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# Wireless Call Point (100-821)



# INSTALLATION MANUAL

# TABLE OF CONTENTS

1. Introduction.....	2
FEATURES:.....	2
2. Normal Operation.....	3
3. LED Indicator.....	3
4. Physical Description.....	4
Call Point Configuration.....	4
Optional Patient Push Set socket.....	4
5. Manually programming ID Codes.....	5
Steps to program a new code into the Wireless Call point (Ver.1.4):.....	5
Illegal Codes:.....	6
6. Tips for Mounting Wireless Call points.....	6
7. APPENDIX 1.....	7
Steps to program a new code into the Wireless Call point (Ver.1.3):.....	7
8. SPECIFICATIONS.....	8

## 1. Introduction

Introducing the all new Wireless Call point from SmartLink with new ergonomic design, Autotex Antibacterial label coating (Optional) and improved features such as the ability to now add a Patient push set connection if required.

Designed from the ground up, this call point now features a new microprocessor that utilises an innovative SmartLink wide pulse format with low standby and operating current consumption, wide operating voltage levels and low Battery detection and reporting.

The feature that stands out from all previous designs is the optional monitored socket that will now also accept standard patient push set plugs to send an alarm. Another added feature (Depending on wiring configuration used) is that if a plug is pulled out of the socket an alarm can now also be raised to let staff know.

There are also provisional connections on the back of the call point that allow external switches to activate and cancel a **Call** and or a **Panic** type of alarm.

### FEATURES:

- Wide operating voltage range: 2V to 5.5V
- Low Battery detection and reporting
- Low standby current (typical 2uA)
- Low active current (typical 7mA)
- Autotex antibacterial coated labels (Optional)
- Built in program mode for onsite modification of ID code

- Transmission timeout of 2 seconds
- In-Circuit Flash programming
- Smartlink 24 bit wide pulse format



## 2. Normal Operation

The wireless call point has three keys: ON (Alarm) and OFF (Cancel) located on the front with secondary connections on the back and an EMERGENCY (Panic) Key which is only accessible through an external link on the back of the unit.

All keys have a 300 ms de-bounce to prevent false activations. This means that the key will need to be held down for at least 300 ms before they are activated. Once a Key is activated it will send the appropriate alarm continuously for 2 seconds.

*Note that pressing any key will cause the LED to instantly flash for 10ms to indicate that the key is working. Holding the key down more than 300ms will activate and send a radio message.*

## 3. LED Indicator

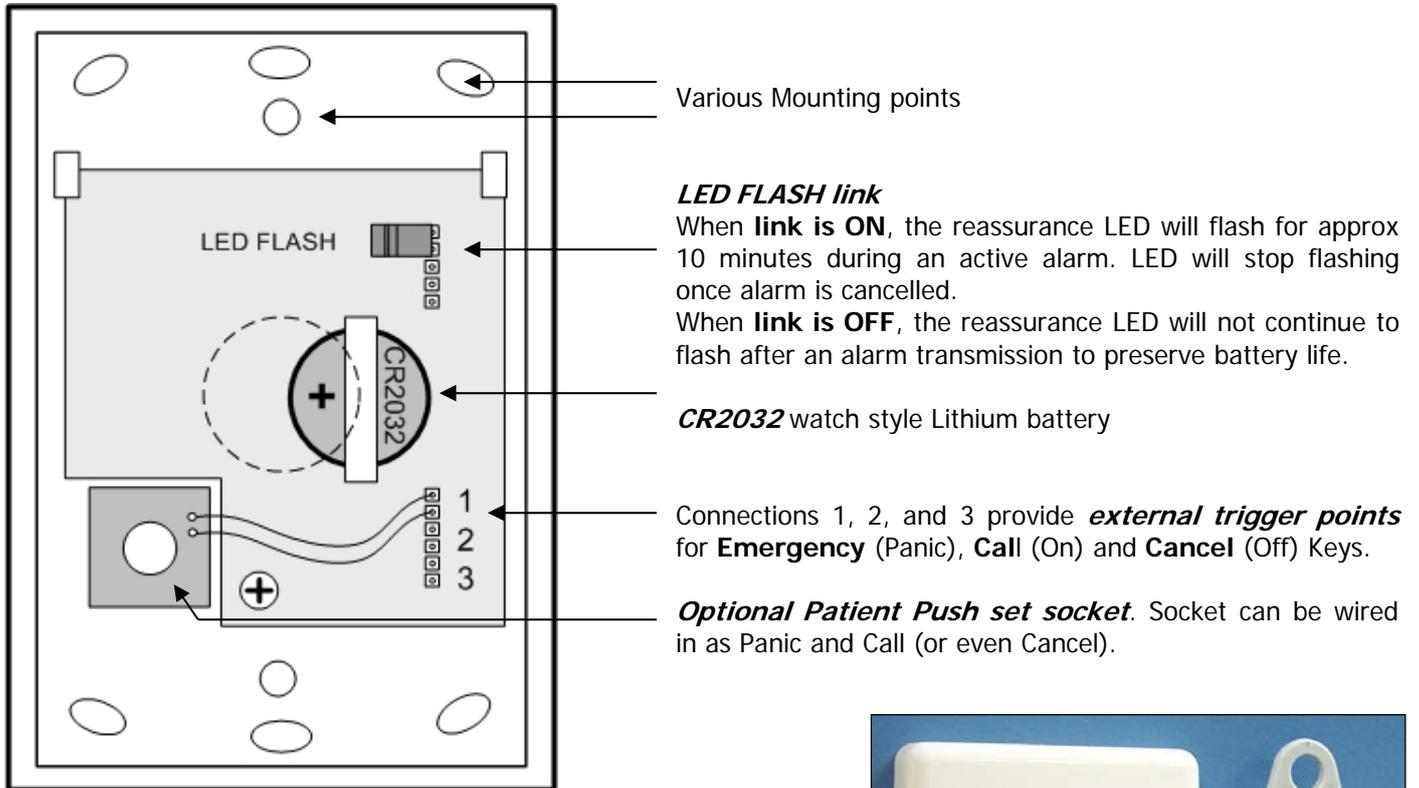
The LED indicator on the wireless call point (located under the Call button) will flash periodically to indicate certain events.

- One long flash for each radio message transmitted
- One fast flash every 2.3 sec for a duration of 10 minutes when ON or PANIC is activated and has not been cancelled (also note that this will only occur when the **LED Flash** pin is linked – **Refer Figure 1**)
- Double fast flash every 2.3 sec for a duration of 10 minutes during a low battery condition when ON or PANIC is activated and has not been cancelled (with LED Flash pin linked)
- Continuous fast flash for error condition or while in program mode

*Note: In all instances the LED will light up briefly on pre-alarm and continuously on alarm transmissions.*

## 4. Physical Description

### Call Point Configuration



**Fig.1** Back of Wireless Call Point

### Optional Patient Push Set socket

Patient Push set sockets are optional and are not provided with any call points but can be ordered separately for self installation if required.

The addition of a patient push set socket allows the wireless call points to accept a patient push set with a standard 6.35mm plug.

If a wireless call point is fitted with a patient push set socket then there are two possible configurations: N/C and N/O. In the N/C configuration removal of the plug will result in an alarm condition. To restore this condition the plug must be re-inserted and the Cancel button pressed. If the Cancel button is pressed without the plug being Re-inserted the Call point will raise the alarm again after 5 seconds to alert staff.

**WARNING:** In this configuration depletion of battery life will occur if plug is left un-installed.



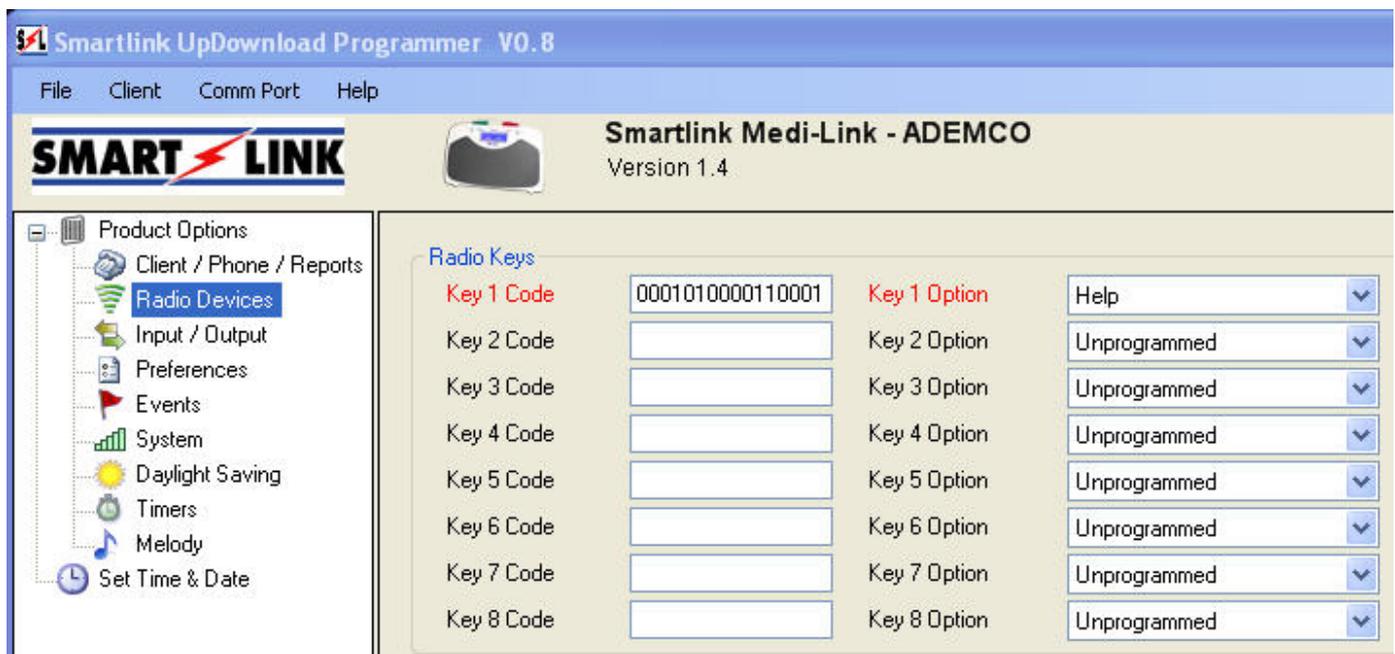
**Fig.2** Wireless Call point  
(with **Optional Patient Push Set Socket**)

## 5. Manually programming ID Codes

All wireless call points are manufactured with a unique 16 bit ID code.

To manually change or duplicate this code you will need a Medi-Link or Medi-Call unit.

The simplest way to read the code is to use the SmartLink Up/Download software package in conjunction with either a Medi-Call unit or the newer Medi-Link unit. Simply check-in the wireless device into the Medi unit and perform an **Upload** to the software. Under "Radio Devices" you will see the 16 bit ID code for the device that was checked in.



### Steps to program a new code into the Wireless Call point (Ver.1.4):

1. Remove the battery
2. Re-insert the battery while holding down both the Call and Cancel buttons together
3. The LED will start flashing very quickly to indicate that the call point is in program mode
4. Release the two buttons – the LED flashing will stop
5. **Call (On)** key is pressed for a **0** and the **Cancel (Off)** key is pressed for a **1**
6. Enter the 16 bit ID code in groups of 4 in the following sequence:  
**13,14,15,16   9,10,11,12   5,6,7,8   1,2,3,4**
7. For example the "Key 1 code" above would be entered as:
8. **0001 0011 0100 0001**
9. Press the Call and Cancel buttons until all the 16 digits have been set
10. You will notice you have come to the end of the digits when a single press only causes the LED to flash once instead of the double flash in program mode

**ID Code bit sequence as seen on Ver. 1.4 of the New Up/Download programmer software.**

Bit No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Bit	0	0	0	1	0	1	0	0	0	0	1	1	0	0	0	1

**Illegal Codes:**

The following ID codes are considered illegal and are not to be stored during program mode:

All "1"s,     1111 1111 1111 1111  
All "0"s,     0000 0000 0000 0000

***NOTE: For Programming using Previous Version of Up-Download Software (Version 1.3) Please refer to Appendix 1, as the bit sequence is different.***

**6. Tips for Mounting Wireless Call points**

In ideal conditions where the wireless call point has a direct line of sight to the receiver the range can be anywhere from 50 to 100m. However in a realistic installation this will not be the case. Most installations will have some form of obstacle in the path of the radio signal such as reflective insulation material, concrete barriers and metal obstructions etc.

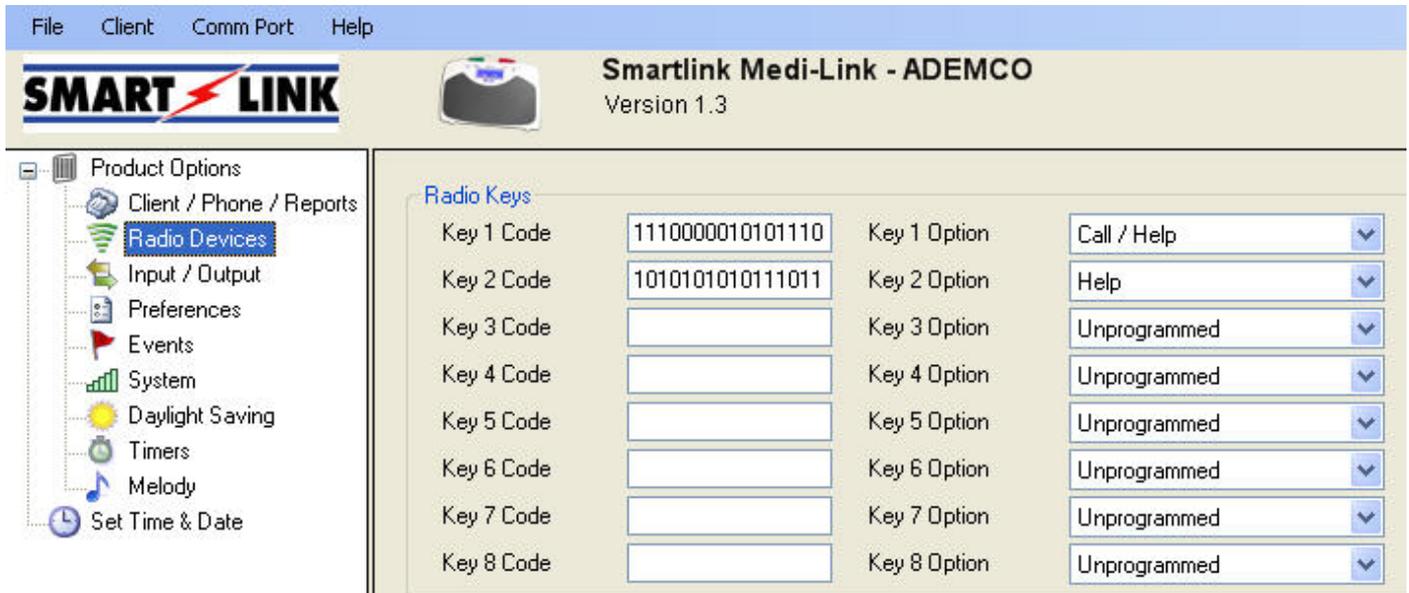
These factors play a large role in determining the range of this wireless device. The key to a good installation is to verifying that the signal level reaching the receiver is adequate before permanently mounting any wireless call points. To do this, you can use the inbuilt signal level meter found in the Medi-Link units which will give you a rough idea with a scale of 1 to 10. Or you may choose to use your own power meter and verify that signal level is greater than -110dBm.

***If mounting the call point sideways, especially in a high vibration environment, be aware that an additional battery stopper will be necessary to prevent the unit's battery dislodging over time.***

Through special OEM requests (Minimum runs of 500), a larger battery (CR2477) can be accommodated by the wireless call point, however the use of a larger battery will require a backing plate or equivalent to be used on solid walls to create room for the larger battery.

## 7. APPENDIX 1

### Programming using Previous Version of Up-Download Software (Version 1.3)



#### Steps to program a new code into the Wireless Call point (Ver.1.3):

1. Remove the battery
2. Re-insert the battery while holding down both the Call and Cancel buttons together
3. The LED will start flashing very quickly to indicate that the call point is in program mode
4. Release the two buttons – the LED flashing will stop
5. The Call (On) key is pressed for a 0 and the Cancel (Off) key is pressed for a 1
6. Enter the 16 bit ID code in groups of 4 in the following sequence:  
**5,6,7,8 1,2,3,4 13,14,15,16 9,10,11,12**
7. For example the "Key 1 code" above would be entered as:  
**0000 1110 1110 1010**
8. Press the Call and Cancel buttons until all the 16 digits have been set
9. You will notice you have come to the end of the digits when a single press only causes the LED to flash once instead of the double flash in program mode

#### ID Code bit sequence as seen on the Up/Download programmer software:

Bit No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Bit	1	1	1	0	0	0	0	0	1	0	1	0	1	1	1	0

## 8. SPECIFICATIONS

- Size 75 mm (W) x 117 mm (H) x 13 mm (D)
- Weight 70 grams
- Operating Voltage 2 – 5.5 Volts DC
- Quiescent Current 2 uA
- Alarm Current 7 mA
- Frequency 304.85 MHz
- Radio Inputs ON, OFF, PANIC
- Battery Type CR 2032 (3V)

- Typical battery life **8.0 years** (2 button presses per day)  
**5.0 years** (4 button presses per day)  
**3.7 years** (6 button presses per day)

*NB: These are estimates only and as such we recommend always having a proper maintenance schedule in place.*

*Warning – if optional patient plug is wired in the N/C configuration for plug removal alarm and a plug is not inserted and or reinserted after disconnection then battery life can be considerably reduced to less than **6 months***



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Unit 4/56 Norcal Rd,  
Nunawading VIC 3131 Australia  
Tel: +61 3 9875 6400 Facsimile: +61 3 9875 6422

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