Scanéo

IR Ear Thermometer with Bluetooth

Bluetooth

Model: TS42B

INSTRUCTION MANUAL
Please read this instruction manual carefully
before using your ear thermometer

Contents

Introduction

for Use:

The device is an infrared thermometer intended for the intermittent measurement of human body temperature in people of all ages.

This thermometer takes temperatures in seconds by measuring the heat generated by the earcanal or other objects. This product conforms to the provisions of the EC directive MDD(93/42/EEC).Its advantages include:
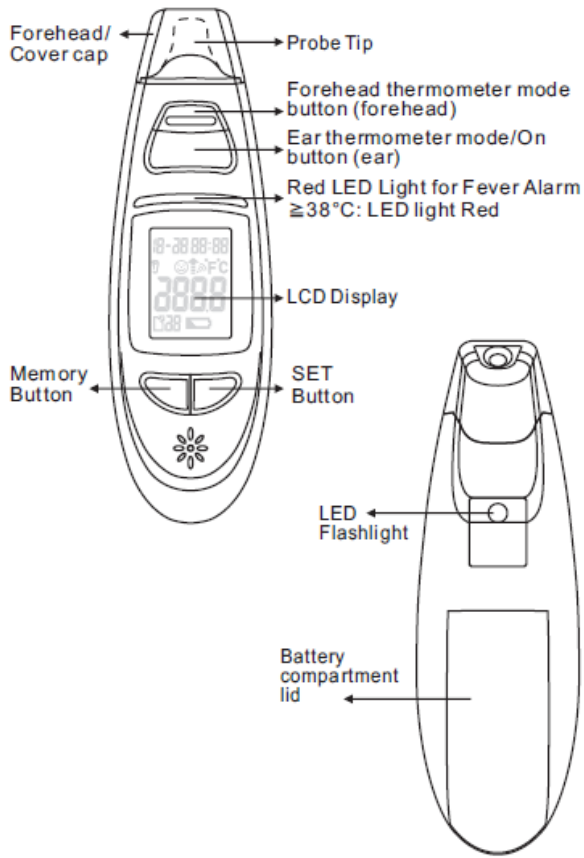
1. Bluetooth Low Energy v4.0
2. 7 in 1 functions
   Ear/Forehead/Object/Date-Time-Stamp/ 30 User Memory/Fever Alarm/Backlight/
3. Red LED Light for Fever Alarm
   ≧38°C: LED light Red
4. 30 User Memory
5. Illuminated Backlight Display
6. °C/°F Switch-able Function
7. Probe Cover Free
8. Waterproof Probe Design
9. One-second Reading
10. Auto power off for power saving
11. Low-battery Indicator
12. Warning indication
    Indications for battery condition and measuring range.
13. Large LCD Display

Important Information Before Use

When using this product, please be sure to follow all the notes listed below. Any action against these notices may cause injury or affect the accuracy.
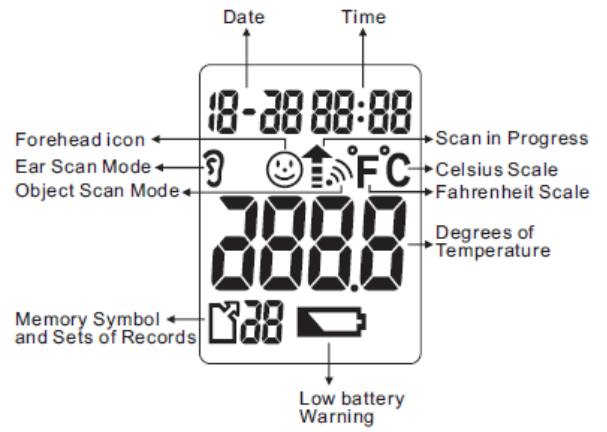
1. Do not disassemble, repair, or remodel the thermometer.
2. Be sure to clean the thermometer lens each time after usage.
3. Avoid direct finger contact with the lens.
4. No modification of this equipment is allowed.
5. It is recommended that user may take 3 temperatures. If they are different, use the highest reading.
6. Do not expose the thermometer to extreme temperature, very high humidity, or direct sunlight.
7. Avoid extreme shock or dropping the device.
8. Before the measurement, patients and thermometer should stay in steady state room condition for at least 30 minutes.
9. Avoid measuring temperature in 30 minutes after exercise, bathing, or returning from outdoor.
10. To protect the environment, dispose of empty batteries at appropriate collection sites according to national or local regulations.
11. It is ill-advised to disassemble the thermometer.
12. Please use the thermometer solely for its intended purpose.
13. Carefully hold the device when in use to avoid dropping the device.
14. Allow one minute between successive measurements as slight variations may occur if measurements are taken over a short period of time. Use average temperatures instead.
15. There are no absolute body temperature standards. Keep reliable records of your personal temperature to serve as a reference for judging a fever.
16. Under any circumstances, the temperature taking result is ONLY for reference. Before taking any medical action, please consult your physician.

Product Identification

Forehead/ Cover cap

Probe Tip

Forehead thermometer mode button (forehead)

Ear thermometer mode/On button (ear)

Red LED Light for Fever Alarm ≧38°C: LED light Red

LCD Display

Memory Button

SET Button

LED Flashlight

Battery compartment lid

Description of LCD Display

Date

Time

Forehead icon

Ear Scan Mode

Object Scan Mode

Scan in Progress

Celsius Scale

Fahrenheit Scale

Degrees of Temperature

Memory Symbol and Sets of Records

Low battery Warning

Battery Installation

Low battery warning:
When the battery power becomes low, the low battery symbol will appear on the display. The thermometer can still be used during this time, but the batteries should be replaced as soon as possible. If the batteries run out completely, "Lo" will be displayed along with the low battery symbol.
In this case, the batteries will need to be replaced before using the thermometer again.

Replacing the Battery:
1. Use a Phillips head screwdriver to loosen battery cover screw. Remove the battery cover.
2. Insert or replace 2 x 1.5 V AAA alkaline batteries into the battery compartment, ensuring to match the indicated polarity symbols. Always use new batteries.
3. Place the battery cover on the thermometer and tighten the screw to secure it in place.
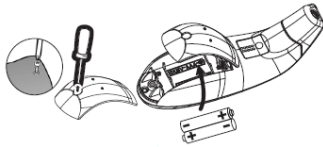
NOTE: Battery-operated
1. Please properly dispose of the batteries away from small children and heat.
2. It is recommended to remove the batteries if the unit will not be used for an extended period of time.
3. For long durations of non-operation, please remove all batteries from the device.
4. Batteries must be disposed of in accordance with local environmental and institutional policies.
5. Dispose of used batteries in accordance with the applicable legal regulations. Never dispose of batteries in the normal household waste.

5

Setting °C/°F and Date/Time

| Under power on condition, press "Set Button" for 5 seconds to enter into setting mode.		LCD Display
°C/°F → Press the "SET" button Change the setting ⇩ Press the "Memory" button Save the setting and Confirm the entry		°F °C
Date/Time → Press the "SET" button Change the **Year** ⇩ Press the "Memory" button Save the setting and Confirm the entry		2009 2012
Month → Press the "SET" button Change the **Month** ⇩ Press the "Memory" button Save the setting and Confirm the entry		2012 2012
Date → Press the "SET" button Change the **Date** ⇩ Press the "Memory" button Save the setting and Confirm the entry		2012 2012
Hour → Press the "SET" button Change the **Hour** ⇩ Press the "Memory" button Save the setting and Confirm the entry		2012 2012
Min → Press the "SET" button Change the **Min** ⇩ Press the "Memory" button Save the setting and Confirm the entry		2012 2012
End setting loop, turn off the unit ⇩ Press the "Memory" button Save the setting		OFF

6

Setting °C/°F and Date/Time

When the thermometer is used for the first time and each time the batteries are changed, the date and time are displayed in the format 1-1 00:00 during the basic set-up (after the self test). Set each of the following settings in turn : unit in which the temperature will be displayed, date and time. To set the device, proceed in stages:
Unit – year – month – day – hours – minutes (there is no voice output when setting date and time).

Press the SET button for 5 second to switch the thermometer on. The device performs a brief self test: all elements of the display are shown for approx. 1 second.

Following a successful self test, the device emits two short beeps. In Standby mode, the date and time are shown and "--" is displayed.
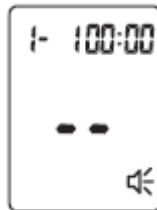
7

Setting °C/°F and Date/Time

1. Changing from Fahrenheit to Celsius

(1) Press the "SET" button to set the °C/°F function on or off.

(2) Press the "Memory" button to confirm entry.

2. Date/Time Function

(1) Press the "SET" button to change.

(2) Press the "Memory" button to confirm entry.

(3) The blinking Date, followed by Year, Hour and Minutes will display. Repeat steps (2) and (3) to adjust the date/time setting.

(4) Your unit is now ready to take a reading, or press the "MEM" button to turn the unit off.

(5) After this process, the thermometer shows the word "OFF" in the display and switches off automatically.

8

Setting °C/°F and Date/Time

Date/Time → Press the "SET" button Change the **Year** ⇩ Press the "Memory" button Save the setting and Confirm the entry	`2009`	`2012`
Month → Press the "SET" button Change the **Month** ⇩ Press the "Memory" button Save the setting and Confirm the entry	`1-` `2012`	`3-` `2012`
Date → Press the "SET" button Change the **Date** ⇩ Press the "Memory" button Save the setting and Confirm the entry	`3-` `2012`	`3-12` `2012`
Hour → Press the "SET" button Change the **Hour** ⇩ Press the "Memory" button Save the setting and Confirm the entry	`3-12` `2012`	`3-12 0:` `2012`
Min → Press the "SET" button Change the **Min** ⇩ Press the "Memory" button Save the setting and Confirm the entry	`3-12 0:00` `2012`	`3-12 0:32` `2012`
End setting loop, turn off the unit ⇩ Press the "Memory" button Save the setting	`OFF`	

Tips for Measuring Human Temperature

Bear in mind that the thermometer needs to have been in the room in which the measurement is taken for at least 30 minutes before use.

- Some people produce different readings in their left and right ear. In order to record temperature changes, always measure a person's temperature in the same ear.
- The ear thermometer may be used by children only under adult supervision. Measurement is usually possible over the age of 6 months. In infants under 6 months, the ear canal is still very narrow so the temperature of the eardrum often cannot be recorded and the result displayed is often too low.
- The measurement must not be taken in an ear affected by inflammatory diseases (e.g. discharging pus or secretion), after possible ear injuries (e.g. eardrum damage) or in the healing period after operative procedures. In all of these cases, please consult your doctor.
- Use of the thermometer on different persons can be inappropriate in the event of certain acute infectious diseases because of the possible spread of germs despite cleaning and disinfection. If you have any doubts, please consult your doctor.
- This thermometer may only be used without a disposable protective cover.
- If you have been lying on one ear for some time, the temperature is slightly raised. Wait a little while or measure in the other ear.
- As ear wax can affect the measurement, you should clean the ear before measuring if necessary.

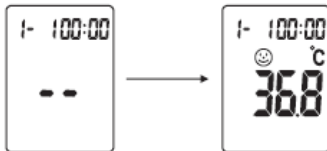## Measuring Body Temperature on the Forehead

NOTE:

The forehead/temples must be free from sweat and cosmetics and that taking medication and skin irritations can distort the result when measuring temperature on the forehead.

1. Press the Forehead mode button or On botton for 1 second to switch the thermometer on. Following a successful self test, the device emits two short beeps.
2. Place the measuring head with the Forehead/Cover cap fitted on the temples, hold on the Forehead mode Button and move the thermometer smoothly over the forehead to the other temple.


3. Release the Forehead Scan Button. The end of the measuring time is signaled with a short beep and the measured value appears on the display.

Measuring Body Temperature in the Ear

1. Press the Power button for 1 second to switch the thermometer on. Following a successful self test, the device emits two short beeps.
2. Remove the cap by gently pushing it up (1) and then pulling it off forwards (2).
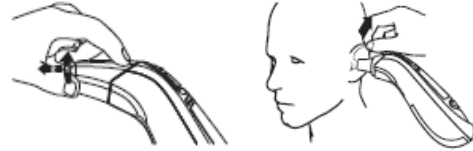
3. Make sure that the sensor tip and also the ear canal are clean. As the ear canal is slightly curved, you have to pull the ear slightly up and backwards before inserting the sensor tip. This is important so that the sensor tip can be pointed directly at the eardrum.

Position thermometer probe properly in ear canal:

• Under 1 year:

Have child lay flat with the head sideways, so that the ear is facing upwards. Gently pull the ear straight back.

• 1 year +:

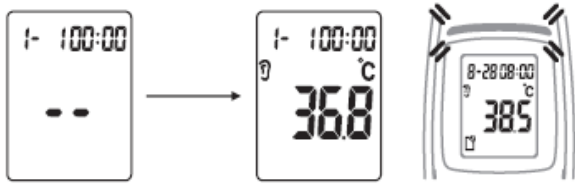Stand behind and slightly to the side of the child/adult. Gently pull the ear up and back to straighten the ear canal.

4. Insert the sensor tip carefully and press the Power button for 1 second.

Measuring Body Temperature in the Ear

5. Release the button. The end of the measuring time is signaled with a short beep and the measured value appears on the display.

NOTE: Fever Alarm: Only in Human Mode

≧38°C: LED light Red
If the temperature measurement is 38°C or above, meanwhile the backlight and alert light (RED) will light for 3 sec and then the voice pronouncing.

Clinical accuracy validation method

TS42B is an adjusted mode clinical thermometer the validated information for clinical accuracy in each adjusted mode are:

GroupA1: Δcb=-0.01°C, L_A=0.18, σ_r=±0.08°C
GroupA2: Δcb= 0.06°C, L_A=0.22, σ_r=±0.08°C
GroupB : Δcb=-0.01°C, L_A=0.20, σ_r=±0.07°C
GroupC : Δcb=-0.01°C, L_A=0.18, σ_r=±0.07°C

cb: CLINICAL BIAS
L_A: LIMITS OF AGREEMENT
σr: CLINICAL REPEATABILITY

Measuring Object/Liquid Temperature

1. Press the Power button for 1 second to switch the thermometer on. Following a successful self test, the device emits two short beeps.
2. Then press the "Memory" and "SET" buttons simultaneously for 3 seconds to switch to the "Object Scan Mode ".

The 📶 symbol appears in the display.

3. Point the sensor tip towards the object or liquid (maintaining a distance of 3 cm), then take one press on Forehead mode button or Ear mode button to take a measurement (never immerse in liquids).
4. After the measurement process is complete, there comes a short beep and the measured value appears on the display.
5. Please note that the displayed temperature is the measured and not the adapted surface temperature. It is not the same as the temperature.
6. To switch back to the thermometer mode, press the "Memory" and "SET" buttons simultaneously for 3 seconds until the " 📶 " symbol disappears and there is a short beep.
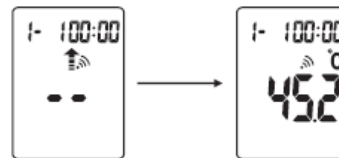
Memory Function

You can recall up to 30 measurements plus an average of all currently stored measurements in memory to share with your physician or trained healthcare professional.

1. Press the "Memory" button. The first reading displayed is the latest measurement stored in memory.
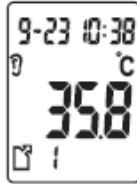
2. Continue to press the "Memory" button to view the next previously stored measurement.
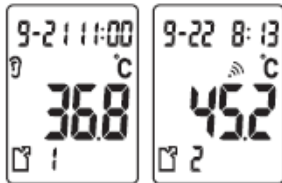
3. Automatically on the 31th measurement: when the 30 memories have been used up, any new measurement will be recorded and the oldest memory deleted without you having to do anything.

Care and Maintenance

• Probe and Tip:
  Clean the probe and tip with an alcohol swab before and after each measurement.
• Thermometer:
  Use a soft, dry cloth to clean thermometer body. Never use abrasive cleaning agents, thinners or benzene for cleaning. Do not scratch the surface of the probe lens or the display. Do not expose the thermometer to extreme temperatures, humidity, direct sunlight, or shock.
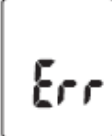

Applied Standards

This product conforms to the provisions of the EC directive MDD(93/ 42/ EEC). The following standards apply to design and/or manufacture of the products:

· **ISO 80601-2-56**
  Medical electrical equipment -- Part 2-56: Particular requirements for basic safety and essential performance of clinical thermometers for body temperature measurement
· **IEC/EN 60601-1**
  Medical electrical equipment- Part 1: General requirement for safety
· **IEC/EN 60601-1-2**
  Medical electrical equipment- Part 2: Collateral standard: Electromagnetic compatibility - Requirements and tests

Error Codes

When a malfunction or incorrect temperature measurement occurs, an error message will appear as described below (comes with backlight).

LCD Display	Cause	Solution
Hi	The temperature measured is higher than **1. Human thermometer mode:** 42°C (107.6°F) **2. Object temperature mode:** 100°C (212.0°F)	Operate the thermometer only between the specified temperature ranges. If necessary, clean the sensor tip. In the event of a repeated error message, contact your retailer or Customer Services.
Lo	The temperature measured is lower than **1. Human thermometer mode:** 35°C (95°F) **2. Object temperature mode:** 10°C (50°F)	
Err	The operating temperature is not in the range 15°C~35°C (59°F~95°F)	Operate the thermometer only between the specified temperature ranges.

Operating the Bluetooth function

What You Need
TS42B Bluetooth IR Ear Thermometer
An Android device with Android version 4.3 or above and hardware support for Bluetooth 4.0.
An iOS device with iOS version 5 or above and hardware support for Bluetooth 4.0. All devices Apple released since the iPhone 4S (including the 4S) do, the older ones don't.

Note:
Please refer to the instruction manual of your smart phone for how to activate the Bluetooth function.

Set Up Process
1. Download an app which supports Bluetooth 4.0 from the iTune App Store or Google Play.
2. Enable Bluetooth on your mobile device.
3. Open the app and activate the scan function.
4. Turn on the TS42B.
5. The app should automatically detect your TS42B. Tap the TS42B that is showed in the device list.
6. Your TS42B is now successfully connected to your mobile device. Every temperature reading will be transfer to your mobile device automatically.

Technical Specifications

- **Range of Measurement :**
  Human Body: 35°C – 42°C (95°F – 107.6°F)
  Object Mode: 10°C – 100°C (50°F – 212°F)
- **Measuring accuracy :**
  Human Body: 35°C – 42°C (95°F – 107.6°F)
  ±0.2°C (0.4°F)
  Object Mode: ±2°C(±4°F) or ±5%
- **Operating environment :**
  15°C – 35°C   (59°F – 95°F)
  with relative humidity up to 85% (noncondensing)
- **Storage/ Transportation environment :**
  -25°C – 55°C   (-13°F ~+131°F)
  with relative humidity up to 85% (noncondensing)
- Display resolution : 0.1°C or °F
- Power supply : 2 X 1.5V AAA size alkaline batteries
- Memory: 30 sets
- Weight : 65g (exclude batteries)
- Dimensions : 134.3mmX42.4mmX47.6mm (L×W×H)
- Bluetooth : Bluetooth Low Energy v4.0

IP 22 🧍 📖 ♻ CE 0197

EMC Tables

Guidance and manufacturer's declaration-electromagnetic emissions

The **TS42 IR Thermometer** is intended for use in the electromagnetic environment specified below. The customer or the user of the **TS42 IR Thermometer** should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment guidance
RF emissions CISPR 11	Group 1	The **TS42 IR 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 **TS42 IR Thermometer** 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.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

Guidance and manufacturer's declaration-electromagnetic immunity

The **TS42 IR Thermometer** is intended for use in the electromagnetic environment specified below. The customer or the user of the **TS42 IR Thermometer** should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	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 %.
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.

EMC Tables

Guidance and manufacturer's declaration-electromagnetic immunity			
The TS42 IR Thermometer is intended for use in the electromagnetic environment specified below. The customer or the user of the TS42 IR 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	80 MHz to 2,5 GHz	3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the TS42 IR Thermometer, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d=1.2 \sqrt{P}$ $d=1.2 \sqrt{P}$ 80 MHz to 800 MHZ $d=2.3 \sqrt{P}$ 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). 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 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 TS42 IR Thermometer is used exceeds the applicable RF compliance level above, the TS42 IR Thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the TS42 IR Thermometer. b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.			

21

EMC Tables

Recommended separation distances between portable and mobile RF communications equipment and the TS42 IR Thermometer			
The TS42 IR Thermometer is intended fo use in an electromagnetic environment in which radiated RF disturbances are controlled . The customer or the user of the TS42 IR Thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the TS42 IR 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 $d=1.2 \sqrt{P}$	80 MHz to 800 MHZ $d=1.2 \sqrt{P}$	800 MHz to 2.5 GHz $d=2.3 \sqrt{P}$
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.			

22

Explanation of Symbols

$C\epsilon$ 0197	Notified Body (TÜV Rheinland)
[i]	Consult the instruction for use
[disposal symbol]	Disposal information: Should you wish to dispose of the article, do so in accordance with current regulations. Details are available from your local authority
[person symbol]	Type BF applied part
IP 22	Basic safety and essential performance requirement
[temperature limits symbol]	Temperature limits
EC REP	European Authorized Representative
[manufacturer symbol]	Manufacturer
LOT	Manufacture batch code

23

FCC Statement

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 of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced adio/TV technician for help.
5. FCC Caution: To assure continued compliance, (example – use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
6. 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.
7. This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be colocated or operating in conjunction with any other antenna or transmitter.

24

72-T42MN-AV1
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