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# **Instruction for Use**

## **Infrared Thermometer (Contact Type)**

**FT-F11-BT, FT-F21-BT, FT-F12-BT, FT-F22-BT**

**FT-F11, FT-F21, FT-F12, FT-F22**

**U08080, U08080E**

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# INFRARED THERMOMETER

(FT-F11-BT, FT-F21-BT, FT-F12-BT, FT-F22-BT;

FT-F11, FT-F21, FT-F12, FT-F22, UO8080, UO8080E)

Operating Instruction

Please read carefully before use.

## DESCRIPTION

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### 2. Product Overview

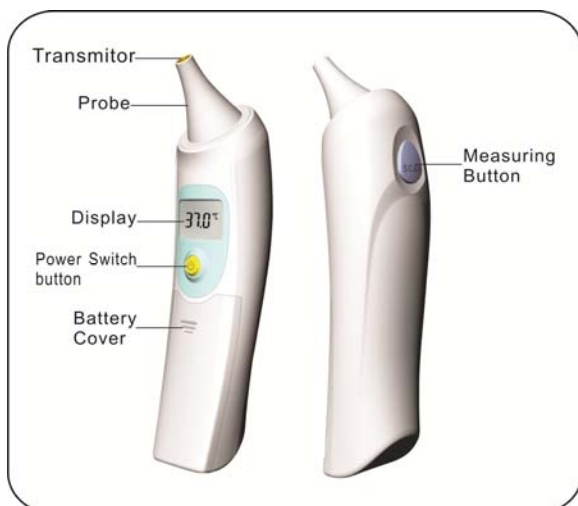
This infrared Thermometer measure the temperature. It can get more quick and accurate from human body temperature.

This product has the following advantages:

- 1). Easy to Clean the Probe.
- 2). High speed & Accuracy scan the reading of temperature.
- 3). Convenience, Only one key operation.
- 4). 12 memories recall.
- 5). Last measured temperature data displayed, when you turn on the power.

### 3. Outline Drawing

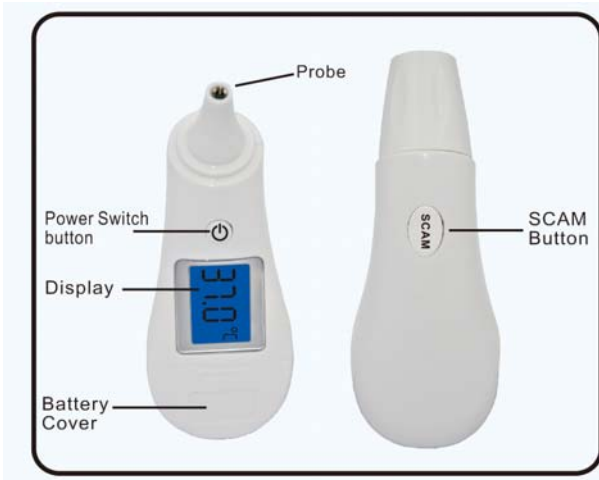
FT-F11-BT&FT-F11



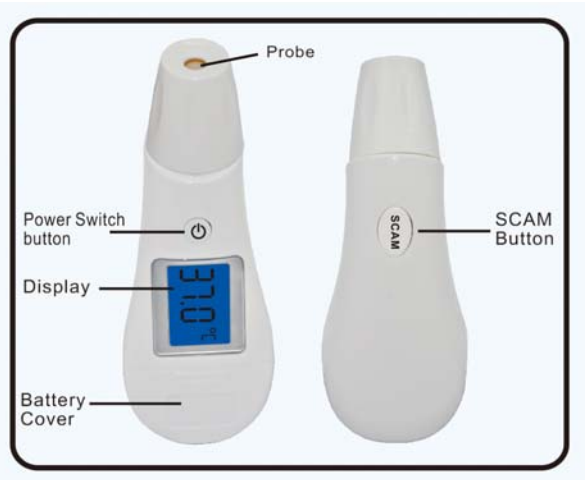
FT-F21-BT & FT-F21



## FT-F12-BT & FT-F12



## FT-F22-BT & FT-F22



### 4. The Definition of Symbols

8888

Reading Display

?

Ear Measuring mode (Suitable for FT-F11, FT-F12 & FT-F21, FT-F22 FT-F11-BT, FT-F21-BT; FT-F12-BT, T-F22-BT; UO8080)

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Forehead Measuring mode (Suitable for FT-F21, FT-F22 & FT-F21-BT FT-F22-BT, UO8080E)

°C

Celsius Scale

°F

Fahrenheit Scale

🔋

Low Battery

M

Last Memorized Temperature Display

### 5. Measuring

1) Ear Measuring Mode (Figure 5.1) (Suitable for FT-F11, FT-F11-BT, FT-F21, FT-F21-BT, FT-F12, FT-F12-BT, FT-F22, FT-F22-BT, UO8080, UO8080E)

- Turn on the “power” button key of the IR Thermometer and then all displayed segments appear briefly as like on (Figure 5.2); the displayed screen appears last measured temperature data, please see on (Figure 5.3); after few seconds automatically change to the Ear Measuring Mode “ ? ” symbol appears on the displayed screen and the

temperature unit “°C” or “°F ” blink it’s ready to measure, please see on( Figure 5.4)

- Insert the IR Thermometer probe into the ear canal as on the following (Figure 5.1); Pull the ear slightly back ward to straighten the ear canal. Then insert the probe into the ear as far as it goes. Be sure the probe fully seals the ear canal. Hold this position until the measurement is completed.
- Press the “ SCAN “ button kev to wait about 1 second then you can hear the long “Bi--” sound that it’s finished the measurement in the meantime the measured temperature data appears on the displayed screen. (Figure 5.5)
- Remove the IR thermometer from the ear canal and read measured data on the dislaved screen. If you don’t use again, the power will be automatically switch off within 60 seconds.



Figure 5.1



Figure 5.2



Figure 5.3

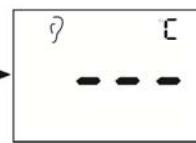


Figure 5.4



Figure 5.5

2) Contact Type Forehead Measuring mode (Figure5.1A) (Suitable for FT-F21, FT-F22 & FT-F21-BT,FT-F22-BT, UO8080E)

- Turn on the “power” button key of the IR Thermometer and then all displayed segments appear briefly as like on(Figure 5.2A),the displayed screen appears last measured temperature data, please see on (Figure 5.3A),after few seconds automatically change to the Forehead Measuring Mode “🧠” symbol appears on the displayed screen and the temperature unit “°C” or “°F ” blink then it’s ready to measure, please see on (Figure 5.4A).
- Put the probe in the middle of forehead position and press the “SACN” button key then keep moving the IR thermometer from the middle of forehead to the side of forehead then you will hear long “Bi--” sound that It is finished the measurement in the meantime the measured temperature data appears on the displayed screen, the measuring time takes about 1 second .(see on Figure 5.5A).
- Remove the IR thermometer from the forehead and read measured data on the displayed screen. If you don’t use again, the power will be automatically switch off within 60 seconds.



Figure 5.1A  
5.5A



Figure 5.2A



Figure 5.3A

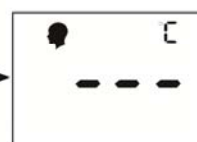


Figure 5.4A



Figure

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3) “°C” and “°F” adjust (Suitable for FT-F11, FT-F21, FT-F11-BT, FT-F21-BT, UO8080, UO8080E)

- On power off condition, press the “SCAN” button key about 5 seconds until the displayed screen appears “---” and “°F” or “°C” temperature unit blinks. In this condition, press the “SCAN” button key again to adjust “°F” or “°C” and then it is set up ready for use.


“°C” and “°F” adjust (Suitable for FT-F12, FT-F22, FT-F12-BT, FT-F22-BT)

- On power off condition, press the “SCAN” button about 10 seconds until the displayed screen appears “---” and “°F” or “°C” temperature unit blinks. In this condition, press the “SCAN” button key again to adjust “°F” or “°C” and then it is set up ready for use.

4) Ear and Forehead measuring mode switch

- On power off condition, press the “Power” button about 5 seconds until the displayed screen appears “?” or then press the “Scan” button to switch to ear or forehead measuring mode.

5) Memory recall

- 12 memories recall.
- Press “SCAN” button key to display “---M” on the displayed screen, in the power off condition and then memory recall displays.
- Press again “SCAN” button key  to display previous memory in order and the memory will recall in one second.
- Press “Power” button key to be out of memory recall and then enter process condition to measure.

## 6. Battery Voltage Display & Replacement

- LOW battery: The low battery symbol will be shown at the lower battery on the displayed screen during the low battery power.

Replace the battery as soon as possible. However you can continue to use it on short time. (Figure 6.1)

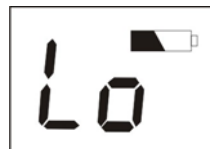


Figure 6.1

- Replace battery:

- 1). Open battery cover, remove the old battery out.
- 2). Insert new battery inside the bottom, please be careful the batteries polarity.

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## **7. Operation Precautions**

- 1). Please insert the battery into the bracket when do you use the IR Thermometer on first time.
- 2). Please keep the probe clean after you used the IR Thermometer.
- 3). Please keep the IR Thermometer dry and never immerse it in water or any liquid.
- 4). Do not put the IR Thermometer under high temperature environment on long time and keep away from sunlight, dust and dirt.
- 5). Do not put the IR Thermometer with keen-edged goods together.
- 6). Do not touch the tip of probe with your finger.
- 7). Do not disassemble the IR Thermometer.
- 8). Do not use the IR Thermometer if you suffer from ear disease or your ear canal wet.
- 9). To obtain a precise temperature measurement, first clean your ear of all excessive earwax.
- 10). Please take your temperature when you relax and never take your temperature after exercise or a bath. Rest at least 30 minutes afterward.
- 11). Please keep your mobile phone away from the IR Thermometer to prevent malfunction.
- 12). If the following conditions occur, we recommend you to take your temperature at least three times and use the highest reading.
- 13). Please use clean cloth with 70-90% Isopropyl alcohol (IPA) to clean up before or after use; Avoid multiple using by different peoples for cross infection.

### Note:

1. Any solution, dilution and method other than mentioned above might cause reliability problems with the Infrared thermometer.
2. Contraindications for the following : placing the thermometer probe on scarred tissue or tissue compromised by skin disorders; patients in trauma; Patients treated with certain drug therapies; and placing the thermometer probe on skin exposed to direct sunlight, fireplace heat, cold compress therapies, air conditioner flow, etc.
3. Not servicing/maintenance while the device is in use.
4. The patient is an intended operator. The patient can measure, transmit data under normal circumstances and maintain the device and its accessories according to the user manual.
5. Please remove the batteries if it is not in use for a long time (More than 3 months ).
6. Not intended to be sterilized. Not for use in an OXYGEN RICH ENVIRONMENT
7. Please dispose of the device/battery/accessory/packing in accordance with the legal obligation in your area
8. Before every use, check the device, Do not use the device if it is damaged in any way. The continuous use of a damaged unit may cause injury, improper results, or serious danger.
9. No modification of this device is allowed.

## **8. Precaution for Measuring Temperature**

Description	Meaning
	Measuring temperature over 43.0°C/109.4°F
	Measuring temperature lower than 34.0°C/93.2°F
	Environment temperature high than working temperature.10.0°C - 40.0°C(50.0°F - 104.0°F)

## 9. Specifications

Model No.	FT-F11, FT-F21, FT-F12, FT-F22; FT-F11-BT, FT-F21-BT; FT-F12-BT, FT-F22-BT; UO8080, UO8080E
Measuring Range	Body 34.0°C-43.0°C( 93.2°F -109.4°F )
Measuring time	minimum measuring time is 2 seconds; and minimum time between measurements for the same site is 2 seconds
Accuracy	±0.2°C/0.4°F    34.0°C-34.9°C (93.2°F - 94.82°F ) ±0.2°C/0.4°F    35.0°C-42.0°C (95.0°F -107.6°F ) ±0.2°C/0.4°F    42.1°C-43.0°C (107.78°F -109.4°F )
Resolution	0.1°C/0.2°F
Operation Condition	10.0°C-40.0°C(50.0°F - 104.0°F ) Rh≤95% Pressure: 86~106 kPa
Storage Condition	-25.0°C-55.0°C(-13.0°F - 131.0°F ) Rh≤95% Pressure: 86~106 kPa
Battery type and battery life	AAA 2pcs ( Suitable for FT-F11 , FT-F21 ,FT-F11-BT FT-F21-BT, UO8080, UO8080E) 1 PC 2032 button battery (Suitable for FT-F12, FT-F22 ,FT-F12-BT FT-F22-BT) The typical service life of the new and unused batteries is 300 measurements for the operation time is 60s
Protection against electric shock	Internally powered ME equipment
Protection against electric shock	Type BF  Cuff
IP classification	IP22 (IP22: The first number 2: Protected against access to hazardous parts with a finger, and the jointed test finger of 12 mm Φ, 80 mm length, shall have adequate clearance from hazardous parts .And protected against solid foreign objects of 12,5 mm Φ and greater. The second number: Protected against vertically falling water drops when enclosure titled up to 15°. Vertically falling drops shall have no harmful effects when the enclosure is titled at any angle up to 15° on either side of the vertical.

Mode of operation	Continuous operation
Size (body)	L145*W35*H40mm (Suitable for FT-F11, FT-F21 FT-F11-BT FT-F21-BT) L120*W44*H60mm (Suitable for FT-F12, FT-F22 FT-F12-BT FT-F22-BT) L132*W40.3*H65mm (Suitable for UO8080, UO8080E)
Weight (including battery)	78g(FT-F11,FT-F11-BT),80g(FT-F21,FT-F21-BT), 48g(FT-F12,FT-F12-BT;FT-F22,FT-F22-BT)
Contents	-infrared thermometer -batteries 3V (Optional) -Storage case (Optional) -Instruction Manual
Bluetooth Version	Bluetooth 4.1 BLE
Bluetooth Modulation Type	GFSK

### Specially Voice Function for Model no.FT-F11, FT-F21, FT-F11-BT, FT-F21-BT, UO8080, UO8080E

1. When the IR thermometer is ready, you can hear “Please measure” voice or other languages voice.
2. When the measurement is finished, the IR thermometer shall report the measured temperature data.

The Blue Tooth function model is FT-F11-BT, FT-F12-BT,FT-F21-BT  
FT-F22-BT)

Operation Method:

- ★ Install the APK accordance with the communication protocol into the blue tooth signal receiving device such as mobile phone.
- ★ Activate the blue tooth signal receiving device such as mobile phone to match with the blue tooth of infrared thermometer
- ★ Start to measure according to the normal infrared thermometer operation method.
- ★ After measuring the result will be displayed on LCD and be sent to the blue tooth receiving device such as mobile phone.

The additional function of blue tooth infrared thermometer is to transmit the testing result to the APK in the receiving device via blue tooth technology.



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## 10. Common questions concerning forehead temperature:

### 1). What is the forehead temperature?

Forehead temperature is the same temperature as the arterial blood supply under the skin. It is the best determinate of body temperature, and unaffected by the artificial errors and time delays of oral and rectal methods.

### 2). How to take forehead temperature properly?

Gently touch the probe to center of forehead .Make sure remove anything covering the area to be measured (hair .hat .wig .and bandages). Failure to do so may insulate the area, resulting in false readings. Press the “SCAN” button on the thermometer for the reading.

### 3). Why is a forehead temperature is more accurate than ear temperature?

Ear thermometers are considered inaccurate because the positioning of the probe in the ear canal might affect the accuracy. The forehead thermometer scans the forehead area for temperature given off by the arterial blood supply under the skin without worrying about correct positioning. The gentle scan is comfortable and not invasive.

Temperature measurements are impacted by the type of measurement method used.
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Measurement method	Normal temperature range	Fever temperature range
Forehead	35.0~38.0°C (95.0~100.4°F)  NOTED: Measurements for some adults may be lower than 35.0°C (95.0°F)	A temperature that is 0.6~0.8°C (1.0~1.5°F) higher than usual. It is highly recommended that you use our IR Forehead Thermometer to establish the normal temperature range for each person.
Ear	36.5~37.9°C (97.7~100.3°F)	38.0°C or higher (100.4°F or higher)

## LIMITED WARRANTY

This Infrared thermometer is guaranteed for 2 years from the purchasing date under normal use .The warranty does not cover the damage of improper use or the battery running out. If the unit does not function properly due to defective parts or assembly, we will repair it free of charge or replace with a new one. We will provide circuit diagrams, component part lists,

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descriptions, calibration instructions to assist to service personnel in parts repair.

**Notes:**

If you have any problems with this device, such as setting up, maintaining or using, please contact with service personnel of FUDAKANG INDUSTRIAL CO.,LTD. Don't open or repair the device by yourself.

Please report to FUDAKANG INDUSTRIAL CO.,LTD if any unexpected operation or events occur.

After drop/ shock...,that may cause changes in the performance , please contact with service personnel of FUDAKANG INDUSTRIAL CO.,LTD.

Don't open or repair the device by yourself.

Keep the device out of the reach of children/pets to avoid inhalation or swallowing of small parts.

The device should be used only with the accessories recommended for use by the manufacturer.

This device must only be serviced, repaired and opened by individuals at authorized sales centers .

This device is not a life supporting me equipment

Statement: Clinical accuracy characteristics and procedures are available from the manufacturer on request.

**STATEMENTS AND DECLARATIONS:**

1. MEDICAL ELECTRICAL EQUIPMENT needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the ACCOMPANYING DOCUMENTS

2. Wireless communications equipment such as wireless home network devices, mobile phones, cordless telephones and their base stations, walkie-talkies can affect this equipment and should be kept at least a distance  $d = 3,3$  m away from the equipment.

(Note. As indicated in Table 6 of IEC 60601-1-2:2007 for ME EQUIPMENT, a typical cell phone with a maximum output power of 2 W yields  $d = 3,3$  m at an IMMUNITY LEVEL of 3 V/m)

3. The manufacturer are available for request of circuit diagrams, component part lists, descriptions ,calibration instructions ,or other information that will assist service personnel to repair those parts of the device

4. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

5. Guidance and manufacturer’s delclaration

<b>Guidance and manufacture’s declaration – electromagnetic emission</b>		
The [EQUIPMENT or SYSTEM] is intended for use in the electromagnetic environment specified below. The customer of the user of the [EQUIPMENT or SYSTEM] should assure that it is used in such an environment.		
<b>Emission test</b>	<b>Compliance</b>	<b>Electromagnetic environment – guidance</b>
RF emissions CISPR 11	Group 1	The [EQUIPMENT or SYSTEM] use 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 emission CISPR 11	Class B	
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

<b>Guidance and manufacture’s declaration – electromagnetic immunity</b>			
The [EQUIPMENT or SYSTEM] is intended for use in the electromagnetic environment specified below. The customer or the user of [EQUIPMENT or SYSTEM] should assure that it is used in such an environment.			
<b>Immunity test</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment -</b>


			<b>guidance</b>
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%. If ESD interfere with the operation of equipment ,counter measurements such as wrist strap, grounding shall be considered.
Electrical transient/burst IEC 61000-4-4	fast ±2 kV for power supply lines ±1 kV for input/output lines	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode. ±2 kV common mode	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% UT (>95% dip in UT) for 0.5 cycle  40% UT (60% dip in UT) for 5 cycles  70% UT (30% dip in UT) for 25 cycles  <5% UT (>95% dip in UT) for 5 sec	Not applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the TL-100Drequires continued operation during power mains interruptions, it is recommended that the TL-100Dbe powered from an uninterruptible power supply or a battery.
Power frequency (50Hz) magnetic field IEC 61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE UT is the a.c. mains voltage prior to application of the test level.

### **Guidance and manufacture's declaration – electromagnetic immunity**

The [EQUIPMENT or SYSTEM] is intended for use in the electromagnetic environment specified below. The customer or the user of [EQUIPMENT or SYSTEM] should assure that it is used in such an environment.

<b>Immunity test</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - guidance</b>
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<p>Conducted RF IEC 61000-4-6</p> <p>Radiated RF IEC 61000-4-3</p>	<p>3 V<sub>rms</sub> 150 kHz to 80 MHz</p> <p>3 V/m 80 MHz to 2.5 GHz</p>	<p>Not applicable</p> <p>3 V/m</p>	<p>Portable and mobile RF communications equipment should be used no closer to any part of the [EQUIPMENT or SYSTEM], including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p><b>Recommended separation distance</b></p> $d = 1.167\sqrt{P}$ $d = 1.167\sqrt{P} \quad 80 \text{ MHz to } 800 \text{ MHz}$ $d = 2.333\sqrt{P} \quad 800 \text{ MHz to } 2.5 \text{ GHz}$ <p>Where <math>P</math> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <math>d</math> is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,<sup>a</sup> should be less than the compliance level in each frequency range.<sup>b</sup></p> <p>Interference may occur in the vicinity of 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.

<sup>a</sup> 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 [EQUIPMENT or SYSTEM] is used exceeds the applicable RF compliance level above, the [EQUIPMENT or SYSTEM] should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the [EQUIPMENT or SYSTEM].

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

Recommended separation distances between portable and mobile RF communications equipment and the [EQUIPMENT or SYSTEM].			
The [EQUIPMENT or SYSTEM] is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the [EQUIPMENT or SYSTEM] can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the [EQUIPMENT or SYSTEM] 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 $d = 1.167\sqrt{P}$	80 MHz to 800 MHz $d = 1.167\sqrt{P}$	800 MHz to 2.5 GHz $d = 2.333\sqrt{P}$
0.01	0.117	0.117	0.233
0.1	0.369	0.369	0.738
1	1.167	1.167	2.333
10	3.689	3.689	7.379
100	11.667	11.667	23.333
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.			

FCC ID: 2ADNQTF21BT

This device complies with Part 15 of the FCC Rules. Operation is subject to the

Following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Explanation of Symbols:



Symbol for batch code



Symbol for manufacturer



Symbol for 'CE'



Symbol for "electrical and electronic equipment"



Symbol for "TYPE BF APPLIED PART"



Symbol for "Follow operating instructions"

**IP22**

Symbol for "the IP classification"



Symbol for " RF transmitters"



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Website: [www.fudakang.com](http://www.fudakang.com)

Software Version: V3.0

Manual Version: V2.0