



X-CUBE 90 Ultrasound System specifications

X-CUBE 90 Ultrasound System



Product Description

X-CUBE 90 is a high-performing diagnostic ultrasound system that provides diagnostic confidence and user convenience with a vast range of convenient features and superior image quality.

System Architecture

- X⁺ Architecture
- X⁺ FIT
- X⁺ Crystal Signature™
- SensiView™ Technology
- MicroFit™ Technology
- Windows10 Embedded

General Specification

Physical Specification

- Width: 580 mm
- Depth: 835 mm
- Height: 1,440 - 1,605 mm
- Weight: approx. 85 kg (System only)

Electrical Specification

- 100 - 120 V, 200 - 240 V, 50/60 Hz
- Power consumption: Max. 700 VA
- Battery (Option): Max. 22 hours (in Sleep mode)

System Design

- 23" flat panel monitor and articulated arm
- Electric motorized control panel adjustment
 - Range of height: 165 mm
 - Left/right swivel: $\pm 30^\circ$
- Front and rear handle
- 5 active transducer connectors
- 1 pencil transducer port
- Transducer holders
- Gel warmer (3 temperature levels)
 - Low: 30° C
 - Medium: 34° C
 - High: 38° C
- 4 swivel wheels
- Locking mechanism
 - Front wheels: Swivel & Brake Lock
 - Rear wheels: Swivel Lock
- Integrated SSD
- ECG (Option)
- Thermal printer storage
- Built-in stereo speaker
- Built-in cable management
- System boot-up
 - from off: approx. 62 sec
 - from Sleep mode to on: approx. 7 sec

Computing power

- Main processor: Intel core i5-8400H 2.5 GHz
- Main memory: 16GB
- SSD[250GB] and HDD[1TB]

User Interface

Control Panel

- Alphanumeric keyboard with backlit
- Ergonomic key layout
- 8 TGC control levers
- 13 user customizable keys

Touch Screen

- 12.1" high definition LED backlit LCD
- Resolution: 1,280 X 800
- 16.7M color display
- Brightness and contrast adjustable (OSD)
- Adjustable screen angle: Up to 15°

Main Monitor

- 23" high definition LED backlit LCD
- Resolution: 1,920 x 1,080 (16:9 wide)
- 16.7M color display
- Contrast: 1:1,000
- IPS (In Plane Switching) technology
- Brightness and contrast adjustable
- Articulated monitor arm
 - Up/down: 145 mm
 - Swivel: +/- 90°
 - Tilt: +15° / -90°

System Overview

Applications

- Abdomen
- Obstetrics (OB)
- Gynecology (GYN)
- Cardiology
- Small Parts
- Musculoskeletal (MSK)
- Vascular
- Urology
- Emergency Medicine (EM)
- TCD
- Breast
- Appendix

Operating Modes

- 2D mode
- Harmonic mode (HAR)
- M mode
- Color M mode
- Anatomical M mode (AMM)
- Color Flow Doppler (CF) mode
- Power Doppler (PD) mode
- Directional PD mode
- Pulsed Wave Doppler (PWD) mode
- Continuous Wave Doppler (CWD) mode
- High PRF Doppler mode
- Tissue Doppler Imaging (TDI) mode
- 3D/4D mode
- Contrast Enhanced Imaging (CEUS) mode
- Strain Elastography
- Point Shear Wave Elastography (pSWE)
- Micro View Imaging mode
- Panoramic mode

Complex Modes

- Duplex: B+B, B+PW, B+CW, B+CF, B+PD, B+DPDI, B+M, B+3D, B+4D, B+Live HQ, A+B+C+3D, A+B+C+4D, B+Elastography
- Triplex: B+CF+PW, B+CF+CW, B+CF+M

Imaging Presentation

- Dual
- Live Dual
- Quad
- Duplex Image Format
 - 1:1/1:2/1:3/3:1/2:1/Full format
- Image Reverse: Left/Right
- Image Rotation: 0°, 90°, 180°, 270°
- Full screen mode

Transducer Types

- Pencil Doppler
- Linear Array
- Sector Phased Array
- Convex Array
- Endocavity
- Volume Transducer
 - Volume Convex
 - Volume Endocavity

System Standard Features

- 5 Transducer ports
- Full Speckle Reduction Imaging (Full SRI)
- Spatial Compounding Imaging (SCI)
- FTHI (Filtered Tissue Harmonic)
- PTHI (Pulse Inversion Tissue Harmonic)
- Xpeed
- Virtual Convex
- EX-FOV (Extended View)
- Raw Data Processing
- Post Processing
- Measurement Package
Including worksheets/reports for:
 - Abdomen
 - OB
 - GYN
 - Cardiology
 - Vascular
 - Urology
 - Pediatrics
 - Small Parts
 - Breast
 - MSK
 - EM

System Options

- CV M&R
- DICOM 3.0 Connectivity
- DICOM SR (OB)
- DICOM SR (Adult Echo)
- DICOM SR (Vascular)
- DICOM Query
- Auto IMT
- CW
- Anatomical-M
- Panoramic
- Tissue Doppler Image
- Stress Echo
- Cube Strain™
- Live HQ™
- Elastography
- Cube View™
- Needle Vision™ Plus
- Auto NT
- X+ 3D4D

- X+ Volume Advance
- Cube Note
- AutoEF
- STIC (Ship-hold)
- CEUS
- Silhouette View
- STL 3D Printing
- X+ MicroView
- X+ pSWE
- X+ Assistant
- X+ Auto Biometry

Peripheral Options

- External USB DVD-RW
 - Hitachi-LG Data Storage, Inc
GP65NB60
- USB thermal B&W printer
 - Sony Corporation
UP-D897, UP-897MD, UP-D898MD, UP-X898MD,
UP-D25MD, UP-25MD
- USB thermal color printer
 - Sony Corporation
UP-D25MD, UP-25MD
- Wireless LAN
- Tri-pedal footswitch, with programmable functionality
- Side tray
- Endocavity transducer holder

Display Annotation

- Patient ID: Up to 64 characters
- Patient name: First, last and middle
- Gender, age and birth date
- Gestational age from LMP, EDD and GA
- Transducer name
- Institution / hospital name: up to 25 characters
- Date format: 3 types
 - YYYY/MM/DD
 - MM/DD/YYYY
 - DD/MM/YYYY
- Time format: 2 types
 - 12 hours / 24 hours
- Acoustic power
 - Mechanical index (MI)
 - Thermal index (TI): TIS, TIB, TIC
- Transducer name
- Preset

- Transducer orientation
- Depth
- Focus
- TGC line
- Frequency
- Frame rate
- Power
- Mode name
- Gray scale bar
- Arrow
- Indicator
- Text
 - Size: 1 - 10
- Body pattern
 - 201 sets
 - Size: small, medium, large
- Biopsy guideline
- ECG and Respiration line
- Thumbnail
- Stored image info
- Cine gauge
- Measurement result
- Trackball controls and status

- Full SRI
- Edge Enhance
- Reject
- M
 - Colorize
 - Dynamic Range
 - Gain
 - Gray Map
 - Reject
 - Sweep Speed
- PWD
 - Gain
 - Auto Calc.
 - Baseline
 - Sweep Speed
 - Invert
 - Colorize
 - Gray Map
 - Auto Angle
 - Angle Correct
 - Reject
 - Dynamic Range
- CWD
 - Angle Correct
 - Auto Calc.
 - Baseline
 - Colorize
 - Dynamic Range
 - Gray Map
 - Reject
 - Sweep Speed
- CF/PD
 - Baseline
 - Blend / Adaptive Blend
 - Colorize
 - Color Map
 - Invert (CF / DPDI)
 - Threshold
- PD
 - Baseline
 - Blend / Adaptive Blend
 - Colorize
 - Color Map
 - Invert (CF / DPDI)
 - Threshold

System Parameters

System Presets

- User Programmable Preset Capability
- Factory Default Preset Data
- Languages: English, German, Spanish, French, Italian, Portuguese, Russian, Chinese
- Programmable Annotation Library
- Body Patterns

Controls Available on Freeze (Post-Processing)

- Read Zoom
- 2D
 - Zoom
 - Reverse
 - Gain
 - Dynamic Range
 - Up/Down
 - Colorize
 - Gray Map

Controls Available while Live (Pre-Processing)

- Write Zoom
- 2D
 - Angle Steer
 - Colorize
 - Dynamic Range
 - Edge Enhance
 - Frequency
 - Full SRI
 - Gray Map
 - Gain
 - Harmonic
 - Pulse inversion harmonic
 - Invert
 - Line Density
 - Persist
 - Power
 - Reject
 - Spatial Compound
- M
 - Anatomical M
 - AMM Angle
 - Colorize
 - Dynamic Range
 - Gray Map
- PWD
 - Angle
 - Angle Steer
 - Auto Angle
 - Baseline
 - Colorize
 - Dynamic Range
 - Frequency
 - Gray Map
 - Gain
 - Line Density
 - Power
 - Reject
 - Scale (PRF)
 - SV Size
 - Sweep Speed
 - Sound
 - Wall Filter
- CWD
 - Angle

- Baseline
- Dynamic Range
- Gray Map
- Gain
- Scale (PRF)
- Frequency
- Power
- Reject
- Sound
- Sweep Speed
- Wall Filter
- CF/PD
 - Angle Steer
 - Baseline
 - Color Map
 - Ensemble
 - Frequency
 - Flow State
 - Gain
 - Line Density
 - Power
 - Scale (PRF)
 - Smooth
 - Wall Filter

Image Processing and Presentation

- System Frequency Range: 1 - 20 MHz
- System processing channel: 11,468,800
- ADC: 14 bits
- Displayed Imaging Depth: 0 - 40 cm
- Max. Frame Rate (Transducer dependent)
 - 2D: 509 (Hz/FPS)
 - Color: 270 (Hz/FPS)
 - PW: 299 (Hz/FPS)
 - Volume Convex: 17 (Hz/VPS)
 - Volume Endocavity: 100 (Hz/VPS)
- Gray Scale: 256 levels
- Dynamic Range: Max. 250 dB
- Max. Scan line: 1,024
- Adjustable Field of View (FOV)
- Image Reverse: Right/ Left
- Image Rotation: 0°, 90°, 180°, 270°
- Focus
 - Focal number: Max. 8

- Focal position: Max. 19
- Zoom
 - Write Zoom: Max. 11.9x (Transducer dependent)
 - Read Zoom: Max. 10x
- CF (Transducer dependent)
 - 300 Hz - 13.1 KHz
 - 2 cm/s - 423.9 cm/s
- PW (Transducer dependent)
 - 300 Hz - 25 kHz
 - 2.3cm/s - 1000 cm/s
- CW
 - 1.6 KHz - 78.1 KHz
 - 2.5 cm/s - 30.8 m/s

- DICOM Print
- DICOM Storage commitment
- DICOM Media
- DICOM Worklist
- DICOM MPPS
- DICOM Q&R
- DICOM Structured Report (OB-GYN)
- DICOM Structured Report (Echocardiography)
- DICOM Structured Report (Vascular)
- Cube View™
- Cube Note
- Network Storage
- Wireless LAN (Option)

CINE Memory

- Cine memory: 716 MB, 16,384 frames, 312 volumes
- Prospective and retrospective
- Cine review, save and edit
- Run, stop, frame move
- Play speed: 50% 100%, 200%, 300%, 400%, 500%, 600%, 700%, 800%, 900%, 100%

Image Archive

- Clipboard: Displays thumbnail images of the acquired data for the current exam
- Previewing Clipboard Images: An enlarged preview of the image
- Recalling Images from the Clipboard
- E-View™: Archived images from the past patient exams appear as well as images stored for the current exam
- 916GB of the 1TB internal hard drive reserved for patient data
- Image store
 - Up to 916,000 images (with JPG compression)
- Image format
 - BMP, JPEG, DICOM, AVI, MPEG
- Export / Backup / Restore
- DVR
 - VCR: VCR/DVR, USB storage
 - VCR Format: NTSC or PAL, MPEG or AVI
 - VCR Maximum Time (min.): 1 to 20 (Only available for USB storage.)

Connectivity

- Verification
- DICOM Storage

Scanning Parameters

2D Mode

- Angle Steer (Transducer dependent): 7 steps (-15 - 15°)
- Colorize: 0 - 6
- Dynamic Range: 30 - 250 dB
- Edge Enhance: 0 - 10
- Frequency
- Full SRI: 0 - 5
- Gray Map: 0 - 8
- Gain: 0 - 100
- Harmonic
- Pulse inversion harmonic
- Line Density: 0 - 5
- Persist: 0 - 4
- Power: 1 - 100 %
- Reject: 0 - 6
- Spatial Compound: 0 - 3

M Mode

- Anatomical M: On / Off
- AMM Angle
- Colorize: 0 - 6
- Dynamic Range: 30 - 150 dB
- Gray Map: 0 - 6
- Gain: 0 - 100
- Reject: 0 - 10
- Power: 1 - 100 %
- Sweep Speed: 0 - 7

PWD Mode

- Angle: -89° - 89°
- Angle Steer (Transducer dependent): 7 steps (-20 - 20°)
- Auto Angle
- Baseline: -8 - 8
- Colorize: 0 - 44
- Dynamic Range: 30 - 120 dB
- Frequency
- Gray Map: 0 - 13
- Gain: 0 - 100
- Power: 1 - 100 %
- Reject: 0 - 10
- Scale (PRF): 0.3 - 25.7 KHz (Transducer dependent)
- SV Size: 5 - 11 mm
- Sweep Speed: 0 - 7
- Sound: 0 - 100%
- Wall Filter: 0 - 7
- Invert

CWD Mode

- Angle: -89° - 89°
- Baseline: -8 - 8
- Dynamic Range: 30 - 120 dB
- Gray Map: 0 - 9
- Colorize: 0 - 44
- Gain: 0 - 100
- Scale (PRF): 0.3 - 78.1 KHz (Transducer dependent)
- Frequency
- Power: 1 - 100 %
- Reject: 0 - 10
- Sound: 0 - 100 %
- Sweep Speed: 0 - 7
- Wall Filter: 0 - 7
- Invert

CF/PD Mode

- Angle Steer (Transducer dependent): 7 steps (-20 - 20°)
- Baseline: -100 - 100
- Color Map: 0 - 26 (CF), 0 - 8 (PD), 0 - 9 (DPDI)
- Ensemble: 6 - 16
- Frequency
- Flow State: Low, Mid, High
- Gain: 0 - 100
- Line Density: 0 - 3

- Power: 1 - 100 %
- Scale (PRF): 0.3 - 12.1 KHz (Transducer dependent)
- Smooth: 0 - 10
- Wall Filter: 0 - 7

3D/4D Mode (X+ 3D4D)

- Quality: Low, Mid, H1, H2, Max
- Volume Angle
 - Volume Convex: 15 - 80 (5 steps)
 - Volume Endocavity: 10 - 95 (5 steps)
- Curved ROI
- Render Direction: Up, Down, Lt, Rt, Front, Back
- Brightness: 1 - 100
- Contrast: 1 - 100
- Threshold: 0 - 255
- Opacity: 0 - 255
- Smooth: 0 - 20
- 3D SRI: 0 - 5
- 2D SRI: 0 - 5
- ColorMap
 - Gray map: 0 - 8
 - 2D Colorize: 0 - 6
 - 3D Color Map: 1 - 18

3D/4D Aquisition Mode

- STIC (Ship-hold)
 - Acq. Time: 7 - 15 sec
 - Volume Angle: 15, 20, 25, 30, 35, 40, 45, 50

3D/4D Visualization Mode

- MPR
 - Display format
 - Ref. Plane
 - 3D Orientation
 - Edit ROI
 - Render Setup: Surface, Depth, Max, Min, XRay, Light, Light2
 - Alpha Mode: 1, 2
 - Cine
 - Cine Calc.
 - Initial
 - Easy Cut
 - Clear Face
 - 3D Print

- Silhouette: On / Off
- Sectional Planes
 - Multi Plane
 - Cubic View: Mode1, Mode2
 - AnySlice
- Multi Slice
 - Display format: 1*1 / 1*2 / 2*2 / 3*3 / 4*4
 - Ref. plane
 - Active view
 - Guide view
 - Pitch: 1 - 10 mm
 - Prev. / Next
 - Oblique Angle: -90 - 90°
 - Thinkness: 0 - 20 mm
 - Slice Thickness: 2 mm, 5 mm, 8 mm, 12 mm, 20 mm
- AnySlice
 - Display format
 - Reference line (Ref. Line)
 - Delete / Delete All
 - Thinkness: 0 - 20 mm
 - Slice Thickness: 2 mm, 5 mm, 8 mm, 12 mm, 20 mm
- VOCAL
 - Segment Mode: Sphere, Manual, Auto
 - Structure: Hypo, Hyper
 - Segment Angle: 10° / 15° / 30°
 - Frame
 - Sphere Size
 - Render Type: Wire, Surface, Volume
 - Shell Type: Off / In / Out / In-Out
 - Rotate X / Rotate Y / Rotate Z
 - 3D Color Map: 1 - 18
 - Shell Thickness: 1.0 - 20.0 mm

3D/4D Live HQ™

- Live HQ Setup
- Light Direction
- Move Light
- Live HQ color map: 1 - 12
- HQ Scatter: 0 - 10
- Front Scale: 0 - 20
- Back Scale: -20 - 25

3D/4D Silhouette

- Silhouette1, Silhouette2
- Mix: 0 - 100

- Level: -100 - 100
- Light Direction
- Move Light
- Color Map: 1 - 12
- Value: 0 - 100
- Transparency: 0 - 100

Panoramic Imaging

- Colorize: 0 - 6
- Dynamic Range: 30 - 250 dB
- Edge Enhance: 0 - 4
- Frequency
- Full SRI: 0 - 5
- Gray Map: 0 - 6
- Gain: 0 - 100
- Harmonic
- Pulse inversion harmonics
- Line Density: 0 - 5
- Persist: 0 - 4
- Power: 1 - 100%
- Reject: 0 - 6

Strain Elastography

- Live Dual: On / Off
- Invert: On / Off
- Persist: 0 - 5
- Opacity: 10 - 100
- Color Map: 0 - 5

point Shear Wave Elastography

- pSWE Units: kPa, m/s
- 12 samples (S1 - S12)

Needle Vision™ Plus

- L/R Flip
- Angle: Shallow, Medium, Steep

Contrast Enhanced Ultrasound Imaging (CEUS)

- Live Dual: On / Off
- Side Control: CEUS, Tissue
- Flash: On / Off
- Timer: On / Off
- Line Density: 0 - 5
- Edge Enhance: 0 - 10

- Sepia: On / Off
- Rotation: 0°, 180°
- Dynamic Range: 30 - 250 dB
- Sepia Map: 0 - 4
- Output Power: -20 - 0 dB
- Flash Frame: 1 - 100
- Frequency
- Persist: 0 - 4
- Reject: 0 - 10

Transducers

SC1-7H

- Transducer type: Convex
- Frequency: 1.0 - 7.0 MHz
- Field of view: 60°
- Elements: 192
- Radius of curvature: 60 mm
- Footprint: 72.4 X 16.8 mm
- Application: Abdomen, EM, Gynecology, Obstetrics, Pediatric, Urology
- SC1-6 Biopsy Starter Kit
- X⁺ Crystal Signature

L3-12X

- Transducer type: Linear
- Frequency: 3.0 - 12.0 MHz
- Field of view: 51.2 mm
- Elements: 256
- Footprint: 58.2 X 10.4 mm
- Application: Pediatric, EM, MSK, Vascular, Small Parts
- L3-12X Biopsy Starter Kit

L10-25H

- Transducer type: Linear
- Frequency: 10.0 - 25.0 MHz
- Field of view: 25.0 mm
- Elements: 192
- Footprint: 32.8 X 6.8 mm
- Application: EM, MSK, Vascular, Small Parts
- Biopsy is not available
- Seamless window

SL3-19H

- Transducer type: Linear
- Frequency: 3.0 - 19.0 MHz
- Field of view: 38.4 mm
- Elements: 192
- Footprint: 43.3 X 8.3 mm
- Application: Abdomen, Pediatric, Gynecology, Obstetrics, EM, MSK, Vascular, Small Parts, TCD
- L3-12 Biopsy Starter Kit
- X⁺ Crystal Signature
- Seamless window

MP1-5X

- Transducer type: Sector Phased
- Frequency: 1.0 - 5.0 MHz
- Field of view: 90°
- Elements: 80
- Footprint: 23.0 X 15.4 mm
- Application: Abdomen, Pediatric, Cardiac, EM, TCD
- Biopsy is not available
- X⁺ Crystal Signature

EC2-11H/EV2-11H

- Transducer type: Endocavity
- Frequency: 2.0 - 11.0 MHz
- Field of view: 200° (Max. 230°)
- Elements: 192
- Footprint: 19.0 X 17.4 mm
- Application: Gynecology, Obstetrics, Urology, EM
- EV2-11H Reusable Starter Kit
- X⁺ Crystal Signature

SVC1-8H

- Transducer type: Volume Convex
- Frequency: 1.0 - 8.0 MHz
- Field of view: 79°
- Radius of curvature: 39 mm
- Elements: 192
- Footprint: 58.64 X 38.58 mm
- Application: Abdomen, Gynecology, Obstetrics, Pediatric, Urology, EM
- Biopsy is not available
- Seamless window

VE3-10H

- Transducer type: Volume Endocavity
- Frequency: 3.0 - 10.0 MHz
- Field of view: 152°
- Radius of curvature: 10 mm
- Elements: 192
- Footprint: 25.1 X 25.1 mm
- Application: Gynecology, Obstetrics, Urology, EM
- VE3-10H Disposable Starter Kit
- VE3-10H Reusable Starter Kit

CW2.0

- Transducer type: Pencil Doppler
- Frequency: 2.0 MHz
- Footprint: 17.2 X 17.2 mm
- Application: Cardiac
- Biopsy is not available

Measurement and Calculation

Basic Measurement

- Distance
- Area Circumference
- %Stenosis
- Volume
- Angle
- A/B ratio
- Volume Flow Area
- Time
- Slope
- HR
- Velocity
- Acceleration
- S/D Ratio
- PI
- RI
- Trace
- Auto Trace
- VTI

Abdomen Measurement

- Aorta
- Renal

- Renal A
- Renal V
- Hepatic A
- IVC
- Hepatic V
- Mid HV
- MPV
- Portal V
- Splenic A
- Splenic V
- SMA
- SMV
- IMA
- Iliac A
- Iliac V
- Vessel
- HR

Breast Measurement

- Mass 1 - 10
- Duct dilatation
- Breast Flow
- HR

Cardiology Measurement

- Ao/LA
- LA Vol (Diam)
- Aorta Diam
- Pul. Diam
- Vena Cava
- RV
- Simpson BP
- Simpson SP
- Modified Simpson
- Area Length
- Teichholz
- LV Mass T-E
- LV Mass A-L
- LA Vol (A-L)
- LA Vol (Simpson)
- RA Vol (A-L)
- RA Vol (Simpson)
- TV
- PISA
- MV

- AV
- PV
- Qp/Qs
- Pul. Vein
- TDI
- HR

Gynecology Measurement

- Uterus
- Ovary
- Follicle
- Fibroid
- Pelvic Floor
- Early Gestation
- Ovarian
- Uterine
- FHR
- Ovarian A
- Uterine A
- Vessel
- Aorta
- Umbilical A
- Placenta
- Des. Aorta
- HR

Obstetrics Measurement

- Early Gestation
- Fetal Biometry
- Fetal Long Bones
- Fetal Cranium
- Fetal Others
- Maternal Others
- Generic
- AFI
- CRAR
- 4 Chamber view
- Aortic Arch
- LVOT
- Outflow tract
- RVOT
- Thorax
- Venous
- FHR
- Tricuspid Valve

- Mitral Valve
- Main Pulmonary A
- Aorta
- Ductus Art
- Umbilical A
- Umbilical V
- Ductus Ven
- Pulmonary Valve
- Aortic Valve
- Pulmonary Vein
- Carotid
- MCA
- SMA
- Celiac A
- Uterine A
- IVC
- Automated nuchal transparency measurement
- Automated fetal biometry measurement
 - BPD, HC, AC, FL, Humerus

Emergency Medicine Measurement

- Aorta
- Renal
- Bladder
- %Stenosis
- A/B ratio
- SMA
- IMA
- IVC
- Uterine A
- Ovarian A
- Vessel
- HR

MSK Measurement

- Volume
- HIP (BA) / Hip (AB)
- Vessel
- HR

Pediatric Measurement

- Aorta
- Renal
- Renal A

- CHA
- IVC
- Hepatic V
- Mid HV
- MPV
- Portal V
- Splenic A
- Splenic V
- SMA
- SMV
- IMA
- Iliac A
- Iliac V
- Vessel
- Hip
- HR

Renal Measurement

- Renal L
- Renal
- Aorta
- Renal A
- Portal V
- Vessel
- HR

Small Parts Measurement

- Thyroid
- Isthmus
- Nodule
- Lymph Node
- Parathyroid
- Thyroid Flow
- Testicle
- Testicle Flow
- HR

Urology Measurement

- Renal
- Bladder
- Testicle
- Prostate
- Residual
- Vessel

- Bladder
- HR

Vascular Measurement

- CCA
- ICA
- ECA
- Bulb
- Vert. A
- Subclav. A
- Axill. A
- Basilar A
- Brach. A
- DBA
- Basilic A
- Radial A
- Ulnar A
- SPA
- Innom. A
- IJA
- Subclav. V
- Ceph. V
- Brach. V
- DBV
- Basilic V
- Radial V
- Ulnar V
- Innom. V
- CIA
- EIA
- IIA
- CFA
- DFA
- SFA
- Pop. A
- PTA
- ATA
- Peron. A
- DPA
- Prof. A
- CIV
- EIV
- IIV
- CFV
- DFV

- SFV
- GSV
- LSV
- Pop. V
- PTV
- ATV
- Peron. V
- DPA
- Prof. A
- MCA
- ACA
- PCA P1
- PCA P2
- Vert. A
- Basilar A
- PComA
- AComA
- Renal A
- Renal V
- Segm. A
- Interlob. A
- Arcuate A
- ABD. Aorta
- SMA
- IMA
- Hepatic A
- Portal V
- Splenic A
- Straight Gft
- Loop Gft
- Cimino Gft
- Comp Gft
- HR
- Automated intima media thickness measurement

- VGA port
- CVBS output port

Safety Compliance

System Classifications

- IEC/EN 60601-1:6.8.1
 - Type of protection against electrical shock: Class I
 - Degree of protection against electrical shock (Patient connection): Type BF equipment
 - Degree of protection against harmful ingress of water: Ordinary equipment and all of applied parts (IPX7, IPX8) except ECG meet ingress protection level according to IEC 60529.
 - 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

Standards Compliance

- MDD 93/42/EEC
- EN ISO 10993-1:2009 (ISO 10993-1:2009)
- EN ISO 10993-10:2013 (ISO 10993-10:2010)
- EN ISO 10993-5:2009 (ISO 10993-5:2009)
- EN ISO 13485:2016 (ISO 13485:2016)
- EN ISO 14155:2011+AC:2011 (ISO 14155:2011)
- EN ISO 14971:2012 (ISO 14971:2007)
- EN ISO 15223-1:2016 (ISO 15223-1:2016)
- EN 1041:2008+A1:2013
- EN 55011:2016+A1:2017 (CISPR 11:2015/AMD1:2016)
- EN 55032:2015 (CISPR 32:2015)
- EN 60601-1:2006+A1:2013 (IEC 60601-1:2005/AMD1:2012)
- EN 60601-1-2:2015 (IEC 60601-1-2:2014)
- EN 60601-1-6:2010+A1:2015 (IEC 60601-1-6:2010/AMD1:2013)
- EN 60601-2-37:2008+A11:2011+A1:2015 (IEC 60601-2-37:2007/AMD1:2015)
- EN 61000-3-2:2014 (IEC 61000-3-2:2018)
- EN 61000-3-3:2013 (IEC 61000-3-3:2013)
- EN 61000-4-11:2004 (IEC 61000-4-11:2004)
- EN 61000-4-2:2009 (IEC 61000-4-2:2008)
- EN 61000-4-3:2006+A1:2008+A2:2010 (IEC 61000-4-3:2006/AMD2:2010)

Inputs and Outputs (I/O)

- USB port (6 ports)
 - 4 USB 3.0 ports
 - 2 USB 2.0 ports
- Audio out port (Left)
- Audio out port (Right)
- HDMI port
- Ethernet port
- S-Video output port

- EN 61000-4-4:2012 (IEC 61000-4-4:2012)
- EN 61000-4-5:2014 (IEC 61000-4-5:2014)
- EN 61000-4-6:2014 (IEC 61000-4-6:2013)
- EN 61000-4-8:2010 (IEC 61000-4-8:2009)
- EN 62304:2006+A1:2015 (IEC 62304:2006/AMD1:2015)
- EN 62366-1:2015 (IEC 62366-1:2015)
- MEDDEV 2.12/2 Rev.2
- MEDDEV 2.7.1 Rev.4
- NEMA UD2:2004 (R2009)
- Medical Devices Regulations (SOR/98-282)
- 의료기기법, 의료기기법 시행령, 의료기기법 시행규칙

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