

Document Title: SonoBook 8 Datasheet

Rev.: V1.0

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CHISON Medical Technologies Co., Ltd.

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Revision History

Rev.	Description	Release Date	Effective Date
1.0	Initial Draft Release	2018-7-16	2018-7-16

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SonoBook 8

Portable Color Doppler System Datasheet (V1.0)



General Information

Dimensions and Weight

- Dimensions of main unit (approx.):360mm*355mm*65mm
- 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:
 - BT-3000: 92.88Wh (maximum working time is 2h) (depend on condition)

User Interface

Operation Panel

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

System Overview

Applications

Fetal, Abdominal, OB, GYN, Urology, Small Organ (breast, thyroid, testes), Peripheral Vascular, Pediatric, Musculo-skeletal, Intra-operative, Trans-rectal, Trans-vaginal, Cardiac, Adult Cephalic, Neonatal Cephalic

Scanning Method

- Electronic convex
- Electronic linear
- Electronic phased array

Transducer Types

- Convex transducer: C3-V
- Linear transducer: L7-V, L8M-V, L8M5-V, L12-V, L7SVA-V, R7-V
- Micro convex transducer: MC3-V, MC6-V, E6-V, E7W-V, R7B8-V
- Phased array transducer: P2-V, P5-V

Image Modes

- B mode
- B/M mode
- M mode
- Dual mode
- Quad mode
- CFM mode (Color Doppler Image)
- CPA mode (Power Doppler Image)
- DPD mode (Directional Power Doppler)
- PW mode (Pulse Wave Doppler)
- CW mode
- TDI
- Color M mode
- B/BC mode
- Trapezoidal imaging (only for linear transducer)

Display Mode

- Quad/dual display (for B, CFM, CPA, DPD)

Display Annotation

- Hospital name
- Date/Time
- Patient Name and Patient ID
- System status (real-time or frozen)
- Gray/Color bar
- Cine guide
- Scanning direction
- Measurement summary window
- Measurement results window
- Transducer type
- Frequency
- Application name
- Menu indication
- Trackball functions indication
- Imaging parameters displayed on the screen

Standard Configuration

- 1 active probe port
- Pencil transducer port
- ECG port
- USB 3.0 port: 2
- USB 2.0 port: 1
- 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
- PW mode

- B/BC mode
- Trapezoidal mode
- Chroma
- Triplex mode
- Quadplex
- 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
- SRA
- Compound
- AIO (Automatic Image Optimization)
- Standby
- Screen Saver
- One key for full screen view
- Integrated battery
- Auto ambience adjustment
- SSD hard drive (128GB)
- Multi-language screen display
- EasyView: image archive system
- Patient information management system
- Building reporting system

Software Options

- 2D steer

- Curved Panoramic
- Super Needle
- Elastography
- Auto IMT
- DICOM
- HIPPA
- CW mode
- Color M mode
- Free Steering M mode
- TDI+PW mode
- ECG

Hardware Option

- Convex transducer: C3-V
- Linear transducer: L7-V, L8M-V, L8M5-V, L12-V, L7SVA-V, R7-V
- Micro convex transducer: MC3-V, MC6-V, E6-V, E7W-V, R7B8-V
- Phased array transducer: P2-V, P5-V
- Footswitch
- ECG Cable
- Docking: SonoDocking
- Wifi
- Trolley: TR-20
- Triple transducer connectors: SonoTriple Connector
- Carry Bag: BG-20

Peripherals

- Video printer:
 - SONY UP-X898MD/D898MD
 - SONY-D711MD
 - MITSUBISHI P95D
- PC printer :
 - HP LaserJet P1102/P1102w
 - HP LaserJet P1108
 - HP LaserJet 1020
 - Canon SELPHY CP910
 - HP LaserJet M251

Imaging

Processing and

Presentation

B Mode

- Acoustic power
- Gain
- AIO
- TGC
- Depth
- Freq.
- Frame rate
- Focus number
- Focus position
- Scan width
- Density
- Dynamic
- Persistence
- Noise reject
- Smooth
- Edge enhance
- Q-image
- SRA
- Compound
- X-Contrast
- Zoom
- 2D Map
- Chroma
- Gamma
- Image rotate
- Flip (left/right, up/down)
- Zoom
- Brightness

- Trapezoidal mode (only for linear transducer)
- 2D Steer
- Biopsy

M Mode

- Gain
- Color Map
- Sweep speed
- 2D map
- Dynamic
- Layout
- Display (only for Free M mode)

CFM Mode

- Gain
 - Freq.
 - Frame rate
 - Steer
 - PRF
 - Wall filter
 - Color Map
 - Color Invert
 - Density
 - Persistence
 - Baseline
 - Color mode: Vel, Variance
 - Blood Efection
 - Scale
 - Wall Thre.
 - Q-beam
 - Q-flow
 - B/BC
-

CPA Mode

- Gain
- Freq.
- Frame rate
- Steer
- PRF
- Wall filter
- Color Map
- Density
- Persistence
- Blood Efection
- Wall Thre.
- Q-beam
- Q-flow
- B/BC

DPD Mode

- Gain
 - Freq.
 - Frame rate
 - Steer
 - PRF
 - Wall filter
 - Color Map
 - Color Invert
 - Density
 - Persistence
 - Baseline
 - Wall Thre.
 - Q-beam
 - Q-flow
 - B/BC
-

PW Mode

- Gain
- Freq.
- PRF
- Scale
- Wall Filter
- Audio
- Speed
- Baseline
- Angle
- QuickAngle
- SV
- Color Map
- Spectrum Enhance
- Dynamic Range
- Auto Cal
- Auto Cal Parameter
- DTrace Smooth
- Threshold
- DVmean
- DVmax
- Trace Area
- Triplex (not support on phased array transducer)
- Quadplex (not support on phased array transducer)

CW Mode

- Gain
- Invert
- PRF
- Scale
- Wall Filter
- Audio
- Speed
- Baseline
- Angle

- Color Map
- Spectrum Enhance
- Dynamic Range

Cineloop

- Support 2D, M, PW/CW, CFM, CPA, DPD
- Simultaneous and independent review in duplex 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 SSD hard drive and display in real-time modes
- Slide show: slide show function

Storage

- High capacity SSD hard drive
- USB ports
- Still images storage format: IMAG
- Still images export format: BMP, JPG, DCM,PNG,TIFF
- Cine loops storage format: CINE
- Cine loops export format: AVI
- Fast storage setting

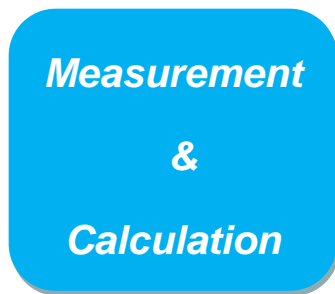
EasyView

- Image review Layout: 1x1,2x2
- Image management

Exam Review

- Search Exam
- Exam review: patient view, study view
- Exam management
 - Delete selected exam
 - Export selected exam
 - Backup selected exam
 - Recover from the backup exam

- Selected all
- Expand all
- Collapse all
- Edit selected Exam
- Review selected Exam
- Continue selected Exam



General Measurement Package

- Software packages for various specific clinical use
- Comprehensive analysis methods
- Clinical analysis reports
- **General measurement package**
- B mode Normal measurement
 - Distance
 - Length__Area (Ellipse)
 - Length__Area (Trace)
 - Volume (1 Distance)
 - Volume (2 Distance)
 - Volume (3 Distance)
 - Volume (1 Ellipse)
 - Volume (2 Ellipse)
 - Volume (1 Distance 1 Ellipse)
 - Ratio
 - Angle
 - Strain Ratio
- M mode Normal measurement
 - MDistance
 - MTime
 - Velocity
 - HR
- PW mode Normal measurement

Velocity
Distance
Peak
Auto Trace
Manual Trace
StD%
StA%
Area
ICA/CCA
HR
Volume Flow

● **Clinical measurement package**

● B mode GYN measurement

Distance
UT
Cervix Vol.
ENDO
OV_Volume
FO_D
FO Auto
Uterine Artery

● M mode GYN measurement

MDistance
MTime
Velocity
HR

● PW mode GYN measurement

Umb A
MCA
Uterine Artery
Fetal AO
FHR

● B mode OB measurement

Distance
GS
CRL
BPD
AC(Ellipse)
HC(Ellipse)
FL
Humerus

OFD

Fetal Biometry

Fetal Long Bones

Fetal Cranium

OB Others

AFI

FBP

Ductus Venosus

CX_L

Aorta

Descending Aorta

MCA

Umb A

Uterine Artery

Pulmonary Artery

Fetal Select

- M mode OB measurement

MDistance

MTime

Velocity

HR

- PW mode OB measurement

Umb A

Aorta

Descending Aorta

Uterine Artery

Pulmonary Artery

MCA

FHR

- B mode Vessel measurement

IMT (Auto)

IMT Mean

CCA

ICA

ECA

Vertebral A

EXT IL

INT IIL

ILIAC

CFA

ProFun

LTCIR

SFA

Pop A

ATA

PTA

PERON

DRPED

Strain Ratio

- M mode Vessel measurement

MDistance

MTime

Velocity

HR

- PW mode Vessel measurement

CCA

ICA

ECA

Vertebral A

INT IIL

EXT IL

ILIAC

CFA

ProFun

LTCIR

SFA

Pop A

ATA

PTA

PERON

DRPED

HR

Volume Flow

- B mode URO measurement

- Distance
- Residual Vol.
- Prostate Vol.
- Kid Volume
- T-Zone Vol.
- Bladder Vol.
- StA%
- StD%
- Vessel Area
- Vessel Dis
- M mode URO measurement
 - MDistance
 - MTime
 - Velocity
 - HR
- PW mode URO measurement
 - Velocity
 - Distance
 - Peak
 - Auto Trace
 - Manual Trace
 - StD%
 - StA%
 - Area
 - ICA/CCA
 - HR
 - Volume Flow
- B mode Small Parts measurement
 - Distance
 - Length__Area (Ellipse)
 - Length__Area (Trace)
 - Volume (1 Distance)
 - Volume (2 Distance)
 - Volume (3 Distance)
 - Volume (1 Ellipse)
 - Volume (2 Ellipse)
 - Volume (1 Distance 1 Ellipse)

- Ratio
- Angle
- Strain Ratio
- Breast
- Thyroid
- M mode Small Parts measurement
 - MDistance
 - MTime
 - Velocity
 - HR
- PW mode Small Parts measurement
 - Velocity
 - Distance
 - Peak
 - Auto Trace
 - Manual Trace
 - StD%
 - StA%
 - Area
 - ICA/CCA
 - HR
 - Volume Flow
- B mode Pediatrics measurement
 - HIP
- M mode Pediatrics measurement
 - MDistance
 - MTime
 - Velocity
 - HR
- PW mode Pediatrics measurement
 - Velocity
 - Distance
 - Peak
 - Auto Trace
 - Manual Trace
 - StD%
 - StA%
 - Area

ICA/CCA

HR

Volume Flow

- B mode Carotid measurement

Subclavian A

CCA

Bulb

ICA

ECA

Vertebral A

General Measurement

Strain Ratio

- M mode Carotid measurement

MDistance

MTime

Velocity

HR

- PW mode Carotid measurement

Subclavian A

CCA

Bulb

ICA

ECA

Vertebral A

General Measurement

HR

Volume Flow

- B mode Cardiac measurement

Teichholz

Simpson SP

Simpson Biplane

Modify Simpson

Cube

Bullet Volume

Gibson

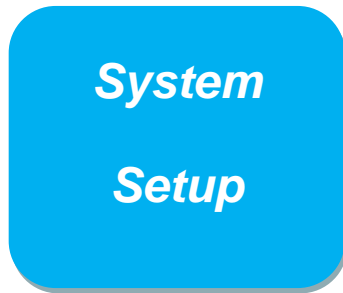
Mitral Valve

Aortic Valve

- Pulmonary Valve
- Tricuspid Valve
- LVOT
- RVOT
- PISA
- LV Mass
- Qp/Qs
- RV/LV
- IVC
- RA/LA
- AO/LA
- M mode Cardiac measurement
 - Distance
 - Time
 - Slope
 - HR
 - Left Ventricle
 - Mitral Valve
 - Aortic Valve
 - Tricuspid Valve
 - Pulmonary Valve
 - RV/LV
 - LV Mass
 - TAPSE
- PW mode Cardiac measurement
 - Velocity
 - Acceleration
 - Time
 - Slope
 - HR
 - ED/PS
 - Mitral Valve
 - Aortic
 - Tricuspid Valve
 - Pulmonary Valve
 - Pulmonary Vein

- PISA
- Qp/Qs
- Tei Index
- TDI
- B mode Abdomen measurement
 - CBD
 - GB Wall
 - Liver Length
 - Artery
 - Spleen
 - Renal Vol.
 - GB Volume
 - Iliac
- M mode Abdomen measurement
 - MDistance
 - MTime
 - Velocity
 - HR
- PW mode Abdomen measurement
 - Velocity
 - Distance
 - Peak
 - Auto Trace
 - Manual Trace
 - StD%
 - StA%
 - Area
 - ICA/CCA
 - HR
 - RAR
 - Volume Flow
- B mode TCD measurement
 - ICA
 - CS
 - MCA
 - ACA
 - PCA
 - ACOA

- PCOA
- OA
- Vertebral A
- BA
- PICA
- M mode TCD measurement
 - ICA
 - CS
 - MCA
 - ACA
 - PCA
 - ACOA
 - PCOA
 - OA
 - Vertebral A
 - BA
 - PICA
- PW mode TCD measurement
 - ICA
 - CS
 - MCA
 - ACA
 - PCA
 - ACOA
 - PCOA
 - OA
 - Vertebral A
 - BA
 - PICA



By using system Setup, users could

- Customize hospital information
- Customize language
- Customize fast storage time
- Customize color map
- Assign functions to "PRINT" button on control panel and foot switch
- Customize comment library
- Customize report

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 3.0 port: 2
- USB 2.0 port: 1
- Ethernet: 1
- Docking port: 1
- System power in: 1
- Probe connect port: 1
- Pencil 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% (no condensation)
- 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

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

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)

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

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