



DATA SHEET 

Model: ESE-G80

Color Ultrasound Doppler



Ultrasound System Specifications

The revolutionary and premium performance of the ESE-G80 provides a fast and easy diagnosis by:

- Ultra-premium contrast and resolution imaging benefited from the first RF platform of the world
- All ranges of features, functions and probes
- Ease of use and ergonomic design

System Overview

Architecture

- The revolutionary RF platform, allows for more accurate information. This platform transfers all RF data for computing without any information loss. It has a much better advantage in detail imaging than current advanced platforms.
- Thanks to the RF platform, it allows the development of many RF-based processing algorithms, which have ultra-premium contrast and resolution imaging
- This unique platform is capable of processing multiple data streams simultaneously
- Up to 25MHz next generation digital broadband and high resolution acoustic beamforming
- The new 12 bit, low noise, digital circuitry, with up to 230dB dynamic range has improved 2D performance and increased Doppler sensitivity
- Directional-enhanced information compiling for more tissue detail and reduction of angle-generated artifacts
- Next generation adaptive image processing for noise and artifact reduction that improves tissue presentation and edge definition
- Fully independent, triplex multiple mode operation for easy in Doppler procedures
- Multi-processors allow simultaneous mode changes and support for advanced system functionality

Applications

- | | | | |
|--------------|--------------|---------------|-------------------|
| • Abdomen | • Cardiology | • TCD | • Pediatrics |
| • Obstetric | • Urology | • Small Parts | • Intra-operative |
| • Gynecology | • Vascular | | |





Imaging features

- 2D grayscale imaging
- Harmonic imaging both in tissue harmonic and pulse inversion harmonic technologies
- VFusion, directional-enhanced information compounding
- VSpeckle, specialized and adaptive imaging processing to remove speckle noise artifacts and enhance tissue edge for clarity and accuracy
- VTissue, the advanced adaptive image processing to compensate for sound and speed variation in different tissue *
- Auto imaging optimization
- Easy Comparative Function to compare previous exam
- Tissue M-mode
- Color M-mode(optional)
- Color Doppler imaging
- Power Doppler imaging
- Pulse wave Doppler imaging
- Simultaneous 2D and M mode
- Simultaneous 2D and CF mode
- Duplex 2D/PW Doppler
- Triplex 2D/Color/PW Doppler
- High PRF pulsed wave Doppler
- Continuous wave Doppler
- Zoom
- FULL screen imaging to enlarge imaging size
- Dual real time imaging without compromising imaging size
- Multi Angle M-mode with 360 degree rotation (Optional)
- PView for panoramic imaging (Optional)
- TView for trapezoidal imaging
- Elastography imaging(Optional)
- Contrast imaging(Optional)
- 3D imaging
- 3D/4D HQR (High Quality rendering) (Optional)*
- Spatio_Temporal Image Correlation (STIC) (Optional)*
- VOCAL (Volume calculation, Follicle count) (Optional)*
- SRV (Super Resolution Volume) to have extreme contrast and resolution in thin volume
- Tomographic display (MCUT)
- Inversion mode(Optional)
- Magic cut(Optional)
- Smart Touch 3D/4D operation (Optional)
- Free View(Optional)
- Auto NT*
- Real-time grayscale 4D
- Three leads ECG function (Optional)
- Tissue Doppler (TD) mode*
- Tissue Velocity Imaging (TVI) mode*
- Tissue Velocity M (TVM) mode (optional)*
- Integrated smart stress echo mode*
- Auto IMT function*

Standard features

- Up to 25Mhz high frequency in system platform. Up to 18MHz's probes are supported
- RF platform and RF data processing
- Up to 1500 seconds cine storage
- 500GB hard drive
- SSD for quick boot up (Optional)
- Integrated DVDRW
- Integrated black/white thermal video printer slot
- Patient information database
- Image archive on hard drive
- Quick store to USB memory stick
- Quick store to hard drive
- Report package
- Quick print to B/W and color thermal video printer
- Network storage and printing
- Full measurement and analysis package
- Real time auto wave Doppler track and calculations
- Vascular calculations
- Cardiac calculations
- OB calculations and tables
- Gynaecological calculations
- Urological calculations
- Renal calculations
- Volume calculations
- Barcode reader for patient information input(*optional*)
- Wireless networking for easy data sharing, storage and printing (*optional*)
- Bluetooth for image data transfer
- Image data transfer directly by E-Mail with network access
- Up-to-date connectivity and data management solutions, wireless , LAN, Bluetooth, E-Mail, integrated database
- DICOM compatibility*
- Four active probe ports, plus one dummy probe port
- 5 USB ports
- 8 TGC slides
- Average 4 multiple adjustable frequency in every probe and mode
- Up to 512 line density
- 1 DVI-D interface
- 1 Audio in interface; 1 Audio out interface
- 1 Speaker interface
- 1 RJ45 interface

Ergonomics

- Unique human oriented design for comfort and convenience
- Fully articulating 21.5-inch high resolution flat panel display with nearly infinite positioning adjustments
- Up to 250mm up/down operation panel, controlled by electric motor
- Fully articulating control panel including height, swivel and front-back slide adjustment
- Integrated footrest
- Integrated foot switch for configurable function, such as Freeze, store etc
- Easy access DVD media drive
- 5 easy access transducer ports
- 5 transducer holders (removable for easy cleaning)
- Automatic warming gel bottle holders
- Integrated touchable alphabetic keyboard
- Simple, easy and effective cable management structure

Keyboard

- Highly sensitive 13 inch capacity touch panel
- Intuitive, configurable and touchable interactive operation interface
- Ergonomic hard keys for general ultrasound operations
- 8 TGC slides, functionality at any depth
- Backlight keys





Image display screen

- 21.5 inch high resolution IPS, LED technology, pixel resolution: 1920x1080
- Brightness, contrast and color temperature adjustment
- Adjustable Gamma curve optimization for dedicated applications
- Big angel swivel and tilting capability

Peripherals

- B&W thermal video printer: Sony UP-D897MD (optional)
- Color thermal video printer: Sony UP-D25MD (optional)
- Memory stick (optional)

Dimensions and Weight

- Height: 1320-1570mm
- Width: 605mm
- Depth: 900-1050mm
- Weight: 75kg

Electrical Power

- Voltage: 100-240V AC
- Frequency: 50/60Hz
- Power: Max. 600VA for console only

Transducers

Transducer Technology

- Xcen technology for wideband frequency
- Pure wave technology for high resolution imaging
- Unique and high technical Xcen probe connector to adapt all different type of product models

Transducer types

- | | | |
|----------------|---------------|----------------------|
| • Convex array | • Phase array | • Endocavity probe |
| • Linear array | • 4D probe | • Micro-convex array |

Transducer selection

- Electronic switching of transducers
- User customizable imaging presets for each transducer and application
- Automatic dynamic receiving focus in all transducers
- Multiple adjustable transmit focal zone, up to 8 focal zone

G2-5C Broadband Curved Array

- Field of view: 66 degree
- Convex radius: 50mm
- Application: abdomen, OB/Gyn, urology, pediatric
- Frequency range: 1.4 -5.6MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes
- Reusable biopsy guide available

D3-6C broadband curved array volume probe

- Field of view: 78 degree
- Convex radius: 40mm
- Application: abdomen, OB/Gyn, urology
- Frequency range: 1.9 - 7MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic, 3D/4D grayscale and 3D color modes
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes





D3-6CX broadband curved array volume probe

- Footprint: 48mm
- Field of view: 75 degree
- Convex radius: 40mm
- Application: abdomen, OB/Gyn, urology
- Frequency range: 2.1 – 5.7MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic , 3D/4D grayscale, 3D color
- Multi-imaging frequency setting in 2D, 3D/4D, Harmonic, color Doppler and Wave Doppler modes

G4-9M broadband micro convex array

- Field of view: 138 degree
- Convex radius: 12mm
- Application: pediatric, abdomen, cardiac
- Frequency range: 3 - 10MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes

G4-9E broadband micro convex endocavity array

- Field of view: 138 degree
- Convex radius: 12mm
- Application: Ob/Gyn, urology
- Frequency range: 3 - 10MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes
- Reusable biopsy guide available

D4-9E broadband micro convex 4D endocavity array

- Field of view: 125 degree
- Convex radius: 10mm
- Application: Ob/Gyn, urology
- Frequency range: 3 - 10MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic , 3D/4D grayscale, 3D color
- Multi-imaging frequency setting in 2D, 3D/4D, Harmonic, color Doppler and Wave Doppler modes

X4-12L broadband linear array

- Fine pitch, high resolution
- Applications: vascular, small parts
- Frequency range: 4.5 -13MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes

X6-16L broadband linear array

- Fine pitch, high resolution
- Applications: vascular, small parts
- Frequency range: 6.5 -18MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes

U5-15L broadband linear array

- Fine pitch, high resolution
- Applications: small parts, specially for breast, vascular
- Frequency range: 5 -15Mhz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes

I4-11T broadband linear array

- Fine pitch, high resolution
- Frequency range: 4.2-11Mhz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes



G1-4P phased array

- Applications: cardiac, abdomen, Ob/Gyn, Urology
- Frequency range: 1.35-4.3Mhz
- Pulsed wave Doppler, continuous wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes

S1-6P phased array

- Single Crystal technology
- Applications: cardiac, abdomen, Ob/Gyn, Urology
- Frequency range: 1.9-7Mhz
- Pulsed wave Doppler, continuous wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes

S1-8C broadband curved array *

- Single Crystal technology
- Convex radius: 60mm
- Application: abdomen, OB/Gyn, urology, pediatric
- Frequency range: 1.5 - 6.5MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes
- Reusable biopsy guide available

S2-9C broadband curved array *

- Single Crystal technology
- Convex radius: 40mm
- Application: abdomen, OB/Gyn, urology, pediatric
- Frequency range: 2-8MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes
- Reusable biopsy guide available

Advanced Imaging controls

VFusion

- Available on all transducers and for 2D, 3D/4D (except phase array probe)
- Up to 5 levels of directional imaging fusion to enrich information
- Operate in conjunction with VSpeckle, harmonic imaging

VSpeckle

- Available on all transducers and for 2D, 3D/4D
- Virtually eliminate speckle noise artifact and dynamically enhances tissue margins
- Selectable multiple levels of speckle noise reduction and smoothing
- Operates in conjunction with VFusion and harmonic imaging

VTissue *

- Special imaging processing to adapt to the speed of the ultrasound variation in different tissue
- Improved spatial resolution and conspicuity of lesions
- One touch operation

SRV (Super Resolution Volume)

- Extreme contrast and spatial resolution in thin volume
- Small volume sweep angle
- High volume rate
- Visual able the tissue information in a thick slice
- Better detection in diffuse lesions of organs





3D/4D HQR (High Quality Rendering) (Optional)

- Amazing high image quality
- Extreme realistic rendering images
- Similar operation as normal rendering

VOCAL (Volume Calculation) (Optional)

- Automatic 3D follicle detection (number&size)
- Definition of a shell contour
- Volume calculation of ultrasound tissue inside a shell contour

Spatio-Temporal Image Correlation (STIC) (Optional)

- Visualize the fetal heart or an artery
- One complete heart cycle represented
- Using 3D static acquisition

Inversion mode

- This render mode is used to display anechoic structures such as vessels
- It invert the gray values of the rendered image, such as black image information become white and vice versa

Magic Cut

- Ability to edit images, make possible to cut away structure obstructing the view in the ROI
- Several cutting methods available

Smart Touch 3D/4D Operation

- Fully utilize touch panel possibility for easy operation, such as rotation 3D rendering image, move ROI, create line by finger

Advanced Imaging controls (cont.)

Free View

- Provide any plane view to visualize the internal tissue information
- Improve the contrast resolution to facilitate the detection of diffuse lesions in organs

Stress Echo

- Review and analyze wall segment information
- Continuous capture or selectable capture
- Provides selectable protocol template for exercise

Auto NT (Nuchal Translucency measurement)

- Automatically detect Nuchal Translucency in interest box
- Automatically report thickness result of NT

Auto IMT (Intima-Media Thickness) measurement

- Automatically detect intima media thickness in interest box
- Automatically report the result of IMT
- Available in linear probe

Next generation RF-based image processing

- Available on all imaging transducers in 2D grayscale modes
- Virtually eliminates speckle noise artifact and dynamically enhance tissue edge
- Operates with other real-time processing algorithms



Imaging modes

2D Imaging

- Pre-defined ATGC (adaptive temporal gain compensation) curves optimized for consistently excellent imaging
- B/M acoustic output: 0-100%
- Depth: able to adjust from 1 to 36cm
- Select between 1 to 8 transmit focal zones
- Reverse function: on/off
- VFusion function
- VSpeckle function
- Harmonic imaging both tissue harmonic and phase inversion
- Cineloop image review
- Selectable 2D line density
- Dual imaging with independent cineloop
- 256(8 bit) gray level
- Up to 8 focus zone adjustable
- Multiple color maps with chroma imaging
- FULL screen imaging to larger image size
- Multi frequency: probe dependent
- Gray filter: 6 steps
- Persistence: 8steps
- Selectable image angles, probe dependent
- Gain: 0-100%
- Dynamic range: 30-230 dB
- VSharpen to enhance edge contrast
- Smooth to improve spatial resolution
- EdgeEnhance to improve detail information and contrast
- VNear to enhance SNR of near field

Harmonic Imaging

- Supports both tissue harmonic and phase inversion imaging (transducer and frequency dependence)
- Second harmonic processing to reduce artifacts and improve image clarity
- Maximize detail resolution and enhance contrast
- Available on all imaging transducers
- Extends high performance imaging capabilities to all patient body types

M mode

- Selectable sweeping rates
- Time marks: 0.025 – 0.5 second
- Selectable display format prospective or retrospective (1/3-2/3, 1/2-1/2, 2/3-1/3, side by side 1/2-1/2, side by side 1/3-2/3, full screen)
- Chroma colorization with multiple color maps
- Cineloop review for retrospective analysis of M-mode data
- Multi Angle M mode with 360 rotation (optional)
- 256 gray levels

Color Doppler mode

- Available on all imaging transducers
- Automatically adapts transmit and receive bandwidth processing based on the color box position
- Cineloop review with full playback control
- Steering on linear array transducers
- Color flow M mode display for tissue motion and flow velocity(optional)
- Selectable in baseline, line density, flash reduction, persistence, maps, frequency, PRF, wall filter, packet size, color level, sensitivity, focus position, acoustic power, and smooth
- Color gain
- Region of interest
- Baseline invert
- Simultaneous mode during PW mode
- Smoothing
- Wall filter
- Zoom

Power Doppler mode

- High sensitive mode for small vessel visualization
- Available on all transducers
- Cineloop review
- Multiple color maps
- Individual controls for gain
- Selectable baseline, line density, flash reduction, persistence, maps, frequency, PRF, wall filter, packet size, color level, sensitivity, focus position, acoustic power, and smooth
- Adjustable region of interest



Pulsed Wave (PW) Doppler

- Ultra high resolution spectral FFT rate
- Angle correction with automatic velocity scale adjustment
- Normal, invert display around horizontal zero line
- Selectable gray filter, dynamic range, frequency, PRF, wall filter, baseline, angle correct, sample volume
- Selectable sweep speeds: 8 steps
- Maximum velocity range: 12m/s
- PW acoustic output: 0-100%
- Selectable low frequency signal filtering with adjustable wall filter settings
- Selectable grayscale curve for optimal display
- Selectable chroma colorization maps
- Selectable display format prospective or retrospective (1/3-2/3, 1/2-1/2, 2/3-1/3, side by side 1/2-1/2, side by side 1/3-2/3, full screen)
- Auto function to optimize spectral Doppler displ.
- Digitally enhanced stereo output
- 256 gray levels
- Post-processing in frozen mode includes map, baseline, invert and chroma
- Simultaneous or duplex mode of operation
- Simultaneous 2D, color Doppler, pulsed Doppler
- High PRF capability in all modes including duplex and triplex

Continuous Wave Doppler (CWD)

- Cardiac sector array transducer only
- Maximum velocity range: 19m/s

Elastography imaging(Optional)

- Shows the spatial distribution of tissue elasticity properties in a region of interest to estimate the strain before and after tissue distortion caused by external force
- The strain estimation is scaled by color to have smooth distribution display
- Have quality index to indicate if there is proper external force

Contrast imaging(Optional)

- Support contrast imaging in both 2D and 3D volume
- By contrast agent, imaging is enhanced within vessel which agent flow
- Have one button push to destroy the agent. Useful in the bubble wash-in characteristics of anatomy being scanned

3D/4D

- 3D/4D rotation
- Grayscale imaging controls
- Selectable rendering approaches
- Unique high quality rendering algorithm
- Selectable gray maps
- Multi slice cutting (MCUT)
- Cineloop 3D
- Review volume

PView (Optional)

- Real time extended field of view composite imaging
- Ability to back up and realign the image during acquisition
- Full zoom, cineloop review and image rotation capabilities
- User can measure distance and area
- Measurement can be made on individual frames during cineloop review
- Available on linear transducers

TView

- Expand view of scanning
- Available on linear transducers

Auto

- Intelligent one button automatic optimization in 2D and Doppler modes • Automatically adjust PRF and baseline in Doppler

Stress Echo*

- Acquisition of single-frames or full-motion digital clips in any modes (including 2D, color flow, power Doppler, etc)
- Length of acquired images is user-adjustable
- Default stress protocols
- Flexible user defined stress protocols



Tissue Doppler Imaging (TD) *

- Present wall motion spectrum by using Doppler principle
- Provide wall motion direction and velocity information
- Available on all sector transducer for cardiac imaging
- Gain

Tissue Velocity Imaging (TVI) *

- Color codes the velocities in tissue
- Present tissue color imaging by using Doppler principle
- This color image is overlaid onto the 2D image
- Captures low flow but high amplitude signals associated with wall motion
- Available on all sector transducer for cardiac imaging
- Tissue velocity M mode display for wall motion(optional)
- Gain
- Velocity

Touch Panel Interface

2D mode

- | | | | |
|---------------|-------------------|------------------|--------------------|
| • New patient | • L/R | • Maps | • Focus width |
| • BodyPattern | • U/D | • Frequency | • Smooth |
| • Archive | • Center line | • Focus position | • Acoustic power |
| • Comments | • VTissue* | • Focus # | • EdgeEnhance |
| • End exam | • VSpeckle | • Dynamic Range | • Vnear |
| • Sys setting | • VFusion | • Line density | • Contrast |
| • Probe&App | • Gray Filter | • VSharpen | • Elastosonography |
| • Pview | • Persistence | • Biopsy | • NeedleEnhance |
| • Tview | • Display Format | • Image angle | • SGC |
| • Fullscreen | • Image reference | | |

M Mode

- | | | | |
|---------------|---------------|------------------|------------------|
| • New patient | • Sys setting | • Maps | • Gray filter |
| • BodyPattern | • Probe&App | • Dynamic range | • VSharpen |
| • Archive | • L/R format | • Acoustic power | • ECG |
| • Comments | • U/D format | • Sweep speed | • Multiple Angle |
| • End exam | | | |

CF mode

- | | | | |
|---------------|-------------------|-------------------|------------------|
| • New patient | • Full Screen | • Display format | • Wall filter |
| • BodyPattern | • L/R | • Sync display | • Packet size |
| • Archive | • U/D | • Transparency | • Colorlevel |
| • Comments | • Baseline | • Image reference | • Sensitivity |
| • End exam | • Flash Reduction | • Maps | • Focus position |
| • Sys setting | • Line density | • Frequency | • Acoustic power |
| • Probe&App | • Persistence | • PRF | • Smooth |
| • Invert | | | |

PW/CW mode

- | | | | |
|---------------|-------------------|------------------|---------------------|
| • New patient | • Invert | • Auto trace | • Baseline |
| • BodyPattern | • Triplex | • Mode/direction | • Steer |
| • Archive | • Display format | • Maps | • Sample volume |
| • Comments | • Sweep speed | • Frequency | • Volume |
| • End exam | • Gray filter | • PRF | • Spectrum optimize |
| • Sys setting | • Dynamic range | • Wall filter | • Acoustic power |
| • Probe&App | • Trace sensitive | | |



3D mode

- | | | | |
|---|--|--|---|
| <ul style="list-style-type: none"> • Comments • BodyPattern • Back to 2D • Start3D • Render • Display format • Image reference • View • Gray map • 3D map | <ul style="list-style-type: none"> • VSpeckle • Quality • Threshold • Transparency • Volume angle • Auto rotate (after data acquisition) • Movement step (after data acquisition) | <ul style="list-style-type: none"> • Slice position(after data acquisition) • Speed(after data acquisition) • HQ Light(after data acquisition) • Rotation angle (after data acquisition) | <ul style="list-style-type: none"> • Rotation direction (after data acquisition) • 3DMcut(after data acquisition) • Magic Cut (after data acquisition) • Free View(after data acquisition) • Smart Touch 3D/4D operation(after data acquisition) |
|---|--|--|---|

4D mode

- | | | | |
|---|---|--|---|
| <ul style="list-style-type: none"> • Comments • Body Pattern • Back to 2D • Start 4D • Auto Cine • Rotation direction • Render | <ul style="list-style-type: none"> • Display format • Image reference • View • Gray map • 3D map • VSpeckle | <ul style="list-style-type: none"> • Quality • Threshold • Transparency • Volume angle • Slice position(after data acquisition) | <ul style="list-style-type: none"> • 3DMcut(after data acquisition) • Smart Touch 3D/4D operation(after data acquisition) |
|---|---|--|---|

System Feature

Display modes

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|---|---|
| <ul style="list-style-type: none"> • Simultaneous capability • 2D/PW/CW • 2D/CF or PDI • 2D/M • Dual, 2D/2D • Dual, 2D/2D+CF or PDI • Dual, duplex and triplex | <ul style="list-style-type: none"> • Duplex and Triplex mode • Quad display in 3D/4D application • 9 slice images display in 3D/4D application • Time line display • Independent dual 2D/PW or CW • Timed based sweep update mode |
|---|---|

Display annotation

- | | |
|--|--|
| <ul style="list-style-type: none"> • Institution/hospital name • Date: 2 types selectable, YY/MM/DD, MM/DD/YY • Time: 2 types selectable, 24hours and 12 hours • Operator identification • Patient name, first, last • Patient identification: 30 characters • Gestational age from LMP/EDC/GA/BBT • Power output index • MI: mechanical index • TIS: thermal index soft tissue • TIC: thermal index cranial (Bone) • TIB: thermal index bone • Probe orientation marker: coincide with a probe orientation marking on the probe • Gray/color bar • Measurement result window • Probe type • Application name | <ul style="list-style-type: none"> • Image depth • Imaging parameters by mode • 2D/M mode: acoustic power output, gain, frequency, frame rate, dynamic range • Color mode: color acoustic power output, color gain, color flow frequency, PRF, wall filter • PW/CW mode: Doppler acoustic power output, Doppler gain, Doppler frequency, PRF, wall filter, sample depth • Scanline Gain Compensation(SGC) with 6 slides adjustment • Focus zone marker • Body pattern • PW and CW scale markers: time/speed • M scale markers: time/depth, time • System measurement display • System message display • Biopsy guide line • Heart rate |
|--|--|

Simple User Operation Interface

- Simple user interface and easy workflow, allows one step on probe & application switch, and intuitive user parameter control





Cineloop

- Acquisition, storage in memory and display of up to 15000 frames, 1500 seconds long of 2D, color and PW/CW images for review
- Acquisition, storage and replay of Doppler audio

Compare

- Flexibly compare live imaging with stored imaging by one key

Quick save feature

- The system provides quick save function through USB stick, internal/external HDD, DVD during or after exam
- Configurable saving file format, VRD (Raw Data), DICOM, PNG and AVI

Physio

- One 3-lead ECG input
- Gain, sweep rate and display position controls
- Automatic heart rate calculation and display
- Fault condition display

Archive

- Patient data input which include patient ID, name, nationality, birth date, sex, exam physician, quality check, exam operator
- Physical data such as weight, height
- Patient exam management
- Patient exam images storage and management
- Import VRD format data into the system from outside media, such as USB stick, external HDD, DVD
- Export patient data into outside medias

Report

- Automatically pull patient data into the report
- Automatically load measurement worksheet into the report
- Pull related exams' images into the report
- Write comments in the report
- Print report through network or local printer

Connectivity

- Standard connectivity features
- Local print to on-board or off-board video printers through USB port
- Page report print
- Image export to removable media (DVD, external HDD, USB stick)
- Network linkage
- Image export to network storage servers*
- DICOM export and retrieve *
- Integrated DVDRW
- Support standard DVD media
- Data storage formats include VRD, DICOM, PNG, AVI
- VRD and DICOM images stored in disc can be recalled on the system
- PNG and AVI images can be played on normal computers
- On-board patient exam storage
- Direct digital storage of static image or cineloop images to internal hard disk drives
- Fully integrated user interface

Probes/application

- Selectable multiple applications
- Edit exist application preset
- Edit user defined preset
- Rename preset
- Return to factory preset
- Quick save user defined parameters in related application



Safety Conformance

- Regulatory Notice: This device is tested to meet all applicable requirements in relevant. According to 93/42 EEC, it is class IIa medical device.
- Conformity to Standards:
- IEC 60601-1 E3:2005 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance
- IEC 60601-1-1:2000 Safety requirements for medical electrical systems
- IEC 60601-1-2:2007 Electromagnetic compatibility - Requirements and tests
- IEC 60601-1-4:2000 Programmable electrical medical Systems
- IEC 60601-1-6:2010 Usability
- IEC 60601-2-37:2005 Medical electrical equipment Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
- IEC 61157:2007 Declaration of acoustic output parameters
- ISO 10993-1:2009 Biological evaluation of medical devices
- IEC 62366:2007 Medical devices Application of usability engineering to medical devices
- Council Directive 93/42/EEC on M.D.
- Directive 2002/96/EC on Waste Electrical and Electronic Equipment
- Directive 2006/42/EC on Machinery

Measurement and Analysis

Generic Measurement in 2D mode

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|--|--|--|
| <ul style="list-style-type: none"> • Depth • Distance • Perimeter • Length and width method • Ellipse method • Polygon method • Spline method • Tracing method • Area | <ul style="list-style-type: none"> • Length and width method • Ellipse method • Polygon method • Spline method • Tracing method • Volume • Single line method • Dual line method • Triple line method | <ul style="list-style-type: none"> • Single ellipse method • Single ellipse and single line method • Angle • Stenosis • Diameter method • Square meter method • A and B ratio • Diameter ratio • Square meter ratio |
|--|--|--|

Generic Measurement in M mode

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> • Depth • Distance • Time • Speed | <ul style="list-style-type: none"> • Heart rate • Stenosis • A and B ratio | <ul style="list-style-type: none"> • Diameter ratio • Time ratio • Speed ratio |
|--|---|---|

Generic Measurement in PW mode

- | | |
|--|--|
| <ul style="list-style-type: none"> • Speed (include PV (Peak Velocity)) • Time (include AT (Accelerate Time)) • Acceleration • PS (Peak Speed in systole period) • ED (The speed in the end of diastole period) • MD (Minimum speed in diastole period) • TAMAX (maximum speed in time average) • TAMEAN (mean speed in time average) • TAMIN (minmum speed in time average) • PI (Pulsatility Index) • RI (Resistance Index) • PS and ED ratio • ED and PS ratio | <ul style="list-style-type: none"> • A and B ratio (A/B ratio) • Speed ratio • Time ratio • Acceleration ratio • FLOWVOL (Flow Volume) • MaxPG (maximum pressure gradient) • MeanPG (Mean pressure gradient) • SV (Stroke Volume) • Each volume diameter cardiac • Time mean speed in each stroke volume • Cardiac output • Heart rate |
|--|--|

Abdominal Measurement

- | | |
|--|--|
| <ul style="list-style-type: none"> • General abdomen • Difficult abdomen • Kidney | <ul style="list-style-type: none"> • Renal vessel • Abdominal trauma |
|--|--|

Small Part Measurement

- | | |
|---|---|
| <ul style="list-style-type: none"> • Thyroid • Breast • Testis | <ul style="list-style-type: none"> • Musculoskeletal • Upper and lower extremity joint • Nerve block |
|---|---|



Vessel Measurement

- | | |
|--|---|
| <ul style="list-style-type: none"> • Carotid artery • Upper artery • Upper vein • Lower artery | <ul style="list-style-type: none"> • Lower vein • Vessel puncture • Transcranial Doppler |
|--|---|

Gynecology Measurement

- Uterus and Plevis
- Follicle

Urology Measurement

- | | |
|--|---|
| <ul style="list-style-type: none"> • Bladder • Prostate • Renal | <ul style="list-style-type: none"> • Kidney and ureter • Pelvic Floor dysfunction |
|--|---|

Pediatric Measurement

- | | |
|--|---|
| <ul style="list-style-type: none"> • Neonatal Head • Neonatal Abdomen • Pediatric Abdomen | <ul style="list-style-type: none"> • Pediatric Hip • FAST |
|--|---|

Obstetrics Measurement

- | | |
|--|--|
| <ul style="list-style-type: none"> • OB Early • OB Mid | <ul style="list-style-type: none"> • OB Late • Fetal Heart |
|--|--|

Cardiac Measurement

- | | | | |
|---|--|--|--|
| <ul style="list-style-type: none"> • General • LV • MV | <ul style="list-style-type: none"> • Ao • AV • LA | <ul style="list-style-type: none"> • RV • TV • PV | <ul style="list-style-type: none"> • RA • System |
|---|--|--|--|