
SonoMax

Color Doppler System Datasheet

V1.0



General Information

Dimensions and Weight

- Dimensions of main unit (approx.):
604mm*685mm*1498mm
- Net weight of main unit (approx):
58kg (no probe included)

Electrical Power

- Power supply voltage: Auto adaptable for
AC100-240V
- Power supply frequency: 50-60 Hz
- Power consumption: 600 VA
- Stand-by mode
- Battery for option

User Interface

Operation Panel

- Control panel
 - Height adjustable: 20 cm
 - Rotatable with 90° left and right
 - released from the machine body
- Alphanumeric keyboard
- 10 TGC Slides
- Interactive backlit keys
- Integrated speaker
 - Volume adjustable

Touch panel

- 15.6 inch Touch screen
 - customizable layout
 - can show the image real time
 - sensitive to use

Display Screen

- High resolution color LED
- Dimension: standard 23.8 inch
- Resolution: 1920×1080
- Image Area: 800×600
Full Screen: 1120×840
1440×1080
- Brightness and contrast adjustment

System Overview

Applications

- Abdominal (Gynecology & Urology)
- Fetal/OB
- Small Parts
 - Breast
 - Thyroid
 - Scrotum
- Pediatrics
- MSK_Conventional & Superficial
- Cardiac (adult & pediatric)
- Transvaginal

Scanning Method

- Electronic convex
- Electronic linear
- Electronic phased array
- Volume convex

Transducer Types

- Convex probe:
C1-5
- Linear probe:
L4-10,L5-14,L4-10R,L6-15i
- Trans-vaginal probe:
E4-13,E4-10
- Phased array probe:
S1-5P,S1-5
- Volume probe:
V2-6,VE4-10
- Micro convex probe:
C4-11
- Bi-plane probe:
BL3-12

Image Modes

- B Mode
- B/M mode
- M mode

- 2B Mode
- 4B Mode
- CFM Mode
- 2D Steer
- PD Mode
- DPD Mode
- PW Mode
- B/BC Mode
- Triplex
- Quadplex
- CW Mode
- Free Steering M Mode
- TDI
- Color M Mode
- Curved Panoramic Imaging
- Trapezoidal imaging
- Compound
- SRA
- Elastography
- Stress Echo
- ECG (optional configuration)
- Super Needle
- 4D
- Virtual HD
- FHI mode
- AIO

Display Mode

- Quad/Dual display
- Duplex mode
- Triplex mode
- Quadplex mode

Display Annotation

- Hospital name
- Date/Time
- Patient Name and Patient ID
- Gray/Color bar
- Cine guide

- Scanning direction
- Measurement results window
- Transducer type
- Frequency
- Application name
- Menu indication
- Trackball functions indication
- Imaging parameters displayed on the screen

Standard Configuration

- 23.8 inch LED monitor
- 15.6 inch touch screen
- 4 active transducer ports
- 5 active transducer ports (optional configuration)
- 500G integrated hard disk
- DVD RW (optional configuration)
- ECG Port (optional configuration)
- Pencil Probe Connector (optional configuration)
- USB ports: 8
- TGC
- LGC
- B, 2B, 4B, B/M, B/BC, CFM, PW, Power Doppler/Directional PD, Instant Triplex, Duplex, Quadplex, Trapezoidal, Chroma B&M&PW, Full Screen
- Automatic PW trace and measurement in real time
- Super Image module: FHI, Multiple Compound Imaging, SRA (Speckle Reduction Algorithm), AIO
- Q-image (intelligent image optimization), X-contrast, Q-beam, Q-flow
- Measurement & calculation software packages: General, OB&GYN, Cardiac
- Zoom
 - Zoom navigator
 - Improve the fps
 - High resolution Zoom
 - Real-time Zoom

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- Frozen Zoom
 - PIP Zoom
 - Pan Zoom

Software Options

- 4D module
- Virtual HD/Depth View
- HD Niche/ Smart Volume Slice/SonoCrystal
- HD 3D
- 2D steer
- Stress Echo
- Auto EF
- Strain and Strain rate
- Intelligent Doppler
- SonoOB
- SonoContrast
- SonoPW
- TDI-SonoPW
- SonoColor
- SonoNeedle
- UltraRemote
- Virtual Apex
- Static 3D
- Nano Flow
- MVI Mode
- Volume Flow
- Elastography
- Super Needle
- Curved panoramic
- Color Panoramic
- Curved expanding
- SonoZoom
- SonoFollicle
- SonoBreast
- SonoCarotid
- RemoteSevice
- SonoCoach

- SonoCompare
- TSS
- HIPPA
- Extended Cardiac Package: ECG Software, Free M, Color M, CW, TDI, IMT
- DICOM 3.0
- HL7
- SonoIMT
- Scan Code
- WIFI Function
- Bluetooth
- Biopsy kit: for convex/linear/TV/ Micro-Convex probe respectively

Hardware Options

- ECG Lead

Peripherals

- SONY UP-X898MD B&W Video Printer
- SONY UP-D25MD

Imaging Parameters

B Mode

- Gain
- Compound
- SRA
- Focus Number
- Focus Position
- Full Screen
- X-contrast
- Q-image
- Persistence
- Density:
- 2D Map
- Noise Reject
- Scan Width
- Image Rotate
- Gamma
- Chroma

- Smooth
- Edge enhance
- A.power
- Frequency
- Dynamic
- Depth
- Zoom
- TGC
- Center Line
- Trapezoidal Mode
- Biopsy
- Biopsy Level
- Super Needle
- Needle angle
- Curved panoramic imaging
- Elastography
- 2D steer

M Mode

- Gain
- Layout
- Display Format
- Chroma
- Free Steering M Mode
- Color Map
- 2D map
- Dynamic
- Speed

Color Mode

- Gain
- Color Map
- Color Invert
- Q-flow
- Q-beam
- Persistence
- Color Mode
- Wall Filte
- Density

- Wall Thre
- Blood Efection
- B/BC
- Frequency
- Baseline
- Scale
- Steer
- PRF

CPA/DPD Mode

- Gain
- Wall Filter
- Q-beam
- Q-flow
- Wall Thre
- Persistence
- Frequency
- PRF
- Steer
- Color Map

PW Mode

- Gain
- 2D Map
- Wall Filte
- Spectrum Enhance
- Dynamic Range
- Invert
- Display format
- Triplex
- Quadplex
- Auto Cal Parameter
- DTrace Smooth
- Threshold
- DVmean:
- DVmax
- Trace area
- Audio
- Color Map

- QuickAngle
- Auto Ca
- Freq
- Baseline
- PRF
- Steer
- Speed

CW Mode

- Gain
- 2D Map
- Spectrum Enhance
- Dynamic
- Audio
- Wall Filter
- Color Map
- QuickAngle
- Baseline
- PRF
- Speed

SonoContrast

- SonoContrast provides exceptional Contrast agent detecting capability, not only extracts second harmonic, but also non-linear fundamental signals
- Available for convex, linear, phased array and endocavitary probe
- Available for abdomen, GYN, URO, Thyroid, Breast,
- Analysis package
- mechanical index
- Timer1: on/off
- Timer2: on/off
- Retro capture and Pro capture storage
- Comparative analysis on complex curves
- Dual live: side by side displays tissue image and contrast image
- Mix: mix contrast image with tissue Image
- Visual: Contrast/Mix/Tissue
- Center line

- Mark
- Cine Save
- Flash
- Q-image:0-4
- Edge Enhance:0-6
- Mix map: 7 types
- Dynamic range: 15-390
- 2D map: 20 types
- Chroma: 1-29+user
- Supports U/D Flip and L/R Flip
- Rotation: 90 degrees/ step

Triplex Mode

- B+C+D
- Available on all probes

Quadplex Mode

- B+C+D+auto trace
- DTrace Calc Parameters: Vs, Vd, TAMAX, VTI, Time, RI, PI, S/D, HR

Technology and Function

Fusion Harmonic Imaging

- Available on all probes
- FHI key ON/OFF
- Second active multi-frequency

Trapezoidal

- Available for linear probe
- combined with compound algorithm space

SonoOB

- Automatic measurement: BPD, HC, AC, FL, NT ,OFD
- Efficiency and accuracy

HIPPA

- Password to get into the system
- User define

Curved panoramic

- Real time
- Support measurement
- Erasable design
- Color map: 30 types
- Available for convex and linear

Elastography

Available on linear, convex, endocavitary

- Dual images simultaneous

- Modifiable ROI
- Support strain ratio measurement
- Real-time display of pressure column
- Quantitative comparison

Dynamic focusing

- Wider the focus area provide image more detail and higher resolution

Post Processing for raw data

- Support measurement
- Adjust the gain, TGC, 2D map, chroma, dynamic range, invert etc.

Stress Echo

- Available on phased array probes
- 36 factory protocols
- User-defined protocols
- Analysis system: wall motion scoring
- Professional report

Cineloop

- Cine loops
- Perspective Retrospective
- Support 2D, M, PW, CFM, CPA, DPD, CW, Color M, Free Steering M
- 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 hard disk and display in real-time modes
- Slide show: slide show function

Storage

- 500GB integrated SSD
- DVD RW driver (optional configuration)
- 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
- System suitable to avoid the loss of data / images

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

Connectivity

- Ethernet work connection
- USB for USB Device
- DICOM support(option)
 - Verify
 - Print
 - Store
 - Worklist
 - Structure report
 - MPPS
 - Query/retrieve

Measurement and Calculations

General Measurement Package

- Software packages for various specific clinical use
- Comprehensive analysis methods
- Clinical analysis reports

General measurement package

- B mode General 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

HR Manual

SonoColor

- M mode normal measurement

MDistance

MTime

Velocity

HR

HR Manual

- PW mode Normal measurement

Velocity

Distance

Peak

Auto Trace

Manual Trace

StD%

StA%

Area

ICA/CCA

HR

Volume Flow

HR Manual

Clinical Analysis Packages

- B mode GYN measurement

Distance

UT

Cervix Vol.

ENDO

OV Volume

FO_D

FO Auto

Uterine Artery

HR Manual

Strain Ratio

- M mode GYN measurement

MDistance

MTime

Velocity

HR

HR Manual

- PW mode GYN measurement

Umb A

MCA

Uterine Artery

Fetal AO

HR Manual

- B mode OB measurement

Distance

GS

CRL

BPD

Auto BPD

AC(Ellipse)

Auto AC

HC

Auto HC

FL

Auto FL

Humerus

OFD

Auto OFD

NT

Free NT

Fetal Biometry

Fetal Long Bones

Fetal Cranium

OB Others

Z Score

AFI

Ductus Venosus

CX_L

Aorta

Descending Aorta	PERON
MCA	DRPED
Umb A	HR Manual
Uterine Artery	Strain Ratio
Pulmonary Artery	● M mode Vessel measurement
Fetal Select	MDistance
HR Manual	MTime
Strain Ratio	Velocity
● M mode OB measurement	HR
MDistance	HR Manual
MTime	● PW mode Vessel measurement
Velocity	CCA
HR	ICA
HR Manual	ECA
FHR	Vertebral A
● PW mode OB measurement	INT IIL
Umb A	EXT IL
Aorta	ILIAC
Descending Aorta	CFA
Left Uterine Artery	ProFun
Right Uterine Artery	LTCIR
Pulmonary Artery	SFA
MCA	Pop A
FHR	ATA
HR Manual	PTA
Duct Venosus	PERON
● B mode Vascular measurement	DRPED
IMT (Auto)	HR
IMT Mean	Volume Flow
SonoColor	HR Manual
CCA	● B mode URO measurement
ICA	Distance
ECA	Void Vol.
Vertebral A	Prostate Vol.
EXT IL	Kidney Volume
INT IIL	T-Zone Vol.
ILIAC	Bladder Vol.
CFA	StA%
ProFun	StD%
LTCIR	Vessel Area
SFA	Vessel Dis
Pop A	HR Manual
ATA	Strain Ratio
PTA	● M mode URO measurement

MDistance	Velocity
MTime	Distance
Velocity	Peak
HR	Auto Trace
HR Manual	Manual Trace
● PW mode URO measurement	StD%
Velocity	StA%
Acceleration	Area
Distance	ICA/CCA
Peak	HR
Auto Trace	Volume Flow
Manual Trace	HR Manual
StD%	● B mode Pediatrics measurement
StA%	HIP
Area	Vol(3Dis)
ICA/CCA	HR Manual
HR	Strain Ratio
Volume Flow	● M mode Pediatrics measurement
HR Manual	MDistance
● B mode Small Parts measurement	MTime
Distance	Velocity
Length__Area (Ellipse)	HR
Length__Area (Trace)	HR Manual
Volume (1 Distance)	● PW mode Pediatrics measurement
Volume (2 Distance)	Velocity
Volume (3 Distance)	Distance
Volume (1 Ellipse)	Peak
Volume (2 Ellipse)	Auto Trace
Volume (1 Distance 1 Ellipse)	Manual Trace
Ratio	StD%
Angle	StA%
Strain Ratio	Area
Breast	ICA/CCA
Auto Breast	HR
Thyroid	Volume Flow
Auto Thyroid	HR Manual
HR Manual	● B mode Carotid measurement
● M mode Small Parts measurement	Subclavian A
MDistance	CCA
MTime	Bulb
Velocity	ICA
HR	ECA
HR Manual	Vertebral A
● PW mode Small Parts measurement	General Measurement

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- Strain Ratio
 - HR Manual
 - M mode Carotid measurement
 - MDistance
 - MTime
 - Velocity
 - HR
 - HR Manual
 - PW mode Carotid measurement
 - Subclavian A
 - CCA
 - Bulb
 - ICA
 - ECA
 - Vertebral A
 - General Measurement
 - ICA/CCA
 - HR
 - Volume Flow
 - HR Manual
 - B mode Cardiac measurement
 - Auto EF
 - 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
 - HR Manual
 - M mode Cardiac measurement
 - MDistance
 - MTime
 - Slope
 - HR
 - Left Ventricle
 - Mitral Valve
 - Aortic Valve
 - Tricuspid Valve
 - Pulmonary Valve
 - RV/LV
 - LV Mass
 - TAPSE
 - Vp
 - HR Manual
 - 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
 - HR Manual
 - B mode Abdomen measurement
 - CBD
 - GB Wall
 - Liver Length
 - Artery
 - Spleen
 - Renal Vol.
 - GB Volume
 - Iliac
 - HR Manual
 - Strain Ratio
 - M mode Abdomen measurement
 - MDistance

- MTime
- Velocity
- HR
- HR Manual
- PW mode Abdomen measurement
- Velocity
- Acceleration
- Distance
- Peak
- Auto Trace
- Manual Trace
- StD%
- StA%
- Area
- ICA/CCA
- HR
- RAR
- Volume Flow
- HR Manual
- B mode TCD measurement
- ICA
- CS
- MCA
- ACA
- PCA
- ACOA
- PCOA
- OA
- Vertebral A
- BA
- PICA
- HR Manual
- PW mode TCD measurement
- ICA
- CS
- MCA
- ACA
- PCA
- ACOA
- PCOA
- OA
- Vertebral A
- BA
- PICA

HR Manual

SYSTEM SETUP

By using system setup, users could

- Customize hospital information
- Customize language
- Customize fast storage time
- Customize color map
- Customize functions to Footswitch,P1 key, Print key
- Customize functions to alphanumeric 0~9
- Customize PC and Video Print
- Option
- Customize Measure
- Customize Comment library
- Customize Report

User Define Functions

- By user-define function, users could customize user-define preset, including
 - Applications name, Presets name
 - Applications exam type
 - Imaging parameters

Multi-language Display Interface

- English
- Chinese
- Other languages

Note: other languages for detailed, please contact CHISON.

Inputs and outputs

- AC Power In: 1
- Power Button: 1
- USB Port: 8
- Ethernet: 1
- Remote Control: 1
- S-Video Out: 1
- Audio: L,R
- HDMI: 1
- VGA Out: 1
- Video Out: 1
- Ground pole: 1

Operating conditions

- Ambient temperature: 10°C to 40°C
- Relative humidity: 30% to 75% (no

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- condensation)
- Atmospheric pressure: 700 hPa to 1060 hPa

- Ambient temperature: -5°C to 40°C
- Relative humidity: ≤80% (no condensation)
- Atmospheric pressure: 700 hPa to 1060 hPa

Storage and Transport conditions

Not all features or specifications described in this document may be available.

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