

GE Healthcare

# LOGIQ S7 with XDclear

## Amazing Versatility

### Product description

The LOGIQ™ S7 with XDclear™ is a highly mobile and easy to use performance multipurpose color Doppler imaging system. It is designed for Abdominal, Vascular, Small Parts, Obstetrics, Gynecology, Cardiology, Pediatric, Neonatal, Transcranial, and Urology applications.



# General Specification

## Dimensions and Weight

Height	Max: 1760 mm (69.29 in) Min: 1210 mm (47.64 in)
Width	Keyboard: 520 mm (20.47 in) Caster: 530 mm (20.87 in) Monitor: 565 mm (22.24 in)
Depth	Max: 865 mm (34.06 in) Caster: 795 mm (31.30 in)
Weight (no Peripherals)	90 kg/198 lbs

## Electrical power

Voltage	100 – 120 Vac or 220 – 240 Vac
Frequency	50/60 Hz

Power consumption maximum of 900 VA with peripherals

## Console Design

4 active probe ports, 1 non-imaging

Integrated HDD and DVD-R/W

On-board storage for peripherals

Integrated speakers

Probe holders

Gel warmer

Front and rear handles

# User Interface

## Operator Keyboard

Ergonomic full size keyboard

Swivel-adjustable, height-adjustable

8 TGC pods

10.1" (256.5 mm) wide LCD touch screen

## Monitor

23" (565 mm) high-resolution wide LCD

Articulating monitor arm

## Applications

Obstetrics

Neonatal

Gynecology

Transcranial

Abdominal

Cardiac

Pediatric

Musculoskeletal

Small Parts

Urology

Vascular

# System Overview

## Scan Methods

Electronic Sector

Electronic Convex

Electronic Micro Convex

Electronic Linear

Real-time 4D Volume Sweep

## Probe Types

Convex Array

Microconvex Array

Bi-plane Microconvex Arrays

Volume Probes (4D)

Linear Array

Matrix Array

TEE Sector Array

Sector Phased Array

Single CW (Pencil) Probes

## Operating Modes

B-Mode

M-Mode

Color Flow Mode (CFM)

M-Color Flow Mode

# System Overview (cont.)

## Operating Modes (cont.)

Power Doppler Imaging (PDI)

PW Doppler Mode

CW Doppler Mode (Option)

3D/4D Volume Modes (Option)

Anatomical M-Mode

Curved Anatomical M-Mode

B-Flow™/B-Flow Color (Option)

Extended Field of View (LOGIQ View Option)

TVI Mode (Option)

Coded Contrast Imaging (Option)

Coded Harmonic Imaging

Elastography (Option)

B Steer+ (Option)

Offline scanning mode (Power Assistant Option)

## System Standard Features

Advanced user interface with high resolution 10.1" wide LCD touch screen

Automatic Optimization

CrossXBeam™ compounding

Speckle Reduction Imaging (SRI-HD)

Fine Angle Steer

Coded Harmonic Imaging

Virtual Convex

Advanced 3D

Patient information Database

Image Archive on integrated CD/DVD and hard disk drive

Raw Data Analysis

Real-time Automatic Doppler Calculations

OB Calculations

Fetal Trending

Multigestational Calculations

Hip Dysplasia Calculations

Gynecological Calculations

Vascular Calculations

Urological Calculations

## System Standard Features (cont.)

Renal Calculations

Cardiac Calculations

Remote Capability: InSite™ ExC

On-board Electronic Documentation

MPEGVue™

Key Macro

Network Storage

Quick Save

Quick Patient

Email to MMS

## System Options

Auto IMT

Auto EF

Automated Volume Calculation (VOCAL II)

Breast Measure Assistant

OB Measure Assistant

B-Flow/B-Flow Color

B Steer+

Breast Productivity Package

Coded Contrast Imaging

HRES Contrast

Compare Assistant

CW Doppler

DICOM® 3.0 Connectivity

Digital Video Recording Software (Software DVR)

Elastography

Elastography Quantification\*<sup>1</sup>

Flow Quantification

LOGIQView

Real-time 4D

Report Writer

Scan Assistant

Stress Echo

Thyroid Productivity Package

# System Overview (cont.)

## System Options (cont.)

Tissue Velocity Imaging (TVI)

Tomographic Ultrasound Imaging (TUI)

Volume Contrast Imaging (VCI) Static

OmniView

STIC

Advanced Probes (XDClear)

Cabinet: High/Mid/Low

## Peripheral Options

Integrated Options for	<ul style="list-style-type: none"> <li>• Digital B/W thermal printer</li> <li>• Digital color thermal printer</li> </ul>
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Printer installation kit

External USB printer connection

Printing using Bluetooth® connectivity (Inkjet printer option)

Wireless LAN card for wireless data transfer

HDMI output available for compatible devices

Foot Switch with programmable functionality

Universal Video Converter

Power Assistant

Battery Pack (for Power Assistant)

Isolation Transformer

Isolated 1 Gb Ethernet connection

Isolated USB connector

EMI filter (PWR supply noise filter)

RS-DLP Probe Adapter for TEE Probe

Side Cabinet (Japan only)

Drawer

Small Probe Holder (Probe Holder Adapter for Small Probe)

Multi-Purpose Holder (Vertical Endocavitary Probe Holder)

Optional Probe Holder (Side Probe Holder)

Probe cable hanger

ECG + AHA/IEC® Cables

USB 3 Pedal Foot Switch

## Display Modes

Live and Stored Display Format: full size and split screen – both with thumbnails for still and Cine

Review Image Format: 4x4 and “thumbnails” for still and Cine

Simultaneous Capability	<ul style="list-style-type: none"> <li>• B or CrossXBeam/PW</li> <li>• B or CrossXBeam/CFM or PDI</li> <li>• B/M</li> <li>• B or CrossXBeam + CFM or PDI/PW (Real-time Triplex Mode)</li> <li>• B/CW (option)</li> </ul>
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Selectable Alternating Modes	<ul style="list-style-type: none"> <li>• B or CrossXBeam/PW</li> <li>• B or CrossXBeam + CFM(PDI)/PW</li> <li>• B/CW (option)</li> </ul>
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Colorized Image	<ul style="list-style-type: none"> <li>• B-mode</li> <li>• M-mode</li> <li>• Doppler mode</li> </ul>
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Time line Display	<ul style="list-style-type: none"> <li>• Independent Dual B or CrossXBeam/PW Display</li> <li>• CW Display</li> <li>• 2 Display Formats             <ul style="list-style-type: none"> <li>– Top/Bottom</li> <li>– Side/Side selectable Format</li> </ul> </li> <li>• Selectable Size Formats</li> <li>• Full format, switchable after freeze             <ul style="list-style-type: none"> <li>– Vert 1/3 B</li> <li>– Vert 1/2 B</li> <li>– Vert 2/3 B</li> <li>– Horiz 1/2 B</li> <li>– Horiz 1/4 B</li> </ul> </li> <li>• 2 Timeline Methods             <ul style="list-style-type: none"> <li>– Scrolling</li> <li>– Moving Bar</li> </ul> </li> </ul>
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Virtual Convex

Multi-image (split/quad screen)

Live and/or frozen	<ul style="list-style-type: none"> <li>• B or CrossXBeam + B or CrossXBeam    CFM or PDI</li> <li>• PW/M</li> </ul>
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Independent Cine playback

Zoom: Write/Read

Simultaneous Bi-plane for Urology application	<ul style="list-style-type: none"> <li>• BE9CS</li> <li>• BE9CS-D</li> </ul>
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# System Overview (cont.)

## Display Annotation

Patient Name: First, Last and Middle

Patient ID

2<sup>nd</sup> Patient ID

Age, Sex and Birth Date

Hospital Name

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
- GA
- EDD
- BBT

Displayed Acoustic Output

- TIS: Thermal Index Soft Tissue
- TIC: Thermal Index Cranial (Bone)
- TIB: Thermal Index Bone
- MI: Mechanical Index

% of Maximum Power output

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

Frame Averaging

Acoustic Frame Rate

Gray Map

SRI-HD

### M-Mode

## Display Annotation (cont.)

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

Inversion

Doppler Frequency

TGC Curve

Cine Gage, Image Number/Frame Number

Body Pattern: Multiple human and animal types

Application Name

Measurement Results

Operator Message

Biopsy Guide Line and Zone

Heart Rate

# General System Parameters

## System Setup

Pre-programmable Categories

User Programmable Preset Capability

Factory Default Preset Data

Languages: English, French, German, Spanish, Italian, Portuguese, Russian, Greek, Swedish, Danish, Dutch, Finnish, Norwegian, Chinese, Japanese (message only)

OB Report Formats including Tokyo Univ., Osaka Univ., USA, Europe, and ASUM

User Defined 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

776 MB of Cine Memory

Selectable Cine Sequence for Cine Review

Prospective Cine Mark

Measurements/Calculations and Annotations on Cine Playback

Scrolling timeline memory

Dual Image Cine Display

Quad Image Cine Display

Cine Gauge and Cine Image Number Display

Cine Review Loop

Cine Review Speed

## Image Storage

On-board database of patient information from past exams

Storage Formats:

- DICOM – compressed/uncompressed, single/multiframe, with/without Raw Data
- Export JPEG, JPEG2000, WMV (MPEG 4) and AVI formats

## Image Storage (cont.)

Storage Devices:

- USB Memory Stick: 64 MB to 4 GB (for exporting individual images/clips)
- CD-RW storage: 700 MB
- DVD storage: -R (4.7 GB)
- Hard Drive Image Storage: ~345 GB

Compare old images with current exam

Reload of archived data sets

Network Storage support for Import, Export, DICOM Read, SaveAs, SaveAs Image, Report SaveAs, MPEGVue

## Connectivity & DICOM

Ethernet network connection

Wireless network connection (WLAN option)

DICOM 3.0 (Optional)

Verify

Print

Store

Modality Worklist

Storage Commitment

Modality Performed Procedure Step (MPPS)

Media Exchange

Off network/mobile storage queue

Query/Retrieve

Public SR Template

- Structured Reporting – compatible with vascular and OB standard
- Direct Export DICOM SR and XML Remote capability InSite ExC

## Physiological Input Panel (Option)

Physiological Input

ECG, 2 leads

Dual R-Trigger

Pre-settable ECG R Delay Time

Pre-settable ECG Position

Adjustable ECG Gain Control

Automatic Heart Rate Display

# General System Parameters (cont.)

## Report Writer (Option)

On-board reporting package automates report writing

Formats various exam results into a report suitable for printing or reviewing on a standard PC

Exam result reports can include patient info, exam info, measurements, calculations, images, comments and physician diagnosis

Standard templates provided

Customizable templates

Report templates:

- Abdomen
  - Abdomen-complete
- Adult
  - Cardiac-complete
  - Stress-Bullseye-16
  - Stress-Cut-Planes
  - Heart-Failure
- Carotid
  - Carotid-4Images
  - Carotid-Advanced
  - Carotid-Basic
  - Carotid-4Images\_summary
  - Carotid-Advanced\_summary
  - Carotid-Basic\_summary
- General-complete
  - General-complete
- Gyn
  - Gyn-complete
- OB1/OB23
  - OB1/OB23-4Images
  - OB1/OB23-Advanced
  - OB1/OB23-Basic
  - OB1/OB23-4Images\_worksheet
  - OB1/OB23-Advanced\_worksheet
  - OB1/OB23-Basic\_worksheet
- Prostate
  - Prostate-4Images
- SmallParts
  - Thyroid

## Scanning Parameters

Displayed Imaging Depth: 0 – 33 cm

Minimum Depth of Field: 0 – 2 cm (Zoom) (probe dependent)

Maximum Depth of Field: 0 – 33 cm (probe dependent)

Continuous Dynamic Receive Focus/Continuous Dynamic

Receive Aperture

Adjustable Dynamic Range

Adjustable Field of View (FOV)

Image Reverse: Right/Left

Image Rotation of 0°, 180°

## Digital B-Mode

Adjustable:

- Acoustic Power
- Gain
- Dynamic Range
- Frame Averaging
- Gray Scale Map
- Frequency
- Line Density
- Scanning Size (FOV or Angle – depending on the probe, see probe specifications)
- B Colorization
- Reject
- Suppression
- SRI-HD
- Edge Enhance

## Digital M-Mode

Adjustable:

- Acoustic Power
- Gain
- Dynamic Range
- Gray Scale Map
- Frequency
- Sweep Speed
- M Colorization
- M Display Format
- Rejection

## Anatomical M-Mode

M-Mode cursor adjustable at any plane

Can be activated from a Cine loop from a live or stored image

M and A capability

Available with Color Flow Mode

Curved Anatomical M-Mode

# General System Parameters (cont.)

## Digital Spectral Doppler Mode

Adjustable:	<ul style="list-style-type: none"> <li>• Acoustic Power</li> <li>• Gain</li> <li>• Dynamic Range</li> <li>• Gray Scale Map</li> <li>• Transmit Frequency</li> <li>• Wall Filter</li> <li>• PW Colorization</li> <li>• Velocity Scale Range</li> <li>• Sweep Speed</li> <li>• Sample Volume Length</li> <li>• Angle Correction</li> <li>• Steered Linear</li> <li>• Spectrum Inversion</li> <li>• Trace Method</li> <li>• Baseline Shift</li> <li>• Doppler Auto Trace</li> <li>• Time Resolution</li> <li>• Compression</li> <li>• Trace Direction</li> <li>• Trace Sensitivity</li> </ul>
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## Digital Color Flow Mode

Adjustable:	<ul style="list-style-type: none"> <li>• Acoustic Power</li> <li>• Color Maps, including velocity-variance maps</li> <li>• Gain</li> <li>• Velocity Scale Range</li> <li>• Wall Filter</li> <li>• Packet Size</li> <li>• Line Density</li> <li>• Spatial Filter</li> <li>• Steering Angle</li> <li>• Baseline Shift</li> <li>• Frame Average</li> <li>• Threshold</li> <li>• Accumulation mode</li> <li>• Sample Volume Control</li> <li>• Flash Suppression</li> <li>• Quantification (Option)</li> </ul>
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## Digital Power Doppler Imaging

Adjustable:	<ul style="list-style-type: none"> <li>• Acoustic Power</li> <li>• Color Maps including velocity-variance maps</li> <li>• Gain</li> <li>• Velocity Scale Range</li> <li>• Wall Filter</li> <li>• Packet Size</li> <li>• Line Density</li> <li>• Spatial Filter</li> <li>• Steering Angle</li> <li>• Frame Average</li> <li>• Threshold</li> </ul>
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## Digital Power Doppler Imaging (cont.)

Adjustable (cont.):	<ul style="list-style-type: none"> <li>• Accumulation mode</li> <li>• Sample Volume Control</li> <li>• Flash Suppression</li> </ul>
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## Continuous Wave Doppler (Option)

Adjustable:	<ul style="list-style-type: none"> <li>• Acoustic Power</li> <li>• Gain</li> <li>• Dynamic Range</li> <li>• Gray Scale Map</li> <li>• Transmit Frequency</li> </ul>
Wall Filter	<ul style="list-style-type: none"> <li>• CW Colorization</li> <li>• Velocity Scale Range</li> <li>• Sweep Speed</li> <li>• Angle Correction</li> <li>• Spectrum Inversion</li> <li>• Trace Method</li> <li>• Baseline Shift</li> <li>• Doppler Auto Trace</li> <li>• Compression</li> <li>• Trace Direction</li> <li>• Trace Sensitivity</li> </ul>

## Automatic Optimization

Optimize B-Mode image to improve gain uniformity and contrast resolution.

Selectable amount of contrast resolution improvement (low, medium, high)

Auto-Spectral Optimize adjusts	<ul style="list-style-type: none"> <li>• Baseline</li> <li>• Invert</li> <li>• PRF (on live image)</li> <li>• Angle correction</li> </ul>
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## Coded Harmonic Imaging

Available on all 2D probes

## B-Flow (Option)

Available on C1-6-D, C1-5-D, 10C-D, C3-10-D, L3-12-D, 9L-D, ML6-15, 11L-D, L8-18i-D, IC5-9-D, BE9CS and BE9CS-D probes

Background: On/Off

Sensitivity/PRI

Line Density

Edge Enhance

Frame Average

Gray Scale Map



# General System Parameters (cont.)

## B-Flow (Option) (cont.)

Tint Map

Dynamic Range

Rejection

Gain

Dual Beam

B-Flow Color

Accumulation

## B Steer+ (Option)

Available on ML6-15, 11L-D, 9L-D, L8-18i-D and L3-12-D probes

## Coded Contrast Imaging (Option)

Available on C1-6-D, C1-5-D, 9L-D, 3Sp-D, S2-5-D, IC5-9-D, BE9CS and BE9CS-D probes

2 Contrast Timers

Timed Updates: 0.05 – 10 seconds

Accumulation mode, six levels

Maximum Enhance Mode

Flash

Time Intensity Curve (TIC) Analysis

Auto MI control

*The LOGIQ S7 Expert 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 nor 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 (Option)

Extended Field of View Imaging

Available C1-5-D, C1-6-D, 8C, 10C-D, 3CRF-D, C3-10-D, ML6-15, 11L-D, 9L-D, L8-18i-D, L3-12-D, 3Sp-D, S1-4-D, S2-5-D, S4-10-D, 6S-D, 6Tc-RS, IC5-9-D, BE9CS-D, BE9CS, RAB4-8-D and RIC5-9-D probes

For use in B-Mode

CrossXBeam is available on linear probes

Auto detection of scan direction

Pre or post-process zoom

## LOGIQ View (Option) (cont.)

Rotation

Auto fit on monitor

Measurements in B-Mode

## 3D

Allows unlimited rotation and planar translations

3D reconstruction from Cine sweep

## Advanced 3D

Acquisition of Color data

Automatic rendering

3D Landscape technology

3D Movie

## Real-Time 4D (Option)

Acquisition Modes:

- Real-time 4D
- STIC
- Static 3D
- Visualization Modes:
  - 3D Rendering (diverse surface and intensity projection modes)
  - Sectional Planes (3 Section planes perpendicular to each other)
  - Volume Contrast Imaging-Static (option)
  - Tomographic Ultrasound Imaging (option)
  - Render Mode: Surface Texture, Surface Smooth, max-, min- and X-ray (average intensity projection), mix mode of two render modes
  - OmniView: up to 3 planes displayed simultaneously
- Curved 3 point 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 (option)
  - Betaview
  - Auto Sweep

# General System Parameters (cont.)

## Scan Assistant (Option)

Factory Programs

User Defined programs

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

## Compare Assistant (Option)

Allows side-by-side comparison of previous ultrasound and other modality exams during live scanning

## Power Assistant (Option)

Allows moving the system without a complete system shutdown and boot-up power cycle.

## Strain Elastography (Option)

Available on ML6-15, 9L-D, C1-5-D, C1-6-D, IC5-9-D, 11L-D, L3-12-D, BE9CS and BE9CS-D probes

Semi-Quantification\*<sup>1</sup>

## Elastography Quantification\*<sup>1</sup> (Option – not available in the United States)

Relative quantification tool

Available on ML6-15, 9L-D, C1-5-D, C1-6-D, IC5-9-D, 11L-D, L3-12-D, BE9CS and BE9CS-D probes

## Quantitative Flow Analysis (Option)

Available in Color and Power Doppler

## TVI (Option)

Myocardial Doppler Imaging with color overlay on tissue image

Available on the 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 (Option)

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 creation of new templates

Reference scan display during acquisition for stress level comparison (dual screen)

Baseline level/Previous level selectable

Raw data continuous capture

Over 100 sec available

Wall motion scoring (bull's-eye and segmental)

Smart stress: Automatically set up various scanning parameters (for instance, geometry, frequency, gain etc.) according to same projection on previous level

## Auto EF (Option)

Allows semi-automatic measurement of the global EF (Ejection Fraction)

User editable

## Virtual Convex

Provides a convex field of view

Compatible with CrossXBeam

Available on all linear and sector transducers

## SRI-HD

Speckle Reduction Imaging

Provides multiple levels of speckle reduction

Compatible with Side-by-Side DualView Display

Compatible with all linear, convex and sector transducers

Compatible with B-Mode, Color, Contrast Agent and 3D imaging

# General System Parameters (cont.)

## CrossXBeam

Available on C1-5-D, C1-6-D, 8C, 10C-D, 3CRF-D, C3-10-D, ML6-15, 11L-D, 9L-D, L8-18i-D, L3-12-D, IC5-9-D, BE9CS-D, BE9CS, RAB4-8-D and RIC5-9-D probes

Provides 3, 5, 7 or 9 angles of spatial compounding

Live Side-by-Side DualView Display

Compatible with:	<ul style="list-style-type: none"> <li>• Color Mode</li> <li>• PW</li> <li>• SRI-HD</li> <li>• Coded Harmonic Imaging</li> <li>• Virtual Convex</li> </ul>
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## Controls Available While "Live"

Automatic Optimization

Write Zoom

B/M/CrossXBeam-Mode	<ul style="list-style-type: none"> <li>• Gain</li> <li>• TGC</li> <li>• Dynamic Range</li> <li>• Acoustic Output</li> <li>• Transmission Focus Position</li> <li>• Transmission Focus Number</li> <li>• Line Density Control</li> <li>• Sweep Speed for M-Mode</li> <li>• Number of Angles for CrossXBeam</li> </ul>
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PW-Mode	<ul style="list-style-type: none"> <li>• Gain</li> <li>• Dynamic Range</li> <li>• Acoustic Output</li> <li>• Transmission Frequency</li> <li>• PRF</li> <li>• Wall Filter</li> </ul>
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Spectral Averaging	<ul style="list-style-type: none"> <li>• Sample Volume Gate <ul style="list-style-type: none"> <li>– Length</li> <li>– Depth</li> </ul> </li> <li>• Velocity Scale</li> </ul>
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Color Flow Mode	<ul style="list-style-type: none"> <li>• CFM Gain</li> <li>• CFM Velocity Range</li> <li>• Acoustic Output</li> <li>• Wall Echo Filter</li> <li>• Packet Size</li> <li>• Frame Rate Control</li> <li>• CFM Spatial Filter</li> <li>• CFM Frame Averaging</li> <li>• CFM Line Resolution</li> </ul>
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Frequency/Velocity Base Line Shift

## 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	<ul style="list-style-type: none"> <li>• Gray Map Optimization</li> <li>• TGC</li> <li>• Colorized B and M</li> <li>• Frame Average (loops only)</li> <li>• Dynamic Range</li> </ul>
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Anatomical M-Mode	<ul style="list-style-type: none"> <li>• Max Read Zoom to 8x</li> <li>• Base Line Shift</li> <li>• Sweep Speed</li> </ul>
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PW Mode	<ul style="list-style-type: none"> <li>• Gray Map</li> <li>• Post Gain</li> <li>• Baseline shift</li> <li>• Sweep Speed</li> <li>• Invert Spectral wave form</li> <li>• Compression</li> <li>• Rejection</li> <li>• Colorized Spectrum</li> <li>• Display Format</li> <li>• Angle Correct</li> <li>• Quick Angle Correct</li> <li>• Auto Angle Correct</li> </ul>
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Color Flow	<ul style="list-style-type: none"> <li>• Overall Gain (loops and stills)</li> <li>• Color Map</li> <li>• Transparency Map</li> <li>• Frame Averaging (loops only)</li> <li>• Flash Suppression</li> <li>• CFM Display Threshold</li> <li>• Spectral Invert for Color/Doppler</li> <li>• Anatomical M-Mode on Cine loop</li> </ul>
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4D	<ul style="list-style-type: none"> <li>• Gray Map, Colorize</li> <li>• Post Gain</li> <li>• Change display – single, dual, quad sectional or rendered</li> </ul>
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# Measurements/Calculations

## General B-Mode

Depth and 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 (PS/ED Ratio)

ED/PS (ED/PS Ratio)

AT (Acceleration Time)

ACCEL (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)

## Real-time Doppler Auto Measurements/Calculations (cont.)

RI (Resistivity Index)

AT (Acceleration Time)

ACC (Acceleration)

PS/ED (PS/ED Ratio)

ED/PS (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)
- 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

# Measurements/Calculations (cont.)

## OB Measurements/Calculations (cont.)

Calculations and Ratios

- FL/BPD
- FL/AC
- FL/HC
- HC/AC
- CI (Cephalic Index)
- AFI (Amniotic Fluid Index)
- CTAR (Cardio-Thoracic Area Ratio)

*Measurements/Calculations by: ASUM, ASUM 2001, Berkowitz, Bertagnoli, Brenner, Campbell, CFEF, Chitty, Eik-Nes, Ericksen, Goldstein, Hadlock, Hansmann, Hellman, Hill, Hohler, Jeanty, JSUM, Kurtz, Mayden, Mercer, Merz, Moore, Nelson, Osaka University, Paris, Rempen, Robinson, Shepard, Shepard/Warsoff, Tokyo University, Tokyo/Shinozuka, Yarkoni*

Fetal Graphical Trending

Growth Percentiles (Hadlock/Williams/Brenner/Kramer)

Multi-Gestational Calculations (4)

Fetal Qualitative Description (Anatomical survey)

Fetal Environmental Description (Biophysical profile)

Programmable OB Tables

Over 20 selectable OB Calculations

Expanded Worksheets

## Measure Assist Breast (Option)

Allows automatic contour and measurement of breast lesions in a user selected ROI

Feature Assessment

BI-RADS® Assessment

User editable

## Measure Assist OB (Option)

Allows automatic measurement of BPD, HC, FL and AC

User editable

## GYN Measurements/Calculations

Right Ovary Length, Width, Height

Left Ovary Length, Width, Height

Uterus Length, Width, Height

Cervix Length, Trace

Ovarian Volume

## GYN Measurements/Calculations (cont.)

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 (Systolic 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 PECA (Systolic Proximal External Carotid Artery)

DIAS PECA (Diastolic Proximal External Carotid Artery)

VERT (Systolic Vertebral Velocity)

SUBCLAV (Systolic Subclavian Velocity)

Automatic IMT

Summary Reports

## Urological Calculations

Bladder Volume

Prostate Volume

Left/Right Renal Volume

Generic Volume

Post-Void Bladder Volume

# Probes

## C1-5-D

Convex Probe

Applications	Abdomen, Vascular, OB/GYN, Urology
Biopsy Guide	Multi-Angle, disposable with a reusable bracket (H40432LE)

## C1-6-D

Convex Probe

Applications	Abdomen, Vascular, OB/GYN, Urology
Biopsy Guide	Multi-Angle, disposable with a reusable bracket (H4913BB)

## 3CRF-D

Micro Convex Biopsy Probe

Applications	Abdomen, OB/GYN, Urology
Biopsy Guide	Single-Angle, disposable with a reusable bracket (H40442LR), Multi-Angle with a reusable bracket (H40452LP)

## RAB4-8-D

Convex Volume Probe

Applications	Abdomen, OB/GYN, Urology
Biopsy Guide	Single-Angle, disposable with reusable bracket (H46701AE), single angle reusable (H48621Y)

## 8C

Micro Convex Probe

Applications	Neonatal, Pediatrics
Biopsy Guide Available	None

## 10C-D

Micro Convex Probe

Applications	Pediatric, Neonatal, Vascular
Biopsy Guide Available	None

## C3-10-D

Micro Convex Probe

Applications	Pediatric, Neonatal, Vascular
Biopsy Guide Available	None

## IC5-9-D

Endo Micro Convex Probe

Applications	OB/GYN (Transvaginal), Urology (Transrectal)
Biopsy Guide	Single Angle, disposable with a disposable bracket (E8385MJ, E8333JB), Reusable bracket (H40412LN)

## BE9CS

Bi-plane Micro Convex Probe

Applications	OB/GYN, Urology (Transrectal)
Biopsy Guide	Single-Angle, Reusable (E8387MA), disposable with a disposable bracket (E8387M), disposable bracket (H42742LH, H42742LJ)

## BE9CS-D

Bi-plane Micro Convex Probe

Applications	OB/GYN, Urology (Transrectal)
Biopsy Guide	Single-Angle, Reusable (E8387MA), disposable with a disposable bracket (E8387M), disposable bracket (H42742LH, H42742LJ)

## RIC5-9-D

Convex Volume Probe

Applications	OB/GYN (Transvaginal), Urology (Transrectal)
Biopsy Guide	Single-Angle, Reusable (H46721R). Single-Angle, disposable with reusable bracket (H48681GF)

# Probes (cont.)

## 9L-D

Linear Probe

Applications	Vascular, Small Parts, Pediatric, Abdomen
Biopsy Guide	Multi-Angle, disposable with a reusable bracket (H4906BK)

## 11L-D

Linear Probe

Applications	Vascular, Small Parts, Neonatal, Pediatrics, Musculoskeletal
Biopsy Guide	Multi-Angle, disposable with a reusable bracket (H40432LC)

## L3-12-D

Linear Probe

Applications	Parts, Vascular, Small, Neonatal, Pediatrics, Abdomen
Biopsy Guide	Multi-Angle, disposable with a reusable bracket (H48302AA)

## ML6-15

Matrix Array Linear Probe

Applications	Small parts, Vascular, Neonatal, Pediatrics, Musculoskeletal
Biopsy Guide	Multi-Angle, disposable with a reusable bracket (H40432LJ)

## L8-18i-D

Linear Probe

Applications	Small Parts, Vascular, Neonatal, Pediatrics
Biopsy Guide	None

## 3Sp-D

Phased Array Sector Probe

Applications	Transcranial, Cardiac, Abdomen
Biopsy Guide	Multi-Angle, Reusable bracket (H46222LC)

## S1-4-D

Phased Array Sector Probe

Applications	Transcranial, Cardiac Abdomen
Biopsy Guide	Multi-Angle, Reusable bracket (H46222LC)

## S2-5-D

Phased Array Sector Probe

Applications	Transcranial, Cardiac, Abdomen
Biopsy Guide	Multi-Angle, Reusable bracket (H46222LC)

## S4-10-D

Phased Array Sector Probe

Applications	Neonatal, Pediatrics, Abdomen
Biopsy Guide	None

## 6S-D

Phased Array Sector Probe

Applications	Cardiac Neonatal, Pediatrics
Biopsy Guide	None

## 6Tc-RS

TEE Sector (Transesophageal) Probe

Applications	Cardiac (Transesophageal)
Biopsy Guide	None
Miscellaneous	TEE RS-DLP Adapter (H46352LK) required

## Probes (cont.)

### P2D

CW Split Crystal Probe

Applications

Cardiac, Vascular

### P6D

CW Split Crystal Probe

Applications

Cardiac, Vascular

### P8D

CW Split Crystal Probe

Applications

Vascular

## Inputs and Outputs

HDMI Out

Ethernet Network (RJ45)

External Audio Out

USB (2x in opio, 2x in LCD monitor, 1x in rear)

AC Power Input

## Safety Conformance

### The LOGIQ S7 Expert is:

Classified to UL 60601-1 by a Nationally Recognized Test Lab

Certified to CAN/CSA-C22.2 No. 601.1-M90 CB-Test report by National Certification Body CE Marked to Council Directive 93/42/EEC on Medical Devices

Conforms to the following standards for safety:

- IEC/EN 60601-1 Medical electrical equipment – Part 1: General requirements for safety
- IEC/EN 60601-1-1 Medical electrical equipment – Part 1-1 General requirements for safety – Collateral Standard: Safety requirements for medical electrical systems
- IEC/EN 60601-1 Medical electrical equipment – Part 1: General requirements for safety
- IEC/EN 60601-1-2 Medical electrical equipment – Part 1-2 General requirements for safety – Collateral Standard: Electromagnetic compatibility – requirements and tests

### The LOGIQ S7 Expert is (cont.):

Conforms to the following standards for safety (cont.):

- IEC/EN 60601-1-4 Medical electrical equipment Part 1-4 General requirements for safety – Collateral Standard: programmable electrical medical systems
- IEC/EN 60601-1-6 Medical electrical equipment – Part 1-6 General requirements for basic safety and essential performance – Collateral Standard: Usability
- IEC/EN 60601-2-18 Medical electrical equipment – Part 2-18: Particular requirements for the basic safety and essential performance of endoscopic equipment
- IEC/EN 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
- IEC/EN 62359 Ultrasonic – Field characterization – Test methods for the determination of thermal and mechanical indices related to medical diagnostic ultrasonic fields
- NEMA® UD2 Acoustic output measurement standard for diagnostic ultrasound equipment
- NEMA UD3 Standard for real time display of thermal and mechanical acoustic output indices on diagnostic ultrasound equipment (MI, TIS, TIB, TIC)
- EMC Emissions Group 1 Class A and Class B device requirements as per Sub clause 4.2 of CISPR 11 Class A and Class B device requirements as per Sub clause 4.2 of CISPR 11 Class B device requirements as per Sub clause 4.2 of CISPR 11
- IEC/EN 62366: Application of usability engineering to medical device
- IEC/EN 62304: Medical device software – Software life cycle processes
- EN980: Symbols for use in the labelling of medical devices
- WEEE (Waste Electrical and Electronic Equipment)
- ROHS according to 2011/65/EU





imagination at work

\*1 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.

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Data subject to change.

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