JPD-FR400

CE 0482

JUMPER

Infrared Thermometer

Instruction Manual

Shenzhen Jumper Medical Equipment Co., Ltd

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Introduction

Thank you for choosing the Dual-mode Digital Infrared Thermometer of Jumper Medical, Infrared thermometer for short.

The infrared thermometer JPD-FR400 can be used to read the body temperature by measure the ear and forehead temperature, which is suitable for adult and children(ear test mode only for the child above 3 months).

Please read the instructions carefully before using the product, and put it in a safe and secure place for reference.

Contents

1. **The advantages of infrared thermometer JPD-FR400**

Multiple use (measurement of forehead temperature and ear temperature)
Dual-mode design, you are free to take body temperature by detecting the infrared heat given off by the forehead or eardrum,The Measuring range of the thermometer in forehead /ear mode is between 32.0°F - 212.0°F (0 °C- 100 °C) .
The product consists of ABS plastics, temperature sensor, Infrared temperature measuring element, microcomputer controlled circuit, LCD , backlight and buzzer.

Convenient for use

●Special ergonomic design to facilitate operation.
●No inconvenience would be caused to your daily life. It's available for measurement when your children's sleeping.
●It provides comfortable user experience compared with anus thermometer for children, rapid reading and simple operation compared with mouth thermometer.

Memory recall

A maximum of 20 previous readings is available to help you track the changes of your body temperature.

Safe and hygienic

●Compared to mercury thermometer, there is no danger of breaking the glass or swallowing mercury.
●It is totally safe for children to use.

Fever warning

When the reading exceeds 37.5℃/99.5℉, this product shall warn the user that he/she may have a fever by 7 rapid and short rings with LCD flicker.(For normal forehead temperature, the signal is long ring with LCD no flicker)

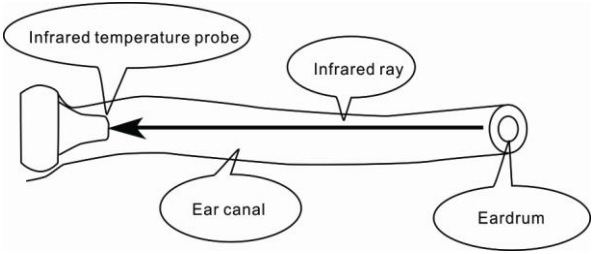
Extensive clinical data of hospital

The cooperation with designated hospitals is subjected to precise clinical verification, with the support of extensive clinical data and professional medical experts.

Application scope

The thermometer takes human body temperature for clinical or household use. It applies to all age groups and those who are suffering from a fever.

Operating principle
The infrared temperature sensor detects infrared energy emitted by the eardrum. A built-in lens focuses the collected energy, which is then converted into a temperature reading by the thermopiles and measurement circuits.



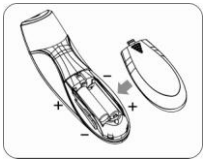
2. Necessary safety instructions

●The device is not used for newborn baby.
●The device is not continuous monitoring device.
●JPD-FR400 is not waterproof. Please do not douse it into water or other liquids. Cleaning and disinfection procedure shall be in comply with the instructions specified in [cleaning and storage]
●Please do not use the product if the temperature sensor or the Dual-mode infrared thermometer shows any sign of damage. Do not try to repair the product if it is damaged. Please contact the nearest Jumper Customer Service.
●JPD-FR400 consists of precision parts with high quality. Please prevent the product from falling off. Protection shall be provided for no intense shock and vibration. Do not twist the Dual-mode infrared thermometer and the temperature sensor.

●Operating Conditions:
Temperature: 10°C to 40°C
Humidity: 15-95% RH, non-condensing
Atmospheric pressure: 86kPa to 106kPa

●Storage and Shipping Conditions:
Temperature: -20°C to 55°C
Humidity: 0-95% RH, non-condensing
Atmospheric pressure: 50kPa to 106kPa

●**Battery Installation:**
Put the two AAA batteries into battery compartment in correct polarities.
Push the battery cover horizontally along the arrow.



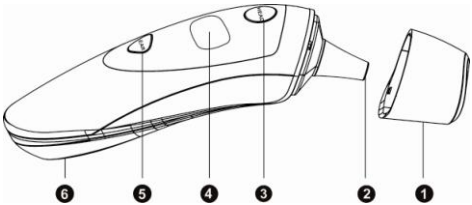
Notes:

☆ If you are the first time using the thermometer, please pull out the Plastic sheet .
☆ Battery polarities should be correctly installed. Otherwise, damage may be caused to the device.
☆ Please put in or remove batteries in right order, or may cause damage to the device bracket.
☆ Please remove the batteries if the thermometer will not be used for a long time.

Warnings

●Please keep this infrared thermometer out of children's reach
●Medical assistance can't be replaced by the use of infrared thermometer
●The infrared thermometer is not waterproof! Keep it away from water.

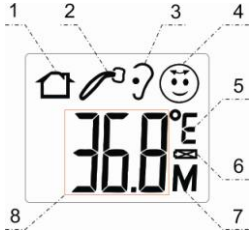
3.Instructions for product designs



(1) Probe cover (put the cover on when using forehead mode)
(2) Probe (take off the cover when using ear mode)
(3) Forehead mode
(4) LCD display screen
(5) Ear mode
(6) Battery cover

Display description

1. Ambient temperature
2. Ready for measurement
3. Ear mode
4. Head mode
5. ˚C / ˚F
6. Low power indicator
7. Memory mode
8. Temperature value



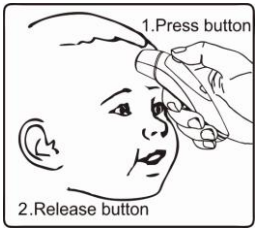
4.How to measure the forehead temperature

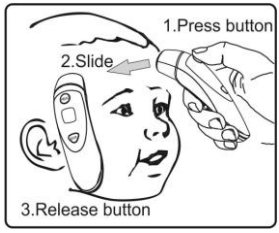
■ **Spot measurement**

1. With the sensor/probe cover attached, position the thermometer at the center of the forehead, just above the eyebrow. Ensure that the thermometer is in contact with the forehead.
2. Press and release the **HEAD** button.The temperature will be displayed on the screen instantly.

■ **Continuous scanning measurement**

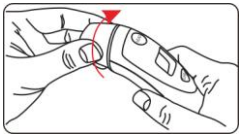
Point the temperature sensing probe at the middle part of forehead, with a distance of 1~5 mm(0.04~0.2 inches).Hold **HEAD button**, scan the forehead from one side to the other and then release the button,the system will read sequentially and record the maximum temperature value.





5.How to measure the ear temperature

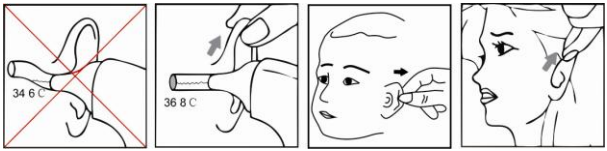
1. Gently remove the sensor/probe cover to reveal the ear probe.



2. Insert the ear probe into the ear canal.
3. Press and release the **EAR** button. The temperature will be displayed on the screen instantly.

Note:

Children under 1 year: Pull the ear straight back.
Children aged 1 year to adult: Pull the ear up and back.



In order to avoid the inaccuracy:

(1)Please make sure that there is no dirt in on the temperature sensor
(2)Please make sure that the device only be used in room, and there is no strongly conversation of wind.
(3)Before you measuring the forehead temperature, there shall be no water or any shade on the forehead.
(4) Before you measuring the ear temperature, please clean the ear canal first.
(5)Please make sure that there is no intense emotion and movement before measuring.
(6)If JPD-FR400 is transferred from one condition to another which has different ambient temperature, it is suggested to deposit for more than 30 minutes, and please follow the rule (2).
(7)If the tester is transferred from one condition to another which has different ambient temperature, it is suggested to have a rest for more than 10 minutes, and please follow the rule (2).
(8)Do not hold JPD-FR400 for long time as it is highly sensitive to heat.
JPD-FR400 has undergone clinical test, it is safe and accurate when using in accordance with operation manual.

Connecting the thermometer to an APP application of a mobile phone

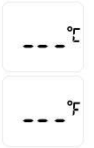
The thermometer has a built-in Bluetooth module and can be connected to a smartphone by using the Bluetooth 4.0 wireless technology. View the measurement data in real time by using mobile phone software "MyThermo". The software automatically saves the measurement data and draws a temperature curve graph,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

6.Instructions for display and operation

LCD display	Operational method and instruction for displays	Sound and backlit
	1.Measurement of forehead temperature: Position the thermometer at the center of the forehead above the eyebrow. With the thermometer touching the forehead, press and release the **HEAD** button. The temperature will be displayed on the LCD screen. 2.Measurement of ear temperature: Insert the thermometer ear probe into the ear canal. Press and release the **EAR** button. The temperature will be displayed on the LCD screen. 3. To measure again, simply press the **HEAD/EAR** button accordingly.	When the temperature is between 32.0°F/ 0°C and 99.5°F/ 37.5°C, there will be a long beep and a green backlit will be displayed for 3 seconds. When the temperature is between 99.6°F/37.6°C and 107.9°F/42.2°C, there will be 7 short beeps and the reading will flicker with a red backlit for 3 seconds. This indicates that the subject may have a fever. Please consult your doctor if you are not sure.

	Forehead measurement mode Eardrum measurement mode	
	The measured value exceeds 212 °F/100°C.	3 short beeps with a red backlit for 3 seconds.
	The measured value falls below 32.0°F/0°C.	3 short beeps with a red backlit for 3 seconds.

Inquiry for memory data, Storing 20 temperature readings		
LCD display	Operational method and instruction for displays	Sound and backlit
	Press and hold button **EAR** for **3-6 seconds** and the LCD will display "- - -" with the M signal blinking.	None
	Press button **EAR** again and the LCD will display the number '1' with the M signal. After 1 second, the measured temperature with the mode of measurement icon will be displayed. Note that this is the latest reading. To recall the next recorded reading, press button **EAR** again. The number '2' with the M signal will be displayed. After 1 second, the measured temperature with the mode of measurement icon will be displayed. Repeat to recall earlier recordings (up to 20 total) if necessary.	None

	The LCD will display “- - -” with the M signal blinking if there is no test data.	None
°C/°F conversion		
LCD display	Operational steps	Sound and backlit
	When the thermometer is off, press and hold the **EAR** button for **6-9 seconds**. The screen will display “- - - ” with “M” at the bottom right. Continue to hold the button until “- - -°C/°F” appears on the screen. Release the **EAR** button and the “- - -°C/°F” temperature unit will start to blink. Press the **EAR** button again within 5 seconds to change the temperature unit to your choice.	None
Error message & Low voltage		
	LCD screen will display “Er1” when ambient temperature exceeds 104.0°F/40.0°C or drops below 50.0°F/10.0°C.	3 short ticks and red backlit for 3 seconds.
	LCD screen will display “ErC” if there is EEPROM data reading error or the calibrating process is not finished. Please contact your supplier.	3 short ticks and red backlit for 3 seconds.
	Low-voltage signal when the battery voltage is below2.51V±0.15V. Please replace battery.	None
Power Off Mode		
The thermometer will power off automatically if no activity is detected for 10 seconds.		

Attention:

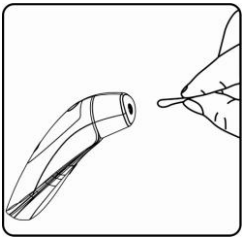
●Electromagnetic interference: JPD-FR400 contains sensitive electronic component and shall not use under the condition with electromagnetic interference,(such as the place nearby the mobile phones and microwaves)

●Please dispose the used products and batteries in accordance with

local regulation requirements when the products and batteries are not available.

●Please take out the battery if the device unused for long time.

7.Cleaning and Disinfection



Cleaning

1) Clean the temperature probe with a soft cloth. Clean the lens of the temperature probe with a cotton swab.
2) Wipe the thermometer body with a slightly damp soft cloth, and gently dry the body with a piece of tissue paper.

⚠ Keep water off the lens during the cleaning process. Otherwise, the lens may be damaged.

⚠ The lens may be scratched if it is cleaned with a piece of tissue paper, resulting in inaccurate readings.

⚠ Do not clean the thermometer with corrosive cleansers. During the cleaning process, do not touch the lens using hard objects, immerse any part of the thermometer into liquid, or allow liquid to enter the thermometer.

Disinfection

1) Disinfect the thermometer body and the area around the temperature probe with a cloth slightly moistened with 75% medical alcohol.

⚠ Do not use hot steam or ultraviolet radiation for disinfection. Otherwise, the thermometer may be damaged or quickly aged.

8.Maintenance

1) After each use, clean the temperature probe as described in "Cleaning and Disinfection".
2) Store the thermometer in a dry, dust-free, and well-ventilated place. Ensure that the thermometer is not exposed to sunlight. Ensure that

the storage and transportation environments meet the requirements

3) Check whether safety risks exist on a regular basis.
4) Remove the batteries if the thermometer will not be used for more than two months.

9. Replace the battery.

Slide the battery cover off along the marked direction. Put two AAA batteries correctly into the compartment.

Remove the batteries if the thermometer will not be used for more than two months.

10.Troubleshooting

Symptom	Possible Cause	Solution
The thermometer fails to power on.	The battery level is extremely low.	Use new batteries of the same model or specifications.
	Polarities of the batteries are reversed.	Ensure that the batteries are correctly installed according to the polarity symbols in the battery compartment.
	The thermometer is faulty.	If the warranty period does not expire, contact Jumper or a local distributor.
Only the battery symbol is displayed after the thermometer powers on.	The battery level is low.	Use new batteries of the same model or specifications.
"Er1" is displayed.	The ambient temperature is lower than 10°C	Take a measurement under an ambient

Symptom	Possible Cause	Solution
	(50.0°F) or higher than 40°C (104°F).	temperature between 10°C (50.0°F) and 40°C (104°F).
"ErC" is displayed.	An error occurs when data is being read from or written into the memory, or the temperature correction is not complete.	Contact Jumper.
The temperature reading is lower than the typical body temperature range.	The lens of the temperature probe is dirty.	Clean the lens using a cotton swab.
	The distance between the temperature probe and the target is too long.	Move the thermometer closer to the target.
	The thermometer is not used within 30 minutes after being taken from a cold environment.	Wait for more than 30 minutes after the thermometer is moved into the measurement environment.
The temperature reading is higher than the typical body temperature range.	The temperature probe is faulty.	Contact Jumper.

11. Technical specifications

Items	Standards
Models	JPD-FR400
1.Applicable regulations and laws	ASTM E 1965
2.Temperature units	℃/℉, adjustable

3.Measurement range	Forehead temperature mode:0.0℃-100.0℃ /32.0°F – 212.0 °F Ear temperature mode:0.0℃-100.0℃ /32.0°F – 212.0 °F
4.Accuracy (Laboratory)	±0.2℃ /±0.4°F(36℃-39℃/96.8℉-102.2℉) ±0.3/±0.5℉(less than 36 °C (96.8°F) or greater than 39 °C (102.2 °F)
5.Display resolution	0.1℃/0.1℉
6.Measure time	About 1 second
7.Latency Time	About 1 second
8.Measuring distance	Forehead temperature:1~5 mm(0.04~0.2 inches)
9.Sound	volume≧50 db (the perpendicular distance from dB Volume sensor to thermometer is 10cm)
10.Automatic shutdown function	10s±1s
11.Low-voltage display function	The product shall display low-voltage signal if the voltage is below 2.51V±0.15V.
12.Memory function	Memorize 20 groups of measured temperature.
13.LED backlit specifications	≧1.2cd/m^2
14.Type of measuring	Applicable for forehead temperature and ear temperature
15.Power supply	Internal power supply
16.Operating voltage	DC 3V
17.Battery	AAA ×2
18.Battery life	More than 3000 times
19.The date of production	See the label
20.Life	5 years

12. After-sale service

The device is under warranty for one year since the date of acquisition. Application for repairing should be presented during the warranty period. The damage caused by improper use is not under warranty scope. Batteries and packaging are not under warranty scope as well.

13. Security type

The signal indicates that the thermometer is type BF applied part.

14. Authorized European Representative:

EC REP

Wellkang Ltd
Suite B, 29Harley Street, London, W1G9QR,UK.

15. Symbols

Symbol	Description
	Type BF applied part.
	Attention must be paid.
	Information about a manufacturer, such as name and address.
	Please read the instructions carefully.
	Waste electrical materials should be sent to a dedicated collection point for recycling.
⚠ Warning	A personal injury or thermometer damage may occur if the thermometer is not correctly used.
⚠ Attention	Inaccurate reading or thermometer damage may occur if the thermometer is not correctly used.

16.Declaration

EMC of this product complies with IEC60601-1-2 standard.

The materials which the user can come into contact have no toxicity and no action on tissues comply with ISO10993-1, ISO10993-5 and ISO10993-10.

17. Appendix A: EMC Information-Guidance and Manufacture's Declaration

⚠ CAUTION:

- JPD-FR400 Infrared Thermometer needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided for in the ACCOMPANYING DOCUMENTS.
- Portable and mobile RF communications equipment can affect JPD-FR400 Infrared Thermometer
- The JPD-FR400 Infrared Thermometer should not be used adjacent to or stacked with other equipment.

Guidance and manufacturer´s declaration – electromagnetic emission –for all EQUIPMENT AND SYSTEMS

Guidance and manufacturer´s declaration – electromagnetic emission		
The JPD-FR400 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the JPD-FR400 Infrared Thermometer should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The JPD-FR400 Infrared Thermometer 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 JPD-FR400 Infrared Thermometer is suitabl e for use in all establishments, including domestic establish ments and those directly connected to the public low-voltage powe r supply network that supplies buildings used for domestic purposes.

Guidance and manufacturer's declaration – electromagnetic immunity –for all EQUIPMENT and SYSTEMS

Guidance and manufacturer´s declaration – electromagnetic immunity			
The JPD-FR400 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the JPD-FR400 Infrared Thermometer should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic	±6 kV	±6 kV contact	Floors should be wood,

discharge (ESD) IEC 61000-4-2	contact ±8 kV air	±8 kV air	concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields 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 SYSTEM that are not LIFE-SUPPORTING

Guidance and manufacturer´s declaration – electromagnetic immunity			
The JPD-FR400 Infrared Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the JPD-FR400 Infrared Thermometer 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	Portable and mobile RF communications quipment should be used no closer to any part of the JPDFR400 Infrared Thermometer, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = [\frac{3.5}{V_1}]\sqrt{P}$ $d = [\frac{3.5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz $d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2.5 GHz 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).[b] 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 situations. Electromagnetic 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 JPD-FR400 Infrared Thermometer is used exceeds the applicable RF compliance level above, the JPD-FR400 Infrared Thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the JPD-FR400 Infrared Thermometer.
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 EQUIPMENT or SYSTEM -for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING

Recommended separation distances between portable and mobile RF communications equipment and the JPD-FR400 Infrared Thermometer.

The JPD-FR400 Infrared Thermometer is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the JPD-FR400 Infrared Thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the JPD-FR400 Infrared Thermometer 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 $d = [\frac{3.5}{V_1}]\sqrt{P}$	80 MHz to 800 MHz $d = [\frac{3.5}{E_1}]\sqrt{P}$	800 MHz to 2,5 GHz $d = [\frac{7}{E_1}]\sqrt{P}$
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.

FCC IC Caution:

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.

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 receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

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

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

- 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 ca use interference, and (2) This device must accept any interference, including i nterference that may cause undesired 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.

Shenzhen Jumper Medical Equipment Co., Ltd.

Address: D Building, No. 71, Xintian Road, Fuyong Street, Baoan,Shenzhen,Guangdong,China
Tel: +86-755-26692192, 26696279
Fax: +86-755-26852025
Website:www.jumper-medical.com
Postal Code: 518102