

# DC-40 Crystal

## Diagnostic Ultrasound System

Datasheet

Release V03.00.00



# 1 System Overview

## 1.1 Application

- Abdomen
- Obstetrics
- Gynecology
- IVF (In-Vitro Fertilization)
- Cardiology
- Small parts
- Urology
- Vascular
- Pediatrics
- Emergency Medicine
- Nerve
- Others

## 1.2 Transducer types

- Curved array transducer
- Linear array transducer
- Phased array transducer
- 4D Volume transducer

## 1.3 Imaging modes

- B-Mode
- THI and PSH™ (Phase Shift Harmonic Imaging)
- M-Mode/Color M-mode

- Free Xros M™ (Anatomical M-mode)
- Free Xros CM™ (Curved Anatomical M-mode)
- Color Doppler Imaging
- Power Doppler Imaging/Directional PDI
- Pulsed Wave Doppler
- Continuous Wave Doppler
- TDI
- Smart 3D™ (Freehand 3D)
- 4D
- Natural Touch Elastography
- iScape™ View (Panoramic Imaging)
- UWN (Ultra Wideband Non-linear Contrast Imaging™)

## 1.4 Standard features

- B-Mode
- THI and PSH™
- M-Mode
- Color M Mode
- Color Doppler Imaging
- Power Doppler Imaging and Directional PDI

- Pulsed Wave Doppler
- iBeam™ (Spatial Compound Imaging)
- iClear™ (Speckle Suppression Imaging)
- iTouch™ (Auto Image Optimization)
- Zoom/iZoom (Full Screen Zoom)
- FCI (Frequency Compound Imaging)
- B steer
- ExFOV (Extended Field of View)
- Raw data processing
- 4 active probe ports
- 1TB hard drive
- 7 USB ports
- iStorage, iMeasurement, iReport
- MedSight
- Smart Installment Reminder
- Smart Track
- ECG
- Free Xros M™
- Free Xros CM™
- TDI (Include TVI, TVD, TVM, TEI)
- TDI QA (TDI Quantitative Analysis)
- Smart 3D™
- Real-time 4D
- iPage™ (Multi-Slice Imaging)
- iLive
- IVF
- Smart OB™ (Auto OB measurement)
- Smart NT™ (Auto NT measurement)
- Smart Face
- Smart V™
- Smart FLC
- DICOM
- Clinical Measurement Package
- Smart Bladder
- iNeedle
- iScanHelper
- Built-in battery
- Gel warmer

## 1.5 Optional features

- iScape™ View
- Auto IMT
- UWN Contrast Imaging™
- Natural Touch Elastography
- Continuous Wave Doppler

- Built-in wireless adapter
  - DVD R/W driver
  - Pencil probe port
  - Barcode reader
  - Network accessory package
- ### 1.6 Language support
- Software: English, Chinese, German, Spanish, French, Italian, Portuguese, Russian, Czech, Polish, Turkish, Norwegian, Finnish, Danish, Icelandic, Swedish, Serbian
  - Keyboard input: English, Chinese, German, Spanish, French, Italian, Portuguese, Russian, Czech, Polish, Icelandic, Norwegian, Swedish, Finnish, Turkish, Danish, Serbian
  - Control panel overlay: German, French, Russian, Italian, Spanish, Portuguese, Czech, Polish
  - User manual: English, Chinese, German, Spanish, Italian, Portuguese, Turkish, Serbian, Greek, French, Russia

## 2 Physical Specification



### 2.1 Dimension and weight

- Fold (adjustable support arm):  
875mm (Depth) x 543mm (Width) x 1200mm (Height)
- Unfold (adjustable support arm):  
875mm (Depth) x 543mm (Width) x 1655mm (Height)
- Weight:  
<75 Kg (standard configuration without probes)

### 2.2 Monitor

- High resolution color LED monitor  
Independent tilt up of 110 degrees from horizontal and swivel left/right of -90 to 90 degrees
- Frame rate (Hz): 60Hz
- Digital on-screen display of brightness and contrast controls
- Viewing angle: 89° left/right; 89° up/down
- Resolution: 1920x1080 (21.5 inch)

### 2.3 Wheels

- Diameter: 100 mm
- Castors (4): total lock and break

## 2.4 Probe port and holder

- Probe ports: 4 active ports, 1 more for pencil probe only
- Detachable probe holder: 8 as standard, including one dedicated holder for endocavity probe (left side holder as default, possible to select it as the right side holder before order) and one dedicated holder for pencil probe

## 2.5 Electrical power

- Voltage: 100-240V~
- Frequency: 50/60 Hz
- Power consumption: Max. 600VA

## 2.6 Operating Environment

- Ambient temperature: 0-40 °C
- Relative humidity: 30%-85% (no condensation)
- Atmospheric pressure: 700hPa-1060hPa

## 2.7 Storage & Transportation Environment

- Ambient temperature: -20-55 °C
- Relative humidity: 30%-95% (no condensation)

- Atmospheric pressure: 700hPa-1060hPa

## 3 User Interface

### 3.1 Control panel

- User-centric control panel with home-based layout favors easy access to keys
- Backlit keys ensure accurate work in the dark room
- 6 Programmable keys available for user-defined functions (<P>, <F3-F6>, <F9>)
- 8-segment TGC control
- Full-sized, backlit QWERTY keyboard for text input, function keys and system programming
- Adjustable key volume and trackball speed meet different needs
- Dedicated palm rest design to help reduce user repetitive stress injury
- Independent rotation and up/down of control panel facilitates optimal positioning

-rotate:  $45 \pm 3$  degrees (from center)

-down/up:  $145 \pm 15$  mm (pull 55 mm range)

### 3.2 Touch screen

- 13.3-inch LED touch screen
- Resolution: 1920\*1080
- Touch screen panel angle adjustable for easy visualization: 30 degrees in rotation
- Digital brightness and contrast adjustment through preset
- Viewing angle: 85 degrees left/right; 85 degrees up/down
- Support thin latex gloves on touch screen.

### 3.3 System boot-up

- Boot-up from complete shut-down in less than 50 sec
- Shut-down in less than 25 sec

### 3.4 Comments

- Supports text input and arrow
- Adjustable text size and arrow size
- Supports home position
- Covers various application

- User customizable

### 3.5 Body marks

- More than 140 bodymarks for versatile application

- User customizable

### 3.6 Exam mode presets

36 system exam modes (unlimited number for user-defined ones)

### 3.7 Screen information\*

- Common info:
  - Mindray logo
  - Hospital name
  - Exam date
  - Exam time
  - Acoustic power
  - Mechanical index
  - ID, Last name, First Name, Middle initial, Gender, Age
  - Probe model
  - ECG icon (when ECG connected),
  - Operator
  - TGC Curve
  - Focus position
  - Thumbnail

- Imaging parameters
- Help guidance

\*Not all items are listed in this part, detail info please refer to user manual

## 4 Imaging Parameters

### 4.1 Overview

- Echo-enriched Beamforming
- Up to 27648 channels
- 12-beamforming

### 4.2 B-mode

- Display formats: Single(B), Dual(B+B), Quad(4B)
- iClear™: Off; 4 steps
- iBeam™: Off/On
- iTouch™
- iTouch Brightness: -12~12
- FCI
- Frequency (depend on probe)
- B steer: available on linear transducers, 3 levels
- ExFOV: available on convex, linear, and volume transducers

- Depth: 30 levels (0.9-38.8 cm; all depend on transducer)
- Frame rate (max): 1400 f/s
- Acoustic output power: 32 levels
- TGC: 8 pods on control panel
- LGC: 8 segments on touch screen
- Dynamic range: 30-240, 5/step
- Gain: 0-100
- Focus number: 1-4 (depend on transducer)
- Focus position: 16 levels
- FOV: continuously adjustable
- Line density: L, M, H, UH
- Persistence: 0~7, 1/step
- 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: 25 types
- Tint map: off; 25 types
- Auto merge: on/off
- Middle Line: on/off

### 4.3 THI and PSH™

- Available on all types of transducer
- Patent PSH™ technology, obtains purer harmonic, better contrast resolution, higher SNR, exceptional high frequency harmonic
- iClear™ available
- Frequency: depends on probe

### 4.4 M-mode

- Display formats: V2:3, V3:2, H2:3, V3:1, FULL (V: vertical, H: horizontal)
- Color M-mode available
- Acoustic output power: 32 levels
- Dynamic range: 30-240, 5/step
- Gain: 0-100
- M sweep speeds: 6 levels;
- M soften: 0~14, 1/step
- Tint map: off; 25 types
- Gray Map: 25 types
- Edge enhance: 0~3, 1/step

### 4.5 Free Xros M™

- Display formats: V2:3, V3:2, H2:3, V3:1 (V: vertical, H: horizontal)
- Color Free Xros M available

- Up to 3 lines
  - Display all lines
  - Sweep speeds: 6 levels
  - M Tint map: off; 25 types
  - Gray Map: 25 types
- ### 4.6 Free Xros CM™
- Only available in TDI mode
  - Display formats: V2:3, V3:2, H2:3, V3:1 (V: vertical, H: horizontal)
  - Sweep speeds: 6 levels
  - Tint map: off; 25 types
  - Gray Map: 25 types
  - Edit, undo, delete function for curved line

### 4.7 Color Doppler Imaging

- Dual live
- Frequency
- Steer: max. 20 degrees (linear transducer)
- Max frame rate: 1302 f/s
- Acoustic output power: 32 levels
- Gain: 0-100
- ROI size/position: adjustable



- Scale: 30 steps, 5 cm/s to 100 cm/s
- Baseline: -8-8, 1/step
- Wall filter: 0-7, 1/step
- PRF: 0.3 kHz to 14.8 kHz
- Packet size: 0-3, 1/step
- Smooth: 0-4, 1/step
- B/C align: on/off
- Priority: 0-100%, 10%/step
- Color map: 21 types
- Invert: on/off
- Persistence: 0-4, 1/step
- Velocity tag: on/off
- Line density: L, M, H, UH
- Smart Track: on/off

#### 4.8 Power Doppler Imaging

- Dual live
- Support directional power Doppler
- Frequency
- Acoustic output power: 32 levels
- Dynamic range: 10-70, 5/step
- Gain: 0-100
- ROI size/position: adjustable
- Scale: 30 steps

- Wall filter: 0-7, 1/step
- PRF: 0.3 kHz to 14.8 kHz
- Packet size: 0-3, 1/step
- Smooth: 0-4, 1/step
- B/C align
- Priority: 0-100%, 10%/step
- Power map: 4 types
- Directional color map: 4 types
- Persistence: 0-4, 1/step
- Line density: L, M, H, UH

#### 4.9 PW/CW-Mode

- Display formats: V2:3, V3:2, H2:3, V3:1, FULL (V: vertical, H: horizontal)
- Duplex/Triplex
- Frequency
- Sample volume size: 0.5-20 mm (PW only)
- Sample gate depth: adjustable
- PW Scale: 30 steps, 4.7 cm/s to 924 cm /s
- CW Scale: 30 steps, 3.1 cm/s to 6160 cm/s
- Baseline: -4-4, 1/step

- PW Steer: max. 20 degrees (linear transducer)
- Volume: 0-100%, 2%/step
- PW PRF: 0.7 kHz to 24 kHz
- CW PRF: 0.4 kHz to 160 kHz
- Gain: 0-100
- Dynamic range: 24-72, 2/step
- Sweep speed: 6 steps
- Wall filter: 0-6, 1/step
- Invert: on/off
- Angle correction: -89-89 degrees, 1/step
- Quick angle: -60, 0, 60 degrees
- Gray map: 25 types
- Tint map: Off; 25 types
- Time/frequency resolution: 0-4, 1/step
- Auto calc: on/off (PW only)
- Auto calc cycle: 1-5 (PW only)
- Trace area: above, below, all (PW only)
- iTouch (PW only)
- HPRF (PW only)

#### 4.10 TVI/TEI (Tissue Velocity/Energy Imaging, included in TDI option)

- Available on phased array transducer
- Dual live: side by side displays B and B+TVI
- Max frame rate: 1757 f/s
- PRF: 0.4 kHz to 9.9 kHz
- Acoustic output power: 32 levels
- Gain: 0-100
- Dynamic range: 10-70, 5/step (TEI only)
- ROI size/position: adjustable
- Scale: 30 steps, 5 cm/s to 100 cm/s (TVI only)
- Baseline: -8-8, 1/step (TVI only)
- Wall filter: 0-7, 1/step
- Packet size: 0-3, 1/step
- Smooth: 0-4, 1/step
- B/C align
- Priority: 0-100%, 10%/step
- TVI maps: 10 types
- TEI maps: 8 types
- Invert: on/off (TVI only)

- Persistence: 0-4, 1/step
- Velocity tag (TVI only): on/off
- Line density: L, M, H, UH

#### 4.11 TVD (Tissue Velocity Doppler, included in TDI option)

- Available on phased array transducer only
- Display formats: V2:3, V3:2, H2:3, V3:1, FULL (V: vertical, H: horizontal)
- Sample volume size: 0.5-20 mm
- Sample gate depth: adjustable
- Scale: 30 steps, 4.7 cm/s – 739.2 cm/s
- Baseline: -4-4, 1/ step
- Volume: 0-100%, 2%/step
- PRF: 0.7 kHz to 24 kHz
- Gain: 0-100
- Dynamic range: 24-72, 2/step
- Sweep speed: 6 steps
- Wall filter: 0-6, 1/step
- Invert
- Angle correction: -89-89 degrees, 1/step
- Quick angle: -60, 0, 60 degrees

- Gray map: 25 types
- Tint map: Off; 25 types
- Time/frequency resolution: 0-4, 1/step

#### 4.12 TVM (Tissue Velocity Motion, included in TDI option)

- Available on phased array transducer only
- Display formats: V2:3, V3:2, H2:3, V3:1, FULL (V: vertical, H: horizontal)
- Dynamic range: 30-240, 5/step
- Gain: 0-100
- M sweep speeds: 6 level
- M soften: 0-14, 1/step
- Gray Map: 25 types
- Tint Map: off, 25 types
- Edge enhancement: 0-3, 1/step

#### 4.13 TDI QA

- Dedicated quantification tool for TDI velocity analysis
- Up to 8 of ROI
- Delete all
- Delete current
- ROI tracking: tracking ROI along with

cardiac movement

- 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

#### 4.14 Smart 3D™

- Smart 3D
  - Acquisition Method: Rocked, Linear
  - iClear
  - VR: on/off, select volume rendered image
  - MPR: on/off, select A, B and C plane
  - Display formats: MPR only  
/asymmetric
  - VOI: on/off
  - Reset: all, orientation, reset curve
  - Active quadrant: A, B, C, VR
  - VR orientation: 0, 90, 180, 270
  - Inversion: on/off
  - Accept VOI: on/off
  - Flip: flip VR
  - Sync: synchronize VR with selected

plane

- Render modes: Surface, Min, Max, X-ray, iLive
- View direction: down/up, left/right, front/back
- Threshold: 0-100%, 1/step (only on VR)
- Opacity: 0-100%, 5%/step (only on VR)
- Smooth: 0-10, 1/step
- Brightness: 0-100%, 2%/step
- Contrast: 0-100%, 2%/step
- Tint: off; 25 types
- Auto rotation
  - Rotation control: play, single loop, loop
  - Direction: left/right, up/down
- Edit:
  - Area selection: inside polygon, outside polygon, inside contour, outside contour, inside rect, outside rect

- Undo: undo, undo all

#### 4.15 4D

- Available on volume transducer
- Static 3D and 4D
  - 4D frame rate: max. 50 vps on DE11-3E
  - iClear
  - VR: on/off, select volume rendered image
  - MPR: on/off, select A, B and C plane
  - Display formats: MPR only / asymmetric
  - VOI: on/off
  - Reset: all, orientation, reset curve
  - Active quadrant: A, B, C, VR
  - VR orientation: 0, 90, 180, 270
  - Inversion: on/off
  - Accept VOI: on/off
  - Flip: flip VR
  - Sync: synchronize VR with selected plane
  - Render modes: Surface, Min, Max, X-ray, iLive

- View direction: down/up, left/right, front/back

- Threshold: 0-100%, 1/step (only on VR)

- Opacity: 0-100%, 5/step (only on VR)

- Smooth: 0-10, 1/step

- Brightness: 0-100%, 2%/step

- Contrast: 0-100%, 2%/step

- Tint: off; 25 types

- Face+: Off, 1-3.

- iPage™

- Slice display mode: Slice only, Slice with MPR

- Slice cut direction: Horizontal and Vertical

- Slice layout: 2\*2, 3\*3, 4\*4, 5\*5

- Active quadrant: A plane, B plane, or C plane

- Reset: All, Reset Curve, Reset Ori

- Range Pos: left or right

- Spacing: 0.5-10 mm, 0.1 mm/step

- Slice Number: ranging from 3 to max. 25, depends on slice layout.
- Slice Position: a unique number for current selected slice.

- iLive

- Shading
- Light Position: 6
- Render Modes: iLive
- Soft View
- Grad View

- Auto rotation

- Rotation control: play, single loop, loop
- Direction: left/right, up/down

- Edit

- Area selection: inside polygon, outside polygon, inside contour, outside contour, inside rect, outside rect
- Undo: undo, undo all

#### 4.16 Smart Face

- Recognize fetal face automatically and then display the face in a

recommended viewing angle

- FaceContact: -15~15
- VR Orientation: 0°, 90°, 180°, 270°

#### 4.17 Smart V™

- Auto 3D volume calculation
- Manual ROI on A, B, C plane separately
- Auto detect contour of target
- Volume result shows in result window
- Edit VOI, Reset Ori
- Active Quadrant: A, B, C, Smart-V

#### 4.18 Smart FLC

- Automatic follicle calculation
- Edit ROI and detect follicle contour automatically
- Undo: Undo, Redo, Undo All
- Active Quadrant: A, B, C, Follicle
- Calc: Off/On
- Edit: Off/On
- Edit: Divide, Merge, Add/Del

#### 4.19 Smart Track

- Available on linear probes for Upper Ext Artery, Upper Ext Vein, Lower

Ext Artery, Lower Ext Vein, carotid,

IMT, EM Vascular exam.

- Enable the function under Color/Power mode, the angle and the position of the ROI are adjusted automatically.
- Enable the function under B+C+PW mode, the angle and the position of the PW sampling line, SV size, SV angle and SV position are adjusted automatically.

#### 4.20 iScape™ View

- Acquisition method: B and Power
- Supports velocity indicator
- Actual size: on/off
- Fit size: on/off
- Ruler: on/off
- Tint map: off; 25 types
- Rotation: 0-355 degrees, 5/step

#### 4.21 Elastography

- Available on L13-3, 7L4B, 7L4A, L12-3E, L14-6NE and V11-3
- Available on Thyroid, Breast, MSK and

Gynecology modes

- Stress compensation technology reduces deeper tissue artifacts, obtains more uniform stress throughout whole field
- Stress indicator: supports frame by frame stress indication
- Display format: Dual live, Single E
- Elasto Map: 6 types
- Smooth: 0-5
- Invert: on/off
- Opacity: 6 steps

#### 4.22 UWN Contrast Imaging™\*

- Ultra Wideband Non-linear (UWN) contrast imaging technology, which provides exceptional contrast agent detecting capability, not only extracts second harmonic, but also non-linear fundamental signals
- Available on C6-2, C5-2, 3C5A and SC5-1N
- Available on Adult ABD mode
- Supports Low MI contrast imaging

- Timer1: on/off
- Timer2: on/off
- Pro capture: captures prospective image less than 480s
- Retro capture: captures retrospective image less than 120s
- Dual live: side by side displays tissue image and contrast image
- Destruct: instantly destroy contrast bubbles
- iClear: off; 4 steps
- Mix: mix contrast image with tissue image
- Mix map: 7 types, available when Mix mode is active
- Persistence: 8 steps
- Dynamic range: 30-240, 5/step
- Gray map: 25 types; inactive when Mix mode is in use
- Tint map: off; 25 types
- Supports U/D Flip and L/R Flip
- Rotation: 90 degrees/step

- HImgPos: transpose position of contrast and tissue image

- Line density: L/M/H/UH

- DestructAP: 32 levels

- Destruct time: 500-2000 ms

#### 4.23 iBeam™

- Spatial compound imaging
- 3 angles maximum
- Available on all convex and linear transducers

#### 4.24 iClear™

- Speckle suppression imaging
- Available for B, 3D, 4D

#### 4.25 iTouch™

- Auto image optimization
- B-mode: gain, TGC
- Color: gain
- Power: gain
- PW: baseline, scale, PRF, WF

#### 4.26 B steer

- Only for linear transducers

#### 4.27 ExFov

- Extended field of view
- Available for all convex, linear and volume transducers



## 4.28 Zoom

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

## 4.29 QSave

- Quick save image parameter setting after image adjustment done
- Support Save, Save as, Restore

## 4.30 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, OB/GYN, Thyroid, Breast and Testicle applications

## 4.31 iNeedle

- Needle visualization enhancement
- Needle steer angle adjustable
- B/iNeedle: on/off

# 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 12390 frames or 181.1 s (M-mode)/169.6s (PW-mode)
- Retrospective and prospective storage are available and length is pre-settable (Max. time 480 s, Max. frames: 192039 )
- Maximum 4D cine memory up to 30719 frames or 120s
- Frame compare: displays one cine in dual format and allows frame by frame compare side by side
- Image/cine compare: max 4 for 2D/Color/Power/TDI files compare; max 2 for M/PW/TVD/TVM files compare (compare cines which are saved in same patient file)
- Jump to first and jump to last: one keystroke go to first or last frame in

the cine

## 5.2 Raw data processing

- B-mode:

- TGC
- Gain
- Gray Map
- Tint Map
- iClear
- L/R Flip
- U/D Flip
- Rotation
- LGC
- Auto Merge
- H Scale

- M-mode:

- Gray Map
- Tint Map

- Color:

- Baseline
- Smooth
- Color Map
- Priority
- Dual Live

- Invert
- Velocity tag

- PW:

- Gain
- Baseline
- Volume
- Angle
- Dyn Ra.
- Gray Map
- Tint Map
- Invert
- Quick Angle
- Auto Calculate
- Auto Calc Cycle
- Auto Calc Parameter
- Trace Area

## 6 Measurement/Analysis and Report\*

### 6.1 Generic measurements

- B-mode

Distance

Ellipse

Trace

Spline	Ratio(Spline)
Cross	Ratio(Cross)
Angle	-----
Double Dist	Volume
Trace Len	Volume
Trace Len(Spline)	Volume(Ellipse)
Parallel	Volume(E+Dist.)
B-Profile	Ratio(A)
B-Hist(Ellipse)	Ratio(Trace)
B-Hist(Trace)	Ratio(Ellipse)
B-Hist(Spline)	Ratio(Spline)
B-Hist(Rectangle)	Ratio(Cross)
Depth	Volume Flow
Color Vel	Vas Area
Color Vel Profile	TAMEAN
IMT	TAMAX
-----	
Volume	• M-Mode
Volume(Ellipse)	HR
Volume(E+Dist.)	Slope
Ratio(D)	Distance
Ratio(Ellipse)	Time

Velocity	Adrenal L
	Adrenal H
• D-Mode	Adrenal W
PS/ED	CBD
Vel	Portal V Diam
HR	CHD
Time	GB L
Acceleration	GB H
D Trace	GB wall th
-----	Panc duct
Volume Flow	Panc head
Vas Area	Panc body
TAMEAN	Panc tail
TAMAX	Spleen

## 6.2 Application measurement package

• Abdominal	Aorta Diam
B-Mode	Aorta Bif
Liver	Iliac Diam
Renal L	Pre-BL L
Renal H	Pre-BL H
Renal W	Pre-BL W
Cortex	Post-BL L
	Post-BL H

Post-BL W	Adrenal H
Ureter	Adrenal W
-----	Smart Bladder
Renal Vol	XS Bladder
Pre-BL Vol	Sag Bladder
Post-BL Vol	
Mictur.Vol	D-Mode
-----	Ren A Org
Kidney	Arcuate A
Renal L	Segment A
Renal H	Interlobar A
Renal W	Renal A
Cortex	M Renal A
Bladder	Renal V
Pre-BL L	Aorta
Pre-BL H	Celiac Axis
Pre-BL W	SMA
Post-BL L	C Hepatic A
Post-BL H	Hepatic A
Post-BL W	Splenic A
Adrenal	IVC
Adrenal L	Portal V

M Portal V	Follicle2 L
Hepatic V	Follicle2 W
Lt Hepatic V	Follicle2 H
Rt Hepatic V	Follicle3 L
M Hepatic V	Follicle3 W
Splenic V	Follicle3 H
SMV	Follicle4 L
• Gynecology	Follicle4 W
B-Mode	Follicle4 H
UT L	Follicle5 L
UT H	Follicle5 W
UT W	Follicle5 H
Cervix L	Follicle6 L
Cervix H	Follicle6 W
Cervix W	Follicle6 H
Endo	Follicle7 L
Ovary L	Follicle7 W
Ovary H	Follicle7 H
Ovary W	Follicle8 L
Follicle1 L	Follicle8 W
Follicle1 W	Follicle8 H
Follicle1 H	Follicle9 L

Follicle9 W

Follicle9 H

Follicle10 L

Follicle10 W

Follicle10 H

Follicle11 L

Follicle11 W

Follicle11 H

Follicle12 L

Follicle12 W

Follicle12 H

Follicle13 L

Follicle13 W

Follicle13 H

Follicle14 L

Follicle14 W

Follicle14 H

Follicle15 L

Follicle15 W

Follicle15 H

Follicle16 L

Follicle16 W

Follicle16 H

-----

Ovary Vol

UT Vol

UT SUM

UT-L/CX-L

Follicle1

Follicle2

Follicle3

Follicle4

Follicle5

Follicle6

Follicle7

Follicle8

Follicle9

Follicle10

Follicle11

Follicle12

Follicle13

Follicle14

Follicle15

Follicle16

-----	Follicle3
Uterus	Follicle3 L
UT L	Follicle3 W
UT H	Follicle3 H
UT W	Follicle4
Endo	Follicle4 L
Uterine Cervix	Follicle4 W
Cervix L	Follicle4 H
Cervix H	Follicle5
Cervix W	Follicle5 L
Ovary	Follicle5 W
Ovary L	Follicle5 H
Ovary H	Follicle6
Ovary W	Follicle6 L
Follicle1	Follicle6 W
Follicle1 L	Follicle6 H
Follicle1 W	Follicle7
Follicle1 H	Follicle7 L
Follicle2	Follicle7 W
Follicle2 L	Follicle7 H
Follicle2 W	Follicle8
Follicle2 H	Follicle8 L



Follicle8 W	Follicle14
Follicle8 H	Follicle14 L
Follicle9	Follicle14 W
Follicle9 L	Follicle14 H
Follicle9 W	Follicle15
Follicle9 H	Follicle15 L
Follicle10	Follicle15 W
Follicle10 L	Follicle15 H
Follicle10 W	Follicle16
Follicle10 H	Follicle16 L
Follicle11	Follicle16 W
Follicle11 L	Follicle16 H
Follicle11 W	• Obstetrics
Follicle11 H	B-Mode
Follicle12	GS
Follicle12 L	YS
Follicle12 W	CRL
Follicle12 H	NT
Follicle13	BPD
Follicle13 L	OFD
Follicle13 W	HC
Follicle13 H	AC

FL

TAD

APAD

TCD

CM

LVW

HW

OOD

IOD

HUM

Ulna

RAD

Tibia

FIB

CLAV

Vertebrae

MP

Foot

Ear

APTD

TTD

FTA

THD

HrtC

TC

Umb VD

F-kidney

Mat Kidney

Cervix L

AF

NF

Orbit

PL Thickness

Sac Diam1

Sac Diam2

Sac Diam3

AF1

AF2

AF3

AF4

LVIDd

LVIDs

LV Diam

LA Diam

RVIDd	TV Diam(Z-Score)
RVIDs	LPA Diam(Z-Score)
RV Diam	RPA Diam(Z-Score)
RA Diam	IVC Diam(Z-Score)
IVSd	AV Diam(Z-Score)
IVSs	MPA Diam(Z-Score)
IVS	RV Diam(Z-Score)
LV Area	LV Diam(Z-Score)
LA Area	RV Area(Z-Score)
RV Area	LV Area(Z-Score)
RA Area	RVIDd(Z-Score)
Ao Diam	LVIDd(Z-Score)
MPA Diam	AC(c)
LVOT Diam	-----
RVOT Diam	Mean Sac Diam
Facial Angle	AFI
HrtA	EFW
MV Diam(Z-Score)	EFW2
PV Diam(Z-Score)	HC/AC(Campbell)
Ao Asc Diam(Z-Score)	FL/AC
Ao Desc Diam(Z-Score)	FL/BPD
Duct Art Diam(Z-Score)	AXT

CI	RVIDd
FL/HC(Hadlock)	RVIDs
HC(c)	IVSd
HrtC/TC	IVSs
TCD/AC	RVIDd(Z-Score)
LVW/HW	LVIDd(Z-Score)
LVD/RVD	
LAD/RAD	D-Mode
AoD/MPAD	Umb A
LAD/AoD	Duct Veno
MAD	Placenta A
-----	MCA
AFI	Fetal Ao
AF1	Desc Aorta
AF2	Ut A
AF3	Ovarian A
AF4	FHR
	Asc Aorta
M-Mode	RVOT
FHR	LVOT
LVIDd	• Cardiology
LVIDs	B-Mode

LA Diam(2D)	LVIDs(Gibson-2D)
LA Major	RVDd(2D)
LA Minor	RVDs(2D)
RA Major	LVPWd(2D)
RA Minor	LVPWs(2D)
LV Major	RVAWd(2D)
LV Minor	RVAWs(2D)
RV Major	IVSd(2D)
RV Minor	IVSs(2D)
LA Area	Ao Diam(2D)
RA Area	Ao Arch Diam(2D)
LV Area(d)	Ao Asc Diam(2D)
LV Area(s)	Ao Desc Diam(2D)
RV Area(d)	Ao Isthmus(2D)
RV Area(s)	Ao st junct(2D)
LVIDd(2D)	Ao Sinus Diam(2D)
LVIDs(2D)	Duct Art Diam
LVIDd(Teich-2D)	Pre Ductal
LVIDs(Teich-2D)	Post Ductal
LVIDd(Cube-2D)	ACS(2D)
LVIDs(Cube-2D)	LVOT Diam(2D)
LVIDd(Gibson-2D)	AV Diam

AVA	PEd(2D)
PV Diam	PEs(2D)
LPA Diam(2D)	Diastole(Teich-2D)
RPA Diam(2D)	Systole(Teich-2D)
MPA Diam(2D)	Diastole(Cube-2D)
RVOT Diam(2D)	Systole(Cube-2D)
MV Diam	Diastole(Gibson-2D)
MVA	Systole(Gibson-2D)
MCS(2D)	HR(Teich 2D)
MV EPSS(2D)	HR(Cube 2D)
TV Diam	HR(Gibson 2D)
TVA	-----
IVC Diam(Insp)	LA/Ao(2D)
IVC Diam(Expir)	Ao/LA(2D)
SVC Diam(Insp)	-----
SVC Diam(Expir)	S-P Ellipse
LCA Diam	LVLd apical(SP Ellipse)
RCA Diam	LVAd apical(SP Ellipse)
VSD Diam	LVLS apical(SP Ellipse)
ASD Diam	LVAs apical(SP Ellipse)
PDA Diam	HR(SP Ellipse)
PFO Diam	B-P Ellipse

LVIDd(BP Ellipse)	EDV(Simp SP-A2C)
LVIDs(BP Ellipse)	ESV(Simp SP-A2C)
LVAd sax MV(BP Ellipse)	HR(Simp SP A2C)
LVAAs sax MV(BP Ellipse)	Simp SP(A4C)
LVAd apical(BP Ellipse)	EDV(Simp SP-A4C)
LVAAs apical(BP Ellipse)	ESV(Simp SP-A4C)
HR(BP Ellipse)	HR(Simp SP A4C)
Bullet	Simpson BP
LVLd apical(Bullet)	EDV(Simp BP-A2C)
LVLs apical(Bullet)	ESV(Simp BP-A2C)
LVAd sax MV(Bullet)	EDV(Simp BP-A4C)
LVAAs sax MV(Bullet)	ESV(Simp BP-A4C)
HR(Bullet)	HR(Simp BP)
Mod.Simpson	Cube(2D)
LVLd apical(Simp)	Diastole(Cube-2D)
LVLs apical(Simp)	Systole(Cube-2D)
LVAd sax MV(Simp)	IVSd(Cube-2D)
LVAAs sax MV(Simp)	LVIDd(Cube-2D)
LVAd sax PM(Simp)	LVPWd(Cube-2D)
LVAAs sax PM(Simp)	IVSs(Cube-2D)
HR(Mod Simp)	LVIDs(Cube-2D)
Simp SP(A2C)	LVPWs(Cube-2D)

HR(Cube 2D)	LA Diam(LA Vol A-L)
Teichholz(2D)	LAA(A2C)
Diastole(Teich-2D)	LAA(A4C)
Systole(Teich-2D)	LA Vol(Simp)
IVSd(Teich-2D)	LA Vol(A2C)
LVIDd(Teich-2D)	LA Vol(A4C)
LVPWd(Teich-2D)	RA Vol(Simp)
IVSs(Teich-2D)	RA Vol(A4C)
LVIDs(Teich-2D)	LV Mass(Cube-2D)
LVPWs(Teich-2D)	IVSd(LV Mass Cube-2D)
HR(Teich 2D)	LVIDd(LV Mass Cube-2D)
Gibson(2D)	LVPWd(LV Mass Cube-2D)
Diastole(Gibson-2D)	LV Mass(T-E)
Systole(Gibson-2D)	LVAd sax Epi(LV Mass T-E)
IVSd(Gibson-2D)	LVAd sax Endo(LV Mass T-E)
LVIDd(Gibson-2D)	a
LVPWd(Gibson-2D)	d
IVSs(Gibson-2D)	LV Mass(A-L)
LVIDs(Gibson-2D)	LVAd sax Epi(LV Mass A-L)
LVPWs(Gibson-2D)	LVAd sax Endo(LV Mass A-L)
HR(Gibson 2D)	LVld apical(LV Mass A-L)
LA Vol(A-L)	MVA(VTI)



LVOT Diam(MVA VTI)	PISA TR
LVOT VTI(MVA VTI)	TR Rad
MV VTI(MVA VTI)	TR Als Vel
AVA(VTI)	TR VTI(PISA TR)
LVOT Diam(AVA VTI)	PISA PR
LVOT VTI(AVA VTI)	PR Rad
AV VTI(AVA VTI)	PR Als Vel
Qp/Qs	PR VTI(PISA PR)
AV Diam(Qp/Qs)	
AV VTI(Qp/Qs)	M-Mode
AV HR(Qp/Qs)	LA Diam(M)
PV Diam(Qp/Qs)	LVIDd(M)
PV VTI(Qp/Qs)	LVIDs(M)
PV HR(Qp/Qs)	LVIDd(Teich-M)
PISA MR	LVIDs(Teich-M)
MR Rad	LVIDd(Cube-M)
MR Als Vel	LVIDs(Cube-M)
MR VTI(PISA MR)	LVIDd(Gibson-M)
PISA AR	LVIDs(Gibson-M)
AR Rad	RVDd(M)
AR Als Vel	RVDs(M)
AR VTI(PISA AR)	LVPWd(M)

LVPWs(M)	MV DE
RVAWd(M)	MCS(M)
RVAWs(M)	MV EPSS(M)
IVSd(M)	PEd(M)
IVSs(M)	PEs(M)
Ao Diam(M)	LVPEP(M)
Ao Arch Diam(M)	LVET(M)
Ao Asc Diam(M)	RVPEP(M)
Ao Desc Diam(M)	RVET(M)
Ao Isthmus(M)	Diastole(Teich-M)
Ao st junct(M)	Systole(Teich-M)
Ao Sinus Diam(M)	Diastole(Cube-M)
LVOT Diam(M)	Systole(Cube-M)
ACS(M)	Diastole(Gibson-M)
LPA Diam(M)	Systole(Gibson-M)
RPA Diam(M)	HR(Teich M)
MPA Diam(M)	HR(Cube M)
RVOT Diam(M)	HR(Gibson M)
MV E Amp	HR
MV A Amp	TAPSE
MV E-F Slope	-----
MV D-E Slope	LA/Ao(M)

Ao/LA(M)

-----

LV Tei Index(M)

MV C-O dur(M)

LVET(LV Tei Index-M)

Cube(M)

Diastole(Cube-M)

Systole(Cube-M)

IVSd(Cube-M)

LVIDd(Cube-M)

LVPWd(Cube-M)

IVSs(Cube-M)

LVIDs(Cube-M)

LVPWs(Cube-M)

HR(Cube M)

Teichholz(M)

Diastole(Teich-M)

Systole(Teich-M)

IVSd(Teich-M)

LVIDd(Teich-M)

LVPWd(Teich-M)

IVSs(Teich-M)

LVIDs(Teich-M)

LVPWs(Teich-M)

HR(Teich M)

Gibson(M)

Diastole(Gibson-M)

Systole(Gibson-M)

IVSd(Gibson-M)

LVIDd(Gibson-M)

LVPWd(Gibson-M)

IVSs(Gibson-M)

LVIDs(Gibson-M)

LVPWs(Gibson-M)

HR(Gibson M)

LV Mass(Cube-M)

IVSd(LV Mass Cube-M)

LVIDd(LV Mass Cube-M)

LVPWd(LV Mass Cube-M)

D-Mode

MV Vmax

MV E Vel

MV A Vel

MV E VTI	AV DecT
MV A VTI	RVET(Doppler)
MV VTI	RVPEP(Doppler)
MV HR	TV Vmax
MV AccT	TV E Vel
MV DecT	TV A Vel
IVRT	TV VTI
IVCT	TV HR
MV E Dur	TV AccT
MV A Dur	TV DecT
LVOT Vmax	TV A Dur
LVOT VTI	RVOT Vmax
LVOT HR	RVOT VTI
LVOT AccT	RVOT HR
AAo Vmax	PV Vmax
DAo Vmax	PV VTI
AV Vmax	PV HR
AV VTI	PV AccT
AV HR	MPA Vmax
LVPEP(Doppler)	RPA Vmax
LVET(Doppler)	LPA Vmax
AV AccT	PVein S Vel

PVein D Vel	PR Vmax
PVein A Vel	PR VTI
PVein A Dur	PR PHT
PVein S VTI	PR Ved
PVein D VTI	RAP
PVein DecT	VSD Vmax
IVC Vel(Insp)	ASD Vmax
IVC Vel(Expir)	PDA Vel(d)
SVC Vel(Insp)	PDA Vel(s)
SVC Vel(Expir)	Coarc Pre-Duct
MR Vmax	Coarc Post-Duct
MR VTI	Ea(medial)
MS Vmax	Aa(medial)
dP/dt	ARa(medial)
AR Vmax	DRa(medial)
AR VTI	Sa(medial)
AR DecT	Ea(lateral)
AR PHT	Aa(lateral)
AR Ved	ARa(lateral)
TR Vmax	DRa(lateral)
TR Vmax(RVSP)	Sa(lateral)
TR VTI	HR

Hepatic V S Vel	PAEDP
Hepatic V D Vel	PR Ved(PAEDP)
-----	RAP
MV E/A	RV Tei Index
MVA(PHT)	TV C-O dur
TV E/A	RVET(RV Tei Index)
TVA(PHT)	Qp/Qs
-----	AV Diam(Qp/Qs)
MVA(VTI)	AV VTI(Qp/Qs)
LVOT Diam(MVA VTI)	AV HR(Qp/Qs)
LVOT VTI(MVA VTI)	PV Diam(Qp/Qs)
MV VTI(MVA VTI)	PV VTI(Qp/Qs)
AVA(VTI)	PV HR(Qp/Qs)
LVOT Diam(AVA VTI)	PISA MR
LVOT VTI(AVA VTI)	MR Rad
AV VTI(AVA VTI)	MR Als Vel
LV Tei Index(Doppler)	MR VTI(PISA MR)
MV C-O dur(Doppler)	PISA AR
LVET(LV Tei Index-Doppler)	AR Rad
RVSP	AR Als Vel
TR Vmax(RVSP)	AR VTI(PISA AR)
RAP	PISA TR

TR Rad	Testicular L
TR Als Vel	Testicular H
TR VTI(PISA TR)	Testicular W
PISA PR	Ureter
PR Rad	Pre-BL L
PR Als Vel	Pre-BL H
PR VTI(PISA PR)	Pre-BL W
• Urology	Post-BL L
B-Mode	Post-BL H
Renal L	Post-BL W
Renal H	Prostate Mass1 d1
Renal W	Prostate Mass1 d2
Cortex	Prostate Mass1 d3
Adrenal L	Prostate Mass2 d1
Adrenal H	Prostate Mass2 d2
Adrenal W	Prostate Mass2 d3
Prostate L	Prostate Mass3 d1
Prostate H	Prostate Mass3 d2
Prostate W	Prostate Mass3 d3
Seminal L	Testicular Mass1 d1
Seminal H	Testicular Mass1 d2
Seminal W	Testicular Mass1 d3

Testicular Mass2 d1	Cortex
Testicular Mass2 d2	Adrenal
Testicular Mass2 d3	Adrenal L
Testicular Mass3 d1	Adrenal H
Testicular Mass3 d2	Adrenal W
Testicular Mass3 d3	Prostate
Epididymis L	Prostate L
Epididymis H	Prostate H
Epididymis W	Prostate W
Scrotal Wall	Seminal Vesicle
-----	Seminal L
Renal Vol	Seminal H
Prostate Vol	Seminal W
Testicular Vol	Testis
Pre-BL Vol	Testicular L
Post-BL Vol	Testicular H
Mictur.Vol	Testicular W
-----	Bladder
Kidney	Pre-BL L
Renal L	Pre-BL H
Renal H	Pre-BL W
Renal W	Post-BL L



Post-BL H	Testicular Mass3
Post-BL W	Testicular Mass3 d1
Prostate Mass1	Testicular Mass3 d2
Prostate Mass1 d1	Testicular Mass3 d3
Prostate Mass1 d2	Epididymis
Prostate Mass1 d3	Epididymis L
Prostate Mass2	Epididymis H
Prostate Mass2 d1	Epididymis W
Prostate Mass2 d2	Smart Bladder
Prostate Mass2 d3	XS Bladder
Prostate Mass3	Sag Bladder
Prostate Mass3 d1	
Prostate Mass3 d2	D-Mode
Prostate Mass3 d3	Testis A
Testicular Mass1	Testis V
Testicular Mass1 d1	Epididymis A
Testicular Mass1 d2	Epididymis V
Testicular Mass1 d3	• Vascular
Testicular Mass2	B-Mode
Testicular Mass2 d1	CCA IMT
Testicular Mass2 d2	Bulb IMT
Testicular Mass2 d3	ICA IMT

ECA IMT	Radial A
-----	Subclav V
Stenosis D	Axill V
Stenosis A	Cephalic V
-----	Basilic V
IMT	Ulnar V
CCA IMT	Radial V
Bulb IMT	C.Iliac A
ICA IMT	Ex.Iliac A
ECA IMT	CFA
	SFA
D-Mode	Pop A
CCA	TP Trunk A
Bulb	Peroneal A
ICA	P.Tib A
ECA	A.Tib A
Vert A	Dors.Ped. A
Innom A	C.Iliac V
Subclav A	Ex.Iliac V
Axill A	Femoral V
Brachial A	Saph V
Ulnar A	Pop V

TP Trunk V	BSP
Sural V	-----
Soleal V	ICA/CCA
Peroneal V	-----
P.Tib V	ABI
A.Tib V	ASP
ACA	BSP
MCA	• Small Parts
PCA	B-Mode
AComA	Thyroid L
PComA	Thyroid H
BA	Thyroid W
IIA	Isthmus H
DFA	Testicular L
Ba V	Testicular H
Brachial V	Testicular W
IIV	Breast Mass1 d1
CFV	Breast Mass1 d2
SFV	Breast Mass1 d3
DFV	Breast Mass2 d1
SSV	Breast Mass2 d2
ASP	Breast Mass2 d3

Breast Mass3 d1

Breast Mass3 d2

Breast Mass3 d3

Breast Mass4 d1

Breast Mass4 d2

Breast Mass4 d3

Breast Mass5 d1

Breast Mass5 d2

Breast Mass5 d3

Breast Mass6 d1

Breast Mass6 d2

Breast Mass6 d3

Breast Mass7 d1

Breast Mass7 d2

Breast Mass7 d3

Breast Mass8 d1

Breast Mass8 d2

Breast Mass8 d3

Breast Mass9 d1

Breast Mass9 d2

Breast Mass9 d3

Breast Mass10 d1

Breast Mass10 d2

Breast Mass10 d3

Thyroid Mass1 d1

Thyroid Mass1 d2

Thyroid Mass1 d3

Thyroid Mass2 d1

Thyroid Mass2 d2

Thyroid Mass2 d3

Thyroid Mass3 d1

Thyroid Mass3 d2

Thyroid Mass3 d3

Testicular Mass1 d1

Testicular Mass1 d2

Testicular Mass1 d3

Testicular Mass2 d1

Testicular Mass2 d2

Testicular Mass2 d3

Testicular Mass3 d1

Testicular Mass3 d2

Testicular Mass3 d3

Epididymis L

Epididymis H

Epididymis W	Breast Mass3 d1
Scrotal Wall	Breast Mass3 d2
-----	Breast Mass3 d3
Thyroid Vol	Breast Mass4
-----	Breast Mass4 d1
Thyroid	Breast Mass4 d2
Thyroid L	Breast Mass4 d3
Thyroid H	Breast Mass5
Thyroid W	Breast Mass5 d1
Testis	Breast Mass5 d2
Testicular L	Breast Mass5 d3
Testicular H	Breast Mass6
Testicular W	Breast Mass6 d1
Breast Mass1	Breast Mass6 d2
Breast Mass1 d1	Breast Mass6 d3
Breast Mass1 d2	Breast Mass7
Breast Mass1 d3	Breast Mass7 d1
Breast Mass2	Breast Mass7 d2
Breast Mass2 d1	Breast Mass7 d3
Breast Mass2 d2	Breast Mass8
Breast Mass2 d3	Breast Mass8 d1
Breast Mass3	Breast Mass8 d2

Breast Mass8 d3	Epididymis L
Breast Mass9	Epididymis H
Breast Mass9 d1	Epididymis W
Breast Mass9 d2	Testicular Mass1
Breast Mass9 d3	Testicular Mass1 d1
Breast Mass10	Testicular Mass1 d2
Breast Mass10 d1	Testicular Mass1 d3
Breast Mass10 d2	Testicular Mass2
Breast Mass10 d3	Testicular Mass2 d1
Thyroid Mass1	Testicular Mass2 d2
Thyroid Mass1 d1	Testicular Mass2 d3
Thyroid Mass1 d2	Testicular Mass3
Thyroid Mass1 d3	Testicular Mass3 d1
Thyroid Mass2	Testicular Mass3 d2
Thyroid Mass2 d1	Testicular Mass3 d3
Thyroid Mass2 d2	
Thyroid Mass2 d3	D-Mode
Thyroid Mass3	STA
Thyroid Mass3 d1	ITA
Thyroid Mass3 d2	• Orthopedics
Thyroid Mass3 d3	B-Mode
Epididymis	HIP

d/D	BPD
• Emergency	UT L
B-Mode	UT H
Renal L	UT W
Renal H	Endo
Renal W	Ovary L
CBD	Ovary H
Portal V Diam	Ovary W
CHD	-----
GB wall th	Renal Vol
Aorta Diam	Pre-BL Vol
Aorta Bif	Post-BL Vol
Ureter	Mictur.Vol
Pre-BL L	Ovary Vol
Pre-BL H	UT Vol
Pre-BL W	UT SUM
Post-BL L	-----
Post-BL H	Uterus
Post-BL W	UT L
GS	UT H
YS	UT W
CRL	Endo

Ovary	• Auto calculation
Ovary L	PS
Ovary H	ED
Ovary W	MD
Kidney	PPG
Renal L	TAMAX
Renal H	Vol Flow(TAMAX)
Renal W	TAMEAN
Cortex	Vol Flow(TAMEAN)
Bladder	DT
Pre-BL L	MPG
Pre-BL H	MMPG
Pre-BL W	VTI
Post-BL L	AT
Post-BL H	S/D
Post-BL W	D/S
	PI
M-Mode	RI
FHR	PV
	HR
D-Mode	<b>6.3 Smart bladder</b>
FHR	• Auto trace of bladder border in
	transverse and vertical section



- Auto measurement of bladder volume

#### 6.4 Report

- Specific report template by application
- User-defined report template
- Editable value in report
- Images selectable
- Able to Export as PDF/RTF file

#### 6.5 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
- IMT Trend in report

#### 6.6 Smart OB™

- Auto measurement for OB, a special tool 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

#### 6.7 Smart NT™

- NT auto measurement
- Auto detection of NT inside ROI

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

## 7 Exam Storage and Management

### 7.1 Exam storage

- 1TB hard drive. Max 726 GB internal hard drive for patient data storage
- Capable to store up to approximate 82602 single frames
- Direct digital storage of single frame and cine 2D, color and Doppler.

### 7.2 Exam management

- iStation™ workstation dedicated for patient exam management
- Patient exam query/retrieve
- Support review of current and past exam
- New exam, Active exam, Continue exam functions, End exam are

- available
- Support measurements and calculations on archived exam and images
- Export images as (BMP/JPG/TIFF/DCM/AVI/MP4 format )
- Support backup/send to USB devices, DVD-RW media

## 8 Connectivity

### 8.1 Ethernet Network Connection

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

### 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 OB/GYN structure report
- DICOM Cardiac structure report
- DICOM Vascular structure report

### 8.3 iStorage (included in UltraAssist)

- 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 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 WiFi
- Support both iOS (7.0 and above) and Android (4.0 and above) powered system.
- For iOS powered smart device:

DICOM is mandatory; For Android powered smart device: DICOM is not necessary

## 9 Transducers

### 9.1 Curved array

- 3C5A

- Application: Gynecology, obstetrics, abdominal, vascular, musculoskeletal, pediatric
- Bandwidth: 1.3~5.7 MHz
- Number of Elements: 128
- FOV (max): 72°
- Extended FOV: 92°
- Convex Radius: 50 mm
- Depth: 2.8-38.8 cm
- Physical Footprint: 76 mm × 29.5 mm
- Footprint: 62 mm × 16 mm
- B-mode Frequencies: 1.3~3.2, 1.9~4.6, 2.1~5.3, 2.3~5.7 [2.0, 3.5, 4.5, 5.0] MHz
- Harmonic Frequencies: 5.0, 6.0 MHz
- Doppler Frequencies: 2.5, 3.0 MHz

- Biopsy Guide: NGB-006, multi angle, reusable

- 6C2

- Application: Gynecology, Obstetrics, Abdominal, Vascular
- Bandwidth: 2.6~13.2 MHz
- Number of Elements: 128
- FOV (max): 102°
- Extended FOV: 122°
- Convex Radius: 15 mm
- Depth: 0.9-29.6 cm
- Physical Footprint: 33.5 mm × 24.8 mm
- Footprint: 29 mm × 10 mm
- B-mode Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2 [5.0, 6.5, 7.5, 8.5] MHz
- Harmonic Frequencies: 8.0, 9.0 MHz
- Doppler Frequencies: 4.4, 5.0 MHz
- Biopsy Guide: NGB-005, multi angle, reusable

- V11-3

- Application: Gynecology, obstetrics, urology
- Bandwidth: 2.4-12.8 MHz
- Number of Elements: 128
- FOV (max): 139°
- Extended FOV: 159°
- Convex Radius: 11 mm
- Depth: 1.8-29.6 cm
- Physical Footprint: 24.85 mm × 21.8 mm
- Footprint: 24 mm × 9 mm
- B-mode Frequencies: 2.4~6.2, 3.2~7.9, 4.0~10.3, 4.7~12.8 [5.0, 6.5, 7.5, 8.5] MHz
- Harmonic Frequencies: 8.0, 9.0 MHz
- Doppler Frequencies: 4.4, 5.0 MHz
- Biopsy Guide: NGB-004, single angle, reusable
- V10-4B
  - Application: OB/GYN, Urology
  - Bandwidth: 2.6-13.2 MHz
  - Number of Elements: 128
  - FOV (max): 160°
  - Extended FOV: 180°
  - Convex Radius: 10mm
  - Depth: 1.8-29.6 cm
  - Physical Footprint: 22.1mm×21.5mm
- FOV (max): 160°
- Extended FOV: 180°
- Convex Radius: 10 mm
- Depth: 1.8-29.6 cm
- Physical Footprint: 22.1mm×21.5mm
- Footprint: 22.1mm×9.1mm
- B-mode Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2 [5.0, 6.5, 7.5, 8.5] MHz
- Harmonic Frequencies: 8.0, 9.0 MHz
- Doppler Frequencies: 4.0, 5.0 MHz
- Biopsy Guide: NGB-004, single angle, reusable
- V10-4
  - Application: OB/GYN, Urology
  - Bandwidth: 2.6-13.2 MHz
  - Number of Elements: 128
  - FOV (max): 160°
  - Extended FOV: 180°
  - Convex Radius: 10mm
  - Depth: 1.8-29.6 cm
  - Physical Footprint: 22.1mm×21.5mm

- Footprint: 22.1mm×9.1mm
  - B-mode Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2 [5.0, 6.5, 7.5, 8.5] MHz
  - Harmonic Frequencies: 8.0, 9.0 MHz
  - Doppler Frequencies: 4.0, 5.0 MHz
  - Biopsy Guide: NGB-004, single angle, reusable
- CB10-4E (Biplane)
    - Application: Urology
    - Bandwidth: 2.6-13.2 MHz
    - Number of Elements: 128
    - Field of View (max): 165°
    - Extended FOV: 180°
    - Convex Radius: 9mm
    - Depth: 1.8-29.6 cm
    - Physical Footprint: 22.5 mm × 20.1mm
    - Footprint: 20.1 mm × 9.0mm
    - B-mode imaging Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2 [5.0, 6.5, 7.5, 8.5] MHz
- C6-2
    - Harmonic Frequencies: 8.0, 9.0 MHz
    - Doppler Frequencies: 4.7, 5.7 MHz
    - Biopsy Guide: NGB-004, single angle, reusable
    - Application: Gynecology, Obstetrics, Abdominal, Vascular
    - Bandwidth: 1.3-5.7 MHz
    - Number of Elements: 128
    - FOV (max): 60°
    - Extended FOV: 80°
    - Convex Radius: 60 mm
    - Depth: 2.8~38.8 cm
    - Physical Footprint: 76.5mm x 28mm
    - Footprint: 68mm x 19.2mm
    - B-mode Frequencies: 1.3~3.2, 1.9~4.6, 2.1~5.3, 2.3~5.7 [2.0, 3.5, 4.5, 5.0] MHz
    - Harmonic Frequencies: 5.0, 6.0 MHz
    - Doppler Frequencies: 2.5, 3.0 MHz
    - Biopsy Guide: NGB-022, multi angle, reusable

- SC5-1N
  - Application: Gynecology, obstetrics, pediatric, abdominal, vascular, urology
  - Bandwidth: 1.3-5.7 MHz
  - Number of Elements: 128
  - FOV (max): 62°
  - Extended FOV: 81°
  - Convex Radius: 60 mm
  - Depth: 2.8~38.8 cm
  - Physical Footprint: 76.7mm × 28mm
  - Footprint: 68mm × 18mm
  - B-mode Frequencies: 1.3~3.2, 1.9~4.6, 2.1~5.3, 2.3~5.7 [2.0, 3.5, 4.5, 5.0] MHz
  - Harmonic Frequencies: 5.0, 6.0 MHz
  - Doppler Frequencies: 2.5, 3.0 MHz
  - Biopsy Guide: NGB-022, multi angle, reusable
- C5-2
  - Application: Gynecology, obstetrics, abdominal, vascular, musculoskeletal, pediatric
  - Bandwidth: 1.3-5.7 MHz
  - Number of Elements: 128
  - FOV (max): 75°
  - Extended FOV: 95°
  - Convex Radius: 50 mm
  - Depth: 2.8~38.8 cm
  - Physical Footprint: 76.3mm x 25.6mm
  - Footprint: 64mm x 16.2mm
  - B-mode Frequencies: 1.3~3.2, 1.9~4.6, 2.1~5.3, 2.3~5.7 [2.0, 3.5, 4.5, 5.0] MHz
  - Harmonic Frequencies: 5.0, 6.0 MHz
  - Doppler Frequencies: 2.5, 3.0 MHz
  - Biopsy Guide: NGB-015, multi angle, reusable

## 9.2 Linear

- 7L4B/7L4A (II)
  - Application: Abdomen, Pediatric, Small Parts, Musculoskeletal, Vascular
  - Bandwidth: 3.0~14.0 MHz

- Number of Elements: 128
- Field of View (max): 38 mm
- Steered Angle: +/-6° (B); +/-20°(C, PW)
- Depth: 0.9 - 29.6 cm
- Physical Footprint: 61 mm × 24.4 mm
- Footprint: 45.7 mm ×10.9 mm
- B-mode Frequencies: 3.0~9.2, 5.4~11.5, 6.2~13, 7.0~14.0 [5.5, 6.5, 7.5, 9.0] MHz
- Harmonic Frequencies: 9.0, 10.0 MHz
- Doppler Frequencies: 5.0, 5.7 MHz
- Biopsy Guide: NGB-007, multi angle, reusable
- L14-6NE
  - Application: Small parts, musculo-skeletal, nerve, vascular, pediatric
  - Bandwidth: 4.8 ~ 16 MHz
  - Number of Elements: 192
  - Field of View (max): 38 mm
- Steered Angle: +/-6° (B); +/-20° (C, PW)
- Depth: 0.9-29.6 cm
- Physical Footprint: 45.7 mm × 10.9 mm
- Footprint: 44.2 mm × 8.5 mm
- B-mode Frequencies: 4.8~10.6, 6.0~12.6, 7.2~14.4, 8.0~16.0 [8.0, 10.0, 12.0, 14.0] MHz
- Harmonic Frequencies: 12.0, 14.0 MHz
- Doppler Frequencies: 5.7, 6.6 MHz
- Biopsy Guide: NGB-007, multi angle, reusable
- L12-3E
  - Application: Musculoskeletal, nerve, small parts, vascular, pediatric, abdominal
  - Bandwidth: 4.4~13.5 MHz
  - Number of Elements: 192
  - Field of View (max): 38 mm
  - Steered Angle: +/-6° (B); +/-12° (C,

- PW)
- Depth: 0.9-29.6 cm
- Physical Footprint: 45.7 mm × 10.9 mm
- Footprint: 44.2 mm × 8.5 mm
- B-mode Frequencies: 4.4~9.6, 5.4~11.5, 6.0~12.6, 6.6~13.5 [5.0, 7.5, 8.5, 10.0] MHz
- Harmonic Frequencies: 8.0, 10.0 MHz
- Doppler Frequencies: 5.0, 5.7 MHz
- Biopsy Guide: NGB-007, multi angle, reusable
- L7-3
  - Application: Small parts, vascular, pediatric, musculoskeletal, abdominal, cephalic, orthopedic
  - Bandwidth: 2.7-8.2 MHz
  - Number of Elements: 128
  - Field of View (max): 38mm
  - Steered Angle: +/-6° (B); +/-12° (C, PW)
- Depth: 0.9-29.6 cm
- Physical Footprint: 45.7mm × 10.9mm
- Footprint: 43mm × 10mm
- B-mode imaging Frequencies: 2.7~5.3, 3.2~6.4, 3.6~7.2, 3.8~8.2 [4.0, 5.0, 6.0, 7.0] MHz
- Harmonic Frequencies: 6.0, 7.0 MHz
- Doppler Frequencies: 3.8, 5.0 MHz
- Biopsy Guide: NGB-007, multi angle, reusable
- L14-6
  - Application: Small parts, vascular, pediatric, musculoskeletal, abdominal, cephalic
  - Bandwidth: 4.8~16.0 MHz
  - Number of Elements: 128
  - Field of View (max): 25.3 mm
  - Steered Angle: +/-6° (B); +/-20° (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 31.6mm×22.8mm



- Footprint: 30mm× 8mm
- B-mode Frequencies: 4.8~10.6, 6.0~12.6, 7.2~14.4, 8.0~16.0 [8.0, 10.0, 12.0, 14.0] MHz
- Harmonic Frequencies: 12.0, 14.0MHz
- Doppler Frequencies: 5.7, 6.6MHz
- Biopsy Guide: NGB-016, multi angle, reusable
- 7L5
  - Application: Small parts, vascular, pediatric, musculoskeletal, abdominal, cephalic, orthopedic
  - Bandwidth: 3.0-14 MHz
  - Number of Elements: 128
  - Field of View (max): 52.6mm
  - Steered Angle: +/-6° (B); +/-10° (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 59.1mm × 12mm
  - Footprint: 56mm × 10mm
  - B-mode imaging Frequencies: 3.0~9.2, 5.4~11.5, 6.2~13.0, 7.0~14.0 [5.5, 6.5, 8.0, 10.0] MHz
  - Harmonic Frequencies: 8.0, 10.0 MHz
  - Doppler Frequencies: 5.0, 5.7 MHz
  - Biopsy Guide: NGB-007, multi angle, reusable
- L13-3
  - Application: Musculoskeletal, nerve, small parts, vascular, pediatric, abdominal
  - Bandwidth: 3.0~14.0 MHz
  - Number of Elements: 128
  - Field of View (max): 38mm
  - Steered Angle: +/-6° (B); +/-20° (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 61mm × 24.4 mm
  - Footprint: 44.2mm x 8.5mm
  - B-mode Frequencies: 3.0~9.2, 5.4~11.5, 6.2~13, 7.0~14.0 [5.5, 6.5,

7.5, 9.0] MHz

- Harmonic Frequencies: 9.0, 10.0 MHz
- Doppler Frequencies: 5.0, 6.2 MHz
- Biopsy Guide: NGB-007, multi angle, reusable

- 6LB7

- Application: Urology
- Bandwidth: 2.6-13.2MHz
- Number of Elements: 128
- Field of View (max): 66mm ( L); 152° (C)
- Steered Angle: +/-6° (B); +/-6° (C, PW) (L)
- Extended FOV: 172° (C)
- Depth: 1.8~29.6 cm
- Physical Footprint: 20.6mm x 20.6mm (L); 21.9mm x 21.9mm (C)
- Footprint: 72mm x 11mm (L); 21.92mm x11.2mm (C)
- B-mode Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2 [5.0, 6.5,

7.5, 8.5] MHz

- Harmonic Frequencies: 8.0, 9.0 MHz
- Doppler Frequencies: 4.0, 5.0 MHz (C); 4.4, 5.3 MHz (L)
- Biopsy Guide: NGB-009, multi angle, reusable

### 9.3 Phased array

- P4-2

- Application: Cardiac, abdominal, Pediatric, vascular
- Bandwidth: 1.0~5.2MHz
- Number of Elements: 64
- Field of View (max): 90°
- Depth: 2.8-31.4 cm
- Physical Footprint: 25.2 mm × 20.6 mm
- Footprint: 23.4 mm × 15.2 mm
- B-mode Frequencies: 1.0~2.6, 1.3~3.2, 1.6~3.8, 2.2~5.2 [2.0, 2.5, 3.0, 4.0] MHz
- Harmonic Frequencies: 3.4, 3.8 MHz
- Doppler Frequencies: 2.0, 2.3 MHz; TDI 2.0, 2.3 MHz

- CW Frequency: 2.0 MHz
- Biopsy Guide: NGB-011, multi angle, reusable
- P7-3
  - Application: pediatric abdomen, pediatric cardiac, neonatal cephalic, neonatal abdomen, neonatal cardiac, nerve, orthopedic
  - Bandwidth: 2.1~8.2 MHz
  - Number of Elements: 96
  - Field of View (max): 90°
  - Depth: 2.8-27.7 cm
  - Physical Footprint: 34 mm × 24.5 mm
  - Footprint: 20.4 mm × 12.8 mm
  - B-mode Frequencies: 2.1~5.4, 2.8~6.4, 3.3~7.2, 3.8~8.2 [3.6, 5.0, 6.0, 7.0] MHz
  - Harmonic Frequencies: 6.0, 7.0 MHz
  - Doppler Frequencies: 3.3, 4.0 MHz; TDI 3.3, 4.0 MHz
  - CW Frequency: 3.3 MHz
- Biopsy Guide: not available
- P10-4E
  - Application: Cardiac, abdominal, Pediatric, nerve
  - Bandwidth: 3.0-11.8 MHz
  - Number of Elements: 128
  - Field of View (max): 90°
  - Depth: 2.8~27.7 cm
  - Physical Footprint: 15.1mm x 10.2mm
  - Footprint: 15mm x 9.1mm
  - B-mode Frequencies: 3.0~9.2, 3.6~10.2, 4.4~11.0, 5.0~11.8 [5.5, 6.5, 7.5, 8.5] MHz
  - Harmonic Frequencies: 7.0, 8.0 MHz
  - Doppler Frequencies: 5.0, 5.7 MHz; TDI 5.0, 5.7 MHz
  - CW Frequency: 5.0 MHz
  - Biopsy Guide: not available

#### 9.4 Volume curved array

- D7-2E
  - Application: OB/GYN, Abdomen
  - Bandwidth: 2.0-8.4 MHz

- Number of Elements: 128
  - FOV (max): 70°(B) × 70°(sweep)
  - Extended FOV: 90°(B)
  - Convex Radius: 40 mm
  - Volume Sweep Radius: 21 mm
  - Depth: 2.8~38.8 cm
  - Physical Footprint: 74 mm × 49 mm
  - Footprint: 49 mm × 14.15 mm
  - B-mode Frequencies: 2.0~4.4, 3.6~6.4, 3.7~7.2, 4.8~8.4 [2.5, 4.0, 4.5, 6.0] MHz
  - Harmonic Frequencies: 5.0, 6.0 MHz
  - Doppler Frequencies: 2.5, 3.0 MHz
  - Biopsy Guide: not available
- DE11-3E
    - Application: Gynecology, obstetrics, urology
    - Bandwidth: 2.3-11.6 MHz
    - Number of Elements: 128
    - FOV (max): 149°(B) × 70°(sweep)
    - Extended FOV: 169°(B)
    - Convex Radius: 11 mm
    - Volume Sweep Radius: 11.06 mm
    - Depth: 1.8~29.6 cm
    - Physical Footprint: 24.9mm x 21.8mm
- D7-2
    - Application: Obstetrics, gynecology, abdominal
    - Bandwidth: 2.0-8.4 MHz
    - Number of Elements: 128
    - FOV (max): 70°(B) × 70°(sweep)
    - Extended FOV: 90°(B)
    - Convex Radius: 40 mm

- Footprint: 24mm x 9mm
- B-mode Frequencies: 2.3~5.8, 2.9~7.2, 3.2~7.9, 4.4~11.6 [5.0, 6.0, 6.5, 8.0] MHz
- Harmonic Frequencies: 8.0, 9.0 MHz
- Doppler Frequencies: 4.0, 5.0 MHz
- Biopsy Guide: NGB-027, multi-angle, reusable
- SD8-1E
  - Application: Gynecology, obstetrics, abdominal
  - Bandwidth: 2.0-8.2 MHz
  - Number of Elements: 192
  - FOV (max): 67°(B) × 70°(sweep)
  - Extended FOV: 86°
  - Convex Radius: 45mm
  - Volume Sweep Radius: 24.1 mm
  - Depth: 2.8~38.8 cm
  - Physical Footprint: 75.7mm x 52.6mm
  - Footprint: 54.5 mm x 14.9 mm
  - B-mode Frequencies: 2.0~4.5, 2.6~4.8, 3.0~5.5, 3.8~8.2 [3.5, 3.7, 4, 5.5] MHz
  - Harmonic Frequencies: 5.0, 6.0 MHz
  - Doppler Frequencies: color: 3.5, 4 MHz; PW: 3.5, 3.8 MHz
  - Biopsy Guide: NGB-039, multi-angle, reusable

## 9.5 Pencil

- CW5s
  - Application: Deep vascular, cardiac, transcranial
  - Number of Elements: 2
  - CW Frequency: 5.0 MHz
  - Biopsy Guide: not available

## 10 Peripheral Devices and Accessories

### 10.1 Digital Color Video Printer

- SONY UP-D25MD

### 10.2 Graph/text printer

- HP Deskjet Ink Advantage 2020hc,
- HP Officejet Pro 8100

### 10.3 Analog Black and White Video Printer

- MITSUBISHI P93W-Z,
- SONY UP-X898MD

#### 10.4 External DVR

#### 10.5 Microphone

#### 10.6 Gel warmer

- Easily removed from system for cleaning
- Light indicator for temperature protecting
- Switch: off, 37°C, 40°C
- Dimension: 80mm (W) × 85 mm (D) × 150mm (H) (145mm in depth)
- Weight: approx. 500g

#### 10.7 Footswitch

- USB port: 971-SWNOM (2-pedal)
- USB port: 971-SWNOM (3-pedal)
- FS-81-SP-2 (1-pedal)
- Support User-definable functions (Freeze, Save, Print)

#### 10.8 ECG

- 6-pin, AHA/IEC, for 3-lead wires
- ECG wave display: on/off
- Gain: 0-30
- Sweep speed: 1-6, 1/step

#### 10.9 Barcode reader

- Laser barcode scanner
- Model: SYMBOL LS2208

#### 10.10 Built-in Wireless adapter

- Encryption: WEP, WPA-PSK, WPA2-PSK
- Max transfer speed: 300Mbps
- Protocols: 802.11b: 11, 5.5, 2, 1 Mbps; 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps; 802.11n: up to 300 Mbps

#### 10.11 Built-in Battery

- Replaceable and rechargeable lithium battery
- Restore from standby mode: minimum 15s
- Full battery lasts more than 24h in standby mode
- Light indicator for standby mode
- Empty battery recharged to full in less than 4h
- Continuous work time: about 1 hour and 13 minutes in B mode
- Li-ion 14.8V 6600mAh LI23I002A
- 14.8V \* 6.6Ah < 100Wh

### 11 System Inputs and Outputs

#### 11.1 Video/Audio input

- Microphone: 1 port

- Audio signal: 2 port

### 11.2 Video/Audio output

- S-Video out: 1 port, PAL/NTSC
- Video out: 2 port
- VGA out: 1 port
- DVI out: 1 port
- Audio out: 2 ports

### 11.3 Physio input

- Support ECG signal
- ECG: 1 port

### 11.4 Other input/output

- USB: 7 USB ports, including 1 dedicated USB port for printer
- Ethernet: 1 port
- Remote control: 2 port

## 12 Safety and Conformance

### 12.1 Quality standards

- ISO 9001
- ISO 13485

### 12.2 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 IEC 60601-2-37
- EN 62304 and IEC 62304
- EN 62366 and IEC 62366
- EN ISO 17664 and ISO 17664

### 12.3 CE declaration

This 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 probes and/or modes.

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