LOGIQ *e*

LOGIQ *e* product description:

LOGIQ* *e* gives physicians the power to expand from routineto advanced ultrasound imaging. GE Healthcare's leadership compact system is designed for general imaging, musculoskeletal, anesthesiology, interventional, emergency, and critical care applications. A variety of premium technologies help care for a broad spectrum of patients, from superficial to dynamic or deep imaging at the point of care.

Point of Care versatility

The LOGIQ *e* excels in the following areas:

Amazingly Accurate Anatomy: Our Tissue Differentiation comes from the combination of our proprietary imaging technology, beamformer and ultra-high frequency L8-18i-RS transducer. This helps you detect subtle changes in anatomy, minimal amounts of fluid and small structures. Power Doppler Imaging (PDI) sensitivity detects slow blood flow in both small and large vessels. B-Steer + Needle Recognition delivers accurate detail—needle, anatomy and motion—even in Color and Power Doppler.

Precision Tools: Patient Follow-up Tool automatically sets all of the imaging parameters to be identical to your previous exam. This helps give you technical consistency when you monitor your patient's condition, therapy or progress over time. Color and PDI Quantification helps you evaluate the amount of blood flow within a specific area, to assist with diagnosis and monitoring. Other advanced capabilities are intuitive to use, such as Simultaneous Split Screen, LOGIQview panoramic imaging, and Raw Data Imaging.

Simplicity creates efficiency. Customize to your needs: You can spend more time focusing on your patient and not your equipment. The system comes with expertly optimized image settings readily available on the LOGIQ *e*. Auto Optimize helps you quickly adjust image quality with the touch of one button. To personalize your system, you have the flexibility to fine-tune the image across all modes and save your settings. You can even create up to eight of your own default settings by anatomy, procedure or physician. To quickly streamline your system, you can select only the capabilities you need for your clinic or facility. In addition, efficient data management and connectivity make documentation easy over a wired or wireless network.

General Specifications

Dimensions and Weight

- Height: 70 mm (2.75 in) console only
          100 mm (3.94 in) with handle
- Width: 340 mm (13.38 in)
- Depth: 346 mm (11.63 in) console only
          372 mm (14.4 in) with handle
- Weight with Battery:
          approx. 5.2 Kg (11.5 lbs).

Battery Power

- Lithium Ion Battery (standard)
- Scan time with battery 1 hour

Electrical Power

- Voltage: 100–240 VAC
- Frequency: 50/60 Hz
- Power: Max. 130 VA with Peripherals

Console Design

- Laptop Style
- Integrated HDD (160 GB)
- CPU
  – U7500 Core 2 Duo 1.06 G
- Wired, wireless LAN Support
  – For DICOM communication
  – For Network Storage (Image store to PC without DICOM system)
- USB Ports (2)
- USB ECG (AHA/IEC) (Optional) Support
- CWD (Optional) Support
- 1 probe port with micro-connector
- Rear handle

User Interface

Operator Keyboard

- Alphanumeric Keyboard
- Ergonomic Hard Key Operations
- Integrated Recording Keys for Peripheral and DICOM Devices
- 6 TGC Pods, with remapping functionality at any depth
- Backlight keys

Display Screen

- 15 inch High-Resolution Color LCD
  – Display size: 1024 x 768
- Interactive Dynamic Software Menu
- Open Angle Adjustable
  – 0 to 160°
- Integrated Speakers
- Brightness Adjustment
- Audio Volume Adjustment

System Overview

Applications

- Abdominal
- Cardiac
- Gynecology
- Intraoperative
- Musculoskeletal
- Obstetrical
- Nerve Block
- Pediatric and Neonatal
- Small Parts and Superficial
- Urological
- Vascular

Scanning Methods

- Phased Array Sector
- Electronic Convex
- Electronic Linear

Transducer Types

- Convex Array
- Microconvex Array
- Linear Array
- Phased Array

Operating Modes

- B-Mode
- M-Mode
- Anatomical M-Mode
- Color Flow Mode (CFM)
- Power Doppler Imaging (PDI)
- Continuous Wave Doppler (CWD)
- Pulse Wave Doppler (PWD)
- Tissue Doppler Imaging (TDI assess direction and velocity of myocardial motion)

Standard Features

- High Resolution 15 inch Color LCD
- Over 1,000 frames or over 60 seconds CINE Memory (64 MB) depend on FOV, Scanning Lines etc.
- 160 GB Hard Drive
- External DVD R/W storage
- Loop storage—from live scanning and from memory
- Automatic Optimization
  – Auto Tissue Optimization: ATO
  – Auto Color Flow Optimization: ACO
  – Auto Spectrum Optimization: ASO
  – Auto Clarity Suite (Auto Focus and Auto Frequency)
- ACE* (Adaptive Color Enhancement)

- Raw Data Processing
- Patient Information Database
- Image Archive 97.5 GB on Hard Drive
- Customizable User Interface
- Full M&A Calculation Package with Real Time Auto Doppler Calculations
- Vascular Calcs
- Cardiac Calcs
- OB Calcs and Tables
- Fetal Trending
- Multi Gestational Calcs
- Musculoskeletal and Hip Dysplasia Calcs
- Gynecological Calcs
- Urological Calcs
- Renal Calcs
- Report Package

Software Options

- Easy3D
- LOGIQview
- B-Steer + Needle Recognition
- CrossXBeam*
- CMM and AMM
- Stress Echo
- TEE Probe Support
- TDI
- IMT
- Touch Mode
- DICOM 3.0 Connectivity
- **eSmart Trainer** provides modules showing basic scanning techniques, with graphics of probe position, anatomy and example clinical image
- **Flow QA (Color and PDI Quantification)** helps you evaluate the amount of blood flow within a region of interest, to assist with diagnosis and monitoring.
- **Patient Follow-up Tool** when you monitor your patient's condition, therapy or progress over time - LOGIQ *e* automatically recalls all of the imaging parameters, comments and body patterns to be identical to your previous exam. It even provides an alert if you use a different transducer than last time. Works in B-Mode, Color Mode and PDI.

Hardware Options

- CWD
- USB ECG (AHA/IEC)
- 1.5T Hard Drive
- SATA to USB convertor

Cart & Peripheral Options

- Streamline Cart
  - Small footprint
  - Adjustable height
  - Optional basket or locking drawer
    Depth: 512 mm
    Width: 540 mm
    Height: 830–1,130 mm
- Portable Docking Station
  Adjustable platform height
  Digital/Analog video output
  - 3 Probe port adapter (option)
  - External speaker (option)
  - 15 inch Extra touch screen (option)
  - Total height with LCD:
    1,385 mm ± 3 mm
    Depth: 617 mm ± 2 mm
    Width: 470 mm ± 1.5 mm
    Weight: 59 kg ± 1.0 kg
  - Total height with TouchScreen (option):
    1,740 mm ± 3 mm
    Depth: 625 mm ± 2 mm
    Width: 473 mm ± 1.5 mm
    Weight: 70 kg ± 1.0 kg
- 3 pedal Foot Switch (IPX8) (option)
- 1 pedal Foot Switch (IPX8) (option)
- External USB DVD-RW (standard)
- USB thermal B&W printer (option)
- USB thermal color printer (option)
- USB DeskJet color printer (option)
- NetGear USB Wireless Adapter
  WNA3100 supporting the 802.11a/b/g
  formats, where available (option)
- Memory Stick (option)
- USB 2.0 Hub (option)
- USB HDD (option)
- Barcode scanner (1D, 2D), HPP4600g
  (option)
- Barcode scanner (1D), HHP3800g
  (option)

Display Modes

- Simultaneous Capability
  - B/PW or TDI
  - B/CFM or PDI
  - B/M or AMM
  - Dual B (B/B)
  - Dual B + CFM or PDI
  - Dual B-Steer + Needle
    Recognition + B-Mode
  - B-Steer + Needle Recognition
    + CFM (PDI)
  - Real-time Triplex Mode
- Selectable Alternating Modes
  - B-Steer + Needle Recognition

- B/M
- B/PW or TDI
- B/CW
- B + CFM (PDI)/M (optional)
- B + CFM (PDI)/PW
- B + CFM (PDI)/CW
- 3D – Mode (option)
- Multi Image Split Screen
  - Live and/or frozen
  - B + B/CFM or PDI
  - Independent Cine playback
  - Conventional or wide screen display
- Zoom: Read/Pan and from archive
- Colorized Image
  - Colorized B
  - Colorized M
  - Colorized PW
  - Colorized CW
- Timeline Display
  - Independent Dual B/PW/CW Display
  - Display Formats:
    Top/Bottom or Side/Side selectable
    Format Size: Vert1/3 B; Vert1/2 B;
    Vert2/3 B; Horiz1/2 B; Horiz1/4 B; TL
    Only format, switchable after freeze
  - Update mode: timed based on sweep
- Quad Screen Display access from
  Split Screen

Display Annotation

- Institution/Hospital Name
- Date: 2 types selectable MM/DD/YY,
  DD/MM/YY
- Time: 2 types selectable 24 hours,
  12 hours
- Operator Identification
- Patient Name: First, Last, & Middle
- Patient Identification: 64 characters
- Gestational Age from LMP/EDD/GA/BBT
- Power Output Readout
  - MI: Mechanical Index
  - TIS: Thermal Index Soft Tissue
  - TIC: Thermal Index Cranial (Bone)
  - TIB: Thermal Index Bone
- System Status (real-time or frozen)
- Probe Orientation Marker:
  Coincides with orientation
  marking on the image monitor
- Image Preview
- Gray/Color Bar
- Cine Gauge
- Measurement Summary Window
- Measurement Results Window:
  pre-settable display location

- Probe Type
- Application Name
- Imaging Parameters by Mode
  (current mode/see below)
- Focal Zone Markers
- Body Pattern: 219 types
- B Scale Markers: 2 types;
  Depth/Width
- M Scale Markers: 2 types;
  Time/Depth, Time
- Image Management Menu:
  Menu, Delete, and Image Manager
- Image Palette
- Caps Lock: On/Off
- System Messages Display
- Trackball Functionality Status: Scroll,
  M&A (Measurement and Analysis),
  Position, Size, Scan Area Width,
  and Tilt
- Battery Status
- Biopsy Guide Line and Zone
- Heart Rate

Primary Parameter Menu, mode dependent

- B-Mode
  Frequency
  Virtual Convex/Virtual Apex
  CrossXBeam
  Edge Enhance
  Dynamic Range
  Rotation
  Gray Map
  Focus Position
  Focus Number
  Colorize
- Color Flow Mode
  Frequency
  Threshold
  Spatial Filter
  Packet Size
  Angle Steer
  Invert
  PRF
  Map
  Wall Filter
- PW Mode
  SV Length
  Sweep Speed
  Angle Steer
  Quick Angle
  Spectral Invert
  Frequency
  Angle Correct
  Baseline
  PRF
  Wall Filter

- – TDI Mode
  - Frequency
  - Sweep Speed
  - Angle Correct
  - Baseline
  - Scale
  - Angle Steer
  - Quick Angle
  - Invert
  - Low Velocity Reject
- – M-Mode
  - Frequency
  - Transparency
  - Axial Filter
  - Power Output
  - PRF
  - Baseline
  - Gray Map
  - Threshold
  - Invert
  - Wall Filter
- – Cine Mode
  - Loop Speed
  - Cycle Select
  - Start Frame
  - End Frame
  - Frame by Frame
  - Select All
  - First Frame
  - Last Frame
  - Run/Stop
  - Cine Mode Selection
- • Secondary Parameters Menu
  - – B-Mode
    - Frame Average
    - Biopsy
    - Line Density
    - Focus Width
    - B Softener
    - Power Output
    - Suppression
    - Range Focus
    - SRI
    - Rotation
    - Focus Number
  - – CF Mode
    - Baseline
    - Line Density
    - Flash Suppression
    - Transparency Map
    - Focus Position
    - Frame Average
    - Power Output
  - – PW/TDI Mode
    - Rejection
    - Compression
    - Display Format
    - Full Timeline
    - Trace Method
    - Trace Sensitivity

- Trace Direction
- Modify Auto Calcs
- PW/CF Ratio
- Duplex
- Time Resolution
- Colorize
- Gray Map
- Power Output
- Auto Calcs
- Spectral Average
- Cycles to Average
- – CW Mode
  - Dynamic Range
  - Display Format
  - Full Timeline
  - Trace Method
  - Trace Sensitivity
  - Trace Direction
  - Modify Calcs
  - Time Resolution
  - Colorize
  - Power Output
  - Auto Calcs
  - Spectral Average
  - Cycles, to Change

System Parameters

System Setup

- • Diagnostic Categories (pre-settable): Abdomen, OB, GYN, Cardiac, Vascular, Urology, Pediatric, Small Parts, Musculoskeletal
- • User Programmable Preset Capability
- • Factory Default Preset Data
- • Languages setup: English, Norwegian, French, German, Spanish, Italian, Portuguese, Russian, Greek, Finnish, Swedish, Dutch, Danish
- • Languages for Manuals: English, Norwegian, Polish, French, German, Spanish, Italian, Portuguese, Russian, Greek, Finnish, Swedish, Dutch, Danish, Japanese
- • Operation Error Beep
- • Body Surface Area: 2 types; Oriental, Occidental
- • OB Report Format 5 types;Tokyo Univ., Osaka Univ., USA, Europe, ASUM
- • EFBW: 8 types; Tokyo Univ., Osaka Univ., USA, and Europe (Shephard, Merz, Hadlock/Shephard, Williams, Brenner)
- • CUA/AUA for Hadlock
- • Body Pattern Copy to Active Side: On/Off
- • Colorized B/M: 5 types for each, PWD/CWD: 6 types for each

- • Programmable Annotation Library: 44 annotations
- • Menu Selection at New Patient: 2 types; Patient Entry, Schedule
- • Sort Criteria for Schedule List: 2 types; Date & Time, Name
- • Patient Name Format: 2 types; Full Name, Last, & First
- • Pre-settable Doppler Audio Volume
- • Measurement Clear Operation: 2 types; Meas. only, with Comment
- • Display Unit Age: 3 types; "Year/month," "Week/day," and "No display"
- • System Boot Up: 35 seconds
- • Probe Change: 3–5 seconds

Pre-Processing

- • Acoustic Power Output
- • Read Zoom up to 8x
- • B/M-Mode
  - – Gain
  - – CrossXBeam
  - – B-Steer + Needle Recognition
  - – PIH
  - – TGC
  - – Image Reverse
  - – Depth
  - – Scan Area
  - – Auto Optimize (ATO)
  - – Dynamic Range
  - – Focus Number
  - – Focus Position
  - – Line Density
  - – Frequency
  - – Frame Average
  - – Edge Enhance
  - – Focus Width
  - – M/D Cursor
  - – Sweep Speed for M-Mode
- • PW/TDI Mode
  - – Gain
  - – Sample Volume Gate Position, Length
  - – PRF
  - – Doppler Frequency
  - – Dynamic Range
  - – Auto Optimize (ASO)
  - – Audio Volume
- • CW Mode
  - – Gain
  - – Velocity
  - – Doppler Frequency
  - – Dynamic Range
  - – Auto Optimize (ASO)
  - – Audio Volume

- Color Flow Mode
  - Gain
  - ROI Position, Size
  - PRF
  - Color Line Density
  - Color Frequency
  - Packet Size
  - Threshold
  - Frame Average
  - Focus Position
  - Auto Optimize (ACO)
- 3D Acquisition (option)
  - Scan Distance
  - Scan Plane
  - Acquisition Mode

Post-Processing

- Raw Data digital processing
- Read Zoom up to 8x
- B/M-Mode
  - Gain
  - Image Reverse
  - Auto Optimize (ATO)
  - Image Rotation
  - Gray Map
  - Colorize
  - Rejection
  - B Softener
  - Sweep Speed for M-Mode
- PW/TDI Mode
  - Gain
  - Baseline
  - Angle Correct
  - Quick Angle
  - Doppler Invert
  - Display Format
  - Sweep Speed
  - Full Timeline
  - Rejection
  - Colorize
  - Compression (Dynamic Range)
  - Auto Calcs
  - Trace Direction
  - Modify Calcs
  - Number of Average Cycles
  - Trace Method
  - Trace Sensitivity
  - Auto Optimize (ASO)
- CW Mode
  - Gain
  - Baseline
  - Angle Correct

- Quick Angle
- Doppler Invert
- Display Format
- Sweep Speed
- Full Timeline
- Rejection
- Colorize
- Compression (Dynamic Range)
- Auto Calcs
- Trace Direction
- Modify Calcs
- Number of Average Cycles
- Trace Method
- Trace Sensitivity
- Auto Optimize (ASO)
- Color Flow Mode
  - Gain
  - Baseline
  - Color Invert
  - Color Map
  - Threshold
  - Frame Average (in loop images)
- Easy3D (option)
  - Threshold (Opacification)
  - Render
  - Texture
  - Gray Surface
  - Scalpel
  - Auto Movie
  - Undo
  - Reset

Image Processing and Presentation

- Digital Beamformer
- Beam former Operating Frequency Range: 1.7–18 MHz
- Maximum frame rate: 1,972 Hz (the maximum frame rate is affected by scan width, line density depth, and Focus number).
- 1,024 Digital Processing Channel Technology
- Displayed Imaging Depth: Minimum Depth of Field: 2 cm (Zoom and probe dependent); Maximum Depth of Field: 30 cm: probe dependent
- Transmission Focus
  - 1–8 Focus Points Selectable: probe and application dependent
  - Focal Zone Position
- Continuous Dynamic Receive Focus/Aperture
- Multi-Frequency/Wideband Technology

- 256 Shades of Gray (VGA)
- 174 dB System Internal Dynamic Range
- Adjustable Field of View (FOV)
- Image Reverse: Right/Left
- Image Rotation: 2 steps Rotation: 0°, 180°

CINE Memory/Image Memory

- Over 1,000 frames or over 60 sec CINE Memory (64 MB) depend on FOV, Scanning Lines, etc.
- CINE Gauge and CINE Image Number Display
- CINE Review: Frame-by-frame, Loop
- CINE Review Speed: 8 types 48%; 31%; 25%; 22%; 17%; 14%; 13%; 11%
- Selectable CINE Sequence for CINE Review
- Start and End Frame Selections for Loop Playback
- Separation Maker to Indicate Time Discontinuity
- Measurements, Calculations, and Annotations on CINE Playback
- Scrolling Timeline Memory

Image Archive/Connectivity

- Preview and Recall of Clipboard Images: An enlarged preview of the image is displayed or the image is recalled to full screen
- Image Browser: Archived images from past patient exams appear as well as images stored for the current exam
  - Preview an Image
  - Group a Set of Images
  - Analyze Images
- Image Management
  - Select All/Unselect All
  - Permanent Store
  - Delete all the Temporary Images
  - Delete Selected Image
  - Analyze
- Ethernet Network Connection
- Configurable 3 Print/Store (Recordings) Keys (P1-P3) to Multiple Output Devices/Workflows
- Archiving Format:
  - DICOM with ultrasound Raw Data
  - DICOM
- Capture Area: pre-settable for each print key
  - Video Area
  - Application Window
  - Whole Screen

- Archiving Image Frames: pre-settable for each print key
  - Single: stores single frame only
  - Multiple: stores cineloop
  - Secondary Capture: screen shot
- Image Compression/Picture Quality: pre-settable for each print key
  - Quality: 1 to 100%
  - Dataflow: determines where/how images will be transferred/stored
- Configurable Examination List Window, Patient Information Window, and Search/Create Patient Window
  - Free text addresses, birth date, extended patient dialog in Pts Info window
  - Extended search dialog, auto search for patient in Search/Create Pts window
  - Pre-defined text directly in Exam List window
  - Automatic generation of patient ID
  - Request acknowledge of End Exam action
  - Go directly to Patient Screen/Worklist screen after [End Current Patient]
  - Detect unfinished examination
- Tools
  - Verify DICOM directory on removable media
  - Format removable media (rewritable DVD)
- Views: shows an overview of the ultrasound system's connectivity architecture
  - The currently selected dataflow
  - All configured data flows
  - The network structure tree
  - The configured buttons data flows
- AVI and JPEG Export
- QuickSave
  - Single button push sends single image or entire patient exam to memory stick or network
- DICOM Support (option)
  - Verify
  - Print
  - Store
  - Modality Worklist
  - Multiframe
  - Storage Commitment
  - Modality Performed Procedure Step (MPPS)
  - Media Exchange
  - Off network/mobile storage queue

Scanning Parameters

B-Mode

- B/M Acoustic Output: 0–100%, 2% increments
- Image Reverse: On/Off
- B Colorize: 5 types
- Thermal Index: TIC, TIS, TIB
- Softener: 4 steps
- Focus Number: 8 steps
- Line Density: 5-8 increments: probe dependent
- Frame Average: 6 increments
- Edge Enhance: 6 increments
- Angle (deg): probe dependent, 10°–133°
- Gray Scale Map: 40 types
- Gain: 0–98 dB, 2 dB increments
- Dynamic Range: 30–150 dB, 3 dB increments: probe dependent
- Harmonics: on/off
- Virtual Convex: on/off
- Depth: 2–30 cm, 1 cm steps, 0.5 cm steps for Linear probe when less than 5 cm depth
- Focus Depth: increments: probe dependent
- Rejection: 6 increments
- Frequency: 3-5 increments: probe dependent

Color Flow Mode

- Base Line
- Invert: On/Off
- CF/PDI Focus Depth: 11 steps default pre-settable
- CF/PDI Acoustic Output: 0–100%, 10% increments
- Packet Size: 6-18: probe dependent
- Line Density: 5–8 increments: probe dependent
- Frame Average: 7 increments
- PRF: 0.3K–11.4K Hz: probe dependent
- Spatial Filter: 6 steps
- Gain: 0–40 dB, 0.5 dB steps
- Wall Filter: 2–6 steps: application and probe dependent
- Angle/Width (deg, mm): probe dependent
- CF/PDI Vertical Size (mm): default pre-settable
- CF/PDI Center Depth (mm): default pre-settable
- CF/PDI Frequency: 2–4 steps: probe dependent

- CF/PDI Focal Number: 1
- Color Map: 13 types at most: application and probe dependent
- Color Threshold: 10–100%, 5% steps

PDI Mode

- PDI Map: 13 types
- CF/PDI Acoustic Output: 0–100%, 10% steps
- Packet Size: 6–18: probe dependent
- Spatial Filter: 6 steps
- Frame Average: 7 steps: probe dependent
- PRF: 0.3K-11.4K Hz: depth dependent
- Power Threshold: 10–100%, 5% steps
- CF/PDI Vertical Size: default pre-settable
- CF/PDI Center Depth: default pre-settable
- CF/PDI Focal Number: 1
- Gain: 0–40 dB, 0.5 dB steps
- Wall Filter: 6 increments: probe dependent
- CF/PDI Frequency: 2–4 increments: probe dependent

M-Mode

- Sweep Speed: 8 increments
- M Color: 5 types
- M/PW Display Format: V-1/3B, V-1/2B, V-2/3B, H-1/2B, H-1/4B, TL Only
- B/M Acoustic Output: 0–100%, 2% increments
- Rejection: 6 increments
- Dynamic Range: 30–120 dB, 3 dB increments
- Edge Enhance: 6 increments
- Gray Scale Map: 40 types
- M Gain: 0–98 dB, 2 dB increments

PW/TDI/CW Mode

- Maximum and Minimum Velocity Scales
- PW
  Max: 870 cm/s, 19,800 Hz
  Min: 15 cm/s, 700 Hz
- CW
  Max: 1,460 cm/s, 40,000 Hz
  Min: 40 cm/s, 2,100 Hz
- Gray Scale Map: 7 types
- Dynamic Range: 24–60, 4 dB increments: application dependent
- Base Line: 5–95 %
- SV Gate: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 14, 16 mm: application dependent
- Angle Correct: +/- 90°, 1° step

- Spectral Color: 6 types
- PW Sweep Speed: 8 increments
- Invert: On/Off
- M/PW Display Format: V-1/3B, V-1/2B, V-2/3B, H-1/2B, H-1/4B, TLOnly
- PW Acoustic Output: 0–100%, 10% increments
- Spectral Averaging: 5 increments pre-settable
- Time Resolution: 4 increments
- PW/CF Ratio: 1, 2, 4
- Rejection: 15 increments
- Gain: 0–32 dB, 1 dB increments
- Wall Filter: 5–1,500 Hz, 22 increments: probe and application dependent
- PW Angle Steer: 0 +/- 10, 15, 20°
- PRF: 700–19,800 Hz with PW, 2,100–40,000 Hz with CW
- Sample Volume Depth: 29 increments default pre-settable
- Audio Volume
- PW Frequency 2–4 steps: probe dependent

B-Steer +

Available on 8L-RS and i12L-RS probes

Provides clarity to needle, anatomy and motion

B-Steer + Needle Recognition

Available on 12L-RS, 9L-RS and L8-18i-RS probes

Provides accurate display of the needle, anatomy and motion even in Color and Power Doppler.

LOGIQview

Available on all probes

Renders a panoramic image up to 60 cm, in long axis. It also allows you to see a wider field of view for comparing normal to abnormal anatomy.

Virtual Convex

Available on linear probes

Provides wider FOV in the far field

Virtual Apex

Available on Sector probes

Provides wider FOV in the near field

Measurements/Calculations

General Measurements/Calculations Mode Measurement

- B-Mode
  - Distance
  - Circumference/Area (Ellipse/Trace)
- M-Mode
  - Tissue Depth (Distance)
  - Time Interval
  - Depth Difference with Time Interval and Slope
- Doppler Mode
  - Velocity
  - TAMAX, TAMIN, and TAMEAN (Manual/Auto Trace)
  - Two Velocities with Slope and Time Interval
  - Time Interval

Generic Measurement

- B-Mode
  - % Stenosis
  - Volume
  - Angle
  - A/B Ratio
- M-Mode
  - % Stenosis
  - A/B Ratio
  - Heart Rate
- Doppler Mode
  - PI (Pulsatility Index)
  - RI (Resistive Index)
  - S/D Ratio
  - D/S Ratio
  - A/B Ratio
  - Max PG (Pressure Gradient)
  - Mean PG (Pressure Gradient)
  - SV (Stroke Volume)
  - Heart Rate

Abdomen and Small Parts Measurements/Calculations

- Aorta/AAA
- Liver
- Gallbladder/CBD
- Spleen
- Bladder (Pre/post void volume)
- Renal/Renal Volume
- Doppler Abdominal and Renal Artery Exam Calcs
  - Acceleration

  - Acceleration Time (AT)
  - Peak Systole (PS), End Diastole (ED), or Mid Diastole (MD)
  - Pulsatility Index (PI)
  - S/D or D/S Ratio
  - Resistive Index (RI)
  - TAMAX
  - Max PG
  - Mean PG
- Emergency medicine
  - Aorta
  - AAA
  - Gallbladder/Gallbladder Wall Thickness/CBD
- Pleural
- Testicle
  - Epididymis
- Thyroid/Parathyroid
- Salivary Glands
- Breast

Obstetrics Measurements/Calculations

- Open trace
- Abdominal Circumference (AC)
- Amniotic Fluid Index (AFI) [Moore]
- Antero-Postero Trunk Diameter and Transverse Trunk Diameter (APTD- TTD)
- Antero-Postero Trunk Diameter by Transverse Trunk Diameter (AxT)
- Biparietal Diameter (BPD)
- Crown Rump Length (CRL)
- Cardio-Thoracic Area Ratio (CTAR)
- Estimated Fetal Weight (EFW)
- Femoral Length (FL)
- Foot Length (Ft)
- Gestational Sac (GS)
- Head Circumference (HC)
- Humeral Length (HL)
- Length of Vertebra (LV)
- Occipitofrontal Diameter (OFD)
- Transverse Abdominal Diameter (TAD)
- Transverse Cerebellar Diameter (TCD)
- Thorax Transverse Diameter (ThD)
- Tibial Length (Tibia)
- Ulnar Length (Ulna)
- Multi-Gestational Calculations
  - Up to 4 fetuses
  - Comparison of multiple fetus data on a graph and a worksheet

OB Worksheet

- Patient Information
  - Fetus Number
  - CUA/AUA Selection
  - Fetus Position
  - Placenta
- Measurement Information
  - AFI
  - AC
  - HC
  - BPD
  - FL
- Calculation Information
  - EFW
  - EFW GP (growth percentile)
  - FL/BPD
  - FL/AC
  - HC/AC
  - FL/HC
  - CI (Cephalic Index)

OB Graphs

- Fetal Growth Curve Graphs
  - Normal growth curve, positive and negative standard deviations or applicable percentiles, and ultrasound age of the fetus
  - One measurement per graph
  - Single or Quad views
- Fetal Growth Bar Graph
  - Ultrasound age and gestational age
  - Plots all measurements on one graph

Gynecology Measurements/ Calculations

- Ovarian Length, Width, and Height
- Uterine Length, Width, and Height
- Ovarian Follicle Measurements
  - One distance
  - Two distances
  - Three distances
- Endometrial thickness (Endo)

Musculoskeletal Measurements/ Calculations

- Shoulder
- Elbow
- Wrist
- Hand
- Small Joint
- Hip
- Knee
- Lower Leg
- Ankle
- Foot

Cardiac Measurements/Calculations B-Mode Measurements

- IMT
  - Semi automated measurement for intima-media wall thickness
  - Allow anterior and posterior wall thickness measurements.
  - Displays minimum, mean and maximum results
  - Measurements can be transferred to the worksheet or a report
- Aorta
  - Aortic Arch Diameter (Ao Arch Diam)
  - Ascending Aortic Diameter (Ao Asc)
  - Descending Aortic Diameter (Ao Desc Diam)
  - Aorta Isthmus (Ao Isthmus)
  - Aorta (Ao st junct)
- Aortic Valve
  - Aortic Valve Cusp Separation (AV Cusp)
  - Aortic Valve Area Planimetry (AVA) (Trans AVA)
- Left Atrium
  - Left Atrium Diameter (LA Diam)
  - LA Length (LA Major)
  - LA Width (LA Minor)
  - Left Atrium Diameter to AoRoot Diameter Ratio (LA/Ao Ratio)
  - Left Atrium Area (LAA(d), LAA(s))
  - Left Atrium Volume, Method of Disk (LAEDV A2C, LAESV A2C) (LAEDV A4C, LAESV A4C)
- Left Ventricle
  - Left Ventricle Mass (LVPWd, LVPWs)
  - Left Ventricle Volume, Teichholz/ Cubic (LVIDd, LVI Ds)
  - Left Ventricle Internal Diameter (LVIDd, LVI Ds)
  - Left Ventricle Length (LVLd, LVLs)
  - Left Ventricle Outflow Tract Diameter (LVOT Diam)
  - Left Ventricle Posterior Wall Thickness (LVPWd, LVPWs)
  - Left Ventricle Length (LV Major)
  - Left Ventricle Width (LV Minor)
  - Left Ventricle Outflow Tract Area (LVOT)
  - Left Ventricle Area, Two Chamber/ Four Chamber/Short Axis (LVA (d), LVA (s))
  - Left Ventricle Endocardial Area, Width (LVA (d), LVA(s))
  - Left Ventricle Epicardial Area, Length (LVAepi (d), LVAepi (s))
  - Left Ventricle Mass Index (LVPWd, LVPWs)
  - Ejection Fraction, Teichholz/Cube (LVIDd, LVIDs)
  - Left Ventricle Posterior Wall
  - Fractional Shortening (LVPWd, LVPWs)
  - Left Ventricle Stroke Index, Teichholz/Cube (LVIDd, LVIDs, and Body Surface Area)
  - Left Ventricle Fractional Shortening (LVIDd, LVIDs)
  - Left Ventricle Stroke Volume, Teichholz/Cubic (LVIDd, LVIDs)
  - Left Ventricle Stroke Index, Single Plane, Two Chamber, Method of Disk (LVI Dd, LVIDs)
  - Left Ventricle Stroke Index, Single Plane, Four Chamber, Method of Disk (LVI Dd, LVIDs)
  - Left Ventricle Stroke Index, Bi-Plane, Bullet, Method of Disk (LVAd, LVAs)
  - Interventricular Septum (IVS)
  - Left Ventricle Internal Diameter (LVI D)
  - Left Ventricle Posterior Wall Thickness (LVPW)
- Mitral Valve
  - Mitral Valve Annulus Diameter (MV Ann Diam)
  - E-Point-to-Septum Separation (EPSS)
  - Mitral Valve Area by Pressure Half Time
  - Mitral Valve Area Planimetry (MVA Planimetry)
- Pulmonic Valve
  - Pulmonic Valve Area (PV Planimetry)
  - Pulmonic Valve Annulus Diameter (PV Annulus Diam)
  - Pulmonic Diameter (Pulmonic Diam)
- Right Atrium
  - Right Atrium Diameter, Length (RAD Ma)
  - Right Atrium Diameter, Width (RAD Mi)
  - Right Atrium Area (RAA)
  - Right Atrium Volume, Single Plane, Method of Disk (RAAd)
  - Right Atrium Volume, Systolic, Single Plane, Method of Disk (RAAs)

- Right Ventricle
  - Right Ventricle Outflow Tract Area
  - Left Pulmonary Artery Area (LPA Area)
  - Right Pulmonary Artery Area (RPA Area)
  - Right Ventricle Internal Diameter (RVIDd, RVIDs)
  - Right Ventricle Diameter, Length (RVD Ma)
  - Right Ventricle Diameter, Width (RVD Mi)
  - Right Ventricle Wall Thickness (RVAWd, RVAWs)
  - Right Ventricle Outflow Tract Diameter (RVOT Diam)
  - Left Pulmonary Artery (LPA)
  - Main Pulmonary Artery (MPA)
  - Right Pulmonary Artery (RPA)
- System
  - Interventricular Septum Thickness (IVSd, IVSs)
  - Inferior Vena Cava
  - Pulmonary Artery Diameter (MPA)
  - Systemic Vein Diameter (Systemic Diam)
  - Patent Ductus Arterosis Diameter (PDA Diam)
  - Pericard Effusion (PEs)
  - Patent Foramen Ovale Diameter (PFO Diam)
  - Ventricular Septal Defect Diameter (VSD Diam)
  - Interventricular Septum (IVS)
  - Fractional Shortening (IVSd, IVSs)
- Tricuspid Valve
  - Tricuspid Valve Area (TV Planimetry TVA Planimetry)
  - Tricuspid Valve Annulus Diameter (TV Annulus Diam)

M-Mode Measurements
- Aorta
- Aortic Valve
  - Aortic Valve Diameter (AV Diam)
  - Aortic Valve Cusp Separation (AV Cusp)
  - Aortic Valve Ejection Time (AVET)
- Left Atrium
  - Left Atrium Diameter to AoRoot Diameter Ratio (LA/Ao Ratio)
  - Left Atrium Diameter (LA Diam)
- Left Ventricle
  - Left Ventricle Volume, Teichholz/ Cubic (LVIDd, LVI Ds)

- Left Ventricle Internal Diameter (LVIDd, LVI Ds)
  - Left Ventricle Posterior Wall Thickness (LVPWd, LVPWs)
  - Left Ventricle Ejection Time (LVET)
  - Left Ventricle Pre-Ejection Period (LVPEP)
  - Interventricular Septum (IVS)
  - Left Ventricle Internal Diameter (LVI D)
  - Left Ventricle Posterior Wall Thickness (LVPW)
- Mitral Valve
  - E-Point-to-Septum Separation (EPSS)
  - Mitral Valve Leaflet Separation (D-E Excursion)
  - Mitral Valve Anterior Leaflet Excursion (D-E Excursion)
- Pulmonic Valve
  - QRS complex to end of envelope (Q-to-PV close)
- Right Ventricle
  - Right Ventricle Internal Diameter (RVIDd, RVIDs)
  - Right Ventricle Wall Thickness (RVAWd, RVAWs)
  - Right Ventricle Ejection Time (RVET)
  - Right Ventricle Pre-Ejection Period (RVPEP)
- System
  - Interventricular Septum Thickness (IVSd, IVSs)
  - Pericard Effusion (PE(d))
  - Interventricular Septum (IVS)
  - Fractional Shortening (IVSd, IVSs)
- Tricuspid Valve
  - QRS complex to end of envelope (Q-to-TV close)

Doppler Mode Measurements
- Aortic Valve
  - Aortic Insufficiency Mean Pressure Gradient (AR Trace)
  - Aortic Insufficiency End Diastole Pressure Gradient (AR Trace)
  - Aortic Insufficiency Mean Velocity (AR Trace)
  - Aortic Insufficiency Mean Square Root Velocity (AR Trace)
  - Aortic Insufficiency Velocity Time Integral (AR Trace)
  - Aortic Valve Mean Velocity (AV Trace)
  - Aortic Valve Mean Square Root Velocity (AV Trace)

- Aortic Valve Velocity Time Integral (AV Trace)
  - Aortic Valve Mean Pressure Gradient (AV Trace)
  - Aortic Insufficiency End-Diastolic Velocity (AR Trace)
  - Aortic Valve Peak Velocity (AV Vmax)
  - Aortic Valve Peak Velocity at Point E (AV Vmax)
  - Aorta Proximal Coarctation (Coarc Pre-Duct)
  - Aorta Distal Coarctation (Coarc Post-Duct)
  - Aortic Valve Insufficiency Pressure Half Time (AR PHT)
  - Aortic Valve Flow Acceleration (AV Trace)
  - Aortic Valve Pressure Half Time (AV Trace)
  - Aortic Valve Acceleration Time (AV Acc Time)
  - Aortic Valve Deceleration TIme (AV Trace)
  - Aortic Valve Ejection Time (AVET)
  - Aortic Valve Acceleration to Ejection Time Ratio (AV Acc Time, AVET)
- Left Ventricle
  - Left Ventricle Outflow Tract Peak Pressure Gradient (VLOT Vmax LVOT Vmax)
  - Left Ventricle Outflow Tract Peak Velocity (LVOT Vmax)
  - Left Ventricle Outflow Tract Mean Pressure Gradient (LVOT Trace)
  - Left Ventricle Outflow Tract Mean Velocity (LVOT Trace)
  - Left Ventricle Outflow Tract Mean Square Root Velocity (LVOT Trace)
  - Left Ventricle Outflow Tract Velocity Time Integral (LVOT Trace)
  - Left Ventricle Ejection Time (LVET)
  - Cardiac Output by Aortic Flow (AVA Planimetry, AV Trace)
  - Stroke Volume Index by Aortic Flow (AVA Planimetry, AV Trace)
- Mitral Valve
  - Mitral Valve Regurgitant Flow Acceleration (MR Trace)
  - Mitral Valve Regurgitant Mean Velocity (MR Trace)
  - Mitral Regurgitant Mean Square Root Velocity (MR Trace)
  - Mitral Regurgitant Mean Pressure Gradient (MR Trace)
  - Mitral Regurgitant Velocity Time

Integral (MR Trace)
- Mitral Valve Mean Velocity (MR Trace)
- Mitral Valve Mean Square Root Velocity (MR Trace)
- Mitral Valve Velocity Time Integral (MR Trace)
- Mitral Valve Mean Pressure Gradient (MR Trace)
- Mitral Regurgitant Peak Pressure Gradient (MR Vmax)
- Mitral Valve Peak Pressure Gradient (MR Vmax)
- Mitral Regurgitant Peak Velocity (MR Vmax)
- Mitral Valve Peak Velocity (MR Vmax)
- Mitral Valve Velocity Peak A (MV A Velocity)
- Mitral Valve Velocity Peak E (MV E Velocity)
- Mitral Valve Area according to PHT (MV PHT)
- Mitral Valve Flow Deceleration (MV Trace)
- Mitral Valve Flow Acceleration (MV Trace)
- Mitral Valve E-Peak to A-Peak Ratio (A-C and D-E) (MV E/ARatio)
- Mitral Valve Acceleration Time (MV Acc Time)
- Mitral Valve Deceleration Time (MV Dec Time)
- Mitral Valve Ejection Time (MV Trace)
- Mitral Valve A-Wave Duration (MV A Dur)
- Mitral Valve Time to Peak (MV Trace)
- Mitral Valve Acceleration Time/ Deceleration Time Ratio (MVAcc/ Dec Time)
- Stroke Volume Index by Mitral Flow (MVA Planimetry, MV Trace)
- Mitral Valve Area from Continuity Equation (MVA Planimetry, LVOT Vmax)

- Pulmonic Valve
  - Pulmonic Insufficiency Peak Pressure Gradient (PR Vmax)
  - Pulmonic Insufficiency End-Diastolic Pressure Gradient (PR Trace)
  - Pulmonic Valve Peak Pressure Gradient (PV Vmax)
  - Pulmonic End-Diastolic Pressure Gradient (PR Trace)
  - Pulmonic Insufficiency Peak Velocity (PR Vmax)

- Pulmonic Insufficiency End-Diastolic Velocity (PR end Vmax)
- Pulmonic Valve Peak Velocity (PV Vmax)
- Pulmonic End-Diastolic Velocity (PV Trace)
- Pulmonary Artery Diastolic Pressure (PV Trace)
- Pulmonic Insufficiency Mean Pressure Gradient (PR Trace)
- Pulmonic Valve Mean Pressure Gradient (PV Trace)
- Pulmonic Insufficiency Mean Velocity (PR Trace)
- Pulmonic Insufficiency Mean Square Root Velocity (PR Trace)
- Pulmonic Insufficiency Velocity Time Integral (PR Trace)
- Pulmonic Valve Mean Velocity (PV Trace)
- Pulmonic Valve Mean Square Root Velocity (PV Trace)
- Pulmonic Valve Velocity Time Integral (PV Trace)
- Pulmonic Insufficiency Pressure Half Time (PR PHT)
- Pulmonic Valve Flow Acceleration (PV Acc Time)
- Pulmonic Valve Acceleration Time (PV Acc Time)
- Pulmonic Valve Ejection Time (PVET)
- QRS complex to end of envelope (Q-to-PV close)
- Pulmonic Valve Acceleration to Ejection TIme Ratio (PV Acc Time, PVET)
- Pulmonic Valve Pre-Ejection to Ejection Time Ratio (PVET)

- Right Ventricle
  - Right Ventricle Outflow Tract Peak Pressure Gradient (RVOT Vmax)
  - Right Ventricle Systolic Pressure (RVOT Vmax)
  - Right Ventricle Outflow Tract Peak Velocity (RVOT Vmax)
  - Right Ventricle Diastolic Pressure (RVOT Trace)
  - Right Ventricle Outflow Tract Velocity Time Integral (RVOT Trace)
  - Stroke Volume by Pulmonic Flow (RVOT Trace)
  - Right Ventricle Stroke Volume Index by Pulmonic Flow (RVOT Planimetry, RVOT Trace)

- System
  - Pulmonary Artery Peak Velocity (PV Vmax)
  - Pulmonary Vein Velocity Peak A (reverse) (P Vein A)
  - Pulmonary Vein Peak Velocity (P Vein D, P Vein S)
  - Systemic Vein Peak Velocity (PDA Diastolic, PDA Systolic)
  - Ventricular Septal Defect Peak Velocity (VSD Vmax)
  - Pulmonary Artery Velocity Time Integral (PV Trace)
  - Pulmonary Vein A-Wave Duration (P Vein A Dur)
  - IsoVolumetric Relaxation Time (IVRT)
  - IsoVolumetric Contraction Time (IVCT)
  - Pulmonary Vein S/D Ratio (P Vein D, P Vein S)
  - Ventricular Septal Defect Peak Pressure Gradient (VSD Vmax)
  - Pulmonic-to-Systemic Flow Ratio (Qp/Qs)

- Tricuspid Valve
  - Tricuspid Regurgitant Peak Pressure Gradient (TR Vmax)
  - Tricuspid Valve Peak Pressure Gradient (TV Vmax)
  - Tricuspid Regurgitant Peak Velocity (TR Vmax)
  - Tricuspid Valve Peak Velocity (TV Vmax)
  - Tricuspid Valve Velocity Peak A (TV A Velocity)
  - Tricuspid Valve Velocity Peak E (TV E Velocity)
  - Tricuspid Regurgitant Mean Pressure Gradient (TR Trace)
  - Tricuspid Valve Mean Pressure Gradient (TV Trace)
  - Tricuspid Regurgitant Mean Velocity (TR Trace)
  - Tricuspid Regurgitant Mean Square Root Velocity (TR Trace)
  - Tricuspid Regurgitant Velocity Time Integral (TR Trace)
  - Tricuspid Valve Mean Velocity (TV Trace)
  - Tricuspid Valve Mean Square Root Velocity (TV Trace)
  - Tricuspid Valve Velocity Time Integral (TV Trace)
  - Tricuspid Valve Time to Peak (TV Acc/Dec Time)

- Tricuspid Valve Ejection Time (TV Acc/Dec Time)
- Tricuspid Valve A-Wave Duration (TV A Dur)
- QRS complex to end of envelope (Q-to-TV close)
- Tricuspid Valve Pressure Half Time (TV PHT)
- Stroke Volume by Tricuspid Flow (TV Trace)
- Tricuspid Valve E-Peak to A-Peak Ratio (TV E/A Velocity)

Color Flow Mode Measurements

- Aortic Valve
  - Proximal Isovelocity Surface Area: Regurgitant Orifice Area (AR Radius)
  - Proximal Isovelocity Surface Area: Radius of Aliased Point (AR Radius)
  - Proximal Isovelocity Surface Area: Regurgitant Flow (AR Trace)
  - Proximal Isovelocity Surface Area: Regurgitant Volume Flow (AR Trace)
  - Proximal Isovelocity Surface Area: Aliased Velocity (AR Vmax)
- Mitral Valve
  - Proximal Isovelocity Surface Area: Regurgitant Orifice Area (MR Radius)
  - Proximal Isovelocity Surface Area: Radius of Aliased Point (MR Radius)
  - Proximal Isovelocity Surface Area: Regurgitant Flow (MR Trace)
  - Proximal Isovelocity Surface Area: Regurgitant Volume Flow (MR Trace)
  - Proximal Isovelocity Surface Area: Aliased Velocity (MR Vmax)
  - Combination Mode Measurements
- Aortic Valve
  - Aortic Valve Area (Ao Root Diam, LVOT Vmax, AV Vmax)
  - Aortic Valve Area by Continuity Equation by Peak Velocity (Ao Root Diam, LVOT Vmax, AV Vmax)
  - Stroke Volume by Aortic Flow (AVA) Planimetry, AV Trace)
  - Cardiac Output by Aortic Flow (AVA Planimetry, AV Trace, HR)
  - Aortic Valve Area by Continuity Equation VTI (Ao Root Diam, LVOT Vmax, AV Trace)
- Left Ventricle
  - Cardiac Output, Teichholz/Cubic (LVIDd, LVI Ds, HR)

- Cardiac Output Two Chamber, Single Plane, Area-Length/Method of Disk (Simpson) (LVAd, LVAs, HR)
- Cardiac Output Four Chamber, Single Plane, Area-Length/Method of Disk (Simpson) (LVAd, LVAs, HR)
- Ejection Fraction Two Chamber, Single Plane, Area-Length/Method of Disk(Simpson) (LVAd, LVAs)
- Ejection Fraction Four Chamber, Single Plane, Area-Length/Method of Disk (Simpson) (LVAd, LVAs)
- Left Ventricle Stroke Volume, Single Plane, Two Chamber/Four Chamber, Area-Length (LVAd, LVAs)
- Left Ventricle Stroke Volume, Single Plane, Two Chamber/Four Chamber, Method of Disk(Simpson) (LVIDd, LVIDs, LVAd, LVAs)
- Left Ventricle Volume, Two Chamber/ Four Chamber, Area-Length (LVAd, LVAs)
- Ejection Fraction, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH)
- Left Ventricle Stroke Volume, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH)
- Left Ventricle Volume, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH)
- Left Ventricle Stroke Index, Single Plane, Two Chamber/Four Chamber, Area-Length (LVSd, LVSs, and BSA)
- Left Ventricle Volume, Single Plane, Two Chamber/Four Chamber, Method of Disk (LVAd, LVAs)
- Left Ventricle Volume, Apical View, Long Axis, Method of Disk (LVAd, LVAs)
- Stroke Volume by Aortic Flow (AVA Planimetry, AV Trace)
- Mitral Valve
  - Stroke Volume by Mitral Flow (MVA Planimetry, MV Trace)
  - Cardiac Output by Mitral Flow (MVA Planimetry, MV Trace, HR)
- Pulmonic Valve
  - Stroke Volume by Pulmonic Flow (PV Planimetry, PV Trace)
  - Cardiac Output by Pulmonic Flow (PV Planimetry, PV Trace, HR)
- Tricuspid Valve
  - Cardiac Output by Tricuspid Flow (TV Planimetry, TV Trace, HR)

Vascular Measurements/ Calculations Exam Categories

- Generic
- Carotid Artery IMT
- Lower Extremity Artery
- Lower Extremity Vein
- Renal Artery
- Upper Extremity Artery
- Upper Extremity Vein

B-Mode Measurements

- IMT
  - Semi automated measurement for intimal-media wall thickness
  - Allow anterior and posterior wall thickness measurements.
  - Displays minimum, mean and maximum results.
  - Measurements can be transferred to the worksheet or a report.
- % Stenosis
  - Diameter
  - Area
- Volume
  - One distance
  - Two distances
  - Three distances
- A/B Ratio
  - Diameter
  - Area

M-Mode Measurements

- % Stenosis
  - Diameter
- A/B Ratio
  - Diameter
  - Time
  - Velocity

Doppler Mode Measurements Auto Vascular Calculation

- Acceleration
- Acceleration Time (AT)
- End Diastole (ED), Mid Diastole (MD), or Peak Systole (PS)
- ED/PS or PS/ED Ratio
- Heart Rate
- Pulsatility Index (PI)
- Resistive Index (RI)
- TAMAX
- Edit Trace
- TAMEAN
- Volume Flow
- PV

Vascular Worksheet

- Vessel Worksheet
- Vessel Summary
- Examiner's Comments
- Generic Worksheet
- Intravessel Ratio

Pediatrics Measurements/ Calculations

- Alpha HIP
- d: D Ratio
- HIP (BA)
- HIP Graf (A/AB/BA)

Urology Measurements/ Calculations

- Bladder (0.7) Length, Height, Width and Volume
- Prostate (0.7523) Length, Height, Width and Volume
- Renal Length (0.49), Height, Width and Volume
- STVOL

Probes

- 4C-RS Wide Band Convex Probe
  - Applications: Abdomen, OB Gyn, Urology, Thoracic/Pleural, Hip
  - Imaging Frequency: 2.0-5.5MHz
  - Number of Elements: 128
  - Convex Radius: 60 mmR
  - FOV: 55°
  - Footprint: 18.3 x 66.2 mm
  - B-Mode Imaging Frequency: 2.0, 3.0, 4.0, 5.0 MHz
  - Harmonic Imaging Frequency: 4.0, 5.0, 5.2, 5.5 Mhz
  - CFM Imaging Frequency: 2.5, 3.3 Mhz
  - Doppler Frequency: 2.5, 3.3 MHz
  - Biopsy Guide: Reusable Bracket, Disposable Sleeve
  - Maximum Frame Rate: 1,146 Hz
- 8C-RS Wide Band Microconvex Probe
  - Applications: Pediatrics
  - Imaging Frequency: 4.0–10.0 MHz
  - Number of Elements: 128
  - Convex Radius: 11 mmR
  - FOV: 133°
  - Footprint: 12 x 22 mm
  - B-Mode Imaging Frequency: 6.0, 8.0, 10.0 MHz
  - Harmonic Imaging Frequency: 8.0, 9.0, 10.0 MHz

- CFM Imaging Frequency: 4.0, 5.0 MHz
- Doppler Frequency: 4.0, 5.0 MHz
- Biopsy Guide Not Available
- Maximum Frame Rate: 1,206 Hz
- E8C-RS Wide Band Micro-convex Probe
  - Applications: OB, Gyn, Urology, Endocavity
  - Imaging Frequency: 4.0–10.0 MHz
  - Number of Elements: 128
  - Convex Radius: 11 mmR
  - FOV: 133°
  - Footprint: 16.9 x 21.2 mm
  - B-Mode Imaging Frequency: 6.0, 8.0, 10.0 MHz
  - Harmonic Imaging Frequency: 8.0, 10.0 MHz
  - CFM Imaging Frequency: 4.0, 5.0 MHz
  - Doppler Frequency: 4.0, 5.0 MHz
  - Biopsy Guide: Fixed Angle; Reusable Bracket, Disposable Sleeve
  - Maximum Frame Rate: 1,972 Hz
- 3S-RS Wide Band Phased Array Probe
  - Applications: Cardiac, Abdomen, Gyn, Thoracic/Pleural, Vascular
  - Imaging Frequency: 1.7–4.0 MHz
  - Number of Elements: 64
  - FOV: 90°
  - Footprint: 19.3 x 27.6 mm
  - B-Mode Imaging Frequency: 2.0, 2.5, 3.0 MHz
  - Harmonic Imaging Frequency: 2.8, 3.0, 3.2, 3.6, 3.8, 4.0 MHz
  - CFM Imaging Frequency: 1.7, 2.0, 2.2, 2.6 MHz
  - Doppler Frequency: 1.7, 2.0, 2.2, 2.6 MHz
  - Biopsy Guide: Multi Angle; Reusable Bracket, Disposable Sleeve
  - Maximum Frame Rate: 463 Hz
- 6S-RS Wide Band Phased Array Probe
  - Applications: Pediatric Cardiac, Pediatric Abdomen
  - Imaging Frequency: 2.5–7.0 MHz
  - Number of Elements: 64
  - FOV: 90°
  - Footprint: 16.8 x 23.5 mm
  - B-Mode Imaging Frequency: 3.0, 4.0, 5.0, 6.0 MHz
  - Harmonic Imaging Frequency: 5, 6, 7 MHz
  - CFM Imaging Frequency: 2.5, 2.9, 3.3, 4.0 MHz

- Doppler Frequency: 2.5, 2.9, 3.3, 4.0 MHz
- Biopsy Guide Not Available
- Maximum Frame Rate: 695 Hz
- L8-18i-RS Wide Band Linear Probe
  - Applications: Vascular, Small parts, Pediatric/Neonatal, Vascular Access, Anesthesia, Point of Care, Interventional and Musculoskeletal
  - Imaging Frequency: 6.7-18.0 MHz
  - Number of Elements: 168
  - FOV(max): 25.2 mm
  - Footprint 11.1 x 34.8 mm
  - B-Mode Imaging Frequency: 8.0, 12.0, 14.0, 16.0 MHz
  - Harmonic Imaging Frequency: 9.0, 12.0, 15.0, 18.0 MHz
  - CFM Mode Imaging Frequency: 6.7, 8.0, 10.0 MHz, defined by application
  - Doppler Frequency: 6.7, 8.0, 10.0 MHz
  - Steered Angle: +/-20
  - Biopsy Guide Not Available
  - Maximum Frame Rate: 151 Hz
- 8L-RS Wide Band Linear Probe
  - Applications: Vascular, Small Parts
  - Imaging Frequency: 4.0–12.0 MHz
  - Number of Elements: 128
  - FOV (max): 39 mm
  - Footprint: 14.2 x 47 mm
  - B-Mode Imaging Frequency: 6.0, 7.0, 8.0, 10.0, 11.0 MHz
  - Harmonic Imaging Frequency: 6.0, 8.0, 10.0, 11.0, 12.0 MHz
  - CFM Imaging Frequency: 4.0, 4.4, 5.0 MHz
  - Doppler Frequency: 4.0, 4.4, 5.0 MHz
  - Steered Angle: +/-20°
  - Biopsy Guide: Multi Angle; Reusable Bracket, Disposable Sleeve
  - Maximum Frame Rate: 251 Hz
- 9L-RS Wide Band Linear Probe
  - Applications: Vascular, Small Parts, MSK
  - Imaging Frequency: 3.33–10.0 MHz
  - Number of Elements: 192
  - FOV (max): 44 mm
  - Footprint: 14.1 x 53 mm
  - B-Mode Imaging Frequency: 5.0, 7.0, 9.0 MHz
  - Harmonic Imaging Frequency: 8.0, 10.0 MHz

- CFM Imaging Frequency: 3.33, 4.0, 5.0 MHz
- Doppler Frequency: 3.33, 4.0, 5.0 MHz
- Steered Angle: +/-20°
- Biopsy Guide: Multi Angle; Reusable Bracket, Disposable Sleeve
- Maximum Frame Rate: 84 Hz
- **12L-RS Wide Band Linear Probe**
  - Applications: Vascular, Small Parts, Neonatal, Pediatrics, Musculoskeletal, Superficial, and Thoracic/Pleural
  - Imaging Frequency: 5.0–13.0 MHz
  - Number of Elements: 192
  - FOV (max): 39 mm
  - Footprint: 12.7 x 47.1 mm
  - B-Mode Imaging Frequency: 7.0, 8.0, 10.0, 12.0 MHz
  - Harmonic Imaging Frequency: 8.0, 10.0, 12.0, 13.0 MHz
  - CFM Imaging Frequency: 5.0, 6.7, 8.0 MHz
  - Doppler Frequency: 5.0, 6.7, 8.0 MHz
  - Steered Angle :+/-20°
  - Biopsy Guide Multi Angle and Out-of-Plane; Reusable Bracket, Disposable Sleeve
  - Maximum Frame Rate: 106 Hz
- **i12L-RS Wide Band Linear Probe**
  - Applications: Vascular, Small Parts, Intra-operative
  - Imaging Frequency: 4.0–10.0 MHz
  - Number of Elements: 96
  - FOV (max): 25 mm
  - Footprint: 12.2 x 32 mm
  - B-Mode Imaging Frequency: 6.0, 8.0, 10.0 MHz
  - Harmonic Imaging Frequency: 8.0, 10.0 MHz
  - CFM Imaging Frequency: 4.0, 5.0 MHz
  - Doppler Frequency: 4.0, 5.0 MHz
  - Steered Angle: +/-20°
  - Biopsy Guide Not Available
  - Maximum Frame Rate: 251 Hz
- **i/T739-RS Wide Band Linear Probe**
  - Applications: Vascular, Small Parts, Intra-operative
  - Imaging Frequency: 4.0–12.0 MHz
  - Number of Elements: 96

- FOV (max): 39 mm
- Footprint : 14 x 48 mm
- B-Mode Imaging Frequency: 6.0, 8.0, 10.0 MHz
- Harmonic Imaging Frequency: 8.0, 10.0, 12.0 MHz
- CFM Imaging Frequency: 4.0, 4.4, 5.0 MHz
- Doppler Frequency: 4.0, 4.4, 5.0 MHz
- Steered Angle: +/-10°, +/-15°
- Biopsy Guide Not Available
- Maximum Frame Rate: 251 Hz
- **6Tc-RS TEE Probe**
  - Applications: Cardiac intra-operative
  - Imaging Frequency: 3.3-6.0 MHz
  - Number of Elements: 64
  - B-Mode Imaging Frequency: 4.0, 5.0 MHz
  - Harmonic Imaging Frequency: 4.0, 6.0 MHz
  - CFM Imaging Frequency: 3.3, 4.0, 5.0 MHz
  - Doppler Frequency: 3.3, 4.0, 5.0 MHz
  - CWD Frequency: 4.0 MHz
  - Biopsy Guide Not Available
- **P2D Non-imaging Probe**
  - Applications: Cardiac, Vascular
  - Footprint: 13.6 mm
  - CWD Frequency: 2.0 MHz
  - Biopsy Guide Not Available

Inputs and Outputs

- Outputs
  - VGA
- Earphone Port
- Connectors
  - USB (Footswitch, DVD-RW, video printer)
  - DC Power input
  - Ethernet port
  - Docking Connector

Safety Conformance

LOGIQ *e* is:

- Listed to UL 60601-1 by a Nationally Recognized Test Lab
- Certified to CAN/CSA-C 22.2 No.601.1 by an SCC accredited Test Lab
- CE Marked to Council Directive 93/42/EEC on Medical Devices

- Conforms to the following standards for safety:
  - IEC 60601-1 Electrical medical equipment
  - IEC 60601-1-1 Electrical medical equipment
  - IEC 60601-1-2 Electromagnetic compatibility
  - IEC 60601-1-4 Programmable medical systems
  - IEC 60601-1-6 2004 Medical Electrical Equipment—Part 6: General Requirements for safety—Usability
  - IEC 61157 Declaration of acoustic output
  - IEC60601-2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
  - ISO 10993 Biological evaluation of medical devices
  - NEMA UD3 Acoustic output display (MI, TIS, TIB, TIC)

Not all features or specifications described in this document may be available in all probes and/or modes. General Electric Company reserves the right to make changes in specifications and features shown herein, or discontinue the product at any time without notice or obligation. Contact your GE Representative for the most current information.

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About GE Healthcare

GE Healthcare provides transformational medical technologies and services that
are shaping a new age of patient care. Our broad expertise in medical imaging and
information technologies, medical diagnostics, patient monitoring systems, drug
discovery, biopharmaceutical manufacturing technologies, performance improvement
and performance solutions services helps our customers to deliver better care to more
people around the world at a lower cost. In addition, we partner with healthcare leaders,
striving to leverage the global policy change necessary to implement a successful shift
to sustainable healthcare systems.

Our "healthymagination" vision for the future invites the world to join us on our journey
as we continuously develop innovations focused on reducing costs, increasing access, and
improving quality around the world. Headquartered in the United Kingdom, GE Healthcare
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