

HTM 08-03 Nurse Call

User Guide



In the event of requiring assistance, please contact your Installer/Supplier.

Contents

1	General Description
2	Display Operation
2.1	Operation
2.2	Day/Night Mode
2.3	Calls on System
2.4	Audible & Visual Alerts
2.5	Silence Button
2.6	Day/Night Sound Level
3	Call Points
3.1	Bedhead Call Point
3.1.1	Call Levels
3.1.2	Patient Handset
3.1.3	Reset
3.2	Toilet/Bathroom Call Point
3.2.1	Call Levels
3.2.2	Infra Red Ceiling Pull Cord
3.2.3	Reset
3.3	Emergency Call Point
3.3.1	Emergency Call
3.3.2	Reset
4	Radio Over Door Indicator Lights
5	Battery Replacement
5.1	Nurse Call Unit – battery
5.2	Ceiling Pull Cord – battery
5.3	Emergency Call Point – battery
6	User Menu
6.1	Isolate a faulty unit
6.2	Setting the time
6.3	Setting the date
6.4	Sensor battery log
6.5	Event log
6.6	Edit sensor names
6.7	Patient name
6.8	Staff name
6.9	Promote Patient Call
7	Trouble Shooting
8	Service & Maintenance
	Appendix: Unlocking & Relocking Panel Memory

1. General Description

The **HTM Nurse Call** system is a radio based call system which has been developed for use in hospitals to meet the requirements of HTM 08-03.

The system operates at a frequency of 173.225 MHz with 10mW e.r.p, conforming to BS6799 class VI and MPT1344. The system has 240-volt wall mounted control panel receivers having master internal or remote displays providing 2 lines of 20 character full alphanumeric text.

The system and its display's provide individual alarm and fault information in plain English text together with a separate day, night and programming modes of operation. The control panel also provides, a 12 volt rechargeable mains fail battery back up giving up to 24 hours standby cover, 2 full monitored programmable outputs, 2 programmable auxiliary relays and 2 hardwired alarm inputs. A series of 9 pin RS232 ports provide printer or PC connectivity, a 9 pin RS232 pager port with a number of selectable pager formats and provision for an integral paging transmitter, a programming port and a two way communications port. The control panel also provides a 500-event rolling memory log, together with a separate 500 event saved alarm activation log. The system is modular with the ability to add up to 3000 unique radio devices of varying types.

The system has the ability to accept an infinite number of additional remote displays all complete with 2-line 20-character backlit plain English text and integral alarm acknowledgement / muting button. Each display also has the ability to be zoned and provided specific alarm information for dedicated activation devices in given zones and have separate volume controls for both Day & Night sound settings.

The Call Points are fully monitored and supervised by the System conforming to the requirements of BS6799 class VI radio devices. Each Call Point has a unique factory set identity and is battery powered by one 3.6-volt lithium battery providing a battery life expectancy of up to 3 years.

2. Control Panel/Display

There are two types of Control Panel:



Configuration Editing buttons

System Status LED's

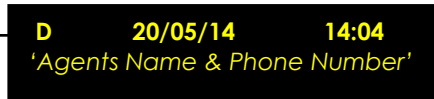
Keyswitch set to "Enable" allows access to the system's configuration files

When the keyswitch is in the enable position, the Silence Button is used to access the configuration menu.

2.1 Operation

For normal operation (no calls or alarms on the system) the panel display will show:

'D' = Keyswitch in Day mode
'N' = Keyswitch in Night mode

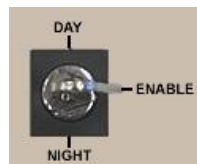


From time to time the Rx & TX leds will flash indicating that the system and devices are communicating.

2.2 Day/Night Mode

The keyswitch on the front of the display module has 3 settings:

- Day
- Night
- Enable



Day and **Night** settings are for the normal operation of the system and are indicated by a **D** or **N** at the top left of the display. These settings influence the type of response the system will show for any alarm, call or fault that occurs on the system.

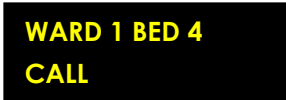
In Night mode a quieter sounder is used for all Calls on the system & faults will be displayed but without the sounder making a noise.

The **Enable** key position activates the buttons on the front of the display such that system parameters may be changed. The Silence button does not silence the sounder in this mode, but instead is used to access the menu structure.

For Normal Operation the keyswitch should be in the Day/Night position and the light above the Enable button should NOT be lit.

2.3 Calls on System

In the event of a Call signal being sent by a unit the display will, for example, show:



2.4 Audible & Visual Alerts

The Control Panel/Displays/Sounders/Over Door Lights will make a different noise depending on what type of Call/Alarm is on the system, so staff can audibly differentiate between the Call types. The Radio Over Door Lights will also flash at different rates:

<u>CALL</u>	<u>SOUNDER</u>	<u>LIGHT</u>
Patient to Staff Call	On 1 second / Off 9 seconds	On
Toilet Call	On 1 second / Off 3 seconds	On
Emergency	ON = 0.5 seconds / OFF = 0.5 seconds (Dual Tone)	0.5 sec On / 0.5 sec Off

The panel will return to normal operation only when the unit sending the call has been reset.

2.5 Silence Button

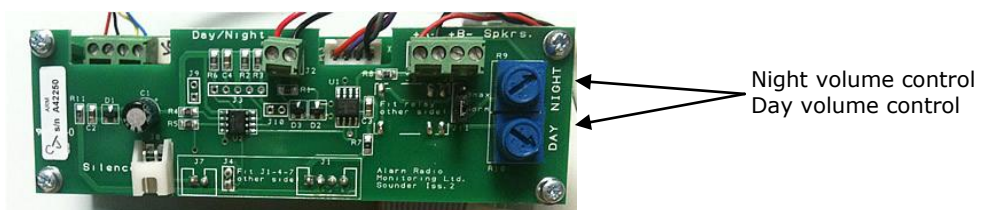
Pressing the Silence button on the Display unit when a Call/Alarm is on the system will cause all the sounders to remain quiet, the Call/Alarm information will still remain on the Displays and the Over Door Lights will still flash and sound.

If a Call/Alarm remains unanswered, the sounders will resound after **4** minutes to remind staff that the Call still needs attending to. **Emergency/Attack** alarms will cause the panel to resound after **1** minute. (Sounder silence times are configurable)

If the Silence button has been pressed following a Call, and then another Call comes onto the system, the Sounders will re-sound to advise staff that there is another Call which needs attending to.

2.6 Day/Night Sound Level

There are separate Day & Night volume controls for the panel/display sound. These can be found either on the inside of the Control Panel door if using an Internal Master Display Panel or inside the Large Master Remote Display Unit.



3. Call Points

3.1 Bedhead Call Point

The HTM Call Points have two Call/Alarm levels [**Patient Call & Emergency/Cardiac**]. When activated the Call Point transmits a radio signal to the Control Panel, which then displays the Location and Type of Call. The Call Point has a reassurance LED & Sounder to inform the user the unit has been activated.

1. Large Patient Call button
2. Grey Reset Button
3. Call Reassurance LED
4. Infra Red Sensor
5. Red Emergency Pull switch
6. Monitored Socket for Patient Handset
7. Patient Handset



3.1.1 Call Levels

Patient Call

- Press the **Orange button** on the Call Point
- Press the **Orange button** on the Patient Handset

Emergency Call

- Pull the **Red Emergency switch** on the front of a Call Point.

Cardiac Call

- Pull the **Blue Cardiac switch** on the front of a Call Point.



Cardiac Call Point

The Emergency/Cardiac Pull switch needs to be pushed back in, to enable the Call Point to be reset.

3.1.2 Patient Handset

The Patient Handset plugs into the socket at the bottom of the Call Point and is activated by pressing the Orange Call button.

If the Patient Handset is unplugged it will trigger the Call Point and send a "**Lead Out**" message to the system to notify staff.

The Call Point cannot be reset unless either a Patient Handset or Dummy Plug is inserted into the Call Point.



Dummy Plug



Patient Handset:

- Orange Patient Call Button
- Reassurance LED on the Handset
- IP67 rated to enable dip sterilisation
- 2.5 m lead
- Linen Clip
- Back Light for easy location in low light
- Bedside Light Switch (*optional*)



3.1.3 Reset

Press the **Grey** Reset Button on the Call Point.

Ensure the Patient Handset/Dummy plug is inserted and that the Emergency/Cardiac Pull switch is pushed in otherwise the Call Point will not reset.

3.2 Toilet/Bathroom Call Point

1. Large Patient Call button
2. Grey Reset Button
3. Call Reassurance LED
4. Infra Red Sensor
5. Red Emergency Pull switch
6. Integral Pull Cord with 2 x easy grip triangles.



3.2.1 Call Levels

Patient Call

- Press the **Orange button** on the Call Point
- Pull the **Orange Cord** hanging down from the Call Point.
- Pull the **Orange Cord** on the Ceiling Pull Switch if installed.

Emergency Call

- Pull the **Red Emergency switch** on the front of a Call Point.

3.2.2 Infra Red Ceiling Pull Cord

The Infra Red Ceiling Pull Cord switches are monitored by the Call Point on the wall in the Toilet/Bathroom.

If the Ceiling Pull Cord is pulled it will transmit an infra red signal to the wall mounted Call Point and activate the wall mounted Call Point.

To **Reset** the Call simply press the **Grey Reset** button on the wall mounted Call Point.



3.2.3 Reset

Press the **Grey** Reset Button on the Call Point.

3.3 Emergency Call Point

The Emergency Alarm Unit offers an Emergency level of alarm only.

1. Red Emergency Pull switch with reassurance LED

3.3.1 Call Levels

Emergency – Pull the **Red pull switch** on the unit.

3.3.2 Resetting Call Points

Push the **Red Pull switch** back into place, the LED will stop flashing and the unit will reset.



4. Radio Indicator Lights

The Indicator Lights will light when the relevant Call Point has been activated to show there is a Call on the system.

When the Call has been answered and the Call Point reset the Indicator Lights will turn off.



The button on the front of the Light is used for as a Reset if required.

When the battery in the Indicator Lights require changing, the light will flash blue.

Unscrew the two screws holding the light to the Back Box.

Turn the Light Over and unplug the battery and plug a new battery in.

Then screw the Light to the Back Box using the two screws

The Indicator Lights require one battery per unit:

D Cell Battery on Lead

*Re-order code: **BAT-D***

5. Battery Replacement

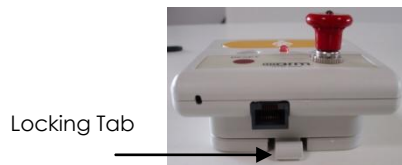
The Low Battery warning comes 30 days prior to the battery in the Call Point reaching a level which may cause the unit not to work properly any more.

5.1 Nurse Call Point - battery

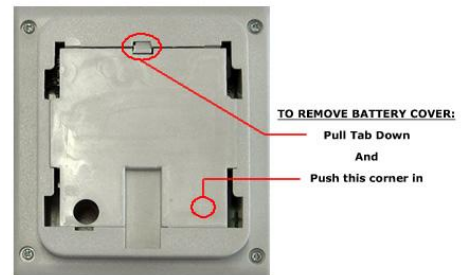
The **Nurse Call Points** require one battery pack per unit:
AA Battery on PCB
Re-order code: **BAT-AANC**.

To replace the battery pack in the Call Points, remove the unit from the bracket.

- To do this push the Locking Tab at the base of the bracket towards the wall and at the same time slide the unit up and off the bracket.



- Turn the unit over and remove the back cover.
- To do this pull the tab at the top of the cover down and at the same time push on the bottom right hand corner of the cover, this will release the cover so it can be removed.



- Remove the exhausted battery pack and dispose of in a safe way and replace with a new battery pack.



- Ensure that the **pins on the unit PCB are lined up with the holes on the battery pack** and insert the new battery



- If the battery pack is inserted correctly the unit should beep and a small bright green LED, located to the left of the battery pack, will flash.
- To reattach to the unit to the bracket line up the slots on the back of the unit and slide down until the locking tab clicks into place.

5.2 Ceiling Pull Cord - battery

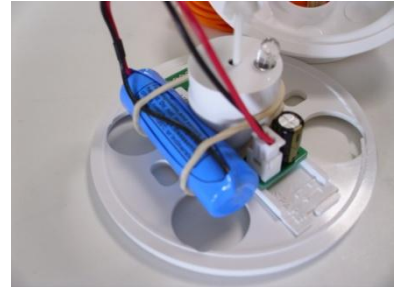
The battery in the Infra Red Ceiling Pull Cord is monitored by the wall Call Point.

If the battery in the Ceiling Pull Cord needs replacing you will see a **"CHECK C/PULLCORD"** fault message on the Nurse Call Display.

The Infra Red Ceiling Pull Cord requires one battery per unit:
2/3 AA Battery on Lead

Battery part number: BAT-AAL

- To replace unscrew the top of the Ceiling Pull Cord
- Unplug the old battery and plug in a new battery.



5.3 Emergency Call Point - battery

The **Emergency Call Points** require one battery per unit:
AA Battery on Lead

Re-order code: BAT-AAL.

- To replace the battery in the Emergency Call Points, firstly remove the four corner covers from the unit using a small flat bladed screw driver.
- Unscrew the four corner screws to release the front half of the Emergency Call Point
- The battery comes on a lead with a white plug on the end.
- Turn the Call Point over and unplug the old battery and plug in a new battery.



- Screw the front of the Emergency Call Point back up and replace the 4 corner covers

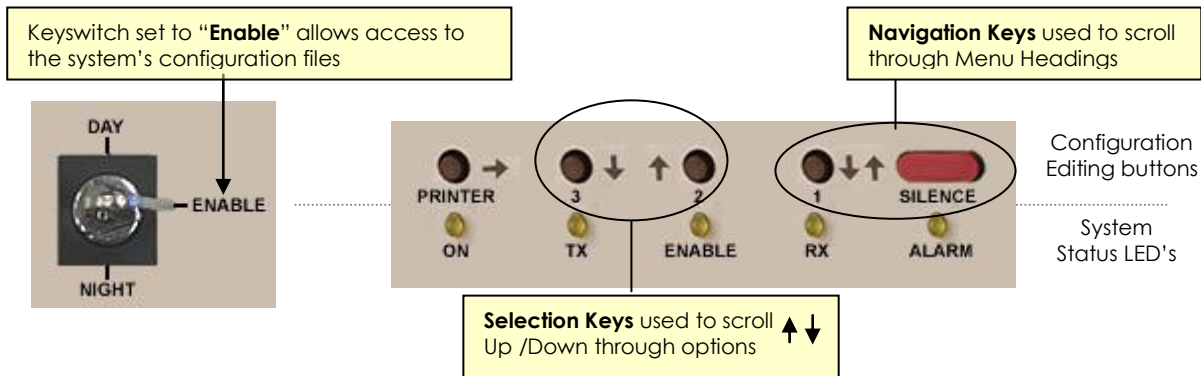
6. User Menu

The User Menu enables the following parameters to be modified/interrogated:

- Unit Isolation
- Time
- Date
- Battery Log
- Print Event Log
- Sensor Name
- Patient Name *(only used on systems with Resident IR key fobs)*
- Staff Name *(only used on systems with Staff IR key fobs)*
- Promote Patient Call

Access to the User Menu is done using the keyswitch and buttons on the front of the Master Display Unit:

- Turn the keyswitch on the Display unit to the **Enable** position *(ensure light above enable lights up)*.
- Press the **Silence** button to select the **User Menu**.
- Then press the (up arrow) ↑ key above the Enable light to enter the User Menu.



6.1 Isolate Sensor

- Enter the User Menu
- Press the Silence button until the display shows:

ISOLATE SENSOR
ON "sensor name"

This menu allows individual sensors to be isolated from System Operation.

- Use the **Selection Keys** to scroll through the sensors on the system.
 - ↑ **Up** arrow above Enable light to navigate up through Sensor list.
 - ↓ **Down** arrow above TX light to navigate down through Sensor list.

Use the → key *(Printer key)* to turn a Sensor **ON** or **OFF**.

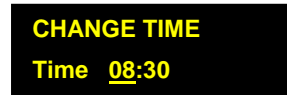
Note: If the sensor was in fault at the time it was isolated it will be necessary to reset the Fault message by turning the keyswitch to Night and then back to Day.

- As a reminder that a unit has been isolated off the system, the display will show:
- This unit can now be sent for repair/replacement, the system will ignore that it is missing from site until it has been returned and can then be un-isolated.

1 ISOLATED

6.2 Setting the Time

- Enter the User Menu.
- Press the Silence button until the display shows:
(with the cursor flashing on the hour)
- Use the **Selection Keys** (above TX & Enable) to change the time and press the → key (Printer key) to move the cursor between the hour and minute fields.



Note: To save the changes to the Time press the Silence Button once the new time has been entered.

6.3 Setting the Date

- Enter the User Menu.
- Press the Silence button until the display shows:
(with the cursor flashing on the day)
- Use the **Selection Keys** (above TX & Enable) to change the date and press the → key (Printer key) to move the cursor between the day/month/year fields.



Note: To save the changes to the Date press the Silence button once the date has been entered.

6.4 Sensor Battery/Signal Strength Log

- Enter the User Menu
- Press the Silence button until the display shows:
- Use the **Selection Keys** (above TX & Enable) to scroll through each sensor to view the battery volts.
- If a Printer / PC is connected then the Battery/Signal Strength Log for all the sensors may be printed out by pressing the → key (Printer key).



This prints:

Sens	-	Sensor Number	-	Sensor Number allocated to each Unit
Batt	-	Battery Voltage	-	Last received Battery Volts
TIME	-	Current Time	-	Time Count since last reception
Lst	-	Last	-	Last Time Interval between receptions
Max	-	Max Time	-	Maximum Time between receptions
RSSI	-	Average Signal Strength	-	Average Signal Strength of Units

Note 1: Sensor numbers 235 to 266 relate to the Control Panels.

Note 2: The Last & Max times are historic Values.

6.5 Event Log

Enter the User Menu

- Press the Silence button until the display shows:
- Press the ↓ **Selection key** above TX light go back in time to view past events.
- If a Printer / PC is connected the Event Log may be printed out from the historic event selected in the display up to the present date by pressing the Printer key →



6.6 Edit Sensor Names

Plug the keyboard into the socket on the base of the display.
(for panels with internal displays the socket is inside the panel on the back of the display PCB)

Enter the User Menu

- Press the Silence button until the display shows:

Serial Number of unit → **Sn_054367 Sensor_001** ← Sensor Number of unit
Unit Location Label → **L_WARD 2 BED 4**

Then Unlock the Memory for editing (see Appendix A)

- If you know the **Serial number** of the unit whose label you wish to change, type it in on the keyboard, then press Return. The units' Sensor number and existing Label will be displayed. Press Return twice to move to the "L_xxx" field (Location Label).
- If you do not know the Serial number of the unit whose label you wish to change, but you do know the **Sensor number**, press Return on the keyboard to move the cursor to the next field, then type in the Sensor number of the unit and press Return.

- **Type the new label that you wish the unit to have and press Return to save it.**

- If the new label is shorter than the old label, use the space bar key to remove leftover characters.

Remember to re-lock the Memory (see Appendix A)

- If you do not know **either the Serial or the Sensor Number** of the unit whose label you wish to change, press Return so that the Sensor field is highlighted and use the **Selection keys** (above TX & Enable) to scroll up and down through the units on the system until you reach the unit that needs changing.
 - Once you have reached the unit that you wish to change the label for, press Return on the keyboard to move to the bottom line (**Location Label field**) and type the new label that you wish the unit to have, press Return to save the new label.
 - If the new label is shorter than the old label, use the space bar key to remove leftover characters.

Remember to re-lock the Memory (see Appendix A)

To **EXIT** the USER Menu, turn the Keyswitch to Night and then back to the Day position.

6.7 Patient Name

Patient Infra Red Fobs can be personalised with the Patient's name if required. (default is Patient 1, Patient 2 etc)

- To rename a Patient IR Fob plug the keyboard into the socket on the base of the display.
(for panels with internal displays the socket is inside the panel on the back of the display PCB)
- Enter the User Menu
- Press the Silence button until the display shows:

IR Fob name → **PATIENT NAME 1** ← Patient IR Fob sensor number
PATIENT 1

Then Unlock the Memory for editing (see Appendix A)

- Press the ↓↑ buttons above TX & Enable lights, to scroll through the Keyfob sensor numbers until to reach the keyfob number that you want to change the name for.
- Type the new name and use the space bar to over type any remaining characters from the previous label.

- Press Return to save the new name.
- To **EXIT** the USER Menu, turn the Keyswitch to Night and then back to the Day position.

Remember to re-lock the memory once finished (see Appendix A).

6.8 Staff Name

Staff Infra Red Fobs can be personalised with the Staff's name if required. (*default is Staff 1, Staff 2 etc*)

- Follow the same procedure as for editing Patient Infra Red Fob names (*Section above*)
- **the display you require is:**

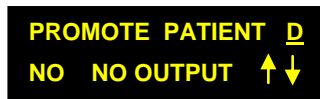


Remember to re-lock the memory once finished (see Appendix A).

6.9 Promote Patient Call

If Patient Level Calls are unanswered for a period of time they can be promoted to alert staff it needs dealing with.

- Enter the User Menu
- Press the Silence button until the display shows:



Then Unlock the Memory for editing (see Appendix A)

- With the cursor flashing on **D** (day mode).
- Press the $\downarrow\uparrow$ buttons above TX & Enable lights, to scroll between **D** (day mode) and **N** (night mode).
- Press the \rightarrow (printer button) to move the cursor to the next field (i.e. **NO**).
- Press the $\downarrow\uparrow$ buttons above TX & Enable lights, to scroll between **NO** & **YES**
- Press the \rightarrow (printer button) to move the cursor to the next field (i.e. **NO OUTPUT**).
- Press the $\downarrow\uparrow$ buttons above TX & Enable lights, to scroll through the various Output/Buzzer options to choose a sound that 'Promoted Calls' will make.
- Press the \rightarrow (printer button) to move the cursor back to the **D** field and then if necessary do the same for Night Mode.
- To **EXIT** the USER Menu, turn the Keyswitch to Night and then back to the Day position.

Remember to re-lock the memory once finished (see Appendix A).

7. Trouble Shooting

In the event of a system fault, please firstly refer to the troubleshooting section below. If you then require assistance please contact your Installer/Supplier.

- **Constant Patient Calls**

Fault: The Call Point sends a Patient Call. When reset is pressed, the system Resets but goes straight back into alarm with patient call.

Cause: Check the pull cord is free of the call point and that the internal switch is operating freely. If it is jammed, release the cord.

Check the Patient Handset in another call point to see if it is the lead at fault.

Check the Large Patient Call button on the call point is not stuck.

- **Constant Emergency or Cardiac alarm**

Fault: The Call Point sends Emergency or Cardiac alarm. When reset is pressed, the system Resets but goes straight back into alarm with Emergency or Cardiac.

Cause: Check the Red Pull Switch has been pushed back in.

Check the Blue Pull switch has been pushed back in.

- **Constant Bleeping from a Unit**

Fault: The Call Point bleeps constantly.

Cause: Check the Reset button operates freely.

- **Call Point Does Not Reset**

To temporarily minimise the nuisance effect of this fault, the faulty unit should be **isolated via the User Menu** and replaced with a spare unit until the faulty unit can be repaired/replaced.

- **Low Battery**

Fault: **Low Battery** is indicated on the Control Panel against a Call Point location.

Cause: The Call Point's battery is low and its internal battery should be replaced.

- **RF Fail / RF FLT**

Fault: **RF Fail / RF FLT** is indicated on the Control Panel against a Call Point location.

Cause: The Unit has failed to communicate with the Control Panel. Put the unit in question into alarm and then reset it. If the alarm is NOT received or the unit does not Reset, then firstly change the battery and retry. If the unit still does not work properly then it will need to be replaced.

A 'RF Fail' fault will also show if any of the systems' units are taken away from site without firstly isolating them from the system.

- **Check C/Pullcord Fault**

Fault: **Check C/Pullcord** is indicated on the Control Panel against a Call Point location.

Cause: The Infra Red Ceiling Pull Cord unit has failed to check in with the wall mounted Call Point in that room.

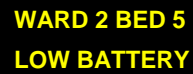
Check to see if the Ceiling Pull Cord triggers the wall mounted Call Point.

Check the wall mounted Call Point works.

Replace the battery in the Ceiling Pull Cord.

- Fault Warnings on Display

If a fault appears on the system the display will show, for example:



WARD 2 BED 5
LOW BATTERY

(or RF/FLT, T/FLT, IR/FLT instead of LOW BATTERY)

DAY MODE:

If the panel is in the **DAY** mode the Internal Buzzer will sound intermittently, pressing the Red Silence Button will cancel the buzzer but the fault will continue to be displayed.

NIGHT MODE:

If the panel is in **NIGHT** mode then the fault will only be displayed and the panel will be silent.

8. Service & Maintenance

All Call Points on the system will periodically transmit their status to the Control Panel, enabling the system to monitor the functionality of all units on the system.

The Control Panel will also monitor the battery levels of all the units incorporated into the system and notify you of any Low Battery faults when they arise, giving you 30 days notice before the battery becomes too low.

If a fault or low battery is detected the Display will show the Sensor number and its location along with the fault.

For information about replacing the batteries in the various units please see *Battery Replacement* section.

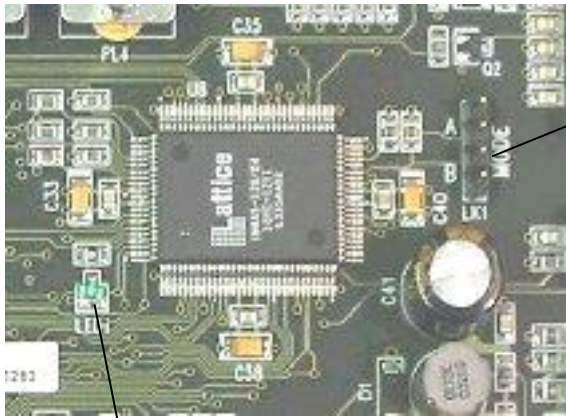
For faults firstly refer to the **Trouble Shooting** section, if the fault persists then contact your Installer/Supplier.

Do not remove any of the Call Points/Units from the site as this will cause the control panel to raise a warning that a unit is missing (*RF Fault will be displayed*)

We recommend that you have your system serviced once a year to meet with Care Standards requirements and at least once every three years to replace all system batteries.

Appendix A: Unlocking Memory

Before Editing Unit names, the memory must be "enabled". To do this, Open Control Panel door and move the jumper on LK1 so that it connects both "B" pins. When the memory is "enabled" the memory LED illuminates on new panels only. (see below)



To "Enable Memory", a memory jumper must connect both "B" pins on LK1.

When the Memory is "Enabled" this LED illuminates



NOTE: (LOCKING MEMORY)

To **Lock Memory** after programming remove the jumper from both "B" pins, (the Memory LED will turn off) and park the jumper on one pin only for future use.

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