esse 3 ®

Ultrasound System Specifications

The premium performance of the full functional Portable ESE-6 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
• World-class Up to 22MHz imaging performance
• 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
• World-class design to be thinner and lighter
• First in class to introduce capacity touch panel in portable ultrasound system to simplify workflow and customized workflow possibility
• Less 20 sec boot up time for easy mobile ability

Applications

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

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Imaging features

- 2D grayscale imaging
- Harmonic imaging both in tissue harmonic and pulse inversion harmonic technologies
- VFusion, directional-enhanced information compounding
- Vspeckle I& II *, 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
- Color Doppler imaging
- Power Doppler imaging
- Pulse wave Doppler imaging
- Simultaneous 2D and M 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

- PView for panoramic imaging (Optional)*
- TView for trapezoidal imaging (Optional)*
- 3D imaging
- 3D/4D HQR (High Quality rendering) (Optional)*
- Spatio Temporal Image Correlation (STIC) (Optional)*
- Real-time grayscale 4D
- Tomographic display (MCUT)
- Three leads ECG function(option) *
- Tissue Doppler (TD) mode
- Tissue Velocity Imaging (TVI) mode*
- Tissue Velocity M mode (TVM)(option)*
- Multi-angle M mode (option)*
- Auto IMT function
- Auto NT*
- Inversion mode(option)*
- Magic cut(option)*
- Smart touch panel 3D/4D operation(option)*
- Free view(option)*
- Elastic Imaging(EI) (option)*

Standard features

- Up to 25Mhz high frequency in system platform. Up to 22MHz's probes are supported
- RF platform and RF data processing
- Up to 1000 seconds cine storage
- 250GB SSD quick boot up and storage
- 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
- Gynecological calculations

- Urological calculations
- Renal calculations
- Volume calculations
- Wireless networking for easy data sharing, storage and printing*(optional)
- Up-to-date connectivity and data management solutions, wireless , LAN, integrated database*(optional)
- Capability to send data to mobile by mail and blue tooth*(optional)
- Total mobile medical solution for remote data transfer and diagnostic
- DICOM compatibility*(optional)
- 2USB ports
- 6 TGC slides
- Average 4 multiple adjustable frequency in every probe and mode
- Up to 512 line density

Ergonomics

- Unique human oriented design for comfort and convenience
- 15.6-inch high resolution flat panel display with nearly infinite positioning adjustments
- Easy to carry by integrated handle
- Full integrated probe to reduce overall space
- Integrated touchable alphabetic keyboard
- Integrated capacity touch panel to easy and simplify workflow
- Cart support up to 150mm up/down operation panel*(optional)
- USB DVDRW *(optional)

Keyboard

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

Image display screen

- 15.6 inch high resolution IPS, LED technology, pixel resolution
- Big angel tilting capability

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Peripherals

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

Dimensions and Weight

- Length: 387mm
- Width: 340mm
- Depth: 47.5mm
- Weight: 3.5kg

Electrical Power

- Voltage: 100-240V AC
- Frequency: 50/60Hz
- Power: Max.120VA

Trasducers

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
- Linear array
- Phase array
- 4D probe
- Endocavity 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 zoom

G2-5C Broadband Curved Array

- Field of view: 72 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

- Field of view: 68 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, 3D color
- Multi-imaging frequency setting in 2D, 3D/4D, Harmonic, color Doppler and Wave Doppler modes

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F2-5CE Broadband Curved Array

- Field of view: 60 degree
- Convex radius: 60mm
- 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

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

F4-9E broadband micro convex endocavity array

- Field of view: 146 degree
- Convex radius: 10mm
- 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

F4-12L 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

I7-18L broadband linear array(Hock stick)

- Fine pitch, high resolution
- Applications: vascular, small parts, Hock stick
- 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

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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

X9-22L broadband linear array
- Fine pitch, high resolution
- Applications: small parts
- Frequency range: 9 -22MHz
- 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

U5-15LE 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

X10-23L broadband linear array
- Fine pitch, high resolution
- Applications: small parts
- Frequency range: 10 -23MHz
- Pulsed wave Doppler, color Doppler, power Doppler, harmonic
- Multi-imaging frequency setting in 2D, Harmonic, color Doppler and Wave Doppler modes

D3-6CE broadband curved array   volume probe
- Field of view: 68 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, 3D color
- Multi-imaging frequency setting in 2D, 3D/4D, Harmonic, color Doppler and Wave Doppler modes

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Advanced Imaging controls

VFusion
- Available on all transducers and for 2D, 3D/4D
- 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
- Speical imaging processing to adapt to the speed of the ultrasound variation in different tissue
- Improved conspicuity of lesions, such as stone and tendon

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

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

Spatio-Temporal Image Correlation (STIC) (Optional)*
- Visualize the fetal heart or an artery
- One complete heart cycle represented
- Using 3D static acquisition

Tissue Doppler (TD)
- Present wall motion spectrum by using Doppler principle
- Provide wall motion direction and velocity information

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

Smart Touch 3D/4D Operation(Optional)
- Fully utilize touch panel possibility for easy operation, such as rotation 3D rendering image, move ROI, create line by finger

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

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Inversion mode*(Optional)
- 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*(Optional)
- Ability to edit images, make possible to cut away structure obstructing the view in the ROI
- Several cutting methods available

Advanced Imaging controls (cont.)

Tissue Velocity M mode(TVM) *
- Color codes the velocities in tissue
- Present wall motion spectrum based on tissue moving
- This color image is overlaid onto the 2D image
- Captures low flow but high amplitude signals associated with wall motion

Multi-angle M mode *
- Sample on moving tissue from multi-angle
- Present wall motion spectrum based on tissue moving

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

Elastic Imaging(EI) *
- use the probe to press tissue artificially
- color codes the elasticity in tissue
- This color image is overlaid onto the 2D image

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 32cm
- 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: 7 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

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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
- 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
- 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, angel 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/sec

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Pview*

- 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

Touch Panel Interface

2D mode

• New patient	• PView	• Gray Filter	• Dynamic Range
• BodyPattern	• Fullscreen	• Persistence	• Line density
• Archive	• L/R	• Display Format	• VSharpen
• Probe&APP	• U/D	• Image reference	• Biopsy
• Comments	• Center line	• Maps	• Image angle
• End exam	• VTissue	• Frequency	• Focus width
• Sys setting	• VSpeckle	• Focus position	• Smooth
• Report	• VFusion	• Focus #	• Acoustic power

M Mode

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

CF mode

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

PW/CW mode

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

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3D mode

- Comments
- BodyPattern
- Back to B
- Start3D
- ROI shape
- Render
- Display format
- Image reference
- View
- Gray map
- VSpeckle
- Quality
- Threshold
- Transparency
- Volume angle
- Movement step (after data acquisition)
- HQ Light(after data acquisition)
- Rotation angle (after data acquisition)
- Rotation direction (after data acquisition)

4D mode

- Comments
- Body Pattern
- Back to B
- Start 4D
- ROI shape
- Movement step
- Rotation direction
- Render
- Display format
- Image reference
- View
- Gray map
- VSpeckle
- Quality
- Threshold
- Transparency
- Volume angle

System Features

Display modes

- Simultaneous capability
- 2D/PW/CW
- 2D/CF or PDI
- 2D/M
- Dual, 2D/2D
- Dual, 2D/2D+CF or PDI
- Dual, duplex and triplex
- 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

- 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
- 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
- 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

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Cineloop

• Acquisition, storage in memory and display of up to 1000 seconds long of 2D, color and PW/CW images for review

Compare

• Compare live imaging with stored imaging.

Quick save feature

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

Physio

• One 3-lead ECG input*(Optional)
• 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
• 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 (external HDD, USB stick)
• Network linkage
• Image export to network storage servers
• DICOM export and retrieve *(Optional)
• Mobile data transfer solution by
• Blue tooth*(Optional)
• email*(Optional)
• Hot point connection
• DICOM workstation for remote diagnostic solution *(Optional)
• DICOM,JPEG, AVI
• VRD and DICOM images stored in disc can be recalled on the system
• JPEG 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

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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

• Depth	• Length and width method	• Single ellipse method
• Distance	• Ellipse method	• Single ellipse and single line method
• Perimeter	• Polygon method	• Angle
• Length and width method	• Spline method	• Stenosis
• Ellipse method	• Tracing method	• Diameter method
• Polygon method	• Volume	• Square meter method
• Spline method	• Single line method	• A and B ratio
• Tracing method	• Dual line method	• Diameter ratio
• Area	• Triple line method	• Square meter ratio

Generic Measurement in M mode

• Depth	• Heart rate	• Diameter ratio
• Distance	• Stenosis	• Time ratio
• Time	• A and B ratio	• Velocity ratio
• Slope		

Generic Measurement in PW mode

• Speed (include PV (Peak Velocity))	• A and B ratio (A/B ratio)
• Time (include AT (Accelerate Time))	• Speed ratio
• Acceleration	• Time ratio
• PS (Peak Speed in systole period)	• Acceleration ratio
• ED (The speed in the end of diastole period)	• FLOWVOL (Flow Volume)
• MD (Minimum speed in diastole period)	• MaxPG (maximum pressure gradient)
• TAMAX (maximum speed in time average)	• MeanPG (Mean pressure gradient)
• TAMEAN (mean speed in time average)	• SV (Stroke Volume)
• TAMIN (minmum speed in time average)	• Each volume diameter cardiac
• PI (Pulsatility Index)	• Time mean speed in each stroke volume
• RI (Resistance Index)	• Cardiac output
• PS and ED ratio	• Heart rate
• ED and PS ratio	

Abdominal Measurement

• General abdomen	• Renal vessel
• Difficult abdomen	• Abdominal trauma
• Kidney	

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Small Part Measurement

• Thyroid	• Musculoskeletal
• Breast	• Upper and lower extremity joint
• Testis	• Nerve block

Vessel Measurement

• Carotid artery	• Lower vein
• Upper artery	• Vessel puncture
• Upper vein	• Transcranial Doppler
• Lower artery	

Gynecology Measurement

• Uterus and Plevis
• Follicle

Urology Measurement

• Bladder	• Kidney and ureter
• Prostate	• Pelvic Floor dysfunction
• Renal	

Pediatric Measurement

• Neonatal Head	• Pediatric Hip
• Neonatal Abdomen	• FAST
• Pediatric Abdomen	

Obstetrics Measurement

• OB Early
• OB Mid
• OB Late
• Fetal Heart

Cardiac Measurement

• General	• Ao	• RV	• RA
• LV	• AV	• TV	• System
• MV	• LA	• PV	

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