



SAMSUNG MEDISON

HS30

Data Sheet

V1.02



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Rev01

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Customer eXperience Group

SPECIFICATION SUMMARY

PHYSICAL SPECIFICATIONS

- Height: 1,393 mm (With monitor)
- Width: 519 mm
- Depth: 664 mm
- Weight: Aprox. 47.8 Kg (without accessories)
- Weight: Aprox. 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 — 14
- USB Port
- HDMI Output — 13

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

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) — 5
- 4 Swivel Wheel Cart Based Type — 3
- Rotation&Tilt Monitor Arm
- Built-in Printer Storages
- Ergonomic Operation Panel
- Alpha-Numeric Keyboard — 8
- Analog TGC
- Trackball
- Probe Holder / Gel Holder
- Front Handles
- Integrated PC Module
- Integrated SSD
- Windows 10 IoT Enterprise — 10
- Gel Warmer (Optional)
- ECG (Optional)

MAIN MONITOR

- 21.5 Inches High Resolution LED Monitor — 16
- Resolution: 1,920 x 1,080 (16:9) — 17
- Number of Color: 16.7 M
- Brightness Adjustment — 18
- Interactive Dynamic Software Menu
- Articulated Monitor Arm — 19
 - Rotation: +/- 135° — 20
 - Tilt: -10° / 75° — 21

CONTROL PANEL — 2

- Alpha-Numeric KBD
- Analog TGC
- 6 User Keys — 12
- Tri-Status backlit
- 4 Probe Holders — 22

PC

- Main Processor: Intel i3-8100H — 11
- Main Memory: 8 GB
- Built-in SSD : 512GB — 9

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 — 1

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

PRESETS — 23

- 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) — 24
- Color Doppler Mode (C) — 25
- Pulse Wave Doppler (PWD) — 26
- Continuous Wave Doppler (CWD): Steered / Static
- Power Doppler Mode (PD) — 27
- S-Flow Mode — 28
- M-Mode (M) — 29
- Anatomical M Mode — 30
- Single/Dual/Quad Mode
- Volume Mode
- 3D / 4D / 3D XI / XI STIC
- TDI/TDW — 31
- ElastoScan Mode

DISPLAY MODE — 44

- Dual Mode — 48
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - ElastoScan + ElastoScan
- Dual Live Mode — 49
 - 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 — 47
- Trapezoid

TRANSDUCER TYPES

- Linear Array: LN5-12, L5-12/50 — 53
- 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 — 54
- Pencil: DP2B
- Volume Probe (3D mechanical probe)
 - Curved Volume: VN4-8 — 51
 - Endo-Cavity Volume: EV2-10A — 52

SYSTEM STANDARD FEATURES

- Hybrid Full Digital Beam-forming — 32
- 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 — 34
- Maximum Frame Rate
 - 2,000 fps (Hz)

- Maximum Color Frame Rate
 - 400 fps (Hz)
- Image Reverse: Right/Left, Up/Down — 46
- Image Rotation: 90°, 180°, 270° — 45
- Pre Processing
- Post Processing
- Digital Calipers / Measurement
- Cine Memory
 - Capacity: 500 MB — 43
 - 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 — 40
- Data Backup / Restore
- Image Exporting and Importing — 41
- 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+™ — 94
- EzAssist™
- NeedleMate+™

- Panoramic+
- MultiVision — **37**
- Strain+
- 3D/4D
- 3D XI
- XI STIC
- 2D NT
- Windows 10
- Mobile Export
- LaborAssist™
- ECG (AHA / IEC)
- Foot Switch
- Gel Warmer
- Printer Tray (Large / Small)
- 2P Connector PSA
- 2P Connector PSA (with Pencil Probe Port) — **6**
- 3P Connector PSA
- 3P Connector PSA (with Pencil Probe Port)
- Ref. Physician
- Operator
- Indication
- Study Information
- E-mail
- Gestational Age: LMP/EDD/GA
- Institute
- Operator
- Probe Name
- Probe Orientation
- Depth / Width
- Focal Zone
- Focal Number
- TGC Line
- FPS (Hz)
- Frequency
- Gain
- Dynamic Range
- Map
- Frame Average
- Power
- ClearVision Index
- MultiVision Index
- Gray Bar
- Acoustic Index: TIs, TIb, Tic
- Mechanical Index: MI
- Caliper & Measurement Result
- Indicator
- Pointer
- Body Marker
- ROI Position / ROI Size
- Wall filter
- Zoom / Panning
- Biopsy Guide Line (Probe dependent)

DISPLAY

- Application
- Preset
- Mode
- Date: 3 types (Selectable)
 - YYYY-MM-DD
 - MM-DD-YYYY
 - DD-MM-YYYY
- Time: 2 types (Selectable)
 - 24 hours
 - 12 hours
- Patient (General Information)
 - Patient ID
 - Patient Name (First, Middle & Last)
 - Gender: Female, Male, Other
 - Birth / Age
 - Accession Number
 - Diag. Physician
- Display Language

LANGUAGE

PROCESSING

DATA PROCESSING

- System Processing Channel: 860,160 — **33**
- 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 — **42**
- 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

POST-PROCESSING — 50

- 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) — **15**
- 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

- 55
 - 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 — 70
- 58
 - Frequency Compounding
- 60
 - Frequency: 3 ~ 5 steps (Probe Dependent)
 - Pen, Gen1, Gen2, Res1, Res2
 - Gain: 0 ~ 100 — 69
- 61
 - Gray Map: 1 ~ 12
- 56
 - Harmonic: On, Off
 - Image Size: 70 ~ 100% — 67
- 62
 - Line Density: Low, Medium, High
 - Number of TGC Level: 8
 - Frame Average: 0 ~ 9
 - Power: 2 ~ 100 — 71
- 57
 - Pulse Inversion Harmonic: On, Off (Probe dependent)
 - QuickScan: On, Update, Off — 38
 - Reject Level: 0 ~ 30
- 63
 - MultiVision Index: Off, Low, Medium, High
 - ClearVision Index: Off, 1 ~ 5 — 36
 - Trapezoid: On, Off (Linear Probes only)

- Scan Area: 40 ~ 100% — 64
- Zoom
 - Read Zoom: 100 ~ 800 % — 65
 - Write Zoom — 66
- Panning
- Free Angle Plane — 68

M MODE

- Chroma Map: Off, 1 ~ 11 — 72
- Display format
 - M-mode only
- 81
 - Up/down, Side by side
 - Size: 50/50, 70/30, 30/70
- Dynamic Range: 30 ~ 256 (Step 2) — 78
- Gain: 0 ~ 100 — 77
- M Mode Map: 1 ~ 12 — 73
- Power: 2 ~ 100 — 79
- QuickScan: On, Update, Off — 80
- Sweep Speed — 74
- Color M — 76
- Anatomical M — 75

COLOR MODE

- Balance: 0 ~ 16
- Baseline: -8 ~ 8 — 93
- Color Map: 1 ~ 12 — 82
- Line Density: Low, Medium, High — 92
- Dual Live: On, Off
- Sensitivity: 0 ~ 5 — 84
- Frame Average: 0 ~ 5
- Frequency: 2 steps — 91
- Gain: 0 ~ 100 — 88
- Hide Color: On, Off
- Invert: On, off — 89
- Power: 2 ~ 100 — 90
- PRF: 0.1kHz ~ 19.5kHz (Probe dependent) — 85
- Sensitivity: 0 ~ 5

- Smoothing: 0 ~ 7
- Steer Angle: -8, -4, 0, 4, 8°
- Velocity
- Filter: 1 ~ 4 — (87)
- Vel + Variance Map — (83)

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 — (39)
- Simultaneous: On, Off
- Sound: 0 ~ 100
- Angle Correction: -80° ~ 80°
- SV Position control
- SV Size: 0.5 ~ 25mm
- Quick Angle: -60°, 0°, 60° — (86)
- 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

TRANSDUCERS

LINEAR

LN5-12

- Center Frequency: 8 MHz
- Band Width : 5 ~ 12 MHz — (101)
- Radius of curvature : Flat
- Field of view : 38.1 mm — (103)
- Number of elements : 128 — (102)
- Biopsy Guide : Available5
- Application : Abdomen, MSK, Small Parts, Vascular, OB, GYN, Pediatric — (100)
- 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 — (96)
- Radius of curvature : 51.071 mm
- Field of view : 68.176° — (98)
- Number of elements : 128 — (97)
- Biopsy Guide : Available — (99)
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urology — (95)
- 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

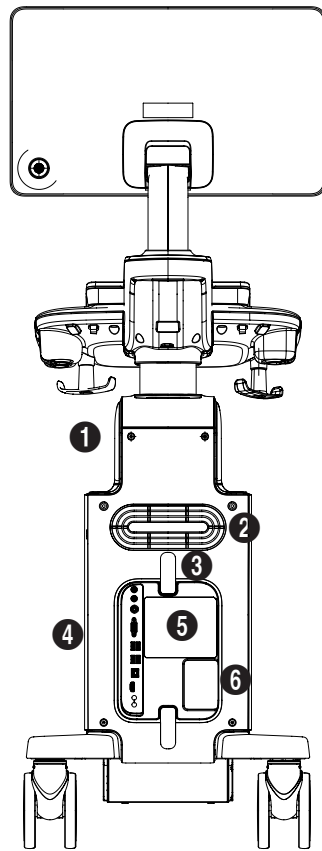
CA2-6BM

- 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



- ❶ Compartimentul de depozitare
- ❷ Ventilație
- ❸ Suportul cablurilor
- ❹ Panoul din spate
- ❺ Eticheta de identificare
- ❻ Conexiunea de alimentare

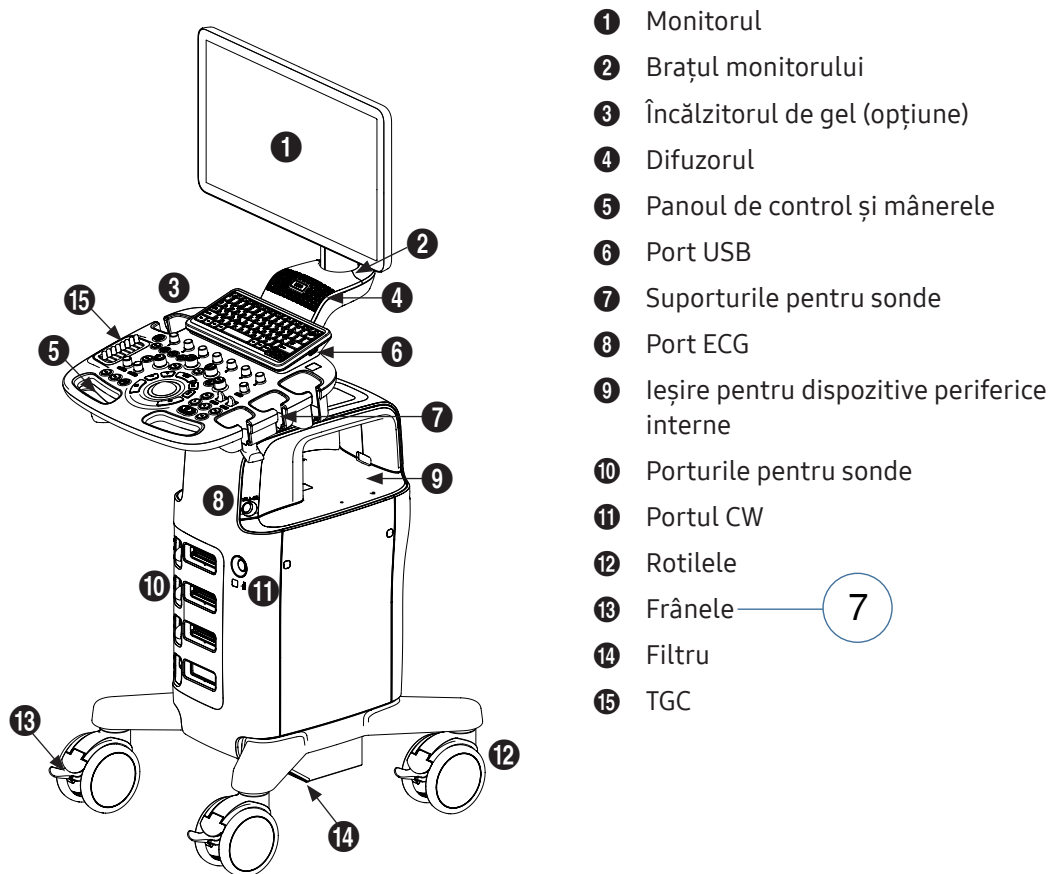
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[Figura 2.2 Partea din spate a produsului]



:: Configurația produsului

Acest produs constă într-un monitor, un panou de control, o consolă, dispozitive periferice și sonde.



[Figura 2.1 Partea din față a produsului]





SAMSUNG MEDISON

HS30

Fisa de date

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Rev01

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Customer eXperience Group

SPECIFICATION SUMMARY

SPECIFICATIE FIZICA

- Inaltime: 1,393 mm (Cu monitor)
- Latime: 519 mm
- Adancime: 664 mm
- Greutate: Aprox. 47.8 Kg (fara accesorii)
- Greutate: Aprox. 52 Kg (Cu sarcina de lucru

sigura)

MODUL IMAGISTICA

- Mod 2D
- Mod M
- Mod M Color
- Mod Anatomic
- Mod Doppler Color
- Mod Doppler Spectral cu undă pulsată (PW)
- CMod Doppler Undă continuă (CW)
- Mod Imagistica Doppler tisulară (TDI)
- Mod Unda Doppler tisulară (TDW)
- Mod Doppler de putere (PD)
- Mod ElastoScan
- Mod de imagini 3D/4D/XI STIC
- Mod Freehand 3D
- Mod Dual
- Mod Quad
- Mod Combinat
- Mod Simultan
- Mod Zoom
- Mod S-Flow

FOCUSARE

- Transmite focalizarea, maxim opt puncte (patru puncte selectabile simultan)
- Focalizare dinamica digitala (continua)

CONECTORI SONDA

- 2 sau 3 Conectori Sonda (Optional)
- Conector Sonda CW (Optional)

MONITOR

- Monitor Principal
 - Rezolutie: 1,920 x 1,080
 - 21.5 Inch LED Monitor

ECG

- Tip USB (Tip CF)

STOCARE IMAGINE

- Maxim 45,000 Cadre pentru memorie Cine
- Maxim 14,000 Linii pentru memorie Loop
- Sistem de arhivare a imaginilor

PANOU DORSAL INTRARE/IESIRE CONEXIUNI

- Port iesire audio (Dreapta/Stanga)
- VGA monitor
- S-Video Iesire
- LAN — 14
- USB Port
- HDMI Iesire — 13

AUXILIARE

- DVD Multi-Drive
- Imprimanta video alb negru digitala
- Imprimanta video color digitala
- Imprimanta USB
- Inregistrare DVD
- Pedala Picior (IPX8)
- Memory USB
- USB HDD
- USB ECG
- Monitor

INTERFATA UTILIZATOR

GENERAL SPECIFICATION

SPECIFICATIE FIZICA

- Inaltime: 1,393 mm (with monitor)
- Latime: 519 mm
- Adancime: 664 mm
- Greutate:
 - Aprox. 47.8 Kg (cu accesorii)
 - Aprox. 52 Kg (cu sarcina sigura de lucru)

ASPECT CONSOLA

- 2 sau 3 Porturi Active de Sonda (Optional) — 5
- Carucior cu 4 roti pivotante — 3
- Brat monitor articulat
- Construit cu spatiu pentru imprimanta
- Panou de comanda ergonomic
- Tastatura alfanumerica — 8
- Analog TGC
- Trackball
- Suport sonda / Suport gel
- Maner fata/spate
- Modul PC integrat
- SSD integrat
- Windows 10 IoT Enterprise — 10
- Incalzitor gel (Optional)
- ECG (Optional)

MONITOR PRINCIPAL

- Monitor LED de inalta rezolutie 21.5 inch — 16
- Rezolutie: 1,920 x 1,080 (16:9) — 17
- Numar de Culori: 16.7 M
- Ajustare luminozitate — 18
- Meniu soft dinamic interactiv
- Brat monitor articulat: — 19
 - Rotatie: +/- 135° — 20
 - Inclinare: -10° / 75° — 21

PANOU DE COMANDA — 2

- Tastatura alfanumerica
- Analog TGC
- 6 Butoane folosite pentru utilizatori — 12
- Tri-Status iluminare
- 4 suporturi sonde — 22

PC

- Procesor principal: Intel i3-8100H — 11
- Memorie principala: 8 GB
- SSD incorporat : 512GB — 9

SPECIFICATII ELECTRICE

- Frecventa: 50/60 Hz
- Voltaj: 100 ~ 240 VAC
- Consum energie: Max. 620 VA with Peripherals
- Caldura disipata: 2,729.7 [BTU/h]
- Zgomot sistem: 40 dBA
- Circuit echipotential incorporat

SYSTEM SPECIFICATION

APLICATII — 1

- Abdomen
- Cardiac
- Ginecologie
- MSK
- Obstetrica
- Pediatrie
- Parti moi
- Urologie
- Vascular

PRESETS — 23

- Abdomen
- Adult Echo
- Adnexa
- Aorta
- Aortic Arch
- Arterial
- Vezica
- Intestin
- Sani
- Carotida
- Adancime
- Inima Fetala
- General
- Neo Head
- NT
- Abdomen pediatric
- Ecografie pediatrica
- Ped Hip
- Prostata
- Renal
- Spina
- Superficial
- Tiroida

- Testicul
- TCD
- Uter
- Venos
- 1st Trimesteru
- 2nd Trimesteru
- 3rd Trimesteru

MOD DE OPERARE

- Mod B (2D) — 24
- Mod Doppler Color (C) — 25
- Mod Doppler cu unda pulsata (PWD) — 26
- Mod Doppler cu undă continuă (CWD): Dirijat / Static
- Mod Doppler de putere (PD) — 27
- Mod S-Flow — 28
- Mod M (M) — 29
- Mod M Anatomic — 30
- Mod Single/Dual/Quad
- Mod Volumetric:
 - 3D / 4D / 3D XI / XI STIC
- TDI/TDW — 31
- Mod ElastoScan

MOD AFISAJ — 44

- Mod Dual — 48
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - ElastoScan + ElastoScan
- Mod Dual in timp real — 49
 - B+B, B+B/C, B+B/PD, B+B/S-Flow
 - B+ElastoScan
- Mod triplex în timp real (mod simultan)
 - B+C+PW, B+PD+PW, B+S-Flow+PW, B+TDI+TDW
- Mod duplex, triplex
 - 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
- Mod Quad

- Combinatii de B/B, B/C, B/PD and B/S-Flow,

ElastoScan

- Mod Zoom
 - Zoom scriere/ Zoom citire/ Pen zoom/ Panning
- Needle Mate+
- Panoramic — 47
- Trapezoid

TIPURI DE SONDE

- Liniara: LN5-12, L5-12/50 — 53
- Convexa: C2-5, C2-8, CA2-6BM
- Endo-Cavitara: EVN4-9, ER4-9
- Micro-Convexa: CF4-9
- Arie Fazata: PN2-4, SP3-8 — 54
- Creion: DP2B
- Sonda Volumetrica (Sonda mecanica 3D)
- Volum Convexa: VN4-8 — 51
- Volum Endo-Cavitara: EV2-10A — 52

CARACTERISTICI STANDARD SISTEM

- Formare fascicul hibrid digital complet — 32
- Frecventa: 1 ~ 18MHz
- Afisare adancime imagine (in functie de sonda)
 - Adancime minima: 2cm
 - Adancime maxima: 38cm
- Numar puncte de focalizare: 1 ~ 4
- Pozitia zonei focale de selectare
 - 1 ~ 8 Puncte focalizare selectabile
- (In functie de sonda si aplicatie)
- Focalizare/Diafragma de receptie dinamica continua
- Multi-frecventa / Tehnologie cu banda larga
- Compunerea frecventei (FSI)
- ClearVision
- 256 Nuante de gri
- Gama dinamica: 256 — 34
- Rata maxima a cadrelor
 - 2,000 fps (Hz)

- Rata maxima a cadrelor de culoare
 - 400 fps (Hz)
- Inversarea imaginii: Dreapta/Stanga, Sus/Jos — 46
- Rotirea Imaginii: 90°, 180°, 270° — 45
- Pre Procesare
- Post Procesare
- Cliper digital / Masuratoare
- Memorie CINE
 - Capacitate: 500 MB — 43
 - Cine loop: Max. 14,000 Linii
 - Stocare imagine: Max. 45,000 Cadre
- QuickScan
- Pachet rapoarte
- Marker corporal
- Timp maxim de pornire: Max. 150 Sec
- Timp schimbare sonda: 2-3 Sec
- Presetari Programabile de utilizatori: Peste 30 Preseturi
- Butoane programabile de utilizator: 6 butoane
- SonoView — 40
- Data Backup / Restabilire date
- Exportarea si importarea imaginilor — 41
- PW raza de viteza: 0.1cm/s ~ 8.8m/s
- CW raza de viteza: 1cm/s ~ 19.3m/s
- Wireless Lan
- RIS Browser
- Q-Path/Q-View
- Cititor de cod de bare/card

OPTIUNI SISTEM

- AutoIMT+
- Masuratori cardiace
- Functie CW
- DICOM 3.0
- ElastoScan™
- EzExam+™ — 94
- EzAssist™
- NeedleMate+™

- Panoramic+
- MultiVision—(37)
- Strain+
- 3D/4D
- 3D XI
- XI STIC
- 2D NT
- Windows 10
- Export Mobil
- LaborAssist™
- ECG (AHA / IEC)
- Conector picior
- Incalzitor gel
- Tavita imprimanta (Mare / Mica)
- Connector 2P PSA
- Connector 2P PSA (cu port de sonda creion)—(6)
- Connector 3P PSA
- Connector 3P PSA (cu port de sonda creion)
- - Ref. fizician
- - Operator
- - Indicatie
- - Informatii despre studii
- - E-mail
- Varsta gestationala: LMP/EDD/GA
- Institut
- Operator
- Nume sonda
- Orientare sonda
- Adancime / Latime
- Zona focalizare
- Numar focalizare
- Linie TGC
- FPS (Hz)
- Frecventa
- Gain
- Gama dinamica
- Harta
- Cadre medii
- Putere
- Indice ClearVision
- Indice MultiVision
- Bara gri
- Index Acoustic: TIs, Tlb, Tic
- Index mecanic: MI
- Caliper & Rezultatul masuratorilor
- Indicator
- Pointer
- Marker corporal
- Pozitie ROI / Marime ROI
- Filtru perete
- Zoom / Panning
- Ghid de biopsie (In functie de sonda)

AFISAJ

- Aplicatie
- Preset
- Mod
- Data: 3 tipuri (Selectabile)
 - YYYY-MM-DD
 - MM-DD-YYYY
 - DD-MM-YYYY
- Timp: 2 tipuri (Selectabile)
 - 24 hours
 - 12 hours
- Pacient (Informatii Generale)
 - ID Pacient
 - Nume Pacient (Nume si Prenume)
 - Sex: Feminin/ Masculin, altul
 - Zi de nastere / Varsta
 - Numar de acces
 - Diag. fizician
- Afisaj

LIMBA

PROCESSING

PROCESARE DATA

- Canal de procesare a sistemului : 860,160 33
- Analiza imaginilor Raw Data
- Cine
 - Functie: save / review / play / stop / pause / export / Trim Start / Trim End
- Clipboard: afiseaza imagini miniaturale ale datelor obtinute pentru examinarea curenta
- Previzualizarea marita a imaginii
- Arhiva / Conectivitate
- Format Imagine: AVI, MPEG, JPEG, BMP, TIFF, DICOM 42
- Vizualizare imagine (Sonoview)
- Masuratori, Calcule and Adnotari pe CINE
- Playback
- Numar de stocare imagini (construit in SSD): max. 350,000 images (Format RAW)
- Previzualizare imagine
- Previzualizare imagine Cine
- Amintirea imaginii pe Clipboard
- Derulare memorie cronologica
- Inceput si incheiere selectie cadru pentru Loop Playback

PRE PROCESARE

- B/M-Mod
 - Gama dinamica
 - Media cadrelor
 - Frecventa
 - Gain
 - Armonic (In functie de proba)
 - Armonici inversie puls (In functie de sonda) - Linia Densitatii
 - Putere
 - Respingere
 - Suprafata scanare
 - TGC

- Write Zoom
- MultiVision (In functie de sonda)
- Beam Steering (in functie de sonda) - Trapezoid (In functie de sonda)
- Unghi plan liber

- Mod PW
 - Filtru
 - Frecventa
 - Gain
 - Putere
 - PRF (Scara)
 - Unghiul Volumului probei - Pozitia volumului probei

- Mod CW
 - Rata probei
 - Filtru
 - Gain
 - Putere
 - Unghiul Volumului probei - Pozitia volumului probei

- Mod Color Doppler / Power Doppler mod - Filtru
 - Media Cadrelor
 - Frecventa
 - Gain
 - Linia Densitatii
 - Putere
 - PRF (Scara)
 - Netezire
 - Sensitivitate
 - Unghi de directie

- Mod 3D / 4D
 - Calitate scanare - Unghi volum

- Mod ElastoScan
 - Media cadrelor
 - Frecventa
 - Densitatea liniei

POST PROCESARE — 50

- B-Mod
 - Harta Cromatica
 - Harta gri
 - Marime imagine
 - Read Zoom
 - ClearVision
 - Sweep Speed
- M-Mod
 - Harta cromatica
 - Harta M-Mod
 - Read Zoom
 - Sweep Speed
- PW / CW Mod
 - Linia de baza
 - Harta cromatica
 - Mapa Doppler
 - Inversie
 - Read Zoom
 - Sunet
 - Directia de contur
 - Metoda de contur
- Mod Color Doppler / Power Doppler Mod
 - Balanta
 - Linia de baza
 - Harta cromatica
 - Mapa color
 - Ascunderea Culoarii
 - Inversie
 - Read Zoom
- 3D Mod
 - Freedhand 3D
 - 3D
 - 3D XI
 - Accept ROI
 - Harta cromatica
 - MagiCut™
- VOCAL
- XI VOCAL
- XI STIC
- ElastoScan Mode -
 - E-Gain
 - Contrast
 - Harta culori
 - Amestec alfa
 - Nivel amestec
 - Imbunatatire margini

CONECTIVITATE

DICOM

- DICOM 3.0
- DICOM Media
- DICOM Etapa procedurii efectuate
- DICOM Printare
- DICOM Stocare
- DICOM Angajament de stocare
- DICOM Raport structurat
- DICOM Verificare
- DICOM Lista de lucru
- Conversie scara de gri
- Multi Cadru
- Cadru Singular
- Transfer Mod
 - Trimite dupa achizitie
 - Trimite la finalizarea examenului
 - Trimitere manuala
- VOI LUT Setup

- Imprimantă video digitală Alb-negru: Sony UP-D897, Sony UP-D898MD, Sony UP-X898MD, Mitsubishi P95DE, Mitsubishi P95DW, Mitsubishi P95D
- Imprimantă video digitală color: Sony UP-D25MD, Mitsubishi CP30DW
- Imprimantă de linie USB: Samsung CLP-620NDK, ML-2950, EPSON L805, HP M454DN

IHE

- Flux de lucru programat
- Depozitarea angajamentului de reconciliere a informatiilor privind pacientii
- Date portabile pentru imagistica
- Documente de evidenta

INTERFATA PERIFERICA

- Audio iesire S/D
- D-SUB iesire
- S-Video iesire
- HDMI iesire
- USB 2.0 (6 porturi) — 15
- Ethernet 10/100/1000BASE-T
- Pedala picior: USB 2.0 (IPX 8)
- DVD Recorder: LG GP60NB50 - Doar inregistrare
- Imprimanta

PARAMETRII DE SCANARE

MOD 2D

- 55 — Unghi de directie (Doar sonde lineare)
 - LN5-12: -8, -4, 0, 4, 8°
 - L5-12/50: -12, -7, 0, 7, 12°
- Harta cromatica: Oprit, 1 ~ 11
- Cine Play: Pornit, Oprit
- Cine Speed: 6, 12, 25, 50, 100, 150, 200, 300
- Depth:
 - Convexa: 5~38cm
 - Micro Convexa: 3~18cm
 - Liniara: 2~14cm
 - Endo cavitala: 3~18cm
 - Aria fazata: 5~30cm
- Dual in timp real
- Gama dinamica: 30 ~ 256 (2 pasi)
- Rasucire: L/R, U/D
- 70 — Numar focal: 1 ~ 4
- 58 — Frecventa compusa
- 60 — Frecventa: 3 ~ 5 pasi (In functie de sonda)
 - Pen, Gen1, Gen2, Res1, Res2
- 69 — Gain: 0 ~ 100
- 61 — Harta de gri: 1 ~ 12
- 56 — Armonic: Pornit, Oprit
- 67 — Marimea imaginii: 70 ~ 100%
- 62 — Linia Densitatii: Scazut, Mediu, Ridicat
 - Numar nivele TGC: 8
 - Media cadrelor: 0 ~ 9
- 71 — Putere: 2 ~ 100
- 57 — Armonic de inversare a pulsului: On, Off (In functie de sonda)
- 38 — QuickScan: Pornit, Updateare, Oprit
 - Nivel respingere: 0 ~ 30
- 63 — Indice multiVision: Oprit, Low, Medium, High
- 36 — Indice ClearVision: Oprit, 1 ~ 5
 - Trapezoid: Pornit, Oprit (Linear Probes only)

- Aria de scanare: 40 ~ 100% — 64
- Zoom

- 65 — Zoom citire: 100 ~ 800 %
- 66 — Zoom scriere
 - Panorare
- 68 — Plan unghi liber

MOD M

- 72 — Harta cromatica: Oprit, 1 ~ 11
- Format afisaj
 - Doar M-mod
 - Sus/jos, Alaturat
- 81 — Dimensiune: 50/50, 70/30, 30/70
- 78 — Gama dinamica: 30 ~ 256 (2 pasi)
- 77 — Gain: 0 ~ 100
- 73 — Harta Mod M: 1 ~ 12
- 79 — Putere: 2 ~ 100
- 80 — QuickScan: Pornit, Updateare, Oprit
- 74 — Viteza de baliere
- 76 — M color
- 75 — M Anatomic

MOD DOPPLER COLOR

- Balanta: 0 ~ 16
- 93 — Linia de baza: -8 ~ 8
- 82 — Harti culori: 1 ~ 12
- 92 — Linia densitatii: Scazut, Mediu, Ridicat
 - Dual in timp real: Pornit, Oprit
- 84 — Sensibilitate: 0 ~ 5
 - Media cadrelor: 0 ~ 5
- 91 — Frecventa: 2 pasi
 - Gain: 0 ~ 100 — 88
 - Ascundere culoare: Pornit, Oprit
- 89 — Inversie: Pornit, Oprit
 - Putere: 2 ~ 100 — 90
 - PRF: 0.1kHz ~ 19.5kHz (In functie de sonda) — 85
 - Sensibilitate: 0 ~ 5

- Netezire: 0 ~ 7
- Unghiul de directie: -8, -4, 0, 4, 8°
- Viteza
- Filtre: 1 ~ 4 — (87)
- Vel + Harta Variantei — (83)

MOD PWD

- Auto Calc: Oprit, In timp real, Inghetat
- Linie de baza: -8 ~ 8
- Harta cromatica: Oprit, 1 ~ 11
- Format Afisaj: Sus/Jos, Alaturat, Doar Doppler
- Marime Afisaj: 70/30, 50/50, 30/70
- Harti Doppler: 1 ~ 12
- Gama dinamica: 30 ~ 256 (2 pasi)
- Frecventa: 2 pasi (In functie de sonda)
- Gain: 0 ~ 100
- Inversie: On, Off
- Putere: 2 ~ 100
- PRF: 1.0 ~ 22.5 kHz (In functie de sonda)
- QuickScan: Pornit, Updateare, Oprit — (39)
- Simultan: Pornit, Oprit
- Sunet: 0 ~ 100
- Corectie de unghi: -80° ~ 80°
- Controlul pozitiei SV
- Marime Size: 0.5 ~ 25mm
- Unghi rapid: -60°, 0°, 60° — (86)
- Viteza de baliere: 15 ~ 117 mm/s
- Contur
 - Metoda: Off, Mean, Max
 - Directie de Contru: Both, Above, Below
- Updateare
- Filtre: 1 ~ 4

MOD CWD

- Auto Calc: Oprit, In timp real, Inghetat
- Linie de baza: -8 ~ 8
- Harta Cromatica: Oprit, 1 ~ 11

- Format Afisaj: Sus/Jos, Alaturat, Doar Doppler
- Marime Afisaj: 70/30, 50/50, 30/70
- Harti Doppler: 1 ~ 12
- Gama Dinamica: 30 ~ 256 (2 pasi)
- Gain: 0 ~ 100
- Inversie: Pornit, Oprit
- Putere: 2 ~ 100
- Sample Rate: 1.8kHz ~ 57kHz (In functie de sonda)
- QuickScan: Pornit, updateare, Oprit
- Sunet: 0 ~ 100
- Corectie Unghi: -80° ~ 80°
- SV Position Control
- Unghi Rapid: -60°, 0°, 60°
- Viteza de baliere: 15 ~ 117 mm/s
- Contur
 - Metoda: Oprit, Mean, Max
 - Directie: ambele, Deasupra, Dedesubt
- Filtre: 1 ~ 4

MOD PD

- Balanta: 0 ~ 16 pasi
- Harti culori: 1 ~ 12
- Linia Densitatii: Scazut, Mediu, Ridicat
- Dual in timp real: Pornit, Oprit
- Filtre: 1 ~ 4
- Cadre Medii: 0 ~ 5 pasi
- Frecventa: 2 pasi (In functie de sonda)
- Gain: 0 ~ 100
- Ascunderea culorilor
- Inversie: Pornit, Oprit (Doar S-Flow™)
- Putere: 2 ~ 100
- PRF: 0.1 ~ 19.5 kHz (In functie de sonda)
- Sensibilitate: 0 ~ 5
- Netezire: 0 ~ 5
- Unghi ghidaj: -8, -4, 0, 4, 8
- Filtre: 1 ~ 4

TRANSDUCTORI

LINIAR

LN5-12

- Frecventa Centrala: 8 MHz
- Latime de banda : 5 ~ 12 MHz — (101)
- Raza de curbare : Flat
- Camp de vedere : 38.1 mm — (103)
- Numar de elemente : 128 — (102)
- Ghid de biopsie : Disponibil
- Aplicatii : Abdomen, MSK, Parti moi, Vascular, OB, GYN, Pediatric — (100)
- Clasa de siguranta: BF

L5-12/50

- Frecventa Centrala: 7.3 MHz
- Latime de banda : 5 ~ 12 MHz
- Raza de curbare : Flat
- Camp de vedere: 52 mm
- Numar de elemente : 128
- Ghid de biopsie : Disponibil
- Aplicatii : Abdomen, MSK, Parti moi, Vascular, OB, GYN, Pediatric
- Clasa de siguranta: BF

CONVEX

C2-8

- Frecventa Centrala: 4.7 MHz
- Latime de banda : 2 ~ 8 MHz — (96)
- Raza de curbare : 51.071 mm
- Camp de vedere : 68.176° — (98)
- Numar de elemente : 128 — (97)
- Ghid de biopsie : Disponibil — (99)
- Application : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urologie — (95)
- Clasa de siguranta: BF

C2-5

- Frecventa Centrala: 3.35 MHz
- Latime de banda : 2 ~ 5 MHz
- Raza de curbare : 39.64 mm
- Camp de vedere : 75°
- Numar de elemente : 128
- Ghid de biopsie : Disponibil
- Aplicatii : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urologie
- Clasa de siguranta: BF

CF4-9

- Frecventa Centrala : 5.65MHz
- Latime de banda: 4 ~ 9 MHz
- Raza de curbare : 14 mm
- Camp de vedere : 92 °
- Numar de elemente : 128
- Ghid de biopsie : Indisponibil
- Aplicatii : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urologie
- Clasa de siguranta: BF

CA2-6BM

- Frecventa Centrala : 3.5MHz
- Latime de banda: 2 ~ 6 MHz
- Raza de curbare : 20 mm
- Camp de vedere: 86.08 °
- Numar de elemente : 144
- Ghid de biopsie: Indisponibil
- Aplicatii : Abdomen, MSK, OB, GYN, Pediatric, Vascular, Urologie
- Clasa de siguranta: BF

ENDOCAVITAR

EVN4-9

- Frecventa Centrala : 6.65MHz
- Latime de banda: 4 ~ 9 MHz