

Bio Signal Total Solution

Total Health care for everyone



Bio Signal Total Solution



BT-350

Fetal Monitor

Int. Sales Team / Matthew Shin













The Use of Fetal Monitor

- ❖ Main Purpose :
 - Non-invasively measuring and showing graphically maternal abdominal contractions and the fetal heart rate
- ❖ Object:
 - To aid in assessing the well being of the fetus during the final trimester of pregnancy
- ❖ Main Feature of Fetal Monitor :
 - The monitored data can be recorded continuously or intermittently on a strip chart recorder at the operator's discretion. The recorded information includes graphic trend data and text information of monitor hardware and software configuration, date and time, patient identification, changes to operational settings, clinician and patient event marks.

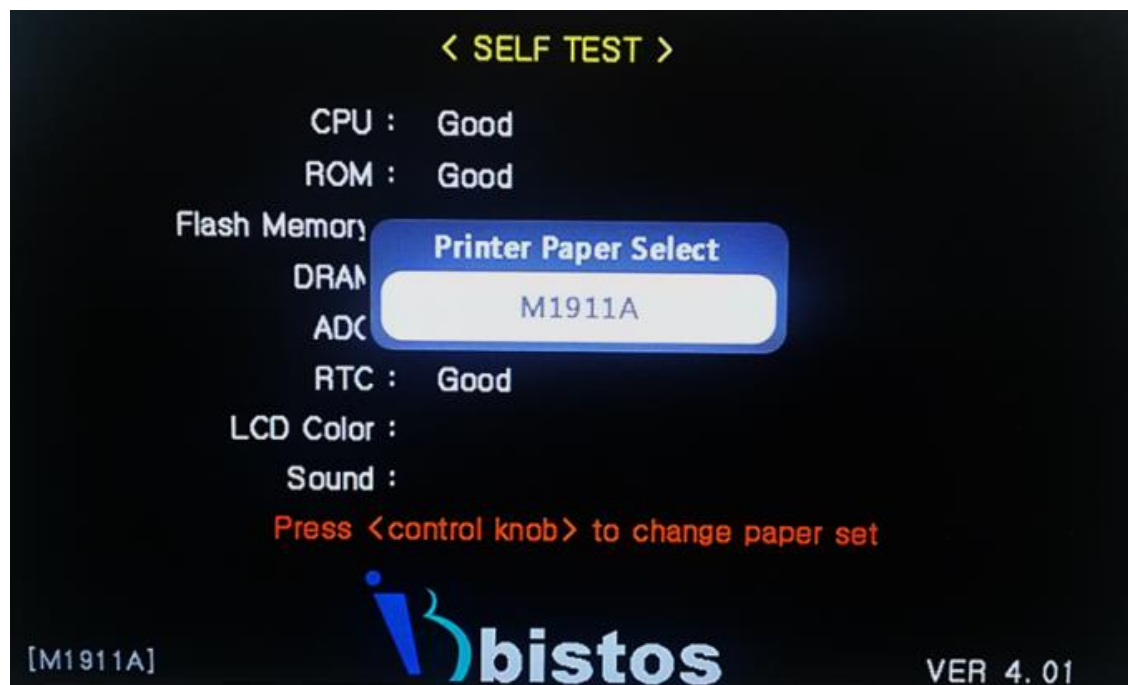


Options and Accessories

	Name	Description		Name	Description
	Doppler Probe	Ultrasound Transducer (1MHz)		Probe Belt	Using for Probe hold
	UC Probe	Pressure Sensor for Measuring Uterine Contraction		Power cord	AC Power cable
	Event Mark	Fetal Movement Event Mark		Power Adaptor	Adaptor for transform AC Power (100-240V ~) to DC 18V(2.5A) (MW160, Bridge Power Corp.)
	AST Probe (Option)	Acoustic Stimulator		Battery Pack	Type / model : 18650 Technical data : 3.7V * 4ea, 2600mA
	Z-fold Recording paper	Thermal Paper		Ultrasound Gel	Ultrasound transmission gel




Self Test & Configuration Settings



Paper	Graph Display Area	Print Area
FS151-90-80R-01 (GE Type)	30-240 bpm	30-240 bpm
M1911A (Philipps Type)	50-210 bpm	50-210 bpm



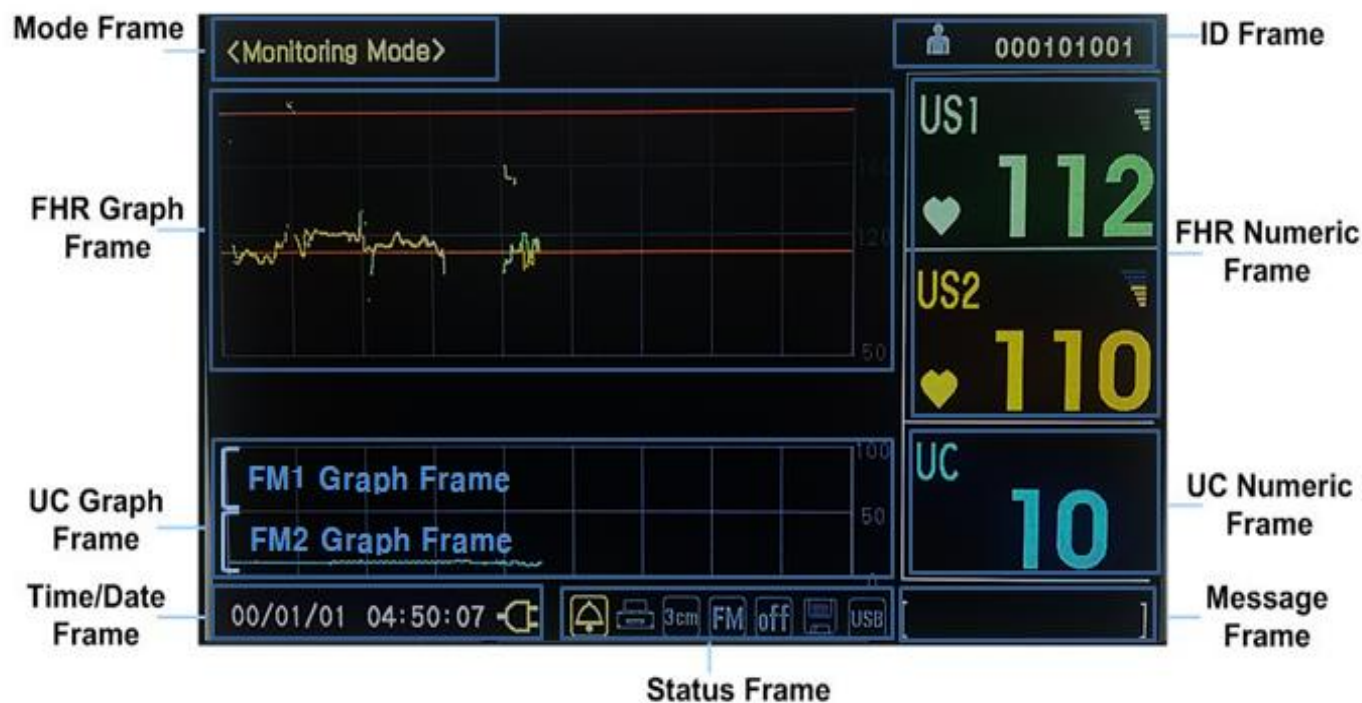
Self Test & Configuration Settings

- ❖ Demo On / OFF
- ❖ CCV Select
 - When there 2 DOP signals are monitored same device will give alarm and  icon will appear on LCD and print outs.
 - When alarm alarms check DOP probe and re-position probe.
- ❖ CTG analysis :
 - Turn ON / OFF CTG analysis feature.
 - Mode will turn to <CTG Mode>
 - At least 10Min. recording needed to give CTG analysis result.
- ❖ Printer Test :
 - Printer Test ON / OFF



Monitoring Display

❖ Graph Mode










Monitoring Display

❖ Number Mode

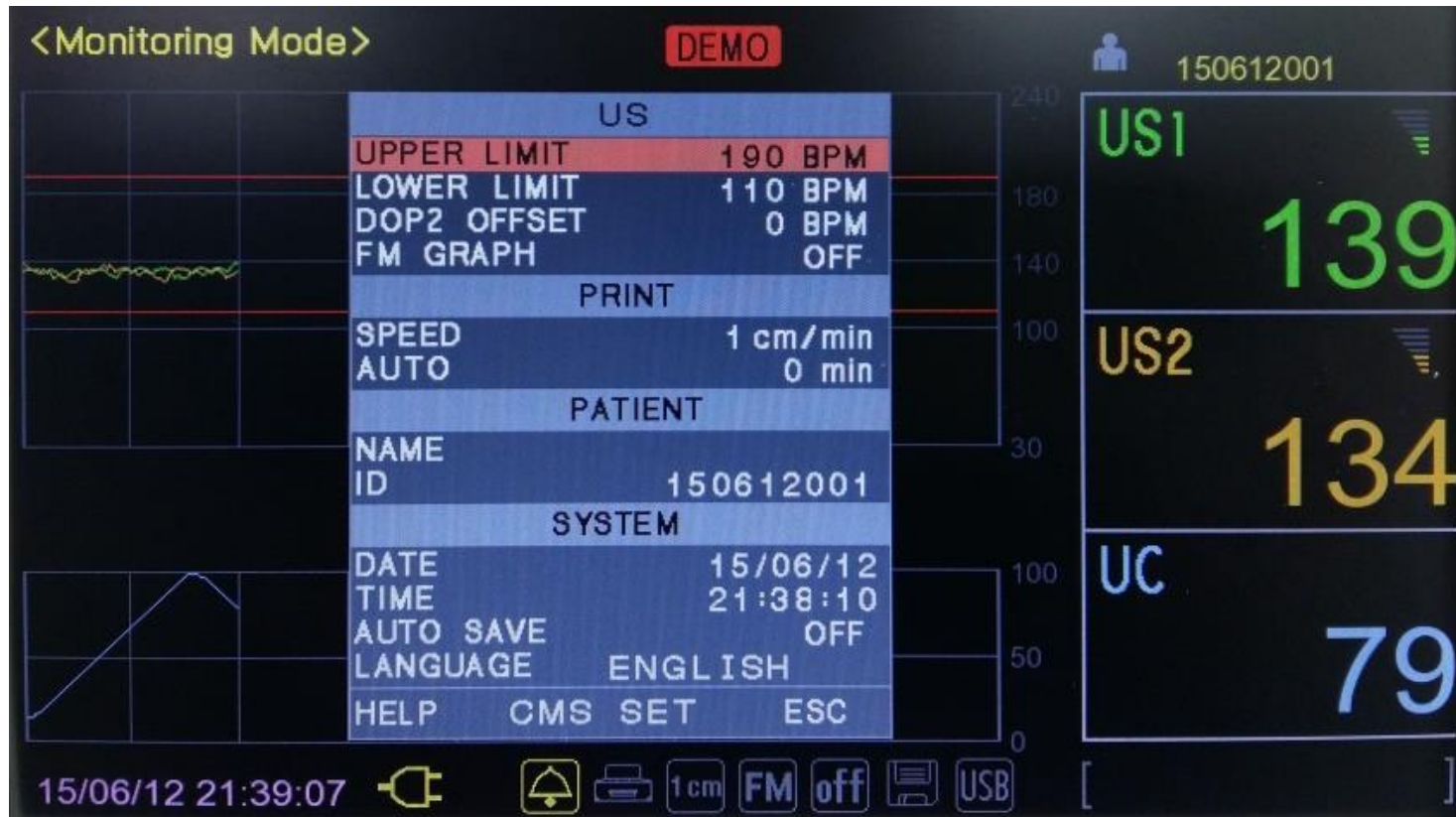




Key Operation

Symbol	Name	Description
	Power On/Off Button	Turns power on or off.
	Dop1 Volume Up/Down Button	Decreases or increases Dop1 fetal audio volume in monitoring mode.
	Dop2 Volume Up/Down Button	Decreases or increases Dop2 fetal audio volume in monitoring mode.
	Alarm On/Off Button	Makes the alarm sound enable or disable in monitoring mode.
	UC Reference Button	Resets the UC baseline in monitoring mode.
	Mode Button	Puts the monitor into trend scroll mode. The trend frames shows historical patient data and the control knob provides navigation capability.
	Record On/Off Button	Turns the record on or off.

System Setup Menu






Data Saving

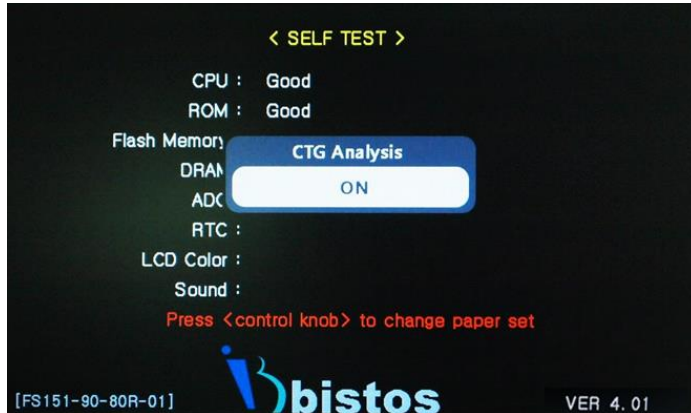
❖ Data Saving

- Save up to 450 Hours (3 hours per one patient up to 150 patients) in internal memory.
- Data storage in USB Memory.

❖ How to Save Data

- Manual 
- Auto Data Save => Set menu
- USB data save

CTG Analysis

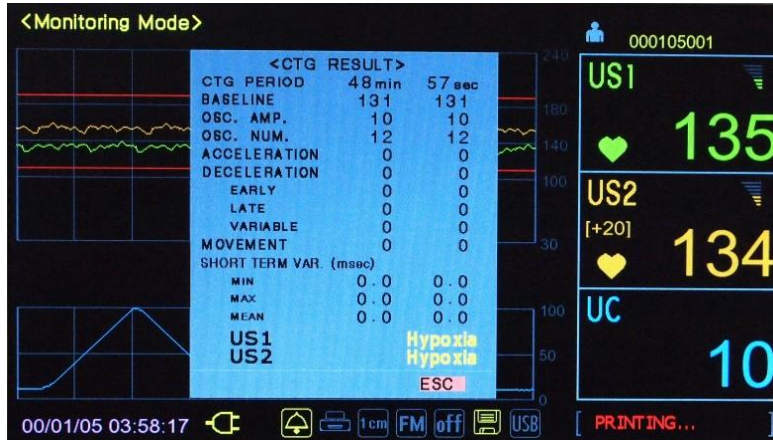


- ❖ Function switch on Configuration Set mode



- ❖ CTG Mode
 - Print at least 10 Min. more to get result
 - Base Line will appear on Screen

CTG analysis Result



❖ Analysis result in Monitoring Mode




❖ Analysis result in Trend Mode



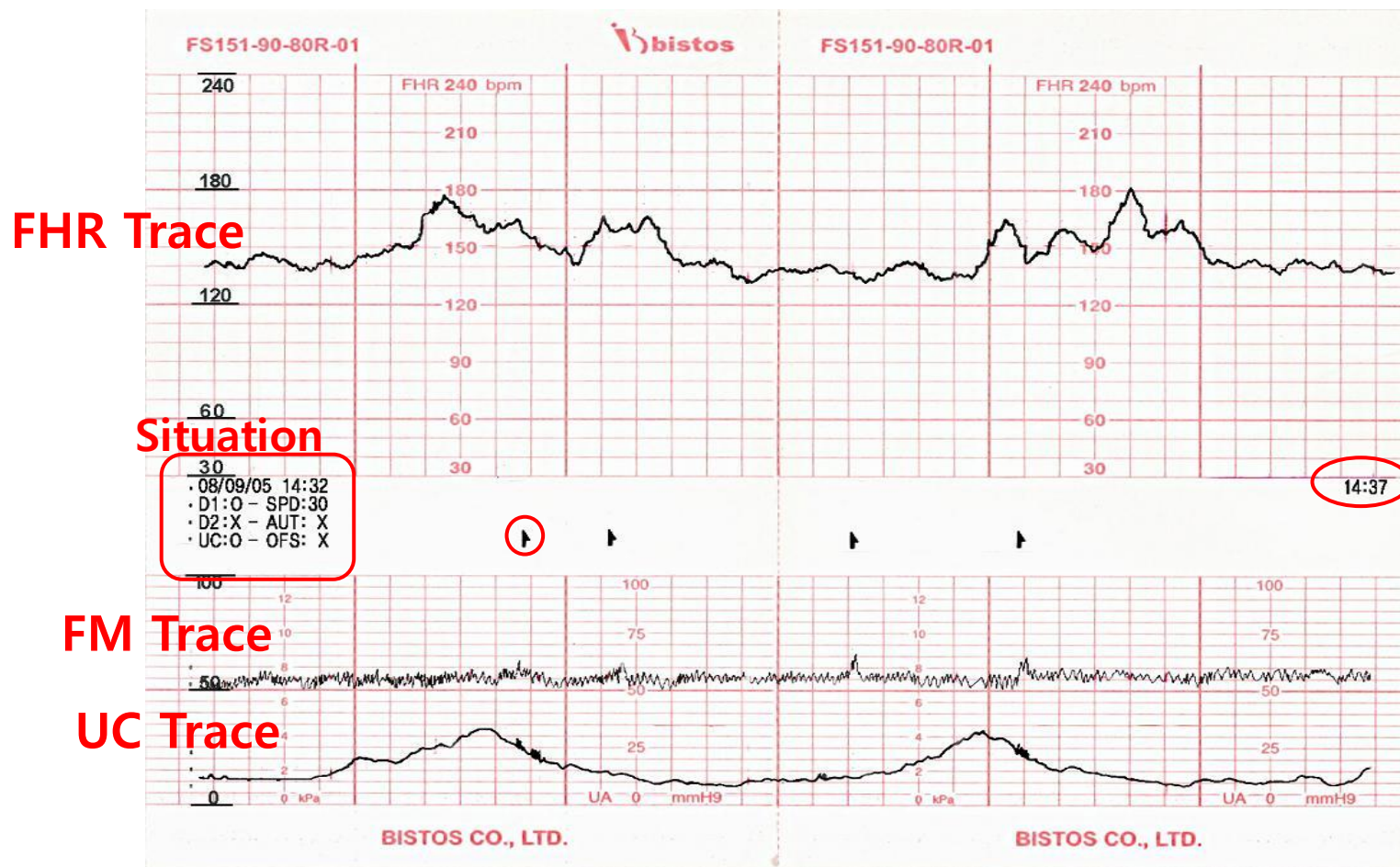
CCV (Cross Channel Verification) Function



- ❖ DOP1 and DOP2 signals are coming similar.
- ❖ When it is detected  icon will appear on LCD and Print-out.
- ❖ Change DOP probe position when there is alarm.

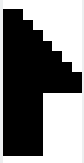
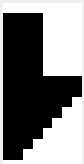

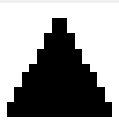
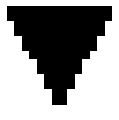
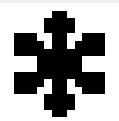


CTG Recording





CTG Recording

Symbol	Description	Source of mark	Possible events
	Event Mark	Press Event marker (by pregnant woman)	When pregnant woman feels fetus movement
	Clinical Event Mark	Press [] button over 2 seconds (by doctor)	When doctor judges fetus movement is happened
	FM1 Detection Mark	FM1 Trace (by algorithm and automatic)	When the system detect fetus movement(FM1)
	FM2 Detection Mark	FM2 (by algorithm and automatic)	When the system detect fetus movement(FM2)
	AST Mark	AST (by doctor)	When the system detect AST signal



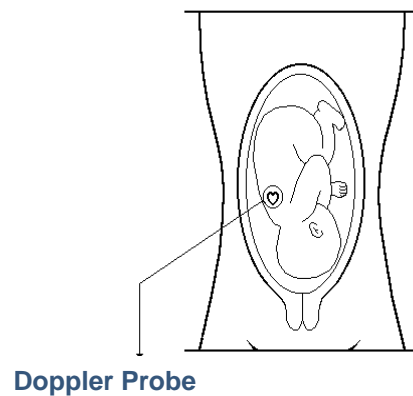
Preparing Fetal Heart Rate Detection

- ❖ Avoid any device or area there strong electromagnetic.
 - Those device or area can affect on SOP signal.
- ❖ Use Handheld Fetal Doppler is recommended
 - Can find best position of Fetal Heart fast.
- ❖ Check Heart Sound from Speaker.
 - Fetal Heart Sound is similar to a Horse's hoofing sound
- ❖ Use Ultrasound Gel.

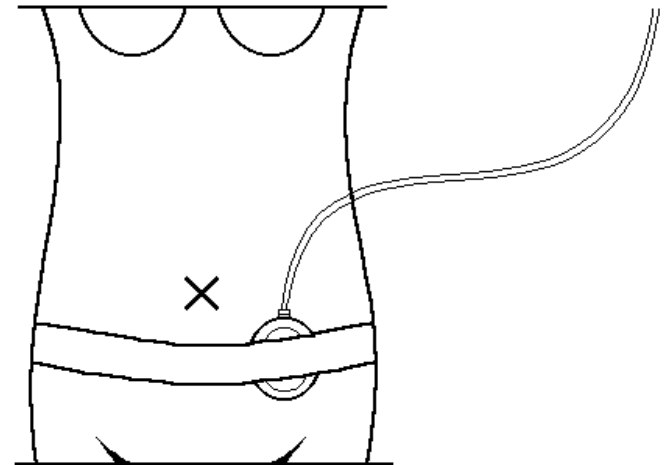


Preparing Fetal Heart Rate Detection

- ❖ Check Heart Sound from Speaker.
 - Fetal Heart Sound is similar to a Horse's hoofing sound
- ❖ Use Ultrasound Gel.



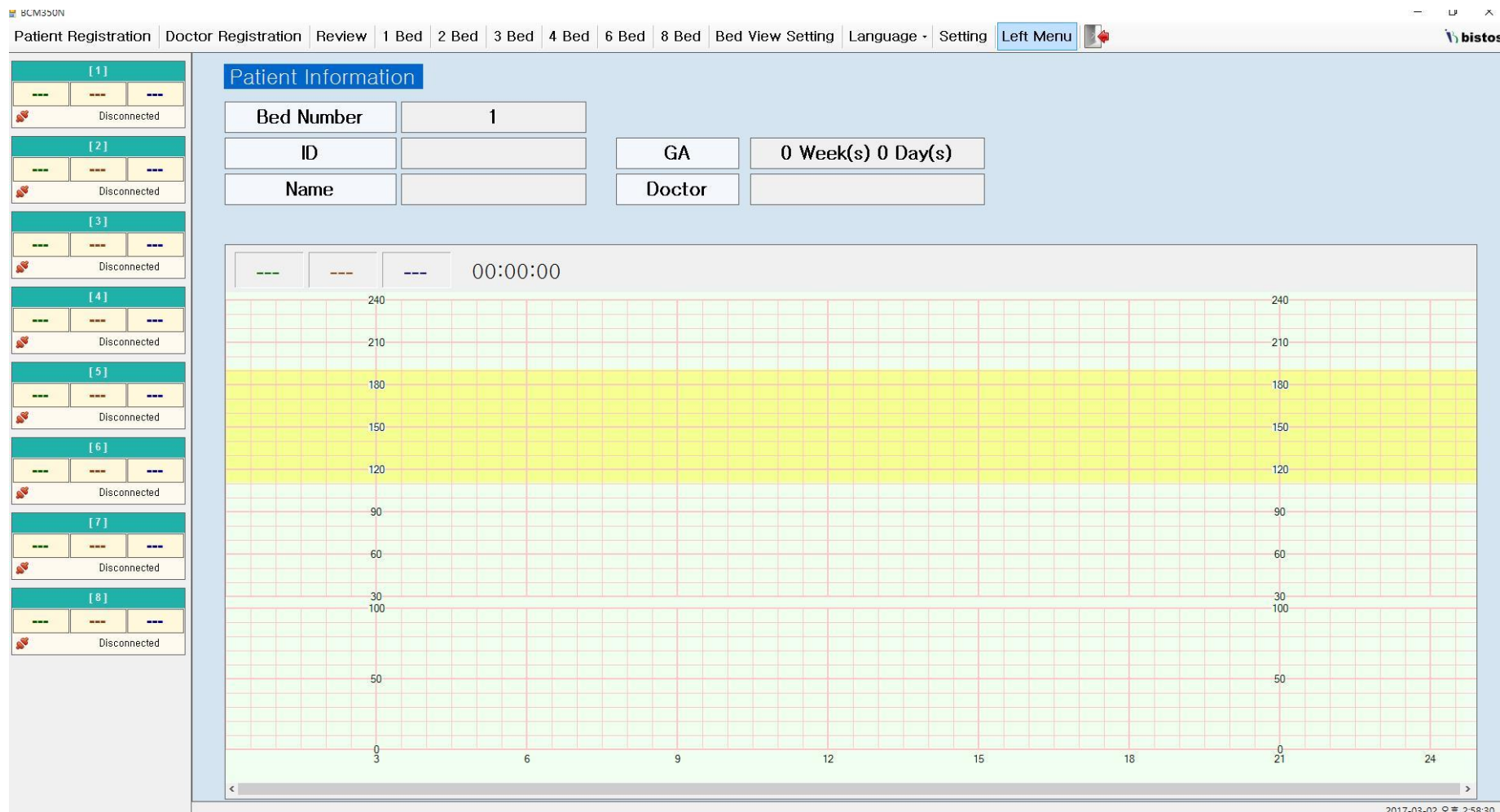
- ❖ DOP Probe Positioning



- ❖ UC Probe Positioning



BCM350 Central Monitoring System



❖ BCM350_BISTOS Fetal Monitor Central Monitoring System Program



BCM350

Patient Registration	New patient can be registered by using the button. If you click the button, the [Patient Registration] window will come out.
Doctor Registration	New doctor can be registered by using the button. If you click the button, the [Doctor Registration] small window will come out.
Review	If you click the button, the [Review] window will come out. You can review and print the saved NST chart. and convert the NST chart to jpg type of image file.
1,2,3,4,6,8 Bed	If you click each of the buttons, you can see the NST chart according to number of bed view.
Bed View setting	If you click the button, the [Multi Bed View Setting] window will come out. You can select the bed that you want to see at the relevant bed view respectively.
Language	If you click this button, available languages are lists on pop-up menu. You can change the language by choosing one of them.
Setting	If you click the button, the [Configuration] window will come out. You can change the necessary setting (or configuration).
Close	To terminate NST Program.



BCM350 Connection



❖ Serial to USB Converter



❖ Crossover Cable



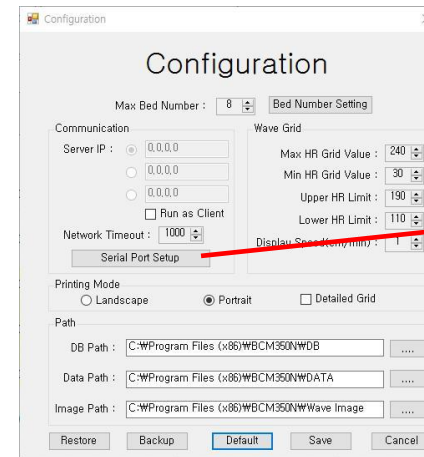
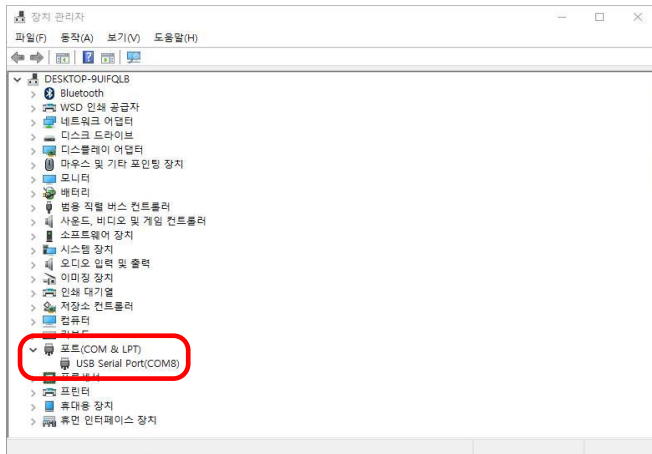
❖ USB Hub

❖ Serial to USB converter connection

- Advantage : Low cost
- Disadvantage : Wire connection

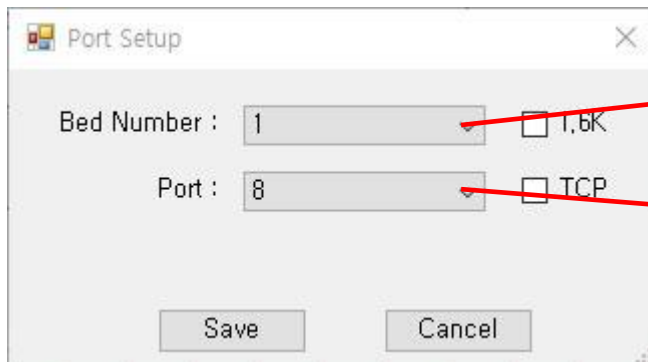
BCM350 Connection

❖ Install Serial to USB converter Drive



❖ Serial Port Setup

❖ Check COM port No. (COM8)



❖ Bed No.

❖ COM Port No.



BCM350 Connection

SENA



❖ Bluetooth Serial Converter (SD1000)



❖ Bluetooth Serial Adaptor (MSP1000C)

❖ Bluetooth connection

- Advantage : Wireless
- Disadvantage : Expensive (SD1000: \$150 MSP1000C: \$700), Hard to install



BCM350 Connection



❖ RJ45 connection

- Advantage : Low cost
- Disadvantage : Wire connection
- Wi-Fi connection is now under development.

BCM350 Connection

```
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\Matthew Shin>ipconfig

Windows IP 구성

무선 LAN 어댑터 로컬 영역 연결* 3:

    미디어 상태 . . . . . : 미디어 연결 끊김
    연결별 DNS 접미사. . . . :

이더넷 어댑터 이더넷:

    연결별 DNS 접미사. . . . :
    링크-로컬 IPv6 주소 . . . : 5000::8477:3a41:29e1:37ea%19
    IPv4 주소 . . . . . : 192.168.0.23
    서브넷 마스크 . . . . . : 255.255.255.0
    기본 게이트웨이 . . . . . : 192.168.0.1

무선 LAN 어댑터 Wi-Fi:

    미디어 상태 . . . . . : 미디어 연결 끊김
    연결별 DNS 접미사. . . . :

이더넷 어댑터 Bluetooth 네트워크 연결:

    미디어 상태 . . . . . : 미디어 연결 끊김
    연결별 DNS 접미사. . . . :

터널 어댑터 로컬 영역 연결* 13:

    연결별 DNS 접미사. . . . :
    IPv6 주소 . . . . . : 2001:0:682c:869a:44b:22e0:3f57:ffe8
    링크-로컬 IPv6 주소 . . . : fe80::44b:22e0:3f57:ffe8%3
    기본 게이트웨이 . . . . . :

터널 어댑터 isatap.{E024D069-406B-45D9-8EBB-571D9983C7CD}:

Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.

C:\Users\Matthew Shin>ping 192.168.0.100

Ping 192.168.0.100 32바이트 데이터 사용:
192.168.0.23의 응답: 대상 호스트에 연결할 수 없습니다.
192.168.0.1의 응답: 대상 호스트에 연결할 수 없습니다.
192.168.0.1의 응답: 대상 호스트에 연결할 수 없습니다.
192.168.0.1의 응답: 대상 호스트에 연결할 수 없습니다.
192.168.0.100에 대한 Ping 통계:
    패킷: 보낸 = 4, 받음 = 4, 손실 = 0.0% (손실)
```

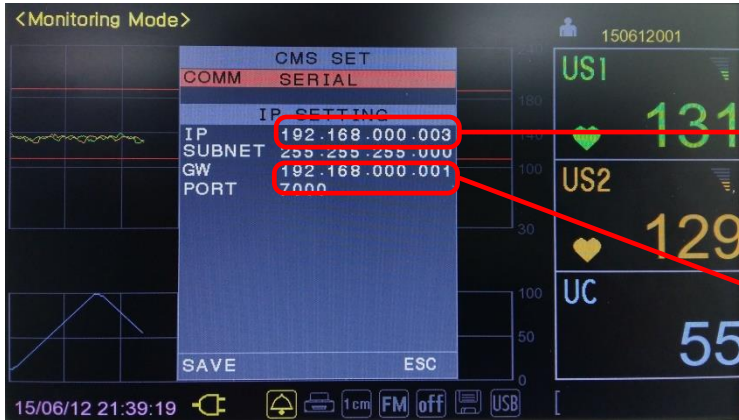
❖ ipconfig

❖ Check IP address

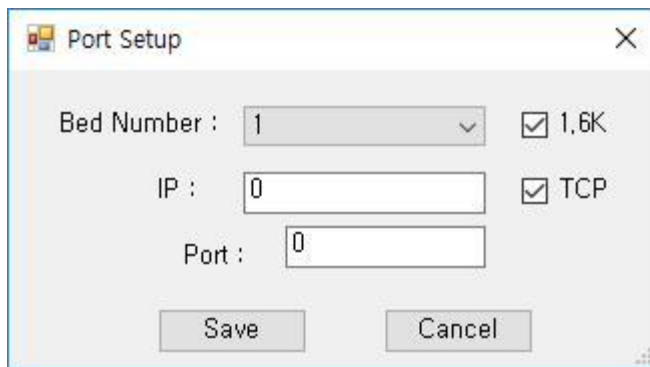
❖ ping checked IP and give 100 or empty IP number.

❖ Check given IP is available

BCM350 Connection








- ❖ Input IP address checked from the system
- ❖ Check other address and port No.



- ❖ Input IP and Port No.



BT-350 Comparison Chart

Supplier	Bistos <KOREA>		Bionet<KOREA>	Philips<netherlands>	GE <USA>	Edan <CHINA>
Model	BT-350	BT-300	FC-1400	Avalon FM20	Corometrics120	CADENCE
Product						
Frequency	0.985MHz	1MHz	1MHz	1MHz	1.151MHz	0.998MHz
FHR range	30~240 bpm	30~240 bpm	30~240 bpm	30~240 bpm	50~210 bpm	50~210 bpm
Accuracy	±2% of range	±2% of range	±2% of range	•	•	±2% of range
Twin FHR	O	O	O	O	O	O
Display	7" TFT color LCD	7-Segment LED	4.7"STN color LCD	6.5" TFT color LCD	Color LCD	6" color LCD
Wall Mount	O	X	X	X	X	O
Waterproof	O	O	O	O	O	•
Momory	450 hours	X	12 hours	•	8 hours	12 hours
AST	O	O	X	X	•	O
Internal battery	O	O	O	O	•	O
PC-Interface	O	O	O	O	O	O
Paper compatible	O	O	X	O	X	X
Language	12 language	•	12 language	•	•	•
Warranty	2 years	2 years	•	•	2 years	•

Thank You !