ESE 5

Data sheet

V1.12.48

Contents

Ultrasound system Specifications

The premium performance of the full functional Portable ESE 5 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

1. System Overview

1.1. Architecture

- The revolutionary RF platform, The First in The World, 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
- 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
- Zone Imaging technology can obtain high resolution and good penetration in the whole image zone through the adaptive dynamic beam control from the near field to the far field
- World-class design to be thinner and lighter
- Diverse customized tools make V5 a truly elite unit, which enhances efficiency dramatically
- Support multiple DICOM server configuration (optional) *
- Background transfer, supports background export without interrupting the actual scan
- VReport, a customer-centric tool for report templates design, makes the

whole report procedure smooth and individual (optional) *

- Customized user interface, allows user to change the position of buttons on the touch screen, also the size of 'Probe&App' UI window is adjustable
- VWork, an intelligent feature, which enables users to configure workflows for every application scenario. This leads to easy and effective adherence to a department protocol and saves operation time to a great extent
- Boot-up from complete shutdown in about 75 sec
- Boot-up from standby mode in about 30 sec

1.2. Applications

- Abdomen
- Gynecology
- Obstetric
- Small Parts
- Cardiology
- Vascular
- TCD
- Urology
- Pediatrics

1.3. 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
- Auto imaging optimization
- VTissue, the advanced adaptive image processing to compensate for sound and speed variation in different tissue
- Easy Comparative Function to compare previous exam
- Color Doppler imaging
- VLuminous flow, a feature which shows the blood flow in a 3-D view with excellent sensitivity
- Sync ROI enables the width of 2D scan area is synchronized with the CF ROI, which effectively improves the frame rate
- Power Doppler imaging
- Pulse wave Doppler imaging
- Duplex 2D/PW Doppler
- Triplex 2D/Color/PW Doppler
- Continuous wave Doppler (optional)*
- Color M-mode (optional)*
- Multi-angle M mode, up to 4 sample lines (optional)*
- Curved M mode, user can draw any curved sample line freely and get corresponding results
- Stress echo (optional)*
- Elastic Imaging (EI) (optional)*
- 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
- Needle enhancement (optional)*
- Auto IMT (optional)*
- Live IMT, display intima-media thickness in real time (optional)*
- 2D/3D auto follicle (optional)*
- Free 3D (optional)*
- 3D/4D Imaging
- Support to export 3D data for 3D printer (optional) *
- 3D Smart Face, for fetal face optimization (optional)*
- Inversion mode (optional)*
- Tomographic display (MCUT) (optional)*
- HQ (optional)*
- Magic cut (optional)*
- Free view (optional)*
- Niche view (optional)*
- Auto NT (Nuchal translucency) (optional)*
- Auto IT, automatic measurement of Intracranial translucency (optional)*
- VAim (V Artificial Intelligent Measurement) for OB, Follicle, Hip, pelvic (optional)*
- Three leads ECG (optional) *

1.4. Standard features

- Up to 25Mhz high frequency in system platform. Up to 18MHz probes are supported
- RF platform and RF data processing
- Up to 1500 seconds cine storage
- 120GB 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
- Quick print to B/W and color thermal video printer
- 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
- 2 USB ports
- 6 TGC slides
- 1 DP port

1.5. Language support

- Software: Chinese, English, German, Greek, Malay, Portuguese, Romanian, Spanish, Swedish, French, Polish, Russian, Uighur, Italian, Czech, Hungarian
- Keyboard input: Chinese, English, German, Greek, Malay, Portuguese, Romanian, Spanish, Swedish, Polish, Norwegian, Danish, Finnish, French, Russian, Italian, Czech, Cambodia, Polish
- Control panel overlay: English
- User manual: Chinese, English, German, Russian, Portuguese, Spanish, Italian, French

2. Ergonomics

- Unique human-oriented design for comfort and convenience

- 15.6-inch high-resolution flat display
- panel display with up to 130 ° 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
- 1 probe interface

2.1. Keyboard

- Highly sensitive 8-inch capacity touch panel
- Intuitive, configurable and touchable interactive operation interface
- Ergonomic hard keys for general ultrasound operations
- Backlight keys

2.2. Image display screen

- 15.6-inch high-resolution flat display
- panel display with up to 130 ° positioning adjustments
- Backlight adjustment
- Resolution:1920*1080 pixels

2.3. Comments

- Supports text input and arrow
- Adjustable text size and arrow size
- Covers various application
- User customizable

2.4. Bodymark

- More than 215 bodymarks for versatile application
- User customizable

2.5. Peripherals (optional)*

- 500G/1T/2T SSD
- B&W thermal video printer: Sony UP-D898MD
- Color thermal video printer: Sony UP-D25MD
- USB DVDRW
- HDMI port, VGA port, S-Video port
- Wireless adapter
- Bluetooth adapter
- Keyboard dust film
- Keyboard Protective Film
- USB double button foot switch
- ECG
- Travelling case
- Battery Pack
- External Gel Warmer
- Cart L
- Cart-S INT
- Cart-F with battery and 3 probe ports
- Physical keyboard (Cart required)
- 3 extended probe ports (For Cart S/ Cart L)
- 2 extended probe ports (For Cart L)
- CART battery pack assembly

2.6. Dimensions and Weight

- Length: 387mm
- Width: 340mm
- Height: 72mm
- Weight: without accessories approx: 3,8 kg

2.7. Power

- Voltage: 100-240V
- Frequency: 50/60Hz
- Power: Max 170VA

2.8. Operating Environment

- Ambient temperature: 10-40°C
- Relative humidity: 30-75%
- Atmospheric pressure: 700-1060hPa

3. Transducers

3.1. Transducer types

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

3.2. 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

- Field of view: 66°
- Convex radius: 50mm
- Transducer elements: 128
- Frequency range: 2–6MHz
- Center frequency: 3.2MHz
- Physical Footprint: 68.5mm×27mm
- Application: Abdomen, OB/Gyn, Urology, Pediatric

F2-5C

- Field of view: 59°
- Convex radius: 60mm
- Transducer elements: 128
- Frequency range: 2–6.5MHz
- Center frequency: 3.2MHz
- Physical Footprint: 72mm×27mm
- Application: Abdomen, OB/Gyn, Urology, Pediatric

D2-6C

- Field of view: 70 °
- Convex radius: 40mm
- Transducer elements: 128
- Frequency range: 3-5.5MHz
- Center frequency: 4.2MHz
- Physical Footprint: 75.5mm×49.2mm
- Application: Abdomen, OB/Gyn, Urology

G4-9M

- Field of view: 136 °
- Convex radius: 11.5mm
- Transducer elements: 128
- Frequency range: 5-11MHz
- Center frequency: 7MHz
- Physical Footprint: 34.2mm×28.7mm
- Application: Pediatric, Abdomen, Cardiac

G4-9E

- Field of view: 136 °
- Convex radius: 11.5mm
- Transducer elements: 128
- Frequency range: 5-11MHz
- Center frequency: 6.9MHz
- Physical Footprint: 40mm×32.4mm
- Application: OB/Gyn, Urology

F4-9E

- Field of view: 150 °
- Convex radius: 10mm
- Transducer elements: 128
- Frequency range: 5-11MHz
- Center frequency: 6.5MHz
- Physical Footprint: 44.2mm×32.5mm
- Application: OB/Gyn, Urology

F4-12L

- Transducer elements: 128
- Frequency range: 6-16MHz
- Center frequency: 7.5MHz
- Physical Footprint: 52.5mm x 25mm
- Application: Vascular, Small parts, MSK, Nerve

I7-18L

- Transducer elements: 128
- Frequency range: 6-18MHz
- Center frequency: 9.5MHz
- Physical Footprint: 31.8mm x 10mm
- Application: Vascular, Small parts, MSK, Nerve

G1-4P

- Field of view: 90 °
- Transducer elements: 64
- Frequency range: 2-5MHz
- Center frequency: 2.8MHz
- Physical Footprint: 34.2mm x 28.7mm
- Application: Cardiac, Abdomen

G3-10P

- Field of view: 90 °
- Transducer elements: 64
- Frequency range: 3-10MHz
- Center frequency: 4.7MHz
- Physical Footprint: 33mm x 23mm
- Application: Application, Abdomen

4. Advanced Imaging controls

4.1. VFusion

- Available on all transducers and for 2D, 3D/4D
- Operate in conjunction with VSpeckle, harmonic imaging

4.2. 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

4.3. VTissue

- Special imaging processing to adapt to the speed of the ultrasound variation in different tissue

- Improved conspicuity of lesions, such as stone and tendon

4.4. 3D/4D

4.4.1. HQ (optional)*

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

4.4.2. Magic Cut (optional)*

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

4.4.3. 3D Smart Face (optional)*

- An intelligent tool for fetal face optimization. This tool detects the fluid/tissue interface and smartly removes noise in front of the baby inside the ROI, to obtain an optimal baby face.
- Use Auto key on the keyboard to remove the obstacle in front of the baby
- Only works on 3D Render
- Can not use this feature together with Magic Cut

4.4.4. Free view (optional)*

- Provide any plan view to visualize the internal organization information
- Increasing the contrast resolution facilitates the detection of diffuse lesions in organs

4.4.5. 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

4.5. Elastography imaging (EI) (optional) *

- Available on linear transducers and convex probe
- 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

4.6. Stress Echo (optional)*

- Stress echo is a non-invasive, dynamic evaluation of myocardial structure and its function under an external stress (exercise or pharmacology)
- 12 Ready to use templates (max 8 stages * 6 views) Editable
- User definable template
- Re-arrange & Select default template
- 8 View names available
- 9 Stage names are available (can add user defined stage name)
- One Touch Shuffle (Stage / View)
- Touch & Compare any view of stage
- Systole only review

4.7. Multi-angle M mode (optional)*

- Sample on moving tissue from multi-angle
- Present wall motion spectrum based on tissue moving

5. Imaging modes

5.1. 2D Imaging

- Pre-defined ATGC (adaptive temporal gain compensation) curves optimized for consistently excellent imaging
- Display format: Single, Dual, Quad
- B/M acoustic output: 10%-100
- Up to 8 focus zone adjustable
- Reverse function: on/off
- 2D optimization: on/off
- Centerline: on/off
- L/R flip and U/D flip: on/off
- VFusion: ≥7steps
- VSpeckle: ≥13steps
- Harmonic imaging both tissue harmonic and phase inversion
- Cine loop image review
- Selectable 2D line density
- Dual imaging with independent Cine loop
- 256(8 bit) gray level
- 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: 30-280 db
- VSharpen to enhance edge contrast: ≥8steps
- Smooth to improve spatial resolution: ≥11steps
- Gray Map: ≥32types
- Tint Map: ≥24types
- TGC: 6 slides on control panel
- TI heat index: TIB, TIS, TIC
- Rotation: 0°, 90°, 180°, 270°
- Zoom (up to 10×)

5.2. 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

5.3. M mode

- Selectable sweeping rates: ≥ 10steps
- Selectable display format prospective or retrospective (V1/3, V1/2, V2/3, H1/2, H3/4, full screen)
- 256 gray levels
- Acoustic output: 10%-100%
- Gray filter: ≥ 7steps
- Dynamic range: 108db-128db, 2db/step
- Vsharpen: ≥ 6steps
- Gray Map: ≥ 32types
- Tint Map: ≥ 24types

- Gain: 0-100%
- Color M mode (optional)*
- MultiAngle (optional)*

5.4. Color Doppler mode

- Available on all imaging 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
- Automatically adapts transmit and receive bandwidth processing based on the color box position
- Cine-loop review with full playback control
- Steering on linear array transducers
- FULL screen imaging to larger image size
- L/R flip and U/D flip: on/off
- Frequency: ≥4steps, depend on probes
- Line density: ≥7 steps
- Smooth: ≥7steps
- Color Map: ≥33types
- Persistence: ≥20 steps
- Invert: on/off
- Baseline: 0-100%
- Color level: ≥16 steps
- Acoustic power: 5-100%
- Color gain: 0-100%
- Adjustable region of interest
- Zoom

5.5. Power Doppler mode

- High-sensitive mode for small vessel visualization
- Available on all transducers
- Selectable line density, flash reduction, persistence, maps, frequency, PRF, wall filter, packet size, color level, sensitivity, focus position, acoustic power, and smooth
- Cine-loop review Display format: Single, Dual, Quad
- Color maps: ≥ 24 types
- Smooth: ≥7steps
- Color levels: ≥11 steps
- Persistence: ≥20 steps
- Adjustable region of interest

5.6. Pulsed Wave (PW) Doppler

- Available on all imaging transducers
- Selectable gray filter, dynamic range, frequency, PRF, wall filter, baseline, angel correct, sample volume
- Ultra-high resolution spectral FFT rate
- Normal, invert display around horizontal zero line
- Dynamic range: 108db-128db
- Angle correct: -80°~ 80°
- Invert: on/off
- Baseline: 5%-95%
- Sample volume: 0.5mm-10mm
- Selectable display format prospective or retrospective (V1/3, V1/2, V2/3, H1/2, H3/4, full screen)
- Gray map: ≥13types
- Tint map: ≥11types
- Spectrum Optimize: ≥28steps
- Gray filter: ≥6steps
- PW acoustic output: 5%-100%
- Audio Volume: 0~20

- Trace direction: above, below, both
- Trace type: max, mean, both
- Cardiac cycle: 1-5
- Selectable grayscale curve for optimal display
- Selectable low frequency signal filtering with adjustable wall filter settings
- Selectable chroma colorization maps
- Auto function to optimize spectral Doppler display
- Digitally enhanced stereo Output
- Post-processing in frozen mode includes map, baseline, invert and chroma
- Simultaneous or duplex mode of operation

5.7. Continuous Wave Doppler (CW) (optional) *

- Cardiac sector array transducer only
- Selectable gray filter, dynamic range, frequency, PRF, wall filter, baseline, angel correct
- Dynamic range: 108db-128db
- Angle correct: -80°~ 80°
- Invert: on/off
- Baseline: 5%-95%
- Selectable display format prospective or retrospective (V1/3, V1/2, V2/3, H1/2, H3/4, full screen)
- Gray map: ≥13types
- Tint map: ≥11types
- Spectrum Optimize: ≥28steps
- Gray filter: ≥6steps
- PW acoustic output: 5%-100%
- Audio Volume: 0~20

5.8. TView

- Expand view of scanning
- Available on all transducers

5.9. PView (optional)*

- Real time extended field of view composite imaging
- Ability to back up and realign the image during acquisition
- Full zoom, cine-loop review and image rotation capabilities
- Available on all transducers

5.10. 3D/4D

- Category: Face, Spine, Brain, Heart, Hi speed, Lip & Plate, Limbs, Custom
- Display format: Single, Double, Triplex, Quad
- Flip: 0°, 90°, 180°, 270°
- View: Front/Back, Back/Front；Left/Right, Right/Left； Up/Down, Down/Up
- Selectable rendering approaches: HQ Surface, HQ Grad, HQ Silhouette, Surf Texture, Surf Smooth, Grad Light, Surf HDR, Trans Max, X-ray, Trans Min, Light
- Render Type: Gray, Graylnv
- Threshold: 0-255
- Transparency: 0.1-2, 0.1steps
- Rotation Direction: X, Y, Z
- Tint maps: ≥24Types
- Gray maps: ≥23Types
- 3D Map: ≥ 10types
- 2D VSpeckle: ≥ 3types

- 3D VSpeckle: ≥ 3types

5.10.1. MCUT (optional)*

- Slice Number: 2×2, 3×3, 4×4, 5×5
- Max Slice Number: 25
- Gray Map: ≥32types
- Tint Map: ≥24types
- Cut plane: A, B, C
- Volume Angle: 15°~ 85°
- Quality: Low, Mid, Good, High
- Interval: 1mm-20mm, 0.5mm/step

5.10.2. Free view (optional)*

- Direction: Left, Right, Up, Down
- Rotation Direction: X, Y, Z
- Active line: 1, 2, 3
- Slice thickness: 0mm-20mm, 1mm/step
- Route: Curve, Straight line
- Display format: Single, Double, Quad
- Reference image: A, B, C
- Mix: 10-90, 5/step
- Threshold: 256steps, 1/step
- Transparency: 0.1-2.0, 0.1/step

5.10.3. Magic cut (optional) *

- Erase mode: inside lasso, outside lasso, big circle, small circle
- Erase type: trace, rectangle, ellipse
- Rotation direction: X, Y, Z

5.10.4. VOCAL (optional) *

- Vocal layers: 8, 12,16,20,24,28,32
- Display format： single, Quad
- Image reference: A, B, C

5.10.5. Niche view (optional) *

- Model type: upper, lower
- Display format: single, quad
- Rotation direction: X, Y, Z
- Image reference: A, B, C, N

5.11. Elastography imaging (EI) (optional) *

- Available on linear transducers and convex probe
- 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
- Precision: 0, 1, 2, 3, 4
- Resolution: 0, 1, 2, 3, 4
- Dynamic range: 0-10
- Transparency: 0-12
- Smooth: 0-6
- Line density: 0-4
- Map: EI0
- Display format: Single, Dual, Quad

6. System Feature

6.1. 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
  -Quad display in 3D/4D

-Max 25 slice images display in 3D/4D

- Time line display
- Independent dual 2D/PW

6.2. Display annotation

- Institution/hospital name
- Date: 3 types selectable, Year-Month-Day, Day-Month-Year, Month-Day-Year
- Time: 2 types selectable, 24hours or 12 hours
- Operator identification
- Patient name, first, last
- Patient identification: 30 characters
- Gestational age from LMP/ BBT/ DOC/ IVF
- 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

6.3. Cine-loop

- Acquisition, storage in memory and display of up to 1500 seconds long of 2D, color and PW/CW images for review
- Supports custom start and end frames
- Support manual playback frame by frame, or automatic playback, and the playback speed is adjustable
- Compare live imaging with stored imaging

6.4. Quick save feature

- The system provides quick save function through USB stick during or after exam
- Configurable saving file format, VRD (V Raw Data), DICOM, JPEG, BMP, PNG, MP4 and AVI

6.5. Physio

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

6.6. Archive

- Patient data input which patient ID, name, birth date, sex, Perf. Physician, Ref. Physician, 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
- Export patient data into outside medias

6.7. Report

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

6.8. Connectivity

- Standard connectivity features
  -Connect to the local printer through the USB port or to the network printer via ethernet port or wireless for image printing
  -Page report print
  -Image export to removable media (USB stick)
- Network Transmission
  -Email
  -FTP service
  -Cloud service
  -DICOM export and storage, printer, worklist (optional)*
- Data storage format Includes VRD, DICOM, PNG, AVI
  -VRD and DICOM images stored in disc can be recalled on the system
  -JPEG, BMP, PNG and AVI images can be played on normal computers
- Mobile data transfer solution by
  -Blue tooth, need bluetooth adapter (optional)*
  -Email
  -VCloud (Cloud service)
- Support for standard DVD media (optional)*

6.9. 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

6.10. Safety Conformance

- This device is tested to meet all applicable requirements in relevant
- Conformity to Standards:

✧ IEC 60601-1: 2005/A1: 2012+A2: 2020 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance

- IEC 60601-1-2: 2014/A1: 2020 Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral Standard: Electromagnetic disturbances - Requirements and tests
- IEC 60601-1-6: 2010/A1: 2013+A2: 2020 Medical electrical equipment - Part 1-6: General requirements for basic safety and essential performance - Collateral standard: Usability
- IEC 60601-2-37: 2007/A1: 2015 Medical electrical equipment - Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment
- -IEC 61157: 2007/A1: 2013 Standard means for the reporting of the acoustic output of medical diagnostic ultrasonic equipment
- ISO 10993-1: 2018 Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process
- IEC 62304: 2006/A1: 2015 Medical device software - Software life-cycle processes
- IEC 62366-1: 2015/A1: 2020 Medical devices - Application of usability engineering to medical devices
- WEEE according to 2012/19/EU
- RoHS according to 2011/65/EU

7. Measurement and Analysis

7.1. Measurement in different modes

7.1.1. Generic Measurement in 2D mode

- Depth
- Distance
- Perimeter
  -Length and width method
  -Ellipse method
  -Polygon method
  -Spline method
  -Tracing method
- Area
  -Length and width method
  -Ellipse method
  -Polygon method
  -Spline method
  -Tracing method
- Angle
  -PolyLine
  -TwoLine
- Stenosis
  -Diameter method
  -Square meter method
- A and B ratio
  -Diameter ratio
  -Square meter ratio

7.1.2. Generic Measurement in M mode

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

7.1.3. Generic Measurement in PW mode

- 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)
- Mean Vel (Max Mode)
- Mean Vel (Mean Mode)
- PI (Pulsation Index)
- RI (Resistance Index)
- PS and ED ratio
- ED and PS ratio
- A and B ratio (A/B ratio)
  -Speed ratio
  -Time ratio
  -Acceleration ratio
- SV (Stroke Volume)
- Heart rate

7.2. Measurement in different applications

7.2.1. Abdominal Measurement

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

7.2.2. Small Part Measurement

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

7.2.3. Vessel Measurement

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

7.2.4. Gynecology Measurement

- Uterus and Pelvis
- Follicle

7.2.5. Obstetrics Measurement

- OB Early
- OB Mid
- OB Late
- Fetal Heart

7.2.6. Pediatric Measurement

- Neonatal Head
- Neonatal Abdomen
- Pediatric Abdomen
- Pediatric Hip

7.2.7. Urology Measurement

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

7.2.8. Cardiac Measurement

- General
- LV
- MV

- AO
- AV
- LA
- RV
- TV
- PV
- RA
- System

7.3. Auto Measurement

7.3.1. VAim OB measurement (optional) *

- VAim OB is a tool for fetal growth calculation, just one touch to activate the measurement items (BPD, OFD, HC, AC, FL, HL) and get the results, helps to make clinical decisions quickly and confidently, improving the speed and ease of exams
- The results will be added into the worksheet and report automatically

7.3.2. VAim Hip measurement (Optional) *

- VAim Hip is an intelligent solution in the assessment of DDH (Developmental Dysplasia of Hip) with one simple touch
- Based on “Ped HIP” application

7.3.3. VAim Follicle (2D) measurement (optional) *

- A tool for follicle calculation, one touch to get the follicle status, dedicated for women’s reproductive health
- Choose left or right follicle
- Automatically identity all the follicles with different colors and calculate follicle volume and diameter

7.3.4. Auto Follicle(2D) (Optional) *

- Just click on the area of follicle in B mode, the area of this follicle will be reported automatically
- Report the area of different follicle in the volume data automatically

7.3.5. 3D Auto Follicle (optional) *

- Click the "Start" button on the touch screen, the follicles will be automatically identified and marked with different colors
- Report the area of different follicle in the volume data automatically

7.3.6. Auto IMT (Intima-Media Thickness) (optional) *

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

7.3.7. Live IMT measurement (optional) *

- Real-time automatically display IMT items with the different ROI positions
- The IMT items include: max, min, average, SD, points (how many points are used for the result), size of ROI
- Available in carotid application

7.3.8. Auto NT (Nuchal Translucency) (optional)*

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

7.3.9. Auto IT (Intracranial translucency) (Optional) *

- Support Auto IT (Intracranial translucency) measurement
- Draw the ROI and the system analyses and displays the result

7.3.10. Smart 3D Volume Measurement (Optional)*

- Trace the margin of the irregular circle in different slices of volume data in irregular shape
- Automatically report the volume of the irregular object

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