

GE Healthcare

Technical Publications EchoPAC Software Only

Version 113

CE₀₄₇₀ Installation Manual EY094707 — English

Rev. 02

Operating Documentation Copyright © 2013 By General Electric Co.



GE Healthcare

Manual status: EY094707-02 2013 05 23 (YYYY MM DD)

Manufacturer: GE VINGMED ULTRASOUND AS Strandpromenaden 45 N-3191 Horten, Norway Tel.: (+47) 3302 1100 Fax: (+47) 3302 1350

Table of Contents

Table of Contents	
Chapter 1 — Introduction	
EchoPAC Software Only installation manual	
Important	1-2
Product description	
Safety	
Chapter 2 — Software installation	
EchoPAC Software Only content	
Computer requirements	
Software installation	
Preliminary recommendations	2-5
Inserting the DVD	2-5
Licence agreement and Read me file	2-8
Preparing the archive installation	2-9
Defining the archive location	- 2-11
System check	- 2-12
	- 2-13
Starting EchoPAC Software Only	0.47
	- 2-17
Removing EchoPAC Software Univ	
Chapter 3 — Software validation	
Validation Procedure	
Validation Step 1 - Software installation	3-3
Validation Step 2 - Start EchoPAC Software Only	3-3 2 2 2
Validation Step 4 - Image guality	3-3
Validation Step 5 - Measurement accuracy	3-4
Validation Step 6 - Image review performance	3-4
Validation Step 7 - Effect on previously installed software	3-5
Validation Step 8 - Network contact (Optional)	3-5
Validation Step 9 - Direct connect with a scanner (Optional)	3-6
Validation Step 10 - Backup and restore (Optional)	3-6
Validation form	
Customer and PC hardware information	3-7
Trouble-shooting	
Image samples	
	- 3-11

																																																		2	1		
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	 •		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	· -	3-	17	2	

Chapter 1 Introduction

This chapter describes:

'EchoPAC Software Only installation manual' on page 1-2

'Product description' on page 1-3

'Safety' on page 1-4

EchoPAC Software Only installation manual

This manual describes how to install EchoPAC Software Only on a Personal Computer.

EchoPAC Software Only is intended to be installed on a Personal Computer fulfilling the minimum requirements as specified in this manual (see page 2-3).



Read this manual before attempting to install EchoPAC Software Only.

After installation EchoPAC Software Only must be validated following the procedure described in this manual (see page 3-1).

Important

The EchoPAC product range consists of:

- EchoPAC Software Only: the software to be installed on any PC that fulfills minimum requirements.
- EchoPAC Turnkey: a turnkey solution consisting of hardware and software in a complete package. EchoPAC Turnkey is only available as upgrade for existing Turnkey workstations.



Do NOT attempt to install the EchoPAC Software Only on a Turnkey workstation.

Do NOT attempt to install the software from Turnkey workstation on a Personal Computer.

Product description

EchoPAC Software Only is a post processing program designed for ultrasound image review, analysis and reporting. EchoPAC Software Only allows post-processing of raw data images from GE ultrasound scanners and DICOM ultrasound images.

The main functionality of EchoPAC Software Only is:

- Read/display DICOM ultrasound and GE raw data images.
- Ultrasound image optimization, as on a scanner.
- Measurement and analysis
- Advanced quantitative analysis, based on raw data such as quantitative TVI, contrast and stress analysis.
- Image storage
- Patient record database
- Report generator

Refer to the EchoPAC Software Only User Manual for information on how to use the software.

Safety



The computer running EchoPAC Software Only must not be placed inside the patient environment (refer to local regulations and EN 60601-1-1).





1. Patient environment





To ensure patient safety, any combination of hardware used for EchoPAC Software Only and other Medical Devices, must comply with IEC60601-1-1:2000 - Safety requirements for medical electrical systems.



EchoPAC Software Only must NOT be installed on computers, which control life-supporting or patient monitoring devices.

Chapter 2

Software installation

This chapter describes: 'EchoPAC Software Only content' on page 2-2 'Computer requirements' on page 2-3 'Software installation' on page 2-5 'Starting EchoPAC Software Only' on page 2-17 'Removing EchoPAC Software Only' on page 2-18

EchoPAC Software Only content

EchoPAC Software Only consists of the following items:

- EchoPAC Software Only Installation DVD
- Software Dongle
- Installation manual
- EchoPAC Software Only user manual (paper or electronic)

Computer requirements



To ensure patient safety, any combination of hardware used for EchoPAC Software Only and other Medical Devices, must comply with IEC60601-1-1 - Safety requirements for medical electrical systems.

Supported Operating systems:

- Windows XP Professional (32-bit)
- Windows 7 (32-bit/64-bit)
 - Professional
 - Enterprise
 - Ultimate

The minimum requirements for the computer are listed in the table below.

	Minimum re	equirements				
ltem	Without 4D option	With 4D option				
CPU	Pentium 4 (2 GHz)	Pentium 4 (2 GHz)				
RAM	1 Gb	2 Gb, DDR-2, 533 MHz				
Disk space	2 Gb on C for the program files and 3 Gb for the archive	2 Gb on C for the program files and 3 Gb for the archive				

	Minimum re	equirements							
ltem	Without 4D option	With 4D option							
Graphic	Min. resolution: 1024x768 Max. resolution: 1920x1200 32-bit colors 16 Mb Graphics card: On Windows 7 a fully DirectX 9 compliant graphics card is required. See Read Me file on the Installation CD for recommended graphics cards.	Min. resolution: 1024x768 Max. resolution: 1920x1200 32-bit colors Graphics card: DirectX 9c compatible graphics card. Performance will vary depending on the graphics capabilities of the graphics card. See Read Me file on the Installation CD for recommended graphics cards. Note: Dynamic Multi-Slice display of 4D acquisitions requires an nVidia graphics card with support for CUDA and with a driver supporting CUDA 2.3.							
	Note: On computers with multiple graphics cards, EchoPAC Software Only will use the same graphics card as the Windows desktop. The default graphics card might not fulfill EchoPAC Software Only requirements. Follow the instructions from the graphics card vendor to change which graphics card is default.								
USB-2	At least one port available	At least one port available							
Installed SW	Adobe Acrobat Reader (for On line Help function)	Adobe Acrobat Reader (for On line Help function)							



EchoPAC Software Only cannot be installed on a computer that already has Sybase or Oracle installed.

Software installation



To be able to install EchoPAC Software Only the current Windows user account <u>must</u> have Administrator rights.

Do not insert the hardware key (dongle) before the EchoPAC Software Only is installed (see also 'Starting EchoPAC Software Only' on *page 2-17*).

Preliminary recommendations

If you are upgrading EchoPAC Software Only, please keep the original installation DVD handy; the new installer may ask for it.

If you are installing EchoPAC Software Only on a domain (please contact your network administrator if you are unsure of the meaning of this):

- 1. Start up the PC without logging on to the domain, i.e. as a local user only.
- 2. Install EchoPAC Software Only.
- 3. Start up the PC again and log on to the domain.

Prior to installing EchoPAC Software Only, we recommend that you disable the following:

- Simple File Sharing (found in Windows XP Service Pack 2)
- All firewalls
- NOTE: Make sure to re-enable all firewalls when the installation is complete.

Inserting the DVD

1. Insert the EchoPAC Software Only DVD into the computer's DVD drive.

The installation software starts automatically.

NOTE: If the DVD does not start automatically, press **Start**, select **Run** and enter **X:\setup.exe** (where X is the DVD drive letter) in the Run window.

EchoPAC Software Only may require the installation of Microsoft components.

choPAC PC - InstallShield Wizard								
choPAC PC requires the following items to be installed on your computer. Click Install to egin installing these requirements.								
Requirement								
Microsoft Visual C++ 2008 SP1 Redistributable Package (x86)								
Instal								

Figure 2-1. Install Microsoft components

Press Install.

The EchoPAC Software Only Installation wizard is started and the Welcome screen is displayed.



Figure 2-2. Preparing the Install Shield Wizard



Figure 2-3. The Welcome screen

2. Press Next.

Licence agreement and Read me file

A message window is displayed referring to this manual for translated information.



Figure 2-4. Refer to the Installation manual

1. Press Next.

The Read Me text is displayed (Figure 2-5).



Figure 2-5. The Information window

2. Read the information and press Next.

Preparing the archive installation

The Archive location message is displayed (Figure 2-6).



Figure 2-6. The Archive location message

- 1. Read the information and press OK.
- If this is the first installation of EchoPAC Software Only on the computer, read and follow 'First time installation' on page 2-9.
- If you are re-installing EchoPAC Software Only on the computer, jump to 'Upgrade/Re-installation' on page 2-9.

First time installation

1. The Archive location setup window is displayed (Figure 2-9). Jump to 'Defining the archive location' on *page 2-11*.

Upgrade/Re-installation

If an archive already exists on the computer from a previous installation, the following message is displayed.



Figure 2-7. The Existing archive message

- 1. Select:
 - **Yes** to use the existing archive as default archive. The *System information window* is displayed (Figure 2-11).
 - **No** to create a new archive. The *Delete archive message* is displayed.

Delete Old	Archive	
?	About to permanently delete C:\EchoPAC_PC\ARCHIVE. Do you want to delete this folder?	
	<u>Y</u> es <u>N</u> o	

Figure 2-8. The Delete archive message

- Select **Yes** to delete the existing archive at the end of the installation process. (A new window will be displayed asking for confirmation, Figure 2-17.) The *Archive location setup window* is displayed (Figure 2-9).

NOTE: All patient data including images and reports will be deleted.

- Select **No** to keep the archive on the disk. It will not be used by EchoPAC Software Only. The *Archive location setup window* is displayed (Figure 2-9).

Defining the archive location

The Archive location setup window is displayed.

hoose Archive Destination Locat	tion		
Please specify where you want to plac	e your Archive files.		
To install to default folder, click Next. T select another folder.	Fo install to a different fol	lder, click Brows	se and
Destination Folder			
Destination Folder C:\EchoPAC_PC\ARCHIVE\		[Browse

Figure 2-9. The Archive location setup window

Default archive location

 Press Next in the Archive location setup window. The System information window is displayed (Figure 2-11).

User-defined archive location

1. Press **Browse** in the *Archive location setup window*. The *Chooser folder window* is displayed (Figure 2-10).

C:\EchoPAC_PC\ARCH	IVE	
<u>D</u> irectories:		
AR	ICHIVE Export GEMS_DB GEMS_IMG GEMS_IMG GEMS_REP ImageBuffer Spooler StdPrinterSpooler	The second secon

Figure 2-10. The Chooser folder window

2. Select the desired location for the archive.

The archive cannot be installed directly on a partition root, it must be within a folder.

If an archive already exists on the computer, the new archive cannot be installed in the same folder as the previously installed archive.

3. Press OK.

The System information window is displayed (Figure 2-11).

System check

Information Please read the following te	xt.	124
EchoPAC PC SW-Only v.1	112.0.x	^
GE Healthcare www.gehealthcare.com		
Please note: This product I combinations of hardware strongly recommend that yo described in the checklist f on the EchoPAC PC CD, to	nas not been validated for all and software platforms. We therefore ou carry out the validation check ound in the Installation Manual pensure full operability on your system	n. 💌
4		•
stallShield		

Figure 2-11. The System information window

1. Press **Next** or if some of the items displayed in the System information window are not fulfilling the system requirements/recommendations (see page 2-3) the following warning is displayed.



Figure 2-12. Warning, incompatibility

Press OK.

Copying files

The Start copying files window is displayed (Figure 2-13).



Figure 2-13. The Start copying files window

1. Press Next.

The EchoPAC Software Only and database files are copied on the computer.

EchoPAC PC - InstallShield Wizard Setup Status	
The InstallShield Wizard is installing EchoPAC PC	
Copying new files	
InstallShield	Cancel

Figure 2-14. The Copy files window (EchoPAC Software Only files)



Figure 2-15. The Copy files window (Database files)

Resuming the installation

Once the files are copied, the EchoPAC Software Only installation is resumed.

EchoPAC PC - InstallShield Wizard	×
Setup Status	No.
The InstallShield Wizard is installing EchoPAC PC	
Copying new files	
InstallShield —	Cancel

Figure 2-16. Command processing windows

If the software is being re-installed and you decided to delete the existing archive (see page 2-9), a confirmation window is displayed.



Figure 2-17. The Delete archive window

1. Select either:

- Yes to permanently delete the archive from the previous installation.
 OR
- No to keep the archive on the disk.

The Insert Dongle window is displayed.

EchoPAC PC - InstallShield Wizard	×
Please insert the dongle into one of th	e usb ports of the computer.
	ОК

Figure 2-18. The Insert Dongle window

 Insert the dongle in one of the USB port. Select OK.

The *Install Shield Wizard complete window* is displayed (Figure 2-19).





3. Select Yes and press Finish.

Note regarding the use of removable media

User without Windows administrator rights are normally prevented from using removable media with EchoPAC Software Only unless the Windows Policy setting "Devices:

Allowed to format and eject removable media" is set to "Administrators and Interactive Users".

If required, contact your network administrator to adjust the Windows local policy accordingly.

Starting EchoPAC Software Only



EchoPAC Software Only requires that the hardware key (dongle) is inserted in an USB port.

- 1. Double click on the EchoPAC Software Only icon on the computer's Desktop.
- 2. Run the validation procedure as described in the chapter 'Software validation' on *page 3-1*.

Refer to the EchoPAC Software Only User's Manual for information on how to use the software.

Accessing user documentation

On line Help

1. Press Help in the Menu bar.

Electronic documentation

If the EchoPAC Software Only User Manual is provided on a CD, follow the following procedure:

- 1. Insert the CD in the CD Drive.
- 2. Open the CD drive on your desktop.
- 3. Double click on the **gedocumentation.html** document.
- 4. In the Documentation interface home page select the EchoPAC Software Only user manual.

Removing EchoPAC Software Only

The following additional programs were installed during EchoPAC Software Only installation:

- Sybase SQL Anywhere
- Windows Media 8 Encoding Utilities
- Windows Media Encoder 9 series

The programs may be removed separately using the Windows application for uninstalling programs in the Control panel. EchoPAC Software Only should be removed first.

NOTE: Removing or upgrading these programs might cause EchoPAC Software Only to fail.

Chapter 3

Software validation

This chapter describes: 'Validation Procedure' on page 3-3 'Validation form' on page 3-7 'Trouble-shooting' on page 3-9 'Image samples' on page 3-10

Introduction

This chapter describes a step-by-step procedure for validating proper installation and operation of EchoPAC Software Only.

It is strongly recommended to perform this validation procedure each time EchoPAC Software Only is installed on a PC. The validation procedure should also be performed on existing installations if hardware or software environment has changed since the installation (e. g. graphic board replacement or operative system upgrade).

Please fill out and sign the validation form on page 3-7 and return it to your local GE sales representative if required.

The purpose of this procedure is:

- To validate that the product EchoPAC Software Only functionality and performance is meeting your expectations on your specific PC hardware and software environment.
- To make sure that the software does not give erroneous or misleading diagnostic results when running on your computer.

Regarding the validation steps 2. to 6. below, if you are uncertain about the details on how to carry out these operations, please refer to the User Manual for EchoPAC Software Only.

Validation Steps 1 to 6: close all other Windows applications, so that EchoPAC Software Only is the only application running.

Validation Procedure

Perform the validation steps below and fill in the result in the table on page 3-8.

Validation Step 1 - Software installation

• Install EchoPAC Software Only on your PC following this manual and the on-screen instructions.

Did you successfully install the EchoPAC Software Only?

Validation Step 2 - Start EchoPAC Software Only

• Double-click on the EchoPAC Software Only icon on the desktop.

Select the Operator **ADM** and log on to the archive with password **ulsadm**.

Did you successfully start EchoPAC Software Only and log on?

Validation Step 3 - Import sample archive from DVD

- Insert the Installation DVD.
 Note: when inserting the DVD, the installer program will start automatically (unless auto-run from DVD is disabled on your PC). Press Cancel to exit the Installation wizard.
- Press Import in the Search/Create patient window.
 Select Removable CD/DVD Archive from the Source drop-down menu in the Import Dialogue window and import all the records from the sample archive on the DVD.
- In the Search/Create patient window select the dataflow Local Archive Int. HD and search the imported records.

Did you successfully import the records from the sample archive?

Validation Step 4 - Image quality

- Select the patient **Example**, **Images**.
- Press Image Browser.
- Open the images one by one by double-clicking the thumbnails.
- Compare each image on screen with the corresponding printed image (see page 3-10).

Note: to get optimal display you may have to adjust the monitor settings (brightness, contrast, color temperature...etc).

Based on your qualitative judgement, do the ultrasound images displayed on screen have correct greyscale, colors and have sufficient diagnostic quality?

Validation Step 5 - Measurement accuracy

- Select the patient Phantom, Images.
- Press Image Browser.
- Open the first image by double-clicking the first thumbnail.
- Press Caliper on the Control panel.
- Make a vertical measurement from one point to another.
 The distance between each vertical point is two cm.

Make sure that the measured distance is correct within 10% accuracy.

 Make a horizontal measurement from one point to another. The distance between each horizontal point is three cm.

Make sure that the measured distance is correct within 10% accuracy.

- Press **Image Browser** and open the <u>third</u> image by double-clicking the third thumbnail.
- Press **Caliper** on the Control panel and measure the diameter on one of the circles in the image.

The diameter is one cm.

Make sure that the measured distance is correct within 10% accuracy.

Validation Step 6 - Image review performance

- Select the patient **Example, Images**.
- Press Image Browser.
- Select all the images and press Analyze.

Verify that the image loading time and cineloop display is adequate/acceptable.

Double-click one of the running cineloops to have it displayed in full-screen.

Verify that the cineloop is running smoothly and with acceptable speed.

Validation Step 7 - Effect on previously installed software

• Run the other applications that you had installed from before (before you installed EchoPAC Software Only).

Make sure these programs still function and perform as expected. I.e. check that installing EchoPAC Software Only did not have any negative effect on the other software packages, or on Windows in general.

Validation Step 8 - Network contact (Optional)

This step is optional and relevant only if EchoPAC Software Only is to be operated in a network environment.

- Make sure that the PC is connected to the network and that you have regular network connection in Windows Explorer.
- Configure EchoPAC Software Only to connect to the server:
 - Go to Config -> Connectivity ->TCPIP.
 - Enter the Server IP-address and name in the *Remote* archive setup field. (Refer to the network specifications.)
- Restart the EchoPAC Software Only application.
- In the Search/Create patient window select the dataflow **Remote Archive Remote HD**.

Make sure the patient list from the server is displayed in the Search/Create patient window.

Validation Step 9 - Direct connect with a scanner (Optional)

This step is optional and relevant only if a GE ultrasound scanner is directly connected to EchoPAC Software Only.

- Configure the PC and connect the units as described in EchoPAC Software Only user manual.
- Configure the scanner for connection to a remote archive and select the "Remote Archive" dataflow as default dataflow. See the scanner User Manual.
- Perform a dummy examination on the scanner. Make sure to properly terminate the examination.
- Check if the examination can be opened from EchoPAC Software Only and make sure you are able to review the exam data, patient demographics, measurements and images.

Validation Step 10 - Backup and restore (Optional)

- Follow the instructions provided in the EchoPAC Software Only User manual to perform a backup and restore of patient data and user-defined settings (See chapter 2, section Data Backup and Restore).
- Verify that you are able to backup and restore patient data and user-defined settings.

٦

Validation form

Customer and PC hardware information

г

Please fill in as much information as you have available. As a help to find the PC specific information (item 9. to 17. in the table below), you can look inside the file " EP_Install_<date>.log</date> ", which is located in the folder named " Log " inside the folder you specified as archive destination during installation. In fact, we recommend, if possible, that you print out that file and attach it to the validation form.				
1	Name			
2	Institution			
3	ZIP/City			
4	Country			
5	E-Mail address			
6	EchoPAC Software Only version			
7	Dongle-ID (see USB hardware key)			
8	Type of PC (Laptop, Desktop, Tabletetc)			
9	PC make and model (Be as specific as possible)			
10	Operating System			
11	Boot drive			
12	Processor speed			
13	Memory (RAM)			
14	Number of colors			
15	Screen resolution			
16	Free space on C:			
17	Free space for ARCHIVE			
18	DVD drive			
19	OS language			

Validation procedure summary

Step	Description	Passed	Failed
1	Software installation		
2	Start EchoPAC Software Only		
3	Import sample archive from DVD		
4	Image quality		
5	Measurement accuracy		
6	Image review performance		
7	Effect on previously installed softwares		
8	Network contact (Optional)		
9	Direct connect with a scanner (optional)		
10	Backup and restore (optional)		

Successful installation

I hereby declare to have performed a successful validation of EchoPAC Software Only. I accept the End User License Agreement and I find the general performance, reliability and feature set of EchoPAC Software Only acceptable.

Date:

Name (print):

Signature:

Trouble-shooting

Problem reading CD/DVD

The following solution may apply if you get an error message when reading CD/DVD: "No media in drive. Cannot format using EchoPAC Software Only".

Disabling of DLA from Sonic

- 1. Double click My Computer (Windows Desktop).
- 2. Right click the CD/DVD device and select Properties.
- Select **DLA** tab (if there is no such tab, you probably don't have Sonic installed and this note does not apply to your system).
- 4. Uncheck Enable DLA on your drives.
- 5. Select **Apply** and **OK**.

Image samples

The images at the end of the book are used for Image quality validation of EchoPAC Software Only installed on your PC.









GE Healthcare