



# Guardian Instruction Manual

## Versions covered by this document

139AA	Wired Guardian Bedside Monitor (inc sound): English
139AAB	Wired Guardian Bedside Monitor (inc sound & radio trigger)
139AB	Wired Guardian Bedside Monitor (inc sound): French
139BA	Radio Guardian Bedside Monitor (inc sound): English
139BB	Radio Guardian Bedside Monitor (inc sound): French



UH1075

Alert-it Care Alarms, Atherstone House, Merry Lees Industrial Estate, LE9 9FE  
0845 2179951, [www.alert-it.co.uk](http://www.alert-it.co.uk), [sales@alert-it.co.uk](mailto:sales@alert-it.co.uk)



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## P139 GUARDIAN MONITOR INSTRUCTIONS

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## Safety Instructions and Warnings



This symbol indicates there are warnings and precautions associated with the use of this equipment that should be carefully read and understood before using the equipment



This symbol indicates where a Patient Applied part is connected, for which it is important to follow these instructions carefully

1. Ensure the voltage & current rating of remote signalling equipment (Nurse Call etc) does not exceed the maximum allowed (50v/100mA)
2. Ensure that the sensor cable is routed and secured to avoid the risk of entanglement or strangulation.
3. Only the recommended power supply shall be used as it is certified to provide two means of patient protection to EN60601-1
4. Ensure the power cable is routed to avoid a trip hazard
5. Regularly check the power supplies for damage and potential shock risks
6. Clean and disinfect each item regularly in accordance with information on page 7
7. Ensure, by testing, that the alarm is annunciated at the carer's location(s)
8. Regularly sensors test as defined herein
9. Use only the power supply and batteries recommended
10. Operate power supply and charge pager away from direct heat and uncovered.
11. As with all medical electronic equipment there is potential for the equipment to interfere with or be effected by interference from other electrical or electronic devices. For this reason avoid placing the monitor, sensor or connecting cable in close proximity to sensitive electronic devices or devices which produce strong electromagnetic fields such as radio transmitters, mobile phones or power cables.
12. Only use the monitor with accessories approved for use with this product and only in accordance with instructions.
13. If the equipment is modified in any way, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.
14. The carer must conduct a risk assessment to determine if the level of reliability offered by the monitor is sufficient or if additional monitoring is needed. Contact the manufacture for assistance with Risk Evaluation Tools.
15. Additional levels of mechanical protection may be needed for some patient disorders. Contact the manufacturers for advice
16. Some accessories are fitted with small screws and have plastic bags. Ensure these do not come into the possession of vulnerable patients who might choke on them
17. Any sensor over the mattress (Bed Vacation or Incontinence) has the potential to cause pressure sores . The carer must assess this risk and monitor the use of these products
18. Any sensor over the mattress could pose a fire hazard if in contact with a smouldering cigarette.

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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Contents	
DISPLAY & CONTROLS.....	2
Overview.....	2
POWER Control.....	3
MONITOR SCREEN.....	3
LINE1: MONITOR ACTIVITY.....	3
LINE2: STATUS INFORMATION.....	3
ALARM ACTIVATING & RESET.....	3
SNOOZE.....	3
Radio Transmitter option (P139Bxx).....	4
Alarm Receiver Option (P139xxB).....	4
MONITOR FUNCTIONS AND DETECTION OF SYMPTOMS AND CONDITIONS.....	4
SHALLOW BODY MOVEMENTS.....	4
Bed Movement Sensor Installation.....	4
SHALLOW MOVEMENT MINIMUM.....	5
SHALLOW MOVEMENT DELAY.....	5
SHALLOW MOVEMENT MAXIMUM ALARM.....	5
SHALLOW MOVEMENT ADJUSTMENT.....	5
RESET and SUSPEND SHALLOW MOVEMENT MONITORING.....	6
SHALLOW MOVEMENT MAGNIFICATION.....	6
ROUTINE TESTING SHALLOW MOVEMENT DETECTION.....	6
BODY SPASM MOVEMENT MONITORING.....	6
SPASM ALARM.....	6
SPASM DELAY.....	6
SPASM RATE SETTING.....	7
RESET SPASM MOVEMENT MONITORING.....	7
SPASM MAGNIFICATION SETTING.....	7
ROUTINE TESTING OF SPASM MONITORING.....	7
TRANSIENT SOUND ALARM.....	7
SOUND DELAY TIME.....	8
SOUND MAGNIFICATION.....	8
SOUND RATE.....	8
RESET SOUND MONITORING.....	8
ROUTINE TESTING OF SOUND MONITORING.....	8
MOISTURE ALARM (A PATIENT CONNECTED SENSOR).....	8
MOISTURE SENSOR FAULT DETECTION.....	9
MOISTURE CONDUCTIVITY SETTING.....	9
BED OCCUPANCY.....	9
SENSOR CONNECTION.....	9
OPERATION OF ALARM.....	10
BED OCCUPANCY ALARM SETTING.....	10
RESET AND SUSPENDING THE BED VACATION MONITORING.....	10
EXTERNAL ALARM.....	10
AUTO-TESTING OF SENSORS.....	10
REMOTE RESET.....	10
RECALL DEFAULT.....	10
MAINTENANCE.....	11
ALARM OUTPUT SOCKET.....	11
BATTERY.....	11
INSTRUCTIONS FOR HIDDEN SETTINGS.....	12
HIDING OR DISPLAY OF MENU ITEMS.....	13
ADDITIONAL CONTROL SETTINGS.....	13
POWER OFF FUNC.....	13
MAX/MIN DISPLAY.....	13
AUDIBLE ALARM.....	13
RED ALARM LIGHT.....	13
MONITOR IDENTIFICATION NUMBER.....	13
SITE IDENTIFICATION NUMBER.....	13
ALARM OUTPUT.....	14
SETTING ALARMS AS LATCHING OR AUTO RESETTING.....	14
REMOTE RESET.....	14
SAVING OF DEFAULT SETTINGS.....	14
EXIT HIDDEN MENU.....	14
SUPPORT.....	20

## Quick Start Guide

The P139 is a complex device with the ability to monitor many sensors associated with distressing conditions that can occur in bed. It is especially aimed at supporting the care of those with Epilepsy and SUDEP. The alarm can then trigger an Alert-iT Safelink Pager or Nurse Call/Telecare systems.

This handbook and associated Quickstarts, are intended to assist in adjusting the many alarm parameters to suit the specific user. The adjustments must therefore be made by someone with skills similar to programming a mobile phone and who is familiar with the users needs and competent to decide what additional safeguards will be needed, in the light of the health risks involved. The manufacture offers a free telephone helpline and a range of information sheets to assist (see page [20](#)).

It is ESSENTIAL to adopt a methodical approach to setting each set of parameters, or the user will soon become confused as to which sensor is giving alarms or false alarms. Unless otherwise informed the unit will have been shipped with all alarms other than gross bed movement turned off and the internal audible sounder disabled. This will enable the user to gradually introduce one sensor at a time and not be confused by false alarms as each setting is tested. Once all the parameters are proved to be working as required, then the audible alarm can be enabled if required (see Hidden Menu).

For protection against inappropriate or accidental parameter changes, all settings can be locked in a hidden menu.

Unless there is specific pressing needs, then the following order for setting the sensor parameters is recommended. After enabling a sensor, then it is recommended that the sensor is used for a few days to establish the optimum setting that has few false alarms while giving the required security, before proceeding with more sensors.

- Bed Movement
- Shallow Movement (Min=0)
- Bed Occupancy
- Moisture (wetting or vomit)
- Sound
- Shallow Movement (Max-Min) based on learning mode settings

Finally remember there are a set of DEFAULT parameters stored in the unit. If you get into difficulty these can easily be recalled to establish a known good working state. Once the changes have proven to be successful, then these new defaults can be saved within the Hidden Menu system.

On page [18](#) you will find a useful chart that lists all the menu items in order, with space to write the optimum settings found by the user.

### Hint for Getting Started

- To start the process, press the top right “Menu” key for 3 seconds to switch the unit on.
- Wait for the “Monitoring” screen. The P139 will return to this screen if no keys are pressed for 30 seconds. The “bar” display indicates the state of the battery charge. Ensure the charger is plugged in if only one bar is displayed, as the next stage will be that the unit will automatically power down.
- Press the MENU key again, and all the available settings will be displayed in rotation, starting with the Power Off capability.
- In general the RIGHT arrow key will turn-on and increase the displayed parameter, while the LEFT key will decrease and eventually turn off the parameter.
- The UP key will scroll back through the menu system, stopping at the “Monitoring Screen”. It also acts to RESET any alarms that are active.

Refer to the main book section for hints on how best to begin setting each parameter., which will appear in a frame like



Look out for this “hint” frame throughout the handbook

# P139 GUARDIAN MONITOR INSTRUCTIONS

## IMPORTANT

Please read these instructions carefully before using the equipment and keep readily available for reference purposes.

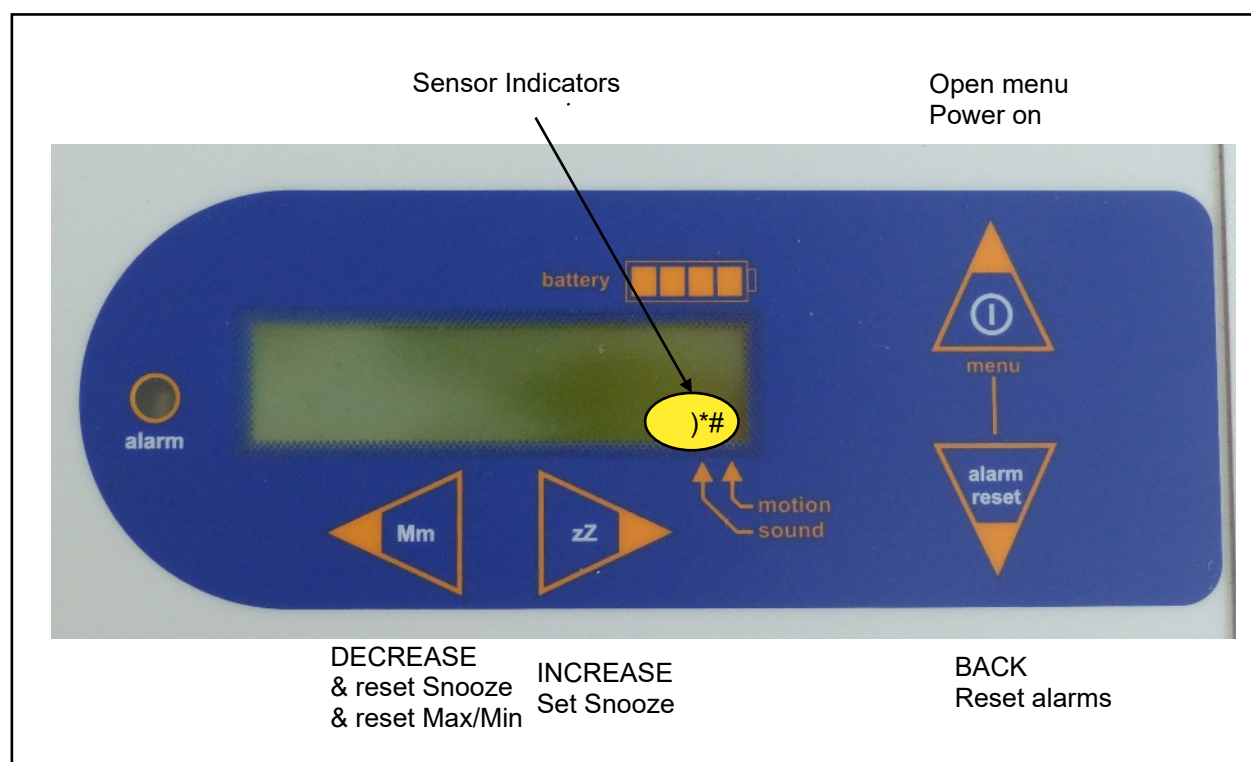
It is not intended for this equipment to be used in diagnosis of medical conditions or for the measurement of any physiological processes. If the user is considered to be at high risk it should not be used without medical advice and support.

The equipment can, when used correctly and in accordance with the instructions, be used to give warnings of symptoms that may be related to particular conditions. The equipment, for a number of reasons, cannot be guaranteed detect the symptoms being monitored and is not a substitute for direct supervision.

If there is ever any cause for concern with the performance of the equipment the supplier should be contacted.

## DISPLAY & CONTROLS

### Overview



A liquid crystal display screen with back lighting and a touch sensitive keypad is provided in order to indicate and adjust, as required, the functions and the status of the system.

In the event of an alarm condition a highly visible red alarm light will flash on the top of the monitor (through this can be disabled if it cause a nuisance) There are a number of screen displays, which provide details of each function and allow adjustment of the various settings. Pressing the 'menu' button advances the screen display in sequence and the settings can be adjusted by pressing the 'INCREASE' or 'DECREASE' buttons. By pressing the 'menu' button repeatedly, the screen displays can be scrolled in sequence until the one required is observed. BACK reverses the menu scrolling, stopping at the "Monitoring" screen, it also functions as the 'ALARM RESET' button when an alarm condition is active.

The 'menu' button has the additional functions of a 'POWER ON' switch when the monitor is turned off. Continuously pressing a button has the same effect as repeated pressing.

If no buttons are pressed for longer than 30 seconds and no alarms have been activated the backlight turns off and the screen will show the normal "monitoring" display.

When sound or motion is detected this is indicated by display symbols on the screen situated above the sound and motion arrows. This facilitates testing and validating the monitor.

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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### **POWER Control**

The monitor has an internal battery designed to maintain full operation during mains failure. It is charged by a mains adapter which should be mounted in a well ventilated area. To isolate the monitor remove the charger connection.

Press and hold the 'POWER ON' button for 3 seconds to switch on the monitor. A start-up display will indicate the model number and software issue, as well as the monitor identification and site identification numbers for the radio version. After approximately 5 seconds the normal monitoring display will be observed on the screen.

*If an alarm is activated, the screen will indicate the relevant alarm message and override the monitoring display.*

To turn off the monitor press the 'menu' button until the "Power screen" is visible (one press from the normal monitor screen). Press the DECREASE < button once turn-off the unit (note this functions can be disabled in the HIDDEN menu). Power Off results in the Alarm OFF message (Fault 29) being sent as a warning that the monitor is off. If this is an acceptable condition then the pager indication can be removed with the RESET ALL function, by disabling FAULT warnings in the pager FUNCTION menu. After this RF Fail messages can be expected on the pager as the unit is no longer transmitting its heartbeat signal (which can be silent) or the monitor can be temporarily deactivated in the pager

### **MONITOR SCREEN**

Alarm monitoring is ONLY active when this screen is displayed. If no key is pressed for 30 seconds in any of the other "menu" screens, then the monitor will revert to this screen and alarm monitoring will commence.

The backlight automatically extinguishes after 30 seconds so not to disturb users at night. Pressing the BACK button will re-illuminate the screen without affecting the monitoring readings

#### **LINE1: MONITOR ACTIVITY**

With no alarms active the screen will show:

ALARMS OFF! This warns that no sensors have actually been enabled

ACTIVE: The normal state when the monitor is sensing for a condition

=zZ following ACTIVE shows the Snooze feature is enabled and can be activated

SUSPENDED: Followed by s (shallow movement & sound), m(moisture), b (bed vacation) shows which sensors are temporarily suspended , until normal activity is again detected.

#### **LINE2: STATUS INFORMATION**

There are three different modes of presentation on this line:

In the basic monitoring condition the shallow movement rate will be displayed in movements per minute

Or If the Max/Min Shallow Movement Recorder is enabled (in HIDDEN menu) this will show instead.

Following this, if a Bed Occupancy Sensor is fitted, the word VACANT or In Bed will appear when appropriate.

However:

If SNOOZE is active then the time countdown will be displayed instead of all the above

### **ALARM ACTIVATING & RESET**

When an alarm is activated the cause appears on line 1 of the screen with a minute/seconds counter on line 2 showing how long the alarm has been active. Any active alarm condition can be reset immediately by pressing the 'ALARM RESET' button so that the message "ALARM RESET" is displayed. After a period of 3 seconds the display screen will return to the Monitoring Screen, providing that no further alarm conditions are activated.

Many of the alarms can be individually configured to be latching or automatically resetting. When an alarm is configured as latching, then once activated the alarm will continue until it is manually reset by pressing the 'ALARM RESET' button. When an alarm is configured as auto resetting, the alarm will automatically cancel as soon as the conditions causing the alarm have reverted to normal., though the screen will continue to show that the alarm was activated for 60 seconds. The configuration of the alarms as latching or auto resetting is made with the Hidden Settings screens. It is our practice to set all the alarms as LATCHING on radio versions to ensure the carer has to attend to the user and there is no uncertainty as to the cause of the alarm. For the wired versions, which are usually connected to Nurse Call or Telecare, we set all the alarms as non-latching so that the carer only has one RESET point, that being the Nurse Call point.

### **SNOOZE**

There may be short times when it is desirable to have the Bed Movement alarms temporarily disabled. This is particularly useful if the user is restless for a period after going to bed, there is a need to use the bed for a caring activity or the user wants some privacy for a while. From the Monitoring screen pressing the RIGHT INCREASE button (as indicated by >=Zz) will show a time increasing in 5 minute steps. This will count down to zero, at which point the alarm monitor will recommence. Pressing the DECREASE button at any time will cancel the snooze period.

### Radio Transmitter option (P139Bxx)

Model P139B includes a transmitter module, which will pass an alarm condition to a remote P137 or P168 Pager. Any alarm indication that causes the red light on the P139 to flash will also cause an Alarm to be indicated on the Pager. Resetting the alarm at the P139 will also reset the Pager.

The radio transmission is “failsafe” in that if a regular heartbeat signal is not received, then the Pager will indicate that the RF link has failed (and hence the user may be at risk). This should be remedied immediately. Please see the Pager handbook for fault finding suggestions.

The communication address for this option is the ID Number displayed on the front panel, which can be adjusted from 1-64 within the hidden menu.

### Alarm Receiver Option (P139xxB)

Models without a radio transmitter can house a P155 radio receiver unit that can be triggered by any compatible Alert-iT Care Alarm. In particular this has application for monitoring day-time falling, where the client wears a radio linked Fall detection badge (eg P135). Should the detector be activated then a radio communicated alarm will trigger the P139 to display “External Alarm”, and pass the alarm to any connected equipment (eg Nurse Call). For details how to pair the receiver with alarm units please see the P155 handbook (UH1093). The EXTERNAL ALARM is always non-latching by default, as it assumes the external equipment will control the reset condition.

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## MONITOR FUNCTIONS AND DETECTION OF SYMPTOMS AND CONDITIONS

### SHALLOW BODY MOVEMENTS

*This function can be used when the movement Sensor Plate is plugged into the yellow socket marked “movement sensor” on the rear of the monitor.*



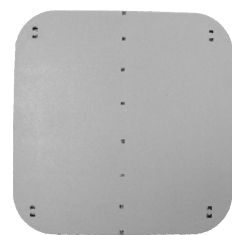
• The detection of TONIC seizures or SUDEP cannot be guaranteed with precision. The monitoring of shallow bed movements is a powerful tool in supporting users vulnerable to these conditions but may need to be supplemented depending on the health risks involved. The carer must make this risk assessment and the manufacture should be contacted for further advice as necessary

The Sensor Plate can detect normal slow body movements which are associated with general muscle, diaphragm, stomach or heart activity. While the monitor ignores most low-level vibrations, care must be taken to ensure that the cot / bed being monitored is not subjected to continuous vibration, as this could delay or prevent activation of the alarm. This point can usually be covered via the Confidence Check procedure described later.

A “learn mode” is used to establish the normal shallow movement activity from which a Max and Min alarm condition can be set, which may help to warn of the onset of a TONIC condition. It is also possible to send an alarm if all movement ceases for a set period, as may indicate a SUDEP condition

#### Bed Movement Sensor Installation

The Sensor Plate with the label side uppermost should be placed on a firm, flat surface **UNDERNEATH** the mattress so that it will be located centrally under the area of the abdomen of the user. If the surface below the mattress is not firm or flat, the Sensor Plate should be supported by placing it on a piece of non-resilient board. Ideally the board should be made to cover the area under mattress and be made of a material such as plywood of at least 2 mm (1/8”) thickness. The cable from the Sensor Plate should be located so that it will not be liable to damage or present a hazard to the user. Ensure that thick bedclothes are not tucked under the edges of the mattress which might lift the underside of the mattress away from the Sensor Plate.



P140 Bed Movement Sensor Mount with side shown uppermost for best sensitivity



- The Sensor Plate should not be used in a moving pram, vehicle or in a rocking cot/crib.
- Draughts blowing over the bed/cot/crib may be detected by the Sensor Plate as shallow movements. This would delay or prevent activation of the alarm. The use of fans directed towards the bed/cot/crib should be avoided.
- The movement alarm will not necessarily detect early stages of choking as the rapid body movement and strengthened heart rate may be interpreted as acceptable shallow movements
- The use of this monitor alone for detecting SUDEP is not recommended



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## P139 GUARDIAN MONITOR INSTRUCTIONS

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### **SHALLOW MOVEMENT MINIMUM**

If the movement rate falls below this setting the monitor display will show the alarm message "SHALLOW MIN".and the alarm output will be activated. The setting ranges from OFF to 10 mpm (movements per minute)

The movement rate is usually averaged over a minute, but as an additional precaution zero movement detection is ONLY delayed by the Shallow Movement Delay, which should be set to avoid false alarms during apnoea type events (30 seconds is recommended)

See SHALLOW MOVEMENT ADJUSTMENT below on how to set the optimum value.

### **SHALLOW MOVEMENT DELAY**

This sets the time after which an alarm (SHALLOW MOVEMENT) is raised when all shallow movement ceases. The value is set to avoid false alarms if the user exhibits periods on excessive stillness normally (eg in sleep apnoea), but fast enough to protect the user should a serious life threatening condition occur. If the user is know to be susceptible to this condition then the carer is responsible for assessing the risks of using this monitor and determining any additional surveillance necessary

### **SHALLOW MOVEMENT MAXIMUM ALARM**

If the movement rate rises above this setting, the monitor will show the message "SHALLOW MAX", and the alarm output will be activated. The setting ranges from OFF to between 20 and 30 mpm.. WARNING: Very fast panting (faster than 2 seconds) will be ignored as this conflicts with heart beats under stress and may therefore compromise fast detection of SUDEP. However continuous activity at this rate will result in Shallow Movement Alarm instead due to the lack of signal.

See SHALLOW MOVEMENT ADJUSTMENT below on how to set the optimum value.

### **SHALLOW MOVEMENT ADJUSTMENT**

The normal sleeping pattern of a user will lead to great variability in the normal shallow movement pattern. The Guardian Monitor has a built-in MAX/min movement recorder to help assess the optimum settings.

- In the HIDDEN MENU (see later) the MAX/min DISPLAY function is enabled.
- The Monitoring screen (when no alarm is active) will then display the Maximum and Minimum recorded values at the start of the second line.
- The carer resets these to a nominal value of 15 at the start of the recording period by pressing the DECREASE (<) button.
- At the end of the recording period the values are noted and used to judge the best limits for the SHALLOW alarms.

#### Hints on setting Shallow Movement Monitoring

1. Using the TICK function is very useful to hear the movement sensor working.
2. Set the Shallow Magnification at 4 and with no user in the bed and no one touching the bed, check the small x symbol does NOT appear on the screen. Decrease the magnification if necessary to stop any sensor activity.
3. With the user or someone of similar weight lying on the bed check that the small x symbol appears regularly on the screen (particularly with each breath). Increase the Magnification if not, then recheck the x stops with no-one in the bed.
4. If SUDEP is of concern then set the Shallow Delay to 30 seconds and Shallow Min to 0. In this case also perform a risk assessment to ensure an appropriate range of monitoring is used
5. On the first few nights do not use the Shallow Alarm Max/Min alarms but enable the "MAX/min Display" recorder function in the hidden menu to detect the suitable settings
6. Once the user is sleeping press the DECREASE button (<) to reset & start the recorder
7. In the morning and before the user is awake, note the Max/Min readings and use these to set the alarm values with a margin to prevent false alarms.
8. Validate operation during observed seizures and adjust the magnification and detection limits as required. The manufacturer can be contacted for advice as required

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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### **RESET and SUSPEND SHALLOW MOVEMENT MONITORING**

If the alarm is active and latched (eg on radio units), then press RESET to clear the alarm. The monitoring will then be suspended until 10 movements are detected (indicating the user safely in bed) or the Bed Occupancy signal is present. This allows the monitor to remain dormant in the day, and automatically revert to monitoring at night or whenever the bed is occupied.

For non-latched (eg Nurse Call) units, the alarm will automatically clear once movement is again detected. Alternatively press RESET to suspend the monitoring.

Using the Bed Vacant signal provides a secure automatic way to prevent false alarms when no-one is in the bed, though a risk assessment is essential as it will inhibit alarms if the person falls out of bed or moves off the occupancy sensor mat (eg in a double bed).

The monitor must be checked that it has returned to ACTIVE once the occupant has settled back in bed

Using the suspend function is preferable to turning the unit off as there is no chance of the user returning to bed unprotected (bar equipment failure).

### **SHALLOW MOVEMENT MAGNIFICATION**

To allow for different thickness, structure and composition of mattresses and the depth and degree of the user's movements, the monitor has an adjustable threshold setting.

- To help set this an audible "tick" can be enabled to sound each time a shallow movement is detected. Hence set TICK VOLUME to 8 (full volume) and have the user or a suitable subject lie as still as possible on the bed.
- Any Bed Occupancy Sensor should be disconnected for this test.
- The SHALLOW MAGNIFY is then increased until a regular series of ticks is heard, at least as often as any chest motion is observed.
- The bed should then be vacated and the ticking should cease, to check that room vibrations or air currents do not cause unwanted activation of the movement detection function. Should this occur then the MAGNIFICATION must be reduced and the above tests repeated.
- After successful setting, turn off the TICK facility.

### **ROUTINE TESTING SHALLOW MOVEMENT DETECTION**

The Monitor should be tested on a regular basis. The confidence check establishes that the shallow movement alarm is operating correctly. For test purposes the bed should be empty. Push the mattress gently and rhythmically and note that a \* symbol appears in the bottom right of the display. Check this does not appear when there is no movement applied.

### **BODY SPASM MOVEMENT MONITORING**

The spasm movement monitoring function of the monitor uses the bed movement sensor. For details see Bed Movement Sensor Installation ([Page4](#))

When the Monitor has detected a spasm movement of sufficient intensity, a '#' symbol will flash on the screen above the motion arrow in time with each movement.

### **SPASM ALARM**

The seizure alarm is activated when movements are detected which are greater than a pre-set energy level and faster than a pre-set frequency, as well as lasting for at least a pre-set period. The monitor will then display the message "SPASM MOVEMENT ALARM", and the alarm output activated.

### **SPASM DELAY**

This setting adjusts the minimum period that movements need to persist before the alarm is activated. The period is adjustable between 5 and 60 seconds or, alternatively, the spasm alarm feature can be switched off. This can be done by pressing the 'menu' button until the screen "SPASM DELAY" is observed. Press the 'INCREASE' button to turn the seizure alarm function on and increase the setting. Press the 'DECREASE' button to decrease the time setting. Decreasing the time below 5 seconds will turn off the seizure alarm function.

If the time delay is set for too short a period, this will give an early warning of body movements, which may not necessarily be seizure movements, and is more likely to cause false alarms. If the time delay setting is increased this should reduce the probability of false alarms, but may not detect spasm movements of short duration. Some prior knowledge of the nature of the user's seizure patterns is desirable to make a suitable choice of the time delay setting. The monitor will normally be provided with a pre-set time delay of about 15 seconds for general use and may not need to be changed, unless a more suitable specific setting can be selected based on experience with the user.

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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To adjust the setting, press the 'menu' button until the "SPASM MAGNIFY" display is observed. Press the 'DECREASE' button for higher energy movements and to decrease the detection gain. Press the 'INCREASE' button to increase the gain for detection of low energy movements.

### **SPASM RATE SETTING**

This adjustment can assist in distinguishing between the movements associated with normal body activity and rhythmic spasms. The spasm rate setting can be adjusted between 1 and 4 seconds between each spasm. This adjustment is intended to prevent the alarm from being activated by slow, repetitive movements, which are not typical of a seizure.

To adjust the spasm rate setting, press the 'menu' button until the "SPASM RATE" display is observed. Press the 'INCREASE' button to increase the frequency limit (so that more rapid spasm movements are required to activate an alarm condition). To reduce the rate limit press the 'DECREASE' button (This will allow detection of seizures with both rapid and slow movements).

*Setting the spasm rate limit to a low value may cause alarm activation with other normal movements and cause false alarms. By setting the spasm rate limit too high the probability of false alarms will be reduced but a seizure may possibly remain undetected. If in doubt initially set the rate limit to a high value and gradually decrease this, as necessary, in order to eliminate false alarms*

#### Hints on setting SPASM detection

1. Turn off all other alarm sensors and use only the Spasm Detection.
2. Use the following settings as a start.  
Spasm Delay 15 seconds  
Spasm Rate 3 seconds between spasms (or faster)
3. You will note this means the system will require a minimum of 5 spasms to trigger the alarm, which is acceptable.
4. Set the Spasm Magnification at mid point (4), and test the # appears when the bed is pressed, but with less movement than the seizure produces. If not, then check the connection and position of the sensor plate. Then increase the Magnification until reliable detection occurs. This test SHOULD be conducted every evening
5. Ensure the # symbol does NOT appear regularly on the screen while the user is lying still or asleep normally. If it does then the magnification will need to be reduced.
7. If the system is failing to detect, then please note if the # symbol is flashing on the display while the seizure is in progress. If not, then the Magnification must be too low or the pad position is poor.

### **RESET SPASM MOVEMENT MONITORING**

If the alarm is active and latched (eg on radio units), then press RESET to clear the alarm.  
For non-latched (eg Nurse Call) units, the alarm will automatically clear once gross movement ceases.  
The Spasm Monitor cannot be suspended as it will not false alarm when no-one is in the bed

### **SPASM MAGNIFICATION SETTING**

The body movement energy level which can be detected is adjustable in 8 steps. Setting the spasm magnification at a high level will allow minor movements to be detected, at a low level the movements would need to be more energetic in order to be detected.

#### ***Routine Testing of Spasm Monitoring***

Check the operation of the spasm alarm by repeatedly pressing on the mattress to simulate body spasm movements, and observe the # symbol appears with each press..

### **TRANSIENT SOUND ALARM**

This alarm is designed to respond only to transient or non-continuous sounds in order to eliminate detection of background noises such as from radio, TV or talking. The monitor uses a microphone located in the top of the enclosure to detect sounds. The monitor will respond best when situated close to the source of sound but the exact positioning is not critical because the microphone is equally sensitive in all directions. An optional external microphone can be used (P158) in difficult situations to better target the sound source.

When the monitor has detected a sound, an bracket symbol ( ) will flash in time with each sound on the display screen above the sound arrow indicator.

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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The transient sound alarm is activated when a sequence of transient sounds above a pre-set sound level occur within a pre-set time period. The sequence must repeat faster than a present frequency. The transient sound alarm can be set to respond for example to a baby crying, as well as personal vocalisations during a seizure or to someone calling for help. It is particularly designed to mirror the detection pattern used for Seizure Monitoring.

When the monitor detects sounds, which meet the set criteria, the monitor will display the message "TRANSIENT SOUND ALARM", and the alarm output will be activated

### **SOUND DELAY TIME**

The transient sound alarm requires the sounds to continue for a set time period. The time period commences with the first sound and continues for the pre-set time. This period can be set between 5 and 60 seconds in 5-second steps.

To adjust the sound monitoring period or turn the sound alarm function on or off, press the 'menu' button until the "SOUND DELAY" display is observed. Press the 'INCREASE' button to turn the sound alarm function on and increase the setting. Press the 'DECREASE' button to decrease the time setting. Decreasing the time below 5 seconds will turn off the sound alarm function.

### **SOUND MAGNIFICATION**

The sensitivity to sound can be adjusted with this setting. This can be set in 8 steps .

To adjust this setting press the 'menu' button until the "SOUND MAGNIFY" display is observed. Press the 'DECREASE' button to decrease the gain (for louder sound) or press the 'INCREASE' button to increase the gain (to detect quieter sounds).

### **SOUND RATE**

To activate the alarm, the sound bursts must occur faster than the rate set.

To adjust the rate, press the 'menu' button until the "SOUND RATE" display is observed. Press the 'INCREASE' button to increase the rate or press the 'DECREASE' button to decrease the rate.

#### Hints on setting SOUND detection

1. With the user is sleeping normally in the bed, set the sound magnification to maximum and observe the occurrence of the "(" symbol on the display. It is reasonable that this may appear occasionally due to some outside noise, but if it appears regularly (so that it would trigger an alarm) then decrease the magnification until it stops).
2. Set the alarm conditions to  
Sound Delay 10 seconds  
Sound Rate 3 seconds between sound bursts or faster
3. If the system fails to detect seizure please observe if the "(" symbol is being displayed with the sounds made by the user during a seizure, and raise the magnification if not.
4. If the system is prone to false alarms then try decreasing the magnification. If this leads to failure to detect then reset the magnification and increase the Sound Rate. Finally you may try increasing the time delay to 15 seconds .

### **RESET SOUND MONITORING**

If the alarm is active and latched (eg on radio units), then press RESET to clear the alarm.

For non-latched (eg Nurse Call) units, the alarm will automatically clear once the sound ceases.

The allow for daytime suspending of the alarm, the SOUND monitoring is only active when Bed Occupancy is assured, by either the Shallow Movement monitor being active (indicating by movement that there is someone in the bed to monitor) or the Bed Occupancy sensor has been activated

### **Routine Testing of Sound Monitoring**

Tap the unit or click fingers to stimulate a sharp sound and note the ) symbol appears

### **MOISTURE ALARM (A Patient Connected Sensor)**

This is used to detect excessive perspiration or bed wetting with urine or, with a sensor sheet over the pillow, saliva or vomit, All can be a consequence of an epileptic seizure.

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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This function of the system can be used when the lead of the moisture detection sheet is plugged into the blue socket marked "Moisture" at the rear of the monitor. The monitor has special isolation circuitry built in to ensure safety of the user in all foreseeable circumstances. The standard provision is a two connector lead, with the leads connecting two adjacent outside studs (ie NOT the two inside studs). There is an optional 4 press-studs cable which not only allows moisture detection but also warns of a sensor failure. However this gives permanent FAULT alarms while the sheet is removed for laundering.

The alarm is activated when the sensor sheet becomes moistened with fluid of sufficient electrical conductivity. The message "MOISTURE ALARM" will be displayed and the alarm output activated

The alarm will only cancel if the moisture detection sheet dries, is removed or is replaced with a clean dry one.

### **Moisture sensor fault detection**

For the normal 2 connector cable the sheet is tested after fitting by connecting the two spare studs together with a metal object (e.g. spoon or key). This should cause a Moisture Alarm condition.

If the 4 connector cable is used then automatic fault detecting can be set in the Hidden Menu. If the moisture detection function is active and the sensor is not connected to the monitor or a wire broken in the sheet, then the message "MOISTURE SENSOR FAULT" will be displayed, and an alarm output is activated. The alarm is reset when the sheet is correctly connected, but can be suspended by pressing RESET (and SUSPENDED m will be displayed). The normal monitoring will resume as soon as a functional sensor sheet is connected to all 4 connectors.

### **MOISTURE CONDUCTIVITY SETTING**

The sensitivity to the conductivity of the liquid required to trigger the alarm can be adjusted in 5 steps from that for moist to wet. Using the least conductive setting will cause the monitor to produce alarms with most liquids, including perspiration. Setting the conductivity higher will make the monitor more selective, and will only produce alarms with more liquid.

To adjust the conductivity setting, press the 'menu' button until the 'MOISTURE' display is observed. Press the 'INCREASE' button to turn the body moisture alarm function on and increase the setting. Press the 'DECREASE' button to decrease the conductivity setting. Continuing to decrease the setting will turn off the moisture alarm function.

Hints on setting Wetting detection (either Bed or Pillow)

1. Install the sensor pad in the bed on top of any waterproof mattress or pillow protection but under and comfort sheet and connect.
2. Enable the alarm with the lowest sensitivity. Please note that if the sensor pad is automatically tested for damage and a "Sensor Failure" will show if a wire is broken or the plug not inserted correctly.
3. If the system fails to detect, then note if the pad has been penetrated by moisture and reposition if necessary.
4. If the system is too sensitive (eg to dribbling or just slight wetting), then set the sensitivity accordingly.

### **BED OCCUPANCY**

This function can be used to provide a remote alarm after a preset period when the bed is vacated. It can be set to allow the user to leave the bed for a given time but generate an alarm if they have not returned within a preset time limit. The time period between the bed being vacated and the bed occupancy alarm activating can be set between 5 seconds and 24 hours. This feature will also stop nuisance alarms from the Shallow Movement and Sound sensors, whilst the bed is vacant. However to ensure failure of the mat does not permanently inhibit these alarms, a bed vacation alarm will always happen at least after 24 hours (the maximum time delay possible). Shorter times MUST be used if the user could fall from bed or move off the mat and thus inhibit the shallow movement or sound detection.

This function is enabled in the Hidden Menu and allows for two possible sensor types, Bed Sensor or Dynamic

### **Sensor Connection**

There are currently 4 types of device that can be used.

1. **Bed Leg** sensor platform for location under a bed leg  
This adjustable device detects the change in weight of a bed when it is vacated. It acts as a normally closed switch when adjusted for an occupied bed.
2. **P143C Pressure sensitive mat** for use in the bed under the user  
In general the mat must be installed on top of the mattress, which should be firm. The mat is waterproof and easily wiped clean in the event of soiling. The mat will act as a normally closed switch for an occupied bed.

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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### **Operation of Alarm**

When the bed is vacated, thereby releasing the pressure, the shallow movement sensing is frozen to prevent any alarm from being activated. This enables a user to leave the bed temporarily without setting off alarms unnecessarily. The vacation is indicated on the normal display screen with the word "Vacant".

When the bed is re-occupied and the pressure sensitive switch is activated the shallow movement function will resume after a short time. The occupation is indicated on the normal display screen with the word "In Bed".

If a time has been set for the bed occupancy alarm feature an alarm will be generated after the set time period, the monitor will display the message "BED OCCUPANCY ALARM", and the alarm output will be activated.

### **Bed Occupancy Alarm Setting**

To adjust the bed occupancy alarm delay setting, press the 'menu' button until the "BED OCCUPANCY" display is observed. Press the 'INCREASE' button to increase the delay period. Press the 'DECREASE' button to decrease the delay period, or turn the sensor OFF

#### Hints on use of Bed Occupancy Sensor

- 1 If the user is known to leave the bed at night, or if the shallow movement false alarms indicate this is happening, then install the bed occupancy sensor. With the bed vacant the display should show the word VACANT. Check that this word is not present when the user is in bed and sleeping normally.
- 2 If the user is known to risk collapsing out of bed then there is the ability to raise the alarm on extended vacation.

### **Reset and Suspending the Bed Vacation Monitoring**

If the alarm is active and latched (eg on radio units), then press RESET to clear the alarm. The monitor will then be suspended (showing SUSPENDED b), until the bed is re-occupied.

For non-latched (eg Nurse Call) units, the alarm will automatically clear once the bed is re-occupied., or it can be suspended by pressing RESET.

### **External Alarm**

This alarm is only available on the P139xxC with the internal alarm receiver unit. This module can be coupled with up to 32 radio linked alarm monitors and if any trigger an alarm there will be:

- A period of 20 seconds while an audible tune is played, allowing the user to reset the source off any false alarm
- Activation of the alarm, with the message EXTERNAL ALARM displayed.
- The alarm is usually reset by resetting the external equipment.

### **Auto-testing of Sensors**

The Guardian MK3 introduces a major capability towards total reliability in monitoring. All the sensor signals are continuously monitored for activity, even if not at a level to stimulate an alarm. If there is no sign of activity in a 24 hour period then a fault alarm is raised as this could mean the sensor or connecting cable has failed. The ONLY way to clear this alarm is to stimulate the sensor in the manner shown in the Client Set-Up Table on page [18](#)

### **Remote Reset**

This feature is available for the Radio (P139B) versions only and is enabled in the Hidden Menu. In essence this stops the Guardian sending Alarm Clear messages to the pager. Instead a separate radio button mounted near to the Guardian sends the clear signal when pressed. This allows the Guardian, with all alarms in "auto-reset" mode, to be discretely mounted under the bed so as to not draw the attention of the client who might damage such equipment. The pager will indicate an alarm condition but can only be reset if the alarm condition has ceased such that the Guardian has self-reset and a member of the care staff has attended the room and pressed the remote reset button. Ask Alert-iT for information about hiding the monitor inside the mattress.

### **Recall Default**

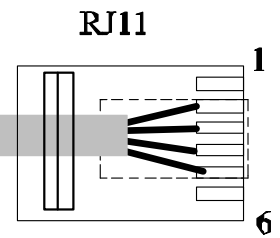
In the "hidden menu" the supervisor can store a complete snapshot of all the settings as "default". Hence should the operator accidentally adjust any setting wrongly, this function will restore this saved default.

## Maintenance

### Alarm Output Socket

The multifunction alarm output socket is usually used to activate Nurse Call or Telecare devices. It also has power available for activating other equipment :

- Pin 3: Normally open contact output (closes for 2-3 seconds on alarm if non-latching mode set)
- Pin 1: Normally closed contact output. (opens 2-3 seconds on alarm if non-latching mode set)
- Pin 2: 12 volt power output (50 mA max.) To special order
- Pin 5: Power zero volt/chassis connection



### BATTERY

An internal rechargeable battery allows the monitor to continue uninterrupted operation in the event of a mains power failure for several days or it allows the monitor to be used for short periods without a mains supply.

#### Battery Level Indication

When the battery status bar indication is static with hollow boxes, then the battery is powering the unit and there is no charger attached (and functioning). The number of bars approximately indicates the battery charge condition as follows:

4 bars: 75 to 100% level (Fully charged)

3 bars: 50 to 75% level

2 bars: 25 to 50% level

1 bar: Up to 25% level (battery needs recharging immediately)

The later situation will be accompanied by short clicks from the audible alarm to ensure the potential danger is recognised.

#### Battery Charging

If possible, the monitor should be connected to the AC adaptor at all times. Prolonged periods of disconnection should be avoided. An inbuilt charger continuously monitors the battery condition. The battery charger has a number of modes of operation to maintain the battery in optimum condition.

**Trickle Charge:** While the monitor is connected to the mains supply via the AC adaptor the battery is trickle charged to maintain the battery voltage, even when the monitor itself is switched off. In this situation the Battery Status bargraph are solid black and static.

**Fast Charge:** If the battery needs charging, for example after a power cut, it will be automatically charged rapidly. This process is indicated by the battery bar graph continuously cycling from 1 through to 4 bars.

**Top up charge:** When the battery is nearly fully charged or when the battery needs charging during normal usage, intermittent charging will occur. This is indicated by intermittent cycling of the indicator from 1, 2, or 3 through to 4 bars.

*Notes: Fast and Top up charging will only occur while the monitor is switched on with the mains adaptor operative.*

**Battery Fault:** If the battery cannot be charged to its full capacity, the bars on the indicator are replaced with question marks '????'. The charging process will continue in an attempt to reinstate the battery condition and, if successful, the display will revert to normal. If the Battery fault indication continues for more than a few days, the battery should be replaced with an identical type available from your supplier.

#### Battery care

The type of battery used is capable of being continuously kept on charge and topped up to full capacity.

#### End of Battery life

The battery will need to be replaced when the battery fault indication persists for several days. This requires advanced maintenance and a special battery pack after opening the case, so please contact the manufacturer.

#### Battery capacity check

Periodically, after about every 12 months of daily use or after an extended period of non-use, the capacity should be checked. This is done by first waiting for the battery to reach the fully charged condition (steady 4 bars while the AC adaptor is connected and switched on), and then disconnecting the AC adaptor and allowing the monitor to operate from the internal battery alone.

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## P139 GUARDIAN MONITOR INSTRUCTIONS

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If, after 24 hours use, the monitor shows 2 bars, or more, the battery has some useful service life remaining. If the monitor fails to operate for the full 24-hour period or the battery charge level has dropped to 1 bar the battery should be replaced.

### **Periods of non-use**

If the monitor is not going to be used for an extended period, ensure that the battery is fully charged before switching off and storing the monitor. Power is disconnected by removing the mains plug. The monitor can be deactivated temporarily in the professional pager to stop RF Fail alarms.

### **Battery Replacement**

**Battery Type: 7.5v 1500mAh NiMH Bespoke Battery Pack available from iTs Designs Ltd**

Note: When the battery is removed and replaced the monitor settings will revert to the default settings that have been pre-programmed. Thus ensure the defaults are safely saved (see HIDDEN menu) before removing the battery. To replace or remove the battery, first switch off the monitor and disconnect the AC adaptor as well as any other connecting leads. Remove the four base screws and open to expose the inner circuit board. Disconnect the battery leads from the main board. Remove the main pcb after removing the 65 retaining screws. Cut the 2 tie clips holding the battery and dispose of the old battery safely. Mount the new battery using 2 new tie clips and refit the circuit board with the 6 retaining screws. Re-connect the 2 battery leads, The base of the monitor can now be refitted .





### **INSTRUCTIONS FOR HIDDEN SETTINGS**

These instructions are normally only used by service personnel or by the technical staff of authorised distributors of this product and allow functions to be tailored to a particular user's specific needs as follows:

- Locking changes to menu items.
- Enabling or disabling of the internal audible alarm
- Radio Identification number setting.
- Site Identification number setting.
- Setting Alarms as latching or auto resetting.
- Saving of default settings.

To gain access to the hidden settings press the 'menu' button until the 'POWER' screen is displayed (one press from normal MONITOR screen) then press and hold the 'INCREASE' button for 10 seconds as shown on the countdown

#### ***Hiding or display of menu Items***

Once you have gained access to the hidden settings the main menu entries for groups of functions can be set to either 'ADJUSTABLE' or 'LOCKED'. (see table below)

Press the 'INCREASE' button to set to 'ADJUSTABLE' or press the 'DECREASE' button to set to 'LOCKED'. Press the 'menu' button to advance down the list. If no buttons are pressed for 30 seconds then the monitor will revert to the normal Monitoring display.

The 'ADJUSTABLE' selection allows full access for adjustment of the settings. The 'LOCKED' selection maintains the current settings but prevents user adjustment.

#### ***Additional Control Settings***

##### ***Power Off Func.***

In some cases it is prudent to prevent the user turning the unit off. This can be done here

##### ***MAX/min Display***

When ON this function shows the maximum and minimum shallow movements that have occurred since starting the recorder. This allows an intelligent assessment of the best settings for the Shallow Maximum and Shallow Minimum alarms, to protect those vulnerable to partial or tonic seizures. The recorder is reset to start a new session by pressing the DECREASE < key.

##### ***Audible Alarm***

The audible alarm within the monitor can be turned on or off. It is usual to turn the 'local' alarm sounder off. In the Hidden Settings menu advance to the 'AUDIBLE ALARM' display with the 'menu' button and press the 'INCREASE' button to turn the alarm on, or the 'DECREASE' button to turn the alarm off.. Note that the sound is not activated for a Non-Latched Sound Alarm, as the sound prevents the Guardian detecting the reset condition.

##### ***Red Alarm Light***

If the front red alarm light is likely to disturb the user, then it can be disabled

##### ***Monitor Identification number***

When the monitor is fitted with a radio transmitter the monitor can be identified with an 'ID' number. This number should be set specifically so that no monitors operating within range of each other have the same number. In an environment where several monitors are in use, such as an institution, the ID could be set to match room numbers. When used with portable pager/ receiver alarms, the ID number can be displayed on the pager to identify the monitor from which the alarm signal has been received. The ID number can be set between 1 and 63.

In the hidden settings menu, advance to the 'MONITOR ID No.' display with the 'menu' button and press the 'INCREASE' button to increase the ID number or press the 'DECREASE' button to decrease the ID number. The ID number will scroll from 1 to 250 and 250 to 1.

##### ***Site Identification number***

For asset management the monitors can be programmed with a 'Site ID' number. The site ID number can be set between 0 and 255.

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## **P139 GUARDIAN MONITOR INSTRUCTIONS**

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In the hidden settings menu, advance to the 'SITE ID NUMBER' display with the 'menu' button and press the 'INCREASE' button to increase the ID number or press the 'DECREASE' button to decrease the ID number. The ID number will scroll from 0 to 255 and 255 to 0.

### ***Alarm Output***

The changeover relay is activated on alarm. It can be set to be activated while the alarm persists (as may benefit its use for a remote buzzer or beacon), or pulse for 2 seconds (usually required for activating a Nurse Call or Telacare interface). This pulsing repeats every 2 minutes while the alarm condition persists to ensure it cannot be over-ridden.

### ***Setting Alarms as latching or auto resetting***

Once you have gained access to the hidden settings the alarms can be set as either 'LATCHING' or 'AUTO RESET'.

Press the 'INCREASE' button to set to 'LATCHING' or press the 'DECREASE' button to set to 'AUTO RESET'. Press the 'menu' button to advance down the list. If no buttons are pressed for 30 seconds then the monitor will revert to the normal display.

When an alarm is set as latching, once activated, the alarm will continue until it is manually reset by pressing the 'ALARM RESET' button. This is the default for radio pager based units as it ensures the carer responds at the room. An alternative radio solution is to use a Remote Rest button (P176AB). In this case the alarms will be AUTO-RESET and the Remote Reset facility enabled (see below). When an alarm is set as auto reset the alarm will automatically cancel as soon as the symptoms causing the alarm condition have stopped. This is also the default for Nurse Call systems as the wall box has to be reset by the carer and the duplicated reset function would cause confusion.

### ***Remote Reset***

This mode has application where the client can be destructive to equipment. The alarms should all be Auto Reset so that the Guardian Monitor can be hidden under the bed. It is also possible to reverse the supplied bracket so that the front panel is protected. With REMOTE RESET active, the Guardian does not send All-Clear on reset, this function is left to an optional Remote button. It does however maintain the Safelink integrity using an Alternative Safelink signal

### ***Saving of default settings***

The default settings are those that are reloaded if the latest settings have been lost. This will occur, for example, if the internal battery is removed and replaced. It is advisable to set the default settings once the monitor has been configured to a particular user's requirements so that, in the event of disruption to the battery power, the settings will not be lost. The USER is also able to reload these settings if, for instance, the sensor parameters have been adjusted wrongly

To save the current settings as the default settings (including all of the user-adjustable settings), enter the Hidden Settings menu and advance to the 'SAVE SETTINGS AS DEFAULT' display by using the 'menu' button. Press the 'INCREASE' button to store the settings. The monitor will turn off and once the settings have been stored the monitor will turn back on in the Monitoring mode.

### ***EXIT HIDDEN MENU***

Select to exit the hidden menu loop and return to normal monitoring screen.

**Cleaning Instructions**

**Cleaning:**

The following is a general guide line based on the components listed . Where a different sensor has been supplied, then please refer to the cleaning instructions supplied with that sensor. A series of techniques are described and the appropriate method is shown in the table on page 3.

**Technique A**

Wetting with strong disinfectant. This can include immersion provided plugs and any obvious breathing holes are avoided.

**Technique B**

Wiping with cotton wool pads moistened (compressed until dripping stops) with a mild detergent (0.5% washing up liquid) solution.

**Technique C**

Wiping with disposable 70% isopropyl alcohol wipes. Ensure that any plugs are completely dry before reinserting into the sensor input socket on the monitor.

**Technique D**

Full immersion in detergent , water and optional disinfectant. See component washing instructions for details

Typical Accessories for use with the P139 Monitor			
	<b>Part Description</b>	<b>Part No</b>	<b>Cleaning</b>
A	Bedside Monitor (Wired)	P139A	C
B	Bedside Monitor (Radio)	P139B	C
C	Bed Movement Sensor	P140A	C
D	Bed Occupancy Mat	P143C	A
E	Bed Occupancy Ribbon	P143G	A
F	Bed Leg Weight Sensor	P144A	B
G	Connecting Lead for H	P141E	B
H	Moisture Sheet	P142A	D
I	Nurse Call lead (many versions available)	P145	B
J	Remote Rest Button	P176B	C
K	Power Supply for A (UK)	P171B	C
L	Pager	P168A	B
M	Power Supply for F*	P153A	C
N	Microphone	P158A	C
O	Wall bracket and protection	P159	A
	* recommended to be used out of patient reach		

- The system is designed for use in an indoor residential environment of 10-30°C and 90% RH max
- When not required, isolate from the mains by removing the power supply plug
- The service life for the monitor is expected to exceed 5 years. Some of the sensors may, however, only be guaranteed for 1 year due to the harsh environment in which they operate (eg Bed Mats where urine contamination is frequent). Hence the carer needs to be vigilant and test the units as prescribed herein to detect deterioration..

The system complies with 93/42/EEC as a Class 1 Medical Device for use in a Home Healthcare environment  
 The system complies with EN60601 for Class 2 Electrical Safety and does not need a protective earth and Group 1 Class B for EMC in a Home Healthcare environment  
 The system has a radio transmitted compliant to EN300-220 operating at 434.075MHz wideband 10mW power (class 8) less than 1% duty cycle (class 2)





Client set-up: Venue/Client Date:

Alarm Setting & Pager Messages							
Function/Menu	Left	Range	Comment	Default	Monitor Screen	Pager	Client
ID Number/Site No			Appears on screen at power up with software version				
On/menu key		menu	Press to scroll menu. Press any key also resets alarms		Active or Suspend		
POWER	off		press to turn off (if enabled)		Blank	Fault 29 or AlarmOff	
Tick Volume	off	1 8	Volume of click on each shallow movement	8			
Shallow Minimum	off	0 10	MPM below which is alarm	OFF	SHALLOW MIN	Urgent 12	
Shallow Delay <sup>1</sup>		10 60	Minimum time for Shallow movement alarm to be detected	30	SHALLOW MOVEMENT	Urgent 11	
Shallow Maximum	off	20 30	MPM above which is alarm	OFF	SHALLOW MAX	Urgent 13	
Shallow Magnify <sup>1</sup>		1 8	Set for optimum movement detection using tick or * symbol	4			
Spasm Delay	off	5 60	Time for spasm to set alarm	15	SPASM MOVEMENT	Urgent 01	
Spasm Magnify <sup>1</sup>		1 8	Set for optimum detection of spasm using # symbol	4			
Spasm Rate <sup>1</sup>		1 4	Seconds between movements: a spasm is assumed if faster	3			
Sound Delay	off	5 60	Time for sound level to set alarm	OFF	TRANSIENT SOUND	Urgent 05	
Sound Magnify <sup>1</sup>		1 8	Sensitivity of microphone	4			
Sounds Rate <sup>1</sup>		1 4	Seconds between sound bursts: a spasm is assumed if faster	3			
Moisture	off	1 5	Fault alarm if sensor open circuit. Covers moist to wet	OFF	MOISTURE	Help 21	
Bed Occupancy	off	5 s 24h	Time allowed for vacancy before alarm. Shallow alarm inhibited.	15 h	BED VACATION	Help 23	
Reload Default			Snapshot saved in "hidden menu"				

<sup>1</sup>Function hidden if alarm off

Other alarms without set-up parameters	
Function	Pager
Turned Off	Fault 29 or AlarmOff
Battery Low	Fault 31 or BatLow
External Alarm	Help 20

Fault	Source	Action to clear /confirm fault
All sensors are monitored for signs of correct operation. If no sign of operation occurs for 24 hours a fault warning is given to force a test of the sensor as shown in the table		
16	Movement Sensor	Tap bed
17	Spasm Sensor	Tap bed
18	Sound Sensor	Clap hands
19	Occupancy Sensor	Sit on bed
21	Moisture sensor	Fit new dry sensor

Unless otherwise agreed, the P139 will be shipped only to create alarms in response to Bed Movement, to prevent the confusion of many alarms activating as soon as the unit is turned on. Any unused sensors will have their menu hidden (see handbook to change this). The other alarm functions can then be enabled one at a time as confidence is gained at each level. The table below shows the recommended default start setting for alarms and the pager indication that will occur. It can be used to record the actual settings used

## P139 GUARDIAN MONITOR INSTRUCTIONS

For protection the various settings can be locked to prevent accidental or unauthorised changes In the hidden menu these are set as LOCKED or ADJUSTABLE using the Left/Right keys.

Other features can be turned ON and OFF

The actual alarm indications can be latched (requiring the rest button to be pressed) or auto-reset when the alarm condition has ceased. The latter is best for wired units connected to Telcare or Nurse Call where the infrastructure latches the alarm call or a carer may not be present to rest the unit. This extends to the actual alarm output relay which will normally be set Auto-reset. In this mode it closes for 2 seconds and then opens to allow the connected equipment to be reset easily. However after 2 minutes the alarm situation is reassessed and the relay re-activated if the danger still exists.

***For P139AA-C0 (Telcare) all alarms are Auto-Reset and not Latching***

Hidden Menu Settings P139BA (Radio) & P139AA-C1 (Nurse Call)			
Function	Comment	Factory Setting	User Setting
Power off	Stops user switch off	on	
Shallow movement	Locked or adjustable	adjustable	
Spasm Movement	Locked or adjustable	adjustable	
Transient Sound	Locked or adjustable	adjustable	
Moisture	Locked or adjustable	adjustable	
Bed Vacation	Locked or adjustable	adjustable	
Snoozing	Allows the user a period without some alarms	on	
max/min	Shows values learned overnight rather than the instant movement rate	on	
audible alarm	Enables internal audible alarm	off	
red alarm light	Enables the red alarm warning light on top	on	
moisture autotest	Using 4 core cable the integrity of the sensor wires can be checked	off	
Occupancy Detect	Future provision for different methods	Bed Sensor	
Monitor ID	Sets the communication address & must be unique for all Guardians in any system	1	
Site ID Number	Not used but for user reference	0	
Spasm Movement	Latching or self resetting when alarm cleared	Latching	
Transient Sound	Latching or self resetting when alarm cleared	Latching	
Shallow movement	Reset normally on external equipment	Latching	
Moisture	Auto-reset = 2 seconds, Latched = continuous	Auto-reset	
Bed Vacation	Latching or self resetting when alarm cleared	Auto-reset	
External Alarm	All settings will be remembered as default and can be restored by the USER	Auto-reset	
Alarm output	Close 2 seconds every 2 minutes while alarm exists	Auto-reset	
Remote Reset	Radio version ONLY. Allows RESET to be a remote button	OFF	
Save as Default	Saves all current settings as the default which can be restored by carers from the main menu		
Exit Hidden Settings	Exit leaving the settings as changed, but without changes to the stored defaults		

## P139 GUARDIAN MONITOR INSTRUCTIONS

This system is certified to the following European Standards	
93/42/EEC	Medical Devices Directive
2014/53/EU	RTT&E Directive (P154Bx only)
2011/65/EU	Permitted Materials (UK)
<sup>1</sup> <i>Alert-it Care Alarms are social aids designed and manufactured in accordance with 93/42/EEC as Class 1 Medical Devices. They are intended to improve the vigilance of carers to distressing side-effects of various diseases, such as Epilepsy and Dementia. They do not monitor vital physiological processes and should not be expected to diagnose any disease or predict the onset of any symptoms.</i>	

### Additional Documents

Quick Start Radio System	UQ1136
Quick Start Wired	UQ1208
Recommended Initial Settings for P139	UT1248
Spare Client Record Set-up Sheet	UH1075C
Epilepsy Support risk calculator	UT1167
Product Selection for Epilepsy Support	UT1166
You tube Instruction Videos Index	UT1198

### Support

HELP: 0845 2179951  
FAX : 0845 2179953  
Support@alert-it.co.uk

Designed by:  
ITs Designs Ltd  
Leicester  
LE9 9FE UK

...using technology to care for carers



None of the components, including batteries should be disposed of as Domestic Waste. For information on disposal contact iTs Designs Ltd.

*The Alert-it system has been designed with due regard to reliability and integrity. While it offers a highly vigilant monitoring method, it is always possible that a distress condition can go undetected for a variety of reasons (including malfunction) and in life threatening situations it is advisable to use the Alert-it system in conjunction with additional monitoring techniques (e.g. video). Neither the manufacturer nor its agent can accept legal responsibility to provide a system that is infallible. The carer is responsible for assessing the risks of using this equipment and any settings pertaining to it.*