



motorola



# USER'S GUIDE

Smart Touchless Forehead Thermometer

Model: MBP70SN

Please read this instruction manual before use

# Welcome...

## to your new Motorola MBP70SN Smart Touchless Forehead Thermometer!

Thank you for purchasing your new Motorola MBP70SN Smart Touchless Forehead Thermometer.

The thermometer has been carefully developed to make accurate, safe, fast and contact-free human body temperature measurements (at a distance of 0 to 5 cm (0 to 2 inches)) on the forehead and object temperature measurements.

The reference body site is “core” and the mode of operation is “adjusted mode”. The device is a non-sterile, reusable clinical thermometer intended for the intermittent determination of human body temperature in “touch” and “no touch” mode, using the center of the forehead as the measurement site for people of all ages. The operator can measure and change battery under normal circumstances and maintain the device and its accessories in accordance with the user manual. Operators can take others’ as well as their own temperature.

Please keep your original dated sales receipt for your records. For warranty service of your Motorola product, you will need to provide a copy of your dated sales receipt to confirm warranty status. Registration is not required for warranty coverage.

For product-related questions, please call:

**US and Canada, 1-888-331-3383**

**E-mail: [support@motorolastore.com](mailto:support@motorolastore.com)**

**On the Web: [www.motorolastore.com/support](http://www.motorolastore.com/support)**

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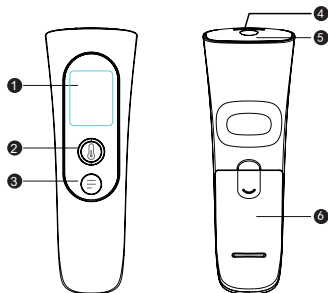
This User's Guide has all the information you need to make the most out of your product.

Please read the Safety Instructions on page 7 before you install the unit.









### **Inside the Box**

- 1 x Thermometer
- 2 x AAA Batteries
- 1 x Quick Start Guide

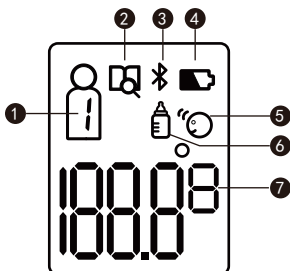
# Overview of the Thermometer



1. LCD
2. Temperature measuring button
3. MENU button
4. Distance sensor
5. Infra-red sensor
6. Battery compartment cover

Operation of the Thermometer Buttons		
	Temperature Measuring Button	Press once to take temperature reading
	Menu Button a) To view the memory data b) To select the user profile	a) Press this button to view the memory data. b) Press and hold for 2 seconds to select the desired user profile.
	Mode button (select either body temperature or liquid temperature readings)	By pressing and holding  and  , you can switch between taking body temperature and object/liquid temperature measurement
	To switch between Celsius (°C) and Fahrenheit (°F)	By pressing and holding  and  for 2 seconds, you can switch between Celsius (°C) and Fahrenheit (°F)

# LCD Display



1. 4 user profiles
2. Memory symbol
3. Bluetooth symbol (lights up when thermometer is connected to the smartphone)
4. Low battery symbol
5. "Forehead temperature" symbol
6. "Object/Liquid temperature" symbol
7. Temperature display ( $^{\circ}\text{C}/^{\circ}\text{F}$ )

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# 1. **IMPORTANT SAFETY INFORMATION**

To obtain an accurate measurement, please read this manual carefully prior to use.

- Use of this thermometer is not intended as a substitute for consultation with your physician.
- Measurement results are for reference only. Contact your physician if you experience or suspect any health concerns.
- The infra-red sensor must be completely clean, dry and undamaged to ensure accurate measurements.
- Skin surface lipids on the forehead may cause an inaccurate measurement, so make sure the forehead is clean.
- Don't touch or blow on the infra-red sensor. A dirty infra-red sensor may produce inaccurate readings.
- Do not use "forehead measurement" mode to measure the temperature of other body parts.
- If the temperature of the storage area differs greatly from that of the measuring area, please wait until the thermometer temperature has equalized to the room temperature, about 30 minutes, prior to use.
- Keep the device out of the reach of children and pets to avoid inhalation or swallowing of small parts. Do not allow children to take their temperatures unattended. Children may not be able to use the device in accordance with the instructions in this user manual. This device is not a toy.
- Do not dispose of batteries by fire. When placed in a fire, the battery is likely to explode.
- Do not store the thermometer under extreme temperature (below  $-20^{\circ}\text{C}/-4^{\circ}\text{F}$  or over  $55^{\circ}\text{C}/131^{\circ}\text{F}$ ) or extreme humidity conditions (below 15% RH or over 90% RH). Failure to store device under proper conditions may cause inaccurate readings.
- Do not use the thermometer if the device is damaged (for example, if the infra-red sensor is broken). Continued use of a damaged unit may cause injury, inaccurate results or serious hazard.
- Do not disassemble, repair or change any parts of the unit.

- If your thermometer will not be used for a long time, remove battery to prevent possible damage caused by chemical leakage. If the battery is leaking, remove it carefully. Do not allow the leaking fluid to touch your bare skin.
- Use of this product requires special precautions regarding electromagnetic compatibility (EMC). It must be installed and put into service in accordance with the EMC information provided. This unit can be affected by portable and mobile RF communications equipment.
- All materials (e.g. ABS) intended to come into contact with patients have passed the ISO 10993-5 and ISO 10993-10 standards test, whereby they are non-toxic and non-allergenic, and do not produce irritation reactions. However, the state of current scientific knowledge and technology being incomplete, other potential allergic reactions may not yet be known. Should you have an allergic reaction to the materials, please stop treatment immediately and consult your physician.
- Store the thermometer in a dry, clean place. Do not expose the product to chemical solvents, lint, dust, direct sunshine or high temperature.
- During use, the operator shall prevent simultaneous contact between the battery and the patient.
- Do not maintain or service the device while it is in use.
- Should you experience any problems with this device (e.g. set-up, maintenance or use), please contact Motorola customer service or your local retailer.
- Should any unexpected operations or events occur, please report them to the manufacturer.

**Caution:**

This device should not be used adjacent to or stacked with other equipment. Should adjacent or stacked use be necessary, this device should be observed to ensure normal operation in the configuration in which it will be used.



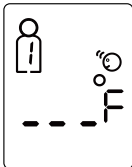
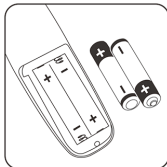
## 2. *INFLUENCES ON BODY TEMPERATURE*

- A person's individual metabolism
- Age  
Body temperature is higher in babies and toddlers than in adults. Greater temperature fluctuations occur faster and more often in children. Normal body temperature decreases with age.
- Clothing
- Outside temperature
- Time of day  
Body temperature is lower in the morning and increases throughout the day towards evening.
- Activities  
Physical and, to a lesser extent, mental activities increase body temperature.

This is why we recommend that you practice using the thermometer on yourself and family members when you are healthy. By doing so, you will know how the thermometer works and will feel more confident regarding the temperature readings you take when a family member is not feeling well.

### 3. **PRIOR TO USE**

1. The key to obtaining accurate readings is a clean sensor. To clean the sensor, use a cotton swab slightly moistened with alcohol to gently wipe its surface, and then immediately wipe dry using a clean cotton swab. Wait at least 20 minutes to make sure that the sensor is completely dry before taking temperature.
2. Skin surface lipids on the forehead may cause an inaccurate measurement, so make sure the forehead is clean. If you clean the forehead, please keep waiting a further 5 to 10 minutes before measuring.
3. If the temperature of the storage area differs greatly from that of the measuring area, please wait until the thermometer temperature has equalized to the room temperature, about 30 minutes, prior to use.
4. Please open the battery cover and install 2 AAA batteries, which can be found inside the packaging. Once batteries are installed, the thermometer will then turn on automatically and the LCD display will appear as in the figure to the left. Press any button to turn the device back on when it turns itself off.





## **4. SYSTEM REQUIREMENT**

Smartphones/Tablets: Android™ and iOS® only.

System Requirements: iOS 8.0, Android™ 4.2 or above

For more information, please visit: <https://hubbleconnected.com/requirements>

## 5. PAIRING THE THERMOMETER TO YOUR MOBILE DEVICE

### Download the “Hubble Connect for Smart Nursery” app

- Go to the Google Play™ Store to search for Hubble Connect for Smart Nursery.
- Download the Hubble Connect for Smart Nursery app and install it on your Android™ device or



- Go to the App Store to search for Hubble Connect for Smart Nursery.
- Download the Hubble Connect for Smart Nursery app and install it on your iPhone®/iPad®.



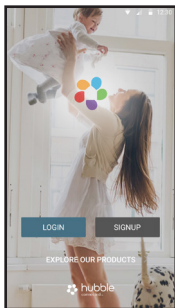
- Run the “Hubble Connect for Smart Nursery” app on your Android™ device/ iPhone®/iPad®
- Run the Hubble Connect for Smart Nursery App, tap SIGNUP and follow the in-app instructions to create your Smart Nursery account. By signing up, you agree to our Terms & Conditions.

Note: If you already have a Smart Nursery App account, please tap LOGIN, enter your account information and proceed to the next steps.

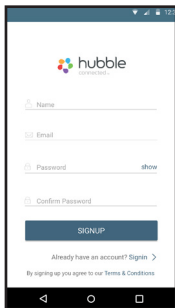
Launch the set-up wizard and follow the steps to create a user profile and add the thermometer.

Make sure that the Smart Nursery app is active and that Bluetooth on your mobile device is activated when pairing is in progress.

- Run the Hubble Connect for Smart Nursery app, tap SIGNUP and follow the in-app instructions to create your Smart Nursery Account. By signing up, you agree to our Terms & Conditions. (Pictures A1 & A2)



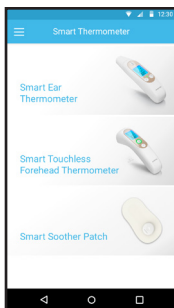
A1



A2

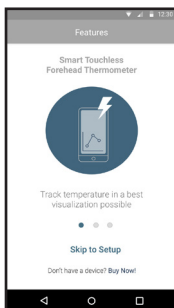
**Note:** If you already have a Smart Nursery app account, please tap LOGIN, enter your account information and proceed to the next steps.

- Tap on the Smart Touchless Forehead Thermometer to enter thermometer set-up mode. (Picture A3)



A3

- Tap Skip to set-up or scroll to review features. (Picture A4)



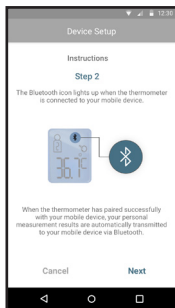
A4

- Follow “Step 1”. Make sure that your thermometer is switched on then press Next. (Picture A5)



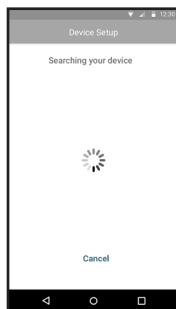
A5

- Follow “Step 2”. Pair the thermometer with your mobile device via Bluetooth. (Picture A6)



A6

- Searching for your device (Picture A7)



A7

- Found your device. Please press on "MBP70-XXX". (Picture A8)



A8

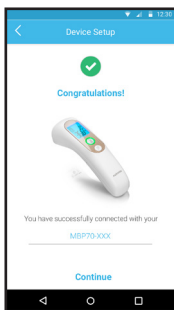


- Pairing the thermometer with your smart device. (Picture A9)



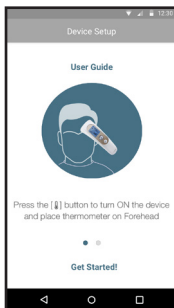
A9

- You have now successfully paired the thermometer with your smart device. Tap "Continue" (Picture A10)



A10

- User guide screen. (Picture A11)



A11

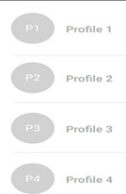



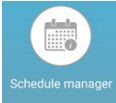
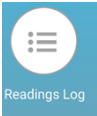

- You can now start using the thermometer. (Picture A12)



A12

**Note:** Your personal health data can only be transmitted when the app is on. The thermometer switches off automatically after 60 seconds of non-use.

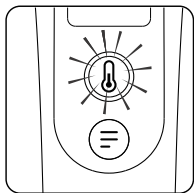
## 6. OVERVIEW OF HUBBLE APP

Overview of the Hubble App		
	Total of 4 profiles	To create and add the profile
	Online	Indicates that the thermometer is connected to the smartphone.
	Offline	Indicates that the thermometer is not connected to the smartphone.
	Number of readings	Indicates the numbers of temperature readings taken
	Schedule Manager	Calendar to manage doctor appointments, reminders and prescriptions.
	Reading Log	Can view saved readings: <ul style="list-style-type: none"> <li>• As Numbers</li> <li>• As Graphics</li> </ul>
	Celsius (°C) and Fahrenheit (°F)	Celsius (°C) and Fahrenheit (°F) switchable

## **7. TEMPERATURE LED INDICATION**

Two colors are used to provide LED indications:

- Green LED: 34.0°C (93.2°F) to 37.9°C (100.3°F) = Normal Temperature
- Red LED: 38.0°C (100.4°F) to 42.9°C (109.3°F) = High Temperature





## 8. *TEMPERATURE TAKING HINTS*

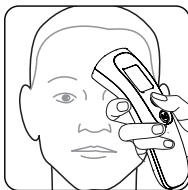
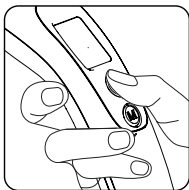
1. External factors may influence forehead temperature. Specific external factors include:
  - Exposure to very hot or very cold foods.
  - Recent swimming or bathing.
  - Having their forehead covered.
  - In these cases, remove individual from the above situation or environment and have them remain in a normal room temperature environment for 30 minutes before taking a temperature.
2. In “object measurement mode”, the current surface temperature of the object is displayed. This may be different from its internal temperature, especially if its surface is exposed to direct sunlight or a draft.
3. Temperatures measured using different thermometers should never be compared to each other.

Tell your doctor what type of thermometer you used to take your temperature and on which part of the body.

**Note:** Holding the thermometer for too long in the hand before taking a measurement may cause the device to warm up. This means the measurement could be incorrect.

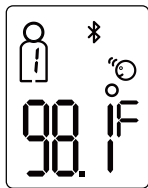
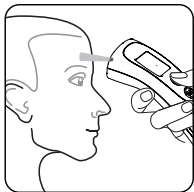
## 9. HOW TO MEASURE FOREHEAD TEMPERATURE

1. Place the thermometer in your hand with your thumb on the [] button.
  - Do not press the button yet.
  - Make sure the probe is clean before measuring.
2. Press the [] button, keeping the thermometer close to your forehead until you hear the “DIDI” sound, then the backlit screen will display the temperature. The measurement is complete.
3. Read the temperature on the display.







### Caution:


After pressing the measurement button, the distance sensor will detect the distance between the forehead and thermometer. If the distance is between 0 to 5 cm (0 to 2 inches), the device will directly test the forehead temperature. If the distance exceeds 5 cm (2 inches), the “didi” sound will be produced, indicating that the thermometer should be brought closer to the forehead, at a distance of 0 to 5 cm (0 to 2 inches). Otherwise, the device will return directly to standby mode.



## 10. HOW TO MEASURE OBJECT (LIQUID) TEMPERATURE

1. Place the thermometer in your hand with your finger on the [  ] and [  ] buttons at the same time. Press the [  ] button, then the thermometer enters the object temperature measuring mode.  
Note: Do not use this mode to measure body temperature.
2. Hold the thermometer and ensure the probe is approximately 0 to 5 cm (0 to 2 inches) from the liquid or surface whose temperature you want to measure. Press the [  ] button to start.







3. Remove the thermometer from the object. The LCD screen displays the temperature. You can press the [  ] buttons to return to standby mode. The thermometer will automatically return to standby mode after 1 minute if no button is pressed.

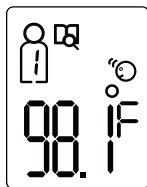
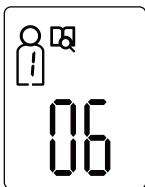
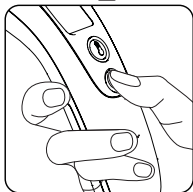
## 11. CHECK THE MEMORY

There is a total of 4 users; each user can store 50 sets of memory data for recording forehead temperature measurements.


The current measurement is always stored in the last storage space. When all storage spaces have been occupied, the earliest measurement is always deleted from the memory.

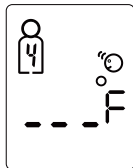
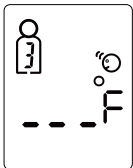
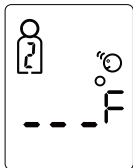
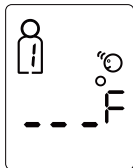
Press the [  ] button to check the memory data. The LCD screen displays memory number and measured temperature. Press the [  ] button repeatedly to go to the desired memory number.

Press [  ] and [  ] button at the same time to return to standby mode.





### 11.1 SELECTING THE USER PROFILE (4 PROFILES)

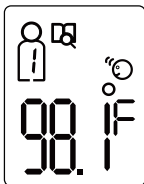
Press and hold [  ] for 2 seconds to select the desired user profile. Please repeat the procedure until you have selected the desired user.






## 12. CELSIUS/FAHRENHEIT OPTION

In standby mode, you can switch between Celsius (°C) and Fahrenheit (°F) by pressing and holding [  ] and the [  ] button at the same time for 2 seconds until you hear one or two “beep” sounds.



## 13. REPLACING THE BATTERY

When the low battery indicator “” appears on the LCD screen, or if the thermometer fails to operate, you should insert a new battery as soon as possible. The thermometer comes with two batteries (2×AAA). Remove the battery cover, remove the batteries, then insert new AAA batteries into the battery compartment. Be sure to properly install the batteries, in accordance with the positive and negative polarity symbols marked in the battery compartment.

Slide the battery cover back in until it snaps in place.



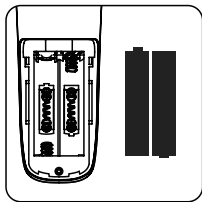
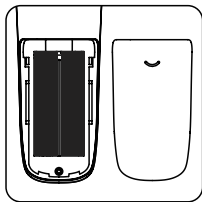
To protect the environment, dispose of exhausted batteries in accordance with current federal, state and local regulations.

Keep batteries out of the reach of children.

Remove the batteries when the unit is not in use for an extended period of time.



This thermometer has been thoroughly tested and inspected to assure proper performance and operation!



## 14. DISPOSAL OF THE DEVICE (ENVIRONMENT)

At the end of the product life cycle, you should not dispose of this product with normal household waste. Take this product to a collection point for the recycling of electrical and electronic equipment. The symbol on the product, user's guide and/or box indicates this obligation.



By taking end-of-life products to a recycling point, you are ensuring that some of the product materials can be re-used. By reusing some parts or raw materials from used products, you make an important contribution to the protection of the environment.

Exhausted batteries do not belong with household waste. Dispose of batteries in accordance with the current federal, state and local regulations. As a consumer, you are legally obligated to return used batteries.

### NOTES:

1. In environments where there is a high frequency of electrostatic discharge, the unit may malfunction and have to be reset by the user.
2. Dispose of used batteries with care; please consult retailer for details.

Please contact your local authorities should you require additional information on the collection points in your area.

## **15. GENERAL INFORMATION**

### **If your product is not working properly....**

1. Read this User's Guide.
2. Visit our website: [www.motorolastore.com](http://www.motorolastore.com)
3. Contact Customer Service at  
US and Canada 1-888-331-3383  
E-mail: [support@motorolastore.com](mailto:support@motorolastore.com)

### **Consumer Products and Accessories Limited Warranty ("Warranty")**

Thank you for purchasing this Motorola branded product manufactured under license by Binatone Electronics International Ltd ("BINATONE").

#### **What Does this Warranty Cover?**

Subject to the exclusions contained below, BINATONE warrants that this Motorola branded product ("Product") or certified accessory ("Accessory") sold for use with this product is manufactured to be free from defects in materials and workmanship under normal consumer usage for the period outlined below. This Warranty is your exclusive warranty and is not transferable.

#### **Who is covered?**

This Warranty extends only to the first consumer purchaser, and is not transferable.

#### **What will BINATONE do?**

BINATONE or its authorized distributor, at its option and within a commercially reasonable time, will at no charge repair or replace any Products or Accessories that does not conform to this Warranty. We may use functionally equivalent reconditioned/refurbished/pre-owned or new Products, Accessories or parts.

#### **What Other Limitations Are There?**

ANY IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED TO THE DURATION OF THIS LIMITED WARRANTY, OTHERWISE THE REPAIR OR REPLACEMENT

PROVIDED UNDER THIS EXPRESS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF THE CONSUMER, AND IS PROVIDED IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. IN NO EVENT SHALL MOTOROLA OR BINATONE BE LIABLE, WHETHER IN CONTRACT OR TORT (INCLUDING NEGLIGENCE) FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT OR ACCESSORY, OR FOR ANY INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, OR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE ABILITY OR INABILITY TO USE THE PRODUCTS OR ACCESSORIES TO THE FULL EXTENT THESE DAMAGES MAY BE DISCLAIMED BY LAW.

Some jurisdictions do not allow the limitation or exclusion of incidental or consequential damages, or limitation on the length of an implied warranty, so the above limitations or exclusions may not apply to you. This Warranty gives you specific legal rights, and you may also have other rights that vary from one jurisdiction to another.

Products Covered	Length of Coverage
Consumer Products	<b>One (1) year</b> from the date of the products, original purchase by the first consumer purchaser of the product.
Consumer Accessories	<b>Ninety (90) days</b> from the date of the Accessories, original purchase by the first consumer purchaser of the product.
Consumer Products and Accessories that are Repaired or Replaced	<b>The balance of the original warranty or for Ninety (90) days</b> from the date returned to the consumer, whichever is longer.

## Exclusions

**Normal Wear and Tear.** Periodic maintenance, repair and replacement of parts due to normal wear and tear are excluded from coverage.

**Batteries.** Only batteries whose fully charged capacity falls below 80% of their rated capacity and batteries that leak are covered by this Warranty.

**Abuse & Misuse.** Defects or damage that result from: (a) improper operation, storage, misuse or abuse, accident or neglect, such as physical damage (cracks, scratches, etc.) to the surface of the product resulting from misuse; (b) contact with liquid, water, rain, extreme humidity or heavy perspiration, sand, dirt or the like, extreme heat, or food; (c) use of the Products or Accessories for commercial purposes or subjecting the Product or Accessory to abnormal usage or conditions; or (d) other acts which are not the fault of MOTOROLA or BINATONE, are excluded from coverage.

**Use of Non-Motorola branded Products and Accessories.** Defects or damage that result from the use of Non-Motorola branded or certified Products or Accessories or other peripheral equipment are excluded from coverage.

**Unauthorized Service or Modification.** Defects or damages resulting from service, testing, adjustment, installation, maintenance, alteration, or modification in any way by someone other than MOTOROLA, BINATONE or its authorized service centers, are excluded from coverage.

**Altered Products.** Products or Accessories with (a) serial numbers or date tags that have been removed, altered or obliterated; (b) broken seals or that show evidence of tampering; (c) mismatched board serial numbers; or (d) non-conforming or non-Motorola branded housings, or parts, are excluded from coverage.

**Communication Services.** Defects, damages, or the failure of Products or Accessories due to any communication service or signal you may subscribe to or use with the Products or Accessories is excluded from coverage.

### **How to Obtain Warranty Service or Other Information ?**

To obtain service or information, please call: 1-888-331-3383

You will receive instructions on how to ship the Products or Accessories at your expense and risk, to a BINATONE Authorized Repair Center.

To obtain service, you must include: (a) the Product or Accessory; (b) the original proof of purchase (receipt) which includes the date, place and seller of the Product; (c) if a warranty card was included in your box, a completed warranty card showing the serial number of the Product; (d) a written description of the problem; and, most importantly; (e) your address and telephone number.



These terms and conditions constitute the complete warranty agreement between you and BINATONE regarding the Products or Accessories purchased by you, and supersede any prior agreement or representations, including representations made in any literature publications or promotional materials issued by BINATONE or representations made by any agent employee or staff of BINATONE, that may have been made in connection with the said purchase.

## 16. DESCRIPTION OF THE WIRELESS FUNCTIONS AND TECHNOLOGY

RF Frequency	2.4GHZ-2.48GHZ
Channel Bandwidth	2 MHz (-20 dB)
Operation Voltage	DC3.7V
Types of Spread Spectrum	FHSS
Modulation Type	GFSK
Number of Channel	40
Chanel Spacing	2 MHz
ChannelFrequency	0-39 Channel 2.402-2.480GHZ
Dwell Time (if FHSS)	400 ms
Hopping Rate (if FHSS)	1600 HZ
Antenna Gain	0 dBi
Bluetooth Version	V1.0
Maximum Output Powers	0 dBm

1. BLE4.1 devices operate in the unlicensed 2.4 GHz ISM (Industrial Scientific Medical) band. BLE4.1 wireless technology has 40 channels (3 broadcasting channels, 37 data channels), each channel spacing 2MHz, over the entire operating frequency range: 2.402-2.480GHZ. A frequency hopping transceiver is used to combat interference and fading. The modulation method is GFSK, the output power is 0 dBm, and the maximum transmission range is 10 m.
2. The BW-TSX device uses BLE4.1 to establish the connection, with our device acting as a peripheral. The device will passively respond to the app's connection request and establish a connection to the app. Once a BW-TSX device has connected to the app, the device will no longer be connected





to other wireless devices or controllers. Once the app connects to the peripheral device, the app will transmit the appropriate command, and once the BW-TSX device confirms that this command is correct, it will open the control panel, enabling the user to control the BW-TSX device. Otherwise, the app can't control the BW-TSX device. Make sure that the device is connected and controlled by our app.

3. To ensure wireless data transmission reliability, the Bluetooth Low Energy 4.1 protocol employs safety measures regarding radio frequency, baseband protocol and link management protocol. The AES-128 CCM algorithm ensures the security of the data.
4. This device emits very low levels in the radio frequency (RF) interval and is therefore not likely to cause any interference with nearby electronic equipment (radios, computers, telephones, etc.)
5. The BW-TSX device is designed to withstand foreseeable disturbances originating from electrostatic discharges, mains supply magnetic fields or radio frequency transmitters.
6. Despite this, it is not possible to guarantee that the device will not be affected by strong RF (radio frequency) fields emitted by other sources.
7. The BW-TSX device is designed to be used in typical household environments approved in accordance with EMC safety standard IEC60601 - 1 - 2.

## 17. CARE AND CLEANING

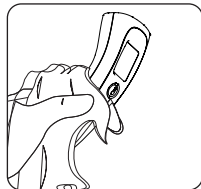
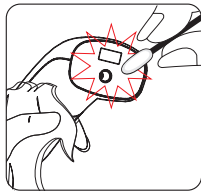
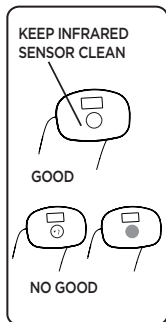
To ensure accurate measurements, it is very important to keep the infra-red sensor clean and free of scratches. Fingerprints and dirt will affect the accuracy of the thermometer. In order to get an accurate measurement, please clean the infra-red sensor. Gently wipe its surface with a cotton swab slightly moistened with alcohol and immediately wipe dry with a clean cotton swab.

Use a soft dry cloth to clean the body of the thermometer. Never clean the thermometer using an abrasive cleanser, thinner or benzene, nor immerse the thermometer in water or other liquids. After cleaning, place the thermometer in its protective case. Store it in a clean, dry place at room temperature. Never expose the thermometer to extreme temperatures, humidity, direct sunlight or shock.

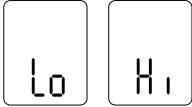
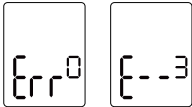

### 17.1 CALIBRATION

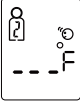
The thermometer is initially calibrated during manufacturing, before ex-factory. If the thermometer is used in accordance with the instructions, periodic recalibration is not required. Should you question the accuracy of measurements at any time, contact the retailer immediately.

Do not attempt to modify or reassemble the thermometer.















## 18. TROUBLESHOOTING

		Corrective Measures
No response / Automatic reset after insulator is pulled out	<p>Are the batteries drained?</p> <p>Are the batteries installed according to the wrong polarity?</p>	Change for a new battery or remove battery and reinsert correctly
	<p>The measured temperature is lower than 34.0°C/93.2°F or higher than 42.9°C/109.3°F. Please check the operation method</p>	Follow user manual for proper measurement
	Hardware problem	Contact Motorola customer service or your local store
	Operating temperature is out of the range	Use the thermometer in the prescribed range of operating conditions
	The sensor temperature has not been stabilized	Wait about 10 seconds and take a measurement again
Inaccurate measurement or where there is any doubt regarding the measured reading	Please check whether the infra-red sensor is clean	Clean the infra-red sensor with a cotton swab in accordance with the user manual
	Please check if the proper measurement method was used	Ensure that you have read the manual and know how to use the thermometer properly

		<b>Corrective Measures</b>
Inaccurate measurement or where there is any doubt regarding the measured reading	Please check if you have allowed the thermometer and patient to stabilize in the room for at least 30 minutes	Please keep the thermometer and patient in the measuring room at least 30 minutes prior to use
	Are you using the thermometer indoors?	Please ensure that you take temperature indoors
	Please check if you have held the thermometer in your hand for too long, thus affecting its accuracy	Put the thermometer on a table in the room where the measurement is being taken and let it cool down before using it
	Please check if the LCD screen is displaying the low battery symbol	Replace the battery
The app can't connect to the BW-TSX device	The Bluetooth connection failed	Restart the BW-TSX and the app
The app can't control the BW-TSX device, but the app is connected to it	Bluetooth communications failed	Restart the app, and then re-connect the device

## 19. NORMALIZED SYMBOLS

	Type BF applied part (the applied part is the probe tip)
	Disposal in accordance with Directive 2012/19/EU (WEEE)
	Complies with the European Medical Device Directive (93/42/EEC), as amended by Directive 2007/47/EC requirements. Notified body: TÜV Rheinland (CE0197)
	The name and the address of the manufacturer
	The name and the address of the Authorized EC-representative in Europe
	Caution
	Refer to the Instruction Manual.
	The first number (2): Protection against solid foreign objects of 12.5 mm $\Phi$ and greater. The second number: Protection against vertically falling water drops when enclosure is tilted up to 15°. Vertically falling drops shall have no harmful effects when the enclosure is tilted at any angle up to 15°, on either side of the vertical.
	Indicate the manufacturing date and serial number.
	Transportation and storage temperature: from -20°C to 55°C
	Transportation and storage humidity limits: from 15% to 90%
	Transportation and storage atmospheric pressure limits: from 700 hPa to 1060 hPa

## **20. IMPORTANT INFORMATION REGARDING ELECTROMAGNETIC COMPATIBILITY(EMC)**

With the increased number of electronic devices such as PC's and mobile (cellular) telephones, medical devices in use may be susceptible to electromagnetic interference from other devices. Electromagnetic interference may result in incorrect operation of the medical device and create a potentially unsafe situation.

Medical devices should also not interfere with other devices.

In order to regulate the requirements for EMC (Electro Magnetic Compatibility) with the aim to prevent unsafe product situations, the EN60601-1-2 standard has been implemented. This standard defines the levels of immunity to electromagnetic interferences as well as maximum levels of electromagnetic emissions for medical devices. Medical devices manufactured by Shenzhen Dongdixin Technology Co., Ltd. conform to this EN60601-1-2:2007 standard for both immunity and emissions.

Nevertheless, special precautions need to be observed:

The use of accessories and cables other than those specified by manufacturer, with the exception of cables sold by manufacturer as replacement parts for internal components, may result in increased emission or decreased immunity of the device.

- The medical devices should not be used adjacent to or stacked with other equipment. In case adjacent or stacked use is necessary, the medical device should be observed to verify normal operation in the configuration in which it will be used.
- Refer to further guidance below regarding the EMC environment in which the device should be used.

**Guidance and Manufacturer's Declaration  
- Electromagnetic Emissions**

The thermometer is intended for use in the electromagnetic environment specified below. The customer or user of this thermometer should ensure that it is used in such an environment.

<b>Emissions Test</b>	<b>Compliance</b>	<b>Electromagnetic Environment - Guidance</b>
RF emissions CISPR 11	Group 1	The thermometer only uses RF energy for its internal operation. 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 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 IEC61000-3-3	Not applicable	

**Guidance and Manufacturer's Declaration**  
**- Electromagnetic Immunity**

The thermometer is intended for use in the electromagnetic environment specified below. The customer or user of these thermometers should ensure 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>
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be made of wood, concrete or ceramic tile. If floors are covered with synthetic materials, the relative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	Not applicable	Not applicable	Not applicable
Surge IEC 61000-4-5	Not applicable	Not applicable	Not applicable
Voltage dips, short interruptions and voltage variations of power supply IEC 61000-4-11	Not applicable	Not applicable	Not applicable
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**

The thermometer is intended for use in the electromagnetic environment specified below. The customer or user of this thermometer should ensure 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>
Conducted RF IEC 61000 -4-6  Radiated RF IEC 61000-4-3	Not applicable  3 V/m 80 MHz to 2.5 GHz	3 V/m	When used near any part of the thermometer (including cables), portable and mobile RF communications equipment should not be used any closer than the recommended separation distance calculated based on the equation appropriate 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 meters (m). Field strengths from fixed RF transmitters as determined by an electromagnetic site survey

			<p>should be less than the compliance level in each frequency range.</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
<p>Note 1: At 80 MHz and 800 MHz, the higher frequency range applies.</p> <p>Note 2: These guidelines may not be applicable in all situations.</p> <p>Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.</p>			
<p>a) Field strengths from fixed transmitters, such as base stations for radio (cellular/ cordless) telephones and land mobile radio, AM and FM radio broadcast and TV broadcast cannot be accurately predicted theoretically. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered.</p> <p>If the measured field strength in the location in which the thermometer is to be used exceeds the above applicable RF compliance level, the thermometer should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the thermometer.</p> <p>b) Over the frequency range of 150 kHz to 80MHz, field strengths should be less than 3 V/m.</p>			

### Recommended Separation Distance Between Portable and Mobile RF Communications Equipment and the Thermometer

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

Output Power of Transmitter in Watts	Separation Distance Based on the Frequency of the Transmitter, in Meters		
	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 meters (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: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies

Note: These guidelines may not be applicable in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

## **21. FCC AND IC REGULATIONS (FCC PART 15)**

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

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.

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.



Industry Canada. This device complies with the Industry Canada license-exempt RSS standard(s):

Operation is subject to the following Two conditions:(1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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## **22. SPECIFICATIONS**

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Power supply:	DC 3V (2 x AAA battery)
Forehead measurement range:	34.0°C to 42.9°C (93.2°F to 109.3°F)
Forehead measurement accuracy:	±0.2°C (±0.4°F)
Object measurement range:	-22°C to 80.0°C (-7.6°F to 176.0°F)
Object measurement accuracy:	±2.0°C (±4.0°F)
Measurement time:	1 second
Measurement interval:	1 second
Dimensions:	130.1(L) x 45.0(W) x 50.3(D) mm
Weight:	About 92.0g (without battery)
Operating conditions:	Forehead: 15.0°C to 40.0°C (59.0°F to 104.0°F) Object: 10.0°C to 40.0°C (50.0°F to 104.0°F) with a relative humidity of 15% to 85%
Storage and transportation conditions:	-20°C to 55°C (-4°F to 131°F) with a relative humidity of 15% to 90% Atmospheric pressure: 700 hPa to 1060 hPa
Maximum separation distance:	10 m (in the open environment)
Battery service life:	With a new battery (carbon), approx. 6 months based on a usage frequency of 5 times/day

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