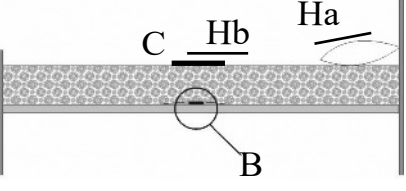




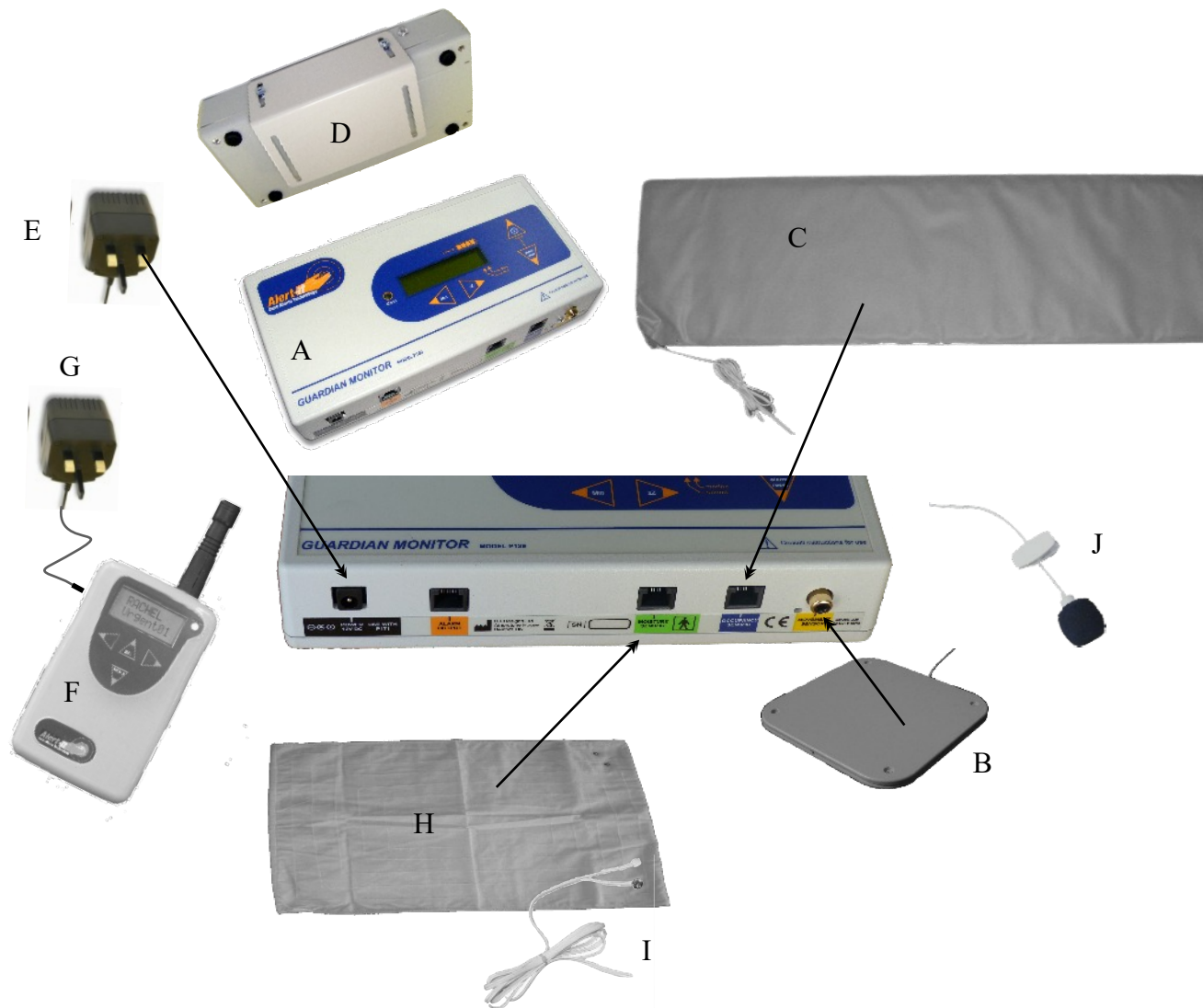


## Quick-start guide for Guardian MK3 Radio linked Bedside Monitor in Professional systems (R1020, R1016)

The P139B is a flexible monitor capable supporting the care of those with Epilepsy by using a range of sensing elements and passing an alarm to a portable Nurse Call Pager. This leaflet is a quick-start guide to installing, testing and using your pre-configured system and it assumes the reader has skills comparable to operating a mobile phone. In addition they need to have sufficient knowledge of the client to make the necessary risk assessment as to the suitability of the equipment to provide a safe environment. We are pleased to offer assistance including a full system check via our telephone helpline, and would urge you to use this service. Should you wish to change any of the operating parameters or modify your system in any way, then detailed handbooks, videos and risk assessment forms are available on request or on-line at [www.alert-it.co.uk/support](http://www.alert-it.co.uk/support)

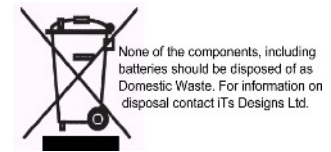
Install the sensing components	Connect to P139 and test	Normal Operation
<p>Install the <b>Bed Movement Sensor (B)</b> underneath the mattress on a firm bed base, in a position below the rib cage. Its task is to monitor the smallest bed movements transmitted through the mattress.</p> 	<p>The system components and connection details are shown overleaf. The actual range of sensors provided will depend on your order requirements</p> <p>Turn on the P39 by pressing the MENU/Power key for 3 seconds. The screen will show the product information and then the ACTIVE or SUSPENDED screen. The P139 has an internal battery which will charge whenever the power supply is plugged in. If the battery becomes discharged then a fault message will be transmitted to the pager.</p> <p>Turn on the <b>Pager</b> by pressing the MENU button for 3 seconds (in the event of no response then charge the battery for at least 5 minutes)</p>  <p><i>These tests must be repeated regularly to check the sensors. The following assumes the sensor is active</i></p>	<p>Remember that most sensors operate with a time delay to reduce false alarms. When a sensor is stimulated the corresponding time delay starts. If the sensor activity stops then the time delay is reset without sending an alarm. If the sensor remains activated the alarm will be transmitted after the delay, and the ALARM light will illuminate (if enabled).</p> <p>The pager will now show the alarm and will normally also sound an appropriate audible alarm (which can be silenced either permanently or for 5 minutes while attending the client). The pager can also be set to vibrate (see setup sheet).</p> <p>Any alarm that is latched can only be cleared at the monitor by pressing the button marked <b>ALARM RESET</b> on the front panel. If this action is taken while the sensor is still detecting an alarm condition (eg while the occupant is out of bed), then the alarm will show “SUSPENDED” and will no longer send alarms until the safe condition is restored (eg occupant back in bed). It is recommended that a check is performed after the client is settled to ensure the unit has returned to ACTIVE.</p> 
<p>For S1016 install the <b>Bed Occupancy Mat (C)</b> on top of the mattress under a suitable cover sheet, in a position that ensures the maximum body weight is lying on the mat, typically below the upper torso. Under the shoulder area is a good place if an alarm is required before the users feet touch the floor.</p>	<p>Follow the test sequence as appropriate: for sensor provided</p> <p><b>Shallow Movement</b> Lie on the bed and note that the breathing symbol (*) appears on the display as you exhale (the tick can also be heard if enabled). The sensitivity (Shallow Magnify) can be adjusted if needed</p> <p><b>Bed Movement</b>.: Tap the mattress and note at each tap that the (#) symbol appears. The force needed for this can be adjusted (Spasm Magnify) to reflect the user’s spasms</p> <p><b>Sound</b>: Make a sharp click near the sensor and note that an “(” symbol appears on the display. The sensitivity (Sound Magnify) can be adjusted</p> <p><b>Bed Occupancy</b>: With the mat plugged in and no-one in the bed the word VACANT should appear. Lie on the bed and In-Bed should appear. The use &amp; delay is adjusted in the menu.</p> <p><b>Moisture</b>.: To manually test, join the two spare sheet connections with a metal object to give an alarm. Optionally a 4 core cable can be used with Auto-test enabled, which will give Sensor Moisture Fault if the wires are broken.</p>	<p><b>A Shallow Movement Alarm</b> will always occur when there is no-one in bed. For this reason it is recommended to disable these Alarms at first while experimenting with using the Guardian. The Bed Vacation or Suspend can be used to prevent this, but only after a full risk assessment of the consequences.</p>
<p>The optional <b>Moisture Sensing</b> mat is connected to it’s connecting lead using press-studs and then placed either over the pillow for vomit detection (Ha) or on top of the mattress (over the Bed Occupancy mat if fitted) in the region of the groin for urination monitoring (Hb).</p> 		<p>In order to reset a <b>moisture alarm</b>, then the cotton sheet must be removed and replaced. The cotton sheet can then be laundered. The monitoring will be suspended until a clean sheet is fitted.</p>
 <p>The sound sensor is built into the case, which should therefore be as close as possible to the client if sound sensing is required. An external microphone (P158) can be used to improve focus. Refer to Alert-iT for details</p>		
<p>Please refer to the Handbook for details on how to tune each sensor for a specific client</p>		

**System components and connection**  
(actual components supplied may vary to order)



Part Description	Part No
A Bedside Monitor	P139B
B Bed Movement Sensor	P140A
C Bed Occupancy Mat (S1016 only)	P143C
D Bracket for wall or bed mounting	P159A
E Power Supply for A (UK)	P171B
F Pager	P138B
G Power Supply for F (Universal)	P153A
H Moisture Sheet (optional purchase)	P142A
I Connecting Lead for H	P141E
J External microphone (optional purchase)	P158A

Full adjustment details are found in handbooks available on:  
**[www.alert-it.co.uk/support/](http://www.alert-it.co.uk/support/)**  
Or by phoning Alert-iT



**Support**  
For technical support please phone or EMail:  
HELP: 01530 239900  
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...using technology to care for carers

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**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	6		
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	2		
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	2		
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	Comment
Turned Off	Fault 29 or AlarmOff	Unit has been turned off (warning)
Battery Low	Fault 31 or BatLow	Connect charger
External Alarm	Help 20	Only on P139xxB with internal radio receiver

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	Fault	Source	Action to clear /confirm fault
	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

## 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 equip-



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.

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)

## Recommended procedure for the introduction of Shallow Movement

*This procedure is the most efficient way to quickly set-up the Guardian to support breathing and other shallow movement sensing. Any other approach is liable to cause a frustratingly large number of false alarms*

- Using the TICK function is very useful to hear the movement sensor working.
- **Setting Magnification:** Set the Shallow Min to 0, Shallow Magnification at 8, Shallow Delay=15 and with no user in the bed and no one touching the bed, check the small x symbol does NOT appear on the screen. Then leave the unit in SUSPEND s (press RESET key) for an hour with no-one in the room and check it remains in SUSPEND. Decrease the magnification if necessary to stop any sensor activity. This will set the optimum highest sensitivity to pick up movement safely.
- On the first few nights do not use the Shallow Alarm Max but set Shallow Min to 0, Shallow Delay=60 and enable the "MAX/min Display" recorder function in the hidden menu to detect the suitable settings.
- Once the user is stable/sleeping press the DECREASE button (<) to reset & start the recorder. This will set M=15, m=15, D=5.
- In the morning and before the user is awake, note the Max/Min/D readings. Repeat for a number of nights to get a spread of readings and use these to set the alarm values with a margin to prevent false alarms. It is best to begin with Shallow Min=0 with Delay set by the D value as required and prove reliable operation before increasing the Min towards the m value (which can increase false alarms).
- If the unit does not have the D reading (v6.3 or less), then a reliable value can be found by decreasing the Delay from 60 step by step until an acceptable value is reached without excessive false alarms. Experience suggests most people experience very low breathing levels with gaps in the early morning, which can trigger alarms without any apparent cause.
- Validate operation during observed seizures and adjust the magnification and detection limits as required. The manufacturer can be contacted for advice as required

*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.*