

GE

# Voluson E8 BT19

## Data Sheet

### Product description

The Voluson\* E8 BT19 is an advanced imaging platform that combines extraordinary image quality with our superb volume ultrasound technology.

### Highlights

- High Resolution 23" LCD LED Display
- Based on the Radiance System Architecture
- Advanced 4D
- HD*live*\* Silhouette
- HD*live*\* Studio
- HD*live*\* Flow and HD*live*\* Flow Silhouette
- Advanced VCI
- SonoBiometry
- SonoAVC\**follicle*
- SonoVCAD\**heart*
- Advanced STIC
- Steerable CW
- *fetal*HQ
- Anatomical M-Mode
- Wide Sector
- Coded Contrast Imaging†
- Scan Assistant
- SonoNT\*
- SonoIT
- Compression & Shearwave Elastography
- Elastography Analysis
- Elastography Ratio Measurement
- B-Flow\*
- Radiant*flow*
- SlowFlowHD
- SonoRender*live*
- Electronic Height Adjustment
- Floating User Interface
- On Board Archive including Preview and Pre-selection



## General Specifications

Dimensions and weight	
Height (minimum)	1330 mm (52.4 in)
Height (maximum)	1670 mm (65.7 in)
Adjustable	with electrical motor
Width	580 mm (22.8 in)
Depth	940 mm (37.0 in)
Weight (no Peripherals)	147 kg (324.1 lbs.)

Power supply	
Voltage	100 – 240 VAC
Frequency	50/60 Hz (+/-1%)
Power	Max. 800 VA Including all options typical power consumption ~350VA without peripherals
Thermal Output	max. 2730 BTU/h

Console design	
4 Active and Imaging Probe Ports	
Integrated HDD	1 TB
Operating System: Windows** 10 IoT Enterprise 64 bit	
Integrated DVD+R(W)/CD-R(W) drive	
On-board storage for Peripherals	
Wheels	Wheel diameter 150 mm
Integrated cable management	
Front and rear handles	
Probe port illumination	

## User Interface

Operator keyboard	
Floating Keyboard:	
<ul style="list-style-type: none"><li>• Rotation: adjustable +/- 38° from center</li><li>• Height adjustable + 195 mm (7.9")</li></ul>	
Full-sized, backlit alphanumeric keyboard	
Ergonomic hard key layout	
Interactive back-lighting	
Integrated recording keys for remote control of up to 6 peripherals or DICOM® devices, one dedicated DVD recording key	

Touch screen	
12.1" high resolution color LCD screen	
Multi touch interactive dynamic software menu	
Brightness adjustable	

Monitor	
23" high resolution LCD LED Display with DVI interface	
Resolution Full HD 1920 x 1080 pixel	
Display brightness up to 300 cd/m <sup>2</sup>	
Tilt/Rotate Adjustable Monitor	
Tilt angle: min. +30°/-75°	
Horizontal rotate angle: +/- 90°	
Digital brightness and contrast adjustment. Five default settings available: Extra Dark, Dark-, Semi Dark-, Light-, Extra Light Room, each for higher and lower color temperature	

## System Overview

Exam types	
Abdominal	
Obstetrical	
Gynecological	
Small Parts and Breast	
Vascular	
Pediatrics	
Transrectal	
Cardiology	
Cephalic	
Musculoskeletal (MSK)	

Operating modes	
Brightness Mode (B-Mode) (2D)	
Motion Mode – M-Mode (conventional M-Mode)	
Anatomical M-Mode (AMM)	
Pulsed Wave Doppler (PW) with HPRF	
Continuous Wave Doppler imaging (CW)	
Color Flow Doppler mode (CFM)	
Power Doppler Mode (PD)	
High Definition Power Doppler (HD-Flow*)	
Tissue Doppler Mode (TD) and PW-Tissue Doppler Mode	
B-Flow (BF)	
Compression & Shearwave Elastography (May not be available in all countries)	
Contrast Imaging Mode†	
Combination modes: M/CFM, M/HD-Flow, M/TD, PW/CFM, PW/HD-Flow, PW/PD, PW/TD	
Extended View (XTD View)	
Volume Mode (3D/4D):	
<ul style="list-style-type: none"><li>• 3D Static</li><li>• 4D Real Time</li><li>• VCI-A</li><li>• VCI-OmniView</li><li>• Spatio-Temporal Image Correlation (STIC)</li><li>• 4D Biopsy</li></ul>	

Scanning methods	
Electronic Sector/Convex/Linear	
Mechanic Volume Sweep	

User Management and Logging Functionality	
Multiple Users with individual log on credentials	
Different and adjustable access levels	
LDAP Interface	
Enhanced Audit Trail and Usage Log	

Privacy and Security Functionality	
Hard disc AES Encryption with 256-bit length	
Whitelisting	
Encrypted DICOM Communication Capability (TLS)	
Encryption and Data Anonymization Export Capability	
All ports, services and shared resources that are not required for the intended use are disabled	
Operating System Access disabled	
Deactivation of USB ports possible	

Transducer types	
Sector Array	
Convex Array	
Microconvex Array	
Linear Array	
Active Matrix Linear Array (1.5D)	
Volume probes 4D:	
• Convex Array	
• Microconvex Array	
• Linear Array	
System standard features	
Innovative user interface with high resolution 12.1" LCD touch panel	
B-Mode	
M-Mode	
PW-Doppler	
CFM (Color Flow Doppler Mode)	
Automatic Tissue Optimization	
Auto TGC	
Coded Harmonic Imaging with Pulse Inversion Technology	
Coded Excitation (CE)	
HD-Flow & Power Doppler Mode	
B-Flow	
Tissue Doppler and PW-Tissue Doppler	
XTD	
SRI II (Speckle Reduction Imaging)	
HDLive Silhouette, HDLive Flow	
CrossXBeamCRI*(Compound Resolution Imaging)	
SonoBiometry (HC, BPD, AC, FL, HL, SonoNT & SonoIT)	
SonoCNS (May not be available in all countries)	
SonoRenderLive	
Scan Assistant:	
• Includes measurements, annotations and fetal anatomy and gynecology worksheet entries	
• Performs predefined mode changes, preset selection and screen layout changes	
• Supports display of user selected reference images	
• Standardize image sequence upon DICOM transfer	
• GYN IDEA Guidelines	
DICOM 3.0 Connectivity	
Static 3D Mode:	
• B Mode only	
• B + Power Doppler Mode	
• B + CFM Doppler Mode	
• B + HD-Flow Mode	
• B + CRI	
• B + CRI + CFM	
• B + CRI + PD	
• B + CRI + HD-Flow	
• B + B-Flow	
Focus and Frequency Composite (FFC)	
HD Zoom & Pan Zoom	
Steering	
Virtual Convex	
Wide Sector	
Beta-View	
Patient information database	
Image Archive on hard drive	
3D/4D data compression (lossy/lossless)	

## Inversion Mode

Real-time automatic Doppler calculations

Measurement, Calculations and Worksheets/Report for:

- |             |                         |
|-------------|-------------------------|
| • OB        | • Small Parts           |
| • GYN       | • Transrectal           |
| • Vascular  | • Pediatrics            |
| • Cardio    | • Cephalic              |
| • Abdominal | • Musculoskeletal (MSK) |

Multigestational Calculations

Integrated uplink for Cloud-based data storage (Tricefy™) (not available in all countries)

GYN IOTA LR2, Simple Rules and ADNEX Model. (not available in all countries)

GYN IETA Protocol & Report (May not be available in all countries)

xTouch

## System options

Advanced 4D

HDLive Studio,-HDLive Flow-Silhouette

VOCAL II

Advanced VCI (Volume Contrast Imaging)

SonoVCADlabor

Compression Elastography

Shearwave Elastography (not available in all countries)

Advanced STIC:

- |               |                 |
|---------------|-----------------|
| • Basic STIC  | • STICflow      |
| • STIC M-Mode | • SonoVCADheart |

SonoAVC, including SonoAVC follicle, antral and general

Steerable CW Mode

Anatomical M-Mode (AMM)

Coded Contrast Imaging + 3D HyCoSy†

Integrated Software DVR

- Digital recording
- One drive for data export and recording
- DVD Formats: DVD+R, -R, +RW, -RW for recording, DVD and CD support for data export
- USB support: FAT32 compatibility

Advanced Security Features

fetalHQ (including speckle tracking capabilities)

Radiantflow, & SlowFlowHD

## Peripheral options

Integrated printers: B&W, Color Thermal Printer

External Color desktop printer with network printing capabilities & connection kits

ECG Digital Module

Foot Switch, with programmable functionality

Barcode Scanner

Magnetic Card reader (not available in all countries)

UPS – Uninterruptible Power Supply

Power Filter

External Patient Monitor Set

Isolation Transformer

WLAN Adapter

USB Microphone

## Display modes

Simultaneous capability in combination with SRI and/or CRI:

<ul style="list-style-type: none"> <li>• B+PW</li> <li>• B+CFM, B+PD, B+TD</li> <li>• B+HD-Flow</li> <li>• B+M, B+AMM</li> <li>• B+3D, B+4D</li> <li>• B+CRI</li> <li>• B+SRI</li> <li>• B+CRI+SRI</li> <li>• Contrast<sup>†</sup>+SRI</li> <li>• B+CRI/3D+CRI</li> <li>• B+SRI/3D+SRI</li> <li>• B+CRI+SRI/3D+CRI+SRI</li> <li>• B+CRI/4D+CRI</li> <li>• B+SRI/4D+SRI</li> <li>• B+CRI/STIC+CRI</li> </ul>	<ul style="list-style-type: none"> <li>• B+SRI/STIC+SRI</li> <li>• B+CRI+SRI/STIC+CRI+SRI</li> <li>• B/B+CRI</li> <li>• B/B+SRI</li> <li>• B/B+SRI+CRI</li> <li>• B/CFM+CRI</li> <li>• B/CFM+SRI</li> <li>• B/CFM+CRI+SRI</li> <li>• B/PD+CRI</li> <li>• B/PD+SRI</li> <li>• B/PD+CRI+SRI</li> <li>• B/HD-Flow+CRI</li> <li>• B/HD-Flow+SRI</li> <li>• B/HD-Flow+CRI+SRI</li> </ul>
<b>Real-time Triplex Mode:</b> <ul style="list-style-type: none"> <li>• B/CFM/PW</li> <li>• B/PD/PW</li> </ul>	<ul style="list-style-type: none"> <li>• B/HD-Flow/PW</li> <li>• B/TD/PW</li> </ul>
<b>Selectable alternating modes:</b> <ul style="list-style-type: none"> <li>• B+PW or CW</li> <li>• B/CFM+PW or CW</li> <li>• B/PD+PW or CW</li> </ul>	<ul style="list-style-type: none"> <li>• B/TD+PW or CW</li> <li>• B/HD-Flow+PW or CW</li> </ul>
<b>Multi-image (split, quad):</b> <ul style="list-style-type: none"> <li>• Live and/or frozen</li> <li>• Live Bi-Plane</li> <li>• Split: B+B, B/CFM+B/CFM or B/PD+B/PD or B/TD+B/TD or B/HD-Flow + B/HD-Flow or BF+BF, Contrast<sup>†</sup>+Contrast<sup>†</sup></li> <li>• Split simultan: B+B/CFM or B+B/PD or B+B/HD-Flow</li> <li>• Split: B+PW or M or CW</li> <li>• Split: Frame Review/XTD-View</li> <li>• Quad: B+B+B+B or BF or Contrast<sup>†</sup>, B/CFM+B/CFM+B/CFM+B/CFM or B/PD or B/TD or B/HD-Flow</li> <li>• Independent Cine playback</li> <li>• Quad: A+B+C+3D or 4D</li> <li>• TUI: 1x1, 1x2, 2x2, 3x2, 3x3, 3x4, 4x4</li> <li>• Segmentation: quad (A/B/C/Segm. Object), single (Segm. Object)</li> <li>• Split: TUI Overview+1 slice</li> </ul>	
<ul style="list-style-type: none"> <li>• Zoom Read/Write (with or without overview image)</li> </ul>	
<b>Image Size: Standard &amp; XL Format</b>	
<b>Colorized Image: available in B/M/PW/3D</b>	
<b>Time line display:</b> <ul style="list-style-type: none"> <li>• Independent Dual B/PW Display</li> <li>• Display Formats: Top/Bottom selectable format (Size 1/2:1/2; 1/3:2/3; 2/3:1/3)</li> </ul>	

<b>Display annotation</b>		
Patient name: First/Middle/Last Name, max. 62 characters each		
ID: max 32 characters		
Secondary patient ID (Citizen Service Number)		
Accession #: max 16 characters		
Hospital Name: max 30 Characters		
Sonographer		
Gestational age (OB) or LMP (GYN)		
Birth date		
Date:	• DD/MM/YYYY	• YYYY/MM/DD
Time display selectable: 12/24 hours		
Probe name		
Application name		
Gray Scale bar		

Depth Scale	
Focal Zone Marker	
Frame Rate	
Zoom Start/Depth	
<b>B-Mode:</b> <ul style="list-style-type: none"> <li>• User Preset</li> <li>• Receiver Frequency</li> <li>• Gain</li> <li>• Dynamic Control</li> <li>• Gray Map</li> </ul>	<ul style="list-style-type: none"> <li>• Edge Enhance</li> <li>• Persistence</li> <li>• SRI, CRI</li> <li>• Probe Orientation</li> </ul>
<b>M-Mode/AMM –Mode:</b> <ul style="list-style-type: none"> <li>• Gain</li> <li>• Dynamic control</li> <li>• Edge Enhance</li> </ul>	<ul style="list-style-type: none"> <li>• Reject</li> <li>• M-Cursor, AMM-Cursor</li> <li>• Time Scale</li> </ul>
<b>PW Doppler Mode:</b> <ul style="list-style-type: none"> <li>• Gain</li> <li>• Angle</li> <li>• Sample Volume Depth and Width</li> <li>• Wall Motion Filter</li> <li>• Doppler Frequency</li> </ul>	<ul style="list-style-type: none"> <li>• Velocity or Frequency Scale</li> <li>• Spectrum Inversion</li> <li>• Time Scale</li> <li>• PRF</li> <li>• HPRF</li> </ul>
<b>Color Flow Imaging modes</b> <ul style="list-style-type: none"> <li>• Color Gain</li> <li>• Color Balance</li> <li>• Color Balance Marker</li> <li>• Quality</li> <li>• Wall Motion Filter</li> <li>• PRF</li> </ul>	<ul style="list-style-type: none"> <li>• Color Map</li> <li>• Color Scale: kHz, cm/s, m/s</li> <li>• Power and Symmetrical Velocity Imaging</li> <li>• Color Velocity Range</li> <li>• Spectrum Inversion</li> <li>• Orientation Markers</li> </ul>

Display annotation	
3D/4D Mode:	
<ul style="list-style-type: none"> <li>• 3D/4D Sub Program</li> <li>• Threshold</li> <li>• Quality</li> <li>• Volume Box Angle</li> <li>• Mix</li> <li>• Acquisition Mode</li> <li>• Compression</li> <li>• VCI: slice thickness</li> </ul>	<ul style="list-style-type: none"> <li>• TUI: slice distance</li> <li>• TUI: slice position in overview image</li> <li>• STIC acquisition time</li> <li>• Calculated heart rate for STIC</li> </ul>
Compression Elastography	
<ul style="list-style-type: none"> <li>• Tx Frequency</li> <li>• Transparency</li> <li>• Velocity Range</li> </ul>	<ul style="list-style-type: none"> <li>• Elasto Map</li> <li>• Persistence</li> <li>• Line Density</li> </ul>
TGC Curve	
Cine Frame Number	
Recorder Status	
Body Pattern: 124 types organized in 10 anatomical groups	
Measurement results	
Displayed Acoustic Output:	
<ul style="list-style-type: none"> <li>• TIS: Thermal Index Soft Tissue</li> <li>• TIC: Thermal Index Cranial (Bone)</li> <li>• TIB: Thermal Index Bone</li> <li>• MI: Mechanical Index</li> </ul>	
Predefined Biopsy Guide Line	
ECG Line	
Trackball function (Trackball and Trackball buttons)	
Zoom overview image (zoom box position)	

## System Parameters

System setup
User Programmable Preset Capability, User program etc.
Display Languages: English, French, German, Spanish, Portuguese, Italian, Danish, Dutch, Finnish, Norwegian, Swedish, Russian, Japanese, Simplified Chinese
Keyboard Languages (Keycap Kits): English, French, German, Spanish, Italian, Danish, Finnish, Norwegian, Swedish, Russian, Swiss, South Slavic Latin
elFU (electronic Instructions for Use) Languages: Bulgarian, Croatian, Czech, Chinese Simplified, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Indonesian, Italian, Japanese, Kazakh, Korean, Latvian, Lithuanian, Norwegian, Polish, Portuguese, Romanian, Russian, Serbian, Slovakian, Slovenian, Spanish, Swedish, Turkish, Ukrainian, Vietnamese
Free programmable Scan assistant lists including Add, Delete, Edit and Reorder of checklist items
Up to 800 Programmable Annotations organized in 10 anatomical groups, including a library function and auto-complete
6 programmable Px buttons for documentation preferences like Save, DICOM Send, Print, Check, Cine length, jpeg, etc.
Several user configurable functions:
<ul style="list-style-type: none"> <li>• Clinic Name</li> <li>• Display (TGC curve, Screen Lock, Screensaver, Auto Scan Stop, Beeper, 3D/4D Screen Controls)</li> <li>• Trackball speed</li> <li>• Zoom Overview window</li> <li>• Dim function</li> <li>• Patient Info display</li> <li>• Title bar settings</li> </ul>

- Start Exam and End Exam configuration

## Measure setup

M&A Setup including Add, Delete, Edit and Reorder of measure items

Application Setup including several parameters of Measurement, Doppler Trace and Calculation presets

Global Setup including several parameters of Measurement, Cursor and Result window presets

Post assign measurements

Auto Sequence measurements

## Biopsy setup

User programmable needle guidelines

## Pre-processing

Write Zoom up to 8x

B/M-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> </ul>	<ul style="list-style-type: none"> <li>• Transmission Frequency</li> <li>• Persistence Control</li> <li>• Line Density Control</li> <li>• Reject</li> <li>• Sweep Speed</li> <li>• M-Cursor position</li> </ul>
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> </ul>	<ul style="list-style-type: none"> <li>• Wall Motion Filter</li> <li>• Sample Volume Gate</li> <li>• Length, Depth, Pos</li> <li>• Velocity Scale</li> <li>• Sweep Speed</li> </ul>
Color Flow Imaging Modes	
<ul style="list-style-type: none"> <li>• Gain</li> <li>• Acoustic Output</li> <li>• PRF</li> <li>• Wall Motion Filter</li> <li>• Line density</li> <li>• Ensemble</li> <li>• Dynamic</li> </ul>	<ul style="list-style-type: none"> <li>• Smooth (Rise and Fall)</li> <li>• Frequency</li> <li>• Balance</li> <li>• Line Filter</li> <li>• Quality</li> <li>• Artifact Suppression</li> </ul>

## Post-processing

Read Zoom: 0.8x – 3.4x Zoom (with HD-Zoom functionality up to 22x Zoom)

B-Mode:	
<ul style="list-style-type: none"> <li>• 2D Gain</li> <li>• Dynamic Contrast</li> <li>• Gray Map</li> <li>• Edge Enhance</li> </ul>	<ul style="list-style-type: none"> <li>• Colorized B</li> <li>• SRI II (Speckle Reduction Imaging)</li> </ul>
M-Mode:	
<ul style="list-style-type: none"> <li>• Gray Map</li> <li>• Colorized M</li> <li>• Edge Enhance</li> </ul>	<ul style="list-style-type: none"> <li>• Display Format</li> <li>• Sweep Speed</li> </ul>
PW Mode:	
<ul style="list-style-type: none"> <li>• Gray Map</li> <li>• Baseline Shift</li> <li>• Angle Correction</li> <li>• Colorized D</li> </ul>	<ul style="list-style-type: none"> <li>• Scale (kHz, m/s, cm/s)</li> <li>• Trace</li> <li>• Invert</li> <li>• Sweep Speed</li> </ul>
Color Flow Imaging Modes	
<ul style="list-style-type: none"> <li>• Display Threshold</li> <li>• Display Mode (V,V-T,T,P,P-T) (CFM only)</li> </ul>	<ul style="list-style-type: none"> <li>• Color Map</li> <li>• Scale (CFM and HD-Flow)</li> <li>• Baseline</li> </ul>

## B-Flow

- Gray map
- Colorized B-Flow
- Advanced SRI (Speckle Reduction Imaging)
- Dynamic Contrast

## Image processing and presentation

Digital Beamformer

8.040.131 system processing channel technology

Minimum Depth of Field: 0 – 1 cm (Zoom, probe dependent)

Maximum Depth of Field: 0 – 50 cm (probe dependent)

Depth Steps: up to 29 (probe dependent)

Transmission Focus: 1-5 Focus Points selectable (probe and application dependent)

Focal Zone position, up to 10 positions selectable

Continuous Dynamic Receive Focus/ Continuous Dynamic Receive Aperture

256 gray levels

16.8 million Colors 24 bit

Up to 274 dB Dynamic Range

Image reverse: Right/Left

Rotation: 0°, 180°

## Cine features

- Cine features:
- Dual/Quad image CINE Display
- CINE Gauge and CINE image number display
- CINE Review Loop
- Selectable CINE Sequence for CINE Review (by Start Frame and End Frame)
- Side Change in dual CINE Mode
- Measurements /Calculations & Annotations on CINE

Length:

- 2D: 512MB: up to 10 min (depending on B-image size and FPS); typical: about 3 min/4000 images (with curved array: 15cm depth, angle 81°, 22 FPS)
- M-Mode: 32MB: up to 1 min motion time (depending on sweep and depth)
- PW/CW-Mode: 32MB: up to 1 min motion time (depending on sweep speed)

Cine operation:

- Manual: image by image
- Auto run: speed: 25 to 200% of real-time rate, play repeat mode: forward-forward, forward-backward-forward

## Image/volume storage (archive)

Standard and fully anonymized archive available

Images stored as:

- Raw Data file (proprietary format)
- DICOM file (Single-or Multi-Frame)

Volume file stored as:

- Raw Data file (proprietary format)
- DICOM file

Size: typically: 0.8 – 5MB (depending on probe and adjusted volume size)

Compression:

- 2D: JPEG, lossless, high, mid low
- 3D/4D: Lossy and lossless compression available. Typical compression rates are 50% with lossless compression, 15% with lossy compression but maximum quality and 5% with lossy compression and reduced quality (approximate values).

Review of current exam and archived data sets (Single Images and Cine Clips). View format: Raw data, DICOM data. Display Formats: 1x1, 2x2, 3x3

Reload of current/ archived data sets: 2D Raw Data (incl. Color Doppler, Spectral Doppler and M-Mode). 3D Raw Data (single Volume incl. Calc. Cines). 4D Raw Data (Volume Cine).

Export as:

- Bitmap files: BMP, TIFF, JPEG;
- Raw files: RAW (2D), VOL (Volume data), 4DV
- (RAW, VOL incl. Patient data – password protected)
- Video File Format: AVI, MP4
- DICOM Files: DCM, DICOM Files with DICOMDIR
- 3D Raw Data: export Cartesian format possible
- Surface formats: STL, OBJ, PLY, 3MF, XYZ (with projected and full 3D export capabilities)

AVI Codec: MS Video 1, FullFrames

Export to: DVD+R(W), CD-R(W), Network, USB devices, email, Printer, DICOM®, Tricefy™

Export Anonymous function: available for following image types: AVI, BMP, TIFF, JPEG, MP4

Backup function to: DVD+R(W)/CD-R(W), Network, USB devices

Repro function: Settings recall (e.g. Geometry, Gain, Color map, etc.) from a stored or reloaded picture

Exam history: Direct access to images from previous exams; direct access to Measure Reports images from previous exams; Image compare window on screen to compare images from previous exams with current exam image

Hard Drive Data Storage space: approx. 900 GB

## Connectivity

Ethernet network connection

6 USB 3.0 ports for USB devices

DICOM support:

- Verify
- Print
- Store
- Modality Worklist
- Structured Reporting
- Storage Commitment
- MPPS (Modality performed procedure step)
- Media Exchange
- Off network / mobile storage queue
- Query/Retrieve
- TLS

Tricefy™ features:

- Store
- Patient Share
- .pdf Report storage
- Query Retrieve

## Scanning Parameters

B-Mode		
B-Mode for all probes		
B Acoustic Power	1-100	
Scan Angle	Probe dependent	
Gain range	+15 to -25 dB	
Gray scale values	8 bit	
SRI	5 steps (1-5)	
CRI	8 steps (1-8)	
CRI filter	4 steps: off, low, mid, high	
CE	On/Off (Probe dependent)	
FFC	On/Off (Probe dependent)	
Persistence filter	8 steps (pre)	
Line filter	3 steps (pre) off, low (12.5/75/12.5%), high (25/50/25%)	
Line Density	3 steps (pre) low, norm, high	
Reject	51 steps (pre) from 0 to 255	
Enhance	6 steps 0, 1, 2, 3, 4, 5	
Gray maps	21 (18 basic maps and 3 User-defined maps)	
Tint maps	10	
Dynamic	12 different dynamic curves C1 – C12	
Display Modes	B, XTD	
Max. B-Mode Frame Rate	> 3000 frames/sec	
Frequency Range	1 to 18 MHz depending on the probe, adjustable in 3 fundamental steps (penetration, normal, resolution) and up to 4 Harmonic steps (HI Pen, low, mid, high)	
Screen Formats:		
<ul style="list-style-type: none"> <li>2D Imaging: Single (B), Dual (B+B), Quad (B+B+B+B)</li> <li>XTD View: Single (XTD), Dual (B+XTD)</li> </ul>		
Coded Excitation (CE):	<ul style="list-style-type: none"> <li>ML6-15-D</li> <li>11L-D</li> </ul>	<ul style="list-style-type: none"> <li>RAB6-D</li> <li>C2-9</li> </ul>
Coded Harmonic Imaging available on all probes		
Focus Frequency Composite (FFC):	<ul style="list-style-type: none"> <li>RIC5-9-D</li> <li>9L-D</li> </ul>	<ul style="list-style-type: none"> <li>C1-6-D</li> <li>C2-9-D</li> <li>RAB6-D</li> </ul>
Compound Resolution Imaging (CRI) available on all probes, except: M5Sc-D and S4-10-D		
Speckle Reduction Imaging (SRI II) available on all probes		
Virtual Convex:	<ul style="list-style-type: none"> <li>RSP6-16-D</li> <li>9L-D</li> </ul>	<ul style="list-style-type: none"> <li>11L-D</li> <li>M5Sc-D</li> <li>ML6-15-D</li> </ul>
Wide Sector:	<ul style="list-style-type: none"> <li>RIC5-9-D</li> <li>RAB6-D</li> </ul>	<ul style="list-style-type: none"> <li>C1-6-D</li> <li>C2-9-D</li> </ul>
HI Pen:	<ul style="list-style-type: none"> <li>RIC5-9-D</li> <li>IC5-9-D</li> </ul>	<ul style="list-style-type: none"> <li>C2-9-D</li> <li>C1-6-D</li> </ul>
Confocal Imaging:	<ul style="list-style-type: none"> <li>C2-9-D</li> </ul>	<ul style="list-style-type: none"> <li>C1-6-D</li> <li>M5Sc-D</li> </ul>

M-Mode		
M-Mode for all probes		

Working Modes	M (conventional M- Mode) AMM (Anatomical M-Mode)	
Power control range	1-100	
Gain range	+15 to -25 dB	
M sweep speeds:		
<ul style="list-style-type: none"> <li>900/450/300/225/150/100 pixels/sec;</li> <li>26.44/13.22/8.81/6.61/4.40/2.94 cm/s in relation to system monitor</li> </ul>		
Review (memory times)	>60 s (32MB)	
Signal processing M:	<ul style="list-style-type: none"> <li>Dynamic range: 1 to 12</li> <li>Reject: 0 to 255</li> <li>Enhance: 0 to 5</li> </ul>	<ul style="list-style-type: none"> <li>Gray maps: 18</li> <li>Tint maps: 10</li> </ul>
Display Modes:		
<ul style="list-style-type: none"> <li>M: 2D+M, 2D+M/CFM, 2D+M/HD-Flow, 2D+M/PD, 2D+M/TD</li> <li>AMM: 2D+AMM, 2D/CFM+AMM/CFM, 2D/HD-Flow+AMM/HD-Flow, 2D/TD+AMM/TD</li> </ul>		
Screen Formats: (window arrangement)		
<ul style="list-style-type: none"> <li>2D+M and 2D+AMM: up/down (horizontal): three different sub formats 30/70, 50/50, 70/30% left/right (vertical): 50/50%</li> <li>2D+AMM+AMM: left/right-up/down: 50/25/25%</li> </ul>		

M-Color Flow Mode		
Probes:	<ul style="list-style-type: none"> <li>RIC5-9-D</li> <li>S4-10-D</li> <li>M5Sc-D</li> </ul>	<ul style="list-style-type: none"> <li>C2-9-D</li> <li>C1-6-D</li> </ul>
Acoustic MCFM Power	1-100	
MCFM Color Maps	8 maps	
CFM Gain	+/-15 dB range, 0.1 dB steps	
CFM Velocity Scale Range	PRF: 150Hz to 20.5kHz	
Wall Motion Filter	8 – 3000 Hz	
Ensemble (color shots per line)	8-16, step size 1	
Gentle color filter		
Smooth filter:	Rise: 12 steps Fall: 12 steps	
CFM Spectrum Inversion		
CFM Baseline Shift	17 steps	
Pre-settable and independently adjustable B-, M and MCFM Gain		
CFM Threshold	1 – 255 steps	
Balance	25 – 225, step size 5	
Artifact suppression	On/Off	
Color Display Mode:	<ul style="list-style-type: none"> <li>V (Velocity)</li> <li>V-T (Velocity + Turbulence)</li> <li>V-P (Velocity + Power)</li> </ul>	<ul style="list-style-type: none"> <li>T (Turbulence)</li> <li>P-T (Power + Turbulence)</li> </ul>
Real -time Triplex Mode	B + M + MCFM in any depth	

Spectral Doppler Mode (PW, CW)	
Spectral Doppler Mode for all probes	
Operating Modes	PW (Pulsed Wave Doppler, Single Gate), Steerable CW (Continuous Wave Doppler)
Transmit Frequencies	PW-Doppler: 1.75-18 MHz CW-Doppler: 1.75-16 MHz
Pulse Repetition Frequency (PRF)	PW-Doppler: 0.9-22 kHz CW-Doppler: 1.3-40.0 kHz
Sample Volume (Doppler Gate)	Length: 0.7,1,2,3,4,5,6, 7,8,9,10,15 mm Position: 5 mm to B-scan end, Angle correction: -85°...0°...+85°

Power control range	1-100
Gain range	+15 to -25 dB (PW) +15 to -15 dB (CW)
WMF (wall motion filter)	PW: 30...500 Hz, CW: 30...1000 Hz
Baseline shift	$\pm$ PRF/2, $\pm$ 8 steps
Spectrum Analyzer	FFT (Fast Fourier Transformation), max. 256 channels, 256 amplitude levels
PW sweep speeds	Simplex (26.44/13.22/8.81/6.61/4.40/2.94 cm/s), Duplex/ Triplex (26.44/13.22/8.81/6.61/4.40/2.94 cm/s)
Review (memory times)	>60 s(32MB)

Measurable flow velocities:

- PW: 1cm/s – 8m/s ( $\alpha=0^\circ$ , 2.0MHz, max. Baseline shift)  
1cm/s – 16m/s ( $\alpha=60^\circ$ , 2.0MHz, max. Baseline shift)
- CW: 1cm/s – 11.6m/s ( $\alpha=0^\circ$ , 2.0MHz, max. Baseline shift)  
1cm/s-23.20m/s ( $\alpha=60^\circ$ , 2.0MHz, max. Baseline shift)

Signal processing: Dynamic range: 15 steps (10 to 40), Gray maps: 18 basic curves and 3 User-defined (pre, post) Tint maps: 11

Scale display	Vert.: kHz, cm/s, m/s (selectable), Hor.: 1s marker (big), ½ s marker (small)
Screen Formats	2D/D: up/down (horizontal): three different sub formats 30/70, 50/50, 70/30% left/right (vertical): 50/50%
Display Formats	2D/D (duplex update, simultaneous); 2D+CFM/D, 2D+HD-Flow/D, 2D+PD/D, 2D+TD/D (triplex update, CW or PW). 2D+CFM/PW, 2D+PD/PW, 2D+HDFlow/PW, 2D+TD/PW, (triplex simultaneous, PW only)
Audio Modes	Stereo (both directions separately in both channels)
Audio Volume	Adjustable, control digipots
CW Doppler, steerable	<ul style="list-style-type: none"> <li>• S4-10-D</li> <li>• M5Sc</li> </ul>
• 9L-D	<ul style="list-style-type: none"> <li>• C2-9-D</li> <li>• C1-6-D</li> </ul>
CW Doppler, non-steerable: RAB6-D	

### Color Doppler Mode

Color Doppler Mode for all Probes

Screen Formats | 2D+CFM (Single, Dual, Quad)

Display Modes:

- Simultaneous dual mode: 2D/2D+CFM
- Triplex mode: 2D+CFM/PW, 2D/M+MCFM
- Volume Mode: 3D+CFM

Color coding:

- Steps: 65536 color steps
- Display modes: V-T (velocity + turbulence), V (velocity), V-P (velocity + power), T (turbulence), P-T (power + turbulence)

Depth range	Axial: 0 to B scan range Lateral: 0 to B scan range
Baseline shift	17 steps (independent from spectral Doppler)
Inversion of color direction	Yes
Wall Motion Filter	7 steps (low1, low2, mid1, mid2, high1, high2, max)
Smoothing Filter	12 steps rising time, 12 steps falling time

Gain Control	+15 dB to -15 dB, 0.2 dB steps
Line Density (color line density)	10 steps
Ensemble (color shots per line)	CFM: 7 to 31; MCFM: 8 to 16
Flow Resolution	4 steps (low, mid1, mid2, high)
Pulse repetition frequency	CFM: 150 Hz to 20.5 kHz MCFM: 150 Hz to 20.5 kHz
Color Map	Up to 8 different color codes for each probe
Frequency range	1 to 18 MHz depending on the probe, adjustable in 3 steps (low, mid, high)
Balance	From 25 to 225
Max. meas. velocity	4.23 m/sec
Min. meas. velocity	0.3 cm/sec
Scale	kHz, cm/s, m/s
Automatic moving tissue suppression	Yes
Max. Color Doppler Frame Rate	> 450 frames/sec

### Power Doppler Mode (PD)

Power Doppler Mode for all Probes

Screen Formats | 2D+PD (Single, Dual, Quad)

Display Modes:

- Simultaneous dual mode: 2D/2D+PD
- Triplex mode: 2D+PD/PW
- Volume Mode: 3D+PD

PD coding	256 color steps
PD window size	Lateral: maximum to minimum B mode scan angle Axial: B-scan range
Display mode	P (power)
Wall motion Filter	7 steps (low1, low2, mid1, mid2, high1, high2, max)
Smoothing Filter	Rising edge: 12 steps Falling edge: 12 steps
Gain Control	+15 dB to -15 dB, 0.2 dB steps
PD Ensemble	7 to 31
PD Line Density	10 steps
Pulse repetition frequency	150 Hz to 20.5 kHz
PD Map	8 different color codes for each probe
Frequency range	1 to 18 MHz depending on the probe, adjustable in 3 steps (low, mid, high)
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225 in 41 steps
Artifact suppression	Yes

### HD-Flow

HD-Flow Mode for all Probes

Screen Formats | Single, Dual, Quad, 2D+HDF

Display Modes:

- Simultaneous dual mode: 2D/2D+HDF
- Triplex mode: 2D+HDF/PW; 2D/M+MHDF
- Volume mode: 3D+HDF

HD-Flow Coding Steps	256 color steps
HD-Flow window size lateral	Maximal to minimal B mode scan angle; axial: B-scan range



Wall Motion Filter	8 steps (low1, low2, mid1, mid2, high1, high2, max1, max2)
Smoothing Filter	12 steps rising edge 12 steps falling edge
Gain Control	+15 dB to -15 dB, 0.2 dB steps
HD-Flow Ensemble	7 to 31
HD-Flow Line Density	10 steps
Pulse repetition frequency	150 Hz to 20.5 kHz
HD-Flow Map	8 different color codes for each probe
Frequency Range	1 to 18 MHz depending on the probe adjustable in three steps (low, mid, high)
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225
Line Filter	8 steps (off, 1 to 7)
Artifact suppression	Yes

Radiantflow		
• RIC5-9-D	• 9L-D	• C2-9-D
• IC5-9-D	• RAB6-D	• C1-6-D
• ML6-15-D		• M5Sc-D
Steps	low/mid/high	

SlowFlowHD		
Probes:	• ML6-15-D	• RAB6-D
• RIC5-9-D	• C1-6-D	• C2-9-D
• IC5-9-D		
Screen Formats	Single, Dual, Quad, 2D+ SlowFlowHD	

Display Modes:	• Simultaneous dual mode: 2D/2D+ SlowFlowHD Triplex mode: 2D+ SlowFlowHD /PW (triplex update); 2D+ SlowFlowHD /AMM
SlowFlowHD Coding Steps	256 color steps
SlowFlowHD window size lateral	Maximal to minimal B mode scan angle; axial: B-scan range
Wall Motion Filter	8 steps (low1, low2, mid1, mid2, high1, high2, max1, max2)
Smoothing Filter	12 steps
Gain Control	+15 dB to -15 dB, 0.2 dB steps
Line Density	10 steps
Pulse repetition frequency	auto adjusting
Map	8 different color codes for each probe
Frequency Range	1 to 18 MHz depending on the probe adjustable in three steps (low, mid, high)
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225
Line Filter	8 steps (off, 1 to 7)
Artifact suppression	4 steps (off, low, mid, high)

Tissue Doppler Mode (TD)		
Probes:	• RAB6-D	• C2-9-D
• RIC5-9-D	• S4-10-D	• C1-6-D
		• M5Sc-D
Screen Formats	Single, Dual, Quad, 2D+TD	
Display Modes	Simultaneous dual mode:	

	2D/2D+TD; Triplex mode: 2D+TD/PW, 2D/M+MTD;
TD coding steps	65536 color steps
Depth range	Axial: 0 to B-scan range Lateral: 0 to B-scan-range
Baseline shift	17 steps
Inversion of color direction	Yes
Smoothing Filter	12 steps rising time, 12 steps falling time
Gain Control	+15 dB to -15 dB, 0.2 dB steps
Line Density (color line density)	10 steps
Ensemble (Color shots per line)	3 to 31
Flow Resolution	4 steps (low, mid1, mid2, high)
Pulse repetition frequency	150 Hz to 20.5 kHz
TD Map	4 different color codes for each probe
Frequency range	1 to 18 MHz depending on the probe, adjustable in 3 steps (low, mid, high)
Balance	From 25 to 225
Max. meas. velocity	4.23 m/sec
Min. meas. velocity	0.3 cm/sec
Display Mode	V (velocity)
Scale	kHz, cm/s, m/s

PW-Tissue Doppler Mode (PW-TD)		
Probes:	• RAB6-D	• C2-9-D
• RIC5-9-D	• S4-10-D	• C1-6-D
		• M5Sc-D
Operating Modes	2D+TD/PW (Tissue Doppler + Pulsed Wave Doppler, Single Gate)	
Transmit Frequencies	1.75..18 MHz	
Pulse Repetition Frequency (PRF)	0.9..7.0 kHz	
Sample Volume (Doppler Gate)	Length: 0.7,1,2,3,4,5,6, 7,8,9,10,15 mm Position: 5 mm to B-scan end, Angle correction: -85°...0°...+85°	
Power control range	1-100	
Gain range	B-Mode: +15 to -25 dB TD: +15 to -15 dB PW: +15 to -25 dB	
WMF (Wall Motion Filter)	PW: 30...500 Hz,	
Baseline shift	± PRF/2, ± 8 steps	
Spectrum Analyzer	max. 128 frequencies, 256 amplitude levels	
PW sweep speeds	Duplex/Triplex (26.44 / 13.22 / 8.81 / 6.61 / 4.40 / 2.94 cm/s)	
Review (memory time)	>60 s (32MB)	
Measurable velocities	1cm/s – 1.3m/s (α = 0°, 2.0MHz, max. zero shift) 1cm/s – 2.5m/s (α = 60°, 2.0MHz, max. zero shift)	
Signal processing	Dynamic range: 15 steps (10 to 40) Gray maps: 18 basic curves and 3 User-defined (pre, post) Tint maps: 11	

Scale display	Vert.: kHz, cm/s, m/s (selectable) Hor.: 1s marker (big), ½ s marker (small)
Screen Formats	2D+TD/PW: horizontal: three different sub formats 30/70, 50/50, 70/30% vertical: 50/50%
Display Formats	2D+TD/PW (duplex/triplex update/simultaneous);
Audio-Modes	Stereo (both directions separately in both channels)
Audio Volume	Adjustable

### Volume Scan Module

Vol. scan size: max. 64 MB for gray volumes, max. 90 MB for color volumes; The required memory space depends on scan parameters (VOL-box size and quality (low, mid1, mid2, high1, high2, max). Typical: 0.8-5 MB

Lines/2D-image: max. 1024 (typ. 80 to 350)

2D-images/volume: Up to 4096 (Acquisition mode dependent)

VOL-Frames/sec.: max. 46 (typ. 4-8); The frame rate depends on scan parameters: VOL-box size, quality and probe

4D Volume Cine: up to 400 volumes, up to 512 MB

Display of sectional plane images: synchronous with control seeing, arbitrary movement in volume, monitored position in volume

Rotation: 360°, 1° or 3° increments (X-, Y- and Z-axis)

Magnification. Adjustable from 0.3 to a factor of 4.00

Acquisition Modes:	
<ul style="list-style-type: none"> <li>• 3D Static: <ul style="list-style-type: none"> <li>- 3D (2D incl. CRI)</li> <li>- 3D/PD (incl. CRI)</li> <li>- 3D/CFM (incl. CRI)</li> <li>- 3D B-Flow</li> <li>- 3D/HD-flow incl. CRI</li> <li>- 3D Contrast† (Coded PI, CCIS)</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• 4D: <ul style="list-style-type: none"> <li>- 4D Real Time</li> <li>- 4D Biopsy</li> <li>- VCI-A</li> <li>- VCI-OmniView</li> <li>- STIC</li> </ul> </li> </ul>

- STIC:
  - Fetal Cardio
  - STIC Angio: B/Power Doppler (incl. CRI)
  - STIC CFM: B/Color Doppler (incl. CRI)
  - STIC HD-Flow: B/HD-Flow (incl. CRI)
  - STIC B-Flow
  - STIC TD
  - STIC with Contrast†

Visualization Modes:

- Render
  - 3D/4D Rendering (diverse surface and intensity projection modes)
  - SonoRender*live*
- Sectional Planes
  - Multiplanar
  - OmniView, actual and projected view
  - Niche
  - SonoVCAD*labor*
- TUI (Tomographic Ultrasound Imaging) (overview image+parallel slices)
  - TUI Standard
  - SonoVCAD*heart*

Visualization Modes:

- Volume Analysis

- VOCAL: semi-auto/ manual segmentation tool (segmentation using touch screen), (3D Static only) + Threshold Volume: measure volume below and above a threshold
- SonoAVC*follicle* (Sono Automated Volume Count)
- SonoAVC*antral*
- SonoAVC*general*
- VCI (Volume Contrast Imaging)
- HD*live* Studio: 3 free moveable light sources and types

Render Modes:	
<ul style="list-style-type: none"> <li>• HD<i>live</i> Silhouette</li> <li>• HD<i>live</i> Flow</li> <li>• Surface Enhanced</li> <li>• Color</li> <li>• Mix Mode of two render modes</li> <li>• Surface Texture</li> <li>• Surface Smooth</li> </ul>	<ul style="list-style-type: none"> <li>• HD<i>live</i> Studio</li> <li>• HD<i>live</i> Flow Silhouette</li> <li>• Transparency modes: max-min- and X-ray</li> <li>• Gradient Light</li> <li>• Inversion</li> <li>• Glass Body</li> <li>• Light</li> </ul>

Display graphics:

- Rotation axis, center point
- ROI box, 3D Frame
- Temporary display of onscreen controls (rotation, translation)

Gray maps: Slices: 21 (18 basic curves and 3 User-defined (pre, post) 3D Image: one general map adjustable with bright (-50 to +50) & contrast (-50 to +50))

Tint maps: Slices: 10; 3D image: 10

Depth render maps: 3

### BF (B-Flow)

B-Flow for all probes except: S4-10-D and M5Sc

Screen Formats	Single (BF), Dual (BF+BF), Quad (BF+BF+BF+BF)
Display Modes	BF, Update: BF/PW
Acc. Power range	1 – 100
Scan angle	Taken from 2D
Gain range	+15 to -25 dB
Gray scale values	8 bit
SRI	Taken from 2D
Persistence filter	8 steps (pre)
S./PRI	1.00, 1.50, 2.00, 3.00, 4.00, 5.00
Quality	3 steps (pre) low, norm, high
Enhance	6 steps (pre) 0, 1, 2, 3, 4, 5
Gray maps	21 (18 basic maps and 3 User-defined maps)
Tint maps	10
Dynamic	12 different dynamic curves C1 – C12
Accumulation	Off, 0.20, 0.35, 0.50, 0.75, 1.00, 1.50, Infinite
Background	0, 1, 2

### Contrast Imaging†

Probes:	<ul style="list-style-type: none"> <li>• ML6-15-D</li> <li>• M5Sc-D</li> </ul>	<ul style="list-style-type: none"> <li>• 9L-D</li> <li>• RIC5-9-D</li> </ul>
Acc. Power range	1 – 100	
Scan angle	Taken from 2D	
Gain range	+15 to -25 dB	
Gray scale values	32 bit	
SRI	Taken from 2D	
Persistence filter	8 steps (pre)	

S./PRI	1.00, 1.50, 2.00, 3.00, 4.00, 5.00
Quality	3 steps low, norm, high
Enhance	6 steps (pre) 0, 1, 2, 3, 4, 5
Gray maps	21 (18 basic maps and 3 User-defined maps)
Tint maps	10
Dynamic	12 different dynamic curves C1 – C12
Accumulation	Off, 0.20, 0.35, 0.50, 0.75, 1.00, 1.50, Infinite
Background	0, 1, 2
Time Delay	0, 0.5, 1, 2, 3, ...10
Display Modes:	<ul style="list-style-type: none"> <li>• Coded PI</li> <li>• Coded PI: CIS</li> <li>• Coded PI: CCIS</li> </ul>
Screen Formats:	<ul style="list-style-type: none"> <li>• Code PI: Single (B), Dual (B+B), Quad (B+B+B+B)</li> <li>• CIS: Dual simultan (2D+Coded PI)</li> <li>• CCIS: Single (B), Dual (B+B), Quad (B+B+B+B)</li> </ul>

### Compression Elastography

Probes:	<ul style="list-style-type: none"> <li>• RIC5-9D</li> <li>• 11L-D</li> <li>• IC5-9-D</li> <li>• ML6-15D</li> </ul>
Acoustic Power range:	1 – 100
Tx Frequency:	3 (penet/norm/resol)
Transparency:	51 steps (0,5, 10, ...255)
Soft Compress:	<ul style="list-style-type: none"> <li>• Range: 0-9</li> <li>• Step Size: 1</li> </ul>
Hard Compress:	<ul style="list-style-type: none"> <li>• Range: 0-9</li> <li>• Step Size: 1</li> </ul>
PRF:	10, 15, 25, 40, 60, 85 Hz
Elasto Maps:	8
Persistence:	<ul style="list-style-type: none"> <li>• Range: 1-9</li> <li>• Step Size: 1</li> </ul>
Line Dens.:	Range: 1-2
Filter Axial:	<ul style="list-style-type: none"> <li>• Range: 1-9</li> <li>• Step Size: 1</li> </ul>
Filter Lateral:	<ul style="list-style-type: none"> <li>• Range: 1-21</li> <li>• Step Size: 2</li> </ul>
Window Length:	<ul style="list-style-type: none"> <li>• Range: 8-25</li> <li>• Step Size: 1</li> </ul>
Screen Formats:	<ul style="list-style-type: none"> <li>• Single (2D/Elasto)</li> <li>• Dual (2D/Elasto+2D/Elasto)</li> <li>• Quad (2D/Elasto+2D/Elasto+2D/Elasto+2D/Elasto)</li> </ul>
Elastography Analysis	
Elastography Ratio Measurement	

### Shearwave Elastography (May not be available in all countries)

Probes:	• C1-6-D
Acoustic Power range:	1 – 100
Gain:	0 - 100
Frequency:	50 – 400 Hz
Transparency:	51 steps (0,5, 10, ...255)
Elasto Maps:	8
Velocity Scale:	2,0 – 10,0 m/s (22 steps)

## Measurements

### Generic measurements

Distance:	<ul style="list-style-type: none"> <li>• Distance (Point to Point)</li> <li>• Distance (Line to Line)</li> <li>• 2D Trace (Trace Length)</li> </ul>	<ul style="list-style-type: none"> <li>• 2D Trace (Point Length)</li> <li>• Stenosis (% Dist.)</li> <li>• Ratio D1/D2</li> </ul>
Area/Circumference:	<ul style="list-style-type: none"> <li>• Ellipse</li> <li>• Trace (Line)</li> <li>• Trace (Point)</li> </ul>	<ul style="list-style-type: none"> <li>• Stenosis (%Area)</li> <li>• Area (2 Dist.)</li> <li>• Ratio A1/A2</li> </ul>
Volume: following Methods:	<ul style="list-style-type: none"> <li>• 1 Distance</li> <li>• 1 Ellipse</li> <li>• 1 Dist. + Ellipse</li> </ul>	<ul style="list-style-type: none"> <li>• 3 Distance</li> <li>• Multiplane-Planimetric Volume (3D only)</li> </ul>
Angle:	<ul style="list-style-type: none"> <li>• Angle (3 Point)</li> </ul>	<ul style="list-style-type: none"> <li>• Angle (2 Line)</li> </ul>
M-Mode:	<ul style="list-style-type: none"> <li>• Distance (Point to Point)</li> <li>• Time</li> <li>• Slope</li> <li>• Vessel Diam.</li> <li>• Ratio D1/D2</li> </ul>	<ul style="list-style-type: none"> <li>• HR</li> <li>• Stenosis (% Dist.)</li> <li>• IMT</li> <li>• Stenosis Diam.</li> </ul>
PW Doppler Mode:	<ul style="list-style-type: none"> <li>• Auto &amp; Manual Trace: <ul style="list-style-type: none"> <li>- PS (Peak Systole)</li> <li>- ED (End Diastole)</li> <li>- MD (Mid. Diastole)</li> <li>- S/D (Ratio)</li> <li>- TAmx</li> <li>- HR</li> <li>- PI (Pulsatility Index)</li> <li>- RI (Resistance Index)</li> </ul> </li> <li>• Vol. Flow</li> <li>• PGmax, PGmean</li> <li>• TAmx (Time avg. max. Velocity)</li> <li>• TAmx (Time avg. mean Velocity)</li> <li>• VTI (Velocity Time Integral)</li> </ul>	
Heart Rate		
Vessel:	<ul style="list-style-type: none"> <li>• R/L Vessel area</li> <li>• R/L Vessel diam.</li> <li>• R/L IMT</li> </ul>	<ul style="list-style-type: none"> <li>• R/L Stenosis area</li> <li>• R/L Stenosis diam.</li> <li>• R/L Flow diam.</li> </ul>
Single Measurements:	<ul style="list-style-type: none"> <li>• PS/ED</li> <li>• RI</li> <li>• PI</li> <li>• PS</li> </ul>	<ul style="list-style-type: none"> <li>• Acceleration</li> <li>• HR</li> <li>• ED</li> </ul>

### Abdomen calculations

Liver	Gallbladder
Pancreas	Spleen
Kidney (right/left)	Renal Artery (right/left)
Aorta (Proximal, Mid, Distal)	Portal Vein
Vessel	Bladder Volume
Summary Reports	

### Small part calculations

Thyroid (right/left)
Testicle (right/left)
Dorsal Penile Artery (right/left)
Vessel
Summary Reports

<b>Small part breast calculations</b>	
Lesion 1-5 (right/left)	
Summary Reports	
<b>Obstetrics calculations</b>	
Fetal Biometry	
Early Gestation	
Fetal Long Bones	
Fetal Cranium	
NT Method: SonoNT/Manual	
AFI	
Uterus	
Ovary right/left	
Umbilical Vein	
Placenta Volume	
Ductus venosus: S, D, a, PI, PLI, PVIV	
Doppler measurements: Ductus Art., Ductus Ven., Ao, Carotid, MCA, Celiac Artery, Superior Mesenteric Artery, Umbilical Art., Umbilical Vein, FHR, Uterine Art.	
Gestational Age Calculation	
Gestational Growth Calculation	
Fractional limb Volume	
Fetal Weight (FW) Estimation	
Fetal Trend Graph	
Multi-Gestational Calculation & Fetal Compare	
Calculation and Ratios	
Fetal Qualitative Description (Anatomical surv	
Fetal Environmental Description (Biophysical profile)	
Summary Reports	
<b>Obstetrics Fetal Echo</b>	
Chambers	
Thorax	
Aorta/LVOT	
Pulmonary/RVOT	
Venous	
fetalHQ	
FHR	
Tricuspid valve	
Mitral Valve	
Aortic	
Pulmonary	
LPA	
RPA	
Ductus Art.	
Cardiac Output	
LT TEI	
RT TEI	
Ductus Ven.	
Umbilical Vein	
Pulmonary Veins	
Summary Reports	
<b>Obstetrics Z-scores</b>	
• Long Axis	• Obl. Short axis

• Aortic Arch	• 4 Chambers
• Short Axis	• Summary Reports
• Thorax	

<b>fetalHQ</b>
<ul style="list-style-type: none"> <li>• Global Heart Size: Length, Width, Area, Axis</li> <li>• Global Heart Shape: Sphericity Index</li> <li>• Ventricular Size (for RV &amp; LV): Area, BAL, Transverse Diameter (24 segment)</li> <li>• Ventricular Shape (for RV &amp; LV): Sphericity Index (24 segment)</li> <li>• Ventricular Contractility: Area Fractional Shortening, Global Strain, Transverse Diameter Shortening (24 segment), BAL Shortening, Annular Plane Systolic Excursion, Lateral and Septal Wall Strain</li> </ul>

<b>Cardiology calculations</b>
2D Mode:
<ul style="list-style-type: none"> <li>• LV Simpson (Single &amp; Bi-Plane)</li> <li>• Volume (Area Length)</li> <li>• LV-Mass (Epi &amp; Endo Area, LV Length)</li> <li>• LV (RVD, IVS, LVD, LVPW)</li> <li>• LVOT Diameter</li> <li>• RVOT Diameter</li> <li>• MV (Dist A, Dist B, Area)</li> <li>• TV (Diameter)</li> <li>• AV/LA (Aortic Valve/Left Atrium)</li> <li>• PV (Diameter)</li> </ul>

M-Mode:
<ul style="list-style-type: none"> <li>• LV (IVS, LVD, LVPW, RVD)</li> <li>• AV/LA (Ao Root Diam, LA Diam, AV Cusp Sep., Ao Root Ampl)</li> <li>• MV(D-E, E-F Slope, A-C Interval, EPSS)</li> <li>• HR (Heart Rate) Atrial HR</li> </ul>

PW-Mode:
<ul style="list-style-type: none"> <li>• MV (Mitral Valve)</li> <li>• AV (Aortic Valve), TV (Tricuspid Valve)</li> <li>• PV (Pulmonary Valve)</li> <li>• LVOT &amp; RVOT Doppler (Left &amp; Right Ventricle Outflow Tract)</li> <li>• Pulmonic Veins</li> <li>• PAP (Pulmonary Artery Pressure measurement)</li> <li>• HR (Heart Rate)</li> <li>• TEI-Index</li> </ul>

C-Mode:
<ul style="list-style-type: none"> <li>• PISA</li> </ul>

Others:	
<ul style="list-style-type: none"> <li>• Diast. Vol (Bi)</li> <li>• Syst. Vol. (Bi)</li> <li>• Stroke Volume</li> <li>• Volume Flow</li> <li>• Cardiac Output</li> <li>• Ejection Fraction</li> <li>• Fractional Shortening</li> <li>• Myocardial Thickness</li> <li>• LA/Ao Ratio</li> <li>• E/A Peak</li> <li>• Peak Gradient Acceleration</li> </ul>	<ul style="list-style-type: none"> <li>• Mean Gradient</li> <li>• Mean Gradient Acceleration</li> <li>• VTI</li> <li>• TVA</li> <li>• PG</li> <li>• PHT</li> <li>• MVA</li> <li>• AVA</li> <li>• ERO</li> <li>• CVP (Cardio Vascular Profile) Score</li> </ul>

Summary Reports
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<b>Transrectal calculations</b>
Prostate
Vessel
Summary Reports incl. PSAD, PPSA(1), PPSA(2) calculation

Vascular calculations
Left/Right CCA (Common Carotid Artery)
Left/Right ICA (Internal Carotid Artery)
Left/Right ECA (External Carotid Artery)
Left/Right Vertebral Artery
Left/Right Subclav.
Left/Right Bulb
Vessels
Summary Reports

Gynecology calculations
Uterus
Left/Right Ovary
Left/Right Follicle
Fibroid
Endometrial thickness (Dist, Double Dist.)
Cervix Length
Left/Right Ovarian Artery
Left/Right Uterine Artery
Vessels
Pelvic Floor
Left/Right Ovarian Cyst
Left/Right Ovarian Mass
Left/Right Adnexal Cyst
Generic Cyst
Left/Right Adnexal Mass
Generic Mass
Bladder (Length/Width/Height/Vol)
FHR
GYN IOTA LR2, Simple Rules and ADNEX Model. (May not be available in all countries)
IETA unenhanced ultrasound examination and enhanced ultrasound examination – Sonohysterography. (May not be available in all countries)
Uterus classification (ESHRE/ESGE and ASRM)
Summary Reports

Pediatric calculations
Left/Right Hip Joint
Pericallosal Artery
Summary Report

Cephalic calculations
Left/Right ACA (Anterior Cerebral Artery)
Left/Right MCA (Middle Cerebral Artery)
Left/Right PCA (Posterior Cerebral Artery)
Basilar Artery
A-Com. A (Anterior Com. Artery)
P-Com. A (Posterior Com. Artery)
Left/Right CCA (Common Carotid Artery)
Left/Right ICA (Internal Carotid Artery)
Left/Right Vertebral Artery
Vessels
Summary Reports

## OB Tables

### Age Tables

- AC: ASUM, CFEF, Hadlock\_82, Hadlock\_84, Hansmann, Hobbins, Jeanty, JSUM, Kurmanavicius, Merz, Nicolaides, Shinozuka, Siriraj, Tokyo
- AD: Persson
- APAD: Merz
- APTD: Hansmann
- APTDxTTD: Shinozuka, Tokyo
- BOD: Jeanty
- BPD: ASUM, ASUM (old), Campbell, CFEF, Chitty (outer-outer) (outer-inner), Eik-Nes, Hadlock\_82, Hadlock\_84, Hansmann, Hobbins, Jeanty, Johnsen, JSUM, Kurmanavicius, Kurtz, Leung, McLennanPersson, Merz, Nicolaides, OSAKA, Rempen, Sabbagha, Shinozuka, Siriraj, Tokyo, Verburg
- CEREB: Chitty, Goldstein, HILL, Hobbins, Nicolaides, Verburg
- CLAV: YARKONI
- CRL: ASUM, DAYA, Eik-Nes, Hadlock, Hansmann, Intergrowth, JSUM, McLennan, Persson, Pexters, Nelson, OSAKA, Rempen, Robinson, Robinson\_BMUS, Sahota, Shinozuka, Tokyo, Verburg
- FL: ASUM, CFEF, Chitty, Eik-Nes, Hadlock\_82, Hadlock\_84, Hansmann, Hobbins, Hohler, Jeanty, JSUM, Kurmanavicius, Leung, Persson, Merz, Nicolaides, O'Brien, OSAKA, Shinozuka, Siriraj, Tokyo, WARDA, Johnsen
- FTA: OSAKA
- FIB: Jeanty
- GS: Hansmann, Hellman, Holländer, Rempen, Tokyo
- HC: ASUM, CFEF, Chitty, Hadlock\_82, Hadlock\_84, Hansmann, Jeanty, Kurmanavicius, Leung, Merz, Nicolaides, Siriraj, Johnsen
- HL: ASUM, Hobbins, Jeanty, Merz, OSAKA
- LV: Tokyo
- MAD: Eik-Nes, eSnurra, Kurmanavicius
- OFD: ASUM, Chitty, Hansmann, Jeanty, Kurmanavicius, Merz, Nicolaides
- RAD: Jeanty, Merz
- TIB: Jeanty Merz
- TAD: CFEF, Merz
- TTD: Hansmann
- ULNA: Jeanty, Merz

### Growth Tables

- AC: ASUM, CFEF, Chitty, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, JSUM, Lai\_Yeo, Kurmanavicius, Lessoway, Leung, Merz, Nicolaides, Shinozuka, Siriraj, Tokyo, Verburg, Johnsen, Medvedev, Stork, Intergrowth, WHO
- AD: Persson
- AFI: Moore
- Aorta: Vmax: Rizzo
- APAD: Merz
- APTD: Hansmann
- APTDxTTD: Shinozuka\_SD
- AxT: Shinozuka, Tokyo
- BOD: Jeanty
- BPD: ASUM, Campbell, CFEF, Chitty, Eik-Nes, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, JSUM, Kurmanavicius, Lai\_Yeo, Lessoway, Leung, Persson, McLenna, Merz, Nicolaides, OSAKA, Paladini, Sabbagha, Shinozuka, Siriraj, Tokyo, Verburg, Medvedev, Stork, Intergrowth, WHO
- CLAV: YARKONI
- CM: Nicolaides
- CRL: ASUM, Hadlock, Hansmann, Intergrowth, JSUM, McLennan, Persson, OSAKA, Robinson, Robinson 1993, Shinozuka, Tokyo, Pexters, Medvevev
- DV a/S: JSUM
- DV PI: Baschat, JSUM

- DV PLI: Baschat
- DV PVIV: Baschat
- DV S/a: Baschat
- FL: ASUM, CFEF, Chitty, Eik-Nes, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, JSUM, Kurmanavicius, Lessoway, Lai\_Yeo, Lessoway, Leung, Paladini, Persson, Merz, Nicolaides, O'Brien, OSAKA, Shinozuka, Siriraj, Tokyo, Verburg, WARDA, Johnsen, Medvedev, Stork, Intergrowth, WHO
- FTA: OSAKA
- FIB: Chitty, Jeanty, JFFSD, Siriraj
- FWg: Alexander
- Foot: Chitty
- GS: Hellman, Nyberg, Rempen, Tokyo
- HC: ASUM, CFEF, Chervernak, Chitty, Hadlock, Hansmann, Jacot-Guillarmod, Jeanty, Kurmanavicius, Lai\_Yeo, Lessoway, Leung, Merz, Nicolaides, Paladini, Siriraj, Verburg, Johnsen, Medvedev, Stork, Intergrowth, WHO
- HL: ASUM, Chitty, Jeanty, Lai\_Yeo, Merz, JFFSD, OSAKA, Paladini, Siriraj, Medvedev
- IVC PLI: JSUM
- Lt.Tei(ICT,IRT), Lt.Tei(a,b): Bhorat
- Lung Area Left/Right: Peralta
- LV: Tokyo
- MCA CP: Ebbing
- MCA PI: Ebbing
- MCA PI, RI: JSUM, Bahlman
- MCA PV: Mari
- MAD: Eik-Nes, eSnurra, Kurmanavicius
- MV E/A: HARADA
- NBL: BUNDUKI, SONEK, Medvedev
- OFD: ASUM, Chitty, Hansmann, Jeanty, Kurmanavicius, Merz, Nicolaides, Medvedev, Intergrowth
- MainPA Vmax: Rizzo
- RAD: Chitty, Jeanty, JFFSD, Merz, Paladini, Siriraj
- SAG. AP: Malinger
- SAG. CC: Malinger
- TAD: CFEF, Jacot-Guillarmod, Merz
- TC: Chitkara
- TCD: Goldstein, Hill, Jacot-Guillarmod, Nicolaides, Verburg
- TIB: Chitty, Jeanty, JFFSD, Merz, Siriraj
- TTD: Hansmann
- TV E/A: HARADA
- ULNA. Chitty, Jeanty, JFFSD, Merz, Siriraj
- UmbArt PI: Ebbing, JSUM, Merz
- UmbArt RI: JSUM, Merz, Kurmanavicius
- UtArtPI: Gomez, Merz
- UtArtRI: Merz
- Vermis A: Malinger
- Vermis C: Malinger
- Fractional Limb Avol/Tvol: Lee

#### Fetal Weight Estimation (EFW)

- Campbell (AC)
- Hadlock (AC, BPD)
- Hadlock 1 (AC, FL)
- Hadlock 2 (BPD, AC, FL)
- Hadlock 3 (HC, AC, FL)
- Hadlock 4 (BPD, HC, AC, FL)
- Hansmann (BPD, TTD)
- Intergrowth (AC, HC)
- Lee (AVOL; AC, AVOL; AC, BDP, AVOL; TVOL; AC, TVOL; AC, BDP, TVOL)
- Merz (AC, BPD)
- Osaka (BPD, FTA, FL)
- Persson (BPD, MAD, FL)

- Persson 2, Schild (HC, AC, FL)
- Shepard (AC, BPD)
- Shinozuka 1 (BPD, ADTP, TTD, FL)
- Shinozuka 2 (BPD, FL, AC)
- Shinozuka 3 (BPD, APTD, TTD, LV)
- Tokyo (BPD, APTD, TTD, FL)

#### Gestational Age by EFW

- Hadlock, JSUM 2001, Osaka, Shinozuka, Tokyo

#### Fetal Weight Growth FWG

- Alexander, Ananth, Bourgoigne, Brenner, Burgundy, CFEF, Doubilet, Duryea, Ego, Eik-Nes, Hadlock, Hansmann, Hansmann (86), Hobbins/Persutte, Intergrowth, Johnsen, Jsum 2001, Kramer, Persson, Osaka, Shinozuka, Tokyo, Williams, WHO, Yarkoni

#### Fetal Ratios

CI (BPD/OFD) (Hadlock)

FL/AC (Hadlock)

FL/BPD (Hohler)

FL/HC (Hadlock), (WHO)

HC/AC (Campbell)

Va/Hem (Nicolaides)

Va/Hem (Hansmann)

Vp/Hem (Nicolaides)

LHR (Peralta)

CVR (Peranteau)

## Probes

C1-6-D	
XDClear Wide Band Convex Probe	
Applications	Abdomen, OB, GYN, Fetal Cardio
Max. Bandwidth (-20dB)	2-5 MHz
Number of Elements	192
Convex Radius	55 mm
FOV	113°
Foot Print	67.2 x 11.5 mm
Depth	Max. 50 cm
Center Frequency	3.4 MHz
B-Mode Frequency	2.00 – 2.00 MHz
Doppler Frequency	2.50 – 3.85 MHz
Harmonic Frequency	2.00 – 2.56 MHz
Biopsy Guide Available	Multi-Angle, disposable with reusable bracket

C2-9-D	
XDClear Wide Band Convex Probe	
Applications	Abdomen, OB, GYN, Pediatrics
Max. Bandwidth (-20dB)	3-9 MHz
Number of Elements	192
Convex Radius	43 mm
FOV	94°
Foot Print	48.0 x 9.0 mm
Depth	Max. 26 cm
Center Frequency	5.0 MHz
B-Mode Frequency	4.00 – 7.14 MHz
Doppler Frequency	3.03 – 5.00 MHz
Harmonic Frequency	2.63 – 3.57 MHz
Biopsy Guide Available	Multi-Angle, disposable with reusable bracket

IC5-9-D	
Wide Band Convex Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB)	4-9 MHz
Number of Elements	192
Convex Radius	11 mm
FOV	179°
Foot Print	21.2 x 17.2 mm
Depth	Max. 16 cm
Center Frequency	5.8 MHz
B-Mode Frequency	5.00 – 9.09 MHz
Doppler Frequency	4.55 – 6.25 MHz
Harmonic Frequency	3.45 – 3.85 MHz
Biopsy Guide Available	Single-Angle, Reusable and disposable

11L-D	
Wide Band Linear Probe	
Applications	Small Parts, Pediatrics, MSK, Peripheral Vascular, Breast
Max. Bandwidth (-20dB)	4-10 MHz
Number of Elements	192
FOV	38 mm
Foot Print	46.9 x 14.4 mm
Depth	Max. 11 cm
B-Mode Steering Angle	7°/14°/20°
Doppler Steering Angle	7°/14°/20°
Center Frequency	7.3 MHz
B-Mode Frequency	6.67 – 10.00 MHz
Doppler Frequency	5.26 – 7.14 MHz
Harmonic Frequency	4.55 – 5.00 MHz
Biopsy Guide Available	Multi-Angle, disposable with reusable bracket

9L-D	
Wide Band Linear Probe	
Applications	Small Parts, Pediatrics, MSK, Peripheral Vascular, OB
Max. Bandwidth (-20dB)	3-8 MHz
Number of Elements	192
FOV	44 mm
Foot Print	53.0 x 14.1 mm
Depth	Max. 14 cm
B-Mode Steering Angle	7°/14°/20°
Doppler Steering Angle	7°/14°/20°
Center Frequency	5.5 MHz
B-Mode Frequency	4.55 – 10.00 MHz
Doppler Frequency	3.70 – 5.26 MHz
Harmonic Frequency	2.86 – 2.86 MHz
Biopsy Guide Available	Multi-Angle, disposable with reusable bracket

ML6-15-D	
Wide Band Matrix Linear Probe	
Applications	Small Parts, Peripheral Vascular, Pediatrics, MSK, Breast
Max. Bandwidth (-20dB)	4-13 MHz
Number of Elements	1008
FOV	50 mm
Foot Print	60.7 x 16 mm
Depth	Max. 16 cm
B-Mode Steering Angle	7°/14°/20°
Doppler Steering Angle	7°/14°/20°
Center Frequency	9.0 MHz
B-Mode Frequency	8.33 – 11.11 MHz
Doppler Frequency	6.25 – 9.09 MHz
Harmonic Frequency	5.00 – 6.25 MHz
Biopsy Guide Available	Multi-Angle, disposable with reusable bracket

## Probes (cont.)

<b>RAB6-D</b>	
Wide Band Convex Volume Probe	
Applications	Abdomen, OB, GYN, Pediatrics
Max. Bandwidth (-20dB)	2-8 MHz
Number of Elements	192
Convex Radius	47 mm
Volume Sweep Radius	24 mm
FOV	90° (B), 90° x 85° (Volume scan)
Foot Print	62.2 x 34.0 mm
Depth	Max. 26 cm
Center Frequency	4.7 MHz
B-Mode Frequency	3.23 – 6.67 MHz
Doppler Frequency	3.03 – 5.00 MHz
Harmonic Frequency	2.56 – 3.70 MHz
Biopsy Guide Available	Multi-Angle, disposable with reusable bracket

<b>RIC5-9-D</b>	
Wide Band Convex Volume Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB)	4-9 MHz
Number of Elements	192
Convex Radius	12 mm
Volume Sweep Radius	12 mm
FOV	180°(B), 180° x 120° (Volume scan)
Foot Print	22.4 x 22.6 mm
Depth	Max. 16 cm
Center Frequency	6.6 MHz
B-Mode Frequency	5.00 – 9.09 MHz
Doppler Frequency	4.55 – 6.25 MHz
Harmonic Frequency	3.45 – 3.85 MHz
Biopsy Guide Available	Single-Angle, Reusable, Disposable, disposable with latex cover

<b>RSP6-16-D</b>	
Wide Band Linear Volume Probe	
Applications	Small Parts, Pediatrics, MSK, Peripheral Vascular, Breast
Max. Bandwidth (-20dB)	6-18 MHz
Number of Elements	192
Volume Sweep Radius	81 mm
FOV	38.4 mm (B), 38.4 mm x 29° (Volume scan)
Foot Print	48.6 x 55.9 mm
Depth	Max. 8 cm
B-Mode Steering Angle	7°/14°/20°
Doppler Steering Angle	7°/14°/20°
Center Frequency	11.5 MHz
B-Mode Frequency	8.33 – 12.50 MHz
Doppler Frequency	6.25 – 8.33 MHz
Harmonic Frequency	5.26 – 5.26 MHz
Biopsy Guide Available	Single-Angle, disposable with reusable bracket

<b>M5Sc-D</b>	
XDClear Wide Band Phased Array Probe	
Applications	Abdominal, Cardiology, OB, Fetal Echo, Pediatrics, Cephalic
Max. Bandwidth (-20dB)	1-5MHz
Number of Elements	240
FOV	90°
Foot Print	27.5 x 18.1 mm
Depth	Max. 24 cm
Center Frequency	2.9 MHz
B-Mode Frequency	2.44 – 3.33 MHz
Doppler Frequency	1.85 – 2.50 MHz
Harmonic Frequency	1.61 – 2.17 MHz
Biopsy Guide Available	Multi-Angle, disposable with reusable bracket

<b>S4-10-D</b>	
Wide Band Phased Array Probe	
Applications	Small Parts, Cardiology, Pediatrics
Max. Bandwidth (-20dB)	4-9 MHz
Number of Elements	128
FOV	90°
Foot Print	20.0 x 15.0 mm
Depth	Max. 14 cm
Center Frequency	6.3 MHz
B-Mode Frequency	5.88 – 7.14 MHz
Doppler Frequency	3.85 – 6.25 MHz
Harmonic Frequency	4.00 – 4.35 MHz
Biopsy Guide Available	Not available



## External Inputs and Outputs

External Connectivity (direct access)

- VGA out
- Network (RJ45)
- Wireless Network interface (USB) (Option)
- USB 3.0 (6x)
- S-Video Out 1
- HDMI

Connectivity behind rear panel (access after opening):

- Audio in/Out
  - Left/right

Ext. Device/Remote Connections:

- BW Printer via USB
- Color Printer/ via USB
- DVR via USB
- Footswitch via USB
- Wireless Network interface (USB) (Option)
- RS 232: via USB to RS 232 converter (Option)
- ECG (Option)

## Service Tools

Data Export capabilities for Asset Performance Analytics

On-board probe quality assessment tool

## Safety Conformance

### The Voluson E8 is:

NRTL certified according IEC 60601-1 (TÜVPS)

Certified to CSA 22.2, 60601.1 by an SCC accredited Test Lab

CB-Test Report by National Certification Body

CE Marked to Council Directive 93/42/EEC on Medical Devices

### The Voluson E8 conforms to the following safety standards

IEC 60601-1 Electrical Medical Equipment

IEC 60601-1-2 Electromagnetic compatibility

IEC 62304 Software Life Cycle Processes

IEC 62366 Application of usability engineering to medical devices

EN 60601-2-37 Particular requirements for the safety of ultrasound medical diagnostic and monitoring equipment

IEC 601157 Declaration of acoustic output

ISO 10993 Biological evaluation of medical devices

IEC 62359 Ultrasonic - Field characterization - Test methods for the determination of thermal and mechanical indices related to medical diagnostic ultrasonic fields

WEEE (Waste Electrical and Electronic Equipment)

ROHS according to 2011/65/EU

†Not for sale in the USA. Not approved or cleared by the U.S. FDA. Please contact your GE Sales Representative for information about availability in your area.

### GE Healthcare

9900 Innovation Drive  
Wauwatosa, WI 53226  
U.S.A.

[www.gehealthcare.com](http://www.gehealthcare.com)

### Europe

#### GE Healthcare

Beethovenstr. 239  
42655 Solingen  
Germany

### APAC

#### GE Healthcare Asia Pacific

4-7-127, Asahigaoka,  
Hino-shi, Tokyo 191-8503  
Japan

### North America

#### GE Healthcare

9900 W. Innovation Drive  
Wauwatosa, WI 53226  
USA



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