



SAMSUNG MEDISON

HS30

Data Sheet

V1.02

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Rev01

Table of Contents

1. SPECIFICATION SUMMARY	1
Physical Specifications	1
Imaging Modes	1
Focusing	1
Probe connections	1
Monitor	1
ECG	1
Image Storage	1
Rear Panel input/output connections.....	1
Auxiliary	1
User Interface	1
Electrical Parameters	2
Pressure Limits.....	2
Humidity Limits	2
Temperature Limits.....	2
2. GENERAL SPECIFICATION	3
Physical Specification	3
Console Design.....	3
Main Monitor.....	3
Control Panel	3
PC	3
Electrical Specifications.....	3
3. SYSTEM SPECIFICATION	4
Applications	4
Presets	4
Operation Mode	4
Display Mode	4
Transducer Types	5
System Standard Features	5
System Options	5

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Display.....	6
Language.....	6
Operating Environment	7
4. PROCESSING.....	8
Data Processing.....	8
Pre-Processing	8
POST-Processing	10
5. CONNECTIVITY.....	11
DICOM.....	11
IHE.....	11
Peripheral interface	11
6. SCANNING PARAMETERS.....	12
2D mode.....	12
M Mode	12
Color Mode	12
PWD Mode.....	13
CWD Mode.....	13
PD Mode	13
ElastoScan Mode.....	14
7. TRANSDUCERS	16
Linear	16
Convex	16
Endocavity.....	16
Phased Array	17
Pencil.....	17
8. MEASUREMENT.....	18
Caliper	18
Abdomen	18
Cardiac	18
Carotid	19

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UE Artery.....	19
UE Vein.....	19
LE Artery.....	19
LE Vein	19
Gynecology	20
Obstetrics.....	20
Fetal Heart	20
Urology	20
Breast.....	20
MSK.....	21
Thyroid.....	21
Testicle.....	21
Superficial	21
Pediatric.....	21
9. SAFETY / EMC.....	22
Classifications.....	22
Applied standards	22
Acoustic output management	22
Anti-virus solution.....	22

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SPECIFICATION SUMMARY

PHYSICAL SPECIFICATIONS

- Height: 1,393 mm (with monitor)
- Width: 519 mm
- Depth: 664 mm
- Weight: Approx. 47.8 Kg (without accessories)
- Weight: Approx. 52 Kg (with Safe Working Load)

IMAGING MODES

- 2D-Mode
- M-Mode
- Color M-Mode
- Anatomical Mode
- Color Doppler Mode
- Pulsed Wave (PW) Spectral Doppler Mode
- Continuous Wave (CW) Doppler Mode
- Tissue Doppler Imaging (TDI) Mode
- Tissue Doppler Wave (TDW) Mode
- Power Doppler (PD) Mode
- ElastoScan Mode
- 3D/4D/XI STIC imaging Mode
- Freehand 3D Mode
- Dual Mode
- Quad Mode
- Combined Mode
- Simultaneous Mode
- Zoom Mode
- S-Flow Mode

FOCUSING

- Transmit focusing, maximum of eight points (four points simultaneously selectable)
- Digital dynamic receive focusing (continuous)

PROBE CONNECTIONS

- 2 or 3 Probe Connectors (Optional)
- CW Probe Connector (Optional)

MONITOR

- Main Monitor
 - Resolution: 1,920 x 1,080
 - 21.5 Inch LED Monitor

ECG

- USB Type (Type CF)

IMAGE STORAGE

- Maximum 45,000 Frames for Cine memory
- Maximum 14,000 Lines for Loop memory
- Image filing system

REAR PANEL INPUT/OUTPUT CONNECTIONS

- Audio Output Port (Right/Left)
- VGA monitor
- S-Video Output
- LAN
- USB Port
- HDMI Output

AUXILIARY

- DVD Multi-Drive
- Digital B/W Video Printer
- Digital Color Video Printer
- USB Printer
- DVD Recorder
- Foot switch (IPX8)
- USB Flash Memory Media
- USB HDD
- USB ECG
- Monitor

USER INTERFACE

-
- English, French, Italian, German, Spanish, Russian,
Chinese, Portuguese (Brazilian)

ELECTRICAL PARAMETERS

- 100-240 VAC, 620 VA, 50/60 Hz

PRESSURE LIMITS

- Operating: 700 hPa to 1,060 hPa
- Storage: 700 hPa to 1,060 hPa

HUMIDITY LIMITS

- Operating: 30 % to 75 %
- Storage & Shipping: 20 % to 90 %

TEMPERATURE LIMITS

- Operating: 10 °C to 35 °C
- Storage & Shipping: -25 °C to 60 °C

GENERAL SPECIFICATION

PHYSICAL SPECIFICATION

- Height: 1,393 mm (with monitor)
- Width: 519 mm
- Depth: 664 mm
- Weight:
 - Approx. 47.8 Kg (without accessories)
 - Approx. 52 Kg (with safe working load)

CONSOLE DESIGN

- 2 or 3 Active Probe Ports (Optional)
- 4 Swivel Wheel Cart Based Type
- Rotation&Tilt Monitor Arm
- Built-in Printer Storages
- Ergonomic Operation Panel
- Alpha-Numeric Keyboard
- Analog TGC
- Trackball
- Probe Holder / Gel Holder
- Front Handles
- Integrated PC Module
- Integrated SSD
- Windows 10 IoT Enterprise
- Gel Warmer (Optional)
- ECG (Optional)

MAIN MONITOR

- 21.5 Inches High Resolution LED Monitor
- Resolution: 1,920 x 1,080 (16:9)
- Number of Color: 16.7 M
- Brightness Adjustment
- Interactive Dynamic Software Menu
- Articulated Monitor Arm
 - Rotation: +/- 135°
 - Tilt: -10° / 75°

CONTROL PANEL

- Alpha-Numeric KBD
- Analog TGC
- 6 User Keys
- Tri-Status backlit
- 4 Probe Holders

PC

- Main Processor: Intel i3-8100H
- Main Memory: 8 GB
- Built-in SSD : 512GB

ELECTRICAL SPECIFICATIONS

- Frequency: 50/60 Hz
- Voltage: 100 ~ 240 VAC
- Power Consumption: Max. 620 VA with Peripherals
- Heat Dissipation: 2,729.7 [BTU/h]
- System Noise: 40 dBA
- Built-in Equipotential Circuit

SYSTEM SPECIFICATION

APPLICATIONS

- Abdomen
- Cardiac
- Gynecology
- MSK
- Obstetrics
- Pediatric
- Small Parts
- Urology
- Vascular

PRESETS

- Abdomen
- Adult Echo
- Adnexa
- Aorta
- Aortic Arch
- Arterial
- Bladder
- Bowel
- Breast
- Carotid
- Deep
- Fetal Heart
- General
- Neo Head
- NT
- Ped Abd
- Ped Echo
- Ped Hip
- Prostate
- Renal
- Spine
- Superficial
- Thyroid

- Testicle
- TCD
- Uterus
- Venous
- 1st Trimester
- 2nd Trimester
- 3rd Trimester

OPERATION MODE

- B-Mode (2D)
- Color Doppler Mode (C)
- Pulse Wave Doppler (PWD)
- Continuous Wave Doppler(CWD): Steered / Static
- Power Doppler Mode (PD)
- S-Flow Mode
- M-Mode (M)
- Anatomical M Mode
- Single/Dual/Quad Mode
- Volume Mode
- 3D / 4D / 3D XI / XI STIC
- TDI/TDW
- ElastoScan Mode

DISPLAY MODE

- Dual Mode
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - ElastoScan + ElastoScan
- Dual Live Mode
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - B+ElastoScan
- Real-Time Triplex Mode (Simultaneous Mode)
 - B+C+PW, B+PD+PW, B+S-Flow+PW, B+TDI+TDW
- Duplex, Triplex Mode
 - B+C, B+M, B+3D, B+4D, B+PW, B+PD, B+S-Flow, B+CW, B+C+PW, B+C+CW, B+C+M, B+ElastoScan, B+TDI, B+TDW
- Quad Mode

- Combinations of B/B, B/C, B/PD and B/S-Flow, ElastoScan

- Zoom Mode
 - Write Zoom / Read Zoom / Pen zoom/ Panning
- Needle Mate+
- Panoramic
- Trapezoid

TRANSDUCER TYPES

- Linear Array: LN5-12, L5-12/50
- Curved Array: C2-5, C2-8, CA2-6BM
- Endo-Cavity: EVN4-9, ER4-9
- Micro-Convex Array: CF4-9
- Phased Array: PN2-4, SP3-8
- Pencil: DP2B
- Volume Probe (3D mechanical probe)
 - Curved Volume: VN4-8
 - Endo-Cavity Volume: EV2-10A

SYSTEM STANDARD FEATURES

- Hybrid Full Digital Beam-forming
- Frequency Range: 1 ~ 18MHz
- Displayed Imaging Depth (Probe dependent)
 - Minimum Depth of Field: 2cm
 - Maximum Depth of Field: 38cm
- Number of Focal Points: 1 ~ 4
- Transmission Focal Zone Position selection
 - 1 ~ 8 Focal Points Selectable
- (Probe and Application dependent)
- Continuous Dynamic Receive Focus / Aperture
- Multi-frequency / Wideband Technology
- Frequency Compounding (FSI)
- ClearVision
- 256 Shades of Gray
- System Internal Dynamic Range: 256
- Maximum Frame Rate
 - 2,000 fps (Hz)

- Maximum Color Frame Rate
 - 400 fps (Hz)
- Image Reverse: Right/Left, Up/Down
- Image Rotation: 90°, 180°, 270°
- Pre Processing
- Post Processing
- Digital Calipers / Measurement
- Cine Memory
 - Capacity: 500 MB
 - Cine loop: Max. 14,000 Lines
 - Image storage: Max. 45,000 Frames
- QuickScan
- Report Package
- Body Marker
- System Boot up: Max. 150 Sec
- Probe Change: 2-3 Sec
- User Programmable Preset : Over 30 Presets
- User Programmable Key: 6 Keys
- SonoView
- Data Backup / Restore
- Image Exporting and Importing
- PW Velocity Range: 0.1cm/s ~ 8.8m/s
- CW Velocity Range: 1cm/s ~ 19.3m/s
- Wireless Lan
- RIS Browser
- Q-Path/Q-View
- Barcode/Card Reader

SYSTEM OPTIONS

- AutoIMT+
- Cardiac Measurement
- CW Function
- DICOM 3.0
- ElastoScan™
- EzExam+™
- EzAssist™
- NeedleMate+™

- | | |
|---|-------------------------------|
| ▪ Panoramic+ | - Ref. Physician |
| ▪ MultiVision | - Operator |
| ▪ Strain+ | - Indication |
| ▪ 3D/4D | - Study Information |
| ▪ 3D XI | - E-mail |
| ▪ XI STIC | ▪ Gestational Age: LMP/EDD/GA |
| ▪ 2D NT | ▪ Institute |
| ▪ Windows 10 | ▪ Operator |
| ▪ Mobile Export | ▪ Probe Name |
| ▪ LaborAssist™ | ▪ Probe Orientation |
| ▪ ECG (AHA / IEC) | ▪ Depth / Width |
| ▪ Foot Switch | ▪ Focal Zone |
| ▪ Gel Warmer | ▪ Focal Number |
| ▪ Printer Tray (Large / Small) | ▪ TGC Line |
| ▪ 2P Connector PSA | ▪ FPS (Hz) |
| ▪ 2P Connector PSA (with Pencil Probe Port) | ▪ Frequency |
| ▪ 3P Connector PSA | ▪ Gain |
| ▪ 3P Connector PSA (with Pencil Probe Port) | ▪ Dynamic Range |

DISPLAY

- | | |
|---------------------------------------|---------------------------------------|
| ▪ Application | ▪ Map |
| ▪ Preset | ▪ Frame Average |
| ▪ Mode | ▪ Power |
| ▪ Date: 3 types (Selectable) | ▪ ClearVision Index |
| - YYYY-MM-DD | ▪ MultiVision Index |
| - MM-DD-YYYY | ▪ Gray Bar |
| - DD-MM-YYYY | ▪ Acoustic Index: TIs, TIb, Tic |
| ▪ Time: 2 types (Selectable) | ▪ Mechanical Index: MI |
| - 24 hours | ▪ Caliper & Measurement Result |
| - 12 hours | ▪ Indicator |
| ▪ Patient (General Information) | ▪ Pointer |
| - Patient ID | ▪ Body Marker |
| - Patient Name (First, Middle & Last) | ▪ ROI Position / ROI Size |
| - Gender: Female, Male, Other | ▪ Wall filter |
| - Birth / Age | ▪ Zoom / Panning |
| - Accession Number | ▪ Biopsy Guide Line (Probe dependent) |
| - Diag. Physician | |

LANGUAGE

- Display Language

- English, French, Italian, German, Spanish, Russian,
Chinese, Portuguese (Brazilian)

- Input Language

- English, French, German, Russian, Nordic (Norwegian,
Finnish, Swedish, Danish)

OPERATING ENVIRONMENT

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

PROCESSING

DATA PROCESSING

- System Processing Channel: 860,160
- Raw Data Image Analysis
- Cine
 - Function: save / review / play / stop / pause / export / Trim Start / Trim End
- Clipboard: displays thumbnail images of the acquired data for the current exam
- Enlarged Preview of the image
- Image Archive / Connectivity
- Image format: AVI, MPEG, JPEG, BMP, TIFF, DICOM
- Image Viewer (Sonoview)
- Measurements, Calculations and Annotations on CINE Playback
- Number of Image Storage (built-in SSD): max. 350,000 images (RAW format)
- Image Preview
- Cine Image Preview
- Recalling Image from the Clipboard
- Scrolling Timeline Memory
- Start and End Frame Selections for Loop Playback

PRE-PROCESSING

- B/M-Mode
 - Dynamic Range
 - Frame Average
 - Frequency
 - Gain
 - Harmonic (Probe dependent)
 - 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
- 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
 - Sweep Speed
- 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
 - Freedhand 3D
 - 3D
 - 3D XI
 - Accept ROI
 - Chroma Map
 - MagiCut™
- VOCAL
- XI VOCAL
- XI STIC
- ElastoScan Mode
 - E-Gain
 - Contrast
 - Color Map
 - Alpha Blending
 - Blending Level
 - Enhancement

CONNECTIVITY

DICOM

- DICOM 3.0
- DICOM Media
- DICOM Performed Procedure Step (PPS)
- DICOM Print
- DICOM Storage
- DICOM Storage Commitment (SC)
- DICOM Structured Reporting (SR)
- DICOM Verification
- DICOM Worklist
- Gray Scale Converting
- Multi Frame
- Single Frame
- Transfer Mode
 - Send after acquisition
 - Send on end exam
 - Send manually
- VOI LUT Setup

IHE

- Scheduled Workflow (SWF)
- Patient Information Reconciliation (PIR)
- Portable Data for Imaging (PDI)
- Evidence Documents (ED)

PERIPHERAL INTERFACE

- Audio out L/R
- D-SUB output
- S-Video output
- HDMI output
- USB 2.0 (6 ports)
- Ethernet 10/100/1000BASE-T
- Foot Switch: USB 2.0 (IPX 8)
- DVD Recorder: LG GP60NB50 - Recording only
- Printers

- Digital BW Video Printer: Sony UP-D897, Sony UP-D898MD, Sony UP-X898MD, Mitsubishi P95DE, Mitsubishi P95DW, Mitsubishi P95D
- Digital Color Video Printer: Sony UP-D25MD, Mitsubishi CP30DW
- USB Line Printer: Samsung CLP-620NDK, ML-2950, EPSON L805, HP M454DN

SCANNING PARAMETERS

2D MODE

- Angle Steering (Linear probes only)
 - LN5-12: -8, -4, 0, 4, 8°
 - L5-12/50: -12, -7, 0, 7, 12°
- Chroma Map: Off, 1 ~ 11
- Cine Play: On, Off
- Cine Speed: 6, 12, 25, 50, 100, 150, 200, 300
- Depth:
 - Convex: 5~38cm
 - Micro Convex: 3~18cm
 - Linear: 2~14cm
 - Endo: 3~18cm
 - Phased: 5~30cm
- Dual Live
- Dynamic Range: 30 ~ 256 (Step 2)
- Flip: L/R, U/D
- Focus Number: 1 ~ 4
- Frequency Compounding
- Frequency: 3 ~ 5 steps (Probe Dependent)
 - Pen, Gen1, Gen2, Res1, Res2
- Gain: 0 ~ 100
- Gray Map: 1 ~ 12
- Harmonic: On, Off
- Image Size: 70 ~ 100%
- Line Density: Low, Medium, High
- Number of TGC Level: 8
- Frame Average: 0 ~ 9
- Power: 2 ~ 100
- Pulse Inversion Harmonic: On, Off (Probe dependent)
- QuickScan: On, Update, Off
- Reject Level: 0 ~ 30
- MultiVision Index: Off, Low, Medium, High
- ClearVision Index: Off, 1 ~ 5
- Trapezoid: On, Off (Linear Probes only)

- Scan Area: 40 ~ 100%
- Zoom
 - Read Zoom: 100 ~ 800 %
 - Write Zoom
- Panning
- Free Angle Plane

M MODE

- Chroma Map: Off, 1 ~ 11
- Display format
 - M-mode only
 - Up/down, Side by side
 - Size: 50/50, 70/30, 30/70
- Dynamic Range: 30 ~ 256 (Step 2)
- Gain: 0 ~ 100
- M Mode Map: 1 ~ 12
- Power: 2 ~ 100
- QuickScan: On, Update, Off
- Sweep Speed
- Color M
- Anatomical M

COLOR MODE

- Balance: 0 ~ 16
- Baseline: -8 ~ 8
- Color Map: 1 ~ 12
- Line Density: Low, Medium, High
- Dual Live: On, Off
- Sensitivity: 0 ~ 5
- Frame Average: 0 ~ 5
- Frequency: 2 steps
- Gain: 0 ~ 100
- Hide Color: On, Off
- Invert: On, off
- Power: 2 ~ 100
- PRF: 0.1kHz ~ 19.5kHz (Probe dependent)
- Sensitivity: 0 ~ 5

- Smoothing: 0 ~ 7
- Steer Angle: -8, -4, 0, 4, 8°
- Velocity
- Filter: 1 ~ 4
- Vel + Variance Map

PWD MODE

- Auto Calc: Off, Live, Frozen
- Base Line: -8 ~ 8
- Chroma Map: Off, 1 ~ 11
- Display format: Up/down, Side by side, Doppler Only
- Display Size: 70/30, 50/50, 30/70
- Doppler Map: 1 ~ 12
- Dynamic Range: 30 ~ 256 (Step 2)
- Frequency: 2 Steps (Probe dependent)
- Gain: 0 ~ 100
- Invert: On, Off
- Power: 2 ~ 100
- PRF: 1.0 ~ 22.5 kHz (Probe dependent)
- QuickScan: On, Update, Off
- Simultaneous: On, Off
- Sound: 0 ~ 100
- Angle Correction: -80° ~ 80°
- SV Position control
- SV Size: 0.5 ~ 25mm
- Quick Angle: -60°, 0°, 60°
- Sweep Speed: 15 ~ 117 mm/s
- Trace
 - Method: Off, Mean, Max
 - Trace Direction: Both, Above, Below
- Update
- Filter: 1 ~ 4

CWD MODE

- Auto Calc.: Off, Live, Frozen
- Base line: -8 ~ 8
- Chroma Map: Off, 1 ~ 11

- Display Format: Up/down, Side by side, Doppler Only
- Display Size: 70/30, 50/50, 30/70
- Doppler Map: 1 ~ 12
- Dynamic Range: 30 ~ 256 (Step2)
- Gain: 0 ~ 100
- Invert: On, Off
- Power: 2 ~ 100
- Sample Rate: 1.8kHz ~ 57kHz (probe dependent)
- QuickScan: On, update, Off
- Sound: 0 ~ 100
- Angle Correction: -80° ~ 80°
- SV Position Control
- Quick Angle: -60°, 0°, 60°
- Sweep Speed: 15 ~ 117 mm/s
- Trace
 - Method: Off, Mean, Max
 - Direction: Both, Above, Below
- Filter: 1 ~ 4

PD MODE

- Balance: 0 ~ 16 step
- Color Map: 1 ~ 12
- Line Density: Low, Medium, High
- Dual Live: On, Off
- Filter: 1 ~ 4
- Frame Average: 0 ~ 5 step
- Frequency: 2 steps (probe dependent)
- Gain: 0 ~ 100
- Hide Color
- Invert: On, Off (S-Flow™ only)
- Power: 2 ~ 100
- PRF: 0.1 ~ 19.5 kHz (Probe dependent)
- Sensitivity: 0 ~ 5
- Smoothing: 0 ~ 5
- Steer Angle: -8, -4, 0, 4, 8
- Filter: 1 ~ 4

3D/4D MODE

- 3D
- 4D (Live 3D)
- Color 3D
- 3D XI
 - MSV
 - Oblique View
 - XI VOCAL
- MagiCut™
- Orientation Help
- Curved ROI
- 3D Cine
 - Rotation Angle: 30°/45°/60°/90°/180°/360°
 - Step Angle: 1°/3°/5°/15°
- 4D Cine
 - Cine Type: Volume, Image
 - Layout
 - Play Mode: Loop, Yoyo
 - Speed: Very Slow, Slow, Normal, Fast, Fastest
 - Trim Start, Trim End
 - Volume Index
- MPR
 - 2D
 - Render
 - Accept ROI
 - Init
 - Layout
 - Ref. Image: A/B/C/OH
 - 3D Rotation: -90°/90°/180°
 - Select
 - Position
- Bias
- Mix
- Vol. Index
- Th. Low
- Transparency
- MSV
 - Layout
 - Ref. Image: A / B / C / MSV OH
 - Page
 - Init
 - Orientation Dot
 - Position
 - Bias
 - Selected Slice
 - Vol. Index
 - Slice Thick.
 - Ruler
- Oblique View
 - Layout
 - Auto Increment
 - OVIX™
 - Init
 - Clear Line
 - Cut Type: Line / Contour / Parallel / Plumb
 - Image Rotation: -90° / 90° / 180°
- VOCAL
 - Solid / General / Prostate / Cystic / Sphere / Manual
 - Init
 - Ref. Image: A / B / C
 - Step Angle: 12° / 18° / 30°
 - Start
 - Pole 1 / Pole2

- XI VOCAL
 - Solid / Cystic / General / Manual
 - Init
 - Ref. Image: A / B / C / Ref. Contour
 - Slice Direction
 - Start
 - Number of Slice
- Chroma Map
 - 2D Chroma Map: Map 1 ~ Map 10
 - 3D Chroma Map: Map 1 ~ Map 10
- Post Processing
 - Negative / Auto Contrast / Threshold / Sharpen / 3D CI
- Preset (Probe dependent)
 - Default / Surface / Skeleton / Extremity / Brain / User1~3
 - Load / Save / Rename / Reset
- ROI Size / ROI Position
- Rendering Preset: Default / Surface / Skeleton / Extremity / Brain / User1~3
- Scan Quality: Low, Med1, Med2, High
- Volume Angle: 10 ~ 90 (Probe dependent)
- XI STIC
 - Scan Time (7 ~ 15 sec)
 - Trimester (1Trim, 2Trim, 3Trim)
 - Speed (Very Slow, Slow, Normal, Fast, Fastest)
 - Vol. Index
- Contrast: 0 ~ 100
- Frame Average: 0 ~ 100
- Color Map: 1 ~ 5
- Alpha Blending: On, Off
- Blending Level: 0 ~ 100
- Enhancement: 0 ~ 100

ELASTOSCAN MODE

- Line Density: Low, Medium, High
- Invert: On, Off
- Dual Live: On, Off
- Frequency
- Gain: 0 ~ 100

TRANSDUCERS

LINEAR

LN5-12

- Center Frequency: 8 MHz
- Band Width : 5 ~ 12 MHz
- Radius of curvature : Flat
- Field of view : 38.1 mm
- Number of elements : 128
- Biopsy Guide : Available
- Application : Abdomen, MSK, Small Parts, Vascular, OB, GYN, Pediatric
- Safety Class: BF

L5-12/50

- Center Frequency: 7.3 MHz
- Band Width : 5 ~ 12 MHz
- Radius of curvature : Flat
- Field of view : 52 mm
- Number of elements : 128
- Biopsy Guide : Available
- Application : Abdomen, MSK, Small Parts, Vascular, OB, GYN, Pediatric
- Safety Class: BF

CONVEX

C2-8

- Center Frequency: 4.7 MHz
- Band Width : 2 ~ 8 MHz
- Radius of curvature : 51.071 mm
- Field of view : 68.176°
- Number of elements : 128
- Biopsy Guide : Available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

C2-5

- Center Frequency: 3.35 MHz
- Band Width : 2 ~ 5 MHz
- Radius of curvature : 39.64 mm
- Field of view : 75°
- Number of elements : 128
- Biopsy Guide : Available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

CF4-9

- Center frequency : 5.65MHz
- Band Width: 4 ~ 9 MHz
- Radius of curvature : 14 mm
- Field of view : 92 °
- Number of elements : 128
- Biopsy Guide : Not available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

CA2-6BM

- Center frequency : 3.5MHz
- Band Width: 2 ~ 6 MHz
- Radius of curvature : 20 mm
- Field of view : 86.08 °
- Number of elements : 144
- Biopsy Guide : Not available
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology
- Safety Class: BF

ENDOCAVITY

EVN4-9

- Center frequency : 6.65MHz
- Band Width: 4 ~ 9 MHz

- Radius of curvature : 10.073 mm
- Field of view : 148.092 °
- Number of elements : 128
- Biopsy Guide : Available
- Application : OB, GYN, Urology
- Safety Class: BF

ER4-9

- Center frequency : 6.65MHz
- Band Width: 4 ~ 9 MHz
- Radius of curvature : 10.073 mm
- Field of view : 148.092 °
- Number of elements : 128
- Biopsy Guide : Available
- Application : OB, GYN, Urology
- Safety Class: BF

VOLUME

VN4-8

- Center frequency : 4.5MHz
- Band Width: 4 ~ 8 MHz
- Radius of curvature : 38.10mm
- Field of view : 77.24 °
- Number of elements : 128
- Biopsy Guide : Available
- Application : Abdomen: OB, GYN
- Safety Class: BF

EV2-10A

- Center frequency : 5.95MHz
- Band Width: 2 ~ 10 MHz
- Radius of curvature : 10.1mm
- Field of view : 150.3 °
- Number of elements : 192
- Biopsy Guide : Available
- Application : OB, GYN, Urology
- Safety Class: BF

PHASED ARRAY

PN2-4

- Center frequency : 2.6MHz
- Band Width: 2 ~ 4 MHz
- Radius of curvature : Flat
- Field of view : 90 °
- Number of elements : 64
- Biopsy Guide : Not available
- Application : Abdomen, Cardiac, Vascular, Pediatric
- Safety Class: BF

SP3-8

- Center frequency : 5.3MHz
- Band Width: 3 ~ 8 MHz
- Radius of curvature : Flat
- Field of view : 90 °
- Number of elements : 64
- Biopsy Guide : Not available
- Application : Abdomen, Cardiac, Vascular, Pediatric
- Safety Class: BF

PENCIL

DP2B

- Center frequency : 2.0MHz
- Application : Cardiac, Vascular
- Safety Class : BF

MEASUREMENT

- Caliper
- Abdomen
- Cardiac
- Vascular
- Gynecology
- Obstetrics
- Fetal Heart
- Urology
- MSK
- Small Parts
- Pediatric

CALIPER

- 2D Distance
- M Distance
- 2D Trace
- 2D Trace length
- Doppler Manual Trace
- Doppler Limited Trace
- 2 Lines Angle
- 3 Points Angle
- Ellipse (Area / Circumference)
- Spline
- Open Spline
- Closed Spline
- %Stenosis (Diameter)
- %Stenosis (Area)
- 1 Distance Volume
- 2 Distance Volume
- 3 Distance Volume
- Ellipse Volume
- Ellipse + Distance Volume
- Disk Volume
- Slope
- Heart Rate (M, Doppler)

- Time (M, Doppler)
- Velocity
- Acceleration
- RI
- Volume Flow (Diameter)
- Volume Flow (Area)
- Auto Trace
- Manual Trace
- Limited Trace

ABDOMEN

- Gallbladder
- Pancreas
- Bowel
- Kidney Vol. (Right / Left)
- Liver
- Spleen
- Aorta
- RA (Right / Left)
- Seg. A (Right / Left)
- Arc. A (Right / Left)
- Celiac A
- Splenic A
- Hepatic A (C / R / L)
- Hepatic V (R / M / L)
- Portal V (R / M / L)
- SMA
- IMA
- IVC
- IMV
- SMV
- RAR

CARDIAC

- LV (2D)
- LV Vol. (Simpson)
- LV Vol. (A/L)

- LV Vol. (Bullet)
- LV Mass
- RV (2D)
- Aorta
- LA
- LA Vol. (Simpson)
- RA
- RA Vol. (Simpson)
- LVOT
- RVOT
- AV
- MV
- TV
- PV
- Shunt
- IVC
- Tei Index
- Plum. Vein
- Hepatic Vein
- Tissue Doppler
- Qp/Qs
- LV (M)
- RV (M)

CAROTID

- Subclavian A (Right / Left)
- CCA (Right / Left/Prox./Mid./Dist)
- Bulb (Right / Left)
- ICA (Right / Left/Prox./Mid./Dist)
- ECA (Right / Left)
- Vertebral A (Right / Left)

UE ARTERY

- Subclavian A (Right / Left)
- Axillary A (Right / Left)
- Brachial A (Right / Left)
- Radial A (Right / Left)

- Ulnar A (Right / Left)
- SPA (Right / Left)

UE VEIN

- Internal Jugular V (Right / Left)
- Innominate V (Right / Left)
- Subclavian V (Right / Left)
- Axillary V (Right / Left)
- Brachial V (Right / Left)
- Cephalic V (Right / Left)
- Basilic V (Right / Left)
- Radial V (Right / Left)
- Ulnar (Right / Left)

LE ARTERY

- CIA (Left / Right)
- IIA (Left / Right)
- EIA (Left / Right)
- CFA (Left / Right)
- SFA (Left / Right)
- DFA (Left / Right)
- Popliteal A (Left / Right)
- ATA (Left / Right)
- PTA (Left / Right)
- Peroneal A (Left / Right)
- DPA (Left / Right)
- MPA (Left / Right)
- LPA (Left / Right)
- Metatarsal A (Left / Right)
- Digital A (Left / Right)

LE VEIN

- CIV (Left / Right)
- IIV (Left / Right)
- EIV (Left / Right)
- CFV (Left / Right)
- PFV (Left / Right)

- SFV (Left / Right)
- GSV (Left / Right)
- Popliteal V (Left / Right)
- LSV (Left / Right)
- ATV (Left / Right)
- PTV (Left / Right)
- Peroneal V (Left / Right)
- MPV (Left / Right)
- LPV (Left / Right)
- Metatarsal V (Left / Right)
- Digital V (Left / Right)

- Ratio
- Umbilical Artery
- Mid Cereb A
- Uterine A (Right / Left)
- Placenta A
- Fetal Carotid (Right / Left)
- Fetal Aorta
- Renal A (Right / Left)
- Duct Venosus
- Fetal HR
- PLI

GYNECOLOGY

- Uterus
- Cervix
- Cyst (Right / Left)
- Ovary (Right / Left)
- Follicles (Right / Left / 1 ~ 20)
- Mass 1 ~ 3
- Ovarian A (Right / Left)
- Uterine A (Right / Left)
- Pericystic Flow
- Endometrial Flow
- Endo. Polyp
- Ovarian Mass (Right / Left)
- Uterine Fibroid
- Cervical Fibroid
- Ectopic

OBSTETRICS

- Fetal Biometry
- Fetal Cranium
- Fetal Long Bone
- Fetal others
- AFI
- CTAR
- Maternal Others

FETAL HEART

- LV Vol. (Simpson)
- 2D Echo
- CTAR
- MPA
- Duct Artriosus
- IVC
- Duct Venosus
- Asc Aorta
- Dsc Aorta
- MV
- TV
- PLI
- TEI
- Fetal HR
- M Echo

UROLOGY

- WG Prostate
- T-Zone Vol
- Bladder Vol.
- Residual Vol
- Renal Vol. (Right / Left)

BREAST

- Mass 1 ~ 10 (Right / Left)
- Breast Flow (Right / Left)

MSK

- Shoulder (Right / Left)
- Wrist (Right / Left)
- Knee (Right / Left)
- Ankle (Right / Left)

THYROID

- Thyroid Vol. (Right / Left)
- Thyroid Flow (Right / Left)
- Mass 1 ~ 5 (Right / Left)

TESTICLE

- Testis Vol. (Right / Left)
- Epididymis (Right / Left)
- Testis Flow (Right / Left)
- Mass 1 ~ 5 (Right / Left)

SUPERFICIAL

- Superficial Vol (Right / Left)
- Superficial Flow (Right / Left)
- Mass 1 ~ 5 (Right / Left)

PEDIATRIC

- Hip Angle (Right / Left)

SAFETY / EMC

CLASSIFICATIONS

- SAFETY
 - Type of protection against electrical shock: Class I
 - Degree of protection against electrical shock: Type BF Applied Part (Probes) and Defibrillation-Proof Type CF Applied Part (ECG)
- EMC
 - RF Emission CISPR 11: Class A
 - IEC 60601-1-2:2014 & EN 60601-1-2:2015
- Degree of protection against harmful ingress of water: Ordinary Equipment, Probes (IPX7), Foot Switch (IPX8)
- RoHS Compliant
- WEEE Compliant
- REACH Compliant

APPLIED STANDARDS

- Safety & EMC
 - IEC 60601-1:2005+AMD1:2012
 - EN 60601-1:2006/A1:2013
 - ANSI/AAMI ES60601-1:2005(R)2012 +A1:2012+C1:2009/(R)2012 +A2:2010/(R)2012
 - CAN/CSA 22.2 NO. 60601-1:14
 - IEC 60601-1-2:2014
 - EN 60601-1-2:2015
 - IEC 60601-1-6:2010+AMD1:2013
 - EN 60601-1-6:2010/A1:2015
 - IEC 60601-2-37:2007+A1:2015
 - EN 60601-2-37:2008+A1:2015
 - ISO 14971:2007 and EN ISO 14971:2012
- Biocompatibility
 - ISO/EN 10993-1: 2009
- Labeling
 - EN 1041: 2008
 - ISO 15223-1: 2016

- NEMA/AIUM
 - NEMA/AIUM UD-2: 2004
 - NEMA/AIUM UD-3: 2004

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 2 % of maximum output
 - Level is increased by 2% in each step.
 - Mechanical Index (MI): 0.01~1.90 Range
 - Thermal Index (TI): 0.01~6.00 Range
 - TIC – Thermal Index, Bone at Surface
 - TIB – Thermal Index, Bone at Focus
 - TIS – Thermal Index, Soft Tissue

ANTI-VIRUS SOLUTION

- Disable USB Autorun Feature
 - Executable applications in USB stick are never launched
 - Prevent autorun virus through USB stick Dedicated Output Display on the system monitor display of output acoustic
- Block Network Port (Except DICOM communication port)
 - Ultrasound Machine allow only DICOM data through DICOM port
 - The network data of other network ports are rejected by Windows firewall
- Prohibit user from accessing windows application (such as Explorer)
 - Impossible to execute applications which is not allowed
 - Impossible to access internet web pages
- Windows Defender
 - Built-in Antivirus Solution
- Avast

-
- DICOM TLS
 - PHI transmission can be encrypted
 - SSD Encryption
 - BitLocker
 - Wiping Tool
 - Secure Erase for PHI Data(Support by Service Engineer only)
 - Password Policy Configurability
 - Menu Access Policy Configurability
 - Audit Trail Log
 - All activities related to PHI access

SAMSUNG MEDISON Customer eXperience Group

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