

Vetus 9 Series

Veterinary Diagnostic Ultrasound System

Specification



1 System Overview

Powered by the most revolutionary ZONE Sonography Technology, the new ZST+ platform brings the ultrasound image quality to a higher level by zone acquisition and channel data processing.

1.1 Advantages of ZST+ platform

- Advanced Acoustic Acquisition
- Dynamic Pixel Focusing (DPF)
- Sound Speed Compensation (SSC)
- Total Recall Imaging (TRI)
- Powerful Processing Architecture
- Enhanced Channel Data Processing
- ZONE Sonography Technology

1.2 Application

- Abdomen
- Cardiology
- Reproduction
- Small Parts
- Musculoskeletal
- Ocular

1.3 Transducer types

- Curved array transducer
- Linear array transducer
- Phased array transducer

1.4 Features

- THI (Tissue Harmonic Imaging) and PSH (Phase Shift Harmonic Imaging)
- iBeam (Spatial Compound Imaging)
- iClear (Speckle Suppression Imaging)
- iClear+

- iTouch (Auto Image Optimization)
- Echo Boost
- Zoom/iZoom (Full Screen Zoom)
- FCI (Frequency Compound Imaging)
- B steer
- ExFOV (Extended Field of View)
- HD Scope
- HR Flow
- Glazing Flow
- B-Mode
- M-Mode/Color M-mode
- Color Doppler Imaging
- Power Doppler Imaging/Directional PDI
- Pulsed Wave Doppler
- Continuous Wave Doppler
- Free Xros M (Anatomical M-mode)
- Free Xros CM (Curved Anatomical M-mode)
- iScape View (Panoramic Imaging)
- TDI (Include TVI, TVD, TVM, TEI)
- TDI QA (TDI Quantitative Analysis)
- UWN+ (Ultra Wideband Non-linear Plus) Contrast Imaging
- Contrast Imaging QA (Quantitative Analysis)
- LVO (Left Ventricular Opacification)
- Low MI Contrast
- Natural Touch Elastography Imaging
- STE Imaging (Sound Touch Elastography)
- STQ Imaging (Sound Touch Quantification)
- High frame rate STE
- Stress Echo

- TTQA (Tissue Tracking Quantitative Analysis)
- Smart 3D (Freehand 3D)
- iLive
- DICOM
- Clinical Measurement Package
- Auto EF
- Smart Trace
- iNeedle (Needle Visualization Enhancement)
- ECG function
- Smart VTI
- Ultrasound gel warmer
- Built-in wireless adapter
- Replaceable battery assembly
- Central brake
- Wipes box bracket
- DVR
- Ambient light
- iStorage
- iWorks (Auto Workflow Protocol)
- MedSight
- MedTouch
- Touch gestures
- Anti-virus software: McAfee, Windows Defender
- iVocal
- u-Link (Only for CE region)
- Remote Control

1.5 Language support

- Software: English, Chinese, German, Spanish, French, Italian, Portuguese, Russian, Czech, Polish, Turkish, Finnish, Danish, Icelandic, Norwegian, Swedish, Hungarian, Serbian, Dutch, Lithuanian, Greek, Thai

- Keyboard input: English, Chinese, German, Spanish, French, Italian, Portuguese, Russian, Czech, Polish, Icelandic, Norwegian, Swedish, Finnish, Turkish, Danish, Hungarian, Serbian
- Small keyboard: English, Germany, Russian, Spanish, French

2 Physical Specification

2.1 Dimension and weight

- The control panel and the monitor are in the lowest position.
- Configured with floating support arm and 23.8-inch monitor
 - Depth: 1020 ± 20 mm;
 - Width: 550 ± 10 mm;
 - Height: 1000 ± 20 mm
- Weight: $105\text{kg} \pm 4\text{kg}$ (net weight, standard configuration but not including the probe)

2.2 Audio speakers

- Stereo audio speakers

2.3 Dual-wing floating support arm

- Rotate angle: 90 ± 5 degrees (to the left); 150 ± 5 degrees (to the right)
- Tilt angle (when positioned vertically): 20 ± 5 degrees (backward); 85 ± 5 degrees (forward)
- From front to back: 300 ± 20 mm
- From bottom to top: 150 ± 20 mm

2.4 Wheels

- Diameter: 125 mm

- When the central brake is configured: Central brake for total lock and break
- When the central brake is not configured: 3 castors for total lock and break, and 1 castor for direction lock and break.

2.5 Transducer port and holder

- Transducer ports with dust prevention: 5 active ports
- Support hot plug with active indicator lights
- Transducer holder: 7 (one for Hockey probe)

2.6 Electrical power

- Voltage: 100-240V~
- Frequency: 50/60 Hz
- Power consumption: 650 VA

2.7 Operating Environment

- Ambient temperature: 0-40°C
- Relative humidity: 20%-85% (no condensation)
- Atmospheric pressure: 700 hPa-1060 hPa

2.8 Storage & Transportation Environment

- Ambient temperature: -20-55 °C
- Relative humidity: 20%-95% (no condensation)
- Atmospheric pressure: 700 hPa-1060 hPa

2.9 System Noise

- ≤26dB @25°C

3 User Interface

3.1 Floating control panel

- Brightness adjustable for the backlight of the whole control panel
- Full-sized, backlit QWERTY keyboard
- iConsole: intelligent control panel for clinical-exam specific layout and adaptive adjustment: 6 programmable E-ink keys for dynamic display of user-defined functions
- Automatic light indication for residual battery power
- Full-space floating control panel adjustment and can be fixed at any position (when centered in the trackball):
 - Left/right rotation: 180±5 degrees (90 degree for both left and right)
 - Left/right adjustment: 1100mm±50mm (550mm for both left and right)
 - Down/up adjustment: 300±20mm
 - Front/back adjustment: 350±20mm

3.2 Monitor

- 23.8-inch bezel-less LED monitor with high resolution
- Resolution: 1920x1080
- Viewing angle: 178 degrees
- Digital on screen display of brightness and contrast controls
- Automatic adjustment of monitor light with the changing environment
- Automatic LED brightness

- Tilt/Rotate independent adjustment
- Tilt angle range: 105 degrees
- Rotate angle range: 240 degrees

3.3 Touch screen

- 15.6-inch high sensitivity anti-glare color touch screen
- Resolution: 1920*1080
- Digital brightness and contrast adjustment through preset
- Angle adjustable range: 40 degrees
- Viewing angle: 170 degrees

3.4 Support touch screen gestures

- Support either hand writing or with gloves on
- Editable buttons: long press to add, delete or move buttons
- Moveable 3D/4D tabs
- Clinical scenario-based 3D/4D user interface
- Digital TGC
- Short-cut switch of latest used probe & exams

3.5 Touch gestures

- Swipe down/up: display/remove projected image on touch screen
- Swipe horizontally: page up/down or review images/cine loops one by one
- Swipe from left edge to right: display hidden menu on projected image.
- Image parameter adjustment.
- Measurement on projected image on touch screen
- Zoom in/out the projected image on touch screen

- Rotate or erase on projected 3D image on touch screen
- 8 user defined gestures using two fingers for more functions, such as freeze, print, activate specific imaging modes, measurements, and some other special functions.

3.6 System boot-up

- Boot-up from shut-down: <30 sec
- Boot-up from stand-by: <5 sec
- Shut-down: <30 sec

3.7 Comments

- Supports text input and arrow
- Voice annotation: record voice as annotation for images and cine
- Support freehand marking on touch screen
- Adjustable text size and arrow size
- Supports home position
- Covers various application
- User customizable

3.8 Bodymark

- More than 160 bodymarks for versatile application
- User customizable

4 Imaging Parameters

4.1 B-mode

- Display formats:
 - Single(B)
 - Dual (B+B), support by B/ M/ Color/ Power/ PW/ CW/ Color M mode
 - Quad (4B), support by B/ Color/ Power
- iClear/ iClear+: Off, 7 steps

- iBeam: Off, 3 steps
- iTouch: on/off
- FCI (Frequency Compound Imaging)
- Dual Live: On/off
- Image quality: Pen/Gen/Res/HPen/HGen/HRes/HGen-FFR/HRes-FFR (dependent on transducer)
- B steer: 5 levels, available on linear transducers
- ExFOV: off, 1-2 (dependent on transducer)
- Depth: 30 levels, 1.5–40 cm
- Frame rate (max): 1701 f/s
- Acoustic output power: dependent on transducer
- TGC/LGC: 8 segments on touch screen
- Dynamic range: 30-260 (dependent on transducer)
- Gain: 0-100, 1/step
- FOV: continuously adjustable
- Line density: L/M/H/UH
- Persistence: 0-7 levels
- Horizontal Scale: on/off
- L/R flip and U/D flip: on/off
- Rotation: 0°, 90°, 180°, 270°
- TSI: general/muscle/fluid/fat
- Gray Map: 8 types
- Tint map: off, 8 types
- Echo Boost: On/Off
- Smooth: 0-6 levels
- HD Scope: off, 1-3 levels
- SSC (Sound Speed Compensation): On/Off
- Dehaze: 0-30 levels
- V 1:1: on/off (available on linear probe under dual-split mode)
- ExtImage: On/Off
- Auto Merge: On/Off

- ZoneVue
- Edge enhance: 0-6, 1/step
- H Scale: On/Off

4.2 THI and PSH

- Patent PSH technology, obtains purer harmonic, better contrast resolution, higher SNR, exceptional high frequency harmonic
- iClear available
- Image quality: HPen/HGen/HRes or HPen/HPen-FFR/HGen/HRes/HRes-FFR (depends on transducers)
- Echo Boost: On/Off

4.3 M-mode

- Display formats: V2:3, V3:2, V3:1, H2:3, Full (V: vertical, H: horizontal)
- Color M-mode available
- Acoustic output power: same as B
- Depth: same as B
- Dynamic range: 30-180, 5/step
- Gain: 0-100, 1/step
- M sweep speed: 6 steps
- M soften: 0-4, 1/ step
- Tint map: off, 8 types
- Gray Map: 8 types
- Edge enhancement: 0-3, 1/ step

4.4 Color Doppler Imaging

- Dual live: On/Off
- HR Flow: High Resolution Flow provides better image quality and sensitivity
- Image quality: Pen/Gen/Res (color), 1 level (HR Flow)
- Velocity: 1.0–129.4 cm/s

- Steer: available on linear transducer
- Max frame rate: 790 f/s
- Acoustic output power: same as B mode
- Gain: 0-100, 2/step
- ROI size/position: adjustable
- Scale: max. 30 steps
- Baseline: -8 – 8, 1/step
- Wall filter: 8 steps
- PRF: 0.1-18.9 kHz
- Packet size: 0-3, 1/ step
- Flow state: L/M/H
- Smooth: 0-6, 1/ step
- B/C align: On/Off
- Priority: 0%-100%, 1%/step
- Color map: V0-V10; VV0-VV9
- Invert: On/Off
- Auto Invert: On/Off
- Persistence: 0-6, 1/ step
- Velocity tag: On/Off
- Line density: L/M/H/UH
- iTouch: on/off
- Glazing Flow: On/Off, L/M/H

4.5 Power Doppler Imaging

- Dual live: On/Off
- HR Flow: High Resolution Flow provides better image quality and sensitivity
- Support directional power Doppler
- Image quality: Pen/Gen/Res (Power), 1 level (HR Flow)
- Acoustic output power: same as B
- Dynamic range: 10-70, 5/step
- Gain: 0-100, 2/step
- ROI size/position: adjustable
- Steer: available on linear transducers)

- Scale: max. 30 steps
- Wall filter: 8 steps
- Packet size: 0-3, 1/ step
- Flow state: L/M/H
- Smooth: 0-6, 1/ step
- B/C align: On/Off
- Priority: 0%-100%, 1%/step
- Color map: 4 types
- Directional color map: 4 types
- Persistence: 0-6, 1/step
- Line density: L/M/H/UH
- Invert: On/Off
- iTouch: On/Off
- Glazing Flow: On/Off, L/M/H

4.6 PW/CW Mode

- Display formats: V2:3, V3:2, V3:1, H2:3, Full, Duplex/Triplex (PW only) (V: vertical, H: horizontal)
- Image quality: Pen/Gen/Res
- PW velocity: max. 445.60 cm/s, min. 0.01 cm/s
- CW velocity: max. 2054 cm/s, min. 0.01 cm/s
- Sample volume size: 0.5-30mm (PW only)
- Sample gate depth: continuously adjustable
- Baseline: 9 steps
- PW Steer: available on linear transducer
- Volume: 0%-100%, 2%/step
- PW PRF: 0.7-29.8 kHz
- CW PRF: 0.2-104.0 kHz
- Gain: 0-100, 2/step
- Dynamic range: 24-72, 2/step
- Sweep speed: 6 steps
- Wall Filter: 0~9 steps
- Invert: On/Off
- Auto invert: On/Off

- Angle correction: -89~89 degrees, 1/step
- Quick angle: 0, -60, 60 degrees
- Gray map: 10 types
- Tint map: Off; 8 types
- Time/frequency resolution: 0-6, 1/ step
- HPRF: On/Off
- Auto calc: On/Off
- Auto calc cycle: 1, 2, 3, 4, 5
- Auto Calc Loop
- Trace Sensitivity: 0-5, 1/step
- Trace Smooth: Off, 1-4, 1/step
- Trace area: Above, Below, All

4.7 Free Xros M

- Display formats: V2:3, V3:2, V3:1, H2:3 (V: vertical, H: horizontal)
- Color Free Xros M available
- Up to 3 lines
- Display all lines
- Sweep speed: 6 steps
- M Tint map: Off, 8 types
- Gray Map: 8 types

4.8 Free Xros CM

- Only available in TDI mode
- Display formats: V2:3, V3:2, V3:1, H2:3 (V: vertical, H: horizontal)
- Sweep speed: 6 steps
- Tint map: Off; 8 types
- Gray Map: 8 types
- Edit, Undo, Delete function for curved line

4.9 iBeam

- Spatial compound imaging
- Off, 1-3, 1/step

4.10 iClear

- Speckle suppression imaging
- Available on B, smart 3D mode

4.11 iTouch

- Auto image optimization
- B-mode: gain, TGC, dehaze
- Color: gain, color box position
- Power: gain
- PW: gain, scale, PRF, WF, SV size, SV position, steering angle
- Contrast imaging: gain

4.12 Echo Boost

- Available in cardiac exam mode when using a phased array probe
- Improve the homogeneity through the whole field of view
- Better noise control in cardiac chambers and muscles

4.13 Zoom

- Zoom: Spot zoom (write zoom), Pan zoom (read zoom) 0.8x-10x
- iZoom: convertible 3 steps; normal image, zoom standard area, zoom only image area

4.14 QSave

- Quickly save image parameter setting after image adjustment done
- Support Save, Create, Restore
- IP (Image Process) Preset Manager
- Support save, create, restore or delete IPs
- Quickly switch to different exam modes without returning to B mode
- A default set of image parameters under each IP are provided for different exam modes

- Only image parameters are switched while measurements, comments, and bodymarks remain the same

4.15 Tissue Velocity/Energy Imaging (included in TDI option)

- Dual live: side by side displays B and B+TVI
- Max frame rate: 3049 f/s
- PRF: 0.4-14.9 kHz
- Acoustic output power: same as B
- Gain: 0-100, 2/step
- Dynamic range: 10-70, 5/step (TEI only)
- ROI size/position: adjustable
- Scale: max. 30 steps
- Baseline: -8 – 8, 1/step (TVI only)
- Wall filter: 8 steps
- Packet size: 0-3, 1/step
- Tissue state: L/M/H
- Smooth: 0-6, 1/ step
- B/C align: On/Off
- Priority: 0%-100%, 1%/step
- Color map: 10 types (TVI), 8 types (TEI)
- Invert: On/Off
- Persistence: 0-6, 1/ step
- Velocity tag: On/Off (TVI only)
- Line density: L/M/H/UH
- Image quality: 2 levels

4.16 Tissue Velocity Doppler (included in TDI option)

- Display formats: V2:3, V3:2, V3:1, H2:3, Full, Duplex/Triplex (V: vertical, H: horizontal)
- Sample volume size: same as PW
- Sample gate depth: adjustable

- Sample volume depth: continuously adjustable
- Scale: 30 levels
- Volume: 0%-100%, 2%/step
- PRF: 0.7-23.1 kHz
- Gain: 0-100, 2/step
- Baseline: 9 steps
- Dynamic range: 24-72, 2/step
- Sweep speed: 6 steps
- Wall Filter: 10 steps
- Invert: On/Off
- Angle correction: -89-89 degrees, 1/step
- Quick angle: 0, -60, 60 degrees
- Gray map: 10 types
- Tint map: Off; 8 types
- Image quality: 2 levels
- Time/frequency resolution: 0-6, 1/step

4.17 Tissue Velocity Motion (included in TDI option)

- Display formats: V2:3, V3:2, V 3:1, H2:3, Full (V: vertical, H: horizontal)
- Acoustic output power: same as B
- Gain: 0-100, 2/step
- M sweep speed: 6 steps
- Smooth: 0-6, 1/ step
- Color Map: 10 types
- Image quality: 2 levels
- Persistence: 0-6, 1/ step
- Packet size: 0-3, 1/ step
- Priority: 0%-100%, 1%/step
- Velocity tag: On/Off
- Tissue state: L/M/H

4.18 Smart 3D

- Acquisition preparation:
 - 3D Scenario setting: Routine

- Acquisition Methods:
Rocked, Linear
- Reset VOI: On/Off
- Flip VOI: On/Off
- Angle: 10-80°
- Distance: 10-200mm
- Acquiring Time: 1.0s-20.0s
- VR:
 - 3D Scenario: Routine (Surf., iLive Gen., iLive Transp., Skeleton)
 - Reset: All, Orientation, Curve
 - VOI: On/Off/Fixed
 - Active quadrant: A, B, C, VR
 - VR orientation: 0°, 90°, 180°, 270°
 - Flip: flip VR
 - Sync: synchronize VR with selected plane
 - Orientation Assist: On/Off
 - Threshold: 0-100%, 1%/step
 - Opacity: 0-100%, 5%/step
 - Brightness: 0-100%, 2%/step
 - Contrast: 0-100%, 2%/step
 - Smooth: 0-10, 1/ step
 - Depth VR:
Off/Black/Cyan/Blue/ Rose
 - Tint: off; 8 types
 - Degree: 10-80°
 - Distance: 10-200mm
- MPR:
 - Active quadrant: A, B, C
 - Gray Map: 1-8
 - Brightness: 0-100%, 2%/step
 - Contrast: 0-100%, 2%/step
 - iClear: Off; 7 types
 - Tint: Off; 8 types
 - Thickness: 0-30mm
- Adv.:
 - Direction: Up/Down, Left/Right, Front/Back, Down/Up, Right/Left, Back/Front
 - VR Refine: Off; 7 steps
 - Surface enhance: 0-7, 1/step
 - MagiClean:
Off/Low/Mid/High/Max
 - Inversion: On/Off
 - A3:1: On/Off
 - Move light: On/Off
 - Degree: 10-80°
 - Distance: 10-200mm
 - Main render: Surface, Max, Min, X Ray, iLive
 - Sub render: Surface, Max, Min, X Ray
 - Mix: Set the mix ratio of the two render modes
- Tool
 - Edit:
 - Rubber: On/Off
 - Eraser Diameter: 8-80, 1/step
 - Cut (area selection): Polygon, Contour, Rectangle, Line
 - Undo: Undo, Undo All
- 3D Layout:
 - 3Slice
 - Active Quadrant: A, B, C, 3Slice
- Auto rotation:
 - Position: Set Start/Set End
 - Direction: Left/Right, Up/Down
 - Step: 1-15°
 - Quick Angle: 30-180°
 - Rotation control: play, single loop, loop
 - Save AVI to USB

4.19 iScape View

- Acquisition method: B and Power
- Supports speed indicator
- Actual size: On/Off
- Fit size: On/Off
- Ruler: On/Off
- Tint map: Off; 8 types
- Rotation: 0~355 degrees, 5/step

4.20 iNeedle

- Needle visualization enhancement
- Needle direction: Auto, Left, Right
- B/iNeedle: On/Off

4.21 Smart VTI

- Probes under cardiac exams
- Acquisition method: single window display in 2D real-time/2D+PW real-time/2D+PW frozen mode
- Edit VTI
- LVOT Diam
- Save VTI
- Graph: On/off
- Trace Sensitivity: -3~3, 1/step

4.22 UWN+ Contrast Imaging

- UWN+ (Ultra Wideband Non-linear Plus) contrast imaging technology, which provides exceptional contrast agent detecting capability, not only extracts second harmonic, but also non-linear fundamental signals
- Micro Flow Enhancement (MFE) available
- Timer1: On/Off
- Timer2: On/Off

- Pro capture: captures prospective image less than 480s preset table
- Retro capture: captures retrospective image less than 120s preset table
- Dual live: side by side displays tissue image and contrast image
- MFE: On/Off
- MFE period: 0.1s, 0.2s, 0.4s, 0.6s, 0.8s, 1.0s, MAX
- Destruct: instantly destroy contrast bubbles
- Destruct AP: -30~0dB, 0.3/step
- Destruct time: 500-2000 ms
- iClear: Off; 7 steps
- Mix: mix contrast image with tissue image
- Mix map: 7 types, available when Mix mode is active
- Persistence: 8 steps
- Dynamic range: same as B mode
- Gray map: 8 types
- Tint map: Off; 8 types
- Supports U/D Flip and L/R Flip
- Rotation: same as B
- CEUS Position: On/Off
- Line density: L/M/H/UH
- FOV: On/Off
- FOV size/position: continuously adjustable
- ExFov: Off, 1-2, 1/step
- Gain: 0-100, 1/step
- iTouch: On/Off, -8~8, 2/step
- Image quality: 3 levels
- Smooth: 0-6, 1/step
- Enhance: On/Off
- Markline: On/Off
- LGC: 8 points

*The system is designed for compatibility with commercially available ultrasound contrast agents. Because the availability of these agents is subject to government regulation and approval, product features intended for use with these agents may not be commercially marketed nor made available before the contrast agent is cleared for use. Contrast related product features are enabled only on systems for delivery to an authorized country or region of use. Mindray Animal Medical systems makes no claims concerning the safety or effectiveness of contrast agents.

4.23 Contrast Imaging QA

- Support Time-Intensity Curve analysis
- Table display: display data in table
- Up to 8 ROIs
- Delete all
- Delete current
- Copy ROI
- Fit curve
- Raw curve
- Motion tracking: Reduce the effect of tissue movement
- X scale: 1-5, 1/step
- Auto play: Stop, X1/10, X1/5, X1/4, X1/3, X1/2, X1, X2, X3
- ROI Type: Trace ROI, Ellipse ROI
- Export: export current data as CSV format file

4.24 LVO

- Only available in LVO exam mode
- Dedicated left ventricle contrast imaging tool

4.25 Low MI Contrast Imaging

- Only available in cardiac exam mode
- Enhances echo reflection by using contrast agent to perform myocardial analysis based on echocardiography technique

4.26 STE Imaging (Sound Touch Elastography Imaging)

- Display Format: V1:1, H1:1, Full
- Invert: On/Off
- HQ Elasto: On/Off
- E Quality: Pen, Gen, Res
- Elas.Metric: E, Cs, G
- Scale: 30 levels
- Opacity: 0-5, 1/step
- Map: 3 types
- ROI Width/Height: continuously random adjustable
- ROI Center Depth: continuously adjustable
- Depth: same as B mode
- iLayering: On/Off
- Filter: 0, 1
- RLB View: On/Off
- M-STB Index: On/Off
- M-STB Sensibility: 0~4, 1/step
- Smooth: 0~2, 1/step
- Persistence: 0~2, 1/step
- RLB Map: On/Off, RLB, RLB&E, RLB&B&E
- Map Position: 0%~100%, 5%/step
- E bar: Mean, Max, Min, SD
- E Avg: Off, 8 levels
- Select/Bad: On/Off
- Fixed ROI: On/Off
- Save All: On/Off
- Lesion: Off, 1-10

4.27 Natural Touch Elastography

- Support strain, strain ratio and strain histogram measurement
- Unique shell analysis function
- Stress compensation technology reduces deeper tissue artifacts, obtain more uniform stress throughout whole field
- Stress indicator: supports frame by frame stress indication.
- Map: 6 types
- Smooth: 0-5, 1/ step
- Opacity: 0-5, 1/step
- ROI Width/height: continuously adjustable
- Invert: On/Off
- Display Format: V1:1, H1:1, Full
- Strain mode: 0~1, 1/step
- Dynamic Range: 0~5, 1/step
- Map Position: 0%~100%, 5%/step
- Strain Scale: 0-5, 1/step
- E Sensitivity: 0-5, 1/step

4.28 High frame rate STE

- Improve the image refresh rate and provide a smoother STE image

4.29 STQ Imaging (Sound Touch Quantification Imaging)

- ROI Adjustment: adjust the ROI fixed size
- Elas.Metric: E, Cs, G
- E bar: Mean, Max, Min, SD
- M-STB Index: On/Off
- M-STB Sensibility: 0-4, 1/step
- Filter: 0, 1
- Smooth: 0-2, 1/step
- Persistence: 0-2, 1/step
- Map Position: 0~100%, 5%/step

- Lesion: Off, 1~10
- The square height of the elasto curve represents the average value of the elasto metric for current frame.
- Scale: 0-9, 1/step
- E Avg: off, 8 levels
- HQElasto: On/Off
- Select/Bad: On/Off
- Fixed ROI: On/Off
- Save All: On/Off
- Lesion: Off, 1-10

4.30 AutoEF

- Output EDV/ESV/EF/SV/CO by Simpson method
- Activated with or without ECG
- Adjustment for the border of endocardium by single point or multi points
- Adjust Frame
- Layout: Dual/ Single
- Diastole FR
- Systole FR
- Volume curve: On/Off

4.31 TDI QA

- Dedicated quantification tool for TDI velocity, strain, strain rate analysis
- Ellipse ROI, Standard ROI
- Up to 8 of ROI
- Delete all
- Delete current
- ROI tracking: tracking ROI along with cardiac movement
- Smooth: 1-7, 1/step
- X scale: 1-5, 1/step
- Std.Height: 1.5-50 mm
- Std.Width: 1.5-50 mm
- Std.Angle: -89-90 degrees

- Export: export current data as CSV format file

4.32 TTQA

- Available on phased array probes under the cardiac mode.
- Tissue tracking quantitative analysis
- Mandatory ECG connection before TTQA cine acquisition
- Six views for analysis: ALAX, A4C, A2C, PSAXB, PSAXM, PSAXAP
- Reload: reload cine again for new study
- Edit: modify trace points
- Start tracking
- Accept & compute: start tracking myocardium movement when user accept trace result
- Display effect: 0/1; at 1, tracking in velocity vector arrow; at 0, tracking in dots
- Trace method: 3 point or manual for ALAX, A4C, A2C; manual for PSAXB, PSAXM, PSAXAP
- Bull's eye: trace result in bull's eye model
- Valve's open and close time index: MVC, MVC', AVC, AVO, MVO
- Data export: export data in CSV file
- Cycle: ECG triggered cardiac cycle recognition for analysis; adjustable
- Auto play: stop, X1/10, X1/5, X1/4, X1/3, X1/2, X1, X2, X3
- Thickness: 1-30mm, 1mm/step; adjust trace thickness
- Track point: 20-40, 1/step

- Parameter: Volume, Speed, Displacement, L Strain, L Strain R, T Strain, T Strain R, Area, R Strain, R Strain R, C Strain, C Strain R, C Rotation, C Rotation R
- Smooth: 0-4, 1/step
- Trace method: 3 point, manual
- Tracking cycles: 1, 3
- Select Cycle: select among 3 cycles when the Tracking Cycle is set to 3
- Average Cycle: On/Off
- Velocity scale: 0%-200%
- Display style: All, Endo., Myo., Epi.
- Curve Display
- Torsion & Torsion Rate Curve
- LGC adjustment
- Data Export: export current data as CSV format file

4.33 Stress Echo

- 14 factory protocols
- User-defined protocols
- ECG triggered acquisition, display, selection, comparison, evaluation and archiving of multiple cardiac loops during various stages of a stress echo examination
- Customized stages: up to 7 views per stage, and up to 12 stages per study
- View: standard views (PLAX, SAB, PSAX, SAA, A4C, A2C, ALAX), and customized views
- Image acquisition
 - R-wave trigger
 - Acquire mode: Manual ROI or full screen
 - Ability to acquire frames or clips in B-mode, M-mode, Color, PW and TDI

- Image selection
Attach the images with view annotation label PLAX, SAB, PSAX, SAA, A4C, A2C, ALAX, and customized views)
- Review
Automatically adjust to the number of images user defined
- Wall Motion Scoring
 - ASE 16 (with score 4-7), or ASE 17(with score 4-7)
 - Graphical display of scoring (Normal, Hyperkinetic, Severely Hyperkinetic, Akinetic, Dyskinetic)
- LV volume measurement
Measurement of LV Volume in all phases of cardiac cycle
- Report
Reporting for both Wall Motion Scoring and LV volume measurement

4.34 iScanHelper

- Tutorial function as a guidance to show basic scanning skill with graphic of probe position, schematic of anatomy and example clinical image
- Support broadcasting the scanning skill in multi languages

4.35 iCompare

- Allow to compare real-time ultrasound imaging to the past DICOM CT/MRI/Mammography/X-Ray/Ultrasound images without external workstation
- Helpful to easily evaluate and follow up the progression of disease, treatment effect monitoring.

4.36 DVR

- Digital video recorder, a useful tool for education and memory
- Max storage length each time: 60 min

5 Cine Review and Raw Data Processing

5.1 Cine review

- Available in all modes
- Frame by frame manual cine loop review or auto playback with variable speed
- Maximum cine memory up to 63575 frames (B storage server) or 210.65s (M storage server) (depends on the mode)
- Retrospective storage (1-120s pre-settable) and prospective storage (1-480s pre-settable)
- Frame compare: displays one cine in dual format and allows frame by frame compare side by side
- Cine compare: compare cines which are saved in same imaging mode
- Jump to first and jump to last: one keystroke go to first or last frame in the cine

5.2 Raw data processing

5.2.1 B-mode

- TGC
- Gain
- Dynamic range
- Gray map
- Tint map
- iClear
- L/R Flip
- U/D Flip

- Rotation
- iTouch
- LGC
- Dual live
- Auto Merge
- H Scale
- Echo Boost
- B/iNeedle
- Smooth
- Zoom
- Dehaze
- V1:1
- ExtImage
- Edge Enhance
- 5.2.2 M-mode
 - Gain
 - Speed
 - Dynamic Range
 - Gray Map
 - Tint Map
 - Display format
- 5.2.3 Color
 - Gain
 - Baseline
 - Smooth
 - Color map
 - Priority
 - Dual Live
 - Invert
 - Velocity tag
 - Glazing flow
- 5.2.4 PW
 - Gain
 - Baseline
 - Volume
 - Angle
 - Speed
 - Dynamic range
 - Gray map

- Tint Map
- Display format
- Invert
- WF
- T/F Res

6 Measurement/Analysis and Report*

6.1 Generic measurements

6.1.1 B-Mode

- Distance
- Ellipse
- Trace
- Spline
- Cross
- Angle (2 Lines)
- Angle (3 Points)
- Double Dist
- Trace Len
- Trace Len(Spline)
- Parallel
- Distance P-L
- IMT
- B-Profile
- B-Hist(Ellipse)
- B-Hist(Trace)
- B-Hist(Spline)
- B-Hist(Rectangle)
- Depth
- Color Vel
- Strain Hist
- Elas. Hist
- Color Vel Profile
- Elas.
- Strain
- Smart Trace
- -----
- Volume
- Volume(Ellipse)

- Volume(E+Dist.)
- Ratio(D)
- -----
- Volume
 - Volume
 - Volume(Ellipse)
 - Volume(E+Dist.)
- Ratio(A)
 - Area1
 - Area2
- Directional R
 - D1
 - D2
- RAC
 - Sag
 - XS
- Volume Flow
 - Vas Area
 - TAMEAN
 - TAMAX
- Elas. Ratio
 - A
 - B
- Strain Ratio
 - A
 - B

6.1.2 M-Mode

- HR
- HR(R-R)
- Slope
- Distance
- Time
- Velocity

6.1.3 D-Mode

- PS
- ED
- PS/ED
- Vel
- HR
- HR(R-R)

- Time
- Auto Trace
- Manual Trace
- Spline Trace
- Acceleration
- -----
- Ratio(Vel)
- Ratio(VTI)
- -----
- Volume Flow
 - Vas Area
 - TAMEAN
 - TAMAX

6.2 AutoCalc

- PS
- ED
- MD
- PPG
- TAMAX
- Vol Flow(TAMAX)
- TAMEAN
- Vol Flow(TAMEAN)
- Vas Diam
- Vas Area
- DT
- MPG
- MMPG
- VTI
- AT
- S/D
- D/S
- PI
- RI
- PV
- HR

6.3 Clinical option measurement package

Not all measurements are listed in this part; For more detailed information please refer to User Manual.

6.3.1 Abdomen

B-Mode

- Portal V Diam
- Splenic V Diam
- CrMV Diam
- CaMV Diam
- GB L
- GB H
- GB W
- GB wall th
- CBD
- Panc duct
- Panc body
- Pylorus
- Pylorus Wall
- Renal L
- Renal H
- Renal W
- Cortex
- Adrenal L
- Adrenal H
- Adrenal W
- Ureter
- Spleen H
- Hepatic Lesion1 Elas.
- Hepatic Lesion2 Elas.
- Hepatic Lesion3 Elas.
- LSM
- BL Height
- BL Depth
- BL TD
- Free Fluid
- Bladder T1
- Bladder T2
- Bladder T3
- RenalPelvis W
- LtPancreas T
- RtPancreas T
- GastricWall T
- Pylorus T
- IntestineWall T
- DuodenalWall T
- JejunalWall T
- IleumWall T
- ColonWall T
- Aorta Diam
- -----
- Renal Vol
- BL Vol
- PV/Ao
- -----
- Aorta
 - Outer Diameter
 - Inner Diameter
 - Outer Area
 - Inner Area
- Celiac Axis
 - Anterior-Posterior
 - Transverse
- CrMA
 - Anterior-Posterior
 - Transverse
- Hepatic A
 - Anterior-Posterior
 - Transverse
- Splenic A
 - Anterior-Posterior
 - Transverse
- GDA
 - Anterior-Posterior
 - Transverse
- CaMA
 - Anterior-Posterior
 - Transverse
- Liver

- L
- H
- W
- Hepatic Lesion 1
 - d1
 - d2
 - d3
- Hepatic Lesion 2
 - d1
 - d2
 - d3
- Hepatic Lesion 3
 - d1
 - d2
 - d3
- Hepatic Cyst 1
 - d1
 - d2
 - d3
- Hepatic Cyst 2
 - d1
 - d2
 - d3
- Hepatic Cyst 3
 - d1
 - d2
 - d3
- GB
 - GB L
 - GB H
 - GB W
 - GB wall th
- GB Finding 1
 - d1
 - d2
 - d3
- GB Finding 2
 - d1
 - d2
 - d3

- GB Finding 3
 - d1
 - d2
 - d3
- GB Finding 4
 - d1
 - d2
 - d3
- GB Finding 5
 - d1
 - d2
 - d3
- Panc Finding 1
 - d1
 - d2
 - d3
- Panc Finding 2
 - d1
 - d2
 - d3
- Panc Finding 3
 - d1
 - d2
 - d3
- Panc Finding 4
 - d1
 - d2
 - d3
- Panc Finding 5
 - d1
 - d2
 - d3
- Kidney
 - Renal L
 - Renal H
 - Renal W
 - Cortex
- Adrenal
 - Adrenal L
 - Adrenal H

- Adrenal W
- Renal Lesion 1
 - d1
 - d2
 - d3
- Renal Lesion 2
 - d1
 - d2
 - d3
- Renal Lesion 3
 - d1
 - d2
 - d3
- Renal Cyst 1
 - d1
 - d2
 - d3
- Renal Cyst 2
 - d1
 - d2
 - d3
- Renal Cyst 3
 - d1
 - d2
 - d3
- Renal A
 - Long
 - Anterior-Posterior
 - Transverse
- Hepatic Lesion1 ElasRatio
 - A
 - B
- Hepatic Lesion2 ElasRatio
 - A
 - B
- Hepatic Lesion3 ElasRatio
 - A
 - B

D-Mode

- Aorta

- CrMA
- Hepatic A
- Splenic A
- CaMA
- CaVC
- Hepatic V
- Lt Hepatic V
- M Hepatic V
- Rt Hepatic V
- Portal V
- M Portal V
- Splenic V
- Renal V
- CrMV
- CaMV
- Renal A
- Interlobar A
- Arcuate A
- Segment A
- -----
- SMA/Ao

6.3.2 Cardiology

B-Mode

- RVAWd(2D)
- RVAWs(2D)
- RVDd(2D)
- RVDs(2D)
- IVSd(2D)
- IVSs(2D)
- LVIDd(2D)
- LVIDs(2D)
- LVPWd(2D)
- LVPWs(2D)
- Diastole(2D)
- Systole(2D)
- LVLd apical
- LVLs apical
- LVAd apical
- LVAs apical
- LVAd sax MV

- LVAs sax MV
- LVAd sax Endo
- LVAd sax Epi
- LV Major
- LV Minor
- LV Area(d)
- LV Area(s)
- HR(2D)
- RA Major
- RA Minor
- RA Area
- RA Vol(A4C)
- RAP
- RV Area(d)
- RV Area(s)
- RV Major
- RV Minor
- LA Diam(2D)
- LA Major
- LA Minor
- LA Area
- LVOT Diam
- Ao Diam(2D)
- ACS(2D)
- AV Diam
- Ao Isthmus(2D)
- Ao Sinus Diam(2D)
- Ao st junct(2D)
- AVA
- Ao Arch Diam(2D)
- Ao Asc Diam(2D)
- Ao Desc Diam(2D)
- Duct Art Diam
- Post Ductal
- Pre Ductal
- MCS(2D)
- MV Diam
- MV EPSS(2D)
- MVA
- TV Diam
- TVA
- PV Diam
- RVOT Diam
- MPA Diam(2D)
- RPA Diam(2D)
- LPA Diam(2D)
- CaVC Diam(Expir)
- CaVC Diam(Insp)
- CrVC Diam(Expir)
- CrVC Diam(Insp)
- LCA Diam
- RCA Diam
- PEd(2D)
- PEs(2D)
- VSD Diam
- ASD Diam
- PDA Diam
- PFO Diam
- AutoEF
- RPADd
- RPADs
- MV T
- -----
- LA/Ao(2D)
- MPA/Ao(2D)
- LV SI(2D)
- -----
- LV(easy)(2D)
- LVIDd(2D)
- LVIDs(2D)
- HR(2D)
- LV(2D)
- Diastole(2D)
- Systole(2D)
- IVSd(2D)
- LVIDd(2D)
- LVPWd(2D)
- IVSs(2D)
- LVIDs(2D)
- LVPWs(2D)

- HR(2D)
- LA Simpson
- LA A4Cd
- LA A4Cs
- LA A2Cd
- LA A2Cs
- HR(2D)
- LV Simpson
- LV A4Cd
- LV A4Cs
- LV A2Cd
- LV A2Cs
- HR(2D)
- Mod.Simpson
- LVLd apical
- LVLs apical
- LVAd sax MV
- LVAs sax MV
- LVAd sax PM
- LVAs sax PM
- HR(2D)
- S-P Ellipse
- LVLd apical
- LVAd apical
- LVLs apical
- LVAs apical
- HR(2D)
- B-P Ellipse
- LVIDd(2D)
- LVAd sax MV
- LVIDs(2D)
- LVAs sax MV
- LVAd apical
- LVAs apical
- HR(2D)
- Bullet
- LVLd apical
- LVLs apical
- LVAd sax MV
- LVAs sax MV

- HR(2D)
- LV Mass(Cube-2D)
- IVSd(2D)
- LVIDd(2D)
- LVPWd(2D)
- LV Mass(A-L)
- LVLd apical
- LVAd sax Epi
- LVAd sax Endo
- LV Mass(T-E)
- LVAd sax Epi
- LVAd sax Endo
- a
- d
- LA Vol(Simp)
- LA Vol(A2C)
- LA Vol(A4C)
- LA Vol(A-L)
- LA apical
- LAA(A2C)
- LAA(A4C)
- MVA(VTI)
- LVOT Diam
- LVOT VTI
- MV VTI
- AVA(VTI)
- LVOT Diam
- LVOT VTI
- AV VTI
- CO(LVOT)
- LVOT Diam
- LVOT VTI
- AV HR
- CO(RVOT)
- RVOT Diam
- RVOT VTI
- PV HR
- CO(MV)
- MV Diam
- MV VTI

- MV HR
- CO(TV)
- TV Diam
- TV VTI
- TV HR
- PISA MR
- MR Rad
- MR Als Vel
- MR VTI
- PISA AR
- AR Rad
- AR Als Vel
- AR VTI
- PISA TR
- TR Rad
- TR Als Vel
- TR VTI
- PISA PR
- PR Rad
- PR Als Vel
- PR VTI
- Qp/Qs
- LVOT Diam
- LVOT VTI
- RVOT Diam
- RVOT VTI

M-Mode

- RVAWd(M)
- RVAWs(M)
- RVDd(M)
- RVDs(M)
- Ao Arch Diam(M)
- Ao Asc Diam(M)
- Ao Desc Diam(M)
- Ao Diam(M)
- Ao Isthmus(M)
- Ao Sinus Diam(M)
- Ao st junct(M)
- ACS(M)
- HR(M)

- IVSd(M)
- IVSs(M)
- LA Diam(M)
- LPA Diam(M)
- Diastole(M)
- Systole(M)
- LVET(M)
- LVIDd(M)
- LVIDs(M)
- LVOT Diam
- LVPEP(M)
- LVPWd(M)
- LVPWs(M)
- MCS(M)
- MPA Diam(M)
- MV A Amp
- MV E Amp
- MV D-E Slope
- MV D-E Amp
- MV E-F Slope
- MV EPSS(M)
- PEd(M)
- PEs(M)
- RPA Diam(M)
- RVET(M)
- RVOT Diam
- RVPEP(M)
- MAPSE
- TAPSE
- MV ALL
- CaVC Diam(Insp)(M)
- CaVC Diam(Expir)(M)
- CrVC Diam(Insp)(M)
- CrVC Diam(Expir)(M)
- Vp
- -----
- LA/Ao(M)
- MPA/Ao(M)
- -----
- LV(easy)(M)

- LVIDd(M)
- LVIDs(M)
- HR(M)
- LV(M)
- Diastole(M)
- Systole(M)
- IVSd(M)
- LVIDd(M)
- LVPWd(M)
- IVSs(M)
- LVIDs(M)
- LVPWs(M)
- HR(M)
- LV Mass(Cube-M)
- IVSd(M)
- LVIDd(M)
- LVPWd(M)
- LV Tei Index(M)
- MV C-O dur(M)
- LVET(M)

D-Mode

- MV A'(lateral)
- MV A'(medial)
- AAo Vmax
- AV VTI
- AV HR
- AV Vmax
- AR DecT
- AR Time
- AR PHT
- AR Ved
- AR Vmax
- AR VTI
- MV ARa(lateral)
- MV ARa(medial)
- ASD Vmax
- AV AccT
- AV DecT
- Coarc Post-Duct
- Coarc Pre-Duct

- DAo Vmax
- MV DRa(lateral)
- MV DRa(medial)
- MV E'(lateral)
- MV E'(medial)
- CaVC Vel(Expir)
- CaVC Vel(Insp)
- IVCT
- LPA Vmax
- LVET(Doppler)
- LVOT AccT
- LVOT VTI
- LVOT Vmax
- LVPEP(Doppler)
- MPA Vmax
- dP/dt
- Tau(BAI)
- MR VTI
- MR Vmax
- MS Vmax
- MV A Dur
- MV A Vel
- MV A VTI
- MV AccT
- MV DecT
- MV E Dur
- MV E Vel
- MV E VTI
- IVRT
- MV VTI
- MV HR
- MV Vmax
- PVein A Dur
- PVein A Vel
- PVein D Vel
- PVein D VTI
- PVein DecT
- PVein S Vel
- PVein S VTI
- PDA Vel(d)

- PDA Vel(s)
- PR PHT
- PR VTI
- PR Ved
- PR Vmax
- PR DecT
- PV AccT
- PV DecT
- PV VTI
- PV HR
- PV Vmax
- RAP
- RPA Vmax
- RVET(Doppler)
- RVOT Vmax
- RVOT VTI
- RVPEP(Doppler)
- MV S'(lateral)
- MV S'(medial)
- CrVC Vel(Expir)
- CrVC Vel(Insp)
- TR VTI
- TR Vmax
- TV A Dur
- TV A Vel
- TV AccT
- TV DecT
- TV E Vel
- TV E Dur
- TV VTI
- TV HR
- TV Vmax
- VSD Vmax
- Hepatic V S Vel
- Hepatic V D Vel
- TV a'(lateral)
- TV a'(medial)
- TV e'(lateral)
- TV e'(medial)
- TV s'(lateral)
- TV s'(medial)
- E'(basal)
- A'(basal)
- S'(basal)
- E'(apical)
- A'(apical)
- S'(apical)
- E'(annular)
- A'(annular)
- S'(annular)
- E'(endo)
- A'(endo)
- S'(endo)
- E'(epi)
- A'(epi)
- S'(epi)
- -----
- MV E/A
- MVA(PHT)
- TV E/A
- TVA(PHT)
- -----
- MV TDI
- MV A'(lateral)
- MV A'(medial)
- MV E'(lateral)
- MV E'(medial)
- MV S'(lateral)
- MV S'(medial)
- LV Tei Index(Doppler)
- MV C-O dur(Doppler)
- LVET(Doppler)
- RVSP
- TR Vmax
- RAP
- PAEDP
- PR Ved
- RAP
- MVA(VTI)
- LVOT Diam

- LVOT VTI
- MV VTI
- AVA(VTI)
- LVOT Diam
- LVOT VTI
- AV VTI
- CO(LVOT)
- LVOT Diam
- LVOT VTI
- AV HR
- CO(RVOT)
- RVOT Diam
- RVOT VTI
- PV HR
- CO(MV)
- MV Diam
- MV VTI
- MV HR
- CO(TV)
- TV Diam
- TV VTI
- TV HR
- RV Tei Index
- TV C-O dur
- RVET(Doppler)
- PISA MR
- MR Rad
- MR Als Vel
- MR VTI
- PISA AR
- AR Rad
- AR Als Vel
- AR VTI
- PISA TR
- TR Rad
- TR Als Vel
- TR VTI
- PISA PR
- PR Rad
- PR Als Vel

- PR VTI
- Qp/Qs
- LVOT Diam
- LVOT VTI
- RVOT Diam
- RVOT VTI
- TV TDI
- TV a'(lateral)
- TV a'(medial)
- TV e'(lateral)
- TV e'(medial)
- TV s'(lateral)
- TV s'(medial)
- Longitudinal Motion
- E'(basal)
- A'(basal)
- S'(basal)
- E'(apical)
- A'(apical)
- S'(apical)
- E'(annular)
- A'(annular)
- S'(annular)
- IVCT
- IVRT
- Radial Motion
- E'(endo)
- A'(endo)
- S'(endo)
- E'(epi)
- A'(epi)
- S'(epi)
- IVCT
- IVRT

6.3.3 Smart Parts

B-Mode

- Thyroid L
- Thyroid H
- Thyroid W
- THY Mass1 Strain

- THY Mass2 Strain
- THY Mass3 Strain
- THY Mass1 Elas.
- THY Mass2 Elas.
- THY Mass3 Elas.
- THY Nodule1 Strain
- THY Nodule2 Strain
- THY Nodule3 Strain
- THY Nodule1 Elas.
- THY Nodule2 Elas.
- THY Nodule3 Elas.
- Breast Mass1 Strain
- Breast Mass1 Elas.
- Breast Mass2 Strain
- Breast Mass2 Elas.
- Breast Mass3 Strain
- Breast Mass3 Elas.
- Breast Mass4 Strain
- Breast Mass4 Elas.
- Breast Mass5 Strain
- Breast Mass5 Elas.
- Breast Mass6 Strain
- Breast Mass6 Elas.
- Breast Mass7 Strain
- Breast Mass7 Elas.
- Breast Mass8 Strain
- Breast Mass8 Elas.
- Breast Mass9 Strain
- Breast Mass9 Elas.
- Breast Mass10 Strain
- Breast Mass10 Elas.
- Testicular L
- Testicular H
- Testicular W
- Epididymis L
- Epididymis H
- Epididymis W
- Scrotal Wall
- Testis V(2D)
- AdrenalTip T
- AdrenalTail T
- LymphNode L
- LymphNode W
- -----
- Parathyroid 1
- L
- H
- W
- Parathyroid 2
- L
- H
- W
- Parotid
- L
- H
- W
- Lymph Node 1
- L
- H
- W
- Lymph Node 2
- L
- H
- W
- Lymph Node 3
- L
- H
- W
- Lymph Node 4
- L
- H
- W
- Lymph Node 5
- L
- H
- W
- Lymph Node 6
- L
- H
- W

- Thyroid
 - Thyroid L
 - Thyroid H
 - Thyroid W
- Thyroid Mass 1
 - d1
 - d2
 - d3
- Thyroid Mass 2
 - d1
 - d2
 - d3
- Thyroid Mass 3
 - d1
 - d2
 - d3
- Thyroid Nodule 1
 - d1
 - d2
 - d3
- Thyroid Nodule 2
 - d1
 - d2
 - d3
- Thyroid Nodule 3
 - d1
 - d2
 - d3
- Thyroid Cyst 1
 - d1
 - d2
 - d3
- Thyroid Cyst 2
 - d1
 - d2
 - d3
- Thyroid Cyst 3
 - d1
 - d2
 - d3
- Isthmus Finding 1
 - d1
 - d2
 - d3
- Isthmus Finding 2
 - d1
 - d2
 - d3
- Isthmus Finding 3
 - d1
 - d2
 - d3
- THY Mass1 Strain Ratio
 - A
 - B
- THY Mass2 Strain Ratio
 - A
 - B
- THY Mass3 Strain Ratio
 - A
 - B
- THY Mass1 Elas. Ratio
 - A
 - B
- THY Mass2 Elas. Ratio
 - A
 - B
- THY Mass3 Elas. Ratio
 - A
 - B
- THY Nodule1 Strain Ratio
 - A
 - B
- THY Nodule2 Strain Ratio
 - A
 - B
- THY Nodule3 Strain Ratio
 - A
 - B
- THY Nodule1 Elas. Ratio
 - A
 - B

- A
- B
- THY Nodule2 Elas. Ratio
- A
- B
- THY Nodule3 Elas. Ratio
- A
- B
- Breast Mass 1
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 2
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 3
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 4
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 5
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 6
- L

- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 7
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 8
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 9
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass 10
- L
- H
- W
- Nip. Dist.
- Skin Dist.
- Breast Mass1 Strain Ratio
- A
- B
- Breast Mass1 Elas. Ratio
- A
- B
- Breast Mass2 Strain Ratio
- A
- B
- Breast Mass2 Elas. Ratio
- A
- B

- Breast Mass3 Strain Ratio
- A
- B
- Breast Mass3 Elas. Ratio
- A
- B
- Breast Mass4 Strain Ratio
- A
- B
- Breast Mass4 Elas. Ratio
- A
- B
- Breast Mass5 Strain Ratio
- A
- B
- Breast Mass5 Elas. Ratio
- A
- B
- Breast Mass6 Strain Ratio
- A
- B
- Breast Mass6 Elas. Ratio
- A
- B
- Breast Mass7 Strain Ratio
- A
- B
- Breast Mass7 Elas. Ratio
- A
- B
- Breast Mass8 Strain Ratio
- A
- B
- Breast Mass8 Elas. Ratio
- A
- B
- Breast Mass9 Strain Ratio
- A
- B
- Breast Mass9 Elas. Ratio

- A
- B
- Breast Mass10 Strain Ratio
- A
- B
- Breast Mass10 Elas. Ratio
- A
- B
- Testis
- Testicular L
- Testicular H
- Testicular W
- Testis Mass 1
- d1
- d2
- d3
- Testis Mass 2
- d1
- d2
- d3
- Testis Mass 3
- d1
- d2
- d3
- Epididymis
- Epididymis L
- Epididymis H
- Epididymis W

D-Mode

- Parathyroid 1
- Parathyroid 2
- Testis A
- Testis V
- Epididymis A
- Epididymis V

6.3.4 Vascular

B-Mode

- CCA IMT
- Bulb IMT

- ICA IMT
- ECA IMT
- -----
- IMT
- CCA IMT
- Bulb IMT
- ICA IMT
- ECA IMT

D-Mode

- CCA
- ICA
- ECA
- Bulb
- Carotid Bifurcation
- C.Iliac A
- Ex.Iliac A
- IIA
- CFA
- DFA

6.3.5 Reproduction

B-Mode

- Dog CRL
- Dog GS
- Dog HD
- Dog BD
- Feline BD
- Feline HD
- Equine GS-H
- Equine GS-V
- Fetal VL(Horse)
- Fetal VL(Pony)
- Bovine CRL
- Bovine TD
- Bovine HD
- Ovine CRL
- Ovine BPD
- Uterus D
- Ovary L
- Ovary H

- Prostate L
- Prostate H
- Prostate W
- Testicle L
- Testicle W
- Follicle1 L
- Follicle2 L
- Follicle3 L
- Follicle4 L
- Follicle5 L
- Follicle6 L
- Follicle7 L
- Follicle8 L
- Follicle9 L
- Follicle10 L
- Follicle11 L
- Follicle12 L
- Follicle13 L
- Follicle14 L
- Follicle15 L
- Follicle16 L

6.4 Smart Trace

- Measures the lengths of major axis and minor axis, area and circumference of a closed region on the image semi-automatically

6.5 Report

- Specific report template by application
- Editable value in report
- Images selectable
- Editing though iReport
- User-defined report template
- Selecting report modules
- Adding/removing measurement items from the report
- Changing report layout
- Load/save comment
- Viewing history reports

- Preview and printing reports
- Able to Export as PDF/DOCX file
- Mini report
- Quickly displaying Mini report in the thumbnail area of the main screen
- Including both general measurement and application measurement results
- Support deleting measurement results

6.6 iWorks

- Auto workflow protocol
- Templates are user configurable
- Functions: pause, stop, replace, repeat, skip, insert single step, return and continue, steps in thumbnail, iNSert another template
- iWorks setup mode: B; B/B (Dual Live); Dual B/B; Color; B/Color (Dual Live); Power; B/Power (Dual Live); B + PW; Color + PW; Power + PW; B + CW; Color + CW; B+M; B+TVI; TVI+TVD; iScape.
- iWorks setup annotation: support up to 2 annotations, location and font size are configurable.
- iWorks setup bodymark: select existing library, and transducer indicator is pre-settable
- iWorks setup measurement: select existing measurement library
- Template import and export are available
- Support create user-defined iWorks protocol

7

Exam Storage and Management

7.1

Exam storage

- 1TB hard drive
- 128G SSD (Solid State Drive)
- Direct digital storage of single frame and cine 2D, color and Doppler.

7.2

Exam management

- iStation workstation dedicated for animal exam management
- Animal exam query/retrieve
- Support review of current and past exam
- New exam, Activate exam, Continue exam functions, End exam are available
- Support measurements and calculations on archived exam and images
- Export images in BMP/JPG/TIFF/DCM/AVI/MP4 format
- Support backup/send to USB devices, DVD-RW, CD-R, DVD+R, DVD-R, DVD+RW media

8

Connectivity

8.1

Ethernet Network Connection

- Cable connection
- Wireless connection: built-in wireless adapter

8.2

DICOM 3.0

- DICOM basic
 - Verify (SCU, SCP)
 - Print
 - Store
 - Storage Commitment

- Media Exchange
- DICOM Worklist
- DICOM Query/Retrieve
- DICOM Modality Performed Procedure Step - MPPS
- DICOM Reproduction SR
- DICOM Cardiac structure report
- DICOM Vascular structure report
- DICOM Abdominal structure report
- DICOM Small Parts structure report

8.3 iStorage

- Direct network storage tool between ultrasound system and personal computer

8.4 MedSight

- An interactive app that lets you transfer clinical images straight from Mindray Animal Medical Ultrasound system to a smart device, such as mobile phone or tablet PC
- Needs to be installed on mobile terminal
- Transfer images or clips from system to mobile terminal through Wi-Fi
- Support both iOS (7.0 and above) and Android (4.0 and above) system
 - For iOS powered smart device: DICOM is mandatory
 - For Android powered smart device: DICOM not necessary

8.5 MedTouch

- Connect Ultrasound machine to smart devices based on Android and iOS system, such as tablet PC or mobile phone. Remote control of Ultrasound machine, review of animal information, and tutorial software iScanHelper study on smart devices
- Support Android and iOS powered smart devices
 - Android 4.0 and above
 - iOS 7.0 and above
 - DICOM not necessary

8.6 u-Link (applicable for CE region only)

- u-Link is used to connect the ultrasound system with software applications which support the u-Link protocol

9 Transducers

9.1 Curved array

9.1.1 SC6-1s

- Application: Abdomen (Canine, Equine, Bovine, Ovine, Camel, Alpaca), Reproduction (Canine, Equine, Bovine, Ovine, Camel, Alpaca)
- Advanced Function: iScan, Smart 3D, Free Xros M, Color M, Contrast (Abdomen), STE (Abdomen), STQ (Abdomen)
- Bandwidth: 1.2-6.0 MHz
- Biopsy Guide: NGB-022, multi angle, reusable

- 9.1.2 C11-3s
- Application: Abdomen (Canine, Feline), Reproduction (Canine, Feline), Small Parts (Canine, Feline)
 - Advanced Function: iScape, Smart 3D, Free Xros M, Color M, Contrast (Abdomen)
 - Bandwidth: 2.6-12.8 MHz
 - Biopsy Guide: NGB-018, multi angle, reusable
- 9.1.3 C13-3s
- Application: Abdomen (Canine, Feline), Cardiology (Canine, Feline), Reproduction (Canine, Feline), Small Parts (Canine, Feline)
 - Advanced Function: iScape, Smart 3D, Free Xros M, Color M, Contrast (Abdomen)
 - Bandwidth: 2.6-12.8 MHz
 - Biopsy Guide: not available
- 9.2 Linear
- 9.2.1 L13-3Ns
- Application: Abdomen (Canine, Feline), Small Parts (Canine, Feline), Ocular (Canine, Feline), MSK (Equine, Camel)
 - Advanced Function: iScape, Smart 3D, Free Xros M, Elastography (Small Parts), STE (Small Parts), STQ (Small Parts), Contrast (Abdomen)
 - Bandwidth: 3.0-13.0 MHz
 - Biopsy Guide: NGB-053, multi angle/depth, reusable
- 9.2.2 L20-5s
- Application: Abdomen (Canine, Feline), Ocular (Canine, Feline), MSK (Canine, Feline)
 - Advanced Function: iScape, Smart 3D, Free Xros M, Elastography (Abdomen), STE (Abdomen), STQ (Abdomen)
 - Bandwidth: 6.0-23.0 MHz
 - Biopsy Guide: not available
- 9.2.3 L16-4Hs
- Application: Abdomen (Canine, Feline), Ocular (Canine, Feline), MSK (Canine, Feline, Equine)
 - Advanced Function: iScape, Smart 3D, Free Xros M
 - Bandwidth: 3.5-16.0 MHz
 - Biopsy Guide: not available
- 9.2.4 L14-3Ws
- Application: Abdomen (Canine, Feline), Small Parts (Canine, Feline), Ocular (Canine, Feline), MSK (Equine)
 - Advanced Function: iScape, Smart 3D, Free Xros M, Elastography (Abdomen, Small Parts), STE (Abdomen, Small Parts), STQ (Abdomen, Small Parts), Contrast (Abdomen)
 - Bandwidth: 4.0 - 15.0 MHz
 - Biopsy Guide: NGB-054, multi angle/depth, reusable
- 9.3 Phased array
- 9.3.1 SP5-1s
- Application: Cardiology (Canine, Equine, Bovine, Ovine, Camel, Alpaca)
 - Advanced Function: CW, iScape, Smart 3D, Free Xros M, Free Xros CM, Color M, TDI, Stress Echo, LVO&Low MI Contrast (Cardiology)
 - Bandwidth: 1.5 - 4.5 MHz
 - Biopsy Guide: NGB-011, multi angle, reusable

- 9.3.2 P8-2s
- Application: Cardiology (Canine, Feline), Abdomen (Canine, Feline)
 - Advanced Function: CW, iScape, Smart 3D, Free Xros M, Free Xros CM, Color M, TDI, Stress Echo, LVO&Low MI Contrast (Cardiology)
 - Bandwidth: 2.3 – 8.0 MHz
 - Biopsy Guide: not available

- 9.3.3 P10-4s
- Application: Cardiology (Canine, Feline), Abdomen (Canine, Feline)
 - Advanced Function: CW, iScape, Smart 3D, Free Xros M, Free Xros CM, Color M, TDI, Stress Echo, LVO&Low MI Contrast (Cardiology)
 - Bandwidth: 3.0-11.4 MHz
 - Biopsy Guide: not available

- 9.3.4 P12-4s
- Application: Cardiology (Canine, Feline), Abdomen (Canine, Feline)
 - Advanced Function: CW, iScape, Smart 3D, Free Xros M, Free Xros CM, Color M, TDI, Stress Echo, LVO&Low MI Contrast (Cardiology)
 - Bandwidth: 6.8-11.4MHz
 - Biopsy Guide: not available

- 9.3.5 P8-2Ts
- Application: Cardiology (Canine, Feline)
 - Advanced Function: CW, iScape, Smart 3D, Free Xros M, Free Xros CM, Color M, TDI, Stress Echo
 - Bandwidth: 2.3-7.2MHz
 - Biopsy Guide: not available

- 9.3.6 P8-3Ts
- Application: Cardiology (Canine, Feline)
 - Advanced Function: CW, iScape, Smart 3D, Free Xros M, Free Xros CM, Color M, TDI, Stress Echo
 - Bandwidth: 2.3-7.2MHz
 - Biopsy Guide: not available

10 Peripheral Devices and Accessories

10.1 Black/white video printer

- Digital
MITSUBISHI P95DW-N
- Analog
SONY UP-X898MD

10.2 Color digital printer

- SONY UP-D25MD

10.3 Graph/text printer

- HP OFFICEJET PRO 8100

10.4 Gel warmer

- Support gel warming with 3 angle positions: 15, 55, 90 degrees
- Easily be disassembled off system for cleaning
- Temperature with 4 levels: off/34°C/37°C/40°C, with deviation of $\pm 1^{\circ}\text{C}$
- Light indicator for temperature protecting
- Dimension: 82(D)*78(W)*119(H) mm
- Weight: approx. 240g (net)
- Continuous operation time: >12h

10.5	Footswitch	11	System Inputs and Outputs
	• USB port: FS-81-SP-2(single pedal), 971-SWNOM (2/3-pedal) • Support User-definable functions (Freeze, Save, Print)	11.1	Audio input/output
10.6	ECG		• Microphone/Audio: 1 port
	• 6-pin, AHA/IEC, for 3-lead wires • ECG wave display: on/off • ECG source: Lead/External • Position: 0~100%, 5%/step • Trig mode: off/single/dual/timer • Gain: 0-30, 1/step • Sweep speed: 6 steps • Invert: on/off	11.2	Video output
10.7	Barcode reader		• S-Video out: 1 port, PAL/NTSC • HDMI: 1 Port • VGA out: 1 port
	• SYMBOL LS2208 (1D) • SYMBOL DS4308 (2D) • Honeywell HH1800	11.3	Physio input
10.8	Built-in Wi-Fi 5 Wireless adapter		• Support ECG signal • ECG: 1 port
	• Encryption: WPA, WPA2 • Max transfer speed: 300Mbps • Protocols: IEEE 802.11 ac/a/b/g/n • Frequency: 2.4G/5G	11.4	Other input/output
10.9	iVocal Microphone		• USB: 6 ports (5 USB 3.0 and 1 Type-C) • Ethernet: 1 port
	• SAMSON XPD2	12	Safety and Conformance
10.10	Built-in Battery	12.1	Quality standards
	• Replaceable and rechargeable lithium battery • Full battery lasts for more than 24h in standby mode • Battery capacity indicators without powering on the system • Battery fully-recharged time: less than 6h • Continuous scanning time: more than 120 mins for 2H battery or 240 mins for 4H battery.		• ISO 9001
		12.2	Design standards
			• EN 60601-1 • EN 60601-1-2 • ETSI EN 301 489-1 • ETSI EN 301 489-3 • ETSI EN 301 489-17 • ETSI EN 300 328 • ETSI EN 300 440 • EN IEC 62311 • ETSI EN 301 893 • EN 60601-2-37
		12.3	CE declaration
			• The device is fully in conformance with the radio equipment directive 2014/53/EU.

NOTICE:

Not all features or specifications described in this document may be available in all probes and/or modes.

Mindray Animal Medical reserves the right to make changes in specifications and features shown herein, or discontinue the product at any time without notice or obligation. Contact your Representative for the most current information.

