The High-Performance Color Doppler System

V90 Data Sheet

Powered by brand new platform Realview+, V90 high-end color Doppler imaging system provides comprehensive professional solution kit supports all-round diagnosis with exceptional imaging performance and efficient workflow.

Highlights

- ***Realview+ Platform***
- ***Multi-function knob***
- ***Quick ID***
- ***Q-Preset***
- ***S-Beam***
- ***S-View***
- ***S-Station***
- ***CHI***
- ***SEQ***

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General Specification

Dimension	
Gross dimension L*W*H(mm)	• Carton: 950*670*1200 • Wooden: 940*660*1190
Net dimension W*D*H(mm)	580*815*1280~1520

Weight	
Gross weight	• Carton packing: 90kg • Wooden case packing: 105kg
Net weight	63.5kg

Power Requirements	
Voltage	100~240V（230±23V~ for EU countries）
Frequency	50Hz±1Hz; 60Hz±1Hz
Input power	300VA

Operation Conditions	
Ambient temperature	0℃ to +40℃
Relative humidity	30% to 85%
Atmospheric pressure	70kPa to 106kPa

Stored Conditions	
Ambient temperature	-20℃ to +60℃
Relative humidity	15% to 93%
Atmospheric pressure	50kPa ~ 106kPa

Connectivity	
Video output	HDMI/VGA/S-VIDEO/VIDEO port
Audio in/out port	
USB port	
ECG port	
Printer control port	
Foot switch port	
Ethernet（RJ45）	
Gel warmer port	

Appearance	
Ergonomic appearance	
Monitor	• 23" high resolution color monitor (1920*1080) • Swivel & height adjust • Visual Angle L&R 89°/U&D 89°
Touch screen	• 13.3" high resolution color monitor • Gesture operation • Adjustable angle, lean backward 25° • Customizable button layout
Control panel	• L&R side rotation:30° • U&D adjust:110mm • Backlit keyboard • Satellite navigation button • Multi-function knob button • Six probe holder • 8 TGC • Hideable pull-out PC keyboard
Five active probe connectors	
Solid state disk：1T	
DVD-ROM	
Tray	
Four lockable casters	

System Overview

Applications
Large Dog(>15kg): Abdomen, MSK, Superficial, Small Part, Cardiology, Reproduction
Medium Dog (5-15kg): Abdomen, MSK, Superficial, Small Part, Cardiology, Reproduction
Small Dog (<5kg): Abdomen, MSK, Superficial, Small Part, Cardiology, Reproduction
Cat: Abdomen, MSK, Superficial, Small Part, Cardiology, Reproduction
Others: Abdomen, MSK, Superficial, Small Part, Cardiology, Reproduction

Transducer Types

Convex probe, Micro-convex probe, Linear probe, Phased array probe

Standard Features

Frequency	• Fundamental Frequency • THI (Tissue Harmonic imaging) • MFI(Inversion THI) • Fusion Frequency: Pen/Gen/Res
Speckle reduction	• Nanoview • Nanopure: Special for Cardiovascular
S-Beam	Compound Imaging
Series customization	• Examination customization • Measurement customization • Annotation customization • Bodymark customization • Report template customization

Quick ID

Q-Preset

Trapezoidal/Extend imaging

Duplex/Triplex

Panoscope

Auto IMT

Auto Volume

Auto Flow

M/Color M/AMM

CFM/PDI/DPDI/VS Flow

PW/HPRF

TDI

Glossy Flow

Needle Enhancement

CW

Semi-auto EF

S-View

S-Station

Account management

SIUI MAI

Sono Air

Smarchive

Historical Archive Query

Spectrum measurement	• Auto Trace • Semi Auto Trace • Manual

Reverse Import

Cursor Zoom

Raw Data Analysis

Auto-Fit	Automatic Optimization

Post processing

DICOM 3.0 (Basic)

Optional Features

DICOM 3.0 (Advance)

DICOM 3.0(Cardiac SR)

PV Imaging

Strain Elastography

SEQ(Shearwave Elastography Quantification)

Contrast Harmonic Imaging(for liver and thyroid)

CHI QA

Micro Flow

ECG

Auto EF/Auto SG

TDI QA

Stress Echo

Free Hand 3D

4D Pro

Lumi 4D

Standard Accessories

Video cable	• S-Video cable • BNC/RCA cable

Power Cable

Potential equalization conductor
Printer control cable
Gel warmer
Fuse
Operation Manual
Dust-proof cover
Recovery system USB
Wireless adapter
Probe holder
Camera
Tray
ECG cable

Optional Accessories

Printer	·B/W thermal printer ·Color thermal printer ·LaserJet printer ·Inkjet printer
Biopsy guide	• Convex probe • Linear probe • Transvaginal probe • Transrectal probe
Customized holder	• Pencil probe • Micro-convex probe
Foot switch	• JT-3 (USB port) • JT-2

Display Mode

B	B, 2B, 4B
M	• M, B+M • B+M+CFM • B+TDI+M • AMM
B+Color	• B+CFM, B+PDI, B+DPDI • B+VS Flow • Split B/CFM
B+Spectrum	• B+PW • B+CW • HPRF
B+Color+	• B+CFM+PW
Spectrum	• B+PDI+PW • B+DPDI+PW • B+VS Flow+PW • B+CFM+CW
Tissue Doppler	• B+TDI • B+TDI+PW
ECG	B+ECG
Volume	• 3D • 4D
Extend Mode	• Trapezoid/Ext (Convex probe) • Panoscope
CHI mode	
Needle Enhancement mode	

System Parameters

General Parameters

GPU+CPU	
Windows 10	
System language	English, Spanish, German,Russian, French, Italian
Input language	English, Spanish, German,Russian, French, Italian
Broadband/Multi-Frequency Technology	
System signal processing bandwidth: 1-18Mhz	
Gray scale	256
Dynamic Range	30-280dB
Max. Frame Rate	>2000 fps, based on probe and mode
Maximum image display depth	41 cm, based on probe
Zoom	• HD Zoom • Full-View Zoom • Full Screen
Focus	• Continuous dynamic focus • 1-8 selectable transmit focus
8-step TGC slide pots	
5/9-step digital LGC	

2D Mode

- Gain
- Depth

- Frequency
- S-Beam
- Enhancement
- Smooth
- Nanoview
- Nanopure
- Persistence
- Chroma
- Gray Map
- Power
- B steer (Linear probe)
- B rotation
- TSI
- Line density
- Inversion
- Dual View/Quad View
- SF

M Mode

- Gain
- Sweep speed
- Gray Map
- Chroma
- Display layout
- AMM

CFM/PDI/DPDI Mode

- Gain control
- Pulse repetition frequency
- Wall filter
- C Priority
- C Gate
- Median Filter
- Threshold
- Color Map
- Smooth
- Color persistence
- Line density
- Color enhancement
- B MIX
- Power
- Baseline (CFM)
- Steer (Linear probe)
- Tag Range
- Tag Position
- Color Hidden
- B/C split
- VS Flow
- Color U/D
- Auto Fit

PW/CW Mode

- Gain
- Gray Map
- Chroma
- PRFd
- Duplex
- Baseline
- Wall filter
- Angle
- Sampling volume
- Volume
- Sweep Speed
- Smooth
- Power
- Auto Trace
- Display layout
- Trace Type
- Trace Correction
- Trace Sensitivity

· CW: Available on the sector probes

TDI Mode

Help to assess the directional and temporal phase of cardiac so as to display the movement state of myocardium and the movement speed of heart.

- TDG
- Persistence
- PRFc
- WF
- Baseline
- U/D
- ENH
- MIX
- TDI Map
- Thred
- Priority
- PWR

• Gate • Smooth • Med Filter • Color Hidden • B/C split • Available on the sector probes	
TDI+PW	• TDI-PW is used to display the trajectory of the movement velocity change of the myocardial tissue. On the time axis, it can intuitively reflect the movement velocity change of the myocardium during the cardiac cycle. It can measure the velocity of myocardial movement, the time length of each phase of the cardiac cycle, and calculate cardiac indicators such as TEI.
TDI+M	• Provide both myocardium motion velocity and direction

AMM

The M mode scanning line can be adjusted 360 degrees to meet the measurement requirements of different cardiac chamber structures, so that the accuracy and reliability of measurement results are not affected by intracardiac structure or position deviation.

· Chroma
· Line Number
· Layout
· Sweep Speed

Auto Fit

The system can reduce noise and artifacts purify tissue shading and edging improve contrast resolution and help early identification of tissue/structure lesion

Available on B/CFM/PW	
B	TGC, Gain
CFM/PDI/ DPDI	Gain
PW/CW	Baseline, PRF

Post Processing

Parameter or mode can be adjusted in the saved original data image or movie, it helps to better diagnose the lesion

Available on B/CFM/PW/4D/M mode	
B	• B Gain, Chroma, Gray Map, L/R, U/D, Rotation, F-Zoom • Activate AMM (Phased array probe only)
CFM	• B Gain, F-Zoom, Baseline, MIX, B Mix, Color Map, Color U/D, Priority, Tag Pos, Tag Range, Smooth, Thred • CFM：Turn off color image and display B mode image, B/C split
PDI/DPDI	• B Gain, F-Zoom, Map, Color U/D, MIX, B MIX, Priority, Smooth, Thred • PDI: Turn off color image and display B mode image, B/C split
PW/CW	•B Gain, PWG, F-Zoom, Baseline, Volume, Angle, Chroma, Trace correction, Trace Sensitivity, Trace Type, Layout, U/D, Gray Map • PW：Turn off PW image and display B mode image
4D	• Nanoview, Brightness, Color, Rotate VR, Zoom, Line Angle, Thred, Smooth, Image Quality, Effect, Gray Map, Opacity Map, Render
M/AMM	M Gain, F-Zoom, Chroma, Gray Map, Layout, Line No.(AMM)

Quick ID

Quickly create ID, no need to input patient information, suitable for emergency situations

Q-Preset

Without entering the setup interface, the user-defined parameters can be saved quickly with one click to improve the operation efficiency

Archive Data Protection

The system will automatically continue the last exam if it is ended abnormally, it helps to protect archive data

Historical File Query

After inputting the patient ID, the system will automatically search for the existence of previous files, so that doctors can consult and quickly understand the patient's situation

S-View

File comparison function to simultaneously compare multiple files, including images and films

S-Station

Image processing system to select or create report templates, and quickly add system default report entries

Reverse Import

General measurement results can be set as specialty measurement items and be used in related calculations

Independent Sound Control

Sound of the spectrum and the buttons on the touch screen and control panel can be controlled independently to meet the daily needs of different users

Measurement Cursor Zoom

During the measurement process, the enlarged image around the measurement cursor is displayed in the lower right corner of the screen, which is suitable for the measurement of small lesions and accurate positioning

Trapezoidal (Virtual Convex)

Available on linear transducers

Extended Angle: L/R 15°

Panoscope

Available on Linear/Convex/Phased array transducers

Max scan length	2m
Max scan time	60S
Scale mark	
Advance function	Measure, Annot, Zoom, Rotate, Crop
Color Panoscope	

Needle Enhancement

based on the ultrasonic beam deflection and imaging fusion, needle enhancement is used to strengthen the view of biopsy needle. Cooperated with the custom biopsy guides with adjustable needle angle available, it implements an effective biopsy for tumor.

Steer Correction

Auto Enhance

VS Flow

Basing on MircoFlow, VS-Flow significantly upgrades the sensitivity and resolution of blood flow which helps doctors to maximize the clinical application value

Auto IMT

Auto IMT greatly improve the accuracy of intima-media measurement, simultaneously measure the thickness of anterior and posterior intima-media, and improve the clinical efficiency

Shearwave Elastography Quantification

SEQ is a real-time and noninvasive way to measure the stiffness of tissues and lesions. Quantitative analysis of tissue elasticity coefficient greatly facilitates the diagnosis on thyroid nodules, chronic liver disease, hepatic fibrosis, vascular disease, etc.

Available on the convex probes

Display detection depth in real time

Result Unit	• Velocity (m/s) • Young's (Kpa) • Shear (Kpa)

Strain Elastography

visualize the stiffness of tissues in real time by delivering an external compression on the tissues.

· Clarity
· Smooth
· E Map
· Persistence
· Dynamic range
· E Gain
· Dual live with E and B mode
· Pressure pilot lamp
· Pressure guide with motion curves

Available on the Linear/Vaginal probes

Contrast Harmonic Imaging

Ultrasound Contrast Imaging effectively enhances the 2D imaging and blood flow Doppler imaging of the liver and thyroid, which is safe, real-time and affordable. It empowers the detection and qualitative diagnosis of tumors in liver, thyroid and other organs

· CHI Chroma
· CHI Frq
· CHI PWR

· CHI DR · Focus Pos · CHI SR · CHI Gray Map · LD · B Chroma · B Gray Map · B DR · Width (Linear Probe) · FOV (Convex Probe) · U/D · Timer · Agent Burst

Layout	CHI C, CHI C+B, CHI B, CHI MIX

Available on the Convex/Linear/4D Vaginal probes

SIUI MAI

Ultrasound device SIUI MAI platform support

SIUI MAI client-side APP: Android and iOS device

Remote service support

Realtime live broadcast

Calculation

Measurement package	Caliper,Abdomen, Repro(Cat), Repro(Dog), Small Part, Cardiology

Expand the measurement menu automatically

Measurement Rule: Repeat, Next, Non

Measurement Across Modes	Measurement items in different modes are contained in the same measurement package. When the mode is activated, the corresponding measurement items are also activated
Measurement Result	• Reverse Import • Delete any measurement item at will • Move location at will • Adjustable size and color

Smarchive

Display the number of images in each archive

Preview images and movies without entering archives

Archive Backup Function

Archive	• Background transmission
Transmission	• Multi path simultaneous transmission • Task manager to view the transfer progress

Worksheet

Measurement results are placed in the front, which can be viewed without the need to enter the worksheet

Specialty worksheet for easy viewing and comparing the measurement results of various exam types

Worksheet interface supports modifying patient information

Report type	PDF,HTML,DICOM SR

S-Station

Memory

Film Length	2D playback: 1~10000 frames,1~3600S； M:600S PW:720S DVR record:1~3600S 4D playback:50 cases
Image Format	Raw data(sfm,vol(4D mode))/BMP/JPG/ DCM
Cine Format	Raw data(cin,vol(4D mode)) /AVI/ MP4/ DCM

Reedit the movie playback area

2B/4B movie playback simultaneously

Store forward or backward

Identification

- ISO 9001:2015
- ISO 13485:2016