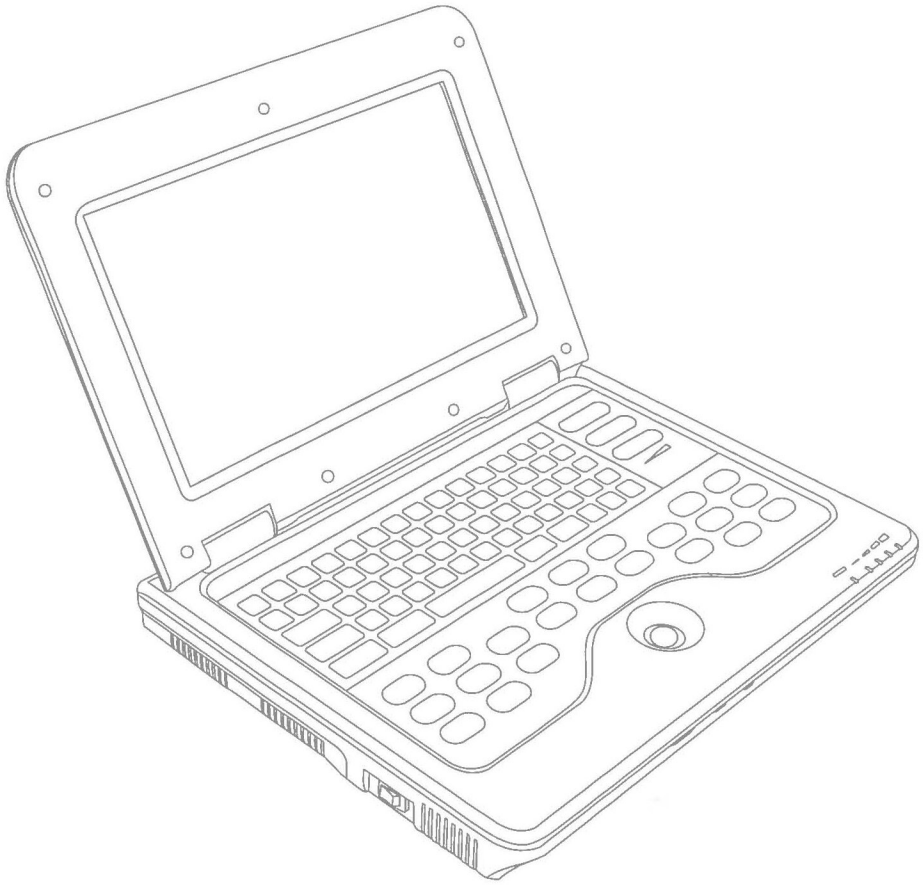
WEI Portable Laptop Ultrasound



User Manual

Preface

Statement

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- The information contained in this document is subject to change without notice.
- Part pictures of the document are sketch maps, which are only for reference, if the pictures are unconformity with actual object, please take real object as quasi.

Warranty

- The apparatus should be maintained by qualified operator who is authorized by our company, and we only consider it responsible for any effects on safety, reliability and performance of the equipment if the apparatus is used in accordance with the user manual.
- Our company would maintain the apparatus and exchange the malfunctioned parts for free during the warranty period.
- This warranty applies only when apparatus is faulty while operated as this manual instructed. The apparatus should be used in the situation that suggested from the manual.
- This warranty doesn't apply to any situation caused by exterior cause, for example thunder, earthquake, theft, misuse or attempting to modify or change any parts or component of the apparatus.
- Our company is not responsible for any damage caused by other devices or unauthorized connecting to other devices.
- Our company is not responsible for any lose, damage, or injury caused by delaying request of supporting service.
- When the apparatus is faulty within the warranty period, please advice our company with the apparatus type, identification, date of purchase and the nature of the problem.

Safety Labels

	Type BF applied part
	Class II equipment
PROBE	Probe interface
IPX7	The degree of protection against harmful ingress of water
VIDEO	Video interface
VGA	VGA interface

DC15V/4A	Adapter interface
	USB interface
|	Power on the switch button
O	Power off the switch button
	WEEE (2002/96/EC)
CE 0123	This item is compliant with Medical Device Directive 93/42/EEC of June 14, 1993, a directive of the European Economic Community.
	Refer to instruction manual
	For indoor use only
	Attention,consult ACCOMPANYING DOCUMENTS
10	Environment-friendly Use Period per Chinese standard SJ/T11363-2006(China specific)
	Disassembly only by the professionals
EC REP	EUROPEAN REPRESENTATIVE

Safety Classification

- **According to the type of protection against electric shock: CLASS Ⅱ EQUIPMENT.**
- **According to the degree of protection against electric shock: TYPE-BF Applied Part.**
- **According to the degree of protection against harmful ingress of water: .**

  IPX 0 (enclosed EQUIPMENT without protection against ingress of water)
- **According to the degree of safety of application in the presence of FLAMMABLE ANAESTHETIC MIXTURE WITH AIR or WITH NITROGEN OR NITROUS OXIDE: Equipment not suitable for use in the environment of FLAMMABLE ANAESTHETIC MIXTURE WITH AIR or WITH NITROGEN or NITROUS OXIDE.**
- **According to the mode of operation: Continuous operation device.**

General Safety information

The following safety precautions should be observed for the consideration of the patient safety and device reliability.

1. The apparatus has to be operated under qualified operator or his/her instructions.
2. Do not change the parameters of the apparatus. If indeed necessary, call the service from our company or its authorized agent.
3. The apparatus has been adjusted to its best status, do not adjust any preset controls or switches except those indicated in this manual.
4. If malfunction occurred, please shutdown the apparatus immediately and contact our company or its authorized agent.
5. If it is necessary to connect this apparatus to other electronic devices from other manufactures, before doing so, please contact our company or its authorized agent.
6. Never strike the TFT-LCD display as it is frangible. Avoid overflowing of Liquid-crystal to eyes and mouths if the display is found break, appropriate disposal should be done.
7. Do not strike apparatus interior Lithium rechargeable battery or put it into fire to avoid exploding; please do not shorten circuit for battery output electrode to avoid the damage of battery; please use original charger to charge the battery; Please regular check the battery. Disuse batteries will pollute the environment, please dispose the battery properly.
8. Do not disassemble the power adapter, if malfunction occurs, necessary maintenance must be performed by authorized service persons. The power adapter only charges to the standard configuration battery, if not, non-expectant danger as exploding, fire etc. will happen possibly.
9. Forbid shortening circuit of adapter output, the adapter will damage if it is shortened circuit for long time.
10. Ultrasound may be harmful to human body, longtime irradiation should be avoided.
11. Please use the accompanying power cable in order to reduce risk.
12. The system acoustic output parameter announces to meet the provision IEC61157-1992.

Warning

Ultrasound is safe when it is low power, and its security has not been proved when it is high power or under longtime ultrasonic irradiation, so be careful in operating, to use it for the lowest power and the shortest time.

Freeze the probe when do not use it, to avoid other devices of the environment are interfered.

This device can not be used with defibrillator or high frequency surgical unit

Notice

In all working application modes, mechanical index: MI≤1, thermal index: TI≤1.

Transportation and Storage

Temperature: -10℃~+55℃,

Relative Humidity: ≤93%, no condensation,

Atmosphere pressure: 700 hPa ~ 1060 hPa..

The device should be preserved in the room with well ventilation, avoid direct sunshine and caustic gas.

Attention

When moved into a room from outside, the ultrasound system might be still too cold or too warm comparing to the indoor temperature. Because of the temperature difference, water may condense inside the machine. So before turning on the power, the system should be put inside the room for a while to adapt to the environment. If the outside temperature is below 10℃ or above 40℃, the system need to be put inside for half an hour.

Taboo

- This apparatus is not applicable to the diagnosis of the viscera organs that contain gas, such as lung etc.
- Forbid using endo-vaginal probe for following patients:

  Vaginal inflammation, such as trichomoniasis elytritis, fungus elytritis, venereal diseases; bachelorette; malformed vaginal; intermenstruum; postmenopausal vaginal atrophy, colporrhagia; front placental, etc.
- Forbid using puncture for following patients: Hypertension, coronary heart disease, cruor obstacle patients.

1 Overview

1.1 Product Introduction

- The apparatus is high resolution ultrasound diagnostic system, which adopts digital beam forming(DBF), real-time dynamic aperture(RDA), real-time dynamic beam apodization (DRA), real-time dynamic receive focusing (DRF), digital-control dynamic frequency scanning (DFS), frame correlation etc. technologies. The image is clear, stable, and high resolution.
- It adopts embedded operating system, which greatly improve the product security and compatibility, and enhance the data processing ability.
- The apparatus is taken more conveniently for its humane operation interface and management system, flexible expansibility and compatibility, pop-up menu and keyboard design.
- Users can chose different kinds of display modes,such as:B, 2B, 4B, BM, M. Image real-time, freeze, memory, calling up and large capability cine loop can be realized; the device possesses multilevel scanning depth, dynamic range, sound output power and focus number, focus space, focus position adjusting etc. functions.
- With controllable frame correlation, gama correction, image reversing, histogram, depth advance, zoom magnification, no distortion real-time part magnification etc. abundant image processing functions. It is convenient for choice of optimal diagnostic image with perfect image pigeonhole, browse, management functions. Measure, calculation, and report are even complete and convenient with powerful measure software package and perfect measurement.
- The device supports linear probe and convex probe. The frequency of the device is 2.0 MHz-10.0 MHz. It has extensive application that is suitable for clinic diagnosis, such as abdomen, obstetrics, gynecology, small organs, cardiology and urology etc. .
- The device is consist of three parts: mainframe, transducer(probe), adapter.

1.2 Range of Application

The device is mainly suitable for people abdomen, cardiology, small organs, urology etc. ultrasonic diagnosis.

1.3 Appearance

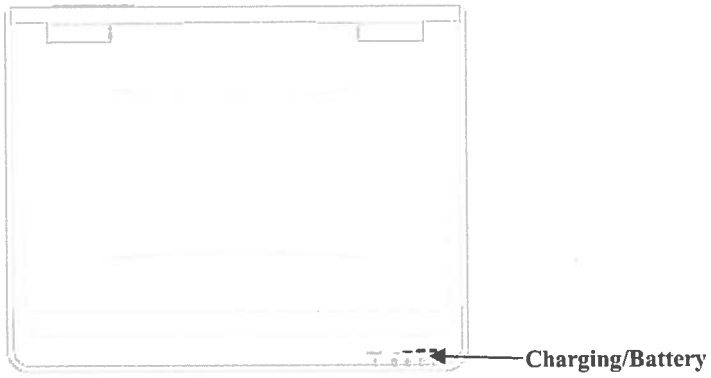

Fig.1-1 Front View

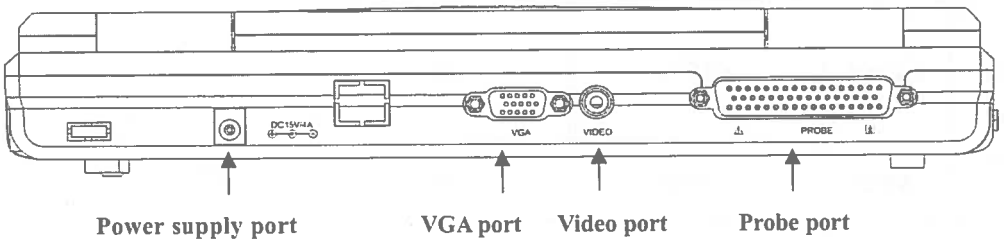

Fig.1-2 Back View

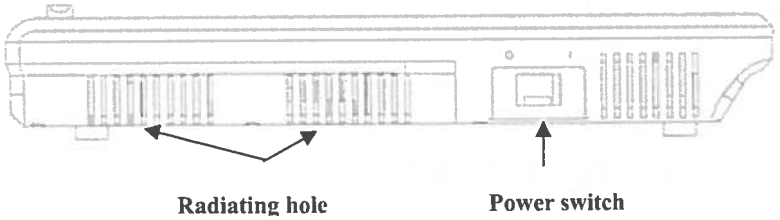

Fig.1-3 Left View

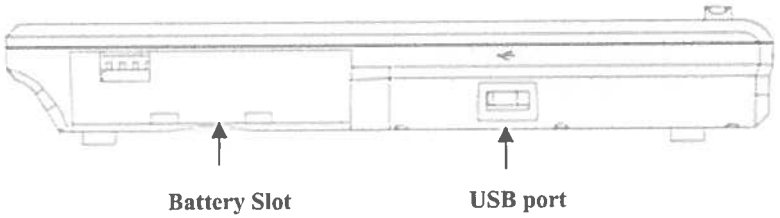

Fig.1-4 Right View

1.4 Technical Specification

Probe	Standard configuration	Optional configuration		
	3.5 MHz convex probe	3.5 MHz micro-convex probe	7.5 MHz linear probe	6.5 MHz endo-vaginal probe
Display depth (mm)	240(max)			
Depth of penetration (mm)	≥160	≥140	≥50	≥40
Lateral resolution (mm)	≤3(Depth≤80) ≤4(80<Depth≤130)	≤3(Depth≤80) ≤4(80<Depth≤130)	≤2(Depth≤40)	≤2(Depth≤30)
Axial resolution (mm)	≤2(Depth≤80) ≤3(80<Depth≤130)	≤2(Depth≤80)	≤1(Depth≤50)	≤1(Depth≤40)
Dead zone (mm)	≤5	≤7	≤3	≤4

Geometric Position Precision	Lateral	≤15%	≤20%	≤10%	≤10%
	Axial	≤10%	≤10%	≤5%	≤5%
Monitor		10.1 inch			
Display mode		B, 2B, BM, M, 4B			
Image gray scale		256 level			
Cine loop		600 frame			
Image storage		2048 frame			
Image conversion		Up/down, left/right, black/white			
Image processing		Gama (gray scale) correction, tissue harmonic imaging, histogram, local magnification			
Focus adjusting		Number, position, space			
Measure		Distance, circumference, area, volume, heart, pregnant age, fetal weight, expected date			
Character input		Date, time, name, No., sex, age, doctor, hospital			
Report output		7			
USB interface		USB2.0			
Power consumption		≤45 VA			
Weight		2.3 kg (include probe)			
Dimension		292 mm × 232 mm × 45 mm			

1.5 Principle Block Diagram

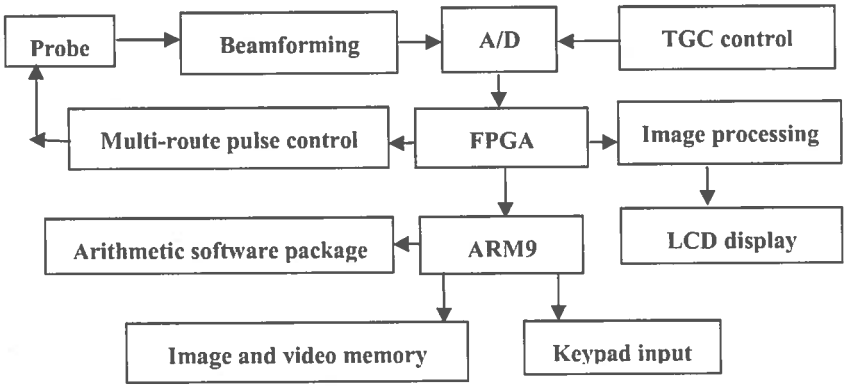

Fig.1-5

1.6 Work Principle

The B-ultrasound diagnostic system works in the following procedure: Different tissues of human body possess different densities and speeds of ultrasound transmission. When piezo-chip (transductor) is inspirited by certain disciplinarian electric impulse, it will produce ultrasonic with certain frequency and this ultrasonic enters into human body. Different organ will produce reflection echo with different

frequency, the reflection is received by the transductor and it is changed into electric impulse. This electric impulse is amplified, demodulated, digital scanning switched and some other handling, standard video signal is produced and the organ section images are displayed on the monitor.

1.7 Standard Configurations

- Mainframe
- Battery
- 3.5 MHz convex probe
- Power adapter
- Power cable
- Screwdriver
- Reticule
- User manual
- Packing list

1.8 Optional Configurations

- 3.5 MHz micro-convex probe
- 6.5 MHz endo-vaginal probe
- 7.5 MHz linear probe
- Biopsy bracket
- Video printer, inkjet printer, laserjet printer

Warning

Please use the optional configurations listed upwards, if not, we are not responsible for non-expectant fall of safety, EMC capability etc..

2 Installation

2.1 Requirement for Environment

- Temperature: +10℃~ +40℃
- Relative humidity: 30%~ 75%
- Atmosphere pressure: 700 hPa ~ 1060 hPa
- Power supply: 100 V~240 V, 50 Hz/60 Hz

Attention

The system should be used far away from the electricity generator, X-ray machine, ultrasonic atomization machine, ultracision-harmonic scalpel, physiotherapy instrument, broadcasting station, TV station, computer and transmission cable to avoid interference to the image. The system should be operated in the room with air-condition.

Warning

If there is any damage of device when opening box, do not use it for safety.

Manufacturer is not responsible for the loss as a result of probe's fall and impact.

2.2 The Connection of Probe

Insert the D type connection pin into the probe port which locates at the back of instrument, and tighten the two side screws of probe connection pin to connect the main unit and probe. There is only one probe port, which can be connected the optional match probe that the system supports.

Disassembling probe is the opposite course of the connection of the probe and main unit.

Attention

To ensure safety, please read **Chapter 12 Maintenance** carefully before installation.

Avoid by all means unplugging or plugging the probe connector when the system is powered for fear the probe and main unit are damaged. Once the probe is connected with the main unit, do not unplug or plug it at discretion for fear poor contact happen.

2.3 Installing and Removing Battery

Installing battery: Set the battery into the battery slot, and then fasten the battery with set screws. (See **Fig.2-1**).

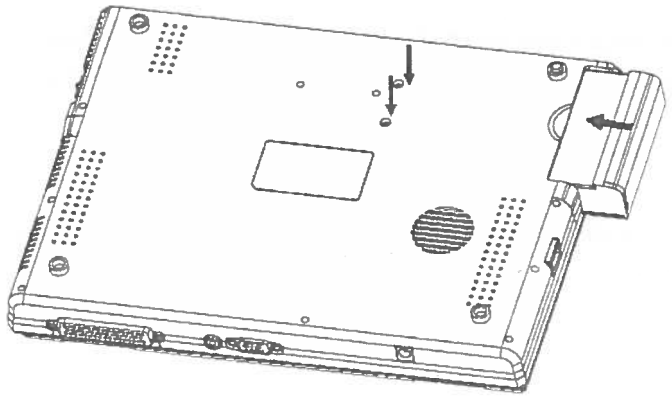

Fig.2-1

Removing the battery: Loosen the fixing screws, and then pull the battery out from the slot. (See **Fig.2-2**).

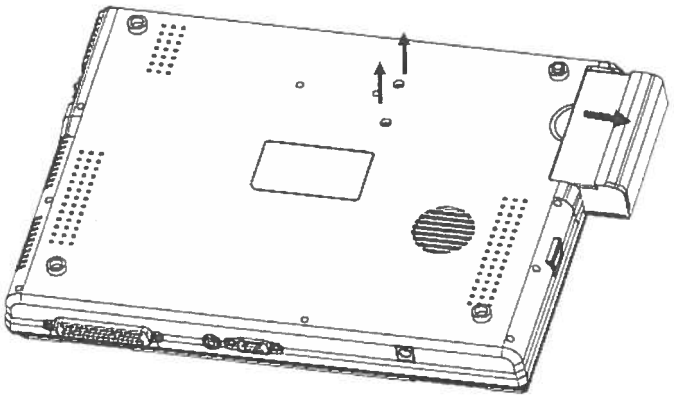

Fig.2-2

2.4 Power Supply

To implement connect/disconnect the equipment to grid by connect/disconnect the powerline.

Insert DC output plug of the adapter into the the "DC15V/4A" socket on the rear of the main unit. The other end connect to the AC power supply. The product has two power supply modes of adapter and built-in battery(597995, 5400mA·h/11.1V).

Attention

When the furthest left power indicator light of the main unit flickers, the battery is running out, and should charge it as soon as possible.

Warning

Never use any other power supply except the standard configuration adapter as the external power supply of the main unit.

2.5 Charging

1. Install the battery correctly into the main unit.
2. Insert the DC output plug of the adapter into "DC15V/4A" interface on the rear of the main unit.

3. Connect power cable of the adapter to AC power supply.
4. No matter the main unit is power on or shut down, when the power indicator lights turn on circulating , the adapter is charging the battery; When the four indicator lights turn on at the same time, the battery is fully charged.

Attention

To prolong the battery operation time, please finish charging when the indicator lights show that the battery is full.

3 Explanations of the Apparatus

3.1 Screen Setting

The **Fig.3-1** is the basic interface of scanning, image setting, measurement and calculation.

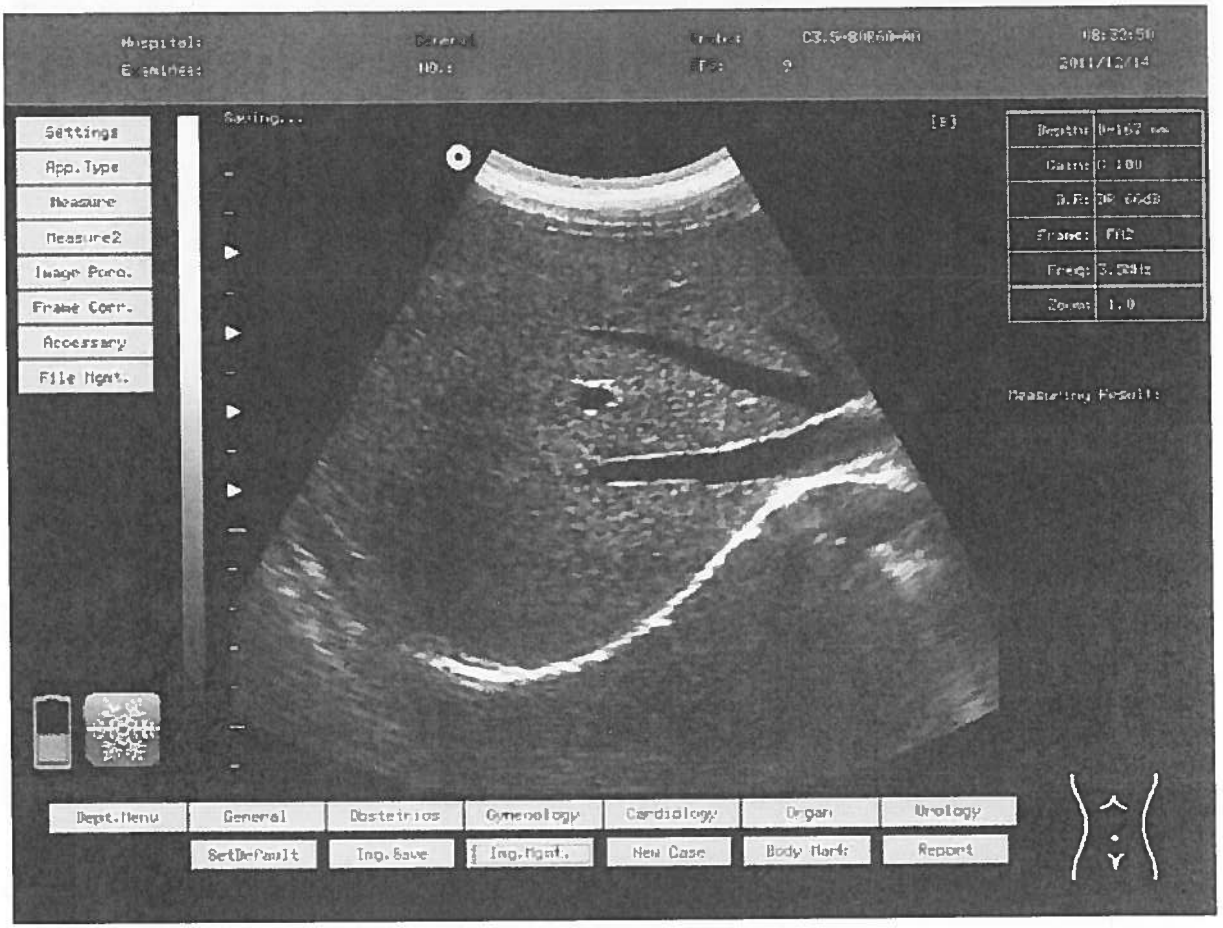

Fig.3-1

- **Main menu:** control and view all items on screen.
- **System Setting:** hospital name, patient information, probe type, date and time, etc. can be displayed in the region.
- **Image region:** scan image, operational variable and all measuring result can be displayed in the region.
- **Function region:** the first row is all kinds of department measurement function, the second row is system management function.
- **Status region:** all the parameters are shown on the top right corner of screen.

3.2 Keyboard

They are image mode control, management control, scanning control, alphanumeric key and input method choice etc. parts.

Keyboard Layout as **Fig.3-2:**

Fig.3-2

3.2.1 Image Mode Control

Mode	Function	Description
B	B Mode	Activate B mode
2B	Double B mode	Activate double B mode, meanwhile used to choose left or right B mode image
4B	4B mode	Activate 4B mode, meanwhile used to choose top left corner, top right corner, bottom left corner, bottom right corner B mode image
BM/M	BM, M mode	Activate BM and M modes, and switch between the two modes
Freeze	Images freeze or defreeze	Freeze/defreeze current image

- B mode is the mainly ultrasonic scan mode. It can display cross section of body interior structure. B, double B, 4B modes can be chosen in different diagnosis, and up/down, left/right, black/white conversion can be done.
- In BM, M modes, the organic shape can be displayed according to time and dynamic observed, which can be especially used for heart diagnosis. In the mode, press "M" or "N" key to move the M line position. Press "K" key on the keyboard can change the speed of M mode image, press it again the image in M mode will change circulatory between 2 kinds of speed.

3.2.2 Management Control

Mode	Function	Description
Save or S	Save image	Conserve the current image into the system
Cine Loop	Manual cine loop	Enter into manual cine loop
Auto/Manual	Automatic cine loop	Enter into automatic cine loop， and then switch between automatic and manual cine loop
R	Report	Pop-up the measurement report directly according to the current measurement type
Z	Screen note	Achieve the screen note function

- Management control only can be used in frozen state.
- In frozen state, first enter manual cine loop, then can enter automatic cine loop.
- Choose the application type first, then press "R" button. Report can be created after the required measurement, and can also be created after the screen comments. If need measurement results and comments, measure first and then comment, and the report will pop-up by the "R" button.

3.2.3 Scanning Control

Mode	Function	Description
Depth	Scanning depth	Adjust the scanning depth
Zoom	Image magnification	Magnify image with 7 levels: 0.9, 1.0, 1.1, 1.2, 1.3, 1.5, 2.0
Magnifier	Local magnification	Activate real-time local magnification function
Focus or O	Focus selection	Adjust the number of focus
D	Dynamic range selection	Selecting different dynamic range
Freq or H	Frequency conversion	Change frequency of multi-frequency probes according to the change of diagnosis part and choose the function of tissue harmonic imaging
U/D	reverse image to up/down	Reverse image to up/down in different situation
L/R	reverse image to left/right	Reverse image to left/right in different situation

B/W or I	reverse image to black/white	Reverse image to black/white in different situation
Gamma or B	Gama correction	Use inner setting project to adjust gama curve of current image
M	Move M line	In BM mode, move the M line right
N	Move M line	In BM mode, move the M line left
Up or ;	Depth advance	Press this key to adjust when image can not display all the depth images
P	Puncture guide adjusting	In real-time B mode, circularly adjust the puncture line display and angle
K	Speed adjusting	In BM, M modes, adjust the image speed
Frame or J	Frame correlation adjusting	Select different frame correlation coefficient
F	Move focus	Move current focus position

3.2.4 Other Functions

Mode	Function	Description
Set	Left key	Confirm key, the function is the same as left key of mouse
Change	Right key	When you draw a ellipse, to confirm a ellipse, and its function is the same as right key of mouse
Clear or C	Clear screen	Clear all characters and measurement results on the screen
Near	Adjust near gain	Increase or decrease near gain
Far	Adjust far gain	Increase or decrease far gain
Main Gain	Adjust total gain	Increase or decrease total gain

3.2.5 Alphanumeric Keys

- Alphanumeric keys have the same function with computer keyboard in the process of inputting text or report.
- Gain control can adjust image gain and total gain according to different depth.

3.2.6 Input Method Selection

Press "Ctrl" to switch between Chinese and English input methods when need to input characters.

3.3 Image Setting

3.3.1 Image Mode Control

- In frozen state, image up/down reversal, local magnification, histogram states, display mode switching can not be operated.
- Activate B mode through pressing "B" key.
- Activate 2B mode through pressing "2B" key, meanwhile used to choose left or right B image, and only one can be activated at one time.
- Activate 4B mode through pressing "4B" key, meanwhile used to choose B images of top left corner, top right corner, bottom left corner, bottom right corner, and only one can be activated at one time.
- Press "BM" key to activate BM or M mode, continuously pressing can switch between two modes.
- In 2B, 4B modes, only left/right reversal can be done, up/down reversal can not be done.
- In BM, M modes, left/right reversal, black/white reversal, gamma correction, image magnifying, depth adjustment, depth advance, frame correlation etc. operations can not be done, but dynamic range adjusting can be done.

3.3.2 Image Depth Adjustment

- In automatic cine loop state, image depth adjustment and magnifying operations still can be done.
- In real-time state, press "Depth" key to adjust image depth.
- Press "Zoom" button to magnify current scanning depth, but some depth can not be magnified.
- Press "Up" button to advance current scanning depth, but depth advance can not be done at 0.9.
- The actual observational range of image is shown on the top right corner of the screen. (for example: 0~218 mm), the actual image magnification is also shown on the top right corner of the screen. (for example 1.2).
- With the different combinations of "zoom" and "depth" buttons, image depth range adjusting, appropriate diagnosis region can be chosen

3.3.3 Local Magnification

- In B mode, press "Magnifier" button to activate local magnification function.
- In automatic cine loop state, local magnification still can be done.
- While the local magnification function is activated, the local image of chosen can be zoomed with "Set" button with the trackball to get the best observation effect.
- In frozen and real-time state, local magnification can be done. But after entering into local magnification in frozen state, local magnification will be quited when unfreezing, moreover "Clear" button also can end it.
- In local magnification mode, depth adjustment, depth advance, image magnification, dynamic range

adjustment, up/down reversal, black/white reversal, left/right reversal, frame correlation, image save etc. operations can be done, to obtain the perfect image effect.

- In local magnification mode, press "Set" button to confirm the center position, if the rectangle frame taking current coordinate as center oversteps the image display range, it will be limited in central part of image.

3.3.4 Image Reversal Adjustment

- Press "L/R" button, image can be reversed left and right.
- Press "U/D" button, the image can be rotated. After one push, the image will rotate 180 degree, another push, the image will resume the initial position. Up/down reversal is effective only in B mode.
- In BM, M modes, image reversal can not be done.
- The actual direction of image will be indicated through direction sign.

3.3.5 Image Dynamic Range Adjustment

- With "D" button, the dynamic range of the ultrasound image is adjustable to get the best contrast of image.
- The current dynamic range value is shown on the top right corner of screen.

3.3.6 Focus Adjustment

- Press "Focus" button to control focus number, the more the focus numbers are, the lower the frame frequency is.
- Press "F" button to move focus position.
- Focus number and focus position adjusting of part probes can not be done.

3.3.7 Image Frame Correlation Adjustment

- Frame correlation adjusting is referring to averaging the corresponding pixels in the current image with those pixels in the same position in the previous several images, so to reduce the random noise in the image, but reduce the dynamic speed.
- In real-time state, the number of correlation can be changed by press "Frame" key in the keyboard, or select "Frame Corr." items.

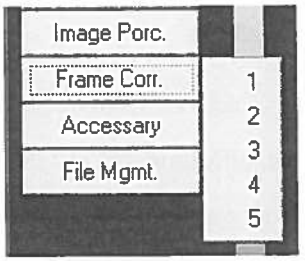

Fig.3-3

- The current frame correlation number is showed on the top right corner of the screen, e.g. FA3 means average three frames.

3.3.8 Frequency Change and THI Adjustment

- With the "Freq" key pushed, the actual probe frequency can be change to observe different human body part.(for different probes, the actual frequency is in the range between 2.0 MHz to 10.0 MHz), to acquire the best image.
- The actual frequency is as following:

  3.5 MHz convex probe: THI/2.0/2.5/3.5/4.0/5.0 MHz

  3.5 MHz micro-convex probe: THI/2.0/2.5/3.5/4.0/5.0 MHz

  6.5 MHz endo-vaginal probe: THI/5.0/6.5/7.5/8.5 MHz

  7.5 MHz linear probe: THI/5.0/6.5/7.5/8.5/10.0 MHz
- The current frequency is shown on the top right corner of screen.(e.g. "3.5 MHz" means the current frequency is 3.5 MHz).
- With the "Freq" key pushed, then through knob to the THI mode, the tissue harmonic image is acquired.
- With the tissue harmonic imaging, the frequency is shown as "THI".

3.3.9 Gama Correction

- In real-time state, gama correction can be operated through gama correction shortcut key.
- In B, 2B, 4B modes, gama correction can be adjusted.
- After entering gama correction, the relevant gama correction curves will appear on the left of screen.

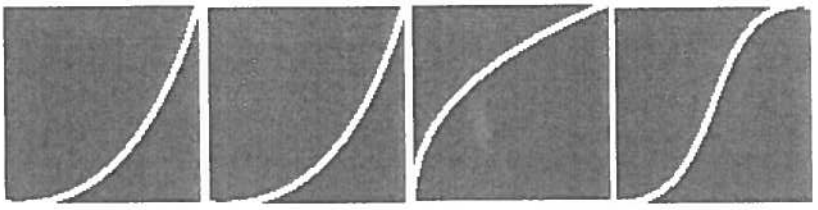

Fig.3-4

4 System Settings

All the settings of system information could only be carried out in real-time state.

4.1 System Setting

- Select "Settings"-"System Set" to open system setting dialog box, see **Fig.4-1**, **Fig.4-2**.

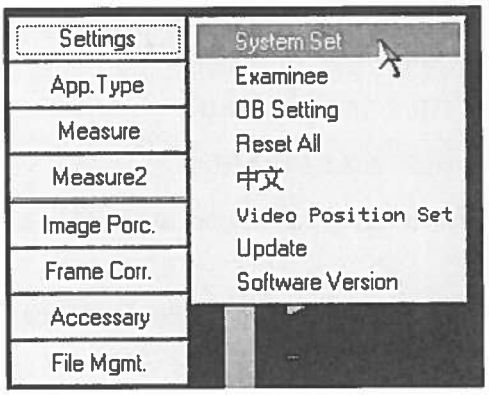

Fig.4-1

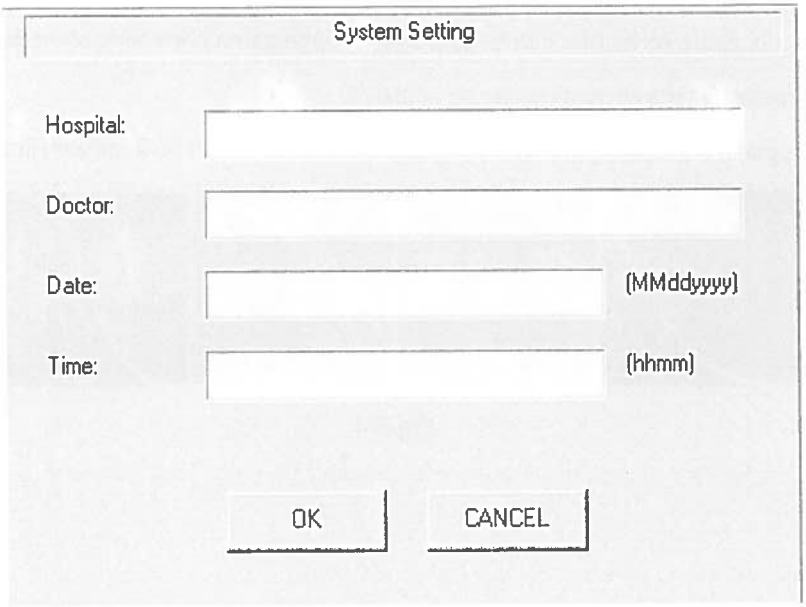

Fig.4-2

- Fill in hospital, doctor and date, time information, press "OK" to save information to system; meanwhile the window will close to return real-time state.
- Press "CANCEL" to close the window, the information will not be saved.
- After inputting hospital and doctor information, press "OK" to save the information; but if the system date and time need to be inputted,both of them should be inputted together.

4.2 Patient Information Setting

- Select "Settings"- "Examinee".

- Enter setting:
  - Mode one: select "Settings"-"Examinee" to open setting window of patient information.

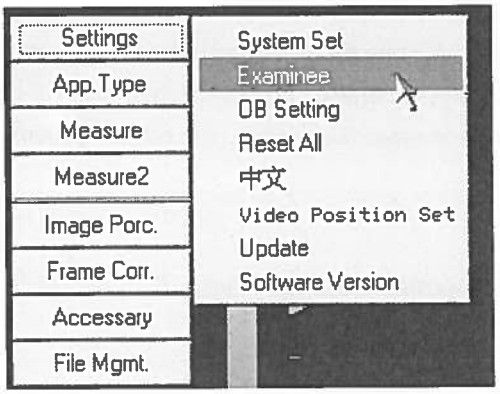

Fig.4-3

  - Mode two: click "New Case" button on the down corner of screen to open setting window of patient information.

Fig.4-4

- In "New Case" interface, for the new patient, it's only necessary to input the relevant data into relevant items and press "OK" button to establish patient information, and the information will be set to current examinee information; click "CLEAR" button to clear all the data in input items; click "SEARCH" button to search the relevant case history; click "CANCEL" button to quit saving the information and return main interface.
- The 254 case history information can be based at most.

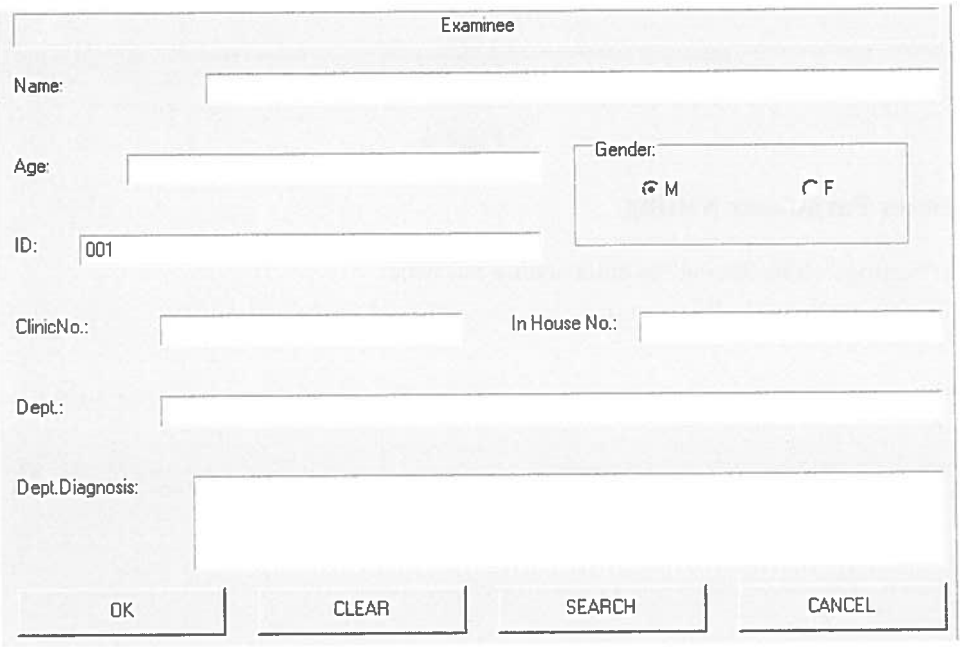

Fig.4-5

- The interface of case history list
  - The saved case history information is listed on the upper corner of interface.
  - Among all the patients information, to choose any one and press "Delete" will delete his/her information permanently. Among the patients information, to choose any one and press "OK" button to close the window, the chosen patient information will be inputted into the window. Press "CANCEL" button to close the window, the chosen patient information will not be inputted into the window.

Attention

It is necessary to fill in the information completely to confirm except "Dept.Diagnosis".

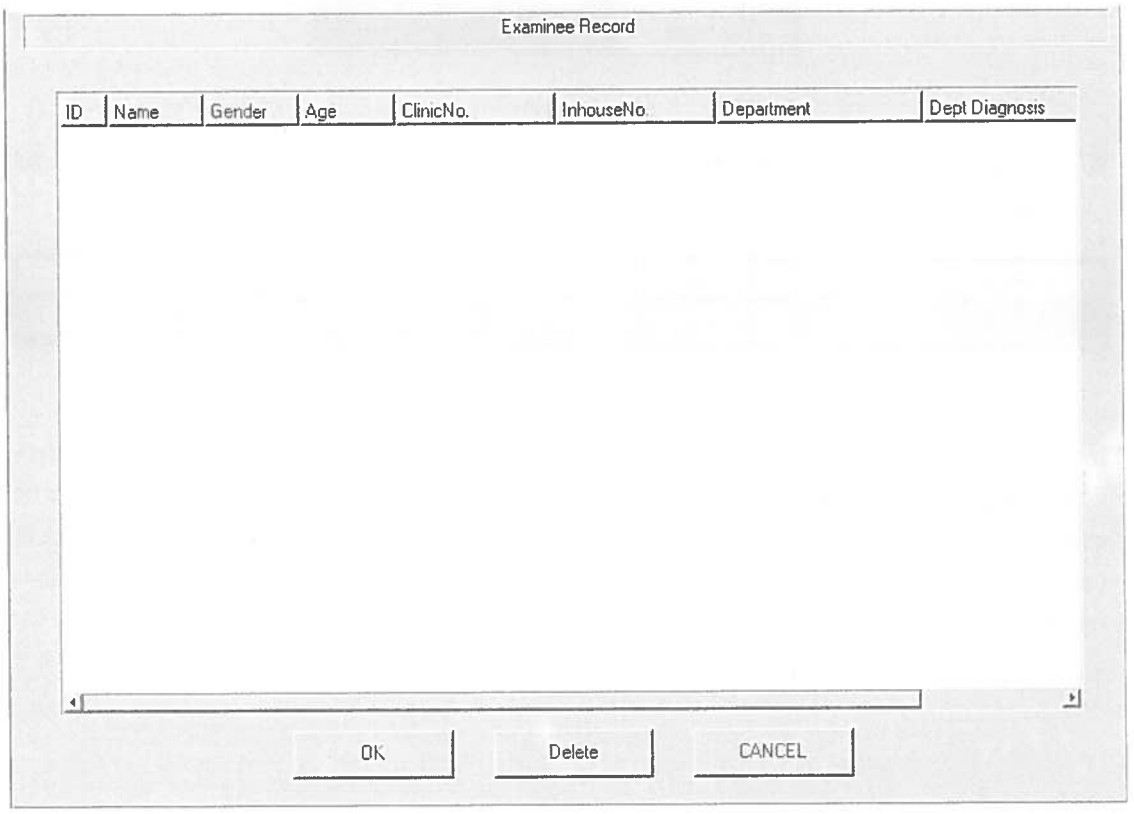

Fig.4-6

4.3 Obstetrics Parameter Setting

- Select "Settings"-"OB Setting" to enter setting interface.

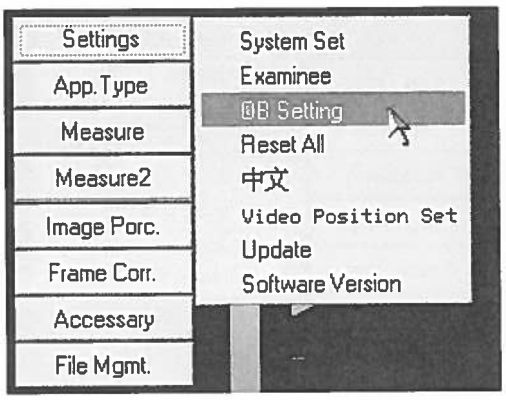

Fig.4-7

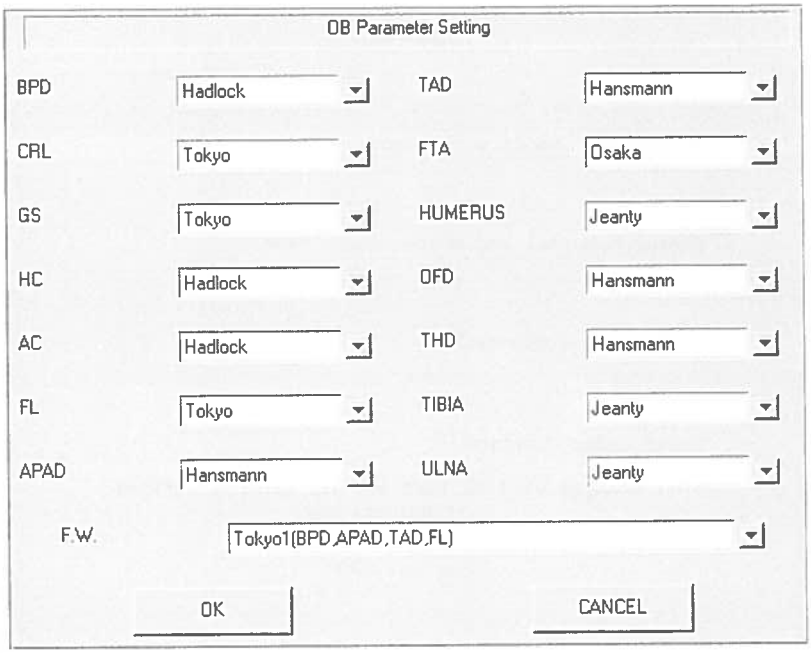

Fig.4-8

- Please choose the appropriate calculate criterion in the relevant right side descend list for each calculate item.
- After choosing, press "OK" button to save obstetrics formula configuration, and return main interface; press "CANCEL" to quit choice and return main interface.

4.4 Chinese and English Operational Interface Setting

- In real-time state of English environment, choose "Settings"-"中文" to switch the language to Chinese environment.

4.5 Resuming Factory Setting

- Select "Settings"-"Reset All" to enter setting interface.

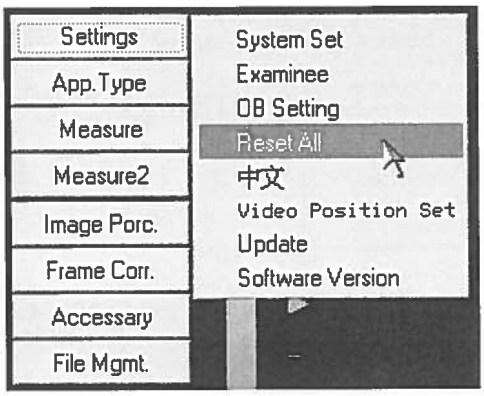

Fig.4-9

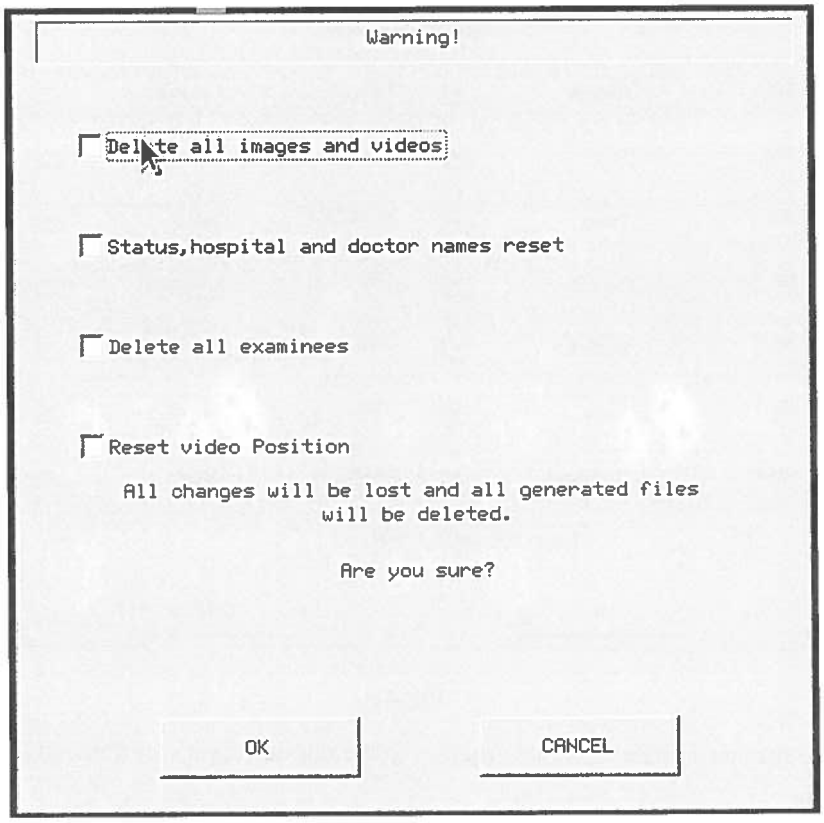

Fig.4-10

- In the setting interface, user can select resuming part settings of the system.
  - Mark "Delete all the images and videos", and all the saved images and videos will be deleted.
  - Mark "Status, hospital and doctor names reset", and the hospital and doctor information is empty, measurement type is general measurement, body mark is general body mark, obstetrics parameters resume the default; and delete the saved data, delete "Set Default" archive, and the language environment resumes English.
  - Mark "Delete all examinees", and all the saved case history information records will be deleted.
  - Mark "Reset video Position", to delete the current saved video position, and resume the factory default position.
- Press "OK" button, the system will carry out the chosen operations, and return main interface; Press

"CANCEL" button, the system will quit any operations, and return main interface.

4.6 Video Position Setting

- After inserting video display, select "Settings"-"Video Position Set " in real-time state, the video move function interface will pop up, as following **Fig.4-12**. After entering into video move function, use the cursor direction keys to adjust the display position of video output, the position changing displays in the video output in real-time and the display of this system do not prompt.
- Not responding other function key operation in the video move function.
- After adjusting, press "Clear" key to exit the video move function, the data will be saved in this device, and every time turning on the device, it will move video position to the last saved position.
- Use correlative function of "Settings"-"Reset All" to resume the video factory position.

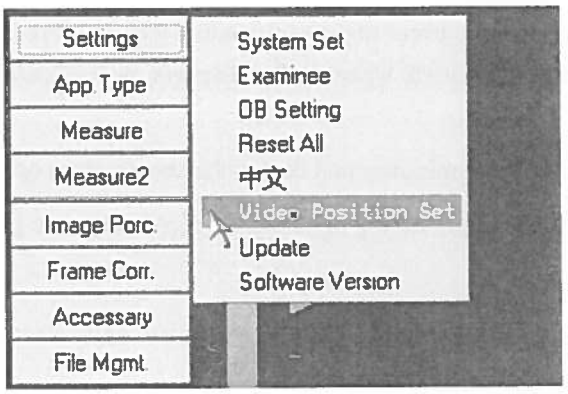

Fig.4-11

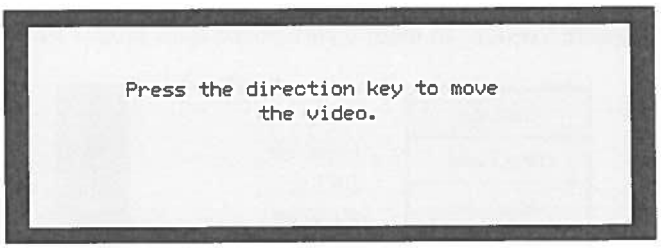

Fig.4-12

4.7 Software Update

- Preparation
  - ◆ Prepare a U disk which file system format is fat32 and the capability is better no more than 4G.
  - ◆ Copy the software update files to U disk without changing file name.
- Power on the system, select "Settings"-"Update" to enter the software update interface.

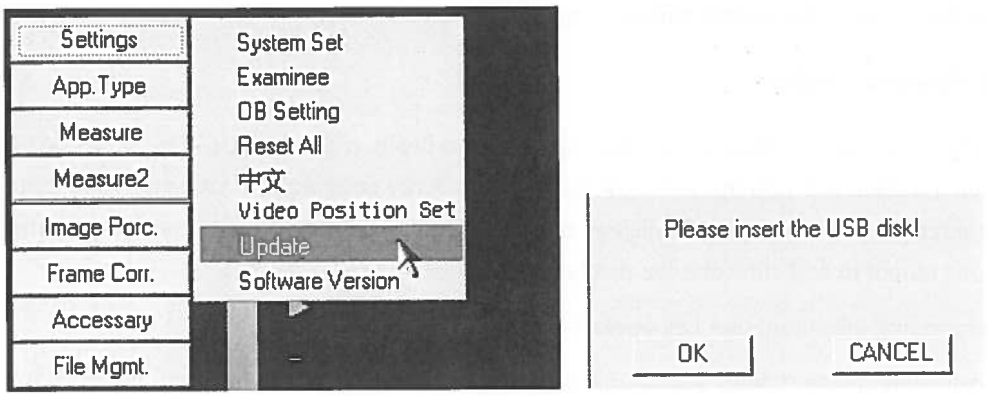

Fig.4-13

- After inserting U disk to press "OK" button.
- After pressing "OK" button, the current running procedure will be closed automatically, and a status bar will appear in the center of screen, when the bar displays 100%, the update system will restart automatically.
- The update course will keep 1~5 minutes, and during the course other operations can not be done.
- Do not switch off the power supply during update course ,or the system procedure will be damaged!

Attention

There is risk for the software update, please ensure all the software update packages are supplied by our company.

4.8 Software Version

- Select "Settings"-"Software Version" to inquire current software procedure version.

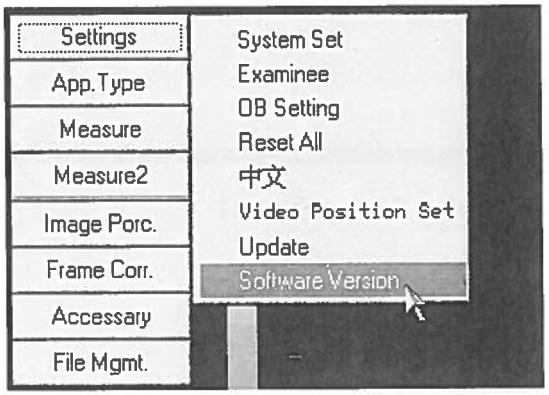

Fig.4-14

4.9 Default Setting of Image Processing

- Select "SetDefault" button on the down corner of screen to enter "IP Setting" interface.

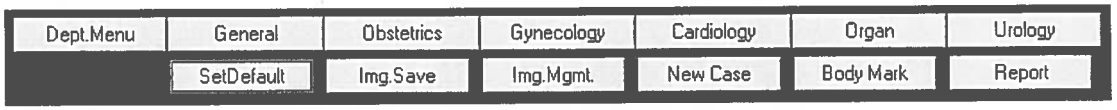

Fig.4-15

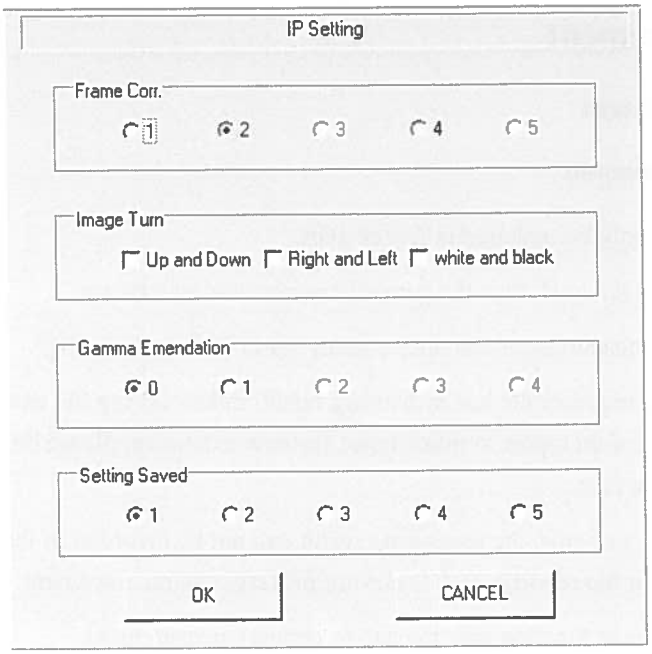

Fig.4-16

- In the interface, current image frame correlation, reversal states, gama correction can be adjusted and saved.
- The 5 enactments can be set at most.
- Press "OK" button to set and save the image, then the system return main interface; press "CANCEL" button to quit setting and saving, then the system return main interface.
- Please ensure every IP setting is done in the effective mode.

5 General Measurement

5.1 General Measurement

5.1.1 Measurement Instruction

- Measurement could only be operated in frozen state.
- Select "App. Type"-"General", then the general examination will be set.
- In M mode, general measurement can not be used, but in BM mode is OK.
- The system will only memory the last measuring result, unless setting the examinee information. So if you want the measurement report to make sense for new examinee, please be attention to set the examinee information first.
- In general measurement items, the measuring result can not be recorded in the test report, if you want to display the result in the report, use the relevant professional measurement.
- Click "General" menu in function area to change general measurement.
- CLEAR key is to end measurement, and clear current measuring result.

5.1.2 Distance Measurement

The equipment could measure distance in every mode except M mode, and could display four groups of measurement results and average value. The measurement results will be displayed in the right side of screen. Detailed measure methods are as following:

- In frozen state, press "General"-"Distance" or press "Measure "-"Distance" to choose distance measurement.

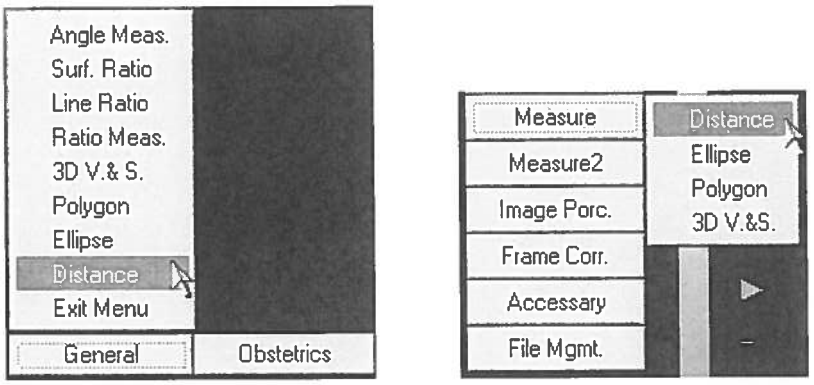

Fig.5-1

- The cursor is displayed on the screen. Move the cursor with trackball to beginning point, press "Set" key to fix the beginning point.
- Move the cursor with trackball to end point, press "Set" key to fix the end point.
- Along with the beginning and end point, a line will be drawn by the system. The relevant measures will be done, and the results are displayed in the measuring result area.
- Repeat the above steps to measure the next distance.

5.1.3 Measure Circumference and Area by Ellipse

The equipment could measure circumference and area by ellipse in every mode, and displays four groups of results and average value. The measuring results are displayed on the right side of screen. Detailed measure methods are as following:

- In frozen state, press "General"-"Ellipse" or press "Measure"-"Ellipse" to choose ellipse measurement.

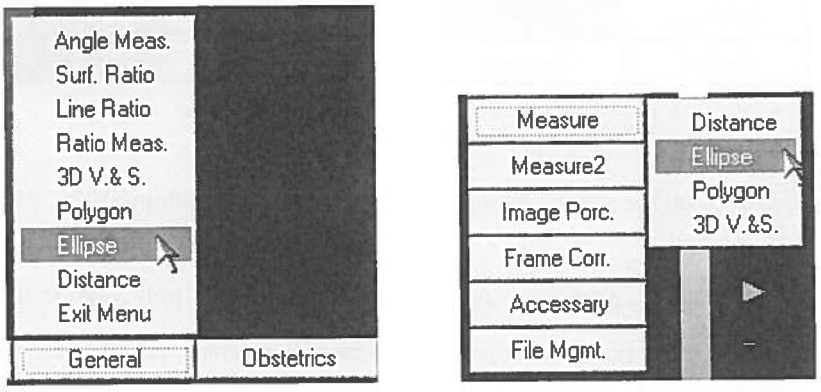

Fig.5-2

- The cursor is displayed on the screen, move it by trackball to the beginning point, press "Set" key to fix it.
- Move the cursor by trackball to the end point, press "Set" button to fix it, and the length of one axis is fixed.
- Press "Set" key can adjust ellipse length of another axis, When button clicking position moves far from the center of ellipse, the axis becomes longer; When button clicking position moves near from the center of ellipse, the axis becomes shorter.
- Press "Change" key to fix the shape of ellipse, which is made by system automatically. After the relevant measures, the results will be displayed in the measuring result area.
- Repeat the above steps to measure the next ellipse circumference and area.

5.1.4 Measure Circumference and Area by Polygon

The equipment could measure circumference and area by polygon in every mode, and displays four groups of results and average value. The measurement results are displayed on the right side of screen. Detailed measure methods are as following:

- In frozen state, press "General"-"Polygon" or press "Measure"-"Polygon" to choose polygon measurement.

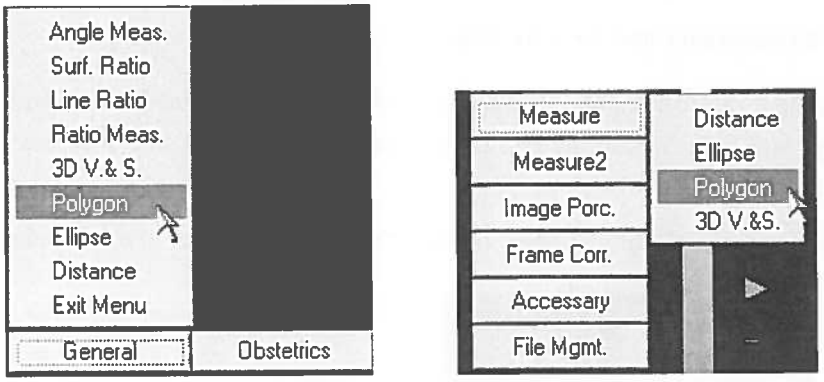

Fig.5-3

- The cursor is displayed on the screen, move it by trackball to the beginning point, press "Set" key to fix it.
- Move the cursor by trackball, press "Set" button to draw each side of polygonal to form polygon.
- Press "Change" button to fix polygon shape, the system will measure and calculate automatically, the results will be displayed in the measuring result area.
- Repeat the above steps to measure the next polygon circumference and area.

5.1.5 Measure Surface and Volume by Ellipse

The equipment could measure surface and volume by ellipse in every mode except M mode, which is mainly used for ellipsoid organ. Four groups of results and average value can be displayed once. The measurement results are displayed on the right side of screen. Detailed measure methods are as following:

- In frozen state, press "General"-"3D V.&S." or press "Measure"-"3D V.&S." to choose 3D measurement.

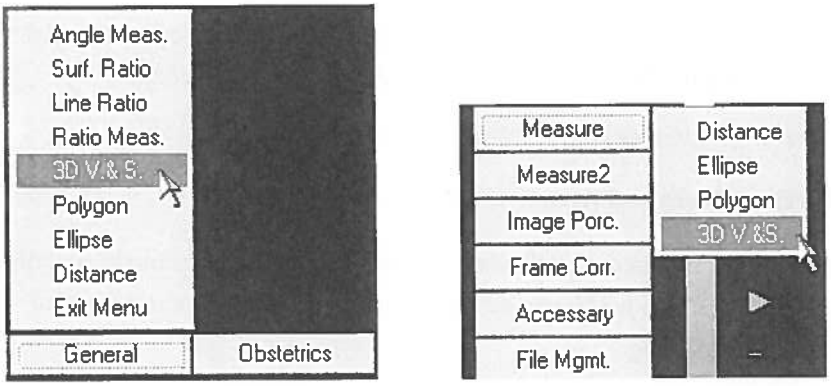

Fig.5-4

- The cursor is displayed in the screen, move it by trackball to the beginning point of one axis, press "Set" key to fix it.
- Move the cursor by trackball to the end point of one axis, press "Set" key to fix the length of the axis.
- Press "Set" key can adjust ellipse length of another axis, When button clicking position moves far from the center of ellipse, the axis becomes longer; When button clicking position moves near from the center of ellipse, the axis becomes shorter.
- Press "Change" key to fix the shape of ellipse, which is made by system automatically. After the

relevant measures, the results will be displayed in the measuring result area.

- Repeat the above steps to measure the next surface and volume.

5.1.6 M Mode Measurement

- In BM mode, the upper part of screen is B mode window, and the down part is M mode window. Press "General" to enter the general measure mode. At a time, the cursor is restricted in B mode window, and the measure can only be done in B mode window.
- The measurement in M mode window can only be chosen in "Cardiology" menu item..
- M measurement can get the results of distance, time, speed, heart rate and so on, the measurement is the same as "Distance Measurement".

5.2 Assistant Measurement

5.2.1 Angle Measurement

The equipment could measure angle by drawing two beelines in every mode except M mode, the length of beeline and angle between the two beelines are displayed on the right side of screen. Detailed measure methods are as following:

- In frozen state, press "General"-"Angle Meas." or press "Measure 2"-"Angle Meas." to choose angle measurement.

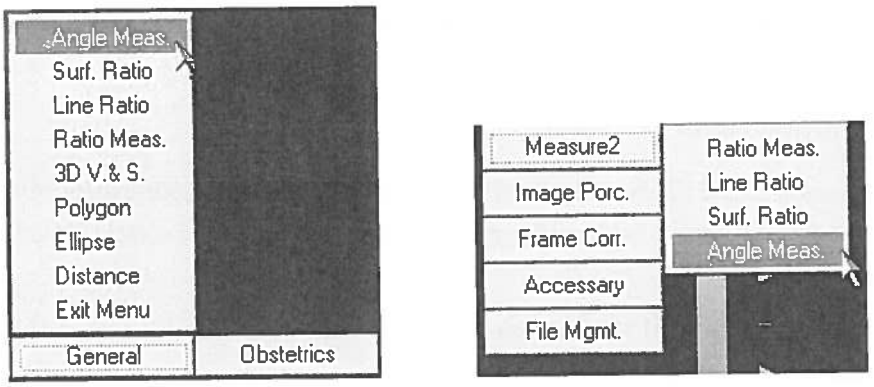

Fig.5-5

- The cursor is displayed on the screen, move it by trackball to the beginning point, press "Set" key to fix it.
- Move the cursor by trackball to the end point, press "Set" key to fix it.
- According to the fixed beginning point and end point, the beeline will be made by system automatically, after the relevant measures, the results will be displayed in measuring result area.
- Repeat the above steps to measure another beeline, after the measurement to calculate angle, and the results will be displayed measuring result area.
- The obtained angle of measurement is between a crossing of two lines and their beginning point.

5.2.2 Ratio Measurement

The equipment could measure ratio by drawing two beelines in every mode except M mode, the length of beeline and ratio of the two beelines are displayed on the right side of screen. Detailed measure methods

are as following:

- In frozen state, press "General"-"Ratio Meas." or press "Measure 2"-"Ratio Meas." to choose ratio measurement.

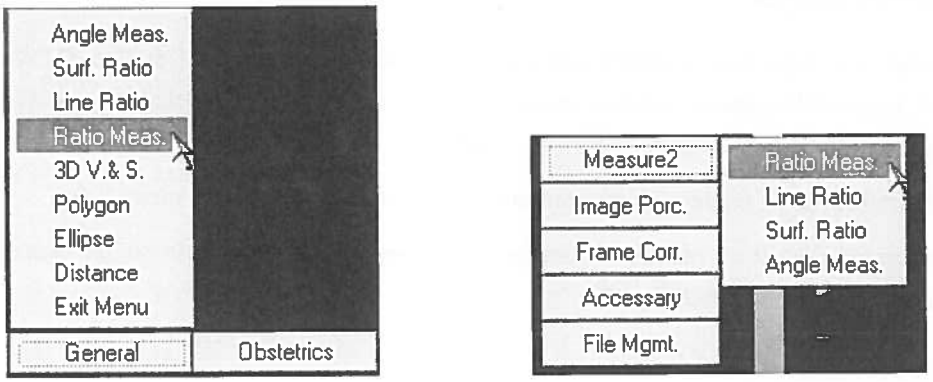

Fig.5-6

- The cursor is displayed on the screen, move it by trackball to the beginning point, press "Set" key to fix it.
- Move the cursor by trackball to the end point, press "Set" key to fix it.
- According to the fixed beginning point and end point, the beeline will be made by system automatically, after the relevant measures, the results will be displayed in the measuring result area.
- Repeat the steps above to measure another beeline, after the measurement to calculate ratio, and the results will be displayed in the measuring result area.

5.2.3 Line Ratio Measurement

The equipment could measure line ratio by drawing two beelines in every mode except M mode, the length of beeline and line ratio of the two beelines are displayed on the right side of screen. Detailed measure methods are as following:

- In frozen state, press "General"-"Line Ratio" or press "Measure 2"-"Line Ratio" to choose line ratio measurement.

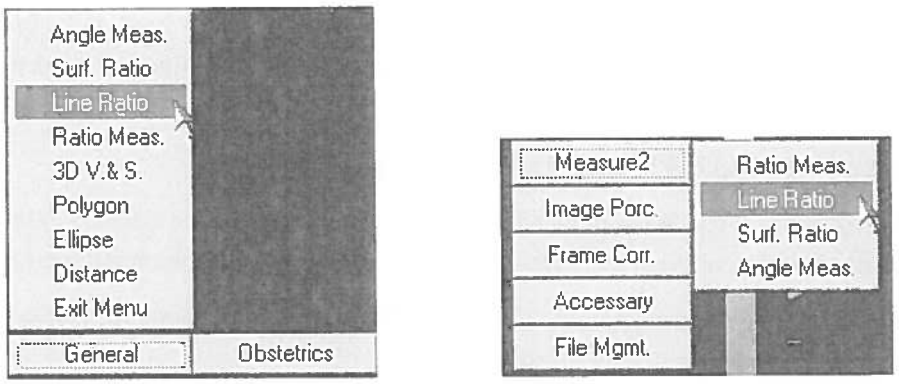

Fig.5-7

- The cursor is displayed on the screen, move it by trackball to the beginning point, press "Set" key to fix it.
- Move the cursor by trackball to the end point, press "Set" key to fix it.
- According to the fixed beginning point and end point, the beeline will be made by system

automatically, after the relevant measures, the results will be displayed in the measuring result area.

- Repeat the above steps to measure another beeline, after the measurement to calculate line ratio, and the results will be displayed in the measuring result area.

5.2.4 Area Ratio Measurement

The equipment could measure area ratio by drawing two ellipses in every mode except M mode, the measuring results are displayed on the right corner of screen. Detailed measure methods are as following:

- In frozen state, press "General"-Surf. Ratio"or press "Measure 2"-"Surf. Ratio" to choose area ratio measurement.

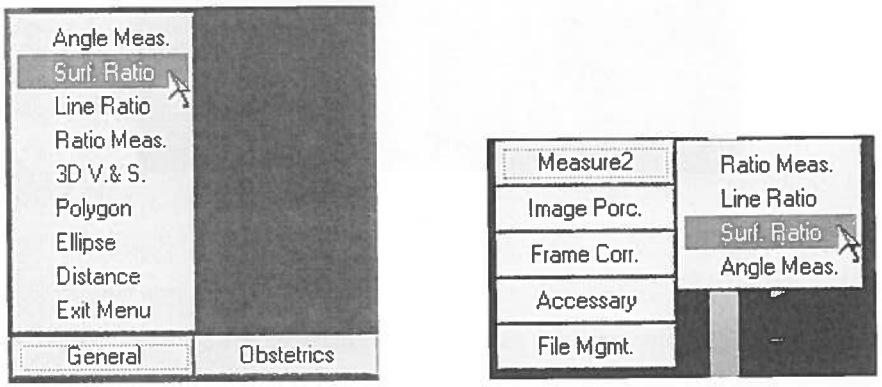

Fig.5-8

- The cursor is displayed on the screen, move it by trackball to the beginning point, press "Set" key to fix it.
- Move the cursor by trackball to the end point of one axis, press "Set" key to fix the length of the axis.
- Press "Set" key can adjust ellipse length of another axis, When button clicking position moves far from the center of ellipse, the axis becomes longer; When button clicking position moves near from the center of ellipse, the axis becomes shorter.
- Press "Change" key to fix the shape of ellipse, which is made by system automatically. After the relevant measures, the results will be displayed in the measuring result area.
- Repeat the steps above to measure another ellipse, after the measurement to calculate area ratio, and the results will be displayed in the measuring result area.

5.3 Assistant Tools

5.3.1 Puncture Guide Line

- Puncture guideline can draw the guide line in the displayed area, so to guide the puncture needle entering the appropriate human tissue. The function is useful only in B mode.
- In real-time state, select "Accessary"-"Pierce Guide", then choose the desired angle to enter the puncture guide function,or press "P" key to enter puncture guide function, and a puncture line will display on screen immediately.
- With puncture line displays, the angle of puncture line can be adjusted by menu or "P" key and end puncture guide function, "CLEAR" key can also end the function.
- Not all probes can realize the puncture function.

- When puncture line displays, every item setting of image can be adjusted. The puncture line will change as the change of depth adjustment, depth advance, image magnification, up/down reversal, left/right reversal.
- It can switch display mode in the function of puncture guide, after switching, the function will be quited.

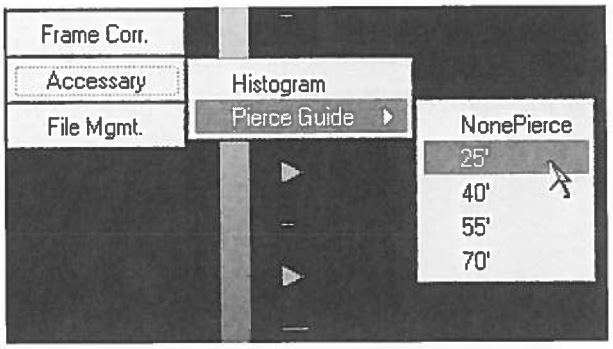

Fig.5-9

Warning

Before every puncture, puncture line must be revised. If the positions of puncture needle and puncture line are different, please do not carry out puncturing.

There is risk for clinic pierce under ultrasonic lead, which must be performed by the personnel with corresponding qualification and ability, and including checking cruor time, blood platelet numbers, cardiogram, blood pressure, puncture package, and puncture probe disinfecting, subscribing operation agreement etc. must be strictly prepared.

Attention

The puncture operation must be done in real-time state.

5.3.2 Histogram

- Histogram function can measure the gray distribution of ultrasound echo image in selected area, and pathology analyse can be done according to this.
- In frozen state, press "Accessary"-"Histogram", the measurement cursor will be displayed on the screen.

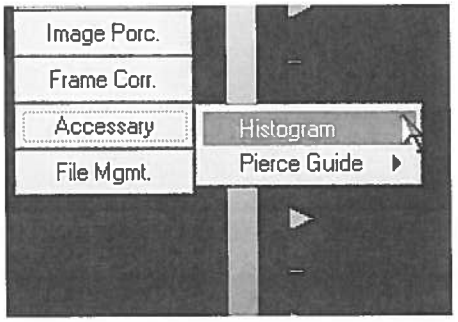

Fig.5-10

- Move the cursor with trackball to the edge of desired area, press "Set" key to fix one rectangle point, and press "Set" key again at another edge to choose the desired area. Then the histogram will be

displayed.

- End histogram through "Clear" key. Exit frozen state under histogram, meanwhile exit the histogram.

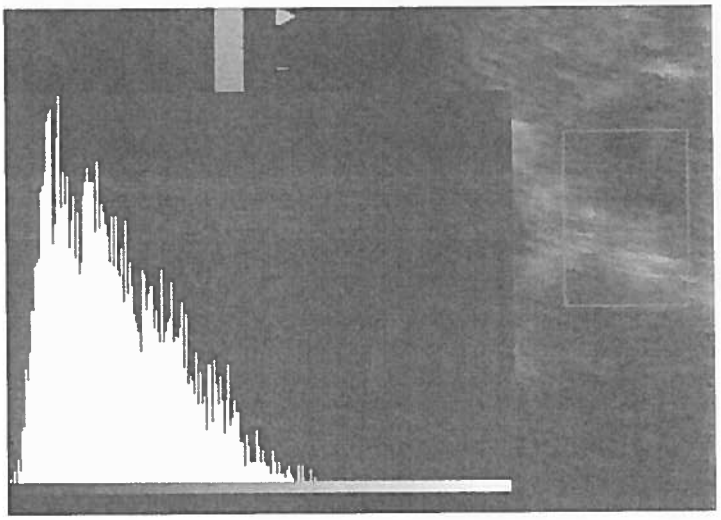

Fig.5-11

5.4 General Measurement Examination Result

- In general measurement mode, select "Report" and the "General Examination Report" dialog will appear.

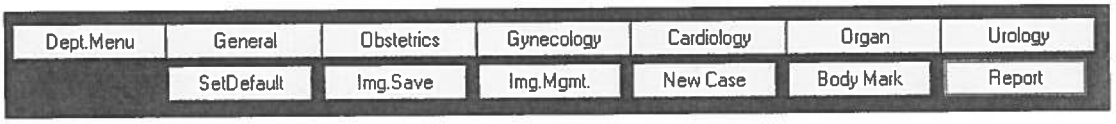

Fig.5-12

- In frozen state, after the measurement or the screen comments, press "R" button the general measurement report will pop-up.
- If there is "General Examination Report" dialog on the screen, diagnosis information can be inputted in the diagnosis information frame. Press "Ctrl" key to switch the input method.

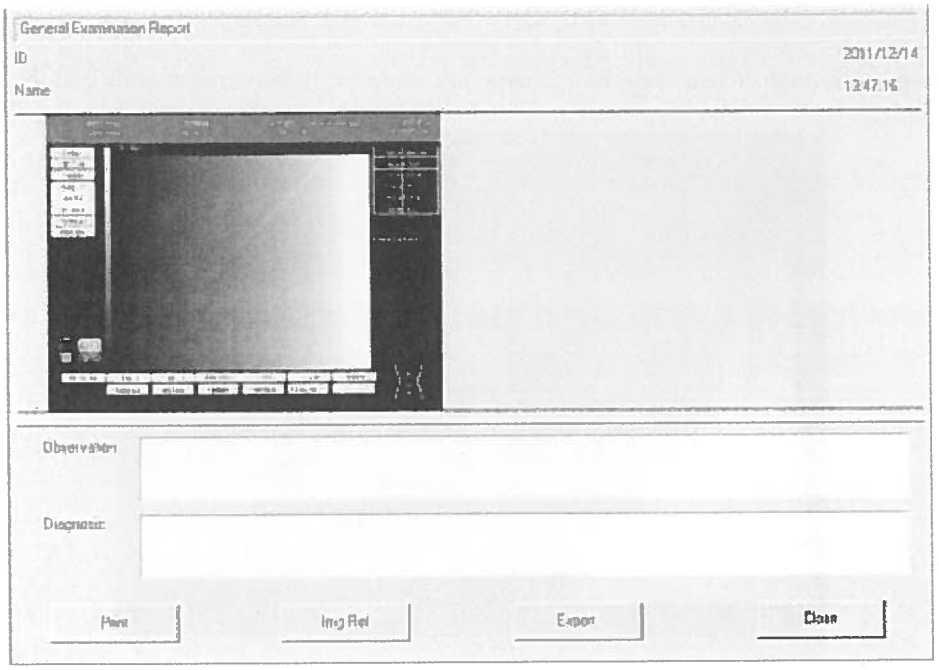

Fig.5-13

- Move cursor to "Img Ref" button, and press "Set" button, a image from image management database will display in report to contrast with current sampling image.
- Move cursor to "Print" button to print reports. The general measure report will be printed if printing succeeds, the warning information will be popped up if printing lose.
- Press "Export" button to export the printing format report to U disk which the device connects.
- Choose "Close" button to end report.

6 Obstetric Examination

6.1 Obstetric Examination and Measurement

- The obstetric examination is usually operated in B mode.
- Select "APP.Type"-"Obstetrics", then the obstetrics examination will be set.
- Before entering obstetric diagnosis, please set each parameter, obstetric formula and FW calculation in obstetric parameter setting.
- In obstetric examination, select "Obstetrics" to show obstetric examination menu as following:

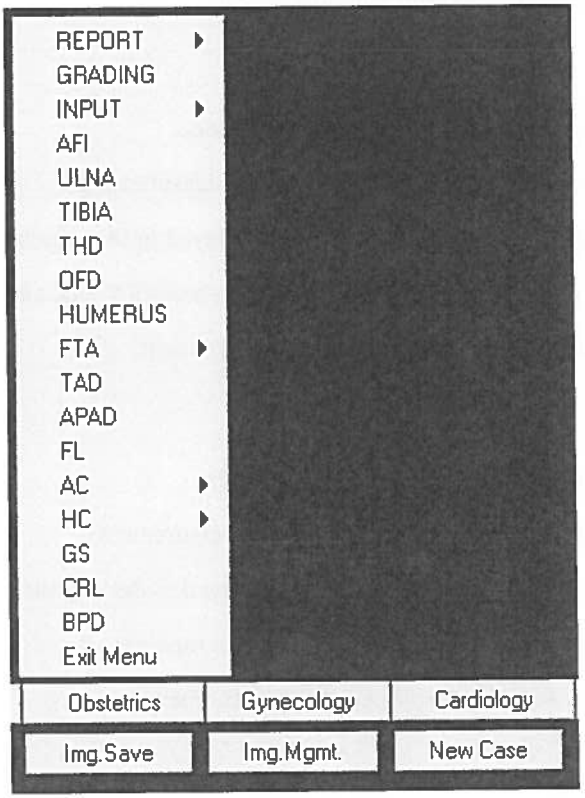

Fig.6-1

- In obstetric examination, the following parameters can be measured: BPD, CRL, GS, HC, AC, FL, APAD, TAD, FTA, HUMERUS, OFD, THD, TIBIA, ULNA and AFI.
- In obstetric examination, the following parameters can be inputted by hand: LMP, BBT and FBP.

6.2 Obstetric Measurement

- The following measurements are the guidelines for parameter measuring. The system will calculate GA and EDD automatically according to measurements.
- Please pay attention that the obstetric formula is used in the calculation of GA and EDD, which could be changed by selecting "Settings"-"OB setting". Moreover, please confine the measuring in the the valid area. Otherwise error results will appear.
- The measurement results of EDD and GA for the same length and area will be different if the obstetric formula is different, the using obstetric formula will label in measurement results.
- The following measurement should be in obstetric examination, which can be set by selecting "App.

Type"-"Obstetrics".

- All the measurements have to be operated in frozen state.

6.2.1 BPD

- Press "Obstetrics"-"BPD" to enter BPD measurement mode.
- Measuring BPD, the method is the same as "Distance Measurement".
- The BPD length, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.2 CRL

- Press "Obstetrics"-"CRL"to enter CRL measurement mode.
- Measuring CRL, the method is the same as "Distance Measurement".
- The CRL length, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.3 GS

- Press "Obstetrics"-"GS" to enter GS measurement mode.
- Measuring GS, the method is the same as "Distance Measurement".
- The GS length, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.4 HC

- Press "Obstetrics"-"HC", there are still submenus: Polygon and Ellipse, select one of them to enter HC measurement mode.
- If user selects ellipse method, please measure by the method of "Measure Circumference and Area by Ellipse"; If user selects polygon method, please measure by the method of "Measure Circumference and Area by Polygon".
- The circumference of HC, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.5 AC

- Press "Obstetrics"-"AC", there are still submenus: Polygon and Ellipse, select one of them to enter AC measurement mode.
- If user selects ellipse method, please measure by the method of "Measure Circumference and Area by

Ellipse"; If user selects polygon method, please measure by the method of "Measure Circumference and Area by Polygon".

- The circumference of AC, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.6 FL

- Press "Obstetrics"-"FL" to enter FL measurement mode.
- Measuring FL, the method is the same as "Distance Measurement".
- The length of FL, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.7 APAD

- Press "Obstetrics"-"APAD" to enter APAD measurement mode.
- Measuring APAD, the method is the same as "Distance Measurement".
- APAD, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.8 TAD

- Press "Obstetrics"-"TAD" to enter TAD measurement mode.
- Measuring TAD, the method is the same as "Distance Measurement".
- TAD, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.9 FTA

- Press "Obstetrics"-"FTA", there are still submenus: Polygon and Ellipse, select one of them to enter FTA measurement mode.
- If user selects ellipse method, please measure by the method of "Measure Circumference and Area by Ellipse"; If user selects polygon method, please measure by the method of "Measure Circumference and Area by Polygon".
- The circumference and area of FTA, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.10 HUMERUS

- Press "Obstetrics"-"HUMERUS" to enter HUMERUS measurement mode.
- Measuring HUMERUS, the method is the same as "Distance Measurement".
- Length of HUMERUS, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.11 OFD

- Press "Obstetrics"-"OFD" to enter OFD measurement mode.
- Measuring OFD, the method is the same as "Distance Measurement".
- Length of OFD, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.12 THD

- Press "Obstetrics"-"THD" to enter THD measurement mode.
- Measuring THD, the method is the same as "Distance Measurement".
- Length of THD, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.13 TIBIA

- Press "Obstetrics"-"TIBIA" to enter TIBIA measurement mode.
- Measuring TIBIA, the method is the same as "Distance Measurement".
- Length of TIBIA, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.14 ULNA

- Press "Obstetrics"-"ULNA" to enter ULNA measurement mode.
- Measuring ULNA, the method is the same as "Distance Measurement".
- Length of ULNA, gestational age and EDD will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.2.15 AFI

- Press "Obstetrics"-"AFI" to enter AFI measurement mode.

- Measuring AFI, the method is the same as "Distance Measurement".
- Depth of AFI will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

6.3 EDD Calculation by Input

- The above measurement is for measuring fetus growth data, calculating EDD of fetus according to obstetric formula. Moreover the description of this section is calculating EDD by LMP and BBT.
- The measurement of calculating EDD by LMP and BBT is: 280 days after LMP is EDD; 266 days after BBT is EDD. The estimated EDD by LMP and BBT will be displayed in obstetric report.

6.3.1 By Last Menstruation Period

- Estimate the EDD according to the last menstrual period (LMP).
- Press "Obstetrics", and select "Input"-"LMP", then "LMP date input" dialog box will pop-up.
- Input the date of the last menstruate in dialog box. If the number cannot be inputted, move the cursor by trackball to input box, then press "Set".
- Press "OK" button of the dialog box, the last menstruate will be inputted to estimate fetal growth curve. "CANCEL" key will cancel input.

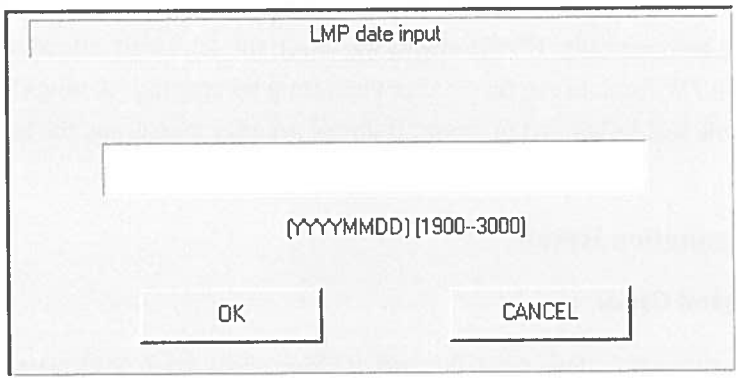

Fig.6-2

6.3.2 By Last Ovulation

- Estimate the EDD according to the last ovulation period (BBT)
- Press "Obstetrics", and select "Input"-"BBT", then "BBT date input" dialog box will pop-up.
- Input the date of the last ovulation in dialog box. If the number cannot be inputted, please move the cursor by trackball to input box, and then press "Set".
- Press "OK" button of the dialog box, the last ovulation will be inputted to estimate expected date. "CANCEL" key will cancel input.

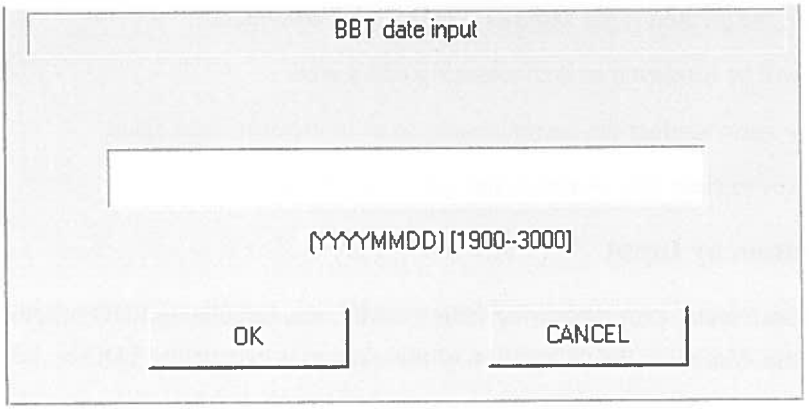

Fig.6-3

6.4 Fetal Weight Calculation

- According to the measurement data, the equipment can calculate to get the fetal weight by relevant formula.
- After getting all the parameters that necessary for the calculation formula, the equipment will calculate fetal weight and display the result in report automatically. Specific weight formula is selected by choosing "Settings"-"OB Setting".
- There are 9 kinds of calculating FW formulas can be chosen.
- GA, EDD formulas must be set by "Settings"-"OB setting" before measuring, then the measurement will be calculated automatically. If after measuring to set, the set is only effective for latter measurement. But FW formula can be set after measuring by entering "Settings"-"OB Setting", the last setting FW formula will be applied in report. If do not set after measuring, the last FW formula will be adopted.

6.5 Obstetric Examination Result

6.5.1 Fetus Physiological Grade

- Fetus physiological grade is done through items of clinic observation or measure method. And the grading method is the clinical index to evaluate the fetus physiological status.
- Correlation index: FHR, FM, FBM, FT, AFI, PL. Hereinto, the AF is got through measuring the depth of amniotic Fluid; the PL has four grade levels according to the placenta mature; other index is got through fetus reaction observation.
- Fetus reaction experiment takes 20 to 30 minutes.
- Measuring depth of amniotic Fluid:

1. Press "Obstetrics", select "AFI" in the menu. then press "Set", when the screen cursor is cross, system enters the depth of amniotic Fluid measuring mode.
2. Method of measure depth of amniotic Fluid is the same as "Distance Measurement".
3. Depth of amniotic Fluid will be shown in measuring result area.
4. Press "Clear"key to clear the result and back to step 1.
5. Depth of amniotic Fluid will automatically enter the fetus physiological grade, the conversion

criterion is as follows:

2 grade: 5 cm<=Max AFI<=18 cm;

1 grade: 2 cm<=AFI<=5 cm or 18 cm<=AFI<=23 cm

0 grade: 0 cm<=AFI<=2 cm, AFI>23 cm.

- According to the reaction trial and placenta grade to input the grade value.

1. Reaction fetus heart rate trial (FHR)

   Observation time: 20 minutes

   Grade criterion:

   2 grade: FHR>=15 times/minute, duration>=15s,>=5 times

   1 grade: FHR>=15 times/minute, duration>=15 s, 1-4 times;

   0 grade: FHR<=1 time/minute.

2. Fetus Movement (FM)

   Observation time: 30 minutes

   Grade criterion:

   2 grade: FM>=3 times;

   1 grade: FM 1-2 times;

   0 grade: none FM

3. Fetus breath movement (FBM)

   Observation time: 30 minutes

   Grade criterion:

   2 grade: FBM>=1 time, duration>=60 s;

   1 grade: FBM>=1 time, duration 30-60 s;

   0 grade: none FBM, or duration<=30 s

4. Fetus Muscular Tension (FT)

   Observation time: 30 minutes

   Grade criterion:

   2 grade:>=2 time member & spinal stretching exercise

   1 grade>=1 time member or spinal stretching exercise;

   0 grade: member extension, none flections, open-hand.

5. Placenta classify (PL)

   Grade criterion:

   2 grade: PL <=II grade;

   1 grade: parries posterior placenta, hard to evaluate;

   0 grade: PL III grade.

- Graded step:

1. In obstetric measurement, press "Obstetrics"-"GRADING", the "Fetus Physiological Grading" box will pop-up.
2. Select the homologous sub- dialog box of graded item by track ball,and press "Set" to select the item of observation conclusion. Then the graded result is changed in the left.
3. Finishing all graded items, press "Set' to end the growth physiological grade.

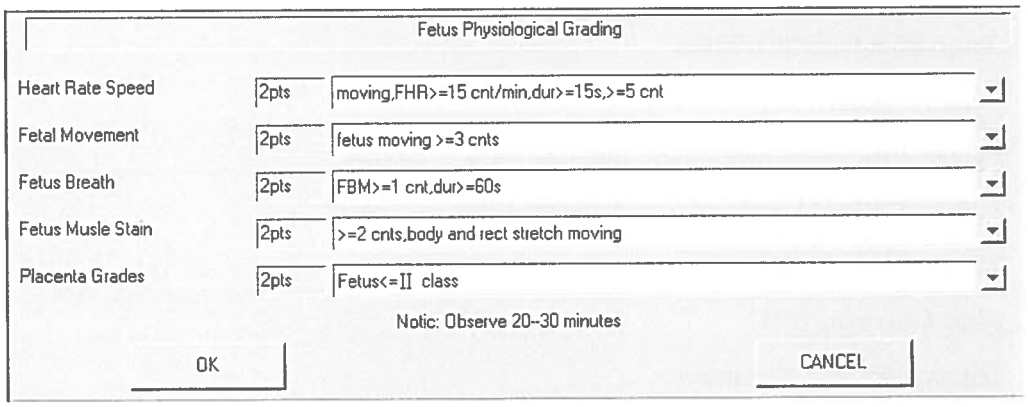

Fig.6-4

6.5.2 Fetus Physiological Grade Report

- After finishing the physiological grading, the fetus physiological grade report will be given by system.
- In obstetric measurement, select "Obstetrics"-"REPORT"-"Grade Report", then press "Set" to show "Fetus physiological grade report".
- The grade report is done with Vintzileos formula.
- In the report, the item with grade 2 means normal; 1 means mild abnormity; 0 means obvious abnormity. The significance of total grade value is as follows:

  7-12: Normal fetus with lower fatalness in chronic asphyxiation

  3-6: Suspicious chronic asphyxiation

  0-2: Altitudinal suspicious chronic asphyxiation

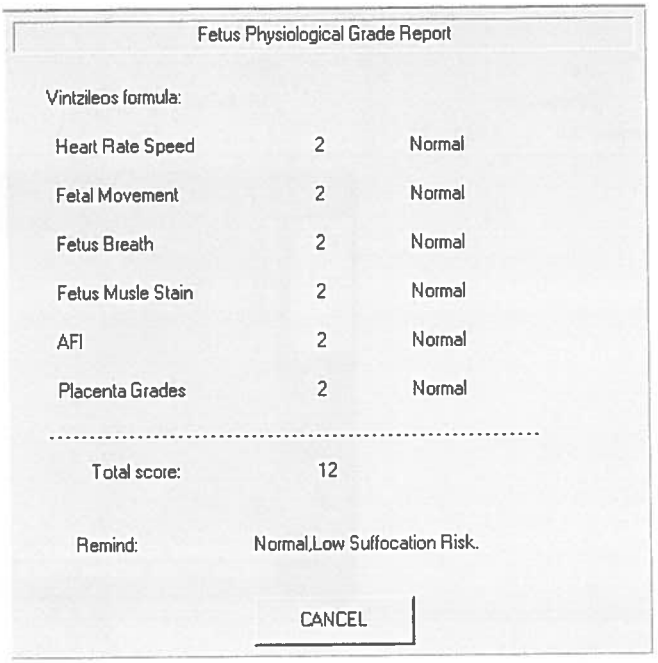

Fig.6-5

6.5.3 Obstetric Examination Report

- After obstetric examinations, the system will give the report automatically. In obstetric measurement, press "Obstetrics" and select "Report"-"OB Report" in obstetric measure menu to show report box.
- In obstetric measurement , press "Report" on the down corner of screen, "Grade Report" and "OB Report" can be chosen. When after the measurement or the screen comments , press "R" button the obstetric examination report will pop-up.
- The contents of result dialog contain patient ID, name, diagnostic image, date of examination, diagnosis, measure result, gestational week, EDD, last menstruation, last ovulation date, the average of gestational age, EDD, and fetus weight and so on.
- Please note that the examination result will be reserved until a new patient information is inputted. Don't forget to input the new patient information before examination.

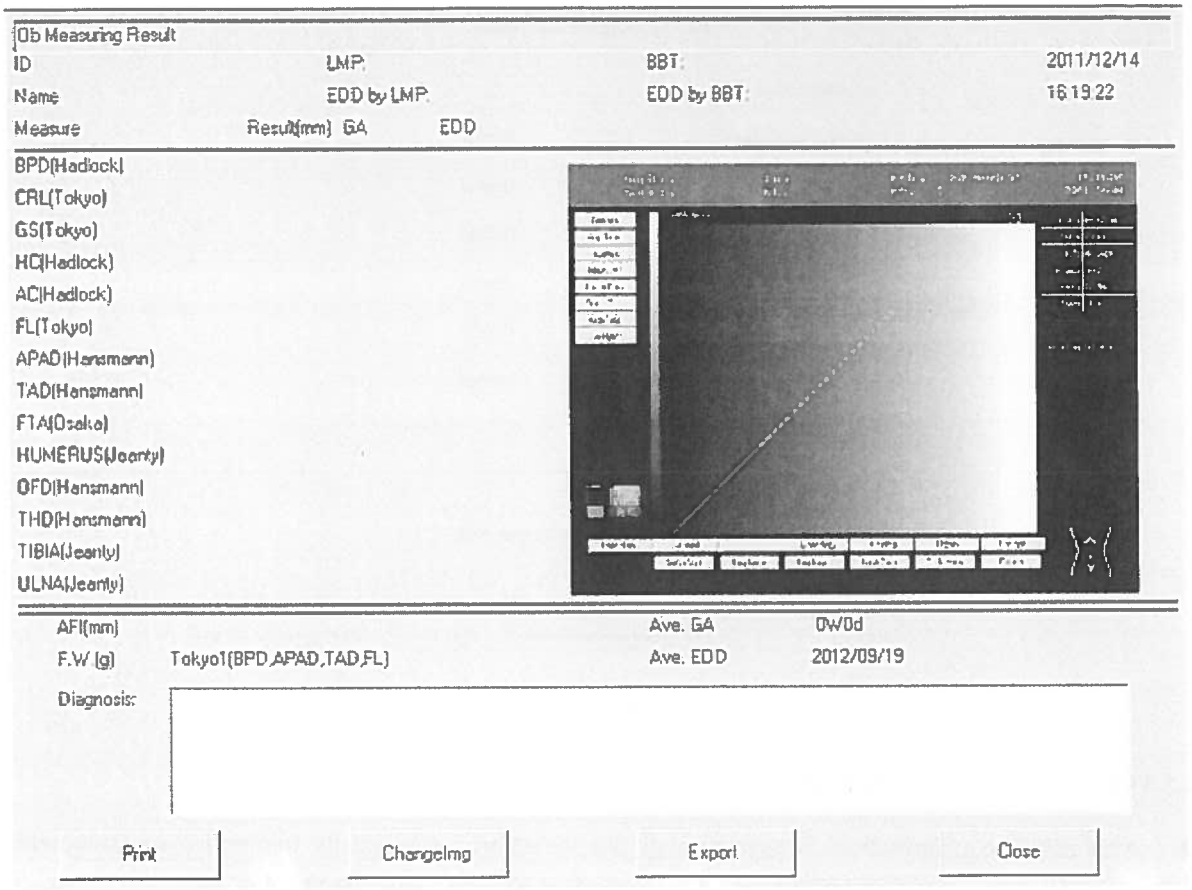

Fig.6-6

- In report dialog, the diagnosis conclusion can be inputted. Press "Ctrl" to switch the input method between Chinese and English.
- Move cursor to "ChangeImg" button, press "Set" key, an image from image management database will display, which can replace current image in report.
- When do not input new patient information after finishing OB diagnosis, the saved measurement result will not be cleared. Before every examination, please first set examinee information to ensure the measurement data is corresponding with the examinee.
- In diagnosis report, press "Print" button to print OB measurement report.
- Press "Export" button to export the printing format reports to the U disk connected with the device.
- Select "Close" button to quit report.

7 Gynecological Examination

7.1 Gynecological Examination and Measurement

- Gynecological examination is usually operated in B mode.
- Select "App. Type"-"Gynecology", then the gynecological examination will be set.
- In gynecological examination, press "Gynecology" to show gynecological examination menu as following:

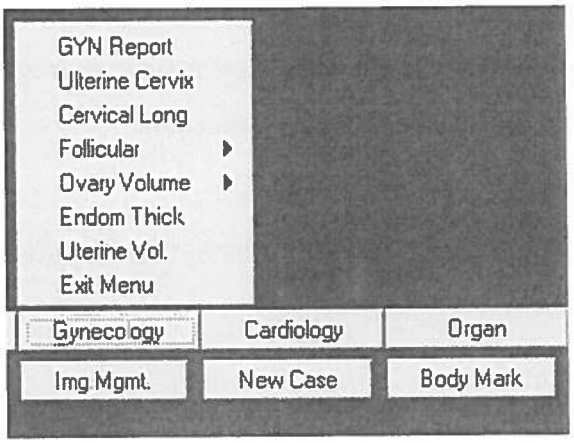

Fig.7-1

- In gynecological examination, the following indexes can be measured: uterus volume, intima thickness, ovary volume, dominant follicle, cervix major diameter, corpus cervix and so on.

7.2 Gynecological Measurement

7.2.1 Uterus Volume

- Press "Gynecology" to choose "Uterine Vol." by "Set" key to enter uterus volume measurement.
- Measure the length, width and thickness of uterus separately, after the measurement to calculate uterus volume. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

7.2.2 Intima Thickness

- Press "Gynecology" to choose "Endom Thick" by "Set" key to enter intima thickness measurement.
- Measure intima thickness. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

7.2.3 Ovary Volume

- Press "Gynecology" to choose "Ovary Volume"-"Left Volume" by "Set" key to enter left ovary volume measurement.
- Measure the length, width and thickness of left ovary separately. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Gynecology" to choose "Ovary Volume"-"Right Volume" by "Set" key to enter right ovary volume measurement. The method is the same as left ovary volume.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

7.2.4 Dominant Follicle

- Press "Gynecology" to choose "Follicular"-"Left Folli" by "Set" key to enter left follicle measurement.
- Measure the length and width of left follicle separately. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Gynecology" to choose"Follicular"-"Right Folli" to enter right follicle measurement. The method is the same as left follicle measurement.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

7.2.5 Cervix Major Diameter

- Press "Gynecology" to choose "Cervical Long" by "Set" key to enter cervix major diameter measurement.
- Measure cervix major diameter. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

7.2.6 Corpus Cervix

- Press "Gynecology" to choose "Uterine Cervix" by "Set" key to enter corpus cervix measurement.
- Measure the length and width of cervix. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

7.3 Gynecological Examination Result

- After gynecological examinations, the system will give the gynecological report automatically. In

gynecological examination, press "Report" on the down corner of screen, or press "Gynecology"-"GYN Report", then the result dialog box will be shown. When after the measurement or the screen comments , press "R" button the gynecological examination report will pop-up.

- The contents of result dialog contain patient ID, name, diagnosis image, date of examination, examination result and so on.
- Please note that the examination result will be reserved until a new patient information is inputted. Don't forget to input the new patient information before examination.

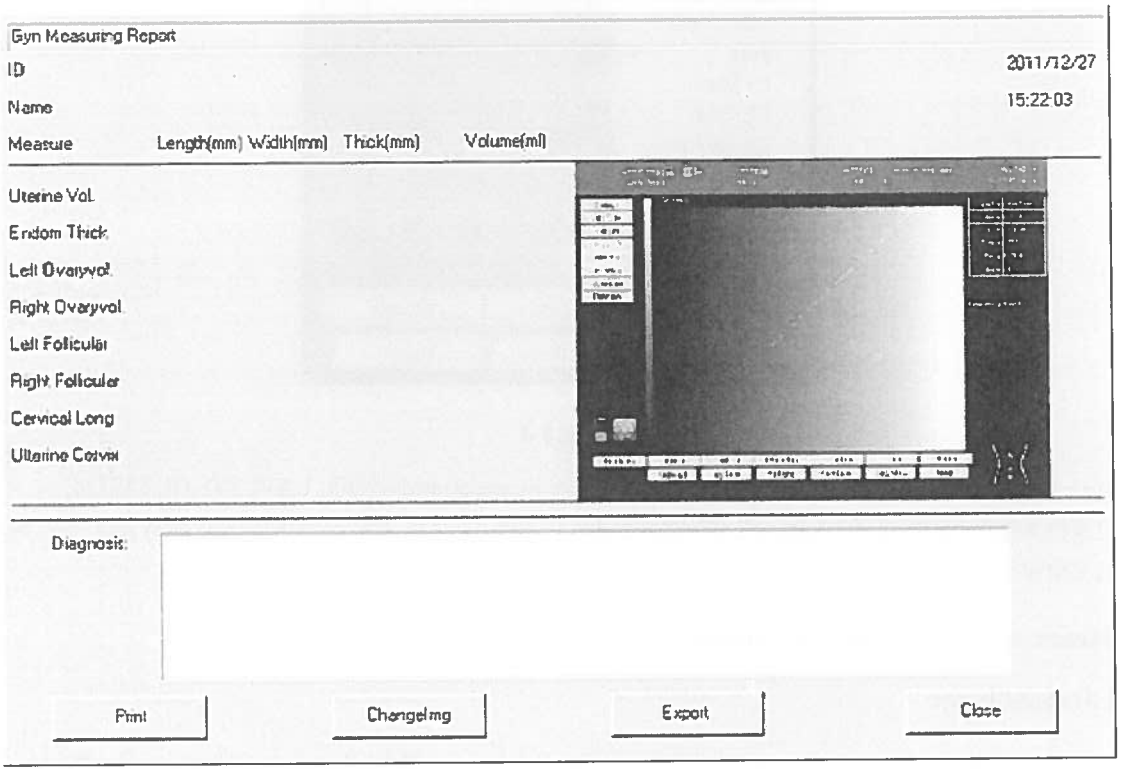

Fig.7-2

- In report dialog, the diagnosis conclusion can be inputted. Press "Ctrl" to switch the input method between Chinese and English.
- Move cursor to "ChangeImg" button, press "Set" key, an image from image management database will display, which can replace current image in report.
- When do not input new patient information after finishing gynecological diagnosis, the saved measurement result will not be cleared. Before every examination, please first set examinee information to ensure the measurement data is corresponding with the examinee.
- In diagnosis report, press "Print" button to print gynecological measurement report.
- Press "Export" button to export the printing format reports to the U disk connected with the device.
- Select "Close" button to quit report.

8 Cardiac Examination

8.1 Cardiac Examination and Measurement

- Cardiac examination is usually operated in BM or M mode.
- Select"App. Type"-"Cardiology", then the cardiac examination will be set.
- In cardiac examination, press "Cardiology" to show the cardiac measurement menu as following:

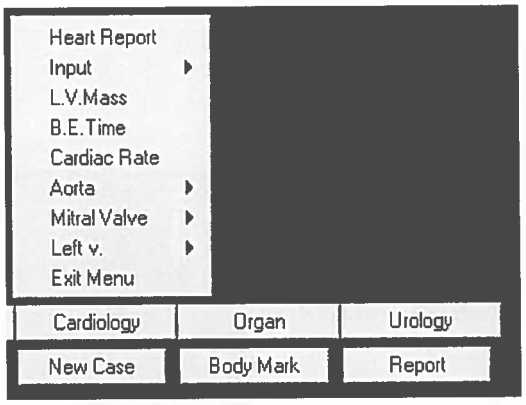

Fig.8-1

- In cardiac examination, the following indexes can be measured: AOD, LAD, IVSTd, LVIDd, LAD/AOD, LVPWd, LVIDs, EF, EF SLP, CA/CE, MVCF, CO, CI, LVMWI, FS, ACV, ET, SV, SI, LVMW.

8.2 Heart Apparatus Measurement

8.2.1 Manual Input

- Input the known items by manual before examination, that will facilitate the relevant calculation.
- Heart Rate
  1. Heart rate can be measured in BM or M mode, or manual input. If without manual input, please first input height and weight before measuring to obtain more parameters.
  2. Press "Cardiology" and select "Input"-"Cardiac Rate". The dialog box of heart rate input will be shown..
  3. Input number into the box, then press "OK". Number of heart rate will be entered into system. Notice: the valid number scale is 30-180 times/minute.
  4. The heart rate can also be got from measurement menu. The system will select the later value between manual input and measurement result.

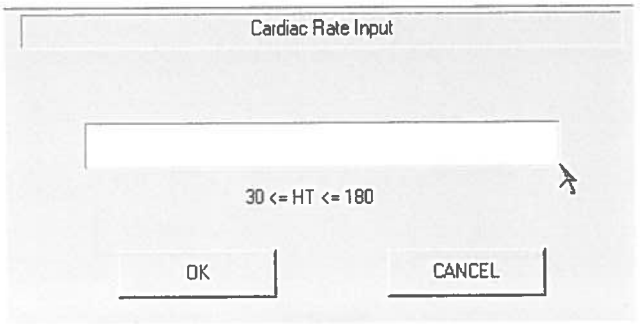

Fig.8-2

- Ejection Time

1. Ejection time will be measured in BM or M mode, or manual input. If without manual input, please first measure blood ejection time before measuring left ventricle function to obtain more parameters .
2. Press "Cardiology" and select "Input"-"B.E.Time". The dialog box of blood ejection time will be shown.
3. Input number into the box, then press "OK". Number of blood ejection time will be entered into system. Notice: the valid number scale is 10-300 ms.
4. The blood ejection time can also be got from measurement menu. The system will select the later value between manual input and measurement result.

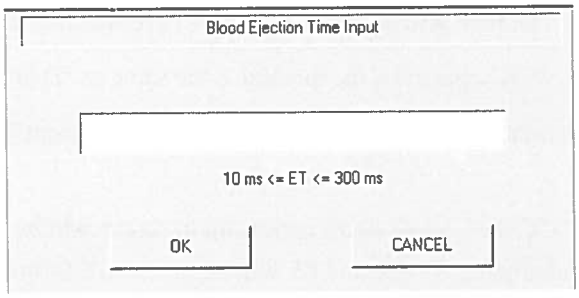

Fig.8-3

- Height and Weight

1. Height and weight must be inputted by manual.
2. Press "Cardiology" and select "Input"- "Wt./Ht.", the dialog box of height and weight will be shown.
3. Input number into the box, then press "OK". Number of height and weight will be entered into system. Notice: the valid value range of height is 20-300 cm, and the valid value range of weight is 1-300 KG.
4. In the heart report, the BSA is calculated through the height and weight, sex, age and relevant formula.

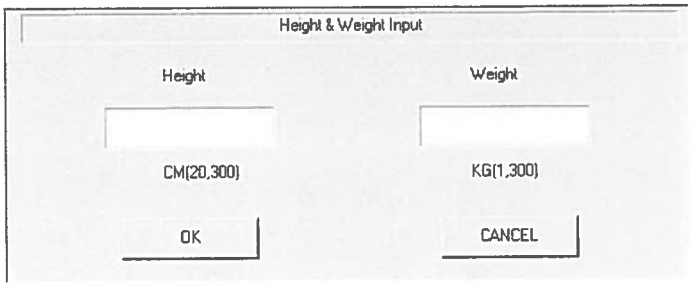

Fig.8-4

8.2.2 Ejection Time (ET)

- Press "Cardiology" to select "B.E.Time" from the pop-up menu, and press "Set" to show cross cursor.
- Measuring ET, the method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- The data measurement should be done before measuring left ventricle.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

8.2.3 Left Ventricle Measurement (LVIDd, LVIDs)

- Press "Cardiology" and select "Left v."- "Teichholz" from cardiac menu. After pressing "Set", the cross cursor will appear. The item will be calculated with TEICHHOLZ formula
- Measuring LVIDd and LVIDs separately, the method is the same as "Distance Measurement".
- When measuring LVIDs, other calculated results will also appear except LVIDd, LVIDs, including SV, EF and FS.
- When selecting "Left v."-"Cube", result items appearing in screen will be the same with former. However, the formula calculating SV, EF and FS will be the CUBE formula instead of TEICHHOLZ formula.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

Attention

Please make sure that the value of LVIDd is always more than LVIDs during the measure process, so as to guarantee the veracity of measurement. Otherwise SV, EF, FS will not appear in the measuring result area of screen.

8.2.4 Heart Rate (HR)

- Press "Cardiology" to select "Cardiac Rate " from pop-up menu, then press "Set" key to enter HR measurement.
- HR measurement must be done after left ventricle function.
- Measuring HR, the method is the same as "Distance Measurement" in BM and M modes.
- Measurement result will be displayed in the measuring result area.

- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

8.2.5 EF (EF SLP)

- Press "Cardiology" and select "Mitral Valve"-"EF Slope" from cardiac menu successively. Then press "Set" to enter measurement.
- Measuring EF SLP, the method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

8.2.6 Mitral Valve Speed (ACV)

- Press "Cardiology" and select "Mitral Value"-"AC Downrate", then press "Set" key to enter measurement.
- Measuring ACV, the method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

8.2.7 Mitral Valve (CA/CE)

- Press "Cardiology" and select "Mitral Value"-"CA/CE", then press "Set" key to enter measurement.
- Measure the distance of AC (the distance of peak value from point A to point C) and CE (the distance of peak value from point C to point E) separately. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

8.2.8 Aorta (LAD/AOD)

- Press "Cardiology" and select "Aorta"-"LAD/AOD", then press "Set" key to enter measurement.
- Measure the diameter of left atrium (LAD). The method is the same as "Distance Measurement".
- Measure the diameter of aortic valve (AOD). The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

8.2.9 Left Ventricle Muscle Weight (LVMW)

- Press "Cardiology" and select "LV.Mass", then press "Set" key to enter measurement.
- Measure the posterior wall thickness at the end of left ventricular diastolic (LVPWd). The method is

the same as "Distance Measurement".

- Measure the interventricular septal thickness (IVSTd) at the end of ventricular diastolic. The method is the same as "Distance Measurement".
- Measure the left ventricle inner diameter (LVIDd) at the end of ventricular diastolic. The method is the same as "Distance Measurement".
- The result of LVMW will display in the measuring result area. If height and weight have been inputted before measurement, the calculated result of left ventricle muscle weight index (LVMWI) will also be displayed.

8.3 Cardiac Examination Result

- After cardiac examinations, the system will give cardiac diagnosis report automatically.In cardiac examination, press "Report"on the down corner of screen, or press "Cardiology"-"Heart Report", the result dialog will pop-up. When after the measurement or the screen comments , press "R" button the cardiac examination report will pop-up.
- The contents of result dialog contain patient ID, name, diagnosis images, date of examination, examination result and so on.
- Please note that the examination result will be reserved until a new patient information is inputted. Don't forget to input the new patient information before examination.

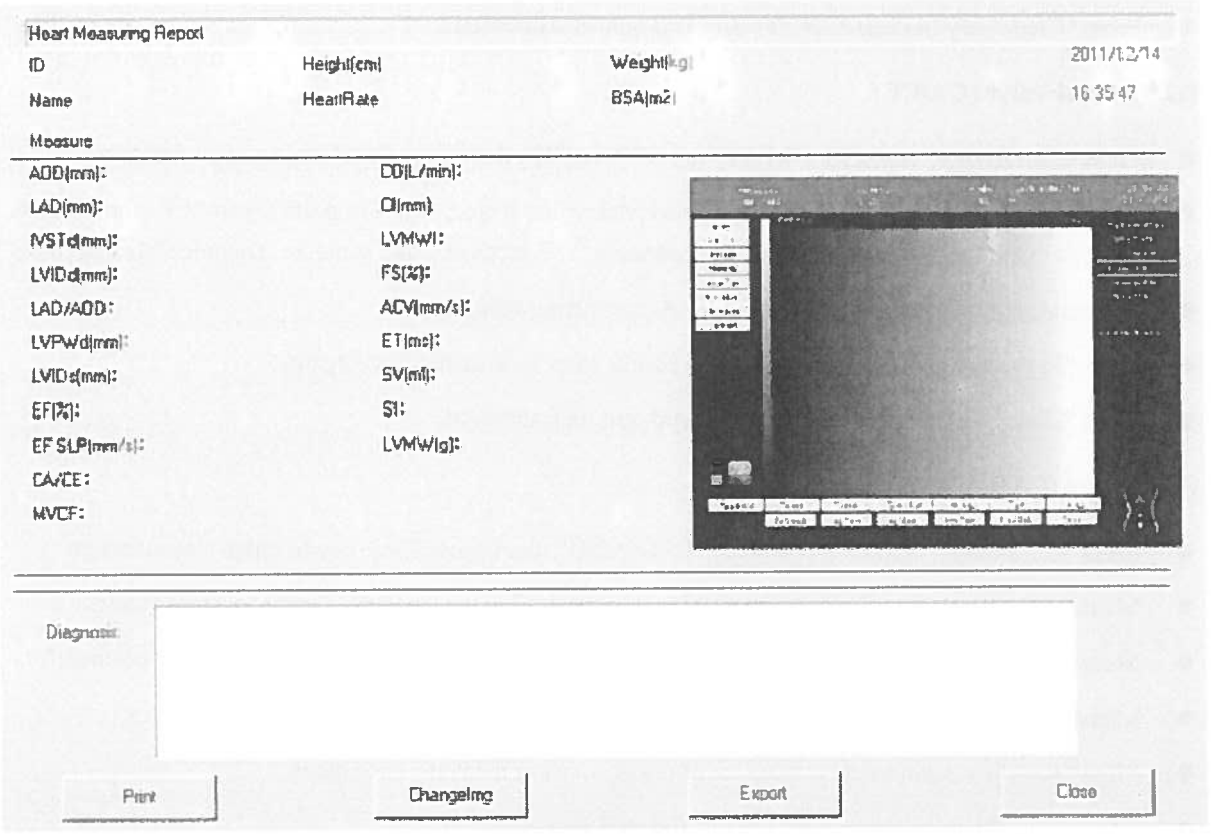

Fig.8-5

- In report dialog, the diagnosis conclusion can be inputted. Press "Ctrl" to switch the input method between Chinese and English.
- Move cursor to "ChangeImg" button, press "Set" key, an image from image management database will

display, which can replace current image in report.

- In measuring, please according to measure order which the user manual prompts to measure, or some parameters will not display calculation results in report.
- When do not input new patient information after finishing cardiac diagnosis, the saved measurement result will not be cleared. Before every examination, please first set examinee information to ensure the measurement data is corresponding with the examinee.
- In diagnosis report, press "Print" button to print cardiac measurement report.
- Press "Export" button to export the printing format reports to the U disk connected with the device.
- Select "Close" button to quit report.

9 Small Organs Examination

9.1 Small Organs Examination and Measurement

- Examinations of small organs are usually operated in B mode.
- Select "App. Type"-"Organ", then the small organs examination will be set.
- In small organs examination, press "Organ", the menu of small organs examination will pop-up as following:

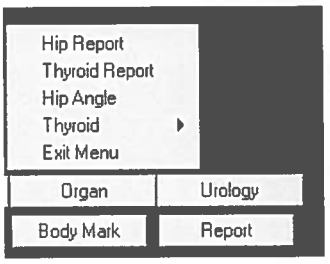

Fig.9-1

- In small organs examination, it can measure thyroid gland and hip joint.

9.2 Small Organs Measurement

9.2.1 Thyroid Gland

- Press "Organ" and select "Thyroid"-"Left Volume" successively from the small organs pop-up menu. After pressing "Set", cross cursor will appear.
- Measure the length, width and thickness of left thyroid gland separately. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Organ" and select "Thyroid"-"Right Volume" successively from the small organs pop-up menu. Next please measure the volume of right thyroid gland. The method is the same as left thyroid.
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

9.2.2 Hip Joint

- Press "Organ" and select "Hip Angle" from the small organs pop-up menu. After pressing "Set", cross cursor will appear.
- Move the cursor to appropriate position with trackball and press "Set", so as to fix the starting point of the segment. Then move the cursor again to the ending point. After pressing "Set", the segment will be set.
- To get the second segment by the same method as above. The angle α between the first and second segments stating points will display in the measuring result area.
- To get the third segment by the same method as above. The angle β between the second and the third segments stating points will display in the measuring result area.

- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

9.3 Small Organs Examination Result

9.3.1 Examination Report of Thyroid Gland

- After small organs examinations, the system will give small organs diagnosis report automatically. In small organs examination, press "Report"on the down corner of screen, or press "Organ"-"Thyroid Report", the result dialog will pop-up.When after the measurement or the screen comments , press "R" button the thyroid examination report will pop-up. Note:The thyroid examination report can be popped up after measuring and press the "R" button.
- The contents of result dialog contain patient ID, name, diagnosis images, date of examination, examination result and so on.
- Please note that the examination result will be reserved until a new patient information is inputted. Don't forget to input the new patient information before examination.

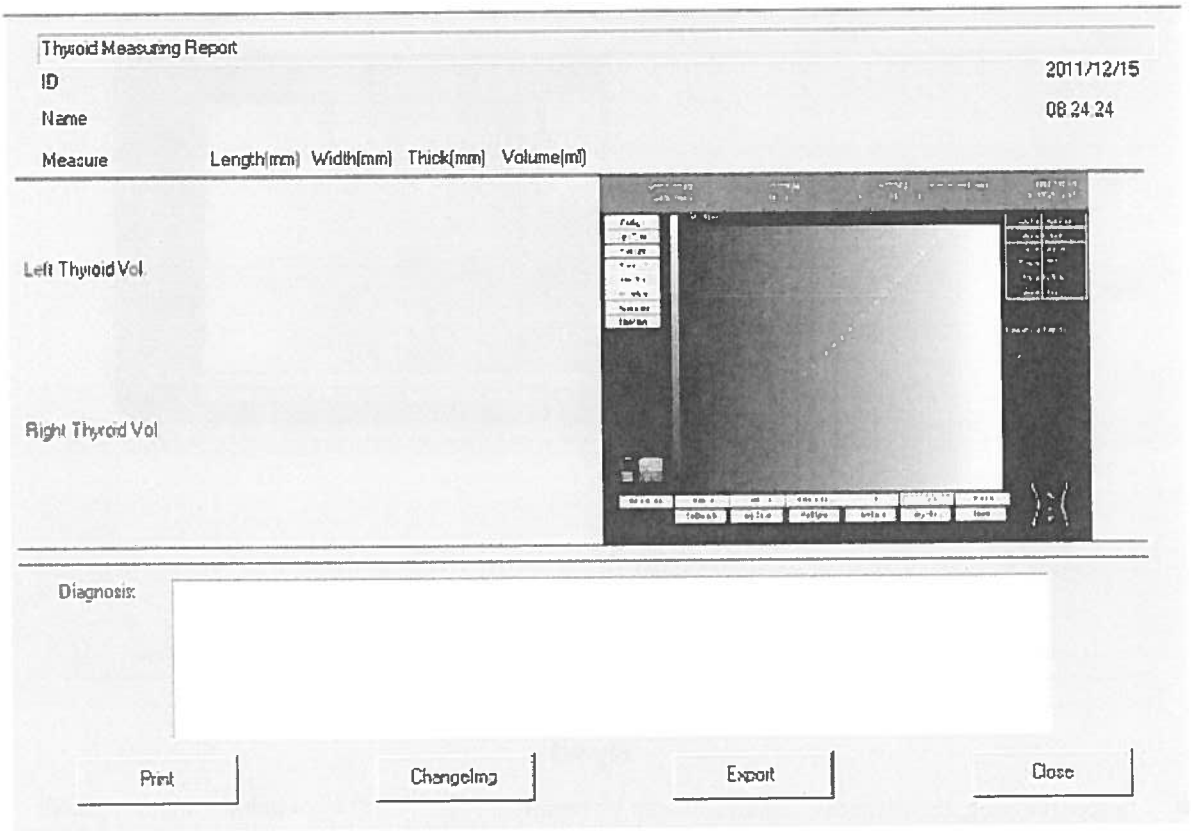

Fig.9-2

- In report dialog, the diagnosis conclusion can be inputted. Press "Ctrl" to switch the input method between Chinese and English.
- Move cursor to "ChangeImg" button, press "Set" key, an image from image management database will display, which can replace current image in report.
- In diagnosis report, press "Print" button to print thyroid measurement report.

- Press "Export" button to export the printing format reports to the U disk connected with the device.
- Select "Close" button to quit report.

9.3.2 Examination Report of Hip Joint

- After small organs examinations, the system will give small organs diagnosis report automatically. In small organs examination, press "Report"on the down corner of screen, or press "Organ"-"Hip Report", the result dialog will pop-up. When after the measurement or the screen comments , press "R" button the hip joint examination report will pop-up. Note:The hip joint examination report can be popped up after measuring and press the "R" button.
- The contents of result dialog contain patient ID, name, diagnosis images, date of examination, examination result and so on.
- Please note that the examination result will be reserved until a new patient information is inputted. Don't forget to input the new patient information before examination.

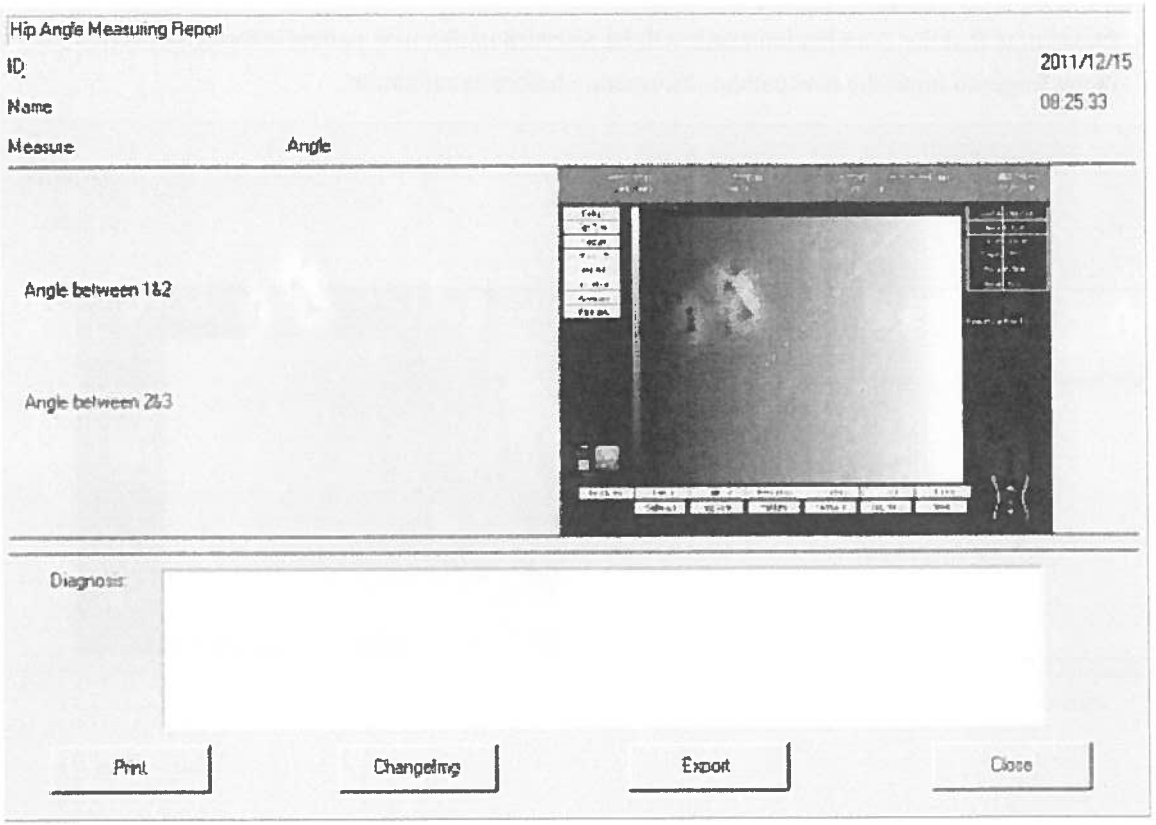

Fig.9-3

- In report dialog, the diagnosis conclusion can be inputted. Press "Ctrl" to switch the input method between Chinese and English.
- Move cursor to "ChangeImg" button, press "Set" key, an image from image management database will display, which can replace current image in report.
- In diagnosis report, press "Print" button to print hip joint measurement report.
- Press "Export" button to export the printing format reports to the U disk connected with the device.
- Select "Close" button to quit report.

10 Urinary Examination

10.1 Urology Examination and Measurement

- Examinations of urology are usually carried out in B mode.
- Select "App. Type"-"Urology", then the urology examination will be set.
- In urology examination, press "Urology", the menu of urology examination will pop-up as following:

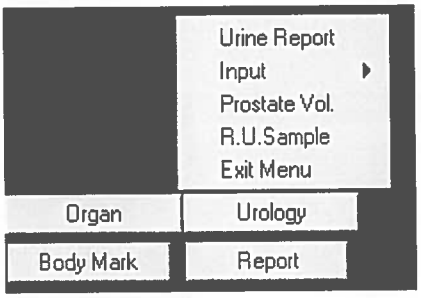

Fig.10-1

- In urology examination, it can measure remnants samples of urine and prostate volume..

10.2 Urology Measurement

10.2.1 Remnants Samples of Urine

- Press "Urology" and select "R.U.Sample" from the pop-up urology menu. After pressing "Set", cross cursor will appear.
- Measure the length, width and thickness separately. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

10.2.2 Prostate

- Press "Urology" and select "Prostate Vol." from the urology pop-up menu. After pressing "Set", cross cursor will appear.
- Measure the length, width and thickness of prostate separately. The method is the same as "Distance Measurement".
- Measurement result will be displayed in the measuring result area.
- Press "Set" key again to clear the current result, so as to measure once again.
- Press "Clear" key to clear current result and quit measurement.

10.3 Urology Examination Result

- After urology examinations, the system will give the urology diagnosis report automatically. In urology examination, press "Report"on the down corner of screen, or press "Urology"-"Urine Report", the result dialog will pop-up. When after the measurement or the screen comments , press "R" button

the urology examination report will pop-up.

- The contents of result dialog contain patient ID, name, diagnosis images, date of examination, examination result and so on.
- Please note that the examination result will be reserved until a new patient information is inputted. Don't forget to input the new patient information before examination.

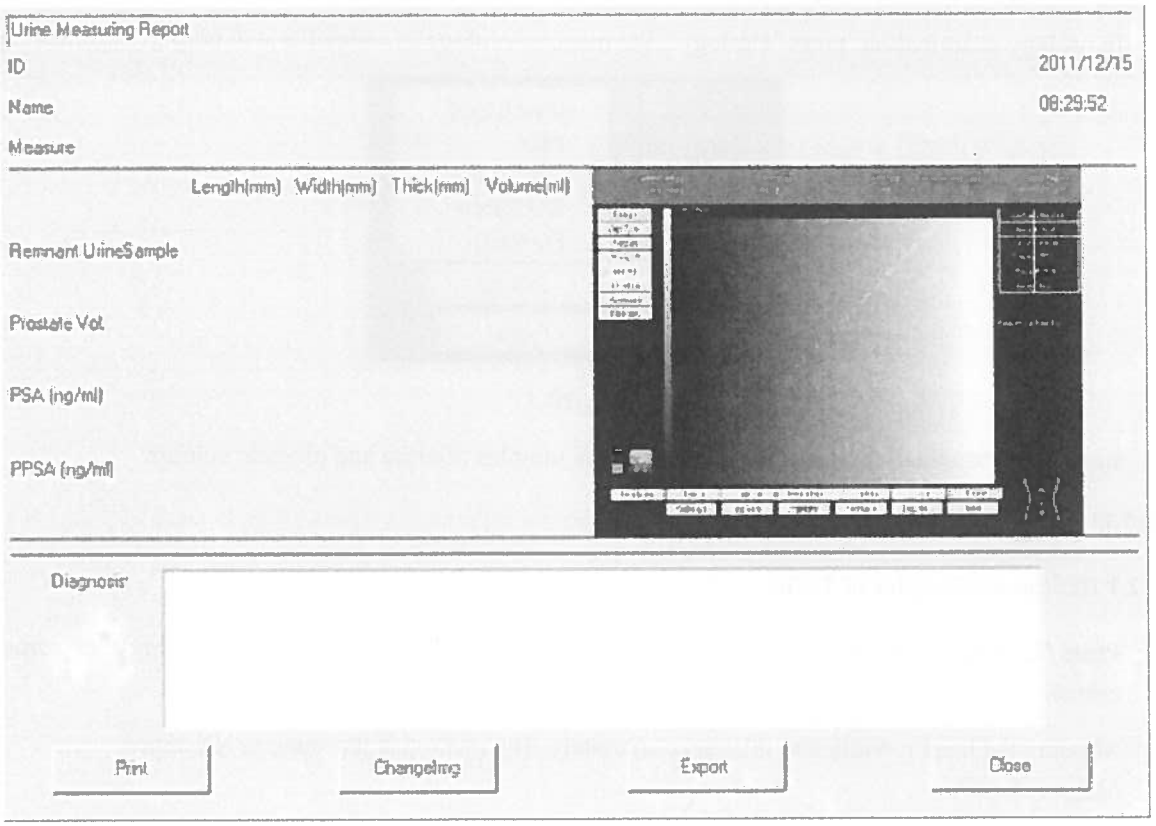

Fig.10-2

- In report dialog, the diagnosis conclusion can be inputted. Press "Ctrl" to switch the input method between Chinese and English.
- Move cursor to "ChangeImg" button, press "Set" key, an image from image management database will display, which can replace current image in report.
- In diagnosis report, press "Print" button to print urology measurement report.
- Press "Export" button to export the printing format reports to the U disk connected with the device.
- Select "Close" button to quit report.

11 Management of Images

External image or video storage is recommended to use industrial-grade U disk.

11.1 Image Saving

- Image saving can only be done in frozen state.
- Saving measurement:
  - Mode one: in frozen state, select "File Mgmt."-"Image Save".

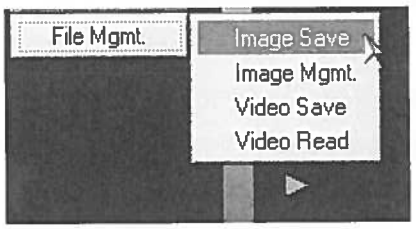

Fig.11-1

  - Mode two: Press "Img.Save" on the down corner of screen .

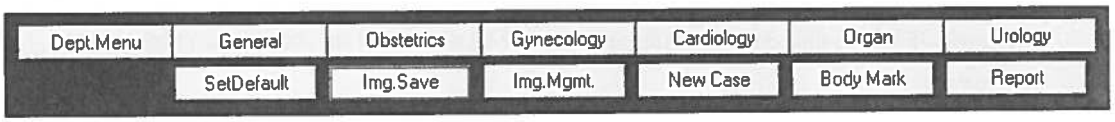

Fig.11-2

  - Mode three: Use "Save" key on the keyboard.
- After entering "image save" operation, the "Saving..." typeface will display on the upper corner of screen, do not operate other systems at the time. After finishing image saving, "Saving..." typeface disappears, then other functions can be operated.
- The numbers of saving image are 2048 at most, when the image total numbers exceed this number, the system will appear error information, part image files should be deleted in order to release space.

11.2 Image Management

- Image management can only be done in frozen state.
- The format of file supports .bmp and .jpeg.
- Measurement
  - Mode one: In frozen state, select "File Mgmt."-"Image Mgmt."

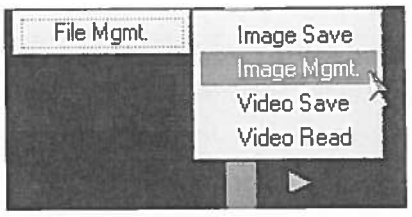

Fig.11-3

  - Mode two: Press "Img.Mgmt." on the down corner of screen.

Fig.11-4

- Image management interface
  - The image information area on the top left corner of interface displays current detailed image information; the left of current storage information area displays current detailed memory space information, and the schedule bar will display current memory instance directly.
  - "Local" and "USB" buttons can switch current image storage area between the device and exterior U disk; "Return" button can end image management interface.
  - The midding miniature display area on the top right corner of interface displays current chosen image; when there is image displaying in the area, click this area to enter the interface of image full screen browse..
  - The image browse area on the down corner of the interface will display current chosen image miniature, which is ordered by new to old image amending time to display two rows and ten breadths of image together. When storage images exceed 10 breadths, can turn the page using up/down button on the right side of the image browse area; after choosing a image, the midding miniature of image and detailed information will be displayed on the image management interface.
- The interface of full screen image browse
  - This interface will display current chosen image in full screen for user browsing.
  - Function buttons on the bottom left corner of interface supply users to operate for the current display.
    - Prior: Switch the former image.
    - Next: Switch the next image.
    - Return: Return image management interface.
    - Save as: Save as current image.
    - Delete: Delete current image at once; when current storage area have not image, return image management interface automatically.
    - Print: Print current total picture, support bmp. format, don't support jpeg format picture printing.
- Image "save as" interface
  - The list on the upper corner of interface displays current image information of storage area.
  - Input image "Save as" name in the relevant items; the name should be letters or numeral, without blank. Do not recommend using Chinese for confusion codes may be appear.
  - "Save" button to operate "Save as", and return the interface of image full screen browse; "Cancel" button, return the interface of image full screen browse without saving; "Local" and "USB"buttons can switch current image storage area between the TF card of the device and exterior U disk.

11.3 Cine Loop

- Cine loop can only be done in frozen state.
- Can not measure and calculate in the course of cine loop.
- Image depth advance, image magnification, and local magnification can be done in the course of cine loop.
- Part parameters of status area are not displayed any more in the course of cine loop.
- The record course of cine loop starts by defreezing, after defreezing, the system will clear empty video cache, and begin recording the new video information up to freezing; the saved video information is saved at the video cache. The video can save 600 frames most, if it is over 600 frames, the initial video frame will be covered in the system, and only retains 600 frames pictures before freezing.
- After defreezing, the video cache can be cleared by the system. If need saving the video documents for a long time , please consult the operation of "Video Save " in the " File Mgmt.".

11.3.1 Manual Cine Loop

- Enter manual cine loop: in frozen state, press "Cine Loop" to enter the manual cine loop interface, meanwhile the cine loop control bar will appear on the down side of interface.

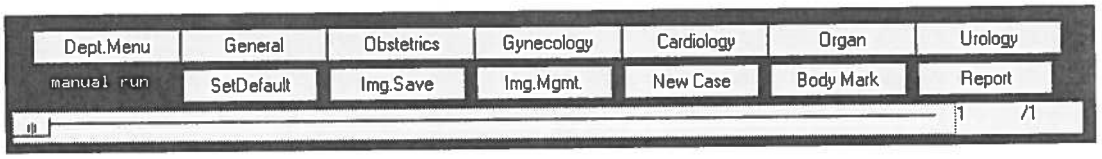

Fig.11-5

- In the course of manual cine loop, control current frame of displaying image using slide of the tool bar. The numbers displayed on the right side of slide are current image frame number and image frame total number; the image display area will display current chosen image frame.
- Quit manual cine loop
  - Mode one: Press "Cine Loop" key again to return frozen state, the image when entering frozen state is displayed.
  - Mode two: Press "Freeze" to return real-time state.

11.3.2 Automatic Cine Loop

- Enter automatic cine loop: in manual cine loop mode, press "Auto/Manual" key to enter automatic cine loop. Meanwhile the image area plays the video.
- Quit automatic cine loop:
  - Mode one: Press "Auto/Manual" key again to quit manual cine loop state, here the last frame of image when automatic cine loop quits is displayed.
  - Mode two: Press "Cine Loop" key to return frozen state, the image when entering frozen state is displayed.
  - Mode three: Press "Freeze" key to return real-time state.

11.4 Video Management

Video management can only be done in frozen state.

11.4.1 Video Save

- Entering: in frozen state, select "File Mgmt."-"Video Save".

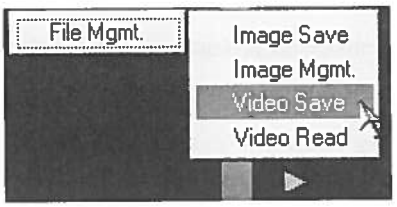

Fig.11-6

- Video save management interface will pop-up after entering.

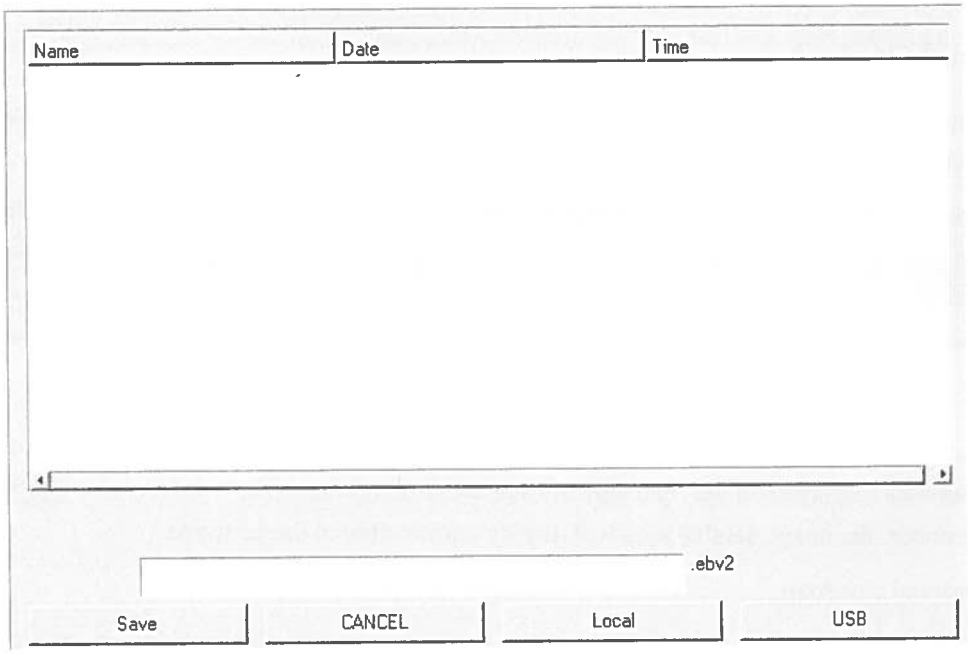

Fig.11-7

- The current video file list is displayed on the upper corner of interface. Input the saved video name into the input box under the list. The name should be letters or numeral, without blank. Do not recommend using Chinese for confusion codes may be appear.
- The button "Local" and "USB" will switch the storage position between TF card in this device and exterior U disk. Press "Save" button to pop-up save video; press "CANCLE"button to quit video saving interface, and return frozen state.

Attention

The video saving need a few minutes, the system do not affect other operations during the saving course, and do not switch off the power supply or the file system will be damaged.

11.4.2 Video Read

- Entering: in frozen state, select "File Mgmt."-"Video Read".

Fig.11-8

- The video management interface will pop-up.

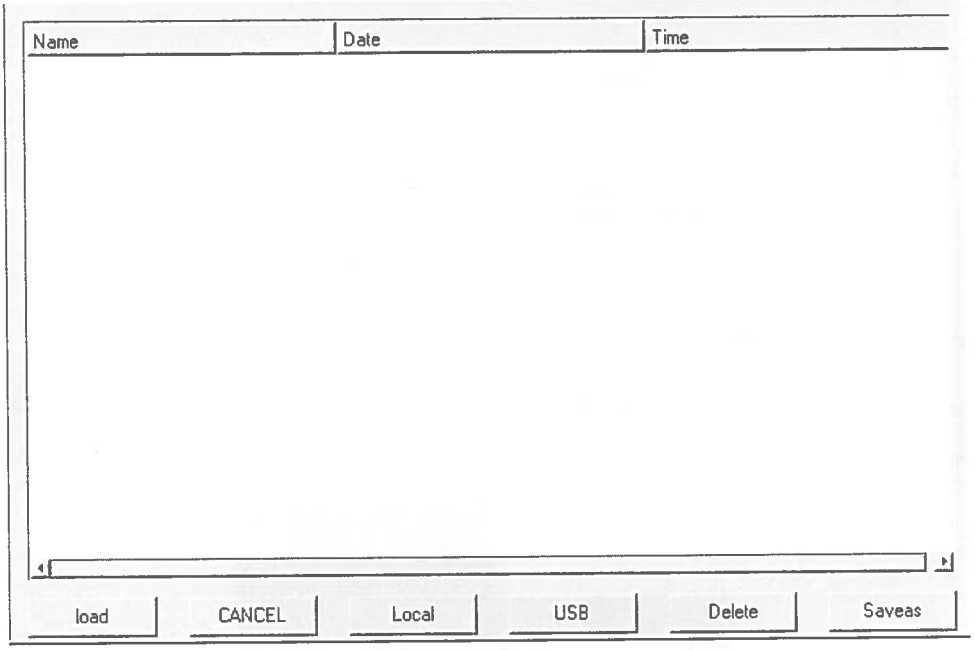

Fig.11-9

- The saved video files list of current storage is listed on the upper corner of interface; choose one of video files, "load", "Delete", "Save as" operation can be done; "Local" and "USB" buttons can switch current storage between TF card in this device and exterior U disk; Press "CANCEL" button to close the window and quit frozen state.
- After choosing one video file, press "load" to load the video to the memory of the system; during this loading course, other operation will not be affected.
- Press "Save as" button, the "Save as" window will pop-up, the operation is general the same with video saving interface.
- After loading video, press "Auto/Manual" button to switch to automatic cine loop.

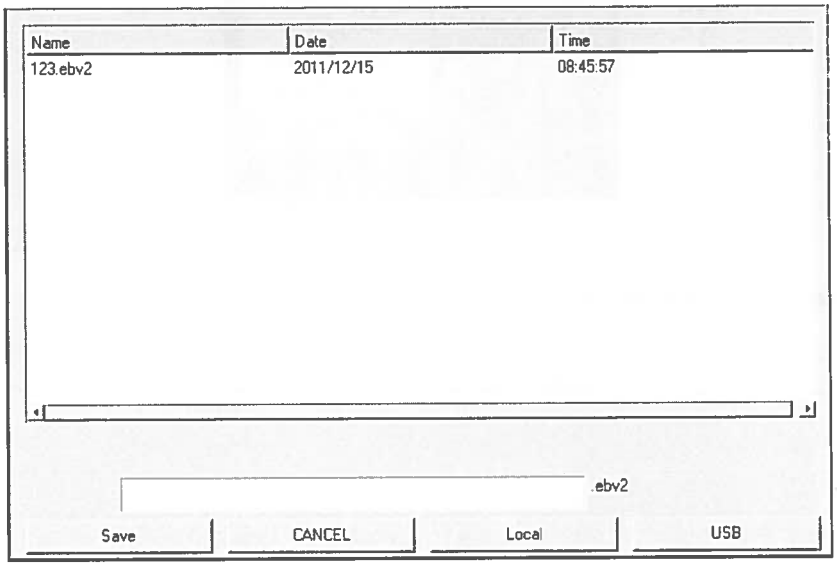

Fig.11-10

11.5 Screen Note Function

- It can only be operated in frozen state, and can be operated synchronously with measurement.
- In frozen state, press "Z" key to display edit box and note status mark on the screen.

Fig.11-11

- When cursor locates in edit box, press "Set" key to input characters.

Fig.11-12

- Move cursor to the left side of edit box after inputting characters, press "Set" key when the cross movable cursor appears, and move the cursor to the needed location, then press "Set" key again, and the note will be moved to this location.

Fig.11-13

- Move the cursor to the right side of edit box, press "Set" key when the adjustable cursor appears, and move the cursor to the needed size location, then press "Set" key again, and the size of edit box will be expectant size.

Fig.11-14

- Press "ALT+Clear" key to close the edit box, and the marked content will be displayed on the screen. The number of edit box is not limited, and the note function can be operated many times on the screen.

Fig.11-15

- Press "ALT+Clear" to close the edit box first when exiting, at this time, press "Save" key to save the image, then press "Clear" to quit the screen note state.

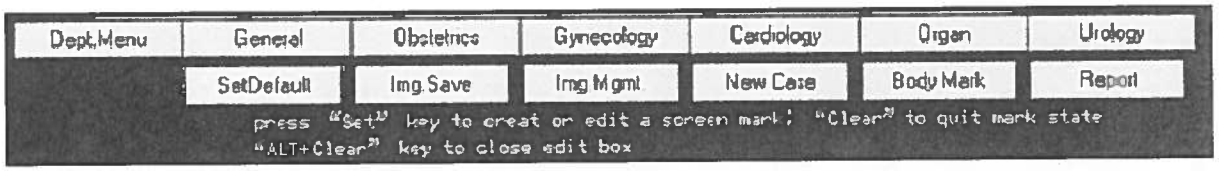

Fig.11-16

- After quitting the screen note state, the clew information on the down corner of screen will also disappear.

11.6 Battery Power Display

- After powering on, the device will display current battery power automatically.
- When only the battery-powered, the device can display current battery power. The battery power will decrease along with the increased using time , when the battery power shows empty, please change the battery in time or connect the adapter .

Fig.11-17

- When the device has the battery, the battery will be charged automatically after connecting the adapter. If the battery is not fully, the charging state will display circularly.

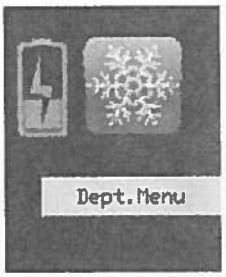

Fig.11-18

- The battery is charged after connecting the adapter, if battery power is full, the full power state will be displayed; when connecting the adapter but not to insert the battery, it is identical to the display state and the full battery power state.

Fig.11-19

11.7 Body Mark

- Body mark choosing can be done in frozen state and real-time state.
- Press "Body Mark" to pop-up body mark choosing interface; after choosing the interface will quit automatically.
- Body mark will recover the default position after the device is restarted, and body mark of the last time power off is not saved.

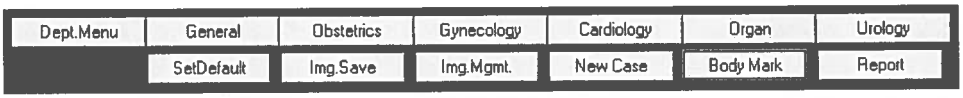

Fig.11-20

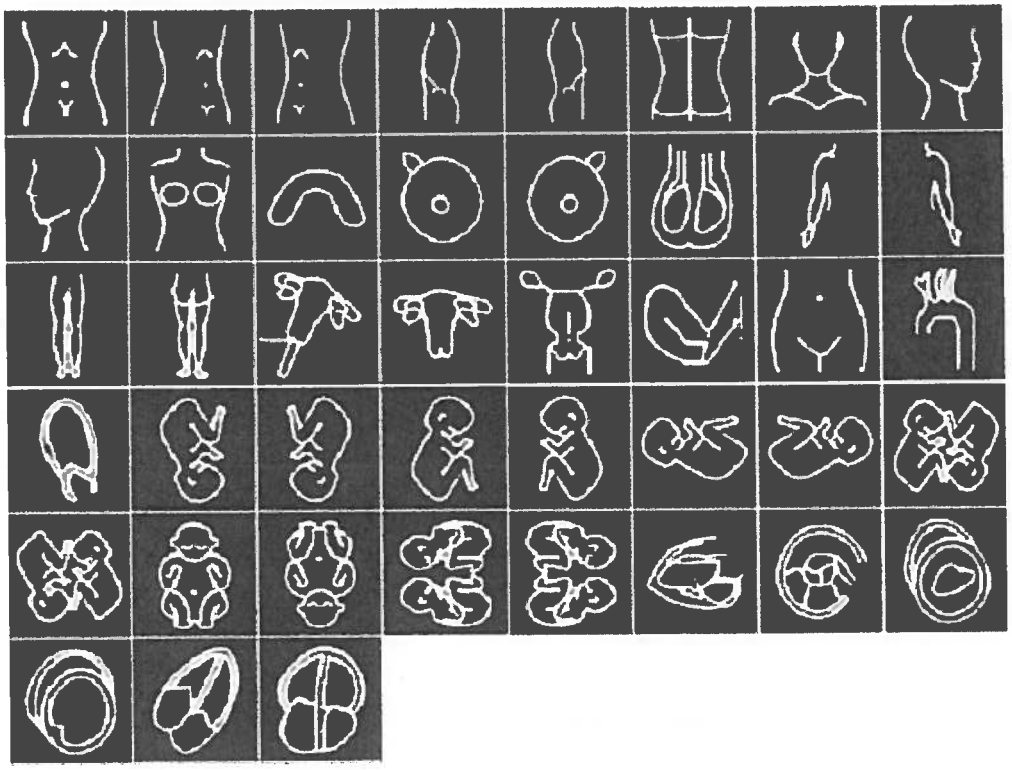

Fig.11-21

12 Maintenance

12.1 Main Unit Maintenance

- The operational environment of device should confirm to **"Requirement for Environment"**.
- If there is abnormal instance during scanning, please stop scanning and turn off the device at once, then wait for 2-3 minutes to restart it.
- Covering the radiating hole of the device is strictly prohibited, never over press the keyboard panel, or the device could be damaged.
- When cleaning the device , wipe the enclosure dust with a soft dry cloth, then use medical tampon soaked in a solution of 75% ethanol to wipe gently.
- Please put the device into the casing according to the indicating direction if it is not used for long time, and preserve it in storehouse properly.
- The product after delisting should be processed in accordance with local regulations.

Attention

The cleaning of main unit must be done only when the system is powered off.

As the display screen is easily damage, please use soft dry cloth to wipe it.

Please neither soak the device into any liquid nor clean the interior of the device.

Though the device enclosure does not bring chemistry reaction with most cleanser, but we do not recommend using any cleanser to avoid damaging the surface of the device.

12.2 Probe Maintenance

- The probe is expensive and easily damaging parts, strictly forbid impacting and falling.If diagnosis pauses, the probe should be putted into the probe case, and keep the device in frozen state.
- Choose medical ultrasound coupling gel in diagnosis. Degree of probe waterproof is IPX7, and examine if the probe enclosure has crackle regularly, avoid soaked liquid to damage the interior parts.
- Probe is the part which touches the patients directly, for avoiding pathogen infection, the properly disinfection disposal should be done after using the probe. Wipe it with a soft cloth socked in a solution of disinfection such as 75% ethanol to have a good effect. Probe discreteness can not waterproof, avoid by all means soaking the probe discreteness into the water.
- For prolong the lifespan of the probe and obtain the best capability, as following operation:
    1. Regular check the probe cable, socket, and sound window parts.
    2. Before connecting, disconnecting the probe and cleaning probe, please turn off the device first.
    3. Never fall off the probe on floor or flinty object, strictly forbid impacting the probe sound window, or the probe will be easily damaged.
    4. Clean the probe after using, put it into the probe case if not use.
    5. Never heat the probe.
    6. Never curve or draw the probe cable ,or the cable interior connection maybe break off.
    7. Never soak the probe in any liquid or cleanser.

12.3 About Battery

1. The equipment is configured rechargeable lithium battery.
2. The new battery will bring the best effect after two or three periods of full recharging and discharging.
3. The battery can recharge and discharge hundreds times, but there is still wastage. When the using time shorten evidently, please change the battery in time. The battery must be purchased from the manufacturer. Battery replacement refer to **"2.3 Installing and Removing Battery"**.
4. Must use the appointed charger by our company (AC adapter) to recharge. Do not connect the battery to charger(AC adapter) without recharging. The time of connecting the recharge do not exceed 10 hours, or the lifespan of the battery may be shortened. If the full charging battery does not use for long time, it will discharge slowly.
5. The extreme temperature environment will affect the battery recharging effect. Forbid recharging to the battery in the condition with fire existing! Never use or reserve the battery near the heat source! If the battery leaks or giving off peculiar smell, please move away from fire source at once.
6. Please do not continue to use damage battery and charger.
7. Forbid using lead or other metal object to shorten circuit the positive and cathode, forbid transporting or reserving with metal object together.
8. Forbid striking, pitching the battery or make the battery suffering machine shaking.
9. Forbid jointing the battery end directly.
10. Forbid disassembling the battery with any modes.
11. Forbid using with once battery (as dry battery) or different capability, model, variety batteries combination.
12. If there are peculiar smell, fever, distortion, changing colors for batteries or appear any other abnormal phenomenon, please stop using. If the battery is using or recharging, the operation must be stopped at once.

13 Ultrasound Output

When the operations hereinafter have been made, the ultrasound output level will be changed.

- Change the display mode, the detailed information please refer to **3.3.1 Image Mode Control.**
- Change focus number and position, the detailed information please refer to **3.3.6 Focus Adjustment.**
- Change the transmitting frequency of the probe, the detailed information please refer to **3.3.8 Freq. Change and THI Adjustment.**

Appendix I

Guidance and manufacturer's declaration – electromagnetic emissions-

for all EQUIPMENT and SYSTEMS

<table>
<tr><th colspan="3">Guidance and manufacturer's declaration – electromagnetic emission</th></tr>
<tr><td colspan="3">The CMS600P2 is intended for use in the electromagnetic environment specified below. The customer of the user of the CMS600P2 should assure that it is used in such and environment.</td></tr>
<tr><th>Emission test</th><th>Compliance</th><th>Electromagnetic environment – guidance</th></tr>
<tr><td>RF emissions
CISPR 11</td><td>Group 1</td><td>The CMS600P2 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.</td></tr>
<tr><td>RF emission
CISPR 11</td><td>Class B</td><td rowspan="3">The CMS600P2 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low voltage power supply network that supplies buildings used for domestic purposes.</td></tr>
<tr><td>Harmonic emissions
IEC 61000-3-2</td><td>Class A</td></tr>
<tr><td>Voltage fluctuations/ flicker emissions
IEC 61000-3-3</td><td>Complies</td></tr>
</table>

Guidance and manufacturer's declaration – electromagnetic immunity –

for all EQUIPMENT and SYSTEMS

Guidance and manufacturer's declaration – electromagnetic immunity			
The CMS600P2 is intended for use in the electromagnetic environment specified below. The customer or the user of CMS600P2 should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines	±2kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 sec	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3A/m	3A/m	Mains power quality should be that of a typical commercial or hospital environment.
NOTE U_T is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacture's declaration – electromagnetic immunity –

for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING

Guidance and manufacture's declaration – electromagnetic immunity			
The CMS600P2 is intended for use in the electromagnetic environment specified below. The customer or the user of CMS600P2 should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Conducted RF IEC 61000-4-6	3Vrms 150 kHz to 80 MHz outside ISM bands	3 V_{rms} (for main power line) 1V_{rms} (for probe)	Portable and mobile RF communications equipment should be used no closer to any part of the CMS600P2, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = \left[\frac{3.5}{V_1}\right]\sqrt{P}$ $d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$ 80 MHz to 800 MHz $d = \left[\frac{7}{E_1}\right]\sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land			

mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the CMS600P2 is used exceeds the applicable RF compliance level above, the CMS600P2 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the CMS600P2.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m .

Recommended separation distances between portable and mobile RF communications equipment and the EQUIPMENT or SYSTEM – for EQUIPMENT or SYSTEM that are not LIFE-SUPPORTING

<table>
<tr><td></td><td colspan="4">Recommended separation distances between
portable and mobile RF communications equipment and the CMS600P2</td></tr>
<tr><td></td><td colspan="4">The CMS600P2 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the CMS600P2 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the CMS600P2 as recommended below, according to the maximum output power of the communications equipment.</td></tr>
<tr><td rowspan="3">Rated maximum output power of transmitter
(W)</td><td colspan="4">Separation distance according to frequency of transmitter
(m)</td></tr>
<tr><td colspan="2">150 kHz to 80 MHz
$d = \left[\frac{3.5}{V_1}\right]\sqrt{P}$</td><td>80 MHz to 800 MHz
$d = \left[\frac{3.5}{E_1}\right]\sqrt{P}$</td><td>800 MHz to 2.5 GHz
$d = \left[\frac{7}{E_1}\right]\sqrt{P}$</td></tr>
<tr><td>Main power line</td><td>probe</td><td></td><td></td></tr>
<tr><td>0.01</td><td>0.12</td><td>0.35</td><td>0.12</td><td>0.23</td></tr>
<tr><td>0.1</td><td>0.37</td><td>1.11</td><td>0.37</td><td>0.74</td></tr>
<tr><td>1</td><td>1.2</td><td>3.50</td><td>1.17</td><td>2.33</td></tr>
<tr><td>10</td><td>3.7</td><td>11.07</td><td>3.69</td><td>7.38</td></tr>
<tr><td>100</td><td>12</td><td>35.00</td><td>11.67</td><td>23.33</td></tr>
<tr><td colspan="5">For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</td></tr>
</table>

Appendix II

Test Mode: B-Mode Transducer Type:C3.5-80R60-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.68	0.14	-	-	-	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.21					
	P		(mW)		46.0	-		-	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					-	
	Z at max. $I_{pi,\alpha}$		(cm)	5.02					
	$d_{eq}(Z_b)$		(cm)					-	
	f_{awf}		(MHz)	3.18	3.18	-	-	-	-
	Dim of A_{aprt}	X	(cm)		5.07	-	-	-	-
		Y	(cm)		1.45	-	-	-	-
Other Information	t_d		(μsec)	0.646					
	prr		(Hz)	1370					
	p_r at max. I_{pi}		(MPa)	2.09					
	d_{eq} at max. I_{pi}		(cm)					-	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	113.2					
	Focal Length	FL_x	(cm)	-	-	-	-	-	-
		FL_y	(cm)	-	-	-	-	-	-
Operating Control Conditions	**Focus Number**			1	1	-	-	-	-

Test Mode: BM-Mode Transducer Type:C3.5-80R60-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.67	0.16	-	0.018	0.073	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.20					
	P		(mW)		52.0	-		3.4	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				1.13		
	Z_s		(cm)				4.54		
	Z_{bp}		(cm)				4.54		
	Z_b		(cm)					5.02	
	Z at max. $I_{pi,\alpha}$		(cm)	5.02					
	d_{eq} (Z_b)		(cm)					0.35	
	f_{awf}		(MHz)	3.18	3.18	-	3.18	3.18	-
	Dim of A_{aprt}	X	(cm)		5.04	-	5.06	5.06	-
		Y	(cm)		1.43	-	1.42	1.42	-
Other Information	t_d		(μsec)	0.66					
	prr		(Hz)	167					
	p_r at max. I_{pi}		(MPa)	2.08					
	d_{eq} at max. I_{pi}		(cm)					0.35	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	108.2					
	Focal Length	FL_x	(cm)	-	-	-	0.32	-	-
		FL_y	(cm)	-	-	-	0.32	-	-
Operating Control Conditions	**Focus Number**			1	1	-	1	1	-

Test Mode: M-Mode Transducer Type:C3.5-80R60-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.68	0.15	-	0.016	0.068	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.20					
	P		(mW)		48.0	-		3.2	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				1.06		
	Z_s		(cm)				4.52		
	Z_{bp}		(cm)				4.52		
	Z_b		(cm)					5.02	
	Z at max. $I_{pi,\alpha}$		(cm)	5.02					
	$d_{eq}(Z_b)$		(cm)					0.35	
	f_{awf}		(MHz)	3.18	3.18	-	3.18	3.18	-
	Dim of A_{aprt}	X	(cm)		5.04	-	5.05	5.05	-
		Y	(cm)		1.39	-	1.41	1.41	-
Other Information	t_d		(μsec)	0.641					
	prr		(Hz)	1370					
	p_r at max. I_{pi}		(MPa)	2.09					
	d_{eq} at max. I_{pi}		(cm)					0.35	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	111.9					
	Focal Length	FL_x	(cm)	-	-	-	0.34	-	-
		FL_y	(cm)	-	-	-	0.31	-	-
Operating Control Conditions	**Focus Number**			4	4	-	4	4	-

Test Mode: B-Mode Transducer Type:L7.5-80L40-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.51	0.15	-	-	-	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.26					
	P		(mW)		16.0	-		-	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					-	
	Z at max. $I_{pi,\alpha}$		(cm)	2.92					
	d_{eq} (Z_b)		(cm)					-	
	f_{awf}		(MHz)	6.15	6.15	-	-	-	-
	Dim of A_{aprt}	X	(cm)		3.23	-	-	-	-
		Y	(cm)		0.71	-	-	-	-
Other Information	t_d		(μsec)	0.385					
	prr		(Hz)	1370					
	p_r at max. I_{pi}		(MPa)	2.34					
	d_{eq} at max. I_{pi}		(cm)					-	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	56.75					
	Focal Length	FL_x	(cm)	-	-	-	-	-	-
		FL_y	(cm)	-	-	-	-	-	-
Operating Control Conditions	**Focus Number**			4	4	-	-	-	-

Test Mode: BM-Mode Transducer Type:L7.5-80L40-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.50	0.14	0.018	-	0.014	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.24					
	P		(mW)		16.0	0.62		0.62	-
	Min.of $[P_a(z_s), I_{ta,a}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					2.90	
	Z at max. $I_{pi,a}$		(cm)	2.92					
	d_{eq} (Z_b)		(cm)					0.28	
	f_{awf}		(MHz)	6.15	6.15	6.15	-	6.15	-
	Dim of A_{aprt}	X	(cm)		3.21	3.18	-	3.18	-
		Y	(cm)		0.71	0.70	-	0.70	-
Other Information	t_d		(μsec)	0.375					
	prr		(Hz)	1370					
	p_r at max. I_{pi}		(MPa)	2.30					
	d_{eq} at max. I_{pi}		(cm)					0.27	
	$I_{pa,a}$ at max. MI		(W/cm^2)	50.79					
	Focal Length	FL_x	(cm)	-	-	0.14	-	-	-
		FL_y	(cm)	-	-	0.17	-	-	-
Operating Control Conditions	**Focus Number**			4	4	4	-	4	-

Test Mode: M-Mode Transducer Type:L7.5-80L40-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.52	0.14	0.019	-	0.016	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.26					
	P		(mW)		16.0	0.68		0.68	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					2.92	
	Z at max. $I_{pi,\alpha}$		(cm)	2.92					
	$d_{eq}(Z_b)$		(cm)					0.28	
	f_{awf}		(MHz)	5.99	5.99	5.99	-	5.99	-
	Dim of A_{aprt}	X	(cm)		3.19	3.20	-	3.20	-
		Y	(cm)		0.68	0.69	-	0.69	-
Other Information	t_d		(μsec)	0.395					
	prr		(Hz)	1370					
	p_r at max. I_{pi}		(MPa)	2.31					
	d_{eq} at max. I_{pi}		(cm)					0.28	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	61.83					
	Focal Length	FL_x	(cm)	-	-	0.12	-	-	-
		FL_y	(cm)	-	-	0.40	-	-	-
Operating Control Conditions	**Focus Number**			4	4	4	-	4	-

Test Mode: B-Mode Transducer Type:C3.5-80R20-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.54	0.070	-	-	-	-
Associated Acoustic Parameters	P_{ra}		(MPa)	0.97					
	P		(mW)		14.0	-		-	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					-	
	Z at max. $I_{pi,\alpha}$		(cm)	3.69					
	d_{eq} (Z_b)		(cm)					-	
	f_{awf}		(MHz)	3.23	3.23	-	-	-	-
	Dim of A_{aprt}	X	(cm)		3.08	-	-	-	-
		Y	(cm)		0.91	-	-	-	-
Other Information	t_d		(μsec)	0.557					
	prr		(Hz)	1370					
	p_r at max. I_{pi}		(MPa)	1.46					
	d_{eq} at max. I_{pi}		(cm)					-	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	69.58					
	Focal Length	FL_x	(cm)	-	-	-	-	-	-
		FL_y	(cm)	-	-	-	-	-	-
Operating Control Conditions	**Focus Number**			1	1	-	-	-	-

Test Mode: BM-Mode Transducer Type:C3.5-80R20-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.54	0.080	0.018	-	0.035	-
Associated Acoustic Parameters	P_{ra}		(MPa)	0.98					
	P		(mW)		16.0	1.09		1.09	-
	Min.of $[P_a(z_s), I_{ta,a}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					3.16	
	Z at max. $I_{pi,a}$		(cm)	3.69					
	d_{eq} (Z_b)		(cm)					0.31	
	f_{awf}		(MHz)	3.23	3.23	3.23	-	3.23	-
	Dim of A_{aprt}	X	(cm)		3.06	3.09	-	3.09	-
		Y	(cm)		0.87	0.89	-	0.89	-
Other Information	t_d		(μsec)	0.557					
	prr		(Hz)	167					
	p_r at max. I_{pi}		(MPa)	1.47					
	d_{eq} at max. I_{pi}		(cm)					0.28	
	$I_{pa,a}$ at max. MI		(W/cm^2)	69.58					
	Focal Length	FL_x	(cm)	-	-	0.24	-	-	-
		FL_y	(cm)	-	-	0.31	-	-	-
Operating Control Conditions	**Focus Number**			1	1	1	-	1	-

Test Mode: M-Mode Transducer Type:C3.5-80R20-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.53	0.078	0.020	-	0.045	-
Associated Acoustic Parameters	P_{ra}		(MPa)	0.98					
	P		(mW)		16.0	1.32		1.32	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					3.18	
	Z at max. $I_{pi,\alpha}$		(cm)	3.69					
	d_{eq} (Z_b)		(cm)					0.29	
	f_{awf}		(MHz)	3.23	3.23	3.23	-	3.23	-
	Dim of A_{aprt}	X	(cm)		3.14	3.12	-	3.12	-
		Y	(cm)		0.88	0.90	-	0.90	-
Other Information	t_d		(μsec)	0.569					
	prr		(Hz)	68					
	p_r at max. I_{pi}		(MPa)	1.47					
	d_{eq} at max. I_{pi}		(cm)					0.30	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	67.55					
	Focal Length	FL_x	(cm)	-	-	0.33	-	-	-
		FL_y	(cm)	-	-	0.29	-	-	-
Operating Control Conditions	**Focus Number**			4	4	4	-	4	-

Test Mode: B-Mode Transducer Type:E6.5-80R13-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.54	0.045	-	-	-	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.21					
	P		(mW)		4.0	-		-	-
	Min.of $[P_a(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					-	
	Z at max. $I_{pi,\alpha}$		(cm)	2.03					
	d_{eq} (Z_b)		(cm)					-	
	f_{awf}		(MHz)	5.08	5.08	-	-	-	-
	Dim of A_{aprt}	X	(cm)		2.15	-	-	-	-
		Y	(cm)		0.87	-	-	-	-
Other Information	t_d		(μsec)	0.436					
	prr		(Hz)	1388					
	p_r at max. I_{pi}		(MPa)	1.73					
	d_{eq} at max. I_{pi}		(cm)					-	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	48.91					
	Focal Length	FL_x	(cm)	-	-	-	-	-	-
		FL_y	(cm)	-	-	-	-	-	-
Operating Control Conditions	**Focus Number**			4	4	-	-	-	-

Test Mode: BM-Mode Transducer Type:E6.5-80R13-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.53	0.070	0.004	-	0.014	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.21					
	P		(mW)		6.0	0.18		0.18	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					2.02	
	Z at max. $I_{pi,\alpha}$		(cm)	2.03					
	d_{eq} (Z_b)		(cm)					0.14	
	f_{awf}		(MHz)	5.10	5.09	5.10	-	5.10	-
	Dim of A_{aprt}	X	(cm)		2.08	2.09	-	2.09	-
		Y	(cm)		0.89	0.88	-	0.88	-
Other Information	t_d		(μsec)	0.427					
	prr		(Hz)	68					
	p_r at max. I_{pi}		(MPa)	1.73					
	d_{eq} at max. I_{pi}		(cm)					0.15	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	49.52					
	Focal Length	FL_x	(cm)	-	-	0.46	-	-	-
		FL_y	(cm)	-	-	0.60	-	-	-
Operating Control Conditions	**Focus Number**			4	4	4	-	4	-

Test Mode: M-Mode Transducer Type:E6.5-80R13-A16A

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						$A_{aprt} \leq 1cm^2$	$A_{aprt} > 1cm^2$		
Maximum Index Value				0.53	0.069	0.005	-	0.015	-
Associated Acoustic Parameters	P_{ra}		(MPa)	1.21					
	P		(mW)		6.0	0.20		0.20	-
	Min.of $[P_\alpha(z_s), I_{ta,\alpha}z_s)]$		(mW)				-		
	Z_s		(cm)				-		
	Z_{bp}		(cm)				-		
	Z_b		(cm)					2.02	
	Z at max. $I_{pi,\alpha}$		(cm)	2.03					
	d_{eq} (Z_b)		(cm)					0.15	
	f_{awf}		(MHz)	5.15	5.15	5.15	-	5.15	-
	Dim of A_{aprt}	X	(cm)		2.11	2.09	-	2.09	-
		Y	(cm)		0.91	0.89	-	0.89	-
Other Information	t_d		(μsec)	0.426					
	prr		(Hz)	68					
	p_r at max. I_{pi}		(MPa)	1.73					
	d_{eq} at max. I_{pi}		(cm)					0.15	
	$I_{pa,\alpha}$ at max. MI		(W/cm^2)	50.31					
	Focal Length	FL_x	(cm)	-	-	0.50	-	-	-
		FL_y	(cm)	-	-	0.60	-	-	-
Operating Control Conditions	**Focus Number**			4	4	4	-	4	-

Appendix Ⅲ

Test Mode: B-Mode Transducer Type:C3.5-80R60-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	46.0	/	Test frequency: 3.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	2.09	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	6.25	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	21.52	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:1	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	50.2	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):3.47 (⊥):3.49	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	Not applicable	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	20	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(Ⅱ)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	7.35	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	3.18	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: BM-Mode Transducer Type:C3.5-80R60-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	52.0	/	Test frequency: 3.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	2.08	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	7.07	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	59.06	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:1	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	50.2	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):3.27 (⊥):3.98	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.167	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	20	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	7.35	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	3.18	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100.4%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100.4%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: M-Mode Transducer Type:C3.5-80R60-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	48.0	/	Test frequency: 3.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	2.09	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	6.53	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	91.24	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	50.2	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):3.44 (⊥):3.07	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.068	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	7.35	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	3.18	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: B-Mode Transducer Type:L7.5-80L40-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	16.0	/	Test frequency: 7.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	2.34	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	6.92	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	11.47	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	29.2	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):2.01 (⊥):3.91	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	Not applicable	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	2.31	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	6.15	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	99.1%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	99.1%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: BM-Mode Transducer Type:L7.5-80L40-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	16.0	/	Test frequency: 7.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	2.30	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	6.92	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	30.68	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	29.2	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):1.37 (⊥):1.68	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.068	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	2.31	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	6.15	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100.8%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100.8%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: M-Mode Transducer Type:L7.5-80L40-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	16.0	/	Test frequency: 7.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	2.31	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	6.92	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	33.12	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	29.2	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):1.13 (⊥):4.05	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.068	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	2.31	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	5.99	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100.4%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100.4%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: B-Mode Transducer Type:C3.5-80R20-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	14.0	/	Test frequency: 3.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	1.46	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	4.98	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	6.09	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:1	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	36.9	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):3.10 (⊥):3.09	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	Not applicable	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	21	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	2.81	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	3.23	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: BM-Mode Transducer Type:C3.5-80R20-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	16.0	/	Test frequency: 3.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	1.47	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	5.69	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	20.88	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:1	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	36.9	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):2.41 (⊥):3.10	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.167	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	21	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	2.81	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	3.23	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	99.3%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	99.3%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: M-Mode Transducer Type:C3.5-80R20-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	16.0	/	Test frequency: 3.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	1.47	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	5.69	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	30.66	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	36.9	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):3.34 (⊥):2.94	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.068	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	2.81	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	3.23	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	99.3%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	99.3%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: B-Mode Transducer Type:E6.5-80R13-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	4.0	/	Test frequency: 6.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	1.73	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	2.07	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	3.56	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	20.3	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):5.50 (⊥):6.17	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	Not applicable	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions paralle(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	1.93	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	5.08	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: BM-Mode Transducer Type:E6.5-80R13-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	6.0	/	Test frequency: 6.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	1.73	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	3.10	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	15.18	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	20.3	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):4.61 (⊥):6.03	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.068	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	1.93	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	5.10	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	

Test Mode: M-Mode Transducer Type:E6.5-80R13-A16A

No	Test Item	Clauses	Requirements	Results	Verdict	Remarks
1	Maximum power (mW)	IEC 61157:1992 4.2.2a)	Maximum temporal-average power output.	6.0	/	Test frequency: 6.5MHz
2	P- (MPa)	IEC 61157:1992 4.2.2b)	Peak-negative acoustic pressure.	1.73	/	
3	Iob (mW/cm^2)	IEC 61157:1992 4.2.2c)	Output beam intensity.	3.10	/	
4	I_{spta} (mW/cm^2)	IEC 61157:1992 4.2.2d)	Spatial-peak temporal average intensity.	15.13	/	
5	System settings	IEC 61157:1992 4.2.2e)	Ultrasound instrument console settings.	Focus number:4	/	
6	Lp (mm)	IEC 61157:1992 4.2.2f)	Distance from the transducer output face to the point of maximum pulse-pressure-squared integral.	20.3	/	
7	W_{pb6} (mm)	IEC 61157:1992 4.2.2g)	-6dB pulse-width.	(//):5.09 (⊥):6.09	/	
8	prr (kHz)	IEC 61157:1992 4.2.2h)	Pulse repetition rate.	0.068	/	
9	srr (Hz)	IEC 61157:1992 4.2.2h)	Scan repetition rate.	9	/	
10	Output beam dimensions (cm^2)	IEC 61157:1992 4.2.2i)	Dimensions parallel(∥)and perpendicular(⊥) to the reference direction shall be specified. For scanning modes, these shall refer to the central scan line only. In many cases, especially contact systems, these dimensions may be taken as the geometrical dimensions of the ultrasonic transducer or ultrasonic transducer element group.	1.93	/	
11	f_{awf} (MHz)	IEC 61157:1992 4.2.2j)	Arithmetic-mean acoustic-working frequency.	5.15	/	
12	APF	IEC 61157:1992 4.2.2k)	Acoustic power-up fraction.	100%	/	
13	Power-up mode	IEC 61157:1992 4.2.2l)	In system in which the user defines the power-up mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
14	AIF	IEC 61157:1992 4.2.2m)	Acoustic initialization fraction.	100%	/	
15	Initialization mode	IEC 61157:1992 4.2.2n)	If appropriate in systems in which the user defined the initialization mode, this shall be stated as either "user defined" or "not applicable"(n/a).	B-Mode	/	
16	Acoustic output freeze	IEC 61157:1992 4.2.2o)	If the system has acoustic output freeze then this shall be stated as "yes", otherwise it shall be stated as "no".	Yes	/	