

# SonoBook 9

## Portable Color Doppler System Datasheet ( V0.3)

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## **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:
  - 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, L12-V, L8M5-V, L10i-V
- Transvaginal transducer: E6-V, E7W-V
- Micro convex transducer: MC6-V
- Phased array transducer: P2-V, P5-V
- 4D volume transducer: VC4-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
- 4D (option)
- 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
- Compound
- SRA
- Chroma
- 2D Steer
- Triplex mode
- Quadplex
- CW mode
- Auto IMT
- 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
- Vet measurement package
- X-Contrast
- FHI
- Q-Image
- Q-flow
- Q-beam
- 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**

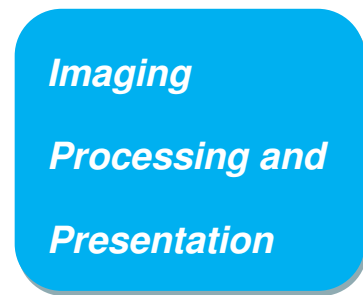
- Stress Echo
  - DICOM
  - TDI
  - Color M mode
  - Curved Panoramic
  - Elastography
  - Super Needle
  - 4D software package
  - Virtual HD
  - Depth View
-

### **Hardware Option**

- High resolution 15 Inch LCD display
- Convex transducer: C3-V
- Linear transducer: L7-V, L12-V, L8M5-V, L10i-V
- Transvaginal transducer: E6-V, E7W-V
- Micro convex transducer: MC6-V
- Phased array transducer: P2-V, P5-V
- 4D volume transducer: VC4-V
- Footswitch
- ECG Cable
- Docking: SonoDocking
- Wifi
- External Battery: SonoBAT
- 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



**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

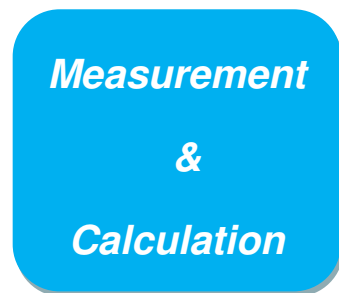
### **EasyView**

- Image review Layout: 1×1,2×2
- 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

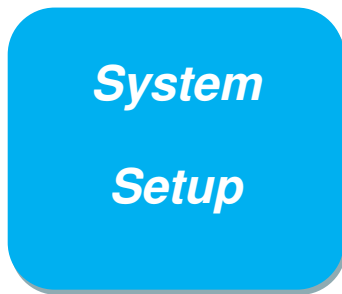
PCOA

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**

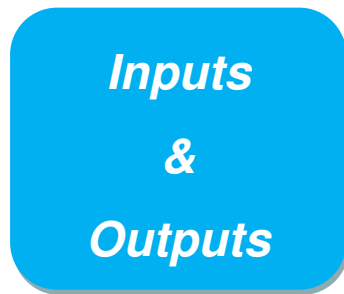
By user-define function, users could customize user-define preset, including

- 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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