Preface

Declamation

Manufacturer is the owner of this manual, it is the reference material for purpose of the operation and maintenance of electronic products, any other party may not disclose the contents of this manual without written permission from manufacturer.

All contents of this manual are regarded as correct; manufacturer is not responsible for any accidental or consequential damage because of wrongful installation or misoperation. Manufacturer is not providing or transferring any privilege or copyrights. For any consequences by infringing copyright law or violating the third party rights, manufacturer is not held responsible.

Parts of the contents in this manual may be changed without notice.

Responsibility of the manufacture

Only under the following conditions, that manufacturer is considered responsible for the apparatus safety, reliability and performance.

- The installating, expanding, resetting, updating or mantaining are all

provided by manufacturer personnel's or manufacturer authorized individuals.

- Any accessory electrical device connected is confirmed to the local standard.
- The apparatus is operated under the condition and requirements strictly as provided in this manual.

User's notice

- Your choice of ultrasound diagnostic apparatus is appreciated. In order to make sure the operation safety and apparatus performance stability, it is highly suggested you understand the apparatus functionalities, operation, and maintenance knowledge before operation of the apparatus.
- Be especially aware of those "Warning", "Caution", "Notice",etc. reminders in this manual.
- Manufacturer is not responsible for any damage or injury caused by misoperation or inappropriate maintanance of the apparatus.
- The following notations are used in the manual, indicating the important parts should cause special attention.

Warning!
"Warning" indicates that severe personal injury, death or property damage might be caused if the mentioned condition is not met.

Caution!
"Caution" indicates that mild personal injury or property damage.

Notice!
“Notice” indicates the user’s installation, operation or maintance information, this information is important but no danger is caused.

Safety Signs

Patient contact is prohibited.(Class B)

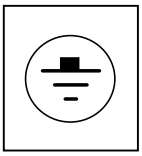
I stands for **ON**, **O** stands for **OFF** on the power switch button.

This sign indicates being careful of the safety, and making sure to understand the functionality in manual before the operation

This sign indicates the equal voltage circuit in the device connections and installtion of electric system for the apparatus.

The following signs are used inside the apparatus:

Dangerous voltage (exceed 1000 V AC or 1500 V DC).



The connecting point between the apparatus safety ground and the apparatus shell, i.e. the protected connecting plug-in confirming to the regulation for class I safety devices. Safety.

General safety information

The following safety precautions have to be observed,giving the consideration for the patient safety and device reliability from in the design and manufacture of digital ultrasound diagnostic apparatus.

1. The apparatus has to be operated under qualified operator or his/her instructing.
2. Digital ulstrasound diagnosic apparatus belongs to class I type B device, hence the patients do not need to contact or operate the apparatus any time.
3. Do not change the parameters of the apparatus. If indeed necessary, request the service from Manufacturer or its authorized agent.
4. The apparatus has been adjusted to its best status, do not adjust any preset controls or switches except those indicated in this manual.
5. If malfunction occurred, please shutdown the apparatus immediately and contact Manufacturer or its authorized agent.
6. If it is necessary to connect this apparatus and other electronic devices from other manufactures, before doing so, please contact Manufacturer or its authorized agent.
7. Avoiding the following operating condition or storage environment
   - Exposed to the contaminated aire.
   - Exposed to vapour.
   - Exposed to mist or sprinkle.
   - Exposed to dust.
   - Exposed to high density oil gas.
   - Exposed to salty fog.
   - Exposed to explosive air or dust.
   - Explosed to shock or vibration.

- Slant angle over 10 degree.
- AC power voltage far below the required value.
- AC power voltage vehemently fluctuated.
- Exposed to strong sunburn.
- Bad ventilation.

Warning!
Ultrasound diagnostic apparatus is not a device or material for therapy.

Warning!
Do not use as a way to discern fetus gender, please obey the local government regulation regarding this.

Warning!
If the hospital or organization responsible for the usage can not meet the requirement to operate the apparatus properly,failure or misfunction will occur, and maybe dangerous.

Warranty

- Warrants to all users: From the delivering date in the purchase to the 18 months afterwards, the apparatus guarantee in materials and technology. Within this period, would maintain the apparatus and exchange the misfunctional parts for free.

- This warranty applies only when apparatus is faulty while operated as this manual instructed. Be sure to use it within the manual suggested situation.

- This warranty doesn't apply to any situation in accidence, misuse, fall, or attempting to modify or change any part or component of the apparatus so to cause damage.

- The apparatus surface damage is not within the repairing or changing range. Neither are the battery change, training material supplies etc.

- Manufacturer is not responsible for any damage caused by other devices or unauthorized connecting to other devices.

- Manufacturer is not responsible for any lose,damage,or injury caused by delayed request of supporting service.

- When the apparatus is faulty within the warranty period, please advice Manufacturer with the apparatus type, identification, date of purchase and the nature of the problem.

Table of Contents

1 General

1.1 Introduction

This manual introduces the full digital ultrasound diagnostic instrument, which is a high-tech. full-digital, B/W ultrasonic diagnostic equipment. The digital ultrasound diagnostic instrument is based on PC platform and embedded operating system, so enormously enhanced the safety, compatibility, and processing speed. With most keys on board, the pop-up menu and keyboard design is convenient for usage.

This manual is comprised of individual chapters. Some of contents between the chapters are redundant. Each chapter is written with consideration of convenience, consistence for the users reading.

This manual instruct to operate the digital ultrasound diagnostic instrument. The medical references can be consulted for the clinic meaning of each function, so as for the basic ultrasound training for the benefit of better understanding to the examing result.

If there is any problem in the operating, please contact the custom service of Manufacturer

1.2 How to use

The operation is not complicated at all, when the equipment is out of factory, it is preset, ensure the best image quality for most of the patients. The users are not required to adjust so often, if user does hope to change the settings, just following the instructions.

Notice!
This manual is only for the purpose of operating digital ultrasound diagnostic instrument, it is not a training book for ultrasonic principle, anatomy, image scanning and their application, etc., although being familiar with above mentioned techniques would help to operate this or other similar equipment.

1.3 User's Guide

1.3.1 The Clinic Application Introduction

Anatomic part	Mode	Probes
Abdomen Section (adult and infant)	B、 M	UT-C-3.5R60
Abdomen Section(OB and GYN)	B、 M	UT-C-3.5R60
Chest Section(adult and infant cardiac)	B、 M	UT-C-3.5R20
Surficials(small parts)	B、 M	UT-L-7.5
New infant head	B、 M	UT-L-7.5
Surficials(out vascular)	B、 M	UT-L-7.5

1.3.2 Taboo

Ultrasound examination is the ultrasound application in the human body. The ultrasound frequency varies between 2.0M to 10.0M, the ultrasound has no ionizing radiation in the nature.

The output power of the instrument conforms to mille- walt requirement, and varies along with the probe frequency, size and focus. The ultrasound can diminish when it penetrating through the human tissue.

There is a long history with ultrasound examination, the research about ultrasound impacts to human body has been going on for years, until now,

there is no evidence showing the negative one when with dose lower than the FDA suggested.

Because that exposures to high power of ultrasound and repeatedly use of it can cause the human tissue heated even damaged, some people think even in the low dose of exposures, the accumulated effect might have negative impact on human body. So before the above theory is backed up by relevant experiment, operator should avoid unnecessary exposures.

Currently, it is a common sense that restricted ultrasound power to the fetus examination is prudent in the medical and scientific field.

1.4 Explanations

1.4.1 Apparatus Summary

The apparatus is a high resolution full digital B/W ultrasound diagnostic instrument, supporting various linear and convex (micro-convex) probes, has a large range applications. With the advanced digital imaging technology of , working frequency ranges from 2.0M to 10.0M, these probes apply in abdominal, liver, kidney, obstetrics, gynecology, small parts, vascular, extremity, pediatrics, cardiology, and urology, etc. vaious specialties.

1.4.2 Standard Package

Main frame（including a 14 inch B/W monitor）

UT-C-3.5R60 convex array probe.

Power line

Fuse (2)

User’s Manual

Coupling Gel (0.25L)

1.4.3 Optional

UT-C-3.5R20 Micro-convex Probe

UT-L-7.5 Linear Probe

UT-C-6.5R13 Endocavity Probe

3D ultrasound image workstation software

Remote diagnosis, Remote maintenance system

Thermal video printer, inkjet printer, laser printer

USB disk、CF card、SD card

Tape video recorder, Tape recording system

Pedal switch

DC power.

1.5 Suggestion for Clinic Application

- The transducers emits ultrasound which penetrating human tissue to acquire the diagnostic image.
- To protect patient, avoid any unnecessary exposures when using the ultrasound diagnostic instrument.
- It is not suggested that the ultrasound instrument is used as ：
  - PUBS
  - IVF
  - Cancer diagnosis.
- In various applications, the ultrasound penetrating primarily provides two dimensional image about major human organs and other structure:
  - Surficial vascular examination
  - The ultrasound penetrates the human skin to acquires the surficial

vascular image and abnormal situation.

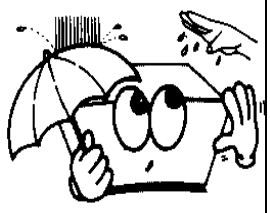
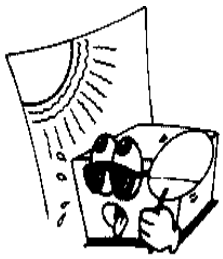
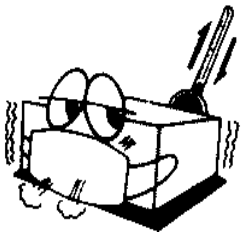
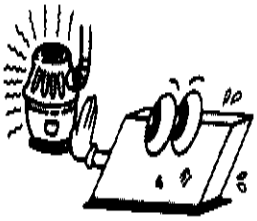
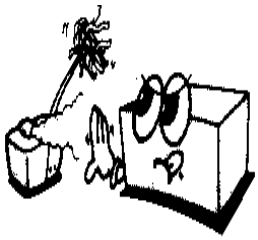
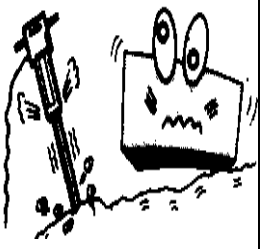
- Cardiac examination
- Abdomen Examination
- Pelvis examination
- Head Examination

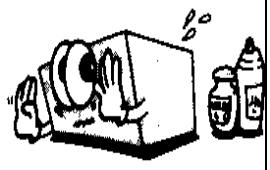
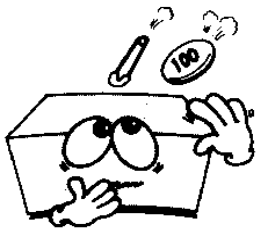
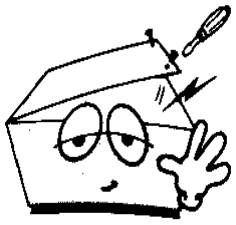
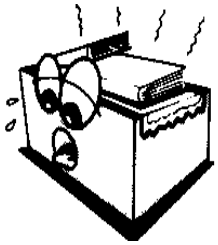
1.6 The Apparatus

2 Safety Precaution

2.1 Environment and Considerations

Avoid the following conditions when operating and storing：

	Exposed to steam No touch with wet hand		Sunburn
	Temperate changes dramatically. (normal for operating is 10°C-40°C）		Avoid heating devices
	Humidity too high Bad Ventilation （normal humidity35%-85%）		Vehement shock or vibration

	Close to chemical materials or explosive gas		Dust, especially metal fall in.
	Do not dismantlers open without authorization		Do not close the fan at the side or back.
	Before properly connecting each components, do not plug in the power.		When plug out the power supply, do not hold the power cable

2.2 Health Safety Precaution

Diagnostic ultrasound has been in use since the late 1950s. Given its known benefits and recognized efficacy for medical diagnosis, including use during human pregnancy, the American Institute of Ultrasound in Medicine herein addresses the clinical safety of such use :

There are no confirmed biological effects on patients or instrument operators caused by exposures from present diagnostic ultrasound instruments. Although the possibility exists that such biological effects may be identified

in the future, current data indicate that the benefits to patients of the prudent use of diagnostic ultrasound outweigh the risks, if any, that may be present.

In one word，there is no any prove showing diagnostic ultrasound has negative effect on human being.

Warning!
In clinic, low dose ultrasound usage is safe. The safety in high power and longtime exposures is uncertain. So, prudent use is necessary to keep it in low dose and short time. According to ALARA（As Low As Reasonably Achievable） principle，the transmitting power should be “reasonable and lowest”.

2.3 Electrical Safety Precautions

The equipment implement the requirements of GB9706.1-2007 “Medical Electric Equipment Part One: General Safety Requirement”, GB10152-1997 “Ultrasonic B Diagnostic Equipment” and GB9706.9-1997 “Medical Electric Equipment: Special Safety Requirement of Medical Ultrasonic Diagnosis and Ward Equipment”.

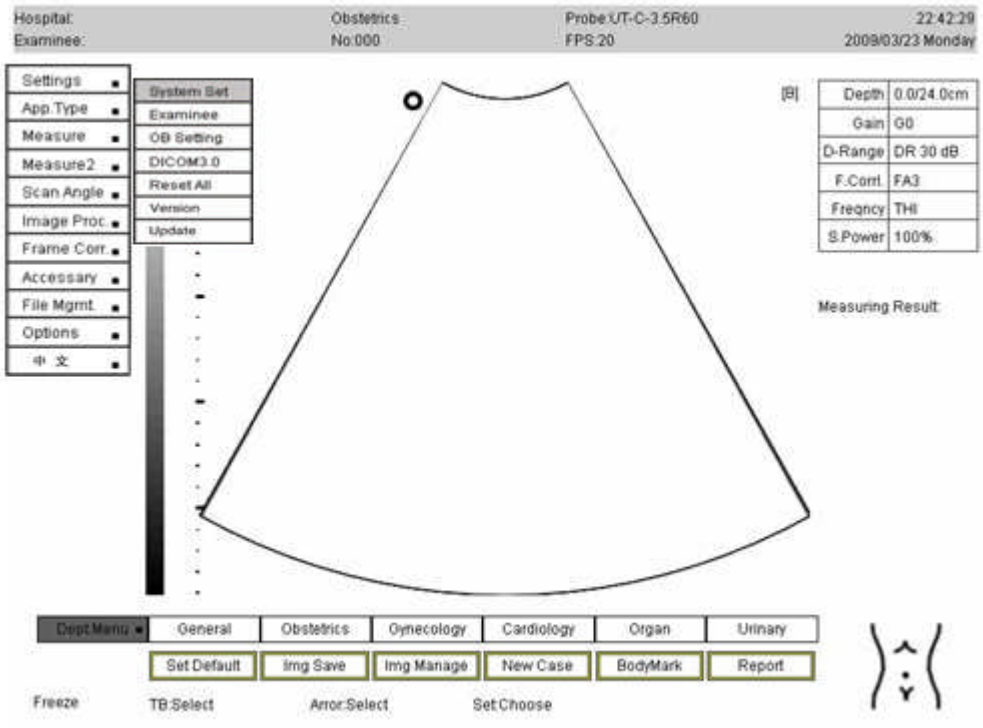
2.4 Environment Protecting Precaution

Environment requirement should accord with the regulation of GB/T14710-1993’s section two Climatic test group Ⅱ and mechanical environment test group Ⅱ.

3 Functionality

3.1 Screen Setting

The following is the basic interface of scan, image setting, measurement and calculation, and it has the following sections:



Main menu：Control and view all item on screen

setting：Hospital name, patient info. Probe type, date and time，etc.

image：Scan image and all the operating result.

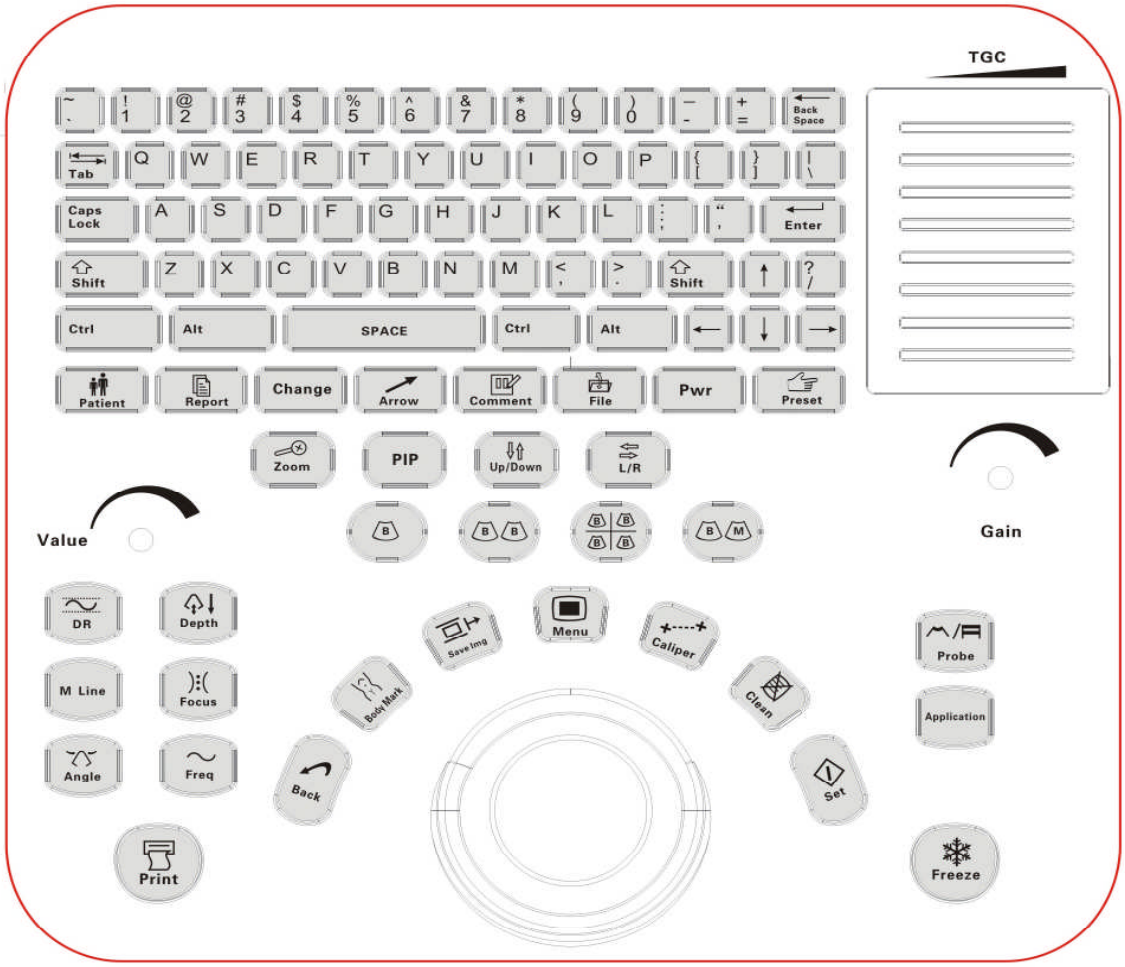
functions：The first row is all kinds of measurement the second row are system administration.

Status：All the parameters are shown on the top right corner.

3.2 Keyboard

The keyboard of this equipment consist of six parts to make users to operate it more conveniently. They are：Image model control, report management control, scan control, track ball control function, alphanumeric key and gain control.

Keyboard Layout as the following picture:



3.2.1 Image Mode Control

Mode	Function	Description
B	B Mode	Activate B mode
B/B	Double B mode	Activate double B mode，meanwhile used to choose left or right B mode image
B/M	B/M mode	Activate B/M and M mode
4B	4B mode	Activate 4B mode
Freeze	Freeze or defreeze images	1. Freeze/defreeze current image 2. Activate cine-memory function when the image is frozen

3.2.2 Report Management Control

Mode	Function	Description
Report	Create reports	Display the measurement result in the report according to the measurement parameter
Image storage	Save image	Conserve the current image into image management system
Image management	Image management	Manage and edit images through activating the image management function
Print	Print image report	Print relevant image or diagnosis report

3.2.3 Scanning Control

Mode	Function	Description
Depth	Scanning depth	Adjust the scanning depth
Magnification	Image magnification	Magnify image steplessly
Zoom magnification	Picture in picture magnification	Activate real-time PIP magnification function
Focus	Choose focus position	Choose different focus depths and focus positions group
DR	Dynamic range choosing	Choose different dynamic ranges
Frequency conversion	Change frequency	Change frequency of multi-frequency probes according to the change of diagnosis part and choose the function of harmonic imaging
Acoustical power	Adjust acoustical power	Adjust transmitting sound power（optional according to different machine type）
Probe choosing	Choose probes	Choose different types of probes according to different clinical application
M line	Move M puncture line	In the B/M mode, move M puncture line to left or right
Up/down reversing	reverse image to up/down	Reverse image to up/down in different situation
Left/right reversing	reverse image to left/right	Reverse image to left/right in different situation
Angle	Angle adjustment	Adjust different angle ranges

Note: The usage method of keys like “depth”, “focus”, “frequency conversion”, “DR”, “M

puncture line" etc. is to press relevant keys and turn around the numerical coding knob in the middle, then the relevant function with change with it.

3.2.4 Other Functions

Mode	Function	Description
Menu	Active menu	Active pop-up main menu in the top left corner, users then use track ball or direction keys to choose relevant function.
Switch	Switch functions	Change current function to another function
Set	Confirm	Set number, position, program and function according to the moving of track ball
New	Make new case history files	Make new databank of case history files
Measurement	Basic measurement	Basic measurement of current diagnosis part, such as distance, circumference, area and volume
Diagnosis instrument	Active measurement menu	Choose to activate certain part measurement menu, and choose relevant diagnosis instrument to carry all kinds of complex measurement and calculation
Indication	indicating arrow	Write indicating arrow on the image; pull out general specialized character repertoire in the condition of characters in-putting
Annotation	In-put annotation	Input characters or mark diagnosis result on the image
Body mark	Display body mark	Display different body mark according to the different images
Clean	Clean images	Clean all characters and measurement result on the image
End	Exiting current step	Exiting relevant step according to current situation(such as exit out of function menu)

3.2.5 Alphanumeric keys and Gain Control

Alphanumeric keys have the same function with computer keyboard in the process of in-putting text or report.

Gain control can adjust image gain and total gain according to different depth

3.3 Screen Adjustment

The two groups of buttons below the monitor can adjust the contrast ratio and brightness for the screen

Warning!
Before use, fix the two small buttons on over the light filter on screen . Be careful in case smash the filter screen.

4 Operation

4.1 Get Ready

- Before operation, check the following：
  - Whether the supplying voltage is required by the equipment
  - Whether all the cables are firmly connected.
  - Whether the ground line is properly connected, if not, maybe noise appear within screen image.
  - Whether proper probe is plug in.

Caution!
Before changing and connecting probe, be sure to turn off the system power to prolong lifetime for the system and probe.

4.2 Startup

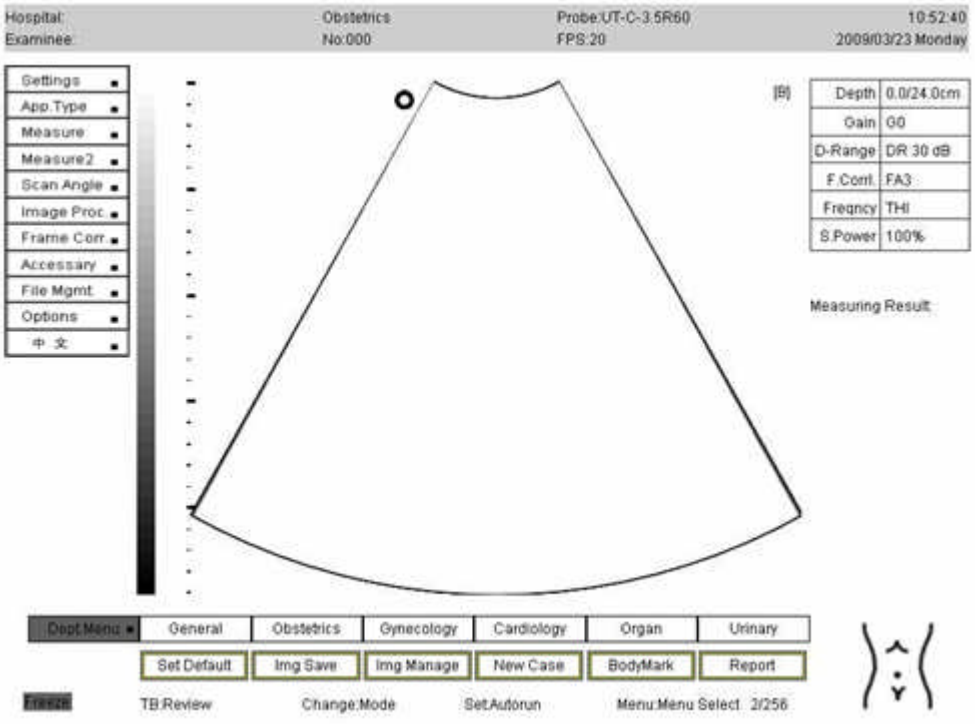
4.2.1 System startup

After making sure the right connection to the power supply, turn on the system.

Then the system begin booting..

Caution!
During the system booting, if there is wrong information appearing on the screen, cut off the power immediately, and contact custom service in Manufacturer

After booting successfully, the initial screen for digital ultrasound diagnostic instrument will be shown on screen with B mode image. Now it's ready for using ultrasonic gel to scan.



4.2.2 Choose Proper Probe

The instrument could be connected with various kinds of linear and convex probes which are used for different applications.

All kinds of linear and convex probes can change frequency.

If the instrument connects two probes at the same time, user could choose one of them through the button of "probe"

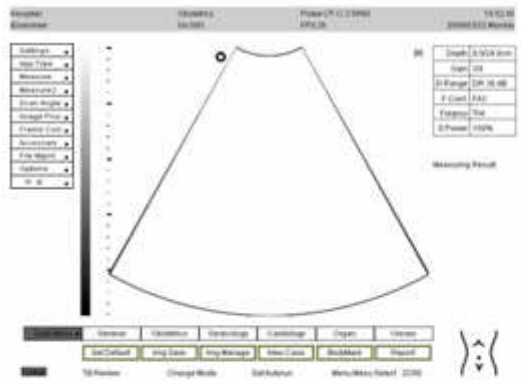
The information of probe type is shown on the top bar of the screen.

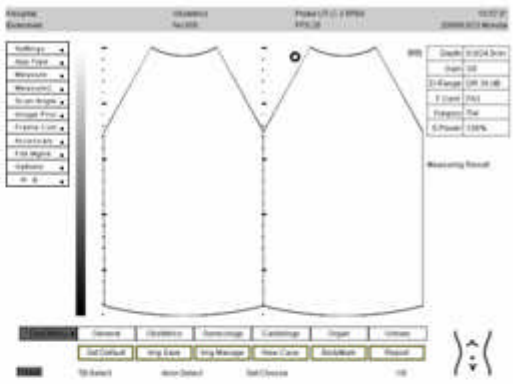
4.3 Image Control

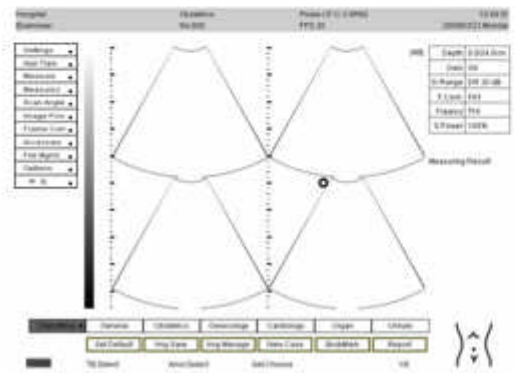
4.3.1 Scanning Mode

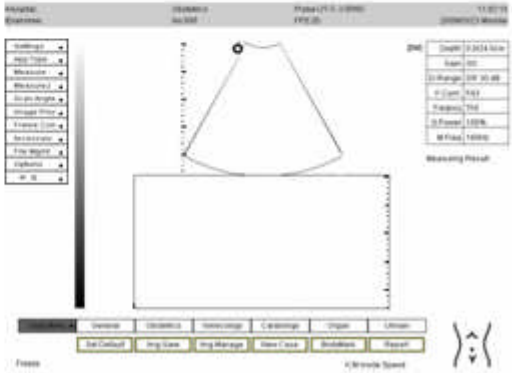
The instrument can change display mode with the following keys.

Key	Function	description
B	B mode	Activate B mode
B/B	Double B mode	Activate B mode, also can choose left or right one.
B/M	B/M mode	Activate B/M or M mode
4B	4B mode	Activate 4B mode, also can choose one of them









B mode is the primary mode, with it the lateral scanning image of body can be displayed. In different application, B,B+B,4B can be chosen.

B/M、M mode display the human organ shape in accordance with time elapse, and provide dynamic observation for doctors, especially useful for cardiac diagnosis. In such mode, pushing M-line button will move the desired M-line position. Pushing the “k” key on the keyboard will change the M Line elapse speed.

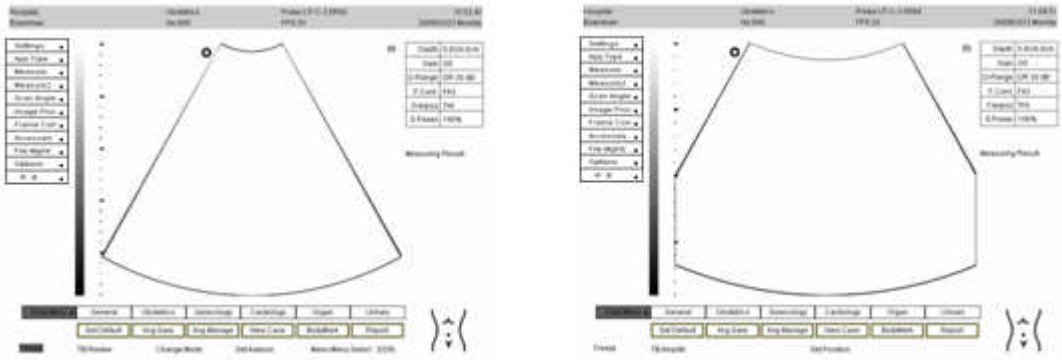
4.3.2 Depth Adjustment

After pushing the “depth” button, then screw rotation will change the displaying depth of the screen image.

With “Zoom” button, the image can be steplessly magnificent. First, push the “Zoom” button, moving the trackball, image will be magnificated smoothly, then “Set” button pushing will fixed at that zoom ratio, moving the trackball again, the displayed image will survey with above chosen zoom ratio to the right position.

The actual image depth range is shown on the top-right corner of the screen. for example:2.0/16.0cm。

With the combination of “zoom” and ”depth” buttons, a properly display range and depth can be chosen for the image.



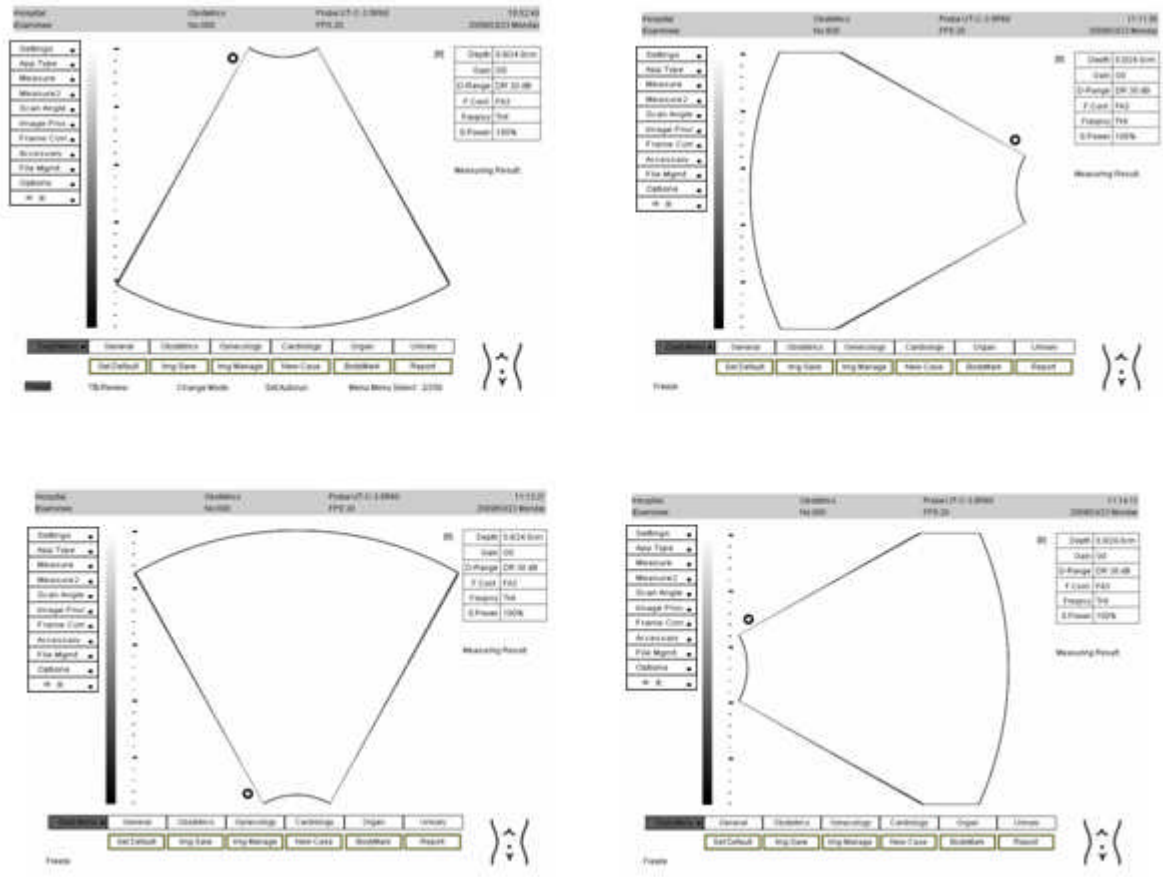
4.3.3 Image Reverse and Upside Down

Through H-Rev button, image can be reversed.

Through V-Rev button, the image can be rotated. After one push, the image

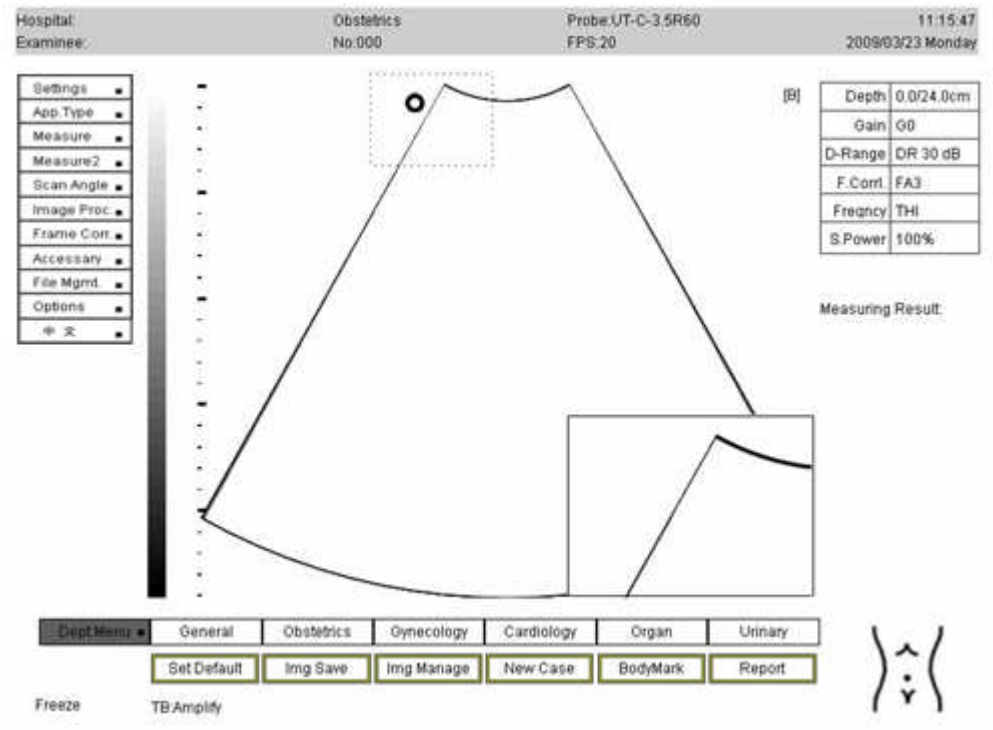
will rotate 90 degree clockwise, another push; the image will be upside-downed from the initial position. So on, after four pushes, the image return to its initial position.

The probe position is marked on the image, which changes along with reversal or rotation.



4.3.4 Real Time PIP

- With the “PIP” button pushed, the real time dynamic PIP will be activated.
- While the real time dynamic PIP is activated, the local image of chosen can be zoomed with position changed with the trackball to get the best observation effect.
- The PIP can be combined with “Zoom” and “Depth” to get best acquired image.



4.3.5 Scanning Angle

- Through the “scan angle” submenu in the main menu, the scanning angle of image can be adjusted.
- The scanning angle has 50，60，70，80，90，100 to choose from，100 is the full angle scanning，the default choice.
- When the scanning angle reduces, the fps (frame per second) gains raises.

4.4 Image Adjustment

4.4.1 Image Gain Adjustment

- With the gain knob, the total image gain is adjustable （0-100dB），its value is shown on the top-right corner of the screen.（e.g. “G60” indicates gain 60dB）。
- Through the sectional TGC（Time Gain Control）slide bar（ref. P3-2 “Keyboard Layout” ）, the sectional gains with different penetrating depths

are adjustable, slide to the left to add, to the right to reduce.

- With the combination of total gain and sectional gain adjusted, the best illuminating image is acquired.

4.4.2 Image Dynamic Range Adjusting

- With the “DR” button pushed，then through the knob, 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: parameter section.

4.4.3 Focus Adjusting

- With the “Focus” button pushed，then through the knob, the focus number and position is adjustable. Along with focus number adding, the FPS(frame per second) reduces.

4.4.4 Frame Correlation Adjusting

- Frame Correlation Adjusting is referring to average the corresponding pixels in the current image with that pixels in the same position in the previous several images, so to reduce the random noise in the image, but also reduce the dynamic speed.
- The number of correlation can be changed by press “L” key in the keyboard, or relevant menu item in the main menu.
- The current frame correlation number is showed in the top right corner of the screen, e.g. FA3 means average three frames.

4.4.5 Freq. Change and THI

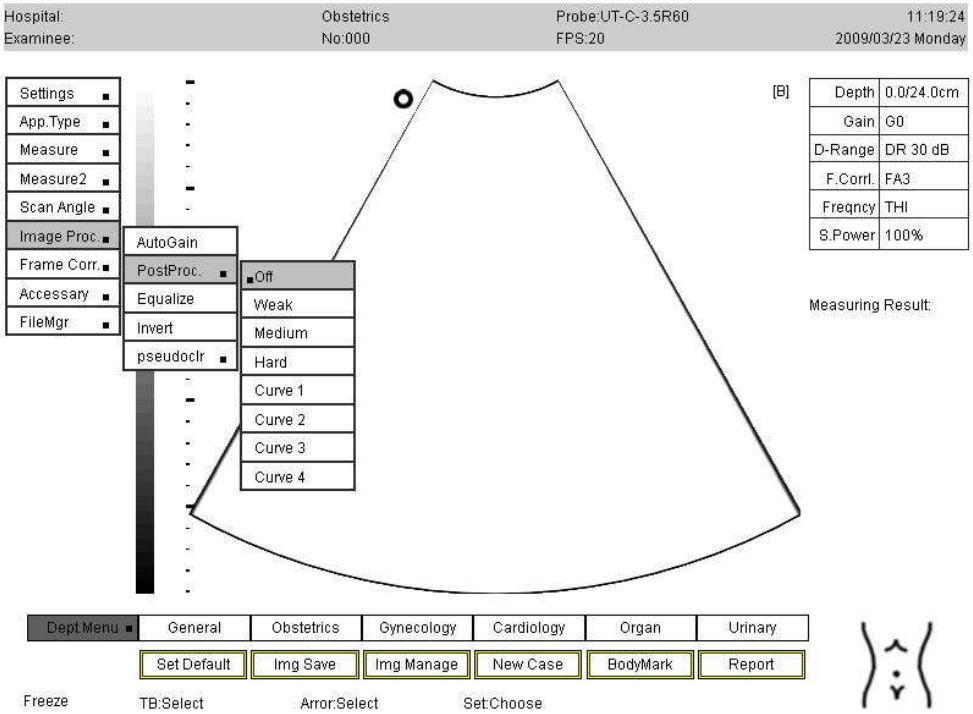
- With the “Freq” key pushed, then through knob, the actual probe frequency

can be change to observe different human body part.（for different probe, the actual frequency is in the range between 2.0M to 10.0M ），to acquire the best image.

- With 4 step frequency, the actual frequency is as following:
  - UT-C-3.5R60 Convex Array：2.5/3.5/4.0/5.0MHz
  - UT-C-3.5R20 Micro-convex Array：2.0/3.5/4.0/5.0MHz
  - UT-L-7.5 Linear Array：5.0/6.5/7.5/10.0MHz
  - UT-C-6.5R13 Endocavity：5.0/6.5/7.5/8.0MHz
- The current frequency is shown on the top right corner of screen.（e.g. “3.5MHz” means the current frequency is 3.5MHz）。
- 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”.

4.4.6 Posterior image Processing

- There are several posterior image processing methods are integrated into the instrument to adjust image.
- Through the “menu” key in the keyboard, from “Image Proc.” Submenu in the main menu, one of the posterior method can be chosen.



4.4.7 Pseudo-color Image Processing

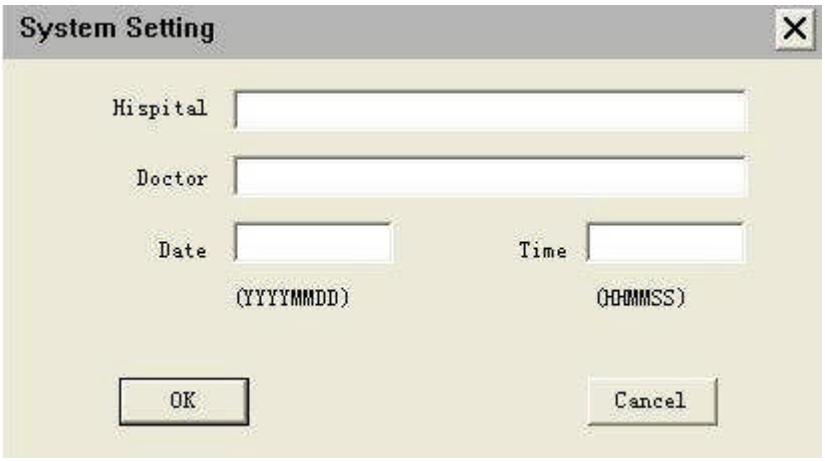
- One of the Pseudo-color Image Processing can be chosen in the main menu.
- Through pseudo-color image processing, the image gray level can be distinctly shown with some color level, the gray level bar in the left side of image shows the steps of gray levels.
- There are six different pseudo color and none pseudo color to choose from in this instrument. None pseudo color means the default B/W gray level display.
- The effect of pseudo color can only be observed in the color monitor screen.

5 System Settings

5.1 System Setting

All the sets of system information could only be carried out under frozen state. And in the active mode, the relevant item becomes grayer. Thaw can exit the set state during the set process.

Press “Menu” key and move trackball to choose parameter setting and system setting then press “enter”. The window “System setting” will be displayed in the screen automatically:



Fill the names of the hospital and doctor. And if necessary, users could change the system date and time and display setting. After pressing ‘Enter’ key, the system set will be finished.

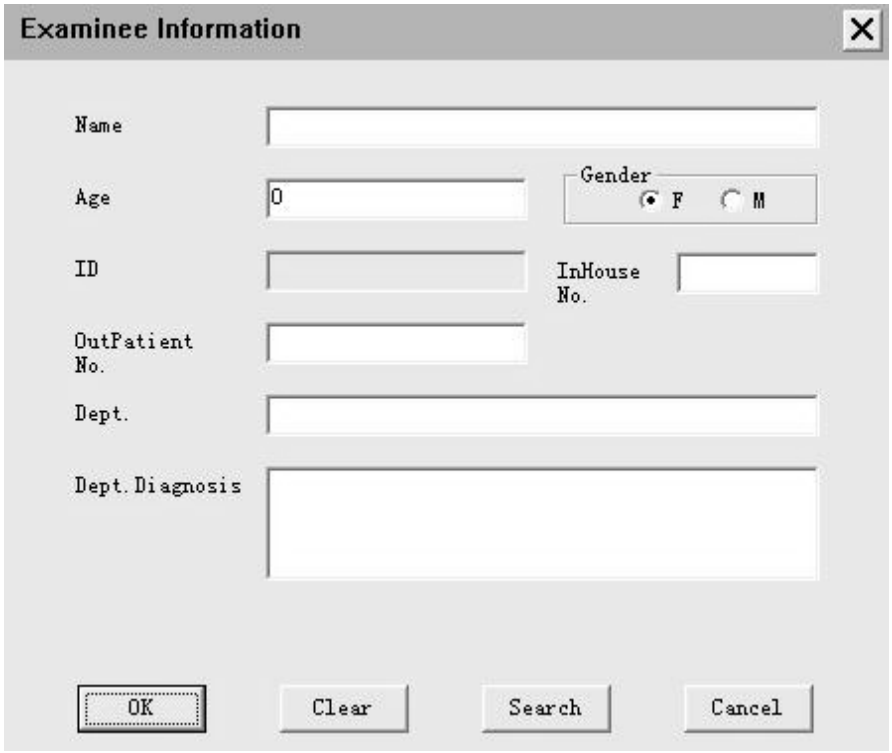
“Switch” key is used for switching the input method.

If the system date and time need to be changed, the new data of both of them should be input. Year format has 4 numbers, month format has 2 and day format has 2. Take 20091210 as example, 2009 means the year 2009, 12 means the month December and 10 mean the day 10th.

System information set result will not change when the equipment is turned off.

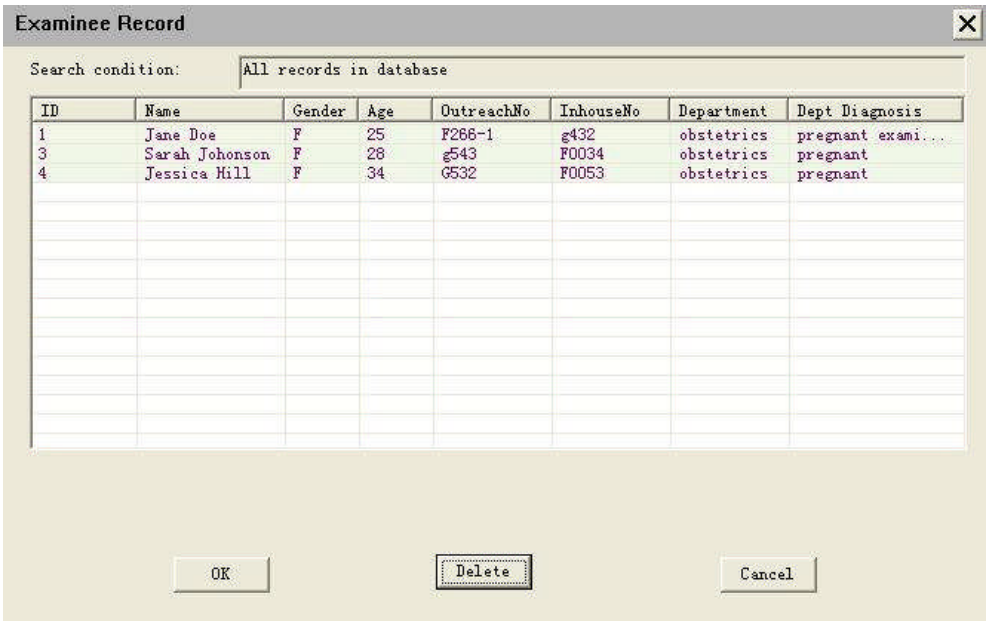
5.2 Patient information setting

To select “Menu”- “Parameter set”- “Patient information” will activate the set of patient information, so as to set the name, age, sex, ID, Hospital No., Clinic No., Section, diagnosis and the other basic information.



For the new patient，it’s only necessary to input the relevant data into relevant items and press “Set” key. The ID will be inputted automatically by system. “Clear” key is to clear all the data in input items.

In the interface of patient information setting，the relevant case histories can be searched through patient name, age or others. During search, if no data is inputted, all the patient information will be displayed.



Among all the patient information, to choose any one and press “Delete” will delete his/her information permanently. Among the patient information，to choose any one and press “Set” key to close the patient information record window. The chosen patient information will be inputted the window.

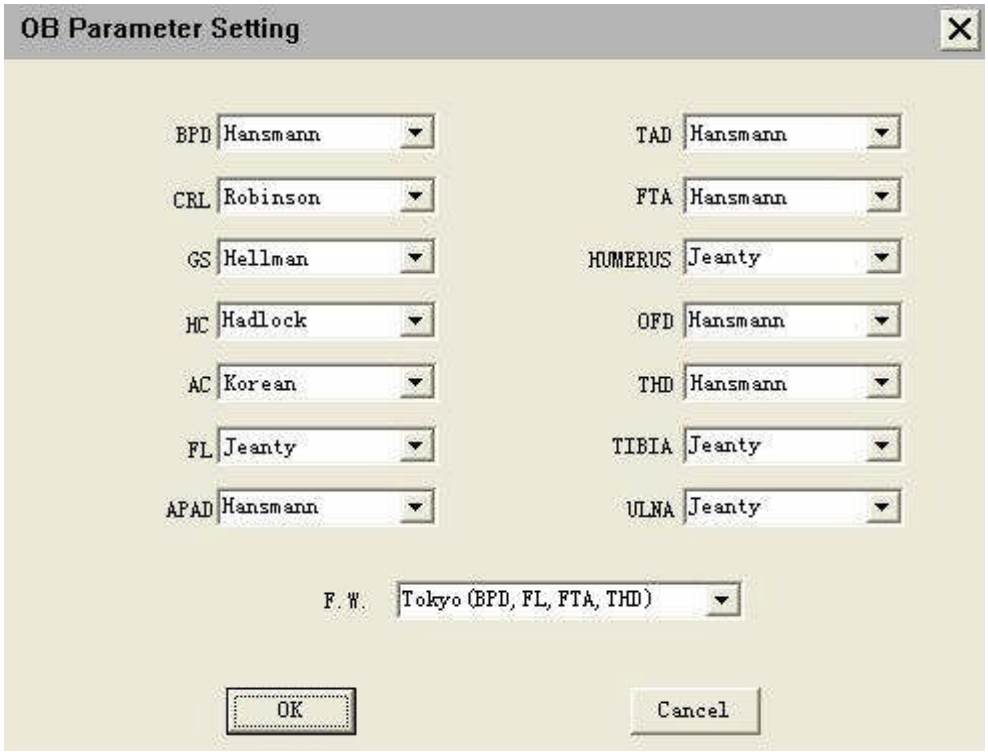
After input, or choose one after search, there is patient information in its window, press enter key to activate the patient.

The patient ID is assigned by system, not need to be input.

As soon as the patient is chosen, all the calculation and diagnosis are done to him/her. The report will display the patient information. It is only to choose another patient to clear the before calculation and diagnosis.

5.3 Obstetrics formula setting

Select “Menu”-“Parameter setting”-“Obstetrics” in order and press “Set” key, the formula setting window will be shown as followings:



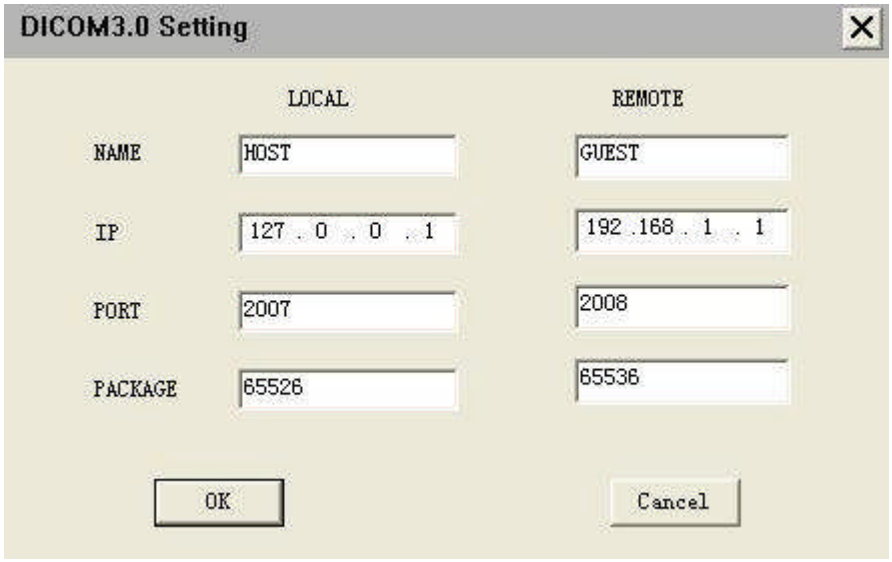
Please choose the appropriate calculate criterion in the relevant right side descend list for each calculate item. After choosing, please press “Set” key in the window, and the chosen calculate criterion will be used in the following obstetrics parameters calculation.

5.4 DICOM3.0 parameter setting

The equipment has the function of DICOM3.0 network transmitting. Images could be saved as DICOM3.0 file and transmitted by network. DICOM3.0 model is not the standard function, but is optional.

It is necessary to set name, IP, port, data bag and other parameters in local and long-distance computers separately.

Select “Menu”-“Parameter setting”-“DICOM3.0 setting” in order， the DICOM3.0 set menu will popup automatically as followings:

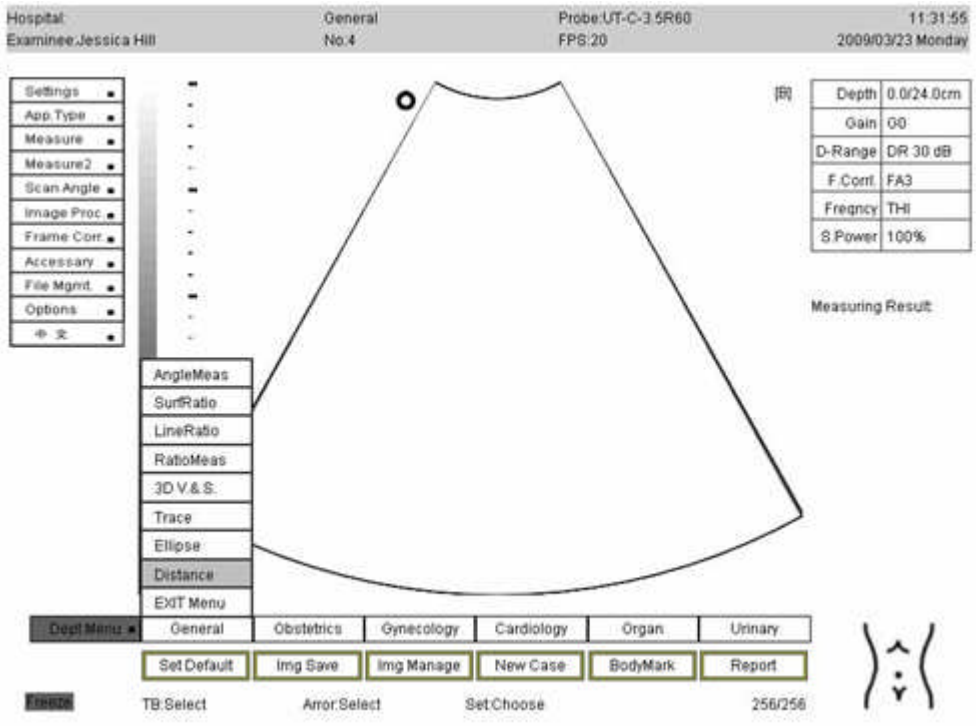

DICOM3.0 Setting
LOCAL
REMOTE
NAME
HOST
GUEST
IP
127 . 0 . 0 . 1
192 .168 . 1 . 1
PORT
2007
2008
PACKAGE
65526
65536
OK
Cancel

6 General measuring

6.1 General measuring

6.1.1 Relevant Keys

- “Measure” key is to choose the method of measuring distance, ellipse, trace and volume：Press “Measure” for one time is to measure distance；Press two times is to measure ellipse；Press three times is to measure trace, and press four times is to measure volume； To press one more time will exit measure mode.
- “Enter” key is to fix the first and the second cursors in measure area.
- “Switch” key is to change the former selection point. Normally, two selection points are necessary for measurement.
- “Exit” key is to exit the basic measure mode, and clear all the measure results.



6.1.2 Attentions in Measure

- Measurement could only be operated in frozen state.
- The equipment will record the last measure results，unless the patient information is reset. Therefore, please don't forget to set new patient information when necessary.
- The measure result of normal measurement will not be written into the report to be printed. Otherwise, the classified professional calculate will be used.（In the relevant measure item, press "Application"，which details in the following pages）
- The measure result of normal measurement will not be written into the report to be printed. Otherwise, the classified professional calculate will be used.（In the relevant measure item, press "Application"，which details in the following pages）。

6.1.3 Distance measure

The equipment could measure distance in each mode，and could display four groups of measure results and average value. The measure result will be displayed in the right side of screen. Detailed method is as following:

In the frozen state, press "measure" key to choose distance measurement

The cursor is displayed in the screen. Move the cursor with trackball to beginning point, press "Set" to fix the beginning point.

Move the cursor with trackball to end point, press "Set" key to fix the end point.

According to the beginning and end point, a line will be made by system. And the relevant measures will be operated, whose results are displayed in the right screen.

Repeat the steps above to measure the next distance.

6.1.4 Measure perimeter and area by ellipse

The equipment could measure perimeter and area by ellipse in every mode, and display four groups of results and average result. The measure results are displayed in the right screen. Detailed method is as following:

- In the frozen state, press “measure” key to choose measure by ellipse.(Press two times)
- The cursor is displayed in 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 “enter” key to fix it.
- “Switch” key can choose ellipse beginning point and end point many times, which is convenient to fix on the location of ellipse.
- The trackball can adjust ellipse X axis. When trackball moves to the right, X axis becomes shorter; when trackball moves to the left, X axis becomes longer.
- Press “Set” key to settle the shape of ellipse, which is made by system automatically. After the relevant measures, the result will be displayed in the right side screen.
- Repeat the steps above to measure the next ellipse perimeter and area.

6.1.5 Measure perimeter and area by trace

The equipment can measure perimeter and area by trace in every mode, which is mainly used for anomalous organ. Four groups of results and average result could be displayed once. The measure results are displayed in the right screen. Detailed measure methods are as following:

- In the frozen state, press “measure” key to choose measure by trace.(Press three times).
- The cursor is displayed in the screen, move it by trackball to the beginning point, press “Set” key to fix it.

- Move the cursor by trackball to draw appropriate trace curve.
- Press “Set” key or move the cursor to the beginning point to settle the trace of curve, the relevant measures will be done automatically by the system. The results are displayed in the right screen.
- Repeat the steps above to measure the next curve perimeter and area.

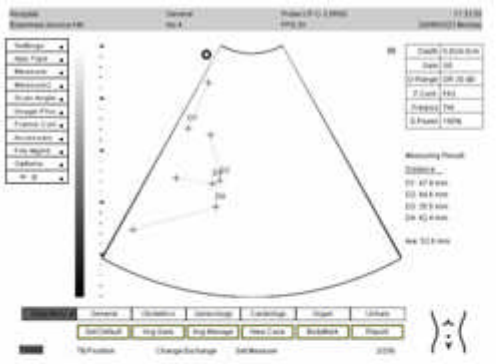
6.1.6 Measure surface and volume by ellipse

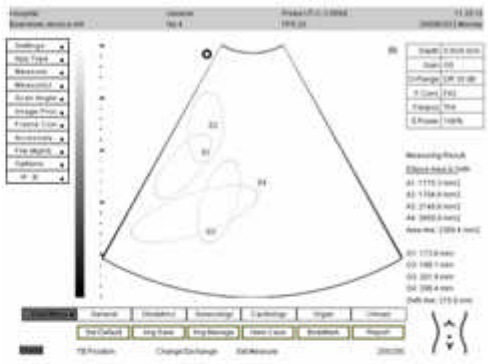
The equipment could measure surface and volume by ellipse in every mode, which is mainly used for ellipsoid organ. Four groups of results and average result can be displayed once. The measure results are displayed in the right screen. Detailed measure methods are as following:

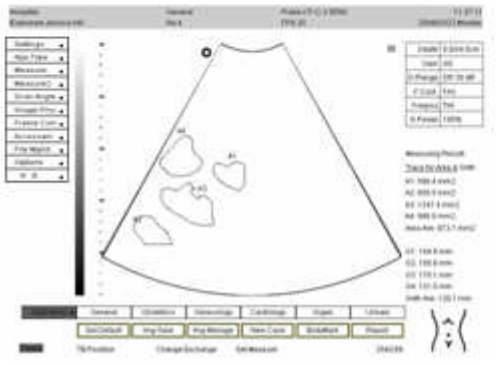
- In the frozen state, press “measure” key to choose volume measurement. (Press four times).
- The cursor is displayed in the screen, move it by trackball to the beginning point, press “Set” key to fix it.
- Move the cursor by trackball to the end point, press “Set” key to fix it.
- “Switch” key can choose ellipse beginning point and end point many times, which is convenient to fix on the location of ellipse.
- The trackball can adjust ellipse X axis. When trackball moves to right, X axis becomes shorter; when trackball moves to left, X axis becomes longer.
- Press “Set” key to settle the shape of ellipse, which is made by system automatically. After the relevant measures, the result will be displayed in the right screen, which the surface and volume are got by circling the ellipse X axis.
- Repeat the steps above to measure the next surface and volume.

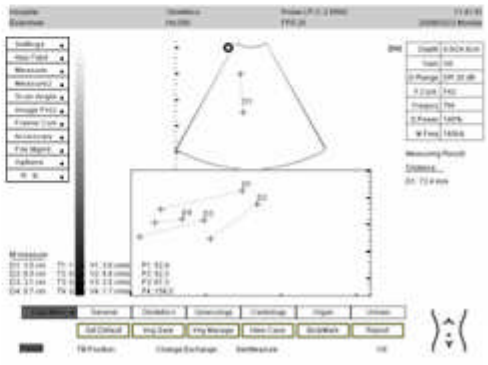
6.1.7 M Mode measure

- In the mode of B/M，the upper part of screen is B mode window, and the down part is M mode window. Press “measure” to enter into the general measure mode. If cursor is in B mode window now, the system will carry out B mode measure. If cursor is in M mode window, system will carry out B mode measure. The first point location is to judge which is B mode measurement or M mode measurement. If the second point is in the other area, the two lines will be dragged, please press “Set” key or “exit” key to measure once more.
- In M display mode, press “measure” key to enter into the general measure mode, which enters into M measurement automatically.
- M measurement can get the results of distance, time, speed, frequency (heart ratio) and so on.









6.2 Assistant measurement

6.2.1 Angle measurement

- Angle measurement can measure the angle between two lines.
- In the frozen state, select “menu”-“assistant measurement”-“angle measurement”, then press “Set” key to activate the cursor in the screen.
- Firstly, draw one line along with one side of the angle, whose measure method is the same with “distance measurement”.
- Secondly, draw the other line along with the other side of the angle, whose measure method is also the same with “distance measurement”.
- After the measurement, the distance and angle will be displayed in the screen.
- Press “Set” key to begin another angle measurement.

6.2.2 Ratio Measurement

- Ratio measurement is to measure the length ratio between two lines. The value of first line is as numerator，the value of last line is as denominator.
- In the frozen state, select “menu”-“assistant measurement”-“angle measurement”, press “Confirm” key to activate the cursor.
- Firstly measure the distance of the first line, whose measure method is the same with “distance measurement”.
- Then measure the distance of the second line, whose measure method is also the same with “distance measurement”.
- After the measurements, the lengths and their ratio will be displayed in the screen.
- Press “Set” key to begin another ratio measurement.

6.2.3 Line straitness ratio measurement

- Line straitness ratio measurement can measure the vascular straitness

degree, which is got by the ratio of the vascular straitness and vascular non-straitness. %D = ((D1-D2)/D1) x 100%

- In the frozen state，select “menu”-“assistant measure”-“line straitness measure”, press “Set” key to activate the cursor.
- Firstly measure the distance of the first line, whose measure method is the same with “distance measurement”.
- Then measure the distance of the second line, whose measure method is also the same with “distance measurement”.
- After the measurements, the lengths and their straitness ratio of the two lines will appear in the screen.
- Press “Set” key to begin another ratio straitness measurement.

6.2.4 Surface straitness ratio measurement

- Surface straitness ratio measurement can measure the vascular straitness degree, which is got by the section ratio of the vascular straitness and vascular non-straitness. %A = ((A1-A2)/A1) x 100%
- In the frozen state，select “menu”-“assistant measure”-“Surface straitness measure”, press “Set” key to activate the cursor.
- Firstly measure the area of the first ellipse, whose measure method is the same with “ellipse area measurement”.
- Then measure the area of the second ellipse, whose measure method is the also same with “ellipse area measurement”.
- After the measurements, the areas and their straitness ratio of the two ellipses will appear in the screen.
- Press “Set” key to begin another ellipse ratio straitness measurement.

6.3 Assistant tools

6.3.1 Puncture guideline

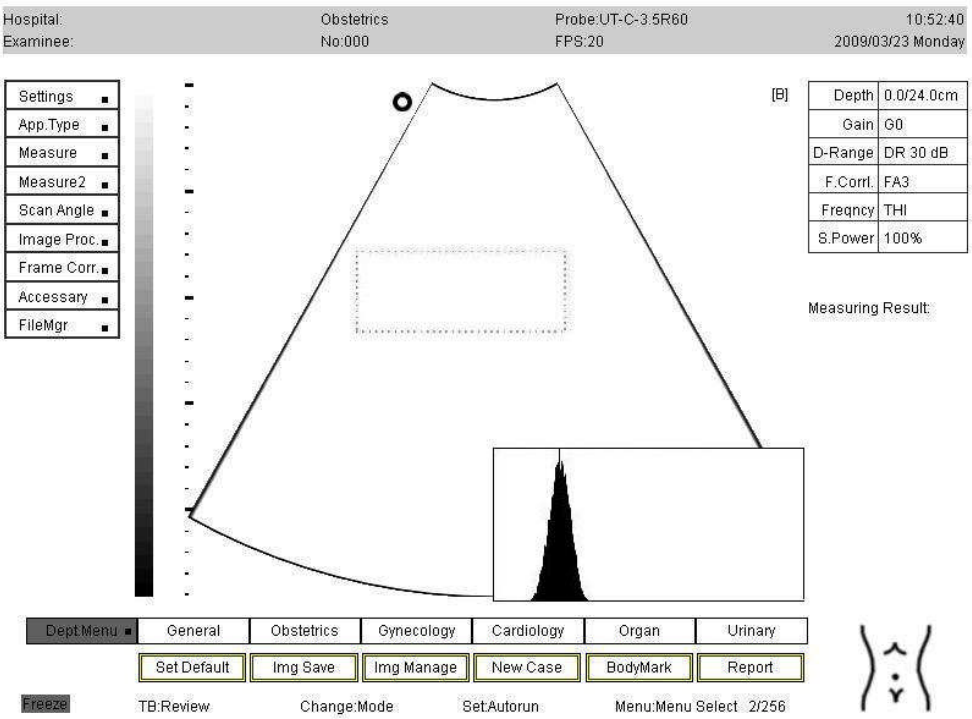
- Puncture guideline can draw the guideline in the displayed area, as so to

guide the puncture needle entering into the appropriate human tissue. The function is useful only in single B mode.

- Select “Menu”- “Assistant tools”-“Puncture guideline”, press “Set” key to enter into puncture guideline.
- Move trackball to fix one side of puncture line, and the other side will be move along B mode interface. Press “Set” key and move trackball again, the other side of the line will move. After arriving to the appropriate position, please press “Set” to finish the set of puncture line.
- Choose “Menu-“Assistant tools”-“Puncture guideline”, and then press “Set”, system will exit the puncture line.
- Pressing “exit” key directly will also cancel puncture line if there is puncture line.

6.3.2 Histogram

- Histogram function can measure the gray distribution of ultrasound echo signal in appointed area.
- In the frozen state, press “Menu”-“Assistant tools”-“Histogram”，then press “Set” key to activate the measure cursor.
- Move the cursor with trackball to the edge of appointed area, press “Set” key to fix one rectangle point.
- Move the trackball again, a rectangle will appear in the screen, which is combined by the fixed point and carried cursor.
- Press “Set” key to fix rectangle area, the histogram of the chosen rectangle area will appear in the screen.
- If there is histogram in the screen，press “Menu”-“Assistant tools”-“Histogram” again to clear it.
- If there is histogram in the screen，to press “Exit” directly will also clear it.

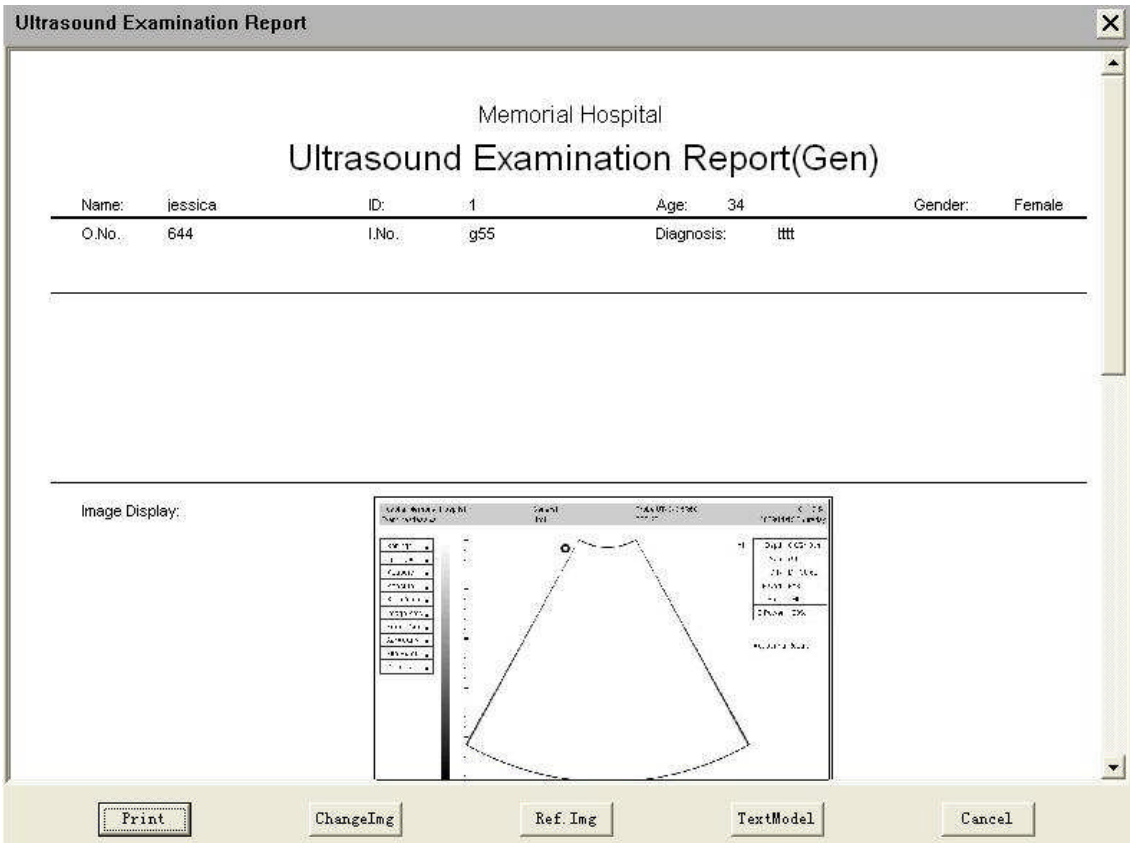


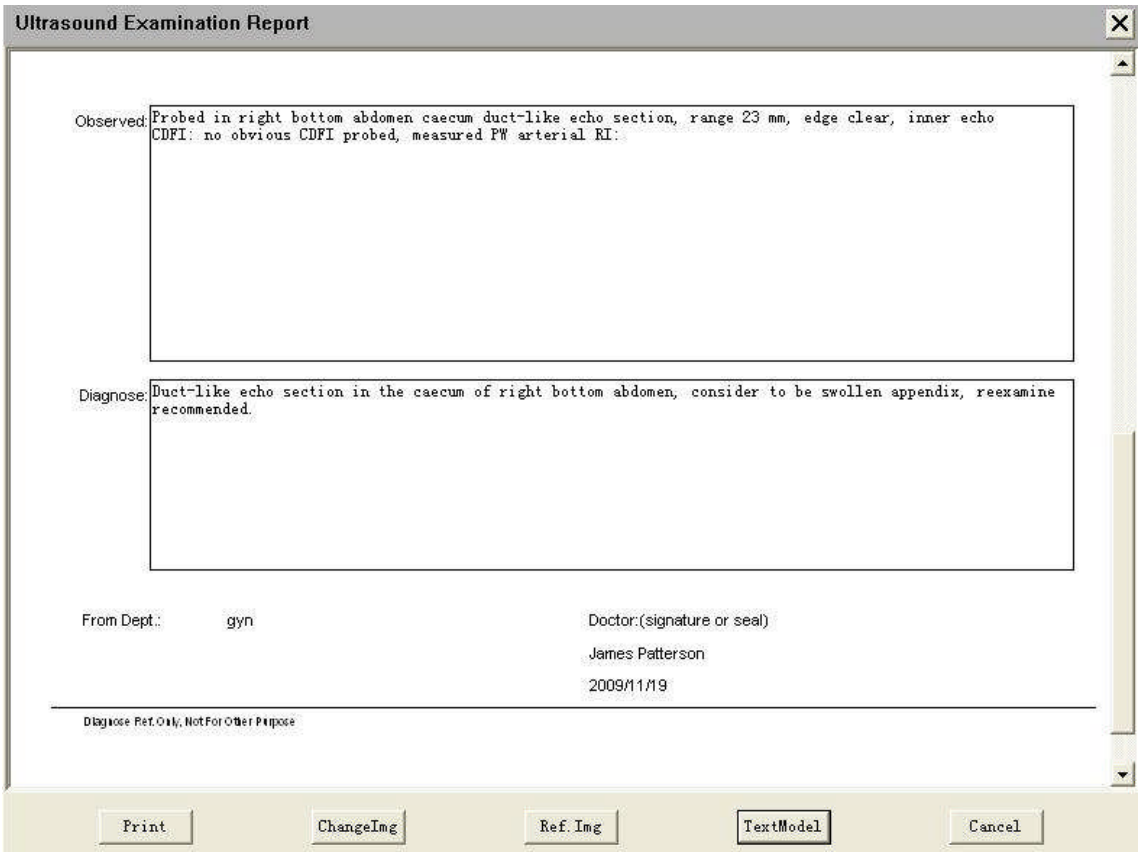
6.4 Print of general measure

- In the general measurement mode, when pressing “Report” key in the keyboard, the general examination report dialog will appear.
- With the trackball guiding the cursor to the scrollbar on the right side, by pressing “Set” key on the keyboard, the lower half of the report can be lifted.
- When the general examination report dialog shown on the screen, all the examinee’s information will be shown on the upper half of the report. After the lower half report is lift, you can input diagnosis information on the “Ultrasound Observation” and “Ultrasound Diagnosis” input box. Pressing “Switch” key will change the input method. Pressing “Indicator” key will pick up the general measured word database, which can decrease unnecessary repeated input. The methods about how to save and use the word database, please refer to Paragraph 3, Chapter 12 of this manual.
- When input diagnosis information to the report, the text model database is also available. By moving cursor on the “Text Model” button, pressing “Set” key will pick up the text model database. After choosing one desired model,

the text for ultrasound observation and ultrasound diagnosis are shown on the right side. Moving the cursor to the “OK” button, press “Set” key on the keyboard will close the dialog and insert the text into the input frame in the report. For how to add, modify, or delete model in the text model dialog, please refer to Chapter 12 of this manual.

- By moving cursor on the “ChangeImg” button and press “set” key on the keyboard, you can pick up the image management dialog; find another saved image to replace the image in the report. By moving cursor on the “RefImg” button and press “set” key on the keyboard, you can pick up the image management dialog, find another saved image to show in the report parallelly with the existed one.
- If there is examination report on the screen, moving cursor on the “print” button and pressing “set” key in the keyboard will print report if there is printer connecting to the apparatus.



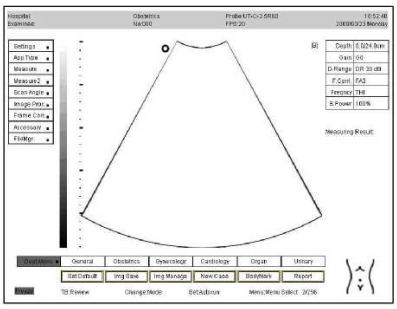

Ultrasound Examination Report
Observed:
Probed in right bottom abdomen caecum duct-like echo section, range 23 mm, edge clear, inner echo
CDFI: no obvious CDFI probed, measured PW arterial RI:
Diagnose:
Duct-like echo section in the caecum of right bottom abdomen, consider to be swollen appendix, reexamine recommended.
From Dept.:
gyn
Doctor:(signature or seal)
James Patterson
2009/11/19
Diagnose Ref.Only, Not For Other Purpose
Print
ChangeImg
Ref.Img
TextModel
Cancel

Memorial Hospital

Ultrasound Examination Report(Gen)

Name:	jessica	ID:	1	Age:	34	Gender:	Female
O.No.	644	I.No.	g55	Diagnosis:	abdominal pain		

Image Display:



Observed: Probed in right bottom abdomen caecum duct-like echo section, range 23 mm, edge clear, inner echo CDFI: no obvious CDFI probed, measured PW arterial RI:

Diagnose: Duct-like echo section in the caecum of right bottom abdomen, consider to be swollen appendix, reexamine recommended.

From Dept.: gyn

Doctor:(signature or seal)

James Patterson

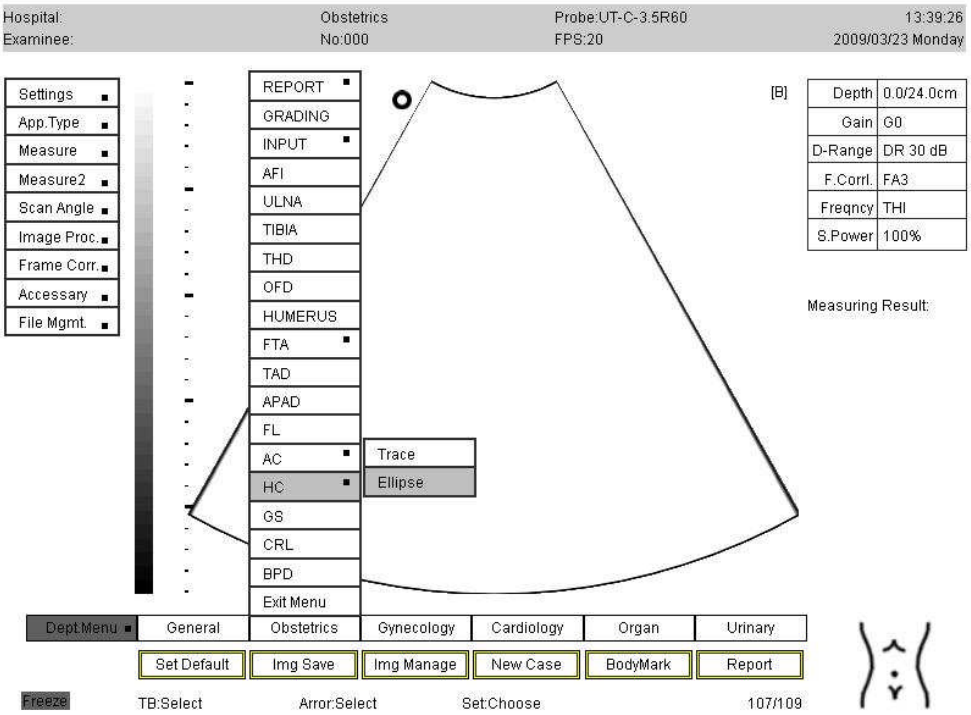
2009/11/19

Diagnose Ref. Only, Not For Other Purpose

7 Obstetric diagnosis

7.1 Obstetric diagnosis and measurement

- The obstetric diagnosis normally is operated in B mode.
- Select “Menu”-“Measure type”-“Obstetric”, obstetrics diagnosis will be set.
- In the state of Obstetric diagnosis, press “Diagnostic tool” key，the menu of obstetric diagnosis will appear as following：



- In the state of obstetric diagnosis, the following specifications can be measured: BPD, CRL, GS, HC, AC, FL, APAD, TAD, FTA, HUMERUS, OFD, THD, TIBIA, ULNA and AFI.
- In the state of obstetric diagnosis, the following items can be inputted by hand: LIMP, BBT and FBP.

7.2 Obstetric measurement

- The following measurements are the guide lines of fetal up-growth. The system will calculate GA and EDD automatically according to each measurement.
- Please pay attention that the obstetric formula is used in the calculation of pregnant time and EDD, which could be set by selecting “Menu”-“Parameter set”–“Obstetric”. Moreover, please Set that the measured area is in the valid area. Otherwise false result will appear.
- The following measurement should be in the state of obstetric diagnosis, which can be set by “Diagnosis type” key or chosen by selecting “Menu”-“Measurement type”-“Obstetric measurement”.
- All the measurements have to be operated in frozen state.

7.2.1 BPD

- Press “Application” key and choose “BPD” in the pop up window of obstetric measurement. Then press “Set” key to make the cursor become ┼ style, so as to enter into BPD measurement mode.
- Measure BPD, whose method is the same with “Distance measurement”.
- The BPD length, gestational age and EDD will be displayed in the measured results area.
- Press “Set” key to clear the current result, so as to measure once again.

7.2.2 CRL

- Press “Application” key and choose “CRL” in the pop up window of obstetric measurement. Then Press “Set” key to make the cursor become ┼ style, so as to enter into CRL measurement mode.
- Measure CRL, whose method is the same with “Distance measurement”.

- The CRL length, gestational age and EDD will be displayed in the measured results area.
- Press “Set” key to clear the current result, so as to measure once again.

7.2.3 GS

- Press “Application” key and choose “GS” in the pop up window of obstetric measurement. Then press “Set” key to make the cursor become ┼ style, so as to enter into GS measurement mode.
- Measure GS, whose method is the same with “Distance measurement”.
- The GS length, gestational age and EDD will be displayed in the measured results area.
- Press “Set” key to clear the current result, so as to measure once again.

7.2.4 HC

- Press “Application” key and choose “HC” in the pop up window of obstetric measurement. There are two submenus: Ellipse and Trace. Please select one of them and press “Set” key, cursor becomes ┼ style, now the system enters into HC measurement mode.
- If user selects ellipse method, please measure by following the method of “Measure perimeter and area by ellipse”;

  If user selects Trace method, please measure by following the method of “Measure perimeter and area by trace”.
- The length of HC, gestational age and EDD will be displayed in the measured results area.
- Press “Set” key to clear the current result, so as to measure once again.

7.2.5 AC

- Press “Application” key and choose “AC” in the pop up window of

obstetric measurement. There are two submenus: Ellipse and Trace. Please select one of them and press “Set” key, cursor becomes ┼ style, now the system enters into AC measurement mode.

- If user selects ellipse method, please measure by following the method of “Measure perimeter and area by ellipse”;

  If user selects Trace method, please measure by following the method of “Measure perimeter and area by trace”.
- The length of abdominal, gestational age, EDD will be shown in the measured results area.
- Press “Set” to clear the result and measure once again.

7.2.6 FL

- Press “Diagnostic tools” and select “FL” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the FL measure mode.
- The method of measuring FL please refers to “Distance measure”.
- The Femur Length, gestational age, EDD will be shown in the result region.
- Press “Set” to clear the result and measure once more.

7.2.7 APAD

- Press “Diagnostic tools” and select “APAD” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the APAD measure mode.
- The method of measuring APAD please refers to “Distance measure”.
- The APAD, gestational age, EDD will be shown in the result region.
- Press “Set” to clear the result and measure once more.

7.2.8 Transverse Abdominal Diameter (TAD)

- Press “Diagnostic tools” and select “TAD” in the menu of obstetrics measure. Then press “Set”, when the screen cursor becomes ┼ style, system enters the TAD measure mode.
- The method of measuring TAD please refers to “Distance measure”.
- TAD, gestational age and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could measure more.

7.2.9 FTA

- Press “Application” key and choose “FTA” in the pop up window of obstetric measurement. There are two submenus: Ellipse and Trace. Please select one of them and press “Set” key, cursor becomes ┼ style, now the system enters into FTA measurement mode.
- Measure the acreage of cross section. If user selects ellipse method, please measure by following the method of “Measure perimeter and area by ellipse”;

  If user selects Trace method, please measure by following the method of “Measure perimeter and area by trace”..
- Trunk transverse Acreage, gestational week and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could re-measure.

7.2.10 HUMERUS

- Press “Diagnostic tools” and select “HUMERUS” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the HUMERUS measure mode.

- The method of measuring HUMERUS please refers to “Distance measure”.
- Length of HUMERUS, gestational week and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could re-measure.

7.2.11 Occipitofrontal Diameter (OFD)

- Press “Diagnostic tools” and select “OFD” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the OFD measure mode.
- The method of measuring HUMERUS please refers to “Distance measure”.
- OFD, gestational week and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could re-measure.

7.2.12 Thorax Diameter (THD)

- Press “Diagnostic tools” and select “THD” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the THD measure mode.
- The method of measuring THD please refers to “Distance measure”.
- THD, gestational week and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could re-measure.

7.2.13 TIBIA

- Press “Diagnostic tools” and select “TIBIA” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the TIBIA measure mode.
- The method of measuring TIBIA please refers to “Distance measure”.

- TIBIA, gestational week and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could re-measure.

7.2.14 ULNA

- Press “Diagnostic tools” and select “ULNA” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the ULNA measure mode.
- The method of measuring ULNA please refers to “Distance measure”.
- ULNA, gestational week and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could re-measure.

7.2.15 Amniotic Fluid Index (AFI)

- Press “Diagnostic tools” and select “AFI” in the pop up window of obstetric measurement. Press “Set”, when the screen cursor becomes ┼ style, system enters the AFI measure mode.
- The method of measuring AFI please refers to “Distance measure”.
- AFI, gestational week and EDD will be shown in the region of measure result.
- Then press “Set”, the result will be cleared and then user could re-measure.

7.3 EDD calcuation

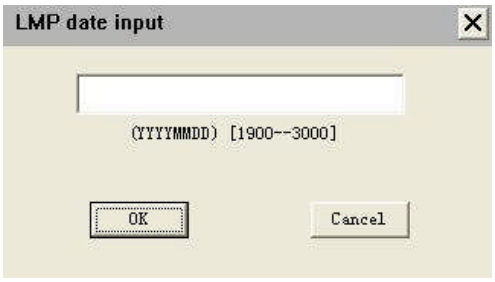
7.3.1 Last Menstruation

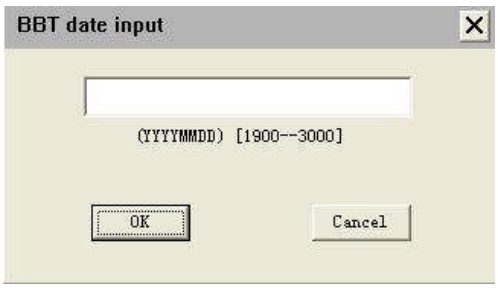
- Estimate the EDD according to the last menstrual date (LIMP).

- Press “Diagnostic tools”, and select “Manual Input”-“Date of last menstruate” from the obstetrics menu pop up by trackball. After pressing “Set”, “Input the date of last menstruate” dialog box will pop up.
- Input the date of the last menstruate in dialog box. If the number cannot be input, please move the cursor by trackball to input box, and then press “Set”
- Press “Set” icon of the dialog box, the last menstruate will be input to estimate fetal growth curve. ”Cancel” key will avoid input.

7.3.2 Last Ovulation

- Estimate the EDD according to the ovulation period(BBT）
- Press “Diagnostic tools”, and select “Manual Input”-“Date of last ovulation” from the obstetrics menu pop up by trackball. After pressing “Set”, “Input the date of last ovulation” dialog box will pop up.
- Input the date of the last ovulation in dialog box. If the number cannot be input, please move the cursor by trackball to input box, and then press “Set”
- Press “Set” icon of the dialog box, the last ovulation will be input to estimate fetal growth curve. ”Cancel” key will avoid input.





7.4 Fetal weight calculation

- According to the measured 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. Detailed formula is selected by choosing “Menu”-“Parameter setting”-“OB parameter setting”.

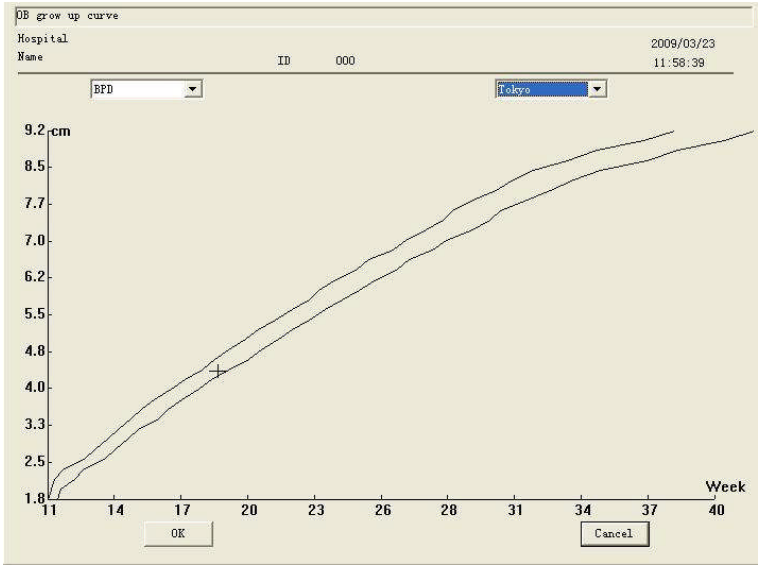
7.5 Obstetrical examination

7.5.1 Fetal physiological growth curve

- Principle: Compare the measured data of fetus with normal fetal physiological growth curve, so as to judge whether fetal growth is normal or not.
- Measure one or more indexes of the fetal growth indexes, including BPD, CRL, GS, HC, AC, FL, APAD, TAD, FTA, HUMERUS, OFD, THD, TIBIA, ULNA, AFI, then user could get fetal growth index.
- Input the pregnant woman LIMP or BBT according to chapter 7.3.
- Press “Applications” in the menu, and select “Result”-“Growth curve” by trackball. Press “Set”, growth curve dialog box will pop up.
- Select the former item in the left dialog box, as hansmann. In the right formula select one as hansmann. Then there will two curves and one cross will be shown in the middle of dialog box
- The curve will be value of fetal in this status in certain pregnancy time. The formula might have some error. Therefore, there are two curves. Cross mean the factual value as above measure and coordinate point of gestational week of last menstruate or last ovulation. Apparently, if the actual value and gestational week which is got by last menstruate (ovulation) is in the middle of two curves, the measure result is tally with the selected formula.
- Change the option which is in the left of drop-down dialog box. Then change the formula is in the right of drop-down dialog box. The item of growth curve will be got by chose the formula. If the item has been measured, there is a

cross mark in the image. It means tally with the selected curve formula, if it is in the middle of the curve

- Notice: because of the difference between oriental and occidental, the factual measure does not mean abnormality. Please obey doctor's opinion
- Select "enter" or "cancel" to exit.



7.5.2 Fetus physiological grade

- Fetus physiological grade is got through items of experiment observation or measure method. And the grade method is the clinical index to evaluate the fetus physiological status.
- Correlation index: FHR, FM, FBM, FT, AF, PL. Thereunto, the AF is got through measuring the deepness of amniotic Fluid; the PL has four grade according to the placenta mature; other index is got through fetus reaction experiment.。
- Fetus reaction experiment cost 20 to 30 minutes.
- Measure deepness of amniotic Fluid
    1. Press "Diagnostic tools", select "Deepness of amniotic Fluid" in the menu. Then press "Set", when the screen cursor is cross, it enters the deepness of amniotic Fluid measure mode.
    2. Method of measure deepness of amniotic Fluid is refer to "Distance

measure”

3. Deepness of amniotic Fluid will be shown in result region.
4. Press “Set” to clear the result and back to step 1 of measure.
5. Deepness of amniotic Fluid will auto enter the fetus physiological grade, the conversion criterion is as follows:

   2 grade: Max AFI>=2cm;

   1 grade: 1 cm <= Max AFI<2 cm;

   0 grade: Max AFI <1 cm

- According to the reaction trial & placenta grade to typing 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 >=15s,1-4 times；

     0 grade: ，FHR <=1 time。

  2. Fetus Movement (FM)

     Observation time: 30 minutes

     Grade criterion:

     2 grade: FM >=3 times；

     1 grade: FM 1-2times;

     0 grade: none FM。

  3. Fetus breath movement (FBM)

     Observation time: 30 minutes

     Grade criterion:

  4. 2 grade: FBM>=1 time，duration >=60s；

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

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

  5. Fetus Muscular Tension (FT)

     Observation time: 30 minutes

     Grade criterion:

2 :>=1time member & spinal stretching exercise

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

0: member extension, none flections, open-handed

6. Placenta classify (PL)

Grade criterion:

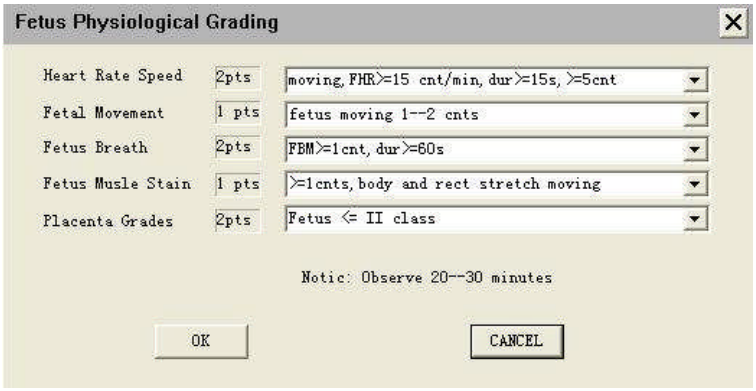
2: PL <=II grade；

1: paries posterior Placenta, hard to evaluate

0: PL III grade。

- Graded step:

1. In the gynecological measure, press “Applications” to show the OB measure menu. Select physiological graded, then press “Set” to shown the physiological graded dialog box.
2. Select the homologous sub- dialog box of graded item by track ball or “Set” to select the item of observation conclusion. Then the graded result is change in the left.
3. Finishing all graded items, press “Set’ to end the growth physiological grade.



7.5.3 Fetus Physiological Grade Report

- Finishing the physiological grade, doctor can look over the fetus physiological grade report which is given by system.
- In OB measure, press “Measure” to show OB measure menu. Select “Result

display”–“Grade report” by trackball. Then press “Set” to show “Fetus physiological grade report”

- The grade report is got according to Ventricles formula.
- In the report, each item which get 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

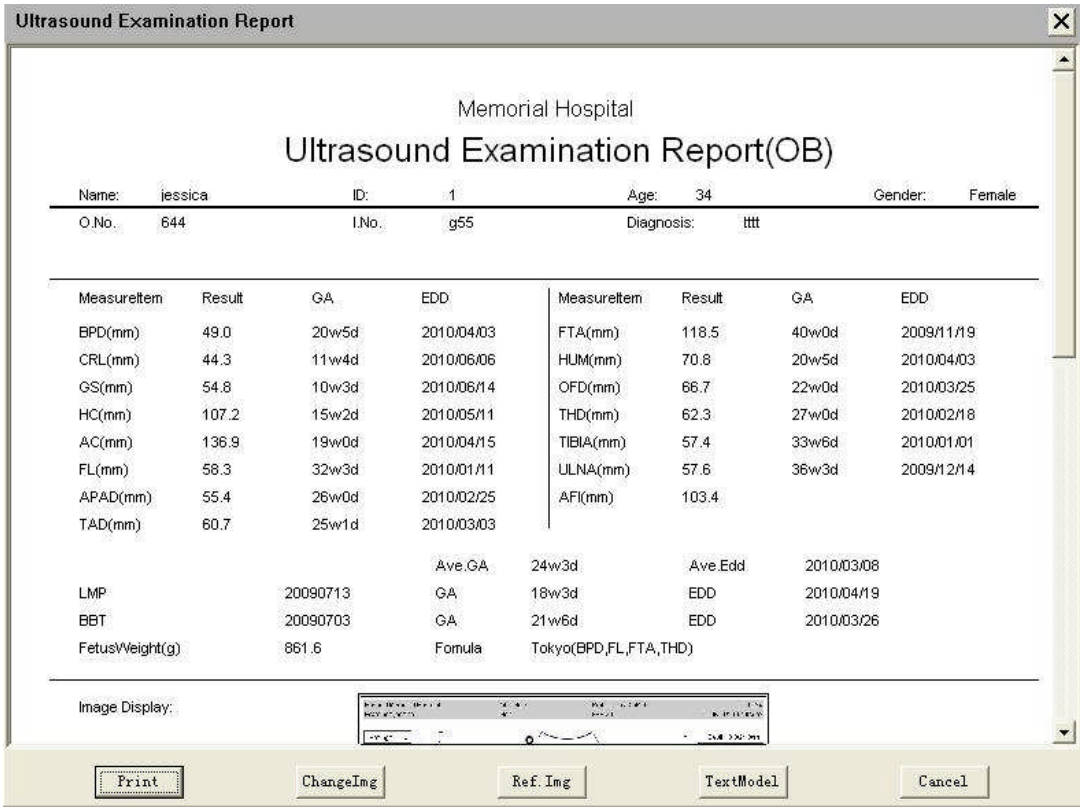
  0-2: Altitudinal suspicious chronic asphyxiation

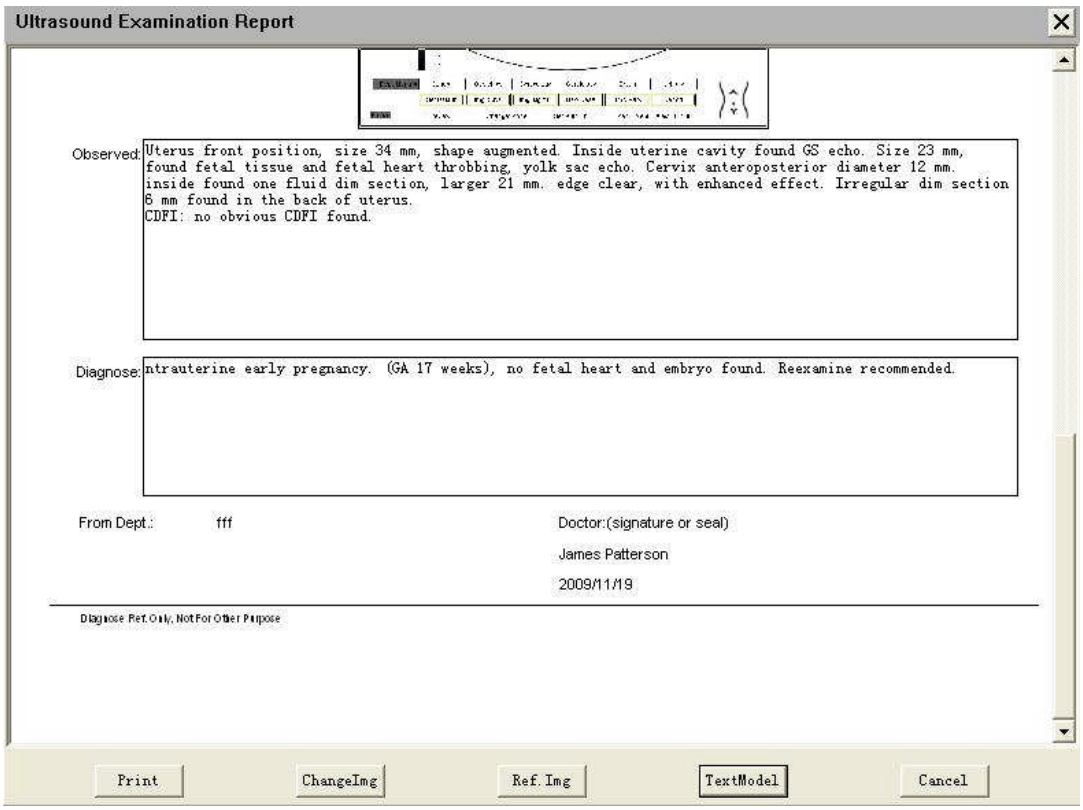
7.5.4 Obstetrical Diagnostic Report

- Finishing obstetrical examination, the system will give the report automatically. In the condition of obstetrical type, Pressing “Report” key on the keyboard, or select submenu “Result display” from OB menu, you can bring up” Obstetrical examination report”.
- The content includes patient ID, name, diagnostic image, date, doctor diagnosis, measured data, gestational week, EDD, last menstruation, last ovulation date, the average of gestational weeks & EDD, and fetus weight

etc.

- Notice: the obstetrical result will be always reserved, until the new patient information is inputted. Therefore, please input patient data in advance, then make examination and measure.





- With the trackball guiding the cursor to the scrollbar on the right side, by pressing “Set” key on the keyboard, the lower half of the report can be lifted.
- When the OB examination report dialog shown on the screen, all the examinee’s information will be shown on the upper half of the report. After the lower half report is lift, you can input diagnosis information on the “Ultrasound Observation” and “Ultrasound Diagnosis” input box. Pressing “Switch” key will change the input method. Pressing “Indicator” key will pick up the general measured word database, which can decrease unnecessary repeated input. The methods about how to save and use the word database, please refer to Paragraph 3, Chapter 12 of this manual.
- When input diagnosis information to the report, the text model database is also available. By moving cursor on the “TextModel” button, pressing “Set” key will pick up the text model database. After choosing one desired model, the text for ultrasound observation and ultrasound diagnosis are shown on the right side. Moving the cursor to the “OK” button, press “Set” key on the keyboard will close the dialog and insert the text into the input frame in the report. For how to add, modify, or delete model in the text model dialog,

please refer to Chapter 12 of this manual.

- By moving cursor on the “ChangeImg” button and press “set” key on the keyboard, you can pick up the image management dialog, find another saved image to replace the image in the report. By moving cursor on the “RefImg” button and press “set” key on the keyboard, you can pick up the image management dialog, find another saved image to show in the report parallelly with the existed one.
- If there is examination report on the screen, moving cursor on the “print” button and pressing “set” key in the keyboard will print report if there is printer connecting to the apparatus.

Memorial Hospital

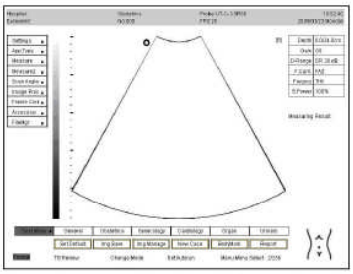
Ultrasound Examination Report(OB)

Name:	jessica	ID:	1	Age:	34	Gender:	Female
O.No.	644	I.No.	g55	Diagnosis:	tttt		

MeasureItem	Result	GA	EDD	MeasureItem	Result	GA	EDD
BPD(mm)	49.0	20w5d	2010/04/03	FTA(mm)	118.5	40w0d	2009/11/19
CRL(mm)	44.3	11w4d	2010/06/06	HUM(mm)	70.8	20w5d	2010/04/03
GS(mm)	54.8	10w3d	2010/06/14	OFD(mm)	66.7	22w0d	2010/03/25
HC(mm)	107.2	15w2d	2010/05/11	THD(mm)	62.3	27w0d	2010/02/18
AC(mm)	136.9	19w0d	2010/04/15	TIBIA(mm)	57.4	33w6d	2010/01/01
FL(mm)	58.3	32w3d	2010/01/11	ULNA(mm)	57.6	36w3d	2009/12/14
APAD(mm)	55.4	26w0d	2010/02/25	AFI(mm)	103.4		
TAD(mm)	60.7	25w1d	2010/03/03				

		Ave.GA	24w3d	Ave.Edd	2010/03/08
LMP	20090713	GA	18w3d	EDD	2010/04/19
BBT	20090703	GA	21w6d	EDD	2010/03/26
FetusWeight(g)	861.6	Fomula	Tokyo(BPD,FL,FTA,THD)		

Image Display:



Observed: Uterus front position, size 34 mm, shape augmented. Inside uterine cavity found GS echo. Size 23 mm, found fetal tissue and fetal heart throbbing, yolk sac echo. Cervix anteroposterior diameter 12 mm. inside found one fluid dim section, larger 21 mm. edge clear, with enhanced effect. Irregular dim section 6 mm found in the back of uterus.
CDFI: no obvious CDFI found.

Diagnose: ntrauterine early pregnancy. (GA 17 weeks), no fetal heart and embryo found. Reexamine recommended.

From Dept.: fff

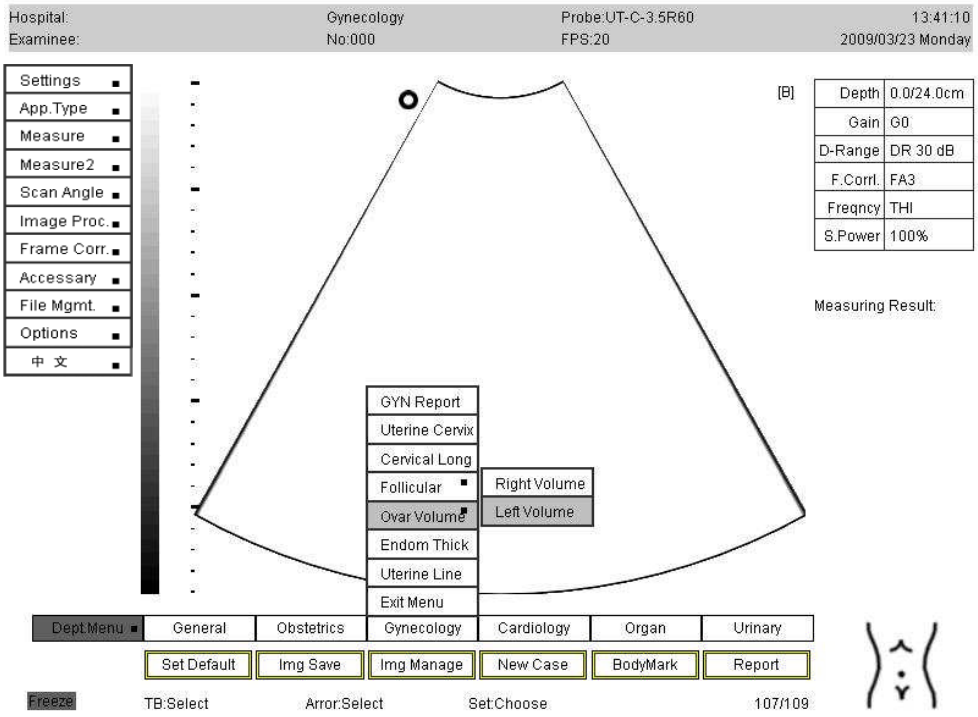
Doctor:(signature or seal)
James Patterson
2009/11/19

Diagnose Ref. Only, Not For Other Purpose

8 Gynecological Examination

8.1 Gynecological examination & measure instruction

- Gynecological examination usually processes in B mode.
- Select “Menu”–“Measure type”-“Gynecological measure”, then the gynecological examination will be set.
- In gynecological examination status, press “Applications” to show gynecological examination menu as following:



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

8.2 Gynecological measure

8.2.1 Uterus radial line

- Press “Applications” to show “Uterus radial line” in the gynecological measure. Press “Set”, and then cross cursor will be present.
- Measure the Uterus major diameter, Uterus width-diameter and Uterus dept-diameter separately. The detailed operation refers to “Distance measure”.
- Measure result will be shown in measure region.
- Press “Set” again to clear the recent measure result.

8.2.2 Intima thickness

- Press “Applications” to show “Intima thickness” in the gynecological measure. Press “Set”, and then cross cursor will be present.
- Measure intima thickness. The detailed operation refers to “Distance measure”.
- Measure result will be shown in measure region.
- Press “Set” again to clear the recent measure result.

8.2.3 Ovary Volume

- Press “Applications” to show “Ovary volume” in the gynecological measure. Press “Set”, and then cross cursor will be present.
- Measure the left ovary major diameter, left ovary width-diameter and left ovary deep-diameter separately. The detailed operation refers to “Distance measure”.
- Measure result will be shown in measure region.
- Press “Applications” to select “Ovary volume”-“Right ovary volume” in the

gynecological measure. Measure right ovary volume as the method of left ovary volume. Press “Set”, and then cross cursor will be present.

- Press “Set” again to clear the recent measure result.

8.2.4 Dominant Follicle

- Press “Applications” to select “Dominant follicle”-“Left dominant follicle” in the gynecological measure. Press “Set”, and then cross cursor will be present.
- Measure the major diameter of left follicle, the width-diameter of left follicle separately. The detailed operation refers to “Distance measure”.
- Measure result will be shown in measure region.
- Press “Applications” to select “Dominant follicle”-“Right dominant follicle” in the gynecological measure. The method is the same with right follicle.
- Press “Set” again to clear the recent measure result.

8.2.5 Cervix Major Diameter

- Press “Applications” to select “Cervix major diameter” in the gynecological measure. Press “Set”, and then cross cursor will be present.
- Measure cervix major diameter. The detailed operation refers to “Distance measure”.
- Measure result will be shown in measure region.
- Press “Set” again to clear the recent measure result.

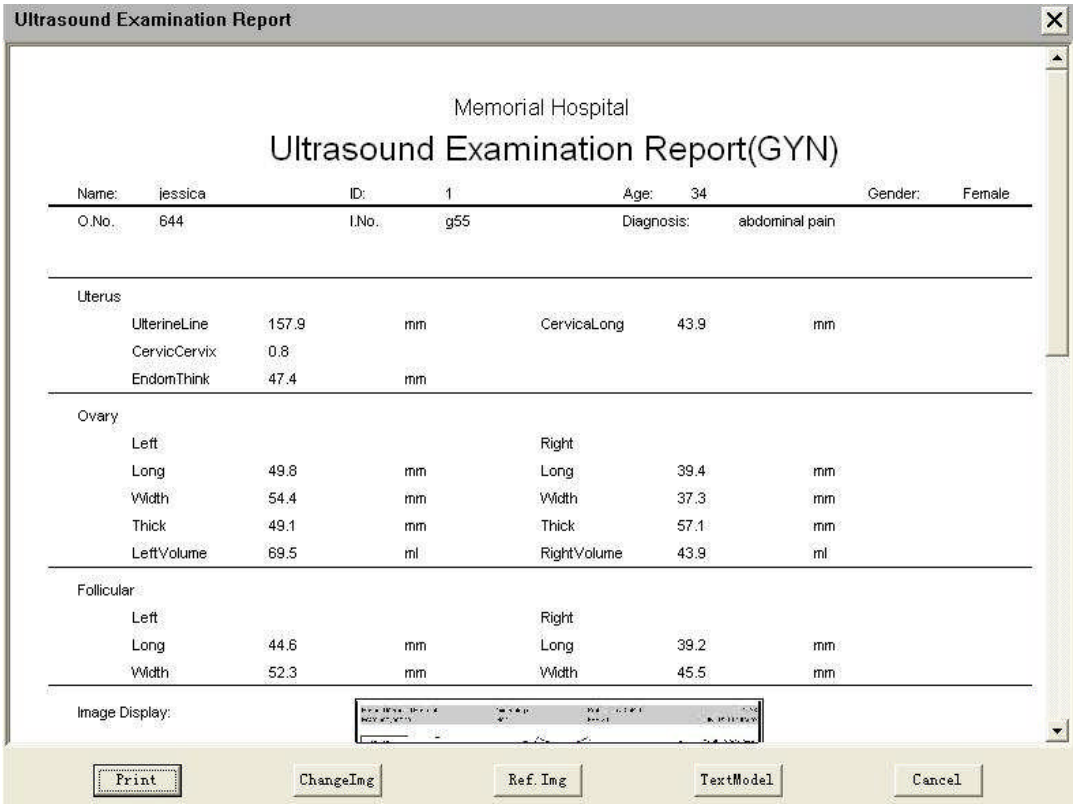
8.2.6 Corpus Cervix

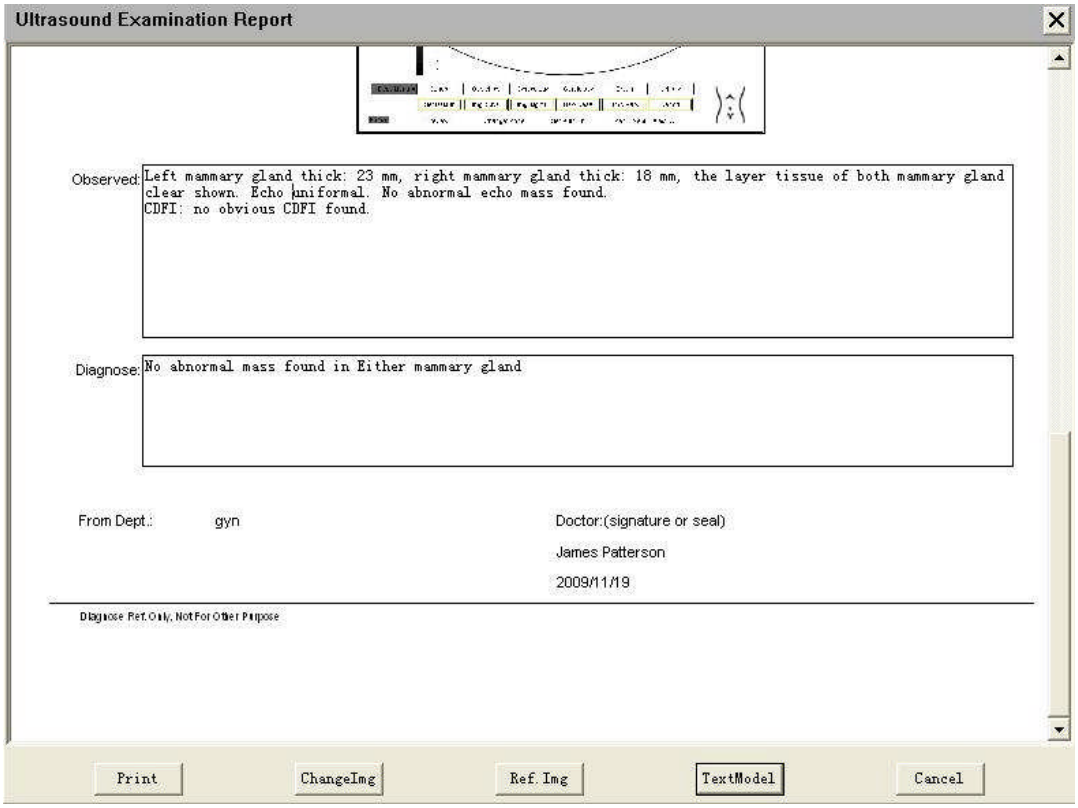
- Press “Applications” to select “Corpus cervix” in the gynecological measure. Press “Set”, and then cross cursor will be present.
- Measure uterus major diameter and cervix major diameter. The detailed operation refers to “Distance measure”.

- Measure result will be shown in measure region.
- Press “Set” again to clear the recent measure result.

8.3 Obstetrical examination result

- After gynecological examination, the system will give a gynecological report automatically. In gynecological examination, press “Report” to bring up gynecological report, then the report dialog will be shown.
- Report includes the patient ID, name, diagnosis image, date of examination, doctor, measured results and so on.
- Please note that the result of gynecological examination will be always reserved, till the new examinee selected. So, please don’t forget to input the new examinee before making the examination.





- With the trackball guiding the cursor to the scrollbar on the right side, by pressing “Set” key on the keyboard, the lower half of the report can be lifted.
- When the gynecological examination report dialog shown on the screen, all the examinee’s information will be shown on the upper half of the report. After the lower half report is lift, you can input diagnosis information on the “Ultrasound Observation” and “Ultrasound Diagnosis” input box. Pressing “Switch” key will change the input method. Pressing “Indicator” key will pick up the general measured word database, which can decrease unnecessary repeated input. The methods about how to save and use the word database, please refer to Paragraph 3, Chapter 12 of this manual.
- When input diagnosis information to the report, the text model database is also available. By moving cursor on the “TextModel” button, pressing “Set” key will pick up the text model database. After choosing one desired model, the text for ultrasound observation and ultrasound diagnosis are shown on the right side. Moving the cursor to the “OK” button, press “Set” key on the keyboard will close the dialog and insert the text into the input frame in the report. For how to add, modify, or delete model in the text model dialog,

please refer to Chapter 12 of this manual.

- By moving cursor on the “ChangeImg” button and press “set” key on the keyboard, you can pick up the image management dialog, find another saved image to replace the image in the report. By moving cursor on the “RefImg” button and press “set” key on the keyboard, you can pick up the image management dialog, find another saved image to show in the report parallelly with the existed one.
- If there is examination report on the screen, moving cursor on the “print” button and pressing “set” key in the keyboard will print report if there is printer connecting to the apparatus.

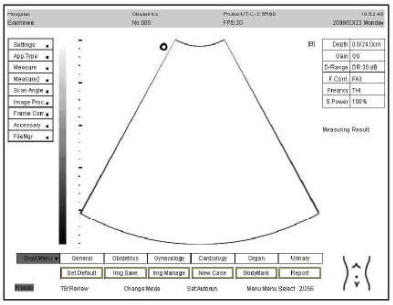
Memorial Hospital

Ultrasound Examination Report(GYN)

Name:	jessica	ID:	1	Age: 34	Gender: Female
O.No.	644	I.No.	g55	Diagnosis:	abdominal pain

Uterus						
	UlterineLine	157.9	mm	CervicaLong	43.9	mm
	CervicCervix	0.8				
	EndomThink	47.4	mm			
Ovary						
	Left			Right		
	Long	49.8	mm	Long	39.4	mm
	Width	54.4	mm	Width	37.3	mm
	Thick	49.1	mm	Thick	57.1	mm
	LeftVolume	69.5	ml	RightVolume	43.9	ml
Follicular						
	Left			Right		
	Long	44.6	mm	Long	39.2	mm
	Width	52.3	mm	Width	45.5	mm

Image Display:



Observed: Left mammary gland thick: 23 mm, right mammary gland thick: 18 mm, the layer tissue of both mammary gland clear shown. Echo uniformal. No abnormal echo mass found.
CDFI: no obvious CDFI found.

Diagnose: No abnormal mass found in Either mammary gland

From Dept.: gyn

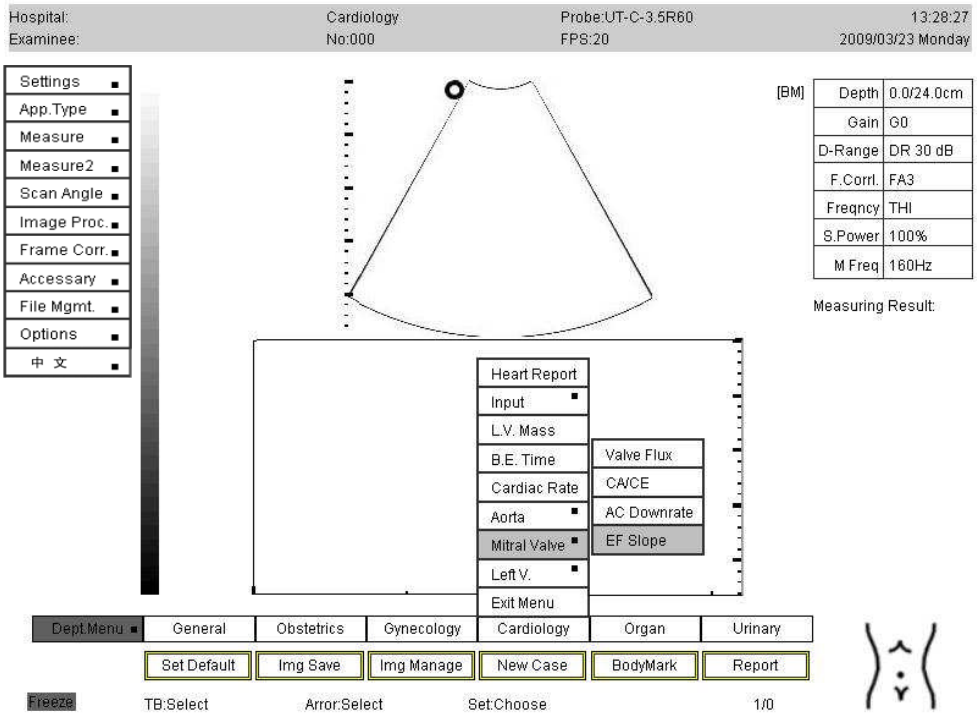
Doctor:(signature or seal)
James Patterson
2009/11/19

Diagnose Ref. Only, Not For Other Purpose

9 Cardiac Examination

9.1 Cardiac Examination And Illuminate

- Cardiac examination is usually used in B/M or M mode.
- Select “Menu”-“Measure type”-“Cardiac examination” successively, cardiac examination will be set.
- In cardiac examination, press “Diagnostic tools” to show the menu of cardiac measure.



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

9.2 Heart Apparatus Examination

9.2.1 Manual Input

- Input the aware items by manual before examination, which is propitious to correlation calculation.
- Heart rate

  Heart rate can be measured in B/M or M mode.

  In cardiac status, press “Application” and select “Input-Heart Rate” from the menu popup. The dialog box of heart rate will be shown in the screen.

  Input number in the box, then press “Set”. Number of Heart rate will be entered into system. Notice: valid number scale is 30-180 times/minute.

  The heart rate can also get from measure menu. The system will select the later value between manual input and measure result.
- Ejection Time

  Ejection time will be measured in B/M or M mode, or manual input

  In cardiac status, press “Applications” and select “Input ejection time”. The dialog box of ejection time will be shown in the screen.

  Input value in the box, then press “Set”. Number of ejection time will be entered into system. Notice: valid number scale is 30-180 times/minute

  The ejection time can also get from measure menu. The system will select the later value between manual input and measure result.
- Stature& Weight

  Stature& weight must be input by manual.

  In cardiac status, press “Applications” and select “Input- Stature& weight”, the dialog box of Stature& weight will be shown in the screen.

  Input value into the box, then press “Set”. Numbers of Stature& weight will be entered into system. Notice: the valid value scale of stature is 20-300 cm, and the valid value scale of weight is 1-150KG.
- In the heart report, the BSA is concluded through the stature& weight, sex,

age and relevant formula.

9.2.2 Left Ventricle Measure (LVIDd, LVIDs)

- Press “Diagnostic tools” and select “LVIDd” and “TEICHHOLZ” from cardiac menu. After pressing “Set”, the cross cursor will appear. The item will be calculate with TEICHHOLZ formula
- Measure LVIDd and LVIDs separately; detailed method is the same with distance measure
- When measuring LVIDs, other calculated results will also appear except LVIDd, LVIDs, including SV, EF and FS.
- Notice: 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 result region of screen.
- When selecting “Left ventricle function” and “CUBE”, items appear 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.

9.2.3 EF (EF SLP)

- Press “Diagnostic tools” and select “Mitral valve measure” and “EF SLP” from cardiac menu successively. Then press “Set”, the cross cursor will appear.
- Measure EF· SLP; detailed operation method refers to “Distance measure”.
- Measured result will be display in the result region.

9.2.4 Mitral Valve Speed (ACV)

- Press “Diagnostic tools” and select “Mitral valve measure” and “AC” from cardiac menu successively. Then press “Set”, the cross cursor will appear.

- Measure ACV; detailed operation method refers to “Distance measure”;
- Measured result will be display in the result region.

9.2.5 Mitral Valve (CA/CE)

- Press “Diagnostic tools” and select “Mitral valve measure” and “CA/CE” from cardiac menu successively. Then press “Set”, the cross cursor will appear.
- 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. Detailed operation method refers to “Distance measure”.
- Measured result will be displayed in the result region.

9.2.6 QMV

- Press “Diagnostic tools” and select “Mitral valve measure” and “QMV” from cardiac menu successively. Then press “Set”, the cross cursor will appear.
- Measure the breakaway speed DEV. Detailed operation method refers to “Distance measure”.
- Measure the breakaway time DCT. Detailed operation method refers to “Time measure”.
- Measured result QMV will be displayed in the result region J QMV[ml]=4×DEV[cm/s]×DCT[s] .

9.2.7 Aorta (LAD/AOD)

- Press “Diagnostic tools” and select “Main artery measure” and “LAD/AOD” from cardiac menu successively. Then press “Set”, the cross cursor will appear.
- Measure the diameter of left atrium (LAD). Detailed operation method refers to “Distance measure”.
- Measure the diameter of aortic valve (AOD). Detailed operation method

refers to “Distance measure”.

- Measured result LAD/AOD will be displayed in the result region

9.2.8 AVSV

- Press “Diagnostic tools” and select “Main artery measure” and “AVSV” from cardiac menu successively. Then press “Set”, the cross cursor will appear.
- Measure the diameter of aorta (MOV1). Detailed operation method refers to “Distance measure”.
- Measure the diameter of aorta (MOV2). Detailed operation method refers to “Distance measure”.
- Measure the amplitude of aorta paries posterior (AA). Detailed operation method refers to “Distance measure”.
- The measured result of AVSV will be shown in the region of measure result.

9.2.9 Heart Rate (HR)

- Press “Diagnostic tools” and select “Heart rate” from cardiac menu popup. Then press “Set”, the cross cursor will appear.
- Measure heart rate; Detailed operation method refers to “Distance measure” in B/M or M Mode.
- The measured result will be displayed in the result region.

9.2.10 Ejection Time (ET)

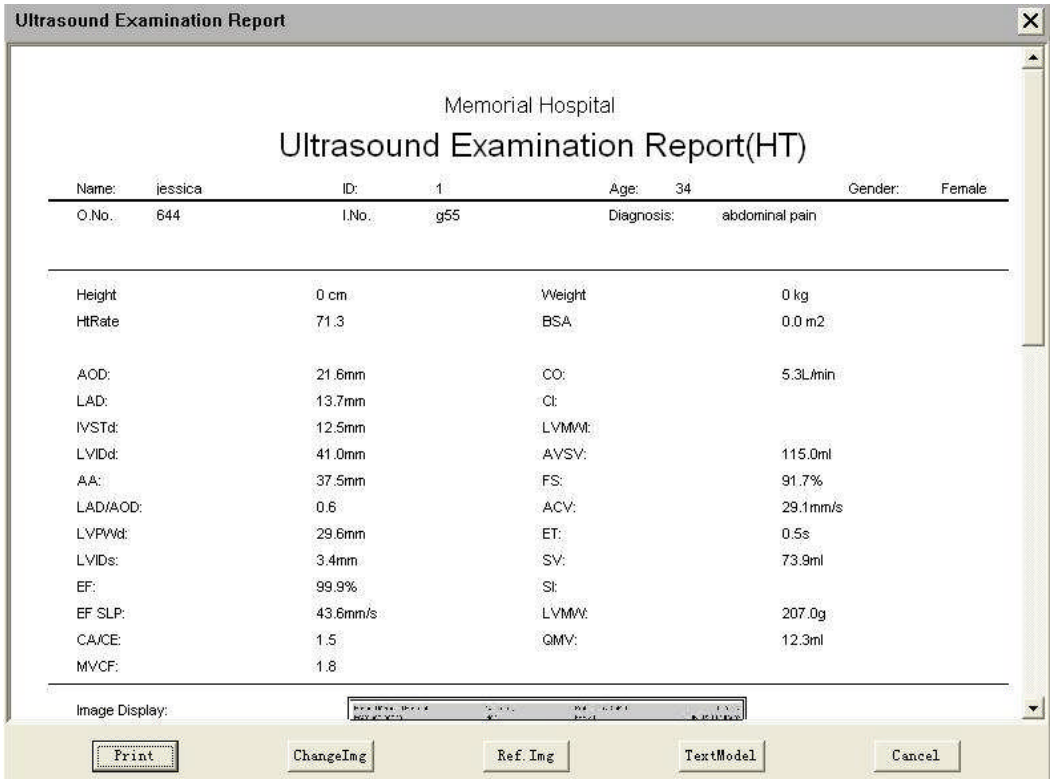
- Press “Diagnostic tools” and select “ET” from cardiac menu popup. Then press “Set”, the cross cursor will appear.
- Measure ET; Detailed operation method refers to “Distance measure” in B/M or M Mode.
- The measured result will be displayed in result region.

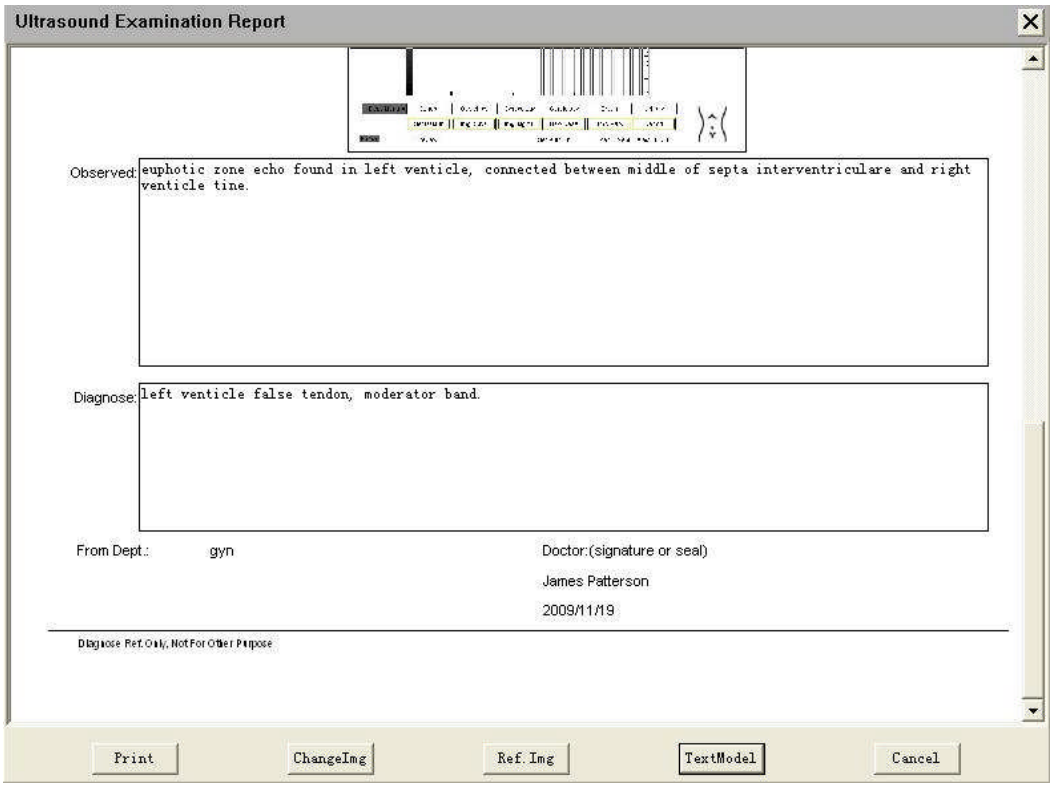
9.2.11 Left ventricle muscle weight (LVMW)

- Press “Diagnostic tools” and select “LVMW” from the cardiac menu popup. After pressing “Set”, cross cursor will appear.
- Measure the posterior wall thickness at the end of ventricular diastolic (LVPWd). Detailed methods refers to “Distance measure”.
- Measure the interventricular septal thickness (IVSTd) at the end of ventricular diastolic. Detailed methods refers to “Distance measure”.
- Measure the left ventricle inner diameter (LVIDd) at the end of ventricular diastolic. Detailed methods refers to “Distance measure”.
- The result of LVMW will display in result region. If stature and weight have been input before measurement, the calculated result of left ventricle muscle weight index (LVMWI) will also display. If measuring functions of left ventricle before measuring LVMW, the results of left ventricle functions will renovate according to LVIDd.

9.3 Examination result of cardiac organs

- After cardiac organs examinations, the system will give cardiac diagnosis report automatically. Press “Diagnostic tools” under cardiac examination and select “Cardiac examination report” from cardiac menu, the report box will popup.
- The contents of report contain patient ID, name, diagnosis images, examination date, doctor, examination result and so on.
- Please note that the examination result will be always kept until new examinee information is input. Therefore, please don’t forget to input new examinee information before implementing examination.





- With the trackball guiding the cursor to the scrollbar on the right side, by pressing “Set” key on the keyboard, the lower half of the report can be lifted.
- When the cardiac examination report dialog shown on the screen, all the examinee’s information will be shown on the upper half of the report. After the lower half report is lift, you can input diagnosis information on the

“Ultrasound Observation” and “Ultrasound Diagnosis” input box. Pressing “Switch” key will change the input method. Pressing “Indicator” key will pick up the general measured word database, which can decrease unnecessary repeated input. The methods about how to save and use the word database, please refer to Paragraph 3, Chapter 12 of this manual.

- When input diagnosis information to the report, the text model database is also available. By moving cursor on the “TextModel” button, pressing “Set” key will pick up the text model database. After choosing one desired model, the text for ultrasound observation and ultrasound diagnosis are shown on the right side. Moving the cursor to the “OK” button, press “Set” key on the keyboard will close the dialog and insert the text into the input frame in the report. For how to add, modify, or delete model in the text model dialog, please refer to Chapter 12 of this manual.
- By moving cursor on the “ChangeImg” button and press “set” key on the keyboard, you can pick up the image management dialog; find another saved image to replace the image in the report. By moving cursor on the “RefImg” button and press “set” key on the keyboard, you can pick up the image management dialog, find another saved image to show in the report parallelly with the existed one.
- If there is examination report on the screen, moving cursor on the “print” button and pressing “set” key in the keyboard will print report if there is printer connecting to the apparatus.

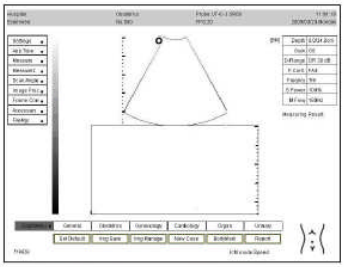
Memorial Hospital

Ultrasound Examination Report(HT)

Name:	jessica	ID:	1	Age:	34	Gender:	Female
O.No.	644	I.No.	g55	Diagnosis:	abdominal pain		

Height	0 cm	Weight	0 kg
HtRate	71.3	BSA	0.0 m2
AOD:	21.6mm	CO:	5.3L/min
LAD:	13.7mm	CI:	
IVSTd:	12.5mm	LVMWI:	
LVIDd:	41.0mm	AVSV:	115.0ml
AA:	37.5mm	FS:	91.7%
LAD/AOD:	0.6	ACV:	29.1mm/s
LVPWd:	29.6mm	ET:	0.5s
LVIDs:	3.4mm	SV:	73.9ml
EF:	99.9%	SI:	
EF SLP:	43.6mm/s	LVMW:	207.0g
CA/CE:	1.5	QMV:	12.3ml
MVCF:	1.8		

Image Display:



Observed: euphotic zone echo found in left venticle, connected between middle of septa interventriculare and right venticle tine.

Diagnose: left venticle false tendon, moderator band.

From Dept.: gyn

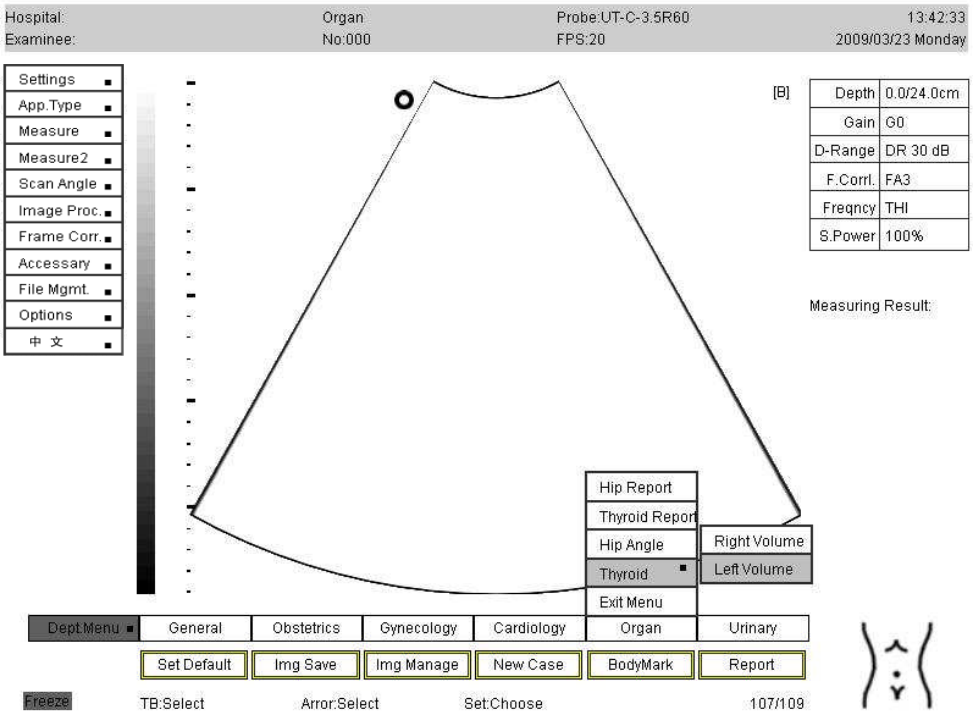
Doctor:(signature or seal)
James Patterson
2009/11/19

Diagnose Ref. Only, Not For Other Purpose

10 Small organs examination

10.1 Explanation of small organs examination

- Examinations of small organs are also carried out in B mode.
- Select “Menu”-“Measure type”-“Small organ” successively, small organ examination will be set.
- Press “Diagnostic tools”, the menu of small organs examination will popup as following:



- Under the status of small organs examination, the instrument could measure thyroid gland and hip joint.

10.2 Small organs examination

10.2.1 Thyroid gland

- Press “Diagnostic tools” and select “Thyroid gland” and “Left volume” successively from the small organ menu popup. After pressing “Set”, cross cursor will appear.
- Measure the length, width and thickness of left thyroid gland separately. Detailed method refers to “Distance measure”.
- Measured result will be displayed in result region.
- Press “Diagnostic tools” and select “Thyroid gland” and “Right volume” successively from the small organ menu popup. Next please measure the follicle of right thyroid gland. Detailed method refers to above.
- Press “Set” again, current measured results will be cleared.

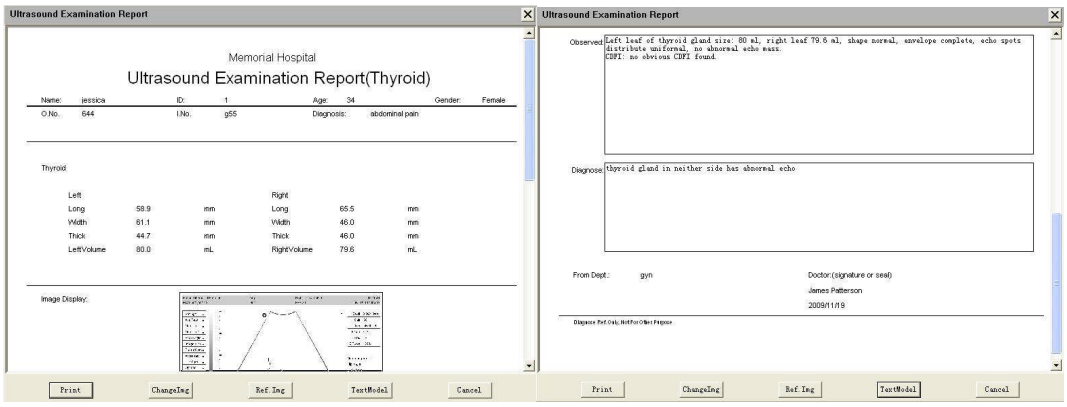
10.2.2 Hip joint

- Press “Diagnostic tools” and select “Hip joint” from the small organ menu popup. After pressing “Set”, cross cursor will appear.
- Move the cursor to appropriate position with trackball and press “Set”, so as to fix one end of the segment. Then move the cursor again to the other end. After pressing “Set”, the segment will be gained.
- To gain the second segment by following the same method as above. The angle contained by the two segments will display in measure region.
- The third segment could also be gained similarly. And its angle β will also display in measure region.

10.3 Examination results of small organs

10.3.1 Examination report of thyroid gland

- After small organs examinations, the system will give small organ diagnosis report automatically. Press “Diagnostic tools” under small organ examination and select “thyroid report” from small organ measuring menu, the report box will popup.
- The contents of report contain patient ID, name, diagnosis images, examination date, doctor, examination result and so on.
- Please note that the examination result will be always kept until new patient information is input. Therefore, please don’t forget to select an examinee or input new patient information before implementing examination.
- For detail operation on the report, refer to the following hip report.

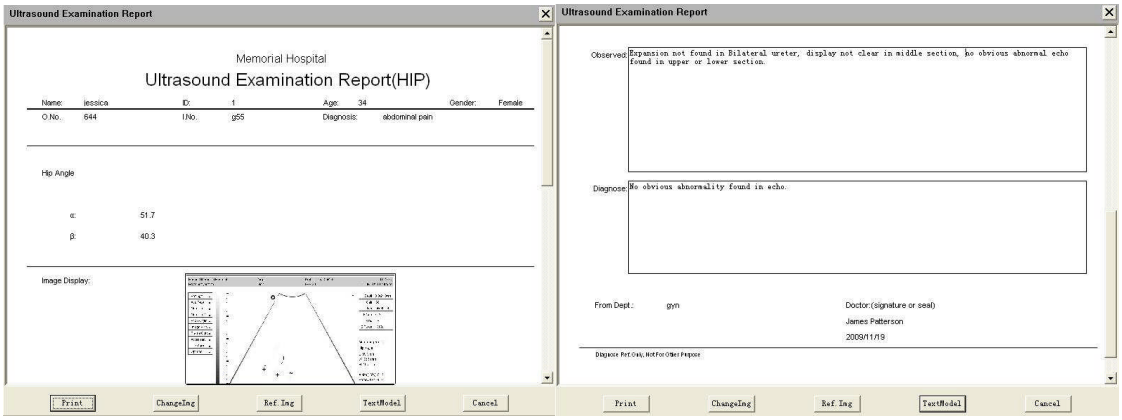


10.3.2 Examination report of hip joint

- After small organs examinations, the system will give small organ diagnosis report automatically. Press “Diagnostic tools” under small organ examination and select “Hip joint report” from small organs menu, the report dialog will popup, or press “report” on the keyboard, the report dialog will popup.
- The contents of report contain patient ID, name, diagnosis images,

examination date, doctor, examination result and so on.

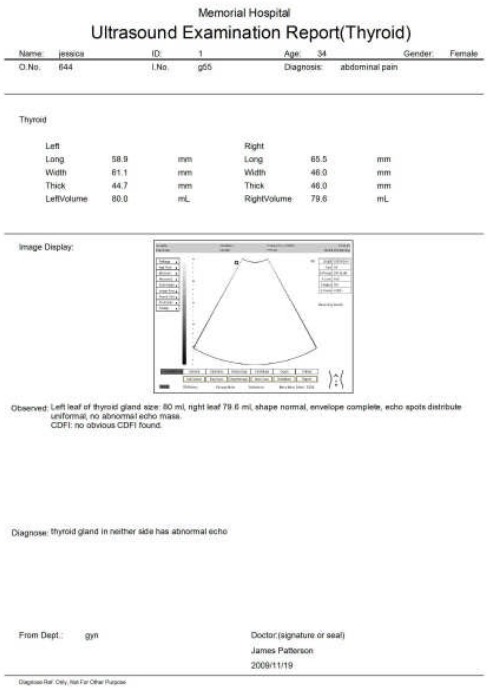
- Please note that the examination result will be always kept until new patient information is input. Therefore, please don't forget to select an examinee or input new examinee information before beginning new examination.

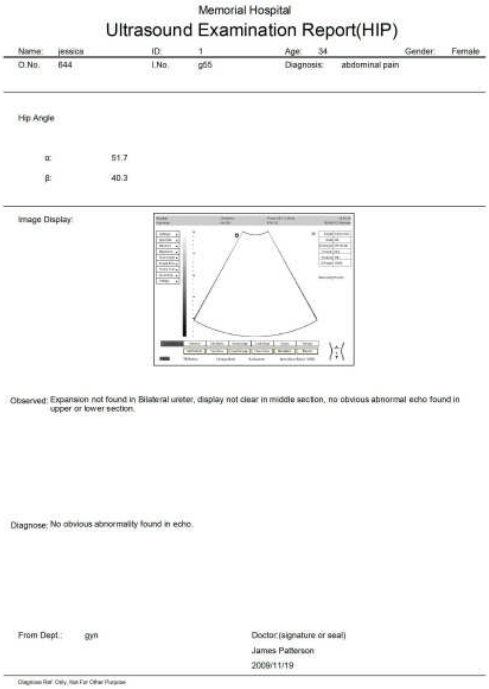


- With the trackball guiding the cursor to the scrollbar on the right side,by pressing "Set" key on the keyboard, the lower half of the report can be lifted.
- When the hip examination report dialog shown on the screen, all the examinee's information will be shown on the upper half of the report. After the lower half report is lift, you can input diagnosis information on the "Ultrasound Observation" and "Ultrasound Diagnosis" input box. Pressing "Switch" key will change the input method. Pressing "Indicator" key will pick up the general measured word database, which can decrease unnecessary repeated input. The methods about how to save and use the word database please refer to Paragraph 3, Chapter 12 of this manual.
- When input diagnosis information to the report, the text model database is also available. By moving cursor on the "TextModel" button, pressing "Set" key will pick up the text model database. After choosing one desired model, the text for ultrasound observation and ultrasound diagnosis are shown on the right side. Moving the cursor to the "OK" button, press "Set" key on the keyboard will close the dialog and insert the text into the input frame in the report. For how to add, modify, or delete model in the text model dialog, please refer to Chapter 12 of this manual.
- By moving cursor on the "ChangeImg" button and press "set" key on the

keyboard, you can pick up the image management dialog; find another saved image to replace the image in the report. By moving cursor on the “RefImg” button and press “set” key on the keyboard, you can pick up the image management dialog; find another saved image to show in the report parallelly with the existed one.

- If there is examination report on the screen, moving cursor on the “print” button and pressing “set” key in the keyboard will print report if there is printer connecting to the apparatus.

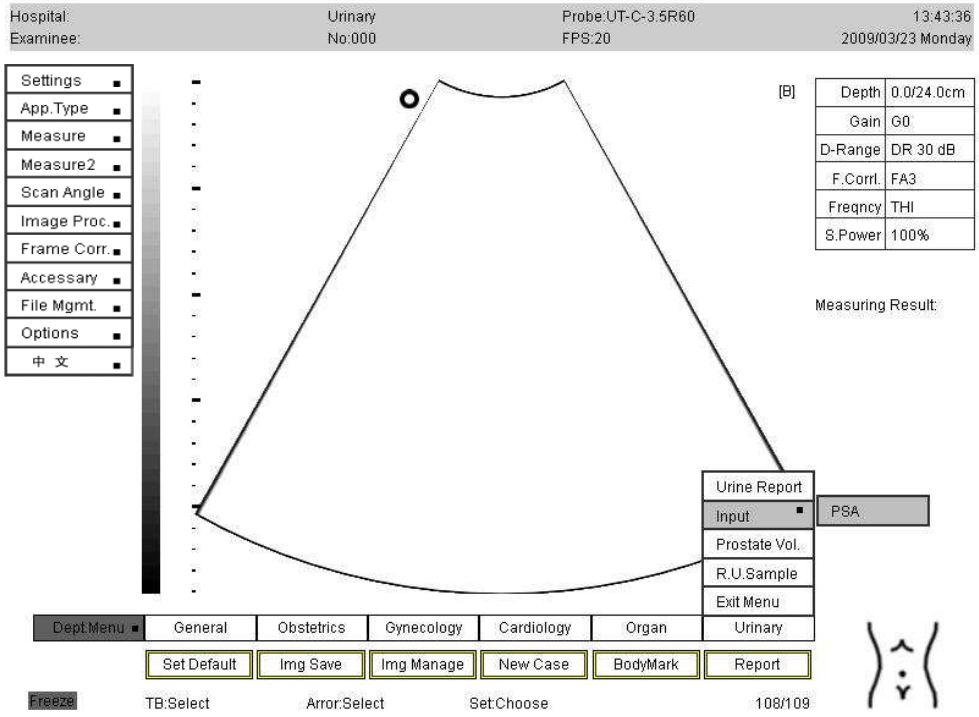

Memorial Hospital
Ultrasound Examination Report(Thyroid)
Name: jessica ID: 1 Age: 34 Gender: Female
O.No: 644 I.No. g55 Diagnosis: abdominal pain
Thyroid
Left Right
Long 58.9 mm Long 65.5 mm
Width 61.1 mm Width 46.0 mm
Thick 44.7 mm Thick 46.0 mm
LeftVolume 80.0 mL RightVolume 79.6 mL
Image Display:
Observed: Left leaf of thyroid gland size: 80 ml, right leaf 79.6 ml, shape normal, envelope complete, echo spots distribute uniformal, no abnormal echo mass.
CDFI: no obvious CDFI found.
Diagnose: thyroid gland in neither side has abnormal echo
From Dept.: gyn
Doctor:(signature or seal)
James Patterson
2009/11/19


Memorial Hospital
Ultrasound Examination Report(HIP)
Name: jessica ID: 1 Age: 34 Gender: Female
O.No. 644 I.No. g55 Diagnosis: abdominal pain
Hip Angle
α: 51.7
β: 40.3
Image Display:
Observed: Expansion not found in Bilateral ureter, display not clear in middle section, no obvious abnormal echo found in upper or lower section.
Diagnose: No obvious abnormality found in echo.
From Dept.: gyn
Doctor:(signature or seal)
James Patterson
2009/11/19

11 Urology examination

11.1 Explanation of urology examination

- Examinations of urology are also carried out in B mode.
- Select “Menu”-“Measure type”-“Urology” successively, urology examination will be set.
- Press “Diagnostic tools”, the menu of urology examination will popup as following:



Under the status of urology examination, the instrument could measure remnants samples of urine, prostate, PSAD and etc.

11.2 Urology measure

11.2.1 Remnants samples of urine

- Press “Diagnostic tools” and select “Remnants samples of urine” from the urology menu popup. After pressing “Set”, cross cursor will appear.
- Measure the length, width and thickness separately. Detailed method refers to “Distance measure”.
- Measured result will be displayed in result region.
- To press “Set” again will clear current results.

11.2.2 Prostate

- Press “Diagnostic tools” and select “Prostate” from the urology menu popup. After pressing “Set”, cross cursor will appear.
- Measure the length, width and thickness of prostate separately. Detailed method refers to “Distance measure”.
- The results of length, width, thickness of prostate, prostate volume (PV) and PPSA will be displayed in result region.
- If user has input “Serum PSA” before measurement, the value of PSA will also display in result region.
- To press “Set” again, system will clear current result and prepare for next measurement.

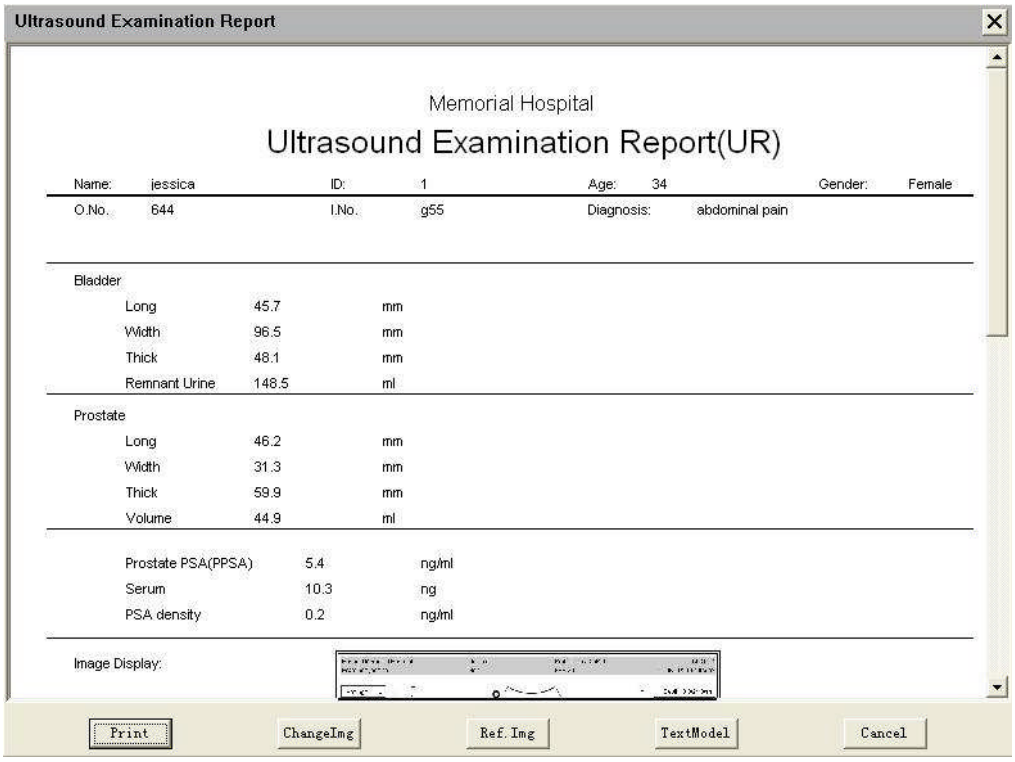
11.2.3 PSAD

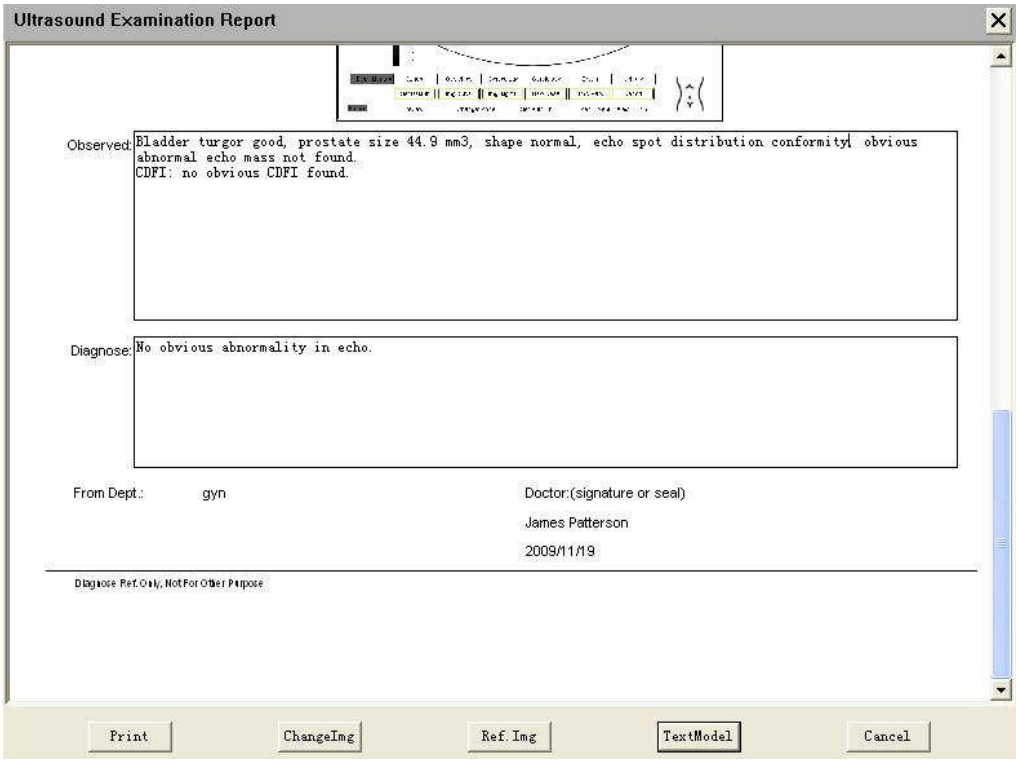
- Before measuring prostate, please input “Serum PAS” from the menu. After finishing the measurement of thyroid gland, the value of PSAD will display in result region automatically.
- If user does not input “Serum PSA” before measurement of prostate, the

value of PSAD will not appear in measurement results. However, it will appear in urology examination report when inputting “Serum PSA” after the measurement of prostate.

11.3 Examination results of urology

- After urology examinations, the system will give urology diagnosis report automatically. Press “Diagnostic tools” under urology examination and select “Urology report” from urology menu, the report box will popup, or press “report” key on the keyboard after measuring.
- The contents of report contain patient ID, name, diagnosis images, examination date, doctor, examination result , PV, PPSA, PSAD and so on.
- Please note that the examination result will be always kept until new examinee information is input. Therefore, please don’t forget to select an examinee or input new examinee information before implementing new examination.





- With the trackball guiding the cursor to the scrollbar on the right side, by pressing “Set” key on the keyboard, the lower half of the report can be lifted.
- When the urology examination report dialog shown on the screen, all the examinee’s information will be shown on the upper half of the report. After the lower half report is lift, you can input diagnosis information on the “Ultrasound Observation” and “Ultrasound Diagnosis” input box. Pressing “Switch” key will change the input method. Pressing “Indicator” key will pick up the general measured word database, which can decrease unnecessary repeated input. The methods about how to save and use the word database, please refer to Paragraph 3, Chapter 12 of this manual.
- When input diagnosis information to the report, the text model database is also available. By moving cursor on the “TextModel” button, pressing “Set” key will pick up the text model database. After choosing one desired model, the text for ultrasound observation and ultrasound diagnosis are shown on the right side. Moving the cursor to the “OK” button, press “Set” key on the keyboard will close the dialog and insert the text into the input frame in the

report. For how to add, modify, or delete model in the text model dialog, please refer to Chapter 12 of this manual.

- By moving cursor on the “ChangeImg” button and press “set” key on the keyboard, you can pick up the image management dialog; find another saved image to replace the image in the report. By moving cursor on the “RefImg” button and press “set” key on the keyboard, you can pick up the image management dialog, find another saved image to show in the report parallelly with the existed one.
- If there is examination report on the screen, moving cursor on the “print” button and pressing “set” key in the keyboard will print report if there is printer connecting to the apparatus.

Memorial Hospital

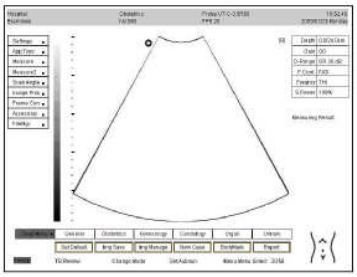
Ultrasound Examination Report(UR)

Name:	jessica	ID:	1	Age:	34	Gender:	Female
O.No.	644	I.No.	g55	Diagnosis:	abdominal pain		

Bladder		
Long	45.7	mm
Width	96.5	mm
Thick	48.1	mm
Remnant Urine	148.5	ml
Prostate		
Long	46.2	mm
Width	31.3	mm
Thick	59.9	mm
Volume	44.9	ml

Prostate PSA(PPSA)	5.4	ng/ml
Serum	10.3	ng
PSA density	0.2	ng/ml

Image Display:



Observed: Bladder turgor good, prostate size 44.9 mm3, shape normal, echo spot distribution conformity, obvious abnormal echo mass not found.
CDFI: no obvious CDFI found.

Diagnose: No obvious abnormality in echo.

From Dept.: gyn

Doctor:(signature or seal)
James Patterson
2009/11/19

Diagnose Ref. Only, Not For Other Purpose

12 Management of images

12.1 Cine loop

12.1.1 Synopsis

- Cine loop function is used for saving and previewing images. It could store a great lot of images in instrument memory, which is easy to preview former images at any moment.
- Cine loop function could store 512 B images in each mode (B, B/B, 4B, B/M), and 4096 M line images. Both of these could be increased.
- Press “Freeze” key, the 512 images current will be saved automatically. Cine loop will also be activated.
- The quantity and position of saved images will display in the down-left corner of screen.

12.1.2 Manual cine loop

- Press “Freeze” key, and cine loop functions will be activated automatically. Move trackball leftward or rightward, user could preview the former single images in turn.
- The number at down-right corner shows positions of current image.

12.1.3 Multiple cine loop

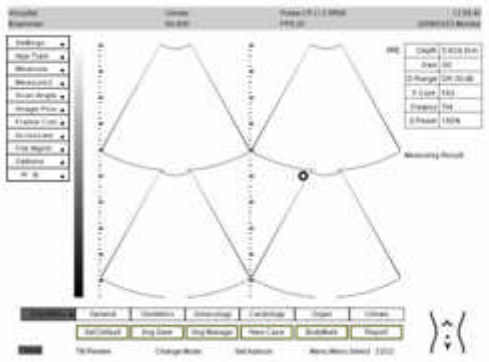
- Press “Freeze” key, and cine loop functions will be activated automatically. Press “Switch” key under this mode, user could preview the saved images in multiple screens.
- Press “Switch” key in turn, user could choose multiple screens. (1×1、2×2、

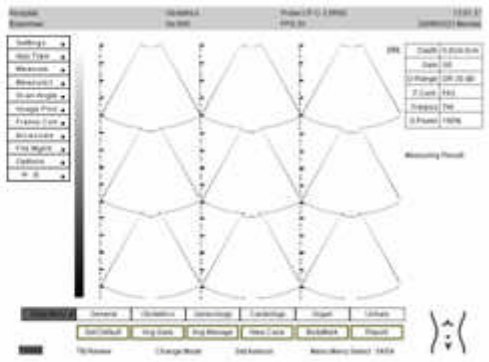
3×3 screen).

- The number at down-right corner shows positions of the first image being previewed.

12.1.4 Automatic cine loop

- Press “Freeze” key, and cine loop functions will be activated automatically. Press “Set” key under this mode, system will enter into automatic cine loop mode, and display images one by one automatically.
- The number at down-right corner shows the positions of the image being previewed now.
- When pressing “K” key under automatic cine loop mode, velocity of cine loop will be changed.
- Move trackball rightward or leftward, system will exit automatic cine loop mode, and return to manual cine loop mode.





12.2 Image management system

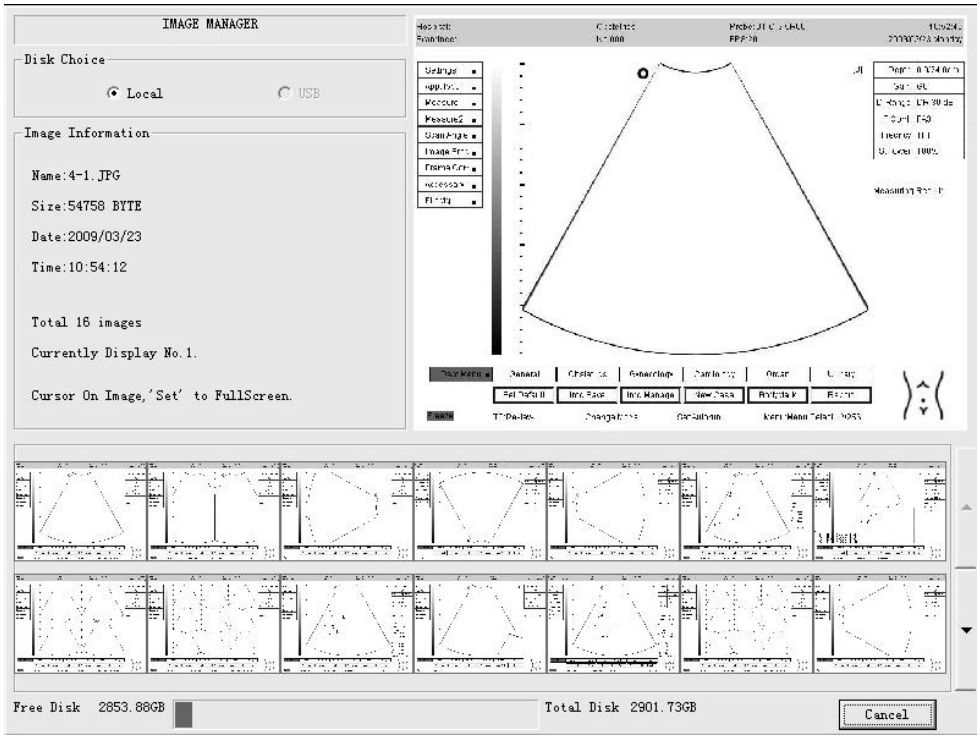
12.2.1 Synopsis

- Image management system is a perfect system which is based on PC platform and could provide convenient image management functions. It could help user study the states of an illness by the numbers at the same time with managing the clinical histories of patients.

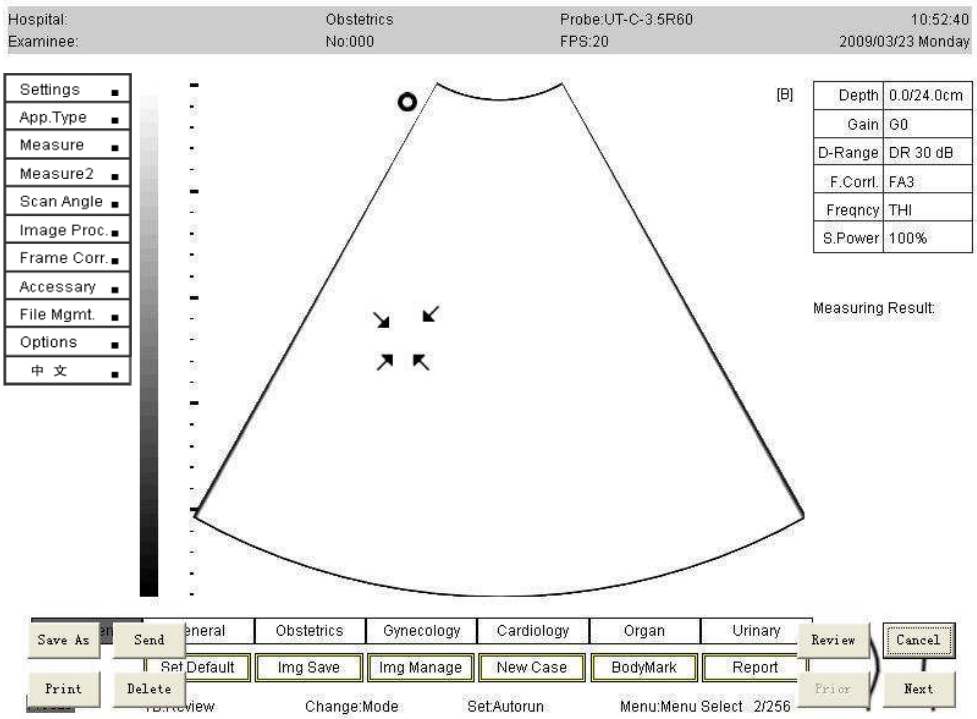
- It owns the functions of saving and opening images, image preview, image deletion, image print and relevant functions of PC.
- The format of file is JPEG and JPG, and DICOM format could also be optional.
- If inserting USB disk during the use process, system will recognize the disk automatically, and select it in the interface of image and texts management. The interface could manage all JPG files under the root directory of USB disk.

12.2.2 Operations of the system

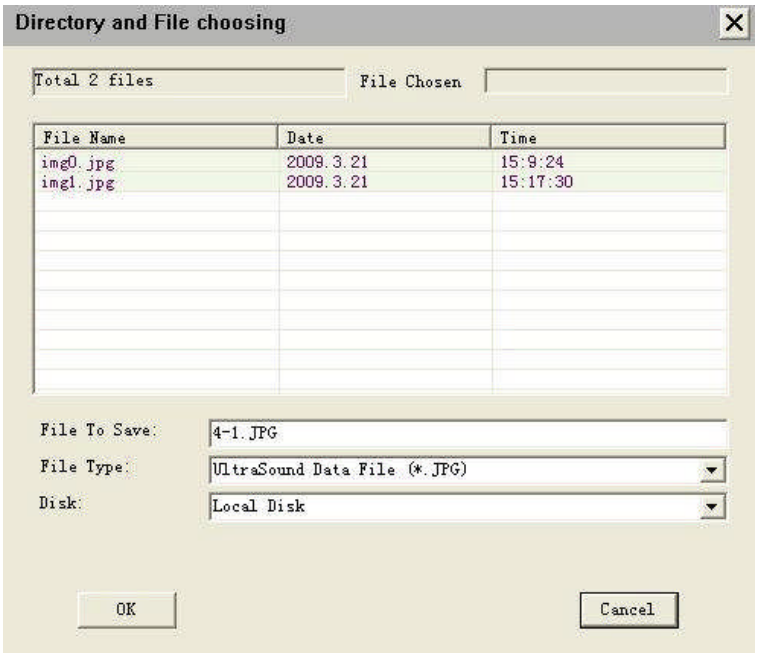
- In order for the more convenient image and texts management, the keyboard possesses independent “Image save” and “Image pigeonhole” keys. When pressing “Image save” key, current images in screen will be saved into hard disk; and when pressing “Image pigeonhole” key, the image management system will be activated. The following image is the basic interface of image management system:



- The interface displays the total number of pigeonholed images, size, ID and other information.
- Users could carry through the operations such as image preview, image comparison, image transfer in basic interface. Moreover, they could save images into local hard disk, add-in U flash, CF card, SD card and other save medium, and also save images into soft disk, CD and other mediums.
- If inserting USB disk when under the dialog box of image management, the USB choice at up-right corner will change active from gray status. Move the cursor to the active icon by trackball, and press “Set” key, all files at root directory with extension of JPG will be displayed in the dialog box.
- Images could be transferred via internet if user chose optional accessories, so as for long-distance diagnosis.
- Under the basic operation interface of image management system, user could select favorite images via image preview with trackball: Move cursor to the favorite image in the down box of image preview, and pres “Set”, the favorite image selected will be displayed in the upper big area. And if moving cursor to the big area, the magnified image will be displayed full screen. Detailed image is as figure 12-3 following.
- When under the full screen status, user could implement the operations of saving, transferring, printing, deleting images via selecting the icons of “Save image as”, “Transmit”, “ Print”, “Print” via trackball and “Set” key.



- Under the interface of full screen image, user could implement the switch of full screen image scan via the combination of trackball and “Set” key.
- Press the “Browse” icon in full screen interface; screen will browse all the images in selected disk (local disk or USB disk) one by one automatically. To press “K” key will change the velocity of browse, and to press “Exit” key will exit automatic browse status.
- To press the icon “Transmit” in full screen interface will transmit the selected image to long-distance main unit under the format of DICOM3.0. However, please note that the function is optional.
- Press “Print” icon in full screen interface, the image selected will be printed.
- Press “Save as” icon in full screen interface, the following “Selection of catalog and file” dialog box will popup:



- To press “Exit” icon will exit full screen interface and return to the basic operation interface.
- To press “Close” icon under the basic operation interface of image management system will exit image management system.

12.3 Text notes and instructions

Under frozen status, test notes and multi-direction arrows could be marked at any location in the full screen.

12.3.1 Text notes

- Under frozen status, press “Test” button, the system will enter into test mark status, and cursor will appear to mark current location.
- Move the cursor by trackball to the location where user wants to write and press”Set” button. The cursor will become into text-input sign.
- User will be able to input any texts by keyboard.
- Press “Set” key after finishing input, current input will be completed.
- Move cursor to the next location, user could input once more.

- Press “Text” button again, the system will exit text-input status, but the marked characters will remain.
- Press “Exit” button, the system will exit text-mark status.
- Under the character-input status, press”Indication” button, common characters library dialog box will appear. Move cursor to the entries which user is interested and press “Set” button, then move the cursor to the “Set” icon of the character set, the current library dialog box will disappear, and the selected texts will appear at the location where the cursor located before. This function will save much time for doctors when it is necessary to input many characters. The common characters storage has the functions of new texts addition, deletion and correction. Doctors could add the commonly used characters into the library, and select them quickly when necessary.

12.3.2 Instructions marked status

- Under frozen status, press “Indication” button, the system will enter into instructions marked status, and cursor will appear to mark the current location.

- Move the cursor to where you want to mark by trackball and press “Set” button, instruction-arrow sign will appear on the image.
- Press “Switch” button can shift the direction of instruction-arrow.
- Move the cursor to the next location, you can mark once again.
- Press “Indication” button again, the system will exit the indication status, but the marked indications will remain.
- Press “Exit” button, marked indications will be cleared.

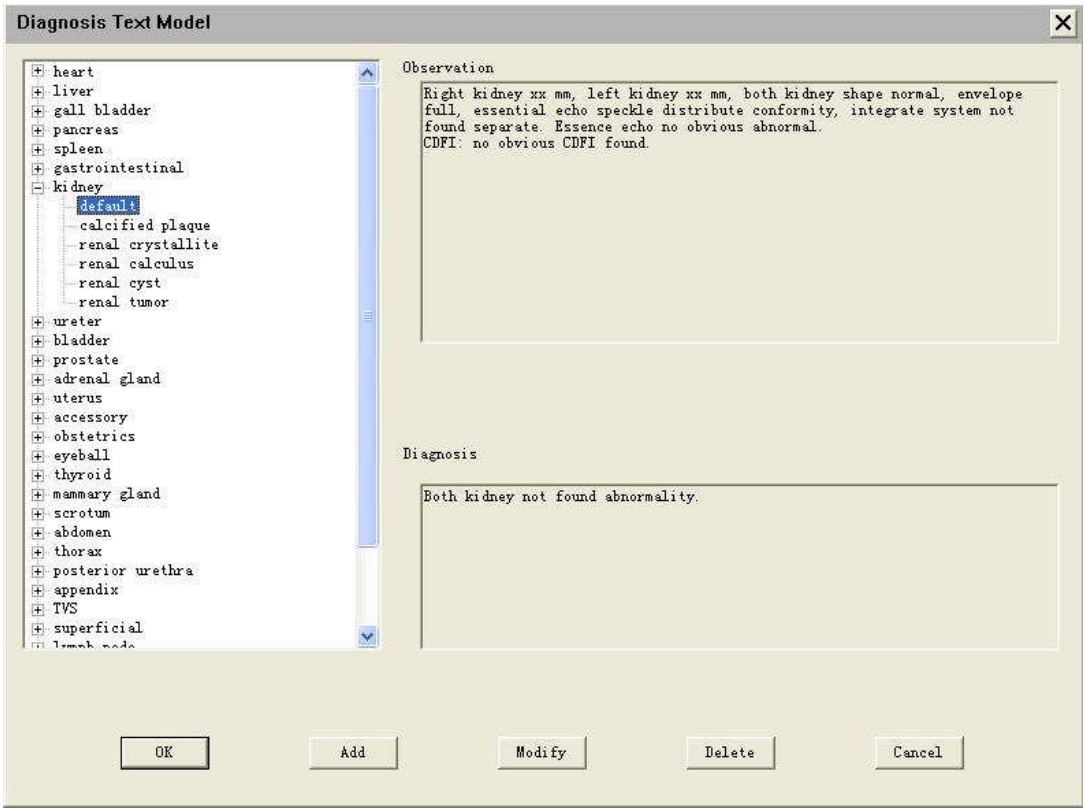
12.4 Text Model

When fill the diagnosis opinion in all the report, move the cursor to the “TextModel” button and press “Set” key, the text model dialog will appear.

- Add: By choosing add function, you can add your edited text into database and save it in the apparatus, so later can bring it out, save time for next diagnosis. First, move the cursor to the classification on the left side by trackball, when the tree expanding, move the cursor to the “Add” button on the bottom, pressing the “Set” key on the keyboard. A new sub branch in the chosen classification named “custom1” will be added, and the “Add” button now is changed into “Finish” button. While on the right side of the dialog, the input box for observation and diagnosis change color to light white, you can write your opinion into it. While inputting, press “Indicator” key on the keyboard can bring up the Word Database to use, when you are done with the input, move the cursor to the “finish” button with trackball, press “Set” key on the keyboard to finish the adding.
- Modify: By choosing modify function, you can modify the exist text model in the apparatus for future use. First, move the cursor to the classification tree on the left side by trackball, when the tree expanding, choose one of the sub branch by move the cursor on it and press “Set” key on the keyboard, then the text model will show on the right side of the dialog, the above is observation and the bottom one is the diagnosis, now, move cursor to the

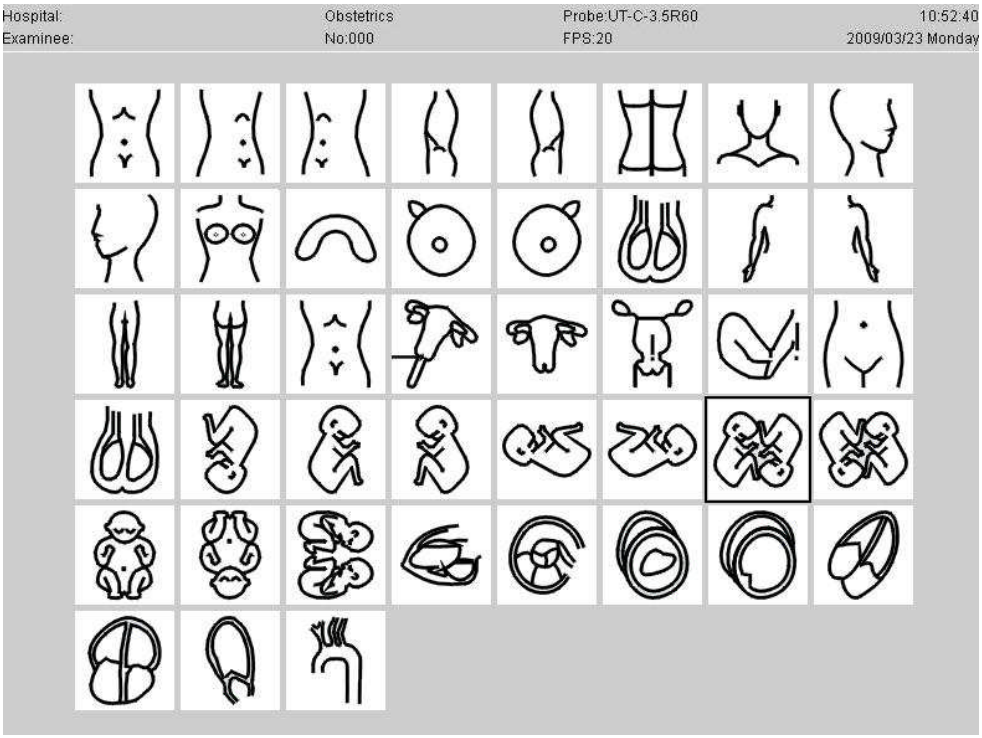
“Modify” button on the bottom, press “Set” key, “Modify” button becomes “Finish” button. The observation and diagnosis box both change color to light white. You can edit them now. While you are editing, pressing “Indicator” key on the keyboard can bring up the Word Database to use. When you finish edit, move cursor to the “finish” button, press “Set” key, “finish” changes back to “Modify” button to finish the modification.

- Delete: By choosing delete function, you can remove the chosen text model from the text model database. Similar to above modify, you can move the cursor to the left side classification tree and choose the desired branch. When the text model show on the right side of the dialog, move the cursor on the “Delete” button on the bottom, then press “Set” key on the keyboard. The chosen branch and its text model will be removed from the database.
- OK: OK button on the bottom of the dialog is for you to send the chosen text model to the report. When you move the cursor to the left side of the dialog, expand one item, choose one of the sub branch, the text model will be shown on the right side. You can move the cursor down onto the “OK” button, then press “Set” key on the keyboard, then the text model “Observation” and “Diagnosis” will be send to the related input box in the report.



12.5 Body mark

- At the down right corner of the screen, it is the sketch map displaying current body position.
- User could select and change examination types from the main menu. And when changing the type, the sketch map will change along with it.
- If user wants to shift body mark on the screen manually, please press “Body mark” button and one selection dialog of body mark will appear as figure 12-6.
- Move the trackball, and when selecting the favorite body mark, please press “Set” key. The selection dialog will disappear, and the selected body mark will be displayed at the down right corner of the screen.


Hospital:
Obstetrics
Probe:UT-C-3.5R60
10:52:40
Examinee:
No:000
FPS:20
2009/03/23 Monday

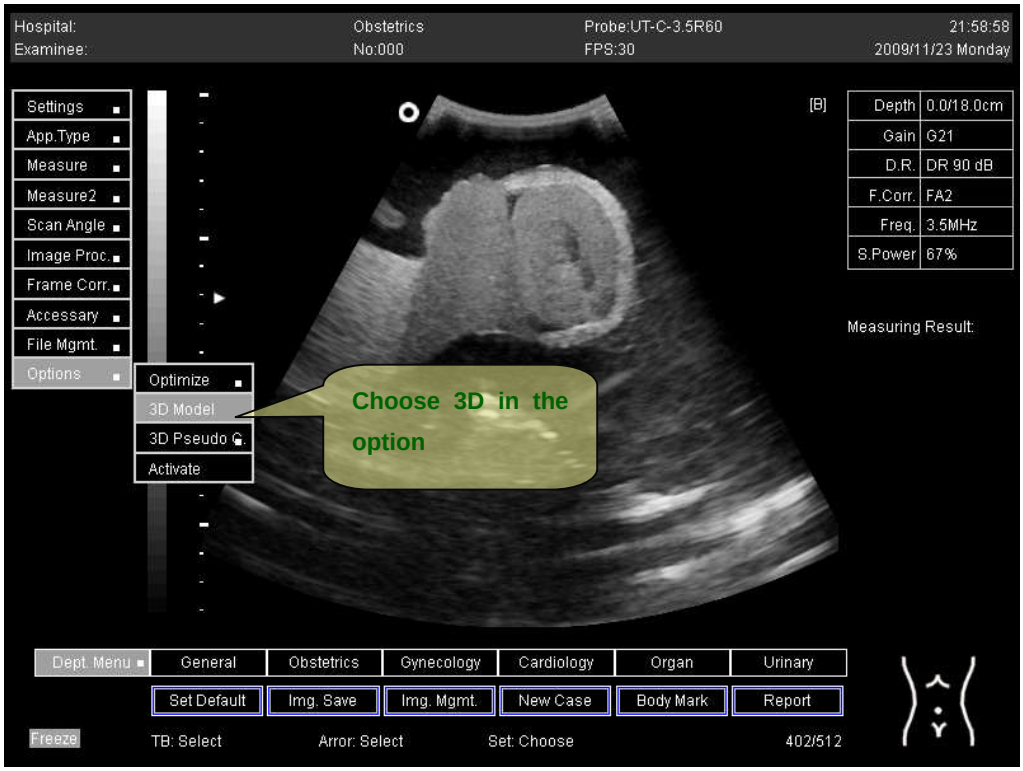
13 3D Ultrasound Image Workstation User Manual (Optional)

13.1 Overview

- 3D ultrasound image workstation software can turn your traditional two dimensional ultrasound equipment into 3D ultrasound image workstation so that operator can get clearly 3D diagnosing ultrasound image.
- The software will dispose corresponding data image of the image which got after rebuild, in this way, the doctor will get the 3D ultrasound image which they need;3D image can be rotated for 360 degree from any angel, the doctor can observe the image from many angel, they can get any aspect image from it, the doctor will familiar with the internal structure of the image; by strong rebuilding and dealing functions of the software, it can help the basis of clinical diagnosis of the doctor from traditional two dimensional image to vivid 3D image, it can improve accuracy and convenience of diagnosis.

13.2 Rebuilding mode of software

- When the pictures is in freezing status, press3D Model” in the”options” menu for entering 3D rebuilding mode.



13.3 Parameters setting

- After entering “3D Model”, it will appear square frame of choosing area and tool tips of operation function on the bottom of the screen.
- The illustration of tool tips are as follows:

Press ”R” to choose the area of 3D rebuilding image.

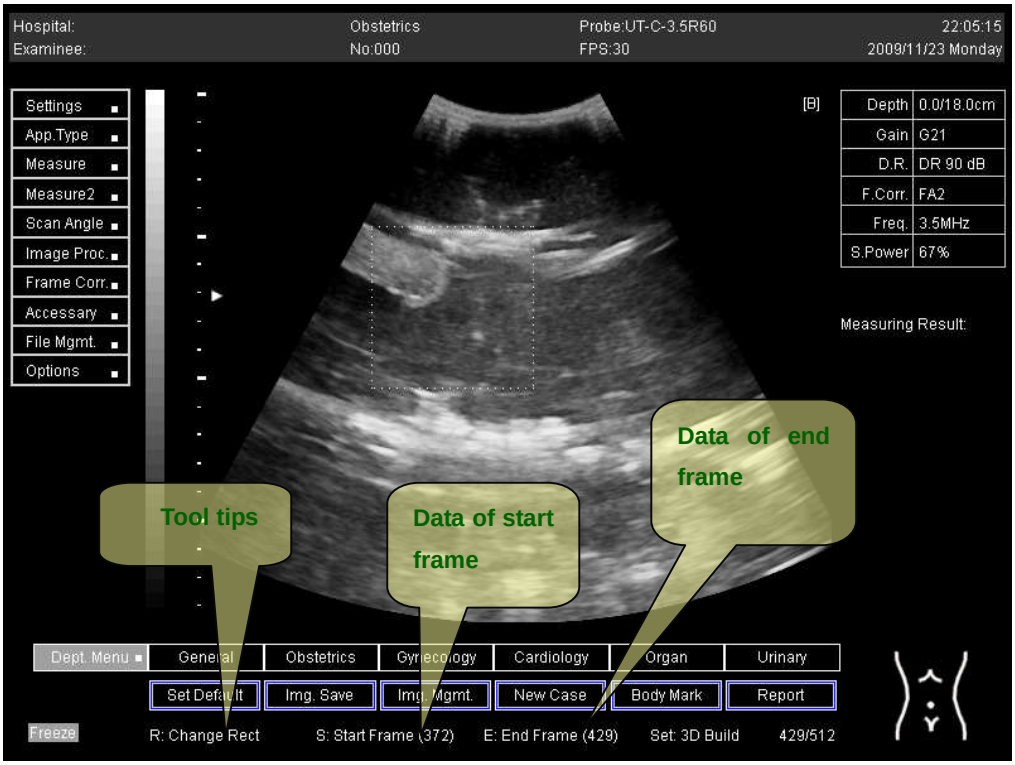
When pressing ”R” to choose the area of rebuilding image, it can be changed between the location of the square frame and size of it.

Press “S” to choose the start frame.

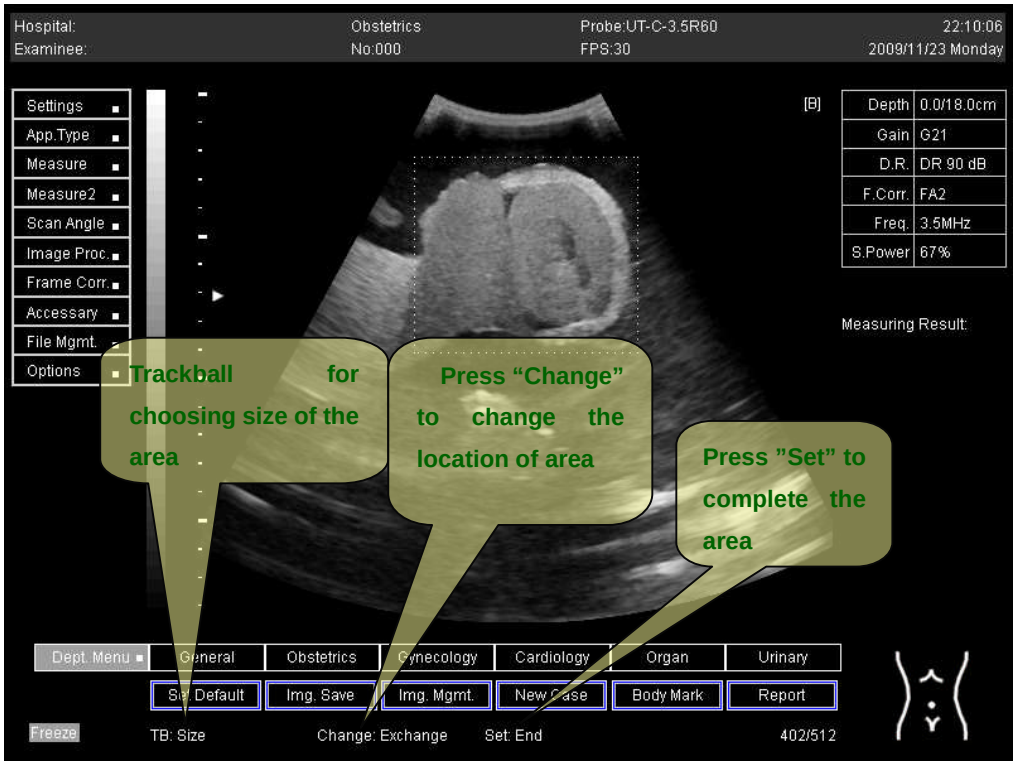
Press ”E” to choose the end frame.

Press ”Set” for the beginning of 3D rebuilding of image.

- Use trackball for choosing the location of start, then press ”S” to confirm the start frame, the data of the start frame will be displayed in the tool tips; use trackball for choosing the location of ending, press ”E” to confirm the end frame, the data of the end frame will be displayed in the tool tips.



- Press ”R” , using trackball to choose the square frame, then press ”Change” to choose the area of rebuilding image, it can be changed between the location of the square frame and size of it. Repeat operation for confirming a suitable location and size of area, press ”set” to complete the setting.
- After confirming the start frame, end frame and area for completing the parameters setting, press ”set” for disposing rebuilding.



13.4 Three-dimensional reconstruction of treatment

- Finishing parameters setting and entering the interface of 3D reconstruction, it will appear 3D image in the screen of ultrasound scanner, the tool tips of operation function will also be appeared at the bottom of the screen.
- The illustration of tool tips are as follows:

  Trackball for revise 3D image

  Press "T" to set transparency and gray scale.

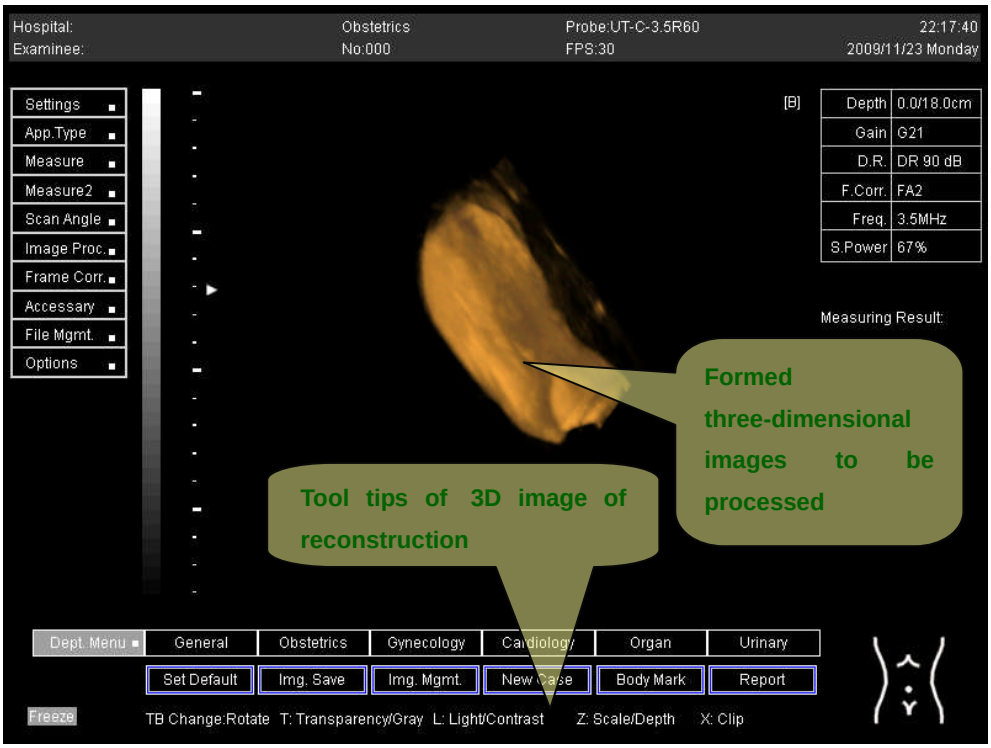
  Press "L" to set brightness and contrast.

  Press "Z" to set proportion/the length of Z axis.

  Press "X" to set aspect of 3D image.

  Press "<" and ">"to set magnitude.

  Press "shift" to set different preferences.



- Use trackball to revise the image to a suitable location, “shift” button to select different rotate mode.
- The Scale of 3D image and adjustment of length of Z axis.

Press ”Z” ,using trackball to adjust the image to a suitable area.

Press ”shift” for adjustment of the Z axis of image.

Use trackball to adjust Z axis of image to a suitable area.

After confirming the scale of image and length of Z axis, press ”Set” for settings.

- Adjustment of transparency and gray scale of image.

Press ”T”, use”>” and “<” button to adjust the transparency of image to a suitable location.

After confirming the area of transparency and gray scale, press ”Set” for settings.

Adjust the three-dimensional Image gray scale to appropriate scope by the key of“<”&“>”.

After determining the scope of transparency and gray, Press “ENTER” to

confirm it.

- The adjustment of the three-dimensional image brightness and contrast.

Press “L”, adjust the three-dimensional Image gray scale to appropriate scope by the key of“<”&“>”.

Press “shift”, Switch to the three-dimensional image contrast adjustment.

Press “<”&“>” adjust the three-dimensional Image contrast to appropriate scope.

After determining the scope of brightness and contrast, Press “ENTER” to confirm it.

- After completion of the three-dimensional rebuilding of treatment, Use the trackball to rotate the 3D image for checking the image from different angles "switch" to select a different spin.
- Three-dimensional image section adjustment.

Press “X” , adjust the three-dimensional image section position through the trackball, it can get three-dimensional images of arbitrary section images, then understand the internal structure of three-dimensional image.

Press "enter" to determine the required three-dimensional image observation section.

Notice!
The 3D ultrasound image workstation software is the charging function; please contact the supplier to launch this feature. Please understand this feature before opening; any refund reason is not acceptable after opening.

14 Trouble shooting

If there is any problem of the machine, please confirm the model, product code, the date of purchase, and cotact the aftersales department of manufacturer.

Warning
Before start up, please make a check according to the below: a) Examine whether the supply power is in normal state. b) The power line of the main frame has been properly connected well. c) Examine whether the probe has been connected to the device correctly

Replacement of Fuse:

Position the driver into the slot on the fuse cap and press it, then contra-rotate it to loose the cap. Take off the fuse tube (protective tube) and replace it then put back the cap and take the reverse measure to fix the cap and fasten it. Fuse specification: φ5×20, 3.15A/250V.

a) Open power switch of the device, with no signal appeared on the screen and the indicating light off.

1. Examine power supply;
2. Examine supply line and plug;
3. Examine whether the fuse is burned-out;
4. Examnine the socket whether it is the bad contact.

b) No signal display

1. Adjust the brightness and contrast knobs;

2. Adjust the connecting wire of the monitor input signal and main frame;

c) Unclear image display

1. Adjust the brightness and contrast knobs

2. Adjust the 8 level TGC and the total gain knob;

d) Discontinuous striae and snow appear on the screen.

1. Examine power supply: strike fire interfere of the other devices;

2. Environmental examination: Electric and magnetic field interfere;

3. Examine power and probe plugs: whether they are well connected or grounded.

e) Cannot enter into windows system

1.Connect the power line , open the machine, press ”comment” button continuously ,system will come into the system recovery menu” ECOVERY Press R; CANCEL Press C;［R，C］?”, Press R button, then the system will enter into the status“URE RECOVERY Press Y;CANCEL Press N ;[R，C]?”Press R button, the system will come into system recovery status. After 10 minutes later, system will recover and will enter into ultrasonic system automatically.（Note: About system recovery operation will recover the system into Default, patient information, image, video documents have already been canceled, please confirm the documents have already reserved or back up before operation, if any questions, please contact our customer service department.

2． If operation can not make system recovery, please contact our customer service department.

Appendix A Sound output report

mode: B

Probe: UT-C-3.5R60

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.68	0.36	-	-	-	-
Associated Acoustic Parameters	p_{ra}		(MPa)	1.14					
	P		(mW)		26.4	-		-	-
	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)	5.71					
	$d_{eq}(z_b)$		(cm)					-	
	*f*awf		(MHz)	3.35	3.35	-	-	-	-
	Dim of *A*aprt	X	(cm)		1.5 1	-	-	-	-
		Y	(cm)		1.37	-	-	-	-
Other Information	t_d		(μsec)	0.401					
	prr		(Hz)	5279					
	p_r at max. I_{pi}		(MPa)	1.90					
	*d*eq at max. I_{pi}		(cm)					-	
	$I_{pa,\alpha}$ at max. *MI*		(W/cm²)	52.60					
Operating Control Conditions	Focus			single	single	-	-	-	-
	Focus position			3	3	-	-	-	-
	Depth (mm)			180	180	-	-	-	-
	Frequency setting (MHz)			3.5	3.5	-	-	-	-

Remark:

Mode B and Mode B/B、4B has the same emitter.The sound output of Mode B can be applied for mode B/B、4B.

Sound output report
mode: BM
Probe: UT-C-3.5R60

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.67	0.36	-	0.017	0.05	-
Associated Acoustic Parameters	p_{ra}		(MPa)	1.1 2					
	P		(mW)		26.4	-		1.71	-
	Min. of [$P_{\alpha}(z_s)$, $I_{ta,\alpha}(z_s)$]		(mW)				1.00		
	*Z*s		(cm)				2.32		
	z_{bp}		(cm)				2.32		
	z_b		(cm)					0.2	
	z at max. $I_{pi,\alpha}$		(cm)	5.70					
	$d_{eq}(z_b)$		(cm)					0.91	
	*f*awf		(MHz)	3.35	3.35	-	3.35	3.35	-
	Dim of *A*aprt	X	(cm)		1.41	-	1.38	1.38	-
		Y	(cm)		1.37	-	1.35	1.35	-
Other Information	t_d		(µsec)	0.401					
	prr		(Hz)	5276					
	p_r at max. I_{pi}		(MPa)	1.90					
	*d*eq at max. I_{pi}		(cm)					0.91	
	$I_{pa,\alpha}$ at max. *MI*		(W/cm²)	52.60					
Operating Control Conditions	Focus			single	single	-	single	single	-
	Focus position			3	3	-	3	3	-
	Depth (mm)			170	170	-	170	170	-
	ST (S)			1.13	1.13	-	1.13	1.13	-
	Frequency setting		(MHz)	3.5	3.5	-	3.5	3.5	-

Sound output report
mode: M
Probe: UT-C-3.5R60

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.59	-	-	0.017	0.05	-
Associated Acoustic Parameters	p_{ra}		(MPa)	1.01					
	P		(mW)		-	-		1.71	-
	Min. of [$P_\alpha(z_s)$, $I_{ta,\alpha}(z_s)$]		(mW)				1.00		
	*Z*s		(cm)				2.32		
	z_{bp}		(cm)				2.32		
	z_b		(cm)					0.2	
	z at max. $I_{pi,\alpha}$		(cm)	5.81					
	$d_{eq}(z_b)$		(cm)					0.91	
	*f*awf		(MHz)	3.34	-	-	3.34	3.34	-
	Dim of *A*aprt	X	(cm)		-	-	1.38	1.38	-
		Y	(cm)		-	-	1.35	1.35	-
Other Information	t_d		(μsec)	0.399					
	prr		(Hz)	291					
	p_r at max. I_{pi}		(MPa)	1.90					
	*d*eq at max. I_{pi}		(cm)					0.91	
	$I_{pa,\alpha}$ at max. *MI*		(W/cm²)	51.77					
Operating Control Conditions	Focus			single	-	-	single	single	-
	Focus position			3	-	-	3	3	-
	Depth (mm)			170	-	-	170	170	-
	ST (S)			2.25	-	-	2.25	2.25	-
	Frequency setting (MHz)			3.5	-	-	3.5	3.5	-

Sound output report
mode: B
Probe: UT-L-7.5

Index Label				*MI*	*TIS*			*TIB*	*TIC*
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	*Aaprt*>1cm²		
Maximum Index Value				0.58	0.27	-	-	-	-
Associated Acoustic Parameters	p_{ra}		(MPa)	0.98					
	P		(mW)		6.6	-		-	-
	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)	3.1 1					
	$d_{eq}(z_b)$		(cm)					-	
	*f*awf		(MHz)	5.32	5.32	-	-	-	-
	Dim of *A*aprt	X	(cm)		0.87	-	-	-	-
		Y	(cm)		0.79	-	-	-	-
Other Information	t_d		(μsec)	0.230					
	prr		(Hz)	2997					
	p_r at max. I_{pi}		(MPa)	1.60					
	*d*eq at max. I_{pi}		(cm)					-	
	$I_{pa,\alpha}$ at max. *MI*		(W/cm²)	41.65					
Operating Control Conditions	Focus			single	single	-	-	-	-
	Focus position			3	3	-	-	-	-
	Depth (mm)			60	60	-	-	-	-
	Frequency setting		(MHz)	7.5	7.5	-	-	-	-

Remark:
Mode B and Mode B/B、4B has the same emitter.The sound output of Mode B can be applied for mode B/B、4B.

Sound output report
mode: BM
Probe: UT-L-7.5

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.58	0.27	0.006	-	0.013	-
Associated Acoustic Parameters	p_{ra}		(MPa)	1.00					
	P		(mW)		6.7	0.35		0.35	-
	Min. of [$P_{\alpha}(z_s)$, $I_{ta,\alpha}(z_s)$]		(mW)				-		
	Zs		(cm)				-		
	z_{bp}		(cm)				-		
	z_b		(cm)					2.58	
	z at max. $I_{pi,\alpha}$		(cm)	3.12					
	$d_{eq}(z_b)$		(cm)					0.26	
	$f$awf		(MHz)	5.35	5.35	5.25	-	5.25	-
	Dim of Aaprt	X	(cm)		0.87	0.82	-	0.82	-
		Y	(cm)		0.80	0.79	-	0.79	-
Other Information	t_d		(μsec)	0.230					
	prr		(Hz)	2997					
	p_r at max. I_{pi}		(MPa)	1.60					
	$d$eq at max. I_{pi}		(cm)					0.26	
	$I_{pa,\alpha}$ at max. MI		(W/cm²)	41.65					
Operating Control Conditions	Focus			single	single	single	-	single	-
	Focus position			3	3	3	-	3	-
	Depth (mm)			60	60	60	-	60	-
	ST (S)			0.90	0.90	0.90	-	0.90	-
	Frequency setting (MHz)			7.5	7.5	7.5	-	7.5	-

Sound output report
mode: M
Probe: UT-L-7.5

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.47	-	0.006	-	0.013	-
Associated Acoustic Parameters	p_{ra}		(MPa)	0.99					
	P		(mW)		-	0.35		0.35	-
	Min. of [$P_{\alpha}(z_s)$, $I_{ta,\alpha}(z_s)$]		(mW)				-		
	*Z*s		(cm)				-		
	z_{bp}		(cm)				-		
	z_b		(cm)					2.58	
	z at max. $I_{pi,\alpha}$		(cm)	2.97					
	$d_{eq}(z_b)$		(cm)					0.25	
	*f*awf		(MHz)	5.25	-	5.25	-	5.25	-
	Dim of *A*aprt	X	(cm)		-	0.83	-	0.83	-
		Y	(cm)		-	0.77	-	0.77	-
Other Information	t_d		(μsec)	0.230					
	prr		(Hz)	287					
	p_r at max. I_{pi}		(MPa)	1.61					
	*d*eq at max. I_{pi}		(cm)					0.24	
	$I_{pa,\alpha}$ at max. *MI*		(W/cm²)	40.80					
Operating Control Conditions	Focus			single	-	single	-	single	-
	Focus position			3	-	3	-	3	-
	Depth (mm)			60	-	60	-	60	-
	ST (S)			1.75	-	1.75	-	1.75	-
	Frequency setting (MHz)			7.5	-	7.5	-	7.5	-

Sound output report
mode: B
Probe: UT-C-6.5R13

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.38	0.074	-	-	-	-
Associated Acoustic Parameters	p_{ra}		(MPa)	0.70					
	P		(mW)		3.2	-		-	-
	Min. of [$P_{\alpha}(z_s)$, $I_{ta,\alpha}(z_s)$]		(mW)				-		
	Zs		(cm)				-		
	z_{bp}		(cm)				-		
	z_b		(cm)					-	
	z at max. $I_{pi,\alpha}$		(cm)	3.35					
	$d_{eq}(z_b)$		(cm)					-	
	$f$awf		(MHz)	4.69	4.69	-	-	-	-
	Dim of Aaprt	X	(cm)		0.39	-	-	-	-
		Y	(cm)		0.71	-	-	-	-
Other Information	t_d		(μsec)	0.238					
	prr		(Hz)	6392					
	p_r at max. I_{pi}		(MPa)	1.16					
	$d$eq at max. I_{pi}		(cm)					-	
	$I_{pa,\alpha}$ at max. MI		(W/cm²)	18.71					
Operating Control Conditions	Focus			single	single	-	-	-	-
	Focus position			3	3	-	-	-	-
	Depth (mm)			60	60	-	-	-	-
	Frequency setting		(MHz)	6.5	6.5	-	-	-	-

Remark:
Mode B and Mode B/B、4B has the same emitter.The sound output of Mode B can be applied for mode B/B、4B.

Sound output report
mode: BM
Probe: UT-C-6.5R13

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.38	0.073	0.007	-	0.008	-
Associated Acoustic Parameters	p_{ra}		(MPa)	0.70					
	P		(mW)		3.1	0.29		0.28	-
	Min. of [$P_{\alpha}(z_s)$, $I_{ta,\alpha}(z_s)$]		(mW)				-		
	Zs		(cm)				-		
	z_{bp}		(cm)				-		
	z_b		(cm)					2.64	
	z at max. $I_{pi,\alpha}$		(cm)	3.34					
	$d_{eq}(z_b)$		(cm)					0.36	
	$f$awf		(MHz)	4.67	4.67	4.46	-	4.46	-
	Dim of Aaprt	X	(cm)		0.38	0.38	-	0.38	-
		Y	(cm)		0.74	0.73	-	0.73	-
Other Information	t_d		(μsec)	0.238					
	prr		(Hz)	289					
	p_r at max. I_{pi}		(MPa)	1.16					
	$d$eq at max. I_{pi}		(cm)					0.35	
	$I_{pa,\alpha}$ at max. MI		(W/cm²)	18.71					
Operating Control Conditions	Focus			single	single	single	-	single	-
	Focus position			3	3	3	-	3	-
	Depth (mm)			60	60	60	-	60	-
	ST (S)			0.86	0.86	0.86	-	0.86	-
	Frequency setting		(MHz)	6.5	6.5	6.5	-	6.5	-

Sound output report
mode: M
Probe: UT-C-6.5R13

Index Label				MI	TIS			TIB	TIC
					Scan	Non-scan		Non-scan	
						Aaprt≤1cm²	Aaprt>1cm²		
Maximum Index Value				0.36	-	0.007	-	0.008	-
Associated Acoustic Parameters	p_{ra}		(MPa)	0.71					
	P		(mW)		-	0.29		0.28	-
	Min. of [$P_{\alpha}(z_s)$, $I_{ta,\alpha}(z_s)$]		(mW)				-		
	*Z*s		(cm)				-		
	z_{bp}		(cm)				-		
	z_b		(cm)					2.44	
	z at max. $I_{pi,\alpha}$		(cm)	3.34					
	$d_{eq}(z_b)$		(cm)					0.35	
	*f*awf		(MHz)	4.36	-	4.46	-	4.46	-
	Dim of *A*aprt	X	(cm)		-	0.38	-	0.38	-
		Y	(cm)		-	0.73	-	0.73	-
Other Information	t_d		(µsec)	0.234					
	prr		(Hz)	289					
	p_r at max. I_{pi}		(MPa)	1.16					
	*d*eq at max. I_{pi}		(cm)					0.35	
	$I_{pa,\alpha}$ at max. *MI*		(W/cm²)	17.10					
Operating Control Conditions	Focus			single	-	single	-	single	-
	Focus position			3	-	3	-	3	-
	Depth (mm)			60	-	60	-	60	-
	ST (S)			1.80	-	1.80	-	1.80	-
	Frequency setting		(MHz)	6.5	-	6.5	-	6.5	-

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