Acclarix AX8

Diagnostic Ultrasound System

Version 1.4

Datasheet

EDAN

Acclarix AX8
Compact Ultrasound System

Product Description

The remarkable Acclarix AX8Compact Ultrasound System delivers a powerhouse combination of features to meet the demands of point-of-care and general imaging applications. The Acclarix AX8 has been designed from the ground up with a relentless focus on delivering unexpected levels of innovation and performance at a price point that is equally surprising.

1.System Overview

1.1.Application

- Abdomen
- Gynecology
- Obstetrics
- Cardiology
- Small parts
- Urology
- Musculoskeletal
- Vascular
- Neurology
- Intra-operation*
- Pediatric*
- Neonatal*
- Adult cephalic*

* Subject to Regulatory approval

1.2.Transducer Types

- Convex array
- Linear array
- Phased array
- Endocavity curved array
- Micro-Convex array
- Wobbler

1.3.Imaging Modes

- B-mode B
- M-mode M
    - Anatomic M Mode*

- Color Doppler
- Power Doppler Imaging/Directional PDI
- Pulsed Wave Doppler
- Continuous Wave Doppler
- HPRF(High Pulse Repetition Frequency)
- Static 3D
- 4D
- Tissue Doppler Imaging* (TDI, including Color-TDI and PW-TDI) *

* Subject to Regulatory approval

1.4.Imaging Technique & Function

- Tissue Adaptive Imaging
- Frequency Compounding Imaging
- Adaptive Spatial Compounding Imaging
- Harmonic Imaging
- Adaptive Speckle Reduction Imaging (eSRI)
- B mode Auto Optimization
- Color mode Auto Optimization *
- PW mode Auto Optimization PW
- Digital Multi-Beam Beamforming
- Trapezoid Imaging
- Adaptive Doppler imaging
- Spectrum Enhancement
- B Steer
- Pan Zoom
- Panorama Imaging
- Needle Enhancement Visualization Imaging

* Subject to Regulatory approval

1.5.Display Modes

- B
- Dual B
- Quad
- M
- B+M(Anatomic M)
- B/C(PDI, or DPDI)
- Dual B/C(PDI or DPDI)
- B+B/C(PDI or DPDI) dual live
- B+PW (Duplex or independent update)
- B/C(PDI or DPDI)+PW (Triplex or independent update)
- B+CW (CW update)
- B/C(PDI or DPDI)+CW (CW update)
- B/Color-TDI
- B/Color-TDI+ PW-TDI

1.6. System Language Support

- English
- Chinese
- German
- Italian
- Spanish
- French*
- Russian*
- Turkish
- Portuguese*

*English and Chinese only in this release, and other languages will be in later release.

1.7. User Management

- User Types: Administrator, Operator
- Switch user in login page

1.8. Options

- Transducers
- Needle Guide Bracket Kits
- CW(with phased-array transducers)
- Panorama
- Needle Visualization
- Auto IMT
- Anatomic M mode
- TDI
- Auto OB(BPD, HC, FL, HUM)
- Advanced DICOM(Modality Worklist and Structured Report)
- Printers
- Battery
- USB Disk
- Footswitch (single button/double buttons)
- Simple Cart: MT-807
- MTC (Multiple Transducer Connector)
- Suitcase
- External DVD
- Hard drive: 500GB/120GB SSD (configuration in order before shipment only

2. Physical Specification

2.1. System Architecture

- Physical Channels: 128
- System Frequency range: 1-19MHz(-20dB)
- System dynamic range:0-264

- Beam forming: Quad beam
- Processor: i7 with quad virtual cores i7
- Memory: 16GB
- Hard drive: 500GB(standard)/120GB SSD (optional)
- Operation System: 64bit Linux system

2.2. Dimension and weight

- Height: 7.7cm
- Width: 38.8cm
- Depth: 40.7cm
- Weight: 8.20 kg(main unit without monitor glass
  8.85kg (includes battery without monitor glass
  8.60 kg(main unit with monitor glass
  9.25kg (includes battery and monitor glass

2.3. Monitor

- 15.6'' high resolution LCD monitor
- Resolution: 1920 x 1080
- Imaging size: 1135*900 or 1024*722
- Tilt: 0°-120°
- Swivel: ±60°
- View angle: right 80°,left 80°,up 80°,down 80°
- Magnetic latch closure
- Built-in stereo speaker
- Brightness and Contrast adjustable

2.4. Handle

- Provides wrist support during imaging

2.5. Transducer port

- 1 active port, 3 active ports with MTC
- 1 pencil probe port(inactive)

2.6. Battery

- Rechargeable lithium ion battery
- Capacity: 6150mAh
- Removable
- Approximately 75 minutes of typical ultrasound exam use
- Empty battery recharged to full in 2.5 hours
- Touch sensor battery level indicator in two locations: console panel and battery,5 level
- Battery level check support on power on and off

2.7. Electrical Power

- Voltage: 110-240VAC
- Frequency: 50/60 Hz

2.8. Environmental operating requirements

- Ambient temperature: 0° to 40°C
- Relative Humidity: 15%~95% (no condensation)
- Atmospheric pressure: 86kPa-106kPa

2.9. Environmental storage requirements

- Ambient temperature: -20° to 55°C
- Relative Humidity: 15%~95% (no condensation)
- Atmospheric pressure: 70kPa-106kPa

3. User Interface

3.1. Control Panel

- Interactive back-lighting
- Hard Keys provides tactile feedback
- Sealed, rubberized overlay for easy cleaning
- Programmable store keys

3.2. Touch Screen

- 10.1'' Touch screen
- Gesture-control–
- Virtual TGC curve
- User configurable
- Support QWERTY keyboard for text input
- Brightness adjustable

3.3. Touch Pad

- 5.0'' Touch Screen 5"
  The 5" touchscreen now shows some function-specific labels for set and enter buttons
- Gesture-control
- Support: electronic virtual trackball
- Unique "Swipe" function to quickly change gain, scroll cine, cine speed.
- Brightness adjustable

3.4. System boot-up

- Boot up from complete shut-down in about60seconds or 40 seconds(with SSD hard drive
- Boot up from sleep in about2 sec.
- Shut-down in about 18 sec

3.5. Comments

- User-programmable home position
- Arrow with user controlled orientation
- Arrow size adjustable: three size
- Soft keyboard with full support for diacritic characters

- Block move and delete for separate blocks of text
- Smart text replacement for predefined text (e.g., Long replaces Trans with one keystroke)
  266user-defined comments in pre-defined presets
- User customizable

3.6. Body Mark

- Up to 100 Body Mark graphics in library
- Support separate body mark in Dual and Quad
- User customizable

3.7. Screen Information

- EDAN logo
- Hospital name
- Date
- Time
- Patient ID
- Patient Name
- Patient Gender
- Patient Age
- Transducer model
- Preset name
- Mechanical Index (MI)
- Thermal Index (TI)
- Imaging parameters
- Gray Scale bar
- Depth Scale
- Thumbnail
- Mini Report

***Not all the items are listed in here, please refer to the User Manual.**

4. Imaging Parameters

4.1. B-Mode B

- Simple preset: Detail/General/Penetration
- Auto optimization: Gain and TGC
- Digital Zoom:x0.7-x2.0(available on live and freeze state, maximum up to x10)
- PIP (Picture in Picture) for zoom
- Depth: 1.0- 30.0cm
- Frequency: 1.0-17.0MHz(3 fundamental &2 harmonic frequencies3)
- eSRI : Off, Low, Med, High
- FOV: Small, Med, Large, Full
- B steer: 0°, ±10°
- Gain: 0-100dB, 1dB/step 1dB
- TGC: 8 segments

- Dynamic range: 40-96 dB, step 2dB/step (Max up to: 40-264)
- FR(frame rate): Low, Med, High
- Max Frame rate:>= 2400f/s (depending on transducers)
- Map: 0-10 (Max up to 20 types)
- Persistence: Off, Low, Med, High
- Focus position adjustable
- Focus Number: 1-3
- Colorize: on/off
- Tint: 5 types, Gold, Sepia, Blue, Ice, Clear (Max up to 20 types)
- Up/Down flip
- Left/Right flip
- Spatial compounding: on/off (max 3angles)
- Trapezoid Imaging: on/off
- Panorama Imaging: on/off (max length: 1.2m)
- Need Vis.: 3 angles
- Needle Guide
- Display format: single(B),dual(B+B), Quad(4B)
- Acoustic Power: 10%-100%, step 10%

4.2. M-Mode

- Sweep speed: 1s, 2s, 4s, 8s, 13s
- Line Persist: Off, Low, Med, High
- Map: 0-10(Max up to 20 types)
- Colorize: on/off
- Tint: Gold, Sepia, Blue, Ice, Clear (Max up to 20 types)
- Gain:0-100dB, 1dB/step
- Frequency: 1.0-19.0MHz(3 fundamental and 2 harmonic frequencies3)
- Dynamic range: 40-96 dB, step 2 dB/step(Max up to: 40-264)
- Display formats: 1:2,1:1,2:1(up: down),1:1(left: right), full screen
- Acoustic Power: 10%-100%, step 10%

4.2.1 Anatomic M mode

- Available on live and freeze

4.3 Color Doppler

- Simple preset: HighFlow/MidFlow/LowFlow
- Dual live (B/B+C)
- ROI size/position: adjustable ROI
- Frequency: 2.0-8.0 MHz
- Gain: 0-100dB, 1dB/step
- FR(frame rate): Low, Med, High
- Max Frame rate:>= 240f/s (depending on transducers)
- Persistence: Off, Low, Med, High
- Smoothing: Off, Low, Med, High

- Wall filter: Low, Med, High
- Color map: 0-7(Max up to 20 types)
- Steer angle:
  0°,±10°,±15° (L10-4Q)
  0°,±5°,±10° (L17-7HQ, L17-SQ)
  0°,±10°,±20° (L12-5Q)
- PRF: 0.6- 11.4kHz
- Scale: 2.8-210 cm/s
- Baseline: -120-120, 10/step
- Threshold: 0-100, 5/step
- Invert: on/off
- Auto optimization: Gain and Scale
- Acoustic Power: 10%-100%, step 10%

4.4. Power Doppler Imaging

- Simple preset: High Flow/Mid Flow/Low Flow
- Dual live (B/B+PDI)
- Directional Power Doppler Imaging(DPDI)
- ROI size/position: adjustable
- Frequency: 2.0-8.0 MHz
- Dynamic range: 10-70 dB, 5dB/step
- Gain: 0-100dB, 1dB/step
- FR(frame rate): Low, Med, High
- Max Frame rate: >= 240f/s (depending on transducers)
- Persistence: Off, Low, Med, High
- Smoothing: Off, Low, Med, High
- Wall filter: Low, Med, High
- Color map: 0-7
- Steer angle:
  0°,±10°,±15° (L10-4Q)
  0°,±5°,±10° (L17-7HQ, L17-7SQ)
  0°,±10°, ±20° (L12-5Q)
- PRF: 0.6- 11.4kHz
- Baseline: -120-120, 10/step(only available on DPDI)
- Threshold: 0-100, 5/step
- Invert: on/off (available on DPDI)
- Acoustic Power: 10%-100%, step 10%

4.5. Pulsed Wave Doppler

- Simple preset: High Flow/Mid Flow/Low Flow
- HPRF(Automatic invocation as needed to maintain gate location/scale)
- Auto Trace: Auto Doppler measurements, User selectable direction
- Duplex and Triplex displays
- Frequency: 2.0-8.0 MHz
- PRF: 0.9-14.7kHz

- Gain: 0-100dB, 1dB/step
- Dynamic range: 10-70 dB, 5dB/step
- Wall filter: Low, Med, High
- Sweep speed: 2s, 4s, 6s, 8s, 12s
- Baseline: -4-4, 1/step
- Angle correction: -80° -80°, 1°/step
- Quick Angle: -60°/0°/60°
- Steer:(available on linear transducers)
  0°,±10°,±15° (L10-4Q)
  0°,±5°,±10° (L17-7HQ, L17-7SQ)
  0°,±15°, ±20° (L12-5Q)
- Invert
- Volume: 0-99, 1/step
- Map: 0-10(Max up to 20 types)
- Colorize: on/off
- Tint: Gold, Sepia, Blue, Ice, Clear (Max up to 20 types)
- Gate size: 0.5-20 mm
- Display formats: 1:2,1:1,2:1(up: down),full screen
- Auto optimization: Gain or DR or Scale
- Acoustic Power: 10%-100%, step 10%

4.6. Continuous Wave Doppler

- Simple preset: High Flow/Mid Flow/Low Flow
- Frequency: 2.0 MHz
- PRF: 1- 89.3kHz
- Gain: 0-100, 1/step
- Dynamic range: 10-70 dB, 5dB/step
- Wall filter: Low, Med, High
- Sweep speed: 2s, 4s, 6s, 8s, 12s
- Baseline: -4-4, 1/step
- Angle correction: -80° -80°, 1° /step
- Quick Angle: -60° /0° /60°
- Invert
- Volume: 0-99, 1/step
- Map: 0-10(Max up to 20 types)
- Colorize: on/off
- Tint (5 types): Gold, Sepia, Blue, Ice, Clear (Max up to 20 types)
- Display formats: 1:2, 1:1, 2:1(up: down), full screen

4.7. Tissue Imaging Doppler(TDI)

4.7.1 Color TDI

- Simple preset: High Flow/Mid Flow/Low Flow
- Dual live (B/B+C)

- ROI size/position: adjustable ROI
- Frequency
- Gain : 0-100, 1/step
- FR(frame rate): Low, Med, High
- Max Frame rate : >= 100 f/s
- Persistence: Off, Low, Med, High
- Smoothing: Off, Low, Med, High
- Wall filter: Low, Med, High
- Color map : 0-7 (Max up to 20 types)
- Scale : 6-80cm/s
- PRF: 0.6-11.4KHz
- Baseline : -120-120, 10/step
- Threshold : 0-100, 5/step
- Invert: on/off:
- Acoustic Power: 10%-100%, step 10%

4.7.2 PW TDI

- Simple preset: High Flow/Mid Flow/Low Flow
- Invert
- Duplex and Triplex displays
- Frequency
- Gain : 0-100dB, 1dB/step
- PRF: 0.9-14.7KHz
- Wall filter: Low, Med, High
- Dynamic range: 10-70 dB, 5dB/step
- Sweep speed: 2s, 4s, 6s, 8s, 12s
- Baseline: -4-4, 1/step
- Angle correction: -80° -80°, 1° /step
- Quick Angle: -60° /0° /60°
- Volume : 0-99, 1/step
- Map: 0-10(Max up to 20 types)
- Colorize: on/off
- Tint: Gold, Sepia, Blue, Ice, Clear(Max up to 20 types)
- Gate size : 0.5-20 mm
- AT Side: Both, Up, Down
- Display formats : 1:2, 1:1, 2:1(up: down), full screen
- Acoustic Power: 10%-100%, step 10%

5. Cine Review and Post-Processing

5.1. Cine Review

- Frame by frame manual review

- Auto playback with 8 speeds
- Start frame and end frame are selectable for cine loop review
- Maximum cine memory is up to (depends on transducers and image parameters):

  21895frames for B mode

  9086 frames for Color mode

  123s for M mode

  1214s for PW/CW Doppler mode

5.2. Post-Processing

- B Mode: gain, TGC, zoom, dynamic range, eSRI, colorize, map
- M Mode: gain, TGC , dynamic range, colorize, map
- Color Mode: zoom, color map, invert
- PW/CW: gain, dynamic range, colorize, map, baseline, angle, invert

***Not available on the stored images and clips in Review**

6. 3D/4D* (Optional)

- Acquisition Modes: 4D, Static 3D
- Visualization Modes: Volume Rendering, MPR, Multi-Slice
- VOI adjustable: curve cut plane
- Render Modes: Surface, MIP, X-Ray
- 3D Clip (2D capture of 3D images)
- Cut

  -Cut tool: trace, box, erase

  -Function: undo, undo all, redo
- Display formats: Single 3D, Dual (A-plane + 3D), Quad (A/B/C Planes + 3D)
- Parameters for 3D 3D: Threshold, Smooth, Brightness, Contrast, Tint
- eFace: Edan Auto show face
- Save and edit volume data set
- MPR measurements (Demo version only)

* Subject to Regulatory approval

7.ImagingStorage and Exam Database

7.1. Imaging Storage

- 500 GB hard drive, 400 GB for data storage
- Storage up to approximately>110,000 lossless single frames
- Compression types of static image and clip: lossless, high, mid, low
- Maximum clip is up to:

  250 frames for B/Color mode

  10 s (250 frames) for M/PW/CW mode

7.2. Exam Database

- Support exam storage without patient information
- Support exam query
- Support review current exam or prior exam
- Support review images and report of an exam
- Support export images as BMP , AVI or DCM format to removable disk
- Support export images as DCM format to DVD-R/RW
- Support import/export exams(including patient information, images, measurement results)
- Support comments, body mark and measurements in review

8.Connectivity

- DICOM Storage
  Verify SCP
  Static image store SCU
  Ultrasound multi-image store SCU Four levels of compression
  Data transfer options
  Removable media
  In-progress network storage in background
  Auto- transfer in background at exam end
  Manual- transfer in background on demand
- 4 USB Ports (2 USB 2.0 and 2 USB 3.0)
- Video out:
  Display port (a digital display interface, has more transmission bandwidth than HDMI)
  S-video: PAL/NTSC
- Ethernet
- ECG port (inactive) ECG
- External DVD-R/RW
- Wi-Fi(Subject to Regulatory approval)
- DICOM Modality Worklist DICOM
- DICOM Structured Report: OB, GYN, Cardiac, and Vascular
- DICOM store to multiple networks
  DICOM
- Non-DICOM network transfer(FTP transfer) in background
- Transfer management UI: review transfer task status, delete a transfer task

9.Preset

- Transducer specific presets:
  ABD
  Abd Diff
  Early OB
  OB

Fetal Echo

GYN

Renal

Aorta

Spine

Prostate

Thyroid

Breast

Testis

Carotid

Low Ext A (Lower Extremity Artery)

Low Ext V (Lower Extremity Vein)

Up Ext A (Upper Extremity Artery)

Up Ext V (Upper Extremity Vein)

Nerve

Sciatic N (Sciatic Nerve)

Sup Nerve (Superficial Nerve)

MSK

Sup MSK (Superficial MSK)

Knee

Shoulder

Vascular

Adult Card (Adult Cardiac)

Ped Card (Pediatric Cardiac) *

Intra-Op (Intra-operative) *

Ped Abd*

Neo Abd*

Neo Head*

TCD(Transcranial Doppler)*

Vascular Access

Lung

IVF

* Subject to Regulatory approval

- User customizable presets: Copy, Delete, Save, Save as

  Supports a second page, up to 30 presets per transducer.
- Each preset can share comment, body mark, and measure presets

10. Peripheral

- Black/white Digital/Analog Video printe

  SONY UP-X898MD
- Color Digital video printer

  SONY UP-D25MD
- Color Analog video printer

SONY UP-25MD

- Graph/text printer

  HP OfficeJet Pro 251dw

  HP LaserJet Pro 200 M251n

  HP Laserjet CP1525n Color

  HP Deskjet Ink Advantage 2010

  HP Deskjet 1010

  HP Deskjet 1510

  HP Deskjet Pro 400

  HP Deskjet Pro M401d

  Canon PIXMA E518

  HP Deskjet 2029

  HP Deskjet 1112

  Generic HP Printer

11. Measurement and Report

- Set and Enter workflow options
- Default measurement unit options:
  - Distance: mm, or cm
  - Area: mm^2, or cm^2
  - Volume: mm^3, or cm^3
- Option to disable swipe in measurement
- Caliper Size: switch automatically according to the distance (3 sizes)

11.1. General Measurement

- **B Mode**
  - Distance
  - Circumference(Ellipse, Trace, and Spline)
  - Area(Ellipse, Trace, and Spline)
  - Angle
  - Volume
  - %Dist Stenosis(Caliper)
  - %Area Stenosis (Ellipse, Trace, and Spline)
- **M Mode M**
  - Distance
  - Time
  - Slope
  - HR
- **Doppler**
  - Auto Trace: PS, ED, MD, RI, PI, S/D, HR, Time, TAMax, TAMean, VTI, AT, DT, PGmax, PGmean
  - Trace(Draw or Spline): PS, ED, MD, RI, PI, S/D, Time, TAMax, VTI, AT, DT, PGmax, PGmean
  - Caliper: V1, V2, Acceleration, Time, RI, S/D, ΔV, PG1, PG2, PHT
  - RI: PS, ED, RI, S/D

- HR

11.2. Application Measurement

- **Abdomen**
  - Liver: Length, Width, Height
  - Portal Vein Diameter
  - Common Hepatic Duct
  - Gallbladder: Length, Height, Wall Thickness
  - Common Bile Duct
  - Pancreas: Head, Body, Tail, Duct
  - Spleen: Length, Height
  - Aorta Diameter
  - Abdominal Aorta
  - Superior Mesenteric Artery
  - Inferior Mesenteric Artery
  - Hepatic Artery
  - Splenic Artery
  - Renal Artery
  - Portal Vein
  - Inferior Vena Cava
  - Main Portal Vein
  - Hepatic Vein
  - Middle Hepatic Vein
  - Splenic Vein
  - Superior Mesenteric Vein
  - Inferior Mesenteric Vein
- **Gynecology**
  - Uterus: Length, Width, Height, Endometrium Thickness, UT Cavity
  - Cervix: Length, Width, Height, UT-L/CX-L
  - Ovary: Length, Width, Height
  - Follicle: D1, D2, D3, Fol-Mean(Calc)
  - Cyst: D1, D2, D3
  - Fluid POD
  - Uterine Artery
  - Ovary Artery
- **Obstetric**
  - Early OB: GS ,YS, CRL, NT, BPD, FL, HUM, AF, FHR, Ductus Venosus, Ovary Artery, Uterine Artery
  - OB: NF,BPD, OFD, HC, AC, FL, TAD, APAD, CER, HUM, ULNA, RAD, TIB, FIB, APTD, TTD, FTA, THD,Foot,AF,AFI, FHR, MCA, Umbilical Artery, Placenta Artery, Ductus Venosus
  - Fetal Echo: RV Diam, RA Diam, RVOT Diam, LV Diam, LA Diam, LVOT Diam, Ao Asc, Ao Arch Diam, Ao Isthmus, Desc Aorta, MPA Diam, Ductus A, CTAR,HR, MCA, Umb. Artery, Planenta Artery, Ductus Venosus, MV, TV, MPV, Ovary Artery, Uterine Artery, Fetal Aorta
  - Gestational Age
  - Fetal Growth

- Estimated Fetal Weight (EFW)
- Multi-gestational Measurement
- Auto OB(BPD, HC, FL, HUM)

- **Cardiac**
  - LV Simpson:A4C Dias., A4C Sys., A2C Dias., A2C Sys., SV, EF, CO, SI, CI
  - Vent. Dim:RVAWd, RVIDd,IVSTd, LVIDd, LVPWd, IVSTs,LVIDs,LVPWs,SV, EF,FS, CO, SI, CI
  - HR
  - PV Diam
  - RVDs
  - RA: Length, Width
  - LA: Length, Width
  - Ao Asc
  - AoD
  - LVOT Diam
  - RVOT Diam
  - LVET
  - LA/AO: LA,AoD, RVOT Diam
  - MV: E/A, E-F Slope, EPSS, MV PHT, MV Trace, IVRT, MV A Dur,MV DecT
  - TV: TV trace, TV Max
  - AoV: LVOT Trace, LVOT Vmax, AoV Trace, AoVVmax
  - PV: PV trace, PV Max
  - Pulmonic Vein: PVein S Vel, PVein D Vel, PV A Vel
  - PISA: MR Rad, MR Als. Vel, AR Rad, AR Als. Vel, TR Rad, TR Als. Vel, PR Rad,PR Als. Vel, MR Trace, AR Trace, TR Trace, PR Trace
- **Urology**
  - Renal: Length, Width, Height, Cortex
  - Pre-void Bladder: Length, Width, Height
  - Post-void Bladder: Length, Width, Height
  - Prostate: Length, Width, Heigh
  - Seminal: Length, Width, Height
  - Testis: Length, Width, Height
  - Renal Artery
  - Arcuate Artery
  - Segmental Artery
  - Interlobar Artery
- **Small Part**
  - Thyroid: Length, Width, Height, Isthmus, Superior Thyroid Artery, Inferior Thyroid Artery
  - Breast: Lesion1, Lesion2, Lesion3, Lesion4, Lesion5
- **Vascular**
  - Carotid: Common Carotid Artery, External Carotid Artery, Internal Carotid Artery, Vert Artery, Subclavian Artery
  - Upper Extremity Artery: Subclavian Artery, Axillary Artery, Brachial Artery, Ulnar Artery, Radial Artery
  - Upper Extremity Vein: Subclavian Vein, AxillaryVein, Brachial Vein, Cephalic Vein, Basilic Vein, Ulnar Vein, Radial Vein, Median Cubital Vein

- Low Extremity Artery: Common Femoral Artery, Deep Femoral Artery, Superficial Femoral Artery, Common Iliac Artery, External Iliac Artery, Internal Iliac Artery, Popliteal Artery, Peroneal Artery, Posterior Tibial Artery, Anterior Tibial Artery, Dorsalis Pedis Artery
- Low Extremity Vein: Common Femoral Vein, Deep Femoral Vein, Superficial Femoral Vein, Common Iliac Vein, External Iliac Vein, Internal Iliac Vein,Great Saphenous Vein, Popliteal Vein, Peroneal Vein, Posterior Tibial Vein, Anterior Tibial Vein, Small Saphenous Vein
- IMT(Auto, Caliper): Common Carotid Artery Intima-Media Thickness, Internal Carotid Artery Intima-Media Thickness, Carotid Artery Bifurcation Intima-Media Thickness
- Volume Flow: Volume Flow Area, Volume Flow Time Average Mean Velocity

- **Pediatric*(***Subject to Regulatory approval**)**
  - Neo-Head : Left lateral ventricle, Right lateral ventricle, Left trigone, Right trigone
  - HIP: angle α and β

***For more measurement information, please refer to the User Manual.**

11.3. Report

- Editable worksheet
- Report type: ABD, GYN, OB, URO, VAS, SMP, FETAL, CARD, PED
- Multiple number of selected images
- Support zoom in preview
- Export as PDF format
- Findings section
- User-imported Header
- User-defined hospital logo

12. Transducers (Optional)

- **C5-2XQ**
  - Imaging Format: convex array
  - Number of elements: 128
  - Convex Radius: 60 mm
  - FOV: 60°
  - Bandwidth: 1.5-6.5MHz(-20dB);
  - Fundamental Frequency: 2-4MHz, 3-5MHz,2-5MHz
  - Harmonic Frequency: H2-4MHz, H3-5MHz
  - Color Doppler Frequency : 2.5MHz, 3.0MHz
  - PW Frequency PW: 2.3MHz, 3.0MHz
  - Focus Position: 30, 40, 60, 70, 80, 90, 110, 130, 150,200mm
  - Depth: 40-300mm, 10 mm/step
  - PW velocity (PW): max 9m/s(±60°)
  - Applications: Abdomen, OB, Gynecology, Nerve
  - Needle Guide: available, BGK-C5-2, Supports16G, 18G, 20G, 22G
- **C5-2Q**
  - Imaging Format: convex array

- Number of elements: 128
- Convex Radius: 60 mm
- FOV: 60°
- Bandwidth: 1.5-6.5MHz(-20dB)
- Fundamental Frequency: 2-4MHz, 3-5MHz,2-5MHz
- Harmonic Frequency: H2-4MHz, H3-5MHz
- Color Doppler Frequency: 2.5MHz, 3.0MHz
- PW Frequency PW: 2.3MHz, 3.0MHz
- Focus Position: 30, 40, 60, 70, 80, 90, 110, 130, 150， 200mm
- Depth: 40-300mm, 10 mm/step
- PW velocity (PW): max 9m/s(±60°)
- Applications: Abdomen, OB, Gynecology, Nerve
- Needle Guide: available, BGK-C5-2, Supports16G, 18G, 20G, 22G

- **L10-4Q**
  - Imaging Format: general linear array
  - Number of elements: 128
  - Footprint: 38 mm
  - Bandwidth: 4-10MHz
  - Fundamental Frequency: 4-7MHz, 6-8MHz, 6-9MHz
  - Harmonic Frequency: H5-8MHz, H6-10MHz
  - Doppler Frequency: 4.4MHz, 5.3MHz
  - Focus Position: 5 10 15 20 25 30 35 40 50 60 75
  - Depth: 10-110mm, 5 mm/step
  - PW velocity (PW): max 4.5m/s(±60°)
  - Applications: SMP, MSK, Nerve, Vascular, Ped-ABD
  - Needle Guide: available, BGK-L40UB, Supports16G, 18G, 20G, 22G
- **L17-7HQ**
  - Imaging Format: high density linear array
  - Number of elements: 192
  - Footprint: 38 mm
  - Bandwidth: 5-19MHz
  - Fundamental Frequency: 7-11MHz, 8-13MHz, 9-15MHz
  - Harmonic Frequency: H9-13MHz, H10-17MHz
  - Doppler Frequency: 6.7MHz, 8.0MHz
  - Focus Position: 5-55mm, 5 mm/step
  - Depth: 10-110mm, 5 mm/step
  - PW velocity (PW): max 3.25m/s(±60°)
  - Applications: Small parts, MSK, Nerve, Superficial, Vascular
  - Needle Guide: not available
- **L12-5Q**
  - Imaging Format: general linear array
  - Number of elements: 128
  - Footprint: 38 mm
  - Bandwidth: 3.5-12.5MHz(-20dB)

- Fundamental Frequency: 5-8MHz, 6-10MHz, 7-11MHz
- Harmonic Frequency: H6-10MHz, H7-12MHz
- Doppler Frequency:4.7MHz, 5.7MHz
- Focus Position: 5 10 15 20 25 30 35 40 50 60 75
- Depth: 10-110mm, 5 mm/step
- PW velocity (PW): max 4.75m/s(±60°)
- Applications: Small parts, MSK, Nerve, Vascular, Sup MSK, Shoulder
- Needle Guide: available, BGK-L40UB, Supports16G, 18G, 20G, 22G

- **E8-4Q**
  - Imaging Format: endocavity micro convex array
  - Number of elements: 128
  - Convex Radius: 10 mm
  - FOV: 150°
  - Bandwidth: 3.5-12MHz(-20dB)
  - Fundamental Frequency: 4-6MHz, 4-7MHz, 5-8MHz
  - Harmonic Frequency: H5-7MHz, H5-8MHz
  - Doppler Frequency: 4.4MHz, 5.3MHz
  - Focus Position: 5 15 20 25 30 35 40 50 60 70 85
  - Depth: 15-110mm, 5 mm/step
  - PW velocity (PW): max 4.5m/s(±60°)
  - Applications: OB, Gynecology, Prostate
  - Needle Guide: available, BGK-CR10UA, Supports16G
- **P5-1XQ**
  - Imaging Format: phased array
  - Number of elements: 64
  - Footprint: 21 mm
  - FOV:90°
  - Bandwidth: 1-5MHz
  - Fundamental Frequency: 1-3MHz, 2-4MHz, 2-5MHz
  - Harmonic Frequency: H2-4MHz, H3-5MHz
  - Doppler Frequency: 2.0MHz, 2.5MHz
  - CW Frequency (CW): 2.0MHz
  - Focus Position: 30 50 70 80 90 100 120 140 160 180 200
  - Depth: 40-300mm, 10 mm/step
  - PW velocity (PW): max 10m/s(±60°)
  - CW velocity(CW): max:64m/s(±60°)
  - Applications: Adult Cardiac, Pediatric Cardiac, ABD, TCD* (*Subject to Regulatory approval)
  - Needle Guide: available, BGK-P5-1X, two angles, Supports14G, 16G, 18G, 20G, 22G
- **P5-1Q**(Subject to Regulatory approval
  - Imaging Format: phased array
  - Number of elements: 64
  - Footprint: 16 mm
  - FOV: 90°
  - Bandwidth: 1-5MHz

- Fundamental Frequency: 1-3MHz, 2-4MHz, 2-5MHz
- Harmonic Frequency: H2-4MHz, H3-5MHz
- Color Doppler Frequency: 2.0MHz, 2.5MHz
- PW Frequency PW: 2.0MHz, 2.2MHz
- CW Frequency (CW): 2.0MHz
- Focus Position: 30 50 70 80 90 100 120 140 160 180 200
- Depth: 40-300mm, 10 mm/step
- PW velocity (PW): max 10m/s(±60°)
- CW velocity (CW): max 64m/s(±60°)
- Applications: Adult Cardiac, Pediatric Cardiac, ABD, TCD
- Needle Guide: unavailable

- **P7-3Q**(Subject to Regulatory approval)
  - Imaging Format: phased array
  - Number of elements: 96
  - Footprint: 15mm
  - FOV: 90°
  - Bandwidth: 1.5-8.5MHz(-20dB)
  - Fundamental Frequency: 3-5MHz, 4-6MHz, 5-7MHz
  - Harmonic Frequency: H5-7MHz, H6-8MHz
  - Doppler Frequency: 2.7MHz, 3.8MHz
  - CW Frequency: 3 MHz
  - Focus Position: 10 20 30 40 50 60 70 80 100 120 140
  - Depth: 20-180mm, 10 mm/step
  - PW velocity (PW): max 8 m/s(±60°)
  - CW velocity (CW): max 45m/s(±60°)
  - Applications: Adult Cardiac, Pediatric Cardiac, Pediatric ABD, Neonatal head
  - Needle Guide: unavailable
- **L17-7SQ**
  - Imaging Format: compact linear array
  - Number of Elements: 128
  - Footprint: 26mm
  - Bandwidth:4.5-18.5MHz
  - Fundamental Frequency: 7-11MHz, 8-13MHz, 9-15MHz
  - Harmonic Frequency: H9-13MHz, H10-17MHz
  - Doppler Frequency: 6.7MHz, 8.0MHz
  - Focus Position: 5-55mm, 5 mm/step
  - Depth: 10-110mm, 5 mm/step
  - PW velocity :max 3.25m/s(±60°)
  - Applications: MSK, Nerve, Vascular, SMP, Intra-operation, Superficial
  - Needle Guide: not available

    (*availability subject to regulatory approval)
- **MC8-4Q**
  - Imaging Format: micro convex array
  - Number of elements: 128

- Convex Radius:15mm
- Bandwidth: 3-10MHz(-20dB)
- Fundamental Frequency: 4-6MHz, 4-7MHz, 5-8MHz
- Harmonic Frequency: H4-7MHz, H5-8MHz
- Doppler Frequency: 4.2MHz, 5.0MHz
- Focus Position: 5 15 20 25 30 35 40 50 60 70 85mm
- Depth: 10-110mm, 5 mm/step, 110-150mm, 10 mm/step
- PW velocity (PW): max 5m/s(±60°)
- Applications: Neonate, Pediatric, Nerve, Vascular
- Needle Guide: available, BGK-R15UB, Supports16G, 18G, 20G, 22G

- **MC9-3TQ**(Subject to Regulatory approval)
  - Imaging Format: micro convex array
  - Number of elements: 128
  - Convex Radius:10mm
  - Bandwidth:3-9MHz
  - Fundamental Frequency: 4-6MHz, 4-7MHz, 5-8MHz
  - Harmonic Frequency: H5-8MHz, H6-9MHz
  - Doppler Frequency: 3.6MHz, 4.5MHz
  - Focus Position: 5, 15, 20, 25, 30, 35, 40, 50, 60, 70, 85mm
  - Depth: 10-110mm, 5 mm/step, 110-150mm, 10 mm/step
  - PW velocity (PW): max 6 m/s(±60°)
  - Applications: Neonate, Pediatric ABD, Nerve, Vascular
  - Needle Guide: unavailable
- **C5-2MQ**
  - Imaging Format: convex Wobbler array
  - Number of Elements: 128
  - Convex Radius: 40 mm
  - FOV：69°
  - Bandwidth: 1.5-7MHz
  - Fundamental Frequency: 2-4MHz, 3-5MHz, 2-5MHz
  - Harmonic Frequency: H2-4MHz, H3-5MHz
  - Color Doppler Frequency: 2.6MHz, 3.0MHz
  - PW Frequency : 2.6MHz, 3.0MHz
  - Focus Position: 30, 40, 60, 70, 80, 90, 110, 130, 150，200mm
  - Depth: 40-300mm, 10 mm/step
  - PW velocity : max 8m/s(±60°)
  - Applications: Fetal/OB
  - Needle Guide: not available

13. Trolley Cart MT-807 (Optional)

- Snap-in mechanism anchors laptop into the cart
- Adjustable height(fixed-height configured at time of cart assembly), 9'' of travel
- Palm rest to floor distance ranges 31''- 40''

- Fixed deck angle of 15°
- Power converter built under tray
- Built-in tray houses printer and other incidentals

14. Multi-Transducer Connector (Optional)

- Allows up to three transducers to be connected to the system

15. Footswitch (Optional)

- Model (USB Port) USB:FS-81-SP(Twin)-USB, or FS-81-SP-USB
- Support User-definable functions (Freeze, Save, Print)

16. External DVD(Optional)

- Model (USB Port) USB DVD:
  SAMSUNG SE-218GN, SAMSUNG SE-208GN, LENOVO DB75, ASUS SDRW-08D2S-U or PIONEER DVR-XU101

17. Regulatory approvals

- FDA Class II Device
- CE/MDD Class IIa

18. Standard Conformance

- IEC 60601-1: Medical Equipment Safety
- IEC 60601-1-2: Medical Device Electromagnetic Safety
- IEC 60601-2-37: Ultrasonic Medical Equipment Safety
- IEC 62133: Battery Safety
- IEC 62304: Medical Device Software Life-cycle Process
- IEC 62366: Medical Device Usability Engineering
- EN ISO 14971: Medical Device Risk Management
- ISO 10993: Medical Device Biocompatibility
- NEMA UD 2: Output Measurement for Diagnostic Ultrasound Equipment
- NEMA UD 3: Display of Thermal and Mechanical Acoustic Output Indices on Diagnostic Ultrasound Equipment

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