GE Healthcare

EchoPAC Dimension 2006 Clinical Workstation

Call 800-422-3547 For More Information

Product Description

The EchoPAC Dimension is a comprehensive clinical work station for viewing, analyzing and reporting multi-dimensional echo images as well as vascular images. Basic and advanced viewing as well as quantitative analysis capabilities for 2D and multi-dimensional parametric images provide broad-spectrum workflow advantage for sonographers and physicians from one workstation. EchoPAC Dimension integrates various software applications so your lab can work more efficiently based on your needs. EchoPAC Dimension displays images from the Vivid family including the newest systems; Vivid 7 Dimension and Vivid i. EchoPAC Dimension workstation is designed to work in GE and multi-vendor laboratories.

Image Quality

- EchoPAC Dimension is an integrated clinical workstation for 2D and 4D image view and analysis. EchoPAC rapidly displays high quality images and image sets for dynamic review and analysis in raw GE and multi-vendor echo labs.
- EchoPAC Dimension extends accessibility of ultrasound system view and analysis capabilities on to a clinical work station. EchoPAC Dimension displays original data quality from high frame rate acquisition systems without compression or loss of data quality. Raw data images from Vivid 7 , Vivid 4, Vivid 3 and Vivid i are viewed, analyzed and manipulated as if the images were still on the ultrasound system. DICOM images are easily viewed and analyzed without the need for screen calibration

4D and Multi-dimensional Imaging (option)

- 4D option display of volume data in gray scale
- Multi-dimensional images, parasternal bi-plane and apical tri-plane views are displayed
- 2D, color, as well as, Tissue Doppler modes (including Tissue Synchronization Imaging which is part of the Advanced QScan option)
- Full volume gray scale data displayed from 4 or 6 sequential heart cycles
- Slice mode allows an anyplane gray scale display based on volume data
- Comprehensive control set for optimizing rendered 4D image display
- Full M&A package can be applied to multi-dimensional and slice mode images
- All data can be stored in raw data DICOM format and can be recalled for post-processing
- Access serial exam image sets quickly in EchoPAC Dimension Image Browser. Sonographers and Physicians review and compare previous exams with the current exam within seconds
- EchoPAC Dimension displays 4D Stress Echo exam data sets in a user defined protocol format for efficient review and analysis. High quality assurance is provided with each data set by leveraging the advantages of 4D multi-dimensional acquisition and review parameters
- 9-Slice. Reconstruct automatically 9 equidistant, parallel horizontal views from a 4D Full Volume data set. This allows to get automatically short axis views from an apically acquired volume. The position of the 9 slices can be adapted to the real anatomy in angle and distance.

EchoStress (option)

- Review of stress-echo studies acquired with the Vivid 7, Vivid 4 or Vivid 3 as well as other DICOM ultrasound systems
- User-configurable exam templates and labels including settings for pharmacological and exercise stress, single loop and continuous loop capture
- Continuous loop capture
- Up to 14 levels
- Up to 10 projection views
- User-definable groups
- Heart rate and ECG stored with each loop
- Parallel raw data acquisition of gray scale 2D and tissue velocity information for quantitative stress analysis
- Qualitative wall motion scoring
- Quantitative Stress Analysis: provides three different analysis tools based on TVI data stored during stress acquisition:

  Vpeak Measurement:
  Enables the display of a tissue velocity trace for a selected region of a previously scored segment through the entire heart cycle

  Tissue Tracking:
  Enables visualization of the heart contraction at peak level by color coding the displacement in the myocardium

  Quantitative Analysis:
  Enables further quantitative analysis based on multiple tissue velocity traces
- M & A capability
- Report capability

Quantitative Analysis TVI (option)

- Multiple time-motion trace display from selected points in the myocardium
- Arbitrary straight Anatomical M-mode
- Arbitrary curved Anatomical M-mode

IMT

- Automatic measurement of Inter Media Thickness of the carotid artery. The algorithm works for raw data images from GE Vivid family of ultrasound scanners.

Tissue Synchronization Imaging (option)

- Parametric imaging which gives information about synchronicity of myocardial motion
- Delayed myocardial segments produce red overlay whereas segments with early motion are green
- Available in live scanning as well as an offline calculation derived from tissue Doppler data
- Additional features in combination with multi-dimensional imaging option:
  - Efficient segment specific TSI time measurements
  - Immediate Bull's eye report
  - Automatic calculated TSI synchrony indexes
  - TSI surface mapping
  - LV synchronization report template

Automated Function Imaging (option)

- Parametric imaging tool which gives Information about global and segmental wall motion
- Allows complete assessment at a glance by combining 3 longitudinal views into one comprehensive bulls-eye view
- Integrated into M&A package with specialized report templates

Review and Analysis

Access 4D data sets from Vivid 7 Dimension on EchoPAC Dimension:

- Utilizing Triplane technology with Tissue Synchronization Imaging, clinicians have the ability to gain a better understanding for patient dyssynchrony. EchoPAC Dimension Triplane TSI is also a communication tool for displaying patient dyssynchrony to referring physicians and specialists

EchoPAC Share

"EchoPAC Share" is a software option that allows to connect up to 3 EchoPAC or Vivid clients to an EchoPAC Workstation. This is for small network settings, typically for a physician's office, where investment in an Image Vault server is not relevant, but where there is a need to have a network with a central archive. With this software option an EchoPAC Workstation can be used as the central archive. The software option "EchoPAC DICOM Share" allows to connect also non-GE scanners via DICOM Storage. Max. 2 non-GE scanners can be connected, plus one GE client. So if both software options "EchoPAC Share" and "EchoPAC DICOM Share" are activated, up to 4 GE clients + up to 2 non-GE clients can be connected to a single EchoPAC Workstation.

Image Review

- TruScan Architecture allows for instant access/recall to digital raw data for uncompromised analysis and reporting or DICOM images
- EchoPAC Image Browser displays from current and stored exams for quick and efficient serial image review
- Thumbnail image display for quick overview
- Image play, freeze, and single frame advance are possible in the Image Review screen
- Flexible Image Layout with multiple images allows for serial comparison of image data from different exam dates (up to 12 images single frames and cineloops)

Image Post-Processing

GE raw data enables full "scanner" post processing functionality:

- Anatomical M-mode
- Compress/reject
- Gain
- Cine speed adjustment
- Freeze/unfreeze
- Frame-by-frame review of cineloop
- Up/down and invert
- Zoom and pan facility
- Color map selection
- DDP control
- Color display on/off
- Horizontal sweep adjustment
- Baseline shift
- Physiological traces control (gain and position)
- Tissue priority
- Variance

Workflow/Productivity/Connectivity

- Digital raw data (single frames and cineloop of 2D, M-mode, TVI, Spectral and Color Doppler modalities) at original resolution and frame rate from the Vivid 7, Vivid 4, Vivid 3 and Vivid i ultrasound units
- DICOM Media Read (Magneto-Optical Disk, CD and DVD)
- ECG, phono and three auxiliary traces recorded with raw data capture
- EchoPAC Dimension creates Mpeg image files and attaches a MPEG viewer to enable physicians and sonographers to view images on conventional PCs running Windows 2000 and XP
- Quality Image sets can be copied and saved on to remvable media (CD, DVD, MOD, USB Flash Card) by EchoPAC Dimension for DICOM Media interchange as well as Mpeg, Jpeg and AVI formats

Patient Record and Image Management

- Shared patient archive with Vivid 7, Vivid 4, Vivid 3 and Vivid i
- Ultimate workflow with instant access data management
- Fast search and recall of patient studies
- Physicians can search on their name and patient file to view if a report has been completed or not with one click

- Stress, Pediatric, Vascular, and many other exam catego ries can be searched and viewed with one click
- Patient Browser Screen for registration of demographic data and quick review of image clipboard contents
- Storage of single-frame, multi-frame and raw data image in raw data DICOM format
- DICOM Media Store (US and US-MF and Secondary Capture) to Magneto-Optical Disk CD
- DICOM Network Storage to DICOM server
- Storage of reports and worksheet
- Export of reports as PDF, CHM, and Excel formats
- MPEGvue to save an entire exam as an MPEG, MPEG is embedded on to CD, MOD, DVD and USB Flash Card
- Export of cineloop as AVI
- Export of single frame images as JPEG
- Export of 4D datasets from Vivid 7 to media or shared network volume, in a data format that can be imported and analyzed by TomTec's workstation "4D LV-Analysis
- ASE-recommended, report-structured text statements help create reports in minutes on Vivid 7, or on the EchoPAC PC
- Report function includes: Patient Information, Measure ments, Calculations, Ultrasound Images and Wall Motion Scoring
- Pre-defined clinical report templates for cardiac, vascular, general imaging, OB and small parts
- Completely configurable report templates
- New Structured findings report tools support efficient text entries with direct editing of findings text, usability improvements , new configuration options and conclusion section
- Printable on ink-jet printer and laser printer
- Report can be exported as PDF, CHM and Excel formats
- Pre-defined and configurable Structured Findings for efficient generation of the echo study findings. The findings will populate the final report.
- Normal Values. Each measurement can be given a normal range, and measurements in the report falling outside the normal range will be highlighted.
- Report and view images and measurements at the same time
- Direct Report program to select or create fully configurable text statements
- Measurements created on the Vivid ultrasound system automatically populate the EchoPAC worksheet
- Measurements created on ultrasound systems other than Vivid are manually entered into the EchoPAC worksheet
- EchoPAC worksheet measurements selected by the physician and sonographer auto populate the EchoPAC report

DICOM (option)

- Storage
- Read/write images on DICOM format (US, US-MF and secondary capture)
- Verify
- Query/Retrieve
- DICOM Print
- DICOM SR Storage

Ease of Use

Measurements from Vivid 7 Dimension, Vivid 4, Vivid 3, Vivid i and conventional DICOM ultrasound systems populate the EchoPAC report from the EchoPAC worksheet. Physicians decide which measurements will be displayed on the final report. The sonographer or physicians on the fly can customize templates for echo, vascular and stress reports without system programming experts

Hardware

- HP Workstation: CPU – Pentium 4 / 3.00 GHz
- 21" LCD Monitor
- Hard Drive – 160 GB
- Memory – 1024 Mb
- HP PS/2 scroll mouse
- Keyboard – HP PS/2 standard
- OS – XP-Embedded
- One XP Pro license included with HP's workstation
- Graphics - ATI Radeon X800 XL 256 Mb
- DVD - LG GSA-4167B
- DVD writer, DVD-R
- 5-1/4" MO drive – Sony SMO-F561 – Internal 14X / 9.1 GB / MO drive
- Controller – Adaptec AHA-2930U – 8-bit Ultra SCSI controller

Hardware (option)

- UPS
- 3.5" MO drive
- HP ink-jet printer
- Lexmark Laserwriter
- 4D graphic board with 4D software (for legacy EchoPAC workstations)
- 21" LCD Monitor for dual-screen reporting

Virus Protection

- Lock-down configuration to prevent access through unused ports
- Vulnerability scanning and evaluation of new security patches for third-party technology

- Microsoft (and other) security patches that address serious issues will be made available to customers after GE tests and validates the security patches. It is imperative that GE tests the security patches for any potential impact on the operation of the Vivid ultrasound systems and EchoPAC workstation.

Healthcare Re-imagined

GE is dedicated to helping you transform healthcare delivery by driving critical breakthroughs in biology and technology. Our expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, and biopharmaceutical manufacturing technologies is enabling healthcare professionals around the world to discover new ways to predict, diagnose and treat disease earlier. We call this model of care "Early Health." The goal: to help clinicians detect disease earlier, access more information and intervene earlier with more targeted treatments, so they can help their patients live their lives to the fullest. Re-think, Re-discover, Re-invent, Re-imagine.

imagination at work

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