# M7 Hand-carried Diagnostic Ultrasound System

### **Performance Specifications**

### System Description

The Mindray M7 Diagnostic Ultrasound System is a premium performance hand-carried color doppler ultrasound imaging system. Mindray research and development engineers employ the System On Chip (SOC) design within the M7. SOC enables complex technologies to be built into the M7's compact laptop style chassis. The M7's exceptional image quality, high speed user experience and versatility have expanded the envelop of performance and flexibility for hand carried ultrasound systems.

### Applications

Abdomen, Obstetrics, Gynecology, Cardiology, Peripheral Vessels, Small Parts, Urology, Anesthesia, Emergency Medicine, IC/CCU, Pediatrics, Neonate, Trans-cranial, Interventional, Musculoskeletal, Intra-operative.

### **General Specification**

#### **Dimensions and Weight** 361mm (14.21 inch) Width: Depth: 357mm (14.06 inch) Height: 75mm (2.95 inch) Approx. 6.5kg, including batteries. Weight: **Electrical Power** AC adapter input Voltage: 100 - 240V~ Frequency: 50/60Hz Input current: 1.5 – 0.6A AC adapter output Voltage: 12V Output current: 10A Battery Batterv Lithium-lon 11.1V.4500mAh Battery Pack: **Operating Environment** Ambient 0°C ~ 40°C temperature: Relative humidity: 30% ~ 85% (no condensation) Atmospheric 700 hPa ~ 1060 hPa pressure: Storage and Transportation Environment Ambient -20°C ~ 55°C temperature: Relative humidity: 30% ~ 95% (no condensation) Atmospheric pressure 700 hPa ~ 1060 hPa **Console Design** Display **Control Panel** Handle Transducer port Transducer locking lever

IO extend port Power input port USB port: 2 Ethernet port S-Video separate video output Wireless LAN support

### User Interface

**Control Panel** Alphanumeric keys Functional keys Navigation Rotary Knob Ergonomic soft key operations Backlight keys 8 segment TGC Power/Battery indicator Blank keys for user-defined functions Trackball, sensitivity and color adjustment Integrated speakers, audio volume adjustment **Display Screen** Display: 15 inch LCD. High-Resolution 1024 x 768 Brightness adjustment

Screen saver: setting adjustment

### **Inputs & Outputs**

Main Unit Transducer port: 1 (Connect to a Transducer or the Transducer extend module) 1 (Connect to the I/O extend I/O extend port: module) Power input port: Connect to the power adapter USB port: 2 S-Video separate video output: 1 (For image signal output) Ethernet port: 1 (To connect to the network) I/O Module (optional) USB port: 2 ECG port: 1 Serial port: 1 Audio output port: 1 L/R Mic In port: 1 Remote control port: 1 Composite video output port: 1 DVI-I output port: 1 V/A Extend Module (optional) Audio input port: L/R Composite video input port Separate video input port ECG Module (optional) ECG lead port Connection port: To connect to I/O module Mobile System Cart UMT-200 UMT-300 15 inch Extra LCD Display (optional)

Power supply module (optional) External DVD R/W storage (optional)



### Intelligent Workflow

Synchronous navigation: On-screen instructions		
Screen saver mode:	Transducer transmission is turned off	
Thumbnail images:	Display saved images during live scan	
Soft keys:	Shortcut for easy access to system	
Menus and active parameter adjustment		
Report edit and preview function		
Backlight indication		
User account management tool		
Task management tool		

### System Overview

Exam Mode	
Factory default:	35, user customizable
User Defined:	15
Total:	50 exam modes, all customizable

### Scanning Method

Electronic convex Electronic linear with steer and trapezoid scanning function Electronic sector

Transducer Type Linear array Phased array Convex array

### **Imaging Mode**

В Μ Free Xros M:

PW/

сw

Anatomical M mode Color Power (DirPower) Smart 3D Static 3D 4D (optional): Dynamic 3D iScape<sup>™</sup> (panoramic imaging) TDI (Tissue Doppler imaging) Color M (CM)

### **Display Mode**

B/C/D Triplex mode: Dual live: B/C, B/TDI Adjustable 2D/ time line display format Single window Dual-split: Quad-split:



### **Imaging Technology**

Tissue harmonic in	naging
Tissue doppler Ima	iging
Steer scanning for PW/CW independe	linear transducers (B, Color/Power, ent)
Trapezoid imaging	for linear transducers
iBeam™:	Spatial compounding imaging for linear transducer
iClear™:	Adaptive speckle suppression imaging for all transducers
iTouch™:	Quick optimization for B or PW/CW image with one button control
HPRF for PW	
Multi-frequency Tr	ansducers for 2D and Doppler

Multi-frequency Transducers for 2D and Doppler imaging modes

### Imaging Feature

Zoom:	Magnification factor 1 – 10
Full screen (iZoom):	Zoom in the image area
System dynamic	
range:	30 – 160dB
Frame rate (Max.):	643 frames/s
Adjustable focus	
positions (Max.):	16
Maximum frame	
rate in 4D:	30 volumes/s

### Languages

Software display, control panel overlay and electronic copy of operation manuals including: Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, Polish, Czech, Turkish, Finnish, Danish, Icelandic, Norwegian, and Swedish.

### System Configuration

### Standard Configuration

Display:	15 inch LCD display,
	High resolution
PW	
HPRF	
Color doppler flow	imaging
Power doppler flow	v imaging
Directional power of	doppler flow imaging
Tissue harmonic im	aging
Trapezoid imaging	
iBeam™	
iTouch™	
iStation™	
160G Integrated ha	rd disk
Multi-language scr overlay	een display and control panel
Carrying case with	telescopic handle
Software Options	
iClear™	
CWD module	
iScape™ module	
Free Xros M (Anato	mical M)
Smart 3D module	
4D module	
TDI (Tissue Dopple	r imaging) module

Application packages, including exam mode, comments, measurements, body marks and report. Abdominal package Obstetrical package Gynecological package Cardiac package Small parts package Urological package Vascular package Pediatric package Nerve blocks package Emergency medicine DICOM basic function module (including: task management, DICOM storage, DICOM print, DICOM storage commitment, DICOM media storage (including DICOM DIR) **DICOM Worklist** DICOM MPPS DICOM OB/GYN structured report DICOM vascular structured report DICOM cardiac structured report **DICOM Query/Retrieve Hardware Options** External USB DVD-RW: SE-S224Q IO extend module: IOM-21 Transducer extend module: PEM-21 V/A extend module: VAM-11 FCG module ECG-21 ECG lead 971-SWNOM Footswitch: Mobile trolley: UMT-300 Pack Dust-proof cover Battery Pack (LI23I001A) Wireless-LAN adapter Transducers Needle-guided brackets **Peripherals Supported** Black/white video printer SONY UP-D897 SONY UP-D23MD Color video printer: Graph/text printer HP Deskjet D2568 HP OfficeJet J3600 (HP Officejet J3608 All-in-One) HP Color LaserJet CM1015 **Display Annotations** Manufacturer logo Hospital name: Display up to 64 characters Exam date: 3 types selectable, YY/MM/DD, MM/DD/YY, DD/MM/YY Exam time: 2 time formats Acoustic output indices: MI, TIC, TIS, TIB Freeze icon

Gender

Aae

١D· Display up to 64 characters Name display up to 64 characters Transducer model Current exam mode ECG icon (displays when connects with a physiology module) Accession# Operator: display up to 64 characters Menu Image ECG trace Transducer orientation mark Time line Coordinate axis, including depth, time, velocity/frequency TGC curve Focus Comment Body Mark Measure caliper Gray/color scale bar Thumbnail Cine icon Trackball functionality status icon Help information Soft Menu Status icons **Biopsy guideline** Measure result window (up to 8 results can be displayed) Image parameters B mode (including iScape<sup>™</sup>) Frequency (F) Depth (D) Gain (G) Frame rate (FR) B IP (IP) Dynamic range (DR) Color mode Frequency (F) Gain (G) IP (IP) Pulse repeated frequency (PRF) Wall filter (WF) M mode M Speed (V) M IP (IP) Dynamic range (DR) Power mode Frequency (F) Gain (G) IP (IP) Pulse repeated frequency (PRF) Wall filter (WF)



System Configuration (cont'd)
PW mode
Frequency (F)
Gain (G)
Pulse repeated frequency (PRF)
Wall filter (WF)
Sample volume depth (SVD)
Sample volume (SV)
CW mode
Frequency (F)
Gain (G)
Pulse repeated frequency (PRF)
Wall filter (WF)
Sample volume depth (SVD)
Free Xros M (anatomical M)
Gain (G)
Velocity (V)
TVI mode
Frequency (F)
Gain (G)
TVI IP (IP)
Pulse repeated frequency (PRF)
Wall filter (WF)
TEI mode
Frequency (F)
Gain (G)
TEI IP(IP)
Pulse repeated frequency (PRF)
Wall filter (WF)
IVD mode
Frequency (F)
Gain (G)
Pulse repeated frequency (PRF)
Wall filter (WF)
Sample volume depth (SVD)
3D/4D Prinktness (P)
Brightness (B)
Contrast (C)
Quality (Q for Static 3D and 4D)
Parameter nack: default or user-defined
ratameter pack. default of user-defined
Setup
General settings
User-defined
functional keys: Print, Save, FI-F6, footswitch
Customize user-defined exam modes in:
Configuration of manufacturement packages, hody
mark and comment libraries
Imaging parameters setting as well as
layout of menus and soft keys in imaging mode
15 User-defined exam modes
Create new measurement items, body marks and
comments
Preser uata manage: to save, load, export and default
r enprieral devices installation and setting

DICOM settings and network setting System Maintenance (network updating, remote desktop, system test, log operation and preset) System information viewing

### Imaging and Processing

Display Depth	
Minimum:	18mm, Transducer dependent
Maximum:	388mm, Transducer dependent
B mode	
Gain:	0 – 100
TGC:	8 segments, with re-mapping functionality at any depth
iTouch™:	-12dB – 12dB
iTouch™ Bright:	-2, -1, 0, 1, 2
FOV position	
B IP:	1 – 8, combination of dynamic
THI IP:	range, iClear™, persistence, smooth 1 – 8, combination of dynamic
Rotation:	no on 180° 270°
Colorizo/	0,90,100,270
Colorize Map:	On/Off, 1 – 10
A. power:	10% – 100%, in increments of 6
FOV:	N, W, M1, M2
Line Density:	L, M, H, UH
L/R Flip	, , , ,
iClear™:	1 – 4. Off
Persistence:	0 – 7
U/D Flip	
TSI:	General, Muscle, Fat, Fluid
Smooth:	1 – 4
Gray Rejection:	0 – 5
y:	0 – 3
Curve	
High FR:	On, Off
Frequency:	Transducer dependent
Focus Position	
Dyn Ra.:	30dB – 160dB, in increments of 5dB
Gray Map:	1 – 8
Focus Number:	1 – 4
B Steer:	-6°, 0°, 6°
Trapezoid:	On, Off
iBeam™:	On, Off
Img Merge:	On, Off
M mode	
Gain:	0 – 100
TGC:	8 segments, with re-mapping functionality at any depth
IP:	1 – 8, combination of dynamic range, M soften, edge enhance
A power:	10% – 100%, in increments of 6
Display Format:	L/R, 1:1, 1:2, Full
M Soften:	0 – 4
Gray Rejection:	0 – 5
y:	0 – 3
Curve	
Colorize/	
Colorize Map:	Un/Uff, 1 – 10

Time Mark: Focus Position	On, Off
Frequency:	Transducer dependent
Speed:	1 – 6
Dvn Ra.:	30dB – 160dB, in increments of 5dB
Edge Enhance:	0 – 3
Gray Map:	1 – 8
Color mode	
Gain:	0 – 100
Color IP:	1 – 8, combination of Smooth and Persistence
A. power:	10% – 100%, in increments of 6
Line Density:	L, M, H, UH
B Display:	On, Off
Smooth:	0 – 4
Persistence:	0 – 4
Baseline:	-8 - +8
Focus Position:	0% - 100%
Packet Size:	0 – 3
B/C Wide:	On, Off
Dual Live:	On, Off
Map:	V0 – V10, VV0 – VV9
Priority:	0 - 100%
WF:	0 – 7
Frequency:	Transducer dependent
Scale:	Frequency, Transducer and depth
	dependent
Steer:	Transducer dependent
Invert:	On, Off
Flow State:	L, M, H
Power (DirPower)	
Gain:	0 - 100
Packet Size:	0 – 3
Flow State:	L, M, H
Dyn Ra.:	10dB – 70dB, in increments of 5dB
Power IP:	1 – 8, combination of Smooth and Persistence
A. power:	10% – 100%, in increments of 6
Line Density:	L, M, H, UH
Smooth:	0 – 4
Persistence:	0 – 4
Focus Position:	0% - 100%
B Display:	On, Off
B/C Wide:	On, Off
Dual Live:	On, Off
Map:	P0-3 (Power), dP0-3 (DirPower)
Priority:	0% - 100%
Frequency:	Transducer dependent
Scale:	Frequency, Transducer and depth
	dependent
Invert:	On, Off
WF:	0 – 7
Steer:	-12°, 0°, 12°



### Imaging and Processing (cont'd)

PW/CW	
Gain:	0 – 100
V Max:	On, Off
V Mean:	On, Off
Colorize/	
Colorize Map:	On/Off, 1 – 10
Dyn Ra.:	24dB – 72dB, in increments of 2
Audio:	0 – 100%, in increments of 2
Trace Area:	Above, Below, All
A. power:	10% – 100%, in increments of 6
Trace Sensitivity:	0 – 5
Trace Smooth:	Off, 1 – 4
Time Mark:	On, Off
Display Format:	L/R, 1:1, 1:2, Full
T/F Res:	0 – 3
Auto Calc Param:	On, Off
HPRF:	On, Off
Frequency:	Transducer dependent
Scale:	Frequency, Transducer and depth
	dependent
Baseline:	-4 - +4
Invert:	On, Off
Quick Angle:	-60, 0, 60
Angle:	-80 – 80°, in increments of 1°
SV:	0.5mm – 20mm
SVD	
WF:	0 – 6
Auto Calc:	On, Off
Speed:	1-6
Dupley/Tripley	On Off
Grav Man	1 – 8
Post Process	Curve Grav Rejection v
PW Steer	Maximum +20°
i w steet.	(Transducer dependent)
Eroo Vroc M	
Gain:	0 100
	e cognoste with re mapping
IGC:	functionality at any depth
Colorize/	functionality at any depart
Colorize Map:	On/Off, 1 – 10
Post Process:	N, curve, grav rejection
Display Format:	L/R. 1:1. 1:2. Full
Display:	Cur., Full
Mark Adjustment:	Show A. Show B. Show C
Time Mark:	On Off
Angle	
Speed.	1 - 6
Grav Man <sup>.</sup>	1 – 8
Gray Map.	1 0
CM	
For parameter deta relevant sections o	alls in CM mode, please refer to of B, Color and M modes.
TVI	
Gain:	0 – 100
Baseline:	-8 - +8
TVI IP:	1 – 8, combination of Smooth and Persistence
A. power:	10% – 100%, in increments of 6

Line Density:	L, M, H, UH
B Display:	On, Off
Smooth:	0 – 4
Dersisten so	0 4
Persistence:	0-4
Focus Position:	0% – 100%
Packet Size:	0 – 3
B/C Wide:	On, Off
Dual Live:	On, Off
Map:	V0 – V10
Priority	0% - 100%
W/E·	0 – 7
Fraguancia	U = 7
Frequency.	
Scale:	Frequency, transducer and depth dependent
Invert:	On, Off
Tissue State:	L, M, H
TEI	
Coine	0 100
Gain:	0 - 100
Dual Live:	On, Off
TEI IP:	1 – 8, combination of Smooth and
	Persistence
Focus Position:	0% – 100%
Frequency:	Transducer dependent
Scale:	Frequency, Transducer and depth dependent
Tissue State:	L. М. Н
Invert.	On Off
W/E-	0 7
WI.	0-7
Persistence:	0 - 4
Smooth:	0 – 4
Dyn Ra.:	10 – 70dB, in increments of 5
B/C Wide:	On, Off
Map:	P0 – P3, dP0 – dP3
Packet Size:	0 – 3
B Display:	On, Off
Priority	0 - 100%
Line Density:	
A nouver	100% 1000% in increments of 6
A. power:	10% – 100%, in increments of 6
TVD	
Gain:	0 – 100
Quick Angle:	-60°, 0°, 60°
WF:	0 – 6
Trace Sensitivity:	0 – 5
Auto Calc Param	
V Max.	On Off
V Moon	
Irace Area:	Above, Below, All
Duplex/Triplex:	On, Off
Colorize/	
Colorize Map:	On/Off, 1 – 10
Gray Map:	1 – 8
Invert:	On, Off
Speed:	1 – 6
Angle:	-80° – 80°, in increments of 1
SV:	0.5mm – 20mm
SVD	-
A nower	10% - 100% in increments of 6
Display Format:	
Display Format:	L/n, 1:1, 1:2, Full

Audio:	0% – 100%, in increments of 2%
Frequency:	Transducer dependent
Scale:	Frequency, Transducer and depth dependent
Baseline:	-4 - +4
Dyn Ra.:	24 – 72dB
Trace Smooth:	Off, 1 – 4
Time Mark:	On, Off
T/F Res:	0 – 3
Post Process:	Curve, Gray Rejection, y
TVM	
For parameter deta relevant sections o	ails in TVM mode, please refer to of B, M and TVI modes.
3D/4D	
Method (only	
for Smart 3D):	Fan, Linear
Direction:	Up/Down, Down/Up, Back/Front,
	Front/Back, Left/Right, Right/Left
Display Format:	Single, Dual, Quad
Distance (for	
Smart 3D only):	10 – 200mm, in increments of 10mm
Angle	
Smart 3D:	10 – 80°, in increments of 2°
Static 3D/4D:	Transducer dependent
Quality (for Static	Law 1 Law 2 Mid Llink 1 Llink 2
3D/4D only):	
Dara madu	50,01
Para pack:	5 07 0ff
Auto Kot	01, 01
Porot POL (For Sma	rt 2D only)
Reset ROI (For Sma	nrt 3D only)
Reset ROI (For Sma Adjusting VOI:	nrt 3D only) On, Off
Reset ROI (For Sma Adjusting VOI: Accept VOI:	rrt 3D only) On, Off On, Off
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map:	rrt 3D only) On, Off On, Off Off 1 – 5
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset:	rrt 3D only) On, Off On, Off Off, 1 – 5 On, Off
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Ouick rotate angle:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0° 90° 180° 270°
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C (3D
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100% in increments of 2
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 100% in increments of 2
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 100%, in increments of 2 0 – 20. in increments of 1
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 100%, in increments of 2 0 – 20, in increments of 1 0 – 100%, in increments of 1
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 100%, in increments of 2 0 – 20, in increments of 1 0 – 100%, in increments of 1 0 – 100%, in increments of 5
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 100%, in increments of 2 0 – 20, in increments of 1 0 – 100%, in increments of 1 0 – 100%, in increments of 5 Surface. Min. Max X Bay
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 100%, in increments of 2 0 – 20, in increments of 1 0 – 100%, in increments of 1 0 – 100%, in increments of 5 Surface, Min, Max, X Ray Partial None Entire
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Tyree:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour Outside Contour
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type:	rt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 100%, in increments of 2 0 – 20, in increments of 1 0 – 100%, in increments of 1 0 – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type:	rt 3D only) On, Off On, Off On, Off Off, 1 – 5 On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve	rt 3D only) On, Off On, Off On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%)
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve	rt 3D only) On, Off On, Off On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%)
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve <b>iScape™ View</b>	rt 3D only) On, Off On, Off On, Off Off, 1 – 5 On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%)
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve <b>iScape™ View</b> Actual Size	rt 3D only) On, Off On, Off On, Off Off, 1 – 5 On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%)
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve <b>iScape™ View</b> Actual Size Fit Size	rt 3D only) On, Off On, Off On, Off Off, 1 – 5 On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%)
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve <b>iScape™ View</b> Actual Size Fit Size Ruler: Colorize (Colorize (Colorize))	nrt 3D only) On, Off On, Off Off, 1 – 5 On, Off 0°, 90°, 180°, 270° A/B/C/3D 0 – 100%, in increments of 2 0 – 20, in increments of 2 0 – 20, in increments of 1 0 – 100%, in increments of 1 0 – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%)
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve <b>iScape™ View</b> Actual Size Fit Size Ruler: Colorize/ Colorize/	rt 3D only) On, Off On, Off On, Off Off, 1 – 5 On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 20, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%) On, Off
Reset ROI (For Sma Adjusting VOI: Accept VOI: Colorize/ Colorize Map: Reset: Quick rotate angle: Current image: Brightness: Contrast: Smooth: Threshold: Transparency: Render mode: MPR Line: Edit Type: Edit Depth: Reset Curve <b>iScape<sup>™</sup> View</b> Actual Size Fit Size Ruler: Colorize/ Colorize/ Colorize/ Colorize Map:	nrt 3D only) On, Off On, Off On, Off Off, 1 – 5 On, Off O°, 90°, 180°, 270° A/B/C/3D O – 100%, in increments of 2 O – 100%, in increments of 2 O – 20, in increments of 1 O – 100%, in increments of 1 O – 100%, in increments of 5 Surface, Min, Max, X Ray Partial, None, Entire Inside Contour, Outside Contour, Big Contour, Big Eraser, Small Eraser, Inside Rect, Outside Rect, Inside Polygon, Outside Polygon Full Depth, User Defined (0 – 100%) On, Off Off, 0 – 10 O – 260° in increments of E°



### **Comments and Body Mark**

Text comment		
Comment text (option)		
Abdomen:	89	
OB:	97	
Cardiology:	80	
GYN:	69	
Vascular:	110	
Urology:	61	
SMP:	124	
Pediatrics:	35	
Nerve blocks:	52	
EM:	126	
User-defined Comr	nents	
Add		
Delete		
Arrow		
Arrow Size		
Arrow position		
Arrow orientation		
Trace		

Control panel operation

### **Body Mark**

### Application package (Option)

Abdomen:	13	
OB:	25	
Cardiology:	13	
GYN:	7	
Vascular:	17	
Urology:	7	
SMP:	46	
Nerve blocks:	32	
EM:	38	
User-defined		
New		
Сору		
Export		
Load		
Delete		
Edit		

### Storage/Connectivity

320G integrated hard disk External DVD-R/W (Optional) USB ports Image archive on hard disk and DVD, temporary saving in cine memory Live capture: Retrospective (1 - 120s, or 1 - 120 cycles) Prospective (1 – 120s, or 1 – 120 cycles) Thumbnail Single image formats: BMP, JPG, DCM, FRM, supports

off-line analysis

Multi-frame images formats: AVI, DCM, CIN, supports off-line analysis 1 - 60s, 1 - 16 cycles Clip length: Storage area: Image area: 640×480 Standard area: 800×600 Full-screen: 1024×768 iVision™ Cine review: Auto, Manual (auto review segment can be set), supports linked cine review for 2D, M/D images, 8380 frames (Max.). Send/print image after End Exam DICOM: DICOM Storage DICOM print DICOM Worklist Query/Retrieve Structured Report (SR) Storage Commitment MPPS Media review iStation™ Intelligent patient data management platform Integrated search engine for patient data

Detailed patient information view Intelligent data backup/ restore Patient data/ image sending Patient data deleting Exam managing: create new exam, activate exam and continue exam Recycle Bin

### Measure/Calc/Study

Caliper 2D mode M mode Doppler mode Application Optional package for specific clinical uses **Clinical Packages** Abdomen Obstetrics Cardiology Vascular Gynecology Urology Small Parts Pediatrics

### **Diagnostic Report**

View/add images Edit report Obstetric/vascular analysis

Fetal growth curve Print report Import/export report View history report

### Physio Input/Output

ECG Display: Position: Display HR: Gain:

On, Off 0% - 100%, in increments of 5 On, Off

### **Transducer Specifications**

#### 0 - 30C5-2s Convex-wide Array type: Applications: Gynecology and obstetrics, abdomen, vascular, pediatrics B mode imaging 2.5/3.5/5.0MHz frequency: Harmonic frequency: 5.0/6.0MHz Doppler frequency 2.5 /3.0MHz C: PW: 2.5 /3.0MHz Convex radius: 49.57mm NGB-015, 25°/35°/45° Biopsy guide: 7L4s Linear Array type: Applications: Small parts, vascular, musculoskeletal, pediatrics, abdomen B mode imaging frequency: 5.0/7.5/10MHz Harmonic frequency: 8.0/10MHz Doppler frequency 5.0/5.7MHz C: PW: 5 0/5 7MHz ±6°/12° Steer angle: NGB-007, 40°/50°/60° Biopsy guide: L14-6s Array type: Linear Applications: Small parts, vascular, musculoskeletal, pediatrics B mode imaging frequency: 8.0/10.0/12.0MHz Harmonic 10.0/11.0MHz frequency: Doppler frequency

C: 5.7 /6.6MHz PW. 5.7 /6.6MHz  $+6^{\circ}/20^{\circ}$ Steer angle: Biopsy guide: NGB-016, 30°/40°/50°

Transducer	Specifications	(cont'd)
	opeenteations	(

L14-6Ns	
Array type:	Linear
Applications:	Small parts, vascular, musculoskeletal, pediatrics
B mode imaging	
frequency:	8.0/10.0/11.0MHz
Harmonic	
frequency:	10.0/14.0MHz
Doppler frequency	· //
C:	5.7 /11MHz
F VV.	5.7 /0.0MITZ
Steer angle:	±0 /20
L12-4s	
Array type:	Linear
Applications:	Small parts, vascular,
P mode imaging	musculoskeletal, peulatiics
frequency:	6 0/7 5/10 0MHz
Harmonic	0.0/7.3/10.00012
frequency: 10.0/11	.0MHz
Doppler frequency	1
C:	5.0 /5.7MHz
PW:	5.0/5.7MHz
Steer angle:	±6°/12°
Biopsy guide:	NGB-007
P4-2s	
Array type:	Sector phased
Applications:	Cardiology, abdomen,
	transcranial, pediatrics
B mode imaging	0.0/0.5/0.0141
frequency:	2.0/2.5/3.0MHz
Harmonic	2 2/2 6MU-
Dependent frequency:	5.2/5.0IVINZ
C.	20/22MU-
C:	
PVV:	2.0/2.5MHZ
CVV:	
IEI:	2.5/ 3.UIVIHZ
Biopsy guide:	NGB-011, 11°/23°

### D7 2

P7-3S	
Array type:	Sector phased
Applications:	Cardiology, abdomen, transcranial, pediatrics
B mode imaging	
frequency:	3.6/5.0/6.6MHz
Harmonic	
frequency:	6.0/7.0MHz
Doppler frequency	
C:	3.3/4.0MHz
PW:	3.2/4.0MHz
CW:	3.3MHz
TVI:	3.3/4.0MHz
TVD:	3.2/4.0MHz
TEI:	3.3/4.0MHz
Biopsy guide:	None
4CD4s	
Array type:	Convex
Applications:	Abdomen, gynecology, obstetrics
B mode imaging	
frequency:	2.5/4.5/6.0MHz
Harmonic	
frequency:	5.0/6.0MHz
Doppler frequency	
C:	2.5/3.0MHz
PW:	2.5/3.0MHz
Convex radius:	40mm
Swing angle (Max.):	70°
Biopsy guide:	None
V10-4s	
Array type:	Convex
Applications:	Gynecology, obstetrics, urology
B mode imaging	
frequency:	5.0/6.5/8.0MHz
Harmonic	
frequency:	8.0/9.0MHz
Doppler frequency	
C:	4.0/5.0MHz
PW:	4.0/5.0MHz
Convex radius:	10mm
Biopsy guide:	NGB-004

### V10-4Bs

Array type:	Convex
Applications:	Gynecology, obstetrics, urology
B mode imaging frequency:	5.0/6.5/8.0MHz
Harmonic frequency:	8.0/9.0MHz
Doppler frequency	,
C:	4.0/5.0MHz
PW:	4.0/5.0MHz
Convex radius:	10mm
Biopsy guide:	NGB-004

### Safety & Conformance

**Quality Standards** ISO 9001:2000 ISO 13485:2003

#### **Design Standards**

UL 60601-1 CSA C22.2 No. 601-1 EN 60601-1 and IEC 60601-1 EN 60601-1-1 and IEC 60601-1-1 EN 60601-1-2 and IEC 60601-1-2 EN 60601-2-37 and IEC60601-2-37 EN60601-1-4 and IEC60601-1-4 EN60601-1-6 and IEC60601-1-6

### **CE** Declaration

M7 system is fully in conformance with the Council Directive Concerning Medical Devices 93/42/EEC. The number adjacent to the CE marking (0123) is the number of the EU-notified body that certified meeting the requirements of Annex II of the Directive.

### Page 6 of 6

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