EE5000 EchoStream® Wireless Repeater
Installation and Operation Manual

1 Overview
EE5000 repeaters receive, decode and retransmit signals from Inovonics nodes. They act as range expanders for any valid Inovonics Wireless transmission, including signals from other 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 EE5000 may be placed in the Inovonics weatherproof plastic housing, part number ACC650.

Note: The ACC650 waterproof housing has not been investigated to European Environmental Standards.

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.
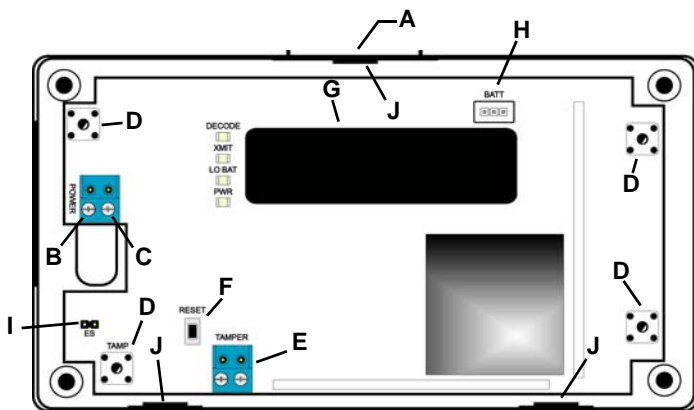
1.2 High Power Repeater Internal Components

Figure 1 EE5000 Components

A Housing release tab	**B** Power	**C** Power
D Housing tamper button	**E** Tamper terminal block	**F** Reset button
G Backup battery	**H** Battery connector	**I** Enable EchoStream selection pins
J Housing screw tab		

1.3 What's in the Carton
- Two drywall mounting anchors.
- Two wall mount screws.
- One EchoStream Select selection jumper.
- Two pieces of mounting tape.
- Three housing screws.

2 Installation and Startup

2.1 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.

2.2 Connect Power Cabling
Before beginning startup, power must be connected to the repeater. To connect power to the repeater:

1. Use a small screwdriver to press the housing release tab on the top of the repeater (Fig. 1).
2. Connect power cabling to the power connections (Fig. 1).
   - 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 30 meters (98 feet).

2.3 Connect Battery Power
The repeater is shipped with a backup battery. You will need to connect the battery:

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

2.4 Connect the Tamper Terminal Block

Note: The external tamper input has not been tested to the EN50131-1 standard.

An external tamper switch can be wired to the tamper terminal block if desired. When activated, an external tamper switch will send an alarm message similar to that sent by the housing tamper button.

2.5 Enable EchoStream Select
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 new 868MHz-only product; if you are not using any EchoStream select products, skip to section 2.6, "Register the Repeater".

To enable compatibility with ES products:

4. Place a selection jumper on the enable EchoStream selection pins (Fig. 1).
5. Press the reset button.

2.6 Register the Repeater
Although the repeater is functional upon startup, Inovonics Wireless strongly recommends you register it using your receiver, network coordinator or control panel. Inovonics recommends all repeaters be supervised. Each Inovonics device has a unique factory-programmed identification number. Refer to the receiver installation instructions for details on registering a transmitter.

6. When prompted by the receiver to reset transmitter, press the reset button.

2.7 Mount the Repeater

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

7. Use the provided 6 x 1/4 mounting screws, drywall anchors and/or tape to mount the repeater in a location accessible for future maintenance.
   - In large installations, 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, repeaters should be mounted with as few obstacles as possible between it and the receiver, network coordinator or control panel.
8. Close the housing.
9. Perform a walk test, activating each transmitter assigned to the repeater and ensuring an appropriate response.

2.8 Grade 2 Requirements

To meet European Grade 2 requirements, the following procedures must be performed:

Cover the Indicator Lights

The indicator lights must be disabled, so that operation cannot be determined externally.

To cover the indicator lights:

10. Apply black electrical tape over the light-holes on the inside of the housing.

Secure the Housing

There are two screw tabs on the bottom of the housing and one screw tab on the top; all three must be used to secure the housing.

To secure the housing:

11. Drill out the three screw holes on the housing base: two on the bottom of the housing, one on the top.

12. Use the three 6 x 1/4 housing screws included in your accessory pack to secure the housing.

3 Specifications

Housing: 165 mm x 89 mm x 25 mm.

Weight: 204 g (7.14 oz).

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

Power requirement: Type A; 50-60 Hz, 12 to 16.5 VAC or VDC; 400 mA maximum current consumption; power fail message sent upon failure of external power supply.

Back-up battery: Lithium ion rechargeable; 2900 mAh maximum capacity; 1800 mAh @ 3.7 typical; 90 mA nominal; 72 hours to recharge to 80%; low battery message sent when battery reaches 3.50 VDC.

Operating frequency: 868-869 MHz.

Tamper: Type B, fixed device.

Battery charger operating environment: -10° to 40°C (14° to 104°F).

Accessories: ACC650: weatherproof plastic enclosure for outdoor installations; BAT850: replacement lithium-ion battery assembly.

EE5000 Compliance: Security Grade 2; Environmental class II.

Certification: Telefication B.V.

Output power: 25mW.

Firmware revision: 90528, v3.21.

Countries in which Inovonics European products can be distributed:

Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Note: Specifications and data are subject to change without notice.

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

4 Simplified Declaration of Conformity

Hereby, Inovonics declares that the radio equipment type EE5000 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following Internet address: www.inovonics.com

5 US Patent Numbers

- 7,154,866.
- 7,554,932.
- 7,746,804.
- Other patents pending.