Resona I9T Diagnostic Ultrasound System

Performance Specifications

System Overview

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
- Up to 8,257,536 channels

Application
- Abdomen
- Obstetrics
- Gynecology
- Cardiology
- Small parts
- Urology
- Vascular
- Pediatrics
- Nerve
- Emergency & Critical
- Pelvic Floor
- Others

Transducer Types
- Curved array transducer
- Linear array transducer
- Phased array transducer
- 4D Volume transducer
- Pencil transducer

Advanced Imaging Techniques
- 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
- Smart Track
- HR Flow™ (High Resolution Flow)
- Glazing Flow

Imaging Modes
- 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 Mmode)
- Free Xros CM™ (Curved Anatomical M-mode)

Function Modes
- 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)
- Volume CEUS
- Natural Touch Elastography Imaging
- STE Imaging (Sound Touch Elastography)
- STQ Imaging (Sound Touch Quantification)
- Endocavity STE
- High frame rate STE
- Stress Echo
- TTQA (Tissue Tracking Quantitative Analysis)
- Smart 3D™ (Freehand 3D)
- Real-time 4D
- iPage+ (Multi-Slice Imaging)
- SCV+ (Slice Contrast View)
- Color 3D
- iLive
- DICOM
- Clinical Measurement Package
- Smart Pelvic Floor
- Smart OB™ (Auto OB measurement)
- Smart Fetal HR (Fetal Heart Rate)
- IVF
- IMT
- Auto EF
- V-Mapping
- iNeedle™ (Needle Visualization Enhancement)
- ECG function

Other Features
- Ultrasound gel
- Ultrasound gel warmer
- Built-in wireless adapter
- Replaceable battery assembly
- Central brake
- Probe adapter
- DVD assembly
- Wipes box bracket
- DVR
- Ambient light
- iStorage
- iWorks™ (Auto Workflow Protocol)
- MedSight
- MedTouch
- UltraAssist (Off-line software)
- UltraView™ (Off-line analysis software)
- Touch gestures
- Anti-virus software: McAfee, Window
- iVocal

Language Support

Software:	Software: English
Keyboard input:	English

Physical Specifications

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 kg±4 kg (net weight, standard configuration but not including the probe)

Audio Speaker

Stereo audio speakers

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

Wheels

Diameter:	125 mm
When the central brake is configured:	Central brake for total lock and break

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Physical Specifications (continued)

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

Transducer Port and Holder

Transducer ports with dust prevention: 5 active ports and 1 pencil probe port

Support hot plug with active indicator lights

Transducer holder: 5, plus 1 dedicated endocavity transducer holder and 1 dedicated pencil transducer holder

Electrical Power

Voltage: 100-240 V~

Frequency: 50/60 Hz

Power consumption: 650 VA

Operating Environment

Ambient temperature: 0-40° C

Relative humidity: 20%-85% (no condensation)

Atmospheric pressure: 700 hPa-1060 hPa

Storage & Transportation Environment

Ambient temperature: -20-55° C

Relative humidity: 20%-95% (no condensation)

Atmospheric pressure: 700 hPa-1060 hPa

System Noise

≤26 dB @25° C

User Interface

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: 1100 mm±50 mm (550 mm for both left and right)
- Down/up adjustment: 300±20 mm
- Front/back adjustment: 350±20 mm

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

Touchscreen

15.6-inch high sensitivity antiglare color touch screen

Resolution: 1920*1080

Digital brightness and contrast adjustment through preset

Angle adjustable range: 40 degrees

Viewing angle: 170 degrees

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

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/4D 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

System Boot-Up

Boot-up from shut-down: <30 sec

Boot-up from stand-by: <5 sec

Shut-down: <30 sec

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

Bodymark

More than 232 bodymarks for versatile application

User customizable

Imaging Parameters

Overview

Echo-enriched Beamforming

Up to 55296 channels

Up to 8-beamforming

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; 1-7, 7 steps

iBeam™: Off, 3 steps

iTouch™: On/off

FCI (Frequency Compound Imaging)

Dual Live: On/off

Imaging Parameters

Imaging

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

Free view: -45°~45°, 5°/step

Dehaze: 0-30 levels

Ref Lines: on/off (under GYN and Pelvic Floor exam mode and using intracavity probe)

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Performance Specifications

Imaging (continued)

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

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

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

Color Doppler Imaging

Dual live:	On/Off
HR Flow™:	High Resolution Flow provides better image quality and flow sensitivity
Image quality:	Pen/Gen/Res (color), 1 level (HR Flow)
Max velocity:	146.5 cm/s
Steer:	available on linear transducer
Max frame rate:	529 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, 5-433 Hz
PRF:	0.1-12.6 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
Smart track:	On/Off
Glazing Flow:	On/Off, L/M/H

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
PRF:	max. 12.6 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:	4 types
Directional color map:	4 types
Persistence:	0-6, 1/step
Line density:	L/M/H/UH
Invert:	On/Off
iTouch™:	On/Off
Smart track:	On/Off
Glazing Flow:	On/Off, L/M/H

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. 8.681 m/s min. 2.03 cm/s
CW velocity:	max. 39 m/s min. 5.34 cm/s
Sample volume size:	0.5-30 mm (PW only)
Sample gate depth:	continuously adjustable
Baseline:	9 steps
PW Steer:	available on linear transducer
Volume:	0%-100%, 2%/step
PW PRF:	1.0-23.1 kHz
CW PRF:	0.3-104.0 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

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

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

iBeam™

Spatial compound imaging

Off, 1-3, 1/step

iClear™

Speckle suppression imaging

Available on B, 3D, 4D mode

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

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

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

QSave

Quickly save image parameter setting after image adjustment done

Support Save, Create, Restore

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Performance Specifications

Imaging (continued)

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

3D/4D Preset Manager

- The scenarios and subpresets can be renamed, restored, deleted, added, set to active, or moved
- Show scenario and subpreset parameters
- Provide multiple groups of preset 3D/4D parameters based on different application scenarios to quickly obtain expected image effect

Tissue Velocity/Energy Imaging (included in TDI option)

Available on phased array, and SC6-1s, SC8-2s, SP5-1s, and P7-3Ts

Dual live:	side by side displays B and B+TVI
Max frame rate:	3175 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
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:	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

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

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

Smart 3D™

Smart 3D

Acquisition preparation:

3D/4D Scenario setting:	Routine
Acquisition Methods:	Rocked, Linear
Reset VOI:	On/Off
Flip VOI:	On/Off
Angle:	10-80°
Distance:	10-200 mm
Acquiring Time:	1.0s-20.0s

VR:

3D/4D 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:	10-200 mm

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:	0-30 mm

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:	10-200 mm
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:

Niche Views:	Inner, Outer
3 Slice	
Active Quadrant:	A, B, C,

Niche/3 Slice

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

4D

Available on all volume transducers

Static 3D and real time 4D

Acquisition preparation:

4D frame rate:	max. 80 vps
3D/4D Scenario setting:	Smart Scene3D (Spine, Brain,Long Bone, Face, Endometrium, Pelvic), Routine, iLive Pro, Bone, Tissue (not all scenarios are listed)
Refresh:	On/Off
Angle:	10-120°
Quality:	low1, low2, mid, high1, high2

Other parameters are the same as Smart 3D

VR:

3D/4D Scenario:	Smart Scene 3D, Routine, iLive Pro, Bone, Tissue, Routine (not all scenarios are listed)
3D iClear:	Off; 7 steps
Face+:	Off, 3 steps

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Performance Specifications

Imaging (continued)

- Auto Play: Stop, x1, x2, x3, x1/2, x1/3
- Frame: Select a frame
- Other parameters are the same as Smart 3D

MPR

- 3D iClear: Off; 7 types
- Other parameters are the same as Smart 3D

Adv.:

- The parameters are the same as Smart 3D

Tool

- The parameters are the same as Smart 3D

3D Reference Point

- Enable the operator to define one or more reference points on MPRs, which are then projected to VR image; helpful for the operator to better understand the corresponding spatial relations of VR image and MPRs
- Display: Point only, H line, V line
- Delete All
- Hide All

Color 3D

- Available on volume transducers Supports Color and Power mode
- Only Available in Static 3D mode

iPage+

- Slice display mode: Slice only, Slice with SCV
- RefMPR: A Plane, B Plane, C Plane
- Reset Ori: On/Off
- Sync MPR: A/B/C
- Quick Rotation: 90°, -90°, -180°
- Slice layout: 2*2, 3*3, 4*4, 5*5
- Slice Number: 3-25
- Spacing: 0.5-10mm
- Line (Start)/Line (End)
- Single window
- Display Ref plane
- Hide Ref plane
- Vertically display ref plane
- Horizontally display ref plane
- Move plane

SCV+

- Reset: All
- Orientation Assist: On/Off
- Active Quadrant: A, B, C
- Main render modes: Surface, Max, Min, X-ray
- Sub render modes: Surface, Max, Min, X-ray
- Mix: Set the mix ratio of the two render modes

CMPR

- Reset Curve
- Undo Last
- Flip: Thickness, Direction
- Ref. Image (A B, C), 1, 2, 3
- Trace Options: Line, Trace, Spline
- Quick Rotation: 90°, -90°, -180°
- Hide Annotation
- Rotate RL
- Support labeled measurements

iLive

- Shading: 0-10, 1/step
- Grad View
- Hyaline: On/Off, 0~100%, 5%/step
- Move Light
- Light Position: 6 default positions selectable
- Light 1/2/3: Parallel, Point, Torch
- VL Saturation: 0~100%, 1%/step
- VL Hue: 0~100%, 1%/step
- VL Distance: 0.0 – 5.0
- VL Bright: 0~100%, 1%/step
- VL Angle: 0~100%, 1%/step
- Tint: 0-4
- Reset

Classic/IntPoint/ExtPoint/Parallel/ Torch/ 3-Light/ User 1/User 2

- Copy to: Copy the current lighting mode to customized lighting mode "User 1" or "User 2"

Smart Track

- Available on linear probes
- Enable the function under Color/Power mode, the angle and the position of the ROI are adjusted automatically
- Enable the function under Color/Power+PW mode, the angle and the position of the PW sampling line, SV size, SV angle and SV position are adjusted automatically

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

iNeedle

- Needle visualization enhancement
- Available on linear SC6-1s, and C6-2Gs probes
- Needle direction: Auto, Left, Right
- B/iNeedle: On/Off
- In-plane biopsy and Out-plane biopsy
- GPS real-time guiding biopsy

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 nonlinear fundamental signals
- Available on SC6-1s, SC8-2s, C11-3s, C6-2Gs, L9-3s, L14-3Ws, L20-5s, V11-3Hs, SP5-1s, SD8-1s, DE11-3Ws, and ELC13-4s probes
- Micro Flow Enhancement (MFE) available
- Timer1: On/Off
- Timer2: On/Off
- Pro capture: captures prospective image

less than 480 s preset table

- Retro capture: captures retrospective image

less than 120 s preset table

- Dual live: side by side displays tissue

image and contrast image

- MFE: On/Off
- MFE period: 0.1 s, 0.2 s, 0.4 s, 0.6 s, 0.8 s,

1.0 s, MAX

- Destruct: instantly destroy contrast

bubbles

- Destruct AP: -30~0 dB, 0.3/step
- Destruct time: 500-2000 ms
- Contrast Agent: SonoVue and SonaZoid
- 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 I9 series 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 medical systems makes no claims concerning the safety or effectiveness of contrast agents.

Contrast Imaging QA

- Support Time-Intensity Curve analysis
- Table display: display data in table

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Performance Specifications

Imaging (continued)

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

LVO

Only available in LVO exam mode
Dedicated left ventricle contrast imaging tool
Fetal heart: Stomach, 4 chamber, LVOT

Volume CEUS

Available on SD8-1s and DE11-3Ws probes
Display: Contrast, Tissue
Capture 3D image
Other parameters are the same as those of 4D imaging

STE Imaging (Sound Touch Elastography Imaging)

Available on SC6-1s, C6-2Gs, L9-3s, L20-5s, L14-3Ws, V11-3Hs, DE11-3Ws probes
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

Natural Touch Elastography

Available on L9-3s, L14-3Ws, L20-5s, V11-3Hs, DE11-3Ws probes
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

High Frame Rate STE

Available on SC6-1s, C6-2Gs, L9-3s, L20-5s, L14-3Ws, V11-3Hs, DE11-3Ws probes
Improve the image refresh rate and provide a smoother STE image

STQ Imaging (Sound Touch Quantification Imaging)

Available on SC6-1s, C6-2Gs, L9-3s, L20-5s, L14-3Ws, V11-3Hs, DE11-3Ws probes
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

Auto EF

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

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

TT QA

Available on the SP5-1s probe 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: 1-30 mm, 1 mm/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

Resona I9T Diagnostic Ultrasound System

Performance Specifications

Imaging (continued)

Data Export: export current data as CSV format file

Stress Echo

Available on the SP5-1s probe in cardiac mode

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

Smart Pelvic

Enter smart pelvic in 2D or 3D/4D scanning mode

Set Rest, Valsalva, and Contraction frame

Measure automatically

iScanHelper

Tutorial function as a guidance to show basic scanning skill with graphic of probe position, schematic of anatomy and example clinical image

Support ABD, SMP, URO, OB, GYN applications

Support broadcasting the scanning skill in multi languages

iCompare

Allow to compare real-time ultrasound imaging to the past DICOM CT/MRI/Mammography/XRay/ Ultrasound images without external workstation

Helpful to easily evaluate and follow up the progression of disease, treatment effect monitoring

DVR

Digital video recorder, a useful tool for education and memory

Max storage length each time: 60 min

Cine Review and Raw Data Processing

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 210.65 s (M storage server) (depends on the mode)

Maximum 4D cine memory: 5423 volumes (SD8-1s)

Retrospective storage (1-120s presettable) 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

Raw Data Processing

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
- Ref Lines
- Dehaze
- V1:1
- ExtImage
- Edge Enhance

M-mode:

- Gain
- Speed
- Dynamic Range
- Gray Map
- Tint Map
- Display format

Color:

- Gain
- Baseline
- Smooth
- Color map
- Priority
- Dual Live
- Invert
- Velocity tag
- Glazing flow

PW:

- Gain
- Baseline
- Volume
- Angle
- Speed
- Dynamic range
- Gray map
- Tint Map
- Display format
- Invert
- WF
- T/F Res

Report*

IMT

Intima-Media Thickness Measurement

Automatic detection of IMT when ROI is set

Support CCA, ICA, ECA, Bulb IMT

Near wall and far wall detection

Angle selectable

Smart OB™

Auto measurement for OB, a special too for easy OB scan and greatly reduce time and increase productivity

Support BPD, HC, OFD, FL, AC

Better get GA before start auto AC

Measurement result can be modified by user

Report

Specific report template by application

Editable value in report

Images selectable

Anatomy information for vascular and OB report

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/RTF file

V-Mapping

- Add anatomical graphics for illustration

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

Resona I9T Diagnostic Ultrasound System

Performance Specifications

Report* (continue)

iWorks

- Auto workflow protocol
- Templates are user configurable
- Functions: pause, stop, replace, repeat, skip, insert single step, return and continue, steps in thumbnail, iNSertTM 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

UltraView™

- Components:
  - DICOM Basic
  - DICOM Query/Retrieve
  - DICOM OB/GYN SR
  - DICOM Cardiac SR
  - DICOM Vascular SR
  - DICOM Breast SR
  - DICOM Urology SR
  - DICOM Pediatric SR
  - DICOM Small Parts SR
  - DICOM Abdomen SR
  - TDI QA
  - Contrast Imaging QA
  - Tissue Tracking QA
  - Stress Echo
  - SCV (Slice Contrast View)
  - iLive
  - iPage+
  - IVF
  - Ultrasound Fusion Imaging
  - Auto EF
  - Smart Planes CNS
- PC-based off-line software

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

Exam Storage and Management

Exam Storage

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

Exam Management

- iStation™ workstation dedicated for patient exam management
- Patient 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

Connectivity

Ethernet Network Connection

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

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 OB/GYN structure report
- DICOM Cardiac structure report
- DICOM Vascular structure report
- DICOM Breast Report
- DICOM Abdominal structure report
- DICOM Small Parts structure report

iStorage (included in UltraAssist)

- Direct network storage tool between ultrasound system and personal computer

MedSight

- An interactive app that lets you transfer clinical images straight from Mindray 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

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 patient 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

Transducers

Curved Array

SC6-1s

Application:	Obstetrics, Gynecology, Abdomen, Small Parts, Musculoskeletal, Vascular, Urology, Nerve
Bandwidth:	1.2-6.0 MHz
Number of Elements:	192
FOV (max):	60°
Extended FOV:	72°
Convex Radius:	60 mm
Depth:	4-40 cm
Physical Footprint:	65.1 mm × 16.4 mm
Footprint:	64.9 mm × 16.2 mm
B-mode Frequencies:	1.2~3.8, 1.7~5.2, 2.0~6.0 MHz
Harmonic Frequencies:	4.0, 5.0, 6.0 MHz
Color Frequencies:	2.0, 2.5, 3.0, 3.3 (HR Flow) MHz
PW Frequencies:	2.0, 2.5, 3.0 MHz
Biopsy Guide:	NGB-022, multi angle, reusable; C11-3s

Application:	Abdomen, Vascular, Cardiac, Small Parts, Pediatric, Cephalic
Bandwidth:	2.6-12.8 MHz
Number of Elements:	128
FOV (max):	101°
Extended FOV:	113°
Convex Radius:	15 mm
Depth:	1.5-35 cm
Physical Footprint:	32.8 mm× 25 mm
Footprint:	27.4 mm × 8.4 mm
B-mode Frequencies:	2.6~6.5, 3.2~7.9, 4.7~12.8 MHz
Harmonic Frequencies:	6.0, 7.0, 8.0 MHz
Color Frequencies:	4.4, 5.0, 5.7, 5.0 (HR Flow) MHz
PW Frequencies:	4.4, 5.0, 5.7 MHz
Biopsy Guide:	NGB-018, multi angle, reusable

C6-2Gs

Application:	Obstetrics, Gynecology, Abdomen, Urology
Bandwidth:	1.2-6.0 MHz
Number of Elements:	128
FOV (max):	94°
Extended FOV:	106°
Convex Radius:	20 mm
Depth:	4-40 cm
Physical	

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Performance Specifications

Transducers (continued)

Footprint:	37.6 mm × 19 mm
Footprint:	31.5 mm × 11.2 mm
B-mode Frequencies:	1.2~3.8, 1.7~5.2, 2.0~6.0 MHz
Harmonic Frequencies:	3.2, 4.0, 5.0 MHz
Color Frequencies:	2.0, 2.5, 3.0, 3.5 (HR Flow) MHz
PW Frequencies:	2.0, 2.5, 3.0 MHz
Biopsy Guide:	NGB-024, multi angle, reusable;

V11-3Hs

Application:	Obstetrics, Gynecology, Urology
Bandwidth:	3.0-11.0 MHz
Number of Elements:	192
FOV (max):	170°
Extended FOV:	210°
Convex Radius:	11 mm
Depth:	1.5-28 cm
Physical Footprint:	24.9 mm × 21.8 mm
Footprint:	24 mm × 9 mm
B-mode Frequencies:	3.0~7.0, 4.0~9.0, 5.0~11.0 MHz
Harmonic Frequencies:	8.0, 9.0, 10.0 MHz
Color Frequencies:	4.4, 5.0, 5.7, 5.5 (HR Flow) MHz
PW Frequencies:	4.5, 5.0, 5.5 MHz
Biopsy Guide:	NGB-025, single angle, reusable

SC8-2s

Application:	Obstetrics, Gynecology, Abdomen, Urology, Vascular
Bandwidth:	1.8-8.2 MHz
Number of Elements:	192
FOV (max):	76°
Extended FOV:	88°
Convex Radius:	40 mm
Depth:	4-40 cm
Physical Footprint:	26.3 mm × 66.9 mm
Footprint:	15 mm × 52 mm
B-mode Frequencies:	1.8~5.4, 2.3~6.8, 2.8~8.2 MHz
Harmonic Frequencies:	4.0, 5.5, 6.0 MHz
Color Frequencies:	3.0, 3.5, 4.0, 3.5 (HR Flow) MHz
PW Frequencies:	3.0, 3.5, 3.8 MHz
Biopsy Guide:	NGB-029, multi angle, reusable

Volume Curved Array

SD8-1s

Application:	Obstetrics, Gynecology, Abdomen
Bandwidth:	1.8-8.2 MHz
Number of Elements:	192
FOV (max):	66°
Extended FOV:	91°
Volume Sweep Angle (max):	85°
Convex Radius:	45 mm
Depth:	4-40 cm
Physical Footprint:	75.7 mm × 52.6 mm
B-mode Frequencies:	1.8-5.4, 2.3-6.8, 2.8-8.2 MHz
Harmonic Frequencies:	4.0, 5.0, 5.5, 6.0 MHz
Color Frequencies:	3.0, 3.5, 4.0, 3.5 (HR Flow) MHz
PW Frequencies:	3.0, 3.5, 3.8 MHz
Biopsy Guide:	NGB-039, multi angle, reusable

DE11-3Ws

Application:	Obstetrics, Gynecology, Urology
Bandwidth:	2.0-9.0 MHz
Number of Elements:	192
FOV (max):	162°
Extended FOV:	187°
Volume Sweep Angle (max):	120°
Convex Radius:	10 mm
Depth:	4-40 cm
Physical Footprint:	24 mm x 24 mm
B-mode Frequencies:	2.0~6.0, 2.8~8.2, 3.0~9.0 MHz
Harmonic Frequencies:	4.0, 5.0, 6.0 MHz
Color Frequencies:	4.4, 5.0, 5.7, 5.0 (HR Flow) MHz
PW Frequencies:	4.4, 5.0, 5.7 MHz
Biopsy Guide:	NGB-047, single angle, reusable

Linear

L9-3s

Application:	Abdomen, Pediatric, Small Parts, Musculo-skeletal, Vascular, Nerve, Obstetrics
Bandwidth:	2.5-9.0 MHz
Number of Elements:	192
Field of View (max):	43.7 mm
Extended FOV:	60° (OB1, NT); 40° (Others)
Steered Angle:	B: 0°, +/–6°, +/–12°; C/PW: –30°-30°
Depth:	1.5-35 cm
Physical Footprint:	62 mm × 22 mm
Footprint:	48 mm × 11 mm
B-mode Frequencies:	2.5~7.0, 3.4~8.2, 3.6~9.0 MHz
Harmonic Frequencies:	5.0, 6.0, 7.0 MHz
Color Frequencies:	3.0, 3.6, 5.0, 4.0 (HR Flow) MHz
PW Frequencies:	3.0, 3.6, 5.0 MHz
Biopsy Guide:	NGB-034, multi angle, reusable

L20-5s

Application:	Abdomen, Small Parts, Musculo-skeletal, Vascular, Nerve
Bandwidth:	6-23 MHz
Number of Elements:	192
Field of View (max):	28.5 mm
Extended FOV:	20°
Steered Angle:	B: 0, +/–6°, +/–12°; C/PW: –20°-20°
Depth:	1.5-29 cm
Physical Footprint:	42.23 mm × 22.10 mm
Footprint:	31.5 mm × 4.5 mm
B-mode Frequencies:	6.0~13.0, 9.0~16.6, 12.5~23.0 MHz
Harmonic Frequencies:	14.0, 16.0, 18.0 MHz
Color Frequencies:	9.0, 11.0, 13.0, 13.0 (HR Flow) MHz
PW Frequencies:	8.3, 10.0, 12.5 MHz
Biopsy Guide:	not available

L14-3Ws

Application:	Small Parts, Musculoskeletal, Vascular, Abdomen, Pediatric, Thoracic/Pleural
Bandwidth:	3.0-14.0 MHz
Number of Elements:	256
Field of View (max):	50.8 mm
Extended FOV:	20°
Steered Angle:	B: 0, +/–6°, +/–12°; C/PW: –30°-30°
Depth:	1.5-35 cm
Physical Footprint:	66.8 mm × 25.5 mm
Footprint:	55.5 mm × 8.2 mm
B-mode Frequencies:	3.0~9.0, 5.0~12.0, 6.0~14.0 MHz
Harmonic Frequencies:	10.0, 11.0, 12.0, 13.0 MHz
Color Frequencies:	5.0, 6.2, 7.2, 8.3(HR flow) MHz
PW Frequencies:	5.0, 6.2, 7.2 MHz
Biopsy Guide:	NGB-054, multi angle/depth, reusable

Phased Array

P7-3Ts

Application:	Cardiac
Bandwidth:	2.3-7.2 MHz
Number of Elements:	64
Field of View (max):	90°
Extended FOV:	90°
Depth:	2.0-38.0 cm
Physical Footprint:	14 mm × 12 mm
Footprint:	12.2 mm × 12.2 mm
B-mode Frequencies:	2.3~5.4, 2.8~6.4, 3.3~7.2 MHz
Harmonic Frequencies:	5.0, 6.0, 7.0 MHz
Color Frequencies:	2.7, 3.3, 4.0, 4.0 (HR Flow) MHz; TDI: 5.0, 6.2 MHz
PW Frequencies:	2.7, 3.3, 4.0 MHz
Biopsy Guide:	not available

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Resona I9T Diagnostic Ultrasound System

Performance Specifications

Transducers (continued)

SP5-1s

Application:	Abdomen, Cardiac, Vascular, Cephalic, Thoracic/Pleural
Bandwidth:	1.5-4.5 MHz
Number of Elements:	80
Field of View (max):	90°
Extended FOV:	90°
Depth:	2-38 cm
Physical Footprint:	38.2 mm × 30.5 mm
Footprint:	23.4 mm × 15.2 mm
B-mode Frequencies:	1.5~2.5, 2.5~3.5, 3.5~4.5 MHz
Harmonic Frequencies:	3.0, 3.5, 3.5, 4.0, 4.0 MHz
Color Frequencies:	2.0, 2.3, 2.5, 2.5(HR Flow) MHz; TDI: 3.0, 3.8 MHz
PW Frequencies:	2.0, 2.3, 2.5 MHz; TDI: 2.5, 4.0 MHz
CW Frequencies:	2.0 MHz
Biopsy Guide:	NGB-011, multi angle, reusable

Pencil

CW5s

Application:	Vascular, Cephalic, Pediatric
Number of Elements:	2
Biopsy Guide:	not available

CW2s

Application:	Cardiac, Cephalic, Pediatric
Number of Elements:	2
Biopsy Guide:	not available

Peripheral Devices and Accessories (Option)

Black/White Video Printer

Digital
MITSUBISHI P95DW-N

Analog
SONY UP-X898MD

Color Digital Printer

SONY UP-D25MD

Graph/Text Printer

HP OFFICEJET PRO 8100

Gel Warmer

Support gel warming with 3 angle position:	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 ±1° C
Light indicator for temperature protecting	
Dimension:	82(D)*78(W)*119(H) mm
Weight:	approx. 240 g (net)
Continuous operation time:	>12 h

Footswitch

USB port:	FS-81-SP-2 (single pedal), 971-SWNOM (2/3-pedal)
Support User-definable functions (Freeze, Save, Print)	

ECG

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

PCG (not for sale in EU countries)

PCG wave display:	on/off
Gain:	0-30, 1/step
Speed:	6 steps
Smooth:	1-4, 1/step

Barcode Reader

SYMBOL LS2208 (1D)
SYMBOL DS4308 (2D)

Built-in Wi-Fi 5 Wireless Adapter

Encryption:	WPA, WPA2
Max transfer speed:	300 Mbps
Protocols:	IEEE 802.11 ac/a/b/g/n
Frequency:	2.4G/5G

iVocal Microphone

SAMSON XPD2

Built-in Battery

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 6 h
Continuous scanning time:	more than 120 mins for 2H battery

Probe Adapter

PCM-ES01:	transforming E socket to S socket, only for SC6-1E, SD8-1E, P7-3TE, and SP5-1E
PCM-US01:	transforming U socket to S socket, only for P7-3TU and SP5-1U

System Inputs and Outputs

Audio input/Output

Microphone/Audio:	1 port

Video Output

S-Video out:	1 port, PAL/NTSC
HDMI:	1 Port
VGA out:	1 port

Physio input

Support ECG/PCG signal	
ECG:	1 port
PCG:	1 port

Other input/Output

USB:	6 ports (5 USB 3.0 and1 Type-C)
Ethernet:	1 port

Safety and Conformance

Quality Standards

ISO 9001
ISO 13485

Design Standards

EN 60601-1 and IEC 60601-1
EN 60601-1-2 and IEC 60601-1-2
EN 60601-1-6 and IEC 60601-1-6
EN 60601-2-37 and IEC60601-2-37
EN 62304 and IEC 62304
EN 62366 and IEC 62366
EN ISO 17664 and ISO 17664

12.3 CE Declaration

The ultrasound system is fully in conformance with the Council Directive 93/42/EEC Concerning Medical Devices. The number adjacent to the CE marking (0123) is the code of the EU-notified body that certified meeting the requirements of Annex II excluding (4). of the Directive.

NOTICE:

Not all features or specifications described in this document may be available in all transducers and/or modes. Mindray reserves the right to make changes in specifications and features shown herein, or discontinue the product at any time without notice or obligation.

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