

## EN4000 EchoStream® Serial Receiver

### Installation Instructions - 05853A

#### 1 Overview

The EN4000 serial receiver is a gateway that uses reliable frequency-hopping, spread-spectrum technology to decode radio frequency (RF) transmissions from end devices and high-power repeaters, and then output the decoded data to the application controller in a common serial data format. The EN4000 is used for all one way Inovonics applications.

#### 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

#### 2 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 serial receiver:

1. Use a small screwdriver to press the housing release tab (Fig. 1A); separate the housing.
2. Place a selection jumper on the appropriate frequency band selection pins (Fig. 1B).
  - Leave the jumper off the pins to set the frequency range to 902-928 MHz for North America.
  - Place the jumper on the right two pins, marked AUS, to set the frequency range to 915-928 MHz for Australia.
  - Place the jumper on the left two pins, marked NZ, to set the frequency range to 921-928 MHz for New Zealand.
3. If the serial receiver is powered on, remove the power source to reset.

#### 3 Connect the Serial Cable

**Caution:** Long cable runs should not be adjacent to high current power feeds. Keep cable lengths as short as possible to minimize noise pickup. Measure voltage at the serial receiver on long cable runs.

1. Connect a serial cable to either the serial data port (Fig. 1C) or the serial data terminal (Fig. 1D). Cabling should meet the following specifications:

**Cable requirements** 4-conductor 20AWG (or larger) stranded-tinned copper with PVC insulation rated to 300 volts at 26°C (80°F). (Belden #8205, for example.)

**Maximum cable length** 30.5 meters (100 feet).

2. Route the cabling through either the bottom cabling knockout (Fig. 1E) or the side cabling knockout (Fig. 1F).

#### 4 Mount the Serial Receiver

**Caution:** Mount the serial receiver 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 serial receiver in a location accessible for future maintenance.
2. Close the serial receiver housing.

#### 5 Serial Receiver Operation

**Caution:** The EchoStream system should be tested regularly to ensure operation. To test, place the system in test mode, activate an end device, and ensure an appropriate response.

The following LEDs are used to monitor serial receiver operation.

**Transmit LED** Lit when the serial receiver is transmitting data to the application controller (Fig. 1G).

**Receive LED** Lit when the serial receiver is receiving data from the application controller (Fig. 1H).

**Decode LED** Lit when the serial receiver is decoding an RF transmission from another Inovonics Wireless device (Fig. 1I).

#### 6 Specifications

**Housing dimensions** 6.38" x 3.60" x 1.10" (162.0 mm x 91.4 mm x 27.9 mm)

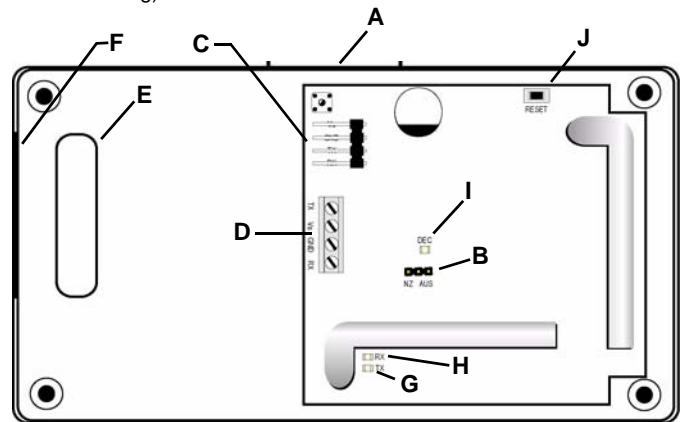
**Weight** 133 g (4.7 oz)

**Power requirement** 10-14 VDC at 100mA

**Radio** Inovonics Wireless EchoStream

**Operating frequency** 902-928 MHz (USA) 915-925 MHz (AUS) 921-928 MHz (NZ)

**Operating environment** 0-60°C, (32-140°F) up to 90% relative humidity (non-condensing)



**Figure 1** EN4000 serial receiver components

- |                                  |  |
|----------------------------------|--|
| <b>A</b> Housing release tab     | <b>B</b> Frequency band selection pins |
| <b>C</b> Serial data port        | <b>D</b> Serial data terminal          |
| <b>E</b> Bottom cabling knockout | <b>F</b> Side cabling knockout         |
| <b>G</b> Transmit LED            | <b>H</b> Receive LED                   |
| <b>I</b> Decode LED              | <b>J</b> Reset button                  |

#### 7 Warranty and Disclaimer

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 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.

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