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## **SECTION 1: INTRODUCTION**

### **1.1 OVERVIEW**

Become familiar with the controls and how to use the product properly before operating the product.



**CAUTION:** It should not be used in life supporting or life sustaining applications

### **1.2 PRODUCT DESCRIPTION**

The product is a lightweight, portable, detector. It is designed to meet your detecting and hearing needs by providing advanced detecting functions and a full range of sound of the fetal heartbeat.

The product is mainly used to detect the fetal heartbeat rate (FHR) and the sound of the fetal heartbeat (SFH).

The growth and development of a fetus can be found out through examination of these indices. It is applicable for department of gynaecology and obstetrics and clinic daily.

In accordance with classification criteria in Annex IX on “Medical Device Directive 93/42/EEC”, the product is class IIa based on rule 10, “Devices for Direct Diagnosis or Detection on physiological process”.

### **1.3 OPERATING PRINCIPLE**

Fetal Doppler consists of probe (transmitter and receiver) and signal process unit.

Ultrasonic wave is transmitted from one piezoelectric ceramic at the front of the probe to the uterus of the pregnant women. Echo is received by the other piezoelectric ceramic at the front of the probe when ultrasonic wave reaches the fetal heart. Then it is converted into voltage. This Doppler signal is detected and demodulated from the received

signal. And the Doppler frequency is consistent with the rhythm of the fetal systole and diastole. Once cardiac valves vibrate and a Doppler frequency excursion is formed. It is transmitted an output signal of cardiac valves vibrating, and it is sent to the loudspeaker for getting a rhythmical sound with the fetal heartbeat. Simultaneously, it is sent to a counter which calculate periods of heartbeat that is fetal heartbeat rate (bpm=beat per minute).

## **SECTION 2: SAFETY GUIDANCE**

### **2.1 INDICATIONS FOR USE**

The product is normally applied to fetus above 9~12 weeks growth, difference in pregnant mater.

#### **Listen to SFH:**

The sound of fetal heartbeat can be played through earphone or speaker.

#### **Record SFH:**

When the device is connected to record devices with USB cable,it can transmit the sound of the fetal heartbeat to record devices,such as cellphone and computer, and save it into the record devices.

#### **Playback SFH:**

Operator can playback the sound of the fetal heartbeat saved in the record devices which recorded with the device.

#### **Transient FHR:**

Automatically the instrument displays the value according to the fetal heartbeat detected by the probe instantly.

#### **Average FHR:**

The detected fetal heartbeat signal will be calculate once every five seconds for the average FHR and the value of the result will be displayed.

#### **Audio record:**

The sound of fetal heartbeat can be recorded by a recorder which is connected with the product.

As a safety advisement that can only be connected with a recorder complied with the safety requirements of IEC 60601-1.

## **2.2 CONTRAINDICATIONS FOR USE**

Normally none, as a particular case, please consult your doctor.

## **2.3 NOTE FOR HOME USE**

Please consult your doctor.

## **2.4 SAFETY TERMS AND CONDITIONS**

The signal words shown below, left, identify the potential hazard categories. The definition of each category is as follows:



**DANGER:** This alert identifies hazards that **will** cause serious personal injury or death.



**WARNING:** This alert identifies hazards that **may** cause serious personal injury or death.



**CAUTION:** This alert identifies hazards that may cause minor personal injury, product damage, or property damage.

## **2.5 SAFETY ALERT DESCRIPTIONS**

The following is a list of product safety alerts that appear in this section and throughout this manual. You must read, understand, and pay heed to these safety alerts before attempting to operate the product.



**DANGER:** Fire and Explosion Hazard

Do not operate the Product in the presence of flammable gases to avoid possible explosion or fire hazard.



**CAUTION:** Temperature/Humidity/Pressure Extremes

Exposing the Product to extreme environmental conditions outside of its operating parameters may compromise the ability of the Product to function properly.



**CAUTION:** Battery Disposal

Recycle or dispose of the battery in accordance with all federal, state and local laws. To avoid fire and explosion hazard, do not burn or incinerate the battery.



**WARNING:** Use only Approved Equipment

Do not use batteries, gel, cables, or optional equipment other than those approved by Jumper Medical Ultrasonic Instrument Co., Ltd. which may cause the Product to function improperly during a rescue.



**CAUTION:** Possible Radio Frequency (RF) Susceptibility

RF susceptibility from cellular phones, CB radios and FM 2-way radio may cause interference with the product. Do not operate wireless radiotelephones in the vicinity of the product – turn power OFF to the radiotelephone and other like equipment near the product.



**WARNING:** Adjacent and/or Stacked Equipment

The Product should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary, the product should be observed to verify normal operation in the configuration in which it will be used.



**CAUTION:** Systems Statement

Equipment connected to the product must be certified to the respective IEC Standards (i.e. IEC 950 for data processing equipment and IEC 601-1 for medical equipment). Furthermore, all configurations shall comply with the system standard IEC 601-1-1. Anybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 601-1-1. The Product Service Port is only intended for use during maintenance by authorized service personnel.

**CAUTION:** Case Cleaning Solutions



When disinfecting the case, use a non-oxidizing disinfectant, such as ammonium salts or glutaraldehyde based cleaning solution, to avoid damage to the metal connectors.



**CAUTION:** Environment of use

The product is designed for indoor use. Operator must confirm that the environment of use meets the required operating environmental specifications before using.



**CAUTION:** Cold Environments

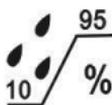
If the product is stored in an environment with a temperature below the operating temperature, the unit should be allowed to warm up to the needed operating temperature before using.

## 2.6 SYMBOL DESCRIPTIONS

The following symbols may appear in this manual, on the Product, or on its accessories. Some of the symbols represent standards and compliances associated with the Product and its use.



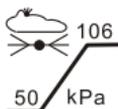
Consult instructions for use of the Product and/or its accessories.



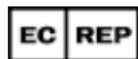
Humidity



Warning Information



Atmospheric Pressure



Authorized Representative in the European Community



Upward



CE Mark: The Product system conforms to essential requirements of the Medical Device Directive 93/42/EEC.



Non-hook



Date of manufacture.



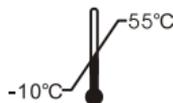
Specifies serial number of the Product



Manufacturer



LOT Number



Storage Temperature



It indicates that the equipment should be sent to the special agencies according to local regulation for separate collection after its useful life.

## **SECTION 3: USING THE PRODUCT**

This section presents information on unpacking and setting up the product.

### **3.1 UNPACKING AND INSPECTING**

Every attempt is made to ensure your accurate and complete order. However, to be sure that your correct order, verifying the contents of the box against your packing slip.

The product is designed for simplicity of operation and set-up and requires minimal assembly. The following items are included in your box:

- 1 (one) Main Unit
- 1 (one) Operator's manual
- 1 (one) Lanyard
- 1 (one) Bag
- 1 (one) Audio Cable
- 1 (one) USB Cable

Carefully inspect each item as it is unpacked for any signs of damage which may have occurred during shipment.

- Check the components according to the packing list.
- Check for any damage or defects. Do not attempt to assemble the product if anything is damaged or defective. Contact Shenzhen Jumper Medical Equipment Co., Limited Customer Service immediately if anything is damaged or defective.

## 3.2 CONTROLS AND DISPLAY

### 3.2.1 Structure and shape



#### Main body

- ① Switch/Volume
- ② Earphone Jack
- ③ USB Socket
- ④ LCD
- ⑤ Probe
- ⑥ Battery Cover Lock
- ⑦ Label
- ⑧ Battery Cover
- ⑨ Indicator
- ⑩ USB Speaker Socket



#### Holder

### 3.2.2 Specification

#### ① Switch/Volume

Function: Turn on or off the device, change the volume.

#### ② Earphone Jack

Function: Connect to the earphone to play fetal heartbeat or connect to the record devices, such as computer or cellphone , to record heartbeat sound and save it on the record devices .

#### ③ USB Socket

Functions: Play the heartbeat sound through the speaker when the USB speaker sockets on both main body and base are connected with an USB cable.

#### ④ LCD

Function: Display heartbeat rate on it.

#### ⑤ Probe

Functions: Detect fetal heartbeat.

#### ⑥ Battery Cover Lock

Function: Lock the Battery Cover.

#### ⑦ Battery Cover

Function: Hold the battery.

#### ⑧ Label

Function: Information about model, manufacturer, agent and so on.

#### ⑨ Indicator

Function: Indicate that the USB Speaker Socket is connected to USB Socket with an USB cable.

#### ⑩ USB Speaker Socket

Function: It's used to connect to USB socket in Main body with USB cable, then the heartbeat sound can be played through the speaker in Base.



**CAUTION:**

Remove the battery if the device is not likely to be used for some time.



**WARNING:** Irregular treatment of batteries may be result in hazards to health and environment.

### 3.3 AUDIO OUT

The 'Earphone Jack' socket can be connected to headset or recorder. A socket for audio output can only be connected with a recorder complied with the requirements of IEC 60601-1

### 3.4 DIRECTION FOR USING

- 1.Revolve the Battery Cover Locker⑥in the proper direct before using it for the first time ,take off Batter Cover⑦,put in 9V battery.
- 2.Plug earphone into Earphone Jack②(Using unmatched earphone maybe affect the hearing effect)
- 3.Revolve Switch/Volume to power on the device ,the LCD ④ displays “ - - - ” at this moment. Put on the earphone, adjust the volume to proper level.
4. Locate the position of the fetus by hand touching, firstly to find out the best direction to the fetal heart. Place the faceplate of probe ⑤ at the best position for detecting fetal heartbeat. Adjust the probe to obtain an optimum audio signal ideally by angling the probe around. Generally,

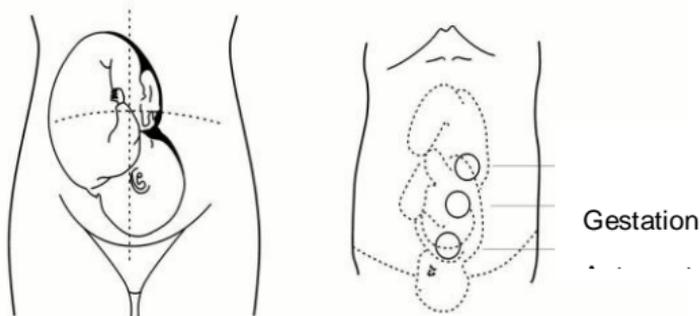
the site of heart of fetus is 1/3 below of navel line at its earlier stage, it then moves upward with increasing of gestational period, and the site of heart of fetus will be a little deviation to left or right with different fetus. Pls. make sure that the surface of probe should be contacted fully with the skin. After the sound become clear and stays stable for a few seconds, the FHR value will appear on the LCD in real time. If no coupling gel, water can be used.

5. plug one end of the record cable into Earphone Jack ②, the other end into record device, like computer, then it is capable to record the fetal heart beat. Move the probe ⑤ to gravida's left breast to record her heart beat, replaying it can calm down the baby after the fetus is born.

6. Rotate the Switch/Volume to power off the device

7. Connect the USB socket ③ in main body to USB Speaker Socket ⑩ in the Base with an USB cable if you want to use the speak in Base, then the Indicator ⑨ is on after you power on the device.

Note: abnormal value of FHR may appear during the searching of fetal heart.



## **SECTION 4: MAINTENANCE & AFTER-SALES SERVICE**

Proper maintenance of the product is very simple, yet it is an important factor of its reliability. The section describes the maintenance and service required for the product and its accessories.

### **4.1 MAINTENANCE**



**WARNING:** Failure on the part of all responsible individuals, hospitals or institutions, employing the use of Product, to implement the recommended maintenance schedule may cause equipment failure and possible health hazards. The manufacturer does not, in any manner, assume the responsibility for performing the recommended maintenance schedule. The sole responsibility rests with the individuals, hospitals, or institutions utilizing the product.

4.1.1 The transducer acoustic surface is frangible and must be handled with care. Gel must be wiped off from the transducer after use. These precautions will prolong the life of the unit.

The user must check that the equipment does not have visible evidence of damage that may affect patient safety or product's capability before use. The recommended inspection interval is once per month or less. If damage is evident, replacement is recommended before use.

4.1.2 To ensure the product is always functional when required, the following maintenance shall be performed:

- Visual Inspection
- Cleaning the product and its accessories
- Check the battery fuel gauge
- Testing product Performance

Correction: manually calculate the FHR with hearing fetal heartbeat sound for qualification.

## 4.2 RECOMMENDED MAINTENANCE AND CARE

- It is important that the product is stored at the operating temperature range if it is expected to be used. Optimal battery life will be obtained if stored and operated at room temperature. See Section 7 for Temperature Specifications.
- The product requires no calibration.

## 4.3 VISUAL INSPECTION

The product and its accessories should be carefully inspected prior to installation, once every 12 months thereafter and each time the equipment is serviced.

- Carefully inspect the equipment for physical damage
- Inspect all external connections for loose connectors or frayed cables.
- Inspect the graphics display for marks, scratches, or other damage.
- Verify that the Safety label on back of the Product is clearly legible

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INSTRUCTION	INSPECT FOR	RECOMMENDED REMEDY
Examine the case connectors and accessories	Foreign substances Damage or cracks	Clean the Product and its accessories as described. Contact Our Customer Service
Examine accessory cables	Foreign substances Broken parts, cracks, damage, or extreme	Clean the cables as described in the Section 5 Replace cable if any abnormalities are found.

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Examine disposable accessories	wear, broken or bent connectors and pins, after bending and flexing the cable Expired PRODUCT or Product PADS	Replace any products approaching or past their expiration dates.
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**WARNING:** After the visual inspection, if the product and/or its accessories are damaged please contact our Customer Service. The product will need to be returned back to us for repair. The accessories should be disposed of appropriately and replacement parts shall be ordered.

#### 4.4 RECOMMENDED CLEANING PRODUCTS

The following cleaning products may be used to clean the exterior surfaces of the Product as well as the batteries.

- Isopropyl alcohol (70% solution in water)
- Mild soap and water
- Sodium hypochlorite (chlorine bleach) (3% solution in water)
- Quaternary ammonium compounds (such as Lysol) (10% solution in water)
- Do not use abrasive cleaners or strong solvents such as acetone or acetone-based cleaners.
- Do not use mixing disinfecting solutions (such as bleach and ammonia) as hazardous gases may result.
- Do not clean electrical contacts or connectors with bleach.

## 4.5 CLEANING INSTRUCTIONS

4.5.1 Before cleaning the product, turn the device off and disconnect the power cord.

4.5.2 Before cleaning, remove all adherent soil (tissue, fluids, etc.) and wipe thoroughly with a cloth dampened with water before applying the cleaning solution.

4.5.3 When cleaning, do not immerse. Keep the exterior surface of the device clean and free of dust and dirt, clean exterior surface of the unit with a dry, soft cloth .if necessary, clean it with a soft cloth soaked in a solution of soap and wipe dry with a clean cloth immediately .

Wipe the transducer body with soft cloth to remove any remaining coupling gel .Clean with soap only

4.5.4 Wring any excess moisture from the cloth before cleaning.

4.5.5 Avoid pouring fluids on the device, and do not allow fluids to penetrate the exterior surfaces of the device.

4.5.6 To prevent scratching the display, the use of a soft cloth is recommended.



**CAUTION:** To prevent damage to equipment, do not clean any part of the product or Accessories with phenol compounds. Do not use abrasive or flammable cleaning agents. Do not steam, autoclave, or gas-sterilize the product or accessories.



**CAUTION:** Cleaning liquids: DO not submerge the device in liquids or pour cleaning liquids over, into or onto the device.

\* Don't use strong solvent, for example, acetone.

\* Never use an abrasive such as steel wool or metal polish.

- \* Do not allow any liquid to enter the product, and do not immerse any parts of the device into and liquids.
- \* Avoid pouring liquids on the device while cleaning.
- \* Don't remain any cleaning solution on the surface of the device.

Wipe the surface of sensor of transducer with 70% ethanol or alcohol, self-air dry or clean with a clean, dry cloth.

#### **4.6 DISINFECTIONS**

Cleaning the unit surface and the transducer as the above mentioned, then wipe the surface of transducer with 70% ethanol or alcohol, clean the transducer surface with a dry , soft cloth.

- \* Don't use low temperature steam sterilization or other way to sterilize
- \* Don't use high temperature sterilizing process

#### **4.7 RECYCLING THE BATTERIES**

The battery is recyclable. Remove the old battery from the product and follow your local recycling guidelines or refer to local regulations.



**WARNING:** Irregular treatment of batteries may be cause hazards to health and environment.

#### **4.8 AUTHORIZED REPAIR SERVICE**

The product has no user-serviceable internal components. Try to resolve any maintenance issues with the product by using the Troubleshooting Table presented in this chapter. If you are unable to resolve the problem, contact Shenzhen Jumper Medical Equipment Co., Limited Service.



**NOTE:** The warranty will be void upon unauthorized disassembly or service of the product.

## SECTION 5: SPECIFICATIONS AND SAFETY

This section presents the specifications and safety standards of the product.

### 5.1 SPECIFICATIONS



**NOTE:** The following specifications are subject to change and are only noted as a point of reference.

#### DISPLAY

LCD Size	34mm X 16mm
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#### ULTRASOUND

Ultrasonic emitting frequency:	2.5MHz±3%
Overall sensitivity at the distances 200mm from the face of the probe (Doppler frequency:300±50Hz, Targe velocity: 10cm/s~40cm/s)	≥90dB
Spatial-peak temporal-peak acoustic pressure	<8.6kPa
Output power	<20mW
Effective area of the ultrasonic transducer active element	1.57cm <sup>2</sup>
The acoustic coupling medium for normal use:	ph: 5.5~8, Acoustic impedance: ≤1.7×105g/cm2.s

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## FHR PERFORMANCE

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FHR Test Range:	30 bpm ~240 bpm (Beat / Minute)
Resolution:	1 bpm
Accuracy:	$\pm 1\% \pm 1$ bpm

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## AUDIO OUTPUT

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Audio Output Power:	<0.5 W
Audio Out Socket:	$\Phi 3.5$ mm

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## BATTERY

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Battery Voltage:	9V
Type:	9V Alkaline

## 5.2 MODE OF OPERATION

Continuous operating

## 5.3 PHYSICAL DIMENSIONS

Main body: 122.5mm x 59mm x 37.4 mm , Wt: 74g

Base: 92mm x 98mm x 46 mm, Wt: 65g

## 5.4 ENVIRONMENTAL REQUIREMENTS

### OPERATING CONDITIONS

Temperature: 5°C to 40°C

Humidity: <80% RH, non-condensing

Atmospheric pressure: 86kPa to 106kPa

### STORAGE AND SHIPPING CONDITIONS

Temperature: -10°C to 60°C

Humidity: 10% - 95% RH, non-condensing

Atmospheric pressure: 50kPa to 106kPa



**CAUTION:** Environment of use

Product is designed for indoor use. Operator must confirm that the environment of use meets the required operating environmental specifications before using.



**CAUTION:** Cold Environments

If the Product is stored in an environment with a temperature below the operating temperature, the unit should be allowed to warm up to the needed operating temperature before using.

## **SECTION 6: ACCESSORIES**

### **OVERVIEW**

This section contains a list of parts and software accessories for product. To place an order, contact your representative or distributor.

### **PRODUCT ACCESSORIES**

Product is available in more than twenty languages, with others being added on a regular basis. For a complete list of those available, contact your sales representative or Shenzhen Jumper Medical Equipment Co., Limited Customer Service.

ACCESSORIES	
Part Number	Description
none	

## Appendix A: EMC Information-Guidance and Manufacture's

### Declaration



#### CAUTION:

**Fetal Doppler** needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided for in the ACCOMPANYING OCUMENTS. Portable and mobile RF communications equipment can affect **Fetal Doppler**.

The **Fetal Doppler** should not be used adjacent to or stacked with other equipment.

The **Fetal Doppler** is intended for use in the electromagnetic environment specified below. The customer or the user of the Fetal heart monitor should assure that it is used in such an environment.

Emissions	test	Compliance
RF emissions CISPR 11	Group 1	The <b>Fetal Doppler</b> uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The <b>Fetal Doppler</b> is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.

The **Fetal Doppler** is intended for use in the electromagnetic environment specified below. The customer or the user of the Fetal Doppler should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
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Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
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The <b>Fetal Doppler</b> is intended for use in the electromagnetic environment specified below. The customer or the user of the Fetal Doppler should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	<p>Portable and mobile RF communications equipment should be used no closer to any part of the <b>Fetal Doppler</b> including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance</p> $d = 1,2\sqrt{P}$ $d = 1,2\sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2,3\sqrt{P} \quad 800 \text{ MHz to } 2,5 \text{ GHz}$ <p>a. Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range.</p> <p>b. Interference may occur in the vicinity of</p>

			<p>equipment marked with the following symbol:</p> 
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NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.  
 NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a. Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the **Fetal Doppler** is used exceeds the applicable RF compliance level above, the **Fetal Doppler** should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the **Fetal Doppler**.

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

Recommended separation distances between portable and mobile RF communications equipment and the **Fetal Doppler**.

The **Fetal Doppler** is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the **Fetal Doppler** can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the **Fetal Doppler** as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2,5 GHz
	$d = 1,2\sqrt{P}$	$d = 1,2\sqrt{P}$	$d = 2,3\sqrt{P}$
0.01	0.12	0.12	0.23

0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance  $d$  in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where  $P$  is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

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

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

## **Appendix B: TROUBLESHOOTING**

Common problems	Possible causes	Solutions
There is no reaction after pressing power on button or just power off soon	<ol style="list-style-type: none"> <li>1. Battery is low</li> <li>2. Battery is in bad contact</li> <li>3. Place the battery incorrectly</li> <li>4. Device failures</li> </ol>	<ol style="list-style-type: none"> <li>1. Change battery</li> <li>2. Make sure that battery is good contact</li> <li>3. Place the battery correctly</li> <li>4. Send the device back to manufacturer for repair</li> </ol>
There are values on LCD but no sound	<ol style="list-style-type: none"> <li>1. Volume is at the minimum</li> <li>2. Plug the earphone or speaker incorrectly</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the volume to the proper lever</li> <li>2. Plug the earphone or speaker correctly</li> </ol>
Too much noise during using the device	<ol style="list-style-type: none"> <li>1. There is not coupling agent</li> <li>2. Moving the probe on the skin of abdomen causes noise</li> <li>3. Probe is not placed at the best position</li> </ol>	<ol style="list-style-type: none"> <li>1. Use coupling agent</li> <li>2. Don't make the probe touch skin during looking for fetal heart, find the right angle between probe facet and abdomen skin to get the clearest fetal heartbeat sound</li> </ol>

		3.Look for the right position of fetal heart again
There is sound but no values on LCD,hard to find the position of fetal heart	<ol style="list-style-type: none"> <li>1.There is no coupling agent between probe facet and abdomen skin</li> <li>2.Gestation period is short,fetal heartbeat is weak</li> </ol>	<ol style="list-style-type: none"> <li>1.Make sure that there is enough coupling agent between probe facet and abdomen skin</li> <li>2.Use the device after gestation period is longer ,fetus is bigger.</li> </ol>
Random values appear frequently on the LCD when using the device .	<ol style="list-style-type: none"> <li>1.The friction between probe and abdomen skin causes the wrong random values during looking for right position of fetal heart</li> <li>2.There is electromagnetic interference around,such as high frequency generator machines which make electric spark and cellphones</li> <li>3.There is fetal movement,which means the position of fetal heart changes</li> </ol>	<ol style="list-style-type: none"> <li>1.Find the position where the fetal heartbeat sound is the loudest,and keep the probe static for 10 seconds,then the values on LCD are real instant fetal heart rate .</li> <li>2.Use the device in a place without interferences.</li> <li>3.Adjust the position of probe,make sure that the probe is at the position where the fetal heartbeat sound is the loudest.means the position of fetal heart changes</li> </ol>

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