JPD-FR302

User Manual

Infrared Thermometer

Version: 1.0
Prepared in August 2015

Shenzhen Jumper Medical Equipment Co., Ltd.

User Instructions

- Thank you for choosing the infrared thermometer produced by Jumper Medical Equipment Co., Ltd. For proper use of the product, please read this manual before using the product, and follow this manual when operating the product .
- Before using the product, please read and follow *Safety Precautions*.
- Please keep this manual with the product, so that you can refer to this manual in case of need.

Contents

FCC Statement

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.

（2）this device must accept any interference received, including interference that may cause undesired operation.

NOTE: 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 recerver is connected.

●Consult the dealer or an experienced radio/TV technician for help.

Warning: Changes or modiflcations to this unit not expressly approved by the party responsible for compliance could void the user's authorty to operate the equipment.

ISED Statement

- English:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must a ccept any interference, including interference that may cause undes ired operation of the device.

- French:

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device has been evaluated to meet general RF exposure requi rement. The device can be used in portable
exposure condition without restriction

Unpacking Check

Please open the package carefully before use, check that all accessories are contained. Check whether any component is damaged due to improper transportation, and perform installation and operation following this user manual. If any damage or operation problem exists, please contact the dealer or directly contact Jumper Medical Equipment Co., Ltd. When contacting us, please provide the following information: device model, serial number, purchase date, and your contact information and address.

Standard Packing List

No.	Name	Remarks
1	Infrared thermometer x 1	
2	Earcap box x 1	
3	Dry battery x 2	Battery specification： AAAx 2
4	Pouch x 1	
5	User manual x 1	

Safety Precautions

Before using the thermometer, please carefully read the following precautions:

⚠ Caution

- This product cannot be used to replace a monitoring instrument that continuously monitors the body temperature.
- The temperature probe is a sensitive component of the infrared thermometer, and keep it carefully.
- Do not discard the exhausted battery at will; take it to a specified environmental protection place for processing, so as to avoid environmental pollution.
- Remove the battery if the product has not been used for more than two months.
- Never put the product into water or under the sun; otherwise, the product may be damaged or suffer accelerated aging.
- Do not acutely vibrate the product or collide it with other things; otherwise, it may be damaged.
- The normal body temperature varies from person to person. You are advised to record daily measurement values and use them as reference values to determine whether you have a fever.
- Your body temperature rises when you are taking exercise or have emotional outbursts. In this case, you are not advised to measure your body temperature. After exercise, take a 20-minutes rest before making measurement.

- After using the product, clean it and keep it in a dust-free, dry, and ventilated place.

When using the product, note the safety precautions below:

- The product is not waterproof, and do not put it into water or other liquid. For the cleaning and disinfection method, see *Cleaning and Disinfection*.
- Do not directly contact the top of the temperature probe, where there is a precise temperature sensor at the top.
- Keep the temperature probe clean, and clear away dirt or cerumen, which may affect the measurement result.
- When there is dirt in the auditory meatus, use a cotton ball to clean it before making measurement.
- The measurement environmental temperature should not be too low or too high. After the instrument enters the measurement environment from the storage environment, make measurement 30 minutes later.
- Do not make measurement at a temperature higher than 40°C (104°F) or lower than 10°C (50.0°F) because the temperature in this case is beyond the normal working temperature of the thermometer.
- Do not use the thermometer for unexpected purposes, and follow the safety precautions when making measurement for a child.

Warning

Warning

- During measurement, do not forcibly insert the temperature probe into the auditory meatus, which may hurt the auditory meatus.
- The thermometer is not a diagnostic instrument, and the measurement result is only used as reference for a doctor.
- It is risky to perform auto-diagnosis and treatment according to the measurement result; follow the doctor's diagnosis.
- Do not refit the product without permission of the manufacturer, which may damage the product or cause safety problems.
- The thermometer can be used cooperatively with a dedicated earcap. When no earcap is used, you are advised to use the thermometer for only one person, so as to avoid cross infection.

Do not charge or put the common alkaline dry battery into the fire, so as to avoid a risk of explosion.

Do not disassemble or repair the thermometer if you are not professional, so as to avoid causing irreparable damage.

During measurement, do not use a mobile phone or another device with strong electromagnetic field interference.

Do not use the thermometer in an environment where there is a gas mixture of inflammable anesthetizing gas and air, or a gas mixture of oxygen and nitrous oxide.

- Do not use the thermometer to make measurement for any part of the body except the ear; the measurement result may be incorrect.
- Keep out of reach of children.

Symbol Conventions

Symbol	Description
	BF-type application part
	Caution! Please see this manual.
	Indicates general prohibitions, where specific content is described following the symbol.
	Manufacturer information including the name and address of the manufacturer
	Date of manufacture, where specific year and month are shown before or below the symbol
	When end users abandon this product, they must send the product to the collection place for recycling.
IPX0	Waterproofing grade, indicating that this product is not water-proof
	Low battery voltage
⚠ Warning	Indicates that an individual may be hurt or the instrument may be damaged in case of wrong usage.

⚠ Caution	Indicates that the measurement result may be incorrect or the instrument may be damaged in case of wrong usage.

Product Introduction

(1) Overview

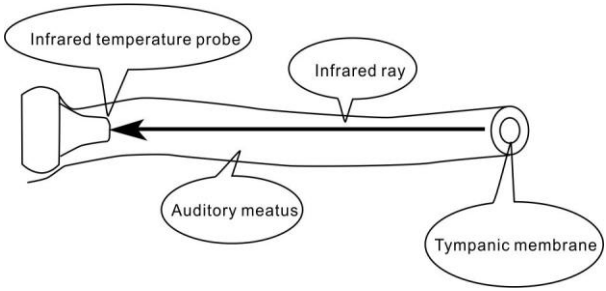
The JPD-FR302 infrared thermometer (referred to as thermometer in the following) is a measurement instrument that uses the infrared receiving principle to measure the temperature in the tympanic membrane of the earhole. You only need to insert the temperature probe into the earhole and place it at the correct position, and press the measurement key to quickly and correctly measure the ear temperature.

(2) Product Structure

This product mainly consists of a casing, a liquid crystal display, a press key, a buzzer, an infrared sensor, and a microprocessor.

(3) Measurement Principle

The infrared thermometer uses the infrared temperature sensor to receive infrared energy emitted by heat generated in the tympanic membrane of the earhole. The energy penetrates through the lens and becomes concentrated, and is further converted into a temperature value by using the thermopile and measurement circuit.



(4) Expected Usage

This product intends to be used by a medical department or a family to measure the body temperature.

(5) Scope of Application

The temperature of a measured object is displayed by measuring thermal radiation of the thermal radiation of the earhole.

(6) Contraindications

Do not use this instrument for an individual having diseases such as otitis media and ear fester.

Functions and Features

1. High Safety
- Passive infrared receiving technology without radiation
- Disposable earcaps that avoid cross infection

2. Easy Operations

- Conforming to ergonomic design
- One-key measurement and automatic temperature measurement
- No interference to daily life, where measurement may be made when a child is asleep

3. Fast Measurement

- One-second measurement and no waiting

4. High Accuracy

- Advanced infrared temperature sensing component with high sensitivity
- Temperature correction program that ensures precise calculation, where the measurement result truly reflects the body temperature

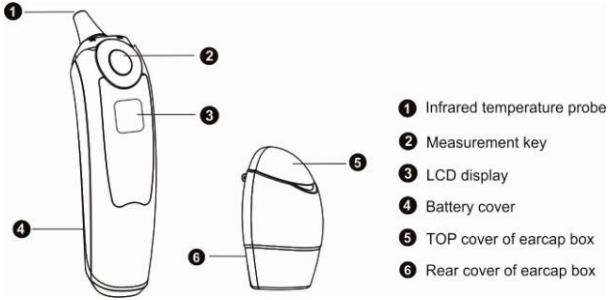
5. Practical Functions

- Function of memorizing 20 groups of measurement data that helps effectively track a change status of the temperature
- Function of measuring the temperature of the ear
- Function of reminding a fever by using audio
- Function of Celsius degree/Fahrenheit degree conversion
- Automatic power-off function, consuming less power
- Bluetooth tethering function and APP program application

6. Wide Target Users

Applicable to individuals older than three months

Schematic Diagram of Appearance



Measurement Method

1. Precautions before Use

1) This thermometer is applicable to indoor environments. There should be no strong cross-ventilation between the instrument and a measured object during measurement (for example, a fan, an air-conditioner, and a heater blow against each other).
2) This thermometer is sensitive to the environment temperature; do not hold the thermometer for a long time.
3) Keep the temperature probe clean and unblocked before using the thermometer.
4) Before measuring the temperature of the ear, keep the auditory meatus clean; otherwise, the measurement result may be incorrect.

5) Do not have emotional outbursts or take acute exercise before measurement.
6) Make measurement 30 minutes later after taking the thermometer into the measurement environment, if there is a temperature difference between the storage environment and the measurement environment.
7) The measured individual is advised to take a more than 10 minutes rest before measurement, if the individual enters the measurement environment from an environment and there is a temperature difference between the two.

2. How to Measure the Temperature of the Ear

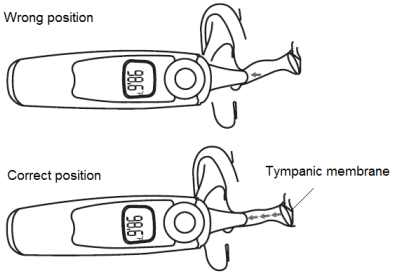
1) Cover the temperature probe with an eareap

Put the eareap into the eareap box, open the top cover of the eareap box, pull out one eareap, place it at the hole on the top, and keep it flat, and press downwards the temperature probe of the thermometer in the transparent film direction in the middle of the eareap until the eareap fully covers the temperature probe. Take out the temperature probe and close the eareap box cover.

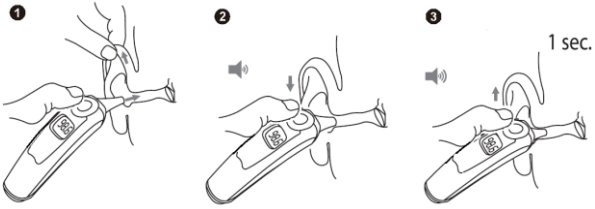
2) Insert the temperature probe into the auditory meatus and place it at the correct position (shown in the following figure)

When making measurement for an adult, lift the ear slightly upwards; when making measurement for a child, lift the ear slightly backwards

to make the auditory meatus straight and the temperature probe aim at the tympanic membrane direction.



3) When measuring the temperature of the ear, press and release the measurement key. The buzzer beeps once, and the display screen displays the measurement value about 1s later.



3. End of Measurement

1) After the measurement is completed, in the power-off state, long press the measurement key for more than 4s but less than 6s to enter the memory query mode, in which you can view previous measurement records. For detailed operations, see *Query of 20 Groups of Memory Data* in the following table.
2) After the measurement is completed, use a dry, soft cloth to wipe the thermometer, and keep the thermometer in a dry and ventilated place.
3) The thermometer is automatically powered off if no key is operated for 10s.

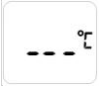
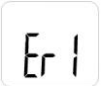
Connecting the Thermometer to an APP Application of a Mobile Phone

The thermometer has a built-in Bluetooth module and can be connected to a smartphone by using the Bluetooth 4.0 wireless technology. View the measurement data in real time by using mobile phone software "MyThermo". The software automatically saves the measurement data and draws a temperature curve graph, which helps view the temperature change status in real time.
For a method for connecting the thermometer to the mobile phone, see *Operation Instruction*.

Display and Operation Instructions

LCD Display	Operation Method and Display Instructions	Sound and Backlight
	In the power-off state, press the measurement key for less than 4s. Then, the thermometer displays the measurement value and starts up.	One long buzzing sound and 3s green backlight
 	After the backlight dies out, the thermometer enters the ready-for-measurement state, and a symbol of a corresponding mode appears. In this case, the measurement prompt symbol blinks.	1. When 32.0°C < T < 37.6°C, one long buzzing sound and 3s bright green backlight 2. When 37.6°C ≤ T ≤ 42.2°C, seven rapid short buzzing sounds and 3s bright green backlight When the temperature of the surrounding object or environment during measurement is within the following range: 0°C ≤ T ≤ 32.0°C or 42.2°C ≤ T ≤ 100.0°C, a symbol appears,

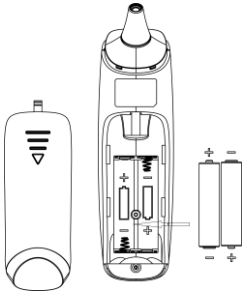
		and it is automatically identified as the temperature of the object.
	When the measured temperature is higher than 100°C (212°F)	Three short buzzing sounds and 3s green backlight
	When the measured temperature is lower than 0°C (32°F)	Three short beeps and 3s green backlight
Query of 20 Groups of Memory Data		
LCD Display	**Operation Method and Display Instructions**	**Sound and Backlight**
	In the power-off state, press the measurement key for more than 4s but less than 6s. Then, the LCD displays "- - - ", and the M symbol blinks.	No sound is emitted.
  	Press the measurement key again. Then, the LCD displays the first memory value, and the M symbol blinks. Each time you press the measurement key once, the LCD displays a memory number for 1s and then displays the memory measurement value, where	No sound is emitted.

	there are 20 groups of memory data in total.	
	If there is no measurement data, the LCD displays only "- - - " and the M symbol, and the M symbol blinks.	No sound is emitted.
°C/°F Conversion		
LCD Display	**Operation Steps**	**Sound and Backlight**
 	In the power-off state, press the measurement key for more than 6s but less than 8s to enter the temperature unit conversion mode. Within 5s after releasing the measurement key, press the measurement key again, and then, the temperature unit is converted once, until the measurement key is released for more than 5s and the thermometer is automatically powered off.	No sound is emitted.
Display of Incorrect Information		
	When the environment temperature is higher than 40.0°C (104°F) or lower than 10.0°C (50.0°F), "Er1" is displayed.	Three short buzzing sounds and 3s green backlight

	When there is a read/write error in the EEPROM data or correction is not completed, "ErC" is displayed. In this case, contact the supplier.	Three short buzzing sounds and 3s green backlight
	When the voltage of the battery is lower than 2.51V±0.15V, a low voltage symbol (not blinking) is displayed after the thermometer is powered on. In this case, replace the battery.	No sound is emitted.

Battery Replacing Method

1) When replacing the battery, press and hold the upward sign on the battery cover, take off the battery cover, put two AAA batteries into the battery holder according to electrode signs, and close the battery cover.
2) After the thermometer has been used for a period of time, if the display screen displays the low voltage symbol after the thermometer is powered on, replace the batteries with new ones before normally using the thermometer.



⚠ When installing the battery, install it according to the electrode signs; otherwise, the instrument may be damaged.

⚠ Use batteries of the same type or specifications; do not randomly discard the exhausted batteries, but process the exhausted batteries according to local environmental requirements.

⚠ Batteries are built in at the time of factory delivery, and you only need to take out the insulation strip.

Cleaning and Disinfection

Device Cleaning:

Recommended detergent:

* Medical detergent
* Household neutral detergent

Cleaning steps:

1) Take out the battery before cleaning.
2) If the instrument body is dirty, use a soft and clean cloth to soak neutral detergent or water, wring the cloth and then wipe the instrument body, and immediately use tissue or dry cloth to wipe the instrument body.
3) Use a clean and soft cloth to wipe the temperature probe of the thermometer, and use a cotton ball to clean the lens.
4) After the cleaning, place the thermometer in a dust-free, dry, and ventilated place.

⚠ During cleaning, keep the lens of the temperature probe away from water; otherwise, the temperature probe may be damaged.

⚠ The lens of the temperature probe may be scratched if tissue is used to wipe the lens, and the measurement result may be incorrect.

⚠ Do not use corrosive detergent or acidic or alkaline detergent.

⚠ During cleaning, do not use a stiff object to contact the lens of the temperature probe, do not put any part of the thermometer into liquid, and prevent liquid from flowing into the instrument.

⚠ You are advised to clean the thermometer weekly, finish cleaning within 3 minutes each time, and clean the thermometer not more than three times each time.

Disinfection:

Recommended sanitizer:

* Isopropanol solution of 70% concentration
* Medicinal alcohol of 75% concentration
* Sodium hypochlorite solution of 3% concentration

Disinfection steps:

1) Use a clean soft cloth to soak a small amount of disinfectant to wipe the instrument body, and immediately dry it.
2) Use a clean cloth to soak a small amount of medicinal alcohol of 75% concentration to wipe and disinfect the periphery of the temperature probe.

⚠ Do not disinfect the instrument by means of high-temperature steam or ultraviolet irradiation, which may damage the instrument or accelerate aging of the instrument.

⚠ You are advised to disinfect the thermometer before and after using it each time, finish disinfection with 1 minute each time, and disinfect the thermometer not more than two times each time.

⚠ Perform cleaning and disinfection in the following environment: temperature: +10°C to +40°C(50°F to 104°F); humidity 15% to 85% RH without condensation; barometric pressure: 86kPa to 106kPa.

Maintenance

1) Each time finishing using the instrument, clean the instrument body and the temperature probe and perform operations following *Cleaning and Disinfection*.
2) Keep the thermometer in a dry, ventilated, dust-free, and pollution-free place, prevent the thermometer from direct solar radiation, and store and transport the thermometer according to corresponding environment requirements.
3) Regularly check the thermometer to determine whether there is a potential safety hazard, so as to ensure safe use.
4) If the thermometer has not been used for a long time (more than two months), take out the battery for storage.

Troubleshooting

Fault Symptom	Possible Cause	Solution
Failing to start up	The battery level is extremely low.	Use new batteries of the same type or specifications.
	The batteries are installed according to wrong positive and negative electrodes.	Check whether the batteries are installed in the battery holder according to the electrode signs.
	The instrument is damaged.	If the instrument is within the warranty period, contact the after-service department of the manufacturer for free repairing.
Only the battery symbol is displayed after the instrument is powered on.	The battery level is low.	Use new batteries of the same type or specifications.
Only "Er1" is displayed	The environment temperature is higher	Make measurement at an environment

Fault Symptom	Possible Cause	Solution
after the instrument is powered on	than 40°C or lower than 10°C.	temperature of 10°C to 40°C.
"ErC" is displayed after the instrument is powered on	There is a read/write error in internal storage data or temperature correction is not completed.	Contact the manufacturer for processing.
The measurement result is lower than a normal value	The lens of the temperature probe is dirty.	Use a cotton ball to clean the lens of the temperature probe, to ensure that the lens is not blocked.
	The measurement method is incorrect that the temperature probe is too far away from the measured position.	Make measurement according to the correct method, and shorten the measurement distance.
	After entering the measurement environment from a colder environment, the thermometer is not placed for more than 30 minutes.	Place the thermometer in the measurement environment for more than 30 minutes.

Fault Symptom	Possible Cause	Solution
The measurement result is higher than a normal value	The temperature probe is damaged. There is direct incidence of strong light.	Contact the manufacturer for repairing. Do not make measurement under strong light.

Technical Specifications

Product Name	Infrared thermometer
Model	JPD-FR302
Battery Working Mode	Internal power supply
Working Voltage	DC 3V
Battery Specifications	AAA×2
Battery Life	Alkaline dry battery, about 20000 times
Running Mode	Short-time continuous running
Input Power	Less than 60mW
Display Mode	Segment LCD
Measurement Time	About 1 second
Emissivity	0.95
Temperature Unit	°C/°F can be set.
Measurement Range	Temperature: 32.0°C to 42.2°C (89.6°F to 107.9°F)
Precision	±0.2°C/±0.4°F
Display Resolution	0.1°C/0.1°F
Memory Storage	Twenty groups of measurement data
Low-voltage Prompt	Lower than 2.51V ± 0.15V, where the low voltage symbol is displayed when the instrument is powered on
Automatic Power-off Time	10s±1s
Dimension (mm)	150 × 40 × 38
Weight (g)	Instrument body: 85.0 g (excluding batteries); earcap box: 37.5 g
Quantity of Earcaps in Earcap Box for Standard Configuration	30 pieces
Work Environment	Temperature: +10°C to +40°C (50°F to 104°F)
	Humidity: 15% to 85% RH, without condensation

	Barometric pressure: 86kPa to 106kPa
Accuracy of Clinical Diagnosis Test	The maximum permissible error of the accuracy of clinical diagnosis test is specified by using the formula below: $Terror = \frac{\lvert T1-Tref \rvert + \lvert T2-Tref \rvert}{2}$ $\leq$ 0.3°C/0.6°F (for 95%) where, T1 and T2 are two temperature reading values of two times of measurement of the tested thermometer, and Tref is a fixed reference temperature.

Safety Class

Anti-electric-shock type: internal power supply device

Anti-electric-shock level: BF-type application part; symbol: 

Fluid-proof level: IPX0, non-water-proof

Transportation and Storage Conditions

1) Transportation

Use general transportation tools, and prevent the instrument from strong shocks, vibration, and water.

2) Storage

Store the packed infrared thermometer in a ventilated indoor place where an environment temperature is -10°C to + 50°C, relative humidity is less than 93% without condensation, the barometric pressure is 50kPa to 106kPa, and no corrosive gas exists.

Appendix I：Manufacturer's Declaration of the EUT

Guidance and manufacturer's declaration – Electromagnetic emissions – for all equipment and systems

The Infrared Thermometer JPD-FR302 is intended for use in the electromagnetic environment specifiled below. The customer or the user of the Infrared Thermometer JPD-FR302 should assure that it is used in such an environment.

Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group1	The Infrared Thermometer JPD-FR302 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 Infrared Thermometer JPD-FR302 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	N/A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	N/A	

Guidance and manufacturer's declaration – Electromagnetic immunity – for all equipment and systems

The Infrared Thermometer JPD-FR302 is intended for use in the electromagnetic environment specifiled below. The customer or the user of the Infrared Thermometer JPD-FR302 should assure that it is used in such an environment.

Immunity test	**IEC 60601 Test Leve**	**Compliance level**	**Electromagnetic environment -guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input / output lines	N/A	
Surge IEC 61000-4-5	± 1 kV differentia mode ± 2 kV common mode	N/A	
Voltage	<5 % UT	N/A	

dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	(>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		
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m		Power frequency magnetic ields should be at levels characteristic of a typical location in a typical commercial or hospital environment

Guidance and manufacturer's declaration – Electromagnetic immunity – for equipment and systems that are not life-supporting

The Infrared Thermometer JPD-FR302 is intended for use in the electromagnetic environment specifiled below. The customer or the user of the Infrared Thermometer JPD-FR302 should assure that it is used in such an environment.

Immunity test	**IEC 60601 Test Level**	**Compliance level**	**Electromagnetic environment-guidance**
Conducted RF IEC 61000-4-3	3 Vrms 150 kHz to 80 MHz	N/A	Portable and mobile RF communications equipment should be used no closer 10 any part of Ihe JPD-FR302，including cables，than the recommended separation distance calculaled from the equation applicable to the frequency of the transmitter. **Recommended separation distance** d = $[\frac{3.5}{E1}]\sqrt{p}$ 80 MHz to 800 MHz d = $[\frac{7}{E1}]\sqrt{p}$ 800 MHz to 2.5 GHz
Radiated RF IEC 61000-4-3	3 V/m 80MHz To 2,5 GHz	3 V/m	

			where P is Ihe maximum oulput power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters， as determined by an electromagnetic site survey,a should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 
NOTE 1 At 80 MHz and 800 MHz，the higher frequency range applies.			

NOTE 2 These guidelines may not apply in all siluations. Eleclromagnetic propagation is affected by absorption and reflection from slructures, objecls and people.

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 JPD-FR302 is used exceeds the applicable RF compliance level above，the JPD-FR302 should be observed to verify normal operation. If abnormal performance is observed，additional measures may be necessary，such as re-orienting or relocating JPD-FR302.

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

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

The Infrared Thermometer JPD-FR302 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Infrared Thermometer JPD-FR302 can help prevent electromagnetic interference by maintaining a minimum

distance between portable and mobile RF communications equipment (transmitters) and The Infrared Thermometer JPD-FR302 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**	
	80 MHz to 800 MHz	**800 MHz to 2.5 GHz**
	$d=[\frac{3.5}{E1}]\sqrt{P}$	$d=[\frac{7}{E1}]\sqrt{P}$
0.01	0.12	0.23
0.1	0.38	0.73
1	1.2	2.3
10	3.8	7.3
100	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.

Jumper®

EC REP

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