



WhereCall III User Guide





User Guide Special Notices



Warnings call attention to a procedure or practice that could result in personal injury if not correctly performed. Do not proceed until you fully understand and meet the required conditions.



CAUTION

Cautions call attention to an operation procedure or practice that could damage the product if not correctly performed. Do not proceed until understanding and meeting these required conditions.

NOTE

Notes provide information that can be helpful in understanding the operation of the product.



FCC Requirements

FCC Compliance Statement

This device complies with Part 15 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. The user is cautioned that any changes or modifications not expressly approved by WhereNet Corp. could void the user's authority to operate the equipment.

Canadian DOC Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.



CAUTION

There are no user serviceable parts inside. Do not attempt to open case or change batteries. Only WhereNet personnel may change batteries.



Document Revision History

Revision	Change	Change Description	Date
A	C01157	Initial Release	08/02/06



Table of Contents		Page
1	OVERVIEW	7
2	COMPONENTS	8
3	INSTALLATION & MOUNTING	9
3.1	POLY-LOCK	9
3.2	MOUNTING WHERECALL III WITH POLY-LOCK	11
3.3	WHERETAG FOAM TAPE SQUARES	12
3.4	MOUNTING WHERECALL III WITH FOAM TAPE SQUARES	12
3.5	MOUNTING WHERECALL III WITH SCREWS	15
3.6	HANGING CABLE BRACKET	16
3.7	INSTALLING WHERECALL III WITH HANGING CABLE BRACKET	17
4	OPERATION OF THE WHERECALL III	18
5	SPECIFICATIONS: WHERECALL III DEVICE	22

Table of Figures		Page
FIGURE 1: POLY-LOCK FASTENER WITH ADHESIVE BACKING		10
FIGURE 2: POLY-LOCK & FOAM TAPE POSITIONS		10
FIGURE 3: FOAM TAPE SQUARES		12
FIGURE 4: SCREW MOUNTING TEMPLATE		14
FIGURE 5: COVER SCREWS		15
FIGURE 6: HANGING CABLE BRACKET		16
FIGURE 7: FRONT & REAR VIEW HANGING BRACKET INSTALLED		17





1 OVERVIEW

The WhereNet WhereCall System allows users in manufacturing and assembly operations to request service or specific parts without leaving their workstations. Specific parts or service requests may be assigned to individual WhereCall III devices so that users may indicate which item is needed. For example, an assembly worker using several parts: Each part is associated with a separate WhereCall III device located in the workstation. By pressing the green button on the WhereCall III device, a radio signal is sent by the WhereCall System to the computer system in the supply area, indicating which workstation requires the specified part or service.

There WhereCall III also operates in an optional “switch mode”. This mode can be used to indicate a status; the display will blink either “-ON” or “-OFF” and will toggle each time the button is pressed.

To insure that the WhereCall system is in constant operation, real-time monitoring using an “I’m Still Alive” blinking transmission advises the system supervisor of the status of each WhereCall III device.

WhereCall III devices may be individually labeled for identification by applying a user-supplied label to the recessed area on the front panel below the green button.

The WhereCall III may be mounted in a work area with removable fasteners, double-sided foam tape or with mounting brackets and screws. Overhead installation is also possible by using cable mounting (Refer to Section 3, Installation and Mounting).



2 COMPONENTS

The **WhereCall System** consists of four major components: the WhereCall III device; a location antenna; a location processor and a WhereNet computer server. This document details only the WhereCall III device.

The **WhereCall III** is a palm-sized device approximately 3 inches by 5 inches, 1 inch thick, in a yellow and gray colored case. A green colored actuator button is in the center of the device. A liquid crystal display (LCD) screen is located above the button.

The WhereNet **Location Antenna** receives radio signals from the WhereCall III device when the work station user sends a call requesting parts by pressing the green button on the WhereCall III. These signals are transferred by cable to the WhereNet Location Processor.

The WhereNet **Location Processor** converts signals from the antenna(s) and sends them to the **WhereNet computer server**. A message is generated by the server and sent to the user's computer system indicating that a part is needed at the location of the WhereCall III device.

If necessary, the **WhereWand** hand-held communicator allows the WhereNet technician to configure the **WhereCall III** device.



3 INSTALLATION & MOUNTING

The WhereCall III may be mounted in a work area with removable fasteners, double-coated foam tape, hanging brackets, or with mounting screws. Overhead installation is also possible using cable mounting.

Each WhereCall III must be mounted in a location to provide an unobstructed view in at least one direction. To maintain communication with the Location Antennas, do not install the WhereCall III inside a metal enclosure such as a metal cabinet.

3.1 Poly-Lock

A plastic, adhesive-backed fastener, Poly-Lock uses mushroom-shaped contact points that overlap and snap together, forming a strong attachment that can be separated by a forceful pull. Poly-Lock is not included with the WhereCall III, but is available from WhereNet in pre-cut squares. Contact your WhereNet account manager for parts information.

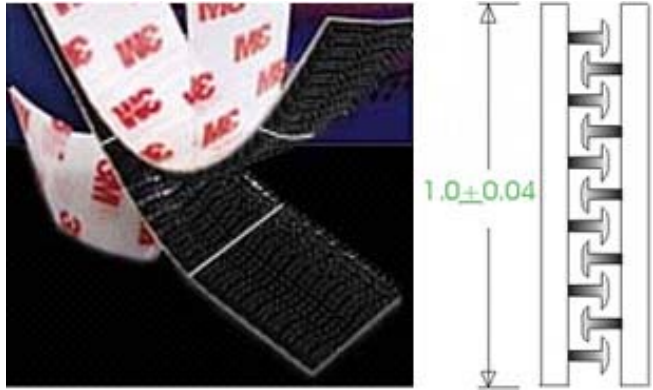


Figure 1: Poly-Lock fastener with adhesive backing

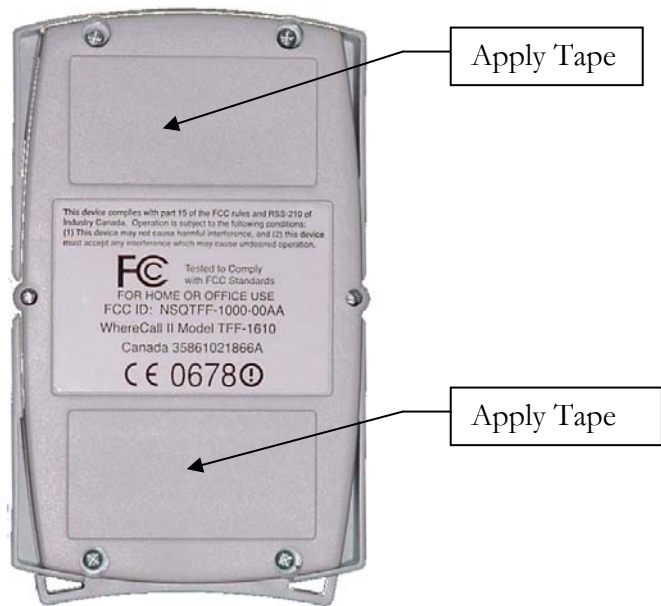


Figure 2: Poly-Lock & foam tape positions



3.2 Mounting WhereCall III with Poly-Lock



Do not apply the poly-lock when the temperature is below 60°F (15°C) or above 90°F (32°C).

1. Select the desired location in the workstation to mount the WhereCall III.
2. Clean the mounting surface and the back plate of the WhereCall III with isopropyl alcohol.
3. Select a pair (they are shipped in attached pairs) of Poly-Lock squares, remove the adhesive backing and press them to the mounting surface, sticky side down (see Figure 2).
4. Remove the adhesive backing from three additional pairs of Poly-Lock squares and affix them to the back plate of the WhereCall III to match the fastener locations on the mounting surface.
5. You should now have four pairs of Poly-Lock attached to the back of the WhereCall III. Remove the adhesive backing from all four squares.
6. While holding the WhereCall III, aligned with the fasteners on the mounting surface. Gently press the unit against the mounting surface to assure that the adhesive on the squares is bonded to the both surfaces.



3.3 WhereTag Foam Tape Squares

WhereTag foam tape, both sides adhesive, provides a secure, semi-permanent mounting method for the WhereCall III device. Foam tape is not included with the WhereCall III. Contact your WhereNet Account Manager for parts information.

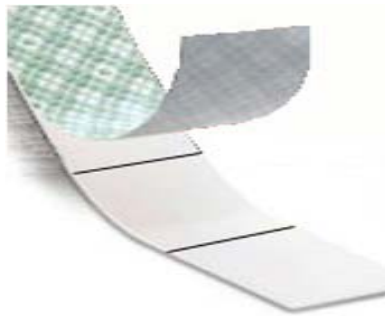


Figure 3: Foam tape squares

NOTE

“Double sticky” tape applies a layer of permanent adhesive film to both surfaces. Care should be taken in the application of foam tape; once applied it is difficult to remove.

3.4 Mounting WhereCall III with Foam Tape Squares



CAUTION

Do not apply the foam tape when the temperature is below 60°F (15°C) or above 90°F (32°C).

1. Select the desired location to mount the WhereCall III.



2. Clean the mounting surface and the back plate of the WhereCall III with isopropyl alcohol.
3. Select two foam tape squares, remove the adhesive backing from one side only and apply them to the back plate of the WhereCall III as shown in Figure 2.
4. Remove the adhesive backing from the exposed surface of the tape squares.
5. While holding the WhereCall III, aligned to the desired position. Gently press the unit onto the mounting surface.

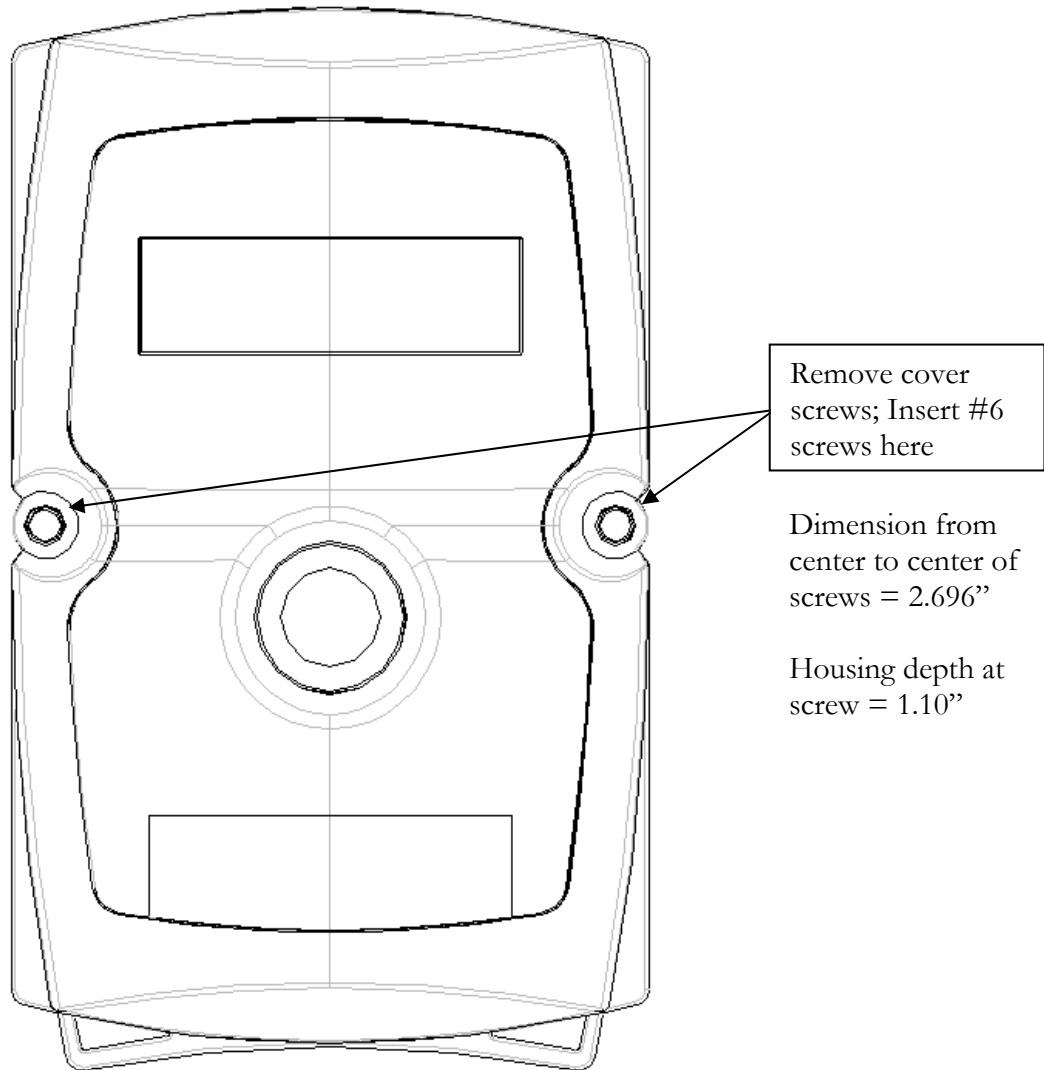


Figure 4: Screw mounting template (drawing is actual size).



3.5 Mounting WhereCall III with screws

The WhereCall III may be directly mounted to a surface such as a wall, post, or desk. For correct screw placement, use the Screw Mounting Template provided in this User's Guide (see Figure 4).

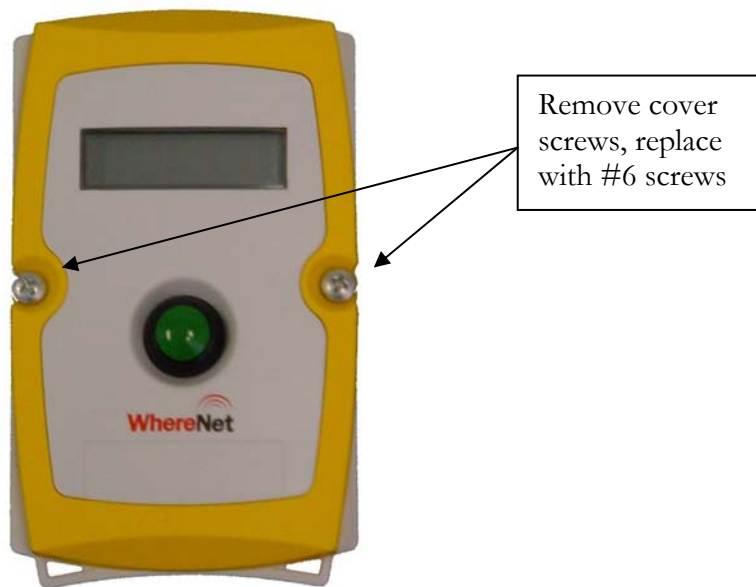


Figure 5: Cover screws

1. Select the desired location to mount the WhereCall III.
2. Position the mounting template on the mounting surface.
3. Place a pencil, pen or metal scribe on the 'Insert screw here' points as shown in Fig. 4, puncture the template and mark the mounting surface.



4. Drill screw pilot holes as needed into the mounting surface.
5. Remove front cover screws as shown in Figure 5.
6. Inserts #6 screws through holes in the front panel of the WhereCall III and gently tighten to a snug fit (12 to 15 in-oz). Do not distort case by over-tightening.



CAUTION

Do not over-tighten screws. Damage to the WhereCall III might result if screws are over-tightened.

3.6 Hanging Cable Bracket

The WhereCall III may be installed from an overhead cable for ease of use in a workstation where mounting on flat surfaces is unsafe or inconvenient. Hanging cable brackets are not included with the WhereCall III but are available from WhereNet. Contact your WhereNet Account Manager for parts information.

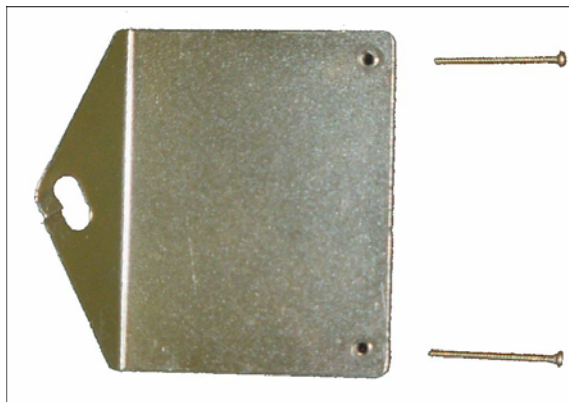


Figure 6: Hanging cable bracket



3.7 Installing WhereCall III with Hanging Cable Bracket

1. Remove front panel screws as shown in Figure 5. Insert #6 threaded screws provided with bracket through holes in front panel of WhereCall III.
2. Align the holes in the Hanging Cable Bracket to the screws.
3. Attach hanging cable to Hanging Cable Bracket using cable loop.



Figure 7: Front & rear view hanging bracket installed



4 OPERATION OF THE WHERECALL III

The WhereCall III is a wireless messaging device that is capable of transmitting simple messages to the WhereNet Infrastructure. These messages can range from a call for parts for line side material replenishment to a request for supervisor assistance. There are three modes of operation, Button or Call, Switch, and OFF. The WhereCall III is shipped in the “OFF” mode.

In button or Call mode the WhereCall III can be used for parts call and other operations that do not require an indication as to whether the request was completed. In this mode, the operator presses the button to send the request message. The display on the WhereCall III will flash the word “CALL” for one minute and then start to count up in minutes since the call was made. This lets the operator easily verify how long it has been since they made their request. In the button mode the WhereCall III will transmit “switch ID 0”.

To turn the WhereCall III on when it is “OFF” (the display will show non blinking OFF). Press the button once and the tag will resume operation in either the Call mode or the Switch mode depending on the mode it was in when the off mode was selected.

In switch mode, the display toggles between “-ON” and “-OFF”. The normal starting state is “-OFF”. If the operator presses the button, then the WhereCall will send a message signaling the change in state and the display will change to “-ON” and transmit “Switch ID 1”. The next button press will cause a new message to be sent signaling the change of state and the display will change back to “-OFF” and transmit “Switch ID 0”. In the switch mode the WhereCall III will send multiple transmissions; at 0, 1, 5, 10, 15, 30, 90, 150 minute intervals and then every hour after that.

To change modes between Call mode and Switch mode or visa versa; press and hold the button until the display indicates either “b ?” or “S ?”. (Do not release the button while the display shows “8888” rather continue to keep the button depressed.) When either of these is displayed immediately release the button then press and release it again within five seconds; this will change the operational mode.



To turn the tag to the OFF mode from either Call mode or Switch mode. Press and hold the button until the display shows 8888. Then release the button the display will indicate a four digit number for a few seconds and then show OFF. The WhereCall III is now OFF and all transmissions are disabled.

These messages are displayed on the WhereCall III's LCD display. The display has large characters so that it can be read from distances up to 10 feet away. The sturdy push-button is recessed to prevent accidental presses.

A variant of WhereCall III, the WhereCall III PLC, provides for automated call requests by replacing the call button with a sealed connector that can be interfaced to intelligent shop floor equipment.

The WhereCall III provides long battery life, typically in excess of 5 years. Additionally, the batteries are replaceable providing a long product life.



Display Message	Display Meaning	Keep Alive Blinks	Comments	Action required
“CALL” (blinking)	Button blinks are being transmitted.	Yes	This mode will continue for 60 seconds following a button press.	None
“HH:MM” Colon flashing	Indicates the elapsed time from the last button press.	Yes	The time advances until it reaches 23:59 then holds until the button is pressed.	None
“CALL” displayed for more than 60 seconds.	If the button is pressed while the display indicates CALL, the display will reset for another 60 seconds.	Yes	The WhereCall will send a “Button Blink” for each button press.	None
“-OFF” switch mode (blinking)	Switch mode where the tag will transmit Switch ID 0.	Yes	From Call mode, the button must be held for several seconds after the “8888” code is displayed and until the code “S?” is shown.	None
“-ON” switch mode (blinking)	Switch mode where the tag will transmit Switch ID 1.	Yes	Once in switch mode, each button press will toggle from “-OFF” to “-ON” and vice versa.	None
“b ?” mode change from switch mode back to call mode (not blinking)	Indicates that the user can now change modes if desired.. To change modes you must release then press the button again within 5 seconds. Releasing the button without pressing it again will cause firmware date code to display and the WhereCall III to enter the “OFF” mode.	Yes	The button must be held for several seconds during which the “8888” code will be momentarily displayed. Pressing the button again will generate a “CALL” response.	Press the button to initiate “CALL” operation.



Display Message	Display Meaning	Keep Alive Blinks	Comments	Action required
“S ?” mode change from call mode to switch mode (not blinking)	Indicates that the user can now change modes if desired.. To change modes you must release then press the button again within 5 seconds. Releasing the button without pressing it again will cause firmware date code to display and the WhereCall III to enter the “OFF” mode.	Yes	The button must be held for several seconds during which the “8888” code will be momentarily displayed. Pressing the button again will generate a “OFF/ON” response.	Press the button to initiate “OFF/ON” switch operation.
“OFF” (not blinking)	The WhereCall III has been set to the Off mode. Holding the button down for more than five (5) seconds sets the unit OFF.	No	This mode must be used to ship the WhereCall III and it may be used during storage.	Press the button to restore the unit to operation.
“8888”	Diagnostic check.	N/A	Display during mode change operations.	None
“NNNN”	Firmware date code	N/A	Display during mode change operation.	None
“ERR1”	An “ST1” switch mode transmission was attempted but the PA On failed to be detected.	No	This display will persist until the button is pressed again.	Retry transmission by pressing the button again. Call for service if this error recurs.
“ERR2”	An “ST2” switch mode transmission was attempted but the PA On failed to be detected.	No	This display will persist until the button is pressed again.	Retry transmission by pressing the button again. Call for service if this error recurs.
“ERR3”	The PA On pulse was detected to be too long. The tag has lost its configuration.	No	This display will persist until the button is pressed again.	Retry transmission by pressing the button again. Call for service if this error recurs.



5 SPECIFICATIONS: WHERECALL III DEVICE

Specifications are subject to change without notice.

Mechanical

Dimensions	2.9 x 4.9 x 1.4 Inches (7.8 cm x 12.5 cm x 3.6 cm)
Weight	6.4 Ounces (181.5 g)
Color	High Visibility Yellow and Gray
Attachments	Mounting devices
Form Factor	Wall Mounted-Rugged Aesthetics

Durability

Drop	3 feet to concrete
Temperature	+32°F to +122°F, (0° to +50°C)
Humidity	0% to 100% condensing
Pressure Wash	Unit to withstand windblown dust and rain (IP 54)
Button	Functional after 1 million cycles
ESD	Functional per IEC-1000-4-2 Level 4

Battery

Battery Type	Two, "AA" Lithium Thionyl Chloride Cells
Battery Life	Typical 5 years (Batteries are not customer replaceable)



Configurable Parameters

Configuration Frame	Configuration frame identical with TFF-1011-0001 Full Function Tag.
Button Function	Push button 1 st time, Tag emits 3 DSSS blinks with status bit 1 set (XXIX). Sub-blinks per blink as configured. The LCD timer starts, counts up to 23:59 and then holds. Push button 2 nd time, the timer clears, cycle starts over.
Button Characteristics	A green, .47-inch diameter button, with tactile feedback.

Autonomous Transmission

Characteristics	Device sends one DSSS blink at user's desired blink rate. (Factory preset: to send transmission every 128 seconds) with no status bits set (other than low battery bit, if active).
Purpose	Indicates device is present and functional even if no parts requested.
Configurable	WhereWand or Hand Held Communicator can vary rate of autonomous blinks from 2 seconds to 9 hours. <u>Note: The WhereCall III will not communicate with the HHC if the display reads "OFF" or "ERR1" or "ERR2" or "ERR3".</u>

Status Word

Length	4 bits
Battery low bit	bit 0 (XXXI), '1' = battery low.
First Button Push	bit 1 (XXIX), '1' = button 1 pressed.

Timer Characteristics

Number of Digits	4
Format	Hours and minutes (HH:MM) Colon flashes
Function	Check previous page
Digit Size	.32 inch
Back Lit	No