





## **Specifications for E1 Series Digital Color Doppler Ultrasound System**

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# 1 General Specifications

## 1.1 Applications

- Abdomen
- Cephalic
- OB/Gynecology
- Cardiology
- Peripheral vascular
- Small parts
- Musculoskeletal
- Transvaginal
- Transrectal
- Lung

## 1.2 Available Probes

- Convex array probe
- Linear array probe

## 1.3 Imaging Modes

- B
- M
- PW

## 1.4 Function and Configuration

- 5-band adjustable frequency in B mode (fundamental wave and harmonic wave)
- $\mu$ -scan
- Compound imaging
- LGC
- Tissue specific index
- Image rotation
- Widescan
- HPRF
- Simultaneous mode (Triplex)
- Auto trace
- Auto IMT
- Scr-Zoom
- Auto optimization
- B mode panoramic imaging
- Biopsy guide
- Vis-needle
- ECG
- Show gallery
- Sono-Help

- Standby mode
- Auto Pleural Line
- Auto B Line
- Lung Mode

## 1.5 Available Languages

- Software: English, Simplified Chinese, Spanish, Russian, French, Italian, German, Polish and Portuguese
- Key panel: English, Simplified Chinese, Spanish, Russian, French, Italian, German and Polish
- User manual: English, German, French and Spanish

# 2 Physical Specifications

## 2.1 Size and Weight

- Size: approx. 378 mm (W) × 352 mm (H) × 114 mm (D)
- Weight: ≤ 6.5 kg (with normal battery)  
≤ 7 kg (with large capacity battery)

## 2.2 Monitor

- 15.6 inch medical high resolution monitor
- Resolution: 1920 × 1080
- Viewing angle: 178° (horizontal), 178° (vertical)
- Up/down angle: 0° to 45°

## 2.3 Control Panel

- User-oriented design
- Backlight design: panel buttons
- Multiple defined-keys
- TGC: 8 segment slider controls
- Trackball sensitivity: adjustable
- Keyboard on the control panel

## 2.4 Speaker

Hi-Fi Speaker

## 2.5 Probe Port

- Probe port: 1 (2 for optional)
- Probe holder: 3

## 2.6 Trolley

- Model: ST-200
- Width: approx. 455 mm
- Depth: approx. 610 mm
- Height: approx. 780 mm (adjusted to the lowest position)
- Lifting height: 0 - 100 mm, 3 levels
- Casters
  - ✓ Diameter: 5 inch
  - ✓ Specification: all the 4 casters can be independently locked
- Front handle: 1
- Cable hanger: 1
- Document basket: 1
- Printer compartment: 1

## 2.7 Electrical Specifications

- Power supply: 100 - 240V ~, 1.5 - 0.75A
- Frequency: 50/60 HZ
- Power output: 180VA

## 2.8 Working Environment

- Temperature: 0 °C to +40 °C
- Relative humidity: 30% - 85% RH (no condensation)
- Atmospheric pressure: 700 hPa - 1060 hPa

## 2.9 Storage and Transportation Environment

- Temperature: -20 °C to +55 °C
- Relative humidity: 20% - 90% RH (no condensation)
- Atmospheric pressure: 700 hPa - 1060 hPa

## 3 Annotation and Body Mark

- Annotation can be selected and input in the library
- All exam applications included
- Annotation: text annotation and arrow annotation
- Annotation can be edited and arranged
- User-defined annotation
- Text font size and arrow size: adjustable
- Body marks:  $\geq 165$  selectable

- Body marks classified by specific exam types, and position adjustable

## 4 Monitor Information

- Manufacturer logo
- Hospital name
- System date and time
- Probe and exam item
- MI and TIS
- Operator
- Patient ID, name and date of birth
- Tissue temperature display (specified probe)
- Depth scale and focus position
- Image parameter
- Thumbnail
- Clipboard
- Screen saver

## 5 Image Parameter

### 5.1 Description

- System boot up: approx.  $\leq 32$  s
- System shut down: approx.  $\leq 17$  s
- Standby: approx.  $\leq 5$  s
- Grayscale: 256 levels
- Transducer element: up to 128
- Volume: 0 - 100%, 10 levels, 10% each step

### 5.2 B Mode

- Gain: 0 - 255 adjustable
- Scan depth:  $\geq 40$  cm
- Compound imaging: Off, 1, 2, 3, 4, 5 levels adjustable
- Frequency: 5 bands adjustable (fundamental wave and harmonic wave)
- Chroma: Off and 12 types selectable, 13 levels
- $\mu$ Scan: Off, 1, 2, 3, 4, 5, 6 levels
- Line density: Low, Med, High, 3 levels for normal probe
- Persist: Off, Low, Med, High, Max, 5 levels
- Focus: focus position and range adjustable, 18 levels adjustable; 1 represents single focus and 2 - 21 represent focus span

control.

- Dynamic range: 20 - 320
- Gray map: 1 - 16, 16 levels
- Power%: 1 - 100% adjustable, 5% each step
- TSI: adipose, muscle, fluid and normal tissue, 4 levels
- TGC: 8 segment sliders
- LGC: 8 bands adjustable
- Image reverse: left/right, up/down
- Rotation: 0 °, 90 °, 180 °, 270 °, 4 levels
- Sector width: 5 levels adjustable
- B steer: 0,  $\pm 2$  °,  $\pm 4$  °,  $\pm 6$  °, 7 levels, linear array image steer
- Widescan: On/Off (linear and convex)
- Auto optimization

### 5.3 M Mode

- Gain: 0 - 255 adjustable, 5 each step
- Chroma: Off and 12 types selectable, 13 levels
- Display format: FULL, H1/1, V1/2, V1/1, V2/1
- Sweep speed: Min, Slow, Med, Fast, Max, 5 levels
- Power%: 1% - 100%

### 5.4 PW Mode

- Power%: 1 - 100%, 5% each step
- Gain: 0 - 255 adjustable, 5 each step
- Display format: FULL, H1/1, V1/2, V1/1, V2/1, 5 levels
- Simultaneous mode (Triplex)
- PW sample volume: 0.5 - 24.0 mm
- PW sample position: adjustable
- Invert: On/Off
- Quick angle correction: 0 °, 60 °, -60 °
- Angle correction range: -88 ° to 88 °, 2 ° each step
- Steer angle: 0,  $\pm 8$  °,  $\pm 12$  °,  $\pm 16$  ° adjustable (linear array probe)
- Auto trace: achievable in real-time mode and frozen mode
- Baseline: 9 levels selectable
- Frequency: 3 levels adjustable
- Wall filter: Min, Low, Med, High, Max, 5

levels

- PRF: 1 - 16 kHz
- HPRF
- Max. velocity range: 0 - 11.2 m/s (C322, PRF=16 kHz,  $\theta=60$ °, frequency= 2.2 MHz, the lowest baseline)
- Sweep speed: Min, Slow, Med, Fast, Max, 5 levels
- Chroma: Off and 12 types selectable, 13 levels

### 5.5 Panoramic Imaging

- Available probes: L741, 10I2, EC9-5, C613, C322, L746, C361, 9L-A
- B mode panoramic imaging
- Rotation: 180 ° to -180 °
- Zoom ratio: 8.0 times
- Maximum available length: 100 cm

### 5.6 Biopsy Guide

- Biopsy line angle: adjustable
- Biopsy line dot size: adjustable
- Biopsy line angle calibration
- Biopsy line offset calibration
- Biopsy line calibration parameter storage and loading default
- User-defined biopsy line angle

### 5.7 Vis-Needle

- Available probe: L741, 9L-A
- Steer angle: 20 ° to 50 °, 10 ° each step, 4 levels
- Biopsy depth: adjustable
- Dual live

### 5.8 Widescan

- Widescan: Off, On
- Available probe: linear array probe, convex array probe

### 5.9 Zoom

- Zoom ratio: 0.8 - 10.0
- Scr-Zoom
- HD Zoom

### 5.10 Sono-Help



- Applications: Liver, Kidney, Spleen, Biliary System, Uterine Adnexa, Obstetrics, Cardiac, Artery and Vein, Thyroid, Breast and Prostate and Testicle
- Available for 82 slices
- Available for display of probe position, slice figure and ultrasound image
- User-defined key

### 5.11 Preset Exam

- Customizable preset: user-defined parameters for different probes and exam types
- Preset order: adjustable
- Import or export preset
- After normal update, the preset parameters are not cleared.

## 6 Measurement/Analysis and Report

### 6.1 Measurement Settings

- BSA setting: Eastern, Western
- Cross cursor size: Large, Medium, Small
- Measure line size: Large, Medium, Small
- Distance dash line display: On, Off
- Velocity cross line display: On, Off
- Ellipse cross line display: On, Off
- Line ID display: On, Off
- Keep result window after unfreezing images: On, Off
- Result font size: Large, Medium, Small
- Result font color: White, Yellow
- Volume flow method: TAm<sub>ean</sub>, TAm<sub>ax</sub>
- Volume flow compensation with TAm<sub>ax</sub>: 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95, 1.00
- Result position: Top Right, Top Left, Bottom Left and Bottom Right adjustable in 2D or M+D mode
- Pleural line color: Blue, Yellow
- Pleural line thickness: On, Off
- Display B line Dist result: On, Off

### 6.2 Application-specific

#### Measurement Package

- Obstetrics measurement package
- Small parts measurement package
- Gynecology measurement package
- Vascular measurement package
- Abdominal measurement package
- Cardiac measurement package
- Urology measurement package
- Pediatrics measurement package

### 6.3 Report

- Application-specific measurement report
  - ✓ Fetal growth curves
- Measurement values: editable
- Value method: single value switch achievable
- Image insertion
- Report preview
- Report logo (170 x 60 Pixel, bmp): changeable
- Report font size and color settings
- Background color settings
- Display item settings
- Export format: TXT, PDF, HTML

### 6.4 Auto Measurement

- Auto IMT

## 7 Storage and Data Management

### 7.1 Storage

- Hard disk: only one available
  - ✓ 500G mechanical hard disk
  - ✓ 1T mechanical hard disk
  - ✓ 250G solid-state disk
- 2D cine storage time setting:
  - ✓ Retrospective storage: 1 - 120 s
  - ✓ Prospective storage: 1 - 480 s
  - ✓ Frozen storage: 1 - 170 s

### 7.2 Data Management

- Image sharing service (Samba)

- Export data to USB drive or DVD
- Export format:
  - ✓ System format
  - ✓ PC format
  - ✓ Image format: BMP, JPG, TIF
  - ✓ Cine format: AVI, WMV
  - ✓ Report format: PDF, TXT, HTML
  - ✓ DICOM format
- Clipboard: thumbnail display, delete, export
- Create exam, activate exam, resume suspended exam
- Query/Retrieve service
- Review current exam and history exam
- Post-processing and post-measurement
- Backstage storage: quick switch of DICOM cine

## 8 Cine Review

- Cine review: manual play frame by frame and auto play with adjustable speed
- Skip from first frame to last frame
- Auto play by using trackball

## 9 System Input and Output

### 9.1 I/O Port

- USB port
  - ✓ USB 3.0: 3
- Video output port: 3
  - ✓ VIDEO OUT
  - ✓ S-VIDEO OUT
  - ✓ HDMI OUT
- Audio output port (AUDIO OUT): 1
- Foot switch input: 1
- Ethernet port: 1
- Video print port: 1
- Headphones port: 1
- MIC port: 1
- ECG port: 1

### 9.2 Network Connection

- Local network
  - ✓ Local network: Enable/Disable
  - ✓ DHCP or static IP
  - ✓ Static IP: IP, netmask and default gateway settings

- ✓ MAC address check
- Ping IP Address
- Wireless network
  - ✓ Wireless network: Enable/Disable
  - ✓ Authentication method: open authentication, WEP, WPA-PSK, WPA-EAP
  - ✓ DHCP or static IP
  - ✓ Static IP: IP, netmask and default gateway settings
  - ✓ MAC address check

## 10 DICOM 3.0

- DICOM storage
- DICOM structured report
  - ✓ Gynecology structured report
  - ✓ Obstetrics structured report
  - ✓ Cardiology structured report
  - ✓ Vascular structured report
- DICOM storage commitment
- DICOM Worklist
- DICOM MPPS
- DICOM print
- DICOM Q/R list

## 11 Probe

### 11.1 Convex Array Probe

- C361
  - ✓ Application: Abdomen, Gynecology, Obstetrics and Lung
  - ✓ Frequency range: 2.0 - 6.0 MHz
  - ✓ Central frequency: 3.5 MHz
  - ✓ Curvature radius: 60 mm
  - ✓ Transducer element: 96
  - ✓ Acoustic lens: 82 mm × 18 mm
  - ✓ Biopsy bracket: NGBC361, 25°, sterilizable
  - ✓ Field of view: 71.5°
  - ✓ Widescan: 15°
  - ✓ Depth: ≥ 30 cm
- C613
  - ✓ Application: Cardiology, Abdomen and Pediatric Cardiology
  - ✓ Frequency range: 4.0 - 13.0 MHz
  - ✓ Central frequency: 6.0 MHz

- ✓ Curvature radius: 14 mm
- ✓ Transducer element: 128
- ✓ Acoustic lens: 30 mm × 10 mm
- ✓ Biopsy bracket: NGBC613, 12 °/18 °/30 °, sterilizable
- ✓ Field of view: 92 °
- ✓ Widescan: 15 °
- ✓ Depth: ≥ 15 cm
- 6V1
  - ✓ Application: Gynecology
  - ✓ Frequency range: 3.0 - 15.0 MHz
  - ✓ Central frequency: 6.0 MHz
  - ✓ Curvature radius: 11 mm
  - ✓ Transducer element: 128
  - ✓ Acoustic lens: 32 mm × 10 mm
  - ✓ Biopsy bracket: NGB6V1, 0 °, sterilizable
  - ✓ Field of view: 135 °
  - ✓ Widescan: 15 °
  - ✓ Depth: ≥ 15 cm
- EC9-5
  - ✓ Application: Prostate
  - ✓ Frequency range: 3.0 - 15.0 MHz
  - ✓ Central frequency: 6.0 MHz
  - ✓ Curvature radius: 8 mm
  - ✓ Transducer element: 128
  - ✓ Acoustic lens: 27 mm × 10 mm
  - ✓ Biopsy bracket: NGBEC9-5, 1.5 °, sterilizable
  - ✓ Field of view: 146 °
  - ✓ Widescan: 15 °
  - ✓ Depth: ≥ 15 cm
- C322
  - ✓ Application: Abdomen
  - ✓ Frequency range: 2.0 - 7.0 MHz
  - ✓ Central frequency: 3.5 MHz
  - ✓ Curvature radius: 20 mm
  - ✓ Transducer element: 72
  - ✓ Acoustic lens: 32 mm × 11 mm
  - ✓ Biopsy bracket: NGBC322, 5 °/25 °, sterilizable
  - ✓ Field of view: 68 °
  - ✓ Widescan: 15 °
  - ✓ Depth: ≥ 30 cm

## 11.2 Linear Array Probe

- L741
  - ✓ Application: Peripheral Vascular, Superficial, Small Parts and Lung
  - ✓ Frequency range: 4.0 - 16.0 MHz
  - ✓ Central frequency: 7.5 MHz
  - ✓ Transducer element: 128
  - ✓ Acoustic lens: 49 mm × 10 mm
  - ✓ Biopsy bracket: NGBL741, 45 °/55 °/63 °, sterilizable
  - ✓ Width of view: 46 mm
  - ✓ Depth: ≥ 11 cm
  - ✓ B steer: 0 °/±2 °/±4 °/±6 °, 7 levels
  - ✓ ROI/sample line steer: 0 °/±8 °/±12 °/±16 °
  - ✓ Widescan: 10 °
- 9L-A
  - ✓ Application: Peripheral Vascular, Superficial and Small Parts
  - ✓ Frequency range: 2.0 - 13.0 MHz
  - ✓ Central frequency: 6.0 MHz
  - ✓ Transducer element: 128
  - ✓ Acoustic lens: 42 mm × 9 mm
  - ✓ Biopsy bracket: NGB9L-A, 38 °/47 °/59 °, sterilizable
  - ✓ Width of view: 35 mm
  - ✓ Depth: ≥ 11 cm
  - ✓ B steer: 0 °/±2 °/±4 °/±6 °, 7 levels
  - ✓ ROI/sample line steer: 0 °/±8 °/±12 °/±16 °
  - ✓ Widescan: 10 °
- 10I2
  - ✓ Application: Peripheral Vascular, Superficial and Small Parts
  - ✓ Frequency range: 4.0 - 16.0 MHz
  - ✓ Central frequency: 7.5 MHz
  - ✓ Transducer element: 96
  - ✓ Acoustic lens: 28 mm × 10 mm
  - ✓ Width of view: 25 mm
  - ✓ Depth: ≥ 11 cm
  - ✓ B steer: 0 °/±2 °/±4 °/±6 °, 7 levels
  - ✓ ROI/sample line steer: 0 °/±8 °/±12 °/±16 °

- ✓ Widescan: 10°
- L746
- ✓ Application: Peripheral Vascular, Superficial, Small Parts and Lung
- ✓ Frequency range: 4.0 - 12.0 MHz
- ✓ Central frequency: 7.5 MHz
- ✓ Transducer element: 96
- ✓ Acoustic lens: 52 mm × 10 mm
- ✓ Width of view: 50 mm
- ✓ Depth: ≥ 11 cm
- ✓ B steer: 0° ± 2° ± 4° ± 6°; 7 levels
- ✓ ROI/sample line steer: 0° ± 8° ± 12° ± 16°
- ✓ Widescan: 10°

### 11.3 Other Probes

- CWD2.0
- ✓ Application: Cardiology and Vascular
- ✓ Central frequency: 2.0 MHz
- ✓ Transducer element: 2

## 12 Accessories

### 12.1 Printer

- Printer types
  - ✓ Color ink jet printer
  - ✓ B/W video printer
  - ✓ Color video printer
- Print type
  - ✓ Video print
  - ✓ USB print
  - ✓ Windows print
- Add printer

### 12.2 Foot Switch

- Round port connection
- User-defined short-cut keys

### 12.3 USB Bar Code Scanner

- Bar code scanning input

### 12.4 External DVD

- Export patient data to DVD
- Import patient data from DVD

### 12.5 External Battery

- Normal battery ≥ 90 min
- Large capacity battery ≥ 180 min

## 13 Safety and Certification

- Comply with:
  - ✓ IEC 60601-1, Class I BF
  - ✓ IEC 60601-1-2, Group 1, Class B
  - ✓ IEC 60601-2-37

### NOTE:

- The specifications of this system may change without any prior notification.
- Some products or features may not be available in some countries.
- Please contact your local SonoScape sales representative for more information.

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