SAMSUNG

V6

Datasheet (Preliminary)

Version 1.04

July 2023

(Rev 1.0)

Table of Contents

1. SYSTEM SPECIFICATION

1.1 General

PHYSICAL SPECIFICATION

- Height: 1,370 ~ 1,698 mm (53.9 ~ 66.9")
- Width: 21.5" monitor 549mm (21.6")
  * Option 23.8" monitor 559mm (22.0")
- Depth: 964 mm (38.0")
- Weight: Approx. 80 kg (176.4 lbs)

ELECTRICAL POWER

- Voltage: 100 ~ 240 VAC
- Frequency: 50/60 Hz
- Power Consumption: Max. 800 VA
  (with Peripherals)
- Nominal Current: 1.22 ~ 2.71 A
  - 110V: 2.44 A
  - 220V: 1.41 A
- Heat Dissipation: 2,729.7 BTU/h
- Safety Class
  - System: A
  - Transducer: BF (probe dependent)
- Battery (Optional)
  - 14.4VDC, 6,900mAh, 99.36W Lithium-ion Battery x 3EA
  - Standby Mode: Approx. 84 hours
  - Scan Time: Approx. 75 min.
  - Wake up Time from Sleep Mode: Approx. 23 sec.
  - Charging Time: Approx. 3 hours
    (It is subject to change depending on user environment.)

CONSOLE DESIGN

- 3 or 4 Probe Ports
- CW Probe Port (Option)
- Height/Rotate Adjustable Control Panel
- Height/Tilt/Rotate Adjustable Monitor
- On-board Storage for Peripherals
- 6 Probe Holders
- Endo-cavity Probe Holder (Option)
- Gel Bottle Storage
- Gel Warmer (Option)
- 4 Swivel/Lock Wheels (wheel diameter: 5 inch)
- Front and Rear Handles
- Integrated Cable Management
- Integrated High-fidelity Stereo Speakers
- Prevention of Noise of the System
- Easy-to-clean Air Filter
- EMC class A
- Tx/Rx Channels: 128
- Audible Noise Level: 34.8 dBA
- Booting Time: Approx. 80 sec.
- Operating System: Windows 10
- CPU: Intel i5 2.5 GHz
- GPU: NVIDIA GeForce GTX 1650
- RAM: DDR4 SDRAM (16 GB)
- Storage: Integrated SSD (512 GB)

CONTROL PANEL

- Height: adjustable 180 mm
- Rotation: adjustable +/- 30° from center
- Ergonomic Hard Key Operations
- Functional Grouping of Keys
- Interactive Back-lighting
- Functional Grouping of Keys on 14” wide LED Touch Panel
- Integrated Alphanumeric QWERTY Backlit Keyboard (optional) and Virtual Screen Alphanumeric QWERTY Keyboard on Touch Panel
- Integrated Recording Keys for Remote Control of Peripherals or DICOM Devices
- Trackball

MONITOR

- Size: 21.5” (Optional 23.8”)
- Type: LCD monitor (with LED Backlight Unit)
- Resolution: 1,920 x 1,080 x 24bit (8bit RGB)
- Tilt Angle: -90° ~ +10°
- Viewing Angle: 178° (R/L, U/D)
- Rotation Angle: -360° ~ +360°
- Adjustable Movement: Up/Down, Forth/Back
- Contrast Ratio: 1000:1
- Contrast Adjustment: 0 ~ 100, Default 80
- Response Time: 14 ms
- Luminance: 350 cd/㎡ (Panel)
- Brightness Adjustment: 0 ~ 100, Default 50
- Sharpness Adjustment: 0 ~ 100, Default 50

TOUCH SCREEN

- Size: 14”
- Type: LCD in-cell capacitive touch screen (with LED Backlight Unit)
- Resolution: 1,920 x 1,080 x 24 bit
- Interactive Dynamic Soft Key Menu Display
- Digital TGC Controls on Touch Screen
- Digital TGC Line Memory Function
- Virtual Screen Alphanumeric QWERTY Keyboard on Touch Screen
- Brightness/Contrast Control

PERIPHERAL SIGNALS

- Multiple USB Ports: 2 USB 3.0 ports (Front), 2 USB 3.0 Ports (Rear)
- 1000BASE-T Gigabit Ethernet
- HDMI Output: 2 ports (1920 x 1080 Resolution)
- Stereo Audio Output (Optional)
- S-VHS Output (Optional)

ENVIRONMENTAL CONDITINON

- System
  - Operating Temperature: 10~35 °C
  - Operating Humidity: 30~75 %
  - Operating Pressure: 700~1,060 hPa

- Storage/Shipping Temperature: -25~60 °C
- Storage/Shipping Humidity: 20~90 %
- Storage Pressure: 700~1,060 hPa

- Probe
  - Operating Temperature: 10~35 °C
  - Operating Humidity: 30~75 %
  - Operating Pressure: 700~1,060 hPa
  - Storage/Shipping Temperature: -25~60 °C
  - Storage/Shipping Humidity: 20~90 %
  - Storage Pressure: 700~1,060 hPa

1.2 Operating Mode

2D MODE

- Available Probes
  - CA1-7S/SD
  - CA1-7AD
  - CA3-10A
  - CA4-10M
  - LA3-14AD
  - LA2-14A
  - LA2-9S
  - L3-22
  - LA3-22AI
  - EA2-11AR/AV
  - EA2-11ARE/AVE
  - miniER7
  - EV2-10A
  - CV1-8A
  - CV1-8AE
  - PA1-5A
  - PA3-8B
  - PA4-12B
  - MMPT3-7
- Max. Frame Rate: 5,000 Hz
  (Condition: Extended Mode › PA1-5/Cardiac/CARD Preset, 2D › Line Density Low2 › Min Depth › Write Zoom Min Size, Min Depth)
- Display
  - Top/Bottom: 30 ~ 70
  - Side by side
  - M only
- Harmonic
- Trapezoidal (Linear)
- Dual live
- Pulse Inversion / S-Harmonic › Harmonic / S-Harmonic
- M line
- Flip: L/R, U/D
- Frequency: Pen2, Pen1, Gen, Res1, Res2
  (Depends on Probe & Preset)
- MultiVision™: Off, 1 ~ 7 step
- ClearVision™: Off, 1 ~ 5 step
- Advanced QuickScan™: On, Off, Update
- Line density: Low, Middle, High
- Edge Enhance: -3 ~ 3 step
- Dynamic Range: 10 ~ 372
- Frame Average: 0 ~ 9 step
- Gray Map: 1 ~ 12 step
- Scan Area: 40 ~ 100 %
- Image Size: 70 ~ 100 %

- Store method: Time, Manual, ECG Beat
  - Time: 2 ~ 360 sec
  - Beat: 1 ~ 10 Beat
- Chroma map: Off, 1~17 step
- Power: 2 ~ 100 %
- Gain: 0 ~ 100 %
- Zoom
  - Read Zoom: 110 ~ 4800 % (48X)
  - Write Zoom: 100 ~ 2,920% (29.2x)
- Depth
  - Convex: 5 ~ 55 cm
  - Linear: 2 ~ 20 cm
  - Endo-cavity: 3 ~ 30 cm
  - Phased: 4 ~ 55 cm

  (Depends on Probe & Preset)
- Focus: 8 focal points
- Number of TGC: 10
- TGC Preset Memory: 5
- 2D Image Panning
- Ability to Invert Image Left and Right, Top, and Bottom
- Ability to Electronically Steer the 2D Beam Direction
- Tissue Optimization
- Grayscale Standard Display
- Adjustable Temporal Resolution and Spatial Resolution
- Selectable 2D Compression Settings
- Tissue Aberration Correction

  (User Selectable Speed of Sound)
- Dual Imaging with either Independent Cine Loop Buffers or Split-screen Imaging
- Dual Imaging with Color Compare
- Dual Imaging with Fundamental and Contrast Optimization
- 256 (8 bits) Discrete Gray Levels

M MODE

- Available Probes
  - CA1-7S/SD
  - CA1-7AD
  - CA3-10A
  - CA4-10M
  - LA2-14A
  - LA3-14AD
  - LA2-9S
  - L3-22
  - LA3-22AI
  - EA2-11AR/AV
  - EA2-11ARE/AVE
  - miniER7
  - EV2-10A
  - CV1-8A
  - CV1-8AE
  - PA1-5A
  - PA3-8B
  - PA4-12B
  - MMPT3-7
- M Line
- M Line Position

- Free Angle M > Anatomical M: On, Off (Phased, Cardiac)
- Sweep Speed: 60, 120, 180, 300, 360 Hz
- Advanced QuickScan™: On, Off
- Dynamic Range: 30 ~ 372
- Gray Map: 1 ~ 12 step
- Chroma Map: Off, 1 ~ 17 step
- Power: 2 ~ 100 %
- Gain: 0 ~ 100 %
- Acquisition Zoom Capability
- Selectable Display Format: Top/Bottom, Left/Right
- Cine Loop Review for Retrospective Analysis of M-mode Data 256 (8 bits) Discrete Gray Levels
- M Tx Freq.: Pen2, Pen1, Gen, Res1, Res2 (Same as 2D)
- M Gain: M Gain can be corrected for 2D gain.
- M Mark: M cursor can be displayed on 2D or C Images. M cursor displayed position can be adjusted.
- Anatomical M: Any desired plane can be set on the 2D-mode Image and the M-mode Image for the set plane can be reconstructed

COLOR DOPPLER MODE

- Available Probes
  - CA1-7SSD
  - CA1-7AD
  - CA3-10A
  - CA4-10M
  - LA2-14A
  - LA3-14AD
  - LA2-9S
  - L3-22
  - LA3-22AI
  - EA2-11AR/AV
  - EA2-11ARE/AVE
  - miniER7
  - EV2-10A
  - CV1-8A
  - CV1-8AE
  - PA1-5A
  - PA3-8B
  - PA4-12B
  - MMPT3-7
- Max Velocity: 7.50 m/sec (Condition: Extended Mode > PA1-5A/Cardiac/CARD Preset > C > Freq. Pen (2.3MHz) > Scale Max (22.27kHz) > Baseline Shift Max > Min Depth, Min ROI)
- Min Velocity: 1 cm/sec (Condition: Extended Mode > PA1-5A/Cardiac/CARD Preset > Freq. Pen (2.3MHz) > Scale Min 0.06KHz > Baseline Center > Max ROI)
- PRF: 0.05 ~ 25.97 KHz (probe dependent)
- Max. Frame Rate: 686 Hz (Condition: PA1-5A/Cardiac/Tender Preset > 2D > Write Zoom ROI Min Size, Min Depth > Line Density Low2 > C > Freq. Pen2 (2.3MHz) > Scale Max 22.27KHz)
- Color Invert: On, Off

- Multi Freq.: Pen2, Pen1, Gen, Res1, Res2
- Filter: 1 ~ 4
- Scale: 0.05 ~ 25.97 KHz (Probe Dependent)
- Baseline: -8 ~ 8
- Balance: 0 ~ 16
- Display Mode: Color + BW, BW only
- Color mode: Velocity, Power, Variance, Vel + Var
- Steer: 0°, ±15°, ±20°, ±30°
- Sensitivity: 0 ~ 5 step
- Smooth: 0 ~ 5
- Density: High, Mid, Low
- Frame Avg.: 0 ~ 5
- TDI: Phased Array only
- Color Map: 1 ~ 12
- Gain Control: 0 ~ 100%
- Color Gain
- ROI
- Baseline Invert
- S-Flow
- MV-Flow
- Color Optimization: GI, WHC
- Zoom
- Scale Sector Width and Position on Curved and Phased Array Transducers
- Simultaneous Mode during PW Mode
- Ability to Steer between ±3 Steering Angles on Linear Array Transducers
- Write Priority
- Cine/Loop Review with Full Playback Control
- 256 Color Bins
- Post-processing includes Baseline, Color Invert, Color Map, Hide Color, Write Priority, Blend, Variance, and Zoom
- Maps, Filters, Color Sensitivity, Line Density, Smoothing, Echo Write Priority, Color Persistence, Gain, and Baseline Optimized Automatically by Exam Type or is User-selectable
- Frequency Optimization Control for Spatial Resolution and Penetration Optimization
- Automatically Adapts Transmit and Receive Processing based on the Color Box Position, Providing Optimal Sensitivity and Color Resolution
- C Gain: Maps, Filters, Color Sensitivity, Line Density, Smoothing, Echo Write Priority, Color Persistence, Gain, and Baseline Optimized Automatically by Exam Type or is User-selectable
- C ROI: Position, Size, and Steering Adjustment is Possible for Color Doppler ROIs
- C Transmit Focus: Automatically Follows the color Doppler ROI position
- Variance Curve: The display of the color variance component can be adjusted
- Advanced Motion Suppression with Intelligent Algorithms; adapts to various application types to selectively eliminate virtually all color motion artifact

POWER DOPPLER/ S-FLOW MODE

- Available Probes
  - CA1-7S/SD
  - CA1-7AD
  - CA3-10A
  - CA4-10M
  - LA2-14A
  - LA3-14AD
  - LA2-9S
  - L3-22
  - LA3-22AI
  - EA2-11AR/AV
  - EA2-11ARE/AVE
  - miniER7
  - EV2-10A
  - CV1-8A
  - CV1-8AE
  - PA1-5A
  - PA3-8B
  - PA4-12B
  - MMPT3-7
- Color Invert
- S-Flow Mode: On, Off
- MV-Flow Mode: On, Off
- Other Spec.: Same as Color mode
- User-selectable Persistence
- User-selectable Blending on/off
- Advanced Motion Suppression with Intelligent Algorithms; adapts to various application types to selectively eliminate virtually all color motion artifact
- Post-processing includes Hide , PD Balance, Invert, PD/S-Flow Map, Alpha Blending, and Zoom
- Trackball-controlled Color Region of Interest: size and position
- Maps, Filters, Color Sensitivity, Line Density, Smoothing, Echo Write Priority, Color Persistence, Gain, and Baseline Optimized Automatically by Exam Type or is User-selectable
- Color Invert in Live and Frozen Imaging
- Frequency optimization control for spatial resolution and penetration optimization
- Color and 2D Line Density Control
- Automatically Adapts Transmit and Receive Processing based on the Color Box Position, Providing Optimal Sensitivity and Color Resolution

PULSED WAVE DOPPLER MODE

- Available Probes
  - CA1-7S/SD
  - CA1-7AD
  - CA3-10A
  - CA4-10M
  - LA2-14A
  - LA3-14AD

- LA2-9S
- L3-22
- LA3-22AI
- EA2-11AR/AV
- EA2-11ARE/AVE
- miniER7
- EV2-10A
- CV1-8A
- CV1-8AE
- PA1-5A
- PA3-8B
- PA4-12B
- MMPT3-7

- Max. Frame Rate: 38 Hz
  (Condition: Extended Mode > PA1-5A/Cardiac/CARD Preset > 2D > Line Density Low2 > Min Depth > Write Zoom ROI Min Depth > PW > Min SV > Min Depth > Simultaneous)
- Max. Velocity: 70 m/s
  (Condition: Extended Mode > CA1-7S /Abdomen/ABD Preset > PW> Baseline Shift Max > Angle Max 80 > Freq. 2.0MHz > Scale Max 33.77kHz > Move SV Position to 0.3cm)
- Min. Velocity: 4.5 cm/s
  (Condition: Extended Mode > LA4-18A/Small Parts/SMP Preset > PW > Scale Min 1.15KHz > Baseline Shift Center > Move SV Position to 0 cm)
- PRF: 1.04 ~ 35.96 KHz (Probe Dependent)
- HPRF: On, Off (Setup)
- Max. HPRF: 70 m/sec
  (Condition: CA1-7S, Tender Preset, base line shift max, angle max 80, Freq. 2.0MHz, Scale 33.77kHz, Move SV Position to 4.5cm)
- Min. HPRF: Different for each case
- Simultaneous: On, Off
- Doppler Invert
- Steer Invert
- AutoCalc: On, Off (Setup)
- AutoCalc direction: All, Up, Down
- Mean Trace: On, Off
- Sweep Speed: 15 ~ 117 mm/s
- Dynamic Range: 30 ~ 256
- Sound: 0 ~ 100
- Filter: 1 ~ 24 level
- Baseline: -8 ~ 8 step
- SV Size: 0.5 ~ 25 mm
- SV Angle: -80° ~ 80°
- TDW (Phased array only)
- Store Method: Time, Manual, ECG Beat
  - Time: 2 ~ 360 sec
  - Beat: 1~10 Beat
- Advanced QuickScan™
- Smart Auto Doppler (Vascular-Artery, Carotid)
- Adjustable Velocity Display Ranges
- Selectable Low-frequency Signal Filtering with Adjustable Wall Filter Settings
- Selectable Grayscale Curve for Optimal Display
- Selectable Chroma Colorization Maps

- Selectable Display Format Prospective or Retrospective 30/70, 40/60, 50/50, 60/40, 70/30, Side by Side, Full Screen
- Doppler Review for Retrospective Analysis of Doppler Data
- 256 (8 bits) Discrete Gray Levels
- Post-processing includes Invert, Baseline, Angle Correct, Quick Angle, Display Format, Sweep Speed, and Chroma Map
  Post-processing in PW Frozen Mode includes Map, Baseline, Invert, and Chroma

CONTINUED WAVE DOPPLER MODE

- Available Probes
  - PA1-5A
  - PA3-8B
  - PA4-12B
  - DP2B
  - CW6.0
  - MMPT3-7
- Max. Velocity: 90 m/sec
  (Condition: PA1-5A/Cardiac/CARD Preset › CW › Baseline Shift Max › Scale 52.50KHz › Angle Max 80)
- Min. Velocity: 10 cm/sec
  (Condition: CW6.0/Cardiac/CARD Preset › CW › Baseline Center › Scale 1.75KHz)
- PRF: 1.75 ~ 52.5 KHz
- Phased array, Static CW (pencil)
- Doppler Invert
- Steer Invert
- AutoCalc: On, Off (Setup)
- AutoCalc direction: All, Up, Down
- Mean Trace: On, Off
- Sweep Speed: 15 ~ 117 mm/s
- Dynamic Range: 30 ~ 256
- Sound: 0 ~ 100
- Filter: 1 ~ 24 level
- Baseline: -8 ~ 8 step
- SV Angle: -60° ~ 60°
- Store Method: Time
  - Time: 2 ~360 sec
- Advanced QuickScan™
- Smart Auto Doppler (Vascular-Artery, Carotid)
- Adjustable Velocity Display Ranges
- Selectable Low-frequency Signal Filtering with Adjustable Wall Filter Settings
- Selectable Grayscale Curve for Optimal Display
- Selectable Chroma Colorization Maps
- Selectable Display Format Prospective or Retrospective 30/70, 40/60, 50/50, 60/40, 70/30, Side by Side, Full Screen
- Doppler Review for Retrospective Analysis of Doppler Data
- 256 (8 bits) Discrete Gray Levels
- Post-processing includes Invert, Baseline, Angle Correct, Quick Angle, Display Format, Sweep Speed, and Chroma Map
  Post-processing in CW Frozen Mode includes Map, Baseline, Invert, and Chroma

CEUS+ MODE

- Available Probes
  - CA1-7S/SD (V-type)
  - EV2-10A (V-type)
- Agent Type (Depends on Probe & Preset)
  - Support Commercial Agent (MI 0.04~0.4)
- Agent Timer: Timer1, Timer2
  (Only Timer1 is available in 3D/4D CEUS+ mode)
- Image Type: Contrast harmonic Imaging, Nonlinear contrast harmonic imaging
- Flash: Temporary On
- Flash Frame: 3 ~ 100 frame
- Frequency: Pen, Gen, Res
  (depends on probe & preset)
- ClearVision™: Off, 1 ~ 5
- Dynamic Range: 30 ~ 256
- Frame Average: 0 ~ 9 step
- Frame Limit: 1 ~ Max_Limit
- Reject Level: 0 ~ 30
- Gray Map: 1 ~ 12 step
- Scan Area: 40 ~ 100 %
- Chroma Map: 1 ~ 13 step
  (depends on probe & preset)
- Speed: 1,460 ~ 1,580 m/s
- Line Density: Low, Medium, High
  (depends on probe & preset)
- PRI Index: 1 ~ 5
  (depends on probe & preset)
- TIC (Time Intensity Curve) Analysis (10 ROIs)
- TIC Parameter Display (12 parameters)
- TIC ROI Tracking
- Accumulation Imaging (VesselMax)
- Review Pointer
- Reference Pointer
- High Frequency Contrast Capability
- Dual Imaging Mode for Simultaneous Fundamental and Contrast Displays
- Single Imaging Mode for Contrast Display
- Long Loop Capture Mode during Contrast Procedures: Max. 6 minutes (depends on probe & preset)
- MI Constant Function

VOLUME MODE

- Available Probes
  - CV1-8A
  - CV1-8AE
  - EV2-10A
- Max Frame Rate: 40 Hz
- Rendering Preset
- Quality: Low, Med1, Med2, High1, High2, Extreme
- Angle: 10~120° (EV2-10A), 10~85° (CV1-8AE)
- Scan Time: 7 ~ 15 sec
- Trimester: 1st, 2nd, 3rd, User set
- MPR (Multi-Planar Rendering) Mode
  - Mode: 2D/VCT/Render
  - Reference image
  - Rotation

- Accept ROI
- Init
- Transparency: 20 ~ 250 step
- Mix: 0 ~ 100 step
- Select: 2D, 3D, 2D Color, 3D Color, OVIX, OVIX Color
- Position: 0 ~ 100 step
- Bias: -100 ~ 100 step
- Th. Low: 0 ~ 254
- ClearVision™: Off, 1 ~ 5
- FAD: Off, On
- Slab 3D: Off, On
- VCE: Off, On

- MSV (Multi-Slice View)
  - Display Format
  - Reference Image
  - Init
  - Ruler
  - Position: 0 ~ 100 step
  - Bias: -100 ~ 100 step
  - Slick Thick: 0.5 ~ 10 mm
  - Previous
  - Next
  - ClearVision™: Off, 1 ~ 5 step
- Oblique View ™
  - Display Format
  - Cut Type
  - Image Rotation
  - Angle
  - Clear Line
  - Init
  - Select
  - Position: 0 ~ 100
  - Bias: -100 ~ 100
  - OVIX
  - OVIX Thick: 1 ~ 22 mm
  - Selected Slice: 1 ~ 8, Select All
  - Slice Thick.
  - Plumb Size
  - Rotation Line
  - Auto Increment
  - ClearVision™: Off, 1 ~ 5 step
- VOCAL (Virtual Organ Computer-aided Analysis)
  - Contour Type: Solid, General, Prostate, Cystic, Sphere, Manual
  - Reference Image: A, B, C
  - Step Angle: 12°, 18°, 30°
  - Pole Point Move Using Trackball
  - Init
  - Shell Type: Off, Inside, Outside, Symmetric
  - Image Review: Previous, Next
  - Shell Thick.: 1 ~ 20 mm
  - Reset Contour
  - Accept Contour
  - Multi Edit
- XI VOCAL (Virtual Organ Computer-aided Analysis)
  - Contour Type
  - Reference Image
  - Slice Direction

- Init
- No. of Slice: 5, 10, 15, 20
- Ref. Contour
- Ref. Page
- Accept Contour
- Reset Contour
- Pole 1
- Pole 2
- Show All Slices
- Edit Contour

- RealisticVue™
  - Light Position
  - Invert
  - Clear SFVI
  - Move Light
  - VC
  - VC Index: 1 ~ 5
  - Hue: 0 ~ 360
  - Saturation: 0 ~ 100
  - Lightness: 0 ~ 100
  - Set Color: 1 ~ 8
  - Transparency: 20 ~ 250
  - Th. Low/High: 0 ~ 255
- CrystalVue™
  - Strength
  - Complexity
  - CrystalVue Transparency
  - Context
  - Manual Contour
  - Circle ROI
- CrystalVue Flow™
  - Strength
  - Complexity
  - CrystalVue Transparency
  - Context
  - Manual Contour
  - Circle ROI
  - Hide Flow
  - Flow Only
  - Specular 3D: 0 ~ 5
- Render Setup
  - Render Direction: A+, A-, B+, B-, C+, C-
    Render Mode 1: Surface Smooth, Surface, Max, Min, X-Ray, Transparent
  - Render Mode 2: Surface Smooth, Light, Max, Min, X-Ray, Ambient Light, VSI, Transparent Max
  - Invert
  - VSI Map: 1 ~ 10
  - Transparency: 20 ~ 250
  - Mix: 0 ~ 100
  - Th. Low/High: 0 ~ 255
- MagiCut
  - Cur Type: Inside Contour, Outside Contour, Inside Box, Outside Box, Small Eraser, Big Eraser
  - SmoothCut Type: Erase Small, Erase Big, Recovery Small, Recovery Big
  - Undo/Undo All
  - Full Depth
  - Depth: 1 ~ 100
  - Mix: 0 ~ 100

  - Th. Low: 0 ~ 254
- Mirror View
  - Screen Layout: Single/Quad
  - Set as Center View: Top, Left, Right
  - Accept ROI
  - Auto Run
  - Init

ELASTOSCAN+ ™ MODE

- LA3-14AD (MSK - General, Small Parts – Breast, Thyroid, Testicle)
- LA2-9S (Small Parts – Breast, Thyroid, Testicle)
- EA2-11AR/AV (Gynecology, Urology)
- EA2-11ARE/AVE (Gynecology, Urology)
- EV2-10A (Gynecology, Urology)
- miniER7(Gynecology, Urology)
- Single/Dual/Quad
- ROI Mode
- Invert Color Map
- Alpha Blending: On, Off
- E Gain: 1 ~ 100 %
- Contrast: 1 ~ 100 %
- Enhancement: 1 ~ 100 %
- Color Map Index: 1 ~ 6
- Blending Level: 0 ~ 100 %
- Persistence Level: 0 ~ 100 %
- Apex (U/D Flip)
- Direction (L/R Flip)
- Frame Average: 0 ~ 100 step
- 2D Image Size: 70 ~ 100 %
- Gain: 0 ~ 100 %
- Zoom
  - Read zoom: 110 ~ 800 %
  - Write zoom: N/A
- Focus
- Depth
  - Linear: Same as 2D
  - Endo-cavity: Same as 2D
- TGC: 1 ~ 10 slide
- One-touch Entry into Elastography Mode
- Shadow Duplication (Size compare) and Measurement Capability in side-by-side Display
- Distance and Area Tools

PANORAMIC IMAGING MODE

- Available Probes
  - CA1-7S/SD
  - CA1-7AD
  - CA3-10A
  - CA4-10M
  - CV1-8AE
  - LA3-14AD
  - LA2-9S
  - LA2-14A
  - LA3-22AI
  - CV1-8AE
- Real-time Extended Field-of-view Composite Imaging, Acquired in Fundamental or MultiVision Mode

- Ability to Acquire Composite Image in ClearVision Mode
- Ability to Save and Realign the Image during Acquisition
- Full Zoom, Pan, Cine loop Review, and Image Rotation Capabilities
- Auto Fit of Composite Image
- Distance, Curved-linear Distance, and Area in Review Mode can be Measured with Distance Marker Displayed via Skin-line Ruler
- Ability to Display or Remove Skin-line Ruler
- Cine Loop Review that Allows Measurement on Individual Frames
- Available on Linear and Curved Array Transducers (not Available on Endo-cavity Transducers)

TDI MODE

- Available Probes
  - PA1-5A
  - PA3-8B
  - PA4-12B
  - MMPT3-7
- Screen Format
  - 2D+TD (Single, Dual, Quad)
- Display Mode
  - Simultaneous Dual Mode: 2D/2D+TD
  - Triplex Mode: 2D+TD/PW, 2D/M+MTD
- TD Coding Steps: 65,536 color steps
- Depth Range
  - Axial: 0 to B-scan range
  - Lateral: 0 to B-scan range
- Inversion of Color Direction
- Smoothing Filter: 0 ~ 5 step
- Gain Control: 0 ~ 100%
- Line Density: Low2, Low1, Mid, High1, High2
- Ensemble: 0 ~ 15 step
- Pulse Repetition Frequency: 0.06 ~20.11 KHz
- TD Map: 1 ~ 12
- Frequency: Pen, Gen, Res
- Balance: 0 ~ 16
- Max Measureable Velocity: 600 cm/sec
- Min Measureable Velocity: 1 cm/sec
- Display Mode: V (velocity)
- Scale: kHz, cm/s, m/s

TDW MODE

- Available Probes
  - PA1-5A
  - PA3-8B
  - PA4-12B
  - MMPT3-7

Similar Parameter with above

MV-FLOW™ MODE

- LA2-9S (Vascular-Carotid/ Arterial)
- LA3-14AD (MSK – General, Small Parts – Breast/ Thyroid)

- LA2-14A (MSK-General, Small Part-Breast/ Thyroid)
- LA3-22AI (MSK-General / Superficial / Superficial1)
- L3-22 (MSK-General / Superficial / Superficial1)
- CA1-7S/SD (Abdomen – Abdomen/Renal, OB – 1st Trim/2nd Trim/3rd Trim)
- CA1-7AD (Abdomen-Abdomen/Renal, OB-1st Trim/ 2nd Trim/ 3rd Trim)
- CA3-10A (OB – 1st Trim/2nd Trim/3rd Trim)
- CA4-10M (Pediatric-Neo head/ Ped Abd, Vet Abd-Small dog abd/ Large dog abd/ Cat abd)
- EA2-11AR / ARD (OB – 1st Trim/2nd Trim/3rd Trim, Gynecology – Uterus, Uterus2)
- CV1-8A / AD (OB – 1st Trim/2nd Trim/3rd Trim)
- EV2-10A (OB – 1st Trim/ 2nd Trim/ 3rd Trim, Gynecology – Uterus)
- miniER7 (Urology – Prostate/Bladder, Gynecology – Uterus)
- Clutter Suppressed
- Blood Flow Enhanced

ARTERIAL ANALYSIS MODE

- Available Probes
  - LA2-9S
  - LA2-14A
  - LA3-14AD
- Location: Left / Right
- Drawing Type: Line / Box / Circle
- Parametric Type: Image Only / Endo+Epicardial / Trajectory / VelocityVector
- Alpha Blending
- Direction: Radial / Circumference / Area
- Diameter: cAI / pAI
- Parameter Type: Displacement / Strain / Strain Rate / Velocity
- 6 Segments
- Select Range Pos.
- Calc IMT
- Start Analysis
- More (Result)
- Show Analysis Range
- Reset Diameter

S-SHEARWAVE IMAGING™ MODE

- CA1-7S/SD (Abdomen Abdomen/Penetration)
- LA2-14A (Small Parts – Breast, MSK, Thyroid)
- Real-time tissue deformation from special ultrasound push pulses
- Selectable confidence map provides assurance of samples obtained in areas with adequate shear wave propagation
- Display Mode
  - Speed: m/s
  - Elasticity: kPa
  - Propagation display
- Shearwave measurement can be performed

IOTA-ADNEX MODE

- CA1-7S/SD (Gynecology - Uterus, Adnexa)
- CA1-7AD (Gynecology - Uterus, Adnexa)
- CA3-10A (Gynecology - Uterus, Adnexa)
- EA2-11ARE (Gynecology - Uterus, Adnexa, Cervix, Penetration)
- EA2-11AVE (Gynecology – Uterus/ Uterus1/Adnexa/ Cervix/ Penetration)
- CV1-8AE (Gynecology - Uterus, Adnexa, Penetration)
- EV2-10A (Genecology - Uterus, Adnexa, Cervix, Penetration, Uterus1, Uterus2)
- miniER7 (Gynecology - Uterus, Adnexa, Cervix, Penetration)
- In order to predict the risk of ovarian cancer step by step, the user inputs 9 parameters directly or the values measured by the user in the ultrasound image are automatically inputted and the module that provides the stepwise probability of ovarian cancer on the screen as text and graph.

S-DETECT™ FOR BREAST MODE

- Available Probe Breast Preset
  - LA3-14AD
  - LA2-9S
  - L3-22
- Classification
  - Auto Classification
  - Edit Classification
- BI-RADS Set: BI-RADS2003, BI-RADS2013
- BI-RADS Category
  - Edit BI-RADS Scoring
  - Display BI-RADS Description
- Lesion Contour
  - Auto contour
  - Manual contour
  - Line Edit contour
  - Point Edit contour
  - Hide contour line
- Display Position Information
  - Graphic Position Marker
  - Graphic Probe Marker
  - Distance from nipple
  - Angle from nipple
  - Depth from skin
- Display Size Information: Width, Height, Area
- Select Side: Left/Right
- Measure: Line distance
- Annotation: Text annotation
- Target Operation: Point, Area
- Assign: Measure Report assign
- Max Assign Count for Each Side: 5
- Position Marker control
  - Customize Circle Space
  - Supported Space Unit
  - Supported Custom Space Count (1cm, 2cm, 3cm, 4cm, 5cm)

S-DETECT™ FOR THYROID MODE

- Available Probe Thyroid Preset
  - LA3-14AD
  - LA2-9S
  - L3-22
- Classification: Auto, Edit
- Assessment Category Set
  - K-TIRADS
  - RUSS
  - ATA
  - EU-TIRADS
- TI-RADS Category
  - Edit TI-RADS Scoring
  - Recalculation Scoring
  - Display TI-RADS Description
- Lesion Contour
  - Auto Contour
  - Manual Contour
  - Line Edit Contour
  - Point Edit Contour
  - Hide Contour Line
- Display Position Information
  - Color Marking
  - Depth from Skin
- Display BodyMarker
  - Thyroid BodyMarker
- Display Size Information
  - Width
  - Height
  - Area
- Select Side: Left (Upper, Mid, Lower), Isthmus, Right (Upper, Mid, Lower)
- Measure: Line distance
- Annotation: Text
- Target Operation: Point, Area
- Assign: Measure Report Assign
- Max Assign Count: 30

1.3 Display Mode

- Single Mode
- Dual Mode
- Quad Mode
- Duplex Mode
- Simultaneous Mode (Triplex)
- Dual Live Mode
- Zoom Mode (Read/Write)
- Wide Screen Mode
- Large Screen Mode
- Full Screen Mode

1.4 Features (Standard)

- Advanced QuickScan™ (Automatic Optimization)
- Auto Calc (Real-Time Automatic Doppler Calculation)
- Beam SteerCine for max. 85,912 frames and Loop for max. 122,568 lines

- ClearVision
- Customizable Body Maker
- Customizable Measurement Menu
- Customizable Touch Menu
- Customizable User Keys
- Doppler Auto Trace
- EzPrepFree Angle Plane
- Fully Digital Real Time Recording
- MultiVision – Convex, Linear
- On-board Electronic Documentation
- Patient Information Database
- Post-image Optimization
- Post-Measurement
- Power Modulation Imaging
- Power Modulated Pulse Inversion Imaging
- Pulse Inversion Harmonic Imaging
- Screen Keyboard
- ShadowHDR™
- S-Harmonic Imaging – Convex, Linear
- Static 3D
- Support for External USB Storage Devices
- Trapezoidal Imaging
- User Configurable Measurement Menu
- UterineContour™

1.5 Features (Optional)

- 2D Follicle™
- 5D Follicle™
- 5D LB™
- 5D NT™
- 5D Limb Vol.
- 5D CNS+
- 5D Heart Color
- ADVR
- ArterialAnalysis™
- AutoEF
- Auto IMT+
- BiometryAssist™
- Cardiac Measurement
- CrystalVue™
- CrystalVue Flow™
- CEUS+
- CW Function
- DICOM
- ElastoScan+™
- E-Strain™
- EzExam+™
- EzHRI™
- HDVI
- HeartAssist™
- HQ-Vision™
- IOTA-ADNEX
- LaborAssist™
- LumiFlow™
- Mobile Export
- MV-Flow™
- NeedleMate+™
- NerveTrack™
- Panoramic+
- RealisticVue™

- S-Detect™ for Breast
- S-Detect™ for Thyroid
- Smart 4D
- SonoSync™
- S-Shearwave Imaging™
- Strain+
- StressEcho
- XI STIC
- UterineAssist™
- Expanded Storage (1TB)
- ViewAssist™
- QUS(TAI/TSI)

1.6 Peripheral Options

- BatteryAssist
- Basket
- ECG (USB type)
- Endo-cavity Probe Holder
- External USB Printers
- Foot Switch (USB type)
- Gel Warmer
- Integrated Options
  for Digital B/W Printer, Digital Color Printer
- Keyboard
- Printer Tray (B/W, Color,S,M,L)

1.7 Display Annotation

- Patient ID/Name/Age
- Probe Name & Application
- MI & TI
- Date (3 Types)
- Time (hh:mm:ss AM/PM)
- Probe Orientation (Probe Name)
- Orientation Mark (S mark)
- BodyMarker
- Annotation
- Power
- Gain
- Zoom Indicator
- Focal Point
- Focus
- Depth
- TGC Curve
- Depth Meter
- PRF
- Frequency
- Frame Average
- Gray Map
- Dynamic Range
- Harmonic
- Trapezoidal
- Dual Live
- Pulse Inversion
- ElastoScan+™
- Panoramic+
- CEUS+
- Single/Dual/Quad
- M Line

- M Line position
- MultiVision
- View Angle
- Scan Area
- 2D Image Size
- Line Density
- Edge Enhance
- Chroma Map
- Quick-Scan
- Navigation Box
- User-selectable Display of Patient Birth Date, Patient Gender, Institution Name, System Name, and User
- Fixed-position Title Area for Consistent Annotation
- Additional Patient Information can be Displayed on Demand
- User-selectable Depth Scale Display
- Trackball-driven Annotation Arrows
- Post-processing of 2D Gain and Zoom after Acquisition on Single-frame Images
- Trackball Icon Displaying Functions Assigned to Trackball Buttons
- Informative Trackball Arbitration Prompts
- Network and Connectivity Icons to Allow Instant Feedback about Network Conditions
- Icons to Display Status of and/or Allow Access to the Following Functions: DICOM Job Status, SSD Storage Capacity Status, Removal Storage Connectivity, LAN Connectivity, Wireless Connectivity, IME Status, CAPS LOCK Status Indicator Icon, ADVR Recording Status, SonoSync Status
- Cine loop Frame Number Display
- Cine loop Bar with Trim Markers
- Prompt Region for Display of Informational Text and Icons
- Protocol Procedure List with Status
- Manual Input Using the Keyboard is Possible
- Auto Text (Abbreviation - Full word) is Possible

1.8 Acoustic Output Management

- User Selectable, Transducer and Scanning Mode Dependent
- Dedicated Output Display on the System Monitor Display of Output Acoustic Power Level, as well as Thermal and Mechanical Indices
- PWR – Output Power Level. Range: From 10 % of Maximum Output, Output Level is Increased by 2% in Each step
- Mechanical Index (MI): 0.001 ~ 1.9 Range
- Thermal Index (TI): 0.01 ~ 6.00 Range
  - TIc: Thermal Index, Cranial Bone
  - TIb: Thermal Index, Bone
  - TIs: Thermal Index, Soft Tissue

1.9 Language

- Display Language

  English, German, French, Italian, Spanish, Chinese, Portuguese, Danish, Russian, Ukrainian

- Input Language

  English, German, French, Italian, Chinese, Nordic (Norwegian, Swedish/Finnish, Danish), Russian, Ukrainian

- User Manual

  English, Korean, German, French, Italian, Spanish, Chinese, Russian, Brazilian Portuguese, Finnish, Czech, Polish, Dutch, Norwegian, Danish, Romanian, Ukrainian, Turkish
  (Available languages may vary by country or region.)

1.10 Processing

PRE-PROCESSING

- B/M-Mode
  - Dynamic Range
  - Frame Average
  - Frequency
  - Gain
  - Harmonic
  - Pulse Inversion Harmonic (Probe dependent)
  - Line Density
  - Power
  - Reject
  - Scan Area
  - TGC
  - Write Zoom
  - MultiVision (probe dependent)
  - Beam Steering (probe dependent)
  - Trapezoid (probe dependent)
  - Free Angle Plane (Volume probe only)
- PW Mode
  - Filter
  - Frequency
  - Gain
  - Power
  - PRF (Scale)
  - Sample Volume Angle
  - Sample Volume Position
- CW Mode
  - Sample Rate
  - Filter
  - Gain
  - Power
  - Sample Volume Angle
  - Sample Volume Position
- Color Doppler / Power Doppler mode
  - Filter
  - Frame Average
  - Frequency
  - Gain

- Line Density
- Power
- PRF (Scale)
- Smoothing
- Sensitivity
- Steer Angle

- 3D / 4D Mode
  - Scan Quality
  - Volume Angle
- ElastoScan Mode
  - Frame Average
  - Frequency
  - Line Density

POST-PROCESSING

- B-Mode
  - Chroma Map
  - Gray Map
  - Image Size
  - Read Zoom
  - ClearVision
- M-Mode
  - Chroma Map
  - M Mode Map
  - Read Zoom
  - Sweep Speed
- PW / CW Mode
  - Base line
  - Chroma Map
  - Doppler Map
  - Invert
  - Read Zoom
  - Sound
  - Trace Direction
  - Trace Method
- Color Doppler / Power Doppler Mode
  - Balance
  - Baseline
  - Chroma Map
  - Color Map
  - Hide Color
  - Invert
  - Read Zoom
- 3D Mode
  - 3D
  - 3D XI™
  - Accept ROI
  - Chroma Map
  - MagiCut™
  - VOCAL™
  - XI VOCAL™
  - 5D Features
  - XI STIC™
- ElastoScan Mode
  - E-Gain
  - Contrast
  - Color Map
  - Alpha Blending
  - Blending Level
  - Enhancement

IMAGE PROCESSING

- Crystal Architecture™
- System Processing Channel: 8,257,536
- Multi-beam Processing: Max. 8 beams
- Imaging Depth: 2 ~ 55 cm
  (depends on probe & preset)
- Dynamic Receive Focus
- Dynamic Receive Aperture
- Tx Pulse Shaping
- Adjustable Dynamic Range
- Adjustable Field of View
- Image Reverse: Left / Right, Up/Down
- Transmission Focus
  - Predetermined Point: Max. 8
  - Multi-zone Focal Point: Max. 4
- 256 Shades of Gray, 8 bits
- 16,777,216 colors, 8 bits for each RGB component
-

IMAGE ARCHIVE

- Archiving Format: DICOM
- Possibly Exported to Other Formats
  - AVI, MPEG, JPEG, BMP, TIFF, DICOM
- Archive Devices
  - SSD (Internal)
  - USB Memory Stick (External)
  - CD/DVD(External)

CINE MEMORY/ IMAGE MEMORY

- CINE Gauge and Cine Image Number Display
- CINE/Loop Review
- Selectable CINE Sequence for CINE Review (by Start Frame and End Frame)
- Measurements/Calculations & Annotations on CINE
- Available in All Modes (include loop)
- Imaging Cine, for Real-time Acquisition and Review of 2D
- After Freezing Immediate Scrolling through Cine Memory with the Track Ball
- CINE memory: Max. 85,912 frames
- Loop memory: Max. 122,568 lines

1.11 DICOM

- DICOM 3.0 Compatible
- Verification Service – SCU, SCP
- Modality Worklist Service – SCU
  - Patient Based Query
  - Broad Based Query
- Image Storage Service – SCU
  - Ultrasound
  - Ultrasound Multi-frame
- Image Storage Service – SCP
  - Ultrasound
  - Ultrasound Multi-frame
  - CT (Computer Tomography)
  - MR (Magnetic Resonance Imaging)

  - MG (Mammography)
  - DX (Digital Radiography)
  - PET (Positron Emission Tomography)
- Structured Report Storage Service – SCU
  - OB-GYN
  - Vascular
  - Adult Echocardiography
  - Urology
  - Small Parts
  - Breast Imaging
  - Pediatric
  - Abdomen
  - Fetal Heart (Fetal Echo)
  - MSK
- Basic Grayscale Print Management Service – SCU
- Basic Color Print Management Service - SCU
- Modality Performed Procedure step Service – SCU
  - In Progress
  - Discontinued
  - Completed
- Storage Commitment Service – SCU
  - For Image
  - For Structured Report
- DICOM Query/Retrieve Service – SCU
  - Study Root Find/Move

DICOM Directory Service – FSC, FSU, FSR

1.12 Cybersecurity

ANTIVIRUS

- Windows Defender
  - Built-in Antivirus Solution
- Whitelisting Solution
  - Applocker

WIPING TOOL

- Secure Erase for PHI Data
  - Support by Service Engineer only

DATA PROTECTION

- SSD Encryption
  - BitLocker™ (FIPS 140-2 certified)
- Firewall
- DICOM TLS
  - PHI transmission can be encrypted (optional)
  - TLS 1.2
  - FIPS 140-2 compliant
  - Supported Cipher suites

    TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
    TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
    TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA
    TLS_DHE_RSA_WITH_AES_256_GCM_SHA384
    TLS_DHE_RSA_WITH_AES_256_CBC_SHA256
    TLS_DHE_RSA_WITH_AES_256_CBC_SHA
    TLS_RSA_WITH_AES_256_GCM_SHA384
    TLS_RSA_WITH_AES_256_CBC_SHA256
    TLS_RSA_WITH_AES_256_CBC_SHA
    TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256

TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256

TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA

TLS_DHE_RSA_WITH_AES_128_GCM_SHA256

TLS_DHE_RSA_WITH_AES_128_CBC_SHA256

TLS_DHE_RSA_WITH_AES_128_CBC_SHA

TLS_RSA_WITH_AES_128_GCM_SHA256

TLS_RSA_WITH_AES_128_CBC_SHA256

TLS_RSA_WITH_AES_128_CBC_SHA

TLS_ECDHE_RSA_WITH_3DES_EDE_CBC_SHA

TLS_DHE_RSA_WITH_3DES_EDE_CBC_SHA

TLS_RSA_WITH_3DES_EDE_CBC_SHA

PRIVACY PROTECTION (ACCESS CONTROL)

- Audit Trail Log
  - All activities related to PHI access
- Password Policy Configurability
- Menu Access Policy Configurability
- LDAP

2. MEASUREMENTS

- Basic: Caliper
- Abdomen
- Cardiac
- Vascular
- Gynecology
- Obstetrics
- Fetal Heart
- Urology
- MSK
- Small Parts
- Pediatric
- Thoracic
- TCD

2.1 Basic Measurement

2.1.1 Caliper

- B Mode
  - Distance
    - ✓ Distance
    - ✓ Trace
    - ✓ Open Spline
    - ✓ %Stenosis(D)
  - Area/Circumference
    - ✓ Ellipse
    - ✓ Trace
    - ✓ Trace Length
    - ✓ Closed Spline
    - ✓ %Stenosis(A)
  - Volume
    - ✓ 1 Dist Volume
    - ✓ 2 Dist Volume
    - ✓ 3 Dist Volume
    - ✓ Ellipse Volume
    - ✓ Ellipse + Dist Vol
    - ✓ Dist Volume
  - Angle
    - ✓ 2 Line Angle
    - ✓ 3 Points Angle
- M Mode
  - Distance(M)
  - Slope
  - Time(M)
  - HR(M)
- D Mode
  - Velocity
  - Accel
  - Time(D)
  - HR(D)
  - RI
  - Doppler Trace
    - ✓ Auto Trace
    - ✓ Limited Trace
    - ✓ Manual Trace
  - S/D Ratio
  - D/S Ratio
  - V1/V2 Ratio

2.1.2 Doppler Measurement

- Auto Calc: Auto Doppler Trace function with Automatic Calculations
- Velocity
- Frequency
- Time
- Acceleration
- Acceleration Time
- Ratios
- V1/V2 Ratio
- Peak Systole/End Diastole (S/D Ratio)
- End Diastole/Peak Systole (D/S Ratio)
- TAmax (Time Averaged Maximum Velocity)
- PI (Pulsatility Index)
- RI (Resistivity Index)
- Heart Rate

2.2 OB Measurement

- Fetal Biometry
- Fetal Long Bones
- Fetal Cranium
- Fetal Others
- AFI
- PLI
- Umbilical Artery
- Umbilical Vein
- Maternal Others
- MCA (Rt/Lt/NA)
- Uterine Artery (Rt/Lt/NA)
- Placenta Artery
- Fetal Carotids (Rt/Lt/NA)
- Fetal Aorta
- Duct Venosus
- Renal Artery (Rt/Lt/NA)
- Maternal Others (Cervix, Placenta)
- Others (Sequence Tools)
  - EFW
  - BPD, HC
  - BPD, OFD
  - HC, BPD, OFD
  - APTD, TTD
  - AC, TAD
  - MSD
  - MYS
  - HC (BPD, OFD)
  - MAD (APAD, TAD)
- Description
  - Fetal Description
  - Fetal Heart
  - Fetal Brain
  - Fetal Abdomen
  - Biophysical Profile
  - Maternal Survey
- Multi-Pregnancy Compare
  - Fetal Compare
  - EFW Compare
  - Biometry Compare
  - Bones Compare
  - Cranium Compare
  - Doppler Compare

  - Others Compare
- Comment

2.2.1 Fetal Biometry

- GS
- MSD
- CRL
- YS
- MYS
- BPD
- OFD, OFD(c)
- HC, HC(c)
- APAD
- TAD
- MAD
- AC, AC(c)
- FTA
- FL (Rt/Lt/NA)
- SL
- APTD
- TTD
- ThC
- AxT
- AVol
- TVol

2.2.2 Fetal Long Bones

- HUM (Rt/Lt/NA)
- ULNA (Rt/Lt/NA)
- TIB (Rt/Lt/NA)
- RAD (Rt/Lt/NA)
- FIB (Rt/Lt/NA)
- CLAV (Rt/Lt/NA)
- Vertebral

2.2.3. Fetal Cranium

- CEREB
- CM
- NF
- NT
- IT
- OOD
- IOD
- NB
- Va (Rt/Lt/NA)
- Vp (Rt/Lt/NA)
- Hem (Rt/Lt/NA)
- Ventricle (Rt/Lt/NA)
- FMF angle
- CC length, Width, Thickness

2.2.4. Fetal Others

- Foot
- Ear
- MP
- Renal L (Rt/Lt/NA)
- Renal AP (Rt/Lt/NA)
- Pelvis (Rt/Lt/NA)

2.2.5. Ratio Calculations

- Ratio
  - FL/AC

- FL/BPD
- FL/HC
- FL/FOOT
- CI (BPD/OFD)
- CPR (RI/PI)
- HC/AC
- ThC/AC
- Ventricle/Hem
- Va/Hem
- Vp/Hem

2.2.6. Fetal Doppler Trend

- Mid Cerebral Artery
- Umbilical Artery
- Uterine Artery
- Fetal Aorta
- Ductus Venosus

2.2.7. Other Trend

- AF Index
- HC/AC
- FL/HC
- Va/Hem

2.3 Gynecology Measurement

- Uterus
- Cervix
- Cyst.
- Ovary
- Follicles (1~50)
- Mass 1/2/3
- Ovarian A
- Uterine A
- Pericystic
- Endometrial
- Endo. Polyp
- Ovarian Mass
- Uterine Fibroid 1~12
- Cervical Fibroid
- Ectopic (Ectopic Pregnancy)
- Pelvic Floor
- Gyn Description
- Comment

2.4 Cardiac Measurement

- LV (2D)
- LV (M)
- LV Vol. (Simpson)
- LV Vol. (A/L)
- LV Vol.(Bullet)
- LV Mass
- RV (2D)
- RV (M)
- RV Vol. (Simpson)
- RV Vol. (A/L)
- LA
- LA Vol. (Simpson)
- LA Vol. (A/L)

- Aorta
- RA
- RA Vol. (Simpson)
- RA Vol. (A/L)
- Cavities Ratio
- LVOT
- RVOT
- AV
- MV
- TV
- PV
- Tei Index
- Pulm. Veins
- Hepatic Veins
- Tissue Doppler
- Qp/Qs
- Shunts
- HR
- Comment

2.5 Carotid Measurement

- Subclavian Artery
- CCA
- Bulb
- ICA
- ECA
- Vertebral Artery
- Vertebral 0/1/2/3/4
- General
  - Auto Trace
  - Limited Trace
  - Manual Trace
  - TAmax
  - TAmean
  - PS
  - ED
  - MD
  - PGmax
  - PGmean
  - AccT
  - Acc
  - DecT
  - Dec
  - %StA
  - %StD
  - Vesl. Dist
  - Vol. Flow
- ICA/CCA
- Comment

2.6 LE Artery Measurement

- Common Iliac Artery
- Internal Iliac Artery
- External Iliac Artery
- Common Femoral Artery
- Superficial Femoral Artery
- Deep Femoral Artery
- Popliteal Artery

- Anterior Tibial Artery
- Posterior Tibial Artery
- Peroneal Artery
- Dorsalis Pedis Artery
- Medial Plantar Artery
- Lateral plantar Artery
- Metatarsal Artery
- Digital Artery
- General
- Comment

2.7 UE Artery Measurement

- Subclavian Artery
- Axillary Artery
- Brachial Artery
- Radial Artery
- Ulnar Artery
- Superficial Palmar Arches
- General
- Comment

2.8 LE Vein Measurement

- Common Iliac Vein
- Internal Iliac Vein
- External Iliac Vein
- Common Femoral Vein
- Deep Femoral Vein
- Superficial Femoral Vein
- Great Saphenous Vein
- Popliteal Vein
- Lesser Saphenous Vein
- Anterior Tibial Vein
- Posterior Tibial Vein
- Peroneal Vein
- Medial Plantar Vein
- Lateral Plantar Vein
- Metatarsal Vein
- Digital Vein
- General
  - Vmax
  - Dur T
  - Vesl. Dist
  - Vol. Flow
- Comment

2.9 UE Vein Measurement

- Internal Jugular Vein
- Innominate Vein
- Subclavian Vein
- Axillary Vein
- Brachial Vein
- Cephalic Vein
- Basilic Vein
- Radial Vein
- Ulnar Vein
- General

- Comment

2.10 Urology Measurement

- Bladder
- WG Prostate
- T- Zone
- Pre Residual
- Post Residual
- Renal (Rt/Lt/NA)
- Comment

2.11 Fetal Echo Measurement

- LV Vol. (Simpson)
- 2D Echo
- Cardio-Thorax Area Ratio (CTAR)
- Fetal M-mode
- LVOT
- RVOT
- Cardiac Output
- Pulmonic Artery
- Main Pulmonary Artery
- Ductus Arteriosus
- Inferior Vena Cava
- Duct Venosus
- Ascending Aorta
- Descending Aorta
- Transverse Aortic Arch
- Mitral Valve
- Tricuspid Valve
- Preload Index
- Tei Index
- LV MPI
- RV MPI
- Z-Score
- Fetal Heart Rate
- Comment

2.12 Abdomen Measurement

- Liver
- Gall bladder
- Pancreas
- Bowel
- Kidney
- Spleen
- Aorta
- Celiac Artery
- Splenic Artery
- C Hepatic Artery
- R Hepatic Artery
- L Hepatic Artery
- Superior Mesenteric Artery
- Inferior Mesenteric Artery
- Inferior Vena Cava
- Renal Artery
- Segmental Artery
- Arcuate Artery

- Common Iliac Artery
- External Iliac Artery
- Internal Iliac Artery
- M Portal Vein
- R Portal Vein
- L Portal Vein
- M Hepatic Vein
- R Hepatic Vein
- L Hepatic Vein
- Superior Mesenteric Vein
- Inferior Mesenteric Vein
- Splenic Vein
- Renal Vein
- Renal Aortic Ratio
- Comment

2.13 TCD Measurement

- Mid Cerebral Artery
- Anterior Cerebral Artery
- Posterior Cerebral Artery 1
- Posterior Cerebral Artery 2
- Anterior Communicating Artery
- Posterior Communicating Artery
- Basilar Artery
- External Cranial ICA
- Terminal ICA
- Siphon
- Ophthalmic Artery
- Vertebral A
- Ratio
  - Lindegaard Ratio (MCA/ExtICA)
  - Sloan Ratio. (ACA/ExtICA)
- Vertebral 4
- Comment

2.14 Thyroid Measurement

- Lobe
- Isthmus
- Volume
- Flow
- Mass1 ~ Mass5
- Comment

2.15 Breast Measurement

- Mass1 ~ Mass10
- Flow
- Comment

2.16 Testicle Measurement

- Volume
- Flow
- Epididymis
- Mass1 ~ Mass5
- Comment

2.17 Superficial Measurement

- Volume
- Flow
- Mass1 ~ Mass5
- Comment

2.18 Pediatric Hips Measurement

- Hips Angle
- Coverage of Femoral Head
- Hip Type
- Comment

2.19 Musculoskeletal Measurement

- Shoulder 1 ~ 10
- Wrist 1 ~ 10
- Knee 1 ~ 10
- Ankle 1 ~ 10

- Comment

3. PROBES

3.1 Linear Probe

	L3-22	LA3-22AI	LA2-9S	LA2-14A	LA3-14AD
Type of Array	Linear	Linear	Linear	Linear	Linear
Material	PZT	PZT	Single Crystal	Single Crystal	PZT
# of Elements	192	192	192	256	256
Field of View	25.4mm	25.4mm	44mm	50mm	50mm
Radius of Curvature	-	-	-	-	-
Safety Class	BF	BF	BF	BF	BF
Frequency Range	3~22MHz	3~22MHz	2~12MHz	2~14MHz	3-12MHz
S-Flow™	◎	◎	◎	◎	◎
ClearVision	◎	◎	◎	◎	◎
MultiVision	◎	◎	◎	◎	◎
HQ-Vision™	◎	◎	◎	◎	◎
QuickScan™	◎	◎	◎	◎	◎
SMART 4D					
HDVI			◎	◎	◎
AutoIMT+			◎	◎	◎
E-Strain™			◎	◎	◎
Cardiac Measurement	◎	◎	◎	◎	◎
S-Detect™ for Breast			◎	◎	◎
S-Detect™ for Thyroid			◎	◎	◎
ArterialAnalysis™			◎	◎	◎
Panoramic+	◎	◎	◎	◎	◎
CEUS+				◎	
ElastoScan+™			◎	◎	◎
S-Shearwave Imaging™				◎	

MV-Flow™		◎	◎	◎	◎	◎
LumiFlow™		◎	◎	◎	◎	◎
BiometryAssist™		◎	◎	◎	◎	◎
Freehand 3D		◎	◎	◎	◎	◎
NerveTrack		◎	◎	◎	◎	◎
NeedleMate+™		◎	◎	◎	◎	◎
Preset						
Abdomen	Abdomen			◎	◎	◎
	Renal			◎	◎	◎
	Bowel			◎	◎	◎
	Aorta			◎	◎	◎
MSK	General	◎	◎	◎	◎	◎
	Superficial	◎	◎	◎	◎	◎
	Superficial1	◎	◎			
	Deep	◎	◎	◎	◎	◎
	Spine			◎	◎	◎
Small Parts	Breast	◎		◎	◎	◎
	Thyroid	◎		◎	◎	◎
	Testicle	◎		◎	◎	◎
Vascular	Carotid	◎		◎	◎	◎
	Arterial	◎		◎	◎	◎
	Venous	◎		◎	◎	◎
Pediatric	Pediatric ABD	◎		◎	◎	◎
	Ped Hip			◎	◎	◎
	Neo Head	◎				
Thoracic	Lung				◎	
Intraoperative	General		◎			

3.2 Convex Probe

	CA1-7S/SD	CA3-10A	CA4-10M	CA1-7AD
Type of Array	Convex	Convex	Convex	Convex
Material	Single Crystal	Single Crystal	PZT	Single Crystal
# of Elements	192	192	128	160
Field of View	66° Wide Angle 102°	58° Wide Angle 67.95°	91°	70°
Radius of Curvature	56.8mm	45mm	14mm	45.6mm
Safety Class	BF	BF	BF	BF
Frequency Range	1~7MHz	3~10MHz	3~12MHz	1~7MHz
Features (not for all the presets)				
S-Flow™	◎	◎	◎	◎
ClearVision	◎	◎	◎	◎
MultiVision	◎	◎	◎	◎
HQ-Vision™	◎			
ShadowHDR™	◎	◎		
QuickScan™	◎	◎		◎
Cardiac Measurement	◎	◎	◎	◎
SMART 4D				
HDVI	◎	◎		◎
Panoramic+	◎	◎	◎	◎
CEUS+	◎			
S-Shearwave Imaging™	◎			
MV-Flow™	◎	◎		
LumiFlow™	◎	◎	◎	
BiometryAssist™	◎	◎		◎
LaborAssist™	◎	◎		◎
IOTA-ADNEX	◎	◎		◎
Freehand 3D	◎	◎		◎

QUS		◎			
EzHRI™		◎	◎		
ViewAssist™		◎	◎		◎
Preset					
Abdomen	Abdomen	◎	◎	◎	◎
	Penetration	◎			◎
	Renal	◎	◎	◎	◎
	Bowel	◎	◎	◎	◎
	Aorta	◎	◎	◎	◎
	Biopsy	◎	◎		◎
OB	1st Trimester	◎	◎		◎
	2nd Trimester	◎	◎		◎
	3rd Trimester	◎	◎		◎
	1st Fetal Heart	◎			
	Fetal Heart	◎	◎		◎
	NT	◎	◎		◎
GYN	Uterus	◎	◎		◎
	Adnexa	◎	◎		◎
MSK	General	◎	◎		◎
	Spine	◎	◎		◎
Vascular	Arterial	◎	◎	◎	◎
	Venous	◎	◎	◎	◎
	Carotid			◎	
Pediatric	Pediatric ABD	◎	◎	◎	◎
	Pediatric Hip	◎	◎	◎	◎
	Neo Head			◎	
Thoracic	Lung	◎	◎		◎
Urology	Prostate	◎	◎		◎
	Bladder	◎	◎		◎

3.3 Endo-Cavity Probe

	EA2-11ARE EA2-11AVE	EA2-11AR EA2-11AV	miniER7
Type of Array	Endo-Cavity	Endo-Cavity	Endo-Cavity
Material	PZT	PZT	PZT
# of Elements	128	128	128
Field of View	150° Wide angle 210°	150° Wide angle 210°	146° Wide angle 180°
Radius of Curvature	10mm	10mm	7mm
Safety Class	BF	BF	BF
Frequency Range	2~11MHz	2~11MHz	2~12MHz
Features (not for all the presets)			
S-Flow™	◎	◎	◎
ClearVision	◎	◎	◎
MultiVision	◎	◎	◎
ShadowHDR™	◎	◎	◎
QuickScan	◎	◎	◎
ElastoScan+	◎	◎	◎
E-Strain™	◎	◎	◎
Cardiac Measurement	◎	◎	◎
MV-Flow™	◎	◎	◎
LumiFlow™	◎	◎	◎
Smart 4D			
HDVI	◎	◎	◎
BiometryAssist™	◎	◎	◎
UterineAssist™	◎	◎	◎
IOTA-ADNEX	◎	◎	◎
Freehand 3D	◎	◎	◎
2D Follicle™	◎	◎	

ViewAssist™		◎	◎	◎
Preset				◎
OB	1st Trimester	◎	◎	◎
	2nd Trimester	◎	◎	◎
	3rd Trimester	◎	◎	◎
GYN	Adnexa	◎	◎	◎
	Cervix	◎	◎	◎
	Penetration	◎	◎	◎
	Uterus	◎	◎	◎
	Uterus2	◎	◎	
Urology	Prostate	◎	◎	
	Bladder	◎	◎	

3.4 Volume Probe

	CV1-8AE	CV1-8A	EV2-10A
Type of Array	Volume Convex	Volume Convex	Volume Endo
Material	Single Crystal	Single Crystal	PZT
# of Elements	128	192	192
Field of View	70°	70°	150° Wide Angle 180°
Radius of Curvature	41.4mm	41.4mm	10mm
Safety Class	BF	BF	BF
Frequency Range	1~8MHz	1~8MHz	2~10MHz
S-Flow™	◎	◎	◎
ClearVision	◎	◎	◎
MultiVision	◎	◎	◎
HQ-Vision™	◎	◎	
ShadowHDR™	◎	◎	◎
QuickScan™	◎	◎	◎
Cardiac Measurement	◎	◎	◎
SMART 4D	◎	◎	◎
HDVI	◎	◎	◎
RealisticVue™	◎	◎	◎
CrystalVue™	◎	◎	◎
CrystalVue Flow™	◎	◎	◎
5D NT™	◎	◎	
5D CNS+™	◎	◎	
5D LB™	◎	◎	
5D Limb Vol.™	◎	◎	
5D Heart Color™	◎	◎	◎
5D Follicle™			◎
2D Follicle™			◎

Panoramic+		◎	◎	
CEUS+				◎
ElastoScan+™				◎
MV-Flow™		◎	◎	◎
LumiFlow™		◎	◎	◎
BiometryAssist™		◎	◎	◎
UterineAssist™				◎
UterineContour™				◎
LaborAssist™		◎	◎	
IOTA-ADNEX		◎	◎	◎
XI STIC		◎	◎	◎
ViewAssist™		◎	◎	◎
Preset				
Abdomen	Abdomen	◎	◎	
	Renal	◎	◎	
	Bowel	◎	◎	
	Aorta	◎	◎	
	Penetration	◎	◎	
OB	1st Trimester	◎	◎	◎
	2nd Trimester	◎	◎	◎
	3rd Trimester	◎	◎	◎
	Fetal Heart	◎	◎	
	NT	◎	◎	
GYN	Adnexa	◎	◎	◎
	Cervix			◎
	Penetration	◎	◎	◎
	Uterus	◎	◎	◎
	Uterus1			◎
	Uterus2			◎
Urology	Prostate	◎	◎	◎
	Bladder	◎	◎	◎

3.5 Phased Array Probe

		PA1-5A	PA3-8B	PA4-12B
Type of Array		Phased Array	Phased Array	Phased Array
Material		Single Crystal	PZT	PZT
# of Elements		80	96	96
Field of View		90°	90°	90°
Radius of Curvature		-	-	-
Safety Class		BF	BF	BF
Frequency Range		1~5MHz	3-8MHz	4-12MHz
Features (not for all the presets)				
S-Flow™		◎	◎	◎
ClearVision		◎	◎	◎
QuickScan™		◎	◎	◎
Strain+™		◎	◎	◎
AutoEF		◎	◎	◎
StressEcho		◎	◎	◎
CW Function		◎	◎	◎
Cardiac Measurement		◎	◎	◎
HeartAssist™		◎	◎	◎
LumiFlow™		◎	◎	◎
Preset				
Abdomen	Abdomen	◎	◎	◎
	Renal	◎	◎	◎
	Bowel	◎	◎	◎
	Aorta	◎	◎	◎
Cardiac	Adult Echo	◎	◎	◎
	Ped Echo	◎	◎	◎
	Aortic Arch	◎	◎	◎

TCD	TCD	◎	◎	◎
Thoracic	Lung	◎		
Vascular	Carotid	◎	◎	◎
	Arterial	◎	◎	◎
	Venous	◎	◎	◎
Pediatric	Neo Head	◎	◎	◎
	Ped Abd	◎	◎	◎
	Ped Hip	◎	◎	◎

3.6 CW Probe

		DP2B	CW6.0
Type of Array		CW (Pencil Type)	CW (Pencil Type)
Material		PZT	PZT
# of Elements		2	2
Field of View		-	-
Radius of Curvature		-	-
Safety Class		BF	BF
Frequency Range		2MHz	6MHz
Features (not for all the presets)			
QuickScan™		◎	◎
CW Function		◎	◎
Cardiac measurement		◎	◎
Preset			
Cardiac	Adult Echo	◎	◎
	Ped Echo	◎	◎
Vascular	Carotid	◎	◎
	Arterial	◎	◎
	Venous	◎	◎
TCD	TCD	◎	◎

3.7 TEE Probe

		MMPT3-7
Type of Array		TEE
Material		PZT
# of Elements		64
Field of View		90°
Radius of Curvature		-
Safety Class		BF
Frequency Range		3~7MHz
S-Flow™		◎
ClearVision		◎
QuickScan™		◎
CW Function		◎
Cardiac Measurement		◎
LumiFlow™		◎
Preset		
Cardiac	Adult Echo	◎
	Ped Echo	◎
	Aortic Arch	◎

4. ENVIRONMENTAL POLICY

- ISO 14001
- OHASA 18001
- RoHS Directive
- WEEE Directive
- REACH Regulation
- USA California Proposition 65
- Packaging and Packaging Waste Directive
- FSC Public
- Battery Directive

5. SAFETY

CLASSIFICATION

- Type of Protection against Electrical Shock: Class I
- Degree of Protection against Electrical Shock (Patient Connection): Type BF applied part and Defibrillation-Proof Type CF applied part (ECG)
- Degree of Protection against Harmful Ingress of Water: Ordinary Equipment, Probes (IPX7), Foot Switch (IPX8)
- Degree of Safety of Application in the Presence of a Flammable Anesthetic Material with Air or with Oxygen or Nitrous Oxide: Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide
- Mode of Operation: Continuous operation
- RF Emission CISPR 11: Class A

APPLICABLE STANDARD & REGULATION

- FDA / USA: 21 Code of Federal Regulations 820
- MDR 2017/745: EU Medical Device Regulation
- IEC (International Electrotechnical Commission)
  - Medical Electrical Equipment, Part 1: General Requirements for Basic Safety and Essential Performance [IEC 60601-1:2005/A1:2012]
  - Medical Electrical Equipment, Part 1-2: General Requirements for Basic Safety and Essential Performance- Collateral Standard: Electromagnetic Compatibility - Requirements and Tests [IEC 60601-1-2 Edition 4:2014]
  - Medical Electrical Equipment, Part 1-6: General Requirements for Basic Safety and Essential Performance- Collateral Standard: Usability [IEC 60601-1-6:2010 + A1:2013]
  - Medical Electrical Equipment, Part 2-37: Particular Requirements for the Basic Safety and Essential Performance of Ultrasonic Medical Diagnostic and Monitoring Equipment [IEC 60601-2-37:2007+A1:2015]
  - Medical devices – Application of usability engineering to medical devices [IEC/EN 62366-1:2015]
  - Medical device software – Software life cycle processes [IEC/EN 62304:2006]
- ISO (International Organization of Standards)
  - ISO/EN 10993-1:2009/(R)2013 Biological evaluation of medical devices Part 1: Evaluation and testing
  - ISO/EN 14971: 2012 Medical devices – Application of risk management to medical devices

- Regional/ National Standards
  - US (FDA Recognized Standards)
    - ✓ Medical Electrical Equipment - Part 1: General Requirements for the Basic Safety and Essential Performance [ANSI/AAMI ES60601-1:2005 (R) 2012 and A1:2012, C1:2009/(R) 2012 and A2:2010(R) 2012]
  - Canada (Health Canada Recognized Standard)
    - ✓ Medical Electrical Equipment - Part 1: General Requirements for the Basic Safety and Essential Performance [CAN/CSA-22.2 No. 60601-1:14]
    - ✓ Medical Electrical Equipment - Part 1-6: General Requirements for the Basic Safety and Essential Performance - Collateral Standard: Usability [CAN/CSA-22.2 No. 60601-1-6:2011 + A1:2015]
    - ✓ Medical Electrical Equipment - Part 2-18: Particular Requirements for the Basic Safety and Essential Performance of Ultrasound Medical Diagnostic and Monitoring Equipment [CAN/CSA-22.2 No. 60601-2-37:2008 (R2014)]
  - EN (Harmonized Standard)
    - ✓ EN ISO15223-1:2016 Symbols to be used with medical device labels, labelling and information to be supplied
    - ✓ EN1041: 2008 Information supplied by the manufacturer with medical devices
- NEMA/AIUM
  - NEMA/AIUM UD-2: 2004 (R2009) Acoustic Output Display Standard for Diagnostic Ultrasound Equipment
  - NEMA/AUIM UD-3: 2004 (R2009) Standard for Real-Time Display of Thermal and Mechanical Acoustic Output Indices on Diagnostic Ultrasound Equipment

For more information, please contact

SAMSUNG MEDISON CO., LTD.