

SonoBook 6

Color Doppler System

Datasheet

(V1.0)



General information

Dimensions and Weight

- Dimensions of main unit (approx.): 366mm*355mm*72mm
- Net weight of main unit (approx.): 5.5kg (with battery, without transducer, AC cord, AC adapter.)

Electrical Power

- Adapter Power supply voltage: AC100-240V 50/60Hz
- Main system power input: 19V 7.8A
- Battery type: SonoBAT: 92.88Wh maximum working time is 2h (depend on condition)

User interface

Operation Panel

- Control panel
- Alphanumeric keyboard
- 8 STC Slides
- Interactive backlit keys
- High resolution color LED
 - Diagonal dimension: 15 inch
 - Resolution: 1024X768
 - Brightness adjustment
 - Angle adjustable: 0-120°
- Integrated speaker
 - Volume adjustable

System overview

Applications

- Abdominal
- Cardiac
- Small organ
- Peripheral Vascular
- Transvaginal
- Transrectal
- Musculo-skeletal
- Pediatric
- Fetal
- OB
- GYN
- Urology

Scanning Method

- Electronic convex
- Electronic linear
- Electronic phased array

Transducer Types

- Convex transducer: C3-V, MC3-V
- Linear transducer: L7-V, L12-V, L8M5-V, R7-V
- Transvaginal transducer: E6-V, E7W-V
- Micro convex transducer: MC6-V
- Phased array transducer: P2-V

Image Modes

- B Mode
- B/M Mode
- M Mode
- Dual Mode
- Quad Mode
- 2D Steer
- CFM Mode (Color Doppler Image)
- CPA Mode (Power Doppler Image)
- DPD Mode (Directional Power Doppler)
- PW Mode (Pulse Wave Doppler)
- B/BC Mode
- Triplex Mode (only for linear transducer)
- CW Mode (option)
- TDI (option)
- Color M Mode (option)
- Trapezoidal Mode
- ECG (option)
- Super Needle (option)

Display Mode

- Quad/dual display (Only for B)
- Duplex mode: B+CFM, B+CPA, B+DPD, B/M
- Triplex mode: B+CFM+PW, B+CPA+PW, B+DPD+PW,

Display Annotation

- Logo
- Hospital name
- Exam Date/Time
- Mechanical index
- Tissue thermal index
- Patient Name and Patient ID
- System status (real-time or frozen)
- Gray/Color bar

- Cine guide
- Measurement summary window
- Measurement results window
- Probe type
- Frequency
- Menu indication
- Trackball functions indication
- Imaging parameters

Standard Configuration

- High resolution 15 Inch LCD display
- 1 active probe port
- ECG port
- USB port: 3
- Ethernet port
- Docking port
- B mode
- B/M mode
- M mode
- Dual mode
- Quad mode
- Pulse Wave Doppler
- Color Doppler Flow Imaging
- Power Doppler Flow Imaging
- Directional Power Doppler Flow Imaging
- B/BC mode
- Trapezoidal mode
- Compound
- SRA
- Chroma
- 2D Steer
- Triplex mode
- Biopsy
- General measurement package

- OB measurement package
- GYN measurement package
- URO measurement package
- Cardiac measurement package
- Vascular measurement package
- Small parts measurement package
- Pediatric measurement package
- TCD measurement package
- X-Contrast
- FHI
- Q-Image
- Q-flow
- Q-beam
- AIO (Automatic Image Optimization)
- Screen Saver
- One key for full screen view
- Integrated battery
- 32G integrated capacity
- Multi-language screen display
- Review: images review system
- Archive: patient information management system
- Reporting system

Software Options

- DICOM (storage, print, worklist)
- Super needle
- CW
- TDI
- Color M
- ECG

Hardware Option

- Convex transducer: C3-V,MC3-V
- Linear transducer: L7-V, L12-V, L8M5-V,R7-V

- Transvaginal transducer: E6-V, E7W-V
- Micro convex transducer: MC6-V
- Phased array transducer: P2-V
- Footswitch
- ECG Cable
- Docking: SonoDocking
- External Battery: SonoBAT
- Trolley: TR-20
- Triple transducer connectors: SonoTriple Connector
- Carry Bag: BG-20

Peripherals

- Video printer: SONY UP897MD, SONY UP-D711MD, SONY UP-X898MD
- PC printer :
 - HP Laser Jet 1020
 - HP Laser Jet 1102/1102W
 - HP Laser Jet P2055d
 - HP Laser Jet M251n/M252n/252dw
 - HP OfficeJet Pro 6230
 - EPSON L130

Imaging processing and presentation

B Mode

- Gain:0~255 ,52 levels
- Frame rate:
- STC:8 segments
- Depth:
- Freq. Min:1.5MHz, Max: 18MHz (depends on probes)
- FHI: On/Off
- X-CONTRAST:Normal/Enhance/Suppress
- U/D flip: On/Off
- Zoom:On/Off
- Full screen:Off/On
- Focus number:1~9 ,9 levels
- Compound: Off/On
- SRA: Off/On
- Density:Low/High
- Dynamic: 30~165, 16 levels
- Focus position: Min: 1cm (depends on probes).
Max: 16cm (depends on probes),
16 levels
- Q-Image:0/1/2/3/,4 levels
- Persistence: 0~7, 8 levels
- B Rejection:0~256
- Scan width: 14~100%
- Gamma: 0~8, 9 levels
- Smooth: 0~7,8 levels
- Edge enhance: 0~6, 7 levels
- Acoustic power: 0~100%
- L/R Flip
- Chroma: Type1~28, 29 levels
- 2D Map:Default/0~20, 21 levels
- Zoom coef:60~100%

- Trapezoidal imaging (only for linear transducer): Off/On
- 2D steer: -20~20, 41 levels
- ECG(only for phased array transducer): On/Off

M Mode

- Color Map: Type0~8, 9 levels
- Speed: 1~4, 4 levels
- Layout: UD/LR, 2 levels
- M 2D map: Default/ 1~20, 21 levels

Color Mode

- Gain: 0~255, 52 levels
- Frame rate
- Freq: Min: 1.5MHz (depends on probes), Max: 15MHz (depends on probes)
- Wall filter: 0~3, 4 levels
- Q-flow: On/Off
- Color Invert: On/Off
- Q-beam: On/Off
- Steer (only for linear transducer): -20~20, 7 levels
- Color Map: Type1~8, 9 levels
- PRF: 500Hz (depends on probes), Max: 16KHz (depends on probes)
- Persistence: 0~7, 8 levels
- Baseline: -3~3, 7 levels
- Color mode: Velocity, Variance
- Wall Thre.: 0~14, 15 levels
- Blood Effect: Smooth, Resolution, Resolution 2, Resolution 3, 4 levels
- Density: High/ Low
- B/BC: On/Off
- ROI Size:

CPA/DPD Mode

- Gain: 0~255, 52 levels
- Frame rate
- Freq: 1.5MHz (depends on probes), Max: 15MHz (depends on probes)
- Wall filter: 0~3, 4 levels
- Q-flow: On/Off
- Q-beam: On/Off
- Steer (only for linear transducer): -20~20, 7 levels
- PRF
- Persistence: 0~7, 8 levels
- Wall Thre: 0~14, 15 levels
- Blood Efection: Smooth, Resolution, Resolution 2, Resolution 3, 4 levels
- Density: High/Low
- DPD: On/Off
- ROI Size

PW Mode

- Gain: 0~255, 52 levels
- Freq:1.5MHz (depends on probes), Max: 15MHz (depends on probes)
- Wall Filter: 0~3, 4 levels
- Triplex mode: On/Off
- Steer: -20~20, 7 levels
- Invert: On/Off
- PW chroma: Type1~28, 29 levels
- Audio: 0~100%, 101 levels
- PRF:
- Speed: 0~2, 3 levels
- Baseline: 0~6, 7 levels
- Angle:0~70, 8 levels
- SV: 1-8mm
- D 2D map: Default/0~20, 21 levels
- Spectrum Enhance: 0~3, 4 levels
- Dynamic Range: 46~67, 8 levels

TDI mode

- Gain: 0~255, 52 levels
- Frame rate
- Freq:Min: 1.5MHz (depends on probes), Max: 15MHz (depends on probes).
- Wall filter: 0~3, 4 levels
- Color Invert: On/Off
- Density: High/Low
- Color Map: Type0~10, 11 levels
- PRF
- Persistence: 0~7, 8 levels
- Baseline: -3~3, 7 levels
- Wall Thre: 0~14, 15 levels
- Blood Efection: Smooth, Resolution, Resolution 2, Resolution 3, 4 levels
- ROI Size

CW mode

- Gain: 0~255, 52 levels
- Wall Filter: 0~3, 4 levels
- CWD chroma: 0~8,9 levels
- Audio: 0~100%, 101 levels
- PRF
- Speed: 0~2, 3 levels
- Base line: 0~6, 7 levels
- CW 2D map: Default/0~20, 21 levels
- Spectrum enhance: 0~3,4 levels
- Dynamic: 46~67, 8 levels

Cineloop

- Support 2D, M, PW, CFM, CPA, DPD
- Simultaneous and independent review in Triplex mode
- Cineloop auto/manual
- Variable cine playback speed
- User-define start and end frame of cine storage
- User-define start and end frame of cine review
- storage in hard disk and display in real-time modes
- Slide show: slide show function

Storage

- 32G Capacity
- USB driver
- Still images storage format: BMP
- Still images export format: BMP, JPG
- Cine loops storage format: CINE
- Cine loops export format: AVI

Review

- Image review Layout: 1×1, 2×2, 4×4
- Image management

Archive

- Patient info
- Review report
- Backup exam
- Restore exam
- Send exam
- Delete exam
- Patient view
- Study view
- Expand all
- Collapse all
- Select all

Measurement & calculation

General Measurement Package

- Software packages for various specific clinical use
- Comprehensive analysis methods
- Clinical analysis reports
- **General measurement package**
- General B mode measurement
 - Distance
 - Perimeter/area
 - Volume(1Distance)
 - Volume(1Ellipse)
 - Volume (2Distance)
 - Volume (3Distance)
 - Volume(1Distance1Ellipse)
 - Ratio(distance/ area)
 - Angle
 - Histogram(rectangular/ellipse/trace)
 - profile
- General M mode measurement
 - M distance
 - M Time
 - Velocity
 - Heart_Rate
- PW mode measurement
 - Velocity
 - Distance
 - Peak
 - Trace
 - StD%
 - StA%
 - ICA/CCA
 - Flow Volume
 - HR

Clinical Analysis Packages

- Abdomen
- Obstetric
- Gynecology
- Cardiology
- Vascular
- Urology
- Small parts
- ORTH
- Pediatrics

System setup

By using system Setup, users could

- Customize hospital information
- Customize language
- Customize screen type
- Customize screen controller
- Customize measurement package
- Customize comment/bodymark
- Customize exam mode
- Customize hotkey functions
- DICOM setting
- Net setting
- System information
 - function setting
 - hardware function

User Define Functions

By user-define function, users could customize user-define preset, including

- Applications name, Presets name, User defined name
- Applications exam type
- Imaging parameters

Multi-language Display Interface

- English
- Chinese
- Other languages

Note: other languages for detailed, please contact CHISON.

Inputs & outputs

- USB port: 3
- Ethernet: 1
- Docking port: 1
- System power in: 1
- Probe connect port: 1
- ECG port 1

I/O Dock output:

- DVI-I: 1
- Foot switch port: 1
- Video out: 1
- Remote: 1
- S-video:1

Operating conditions

- Ambient temperature: 10°C to 40°C
- Relative humidity: 30% to 75%
- Atmospheric pressure: 700 hPa to 1060 hPa

Storage and transport conditions

- Ambient temperature: -10°C to 50°C
- Relative humidity: ≤95% (no condensation)
- Atmospheric pressure: 700 hPa to 1060 hPa

Standards

IEC60601-1:1988+A1:1991+A2:1995
UL60601-1:2003 R6.03
IEC60601-1-1:2000
IEC60601-1-4:1996+A1:1999
IEC60601-1-6:2004
IEC62366:2007
IEC60601-2-37:2001+A1:2004+A2:2005
IEC60601-1-2:2001+A1:2004
EN60601-1-2:2007
IEC60601-1:2005+CORR.1(2006)+CORR.2(2007)
EN 60601-1:2006
IEC60601-1-6:2010/EN60601-1-6:2010
IEC60601-2-37:2007/EN60601-2-37:2008
ANSI/AMI ES60601-1:2005/(R)2012,
CAN/CSA-C22.2 No.60601-1:2008(R2013)
CAN/CSA-C22.2 NO.60601-2-37-08(R2014)
IEC62366:2007/EN 62366:2008
ISO10993-1(2009)
ISO 10993-5(2009)
ISO 10993-10(2010)

*Note: for the battery Storage temperature: -20°C to +60°C (less than 1 month); -20°C to +30°C (less than 6 months)

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

CHISON Medical Technologies Co., Ltd. reserves the right to make changes in specifications and features shown here in, or discontinues the product at any time without notice or obligation. For the most current information, Contact CHISON Representative.