LOGIQ™ P9
Make it simple. Make it your own.
Product Specification

- **Personalized**
  Customized settings and workflow that help you improve ease of use

- **Patient-Centric**
  Solutions that enable improved focus on patients and help enhance your confidence and care delivery

- **Practical**
  Smart ergonomics and solutions to help improve your productivity and investment value
**Product Description**

The LOGIQ P9 is a highly capable ultrasound system that provides excellent image quality and productivity through easy to use tools across a wide range of applications in a portable, ergonomic, budget-friendly system design.

**System Architecture**

**P-Agile Architecture** – Agile architecture is GE’s innovative, patented, model-based technology providing vast computational power, ease of imaging, workflow flexibility and product upgradeability. It has been migrated to LOGIQ P9 as P-Agile architecture. The LOGIQ P9 excels in the following areas:

- **Personalized** - Customized settings and workflow that help you improve ease of use
- **Patient-Centric** - Solutions that enable improved focus on patients and help enhance your confidence and care delivery
- **Practical** - Smart ergonomics and solutions to help improve your productivity and investment value

**General Specifications**

**Dimensions and Weight**

- **Height**
  - Fixed Monitor Arm (Standard)
  - Maximum: 1475 mm (60.0 in)
  - Minimum: 1375 mm (54.1 in)
  - Articulating Monitor Arm (Option)
  - Maximum: 1570 mm (61.8 in)
  - Minimum: 1320 mm (52.0 in)

- **Width**
  - Keyboard: 430 mm (16.9 in)
  - Foot Cover: 495 mm (19.5 in)
  - Monitor: 525 mm (20.7 in)

- **Depth**
  - Foot Cover: 685 mm (27.0 in)
  - Rear Handle: 740 mm (29.1 in)

- **Weight (without peripherals)**
  - 60 kg/132 lbs

**Electrical Power**

- **Voltage**: 100-240 Vac
- **Frequency**: 50/60 Hz
- **Power consumption maximum of 500 VA with peripherals**
- **Maximum Thermal Output**: 700 BTU/hr.

**Console Design**

- **3 Active Probe Ports**
- **4 Active Probe Ports (Option)**
- **1 CW Pencil Probe Port**
- **Integrated HDD (Capacity: 500GB)**
- **Integrated DVD +/- R/W Multi Drive**
- **On-board Storage for**
  - B/W-printer
  - Integrated speakers
- **Wheels**
  - Wheel diameter: 125 mm
  - Locking mechanism that provides rolling lock and caster swivel lock
- **Probe holders, removable for cleaning and washing**
- **Gel Holder with integrated Gel Warmer (Option), Removable for Cleaning and Washing**
- **Integrated cable management**
- **Easily removable air filters**
- **Front and rear handles (Option)**

**User Interface**

**Operator Keyboard**

- Operating keyboard adjustable in two dimensions:

**Touch Screen**

- 10.4” wide LCD, High Resolution, Color, Touch screen
- Interactive dynamic software menu
- Brightness adjustment
- User-configurable layout

**Monitor**

- 21.5” wide screen LCD with high resolution
- Tilt/Rotate/Translate
  - Tilt angle +15°/-90°
  - Rotate angle +/-90°
  - Translate horizontal 660 mm
  - Translate vertical 150 mm
- Fold-down and lock mechanism for transportation
- Brightness and contrast adjustment
- Horizontal/Vertical viewing angle of +/-178°
- Articulating monitor arm (Option)

**System Overview**

**Applications**

- Abdominal
- Obstetrical
- Gynecological
- Breast
- Small parts and superficial
- Musculoskeletal
- Vascular
- Urological
- Endocavitary
  - Transvaginal
  - Transrectal
- Pediatric and Neonatal
- Transcranial
- Cardiac
- Intraoperative

**Scanning Methods**

- Electronic Sector
- Electronic Convex
- Electronic Micro Convex
• Electronic Linear
• Real Time 4D Volume Sweep

Transducer Types
• Sector Phased Array
• Convex Array
• Microconvex Array
• Linear Array
• Matrix Array
• Single CW (Pencil) Probes
• Volume Probes (4D)

Operating Modes
• B-Mode
• Coded Harmonic Imaging
• M-Mode
• Color Flow Mode (CFM)
• Power Doppler Imaging (PDI) with directional map
• PW Doppler with High PRF
• M-Color Flow Mode
• Anatomical M-Mode
• Anatomical M-Color Mode
• B-Flow™/B-Flow Color Mode (option)
• Extended Field of View (LOGIQ View, Option)
• B Steer + (option)
• Coded Contrast Imaging (option)
• CW Doppler Mode (option)
• Tissue Velocity Imaging (TVI) Mode (option)
• Elastography (option)
• SW DVR (option)
• 3D/4D Volume Modes:
  - 3D Static (option)
  - 4D Realtime (option)

System Standard Features
• Hard Disk Partition of 358GB for image storage without Compression
• Storage Formats
  - DICOM: compressed/uncompressed, single/multi-frame, with/without raw data
  - Export JPEG, WMV (MPEG 4), and AVI formats
• Advanced user interface with high resolution 10.4 inch wide LCD touch panel
• Automatic Optimization
  - Auto Tissue optimization
  - Auto Spectral Optimization
  - Auto TGC
• CrossXBeam™ compounding
• Speckle Reduction Imaging (SRI-HD)
• Fine Angle Steer
• Coded Harmonic Imaging
• Virtual Convex
• Easy 3D
• Anatomical M-Mode
• Patient Information Database
• Image Archive on CD/DVD and Hard Drive
• Easy Backup to Media for Data Security
• TruAccess, Raw Data Processing and Analysis
• Real-time Automatic Doppler Calc
• OB Calc
• Fetal Trending
• Multi Gestational Calc
• Hip Dysplasia Calc
• Gynecological Calc
• Vascular Calc
• Cardiac Calc
• Urological Calc
• Renal Calc
• InSite™ ExC Capability, Remote Service
• iLinq Capability, Remote Service
• On-board electronic documentation (PDF format)
• MPEGvue
• Key Macro
• Network Storage
• Quick Save
• Quick Patient Entry
• TiC Motion Tracking
• My Page
• My Trainer
• Reset

System Options
• Auto IMT
• AutoEF
• Elastography
• Elastography Quantification
• Advanced 3D with 3D Landscape
• DICOM 3.0 Connectivity
• LOGIQ View
• B-Flow/B-Flow Color
• CF/PDI Quantification
• Coded Contrast Imaging
• Measure Assist Breast
• Measure Assist OB
• Breast Productivity Package
• Thyroid Productivity Package
• B Steer+
• Stress Echo
• Tissue Velocity Imaging (TVI) with Q-Analysis
• Scan Assistant
• Compare Assistant
• Report Writer
• ECG
• ECG AHA Cable
• ECG IEC Cable
• SW Doppler
  - Storage: CD/DVD Media
  - Storage: USB Memory Stick
• Real Time 4D
• 4D TUI
• Static 3D Color
• Volume Review
• VOCAL
• VCI Static
• High Cabinet
• Drawer
• Side Tray
• Small Probe Adaptor
• Vertical Endocavitary Probe Holder
• Probe Cable Hanger
• Cable Hook Rear
• Card Reader Hanger
• Paper Tray
• OPIO Tray
• Gel warmer
• Multipurpose holder
• Physical A/N Keyboard

Peripheral Options
• Integrated Mounting Kits and Remote Controls provided for
  - B/W Digital thermal printer
  - Digital Color A6 thermal printer
  - Digital Color A5 thermal printer
  - External USB printer connection
  - Wireless LAN card for wireless data transfer
  - HDMI output available for compatible devices
  - Foot Switch, with programmable functionality, 3-Pedal
  - Console Protective Cover
  - Universal Video Converter
  - Power Assistant (Battery Pack)
  - Isolation transformer
  - S-Video
  - Composite output
  - EMI Filter

Display Modes
• Live and Stored Display Format: Full size and split screen - both w/ thumbnails. For Still and CINE
• Review Image Format: 4x4, and “thumbnails”. For Still and CINE
• Simultaneous Capability
  - B/PW
  - B/CFM or PDI
  - B/M
  - B + CFM/M
  - Real-time Triplex Mode
Display Annotation

- Patient Name: First, Last & Middle name each store 27 characters. Up to 64 total characters displayed.
- Patient ID: 31 characters. Up to 27 characters displayed.
- 2nd Patient ID
- Age, Sex and Date of Birth
- Hospital Name: 23 characters
- Date format: 3 Types selectable - MM/DD/YY - DD/MM/YY - YY/MM/DD
- Time format: 2 types selectable - 24 hours, 12 hours

- Gestational Age from LMP/EDD/GA/BBT
- Probe Name
- Map names
- Probe Orientation
- Depth Scale Marker
- Lateral Scale Marker
- Focal Zone Markers
- Image Depth
- Zoom Depth
- B-Mode
- Gain
- Dynamic Range
- Imaging Frequency
- Edge Enhance
- Frame Averaging
- Gray Map
- ATO On/Off
- SRI-HD
- CrossXBeam
- M-Mode
- Gain
- Dynamic Range
- Time Scale
- Doppler Mode
- Gain
- Angle
- Sample Volume Depth and Width
- Wall Filter
- Velocity and/or Frequency Scale
- Spectrum Inversion
- Time Scale
- PRF
- Doppler Frequency
- Color Flow Mode
- Line Density
- Frame Averaging
- Packet Size
- Color Scale: 3 types - Power
- Directional PDI
- Symmetrical Velocity Imaging
- Color Velocity Range and Baseline
- Color Threshold Marker
- Color Gain
- PDI
- Color Scale Inversion
- Color Doppler Frequency
- TGC Curve
- Acoustic Frame Rate
- Cine Gage, Image Number /Frame Number
- DVR Counter and Status
- Body Pattern: Multiple human and animal types
- Application Name
- Measurement Results
- Operator Message
- Displayed Acoustic Output
- TiS: Thermal Index Soft Tissue

- TIC: Thermal Index Cranial (Bone)
- TiB: Thermal Index Bone
- MI: Mechanical Index
- % of Power output
- Biopsy Guide Line and/or Zone
- Heart Rate

General System Parameters

System Setup

- 8 Pre-programmable Categories
- User Programmable Preset Capability
- Factory Default Preset Capability
- Languages: English, French, German, Spanish, Italian, Portuguese, Russian, Greek, Swedish, Danish, Dutch, Finnish, Norwegian, Japanese
- OB Report Format: 5 Types, Tokyo Univ., Osaka Univ., USA, Europe, and ASUM
- EFBW: 10 Types, Japan, USA and Europe (Tokyo Univ., Osaka Univ., Tokyo Shinozuka, JSUM, German, Shepard, Merz, Hadlock/Shepard, Williams, Brenner)
- Pre-defined Annotations and User Programmable Libraries/Annotations
- Body Patterns
- Customized Comment Home Position

Complete User Manual available on board through Help (F1)
User Manual and Service Manual are included on CD with each system. A printed Manual is available upon request.

CINE Memory/Image Memory

- CINE Memory: 776MB
- Selectable CINE Sequence for CINE Review
- Prospective CINE Mark
- Measurements/Calculations & Annotations on CINE Playback
- Scrolling Timeline Memory
- Cine Capture Function
- Digital Continuous Cine Capture
- Dual Image CINE Display
- Quad Image CINE Display
- CINE Gauge and CINE Image Number Display
- CINE Review Loop
- CINE Review Speed: 10 Steps (11, 13, 14, 17, 22, 25, 31, 100, 200, 400%)
- DICOM: compressed/uncompressed, single/multi-frame, with/without Raw Data
- Export JPEG, JPEG2000, WMV (MPEG 4), and AVI Formats
- DICOM Still Image Storage Size: ~2.1MB
- Gray Image: ~1.3 to ~3.5 MB
- Color Image: ~1.8 to ~5.0 MB
- Display Format: Full Size, 4x4 and “thumbnails”
- Storage Devices:
  - Internal Hard Drive Partition of 358 GB for Image Storage
  - External USB 2.0 Hard Drive Support for Import, Export, DICOM Read, SaveAs and MPEGVue
  - USB Memory Stick Support for SaveAs and MPEGVue (64MB to 4GB)
  - CD/-RW storage: 700MB
  - DVD storage: +/-R (4.7GB)
- Conversion to Formats: JPEG, AVI, WMV
- Live Image and stored Image side-by-side Display
- Compare old images with current exam
- Reload of archived data sets
- Network Storage support for Import, Export, DICOM Read, SaveAs, MPEGVue

**Connectivity & DICOM**
- Ethernet network connection
- DICOM 3.0 (option)
  - Verify
  - Print
  - Store
  - Modality Worklist
  - Storage Commitment
  - Modality Performed Procedure Step (MPPS)
  - Media Exchange
  - Off network / mobile storage queue
  - Query / Retrieve
  - Structured Reporting
  - Public SR Template
  - Structured Reporting – compatible with vascular and OB standard
  - Direct Export DICOM SR and XML
  - Media Store of SR
  - InSite ExC capability
- Wireless LAN (Option)

**Physiological Input Panel**
- Physiological Input
- ECG, 2 lead
- Dual R Trigger
- Pre-settable ECG R Delay Time
- Re-settable ECG Position
- Adjustable ECG Gain Control
- Automatic Heart Rate Display

**Scanning Parameters**
- Digital P-Agile Beamformer Architecture
- 386,469 System Processing Channels
- Max. Frame Rate up to 2399 F/s
- Displayed Imaging Depth: 0 – 33 cm
- Minimum Depth of Field: 0 - 1 cm
- Maximum Depth of Field: 0 - 33 cm
- Transmission Focus: 1 - 8 Focal Points selectable (Probe and Application dependent)
- Quad Beamforming
- Continuous Dynamic Receive Focus / Aperture
- Multi-Frequency / Wideband Technology
- Frequency Range: 2 to 18 MHz
- 256 Shades of Gray
- 270 dB of Composite Dynamic Range
- Adjustable Dynamic Range
- Adjustable Field Of View (FOV)
- Up to 132 degree (depending on Probe) Image Reverse: Right/Left
- Image Rotation: 2 Steps of 0°, 180°

**Digital B-Mode**
- Acoustic Power Output: 0 – 100%, 25 steps
- Gain: from 0 – 90 dB, 1 dB Steps
- Dynamic Range: 36 - 96 dB, 16Steps
- Frame Averaging: 8 Steps
- Gray Scale Map: 7Types
- Tint Map: 9 Types
- Frequency: Up to 5 selectable (depending on Probe)
- Speed of Sound (probe, application dependent)
- Line Density: 5 Steps
- Line Density Zoom: 5 Steps
- Thermal Index: TIC, TIS, TIB
- Image Reverse: On/Off
- Focus Number: 8 Steps
- Focus Width: 3 Types
- Suppression: 6 Steps
- Edge Enhance: 7 Steps
- Rejection: 6 Steps
- Steered Linear: +/- 12°
- Scanning Size (FOV or Angle – depending on the probe)
- SRI-HD: Up to 6 Levels selectable
- CrossXBeam: Up to 9 Angles selectable
- Depth: 1- 33cm, 1cm Step, Probe dependent

**Digital M-Mode**
- Gain: ~20 -20 dB, 1 dB step
- Compression: 0.5 – 3/4, 13steps
- Sweep Speed: 0 – 7, 8 steps
- Frame Averaging
- Gray Scale Map: 7Types
- MColorization: 9 Types
- Frequency
- Line Density
- Scanning Size (FOV or Angle – depending on Probe, see Probe specifications)
- Rejection: 6 Steps

**Anatomical M-Mode**
- M-mode cursor adjustable at any plane
- Can be activated from a CINE loop, from a live or stored image
- M & A capability
- Available with Color Flow Mode
- Curved Anatomical M-Mode

**Digital Spectral Doppler Mode**
- Adjustable:
  - Acoustic Power
  - Gain
  - Dynamic Range
  - Gray Scale Map
  - Transmit Frequency
  - Wall Filter
  - PW colorization
  - Velocity Scale Range
  - Sweep Speed
  - Sample Volume Length
  - Angle Correction
  - Steered Linear
  - Spectrum Inversion
  - Trace Method
  - Baseline Shift
  - Doppler Auto Trace
  - Time Resolution
  - Compression
  - Trace Direction
  - Trace Sensitivity

**Digital Color Flow Mode**
- Base Line: 0 – 100%, 11 Steps
- Invert: On/Off
- CF/PDI Focus Depth: default presettable for10 – 100% of ROI in depth, 6Steps
- CF/PDI Flash Suppression: 5 Steps
- CF/PDI Angle Steer: 0, +/- 20°
- Packet Size: 8-24, dependent on Probe and Application
- Line Density: 5 Steps
- Line Density Zoom: 5 Steps
Digital Power Doppler Imaging
- PDI Map: 16Types
- CF/PDI Focus Depth: default pre-settable for 10 – 100% of ROI in Depth, 6Steps
- CF/PDI Acoustic Output: 0 – 100%, 10% Steps
- CF/PDI Angle Steer: 0, +/- 20°
- Packet Size: 8 – 24, dependent on Probe and Application
- Spatial Filter: 6 Steps
- Frame Average: 7 Steps
- PRF: 0.1-23.5kHz/20 steps
- Power Threshold: 0 – 100%, 11 Steps
- Arbitration Threshold: 15 Steps pre-settable
- Gain: 0 – 40dB, 0.5dB Steps
- Wall Filter: 4Steps depending on Probe and Application
- CF/PDI Frequency: Up to 5 Steps, depending on Probe
- Auto Line Density: On/Off pre-settable
- Transparent: 5 Steps
- Invert: On/Off
- Accumulation: 8 Steps
- Flash Suppression

PW/CW Wave Doppler
- Velocity Scale:
  - Max: 10.34m/s
  - Min: 0.06m/s
- Gray Scale Map: 8Types
- Base Line: 5 – 95%, 11 Steps
- SV Gate: 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 14, 16mm
- Angel Correct: +/- 90°, 1° Step
- Spectral Color: 6Types
- PW Sweep Speed: 8 Steps
- Invert: On/Off
- Duplex: On/Off (PW only)
- PW/CF Ratio: 1, 2, 4
- Gain: 0 – 85dB, 1dB Steps
- Wall Filter: 5.5 – 5000Hz, 27 Steps, dependent on Probe and Application
- PW Angle Steer: 0, +/-10, 15, 20°
- PRF: 0.5 – 26.7 kHz with PW, 0.4 – 49.0 kHz with CW
- Sample Volume Depth: 30Steps default pre-settable
- CW-Mode is available on the following probes:
  - 3S, 5S
  - 6S-RS, 7S
  - P8D, 9S
- Steerable CW Mode includes
  - Transmit Frequency
  - CW Colorization
  - Velocity Scale Range
  - Spectrum Inversion
  - Trace Method
  - Doppler Auto Trace
  - Trace Direction
  - Trace Sensitivity

Automatic Optimization
- Optimize B-Mode, B-Flow image to improve contrast resolution. Selectable amount of contrast resolution improvement (low, medium, high)
- Auto TGC
- Auto-Spectral Optimize adj
  - Baseline
  - Invert
  - PRF (on live image)
  - Angle correction

Coded Harmonic Imaging
- Available on all imaging probes
- Line Density: 5Steps
- Line Density Zoom: 5 Steps
- Suppression: 6 Steps
- Edge Enhance: 7Steps
- Gray Scale Map: 7Types
- Tint Map: 9 types
- Gain: 0 – 90 dB, 1 dB step
- Dynamic Range: 36 – 96 dB, 16step
- Rejection: 6 step
- Frequency: Up to 4 steps, probe depended

B-Flow/B-Flow color
- Available on 9L-RS, 12L-RS, ML6-15-RS, L8-18I-RS probes
- Background: On/Off
- Sensitivity/PRI: 17steps
- Line Density: 5steps
- Edge Enhance: 7steps
- Frame Average: 8steps
- Gray Scale Map: 8 types
- Tint Map: 9 types
- Dynamic Range: 36 – 96 dB, 16steps
- Rejection: 6 steps
- Gain: 0 – 90 dB, 1 dB step
- Dual Beam: On/Off pre-settable
- B-Flow Color: 8 color maps and 6 directional maps
- Accumulation: 8 steps

Coded Contrast Imaging
- Available on C1-5-5S probe
- Modes: General, Resolution and Penetration
- Tissue Background Selection: 4 steps
- Display Tissue Image and Contrast enhanced Image simultaneously in split screen
- 2 separate Contrast Timers
- Timed Updates: 0.05 – 10 seconds
- Accumulation mode: 8 steps
- Max Enhancement Mode: On/Off
- Gray Scale Map: 21 types
- Colorization: On/Off
- Time Trigger Scan: 0.3 & 0.5 – 10 sec., 0.5 sec step
- Flash / Burst mode
- Time Intensity Curve (TIC) Analysis
- The LOGIQ P9 is designed for compatibility with commercially available ultrasound contrast agents. Because the availability of these agents is subject to government regulation and approval, product features intended for use with these agents may not be commercially marketed or made available before the contrast agent is cleared for use. Contrast related product features are enabled only on systems for delivery to an authorized country or region of use.

LOGIQ View
- Extended Field of View Imaging
- Available on all imaging probes
- For use in B-Mode
- CrossXBeam is available on linear probes
- Auto detection of scan direction
- Pre or post-process zoom up to 10x
• Rotation
• Auto best fit on monitor
• Measurements in B-Mode
• Up to 60cm scan length

**Easy 3D (available on all imaging probes)**
• Colorize Image
• Threshold (opacity)
• Render
• Texture
• Gray Surface
• Scalpel
• Auto Movie
• Undo
• Reset
• Allows unlimited rotation and planar translation
• 3D reconstruction from CINE sweep

**Advanced 3D (available on all imaging probes)**
• Acquisition of Color data
• Automatic rendering
• 3D Landscape technology
• 3D Movie
• Main Mode

**Real Time 4D**
• Acquisition Modes:
  - Real-time 4D mode
  - Static 3D mode
• Visualization Modes:
  - 3D Rendering (diverse surface and intensity projection modes)
  - Sectional Planes (3 Section planes perpendicular to each other)
  - Volume contrast Imaging-Static
  - Tomographic ultrasound imaging
• Render Mode:
  - Surface texture, Surface Smooth, max-, min- and X-ray (average intensity projection), Mix Mode of two render Modes
• Curved 3point Render start
• 3D Movie
• Scalpel: 3D Cut tool
• Display Format:
  - Quad: A-/B-/C-Plane/3D
  - Dual: A-Plane/3D
  - Single: 3D or A- or B- or C-Plane

**Automated Volume Calculation**

- **VOCAL II (optional)**
- **Scan Assistant**
  - Workflow enhancement tool for standardized and repetitive exams
  - Include Factory Programs
  - User – defined programs and import Functionality

- **Steps include image annotations, mode transitions, basic imaging controls and measurement initiation**

**Report Writer**
• On-board reporting package automates report writing
• Formats various exam results into a report suitable for printing or reviewing on a standard PC
• Exam results include patient info, exam info, measurements, calculations, images, comments and diagnosis
• Standard templates provided
• Customizable templates

**Elastography**
• Available on C1-5-RS, ML6-15-RS, 9L-RS, 12L-RS Probes
• E Index: 8 maximum
• E Ratio: 7 maximum

**TVI**
• Myocardial Doppler imaging with color overlay on tissue image
• Available on all sector probes
• Tissue color overlay can be removed to show just the 2D image, still retaining the tissue velocity information
• Curved Anatomical M-mode: free (curved) drawing of M-mode generated from the cursor independent from the axial plane
• Q-Analysis: Multiple Time - Motion trace display from selected points in the myocardium

**Stress Echo**
• Advanced and flexible stress-echo examination capabilities
• Provides exercise and pharmacological protocol templates
• 8 default templates
• Template editor for user configuration of existing templates or creating new templates
• Reference scan display during acquisition for stress level comparison (dual-screen)
• Baseline level / previous level selectable
• Raw data continuous capture
  - Over 180 sec available
• Wall motion scoring (bulls-eye and segmental)
• Smart stress: Automatically set up various scanning parameters (e.g. geometry, frequency, gain, etc.)

**Virtual Convex**
• Provides a convex field of view
• Compatible with CrossXBeam
• Available on all linear and sector transducers: 9L-RS, 12L-RS, ML6-15-RS, L8-18i-RS, 3Sc-RS, 65-RS Probes

**SRI-HD**
• High Definition Speckle Reduction Imaging
• Provides multiple (6) levels of speckle reduction
• Compatible with Side by Side DualView Display
• Compatible with ALL Linear, convex and sector transducers
• Compatible w/ B-Mode, Color, Contrast Agent and 3D/4D imaging
• Pre and post processing

**CrossXBeam**
• Provides 3, 5, 7 or 9 angles of spatial compounding
• Live Side by Side DualView Display
• Compatible with
  - Color Mode
  - PW
  - SRI-HD
  - Coded Harmonic Imaging
  - Virtual Convex on Linear Probes
• Available on C1-5-RS, 8C-RS, E8C-RS, 9L-RS, 12L-RS, ML6-15-RS, L8-18i-RS, RAB2-6-RS Probes

**Controls Available While “Live”**
• Write Zoom
• B/M/CrossXBeam-Mode
  - Gain
  - TGC
  - Dynamic Range
  - Acoustic Output
  - Transmission Focus Position
  - Transmission Focus Number
  - Line Density Control
  - Sweep Speed for M-Mode
  - Number of Angles for CrossXBeam
• PW-Mode
  - Gain
  - Dynamic Range
  - Acoustic Output
  - Transmission Frequency
  - PRF
  - Wall Filter
  - Spectral Averaging
  - Sample Volume Gate
  - Length
  - Depth

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**LOGIQ P9 Product Specification**

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Recall

Controls Available on “Freeze” or Recall
- Automatic Optimization
- SRI-HD
- CrossXBeam – Display non-compounded and compounded image simultaneously in split screen
- 3D reconstruction from a stored CINE loop
- B/M/CrossXBeam-Mode
  - Gray Map Optimization
  - TGC
  - Colorized B and M
  - Frame Average (loops only)
  - Dynamic Range
  - Anatomical M Mode
  - Max Read Zoom to 8x
  - Base Line Shift
  - Sweep Speed
  - PW-Mode
    - Gray Map
    - Post Gain
    - Baseline shift
    - Sweep Speed
    - Invert Spectral wave form
    - Compression
    - Rejection
    - Colorized Spectrum
    - Display Format
    - Doppler Audio
    - Angle Correct
    - Quick Angle Correct
    - Auto Angle Correct
- Color Flow-Mode
  - Overall Gain (loops and stills)
  - Color Map
  - Transparency Map
  - Frame Averaging (loops only)
  - Flash Suppression
  - CFM Display Threshold
  - Spectral Invert for Color/Doppler
- Anatomical M-Mode on cine loop
- 4D
  - Gray Map, Colorize
  - Post Gain
  - Change display – single, dual, quad sectional or rendered

Measurements / Calculations

General B-Mode
- Depth & Distance
- Circumference (Ellipse / Trace)
- Area (Ellipse / Trace)
- Volume (Ellipsoid)
- % Stenosis (Area or Diameter)
- Angle between two lines

General M-Mode
- M-Depth
- Distance
- Time
- Slope
- Heart Rate

General Doppler Measurements/Calculations
- Velocity
- Time
- A/B Ratio (Velocities / Frequency Ratio)
- PS (Peak Systole)
- ED (End Diastole)
- PS/ED Ratio
- ED/PS Ratio
- AT (Acceleration Time)
- ACC (Acceleration)
- TAMAX (Time Averaged Maximum Velocity)
- Volume Flow (TAMEAN and Vessel Area)
- Heart Rate
- PI (Pulsatility Index)
- RI (Resistivity Index)

Real-time Doppler Auto Measurements / Calculations
- PS (Peak Systole)
- ED (End Diastole)
- MD (Minimum Diastole)
- PI (Pulsatility Index)
- RI (Resistivity Index)
- AT (Acceleration Time)
- ACC (Acceleration)
- PS/ED Ratio
- ED/PS Ratio
- HR (Heart Rate)
- TAMAX (Time Averaged Maximum Velocity)
- PVAL (Peak Velocity Value)
- Volume Flow (TAMEAN and Vessel Area)

OB Measurements/Calculations
- Gestational Age by:
  - GS (Gestational Sac)
  - CRL (Crown Rump) Length
  - FL (Femur Length)
  - BPD (Biparietal Diameter)
  - AC (Abdominal Circumference)
- HC (Head Circumference)
- APTD x TTD (Anterior/Posterior Trunk Diameter by Transverse Trunk Diameter)
- LV (Length of Vertebra)
- FTA (Fetal Trunk Cross-sectional Area)
- HL (Humerus Length)
- BD (Binocular Distance)
- FT (Foot Length)
- OFD (Occipital Frontal Diameter)
- TAD (Transverse Abdominal Diameter)
- TCD (Transverse Cerebellum Diameter)
- THD (Thorax Transverse Diameter)
- TIB (Tibia Length)
- ULNA (Ulna Length)
- Estimated Fetal Weight (EFW) by:
  - AC, BPD
  - AC, BPD, FL
  - AC, BPD, FL, HC
  - AC, FL
  - AC, FL, HC
  - AC, HC
  - BPD, APTD, TTD, FL
  - BPD, APTD, TTD, SL
- Calculations and Ratios
  - FL/BPD
  - FL/AC
  - FL/HC
  - HC/AC
  - CI (Cephalic Index)
  - AFI (Amniotic Fluid Index)
  - CTAR (Cardio-Thoracic Area Ratio)
- Fetal Graphical Trending
  - Growth Percentiles
  - Multi-Gestational Calculations (4)
  - Fetal Qualitative Description (Anatomical survey)
  - Fetal Environmental Description (Biophysical profile)
  - Programmable OB Tables
  - Over 20 selectable OB Calcs
  - Expanded Worksheets

GYN Measurements/Calculations
- Right Ovary Length, Width, Height
- Left Ovary Length, Width, Height
- Uterus Length, Width, Height
- Cervix Length, Trace
- Ovarian Volume
- ENDO (Endometrial thickness)
• Ovarian RI
• Uterine RI
• Follicular measurements
• Summary Reports

Vascular Measurements/Calculations
• SYS DCCA (Systolic Distal Common Carotid Artery)
• DIAS DCCA (Diastolic Distal Common Carotid Artery)
• SYS MCCA (Systolic Mid Common Carotid Artery)
• DIAS MCCA (Diastolic Mid Common Carotid Artery)
• SYS PCCA (Systolic Proximal Common Carotid Artery)
• DIAS PCCA (Diastolic Proximal Common Carotid Artery)
• SYS DICA (Systolic Distal Internal Carotid Artery)
• DIAS DICA (Diastolic Distal Internal Carotid Artery)
• SYS MICA (Systolic Mid Internal Carotid Artery)
• DIAS MICA (Diastolic Mid Internal Carotid Artery)
• SYS PICA (Systolic Proximal Internal Carotid Artery)
• DIAS PICA (Diastolic Proximal Internal Carotid Artery)
• SYS DECA (Systolic Distal External Carotid Artery)
• DIAS DECA (Diastolic Distal External Carotid Artery)
• SYS PICA (Systolic Proximal External Carotid Artery)
• DIAS PICA (Diastolic Proximal External Carotid Artery)
• VERT (Systolic Vertebral Velocity)
• SUBCLAV (Systolic Subclavian Velocity)
• Auto IMT
• Summary Reports

Urological Measurements/Calculations
• Bladder Volume
• Prostate Volume
• Lt/Rt Renal Volume
• Generic Volume
• Post-Void Bladder Volume

Cardiac Measurements/Calculations
• Cardiac calculation package including extensive measurements and display of multiple repeated measurements
• Parameter annotation follow ASE standard

Probes
C1-5-RS, 8C-RS, E8C-RS, ML6-15-RS, 12L-RS, 9L-RS, L8-18i-RS, 3Sc-RS, 6S-RS, RA82-6-RS, and P8D

C1-5-RS Convex Probe
• Applications: Abdomen, Vascular, OB/GYN, Urology
• Probe Band Width: 1.75-4.95 MHz
• Number of Element: 192
• Convex Radius: 55 mmR
• FoV (Max): 70°
• Physical Foot Print: 67 x 11.5 mm
• B-Mode Frequency: 2, 3, 4 MHz
• Harmonic Frequency: 3, 4, 5 MHz
• Doppler Frequency: 1.9, 2.1, 2.5, 3.6 MHz
• Biopsy Guide: Multi-Angle, disposable with a reusable bracket (H40432LE)

8C-RS Micro Convex Probe
• Applications: Neonatal, Pediatrics
• Probe Band Width: 3.6-10.0 MHz
• Number of Element: 128
• Convex Radius: 10.7 mmR
• FoV (Max): 132°
• Physical Foot Print: 24.7 x 5 mm
• B-Mode Imaging Frequency: 6.0, 7.0, 8.0 MHz
• Harmonic Frequency: 8.0, 9.0, 10.0 MHz
• Doppler Frequency: 3.6, 4.2, 5.0, 6.3 MHz
• Biopsy Guide available: None

E8C-RS Endo Micro Convex Probe
• Applications: OB/GYN, Urology, Transvaginal, Transrectal
• Probe Band Width: 3.6-10.0 MHz
• Number of Element: 128
• Convex Radius: 10.7 mmR
• FoV (Max): 132°
• Physical Foot Print: 24.7 x 5 mm
• B-Mode Frequency: 6, 7, 8 MHz
• Harmonic Frequency: 8, 9, 10 MHz
• Doppler Frequency: 3.6, 4.2, 5.0, 6.3 MHz
• Biopsy Guide: Single Angle, disposable with a disposable bracket (E8385MJ, E8333JB), Single-Angle, Reusable bracket (H40412LN)

ML6-15-RS Matrix Array Linear Probe
• Applications: Small Parts, Vascular, Pediatric, Neonatal, Musculoskeletal
• Probe Band Width: 4.3-13.0 MHz
• Number of Element: >1000
• FoV (Max): 50.4 mm

Physical Foot Print: 50.4 x 6 mm
• B-Mode Frequency: 9, 11, 13, 15 MHz
• Harmonic Frequency: 8, 10, 12, 15 MHz
• Doppler Frequency: 5, 6.3, 8.3 MHz
• Biopsy Guide: Multi-Angle, disposable with a reusable bracket (H40432LJ)

12L-RS Linear Probe
• Applications: Small Parts, Vascular, Pediatric, Neonatal, Musculoskeletal
• Probe Band Width: 3.85-11.65 MHz
• Number of Element: 192
• FoV (Max): 38.4 mm
• Physical Foot Print: 38.4 x 4 mm
• B-Mode Frequency: 7, 9, 11 MHz
• Harmonic Frequency: 9, 11, 12 MHz
• Doppler Frequency: 4.2, 5, 6.3, 8.3 MHz
• Biopsy Guide: Multi-Angle, disposable with a reusable bracket (H40432LC)

9L-RS Linear Probe
• Applications: Vascular, Small Parts, Pediatric, Abdomen
• Probe Band Width: 2.7-7.8 MHz
• Number of Element: 192
• FoV (Max): 44.2 mm
• Physical Foot Print: 44.2 x 6 mm
• B-Mode Frequency: 5, 7, 9 MHz
• Harmonic Frequency: 8, 9, 10 MHz
• Doppler Frequency: 3.1, 3.6, 4.2, 5 MHz
• Biopsy Guide: Multi-Angle, disposable with a reusable bracket (H4906BK)

L8-18i-RS Linear Probe
• Applications: Small Parts, Vascular, Pediatric, Neonatal
• Probe Band Width: 4.5-14.0 MHz
• Number of Element: 168
• FoV (Max): 25.2 mm
• Physical Foot Print: 25.2 x 4 mm
• B-Mode Frequency: 8, 9, 12, 15, 18 MHz
• Harmonic Frequency: 9, 15, 18 MHz
• Doppler Frequency: 5, 6.3, 8.3 MHz
• Biopsy Guide available: None

3Sc-RS Phased Array Sector Probe
• Applications: Cardiac, Transcranial, Abdomen
• Probe Band Width: 1.45-4.2 MHz
• Number of Element: 64
• FoV (Max): 120°
• Physical Foot Print: 15 x 14 mm
• B-Mode Frequency: 2, 3, 4 MHz
• Harmonic Frequency: 3, 3.5, 4.0, 5.0 MHz
• Doppler Frequency: 1.7, 2.1, 2.5, 3.1, 3.6 MHz
• Biopsy Guide: Multi-Angle, Reusable bracket (H46222LC)

6S-RS Phased Array Sector Probe
The LOGIQ Safety Conformance

• Applications: Cardiac Neonatal, Pediatrics
• Probe Band Width: 2.2-7.0 MHz
• Number of Element: 64
• FoV (Max): 90°
• Physical Foot Print: 10.2 x 5.5 mm
• B-Mode Frequency: 4, 5, 6.5, 8.0 MHz
• Harmonic Frequency: 4.8, 5.4, 6.2 MHz
• Doppler Frequency: 2.8, 3.1, 3.6, 4.2, 5.0 MHz
• Biopsy Guide available: None

RAB2-6-RS Convex Volume Probe
• Applications: Abdomen, OB/GYN, Urology
• Probe Band Width: 1.7-4.8 MHz
• Number of Element: 128
• Convex Radius: 47 mmR
• FoV (Max): 66°, Volume Angle: 85°
• Physical Foot Print: 53.8 x 13 mm
• B-Mode Frequency: 3, 4, 5 MHz
• Harmonic Frequency: 4, 5, 6 MHz
• Doppler Frequency: 1.9, 2.5, 3.1, 3.6 MHz
• Biopsy Guide: Multi-Angle, disposal with reusable bracket (H48681ML)

PBD CW Split Crystal Probe
• Applications: Cardiac, Vascular

Inputs and Outputs
• HDMI Out
• Ethernet Network (RJ45)
• External Audio Out
• USB (2x in front, 3x in rear, 2x monitor)
• AC Power Input
• Probe connectors

Safety Conformance

The LOGIQ P9 is:

• Listed to UL 60601-1 by a Nationally Recognized Test Lab
• Certified to CSA 22.2,60601.1 by an SCC accredited Test Lab
• CB-Test report by National Certification Body
• Conforms to the following standards for safety:
  - IEC/EN 60601-1 Medical Electrical equipment, General requirement for Safety
  - IEC/EN 60601-1-1 Safety requirements for Medical Electrical Systems
  - IEC/EN 60601-1-2 Electromagnetic compatibility
  - IEC 60601-1-4 Software Design life cycle
  - IEC/EN 62034 Programmable Electrical Medical Systems
  - IEC 60601-1-6 Collateral Standard: Usability
  - IEC/EN 62366 Application of Usability engineering to medical devices
  - IEC/EN 60601-2-18 Particular requirements for safety of endoscopic equipment
  - IEC/EN 60601-2-37 Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
  - IEC 61157 Declaration of acoustic output
  - ISO 10993 Biological evaluation of medical devices
  - NEMA UD2 Acoustic output measurement standard for diagnostic ultrasound equipment
  - NEMA UD3 Acoustic output display (MI, TIS, TIB, TIC)
  - EMC Emissions Group 1 Class B device requirements as per Sub clause 4.2 of CISPR 11
    1. 6S-RS: EMC Emissions Group 1 Class A device
  2. Elastography with semi-Quantification (Elastography Quantification) described in this material has not been cleared by the U.S. FDA and is not available for promotion or sale in the United States.
  3. Coded contrast imaging described in this material has not been cleared by the U.S. FDA and is not available for promotion or sale in the United States.

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