ED

Zerio

EDA-Z1000

Radio Fire Alarm System

Operation and Installation Manual

Electro-Detectors

Revision History

Manual Version	Author	Software Version	Date	Description
V1.00	DR	0.08	01-10-05	First Release
V1.01	DR	0.10	01-11-05	Sounder Repeater Added to System, Access code override function and ability to view access codes, re-program devices to factory settings, re-program unique Id. Antenna monitoring configuration added.
V1.02	DR	0.10	22-12-05	Must reset booster panel to ensure memory cleared. All other devices should also be reset on power up. Operation of fire relays when silence / reset pressed
V1.03	SM	0.15	13-06-06	New features for disabling faults and Double knock functions.
V1.04	SM	1.01	14-03-07	New menu structure, Survey mode, function keys and sounder circuit

Contents / Index

Electro-Detectors

Electro-Detectors

1. Introduction

Electro Detectors has been manufacturing radio fire alarm systems for over 16 years and has now complemented its range of products with a smaller purpose built control panel , the Zerio system. It has been designed for smaller systems and is capable of handling 99 devices in 8 zones. Typical installations could be small offices, private houses, HMO's, guest- houses and small hotels.

The system has been designed to allow very simple set up with most operations being automated and is capable of displaying full text and having sophisticated cause and effect programming.

The panel requires a single 2.8Ahr Lead Acid battery to achieve 48 hours standby. Two 6V 4Ahr batteries connected in series will provide a 72- hour HMO compliant standby.

Devices for the system are visually the same as the standard Millennium devices but are labelled differently with a yellow label. In order to maintain compatibility, the Zerio panel can re-program a Millennium device to operate with the Zerio format, providing the devices are version V1.6 or later.

A memory module is plugged into the processor board. This stores a copy of any set-up information including device text and cause and effects. This can be used as a means of swapping data between panels should the need arise.

In order to program and log devices into the system, they need to be connected via a supplied programming lead. The system also stores the data programmed into each device allowing replacement devices to be easily cloned onto the system.

Prior to installation, the building where the system is to be installed must be surveyed to ensure that each device to be fitted has a good radio communication path to the control panel (see section 7). If this is not done correctly the system will operate unreliably. When installing devices, they must be positioned as per the survey. Installing a device only even a few inches from the surveyed position can reduce the signal strength significantly, especially if any metal work is contained in the ceiling above the new position (e.g. air-conditioning ducting).

When manufactured each device is programmed with a unique ID. Whenever a device transmits a message this ID is included as part of the message. Also included in the message is the status (i.e. alarm condition, unit removal, low battery etc). The amount of smoke inside the head at the time of the transmission is included as part of the message. Even if there is no change in status, the device will transmit an 'I'm OK' verify message approximately every 3 minutes. If these transmissions are not received from the device within the verify period (typically 120 minutes) then a 'Verify Fail' fault is generated.

2.   Front Panel Display and Keys

Figure 1.1 Front Panel Display and Buttons

Status
Supply – This LED will be illuminated when mains is present
Delays Active – Illuminated if a fire condition exists and delays are programmed.
Disablements-Illuminated if any devices or zones are isolated.
Test Mode-Illuminated if any test modes are operational. The buzzer will pulse and can be silenced by pressing 'Silence Buzzer'
Remote Signal-Not implemented.

Faults
Common – Device or panel has a fault – see the main display for details.
System – System failure.
Tx/Rx – Not implemented.
Remote Signal – Not implemented.
Device Battery – Not implemented.

Keys
Function 1 & 2 – Programmable for use as Evacuate and Alert functions.
Cancel - Used to return to the main screen from a menu or to return to the menu from a programming screen.
Enter - This is used to accept information programmed into the panel.
Menu – Press to enter the menu system. If held down for longer than 4 seconds all LED's will flash (lamp test).
Silence Buzzer- Silences the buzzer for all currently displayed faults (fault acknowledgement).
Silence / Re-Sound - If the panel is in a fire condition this will silence the sounders. If the sounders are already silenced and the panel not reset, pressing this button will re-sound the sounders using the preconfigured re-sound tone.
Reset – Resets the panel from an alarm condition. Note that the system must be silenced before it can be reset from a fire condition.

Navigation Keys
Used to navigate through the menu structure and programming / status screens.
In a multiple fault or alarm condition, the up and down arrow keys allow the user to scroll through all the current events. The display will also scroll automatically every 6 seconds.

Electro-Detectors

Version Z1000/V1.04

3.   User Operation

> Please note: No operator serviceable parts are contained within this panel. Always refer to a qualified technician for parts and servicing.

3.1   System Normal

In normal operation the screen will show either the date and time, contact details or alternate the two depending on the customers requested settings. Also a single green "Supply" LED will be illuminated.

```
   A.N.Other Fire
    01279 450185


     11:02:31
```

```
    Thursday
   25-05-2006


    11:02:31
```

3.2   Fault Conditions

If a fault occurs, a message describing the fault will be displayed and the internal buzzer will sound. This will detail the device type, a description of the fault, the unit / device number and a location description (if programmed). The description has a maximum length of 59 characters and will scroll across the screen. Appropriate action should be taken to remedy the fault as this may affect the operation of the fire alarm system. If in doubt, the system maintenance company should be contacted.

```
001 SMOKE/SOUNDER 05
UNIT REMOVAL
1st Floor Garden Entr
```

If more than one fault exist on the system they will scroll round every 5 seconds. Pressing the cursor keys will automatically move to the previous or next fault.

3.3   To Silence a Fault

Press 'Silence Buzzer'.

Once the 'Silence buzzer' button has been pressed the panel assumes that the fault has been acknowledged and does not resound the buzzer. If a different fault occurs, the panel will sound the buzzer until the new fault has been acknowledged.

3.4   To Reset a Fault

Assuming the fault has been rectified, pressing reset will reset the panel and the system normal screen will be displayed. If the fault is still present or re-occurs it will be re-displayed (this could take some time depending on the type of fault).

For a list of faults, their most common causes and ways to rectify faults see Appendix 2. Note that all faults will continue to be displayed on the panel until the system is reset, even if the fault condition has been rectified.

3.5   Alarm Conditions

In a fire condition a screen will be displayed similar to below. The Fire LEDs will flash and the appropriate zone LED(s) will flash. The first line details the first zone that has been activated and the last zone to activate. The second line provides a count of all zones in alarm. The third line details the event number, device type and number. The last line details the text location of the device in alarm. If the description is longer than 20 characters it will scroll across the screen. If more than 1 event occurs, the bottom two lines will scroll.

```
First ZN:1 Last ZN:1
Zones in alarm:1
001 CALLPOINT 06
First Floor Next to W
```

> Note: It is possible to configure the system to silence, re-set and re-sound without the need to enter a valid user code by setting 'Code Protect' to off in the panel configuration options. Please be aware that turning code protect off may mean that the installation contravenes relevant standards – see section 8.7.

Electro-Detectors

3.6   To Silence the Alarm.

When it is certain that it is safe to return to the building the 'Silence / Re-Sound' button should be pressed. The user will then be prompted to enter a valid user password. Up to 30 seconds should be allowed for all sounders to silence with a radio system. If the device is still in an alarm condition the sounders will not sound again unless another device goes into alarm. The sounders will automatically silence after 30 minutes.

3.7   To Re-Sound the Sounders

There may be times when the sounders have been mistakenly silenced - for example if the alarm was genuine but someone mistakenly pressed silence. To do this press the 'Silence / Resound' button. To prevent the user from inadvertently silencing and re-sounding the system there is a programmable lock out time during which this button is inactive.

3.8   To Reset the Alarm

Assuming the reason for the alarm condition has been investigated, pressing 'Reset' will return the system to its normal operation screen. The user will need to enter a valid password. The screen will display any faults that were detailed prior to the alarm condition or any new fault that occurred during the alarm condition.

3.9   Menu Navigation

To enter the menu system, press 'MENU' and enter a valid password. 'Main Menu' will appear. To scroll through the menu the '↑' or '↓' keys should be pressed. In order to select a menu option the '→' key should be pressed. To return to the previous menu screen from a sub-menu the '←' should be pressed. Pressing 'Cancel' will return to the system screen where any faults or alarms will be displayed if present. If a sub-menu is selected the 'Cancel' button should be pressed to return to the previous menu.

```
      Main Menu
1→Setup
2 Disable/Enable
3 View Events
```

3.10   Changing the system date and time

To set the date and time, press 'MENU', enter the correct password, select '1-Setup', '1- Time & Date'. Use the ←and→ keys to navigate to the value to change and the ↑ or ↓ keys to select the desired value. Press 'ENTER' to accept or 'CANCEL' to exit. The Zerio panel automatically adjusts the clock for daylight savings.

```
Time: 12:29:00
Date: 01-01-2005

     ENTER to save
```

3.11   Isolating a Zone

If a zone is isolated the system will not display any fire or fault events for devices located in the zone. This includes any call point activations.

Press 'MENU', enter the correct password, select '2-Disable/Enable', select '1-Disable', select '1-Disable Zone'. Using the ↑ or ↓ keys, select the zone number to be disabled and press 'ENTER'. Select the timeout (in hours) and press 'ENTER'. After this time has expired the isolated zone(s) will be automatically enabled. Press 'ENTER' to confirm. The 'Disablements' LED will be illuminated. If more zones need to be isolated press 'ENTER' or press 'CANCEL' to exit.

```
  Select Zone 01↕


  ENTER to continue
```
```
  Timeout (hours) 01↕


   ENTER to continue
```
```
    Press ENTER to
    Disable Zone 01
```

3.12   To Isolate a Device

Once a device is isolated the system will ignore any fire or fault event from that device.

Press 'MENU' and enter a valid password. Select '2-Disable/Enable', select '1-Disable', select '2-Disable Device'. Using the ↑ or ↓ keys select the device number to be disabled and press 'ENTER' Select the timeout (in hours) and press 'ENTER'. After this time has expired the device that was isolated will automatically be enabled. Assuming the information is correct, press 'ENTER' to isolate the device. The 'Disablements' LED will be illuminated.

```
 Select Device 01↕              Timeout (hours) 01↕            Press ENTER to
   SMOKE/SOUNDER                                              Disable Device 01

 ENTER to continue              ENTER to continue
```

3.13   To Enable a Zone

To enable a previously isolated zone, press 'MENU' and enter a valid password. Select '2-Disable/Enable', select '2-Enable', select '1-Enable Zone'. Using the ↑ or ↓ keys select the zone number to be enabled and press 'ENTER'. To enable more zones press 'ENTER' or 'CANCEL' to exit. If all zones have been enabled 'No Zones to enable' will be displayed and the 'Disablements' LED will extinguish (assuming that no other 'Disablement' conditions such as isolated devices exist).

```
   Select Zone 01↕                Press ENTER to
                                  enable Zone 01
 ENTER to continue
```

3.14   To Enable a Device

To enable a previously isolated device, press 'MENU' and enter a valid password. Select '2-Disable/Enable', select '2-Enable', select '2-Enable Device'. Using the ↑ or ↓ keys, select the device number to be enabled and press 'ENTER'. To enable more devices press 'ENTER' or 'CANCEL' to exit. If all devices have been enabled 'No Devices to enable' will be displayed and the 'Disablements' LED will extinguish (assuming that no other 'Disablement' conditions such as isolated zones exist).

```
  Select Device 01↕               Press ENTER to
                                  enable Device 01
 ENTER to continue
```

3.15   Viewing Event History

To view a log of historical system events, press 'MENU' followed by a valid password and select '3-Event Log '. A sub menu will appear detailing 'VIEW EVENTS'. Using the cursor keys to select this. The panel stores up to 255 fire or fault events in memory. A description of the fault or fire is recorded together with the date and time of the event. When the log becomes full the oldest entries are automatically removed to make room for new ones. To scroll through the event log use the cursor keys.

```
              13:24 01/05
001 CALLPOINT 06
UNIT REMOVAL
1st Floor Landing
```

4. Advanced User Operations

> **Please note: No operator serviceable parts are contained within this panel. Always refer to a qualified technician for parts and servicing.**

4.1 General

Assuming the correct password is entered, the user can sign on as an advanced user. This allows some extra functions not available to the basic user. Only people who have been trained in the operation of the system should be allowed access at this level as certain operations of the fire alarm can be disabled (although they will be automatically enabled after a short timeout period)

4.2 To View Access Codes

The access code / password is a 4 digit number with each digit in the range of 1 to 4. To view the current passwords press the 'MENU' button and enter the correct password for an 'Advanced User' The default is 2222. Using the cursor keys, select '1-Setup', select '2-Access Codes' and select '1-View Codes'. A screen, as shown below, will list the passwords for the basic user labelled 'AL1' and the advanced user labelled 'AL2'.

```
AL1 1111  AL2 2222


 CANCEL to exit
```

4.2 Changing Access Codes

An advanced user can change the password for the basic and advanced user. The password is a 4 digit number with each digit ranging from 1 to 4. To change the password, press the 'MENU' button, select '1-Setup', select '2-Access Codes' and select '2-Change Codes. Using the cursor keys, select either the 'advanced user' (Access Level 2) or the 'basic user' (Access Level 1) password. Once selected press 'ENTER'. Using the numbered keys enter the current password. Assuming this matches the stored user code you will be prompted to enter the new password and then re-enter the new password to confirm. Press 'ENTER' to save the new password. A message will be displayed indicating that the password is being saved to the SIM and flash memory.

```
  Access Level 1↕        Enter Current Code        Enter New Code          Confirm New Code
    Basic User                 ----                    ----                     ----

 ENTER to continue      Hold CANCEL to exit      Hold CANCEL to exit       Hold CANCEL to exit
```

4.3 To Select Test Mode

Test mode is available to an advanced user so that a system can be tested with minimal disruption to the occupants of a building. BS5839 and EN54 specify what tests should be performed at what intervals. Always follow any testing schedule or routine recommended by the system installer. As a rough guide the system should be tested weekly, but sounders only need to be tested every month. The test mode allows various output devices and/or sounders to be disabled.

To select the option press 'MENU' and enter a valid password. Select '4-Test Mode', select '1-System Test' and select '1-Enable Test'. For each device that is to be tested, the zone that the device is located in must be selected by scrolling to the appropriate zone number and pressing the '→'. A '*' will be indicated by the zone for any zones selected. Failure to select the correct zone will mean the system will operate as normal if the device is set into alarm.

```
     Zone 05↕ *
Use →key to select           Sounders OFF ↕

 ENTER to continue          ENTER to continue
```

Having selected the zones that are to be tested press 'Enter'. The operation of the alarm can now be selected.

Sounders

If sounders are not required to sound set 'Sounders' to OFF.

Tone

If sounders are set to ON, you can select an option to have any activated sounders silence automatically after 6 seconds. The options are 'FULL' for continual sounding or 'SHORT' for the 6 second tone. If using the short test tone, 60 seconds must be left after the sounders have silenced before testing further devices.

Electro-Detectors

Actuators

If actuators are not required to operate then set 'Actuators' to OFF. Actuators are output devices used to control equipment like magnetic doors, other alarm systems, gas valve shut-offs, air conditioning etc. It would be normal for actuators to be isolated in an alarm test.
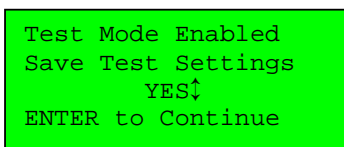
Sound areas

Setting this to zero will sound all sounders providing the sounder option is on. By selecting a specific sound area a certain group of sounders can be operated that are programmed to this area.

Fire Relay

If the fire relay inside the panel is required to be disabled this should be set to OFF. This is often used as a way of triggering a link to the fire brigade or to an alarm monitoring station. Always follow the procedure outlined by the system installer.

Timeout

This is the amount of time before the system will automatically exit test mode operation. This should be set slightly longer than the test should take. It can be set in 1 hour intervals and is selected using the cursor keys. A maximum of 48 hours can be set.
The user should now press enter to enable the test mode. The 'Test Mode' LED will illuminate.

```
Test Mode Enabled
Save Test Settings
        YES↕
ENTER to Continue
```

Once test options have been selected these can now be saved for quick setup in the future. Once the test screen is entered the panel will prompt to use saved settings, if unsure of the saved settings select NO and re-define the test parameters.

Devices that require testing should now be set into a fire condition and the details on the screen checked. Care should be taken to ensure the correct devices are tested as failure to do this could result in all the bells sounding.

Once the tests are complete and the user is satisfied that everything functioned correctly, the test mode should be disabled. If this procedure is forgotten the test mode will automatically time out after the selected period.

4.4   To Disable the Test Mode

Press the 'MENU' button, select '4-Test Modes' then '2-Disable Test' Press 'ENTER' to disable test. The 'Test Mode' LED will extinguish.

5. Panel Installation

Please note: No operator serviceable parts are contained within this panel. Always refer to a qualified technician for parts and servicing.

5.1 General

A competent person should mount the control panel on a wall in a suitable position. The antenna position should be away from any solid objects, especially electronic equipment and metal structures .The wall should be even, clean and dry and not prone to vibration. Should the wall not be level, the panel should be mounted on a wooden board. The panel should be mounted using 3 x No. 6 screws. Note that it is not advisable to disconnect any of the components connected to the interconnect cable while the panel is powered up.

5.2 Panel Layout

Figure 1.2 Panel Layout

1	Processor Printed Circuit Board
2	Transceiver Module
3	Power Supply Printed Circuit Board
4	12V Battery (2.8Ahr)
5	Interconnect cable
6	Mains 230V AC input
7	Fuse (0.5A T rating 20mm)
8	Battery Connection (-ve, +ve)
9	Auxiliary Relay and Monitor Input Connections
10	Configuration Links
11	Expansions Port
12	Memory SIM Card (EDA-Z1010)
13	Detector Programming Lead Port
14	Write Enable Link for Memory Card
15	PC / PS2 Keyboard Port
16	Buzzer Enable
17	Processor Configuration Links
18	LCD
19	Battery Fuse (TE5 Quick Blow 3.15A)
20	Antenna

Electro-Detectors

Fire/Fault Relays and Inputs

Antenna

Battery Terminals (-ve left +ve right)

5.3 Connecting the Mains Supply.

A 230V AC 50Hz supply capable of providing 300mA should be derived from a separate fused spur. This spur should not incorporate a switch and should be labelled 'Fire Alarm Equipment – Do Not Switch Off'. **Always ensure that the mains supply is completely isolated before working on any mains rated components.**

To prevent damage during transit, the panel is supplied without the PSU fitted. This should be fitted by removing the nuts and washers from the metal studs, fitting the board over the studs, followed by the washers and secured using the M3 nuts.

The supply should be terminated in the terminal block labelled 6 in Fig. 1.2 and shown above.

The cable should be connected to the terminal block from above with the Live connected to the left terminal, the Earth to the middle and the Neutral to the right. Care should be taken to ensure no loose strands protrude from the terminal block and that the wire insulation is trimmed to the correct length so that no exposed wire is left visible. Any earth cables should not be removed.

All wiring should be done in accordance with current regulations and be of sufficient standard as not to harm any persons or cause damage to the panel.

Once the connection has been made, the panel fuse (500mA ceramic T type) should be removed from the panel, labelled 7 in Fig.1.2, by turning half a turn anti-clockwise. The fused spur can then be energised. To power up the panel, push down on the fuse holder and give a half turn clock-wise – **never power up the panel with the ribbon cable removed. Mains power should always be applied prior to connecting the stand by battery**. Once the mains supply has been applied, the green LED on the PSU should illuminate. The system normal screen will be displayed and the time and date will indicate 00:00:00 01-01-2005. Within approximately 100 seconds the panel will indicate a low battery condition and the buzzer will sound. This can be silenced by pressing 'Silence Buzzer'. During set-up the buzzer can be temporarily disabled by removing the link marked 16 in figure 1.2. If the panel fails to power up correctly, briefly short the two reset pads (located to the left of the buzzer) together using a screwdriver.

5.4 Connecting the Battery

Connect the battery using the supplied terminal connections. The connection is fused using a 3.15A TE5 fuse. A single 12V 2.8Ahr lead acid sealed battery should be used giving a 48 Hour stand-by. A longer stand-by period of up to 72 hours can be obtained by replacing the 2.8Ahr battery with two 6V 4Ahr batteries connected in series. Ensure the correct polarity is used as marked by the coloured wires (Red +, Black -). Once connected, the 'Reset' button on the keypad can be pressed. If 'Low battery', appears check the connections and polarity. If the battery is connected incorrectly it is likely that the fuse will blow. The wiring should be corrected and the fuse replaced.

When replacing the battery always do so with a product of an equal specification. Always dispose of batteries responsibly. Never dispose of batteries in general waste. If unsure contact your local authority for guidance.

5.5 Fitting the Antenna

The standard helical stub antenna supplied with the panel should be fitted to the BNC connector on the top left hand side of the panel as marked by the arrow above. If a higher gain antenna is being used, the stub antenna should be removed and the new antenna be fitted in its place. If a BNC connector is to be fitted to the antenna then it must be a 50Ω connector suitable for use with RG58 c/u coaxial cable. When making off the cable, ensure that no stray shielding wires are shorting.

Electro-Detectors

5.6 Connecting the Relays

The panel is equipped with two "volt free" relays rated at 30 volts DC @ 1 amp maximum. The fault relay is a "fail safe" relay that energises on power up and de-energises in fault. Consequently the normally open and normally closed terminals are reversed. The other relay activates on an alarm condition. Note that these outputs are not monitored for open or short circuit conditions.

5.7 Connecting the Inputs

The panel features two monitored inputs that can be programmed either as latching or non-latching. It is important to note that before using these inputs they must be enabled and programmed in the panel options. If the option is enabled then 4K7Ω end of line resistors must be fitted at the termination. Applying a 470Ω resistor across the inputs will produce a 'fire' message. See section 8.7 for further details.

5.8 Panel Boards

A ribbon cable connects the internal panel boards together. These should be connected to the system link / bus connections on the boards. The expansion plug is designed to be used to connect other modules onto the system. These are still under development.

IMPORTANT: Damage may be caused to the panel if this ribbon cable is disconnected and reconnected while the panel is powered up.

Always power the panel down before attempting to remove or connect the ribbon cable.

5.9 Processor Board Links and Connections

Write Enable Link &Buzzer Link
Memory Card
Links LN1 to LN4
PC / Keyboard Connection
Device Programming Lead Connection
Reset pads

LN 1 to 4
Links 1 to 4 should not be fitted in normal operation. These are used to enable certain modes during programming.

Buzzer
To enable the buzzer this link should be fitted. Removal of this link will prevent the buzzer operating and the system will not comply with BS5839 or EN54.

Write/enable
In normal operation this link should not be fitted but should be left inside the panel connecting just one of the pins. If any changes to the system are required this link will have to be fitted.

Memory Card
The memory card should be fitted at all times. The memory card stores a complete set of the system settings including text and options.

PC / Keyboard Connection
In order to program the panel with text information for description, phone numbers company names etc a standard computer keyboard or a PC running Hyper Terminal is connected to this port. If entering text using a pc, a special interface cable (EDA-Z1020) will be required.

Device Programming Lead Connection
In order to add and program devices on to the system, a programming lead is connected to this port and the other end connected to the device. The marked edge of the connector is connected to the port marked with a white bar on the board and the 'on' position on the device. Each panel is supplied with a one of the leads but should a replacement be required the product code is EDA-Z1030

Reset
In the unlikely event that the panel 'locks up' and doesn't respond to any key presses, use a terminal driver to short out the two gold pads. This will cause the system to clear any faults and return to the system normal state. No programmed information will be lost.

6.0   Service Engineer Operations

6.1   Event Log Operations

View Event Log.

In order to view what has previously happened on the control panel, press 'MENU' and select '3-Event Log'. A sub menu will appear 'VIEW EVENTS'. Using the cursor keys to select this. The panel stores up to 255 fire or fault events in memory. A description of the fault or fire is recorded together with the date and time of the event. When the log becomes full the oldest entries are automatically removed to make room for new ones. To scroll through the event log use the cursor keys.
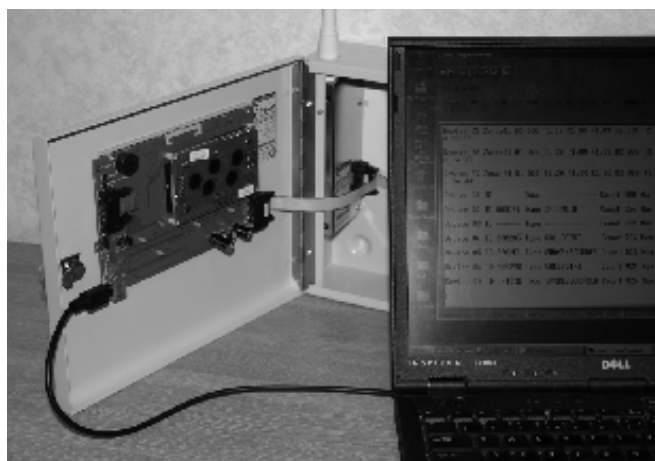
```
          13:24 01/05
001 CALLPOINT 06
UNIT RENOVAL
1st Floor Landing
```

To Clear the Event Log

A service engineer can also clear the event log by selecting '2-Clear Event Log' and then pressing 'ENTER' to confirm.

To Copy the Event Log to a PC

From the 'Event Log' menu select '3-Dump Event Log'. Ensure a PC is connected to the PS2 port on the panel using lead EDA-Z1020 as shown opposite. The PC should be running Hyper Terminal. To check the settings see the appendices. If you require to save this to a file then select the option in Hyper Terminal to capture text in the transfer menu. Once connected press 'ENTER' to dump the log to the PC. An example is detailed below.

```
001 13:50 01/01 UNIT REMOVAL      CALLPOINT 76    Ground Floor West Wing Fire Exit
002 13:50 01/01 RESET FAULT       CONTROL         Reception
003 13:49 01/01 RESET ALARM       CONTROL         Reception
004 13:49 01/01 SILENCE ALARM     CONTROL         Reception
005 13:49 01/01 FIRE              CALLPOINT 07    1st Floor Drawing Room by Snooker Table
006 13:48 01/01 UNIT REMOVAL      CALLPOINT 07    1st Floor Drawing Room by Snooker Table
007 13:37 01/01 SIM LINK FAULT    CONTROL         Reception
008 13:37 01/01 BATTERY LOW       CONTROL         Reception
009 10:48 01/01 RESET FAULT       CONTROL         Reception
010 10:47 01/01 ENABLE DEVICE 05  CONTROL         Reception
011 10:46 01/01 ENABLE ZONE 01    CONTROL         Reception
012 09:36 01/01 DISABLE DEVICE 05 CONTROL         Reception
013 09:36 01/01 DISABLE ZONE 01   CONTROL         Reception
End of Log
```

6.2   Operating Test Modes

Refer to the advanced user section for the basic test mode operation. The service engineer also has additional test modes as detailed below. In order to sound individual sounders or combined sounder detectors, the unit number can be selected and the device instructed to sound. From the 'Test Mode' select '3-Device Test'. Using the cursor keys, select the device number and then press 'ENTER'. The cursor keys can then be used to transmit messages to the unit. Only one message is transmitted each time the key is pressed.

It is important that once activated and silenced the device must also be reset.

```
Select Device 05↕        ↑  Activate
   SMOKE/SOUNDER         ← Silence
                         → Reset
ENTER to continue     CANCEL to exit
```
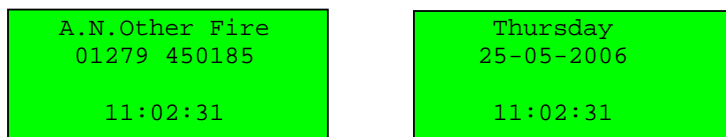
6.3   Changing Access Codes

Refer to the advanced user section. The Service Engineer can change all passwords up to service engineer (AL3) level.

6.4   Panel Display Options

The system normal screen can be adjusted to display either the date and time, the agents name and telephone number or alternating between the two. In order to display the agents details, they will have to have been programmed. These details will also be displayed on the first line of the LCD in fault conditions. If un-programmed, the screen will remain blank.

```
   A.N.Other Fire
    01279 450185


     11:02:31
```
```
     Thursday
    25-05-2006


     11:02:31
```

To change the option:
- ❑ From the 'Main Menu', enter the correct password.
- ❑ Using the cursor keys, select '1-Setup'
- ❑ Select '3-Panel Display'
- ❑ Select '3-Display Options'
- ❑ Using the cursor keys select either 'Time/Date', 'Agent Details' or 'Alternating.'
- ❑ Press 'ENTER' to select the option.
- ❑ Press 'ENTER' to save the details.
- ❑ Press 'CANCEL' to return to the menu.

```
   Time/Date ↕

 ENTER to continue
```

Programming Agent Details

A PS/2 keyboard or laptop using HyperTerminal must be used to enter text (see section 5.9)

- ❑ From the 'Main Menu', enter the correct password.
- ❑ Using the cursor keys, select '1-Setup'
- ❑ Select '3-Panel Display'
- ❑ Select '1-Agent Name' enter text, Press 'ENTER' to save
- ❑ Select '2-Agent Phone' enter text, Press 'ENTER' to save

6.5   Verify and Signal Strengths

The verify information is essential to the engineer to ensure the system is set-up correctly. It details signal strengths and performance information about all of the devices on the system. The panel must receive verify messages from each individual device, either directly from the device or via a booster panel. If these messages are not received, a verify fault message will be displayed on the panel after a pre-programmed period of time. Although the system may appear to be working when tested, if the signal strength is not adequate any devices with weak signal strengths are likely to fail over a period of time.

Operation of the Verify System

As shown above, information regarding a device is transmitted either directly to the panel (route A) or if the signal strength is too low, to a repeater (route C) which relays the information on to the panel when requested (route B).

Electro-Detectors

If the control panel has not received a message from a particular device, it transmits a request message to the repeater. If the repeater is already logging information from this device it will reply with information concerning the device. If it is not logging the device, it will add it to the list and begin to listen for any messages from the device. When the control panel next requests information, the repeater will reply with any information that it has received from that particular device.

Each device on a correctly installed system will fall into one of three categories:
- The device maintains regular contact with the control panel and has a good signal strength. The control panel does not request information regarding this device from the repeaters. All communications are via route A.
- The device is out of range of the panel or has no direct link to the panel but is within range of a repeater. In this instance the panel will poll the repeaters on the system and request that they listen out for the device. The panel will then periodically poll the repeaters for an update on the device's verify status. In this instance all communications will be via routes B and C.
- The device is within direct communications range of the panel but has a weak signal strength. The panel will again poll the repeaters on the system regarding information on the device in addition to the direct communications it receives from the device. This is to ensure a reliable communication link is present. Communications will be via a mixture of routes A, B and C.

Two points should be noted:
- All repeaters must communicate directly to the control panel with a signal strength above 37. Repeaters cannot be 'hopped' through another repeater.
- In some situations it is feasible that a device will periodically move between reporting directly to the panel and reporting via a repeater. This is perfectly acceptable.

The time between polls to the repeater network regarding a device's status is known as the group verify period. The default value is 15 minutes so for a device communicating via the repeater network the initial verify message may take up to 20 minutes to be received by the panel. Any fire or fault message is immediately forwarded to the control panel. The default value should be adequate for most systems, however if necessary this can be adjusted by entering the system with an Advanced Engineer password and adjusting this value in the panel options menu.

To view the signal strength for a single device
- ❑ Using the cursor keys select the device number you wish to view details for and press 'ENTER'.
- ❑ Once in this screen the '↑' and '↓' keys can be used to quickly move between devices.
- ❑ The '←' and '→' keys can be used to change between verify details for the main panel or verify details recorded by the repeater.
- ❑ The information detailed is listed below:

For a more detailed description refer to 'To dump the verify table to a PC' later in this section.

Screen 1
The first line details the device number and the device type..

Count   The System Count which is the time in minutes since the panel received a transmission from the device via routes a or c.

RSSI   **R**eceived **S**ignal **S**trength **I**ndicator. This is an indication of the signal strength for a device and provides a simple 'OK / LOW' indication.

Last RX   This indicates where the last transmission was received from. Direct indicates that the panel received the verify message, SND/RPT A would indicate that the device verified using repeater A.

```
Select Device 01↕
  SMOKE/SOUNDER

 ENTER to continue
```

```
001:SOUNDER      →
Count:002
RSSI :OK
Last RX: DIRECT
```

Screen 2

The first line shows the device number and the unique ID of the device. The second line details that you are looking at information received by the main panel.

ID   The unique ID of the unit that is transmitted to the control panel.

Count   The time in minutes since the device last transmitted. A device transmits
Approximately every 3 to 5 minutes and this time would be expected to
be less than 10 minutes in a system that is operating without any repeaters.

Max   The maximum time between two successive transmissions since
the verify table was last reset.

RSSI   The average signal strength of the device received at the main control
panel for the last few transmissions.

```
001:00063D (ID)    →
MAIN PANEL
Count:003   Max :006
RSSI :80    Last:004
```

Screen 3

This screen details information for a single device and how the unit transmits to the first booster unit.

Poll   If the device is communicating through a booster panel, this is the
number of minutes until the next poll message would be transmitted to
the booster unit.

Count: The number of minutes since a message was last received from the
device to the booster.

Max: The maximum time in minutes between two successive messages
received by the booster unit.

RSSI: The signal strength of the device at the booster unit.

Age: This is the time in minutes that information was received from the device
after the repeater being polled. Once the panel has received this the
count will reset to 0.

```
001:00063D         ←
Repeater A   Poll:00
Count:00     Max :00
RSSI :77     Age :41
```

To Clear the Complete Verify Table

It is often necessary to clear the verify table. If devices have been mover around the building or device have been replaced then any historical information needs to be deleted and any new information recorded.

❑ From the 'Main Menu', using the cursor keys, select '5-Verify Table'
❑ Select '2-Clear Table'
❑ Select '2-Clear All'
❑ Press 'ENTER' to confirm the clearing of the event log
❑ Press 'CANCEL' to return to the menu.

To Clear the Verify Information for a Single Device

If a device has been replaced then once the new one is installed the verify information for this new device will take into account historical information about the old device. For this reason the verify information for the device should be cleared. This is achieved by following the instructions below.

❑ From the 'Main Menu', using the cursor keys, select '5-Verify Table'
❑ Select '2-Clear Table'
❑ Select '1-Clear One Device
❑ Use the cursor keys to select the device number to be cleared and press 'ENTER'
❑ Press 'ENTER' to confirm the clearing of the event log
❑ Press 'CANCEL' to return to the menu.

Please be aware when programming devices that the average RSSI value shown in the verify table will be artificially high due to it's proximity to the control panel. It is advisable to clear the table after programming devices or setting up a new system.

Electro-Detectors

To dump the verify table to a PC

It is advisable after commissioning is complete and at least once a year as part of the routine service to record the verify information for the system. The easiest way to achieve this is to dump the information to a PC and record this on a disk or print a copy out.

❑ From the main menu using the cursor keys select '5-Verify Table'.
❑ Connect a PC to the 'Multi Link' port as shown opposite.
❑ Run 'Hyper-terminal' with the correct settings. See appendices.
❑ If you intend to save the file, remember to select this option in Hyper-Terminal before dumping out the table.
❑ Select '3-Dump Table' and press 'ENTER' to continue.
❑ When the screen requests to 'Dump verify table', press 'ENTER'
❑ The screen will scroll through the device numbers as they are transferred to the PC and the data will appear on the screen.
❑ A message will be displayed on the panel once complete. Press 'CANCEL' to exit.

```
Dump Verify Table?

ENTER to continue
```

```
Dump Complete

CANEL to exit
```

```
Z1000 Verify Table
15:44:50 14/03/07
Sys No: 23455
Devices:   13
Repeaters: 01

Device:01
ID    :00063C
Type  :SMOKE/SOUNDER
Analog:001

System Cnt
       001

Panel Cnt Max Lst RSSI
      001 016 002 32

Rptr   Cnt Max Lst RSSI Age
 A     001 015 002 77   10

Poll:05

end of table.
```

Device: The number of the device on the system
ID: The unique ID of that device
Type: Device type
Analog: Head value for device

System Cnt: The number of minutes since a transmission from the device was last received by either the panel or a booster unit. Route B.

Panel Cnt: The number of minutes since a transmission was received from the device directly to the panel. Route A

Rptr A: The number of minutes since this repeater received a transmission from the device. There can be up to 4 repeaters on the system.

Count: The number of minutes since a message was last received from the device to the booster.

Max: The maximum time in minutes between two successive messages received by the booster unit.

Lst: The time between the last two transmissions for this device

RSSI: The signal strength of the device at the booster unit.

Age: This is the time in minutes that information was received from the device after the repeater being polled. Once the panel has received this the count will reset to 0.

Poll: This is a counter used to decide when the control panel will request information from the booster panel for this unit. Each time a message is received from the device directly with an acceptable signal strength, the count will be set to 0. If the value exceeds 15 a request message will be transmitted to all booster units. If the booster panel receives such a request and already has information about this device, the information is transmitted to the control panel. If the booster has no information it will start to listen for this device. When the next request is received, provided the booster has received a verify transmission from the device, it will then respond.

Electro-Detectors

6.6   Examine Panel Settings

Each panel contains three separate electronic circuit boards, each with a processor running a particular version of firmware. When reporting faults with the control panel, these versions will be required to diagnose the fault.

To determine Panel Status
- ❑ From the 'main menu', using the cursor keys, select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '1-Panel Info'
- ❑ Select '1-Status'. Information about the panel and system is detailed.
- ❑ The system number, which is used to control any sounders and output devices, is detailed.
- ❑ Devices: is the number of devices logged to the system.
- ❑ Repeaters: is the number of repeaters programmed on to the system
- ❑ Uptime: is the length of time, in days, hours, minutes, the panel has been operational since last powered down or reset.
- ❑ Pushing '→' will display more information
- ❑ Panel: is the software version, the date and time of creation alternates next to this
- ❑ TX/RX: Firmware of the transceiver unit
- ❑ PSU: Firmware version for the power board
- ❑ Press 'Cancel' to exit.

```
Sys No: 64996        →
Devices: 24
Repeaters: 01
Uptime 0356d22h01m
```

```
Panel:01.01 15:26
TX/RX:2.08
PSU:1.05
```

To Examine panel readings
- ❑ From the 'main menu', using the cursor keys, select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '1-Panel Settings'
- ❑ Select '2-Panel Readings'
  - Vb1:   The voltage on the System bus.   During normal operation this value is usually around 22.5V.
  - Vb2:   The Voltage on the Expansion bus, used for the additional sounder circuit.
  - IChg: The battery charge current.
  - Vfl: The charge voltage of the battery; can vary but normally around 14V.
  - IP1:   The current resistance level on input 1.
  - IP2:   The current resistance level on input 2.
- ❑ Pushing '→' will display more readings
  - Stub: Antenna monitoring value.
             With a stub antenna fitted this can vary up to 55.
             With the stub antenna removed the reading will change.
  - Ext Ant: This value is used to monitor remote antennas.
  - RSSI: Received signal strength indicator. This value represents the background noise or the level of transmission being received.
  - LK1…:   Indicator for which links are fitted on the processor board (see 5.9) These are used to enable certain modes during programming and should not be fitted during normal operation.

```
Vb1:22.7V Vb2:22.2V→
IChg:004mA Vfl:14.4V
IP1:>10kΩ      IP2:>10kΩ
```

```
Stub:015 NORMAL
EXT ANT: 173 OPEN CCT
RSSI:022
LK1: LK2: LK3: LK4:
```

6.7   To Examine Device Settings

Device Settings

Various device configurations are available with the Zerio system.

From the 'main menu', using the cursor keys, select '1-Setup'
- ❑ Select '5-Device Setup'
- ❑ Select '1-Device Settings'
- ❑ Select '1-View Settings'
- ❑ Using the cursor keys, select the device number you wish to examine and press 'Enter'
- ❑ To view the rest of the settings use the cursor keys to navigate through the screens shown opposite.

```
   Select Device 02↕
    HEAT/SOUNDER F


  ENTER to continue
```

Electro-Detectors

Zone: The zone number that the device is located in.

I/P1: If the device has a second input i.e. dual transmitter unit or a sounder with a call-point input then this value will be set as the unit number of the second input.

Linked to: If the unit is a second input then the master unit will be set in this value.

Delay1: When the control panel receives an alarm signal from this device, the panel will delay for this period (in seconds) before sounding the sounders. If the delay is set to 0 then the sounders will operate immediately

Area1: If the sounders have been programmed into areas, the system can be programmed to sound different areas of the building. Area 0 will sound all sounders even if they are programmed to a different area.

Tone1: The tone that the sounder(s) should sound. These are listed in the appendices.

Delay2: Once delay1 has expired, the control panel will delay for this period of time before operating the sounders with the programmed values for tone2 and area2.

Area2: The area to sound after delay 2 has expired. Area 0 will sound all sounders even if they are programmed to a different area.

Tone2: The tone that the sounder(s) should sound. These are listed in the appendices.

Text: The last screen details the text location for the device that has been programmed.

```
      Device 02↕  →
Zone 01
I/P1 00
Linked to 00
```

```
←     Device 02   →
Delay2 000 Area1 00
Tone2 AUX ON SWEPT
Relay2 RELAY ON
```

```
←     Device 02
1st Floor Demo
Office Room 25
```

6.8   To View Transmissions in the Airwaves

In order to see any transmissions that occur in the airwaves, a menu option is available. This is particularly useful to see that the receiver of the panel is operational. Only Zerio devices will be displayed on this screen. (Millennium and the older 'A series' devices use a different transmission protocol so will not be visible).

The screen only displays information for the last received transmission. If another message is received the previous one is over-written. The displayed transmissions can be filtered using the following options.

Selection	Description
View All	List every signal received
View Single Device	Select the device number using the cursor keys. Only the messages received for this device are listed.
View This System	Only messages from devices that have previously programmed on to this system will be listed.
View Type	Select the device type using the cursor keys. Only the messages received for these types are listed.

❑ From the 'main menu', using the cursor keys, select option '7-View Airwaves'
❑ Select the particular set of transmissions that you wish to be viewed.
❑ Press 'CANCEL' to return to the menu.

```
Type:SMOKE/SOUNDER
ID:081008
Message:VERIFY
Strength:54
```

7.0 <u>The Site Radio Survey</u>

7.1 Survey Mode

Zerio panels have a survey mode facility incorporated into the menu structure. The main panel is mounted where the proposed location would be and a sounder detector is used to survey for device positions.

Before beginning the survey it is recommended that the cradle used to support the survey detector is assembled and the plastic extension rods attached.

Every time the unit removal peg located on the back of the detector is depressed it sends out a transmission to the panel. The panel examines the received signal strength and radios back a command to beep x number of times depending on what the received signal strength was.

```
         Survey Mode

  ID: - - - - - -
```

To Enter Survey Mode
- ❑ From the 'Main Menu', using the cursor keys, select '4-Test Mode'
- ❑ Select '4-Survey Mode'
- ❑ Power on the survey detector or cause a unit removal (by removing the base),
  the ID number shown on the screen should correspond to the ID number on the detector label, press enter to accept. The device will now be activated
- ❑ The buzzer will sound as a device has been put in to unit removal, this can be silenced by pressing the 'Silence Buzzer' button on the keypad.
- ❑ Briefly depress the white unit removal peg to check that the device is operating correctly.

To Survey for Device Positions
- ❑ Follow the above instructions to enter the survey mode and activate the survey detector. The panel should display a screen similar to the one opposite.
- ❑ Site the panel in its proposed location. This is important as installing the panel in a different location to the one used in the survey can invalidate the survey.
  As you move further away from the panel the detector beeps to indicate the received signal strength - the fewer the beeps the lower the strength.

```
Survey Mode Active
RSSI: 82
■■■■■■■■■■■
     ENTER to Quit
```

The values for each beep type are:

No. of Beeps	RSSI Value
1	37-45
2	46-52
3	53-60
4	61-67
5	68 and above

- ❑ The survey detector should now be taken to all proposed device locations. Position the detector where the device will be located and press it firmly against the surface so that the unit removal peg is pressed in. If the surface is too rough or the location too high to reach then refit the detector base to force the detector to constantly transmit. The detector unit should be touching the surface of device locations when performing the survey. Failure to do so could lead to inaccurate results.
- ❑ Should the signal strength drop to below 37 when performing the survey the tone of the detector will change to indicate this and a repeater panel should be considered.

> **Always use the cradle and the plastic extension rods when surveying - holding the survey device in you hand will provide inaccurate readings as the person holding the device will act as an antenna.**

Tip: If the device is likely to slip out of the plastic cradle, secure it in place with a rubber band.

To Survey for Repeater Positions
- ❑ Surveying for panels is the same as for detectors. Once the need for a repeater panel is identified check the proposed position has a strength of over 37 using the survey detector.

❑   The survey panel should then be moved to this location. Surveying for the remainder devices can now continue. If using a 1-metre antenna for either the main panel or repeaters, the survey panel should be positioned where the antenna would be sited.

NOTE: The system will support a maximum of 4 repeater panels. Each repeater must be able within radio range of the control panel.

IMPORTANT

Failure to perform an accurate survey will result in the system being unlikely to function correctly. These errors can be costly to correct.

Points to remember:
1.   **Position the panel where it is to be installed**
2.   **Ensure devices are surveyed for their exact positions touching the ceiling or wall. A few inches either side may affect the signal strengths substantially.**
3.   **In order to have an accurate survey the batteries in the detector should be changed at least once a year**

Disabling Survey Device

Once finished surveying, press ENTER to quit. This will reset the sounder detector from survey mode.

If a message appears saying 'Device Not Responding' see section 7.3

```
      Device Not
      Responding

    CANCEL to exit
```

7.2   Range Test

Signal strengths of individual devices to the main panel and repeaters can be easily viewed using this menu option. Detectors need to be logged on the system and put in to a test mode in order to use this function.

❑   From the 'Main Menu', using the cursor keys, select '4-Test Mode'
❑   Select '5-Range Test'
❑   Visit the detector and remove from the base
❑   Press the reset button until 3 tones have sounded followed by a confirmation tone
❑   If LED is flashing at a faster rate then device is in test mode
❑   Replace device on base for more accurate reading
❑   Screen should display the ID of the device and a signal strength
❑   Use ↑↓ to scroll through repeater panels
❑   Once finished refit the device to its' base then hold reset button
❑   until 3 tones have sounded followed by a confirmation tone.
❑   Press reset once more and device will stop flashing the LED.

```
        Panel
ID:000000   RSSI:00


   CANCEL to exit
```

```
        Panel
ID:000082   RSSI:77
■■■■■■■■■■■■
   CANCEL to exit
```

7.3   Reset Survey Device

If the survey device does not reset at the end of a survey use this menu to reset the device.

❑   From the Main Menu', using the cursor keys, select '4-Test Mode'
❑   Select '6 – Reset Survey Device'
❑   Ensure device is in unit removal, the unique id should be displayed
❑   Press ENTER to reset the device

```
   Device Disabled

   CANCEL to exit
```

8.0   <u>Commissioning Engineer Access Level</u>

8.1   Set-up a New System (Standard)

Devices are programmed by connecting them to the control panel.

- ❑ Fit the Write Enable Link
- ❑ From the 'Main Menu', using the cursor keys, select '1-Setup'
- ❑ Select '4 -System Setup'
- ❑ Select '2 -New Setup'
- ❑ Select either, '1 - Standard System' or '2 - Advanced System'. The standard option allows the user to set up the basic options inside the devices. The advanced menu allows the less frequently used options to be set.
- ❑ Press ENTER to start. If you wish to put the system in test mode select yes at the next screen (see 4.3), otherwise use the cursor keys to select no. ENTER to continue.
- ❑ Select Antenna type. If selecting a stub, follow the on screen instruction to calibrate it.
- ❑ If a new setup was selected the panel will prompt you to connect the devices for programming.

```
Put the system in to
test mode?
        Yes↕
ENTER to Continue
```

```
   Antenna type
       Stub↕


  ENTER to Continue
```

```
Antenna Calibration

Remove antenna and
    Press ENTER
```

8.2   Adding a device

Additional devices can be added to the system at any time. Ensure you have the correct information prior to programming the devices, although these values can be changed at a later date. The information is dependant on what type of device is being installed which is listed below. See the glossary for a description of the settings.

Model Number	Zone	Device Description	Sensitivity/ Alarm Value	Volume	Alarm Verification	Sounder Area
EDA-C1000	1-8	Callpoint	X	X	X	X
EDA-R1000	1-8	Smoke Detector	High, Medium or Low	X	0-60s	X
EDA-R2000	1-8	Smoke Detector and Sounder	High, Medium or Low	0 - 10	0-60s	0 – 255
EDA-S1000	1-8	Heat Detector (Fixed Point)	$50 – 99\ ^0C$	X	X	X
EDA-S1000	1-8	Heat Detector (Rate of Rise)	High, Medium or Low	X	X	X
EDA-S2000	1-8	Heat Detector and Sounder (Fixed Point)	$50 – 99\ ^0C$	0 – 10	X	0-255
EDA-S2000	1-8	Heat Detector and Sounder (Rate of Rise)	High, Medium or Low	0 – 10	X	0-255
EDA-A2000	1-8	Wall Mounted Sounder	X	0 – 10	X	0-255
EDA-A2060	1-8	Wall Mounted Strobe	X	X	X	0-255
EDA-A2080	1-8	Wall Mounted Output Unit	X	X	X	0-255
EDA-A2102	1-8	Wall Mounted Sounder/Repeater with antenna	X	0-10	X	0-255
EDA-T1000	1-8	Transmitter / Input Unit	X	X	0-60s	X

Note: X denotes option not available

> **Note: From version 0.15 of panel software, repeaters are added to the system the same as all other devices – follow guidance below.**
>
> **If using software prior to this please refer to the appendices for help.**

- ❑ From the 'Main Menu' screen using the cursor keys, select '1-Setup'
- ❑ Select '5-Device Setup'.
- ❑ Select '2-Add Device'.
- ❑ The write/enable link must be fitted.
- ❑ The device to be added to the system should now be connected to the 4 way connector, the other end being connected to the panel as shown in the picture. The coloured edge of the connector should face the 'on' position on the device and upwards on the panel. The led will flash and the unit will usually beep once as it is connected.
- ❑ A screen will prompt you to press 'ENTER' to read the device. During reading, which takes about 3 seconds, the device will occasionally beep.
- ❑ Once read, the unique ID will be displayed on the screen. This should be checked against the unique ID printed on the bar-coded label. If the unique ID already exists on the system a message will appear and the unit will not be able to be added.

```
  Connect Device
To Programming Lead

  ENTER to continue
```

❑ The device number the new unit is to be assigned to should be selected using the cursor keys. When correct press enter.

❑ You will now be prompted to select various options for the device depending on the type of device is being programmed. All options are entered through the control panels' key pad using the cursor keys, except for the text location.

❑ If a call point, smoke or heat detector is being programmed using the '↑' and '↓' select the zone number and press 'enter'.

❑ If a smoke or heat detector is being programmed select the preferred sensitivity for this unit and press 'enter'. Smoke and Fixed Rate of Rise Heat Detectors can be set as either 'High' (most sensitive) 'Med' and 'Low' (least sensitive). Fixed Point Heat Detectors can be set in a range of 50°C to 99°C in 1° intervals.

❑ If a sounder, beacon, I/O unit or combined sounder detector is being programmed then using the '↑' and '↓' select the volume (0-no sound to 10 max volume) and the correct sounder area.

❑ To enter location text, connect a standard keyboard (PS2 type connector) and type in the text. To correct any error use the 'Backspace' key. When finished press the panel 'ENTER' key.

❑ Press Enter to save settings. Once pressed the following messages will be displayed as the information is written to the device, followed by the processors internal memory and to the SIM card. Once stored a message, 'Data Saved OK' appears on the screen. Wait for the device to give a confirmation beep before removing the programming lead.

If required the next device can now be connected and the process repeated.

Once all devices have been programmed the 'write enable' link should be removed.

Converting a Millennium Device
Millennium devices can be converted for use on Zerio systems.

❑ From the 'Main Menu' screen using the cursor keys, select '8-Setup System'
❑ Select '2-Add Device'.
❑ The write/enable link must be fitted.
❑ The device to be added to the system should now be connected to the 4 way connector, the other end being connected to the panel as shown in the picture. The coloured edge of the connector should face the 'on' position on the device and upwards on the panel. The led will flash and the unit will usually beep once as it is connected.
❑ A screen will prompt you to press 'ENTER' to read the device. During reading, which takes about 3 seconds, the device will occasionally beep.
❑ The panel will display a message showing that the device is Millennium and prompt you to covert it or skip that device.
❑ Press ENTER
❑ The rest of the procedure is as above.

```
Millennium Device

ENTER to convert
  → to skip
```

Note: Any error may occur if the Millennium device has previously been programmed using a hand-held programmer. If so please see section 8.10 – 'Setting to default factory settings' for instructions.

8.3 To Remove a Device(s)

To Remove a Single Device

If a device is not required on the system it must be removed to prevent it causing a verify fault.

❑ From the main menu, using the cursor keys select '1-Setup'.
❑ Select '5-Device Setup'.
❑ Select '5-Remove Device'.
❑ Select '1-Remove One Device'.
❑ Using the cursor keys select the device number and press enter.
❑ Press enter to confirm the removal. All programming and text will be deleted.

```
Select Device 01↕

ENTER to continue
```

```
Remove Device 02?

ENTER to continue
```

Electro-Detectors

To Remove all Devices
It would be unusual to remove all devices from a system unless a system was being completely re-installed.
- ❑ From the main menu, using the cursor keys select '1-Setup'.
- ❑ Select 5-Device Setup'.
- ❑ Select 5-Remove Device'.
- ❑ Select '1-Remove All Devices'.
- ❑ Press 'ENTER' to confirm removal of all devices from the system. All programming and text will be deleted.

8.4   To Replace a Device

A device on the system can easily be replaced.
- ❑ Fit the Write / Enable link on the inside door Fig 1.2 (14).
- ❑ From the 'Main Menu' screen, using the cursor keys, '1-Setup' should be selected.
- ❑ Select '5-Device Setup'.
- ❑ Select '4-Replace Device'. The following screens will be displayed.
- ❑ Select the device number of the device being replaced.
- ❑ Connect the new unit to the programming lead with the marked edge facing the on position.
- ❑ Press 'ENTER' to read the device.
- ❑ The unique ID will be displayed and 'ENTER' should be pressed to confirm the correct unique ID number.
- ❑ If the device is a different type to the one being replaced, then all of the settings will have to be set as detailed in section '8.2 Add a device'. If the text location is different then change it using the 'Edit Device/ Panel' menu option.
- ❑ Once 'ENTER' is pressed to confirm the unit number to be replaced, the following messages will be displayed:-'Programming device', 'Saving to flash', 'Saving to SIM', 'Data saved OK'
- ❑ Press cancel to exit.

```
Connect NEW Device
To Programming Lead

ENTER to continue
```

```
Type: CALLPOINT
  ID: 000275

ENTER if correct
```

```
Replace Device 07
 with ID 000275?

ENTER to continue
```

8.5   To Adjust a Device's Settings

Each device has certain settings, which are stored inside the device, determining how they function. For example, a smoke detector contains a setting, which determines how much smoke is required inside the chamber before an alarm condition is transmitted to the control panel. Other settings are listed in the table below. As this information is stored inside the actual device, the device is required to be re-programmed at the control panel, using the programming lead connected to the control panel.

Model Number	Device Description	Sensitivity/ Alarm Value	Volume	Alarm Verification	Sounder Area
EDA-C1000	Callpoint	X	X	X	X
EDA-R1000	Smoke Detector	High, Medium or Low	X	0-60s	X
EDA-R2000	Smoke Detector and Sounder	High, Medium or Low	0 - 10	0-60s	0 – 99
EDA-S1000	Heat Detector (Fixed Point)	50 – 99 ^{0}C	X	X	X
EDA-S1000	Heat Detector (Rate of Rise)	High, Medium or Low	X	X	X
EDA-S2000	Heat Detector and Sounder (Fixed Point)	50 – 99 ^{0}C	0 – 10	X	0-99
EDA-S2000	Heat Detector and Sounder (Rate of Rise)	High, Medium or Low	0 – 10	X	0-99
EDA-A2000	Wall Mounted Sounder	X	0 – 10	X	0-99
EDA-A2060	Wall Mounted Strobe	X	X	X	0-99
EDA-A2080	Wall Mounted Output Unit	X	X	X	0-99
EDA-A2102	Wall Mounter Sounder/Repeater with antenna	X	0-10	X	0-99
EDA-T1000	Transmitter / Input Unit	X	X	0-60s	X

Note: X denotes option not available

❑ Remove the device from its location and remove the 'power link'
❑ Attach the programming lead to the control panel as shown in section 7.2
❑ Fit the programming lead into the device with the marked edge of the plug facing the on position. Ensure the LED on the device is flashing.
❑ From the main menu select, '1-Setup'.
❑ Select '5-Device Setup'.
❑ Select '3-Edit Device'.
❑ Select '1-Re-program Device'.
❑ Press the 'ENTER' button on the front of the panel. The device will beep and the screen will display the ID and device type.
❑ If this is correct press 'ENTER'. If not then press 'CANCEL' and try again. Depending on the device type, the following screens will vary. The previous table lists the available options that can be programmed and their range of values. Using the ↑ and ↓ keys the values can be selected. Once all values have been set you will be prompted to program the unit by pressing enter.
❑ If a call point, smoke or heat detector is being programmed using the '↑' and '↓' select the zone number and press 'enter'.
❑ If a smoke or heat detector is being programmed then using the '↑' and '↓' select the sensitivity for this unit and press 'enter'. Smoke and Rate of Rise Heat Detectors can be set as either 'High' (most sensitive) 'Med' and 'Low' (least sensitive). Fixed Point Heat Detectors can be set in a range of 50°C to 99°C in 1° intervals.
❑ If a sounder, beacon, I/O unit or combined sounder detector is being programmed then using the '↑' and '↓' select the volume (0-no sound to 10 max volume) and the correct sounder area.
❑ To enter location text using either a PS2 type keyboard or a PC running hyper terminal, which should already be connected, type the text as required. Do not type too quickly as some key presses get missed. Backspace, delete, insert, shift etc. are all functional. Once the text is entered press 'Enter' on the control panel.
❑ Press Enter to save settings. Once pressed messages will be displayed as the information is written to the device, the processors' internal memory is updated as is the SIM card. Once stored, a message 'Data Saved OK' appears. Wait for the device to give a confirmation beep before removing the programming lead.
❑ If required the next device can now be connected and the process repeated.
❑ Once all devices have been programmed the 'write enable' link can be removed.

```
   Connect Device
To Programming Lead

 ENTER to continue
```

```
   Reading Device

   Please wait
```

```
Type:HEAT/SOUNDER
    ID: 000275

  ENTER if correct
```

```
 Alarm Temp 60↕
     (deg C)
 ENTER to continue
```

```
  Press ENTER to
  save settings
```

```
   Data Saved OK

 ENTER to continue
```

8.6   Changing Text

Device Text

Each device can have location text programmed into the control panel using either a PS2 keyboard or a PC running Hyper-Terminal. The text can be programmed when the device is being added or can be entered or amended at a later date.

❑ Fit the 'SIM write / Enable' link
❑ Connect the keyboard or PC to the PS2 connector. A special lead will be required if using a PC (See the appendices for settings).
❑ From the 'Main Menu', using the cursor keys, select '1-Setup'
❑ Select '5-Device Setup'
❑ Select '3-Edit Device'.
❑ Select '3-Device Text'
❑ Using the cursor keys select the device number which requires text amending or adding
❑ Using either the keyboard or PC type the location text. Do not type too fast as characters may be lost. Insert, shift, delete and backspace are all functional.
❑ Once complete press 'ENTER' on the control panel.
❑ Press 'ENTER' to save the data.
❑ Press 'ENTER' once saved.
❑ Press 'ENTER' if more text is to be amended / added otherwise press 'CANCEL' to return to the menu.
❑ Remove the 'SIM Write Enable' link once all text is amended / added.

```
 Select Device 01↕
   HEAT/SOUNDER

 ENTER to continue
```

```
   Text Location


 ENTER to continue
```

Agent Details

An agents name and telephone number can be displayed on the main screen when the system is in normal mode.

Please refer to section 6.4 for display options.

8.7   Changing Panel Settings

To Change the Alarm Verification time.

Alarm verification is the confirmation period (in seconds) that a smoke, heat detector or transmitter unit has to remain in alarm before the panel responds to the condition. The default value is 3 seconds. If this is set for devices other than the ones listed, the value is ignored.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '1-Main Options'
- ❑ Use the cursor keys to change the value and press 'ENTER'
- ❑ Continue to press 'ENTER' through the rest of the options until the screen details 'Press ENTER to save settings
- ❑ Press 'ENTER' to save.
- ❑ Remove the 'SIM Write / Enable' link

```
Alarm Verify 03↕


ENTER to continue
```

To Change the Re-sound Tone

Once the panel has operated the sounders after an activation, and the user has silenced the system by mistake, pressing the 'Silence / Re-sound' will cause the system to re-sound the sounders. The tone that is sounded can be changed to various sounds that are listed in the appendices.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '1-Main Options'
- ❑ Press 'ENTER' until the screen opposite appears.
- ❑ Use the cursor keys to select the appropriate value and press 'ENTER'
- ❑ Continue to press 'ENTER' through the rest of the options until the screen details 'Press ENTER to save settings
- ❑ Press 'ENTER' to save.
- ❑ Remove the 'SIM Write / Enable' link

```
Resound Tone 20↑
 SWEPT AUX ON
ENTER to continue
```

To Change the Re-sound Alarm Relay

Once the panel has operated the sounders after an activation and the user has silenced the system by mistake, pressing the 'Silence / Re-sound' will cause the system to re-sound the sounders and operate the internal fire relay. The relay can be programmed as to what should happen in the event of this. The relay can either be set so as to not operate, switch or pulse.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '1-Main Options'
- ❑ Press 'ENTER' until the screen opposite appears.
- ❑ Use the cursor keys to select the appropriate value and press 'ENTER'
- ❑ Continue to press 'ENTER' through the rest of the options until the screen details 'Press ENTER to save settings
- ❑ Press 'ENTER' to save.
- ❑ Remove the 'SIM Write / Enable' link

```
Resound Relay 03↕
   RELAY ON
ENTER to continue
```

To change the verify fail time

All devices transmit a regular 'I'm OK' verify signal. The verify fail time is the length of time, in minutes, that has to pass without the panel receiving a signal from a particular device before a fault is indicated. If this time is exceeded for a device a verify fail fault is generated. It is recommended that the verify fail time be left at the default 120 minutes.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'

```
Verify Time 120↕


ENTER to continue
```

Electro-Detectors

- ❑ Select '4-Fault Options'
- ❑ Press 'ENTER' until the screen opposite appears.
- ❑ Use the cursor keys to select the appropriate value and press 'ENTER'
- ❑ Continue to press 'ENTER' through the rest of the options until the screen details 'Press ENTER to save settings
- ❑ Press 'ENTER' to save.
- ❑ Remove the 'SIM Write / Enable' link

To Change the Hardwired Panel Input Operation

The control panel is equipped with two inputs. These can be used either as local hardwired call-points or non-latching inputs. The input is monitored for short and open circuit, generating an appropriate fault. A 470 Ω operates the alarm and a 4K7 is required as an end of line. If the input is not set-up, a resistor does not need to be fitted inside the panel. The inputs can also be set as non-latching inputs. The inputs can also be programmed for setting the system into alarm, silencing and resetting the system remotely. A 470Ω resistor across the inputs sets the system into alarm. A 2K2 resistor will cause a silence to be generated and a 4K7 will force the system to reset. Call-points fitted with LED's in series with the alarm load will not trigger the panel in to fire.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '1-Main Options'
- ❑ Press 'ENTER' until the screen opposite appears.
- ❑ Use the cursor keys to select the appropriate value and press 'ENTER' The available options are 'DISABLED, CALLPOINT and NON-LATCHING CP'
- ❑ If anything other than disabled is selected you should then select a value for 'I/P1 Device' on the following screen. This number is the device number that the system will assign it to and cannot already be allocated to another device on the system.
- ❑ Continue to press 'ENTER' through the rest of the options until the screen details 'Press ENTER to save settings
- ❑ Press 'ENTER' to save.
- ❑ Remove the 'SIM Write / Enable' link

```
I/P1 Device 00↕

ENTER to continue
```

To Enable/Disable Battery Low and/or Internal Fail for Device.

It is possible to set the panel to not display internal fails and / or battery low conditions from devices. If a timeout of '00' is entered a warning message that these faults have been permanently disabled will be displayed each time menu is accessed at Commissioning Engineer level.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup System'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '4-Fault Options'
- ❑ Press 'ENTER' until the screen opposite appears.
- ❑ Use the cursor keys to select the appropriate value and press 'ENTER' With the value set to ON the fault will be displayed.
- ❑ Continue to press 'ENTER' through the rest of the options until the screen details 'Press ENTER to save settings
- ❑ Press 'ENTER' to save.
- ❑ Remove the 'SIM Write / Enable' link

```
Batt Low ON↕

ENTER to continue
```

```
Int Fail ON↕

ENTER to continue
```

To Disable / Enable Password Entry for Silence and Reset

In order to silence, reset or use the function keys a valid user password is required. If the panel is installed in a location that is not accessible to misuse, this security feature can be disabled.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-system Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '1-Main Options'
- ❑ Press 'ENTER' until the screen opposite appears.
- ❑ Use the cursor keys to select the appropriate value and press 'ENTER'. Setting the value to ON means the password has to be entered.

```
Code Protect ON↕

ENTER to continue
```

Electro-Detectors

❑ Continue to press 'ENTER' through the rest of the options until the screen details
'Press ENTER to save settings
❑ Press 'ENTER' to save.
❑ Remove the 'SIM Write / Enable' link

Disable Faults

To prevent faults being displayed from devices or the panel a menu option is available. Panel and device faults can be disabled for up to 16 weeks.

❑ From the 'main menu' use the cursor key to navigate to '2-Disable/Enable'.
❑ Select option '1-Disable'.
❑ Select either '4-Disable Device Flt' or '5-Disable Panel Flt'.
❑ Use the cursor keys to navigate to the desired fault and press ENTER
❑ Specify the length of time in weeks. Using the cursor keys
❑ Press ENTER again to confirm.

The selected faults will remain disabled until either the time specified expires or they are enabled.

```
   SIM LINK FAULT↕

  ENTER to continue
```

```
  Timeout (wks) 01↕

  ENTER to continue
```

Enable Faults

❑ From the 'main menu' use the cursor key to navigate to '2-Disable/Enable'.
❑ Select option '2-Enable'.
❑ Select '4-Enable Faults'
❑ A list of all disabled panel and device faults will be displayed, use the cursor keys to scroll through and press ENTER to enable a specific fault.
❑ Press ENTER again to confirm

To Change an Antenna Setting

The main control panel can be fitted with different sorts of antennas. The system allows the use of either a helical (stub) aerial (supplied) or with either a 1m or 3m antenna. The system monitors the antennae status but must be configured for the correct aerial type.

❑ Ensure the 'SIM Write / Enable' link is fitted
❑ From the 'Main Menu', select '1-Setup'
❑ Select '4-System Setup'
❑ Select '3-Panel Options'
❑ Select '1-Main Options'
❑ Press 'ENTER' until the screen opposite appears.
❑ Use the cursor keys to select the appropriate antenna type and press 'ENTER'.
❑ Continue to press 'ENTER' through the rest of the options until the screen details
'Press ENTER to save settings
❑ Press 'ENTER' to save.
❑ Remove the 'SIM Write / Enable' link

```
   Antenna STUB↕

  ENTER to continue
```

To Change the Antenna Monitoring Value

If a stub antenna is fitted to the panel, it is monitored for removal using a method of detecting standing waves. The factory default is 60 (unless calibrated during a New Setup). Under certain circumstances, depending on the material of the wall or other parameters in the vicinity of the panel, this value may not be high enough to display the fault when the antenna is removed. In order to re-calculate the value, the current value with the antenna fitted should be recorded as well as the value with the antenna removed. Refer to section 6.6 to perform this. The two values should be added and divided by 2.

To set this value:

❑ Ensure the 'SIM Write / Enable' link is fitted
❑ From the 'Main Menu', select '1-Setup'
❑ Select '4-System Setup'
❑ Select '3-Panel Options'
❑ Select '4-Fault Options'
❑ Press 'ENTER' until the screen opposite appears.
❑ Use the cursor keys to select the value as calculated above and press 'ENTER'.
❑ Continue to press 'ENTER' through the rest of the options until the screen details
Press 'ENTER' to save settings
❑ Press 'ENTER' to save.
❑ Remove the 'SIM Write / Enable' link

```
 Stub Mon level 060↕

  ENTER to continue
```

Electro-Detectors

To Change the Fire Relay to Operate Either on Silence or Reset

If programmed, the fire auxiliary relay will operate on an alarm condition. By default this will switch off when the RESET button is pressed. However it can be programmed to switch off when SILENCE/RE-SOUND is pressed.

- ❑ Ensure the 'SIM Write / Enable' link is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '1-Main Options'
- ❑ Press 'ENTER' until the screen opposite appears.
- ❑ Use the cursor keys to select either '01' to switch the relay off when SILENCE is pressed or '00' to switch the relay off when RESET is pressed.
- ❑ Press 'ENTER'.
- ❑ Continue to press 'ENTER' through the rest of the options until the screen details Press 'ENTER' to save settings
- ❑ Press 'ENTER' to save.
- ❑ Remove the 'SIM Write / Enable' link

```
     Fire Relay 00↕
     CLEAR ON RESET
   ENTER to continue
```

```
     Fire Relay 01↕
    CLEAR ON SILENCE
   ENTER to continue
```

8.8 Function Keys

The two function keys located on the front keypad can now be set up as 'EVACUATE' or 'ALERT' buttons. These buttons are disabled by default, to enable follow the procedure below.

- ❑ Ensure that the 'SIM link' is fitted
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '4-System Setup'
- ❑ Select '3-Panel Options'
- ❑ Select '3-Function Keys'
- ❑ Options for Function 1 are displayed, select the function type and press ENTER
- ❑ Next select the tone required, press ENTER
- ❑ The following option configures the fire relay, press ENTER
- ❑ Options for Function 2 are now displayed in the same manner. If the key is left as disabled the tone and relay options are skipped.
- ❑ Press 'ENTER' to save
- ❑ Remove the 'SIM Write / Enable' link

```
      F1 Key 01↕
       Evacuate
   ENTER to continue
```

8.9 Adding a Repeater

Zerio systems can have dedicated repeater units to extend the system range and are added to the system in the same way as other devices. If adding new repeaters to an older system (version 0.14 or earlier) see section 4 of the appendices for specific instructions.

8.10 To Convert a Device to Default Factory Settings

To reset a device back to the factory standard defaults use the following procedure. If smoke detectors are being reset to default the head will be re-calibrated. It is important that a detector has not been tested in the previous 60 minutes and that the head is free of any contamination.

- ❑ Ensure that the 'SIM link' is fitted
- ❑ Connect the programming lead to the device and ensure the LED is flashing
- ❑ From the 'Main Menu', select '1-Setup'
- ❑ Select '5-Device Setup'
- ❑ Select '3-Edit Device'
- ❑ Select '5-Device Defaults'
- ❑ Using the cursor keys, select the device type that is being re-programmed. Selecting the incorrect device type could lead to the device not functioning correctly. Press 'ENTER' to continue when the type is selected. Messages will be displayed detailing the operation, which includes re-calibrating. Smoke detectors will beep during this process and takes about 10 seconds. DO NOT disconnect the unit during this operation.
- ❑ Press 'CANCEL' to Exit
- ❑ Remove the 'SIM link'

```
     Select Type
     SOUNDER/RPT

   ENTER to continue
```

8.11 To Change a Devices' Unique ID

It is possible to change a device's pre-programmed unique ID to that of an existing device already on the system. Doing this allows a direct device swap out with no need to reconfigure the panel. For instance if you were sending a replacement device to a site for an untrained person to swap out, if you clone the unique ID then the panel will not be altered. Assuming this information is available the following procedure demonstrates how this can be achieved.

❑ From the 'Main Menu', select '1-Setup'
❑ Select '5-Device Setup'
❑ Select '3-Edit Device'
❑ Select '4-Change ID'
❑ Using the cursor keys, highlight each digit that requires changing and then use the up and down keys to change the values. The values are hexadecimal numbers i.e. each digit ranges from 0 to 9 and then A to F. This value should match the value of the device that is being replaced. If this is wrong the device will not operate. The system will not allow a second device of the same unique Id to be programmed on to the system.
❑ Press 'CANCEL' to Exit

```
ID: 00063E↕


  ENTER to save
```

8.12 Analogue Levels

This menu allows the head levels to be viewed. A heat detector would show the current head temperature and for a smoke detector the head level and how close the head is to an alarm condition.

❑ From the 'Main Menu', select '5-Verify Table'
❑ Select '4-Analogue Levels'
❑ Using the cursor keys select the device
❑ Press 'ENTER'
❑ Head levels are displayed

```
Select Device 04↕
    Heat Det

ENTER to continue
```

```
004: Heat Det


Head Level:15°c
```

8.13 Memory Operations

The control panel has two types of memory flash and SIM. The flash memory is built into the processor board and is used by the panel. The SIM memory (small red plug in card) contains a copy of the set-up information. It is used as a means of transferring data to a panel and is also used as a back-up. If the processor board is changed the entire site configuration data can be easily transferred to the new board simply by plugging in the old SIM card and reloading the data from it.

SIM (memory card)

To clear the panel of all data and set up default operation.

All device programming, location text and panel configuration data will be deleted and all passwords will be set to the default values.

❑ From the 'Main Menu', using the cursor keys, select '1-Setup'
❑ Select '4-System Setup'
❑ Select '4-Factory Default'
❑ Ensure the 'SIM Write / Enable' link is fitted.
❑ Press 'ENTER' to confirm. The process takes about 10 seconds.
❑ Press 'CANCEL' to proceed.
❑ Remove the 'SIM Write / Enable' link

```
Set to default
   Settings

ENTER to continue
```

Loading the system set-up from a SIM

If a processor board is being replaced or a set-up needs to be loaded from the SIM memory module, the data contained can be copied into the main processors flash memory.

❑ From the 'Main Menu', using the cursor keys, select '1-Setup'
❑ Select '4-System Setup'
❑ Select '3-Panel Options'
❑ Select '5-SIM Operations'
❑ Ensure the 'SIM Write / Enable' link is fitted.
❑ Select '1-Load from SIM'
❑ Press 'ENTER' to confirm. The process takes about 15 seconds.
❑ Press 'CANCEL' to proceed.
❑ Remove the 'SIM Write / Enable' link

```
Load data from SIM?

 ENTER to continue
```

Storing the system set-up into a SIM

If a copy of the memory is going to be stored on a back-up SIM, or EDA have requested a copy of the memory, the data can be copied on to another SIM. Remove the panel SIM and insert a blank one

❑ From the 'Main Menu', using the cursor keys, select '1-Setup'
❑ Select '4-System Setup'
❑ Select '3-Panel Options'
❑ Select '5-SIM Operations'
❑ Ensure the 'SIM Write / Enable' link is fitted.
❑ Select '2- Save to SIM'
❑ Press 'ENTER' to confirm. The process takes about 15 seconds.
❑ Press 'CANCEL' to proceed.
❑ Remove the 'SIM Write / Enable' link
❑ Remove the SIM and insert the original one

```
Save data to SIM?

 ENTER to continue
```

Upgrading Panel Firmware

Note: The following procedure only applies to panels fitted with version 1.01 and later firmware. If your panel is using an older version of firmware then the entire processor board will need to be changed. A special firmware SIM card will be needed.

❑ From the 'Main Menu', using the cursor keys, select '1-Setup'
❑ Select '4 – System Setup'
❑ Select '3 – Panel options'
❑ Select '5 – SIM Operations'
❑ Select '3 – Upgrade Firmware'
❑ Remove current panel SIM card and fit the firmware SIM.
❑ Follow the on screen instructions.
❑ When prompted to 'Fit Link' place a link over pins 3 and 4 on the 'Device Programming Lead' section of the display board (where the programming lead would normally goes)
❑ Remove link when prompted
❑ Once finished programming and prompted to do so remove the firmware SIM and replace with the original panel SIM card (referred to as the backup SIM)
❑ Panel display will return to the front screen
❑ Check the panel status screen to ensure version number has changed (see 6.6)

```
  SIM Contains
  Version 01.01

ENTER if Correct
```

```
BootLoader V1.1

Programming
********
```

8.14 Resetting Passwords

Note: Electro-Detectors will only supply over-ride passwords to authorised distributors. If you require engineering access to a Zerio panel but do not know the current passwords there is a way of overriding the system password. This requires a panel seed number and contacting the EDA helpdesk. If you are not an approved distributor you will have to contact either the installation or current maintenance company. The procedure to obtain the 'Seed' is described below.

❑ Press and hold the 'MENU' button until the lamps test function operates.
❑ Whilst the lamps are flashing, press the right hand cursor key
❑ A screen will be displayed indicating a 4 digit seed value for approximately 10 seconds
❑ Contact EDA with this value and they will issue a password, valid for 15 minutes at commissioning engineer access level. Passwords can then be viewed or changed under the 'Access Codes' menu
❑ If the codes have been corrupted and are outside the range of acceptable value '4-Set to Default' can be used to revert all passwords back to the default settings.

```
    Seed
    4CF3
```

Electro-Detectors

8.15 Double Knock

The Double Knock feature can be set up so that a second device anywhere on the system will override the delay (see Double Knock by Device) or a second device within the same zone will override the delay (see Double Knock by Zone).

❑ Using the cursor keys select menu '8 – Setup System'
❑ Select '5 – Edit Device/Panel'
❑ Select '2 – Double Knock'
❑ Select Double knock to **ON** to enable the feature
❑ DKnock by zone to **OFF**
❑ DKnock tone, this is the tone the system will sound in the event of the second device being triggered before the delay expires (e.g. tone 4 evacuate)
❑ DKnock relay, this enables the fire relay causing it to activate once the second device is triggered. This would normally be set to 3 – on, but can be adjusted.

Double Knock by Zone
❑ Using the cursor keys select '8 – Setup System'
❑ Select '5 – Edit Device/Panel'
❑ Select '2 – Double Knock'
❑ Select Double knock to **ON**
❑ DKnock by zone to **ON**, will only cause the entire site to sound immediately if the second device is in the same zone as the first
❑ DKnock tone, this is the tone the system will sound in the event of the second device being triggered before the delay expires (e.g. tone 4 evacuate)
❑ DKnock relay, this enables the fire relay causing it to activate once the second device is triggered. This would normally be set to 3 – on, but can be adjusted.

8.16 Sounder Circuit

Two sounder circuits can be added to the Zerio panel using an expansion board (EDA-Z1050). The board can supply a total of 250mA split between the two circuits.

The expansion board is fitted to the existing fire/fault relays and both inputs on the psu. Two sounder circuits are provided together with a fire relay and a 'straight through' terminal connection for the fault relay. Sounder circuit 2 can be converted back to a monitored input should this be required. The board can only be used on version 1.01 or higher firmware. Detailed installation instructions provided with each board.

Appendices

1. Default Passwords

User	1111
Advanced User	2222
Service Engineer	3333
Commissioning Engineer	4444

2. Glossary

Flash Memory	The panel's internal memory that stores all set-up data and information.
SIM Card	The back-up memory which stores a copy of customer set-up options. The same information is also stored in the flash memory.
Unique number	Each device has a unique unit number, set during the manufacturing process, which is transmitted every time the device transmits a message. The control panel uses this information to determine which device is transmitting.
Unit number	When a device transmits its unique ID, the control panel references this to a unit number in the range of 1 to 99. This number is displayed on the control panel whenever a fault or alarm message is received from a device.
Sensitivity	Each smoke and heat detector can be set to a value so that when this value is exceeded, they generate an alarm condition. For smoke and rate of rise heat detectors, this can be set to high, medium or low. For fixed point heat detectors, this can be set to a value between 50 and 99 degrees centigrade.
Sounder Area	Areas of buildings or separate buildings can be set up so that only these areas sound when an alarm in this area occurs. These areas are called sounding areas. Each sounder must be programmed to the appropriate area and the cause and effect programming be altered so that each device sounds the appropriate area. A sounder programmed to area 0 will always sound, irrespective of the sounder area number being transmitted and can be used as a global alarm sounder.
Text Location	59 characters of text, programmed into the panel corresponding to the location of the device / panel. In order to display the full text, the characters scroll across the screen.
Volume	Every sounder and combined detector and sounder have a value programmed into them ranging from 0 to 10. 10 is the maximum volume and 0 would be silent. The value would usually be programmed to 10.
Zone Number	Each device can be programmed into a logical fire area called a zone. When the unit transmits an alarm, the unit number and its corresponding zone is displayed on the screen.
Frequency	Transmission frequency is set at 173.2250MHz.
Rating	The panel requires a mains supply rated at 220-240V a.c 50Hz capable of providing 300mA. The panel fuse being a 500mA ceramic T type.

3. Setting up Hyper-Terminal

It is always best to set up Hyper-Terminal and connect it to the panel before starting to program the system. A special 9 way d-type to PS2 connector is required (EDA-Z1020).

Hyper-Terminal is supplied free with Windows and can usually be found by clicking on Start, then on Programs and then on Accessories. In this folder there is usually a 'Communications' folder containing Hyper-Terminal. It is advisable to check that Hyper-Terminal is installed on your pc.

If you are setting up for the first time then enter a name 'EDA_ZERIO' under 'Connection Description' and click on OK. Select the com port that the PC is using (usually COM1) under the 'Connect To' screen. Enter the com port settings as shown below and click on OK

If Hyper-terminal has been used before then selecting 'File', 'Open' and select 'EDA-Zerio' will load the settings.

A blank screen as shown below will appear.

Text should be typed in to the computer and will appear on the panels' display. Backspace is used to delete characters but the 'Delete' cannot be used . ←&→ will move through the text and allow the text to be overwritten (no text can be inserted). The ↑ & ↓ keys have no effect. 60 characters can be entered and will scroll to the right of the screen.

Characters will not appear by default on the PC screen as you type, however if 'File', 'Properties', 'settings', 'ASCII set-up' is selected and 'Echo Typed Characters Locally' checked, all characters sent to the panel will be displayed on the screen.

To Save the Data to a file

Prior to the data being displayed on the screen, the information can be saved to a file.
Click on 'Transfer' in the main menu bar and then select 'Capture Text'. You will be prompted to enter a file name where the file would be stored. This is a .TXT file and can be viewed later. Select the option on the panel to dump the information to the PC.

4. Repeaters

In order to extend the range of a Zerio system, specially designed repeater units (EDA-A2102) can be added. Although these devices look like a wall mounted sounder fitted with an aerial they do require a power supply to operate correctly (EDA-A2110). Note that currently it is necessary to order a power supply when ordering a repeater unit. On panels with V0.15 of software or higher these are added in the same way as other devices (see section 8.2).

> IMPORTANT: Repeaters should not be run from batteries. When operating as a sounder/repeater the receiver is permanently switched on. The supplied battery is used as a stand-by battery and will provide in excess of 60 days operation in the event of a mains failure.
>
> Always connect repeaters to a fused spur using adapter EDA-A2110.

For older systems these units will need to be converted to a sounder, added to the system and then converted back to a Sounder/Repeater by following the procedure below.

Converting to Sounder
- ❑ Ensure the 'SIM link' is fitted
- ❑ Connect the programming lead to the device and ensure the LED is flashing
- ❑ From the 'Main Menu', select '8-Setup System'
- ❑ Select '6-Program Device'
- ❑ Select '5-Device Defaults
- ❑ Select the type as 'SOUNDER' and press ENTER to continue
- ❑ Messages will be displayed detailing the operation which includes, programming the device, save to flash, save to SIM and data saved
- ❑ Press 'CANCEL' to exit.

```
       Select Type
        SOUNDER↕

    ENTER to Continue
```

The device has now been converted to a sounder, add the device to the system as normal (see section 8.2)

Once added the device will need to be converted to a repeater again. This process is detailed below.

Converting Device to Sounder/Repeater
- ❑ Ensure the 'SIM link' is fitted
- ❑ Connect the programming lead to the device and ensure the LED is flashing
- ❑ From the 'Main Menu', select '8-Setup System'
- ❑ Select '6-Program Device'
- ❑ Select '2-Repeater functions
- ❑ Select '1-Device to Repeater'
- ❑ Messages will be displayed detailing the operation which includes, programming the device, save to flash, save to SIM and data saved.
- ❑ Press 'CANCEL' to exit.
- ❑ Device should now show as Sounder/Rpt

```
Type: SOUNDER
  ID: 00036D

   ENTER to convert
```

Common Problems

- ❑ **Error message 'Cannot add a repeater to system'.**
  Panels with software pre V0.15 are unable to add sounder/repeaters straight on to the system. Follow above guidance.
- ❑ **Booster not relaying verify messages**.
  Ensure the system is showing device as a Sounder/Rpt, if follow the above instructions on 'Converting to Sounder/Repeater'. Once fitted the booster unit must be swiped with a magnet. Failure to do so prevent verify messages not being re-transmitted to the main panel for up to 5 hours, leading to verify fails from certain devices.
- ❑ **Sounder/Rpt XX Type Error**
  Occurs when trying to convert an active sounder/repeater back to a sounder by using the Device Defaults menu. Follow instruction in section 7.9 on converting units back to sounders.

5. Sounder tones

Sound Number	Auxiliary O/P	Tone	Sound Number	Auxiliary	Tone
0	OFF	No Sound	16	ON	No Sound
1	OFF	Constant High Frequency Tone	17	ON	Constant Frequency Tone
2	OFF	Constant Low Frequency Tone	18	ON	Constant Frequency Tone
3	OFF	Warble Tone	19	ON	Warble Tone
4	OFF	Swept Tone	20	ON	Swept Tone
5	OFF	Pulsed Constant Low Frequency Tone	21	ON	Pulsed Constant Low Frequency Tone
6	OFF	Pulsed Warble Tone	22	ON	Pulsed Warble Tone
7	OFF	Pulsed Swept Tone	23	ON	Pulsed Swept Tone
8	OFF	No Sound	24	ON	No Sound
9	OFF	4 Seconds Pulsed Low Tone	25	ON	4 Seconds Pulsed Low Tone
10	OFF	4 Seconds Pulsed Warble Tone	26	ON	4 Seconds Pulsed Warble Tone
11	OFF	6 Seconds Pulsed Low Tone	27	ON	6 Seconds Pulsed Low Tone
12	OFF	6 Seconds Pulsed Warble Tone	28	ON	6 Seconds Pulsed Warble Tone
13	OFF	6 Seconds Low Tone	29	ON	6 Seconds Low Tone
14	OFF	6 Seconds Warble Tone	30	ON	6 Seconds Warble Tone
15	OFF	6 Seconds Swept Tone	31	ON	6 Seconds Swept Tone

6. Menu – Quick Guide

First Menu Level	Second Level	Third Level	Fourth Level	Fifth Level
1. Setup(1)	1. Time & Date(1)			
	2. Access Codes(2)	1. View Codes(2) 2. Change Codes(2) 3. Set to Default(4)		
	3. Panel Display(3)	1. Agent Name(3) 2. Agent Phone(3) 3. Display Options(3)		
	4. System Setup(3)	1. Panel Info(3)	1. Status(3) 2. Panel Readings(3)	
		2. New Setup(4)	1.Standard System(4) 2. Advanced System(4)	
		3. Panel Options(4)	1. Main Options(4)	
			2. Double Knock(4)	
			3. Function Keys(4)	
			4. Fault Options(4)	
			5. SIM Operations(4)	1. Load from SIM(4) 2. Save to SIM(4) 3. Upgrade Firmware(4)
			6. Sounder Circuit(4)	1. Add Sounder Cct(4) 2. Remove Sounder Cct(4)
		4. Factory Default(4)		
	5. Device Setup(3)	1. Device Info(3)	1. View Info(3) 2. Dump Info(3)	
		2. Add Device(4)		
		3. Edit Device(4)	1. Reprogram Device(4) 2. Device Options(4) 3. Device Text(4) 4. Change ID(4) 5. Default Device(4)	
		4. Replace Device(4)		
		5. Remove Device(4)	1. Remove One Device(4) 2. Remove All Devices(4)	
2. Disable/Enable(1)	1. Disable(1)	1. Disable Zone(1) 2. Disable Device(1) 3. Disable Fire Relay(3) 4. Disable Device Flt(4) 5. Disable Panel Flt(4)		
	2. Enable(1)	1. Enable Zone(1) 2. Enable Device(1) 3. Enable Fire Relay(3) 4. Enable Faults(4)		

(1) - available to basic user and higher
(2) - available to advanced user and higher
(3) - available to service engineer and higher
(4) - available to advanced engineer and higher

continued……

Electro-Detectors

3. Event Log(1)	1. View Events(1) 2. Clear Event Log(3) 3. Dump Event Log(3)			
4.Test Mode(2)	1. Enable Test(2) 2. Disable Test(2) 3. Device Test(3) 4. Survey Mode(4) 5. Range Test(4) 6. Reset Survey Device(4)			
5. Verify Table(3)	1. View Table(3) 2. Clear Table(3) 3. Dump Table(3) 4. Analogue Levels(3)	1. Clear One Device(3) 2. Clear All(3)		
6. View Airwaves(3)	1. View All(3) 2. View Single Device(3) 3. View This System(3) 4. View Type(3)			

(1)   - available to basic user and higher
(2)   - available to advanced user and higher
(3)   - available to service engineer and higher
(4)   - available to advanced engineer and higher

Electro-Detectors

7. Faults

The following provides a list of common faults. It is sub-divided into device and panel faults.

Device faults	EXPLINATION	ACTION TO RECTIFY
BATTx LOW	The battery in the device is nearly flat. Typically devices continue to have another 60 days of active life left.	Replace the batteries in the device within the next 30 days.
I/P1 or I/P2 OPEN CCT	One of the input circuits inside the control panel has gone open circuit. Note that the inputs are only monitored if they are enabled in the panel options.	The inputs are monitored for a 4k7 ohm end of line resistance. Check the wiring of any inputs going into the panel. If none are fitted, check the end of line resistors are fitted and tightened properly.
I/P1 or I/P2 SHORT CCT	One of the input circuits inside the control panel has gone short circuit. Note that the inputs are only monitored if they are enabled in the panel options.	The inputs are monitored for a 4k7 ohm end of line resistance. Check the wiring of any inputs going into the panel. If none are fitted, check the end of line resistors.
DEVICE NUMBER xx INT FAULT	This usually appears when programming a device. If it occurs during normal operation it is usually a precursor of another fault such as a dirty head or a low battery.	Reset the device and reset the panel. If the fault returns notify the maintenance company.
DEVICE xx UNIT REMOVAL	Device number xx has been removed from its base.	Check the device and reset as necessary. If the device will not reset check that it is correctly seated in the mounting base. Reset the panel. If the fault returns try slackening the mounting screws on the base.
DEVICE xx TYPE ERROR	This usually appears when programming a device. If it occurs during normal operation contact the maintenance company.	During programming – reset device and panel. If it re-occurs see the section on removing and adding a device. If the fault reoccurs do not use the device and contact the maintenance company.
Panel faults		
PANEL FAULT	The panel cannot communicate with all internal components.	Disconnect standby battery and remove power supply fuse. Wait 60 seconds then re-insert fuse and reconnect battery.
SUPPLY FAULT	Mains failure.	Check 500mA fuse and fused spur.
SYSTEM FAULT	Flash memory checksum failed	Contact the maintenance company.
SIM CARD FAULT	SIM card not fitted or faulty	Check SIM card is fitted. Remove and refit
BATTERY LOW	Panel standby battery low.	Check battery voltage is above 10 volts.
INTERFERENCE	Interference	Reset fault. If it re-occurs notify maintenance company.
SIM LINK FAULT	SIM write enable link left enabled.	Remove jumper. (marked 14 in fig 1.2).
CONFIGURATION FAULT	Faulty flash.	Contact maintenance company.
ID ALREADY ASSIGNED TO DEVICE XXXX	The same unit will not be allowed to be programmed twice on to the system	

Electro-Detectors

8. Common Problems

SIM Link Fault
The SIM card link needs to be removed from the panel when the system is not having its internal memory updated. This is located on the top left hand side of the processor board. It is the lower of the 2 links and is labelled 'write/enable'

No display on Panel
If the green LED is off then check the mains supply.
If the green led is on, then the mains supply is OK. There is a resettable fuse on the PSU. Power down the panel for 1 minute and re-apply power. If the fuse has reset the green led should come on.

Panel Battery Low
Check battery voltage should be between 11 and 14 volts. – check fuse – check battery terminal connections at both end of cable Disconnect battery and measure battery voltage approx 12V.
Power down panel and apply mains supply first and then attach the battery.

Devices won't program
Lead connected incorrectly – ensure the marked edge of the connector faces the on position on the device and faces upwards on the panel.
The device should flash its LED prior to being able to be programmed. If not, the unit should be Reset or powered down. Ensure the LED is flashing before programming. Sounders can be reset by shorting out the pads to the right hand side of the power link.
Devices must be either Zerio devices or Millennium device version 1.6 or greater.

Antenna Open Circuit Fault
The stub antenna is now monitored. However, this operates using a method of detecting and measuring standing waves. The panel defaults to a set value of 60 but depending on the type of material around the panels location this value may need to change. See section 7.7 – 'change panel settings'.

LED on PSU not Illuminated
If there is no mains present the green LED will not illuminate. If there is mains present but the green LED is not illuminated there is a fault on the PSU. It is likely that a panel fault will be generated.

Callpoint Input not Operating
This feature is disabled by default, see section 7.7 Change Panel Settings

Repeaters (boosters) not Relaying Information
Ensure the system is showing device as a Sounder/Rpt, if not follow the instructions in section 4 'Converting to a Sounder/Repeater. Once fitted the booster unit must be swiped with a magnet. Failure to do so may prevent verify messages from being re-transmitted to the main panel for up to 5 hours.

9. Software Version

Software is continually being developed to improve the operation of the system. Different versions of software are fitted in the main processor / display module (EDA-Q1030), the power supply module (EDA-Q1010) and the transceiver module (EDA-Q1020). A list of the versions are detailed below with the improvements and whether the upgrade should be made. Upgrades are available by changing the actual board or using a special lead and upgrading via a PC.

The update field indicates the importance to update the firmware as described below:
- 1 – Update immediately
- 2 – Update when engineer next available
- 3 – Update at next service visit
- 4 – No update required
- 5 – Optional or if new functionality required.

EDA-Q1010 – Zerio Power supply Module.

Version	Date	Description	Update (1-5)
1.03	27/06/05	Original release	
1.04	18/08/05	Battery low monitoring algorithm improved	4
1.05	12/03/07	Panel able to be powered up on battery first then mains	4

EDA-Q1020 – Zerio Transceiver Module

Version	Date	Description	Update (1-5)
2.04	27/06/05	Original release	
2.06	15/07/05	Sounder pre-amble messages improved	4
2.07	12/08/05	Tx/Rx latching up on power up corrected	4
2.08	30/09/05	Upgraded to operate with booster/sounder unit	5

EDA-Q1030 – Zerio Processor / Display Module

Version	Date	Description	Update (1-5)
0.04	01/08/05	Original release	
0.05	03/08/05	Production test mode added, extra silences transmitted to sounders	4
0.06	29/09/05	Back door password entry added. Device 32 & 33 can now be added. Menu changes	4
0.07	02/10/05	Antenna monitoring and programmable aux relay moved to access level 4	4
0.08	05/10/05	Production test mode improved and hidden from user	4
0.09	11/11/05	Verify Handling improved. Antenna monitoring adjustments	4
0.10	16/11/05	Sounder/Repeater added to system. Various menu changes	4
0.11	02/12/05	0.10 could not change password. New version OK	4
0.12	12/12/05	Text for panel when I/P in fault	4
0.13	13/02/06	Fix for some panels not reading devices	4
0.14	28/02/06	Improved performance when writing to flash memory	4
0.15	16/06/06	RSSI values now relayed to Main Panel from repeater, disable faults added, double knock functionality added	5
0.16	10/07/06	Changes to production test mode	4
0.17	16/0906	SIM link monitoring improved	4
1.01	27/03/07	New menu structure, survey mode, functions keys now activated. Expansion for 2 sounder circuits added	5

10. Product, Ancillary and Replacement Part Numbers

Control Panel

Product	Description
EDA-Z1000	Zerio 8 Zone Control Panel

Devices

Below is a list of devices that operate with the Zerio system. Units are supplied from new fitted with batteries. Should replacements be required the following part numbers should be used.

Product	Description	Battery Required
EDA-R1000	Zerio Optical Smoke Detector	EDA-Q660
EDA-R2000	Zerio Optical Smoke Detector with Combined Sounder	EDA-Q670 x 2
EDA-D1000	Zerio Heat Detector	EDA-Q660
EDA-D2000	Zerio Heat Detector with Combined Sounder	EDA-Q670 x 2
EDA-C1000	Zerio Call-point	EDA-Q670
EDA-T1000	Zerio Transmitter Unit	EDA-Q670
EDA-A2000	Zerio Sounder	EDA-Q620 + EDA-Q630
EDA-A2050	Zerio Actuator to operate door releases (requires EDA-A012)	EDA-Q620 + EDA-Q630
EDA-A2060	Zerio Strobe / Beacon	EDA-Q621 + EDA-Q630
EDA-A2080	Zerio Output Unit	EDA-Q620 + EDA-Q630
EDA-A2100	Zerio Booster / Sounder Unit (requires EDA-A2110)	EDA-Q620
EDA-A2102	Zerio Booster / Sounder Unit with antenna (requires EDA-A2110)	EDA-Q620
EDA-A2110	Zerio Booster Mains PSU adapter	

Ancillary Parts

Part Number	Description
EDA-Z1010	SIM Memory Card
EDA-Z1020	Zerio to PC connection lead
EDA-Z1040	Zerio slim line PS2 keyboard
EDA-Z1041	Zerio Economy PS2 keyboard
EDA-Z1050	Zerio Twin Sounder Circuit Expansion board
EDA-Y100	Helical stub antenna
EDA-Y200	3m end fed co-linear dipole antenna
EDA-Y600	1m end fed antenna including fixing bracket

Replacement Boards/Parts

Part Number	Description
EDA-Q1010	PSU
EDA-Q1020	Transceiver
EDA-Q1030	Processor and keypad including LCD
EDA-Q1040	SPI Processor/PSU/Transceiver IDC Cable