press the "Menu" button.
4.) Press the "+" button until "User" is highlighted.
5.) Press the "Menu" button.
6.) Press the "Menu" button to highlight and select first Red, then Green, and then Blue, and use "-"and "+" buttons to set the following values:

- Red: 100%
- Green: 92%
- Blue: 100%

7.) Finally highlight "Exit", and then press "Menu" button. (The menu will disappear by itself after a few seconds.)
8.) Exit from EchoPAC PC.
9.) Select shut down.
10.)Remove SW option dongle.

Chapter 7
Diagnostics/Troubleshooting

Section 7-1
Overview

7-1-1   Purpose of Chapter 7

This section describes how to setup and run the tools and software that help maintain image quality and PC operation. Very basic host, PC diagnostics are run whenever power is applied. Some Service Tools may be run at the application level.

Table 7-1   Contents in Chapter 7

SECTION	DESCRIPTION	PAGE NUMBER
7-1	Overview	7-1
7-2	Service Safety Considerations	7-2
7-3	Shortcut keys	7-3
7-4	Recovering from a datavirus infection	7-4
7-5	Global Service User Interface (GSUI) before BT'09	7-5
7-6	Common Service Diagnostics Interface (Ultrasound Interface)	7-7
7-7	Error Logs	7-10
7-8	Common Diagnostics	7-21

Section 7-2
Service Safety Considerations

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⚠ **DANGER**   **DANGEROUS VOLTAGES, CAPABLE OF CAUSING DEATH, ARE PRESENT IN THIS EQUIPMENT. USE EXTREME CAUTION WHEN HANDLING, TESTING AND ADJUSTING.**

⚠ **WARNING**   *EXPLOSION WARNING*

DO NOT OPERATE THE EQUIPMENT IN AN EXPLOSIVE ATMOSPHERE. OPERATION OF ANY ELECTRICAL EQUIPMENT IN SUCH AN ENVIRONMENT CONSTITUTES A DEFINITE SAFETY HAZARD.

⚠ **WARNING**   *DO NOT SUBSTITUTE PARTS OR MODIFY EQUIPMENT*

BECAUSE OF THE DANGER OF INTRODUCING ADDITIONAL HAZARDS, DO NOT INSTALL SUBSTITUTE PARTS OR PERFORM ANY UNAUTHORIZED MODIFICATION OF THE EQUIPMENT.

Section 7-3
Shortcut keys

Table 7-1 Key shortcuts overview

Shortcut key	Function
ESC	Displays previous state (Window), or goes to given screen
F1	Help
F2	Config
F3 / F4	- Adjusts cine speed when the selected cineloop is running (F3 = decrease, F4 = increase). - Enables frame scrolling when the selected cineloop is frozen (F3 = backward, F4 = forward). - Adjusts the baseline when a Doppler window is selected (F3 = up, F4 = down).
F5 / F6	- Adjust the horizontal sweep speed when a Doppler window is selected (F5 = decrease, F6 = increase)
F7 / F8 or arrow key Up / Down	Zoom in: F8 or Arrow Upo Zoom out: F7 or Arrow Down
Arrow key Left / Right	In Freeze, displays previous and next frame.Disabled when Direct report is activated.
Ctrl + Arrow key Left / Right	In duplex mode, scrolls through a cineloop
F9 / F10	Adjust Compression (F9 = decrease, F10 = increase)
F11 / F12	Adjust Reject (F11 = decrease, F12 = increase)
Shift + Arrow key Left / Right / Up / Down	Panning tool when in Zoom mode
Shift+F1	Previous image (when analyzing > 1 image)
Shift+F2	Next image (when analyzing > 1 image)
Alt+1	Performs Alt. store 1
Alt+2	Performs Alt. store 2
Alt+A	Annotation
Alt+E	Ejects removable media
Alt+F	Structured Findings
Alt+I	Image store
Alt+Q	Displays the monitor test image (Turnkey workstations only)
Alt+P	Print
Alt+R or SPACE BAR	Run / Stop cineloops
Alt+S	DICOM Spooler
Alt+T	Starts Direct report
Alt+W	Starts Q Analysis
Alt+Z	Image store
PrintScreen	Annotation

Section 7-4
Recovering from a datavirus infection

7-4-1   Virus Handling

When a virus is detected on the the workstation, do the following steps to remove the virus safely:

1.) Disconnect the workstation from the network.

2.) Move Images to an MO Disk.

3.) Do backup of User Presets, and Patient Archive.

4.) Reinstall System SW (Perform a C partition Installation) to remove Virus.

5.) Install Application SW.

6.) Install MS Blast Safety Patch P824146 if required.

7.) Verify with Hospital Network Administrator that Virus is removed from the Network.

8.) Connect the workstation to the Network.

9.) Install the latest Vulnerability patch software.

Section 7-5
Global Service User Interface (GSUI) before BT'09

As described in *Chapter 5*, the overall service platform uses a web-based user interface (UI) to provide access to common service components. Upon selecting a test, the Diagnostic screen divides into three frames as shown in Figure 7-1 on page 7-5 below. These are:

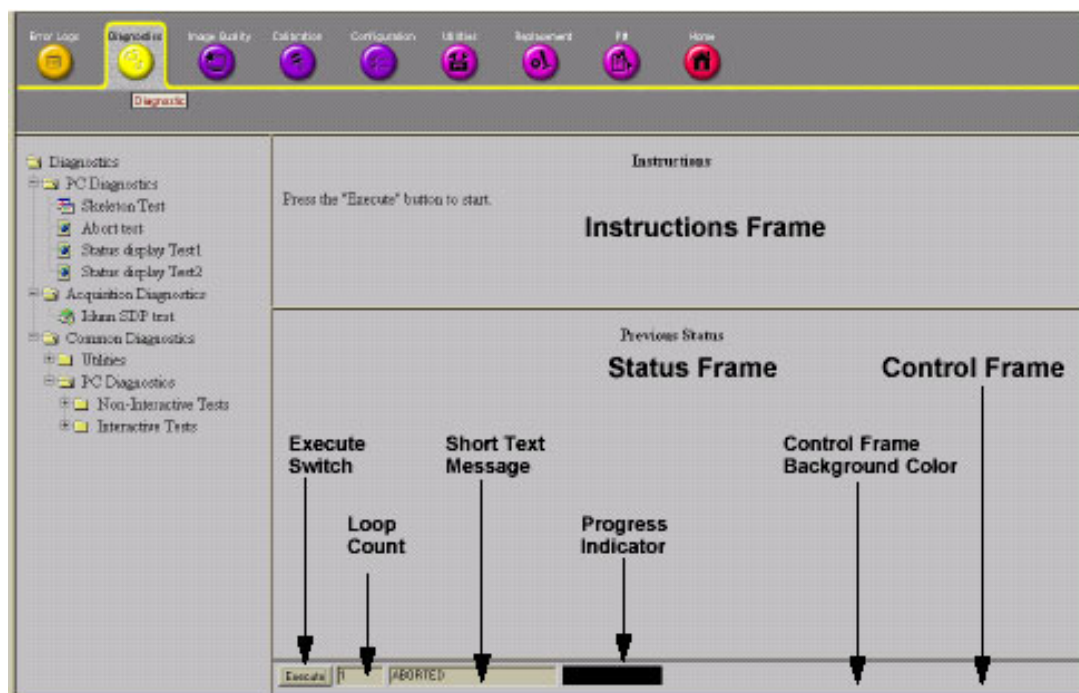- Instructions Frame
- Status Frame
- Control Frame

Figure 7-1   User Interface Diagnostics screen

7-5-1   Instructions Frame

Displays a test-specific HTML page or the default instructions HTML page.

7-5-2   Status Frame

Initially displays the last known status for the particular diagnostic. Once the diagnostic starts, the frame displays the "current" status of all test results.

7-5-3   Control Frame

Contains the user interface elements used for:

- Diagnostic control, and
- Operator feedback

7-5-3-1   Execute Switch

This switch has two modes - each with appropriate text:

- Execute - to start the diagnostic, and
- Abort - to stop a diagnostic

7-5-3-2   Loop Count

This is an editable text field that will only accept numeric values with 4 digits or less. When the switch is configured as an "execute" switch and pressed, the loop count field will be queried to determine the number of times to execute the diagnostic.

7-5-3-3   Progress Indicator

Displays a graphical progress indicator for the user.

7-5-3-4   Short Text Message

Displays either a starting message or aborting message, as well as the diagnostic completion status.

7-5-3-5   Control Frame Background Color

Initially gray, the Control Frame background color changes upon completion of a diagnostic to indicate completion status.

- Fail = Red
- Pass = Green
- Neither pass nor fail = Set back to Gray (for example, final code status is Aborted).

Section 7-6
Common Service Diagnostics Interface (Ultrasound Interface)

7-6-1   Log on to the Global Service Platform

1.) Select user level "External Service".
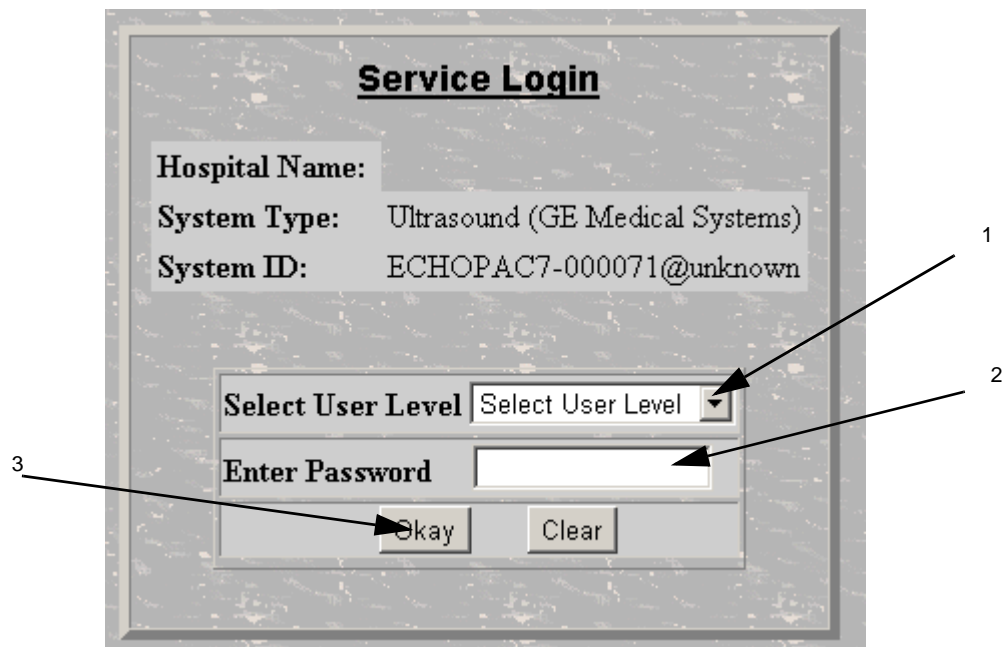
Figure 7-2   Service Login Window

2.) Enter password **gogems**

3.) Click on the **Okay** button or press **enter**.

7-6-2   Service Home Page

NOTE: When the Common Service Desktop is started, the Service Home Page appears.*When using the Common Service Desktop do **NOT** iconify any of the Common Service Desktop windows. If you iconify them they end up in the lower left-hand corner of the screen behind the Service Desktop Manager window and cannot be restored.*
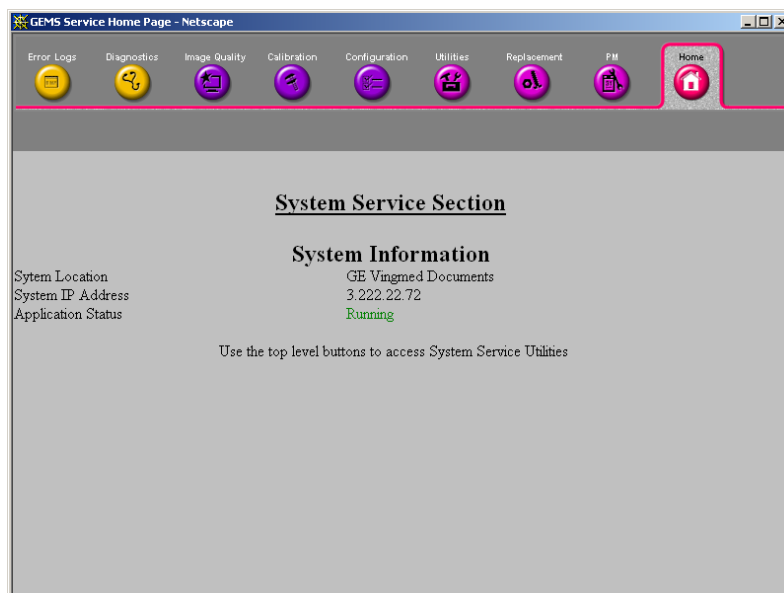
Figure 7-3   Service Interface Home Page

7-6-3 Menu Bar Description

On top of the Service Interface Home Page, there is a Menu Bar where you can choose between these screens, see Figure 7-4 "Service Interface Home Page" on page 7-9:

- Error Logs
- Diagnostics
- Image Quality
- Calibration
- Configuration
- Utilities
- Replacement
- PM
- Home
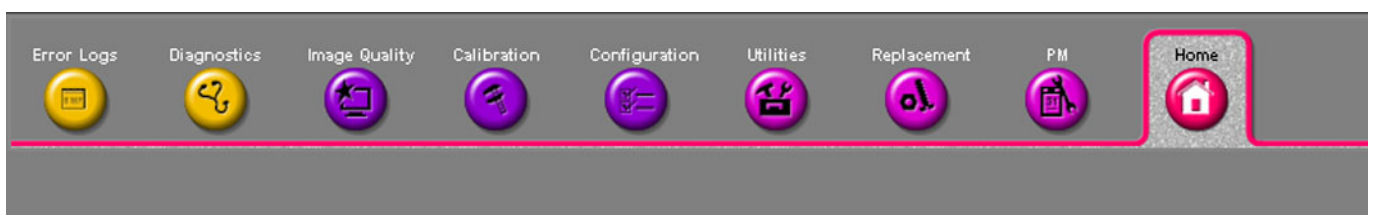
Figure 7-4   Service Interface Home Page

Select an icon to open the respective screen.

7-6-4 Description of Screens

Each screen may include one or more "sub-screens". The next section describes the different screens available.

Section 7-7
Error Logs

From the Error Logs page, the Log Viewer displays five categories with pull-down submenus. The Service Interface has a log viewing tool driven by the following high-level requirements.

- Simple filtering of the scanner log(s) with filtering capabilities being a function of login access permissions.

- Logs are viewable by all service modes.

- Allow for multiple instances of the log viewer.

- Color-coded log entries for severity levels:
    - Severity 1 - Color coded Green
    - Severity 2 - Color coded Yellow
    - Severity 3 - Color coded Red

- Support the transfer of logs to local and/or remote destinations
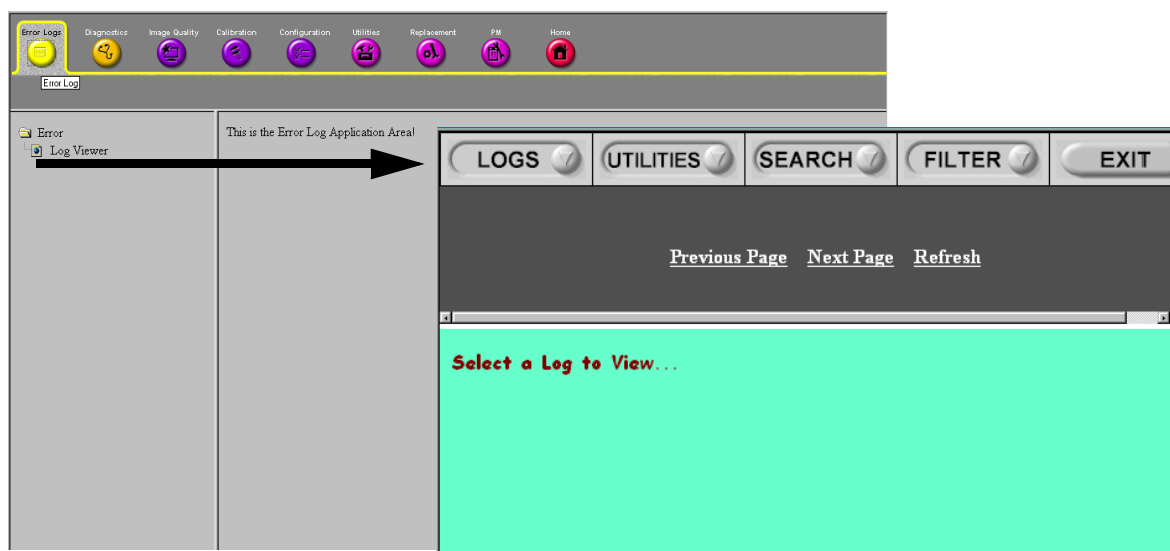
Figure 7-5   Error Log Viewer Menu

7-7-1   Submenues in the Logs category

The submenus of the Logs category are System, Power, Temperature, Probe, Board and DICOM.
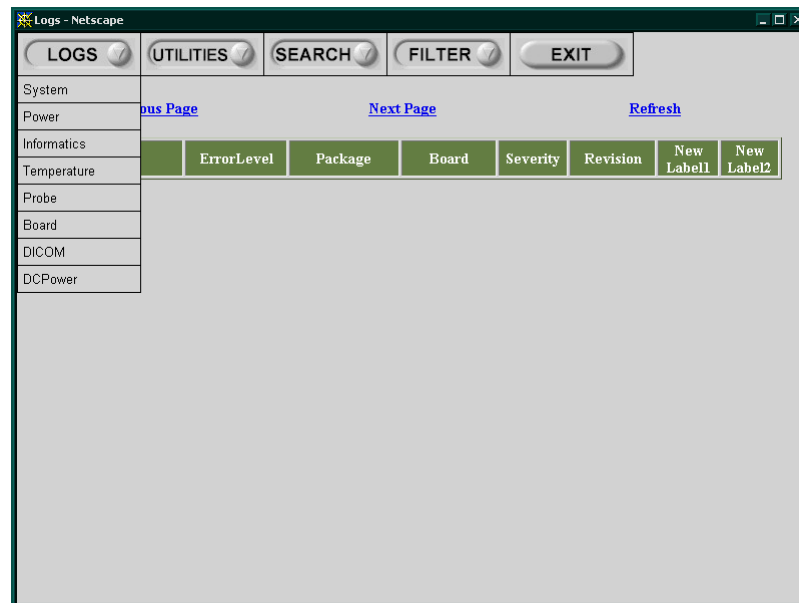
Figure 7-6   Logs Submenu

7-7-1-1   **System**

Select this screen to view System log. It displays all error messages from EchoPAC PC Turnkey .

Figure 7-7   Example of System Error Log

7-7-1-2 **DICOM**

Select this screen to view DICOM log.

Figure 7-8 DICOM Log (example)

7-7-1-3   **Utilities**
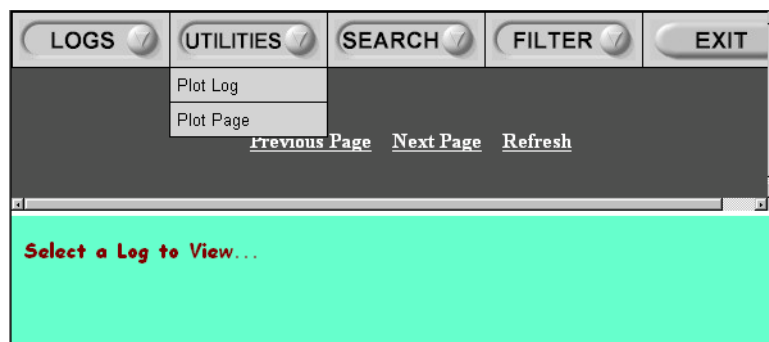
Figure 7-9   Utilities Category

7-7-1-4   Plot Log

Select *Plot Log* to make a plot of the active log on screen.
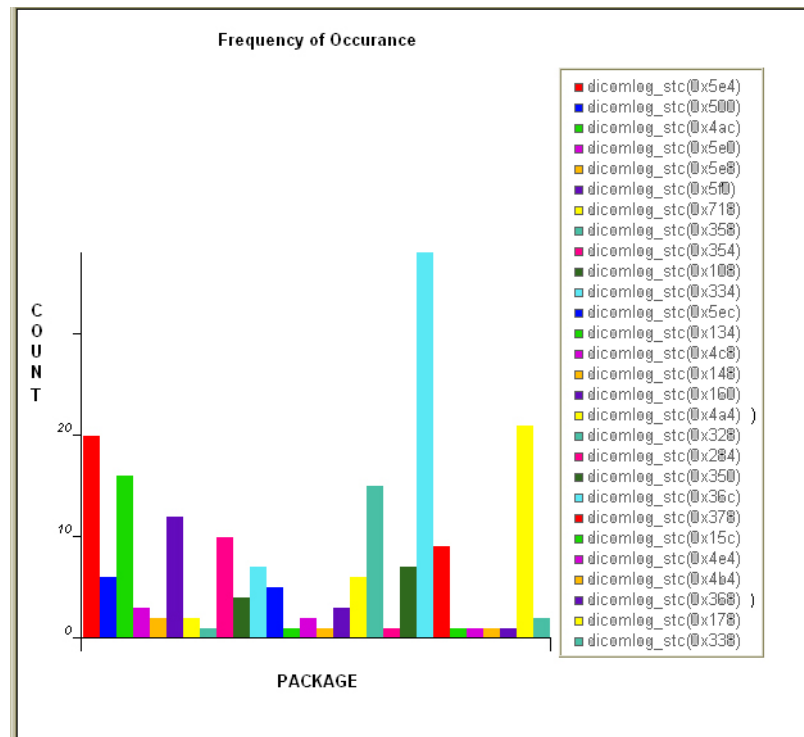
Figure 7-10   Utilities, Plot Log

7-7-1-5 Plot Page

Select *Plot Page* to make a plot of the active (log-) page on screen.
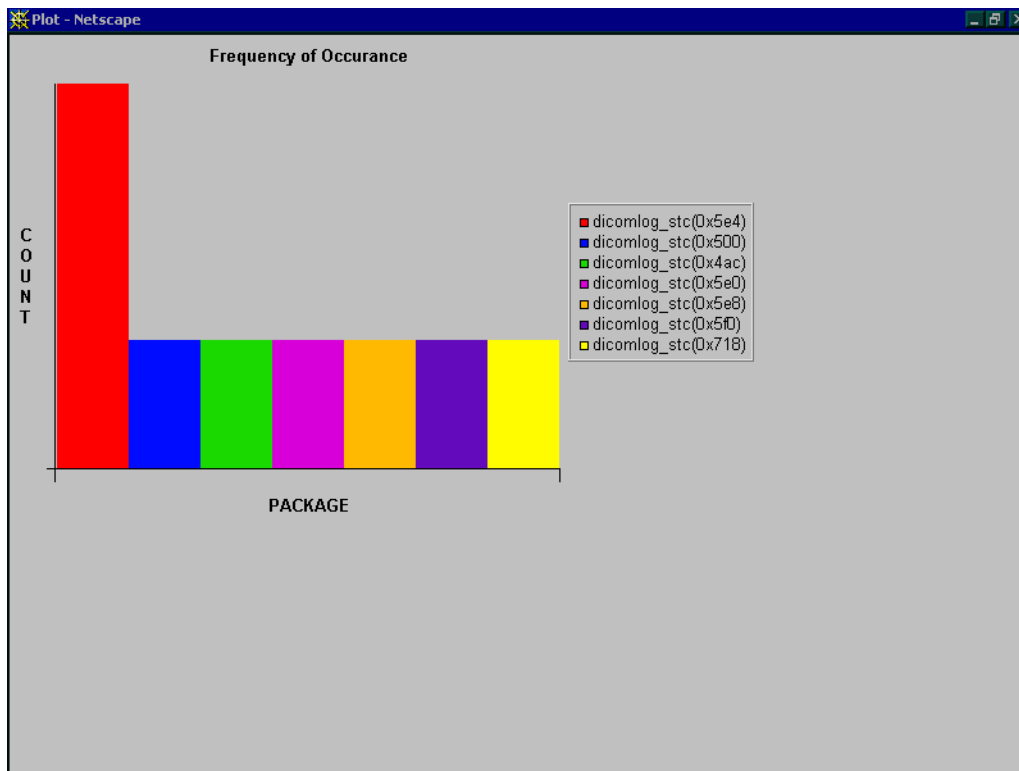
Figure 7-11 Utilities, Plot Page

7-7-1-6 **Search**

On the Text Search submenu of the Search category, users enter case-sensitive text they wish to search for in the logs.
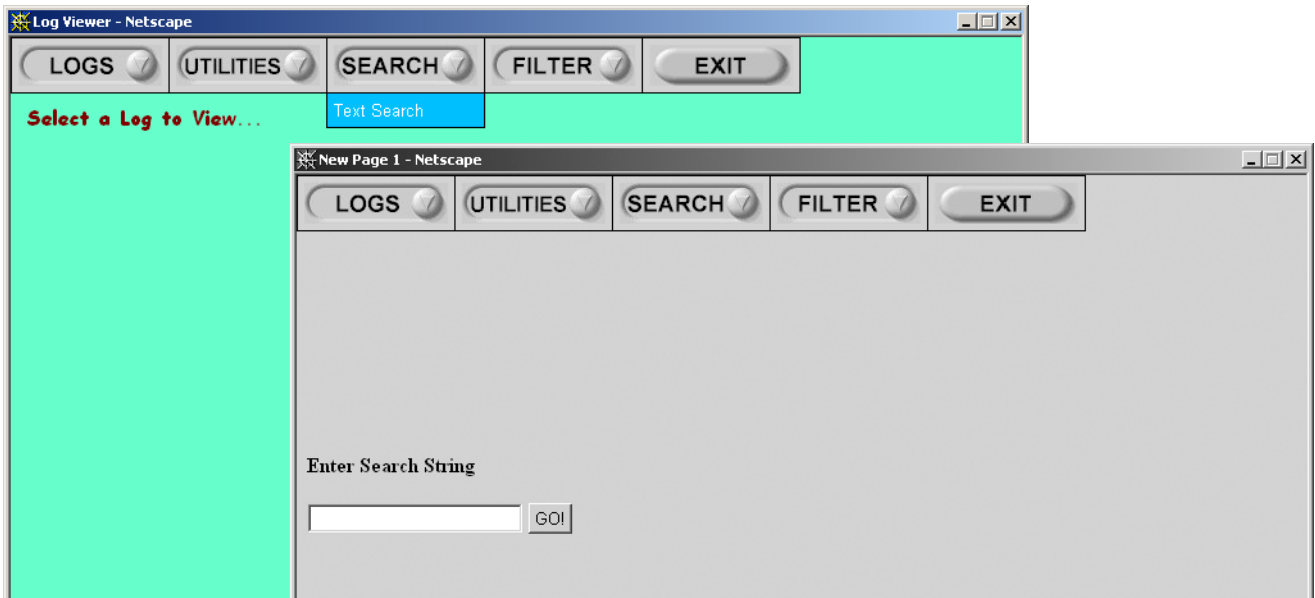
Figure 7-12   Search Category

7-7-1-7   **Filter**

This function is available for GE Service only.

7-7-1-8   Exit

The submenu, Exit Log Viewer, returns the user to the Common Service Desktop home page.
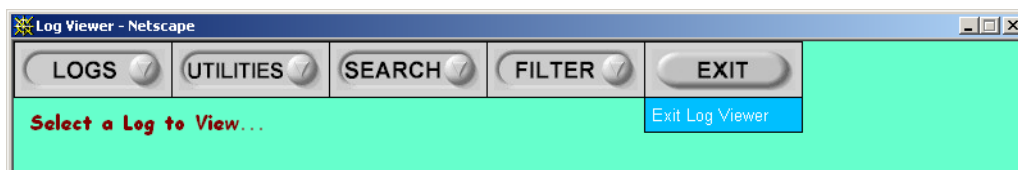
Figure 7-13   Exit Log Viewer Category

7-7-2   Diagnostics

7-7-2-1   Diagnostics Execution

Diagnostic tests are executable by both local and remote users. The Service Platform provides top-level diagnostic selection based on the user's level and login access permissions. The Service Platform provides for simple filtering of the scanner logs and the utility to switch between disruptive and non-disruptive diagnostic modes.

7-7-2-2   Diagnostic Reports

Diagnostic tests return a report to the Service Platform. The platform retains the report and allows for future viewing of the diagnostic logs.

7-7-2-3   Proactive Diagnostics

A system of self-monitoring is largely supported with the integration of *iLinq*. The scheduler, executive, user interfaces, and some of the proactive diagnostic functions are provided by *iLinq*. Other tasks will need to be provided by the product team.
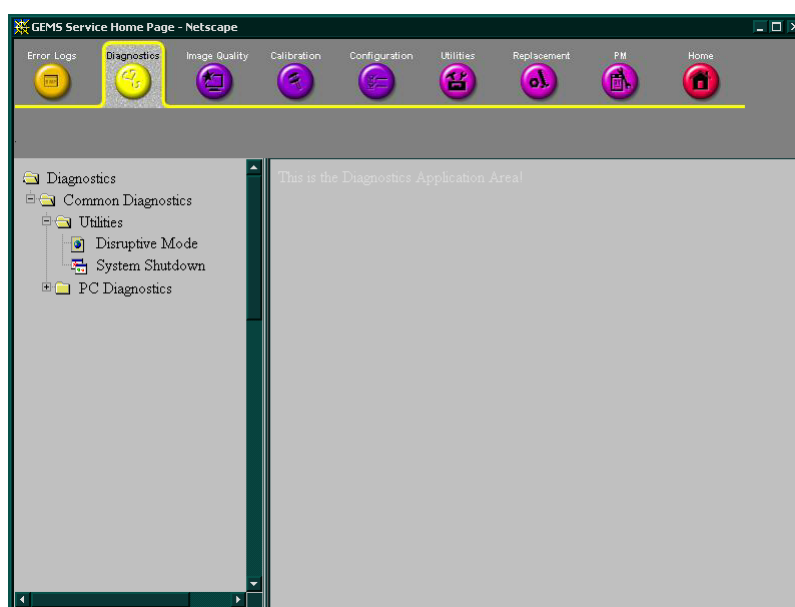
Figure 7-14   Diagnostic Screen Home Page

Section 7-8
Common Diagnostics

Common Diagnostics is a collection of diagnostics tools that are common for several of GE Ultrasound's products.
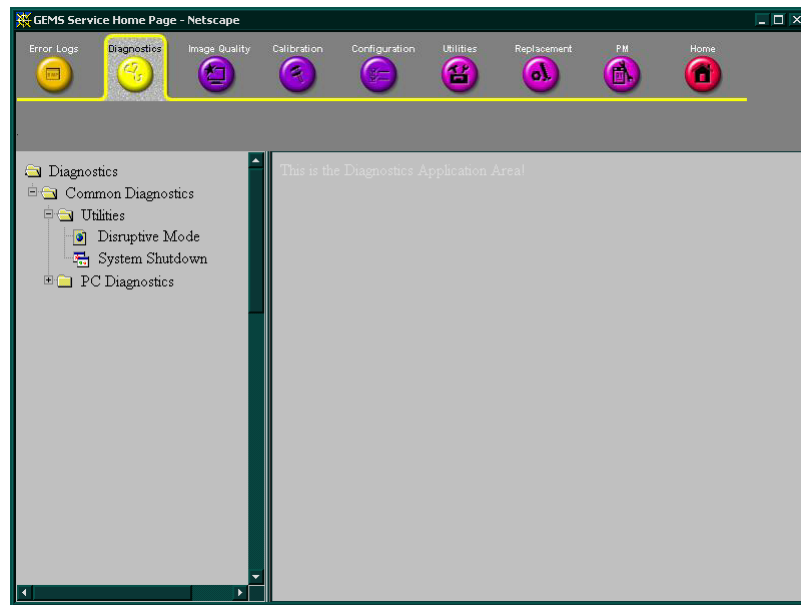
Figure 7-15   Common Diagnostics

The Common Diagnostics folder has two sub-folders:

• Utilities
• PC Diagnostics

7-8-1 Utilities
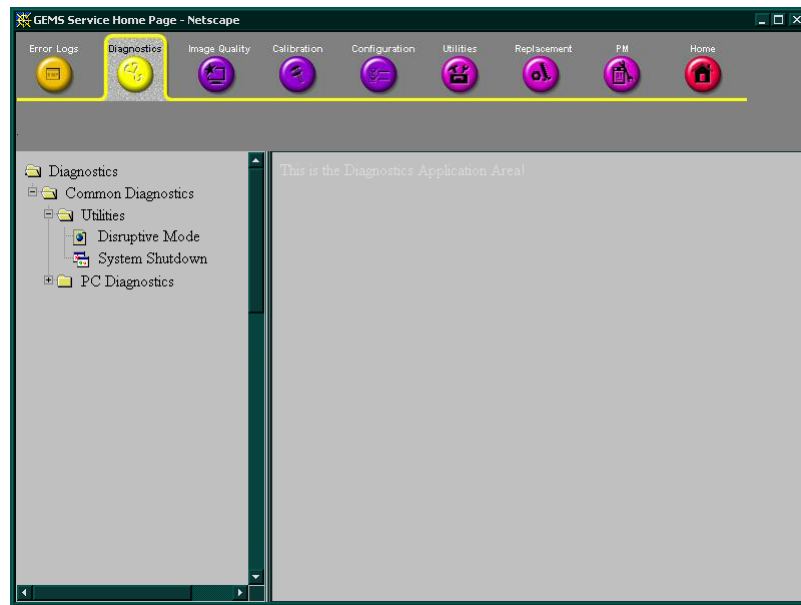
Figure 7-16   Common Diagnostics - Utilities

Utilities has two tools, both intended for use when connecting from a remote connected computer:

1.) Disruptive Mode
2.) System Shutdown

7-8-1-1   Disruptive Mode

Disruptive Mode Utility is used to enable/disable Disruptive Mode.

Disruptive Mode must be used if a remote computer is used to control EchoPAC PC Turnkey . Example: InSite.
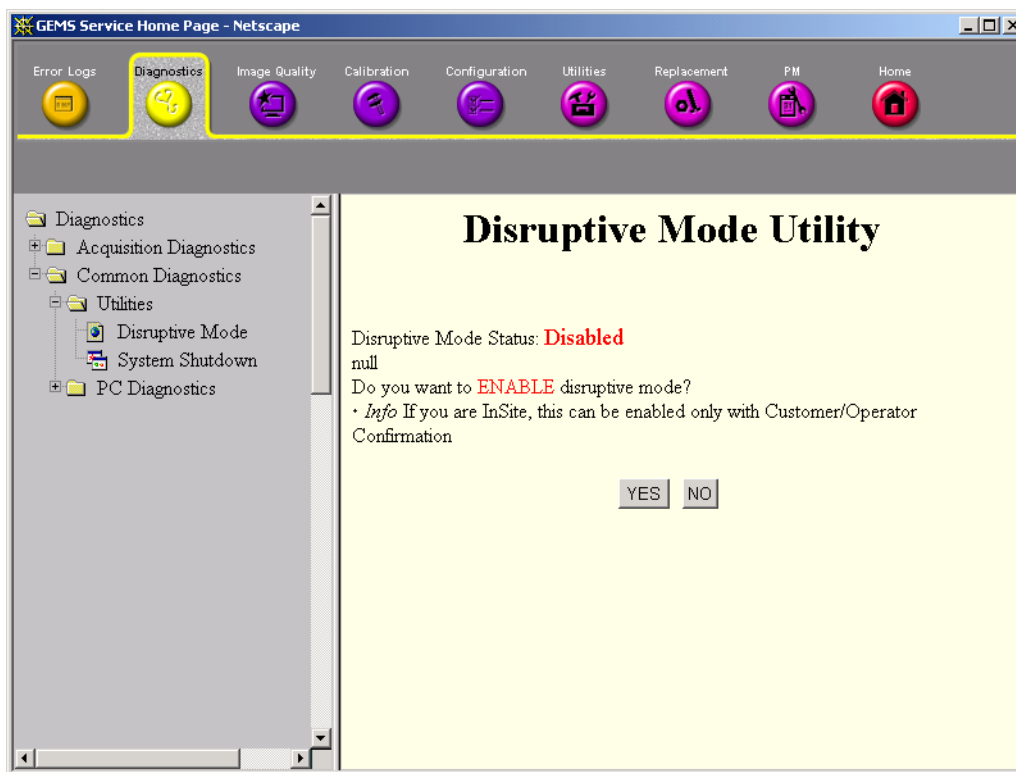
Figure 7-17   Common Diagnostics - Utilities - Disruptive Mode Utility

7-8-1-2   System Shutdown

Intended for use from remote computer. See .

7-8-2   PC Diagnostics (Non-Interactive Tests)

The following sub-sections outline the non-interactive PC Diagnostic tests.

7-8-2-1   CPU Tests

- **CPU Test (All)** - This diagnostic performs a battery of tests on your CPU to ensure it is working properly. The following tests are a complete list of the tests performed on the PC's CPU.
- **CPU: Registers** - The CPU registers are tested using the default test patterns defined above. On 32 bit CPUs, the extended registers are also checked. If errors are detected, the failed registers are listed.
- **CPU: Arithmetics** - Tests the proper function of arithmetic commands ADC, ADD, DEC, DIV, IDIV, IMUL, INC, MUL, SBB and SUB with 16 and 32-bit operands. If errors are detected, the failed commands and operands are listed.
- **CPU: String Operations** - Tests the proper operation of string commands LODS, MOVS, SCAS and STOS with 8, 16 and 32-bit operands. If errors are detected, the failed commands and operands are listed.
- **CPU: Logical Operations** - Tests the proper operation of logical operations AND, NOT, OR and XOR with 16 and 32-bit operands. If errors are detected, the failed operands are listed.
- **CPU: Math Registers** - Tests coprocessor register stack, pointers and commands FLDLZ, FLDPI, FLDLN2, FLDLG2, FLDL2T, FLDL2E and FLD1. If errors are detected, the failed steps and commands are listed.
- **CPU: Math Commands** - Tests coprocessor commands FBLD/FBSTP, FLD/FST, FXCH, FCOM, FICOM, FTST, FXAM and FUCOM. If errors are detected, the failed instructions are listed.
- **CPU: Transcendental** - Tests coprocessor transcendental commands F2XM1, FPATAN, FPTAN, FYL2X, FYL2XP1, FCOS, FSIN and FSINCOS. If errors are detected, the failed commands are listed.
- **CPU: MMX Arithmetic** - Tests MMX commands PADD, PSUB, PMUL and PMADD. If errors are detected, the failed commands are listed.
- **CPU: MMX Logical** - Tests MMX commands PAND, PANDN, POR and PXOR. If errors are detected, the failed commands are listed.
- **CPU: MMX Shift** - Tests MMX commands PSLL and PSRL. If errors are detected, the failed commands are listed.
- **CPU: MMX Data Transfer** - Tests MMX commands MOVD and MOVQ. If errors are detected, the failed commands are listed.
- **CPU: MMX Misc.** - Tests MMX commands PCMPEQ, PCMPGT, PACKSS, PACKUS, PUNPCK and PUNPCK. If errors are detected, the failed commands are listed.

7-8-2-2   **Hard Drive Tests**
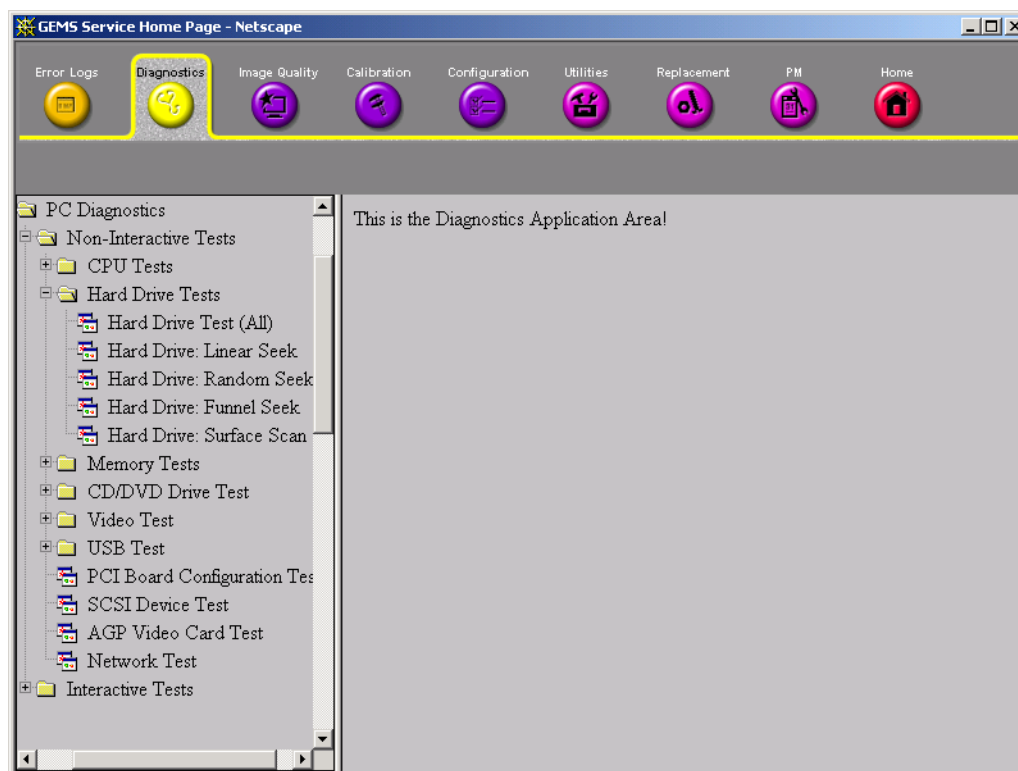
Figure 7-18   Hard Drive Tests

- **Hard Drive Test (All)** - The Hard Drive test examines your hard disk drive using a series of tests to ensure that your drive can perform its functions.

  The following tests are performed on your hard drive to ensure the hard disk controller and the drive mechanism are working correctly. The disk surface itself is also checked.

NOTE: *The hard drive test can take over ten minutes.*

- **Hard Drive: Linear Seek** - Hard disk drive heads are moved from track 0 to the maximum track one track at a time.
- **Hard Drive: Random Seek** - Hard disk drive heads are moved randomly several hundred times.
- **Hard Drive: Funnel Seek** - Hard disk drive heads are moved in a funnel fashion, i.e., from the first track on the drive to the last, then to the second track, then to the second to last track, then to the third track, and so on.
- **Hard Drive: Surface Scan** - This test scans for surface defects on the hard disk drive.

7-8-2-3 **Memory Tests**
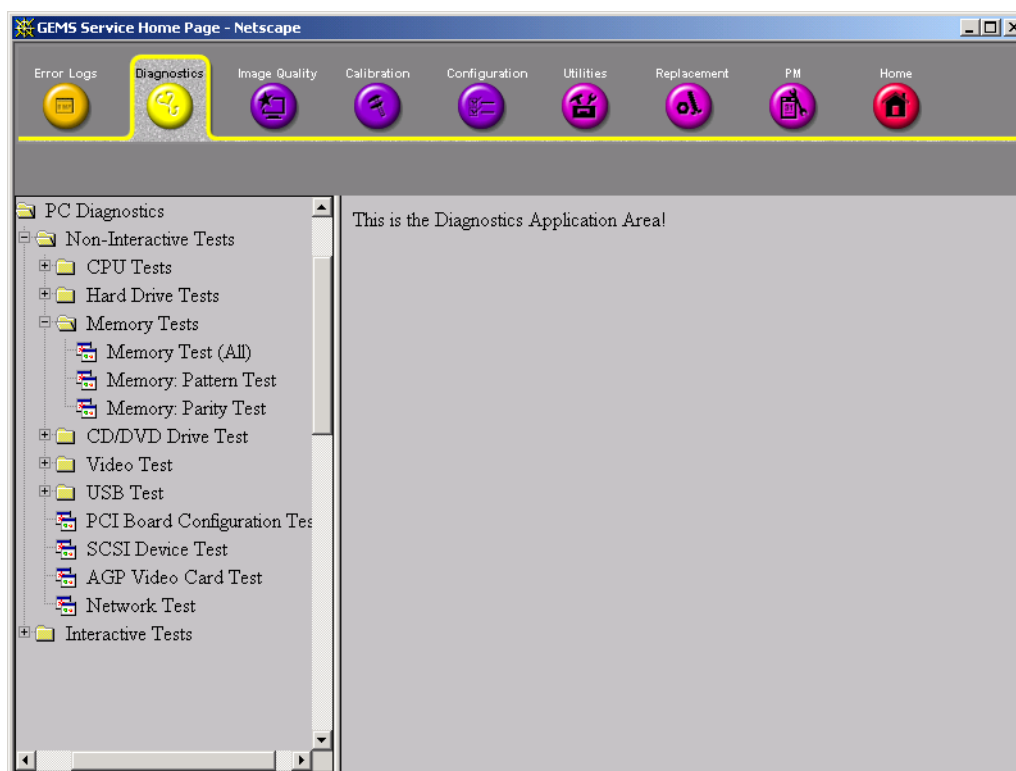
Figure 7-19   Memory Tests

- **Memory Test (All)** - Eighteen test patterns are used to test memory locations. If errors are detected, the address of the block the error was detected in is shown. During testing, these diagnostics will also look out for parity errors and other exceptions. These will be added to the Test Log as errors if encountered.

- **Memory: Pattern Test** - The program uses several test patterns to test as much memory as possible.

- **Memory: Parity Test** - This test checks for parity errors on the memory bus during intensive string transfer operations. If an error is detected, the address of the failed block is displayed.

7-8-2-4   CD/DVD Drive Test
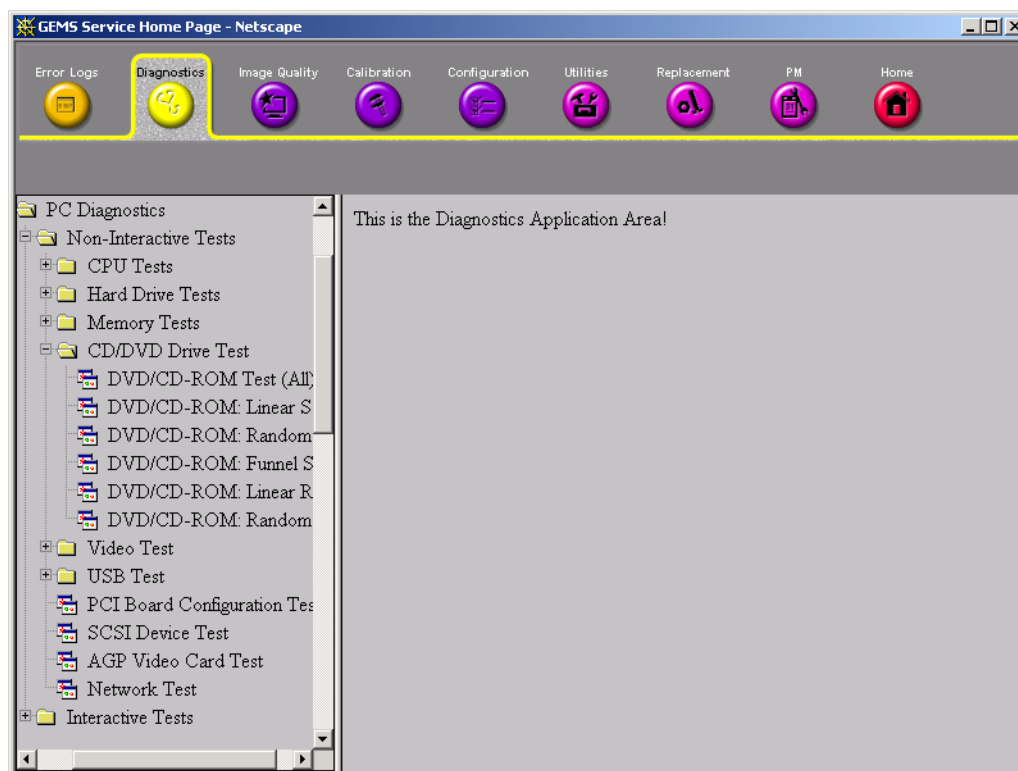
Figure 7-20   CD-Rom Drive Tests

- **DVD/CD-ROM Test (All)** - The DVD/CD-ROM test examines the DVD/CD-ROM drive to make sure it is working properly. Use a data DVD/CD-ROM or a DVD disk for these tests. You cannot use an audio CD, such as a regular commercial music CD, with this test.

NOTE: The PC is sometimes slow in recognizing a newly inserted DVD/CD-ROM disk. It is best to wait a few seconds after inserting a disk into the drive before you run any tests.

There are two types of DVD/CD-ROM tests:

1.) *Seek Tests:* Ensures the drive can access all locations on a disk.
2.) *Read Tests:* Ensures the drive can read all the data.

- **DVD/CD-ROM: Linear Seek** - Tests that all locations can be accessed on a DVD or CD-ROM disk in a linear fashion, starting from the first to the last.

- **DVD/CD-ROM: Random Seek** - Tests that all locations can be accessed on a DVD or CD-ROM disk randomly.

- **DVD/CD-ROM: Funnel Seek** - Tests that all locations can be accessed on a DVD or CD-ROM disk in a funnel fashion, starting from the first then moving to the last, then, at the next pass starting from the second location then moving to the next to the last, and so on.

- **DVD/CD-ROM: Linear Read** - Reads the data on the CD-ROM or DVD in a linear fashion, starting from the start to the end.

- **DVD/CD-ROM: Random Read** - Reads the data on the DVD or CD-ROM randomly.

7-8-2-5   **Video Test**
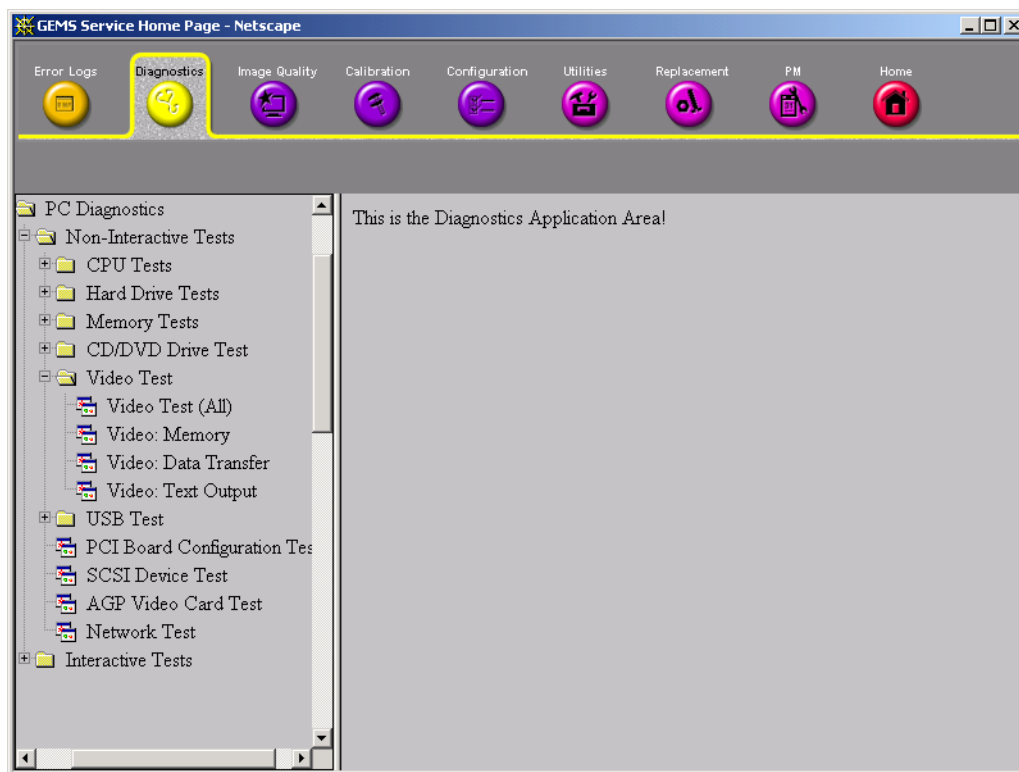
Figure 7-21   Video Tests

- **Video Test (All)** - This diagnostic tests your system's video capabilities. This involves testing the video memory with 18 patterns, testing your graphics acceleration, and text output. You will see these tests being performed on your monitor.

  You can cancel this test at any time by hitting the Escape (Esc) key.

The following tests are performed on your monitor:

- **Video: Memory** - Video memory is tested by filling the video buffer with 18 test patterns, one pattern at a time. The tests will fill the entire screen with a single color.
- **Video: Data Transfer** - This tests the graphics acceleration part of your video controller. These tests will appear on your screen as black and white concentric squares and rectangles of various sizes and colors. If errors are detected, the locations of the problems are displayed.
- **Video: Text Output** - This test prints a text string in random sizes and colors to tests your video device driver and video controller.

7-8-3   PC Diagnostics, Interactive Tests

7-8-3-1   Keyboard Test

1.) Double-click **Keyboard Test** from the PC Diagnostics interactive tests menu.

2.) Select the **Execute** button. A keyboard layout is displayed on which you can see the keys of a standard computer keyboard. Some of these keys are missing on EchoPAC PC Turnkey .

3.) Press each key on your keyboard once and make sure that the corresponding keys on-screen are removed from view. If a key on-screen is not removed, that key may be damaged and you may have to have your keyboard repaired or replaced. Since some of the displayed keys are missing on EchoPAC PC Turnkey , they cannot be removed.

4.) To reset the keyboard, select the Reset Keys button.

5.) To exit the test, select Close.

7-8-3-2   **Audio Test**

1.) Double-click **Audio Test** from the PC Diagnostic interactive tests menu.
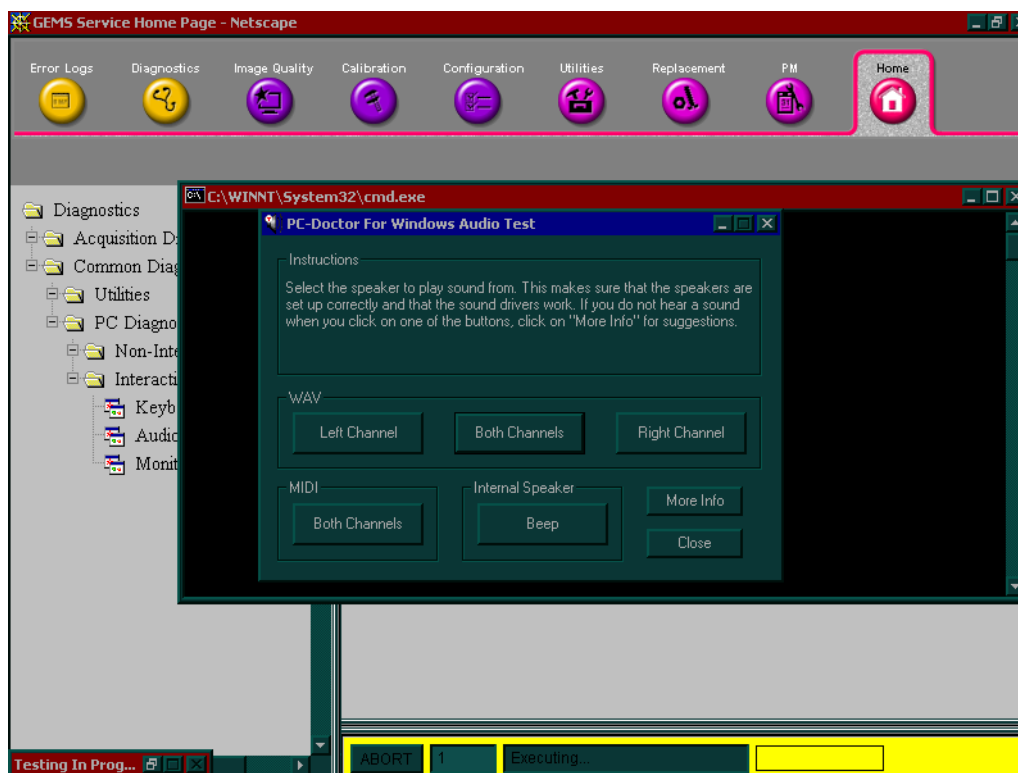
Figure 7-22   Sound Tests

2.) To test the WAV sound reproduction select Left Channel, Right Channel, or Both Channels to test your speakers. You should hear a guitar chord.

3.) To test MIDI sound reproduction select the button under MIDI. You should hear a few seconds of recorded music.

4.) Click on the Beep button. You should hear a low "beep" from your Back-End Processor. (It may be difficult to hear due to noise from the fan.

If no sound is produced in these tests, choose the More Info button in the Audio Test dialog box for information about possible causes and solutions.

7-8-3-3   Monitor Test

Double-click **Monitor Test** from the PC Diagnostic interactive tests menu.
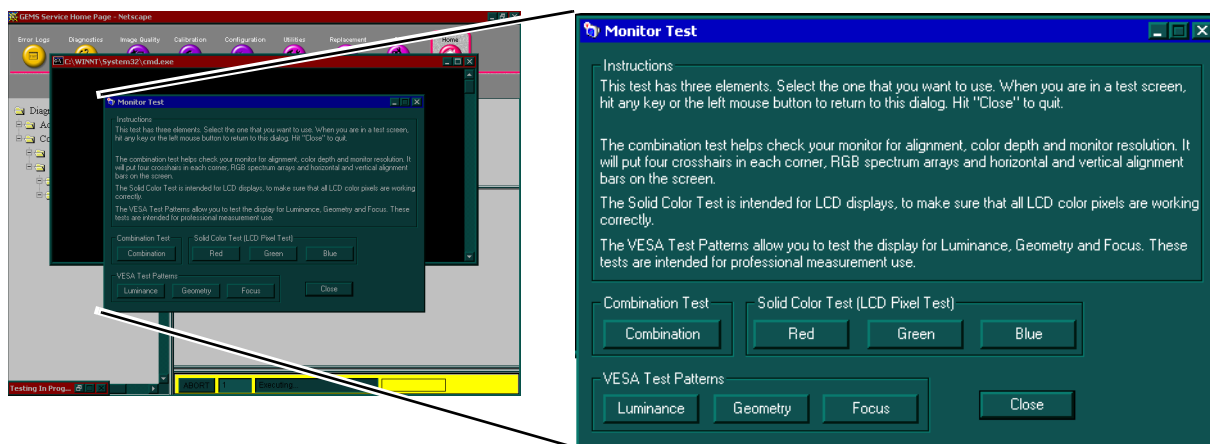
Figure 7-23   Monitor Test

The monitor test dialog box presents you with three options:

- **Combination Test** - Checks the monitor for alignment, color depth, and monitor resolution. It will put four cross-hairs in each corner, RGB (Red Green Blue) spectrum arrays and horizontal and vertical alignment bars on the screen.

NOTE: *In most cases, you will choose the Combination Test.*
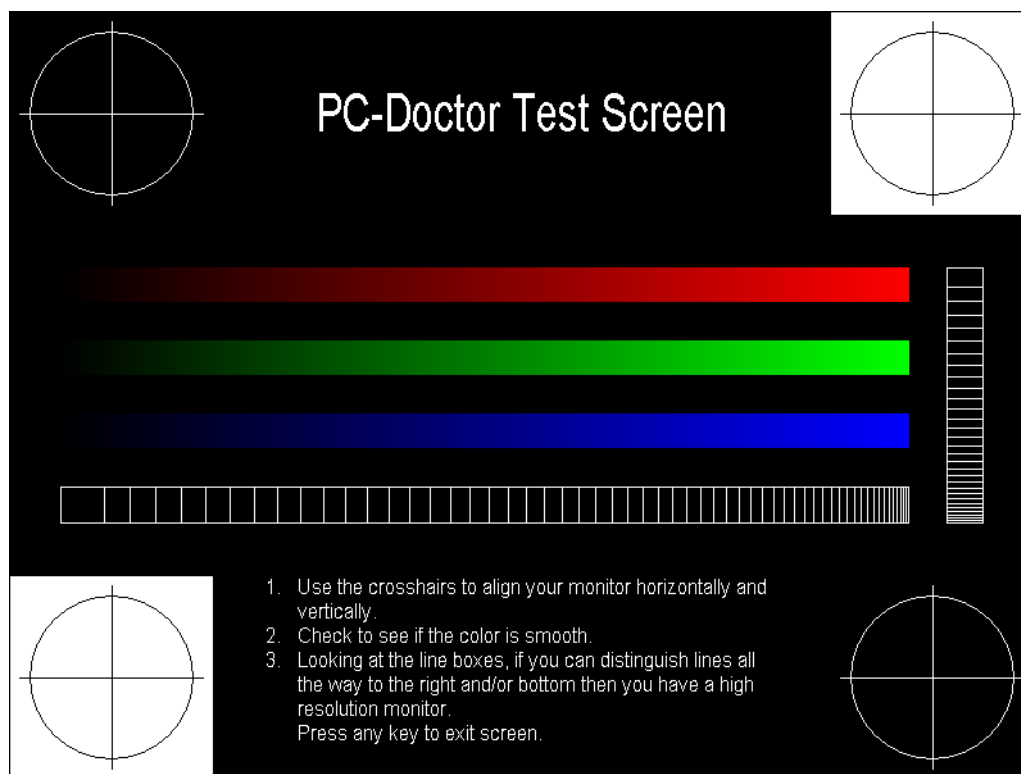
Figure 7-24   Monitor Test

7-8-3-3   Monitor Test (cont'd)

- **Solid Color Test** - The solid color test is for laptop and LCD (Liquid Crystal Display) panel displays. This test displays solid color screens to allow you to make sure all color pixels are operating correctly.

- **VESA (Video Electronics Standards Association) Test Patterns** - The VESA test patterns checks luminance, geometry, and focus. The VESA tests are designed for professional measurement use.

Luminance
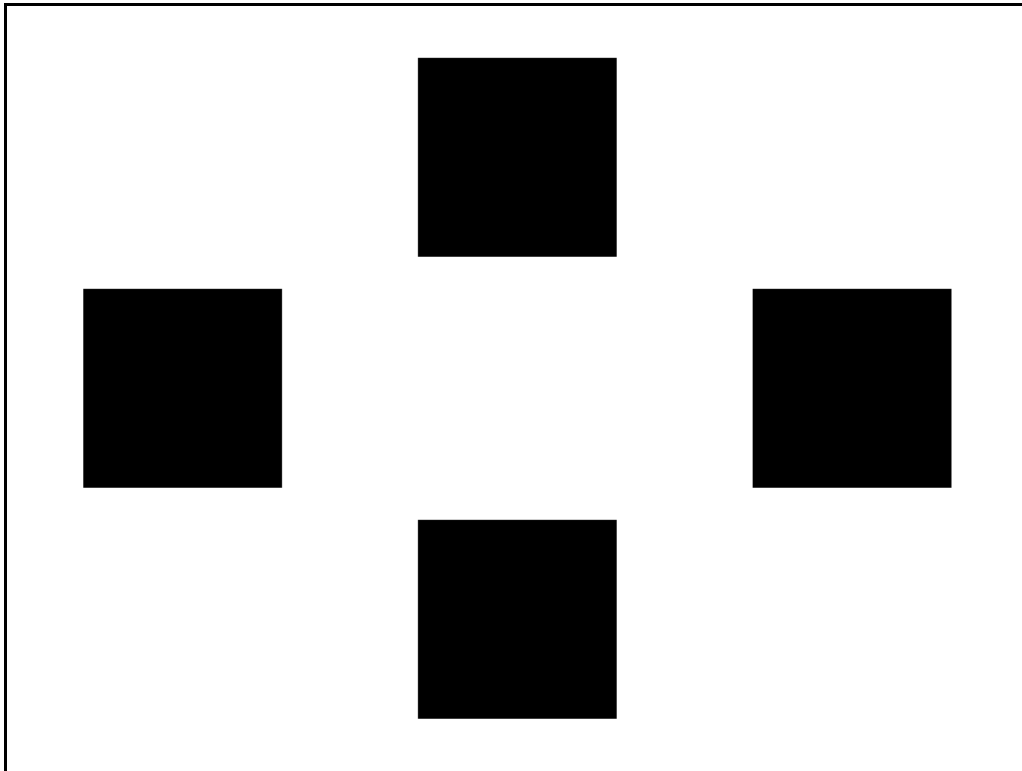
Figure 7-25   Monitor, VESA Test Pattern, Luminance

7-8-3-3   Monitor Test (cont'd)

Geometry
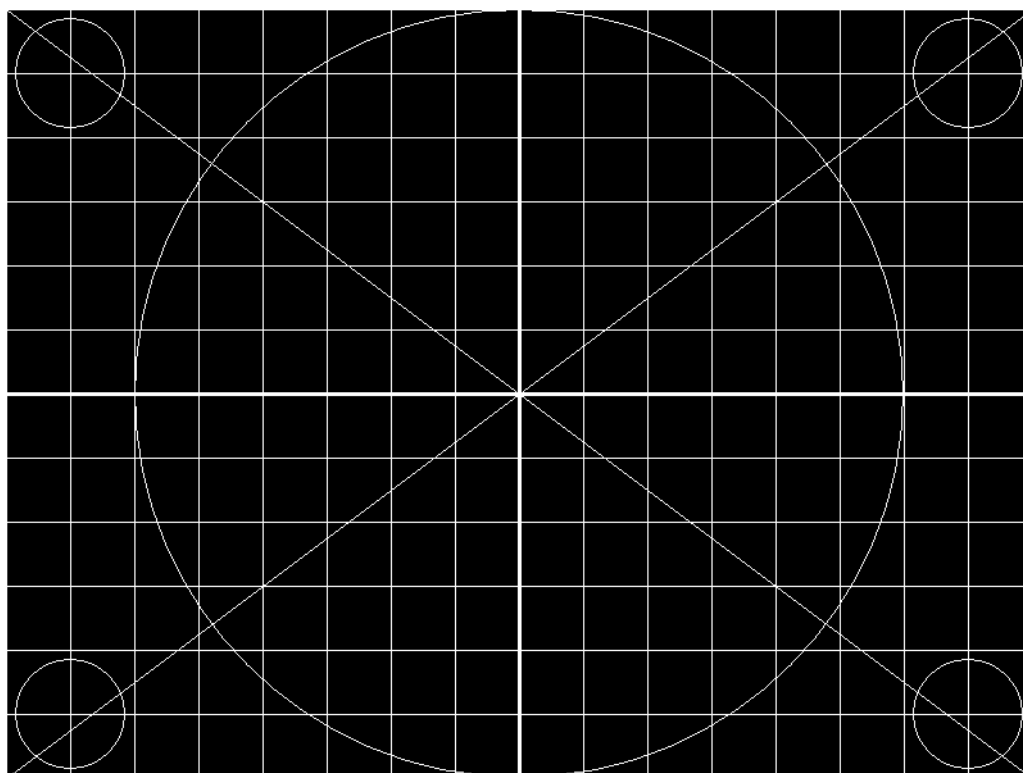
Figure 7-26   Monitor, VESA Test Pattern, Geometry

7-8-3-3   Monitor Test (cont'd)

Focus
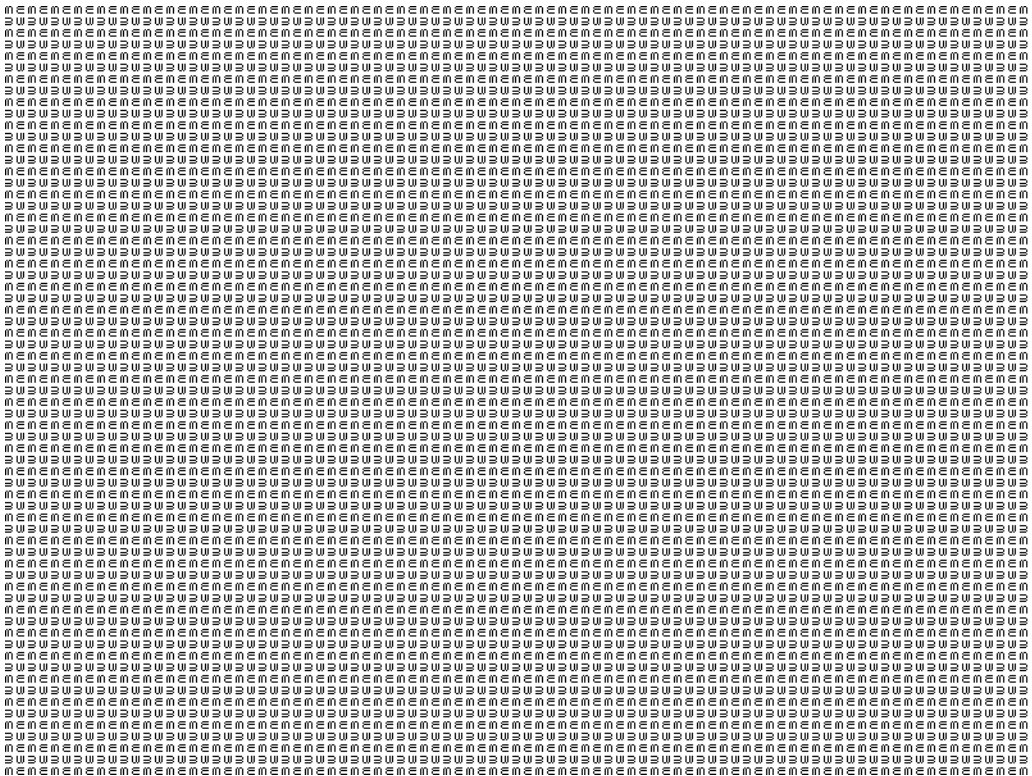
Figure 7-27   Monitor, VESA Test Pattern, Focus

7-8-4   Utilities

The Utilities page contains several miscellaneous tools:

- Windows 2000 Utilities
  - Disk Usage
  - IP Configuration
  - Network Status
  - Windows 2000 Services
  - User Accounts
  - Shared Resources
  - System Shutdown
  - Disk Defragmenter
- Workstation Utilities
  - System Shutdown
  - Set Debug Utility
  - Reset database
  - Clean Userdefs
  - Resource File Utility
- Prodiags Configuration
  - Prodiags Browser
  - File Transfer Configuration Utility
- Ilinq Configuration Utility

Figure 7-28   Utilities/Tools Page

7-8-5   Windows 2000 Utilities

7-8-5-1   Disk Usage

The Disk Usage page displays an overview of EchoPAC PC Turnkey 's disk usage.
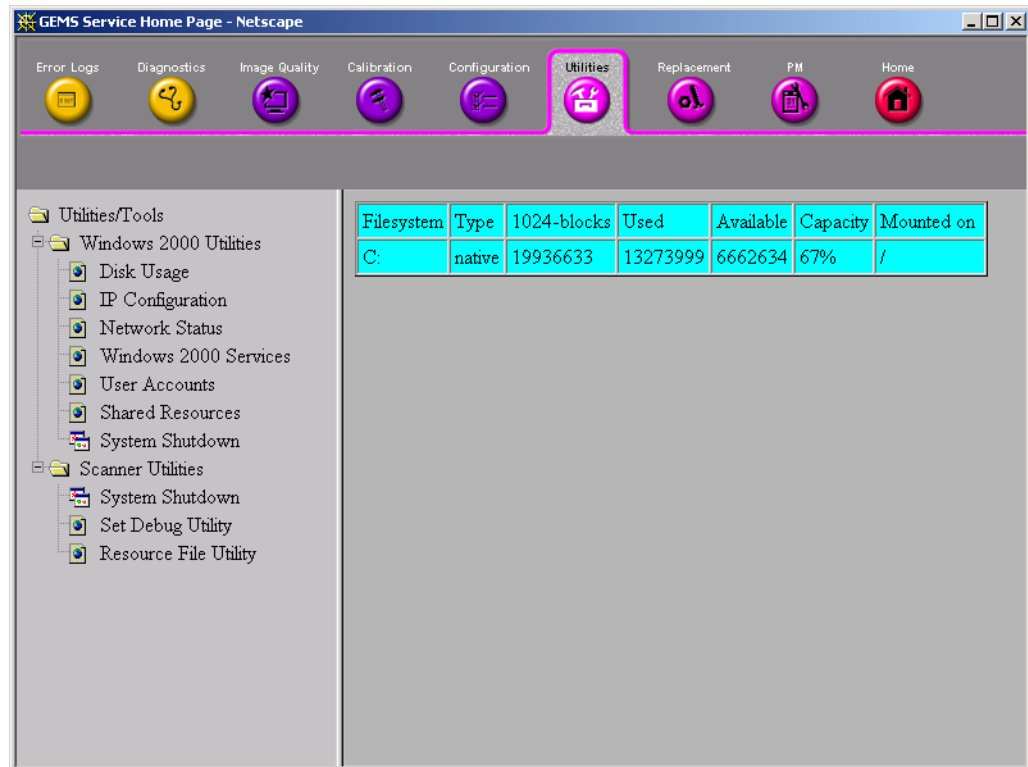
Figure 7-29   Disk Usage

7-8-5　　Windows 2000 Utilities (cont'd)

7-8-5-2　　IP Configuration

The IP Configuration page gives you an overview of EchoPAC PC Turnkey 's Internet Protocol (IP) configuration.
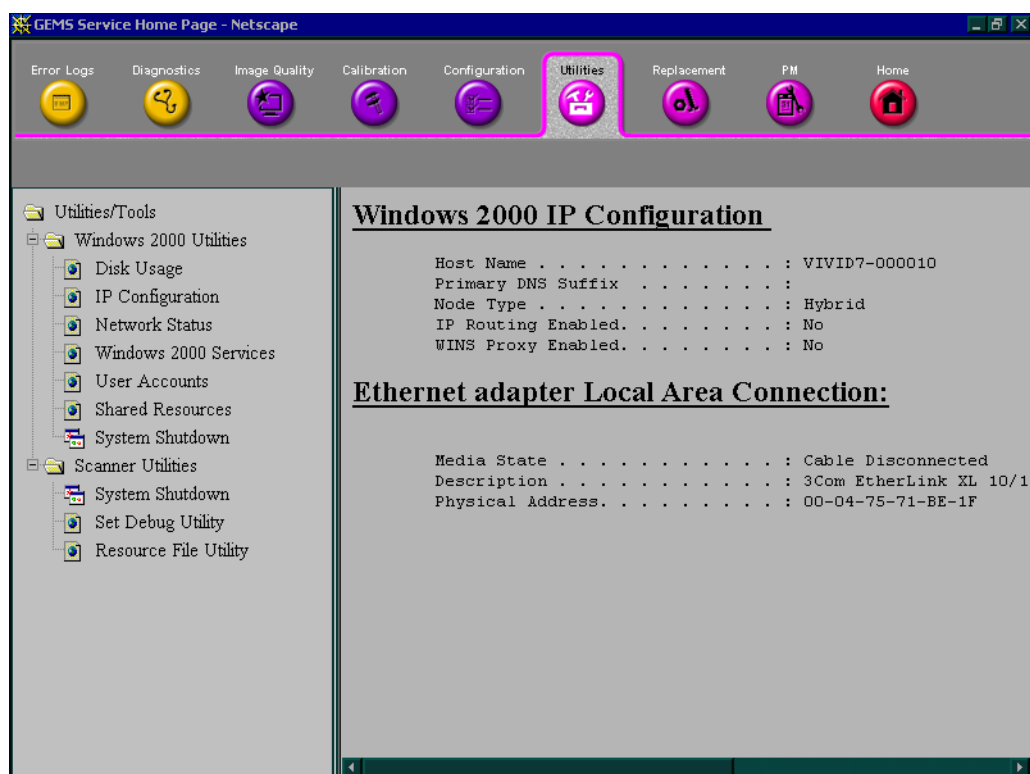
Figure 7-30　IP Configuration

7-8-5   Windows 2000 Utilities (cont'd)

7-8-5-3   Network Status

This screen displays all open TCP/IP Ports on EchoPAC PC Turnkey .
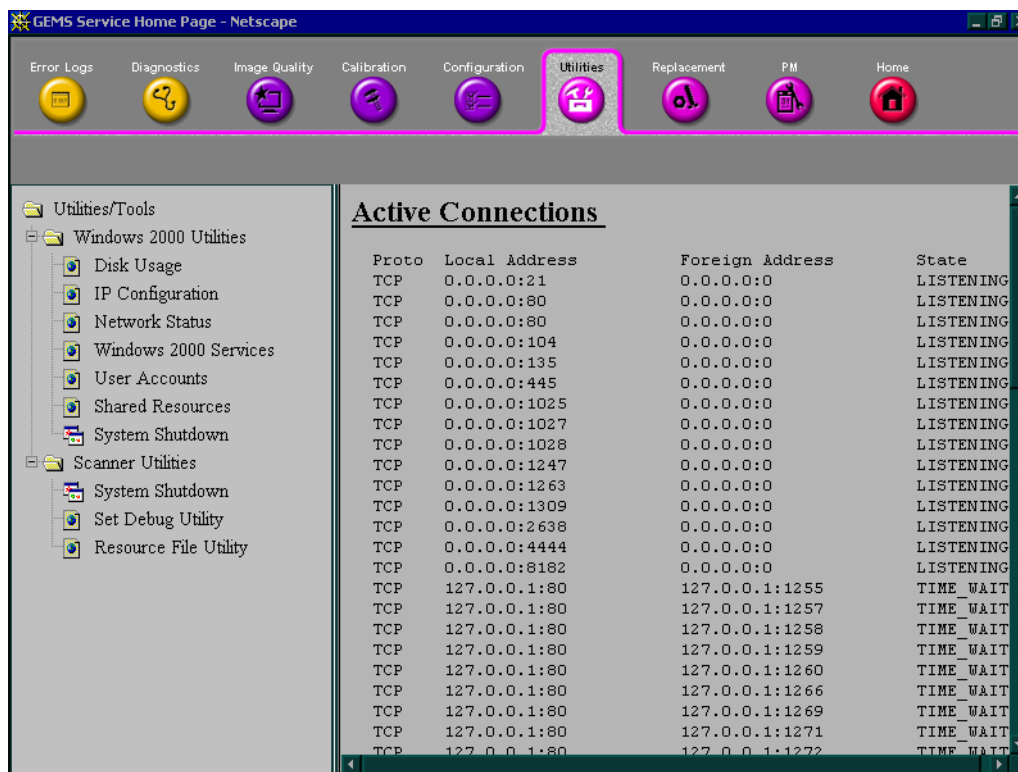
Figure 7-31   Network Status

7-8-5   Windows 2000 Utilities (cont'd)

7-8-5-4   Windows 2000 Services

This page displays a list of active Windows 2000 services.

A Windows 2000 Service is a computer program that has been automatically started and is running in the background on the computer.

Figure 7-32   Windows 2000 Services

7-8-5   Windows 2000 Utilities (cont'd)

7-8-5-5   User Accounts

This page lists the Users that has been given access to this EchoPAC PC Turnkey .
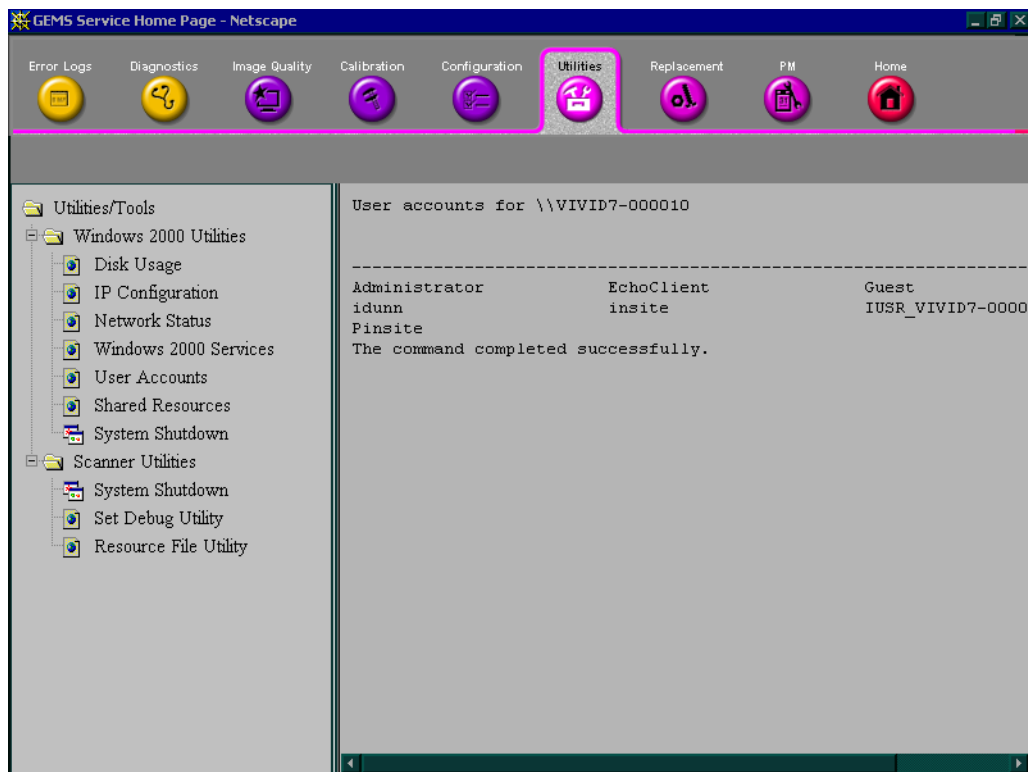
Figure 7-33   User Accounts

7-8-5   Windows 2000 Utilities (cont'd)

7-8-5-6   Shared Network Resources

This screen displays all shared network resources on EchoPAC PC Turnkey .
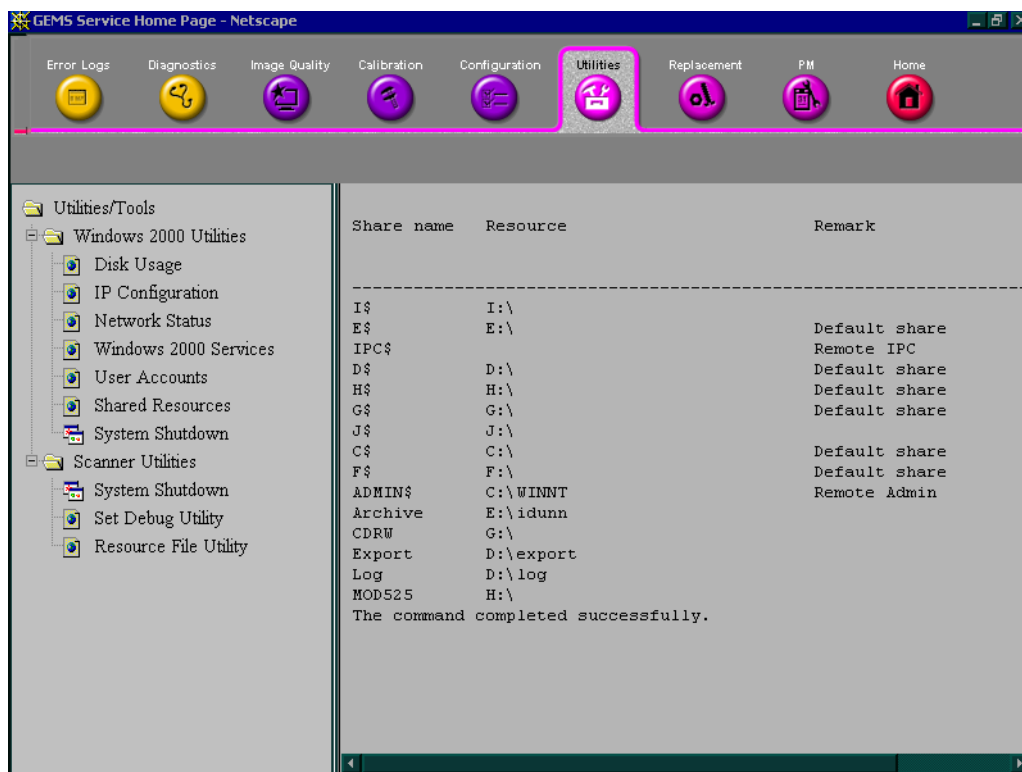
Figure 7-34   Shared Network Resources

7-8-5   Windows 2000 Utilities (cont'd)

7-8-5-7   System Shutdown

NOTE: *Intended for use from remote computer.*

This menu gives you the ability to either Restart or Shutdown the EchoPAC PC Turnkey .

NOTE: *Retain Disruptive Mode should be kept unchecked if you are working on EchoPAC PC. It must be checked if working from an external computer.*
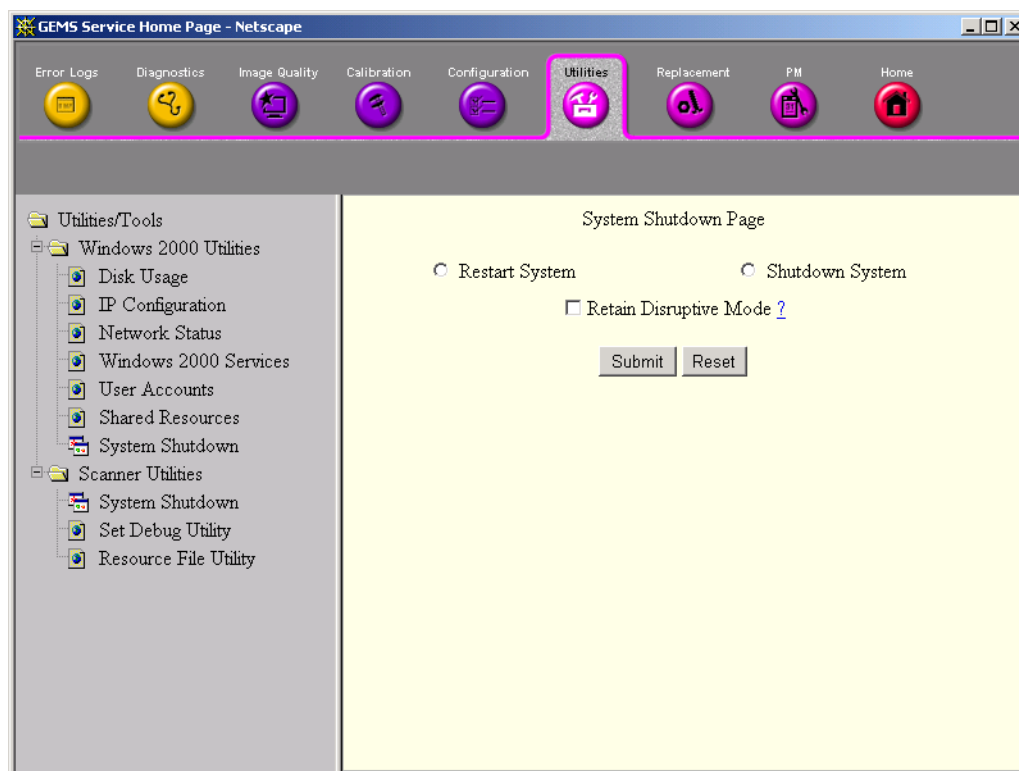
Figure 7-35   Restart or Shutdown System

7-8-6 Scanner Utility (EchoPAC PC Turnkey Utilities)

7-8-6-1 System Shutdown (EchoPAC PC Turnkey Shutdown)

7-8-6-2 Set Debug Utility

This function is only to be used on Request from GE Service. It is used for setting Debug Variables.
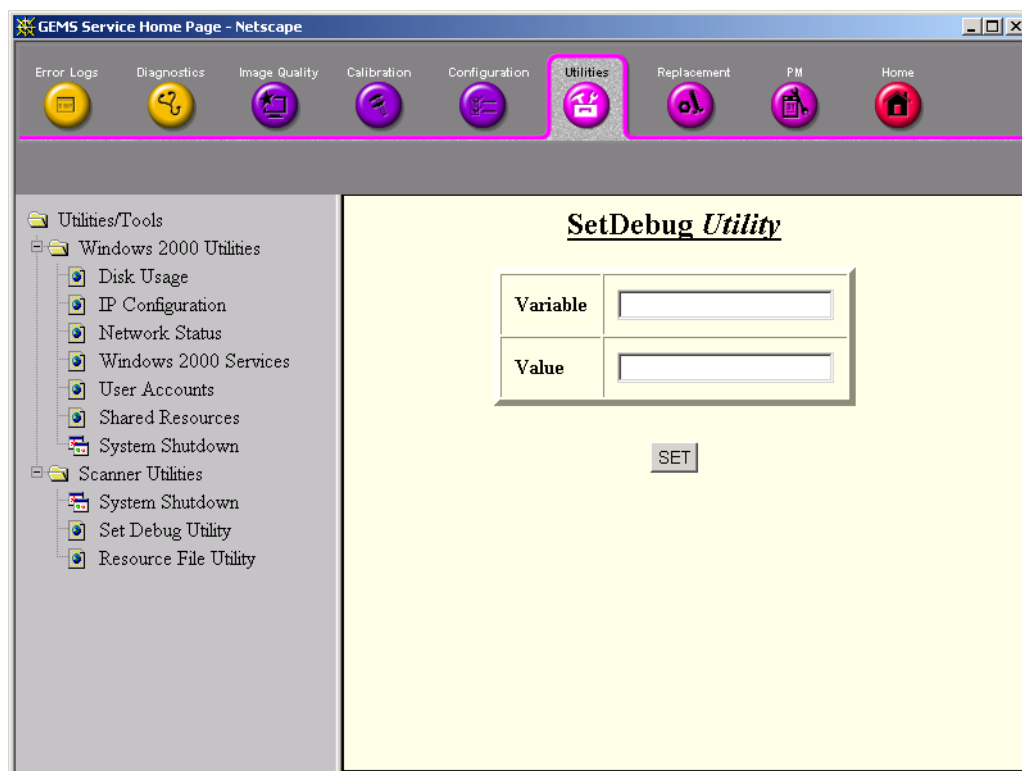
Figure 7-36 Set Debug Utility

7-8-6   Scanner Utility (EchoPAC PC Turnkey Utilities) (cont'd)

7-8-6-3   Resource File Utility

From this page you can review the listed *User Defined Resource File* and save it to MO.

-    View

Select View to examine the User Defined Resource file on-screen.

-    Save

Select Save and navigate to the MO drive to save the User Defined Resource file.

Figure 7-37   Resource File Utility

7-8-7   Replacement

Field is not populated.
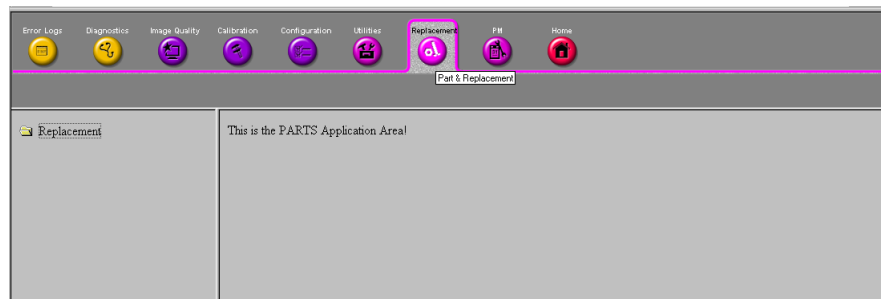
Figure 7-38   Part Replacement Page

7-8-8   PM

Field is not populated.
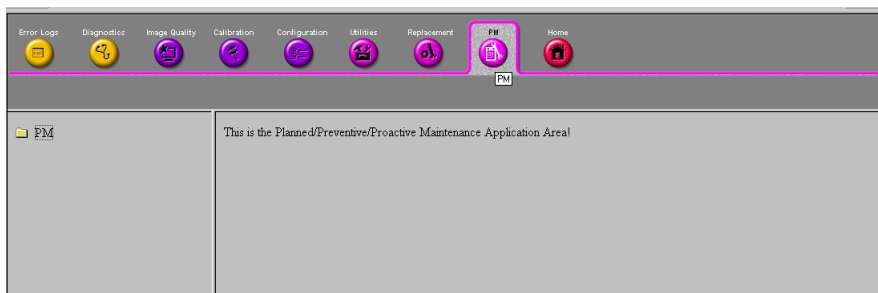
Figure 7-39   Planned Maintenance Page

7-8-9   Home

Select **Home** to return to the Service Home Page.

7-8-10   Exit From Diagnostics

Select the "X" in the upper right corner of the screen to exit Diagnostics.

7-8-11   Restart EchoPAC PC Turnkey After Diagnostics

Always shutdown the system and reboot after a diagnostics session.

-
-
-

7-8-11-1   Computer Does Not Work
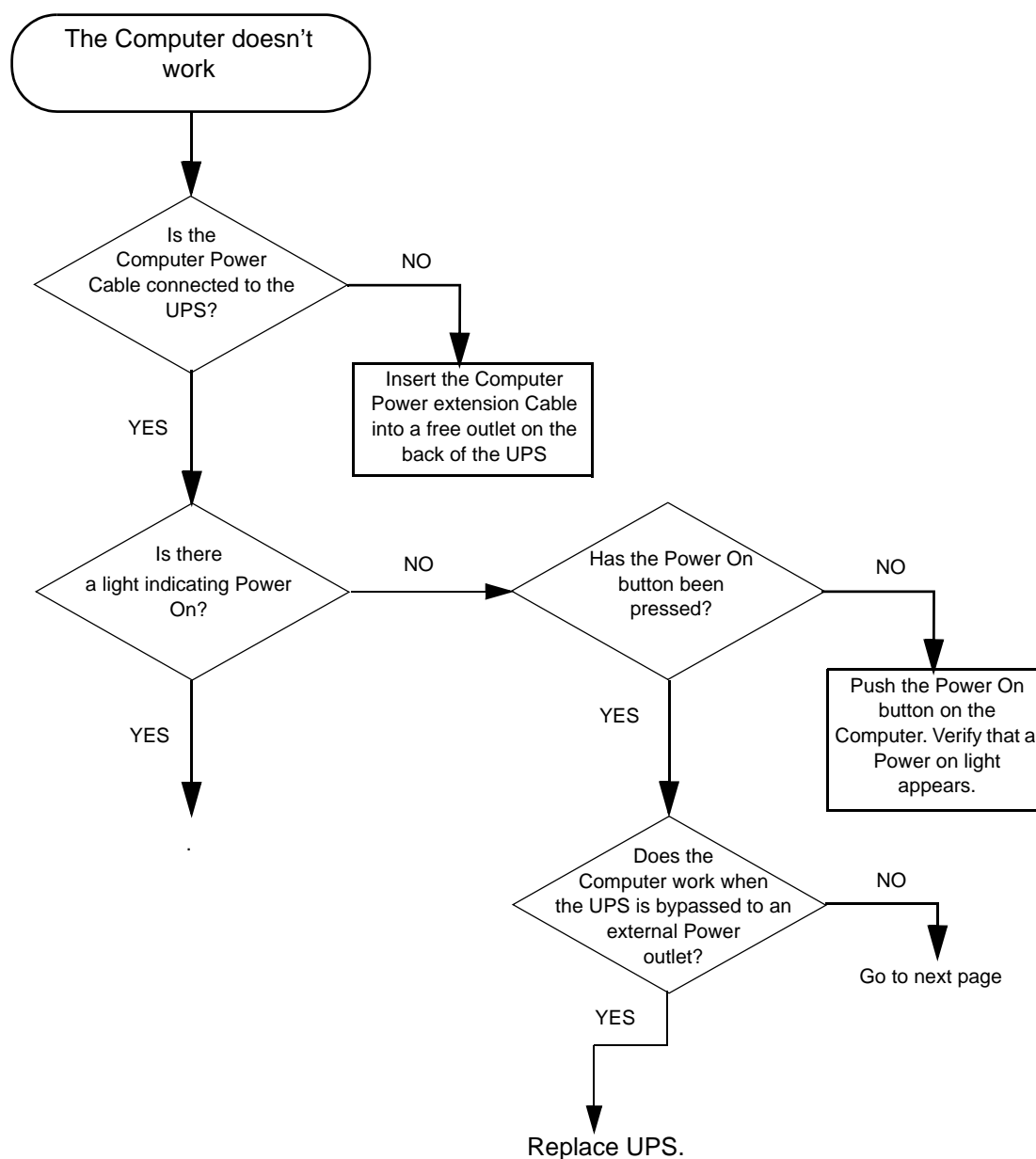
Figure 7-40   Computer Does Not Work.

7-8-11-1   Computer Does Not Work (cont'd)
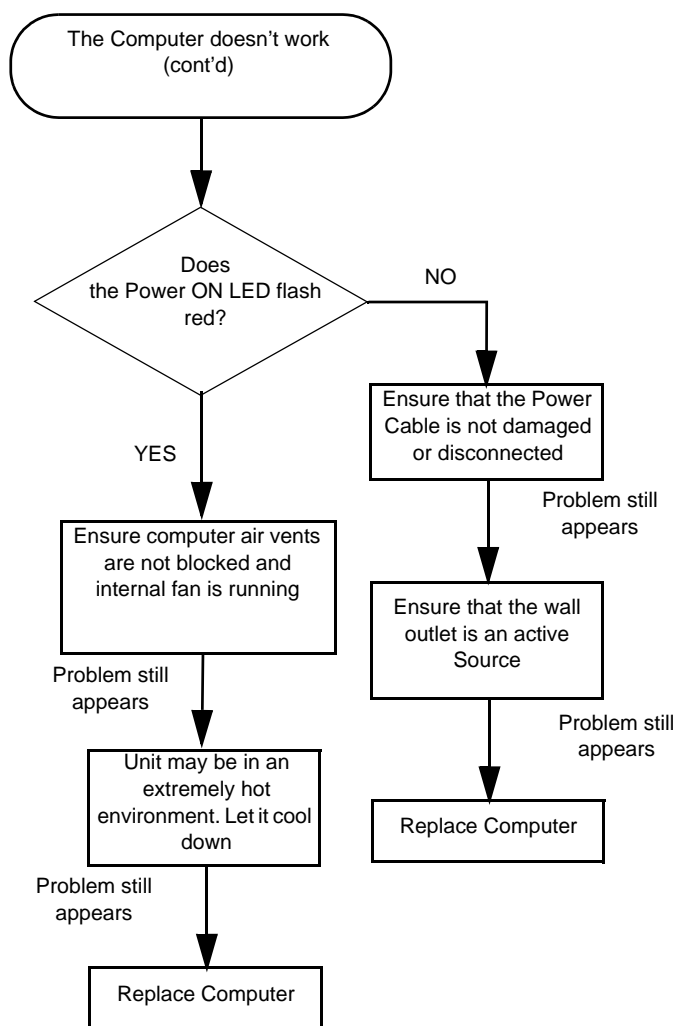
Figure 7-41   Computer Does Not Work (cont'd)

7-8-11-2   Computer Boot Up Problems
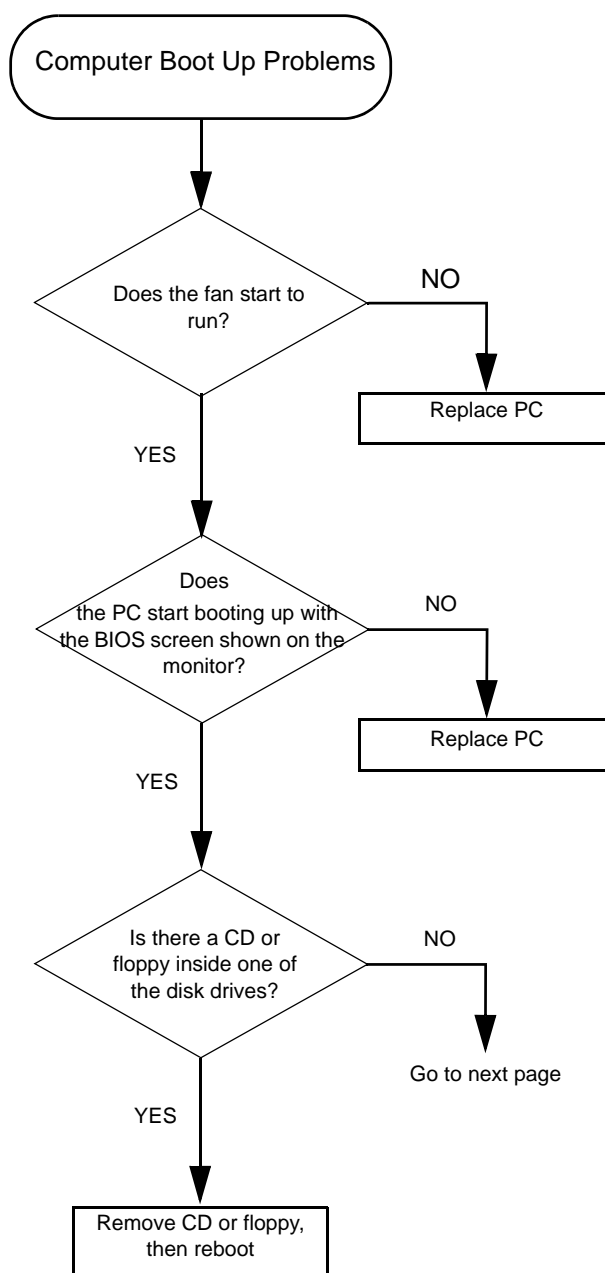
Figure 7-42   Computer Boot Up Problems

7-8-11-2   Computer Boot Up Problems (cont'd)
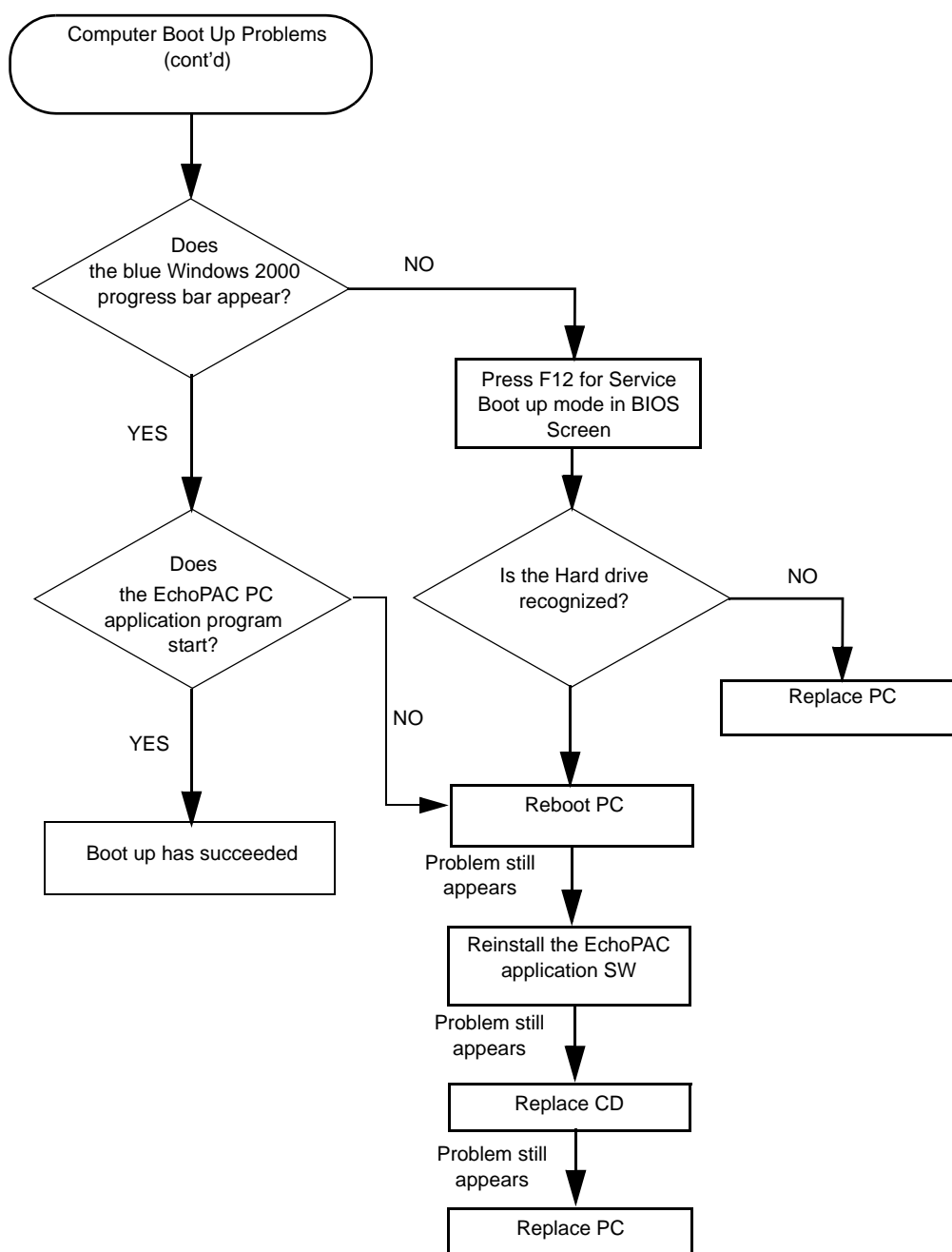
Figure 7-43   Computer Boot Up Problems (cont'd**)**

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7-8-11-3   Repair DICOM DIR does not work
Applies to:

EchoPAC BT-09, all versions

Problem:

Repair DICOM DIR does not work if the number of files is greater than 30.000.

Cause:

Software limitation.

Solution:

1.) Create a DICOM DIR on a memory stick/flash card.
2.) Replace the defective dicom dir with the one from the memory stick/flash card
3.) Run **Repair DICOM DIR**

7-8-11-4   DICOM option not available after upgrading

Applies To:

- BT'02 SW v2.6.2
- BT'03 SW v3.5.4
- BT'03 SW v3.6.5

Problem:

DICOM option is not available after upgrade to the above versions.

Cause:

The reason for this is that Dicom is no longer part of basic functionality. A Dicom option will be provided on request.

Solution:

Contact your pole OLS to obtain a new Dicom SW option.

7-8-12   Auto-populations of Wall Motion scoring (Bullseye) in Stress doesn't work

Problem:

Auto-populations of Wall Motion scoring (Bullseye) in Stress reports does not work after upgrade to software version v3.5.4 or v3.6.5.
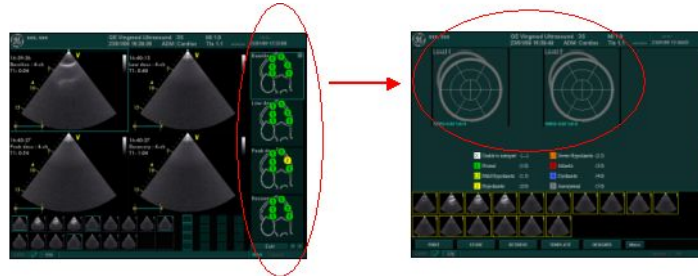
Figure 7-44   Auto-populations

Applies to:

Vivid 7 (and EchoPAC PC) with SW versions 3.5.4/3.6.5, using special Stress reports with Bullseye.

Cause:

Software bug.

Solution:

FMI FMI76105 (Mandatory FMI on Request) is deployed to correct Wall Motion Scoring (Bullseye) in stress report. It is estimated that only 5% of customer base is using Wall Motion Scoring.

Check with your customers before installing BT03 FMI's, **76078, 76079, 76080 and 76081.** If needed, install FMI 76105 at the same time.

Procedure:

Follow this procedure when contacting Customer to schedule appointment to install FMI

1.) When contacting customer to schedule appointment to install FMI ask if they are using Stress.
- If **No**: Continue to schedule FMI install appointment as usual.
- If **Yes**: Continue with the next step (step 2).
2.) Ask if customer is using the **Bullseye template**, the **CutPlane (Pictograph) template** or other templates using Bullseye scoring, for their stress reporting.
- If no Bullseye scoring is used in report, continue to schedule FMI install appointment as usual.
- If using **Bullseye template**: Schedule to install the optional FMI 76105simultaneously with the other FMIs.

7-8-13   Long delay during Auto-purge or "System is not responding"

Applies To:

All Vivid 7 and EchoPAC PC - BT'02 to BT'08.

Problem:

- Unacceptable long delay during Auto-purge which is automatically triggered at End Exam and the Internal Archive Disk has less than 10 GB free space.
- In some cases the message "The system is not responding" may appear:
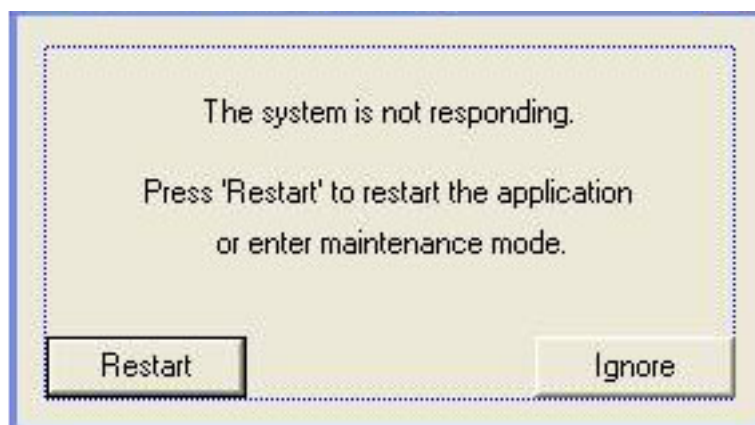
Figure 7-45   The system is not responding

Cause:

To large data set read into memory when executing auto purge.

Solution:

1.) Advise Customer to use Disk Management Move instead of Copy. Please refer to the User manual on how to configure the Move function according to Customer's preferences. This is better for overall System Performance.

2.) Or, change one resource setting as per procedure below.

Procedure:

1.) Exit to desktop of Vivd 7/EchoPAC PC - Service Dongle is required.

2.) Take a backup copy of C:\idunn\target\resources\idunn\setup\EchoDiskMng.res.

3.) Remove the Read Only Properties of **C:\idunn\target\resources\idunn\setup\EchoDiskMng.res**.

4.) Use a text editor, for instance Notepad, to edit the file.
   Open **C:\idunn\target\resources\idunn\setup\EchoDiskMng.res** .

5.) Make the following Change in the [Query_Param] section:
   - [Query_Param] .
   - AutoPurge_Exm2Prg = 50 (this is originally set to 1000).

6.) Save the file and change the file properties back to Read Only.

7.) Remove the Service Dongle and restart the unit.

NOTE: A Reload of System Software will reset AutoPurge_Exm2Prg back to default value - 1000.

7-8-14   Reliability problem: Disk management, DVD on HP xw4400

Applies To:

EchoPAC PC BT'06 Software on HPxw4400 PC.

Problem:

Reliability problem with disk management on EchoPAC PC Turnkey workstation HP xw4400 with DVD-drive LG GSA H21L.

Cause:

Instant Write v8.3.0.8 gives problems for Disk Management.

Solution:

Downgrade InstantWrite Driver to v8.0.5.3 by installing System Software v2.0.9, PN: EQ200159-01.

NOTE: *This alone doesn't solve the problem in the field. The DVD-drive LG GSA H21L, which was shipped with the HP xw4400, fails intermittently when writing to DVD, especially often while using Disk Management. This drive must be replaced with Pioneer DVD Drive, P/N: 066E0698, and Windows Registry Patch CD, P/N: FD200147-01 must be installed.*

Procedure:

Install the System Software v2.0.9.

For installation instructions, see: Section 8-5 "BT'06 Software Reloading Procedure" on page 8-74.

7-8-14-1   Installation Problems HP 8000
Problem:

Installation problems with HP Officejet PRO 8000.

The printer driver will not install untill the workstation/scanner recognizes the printer.

Cause:

HP Officejet PRO 8000 is delivered with fixed IP address.

Solution:

NOTE: *This procedure must be performed before you can install the printer driver for HP 8000*

1.) Press the network config button on the printer to print out the IP address.
2.) Then change temporarely the IP address on the workstation/scanner to match the printers IP address.
3.) Install the printer driver for HP 8000.

7-8-14-2   Issues with Universal Driver PL6 and HP2025n printer
Applies to:

Vivid 7/EchoPAC with HP2025n printer

Problem:

Not able to install printer or printer is only printing B&W

Cause:

Related to the Universal Printer driver PL6, and the printer language. If the printer is set to other languages than english the installation will fail.

Solution:

The workaround is to set printer language to English, before installing the Universal PL6 printer driver from the *Vivid 7, Vivid E9 and EchoPAC PC Printer Installer v.1.0.3*, GA200652, printer driver CD. After printer driver is installed, the printer language can be set back to the desired language.

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Chapter 8
Replacement Procedures

Section 8-1
Overview

8-1-1   Purpose of this chapter

This chapter describes how to reinstall the EchoPAC PC Turnkey 's software and replace service parts.

8-1-2   Contents in this chapter

Section 8-2
Warnings and important information

8-2-1 Purpose of this section

This section includes important information. Please read it before doing any of the procedures in this chapter.

8-2-2 Warnings

⚠ **WARNING** *BECAUSE OF THE LIMITED ACCESS TO CABINETS AND EQUIPMENT IN THE FIELD, PLACING PEOPLE IN AWKWARD POSITIONS, AT LEAST TWO - 2 PERSONS ARE NEEDED WHEN LIFTING ANYTHING OVER 16 KG (35 LBS).*

⚠ **WARNING** *AT LEAST TWO PERSONS ARE NEEDED WHEN LIFTING THE CRT MONITOR. ANYTHING OVER 16 KG (35 LBS) REQUIRES TWO PEOPLE.*

⚠ **WARNING** *DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:*

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

⚠ **WARNING** *THE WASTE OF ELECTRICAL AND ELECTRONIC EQUIPMENT MUST NOT BE DISPOSED AS UNSORTED MUNICIPAL WASTE AND MUST BE COLLECTED SEPARATELY.*

PLEASE CONTACT THE MANUFACTURER OR OTHER AUTHORIZED DISPOSAL COMPANY TO DECOMMISSION YOUR EQUIPMENT.

8-2-3   Returning/Shipping Repair Parts

Equipment being returned must be clean and free of blood and other infectious substances.

GE Healthcare policy states that body fluids must be properly removed from any part or equipment prior to shipment. GE Healthcare employees, as well as customers, are responsible for ensuring that parts/ equipment have been properly decontaminated prior to shipment. Under no circumstance should a part or equipment with visible body fluids be taken or shipped from a clinic or site (for example, body coils or an ultrasound probe).

The purpose of the regulation is to protect employees in the transportation industry, as well as the people who will receive or open this package

NOTE: *The US Department of Transportation (DOT) has ruled that "items that were saturated and/or dripping with human blood that are now caked with dried blood; or which were used or intended for use in patient care" are "regulated medical waste" for transportation purposes and must be transported as a hazardous material.*

8-2-4   Manpower - When two persons are needed

The following replacement procedure requires two persons:

*   19" CRT monitor replacement procedure

⚠️ **WARNING** *THE 19 INCH CRT DISPLAY NEEDS TO BE LIFTED BY TWO PERSONS WHENEVER THIS IS CALLED FOR.*

The rest of the replacement procedures can be carried out by one person.

Section 8-3
Software reloading procedure - software v108.x and higher

8-3-1   Purpose of this section

This section describes how to reinstall software on an EchoPAC PC Turnkey workstation.

8-3-2   Customer provided prerequisite

- Formatted and labelled media for **Images** storage.
- Formatted and labelled media for **Patient Archive** and **User Defined Settings**.
- Password for the user **ADM**.

  The default password for the user **ADM** is **ulsadm**.

  If the password has been changed by the site, you should record it for your own use, before you start the work on the EchoPAC PC Turnkey .

8-3-3   Tools provided with the EchoPAC PC Turnkey at delivery or after an upgrade

- System software (DVD) - specific for each workstation model.
- Application software (CD)
- CD for 4D LV Volume
- CD for RV Volume

If present:

- Patch for EchoPAC PC Turnkey (CD)

8-3-4   Data Management - moving all images

⚠	**NOTICE**	An error, or a power loss may occur.
		Always backup the Patient Archive and the System Configurations before loading the software! In order to complete a successful restore of the Patient Database, as needed after a hard disk replacement, or if all the content on the hard disk has been erased, the images must be moved away from *EchoPAC PC Turnkey before* doing backup of the Patient Database. Depending on the location set-up, either move the images to a remote server or to removable media like DVD or CD discs.
		As the images are moved, the database will point to the new location.
		If the backup procedure is not completed correctly, the images and database information will be lost.

For instructions, please see "Disk management" in the User Manual/User Guide.

8-3-5   Backing up the Patient Archive and System Configurations

⚠	**NOTICE**	An error, or a power loss may occur.
		Always backup the Patient Archive and the System Configurations before loading the software! In order to complete a successful restore of the Patient Database, as needed after a hard disk replacement, or if all the content on the hard disk has been erased, the images must be moved away from *EchoPAC PC Turnkey before* doing backup of the Patient Database. Depending on the location set-up, either move the images to a remote server or to removable media like DVD or CD discs.
		As the images are moved, the database will point to the new location.
		If the backup procedure is not completed correctly, the images and database information will be lost.

Backup the Patient Archive and System Configurations.

For instructions, please see "Data Backup and Restore" in the User Manual/User Guide.

8-3-6   Recording important settings and parameters

⚠	**NOTICE**	An error, or a power loss may occur during the software loading.
		It is considered to be a best practice to always keep a record on paper of the settings for the EchoPAC PC Turnkey . Verify if it is current before you start to load software!
		.

Always ensure that the following information is available regarding a remote printer:

- Printer Model (as selected on the EchoPAC PC Turnkey .)
  The printer's IP Number.

  The printer's IP number is not easily available via the EchoPAC PC Turnkey 's menus. Print out a status sheet on the printer. For more information, please refer to the printer's documentation.

8-3-7   When to load or reload the software

- If the Hard Disk Drive, or the Workstation has been replaced, the correct EchoPAC PC Turnkey software must be installed on the new unit.
- If the EchoPAC PC Turnkey software becomes corrupted, a software reload may be the only way to solve the issue.
- If the EchoPAC PC Turnkey configuration/setup has issues that are difficult to troubleshoot and resolve, it may be easier to do a software reload, and start the setup from scratch.

8-3-8   Reloading the software from Repository

NOTE: *This function is only available for EchoPAC PC Turnkey units with system software v103.0.0 / v104.0.0 and higher.*

8-3-8-1   Introduction to Software reload from Repository

During the installation process, when the software was installed on the EchoPAC PC Turnkey workstation, the compressed original files, from the DVD and CD, were stored on a separate disk partition on the hard disk drive, labeled "REPOSIT" (Repository). If you are going to reinstall the software, you can install from these files. Usually there is no need to copy the files from DVD/CD once more!

8-3-8-2   Preparations

Disconnect all external USB devices before starting the reload. (This is to ensure that the drive letters are not mixed up during the software reload.)

8-3-8-3   **Initiate software reload from the Recovery Console**

Ensure that the EchoPAC PC Turnkey is powered down.

1.) Switch on the power on the workstation. The EchoPAC PC Turnkey starts.

2.) Press the **Esc** button, on the alphanumeric keyboard, multiple times until the **GRUB** menu is displayed on the screen.

Figure 8-1   GRUB menu

GNU GRUB version 0.97 (638K lower / 2095879K upper memory)

Windows
Recovery Console

Use the | and | keys to select which entry is highlighted.
Press enter to boot the selected OS or 'p' to enter a
password to unlock the next set of features.
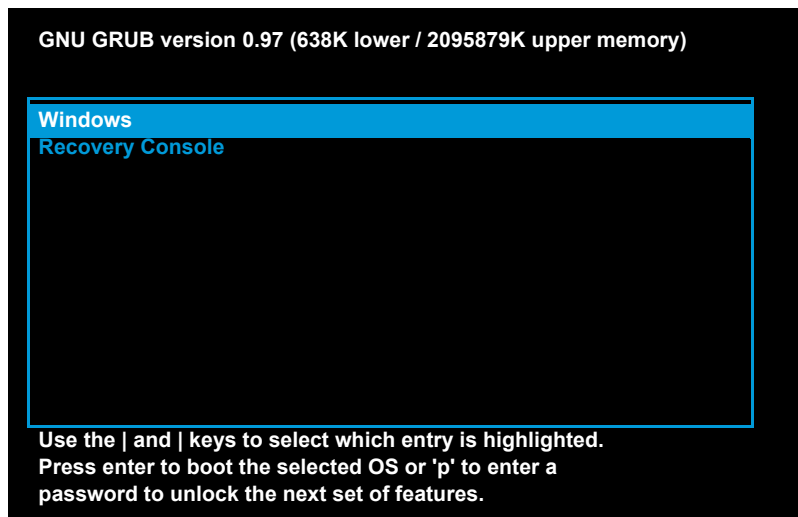
USE THE ARROW DOWN KEY TO SELECT RECOVERY CONSOLE, THEN PRESS ENTER.

3.) On the **Grub** menu, select: **Recovery Console**.

The GE Healthcare Recovery Console is displayed.

Figure 8-2   GE Healthcare Recovery Console (Example)

GE Healthcare Recovery Console

Challenge: 9177D8
Response:

0.9.0.15
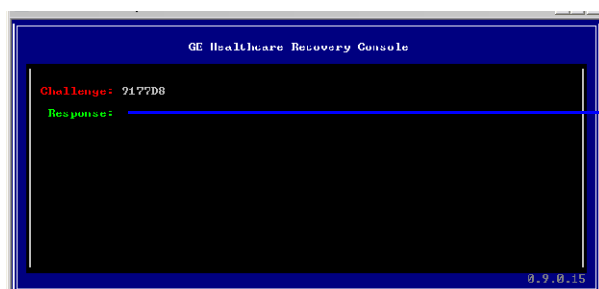
Enter the password (from OLC).

4.) Call the **Online Center (OLC)**.
Tell **OLC** that you need a "**Challenge Code**", and on request, you must read the **Challenge String** on the screen. **OLC** will return a password that you need to type in as the **Response**.

5.) Enter the **Response** (**password**) you got from **OLC**. The response is always in upper-case.

If, accepted, the **System Software Loading from Repository**, starts.

NOTE: *Time to complete the software reload is typically 15 to 25 minutes.*

- When the **System Software reload** is done, the EchoPAC PC Turnkey reboots.

- After the reboot, the EchoPAC PC Turnkey starts to load the Application Software. This is done without any interactions. The TCP/IP settings, Computer Name etc. are restored.

- The EchoPAC PC Turnkey shuts down, and is then ready for verification, see: 8-3-11 "Verifications after the software on C:\ has been loaded" on page 8-22.

8-3-9   Loading the Software - from CD/DVD

8-3-9-1   Introduction

The software is delivered on one DVD for the EchoPAC PC Turnkey System Software and one CD for the EchoPAC PC Turnkey Application Software. In some cases, a third CD with a software patch, may also be included.

A software patch CD is used when one or a few new files should be replaced or added, but the change doesn't require a complete software load.

Example: Virus hardening software.

When installing the software, start with the System Software, then the Application Software and if included, install the patch software at the end.

If you don't need to reload the System Software, you can start with the Application Software. If a patch software is included, remember to install the patch. See the next pages for details.

Contents

8-3-9-2   Preparations

⚠ **CAUTION** **Before any software loading or reloading takes place, please disconnect all externally connected USB and SCSI devices from the workstation and reboot.**

Disconnect all external USB and SCSI devices (USB Flash Card, USB Hard Drive, etc.) before you start loading the software.

8-3-9-3 Loading the BT'12, BT'11 or BT'09 System Software

1.) Insert the applicable EchoPAC PC Turnkey System Software DVD into the DVD drive.

2.) Power down the EchoPAC PC Turnkey .

3.) Power ON the EchoPAC PC Turnkey . The EchoPAC PC Turnkey will now boot from the DVD you inserted.

Figure 8-3   First four screens - starting PC-DOS and loading drivers for the DVD-drive

After the BIOS is read this process starts.

```
Attempting Boot From CD-ROM
Starting PC DOS...

This driver is provided by Oak Technology, Inc.
OTI-91X ATAPI CD-ROM device driver, Rev D91XV352
(C)Copyright Oak Technology Inc. 1987-1997
   Device Name      : MSCD000
   Transfer Mode    : Programmed I/O
   Number of drives : 1


GCDROM V2.3. 8-24-2006
SATA Native IDE controller at I-O address 30D0h/30D8h, Chip I.D. 808627C0h.
Driver name is "MSCD001".
No CD-ROM drive to use; CCDROM not loaded!
_
```

THE TEXT IN THESE SCREENS DEPEND ON THE INSTALLED DVD DRIVE MAKE AND MODEL.

Several screens will be displayed, indicating the progress.

Figure 8-4   Loading Mouse Driver


```
Loading...
Microsoft (R) Mouse Driver Version 0.20
Copyright (C) Microsoft Corp. 1983-1992.
Copyright (C) IBM Corp. 1992-1993.
Mouse driver installed
Device driver not found: 'MCSD001'.
```
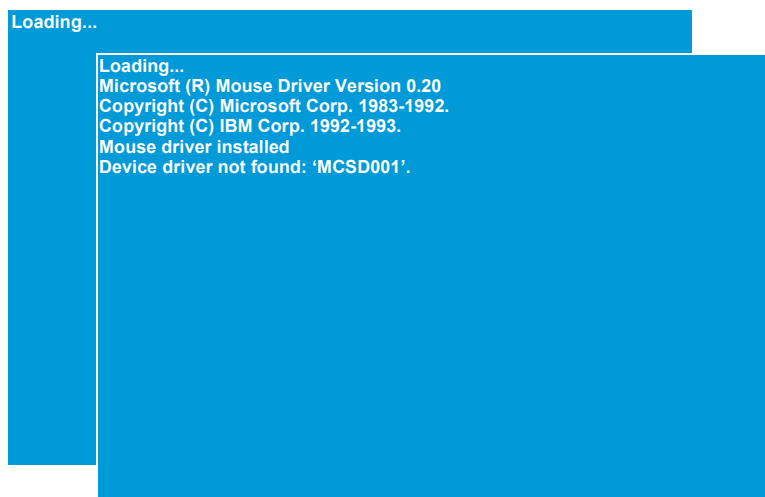
8-3-9-3   **Loading the BT'12, BT'11 or BT'09 System Software** (cont'd)

⚠ **NOTICE**   **If you select "A" in the next step, ALL existing software and data will be erased. If backup has not been performed, all data such as: Patient Database, System Configuration and User Configurations (Customer Presets), will be lost.**

When the screen in Figure 8-5 is displayed, the installation halts and waits for your input.

You can choose if you want to do a complete software installation, deleting all data, or if you only want to update or reinstall the software on the C:\ partition (C:\ drive).

Usually it should be OK to update the C:\ drive only. This will keep Patient Archive and Presets intact.

Table 8-1   Description of the choices in Figure 8-5

DESCRIPTION	WHEN TO USE	COMMAND
To do a complete EchoPAC PC Turnkey software installation. (All data on the Hard Disk Drive will be erased.)	Use this procedure if: - The HDD has been replaced - You want to erase all data on the HDD - The installation on C:\ failed.	A
To update/re-install the software on the C:\ partition. (Only data on the C:\ partition will be erased. This will keep Patient Archive and Presets intact.)	Use this procedure if you are going to: - Repair the software on C:\ - Upgrade the software on C:\.	B
To Restart	You stop the software installation and re-start the workstation.	R
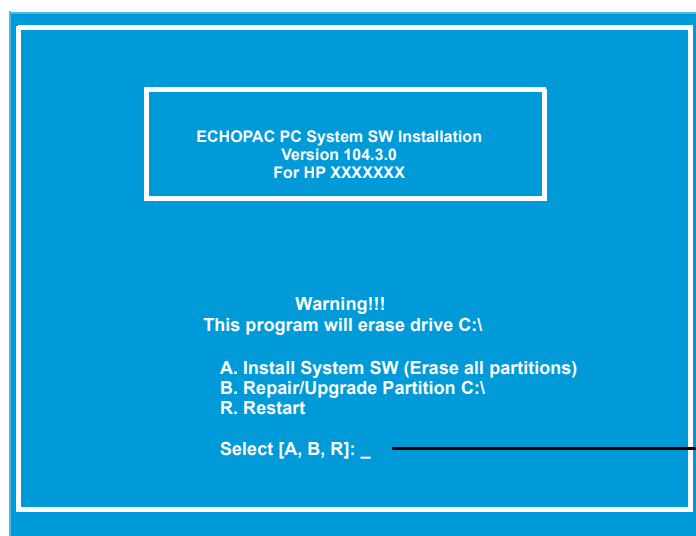

```
ECHOPAC PC System SW Installation
            Version 104.3.0
           For HP XXXXXXX




              Warning!!!
   This program will erase drive C:\

   A. Install System SW (Erase all partitions)
   B. Repair/Upgrade Partition C:\
   R. Restart

   Select [A, B, R]: _
```

SELECT 'A' TO INSTALL THE SYSTEM SOFTWARE AND TO DELETE THE DATABASE, THE SETTINGS AND THE ARCHIVE.

Figure 8-5   Choices

4.) Select "A" to install the system software and to delete the database, the settings and the archive.

8-3-9-3   Loading the BT'12, BT'11 or BT'09 System Software (cont'd)

Next, you are asked to confirm that you will erase the whole disk.

5.) Press "**Y**" to confirm that you will continue. (If you want to return to the previous screen, press "**N**")

Figure 8-6   Are you really sure? Delete Hard Disk Contents

This will erase the whole harddisk before installation!
Are you really sure? Y./n:

YOU HAVE TWO CHOICES HERE.
EITHER PRESS 'Y', AND THE INSTALLATION WILL CONTINUE,
OR PRESS 'N', AND RETURN TO THE PREVIOUS SCREEN
WITHOUT DELETING OR INSTALLING ANYTHING.

This will erase the whole harddisk before installation!
Are you really sure? Y./n: Y
Installing All...

'Y' WAS PRESSED, AND THE INSTALLATION STARTS.

This will erase the whole harddisk before installation!
Are you really sure? Y./n: Y
Installing All...
Partition Status Type Volume Label Mbytes System Usage
C: 1 *DELETED*

THE EXISTING CONTENTS ON THE HARD DISK
ARE DELETED.

8-3-9-3   Loading the BT'12, BT'11 or BT'09 System Software (cont'd)

Figure 8-7   Loading new software from DVD onto the HDD

Here, the Hard disk is completely erased and the erased area is divided into empty partitions.

A RESTART IS REQUIRED

The workstation needs to be rebooted in order to continue the installation. Please let the DVD remain in the CD tray, and press any key to continue.
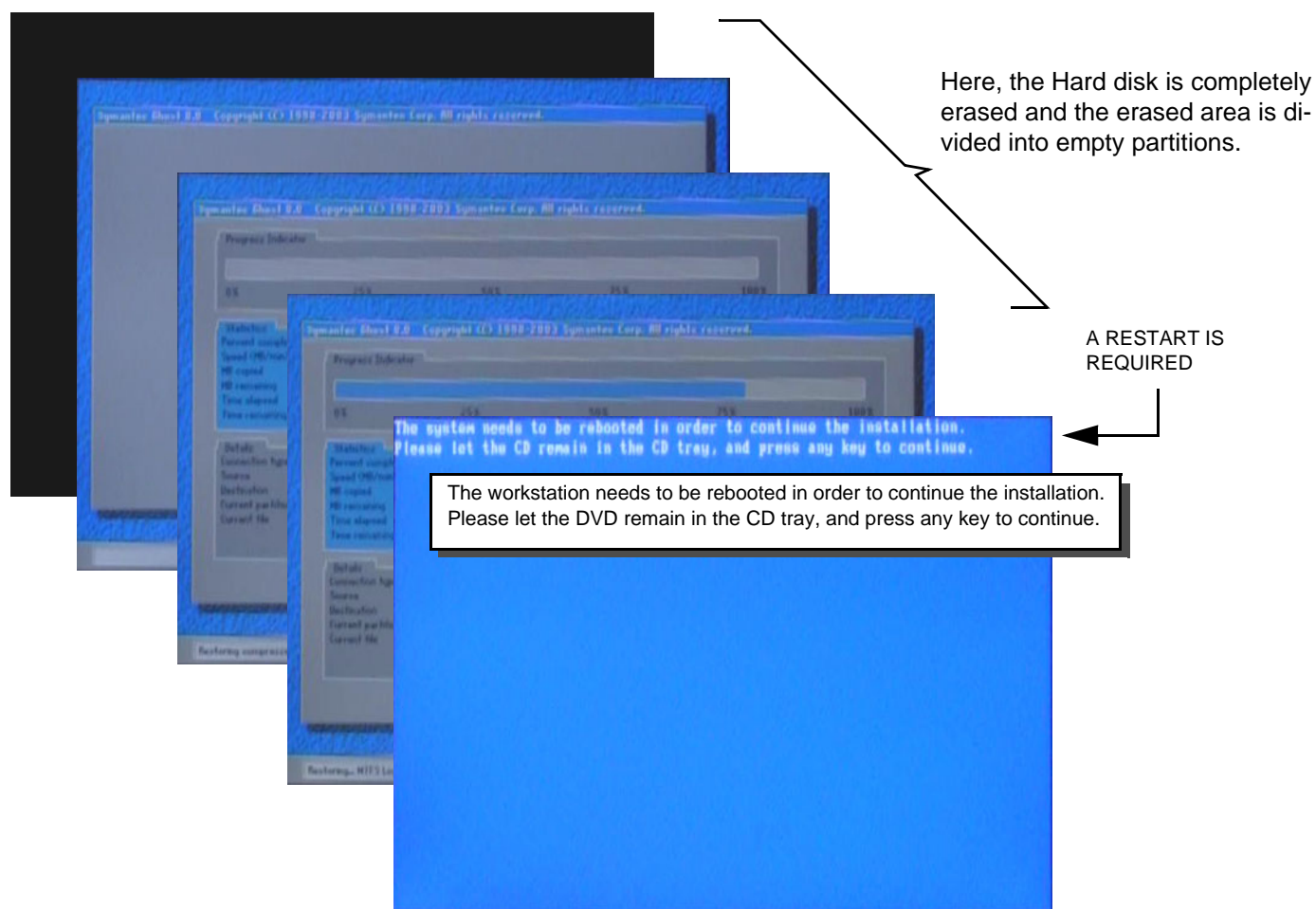
6.) Press any key to reboot at stage above.

NOTE: Please let the CD remain in the CD tray during reboot.

8-3-9-3 **Loading the BT'12, BT'11 or BT'09 System Software** (cont'd)

Figure 8-8   Starting PC-DOS and loading drivers for the DVD-drive

```
Attempting Boot From CD-ROM
```

```
Attempting Boot From CD-ROM
Starting PC DOS...
```

```
Attempting Boot From CD-ROM
Starting PC DOS...

This driver is p
OTI-91X ATAP
(C)Copyright O
   Device Nam
   Transfer Mo
   Number of d
```

```
Attempting Boot From CD-ROM
Starting PC DOS...

This driver is provided by Oak Technology, Inc.
OTI-91X ATAPI CD-ROM device driver, Rev D91XV352
(C)Copyright Oak Technology Inc. 1987-1997
   Device Name        : MSCD000
   Transfer Mode      : Programmed I/O
   Number of drives   : 1


GCDROM V2.3. 8-24-2006
SATA Native IDE controller at I-O address 30D0h/30D8h, Chip I.D. 808627C0h.
Driver name is "MSCD001".
No CD-ROM drive to use; CCDROM not loaded!
_
```

THE TEXT IN THESE SCREENS DEPEND ON THE INSTALLED DVD DRIVE MAKE AND MODEL.

Figure 8-9   Load Mouse Driver and move contents from DVD to Repository

```
Loading...
```

```
Loading...
Microsoft (R) Mouse Driver Version 0.20
Copyright (C) Microsoft Corp. 1983-1992.
Copyright (C) IBM Corp. 1992-1993.
Mouse driver installed
Device driver not found: 'MCSD001'.
```

```
_
```

```
Saving Imagefile to repository (takes up to 10 minutes)
Please wait...
```
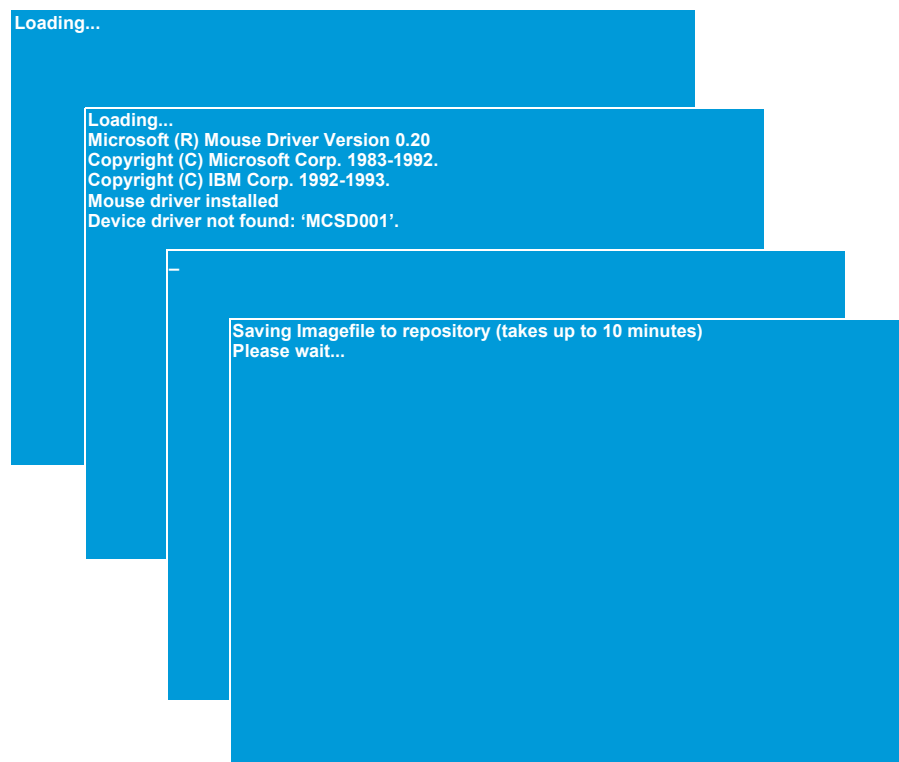
8-3-9-3 Loading the BT'12, BT'11 or BT'09 System Software (cont'd)

Figure 8-10 Install the System Software

INSTALLING THE C:\ PARTITION.

INSTALLING THE D:\ PARTITION.

INSTALLING THE E:\ PARTITION.

8-3-9-3   Loading the BT'12, BT'11 or BT'09 System Software (cont'd)

Figure 8-11 Finalize the System Software installation

F:\ (Repository) Is
installed

System SW successfully installed.

Application SW must be installed from CD.
Please remove System SW CD and insert Application SW CD.

Press any key to reboot.
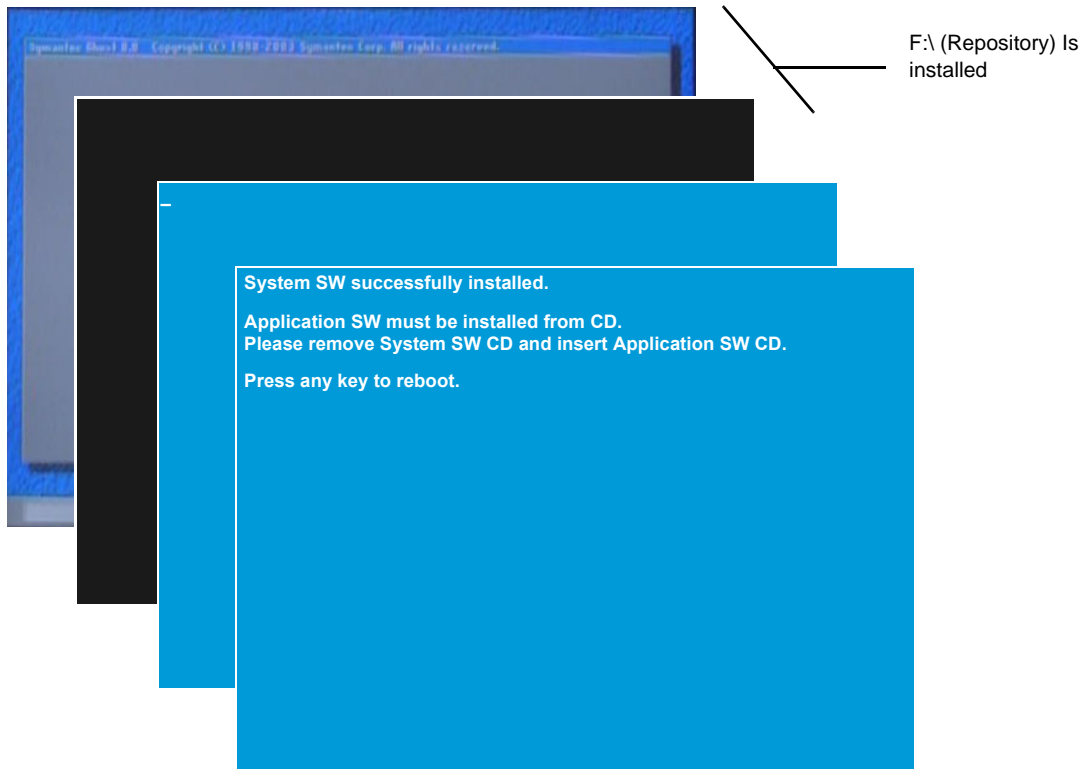
7.) When the System Software Installation has completed, the disc drawer is ejected, and you are prompted to remove the System Software disc from the DVD drive and insert the Application Software CD.

8.) Continue with: 8-3-9-4 "Loading the Application Software - Software version v108 and higher" on page 8-16.

8-3-9-4   **Loading the Application Software - Software version v108 and higher**

1.) If not already done, insert the applicable Application Software CD in the DVD drive.

2.) As soon as you have inserted the Application Software CD and closed the drive, press any key on the alphanumeric keyboard to reboot the EchoPAC PC Turnkey .

After the reboot, the compressed software will be copied from the CD to the Repository partition on the hard drive.

Figure 8-12 Copying files
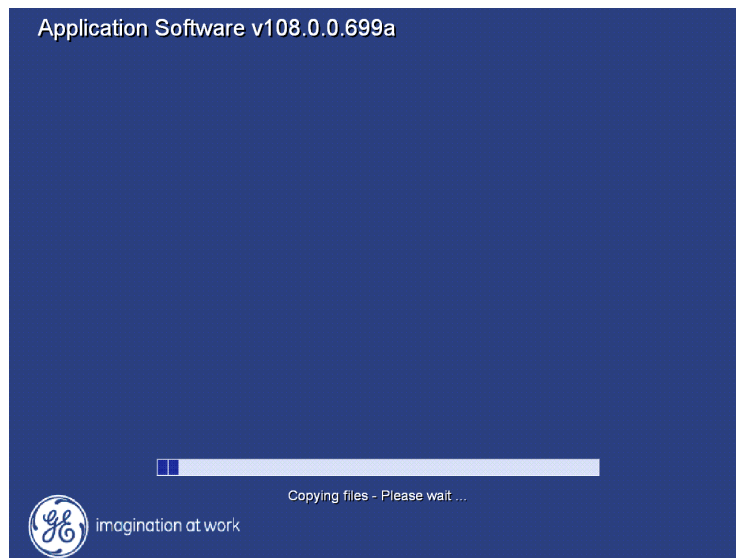
When done, the CD drawer is ejected so you can remove the CD.

3.) Remove the CD.

4.) At the prompt, select OK to confirm that you will continue the installation. The drawer is closed, and the software loading continue.

Figure 8-13 Installation Warning
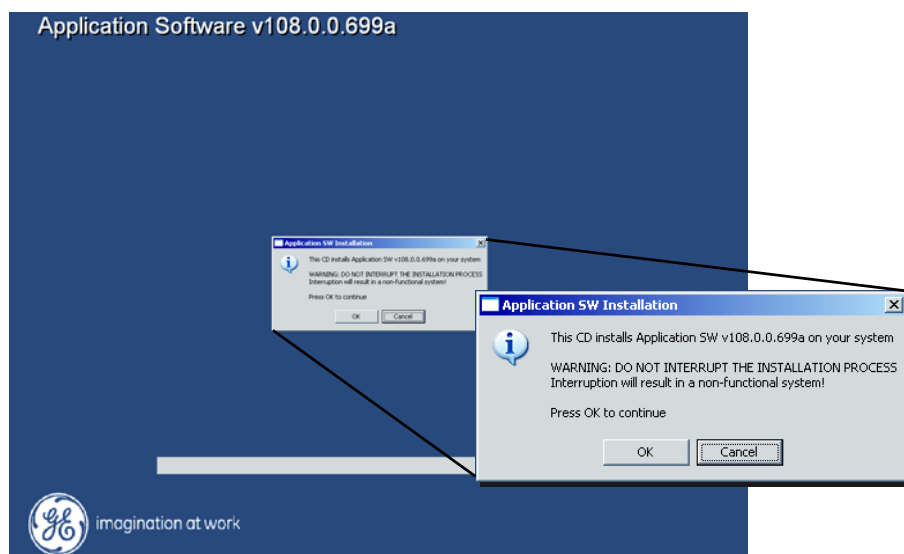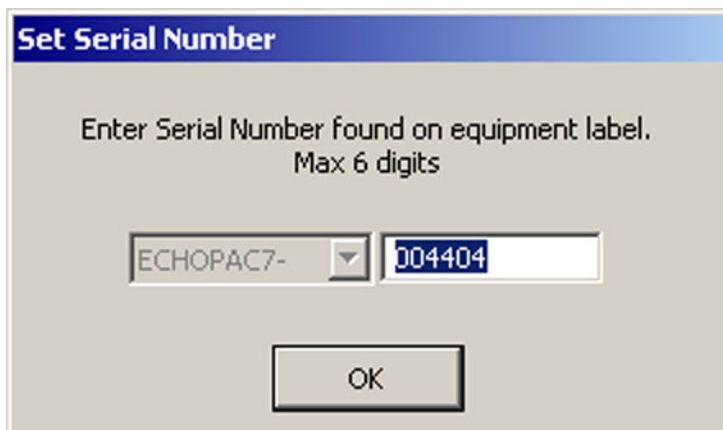
5.) Select "OK" to confirm that you will continue to install the new Application Software.

8-3-9-4   **Loading the Application Software - Software version v108 and higher** (cont'd)

NOTE: *The next screen (Figure 8-14) will only be displayed if this is the first time the software is installed. I.e. after a HDD replacement. If the computer name has been generated previously, the pop-up screen in Figure 8-15 will be displayed.*

Figure 8-14 Enter Serial Number
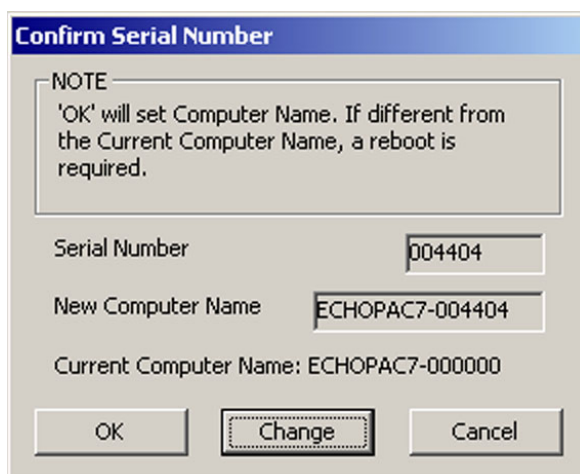
6.) Enter the EchoPAC PC Turnkey 's Serial Number. The Serial Number is located on a label at the rear of the EchoPAC PC Turnkey .

NOTE: *You don't need to include the leading zeroes in the Serial Number. They will be automatically added.*

Example: "4404" (Zeros will be added, so the result will be "004404"

The Serial Number is used when the Computer Name is generated.

8-3-9-4   **Loading the Application Software - Software version v108 and higher** (cont'd)

In the next screen, you are prompted to confirm the serial number (and Computer Name).

Figure 8-15 Confirm the Serial Number

7.) Select **OK** to confirm that the Serial Number is correct., or select **Change** if you want to change the Serial Number.

When confirmed, the unpacking of the software starts.

Figure 8-16 Unpacking the software
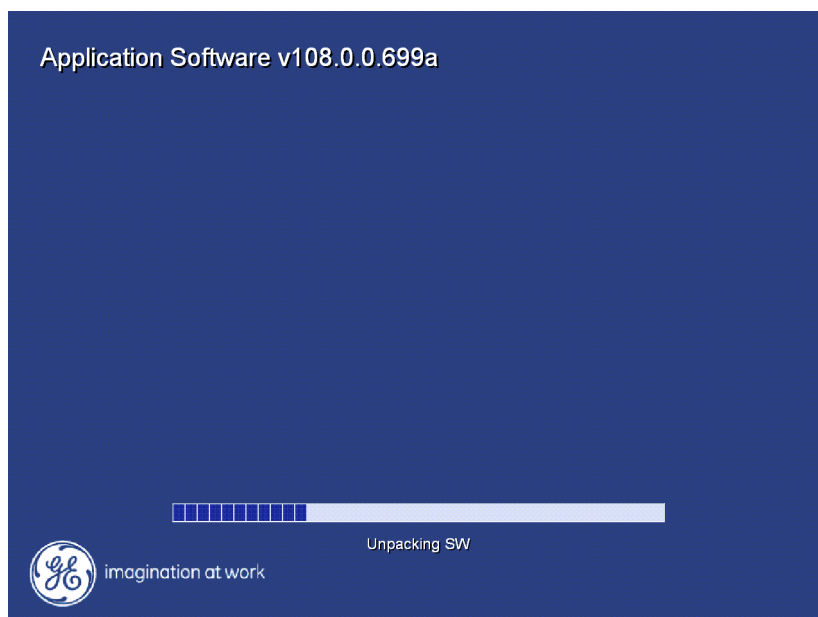
8-3-9-4   Loading the Application Software - Software version v108 and higher (cont'd)

When the software has been unpacked, the installation of the Application software starts. It is installed on the C:\ partition.

Figure 8-17 Installing the Application software
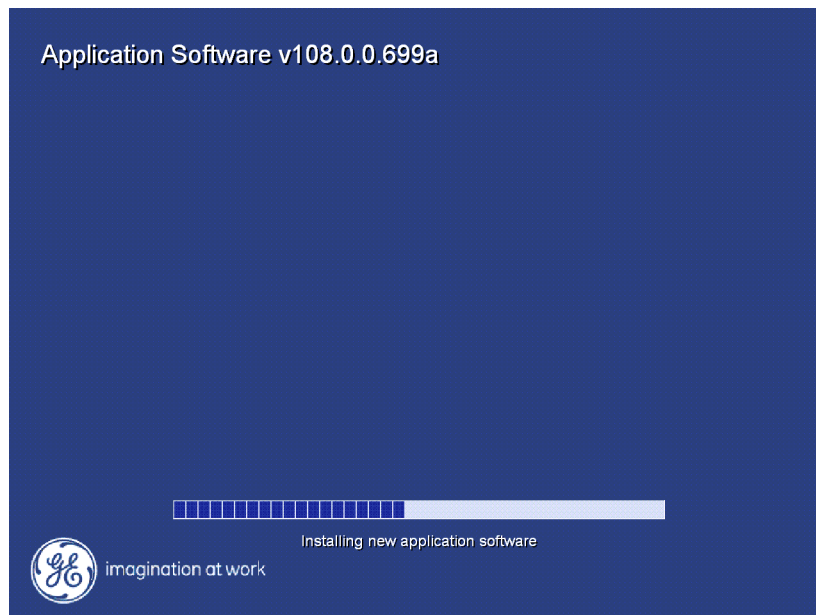
When the Application software has been installed, the InSite ExC software is installed on the C:\ partition.

8-3-9-4   Loading the Application Software - Software version v108 and higher (cont'd)

Figure 8-18 Installing the InSite ExC software
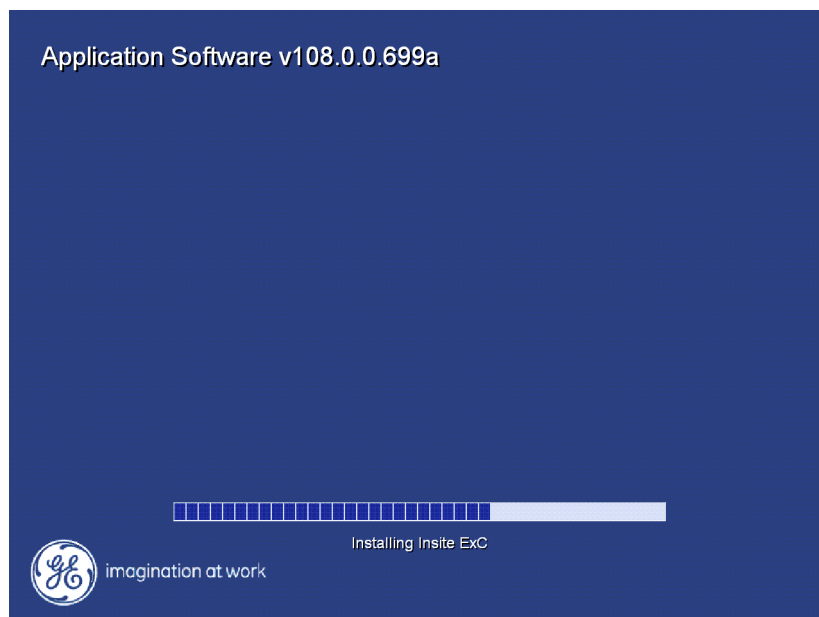
After the InSite ExC software has been installed, the installation is complete and you are prompted to restart the EchoPAC PC Turnkey .

8.) Remove the CD from the DVD/CD drive.

9.) Select OK to restart.

When you have selected OK to restart, the CD/DVD drawer will close, and the EchoPAC PC Turnkey will restart.

Figure 8-19 Installation complete. Restart the EchoPAC PC Turnkey and remove the CD.
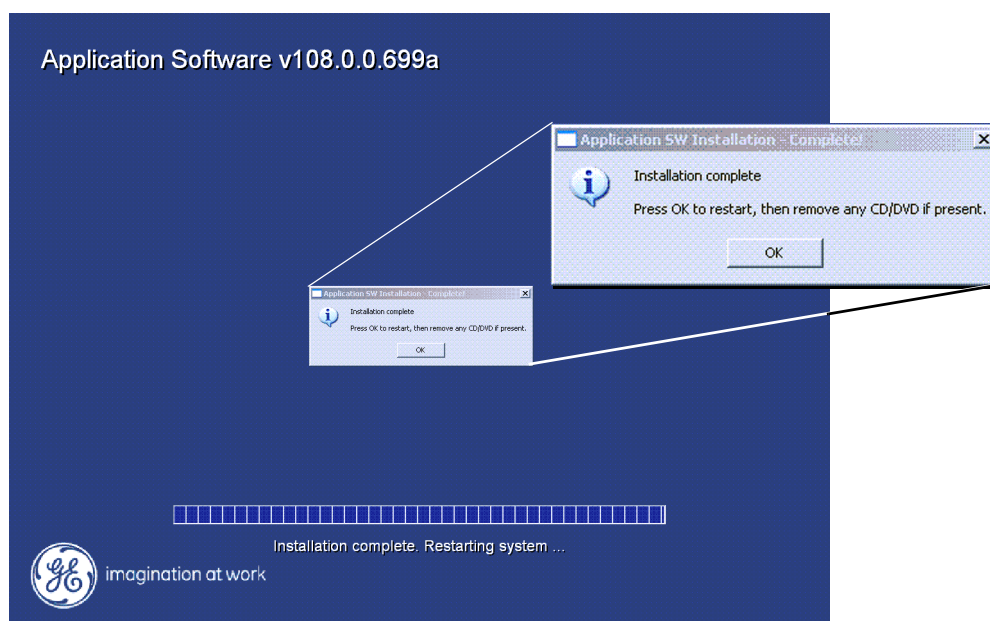
8-3-9-5   **Loading BT'12, BT'11 or BT'09 Software Patches**

If a CD with a software patch is included, insert the disc in the drive, restart the EchoPAC PC Turnkey and follow the instructions on-screen.

Please continue with 8-3-11 "Verifications after the software on C:\ has been loaded" on page 8-22.

⚠ CAUTION **Connect all external devices disconnected From the EchoPAC PC Workstation before software reloading.**

Please continue with Section 8-26 "Verification - Functional checks" on page 8-222.

8-3-10 Setup after BT'12, BT'11 or BT'09 software loading

NOTE: *Use this procedure if all partitions on the HDD have been erased during the software load.*

NOTE: *If only the software on C:\ has been replaced or updated, please go to: 8-3-11 "Verifications after the software on C:\ has been loaded" on page 8-22.*

1.) Restore the Patient Archive and System Configurations from the backup you made before the software loading.
   - For instructions, please see "Data Backup and Restore" in the User Manual/User Guide.
2.) With your recordings from before the software loading available, continue with the setup instructions starting in: Section 3-7 "Configuration" on page 3-45. Correct the settings as needed.
3.) Continue with: Section 3-8 "Connectivity Setup - Software v112.x, v110.x and v108.x" on page 3-62. Based on your recordings, correct the settings as needed.
4.) Install the network printer (if any). Please refer to the Printer Driver Installation Manual.
5.) Next, continue with: 8-3-13 "Verification and functional checks" on page 8-37.

8-3-11 Verifications after the software on C:\ has been loaded

NOTE: *DO NOT use this procedure if all partitions on the HDD have been erased during the software load, but refer to: 8-3-10 "Setup after BT'12, BT'11 or BT'09 software loading" on page 8-22.*

NOTE: *Use this procedure if only the software on C:\ has been updated or reloaded.*

1.) With your recordings from before the software loading available, continue with the setup instructions starting in: Section 3-7 "Configuration" on page 3-45. Correct the settings if needed.
2.) Continue with: Section 3-8 "Connectivity Setup - Software v112.x, v110.x and v108.x" on page 3-62. Based on your recordings, correct the settings if needed.

8-3-12   Verification of BT'12, BT'11 or BT'09 System Software and Application Software

NOTE: *This is Software verification on either HP Z200, HP xw4600 HP xw4400, HP xw4300, HP xw4200 or HP xw4100.*

⚠️ **CAUTION**   **After Software loading or reloading please connect all disconnected USB and SCSI devices and reboot the Workstation.**

8-3-12-1   Log ON - BT'12, BT'11 or BT'09 Software

1.) Type **ADM** in the **Operator** field on the **Operator Login** pop-up menu..
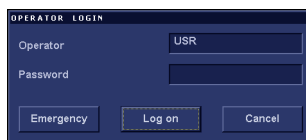
Figure 8-20   Log On Dialog

2.) Select **Log On**.
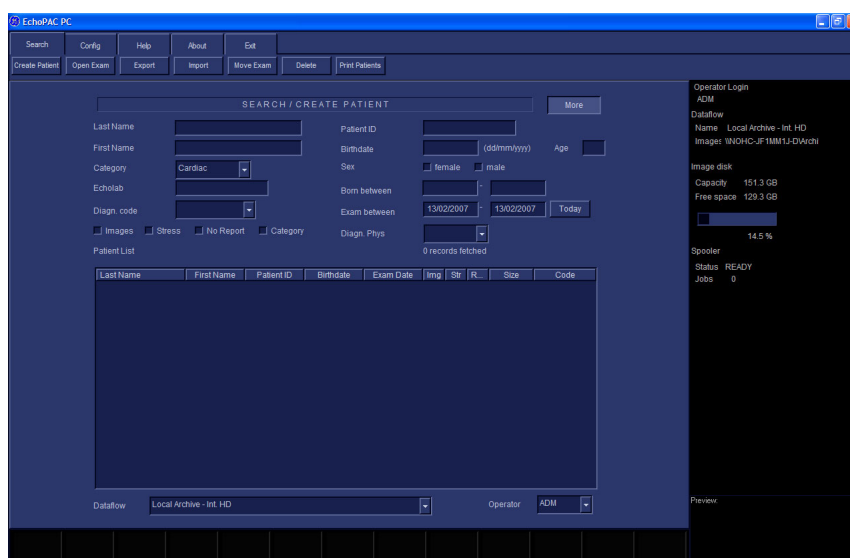
Figure 8-21   After Logon

8-3-12-2   Verify BT'12, BT'11 or BT'09 4D LV Volume Option

a.) Install the 4D LV Volume CD in the CD drive.

b.) Press a key to reboot.

c.) Follow the instructions on-screen.

d.) When the installation is complete, remove the CD and continue with the next step.

8-3-12-3   Verify BT'12, BT'11 or BT'09 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Select **Config**.

2.) Select Admin.

3.) Select System Admin.

Verify the Software Option Strings, see Table 8-4 "Software Option Strings" on page 8-40.

Figure 8-22   The Admin/System Admin window

8-3-12-4   Verify BT'12, BT'11 or BT'09 Default Dataflow

1.) In **Connectivity** window, select **Dataflow**.
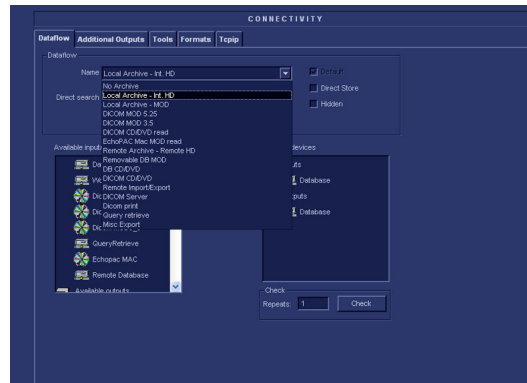
Figure 8-23   Default Dataflow

2.) Verify that Default Dataflow matches what was recorded in Table 8-6, "Record Default Dataflow Name," on page 8-43.
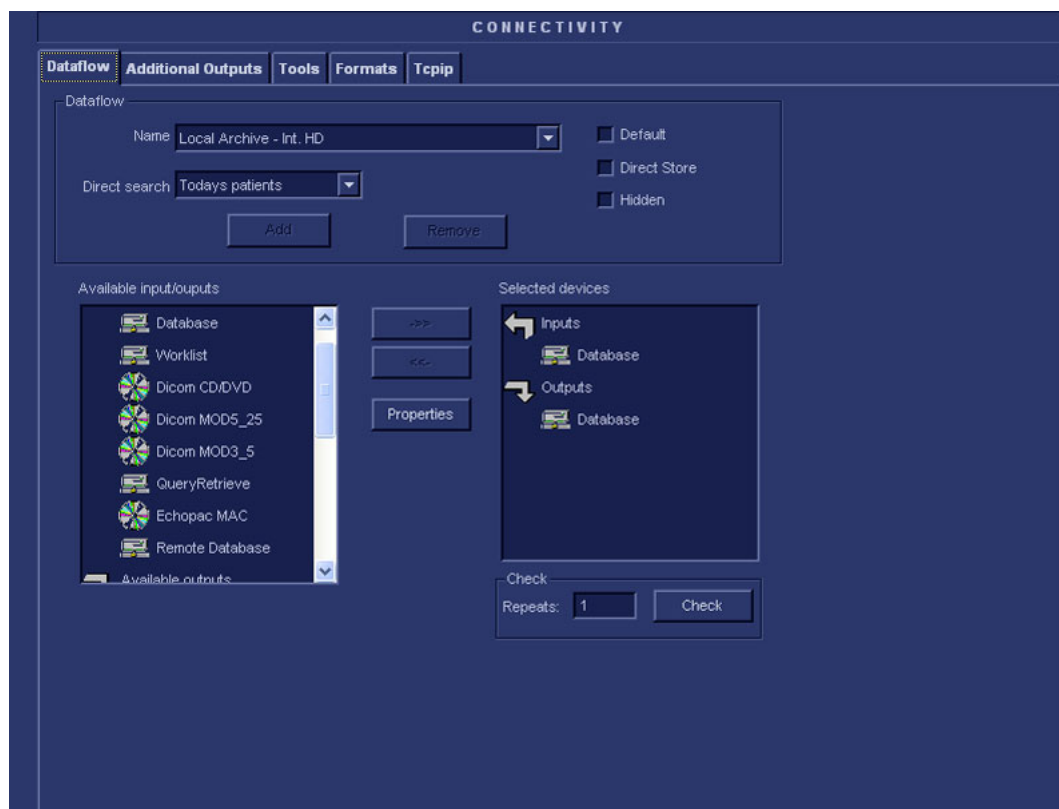
Figure 8-24   Dataflows window

8-3-12-5   Verify BT'12, BT'11 or BT'09 Software Versions

1.) Select **Config**.

2.) Select **About** tab.
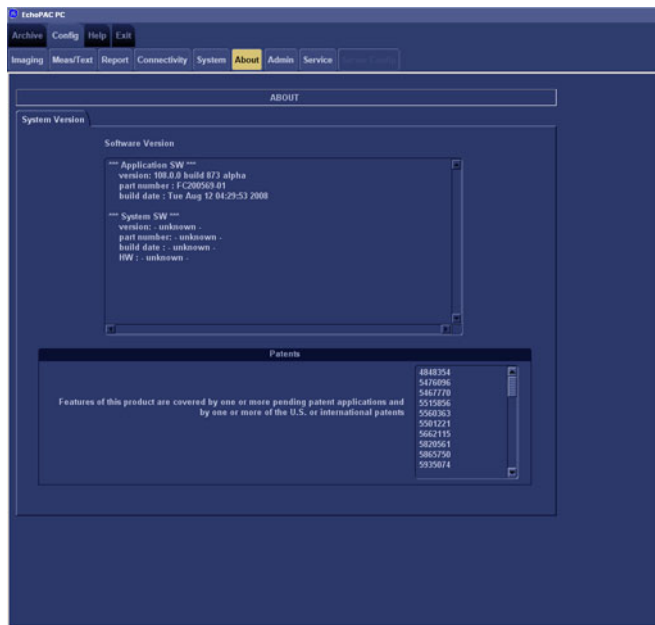
Figure 8-25   Software Verification

3.) Verify that the SW versions are the same as recorded in 8-3-6 "Recording important settings and parameters" on page 8-5.

8-3-12-6   Verify BT'12, BT'11 or BT'09 TCP/IP Settings

1.) Select **Config**.

2.) Select **Connectivity.**
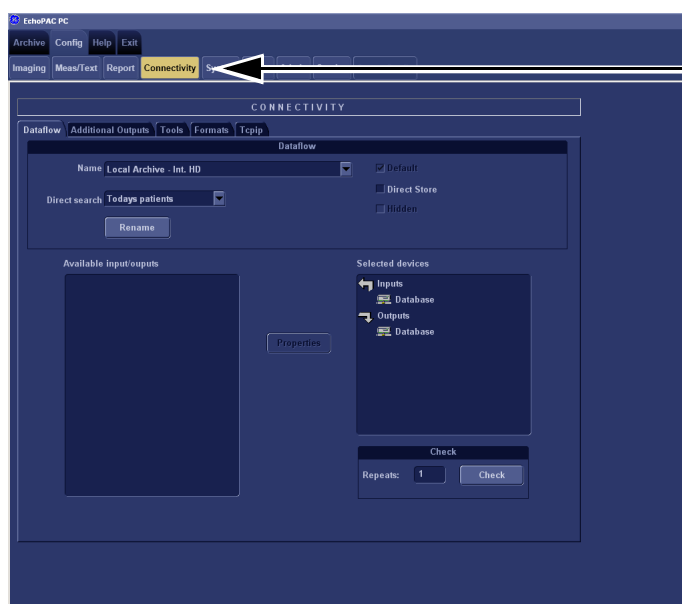
Figure 8-26   Connectivity Selection

3.) Select the **TCPIP** tab.
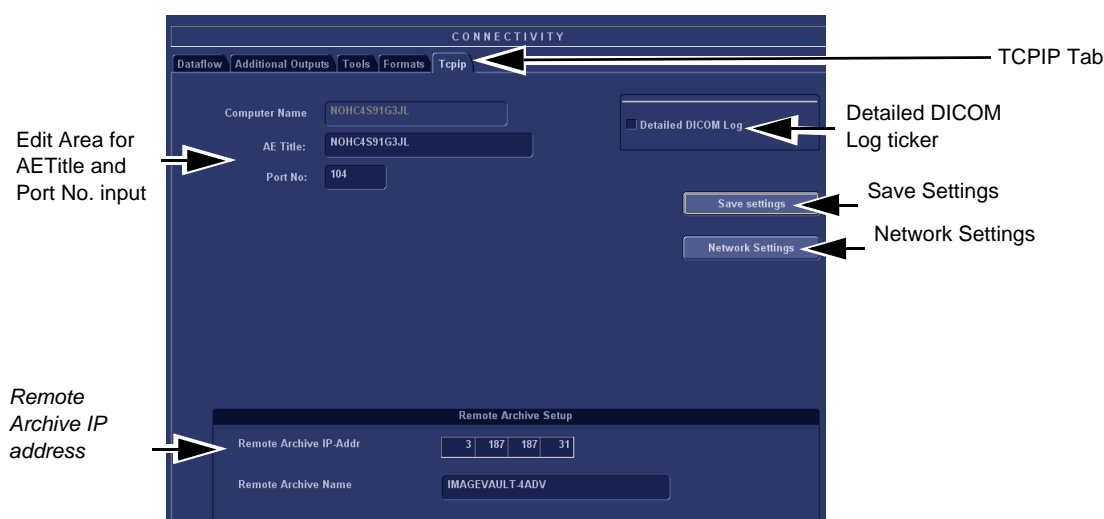
Figure 8-27   Verify TCP-IP set-up

4.) Verify the following data as recorded in Table 8-5 "Record settings from BT'08 Tcpip screen" on page 8-41.

If DHCP is enabled, verify/set:

- AE Title:

- Port No:

- Activate DHCP as described in 3-8-4 "DHCP Setup (software v108.x and higher)" on page 3-67.

8-3-12-6   Verify BT'12, BT'11 or BT'09 TCP/IP Settings (cont'd)

If DHCP is turned off, verify/set:

- Computer Name
- AE Title
- IP- Address
- Subnet Mask
- Default Gateway
- Remote Archive IP-Address
- Remote Archive Name

5.)   Select **Save Settings.**

6.)   A Warning window will appear, select OK.

7.)   Select **Advanced Settings.(**See .)

8-3-12-6   Verify BT'12, BT'11 or BT'09 TCP/IP Settings (cont'd)

8.) Right click on selected IP source in Windows window.
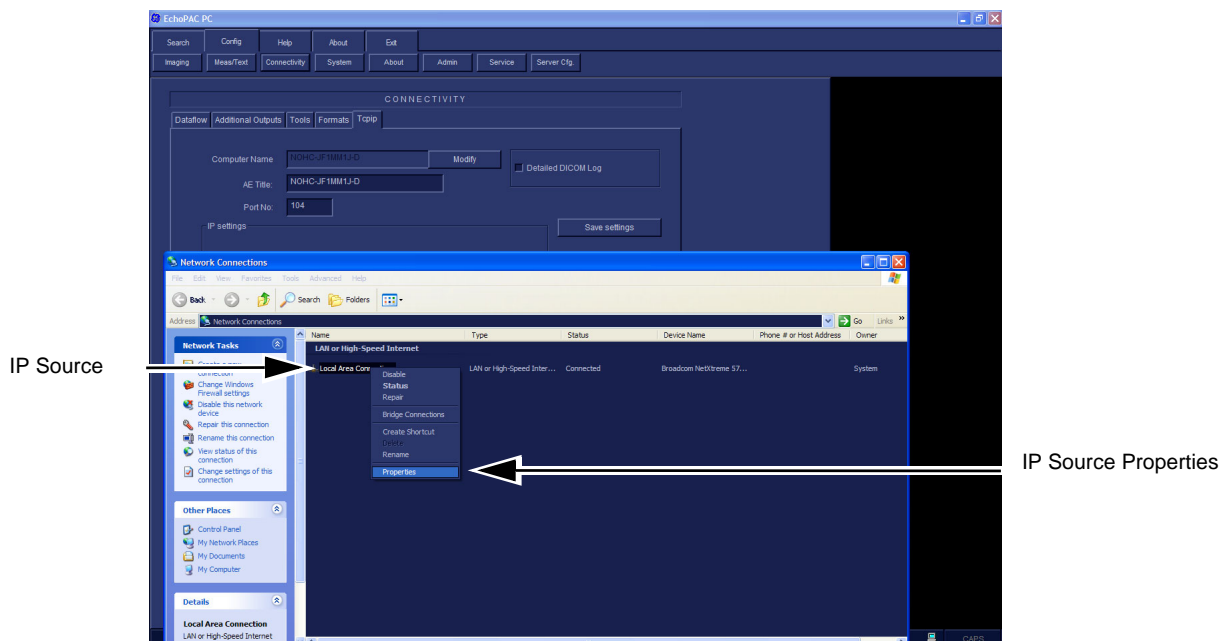
Figure 8-28   Advanced Settings

9.) Select **Properties** on menu that appears.
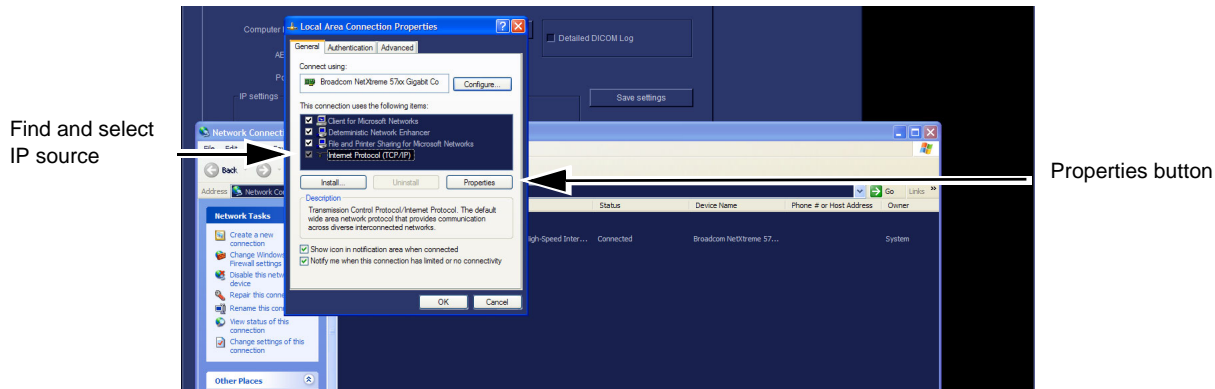
Figure 8-29   IP Source and Properties selection

10.) Select IP source and Properties button.

8-3-12-6   Verify BT'12, BT'11 or BT'09 TCP/IP Settings (cont'd)

11.) Obtain IP address from Network Administrator and enter data at vacant fields.

OK Button

Vacant Fields for IP input
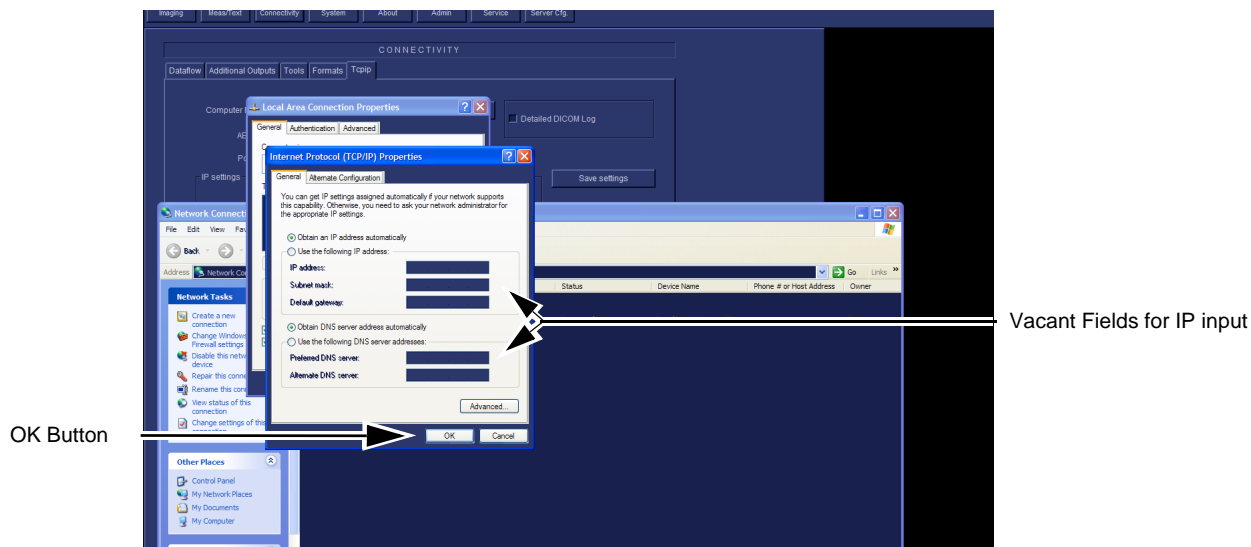
Figure 8-30   IP Address input

12.) When completed select OK twice to close properties settings and close the Widows window.

8-3-12-6   Verify BT'12, BT'11 or BT'09 TCP/IP Settings (cont'd)

13.) Select **Save settings** button.

Figure 8-31   Save Settings

Notice that the Remote Archive is automatically remembered because of the C;/ software update.

8-3-12-7   Printer Setup Verification BT'12, BT'11 or BT'09 Software

1.) Select Connectivity.

2.) Select Additional Outputs.
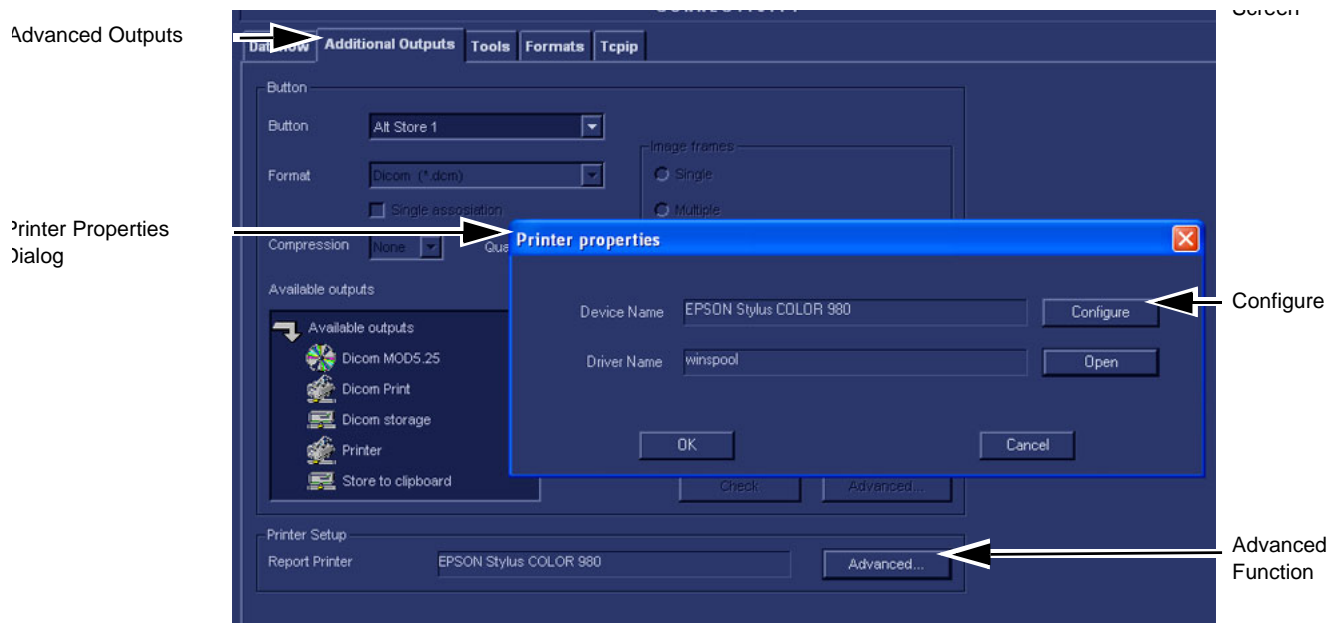
Figure 8-32   Additional Outputs

3.) Select <u>ADVANCED</u> to open **Printer Properties** window.

4.) Select <u>CONFIGURE</u> to open the **Print Setup** dialog.

5.) Select or verify the default printer and select OK. This closes the Print Setup dialog.

6.) Verify Default Printer Name.
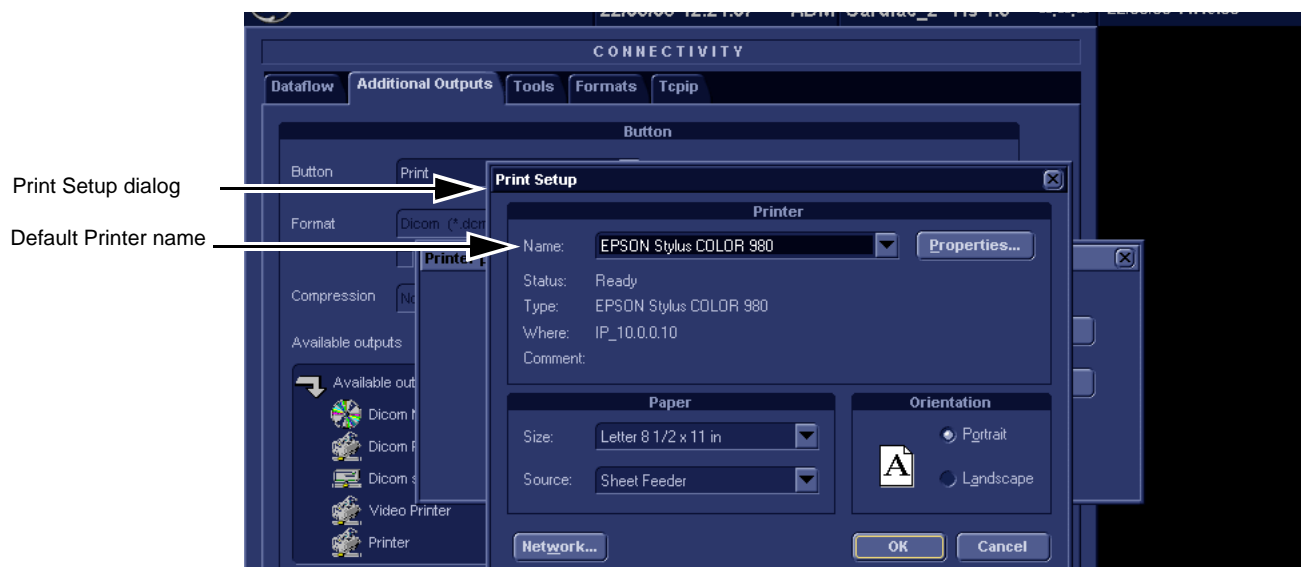
Figure 8-33   Standard Print dialog

7.) Verify that the **Device Name** lists the correct printer.

8.) Select the **Select** button to display the **Print Setup** dialog.

8-3-12-7   Printer Setup Verification BT'12, BT'11 or BT'09 Software (cont'd)

*NOTE: Notice that the Default printer is now the Device name on the Printer Properties Dialog. It
              replaced the EPSON printer that was there at the beginning as shown in Figure 8-34 "Printer
              Properties Dialog" on page 8-33.*

9.) On the Printer Properties dialog select Open.
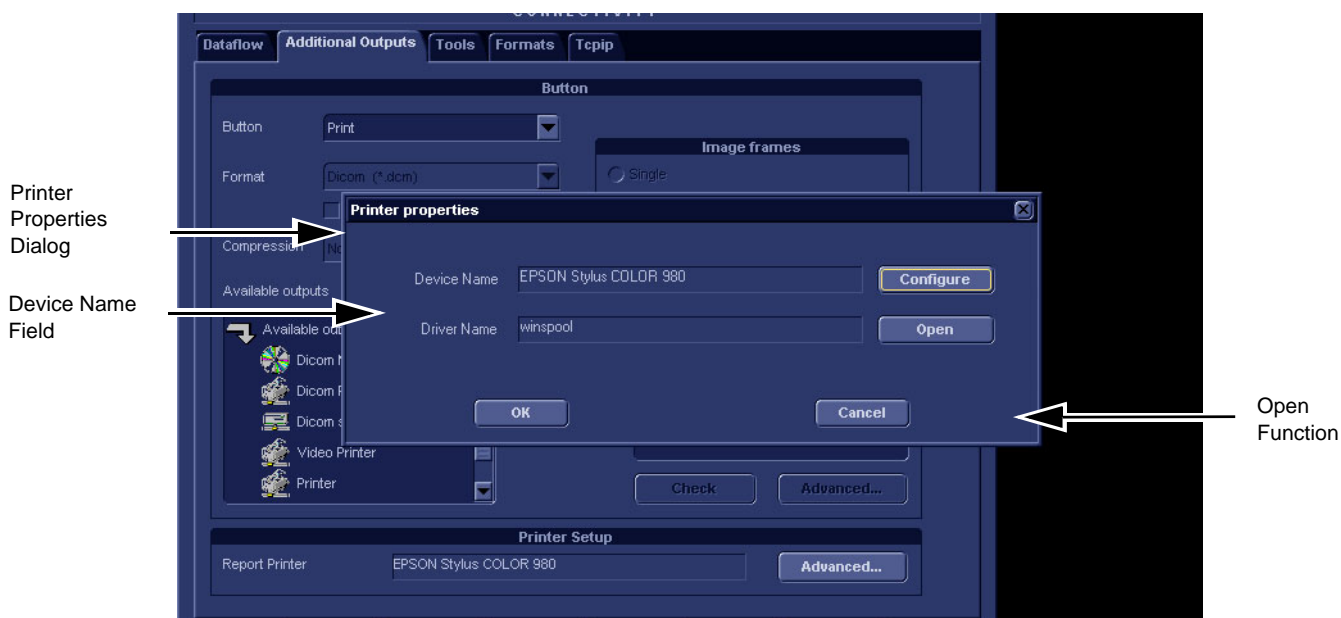
Figure 8-34   Printer Properties Dialog

10.) This opens a MS Windows dialog for the Default Printer.
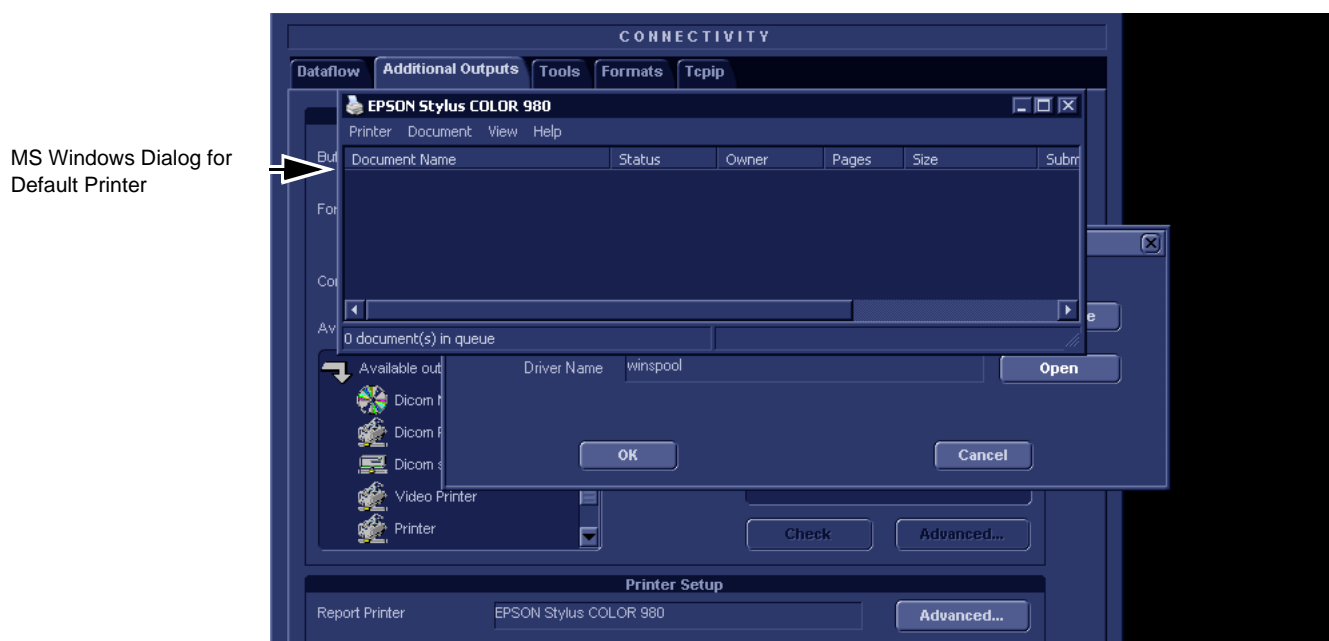
Figure 8-35   MS Windows Dialog for Default Printer

8-3-12-7   Printer Setup Verification BT'12, BT'11 or BT'09 Software (cont'd)

11.) Click open the Printer Menu.
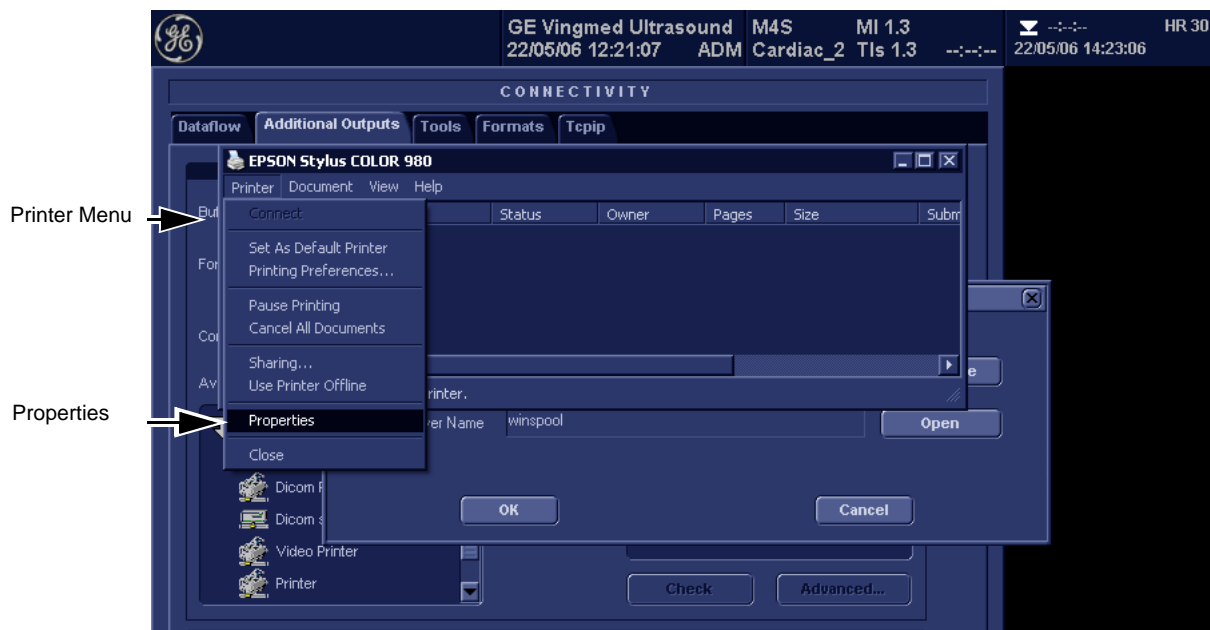
Figure 8-36   MS Windows printer Properties choice

12.) Highlight and Select Properties to display the MS Windows Default Printer Properties dialog.
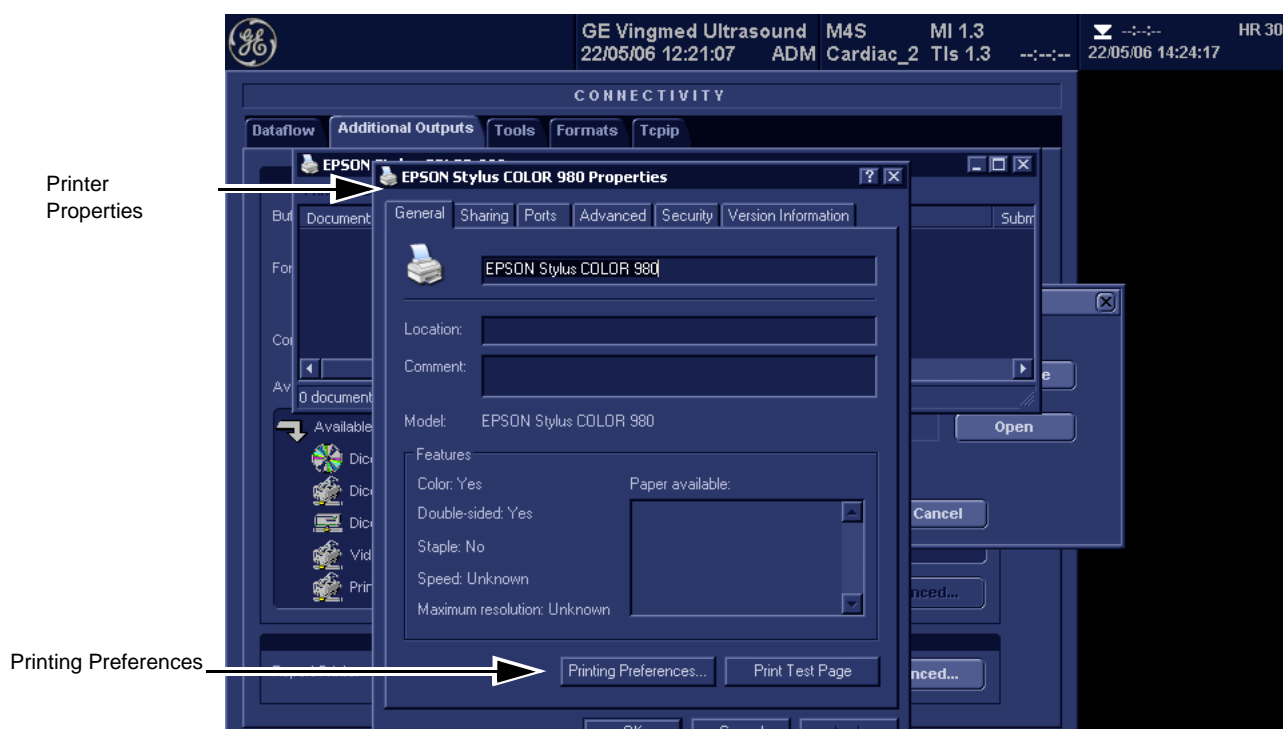
Figure 8-37   MS Windows Printer Properties Dialog Printing Preferences choice

13.) Select MS Windows Default Printer Printing Preferences.

8-3-12-7 **Printer Setup Verification BT'12, BT'11 or BT'09 Software** (cont'd)

14.) Verify the Preferences shown here.

Printing Preferences
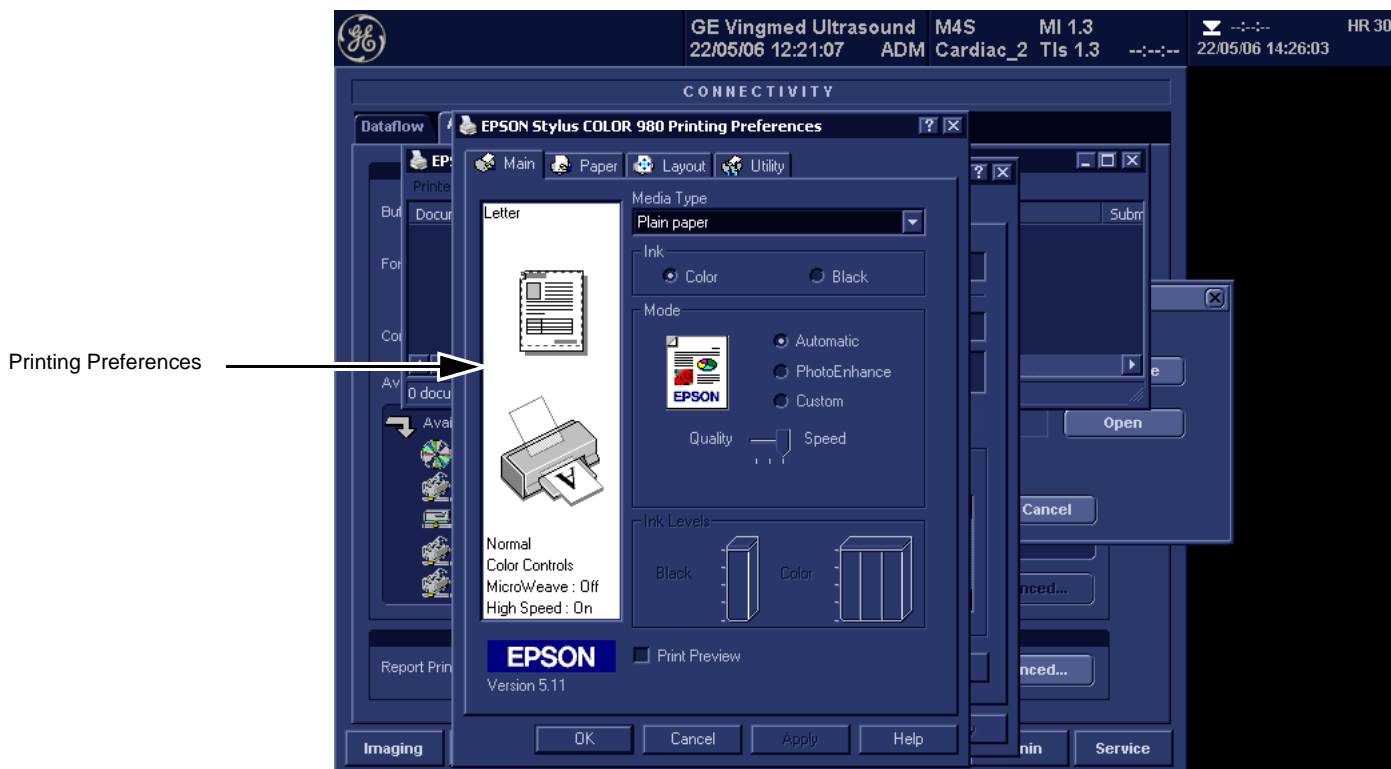
Figure 8-38 Printing Preferences selection completed

15.) Select OK when completed.

8-3-12-7 **Printer Setup Verification BT'12, BT'11 or BT'09 Software** (cont'd)

16.) Select Ports Tab and verify recorded Default Printer Report details.
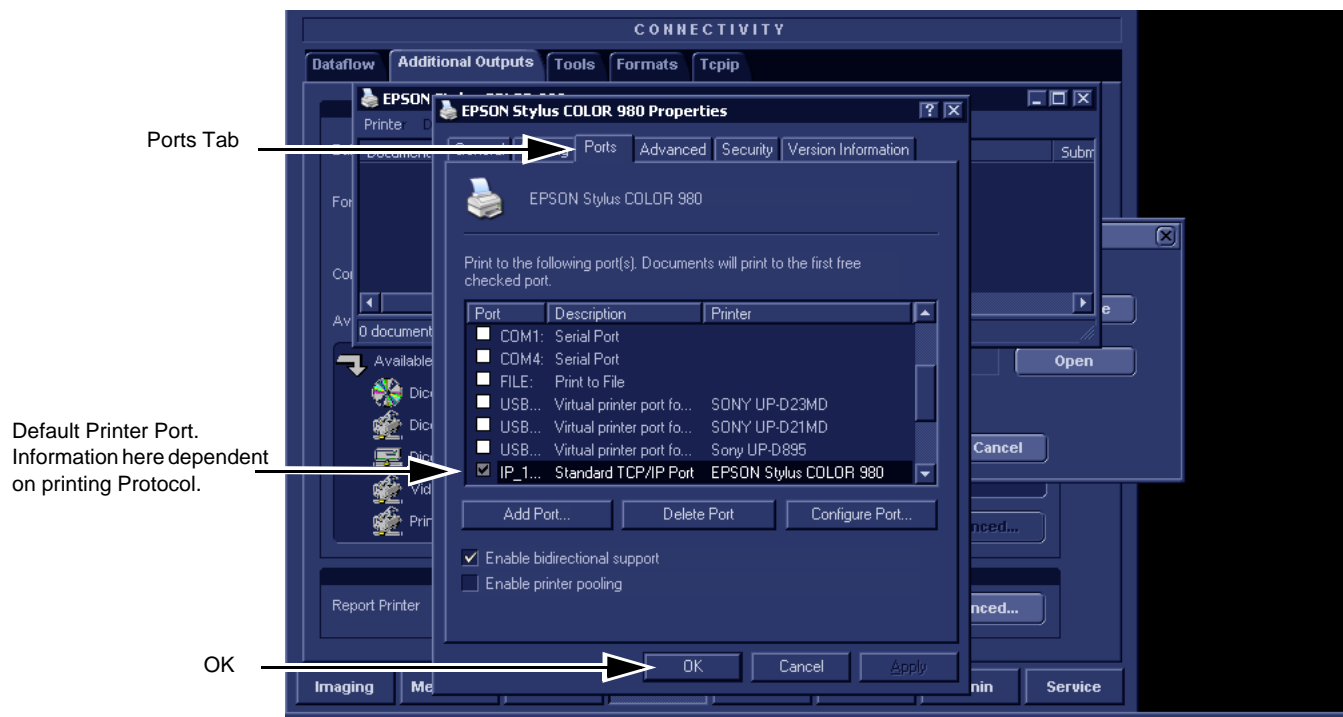
Figure 8-39 Verify Port selection

17.) Select OK when completed. This will return the EchoPAC PC stage that exited to MS windows dialog.
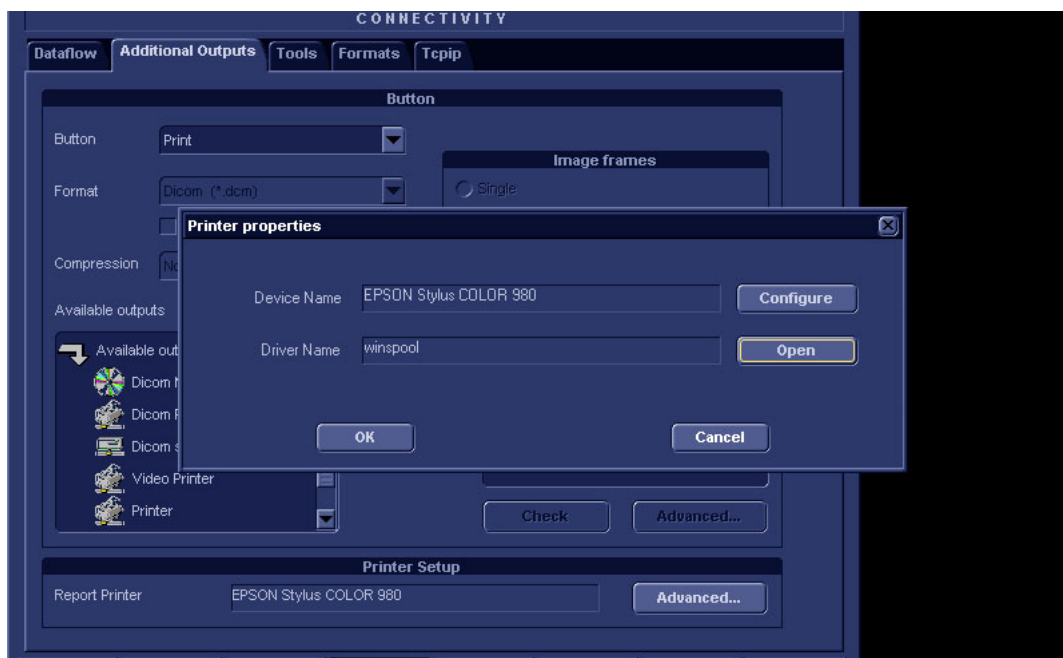
Figure 8-40 Printer properties

8-3-12-7   Printer Setup Verification BT'12, BT'11 or BT'09 Software (cont'd)

Table 8-2   Printer Name or IP Address and Port Number

Printer Name or IP Address	Port Number

18.) Select C̅A̅N̅C̅E̅L̅.

19.) Close the rest of the windows by selecting O̅K̅.

8-3-13   Verification and functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-4
BT'08 Software Reloading Procedure

⚠️ **NOTICE** Do not use this procedure when *upgrading* a unit's software. Additional software and procedures, not described here, may be needed for such upgrades.
Use this procedure if you need to reinstall the existing software on a EchoPAC PC Turnkey .

8-4-1   Introduction - BT'08 Software

⚠️ **NOTICE** In order to complete a successful restore of the Patient Database, if needed, the images must be moved to MO disks *before* doing backup of Patient Database. If the backup procedure is not completed correctly, the images and database information could be lost.

This procedure describes how to reload the needed EchoPAC PC Turnkey software on the workstation.

Table 8-3   Contents in this Procedure

SECTION	DESCRIPTION	PAGE NUMBER
8-4-1	Introduction - BT'08 Software	8-38
8-4-2	Preparations Before BT'08 Software Reload	8-38
8-4-3	Customer Provided Prerequisite - BT'08 Software	8-39
8-4-4	Tools provided with unit or after a BT'08 software update	8-39
8-4-5	Preparations - BT'08 Software	8-39
8-4-6	Backup - BT'08 Software	8-39
8-4-7	Record BT'08 Software Option Strings	8-40
8-4-8	Record TCP/IP Settings - BT'08 Software	8-41
8-4-9	Record Default Dataflow - BT'08 Software	8-43
8-4-10	Record Standard Printer Settings - BT'08 Software	8-44
8-4-11	Record BT'08 Software Versions	8-47
8-4-12	Software Loading - BT'08 Software	8-48
8-4-13	Verification of BT'08 System Software and Application Software	8-59

8-4-2   Preparations Before BT'08 Software Reload

To ensure that no data is lost during the reload, these preparations should be done before starting the software reload:

• Export Patient Images from the internal hard drive to removable MO disks.

• Make backup of Customer Presets, Patient Database (Patient Archive, Report Archive, System Configuration and User Defined Configuration) to MO disks.

• TCP/IP Addresses, Computer Name and Software Option Password (alphanumeric string) settings must be manually recorded.

8-4-3   Customer Provided Prerequisite - BT'08 Software

The customer should provide the needed storing and backup media as described in this list:

- Formatted and labelled MO Disks for Images storage
- Formatted and labelled MO Disk for Patient Archive and User Defined Settings.

8-4-4   Tools provided with unit or after a BT'08 software update

- System software (DVD) - specific for each workstation model.
- Application software (CD)
- CD for 4D LV Volume

If present:

- Patch for EchoPAC PC Turnkey (CD)

8-4-5   Preparations - BT'08 Software

- Switch ON the Mains Power Circuit Breaker and power up the unit, see 4-2-1 "Power On/Boot Up" on page 4-2.

8-4-6   Backup - BT'08 Software

Please refer to **Space Management** in the **User Manual**.

8-4-7   Record BT'08 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Press **Config** (**F2**) and log on as *adm*.
2.) From the **Admin** tab, select **SYSTEM ADMIN**.
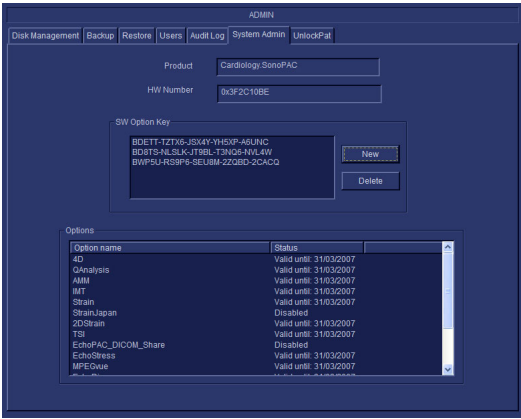
Figure 8-41   System Admin

3.) Record SW Options Keys from the SW Options Key window.

⚠ **WARNING** *Make sure that the SW Option Keys (passwords) have been recorded correctly. If the key is incorrect, you will not be able to log on after the software loading has been completed. The password is case sensitive. Hyphens must also be recorded. There may be more than one password.*

Table 8-4   Software Option Strings

SW OPTIONS STRINGS

8-4-8 Record TCP/IP Settings - BT'08 Software

1.) Select **CONNECTIVITY**.

2.) Select the **TCPIP** tab.

Figure 8-42   TCP/IP Example Settings

3.) Record the **Computer Name** and **AE Title** in Table 8-5 "Record settings from BT'08 Tcpip screen" on page 8-41.

Table 8-5   Record settings from BT'08 Tcpip screen

PARAMETER	VALUE
Computer Name	EchoPAC7-00 _ _ _ _
AE Title	EchoPAC7-00 _ _ _ _
IP Settings	
DHCP	ACTIVE: __
IP Address	_ _ _. _ _ _. _ _ _
Subnet mask	_ _ _. _ _ _. _ _ _
Default Gateway	_ _ _. _ _ _. _ _ _
Remote Archive Setup	
Remote Archive IP-Address	_ _ _. _ _ _. _ _ _
Remote Archive Name	

8-4-8Record TCP/IP Settings - BT'08 Software (cont'd)

4.) If the unit has software version v5.0 (or higher), and DHCP is in use, recording of the rest of the TCP/IP settings can be skipped, since they are provided from the DHCP server each time the workstation is powered on.
See next page for instructions on how to verify if DHCP has been enabled.

Verify if DHCP is Active

Follow the steps below to verify if DHCP has been activated:

a.) From the **Tcpip** screen, select **Advanced Settings**.
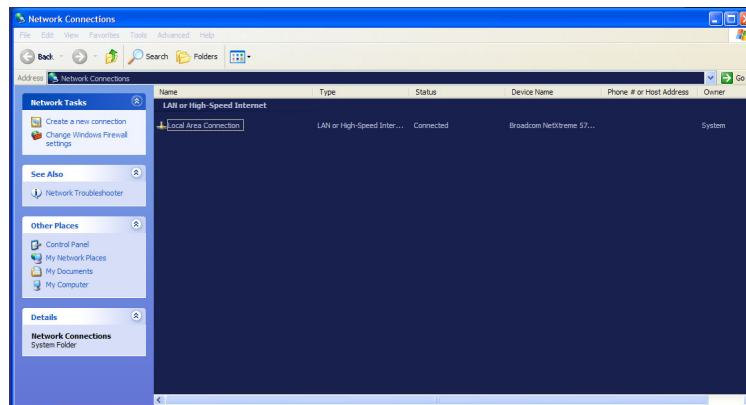
Figure 8-43   Network Connections

b.) Select **Local Area Connection.**

c.) Right click and select **Properties** to display the **Local Connection Properties.**

d.) Scroll down to **Internet Protocol (TCP/IP)** and select it.

e.) Select **Properties.**

f.) Check if **Obtain an IP address automatically** has been selected.

g.) If **Obtain an IP address automatically** has been selected, you only need to record that it is active in Table 8-5 "Record settings from BT'08 Tcpip screen" on page 8-41.
Next, continue with 8-4-9 "Record Default Dataflow - BT'08 Software" on page 8-43.

h.) If **Obtain an IP address automatically** wasn't selected, continue with step 5 on next page.

8-4-9   Record Default Dataflow - BT'08 Software

1.) In the **Connectivity** window, select **Dataflow**.

2.) Verify that **Default Dataflow** is selected.

3.) Record the **Default Dataflow** in Table 8-6 "Record Default Dataflow Name" on page 8-43.

Table 8-6   Record Default Dataflow Name

Default Dataflow Name

8-4-10   Record Standard Printer Settings - BT'08 Software

1.) In the **Connectivity** window, select **Services**.

2.) Select **Printer Setup**.

3.) Select **Open**.
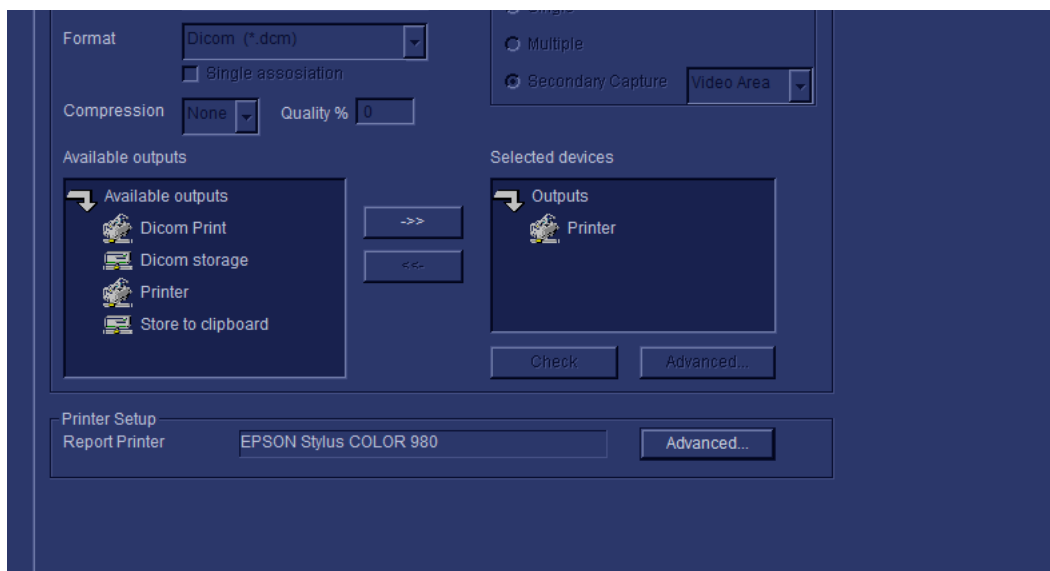
4.) Select **Printer**.

Figure 8-44   Properties

5.) Select **Properties** from the Printer scroll down menu.
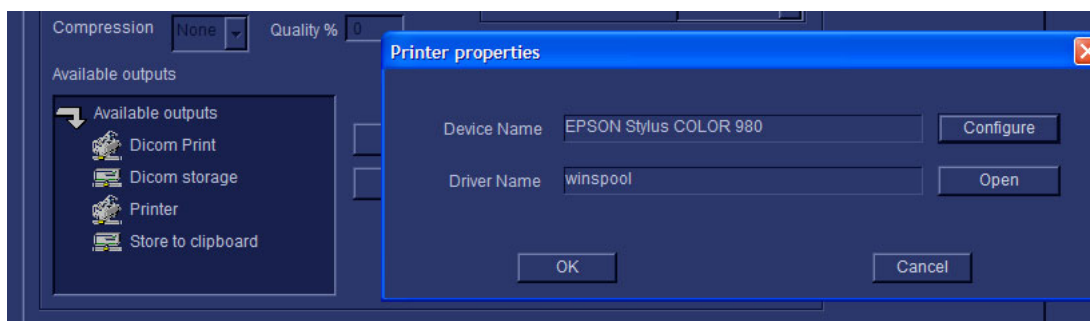
Figure 8-45   Printer Properties Dialog

6.) Select **Configure**

8-4-10Record Standard Printer Settings - BT'08 Software (cont'd)
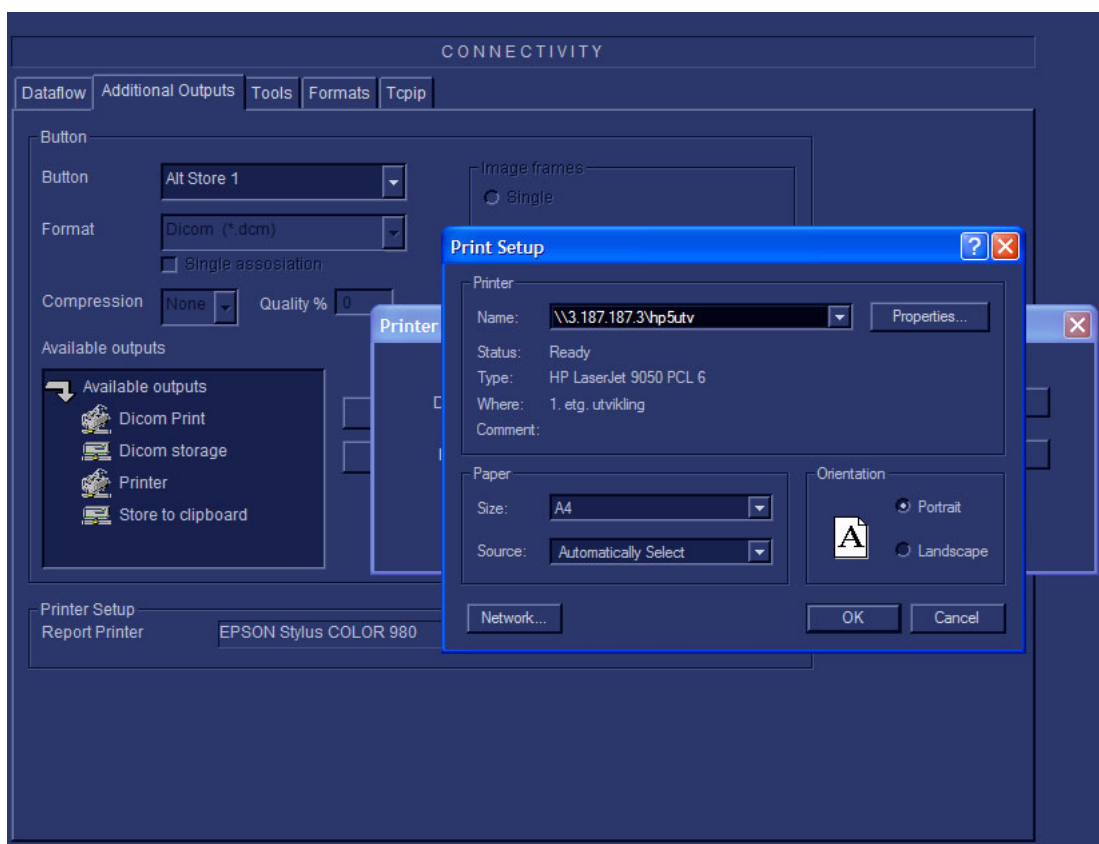
Figure 8-46   Printer Setup

7.) Record **correct Printer Name**

8.) Record correct Paper Size Paper Source and Orientation.

Table 8-7   Printer details

Printer Name or IP Address	Port Number

8-4-10   Record Standard Printer Settings - BT'08 Software (cont'd)
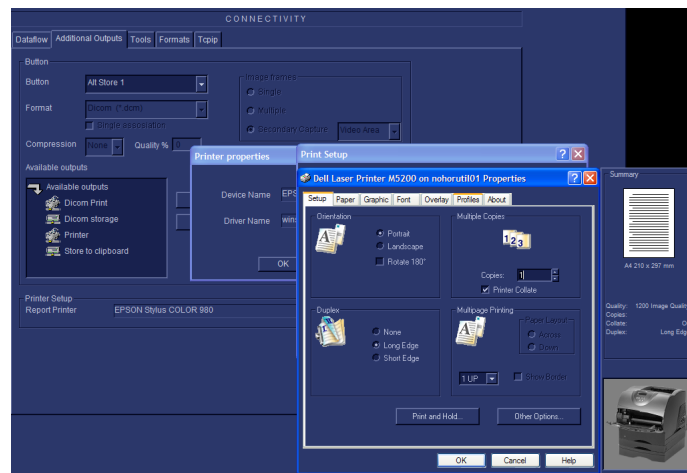
Figure 8-47

9.) Close all windows with an **OK selection**.

8-4-11 Record BT'08 Software Versions

1.) Select **About**.

ABOUT

SystemVersion

Software Version

```
*** Application SW ***
    version: 107.0.0 build 302 alpha
    part number : FC200569-01
    build date : Wed Jan 17 04:05:54 2007

*** System SW ***
    version: - unknown -
    part number: - unknown -
    build date : - unknown -
    HW : - unknown -
```

Figure 8-48   Information available on the About tab

2.) Record *Application Software* version in Table 8-8 "Record BT'08 Software versions." on page 8-47.

3.) Record *System Software* version in Table 8-8 "Record BT'08 Software versions." on page 8-47.

Table 8-8   Record BT'08 Software versions.

DESCRIPTION	RECORD SOFTWARE VERSION
APPLICATION SOFTWARE VERSION	
SYSTEM SOFTWARE VERSION	

4.) Shutdown the PC.

5.) Shutdown all peripherals on the USB bus.

6.) Disconnect USB cables from the PC.

8-4-12   Software Loading - BT'08 Software

8-4-12-1   BT'08 Software - Overview

Refer to Table 8-8 "Record BT'08 Software versions." on page 8-47 where you recorded the unit's software versions.

This software loading procedure covers installation of BT'08 software (software version v7.x) on EchoPAC PC Turnkey units.

The software for EchoPAC PC Turnkey is divided on two CDs, one CD with the System Software and one with the Application Software. The System Software is dependant on workstation model, so you must choose the correct CD.

In addition, for BT'08, the software for **4D LV Volume** is included on an extra CD.

Table 8-9   CDs with BT'08 Software

ITEM	TITLE	PART NUMBER	DESCRIPTION
1.	SYSTEM SOFTWARE FOR HP xw4400	EQ200001	CD with System SoftWare v3.x.x
2.	SYSTEM SOFTWARE FOR HP xw4300	EP200822	CD with System SoftWare v2.1.1
	SYSTEM SOFTWARE FOR HP xw4200	EP200706	CD with System SoftWare v2.1.1
	SYSTEM SOFTWARE FOR HP xw4100	EP200705	CD with System SoftWare v2.1.1
	SYSTEM SOFTWARE FOR COMPAQ EVO W4000	EP200704	CD with System SoftWare v2.1.1
3.	VIVID 7 & ECHOPAC PC APPLICATION SOFTWARE	FD200110	CD with APPLICATION SOFTWARE v7.x.x, COMMON TO EchoPAC PC Turnkey AND VIVID 7.
4.	4D LV FUNCTION	A.18.5142	Software for 4D LV Function TOMTEC Software

8-4-12-2   Introduction to BT'08 Software Reloading

•   Starting with System Software version v3.0.0 (and Application Software v7.0.0), the compressed System and Application software has been stored on a partition of the EchoPAC PC Turnkey hard disk drive, making a software reinstallation easier and faster than with previous software.

-    To reinstall the Application Software, go to:
     8-4-12-4 "Loading BT'08 Application Software on EchoPAC PC Turnkey" on page 8-51.

-    To reinstall both the System Software and the Application Software, go to:
     8-4-12-3 "Loading BT'08 System Software v3.0.x on HP xw4400" on page 8-49.

•   For EchoPAC PC Turnkey with System Software version v2.x.x, the software CDs must be used if the software needs to be reinstalled.

-    To reinstall the Application Software, go to:
     8-4-12-6 "Re-loading BT'08 Application Software for EchoPAC PC Workstation" on page 8-56.

-    To reinstall both the System Software and the Application Software, go to:
     8-4-12-5 "Re-installation of BT'08 System Software on an EchoPAC PC Turnkey" on page 8-53.

8-4-12-3   **Loading BT'08 System Software v3.0.x on HP xw4400**

NOTE: *This procedure describes how to reload BT'08 software that already has been stored as compressed files on a partition of the HP xw4400's hard disk drive. A CD is not used in this procedure.*

When using this procedure, you can choose to reload partition C: only, or to erase all partitions. The selection is done later in this procedure.

1.) Reboot the EchoPAC PC Turnkey , and press the **ESC**-key each second. The boot sequence will be interrupted and a boot-menu appears on the screen.

There are two entries in the menu as shown in .

   1.) Normal startup.
   2.) Recovery.

Figure 8-49   The Next step choice menu

2.) Use the arrow keys to select (highlight) your choice.

3.) Select **Recovery.**

4.) Press **Enter** to display the **System Recovery Menu** on the screen.

8-4-12-3   Loading BT'08 System Software v3.0.x on HP xw4400 (cont'd)

System Recovery Menu

A. Full reload (erase all partitions
B. Reload Partition C:\ only (Keep Archive)
C. Reload Application Software

R. Restart System

Select (A, B, C,R) _
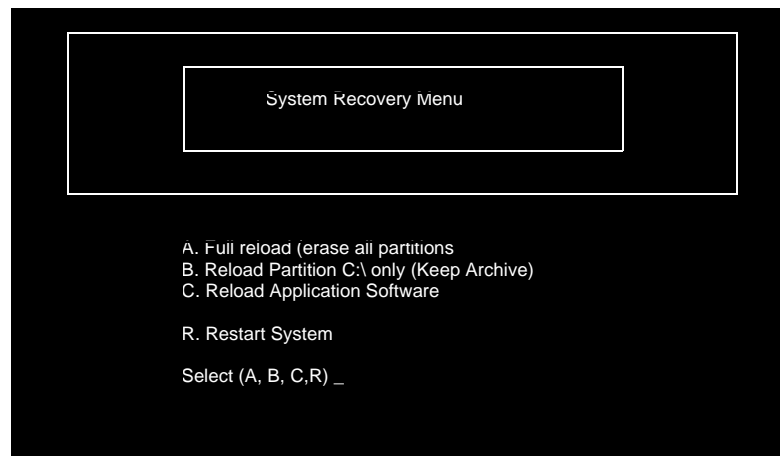
Figure 8-50   Recovery Chosen

⚠ **NOTICE** **If you select "A" in the next step, ALL existing software and data will be erased. If backup has not been performed as described earlier in this manual; ALL DATA like Patient Database, System Configuration and User Configurations (Customer Presets) will be lost.**

5.) In this step, you can choose if you want to do a complete EchoPAC PC Turnkey software installation that overwrites all data, or if you only want to update or reinstall the software on the C: partition (C: drive).

Usually it should be OK to select "**B**" to update the C: drive only. This will keep Patient Archive and Presets intact. Continue with either step a (if possible) or step b (if you have to):

NOTE: *If you select "**A**" below, all program data, Patient Archive and Presets will be erased.*

   a.) ONLY select "**A**" if a "**B**" update cannot be used: Select **A** to do a complete Vivid 7 software installation.

The reload process start automatically. When done, a message tells you to initiate Application software installation. Continue with step 6.

   b.) Select "**B**" to update/re-install the software on the C: partition. (Only data on the C: partition will be erased. This will keep Patient Archive and Presets intact.)

   c.) The reload process starts automatically. When done, a message tells you to initiate Application software installation.

6.) Press **Y** to confirm.

The EchoPAC PC Turnkey reboots and the Application software installation starts automatically. When completed, the EchoPAC PC Turnkey reboots normally.

• If you selected **A** above, the User Presets, the System Configurations and the local Patient Archive has been reset to the factory default settings.

• If you selected **B** above, the User Presets, the System Configurations and the local Patient Archive remains as before the software reload.

8-4-12-4   Loading BT'08 Application Software on EchoPAC PC Turnkey

NOTE: *This procedure describes how to reload software that already has been stored as compressed files on a partition of the PC hard disk drive. A CD is not used in this procedure.*

1.) Reboot the EchoPAC PC Turnkey , and press the **ESC**-key each second. The boot sequence will be interrupted and a boot-menu appears on the screen.

There are two entries in the menu.

1.) Normal startup.
2.) Recovery.

GNU GRUB version 8.95 (639k lower / 523112X upper memory

Normal Startup

Recovery

Use the ^ and v keys to select which entry is highlighted.
Press enter to boot the selected OS or "p" to enter a
Password to unlock the next set of features.
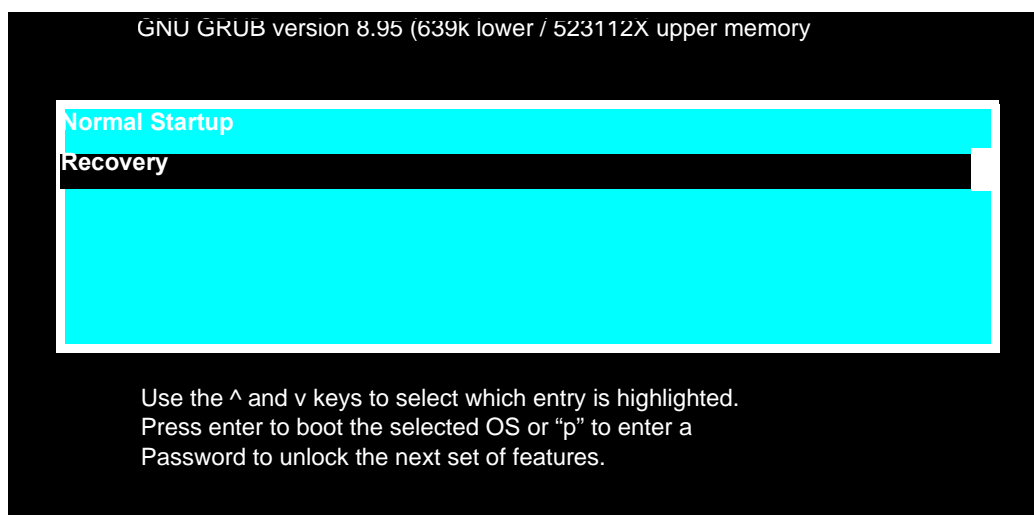
Figure 8-51

2.) Use the arrow keys to select (highlight) your choice.
3.) Select **Recovery.**
4.) Press **Enter** to display the **System Recovery Menu** on the screen.

System Recovery Menu

A. Full reload (erase all partitions)
B. Reload Partition C:\ only (Keep Archive)
C. Reload Application Software

R. Restart System

Select (A, B, C, R) C
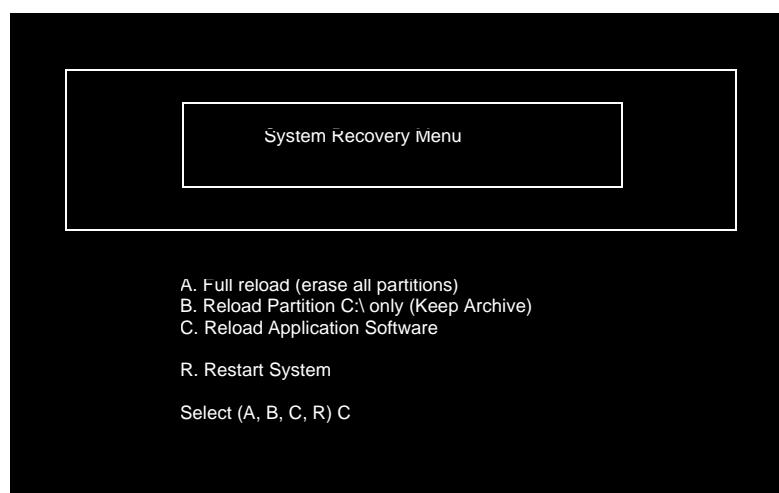
Figure 8-52   Choose Reload Application Software

8-4-12-4   Loading BT'08 Application Software on EchoPAC PC Turnkey (cont'd)

⚠️ **NOTICE**   **If you select "A" in the next step, ALL existing software and data will be erased. If backup has not been performed as described earlier in this manual; ALL DATA like Patient Database, System Configuration and User Configurations (Customer Presets) will be lost.**

5.) Select "**C. Reload Application SW**"

6.) Confirm the selection by pressing **Y**.

The Workstation reboots and the Application software installation starts automatically.

When completed, the EchoPAC PC Turnkey reboots and starts up normally. The User Presets, the System Configurations and the local Patient Archive remains as before the software reload.

8-4-12-5   Re-installation of BT'08 System Software on an EchoPAC PC Turnkey

NOTE: *Workstation typesHP xw4600, HP xw4400, HP xw4300, HP xw4200, HP xw4100 or EVO W4000.*

Verify that the Software Option Dongle is installed in one of the ports at the rear of the workstation, before continuing the software loading.

1.) Press **Eject** on the CD Drive to open the drive.

.

EJECT button on CD Drive
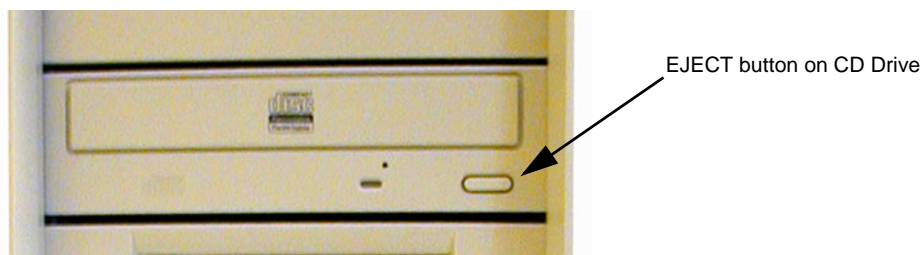
Figure 8-53   Eject Button on CD Drive.

2.) Insert the System Software CD.

3.) Shutdown the workstation.

4.) Switch power on again.
The PC will now boot from the System Software CD, and the System Software loading Program starts.

.

Figure 8-54   Step of startup (Example).

8-4-12-5   Re-installation of BT'08 System Software on an EchoPAC PC Turnkey (cont'd)

You can choose if you want to do a complete EchoPAC PC Turnkey software loading, including the erasing of all partitions, or if you only want to update or reinstall the software on the C partition (C drive) only.

*NOTE: In most cases, a **C:\ Repair/Upgrade Partition** is the preferred solution.*

-    If you select <A> to do a complete EchoPAC PC Turnkey software loading, ALL data will be erased.
-    If you select <B> to update/re-install the software on the C partition, only the data on the C partition will be erased, but user setups, measurement reports and pictures/screen loops will be kept.
     In most cases, the C:\ partition update is the preferred solution.
-    If you select <C> the installation is halted and you exit from the installation application.

5.) **Select <B>** to update the software on the C:\ drive, leaving the data on the other drives unchanged.

Previously entered
Computer Name

Warning to be read

Select <B>

```
            ECHOPAC PC Base Installation
                    Version 1.0


    Enter Computer Name: (ECHOPAC7-xxxxxx) : ECHOPAC7-000001

                     Warning !!!
            This program will erase drive C:\

            A. Install ECHOPAC 7
            B. Repair/Upgrade Partition C:\
            C. Exit Program

            Select [A,B,C] :_
```

Figure 8-55   Installation Type Selection.

8-4-12-5 Re-installation of BT'08 System Software on an EchoPAC PC Turnkey (cont'd)

Progress Indicator

Statistics

Details
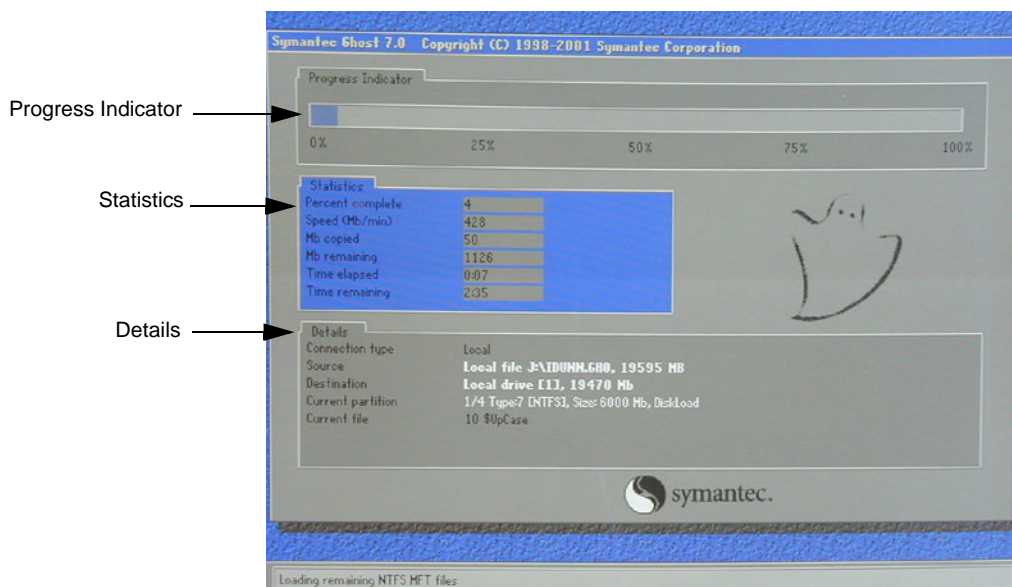
Figure 8-56 System software loading progresses.

6.) Wait for System Software to be installed. Typical installation time is 10 minutes.
A status bar on the screen indicates the progress
.
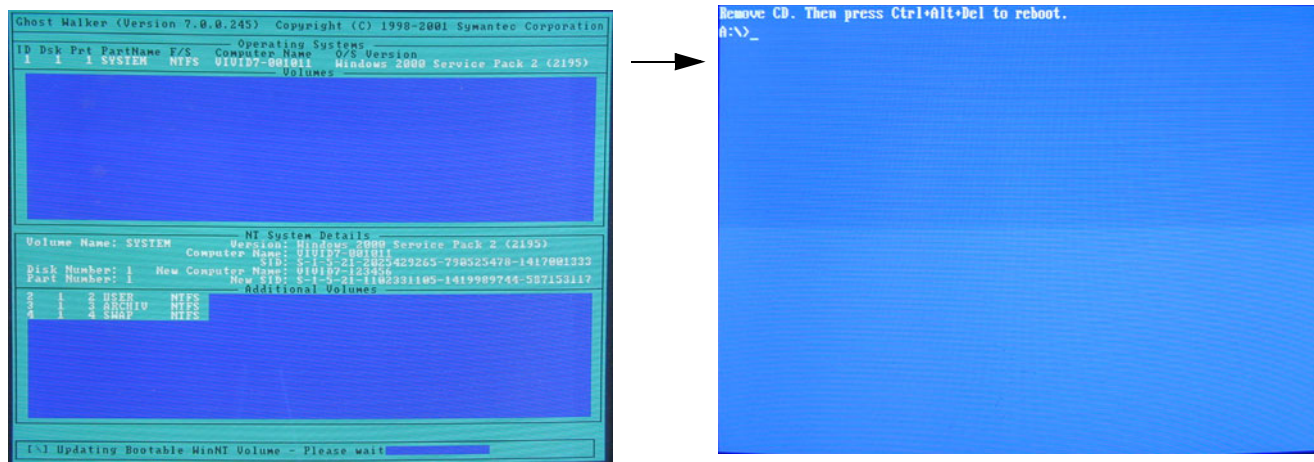
Figure 8-57 System software loading completed and command prompt appears

7.) After the installation you are prompted to remove CD.

8.) Press the **Eject** button on the CD drive and remove the CD.

⚠ **NOTICE** **Don't restart the workstation yet! Continue with the steps on next page.**

8-4-12-6   Re-loading BT'08 Application Software for EchoPAC PC Workstation

NOTE: *This concerns Workstation types HPxw4600, HP xw4400, HP xw4300, HP xw4200, HP xw4100*
                 or EVO W4000.

1.) Insert CD labelled Application Software.

2.) Press **Ctrl+Alt+Del** on the keyboard to reboot the EchoPAC PC workstation.

3.) The workstation will restart.
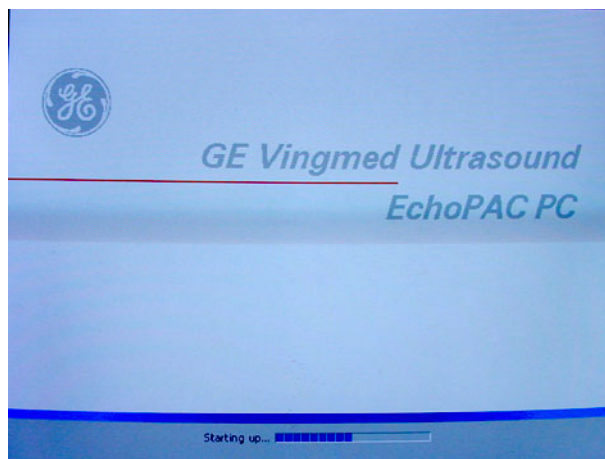
Figure 8-58   Start Picture

4.) When the workstation is rebooted, select **install sw** in the dialog box.
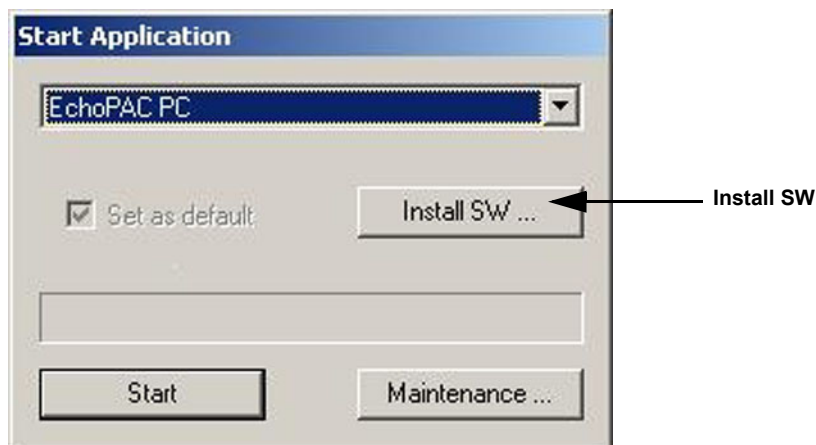
Figure 8-59   Start Application dialog

8-4-12-6   Re-loading BT'08 Application Software for EchoPAC PC Workstation (cont'd)

5.) Select **OK**.

Figure 8-60   StartLoader

6.) Select **OK**.

Figure 8-61   StartLoader

7.) Press any key to continue.
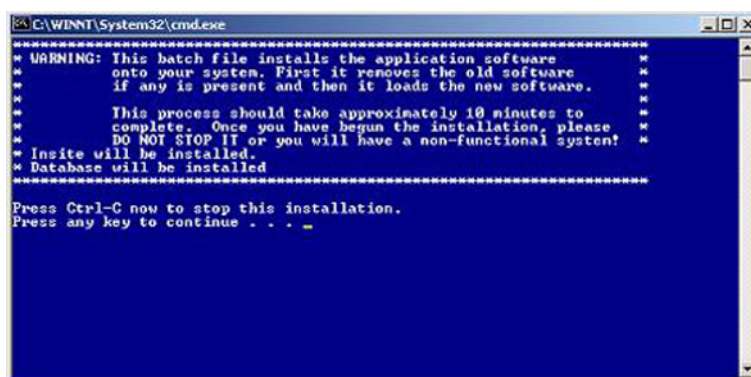
Figure 8-62   Continue the Installation

NOTE: *Do not interrupt the software loading or close the cmd.exe window during the installation of the Application Software as it will cause the Installation to fail.*

8.) The system will now be loaded with new Application SW.

8-4-12-6   Re-loading BT'08 Application Software for EchoPAC PC Workstation (cont'd)

When Application software loading is completed, the following will appear on the screen:
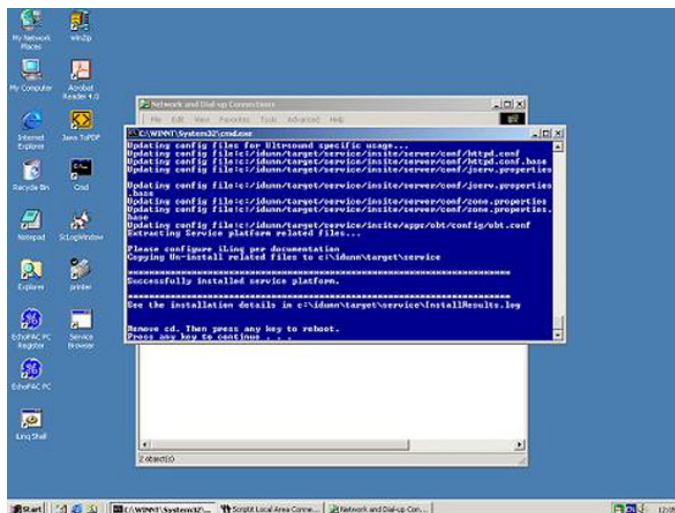
Figure 8-63   Application software loading completed

9.) Remove the CD.

10.) If there are extra CDs with software patches, these should be installed now.

    a.) Insert the patch CD in the CD drive.

    b.) Press any key to reboot. The patch software will be installed during the booting.

    c.) Repeat step a and b until all patches have been installed. When finished, remove the last CD used and continue with next step.

11.) Press a key to reboot.

12.) The unit will boot up from the installed software. The first startup from new software may be slightly slower than a normal startup.

13.) Verify a similar boot sequence as shown in .

NOT ALL SCREENS SHOWN

Figure 8-64   Normal Start Up Process

8-4-13   Verification of BT'08 System Software and Application Software

NOTE: *This is Software verification on either HP xw4600, HP xw4400, HP xw4300, HP xw4200, HP xw4100 or EVO W4000*

8-4-13-1   PC Log ON - BT'08 Software

1.) Type **ADM** in the **Operator** field on the **Operator Login** pop-up menu..

Figure 8-65   Log On Dialog

2.) Select **Log On**.
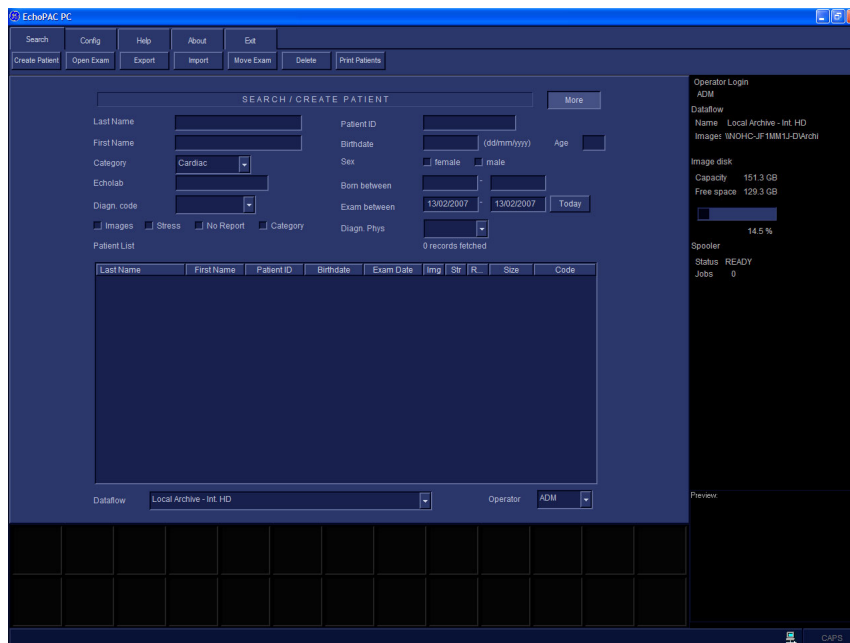
Figure 8-66   After logon

8-4-13-2   Verify BT'08 4D LV Function Option

      a.) Install the 4D LV Function CD in the CD drive.

      b.) Press a key to reboot.

      c.) Follow the instructions on-screen.

      d.) When the installation is complete, remove the CD and continue with the next step.

8-4-13-3   Verify BT'08 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

      1.) Select **Config**.

      2.) Select Admin.

      3.) Select System Admin.

Verify the Software Option Strings, see Table 8-4 "Software Option Strings" on page 8-40.

Figure 8-67   The Admin/System Admin window

8-4-13-4   Verify BT'08 Default Dataflow

1.) In **Connectivity** window, select **Dataflow**.
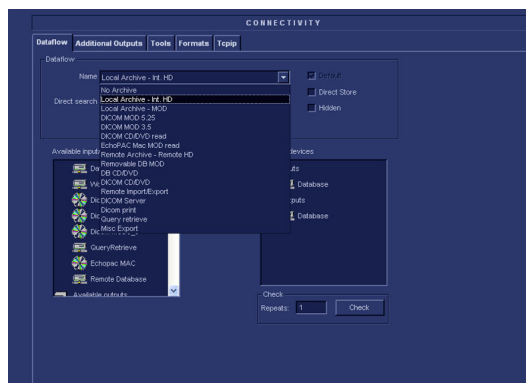
Figure 8-68   Default Dataflow

2.) Verify that Default Dataflow matches what was recorded in .
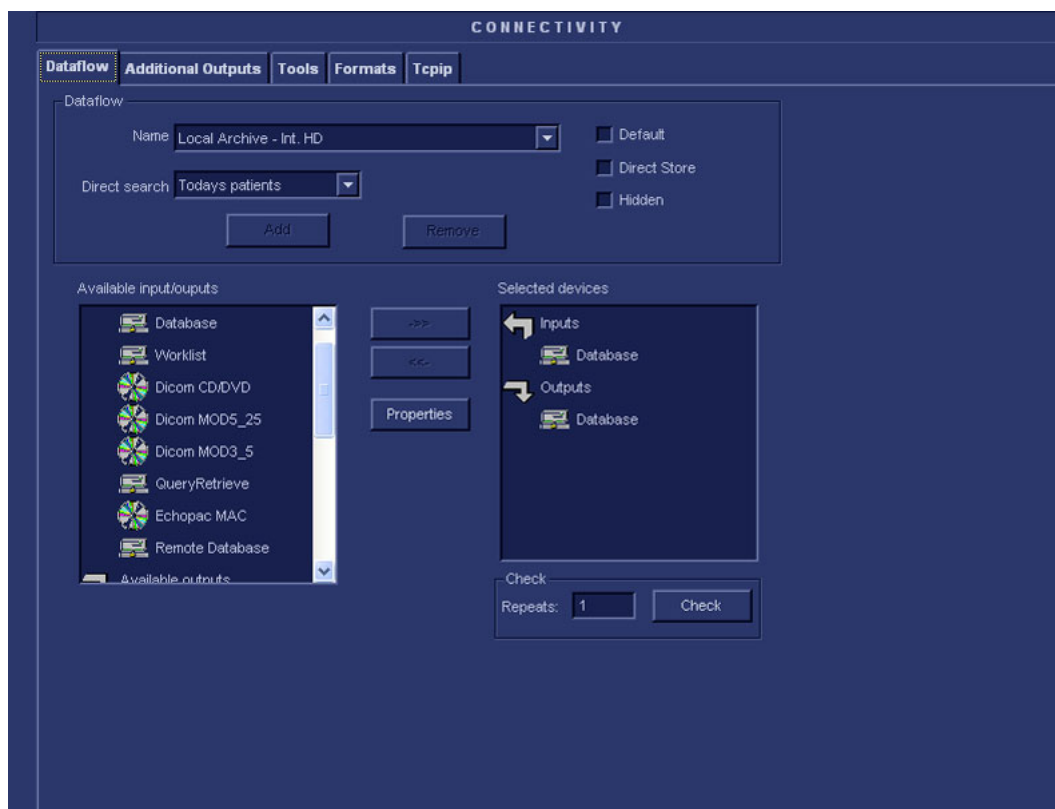
Figure 8-69   Dataflows window

8-4-13-5   Verify BT'08 Software Versions

1.) Select **Config**.

2.) Select **About** tab.
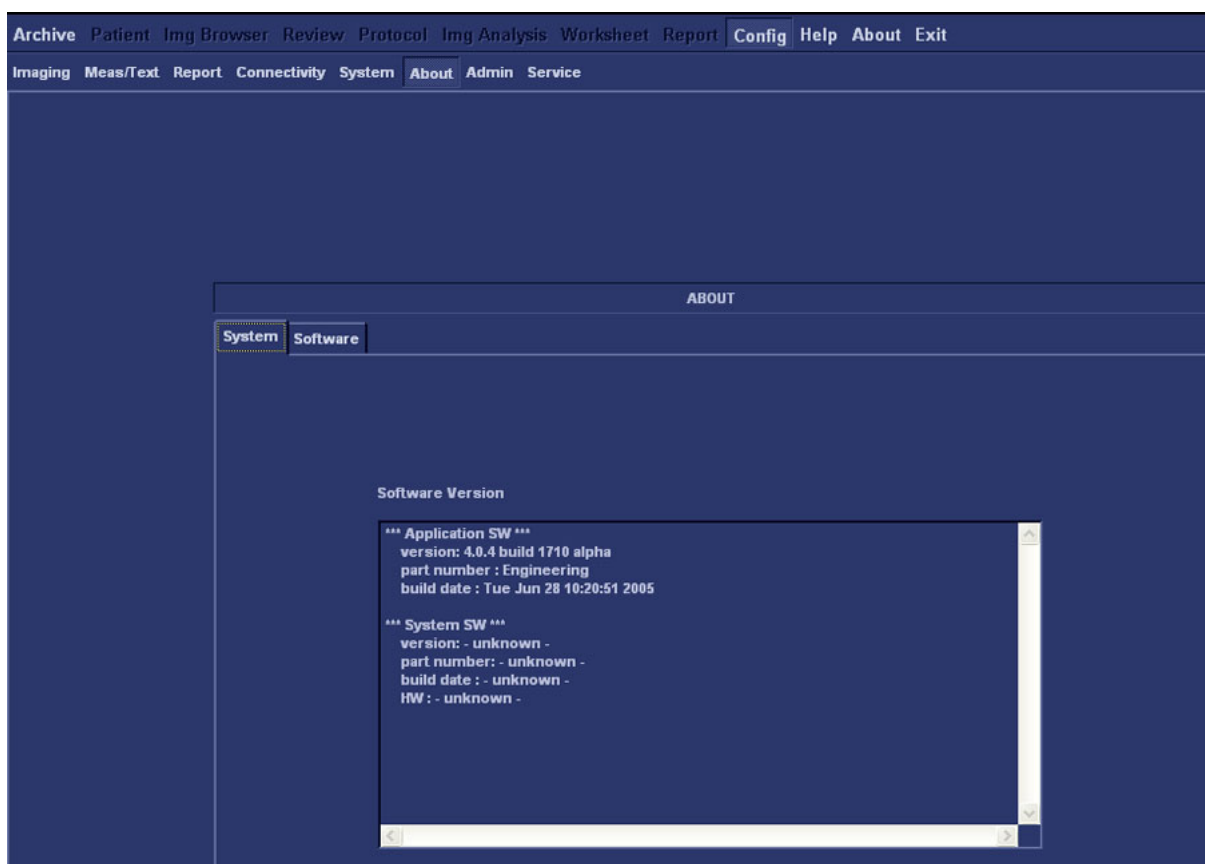
Figure 8-70   Software Verification

3.) Verify that the SW versions are the same as recorded in Table 8-8 "Record BT'08 Software versions." on page 8-47.
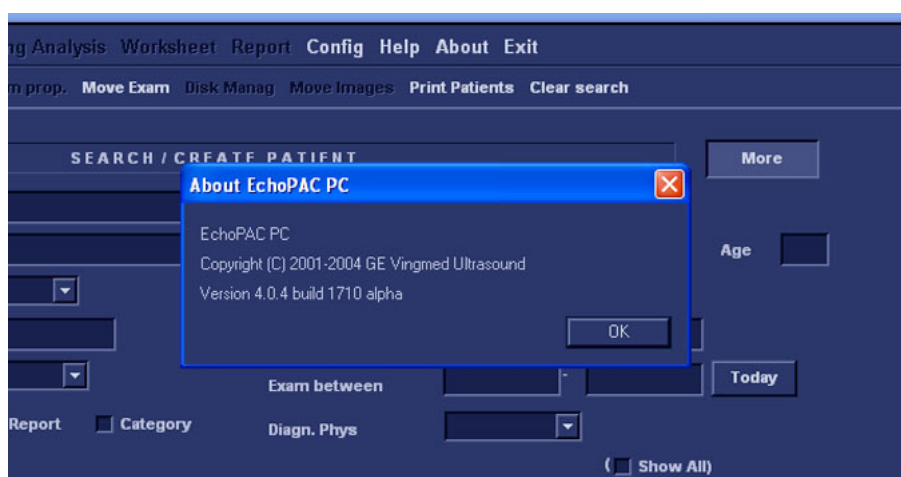
Figure 8-71   The About EchoPAC PC Dialog

8-4-13-6   Verify BT'08 TCP/IP Settings

1.) Select **Config**.

2.) Select **Connectivity.**
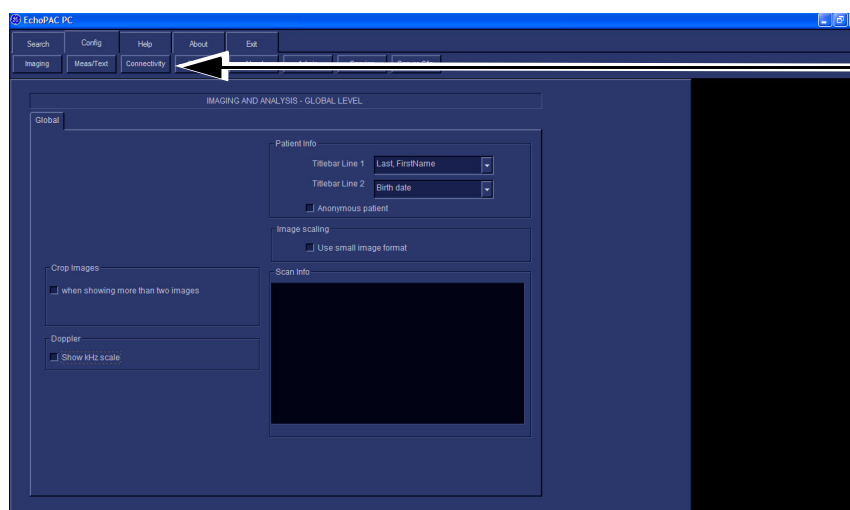
Figure 8-72   Connectivity Selection

1.) Select the **TCPIP** tab.
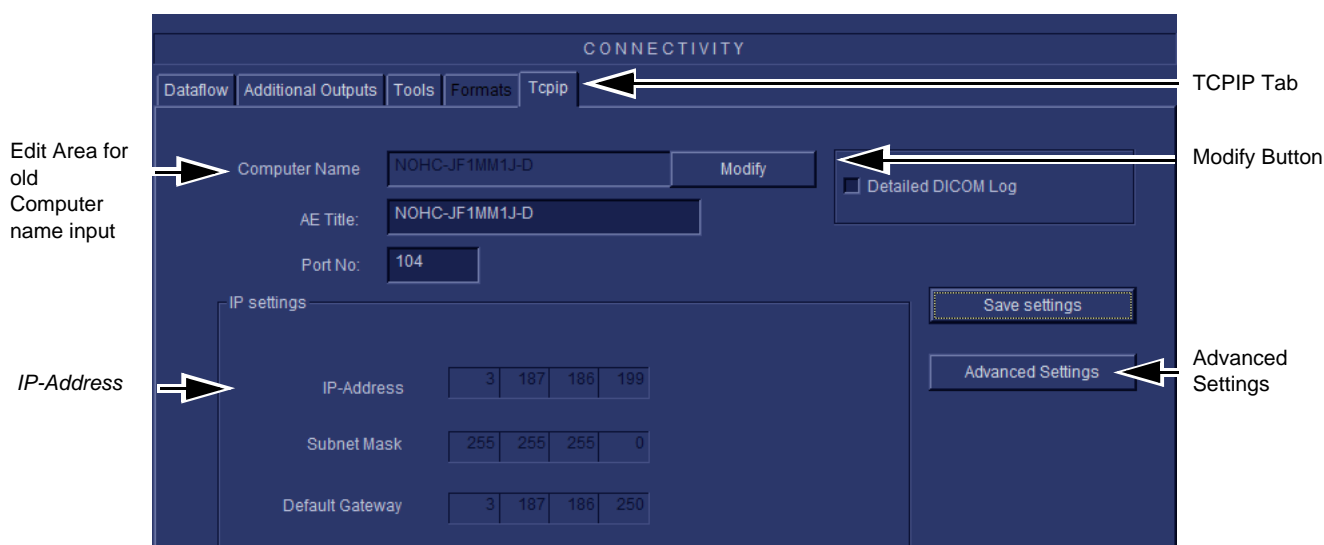
Figure 8-73   Verify TCP-IP set-up

2.) Verify the following data as recorded in Table 8-5 "Record settings from BT'08 Tcpip screen" on page 8-41.

If DHCP was enabled, verify/set:

- Computer Name
- AE Title
- Activate DHCP as described in 3-8-4 "DHCP Setup (software v108.x and higher)" on page 3-67.

8-4-13-6   **Verify BT'08 TCP/IP Settings** (cont'd)

If DHCP was un-enabled, verify/set:

- Computer Name
- AE Title
- IP- Address
- Subnet Mask
- Default Gateway
- Remote Archive IP-Address
- Remote Archive Name

3.) Select **Save Settings.**

4.) A Warning window will appear, select OK.

5.) Select **Advanced Settings.(**See Figure 8-73 "Verify TCP-IP set-up" on page 8-63.)

8-4-13-6   Verify BT'08 TCP/IP Settings (cont'd)

6.) Right click on selected IP source in Windows window.
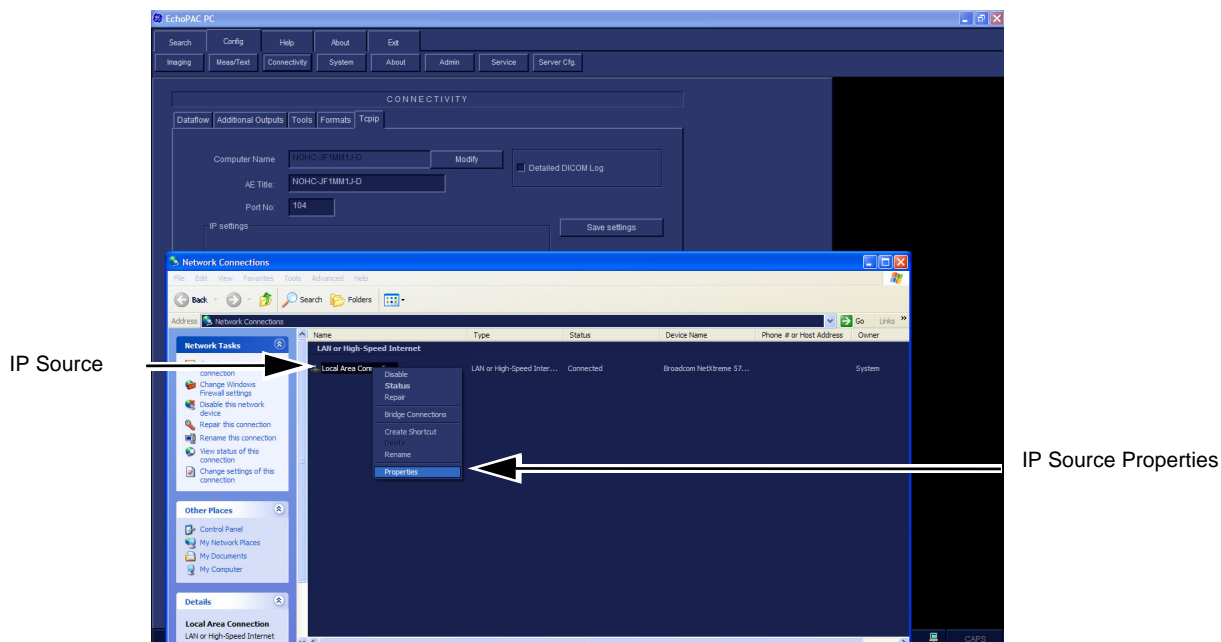
Figure 8-74   Advanced Settings

7.) Select **Properties** on menu that appears.
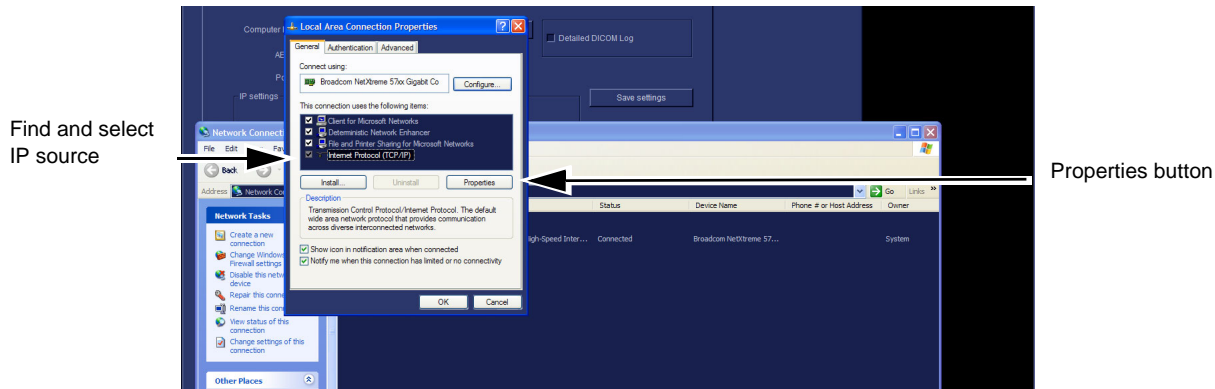
Figure 8-75   IP Source and Properties selection

8.) Select IP source and Properties button.

8-4-13-6   Verify BT'08 TCP/IP Settings (cont'd)

9.) Obtain IP address from Network Administrator and enter data at vacant fields.
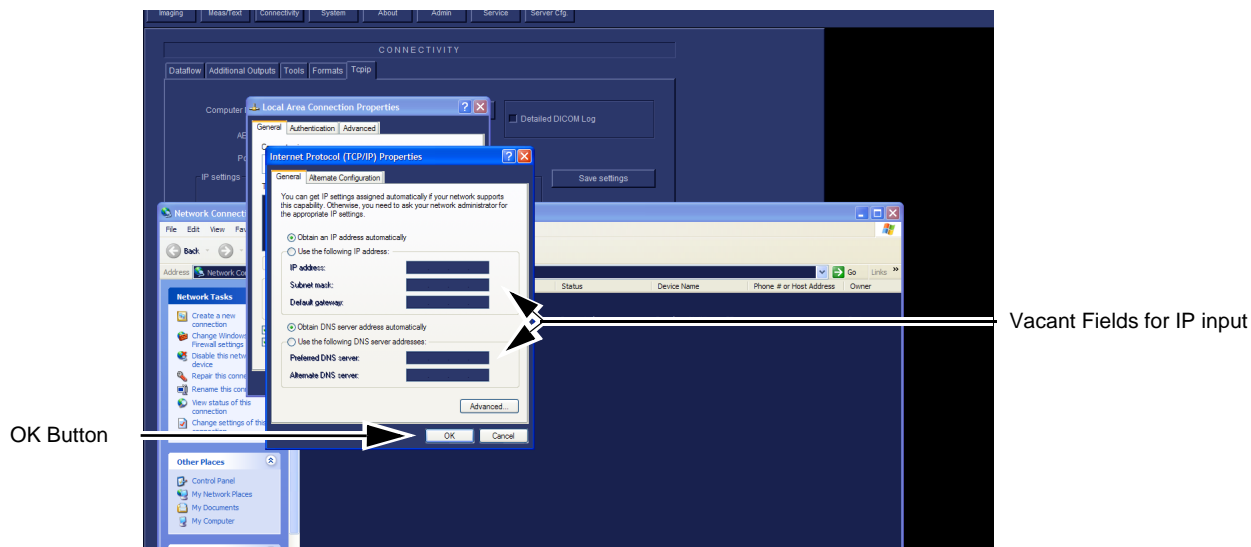
Figure 8-76   IP Address input

10.) When completed select OK twice to close properties settings and close the Widows window.

8-4-13-6 Verify BT'08 TCP/IP Settings (cont'd)

11.) Select **Save settings** button.

Figure 8-77 Save Settings

Notice that the Remote Archive is automatically remembered because of the C;/ software update.

8-4-13-7   Printer Setup Verification BT'08 Software

1.) Select Connectivity.

2.) Select Additional Outputs.
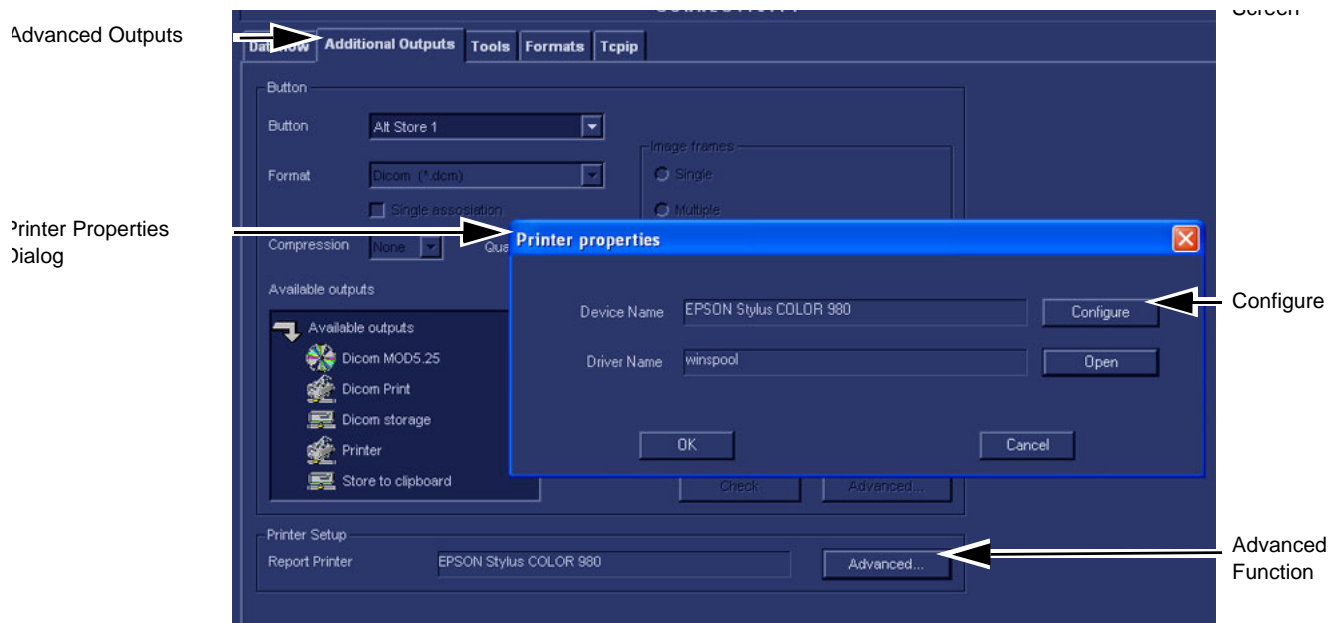
Figure 8-78   Additional Outputs

3.) Select <u>ADVANCED</u> to open **Printer Properties** window.

4.) Select <u>CONFIGURE</u> to open the **Print Setup** dialog.

5.) Select or verify the default printer and select OK. This closes the Print Setup dialog.

6.) Verify Default Printer Name.
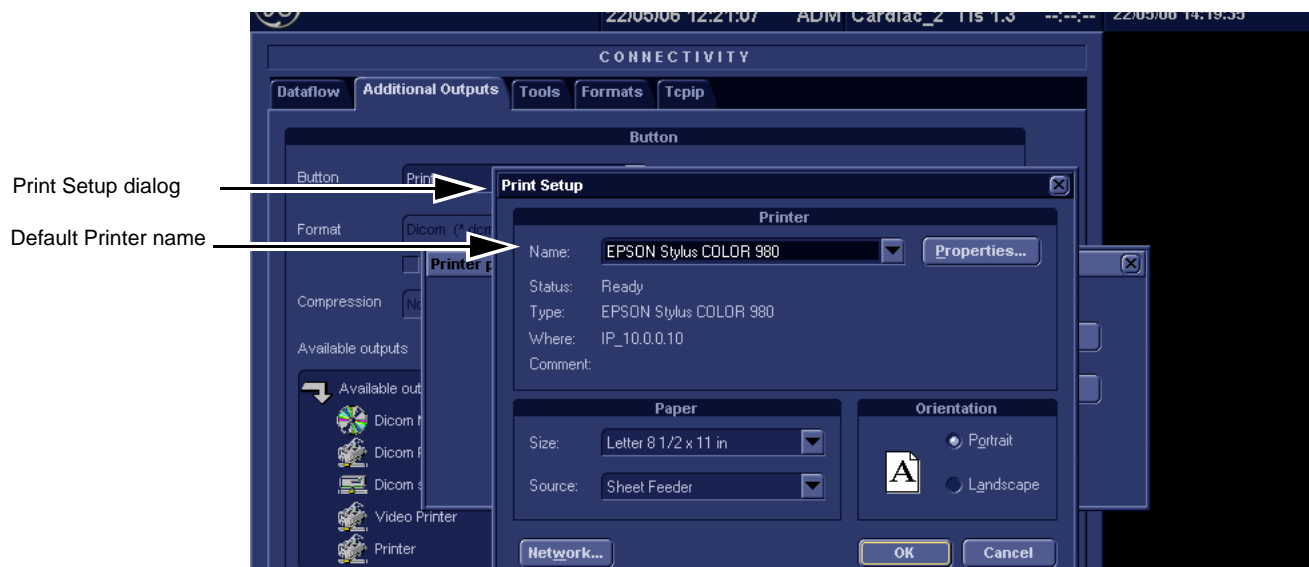
Figure 8-79   Standard Print dialog

7.) Verify that the **Device Name** lists the correct printer.

8.) Select the **Select** button to display the **Print Setup** dialog.

8-4-13-7　Printer Setup Verification BT'08 Software (cont'd)

NOTE:　　　*Notice that the Default printer is now the Device name on the Printer Properties Dialog. It replaced the EPSON printer that was there at the beginning as shown in* Figure 8-80 "Printer Properties Dialog" on page 8-69.

　　　　　9.)　On the Printer Properties dialog select Open.
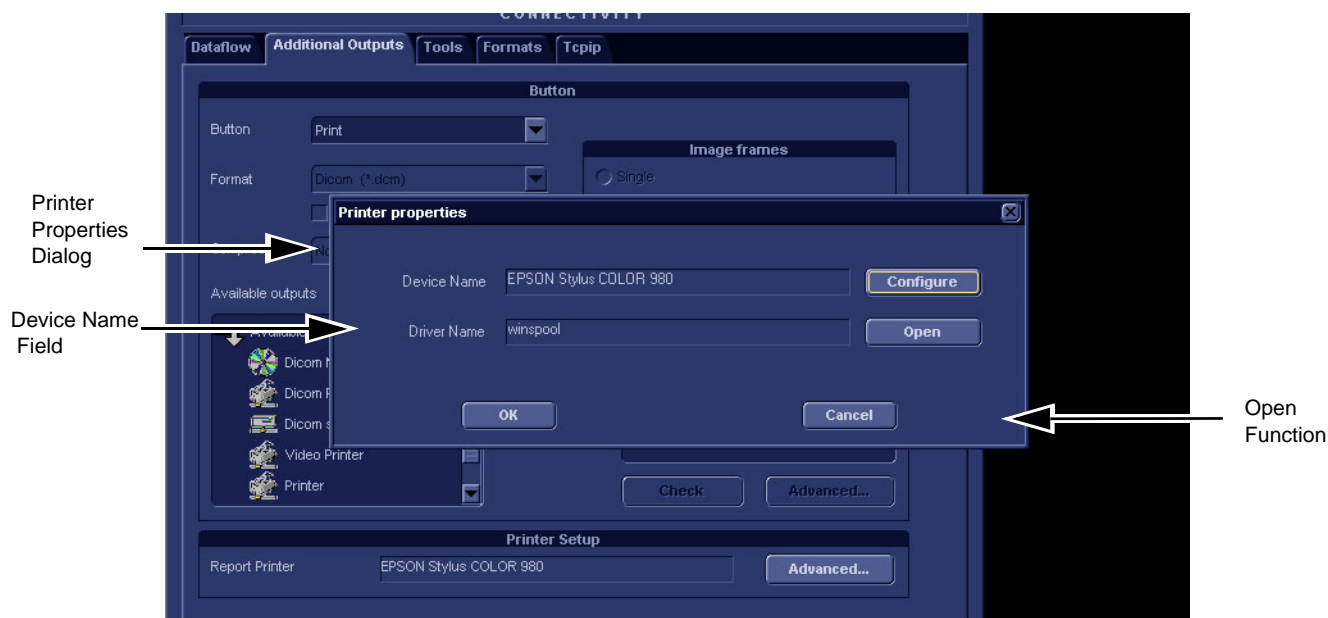
Figure 8-80　Printer Properties Dialog

10.)This opens a MS Windows dialog for the Default Printer.
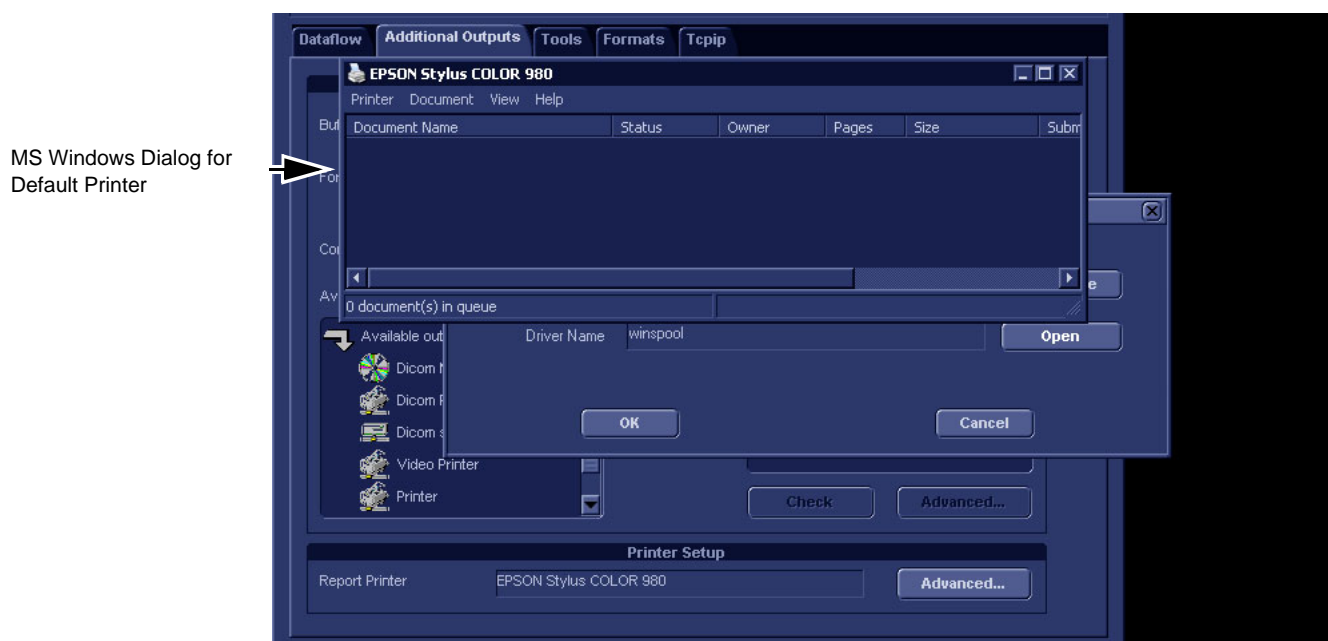
Figure 8-81　MS Windows Dialog for Default Printer

8-4-13-7 Printer Setup Verification BT'08 Software (cont'd)

11.) Click open the Printer Menu.
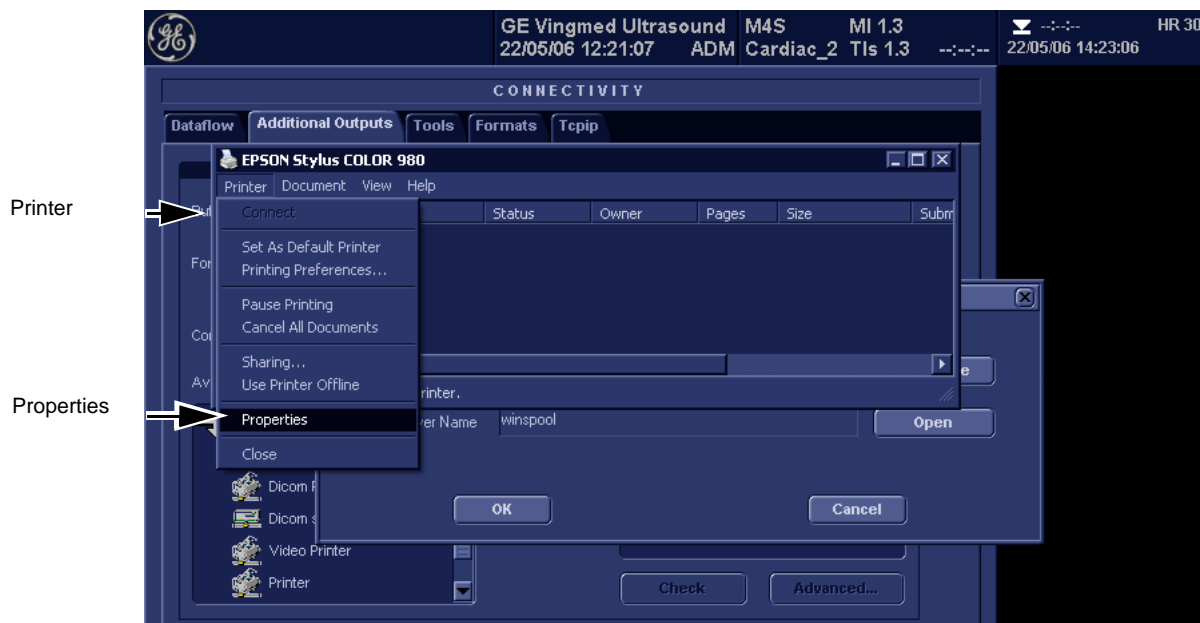
Figure 8-82 MS Windows printer Properties choice

12.) Highlight and Select Properties to display the MS Windows Default Printer Properties dialog.
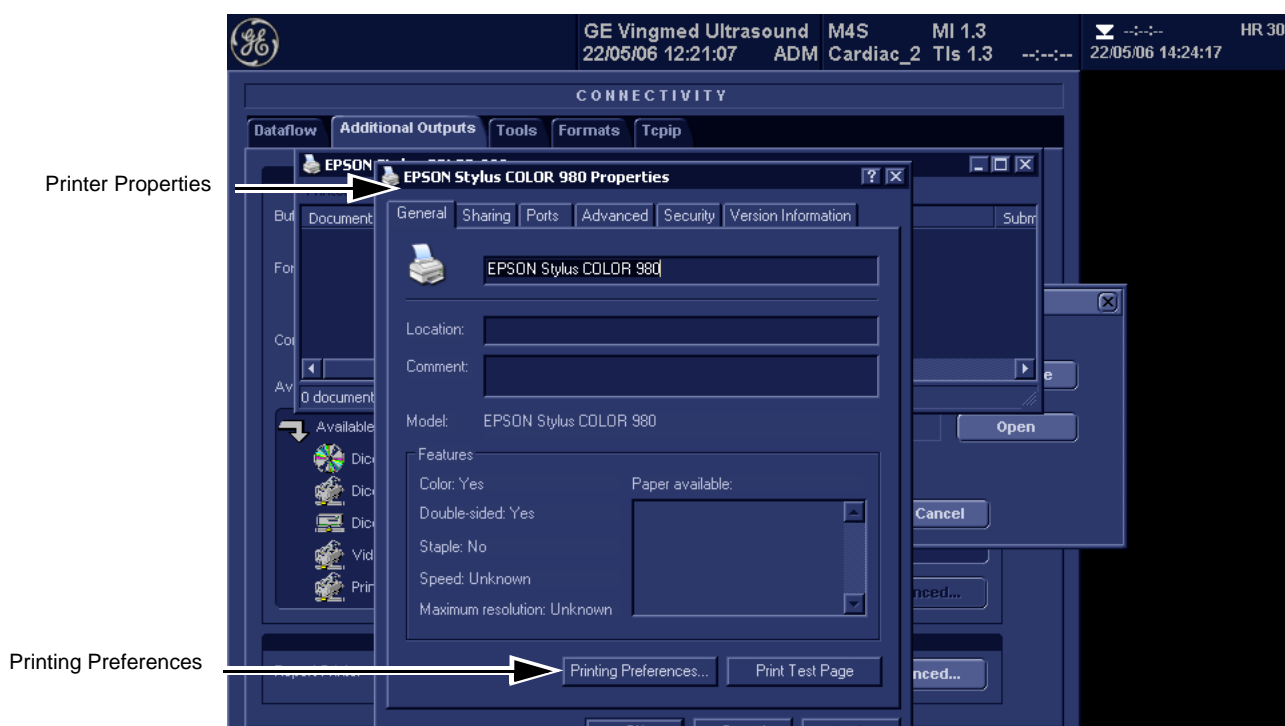
Figure 8-83 MS Windows Printer Properties Dialog Printing Preferences choice

13.) Select MS Windows Default Printer Printing Preferences.

8-4-13-7   Printer Setup Verification BT'08 Software (cont'd)

14.) Verify the Preferences shown here.

Printing Preferences
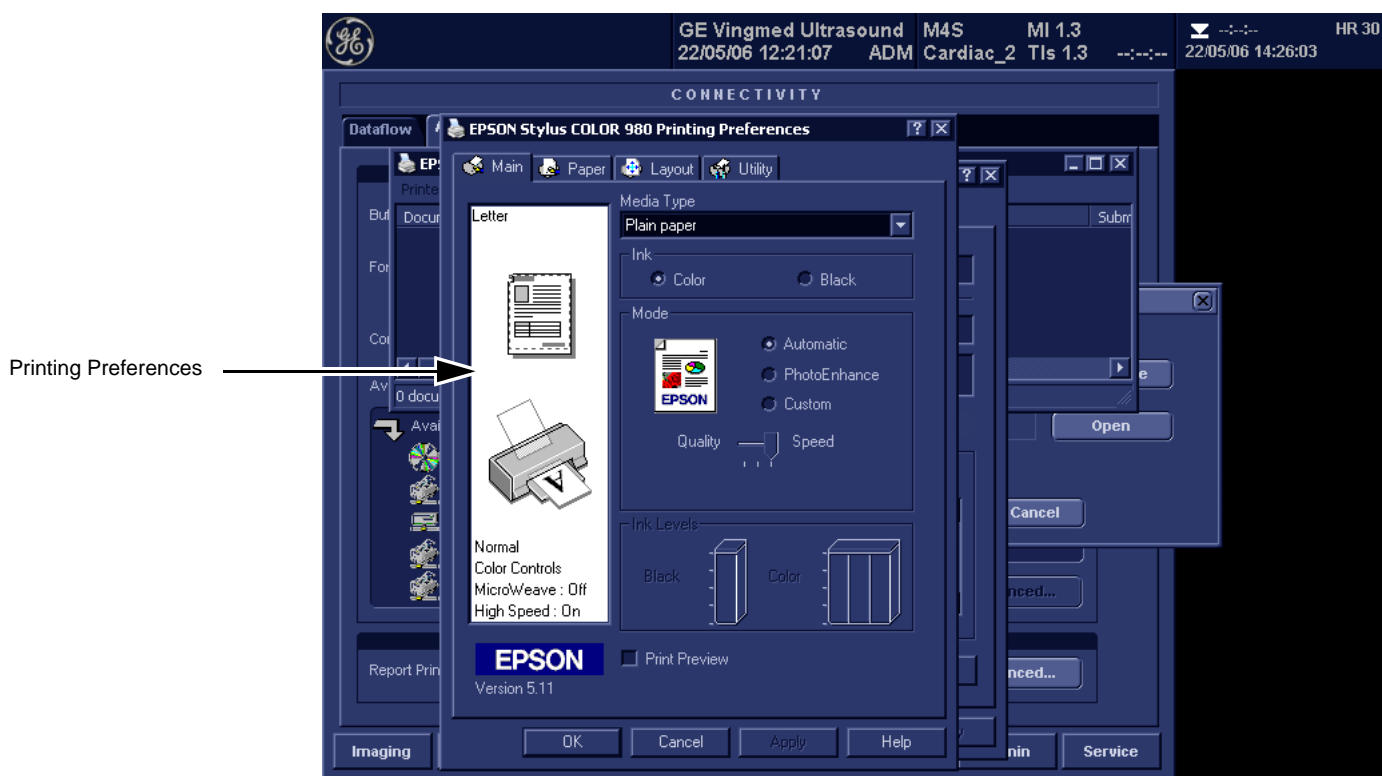
Figure 8-84   Printing Preferences selection completed

15.) Select OK when completed.

8-4-13-7   Printer Setup Verification BT'08 Software (cont'd)

16.) Select Ports Tab and verify recorded Default Printer Report details.
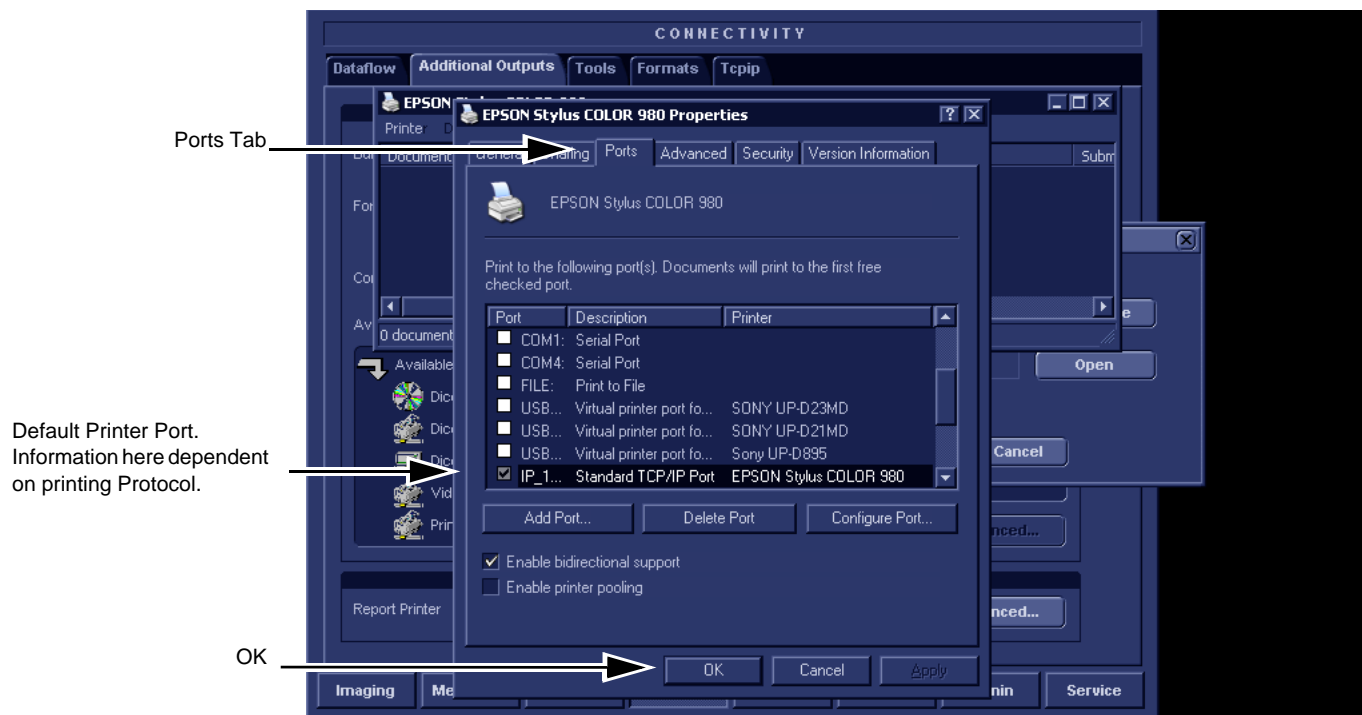
Figure 8-85   Recording Ports

17.) Select OK when completed.This will return the EchoPAC PC stage that exited to MS windows dialog.
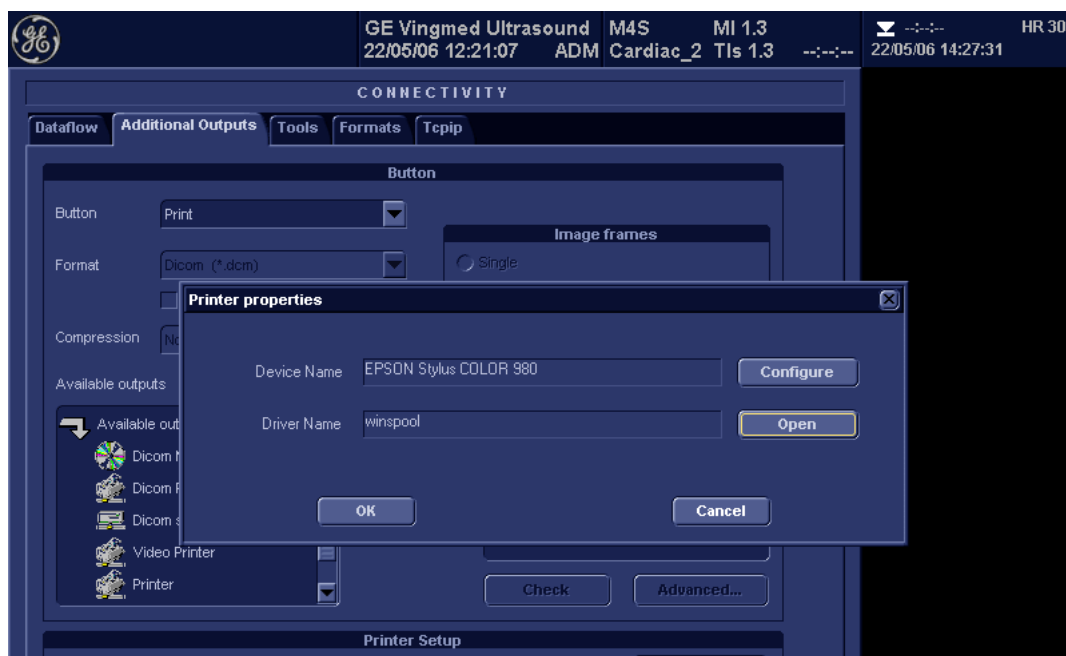
Figure 8-86   EchoPAC PC back again

8-4-13-7   Printer Setup Verification BT'08 Software (cont'd)

Table 8-10   Printer Name or IP Address and Port Number

Printer Name or IP Address	Port Number

18.) Select <u>CANCEL</u>.

19.) Close the rest of the windows by selecting <u>OK</u>.

8-4-14   Verification and functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-5
BT'06 Software Reloading Procedure

⚠️ **NOTICE** Do not use this procedure when *upgrading* a unit's software. Additional software and procedures, not described here, may be needed for such upgrades.
Use this procedure if you need to reinstall the existing software on a EchoPAC PC Turnkey .

8-5-1 Introduction - BT'06 Software

⚠️ **NOTICE** In order to complete a successful restore of the Patient Database, if needed, the images must be moved to MO disks *before* doing backup of Patient Database. If the backup procedure is not completed correctly, the images and database information could be lost.

This procedure describes how to reload the needed EchoPAC PC Turnkey software on the workstation.

Table 8-11   Contents in this Procedure

8-5-2 Preparations Before BT'06 Software Reload

To ensure that no data is lost during the reload, these preparations should be done before starting the software reload:

- Export Patient Images from the internal hard drive to removable MO disks.
- Make backup of Customer Presets, Patient Database (Patient Archive, Report Archive, System Configuration and User Defined Configuration) to MO disks.
- TCP/IP Addresses, Computer Name and Software Option Password (alphanumeric string) settings must be manually recorded.

8-5-3   Customer Provided Prerequisite - BT'06 Software

The customer should provide the needed storing and backup media as described in this list:

- Formatted and labelled MO Disks for Images storage
- Formatted and labelled MO Disk for Patient Archive and User Defined Settings.

8-5-4   Tools Provided with Unit or After a BT'06 Software Upgrade

- System software (DVD) - specific for each workstation model.
- Application software (CD)
- CD for 4D LV Volume

If present:

- Patch for EchoPAC PC Turnkey (CD)

8-5-5   Preparations - BT'06 Software

- Switch ON the Mains Power Circuit Breaker and power up the unit, see 4-2-1 "Power On/Boot Up" on page 4-2.

8-5-6   Backup - BT'06 Software

Please refer to **Space Management** in the **User Manual**.

8-5-7   Record BT'06 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Press **Config** (**F2**) and log on as *adm*.
2.) From the **Admin** tab, select **SYSTEM ADMIN**.
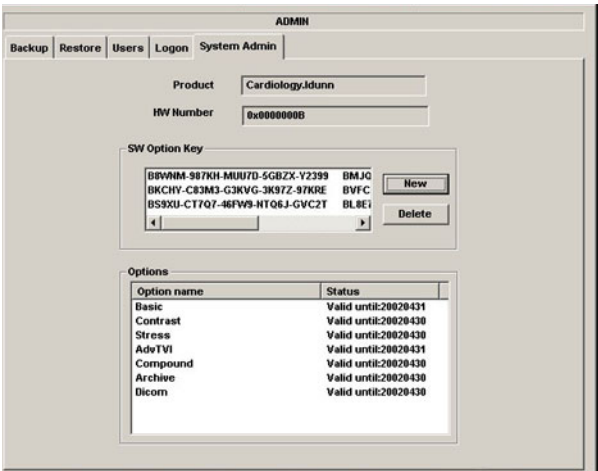
Figure 8-87   System Admin

3.) Record SW Options Keys from the SW Options Key window.

⚠ **WARNING**   ***Make sure that the SW Option Keys (passwords) have been recorded correctly. If the key is incorrect, you will not be able to log on after the software loading has been completed. The password is case sensitive. Hyphens must also be recorded. There may be more than one password.***

Table 8-12   Software Option Strings

SW OPTIONS STRINGS

8-5-8   Record TCP/IP Settings - BT'06 Software

1.) Select **CONNECTIVITY**.

2.) Select the **TCPIP** tab.

Figure 8-88   TCP/IP <u>Example</u> Settings

3.) Record the **Computer Name** and **AE Title** in Table 8-26 "Record settings from Tcpip screen" on page 8-119.

4.) If the unit has software version v5.0 (or higher), and DHCP is in use, recording of the rest of the TCP/IP settings can be skipped, since they are provided from the DHCP server each time the workstation is powered on.
See next page for instructions on how to verify if DHCP has been enabled.

8-5-8Record TCP/IP Settings - BT'06 Software (cont'd)

Verify if DHCP is Active

Follow the steps below to verify if DHCP has been activated:

a.) From the **Tcpip** screen, select **Advanced Settings**.
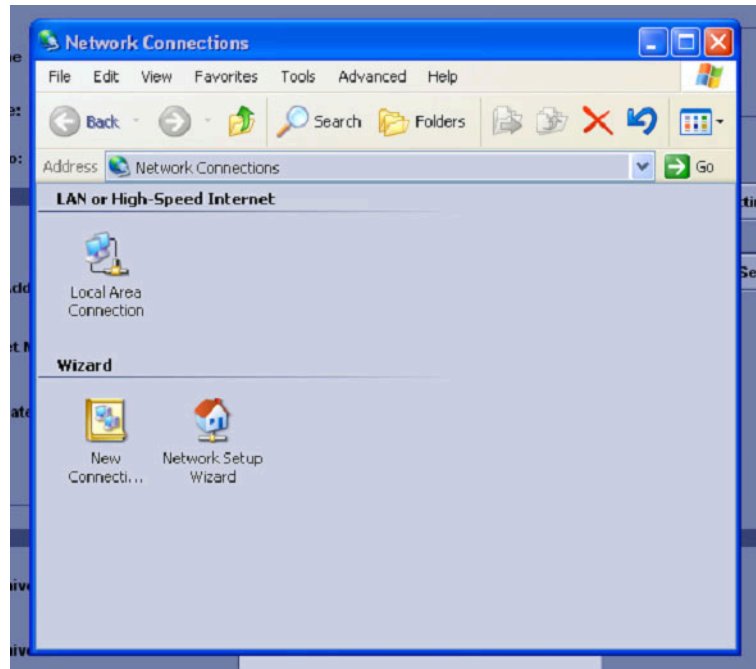
Figure 8-89   Network Connections

b.) Select **Local Area Connection.**

c.) Right click and select **Properties** to display the **Local Connection Properties.**

d.) Scroll down to **Internet Protocol (TCP/IP)** and select it.

e.) Select **Properties.**

f.) Check if **Obtain an IP address automatically** has been selected.

g.) If **Obtain an IP address automatically** has been selected, you only need to record that it is active in Table 8-26 "Record settings from Tcpip screen" on page 8-119.
Next, continue with 8-5-9 "Record Default Dataflow - BT'06 Software" on page 8-79.

h.) If **Obtain an IP address automatically** wasn't selected, continue with step 5 on next page.

8-5-8Record TCP/IP Settings - BT'06 Software (cont'd)

5.) Record all settings in .

Table 8-13   Record settings from Tcpip screen

PARAMETER	VALUE
Computer Name	EchoPAC7-00 _ _ _ _
AE Title	EchoPAC7-00 _ _ _ _
IP Settings	
DHCP	ACTIVE: __
IP Address	_ _ _. _ _ _. _ _ _
Subnet mask	_ _ _. _ _ _. _ _ _
Default Gateway	_ _ _. _ _ _. _ _ _
Remote Archive Setup	
Remote Archive IP-Address	_ _ _. _ _ _. _ _ _
Remote Archive Name	

8-5-9   Record Default Dataflow - BT'06 Software

1.) In the **Connectivity** window, select **Dataflow**.
2.) Verify that **Default Dataflow** is selected.
3.) Record the **Default Dataflow** in .

Table 8-14   Record Default Dataflow Name

Default Dataflow Name

8-5-10　　Record Standard Printer IP and Port Settings - BT'06 Software

　　　1.)　In the **Connectivity** window, select **Services**.

　　　2.)　Select **Printer Setup**.

　　　3.)　Select **Open**.
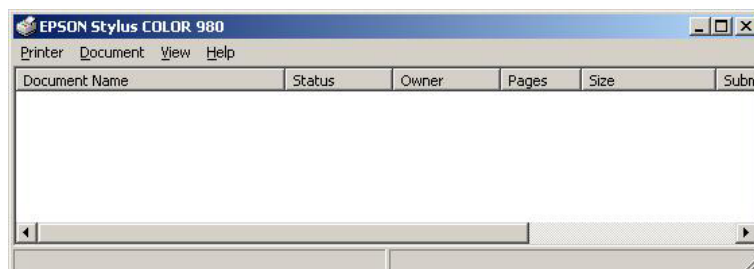
　　　4.)　Select **Printer**.

Figure 8-90　Properties

　　　5.)　Select **Properties** from the Printer scroll down menu.

　　　6.)　Select **Ports**
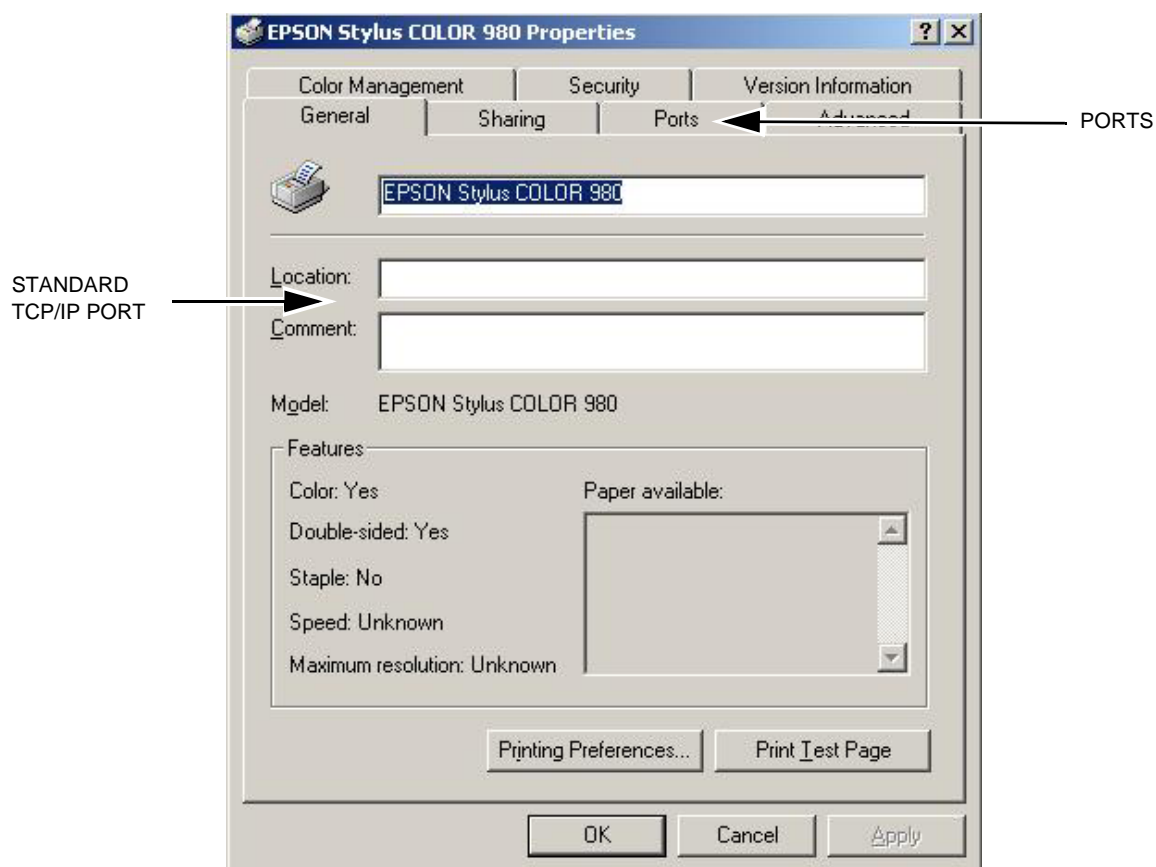
Figure 8-91　Printer Properties

8-5-10 Record Standard Printer IP and Port Settings - BT'06 Software (cont'd)

7.) Select **Configure Port**.

8.) Select and Record *Printer Name or IP Address* in Table 8-28 "Printer Name or IP Address and Port Number" on page 8-121.

9.) Select and Record *Port Number* in Table 8-28 "Printer Name or IP Address and Port Number" on page 8-121.

Table 8-15   Printer Name or IP Address and Port Number

Printer Name or IP Address	Port Number

10.) Select **Cancel**.
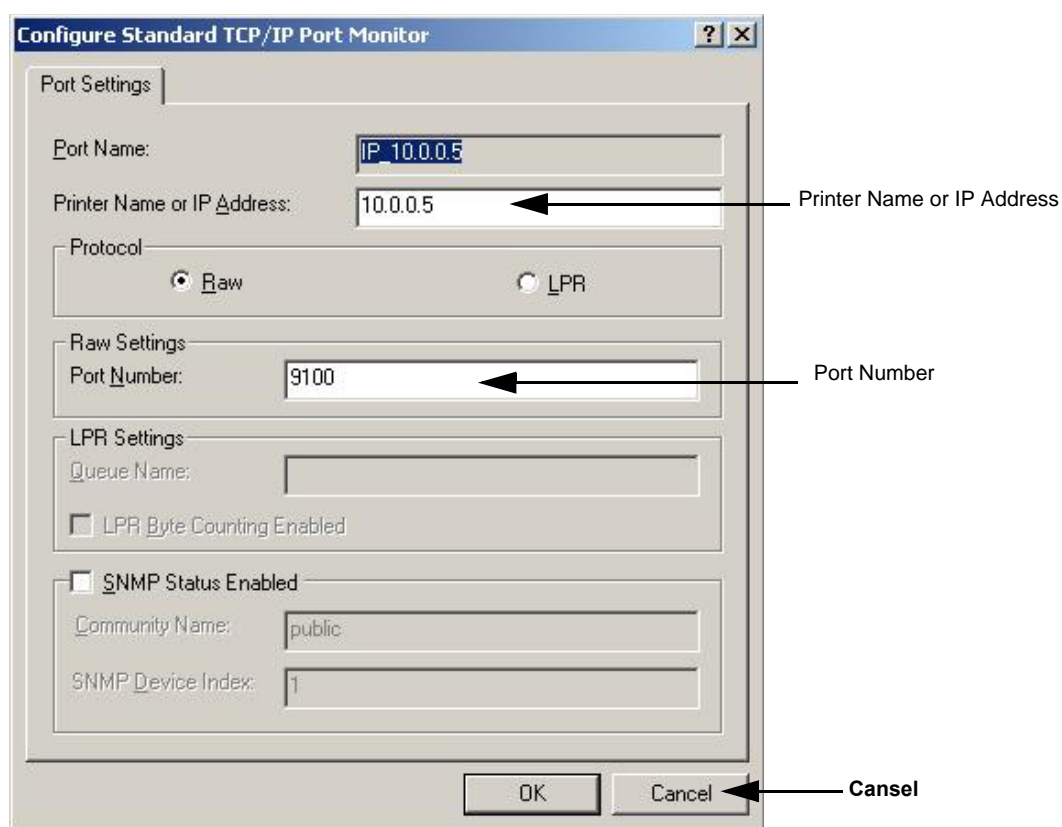
Figure 8-92   Configure Port

11.) Close the rest of the windows by selecting **OK**.

8-5-11   Record BT06 Software Versions

1.) Select **About**.
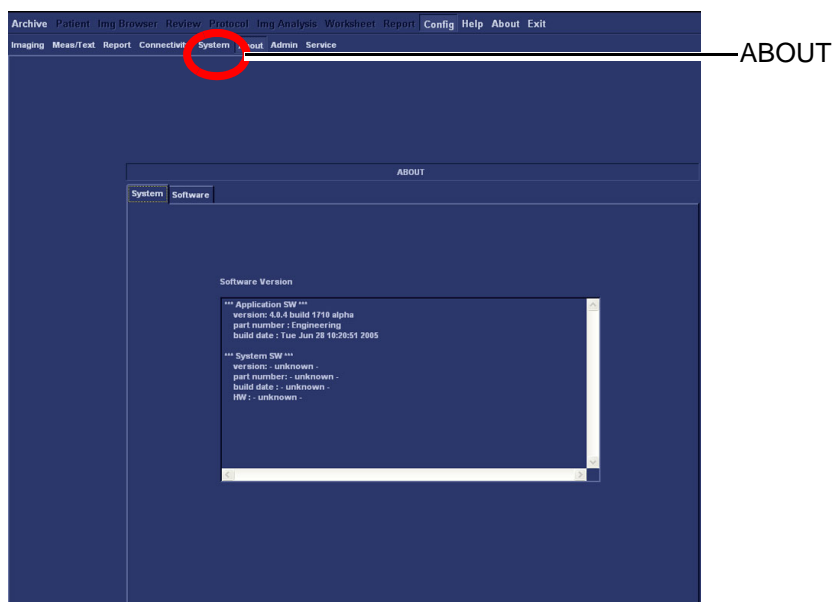
Figure 8-93   Information available on the About tab

2.) Record *Application Software* version in Table 8-16 "Record Software versions." on page 8-82.

3.) Record *System Software* version in Table 8-16 "Record Software versions." on page 8-82.

Table 8-16   Record Software versions.

DESCRIPTION	RECORD SOFTWARE VERSION
APPLICATION SOFTWARE VERSION	
SYSTEM SOFTWARE VERSION	

4.) Shutdown the PC.

5.) Shutdown all peripherals on the SCSI bus and/or the USB bus.

6.) Disconnect SCSI cables and USB cables from the PC.

8-5-12 Software Loading - BT'06 Software

8-5-12-1 Overview - BT'06 Software

Refer to Table 8-16 "Record Software versions." on page 8-82 where you recorded the unit's software versions.

This software loading procedure covers installation of BT'08 software (software version v7.x) on EchoPAC PC Turnkey units.

The software for EchoPAC PC Turnkey is divided on two CDs, one CD with the System Software and one with the Application Software. The System Software is dependant on workstation model, so you must choose the correct CD.

In addition, for BT'08, the software for **4D LV Volume** is included on an extra CD.

Table 8-17   CDs with BT'06 Software, Software version v6

ITEM	TITLE	PART NUMBER	DESCRIPTION
1	SYSTEM SOFTWARE FOR HP xw4300	EP200822	
	SYSTEM SOFTWARE FOR HP xw4200	EP200706	
	SYSTEM SOFTWARE FOR HP xw4100	EP200705	
	SYSTEM SOFTWARE FOR COMPAQ EVO W4000	EP200704	
2	VIVID 7 & ECHOPAC PC APPLICATION SOFTWARE	FC200885	APPLICATION SOFTWARE, COMMON TO EchoPAC PC Turnkey AND VIVID 7.
3	4D LV FUNCTION	A.18.5142	Software for 4D LV Function TOMTEC Software

8-5-12-2   BT'06 System Software Loading

NOTE: *Verify that the Software Option Dongle is installed in one of the ports at the rear of the workstation, before continuing the software loading.*

1.) Press **Eject** on the CD Drive to open the drive.

Figure 8-94   Eject Button on CD Drive.

2.) Insert the System Software CD.

3.) Shutdown the workstation.

4.) Switch power on again.
The PC will now boot from the System Software CD, and the System Software loading Program starts.

Figure 8-95   Step of startup (Example).

8-5-12-2   BT'06 System Software Loading (cont'd)

You can choose if you want to do a complete EchoPAC PC Turnkey software loading, including the erasing of all partitions, or if you only want to update or reinstall the software on the C partition (C drive) only.

NOTE: *In most cases, a **C:\ Repair/Upgrade Partition** is the preferred solution.*

- If you select <A> to do a complete EchoPAC PC Turnkey software loading, ALL data will be erased.
- If you select <B> to update/re-install the software on the C partition, only the data on the C partition will be erased, but user setups, measurement reports and pictures/screen loops will be kept.
  In most cases, the C:\ partition update is the preferred solution.
- If you select <C> the installation is halted and you exit from the installation application.

5.) **Select <B>** to update the software on the C:\ drive, leaving the data on the other drives unchanged.

Figure 8-96   Installation Type Selection.

8-5-12-2 BT'06 System Software Loading (cont'd)
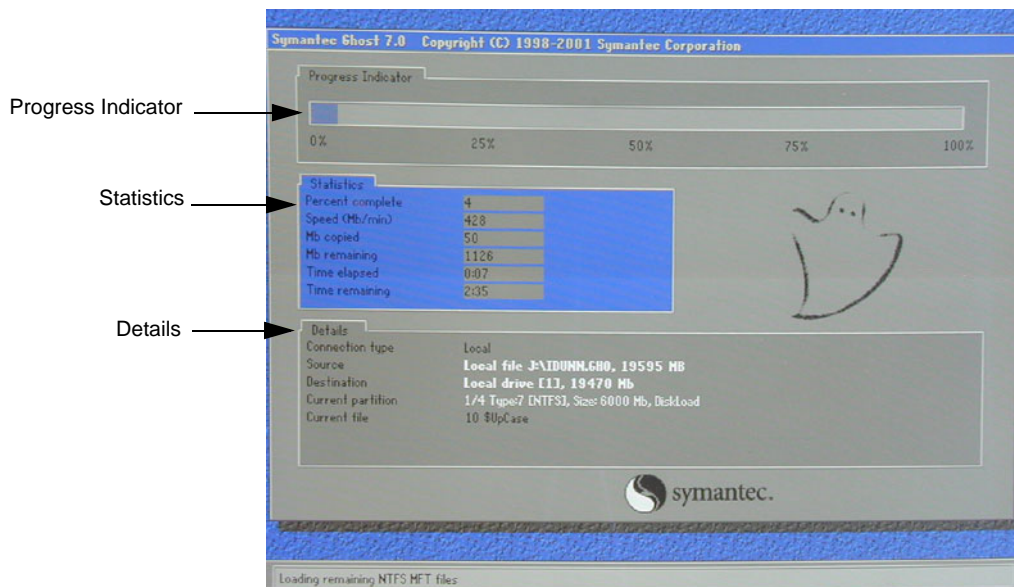
Figure 8-97 System software loading progresses.

6.) Wait for System Software to be installed. Typical installation time is 10 minutes. A status bar on the screen indicates the progress
.
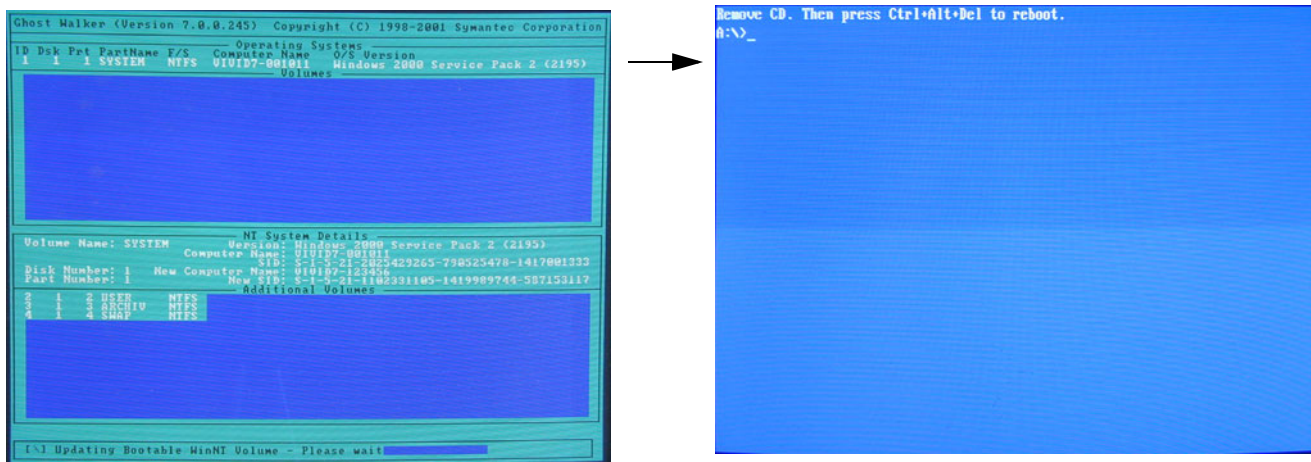
Figure 8-98 System software loading completed and command prompt appears

7.) After the installation you are prompted to remove CD.

8.) Press the **Eject** button on the CD drive and remove the CD.

⚠️ **NOTICE Don't restart the workstation yet! Continue with the steps on next page.**

8-5-12-3 BT'06 Application Software Loading

1.) Insert CD labelled Application Software.

2.) Press **Ctrl+Alt+Del** on the keyboard to reboot the EchoPAC PC workstation.

3.) The workstation will restart.
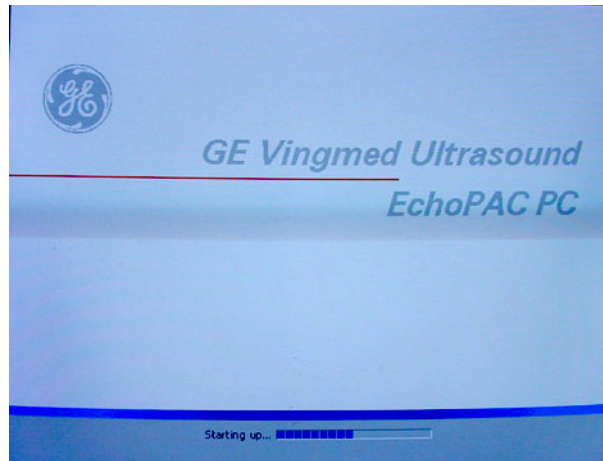
Figure 8-99   Start Picture

4.) When the workstation is rebooted, select **install sw** in the dialog box.
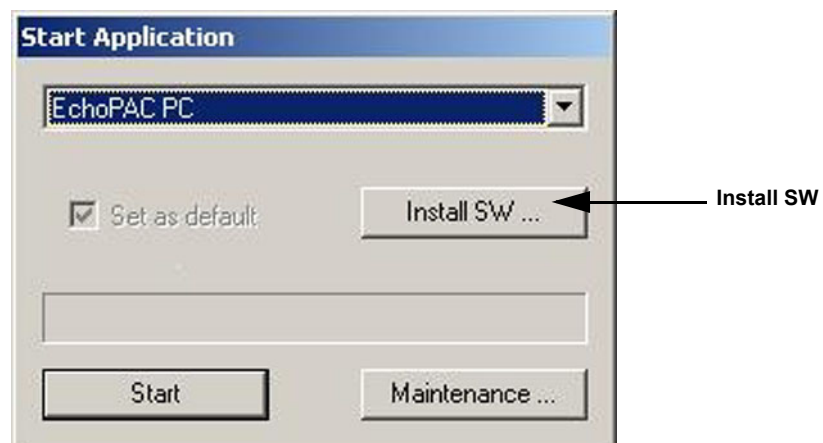
Figure 8-100   Start Application dialog

8-5-12-3   BT'06 Application Software Loading (cont'd)

5.) Select **OK**.

Figure 8-101   StartLoader

6.) Select **OK**.

Figure 8-102   StartLoader

7.) Press any key to continue.
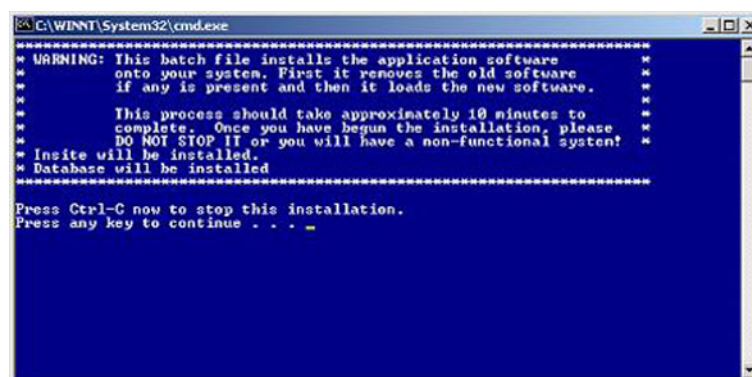
Figure 8-103   Continue the Installation

NOTE: *Do not interrupt the software loading or close the cmd.exe window during the installation of the*
            Application Software as it will cause the Installation to fail.

8.) The system will now be loaded with new Application SW.

8-5-12-3   BT'06 Application Software Loading (cont'd)

When Application software loading is completed, the following will appear on the screen:
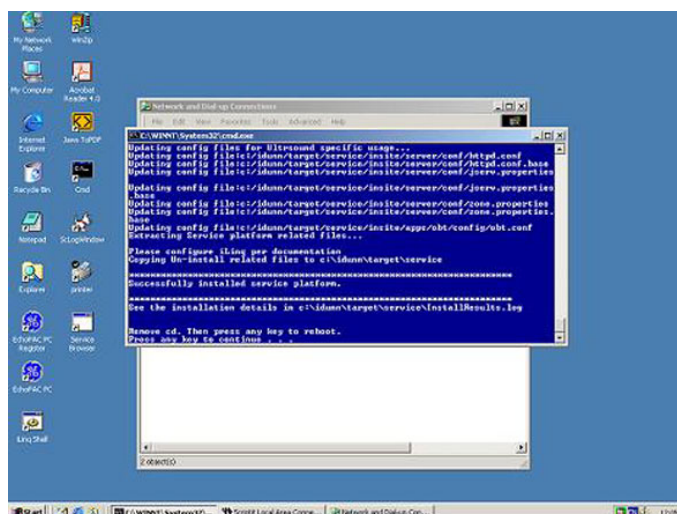
Figure 8-104   Application software loading completed

9.) Remove the CD.

10.) If there are extra CDs with software patches, these should be installed now.

   a.) Insert the patch CD in the CD drive.

   b.) Press any key to reboot. The patch software will be installed during the booting.

   c.) Repeat step a and b until all patches have been installed. When finished, remove the last CD used and continue with next step.

11.) BT'06 (software version v6.x) ONLY:

   a.) Install the 4D LV Function CD in the CD drive.

   b.) Press a key to reboot.

   c.) Follow the instructions on-screen.

   d.) When the installation is complete, remove the CD and continue with the next step.

12.) Press a key to reboot.

13.) The unit will boot up from the installed software. The first startup from new software may be slightly slower than a normal startup.

14.) Verify a similar boot sequence as shown in Figure 8-105 "Normal Start Up Process" on page 8-89.

NOT ALL SCREENS SHOWN

Figure 8-105   Normal Start Up Process

8-5-13   Verifications - BT'06 Software

8-5-13-1   System Log ON - BT'06 Software

1.) Select **adm** on the Operator drop-down menu.

Figure 8-106   Log On Dialog

2.) Select **Log On**.

8-5-13-2   Verify BT'06 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Select **Config**.
2.) Select Admin
3.) Select System Admin.
Verify the Software Option Strings, see Table 8-12 "Software Option Strings" on page 8-76.

8-5-13-3   Verify BT'06 Default Dataflow

1.) In **Connectivity** window, select **Dataflow**.
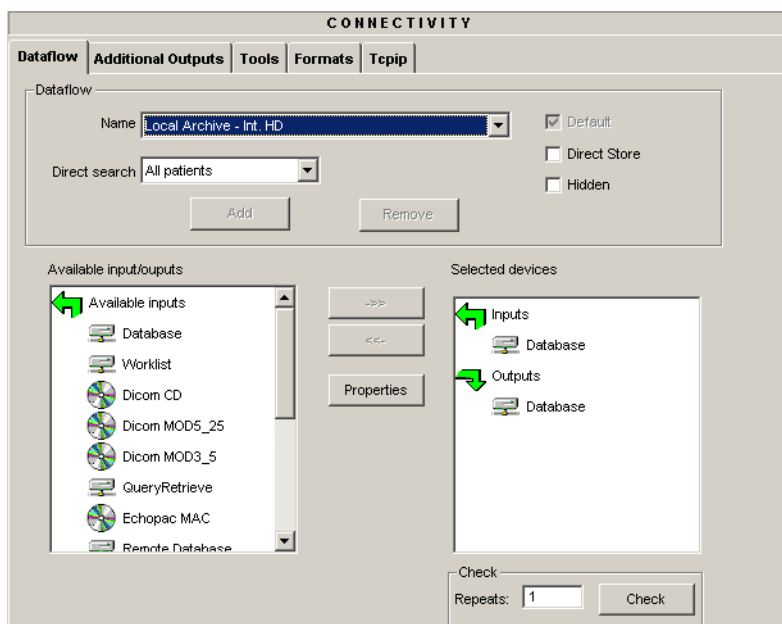
Figure 8-107   Default Dataflow

2.) Verify that Default Dataflow matches what was recorded in Table 8-14, "Record Default Dataflow Name," on page 8-79.

8-5-13-4   Verify BT'06 Software Versions

1.) Select **Config**.

2.) Select **About** tab.

3.) Verify that the SW versions are the same as recorded in Table 8-16 "Record Software versions." on page 8-82.

8-5-13-5   Verify TCP/IP Settings - BT'06 Software

1.) From the top of the connectivity tab, select the **TCPIP** tab.

2.) Verify the following data as recorded in Table 8-13 "Record settings from Tcpip screen" on page 8-79.

If DHCP was enabled, verify/set:

- Computer Name
- AE Title
- Activate DHCP as described in 3-9-6 "DHCP Setup" on page 3-96

If DHCP was un-enabled, verify/set:

- Computer Name
- AE Title
- IP- Address
- Subnet Mask
- Default Gateway
- Remote Archive IP-Address
- Remote Archive Name

3.) Select **Save Settings**

4.) A Warning window will appear, select OK.

8-5-13-6   Printer Setup Verification - BT'06 Software

1.) Select Connectivity > Additional Outputs

This selection corresponds to the Print button on the Operator Panel

Standard Printer Settings
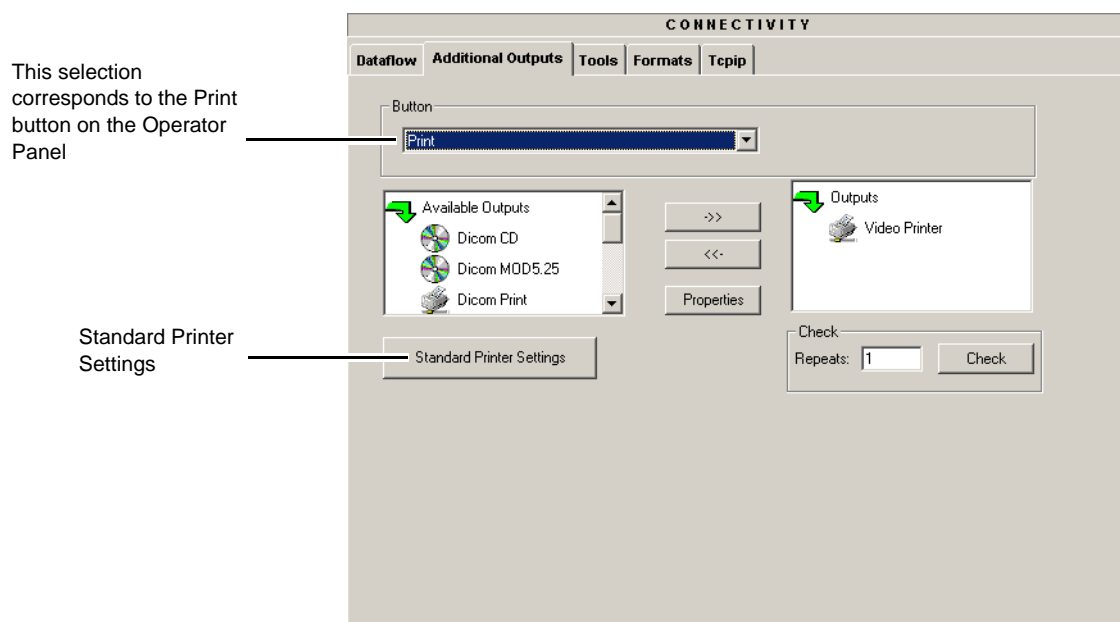
Figure 8-108   Additional Outputs

2.) Select **Standard Printer Settings**.

Device Name for the default printer
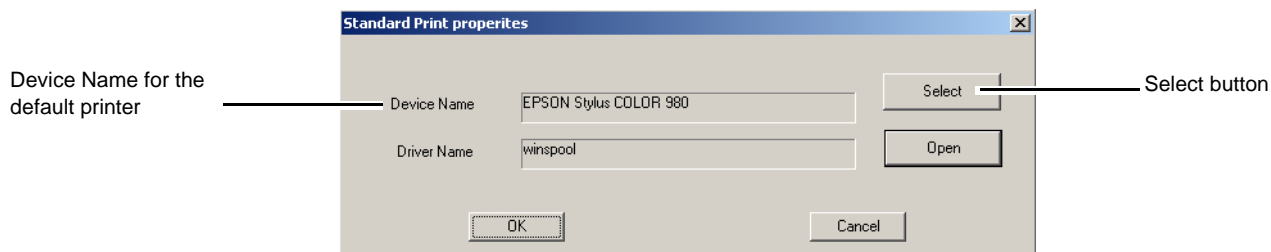
Select button

Figure 8-109   Standard Print dialog

3.) Verify that the **Device Name** lists the correct printer

4.) Select the **Select** button to display the **Print Setup** dialog.

8-5-13-6   Printer Setup Verification - BT'06 Software (cont'd)
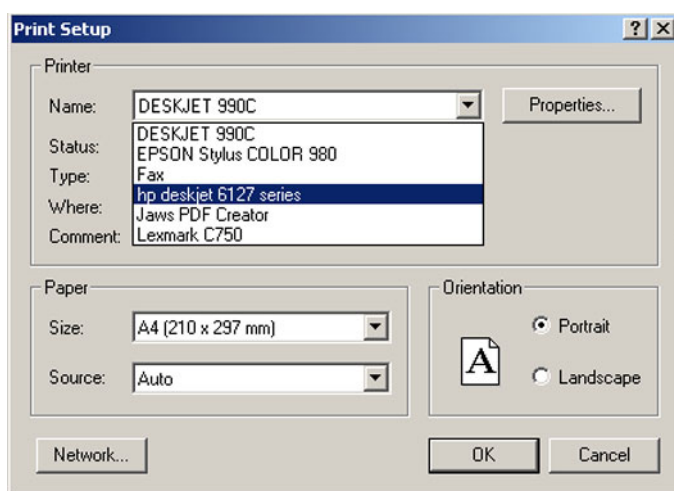
Figure 8-110   Printer Setup Dialog

5.) Verify that the selected printer is the one you want to have as the default printer.
By selecting the Name pull-down menu, you may see other printers.

6.) Verify that the selected Paper Size setting is according to local requirements.

To permanently change any of these settings, select: Config > Service. Then select the Network Printer you want to change the settings for, and finally select Start Setup Program. Then follow the online instructions.

8-5-14   Verification and functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-6
BT'05 Software Reloading Procedure

⚠️ **NOTICE** Do not use this procedure when *upgrading* a unit's software. Additional software and procedures, not described here, may be needed for such upgrades.
Use this procedure if you need to reinstall the existing software on a EchoPAC PC Turnkey .

8-6-1 Introduction - BT'05 Software

⚠️ **NOTICE** In order to complete a successful restore of the Patient Database, if needed, the images must be moved to MO disks *before* doing backup of Patient Database. If the backup procedure is not completed correctly, the images and database information could be lost.

This procedure describes how to reload the needed EchoPAC PC Turnkey software on the workstation.

Table 8-18   Contents in this Procedure

SECTION	DESCRIPTION	PAGE NUMBER
8-6-1	Introduction - BT'05 Software	8-94
8-6-2	Preparations Before BT'05 Software Reload	8-94
8-6-3	Customer Provided Prerequisite - BT'05 Software	8-95
8-6-4	Tools Provided with Unit or After a BT'05 Software Upgrade	8-95
8-6-5	Preparations	8-95
8-6-6	Backup - BT'05 Software	8-95
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8-6-10	Record Standard Printer IP and Port Settings - BT'05 Software	8-100
8-6-11	Record BT'05 Software Versions	8-102
8-6-12	Software Loading - BT'05 Software	8-103
8-6-13	Verifications - BT'05 Software	8-110

8-6-2 Preparations Before BT'05 Software Reload

To ensure that no data is lost during the reload, these preparations should be done before starting the software reload:

- Export Patient Images from the internal hard drive to removable MO disks.
- Make backup of Customer Presets, Patient Database (Patient Archive, Report Archive, System Configuration and User Defined Configuration) to MO disks.
- TCP/IP Addresses, Computer Name and Software Option Password (alphanumeric string) settings must be manually recorded.

8-6-3   Customer Provided Prerequisite - BT'05 Software

The customer should provide the needed storing and backup media as described in this list:

*   Formatted and labelled MO Disks for Images storage
*   Formatted and labelled MO Disk for Patient Archive and User Defined Settings.

8-6-4   Tools Provided with Unit or After a BT'05 Software Upgrade

*   System software (DVD) - specific for each workstation model.
*   Application software (CD)

If present:

*   Patch for EchoPAC PC Turnkey (CD)

8-6-5   Preparations

*   Switch ON the Mains Power Circuit Breaker and power up the unit, see 4-2-1 "Power On/Boot Up" on page 4-2.

8-6-6   Backup - BT'05 Software

Please refer to **Space Management** in the **User Manual**.

8-6-7   Record BT'05 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Press **Config** (**F2**) and log on as *adm*.
2.) From the **Admin** tab, select **SYSTEM ADMIN**.
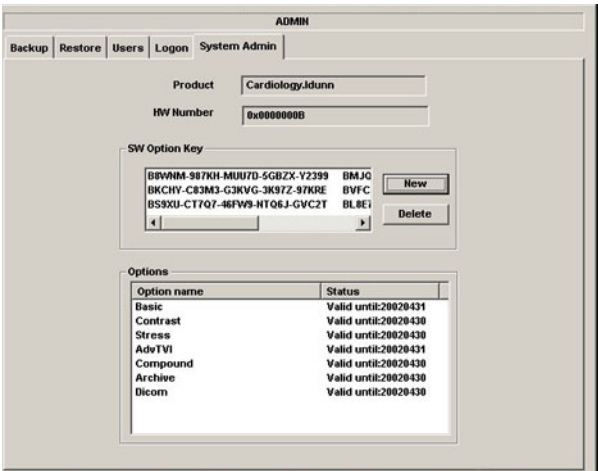
Figure 8-111   System Admin

3.) Record SW Options Keys from the SW Options Key window.

⚠ **WARNING**   *Make sure that the SW Option Keys (passwords) have been recorded correctly. If the key is incorrect, you will not be able to log on after the software loading has been completed. The password is case sensitive. Hyphens must also be recorded. There may be more than one password.*

Table 8-19   Software Option Strings

SW OPTIONS STRINGS

8-6-8 Record TCP/IP Settings - BT'05 Software

1.) Select **CONNECTIVITY**.

2.) Select the **TCPIP** tab.

Figure 8-112   TCP/IP <u>Example</u> Settings

3.) Record the **Computer Name** and **AE Title** in Table 8-26 "Record settings from Tcpip screen" on page 8-119.

4.) If the unit has software version v5.0 (or higher), and DHCP is in use, recording of the rest of the TCP/IP settings can be skipped, since they are provided from the DHCP server each time the workstation is powered on.
See next page for instructions on how to verify if DHCP has been enabled.

8-6-8Record TCP/IP Settings - BT'05 Software (cont'd)

Verify if DHCP is Active

Follow the steps below to verify if DHCP has been activated:

a.) From the **Tcpip** screen, select **Advanced Settings**.
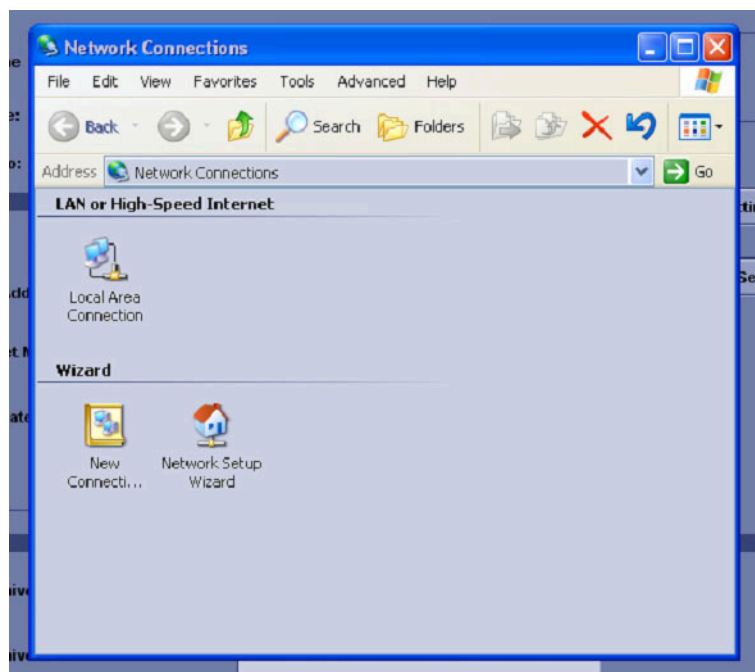
Figure 8-113   Network Connections

b.) Select **Local Area Connection.**

c.) Right click and select **Properties** to display the **Local Connection Properties.**

d.) Scroll down to **Internet Protocol (TCP/IP)** and select it.

e.) Select **Properties.**

f.) Check if **Obtain an IP address automatically** has been selected.

g.) If **Obtain an IP address automatically** has been selected, you only need to record that it is active in Table 8-26 "Record settings from Tcpip screen" on page 8-119.
Next, continue with 8-5-9 "Record Default Dataflow - BT'06 Software" on page 8-79.

h.) If **Obtain an IP address automatically** wasn't selected, continue with step 5 on next page.

8-6-8 Record TCP/IP Settings - BT'05 Software (cont'd)

Table 8-20   Record settings from Tcpip screen

PARAMETER	VALUE
Computer Name	EchoPAC7-00 _ _ _ _
AE Title	EchoPAC7-00 _ _ _ _
IP Settings	
DHCP	ACTIVE: __
IP Address	_ _ _. _ _ _. _ _ _
Subnet mask	_ _ _. _ _ _. _ _ _
Default Gateway	_ _ _. _ _ _. _ _ _
Remote Archive Setup	
Remote Archive IP-Address	_ _ _. _ _ _. _ _ _
Remote Archive Name	

8-6-9   Record Default Dataflow - BT'05 Software

1.) In the **Connectivity** window, select **Dataflow**.

2.) Verify that **Default Dataflow** is selected.

3.) Record the **Default Dataflow** in .

Table 8-21   Record Default Dataflow Name

Default Dataflow Name

8-6-10   Record Standard Printer IP and Port Settings - BT'05 Software

1.) In the **Connectivity** window, select **Services**.

2.) Select **Printer Setup**.

3.) Select **Open**.
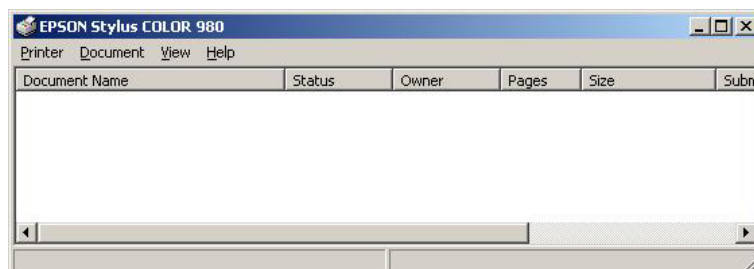
4.) Select **Printer**.

Figure 8-114   Properties

5.) Select **Properties** from the Printer scroll down menu.

6.) Select **Ports**

Figure 8-115   Printer Properties

8-6-10 Record Standard Printer IP and Port Settings - BT'05 Software (cont'd)

7.) Select **Configure Port**.

8.) Select and Record *Printer Name or IP Address* in .

9.) Select and Record *Port Number* in .

Table 8-22   Printer Name or IP Address and Port Number

Printer Name or IP Address	Port Number

10.) Select **Cancel**.
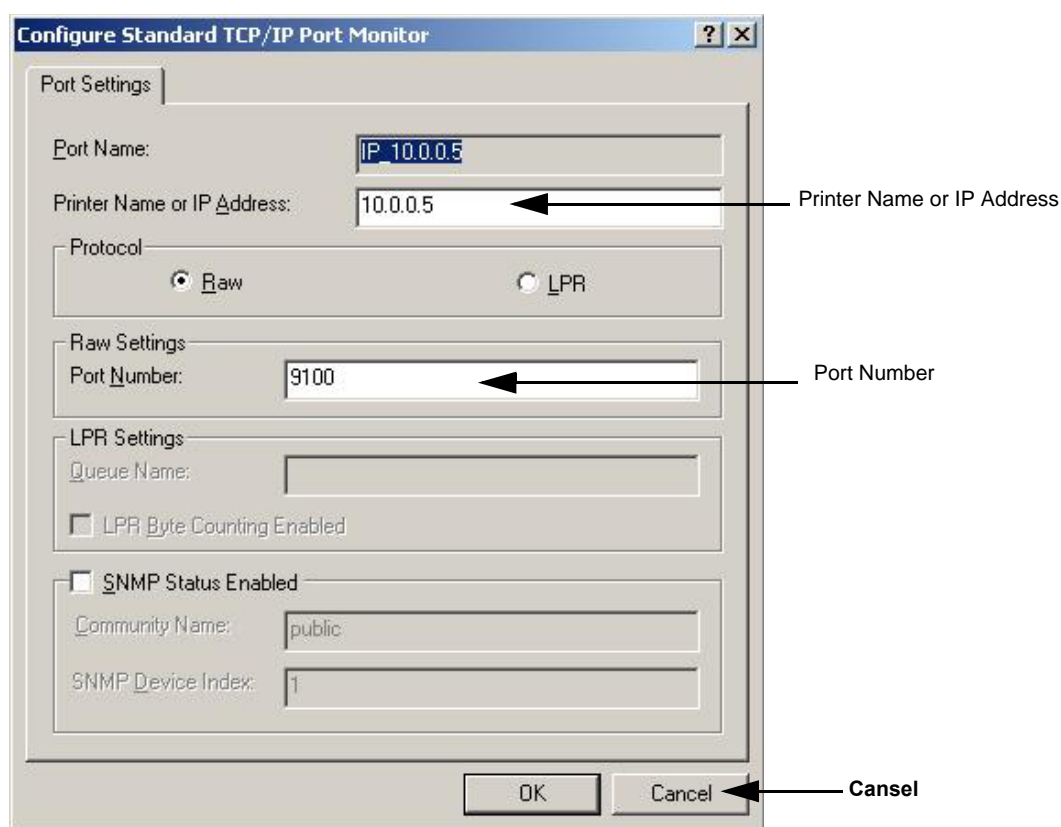
Figure 8-116   Configure Port

11.) Close the rest of the windows by selecting **OK**.

8-6-11   Record BT'05 Software Versions

1.) Select **About**.
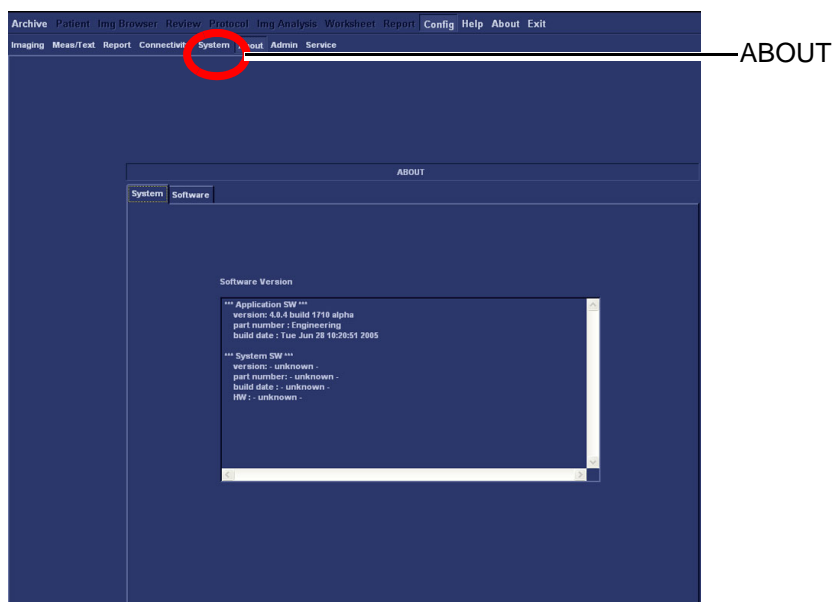
Figure 8-117   Information available on the About tab

2.) Record *Application Software* version in Table 8-16 "Record Software versions." on page 8-82.

3.) Record *System Software* version in Table 8-16 "Record Software versions." on page 8-82.

Table 8-23   Record Software versions.

DESCRIPTION	RECORD SOFTWARE VERSION
APPLICATION SOFTWARE VERSION	
SYSTEM SOFTWARE VERSION	

4.) Shutdown the PC.

5.) Shutdown all peripherals on the SCSI bus and/or the USB bus.

6.) Disconnect SCSI cables and USB cables from the PC.

8-6-12   Software Loading - BT'05 Software

8-6-12-1   Overview - BT'05 Software

Refer to Table 8-16 "Record Software versions." on page 8-82 where you recorded the unit's software versions.

This software loading procedure covers installation of BT'05 software (software version v5.x) on EchoPAC PC Turnkey units.

The software for EchoPAC PC Turnkey is divided on two CDs, one CD with the System Software and one with the Application Software. The System Software is dependant on workstation model, so you must choose the correct CD.

For software overview, refer to: 9-3-8 "BT'05 Software" on page 9-11.

8-6-12-2 BT'05 System Software Loading

NOTE: *Verify that the Software Option Dongle is installed in one of the ports at the rear of the workstation, before continuing the software loading.*

1.) Press **Eject** on the CD Drive to open the drive.

.

EJECT button on CD Drive

Figure 8-118   Eject Button on CD Drive.

2.) Insert the System Software CD.
Please refer to 9-3-8 "BT'05 Software" on page 9-11 for lates software.

3.) Shutdown the workstation.

4.) Switch power on again.
The PC will now boot from the System Software CD, and the System Software loading Program starts.

.

Figure 8-119   Step of startup (Example).

8-6-12-2   BT'05 System Software Loading (cont'd)

You can choose if you want to do a complete EchoPAC PC Turnkey software loading, including the erasing of all partitions, or if you only want to update or reinstall the software on the C partition (C drive) only.

*NOTE: In most cases, a **C:\ Repair/Upgrade Partition** is the preferred solution.*

- If you select <A> to do a complete EchoPAC PC Turnkey software loading, ALL data will be erased.
- If you select <B> to update/re-install the software on the C partition, only the data on the C partition will be erased, but user setups, measurement reports and pictures/screen loops will be kept.
  In most cases, the C:\ partition update is the preferred solution.
- If you select <C> the installation is halted and you exit from the installation application.

5.) **Select <B>** to update the software on the C:\ drive, leaving the data on the other drives unchanged.

Figure 8-120   Installation Type Selection.

8-6-12-2   BT'05 System Software Loading (cont'd)

Progress Indicator

Statistics

Details
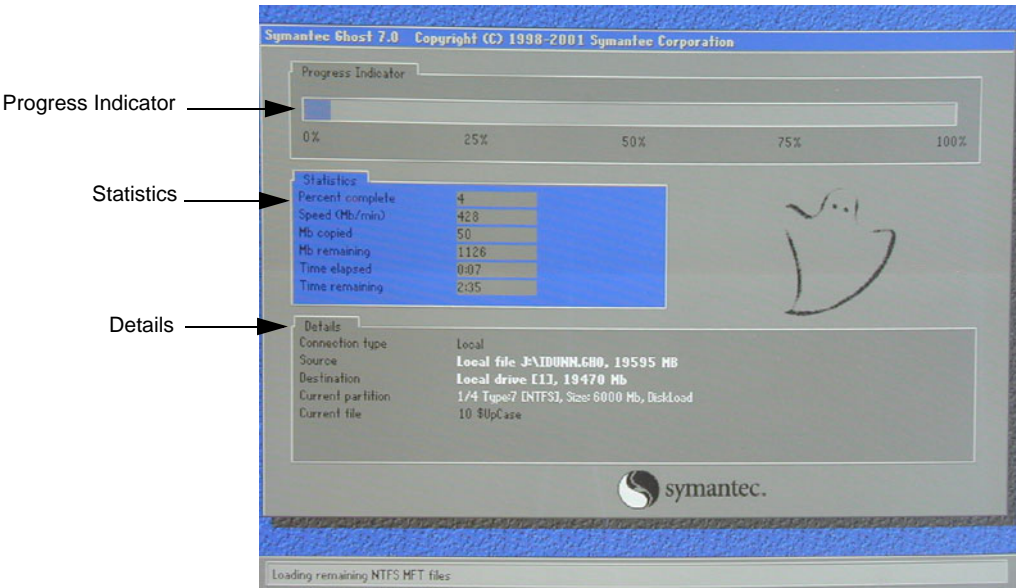
Figure 8-121   System software loading progresses.

6.) Wait for System Software to be installed. Typical installation time is 10 minutes. A status bar on the screen indicates the progress

.
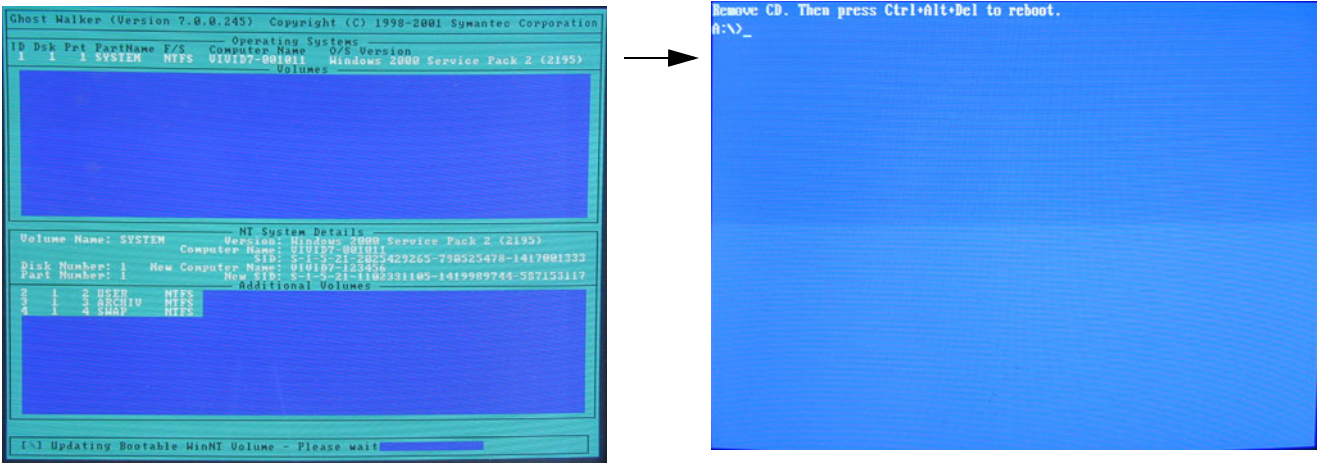
Figure 8-122   System software loading completed and command prompt appears

7.) After the installation you are prompted to remove CD.

8.) Press the **Eject** button on the CD drive and remove the CD.

⚠ **NOTICE** **Don't restart the workstation yet! Continue with the steps on next page.**

8-6-12-3   BT'05 Application Software Loading

1.) Insert CD labelled Application Software.

2.) Press **Ctrl+Alt+Del** on the keyboard to reboot the EchoPAC PC workstation.

3.) The workstation will restart.
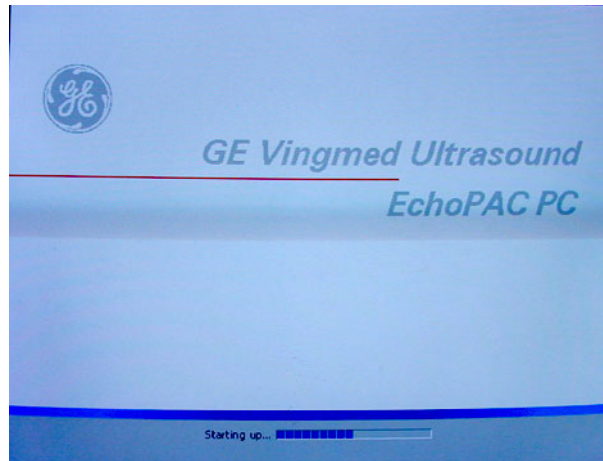
Figure 8-123   Start Picture

4.) When the workstation is rebooted, select **install sw** in the dialog box.
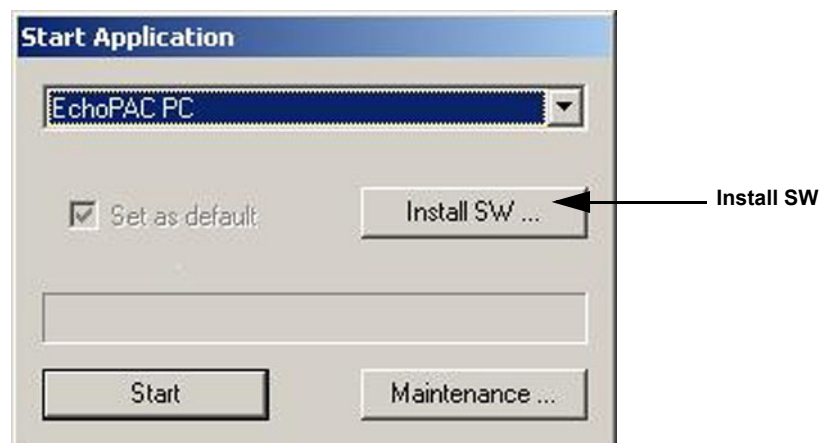
Figure 8-124   Start Application dialog

8-6-12-3 BT'05 Application Software Loading (cont'd)

5.) Select **OK**.

Figure 8-125   StartLoader

6.) Select **OK**.

Figure 8-126   StartLoader

7.) Press any key to continue.
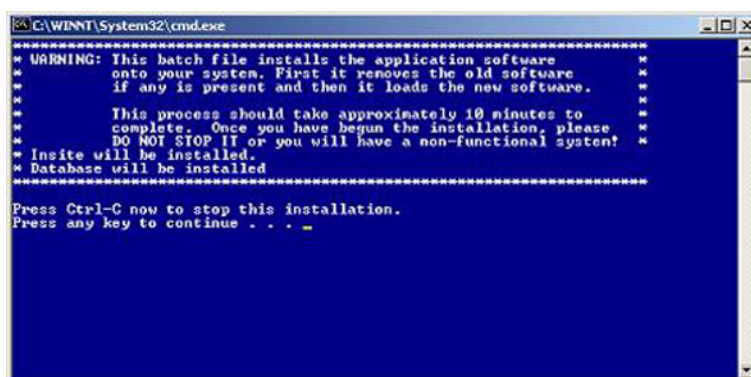
Figure 8-127   Continue the Installation

NOTE: *Do not interrupt the software loading or close the cmd.exe window during the installation of the Application Software as it will cause the Installation to fail.*

8.) The system will now be loaded with new Application SW.

8-6-12-3   BT'05 Application Software Loading (cont'd)

When Application software loading is completed, the following will appear on the screen:
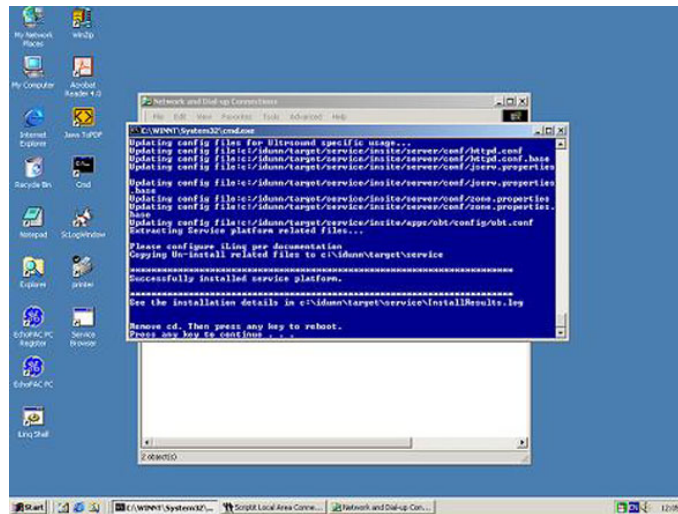
Figure 8-128   Application software loading completed

9.)   Remove the CD.

10.) If there are extra CDs with software patches, these should be installed now.

   a.)   Insert the patch CD in the CD drive.

   b.)   Press any key to reboot. The patch software will be installed during the booting.

   c.)   Repeat step a and b until all patches have been installed. When finished, remove the last CD used and continue with next step.

11.) BT'06 (software version v6.x) ONLY:

   a.)   Install the 4D LV Function CD in the CD drive.

   b.)   Press a key to reboot.

   c.)   Follow the instructions on-screen.

   d.)   When the installation is complete, remove the CD and continue with the next step.

12.) Press a key to reboot.

13.) The unit will boot up from the installed software. The first startup from new software may be slightly slower than a normal startup.

14.) Verify a similar boot sequence as shown in Figure 8-105 "Normal Start Up Process" on page 8-89.

NOT ALL SCREENS SHOWN

Figure 8-129   Normal Start Up Process

8-6-13   Verifications - BT'05 Software

8-6-13-1   System Log ON - BT'05 Software

1.) Select **adm** on the Operator drop-down menu.

Figure 8-130   Log On Dialog

2.) Select **Log On**.

8-6-13-2   Verify BT'05 Software Option Strings

NOTE: The alphanumeric Software Option Strings are called "Software Option Keys" by the software.

1.) Select **Config**.
2.) Select Admin
3.) Select System Admin.

Verify the Software Option Strings, see Table 8-12 "Software Option Strings" on page 8-76.

8-6-13-3   Verify BT'05 Default Dataflow

1.) In **Connectivity** window, select **Dataflow**.
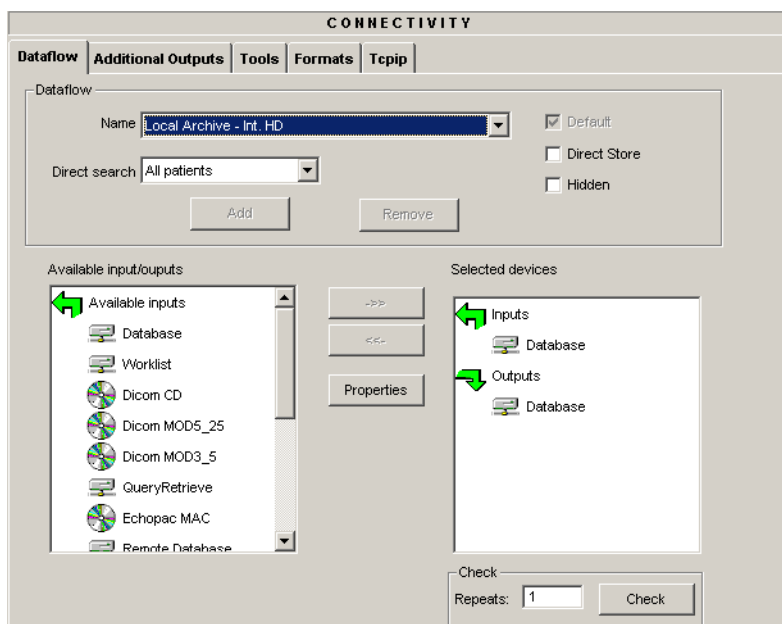
Figure 8-131   Default Dataflow

2.) Verify that Default Dataflow matches what was recorded in Table 8-14, "Record Default Dataflow Name," on page 8-79.

8-6-13-4   Verify BT'05 Software Versions

1.) Select **Config**.

2.) Select **About** tab.

3.) Verify that the SW versions are the same as recorded in Table 8-16 "Record Software versions." on page 8-82.

8-6-13-5   Verify TCP/IP Settings - BT'05 Software

1.) From the top of the connectivity tab, select the **TCPIP** tab.

2.) Verify the following data as recorded in Table 8-13 "Record settings from Tcpip screen" on page 8-79.

   If DHCP was enabled, verify/set:

   -    Computer Name
   -    AE Title
   -    Activate DHCP as described in 3-9-6 "DHCP Setup" on page 3-96

   If DHCP was un-enabled, verify/set:

   -    Computer Name
   -    AE Title
   -    IP- Address
   -    Subnet Mask
   -    Default Gateway
   -    Remote Archive IP-Address
   -    Remote Archive Name

3.) Select **Save Settings**

4.) A Warning window will appear, select OK.

8-6-13-6 Printer Setup Verification - BT'05 Software

1.) Select Connectivity > Additional Outputs

This selection corresponds to the Print button on the Operator Panel

Standard Printer Settings
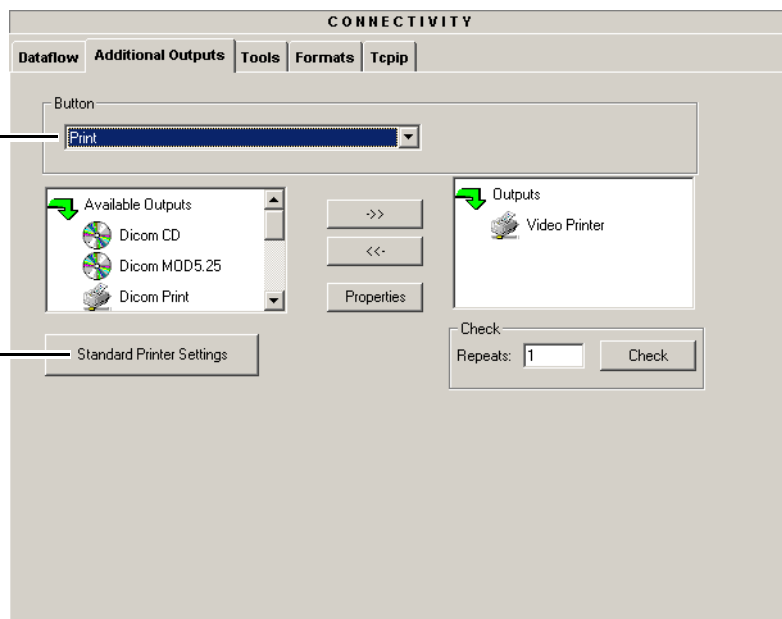
Figure 8-132   Additional Outputs

2.) Select **Standard Printer Settings**.

Device Name for the default printer
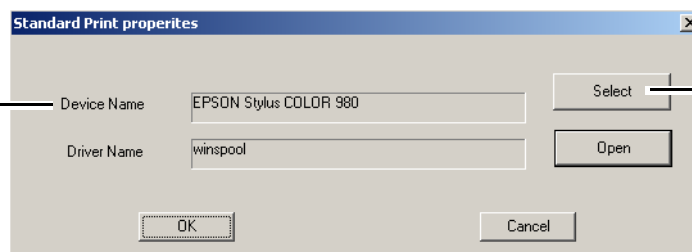
Select button

Figure 8-133   Standard Print dialog

3.) Verify that the **Device Name** lists the correct printer

4.) Select the **Select** button to display the **Print Setup** dialog.

8-6-13-6   Printer Setup Verification - BT'05 Software (cont'd)
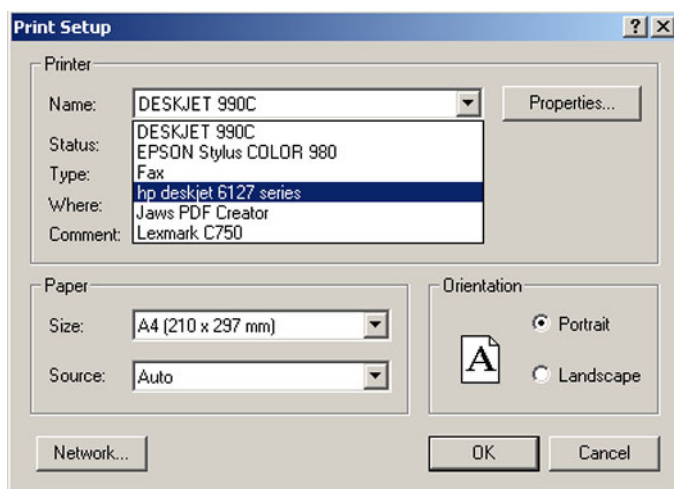
Figure 8-134   Printer Setup Dialog

5.) Verify that the selected printer is the one you want to have as the default printer.
By selecting the Name pull-down menu, you may see other printers.

6.) Verify that the selected Paper Size setting is according to local requirements.

To permanently change any of these settings, select: Config > Service. Then select the Network Printer you want to change the settings for, and finally select Start Setup Program. Then follow the online instructions.

8-6-14   Verification and functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-7
BT'04 Software Reloading Procedure

⚠️ **NOTICE** Do not use this procedure when *upgrading* a unit's software. Additional software and procedures, not described here, may be needed for such upgrades.
Use this procedure if you need to reinstall the existing software on a EchoPAC PC Turnkey .

8-7-1   BT'04 Introduction

⚠️ **NOTICE** In order to complete a successful restore of the Patient Database, if needed, the images must be moved to MO disks *before* doing backup of Patient Database. If the backup procedure is not completed correctly, the images and database information could be lost.

This procedure describes how to reload the needed EchoPAC PC Turnkey software on the workstation.

Table 8-24   Contents in this Procedure

SECTION	DESCRIPTION	PAGE NUMBER
8-7-1	BT'04 Introduction	8-114
8-7-2	Preparations Before BT'04 Software Reload	8-114
8-7-3	Customer BT'04 Provided Prerequisite	8-115
8-7-4	Tools Provided with Unit or After a BT'04 Software Upgrade	8-115
8-7-5	BT'04 Software Preparations	8-115
8-7-6	Backup - BT'04 Software	8-115
8-7-7	Record BT'04 Software Option Strings	8-116
8-7-8	Record BT'04 TCP/IP Settings	8-117
8-7-9	Record BT'04 Default Dataflow	8-119
8-7-10	Record BT'04 Standard Printer IP and Port Settings	8-120
8-7-11	Record BT'04 Software Versions	8-122
8-7-12	BT'04 Software Reloading	8-123
8-7-13	Verifications - BT'04 Software	8-130

8-7-2   Preparations Before BT'04 Software Reload

To ensure that no data is lost during the reload, these preparations should be done before starting the software reload:

- Export Patient Images from the internal hard disk to removable MO disks.
- Make backup of Customer Presets, Patient Database (Patient Archive, Report Archive, System Configuration and User Defined Configuration) to MO disks.
- TCP/IP Addresses, Computer Name and Software Option Password (alphanumeric string) settings must be manually recorded.

8-7-3   Customer BT'04 Provided Prerequisite

The customer should provide the needed storing and backup media as described in this list:

- Formatted and labelled MO Disks for Images storage
- Formatted and labelled MO Disk for Patient Archive and User Defined Settings.

8-7-4   Tools Provided with Unit or After a BT'04 Software Upgrade

- System software (DVD) - specific for each workstation model.
- Application software (CD)

If present:

- Patch for EchoPAC PC Turnkey (CD)

8-7-5   BT'04 Software Preparations

- Switch ON the Mains Power Circuit Breaker and power up the unit, see 4-2-1 "Power On/Boot Up" on page 4-2.

8-7-6   Backup - BT'04 Software

Please refer to **Space Management** in the **User Manual**.

8-7-7   Record BT'04 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Press **Config** (**F2**) and log on as *adm*.

2.) From the **Admin** tab, select **SYSTEM ADMIN**.

Figure 8-135   System Admin

3.) Record SW Options Keys from the SW Options Key window.

⚠ **WARNING**   *Make sure that the SW Option Keys (passwords) have been recorded correctly. If the key is incorrect, you will not be able to log on after the software loading has been completed. The password is case sensitive. Hyphens must also be recorded. There may be more than one password.*

Table 8-25   Software Option Strings

SW OPTIONS STRINGS

8-7-8   Record BT'04 TCP/IP Settings

1.) Select **CONNECTIVITY**.

2.) Select the **TCPIP** tab.

Figure 8-136   TCP/IP <u>Example</u> Settings

3.) Record the **Computer Name** and **AE Title** in Table 8-26 "Record settings from Tcpip screen" on page 8-119.

4.) If the unit has software version v4.x (or higher), and DHCP is in use, recording of the rest of the TCP/IP settings can be skipped, since they are provided from the DHCP server each time the workstation is powered on.
See next page for instructions on how to verify if DHCP has been enabled.

8-7-8 Record BT'04 TCP/IP Settings (cont'd)

Verify if DHCP is Active

Follow the steps below to verify if DHCP has been activated:

a.) From the **Tcpip** screen, select **Advanced Settings**.

Figure 8-137   Network Connections

b.) Select **Local Area Connection.**

c.) Right click and select **Properties** to display the **Local Connection Properties.**

d.) Scroll down to **Internet Protocol (TCP/IP)** and select it.

e.) Select **Properties.**

f.) Check if **Obtain an IP address automatically** has been selected.

g.) If **Obtain an IP address automatically** has been selected, you only need to record that it is active in Table 8-26 "Record settings from Tcpip screen" on page 8-119.
Next, continue with 8-7-9 "Record BT'04 Default Dataflow" on page 8-119.

h.) If **Obtain an IP address automatically** wasn't selected, continue with step 5 on next page.

8-7-8 Record BT'04 TCP/IP Settings (cont'd)

5.) Record all settings in .

Table 8-26   Record settings from Tcpip screen

PARAMETER	VALUE
Computer Name	EchoPAC7-00 _ _ _ _
AE Title	EchoPAC7-00 _ _ _ _
IP Settings	
DHCP	ACTIVE: __
IP Address	_ _ _. _ _ _. _ _ _
Subnet mask	_ _ _. _ _ _. _ _ _
Default Gateway	_ _ _. _ _ _. _ _ _
Remote Archive Setup	
Remote Archive IP-Address	_ _ _. _ _ _. _ _ _
Remote Archive Name	

8-7-9   Record BT'04 Default Dataflow

1.) In the **Connectivity** window, select **Dataflow**.

2.) Verify that **Default Dataflow** is selected.

3.) Record the **Default Dataflow** in .

Table 8-27   Record Default Dataflow Name

Default Dataflow Name

8-7-10   Record BT'04 Standard Printer IP and Port Settings

1.) In the **connectivity** window, select **services**.

2.) Select **Printer Setup**.

3.) Select **open**.
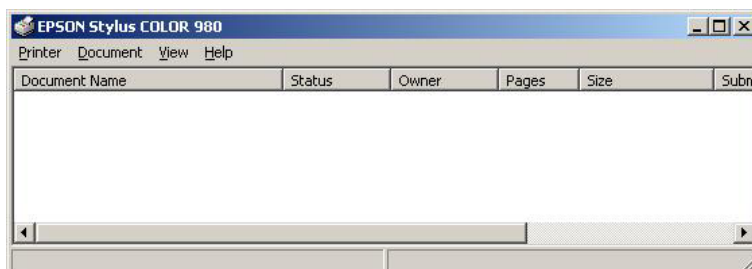
4.) Select **Printer**.

Figure 8-138   Properties

5.) Select **Properties** from the Printer scroll down menu.

6.) Select **Ports**

Figure 8-139   Printer Properties

8-7-10 Record BT'04 Standard Printer IP and Port Settings (cont'd)

7.) Select **Configure Port**.

8.) Select and Record *Printer Name or IP Address* in

9.) Select and Record *Port Number* in

Table 8-28   Printer Name or IP Address and Port Number

Printer Name or IP Address	Port Number

10.) Select **Cancel**.
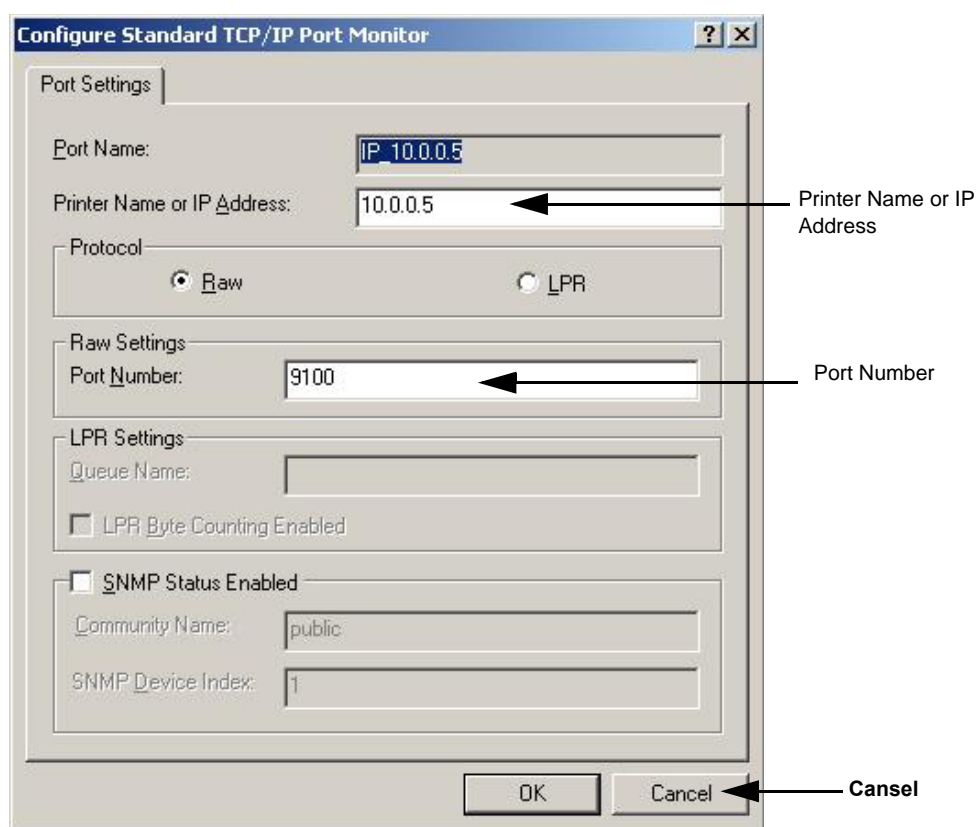
Figure 8-140   Configure Port

11.) Close the rest of the windows by selecting **ok**.

8-7-11   Record BT'04 Software Versions

1.) Select **About**.

Figure 8-141   Information available on the About tab

2.) Record *Application Software* version in Table 8-29 "Record Software versions." on page 8-122.

3.) Record *System Software* version in Table 8-29 "Record Software versions." on page 8-122.

Table 8-29   Record Software versions.

DESCRIPTION	RECORD SOFTWARE VERSION
APPLICATION SOFTWARE VERSION	
SYSTEM SOFTWARE VERSION	

4.) Shutdown the PC.

5.) Shutdown all peripherals on the SCSI bus and/or the USB bus.

6.) Disconnect SCSI cables and USB cables from the PC.

8-7-12   BT'04 Software Reloading

8-7-12-1   BT'04 Software Overview

Refer to Table 8-29 "Record Software versions." on page 8-122 where you recorded the unit's software versions.

This software loading procedure covers installation of BT'04 software (software version v4.x) on EchoPAC PC Turnkey units.

The software for EchoPAC PC Turnkey is divided on two CDs, one CD with the System Software and one with the Application Software. The System Software is dependant on workstation model, so you must choose the correct CD.

Table 8-30   CDs with BT'04 Software

ITEM	TITLE	PART NUMBER	DESCRIPTION
1	SYSTEM SOFTWARE FOR COMPAQ EVO W4000	EP200704	
	SYSTEM SOFTWARE FOR HP xw4100	EP200705	
	SYSTEM SOFTWARE FOR HP xw4200	EP200706	
2	VIVID 7 & ECHOPAC PC APPLICATION SOFTWARE	FC200569	CD with APPLICATION SOFTWARE v4.x.x, COMMON TO EchoPAC PC Turnkey AND VIVID 7.

8-7-12-2   BT'04 System Software Reloading

NOTE: *Verify that the Software Option Dongle is installed in one of the ports at the rear of the workstation, before continuing the software loading.*

1.) Press **Eject** on the CD Drive to open the drive.
.

Figure 8-142   Eject Button on CD Drive.

2.) Insert the System Software CD, ref. Table 8-36 "System Software Overview" on page 8-149 for correct CD.

3.) Shutdown the workstation.

4.) Switch power on again.
   The PC will now boot from the System software loading CD, and the System software loading Program starts.
.

Figure 8-143   Step of startup (Example).

8-7-12-2   **BT'04 System Software Reloading** (cont'd)

You can choose if you want to do a complete EchoPAC PC Turnkey software loading, including the erasing of all partitions, or if you only want to update or reinstall the software on the C partition (C drive) only.

NOTE: *In most cases, a C:\ partition update is the preferred solution.*

-    If you select <A> to do a complete EchoPAC PC Turnkey software loading, ALL data will be erased.
-    If you select <B> to update/re-install the software on the C partition, only the data on the C partition will be erased, but user setups, measurement reports and pictures/screen loops will be kept.
 In most cases, the C:\ partition update is the preferred solution.
-    If you select <C> the installation is halted and you exit from the installation application.

5.) **Select <B>** to update the software on the C:\ drive, leaving the data on the other drives unchanged.
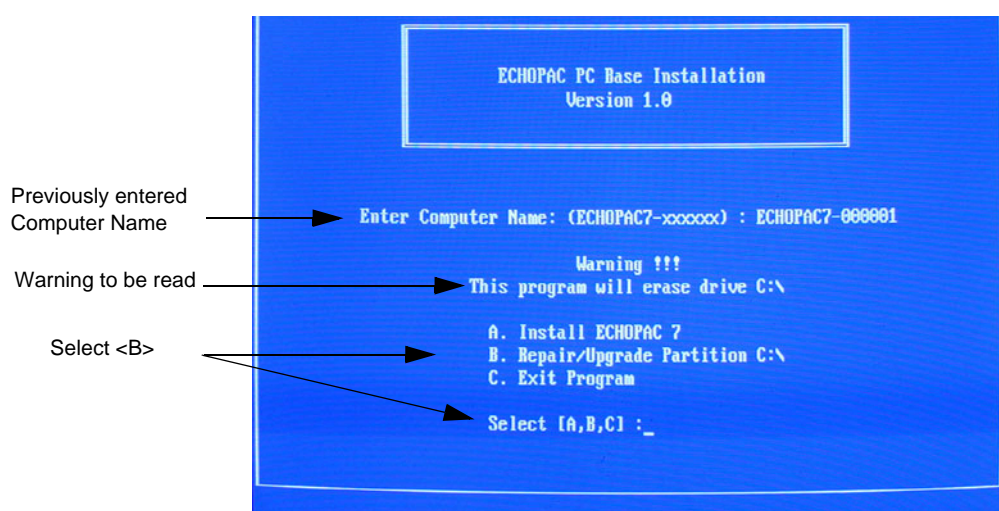
Figure 8-144   Installation Type Selection.

8-7-12-2   BT'04 System Software Reloading (cont'd)

Progress Indicator

Statistics

Details
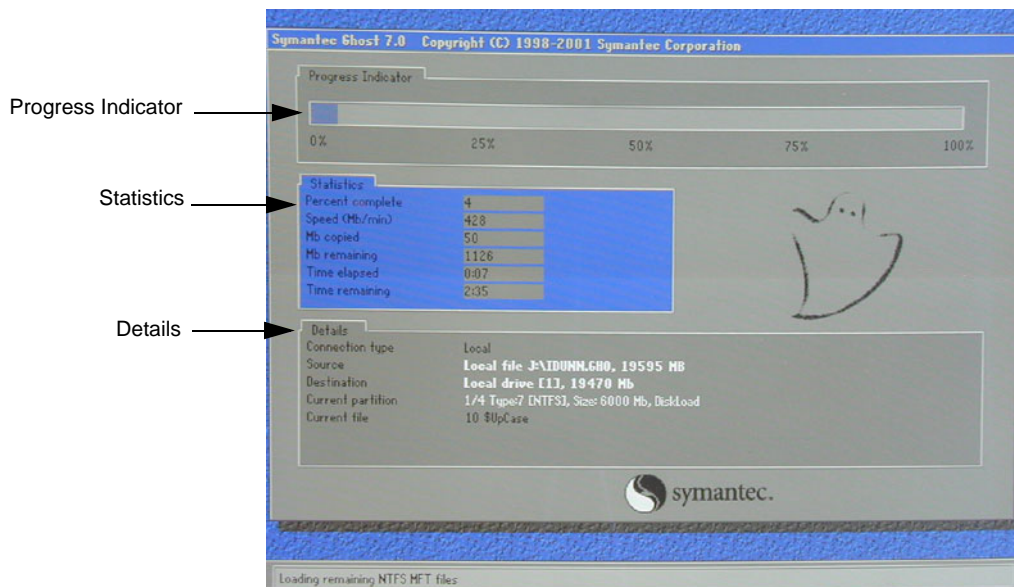
Figure 8-145   System software loading progresses.

6.) Wait for System Software to be installed. Typical installation time is 10 minutes.
A status bar on the screen indicates the progress
.

Figure 8-146   System software loading completed and command prompt appears

7.) After the installation you are prompted to remove CD.

8.) Press the **Eject** button on the CD drive and remove the CD.

⚠️   **NOTICE   Don't restart the workstation yet! Continue with the steps on next page.**

8-7-12-3   BT'04 Application Software Loading

1.) Insert CD labelled Application Software.

2.) Press **Ctrl+Alt+Del** on the keyboard to reboot the EchoPAC PC workstation.

3.) The workstation will restart.
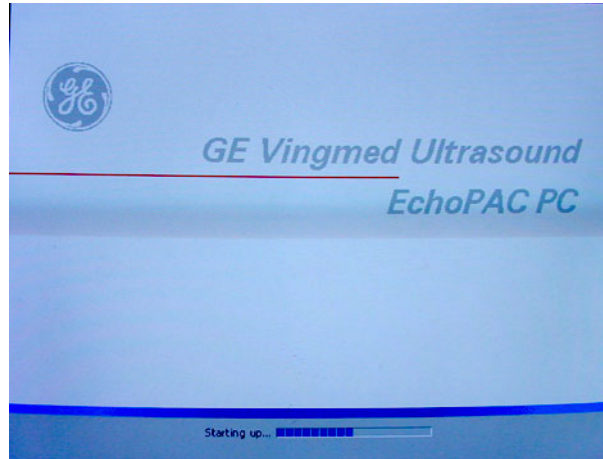
Figure 8-147   Start Picture

4.) When the workstation is rebooted, select **install sw** in the dialog box.

Figure 8-148   Start Application dialog

8-7-12-3   BT'04 Application Software Loading (cont'd)

5.) Select **ok**.

Figure 8-149   StartLoader

6.) Select **ok**.

Figure 8-150   StartLoader

7.) Press any key to continue.
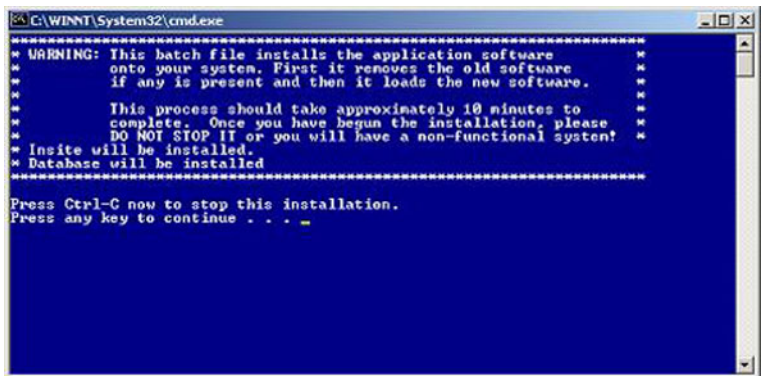
Figure 8-151   Continue the Installation

NOTE: *Do not interrupt the software loading or close the cmd.exe window during the installation of the application SW. This will cause the Installation to fail.*

8.) The system will now be loaded with new Application SW.

8-7-12-3   BT'04 Application Software Loading (cont'd)

When Application software loading is completed the following will appear on the screen:

Figure 8-152   Application software loading completed

9.) Remove the CD.

10.) If there are extra CDs with software patches, these should be installed now.

   a.) Insert the patch CD in the CD drive.

   b.) Press any key to reboot. The patch software will be installed during the booting.

   c.) Repeat step a and b until all patches have been installed. When finished, continue with next step.

11.) Press a key to reboot.

12.) The unit will boot up from the installed software. The first startup from new software may be slightly slower than a normal startup.

13.) Verify a similar boot sequence as shown in .
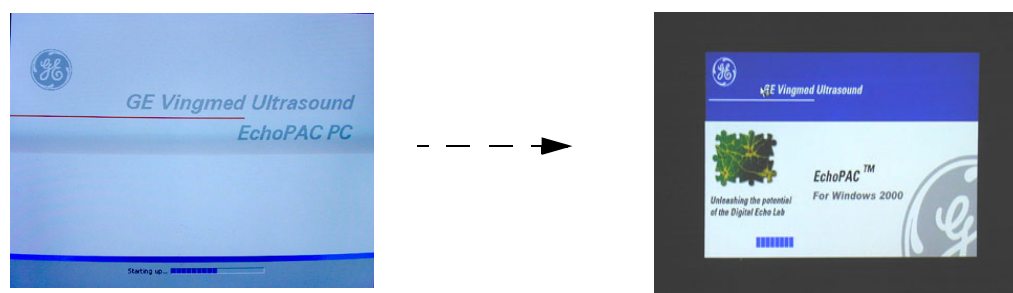
NOT ALL SCREENS SHOWN

Figure 8-153   Normal Start Up Process

8-7-13 Verifications - BT'04 Software

8-7-13-1 System Log ON - BT'04 Software

1.) Select **adm** on the Operator drop-down menu.

Figure 8-154   Log On Dialog

2.) Select **Log On**.

8-7-13-2 Verify BT'04 Software Option Strings

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Select **config**.
2.) Select Admin
3.) Select System Admin.
Verify the Software Option Strings, see Table 8-25 "Software Option Strings" on page 8-116.

8-7-13-3 Verify BT'04 Default Dataflow

1.) In **Connectivity** window, select **Dataflow**.
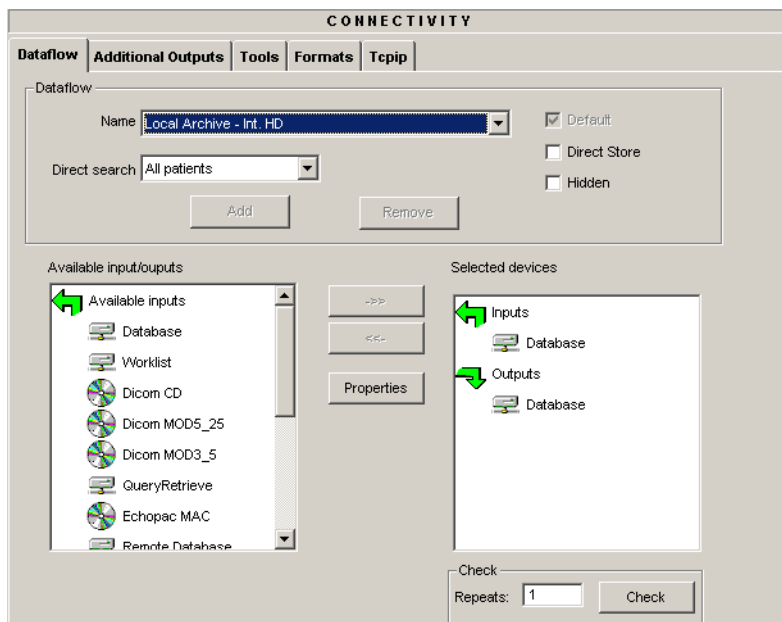
Figure 8-155   Default Dataflow

2.) Verify that Default Dataflow matches what was recorded in Table 8-33 "Record Default Dataflow Name" on page 8-144.

8-7-13-4   Verify the PC BT'04 Software Version

1.) Select **config**.

2.) Select **about** tab.

3.) Verify that the SW versions are the same as recorded in Table 8-35 "System Software version." on page 8-147.

8-7-13-5   Verify BT'04 TCP/IP Settings

1.) From the top of the connectivity tab, select the **TCPIP** tab.

2.) Verify the following data as recorded in Table 8-32 "TCPIP Settings Table" on page 8-143.

If DHCP was enabled, verify/set:

- Computer Name
- AE Title
- Activate DHCP as described in 3-9-6 "DHCP Setup" on page 3-96

If DHCP was un-enabled, verify/set:

- Computer Name
- AE Title
- IP- Address
- Subnet Mask
- Default Gateway
- Remote Archive IP-Address
- Remote Archive Name

3.) Select **Save Settings**

4.) A Warning window will appear, select OK.

8-7-13-6   BT'04 Printer Setup Verification

1.) Select Connectivity > Additional Outputs

This selection corresponds to the Print button on the Operator Panel

Standard Printer Settings

Figure 8-156   Additional Outputs

2.) Select **Standard Printer Settings**.

Device Name for the default printer
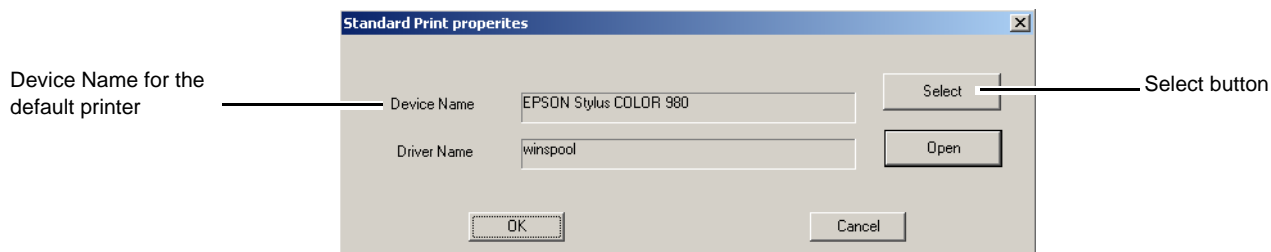
Select button

Figure 8-157   Standard Print dialog

3.) Verify that the **Device Name** lists the correct printer

4.) Select the **Select** button to display the **Print Setup** dialog.

8-7-13-6   BT'04 Printer Setup Verification (cont'd)
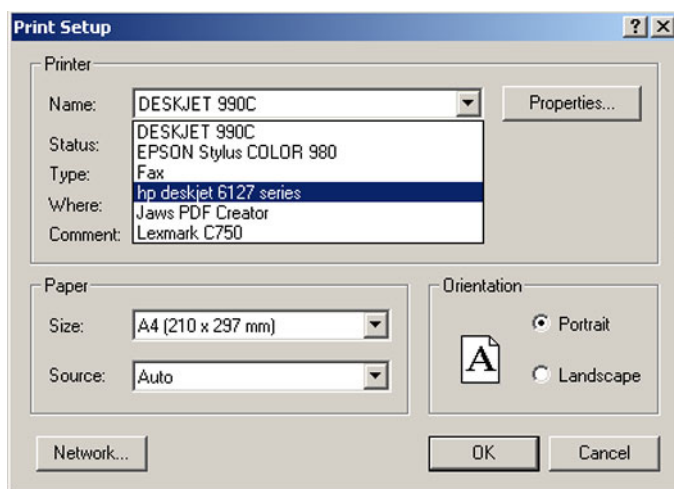
Figure 8-158   Printer Setup Dialog

5.) Verify that the selected printer is the one you want to have as the default printer.
     By selecting the Name pull-down menu, you may see other printers.

6.) Verify that the selected Paper Size setting is according to local requirements.

To permanently change any of these settings, select: Config > Service. Then select the Network Printer you want to change the settings for, and finally select Start Setup Program. Then follow the online instructions.

8-7-14   Verification and functional checks

Section 8-8
BT'03 Software Reloading Procedure

NOTE: *In order to complete a successful restore of the database, the images must be exported to Magneto Optical (MO) disks before doing backup of Patient Database. If the backup procedure is not completed correctly, the images and database information will be lost.*

8-8-1   BT'03 Software Introduction

This procedure describes how to perform a complete re-installation of the software on the EchoPAC PC workstation's hard disk. The installation will erase all existing data on the hard disk, including Patient Database, Customer Presets and Patient Images that are stored on the hard drive.

Before installation, export of Patient Images, backup of Customer Presets and Patient Database to MO disks must be completed.

The backup procedure will export all images from the internal hard disk to a removable MO disk. It will also backup the Patient Archive, Report Archive, System Configuration and User Defined Configuration to a backup MO disk.

TCP/IP addresses, computer name and software option strings settings must be manually recorded.

Content in this section:

8-8-2   Customer Provided Prerequisite - BT'03 Software

- Formatted and labelled MO Disks for Images storage
- Formatted and labelled MO Disk for Patient Archive and User defined settings.

8-8-3   Tools Provided - BT'03 Software

- System software (CD) - specific for each workstation model.
- Application software (CD)

If present:

- Patch for EchoPAC PC Turnkey (CD)

8-8-4   Prepare MO Disk for Image Storage - BT'03 Software

1.) Label the MO Disk sequentially, i.e. Image 1A (Side A), Image 1B (side B), Image 2A etc.

2.) If the MO Disks are already formatted and labelled move to 8-8-5 "Move Images - BT'03 Software" on page 8-137

NOTE: *When formatting the MO disk, give it a logical name and make sure to physically label the disk.*
          A labelling convention should be followed so that each MO disk gets a unique label. The
          maximum numbers of label characters allowed is 11.
          MO Disk Label side B must differ from side A.

3.) Insert an MO disk, side A, into the empty MO drive.

4.) Select **Config .**

5.) Select **Connectivity** in the Image and Analysis menu.

6.) Select **Tools** in the Connectivity menu.

7.) In the Label window, type the same name as labelled on the MO disk side A.
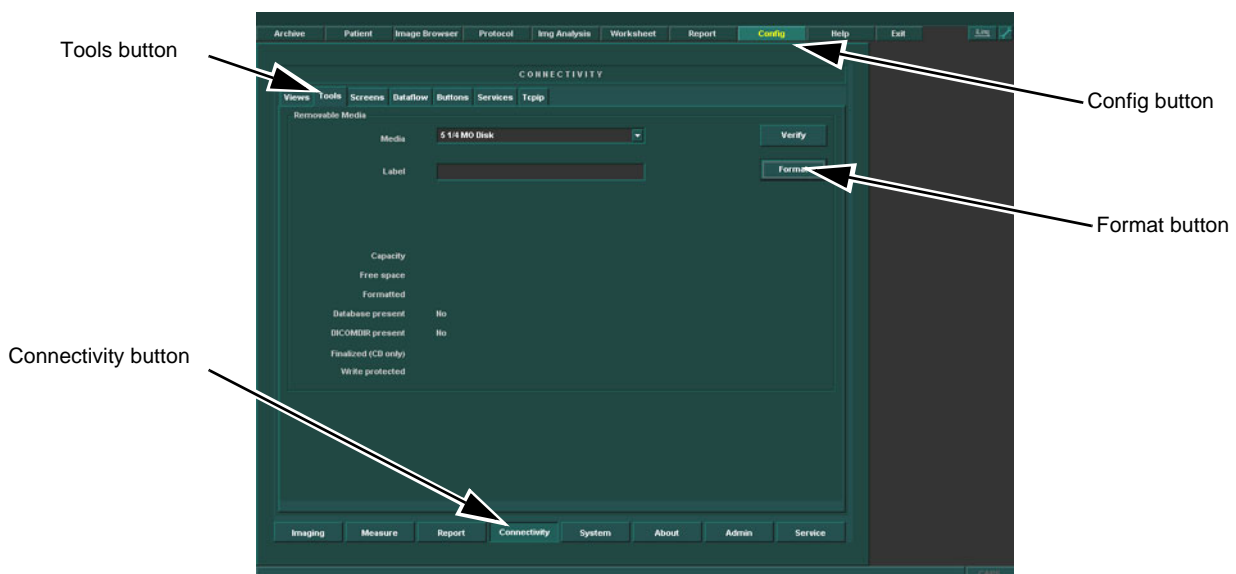
8.) Select **Format.**

Figure 8-159   Connectivity screen.

9.) A warning "Are you sure you want to format H: and remove all data from the media" appears, select **OK.**

10.) Wait until the information dialogue window appears on screen.

11.) Select **OK** to continue.

12.) Verify the disk formatting status has been updated.

13.) Press **ALT-E.**

14.) Select the *5 1/4 MO Disk*, to eject Disk.

15.) Insert the MO disk, side B (or a new MO disk if side B has been formatted already) and repeat step 7 to 15.

8-8-5   Move Images - BT'03 Software

The Move images function enables the movement of archived images from one volume/media to another and the deletion of the moved images from the original volume. The pointers to the database are restored in the new volume/media.
Move Images copies image data only, it doesn't copy any database information.

8-8-5-1   Moving Images from the Local Archive to a Removable Media - BT'03 Software

1.) Insert a formatted MO disk in the drive.
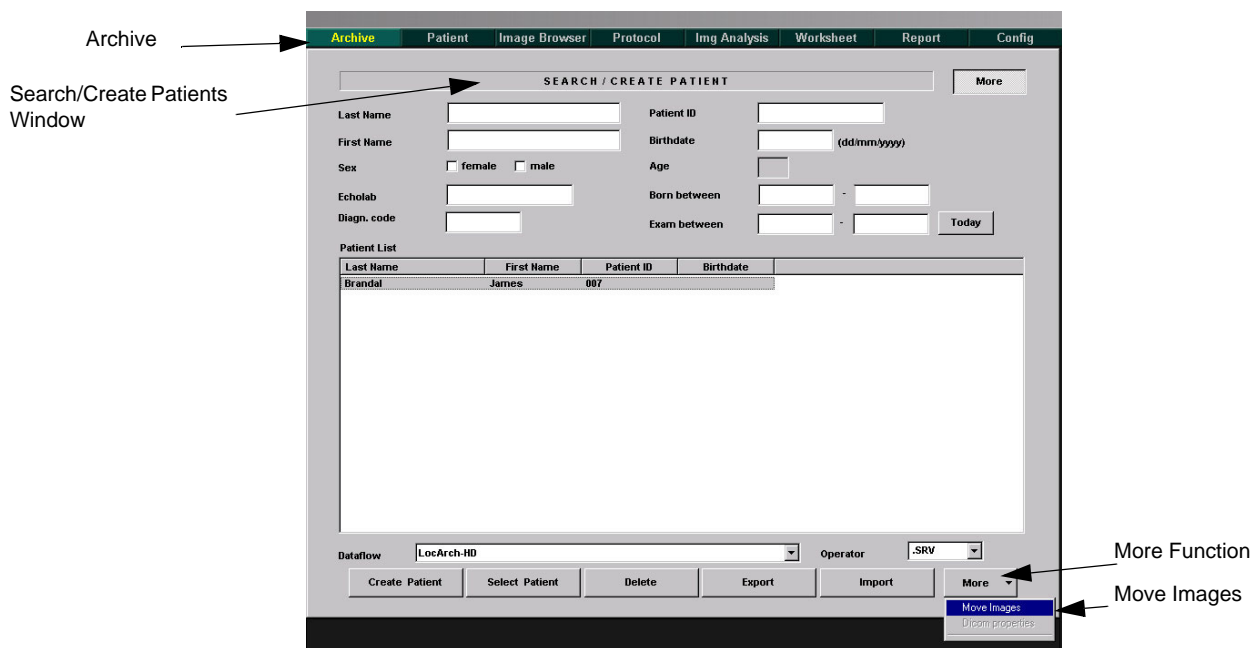
2.) Press **Archive**.

Figure 8-160   Archive-Search/Create Patients Functions selection
The *Search/Create Patient window* is displayed as shown on previous page.

3.) Press **More**. See above.

4.) Press **Move images**. See above.
The *Move images window* is displayed (see below).

8-8-5-1   Moving Images from the Local Archive to a Removable Media - BT'03 Software (cont'd)


```
┌──────────────────────────────────────────┐
│  ┌────────────────────────────────────┐   │
│  │          MOVE IMAGES               │   │
│  └────────────────────────────────────┘   │
│                                            │
│  From Date:      ▢▢/▢▢/▢▢   ┌──────────┐  │
│                             │Recalculate│  │
│  To Date:        ▢▢/▢▢/▢▢   └──────────┘  │
│                                            │
│  Image source:   ▢▢▢▢▢▢▢▢▢▢▢▢             │
│                                            │
│  Image destination: ▢▢▢▢▢▢▢▢▢▢ ▼          │
│                                            │
│  ☐ Keep days together    Exams sel.:  ▢   │
│  ┌──────────────────┐  ┌─────────────────┐│
│  │ ⦿ Move images    │  │Free disk space ▢││
│  │                  │  │Space needed    ▢││
│  └──────────────────┘  └─────────────────┘│
│                                            │
│  ┌──────────────┐      ┌──────────────┐   │
│  │     OK       │      │    Cancel    │   │
│  └──────────────┘      └──────────────┘   │
└──────────────────────────────────────────┘
```

Figure 8-161   The Move images window

5.) In the *Move Images window,* adjust **From Date** and **To Date** to select the images to copy in a defined time period.

6.) If necessary select the actual MO disk in the *Image destination field.*

7.) Check **Keep days together** if images from examinations performed on the same day are to be kept on the same MO disk.

8.) Press **Recalculate**.
The *Free disk space* and *Needed space* information is updated. Make sure that the space needed does not exceed the space available.

*NOTE: If the space needed is bigger than the available space on the destination media the time period selected must be decreased by selecting an earlier date in the **To date field**. Press **recalculate** again and ensure that there is enough space.*

9.) Press **OK**.
A progress indicator is displayed.

10.) After completion, press **OK**.

11.) Remove MO-Disk with moved Images from MO-Drive.

12.) Insert a new MO-Disk.

13.) Repeat step 5 through 12, in case archived data on the hard disk exceed MO Disk media capacity.

14.) Remove MO disk.

8-8-6 Prepare MO Disk for Patient Archive - BT'03 Software

NOTE: *A separate MO disk is required for backup of Patient Database, System Configuration and User Defined Configurations (Customer Presets).*
This MO disk must be a separate disk with no images stored.

1.) Label the MO Disk *Backup*.
2.) If the MO Disks is already formatted and labelled move to 8-8-7 "Backup of Patient Database and User Presets - BT'03 Software" on page 8-140.
3.) Insert a MO disk, side A, into the empty MO drive.
4.) Select **Config .**
5.) Select **Connectivity** in the Image and Analysis menu.
6.) Select **Tools** in the Connectivity menu.
7.) In the Label window, type the same name as labelled on the MO disk side A.
8.) Select **Format.**
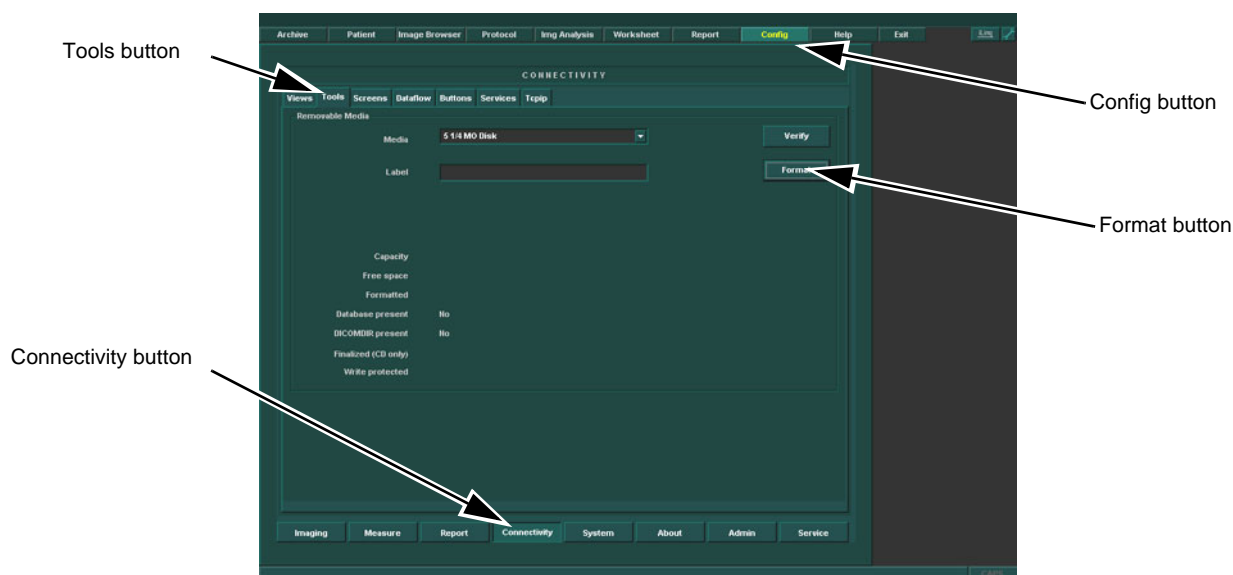
Figure 8-162   Connectivity screen.

9.) Wait until the warning: "Are you sure you want to format H: and remove all data from the media" appears. Select **OK** to confirm.
10.) Wait until the information dialogue window appears on screen.
11.) Select **OK** to continue.
12.) Verify the disk formatting status has been updated.
13.) Press **ALT-E.**
14.) Select the *5 1/4 MO Disk*, to eject Disk.

8-8-7 Backup of Patient Database and User Presets - BT'03 Software

This procedure describes how to backup Patient database and user presets (user defined configuration).

1.) Insert the formatted MO disk prepared for Backup, in the MO Drive.

2.) Go to **Config** -> **Admin** -> **Backup**.
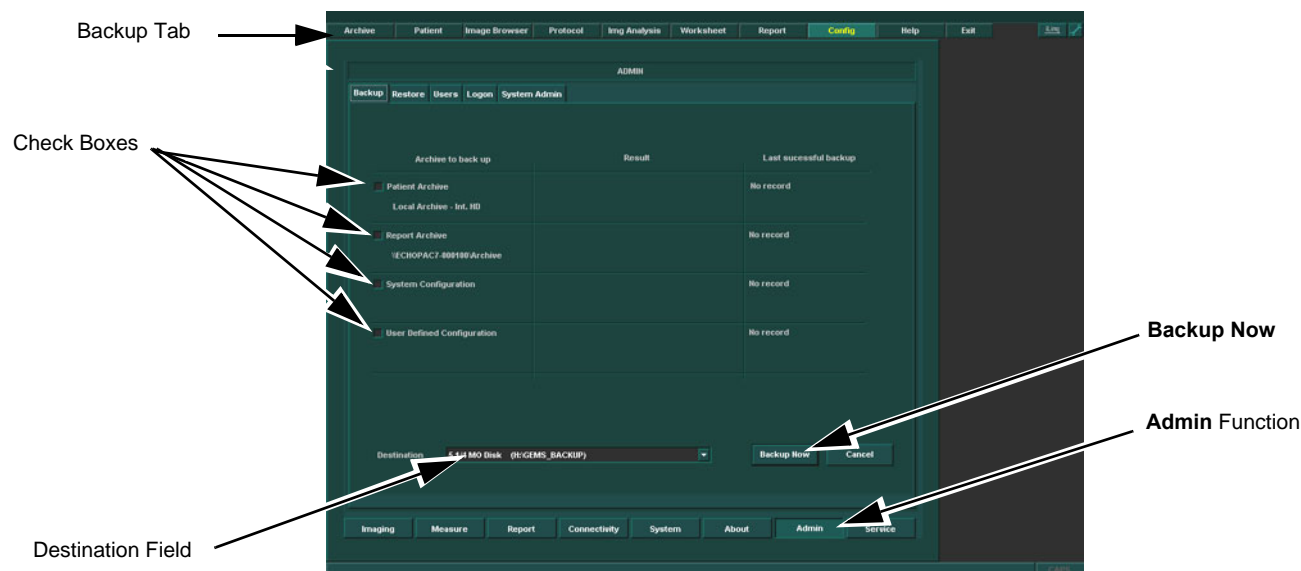
Figure 8-163 The Backup Screen

3.) Select all check boxes.

4.) In the Destination field, select the *MO disk* from the drop-down menu.

5.) Select **Backup now**. A Warning will appear on the screen.

8-8-7   **Backup of Patient Database and User Presets - BT'03 Software** (cont'd)

.
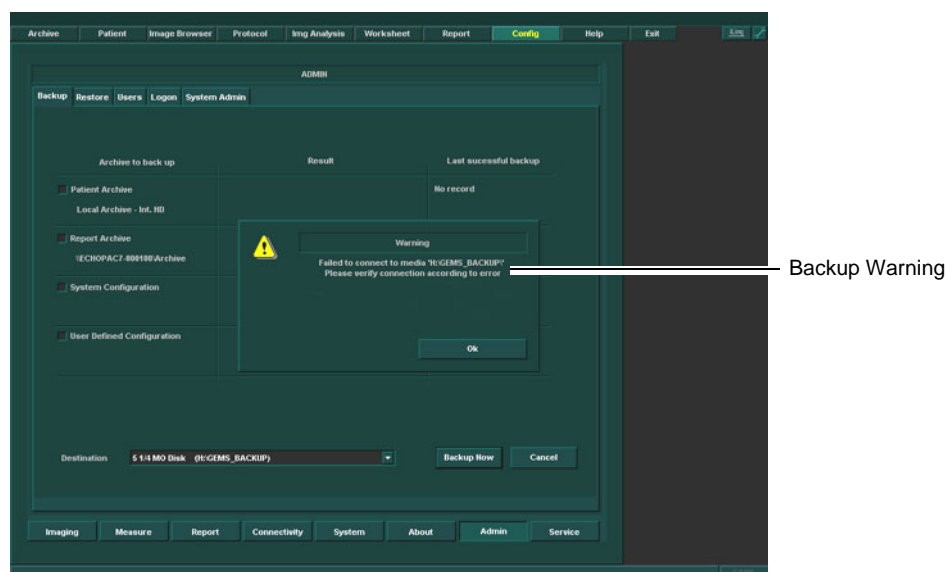
Figure 8-164   Backup Warning

NOTE: *No process indicator will appear on screen. Verify that the "Finished, OK" Status appears in the Result column, and that the date appearing in the Last Successful Backup column is the current date and time. The backup is completed.*

6.) Remove the Backup MO Disk when the backup is completed.

8-8-8 Record Software Option String(s) - BT'03 Software

NOTE: *The alphanumeric Software Option Strings are called "Software Option Keys" by the software.*

1.) Select **Config**.
2.) Select **Admin**.
3.) Select the **System Admin** tab.
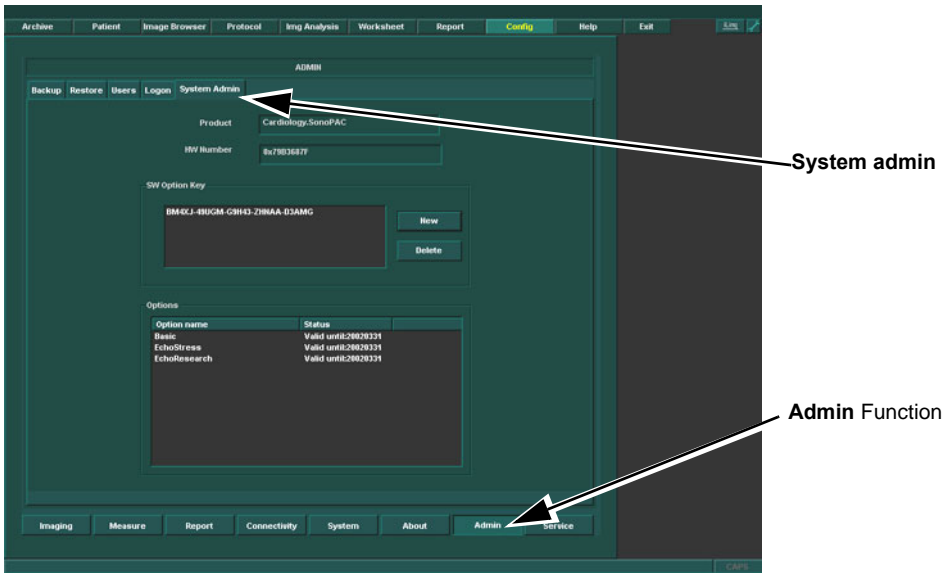
Figure 8-165   Software Option Strings

4.) Record SW Options String(s) from SW Options key window.

⚠ **WARNING** *Make sure that the Software Option Strings have been recorded correctly. If the password is incorrect, you will not be able to log on after the software loading has been completed.*
The Software Option Strings are case sensitive.
Hyphens must also be recorded. There may be more than one string.

Table 8-31   SW Options Strings

SOFTWARE OPTIONS STRINGS

8-8-9   Record TCP/IP Settings - BT'03 Software

1.) Select **CONNECTIVITY**.

2.) Select the **TCPIP** tab.

3.) Record **Computer Name** in Table 8-32 "TCPIP Settings Table" on page 8-143.
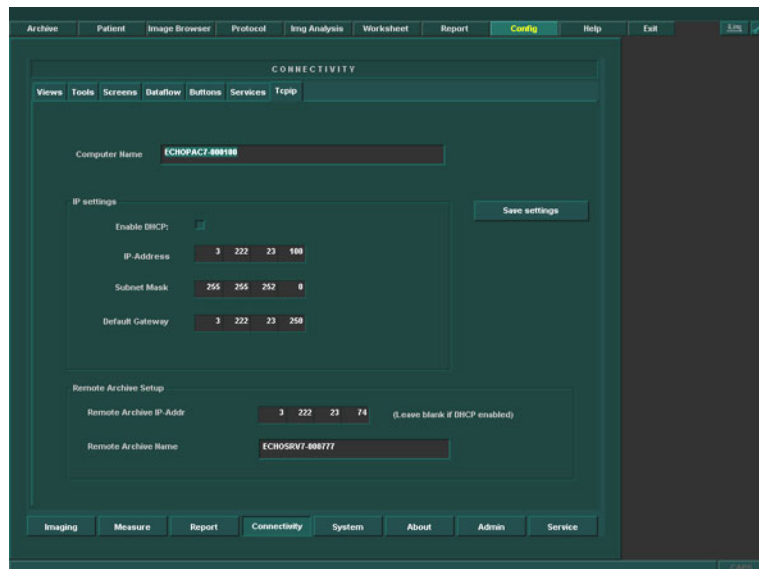
Figure 8-166   TCP/IP <u>Example</u> Settings

Table 8-32   TCPIP Settings Table

Function	Setting
Computer Name	**ECHOPAC7-**
IP-Address	
Subnet Mask	
Default Gateway	
Remote Archive IP-Address	
Remote Archive Name	

4.) Record the Computer Name serial number which is in the following format: ***ECHOPAC7-xxxxxx***. These are found on the PC's left side seen from the front.

8-8-10 Record Default Dataflow - BT'03 Software

1.) In the **Connectivity** window, select **Dataflow**.
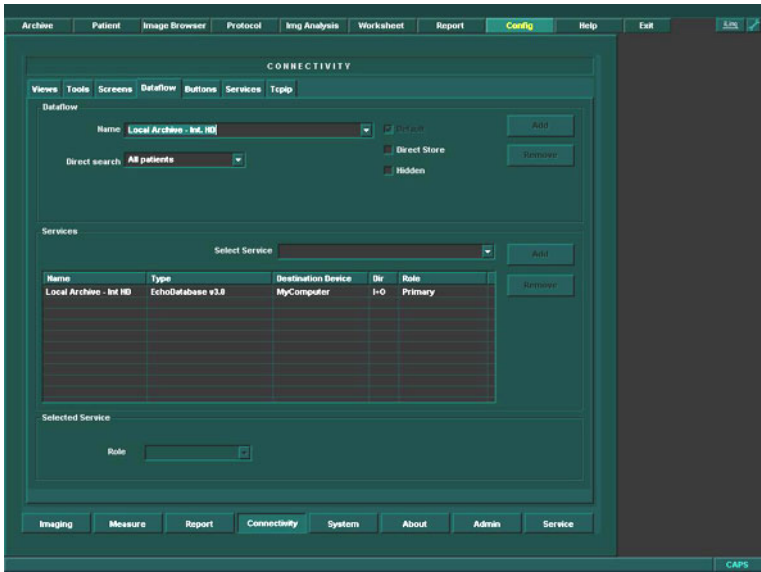
Figure 8-167   Select Dataflow

2.) Verify that Default Dataflow is selected.

3.) Record data in Table 8-33 "Record Default Dataflow Name" on page 8-144.

Table 8-33   Record Default Dataflow Name

Default Dataflow Name

8-8-11 Record Standard Printer IP and Port Settings - BT'03 Software

1.) In the **connectivity** window, select **services**.

2.) Select *Printer Setup*.

3.) Select **open**.
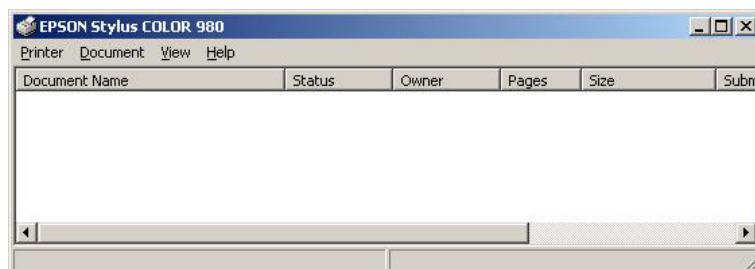
4.) Select *Printer*.

Figure 8-168   Properties

5.) Select *Properties* from the Printer scroll down menu.

6.) Select *Ports*
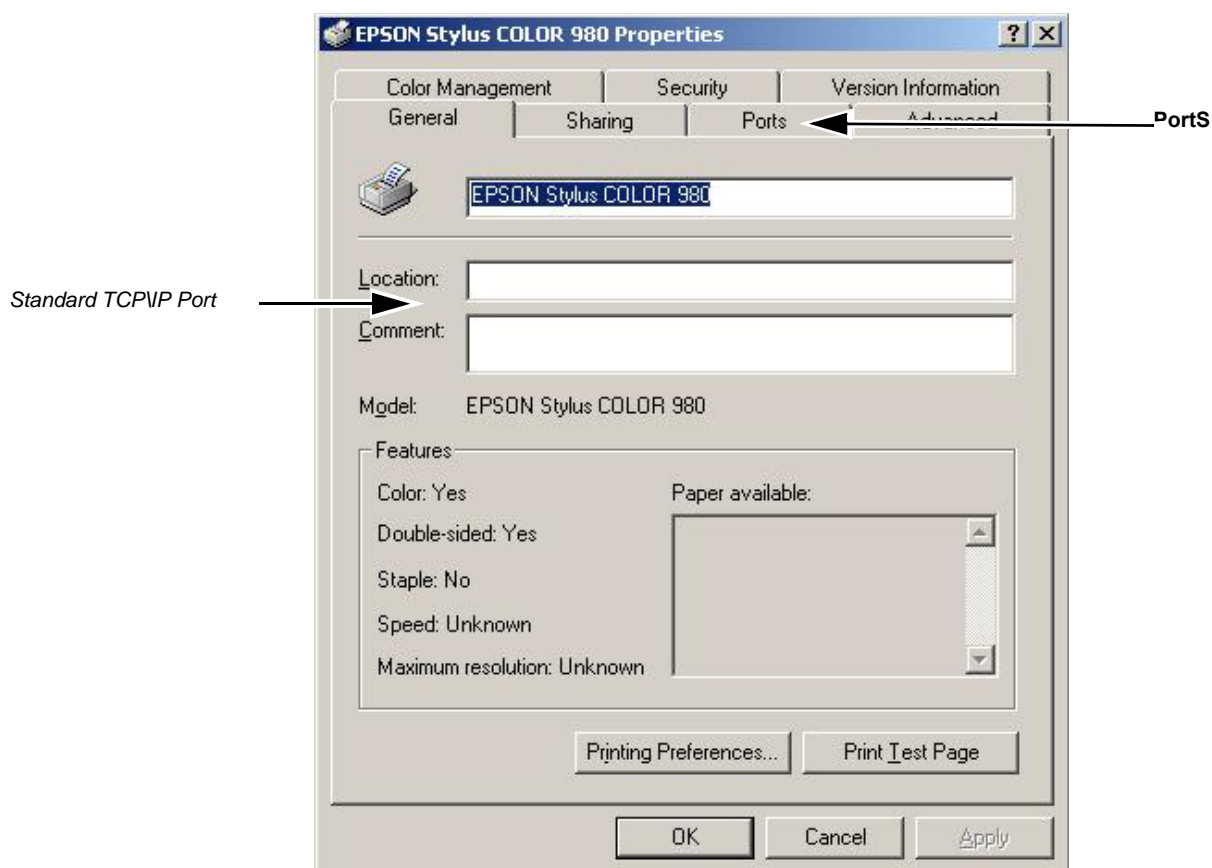
Figure 8-169   Printer Properties

8-8-11   **Record Standard Printer IP and Port Settings - BT'03 Software** (cont'd)

7.) Select **Configure Port**.

8.) Select and Record *Printer Name or IP Address* in Table 8-34 "Printer Name or IP Address and Port Number" on page 8-146.

9.) Select and Record *Port Number* in Table 8-34 "Printer Name or IP Address and Port Number" on page 8-146.

Table 8-34   Printer Name or IP Address and Port Number

Printer Name or IP Address	Port Number

10.) Select **Cancel**.
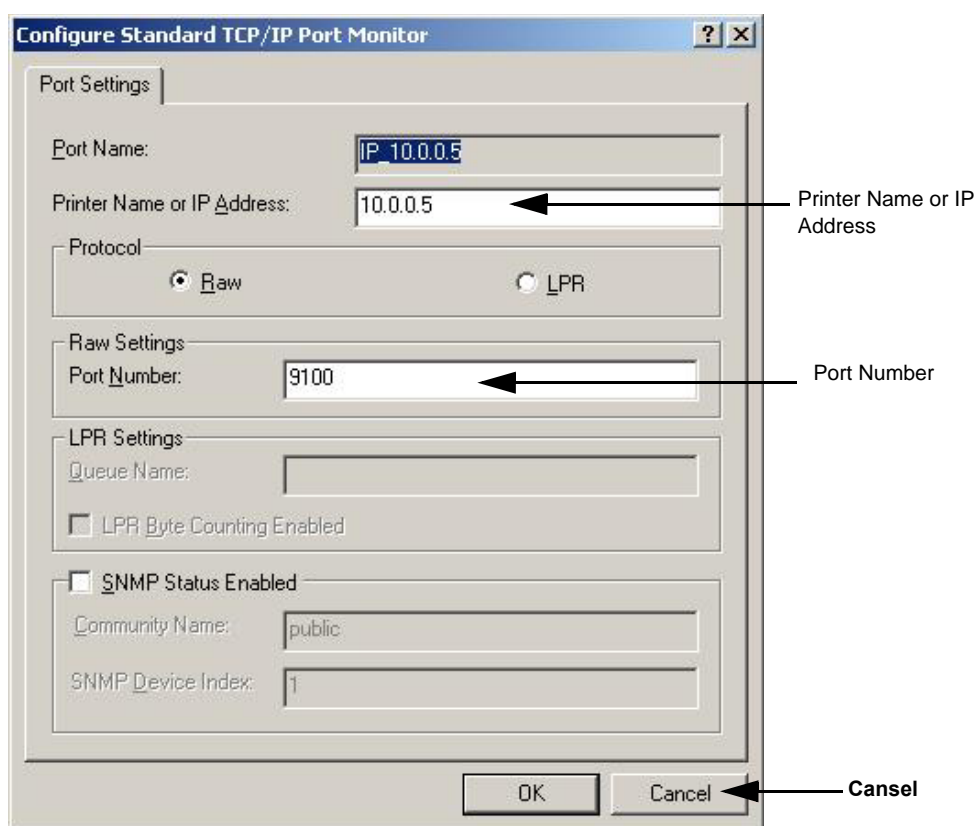
Figure 8-170   Configure Port

11.) Close the rest of the windows by selecting **ok**.

8-8-12   Record the BT'03 System Software Version

1.) Select the **About** button.
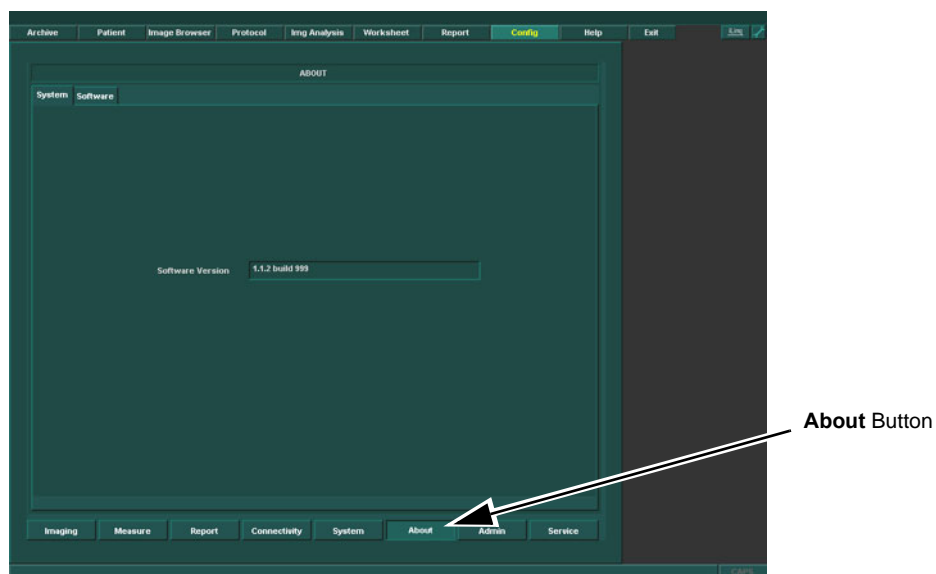
Figure 8-171   About

2.) Record System Software version in Table 8-35 "System Software version." on page 8-147.

Table 8-35   System Software version.

System Software version

8-8-13   Preparations Before BT'03 Software Installation

8-8-13-1   MOD Shut down - BT'03 Software

All SCSI devices must be shut down and disconnected before installing the software to avoid mistaken drive choice.

- Shut down and disconnect all the MO-Drives connected to the EchoPAC PC Turnkey .
  .

8-8-13-2   ZIP Shut down - BT'03 Software

The ZIP device must be disconnected from the PC before software loading to avoid mistaken drive choice.

- If ZIP Drive is connected to EchoPAC PC Turnkey , power down ZIP Drive and disconnect it from the EchoPAC PC Turnkey .
  .

8-8-13-3   Restart the EchoPAC PC Turnkey

Restart the EchoPAC PC Turnkey before you continue.

8-8-14 EchoPAC PC BT'03 Software Loading

8-8-14-1 Overview - BT'03 Software

EchoPAC PC Turnkey workstation has been delivered with different workstation models. Each model requires its own System Software CD, sometimes called "Ghost CD".

Table 8-36 System Software Overview

WORKSTATION MODEL	SYSTEM SOFTWARE CD	COMMENTS
COMPAQ DW300	EP200435	The DW300 workstation has a light gray chassis with a dark blue cover at the front.
COMPAQ EVO W4000	EP200458	The EVO W4000 workstation chassis is black with a gray front that has a black cover.
HP XW4100	EP200590	HP workstation

In addition to this there is a common Applications CD, described in 8-8-14-3 "EchoPAC PC BT'03 Applications Software loading" on page 8-153.

8-8-14-2 BT'03 System Software (Ghost) Installation

NOTE: *Verify that the Software Option dongle is installed in one of the ports at the rear of the workstation, before continuing the software loading*

1.) Press **Eject** on the CD Drive to open the drive.

.

Eject button on CD Drive

Figure 8-172 Eject Button on CD Drive.

1.) Insert the System Software CD, ref. Table 8-36 "System Software Overview" on page 8-149 for correct CD.

2.) Power down the workstation, see 4-2-2 "Power OFF" on page 4-4 for details.

8-8-14-2   BT'03 System Software (Ghost) Installation (cont'd)

3.) Switch power on again, see 4-2-1 "Power On/Boot Up" on page 4-2 for details.
   The PC will now boot from the System software loading CD, and the System software loading
   Program starts.

.

Figure 8-173   Steps of startup.

4.) When requested, enter the unit's Computer Name (Serial Number) as recorded in **Table 8-32 "TCPIP Settings Table" on page 8-143**, **EchoPAC PC-*xxxxxx***.
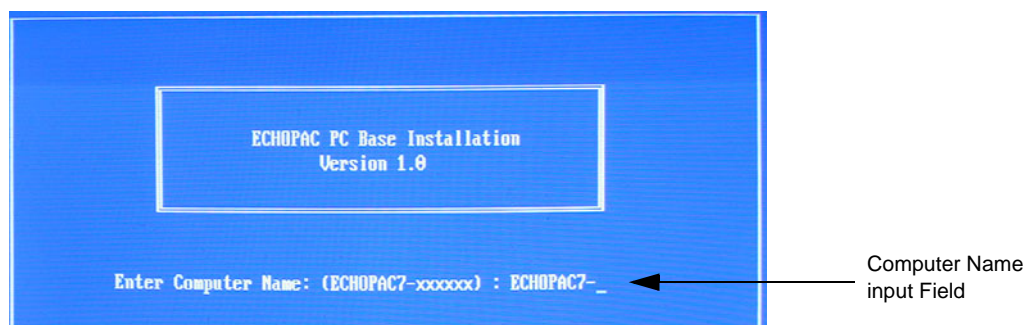
Figure 8-174   Computer Name entry

8-8-14-2   BT'03 System Software (Ghost) Installation (cont'd)

5.) You can choose if you want to do a complete EchoPAC PC Turnkey installation or if you only want to update or reinstall the software on the C partition (C drive).

   a.) Press A to do a complete Vivid 7 software loading. (All data will be erased.)

   b.) Press B to update/re-install the software on the C partition. (All data on the C partition will be erased.)

   c.) Press C to Exit.
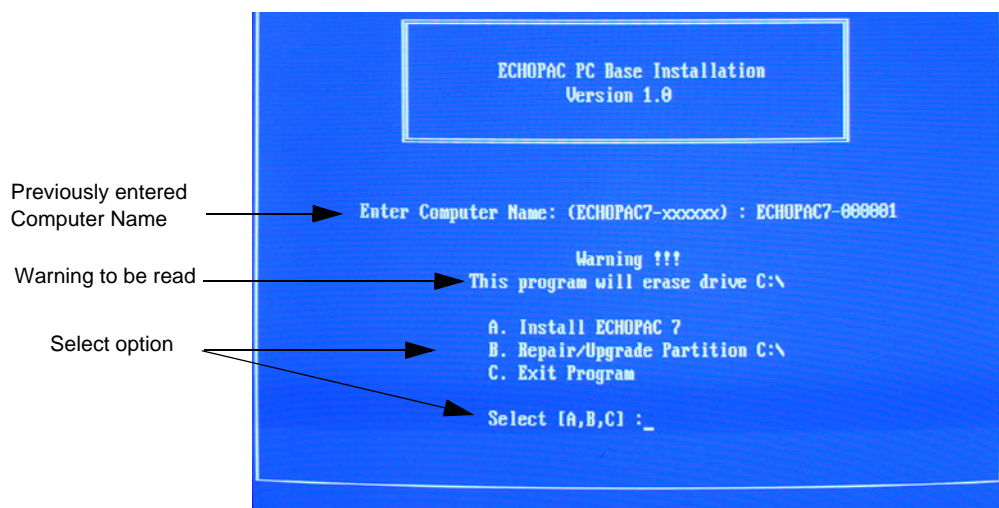
Figure 8-175   Installation Type Selection.

8-8-14-2 BT'03 System Software (Ghost) Installation (cont'd)

Progress Indicator

Statistics

Details
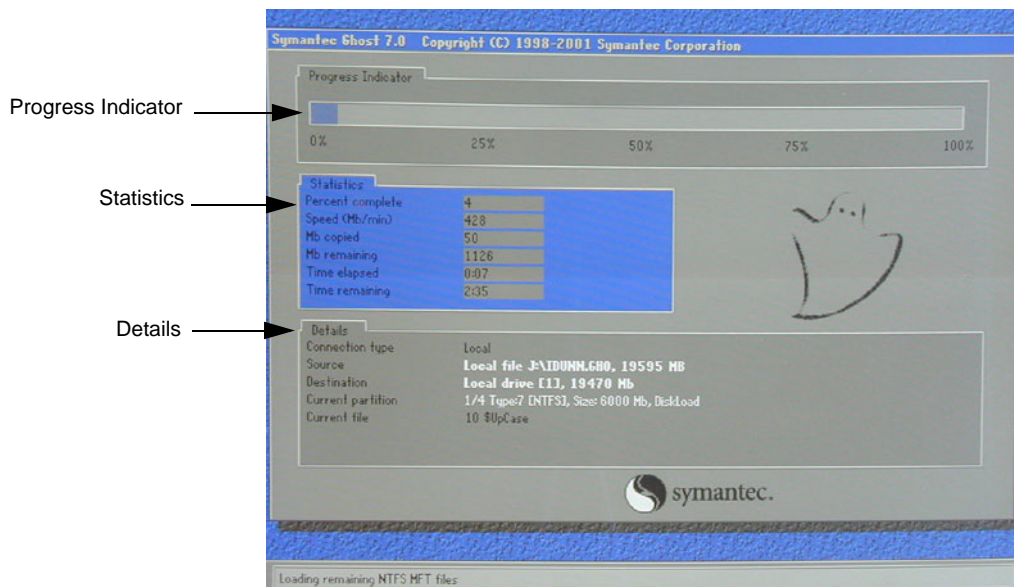
Figure 8-176 System software loading progresses.

6.) Wait for System SW to be installed. Typical installation time is 10 minutes. A status bar on the screen indicates the progress

.
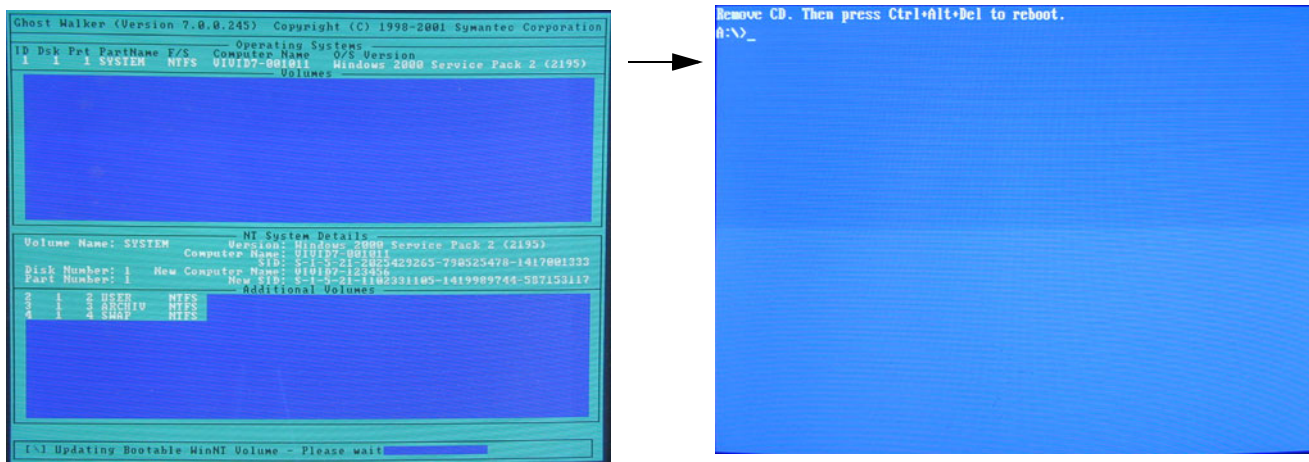
Figure 8-177 System software loading completed and command prompt appears

7.) After the installation you are prompted to remove CD.

8.) Press the **Eject** button on the CD drive and remove the CD.

⚠ **NOTICE** **Don't restart the workstation yet! Continue with the steps on next page.**

8-8-14-3   EchoPAC PC BT'03 Applications Software loading

1.) Insert CD labelled Application Software, Part Number FC200220.

2.) Press **Ctrl+Alt+Del** on the keyboard to reboot the EchoPAC PC workstation.

3.) The workstation will restart.
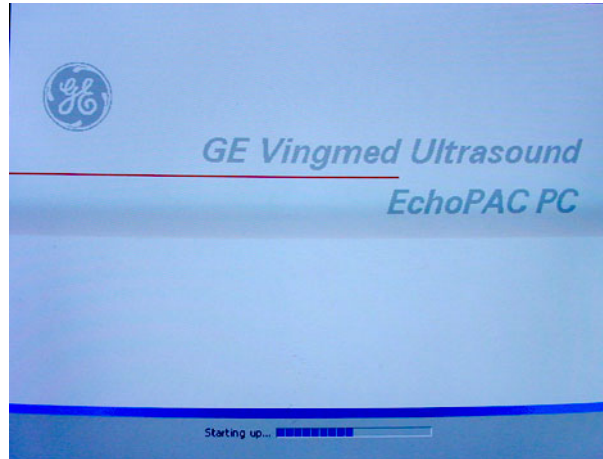
Figure 8-178   Start Picture

4.) When the workstation is rebooted, select **install sw** in the dialog box.
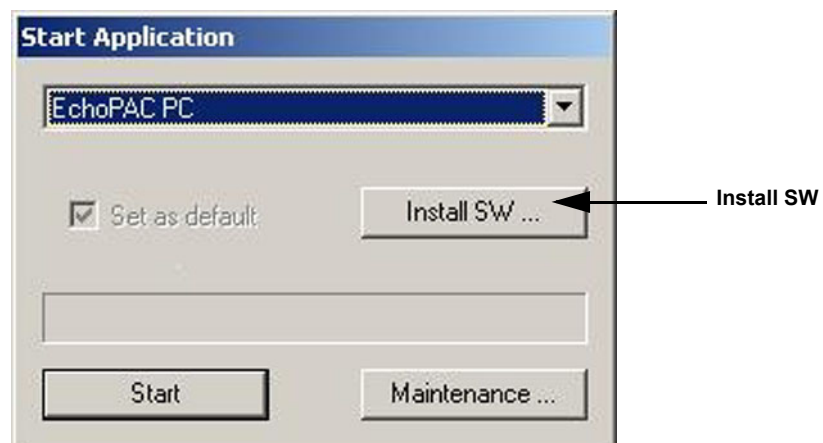
Figure 8-179   Start Application dialog

8-8-14-3   EchoPAC PC BT'03 Applications Software loading (cont'd)

5.) Select **ok**.

Figure 8-180   StartLoader

6.) Select **ok**.

Figure 8-181   StartLoader

7.) Press any key to continue.
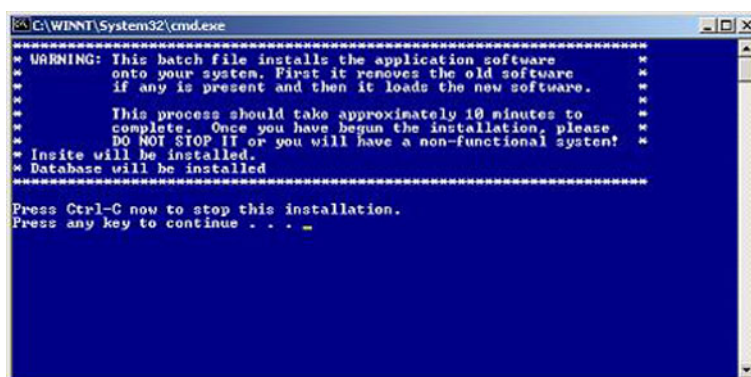
Figure 8-182   Continue the Installation

NOTE: *Do not interrupt the software loading or close the cmd.exe window during the installation of the application SW. This will cause the Installation to fail.*

8.) The system will now be loaded with new Application SW. When Application software loading is completed the following will appear on the screen:

8-8-14-3   EchoPAC PC BT'03 Applications Software loading (cont'd)
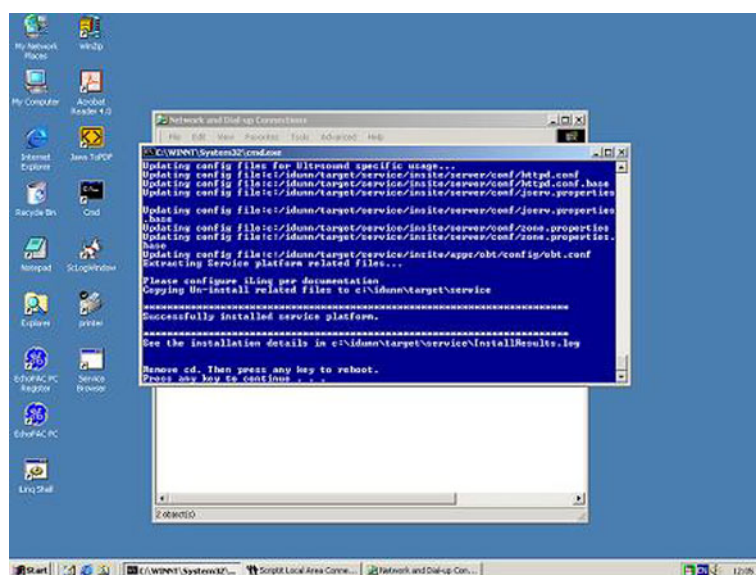
Figure 8-183   Application software loading completed

9.) If there are extra CDs with software patches, these should be installed now.

   a.) Insert the patch CD in the CD drive.

   b.) Press any key to reboot. The patch software will be installed during the booting.

   c.) Repeat step a and b until all patches have been installed. When finished, continue with next step.

10.) Connect a 5.25" MO drive to the EchoPAC PC Turnkey .

11.) Press any key to reboot.

12.) The unit will boot from the installed software. The first startup from new software may be slightly slower than a normal startup.

13.) Verify a similar boot sequence as shown in Figure 8-184 "Normal Start Up Process" on page 8-156.

14.) If a 3.5 MO is present:

   a.) Power down the workstation.

   b.) Connect the 3.5 MO drive to the EchoPAC PC Turnkey .

   c.) Boot the workstation.

   d.) Verify that the MO drives ar detected as 3.5" MO and 5.25"MO.

8-8-14-3   EchoPAC PC BT'03 Applications Software loading (cont'd)
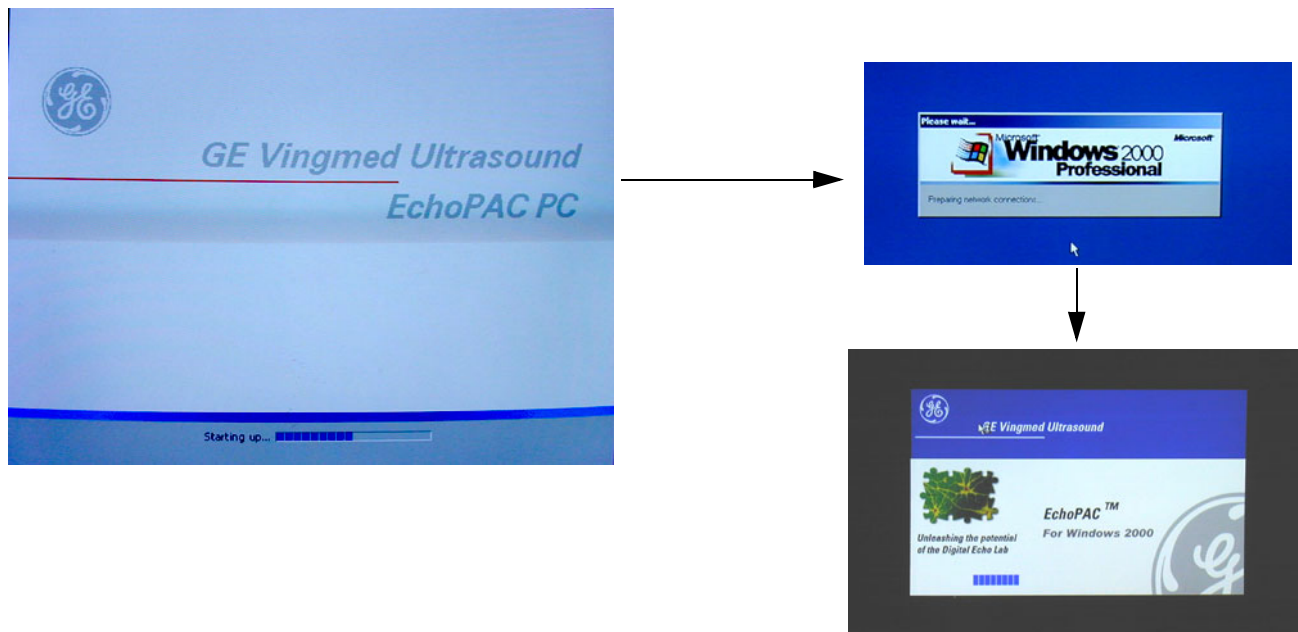
Figure 8-184   Normal Start Up Process

8-8-15 Verifications - BT'03 Software

8-8-15-1 System Log ON - BT'03 Software

1.) Select No Archive on the Operator drop-down menu.
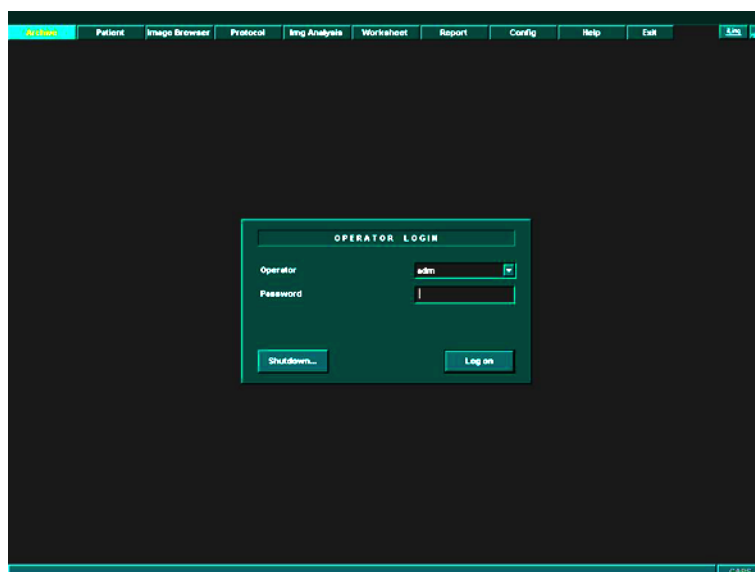
Figure 8-185 Log On Dialog

2.) Enter password, if needed, and Log On.

8-8-15-2 Verify BT'03 Software Option Strings

1.) Select **Config**.

2.) From the configuration page, select the **Connectivity** tab.

3.) From the lower part of the window, select the **Service** tab.

4.) From Video Settings pull-down menu, select *Format*.

5.) Verify recorded data in Table 8-35 "System Software version." on page 8-147.

6.) From the VCR pull-down menu, select *VCR type*.

7.) Verify data as recorded in Table 8-35 "System Software version." on page 8-147.

8.) From the top of the connectivity tab, select the **Tcpip** tab.

9.) Verify that all settings on the TCPIP tab matches those recorded in Table 8-32 "TCPIP Settings Table" on page 8-143.

10.) Select **ok** to continue.

8-8-15-3   Verify Default Dataflow - BT'03 Software

1.) In **Connectivity** window, select **Dataflow**.

2.) Verify that Default Dataflow matches what was recorded in Table 8-33 "Record Default Dataflow Name" on page 8-144.

8-8-15-4   Verify BT'03 System Software Version

1.) Select **Config**.

2.) Select **About** tab.

3.) Verify that the SW versions has changed to a higher revision, then what was recorded in Table 8-35 "System Software version." on page 8-147.

8-8-15-5   Verify TCP/IP Settings - BT'03 Software

1.) From the top of the connectivity tab, select the **TCPIP** tab.

2.) Verify the following data as recorded in Table 8-32 "TCPIP Settings Table" on page 8-143

    a.) Computer Name

    b.) IP- Address

    c.) Subnet Mask

    d.) Default Gateway

    e.) Remote Archive IP-Address

    f.)   Remote Archive Name

3.) Select Save Settings

4.) A Warning window will appear, select OK.

8-8-15-6   Verify Standard Printer IP and Port Settings - BT'03 Software

1.) Select **Config**.

2.) Select **Connectivity**.

3.) Select **Services**.

4.) Scroll down to *Standard Print*.

5.) Select *Standard Print*.

6.) Select **Open**.

7.) Select *Printer*.

8.) Select *Properties.*

8-8-15-6   Verify Standard Printer IP and Port Settings - BT'03 Software (cont'd)
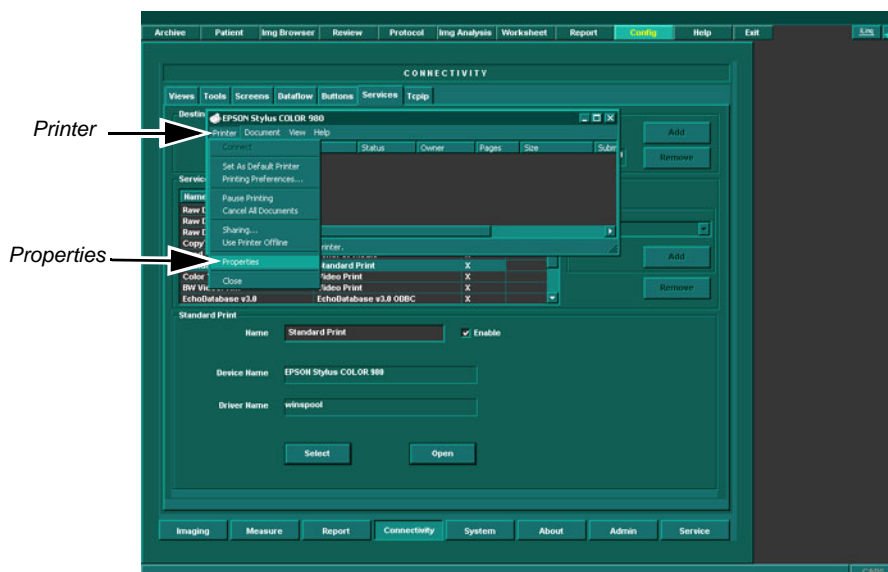
Figure 8-186   Properties

9.) Select *Standard TCP\IP Port*.

10.) Select **Configure Port**.
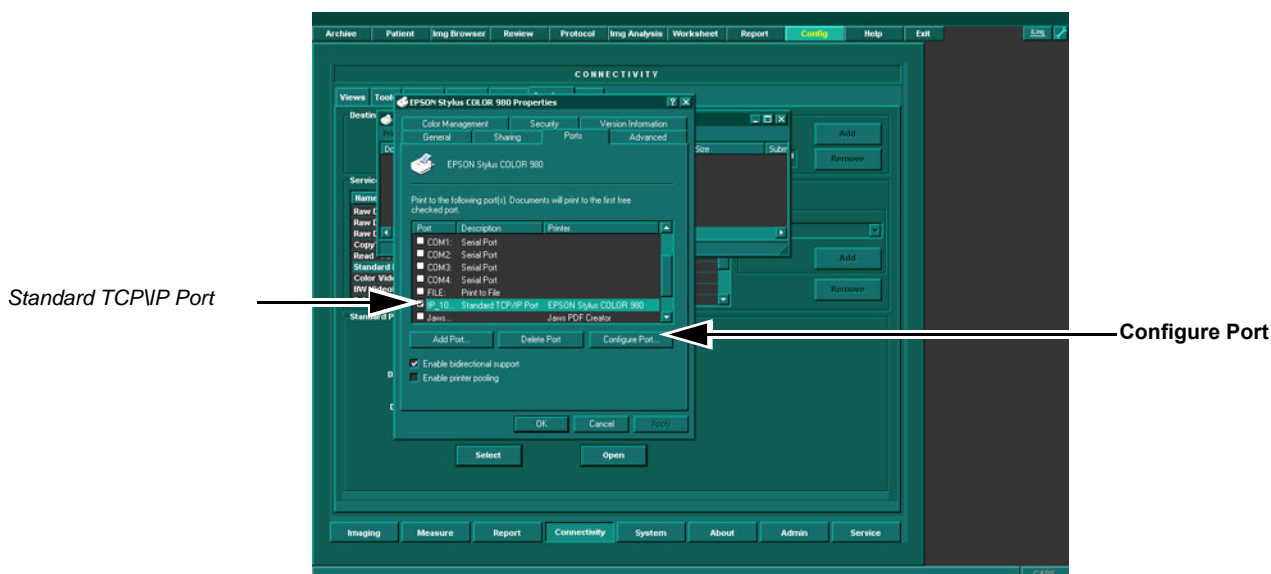
Figure 8-187   Configure Port

8-8-15-6   Verify Standard Printer IP and Port Settings - BT'03 Software (cont'd)

11.) Verify *Printer Name or IP Address* as recorded in .

12.) Select *Raw.*

13.) Verify *Port Number* as recorded in .

14.) Select **ok**.
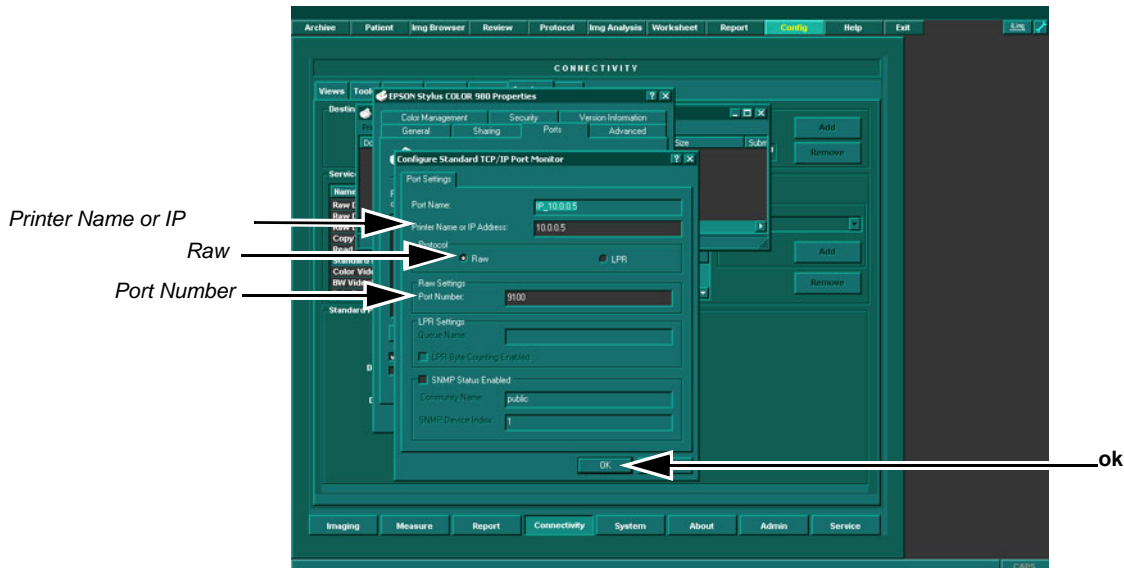
Figure 8-188   Configure Port

Close rest of the Windows by selecting **ok**.

15.) Reboot the EchoPAC PC workstation.

8-8-16   Verification and functional checks

Perform

Section 8-9
BT'02 Software Reloading Procedure

NOTE: *All EchoPAC PC Turnkey workstations with older software than version v2.3.x should have been updated with FMI76036 to software version v2.3.1.*

8-9-1   Customer Provided Prerequisite - BT'02 Software

- Formatted and labelled MO Disks for Images storage.
- Formatted and labelled MO Disk for Patient Archive and User defined settings.

8-9-2   Tools Provided with Unit or After a BT'02 Software Upgrade

- System software (CD) - specific for each workstation model.
- Application software (CD)

If present:

- Patch for EchoPAC PC Turnkey (CD)

8-9-3   **Prepare MO Disk for Image Storage - BT'02 Software**

1.) If the MO Disks is already formatted and labelled move to 8-8-5 "Move Images - BT'03 Software" on page 8-137.

2.) Label the MO Disk sequentially.i.e Image 1A (Side A), Image 1B (side B), Image 2A etc.

NOTE: *When formatting the MO disk, give it a logical name and make sure to physically label the disk. A labelling convention should be followed so that each MO disk gets a unique label. The maximum numbers of label characters allowed is 11. MO Disk Label side B must differ from side A.*

3.) Insert a MO disk, side A, into the empty MO drive.

4.) Select **Config .**

5.) Select **Connectivity** in the Image and Analysis menu.

6.) Select **Tools** in the Connectivity menu.

7.) In the Label window, type the same name as labelled on the MO disk side A.
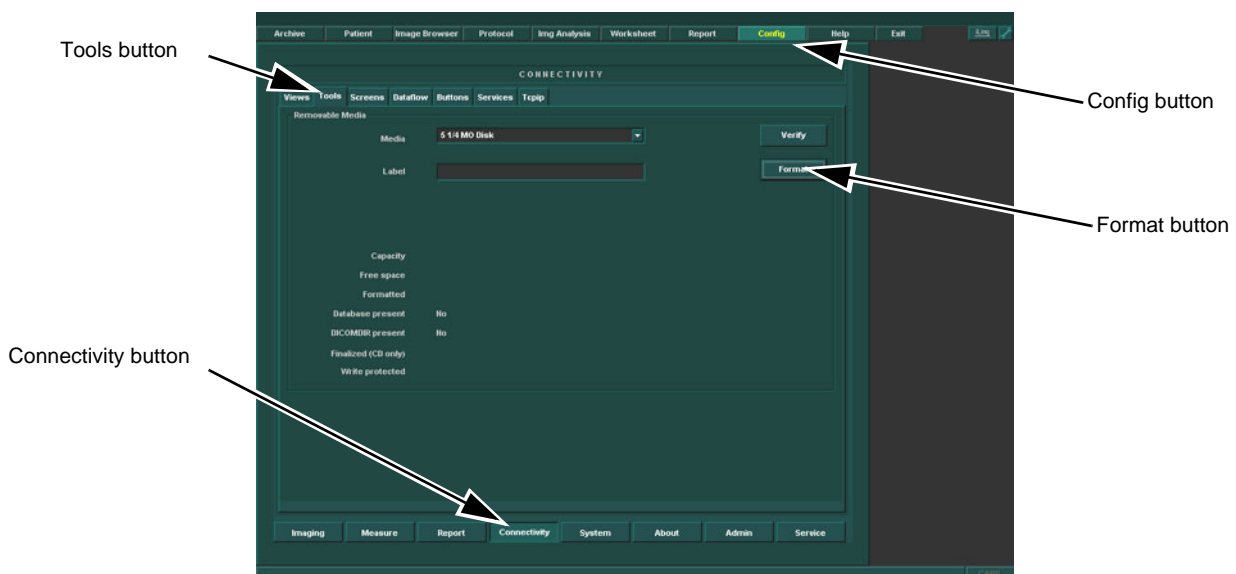
8.) Select **Format.**

Figure 8-189   Connectivity screen.

9.) "Are you sure you want to format H: and remove all data from the media" appears, select **OK.**

10.)Wait until the information dialogue window appears on screen.

11.)Select **OK** to continue.

12.)Verify the disk formatting status has been updated.

13.)Press **ALT-E.**

14.)Select the *5 1/4 MO Disk*, to eject Disk.

15.)Insert the MO disk, side B and Repeat step 7 to 14.

8-9-4   Move images - BT'02 Software

The Move images function enables the movement of archived images from one volume/media to another and the deletion of the moved images from the original volume. The pointers to the database are restored in the new volume/media.
This function copies image data only, no database information is copied.

8-9-4-1   Moving BT'02 images from the local archive to a removable media:

1.) Insert a formatted MO disk in the drive.
2.) Press **Archive**.
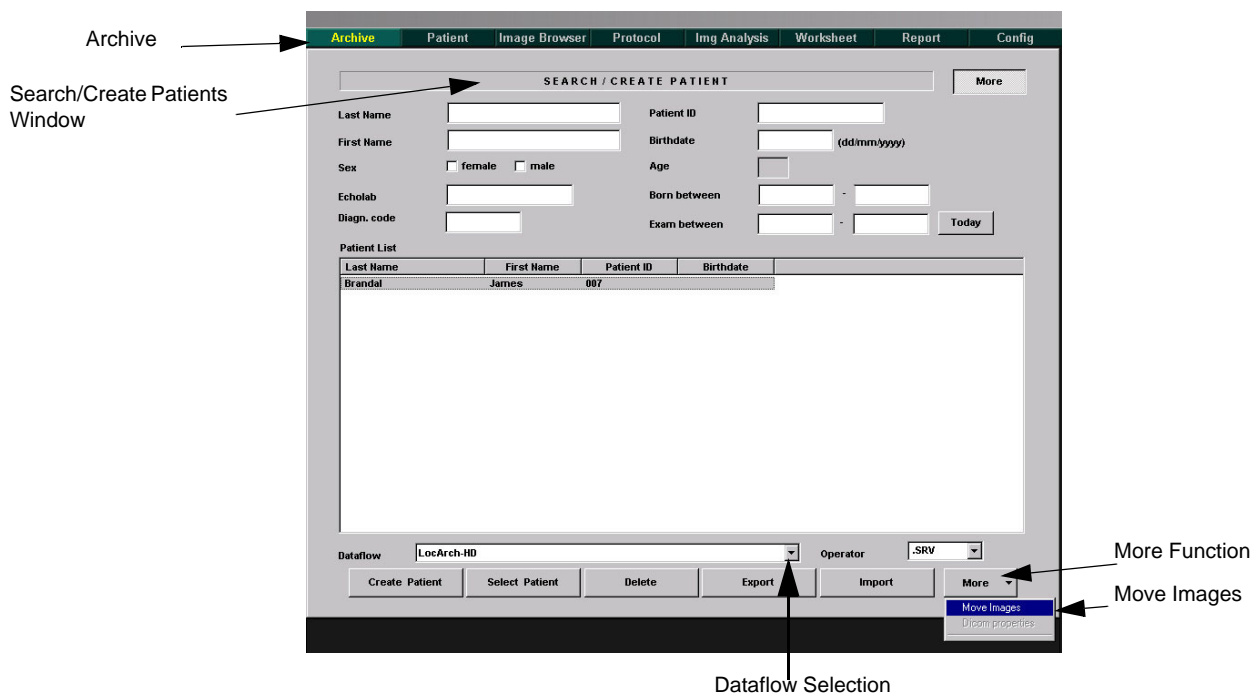
Figure 8-190   Archive-Search/Create Patients Functions selection
The *Search/Create Patient window* is displayed as shown on this page.

3.) Choose the Dataflow where the Images are. See above.
4.) Press **More**. See above.
5.) Press **Move images**. See above.
     The *Move images window* is displayed (see following page).

8-9-4-1 Moving BT'02 images from the local archive to a removable media: (cont'd)

MOVE IMAGES

From Date:

To Date:

Image source:

Image destination:

☐ Keep days together

⦿ Move images

Recalculate

Exams sel.:

Free disk space
Space needed

OK

Cancel

Figure 8-191 The Move images window

6.) If necessary select the actual MO disk in the *Image destination* field.

7.) Check **Keep days together** if images from examinations performed on the same day are to be kept on the same MO disk.

8.) Press **Recalculate**.
The *Free disk space* and *Space Needed* information is updated. Make sure that the space needed does not exceed the space available.

9.) Press **OK**.
A progress indicator is displayed.

10.) After completion, press **OK**.

11.) Remove MO-Disk with moved Images from MO-Drive.

12.) Insert a new MO-Disk.

13.) Repeat step 5 through 11, if archive HD exceed MO Disk media capacity.

14.) Remove MO disk.

8-9-5   Prepare MO Disk for Patient Archive - BT'02 Software

NOTE: *A separate MO disk is required for backup of Patient Database, System Configuration and User Defined Configurations (customer presets).*
This MO disk must be a new disk with no images stored.

1.) Label the MO Disk sequentially.i.e Backup 1A (side A), Backup 1B (side B).

NOTE: *When formatting the MO disk, give it a logical name and make sure to physically label the disk. A labelling convention should be followed so that each MO disk gets a unique label. The maximum numbers of label characters allowed is 11.*
MO Disk Label side B must differ from side A.

2.) If the MO Disks is already formatted and labelled move to section 8-8-7 on page 140.
3.) Insert an MO disk, side A, into the empty MO drive.
4.) Select **Config .**
5.) Select **Connectivity** in the Image and Analysis menu.
6.) Select **Tools** in the Connectivity menu.
7.) In the Label window, type the same name as labelled on the MO disk side A and select **Format.**
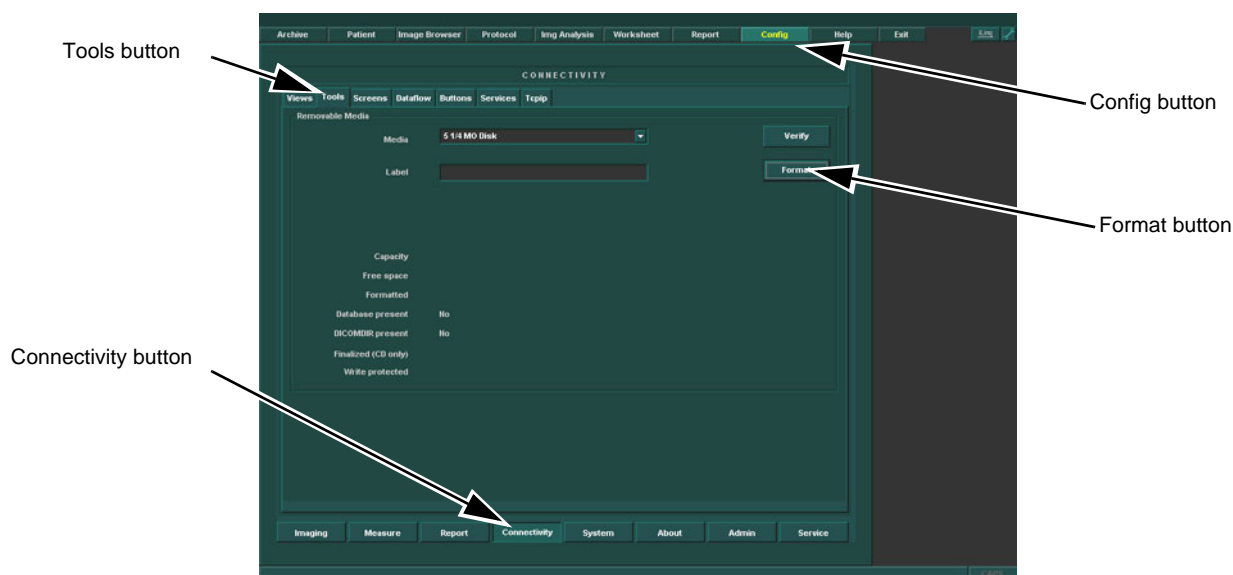
Figure 8-192   Connectivity screen.

8.) "Are you sure you want to format H: and remove all data from the media" appears, select **OK.**
9.) Wait until the information dialogue window appears on screen.
10.) Select **OK** to continue.
11.) Verify the disk formatting status has been updated.
12.) Press **ALT-E.**
13.) Select the *5 1/4 MO Disk*, to eject Disk.
14.) Insert the MO disk, side B and Repeat step 7 to 13.

8-9-6 Backup of Patient Database and User Presets - BT'02 Software

This procedure describes how to backup Patient database and user presets (user defined configuration).

1.) Insert a formatted MO disk prepared for Backup into the MO Drive.

2.) Go to **config** -> **Admin** -> **Backup**.
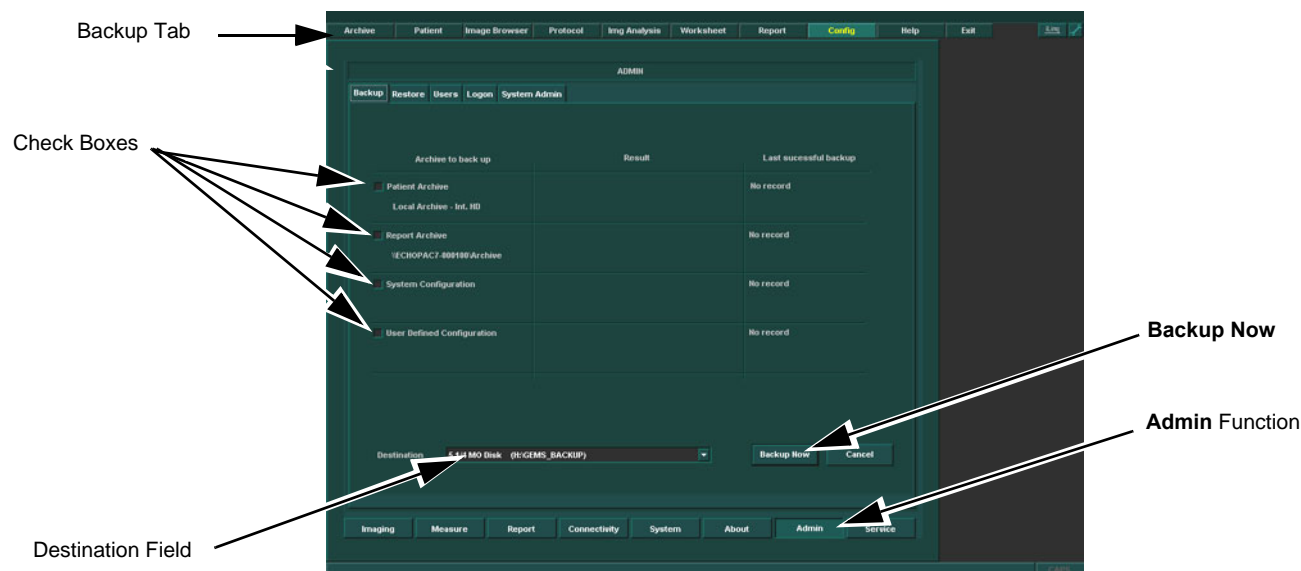
Figure 8-193   The Backup Screen

3.) Select all check boxes.

4.) In the Destination field, select the *MO disk* from the drop-down menu.

5.) Select **Backup now**. A Warning will appear on the screen.

8-9-6 Backup of Patient Database and User Presets - BT'02 Software (cont'd)

.
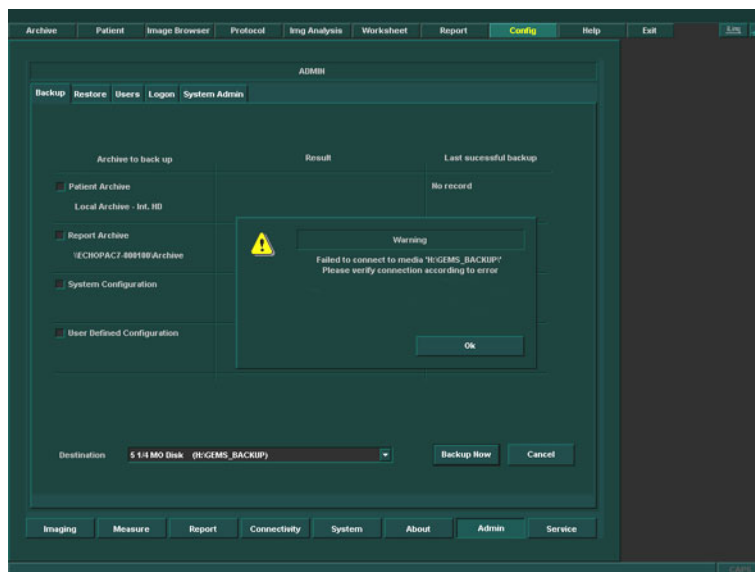
Figure 8-194   Backup Warning

NOTE: *No process indicator will appear on screen. Verify that the **Finished, OK** Status appears in the Result column, and that the date appearing in the Last Successful Backup column is the current date and time. The backup is completed.*

6.)   Remove the Backup MO Disk when the backup is completed.

8-9-7 Record BT'02 Software Option Keys, TCP/IP, IP Port and Service Settings

NOTE: *Service Key is not required and should NOT be installed prior to Upgrade.*

NOTE: *An alternative to the method described here is doing a screen shot of the data to record and then print the screen shot.*

8-9-7-1 Record BT'02 Software Option Keys

1.) Select **Config**.
2.) Select **Admin**.
3.) Select the **SYSTEM ADMIN** tab.
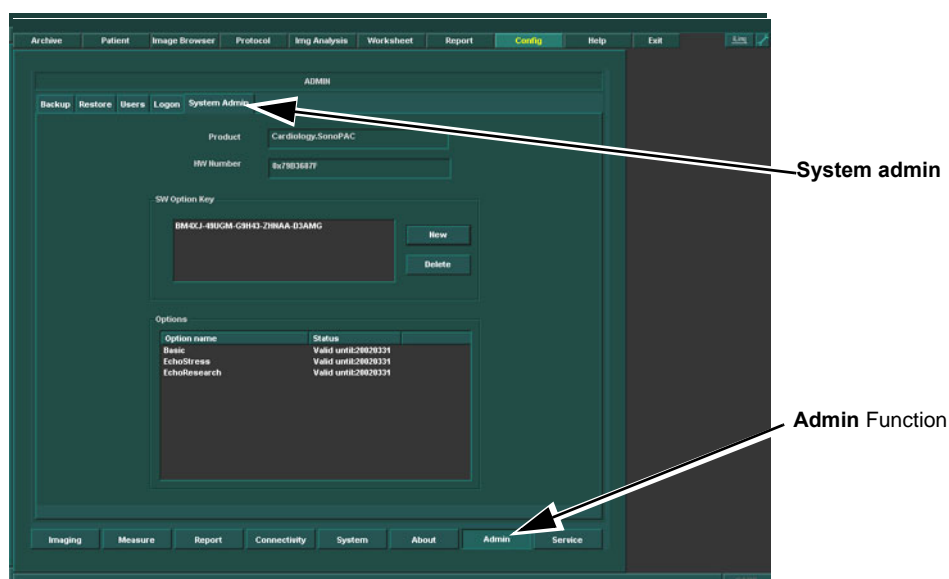
Figure 8-1 System Admin Screen

4.) Record SW Options Key(s) from SW Options key window.

NOTE: *Make sure that the SW keys have been recorded correctly. If the password is incorrect, you will not be able to log on after the software loading has been completed. The key is case sensitive. Hyphens must also be recorded. There may be more than one key.*

Table 8-37   Record SW Option key details

SW Options Key

8-9-7-2   Record TCP/IP Settings - BT'02 Software

1.) Select **Connectivity**.

2.) Select the **TCPIP** tab.

3.) Record all settings below in corresponding Table.
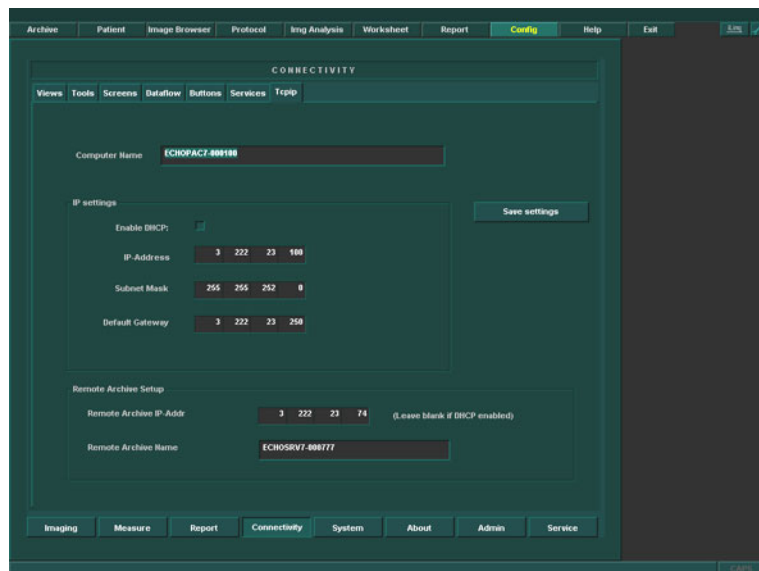
Figure 8-195   TCP/IP Example Settings

Table 8-38   Record TCP/IP settings

Function	Setting
Computer Name	
IP-Address	
Subnet Mask	
Default Gateway	
Remote Archive IP-Address	
Remote Archive Name	

4.) Record the Computer Name serial number which is in the following format: *EchoPAC PC-xxxxxx*, found in the Computer name field.

5.) Verify that the Computer Name listed in table above is the same as on the label attached to the EchoPAC PC Cover.

8-9-7-3   Record Default Dataflow - BT'02 Software

1.) In the **Connectivity** window, select **Dataflow**.
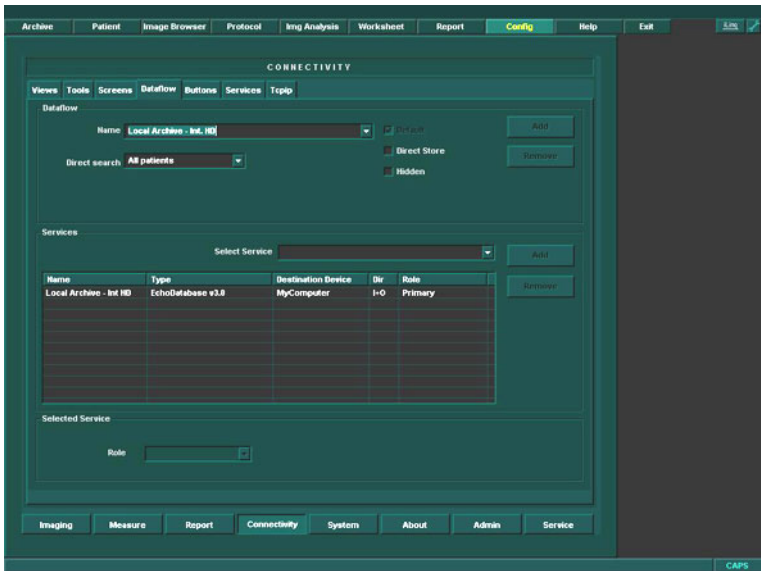
Figure 8-196   Select Dataflow

2.) Verify that Default Dataflow is selected.

3.) Record data in table Table 8-39, "Record Default Dataflow Name," on page 8-170.

Table 8-39   Record Default Dataflow Name

Default Dataflow Name

8-9-7-4   Record Standard Printer IP and Port Settings - BT'02 Software

1.) In the **Connectivity** window, select **Services**.

2.) Select *Printer Setup*.
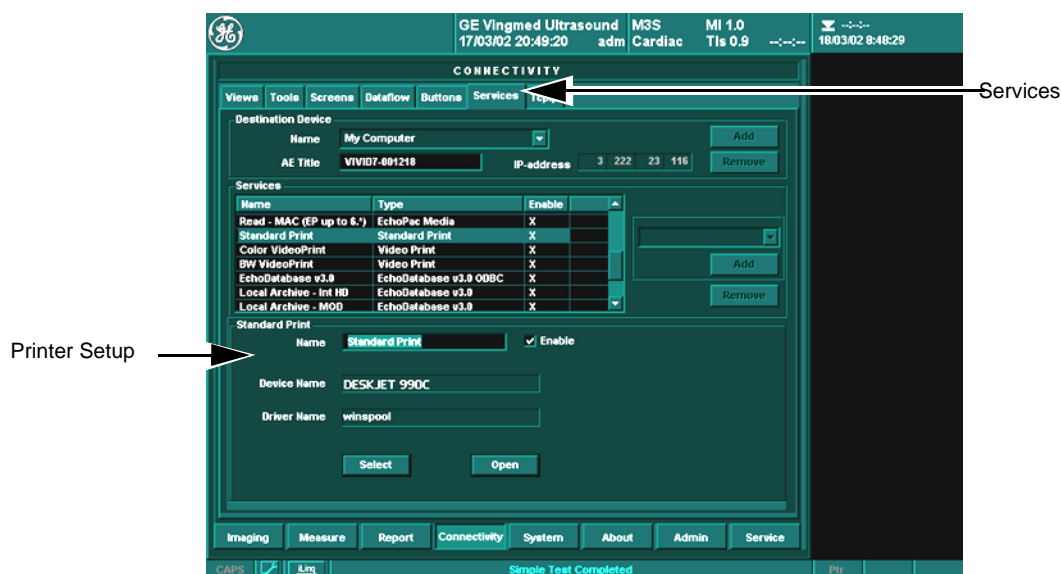
Figure 8-197   Choosing Standard Print

3.) Select **open**.

4.) Select *Printer*.
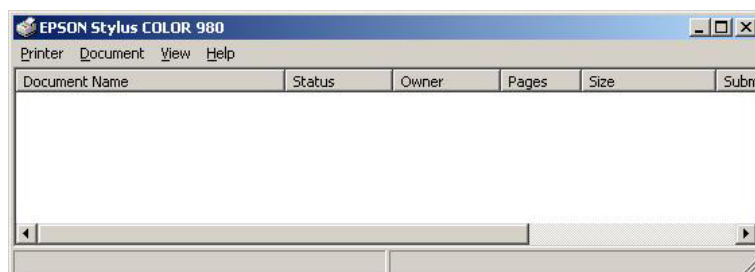
Figure 8-198   Properties

5.) Select *Properties* from the Printer menu.

8-9-7-4   **Record Standard Printer IP and Port Settings - BT'02 Software** (cont'd)

6.) Select *Ports*.
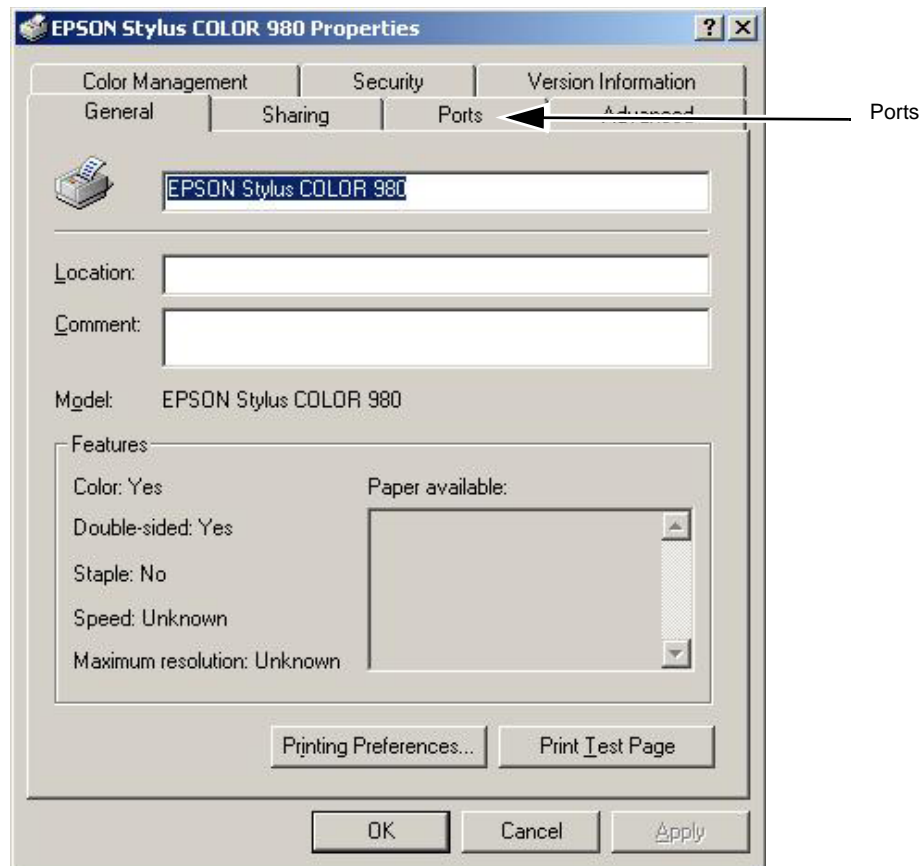
Figure 8-199   Configure Port

7.) Select **Configure Port**.

8-9-7-4   Record Standard Printer IP and Port Settings - BT'02 Software (cont'd)

8.) Select and Record *Printer Name or IP Address* in Table 8-40, "Printer Name/ IP and Port recording table," on page 8-173.

9.) Select and Record *Port Number* in Table 8-40, "Printer Name/ IP and Port recording table," on page 8-173.

Table 8-40   Printer Name/ IP and Port recording table

PRINTER NAME OR IP ADDRESS	PORT NUMBER

10.) Select **Cancel**.

Printer Name or IP Address

Port Number

OK
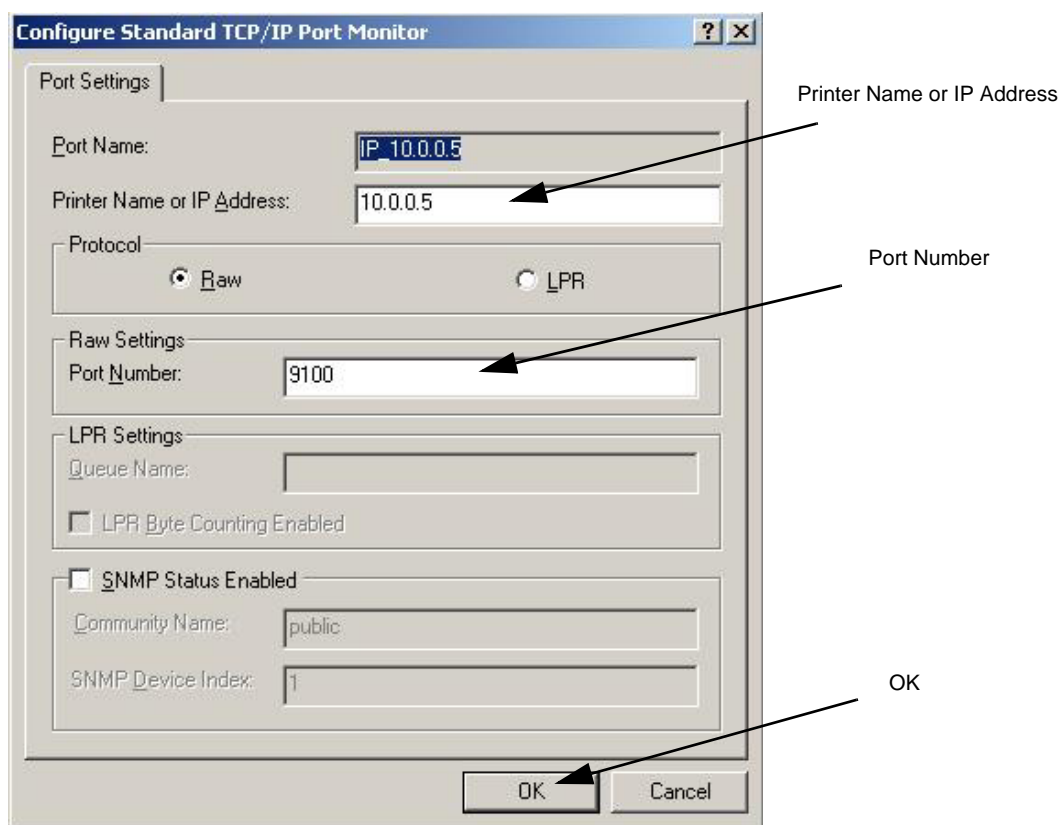
Figure 8-200   Configure Port

11.) Close rest of the Windows by selecting **ok**.

8-9-7-5   Record BT'02 System Software Version

1.) Select the **about** tab.
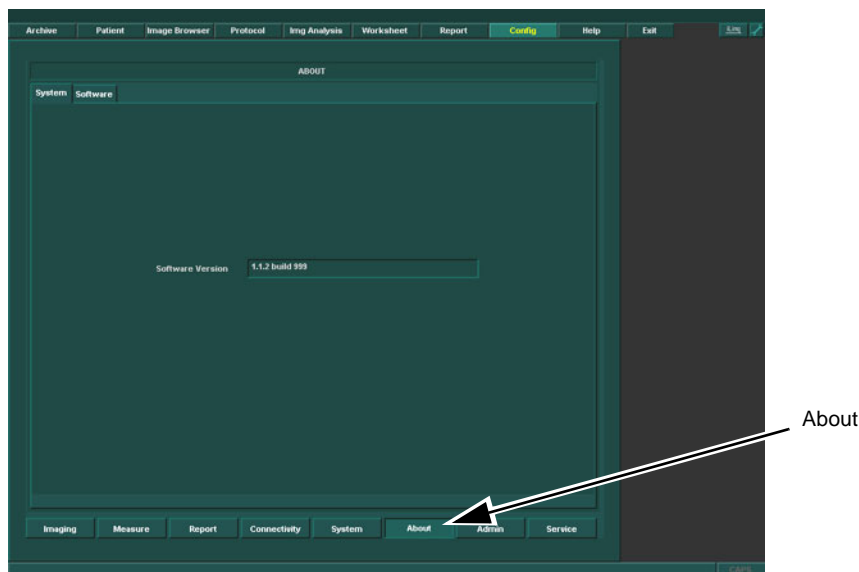
Figure 8-1 About screen

2.) Record System Software version in Table 8-41 "Record System Software version Table" on page 8-174.

Table 8-41   Record System Software version Table

System Software version

8-9-8 EchoPAC PC BT'02 Software Loading

NOTE: *Verify that the SW Option Dongle is connected to one of the ports at the rear of the workstation, before continuing the software loading*

1.) On the EchoPAC PC type DW300 insert the System Software CD with P/N: EP200435.

NOTE: *The DW300 has a light gray chassis with a dark blue cover at the front.*

2.) On the EchoPAC PC type EVO W4000 insert the System Software CD with P\N: EP200458.

NOTE: *The EVO W4000 chassis is black with a gray front that has a black cover.*

3.) On the EchoPAC PC type HPXW4100 insert the System Software CD with P\N: EP200590.

8-9-8-1 Power Down - BT'02 Software

1.) Select the Exit button on the upper menu bar.
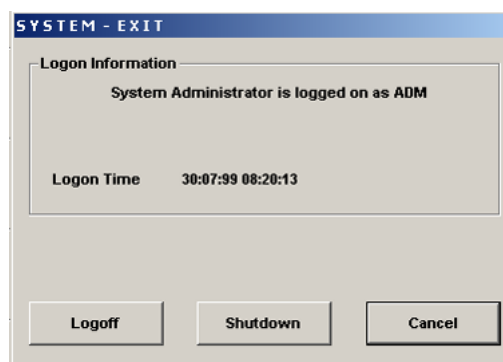
Figure 8-1 System Exit window

2.) Select Shutdown and the Computer shuts down.

3.) When Shutdown is completed, press the Power ON/OFF switch on the Computer Front.

Figure 8-2 Power ON/OFF switch

4.) Power down any MO drives or ZIP drives.

5.) Disconnect the SCSI cable from the rear of the PC.

8-9-8-2   Load the BT'02 System Software

1.) Press the PC Power button. The PC will now boot from the System software loading CD and the System software loading Program starts.

.

Figure 8-201   Steps of startup.

2.) When requested, enter the Workstation Serial Number **EchoPAC PC-*xxxxxx***).

Computer Name
input Field

Figure 8-202   Computer Name entry.

8-9-8-2   Load the BT'02 System Software (cont'd)
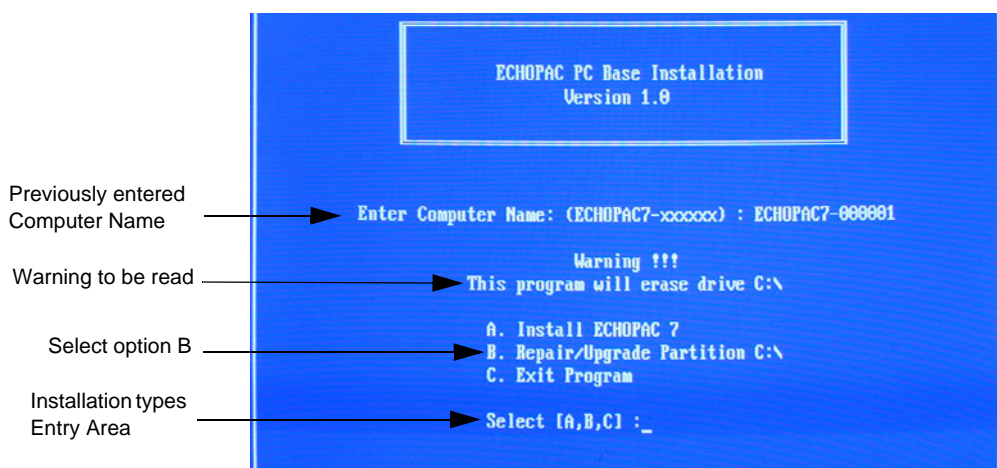
Figure 8-203   Installation Type Selection.

3.) When prompted, select **B** for Repair/Upgrade Partition C:\.

⚠ **NOTICE   It is extremely important that you select B here. System Configuration and User Configurations (customer presets) will be lost unless option B is selected.**

8-9-8-2   Load the BT'02 System Software (cont'd)

Progress Indicator

Statistics

Details
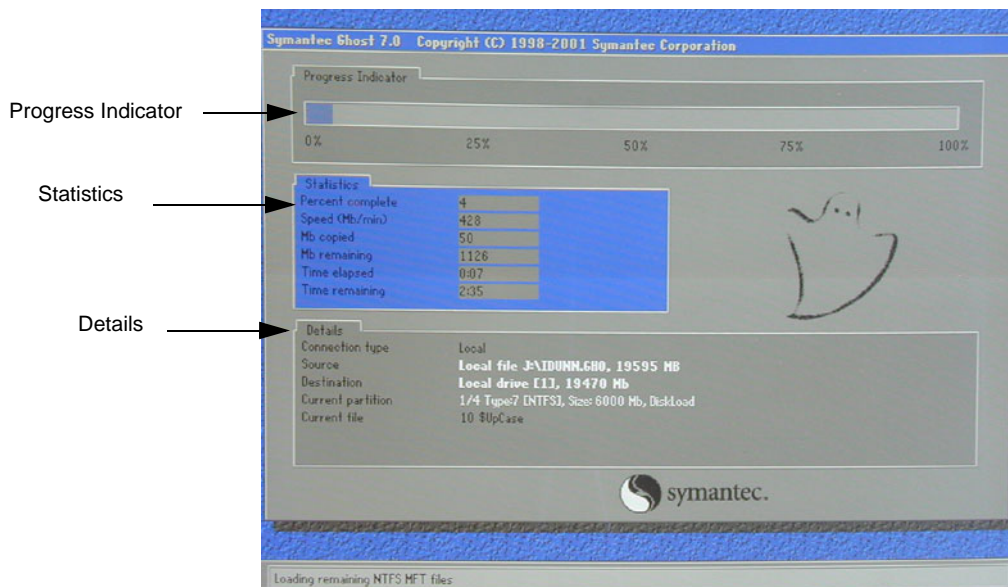
Figure 8-204   System software loading progresses.

4.) Wait for System SW to be installed. (Typical installation time: 10 minutes).
A status bar on the screen indicates the progress

.
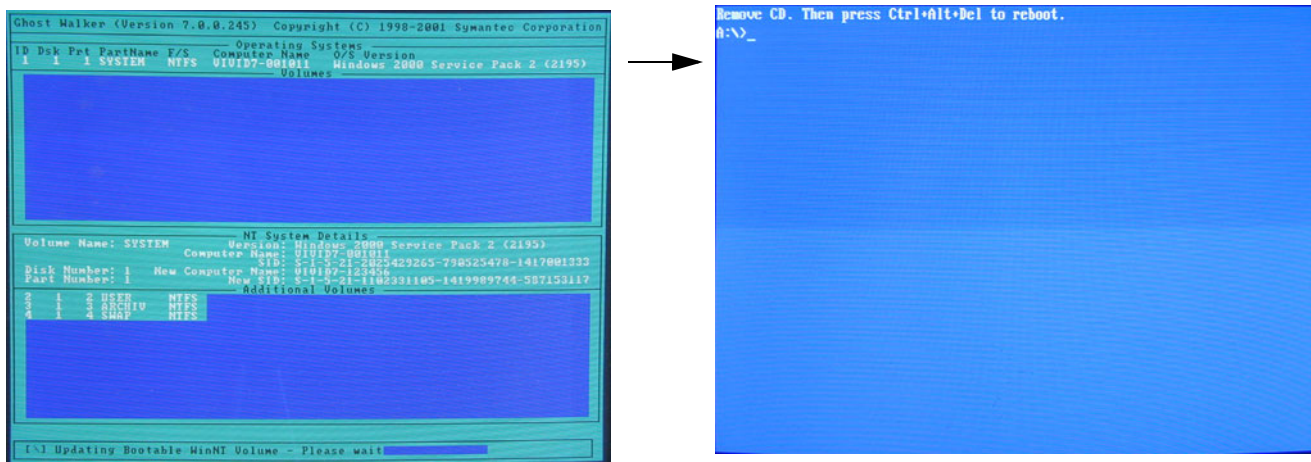
Figure 8-205   System SW completed and command prompt appears.

5.) After the installation you are prompted to remove the CD.

6.) Press the **Eject** button on the CD drive, see , and remove the CD.

8-9-8-2   Load the BT'02 System Software (cont'd)

Eject Button on CD Drive
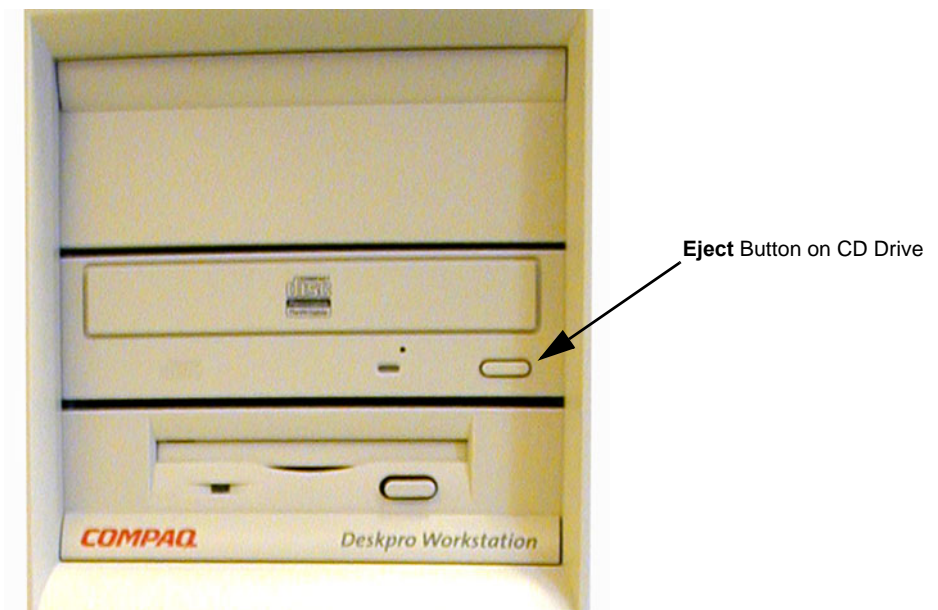
Figure 8-206   Eject Button on CD Drive.

8-9-8-3   **Load the BT'02 Application Software**

1.) Insert the Applications Software CD, Part Number: FC200220.

2.) Press **Ctrl+Alt+Del** on the keyboard to reboot EchoPAC PC. The EchoPAC PC will restart.
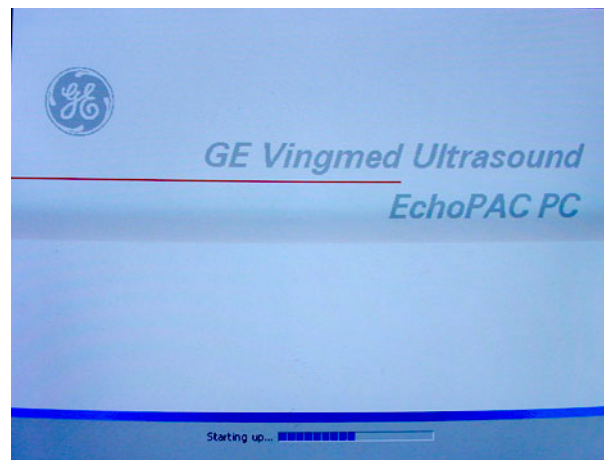
Figure 8-207   Start Picture

3.) When PC is rebooted, select **Install SW ...**
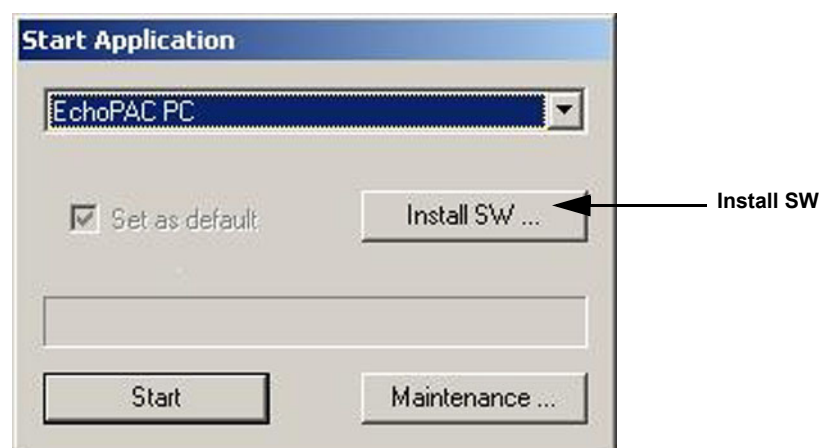
Figure 8-208   Start Application

8-9-8-3   Load the BT'02 Application Software (cont'd)

4.) Select **Ok**.

Figure 8-209   StartLoader

5.) Select **ok**.

Figure 8-210   StartLoader

6.) Press any key to continue.
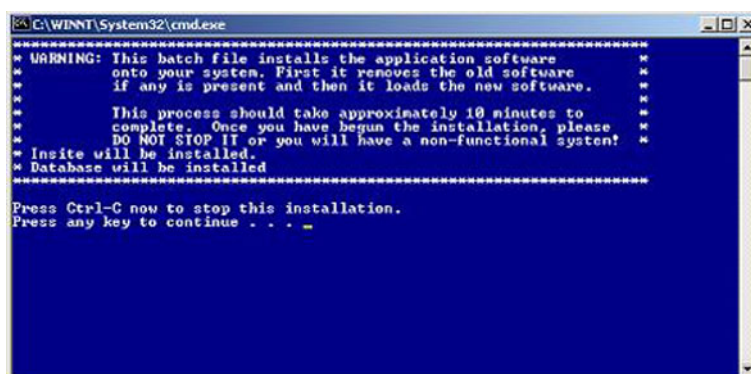
Figure 8-211   Continue the Installation

⚠ **NOTICE**   *Do not interrupt the software loading or close the cmd.exe window during the installation of the Software. This will cause the Installation to fail.*

7.) The system will now be loaded with new Software. When software loading is completed the following will appear on the screen:

8-9-8-3 Load the BT'02 Application Software (cont'd)

Figure 8-212   software loading completed

8.) A status window showing Installation process appears.

9.) An Install box appears.

10.) Select OK to restart the System

11.) Select **Start** on the installation dialog box.

12.) Remove the CD.

13.) The unit will boot up from the installed software. The first startup from new software may be slightly slower than a normal startup.

14.) Verify a similar boot sequence as shown in .
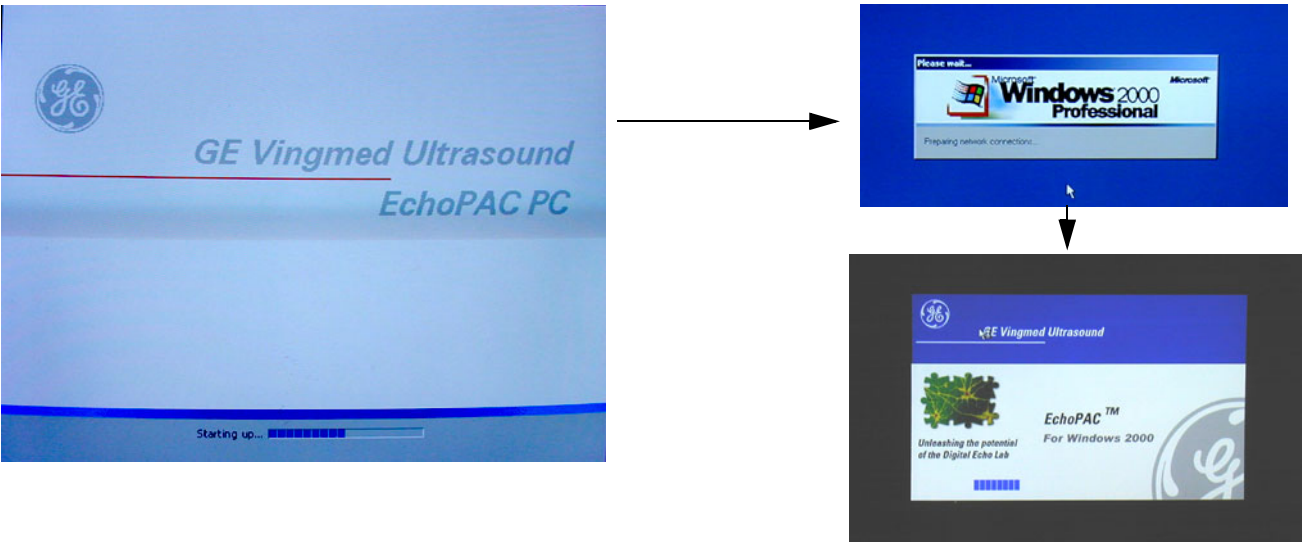
Figure 8-213   Normal Start Up process during clean install

8-9-8-4   System Log ON - BT'02 Software

1.) Select **Adm** on the Operator drop-down menu.
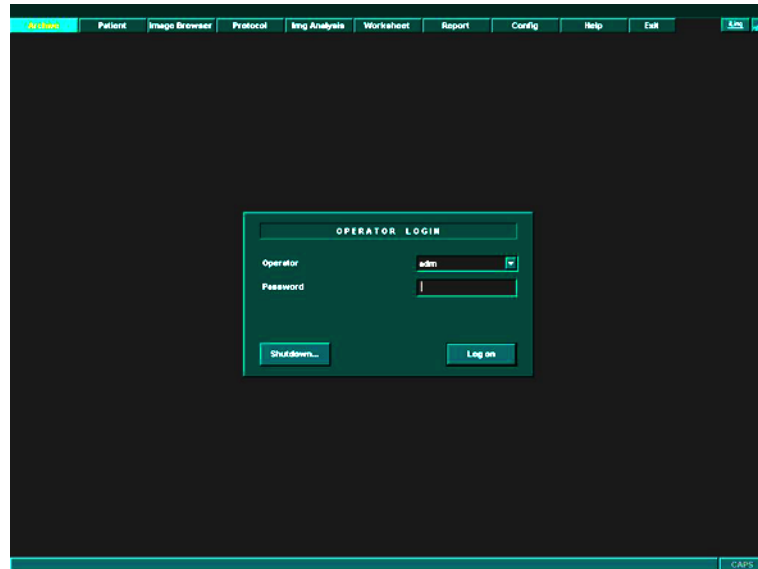
Figure 8-214   Log ON Dialog

2.) Select **Log on**.

8-9-8-5   Reconnect the MO drive(s)

1.) Power down the EchoPAC PC Turnkey .

2.) Connect a 5.25" MO drive to the EchoPAC PC Turnkey .

3.) Power up the EchoPAC PC Turnkey .

4.) If a 3.5 MO is present:

   a.) Power down the workstation.

   b.) Connect the 3.5 MO drive to the EchoPAC PC Turnkey .

   c.) Boot the workstation.

   d.) Verify that the MO drives ar detected as 3.5" MO and 5.25" MO.

8-9-9   BT'02 Verifications

8-9-9-1   Verify BT'02 Software Option Key Settings

1.) Select **Config**.

2.) From the bottom of the configuration page select the **Admin** tab.

3.) From the lower part of the window, select the **System Admin** tab.
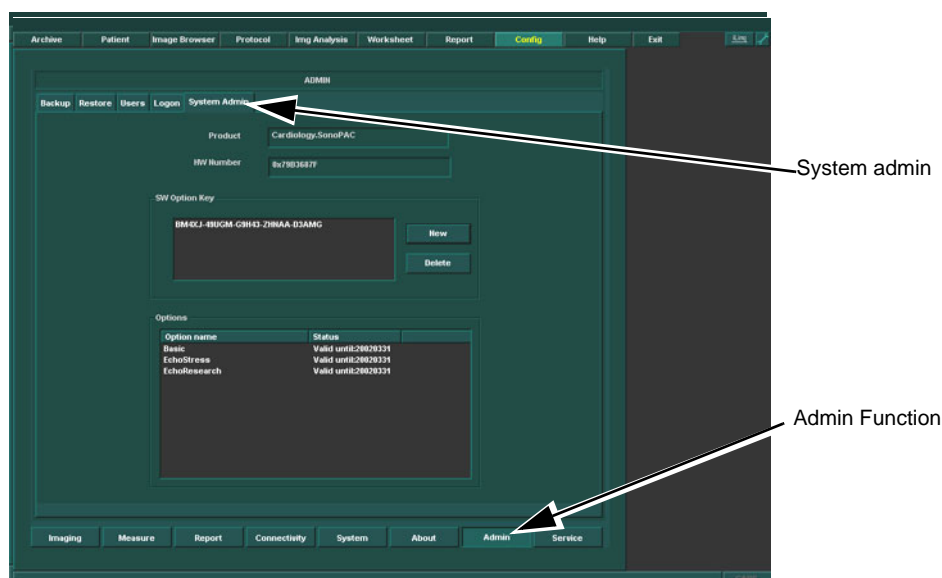
Figure 8-1 the Admin Dialog with Option key and Options

4.) Verify recorded data in Table 8-37, "Record SW Option key details," on page 8-168, and verify that they match the data shown above.

8-9-9-2   **Verify Default Dataflow - BT'02 Software**

1.) In **Connectivity** window, select **Dataflow**.
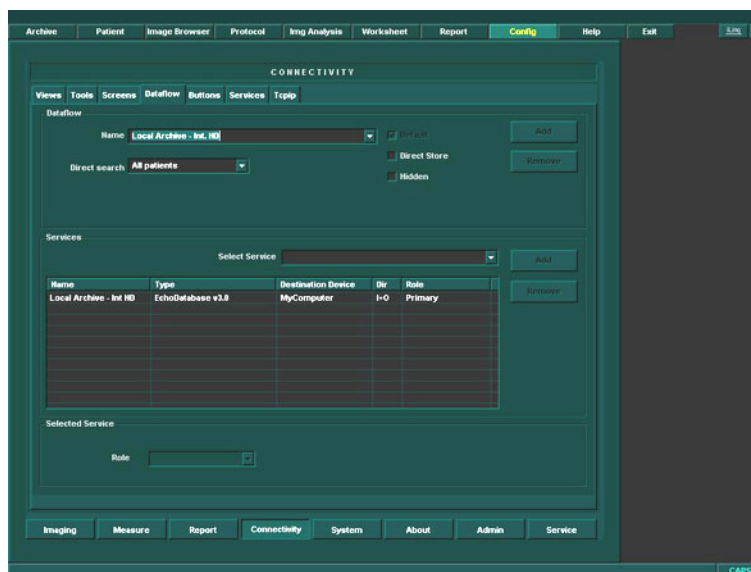
Figure 8-215   Default Dataflow

2.) Verify that Default Dataflow matches what was recorded in Table 8-39, "Record Default Dataflow Name," on page 8-170.

8-9-9-3   **Verify BT'02 System Software Version**

1.) Select **Config**.

2.) Select **About** tab.

3.) Verify that the software versions is the same as what was recorded in Table 8-41 "Record System Software version Table" on page 8-174.

Example: If applications software v2.3.1 has been installed, the following will be displayed when verified:
2.3.1+ P823980.
The text P823980 indicates that patch number P823980 has been installed.

8-9-9-4   **Verify BT'02 Standard Printer IP and Port Settings**

1.)   Select **Config**.

2.)   Select **Connectivity**.

3.)   Select **Services**.

4.)   Scroll down to *Standard Print*.

5.)   Select **Standard Print**.

6.)   Select **Open**.
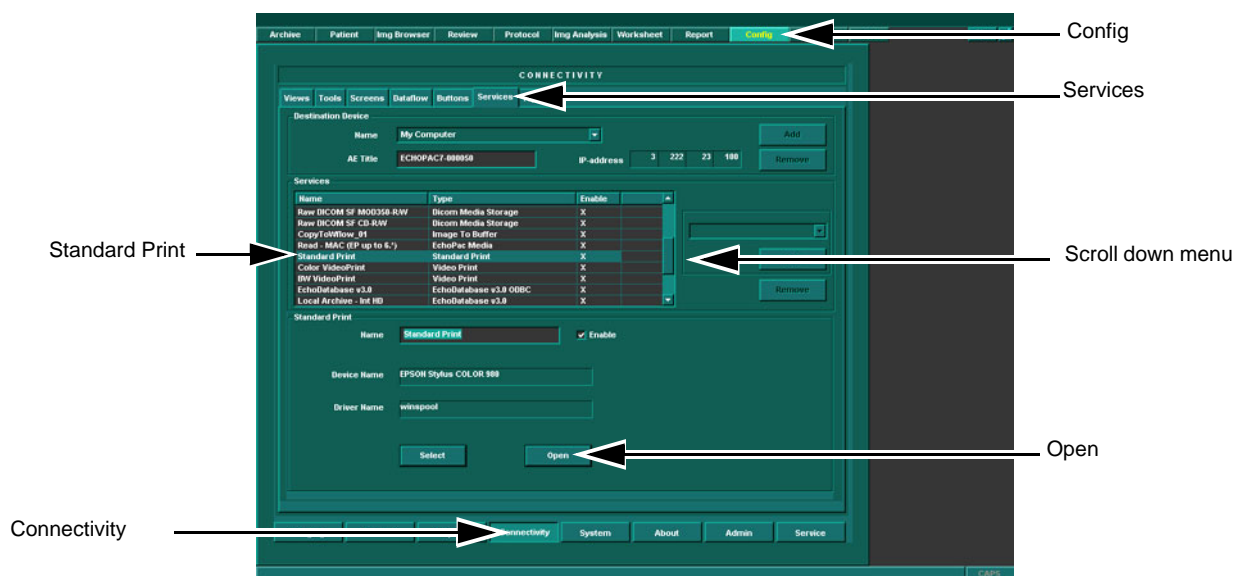
Figure 8-216   Choosing Standard Print

7.)   Select **Printer**.

8.)   Select **Properties**.

8-9-9-4 **Verify BT'02 Standard Printer IP and Port Settings** (cont'd)
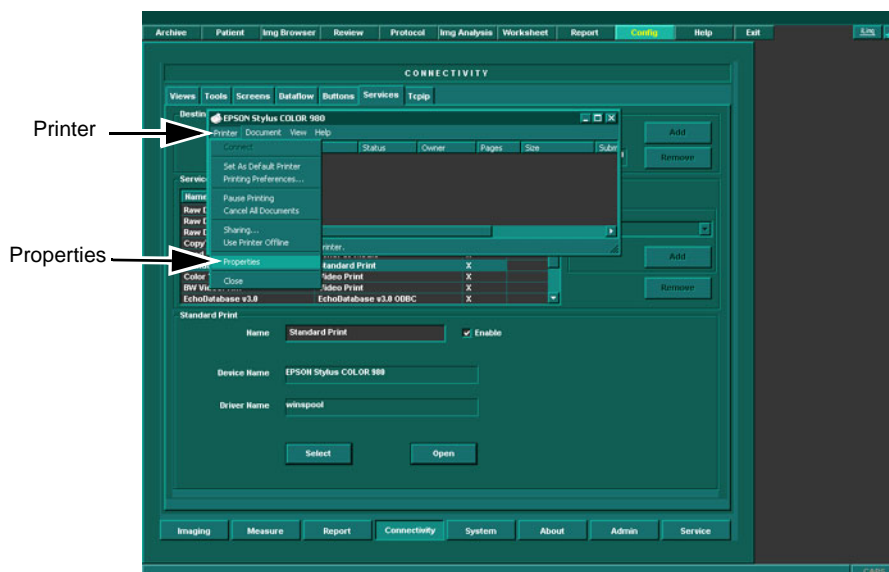
Figure 8-217   Properties

9.) Select **Standard TCP\IP Port**.

10.) Select **Configure Port**.
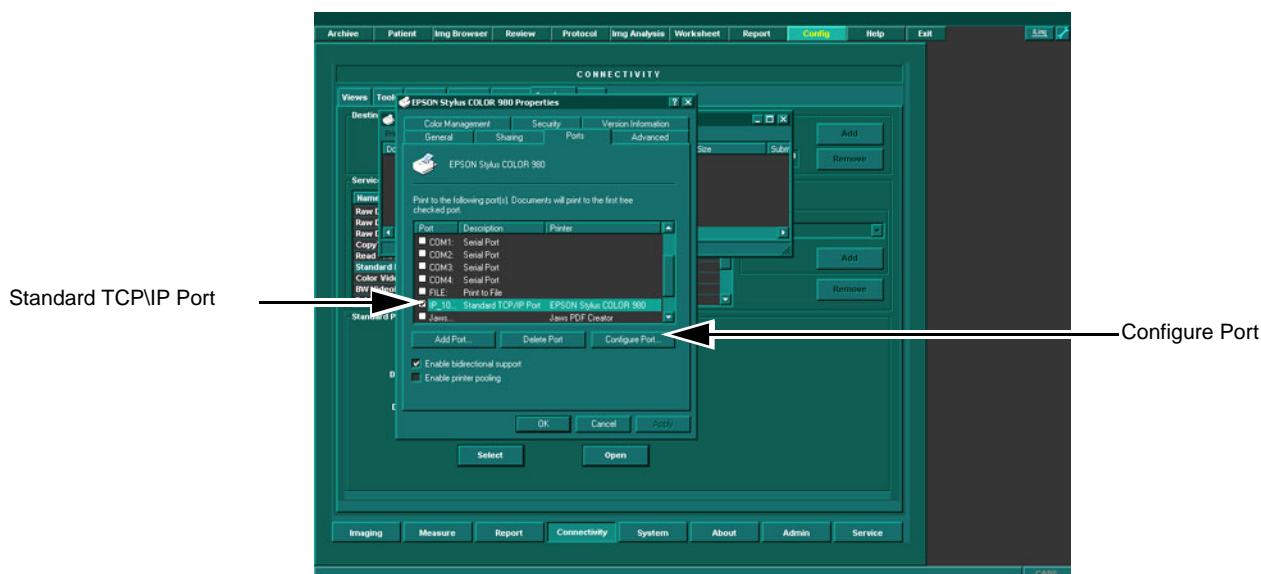
Figure 8-218   Configure Port

8-9-9-4   Verify BT'02 Standard Printer IP and Port Settings (cont'd)

11.) Verify *Printer Name or IP Address* as recorded in Table 8-40, "Printer Name/ IP and Port recording table," on page 8-173.

12.) Select *Raw.*

13.) Verify *Port Number* as recorded in Table 8-40, "Printer Name/ IP and Port recording table," on page 8-173.

14.) Select **Ok**.
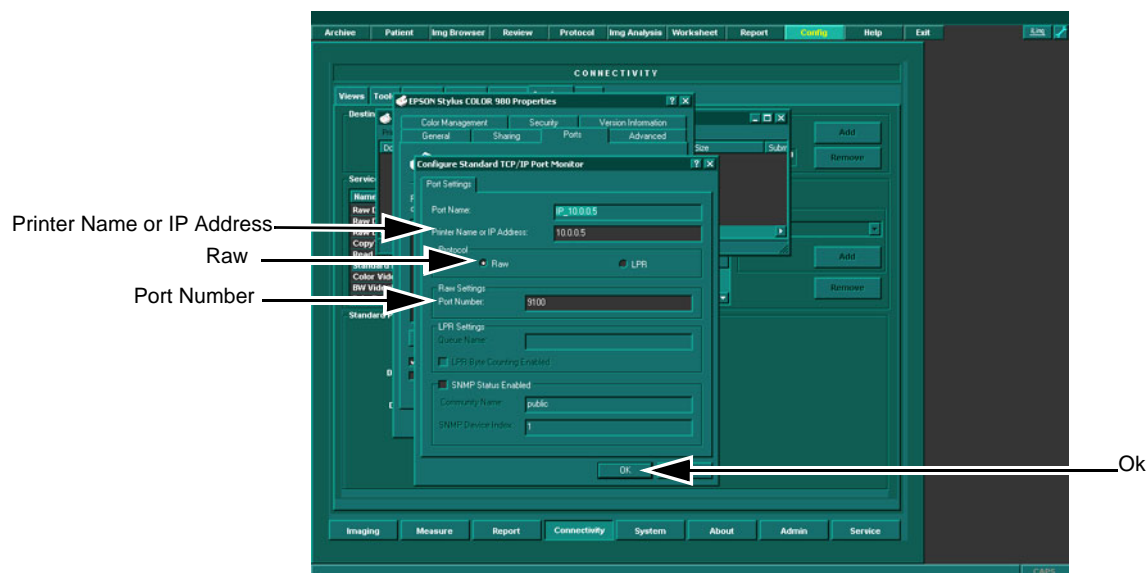
Figure 8-219   Configure Port

15.) Close rest of the Windows by selecting **Ok**.

16.) Reboot the EchoPAC PC workstation.

8-9-10   Restore - BT'02 Software

8-9-10-1   Restore BT'02 TCP/IP Settings

1.) From the top of the connectivity tab, select the **TCPIP** tab.
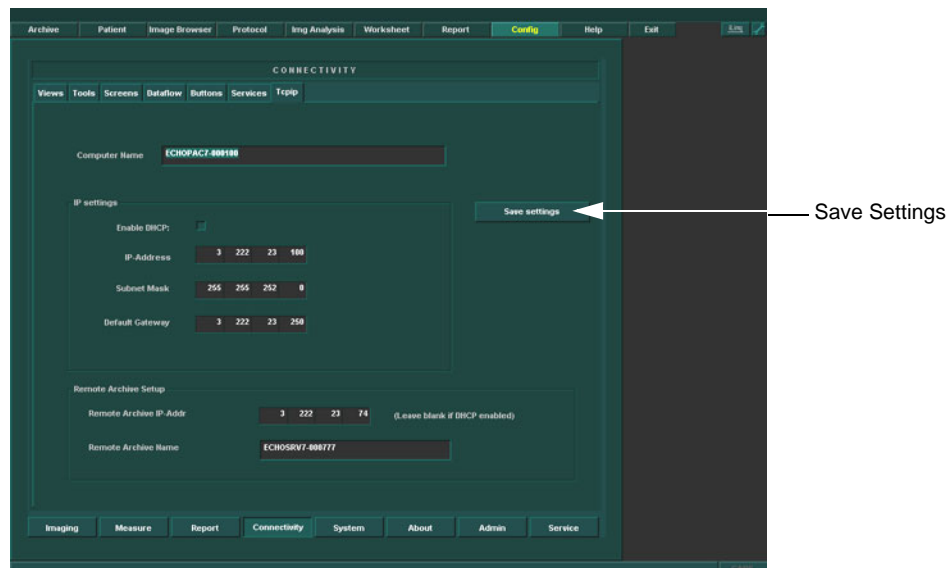
Figure 8-220   TCP/IP _Example_ Settings

2.) Restore the following data as recorded in

    a.) Computer Name

    b.) IP- Address

    c.) Subnet Mask

    d.) Default Gateway

    e.) Remote Archive IP-Address

    f.) Remote Archive Name

3.) If the data doesn't match the recordings then enter the recordings.

4.) Select Save Settings

5.) A Warning window will appear, select OK.

8-9-11   Verification and functional checks

Perform .

Section 8-10
Workstation replacement procedure

8-10-1   Preparations

NOTE: *The status of the PC to be replaced may be such that the preparations showed here may apply*
              or not. Perform the steps if possible.

1.) Dependant on software version, perform all the preparations for a software load, as described in:
   - Section 8-3 "Software reloading procedure - software v108.x and higher" on page 8-4
   - Section 8-4 "BT'08 Software Reloading Procedure" on page 8-38
   - Section 8-5 "BT'06 Software Reloading Procedure" on page 8-74
   - Section 8-6 "BT'05 Software Reloading Procedure" on page 8-94
   - Section 8-7 "BT'04 Software Reloading Procedure" on page 8-114
   - Section 8-8 "BT'03 Software Reloading Procedure" on page 8-134
   - Section 8-9 "BT'02 Software Reloading Procedure" on page 8-161

2.) Shut Down the PC, see 4-2-2 "Power OFF" on page 4-4 for description.

8-10-2   Workstation removal

1.) Disconnect the power cable coming from the UPS (or mains power outlet).

2.) Disconnect all signal cabling from the rear of the PC.

3.) Remove the SW option dongle.

4.) Remove the PC.

8-10-2 Workstation removal (cont'd)

- If the workstation is equipped with an extra external hard disk drive (some COMPAQ DW300 and some COMPAQ W4000 only), the special internal SCSI cable and the connector panel, must be moved to the new PC (COMPAQ DW300 or COMPAQ W4000 only). See the "EchoPAC PC External Hard Disk Drive Installation", Direction Number: EP294502 for details.

- If the workstation you're replacing has an internal MO Drive (HP xw4200/xw4300 and some replaced workstations), you must move the MO Drive over to the new workstation. See Section 8-17 "5,25" Internal MO Drive (MOD) Replacement Procedure" on page 8-212 for instructions about how to remove the MO drive from old PC and install it in the new PC.

8-10-3   Workstation installation

1.) Install the new PC.

2.) Insert the SW Option dongle.

3.) Connect all signal cables at the rear of the PC, see 3-6-2-6 "Connect the Signal Cables to the workstation" on page 3-28.

4.) Connect the Power cable to the UPS, if present, or to the wall outlet.

5.) Turn ON the PC as described in 4-2-1 "Power On/Boot Up" on page 4-2.

6.) Do a clean software loading, and set Computer-ID similar to the replaced PC.

7.) Follow the respective Software Loading Procedure, see:
- Section 8-3 "Software reloading procedure - software v108.x and higher" on page 8-4
- Section 8-4 "BT'08 Software Reloading Procedure" on page 8-38
- Section 8-5 "BT'06 Software Reloading Procedure" on page 8-74.
- Section 8-7 "BT'04 Software Reloading Procedure" on page 8-114.
- Section 8-8 "BT'03 Software Reloading Procedure" on page 8-134
- Section 8-9 "BT'02 Software Reloading Procedure" on page 8-161

8.) If EchoPAC PC is connected to a network, localize the scanner having a dataflow connected to it.

8-10-4   Verification and functional checks

1.) Perform Section 8-26 "Verification - Functional checks" on page 8-222

⚠ **NOTICE** Verify a connection to the EchoPAC PC archive, by logging on to the EchoPAC PC dataflow on the scanner.

Section 8-11
SCSI Card replacement procedure

8-11-1   Preparations

     1.) Shut Down and turn off the workstation and all its parts.

     2.) Disconnect the AC Power cable from the PC.

     3.) Remove the cover from the PC.

8-11-2   Removing the SCSI Card

⚠ **WARNING** *DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:*

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

     1.) Disconnect the cables connected to the SCSI Card.

     2.) Loosen the fastening screw that locks it to the frame

     3.) Gently remove the card from its socket.

8-11-3   Installing the SCSI Card

⚠ **WARNING** *DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:*

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

     1.) Gently insert the card into its socket.

     2.) Connect the cables

     3.) Install the cover on the PC.

     4.) Connect AC Mains Power to the PC

8-11-4   Verification and functional checks

     1.) Perform

Section 8-12
Monitor Replacement Procedures

NOTE: *This procedure is valid for both LCD and CRT monitors, but only the CRT monitors are shown in the illustrations.*

8-12-1   Overview

The following monitor related procedures are incuded:

8-12-2   Preparations

Power down the workstation as described in 4-2-2 "Power OFF" on page 4-4.

8-12-3   Monitor Removal

⚠️ **WARNING**   *AT LEAST TWO PERSONS ARE NEEDED WHEN LIFTING THE CRT MONITOR. ANYTHING OVER 16 KG (35 LBS) REQUIRES TWO PEOPLE.*

1.) Switch OFF the monitor(s).
2.) Disconnect the monitor power cable from the power source.
3.) Disconnect the monitor signal cable from the workstation.
4.) Remove the monitor.
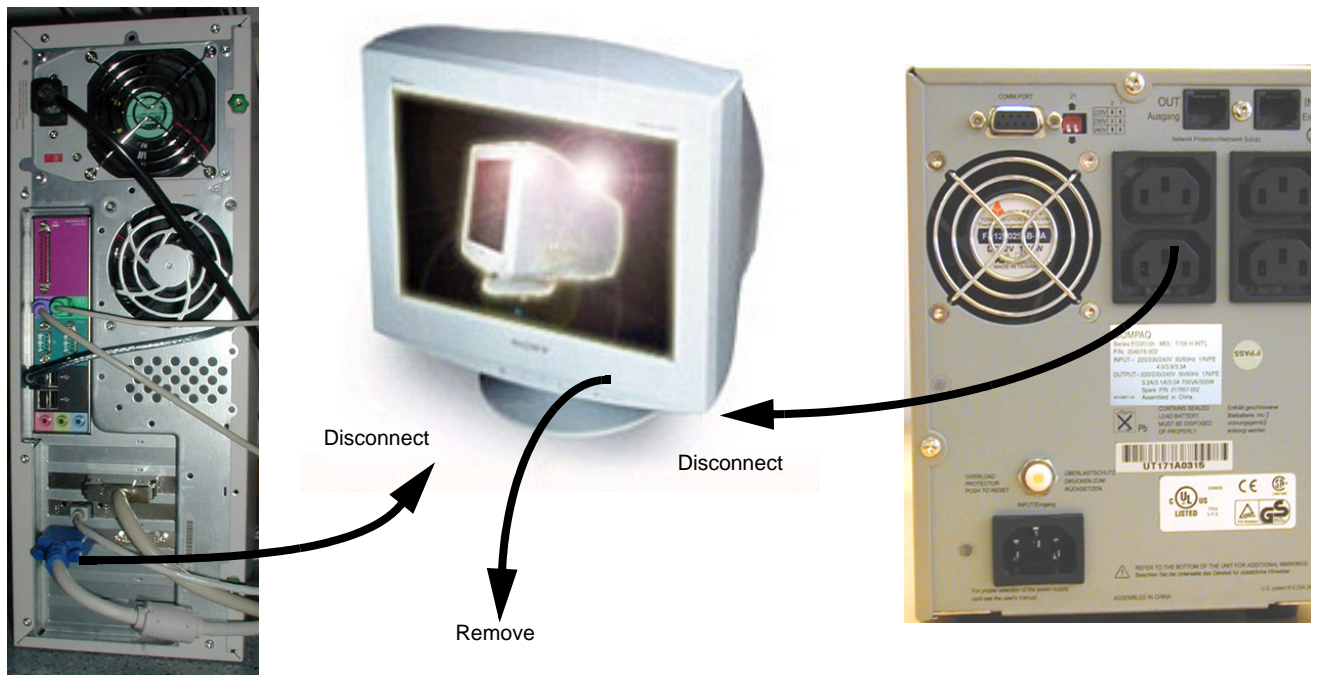
Figure 8-221   Monitor disconnection and removal (CRT monitor shown in illustration)

8-12-4   Monitor installation

1.) Position new monitor(s) where old one was positioned.

2.) Connect the power cable(s) from the monitor(s) to mains power.

3.) Connect the signal cable(s) to the workstation.

- A CRT monitor connects to the VGA output on the PC.

- If one LCD screen is used: Use the DVI cable and connector.

- If two LCD screens are used (supported by software v5.0 and newer):
  If one DVI and one VGA connector are available:

  * Connect the lefthand monitor to the DVI connector and the righthand monitor to the VGA connector.

  * On newer graphic adapters with two DVI outlets, use DVI for both monitors.

4.) Switch ON the monitor(s).

5.) Switch ON the workstation.
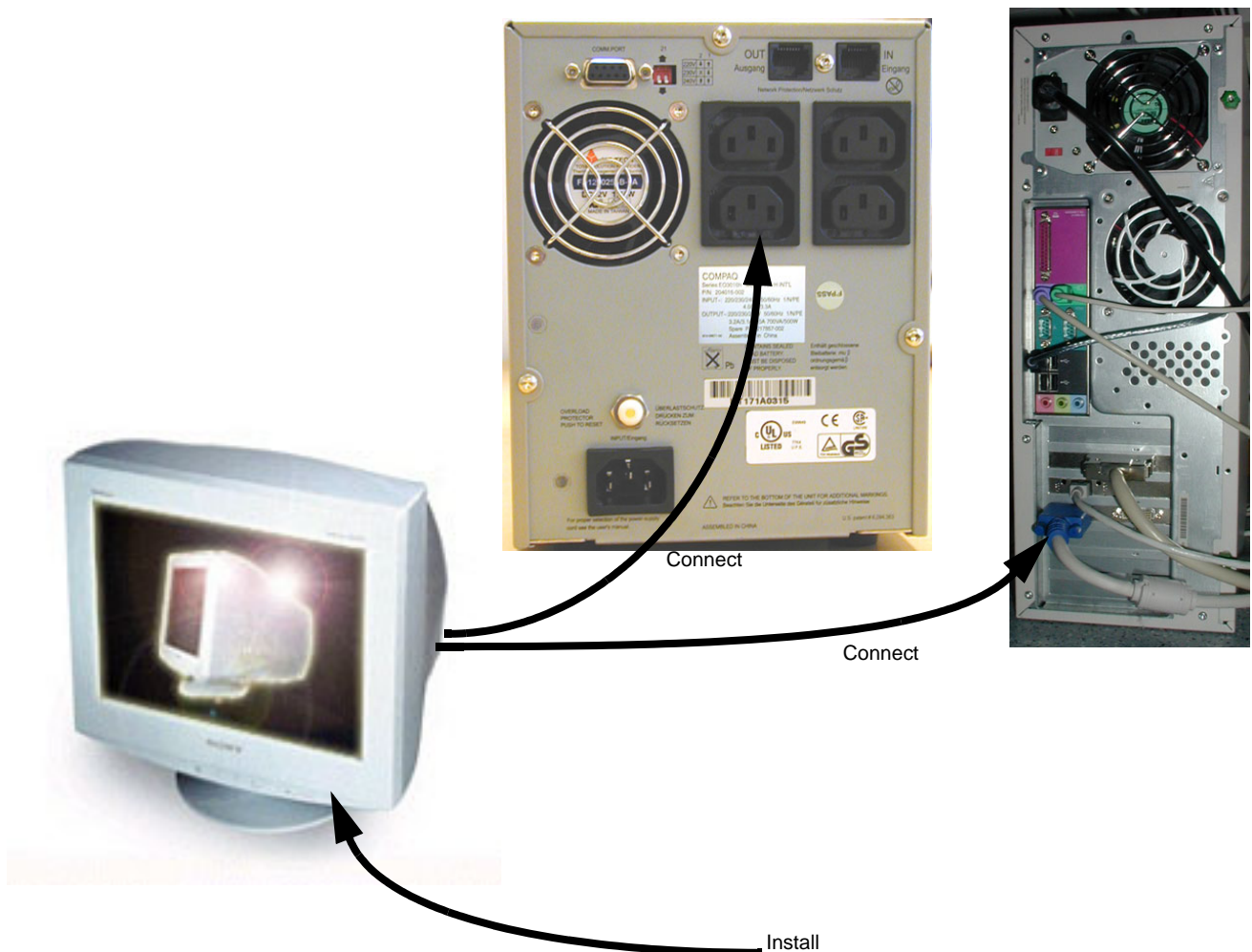
Figure 8-222   Monitor connection and installation (CRT monitor shown in illustration)

8-12-5 Adjusting the monitors

For monitor adjustment instructions, see:

- Eizo FlexScan S2231WSE and BT09 or BT'11 software (v108.1.0 and higher):
  8-12-6-1 "Adjusting Eizo FlexScan S2231WSE - software v108.1.0 and higher" on page 8-197.
- Eizo FlexScan S2231WSE and BT'08 and earlier (software versions v7.x.x and lower):
  8-12-6-2 "Adjusting Eizo FlexScan S2231WSE - software v7.x.x and lower" on page 8-199.
- For adjustment for other monitors on BT'08 and older software, please refer to: 3-7-2-9 "Adjust Monitor Settings" on page 3-53.

8-12-6 Adjusting Eizo FlexScan S2231WSE monitor for EchoPAC PC

8-12-6-1 Adjusting Eizo FlexScan S2231WSE - software v108.1.0 and higher

1.) Start up EchoPAC PC.
2.) Log on as **ADM**.
3.) In EchoPAC PC, select the **Config** menu.
4.) Select **Service**.
5.) Select **Advanced Monitor Settings**.
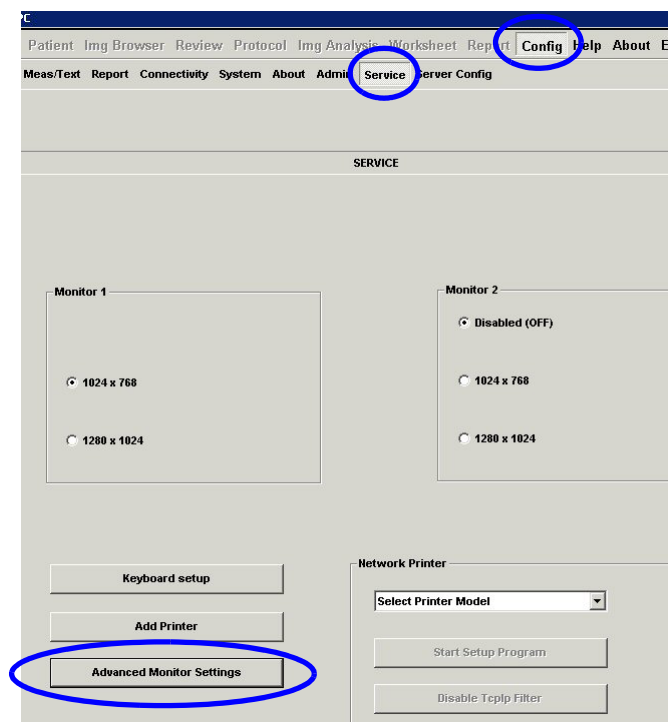
Figure 8-223   Config Services Screen

8-12-6-1   Adjusting Eizo FlexScan S2231WSE - software v108.1.0 and higher (cont'd)
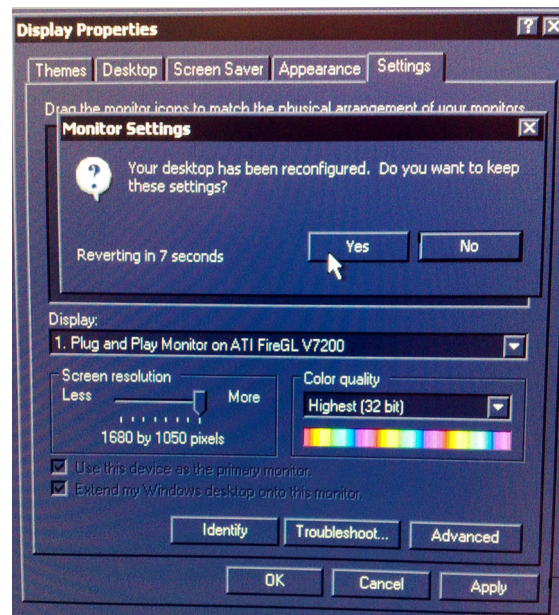
Figure 8-224   Display Properties Setup Dialog

6.) Drag the **Screen resolution** slider until **1680 by 1050 pixels** is displayed.

7.) Select **Apply**.

8.) Select **Yes** in the popup window.

9.) Select **OK**.

NOTE: *Some menus may be missing at this point.*

10.)Restart the EchoPAC PC before you continue.

8-12-6-2   **Adjusting Eizo FlexScan S2231WSE - software v7.x.x and lower**

1.) Start up EchoPAC PC.

2.) At the bottom front of the monitor, locate the button that looks like a filled "o" and press once.

Figure 8-225   Lower Edge of Monitor

The Screen Manager menu will now appear:

3.) Press the right-arrow (**>**) three times until **<Others>** is highlighted.

4.) Press "**o**" (**Screen size**) to activate the **Screen Size** menu.
The **<Screen Size>** menu is automatically highlighted.

5.) Press "**o**" once to activate the Screen Size Menu.

6.) Press down-arrow twice to select **<Normal>**.

7.) Press "**o**" once to return to **<Others>** on the Screen Manager.

8.) Press right-arrow key (**>**) nine times until **<Return>** is highlighted.

9.) Press "**o**" once to return to the Screen Manager main meny.

10.)Press right-arrow three times until **<Return>** is highlighted.

11.)Press "**o**" once.

12.)The monitor should now be set up to display the EchoPAC PC default display size correctly: 1280 by 1024 pixels, leaving a black border as intended on either side of the image.

8-12-6-3   **Setup/Verify Power Save Mode**

1.) In EchoPAC PC, select the **Config** menu.

2.) Select **Service**.

3.) Select **Advanced Monitor Settings**.
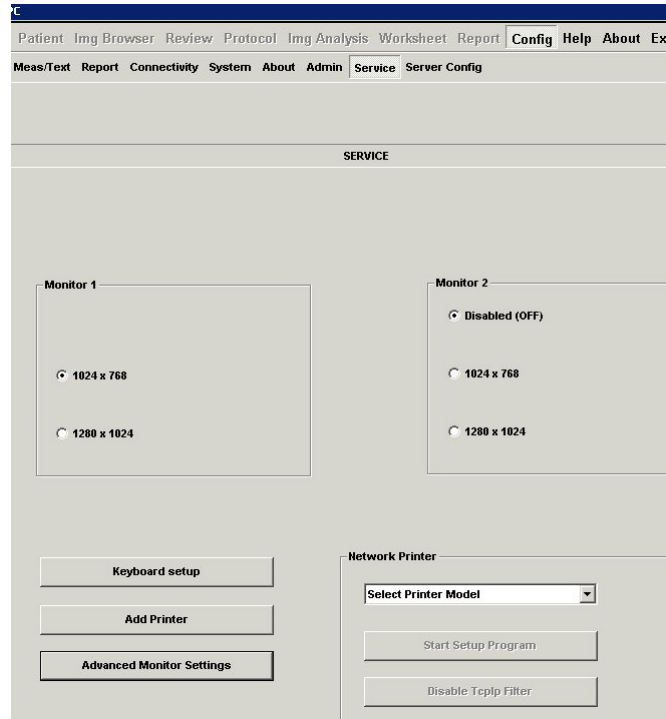
Figure 8-226   Config Services Screen

4.) Select **Screen Saver.**

8-12-6-3   Setup/Verify Power Save Mode (cont'd)

    5.) Select **Power**
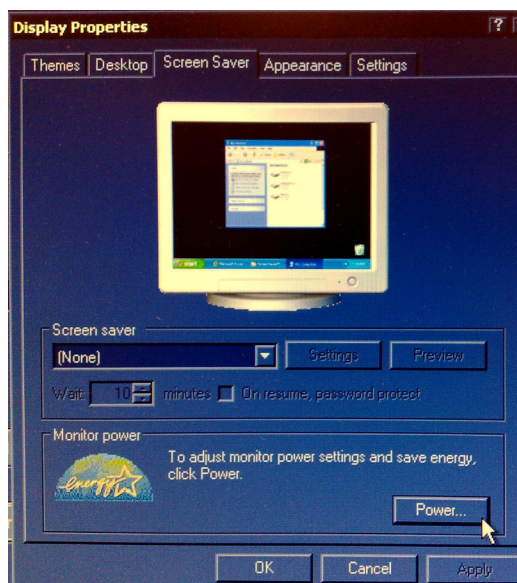
Figure 8-227   Display Properties

The following menu will appear:
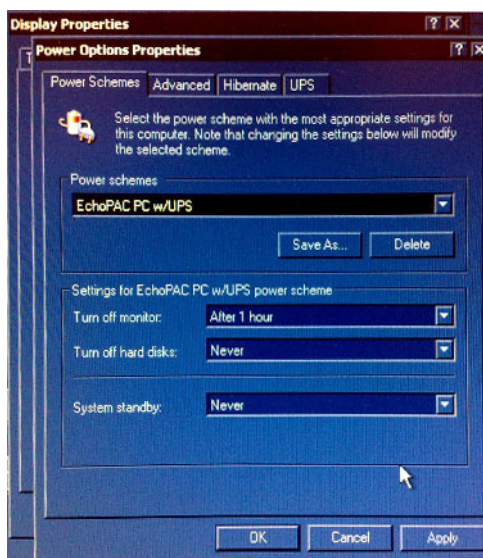
Figure 8-228   Power Options Properties

    6.) Verify that "Turn off monitor" is set to **After 1 hour**.

    7.) Select **Apply** then **OK**.

8-12-7   Verification and functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222.

Section 8-13
Connect two monitors - one digital and one VGA output

New LCD monitors for EchoPAC PC Turnkey are shipped with one cable for connection to the workstation's digital monitor connector and one for the VGA connector.

1.) Power down the EchoPAC PC workstation, if not already done.

2.) If not already done, connect the left hand monitor to the digital output (see 1 in the illustration below).

3.) Connect the right hand monitor to the VGA connector (see 2 in the illustration below).
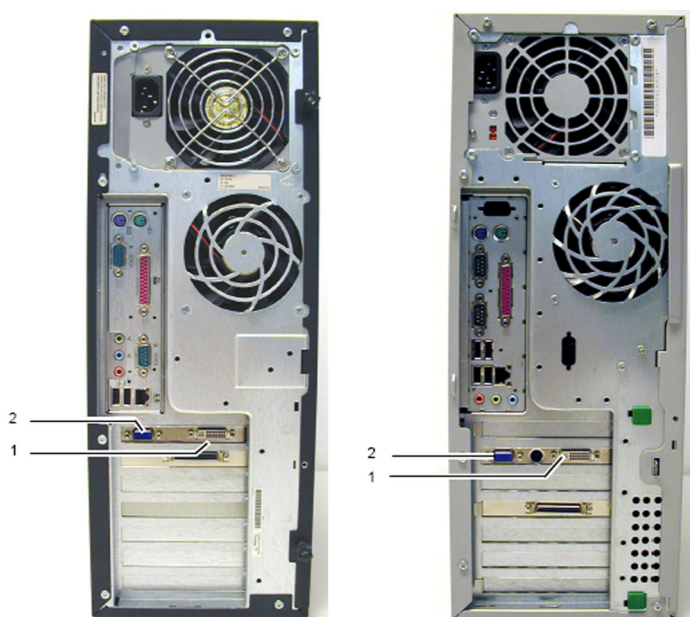
Figure 8-229   Connectors at rear of COMPAQ Evo X4000 (left) and HP xw4100 / xw4200 /xw4300 /xw4400 / xw4600 (right)

4.) Connect power to both LCD monitors.

5.) Turn on both monitors.

Verification and functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-14
COMPAQ UPS Replacement Procedure

⚠️ **WARNING** *DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:*

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

8-14-1   Preparations

- Shut Down and turn Off all units connected to the UPS.

8-14-2   UPS Removal

1.) Switch OFF the UPS.
2.) Disconnect the UPS power input cabling.
3.) Disconnect the PC, Monitor, Modem and MOD power cables.
4.) Disconnect the RS-232 Communication cable to the PC.
5.) Remove the UPS.

Disconnect the cabling.

Switch OFF the UPS.

Remove the UPS.
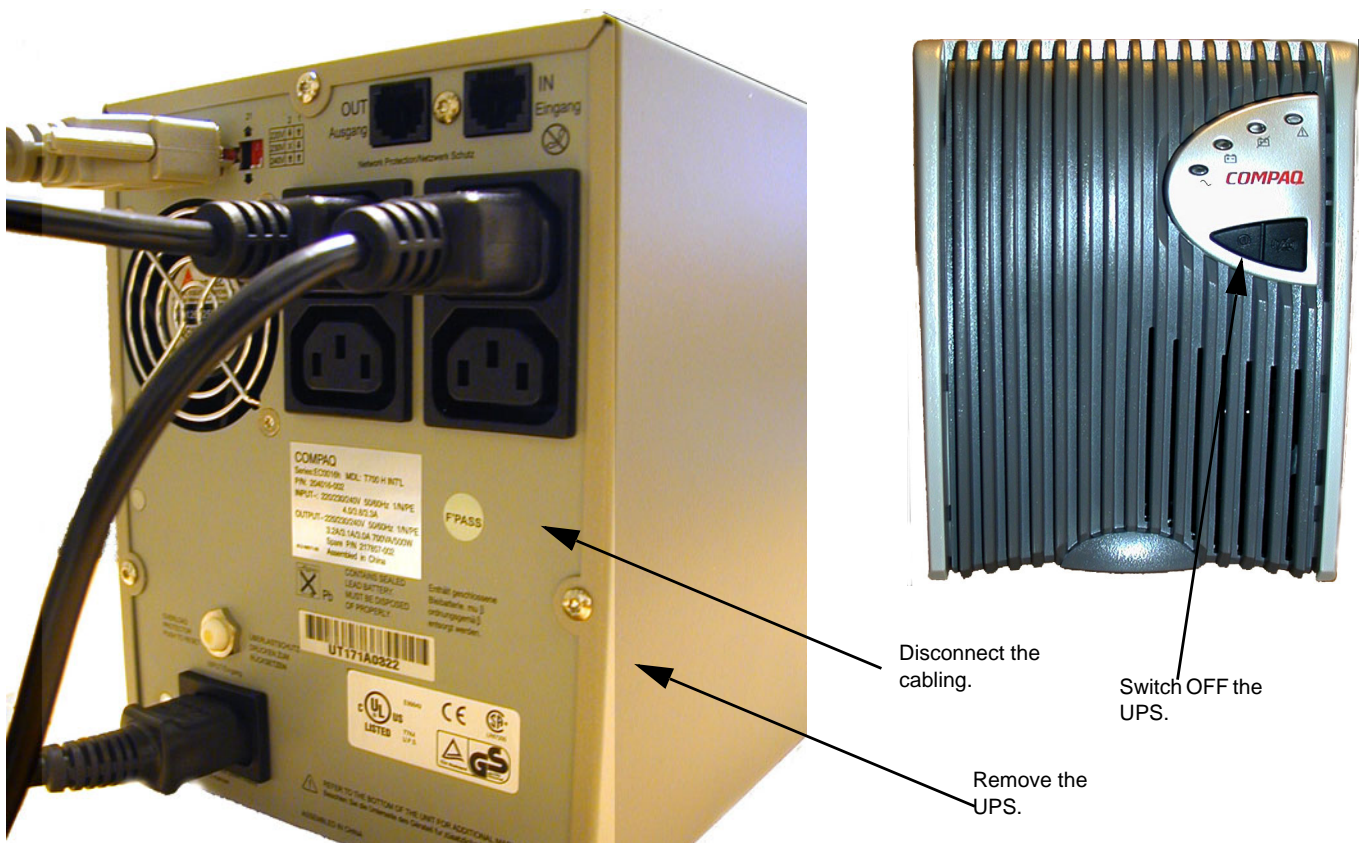
Figure 8-230   The UPS Rear and Front

8-14-3   UPS Installation

1.) Position the UPS where the old one was placed.

2.) If UPS is a High Voltage type (220-240 VAC) adjust dip switches next to the RS-232 connection on the backside accordingly:

220 VAC   Can be both   230 VAC   240 VAC
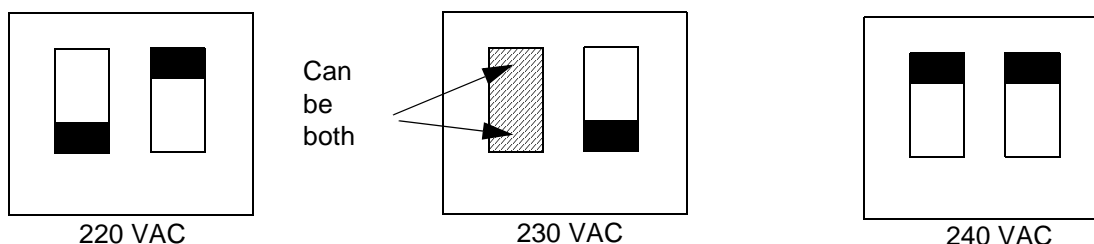
Figure 8-231   UPS High Voltage Settings

3.) Connect the Power input Cabling.

4.) Connect UPS power to the Monitor, PC, Modem and MOD.

5.) Switch ON the UPS.

6.) Switch ON the Workstation and its parts.

Install New UPS.

Switch ON UPS.

Connect cables.
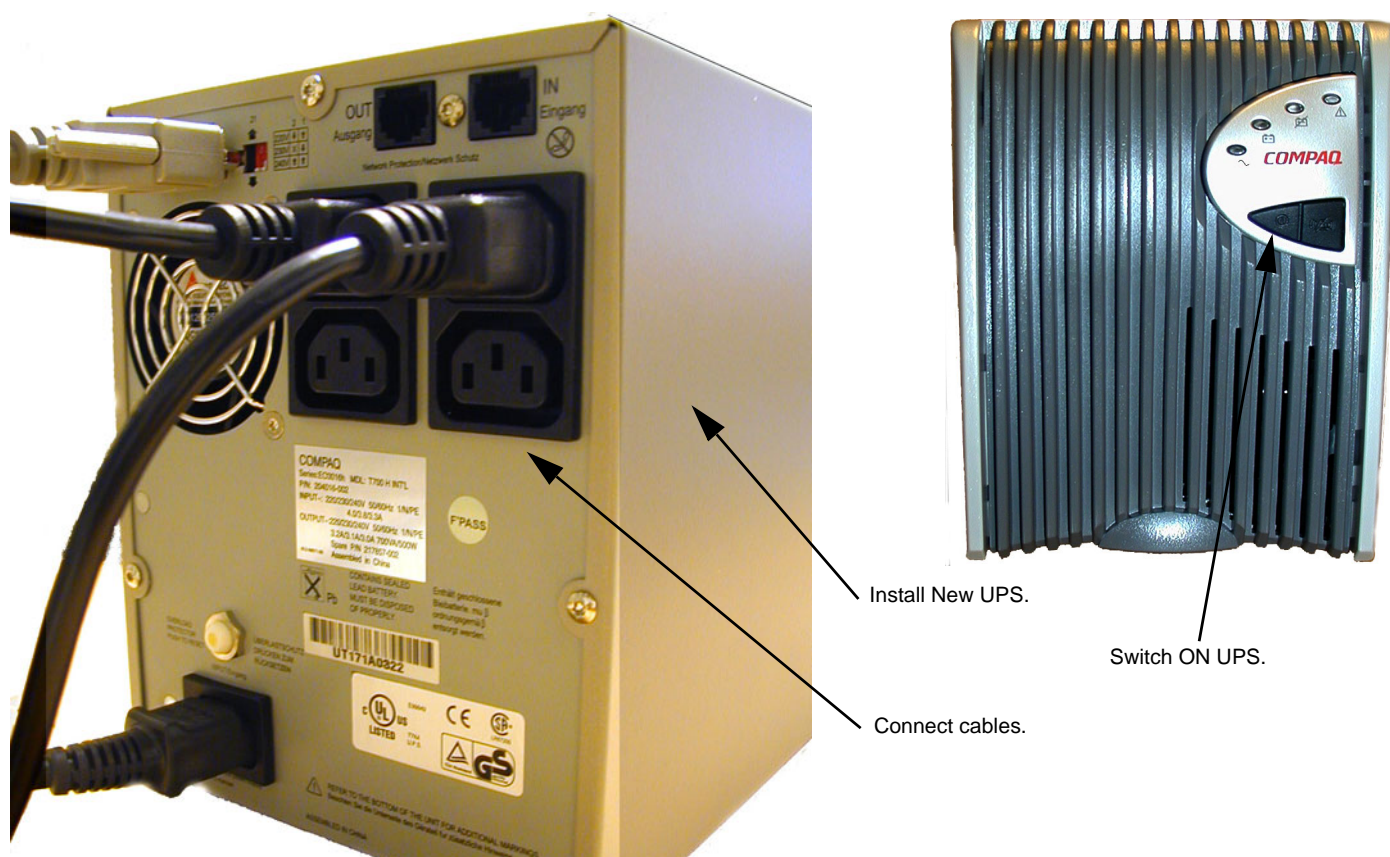
Figure 8-232   Rear and Front of UPS

8-14-4   Verification and functional checks

1.) Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-15
Battery for COMPAQ UPS replacement

⚠ **DANGER** **DANGEROUS VOLTAGES, CAPABLE OF CAUSING DEATH, ARE PRESENT IN THIS EQUIPMENT. USE EXTREME CAUTION WHEN HANDLING, TESTING AND ADJUSTING.**

8-15-1   Preparations

- Shut Down and turn Off all units connected to the UPS.
- Remove all Power cords and RS-232 cable connected to the UPS.
- Shut off the UPS completely and disconnect Power input.

8-15-2   Battery Removal

1.) Remove the front of the UPS.

Take a grip under this piece, press gently Upwards and outwards simultaneously.

Figure 8-233   Front removal

⚠ **CAUTION** **- Risk of electric shock. Battery Supply circuit is grounded.**
- Make sure all cables are disconnected.
- Do not short circuit the Battery.

Section 8-15   Battery for COMPAQ UPS replacement (cont'd)

2.) Remove the battery chamber door.
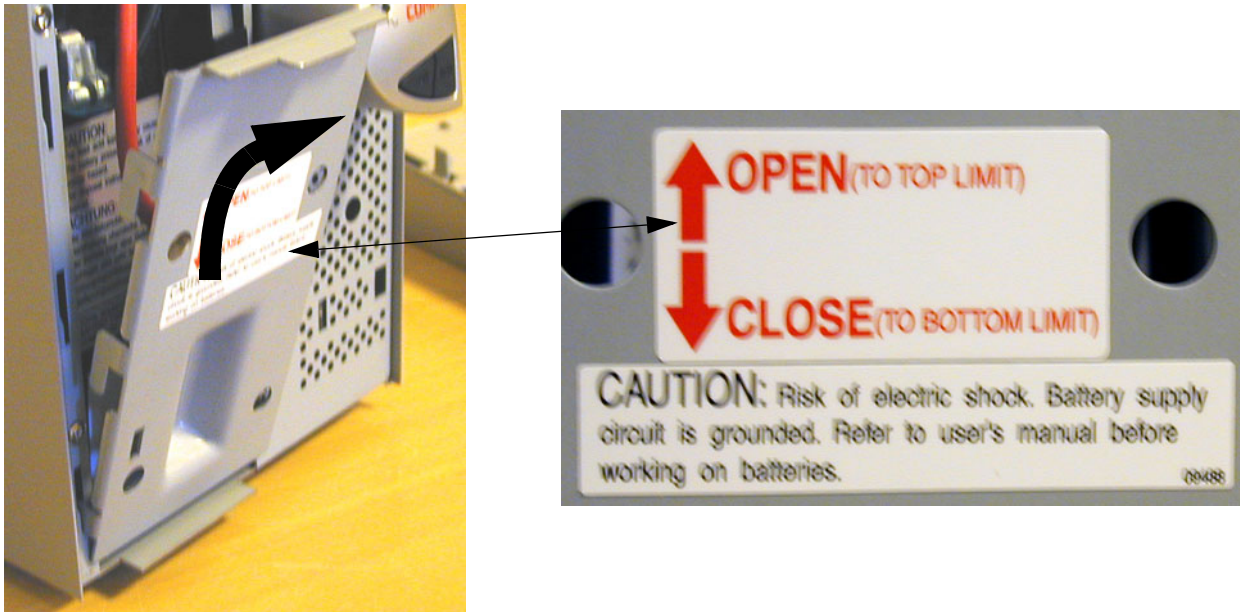
Figure 8-234   Battery chamber door removal

Section 8-15   Battery for COMPAQ UPS replacement (cont'd)

3.) Disconnect the battery cables.

..

⚠ **DANGER** **DANGEROUS VOLTAGES, CAPABLE OF CAUSING DEATH, ARE PRESENT IN THIS EQUIPMENT. USE EXTREME CAUTION WHEN HANDLING, TESTING AND ADJUSTING.**
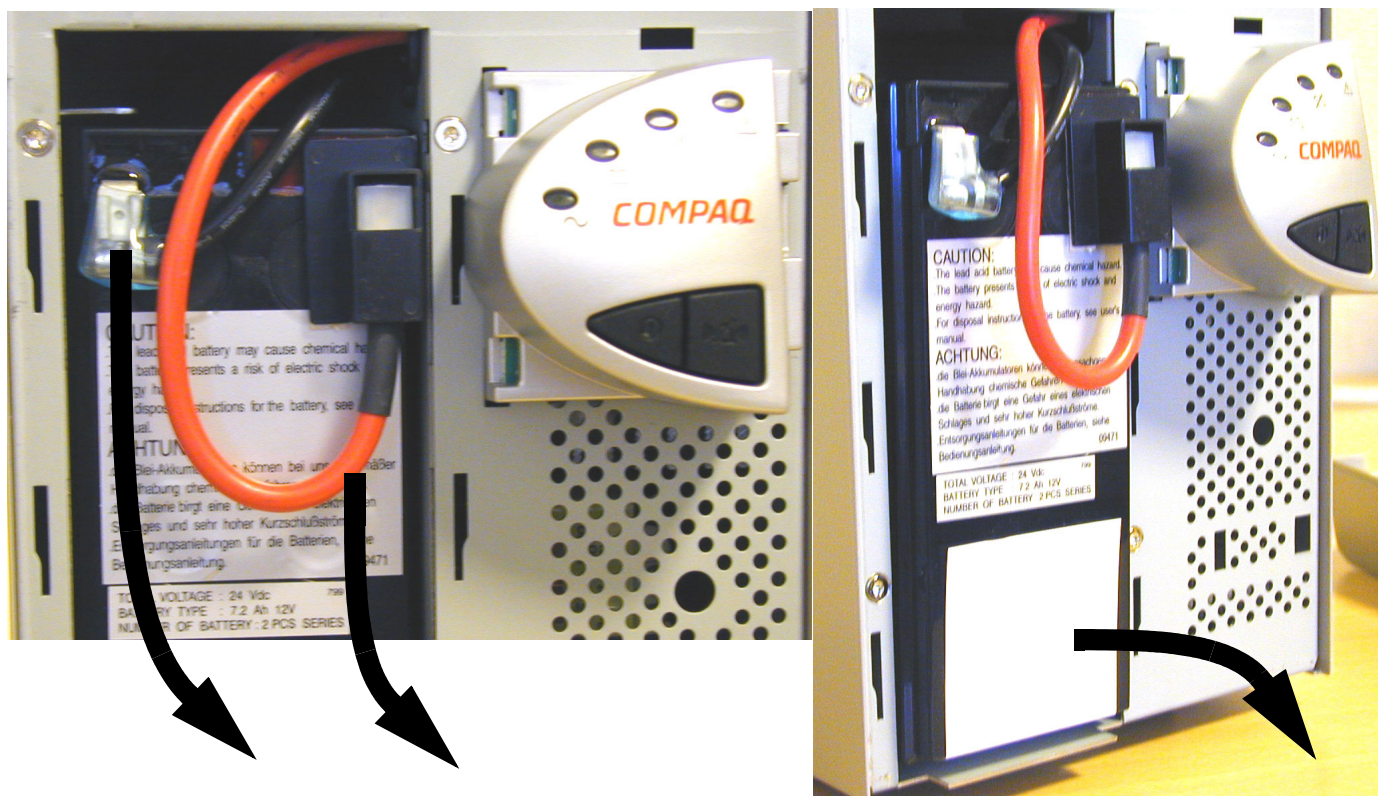
Figure 8-235   Power and ground disconnection and Battery removal.

4.) Remove the Battery from the chamber.

8-15-3   Battery Disposal

Please make sure replaced batteries are included in the recycling loop.

Section 8-15   Battery for COMPAQ UPS replacement (cont'd)

8-15-4   Battery Installation

1.) Insert a new battery and hook up the cabling.
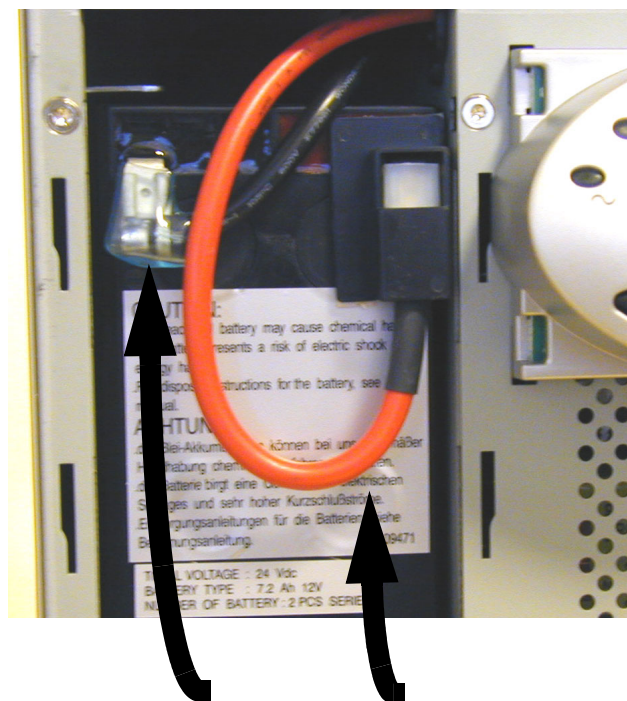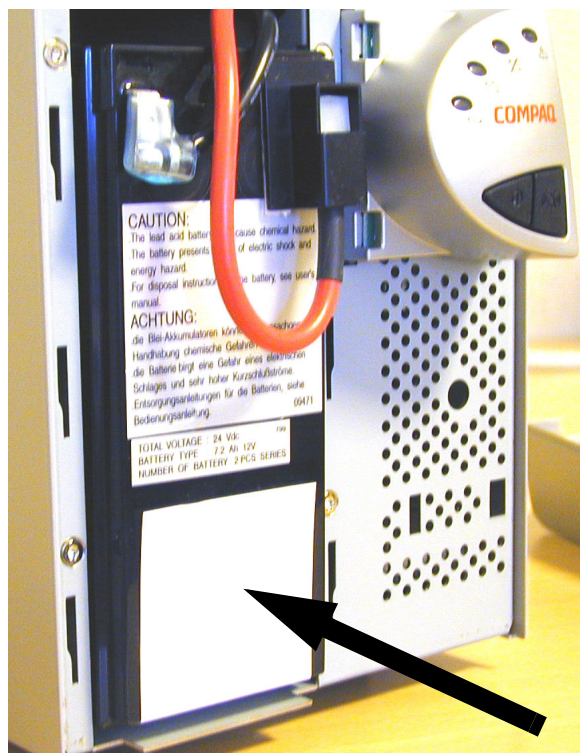
Figure 8-236   Power and Ground Battery Hook up and battery installation.

2.) Reinsert the battery chamber door.
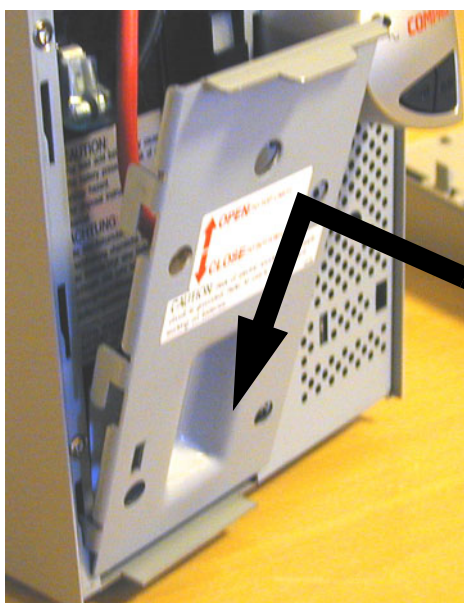
Figure 8-237   Lock the battery chamber door

Section 8-15   Battery for COMPAQ UPS replacement (cont'd)

3.) Replace the UPS front.

4.) Connect the Power Input cabling.

Place these protrusions into holes on the UPS chassis and press the front until it locks into position.

Figure 8-238   Hook up and lock the UPS front

8-15-5   Verification and functional checks

1.) Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-16
CD / DVD Drive Replacement Procedure

8-16-1   Preparations

1.) Shut Down and turn off the workstation and all its parts.

2.) Disconnect the AC Power cable and all the other cables from the PC.

3.) Disconnect all the signal cables from the PC.

4.) Remove the cover from the PC.

⚠ **WARNING** *DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:*

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

8-16-2   CD / DVD Drive Removal Procedure

1.) Disconnect signal cable at the CD / DVD Drive.

2.) Disconnect DC power cable at the CD / DVD Drive.

3.) Remove the CD / DVD Drive.

8-16-3   CD / DVD Drive Installation Procedure

1.) Place the new CD / DVD Drive where the old was.

2.) Connect signal cable to the CD / DVD Drive.

3.) Connect DC power to the CD / DVD Drive.

4.) Install the cover on the PC.

5.) Connect all signal cables.

6.) Connect AC Mains Power.

8-16-4   Verification and functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-17
5,25" Internal MO Drive (MOD) Replacement Procedure

NOTE: *The internal MO Drive was introduced early 2005 for use in xw4200. It has also been used in xw4300.*
           It is not used in the xw4400, xw4600 or Z200, but the external 5.25 MO drive was available as an option for BT'08 and BT'09 units. It is now discontinued.

NOTE: *If replacing a workstation with SCSI and MO drive, move the SCSI interface, and the MO drive to the new workstation.*

⚠️ **WARNING** ***DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:***

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

8-17-1   Preparations

1.) Shut Down and turn off the workstation and all its parts.
2.) Disconnect the AC Power cable and all the other cables from the PC.
3.) Disconnect all the signal cables from the PC.
4.) Remove the cover from the PC.

8-17-2   Internal MO Drive Removal

1.) Disconnect SCSI Signal cable at the MOD.
2.) Disconnect DC power cable at the MOD.
3.) Remove the MOD.

8-17-3   Internal MO Drive Installation

1.) Set the SCSI Address similar to the replaced unit.
2.) Place the new MOD where the old was.
3.) Connect SCSI signal cable to the MOD.
4.) Connect DC power to the MOD.
5.) Install the cover on the PC.
6.) Connect all signal cables.
7.) Connect AC Power.

8-17-4   Verification and functional checks

1.) Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-18
USB Flash Card Replacement Procedure

8-18-1   Removing the USB Flash Card

1.) Press Utility/Eject. The Eject device menu is displayed.

2.) Select the USB Flash Card.

3.) The selected media is prepared for ejection.

4.) Remove the USB Flash Card.

8-18-2   Installing the USB Flash Card

Plug the USB Flash Card into one of the USB ports on the EchoPAC PC Turnkey workstation.

8-18-3   Functional Checks

No special tests are needed.

Section 8-19
Internal Hard Drive for HP xw4600 replacement

8-19-1 Internal Hard Drive removal

⚠️ **WARNING** *DO NOT TOUCH ANY BOARDS WITH INTEGRATED CIRCUITS PRIOR TO TAKING THE NECESSARY ESD PRECAUTIONS:*

ALWAYS CONNECT YOURSELF, VIA AN ARM-WRIST STRAP, TO THE METAL CHASSIS OF THE ECHOPAC PC TURNKEY .

FOLLOW GENERAL GUIDELINES FOR HANDLING OF ELECTROSTATIC SENSITIVE EQUIPMENT.

8-19-2 Preparations

1.) Shut Down any active program.

2.) Shut Down the PC and disconnect all external cabling.

3.) Place the PC on a grounded matt

4.) Remove the left hand side panel, seen from front, by unscrewing some screws at the rear edge.

Screws at the rear along this edge
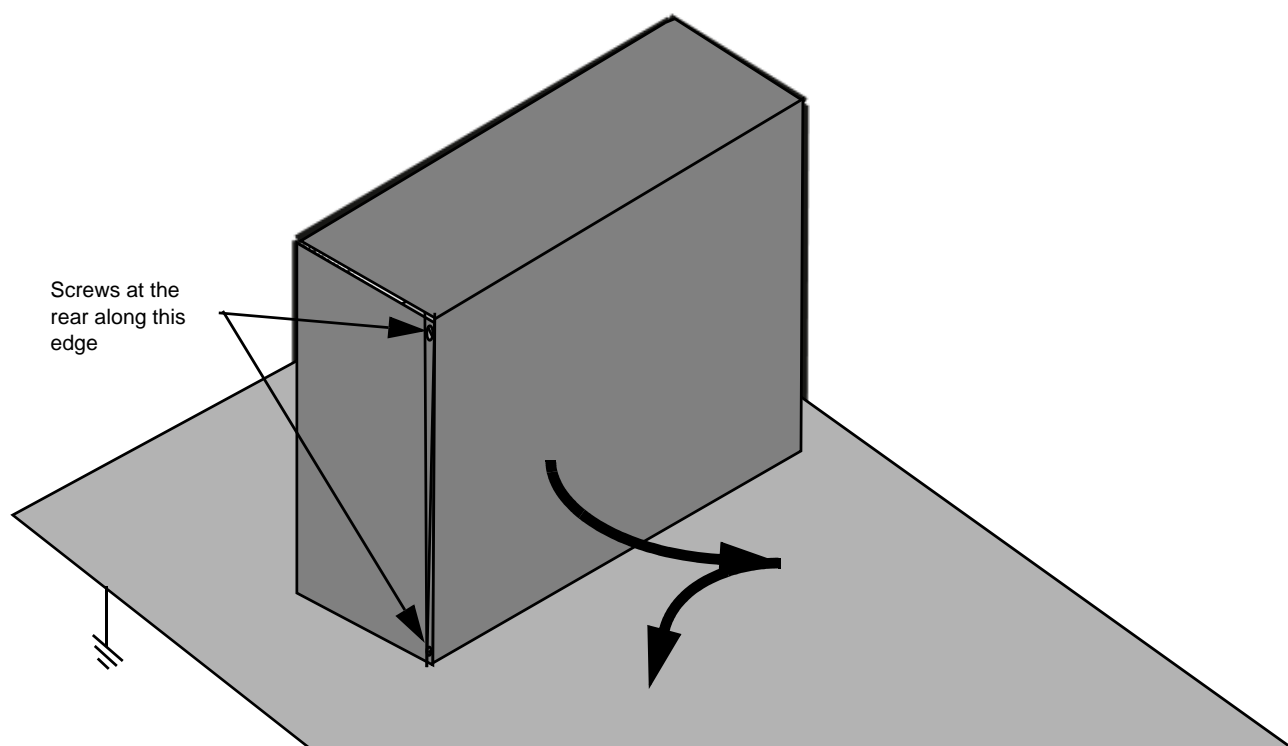
Figure 8-239 HP xw4600 PC Ready for Service on a grounded mat

8-19-3   Tools

- 1 Phillips screw driver

8-19-4   Hard Drive Removal

1.) Disconnect the Power and Communication cables connected at the Drive rear.

2.) Unscrew any drive fasteners and slide the drive backwards to remove it.

⚠️ **WARNING** *Hard drives are very fragile and must be Handled with great care.*
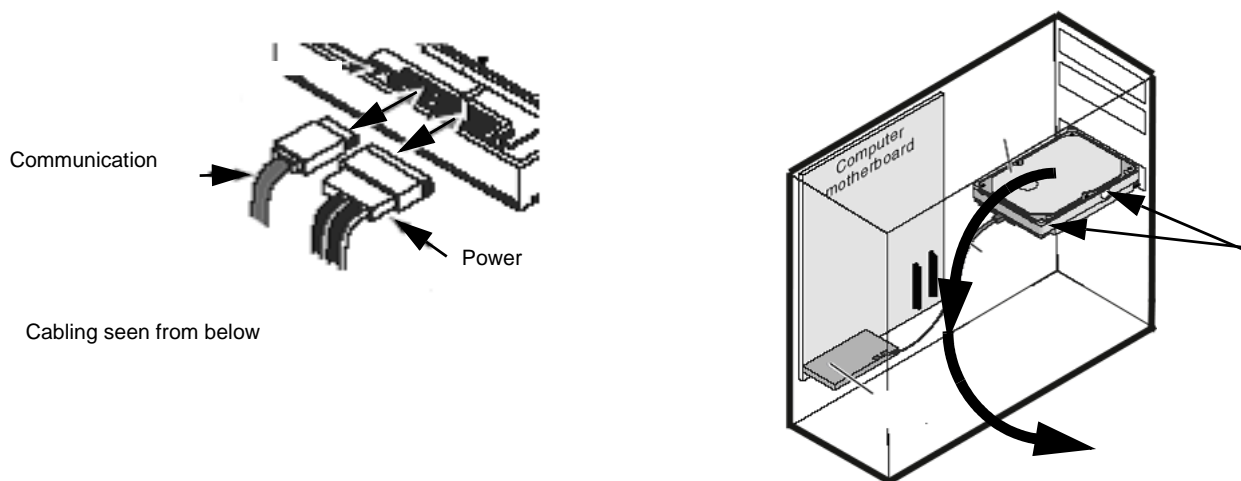
Figure 8-240   Hard Drive disconnection and removal

8-19-5   Hard Drive Installation

1.) Slide the Hard drive into the internal rack at the position the removed drive had.

2.) Fasten it with suitable fasteners and connect the removed Power and Communication cables.

3.) Install and fasten the Side Panel.

4.) Move the PC from the grounded mat and place where it is meant to be

5.) Connect all disconnected external cabling and turn the PC ON.

Section 8-20
5,25" External MOD Replacement Procedure

8-20-1   Preparations

- Shut Down and turn Off the Workstation and all its parts as described.
- Make sure that the 5,25" MOD is turned OFF.

8-20-2   MO Drive Removal

1.) Disconnect the power cable from the UPS at the 5,25" MOD end.
2.) Disconnect SCSI Signal cable at the 5,25" MOD.

Figure 8-241   MOD rear

3.) Record the SCSI Address of the 5,25" MO Drive:_____.

Figure 8-242   MOD to be removed

8-20-3   5,25" MO Drive Installation

1.) Set the SCSI address similar to the replaced unit.

2.) Place the new 5,25" MOD where the old was.

Install New MOD.

Figure 8-243   MOD to be installed

3.) Connect the UPS power cabling to the 5,25" MOD.

4.) Connect SCSI signal cable to the 5,25" MOD.

5.) Switch ON the workstation and all its parts.

Connect New MOD cabling.

Figure 8-244   Rear of MOD

8-20-4   Verification and functional checks

1.) Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-21
3,5" MOD Replacement

The following models have been used for EchoPAC PC:

- FUJITSU 2300 U2 (USB). Introduced late 2005
- FUJITSU 1300 U2 (USB). Introduced late 2004
- FUJITSU DynaMO 1300 Drive (SCSI). Used since the introduction of EchoPAC PC

Please refer to "Fujitsu DynaMO 1300 and 2300 Drives for EPC and Mac - Installation Manual", Direction Number FC194209 revision 4 (or later), for installation instructions.

Section 8-22
ZIP Drive Replacement

8-22-1 Preparations

Shut Down and turn Off the Workstation and all its parts.

8-22-2 Zip Removal

1.) Disconnect the USB cable between the ZIP Drive and the PC.

Figure 8-245   Zip Unit Rear

2.) Remove the ZIP option.

Figure 8-246   Zip Unit front

8-22-3   ZIP Installation

1.) Place the new ZIP option where the old one was.

Figure 8-247   Zip unit Front

2.) Connect the USB cable between the ZIP Drive and the PC.

3.) Turn ON the Workstation and all its parts as described.

Figure 8-248   Zip Unit front Rear

8-22-4   Verification and functional checks

1.) Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-23
IOMEGA Ultramax Desktop Hard Drive replacement

The IOMEGA Ultramax Desktop Hard Drive is an External USB hard disk with RAID1 data protection mirrored hard disk

For installation and replacement, see: Direction Number EY194147, "Vivid E9 and EchoPAC PC Iomega Ultramax Desktop Hard Drive Installation Manual - For BT'09 and later".

Section 8-24
Ethernet Switch Replacement Procedure

8-24-1   Ethernet Switch Removal

1.) Disconnect the Power Cable.

.

Figure 8-249   Rear of ethernet switch with mains power inlet

2.) Disconnect all the ethernet cables at the ethernet switch.

.

Figure 8-250   Ethernet Switches seen from front side

3.) Remove the ethernet switch.

8-24-2   Ethernet Switch Installation

1.) Place the new box where the old one was placed.

2.) Connect the power cable.

3.) Connect all the Internet cables to the Switch Box.

8-24-3   Verifications and Functional checks

Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-25
Cable Replacement Procedure

8-25-1   Preparations

- Shut Down and turn Off the Workstation and all its parts as described.

NOTE: *This procedure is a general cable replacement procedure, and should be valid for Power, SCSI, USB, Ethernet and RS-232 cables.*

8-25-2   Cable Removal

1.) Unplug the cable from the connecting devices.
2.) Remove the cable.

8-25-3   Cable Installation

- Plug the New Cable to the same devices as the old one was connected to.

8-25-4   Verification and Functional Checks

Turn on the workstation and the connected device.

1.) Power Cable: Verify System is powered on.
2.) SCSI Cable: Insert a media into the MOD. Connect to the Dataflow, and verify you are able to read from the disk.
3.) USB Cable: Insert a media into the ZIP Drive. Connect to the Dataflow, and verify there is power on the ZIP drive and that you are able to read from the disk.
4.) Ethernet Cables: Verify a green link light present on the Ethernet Switch, or PC.
5.) RS-232 Cable, UPS: Use ALT-TAB to select the Lan Safe III Power Monitor Window. Verify a Communication success with the UPS.
6.) Perform Section 8-26 "Verification - Functional checks" on page 8-222

Section 8-26
Verification - Functional checks

8-26-1   Functional Test Matrix

Table 8-42   Functional Test Matrix   sheet 1 of 2

SECTION	FRU Replacement	Diagnostics	Leakage Current Tests	Functional Test
4-3	Functional Check		No	4-2-1 "Power On/Boot Up" on page 4-2 4-2-2 "Power OFF" on page 4-4 4-3-2 "Power ON/OFF Checks" on page 4-18
8-3	Software reloading procedure - software v108.x and higher		No	Perform 4-3 "Functional Check" on page 8-222 (the tests listed in the first row in this table). 4-3-12 "Mode Function Checks" on page 4-27 4-4-1 "Software Configuration Checks" on page 4-28
8-4	BT'08 Software Reloading Procedure		No	
8-5	BT'06 Software Reloading Procedure		No	
8-6	BT'05 Software Reloading Procedure		No	
8-7	BT'04 Software Reloading Procedure		No	
8-8	BT'03 Software Reloading Procedure		No	
8-9	BT'02 Software Reloading Procedure		No	
8-10	Workstation replacement procedure	Section 7-8 "Common Diagnostics" on page 7-21	No	Perform 4-3 "Functional Check" on page 8-222 (the first row in this table). 4-4-1 "Software Configuration Checks" on page 4-28
8-11	SCSI Card replacement procedure	Section 7-8 "Common Diagnostics" on page 7-21	No	Perform 4-3 "Functional Check" on page 8-222 (the first row in this table).
8-12	Monitor Replacement Procedures		No	
8-13	Connect two monitors - one digital and one VGA output		No	
8-14	COMPAQ UPS Replacement Procedure		No	4-2-1 "Power On/Boot Up" on page 4-2 4-2-2 "Power OFF" on page 4-4 4-3-2 "Power ON/OFF Checks" on page 4-18 4-3-1 "UPS Checks" on page 4-16 4-3-2 "Power ON/OFF Checks" on page 4-18
8-15	Battery for COMPAQ UPS replacement		No	4-2-1 "Power On/Boot Up" on page 4-2 4-2-2 "Power OFF" on page 4-4 4-3-2 "Power ON/OFF Checks" on page 4-18 4-3-1 "UPS Checks" on page 4-16 4-3-2 "Power ON/OFF Checks" on page 4-18

Table 8-42   Functional Test Matrix (cont'd) sheet 2 of 2

SECTION	FRU Replacement	Diagnostics	Leakage Current Tests	Functional Test
8-16	CD / DVD Drive Replacement Procedure	Section 7-8 "Common Diagnostics" on page 7-21	No	4-3-7 "CD-R/DVD-R Check" on page 4-23
8-17	5,25" Internal MO Drive (MOD) Replacement Procedure	Section 7-8 "Common Diagnostics" on page 7-21	No	4-3-4 "MO Drives Check" on page 4-21
8-18	USB Flash Card Replacement Procedure		No	No Special Tests Required
8-19	Internal Hard Drive for HP xw4600 replacement		No	No Special Tests Required
8-20	5,25" External MOD Replacement Procedure	Section 7-8 "Common Diagnostics" on page 7-21	No	4-3-4 "MO Drives Check" on page 4-21
8-21	3,5" MOD Replacement	Section 7-8 "Common Diagnostics" on page 7-21	No	4-3-5 "3.5" MO-Drive Option Check" on page 4-22
8-22	ZIP Drive Replacement	Section 7-8 "Common Diagnostics" on page 7-21	No	4-3-8 "ZIP Option Check" on page 4-24
8-23	IOMEGA Ultramax Desktop Hard Drive replacement	Section 7-8 "Common Diagnostics" on page 7-21	No	No Special Tests Required
8-24	Ethernet Switch Replacement Procedure		No	4-3-3 "Network Check" on page 4-19
8-25	Cable Replacement Procedure		No	Perform 4-3 "Functional Check" on page 8-222 (the first row in this table).

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Chapter 9
Renewal Parts

Section 9-1
Overview

9-1-1   Purpose of Chapter 9

This chapter gives you an overview of Spare Parts for EchoPAC PC Turnkey .

Table 9-1   Contents in Chapter 9

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Section 9-2
List of Abbreviations

9-2-1 Stock Items

FRU Y   Field Replacement Unit

         Customer Replaceable Unit
         A CRU is a FRU part that can be replaced by the Customer and Customer confirms functional check at site.

CRU Y   Customer Replaceable Units were based on the following criteria:
- The part must be an existing external FRU
- No tools are needed to replace the CRU

9-2-2 Non Stock Items

FRU N   Field Replacement Unit - Non Stock Part

9-2-3 General Abbreviations

UMAN   User Manual

QTY   Quantity per unit

GEVU   GE Vingmed Ultrasound AS (located in Horten, Norway)

Section 9-3
Software

9-3-1   Overview

9-3-2 BT'12 Software

Table 9-2   Software used on EchoPAC PC Turnkey with BT'12 software

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
			System Software			
1.	EchoPAC PC System software v.104.3.x for HP Z200	EY200298-01	Latest system software (2011-NOV): v104.3.0	1	N	Y
2.	EchoPAC PC System software v.104.3.x for xw4600	EY200297-01	Latest system software (2011-NOV): v104.3.0	1	N	Y
3.	EchoPAC PC System software v.103.3.x for xw4400	EY200296-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
4.	EchoPAC PC System software v.103.3.x for xw4300	EY200294-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
5.	EchoPAC PC System software v.103.3.x for xw4200	EY200293-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
6.	EchoPAC PC System software v.103.3.x for xw4100	EY200289-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
			Application Software			
7.	Vivid E9 and EchoPAC PC Application software v.112.x	GA200965	APPLICATION SOFTWARE v112.x COMMON with VIVID E9 Latest Application Software (2011-NOV): v112.0.0	1	N	Y
			Third Party Software			
8.	SW CD TomTec 4D LV-Function v.2.2.3	A185142-09	Used on EchoPAC PC with software v112	1	N	Y
9.	TomTec 4D RV-Volume v.1.1.1	A185175-05	Used on EchoPAC PC with software v112	1	N	Y
10.	TomTec 4D MV-Assessment v.2.0	A185198-01	Used on EchoPAC PC with software v112	1	N	Y
			Miscellaneous Software			
11.	SET SERIAL NUMBER	GA200649-04	Latest version (2011-SEP): v1.3, GA200649 REV. 4	1	N	Y

9-3-3 BT'11-M4 Software

Table 9-3   Software used on EchoPAC PC Turnkey with BT'11- M4 software

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
			System Software			
1.	EchoPAC PC System software v.104.3.x for HP Z200	EY200298-01	Latest system software (2011-NOV): v104.3.0	1	N	Y
2.	EchoPAC PC System software v.104.3.x for xw4600	EY200297-01	Latest system software (2011-NOV): v104.3.0	1	N	Y
3.	EchoPAC PC System software v.103.3.x for xw4400	EY200296-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
4.	EchoPAC PC System software v.103.3.x for xw4300	EY200294-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
5.	EchoPAC PC System software v.103.3.x for xw4200	EY200293-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
6.	EchoPAC PC System software v.103.3.x for xw4100	EY200289-01	Latest system software (2011-NOV): v103.3.0	1	N	Y
			Application Software			
7.		GA200956	APPLICATION SOFTWARE v110.1.x COMMON with VIVID E9 Latest Application Software (2011-NOV): v110.1.8	1	N	N
8.		GA200956-01	Service Part: Application software v.110.1.0	1	N	Y
9.		GA200956-02	Service Part: Application software v.110.1.1	1	N	Y
10.	ECHOPAC PC APPLICATION SOFTWARE (M4)	GA200956-03	Service Part: Application software v.110.1.3	1	N	Y
11.		GA200956-04	Service Part: Application software v.110.1.4	1	N	Y
12.		GA200956-05	Service Part: Application software v.110.1.5	1	N	Y
13.		GA200956-06	Service Part: Application software v.110.1.7	1	N	Y
14.		GA200956-07	Service Part: Application software v.110.1.8	1	N	Y
			Patch CDs			
15.	Vivid E9 and EchoPAC PC MS Security Patch CD	GA200973-01	The patches must be installed after the installation of system software and application software. WINDOWS PATCHES INCLUDED: MS11-006, MS11-019 and MS11-020	1	N	Y
16.	Vivid E9 and EchoPAC PC MS Security Patch CD	GA200973-02	The patches must be installed after the installation of system software and application software. WINDOWS PATCHES INCLUDED: MS11-006 and MS11-020, MS11-042 and MS11-043	1	N	Y
			Third Party Software			
17.	SW CD TomTec 4D LV-Function v.2.2.2	A185142-08	Used on EchoPAC with BT'11 software	1	N	Y
18.	TomTec 4D RV-Volume v.1.1	A185175-04	Used on EchoPAC PC with BT'11 software	1	N	Y
			Miscellaneous Software			
19.	SET SERIAL NUMBER	GA200649-04	Latest version (2011-SEP): v1.3, GA200649 REV. 4	1	N	Y

9-3-4 BT'11-M3 Software

NOTE: *The BT'11-M3 has also been called BT'10.*

Table 9-4 Software used on units delivered with or upgraded to BT'11 - M3 software

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
			System Software			
1.	EPPC System Software v104.1.x for HP XW4600	EY200132 + EY200285	SYSTEM SOFTWARE VERSION v104.1.x Latest system software per: 2011-NOV is v104.1.0.	1	N	Y
2.	EPPC System Software v103.1.x for HP XW4400	EY200015 + EY200285	SYSTEM SOFTWARE VERSION v103.1.x Latest System Software version per: 2011-NOV is v103.1.0.	1	N	Y
3.	EPPC System Software v103.1.x for HP XW4300	EY200133 + EY200285	SYSTEM SOFTWARE VERSION v103.1.x Latest System Software version per: 2011-NOV is v103.1.0.	1	N	Y
4.	EPPC System Software v103.1.x for HP XW4200	EY200134 + EY200285	SYSTEM SOFTWARE VERSION v103.1.x Latest System Software version per: 2011-NOV is v103.1.0.	1	N	Y
5.	EPPC System Software v103.1.x for HP XW4100	EY200135 + EY200285	SYSTEM SOFTWARE VERSION v103.1.x Latest System Software version per: 2011-NOV is v103.1.0.	1	N	Y
			Application Software			
6.	ECHOPAC PC APPLICATION SOFTWARE	GA200845	APPLICATION SOFTWARE v110.x.x COMMON with VIVID E9 Latest BT'11-M3 Application Software version (2011-NOV) is v110.0.2	1	N	N
7.		GA200845-05	Service Part: Application software v110.0.2	1	N	Y
			Patch CDs			
8.	EchoPAC PC System software patch v.103-104.1.0	EY200285-02	The patches must be installed after the installation of system software and application software. (This CD is also listed above.)	1	N	Y
9.	Vivid 7, Vivid E9 and EchoPAC PC MS Security Patch	FC200821-11	The patches must be installed after the installation of system software and application software. WINDOWS PATCHES INCLUDED: MS08-067, MS09-001, MS09-22, MS10-007, MS10-020, KB967715, MS10-046, MS10-054 (Updated 2010.NOV.04)	1	N	Y
			Third Party Software			
10.	SW CD TomTec 4D LV-Function v.2.2.2	A185142-07	Used on EchoPAC with BT'09 software	1	N	Y
11.	SW CD TomTec 4D RV-Volume v.1.1	A185175-03	Used on EchoPAC PC with BT'09 software	1	N	Y
			Miscellaneous Software			
12.	SET SERIAL NUMBER	GA200649-4	Latest version (2011-SEP): v1.3, GA200649 REV. 4	1	N	Y

9-3-5   BT'09 Software

Table 9-5   Software used on units delivered with or upgraded to BT'09 Software sheet 1 of 2

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
System Software						
1.	EchoPAC PC System software v.104.3.x for HP Z200	EY200298-01	SYSTEM SOFTWARE V104.3.0 (Use with Application Software v108.1.13.)	1	N	Y
2.	EchoPAC PC System Software for HP xw4600	EY200297-01	Service Part: SYSTEM SOFTWARE V104.3.0 (Use with Application Software v108.1.13.)	1	N	Y
		EY200132	SYSTEM SOFTWARE VERSION v104.0.x		N	N
		EY200132-01	Service Part: SYSTEM SOFTWARE VERSION v104.0.0		N	Y
		EY200132-02	Service Part: SYSTEM SOFTWARE VERSION v104.0.1			
		EY200132-03	Service Part: SYSTEM SOFTWARE VERSION v104.0.2 Support for graphic card 066E0340 ATI 5700			
3.	EchoPAC PC System Software for HP xw4400	EY200296-01	System software v103.3.0 (Use with Application Software v108.1.13.)	1	N	Y
		EY200015-02	System Software Version v103.x.1			
4.	EchoPAC PC System software for HP xw4300	EY200294-01	System Software v103.3.0 (Use with Application Software v108.1.13.)	1	N	Y
		EY200133-02	EchoPAC PC System Software v103.0.1			
5.	EchoPAC PC System software for HP xw4200	EY200293-01	EchoPAC PC System software v103.3.0 (Use with Application Software v108.1.13.)	1	N	Y
		EY200134-02	SYSTEM SOFTWARE VERSION v103.0.1			
6.	EchoPAC PC System software for HP xw4100	EY200289-01	EchoPAC PC System software v103.3.0 (Use with Application Software v108.1.13.)	1	N	Y
		EY200135-02	SYSTEM SOFTWARE VERSION v103.0.1			
Application Software						
7.	APPLICATION SOFTWARE	GA200355	APPLICATION SOFTWARE v108.x.x COMMON with VIVID E9 Latest application software pr.: 2011-NOV is v108.1.13	1	N	N
8.		GA200355-03	Service Part: Application software v.108.1.2	1	N	Y
9.		GA200355-04	Service Part: Application software v.108.1.4	1	N	Y
10.		GA200355-05	Service Part: Application software v.108.1.5	1	N	Y
11.		GA200355-06	Service Part: Application software v.108.1.6	1	N	Y
12.		GA200355-08	Service Part: Application software v.108.1.9	1	N	Y
13.		GA200355-09	Service Part: Application software v.108.1.11	1	N	Y
14.		GA200355-10	Service Part: Application software v.108.1.12	1	N	Y
15.		GA200355-11	Service Part: Application software v.108.1.13	1	N	Y
Patch CDs						

Table 9-5   Software used on units delivered with or upgraded to BT'09 Software sheet 2 of 2

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
16.	EchoPAC PC System software patch v.103-104.1.0	EY200285-02	The patches must be installed after the system software and the application software have been installed.	1	N	N
17.	Vivid 7, Vivid E9 and EchoPAC PC MS Security Patch	FC200821-11	The patches must be installed after the installation of system software and application software. WINDOWS PATCHES INCLUDED: MS08-067, MS09-001, MS09-22, MS10-007, MS10-020, KB967715, MS10-046, MS10-054 (Updated 2011.SEP.)	1	N	Y
			Third Party Software			
18.	TomTec SW CD 4D LV-Function v2.2.1	A185142-07	Used on EchoPAC PC Turnkey BT'09	1	N	Y
19.	TomTec 4D RV-Volume v.1.0.2	A185175-03	Used on EchoPAC PC Turnkey BT'09	1	N	Y
			Miscellaneous Software			
20.	SET SERIAL NUMBER	GA200649-4	Latest version (2011-SEP): v1.3, GA200649 REV. 4	1	N	Y

9-3-6   BT'08 Software

Table 9-6   Software used on units delivered with or upgraded to BT'08 Software

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
			System Software			
1.	SYSTEM SOFTWARE (HP Z200)	EY200298-01	SYSTEM SOFTWARE VERSION 104.3.0 (Updated: 2011-NOV)	1	N	Y
2.	SYSTEM SOFTWARE (HP xw4600)	EY200132-03	SYSTEM SOFTWARE VERSION 104.0.2 Support for graphic card 066E0340 ATI 5700 (Updated: 2011-NOV)	1	N	Y
3.	SYSTEM SOFTWARE (HP xw4400)	EQ200001-03	SYSTEM SOFTWARE VERSION v3.0.2 For BT'08 with software reload (Updated: 2011-NOV)	1	N	Y
4.		EP200926-03	SYSTEM SOFTWARE VERSION v2.1.2 For BT'08 without software reload (Updated: 2011-NOV)			
5.	SYSTEM SOFTWARE (HP xw4300)	EP200822-07	SYSTEM SOFTWARE VERSION v2.1.2 For BT'08 without software reload (Updated: 2011-NOV)	1	N	Y
6.	SYSTEM SOFTWARE (HP xw4200)	EP200706-09	SYSTEM SOFTWARE VERSION v2.1.2 For BT'08 without software reload (Updated: 2011-NOV)	1	N	Y
7.	SYSTEM SOFTWARE (HP xw4100)	EP200705-08	SYSTEM SOFTWARE VERSION v2.1.2 For BT'08 without software reload (Updated: 2011-NOV)	1	N	Y
8.	SYSTEM SOFTWARE (EVO W4000)	EP200704-07	SYSTEM SOFTWARE VERSION v2.1.2 For BT'08 without software reload (Updated: 2011-NOV)	1	N	Y
			Application Software			
9.	APPLICATION SOFTWARE	FD200255-03	APPLICATION SOFTWARE v7.3.0 COMMON with VIVID 7 (Updated: 2011-NOV)	1	N	Y
			Third Party Software			
10.	SW CD 4D LV-Function v.2.2	A185142-04	Used on EchoPAC BT'06 to BT'08 and Vivid 7 BT'08	1	N	Y
			Software Patches			
11.	CD EP Patch for System Software v2.1.x	FD200139	BT'08	1	N	N
12.	Windows Patches	FC200821-r11	WINDOWS PATCHES INCLUDED : MS07-058, MS08-001, MS08-067, MS09-001, MS09-022, MS10-007, MS10-020, KB967715, MS10-046, MS10-054 (Updated 2010NOV04)	1	N	Y

9-3-7 BT'06 Software

FMI76095 updates BT'06 EchoPAC PC work stations with v6.1.5 Software.

Table 9-7 Software used on units delivered with or upgraded to BT'06 Software (SW v6.x)

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
			System Software			
1.	SYSTEM SOFTWARE (HP xw4600)	EQ200185-01	SYSTEM SOFTWARE VERSION v2.0.9 (Updated: 2011-NOV)	1	N	Y
2.	SYSTEM SOFTWARE (HP xw4400)	EQ200159-01	SYSTEM SOFTWARE VERSION v2.0.7 (Updated: 2011-NOV)	1	N	Y
3.		EP200926-01				
4.	SYSTEM SOFTWARE (HP xw4300)	EP200822-04	SYSTEM SOFTWARE VERSION v2.0.6 (Updated: 2011-NOV)	1	N	Y
5.	SYSTEM SOFTWARE (HP xw4200)	EP200706-06		1	N	Y
6.	SYSTEM SOFTWARE (HP xw4100)	EP200705-05		1	N	Y
7.	SYSTEM SOFTWARE (EVO W4000)	EQ200160-01	SYSTEM SOFTWARE VERSION v2.0.9 (Updated: 2011-NOV)	1	N	Y
8.		EP200704-03	SYSTEM SOFTWARE VERSION v2.0.2 (Updated: 2011-NOV)			
			Application Software			
9.	APPLICATION SOFTWARE	FC200885-08	APPLICATION SOFTWARE v6.1.5 (Updated: 2011-NOV)	1	N	Y
			Third Party Software			
10.	SW CD 4D LV-Function v.2.2	A185142-04	Used on EchoPAC BT'06 to BT'08 and Vivid 7 BT'08	1	N	Y
			Software Patch(es)			
11.	Windows Patches	FC200821-r11	WINDOWS PATCHES INCLUDED : MS07-058, MS08-001, MS08-067, MS09-001, MS09-022, MS10-007, MS10-020, KB967715, MS10-046, MS10-054 (Updated 2010NOV04)	1	N	Y

9-3-8   BT'05 Software

FMI76095 updates BT'05 EchoPAC PC work stations with v5.2.3 Software.

Table 9-8   Software used on units delivered with or upgraded to BT'05 Software (SW v5.x)

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
			System Software			
1.	SYSTEM SOFTWARE (HP xw4600)	EQ200185-01	SYSTEM SOFTWARE VERSION v2.0.9 (Updated: 2011-NOV)	1	N	Y
2.	SYSTEM SOFTWARE (HP xw4400)	EQ200159-01		1	N	Y
3.		EP200926-01	SYSTEM SOFTWARE VERSION v2.0.7 (Updated: 2011-NOV)			
4.	SYSTEM SOFTWARE (HP xw4300)	EP200822-04	SYSTEM SOFTWARE VERSION v2.0.6 (Updated: 2011-NOV)	1	N	Y
5.	SYSTEM SOFTWARE (HP xw4200)	EP200706-06		1	N	Y
6.	SYSTEM SOFTWARE (HP xw4100)	EP200705-05		1	N	Y
7.	SYSTEM SOFTWARE (EVO W4000)	EQ200160-01	SYSTEM SOFTWARE VERSION v2.0.9 (Updated: 2011-NOV)	1	N	Y
8.		EP200704-03	SYSTEM SOFTWARE VERSION v2.0.2 (Updated: 2011-NOV)			
			Application Software			
9.	APPLICATION SOFTWARE	FD200165-02	APPLICATION SOFTWARE v5.2.3 (Updated: 2011-NOV)	1	N	Y
			Software Patch(es)			
10.	Windows Patches	FC200821-r11	WINDOWS PATCHES INCLUDED : MS07-058, MS08-001, MS08-067, MS09-001, MS09-022, MS10-007, MS10-020, KB967715, MS10-046, MS10-054 (Updated 2010NOV04)	1	N	Y

9-3-9   BT'04 Software

FMI76095 updates BT'04 EchoPAC PC work stations with v4.2.3 Software.

Table 9-9   Software used on units delivered with or upgraded to BT'04 Software (SW v4.x)

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
System Software						
1.	SYSTEM SOFTWARE (HP xw4600)	EQ200185-01	SYSTEM SOFTWARE VERSION v2.0.9 (Updated: 2011-NOV)	1	N	Y
2.	SYSTEM SOFTWARE (HP xw4400)	EQ200159-01		1	N	Y
3.		EP200926-01	SYSTEM SOFTWARE VERSION v2.0.7 (Updated: 2011-NOV)			
4.	SYSTEM SOFTWARE (HP xw4300)	EP200822-04	SYSTEM SOFTWARE VERSION v2.0.6 (Updated: 2011-NOV)	1	N	Y
5.	SYSTEM SOFTWARE (HP xw4200)	EP200706-06		1	N	Y
6.	SYSTEM SOFTWARE (HP xw4100)	EP200705-05		1	N	Y
7.	SYSTEM SOFTWARE (EVO W4000)	EQ200160-01	SYSTEM SOFTWARE VERSION v2.0.9 (Updated: 2011-NOV)	1	N	Y
8.		EP200704-03	SYSTEM SOFTWARE VERSION v2.0.2 (Updated: 2011-NOV)			
Application Software						
9.	APPLICATION SOFTWARE	FD00164-02	APPLICATION SOFTWARE v4.2.3 COMMON TO VIVID 7 (Updated: 2011-NOV)	1	N	Y
Software Patch(es)						
10.	Windows Patches	FC200821-r11	WINDOWS PATCHES INCLUDED : MS07-058, MS08-001, MS08-067, MS09-001, MS09-022, MS10-007, MS10-020, KB967715, MS10-046, MS10-054 (Updated 2010NOV04)	1	N	Y

9-3-10   BT'03 Software

Table 9-10   Software used on units delivered with, or upgraded to, BT'03 Software (SW v3.x)

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
System Software						
1.	SYSTEM SOFTWARE (HP xw4600)	EQ200186-01	SYSTEM SOFTWARE VERSION v1.5.5 (FMI76080 upgrades this software to v1.5.5) (Updated: 2011-NOV)	1	N	Y
2.	SYSTEM SOFTWARE (HP xw4400)	EQ200165-02	SYSTEM SOFTWARE VERSION v1.5.4 (FMI76080 upgrades this software to v1.5.4) (Updated: 2011-NOV)	1	N	Y
3.	SYSTEM SOFTWARE (HP xw4100)	EP200703-03	SYSTEM SOFTWARE VERSION v1.5.2 FMI76080 upgrades this software to v1.5.2 (Updated: 2011-NOV)	1	N	Y
4.	SYSTEM SOFTWARE (EVO W4000)	EP200702-03	SYSTEM SOFTWARE VERSION v1.5.2 (Updated: 2011-NOV)	1	N	Y
5.	SYSTEM SOFTWARE (DW300)	EQ20055-01	SYSTEM SOFTWARE VERSION 1.5.2 (Updated: 2011-NOV)	1	N	Y
Application Software						
6.	APPLICATION SOFTWARE	FC200567-06	Application software version v3.5.4 FMI76080 Upgrades this software to version 3.5.4 COMMON TO VIVID 7 RFT (without RFI) (Updated: 2011-NOV)	1	N	Y
7.		FC200567-06 + FD200223-01	Application software version v3.5.5 (Updated: 2011-NOV)			
Software Patch						
8.	Vivid 7 RFT, EchoPAC PC and EP SWO application SW patch v3.5.5	FD200223-01	Correction of BullS Eye Stress Report issues	1	N	Y
9.	EV04000 GRAPHIC DRIVER	EP200711	The first EVO W4000 PCs delivered, are using a different graphics driver than the most of the EVO W4000. This CD includes the needed driver.	1	N	Y
10.	Windows Patches	FC200821-r11	WINDOWS PATCHES INCLUDED : MS05-043, MS05-047, MS05-051, MS06-025, MS06-035, MS06-036, MS06-041, MS06-070, MS07-058, MS08-001, MS08-067, MS09-001, MS09-022, MS10-007, MS10-020, KB967715 (Updated 2010NOV04)	1	N	Y

9-3-11 BT'02 Software

Table 9-11 Software for units delivered with BT'02 Software (SW v2.x) or older

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
			System Software			
1.	SYSTEM SOFTWARE (HP xw4600)	EQ200186-01	SYSTEM SOFTWARE VERSION v1.5.5 (FMI76080 upgrades this software to v1.5.5) (Updated: 2011-NOV)	1	N	Y
2.	SYSTEM SOFTWARE (HP xw4400)	EQ200165-02	SYSTEM SOFTWARE VERSION v1.5.4 (FMI76080 upgrades this software to v1.5.4) (Updated: 2011-NOV)	1	N	Y
3.	SYSTEM SOFTWARE (HP xw4100)	EP200703-03	SYSTEM SOFTWARE VERSION v1.5.2 FMI76080 upgrades this software to v1.5.2 (Updated: 2011-NOV)	1	N	Y
4.	SYSTEM SOFTWARE (EVO W4000)	EP200702-03	SYSTEM SOFTWARE VERSION v1.5.2 (Updated: 2011-NOV)	1	N	Y
5.	SYSTEM SOFTWARE (DW300)	EQ20055-01	SYSTEM SOFTWARE VERSION 1.5.2 (Updated: 2011-NOV)	1	N	Y
			Application Software			
6.	APPLICATION SOFTWARE	FD200144-03	Application software version v2.6.4 COMMON TO VIVID 7 (Updated: 2011-NOV)	1	N	Y
			Software Patch			
7.	CD Application SW. Patch v2.6.3	FD200222-01		1	N	Y
8.	EV04000 GRAPHIC DRIVER	EP200711	The first EVO W4000 PCs delivered, are using a different graphics driver than the most of the EVO W4000. This CD includes the needed driver.	1	N	Y
9.	Windows Patches	FC200821-r11	REQUIRES SYSTEM SOFTWARE VERSION: v1.3.x, v1.4.x, v1.5.x, v2.1.x, v3.0.0, v3.0.1 WINDOWS PATCHES INCLUDED : MS05-043, MS05-047, MS05-051, MS06-025, MS06-035, MS06-036, MS06-041, MS06-070, MS07-058, MS08-001, MS08-067, MS09-001, MS09-022, MS10-007, MS10-020, KB967715 (Updated 2010NOV04)	1	N	Y

9-3-12 Other Software

Table 9-12   Other Software

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	PRINTER DRIVER INSTALLER CD	GA200652-03	Version 1.0.5 Used when installing new printer drivers For installation instructions, see Direction Number GA294837 (Printer Driver Installation Manual). Updated: 2011 NOV.	1	N	N

Section 9-4
Options

9-4-1   Content in this section

9-4-2   Software Option Dongle

NOTE: *In some of GE's data bases, the SW Option Dongle is called "SW Option Key".*

Table 9-13   Software Option Dongle

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1	ECHOPAC PC SW OPTION KEY, USB (USB Dongle)	066E0707	Replaced 066E0706	1	Y	N
2	ECHOPAC PC SW OPTION KEY, USB (USB Dongle)	066E0706		1	Y	N
3	ECHOPAC PC SW OPTION KEY, USB (USB Dongle)	EP100553	A Software Option Dongle is needed for all EchoPAC PC versions and is included with the product. The USB version was introduced 2003. This dongle replaces the parallel port dongle used before the USB dongle was introduced.	1	Y	N

9-4-3 Software Options - software v112.x

Table 9-14   Software Options - software v112.x

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	4D Package	H45561TZ	Enables post-processing of 4D and multi-plane image datasets from Vivid 7 and Vivid E9	
2.	Advanced 4D Package	H45561WA	Includes all the tools from the 4D Package as well as the Advanced 4D post-processing	
3.	Advanced QScan Imaging	H45561WB	Dedicated parametric imaging applications for quantitative display of regional wall	Not available in all markets.
4.	Advanced QScan Imaging Rev. J	H45561WC	Dedicated parametric imaging applications for quantitative display of regional wall deformation.	For Japan Only
5.	AFI Package	H45561WD	Automated Function Imaging	
6.	IMT Intermedia Thickness	H45561WE	The Intima Media Thickness (IMT) measurement option	
7.	2D Strain	H45561WF	This is a research option only, not for regular clinical use.	
8.	Auto 2D EF	H45561WG	Automated 2D EF Measurement tool based upon 2D-Speckle tracking algorithm	
9.	EchoPAC Share	H45561WH	Maximum 3 GE clients. (The GE client may be: EchoPAC (Turnkey or SW-Only), Vivid E9, Vivid 7, Vivid S6, Vivid S5, Vivid q, or Vivid i.)	
10.	EchoPAC DICOM Share	H45561WJ	Up to 2 non-GE clients via DICOM and one GE client (The GE client may be: EchoPAC (Turnkey or SW-Only), Vivid E9, Vivid 7, Vivid S6, Vivid S5, Vivid q, or Vivid i.)	
11.	Mitral Valve Assessment	H45561WK	Software plug-in for Mitral Valve visualization derived from the volume ultrasound data of the Vivid Scanner. The semi-automatic surface detecting algorithm is optimized for clinical users to get fast, reproducible and accurate 4D visualization of the Mitral Valve.	
12.	Mitral Valve Assessment Rev. J	H45561WL	Software plug-in for Mitral Valve visualization derived from the volume ultrasound data of the Vivid Scanner. The semi-automatic surface detecting algorithm is optimized for clinical users to get fast, reproducible and accurate 4D visualization of the Mitral Valve.	
13.	4D LV Volume	H45561WM	Please note 2 GByte of RAM is a requirement. Software plug-in for volume calculation based on volume ultrasound data Requires 4D Analysis Package..	Not available in all markets.
14.	4D LV Volume Rev. J	H45561WN	Please note 2 GByte of RAM is a requirement. Software plug-in for volume calculation based on volume ultrasound data Requires 4D Analysis Package..	For Japan Only.
15.	4D RV Volume	H45561WP	4D volume and ejection fraction tool for Right Ventricle from TomTec, customized for GE users. The option "4D Analysis Package" is required.	Not available in all markets.
16.	4D RV Volume Rev. J	H45561WR	4D volume and ejection fraction tool for Right Ventricle from TomTec, customized for GE users. The option "4D Analysis Package" is required.	For Japan Only.

9-4-4   Software Options - BT'11

Table 9-15   Software Options - BT'11 (software v110.x)

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	4D Package	H45561PS		
2.	Advanced 4D Package	H45561PT		
3.	Advanced QScan Imaging	H45561PW	Not available in all markets.	
4.	Advanced QScan Imaging Rev. J	H45561PX	STRAIN EPPC F/JAPAN Not available in all markets.	For Japan
5.	AFI Package	H45561RP		
6.	IMT Intermedia Thickness	H45561PZ		
7.	2D Strain	H45561JM		
8.	Auto 2D EF	H45561RM		
9.	EchoPAC Share	H45561JP	Maximum 3 GE clients. (The GE client may be: EchoPAC (Turnkey or SW-Only), Vivid E9, Vivid 7, Vivid S6, Vivid S5, Vivid q, or Vivid i.)	
10.	EchoPAC DICOM Share	H45561JR	2 non-GE clients via DICOM and one GE client (The GE client may be: EchoPAC (Turnkey or SW-Only), Vivid E9, Vivid 7, Vivid S6, Vivid S5, Vivid q, or Vivid i.)	
11.	4D LV Volume	H45561RA EY200274	Not available in all markets.	
12.	4D LV Volume Rev. J	H45561RB	Not available in all markets.	
13.	4D RV Volume	H45561RC EY200276	Not available in all markets.	
14.	4D RV Volume Rev. J	H45561RD EY200277	Not available in all markets.	

9-4-5 Software Options - BT'09

Table 9-16   Software Options - BT'09 (software v108.x)

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	Q-ANALYSIS	H45551RC	THE Q-ANALYSIS PACKAGE (ECHO RESEARCH)	
2.	ADVANCED Q-SCAN IMAGING	H45551RD	STRAIN ECHOPAC PC	Not for Japan
3.	ADVANCED Q-SCAN IMAGING Rev. J	H45551RE	STRAIN EPPC F/JAPAN	For Japan
4.	ECHO DICOM NETWORK OPTION	H45551RF	DICOM ECHOPAC PC	
5.	ECHO STRESS	H45551RG	QUANTATIVE STRESS ECHO ANALYSIS	
6.	MACVUE	H45521LY	VIEW MO DISKS RECORDED ON ECHOPAC MAC ON ECHOPAC PC. For installation instructions, refer to direction number EP294509	
7.	DICOM PRINT	H45551RH		
8.	ECHOPAC SHARE (max 3 GE clients)	H45551RJ	MINI ECHOSERVER (DIRECT CONNECT SHARE) (max 3 GE clients)	
9.	4D Analysis	H45551RK	GRAPHIC CARD NOT INCLUDED	
10.	2D strain	H45551RL		
11.	MPEGvue	H45551RM		
12.	EchoPAC DICOM SHARE	H45551EY		
13.	IMT - Intermedia Thickness	H45551RP		
14.	Automated Function Imaging (AFI)	H45551RR		
15.	4D LV Volume	H45551RS		
16.	4D LV Volume Rev. J	H45551RT		
17.	Advanced 4D Analysis	H45551RW		
18.	4D RV Volume	H45551RX		
19.	4D RV Volume Rev. J	H45551RY		

9-4-6   Software Options - BT'08

Table 9-17   Software Options - BT'08 (software v7.x)

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	Q-ANALYSIS	H45551EK	THE Q-ANALYSIS PACKAGE (ECHO RESEARCH)	
2.	ADVANCED Q-SCAN IMAGING	H45551EL	STRAIN ECHOPAC PC	Not for Japan
3.	ADVANCED Q-SCAN IMAGING Rev. J	H45551EM	STRAIN EPPC F/JAPAN	For Japan
4.	ECHO DICOM NETWORK OPTION	H45551EN	DICOM ECHOPAC PC	
5.	ECHO STRESS	H45551EP	QUANTATIVE STRESS ECHO ANALYSIS	
6.	MACVUE	H45521LY	VIEW MO DISKS RECORDED ON ECHOPAC MAC ON ECHOPAC PC	
7.	DICOM PRINT	H45551ER		
8.	ECHOPAC SHARE (max 3 GE clients)	H45551ES	MINI ECHOSERVER (DIRECT CONNECT SHARE) (max 3 GE clients)	
9.	4D Analysis	H45551ET	GRAPHIC CARD NOT INCLUDED	
10.	4D Analysis	EQ100038-01	for Installed Base	
11.	2D strain	H45551EW		
12.	MPEGvue	H45551EX		
13.	EchoPAC DICOM SHARE	H45551EY		
14.	IMT - Intermedia Thickness	H45551EZ		
15.	Automated Function Imaging (AFI)	H45551FA		
16.	4D LV Volume	H45551FB		
17.	4D LV Volume Rev. J	H45551FC		

9-4-7   Software Options - BT'06

Table 9-18   Software Options - BT'06 (software v6.x)

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	Q-ANALYSIS	H45541GX	THE Q-ANALYSIS PACKAGE (ECHO RESEARCH)	
2.	ADVANCED Q-SCAN IMAGING	H45541GY	STRAIN ECHOPAC PC	Not for Japan
3.	ADVANCED Q-SCAN IMAGING Rev. J	H45541GZ	STRAIN EPPC F/JAPAN	For Japan
4.	ECHO DICOM NETWORK OPTION	H45541HA	DICOM ECHOPAC PC	
5.	ECHO STRESS	H45541HB	QUANTATIVE STRESS ECHO ANALYSIS	
6.	MACVUE	H45541LY	VIEW MO DISKS RECORDED ON ECHOPAC MAC ON ECHOPAC PC	
7.	DICOM PRINT	H45541HC		
8.	ECHOPAC SHARE (max 3 GE clients)	H45541HD	MINI ECHOSERVER (DIRECT CONNECT SHARE) (max 3 GE clients)	
9.	4D Analysis	H45541HF	GRAPHIC CARD NOT INCLUDED	
10.	2D strain	H45541HG		
11.	MPEGvue	H45541HH		
12.	EchoPAC DICOM SHARE	H45541HJ		
13.	IMT - Intermedia Thickness	H45541HK		
14.	Automated Function Imaging (AFI)	H45541HL		
15.	4D LV Volume	H45541KZ		

9-4-8 Software Options - BT'05

Table 9-19   Software Options - BT'05 (software v5.x)

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	Q-ANALYSIS	H45531ZT	THE Q-ANALYSIS PACKAGE (ECHO RESEARCH)	
2.	ADVANCED Q-SCAN IMAGING	H45531ZW	STRAIN ECHOPAC PC	Not for Japan
3.	ADVANCED Q-SCAN IMAGING	H45531ZX	STRAIN EPPC F/JAPAN	For Japan
4.	ECHO DICOM NETWORK OPTION	H45541EA	DICOM ECHOPAC PC	
5.	ECHO STRESS	H45531ZZ	QUANTATIVE STRESS ECHO ANALYSIS	
6.	MACVUE	H45521LY	VIEW MO DISKS RECORDED ON ECHOPAC MAC ON ECHOPAC PC	
7.	DICOM PRINT	H45541AA		
8.	ECHOPAC SHARE (max 3 GE clients)	H45541AB	MINI ECHOSERVER (DIRECT CONNECT SHARE) (max 3 GE clients)	
9.	4D Analysis	H45541AC	For COMPAQ EVO W4000 and HP xw4100	
10.	4D Analysis	H45541EB	GRAPHIC CARD NOT INCLUDED	
11.	2D strain	H45541EC		
12.	MPEGvue	H45541ED		
13.	EchoPAC DICOM SHARE	H45541AG		
14.	IMT - Intermedia Thickness	H45541AH		

9-4-9   Software Options - BT'04

Table 9-20   Software Options - BT'04 (software v4.x)

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	Q-ANALYSIS	H45531LC	THE Q-ANALYSIS PACKAGE (ECHO RESEARCH)	
2.	ADVANCED QSCAN IMAGING	H45531LD	STRAIN ECHOPAC PC	Not for Japan
3.	ADVANCED QSCAN IMAGING	H45531LE	STRAIN EPPC F/JAPAN	For Japan
4.	ECHODICOM Network option	H45531LF	DICOM ECHOPAC PC	
5.	ECHOSTRESS	H45531LG	QUANTATIVE STRESS ECHO ANALYSIS	
6.	MACVUE	H45521LY	VIEW MO DISKS RECORDED ON ECHOPAC MAC ON ECHOPAC PC	
7.	DICOM PRINT	H45531LJ		
8.	DIRECT CONNECT SHARE (max 3 clients)	H45531LK	MINI ECHOSERVER	
9.	3D Analysis	H45531LL		
10.	eVue	H45531LH		
11.	2d strain	H45531MN		
12.	MPEGvue	H45531MP		

9-4-10 Software Options - BT'03

Table 9-21   Software Options - BT'03 (software v3.x)

ITEM	PART NAME	H-CAT #	DESCRIPTION	COMMENTS
1.	Q-ANALYSIS	H45511FH	THE Q-ANALYSIS PACKAGE (ECHO RESEARCH)	
2.	ECHOSTRESS	H45521FY	QUANTATIVE STRESS ECHO ANALYSIS	
3.	ADVANCED QSCAN IMAGING	H45521FW	STRAIN ECHOPAC PC	Not for Japan
4.	ADVANCED QSCAN IMAGING	H45521FX	STRAIN EPPC F/JAPAN	For Japan
5.	ECHODICOM Network option	H45521FM	DICOM ECHOPAC PC	
6.	MACVUE	H45521LY	VIEW MO DISKS RECORDED ON ECHOPAC MAC ON ECHOPAC PC	
7.	DICOM PRINT	H45521LR	BT03	
8.	DIRECT CONNECT (max 3 clients)	H45521LW	BT03: MINI ECHOSERVER	

Section 9-5
Keyboards and Mouse
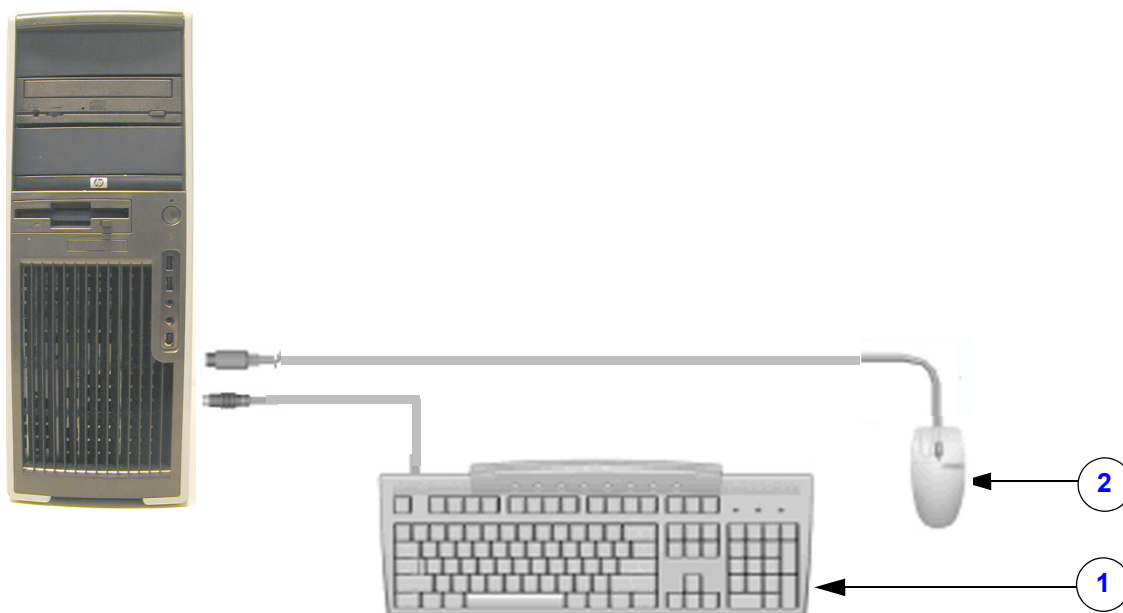
Figure 9-1   Keyboards and Mouse

Table 9-22   Keyboards and Mouse

Item	Part Name	Part Number	Description	Qty	CRU	FRU
1	PC KEYBOARD, LANGUAGE SPECIFIC	066E0135 066E0136 066E0137 066E0138 066E0139 066E0144 066E0145 066E0146 066E0147 066E0148	NORWEGIAN SWEDISH/FINNISH DANISH FRENCH GERMAN ITALIAN SPANISH PORTUGUESE ENGLISH (UK) ENGLISH (USA)	1	Y Y Y Y Y Y Y Y Y Y	Y Y Y Y Y Y Y Y Y Y
2	MOUSE	066E0309		1	Y	Y

Section 9-6
Monitors

9-6-1　　　LCD/TFT Monitor
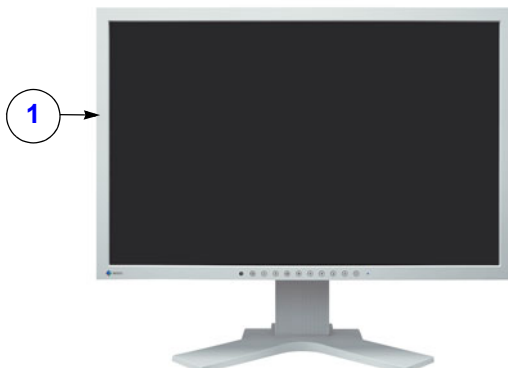
Figure 9-2　LCD/TFT Monitor (Example)

Table 9-23　LCD/TFT Monitors

Item	Part Name	Part Number	Description	Qty	CRU	FRU
1	Monitor 22" TFT/LCD 16:10	066E3015	22" TFT/LCD 16:10 f/EchoPAC Eizo: FlexScan S2231WSE Introduced in 2009. Replaces the 21" LCD, Samsung SyncMaster 214T, 066E3010. For installation instructions, please refer to dirtection number: EY250160 (Eizo FlexScan 22 inch Monitors Installation Manual)	1 or 2	Y	Y
	MONITOR 17" TFT/LCD FOR EchoPAC	066E3004	EIZO FlexScan S1721SAK Replaces: 066E3003 / 066E3002 / 066E0083 and 066E3000	1 or 2	Y	Y
2	Samsung 214T IP Board	066E3011		1	N	Y

Section 9-7
Uninterruptible Power Supply - UPS

9-7-1   Overview

These UPS models have been used:
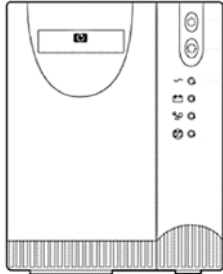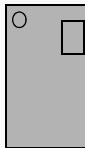
- HP T750 G2 (introduced as a replacement for HP T750).
- HP T750 (introduced as a replacement for COMPAQ T700)
- COMPAQ T700 (from the introduction of EchoPAC PC in 2001 to late 2005)

For EchoPAC PC Turnkey workstations delivered before June 2004, the UPS was a standard part of the delivery

After the introduction of software version v4.0.0 (BT'04), the UPS unit is an option.

9-7-2   UPS Parts

Table 9-24   UPS parts

Item	Part Name	Part Number	Description	Qty	CRU	FRU
1	UPS T750 G2 JPN, for Japan	066E0619	Please refer to the documentation included with the UPS.	1	Y	Y
	UPS T750 G2 NA Low voltage for USA	066E0617				
	UPS T750 G2 INTL High voltage	066E0618				
4	COMPAQ T700 UPS BATTERY	084C4260		1	Y	Y

Section 9-8
Cables

9-8-1   Overview

Contents in this section:

9-8-2   AC Cables for EchoPAC PC Turnkey - 1xx VAC

MO DRIVE (OPTION TO HP
XW4100, COMPAQ EVO W4000
and COMPAQ W300)
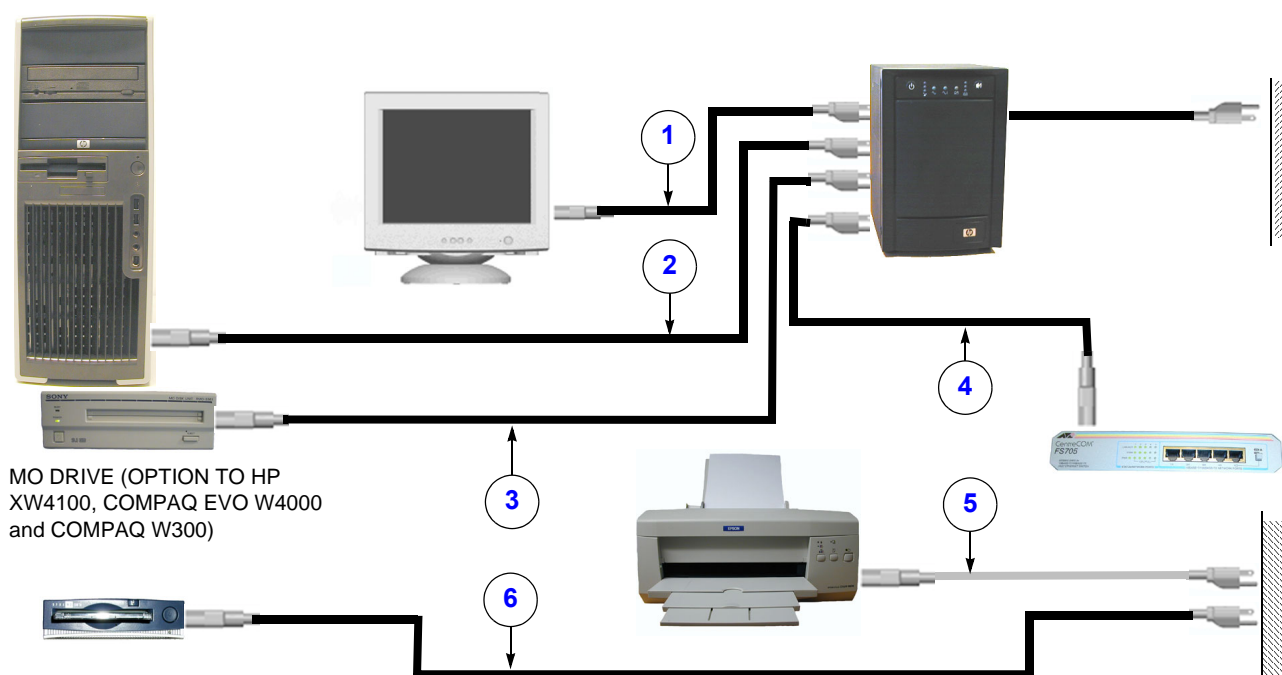
Figure 9-3   AC Cables for EchoPAC PC Turnkey - 1xx VAC

Table 9-25   AC Cables for EchoPAC PC Turnkey - 1xx VAC

Item	Name	Part Number	Description	Qty	CRU	FRU
	ECHOPAC PC WORKSTATION					
1	CABLE, POWER 1XX VAC	070C3561	1XX VAC	1	Y	Y
2				1		
3				1		
4				1		
	PERIPHERALS					
5	CABLE, POWER 1XX VAC	070C3561	1XX VAC	1	Y	Y
6				1		

9-8-3   AC Cables for EchoPAC PC Turnkey - 2xx VAC
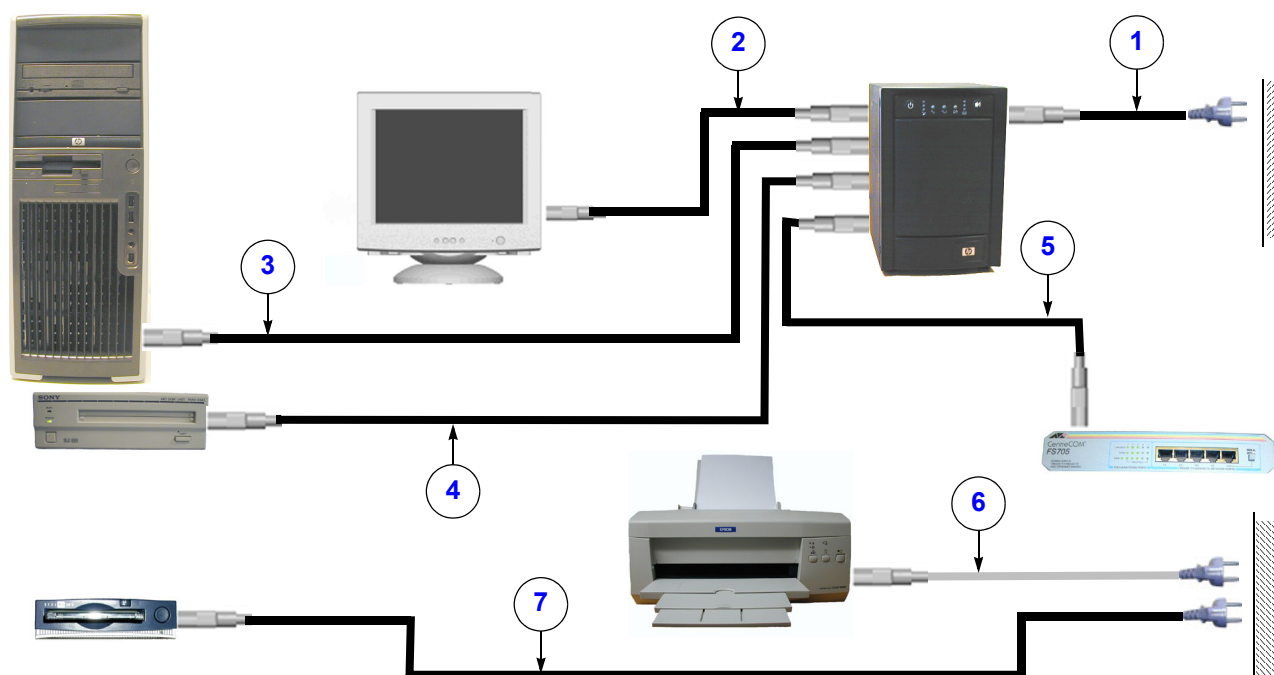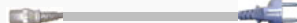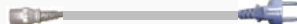
Figure 9-4   AC Cables for EchoPAC PC Turnkey - 2xx VAC

Table 9-26   AC Cables for EchoPAC PC Turnkey - 2xx VAC

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
	ECHOPAC PC WORKSTATION					
1	CABLE, MAINS 2XX VAC PLUG EURO	070C3191	FOR 230 VAC UPS	1	Y	Y
2						
3	CABLE, MAINS SHIELDED, 2.05 M	070C5205	EXTENTION CABLE	4	Y	Y
4						
5						
	PERIPHERALS					
6	CABLE, MAINS 2XX VAC PLUG EURO	070C3191	FOR 230 VAC	1	Y	Y
7	CABLE, MAINS 2XX VAC PLUG EURO	070C3191	FOR 230 VAC	1	Y	Y

9-8-4   Signal Cables

9-8-4-1   Overview

Depending on time (year) of delivery, several configurations have been used, see:

9-8-4-2   EchoPAC PC Turnkey with two Monitors and T750/T750-2 UPS

Figure 9-5 Signal Cables - EchoPAC PC Turnkey with two Monitors and "new" UPS
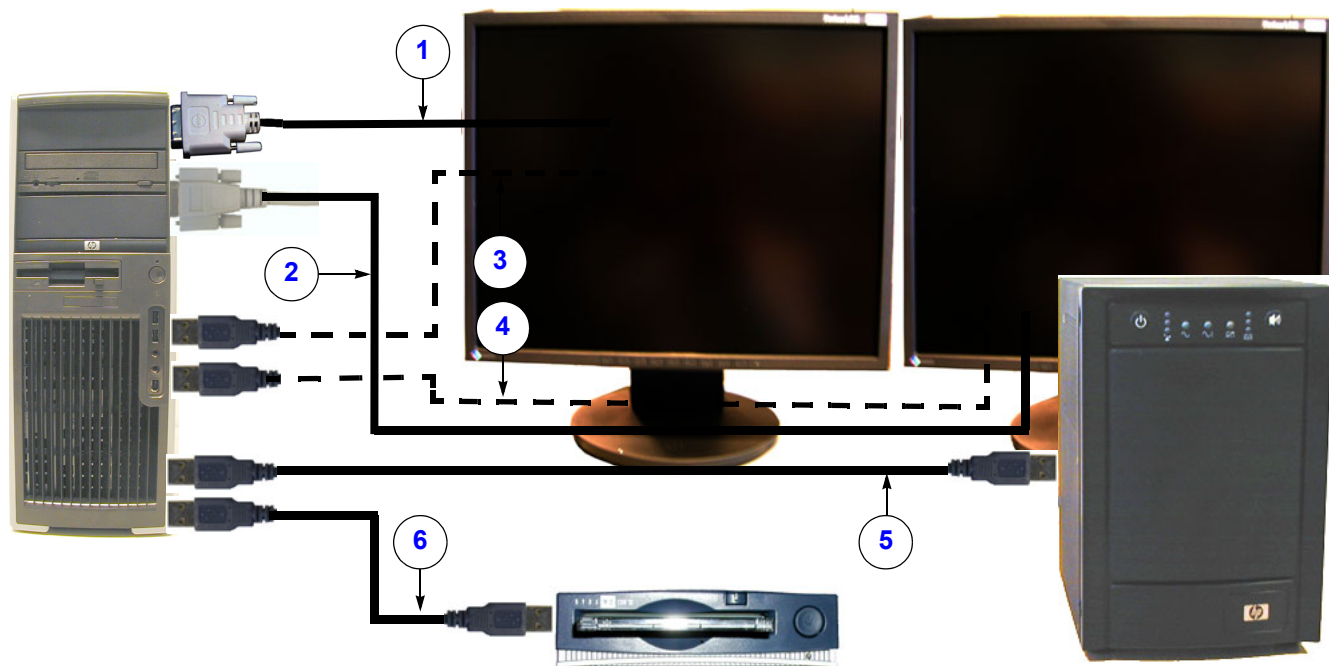
Table 9-27   Signal Cables - EPPC w/ two monitors and T750/T750 G2 UPS

Item	Part Name	Part Number	Description	Qty	CRU	FRU
1	CABLE, DVI MONITOR CABLE	070D2911	MALE TO MALE, 2.00M FOR LCD MONITOR (DVI)	1	Y	Y
2	CABLE, VGA MONITOR CABLE	070D2910	MALE TO MALE (VGA), 2.00M FOR OPTIONAL MONITOR #2	1	Y	Y
3	CABLE USB A to B	070D2800	(OPTIONAL) PC to MONITOR	1	Y	Y
4	CABLE USB A to B	070D2800	(OPTIONAL) PC to MONITOR	1	Y	Y
5	CABLE USB A to B	070D2800	PC to UPS	1	Y	Y
6	CABLE USB A to B	070D2800	PC to 3.5 MO DRIVE	1	Y	Y
	Display Port for DVI Adapter	064G5820	Mini DisplayPort to DVI Converter. Introduced late 2010.	1	Y	Y

9-8-4-3   EchoPAC PC Turnkey with one Monitor and "Old" UPS
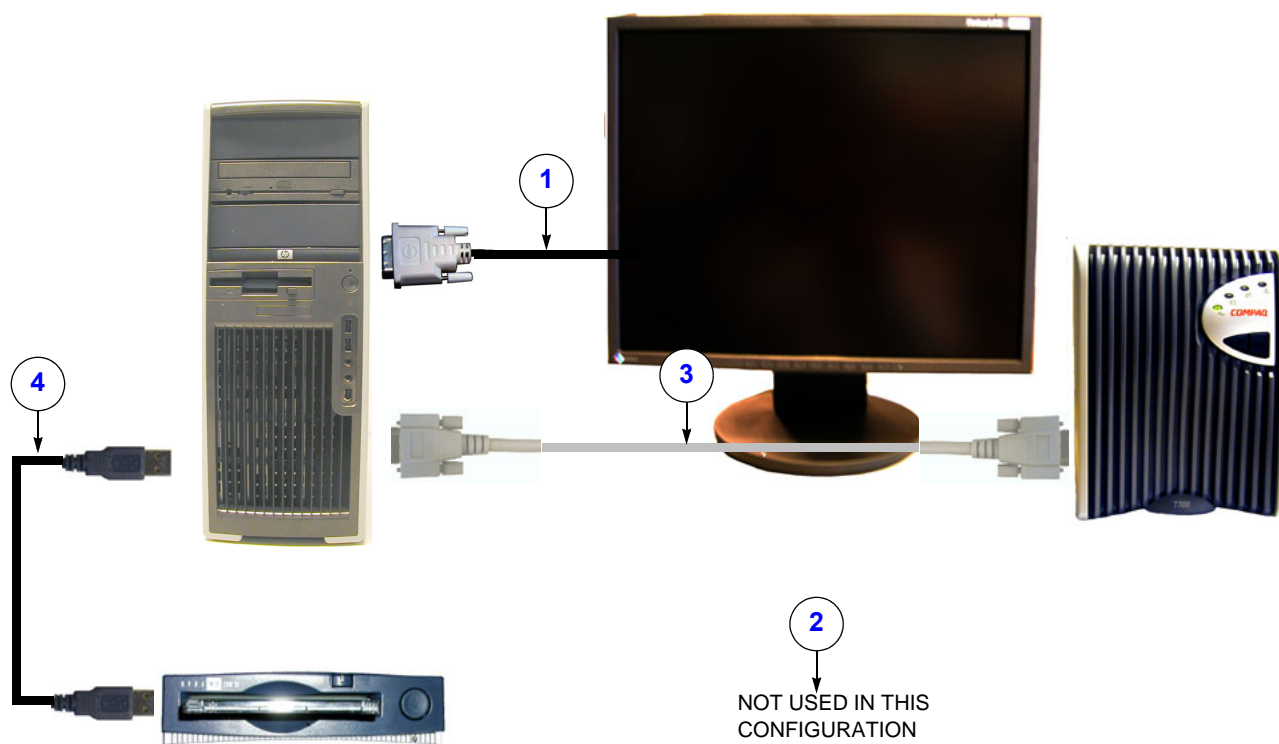
Figure 9-6   Signal Cables - one LCD monitor and "old" UPS

Table 9-28   Signal Cables - one LCD monitor and "old" UPS

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1	CABLE, DVI MONITOR CABLE	070D2911	MALE TO MALE, 2.00M FOR LCD MONITOR (DVI)	1	Y	Y
2	CABLE, VGA MONITOR CABLE	070D2910	MALE TO MALE, 2.00M FOR VGA	1	Y	Y
3	RS-232 Cable, 9 pin plugs	070M0009	PC to UPS	1	Y	Y
4	CABLE USB A to B 1,00M	070D2800	A to B 1 meter long	1	Y	Y

9-8-4-4   EchoPAC PC Turnkey with one CRT Monitor, SCSI Devices and "Old" UPS
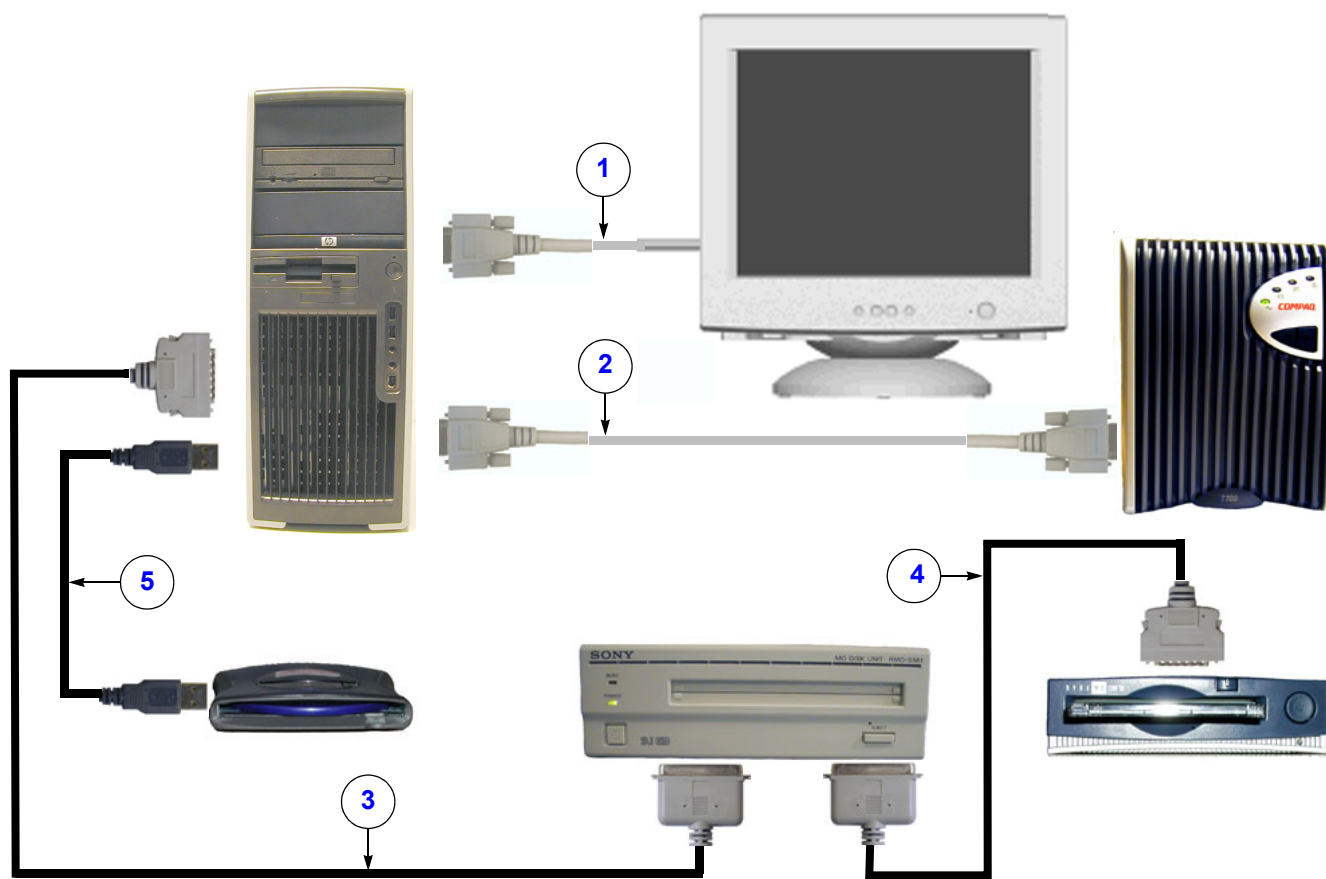
Figure 9-7   Signal Cables - EchoPAC PC Turnkey with one CRT Monitor, SCSI Devices and "Old" UPS

Table 9-29   Signal Cables - EPPC w/ one CRT monitor, SCSI devices and "Old" UPS

Item	Part Name	Part Number	Description	QTY	CRU	FRU
1	CABLE, VGA MONITOR CABLE	070D2910	MALE TO MALE, 2.00M FOR CRT MONITOR (VGA)	1	Y	Y
2	RS-232 Cable, 9 pin ends	070M0009	PC to UPS	1	Y	Y
3	CABLE SCSI 1,5M 50P CN to D-Sub HD	070D3051	50P CN to D-sub HD 1,5 meters long	1	Y	Y
4	CABLE SCSI 0,6M 50P CN / D-Sub HD	070D3054	50P CN to D-sub HD 0,6 meter long	1	Y	Y
5	CABLE USB A to B 1,00M	070D2800	A to B 1 meter long	1	Y	Y

9-8-5 **Network Cables**
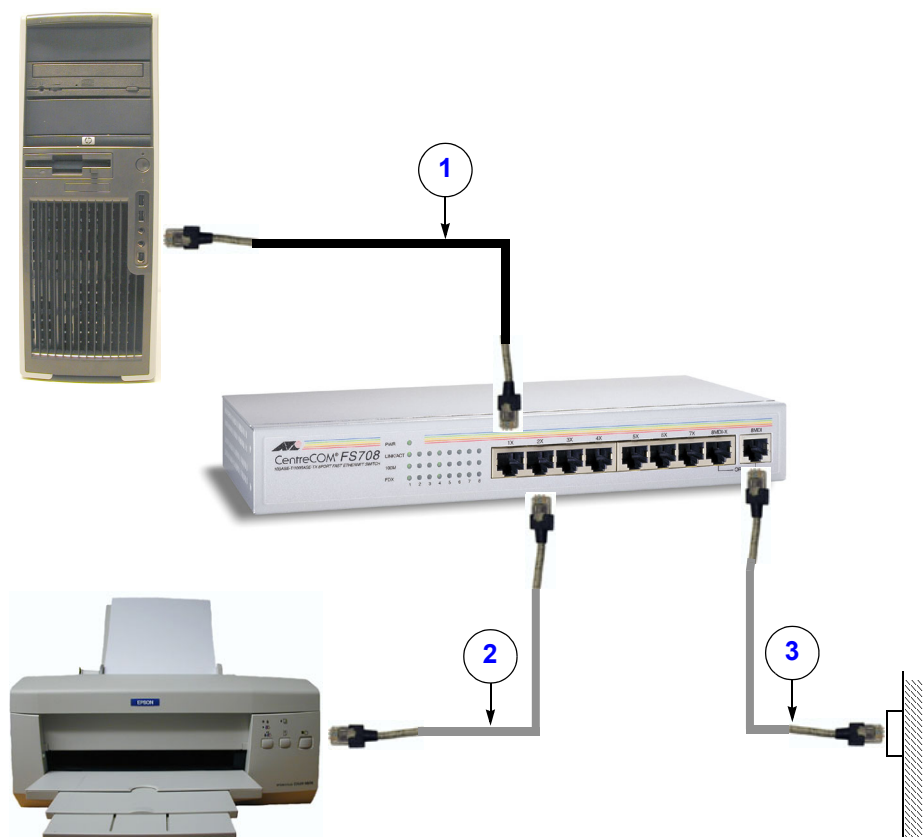
Figure 9-8   Network Cables

Table 9-30   Network Cables

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1	CABLE ETHERNET PATCH 5,00M SHIELDED TWISTED PAIR	070D2950	5 meters long	1	Y	Y
2	CABLE ETHERNET PATCH 5,00M SHIELDED TWISTED PAIR	070D2950	5 meters long	1	Y	Y
3	CABLE ETHERNET PATCH 5,00M SHIELDED TWISTED PAIR	070D2950	5 meters long	1	Y	Y
4	ETHERNET CROSSOVER CABLE 5M	070D2951	Crossover cable 5 meters long	1	Y	Y

Section 9-9
EchoPAC PC Turnkey workstations covered in this manual

HP Z200   HP xw4600 /   HP xw4300/   COMPAQ EVO W4000   COMPAQ DeskPro
                 HP xw4400   xw4200/xw4100   Workstation 300
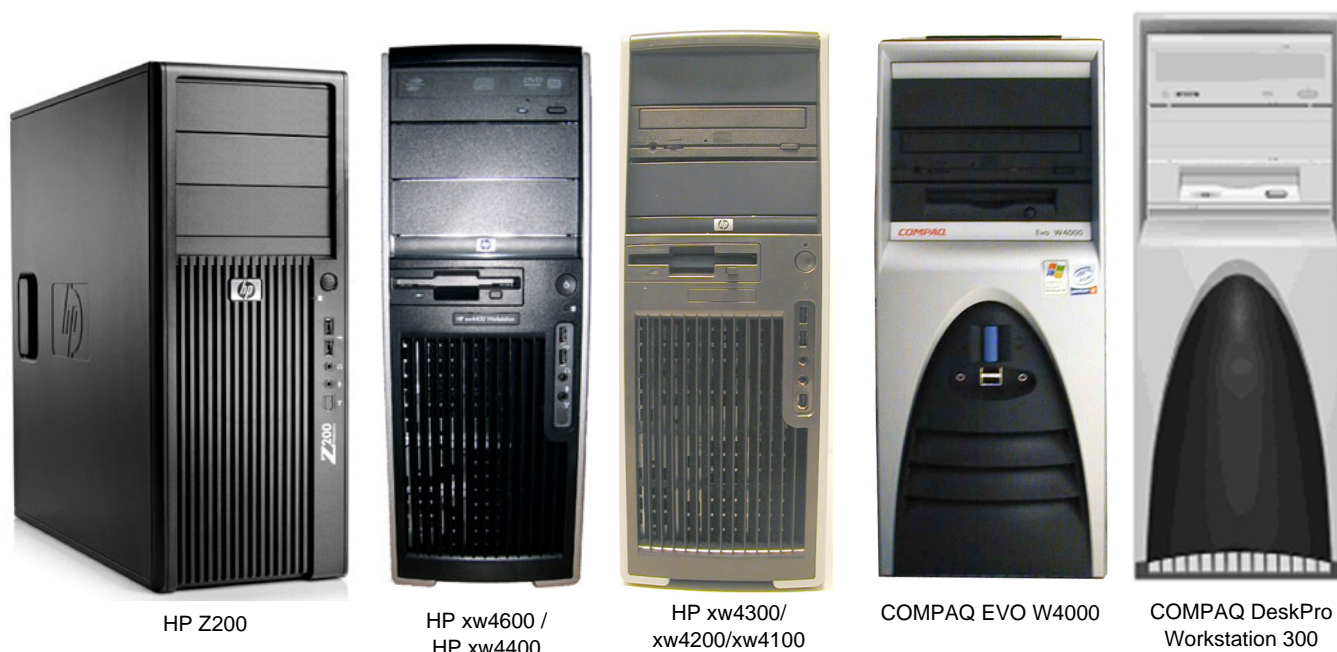
Figure 9-9   Workstation models used for EchoPAC PC Turnkey

- HP Z200
  - Delivered with BT'09 and BT'11 software.
  - Can be upgraded to software version v112.x.x.
- HP xw4600
  - Delivered with BT'08, BT'09 and BT'11 software.
  - Can be upgraded to software version v112.x.x..
- HP xw4400
  - Delivered with BT'06 software.
  - Can be upgraded to software version v112.x.x..
- HP xw4300
  - Delivered with BT'05 software.
  - Can be upgraded to software version v112.x.x..
- HP xw4200
  - Delivered with BT'04 software.
  - Can be upgraded to software version v112.x.x..
- HP xw4100
  - Delivered with BT'02 and BT'03 software.
  - Can be upgraded to software version v112.x.x..

Section 9-9   EchoPAC PC Turnkey workstations covered in this manual (cont'd)

- COMPAQ EVO W4000
    - Delivered with BT'02 software.
    - Can be upgraded to software version v6.x.x.
- COMPAQ DeskPro Workstation 300
    - Delivered with BT'01 and BT'02 software.
    - Can be upgraded to software version v3.3.x.

Section 9-10
Workstation service parts

9-10-1   Service Parts for HP Z200

Table 9-31   Service Parts for HP Z200

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	HP Z200	066E0329	Without MO drive	1	Y	N

9-10-2   Service Parts for HP xw4600

Table 9-32   Service Parts for HP xw4600

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	ATI FirePro 5700 512MB	066E0340	Replaces 066E0339 on HP xw4600 ONLY. Requires system software v104.0.2 (or later).	1	Y	Y
2.	SCSI PCI ADAPTER 50P ULTRASCSI	066E0790		1	Y	Y
3.	SCSI Cable for internal mounting in PC	070D3056		1	N	N
4.	MO-DRIVE 9.1GB 5.25 INTERNAL	066E0676		1	Y	Y

9-10-3   Service Parts for HP xw4400

Table 9-33   Service Parts for HP xw4400

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	ATI FireGL V7200 256MB PCI-X DVI	066E0339	Graphics Adapter	1	N	Y
2.	MO-DRIVE 9.1 GB 5.25 INTERNAL	066E0676		1	N	Y
3.	DVD PATA-IDE Drive Pioneer DVR-A18L, DVR-118L	066E0852	Replaces 066E0686 and 066E0688	1	N	Y
4.	SCSI PCI ADAPTER 50P ADAPTEC AHA-2930	066E0790		1	N	Y

9-10-4 Service Parts for HP xw4300

Table 9-34 Service Parts HP xw4300

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	ATI FireGL V7200 256MB PCI-X DVI	066E0339	Graphics Adapter Replaces 066E0337	1	N	Y
2.	MO-DRIVE 9.1 GB 5.25 INTERNAL	066E0676		1	N	Y
3.	DVD PATA-IDE Drive Pioneer DVR-A18L, DVR-118L	066E0852	Replaces 066E0688	1	N	Y
4.	SCSI PCI ADAPTER 50P ULTRASCSI	066E0790		1	N	Y
5.	EchoPAC PC Memory upgrade for HP xw4200 and xw4300	EP200907		1	N	Y

9-10-5 Service Parts for HP xw4200

Table 9-35 Service Parts - xw4200

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	ATI FirePro V5700 512MB	066E0340	Replaces ATI FireGL V7200 on HP xw4600 ONLY. Requires system software v104.0.2 (or later).	1	N	Y
2.	MO-DRIVE 9.1 GB 5.25 INTERNAL	066E0676		1	N	Y
3.	SCSI PCI ADAPTER 50P ULTRASCSI	066E0790		1	N	Y
4.	EchoPAC PC Memory upgrade for HP xw4200 and xw4300	EP200907		1	N	Y

9-10-6   Service Parts for HP xw4100

Table 9-36   Service Parts - xw4100

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	EchoPAC PC Memory upgrade for HP xw4100	EP200906		1	N	Y

9-10-7   Service Parts for COMPAQ EVO W4000

No service parts available.

9-10-8   Service Parts for COMPAQ Deskpro Workstation 300

No service parts available.

Section 9-11
Peripherals - Internal

Table 9-37   Internal Peripherals (HP xw4300 / xw4200 ONLY)

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	5.25 MO DRIVE, 9.1 GB	066E0676		1	N	Y

Section 9-12
Peripherals - External

9-12-1   External Storage Devices

Table 9-38   External Storage Devices

Item	Part Name	Part Number	Description	QTY	CRU	FRU
1	MO Drive 9.1 GB 5.25" Ext	066E0677	SCSI BUS	1	Y	Y
3	IOMEGA Ultramax Desktop Hard Drive External USB hard disk with RAID1 data protection mirrored hard disk USB-2 BUS	EY100147		1	N	Y
4	Hard Drive 3,5 inch 1TB SATA for IOMEGA Norsk Datalagring: NDUR-1T-HD	066E0662	Replacement disk for the IOMEGA Ultramax	2	N	Y

9-12-2 USB Flash Card (USB Drive)

Table 9-39 USB Flash Card (USB Drive)

ITEM	Part Name	Part Number	Description	QTY	CRU	FRU
1	USB Memory Key 8GB	066E0753	Kingston DataTraveler 410	1	Y	Y
2	USB Memory Key 4GB	066E0754	SanDisk Cruzer Slice	1	Y	Y
3	USB Memory Key 2GB	066E0751	Transcend USB Memory Key 2GB (From BT'09) This model have been approved for use with the Vivid E9, but is no more available from GEHC.	1	N	N
4	USB Drive 256 MB USB 2.0 The following models have been approved for use with Vivid 7, and may also be used with EchoPAC PC:. - Kingston DataTraveler Elite 256 MB - Sandisk Cruzer Micro 256 MB - Twin MOS K24-256MB Mobile Disk III	066E0693 066E0692 066E0691	USB FLASH CARD (USB Drive 256 MB USB 2.0 Up to BT'08)	1	N	N

9-12-3   Printers, Network

Table 9-40   Printer, Color, Network

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	COLOR PRINTER HP OFFICEJET PRO 8000 100-240V SPARE PART:	EY100153 066E0427	Color Printer HP Officejet Pro 8000 100-240V CB092A	1	N	Y
2.	HP COLOR LASERJET CP2025n Printer 220-240V SPARE PART:	EY100149 066E0428		1	N	Y
3.	HP COLOR LASERJET CP2025n Printer 100-127V SPARE PART:	EY100148 066E0429				
4.	HP OFFICEJET PRO K5400 KIT SPARE PART: HP OfficeJet Pro K5400dn	EQ100158 066E0426	Replaced by EY100153 / 066E0427	1	Y	Y
2.	HP OfficeJet PRO K550 assembly	EP100925	NETWORK INKJET PRINTER HP OfficeJet PRO K550 DTN	1	Y	Y
	HP OfficeJet PRO K550	066E0425		1	Y	Y
3.	HP InkJet 1200dtn	EP100731	NETWORK INKJET PRINTER	1	Y	Y

9-12-4 Network Switches
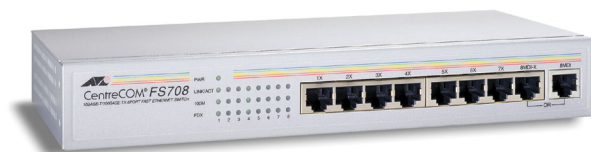
Figure 9-10   Network Switch

Table 9-41   Network Switches

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	Ethernet switch 10/100 8 port	066E0743	Replaces 066E0741	1	Y	Y

Section 9-13
Storage Media

Table 9-42   Storage Media

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	MO-disk 2.3 GB, 3,5"	066E0490	3.5 inch	1	Y	Y
2.	MO-disk 2.3 GB, 5.25"	066E0518	5.25 inch	1	Y	Y
3.	MO-disk 5.2 GB, 5.25"	066E0519		1	Y	Y
4.	MO-disk 8.6 GB, 5.25"	066E0514		1	Y	Y
5.	MO disk 9.1 GB, 5.25"	066E0516		1	N	N

Section 9-14
Kits

9-14-1   EchoPAC PC Workstation Upgrade Kits

Table 9-43   EchoPAC PC Workstation Upgrade Kit, software version v112.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT'12 Software Upgrade kit	EY200387 H45561TP	EchoPAC PC Turnkey Upgrade from BT'09 or BT'11 For installation instructions, see Direction Number: EY194438.	1	N	N/A

Table 9-44   EchoPAC PC Workstation Upgrade Kit BT'11 - software version v110.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT'11 Software Upgrade kit	EY200256 H45561JC	EchoPAC PC BT11 Turnkey upgrade from BT09.	1	N	N/A

Table 9-45   EchoPAC PC Workstation Upgrade Kits BT'09 - software version v108.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT'09 Software Upgrade kit	EY200082 H45551PX	BT'02 to BT'09 Upgrade kit. For installation instructions, see Direction Number:EY194438.	1	N	N/A

Table 9-46   EchoPAC PC Workstation Upgrade Kits BT'08 - software version v7.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	EchoPAC PC Workstation BT'08	EQ100190 H45551DF		1	N	N/A
2.	EPPC Country Assembly, Japanese, BT'08	EQ100181 H45551DX		1	N	N/A
3.	System Software Upgrade Kit for HPxw4400 workstation	EP200926-01		1	N	N/A
4.	4D Analysis (Installed Base)	EQ100038 H45551EH		1	N	N/A
5.	4D Analysis for Low-End EchoPAC PC	EQ100039 H45551EJ		1	N	N/A
6.	MEMORY UPGRADE FOR COMPAQ EVO W4000	EP200903 H45541MA		1	N	N/A
7.	MEMORY UPGRADE FOR HP XW4100	EP200906 H45541MC		1	N	N/A

Table 9-46   EchoPAC PC Workstation Upgrade Kits BT'08 - software version v7.x (cont'd)

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
8.	MEMORY UPGRADE FOR HP XW4200/4300	EP200907 H45541MD		1	N	N/A
9.	EPPC BT'04 TO BT'08 Software Upgrade	EQ200036 H45551EA		1	N	N/A
10.	EPPC BT05 TO BT08 Software Upgrade	EQ200036 H45551EB		1	N	N/A
11.	EPPC BT'06 TO BT'08 Software Upgrade	EQ200036 H45551EC		1	N	N/A

9-14-1   EchoPAC PC Workstation Upgrade Kits (cont'd)

Table 9-47   EchoPAC PC Workstation Upgrade Kits BT'06 - software version v6.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	4D Analysis OPTION FOR W4000, xw4100, xw4200 and xw4300 (Software version v6.x)	H45541HE EP100857		1	N	N/A
2.	MEMORY UPGRADE FOR COMPAQ EVO W4000	EP200903		1	N	N/A
3.	MEMORY UPGRADE FOR HP XW4100	EP200906		1	N	N/A
4.	MEMORY UPGRADE FOR HP XW4200/ 4300	EP200907		1	N	N/A
5.	EPPC BT'05 to BT'06 Upgrade	H45541GW EP10834		1	N	N/A
6.	EPPC BT'04 to BT'06 Upgrade	H45541GT EP100833		1	N	N/A
7.	EPPC BT'03 to BT'06 Upgrade	H45541GS EP100832		1	N	N/A
8.	EPPC BT'02 to BT'06 Upgrade	H45541GR EP100831		1	N	N/A

Table 9-48   EchoPAC PC Workstation Upgrade Kits BT'05 - software version v5.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	3D/4D OPTION FOR W4000 and xw4100 (Software version v5.x)	H45541AC EP100791		1	N	N/A
2.	3D/4D OPTION FOR W4000 and xw4100 (Software version v5.x)	H45541EB EP100792		1	N	N/A
3.	EPPC BT'04 to BT'05 Upgrade	H45531ZS EP100783		1	N	N/A
4.	EPPC BT'03 to BT'05 Upgrade	H45531CR EP100782		1	N	N/A
5.	EPPC BT'02 to BT'05 Upgrade	H45531ZQ EP100781		1	N	N/A

Table 9-49   EchoPAC PC Workstation Upgrade Kits BT'04 - software version v4.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	3D/4D OPTION FOR W4000 and xw4100 (Software version v4.x)	H45531LL EP100716		1	N	N/A
2.	EPPC BT'03 to BT'04 Upgrade	H45531LB		1	N	N/A
3.	EPPC BT'02 to BT'04 Upgrade	H45531LA		1	N	N/A

9-14-1   **EchoPAC PC Workstation Upgrade Kits** (cont'd)

Table 9-50   EchoPAC PC Workstation Upgrade Kits BT'03 - software version v3.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	EPPC BT'02 to BT'03 Upgrade	H45521LP EP200517		1	N	N/A
2.	EPPC BT'01 to BT'03 Upgrade	H45521LL EP200515		1	N	N/A

Table 9-51   EPPC HW obsolescence upgrade

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	EPPC HW obsolescence upgrade without MO-drive	EY200086		1	N	N/A
2.	EPPC HW obsolescence upgrade with MO-drive	EY200138		1	N	N/A

9-14-2   Language Kits

9-14-2-1   Typical Contents in a Language Kit

- EchoPAC Box (Carton)
- EchoPAC PC System Software CDs (one for each PC model)
- Application Software CD
- EchoPAC Mouse Pad
- PC Keyboard (type is language dependant)
- CD with User's Manuals, see Section 9-15 "Product Manuals" on page 9-56 for available languages
- Password Configuration Data Sheet
- Option Dongle
- AC Power Cables - Country Dependant

9-14-2-2   List of Language Kits

*NOTE: The BT'11 versions of EchoPAC PC Turnkey is sold in Japan ONLY, so no list of language kits
             are available.*

Table 9-52   Language Kits (BT'09)

ITEM	PART NAME	H-CAT #	QTY
1.	EPPC Country Assembly, English (US), BT'09	H45551PE	1
2.	EPPC Country Assembly, Norwegian, BT'09	H45551PF	1
3.	EPPC Country Assembly, Danish, BT'09	H45551PG	1
4.	EPPC Country Assembly, Swedish, BT'09	H45551PH	1
5.	EPPC Country Assembly, French, BT'09	H45551PJ	1
6.	EPPC Country Assembly, German, BT'09	H45551PK	1
7.	EPPC Country Assembly, Italian, BT'09	H45551PL	1
8.	EPPC Country Assembly, Spanish, BT'09	H45551PM	1
9.	EPPC Country Assembly, Portuguese, BT'09	H45551PN	1
10.	EPPC Country Assembly, English (UK), BT'09	H45551PP	1
11.	EPPC Country Assembly, Finnish, BT'09	H45551PR	1
12.	EPPC Country Assembly, Netherlands, BT'09	H45551PS	1
13.	EPPC Country Assembly, Chinese, BT'09	H45551PT	1
14.	EPPC Country Assembly, Japanese, BT'09	H45551PW	1

9-14-2-2   **List of Language Kits** (cont'd)

Table 9-53   Language Kits (BT'08)

ITEM	PART NAME	H-CAT #	QTY
1.	EPPC Country Assembly, English (US), BT'08	H45551DG	1
2.	EPPC Country Assembly, Norwegian, BT'08	H45551DH	1
3.	EPPC Country Assembly, Danish, BT'08	H45551DJ	1
4.	EPPC Country Assembly, Swedish, BT'08	H45551DK	1
5.	EPPC Country Assembly, French, BT'08	H45551DL	1
6.	EPPC Country Assembly, German, BT'08	H45551DM	1
7.	EPPC Country Assembly, Italian, BT'08	H45551DN	1
8.	EPPC Country Assembly, Spanish, BT'08	H45551DP	1
9.	EPPC Country Assembly, Portuguese, BT'08	H45551DQ	1
10.	EPPC Country Assembly, English (UK), BT'08	H45551DR	1
11.	EPPC Country Assembly, Finnish, BT'08	H45551DS	1
12.	EPPC Country Assembly, Netherlands, BT'08	H45551DT	1
13.	EPPC Country Assembly, Chinese, BT'08	H45551DW	1
14.	EPPC Country Assembly, Japanese, BT'08	H45551DX	1

9-14-2-2 **List of Language Kits** (cont'd)

Table 9-54   Language Kits (BT'06)

ITEM	PART NAME	H-CAT #	QTY
1.	ECHOPAC LANGUAGE KIT - ENGLISH (US) BT'06	H45541GB	1
2.	ECHOPAC LANGUAGE KIT - NORWEGIAN BT'06	H45541GC	1
3.	ECHOPAC LANGUAGE KIT - DANISH BT'06	H45541GD	1
4.	ECHOPAC LANGUAGE KIT - SWEDISH BT'056	H45541GE	1
5.	ECHOPAC LANGUAGE KIT - FRENCH BT'06	H45541GF	1
6.	ECHOPAC LANGUAGE KIT - GERMAN BT'06	H45541GG	1
7.	ECHOPAC LANGUAGE KIT - ITALIAN BT'06	H45541GH	1
8.	ECHOPAC LANGUAGE KIT - SPANISH BT'06	H45541GJ	1
9.	ECHOPAC LANGUAGE KIT - PORTUGUESE BT'06	H45541GK	1
10.	ECHOPAC LANGUAGE KIT - ENGLISH (UK) BT'06	H45541GL	1
11.	ECHOPAC LANGUAGE KIT - FINNISH BT'06	H45541GM	1
12.	ECHOPAC LANGUAGE KIT - NETHERLANDS BT'06	H45541GN	1
13.	ECHOPAC LANGUAGE KIT - CHINESE BT'06	H45541GP	1
14.	ECHOPAC LANGUAGE KIT - JAPANESE BT'06	H45541GQ	1

9-14-2-2 **List of Language Kits** (cont'd)

Table 9-55 Language Kits (BT'05)

ITEM	PART NAME	H-CAT #	QTY
1.	ECHOPAC LANGUAGE KIT - ENGLISH (US) BT'05	H45531ZC	1
2.	ECHOPAC LANGUAGE KIT - NORWEGIAN BT'05	H45531ZD	1
3.	ECHOPAC LANGUAGE KIT - DANISH BT'05	H45531ZE	1
4.	ECHOPAC LANGUAGE KIT - SWEDISH BT'05	H45531ZF	1
5.	ECHOPAC LANGUAGE KIT - FRENCH BT'05	H45531ZG	1
6.	ECHOPAC LANGUAGE KIT - GERMAN BT'05	H45531ZH	1
7.	ECHOPAC LANGUAGE KIT - ITALIAN BT'05	H45531ZJ	1
8.	ECHOPAC LANGUAGE KIT - SPANISH BT'05	H45531ZK	1
9.	ECHOPAC LANGUAGE KIT - PORTUGUESE BT'05	H45531ZL	1
10.	ECHOPAC LANGUAGE KIT - ENGLISH (UK) BT'05	H45531ZM	1
11.	ECHOPAC LANGUAGE KIT - FINNISH BT'05	H45531ZN	1
12.	ECHOPAC LANGUAGE KIT - NETHERLANDS BT'05	H45531ZP	1
13.	ECHOPAC LANGUAGE KIT - CHINESE BT'05	H45541ZG	1
14.	ECHOPAC LANGUAGE KIT - JAPANESE BT'05	H45541ZH	1

9-14-2-2   **List of Language Kits** (cont'd)

Table 9-56   Language Kits (BT'04)

ITEM	PART NAME	H-CAT #	QTY
1.	ECHOPAC LANGUAGE KIT - ENGLISH (US) BT'04	H45531KE	1
2.	ECHOPAC LANGUAGE KIT - NORWEGIAN BT'04	H45531KF	1
3.	ECHOPAC LANGUAGE KIT - DANISH BT'04	H45531KG	1
4.	ECHOPAC LANGUAGE KIT - SWEDISH BT'04	H45531KH	1
5.	ECHOPAC LANGUAGE KIT - FRENCH BT'04	H45531KJ	1
6.	ECHOPAC LANGUAGE KIT - GERMAN BT'04	H45531KK	1
7.	ECHOPAC LANGUAGE KIT - ITALIAN BT'04	H45531KL	1
8.	ECHOPAC LANGUAGE KIT - SPANISH BT'04	H45531KM	1
9.	ECHOPAC LANGUAGE KIT - PORTUGUESE BT'04	H45531KN	1
10.	ECHOPAC LANGUAGE KIT - ENGLISH (UK) BT'04	H45531KP	1
11.	ECHOPAC LANGUAGE KIT - FINNISH BT'04	H45531KQ	1
12.	ECHOPAC LANGUAGE KIT - NETHERLANDS BT'04	H45531KR	1
13.	ECHOPAC LANGUAGE KIT - POLISH BT'04	H45531KS	1
14.	ECHOPAC LANGUAGE KIT - GREEK BT'04	H45531KT	1
15.	ECHOPAC LANGUAGE KIT - RUSSIAN BT'04	H45531KW	1
16.	ECHOPAC LANGUAGE KIT - CHINESE BT'04	H45531KX	1
17.	ECHOPAC LANGUAGE KIT - JAPANESE BT'04	H45531KY	1

9-14-2-2   **List of Language Kits** (cont'd)

Table 9-57   Language Kits (BT'03)

ITEM	PART NAME	H-CAT #	QTY
1.	ECHOPAC LANGUAGE KIT - ENGLISH (US)	H45521LA	1
2.	ECHOPAC LANGUAGE KIT - NORWEGIAN	H45521LB	1
3.	ECHOPAC LANGUAGE KIT - DANISH	H45521LC	1
4.	ECHOPAC LANGUAGE KIT - SWEDISH	H45521LD	1
5.	ECHOPAC LANGUAGE KIT - FRENCH	H45521LE	1
6.	ECHOPAC LANGUAGE KIT - GERMAN	H45521LF	1
7.	ECHOPAC LANGUAGE KIT - DUTCH	H45531BB	1
8.	ECHOPAC LANGUAGE KIT - GREEK	H45531BD	1
9.	ECHOPAC LANGUAGE KIT - RUSSIAN	H45531BE	1
10.	ECHOPAC LANGUAGE KIT - ITALIAN	H45521LG	1
11.	ECHOPAC LANGUAGE KIT - SPANISH	H45521LH	1
12.	ECHOPAC LANGUAGE KIT - PORTUGUESE	H45521LJ	1
13.	ECHOPAC LANGUAGE KIT - POLISH	H45531BC	1
14.	ECHOPAC LANGUAGE KIT - FINNISH	H45531BA	1
15.	ECHOPAC LANGUAGE KIT - JAPANESE	H45521BG	1
16.	ECHOPAC LANGUAGE KIT - CHINESE	H45531BF	1
17.	ECHOPAC LANGUAGE KIT - ENGLISH (UK)	H45521LK	1

9-14-2-2   **List of Language Kits** (cont'd)

Table 9-58   Language Kits (BT'02)

ITEM	PART NAME	GEVU PART NUMBER	QTY
1.	ECHOPAC LANGUAGE KIT - ENGLISH (US)	EP200276	1
2.	ECHOPAC LANGUAGE KIT - NORWEGIAN	EP200277	1
3.	ECHOPAC LANGUAGE KIT - DANISH	EP200278	1
4.	ECHOPAC LANGUAGE KIT - SWEDISH	EP200279	1
5.	ECHOPAC LANGUAGE KIT - FRENCH	EP200280	1
6.	ECHOPAC LANGUAGE KIT - GERMAN	EP200281	1
7.	ECHOPAC LANGUAGE KIT - DUTCH	EP200282	1
8.	ECHOPAC LANGUAGE KIT - GREEK	EP200283	1
9.	ECHOPAC LANGUAGE KIT - RUSSIAN	EP200284	1
10.	ECHOPAC LANGUAGE KIT - ITALIAN	EP200285	1
11.	ECHOPAC LANGUAGE KIT - SPANISH	EP200286	1
12.	ECHOPAC LANGUAGE KIT - PORTUGUESE	EP200287	1
13.	ECHOPAC LANGUAGE KIT - POLISH	EP200289	1
14.	ECHOPAC LANGUAGE KIT - FINNISH	EP200292	1
15.	ECHOPAC LANGUAGE KIT - JAPANESE	EP200293	1
16.	ECHOPAC LANGUAGE KIT - CHINESE	EP200294	1
17.	ECHOPAC LANGUAGE KIT - ENGLISH (UK)	EP200315	1

Section 9-15
Product Manuals

9-15-1   Overview

This section includes:

9-15-2   Product Manuals - Software v112.x

NOTE: *The User and Service Manuals are delivered as PDF files on a CD-ROM,*
Part Number: EY200440. Paper copies may be ordered separate.

Table 9-59   BT'12 EchoPAC PC Product Manuals   sheet 1 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT'12 EchoPAC PC User Manual Bulgarian	EY092301			N	N
2.	BT'12 EchoPAC PC User Manual Croatian	EY092303			N	N
3.	BT'12 EchoPAC PC User Manual Czech	EY092304			N	N
4.	BT'12 EchoPAC PC User Manual Danish	EY092305			N	N
5.	BT'12 EchoPAC PC User Manual Dutch	EY092306			N	N
6.	BT'12 EchoPAC PC User Manual English	EY092307			N	N
7.	BT'12 EchoPAC PC User Manual Estonian	EY092308			N	N
8.	BT'12 EchoPAC PC User Manual Finnish	EY092309			N	N
9.	BT'12 EchoPAC PC User Manual French	EY092310		1	N	N
10.	BT'12 EchoPAC PC User Manual German	EY092311			N	N
11.	BT'12 EchoPAC PC User Manual Greek	EY092312			N	N
12.	BT'12 EchoPAC PC User Manual Hungarian	EY092313			N	N
13.	BT'12 EchoPAC PC User Manual Indonesian	EY092432			N	N
14.	BT'12 EchoPAC PC User Manual Italian	EY092314			N	N
15.	BT'12 EchoPAC PC User Manual Japanese	EY092315			N	N

Table 9-59   BT'12 EchoPAC PC Product Manuals (cont'd) sheet 2 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
16.	BT'12 EchoPAC PC User Manual Korean	EY092316			N	N
17.	BT'12 EchoPAC PC User Manual Latvian	EY092317			N	N
18.	BT'12 EchoPAC PC User Manual Lithuanian	EY092318			N	N
19.	BT'12 EchoPAC PC User Manual Norwegian	EY092319			N	N
20.	BT'12 EchoPAC PC User Manual Polish	EY092320			N	N
21.	BT'12 EchoPAC PC User Manual Portuguese	EY092321			N	N
22.	BT'12 EchoPAC PC User Manual Romanian	EY092322		1	N	N
23.	BT'12 EchoPAC PC User Manual Russian	EY092323			N	N
24.	BT'12 EchoPAC PC User Manual Serbian	EY092324			N	N
25.	BT'12 EchoPAC PC User Manual Slovak	EY092325			N	N
26.	BT'12 EchoPAC PC User Manual Slovenian	EY092433			N	N
27.	BT'12 EchoPAC PC User Manual Spanish	EY092326			N	N
28.	BT'12 EchoPAC PC User Manual Swedish	EY092327			N	N
29.	BT'12 EchoPAC PC User Manual Turkish	EY092328			N	N
30.	EchoPAC PC Turnkey Service Manual	EP091298	Revision 9 (or higher)	1	N	N
31.	EchoPAC PC Unpacking and Packing Procedure	EP050369	Revision 17 (or higher)	1	N	N
32.	Iomega Ultramax Desktop Hard Drive Installation manual for EchoPAC PC Turnkey , EchoPAC SW Only and Vivid E9	EY194147	Revision 2 or higher	1	N	N
33.	Mercury Label Addendum Booklet	5244547	Revision 2 or higher	1	N	N
34.	Printer Driver Installation manual	GA294652	Revision 2 or higher	1	N	N

9-15-2-1   Product Manuals for 4D LV-Function 2.2.3, 4D RV-Volume 1.1.1 and 4D MV-Assessment 2.0

The documentation is included on CD-ROMs in the TomTec software boxes.

9-15-3 Product Manuals - Software v110.x for BT'11

NOTE: *The User and Service Manuals are delivered as PDF files on a CD-ROM, Part Number: EY200194. Paper copies may be ordered separate.*

NOTE: *Some countries require hard copy manuals.*

Table 9-60   BT'11 EchoPAC PC Product Manual   sheet 1 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT'11 EchoPAC PC User Manual English	EY092166		1	N	N
2.	BT'11 EchoPAC PC User Manual German	EY092167		1	N	N
3.	BT'11 EchoPAC PC User Manual French	EY092168		1	N	N
4.	BT'11 EchoPAC PC User Manual Italian	EY092169		1	N	N
5.	BT'11 EchoPAC PC User Manual Spanish	EY092170		1	N	N
6.	BT'11 EchoPAC PC User Manual Portuguese	EY092171		1	N	N
7.	BT'11 EchoPAC PC User Manual Japanese	EY092172		1	N	N
8.	BT'11 EchoPAC PC User Manual - Swedish	EY092174		1	N	N
9.	BT'11 EchoPAC PC User Manual - Norwegian	EY092175		1	N	N
10.	BT'11 EchoPAC PC User Manual - Danish	EY092176		1	N	N
11.	BT'11 EchoPAC PC User Manual - Polish	EY092177		1	N	N
12.	BT'11 EchoPAC PC User Manual - Finnish	EY092178		1	N	N
13.	BT'11 EchoPAC PC User Manual - Greek	EY092179		1	N	N
14.	BT'11 EchoPAC PC User Manual - Russian	EY092180		1	N	N
15.	BT'11 EchoPAC PC User Manual - Dutch	EY092181		1	N	N
16.	BT'11 EchoPAC PC User Manual - Hungarian	EY092182		1	N	N
17.	BT'11 EchoPAC PC User Manual - Slovak	EY092183		1	N	N
18.	BT'11 EchoPAC PC User Manual - Romanian	EY092184		1	N	N
19.	BT'11 EchoPAC PC User Manual - Czech	EY092185		1	N	N
20.	BT'11 EchoPAC PC User Manual - Latvian	EY092186		1	N	N
21.	BT'11 EchoPAC PC User Manual - Lithuanian	EY092187		1	N	N
22.	BT'11 EchoPAC PC User Manual - Turkish	EY092188		1	N	N
23.	BT'11 EchoPAC PC User Manual - Estonian	EY092189		1	N	N
24.	BT'11 EchoPAC PC User Manual - Korean	EY092190		1	N	N
25.	BT'11 EchoPAC PC User Manual - Serbian	EY092191		1	N	N
26.	BT'11 EchoPAC PC User Manual - Bulgarian	EY092192		1	N	N

Table 9-60   BT'11 EchoPAC PC Product Manual (cont'd) sheet 2 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
27.	BT10 EchoPAC PC User Manual - Croatian	EY092193		1	N	N
29	EchoPAC PC Unpacking and Packing Procedure	EP050369	Revision 17 (or higher)	1	N	N
28.	EchoPAC PC Turnkey Service Manual	EP091298	Revision 8 (or higher)	1	N	N
29.	Mercury Label Addendum Booklet	5244547	Revision 2 or higher	1	N	N
30.	Iomega Ultramax Desktop Hard Drive Installation manual for EchoPAC PC, EchoPAC SW Only and Vivid E9	EY194147	Revision 2 or higher	1	N	N
31.	Printer Driver Installation manual	GA294652	Revision 2 or higher	1	N	N

9-15-4   Product Manuals - Software v108.x for BT'09

NOTE: *The User and Service Manuals are delivered as PDF files on a CD-ROM,
Part Number: EY200136. Paper copies may be ordered separate.*

NOTE: *Some countries require hard copy manuals.*

Table 9-61   BT'09 EchoPAC PC Product Manual   sheet 1 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1	BT'09 EchoPAC PC User Manual English	EY092103		1	N	N
2	BT'09 EchoPAC PC User Manual German	EY092104		1	N	N
3	BT'09 EchoPAC PC User Manual French	EY092105		1	N	N
4	BT'09 EchoPAC PC User Manual Italian	EY092106		1	N	N
5	BT'09 EchoPAC PC User Manual Spanish	EY092107		1	N	N
6	BT'09 EchoPAC PC User Manual Portuguese	EY092108		1	N	N
7	BT'09 EchoPAC PC User Manual Japanese	EY092109		1	N	N
8	BT'09 EchoPAC PC User Manual Chinese	EY092110		1	N	N
9	BT'09 EchoPAC PC User Manual - Swedish	EY092111		1	N	N
10	BT'09 EchoPAC PC User Manual - Norwegian	EY092112		1	N	N
11	BT'09 EchoPAC PC User Manual - Danish	EY092113		1	N	N
12	BT'09 EchoPAC PC User Manual - Polish	EY092114		1	N	N
13	BT'09 EchoPAC PC User Manual - Finnish	EY092115		1	N	N
14	BT'09 EchoPAC PC User Manual - Greek	EY092116		1	N	N
15	BT'09 EchoPAC PC User Manual - Russian	EY092117		1	N	N
16	BT'09 EchoPAC PC User Manual - Dutch	EY092118		1	N	N
18	BT'09 EchoPAC PC User Manual - Hungarian	EY092119		1	N	N
19	BT'09 EchoPAC PC User Manual - Slovak	EY092120		1	N	N
20	BT'09 EchoPAC PC User Manual - Romanian	EY092121		1	N	N
21	BT'09 EchoPAC PC User Manual - Czech	EY092122		1	N	N
22	BT'09 EchoPAC PC User Manual - Latvian	EY092123		1	N	N
23	BT'09 EchoPAC PC User Manual - Lithuanian	EY092124		1	N	N
24	BT'09 EchoPAC PC User Manual - Turkish	EY092125		1	N	N
25	BT'09 EchoPAC PC User Manual - Estonian	EY092126		1	N	N
26	BT'09 EchoPAC PC User Manual - Korean	EY092127		1	N	N
27	BT'09 EchoPAC PC User Manual - Serbian	EY092128		1	N	N

Table 9-61   BT'09 EchoPAC PC Product Manual (cont'd) sheet 2 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
28	BT'09 EchoPAC PC User Manual - Bulgarian	EY092129		1	N	N
29	EchoPAC PC Unpacking and Packing Procedure	EP050369	Revision 17 (or higher)	1	N	N
30	ECHOPAC PC SERVICE MANUAL	EP091298	Revision 8 (or higher)	1	N	N
31	Mercury Label Addendum Booklet	5244547	Revision 2 or higher	1	N	N
32	HP T750 UPS Installation Manual for EchoPAC PC	EP294824	Revision 2 (or higher)	1	N	N
33	Iomega Ultramax Desktop Hard Drive Installation manual for EchoPAC PC, EchoPAC SW Only and Vivid E9	EY194147	Revision 2 or higher	1	N	N

9-15-5   Product Manuals - Software v7.x for BT'08

NOTE: *The User and Service Manuals are delivered as PDF files on a CD-ROM, Part Number: EQ200031. Paper copies may be ordered separate.*

Some countries require Hard Copy Manuals.

Table 9-62   BT'08 EchoPAC PC Product Manual   sheet 1 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1	BT08 EchoPAC PC User Manual English	EQ092006		1	N	N
2	BT08 EchoPAC PC User Manual German	EQ092007		1	N	N
3	BT08 EchoPAC PC User Manual French	EQ092008		1	N	N
4	BT08 EchoPAC PC User Manual Italian	EQ092009		1	N	N
5	BT08 EchoPAC PC User Manual Spanish	EQ092010		1	N	N
6	BT08 EchoPAC PC User Manual Portuguese	EQ092011		1	N	N
7	BT08 EchoPAC PC User Manual Japanese	EQ092012		1	N	N
8	BT08 EchoPAC PC User Manual Chinese	EQ092013		1	N	N
9	BT08 EchoPAC PC User Manual - Swedish	EQ092014		1	N	N
10	BT08 EchoPAC PC User Manual - Norwegian	EQ092015		1	N	N
11	BT08 EchoPAC PC User Manual - Danish	EQ092016		1	N	N
12	BT08 EchoPAC PC User Manual - Polish	EQ092017		1	N	N
13	BT08 EchoPAC PC User Manual - Finnish	EQ092018		1	N	N
14	BT08 EchoPAC PC User Manual - Greek	EQ092019		1	N	N
15	BT08 EchoPAC PC User Manual - Russian	EQ092020		1	N	N
16	BT08 EchoPAC PC User Manual - Dutch	EQ092021		1	N	N
18	BT08 EchoPAC PC User Manual - Hungarian	EQ092022		1	N	N
19	BT08 EchoPAC PC User Manual - Slovak	EQ092023		1	N	N
20	BT08 EchoPAC PC User Manual - Romanian	EQ092024		1	N	N
21	BT08 EchoPAC PC User Manual - Czech	EQ092025		1	N	N
22	BT08 EchoPAC PC User Manual - Latvian	EQ092026		1	N	N
23	BT08 EchoPAC PC User Manual - Lithuanian	EQ092027		1	N	N
24	BT08 EchoPAC PC User Manual - Turkish	EQ092028		1	N	N
25	BT08 EchoPAC PC User Manual - Estonian	EQ092029		1	N	N
26	BT08 EchoPAC PC User Manual - Korean	EQ092030		1	N	N
27	ECHOPAC PC SERVICE MANUAL	EP091298	Revision 6 (or higher)	1	N	N

Table 9-62   BT'08 EchoPAC PC Product Manual (cont'd) sheet 2 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
28	Mercury Label Addendum Booklet	5244547	Revision 2 or higher	1	N	N

Table 9-63   BT'08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual   sheet 1 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual English	FD092081		1	N	N
2	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual German	FD092082		1	N	N
3	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual French	FD092083		1	N	N
4	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Italian	FD092084		1	N	N
5	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Spanish	FD092085		1	N	N
6	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Portuguese	FD092086		1	N	N
7	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Japanese	FD092087		1	N	N
8	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Chinese	FD092088		1	N	N
9	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Swedish	FD092089		1	N	N
10	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Norwegian	FD092090		1	N	N
11	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Danish	FD092091		1	N	N
12	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Polish	FD092092		1	N	N
13	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Finnish	FD092093		1	N	N
14	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Greek	FD092094		1	N	N
15	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Russian	FD092095		1	N	N
16	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Dutch	FD092096		1	N	N
17	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Hungarian	FD092097		1	N	N
18	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Slovak	FD092098		1	N	N

Table 9-63   BT'08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual (cont'd) sheet 2 of

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
19	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Romanian	FD092099		1	N	N
20	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Czech	FD092100		1	N	N
21	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Latvian	FD092101		1	N	N
22	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Lithuanian	FD092102		1	N	N
23	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Turkish	FD092103		1	N	N
24	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Estonian	FD092104		1	N	N
25	BT08 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Korean	FD092105		1	N	N

9-15-6 Product Manuals - Software v6.x

NOTE: The User and Service Manuals are delivered as PDF files on a CD-ROM, Part Number: EP200890. Paper copies may be ordered separate. The Czech Uman is delivered on CD-ROM with Part Number EP200890-04.

NOTE: Some countries require Hard Copy Manuals.

Table 9-64 BT'06 EchoPAC PC User Manual sheet 1 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT06 ECHOPAC PC USER MANUAL ENGLISH	EP092874		1	N	N
2.	BT06 ECHOPAC PC USER MANUAL GERMAN	EP092875		1	N	N
3.	BT06 ECHOPAC PC USER MANUAL FRENCH	EP092876		1	N	N
4.	BT06 ECHOPAC PC USER MANUAL ITALIAN	EP092877		1	N	N
5.	BT06 ECHOPAC PC USER MANUAL SPANISH	EP092878		1	N	N
6.	BT06 ECHOPAC PC USER MANUAL PORTUGUESE	EP092879		1	N	N
7.	BT06 ECHOPAC PC USER MANUAL JAPANESE	EP092880		1	N	N
8.	BT06 ECHOPAC PC USER MANUAL CHINESE	EP092881		1	N	N
9.	BT06 ECHOPAC PC User Manual - SWEDISH	EP092882		1	N	N
10.	BT06 ECHOPAC PC User Manual - NORWEGIAN	EP092883		1	N	N
11.	BT06 ECHOPAC PC User Manual - DANISH	EP092884		1	N	N
12.	BT06 ECHOPAC PC User Manual - POLISH	EP092885		1	N	N
13.	BT06 ECHOPAC PC User Manual - FINNISH	EP092886		1	N	N
14.	BT06 ECHOPAC PC User Manual - GREEK	EP092887		1	N	N
15.	BT06 ECHOPAC PC User Manual - RUSSIAN	EP092888		1	N	N
16.	BT06 ECHOPAC PC User Manual - DUTCH	EP092889		1	N	N
17.	BT06 ECHOPAC PC User Manual - HUNGARIAN	EP092937		1	N	N
18.	BT06 ECHOPAC PC User Manual - SLOVAKIAN	EP092938		1	N	N
19.	BT06 ECHOPAC PC User Manual - ROMANIAN	EP092939		1	N	N
20.	BT06 ECHOPAC PC User Manual - CZECH	EP092940		1	N	N
21.	BT06 ECHOPAC PC User Manual - LATVIAN	EP092941		1	N	N
22.	BT06 ECHOPAC PC User Manual - LITHUANIAN	EP092942		1	N	N
23.	BT06 ECHOPAC PC User Manual - TURKISH	EP092943		1	N	N
24.	BT06 ECHOPAC PC User Manual - ESTONIAN	EP092944		1	N	N
25.	BT06 ECHOPAC PC User Manual - KOREAN	EP092945		1	N	N
26.	4D LV FUNCTIONS ENGLISH	A.19.0268		1	N	N

Table 9-64   BT'06 EchoPAC PC User Manual (cont'd) sheet 2 of 2

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
27.	ECHOPAC PC SERVICE MANUAL	EP091298	Revision 3 (or higher)	1	N	N

NOTE: *User Manuals and Service Manual are delivered as PDF files on a CD-ROM (Part Number: EP200890). Paper copies may be ordered separate.*

NOTE: *Some countries require Hard Copy Manuals.*

Table 9-65   4D User Manual for Software Version v6.x

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.1	Vivid 7/EchoPAC PC 4D USER MANUAL, ENGLISH	FC092861		1	N	N
2.	Vivid 7/EchoPAC PC 4D USER MANUAL, GERMAN	FC092862		1	N	N
3.	Vivid 7/EchoPAC PC 4D USER MANUAL, FRENCH	FC092863		1	N	N
4.	Vivid 7/EchoPAC PC 4D USER MANUAL, ITALIAN	FC092864		1	N	N
5.	Vivid 7/EchoPAC PC 4D USER MANUAL, SPANISH	FC092865		1	N	N
6.	Vivid 7/EchoPAC PC 4D USER MANUAL, BRAZILE PORTUGESE	FC092866		1	N	N
7.	Vivid 7/EchoPAC PC 4D USER MANUAL, SWEDISH	FC092870		1	N	N
8.	Vivid 7/EchoPAC PC 4D USER MANUAL, NORWEGIAN	FC092871		1	N	N
9.	Vivid 7/EchoPAC PC 4D USER MANUAL, DANISH	FC092872		1	N	N
10.	Vivid 7/EchoPAC PC 4D USER MANUAL, JAPANESE	FC092868		1	N	N
11.	Vivid 7/EchoPAC PC 4D USER MANUAL, CHINESE	FC092869		1	N	N
12.	Vivid 7/EchoPAC PC 4D USER MANUAL, POLISH	FC092873		1	N	N
13.	Vivid 7/EchoPAC PC 4D USER MANUAL, FINNISH	FC092874		1	N	N
14.	Vivid 7/EchoPAC PC 4D USER MANUAL, GREEK	FC092875		1	N	N
15.	Vivid 7/EchoPAC PC 4D USER MANUAL, RUSSIAN	FC092876		1	N	N
16.	Vivid 7/EchoPAC PC 4D USER MANUAL, DUTCH	FC092877		1	N	N

9-15-7   Product Manuals - Software v5.x

NOTE: *The User and Service Manuals are delivered as PDF files on a CD-ROM (Part Number: EP200815). Paper copies may be ordered separate.*

NOTE: *Some countries require Hard Copy Manuals.*

Table 9-66   BT'05 EchoPAC PC User Manual

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT05 ECHOPAC PC USER MANUAL ENGLISH	EP092749		1	N	N
2.	BT05 ECHOPAC PC USER MANUAL GERMAN	EP092750		1	N	N
3.	BT05 ECHOPAC PC USER MANUAL FRENCH	EP092751		1	N	N
4.	BT05 ECHOPAC PC USER MANUAL ITALIAN	EP092752		1	N	N
5.	BT05 ECHOPAC PC USER MANUAL SPANISH	EP092753		1	N	N
6.	BT05 ECHOPAC PC USER MANUAL PORTUGUESE	EP092754		1	N	N
7.	BT05 ECHOPAC PC USER MANUAL JAPANESE	EP092755		1	N	N
8.	BT05 ECHOPAC PC USER MANUAL CHINESE	EP092756		1	N	N
9.	BT05 ECHOPAC PC User Manual - SWEDISH	EP0926757		1	N	N
10.	BT05 ECHOPAC PC User Manual - NORWEGIAN	EP092758		1	N	N
11.	BT05 ECHOPAC PC User Manual - DANISH	EP092759		1	N	N
12.	BT05 ECHOPAC PC User Manual - POLISH	EP092760		1	N	N
13.	BT05 ECHOPAC PC User Manual - FINNISH	EP092761		1	N	N
14.	BT05 ECHOPAC PC User Manual - GREEK	EP092762		1	N	N
15.	BT05 ECHOPAC PC User Manual - RUSSIAN	EP092763		1	N	N
16.	BT05 ECHOPAC PC User Manual - DUTCH	EP092764		1	N	N
17.	ECHOPAC PC SERVICE MANUAL	EP091298	Revision 2 (or higher)	1	N	N

9-15-7   Product Manuals - Software v5.x (cont'd)

NOTE: User Manuals and Service Manual are delivered as PDF files on a CD-ROM, Part Number: EP200815. Paper copies may be ordered separate.

NOTE: Some countries require Hard Copy Manuals.

Table 9-67   4D User Manual for Software Version v5.x

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	Vivid 7/EchoPAC PC 4D USER MANUAL, ENGLISH	FC092727		1	N	N
2.	Vivid 7/EchoPAC PC 4D USER MANUAL, GERMAN	FC092728		1	N	N
3.	Vivid 7/EchoPAC PC 4D USER MANUAL, FRENCH	FC092729		1	N	N
4.	Vivid 7/EchoPAC PC 4D USER MANUAL, ITALIAN	FC092730		1	N	N
5.	Vivid 7/EchoPAC PC 4D USER MANUAL, SPANISH	FC092731		1	N	N
6.	Vivid 7/EchoPAC PC 4D USER MANUAL, BRAZILE PORTUGESE	FC092732		1	N	N
7.	Vivid 7/EchoPAC PC 4D USER MANUAL, SWEDISH	FC092735		1	N	N
8.	Vivid 7/EchoPAC PC 4D USER MANUAL, NORWEGIAN	FC092736		1	N	N
9.	Vivid 7/EchoPAC PC 4D USER MANUAL, DANISH	FC092737		1	N	N
10.	Vivid 7/EchoPAC PC 4D USER MANUAL, JAPANESE	FC092733		1	N	N
11.	Vivid 7/EchoPAC PC 4D USER MANUAL, CHINESE	FC092734		1	N	N
12.	Vivid 7/EchoPAC PC 4D USER MANUAL, POLISH	FC092738		1	N	N
13.	Vivid 7/EchoPAC PC 4D USER MANUAL, FINNISH	FC092739		1	N	N
14.	Vivid 7/EchoPAC PC 4D USER MANUAL, GREEK	FC092740		1	N	N
15.	Vivid 7/EchoPAC PC 4D USER MANUAL, RUSSIAN	FC092741		1	N	N
16.	Vivid 7/EchoPAC PC 4D USER MANUAL, DUTCH	FC092742		1	N	N

9-15-8   Product Manuals - Software v4.x

NOTE: *Starting with software version v4.0.0, the User and Service Manual are delivered as PDF files on a CD-ROM, Part Number: FC200570. Paper copies may be ordered separate.*

NOTE: *Some countries require Hard Copy Manuals.*

Table 9-68   BT04 EchoPAC PC User Manual

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT04 ECHOPAC PC USER MANUAL ENGLISH	EP092640		1	N	N
2.	BT04 ECHOPAC PC USER MANUAL GERMAN	EP092641		1	N	N
3.	BT04 ECHOPAC PC USER MANUAL FRENCH	EP092642		1	N	N
4.	BT04 ECHOPAC PC USER MANUAL ITALIAN	EP092643		1	N	N
5.	BT04 ECHOPAC PC USER MANUAL SPANISH	EP092644		1	N	N
6.	BT04 ECHOPAC PC USER MANUAL PORTUGUESE	EP092645		1	N	N
7.	BT04 ECHOPAC PC USER MANUAL JAPANESE	EP092646		1	N	N
8.	BT04 ECHOPAC PC USER MANUAL CHINESE	EP092647		1	N	N
9.	BT04 ECHOPAC PC User Manual - SWEDISH	EP092648		1	N	N
10.	BT04 ECHOPAC PC User Manual - NORWEGIAN	EP092649		1	N	N
11.	BT04 ECHOPAC PC User Manual - DANISH	EP092650		1	N	N
12.	BT04 ECHOPAC PC User Manual - POLISH	EP092651		1	N	N
13.	BT04 ECHOPAC PC User Manual - FINNISH	EP092652		1	N	N
14.	BT04 ECHOPAC PC User Manual - GREEK	EP092653		1	N	N
15.	BT04 ECHOPAC PC User Manual - RUSSIAN	EP092654		1	N	N
16.	BT04 ECHOPAC PC User Manual - DUTCH	EP092655		1	N	N
17.	ECHOPAC PC SERVICE MANUAL	EP091298	Revision 1 (or higher)	1	N	N

9-15-8   Product Manuals - Software v4.x (cont'd)

NOTE: *Starting with software version V4.0.0, the User and Service Manual are delivered as PDF files on a CD-ROM. Paper copies may be ordered separate.*

NOTE: *Some countries require Hard Copy Manuals.*

Table 9-69   BT04 VIVID 7/EchoPAC PC 4D/Multiplane Imaging User Manual

ITEM	NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual English	FC092540		1	N	N
2.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual German	FC092541		1	N	N
3.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual French	FC092542		1	N	N
4.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Italian	FC092543		1	N	N
5.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Spanish	FC092544		1	N	N
6.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Portuguese	FC092545		1	N	N
7.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Japanese	FC092546		1	N	N
8.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Chinese	FC092547		1	N	N
9.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Swedish	FC092548		1	N	N
10.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Norwegian	FC092549		1	N	N
11.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Danish	FC092550		1	N	N
12.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Polish	FC092551		1	N	N
13.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Finnish	FC092552		1	N	N
14.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Greek	FC092553		1	N	N
15.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Russian	FC092554		1	N	N
16.	BT04 Vivid7/EchoPAC PC 4D/Multiplane Imaging User manual Dutch	FC092555		1	N	N

9-15-9   Product Manuals - Software v3.x

Table 9-70   Product manuals - Software v3.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	ECHOPAC PC SERVICE MANUAL	EP091298	Revision E (or higher)	1	N	N
2.	EchoPAC PC Turnkey USER MANUAL, ENGLISH	EP092537	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
3.	EchoPAC PC Turnkey USER GUIDE, NORWEGIAN	EP092544	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
4.	EchoPAC PC Turnkey USER GUIDE, SWEDISH	EP092543	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
5.	EchoPAC PC Turnkey USER GUIDE, DANISH	EP092545	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
6.	EchoPAC PC Turnkey USER MANUAL, FRENCH	EP092539	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
7.	EchoPAC PC Turnkey USER GUIDE, RUSSIAN	EP092551	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
8.	EchoPAC PC Turnkey USER MANUAL, GERMAN	EP092538	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
9.	EchoPAC PC Turnkey USER MANUAL, CHINESE	EP092547	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
10.	EchoPAC PC Turnkey USER GUIDE, DUTCH	EP092552	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
11.	EchoPAC PC Turnkey USER GUIDE, GREEK	EP0925550	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
12.	EchoPAC PC Turnkey USER MANUAL, ITALIAN	EP092540	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
13.	EchoPAC PC Turnkey USER MANUAL, SPANISH	EP092541	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
14.	EchoPAC PC Turnkey USER MANUAL, PORTUGUESE	EP092542	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
15.	EchoPAC PC Turnkey USER MANUAL, JAPANESE	EP092546	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
16.	EchoPAC PC Turnkey USER GUIDE, POLISH	EP092548	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N
17.	EchoPAC PC Turnkey USER GUIDE, FINNISH	EP092549	BT'03 - SW v3.x BT'04 - SW v4.x	1	N	N

9-15-10   Product Manuals - Software v2.x

Table 9-71   Product manuals - SW v2.x

ITEM	PART NAME	PART NUMBER	DESCRIPTION	QTY	CRU	FRU
1.	EchoPAC PC Service Manual	EP091298		1	N	N
2.	UMAN, EchoPAC PC Turnkey , Norwegian	EP292236	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
3.	UMAN, EchoPAC PC Turnkey , Swedish	EP292237	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
4.	UMAN, EchoPAC PC Turnkey , Danish	EP292238	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
5.	UMAN,EchoPAC PC Turnkey , French	EP292239	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
6.	UMAN, EchoPAC PC Turnkey , English	EP292241	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
7.	UMAN, EchoPAC PC Turnkey , German	EP292242	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
8.	UMAN, EchoPAC PC Turnkey , Chinese	EP292243	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
9.	UMAN, EchoPAC PC Turnkey , Dutch	EP292244	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
10.	UMAN, EchoPAC PC Turnkey , Greek	EP292246	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
11.	UMAN, EchoPAC PC Turnkey , Italian	EP292247	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
12.	UMAN, EchoPAC PC Turnkey , Spanish	EP292248	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
13.	UMAN, EchoPAC PC Turnkey , Portuguese	EP292249	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
14.	UMAN, EchoPAC PC Turnkey , Japanese	EP292252	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
15.	UMAN, EchoPAC PC Turnkey , Polish	EP292263	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N
16.	UMAN, EchoPAC PC Turnkey , Finnish	EP292268	BT'01/BT'02 - SW v1.x/ SW v2.x	1	N	N

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Chapter 10
Care & Maintenance

Section 10-1
Overview

10-1-1   Periodic Maintenance Inspections

It has been determined by engineering that your EchoPAC PC Turnkey workstation does not have any high wear components that fail with use, therefore no Periodic Maintenance Inspections are mandatory. Some Customers Quality Assurance Programs may require additional tasks and or inspections at a different frequency than listed in this manual.

10-1-2   Purpose of Chapter 10

This chapter describes **Care & Maintenance** on the workstation and peripherals. These procedures are intended to **maintain the quality** of the workstations **performance**. Read this chapter completely and familiarize yourself with the procedures before performing a task.

Table 10-1   Contents in Chapter 10

Section	Description	Page Number
10-1	Overview	10-1
10-2	Why do Maintenance?	10-2
10-3	Maintenance Task Schedule	10-3
10-4	Tools Required	10-4
10-5	EchoPAC PC Turnkey Maintenance	10-5
10-6	Safety Inspections	10-9

⚠ **CAUTION**   **Practice good ESD prevention. Wear an anti–static strap when handling electronic parts and even when disconnecting/connecting cables.**

⚠ **DANGER**   **THERE ARE SEVERAL PLACES, SUCH AS THE AC DISTRIBUTION, THAT ARE DANGEROUS. BE SURE TO TURN OFF ALL PARTS AND DISCONNECT EACH POWER PLUG BEFORE YOU REMOVE ANY PARTS. BE CAUTIOUS WHENEVER POWER IS STILL ON.**

⚠ **CAUTION**   **Do not operate this unit unless all board covers and frame panels are securely in place. EchoPAC PC Turnkey performance and cooling require this.**

Section 10-2
Why do Maintenance?

10-2-1   Keeping Records

It is good business practice that ultrasound facilities maintain records of quality checks and corrective maintenance. The Ultrasound Inspection Certificate (provided on page 10-9) provides the customer with documentation that the workstation is maintained on a periodic basis.

A copy of the Ultrasound Periodic Maintenance Inspection Certificate should be kept in the same room or near the workstation.

10-2-2   Quality Assurance

In order to gain accreditation from organizations such as the American College of Radiology (USA), it is the customer's responsibility to have a quality assurance program in place for each Vivid scanner with the EchoPAC PC Turnkey . The program must be directed by a medical physicists, the supervising radiologist/physician or appropriate designee.

Routine quality control testing must occur regularly. The same tests are performed during each period so that changes can be monitored over time and effective corrective action can be taken.

Testing results, corrective action and the effects of corrective action must be documented and maintained on the site.

Your GE service representative can help you with establishing, performing and maintaining records for a quality assurance program. Please contact us for coverage information and/or price for service.

Section 10-3
Maintenance Task Schedule

10-3-1   How often should care & maintenance tasks be performed?

The Care & Maintenance Task Schedule (provided on page 10-3) specifies how often your EchoPAC PC Turnkey workstation should be serviced and outlines items requiring special attention.

NOTE: *It is the customer's responsibility to ensure the EchoPAC PC Turnkey care & maintenance is performed as scheduled in order to retain its high level of safety, dependability and performance.*

Your GE Service Representative has an in-depth knowlegde of your EchoPAC PC Turnkey workstation and can best provide competent, efficient service. Please contact us for coverage information and/or price for service.

The service procedures and recommended intervals shown in the Care & Maintenance Task Schedule assumes that you use your EchoPAC PC Turnkey for an average patient load (10-12 per day) and not use it as a primary mobile unit which is transported between diagnostic facilities.

NOTE: *If conditions exist which exceed typical usage and patient load, then it is recommended to increase the maintenance frequencies.*

Table 10-2 Customer Care Schedule

Service at Indicated Time	Daily	Weekly	Monthly	Per Facilities QA Program	Notes
Inspect AC Mains Cable			●		Mobile Unit Check Weekly
Inspect Cables and Connectors			●		
Clean all outer Casings			●		Moist damp cloth
Clean Monitor			●		Use anti static alcoholic moist cloth
Clean Mouse and Keyboard			●		Use anti static alcoholic moist cloth
Measurement Accuracy Checks				●	also after corrective maintenance
Functional Checks				●	also after corrective maintenance

Section 10-4
Tools Required

10-4-1   Special Tools, Supplies and Equipment

10-4-1-1   Specific Requirements for Care & Maintenance

Table 10-3   Overview of Requirements for Care & Maintenance

Tool	Part Number	Comments
Digital Volt Meter (DVM)		
Anti Static Kit	46–194427P231 46–194427P279 46–194427P369 46–194427P373 46–194427P370	Kit includes anti–static mat, wrist strap and cables for 200 to 240 V workstation 3M #2204 Large adjustable wrist strap 3M #2214 Small adjustable wrist strap 3M #3051 conductive ground cord
Anti Static Vacuum Cleaner	46–194427P278 46–194427P279	120V 230V
3.5" MOD MEDIA	E8381AA E8381AB	blank 128 M disk blank 230 M disk
5.25" MOD Media	2277190	Blank Disk
3.5" MOD Media Cleaner	2117811	cleans the diskettes
3.5" MOD Head Cleaner Kit	2148392	cleans the drive heads
5.25" MOD Disk Cleaning Kit	066E0674	SONY MOA-D51
CD-R Media		For EchoPAC PC Turnkey
B/W Printer Cleaning Sheet		See printer user manual for requirements
Color Printer Cleaning Sheet		See printer user manual for requirements
Disposable Gloves		

Section 10-5
EchoPAC PC Turnkey Maintenance

10-5-1   Preliminary Checks

The preliminary checks take about 10 minutes to perform. Refer to the EchoPAC PC Turnkey user documentation whenever necessary.

Table 10-4   EchoPAC PC Turnkey Checks

Step	Item	Description
1	Ask & Listen	Ask the customer if they have any problems or questions about the equipment.
2	Paperwork	Fill in the top of the Ultrasound Inspection Certificate (see "Ultrasound INSPECTION Certificate" on page 10-9). Record all EchoPAC PC Turnkey options.
3	Power up	Turn the EchoPAC PC Turnkey power on and verify that all fans and peripherals turn on. Watch the display during power up to verify that no warning or error messages are displayed.
4	Displays	Verify proper display on the monitor.
5	Presets	Backup all customer presets on an empty and formatted MO disk (prefered) or to an empty CD-R disk.

10-5-2   Functional Checks

NOTE: *See Also Chapter 4 - General Procedures and Functional Checks.*

The functional checks take about 30 minutes to perform. Refer to the EchoPAC PC Turnkey user documentation whenever necessary.

10-5-2-1   EchoPAC PC Turnkey Checks

Table 10-5   EchoPAC PC Turnkey Functional Checks

Check	Step	Description
	*Applicable Software Options	Verify the basic operation of all optional modes such as Multi-Image, 3D, Contrast, Harmonics, Cine, Stress Echo,... etc. Check the basic EchoPAC PC Turnkey controls that affect each options operation.
	Keyboard Test	Perform the Keyboard Test Procedure to verify that all keyboard controls are OK.
	Monitor	Verify basic Monitor display functions. Refer to Chapter 3 of the User Manual.

NOTE: ** Some software may be considered standard depending upon EchoPAC PC Turnkey model configuration.*

10-5-2-2   Peripheral/Option Checks

If any peripherals or options are not part of the EchoPAC PC Turnkey configuration, the check can be omitted.

Table 10-6   GE Approved Peripheral/Hardware Option Functional Checks

Step	Item	Description
1	B/W Printer	Verify hardcopy output of the B/W video page printer. Clean heads and covers if necessary.
2	Color Printer	Verify hardcopy output of the Color video page printer. Clean heads and covers if necessary.
3	DICOM	Verify that DICOM is functioning properly. Send an image to a DICOM device.
4	InSite ExC	Verify that InSite ExC is functioning properly. Ensure two-way remote communications. (Warranty & Contract Customers only)

10-5-3   Input Power

10-5-3-1   Mains Cable Inspection

Table 10-7   Mains Cable Inspection

Step	Item	Description
1	Unplug Cord	Disconnect the mains cables.
2	Inspect	Inspect the mains cables and connectors for damage of any kind.
3	Verify	Verify that the LINE, NEUTRAL and GROUND wires are properly attached to the terminals, and that no strands may cause a short circuit.

10-5-4   Cleaning

10-5-4-1   General Cleaning

Table 10-8   General Cleaning

Step	Item	Description
1	Workstation	Use a fluid detergent in warm water on a soft, damp cloth to carefully wipe the EchoPAC PC Turnkey . Be careful not to get the cloth too wet so that moisture does not enter the Workstation.
2	LCD	• Clean the screen surface lightly with a soft cloth. If necessary, use a soft cloth lightly moistened with a mild detergent solution (Not abrasive) diluted with water to remove Hand oils or fingerprints etc. *Do not use any type of abrasive pad, scouring powder or any type of solvents containing an alcohol, Benzene or similar additive as they may cause damage to the Anti-reflective coating.* *Do not rub, touch, or tap the screen surface with sharp or abrasive items such as a ball point Pen. This contact may result in a scratched screen surface.*
	CRT	*The CRT screen surface is coated with a special thin optical coating to ensure the ergonomic characteristics.* • Clean the screen surface lightly with a soft cloth. If necessary, use a soft cloth lightly moistened with a mild detergent solution (Not abrasive) diluted with water to remove Hand oils or fingerprints etc. *Do not use any type of abrasive pad, scouring powder or any type of solvents containing an alcohol, Benzene or similar additive as they may cause damage to the Anti-reflective coating.* *Do not rub, touch, or tap the screen surface with sharp or abrasive items such as a ball point Pen. This contact may result in a scratched screen surface.*

10-5-5   Physical Inspection

Table 10-9   Physical Checks

Step	Item	Description
1	Labeling	Verify that all EchoPAC PC Turnkey labelling are present and in a readable condition. Refer to the User Manual for details.
2	Scratches & Dents	Inspect the Workstation for dents, scratches or cracks.
3	Alphanumeric Keyboard	Inspect keyboard Note any damaged or missing items.
6	Cables & Connectors	Check all cables and connectors for wear and secure connector seating.
8	External I/O	Check all connectors for damage and verify that the labeling is good.

10-5-6   Optional Diagnostic Checks

Optionally you can access the diagnostic software as described in Chapters 5 or 7. View the error logs and run desired diagnostics.

10-5-6-1   View the Logs

1.) Review the EchoPAC PC Turnkey error log for any problems.

2.) Check the temperature log to see if there are any trends that could cause problems in the future.

Section 10-6
Safety Inspections

10-6-1   Electrical Safety Test

1.) Check that power cables are connected correctly and undamaged in any way.

ULTRASOUND INSPECTION CERTIFICATE

Customer Name:	System ID:	Dispatch Number / Date Performed:	Warranty/Contract/HBS
System Type	Model Number:	Serial Number:	Manufacture Date:

FUNCTIONAL CHECKS   PHYSICAL INSPECTION AND CLEANING

Functional Check (if applicable)	OK? or N/A	Physical Inspection and Cleaning (if applicable)	Inspect	Clean
B-Mode Function		Console		
Doppler Modes Function		Monitor		
CF-Mode Function		Touch Panel		
M-Mode Function		Air Filter		
Applicable Software Options		Probe Holders		
Applicable Hardware Options		External I/O		
Control Panel		Wheels, Brakes & Swivel Locks		
Monitor		Cables and Connectors		
Touch Panel		GE Approved Peripherals (VCR, CD-RW, MOD, Printers)		
Measurement Accuracy				
GE Approved Peripherals				

COMMENTS:
_____
_____
_____
_____

FINAL CHECK. ALL SYSTEM COVERS ARE IN PLACE.

ACCEPTED BY:
_____

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