EN5000 EchoStream® High-Power Repeater

Installation and Operation Manual - 04062C

1 Overview

EN5000 high-power repeaters receive, decode and retransmit signals at enhanced power from Inovonics Wireless nodes. They act as range expanders for any valid Inovonics Wireless transmission, including signals from other high-power repeaters. Repeaters can be layered as necessary, allowing Inovonics Wireless systems to scale from small commercial sites to complete campuses consisting of several buildings.

For applications that require a weatherproof enclosure, the EN5000 may be placed in the Inovonics weatherproof plastic housing, part number ACC640.

1.1 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

1.2 EN5000 LEDs

Decode LED: Flashes when any recognizable RF transmission is received. (Fig. 1).

Transmit LED Lit when transmitting an RF transmission (Fig. 1).

Low Battery Fault LED: Lit when the high-power repeaterhas a low battery (Fig. 1).

Power LED: Lit when receiving power (Fig. 1). The LED lights green when the unit is receiving line power; red when receiving battery power.

Note: If mapped to an output, the high-power repeater will send the AC loss message to the receiver or network coordinator when receiving power from the backup battery.

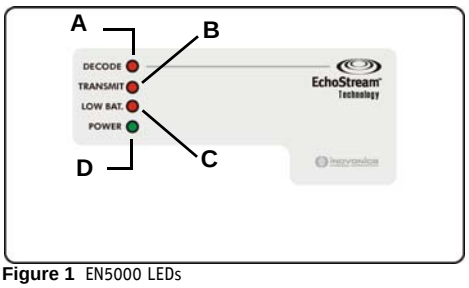

Figure 1 EN5000 LEDs

A. Decode LED **B.** Transmit LED **C.** Low Battery Fault LED **D.** Power LED

2 Installation and Startup

2.1 Connect Power Cabling

Before beginning startup, power must be connected to the high-power repeater. To connect power to the high-power repeater:

1. Use a small screwdriver to press the housing release tab on the top or bottom of the high-power repeater (Fig. 2); separate the housing.

2. Connect power cabling to the Vs and GND connections (Fig. 2).

- Wire should be two-conductor 20AWG (or larger) stranded-tinned copper with PVC insulation rated to 300 volts at 26°C (80°F). Wire length should not exceed 100 meters (328 feet).

2.2 Connect Battery Power

The high-power repeater is shipped with a fully-charged backup battery. You will need to connect the battery:

1. Plug the connector cable from the backup battery into the battery connector (Fig 2).

2.3 Select the Frequency Band

EchoStream products are able to use a range of radio frequencies, and must be configured for your geographic area. To configure the high-power repeater:

1. Use a small screwdriver to press the housing release tab on the top or bottom of the receiver (Fig. 2); separate the housing.

2. Place a selection jumper on the appropriate frequency band selection pins (Fig. 2).

- Place the jumper on the top two pins, marked AUS, to set the frequency range to 915-928 MHz for Australia.
- Place the jumper on the bottom two pins, marked NZ, to set the frequency range to 921-928 MHz for New Zealand.
- Leave the jumper off the pins to set the frequency range to 902-928 MHz for North America.

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.

3. Cycle power source to reset.

2.4 Register the High-Power Repeater

Although the high-power repeater is functional upon startup, Inovonics Wireless strongly recommends you register it using your receiver, network coordinator or control panel. Inovonics Wireless recommends all high-power repeaters be supervised.

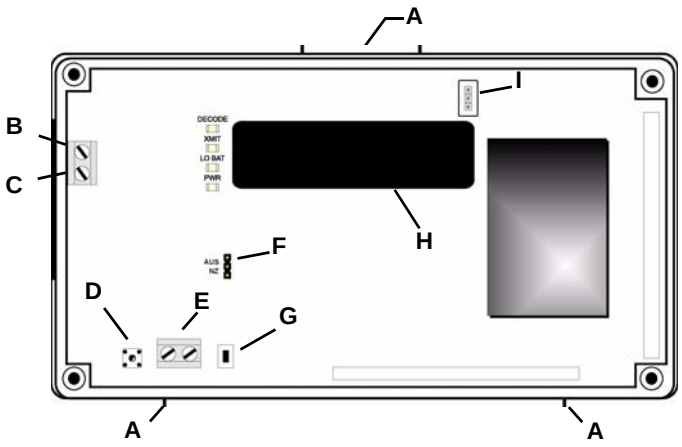

Figure 2 EN5000 Components

A. Housing release tabs **B.** Power **C.** GND connection **D.** Tamper button **E.** Tamper output **F.** Frequency selection pins **G.** Reset button **H.** Backup battery **I.** Battery connector

2.5 Mount the High-Power Repeater

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

1. Use the provided anchors and screws to mount the high-power repeater in a location accessible for future maintenance.

- In large installations, high-power repeaters should be mounted so that every transmitter has multiple transmission paths to the serial receiver or network coordinator. This kind of redundancy preserves system integrity in the event of temporary interruptions of any transmission path in the system.
- For maximum efficiency, high-power repeaters should be mounted with as few obstacles as possible between it and the receiver, network coordinator or control panel.

2. Perform a walk test, activating each transmitter assigned to the high-power repeater and ensuring an appropriate response.

3 Specifications

Housing: 165 mm x 89 mm x 25 mm (6.5" x 3.5" x 1")
Weight: 204 g (7.14 oz)
Operating environment: 0°- 60°C (32°- 140°F), 90% relative humidity, non-condensing
Power requirement: 14 VAC
Battery capacity: 1800 mAH @ 3.7 typical
Typical back-up battery life: 24 hours
Operating frequency: 915-928 MHz (Australia), 921-928 MHz (New Zealand) 902-928 MHz (USA)
Battery charger operating environment: 0°- 40°C (32°- 104°F)
Accessories: ACC640: weatherproof plastic enclosure for outdoor installations; BAT850: replacement lithium-ion battery assembly

4 Warranty/Disclaimer

Caution: Changes or modifications to this unit not expressly approved by Inovonics Wireless Corporation may void the installer's authority to operate the equipment as well as the product warranty.

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 twenty-four (24) 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.