

Voluson Performance 18

When you meet the right partner, everything just clicks. The next evolution of the Voluson™ Performance series builds on its strengths, combining powerful, modern advancements with the reliability you trust. One-touch image optimization, time-saving automation, and highly-intuitive tools—it's everything you need, in one perfect package.

Highlights

- Voluson Core Architecture
- High resolution 21.5" LCD monitor
- Lightweight and maneuverable
- Radiantflow™
- Autolive
- Battery operation
- Fast boot-up
- Sleep mode with fast wake
- Probe Favorites
- 3D/4D HDlive™
- SonoRenderlive
- BetaView
- Automated follicle measurements in both 2D and 3D
- Advanced VCI (Volume Contrast Imaging) with OmniView
- Uterine Trace & Spine Trace
- AI based functionality with *fetal*HS, SonoCNS, SonoPelvicFloor^{3.0}
- Automation technologies: SonoBiometry, SonoNT™/IT, SonoFHR
- AI based image guidance with SonoLystlive
- Scan Assistant with SonoLyst image recognition
- SonoGYN with Uterine Trace & Fibroid Mapping
- Labor & Delivery package
- 3D Printing capabilities
- Voluson Image Portal
- Cable management
- Reminders
- Quick Setup Wizard
- Wireless probes technology with Vscan Air™ CL/SL integration
- "Hey Voluson" voice control



General Specifications

Dimensions / weight / noise emission	
Height (maximum, in use)	158 cm (62.2 inch)
Height (minimum, transport)	116.5 cm (45.9 inch)
Width (UI)	51 cm (20.1 inch)*
Width (base)	42 cm (16.5 inch)
Depth (overall)	71.0 cm (27.9 inch)
Depth (base)	54.2 cm (21.3 inch)
Weight (no peripherals)	64 kg (141 lbs)
Maximum audible noise emission	≤65dBA
Typical audible noise emission (in a noise-reduced setting)	≤35dBA (measured at user-location)

Power supply	
Voltage	100 – 240 VAC
Frequency	50/60 Hz (+/-2%)
Power	Typical power ~150VA Maximum 450 VA, all options
Thermal output	Typical: 512 BTU/h Maximum 1535 BTU/h
Battery (option)	- Battery: up to 20 minutes scanning - Longer in standby [sleep]

Console design	
3 active universal pinless imaging probe ports	
Integrated cable management	
Task lamp under user interface	
Wheels, diameter 12.5 cm (4.9 inch)	
Individual wheel locks, direction lock on rear wheel	
On-board storage for peripherals	

Operating system	
Operating system: Windows® 10 IoT Enterprise 64 bit	
Integrated SSD	500GB (optional 1TB SSD)



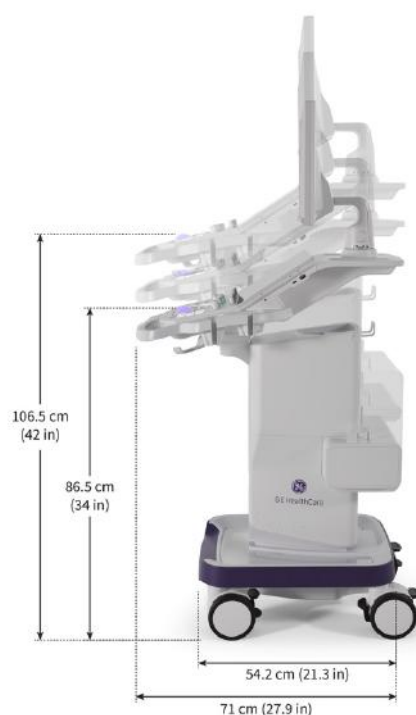
*Probe holders are configurable and can be removed to reduce system width.

User Interface

Operating panel	
Height adjustable (mechanical): + 20 cm (7.9 inch)	
4 integrated probe holders including optional horizontal transvaginal probe holder	
Gel holder	
Ergonomic hard key layout including trackball	
4 programmable buttons for Print/Save/Send	
4 user configurable buttons	
3 programmable Probe Favorite keys for immediate access to frequently used probes, applications and user settings	
Integrated microphone	

Touch screen	
14" high resolution color LCD screen	
Resolution	Full HD 1920 x 1080 pixel
Aspect ratio	16:9
Multi-touch interactive dynamic software menu	
Adjustable brightness	
Capable of displaying real-time 2D/3D/4D ultrasound images	

Monitor	
21.5" high resolution LCD Display with HDMI interface	
Resolution	Full HD 1920 x 1080 pixel
Image Size	Standard, XL, Full screen
Aspect ratio	16:9
Max. display brightness	209 cd/m ²
Contrast ratio	1000 : 1
Response time	22 ms
Tilt angle	+40° -90°, from vertical
Rotation angle	+/- 90°
Color temperature setting	Warm and Cold
Optimized brightness settings	Extra Dark, Dark, Semi Dark, Light, Extra Light Room



System Overview

Exam types	
Obstetrics	Pediatrics
Gynecology	Cardiology
Abdominal	Transrectal
Small Parts & Breast	Cephalic
Vascular	Musculoskeletal (MSK)

Operating modes	
B-mode (2D)	
Color Doppler mode (C or CFM)	
Power Doppler mode (PD)	
High definition power Doppler (HD-Flow™)	
M-mode (M), including anatomical M-mode (AMM)	
Pulsed Wave Doppler (PW) with automatic HPRF, including duplex and triplex capabilities	
Continuous Wave Doppler imaging (CW)	
Compression elastography	
Contrast Imaging mode†, including quantification capabilities	
Combination modes: M/C, M/HD-Flow, PW/C, PW/HD-Flow, PW/PD	
Extended View (XTD)	
Volume mode (3D/4D):	
• 3D Static • 4D Real-time • VCI-OmniView • VCI-A	
Static 3D mode:	
• B-mode only • B + PD • B + CFM • B + HD-Flow	• B + CRI • B + CRI + CFM • B + CRI + PD • B + CRI + HD-Flow

Transducer types
Convex array
Microconvex array
Linear array
Sector array
Volume probes 4D: convex and microconvex array

Scanning methods
2D electronic sector/convex/linear
3D/4D mechanical volume sweep

User management and logging functionality
Individual login credentials for multiple users
Adjustable access levels for different users
LDAP interface
Enhanced audit trail and usage log

Privacy and security functionality
Hard disc encryption following Advanced Encryption Standard (AES) with 256-bit key 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

Standard features
B-mode (2D)
Color Doppler mode (C or CFM)
Power Doppler mode (PD)
High definition power Doppler (HD-Flow)
M-mode (M), including anatomical M-mode (AMM) with up to 2 cursors
Pulsed Wave Doppler (PW)
Extended View (XTD)
Coded Harmonic Imaging with Pulse Inversion Technology, operating on multiple frequencies, user selectable On/Off
Auto Optimize - B-mode, PW Doppler
Autolive - real-time, automatic B-mode gain optimization
Auto TGC
AutoScale (PW Doppler and color Doppler PRF)
SRI (Speckle Reduction Imaging)
CrossXBeamCRI™ (Compound Resolution Imaging)
Shadow Reduction
Wide Sector (maximum angle)
Flow Profiles for CFM/HDF/PD/PW and CW
HD-Zoom & Pan Zoom
Steering
Virtual convex (trapezoid image, also with CrossXBeamCRI)
BetaView
Histogram analysis with up to 3 user adjustable ROIs with comparative analysis on complex curves
Biophysical profile timer
Measurement, Calculations and Worksheets/Report for:
• OB • GYN • Abdominal • Transrectal • Vascular • Cardiac • Small Parts • Cephalic • Pediatrics • Musculoskeletal
Multigestational calculations
SonoBiometry (HC, BPD, AC, FL, HL)
SonoFHR, Fetal Heart Rate
Real-time automatic Doppler calculations
Biopsy - user programmable needle guidelines
IOTA: LR2, Simple Rules and ADNEX Model†††
GYN IETA Protocol & Report†††
GYN IDEA Protocol & Scan Assistant Guideline
GYN O-RADS Report†††
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
Patient information database
Image archive on hard drive
3D/4D data compression (lossy/lossless)
DICOM 3.0 connectivity
Data export in 3D printable format
Voluson Image Portal (additional WLAN Adapter required)
Education videos
Fast boot-up

System Overview (continued)

Software options ^{†††} – individual (may not be available in all countries)	
Radiantflow	
Volume Imaging Package (3D/4D, TUI, VCI-A, volume w/ color, SonoRenderlive)	
HDlive (3D & 4D)	
Advanced VCI OmniView, includes Uterine Trace and Spine Trace	
VOCAL II	
Inversion	
SonoCNS ^a	
fetalHS ^b	
SonoGYN, Includes Uterine Trace & Fibroid Mapping	
SonoPelvicFloor ^{3.0}	
SonoNT/IT	
SonoLyst IR/X - 2nd trimester	
SonoLystlive - 2nd trimester, includes SonoLyst IR/X	
Follicle Monitoring Package, Includes SonoAVCfollicle ^{2.0} , SonoAVCantra ^{2.0} , Auto Caliper	
Labor & Delivery Package (Sono L&D), direct access to HPD, HD, and MLA and automated AoP	
Coded Contrast Imaging + 3D HyCoSy [†]	
Compression Elastography	
Voice Control “Hey Voluson”	
Software DVR (USB) - ultrasound area or full screen	
eDelivery – remote software download	
Voluson Remote Updates	
Advanced Security	
Premium Security (fulfills USA DoD requirements)	
Verisound™ Fleet Management	
Vscan Air Activation	
C1-5-RS Probe Activation	
Russian Language Support (RLS)	

Software – clinical packages ^{††††}	
• Content may vary based on region / country	
OB Package • 3D/4D Package • Radiantflow • SonoLyst IR/X • fetalHS • SonoCNS • HDlive • SonoNT/IT • OmniView w/ Advanced VCI ○ Spine Trace ○ Uterine Trace	OB / GYN Package • 3D/4D Package • Radiantflow • SonoLyst IR/X • fetalHS • SonoCNS • HDlive • SonoNT/IT • OmniView w/ Advanced VCI ○ Spine Trace • SonoGYN ○ Uterine Trace ○ Fibroid Mapping • SonoPelvicFloor^{3.0}
GYN Package • 3D/4D Package • Radiantflow • OmniView w/ Advanced VCI • SonoGYN ○ Fibroid Mapping ○ Uterine Trace • SonoPelvicFloor^{3.0}	Reproductive Medicine • 3D/4D Package • Radiantflow • OmniView w/ Advanced VCI ○ Uterine Trace • Follicle Monitoring ○ SonoAVCfollicle^{2.0} ○ SonoAVCantra^{2.0} ○ Auto Caliper

Hardware options ^{††††} (may not be available in all countries)
Horizontal probe holder
Horizontal 2D TV probe holder insert
Storage – Side basket
Storage – Front shelf
Alternate left side probe holder without gel cup
User interface trim (removes probe holders)
Battery Pack – up to 20 minutes of scanning
Battery Pack, extended – up to 40 minutes of scanning
1 TB SSD Hard Drive
CW Option Kit
ECG Digital Module (USB)

Peripheral options ^{††††} (may not be available in all countries)
B&W printer, medical grade (integrated in console)
Color printer, medical grade (external, not integrated, USB)
Sony wireless printer kit
Report color printer with network printing capabilities & connection kits for printing reports and images (not integrated)

Connectivity options ^{††††} (may not be available in all countries)
WLAN & Bluetooth Adapter (USB)
Integrated video converter (VGA, S-Video, Composite BNC)
Wireless HDMI display module
External patient monitor
Digital Expert Connect

Accessories ^{††††} (may not be available in all countries)
Vscan Air charger installation kit
Voluson cleaning cloth
Foot switch, with programmable functionality (USB)
Barcode scanner (USB)
Card reader (USB)
USB keyboard
Isolated USB connection
Ethernet protection cable
Uninterruptible power supply (UPS): 1kVA, 750W, Medical-Grade, Line-Interactive, 115V or 220/230V AC version available. Provides up to 55 minutes of additional scanning time (may vary depending on battery age)
Isolation transformer
Power supply noise filter (EMI Filter)

^aEnables SonoBiometry (CM, Vp, Cerebellum)

^bEnables automated Cardiac Axis measurement within calculation menu

System Overview (continued)

Displayed information	
Patient Name: First/Middle/Last Name, maximum 62 characters	
ID: maximum 32 characters	
Secondary patient ID (Citizen Service Number)	
Accession #: maximum 16 characters	
Clinic Name: maximum 30 characters	
Sonographer	
Gestational age (OB) or LMP (GYN)	
Birth date	
Date format: MM/DD/YYYY, DD/MM/YYYY, YYYY/MM/DD	
Time display selectable: 12/24 hours	
Displayed acoustic output:	
- TIS: Thermal Index Soft Tissue - TIC: Thermal Index Cranial (Bone) - TIB: Thermal Index Bone - MI: Mechanical Index	
Probe name	
Frame Rate / Depth	
Angle / Zoom factor	
User Preset / Application	
B-mode:	
- Receive Frequency - Gain - Dynamic Contrast/Gray Map - Persistence / Edge Enhance - SRI / CRI	
Color Doppler mode:	
- Color Gain - Frequency - Quality - Wall Motion Filter - Pulse Repetition Frequency - Color Map - Radiant/flow - Color Scale: kHz, cm/s, m/s - Color Velocity Range - Color Balance marker	
M-mode/Anatomical M-mode:	
- M-Gain - Dynamic Control - Edge Enhance - Reject - M-Cursor, AMM-Cursor - Time Scale	
PW Doppler mode:	
- PW-Gain - Wall Motion Filter - Angle - Sample Volume Size & Depth - PRF including HPRF - Doppler Frequency - Velocity or Frequency Scale - Time Scale	
3D/4D mode:	
3D/4D sub program - Threshold - Quality - Volume Box Angle - Mix - Acquisition Mode - Compression - VCI: slice thickness - TUI: slice distance (0.5-10mm) - TUI: slice position in overview image - Orientation markers	
Elastography Mode:	
- Transmit (Tx) Frequency - Transparency - Velocity Range - Elasto Map - Persistence - Line Density	
TGC curve	
Gray scale bar	
Color scale bar (mode dependent) and balance indicator	
Depth scale	
Focal zone marker	
Probe orientation	

Displayed information (continued)

Cine frame number
Connectivity indicators: record, spool, external monitor, email, ethernet connection, and reminder status
Body Marks: >150 types organized in 10 anatomical groups
Measurement results
ECG trace
Trackball function (Trackball and Trackball buttons)
P-button and C-button configuration
Zoom overview image (zoom box position)
Clipboard in adjustable layout
Scan Assistant/Measurement result window
Predefined biopsy guide line
GE HealthCare logo

System Parameters

Image processing and presentation

Digital beamformer
9,303,857 system processing channel technology
Minimum depth of field: 0 – 1 cm (Zoom, probe dependent)
Maximum depth of field: 0 – 42 cm (probe dependent)
Depth steps: up to 29 (probe dependent)
Transmit Focus: 1-5 selectable focal points (probe and application dependent)
Focal zone position, up to 10 positions selectable
Continuous Dynamic Receive Focus/ Continuous Dynamic Receive Aperture for all probes
256 gray levels
16.8 million colors 24 bit
Up to 381 dB dynamic range
Image reverse: Right/Left
Image rotation: 0°, 90°, 180°, 270°

Cine features

Prospective or retrospective capture
Store 3D sweep to Cine
Single/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)
Toggle between sides in dual Cine mode
Measurements /calculations & annotations on cine
Length: 2D: 512MB: up to 10 min and 13,200 frames (depending on B-mode image size and FPS); typical: about 3 min/4000 images (with curved array: 15cm depth, angle 81°, 22 FPS) - M-mode/ PW/CW-mode: 32MB: up to 1 min motion time (depending on sweep speed and depth)
Cine operation: - Manual: image by image - Auto run: speed, 25 to 200%; Repeat, Forward-Forward, Forward-Backward-Forward

System Parameters (continued)

System setup

Quick Setup

User Programmable Presets

Display Languages: English, French, German, Spanish, Portuguese, Italian, Danish, Dutch, Finnish, Norwegian, Swedish, Russian, Japanese, Simplified Chinese

Software Keyboard Languages: English, French, German, Spanish, Italian, Danish, Finnish, Norwegian, Swedish, Russian, Swiss French, Swiss German, Polish, 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

Programmable Scan Assistant lists including Add, Delete, Edit and Reorder of checklist items

Up to 3500 Programmable Annotations organized in 10 anatomical groups, including library function and auto-complete
4 programmable Print buttons for documentation preferences like Save, DICOM Send, Print, Check, Cine length, JPEG, etc.

3 programmable Probe Favorite keys for immediate access to frequently used probes, applications and user settings

4 programmable Custom buttons for different functionality

User configurable items, including but not limited to:

- Clinic Name
- Display (TGC curve, Screen Lock, Screensaver, Beeper, Auto Scan Stop, 3D/4D Screen Controls)
- Trackball speed
- Zoom overview window
- DVR recording area
- Dim function
- Patient info display
- Title bar settings
- Start Exam and End Exam configuration
- Probe Favorites
- Color theme (software accents and trackball color)
- Quick access to network profiles
- Customized reminders
- Multiplanar axis dot: configurable size

Measure setup

M&A setup: Add, Delete, Edit and Reorder of measurement 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

Magnifier available to help place precise measurements

Auto sequence measurements

Connectivity (External I/O is covered in the Connectivity & Service Tools section)

DICOM support:

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

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 (including color Doppler, spectral Doppler and M-mode)
- 3D Raw Data (single volume including calculation Cines)
- 4D Raw Data (volume Cine)

Export as:

- Still image: JPEG (.jpg), BITMAP (.bmp), TIFF (.tif), PNG (.png)
- Video format: AVI, MP4
- Raw files: RAW (2D), VOL (Volume data), 4DV (RAW, VOL including Patient Data – password protected)
- 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, FullFrame

Export to:

- Network
- USB devices
- email
- Printer
- DICOM
- Voluson Image Portal (VIP) [WLAN adapter required]

Export anonymous function: available for following image types: AVI, BMP, TIFF, JPEG, MP4, 4DV

Backup function to:

- Network
- USB devices

Repro function:

Settings recall (e.g. Geometry, Gain, Color Map, etc.) from a stored or reloaded image

Exam history:

- Direct access to images from previous exams
- Direct access to measurement reports and images from previous exams
- Image comparison window, compare images from previous exam with current exam images

Hard drive data storage space: approx. 450 GB

Scanning Parameters

B-mode	
Gain range	+15 (100%) to -25 dB (0%)
TGC	8 sliders
Nearfield/Farfield	Adjusting upper & lower TGC sliders
Mode	Harmonic/Fundamental
Harmonic Frequencies	HI Pen/Low/Mid/High
Fundamental Frequencies	Penet/Norm/Resol
Frequency range	1 to 18 MHz, probe dependent
Acoustic Output	1 to 100%
Scan Angle	3° - 185° in 5° increments (probe dependent)
Max Angle (Wide Sector)	Probe dependent
Dynamic Contrast	23 steps: 1-12, 0.5 increments
SRI	5 steps: (1-5)
CRI	8 steps: (1-8)
Gray Maps	21 (18 basic maps and 3 user-defined maps)
Tint Maps	11 (10 colors, 1 gray scale)
Line Filter	Off, low (12.5/75/12.5%), high (25/50/25%)
Persistence Filter	8 steps: 1 to 8
Frame Filter	7 steps: 0 to 6
CRI Filter	4 steps: Off, low, mid, high
Line Density	3 steps: low, norm, high
Reject	51 steps: 0 to 255
Enhance	6 steps: 0, 1, 2, 3, 4, 5
Display modes	B, XTD, Fullscreen
Max. B-mode frame rate	> 3000 frames/sec, probe dependent
Gray Scale values	8 bit
Write Zoom up to 8x magnification	
Read Zoom: 0.8x – 3.4x zoom (with HD-Zoom functionality up to 22x zoom)	
Screen formats:	
2D imaging: Single (B), Dual (B+B), Quad (B+B+B+B) - XTD View: Single (XTD), Dual (B+XTD)	
Coded Harmonic Imaging: available on all probes	
Speckle Reduction Imaging (SRI): available on all probes	
Compound Resolution Imaging (CrossXBeamCRI):	
4C-RS - C1-5-RS^{††††} - RAB2-6-RS - IC9-RS - IC9B-RS - RIC5-9A-RS 9L-RS 12L-RS	
Wide Sector (Max Angle):	
4C-RS - C1-5-RS^{††††} - RAB2-6-RS - IC9-RS - IC9B-RS - RIC5-9A-RS 3Sc-RS 12S-RS	
Virtual Convex:	
3Sc-RS 12S-RS 9L-RS 12L-RS	
HI Pen & Shadow Reduction:	
4C-RS - C1-5-RS^{††††} - RAB2-6-RS - IC9-RS - IC9B-RS - RIC5-9A-RS 12L-RS	
Autolive – OB & Gyn applications:	
4C-RS - C1-5-RS^{††††} - IC9-RS - IC9B-RS - RIC5-9A-RS - RAB2-6-RS	

M-mode	
Working modes	M (conventional M-mode) AMM (Anatomical M-mode)
Gain	+15 (100%) to -25 dB (0%)
Acoustic Output	1 to 100%
Harmonic Frequencies	HI Pen/Low/Mid/High
Fundamental Frequencies	Penet/Norm/Resol
Gray Maps	21 (18 basic maps and 3 user-defined maps)
Tint Maps	11 (10 colors, 1 greyscale)
Sweep Speed	1 - 6
Dynamic Contrast	23 steps: 1-12, 0.5 increments
Reject	51 steps: 0 to 255
Enhance	6 steps: 0, 1, 2, 3, 4, 5
B/M-mode Quality	On/Off
Review (memory times)	>60s (32MB)
AMM Rotate	-90 to 90
Display modes	
- M: 2D+M, 2D+M/CFM, 2D+M/HD-Flow - AMM: 2D+AMM, 2D/CFM+AMM/CFM, 2D/HD-Flow +AMM/HD-Flow	
Screen formats: (window arrangement)	
2D+M and 2D+AMM: Up/Down (horizontal), three different sub formats 40/60, 50/50, 60/40%; Left/Right (vertical): 50/50% 2D+AMM+AMM: Left/Right-Up/Right-Down: 50/25/25%	
AMM is not available on Vscan Air	

Color flow M-mode	
4C-RS - C1-5-RS^{††††} - RAB2-6-RS - RIC5-9A-RS - IC9-RS - IC9B-RS 3Sc-RS 12S-RS	
CFM Gain	±15 dB range (0.1 dB steps)
Acoustic MCFM Output	1 to 100%
Color Center Frequency	Low / Mid / High
MCFM Color Maps	8 maps
CFM Velocity Scale range	PRF: 100Hz to 11kHz
Wall Motion Filter (WMF)	8 – 3000 Hz
Ensemble (color shots per line)	8-16, step size 1
Smooth Filter	Rise: 12 steps Fall: 12 steps
CFM Baseline Shift	17 steps
CFM Threshold	1 – 255 steps
Balance	25 – 225, step size 5
Artifact Suppression	On/Off
Radiantflow	Off / Min / Mid / Max
Real-time triplex mode	B + M + MCFM in any depth
Pre-settable and independently adjustable B, M and MCFM Gain	
CFM Spectrum Invert	
Gentle Color Filter	
Color display modes:	
- V (Velocity) - V-T (Velocity + Turbulence) - V-P (Velocity + Power) - T (Turbulence) - P-T (Power + Turbulence)	
Color flow M-mode is not available on Vscan Air	

Scanning Parameters (continued)

Color Doppler mode (CFM)	
Gain	+15 dB to -15 dB, 0.2 dB steps
Acoustic Output	1 to 100%
Pulse Repetition Frequency	CFM: 100 Hz to 20.5 kHz MCFM: 100 Hz to 20.5 kHz
Color coding:	65,536 color steps
Color box	Maximal to minimal B-mode scan angle; axial: B-scan range
Wall Motion Filter (WMF)	8 steps (low1, low2, mid1, mid2, high1, high2, max1, max2)
Smooth Filter	Rise: 12 steps Fall: 12 steps
Ensemble (color shots per line)	CFM: 7 to 31; MCFM: 8 to 16
Line Density (color line density)	10 steps
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225
Line Filter	8 steps (Off, 1 to 7)
Threshold	1 to 255
Color Center Frequency	low / mid / high
Frequency range	1 to 18 MHz, probe dependent
Quality	low / norm / high
Color Map	8 color codes for each probe
Radiantflow	Off / Min / Mid / Max
Flow Profiles	6 presets
Artifact Suppression	Yes
Maximum Velocity display	4.23 m/sec
Minimum Velocity display	0.3 cm/sec
Color Invert	Yes
Scale	kHz, cm/s, m/s
Baseline Shift	17 steps (independent from spectral Doppler)
Max. Color Doppler Frame Rate	≥740 frames/sec
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 display mode:	
• V (Velocity) • V-T (Velocity + Turbulence) • V-P (Velocity + Power) • T (Turbulence) • P-T (Power + Turbulence)	

Power Doppler Mode (PD)	
Gain	+15 dB to -15 dB, 0.2 dB steps
Acoustic Output	1 to 100%
Pulse Repetition Frequency	100 Hz to 20.5 kHz
PD coding	256 color steps
PD box	Maximal to minimal B mode scan angle; axial: B-scan range
Wall Motion Filter (WMF)	8 steps (low1, low2, mid1, mid2, high1, high2, max, max2)
Smooth Filter	Rising edge: 12 steps Falling edge: 12 steps
PD Ensemble	7 to 31
PD Line Density	10 steps

Power Doppler mode (PD) (continued)	
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225 in 41 steps
Line Filter	8 steps (Off, 1 to 7)
Threshold	1-255
Color Center Frequency	low / mid / high
Frequency range	1 to 18 MHz, probe dependent
Quality	low / norm / high
PD Map	8 color codes for each probe
Radiantflow	Off / Min / Mid / Max
Flow Profiles	6 presets
Artifact suppression	Yes
Screen formats: 2D+PD (Single, Dual, Quad)	
Display modes:	
• Simultaneous dual mode: 2D/2D+PD • Triplex mode: 2D+PD/PW • Volume mode: 3D+PD	
Power Doppler is not available on Vscan Air	

HD-Flow	
Gain	+15 dB to -15 dB, 0.2 dB steps
Acoustic Output	1 to 100%
Pulse Repetition Frequency	100 Hz to 20.5 kHz
HD-Flow coding	256 color steps
HD-Flow box	Maximal to minimal B mode scan angle; axial: B-scan range
Wall Motion Filter (WMF)	8 steps (low1, low2, mid1, mid2, high1, high2, max1, max2)
Smooth Filter	Rise: 12 steps Fall: 12 steps
HD-Flow Ensemble	7 to 31
HD-Flow Line Density	10 steps
Flow Resolution	4 steps (low, mid1, mid2, high)
Balance	From 25 to 225
Line Filter	8 steps (Off, 1 to 7)
Threshold	1-255
Color Center Frequency	low / mid / high
Frequency range	1 to 18 MHz, probe dependent
Quality	low / norm / high
HD-Flow Fap	8 color codes for each probe
Radiantflow	Off / Min / Mid / Max
Flow Profiles	6 presets
Artifact suppression	Yes
Color Invert	Yes
Scale	kHz, cm/s, m/s
Screen formats: 2D+HDF (Single, Dual, Quad)	
Display modes:	
• Simultaneous dual mode: 2D/2D+HDF • Triplex mode: 2D+HDF/PW; 2D/M+MHDF • Volume mode: 3D+HDF	
HD-Flow is not available on Vscan Air	

Radiantflow		
• 4C-RS	• IC9-RS	• 3Sc-RS
• RAB2-6-RS	• IC9B-RS	• 9L-RS
• C1-5-RS ^{†††}	• RIC5-9A-RS	• 12L-RS
• Vscan Air CL& SL		

Scanning Parameters (continued)

Spectral Doppler mode (PW, CW)	
Pulsed Wave Doppler mode is available for all probes except Vscan Air. Continuous Wave Doppler mode is only available for the 3Sc-RS and 12S-RS probes	
Gain range	+15 to -25 dB (PW) +15 to -15 dB (CW)
Acoustic Output	1 to 100%
Center Frequency	low / mid / high
Frequency range	PW-Doppler: 1.75 to 18 MHz CW-Doppler: 1.75 to 16 MHz
Pulse Repetition Frequency	PW-Doppler: 0.9-22 kHz CW-Doppler: 1.3-41.7 kHz
Radiantflow	Off / Min / Mid / Max
Flow Profiles	6 presets
Sample Volume (Doppler gate)	Length: 0.1, 0.7, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20 mm Position: 0.1 mm to B-scan end Angle: -85°...0°...+85°
Baseline Shift	17 steps, -8 to 8
Sweep Speed	Simplex: 26.44/13.22/8.81/6.61 /4.40/2.94 cm/s Duplex/ Triplex: 8.81/6.61/4.40/ 2.94 cm/s
Review (memory times)	>60s (32MB)
Spectrum Analyzer	maximum 256 frequencies, 256 amplitude levels
Wall Motion Filter (WMF)	PW: 30...500 Hz, 8 steps CW: 30...1000 Hz, 8 steps
Gray Maps	18
Tint Maps	11 (10 colors, 1 greyscale)
Dynamic Contrast	10 – 40 in 2 step increments
Allow HPRF	On / Off
Color Invert	Yes
RT Trace	Off / Auto / Lower / Upper
Audio volume	Adjustable
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 – 15.4m/s ($\alpha=0^\circ$, 2.0MHz, max. baseline shift) 1cm/s-30.80m/s ($\alpha=60^\circ$, 2.0MHz, max. baseline shift)	
Scale display:	
- Vertical: kHz, cm/s, m/s (selectable) - Horizontal: 1s marker (big), ½ s marker (small)	
Display modes:	
2D/D (duplex update) 2D+CFM/D, 2D+HD-Flow/D, 2D+PD/D (triplex update, CW or PW) 2D+CFM/PW, 2D+PD/PW, 2D+HDFlow/PW (triplex simultaneous, PW only)	
Screen formats: (window arrangement)	
- Up/Down (horizontal): 40/60, 50/50, 60/40% - Left/Right (vertical): 50/50%	

Volume scan module

RIC5-9A-RS	RAB2-6-RS
Volume scan size: max. 64 MB for B-mode volumes, max. 90 MB for color Doppler 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: maximum 1024 (typical 80 to 350)	
2D-images/volume: Up to 4096 (acquisition mode dependent)	
VOL-frames/sec.: >46 (typ. 4-8); 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, 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:	
3D static 3D (2D incl. CRI) 3D/PD (incl. CRI) 3D/CFM (incl. CRI) 3D/HD-Flow incl. CRI 3D Contrast (Coded PI)	4D - Real-time 4D - VCI-A - VCI-OmniView
Visualization modes:	
- Render 3D/4D Rendering (diverse surface and intensity projection modes) - SonoRenderlive - Sectional planes - Multipanar - OmniView, actual and projected view - TUI (Tomographic Ultrasound Imaging) (overview image+parallel slices)	
Render modes:	
- HDlive - Surface Enhanced - Mix Mode of two render modes - Surface Texture - Surface Smooth	- Transparency modes: Max/Min/X-ray - Gradient Light - Inversion - Glass Body - Light
Volume Analysis:	
- SonoCNS - Spine Trace - Uterine Trace - SonoPelvicFloor^{3.0} - VOCAL II: semi-auto/ manual segmentation tool using touch screen, 3D Static only + Threshold Volume - SonoAVCfollicle^{2.0} - SonoAVCantral^{2.0} - Fibroid Mapping - VCI (Volume Contrast Imaging)	
Display graphics:	
- Rotation axis, center point - ROI box, 3D frame - Temporary display of onscreen controls (rotation, translation)	
Gray Maps:	
- Multipanar: 18 3D image: Brightness (-50 to +50) & Contrast (-50 to +50)	
Tint Maps:	
- Slices: 10 3D image: 10	
Depth render maps: 3	

Scanning Parameters (continued)

Elastography	
Probes	• 12L-RS • RIC5-9A-RS • IC9-RS • IC9B-RS
Acoustic Power range	1 to 100%
Transmit Frequency	3 (Penet/Norm/Resol)
PRF	10, 15, 25, 40, 60, 85 Hz
Transparency	51 steps: 0, 5, 10, ..., 255
Hard Compress:	Range: 0 – 9, step size: 1
Soft Compress:	Range: 0 – 9, step size: 1
Elasto Maps	8
Line Density:	Range: 1 – 2
Persistence:	Range: 1 – 9, step size: 1
Window Length:	Range: 8 – 25, step size: 1
Filter Axial	Range: 1 – 9, step size: 1
Filter Lateral:	Range: 1 – 21, step size: 2
Frame Reject:	Range: 0 – 255, step size: 5
Pixel Reject:	Range: 0 – 255, step size: 5
Quality Curve	On / Off
Screen formats	• Single (2D/Elasto) • Dual (2D/Elasto+2D/Elasto) • Quad (2D/Elasto + 2D/Elasto + 2D/Elasto + 2D/Elasto)

Contrast imaging†	
Probes:	• 4C-RS • C1-5-RS††† • 9L-RS • RIC5-9A-RS • 3Sc-RS
Low MI contrast capabilities	
Gain	+15 (100%) to -25 dB (0%)
Acoustic Output	1 to 100%
Scan Angle	Taken from 2D
Gray Scale values	8 bit
Tint Maps	10
Gray Maps	18
CCIS Maps	8
SRI	Taken from 2D
S./PRI	1.00, 1.50, 2.00, 3.00, 4.00,...15.00
Accumulation	Off, 0.20, 0.35, 0.50, 0.75, 1.00, 1.50, infinite
Dynamic Contrast	23 steps: 1-12, 0.5 increments
Line Density	3 steps (pre) low, norm, high
Enhance	6 steps (pre) 0, 1, 2, 3, 4, 5
Persistence Filter	8 steps (pre)
Time Delay	0, 0.5, 1, 2, 3, ...10
Contrast Clock	On / Off
Balance	Range: 25 – 225, step size: 5
Threshold	Range: 10 – 255, step size: 1
Display modes:	• Coded PI • Coded PI: CIS • Coded PI: CCIS
Screen formats:	
• Code PI: Single (B), Dual (B+B), Quad (B+B+B+B) • CIS: Dual simultaneous (2D+Coded PI) • CCIS: Single (B), Dual (B+B), Quad (B+B+B+B)	

Post-processing		
B-mode:		
• Gain	• Gray Map	• CRI Filter
• Auto	• Tint Map	• Dynamic Contrast
• SRI	• Enhance	
M-mode:		
• M-Gain, 2D-Gain	• Display format	• Tint map
• Sweep speed	• Gray map	• Dynamic Contrast
• Angle (AMM)	• Enhance	
Color Flow M-mode:		
• M-Gain, 2D-Gain	• Angle (AMM)	• Radiantflow
• Balance	• Invert	• Scale
• Baseline	• Color Map	• Threshold
• Sweep Speed	• Display Mode	• Display Format
Color Flow imaging modes (CFM, PD, HD-Flow):		
• 2D-Gain	• Baseline	• Display Mode (CFM only)
• Auto	• Color Map	• Scale (CFM and HD-Flow)
• Invert	• Radiantflow	
• Balance	• Threshold	
PW-mode:		
• PW-Gain	• Angle	• Tint Map
• 2D-Gain	• Invert	• Scale
• Baseline	• Trace	• Display Format
• Sweep Speed	• Gray Map	
Elastography		
• 2D-Gain	• Soft Compress	• SRI
• Transparency	• Hard Compress	• Elasto Map
Contrast		
• Gain	• Tint Map (PI, PI CIS)	
• SRI	• CCIS Map (PI CCIS)	
• Dynamic Contrast	• Balance (PI CCIS)	
• Gray Map (PI, PI CIS)	• Threshold (PI CCIS)	

Measurements

Generic measurments	
Distance:	
• Distance (Point to Point)	• 2D Trace (Point Length)
• Distance (Line to Line)	• Stenosis (% Distance)
• 2D Trace (Trace Length)	• Ratio D1/D2
Area/Circumference:	
• Ellipse	• Stenosis (% Area)
• Trace (Line)	• Area (2 Distance)
• Trace (Point)	• Ratio A1/A2
Volume (calculation methods):	
• 1 Distance	• 3 Distance
• 1 Ellipse	• 1 Distance + Ellipse
Angle:	
• Angle (3 Point)	• Angle (2 Line)
M-mode:	
• Distance (Point to Point)	•
• Time	• HR
• Slope	• Stenosis (% Distance)
• Vessel Diam.	• IMT
• Ratio D1/D2	• Stenosis Diam.
PW Doppler mode:	
• Auto & Manual Trace:	• PGmax, PGmean
• PS (Peak Systole)	• TAmx (Time avg max Vel)
• ED (End Diastole)	• TAmx (Time avg mean Vel)
• MD (Mean Difference)	• VTI (Vel. Time Integral)
• S/D (Ratio)	• Heart Rate
• TAmx	• Vol. Flow
• HR	
• PI (Pulsatility Index)	
• RI (Resistance Index)	
Vessel:	
• R/L Vessel Area	• R/L Stenosis Area
• R/L Vessel Diam.	• R/L Stenosis Diam.
• R/L IMT	• R/L Flow Diam.
Single Measurements:	
• Velocity	• RI
• Time	• PI
• PS	• Acceleration
• PS/ED	• HR
• ED	

Obstetrics SonoL&D	
Progression Angle – Auto	Progression Angle – Manual
Head Perineum Distance	Midline Angle
Head Direction	Summary Reports

Obstetrics fetal echo	
Chambers	LPA
Thorax	RPA
Aorta/LVOT	Ductus Art.
Pulmonary/RVOT	Cardiac Output
Venous	LT TEI
FHR	RT TEI
Tricuspid Valve	Ductus Ven.
Mitral Valve	Umbilical Vein
Aortic	Pulmonary Veins
Pulmonary	Summary Reports

Obstetrics Z-scores	
Long Axis	Obl. Short axis
Aortic Arch	4 Chambers
Short Axis	Thorax
Summary Reports	

Obstetrics calculations	
Biometry	Early Gestation
Long Bones	NT Method: SonoNT/Manual
Fractional Limb Volume	Fetal Cranium
AFI	Uterus
Thorax	Ovary Right/Left
FHR	Fibroid
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., Tricuspid valve, Ovarian	
Gestational Age Calculation	
Gestational Growth Calculation	
Fetal Weight (FW) Estimation	
Fetal Trend Graph	
Multi-Gestational Calculation & Fetal Compare	
Calculation and Ratios	
Fetal Qualitative Description (anatomical assessment)	
Fetal Environmental Description (biophysical profile)	
Summary Reports	

Gynecology calculations	
Uterus	
Left/Right Ovary	
Left/Right Follicle: Manual / Auto Caliper	
Fibroid/Myoma, includes fibroids classification selection	
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/Volume)	
IOTA LR2, Simple Rules and ADNEX Model****	
IETA unenhanced ultrasound examination and enhanced ultrasound examination – Sonohysterography****	
IDEA Protocol	
Uterus Classification (ESHRE/ESGE and ASRM)	
Summary Reports	

Measurements (continued)

Pediatric calculations
Left/Right Hip Joint
Left/Right Femoral Head Coverage
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 Communicating Artery)
P-Com. A (Posterior Communicating Artery)
Left/Right CCA (Common Carotid Artery)
Left/Right ICA (Internal Carotid Artery)
Left/Right Vertebral Artery
Vessels
Summary Reports

Transrectal calculations
Prostate
Vessel
Summary Reports including PSAD, PPSA(1), PPSA(2) calculation

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

Small part calculations: Breast
Lesion 1-5 (Right/Left)
Summary Reports

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

Vascular calculations: UEA	
Innom. Artery	Ulnar Artery
Subclav. Artery	Sup Palm. Artery
Axill. Artery	Deep Palm. Artery
Brach. Artery	Graft
Summary Reports	Rad. Artery

Vascular calculations: UEV	
Innom. Vein	Basilic Vein
Subclav. Vein	Brach. Vein
Jugular Vein	Med. Cub. Vein
Axill. Vein	Rad. Vein
Ceph. Vein	Ulnar Vein
Summary Reports	

Vascular calculations: Renal Artery	
Renal Artery	Interlob. Artery
Renal Vein	Arcuate Artery
Summary Reports	Segm. Artery

Vascular calculations: LEA	
Com. Iliac Artery	Popl. Artery
Ext. Iliac Artery	Ant. Tib. Artery
Int. Iliac Artery	Post. Tib. Artery
Com. Fem. Artery	Peron. Artery
Prof. Fem. Artery	Dors. Ped. Artery
Sup. Fem. Artery	Graft
Summary Reports	

Vascular calculations: LEV	
IVC	Com. Fem. Vein
Com. Iliac Vein	Sup. Fem. Vein
Ext. Iliac Vein	Prof. Fem. Vein
Int. Iliac Vein	Low Saph. Vein
Gr. Saph. Vein	Ant. Tib. Vein
Popl. Vein	Post. Tib. Vein
Summary Reports	

Vascular calculations: TCD	
MCA	P cCom. Artery
ACA	Vertebral
PCA	Basilar
Summary Reports	A Com. Artery

Measurements (continued)

Cardiology	
B-mode:	
- Simpson (LV, LA, RA) - LV-Mass (Epi & Endo Area, LV Length) - LV (RVD, IVS, LVD, LVPW) - LVOT Diameter - RVOT Diameter - MV (Dist A, Dist B, Area) - TV (Diameter) - AV/LA (Aortic Valve/Left Atrium) - PV (Diameter) - PEd (Pericardial Effusion Diameter)	
M-mode:	
- LV (IVS, LVD, LVPW, RVD) - AV/LA (Ao Root Diam, LA Diam, AV Cusp Sep., Ao Root Ampl) - MV(D-E, E-F Slope, A-C Interval, EPSS) - TV (TAPSE) - HR (Heart Rate, Atrial HR)	
PW-mode:	
- MV (Mitral Valve) - AV (Aortic Valve), TV (Tricuspid Valve) - PV (Pulmonary Valve) - LVOT & RVOT Doppler (Left & Right Ventricle Outflow Tract) - Pulmonic Veins - PAP (Pulmonary Artery Pressure) - HR (Heart Rate) - TEI-Index	
Color-modes:	
PISA	
Others:	
- Diast. Vol. (Bi) - Syst. Vol. (Bi) - Stroke Volume - Volume Flow - Cardiac Output - Ejection Fraction - Fractional Shortening - Myocardial Thickness - LA/Ao Ratio - E/A Peak - Peak Gradient Acceleration	- SVR/SVRI - Mean Gradient - Mean Gradient Acceleration - VTI - TVA - PG - PHT - MVA - AVA - ERO - CVP (Cardio Vascular Profile) Score
Summary Reports	

OB Tables

Age tables	
- AC: ASUM, CFEF, Hadlock(82), Hadlock(84), Hansmann, Hobbins, Jeanty, JSUM, Kurmanavicius, Merz, Nicolaides, Shinozuka, Siriraj, Tokyo, WHO - 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, McLennan, Merz, Nicolaides, OSAKA, Persson, Rempen, Sabbagha, Shinozuka, Siriraj, Tokyo, UltraARG, Verburg, WHO	

OB Tables (continued)

Age tables (continued)	
- CEREB: Chavez, Chitty, Goldstein, Hill, Hobbins, Nicolaides, Verburg - CLAV: Yarkoni - CRL: ASUM, DAYA, Eik-Nes, Hadlock, Hansmann, Intergrowth, JSUM, McLennan, Persson, Pexsters, Nelson, OSAKA, Rempen, Robinson, Robinson_BMUS, Sahota, Shinozuka, Tokyo, Verburg - FL: ASUM, CFEF, Chitty, Eik-Nes, Hadlock_82, Hadlock_84, Hansmann, Hobbins, Hohler, Jeanty, Johnsen, JSUM, Kurmanavicius, Leung, Persson, Merz, Nicolaides, O'Brien, OSAKA, Shinozuka, Siriraj, Tokyo, UltraARG, WARDA, WHO - FTA: OSAKA - FIB: Jeanty - GS: Hansmann, Hellman, Holländer, Nyberg, 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, Hadlock82, Hansmann, Jacot-Guillarmod, Jeanty, Johnsen, JSUM, Kurmanavicius, Lai_Yeo, Lessoway, Leung, Merz, Nicolaides, Paladini, Shinozuka, Siriraj, Stork, Tokyo, Verburg, Medvedev, Intergrowth, WHO - AD: Persson - AFI: Moore - Aorta: Vmax: Rizzo - Aolst ED, PI, RI, TAmx, Vmax: DelRio2006 - APAD: Merz - APTD: Hansmann - APTDxTTD: Shinozuka_SD - AxT: Shinozuka, Tokyo - BOD: Jeanty - BPD: ASUM, Campbell, CFEF, Chitty, Eik-Nes, Hadlock, Hadlock82, Hansmann, Jacot-Guillarmod, Jeanty, JSUM, Kurmanavicius, Lai_Yeo, Lessoway, Leung, McLennan, Merz, Nicolaides, Paladini, Persson, OSAKA, Sabbagha, Shinozuka, Siriraj, Stork, Tokyo, Verburg, Medvedev, Intergrowth, WHO - CLAV: YARKONI - CM: Nicolaides - CRL: ASUM, Hadlock, Hansmann, Intergrowth, JSUM, McLennan, Persson, OSAKA, Robinson, Robinson 1993, Shinozuka, Tokyo, Pexsters, Medvevev - DV a/S: JSUM - DV PI: Baschat, JSUM - DV PLI: Baschat - DV PVIV: Baschat - DV S/a: Baschat - FIB: Chitty, Jeanty, JFFSD, Siriraj - FTA: OSAKA - FWg: Alexander - Foot: Chitty	
--	--

OB Tables (continued)

Growth tables
- FL: ASUM, CFEF, Chitty, Eik-Nes, Hadlock, Hadlock82, Hansmann, Jacot-Guillarmod, Jeanty, Johnsen, JSUM, Kurmanavicius, Lai_Yeo, Lessoway, Leung, Merz, Nicolaides, O'Brien, OSAKA, Paladini, Persson, Shinozuka, Siriraj, Stork, Tokyo, Verburg, WARDA, Medvedev, Intergrowth, WHO - GS: Hansmann, Hellman, Nyberg, Rempen, Tokyo - HC: ASUM, CFEF, Chervenak, Chitty, Hadlock, Hadlock82, Hansmann, Jacot-Guillarmod, Jeanty, Johnsen, Kurmanavicius, Lai_Yeo, Lessoway, Leung, Merz, Nicolaides, Paladini, Siriraj, Stork, Verburg, Medvedev, Intergrowth, WHO - HL: ASUM, Chitty, Jeanty, Lai_Yeo, Merz, JFFSD, OSAKA, Paladini, Siriraj, Medvedev - IFA: Rotten - IVC PLI: JSUM - Kidney L/W/H: Chitty(2003), Vuuren - Kidney Vol: Chitty(2003) - Kidney RPAP: Chitty(2003), Vuuren, Romero, Hansmann - Lt.Tei(1CT,1RT), Lt.Tei(a,b): Bhorat - Lung Area Left/Right: Peralta - LV: Tokyo - MAD: Eik-Nes, eSnurra, Kurmanavicius - MainPA Vmax: Rizzo - MCA CP: Ebbing - MCA PI: Bahlmann, Baschat, Ebbing, JSUM - MCA RI: Bahlmann, JSUM - MCA PV: Mari - MCA PS, TAmx: Schaffer - MainPA Vmax: Rizzo - MNM Ang: deJong-Pleij - MV E/A: HARADA - NBL: BUNDUKI, Medvedev, Orlandi, SONEK - NT: Nicolaides, Yagel - OFD: ASUM, Chitty, Hansmann, Jeanty, Kurmanavicius, Merz, Nicolaides, Medvedev, Intergrowth - RAD: Chitty, Jeanty, JFFSD, Merz, Paladini, Sirirja - SAG. AP: Malinger - SAG. CC: Malinger - Stomach APD: Goldstein - Stomach LD: Goldstein - Stomach TD: Goldstein - TAD: CFEF, Jacot-Guillarmod, Merz - TC: Chitkara - TCD: Goldstein, Hill, Jacot-Guillarmod, Nicolaides, Verburg - Thym. Dia: Pittyanont - Thyr. Circ: Ranzini - ThyTh: Karl - TIB: Chitty, Jeanty, JFFSD, Merz, Paladini, Siriraj - TTD: Hansmann - TV E/A: HARADA - ULNA: Chitty, Jeanty, JFFSD, Merz, Paladini, Siriraj - UmbArt PI: Baschat, Ebbing, JSUM, Merz, Schaffer, Drukker - UmbArt RI: JSUM, Merz, Kurmanavicius, Schaffer, Drukker - UmbArt S/D: Drukker - UtArtPI: Gomez, Merz, Schaffer - UtArtRI: Merz, Schaffer - Vermis A & 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,BPD, TVOL) - Merz (AC, BPD) - Osaka (BPD, FTA, FL) - Persson 1 (BPD, MAD, FL) - Persson 2 (BPD, MAD) - 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, WHO, intergrowth, CFEF
Fetal Weight Growth FWG
Alexander, Ananth Tw (M,D), Bourgogne, Brenner, Burgundy, Burgundy (m, f), CFEF, Doubilet, Duryea, Duryea (m, f), Ego, Ego (m, f), Eik-Nes, Hadlock, Hansmann, Hansmann(86), Hobbins/Persutte, Intergrowth, Johnsen, Johnsen(m, f), JSUM(2001), Kramer (m, f), Osaka, Persson(96), Persson(98), Shinozuka, Tokyo, Williams, WHO, Yarkoni

Fetal ratios
CC/TC
CI (BPD/OFD) (Hadlock)
FL/AC (Hadlock)
FL/BPD (Hohler)
FL/HC (Hadlock), (WHO)
HC/AC (Campbell)
Va/Hem (Hansmann, Nicolaides)
Vp/Hem (Nicolaides)
LHR (Peralta)
LTR (Lung Area/ Thorax Area) (Hasegawa)
CVR (Peranteau)
TT (Karl)
AOI/DuctArt. (DelRio)
MD/MX (Rotten)

Probes (All probes may not be available in all countries)

4C-RS

Wideband Convex Probe	
Applications	OB, GYN, Abdomen
Max. Bandwidth (-20dB) ^{†††}	2 – 5MHz
Number of Elements	128
Convex Radius	60.0 mm
FOV	81°
Footprint	68.7 x 18.3 mm
Depth	Max. 42 cm
Center Frequency	3.1 MHz
B-mode Frequency	2.50 - 3.70 MHz
Doppler Frequency	2.00 - 3.23 MHz
Harmonic Frequency	1.64 - 2.08 MHz

C1-5-RS^{†††} (may not be available in all countries)

Wideband Convex Probe	
Applications	OB, GYN, Abdomen
Max. Bandwidth (-20dB) ^{†††}	2 – 5MHz
Number of Elements	192
Convex Radius	56.1 mm
FOV	114°
Footprint	69.3 x 17.2 mm
Depth	Max. 42 cm
Center Frequency	3.4 MHz
B-mode Frequency	2.78 – 3.70 MHz
Doppler Frequency	2.00 - 3.23 MHz
Harmonic Frequency	2.13 - 2.13 MHz

RAB2-6-RS

Wideband Convex Volume Probe	
Applications	OB, GYN, Abdomen
Max. Bandwidth (-20dB) ^{†††}	2-5 MHz
Number of Elements	128
Convex Radius	47.1 mm
Volume Sweep Radius	24.11 mm
FOV	90° (B), 85° x 90° (Volume scan)
Footprint	62.2 x 34.0 mm
Depth	Max. 30 cm
Center Frequency	3.3 MHz
B-mode Frequency	2.78 – 3.85 MHz
Doppler Frequency	2.08 – 3.23 MHz
Harmonic Frequency	1.96 – 2.38 MHz

RIC5-9A-RS

Wideband Microconvex Volume Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB) ^{†††}	3.8 - 9.3 MHz
Number of Elements	192
Convex Radius	10.0 mm
Volume Sweep Radius	11.7 mm
FOV	184° (B), 120° x 184° (Volume)
Footprint	26.2 x 27.8 mm
Depth	Max. 18 cm
Center Frequency	6.5 MHz
B-mode Frequency	4.55 - 8.33 MHz
Doppler Frequency	4.55 - 6.25 MHz
Harmonic Frequency	3.57 - 3.85 MHz

IC9-RS

Wideband Microconvex Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB) ^{†††}	2.9 – 9.7MHz
Number of Elements	192
Convex Radius	9.2 mm
FOV	185°
Footprint	19.6 x 13.6 mm
Depth	Max. 18 cm
Center Frequency	6.25 MHz
B-mode Frequency	4.55 - 8.33 MHz
Doppler Frequency	5.00 - 6.25 MHz
Harmonic Frequency	3.57 - 3.57 MHz

IC9B-RS

Wideband Microconvex Probe	
Applications	OB, GYN, Transrectal
Max. Bandwidth (-20dB) ^{†††}	2.9 – 9.7MHz
Number of Elements	192
Convex Radius	9.2 mm
FOV	185°
Footprint	19.6 x 13.6 mm
Depth	Max. 18 cm
Center Frequency	6.25 MHz
B-mode Frequency	4.55 - 8.33 MHz
Doppler Frequency	5.00 - 6.25 MHz
Harmonic Frequency	3.57 - 3.57 MHz

12L-RS

Wideband Linear Probe	
Applications	Small Parts, Pediatrics, MSK, Peripheral Vascular, Breast
Max. Bandwidth (-20dB) ^{†††}	4 – 12 MHz
Number of Elements	192
FOV	38.4 mm
Footprint	47.2 x 13.8 mm
Depth	Max. 11 cm
Color Doppler Steering Angle	7°/14°/20°
Center Frequency	7.7 MHz
B-mode Frequency	6.67 - 10.00 MHz
Doppler Frequency	5.26 - 7.14 MHz
Harmonic Frequency	4.55 - 5.00 MHz

9L-RS

Wideband Linear Probe	
Applications	OB, Small Parts, Pediatrics, MSK, Peripheral Vascular
Max. Bandwidth (-20dB) ^{†††}	3 – 8 MHz
Number of Elements	192
FOV	44 mm
Footprint	53.0 x 14.1 mm
Depth	Max. 14 cm
Color Doppler Steering Angle	7°/14°/20°
Center Frequency	5.3 MHz
B-mode Frequency	4.55 - 10.00 MHz
Doppler Frequency	3.70 – 5.26 MHz
Harmonic Frequency	2.86 – 2.86 MHz

Probes (continued)

3Sc-RS	
Wide Band Phased Array Probe	
Applications	Abdominal, Cardiology, OB, Pediatrics, Cephalic
Max. Bandwidth (-20dB) ^{†††}	1 – 4 MHz
Number of Elements	64
FOV	90°
Footprint	27.6 X 19.3 mm
Depth	Max. 23.7 cm
Center Frequency	2.8 MHz
B-mode Frequency	2.44 - 3.33 MHz
Doppler Frequency	1.85 - 2.50 MHz
Harmonic Frequency	1.92 - 1.96 MHz

12S-RS	
Wideband Phased Array Probe	
Applications	Small Parts, Cardiology, Pediatrics
Max. Bandwidth (-20dB) ^{†††}	4 – 12 MHz
Number of Elements	96
FOV	90°
Footprint	21.0 X 14.5 mm
Depth	Max. 13.7 cm
Center Frequency	8 MHz
B-mode Frequency	5.88 – 9.09 MHz
Doppler Frequency	5.00 – 6.67 MHz
Harmonic Frequency	4.76 – 5.00 MHz

Vscan Air CL		
Wideband Curved & Linear Array Probe		
Applications	Abdomen, Vascular, Cardiology, OB & GYN, Pediatrics incl. Neonatal Cephalic, Musculoskeletal incl. Nerve, Small Parts, Interventional	
Weight	205 +/-3g	
	Curved	Linear
Max. Bandwidth (-20dB) ^{†††}	2-5 MHz	3-12 MHz
Number of Elements	128	192
FOV	60°	38.4 mm
Footprint	64 x 16 mm	40 x 7 mm
Depth	Max. 24 cm	Max. 8 cm
Center Frequency	3.3 MHz	7.7 MHz

Vscan Air SL		
Wideband Sector & Linear Array Probe		
Applications	Abdomen, Vascular, Cardiology, OB & GYN, Pediatrics incl. Neonatal Cephalic, Musculoskeletal incl. Nerve, Small Parts, Interventional	
Weight	218 +/-3g	
	Sector	Linear
Max. Bandwidth (-20dB) ^{†††}	2-4 MHz	3-12 MHz
Number of Elements	64	192
FOV	90°	38.4 mm
Footprint	22 x 17 mm	40 x 7 mm
Depth	Max. 24 cm	Max. 8 cm
Center Frequency	2.4 MHz	7.7 MHz

Biopsy guides available for:

Probes:

- IC9-RS
- IC9B-RS
- RIC5-9A-RS
- 4C-RS
- RAB2-6-RS
- 12L-RS
- C1-5-RS
- 3Sc-RS
- 9L-RS

Connectivity & Service Tools

External inputs and outputs

Ethernet Network (RJ45 - 100Mbps)

Wireless Network and Bluetooth interface (USB) (Option)

USB Type A (3.0), 1x

USB Type A (2.0), 1x

USB Type C (3.0), 2x

External Audio Out

HDMI, standard

Wireless display module (option)

VGA port (integrated video converter option)

S-Video (integrated video converter option)

Composite BNC (integrated video converter option)

Service tools

Data Export capabilities for Asset Performance Analytics

Probe Check: On-board probe quality assessment determining probe performance based on electroacoustic or impedance measurements in accordance with FDA 510(k) requirements.

InSite™ Remote diagnostic support

Verisound™ Fleet management (cloud-based preset management)

eDelivery, electronic delivery of software updates

Safety Conformance

Applicable standards

Classified to ANSI/AAMI ES60601-1 Medical Electrical Equipment, Part 1: General Requirements for Safety by a Nationally Recognized Test Lab

Certified to CSA CAN/CSA-C22.2 NO. 60601-1 General requirements for safety

CE Marked to Regulation (EU) 2017/745 on Medical Devices Conforms to the following standards for safety

IEC^{††}/EN 60601-1 Medical electrical equipment – Part 1: General requirements for basic safety and essential performance

IEC^{††}/EN 60601-1-2 Medical electrical equipment – Part 1-2: General requirements for safety – Collateral Standard: Electromagnetic compatibility – requirements and tests

IEC^{††}/EN 60601-1-6 Medical electrical equipment Part 1 -6: General requirements for basic safety and essential performance – Collateral Standard: Usability

IEC^{††}/EN 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment

IEC^{††}/EN 62366-1 Application of usability engineering to medical devices

IEC/EN 62304 Software Life Cycle Processes

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

EN ISO 15223-1: Symbols to be used with medical device labels, labelling and information to be supplied

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

EMC Emissions Group 1, class A device requirements of CISPR 11

WEEE (Waste Electrical and Electronic Equipment)

ROHS according to 2011/65/EU, EU Directive 2015/863 Including national deviations

[†]Not for sale in the USA. Not approved or cleared by the U.S. FDA.

Please contact your GE HealthCare sales representative for information about availability in your area.

^{††} Including national deviations

^{†††} Used frequencies are dependent on probe settings and parameters and are displayed on the ultrasound screen

^{††††} Not available in all countries

Products mentioned in the material may be subject to government regulations and may not be available in all countries. Shipment and effective sale can only occur after approval from the regulator. Please check with local GE HealthCare representative for details.

©2025 GE HealthCare.

Voluson, HD*live*, SonoAVC, SonoNT, HD-Flow, Radiant*flow*, CrossXBeamCRI, InSite, Vscan Air and Verisound are trademarks of GE HealthCare. Windows is a registered trademark of Microsoft Corporation. DICOM is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information. GE HealthCare is a trademark of General Electric Company used under trademark license.