QBit 5

Color Doppler System

Datasheet

V2.0

Note:

The image above is adapted for 19 inch displayer. For device of 15 inch displayer please be subject to the actual product.

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General information

Dimensions and Weight

- Dimensions of main unit (approx.):
  1. 15 inch displayer: 747mm（Length）×517mm（Width）×1283mm（Height）
  2. 19 inch displayer (option): 747mm（Length）×517mm（Width）×1358.23mm（Height）
- Net weight of main unit (approx.): 50kg (no probe included)

Electrical Power

- Power supply voltage: Auto adaptable for AC100-240V
- Power supply frequency: 50-60 Hz
- Power consumption: 600 VA

User interface

Operation Panel

- Control panel
- Alphanumeric keyboard
- 8 STC Slides
- Interactive backlit keys
- High resolution color LED
  - Diagonal dimension: 15inch; 19 inch (option)
  - Monitor Resolution:
    1. 15 inch displayer: 1024X768
    2. 19 inch displayer: 1280 X1024
  - Brightness and contrast adjustment
- 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 micro convex
- Electronic phased array

Transducer Types

- Convex transducer: D3C60L
- Linear transducer: D7L40L
- Linear transducer: D12L40L
- Trans-rectal transducer: D7L40L-REC
- Trans-vaginal transducer: D6C12L
- Trans-vaginal transducer: D7C10L
- Micro convex transducer: D3C20L
- Micro convex transducer: D5C20L
- Micro convex transducer: D6C15L
- Phased array transducer: D3P64L

Image Modes

- B Mode
- B/M Mode
- M Mode
- 2B Mode
- 4B Mode
- 2D Steer
- CFM Mode
- CPA Mode
- DPD Mode
- PW Mode
- B/BC Mode
- Triplex Mode
- CW Mode (option)
- TDI (option)
- Color M Mode (option)
- Trapezoidal Mode
- ECG (option)
- Super Needle (option)
- HD 3D(option)
- Curved Panoramic (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
- Sonographer

- Patient Name and Patient ID and Patient Gender and Patient Birthday and Patient Age
- 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 LED display; 19 inch (option) LED display
- 2 active probe ports(standard)
- Pulse Wave Doppler
- Color Doppler Flow Imaging
- Power Doppler Flow Imaging
- Directional Power Doppler Flow Imaging
- ≥32G integrated capacity
- USB ports : 6
- Ethernet port :1
- S-video out port :1
- Video out port :1
- VGA port :1
- DVI port :1
- ECG port :1
- Foot switch :2
- Remote :1
- General measurement package
- Clinical measurement packages
- Multi-language screen display
- Review: images review system

- Archive: patient information management system
- Reporting system
- AIO (Automatic Image Optimization)
- Intelligent Zoom
- Speckle Reduction Algorithm (SRA)
- Q-Image software package
- X-contrast
- Q-beam
- Q-flow

Software Options

- DICOM (storage, print, worklist)
- Super needle
- CW
- TDI
- Color M
- ECG
- HD 3D
- Curved Panoramic

Hardware Option

- Convex transducer: D3C60L
- Linear transducer: D7L40L
- Linear transducer: D12L40L
- Trans-rectal transducer: D7L40L-REC
- Trans-vaginal transducer: D6C12L
- Trans-vaginal transducer: D7C10L
- Micro convex transducer: D3C20L
- Micro convex transducer: D5C20L
- Micro convex transducer: D6C15L
- Phased array transducer: D3P64L
- 3 active probe ports
- Footswitch
- ECG cable
- USB DVD-RW External Drive

- HDD 500G
- HD 3D Module

Peripherals

- Video printer: SONY UP897MD, SONY UP-D711MD, SONY UP-X898MD
- PC printer :
  - EPSON L120 Series
  - EPSON L130 Series
  - EPSON L310 Series
  - EPSON L380 Series
  - EPSON L805 Series
  - EPSON L1110 Series
  - EPSON L1118 Series
  - HP DeskJet 1010 series
  - HP OfficeJet Pro 6230
  - HP LaserJet 1020 Plus
  - HP LaserJet P2055d
  - HP LaserJet Pro M12a
  - HP LaserJet Pro P1102
  - HP LaserJet Pro P1102w
  - HP LaserJet Pro P1108
  - HP LaserJet Pro 200 color M251n
  - HP Color LaserJet Pro M252n
  - HP Color LaserJet Pro M252dw
  - HP Color LaserJet Pro M254nw
  - Canon SELPHY CP1200
  - Canon SELPHY CP1300

Imaging processing and presentation

B Mode

- Gain: 0-255
- Frame rate: max: 1495 (Depends on the probes)
- STC: 8 slides
- Depth: 1-36.7cm (Depends on the probes)
- Freq.: 1.5-18MHz (Depends on the probes)
- FHI: on/off
- X-CONTRAST: normal，enhance，supress
- U/D invert: on/off
- Zoom: on/off
- Full screen: on/off
- Focus number: 1-8
- Compound: on/off
- SRA: on/off
- Density: low/high
- Dynamic: 30-165 (9/step)
- Focus position Min: 1cm (depends on probes).
  Max: 16cm (depends on probes),
  16 levels
- Q-Image: 0-3
- Persistence: 0-7
- B Rejection: 0-256
- Scan width: 14%-100% (6/step)
- Gamma: 0-8
- Smooth: 0-7
- Edge enhance: 0-6
- Acoustic power: 0-100%
- L/R Flip: on/off
- Rotation: 0° ,90° ,180° ,270°
- Chroma: 0-28
- 2D Map: default, 1-20

- Zoom coef: 60%-100% (5/step)
- Trapezoidal imaging (only for linear transducer): on/off
- 2D steer: -20-20 (only for linear transducer)
- ECG: on/off (only for phased array transducer)
- Biopsy: on/off
- Super needle: on/off
- Needle angle: -30-30 (5/step)
- Center line: on/off

M Mode

- Speed: 1-4
- Layout: UD/LR
- M 2D map: default, 1-20
- M chroma: 0-8

Color Mode

- Gain: 0-255
- Frame rate: max: 359 (Depends on the probes)
- Freq.: 1.5-15MHz (Depends on the probes)
- Wall filter: 0-3
- Q-flow: on/off
- Color Invert: on/off
- Q-beam: on/off
- Steer (only for linear transducer): -20-20 (Depends on the probes)
- Color Map: 0-8
- PRF: 500-20kHz (Depends on the probes)
- Persistence: 0-7
- Baseline: -3-3
- Color mode: Velocity, Variance
- Wall Thre.: 0-14
- Blood Effection: smooth, resolution1,2,3
- Density: low/high
- B/BC: on/off
- ROI Size

CPA/DPD Mode

- Gain: 0-255
- Freq:1.5-10 MHz (Depends on the probes)
- Wall filter: 0-3
- Q-flow: on/off
- Q-beam: on/off
- Steer (only for linear transducer): -20-20 (5/step)
- PRF: 500-20kHz (Depends on the probes)
- Persistence: 0-7
- Wall Thre.: 0-14
- Blood Effection: smooth, resolution1,2,3
- Density: low/high
- DPD: on/off
- ROI Size

PW Mode

- Gain: 0-255
- Freq: 1.5-15MHz (Depends on the probes)
- Wall Filter: 0-3
- Triplex mode: on/off
- Steer: -10-10 (5/step)
- Invert: on/off
- PW chroma: 0-28
- Audio: 0-100%
- PRF: 500-20kHz (Depends on the probes)
- Speed: 0-2
- Baseline: 1-6
- Angle: 0-70 (10/step)
- SV: 1-8mm
- D 2D map: default, 1-20
- Spectrum Enhance: 0-3
- Dynamic Range: 46-67 (3/step)
- Threshold:1-25
- DTrace Smooth:0-3

- Quick Angle:0~60(60/step)

TDI mode

- Gain: 0-255
- Frame rate
- Freq:1.5 -4.0MHz (Depends on the probes)
- Wall filter: 0-3
- Color Invert: on/off
- Density: low/high
- Color Map: 0-10
- PRF:1000-4500Hz (Depends on the probes)
- Persistence: 0-7
- Baseline: -3-3
- Wall Thre.: 0-14
- Blood Effection: smooth, resolution1,2,3
- ROI Size

CW mode

- Gain: 0-255
- Wall Filter: 0-3
- CWD chroma: 0-8
- Audio: 0-100%
- PRF:2000-25kHz (Depends on the probes)
- Speed: 0-2
- Invert: on/off
- Base line: -3-3
- CW 2D map: default, 1-20
- Spectrum enhance: 0-3
- Dynamic: 46-67 (3/step)
- Quick angle: 0°,60°

HD 3D mode

- 3D ROI: on/off

- Vol Spacing:0.10~1.00(0.02/step)
- X axis
- Y axis
- Z axis

Curved Panoramic mode

Chroma:0-28

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
- 500G Capacity (option)
- 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
- Information
- Report
- Send images
- Print images

- Delete images
- Pre Page
- Next Page
- Select All
- Deselect All

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(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
- LE Vein
- LE Artery
- Urology
- Small parts
- ORTH
- Pediatrics
- TCD
- Fast

Probe Specification

Probes	D3C60L	D7L40L	D3P64L	D6C12L
Applications	ABD OB GYN Chest	Vascular Small parts Nerve MSK Pediatric Orthopedics Chest	Cardiac ABD FAST Special Chest	GYN OB URO
Main frequency	3.5MHz	7.5MHz	2.5MHz	6.0MHz
Number of elements	128	128	64	128
Footprint	73mm*16mm	44mm*11mm	24mm*18mm	41mm*12mm
Mode	B;C;D;M;CPA;DPD	B;C;D;M;CPA;DPD	B,C,D,M,CW,TDI,color M,Free M	B;C;D;M;CPA;DPD
Radius of Curvature	60mm	40mm	64mm	12mm
Field of view(adjustable)	69°	3.96cm	81°	120°
Depth（cm）	3.2-36.7	1-14.8	4.9-36.5	2.3-16.1
Frame rate				
B mode	1495	1123	764	1244
C mode	214	231	126	246
Frequency				
2D(without FHI)/M/C/D	2	4	1.5	4
	3	6.5	2.5	5.3
	3.5	7.5	3	6
	4	8.5	4	8
	5.3	10		10
2D(with FHI)	3	6	3	4.8
	3.5	7.8	3.6	6.4
	4	9	4.2	7.2
	4.5	10.2	5.3	9.6
	6.8	15		12
C mode				
PRF	600-6000Hz	500-20KHz	1000-5621Hz	800-6000Hz
Scale of velocity（cm/s）	4.6-92.4	1.9-125.9	9.6-97.5	3.8-57.8
PW Mode				
PRF	600-6000Hz	500-20.0KHz	1000-9000Hz	800-6000Hz
Scale of velocity（cm/s）	2.38-532.4	0.8-690	2.44-546.3	1.32-295.5
CW				
PRF	NA.	NA.	2000-25.0KHz	NA.
Scale of velocity（cm/s）	NA.	NA.	10.99-2462.4	NA.

Probes	D6C15L	D3C20L	D5C20L	D7C10L
Applications	FEDABD Chest	Cardiac FAST	Cardiac FAST	OB GYN Urology
Main frequency	6.0MHz	3.0MHz	5.0MHz	7.0MHz
Number of elements	128	128	128	128
Footprint	26mm*11mm	42mm*15.5mm	35mm*15mm	37mm*12mm
Mode	B;C;D;M;CPA;DPD	B;C;D;M;CPA;DPD	B;C;D;M;CPA;DPD	B;C;D;M;FHI;CPA;DPD
Radius of Curvature	15mm	20mm	20mm	10mm
Field of view(adjustable)	90°	115°	85°	172°
Depth（cm）	2.5-14.3	3.9-28.5	2.4-16.2	1.9-16.7
Frame rate				
B mode	1149	451	1198	1106
C mode	359	183	226	196
Frequency				
2D(without FHI)/M/C/D	4	2	4	4
	5.3	3	4.5	5.3
	6	4	5	6.4
	8	5.3	6.4	7.5
	10.7	6.4	8	10.7
2D(with FHI)	4.8	3	4.2	4.8
	6.4	4.2	4.8	6.4
	7.2	4.8	6.4	7.7
	9.6	6.4	7.7	9
	12	6.8	10.7	15
C mode				
PRF	1000-10KHz	1000-10kHz	1000-10.0KHz	800-6000Hz
Scale of velocity（cm/s）	9.6-96.2	15.4-154	9.6-96.2	6.2-46.2
PW Mode				
PRF	1000-10KHz	1000-10.0KHz	1000-10.0KHz	720-6000Hz
Scale of velocity（cm/s）	0.22-492.5	0.35-788.0	0.24-541.2	0.14-236
CW				
PRF	NA.	NA.	NA.	N.A.
Scale of velocity（cm/s）	NA.	NA.	NA.	N.A.

Probes	D7L40L-REC	D12L40L
Applications	Urology	Cariod Thyriod MSK Orthopedics
Main frequency	7.5MHz	10MHz
Number of elements	128	128
Footprint	44mm*11mm	44mm*11mm
Mode	B;C;D;M;FHI;CPA;DPD;C	B;C;D;M;FHI;CPA;DPD
Radius of Curvature	40mm	40mm
Field of view(adjustable)	39mm	3.98cm
Depth（cm）	1.0-14.8	1.1-14.8
Frame rate		
B mode	1289	1123
C mode	154	115
Frequency		
2D(without FHI)/M/C/D	4	7
	6.5	8.5
	7.5	10
	8.5	12
	10	15
2D(with FHI)	6	8.4
	7.8	10.2
	9	12
	10.2	14.4
	15	18
C mode		
PRF	800-14.9kHz	500-20kHZ
Scale of velocity（cm/s）	2.9-100.3	1.9-117.9
PW Mode		
PRF	500-16.0kHz	500-20kHZ
Scale of velocity（cm/s）	0.08--552	0.08-684.9
CW		
PRF	N.A.	N.A.
Scale of velocity（cm/s）	N.A.	

System setup

By using system Setup, users could

- Customize hospital information
- Customize data and time
- Customize language
- Customize screen type
- Customize screen controller
- Customize traceball option
- Customize auto export
- Customize cine frames
- Customize options for image area
- Customize options for transmitted images
- Customize PC print image option
- Customize patient info display
- Customize measurement package
- Customize comment/bodymark
- Customize exam mode
- Customize hotkey functions
- Customize hospital logo
- Customize report font size
- Customize report layout setting
- Customize report template
- DICOM setting
- Net setting
- System information

  -function setting

  -hardware function

  -Video&VGA setting

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

- AC Power In: 1
- AC power Out: 1
- Power Button: 1
- USB Port: 6
- Ethernet: 1
- Remote Control: 1
- S-Video Out: 1
- DVI: 1
- VGA Out: 1
- Video Out: 1
- Footswitch Port: 2

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: -5°C to 40°C
- Relative humidity: ≤80%
- Atmospheric pressure: 700 hPa to 1060 hPa

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

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