Non-contact
FOREHEAD THERMOMETER

Operating Instructions
Product code: 801-590

This non-contact digital forehead thermometer is intended for the intermittent measurement of human body temperature in people of all ages.

OPERATING INSTRUCTIONS FOR FOREHEAD USE - Press ⏻ to turn on the instrument. Hold the instrument within 4 cm from the centre of the forehead and press and hold 'Start' until you hear one beep (unless muted) to indicate the reading is complete. Readings should take approximately one second. The instrument will automatically turn off after 60 seconds. Manually turn the instrument off by pressing and holding the ⏻ for five seconds.

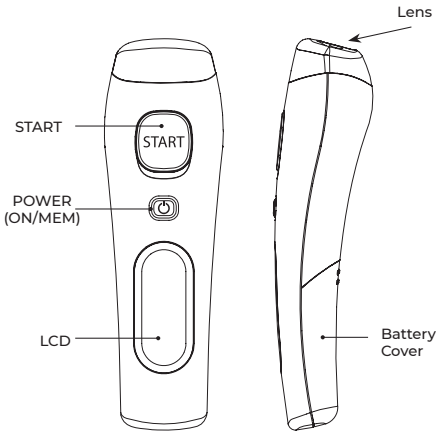
The temperature displayed is the "oral equivalent" value. If the temperature is above 37.5 °C (99.5 °F) you will hear three short beeps followed by one long beep.

⚠ **FOR BEST RESULTS** - Keep the forehead area clean. Keep away from sweat, cosmetics, and scars while taking measurements. Please remain in a stable environment for five minutes, and avoid exercising, bathing, or showering for 30 minutes, which can artificially raise your temperature.

SPECIFICATIONS

Forehead range	34 to 42.2 °C (93.2 to 108 °F)
Surface range	- 22 to 80 °C (- 7.6 to 176 °F)
Operating range	10 to 40 °C (50 to 104 °F) 15 to 85 %rh
Storage range	- 20 to 50 °C (- 4 to 122 °F) , < 85 %rh
Transport. temp	Shall be less than 70 °C (158 °F), 95 %rh
Atmospheric pressure	800 to 1013 hPa
Forehead accuracy	±0.2 °C (0.4 °F) within 35 to 42 °C (95 to 107.6 °F) Otherwise ±0.3 °C (0.5 °F)
Surface accuracy	±0.3 °C (0.5 °F) with 22 to 42.2 °C (17.6 to 108 °F) Otherwise ±4% or ±2 °C (±4 °F), whichever is greater
Resolution	0.1 °C / °F
Units	°C / °F
Response time	1 second
Auto-Off	60 seconds
Battery	2 x 1.5 volt AAA - 3000 hours
Dimensions	40.2 x 48 x 158 mm
Weight	100 grams
Expected service life	4 years

FEATURES

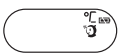
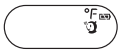


GUARANTEE - This instrument carries a one-year guarantee against defects in either components or workmanship. During this period, products that prove to be defective will, at the discretion of ETI, be either repaired or replaced without charge. The product guarantee does not cover damage caused by fair wear and tear, abnormal storage conditions, incorrect use, accidental misuse, abuse, neglect, misapplication or modification. Full details of liability are available within ETI's Terms & Conditions of Sale at etiltd.com/terms. In line with our policy of continuous development, we reserve the right to amend our product specification without prior notice.

STORAGE & CLEANING- The instrument should be stored at room temperature, away from liquids and direct sunlight. If there are any temperature differences between the place where the instrument is stored and where you are going to measure, please allow the instrument to stabilize to the ambient temperature for at least 15 minutes. Holding the instrument too long may cause a higher ambient temperature reading. This could make the body temperature measurement lower than usual.

The sensor lens is the most delicate part of the instrument and should be kept clean at all times. Care should be taken when cleaning the lens to avoid damage. Use only a soft cloth or cotton swab with medical alcohol, allowing the lens to dry fully before using the instrument again.

FUNCTIONS

Forehead temperature	This instrument has been designed for personal use. It is not meant to replace a visit to the doctor. Please compare the measurement result to your regular body temperature. Consult with your doctor if you have health concerns.	
Surface temperature	Surface mode shows the actual and unadjusted surface temperature, which is different from the body temperature. To access surface mode, press and hold ⏻ while pressing 'Start' once. You will see the ⌔ on the display. Press and hold 'Start' for continuous surface measurements.	
High temp alert	If the thermometer detects a temperature of > 37.5 °C (99.5 °F) using forehead mode, you will hear three short beeps followed by one long beep.	
Memory locations	You can store 25 of the most recent temperature readings. To access these, start with the instrument turned on and press ⏻ once. The saved reading will display indicated by the Ⓜ icon. Press ⏻ again to advance through saved readings	
Switch °C/°F	Start with the instrument turned off. Press and hold 'Start' for approximately 3 seconds while pressing the ⏻ once. The icon will switch from °C to °F. Complete the process again to switch back to °C. Please Note: All stored memory readings will be deleted when switching between units.	 
Mute	The default setting is for sound on. To turn the sound off, press and hold the ⏻ button for 3 seconds. The 🔇 icon will flash on the display and the instrument is muted. Complete the process again to turn the sound on and unmute the instrument.	

BATTERY REPLACEMENT - When the "Low Battery" icon flashes, the batteries should be replaced immediately with 2 x AAA, 1.5 volt batteries. To open the battery cover, use your thumbs to press down and slide the battery cover off. Remove and properly dispose the used batteries promptly, keeping away from children. Insert the new batteries according to the correct polarity. Replace the battery cover.

TROUBLESHOOTING

Er 1 Er 3	Er1 is displayed when the measurement was taken before the instrument had stabilized. Er3 is displayed when the ambient temperature is not between 10 to 40 °C (50 to 104 °F). The instrument should always be allowed plenty of time (minimum of 15 minutes) to stabilize to the ambient temperature.
Er	Error 5-9 is displayed for all other error messages; it is necessary to reset the thermometer. To reset the thermometer, turn it off and remove the batteries for at least one minute. Reinsert the batteries and turn on. If the error message remains, please contact our technical sales office on: technical@etiltd.co.uk for further assistance.
Hi Lo	'Hi' or 'Lo' is displayed when the temperature being measured is outside of the measurement range. In forehead mode this is lower than 34 °C (93.2 °F) or higher than 42 °C (108 °F). In surface mode this is lower than –22 °C (–7.6 °F) or higher than 80 °C (176 °F).
	Instrument cannot be powered on. Please try a new battery.
	Replace batteries

SYMBOL DESCRIPTIONS

⚠	Warning: No modification of this equipment is allowed		Please read the instructions for use	⏻	Power/Memory
	BF type applied part		Paper recycling		Battery recycling
IP22	Classification for water ingress and particulate matter	CE 1639	The CE mark and Notified Body Registration Numbers, the requirement of Annex II from Medical Device Directive 93/42/EEC are met.		Indicates this device is subject to the Waste Electrical and Electronic Equipment Directive in the European Union. To protect the environment, dispose of useless device at appropriate collection sites according to national or local regulations.

Manufacturer's declaration – electromagnetic emissions

The non-contact forehead thermometer is intended for use in the electromagnetic environment (for home healthcare) specified below. The customer or the user of the non-contact forehead thermometer should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – guidance (for home healthcare environment)
RF emissions CISPR 11	Group 1	The unit 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 non-contact forehead 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.

Manufacturer's declaration – electromagnetic immunity

The non-contact forehead thermometer is intended for use in the electromagnetic environment (for home healthcare) specified below. The customer or the user of the non-contact forehead thermometer should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance (for home healthcare environment)
Electrostatic discharge (ESD) IEC 61000-4-2	Contact±8 kV Air±2 kV,±4 kV,±8 kV,±15 kV	Contact±8 kV Air±2 kV,±4 kV,±8 kV,±15 Kv	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	30 A/m 50 Hz or 60 Hz	30 A/m 50 Hz and 60 Hz	The non-contact forehead thermometer power frequency magnetic fields should be at levels characteristic of a typical location in a typical home healthcare environment.

Manufacturer's declaration – electromagnetic immunity

The non-contact forehead thermometer is intended for use in the electromagnetic environment (for home healthcare) specified below. The customer or the user of the non-contact forehead thermometer should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance (for home healthcare environment)
Radiated RF IEC 61000-4-3	10 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz	10 V/m 80 MHz – 2,7 GHz 80 % AM at 1 kHz	**Recommended separation distance:** $d = 1,2 \sqrt{P}$ $d = 1,2 \sqrt{P}$ 80MHz to 800 MHz $d = 2,3 \sqrt{P}$ 800MHz to 2,7 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.

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 non-contact forehead thermometer is used exceeds the applicable RF compliance level above, the non-contact forehead 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 non-contact forehead thermometer.

Recommended separation distances between portable and mobile RF communications equipment and the non-contact forehead thermometer

The non-contact forehead thermometer is intended for use in an electromagnetic environment (for home healthcare) in which radiated RF disturbances are controlled. The customer or the user of the non-contact forehead thermometer can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the non-contact forehead 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 2,7 GHz $d = 2{,}3\ \sqrt{P}$
0,01	N/A	0,12	0,23
0,1	N/A	0,38	0,73
1	N/A	1,2	2,3
10	N/A	3,8	7,3
100	N/A	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 & people.

Manufacturer's declaration-electromagnetic immunity
Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment

The non-contact forehead thermometer is intended for use in the electromagnetic environment (for home healthcare) specified below. The customer or the user of the non-contact forehead thermometer should assure that it is used in such an environment.

Test frequency (MHz)	**Band a) (MHz)**	**Service a)**	**Modulation b)**	**Maximum power (W)**	**Distance (m)**	**Immunity test level (V/m)**	**Compliance (V/m) (for home healthcare)**
385	380–390	TETRA 400	Pulse modulation b) 18 Hz	1,8	0,3	27	27
450	430–470	GMRS 460, FRS 460	FM c) ±5 kHz deviation 1 kHz sine	2	0,3	28	28
710	704–787	LTE Band 13,17	Pulse modulation b) 217 Hz	0,2	0,3	9	9
745							
780							
810	800–960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation b) 18 Hz	2	0,3	28	28
870							
930							
1720	1700–1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation b) 217 Hz	2	0,3	28	28
1845							
1970							
2450	2400–2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation b) 217 Hz	2	0,3	28	28
5240	5100–5800	WLAN 802.11 a/n	Pulse modulation b) 217 Hz	0,2	0,3	9	9
5500							
5785							

NOTE If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

a) For some services, only the uplink frequencies are included.
b) The carrier shall be modulated using a 50 % duty cycle square wave signal.
c) As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be the worst case.

⚠ This is not as AP or APG product.
⚠ This device should not submerge into any liquids and expose it to direct moisture.
⚠ There is no gender or age limitation for using the infrared thermometer.
⚠ Choking from swallowing small parts and batteries by children or pets is possible, please keep small parts and batteries at places where children and pets can't reach.

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