Honeywell

Galaxy 2 Series

Installation Manual

Contents

SECTION 1: INTRODUCTION

The Galaxy 2 Series is a 12-zone intruder alarm control panel. There are 2 variants. The 2-44+ is the full function version which is expandable to 44 zones. The 2-20 is an entry level version which is expandable to 20 zones. This manual covers both versions. However, certain features are not available on the 2-20 variant.

The following table gives the general specification for both variants.

Feature	Specification	
	Galaxy 2-20	**Galaxy 2-44+**
Zones	12 expandable to 20	12 expandable 44
Outputs	4+8 expandable to 16	4+8 expandable to 28
Databuses	RS485 Only	RS485 and ECP
PSU	1A (0.6A @ Grade 2)	1.4A (1A @ Grade 2)
Alphanumeric LCD Keypads/ Alphanumeric LCD KeyProx	4	4
RIO (8 zones/4 outputs)	1	4
RF Receiver	2	2
User Codes (PIN and Card)	23	23
Groups	3+1 common group	3+1 common group
Part Set	2 Part Sets	2 Part Sets
Silent Night Set	Yes	Yes
Zone Types	18	18
O/P Types	23	23
Event Log	384	384
Multi-Users	4	4
Printer Module	Optional	Optional
PSTN Communicator/Modem	On-Board	On-Board
GSM Comunicator/Modem	-	Plug on Option
Serial Port	1 on-board	1 on-board
2-way Voice	-	Optional

Table 1. General Specifications

The Galaxy 2 Series requires at least one external keypad for programming and general operation. There are two main types of keypad available.

Galaxy Mk7 LCD Keypad: This keypad has a 2 x 16 character display and operates on the RS485 data bus. Optionally, a keyprox version is available. This is a standard Mk7 keypad with a proximity card reader built in to the lower right-hand corner. The keyprox is for set/unset only.

6160 Full Text Keypad: This keypad has a 2 x 16 character display and operates on the ECP data bus. Optionally versions are available with built-in prox reader and wireless receiver.

Optional Peripherals

Zone Expander: This gives eight extra hardwire zones and four programmable outputs. Alternatively four extra hardwire zones and no outputs.

RF Radio Receiver: This allows the control panel to receive signals from wire-free detectors and radio keyfobs. One radio receiver will allow the panel to assign wire-free detectors to any or all of the 44 detection zones. However, two receivers can be used to increase coverage.

Proximity Card Reader: This allows users to set/unset simply by swiping a card or tag in front of the reader. The proximity card readers are built into the housing of the keypads.

RIO/ PSU Control: Up to four RIO's or PSU's can be added to the RS485 Bus. Each RIO/ PSU Control expands the system by eight zones and four outputs.

GSM Module: This module provides mobile telecommunications between the panel and the Alarm Receiving Center (ARC).

Features

RF

The system operates with the 5800 receivers on ECP and/or the RF Portal on RS485. A maximum of two RF receivers can be fitted to the system (two on the ECP bus, two on the RS485 bus or one on each bus), to support up to 44 zones. The RF receivers are in addition to the prox keypads on RS485 but in place of ECP prox keypads.

Groups

Group functionality allows the system to be split into three individual sub-systems that can be set and unset independently. Additionally there is a fourth common group which will set automatically when all the other groups have set. It is unset as soon as any one group has been unset by a user. Zones are assigned users to a single group only. Users are assigned to one or more groups.

Dialler

The system can have two active comms devices configured, chosen from:

- On-board PSTN/Modem

- Plug-on GSM Module

These are used for Dial-up primary and secondary signalling, as well as remote servicing and two-way audio.

SMS Text Messaging

This is a secondary alarm notification to keyholders. Text messages are sent to GSM mobile phones, giving information on panel events.

ProxKeypads

These are standard keypads with an added proximity card reader, combined into one housing. This allows dual function setting/unsetting ability from the one station without the need for a separate card reader. They are primarily intended for use in situations where a PIN card is needed to set and unset the intruder alarm system.

Remote Servicing

The Galaxy 2 series control panel can be remotely and/or locally serviced by a Personal computer (PC). This is accomplished when the Remote Servicing Software is installed on the PC.

SECTION 2: QUICK GUIDE

How to Boot up

Wire up the keypads, address them (see Peripherals - Installation, Wiring and Addressing), then apply power to the system. The keypads will configure and show the default banner display.

```
Galaxy  44    V1.0
09:51   SAT 01 JAN
```

Default Codes

Default User Code: 1234

Default Engineer code: 112233

Menu Access Operation/Navigation

Only valid codes can access the Galaxy 2 Series menu options.

Type the code then press **ent** to access the menu.

Data entry, on both ECP and RS485 keypads, is via the **0-9** function keys and the *****, **#** on the keypad.

The **A>** and **<B** keys are curser or scroll keys and are used to scroll through options in menus.

The **ent** key is used to enter a PIN code and to accept screen information.

The **esc** key is used to cancel or exit from the current operation.

NOTE: Users cannot view or access options for which they are not authorised.

How to get in and out of Engineer Mode

Entry to engineer mode is authorised by a user in menu option **48 = Level 3 Access**. Following this the engineer will have five minutes in which to enter his code. When the engineer code is entered four things happen:

• All system tampers become isolated.
• All fault signalling is suppressed, and indications are silent.
• The engineer is given access to the full menu.
• The banner message is changed to indicate engineer mode.

To bring the system back out of engineer access mode and reinstate all the tampers from the banner, the engineer enters his code but presses the **esc** key rather than the **ent** key.

How to Set/Unset

To **Full Set** the system, the user types their code then presses the **A** key.

To **Part Set** the system, the user types their code, presses the **B** key then presses the [**1**] key.

To **Night Set** the system, the user types their code, presses the **B** key then presses the [**2**] key.

To **Unset** the system, the user types their code then presses **ent**.

How to Restore an Alarm

Alarms, faults and tampers will be restored provided:

1. The cause has cleared
2. An authorised user PIN code or anti-code has been entered.
3. The conditions have been viewed on the keypad display after steps 1 and 2 above.

If a user cannot restore all the conditions, a temporary banner is displayed to indicate that a manager or engineer is required to restore the system. This lasts for 30 seconds before the normal banner is displayed.

SECTION 3: SYSTEM ARCHITECTURE

12-way ribbon cable

External Communicator

Trigger Header

Phone line

Serial Port to PC

Galaxy 2-44 PCB

ECP BUS (2—44+ only)

12 on-board zones   4 outputs

6160 keypad (4) (optionally with built-in receiver/keyprox) Note: maximum of 2 receivers/keyproxes

RS485 BUS

Note: A maximum of 4 keypads (including keyprox) can be connected to the RS485 line.

Maximum cable length from panel to last module on line is 100m

Maximum cable length from panel to last module on line is 1km

5800 RF receiver (2)

Mk7 LCD Keypad/Keyprox (4)

Standard 4-core cable spurred or T wired

4 outputs

RIO (4) C072

8 zones

ECP zone expander 8 zone, 4 output (3)

OR

4 outputs

Power Unit (4) P025 or Power RIO (4) P026

8 zones

MODULE	TOTAL QTY	ADDRESSES AVAILABLE	ECP	RS485	PLUG-ON
Keypads	4	0,1, 2, 3	4	4	
Keyprox	4	0,1, 2, 3	2	2	
Expanders*	4 on RS485 **or** 3 on ECP	2, 3, 4, 5	3	4	
RF Receivers	2	4, 5	2	2	
PSU Control/RIO	4	2, 3, 4, 5	-	4	
GSM (2-44+ only)	1	-	-	-	1
2-way Voice (2-44+ only)	1	-	-	-	1

* Only the first expander can be used on the 2-20

Twisted pair screened cable Belden 8723 equivalent. Daisy chain configuration only.

RF Portal (2)

Figure 1. Galaxy 2 Series System Configuration

SECTION 4: SYSTEM WIRING

General Information

It is essential that this product is installed correctly, in particular with respect to a person's safety and connection to the mains electricity supply. This product is not suitable for installation, maintenance or connection by the user. A competent, qualified engineer, with for example NACOSS approval, must carry out installation and maintenance.

Siting

The control panel enclosure (plastic box or metal box), must be sited indoors in a secure area where it cannot be readily interfered with. There must be adequate ventilation, ample light and easy access for servicing and maintenance. It is not suitable for siting externally or in harsh environments where it could be subject to high humidity, extremes of temperature, chemical atmospheres, high dust levels, or in a position where it may be subject to being dripped on, or splashed by, water or other fluids.

The enclosure base must be securely fixed to a vertical, smooth, solid surface that is a part of the fabric of the building. The position chosen must allow the cabinet lid to be removed and allow unhindered access for installation and maintenance.

Ventilation

While the control panel has been designed so that no part attains an unsafe temperature it is important that adequate ventilation is provided around the cabinet, therefore the cabinet must not be positioned close to heat-radiating equipment or other sources of heat.

Cabling

The panel has high voltage barriers between the a.c. mains supply and the alarm wiring terminals. It is essential that these barriers be maintained in the way the cables enter the cabinet, are routed inside the cabinet, and are routed externally.

Additional holes must not be cut in the enclosure, rear entry points are provided for cables. Alarm system cables must be neatly trimmed and not allowed to loop inside the cabinet.

Cables external to the cabinet must be either firmly affixed to the fabric of the building using suitable clips or saddles, or mechanically protected in conduit or trunking. It must not be possible to put strain on the wiring within the control cabinet by pulling on cabling external to the cabinet.

It must not be possible to push a finger or similar size object or instrument into any hole or cable entry point.

Mains Cable Type

The conductors of the mains supply cable must have a minimum cross-sectional area of 0.75 mm and the insulating material on each conductor must be a minimum of 0.4 mm thick Polyvinyl Chloride (pvc). Flexible cables must conform to the requirements of BS6500 and IEC Publication 227. Non-flexible electrical installation cables must conform to BS6004.

Zone and Data Cable Type

Zone cables and all cables between the panel, keypads and expansion modules must be as follows:

RS485 Bus: Twisted pair screen cable Belden 8723 equivalent. For systems with less than 100m cable run in total, standard 4-core alarm cable may be used in most normal environments.
ECP Bus and Zone Cables: Standard 4-core alarm cable.
Zones: Standard 4-core alarm cable.

Mains Supply Connection

The connection to the a.c. mains supply must be made by a competent, qualified person, for example NICEIC approved, in accordance with the current IEE and local supply regulations.

Warning: **A means of isolation from the mains supply must be provided within two metres of the control panel. Where live and neutral supplies can be identified, a fused spur with a 3A fuse, must be fitted on the live circuit. Where live and neutral circuits cannot be reliably identified, 3A fuses must be fitted to both circuits.**

Where a flexible cable is connected to the control having cores coloured brown and blue it is important to connect the wires to the mains terminal block as follows:

- Blue (Neutral) – connect to terminal N
- Green/Yellow (Earth) – connect to terminal E
- Brown (Live) – connect to terminal L
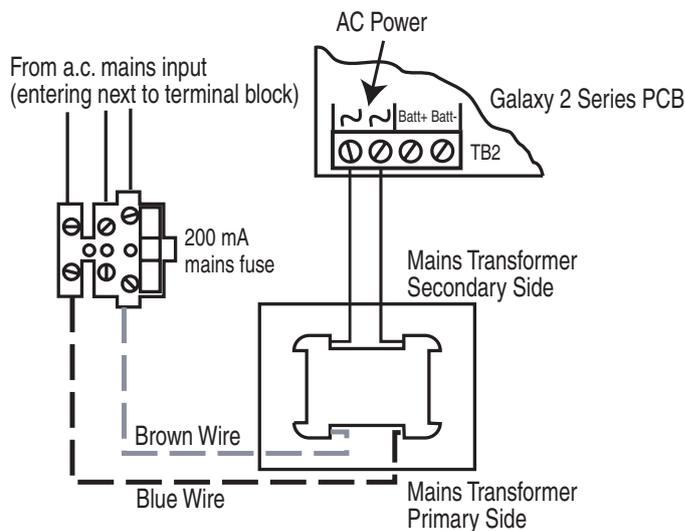
NOTE: Connections shown as dashed lines are factory made. The metal box must be earthed.

Figure 2. Mains Connection to the Galaxy 2 Series

The outer covering insulation must be clamped under the cable clamp. It is important that this cable enters the control panel enclosure through the mains entry hole next to the mains terminal block, is not looped within the control panel enclosure and does not run close to other system cables inside or external to the enclosure.

WARNING: The control panel enclosure must not be opened before isolating the mains supply. Illumination of the green power LED 2 indicates the presence of a.c. mains supply. The cover of the Galaxy 2 Series enclosure must be replaced whenever any connection to the BT master socket is completed to prevent exposure to potentially lethal voltages from the PSTN.

Equipment Electrical Rating

The control equipment is designed to operate on a mains supply of 230 Volts a.c. (230 V +10% -15%) at a frequency of 50 Hz. It is not suitable for other types of supply. The maximum current consumption in normal use is **200 mA.**

Batteries

The battery used with the control panel must be a 12 V sealed lead-acid rechargeable battery of up to 7 Ahr (plastic box) or 17 Ahr (metal box) capacity on the 2-44+ and 12 Ahr on the 2-20. The battery must be positioned on the battery shelf. Wire in battery leads to panel terminals (red lead to **Batt+**, black lead to **Batt-**). The battery leads must be connected to the battery observing terminal polarity and not left hanging near the mains terminal block.

Fuses

The mains supply must be disconnected before opening the cabinet and changing the fuse. Replace the mains fuse with the same type and rating. Refer to **SECTION 15: SPECIFICATIONS.**

Connecting the Galaxy 2 Series to the PSTN

The Telecommunications Network Voltage (TNV) port (terminals A and B on TB1) must be permanently connected (hard-wired) to the PSTN via a BT master socket, refer to Figure 3.

Note: If the BT master socket is the newer type (NTE5/CTE5), then the connection can be carried out by the installation engineer. If the BT master socket is not an NTE5/CTE5, then the network operator must make the connection.
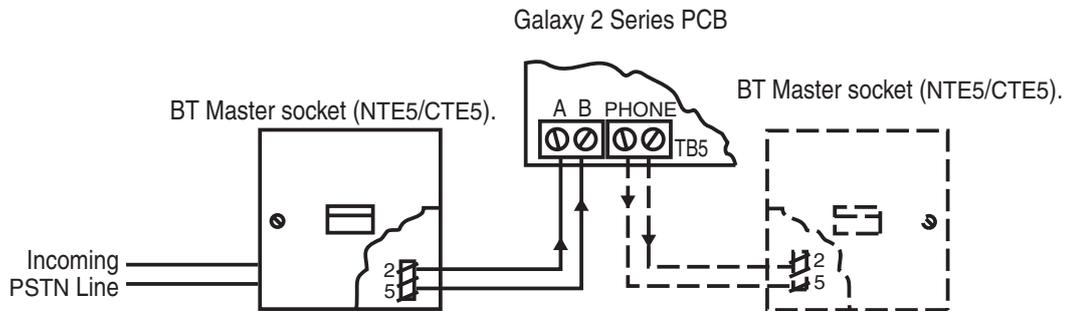
Figure 3. Connecting the Galaxy 2 Series to the PSTN

NOTES: 1.   Terminals 2 and 5 on the BT Master Socket must be hard-wired to the A and B terminals (TB1)on the Galaxy 2 Series PCB. The connection is polarity independent.

2.   It is strongly recommended that the Galaxy 2 Series panel is the only device on the line.

3.   If another device is to be connected to the line, connect the PHONE terminals on the PCB to terminals 2 and 5 on a second BT Master Socket and connect the additional devices to the second socket.

Using cable suitable for connection to 2.8 mm diameter screw terminals, strip back approximately 20 mm of the outer sheath and then remove approximately 4 mm of the insulation from the wires to be connected to the Galaxy 2 Series.

Connect terminals 2 and 5 on the BT Master socket across the A and B terminals (TB1) on the Galaxy 2 Series, see Figure 3.

Private Branch Exchange (PBX) Approval

The Galaxy 2 Series may be used with some analogue PBX exchanges. The correct operation of the Galaxy 2 Series cannot be guaranteed under all possible conditions of connection to compatible PBXs.

REN and SEN Numbers

It is possible to simultaneously connect a number of items to one line of the PSTN. The limit is determined by summing the Ringer Equivalence Number (REN) shown on each item of apparatus, ensuring that the sum of RENs is not more than four.

The REN of the Galaxy 2 Series is one (1).

Assume that all British Telecom equipment has a REN of one unless otherwise marked.

More than one item of series apparatus may be connected to the Galaxy 2 Series ports marked phone. This is limited by summing the Series Equivalence Number (SEN) shown on each item of series connected apparatus, ensuring that the sum of the SENs is not more than one (1). The total series resistance, including cabling, must not exceed 50 Ohms.

- The SEN of the Galaxy 2 Series is 0.3.
- Nominal series resistance is 90 milli-ohms.
- Nominal insertion loss is 0.1 dB.

It is recommended that the PSTN should have the following facilities:

- Outgoing calls only (when used as dialler only).
- Direct exchange.
- Tone dialling.

SECTION 5: HARDWARE

PCB Layout (2–44+)

Figure 4. Galaxy 2–44+ PCB Layout
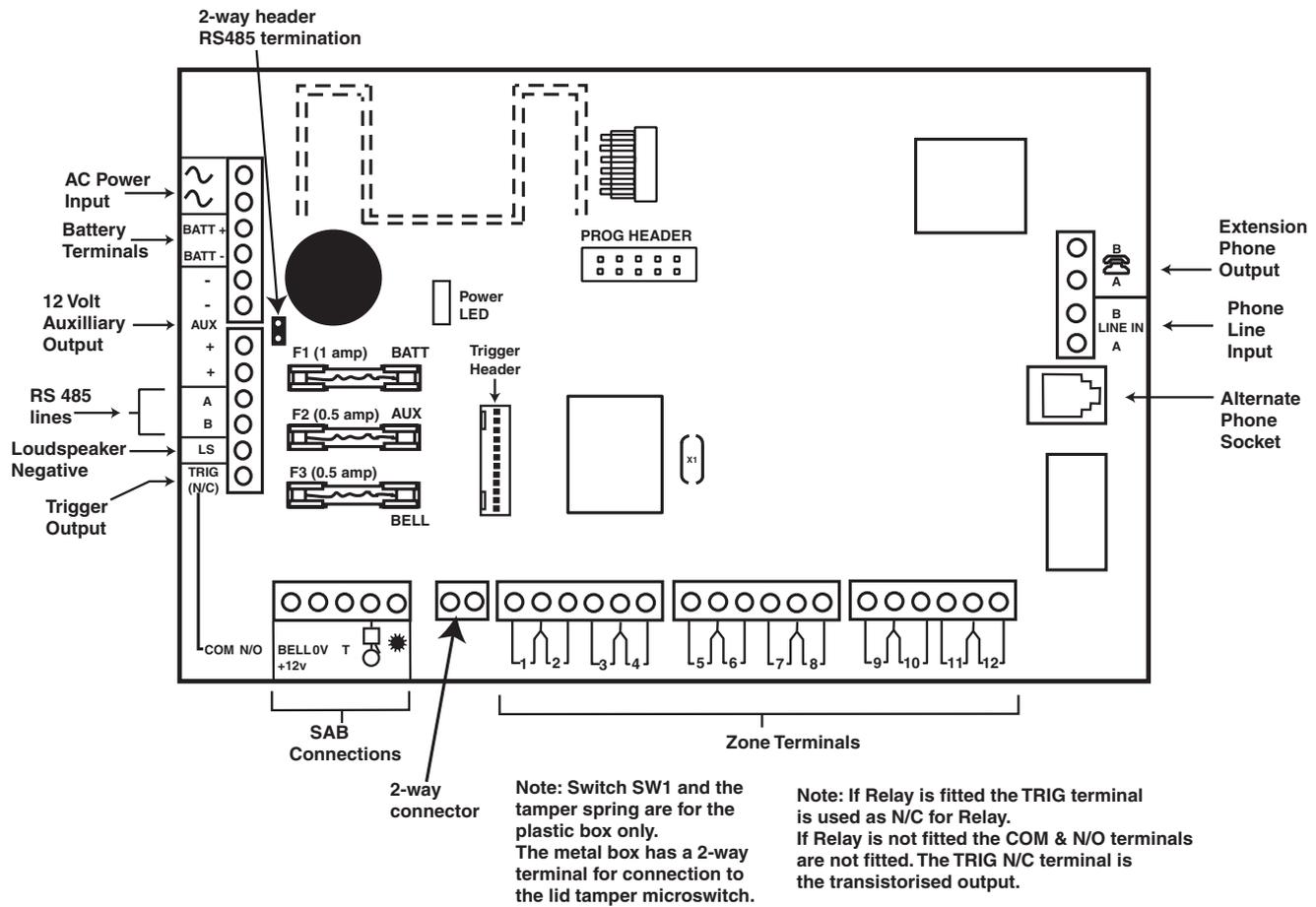
PCB Layout (2–20)

Figure 5. Galaxy 2–20 PCB Layout

Zones

The Galaxy 2–20 has 12 on-board zones expandable to 20 (RS485 bus).

The Galaxy 2–44+ has 12 on-board zones expandable to 44 (RS485 bus) or 36 (ECP bus).

The zones on the Galaxy 2 Series can function in one of three modes; Normal Closed, Double Balanced and U.S. End of line. Zone wiring for the three modes are illustrated in the following three Figures:
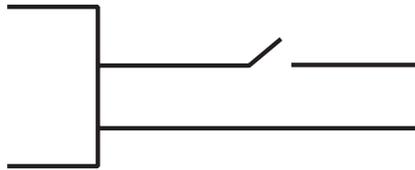
Figure 6. Zone wiring for Normal Closed Zones
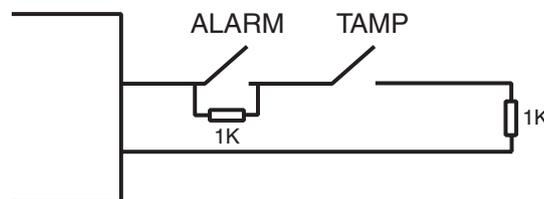
Figure 7. Zone wiring for Double Balanced Zones
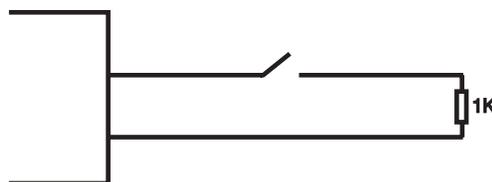
Figure 8. Zone wiring for US EOL Zones

The mode of operation for the zones is programmed from menu **option 51.46 = Parameters. Zone Resistance.** The default zone resistors are 1k ohm. However this can be changed in option 51.46. It is strongly recommended that the maximum cable run on each zone is 100 m.

Zone Links

The bell tamper circuit can be shorted using the Links provided in the installation kit. If the zones are programmed as Double Balanced or U.S. End of Line, fit a 1k resistor across the zone and not the zone link. It is strongly recommended that this be done if any of the circuits are not to be used.

Wiring Zones

The zones on Galaxy 2 Series panels are defaulted as double balanced. Each zone is 1 kΩ closed and 2 kΩ open. The transition from 1 to 2 kΩ generates an alarm condition. Refer to Table 2 for details of the zone resistance and resulting conditions.

NOTE: The circuit debounce time (the period the zone must remain open to register a change in condition) is 300 milliseconds by default.

Zone Resistance (ohms)	Condition
0-700	Tamper Short Circuit (TAMP S/C)
700-1500	Normal (CLOSED)
1500-11000	Alarm (Open) (OPEN)
11000-infinity	Tamper Open Circuit (TAMP O/C)

Table 2. Zone Resistance

Multiple detectors can be wired into a single zone. The maximum number of detectors that can be connected to a single zone is 10.

Wiring Keyswitches

The transition from 1 kΩ to 2 kΩ initiates the setting procedure of an unset system, the transition from 2 kΩ to 1 kΩ instantly unsets a set system. If the system is already set, then the transition from 1 kΩ to 2 kΩ has no effect. If the system is unset, the transition from 2 kΩ to 1 kΩ has no effect.

The wiring of the keyswitch is shown in Figure 9.

Wiring Push-Set Buttons

Zones programmed as **Push-Set** (terminator) buttons can be open going closed (2 kΩ to 1 kΩ) or closed going open (1 kΩ to 2 kΩ). The first activation of the terminator button initialises its status to the system.

NOTE: For push-set zones to operate, parameter 51.08, Exit Terminate, must be set up.

The wiring of the terminator is shown in the following Figure .
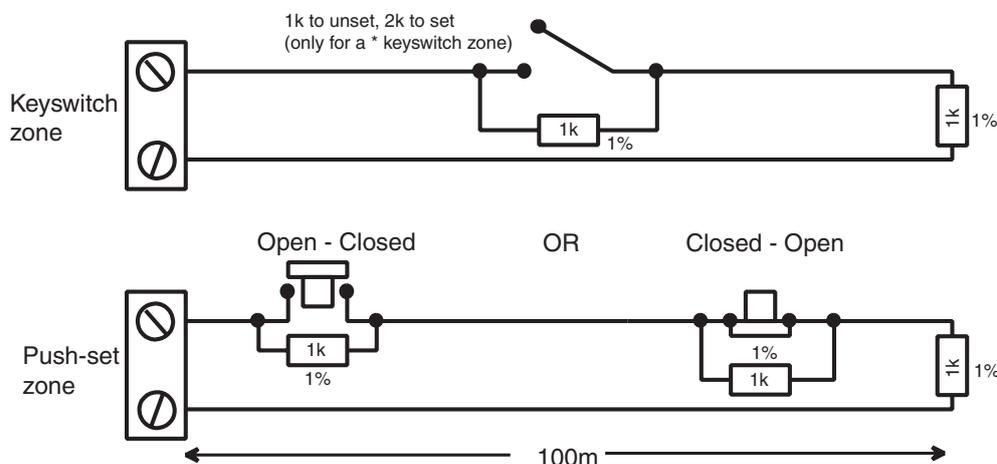
Figure 9. Keyswitch/Push-Set Zone wiring

Zone Addresses

Each zone on the Galaxy 2 Series has a 4-digit address. For example: 1004, 1058. The address is made up of three reference numbers as shown in the following figure:
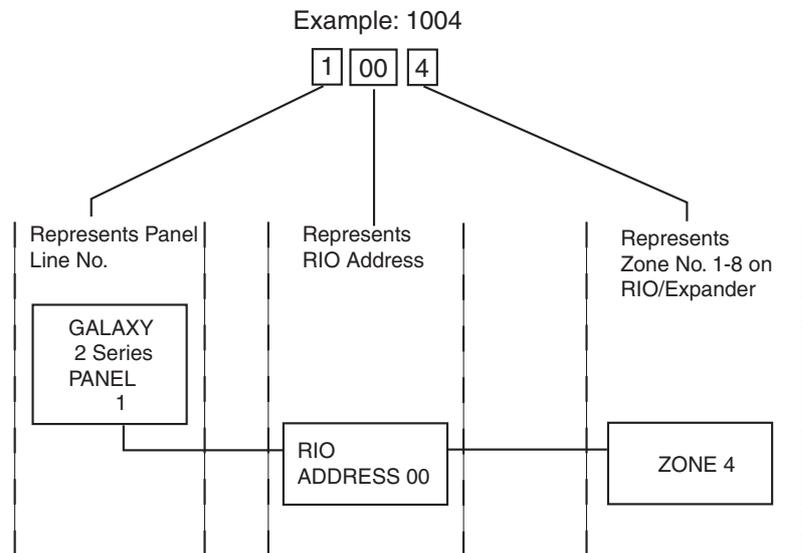
Figure 10. Zone Addresses

The example above, 1004, is the detector connected to line 1, RIO 00, zone 4.

Zone Numbering System

The numbering system is as follows:

1. The first number is the Galaxy 2 Series Panel line that the RIO/Expander is connected to. This will always be **1**.

2. The next two numbers refer to the address of the RIO/Expander that the zone is on.

    00 = On board RIO

    01 = On board RIO

    02 = RIO/Expander 1

    03 = RIO/Expander 2

    04 = RIO/Expander 3

    05 = RIO 4

3. The last number is the actual zone on the RIO/Expander 1-8. Therefore the valid zone numbers are:

    1001 - 1004

    1011 - 1018

    1021 - 1028

    1031 - 1038

    1041 - 1048

    1051 - 1058

    This gives a total of 44 zones.

Outputs

The Galaxy 2 Series has four on-board outputs; Bells, Strobe, Speaker and Set. The format of the addressing of the outputs is similar to zones. The addresses of these outputs are as follows:

Output Address	Default function	Current (mA)	Normal State	Active State
1001	Set	100	Off	0V
1002*	SPK Driver	-	-	-
1003	Bell	100	Off	0V
1004	Strobe	100	Off	0V

Table 3. Output Addresses

*NOTE: **Output 1002** - This output is configured as a 16 Ohm speaker driver (AC signal). The speaker should be connected between this output and +12V. The speaker Entry/Exit volume is controlled by parameter 51.10. It is possible to reprogram the output to operate as a normal switched negative output by programming parameter 51.15 to **0=Switch DC**. However, when it is reprogrammed to operate as Switch DC, a loudspeaker should never be connected directly to this terminal otherwise damage may result. Always ensure that this parameter is set to **1=SPK Driver**, before connecting a loudspeaker.

Trigger Header

The Trigger Header on the Galaxy 2 Series is a set of pins, which consists of programmable outputs for an external communication module. The connection is via an optional ribbon cable (Part No. A229).

Trig 1-8

There are eight trigger outputs, which are intended as communication triggers, but can be used for any purpose. By default these outputs are programmed as positive. They are designed to sink current (to 0V) not source current (from 12V). The addresses of these outputs are as follows:

Output Address	Default function	Current (mA)
0001	Fire	100
0002	Panic	100
0003	Intruder	100
0004	Set	100
0005	Omit	100
0006	Not Used	100
0007	Confirm	100
0008	Not Used	100

Table 4. Trigger Output Addresses

The function of the trigger outputs can be programmed in menu **53=Outputs**.

Inputs

Line Fault: This input tells the panel that the communicator has a telephone line fault (active low).

Reset: This input from the communicator resets the panel on a low to high signal (negative removed).

Supply

A 100 mA, 12V output is also provided. The output is fused by the on-board AUX FUSE (F2).

■	+12V
■	Trig 8
■	Trig 7
■	Trig 6
■	Trig 5
■	Trig 4
■	Trig 3
■	Trig 2
■	Trig 1
■	Line Fault
■	Reset
■	GND
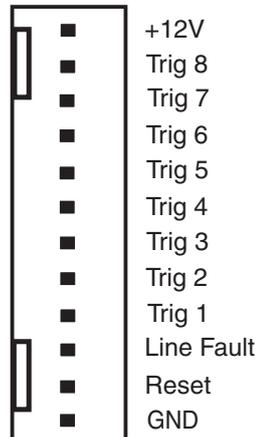
Figure 11. Trigger Header

Data Buses

Two separate data buses are available to connect the Galaxy 2–44+ panel to its peripherals.

Communication between the Galaxy 2–44+ control panel and the peripherals attached to it (see **Figure 1**), takes place on the data bus. The control panel constantly monitors the peripherals attached to it. A break in the communication from any of the peripherals generates a tamper alarm.

RS485 Wiring Configurations

The system **must** be wired in a daisy-chain configuration. That is the **A** line from the previous peripheral is connected to the **A** terminal of the current peripheral and then on to the **A** line of the next peripheral.

The RS485 (**AB**) line must have a 680 Ω resistor fitted across the **A** and **B** terminals of the last peripheral on the line.
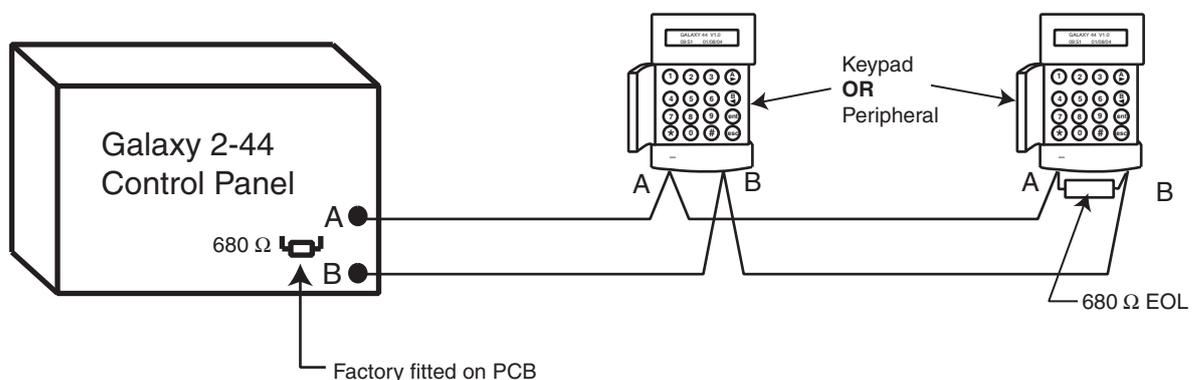
Figure 12. Daisy-chain Configuration

If two lines are connected, both ends must be terminated with 680 Ω resistors and the appropriate End OF Line (EOL) resistor on the control panel PCB must be disconnected by removal of link LK1.
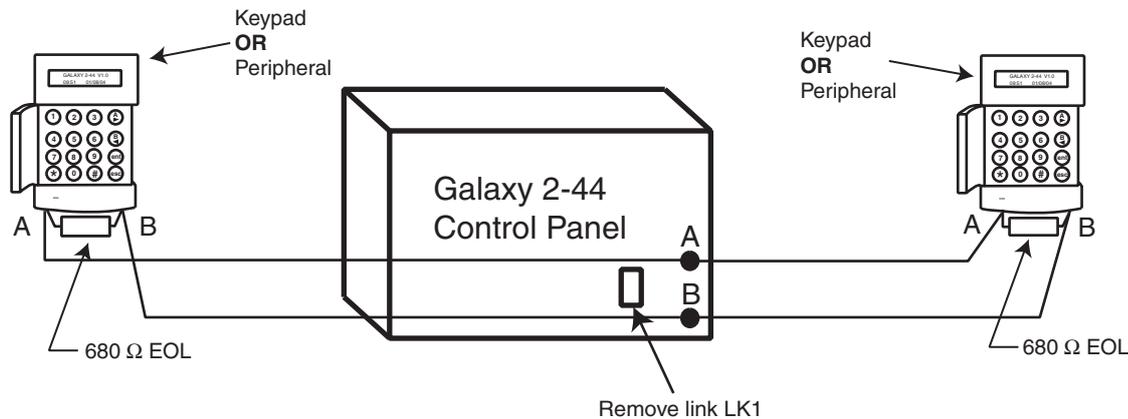
Figure 13. Twin AB Line Daisy-Chain Configuration

RS485 Wiring Recommendations

1. The system must be wired in a daisy-chain configuration. Spur and star configurations must not be used.

2. The recommended cable used to connect the RS485 (AB) line is twisted pair screened cable (Belden 8723 equivalent). However, for cable runs of less than 100m in normal environments, standard 4-core cable can normally be used.

3. There must only be a single AB pair of wires in each of the cables.

4. The power supply in the Galaxy 2 Series control panel and remote power supplies must not be connected in parallel.

5. The 0V of all remote power supplies must be connected in common to the 0V of the Galaxy 2 Series control panel.

6. Ensure that any extension loudspeakers are not wired in the same cable as an **AB** pair of wires.

7. Where possible, ensure that the **AB** cable is at least 30 centimetres away from any other cables.

8. Where possible, ensure that the **AB** cable does not run parallel to other cables for extended distances (maximum five metres).

9. The maximum length of cable run is one kilometre.

ECP Bus (2–44+ Only)

The ECP bus can operate at the same time as the RS485 bus. The cable can be standard 4-core and can be spurred or T wired.

The maximum length of cable run is 100 metres.
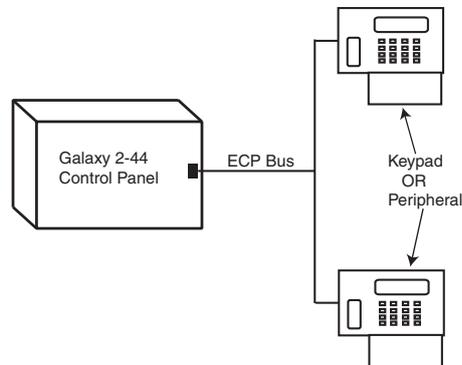
Figure 14. ECP Line - T Wire Configuration

Built-in Dialler/Modem

The built-in dialler allows signalling to an Alarm Receiving Centre (ARC), SMS signalling and remote servicing from a PC.

LED'S

There are two LED's on the Galaxy 2–44+ PCB. Pulsing of the red LED1 indicates an active telecommunications. Illumination of the green LED2 indicates the presence of AC mains supply.

There is one LED on the Galaxy 2–20 PCB. Pulsing of this LED indicates an active telecommunications.

Audio Header (2–44+ Only)

This is a 14-way shrouded header for audio connection. When an alarm is received at the ARC, the ARC can communicate through a loudspeaker at the premises, and ask for a password before authenticating the alarm.

GSM Interface (2–44+ Only)

This module provides a mobile telecommunications interface to provide an alternative to the land line. The GSM interface provides the same functionality as the built-in dialler/modem. The module attaches to the underside of the PCB and also connects to the antenna on the edge of the enclosure box.
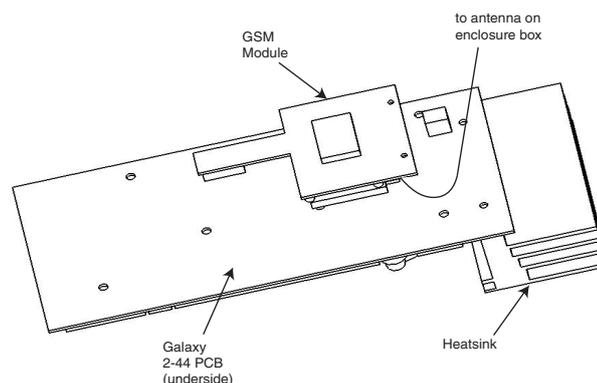
Figure 15. GSM Module fitted to underside of Galaxy 2-44 PCB

Panel Mounting (Plastic Box)

Installation Kit

The Galaxy 2 Series plastic box comes with an installation kit. It contains 13 zone links, a cable clamp with two self tapping screws, two M4 x 20mm lid screws, a tamper spring, battery connector leads and 24, 1K resistors.

WARNING: **The lid of the plastic box must not be removed before isolating the mains supply. Illumination of the keypad power LED indicates the presence of a.c. mains supply.**

Removing the Enclosure Lid

1. Remove the two M4 x 20 mm pan head screws from the bottom corner of the lid.
2. Pull the lid away from the lid hinge recesses (two menus of four) on the top of the enclosure base .
3. Remove the lid.

Installing the Enclosure Lid

1. Hold the lid at an angle of 90 deg. to the enclosure base.
2. Place the eight (two menus of four) lid hinges into the recesses on the top of the enclosure base.
3. Swing the lid down making sure that the hinges fit into the holes in the top of the enclosure rim.
4. Attach the lid in place with the two M4 x 20 mm pan head screws provided.

Removing and Replacing the Galaxy 2 Series PCB

NOTE: The plastic box comes with the PCB installed. The PCB must be removed to enable access to the keyhole mounting slot (see Figure 16).
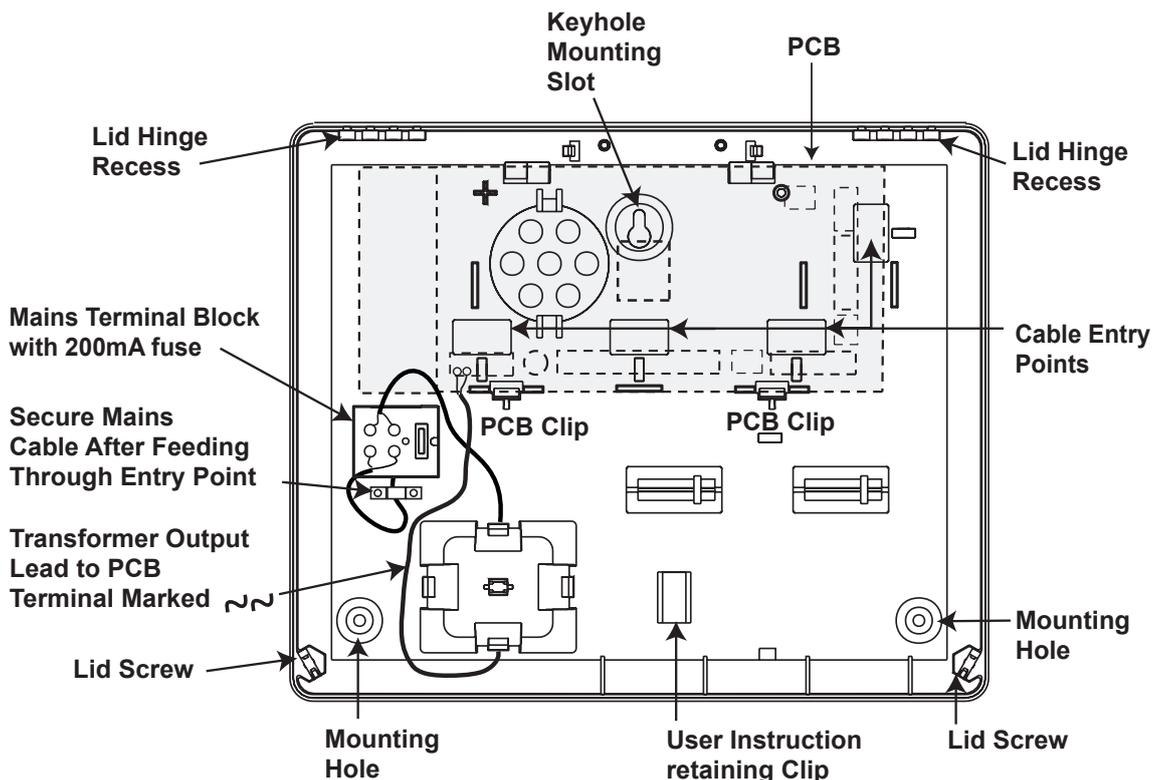
Figure 16. Galaxy 2 Series Plastic Box Layout

Remove the PCB

1. Gently pull back the PCB mounting clips to free the PCB.
2. Lift the PCB free of the PCB mounting pillars.

Replace the PCB

1. Insert the PCB into the PCB mounting slots.
2. Ensure that any cabling is clear of the PCB support pillars.
3. Gently pull back the PCB mounting clips and place the PCB on top of the PCB support pillars.
4. Release the PCB mouting clips ensuring that they spring back into place and that the PCB is held firmly in place.

Mounting the Plastic Enclosure Base

Use the keyhole slot in the plastic box base to position the base. Three mounting screws (not provided) are required to mount the plastic box. Fix one of the screws into the mounting surface, this will be used for the top, keyhole mounting hole. Hang the enclosure base onto the mounting screw ensuring that the screw sits in the narrow portion of the keyhole.

All cables must be brought into the enclosure base via the cable entry points shown in Figure 16. There are six cable entry holes for the entry of alarm cables. There is one a.c. mains cable entry point located below the mains terminal block.

Fitting the Tamper Spring

The Galaxy 2 Series plastic box enclosure is supplied without the tamper spring in place. The panel will not function without a Tamper. It is therefore the engineer's responsibility to correctly attach the tamper spring. The spring is supplied in the Installation Kit. The engineer must ensure the spring is securely attached to the Tamper Post (SW1). Refer to Figure 4.

Panel Mounting (Metal Box)

Installation Kit

The Galaxy 2 Series metal box comes with an installation kit. It contains two No.8 x 12 mm self-tapping lid screws, 6160 Text Programming Overlay, two battery leads (one red and one black), 10 mm cable staple and 24, 1K resistors.

WARNING: **The lid of the metal box must not be removed before isolating the mains supply. Illumination of the keypad power LED indicated the presence of a.c. mains supply.**

Removing and Installing the Enclosure Lid

1. Remove the two self-tapping screws that secures the lid to the enclosure base.
2. Slide the lid forward on the locating slots then lift clear.
3. To install the lid, simply reverse the process.

NOTE: The top self-tapping screw activates the Lid Tamper Microswitch.
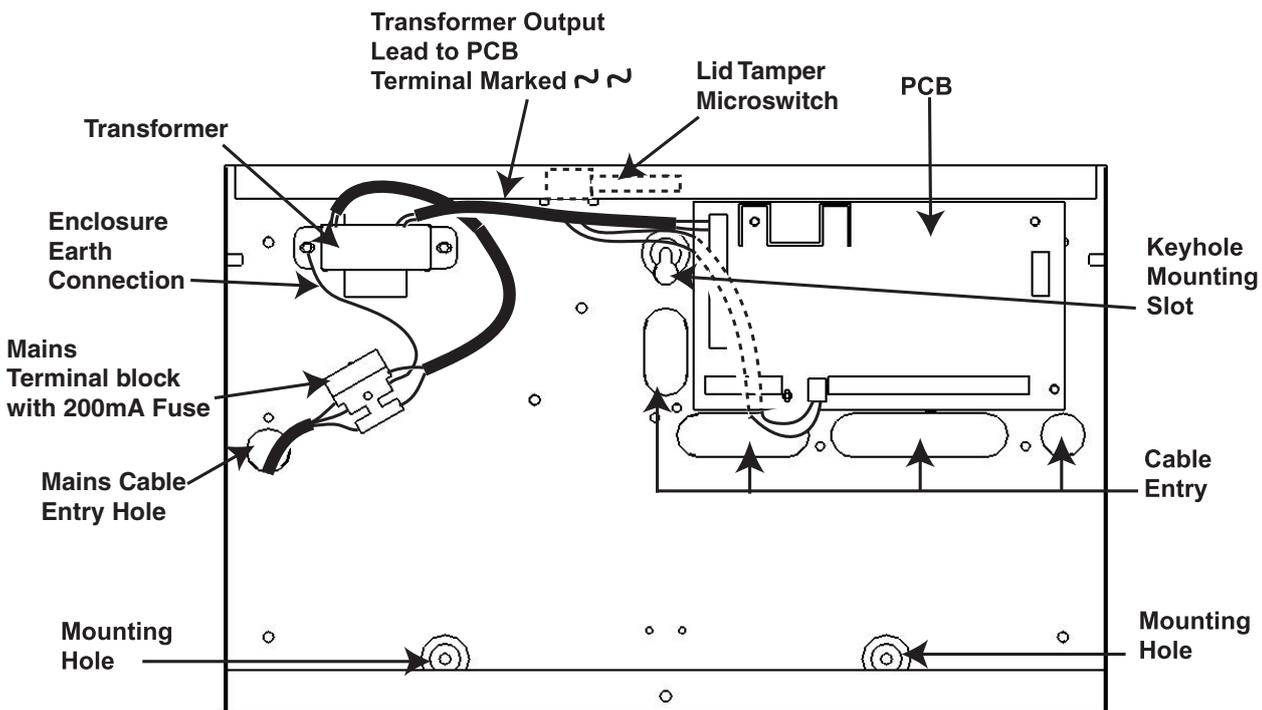
Figure 17. Galaxy 2-20 Series Metal Box Layout

NOTE: Figure 17 shows the Galaxy 2-20 in the metal box. The procedure to remove and install the Galaxy 2-44+ is identical to the 2-20.

Removing and Replacing the Galaxy 2 Series PCB

NOTE: The metal box comes with the PCB installed. The PCB does **not** have to be removed to enable access to the keyhole mounting slot (see Figure 17).

Mounting the Metal Enclosure Base

Use the keyhole slot in the metal box to position the base. Three mounting screws (not provided) are required to mount the metal base. Fix one of the screws into the mounting surface, this will be used for the top, keyhole mounting hole. Hang the enclosure base onto the mounting screw ensuring that the screw sits in the narrow portion of the keyhole.

All cables must be brought into the enclosure base via the cable entry points shown in Figure 17. There are four cable entry holes for the entry of alarm cables. There is one a.c. mains cable entry point located below the mains terminal block.

NOTE: There are three knockouts at the top of the metal enclosure base and three at the bottom for cable entry if required.

Peripherals - Installation, Wiring & Addressing

Configuring

New peripherals will be configured onto the system at system power up or on learning programming mode. Changes to peripheral addresses will only take effect when the peripheral is re-powered.

General

The following peripherals can be connected to the Galaxy 2 Series:

RS485 Bus: Mk7 LCD Keypad/Keyprox; RIO; PSU; RF Portal.

NOTE: Up to four keypads (including keyprox) can be fitted to this line. Keypads/keyproxes must be wired in daisy chain configuration (see **RS485 Wiring Configuration**). The maximum length of cable for all peripherals on this line is one km.

PANEL	PERIPHERAL
AUX+	+
AUX-	-
A	A
B	B

Table 5. RS485 Peripheral Wiring

ECP Bus (2–44+ only): 6160 Keypad/Keyprox; 5800 RF receiver; ECP zone expander.

NOTE: Up to four keypads can be fitted to this line. Keypads can be wired to the control panel independently, in series or in star configuration. The maximum cable length for all peripherals connected to this line is 100m.

PANEL	6160 KEYPAD	5800 RECEIVER	4+ 8 ZONE EXPANDER
AUX+	+	+ (red)	+12V I/P
AUX-	-	- (black)	-
DO	Y∇	DO (yellow)	DO
DI	G△	DI (green)	DI

Table 6. ECP Peripheral Wiring

The following table identifies the peripheral addresses:

PERIPHERAL	ADDRESS
Mk7 Keypad/keyprox	0 - 3
RIO	2 - 5
PSU	2 - 5
Wireless Receiver	4 - 5
6160 Keypad	0 - 3
6160 Keyprox	4 - 5
5800 RF Receiver	4 - 5
ECP Zone Expander	2 - 4

Table 7. Peripheral Addresses

NOTE: No two peripherals connected can share an address, regardless of the data bus to which they are connected.

Mk7 LCD Keypad/Keyprox

The Mk7 keypad is a 16 character alpha-numeric keypad used to program and set the Galaxy 2 Series. The window display is spread over two lines.

The Mk7 keyprox is a standard keypad with a proximity card reader combined into one housing. This allows dual function setting/unsetting ability from one station without the need for a separate card reader.

Keypad/Keyprox Installation

1. Remove the keypad from its packaging.
2. To attach the keypad to the wall, the back plate must first be removed from the front plate. To do this, insert a suitable tool into both openings at the bottom of the keypad and turn the tool gently.

    CAUTION: When the keypad is separated make sure that the anti-static precautions are taken with the keypad pcb to avoid damage from esd (electro static discharge).

3. Use the backplate as a template, then mark the locations for the three attachment screws in the required position. Use the keyhole slot at the top of the backplate and the two elongated holes at the bottom.
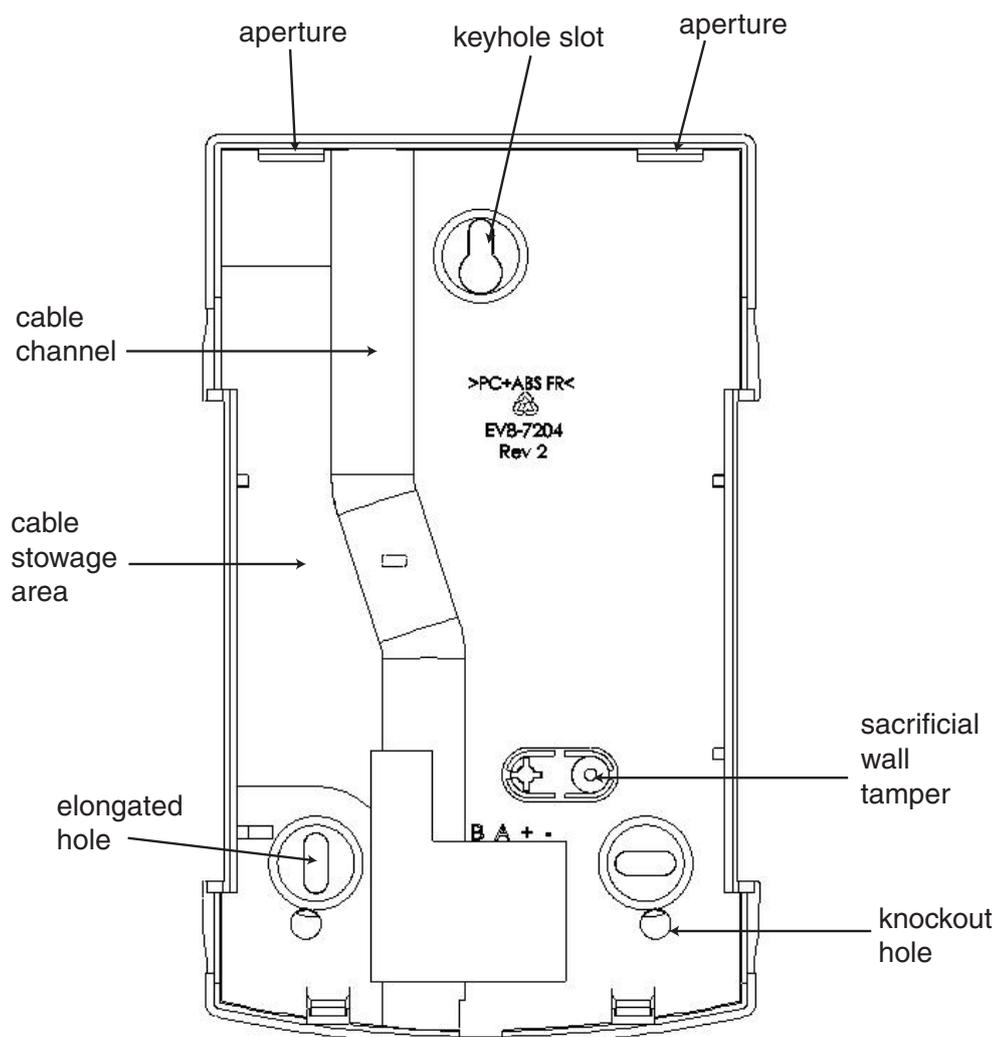
Figure 18. Galaxy Mk7 Keypad Backplate Installation

4. If you are using a wall-run cable for the keypad (A, B, +, -) position the cable behind the back plate in the cable channels provided. The cable can be run in from either the top or the bottom of the back plate. Use a sharp tool to remove the plastic from the top or the bottom of the cable guides on the back plate skirting.

CAUTION: **Use of any screws other than No. 6 Pan-head can damage the keypad mouldings.**

5. Make sure that the keypad wiring is fed through the large opening on the keypad backplate, then position the keypad base on the wall and attach it securely with the three No. 6 Pan-head screws.

6. If an off the wall tamper is required, using a No. 6 Pan-head screw, secure the sacrificial wall tamper, indicated in Figure 18, to the wall. Make sure that the tamper knockout is still connected to the backplate moulding.

7. Connect the A, B and power wires to the correct terminals of the removable, four-way connector block.

Mk7 Keypad/Keyprox Addressing

The valid keypad/keyprox addresses are: 0, 1, 2, and 3. A 16-way Rotary Address Switch is used to address the Keypad/keyprox. The address switch assigns a hexadecimal address value to the keypad/keyprox.

NOTE: Any change to the keypad address must be made when the power is disconnected from the keypad.

Adding a Mk7 Keypad/Keyprox to the System

When adding a keypad to an existing system, the following points must be considered:

1. Ensure that the keypad to be added has a unique address from the other keypads on the system.

2. Ensure that the keypad has a valid address.

3. Connect the keypad to the system - refer to the Keypad Installation Procedure.

4. Access engineer mode.

5. Connect the RS485 (AB) line of the keypad in parallel with the RS485 (AB) line of the existing keypads.

6. Connect + and – terminals of the keypad to a power supply.

7. Exit engineer mode - engineer code + **esc**.

8. The Mk7 keypad displays the message **1 MOD. ADDED — esc=CONTINUE.** Press the esc key; the keypad returns to the unset banner. If this message is not displayed, the keypad is not communicating with the control panel and has not been configured into the system.

9. The keypad is now configured into the system.

Remote Input Output (RIO)

Galaxy RIO's can be added to the RS485 Bus on the Galaxy 2 Series control panel. Each additional RIO expands the system by eight zones and four outputs.
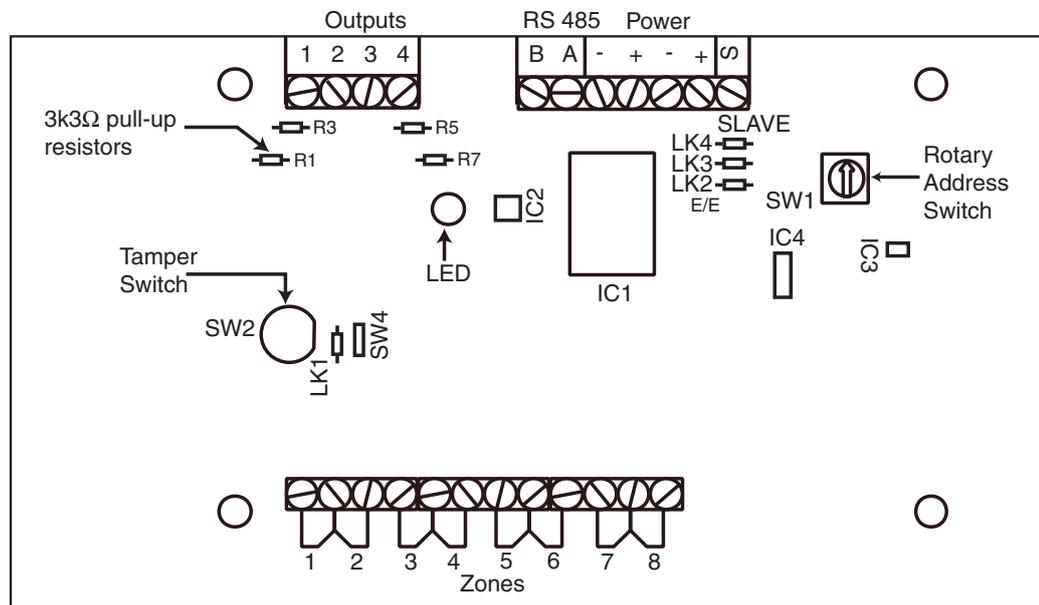
Figure 19. Galaxy RIO

Addressing the RIO

The Galaxy RIO must be given a unique address before it is connected to a power supply (see **Table 8. RIO Addresses**). The address is selected using the 16-way Rotary Address Switch (SW1).

Address	Zones Allocated	Outputs Allocated
2	1021 - 1028	1021 - 1024
3	1031 - 1038	1031 - 1034
4	1041 - 1048	1041 - 1044
5	1051 - 1058	1051 - 1054

Table 8. RIO Addresses

Connecting the RIO

The RS485 (**AB**) line of the Galaxy RIO **must** be wired in parallel (daisy-chain configuration) with the RS485 (**AB**) line of any keypads connected to the system. The RIO requires 12 Vd.c. (range 10.5 to 16.0 V) and 40 mA. This can be supplied from the control panel power supply or from a remote power supply if the distance causes a large voltage drop on the cable.

NOTE: A 3 Ampere Smart PSU can be fitted in place of a RIO.

Configuring the RIO

The added RIO is configured into the system on exiting from engineer mode. If the message **XX Mod Added [<],[>] To View** is displayed, the system has recognised that a new module is present. Press the **A** or **B** keys to confirm that the RIO has been added. If this message is not displayed or the RIO is not on the list of added modules, then the RIO is not communicating with the control panel or has been set to the same address as the RIO already connected to the system.

The flash rate of the red LED (LED1) on the RIO indicates the status of the communication with the control panel - refer to the following Table:

Flash Rate	Meaning
0.1 ON / 0.9 OFF	Normal communications
OFF	No d.c. supply
1.5 ON / 1.5 OFF	RIO has not been configured into system
0.2 ON / 0.2 OFF	RIO has lost communication with system
0.9 ON / 0.1 OFF	Very poor communications

Table 9. RIO LED Flash Rates

Zones

The Galaxy RIO has eight programmable zones. These default to **INTRUDER**. Each zone is Double Balance monitored with a $1\,k\Omega$ resistor in series with the zone detector and a $1\,k\Omega$ (1%) resistor in parallel across the detector switch. The change to $2\,k\Omega$ (1%) resistance registers the zone as open/alarm.

Outputs

The RIO has four transistorised outputs. Each output is connected to +12 V via a $3k3\Omega$ pull-up resistor (refer to Table 10). When an output is activated, the load is switched to the negative supply voltage (ground or 0 V) of the RIO. The current available through each output is 400 mA.

The default functions and pull-up resistors of each RIO output, when connected to a Galaxy 2 Series are shown in the following Table:

Output No.	Function	Pull-up Resistor
1	Not Used	R1
2	Not Used	R3
3	Not Used	R5
4	Not Used	R7

Table 10. RIO Output Default Functions

Link LK1 on the RIO, if altered when the module is powered down, modifies the RIO operation:

• LK1 - short circuit this to by-pass the RIO lid tamper switch SW2

Power Supply Unit

The Galaxy 2 Series Power Supply Unit (PSU) is available in two variants.

The **Galaxy Power Unit** is a 3-ampere power supply. The **Galaxy Power RIO** is a Power Unit plus an on-board Remote Input Output (RIO) module. Both variants are configured in the same way.
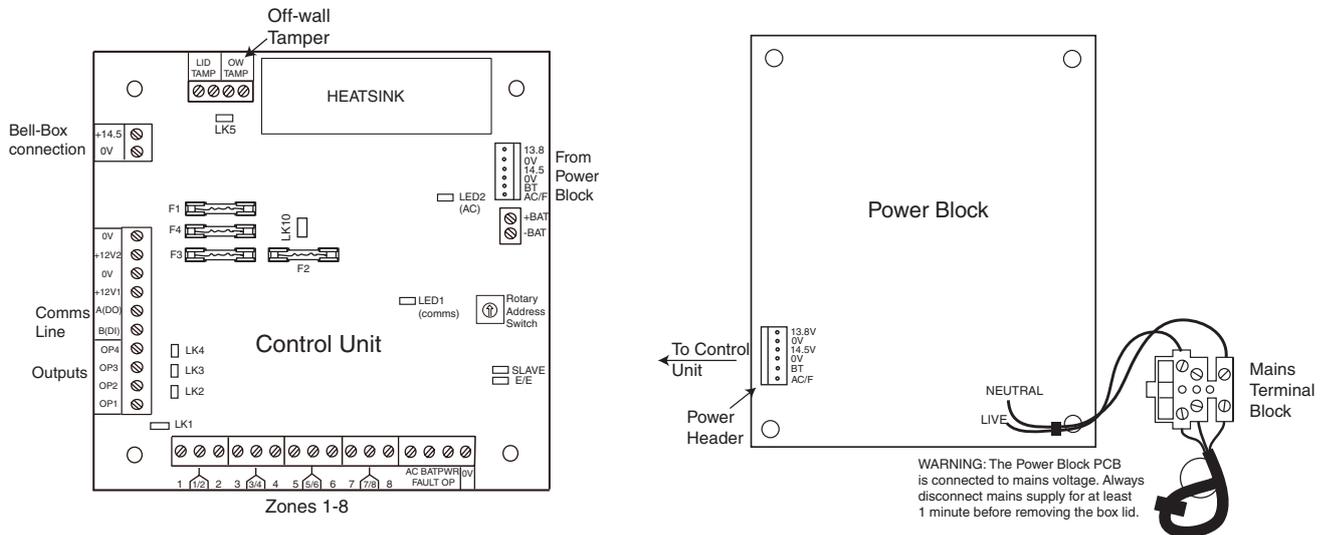
Figure 20. Power Supply Unit

Configuration

The Galaxy Power Supply Unit (PSU) consists of two modules, the Power Block and the Control Unit. The PSU can be connected to the Galaxy 2 Series control panel via the RS485 (AB) line. The PSU can be used in place of a standard RIO to overcome power problems that arise when the additional RIO is fitted distant to the control panel.

A 6-way jumper lead connects the Power Block to the Control Unit.

The PSU (Power RIO variant) has eight zones and four outputs. Each variant of the PSU takes one of the four RIO address (2 - 5). Addressing is identical to that described for RIO Modules.

The four outputs are switched 0V (0V active). Without the jumper links (LK1-4) fitted, the outputs will float in the OFF state. They can apply a +12V signal, if required, by fitting the appropriate pull-up jumper supplied.

LK5 will short out the off-wall tamper if it is not used.

The SLAVE and E/E links must be in place for normal operation.

FAULT OP AC: This is an open collector transistor which is normally off. The output is activated by an AC failure.

FAULT OP BAT: This is an open collector transistor which is normally off. The output is activated by a Battery Low or Battery Fail condition.

FAULT OP POWER: This is an open collector transistor which is normally off. The output is activated by low voltage present in +12V1 or +12V2 .

Installation Instructions

The installation and wiring must be performed by a competent engineer. The Galaxy Power Supply Unit must be connected to the a.c. mains supply (230/240 Va.c. 50Hz) via a fused connection outlet. The fuse in the mains outlet must not exceed 3A.

The Galaxy Power Supply Unit comes installed in the metal enclosure base. The installation procedure of the panel base is as follows:

1. Route the mains cable through the hole on the right hand side of the enclosure base. Securely anchor the cable to the box using the tie-wrap as shown in the following Figure:
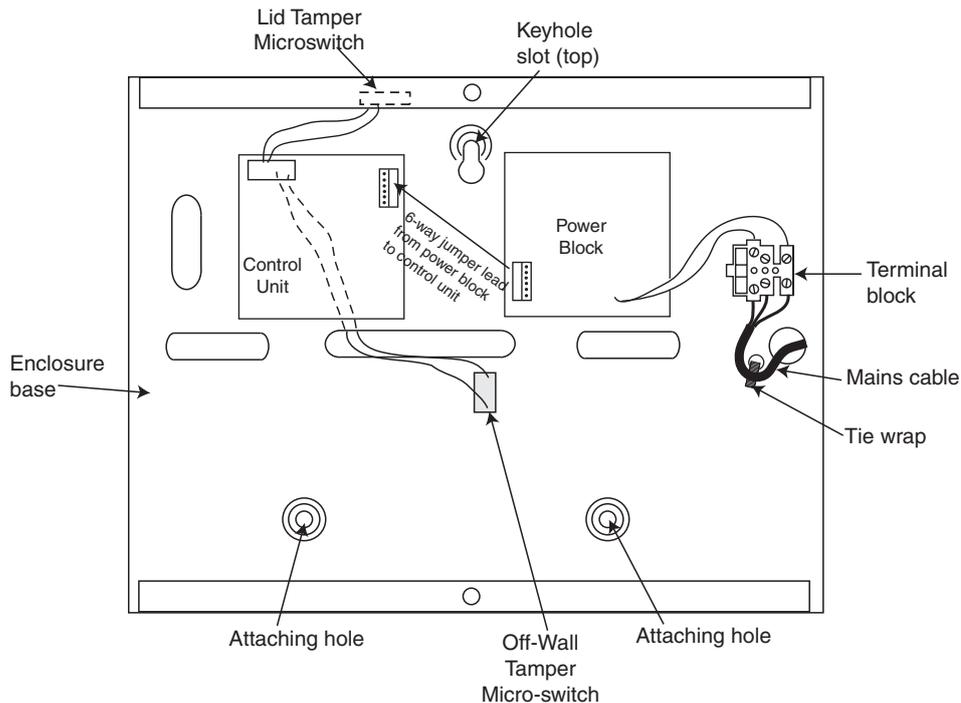
Figure 21. Enclosure Base

2. Secure the panel base to the wall using three 1.5" No. 8 round head steel screws through the holes provided.

The mains cable used must be a three core type (with green/yellow earth insulation) of adequate current carrying capacity.

NOTE: The mains cable must satisfy the requirements stated in BS6500.

3. Connect the mains cable to the mains terminal block as follows:

• blue wire to the terminal marked N (Neutral)

• green/yellow wire to the terminal marked ⏚ (Earth)

• brown wire to the terminal marked L (Live)

NOTE: No other connections to the mains connector are permitted.

All wiring must be in accordance with the latest edition of the IEE Wiring Regulations, BS7671 (Requirements for Electrical Installations).

4. Power up by applying mains first. This unit can be powered up from the battery by momentarily shorting LK10. Never leave LK10 connected, as deep discharge of the battery will occur. LK10 is for start-up only.

Battery

The minimum capacity battery to supply the PSU is 1x 7Ah. The maximum capacity battery to supply the PSU is 2 x 17Ah.

Battery Test

A battery test on full load is automatically performed once an hour and during the Engineer Mode exiting procedure. If the battery voltage falls to 10 V while the Power Supply Unit is running on the battery, then it is automatically disconnected to prevent deep discharge of the battery.

Specifications

Electrical (based on 34 Ah battery and UK grade 2 compliance)

Input voltage:	230V a.c. (+10%/-15%) @50Hz
Output voltage (nominal):	13.8V & 14.5V
Output current (max):	3.0A
Operating temperature:	-10 deg C to +40 deg C

Aux1 & Aux2

Output voltage (nominal):	13.8V
Output current (max):	0.75A each

14.5V Output (not for EN50131: grade 2 use)

Output voltage (nominal):	14.5V
Output current (max):	0.15A (when using this current, the AUX1 & AUX2 currents will be reduced by an equivalent amount).

Battery charge current (max):	1.4A
Maximum ripple voltage:	less than 100mV

Fuses

F1 (14.5V)	500mA - 20mm anti-surge
F2 (Battery)	1.6A - 20mm anti-surge
F3 (12V Aux1)	1.0A - 20mm anti-surge
F4 (12V Aux2)	1.0A - 20mm anti-surge

EN50131 Compliance

This product is suitable for use in systems designed to comply with EN50131-1:2004/PD6662:2004.

Security Grade - 2

Environmental Class - II

Power Supply Type - A

ECP Zone Expander (2–44+ Only)

This is an expander for use on panels that use the ECP communication Bus. Up to three zone expanders can be fitted to the Galaxy 2–44+ panel. Each expander gives 8 extra hardwired zones and four programmable outputs. An alternative expander gives four extra hardwired zones and no outputs.
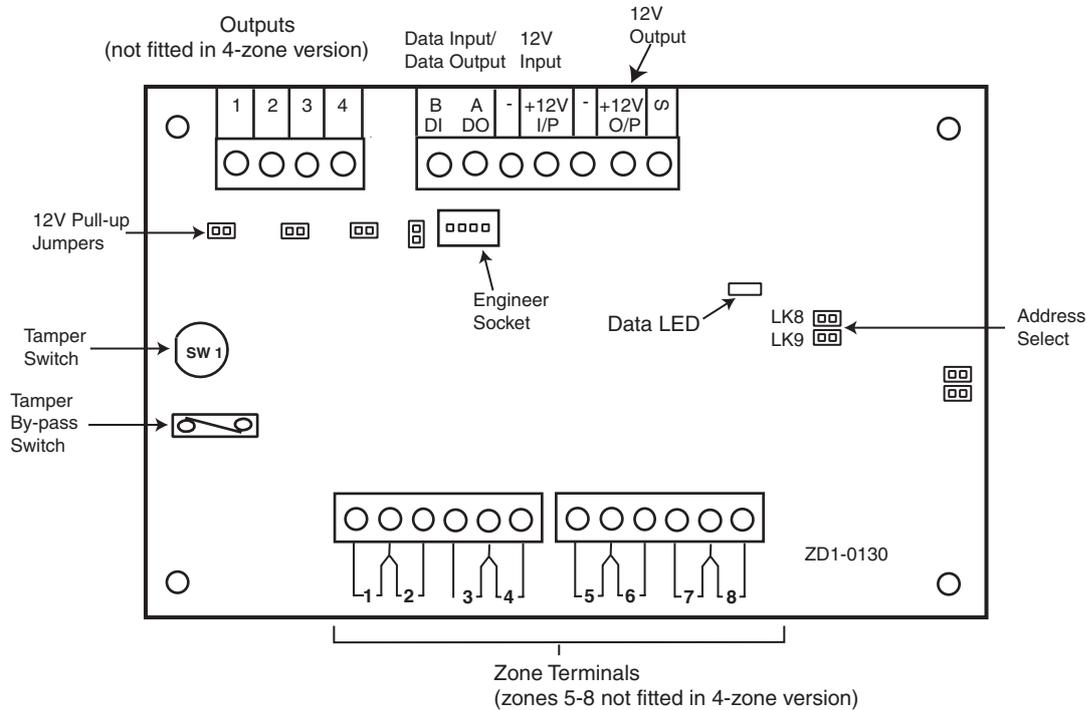
Figure 22. Zone Expander Outputs

Zone Expander Outputs

The four outputs are switched 0V (0V active). Without the jumper they will float in the 'OFF' state (see **Figure 23**). They can apply a +12V signal, if required, by fitting the appropriate pull-up jumper supplied (see **Figure 24**). (This is typically required for activating comms devices). All devices wired to the outputs must have their negative terminals wired to the switched output, and their positive terminals wired to the +12V output.
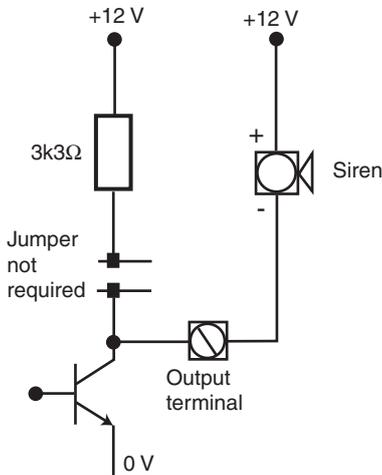
Figure 23. Output without jumper
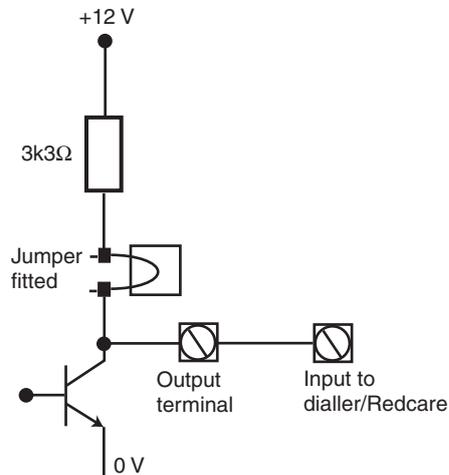
Figure 24. Output with jumper

Addressing the ECP Zone Expander

Select jumper addresses before powering up the zone expander. Available addresses are 2, 3, and 4. Refer to Table 11 for jumper settings.

	8-Zone Expander				4-Zone Expander	
Address	LK8	LK9	Zones Allocated	Outputs Allocated	Zones Allocated	Outputs Allocated
2	Off	Off	1021 - 1028	1021 - 1024	1021 - 1024	0
3	Off	On	1031 - 1038	1031 - 1034	1031 - 1034	0
4	On	Off	1041 - 1048	1041 - 1044	1041 - 1044	0

Table 11. Zone Expander Addresses

5800H RF Receiver (2–44+ Only)

The 5800H is a remote, stand-alone radio receiver. An additional standard 6160 keypad needs to be connected to the Galaxy 2–44+ control panel when using the 5800H receiver.

Installation

Always mount the receiver where the survey receiver showed the best reception. Make sure other equipment such as panels or power supplies are not mounted immediately next to it. As a guide, try to keep other equipment at least half a meter away. Ensure that anyone fitting any other site equipment, knows not to locate anything close by the receiver.

Wiring

The receiver comes with a five way flying lead, which should first be plugged into the RF receiver PCB. The coloured cables are wired direct to the Galaxy 2–44+ control panel as shown in **Table 6. ECP Peripheral Wiring.** The blue wire is not used and may be cut off.

All wiring must be routed into the receiver via the holes and knockouts provided. Always make sure the wiring runs on the side of the PCB away from the antennas.

Addressing

Set all DIP switches to OFF before powering up the 5800H RF receiver, which must be addressed as either 4 or 5. Refer to Table 12 for DIP switch settings. No other settings are required on this unit.

ADDRESS	DIP SWITCH		
	3	4	5
4	ON	OFF	OFF
5	ON	OFF	ON

Table 12. DIP Switch Settings

G2 RF Portal

The G2 RF Portal is a wireless receiver for the Honeywell V2 Domonial transmitter range. The G2 RF Portal allows the control panel to receive signals from wire-free detectors and radio keyfobs. One RF Portal will allow the control panel to assign wire-free detectors to any or all detection zones. However, two RF Portals can be used to increase coverage.

A maximum of two RF Portals can be connected to the RS485 (AB) line to support up to 44 zones.
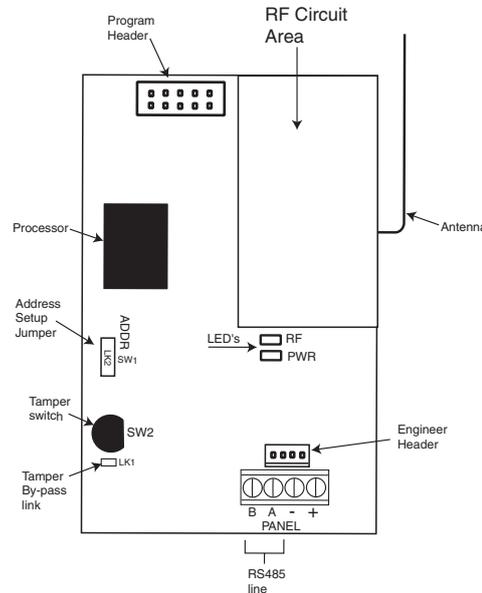
Figure 25. G2 RF Portal PCB

Program Header

The Program Header allows field upgrades of flash software on the processor.

Tamper By-pass Link

The Tamper By-pass Link (LK1) must be removed to allow the lid tamper to function through the operation of switch SW2.

LED's

The **RF** LED will blink upon reception of decodeable signals. If a jam condition occurs (continuous interference), the LED will come on constantly. It will switch off again only when the jam condition clears.

The **PWR** LED gives power and communication status of the RF Portal (see **Table 9 - RIO LED Flash Rates** for information on the meaning of the various flash rates).

Mounting the Plastic Base

Before mounting the base it is recommended that a survey is carried out to determine the suitability of the site for RF installation. Refer to **Galaxy RF Survey Kit, Operation Instructions (II1-0011).**

NOTES:

• The plastic base must be mounted so that when the PCB is installed, the antenna will point vertically (see **Figure 26, Plastic Base with PCB Installed**)

• The plastic base is mounted using three screws that are not provided with the installation kit.

• The plastic base must be mounted **before** attaching the PCB or else access to the top left-hand mounting hole will be severely restricted.

1. Either remove one of the knockouts in the side of the plastic base or, if fitting into an electrical box, remove the knockout in the centre of the base (**see Enclosure knockout Removal Procedure, II1-0220**).

2. Fit the two plastic supports for the PCB from the underside of the plastic base.

3. Using three screws, attach the plastic base loosely to a wall or electrical mounting box.

4. Bring in the cable from the control panel through the relevant knockout hole.

5. Firmly secure the plastic base with the three mounting hole screws.
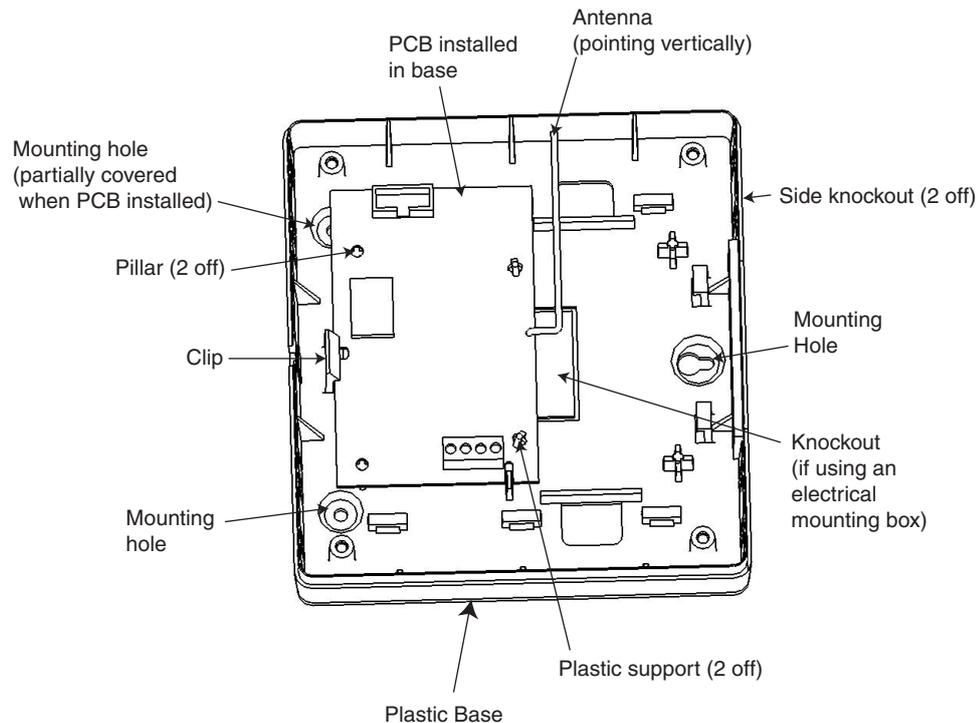
Figure 26. Plastic Base with PCB Installed

Attaching the PCB

1. Place the PCB over the two plastic supports and the two pillars.

2. Pull back the clip then press the PCB firmly into place.

3. To allow the lid tamper switch (SW2) to function, remove the by-pass link (LK1).

4. Attach the lid tamper spring over the lid tamper switch (SW2).

Addressing the RF Portal

The RF Portal must be given a unique address **before** it is connected to the power supply. This address is selected via the Address Setup Jumper and can be 4 or 5.

To set the address as 4, fit the jumper to one pin only (open) of Address Setup Jumper LK2.

To set the address as 5, fit the jumper across the two pins (shorted) of Address Setup Jumper LK2.

Connecting the RF Portal

The RS485 (**AB**) line of the RF Portal **must** be wired in parallel (daisy-chain configuration) with the RS485 (**AB**) line of any keypads connected to the system. The RF Portal requires 12 Vd.c. (range 9.0 V to 14.0 V) and 55 mA. This can be supplied from the control panel power supply or from a remote power supply if the distance causes a large voltage drop on the cable.

Configuring the RF Portal

The added RF Portal is configured into the system on exiting from engineer mode. If the message **XX Mod Added [<],[>] To View** is displayed, the system has recognised that a new module is present. Press the **A** or **B** keys to confirm that the Receiver has been added. If this message is not displayed or the Receiver is not on the list of added modules, then the Receiver is not communicating with the control panel or has been set to the same address as the Receiver already connected to the system.

Attaching the Plastic Box Lid

Place the lid over the plastic base then firmly attach with the four self-tapping screws provided.

Specifications

Physical

PCB	Width: 104.5 mm
	Height: 68 mm
	Weight: 42 g
PCB with antenna	Width: 125 mm
	Height: 76 mm
PCB in Plastic Box	Weight: 245 g

Electrical

Quiescent Current	55.0 mA
Operating Voltage	12.0 V nominal, +16%/-25% (9 V to 14 V)
Operating Temperature	-10 deg.C to +40 deg.C

EN50131 Compliance

This product is suitable for use in systems designed to comply with prEN50131-1:2004.

> Security Grade – 2
>
> Environmental Class – II

6160 Keypad/Keyprox/RFH (2–44+ Only)

The 6160 keypad is an addressible, alphanumeric remote keypad for setting/unsetting the Galaxy 2–44+ control panel. It is also available as a combined keypad/keyprox unit (keypad with built-in proximity card reader). The keyprox version allows the system to be set and unset with keytags and cards. (**see Section 6: General Operation).**
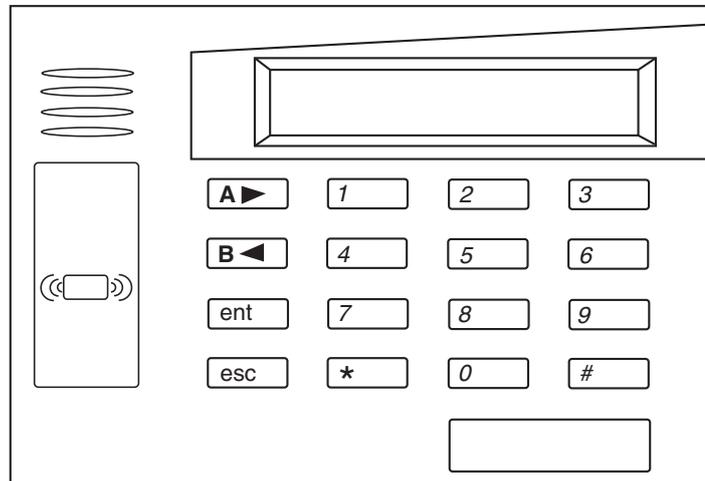
Figure 27. 6160 Keyprox

Installation and Wiring

The keypad can be surface mounted directly to a wall or electrical box. The keypad has a built in tamper switch to detect separation of the back case from its mounting surface. An additional mounting screw must be inserted in the tamper tab in the back case.

1. Press down the two base clips located at the rear edge of the keypad while gently pulling the two halves of the case apart.

2. Route the wiring from the control panel through the cable entry hole in the back case. Use the knockout holes if alternative routes are necessary.

3. Securely mount the back case to a wall or electrical box via the mounting holes. Ensure the tamper tab is securely screwed down.

4. The keypad PCB must be wired to the control panel PCB as shown in **Table 6. ECP Peripheral Wiring.**

5. Reattach the keypad to the back case.
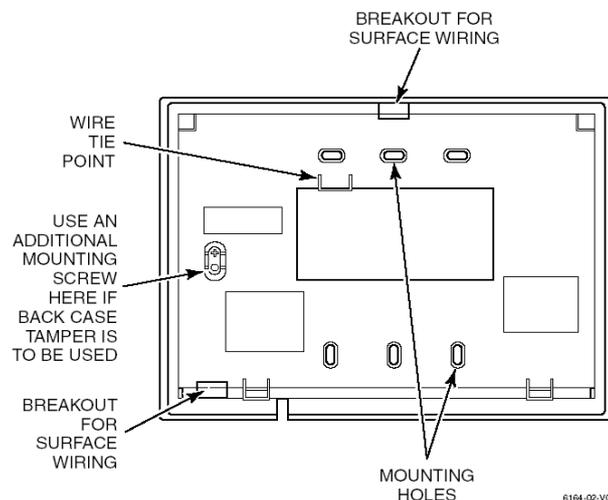
Figure 28. Wiring Entry (Back case)

Addressing the 6160 Keypad

Keypad address (CON ADDR) needs to be from 0 to 3.

To set the address:

1. Either repower the keypad or activate the keypad tamper switch.
2. Within 60 seconds of step 1, press and hold buttons 1 and 3 for five seconds.

NOTE: If 10 seconds pass without a key entry, the keypad exits address mode. You must power down, power up and start the procedure again.

3. The current keypad address will be displayed.
4. Type address of keypad (00, 01, 02, 03) then press ✶ to save address and exit menu.
5. Remove then re-apply power to the system, including the keypad, to allow the new address to configure.

Addressing the 6160 Keyprox

The reader module shares the ECP Bus terminals with the keypad. The system will see the reader as an RF receiver (address 4 or 5). The addressing can be achieved by using the address Jumper Link that is located above the ECP terminals. These jumpers must be set before powering up the unit.
Jumper Link not fitted: Address = 4
Jumper Link fitted: Address = 5

NOTE: A keyprox unit cannot be fitted if that address is already used by any wireless receiver.
The keypad section of the keyprox should be addressed as per the keypad instructions above.

Addressing the 6160 RFH

1. Enter the program mode by pressing the 1 and 3 keys simultaneously for a few seconds, within 60 seconds after applying power. The display shows CON ADDR = XX.
2. Enter the 2-digit keypad address (00 - 03).The display shows CON ADDR = YY. Press the * key to continue.
3. To enable the receiver - enter 1 to enable or 0 to disable. Enable the receiver if RF transmitters or wireless keypads are programmed into the control and no other receivers are enabled. The display shows REC ON. Press the * key to continue.
4. If receiver is enabled, enter the 2-digit receiver address (04 or 05). The display shows REC ADDRESS = XX. Press the * key to continue.
5. Enable High Security Mode by pressing the 1 key. The display shows HIGH SECURITY ON.
    Press the * key to continue.

    NOTE: If this mode is enabled, the 6160RFH will only recognise encrypted fobs. If this mode is disabled, the 6160RFH will recognise both encrypted and non-encrypted fobs.

6. Press the * key. This exits program mode.
7. Remove then re-apply power to the system, including the keypad, to allow the new addresses to configure.

2-Way Audio (2–44+ Only)

The system can support up to three TP800 speaker-mic devices via the audio header. To allow connection via the Audio Header, an Audio Terminal Board must be fitted (part no. A233—2-way Audio Terminal Board).

Alternatively, a 14-way socket can connect directly on to the Audio Header on the main PCB.

The Galaxy 2 Series Audio Terminal Board is a connector that allows 2-way audio communication (speak and listen) between the panel PCB and the Alarm Receiving Centre. The Audio Terminal Board is connected to a TP800 speaker mic which allows audio communication via the on-board PSTN/Modem or the plug-on GSM module. The Audio Terminal Board is fitted to the main PCB at the location shown in the diagram below.
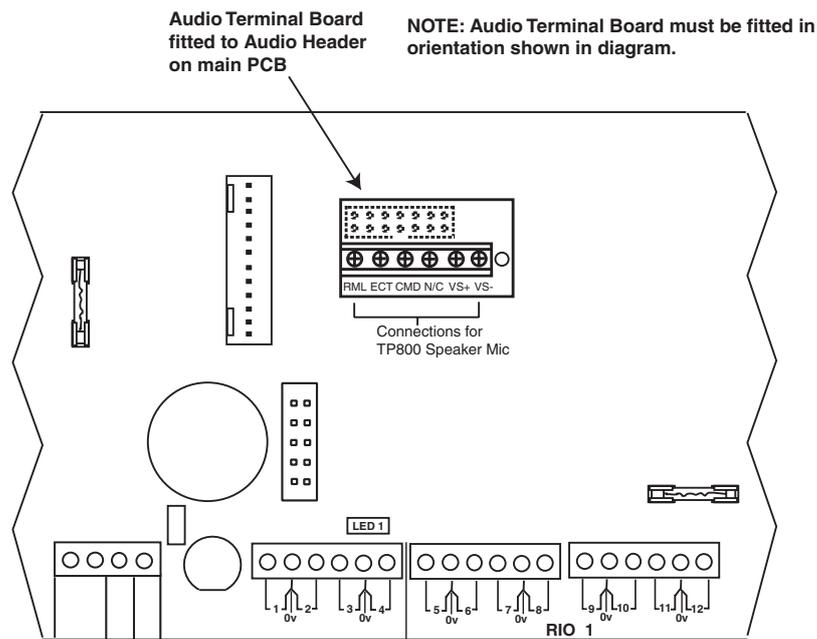
Figure 29. Audio Terminal Board fitted to PCB

The TP800 modules can be adjusted for audio levels. Refer to the instructions supplied with the modules for further information.

The wires between the TP800 units must be no longer than 30 metres in total. The wires are connected to the terminal board as shown in the following table:

Audio Header	TP800
ECT	ECOUT
RML	RML
CMD	CMD
N/C	NOT USED
VS+	VS+
VS-	VS-

Table 13. Audio Header to TP500/800 Wiring

Operation of 2-Way Audio

Two types of audio communication are possible;

Listen-in

In this mode, the panel will stay on-line for 30 seconds after sending an alarm signal to the ARC to allow the operator to listen to the audio on site. The operation is controlled by the remote DTMF telephone and is as follows:

1. Press the ***** then **6** keys to start listen-in.
2. Use the **0** and **1** keys to toggle between listen and talk modes (0 = listen, 1 = talk).
3. To end the call, press the ***** then **#** keys.
4. The call ends with three beeps.

Dial-in

In this mode, a user can dial into the alarm system from a DTMF telephone and type in a special PIN code (controlled in Menu 42, User 99). This will allow the user to listen to the audio on site, and talk to the site. The operation is controlled by the remote telephone and is as follows:

1. Dial in to either the PSTN number or the GSM audio number.
2. The panel answers after the number of rings set up in Menu 56.1.09.
3. Wait for a long tone then enter the PIN code to start listening.
4. Use the **0** and **1** keys to toggle between listen and talk modes (0 = listen, 1 = talk).
5. To end the call, press the ***** then **#** keys.
6. The call ends with three beeps.

In both modes, if no commands are detected within two minutes the call will be timed out and hung up. If the remote user hangs up without using ***** and **#** then it can take up to two minutes before the call times out at the panel end.

GSM Module (2–44+ Only)

A Dedicated GSM telecommunication interface can be connected to the Galaxy 2 series control panel to allow an alternative communication path to the PSTN telephone line. The GSM module is installed as follows.

CAUTION: **Install the control panel with the GSM Module at least 1.5 m from any wireless peripheral device. This will avoid interference generated by the GSM. Do not install the module in the immediate proximity of a sound source (loudspeaker, TV set, Hi-fi chain etc.)**

1. Remove all power from the control panel and remove the control panel PCB from the enclosure.

2. With the control panel PCB still removed, remove the knock-out in the top-centre of the enclosure using broad-nose pliers, gripping the full length of the knock-out tab and bending it sharply downwards.

3. Slide the GSM antenna into the slot in the top of the enclosure and lock into place with the locking tab provided.

4. Fit the co-axial antenna lead to the GSM module.

5. Remove the two-way jumper fitted to two of the four audio pins on the rear of the PCB.

6. Using the three stand-offs supplied with the GSM module, fit the module to the rear of the control panel PCB, taking care to route the two power leads to the GSM power terminals on the corner of the control panel PCB.
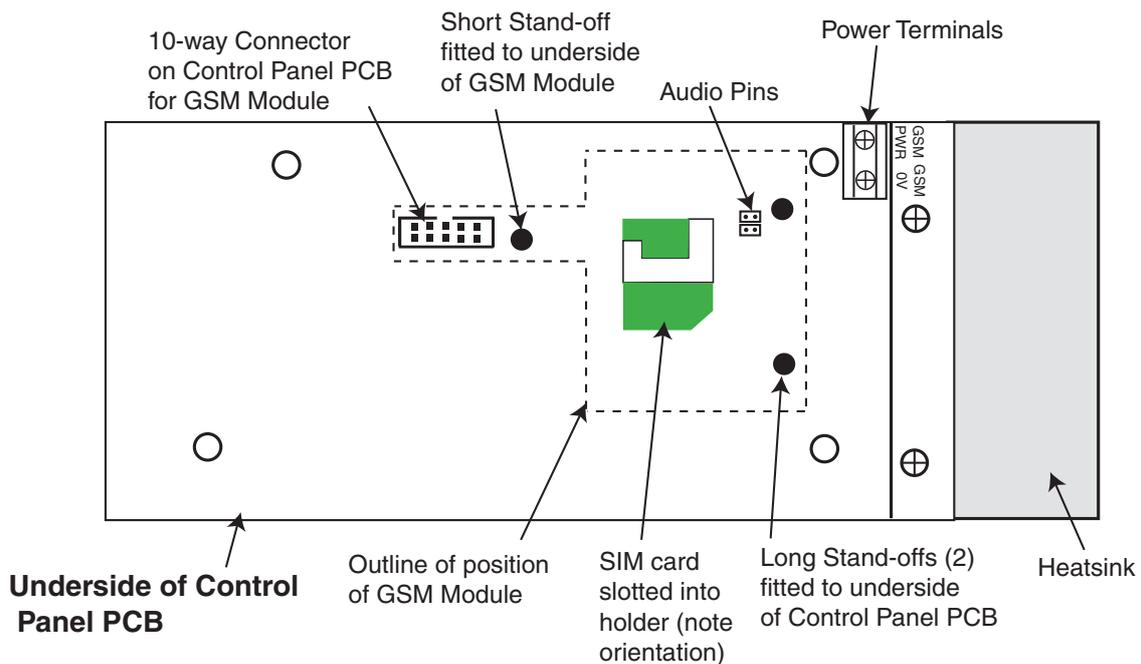
Figure 30. Location of GSM Module on Control Panel PCB

WARNING: **Do not screw the power leads into the AUX power terminals on the control panel PCB.**

7. Screw the power leads into the two GSM power terminals observing polarity (Red lead is GSM PWR, black lead is GSM 0V).

8. Fit a suitable SIM card into the holder on the GSM Module (see **Note on SIM cards**).

9. Refit the control panel PCB into the enclosure, connecting the co-axial antenna lead to the antenna.

10. All programming of the GSM module is performed in menu 56.5 of the panel programming.

Note on SIM cards: Any valid GSM sim card can be used. Both contract and Pre-pay types will work, although contract SIMs are better for systems with alarm signalling as there is no chance of credit running out when an alarm activation needs to be signalled. If the GSM module is to be used for remote servicing, then a Data-enabled SIM card must be used. Most service provider can supply this service on contract SIMs and will issue a separate data number. This data number should be used for remote servicing when dialling into the panel.

All GSM programming is performed through menu 56.5.
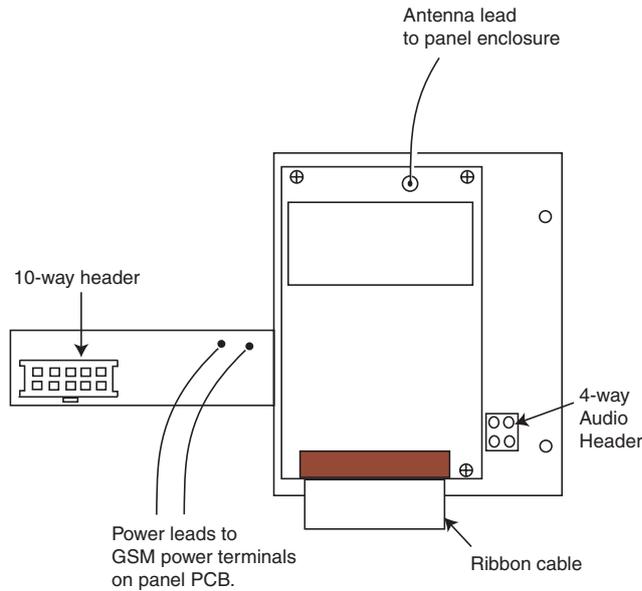
Figure 31. GSM Module - Top side

Characteristics

The following table shows the technical characteristics of the GSM Module:

GSM Fault Detection	Dedicated internal "GSM fault code" is triggered by lack of network
Service Temperature	0 deg to 40 deg C
Storage Temperature	-20 deg C to + 70 deg C
Dual Band	GSM 900 MHz and DCS 1800 MHz
Power	2 W (GSM)/ 1 W (DCS)
Antenna	Supplied
SIMcard	Micro

Table 14 - GSM Module Technical Data

Compliance

The GSM Module is suitable for use in systems designed to comply with EN50131-1 and PD6662:2004.

Security Grade - 2

Environmental Class - II

Alarm Transmission System - 2.

SECTION 6: GENERAL OPERATION

Galaxy 2 Series Users

Users are split into two main access levels under EN50131.

Level 2:   Normal users who operate the system

Level 3:   Engineers and master users who can alter PIN codes and system settings.

NOTE: Engineers can only alter their own PIN code

NOTE: Level 1 is considered to be the system in standby mode, where no users are currently accessing the system.

Users

For a user to gain access, a valid PIN must be entered first. After entry of the PIN, the enter key must be pressed and the user will be 'logged on'. At this point any alarms and alerts are silenced. The set status of the system (or each group that the user is assigned to) is displayed for five seconds. Pressing the **ent** or the scroll keys during this five seconds, ends this time and the first event or first menu option is displayed on the keypad.

Engineers

Entry to engineer mode is authorised by a user in menu option **48 = Level 3 Access**. Following this the engineer will have five minutes in which to enter his code. When the engineer code is entered four things happen:

• All system tampers become isolated.
• All fault signalling is suppressed, and indications are silent.
• The engineer is given access to the full menu.
• The banner message is changed to indicate engineer mode.

To bring the system back out of engineer access mode and reinstate all the tampers from the banner, the engineer enters his code but presses the **esc** key rather than the **ent** key.

When exiting engineer's mode, there is a 30 minute window where the engineer's code can access the menu again. After this time, user authorisation will be required.

General Menu Operation

The Galaxy 2 Series provides various menu options for operating and modifying the functional performance of the system.

To access any of the functions, a user must first log-in by typing a valid pin code. See **SECTION 2, QUICK GUIDE,** for details.

10 = Setting	20 = Display	30 = Test	40 = Modify	50 = Engineer 1	60 = Engineer 2
11 = Omit Zones	21 = Zone status	31 = Walk Test	41 = Time/Date	51 = Parameters	61 = Diagnostics
12 = Timed Set	22 = View Log	32 = Output Test	42 = Users	52 = Zones	62 = Full Test
13 = Part Set	23 = System Version		44 = Mobile Nos.	53 = Outputs	63 = Options
14 = Night Set	24 = Print		47 = Remote Access	56 = Comms	
15 = Chime			48 = Level 3 Access	57 = System Print	

Table 15. Menu Options

To navigate around the menu and enter data, the keys are used as follows:

0-9: numeric data entry.

ent: accepts current display or enters selected option.

esc: escapes out of selected option.

A> B<: scroll forward and backward in menu or selected option. Many of the menu options shown above will have one or more sub-menus below them. A user will be timed out of the menu structure if no keys are pressed for two minutes. The engineer is not subject to timing out.

Full Setting

Before setting the system:

*   Ensure all doors and windows are secure.

*   Ensure movement detectors are not obstructed.

Enter: **User code** and press **A.**

If groups are enabled and a user has group choice, then the group status is displayed on screen. Each group has a letter under it to display the status of the group as follows:

R = Ready

S (steady) = Set

S (flashing) = Selected for setting

U = Unset

```
SET     1 2 3
GROUPS  SSR
```

Pressing the group number will allow the status of the group to be toggled. The current state is shown steady. The new state is shown as flashing.

Once the required groups have been enabled press the **ent** key to begin the setting procedure.

If groups are not enabled and the user does not have group choice, entering the user code followed by **A** immediately starts the setting procedure.

```
FULL  SET      030
■■■■■■■■□□□□□□□□
```

The keypad displays the exit time countdown. At the end of the exit time, or when the setting procedure is terminated by a **FINAL** or **PUSH-SET** zone closing, the **ENTRY/EXIT HORN** outputs and keypad buzzers become silent for four seconds, then emit two long tones to confirm that the system is set. The message **SYSTEM IS NOW SET** appears for five seconds on the keypad that the user has logged into only. All other keypads remain at the banner.

Part Setting

Enter: **User code** and press **B.**

```
PART  SET      030
■■■■■■■■□□□□□□□□
```

Press **1** = **Part Set**

This is identical to the **Full Setting** procedure, except the keypad display indicates that the system is being **Part Set**. Only the zones which have the **Part** attribute enabled (refer to option **52.1.2** = **ZONES.Function.Part Set**), are included.

Night Setting

Enter: **User code** and press **B.**

Press **2 = Night Set**

```
NIGHT  SET      030
■■■■■■■■□□□□□□□□
```

This is identical to the **Part Setting** procedure, except the keypad display indicates that the system is being **Night Set**. Only the zones which have the **Night** attribute enabled (refer to option **52.1.3 = ZONES.Function.Night Set**), are included. By default, the exit time will be silent.

Cancelling the Setting

The **Ful**l, **Par**t and **Night** setting routines can be cancelled, before the system sets, by pressing the **esc** key on the keypad used to begin the setting. To cancel the setting on another keypad, type in a user code and press **A>** or **ent.**

Unsetting the System

To unset, the user can either:

1. Type their code & press **ent.**
2. Present a valid prox tag to a prox reader.
3. Press the **OFF** button on a valid RF fob.

A successful unset is accompanied by a double beep. If there are no alarms, the words "System Unset" appear on the display for five seconds.

If the system has been in alarm, then entering a code to unset logs the user in, so that the alarms can be displayed.

Cancelling Alarms and Alerts

Following each alarm activation, the alarm must be cancelled and the system reset. The alarm is cancelled by entry of any valid user code (level 2 and above) assigned to the group that has alarmed or by presentation of a valid proximity card to a reader or keyprox. The alarm sounders, Bell and Strobe outputs are silenced and the keypad displays information on the zones that have been activated during the alarm.

If the user code entered is not of a sufficient level to reset the Galaxy, the keypad displays the message **MANAGER RESET REQUIRED** or **ENGINEER RESET REQUIRED** depending on the type of alarm and level of reset required.

Alert Indication

Tampers and faults cause an alert condition in the unset state. At access level 1 (no users logged on) in the unset state, no indication can be given except for an alert indication. This can be audible (0.5 seconds beep every 30 seconds), and/or by the display shown below, until a user logs on.

```
        Alert!
      Enter  Code
```
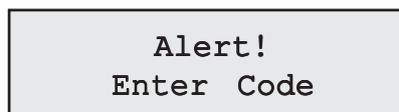
Whether or not the audible and/or visible elements of alerts are given is governed by **Option 51, Parameter 23 = Alert Indication.**

If a fault, tamper or alarm condition occurs while a user is logged on, the user is put back to the banner and the alert/alarm indication given as appropriate.

Restoring alarms

Alarms, faults and tampers will be restored provided:

1. The cause has cleared

2. An authorised user PIN code or anti-code has been entered.

3. The conditions have been viewed on the keypad display after steps 1 and 2 above.

If a user cannot restore all the conditions, a temporary banner is displayed to indicate that a manager or engineer is required to restore the system. This lasts for 30 seconds before the normal banner is displayed.

```
Engineer  Reset
Required
```

```
Master  Reset
Required
```

When systems have been set up for Technistore reset, a Technistore anti-code must be entered at the keypad to complete the restore process. If a Technistore reset is required, the restore banners shown above will be replaced by the following:

```
Call  ARC
Quote  XXXXX
```

Where XXXXX is the quote code generated by the internal Technistore algorithm. While this is on display, the system accepts both User PIN codes and the valid anti-code. Typing the anti-code cancels the technistore, and gives an opportunity to view alarms. If viewed, the system restores all the outstanding alarms, tampers and faults, provided the conditions have cleared. The display returns to the Standard Access level 1 banner.

Overriding of Faults and Tampers

Whenever a user logs in, the display shows any unrestored faults and tampers. If the condition cannot be cleared and restored, then to enable the system to be set, a facility to override the condition is included.

When a user tries to set the system, the system displays any conditions and allow the user to scroll through multiple conditions. If the user has the authority to override the condition, the following display accompanies the condition;

```
AC  Fail
ENT  to  Continue>
```

If the user cannot override the condition, the **ENT to Continue** will not be displayed.

The user can override each authorized condition, by pressing the ent key while the condition is displayed on the keypad. Each and every condition is individually displayed and overriden.

Pressing enter omits the condition for one set period only. Pressing escape returns to the previous banner. When setting the system with an overriden fault or tamper condition, the display indicates the overriden function in place of the set mode by showing the omit message as detailed in the omit menu function. The Override condition is logged, and will last for one set period only. When all the groups that are affected by the override condition become unset, the override status is cleared. An override restore is logged at unset.

If, during a setting attempt, there are conditions that haven't restored and cannot be overriden, then the system will not set. If the user presses escape or two minutes without button presses elapses, the display shows the **Reset required** banner, as detailed above, then returns to the main banner.

Setting and Unsetting with Keyfobs

The following information applies when a radio receiver is connected to the system.

To Full Set the system (5804 Keyfob):

Press the ON button on the keyfob (Full setting will commence as per keypad procedure).

NOTE: To cancel the setting during the exit time, press the OFF button.

To Unset the system:

Press the OFF button on the keyfob. (The system unsets with a double beep).

Begin Full Set Procedure

Unset/Cancel

Begin Part Set Procedure

Begin Night Set Procedure
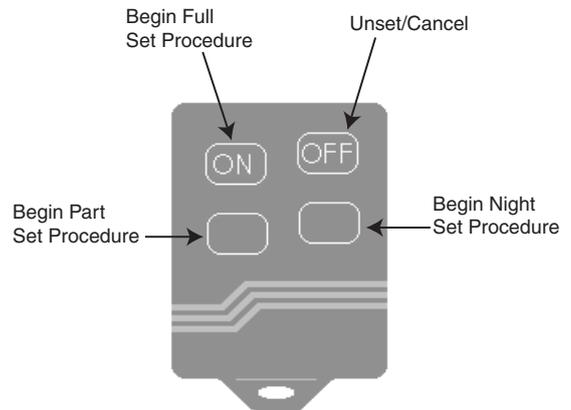
5804 Keyfob

To Full Set the system (KTC805 Keyfob):

Press button 1 on the keyfob (Full setting will commence as per keypad procedure).

NOTE: To cancel the setting during the exit time, press button 2.

To Unset the system:

Press button 2 on the keyfob. (The system unsets with a double beep).

Begin Full Set Procedure (Button 1)

SOS

Unset/Cancel (Button 2)

Begin Part Set Procedure (Button 3)

SOS

Begin Night Set Procedure (Button 4)
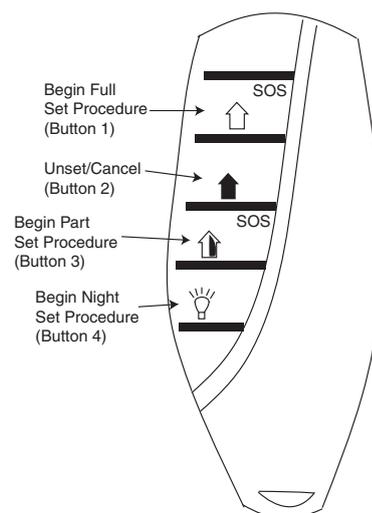
KTC805 Keyfob

Setting and Unsetting with Keytags or Cards

The following information applies to systems fitted with a keyprox.

To Full Set the system (6160 keyprox):

Hold keytag or card in front of prox symbol for three seconds. (Full setting will commence).

NOTE: To cancel the setting during the exit time, hold keytag briefly in front of prox symbol.

To Unset the system (6160 keyprox):

Hold keytag briefly in front of prox symbol. (The system unsets with a double beep).

Keytag or card presented to prox reader to set and/or unset the system
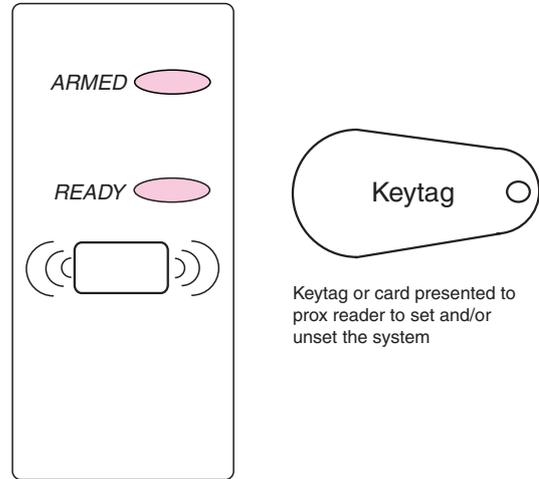
To Full Set the system (Mk 7 keyprox):

Hold keytag or card in front of prox symbol for three seconds. (Full setting will commence as per keypad procedure).

NOTE: To cancel the setting during the exit time, hold keytag briefly in front of prox symbol.

To Unset the system (Mk 7 keyprox):

Hold keytag briefly in front of prox symbol. (The system unsets with a double beep).
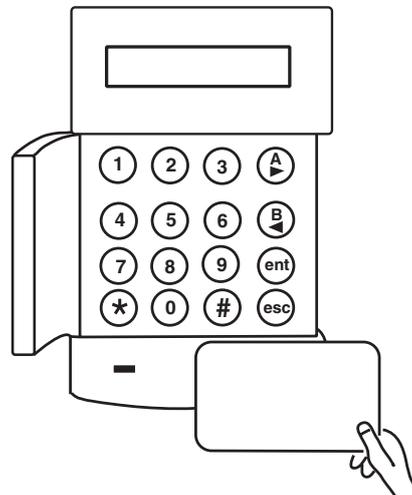
Text Programming

Certain functions on the Galaxy 2 Series can be set up with text descriptors or names. When one of these is edited the keypad will initially show the name that is currently programmed. The **A** and **B** keys can be used to move the edit cursor right and left in the name. Pressing the ***** key will delete the character to the left of the cursor and move the cursor one position to the left (Left Delete). Pressing the **#** key will delete the character at the cursor (Right Delete).

Pressing any of the numeric digit keys will enter character input mode, allowing a new character to be entered at the cursor position. If there is any space to the right of the name, a new character will be inserted. If there is no more space, new characters will overwrite existing characters.

There is a list of characters associated with each digit key, as shown in the following table. Pressing the same key multiple times scrolls through the list until the correct character appears on the keypad. So, for example, to insert the letter R the 7 key would be pressed three times. The behaviour of the **B** key changes while character input mode is active. Instead of moving the cursor to the left, it displays the previous character in the list. If a digit key is pressed too often by mistake this feature can be used to avoid having to cycle round the list to get back to the correct character.

Character input mode can finish in a number of ways:

·	After two seconds without a key press the text entry will finish automatically and the cursor will move to the next position.

·	A different digit key can be pressed. This will finish the first character input and begin character input at the next position.

·	The **A** key can be pressed. This is useful to avoid waiting for two seconds for the current character entry to expire when the same digit key is to be used for the next character.

When the edit is complete, pressing the ent key will save the new name. Pressing the esc key cancels the edit without saving any changes to the name.

Key	Output
1	& - 1 @ ' / ( ) full stop, comma, # * +
2	A, B, C, Ä, Å, Æ 2, a, b, cä, å, æ
3	D, E, F, 3, d, e, f
4	G, H, I, 4, g,h, i
5	J, K, L, 5, j, k, l
6	M, N, O, 6, m, n, o
7	P, Q, R, S, 7, p, q, r, s
8	T, U, V, 8, t, u, v
9	W, X, Y, Z, 9, w, x, y, z
0	<space> or 0
ent	Save string entry and exit
esc	Cancels the edit without saving changes
*	Delete character to left of cursor
#	Delete character at the cursor

Table 16. Zone Text Characters

Additional Functions

Code Tampers

When enabled (see **Option 51, Parameter 14 = Lockouts**), when 10 wrong codes are entered in succession, the keypad is locked. The lockout lasts for two minutes. After a further 10 wrong code entries, a tamper is logged and a signal is given. The keypad is again locked out for two minutes.

NOTE: RF fobs can still operate.

Conversely, if a wrong tag is presented to a keyprox or an invalid RF fob is activated for a similar number of attempts, the prox and receiver devices are locked out, but the keypads still operate.

If five wrong codes are entered from a keypad, followed by five wrong codes on a keyprox, both devices are locked for two minutes.

After a further 10 wrong code entries, a tamper condition is logged and a signal is given. Both devices will be locked out for two minutes.

Hot Keys

Three hot key functions are available on the keypads, by pressing a combination of two buttons. These functions mimic the Panic, Fire and Assistance zone types.

On the RS485 keypads the following combination is used:

Fire: *** & 8**
Panic: *** & 2**
Assistance: *** & 5**

On the ECP keypads the following combination is used:

Fire: **3 & #**
Panic: *** & #**
Assistance: **1 & ***

SECTION 7: MENU OPTIONS

Menu 10 - Setting Options

Option 11 - Omit Zones

This option allows zones to be temporarily removed (omitted) from the system. Once a zone has been omitted it does not generate an alarm condition. The omit status of the zone can be toggled on and off using the # key.

The omitted zones are reinstated automatically when the system is unset or manually when the zone omit option is disabled.

Option 12 - Timed Set

This option, when entered, initiates a timed full set.

Option 13 - Part Set

This option, when entered, initiates a timed part set.

Option 14 - Night Set

This option, when entered, initiates a timed night set.

Option 15 - Chime

The Chime option allows the user to switch the chime facility on or off. Any zones that have the chime attribute enabled momentarily operate **Entry/Exit Horns** when opened; two short tones are emitted.

1 = Chime Mode

This option turns the chime function on or off.

2 = Chime Zones

Selecting this option allows the user with appropriate access to scroll through all the zones that the user has access to, and toggle the Chime status on or off, by pressing the # key.

Menu 20 - Display Options

Option 21 - Zone Status

This option shows the status of each zone on the system one at a time. The scroll keys scroll along the zone list. For each zone, the zone type and its open/close/tamper status are displayed. If the # key is pressed, the resistance reading for that zone is displayed, if hard-wired, or the last recorded signal strength if it is RF (from RF Portal on RS485 line only). There are two readings, one from each receiver, eg. 10/10.

NOTE: 5800 series detectors will not show signal strength.

Option 22 - View Log

The log is a 384 event capacity log which stores all the mandatory and optional events as required by EN50131-1.

If group mode is enabled (refer to option **63 = OPTIONS**), users are given group choice of group in **View Log**. The available groups are displayed for selection. Press the number of the groups to be displayed, the **N** below the selected group changes to a flashing **Y**. Press ***** to enable all groups simultaneously. When all the required groups are selected press the **ent** key to access the log; only the events in the selected groups are displayed.

The most recent event is displayed first. The user can scroll through events with single presses of the scroll buttons. Holding the buttons down will scroll the log by one full day. While this is happening, the date is displayed and scrolls at one-second intervals.

The typical display for each event is as follows;

Event time ———   ———Date

```
09:51    SAT  01  JAN
1021+   Intruder
```
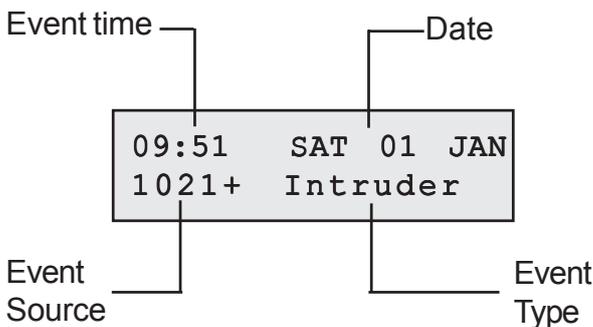
```
09:51    SAT  01  JAN
LOUNGE
```

Event Source   Event Type

```
09:04    SAT  01  JAN
Full  Set  usr  04
```

```
09:04:06      2005
Full  Set    G12--
```

Standard Display   **Additional Info with # Key**

NOTE: During any set period, if a particular event constantly repeats, only the first three occurences are logged. The counter is reset when the panel rearms or is unset.

Option 23 - System Version

This option shows the panel type and software version.

Option 24 - Print

NOTE: A serial printer must be connected to the program header on the Galaxy 2 Series PCB.

This option allows the user to print out the event log.

NOTE: The system programming can only be printed by an engineer in menu option 57.

A master code can also print out the users. There are four sub-menus:

1 = Codes

Only Master codes and engineers can print the information contained in this option. Information printed consists of: user number and name, level and group assigned.

2 = Zones

This sub-option prints out information for all zones on the system.

3 = Event Log

This option prints all events in the log.

4 = All

This option prints all information contained in options 1,2 and 3.

Pressing **ent** on each of the selected items will begin printing the required information. Pressing **esc** during this display will cancel the print function.

Menu 30 - Test Options

Option 31 - Walk Test

Menu option 31 allows a selection of zones or a single zone to be put on walk test.

NOTE: Zones programmed with the following functions remain active during the walk test:
24 hours, PA, PA silent, Fire, Tamper, Batt Fail, AC Fail, Assistance, Bell Fail.

Menu Option 31 has two settings:

1 = Test All Zones

This option initiates a walk test that includes all zones that have the omit attribute enabled (refer to option **52 = PROGRAM ZONES**). When selected, the walk test starts immediately. The message **NO ENTRIES** is displayed if all zones are non-omittable when selecting All Zones. Non-omittable zones are not included in this test and remain active throughout the test.

2 = Selected Zones

This test option allows the user to select any zones, irrespective of function type, for walk testing. As many zones as necessary may be added to the list before starting the test. Press the ✳ key to include all groups in the Walk Test. On entering this option the details of the first zone are displayed. Each zone required for test can be selected using the **A** or **B** keys or by entering the zone number. Press the # to toggle the test status of each zone in the Walk Test: the test status of the zone changes to **TEST** if it is included in the test and **# = TEST** if it is not. When all the required zones have been selected, press the **ent** key to start the Walk Test.

Once the Walk Test has started, opening a zone activates outputs programmed as **Entry/Exit Horn**. If a single zone is open, the keypad displays the address and function of the zone. If multiple zones are open, then the keypad indicates how many zones are open; the open zones can be viewed by pressing the **A** or **B** keys.

While the walk test is active the message **WALK TEST ACTIVE / ESC to abort** is displayed; press the # key to view all zones that have been walk tested so far. To return to the Walk Test press the # key again.

NOTE: RF zones will also record the signal strength in reduced gain mode.

Ending the Walk Test

To terminate the walk test, press the **esc** key. The test will terminate automatically if no zones are activated for 20 minutes.

The results of the test can be viewed by accessing the event log (refer to option **22 = DISPLAY LOG**).

Option 32 - Output Test

Menu option 32 allows each of the output function types to be scrolled through and toggled on/off by pressing the **ent** key. If a user has activated the output test, they can only turn on the bells and strobe. No other output types can be selected by the user. Refer to **53 = Outputs** for a full description of each output function.

Menu 40 - Modify Options

Option 41 - Time/Date

This option has two sub-options:

A = Time

Selection of this sub-option allows a new time to be entered. The time must be a valid four-digit number in the 24 hour format (HH:MM). When setting the time, on pressing the last digit, the seconds will be set to 00.

B = Date

Selection of this sub-option allows a new date to be entered. The date must be a valid six-digit number in the day/month/year format (DD/MM/YY).

Option 42 - Users

This option has one sub-option:

1 = Users

Option 1 allows scrolling through all the system users. Pressing the **ent** key at any point will enter into a list of sub options for that user. The engineer code cannot access the options for user codes. Similarly, user codes cannot access the options for the engineer code.

1 = PIN	4-6 digits	
2 = Type	Template 0-3	
3 = Groups	On/Off for each group	* Modifier gives the user group choice
4 = Name	6 characters	Entered in SMS text format
5 = RF Fob	Self learn	
6 = Prox Tag	Self learn	
7 = Duress	0 = Off, 1 = On	

Table 17. User Attributes

1 = Pin

The PIN identifies each user to the Galaxy 2 Series panel and permits the user to operate the system. This option allows a PIN to be assigned to a user or an existing PIN to be modified. The PIN must be a four, five or six digit number that is unique to the system. If a duplicate PIN is assigned, the message DUPLICATE ENTRY is displayed; the PIN is not assigned to the user. As each digit is entered it appears on the lower line of the display. Pressing the * key erases the last digit displayed. When the correct PIN has been assigned, press the **ent** key to accept the programming.

If the engineer PIN code has a # assigned, then the engineer can gain access by entering his PIN code twice, without requiring user authorisation via menu 48. The first entry of the PIN code will generate a tamper alarm on the keypad.

2 = Type

This attribute shows the type of user and the level of access for each. There are four sub-options:

0 = Cleaner (L2)
1 = Users (L2)
2 = Manager (L2)
3 = Master (L3)

User Types

A user type is assigned to every user on the system. The type dictates what functions a user can access.

Each user has the following selectable attributes:

Attribute	Option	Assigned Attributes				
Template Name		Cleaner (L2)	User (L2)	Manager (L2)	Master (L3)	Installer
Restore Alarms	Yes/No	No	Yes	Yes	Yes	Yes
Restore Faults	Yes/No	No	No	Yes	Yes	Yes
Restore Tampers	Yes/No	No	No	No	Yes	Yes
Set Access	Yes/No	Yes	Yes	Yes	Yes	Yes
Unset Access	Yes/No	Yes	Yes	Yes	Yes	Yes*
Enable Level 3	Yes/No	No	Yes	Yes	Yes	Yes
Change own Code	Yes/No	No	Yes	Yes	Yes	Yes
Change other Codes	Yes/No	No	No	No	Yes	No
Change SMS numbers	Yes/No	No	No	No	Yes	Yes
Chime Access	0, 1, 2*	0	1	2	2	2
Omit Zones	Yes/No	No	Yes	Yes	Yes	Yes
Override Prevent Set	Yes/No	No	No	Yes	Yes	Yes
Time & Date	Yes/No	No	No	Yes	Yes	Yes

Table 18. User Types

*   0 =   No Access
     1 =   Access sub-menu 1 only
     2 =   Access sub-menu 1 & 2

Yes* Only if set by engineer

The engineer always has access to all menu options. However, in the codes menu the engineer can only edit the engineer's PIN code.

3 = Groups

This attribute determines the system groups that the user has access to and operational control over. This attribute is only available when the groups option is enabled, see Option 63.1.

Access to the common group is not required as this arms and disarms automatically.

A modifier can be assigned to the groups. If the * is selected and displayed , then the user will have a choice at the point of setting and unsetting, of which groups of their assigned groups are to be affected.

4 = Name

This attribute allows a six-character user name to be entered in SMS text format.

5 = RF Fob

This parameter allows users to be assigned to RF fobs. See **Adding Keyfobs.**

6 = Prox Tag

This parameter allows users to be assigned to prox tags/cards. See **Adding Keytags or Cards**.

7 = Duress

This parameter allows the current user code to be assigned to a Duress code. There is no limit to the number of codes that can be assigned as Duress Codes.

Adding Keyfobs (ECP)

1. Enter menu **42.1 = Users.Users.**
2. Select a user.
3. Select option **5 = RF Fobs**.
4. Press * (AUTO) to self-learn the keyfob on to system.
5. Display says **awaiting fob**.
6. Press the four buttons on the keyfob simultaneously on the keyfob (receiver may give a triple beep at this point).
7. Press and release any single button on the keyfob when prompted.
8. The keyfob is now learned on to the system.

Adding Keyfobs (RS485)

1. Enter menu **42.1 = Users.Users.**
2. Select a user.
3. Select option **5 = RF Fobs**.
4. Press * (AUTO) to self-learn the keyfob on to system.
5. Display says **awaiting fob**.
6. Press one button on the keyfob.
7. The keyfob is now learned on to the system.

Removing Keyfobs

1. Enter menu **42.1 = Users.Users.**
2. Select a user.
3. Select option **5 = RF Fobs**.
4. To delete a keyfob for a user press the **<B** key for each digit on the fob.

Adding Keytags or Cards - Mk7 485 Keyprox only

1. Enter menu **42.1 = Users.Users.**

2. Select a user.

3. Select option **6 = Prox Tags**.

4. Press **A & 1** together to self-learn keytag/card on to system.

NOTE: When pressing A & 1, make sure keytag or card is kept away from prox symbol or else the number will be misread.

5. Hold card/keytag in front of prox symbol to add it in.

6. The number should be displayed.

7. Wait for double beep then remove keytag/card.

8. Press enter to save and exit.

NOTE: If at any time a triple beep is heard, the learn procedure has failed.

Adding Keytags or Cards - 6160 Keyprox only

1. Enter menu **42.1 = Users.Users.**

2. Select a user.

3. Select option **5 = RF Fobs**.

4. Press * (AUTO) to self-learn keytag/card on to system.

5. Display says **awaiting fob**.

6. Hold card/keytag in front of LED's to add it in.

7. Ignore request to press a button (this is for RF fobs).

8. The keytag/card has been successfully added.

NOTE: If at any time a triple beep is heard, the learn procedure has failed.

Removing Keytags or Cards - Mk7 485 Keyprox only

1. Enter menu **42.1 = Users.Users.**

2. Select a user.

3. Select option **6 = Prox Tags**.

4. The Serial number is displayed.

5. Press the **B** key until all digits are deleted from screen.

6. Press **enter** to save and exit.

Removing Keytags or Cards - ECP 6160 Tags only

1. Enter menu **42.1 = Users.Users**.

2. Select a user.

3. Select option **5 = RF Fobs**.

4. The Serial number is displayed.

5. Press the **B** key until all digits are deleted from screen.

6. Press **enter** to save and exit.

Option 44 - Mobile Nos

The Galaxy 2 Series can send SMS messages to users on up to three separate phone numbers to alert them of system events.

This option allows users to set up or alter the mobile phone numbers and the types of messages sent. There are three sub-options, one for each phone:

1 = Call 1

2 = Call 2

3 = Call 3

Each of these options has a further sub-menu as follows:

1 = Mobile Number

The mobile number can be up to 20 digits long.

2 = Message Type

This menu allows the types of events that are sent via SMS to be selected. There are four options as follows:

> **1** = Alarm Events
> **2** = Alarm & Set
> **3** = Alarm & Fault
> **4** = All Events
> These selections can be different for each mobile.

Option 47 - Remote Access

1 = Service

This option allows a user to initiate a call to the remote service centre or authorise a call in from the remote servicing centre. On entering the menu, the user can select which communication device is used.

1 = Telecoms

5 = GSM (2–44+ only)

Upon selecting the device, the user can select which communication mode is used.

0 = Direct Access

This enables a five minute window where the panel will accept an incoming call for the remote servicing software.

1 = Start Call Out

This immediately initiates an outgoing call to the number pre-programmed in menu 56.1.12 or 56.5.12.

4 = Auto Service (engineer access only)

This option allows an automatically initiated remote servicing call to the remote servicing centre.

1 = Mode

This selects the mode of automatic remote servicing connections.

0 = Off

In this mode the panel will **not** automatically initiate a remote servicing call. This is the default setting.

1 = PSTN

In this mode the panel automatically initiates a remote servicing call via the on-board modem to the telephone number programmed in menu 561.12 on the date and time programmed in menu 56.7.11.

2 = GSM

In this mode the panel automatically initiates a remote servicing call via the GSM module to the telephone number programmed in menu 561.12 on the date and time programmed in menu 56.7.11.

Option 48 - Level 3 Access

This option is a command which allows a normal user to authorize access for an engineer/master. This is always required for an engineer code. It is also required to authorize access for a Master code, if the system is set up this way by parameter 16. Authorization will be granted for five minutes. The engineer code must be entered within this time. Two sub-options are available:

0 = Disabled

This is always the option shown first.

1 = Enabled

Authorization is granted for five minutes.

Upon leaving engineering mode, the engineer's code can regain access for up to 30 minutes, before manual authorisation is required again via menu 48.

NOTE: During the 30 minute window, a user cannot disable engineer access.

If the engineer PIN code has a # assigned, then the engineer can gain access by entering his PIN code twice. The first entry of the PIN code will generate a tamper alarm on the keypad.

Menu 50 - Engineer 1 Options

Option 51 - Parameters

This option allows the engineer to modify the settings for the system functions. Options can be selected using the **A** or **B** keys or by entering the two digit parameter number and pressing the **ent** key. The selected options can then be programmed by typing the new value directly or by using the **A** key to increase or the **B** key to decrease the values assigned to the parameter; pressing the **ent** key accepts the new value and returns to the previous menu level.

NOTE: If the system is split into groups, certain parameters will have a different setting for each group.

The following table lists the System Parameters.

Parameter	Values	Defaults
01=Bell Time	01-30 minutes	15 minutes
02=Bell Delay	0=Off. 1=On - 10 min.	0 = Off
04=Exit Time	00 - 99 Seconds. 00=Infinite time/final contact.	30
05=Entry Time	00 - 99 seconds.	30
06=Part set exit	0=Silent 1=Keypad only 2=Keypad & Speaker	1 = Keypad
07=Intruder Resets	0=User 1=Remote	1 = Remote
08=Exit Terminate	0=No 1=Full set only 2=Full and part set only 3=All set modes	0 = No
09=Zone lockout	Alarms per set period, 0-9 Events	0 = No Lockout
10=Horn Volume	00-31	10
11=Audible power fault	0=No 1=Yes (AC fail after 1 hour, Batt low immediate)	1 = Yes
12=Banner	1=Top Line 2=Bottom Line programmed as for SMS 3=Show on Set　0=Off (Blank display when set) 　　　　　　　1=On (Display normal banner when set)	Blank Blank 1 = On
13=Hot keys	1=Mode (0=Off, 1=On, 2=On+ Keyfob panic) 2=Audible Panic (0=No, 1=Yes)	0 = Off 0 = No
14=Lockouts	0=Off 1=Keypad 2=Fob and Tag 3=All	3 = All
15=SPK Mode	LS Output 0 = Switch DC 1 = Speaker Driver	1 = SPK Driver
16=Master Code	Selects access authorization required 1=Always authorized 2=Temp authorized (via menu 48)	1 = Always
17=Restart	1=Enter performs a reboot, After warning. 2=Enter loads the factory default programming.	-
18=Stop Set	Sub options selectable. Each is stop set on/off 1=AC Fail, 2=Batt fault, 3=RF Jam, 4=Tel Line fault	1 = AC Fail
19=Part Bells	0=No 1=Yes	1 = Yes
20=Night Bells	0=No 1=Yes	1 = Yes
21=Reset Manager	Enter to reset manager code to default, after warning	-
22=Technistore	1=Mode: 0=Off, 1=On (In parallel to other resets) 2=Version (000-255)	0 = Off
23=Alerts	1=Audible and visible 2=Audible only 3=Visible only	1 = Aud & Vis
24=Entry Deviation	0=No 1=Yes (Default for EN50131-1)	1 = Yes
25=Easy set	0=No 1=Yes	0 = No
26=Sup. Entry	0=No 1=Yes	0 = No
46=Zone resistance	3 Sub options: 1=Zone config, 0=NC, 1=Double Balance, 2=EOL 2=EOL resistor, (1 - 99) X 100 Ohms, 100 ohm intervals 3=Contact Res, (1 - 99) X 100 Ohms, 100 ohm intervals	1 = Doub Bal 10 (1000) 10 (1000)
47=Set confirm	0=Off 1=Strobe (for 2 seconds). 2=Strobe and Bell (for 2 seconds when set terminates).	0 = Off
50=RF Options	1=RF Fob unset: 0=Disable fobs, 1=Unset anytime, 2=After Entry. 2=Supervision (0=2.0 hrs, 1=3.6 hrs, 2=8.4 hrs) 3=Audible Jam 4=Audible Supervision 5=Audible RF Low Bat For 3, 4, 5　　　　　0=No 　　　　　　　　　1=Yes 6 = RF Check　　0=No　1=Yes	1 = Anytime 0 = 2 hrs 0 = No 1 = Yes
55=DD243	1=Confirm Time　　(00-60) minutes, 0=Full set period 2=Confirm Mode　　0=Disabled 　　　　　　　　1=Before Entry (No portable ACE) 　　　　　　　　2=Except Entry (With portable ACE) 　　　　　　　　3=Always Confirm (Non DD243) 3=Restrict Keypad　　0=No 　　　　　　　　1=During Entry 　　　　　　　　2=Never Unset 4=Restart Time　　0=No 　　　　　　　　1=If first Zn Repeats 5=Reduced Resets.　　0=Off 　　　　　　　　1=On Unconfirmed 6=Re-arm mode　　0=On Confirm 　　　　　　　　1=On Bell Timeout 7=Entry T/O Conf.　　0=No 　　　　　　　　1=Yes 8=Exit ZN conf.　　0=Before Entry 　　　　　　　　1=Except entry 9=Entry clears conf.　　0=Reset Count 　　　　　　　　1=Keep Count	30 2 = Except Entry 1 = During Entry 0 = No 1 = On Unconfirmed 0 = On Conf. 0 = No 0 = Before Entry 1 = Keep Count

Table 19. System Parameters

01 = Bell Time

This is the amount of time that the sounders/bells activate after an alarm condition has occured. The duration of the output is programmable within the range **01-30** minutes; the default is **15**.

02 = Bell Delay

This parameter, when set to **On**, delays the operation of the bell for 10 minutes following an intruder alarm.

04 = Exit time

This is the amount of time that the user has to exit the premises after initiating a **Full Set** procedure. The Exit Time is programmable within the range **00 - 99** seconds. If Final Contact is required then enter **00.** The system will only set when a final exit zone is activated after the exit timer has started (infinite exit time).

This parameter can be assigned a different value for each group, when groups are enabled.

05 = Entry Time

This is the amount of time that the user has to enter the premises and **Unset** the system. The Entry Time is programmable within the range **00 - 99** seconds. The Entry Time is initiated by opening a zone programmed as Final Exit.

This parameter can be assigned a different value for each group, when groups are enabled.

06 = Part Set Exit

This parameter allows the Part Set exit timer to be silent, audible through the keypad, or, audible through the keypad and internal sounder. Night Set will always have a silent exit timer but this option will affect the Night Set comfort tone (confirmation of set) and fault warnings given at the end of the Exit Time. All possible options are shown in the following three tables.

PART SET EXIT WARNING – 51 06 0 SILENT				
	EXIT TONE	FAULT TONE	FAULT TONE AT END OF EXIT TIME	COMFORT TONE
Part Set	None	None	Keypad only	Keypad only
Night Set	None	None	Keypad only	Keypad only

Table 20. Part Set Exit Warning - Silent

PART SET EXIT WARNING – 51 06 1 KEYPAD BUZZER ONLY				
	EXIT TONE	FAULT TONE	FAULT TONE AT END OF EXIT TIME	COMFORT TONE
Part Set	Keypad only	Keypad only	Keypad only	Keypad only
Night Set	None	None	Keypad only	Keypad only

Table 21. Part Set Exit Warning – Buzzer Only

PART SET EXIT WARNING – 51 06 2 KEYPAD BUZZER AND INTERNAL SOUNDER				
	EXIT TONE	FAULT TONE	FAULT TONE AT END OF EXIT TIME	COMFORT TONE
Part Set	Both	Both	Both	Both
Night Set	None	None	Both	Both

Table 22. Part Set Exit Warning – Buzzer & Internal sounder

07 = Intruder Resets

This parameter dictates what type of reset is required for a signalled intruder alarm. There are two settings:

0. User

This setting allows any user programmed with the following user types: user, manager, master, to reset a full intruder alarm.

1. Remote (default)

This setting requires an engineer or remote reset for a signalled intruder alarm. If this option is selected on a system where confirmed alarms are used, then the reset level required for an unconfirmed alarm can be reduced to user, if required, in parameter 51.55.5. This is the default setting for DD243 compliant systems.

08 = Exit Terminate

If Exit Terminate is enabled for Full, Part or Night Set, exit times for the selected mode will be set to infinity. For Full Set this overrides the value programmed in the Exit Time option (Option 04=Exit Time).

Setting of the system is terminated when a Push Set zone is opened during the exit time. There is a five second delay between the closing of the Push Set zone and the setting of the system to allow entry route detectors to settle.

NOTE: The operation (opening and closing) of Push Set zones has no effect on the system except during the setting procedure.

The settings for Exit Terminate are:

0. No
1. Full set only
2. Full and part set only
3. All set modes

09 = Zone Lockout

This parameter determines the number of times a zone can activate during a set period before it is omitted from the system. The counter is reset when the panel is unset.

0 (0 - 9) Events.

0 = No lockout (default)

10 = Horn Volume

This parameter sets the volume of the entry/exit horn via the loudspeaker. The range is **00-31**. Setting the volume to 00 makes it silent. Alarm tones are not affected by the volume control.

11 = Audible Power Fault

This parameter has two settings:

0. No
1. Yes (AC fail, Batt low).

When set to 1 (Yes) an alert indication is given immediately at the keypad (see parameter 23). Visual indication is always given on keypads. These indications are signalled to the ARC after the time programmed in menu **56.7.04=Comms.Parameters.Power Delay**. No audible indication is given when the system is set.

NOTE: When set to 0 (No) no audible indication is given. It is only visible on keypad.

12 = Banner

This parameter has three settings:

1. Top Line

2. Bottom Line

3. Show on Set

    0 = Off (Blank display when Set)

    1 = On (Display normal banner when set)

The Day Mode Banner display on keypads can be altered. The top and bottom row can be edited separately with descriptors of up to 16 characters. Each number key on the keypad is assigned several characters that are accessed by pressing the key repeatedly until the desired character appears on the screen.

For a full description of how to use the text function, refer to **Text Programming**.

13 = Hot Keys

This parameter has two settings:

1. Mode

    0 = Off

    1 = On

    2 = On + Keyfob panic

2. Audible panic

    0 = NO

    1 = Yes

When the mode is set to **On** this option permits Assistance, Fire and Panic facilities to operate via a double-push on the keypad buttons. The button combinations vary depending on keypad type and are detailed in **General Menu Operation, Hot Keys**.

When set to **On + Keyfob panic**, the panic function is extended to the keyfob.
5804 keyfob: the lower two buttons are pressed simultaneously.
TC805HF keyfob: the first and third buttons (marked **SOS**) are pressed simultaneously.

Assistance: Keypad displays assistance message with fast pulse tone, and assistance outputs/comms trig. are activated.

Fire: Keypad displays fire message with slow pulse tone and fire output/comms trig are activated.

Panic: PA is indicated and a constant tone emits and PA/outputs/comms trig are activated.

NOTE: When groups are enabled, hotkey operation occurs in the common group (group four).

14 = Lockouts

This parameter has four settings:

0. Off

1. Keypad

2. Fob and Tag

3. All

When option 1 is selected, the keypad is locked out if 10 PIN codes are entered simultaneously without a valid PIN code being entered, this does not include the # key. The keypad, and any keypads that have been used for invalid PIN code entry, are by-passed from the system for two minutes.

Keypad tamper lockout is indicated on the keypad display. After 20 attempts, a tamper is logged and an event is signalled. When option 2 or 3 are selected the same rules apply to wireless fobs and prox tags.

15 = SPK Mode

This function selects whether the LS (loudspeaker) terminal acts as a speaker driver or a normal switched output. There are two settings.

0.　Switch DC

1.　SPK Driver

NOTE:　Never connect a speaker to this terminal when the mode is set to Switch DC.

16 = Master Code

This parameter selects if access authorization is required. There are two settings:

1.　Always authorized

2.　Temp authorized

　　This setting operates via Option **48 = Level 3 access**.

17 = Restart

This parameter has two sub-options:

1.　Restart

The **Restart** option configures any modules that have been added to the system but gives an alarm if there are any tampers open or if any modules are reported as missing. The message **WARNING!!! ent = RESTART SYS**. is displayed. Press the **ent** key to restart the system.

2.　Load Defaults

This parameter re-configures the system without the need to remove and reconnect the power. The system displays a **WARNING!!! ent=DEFAULT**, press the **ent** key to reconfigure the system. The keypad display becomes blank for a few seconds, then displays the message **Loading Defaults**. When configuration is complete the banner returns to the normal display (day mode).

NOTE:　After restart, there is a 30 minute window when the engineer's code can still access the menu. After this time, user authorisation will be required.

NOTE:　Outputs are momentarily reset during the restart. If the system has a communications requirement, put it on test before using the restart.

18 = Stop Set

This parameter has four sub-options. Each is stop set Yes/No

　　0 = No – System can be set with condition present.

　　1 = Yes – Condition must be cleared before setting.

1.　AC Fail

This option prevents setting of the system if there is a mains fail condition.

2.　Batt Fault

This option prevents setting of the system if there is a low battery condition.

3.   RF Jam

This option selects whether or not the system can be set while there is an RF Jam (interference condition) present.

4.   TEL Line Fault

When set to **on** a line fault can be detected by the panel.

A line fail prevents setting.

19 = Part Bells

This option determines whether the External Bell and Strobe outputs activate during an alarm condition when the system is Part Set.

0.   No

1.   Yes (default)

NOTE: Internal sounders always sound.

20 = Night Bells

This option determines whether the External Bell and Strobe outputs activate during an alarm condition when the system is Night Set.

0.   No

1.   Yes (default)

Note: Internal sounders always sound.

21 = Reset Manager

This parameter must only be used if the Master Manager code is lost or must be replaced. On selecting the **Reset MGR** parameter, a warning message is displayed: **WARNING!!! ENT=Code Change**; press the **ent** key to erase current code and reset it to the default of **1234**.

22 = Technistore

A user code can cancel an alarm activation but a Technistore reset number must be entered to restore the system. This parameter has two options:

1.   Mode

    0 = Off

    1 = On (in parallel to other resets)

2.   Version 000 (0-255)

The engineer can program the Technistore Version number with a valid range of 000 - 255.

23 = Alerts

This parameter has three settings and dictates how alert indications are presented to the user.

1.   Audible and Visible

2.   Audible Only

3.   Visible Only

Alert indications are given in the unset state only. Audible alerts are given on keypad buzzers and internal speakers.

Visible alerts are given on the keypad display only.

24 = Entry Deviation

This parameter has two settings:

0.   No

1.   Yes (default)

If set to 0 (Entry Deviation not permitted), deviation from an entry route during entry or supplementary entry periods will result in a Full Alarm Condition.

An entry route is defined as zones programmed as 01 (final) and 02 (exit).

Entry Deviation permitted (1) means that external bells/communications/triggers will be withheld until the entry time expires. Entering a valid code before a full alarm condition prevents communication and triggers from activating.

This option defaults to 1 - required by DD243, EN50131-1

25 = Easy Set

This parameter has two settings:

0.   No (default)

1.   Yes

When set to Yes (enabled), this option allows users to (Full, Part or Night) set the system without entering a user code. Instead, users set the system by pressing the A> or <B Keys. A valid user code is still required to unset the system.

When set to No (disabled), a user code must be entered before setting.

NOTE: Easy Set can only be used when there are no faults controlled by the **Stop Set** override parameter.

26 = Supplementary Entry

This parameter has two settings:

0.   No

1.   Yes

When set to No (disabled) an alarm condition occurs if the system has not been unset at the end of the entry time.

When set to Yes (enabled) an internal only alarm occurs if the system has not been unset at the end of the entry time (Trigger, External Bell and Strobe do not activate). The internal alarm will run for 30 seconds. A full alarm will occur if the system has not been unset at the end of this time.

46 = Zone Resistance

This parameter has 3 options:

1.   Zone Config

The zones on the Galaxy 2 Series function as Normally Closed, Double Balanced, End of Line. This sets the configuration for all hardwire zones on the system, including expanders. See **Section 5: Hardware—Zones,** for wiring instructions for each configuration. This option defaults to (1) Double Balanced.

 0. Normally Closed

 1. Double Balanced

 2. End of Line

2.   EOL Resistor

This selects the resistor value for the end of line (EOL) resistor used in EOL double balance zone configurations. Normally this should be 1000 ohms. The value entered is in hundreds of ohms, 01 = 100 ohms, 99 = 9900 ohms.

3.   Contact Res

As for EOL Resistor but for Contact resistor.

47 = Set confirm

This parameter gives an external indication when the system has set. There are three options:

0.   Off

1.   Strobe (flashes for two seconds)

2.   Strobe & Bell (indication for two seconds when set terminates)

50 = RF Options

This parameter has six options:

1.   RF Fob Unset

This option assigns the operation of the keyfobs.

> 0 = Disable fobs
>
> 1 = Unset anytime (default)
>
> 2 = After Entry

2.   Supervision

If no signal is received from each RF detector within this time window, a supervision alarm is generated.

> 0 = 2.0 hours (default)
>
> 1 = 3.6 hours
>
> 2 = 8.4 hours

3.   Audible Jam

This parameter suppresses alert indications for audible jam faults and has two settings:

> 0 = No (always silent). This is the default.
>
> 1 = Yes (follows alert programming in parameter 23)

4.   Audible Supervision

This parameter assigns the indication for supervision loss and has two options:

> 0 = No (always silent).This is the default
>
> 1 = Yes (follows alert programming in parameter 23)

5.   Audible RF Low Bat

This parameter assigns the indication for RF low bat faults and has two options:

> 0 = No (always silent). This is the default.
>
> 1 = Yes (follows alert programming in parameter 23)

6. RF Check

The RF Check is a means of warning the user that the system is unable to determine the status of the detector. There are two options:

0 = No

This option disables the checking of the RF Stop Set (see Section 8, RF Stop Set).

1 = Yes

This option enables the checking of the RF stop set.

55 = DD243

The options of this parameter allow the confirmed alarm reporting operation to be modified to tailor the system to requirements of DD243: 2002, depending on the type of installation. The default options should be used in all installations where portable fobs are used to unset.

1. Confirm time

0 - 60 minutes, 0 = Full set period

2. Confirm Mode

This dictates if and when a sequentially confirmed alarm report can be generated. A sequentially confirmed alarm means that two separate alarm zones must be activated during the set period within the confirmed alarm time window. The option has four settings:

0 = Disabled

No confirmed alarm signals will be generated

1 = Before Entry (No Portable ACE)

This option means that confirmed alarms can occur during the set state until a Final Exit type zone is activated and the entry timer started. From that point on, no confirmed alarms can be generated until a user unsets then sets the system again.

2 = Except Entry (With Portable ACE). This is the default.

This option means that confirmed alarms can be generated during the set state except during the entry delay period. If a Final Exit type zone starts the entry timer, and then an Entry timeout occurs, the confirmed alarm functionality will come back into operation after the timeout has occurred.

3 = Always Confirm (Non DD243)

This option means that confirmed alarms can be generated by alarms activated at any time during the set state.

3. Restrict keypad

This option can be used to prevent keypads from unsetting the system under normal conditions. This can be used to force users to always unset by keyfobs (portable ACE), to comply with DD243:2002.

This option has three settings:

0 = No

Keypads can always unset the system.

1 = During Entry (default)

The keypad can unset the system at any time, except during the normal entry time. This option could be used to ensure users are always using their keyfobs but does not lock them out completely when a keyfob is lost or damaged.

2 = Never Unset

The keypad can never unset the system. Unsetting can only be performed by a keyfob, proximity tag or card.

> **NOTE:** If the panel becomes locked by accidental selection of this option, the panel can be force unset by the following procedure:

(a) Remove all power from the system.

(b) Open the panel lid tamper.

(c) Re-apply power.

The system will power up unset in a tamper condition.

4. Restart time

This option has two settings:

0 = No (default)

1 = If 1st Zn Rpt.

When this option is set to 1 (If 1st Zn Rpt.), the confirm timer will be restarted whenever the first to alarm zone is opened again within the confirm time window. When set to 0 (No), the confirm timer will continue running as before and will not restart.

5. Reduced Resets

This option allows users to reset the system if there has not been a confirmed alarm signalled. There are two settings:

0 = Off

This setting makes any alarm follow the reset level in parameter 51.7.

1 = On Unconfirmed (default)

This setting allows the user to reset an unconfirmed alarm, even if parameter 51.7 is set to require a remote reset.

6. Re-arm mode

This option dictates at what point the re-arm occurs when activated zones are being by-passed and signalled to the monitoring station. There are two settings:

0 = On Confirm (default)

By-passed zones will send a by-pass signal at the end of the confirm time window.

1 = On Bell Timeout

By-passed zones will send a by-pass signal at the end of the bell time.

7. Entry T/O Confirm

This option determines whether an Entry Timeout alarm will contribute to a confirmed alarm. There are two settings:

0 = No (default)

1 = Yes

When set to 1 (Yes), a timeout alarm will contribute to a confirmed alarm. When set to 0 (No), a timeout alarm will only cause an unconfirmed alarm. It will not be counted as either the first or second contribution to a confirmed alarm.

This must be set to 0, for DD243:2002 compliance.

8.   Exit ZN conf.

   0 = Before Entry (default)

   1 = Except Entry

9.   Entry clears conf.

This options selects whether a single (unconfirmed) alarm activation is remembered for the purposes of confirmation, after an entry door is open. This option has two settings:

   0 = Reset Count

   In this case, the confirmed alarm counter is reset to 0 as soon as an entry door is opened.

   1 = Keep Count (default)

   In this case, the confirmed alarm counter is maintained. If there is one alarm activation before the entry door is opened, and then another activation after the entry delay expires, a confirmed alarm condition will be generated, provided that both activations occur within the confirm time window.

Option 52 - Zones

Zones are programmed in menu 52. Each zone has a set of attributes as shown in the following table:

	Attributes	Description
1	Function	Assigns Zone Type
2	Descriptor	SMS text - 16 characters max. alpha-numeric description
3	Soak Test	Zone monitored for 14 days max.
4	Omit enable	When enabled zone can be by-passed by authorized user
5	RF options	Zone set up with a wireless detector
6	Groups	Assigns a zone to a single group on the system
Note: Groups only appear if the Groups option is enabled (refer to option 63.1)		

Table 23. Zone attributes

Selecting Zones

On entering the option, the first zone on the system is displayed; the zone address, function and group assigned are displayed on the top line, the descriptor is displayed on the bottom line.

From the display of the first zone, any zone on the system can be displayed by pressing the **A** or **B** keys or by entering the address of a specific zone.

The zone is selected for programming by pressing the **ent** key; the first zone programming attribute **1=Function** is displayed.

Attributes

The attributes can be stepped through by pressing the **A** or **B** keys or directly selected by pressing the attribute number (**1–6**). Once the required attribute is on display, press the **ent** key to gain access for modification.

Once the attribute has been assigned press the **ent** key to save the programming and return to the attribute selection level.

	Zone Function	Description
0	Not Active	For use in Part set. Zone is not active in alarms but tampers are monitored.
1	Final	Activation whilst set initiates the timed entry procedure. Activation during setting may terminate setting depending on programming.
2	Exit	Intruder zone which is inactive during the setting and timed unsetting procedures.
3	Intruder	Causes an instant intruder alarm when set.
4	24 Hours	As an intruder zone but permanently active.
8	Push Set	Terminates a setting procedure.
9	Keyswitch	Transition to open initiates setting. Transition to closed causes unset. Simulates level 2 user.
13	PA	Activates a PA alarm.
14	PA Silent	Activates a silent PA alarm.
17	Link	Has no alarm function but can be used to activate links.
18	Spare	Renders all function of a particular zone inactive, including tampers, RF supervision and RF Low battery.
19	Fire	Activates a fire alarm.
20	Tamper	Activates a tamper condition (both the physical alarm state and physical tamper state of the zone result in the same tamper activation).
23	Batt Fail	Causes an APS fault condition.
25	AC Fail	Causes a PPS fault.
53	Secondary Entry	As Exit function but changes to entry upon the force omitting of a Final zone, as per the requirements of DD243.
54	Assistance	Activates an Assistance alarm.
55	Bell Fail	Causes a bell fault condition

Table 24. Zone Functions and Descriptions

1 = Function

This option allows the function of the zone to be selected. The zone can be assigned a different function for each set mode (full, part and night set) to allow maximum flexibility. For instance, the zone can be programmed with the 'Intruder' function in Full and Part Set, but programmed as 'Not Active' in Night Set.

On selecting this option, the main zone function is selectable using the cursor keys, or by direct entry of the code number for the zone type.

```
1008    Full  Set
03=Intruder
```

Pressing the **ent** key will apply the selected function to all set modes and then give the option of selecting a different function for the Part Set mode. Pressing the # key instead, will only save the function for the Full Set mode, and then display the Part Set function. Again, the function is selected using the cursor keys or direct code entry.

```
1008    Part  Set
01=Final
```

If no change is required for Part or Night Set modes, the esc key can be pressed to exit the zone function option. Pressing the ent key will save the function and then give the option of selecting a different function for the Night Set mode.

```
1008    Night  Set
00=Not  Active
```

Select the night set function and press the **ent** key or the **esc** key to cancel.

NOTES:

1.   If the main function is a 24hr function (panic, fire, tamper or keyswitch etc) then the part set and night set function cannot be altered separately. The zone must maintain the same function throughout.

2.   In the unset mode, the zone function will be the same as that set for Full set.

3.   The # key can be used to view each of the modes without reprogramming.

2 = Descriptor

Each zone can be assigned with an alpha-numeric description of up to 16 characters (see **Table 16, Zone Text Characters**). The descriptor is assembled from the character set in this table. On selecting the **Descriptor** attribute, the currently assigned descriptor (blank by default) is displayed on the top line. Each of the keys on the keypad, when pressed, offers a choice of character on the bottom line. Press the key repeatedly to choose a character. A two-second delay accepts the character and the flashing cursor moves on. Press and hold down the * key to delete all the characters to the left or highlight a character and press the # key to delete a single character.

For a full description of how to use this function, refer to **Text Programming**.

3 = Soak Test

Soak test. This option allows the zone to be placed in a test mode for the programmed number of days (maximum 14). If the zone is activated when it would normally have caused an alarm, then a soak event is recorded in the log and no alarm is generated. The soak test days will be reset to the start. If no activations occur each day, then the number of days are decreased by one, each day at midnight. If the counter reaches 0 days, then the zone is reinstated fully into the system and normal alarm operation is resumed.

4 = Omit Enable

If the omit attribute is set to **1 = Enabled**, a user with the appropriate authorization can manually omit a zone from the system. It has no bearing on the force omit for re-arm/re-instatement. Manually omitted zones are omitted for one set period only.

5 = RF Options

These options allow the zone to be set up with a wireless detector.

There are six options selectable with this attribute:

1. Serial number

This allows the detector's unique serial number to be entered by typing the number or by using the auto-learn function. To use the auto-learn, press * and when prompted, activate the detector's tamper switch. On learning, the signal strength is displayed.

2. Loop number

On 5800 series detectors, this selects the loop input to be used on this zone.

3. Supervision

This enables or disables supervision of the wireless detector.

4. Auto reset

The Auto reset function can be enabled to force the zone to automatically close after five seconds, if no close signal is received from the transmitter. This will be useful on certain installations.

5. Last signal

This shows the strength of the last signal received from this detector for V2 peripherals; 5800 series detectors will not show that signal strength.

6. Lowest signal

Lowest Signal will show the lowest signal strength received from that device since records were reset in menu 61. This is for V2 peripherals only; 5800 series detectors will not show this signal strength.

NOTE: If two receivers are fitted, both signals will be shown. If only one receiver is fitted, the reading for that receiver only will be shown. The receiver not fitted will show a reading of 0, eg. 9/0.

6 = Groups

This option selects the group that a zone belongs to. The zone will always default to group 1, but can be set to work under any group.

Zone Functions and Descriptions

00 Not Active

The zone is not active in alarms but tampers are monitored

01 Final

Zones programmed as **Final** initiate the unsetting procedure and terminate the setting procedure.

NOTE: The setting procedure can only terminate if the **Exit Time** (Parameter 51.04) is set to zero.

Opening the **Final** zone when the system or group is set starts the entry timer; opening and then closing the **Final** zone during the exit procedure sets the system or assigned groups, providing all the zones are closed. The opening (+) and closing (–) of **Final** zones during the setting and unsetting procedures are recorded in the event log.

Opening a **Final** zone during the set procedure is only reported during settling.

02 Exit

Zones that protect the entry and exit routes are programmed as **Exit**. During the setting and unsetting procedures **Exit** zones have a non-alarm operation. If the **Exit** zone is activated while the system is set - without the unsetting of the group being initiated - an **Intruder** alarm condition is activated.

Opening a **Exit** zone during the set procedure is only reported during settling.

03 Intruder

The **Intruder** function is inactive when the system is unset. When the system is set, activation of an **Intruder** zone causes a full alarm activation that requires to be reset with an authorized code.

04 24 Hours

As an intruder zone but permanently active.

NOTE: In the unset state, a 24 hour alarm is signalled. In the set state, an intruder alarm is signalled.

08 Push Set

This zone function is used to terminate the setting routine. The system sets when the **Push Set** zone, usually a push button, is activated. The **Entry/Exit Horn** stops immediately the button is pressed; the system sets after five seconds, allowing the doors to settle to the closed state. The **Push Set** zone remains inactive until the next setting routine.

Only a **Push Set** zone in the common area will cause all setting areas to set, otherwise it will only set in the area it is in. This will leave the other setting areas to continue setting until a **Push Set** zone in their area activates.

The **Push Set** zone can be either $1k\Omega$ going to $2k\Omega$ or $2k\Omega$ to $1k\Omega$ - refer to **Figure 9 (Keyswitch/Push-Set Zone Wiring)** for wiring details.

Activating a **Push Set** zone during the set procedure is only reported during settling.

NOTE: For this type of zone function to operate, Parameter 51.08, Exit Terminate, has to be set.

09 Keyswitch

The **Keyswitch** function allows a zone to be used as an on/off switch for the system or assigned groups. Operating a **Keyswitch** zone when the system is unset starts the timed full setting routine, therefore the exit time is applicable. The system sets when the exit time expires or a **Final** or **Push Set** is activated.

If the system is set, operating a **Keyswitch** immediately unsets the assigned groups; there is no entry time countdown.

The **Keyswitch** operation is as follows: $1k\Omega$ to $2k\Omega$ sets the system; $2k\Omega$ to $1k\Omega$ unsets the system.

NOTE: The activated zones are not displayed on the keypad when a **Keyswitch** is used to reset the alarm.

Keyswitch operation with groups enabled

When groups are enabled, a keyswitch zone will set and unset only the group that it is programmed to. However, if the keyswitch is programmed to the common group (group four), then it will set and unset the groups in the common group map (see Option 63.1.2).

13 PA

The **PA** (Personal Attack) function is continuously operational. Activation of this zone type overrides the **Bell Delay** parameter and causes an instant full alarm condition that requires to be reset with an authorised user code.

14 PA Silent

The **PA Silent** function is identical to the **PA** function, with the exception that there is no audible or visual indication of the activation; that is, no bells or strobes are activated. Only the **PA** output (normally channel 2 on the digital communicator) signals the alarm. The activation (+) and restoral (–) of **PA Silent** zones is recorded in the event log.

17 Link

This has no alarm function but can be used to activate links.

18 Spare

The **Spare** function allows any zones that are not being used to be ignored by the system; the resistance readings from the circuit - including the tamper conditions - do not activate an alarm condition.

NOTE: It is recommended that all unused zones are programmed as **Spare** and that a $1k\Omega$ 1% resistor is connected across each of these zones.

19 Fire

The **Fire** function is continuously operational. When activated, a **FIRE** zone overrides the **Bell Delay** parameter and activates an instant alarm (**Bell**, **Strobe** and **Fire**). The keypad buzzer and control panel horn output, if fitted, emit an interrupted tone (one second on, 0.5 seconds OFF), easily distinguishable from all other alarm conditions. Any valid code entry cancels the **Fire** activation.

20 Tamper

The **Tamper** function is continuously operational. When a **Tamper** zone is activated (1kΩ to 2kΩ), a tamper alarm is generated; this requires to be reset by an authorised user code. If a tamper condition (open or short circuit) occurs, a tamper alarm is also generated.

23 Batt Fail

This function is used to monitor the voltage of a back-up battery connected to a power supply. It causes an Aux. Power Supply fault condition.

25 AC Fail

This function is used to monitor a remote power supply. In the event of a power failure the AC **Fail** zone is activated; the activation (+) and de-activation (–) of the zone is recorded in the event log.

53 Secondary Entry

As exit function but changes to entry upon the force omitting of a final zone.

54 Assistance

This function activates a "personal assistance required" alarm in both set and unset conditions. Bells and sounders are activated and an assistance message is signalled.

55 Bell Fail

This function causes a bell fault condition.

Option 53 - Outputs

This option allows the operation of all the system outputs to be programmed. Outputs numbered 0001 to 0008 are the outputs from the trigger header. Outputs numbered 1001 to 1004 are the standard outputs on the main PCB. Outputs on expansion modules are shown if fitted. Each output has a sub menu containing attributes as shown:

1. Function

Assigns the output function that activates the output.

2. Polarity

This selects if the output is normally off (positive) or normally on (negative). Positive means that the output is 12V going to 0V when activated. Negative means that the output is 0V going to 12V when activated.

3. Groups

For output types where groups are programmable, this selects the groups that an output responds to. An output can respond to 1, 2, 3 or 4 groups.

NOTE: **Reflex** means that the output stays on until the condition clears.
Latch means that the output stays on until a valid user logs on (PIN or card).
Latch* means that these outputs are latched but can be forced off by bell delay, bell time or confirm timeouts.
Pulse means that the output stays on for five seconds and then switches off again.

4. RF Options

Option not available at present.

Selecting Outputs

On entering the option, the first output on the system is displayed; the output address, function and mode are displayed on the top line, the polarity and assigned groups are displayed on the bottom line.

From the display of the first output, any output on the system can be displayed by pressing the **A** or **B** keys or by entering the address of a specific output.

The output is selected for programming by pressing the **ent** key; the first output programming attribute **1= Function** is displayed.

00=Not Used

This function is used to designate outputs that are not being used on the system.

01=Bell (Latch)

The **Bells** output is activated on a full alarm event when the system is set. This output is subject to the **Bell Time** and **Bell Delay** parameters.

02=Strobe (Latch)

The **Strobe** output is activated on a full alarm event during the set state. This output is subject to the **Bell Delay**. The **Strobe** output follows the **Bell Time**, but latches on after the last rearm.

03=Panic (Latch)

The **PA** output is activated whenever any of the **PA** zone types activate. It latches on and remains active until a valid code, with the appropriate reset level, is entered.

04=Intruder (Latch)

The **Intruder** output is activated on a full alarm event during the set state.

05=Tamper (Latch)

The **Tamper** output is activated whenever a circuit tamper or lid tamper occurs. The output is not subject to rearm: it latches on and remains active until a valid code, with the appropriate **System Reset** level, is entered.

06=24 Hour

The **24 Hour** output is activated whenever a **24 Hour** zone is activated. The output is not subject to rearm: it latches on and remains active until a valid code, with the appropriate **System Reset** level, is entered.

08=0V Detector Reset (Pulse)

This output is always on (0V) but pulses for five seconds upon setting or system reset to reset any latching detectors.

09=Set (Reflex)

The **Set** output is activated when the assigned groups on the system are set. This output is a **Reflex** output and follows the set and unset status of the groups.

11=Comms Test (Pulse)

This output activates any time a test signal is sent to the Alarm Receiving Centre.

14=AC Fail (Reflex)

The **AC Fail** output indicates the status of the a.c. (mains) power supply. The output activates when the a.c. supply fails or an **AC Fail** zone is activated. The output is reset when the a.c. supply is restored or the **AC Fail** zone is closed. This output is subject to Parameter **56.7.4=Comms.Parameters.Power Delay**.

15=Low Batt (Reflex)

The **Low Batt** output activates whenever the control unit stand-by battery falls below 10.5V or a **Low Batt** zone is activated. The output is restored when the voltage rises above 10.5V or the **Low Batt** zone is closed.

16=Fire (Latch)

The **Fire** output is activated whenever a **Fire** zone is activated. It latches on and remains active until a valid code (level 2 or above) is entered.

20=Confirm (Latch)

The **Confirm** output is activated when there have been activations on two separate zones: the second activation must occur within the Confirm Time Window. The zones do not have to be in the same group. Confirm outputs will switch off when all groups which have been in alarm are unset.

NOTE: The **Confirm** output is used to give positive identification that a genuine intruder alarm condition has occurred and to minimise the possibility of false alarm activations.

32=Omit (Reflex)

The **Omit** output is activated as soon as a zone is omitted from the system. The activation can be initiated manually by omitting a zone at **11 = OMIT ZONES** or by force omit at rearm. Response to either is controlled by **Option 56.7.06 = Comms.Parameters.Omit Sig.**

44=Abort (Pulse)

The **Abort** output is activated when a valid code is entered to unset the system following an intruder alarm. The output stays on for one minute and then switches off.

45=Unset (Pulse)

The **Unset** output is activated each time the system (or group) is unset.

51=Link (Reflex)

Activates when link zone is activated see 52.1

66=RF Jam (Reflex)

The **RF Jam** output is activated whenever any of the RF RIO's configured onto the system detect a significant level of interference to cause radio jamming.

67=RF Supervision Fail (Reflex)

The RF Supervision Fail output is activated whenever there is a supervision failure from any one of the supervised RF detectors configured onto the system. That is, when the system has received no signals (including periodic check-in signals) whatsoever, from a particular detector within the programmed supervision period.

68=Assistance (Latch)

Keypad assistance hot key activation or assistance zone.

70=Any Set (Reflex)

Activated when system is Full Set, Part Set or Night Set.

71=Bell Fail (Reflex)

Activates when bell fail zone is activated see Option 52.1

72=RF TX Low Battery (Reflex)

The **RF TX Low Battery** output is activated whenever an RF detector sends a low battery condition to an RF receiver.

76=Fault (Reflex)

This output will activate any time there is a fault condition present on the panel and will clear when all the fault conditions have cleared.

The following fault types will activate the fault output:

Line fail (any module), ARC comms fail (any module), RF jam, RF low battery, RF supervision failure, Bell fail (from a bell fail zone), AC fail (panel, AC zone or power supply), Battery fail (panel, battery zone or power supply).

SMS signalling faults will not activate the fault outputs.

Option 56 - Comms

The **Communications** option is used to control the Galaxy 2 Series system signalling and has five submenus broken down as follows:

1 = Telecoms; 5 = GSM; 6 = HW Priority; 7 = Parameters, 8 = 2-Way Voice

Telecom/GSM

These sub-sections set up the parameters for the built-in dialler modem and the GSM Module. Most of the programming options are shared between both sections and can be modified from either one, except where noted.

```
1 = Telecom,  5 = GSM
   ─ 01 = Format ──── 1 = DTMF ──── 1 = Channels 1-8 ──── 1 = Function
                        (Default)                          2 = Not used
                                                           3 = Not used
                                                           4 = Groups

                                     2 = Fixed Reports ──── 1 = Low Bat Ch9 ──── 0 = No
                                                                                  1 = Yes (Default)

                                                            2 = Invert Open/Close ──── 0 = No (Default)
                                                                                        1 = Yes

                                                            3 = Send Restores ──── 0 = On Unset (Default)
                                                                                    2 = Sys Restore

                     2 = SIA ──── SIA Level 0 (0-3) ──── 1 = Triggers (see Trigger Events table)

                     3 = Contact ID ──── 1 = Triggers (see Trigger Events table)

   ─ 02 = Telephone No. 1 ── 20 digits Max

   ─ 03 = Account No. ──── 6 digits Max.

   ─ 04 = Receiver ──── 1 = Alternate (Default)
                        2 = Dual

   ─ 05 = Telephone No. 2 ── 20 digits Max

   ─ 06 = Dial Type ──── 1 = Tone (Default)
         (PSTN only)      2 = Pulse

   ─ 07 = Autotest ──── 1 = Intervals ──── 0 - 99 hours (Default = 24 Hrs)

   ─ 08 = Engineer Test

   ─ 09 = No. of Rings ──── 00-15 (Default = 15)    15 = Ans Mach defeat

   ─ 10 = Line Fail ──── 0 = No
                         1 = Yes ──── 1 = Debounce Time (Default = 60 seconds)

   ─ 11 = Fail to Comm 0 - 244 seconds (Default = 120)

   ─ 12 = Remote Access ──── 1 = Access Period ──── 0 = Full (Default)
                                                    1 = When Unset
                                                    2 = No Unsetting

                             2 = Access Mode ──── 1 = Direct Access
                                                  2 = Manager Authorise

                             3 = Callback No. ──── Telephone No.

                             4 = Downloader ID (8 digit password)

   ─ 17 = SMS Paging ──── 1 = Mobile Nos. ──── 1 = Mobile 1 ──── 1 = Mobile No.
                                                                 2 = Event Type (see SMS Event Type table )
                                                                 3 = Group Map

                                               2 = Mobile 2 ──── As per Mobile 1

                                               3 = Mobile 3 ──── As per Mobile 1

                          2 = Centre No. (separate for GSM and PSTN)

                          3 = Format ──── 1 = TAP (Default)
                                          2 = UCP (SMS)
                                          3 = UCP (Numeric)

                          4 = Site ID (16 character text)

                          5 = UCP Operation ──── 1 = Call Input
                                                 2 = Call Input Sup
                                                 3 = SMS Message
```

Figure 32. Telecom/GSM Programming Structure

01 Format

The communicator provides three signalling formats:

•   DTMF

•   SIA

•   Contact ID

Once the format has been selected, the alarm and event triggers that the panel will transmit to the ARCs, may be programmed.

1 = DTMF (Dual tone Multiple Frequency)

DTMF is the fast format. When DTMF format is selected, the operation of the dialler is similar to that of a hardwired 8-channel communicator.

Programming Channels

On selecting **DTMF**, the keypad displays **1 = Channels 1 – 8**. All eight channels can be individually programmed. To access the **Channels** option press the **ent** key; the programming details of the first channel are displayed. Select the required channel using the **A** and **B** keys or by entering the channel number directly and press the **ent** key.

Channel Output Function

Channel ————— CH3   INTRUDER L ————— Mode (Latch)
Polarity ————— POS   1234 ————— Groups assigned
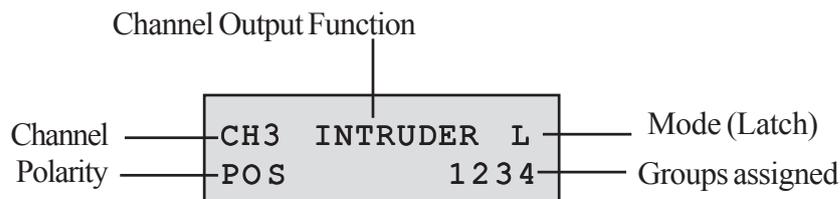
1 = Channels 1-8

Each channel can be programmed with the following attributes:

1 = Function
Any of the system output functions (see option **53 = Outputs**) can be assigned to each of the channels 1 – 8. Channel 3 defaults to output function **04 = INTRUDER**. Channel 5 defaults to **32=OMIT**. Channel 7 defaults to **20 = CONFIRM**. All other channels default to **0 = NOT USED**. Select the required output function using the **A** and **B** keys or by entering the function number directly. Once the required function is displayed, press the **ent** key to assign the function to the selected channel. For example, a **PA** function programmed on channel 2 results in a **PA** code to be transmitted on channel 2 to the ARC when there is a **PA** alarm activation.

2 = Not used
3 = Not used
.

4 = Groups

NOTE: The **Groups** attribute is only available if groups have been enabled on the system (refer to **Option 63 = OPTIONS**) and is also dependent upon the programmed output function for the channel.

The **Group** attribute allows the channel to be assigned to the groups on the system; a channel can be assigned to more than one group. The channel will only trigger when an event occurs on one of the groups assigned to the channel. All channels default to all groups on the system.

On selecting the **Groups** attribute, the groups that the channel is currently assigned to are displayed. Press the relevant number keys to toggle the status of the group and press the **ent** key: if the group number is displayed on the top line, then the group is assigned to the channel; if a dash (−) appears in place of the group number, the group has been removed from the channel.

2 = Fixed Reports

1 = Low Bat Ch9

This option enables panel low bat condition signalling. In high speed format, this is transmitted as a code 8 in channel 9

2 = Invert Open/Close

When enabled, set signals report a code 4 signal on channel 4. If disabled, unset signals report a code 2 signal on channel 4 (DTMF only).

3 = Send Restores

This option determines when intruder restore signals are transmitted to the monitoring station (fast format only).

0 = on unset

1 = syst restore

If set to 0, the restore signal is sent, after an alarm condition during a set state, when a user code is entered to unset the system, or at the end of the confirm time window if an unconfirmed alarm has occured.

If set to 1, the restore signal is sent after an alarm condition during a set state, when the system is fully reset.

This option affects high speed format only.

This option defaults to 0 and is required by DD243.

2 = SIA (Security Industry Association)

The SIA format provides a highly detailed protocol that transmits detailed information including zone descriptions to a PC loaded with suitable software or to a SIA compatible receiver. The SIA format is capable of transmitting over 70 different Galaxy 2 Series events (refer to **Appendix A** for further details).

On selecting the SIA format, the keypad prompts for the required SIA level to be entered, there are 4 SIA levels available:

- 0 (default) - Basic event information with 4-digit account number.

- 1 - as level 0 plus 6 digit accounts

- 2 - as level 1 but with event modifiers

- 3 - as level 2 but with text descriptions

1 = Triggers

When the SIA level has been selected press the **ent** key. The keypad displays the first trigger event and it's On/Off status (see the following table for the list of available triggers, and Appendix A for the events which are controlled by each trigger). The triggers control the events, which are transmitted. If the trigger is set to On, any events logged, which are controlled by the trigger will be transmitted. If the trigger is set to Off, the events controlled by the trigger will not be transmitted. Step through the trigger events using the A and B keys.

No	Trigger Event	No	Trigger Event
1	Panic	11	Reset/Cancel
2	Intruder	13	Elec Status
3	24 Hours	14	System Status
6	Fire	15	System Faults
8	Omit	19	RF Faults
9	Tamper	20	Assistance
10	Set/Unset		

Table 25. Trigger Events

3 = Contact ID

Contact ID format is a protocol which transmits point identification information to an Alarm Receiving Centre that is capable of receiving the Galaxy 2 Series variant of contact ID.

The menu structure and programming of the options are identical to the SIA format. Refer to **2 = SIA** for programming details.

02　Telephone No.1

Telephone number 1 **must** be entered. This is the main telephone number that the alarms are signalled to. Up to 20 digits may be entered, including control modifiers.

Note on dial Attempts

After a dialling sequence the panel waits 25 seconds from the last digit dialled, for a kiss-on tone. If nothing is received in that time, the call will be considered a fault call and that attempt terminated. Between redial attempts, the panel will go back on hook for a minimum of five seconds and a maximum of 10. The system will attempt to send the alarm signal calls for two minutes before generating a comms fail fault condition. The panel will continue to send a message for a total of four minutes before giving up.

The **B** key is used to erase an existing telephone number. Each press deletes the last digit displayed.

03　Account No.

This is the site identifier. A unique account number must be entered, this can be up to a maximum of 6 digits although 4 digits is the standard.

The **B** key is used to erase an existing number. Each press deletes the last digit displayed.

04　Receiver

The transmission destination can be set to one of two modes:

1 = Alternate

If alternate mode has been enabled using two phone numbers, then each call attempt will alternate between **Telephone Number 1** and **Telephone Number 2**. A comms fail condition will still occur 2 minutes after the initial dial attempt, regardless of how many attempts have been made to each number.

2 = Dual

Reports to both numbers programmed in **Telephone Number 1** and **Telephone Number 2**. The alarm must be transmitted to both numbers.

05　Telephone No.2

A second telephone number is available to support **Dual** and **Alternate** dialling to a second destination receiver. The programming is identical to **Telephone Number 1**.

The **B** key is used to erase an existing number. Each press deletes the last digit displayed.

06 Dial Type

NOTE: This is a PSTN option only.

The transmission mode can be selected from two types:

1. **Tone** (also known as "DTMF Dial") this is much quicker at dialling than the **Pulse** option.

2. **Pulse** (also known as "Rotary" or "Loop Disconnect") is universal, however, an increasing number of exchanges now provide the Tone (DTMF Dial) option.

NOTE: If unsure of the type of exchange that the panel is connected to, leave as **Pulse** dialling.

07 Autotest

An engineer test can be automatically transmitted to the Monitoring Station at programmed intervals, in order to indicate alarm transmission path integrity.

1 = Intervals

This option determines the period between engineer test transmissions. The programmable range is **0 – 99** hours. The default is 24 hours.

NOTES:

1. If the **Test Interval** is **0** the **Autotest** is disabled.

2. The first test will happen at a time equal to half the programmed interval from when the option was programmed, or whenever there is a cold power-up of the panel.

08 Engineer Test

An engineer test can be sent to the alarm destination once the **Account Number** and the **Telephone Number 1** have been entered, to ensure that the station is receiving transmissions sent from the Telecom module.

On selecting this option a warning message is displayed on the keypad, **WARNING!!! ENT = SEND TEST.** Press the **ent** key to send the engineer test.

The test attempts to transmit for two minutes. If the transmission is unsuccessful a **COMM FAIL** event is logged.

NOTE: Activation of an engineer test will send a test signal via all Galaxy 2 Series communication modules.

09 No. of Rings

This option determines the number of rings before the dialler modem answers an incoming call; the programmable range is 00 – 15. The following table shows the panel operation.

No of rings	Panel Operation
00	Panel never answers incoming calls
01 - 14	Entry equals the number of rings before the panel answers
15	Answer machine defeat mode

Table 26. Panel Operation

If set to answer machine defeat (15), the Galaxy 2 Series only picks up the line if the download PC dials in, hanging up after one ring, then redials within 30 seconds.

10 = Line Fail

This option has two settings:

0 = No

When set to **No** there is no internal alarm or indication in the event of a telephone line fail condition.

1 = Yes

If this option is set to **Yes**, a line fail condition will cause a fault condition. An alert indication is given in the unset state. A Line Fail condition does not exist until 30 seconds after loss of line voltage. A line fault indication will then be given within 10 seconds if the debounce time is set to zero. However, this delay can be increased to between 1 and 60 minutes by altering the debounce time. This is to cope with expected performance levels of different telephone networks.

On selecting 1 = Yes a further sub-option becomes available:

1 = Debounce Time

The debounce time determines the response time before a line fail condition registers. It can be set from 0-60 minutes.

The audible indication of the line fail is cancelled by the entry of a valid user code but the Line Fail display remains until 30 seconds after the Line Fail condition is restored.

The communicator still attempts to dial out in the event of an alarm, even if a Line Fail condition has been detected.

11 = Fail to Comm

This option sets the comms fail time window. This is defaulted to 120 seconds. If the panel does not receive a valid kiss-off signal from the Alarm receiver in this time, a Comms fail condition will occur, to indicate that the message did not get through to the receiver. The panel will continue to attempt to send the signal for a further period equal to the programmed window before giving up on that signal altogether.

The programmable range for Fail to Comm is 0 to 244 seconds.

12 Remote Access

This option defines when and how remote servicing will operate. The options are described as follows.

1 = Access Period

This option determines under what conditions the remote site can be accessed by the remote operator. There are three modes:

0 = Full

Access available at any time.

1 = When Unset

Access only when all the groups are unset.

2 = No Unsetting

Remote servicing software can gain access to system when set but cannot unset the system remotely.

2 = Access Mode

This option determines what authorisation is required for remote service connection. There are two options:

1 = Direct Access

This permits access anytime. The remote centre can dial directly to the panel and gain access. If a call-back number is programmed in option 3, then connection must be made by the call back procedure.

2 = Manager Authorise

This requires the user to authorise the remote servicing call via menu 47. The panel will not answer an incoming call without authorisation.

3 = Callback No.

Remote servicing software requests the Galaxy 2 Series to call back the programmed telephone number.

4 = Downloader ID

This option specifies an eight-digit ID number for panels communicating via the remote servicing software. This option defaults to 99999999. This is a security number and cannot be viewed at the keypad.

17 = SMS Paging

As a secondary alarm notification to keyholders, facility for sending SMS messages to a maximum of 3 mobile phones, is incorporated. This comms format will only transmit once any Primary signalling programmed, has successfully completed or has finished all redial attempts.

The panel dials the message centre number and leaves a message for each of the mobile phone numbers programmed, according to the selected event type groups.

If a call is being made to an SMS centre number and a new event occurs which needs to be sent to the main alarm reporting station, the call to the SMS centre number will be completed normally before the primary number is dialled.

The following table lists the event types for this option:

Type	Events
1	Alarm events
2	Alarm and Set
3	Alarm and Fault
4	All Events

Table 27. Event Types

For each of the above events, the full text event log entry for each event, including the additional info display, is sent as an SMS message. Note that for alarm activations, only the first two alarm activations in each set period will be sent. This will be reset at rearm.

If a kiss-off is not received, the system redials for two minutes. These redials are within 5-10 seconds of the previous call. There is no comms fail fault condition generated if the calls are not successful, but an SMS fail event is logged.

Where SMS has been programmed to send via both the PSTN and GSM modules, the panel will always try and send using the GSM module. The PSTN module will be backup only.

1 = Mobile Nos

1 = Mobile 1

This selects the first mobile user.

1 = Mobile Number
This is a 20 digit telephone number and is the mobile phone number of the recipient of the message.

2 = Event Type
Refer to **Table 27. Event types.**

3 = Group Map
This option selects the system group or area from which messages will be sent.

2 = Mobile 2

As per mobile 1.

3 = Mobile 3

As per mobile 1.

2 = Centre No

This is a 20 digit telephone number and is the phone number of the SMS centre. This number is provided by the SMS service provider and will be different for the PSTN line and GSM Module.

3 = Format (PSTN only)

This option allows message formats to be tailored for the message centre being used. The information should be obtained from the SMS service provider. The following formats are used:

1 = TAP

This is the standard format for the UK. It sends the event log message in full for each event.

2 = UCP (SMS)

This is the format for alpha pagers. It sends the event log message in full for each event.

3 = UCP (Numeric)

This is the format for numeric pagers. It sends the contact ID format message for each event. The layout is as follows:

ssss/r/ccc/gggg/dd?

ssss = Account number in numeric format.

r = Event activation or restoral. 0 = activation, 1 = restoral.

ccc = Contact ID code.

gggg = Group map showing group numbers 1234. Any missing group replaced with 0, eg 1034 (group 2 missing).

dd? = This is the data accompanying the event. For example, user, zone, peripheral etc. This can vary in length.

4 = Site ID

This is a 16 character alphanumeric string and is used to identify the panel/site sending the message. If the format is UCP (numeric), then the site ID is numeric. Only the first four characters are sent out.

5 = UCP Operation

This option specifies the coding of UCP SMS operation both from the panel and the replies from the SMS message centre.

1 = Call Input

This option sets part of the SMS operation message from the panel to the SMS message centre to be 01 (default value).

2 = Call Input sup

This option sets part of the SMS operation message from the panel to the SMS message centre to be 03.

3 = SMS Message

This option sets part of the SMS operation message from the panel to the SMS message centre to be 30.

6 = HW Priority

This option has three sub-options:

1 = Telecoms (Default Setting = 1)
5 = GSM (Default Setting = 0)
6 = STU (Default Setting = 0)

Upon selecting any of these sub options, the engineer is able to select a priority level for that particular device of 0-2. The priority settings has the following meaning:

0 = This module does not send alarm information. It can only be used for remote servicing.
1 = This module always send alarm signals, dependant on the alarm reporting programming set up in the modules own menu.
2 = This module will only signal if there is a fault condition on all modules with priority 1.

In this way, you can set up both modules with Priority 1 which means that they all signal all events. More likely, you set up the Telecom module with priority 1, and the GSM with Priority 2 (or vice versa). That way the GSM module does not dial unless there is a fault on the Telecom module.
The hardware in use will switch as soon as there is a fault condition on the main hardware path. It will also switch after all redial attempts have failed on the main path.

7 = Parameters

This menu option has 12 sub-options as follows:

01 = Abort Delay

This is the time that the bells must sound, after an entry timeout alarm, before alarm signalling can occur. The time is programmable within the range 00-99 seconds. The default is 30 seconds.

02 = PA Delay

This parameter determines the delay between the activation of a full alarm and signalling to the ARC. The PA Delay is programmable within the range 00-60 seconds. The default is 00 seconds.

03 = Fire Delay

This parameter determines the delay between the activation of a fire alarm and the signalling to an ARC. The Fire Delay is programmable within the range 00-60 seconds. The default is 00 seconds.

04 = Power Delay

This parameter determines the delay between the activation of **AC Fail** outputs following a mains failure to allow the power to return before signalling the fault. The **Power Delay** is programmable within the range 00-60 minutes. The default is 60 minutes.

05 = Part Intruder

This parameter determines under which set conditions the panel communicates following Alarm, Abort, Verified Alarm, Tamper and Set/Unset. There are four sub-options:

0.   Full
1.   Full & Part
2.   Full & Night
3.   All (Full, Part and Night) (Default)

This parameter does not affect any other signals.

NOTE: Set outputs only respond to Full Set conditions. The **Any Set** output will respond to Full, Part or Night Set conditions.

06 = Omit Sig.

This parameter has two options:

0.   Force Omit (default)

When set to 0 this option only signals automatic force omits.

1.   All Zn Omit

When set to 1 this option signals all omits to the ARC including manual omits.

07 = CS Handshake

This parameter signals handshake tones from the ARC and has three options:

0.   UK (default)
1.   Belgian
2.   Paris

08 = Pre-Dial Flash

This parameter flashes the line to clear it before dialling the ARC and has two options:

0 = No
1 = Yes

09 = STU Return

This parameter determines the return path signalling function of the STU header and has two options:

0 = Off
1 = Intruder Restore

When set to 1, intruder alarms are reset.

10 = STU Line Fail

This parameter determines the line fail monitoring for the STU and has two options:

0 = No (default)

1 = Yes

11 = Remote Date

This parameter allows the panel to be programmed to initiate a remote servicing call automatically on a pre-determined date and time. It will dial out on the appropriate comms module as dictated in 56.6 HW priority. There are two sub-options:

1 = Call Date

The date is in the format DD/MM/YY

2 = Call Time

The time is in the format HH:MM

12 = Remote ID

This option allows a 10-digit identification number to be entered to allow the system to be uniquely identified to remote servicing software.

8 = 2-Way Voice (2–44+ Only)

This menu option has three sub-options:

1 = Listen in

This option allows an operator to listen to the audio on site after the panel sends an alarm signal to the ARC.

1 = Intruder

When set to **Yes** this option enables listen-in after an intruder or entry timeout transmission.

2 = Confirm

When set to **Yes** this option enables listen-in after a confirm transmission.

3 = Others

When set to **Yes** this option enables listen-in after a Fire, PA audible, PA silent or Assistance transmission.

2 = ARC Tel Nos

This option selects which receiver no's can operate with the listen-in function.

1 = Tel No1

2 = Tel No2

3 = Dial in

This option allows a user to dial-in and enter a PIN code to operate the 2-way voice function. See Menu 42.1 (User 99)

1 = Mode

This option, when set to **Yes**, enables this function.

Option 57 - System Print

This option allows the engineer to print out the system programming and diagnostic information. On entering this option, the user is asked to confirm printing by pressing enter. Pressing enter at this point will print the system programming via the program header to a serial printer. Pressing escape at that same point or during printing, will abort the print command The sub-options are:

01 = System Info
02 = User Codes
03 = Parameters
04 = Zones
05 = Outputs
06 = Telecom
07 = Groups
08 = Diagnostics
09 = Event Log
10 = All

Menu 60 - Engineer 2 Options

Option 61 - Diagnostics

This option allows the engineer to interrogate the system, providing valuable information on the operational status of the Galaxy 2 Series and connected peripherals. The Galaxy polls each peripheral and reports the successful communications during this period as a percentage.

There are seven sub-options. On selecting each of the sub options, the display shows the first of that type of peripheral that is configured to the system. The scroll keys can be used to view additional peripherals of that type if more than one is present.

1 = Keypads

This gives the module type, address and the communication level between the Galaxy 2 series panel and the keypads.

2 = Zone RIO's

This gives the module type, address and the communication level between the Galaxy 2 Series panel and the zone RIO's.

3 = RF Modules

This gives the module type, address and the communication level between the Galaxy 2 Series panel and the RF Transceivers. In addition, pressing the # key gives two more screens; the RF noise level along with the maximum noise level.

NOTE: 5800 series receivers do not give the above information.

4 = Prox Readers

This gives the module type, address and the communication level between the Galaxy 2 Series panel and the prox readers.

5 = PSU's

This gives the module type, address and the communication level between the Galaxy 2 Series panel and the SPSU's.

6 = Reset Max/Min

This sub-option allows the engineer to clear all the saved max/min information used in the diagnostics of the PSU, Zones (hardwire and wireless) and the max noise level on the receivers. The message **WARNING!!! ent=RESET** is displayed on the keypad before the reset takes place.

7 = GSM

This gives the module type, address and communication level between the Galaxy 2 Series panel and the GSM module.

For each peripheral, the following information is displayed where available:

Module	Metric				
	Module Type	Address	% Comms	Noise Level	Max Noise Level
Keypads	✓	✓	✓		
Expanders	✓	✓	✓		
Transceivers	✓	✓	✓	✓	✓
Prox	✓	✓	✓		
PSU's	✓	✓	✓		
GSM	✓	✓	✓		

Table 28. Diagnostic Module Information

The Galaxy 2 Series polls each module 32 times every second and reports the successful communications during this period as a percentage. This is calculated by the ratio of successful poll responses received from each module. Typical figures are:

- 70% and above - satisfactory communication level

- 50 - 69% - Module requires monitoring

- 49% and below - remedial action required

Option 62 - Full Test

This menu option allows the engineer to test the bells and signalling on a busy occupied site. This is achieved by simulating a full set but only making one or two zones active. The rest of the zones in the intruder system are omitted for the duration of the test.

On entering the option, the engineer is presented with a display to choose a zone for the test. The first zone that the user has access to is shown on the top row and the cursor keys can scroll through all the zones.

```
1025  Intruder
ENT=START
```
Top row alternates with descriptor

Pressing enter will select the zone shown for test.

The system will then ask for a second confirm zone. The cursor key selects yes or no.

```
2nd  Confirm  Zone
A=Yes      B=NO
```

If **Yes** is selected, the system will allow the user to select a second zone in the same way as the first. If the engineer selects **No** or when the second zone is selected, the system omits all other intruder system zones and sets instantly (no exit delay). All signalling and sounder activations will be as per a full set. The system is unset in the normal manner.

Option 63 - Options

This menu has one sub-section:

1 = Groups

There are three sub-options:

1 = Group Mode

This option enables group mode. When enabled, each group on the system will behave as an independent area that can be separately set and unset. There are two settings:

0 = Disabled

1 = Enabled

If a group mode is switched off, the system will behave as though all zones, users and outputs are in group 1.

2 = Common Group

Group 4 is intended to be a group that will cover a common access area (such as an entrance foyer). This group will set and unset automatically depending on the state of the other individual areas. When all the other individual areas are set, the common group will set along with the last group. As soon as any of the individual groups are unset, the common group will unset. In order to determine which individual groups need to be set before the common group sets, the group map in this option can be programmed. The screen is as shown below. Pressing the appropriate group number toggles the group status between **Y** and **N**. A **Y** under a group number means that that individual group needs to be set before the common group can set.

```
GROUPS    123
Set       YNN
```

3 = Comms Set Map

This option selects which groups must be set before intruder communication can be enabled. This means either full set, night set or part set. The screen should appear as follows:

```
GROUPS    1234
Set       NNNN
```

This option only affects Set, Intruder, Confirm, Omit, Abort and the appropriate restore signals. All other signalling is not part of the Intruder comms system.

Notes on Group Operation

Certain functions have different settings for each group. The operation concerned is detailed below.

Bell Time

The bell time for common bell output is limited to the maximum time programmed. That means, if an alarm has occurred on group 1 and after 80% of the bell time has elapsed, an alarm occurs in group 2, the bells only continue to run for the remaining 20% of the bell time.

Entry and Exit times

Entry and exit times will always be individual to each group. The exit time can be terminated for all groups by a final zone or exit terminator in the common group except when any group in the common group map has infinite exit time. The last group to enter the settling state will be prevented from setting until the common area completes its own settling period.

Upon entering a PIN code, group choice is given if any of the user's areas are not in alarm or entry. If one of those areas is in entry or alarm, then those groups in entry or alarm will be unset automatically.

If the user belongs to a group that is not part of the common group map, then their PIN code will have no effect on the common area.

Either each individual group will need to have its own entry door, or the keypad will be situated in the common area. In the later case, entry to the individual group areas, is prevented until the group is unset, in order to comply with DD243.

SECTION 8: RF HINTS AND TIPS

How to Install RF

The system works with the current 5800 receivers on ECP and/or the RF Portal on RS485. A maximum of two RF receivers can be fitted to the system (two on the ECP bus, two on the RS485 bus or one on each bus), to support up to 44 zones. The two RF receivers are in addition to the prox keypads. All programming is local in the panel. Up to 23 RF fobs and 23 prox tags/cards can be added to the system.

RF Zones

To ease installation, there is a built-in signal strength reading for each Alpha or V2 protocol detector. This is viewable from the keypad, in walk test (option 31), in display zones (option 21) and from program zones (option 52).

All RF device handling is done in the Control panel. No device processing takes place at the receiver. This allow all transmitting devices to signal to the alarm panel via the nearest available receiver (Roaming) as per the 5882 system, but including Rolling Code fobs.

RF Stop Set

There is a facility to prevent setting if any of the supervised peripherals have not sent a supervision signal within the previous 20 minutes. An indication will only be given if RF Check is enabled (see menu **51.50.6= Parameters.RF Options.RF Check**) The devices involved are indicated to the user at the time of starting the setting procedure. This condition is not a fault. The 2HR supervision fail is a fault. This stop-set is merely a warning to the user that the system cannot determine the status of the detector.

NOTE: This function only checks zones with RF supervision enabled (see menu **52.5.3=Zones.RF Options.Supervision)**

RF Diagnostics

Facilities are provided to allow the panel to record and pass the following information to the remote servicing software for remote diagnostics.

1. Minimum signal strength for each detector from each receiver.
2. Current signal strength for each detector from each receiver.
3. Maximum background noise for each receiver.
4. Current background noise for each receiver.
5. Transmitter battery status.

NOTE: Point 5 is only applicable to 5800 series receivers.

SECTION 9: FINAL COMMISSIONING

Final system Test

Before leaving the system to the user, or after any maintenance visits, it is important that the following checks are carried out.

1. Walk test on all zones using menu 31.

2. Communication test via menu 32 or "Full Test" via menu 62.

3. Escape out of engineer's mode and check that all modules are configured onto the system.

User Information

Fill in the zone information at the back of the user guide and inform the user as to which optional functions are available or not.

SECTION 10: REMOTE SERVICING

The Galaxy 2 Series control panel can be remotely and/or locally serviced by a Personal computer (PC). This is accomplished when the Remote Servicing Pack is installed on the PC. Remote servicing is controlled in menu options 56.01 and 56.12.

Telephone Line Set-Up

The control panel has an on-board modem. This allows remote servicing of the control panel without the need for a separate comms module.

Alternatively, the GSM Module can be used for remote servicing when a land line is not available.

Direct Wire Set-Up

Alternatively, the PC can be connected directly to a single Galaxy 2 Series control panel, via the Program Header and used to locally service the site. A special lead (part number A228) is required.

Remote Programming

All programming with this software can be done remotely from a PC. The following functions can also be carried out:

- the panel can operate with all user functions.
- the event log can be viewed.
- routine remote inspection can be carried out. Some diagnostic information can be uploaded from the control panel to the PC to allow remote site servicing.

SECTION 11: FLASH UPGRADE

The software that runs the Galaxy 2 Series is stored in "flash memory", rather than traditional prom chips. If required, the software can be upgraded to a newer version using the flash programming kit, part number A221. The kit comprises of a windows application which runs on a PC, and the flash programming lead which connects the Galaxy 2 Series PCB to the PC comm port. The actual software upgrade file for the Galaxy 2 Series will be supplied separately, as required by Honeywell Security.

SECTION 12: PRINTER CONNECTION

The Galaxy 2 Series can print system detail directly to a serial printer. In order to do this a printer lead is required (part number A225) to connect between the program header on the Galaxy 2 Series PCB and the printer.

The printer must have the following settings:

- Baud Rate: 1200
- Parity: None
- Stop Bits: 2
- Data Bits: 8
- Start Bits: 1

When this has been set up, system information can be printed as per menu options 24 and 57.

SECTION 13: BELL-BOX CONNECTIONS

The terminal connections for various bell-box models are shown below:

Lyntech Ltd. - 120 LED/120 lexon

2 Series Terminals	BELL + 12V	⊟	0V	T	✸
Bell box Terminals	HOLD +	TRG	HOLD-	TAMP R	STRB

Elmdene Rapier 3000, 4000, 5000, 6000; Prima 100, 200,300,400,500 600; Starlight 020

2 Series Terminals	BELL + 12V	⊟	0V	T	✸
Bell box Terminals	+H	-R	-H	RTN	-ST

CQR Security - Sigma, Cequera, Plus and Ultima

2 Series Terminals	BELL + 12V	⊟	0V	T	✸
Bell box Terminals	HOLD OFF +VE	SIREN TRIG	HOLD OFF -VE	A/T RET SIG	STROBE TRIG

Ventcroft Security - Vision, Classic, and Spirit

2 Series Terminals	BELL + 12V	⊟	0V	T	✸
Bell box Terminals	HOLD OFF +VE, STB +VE	TRIG -	HOLD OFF -VE	RTN	STB -

Flashguard - Xtra

2 Series Terminals	BELL + 12V	⊟	0V	T	✸
Bell box Terminals	SUPPLY + STROBE +	TRIGGER	TAMP OUT	SUPPLY -	STROB -

Intellisense AG3

2 Series Terminals	BELL + 12V	⊟	0V	T	✸
Bell box Terminals	V +	S -	V -	TR	ST -

NOTE: Where 2 connections are specified for the bell box connection a 0 ohm link must be made between the 2 terminals on the bell box PCB.

SECTION 14: EVENT LOG LIST

EVENT	DESCRIPTION
+ AC	AC zone activated
- AC	AC zone closed
+ AC>	AC zone signalled
- AC>	AC zone closed signalled
+ CU AC	Panel Mains fault
- CU AC	Panel Mains reinstated
+ CU AC>	Mains loss signalled
- CU AC>	Mains restored signalled
+ PSU AC	Remote PSU Mains fault
- PSU AC	Remote PSU mains reinstated
+PSU AC>	Remote PSU Mains fault signalled
- PSU AC>	Remote PSU Mains reinstated
+ASSIST	Assistance zone activation
- ASSIST	Assistance zone closed
+AUXFUSE	Aux fuse blown
- AUXFUSE	Panel Aux fuse fault cleared
+ BAT MIS	Panel Battery disconnected
- BAT MIS	Panel Battery reconnected
+BATTERY	Remote PSU battery low (zone)
-BATTERY	Remote PSU battery low cleared (zone)
+ CU BATT	Control Unit battery fail
- CU BATT	Control Unit battery fault restored
+BELFUSE	Bell fuse Blown
- BELFUSE	Bell fuse fault cleared
+BELLFLT	Bell fault zone activated
- BELLFLT	Bell fault cleared
+DURESS	Duress Condition activated
- DURESS	Duress condition cleared
+ENG CDE	Engineer Mode accessed non EN50
+ FIRE	Fire zone activated
- FIRE	Fire zone closed
+FIRE>	Fire zone signalled
- FIRE>	Fire zone closed signalled
+ FOB BAT	Fob battery low
- FOB BAT	Fob battery fault cleared
+INTRU	Intruder zone activated
- INTRU	Intruder zone closed
+JAM	Jam condition detected
- JAM	Jam condition cleared
+JAM>	Jam condition signalled
+ LINK	Link zone activated
- LINK	Link zone closed
+ PSU BAT	Smart PSU battery low
- PSU BAT	Smart PSU battery Low cleared
+ PSU FUSE	Smart PSU fuse blown
- PSU FUSE	Smart PSU fuse fault cleared

EVENT	DESCRIPTION
+ PA	Panic zone activated
- PA	Panic zone closed
+ PA>	Panic zone signalled
- PA>	Panic zone closed signalled
PA RESET	PA Reset
+ PA SIL	Silent Panic zone activated
- PA SIL	Silent Panic zone closed
+ PASIL>	Silent Panic zone activation signalled
- PASIL>	Silent Panic zone closed signalled
+ RF BATT	Wireless detector battery low
- RF BATT	Wireless detector battery low cleared
+ RF BATT>	Wireless detector battery fault signalled
+ RFCHOV	RF check override
- RFCHOV	RF check override restore
+ RF OVRR	RF low battery override
- RF OVRR	RF low battery override restore
+ STU FLT	External Comms Fault
- STU FLT	External Comms Fault cleared
+ SUPERV	Detector supervision fault
- SUPERV	Detector Supervision cleared
+ SV OVER	RF Supervision fail override
- SV OVER	RF Supervision fail override restore
+ TAMPER	Tamper condition activated
- TAMPER	Tamper condition cleared
+USR TMP	Tamper due to wrong code
-USR TMP	Tamper due to wrong code cleared
CANCEL	Alarm cancelled by user
AUTO TST	Automatic comms test
CODE CHG	User codes edited
COM FAIL	Signalling failed
COM RST	Signalling restored
CONFIRM	Confirmed alarm activation
DEFAULTS	Panel defaults loaded
COMM TST	Engineer signalling test
+ REMOTE	Remote servicing started
-REMOTE	Remote servicing ended
EASY SET	Easy set by user
FBAT ACK	Fob low battery acknowledged
FULL SET	System full set
FULL TST	Full test activated
LOCKOUT	Lockout due to wrong codes
LINE FLT	Phone line fault
LINE RST	Phone line restored
+ MISSING	System module missing
- MISSING	System module reinstated
NGHT SET	System Night set
- OVERRDE	Fault override cancelled
PART SET	System Part set
+ PROGRAM	Program mode enterd
- PROGRAM	Program mode exited

EVENT	DESCRIPTION
RESET	System reset
SOAK TST	Zone soak test activation
+ OVERRDE	Override of system faults
TIM/DATE	Time/Date adjusted
- OMIT	Zone unomitted
UNSET	System unset
WALKTST-	Walk test ended
WALKTST+	Walk test started
WDOG RST	System reboot
+ OMIT	Zone omitted
ZONE TST	Zone tested
POWER ON	Panel Power On
RESTART	Panel restarted
REARM	Rearm of system has occured
+ 24 HR	24 HR zone activated
- 24 HR	24 HR zone closed
+ INT>	Intruder signalled
- INT>	Intruder restore signalled
+ ENT T/O	Entry Timeout alarm
- ENT T/O	Entry Timeout alarm cancelled
+ ENT T/O>	Entry Timeout alarm signalled
- ENT T/O>	Entry Timeout alarm cancel signalled
TEST END	

SECTION 15:   SPECIFICATIONS

Panel Specifications	2-44+	2-20
Physical		
Plastic Box-3 mm polycarb (with mains transformer and PCB installed)	Width: 300 mm Height: 250 mm Depth: 100 mm Weight: 1.7 kg	Width: 300 mm Height: 250 mm Depth: 100 mm Weight: 1.7 kg
Metal Box-1.2 mm steel (with mains transformer and PCB installed)	Width: 370 mm Height: 320 mm Depth: 85 mm Weight: 4.5 kg	Width: 400 mm Height: 255 mm Depth: 115 mm Weight: 4.2 kg
Electrical		
Panel Current Consumption PSU Type Mains Input Back-up Battery	120 mA (max) A 230 V ac (+10% -15%) Up to 7.2Ahr 12 V Sealed Lead-Acid (plastic encl.) Up to 17Ahr 12 V Sealed Lead-Acid (metal encl.)	120 mA (max) A 230 V ac (+10% -15%) Up to 7.2Ahr 12 V Sealed Lead-Acid (plastic encl.) Up to 12Ahr 12 V Sealed Lead-Acid (metal encl.)
PSU Max total load	1.4 A (nominal temp. and mains supply)	1.0 A (nominal temp. and mains supply)
Grade 2 Rating Max continuous ripple voltage	1 A 0.5 V at max. load	600 mA 0.5 V at max. load
Individual 12 V outputs: Bell+12V Both Aux+combined Trigger Header+12V	500 mA max 500 mA max 100 mA max	500 mA max 500 mA max 100 mA max
Switched Outputs: Trigger Header Outputs Bell Trigger 1003 Strobe Trigger 1004 Trig Output 1001	Can sink 30 mA each Can sink 500 mA max Can sink 500 mA max Can sink 300 mA each	Can sink 30 mA each Can sink 500 mA max Can sink 500 mA max Can sink 300 mA each
Speaker Output: Speaker output 1002	8 to 32 ohms or 100 mA in switched DC mode	8 to 32 ohms or 100 mA in switched DC mode
Fuses: Mains Battery (F1) Aux (F2) Bell (F3)	500 mA, 20 mm anti-surge (IEC 127) 1 A, 20 mm anti-surge 500 mA, 20 mm anti-surge 500 mA, 20 mm anti-surge	200 mA-20 mm anti-surge (IEC 127) 1 A, 20 mm anti-surge 500 mA, 20 mm anti-surge 500 mA, 20 mm anti-surge

Table 29. Panel Specifications

PERIPHERAL	QUIESCENT CURRENT (mA)	MAXIMUM ALARM CURRENT (mA)
Mk 7 Keyprox	90	130
RIO	40	
Power RIO/Power Unit	100	
RF Portal	55	
6160 Keyprox	40	200
5800 RF Receiver	60	
ECP Expander	25	
GSM Module	10	

Table 30. Peripheral Current Consumption

SECTION 16: COMPLIANCE AND APPROVALS

The Galaxy 2 Series is compliant with the relevant parts of the following standards:

* 99/05/EC   R&TTE Directive
* EN50130-5:1998   Alarm systems. Environmental test methods

It is a condition of the product's approval that the installation complies with the following:

EN50131 Compliance

This product is suitable for use in systems designed to comply with PD6662:2004 and EN50131-1:2004.

> Security Grade - 2
> Environmental Class - II
> Alarm Transmission System - 2 (options A, B, C & X)
> Power Supply Type - A

This product is also suitable for use in alarm systems designed to comply with EN50131-1:1997.

> Security Grade - 2
> Environmental Class - II
> Alarm Transmission System - D2, T2, A2, I0, S0
> Power Supply Type - A

Public Switched Telephone Network (PSTN) Approval

The equipment has been approved to Council Decision 98/482/EC for Pan -European single terminal connection to the Public Switched Telephone Network (PSTN). However due to differences between the individual PSTNs provided in different countries the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems contact the equipment supplier in the first instance.

The Galaxy 2 Series is designed to interwork with the following networks:

Austria	France	Italy	Norway	United Kingdom
Belgium	Greece	Liechtenstein	Portugal	
Denmark	Iceland	Luxembourg	Spain	
Finland	Ireland	The Netherlands	Sweden	

NOTE: Contact the equipment supplier before using the Galaxy 2 Series on any network not listed.

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Honeywell Security, 6 Aston Fields Road, Whitehouse Industrial Estate, Runcorn, Cheshire WA7 3DL

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Seller does not represent that the products it sells may not be compromised or circumvented; that the products will prevent any personal injury or property loss by burglary, robbery, fire or otherwise; or that the products will in all cases provide adequate warning or protection. Customer understands that a properly installed and maintained alarm may only reduce the risk of a burglary, robbery, fire or other events occurring without providing an alarm, but it is not insurance or a guarantee that such will not occur or that there will be no personal injury or property loss as a result.

CONSEQUENTLY, SELLER SHALL HAVE NO LIABILITY FOR ANY PERSONAL INJURY, PROPERTY DAMAGE OR OTHER LOSS BASED ON A CLAIM THE PRODUCT FAILED TO GIVE WARNING. HOWEVER, IF SELLER IS HELD LIABLE, WHETHER DIRECTLY OR INDIRECTLY, FOR ANY LOSS OR DAMAGE ARISING UNDER THIS LIMITED WARRANTY OR OTHERWISE, REGARDLESS OF CAUSE OR ORIGIN, SELLER'S MAXIMUM LIABILITY SHALL NOT IN ANY CASE EXCEED THE PURCHASE PRICE OF THE PRODUCT, WHICH SHALL BE THE COMPLETE AND EXCLUSIVE REMEDY AGAINST SELLER.

This warranty replaces any previous warranties and is the only warranty made by Seller on this product. No increase or alteration, written or verbal, of the obligations of this Limited Warranty is authorized.

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Appendix A: Point ID Comms Triggers

Menu	Trigger Name	Events Controlled	CID Code	SIA Code	
01	Panic	Silent Panic Zone - Hotkey	122	HA, HR	
		Audible Panic Zone - Hotkey	123	PA, PR	
		Duress Code	121	HA, HR	
02	Intruder	Intruder Zone	130	*BA, BR	
		Exit Zone	130	BA, BR	
		Entry Timeout	134	BA, BR	
		Confirm	139	BV	
03	24 Hour	24 hour Zone	135	BA, BR	
		Link Zone	150	RO, RC	
06	Fire	Fire Zone	110	FA, FR	
		Fire Hotkey	110	FA, FR	
08	Omit	Zone manual omit	573	BB	
		Zone force omit	573	BB	
09	Tamper	Zone tamper set	137	TA, TR	
		Zone tamper unset	137	TA, TR	
		Panel lid tamper (0003)	145	TA, TR	
		Module lid tamper	145	TA, TR	
		Bell tamper (0004)	137	TA, TR	
		Aux tamper	137	TA, TR	
		Missing Module	145	TA, TR	
		Keypad (Code) tamper	461	JA, TR	
10	Set/Unset	Full Set (Areas Off)	R401	CL	
		Part Set	R441	CG	
		Night Set	R441	CG	
		Rearm	463	CP	
		Full Unset	E401	OP	
		Part or night unset	E441	OG	
11	Reset/Cancel	Abort (unset from Alarm)	406	BC	
		Reset	313	OR	
		Reset (PA)	465	OR	
13	Elec Status	Low Battery (0001)	302	YT, YR	
		Battery fail (0001)	302	YT, YR	
		Battery missing (0001)	302	YT, YR	
		Mains loss (0002)	301	AT, AR	
		Fuse fail (Any)	300	YP, YQ	
14	System Status	Downloader Access exit	412	RS	
		Manual Comms Test	601	RX	
		Periodic Comms Test	602	RP	
		Walk Test Active	607	TS, TE	
		Engineer Exit	628	LX	
15	System Faults	Line Fault	351	LT, LR	
		Comms Fail	350	YC, no restore	
		Bell Fail (Zone)	320	YA,YH	
19	RF Faults	RF Jam	344	XQ, XH	
		RF Low Battery	384	XT, XR	
		RF Supervision**	381	See note	
20	Assistance	Assistance Hotkey	101	QA, QR	
	Always on	Listen-in to follow	606	*	

* Note : For listen-in events after alarms a SIA listen-in block is sent. There is no SIA mnemonic for listen-in.
**Note : There is no specific code for RF supervision failure. The Trouble codes that are associated with
the usage of the transmitter should be used:

Trouble Code	Transmitter Usage
BT	Burglary zone trouble
FT	Fire zone trouble
PT	Panic zone trouble
MT	Medical zone trouble
QT	Emergency zone trouble
UT	Trouble on zone of unknown type