EE4232MR 32 Zone Multi-Condition Receiver with Relay Outputs

Overview

Inovonics EchoStream technology is designed to minimize dead spots in transmission areas using diversity reception and advanced signal processing. The EE4232MR receiver allows you to add up to 32 transmitters and 12 outputs to any application and includes a back tamper for increased tamper security.

Installing an Inovonics Security System

The EchoStream survey kit measures the signal strength of high-power repeater and sensor messages to help optimize your EchoStream system.

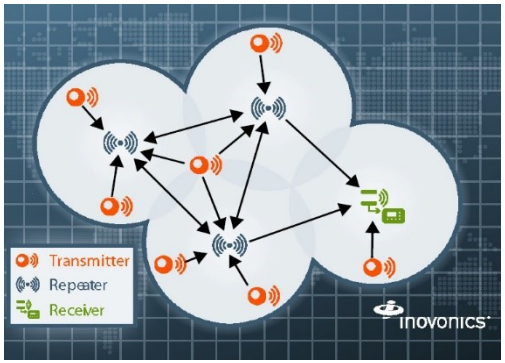

Figure 1 – Sample EchoStream System

The EchoStream survey kit provides you with two signal strength measurements: signal level and signal margin.

Signal level: The signal level is the measurement of the overall decibel level of the message.

Signal margin: The signal margin is the measurement of the decibel level of the message, minus the decibel level of any interfering signals. Inovonics Wireless equipment should be placed within a facility such that all end devices produce signal margin readings of at least 4 decibels.

Both the signal level and signal margin are measured in decibels. Because signal strength and signal margin are measured on a logarithmic scale, the difference between a decibel level of 3 (Weak) and a decibel level of 4 (Good) is a much larger difference than it would be on a linear scale.

RF Signal Protection

While wood, drywall and glass usually let the RF signals pass, some materials may inhibit or attenuate radio frequency (RF) signal propagation by blocking, reflecting, deflecting or absorbing RF signals.

Consider anything between transmitters and repeaters and/or the receiver. Is there concrete and steel construction? Are there earthen berms or hills? Are there a lot of trees? Devices should be mounted such that they are least affected by these elements.

For best results, transmitters and repeaters should be mounted at the optimal height to achieve line of sight to repeaters and/or the receiver. Usually this means they will be mounted as high as possible.

Following are some typical obstacles to RF signal propagation:

Material	Affect	Recommendation
Metal construction, including ductwork; pipes; studs; stucco, plaster or concrete with wire mesh; satellite dishes, metal-lined rooms such as walk-in coolers or freezers; metal siding, safes, etc.		Perform a site survey using an Inovonics wireless survey kit to verify the RF signal is acceptable, and, when necessary, to determine where to locate repeaters.
Completely enclosed metal boxes/enclosures.	Can restrict RF signals.	
Solar panels, cinder block walls, windows with built-in solar tinting.	Can absorb and/ or reflect RF signals.	
Vegetation.	Can attenuate RF signals. The RF environment can alter as trees shed or sprout leaves.	Add repeaters as issues arise.
Automobile and truck traffic.	Can disrupt RF signals.	Mount Inovonics devices at a height sufficient to achieve line of sight above traffic.

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

EE4232MR Front Panel

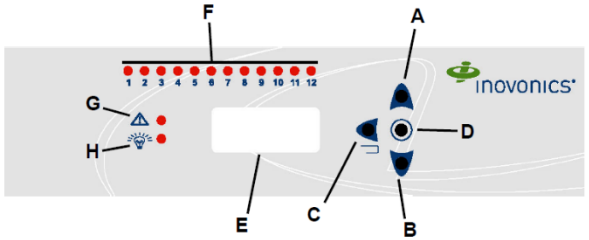

Figure 2 – Receiver Front Panel

A Up Button – Scrolls the display up.

B Down Button – Scrolls the display down.

C Back Button – Returns the display to the previous menu.

D Enter Button – Selects the currently displayed menu item.

E LCD Display – Shows status, event log, and programming information.

F Output LEDs – The output LEDs light to indicate an alarm or fault condition at the appropriate output.

G Fault LED – The fault LED lights to indicate a transmitter fault condition; either low battery, inactive, line power loss, or tamper.

H Power LED – The power LED lights when the EE4232MR is receiving power.

Note – The EE4232MR LCD will only display information when an authorised password has been entered.

EE4232MR Internal Components

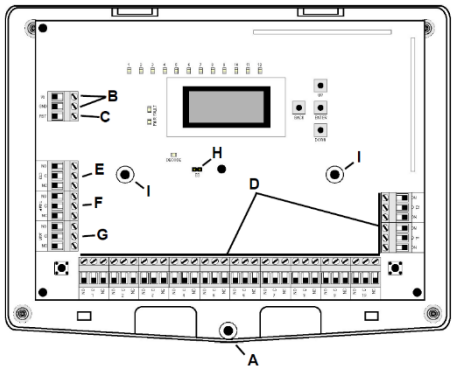

Figure 3 – EE4232MR Internal Components

A Housing Release Screw

B Power Connections

C Reset Input

D Output Terminals

E Clear to Set Output

F Tamper Output

G Jam Output

H ES Selection Pins

I Mounting Holes

What's in the Carton

- Two drywall mounting anchors.
- Two wall mount screws.
- One frequency band selection jumper.

Installation Notes

- These products are designed to be maintained by professional security technicians.
- Products are tested for indoor use.
- All products should be manually tested weekly.

Power Cabling

Before beginning startup, you will need to connect power to the receiver:

1. Connect power cabling to the Vs and GND connections.
    a. The power source must be 11-14 VDC. The power supply must be unswitched, uninterrupted, and regulated.

EchoStream Select Compatibility

To meet ETSI requirements, Inovonics has developed a new line of EE 868MHz-only products. These new 868MHz-only products are compatible with older systems that include EchoStream Select products. If you are using any ES products in your current system, you will need to enable EchoStream select compatibility on this 868MHz-only product; if you are not using any EchoStream select products, skip to, "Input/ Output Cabling".

To enable EchoStream Select compatibility:

2. Place a selection jumper on the ES selection pins.

Note – Selection jumpers are included in the EE4232MR hardware packet.

3. Reset the receiver or cycle power.

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

Input/Output Cabling

Connect the inputs and outputs per your specific application:

4. Connect cabling to the clear to set output.
    a. The optional clear to set output is a relay output that provides a clear to set signal to the control panel that can be used to ensure all security devices in the system are active before allowing the system to be set. If used, the system cannot be set if the receiver has not heard from any registered wireless devices within the last 20 minutes.
5. Connect cabling to the tamper output.
    a. The optional tamper output is a relay output that reports receiver case tamper to an external device.
6. Connect cabling to the jam output.
    a. The optional jam output is a relay output that is active when noise thresholds on all transmission channels remain above a predetermined value for 30 seconds in any 60 second window.
7. Connect a momentary switch to the reset input and ground.
    a. The optional reset input circuit permits installation of a remote momentary normally open (N/O) switch to clear faults, unlatch outputs, and reset the receiver to a normal state.
8. Connect cabling to the output terminals.
9. Mount the receiver.

Caution – Mount the receiver in a location removed from metal. Metal objects will reduce RF range.

10. Use the provided anchors and screws to mount the receiver in a location accessible for future maintenance, making sure the housing is flush with the wall and the back tamper switch is actuated.
11. After all transmitters have been registered, perform a walk test, activating each transmitter assigned to the receiver and ensuring a good signal.

Select Display Language

On initial startup you will need to select the display language. Once selected, the language will be maintained unless changed using the CHANGE LANGUAGE option in the INSTALL & SERVICE menu. To change the display language, see “Select Language”

Factory Configuration Defaults

The EE4232MR arrives with the outputs pre-programmed. If the default programming is sufficient for your site, you can advance directly to section “Register Transmitter”.

Default Transmitter Programming

Transmitter Alarm	Output
1, 11, 21, 31	1
2, 12, 22, 32	2
3, 13, 23	3
4, 14, 24	4
5, 15, 25	5
6, 16, 26	6
7, 17, 27	7
8, 18, 28	8
9, 19, 29	9
10, 20, 30	10

Default Trouble Condition Programming

Condition	Output
Tamper	11
Low Battery	12
Supervision Loss/Inactive	12
Line Power Loss	12

Access Levels

There are three levels of EE4232MR access available to users. Only the level 2 authorized user and level 3 authorized installer are able to access EE4232MR menus.

Access Level	Access
Level 1	No menu access
Level 2	Can view system status indicators and enter system test mode as included in the following menus: • System Status • System Test
Level 3	Can view system status indicators, change receiver system parameters, and perform the receiver functions included in the following menus: • Point Status • Install & Service • Setup Point • PW Prot LEDs • System Test • Factory Config • Select Language • Change Password • Signal Strength • Delete Point • Register Xmitter • Event Log

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

During normal operation there is no visual indication of system status or activity on the LCD of the EE4232MR receiver. Unless the level 2 authorized user or the level 3 authorized installer enters a valid password, the LCD will remain completely blank.

To enter either the level 2 authorized user or the level 3 authorized installer password:

1. Press any button; PASSWORD displays.
    a. Once PASSWORD displays, the password must be entered within 60 seconds; if it is not entered within 60 seconds, the attempt will be counted as an incorrect password.
2. Use the **Up** and **Down** buttons to scroll through the numerals; press **Enter** to select.
    a. The **Back** button deletes the last character entered.
3. Repeat step 2 for each numeral in the password.
4. When all numerals in the password have been entered, press **Enter**.

Note - If an incorrect password is entered, all EE4232MR buttons will lock up for 90 seconds. If five incorrect passwords in a row are entered, the receiver will send a tamper fault and log the event. The tamper fault will be cleared once the correct password is entered.

Level 2 Access

Note – The default level 2 authorised user password is 1234.

Level 2 authorised users have access to two menu options after entering their password: System Test and System Status.

1. **System Test**

    System test mode is used to perform a functional test of all of the transmitters programmed into the system. Upon entry into test mode, the receiver outputs will be cleared, and transmissions will not generate the defined outputs. System test mode will timeout after 30 minutes of inactivity.

    Note – System test mode only tests transmitters, repeaters are not tested.

    To perform a system test:
    a. Select SYSTEM TEST to enter system test mode.
    b. Activate each of the transmitters in the system.

    Note - An activation from any condition of a multiple condition transmitter will satisfy the test requirement for the entire transmitter. For example, pressing any button on an EE1236D three-condition pendant will satisfy the test requirement for the entire transmitter.

    c. Use the **Up** and **Down** buttons to scroll through the transmitters.
        i. Transmitters which have not sent an activation signal will display only the point number.
        ii. Transmitters which have sent an activation signal will display the point number followed by ****.
    d. When all transmitters have been verified, press the **Back** button to cancel system test mode.

    Note - During system test all alarm outputs are repressed and will have to be read locally on the receiver's display by the technician.
    Note – The test mode will automatically terminate after 30 minutes.

2. **System Status**

    The SYSTEM STATUS screen displays alarm and fault information. Points in alarm are displayed as ALARM, with the point number following. If more than one point is in alarm, the display scrolls through each point. If a point has more than one alarm, the display scrolls through each alarm. Fault conditions are indicated by FAULT in the LCD display if there is no ALARM already displayed; point numbers are not displayed. If no point is in alarm and there are no fault conditions, READY displays.

System status will timeout after 10 minutes of inactivity.

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

To enter system status:

a. Select SYSTEM STATUS to enter system status mode.

Note – If - - displays, the displayed condition has been mapped to a null output.

Level 3 Access

Note – The default level 3 authorised installer password is 3446.

Once the password is entered, the screen displays alarm and fault information. Points in alarm are displayed as ALARM, with the point number following. If more than one point is in alarm, the display scrolls through each point. If a point has more than one alarm, the displays scrolls through each alarm. Fault conditions are indicated by FAULT in the LCD display if there is no ALARM already displayed; point numbers are not displayed. If no point is in alarm and there are no fault conditions, READY displays. From the system status information, press Enter to access the three main menu options: POINT STATUS, EVENT LOG, and INSTALL & SERVICE. All level 3 screens will timeout after 30 minutes of inactivity.

1. **Point Status**
   Point Status allows you to view detailed alarm and fault information.
   To access Point Status:
   a. From system status information, press the **Enter** button to access the receiver's three main menus. POINT STATUS displays.
   b. Press **Enter** to display point status details.
   c. Use the Up/Down buttons to scroll through the points; press Enter again to view the outputs the displayed conditions are mapped to.
      i. Point status flags are defined as follows: A = Alarm (transmitter only); T = Tamper; B = Low Battery; L = AC loss (repeater only); I = Inactive.

   Note - If - - displays, the displayed condition has been mapped to a null output.

2. **Install & Service**
   The INSTALL & SERVICE menu is used to select language, change password, view the signal strength, delete points, register transmitters, return the receiver to its factory configurations, perform system test, password protect the LEDs, and set up points for any of the programmed points.

   Note - If changing programming for a point that already has a transmitter registered to it, there is no need to re-register the transmitter. Changes to point programming are automatically assigned to the transmitter registered to that point.

   To access the Install & Service menu:
   a. From system status information, press the **Enter** button to access the receiver's three main menus.
   b. Use the **Up** or **Down** buttons to navigate to INSTALL & SERVICE; press the **Enter** button.
   Setup Point

   Note – The receiver processes messages on a first-in, first-out basis.

   a. From the INSTALL & SERVICE menu, press **Enter** at the SETUP POINT prompt.
   b. Use the **Up/Down** buttons to scroll through point numbers; press the **Enter** button to select a point.
      i. TX REGISTR'D displays if a transmitter or repeater is currently registered to this point; TX NOT REGSTR'D displays if no transmitter is registered to this point.
   c. Press **Enter** to continue.
      Supervision Time: Sets a time limit of missing transmitters.

The valid range is 0 to 99 hours. The default is 60 minutes. Selecting 0 turns off supervision.

Note - Turning off supervision can jeopardize the integrity of your system. Inovonics does not recommend turning off supervision. For supervision to function correctly, the supervision time must be set for an interval greater than the transmitter check-in time.

   i. Use the **Up** and **Down** buttons to adjust the supervision time; press the **Enter** button to select.

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

ii. Use the **Up** and **Down** buttons to toggle between Hrs (hours) and Min (minutes); press the Enter button to select.

Select Security/Repeater: Configures point's alarm and alert messages as either a repeater or a security transmitter.

a. Use the **Up** and **Down** buttons to choose SELECT SECURITY for a security transmitter or SELECT REPEATER for a repeater; press the **Enter** button to select.

1-4 Alarm Inputs: Allows security transmitters with multiple alarm conditions to be assigned a separate alarm point and output type for each individual condition.

a. Use the **Up** and **Down** buttons to navigate the number of alarm inputs for the transmitter; press the **Enter** to select.

Alarm Out: Maps the security transmitter's alarm condition(s) to alarm outputs.

a. Use the **Up/Down** buttons to scroll through the output numbers. Choosing - - will disable alarm output.
b. Press **Enter** to select the output to use for the alarm condition.

Alarm Output Type: Selects the output type for the alarm condition.

a. Use the **Up/Down** buttons to scroll through the following options:
   i. Follower: The output reflects the transmitter's alarm status. Press the Enter button to select.
   ii. Latching: The output turns on when activated and remains on until the receiver is reset. Press the Enter button to select.
   iii. Toggle: The output changes state each time the device sends a new activation. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.
   iv. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.

Inactive Out: Maps transmitter/repeater inactivity fault output.

a. Use the Up/Down buttons to scroll through the output numbers. Choosing - - will disable inactivity reporting.
b. Press Enter to select the output to use for this transmitter/repeater.

Inactive Output Type: Selects the output type for the inactive condition.

a. Use the **Up/Down** buttons to scroll through the following options:
   i. Follower: The output reflects the transmitter's inactive status. Press the Enter button to select.
   ii. Latching: The output turns on when an inactive condition is sent and remains on until the receiver is reset. Press the Enter button to select.
   iii. Toggle: The output changes state each time

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

the device sends a new inactive condition. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.

iv. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.

Tamper Out: Maps transmitter/repeater tamper fault output.

a. Use the **Up/Down** buttons to scroll through the output numbers. Choosing - - will disable tamper output.
b. Press **Enter** to select the output to use for this transmitter/repeater's tamper transmission.

Tamper Output Type: Selects the output type for the tamper condition.

a. Use the **Up/Down** buttons to scroll through the following options:
   i. Follower: The output reflects the transmitter's tamper status. Press the Enter button to select.
   ii. Latching: The output turns on when a tamper condition is sent and remains on until the receiver is reset. Press the Enter button to select.
   iii. Toggle: The output changes state each time the device sends a new tamper condition. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.
   iv. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.

Low Batt Out: Maps transmitter/repeater low battery fault output.

a. Use the **Up/Down** buttons to scroll through the output numbers. Choosing - - will disable low battery output.
b. Press Enter to select the output to use for this transmitter/repeater's low battery transmission.

Low Battery Output Type: Selects the output type for the low battery condition.

a. Use the **Up/Down** buttons to scroll through the following options:
   i. Follower: The output reflects the transmitter's low battery status. Press the Enter button to select.
   ii. Latching: The output turns on when a low battery condition is sent

iii. and remains on until the receiver is reset. Press the Enter button to select.

iv. Toggle: The output changes state each time the device sends a new low battery condition. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.

v. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.

Line Power Loss Out: Maps repeater line power loss fault output.

a. Use the **Up/Down** buttons to scroll through the output numbers. Choosing - - will disable line power loss output.
b. Press **Enter** to select the output to use for this repeater's line power loss transmission.

Line Power Loss Output Type: Selects the output type for the line power loss condition.

a. Use the **Up/Down** buttons to scroll through the following options:
    i. Follower: The output reflects the repeater's line power loss status. Press the Enter button to select.
    ii. Latching: The output turns on when a line power loss condition is sent and remains on until the receiver is reset. Press the Enter button to select.
    iii. Toggle: The output changes state each time the device sends a new line power loss condition. Press the Enter button to select. INACTIVE displays when selected. Inactive time prevents output chatter. The valid range is 2.0 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.
    iv. Momentary: The output turns on for the programmed duration, then turns off, regardless of the device status. Press the Enter button to select. MOMENT displays when selected. This sets the time that the output will stay activated. The valid range 0.5 to 99.5 seconds, in 0.5 second increments. Use the Up and Down buttons to navigate; press the Enter button to select.

Text: Enter eight-character descriptive text for the transmitter/repeater

a. Use Up/Down buttons to scroll through the alphanumeric characters; press Enter to select and advance to the next character. To select a space, press Enter without selecting a digit.

Note – If you do not use all eight characters, you must enter spaces to the end of the line.

b. When finished, press **Enter** again to complete selection.

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

The REGISTER TRANSMITTER option allows you to register a transmitter or repeater to the programmed point.

a. Use the **Up** and **Down** buttons to toggle between N for no and Y for yes to choose whether or not you wish to register a transmitter/repeater to the point; press **Enter** to select.
b. Press the transmitter/repeater's **Reset** button at the RESET XMITTER prompt.
c. When TX REG'D displays, press **Enter** to finish and advance to the next point.
d. When all transmitters have been registered and installed, press **Reset** on the receiver to clear faults.

Note - A transmitter/repeater can be registered to the point at a later time using the REGISTER XMITTER prompt in the INSTALL & SERVICE menu.

3. Password Protect LEDs

To disable/enable operation LEDs:

a. At the PW PROT LEDs prompt, press **Enter**.
b. Use the **Up/Down** buttons to choose either LEDs DISABLED or LEDs ENABLED.
c. Press **Enter** to select; a confirmation message will display.

4. System Test

System test mode is used to perform a functional test of all of the transmitters programmed into the system. Upon entry into test mode, the receiver outputs will be cleared. and transmissions will not generate the defined outputs.

Note - System test mode only tests transmitters; repeaters are not tested.

To perform a system test:

a. At the SYSTEM TEST prompt press **Enter.**
b. Activate each of the transmitters in the system.

Note - An activation from any condition of a multiple condition transmitter will satisfy the test requirement for the entire transmitter. For example, pressing any button on an EE1236D three-condition pendant will satisfy the test requirement for the entire transmitter.

c. Use the **Up** and **Down** buttons to scroll though the transmitters.
    i. Transmitters which have not sent an activation signal will display only the point number.
    ii. Transmitters which have sent an activation signal will display the point number followed by ****.
d. When all transmitters have been verified, press the **Back** button to cancel system test mode.

Caution - During system test all alarm outputs are repressed and will have to be read locally on the receiver's display by the technician.

Note - The test mode will automatically terminate after 30 minutes of inactivity.

5. Factory Config

The FACTORY CONFIG option is used to restore the EE4232MR to its factory defaults.
Caution - Choosing FACTORY CONFIG will erase all programmed point and output information, as well as passwords and the LED password protect settings.

To restore the factory configuration defaults to the EE4232MR:

a. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the FACTORY CONFIG prompt; press the **Enter** button.
b. The RESET CONFIG prompt displays. Use the **Up** and **Down** buttons to choose Y for yes; press **Enter** to select.
c. The CONFIG RESET prompt displays; press the **Enter** button to return to the INSTALL & SERVICE menu.

The receiver can also be brought back to the factory default configuration through a hardware initiated sequence.

a. Connect a wire between the reset terminal and the ground terminal.
b. While pressing the **Back** button, cycle the power to the unit.
c. Release the **Back** button and remove the wire between the reset terminal and ground.
d. RESET CONFIG? displays; select Y and press the **Enter** button.

UK CA CE

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

6. **Select Language**
   a. At the SELECT LANGUAGE prompt, press Enter.
   b. Use the **Up/Down** buttons to scroll through the language options. The CLEAR LANG option resets the language to the default and exits the INSTALL & SERVICE menu.
   c. Press **Enter** to select language.
   d. When LANGUAGE SELECTED displays, press **Enter** to return to the INSTALL & SERVICE menu.

   To reset the language selection:

   a. Press the **Up** and **Enter** keys while cycling the power.
   b. The SELECT LANGUAGE prompt displays. Follow the steps above to choose a new language.

7. **Change Password**
   Passwords can be up to eight digits long. The default authorized user password is 1234; the default authorized installer password is 3446.
   To change the password:
   a. From the INSTALL & SERVICE menu, press **Enter** at the CHANGE PASSWORD prompt.
   b. Use the **Up/Down** buttons to choose either USER PASSWORD or INSTALL PASSWORD; press **Enter** to select.
   c. Use the **Up/Down** buttons to scroll through the digits; press **Enter** to select and advance to the next digit.

   Note - Choosing a null as the password will disable the function, allowing users to perform receiver functions and/or change parameters without a password.

   d. When finished, press **Enter** again to complete selection.
   e. When PASSWORD CHANGED displays, press **Enter** to return to the INSTALL & SERVICE menu.

   Caution - Store the new password in a secure place. If the new password is lost, you will not be able to access the receiver without restoring it to factory defaults as described in section , “Factory Config”.

8. **Signal Strength**
   The SIGNAL STRENGTH option is used to measure signal strength and troubleshoot installation problems.
      a. At the SIGNAL STRENGTH prompt, press **Enter**.
         i. The first programmed point displays, along with a signal quality of GOOD, WEAK or NO SIG.

   Note - The point must have an active transmitter associated with it to display signal strength.

      b. Use the **Up/Down** buttons to scroll through the registered transmitters.
      c. Press **Enter** to view Level (LV) and Margin (MA).
         i. LV indicates the overall signal strength; MA indicates the signal strength minus the background noise.

9. **Delete Point**

   The DELETE POINT option allows you to delete transmitter registration information from all registered points, or from a specific point. Programmed point information is not deleted; just the registration identification number associated with the transmitters or repeaters.
   To delete points:

   a. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the DELETE POINT prompt; press the **Enter** button.
   b. The DELETE ALL? prompt displays. Use the **Up** and **Down** buttons to choose N for no or Y for yes; press **Enter** to select.
   c. If you selected no, the DELETE POINT prompt displays. Use the **Up** and **Down** buttons to choose a point to delete; press **Enter** to select.
   d. Press the **Enter** button. If there is more than one registered point, then pressing the **Enter** button returns to point selection for deletion; if there are no more registered points, the display returns to the INSTALL & SERVICE menu.

10. **Register Transmitter**
    The REGISTER XMITTER option allows you to register a transmitter or repeater.
    a. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600

REGISTER XMITTER prompt; press the **Enter** button.

b. Use the **Up** and **Down** buttons to choose the point to which you want to register the transmitter/repeater.
c. Use the **Up** and **Down** buttons to toggle between N for no and Y for yes to choose whether or not you wish to register a transmitter/repeater to the point; press **Enter** to select.
d. Press the transmitter/repeater's **Reset** button at the RESET XMITTER prompt.

Event Log

The event log displays the last 50 events that have occurred, whether they be alarms, restorals or tamper, inactive, or low battery faults. Event log information is available without a password.

1. From system status information, press Enter.
2. Use the Up or Down buttons to navigate to EVENT LOG; press the Enter button.
3. Use the Up/Down buttons to scroll through events.
4. When viewing transmitter events, press Enter to see the output the events map to.

Note – No output will be displayed if the event is mapped to a null output.

Specifications

Dimensions: 22cm x 18cm x 4cm (8.75" x 7" x 1.63").

Weight: 522 g (18.4 oz).

Operating environment: -10°- 60°C (14°- 140°F), 90% relative humidity, non-condensing.

Power requirement: 11-14 VDC; 500mA.

Nominal current consumption: Approx. 120 mA.

Output specifications: Form C relay 1A @ 28 VDC, 0.5 @ 30 VAC resistive load.

Input specifications: Reset input: Contact closure, momentary low.

Receiver type: Frequency hopping spread spectrum.

Operating frequency: 868-869 MHz.

Tamper: Type B, fixed device.

Number of points/Transmitters: 32.

Number of outputs: 12 Form C relay outputs.

Event history log capacity: 50 events (first-in, first-out replacement).

Output power: N/A.

Firmware revision: 90595, v1.3.

Hoyles Electronic Developments Ltd
Sandwash Close, Rainford, St Helens, WA11 8LY, UK
www.hoyles.com
sales@hoyles.com
+ 44 (0) 1744 886600