EN4216MR EchoStream® Receiver

Installation and Operation Manual - 05637D, April 4, 2011

1 Overview

The EN4216MR receiver allows you to add up to 16 transmitters and six outputs to any application. With diversity reception and advanced signal processing, Inovonics EchoStream technology is designed to minimize dead spots in transmission areas.

1.1 Installing an Inovonics Security System

An EchoStream survey kit must be used to establish a UL system. The EchoStream survey kit measures the signal strength of high-power repeater and sensor messages to help optimize your EchoStream system.

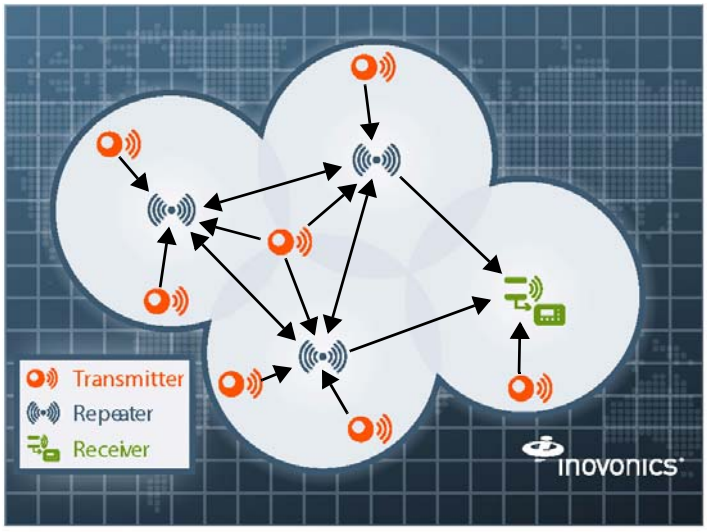

Figure 1 Sample EchoStream System

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.

Note: For more information about the EchoStream survey kit, see the *EN/EE7016SK EchoStream® Survey Kit Installation and Operation Manual*.

1.2 Inovonics Wireless Contact Information

If you have any problems with this procedure, contact Inovonics Wireless technical services:

- E-mail: support@inovonics.com
- Phone: (800) 782-2709; (303) 939-9336

1.3 EN4216MR Front Panel

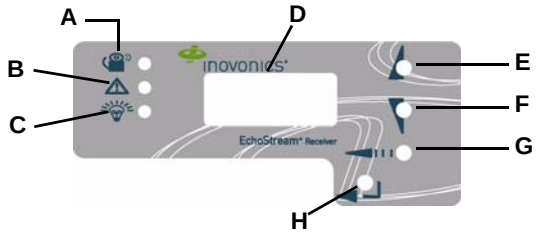

Figure 2 Receiver front panel

A Output LED	**B** Fault LED	**C** Power LED
D LCD display	**E** Up button	**F** Down button
G Back button	**H** Enter button	

Output LED: Lights when any transmitter output is active.
Fault LED: Lights when any transmitter is sending a fault condition.
Power LED: Lit when receiving power.
LCD Display: Shows status, event log and programming information.
Decode LED: Flashes when any recognizable transmission is received. This LED is only visible when the cover is removed.
Up button: Scrolls the display up.
Down button: Scrolls the display down.
Back button: Returns display to the previous menu, or when pressed in the main menu options, returns the unit to normal operating mode. When entering information in the display, returns to the last character entered.
Enter button: Selects the currently displayed menu item. If in normal operating mode, sets the unit to menu mode.
Reset button: Clears the current status for all points and resets all outputs and LEDs. Records a receiver reset entry in the event log and resets the supervision window timers. This button is only accessible when the cover is removed.

1.4 EN4216MR Internal Components

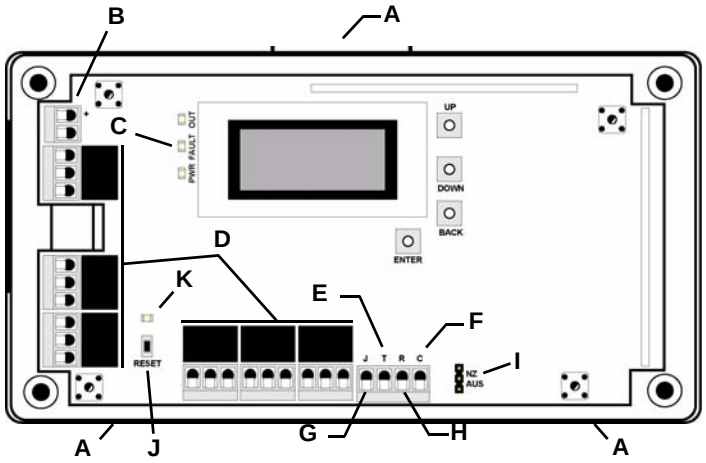

Figure 3 EN4216MR internal components

A Housing release tabs	**B** Power connections	**C** Operation LEDs
D Relay outputs	**E** Tamper output	**F** Receiver power loss output
G Jam output	**H** Reset input	**I** Frequency band selection pins
J Reset button	**K** Decode LED	

2 Power Cabling

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

1. Connect power cabling to the Vs (+) and GND (-) connections.
   - Power source should be 11-14 VDC. Power supply must be unswitched, uninterrupted, and regulated.
   - Use 14 - 22 gauge wire for all cabling, and ensure torque on the screw terminals does not exceed 7 inch-pounds.
   - For UL installations, wire lengths must not exceed 300 feet.

3 Select the Frequency Band

EchoStream products use a range of radio frequencies, and must be configured for your geographic area. To configure the receiver:

1. Use a small screwdriver to press the housing release tabs on the top or bottom of the receiver; separate the housing.
2. Place a selection jumper on the appropriate frequency band selection pins.
   - Leave the jumper off the pins to set the frequency range to 902-928 MHz for North America.
   - Place the jumper on the top two pins, marked NZ, to set the frequency range to 921-928 MHz for New Zealand
   - Place the jumper on the bottom two pins, marked AUS, to set the frequency range to 915-928 MHz for Australia.

Note: North American is also selected when the jumper is only attached to one pin. This can prevent the jumper from being lost when selecting North America.

Note: Only devices set for use in North America are configured for UL installations.

3. Cycle power to reset.

4 Connect Input/Output Cabling

1. Connect cabling to the receiver power loss output. Must be configured for UL installations.
   - The receiver power loss output is a normally closed (N/C) output that opens when the receiver loses power.
2. Connect cabling to the tamper output. Must be configured for UL installations.
   - The tamper output is a normally open (N/O) output that reports receiver case tamper to an external device.
3. Connect cabling to the jam output. Must be configured for UL installations.
   - The jam output is a normally closed (N/C) output that opens when noise thresholds on all receive channels remain above a predetermined value for 10 seconds. The jam output is set to the follower output type.
4. Connect a momentary switch to the reset input and ground. Must be configured for UL installations.
   - The 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.
5. Connect cabling to the output terminals. Must be configured for UL installations.
   - The EN4216MR provides six Form-C relays.
6. Close receiver housing.

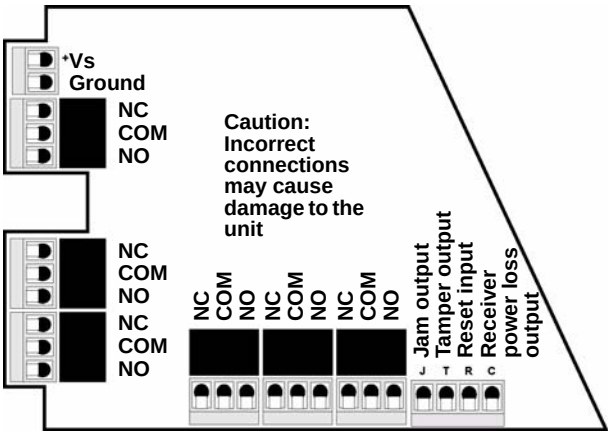

Figure 4 EN4216MR Terminals

5 Mount the Receiver

Caution: Mount the receiver in a location removed from metal. Metal objects (duct work, wire mesh screens, boxes) will reduce RF range.

Note: For UL listed systems containing a UL hold-up switch, the EN4216MR must be located within three feet of a system keypad in a location out of sight from the protected premise.

Note: For UL installations, the EN4216MR must be in the same room as the control panel.

1. Use the provided anchors and screws to mount the receiver in a location accessible for future maintenance.
2. Perform a walk test, activating each transmitter assigned to the receiver and ensuring a good signal.

6 Factory Configuration Defaults

The EN4216MR arrives with the tamper, low battery, and inactive trouble conditions pre-programmed.

Default Trouble Condition Programming

Condition	Output
Tamper	6
Low Battery	5
Supervision Loss/Inactive	6

7 System Status

System status information displays alarm and fault information on the LCD display by default. 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.

8 Point Status

POINT STATUS allows you to view detailed alarm and fault information. Point status information is available without a password.

To access POINT STATUS:

1. From system status information, press the **Enter** button to access the receiver's three main menus. POINT STATUS displays.
2. Press **Enter** to display point status details.
3. Use the **Up**/**Down** buttons to scroll through the points; press **Enter** again to view the outputs the displayed conditions are mapped to.
   - 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.

9 Install & Service

Note: The default password is 3446.

The INSTALL & SERVICE menu is used to reset factory configuration, change password, view signal strength, delete points, register transmitters, and setup points for any of the programmed points.

To access the INSTALL & SERVICE menu:

1. From the system status information, press the **Enter** button to access the receiver's three main menu options.
2. Use the **Up** and **Down** buttons to navigate to the the INSTALL & SERVICE menu; press the **Enter** button.
3. Enter a password to access INSTALL & SERVICE menus.

9.1 Setup Point

1. From the INSTALL & SERVICE menu, press **Enter** at the SETUP POINT prompt.
2. Use the **Up**/**Down** buttons to scroll through point numbers; press the **Enter** button to select a point.
   - 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.
3. Press **Enter** to continue.

Supervision Time: Sets a time limit on missing transmitters.

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

Caution: 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.

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

- Follower: The output reflects the transmitter's alarm status. Press the **Enter** button to select.
- Latching: The output turns on when activated and remains on until the receiver is reset. Press the **Enter** button to select.
- 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.
- 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 is 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:

- Follower: The output reflects the transmitter's inactive status. Press the **Enter** button to select.
- Latching: The output turns on when a inactive condition is sent and remains on until the receiver is reset. Press the **Enter** button to select.
- Toggle: The output changes state each time the device becomes inactive. 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.
- 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 is 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:

- Follower: The output reflects the transmitter's tamper status. Press the Enter button to select.
- 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.
- 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.
- 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 is 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:

- Follower: The output reflects the transmitter's low battery status. Press the **Enter** button to select.
- Latching: The output turns on when a low battery condition is sent and remains on until the receiver is reset. Press the **Enter** button to select.
- 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.
- 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 is 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:

- Follower: The output reflects the repeater's line power loss status. Press the **Enter** button to select.
- Latching: The output turns on when a condition is sent and remains on until the receiver is reset. Press the **Enter** button to select.
- 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.
- 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 is 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.

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

Register Transmitter: 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, 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.

9.2 Factory Config

The FACTORY CONFIG option is used to restore the EN4216MR to its factory defaults.

Caution: Choosing FACTORY CONFIG will erase all programmed point and output information, as well as the password.

To restore the factory configuration defaults to the EN4216MR:

1. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the FACTORY CONFIG prompt; press the **Enter** button.
2. The RESET CONFIG prompt displays. Use the **Up** and **Down** buttons to choose Y for yes; press **Enter** to select.
3. 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.

1. Connect a wire between the reset terminal and the ground terminal
2. While pressing the **Back** button, cycle the power to the unit
3. Release the **Back** button and remove the wire between the reset terminal and ground

4. RESET CONFIG? displays; select Y and press the **Enter** button

9.3 Change Password

Passwords can be up to eight digits long. The default password is 3446. To change the password:

1. From the INSTALL & SERVICE menu, press **Enter** at the CHANGE PASSWORD prompt.
2. 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.

3. When finished, press **Enter** again to complete selection.
4. 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 9.2, “Factory Config” on page 3.

9.4 Signal Strength

The SIGNAL STRENGTH option is used to measure signal strength and troubleshoot installation problems.

1. At the SIGNAL STRENGTH prompt, press **Enter**.
   - 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.

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

Note: Inovonics recommends an LV of four for most installations.

9.5 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:

1. From the INSTALL & SERVICE menu, use the **Up** and **Down** buttons to navigate to the DELETE POINT prompt; press the **Enter** button.
2. The DELETE ALL? prompt displays. Use the **Up** and **Down** buttons to choose N for no or Y for yes; press **Enter** to select.
3. 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.
4. 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.

9.6 Register Transmitter

The REGISTER XMITTER option allows you to register a transmitter or repeater.

1. From the INSTALL & SERVICE menu, use the **Up** and Down buttons to navigate to the REGISTER XMITTER prompt; press the **Enter** button.
2. Use the **Up** and **Down** buttons to choose the point to which you want to register the transmitter/repeater.
3. Press the transmitter/repeater’s **Reset** button at the RESET XMITTER prompt.

10 Event Log

The event log displays the last 50 events that have occurred, whether they be alarms, or tamper or inactive 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.

11 Specifications

Compatible repeater, transmitters: EN5040-T, EN1215EOL, EN1215WEOL, EN1223D, EN1235SF, EN1235DF, EN1249, EN1261HT
Dimensions: 165 mm x 89 mm x 25 mm (6.5" x 3.5" x 1").
Weight: 280 g (.62 lb)
Operating environment: 0°- 60°C (32°- 140°F), 90% relative humidity, non-condensing.
Power requirement: 11 - 14 VDC; 400 mA
Output specifications: Form C relay 1A @ 28 VDC, 0.5 @ 30 VAC resistive load
Input specifications: A low is less than .5 V; a high is greater than 2.5 V. Reset input: Contact closure, momentary low.
Receiver type: Frequency hopping spread spectrum.
Operating frequency: 915-928 MHz (Australia), 921-928 MHz (New Zealand), 902-928 MHz (USA)
Tamper: Type B, fixed device.
Number of points/Transmitters: 16.
Number of outputs: Six Form C relay outputs
Event history log capacity: 50 events (first-in, first-out replacement).
UL listings: UL 365, UL 636, UL 1023, ULC/ORD-C1023-74, UL 1076, UL 1610.

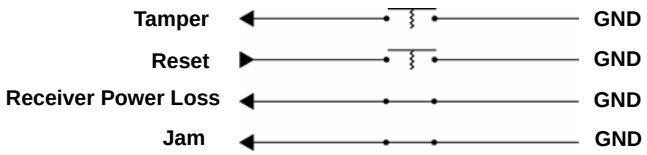

Figure 5 Tamper, Reset, Arm and Receiver Operational Circuits

12 Television and Radio Interference

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

13 Warranty and Disclaimer

Note: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Inovonics Wireless Corporation ("Inovonics") warrants its products ("Product" or "Products") to conform to its own specifications and to be free of defects in materials and workmanship under normal use for a period of thirty-six (36) months from the date of manufacture. Within the warranty period, Inovonics will repair or replace, at its option, all or any part of the warranted Product. Inovonics will not be responsible for dismantling and/or reinstallation charges. To exercise the warranty, the User ("User", "Installer" or "Consumer") must work directly through their authorized distributor who will be given a Return Material Authorization ("RMA") number by Inovonics. Details of shipment will be arranged directly through the authorized distributor.

This warranty is void in cases of improper installation, misuse, failure to follow installation and operating instructions, alteration, accident or tampering, and repair by anyone other than Inovonics.

This warranty is exclusive and expressly in lieu of all other warranties, obligations or liabilities, whether written, oral, express, or implied. There is no warranty by Inovonics that Inovonics product will be merchantable or fit for any particular purpose, nor is there any other warranty, expressed or implied, except as such is expressly set forth herein. In no event shall Inovonics be liable for an incidental, consequential, indirect, special, or exemplary damages, including but not limited to loss of profit, revenue, or contract, loss of use, cost of down time, or interruption of business, nor any claim made by distributor's customers or any other person or entity.

This warranty will not be modified or extended. Inovonics does not authorize any person to act on its behalf to modify or extend this warranty. This warranty will apply only to Inovonics Products. Inovonics will not be liable for any direct, incidental, or consequential damage or loss whatsoever, caused by the malfunction of Product due to products, accessories, or attachments of other manufacturers, including batteries, used in conjunction with Inovonics Products.

Note: E-mail support@inovonics.com for a copy of the CE Declaration of Conformity.

14 ADT Focus 200 Plus / Focus Cadet Control Panel Wiring and Programming Information

14.1 Typical EN4216MR Receiver Connection to ADT Focus 200 Plus / Focus Cadet Control Panel

EN4216MR Function	EN4216MR Terminal	Panel Terminal	Keypad Text
Power in (12V DC)	Vs	(19) + Aux Power	n/a
Ground	GND	(20) - Aux Power	n/a
Alarm 1	NC (1)	(25) Point 1	(user text)
(Follower)	Com 1	(26) Common	
	NO (1)		
Alarm 2	NC (2)	(27) Point 2	(user text)
(Follower)	Com 2	(28) Common	
	NO (2)		
Repeater AC Loss	NC (3)	(29) Point 3	RF Repeater AC
(Follower)	Com 3	(30) Common	
	NO (3)		
RF Pt Low Battery	NC (4)	(32) Point 4	RF Pt Low Batt
(Latching)	Com 4	(31) Common	
	NO (4)		
RF Pt Tamper	NC (5)		RF Pt Trouble
(Latching)	Com 5	(34) Common	
	NO (5)*	(33) Point 5	
RF Pt Inactive	NC (6)	(35) Point 6	RF Pt Inactive
(Follower)	Com 6	(34) Common	
	NO (6)		
Power Loss	POWER LOSS	(36) Point 7	RF Recvr Power
(Follower)		(37) n/a	
Receiver Tamper	TAMP *	n/a	n/a
RF Jam	JAM	(38) Point 8	RF System Jammed
(Follower)		(37) n/a	

* Point 5 is normally open to allow RF Pt Tamper and Receiver Tamper on one loop.
The end-of-line resistor must not be in series with the wire from terminal NO (5) to terminal 33. Add the following 2 connections to terminate the combined loop:

1. Connect a wire from TAMP terminal to NO (5) terminal.
2. Connect a 2K-ohm resistor from TAMP terminal to COM 5 terminal.

14.2 ADT Focus 200 Plus / Focus Cadet Control Panel Zone Information

EN4216MR Output Function	Point #	Point Name	Point Type	Description	Option
Alarm 1	1				
Alarm 2	2				
Repeater AC Loss	3	RF REPEATER AC	13 (SPV)	Supervisory	
RF Point Low Battery	4	RF PT LOW BATT	13 (SPV)	Supervisory	
RF Point/Receiver Tamper	5	RF PT TROUBLE	1 (FI)	Fixed	2
RF Point Inactive	6	RF PT INACTIVE	13 (SPV)	Supervisory	
Receiver Power Loss	7	RF RECVR POWER	1 (FI)	Fixed	2
RF Jam	8	RF SYSTEM JAMMED	13 (SPV)	Supervisory	

Examples of programming for alarm points:

EN4216MR Output Function	Point #	Point Name	Point Type	Description	Option
Intrusion		Front Door	7 (MIC)	Movable Instant Chime	2
		or			
			8 (MDC)	Movable Delayed Chime	2
Holdup		Holdup	11 (HU)	Holdup	2

Note: For UL installations, the control panel must be programmed to indicate an alarm if the system is in an armed condition and an RF jamming signal occurs at the receiver.

15 Bosch D9412GV2 / D7412GV2 Control Panel Wiring and Programming Information

15.1 Typical EN4216MR Receiver Connection to Bosch D9412GV2 / D7412GV2 Control Panel

EN4216MR Function	EN4216MR Terminal	Panel Terminal	Keypad Text
Power in (12V DC)	Vs	(3) + Aux Power	n/a
Ground	GND	(9) Common	n/a
	NC (1)		
Alarm 1	Com 1	(12) Common	PT 1
(Follower)	NO (1)	(11) Point 1	(user text)
	NC (2)		
Alarm 2	Com 2	(12) Common	PT 2
(Follower)	NO (2)	(13) Point 2	(user text)
	NC (3)		
Repeater AC Loss	Com 3	(15) Common	PT 3
(Follower)	NO (3)	(14) Point 3	RF Repeater AC
	NC (4)		
RF Pt Low Battery	Com 4	(15) Common	PT 4
(Latching)	NO (4)	(16) Point 4	RF Pt Low Batt
	NC (5)		
RF Pt Tamper	Com 5	(18) Common	PT 5
(Latching)	NO (5)	(17) Point 5	RF Pt Trouble
	NC (6)		
RF Pt Inactive	Com 6	(18) Common	PT 6
(Follower)	NO (6)	(19) Point 6	RF Pt Inactive
Power Loss	POWER LOSS	(20) Point 7	PT 7
(Follower)		(21) n/a	RF Recvr Power
Receiver Tamper	TAMP *	n/a	n/a
RF Jam	JAM	(22) Point 8	PT 8
(Follower)		(21) n/a	RF System Jammed
* Add the following 2 connections to combine receiver tamper and transmitter tamper:			
1. Connect a 2K-ohm resistor from TAMP terminal to COM 5.			
2. Connect a wire from TAMP terminal to NO 5 terminal.			

15.2 Bosch D9412GV2 / D7412GV2 Control Panel Zone

EN4216MR Output Function	Point Assignment	Point Text	Point Type	Point Response	Options
Alarm 1	1				
Alarm 2	2				
Repeater AC Loss	3	RF REPEATER AC	0	3	Buzz on fault = 2
RF Point Low Battery	4	RF PT LOW BATT	0	3	Buzz on fault = 2
RF Point/Receiver Tamper	5	RF PT TROUBLE	2	3	Buzz on fault = 1
RF Point Inactive	6	RF PT INACTIVE	0	3	Buzz on fault = 2
Receiver Power Loss	7	RF RECVR POWER	2	3	Buzz on fault = 2
RF Jam	8	RF SYSTEM JAMMED	0	3	Buzz on fault = 1

Examples of programming for alarm points:

EN4216MR Output Function	Point Assignment	Point Text	Point Type	Point Response	Options
Intrusion		Front Door	1	1	
Holdup		Holdup	0	0	Silent bell = Yes

Note: For UL installations, the control panel must be programmed to indicate an alarm if the system is in an armed condition and an RF jamming signal occurs at the receiver.

16 DMP XR500 Control Panel Wiring and Programming Information

16.1 Typical EN4216MR Receiver Connection to DMP XR500 Control Panel

EN4216MR Function	EN4216MR Terminal	Panel Terminal	Keypad Text
Power in (12V DC)	Vs	(7) RED	n/a
Ground	GND	(10) BLK	n/a
	NC (1)		
Alarm 1	Com 1	(14) GND	Zone 1
(Follower)	NO (1)	(13) Z1	(user text)
	NC (2)		
Alarm 2	Com 2	(14) GND	Zone 2
(Follower)	NO (2)	(15) Z 2	(user text)
	NC (3)		
Repeater AC Loss	Com 3	(17) GND	Zone 3
(Follower)	NO (3)	(16) Z 3	RF Repeater AC
	NC (4)		
RF Pt Low Battery	Com 4	(17) GND	Zone 4
(Latching)	NO (4)	(18) Z 4	RF Pt Low Batt
	NC (5)		
RF Pt Tamper	Com 5	(20) GND	Zone 5
(Latching)	NO (5)	(19) Z 5	RF Pt Trouble
	NC(6)		
RF Pt Inactive	Com 6	(20) GND	Zone 6
(Follower)	NO (6)	(21) Z 6	RF Pt Inactive
Power Loss	POWER LOSS	(22) Z 7	Zone 7
(Follower)	GND	(23) GND	RF Recvr Power
Receiver Tamper	TAMP *	n/a	n/a
RF Jam	JAM	(24) Z 8	Zone 8
(Follower)		n/a	RF System Jammed

* Add the following two connections to combine receiver tamper and transmitter tamper:

1. Connect a 2K-ohm resistor from TAMP terminal to COM 5.
2. Connect a jumper wire from TAMP terminal to NO 5 terminal.

16.2 DMP XR500 Control Panel Zone Information

EN4216MR Output Function	Zone Number	Zone Name	Zone Type	DO Message	DO Output	DO Output Action	DS Message	DS Output	DS Output Action	AO Message	AO Output	AO Output Action	AS Message	AS Output	AS Output Action
Alarm Zone 1	1														
Alarm Zone 2	2														
Repeater AC Loss	3	RF REPEATER AC	Night	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow
RF Point Low Battery	4	RF PT LOW BATT	Night	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow
RF Point/Receiver Tamper	5	RF PT TROUBLE	Night	Trouble	1	Follow	Trouble	1	Follow	Alarm	0	Steady	Alarm	0	Steady
RF Point Inactive	6	RF PT INACTIVE	Night	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow
Receiver Power Loss	7	RF RECVR POWER	Night	Trouble	1	Follow	Trouble	1	Follow	Alarm	0	Steady	Alarm	0	Steady
RF Jam	8	RF SYSTEM JAMMED	Night	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow	Trouble	1	Follow

Examples of programming for alarm points:

EN4216MR Output Function	Zone Number	Zone Name	Zone Type	DO Message	DO Output	DO Output Action	DS Message	DS Output	DS Output Action	AO Message	AO Output	AO Output Action	AS Message	AS Output	AS Output Action
Intrusion		Front door	Exit	Trouble	1	Follow	Trouble	0	Follow	Alarm	0	Steady	Alarm	0	Steady
Holdup		Holdup	Panic	n/a	n/a	n/a	n/a	n/a	n/a	Trouble	0	Steady	Alarm	0	Steady
Status List must not have panic zone keypads enabled															

Note: For UL installations, the control panel must be programmed to indicate an alarm if the system is in an armed condition and an RF jamming signal occurs at the receiver.