GE Healthcare

LOGIQ F8

USA Data Sheet

The LOGIQ* F8 is the multipurpose ultrasound imaging system designed for Abdominal, Obstetrical, Gynecological, Small Parts, Musculoskeletal, Vascular/Peripheral Vascular, Urological, Pediatric, Transcranial and Cardiac applications.

General Specifications

Dimensions and Weight	
Height with 19" LCD	• Max 1495mm (58.9 in)
	• Min 1410mm (55.5 in)
Width	• Keyboard: 500 mm (19.7 in)
	• Caster: 720 mm (28.3 in)
Depth	• Maximum: 810 mm (31.9 in)
	• Caster: 800 mm (31.5 in)
Weight (no Peripherals)	58 kg

Electrical Power
Voltage 100-240 VAC
Frequency 50/60 Hz
Power consumption maximum of 400 VA with peripherals

Console Design
3 Active probe ports
Integrated HDD
Integrated Speakers
Probe Holders
Gel Holder
Front and Rear Handles
Probe Cable Tray

System overview

Applications
Abdominal
Obstetrical
Gynecological
Small Parts
Musculoskeletal
Vascular/Peripheral Vascular
Urological
Pediatric
Transcranial
Cardiac

Scanning Methods
Convex
Linear
Micro Convex
Sector

Transducer Types
Convex Array
Linear Array
Microconvex Array
Sector Phased Array

User interface

Operator Keyboard
Ergonomic full size keyboard
8 TGC pods
8.4" (213.4 mm) LCD touch screen

Monitor
19" (482.6 mm) high-resolution LCD
Articulating monitor arm

Operating Modes
B-Mode
Coded Phase Inversion Harmonic Imaging
M-Mode
Color M-Mode
Color Flow Mode (CFM)
Power Doppler Imaging (PDI)
Directional PDI
PW Doppler with High PRF
LOGIQView (Option)

System overview (continued)

System Standard Features
AO (Automatic Optimization)
CrossXBeam*
SRI-HD (High Definition Speckle Reduction Imaging)
B-Steer
Coded Phase Inversion Harmonic Imaging
Virtual Convex
Patient Information Database
Image Archive on integrated HDD
Raw Data Analysis
Scan Assistant
Scan Coach
Real-Time Automatic Doppler Calculations
OB Calculations
Fetal Trending
Multigestational Calculations
Hip Dysplasia Calculations
Gynecological Calculations
Vascular Calculations
Urological Calculations
Renal Calculations
Cardiac Calculations
Remote capability: InSite* ExC
On-Board Reporting Package
MPEGVue
Network Storage
DICOM® 3.0 Connectivity

System Options
LOGIQView
Extra Probe Holder
Paper Tray
Probe Cable Hanger
Probe Cable Tray

Peripheral Options
Fixture Kit for Digital UP-D711 Thermal Printer
Digital UP-D711 Thermal Printer
HP office jet 100 Mobile Printer
1-Pedal Type Footswitch 'Whanam FSU-1000'
Footswitch MKF 2-MED USB GP26
SanDisk USB Stick 4G
1TB Mobile USB HDD
USB Lamp
USB ECG Kits (AHA/IEC)

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	
B or CrossXBeam/PW	
B or CrossXBeam/CFM or PDI	
B/M	
B/CrossXBeam	
Real-Time Triplex Mode (B or CrossXBeam + CFM or PDI/PW)	
Selectable Alternating Modes	
B or CrossXBeam/PW	
Multi-image (split/quad screen)	
Live and/or Frozen	
B or CrossXBeam + B or CrossXBeam/CFM or PDI Independent	
Cine Playback	
Time Line Display	
Independent Dual B or CrossXBeam/PW Display	
Display Formats	• Top/Bottom Selectable Format
	• Side/Side Selectable Format
Virtual Convex	
Timeline Only	

System overview (continued)

Display Annotation	
Patient Name: First, Last	
Patient ID	
Other 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	• 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	
Gain	
Dynamic Range	
Time Scale	
Doppler Mode	
Gain	
Angle	
Sample Volume Depth and Width	

Display Annotation (continued)	
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: 2 Types	• Power
	• Directional PDI
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	
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, Latin American Spanish, French, German, Italian, Brazilian Portuguese, Chinese (Simplified), Swedish, Russian, Norwegian, Danish, Dutch, Finnish, Japanese

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

User Defined Annotations

Body Patterns

Customized Comment Home Position

CINE Memory/Image Memory

128 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

Storage Formats	DICOM – compressed/uncompressed, single/multiframe, with/without Raw Data
	Export JPEG, JPEG2000, WMV (MPEG 4) and AVI formats
Storage Devices	USB Memory Stick
	DVD-RW Storage
	HDD Image Storage

Connectivity & DICOM

Ethernet Network Connection

DICOM 3.0

Verify

Print

Store

Modality Worklist

Storage Commitment

Modality Performed Procedure Step (MPPS)

Query/Retrieve

Structured Reporting Template – which can be compared to vascular and OB standard values

Remote Capability InSite ExC

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°

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

General system parameters (continued)

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

Pulse Wave Doppler Mode
Adjustable:
Acoustic Power
Gain
Gray Scale Map
Transmit Frequency
Wall Filter
PW Colorization
Velocity Scale Range
Sweep Speed
Sample Volume Depth
Angle Correction
Spectrum Inversion
Trace Method
Baseline Shift
Doppler Auto Trace
Compression
Trace Direction
Trace Sensitivity

Color Flow Mode	
Adjustable:	
Acoustic Power	
Color Maps, including velocity-variance maps	
Gain	
Velocity Scale Range	
Wall Filter	
Packet Size	
Line Density	
Spatial Filter	
Steering Angle	
Baseline Shift	
Frame Average	
Threshold	
Accumulation Mode	
Sample Volume Control	
Flash Suppression	

Power Doppler Imaging		
Adjustable:		
Acoustic Power		
Color Maps	• Velocity-Variance Maps	
	• Directional Map	
Gain		
Velocity Scale Range		
Wall Filter		
Packet Size		
Line Density		
Spatial Filter		
Steering Angle		
Frame Average		
Threshold		
Accumulation Mode		
Sample Volume Control		
Flash Suppression		

General system parameters (continued)

Auto Optimization	
Optimize B-Mode image to enhance contrast resolution	
Selectable amount of contrast resolution enhancement (low, medium, high)	
Auto-Spectral Optimize adjusts	• Baseline
	• Invert
	• PRF (on live image)
	• Angle correction

Coded Harmonic Imaging
Coded Phase Inversion Harmonic Imaging
Available on all Probes

LOGIQView (Option)
Extended Field of View Imaging
Available on 4C-RS, L6-12-RS, 8C-RS, 3Sc-RS, E8C-RS, probes
For use in B-Mode
CrossXBeam is available on linear probe
Auto detection of scan direction
Post-process zoom
Rotation
Auto fit on monitor
Measurements in B-Mode

Scan Assistant
Factory Programs
User Defined Programs
Steps include image annotations, mode transitions, basic imaging controls and measurement initiation

Scan Coach
Modules showing basic scanning techniques with graphic of probe position, schematic of anatomy and example clinical image

Virtual Convex
Provides a convex field of view
Compatible with CrossXBeam
Available on linear and Sector Transducers

General system parameters (continued)

SRI-HD
High Definition Speckle Reduction Imaging
Provides multiple levels of speckle reduction
Compatible with Side by Side DualView Display
Compatible with all linear, convex and sector transducers

CrossXBeam	
Provides 3, 5, 7 of spatial compounding	
Live Side by Side DualView Display	
Compatible with	• Color Mode
	• PW
	• SRI-HD
	• Coded Harmonic Imaging
	• Virtual Convex
Available on 4C-RS, L6-12-RS, E8C-RS, 8C-RS, RAB2-6-RS	

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
Velocity Scale		
Color Flow Mode		
CFM Gain		
CFM Velocity Range		
Acoustic Output		
Wall Echo Filter		
Packet Size		
Frame Rate Control		
CFM Spatial Filter		
CFM Frame Averaging		
Frequency/Velocity Base Line Shift		

General system parameters (continued)

Controls Available on "Freeze" or Recall

Automatic Optimization

SRI-HD

CrossXBeam – Display non-compounded and compounded

Image Simultaneously in Split Screen

B/M/CrossXBeam Mode

Gray Map Optimization

TGC

Colorized B and M

Frame Average (loops only)

Dynamic Range: Anatomical M-Mode

Sweep Speed

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

Overall Gain (loops and stills)

Color Map

Transparency Map

Frame Averaging (loops only)

Flash Suppression

CFM Display Threshold

Spectral Invert for Color/Doppler

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)

Measurements/Calculations
(continued)

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 (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, HC
	• AC, FL, HC
	• BPD, APTD, TTD, FL

OB Measurements/Calculations (continued)	
Calculations and Ratios	• FL/BPD
	• FL/HC
	• CI (Cephalic 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
Multi-Gestational Calculations (4)
Fetal Qualitative Description (Anatomical Survey)
Fetal Environmental Description (Biophysical Profile)
Programmable OB Tables
Over 20 selectable OB Calculations
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

Measurements/Calculations

(continued)

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 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
Lt/Rt Renal Volume
Generic Volume
Post-Void Bladder Volume

Probes

4C-RS
Convex Probe
Applications: Abdominal, Obstetrical, Gynecological, Pediatric, Urological
Biopsy Guide: Multi Angle, Reusable Bracket

L6-12-RS
Linear Probe
Applications: Small parts, Vascular/Peripheral Vascular, Pediatric, Musculoskeletal
Biopsy Guide: Multi Angle, Reusable Bracket

E8C-RS
Endo Micro Convex Probe
Applications: Obstetrical, Gynecological, Urological
Biopsy Guide: Fixed Angle, Disposable, or Reusable Bracket

8C-RS
Micro Convex Probe
Applications: Pediatric, Cardiac, Abdominal
Biopsy Guide: Not Available

3Sc-RS
Phased Array Sector Probe
Applications: Cardiac, Abdominal, Transcranial, Pediatric
Biopsy Guide: Multi Angle, Reusable Bracket

Inputs and Outputs
CVBS Output (BNC)
S-Video Output
VGA Output (SXGA resolution)
Audio stereo Output
100BASE-TX Ethernet (RJ45)
USB (3x in rear, 3 under keyboard)

SAFETY CONFORMANCE

The LOGIQ F8 is:

CE Marked to Council Directive 93/42/EEC on Medical Devices
Conforms to the following standards for safety:

- IEC 60601-1 Medical electrical equipment—Part 1: General requirements for safety

- IEC 60601-1-2 Medial electrical equipment—Part 1-2 General requirements for safety—Collateral Standard: Electromagnetic compatibility—requirements and tests EMC Emissions Group 1 Class A device requirements as per CISPR 11

- IEC 60601-2-37 Medical electrical equipment—Part 2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment

- ISO 10993-1 Biological evaluation of medical devices—Part 1 Evaluation and testing

- EN 62366 Medical devices —Application of usability engineering to medical devices

About GE Healthcare

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter - great people and technologies taking on tough challenges. From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

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imagination at work