

DC-6

Diagnostic Ultrasound System



DC-6 is a general purpose color Doppler ultrasound system aiming at most clinical areas both in exam and research with various transducers and multi software packages incorporating powerful user-define presets. Additionally, DC-6 supports advanced imaging methods of freehand 3D (Smart3D™), anatomic M mode (Free Xros™ Imaging), panoramic imaging (iScape™ View) and continuous wave (CW) Doppler to extend clinical application.

DC-6 provides exceptional image quality with advanced technologies (MBP, FTO, TSF, ITA, AVI) of signal processing, incorporating high level features in standard configuration such as tissue harmonic imaging (THI), high pulse repeat frequency (HPRF), directional power Doppler and trapezoid imaging, of which, display parameters can be easily adjusted according to individual preference. Meanwhile, intelligent workflow solutions help user to achieve a wide variety of applications via easy operations, such as iTouch™, IP, Q-click and screen display navigation.

DC-6 also has massive information saving ability of built-in 80G hard disk and interfaces of USB, CD-R/W and DICOM supporting daily data transmission and backup.

Professional Clinical Applications & imaging modes

DC-6 was built upon its proven technical foundation to offer wide clinical applications and transducers for each special clinical use, meeting strict clinical requirements for accurate and

professional diagnosis.

- **16 preset clinical modes:** user can execute exams including but not limit to
 - Abdomen
 - Cardiology
 - Gynecology
 - Obstetrics
 - Urology
 - Small part
 - Pediatrics
 - Musculoskeletal
 - Orthopedics
 - Intraoperative
 - Peripheral Vascular
- **24 user-defined exam modes:** user can customize items including but not limited to
 - Exam mode name
 - Imaging parameters
 - General measurement items for each imaging mode
 - Measurement packages
 - Obstetric formula
 - Comment library
 - Body mark library
- **Standard imaging modes:** high level standard feature including
 - B mode, 4B mode, B/M mode, M mode
 - Color Doppler
 - Power, Directional Power Doppler
 - PW mode, HPRF
 - Tissue harmonic imaging
 - Trapezoid imaging
- **CW Doppler** – with continuous wave Doppler to measure high velocity of blood deep in human body to meet more professional cardiology applications.
- **Free Xros™ Imaging** – also called anatomic M mode, based on real-time imaging or cine loop of B mode. Sample line position and angle adjustable independently, checking any segment of heart in M mode, especially suit for patients without good imaging in normal M mode.
- **iScape™ View Imaging** – also called panoramic imaging. Imaging enlarges the view of exam to show the whole structure within one image.
- **Smart3D™** – also called freehand 3D. Show 3-dimension structure with all-round view. Free rotation enable user to observe at will, showing more intuitive information in exams.

Intelligent Work Flow

DC-6 offers effective and comfortable working experience with intelligent work flow components



such as iStation and iTouch™. Doctors can focus on the diagnosis and their patients.

- **iStation** – one button integrated patient information management system, supporting patients information reviewing, archiving, searching, editing and exporting.
- **iTouch™** – one button for automatic image optimization.
- **Q-click** – cursor activating items and multi-functional knob adjusting
- **One button to activate Smart3D™, Free Xros™ Imaging, i-Scape™ View**
- **Offline Analysis System** – support to post-process, measurement, adding annotations after exam.
- **Self test function** – automatic system and hardware test, generating log file
- **Auto Image Review** – thumbnail panel of images stored for current patient.
- **System Hibernation** – automatically transducer freeze, prolonging using span.
- **Ergonomic key board** – function-oriented areas with home based design
- **Operation Navigation** – instructions for easy scanning process.

Technical Specification:

General Descriptions

- **Imaging mode**
 - B, 4B, M
 - Color Flowing Imaging
 - Pulse Wave/Continuous Wave Doppler
 - HPRF
 - Power and DirPower
 - Tissue harmonic imaging
 - Trapezoid Imaging
 - Free Xros™ Imaging
 - i-Scape™ View
 - Smart3D™
- **Scanning mode**
 - Electronic convex
 - Electronic linear with steering scan
 - Electronic phased array
- **Multi-frequency transducer**
 - Up to 5 frequencies
 - 2 Doppler frequencies
- **Scanning depth**
 - Max. 263mm
- **Transducer frequency**
 - 2.0~12.0MHz
- **Gray scale**
 - 256
- **Display**
 - 15" color CRT monitor
- **Transducer connector**

- 4 sockets (3 active, 1 parking)
- Gain control:
 - Button adjustment
 - 8 -segment TGC

Brief Image Display & Processing Parameters

Mindray succeed in providing users with a unique ultrasound system. Modify parameters to meet individual preference. All user define adjustment can be saved and loaded.

● **B mode**

- Images reverse
- Images rotation
- Dynamic range
- Gain
- Frame correlation
- Edge enhance, Smooth, Noise Rejection
- AGC (auto gain control)
- TSI (tissue specific imaging)
- Steer and trapezoid imaging
- THI
- Colorize

● **M mode**

- Display speed
- Display mode (scroll)
- Gain, Edge enhance, M soften, Smooth
- Colorize
- Full screen
- Time mark

● **PW /CW mode**

- SV size/position
- Steer angle
- Baseline
- Gain
- Velocity scale
- PW filter
- HPRF
- Display Speed
- Correlation angle
- Duplex/Triplex
- Doppler sound
- Auto trace
- Trace area
- Colorize
- Full screen

- Time mark
- **Color/Power/DirPower mode**
 - Range of Interest (ROI)
 - Steer
 - Scale
 - Gain
 - Baseline
 - Wall filter
 - Color map
 - B/C live
 - B disappear
 - Persistence
 - Priority
 - Focus position
- **Free Xros™ Imaging**
 - Sample line position
 - Sample line angle
 - Sweep speed
 - Image enhance
 - Gray map
 - Colorize
 - Time mark
- **iScape™ View**
 - Rotation
 - Zoom
 - Colorize
- **Smart3D™**
 - Scan method (fan, linear)
 - Rendering method
 - Threshold
 - Contrast, Brightness
 - Rotation
 - Single/quad display

Functions

- **Cine loop**
 - 2D mode(B, Color, Power, DirPower), 1024-frame max
 - Time line mode(M, PW, CW), 131s max
- **Zoom**
 - Spot zoom
 - Pan zoom
- **Image storage**
 - BMP

- JPG
- CIN
- FRM
- AVI
- DCM

- **Image archive**

- Built-in 80G hard disk
- CD-R/W
- USB
- DVD recorder
- VCR
- Video printer
- DICOM3.0

Advanced Imaging Technology

Benefiting from MINDRAY's advanced image process technologies, DC-6 provides brilliant color Doppler images and precise anatomic 2D imaging.

- **Powerful Multi-beam Parallel Imaging (MBP)** increases temporal resolution and real-time frame rate, while collecting useful information to re-build high quality images.
- **Fine Tissue Optimization (FTO)** eliminates noise, improves signal-to-noise ratio and emphasizes boundary imaging.
- **Transmitting Spectrum Focusing (TSF)** greatly decreases side lobe while improving spatial and temporal resolution.
- **Innovative Transmitting Apodization (ITA)** minimizes artifact through specific apodized transmission, reducing near-field clutter and enhancing precise sound beam for more predictable results.
- **Accurate Vessel Imaging (AVI)** automatically distinguishes subtle tissue Doppler signal from blood cell to form high resolution images.

Measurement & Calculation

- General B mode measurement:
- General M mode measurement
- General Spectral Doppler mode measurement
- General Color mode measurement
- User-define measurement
 - Add measurement or calculation items
 - Arrange general items for each imaging mode
 - Arrange clinical items for each exam mode

Clinical Analysis Packages

- **Obstetrics**

- **Cardiac**
- **Gynecology**
- **Small Parts**
- **Urology**
- **Orthopedics**
- **Peripheral Vascular**

Report

DC-6 automatically generates reports for every measurement package, including general measurements and calculations.

Standard Configuration:

- DC-6 main unit
- 15" color CRT monitor
- Pulse Wave Doppler
- HPRF
- Color Doppler Flow Imaging
- Power Doppler Flow Imaging
- Directional Power Doppler Flow Imaging
- Tissue Harmonic Imaging
- Trapezoid Imaging
- iStation patient information management system
- 80G hard disk
- CD-R/W and USB ports
- Measurement & calculation software packages
- Convex array transducer 3C5A
- Linear array transducer 7L4A
- Multi-language screen display, control panel and operation manuals

Options:

- Continuous Wave Doppler & Free Xros™ Imaging
- i-Scape™ View & Smart3D™
- DICOM 3.0 package
- ECG module
- Micro-convex array transducer 3C1
- Micro-convex endocavity transducer 6CV1
- Linear array transducer 10L4
- Linear array transducer 7L6
- Intrarectal biplanar transducer 6LB7
- Intrarectal linear array transducer 6LE7
- Intraoperative T-type linear array transducer 7LT4

- Phased array transducer 2P2
- Micro-convex array transducer 6C2
- Water-resistant footswitch
- Needle-guided brackets

Language Support

Screen display, control panel and operation manuals support

- **English**
- **Spanish**
- **German**
- **French**
- **Russian**
- **Italian**
- **Portuguese**
- **Chinese.**

Others Parameters

- **Peripheral port**
 - Serial port
 - Parallel port
 - Video in/output
 - Audio in/output
 - S-video in/output
 - VGA in/output
 - RGB in/output
 - Ethernet
 - Remote control
 - Microphone port
 - ECG interface
 - USB
- **Power supply**
 - 100VAC to 127 VAC or 220VAC to 240VAC
 - 50/60Hz±3Hz
 - 800VA (Max consumption)
- **Dimensions & net weight:**
 - Height: 1390mm (54.7 in)
 - Depth: 790mm (31.1 in)
 - Width: 480mm (18.9 in)
 - Approx. 132 kg (291.0 lb)

Transducer-Specification

Model name	Array type	Multi-frequency (MHz)	Doppler frequency (MHz)	Scanning Angle /length	Display depth (mm)
3C5A	Convex	2.5/3.5/5.0 H4.6/H6.0	2.5/3.3	68°	263
7L4A	Linear	5.0/7.5/10.0	5.0/5.7	35mm	118
6CV1	Endocavity	5.0/6.5/8.0	4.4/5.0	140°	118
2P2	Phased Array	2.0/2.5/3.0 H3.5/H4.0	2.0(CW) /2.5	90°	263
3C1	Micro-convex	2.5/3.5/5.0 H4.6/H6.0	2.5/3.3	136°	263
7LT4	T-type Linear	5.0/7.5/10.0	5.0/5.7	37mm	118
6LB7	Biplanar	5.0/6.5/8.0	Convex 4.4/5.0 Linear 3.7/4.6	Convex 168° Linear 62mm	118
10L4	Linear	8.0/10.0/12.0	7.3/8.0	35mm	118
7L6	Linear	5.0/7.5/10.0	5.0/5.7	56mm	118
6LE7	Intrarectal	5.0/6.5/8.0	4.4/5.0	62mm	118
6C2	Micro-convex	5.0/6.5/8.0	4.4/5.0	93°	118