



CorTemp™
Wireless Temperature/Heart Rate
Monitoring System

Model No. HT150010/HT150009



Hardware
Operational Instructions

US Version 1.0 – December 2002

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FCC Notice

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 with radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does harmful interference to radio or television, 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 the 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.

Warning: FCC regulations state that any unauthorized changes or modifications to this equipment not expressly approved by HQ, Inc. could void the user's authorization to operate this equipment.

FCC ID# QQBHT130022

I. System Overview

The CorTemp™ Wireless Monitoring System is designed to remotely monitor the core body temperature and heart rate of single or multiple subjects in real-time.

The system hardware consists of an RF Central Receiving Base Station and one or more personal monitoring sets that include a CorTemp™ Ambulatory Data Recorder, RF Remote Transmitter and an optional Polar™ Heart Rate Chest Belt which are worn by the subject.

The base station allows 1-20 subjects to move freely within a 200-300 ft. line of sight distance. Distances will vary depending on the environmental surrounding.

The system is supported by central station software that displays the individual physiological data of each subject. (See Figure 1.)

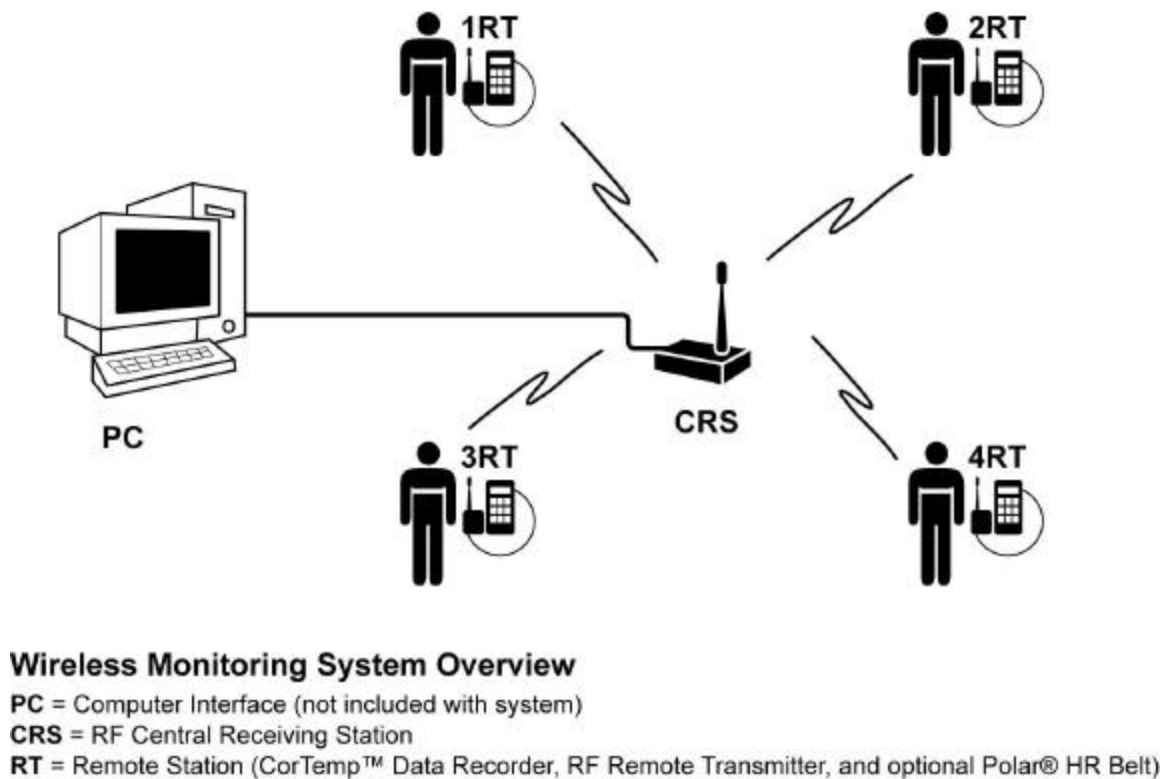


Figure 1.

II. System Requirements

Table 1. represents the minimal hardware requirements to operate the wireless monitoring system. Additional CorTemp Data Recorders and RF Remote Transmitter sets (*) may be added to monitor up to 19 additional subjects. (Also, see Figure 2.)

Component	Product No.
CorTemp™ 2002 Ambulatory Data Recorder (*)	HT150001
RF Central Receiving Station	HT500010
RF Remote Transmitter (*)	HT500009
Polar Chest Belt (for HR Option only) (*)	HT300005
PC Interface Cable	HT300008
External Power Supply Connection	HT250005
CorTrack™ RF 3.0 Operating Software	
Computer (Not Included With System)	

Table 1.

III. RF System Set-Up

Following are the steps to ensure proper set-up and functionality of the wireless RF system. Section III should be repeated for each personal monitoring set (*).

III.1 CorTemp – (See Figure 2.)

- Insert a new battery into the CorTemp™ unit. Always use ONLY Duracell Coppertop, Energizer or Ultra Life Batteries for optimal performance.
- Program the CorTemp™ Data Recorder via the CorTrack™ Software, Version 3.8 or above or manually via the keypad. (Refer to Section III.2 in the CorTemp™ User's Manual). **NOTE: The serial port option must be “ON” for the system to function properly** (Refer to Section III.2, 2.7 in the CorTemp™ User's Manual.) **and the collection interval must be set at a minimum of 20 seconds.** (Refer to Section III.2, 2.3)
- Turn the unit “OFF”.
- Place the CorTemp Recorder in the carry pouch ensuring that the serial cable connection on the CorTemp™ Data Recorder is aligned with the cutout in the pouch for connection to the RF Remote Transmitter, leaving the pouch “open”.
- Connect the RF Remote Interface Cable through the pouch cutout to the CorTemp™ Data Recorder and then to the RF Remote transmitter.

- f. Make written note of each RF Remote transmitter channel number (located on the back of the RF Remote unit) as to how it corresponds to its complimentary CorTemp™ Data Recorder.
- g. Repeat section III.1 for each additional CorTemp™ Data Recorder in the wireless system.

III.2 RF Central Receiving Station – (See Figure 2.)

- a. Turn the unit “OFF”.
- b. **External Power Supply** –
 - a. Plug the external DC power supply to the RF Central Receiving Station jack.
 - b. Plug the AC connector into an AC power source.
- b. **PC Interface Cable** –
 - a. Connect the 9 pin male DB9 connector to the female connector on the RF Central Receiving Station.

III.3 RF Remote Transmitter – (See Figure 2.)

Each RF Remote Transmitter has a unique channel ID number that is recognized by the RF Central Receiving Station. To ensure the integrity of the data collection, be sure to make note of the transmitter channel number as it corresponds to the CorTemp™ Data Recorder and subject you monitor. The RF Central Receiving Station will not recognize duplicate channel numbers. If you add personal monitoring sets to your system in the future, please ensure that you convey your existing channel numbers to HQ, Inc. customer service so you do not receive duplicate transmitter channel ID numbers. The transmitter channel ID number is etched on the back of the transmitter case.

- a. **Diagnostic LED** – Turn the LED switch “OFF”.
- b. Repeat Section III.3 for each additional RF Transmitter unit in the wireless system.

III.4 Computer

- a. Turn the PC “ON”.
Run the CorTrack Software program.
- b. Plug the DB 9-pin PC interface cable female connector to the Com 1 or Com 2 port on the PC.
- c. Turn the RF Central Receiving Station “ON”.



Figure 2.

III.5 Diagnostic Systems Test

- a. Turn the RF Central Receiving Station “ON”.
- b. Turn the RF Remote Transmitter LED switch “ON”.
- c. Follow “Systems Test” procedure as outlined in the CorTrack™ RF Software Operating Manual Version 3.0.
- d. Turn the RF Remote Transmitter LED switch “OFF”.

III.6 CorTemp™/RF Remote Transmitter Placement

- a. Turn the CorTemp™ Data Recorder “ON”.
- b. Place the CorTemp™ Data Recorder into the “run/stop” mode.
- c. Place the CorTemp™ in the neoprene pouch and seal the pouch.
- d. Thread the pouch through the subject’s belt loop and position the belt loop on the middle of the back. (See Figure 3. below)
- e. To avoid battery drain, ensure that the RF Remote Transmitter LED is “OFF”. The “OFF/ON” LED feature is for diagnostic purposes only.
- f. Clip the RF Remote Transmitter to a comfortable area on the side of the body. (See Figure 3. below)
- f. Repeat Section III.6 for each additional CorTemp™ Data Recorder in the wireless system.

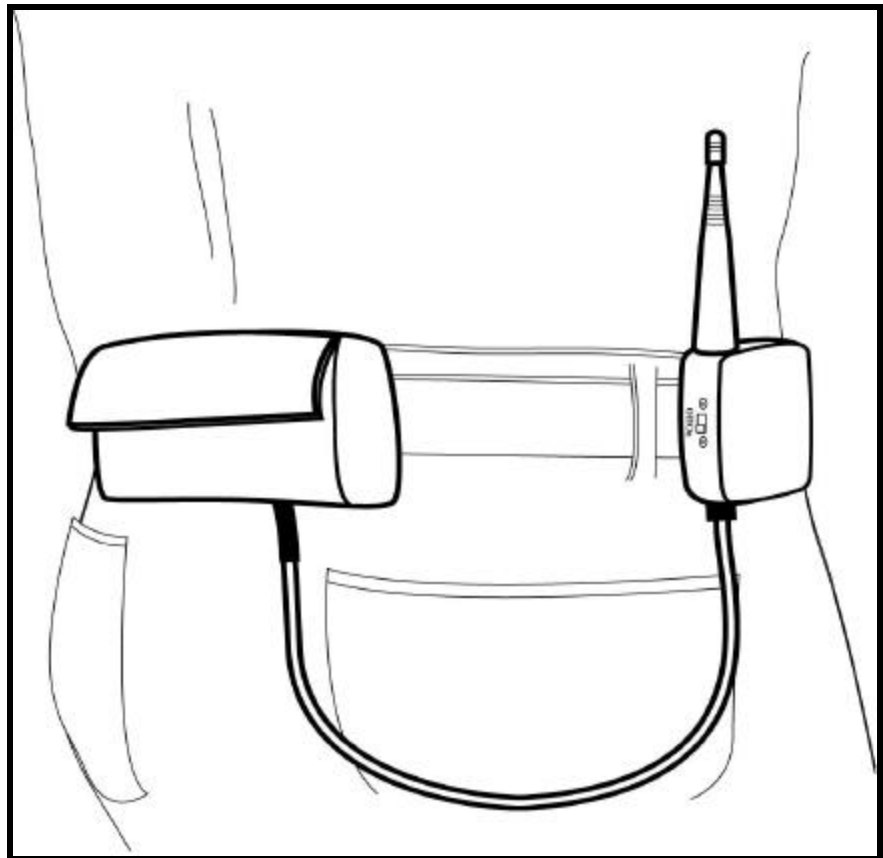


Figure 3.

IV. RF Remote Transmitter

IV.1 Product Features

- a. **Receive LED** - Illuminates “YELLOW” when unit is receiving data from the RF Central Receiving Station.
- b. **Transmit LED** - Illuminates “GREEN” when unit is transmitting data to the RF Central Receiving Station.
- c. **RS232 Remote Interface Connection** – Connects RF Remote Transmitter to the CorTemp Data Recorder.
- d. **LED Off/On Switch** - Must be in “ON” position for unit diagnostic function. Not required to be “ON” for unit to operate.
- e. **Antenna** – Non-Removable, whip style.



**Product No. HT150009
(Figure 4.)**

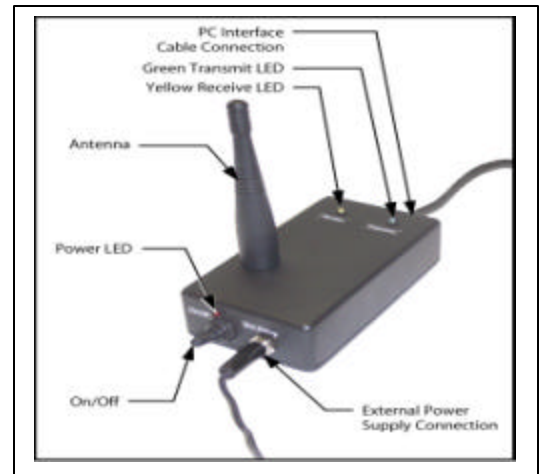
IV.2 Specifications

<u>Input</u>	9 Volt
<u>RS 232 Serial Port</u>	4800 baud rate, one stop bit, no parity, one start bit
<u>Microprocessor</u>	8 bit 10 mHz
<u>RF Transceiver Operating Freq.</u>	914.5 mHz
<u>Transmission Power</u>	0dBm (1mW) Nominal
<u>Receiver Sensitivity</u>	100 dBm at 1 ppm BER
<u>Receiver Image Rejection</u>	> 4 dB
<u>Receiver Board Oscillator Leakage</u>	< -65 dBm
<u>Power Source</u>	Via CorTemp™ Data Recorder
<u>Weight</u>	4 oz.
<u>Dimensions</u>	Length 2.5cm, Width 5cm, Height 6.5cm (15cm with Antenna)
<u>Antenna Type</u>	Whip style (Use only Antenna Supplied)

V. RF Central Receiving Station

V.1 PC Requirements

10 mg Hard Drive
Pentium III Processor
Minimum Operating System - 600 mHz
One Available RS232 Port
Windows 98, 2000, or XP Operation System
17" Monitor
(1024 x 768 Resolution Recommended)



Product No. HT500010 (Figure 5.)

V.2 Product Features

- a. **External Power Supply Connection** – Connects RF Central Receiving Station to external power source.
- b. **On/Off** – Must be in “ON” position for unit to function.
- c. **Power LED** – Illuminates “RED” when unit is in “ON” position.
- d. **Receive LED** – Illuminates “YELLOW” when unit is receiving data from RF remote transmitter. (4)
- e. **Transmit LED** – Illuminates “GREEN” when unit is transmitting data to the RF remote transmitter.
- f. **PC Connection** – Connects RF Central Receiving Station to PC platform.
- g. **Antenna** – Non-Removable, whip style.

V.3 Specifications

<u>RS 232 Serial Port</u>	4800 baud rate, one stop bit, no parity, one start bit
<u>Microprocessor</u>	8 bit 10 mHz
<u>RF Transceiver Operating Freq.</u>	914.5 mHz
<u>Transmission Power</u>	0dBm (1mW) Nominal
<u>Receiver Sensitivity</u>	100 dBm at 1 ppm BER
<u>LED</u>	two – green and yellow, switchable
<u>Receiver Image Rejection</u>	> 4 dB
<u>Receiver Board Oscillator Leakage</u>	< -65 dBm
<u>Operation Range</u>	Line of Sight 200-300 Feet Nominal (Depending on obstacles and/or surroundings such as buildings)
<u>Power Input</u>	9-12 Volt DC, 100 mA
<u>External Power Source</u>	12 Volt Output DC, Input 90-264 VAC, 47-63 Hz, 1.5A
<u>Antenna Type</u>	Whip (Use only antenna supplied)
<u>Operating Range Temperature</u>	0 – 40 degrees C
<u>Weight</u>	8 oz.
<u>Dimensions</u>	Length - 13.5cm, Width 6.5cm, Height 3cm (12cm w/antenna)
<u>Antenna Type</u>	Whip style (Use Only Antenna Supplied)

VI. Limited Warranty

HQ, Inc. will, at no charge, repair or replace, at its option, defective product or component parts of the CorTemp™ Wireless Temperature/Heart Rate Monitoring System and its ancillary equipment within ninety (90) days of receipt of product.

VII. Customer Service/Repair

HQ, Inc. Customer Service hours are 8:00am through 5:00pm EST. Please feel free to contact Customer Service at 941-721-7588, ext. 11 for technical assistance, return authorizations and additional equipment purchases.

All equipment is repaired at our main manufacturing facility located in Palmetto, Florida. Prior to returning the equipment for repair, an RMA number must be obtained from HQ, Inc. customer service. The RMA number should be referenced both on the outside of the carton and on all correspondence sent with the shipment. The shipment should be sent back ONLY via prepaid freight to:

HQ, Inc. Attn: Repair Dept.
210 9th Street Drive West
Palmetto, FL 34221

The repaired unit(s) will be returned back to you prepaid within two-three weeks of receipt.

Invoices will be submitted to your company for any item out of warranty.