

iVi™

'the intelligent pendant'  
with auto fall detection

Programming and  
installation Guide



**Tunstall**

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## Introduction

iVi the intelligent pendant with automatic fall detection is a small body worn device that can be used to raise manual alarms by using the integral help button. The device can also detect falls and raise an automatic alarm using an integrated accelerometer and a barometer. The device is sealed to a rating of IP67, which means the device can be used in the bath/shower.

The fall algorithm is designed to make use of changes in barometric pressure, acceleration and static orientation in order to assess whether a fall event has taken place.

When the iVi detects an event which is assessed to be like a fall (this takes up to 20 seconds) then it will alert the user by emitting tones from the sounder and flashing the green LED. The user then has 10 seconds to cancel the alert by pressing the cancel button.

The iVi can send an alert to the monitoring centre if it hasn't been worn for a period of time. This period of time is configurable (3, 5 or 7 days). This feature is turned off by default and only turned on in advanced mode.

The device is battery powered by a CR2450 and has an approximate battery life of up to 12 months.

Both this guide and the user guide should be read carefully before providing the iVi to a user.

NOTE: The iVi is supplied in a sleep mode to preserve battery power. To wake the iVi press the help button once. The second press of the help button will send a radio signal to the connected Lifeline home unit.

## Wearing Options

The Device can be worn in 3 different ways; these are Belt Clip, Brooch/Shirt Clip and Neck Cord. The neck cord (inc brooch/shirt clip) wearing option provides the most optimal position in terms of overall performance however should the user be unable to wear the pendant using this option the belt clip can be used.



For details on how each of the wearing options is fitted, refer to the User guide that is included in the iVi packaging.

## Alert Types

The following table explains what alarms will be presented at a PNC and what caused that particular alarm.

Alert	Description	Note	Ademco Protocol (USA Only)
<b>Fall Detector Button</b>	User has pressed the Help button	Call presented to an operator at PNC	Code 101
<b>Fall Detector Fall</b>	A fall has been detected	Call presented to an operator at PNC	Code 572
<b>Fall Detector Activation Cancelled</b> (Lifeline Vi/Vi+ only)	The user has pressed the cancel button during a fall alert	Lifeline Vi/Vi+ (TT21 only), Background call in PNC, alert turned off in normal mode	Code 573
<b>Fall Detector Not Worn</b> (Lifeline Vi/Vi+ only)	The iVi has not moved for 7 days indicating the user is not wearing the device	Lifeline Vi/Vi+ (TT21 only), Call presented to an operator at PNC, alert turned off in normal mode	Code 571

## Getting Started

Before the device is programmed for the user, there are a number of important points/steps that need to be performed

- How is the device going to be worn?
- How tall is the person who will be wearing the iVi?
- What model of home units is the iVi going to be programmed to e.g. Communicall Connect, CareAssist, Lifeline 400, 4000+, Connect, Connect +, Vi and Vi+?
- Is the user capable of using the cancel button correctly?

Once the above points are known, it is possible to program the iVi correctly and then program the iVi to the Lifeline.



In many circumstances the default settings will meet the requirements therefore only programming the iVi to the Lifeline home unit will be necessary.

## Default iVi settings

The default settings are as follows:

Menu	Setting	Note
<b>Sensitivity</b>	Low	Low sensitivity should be suitable for the majority of users however very inactive users may require an adjustment to increase the sensitivity to suit their levels of activity.
<b>Equipment type</b>	Normal mode	'Not worn' and 'Activation cancelled' events are turned off.
<b>Wearing option</b>	Neck and Brooch (users 5ft 2in or above)  Waist Worn (users 5ft 10in or above)	If the height of the user falls outside of these settings then the wearing option will need to be changed for optimum performance.
<b>Cancel button</b>	Enabled	The user can cancel an automated fall alert when the iVi is beeping.
<b>Not worn period</b>	7 days	The Not Worn alert is disabled

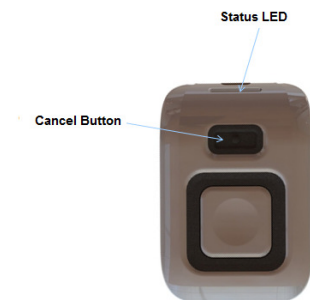
## Programming the iVi

The iVi needs to be placed into program mode to configure the following parameters:

- Adjusting Sensitivity
- Equipment type connected to
- Wearing Option Setting
- Disable cancel button
- Not worn period
- Sleep mode

The programming mode is accessed by pressing the buttons in the following sequence:

- Press and hold the Cancel button for more than 3 seconds.
- Release the Cancel button (the green status LED will light)
- Press and hold the Help button and then the Cancel key and hold both for 3 seconds.
- After more than 3 seconds release the Alarm key then release the Cancel key (iVi beeps and the green status LED lights up)
- The iVi is now in programming mode



## Programming Menu

Once the menu has been entered, you can scroll through the menu options using the cancel and help buttons. A press of the Cancel button will move to the next menu item and is indicated by the colour of the status LED. A press of the Help button within each menu will cycle between the options within that menu and is indicated by different tones played by the iVi. The settings are automatically saved when the programming menu is exited (after 20 seconds of no button presses).

The next time the menu is entered the beeps within each menu option will help to indicate the settings that had previously been saved in the unit.

There are 6 menus; the currently selected menu is indicated by the state of the LEDs. For more details on each menu please refer to the following pages.

	Menu Number	Operation	LED Indication	Menu options		
				Press alarm button to scroll to next menu option →		
				High Tone	Medium Tone	Low Tone
Press Cancel button to scroll to next menu ↓	1	Adjusting Sensitivity	Green	High	Medium	Low (Default setting)
	2	Equipment Type	Red	Advanced Mode (Vi/Vi+ only)	N/A	Normal Mode (Default setting)
	3	Wearing Option	Orange	Neck and Brooch (users 5ft 2in or above) Waist Worn (users 5ft 10 in or above) (Default setting)	N/A	Neck and Brooch (users 4ft 6 in to 5ft 2 in) Waist Worn (users 5ft to 5ft 10 in)
	4	Disable cancel button	Flashing Green	Cancel Button Enabled (Default setting)	N/A	Cancel Button Disabled
	5	Not worn period	Flashing Red	7 Days (Default setting)	5 Days	3 Days
	6	Sleep mode	Flashing Orange	Pressing alarm button in this menu puts iVi immediately into sleep mode		



## iVi Quick Programming Guide

### Menu 1 - Adjustable Sensitivity - Green LED on

Option	Setting	Indicator Tone	Note
1	High	High Tone	Very inactive user susceptible to falls
2	Medium	Medium Tone	Less active user
3	Low	Low Tone	<b>Default setting</b>

### Menu 2 – Equipment Type - Red LED on

Option	Setting	Indicator Tone	Note
1	Advanced Mode	High Tone	<b>To be used with Lifeline Vi/VI+ Only</b>
2	Normal Mode	Low Tone	<b>Default setting</b> Supports Lifeline 400, 4000+, Connect, Connect+, GSM Lifeline, CareAssist, Communicall

### Menu 3 - Wearing Option - Orange LED on

Option	Setting	Indicator Tone	Note
1	Neck and Brooch (5ft 2in or above)  Waist worn (5ft 10in or above)	High Tone	<b>Default setting</b>
2	Neck and Brooch (4ft 6in to 5ft 2in)  Waist Worn (users 5ft to 5ft 10in)	Low Tone	

### Menu 4 - Disable Cancel Button - Flashing Green LED

Option	Setting	Indicator Tone	Note
1	Cancel Button Enabled	High Tone	<b>Default setting</b>
2	Cancel Button Disabled	Low Tone	

### Menu 5 – Not Worn Period – Flashing Red LED

Option	Setting	Indicator Tone	Note
1	7 Days	High Tone	<b>Default setting</b>
2	5 Days	Medium Tone	
3	3 Days	Low Tone	

### Menu 6 – Sleep Mode (for transportation) - Flashing Orange LED

Help button press = enters sleep mode immediately  
Cancel button press = move to next menu (menu 1)

## Full Programming Guide

### Menu 1 - Adjustable Sensitivity

#### Green LED on

This menu item is used to set the shock level that will initiate the algorithm into determining whether a fall has taken place. There are 3 sensitivity settings.

Pressing the Help button will cycle between High/Medium/low levels. After each press a different tone will sound to indicate the setting selected. When the correct setting is selected, either press the cancel button to move to Menu 2 or press no further buttons and after 20 seconds the iVi will exit the programming menu.

Option	Sensitivity	Indicator Tone	Note
1	High	High Tone	Very inactive user
2	Medium	Medium Tone	Less active user
3	Low	Low Tone	Default setting

Press Help button ↓

### Menu 2 – Equipment Type

#### Red LED on

**Normal Mode**            The normal mode is for use with all Tunstall home units and radio systems. It prevents the 'Activation Cancelled' and 'Not Worn' alerts from being sent by iVi as these alerts are not supported by all systems.

**Advanced Mode**        Must only be used with Lifeline Vi/Vi+ and when 'Activation Cancelled' and 'Not Worn' alerts are also required.

Pressing the Help button will cycle between Advanced/Normal mode. After each press a different tone will sound to indicate the setting selected. When the correct setting is selected, either press the cancel button to move to Menu 3 or press no further buttons and after 20 seconds the iVi will exit the programming menu.

Option	Setting	Indicator Tone	Note
1	Advanced Mode	High Tone	<b>To be used with Lifeline Vi/Vi+ Only</b> Activates cancelled and not worn alarms
2	Normal Mode	Low Tone	<b>Default setting</b> Supports Lifeline 400, 4000+, Connect, Connect+, GSM Lifeline/Caresse, Vi, Vi+, CareAssist, Telecare enabled Communicall systems

Press Help button ↓

### Menu 3 - Wearing Option

#### Orange LED on

The iVi can be worn in multiple positions. Menu option 1 and 2 is selected depending upon the height of the user and the wearing position of the iVi. Users below the minimum height threshold may still wear the device but they may experience a lower performance.

When the iVi is worn at a lower height (i.e. smaller users) the fall detection algorithm is modified to take into account the different pressure detection criteria used by the barometer.

Pressing the Help button will cycle between the wearing options. After each press a different tone will sound to indicate the setting selected. When the correct setting is selected, either press the cancel button to move to Menu 4 or press no further buttons and after 20 seconds the iVi will exit the programming menu.

Option	Setting	Indicator Tone	Note
1	Neck and Brooch (users 5ft 2in or above)  Waist worn (users 5ft 10in or above)	High Tone	<b>Default setting</b>
2	Neck and Brooch (users 4ft 6in to 5ft 2in)  Waist Worn (users 5ft to 5ft 10in)	Low Tone	

Press Help button ↓

### Menu 4 - Disable Cancel Button

#### Flashing Green LED

The iVi's cancel button can be disabled for users. For example those who may press the button inappropriately i.e. person with dementia. This can be achieved through this menu. Please note that disabling the cancel button may increase the number of calls to the monitoring centre.

Pressing the Help button will cycle between enabling/disabling the button. After each press a different tone will sound to indicate the setting selected. When the correct setting is selected, either press the cancel button to move to Menu 1 or press no further buttons and after 20 seconds the iVi will exit the programming menu.

Option	Setting	Indicator Tone	Note
1	Cancel Button Enabled	High Tone	<b>Default setting</b>
2	Cancel Button disabled	Low Tone	

Press Help button ↓

## Menu 5 – Not Worn Period

### Flashing Red LED

When the Not Worn alert is active (See Menu 2 – Advanced Mode), the number of days before the iVi will send a Not Worn event can be changed using this menu.

Pressing the Help button will cycle between enabling/disabling the button. After each press a different tone will sound to indicate the setting selected. When the correct setting is selected, either press the cancel button to move to Menu 6 or press no further buttons and after 20 seconds the iVi will exit the programming menu.

	Option	Setting	Indicator Tone	Note
Press Help button ↓	1	7 Days	High Tone	<b>Default setting</b>
	2	5 Days	Medium Tone	
	3	3 Days	Low Tone	

## Menu 6 – Sleep Mode (for transportation)

### Flashing Orange LED

To stop the iVi from generating radio transmissions (and beeps etc) during delivery and for storage, the unit is supplied in a sleep mode. When in sleep mode, a press of the Help button will exit sleep mode and return it to normal operation. A subsequent press of the Help button will generate an alarm call. Sleep mode can be entered again using this menu to allow shipment of the device after configuration.

Pressing and releasing the Help button puts the iVi into sleep mode and turns off the LEDs. If you don't want to enter sleep mode, press the cancel button to move to Menu 1 or press no further buttons and after 20 seconds the iVi will exit the programming menu.

**Help button press = sleep mode  
(menu 1)**

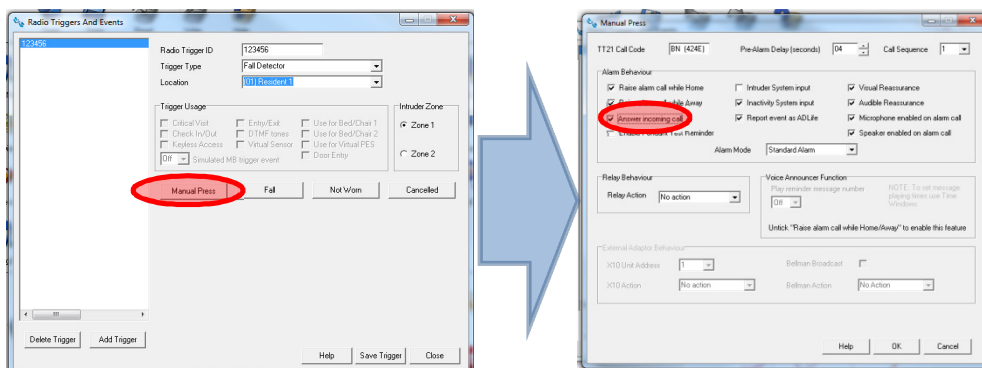
**Cancel button press = move to next menu**

## Programming the iVi to a Lifeline home unit

Press and hold the cancel key on the Lifeline until a bleep is heard, release the cancel key. The Red Help button should be flashing slowly and the unit may announce 'programming mode'. Press and hold the green cancel key again until a bleep is heard then release it. The red Help button on the unit should be flashing rapidly and the unit may announce 'registration mode'. Press the Help button on the iVi, the Lifeline should acknowledge it has been programmed by a high pitched bleep or a spoken message. Press the green cancel key on the Lifeline to exit programming mode.

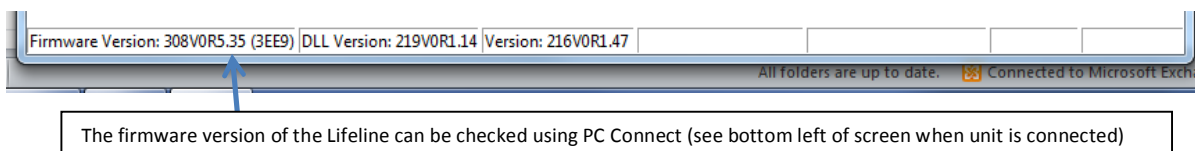
## Using the iVi to answer an incoming call

The iVi, like a standard pendant, can be used to answer an incoming call by simply pressing the alarm button when the connected telephone or Lifeline is ringing. Once the iVi is programmed to the Lifeline Vi, open PC Connect then click on 'Radio Triggers & Events' and for the Fall Detector 'Manual Press' event ensure the 'answering incoming call' box is ticked. Then click 'OK' and write the changes to the Lifeline Vi.



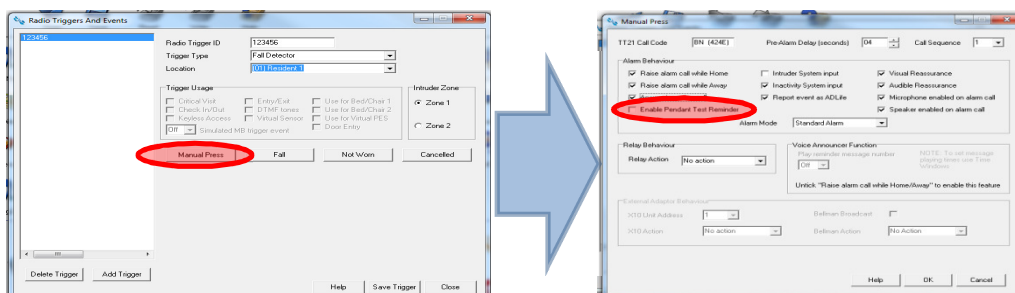
## Using with the pendant test reminder (Lifeline Vi/Vi+ only)

If you would like the iVi to work with the Lifeline Vi/Vi+ pendant test reminder feature, the Lifeline Vi with firmware version 5.35 to 5.51 needs to be configured using PC Connect.



Once the iVi has been programmed to the Lifeline Vi, open PC Connect then click on 'Radio Triggers & Events' and for the Fall Detector 'Manual Press' event ensure the 'Enable Pendant Test Reminder' box is ticked. Then click 'OK' and write the changes to the Lifeline Vi.

Lifeline Vi/Vi+ with firmware versions 5.52 or above automatically work with the pendant test reminder feature and do not need configuring.



## Using Not Worn Alerts (Lifeline Vi/Vi+ only)

The iVi can also assess whether it is being worn. The period before this raises an alarm is configurable (3, 5 or 7 days). This feature is turned off by default and only turned on in advanced mode.

The not worn alert is calculated from the last movement of the iVi therefore subsequent alerts can occur at night. PC Connect\* can be used to inhibit not worn alerts between specific times. In PC Connect go to 'Time Windows' and use 'inhibit selected alarms'.

\*Requires PC Connect version 1.46 or above and Lifeline Vi firmware 5.53 or above

This feature is not a measure of the user's well-being and must only be used to indicate that the user has not been wearing their iVi to help service providers and family members to encourage the user to wear it. In order to achieve this, the not worn alert can be used in two ways:

- Either
  - Provide an alert to the monitoring centre for an operator to understand the reasons and if required encourage the user to wear the iVi
- Or
  - Using the new Voice Announcer feature on Lifeline Vi+, provide a local reminder to the user by recording a message in a familiar voice encouraging them to wear the iVi

## Programming to Communicall or the CareAssist

For instructions on how to program the iVi to the above systems please refer to the relevant system instructions.

## Testing the iVi

### Testing the Help button

Press the Help button on the iVi and ensure an alarm call is generated to the monitoring centre.

### Testing/Demonstrating fall detection

The iVi is designed to avoid false activations therefore when testing or demonstrating you must follow specific steps to reliably test/demonstrate the fall detection element of the iVi. On occasions the iVi may still not activate, if this occurs start the process again.

A video is available that clearly demonstrate the test/demo method.

Please visit <http://youtu.be/LQmYilO8s3g> to view the video.

## Spares and Accessories

The following replacement parts are available.

Description	Part Number
Battery - CR2450* (pack of 5)	S1004050
Belt clip (pack of 10)	D6602038
Brooch/Shirt clip (pack of 10)	D6602039
Neck cord (pack of 10)	D6602045
Battery cover (pack of 10)	D6602040

\*Only use batteries recommended by Tunstall.

## Troubleshooting

The iVi automatically checks its own status and in the unlikely event that it detects a problem it will provide an alert to the user by beeping and flashing its LED orange once every 30-40 seconds.

In addition, if the error condition persists the iVi will send 3 Automatic Low Battery (ALB) alerts to the monitoring centre within a 30 minute period. This will enable service providers to distinguish the error condition from standard battery low conditions.

In the unlikely event that the iVi signals an error or 3 ALB alerts are received within 30 minutes at the monitoring centre, the iVi must be replaced immediately and returned to Tunstall via the normal product returns process.

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