PRT-IVO-IF

Protege Inovonics Wireless Receiver Module

Installation Manual
Introduction

The Protege Inovonics receiver module is designed to facilitate integration between Protege systems and wireless Inovonics devices. It works with the Inovonics EN4200 EchoStream receiver to translate incoming Inovonics signals so they are understood by Protege controllers. The module can link up to 255 Inovonics wireless devices to each EchoStream receiver.

The receiver module is available in two unit types suitable for the following frequencies:

- **PRT-IVO-IF**: for use in the US (902-928 MHz), Australia (915-928 MHz), and New Zealand (922-928 MHz)
- **PRT-IVO-IF-EU**: for use in the EU region (868-870 MHz)

Note: the Inovonics receiver module integrates with both Protege GX and Protege WX systems. This manual provides integration instructions for both.

Key features of the Protege Inovonics Wireless Receiver Module include:

- The ability to connect to Protege systems via RS-485 network or ethernet.
- A web interface for easy network setup and boot mode for firmware updates.
- Firmware upgrade via Trivial File Transfer Protocol (TFTP).
- The linking of Inovonics wireless devices, such as PIRs and remotes, to Protege inputs.
- The linking of Inovonics remotes to Protege users for access control.
Installation Requirements

This equipment is to be installed in accordance with:

- The product installation instructions
- The Local Authority Having Jurisdiction (AHJ)
Grounding Requirements

An effectively grounded product is one that is intentionally connected to earth ground through a ground connection or connections of sufficiently low impedance and having sufficient current-carrying capacity to prevent elevated voltages which may result in undue hazard to connected equipment or to persons.

Grounding of the Protege system is done for three basic reasons:

1. Safety
2. Component protection
3. Noise reduction

Safety Grounding

The object of safety grounding is to ensure that all metalwork is at the same ground (or earth) potential. Impedance between the Protege system and the building scheme ground must conform to the requirements of national and local industrial safety regulations or electrical codes. These will vary based on country, type of distribution system and other factors. The integrity of all ground connections should be checked periodically.

General safety dictates that all metal parts are connected to earth with separate copper wire or wires of the appropriate gauge.

Earth Ground Connection

The DIN rail enclosure and the DIN rail modules must be grounded to a suitable single-point earth ground connection in the installation. A minimum 14AWG solid copper wire (or thicker, in accordance with local authorities) shall be used from the Protege system's earth connection points.

The DIN rail enclosure includes an earth ground single-point link connection via the metallic enclosure. This single-point link is the Protege system's earth ground. All modules that have earth ground connections and that are installed in the same enclosure shall be connected to this single point. A single-point earth ground connection avoids the creation of ground loops in the system and provides a single reference point to earth ground.
The **Dialer’s Earth Ground Connection** applies to modem model controllers only.

Note that the DIN rail enclosure earth terminal is connected to the power supply V- terminal.

There must be only one single earth grounding point per system.
Mounting the Module

The receiver module should be mounted in a location away from metal objects (such as duct work, wire mesh screens and boxes) as they will reduce RF range.

For best results, mount transmitters and repeaters so they achieve line of sight with the repeaters and/or the receiver. This usually means they should be mounted as high as possible.
Jumper Configuration

Configuring the Inovonics Frequency Jumper

This section applies only to the NA / AUS / NZ variant of the Inovonics receiver module (PRT-IVO-IF).

The Inovonics EchoStream Receiver can use a range of radio frequencies and must be configured based on your geographic area using the frequency jumper.

The frequency jumper is labeled NZ AUS and is located on the Inovonics side of the board.

If using the device in **North America**, ensure that the frequency jumper is removed from the pins:

If using the device in **New Zealand**, place the jumper on the left two pins, marked NZ, to set the frequency range to 921-928 MHz:

If using the device in **Australia**, place the jumper on the right two pins, marked AUS, to set the frequency range to 915-928 MHz:

If the device is powered on, remove and restore the power source to apply the change.
Configuring the Inovonics EchoStream Select Jumper

This section applies only to the European variant of the Inovonics receiver module (PRT-IVO-IF-EU).

If you are using Inovonics EchoStream Select products in your system, you need to enable EchoStream Select compatibility on this device using the ES jumper.

The jumper is labeled **ES** and is located on the Inovonics side of the board:

![EchoStream Select Jumper Diagram]

To enable EchoStream Select compatibility, place the jumper over the ES pins:

![Jumper Placement Diagram]

If there are no EchoStream Select products being used in your system, remove the jumper from the ES pins.

If the device is powered on, remove and restore the power source to apply the change.
Power Requirements

Power to the Inovonics receiver module is supplied by the N+ and N- terminals, and also supplies the onboard Inovonics EchoStream receiver.
When the receiver module is connected via ethernet, module power is also supplied by the N+ and N- terminals.

If the receiver module is inserted into an existing section of the RS-485 module network, both module and network power are supplied by the N+ and N- terminals.
Connection of the communications and network power should be performed according to the diagram shown.
It is important that the N+ network communications power be 12VDC supplied from an independent battery backed power supply unit capable of supplying the required voltage to all devices on the RS-485 network.

The 12V N+ and N- communication input must be supplied from only one point. Connections from more than one 12V supply may cause failure or damage to the unit or the device supplying network power.
Encrypted Module Network

The Protege Inovonics receiver module incorporates encrypted RS-485 communications technology. Network power is supplied by the N+ and N- terminals.

Connection of the communications and network power should be performed according to the diagram shown. It is important that the N+ network communications power be 12VDC supplied from an independent battery backed power supply unit capable of supplying the required voltage to all devices on the RS-485 network.

The 12V N+ and N- communication input must be supplied from only one point. Connections from more than one 12V supply may cause failure or damage to the unit or the device supplying network power.

End of Line (EOL) Resistors

The 330 ohm EOL (End of Line) resistor provided in the accessory bag must be inserted between the NA and NB terminals of the first and last modules on the RS-485 network. These are the modules physically located at the ends of the RS-485 network cabling.

- **First Module on RS-485 Network**
- **Last Module on RS-485 Network**
Relay Output

The receiver module has one onboard Form C relay output. The connection example shows the control of an external LED indicator.
The Inovonics receiver module can communicate with the Protege controller via a 10/100 ethernet connection using the encrypted UDP protocol.

When installing an ethernet connection the module should be interfaced using a standard segment (<100m in length) and should be connected to a suitable ethernet hub or switch:

Temporary direct connections can be used for onsite programming by using a standard ethernet cable.

Installing the module on an active network requires knowledge of the configuration and structure for the network. Always consult the network or system administrator and ask them to provide you with a fixed IP address that can be assigned to the module.
Defaulting the IP Address

If you don't know the IP address you can set it back to the default address of 192.168.1.3

1. Locate the default jumper next to the ethernet port on the PRT-IVO-IF side of the board.

The jumper should be in the normal operating position on the two pins closest to the edge of the board.

2. Power down the unit
3. Place the jumper on the two pins furthest from the edge of the board

4. Power up the unit for 30 seconds
5. Power down the unit
6. Move the jumper back to its original position.
7. Power up the unit
Module Configuration

Configuration of the Inovonics receiver module is carried out using the built-in web interface. To access the web interface, open an internet browser and type the IP address of the module into the address bar.

When attempting to view the web interface from a network that uses a proxy server, ensure the browser connection options are configured to recognize local addresses.

Logging in for the First Time

1. Open a web browser and enter the default IP address of **192.168.1.3**
2. Enter the default operator login of **admin** with the password **admin**.
   
   For security reasons, this password should be changed before deployment.
3. Click **Sign In**.

Configuration

Programming the IP address, subnet mask, and default gateway requires knowledge of the network and subnet that the system is connected to. You should always consult the network or system administrator before programming these values.

IP Config

The module can be configured to use either a static or dynamic IP address.

- **Physical Address**: The MAC address of the module.
- **Enable DHCP**: When enabled, the module will use DHCP to dynamically allocate an IP address instead of using a static IP address. To use this there must be a DHCP server on the network you are attempting to connect to.
- **IP Address**: The module must be programmed with a valid TCP/IP address to allow it to connect to the system controller. By default the IP address is set to 192.168.1.3.
- **Subnet Mask**: Used in conjunction with the IP address, a netmask must be configured to allow access to the appropriate node on the subnet. By default this is set to 255.255.255.0.
- **Gateway**: Used in conjunction with the IP address, the gateway can be configured to allow access to a router for external communications beyond the subnet to which the module is connected. By default this is set to 192.168.1.1.
- **DNS Server**: Defines the IP address of the DNS Server if one is used.

Controller Network Config

The receiver module needs to know which controller it should communicate with.

- **UDP IP/Host**: The IP address or host name of the controller.
- **UDP Resolved IP/Host**: If a dynamic connection is used, you can confirm the controller’s IP address by viewing this field.
- **UDP Port**: The UDP port defines the port the expander uses to connect to the controller. This must match the controller.
When connecting to a controller that is running firmware version 2.08.886 or higher, module comms and TLCD comms ports (9450 & 9460) over ethernet are disabled by default. You will need to enable these ports for the module to communicate with the controller, by adding commands to the controller programming.

- To enable Module Comms UDP/TCP (9450) add the commands:
  ```
  EnableModuleUDP = true
  EnableModuleTCP = true
  ```
- To enable Touch Screen Comms UDP (9460) add the command:
  ```
  EnableTLCDCommsUDP = true
  ```

**Restart Device**

Use this option to restart the module.

**Device Information**

The device information page displays the serial number, hardware revision, and firmware version of the receiver module.

This page is also used to upgrade the module’s firmware by putting the device into boot mode then transferring a firmware file to the device by TFTP.

**User Management**

The module comes with two default users:

<table>
<thead>
<tr>
<th>Username</th>
<th>Password</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin</td>
<td>admin</td>
</tr>
<tr>
<td>user</td>
<td>user</td>
</tr>
</tbody>
</table>

When logged in as admin, the operator can access all pages and change any parameter. In comparison, the user account permits access to the main (home) and device information pages.

To edit a user, click on the appropriate checkbox, then click **Edit**. This opens a new page where the user settings can be changed.

For security reasons, we recommend you change the password of the admin user before deployment.
Configuring Protege GX and Protege WX

The Inovonics receiver module facilitates integration between Protege GX or Protege WX and the Inovonics wireless sensor network.

The receiver module registers in Protege as a reader expander and is linked to Inovonics wireless devices using inputs and credential types.

Prerequisites for Protege GX and Protege WX

The following prerequisite components must be installed and operational.

**Required Protege GX Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protege GX</td>
<td>4.2.194.5 or higher</td>
</tr>
<tr>
<td>Protege GX Controller</td>
<td>With PRT-IVO-IF versions 24 and above: 2.08.849 or higher</td>
</tr>
<tr>
<td></td>
<td>With PRT-IVO-IF versions below 24: 2.08.783 or higher</td>
</tr>
</tbody>
</table>

**Required Protege WX Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protege WX Controller</td>
<td>With PRT-IVO-IF versions 24 and above: 4.00.359 or higher</td>
</tr>
<tr>
<td></td>
<td>With PRT-IVO-IF versions below 24: 4.00.290 or higher</td>
</tr>
</tbody>
</table>

In order to configure the integration, advanced mode must be activated on the Protege WX controller.

Adding the Module in Protege GX

1. Navigate to Sites | Controllers.
2. Right-click on the controller connected to the Inovonics module and click the Module addressing button. The module will come online and register as a reader expander. Readress the module if required.
3. Navigate to Expanders | Reader expanders and click Add to add the new module.
4. Assign a Name, e.g., Inovonics Module.
5. Set the Physical address to match the module address within the configuration window.
6. Click Save.
7. The pop-up Configure module window shows the module's default inputs and outputs. Ensure the correct Type is selected for the Inovonics module (PRT-IVO-IF).
8. Click Add now.

Adding the Module in Protege WX

1. Navigate to Wizards | Expanders Wizard.
2. At the bottom of the Setup Wizard screen, click Step 2 - Auto Detection.
3. The Inovonics (PRT-IVO-IF) module will come online and register as a reader expander. Rename the automatically assigned module name to Inovonics Module.
4. Click Step 3 - Additional Modules.
5. Click Save and Return to Menu.
6. The **Expander Programming** window is displayed. Set the number of doors to 2 and check the **Program** checkbox to the right.
7. Click **OK**. The reader expander will register with the controller and restart.
8. Navigate to **Expanders | Reader Expanders**. If the newly added Inovonics module reader expander was not renamed in Step 3 above you can rename it here.
9. Click **Save**.

**Linking Inputs to Inovonics Devices**

1. Navigate to **Programming | Inputs**.
2. Select an input to link to the Inovonics devices or click **Add** to create a new input.
3. Set the following **Address** options:
   - **Module type**: Reader expander
   - **Module address**: the Inovonics module **Physical address** as assigned above.
4. In the **Commands** field add the command: `GenericDeviceID=#`
   where # is the serial number of the Inovonics device.

   Enter the full serial number of the device, including the first two digits in small font.

   If the device is a multi-button remote or a device with multiple inputs, define which specific button/input will trigger the input operation by adding a comma and the button/input number.

   For example, `GenericDeviceID=12345678,4` means the input is linked to button 4 of device number 12345678. If the button/input number is not specified, button 1/input 1 will be linked to the input by default.
5. Click **Save** and download the changes to the controller.

**Inputs Table (PRT-IVO-IF)**

This section applies only to the NA / AUS / NZ variant of the Inovonics Receiver Module (PRT-IVO-IF).

Refer to the table below to correctly program the specific button/input that will trigger the input operation.

<table>
<thead>
<tr>
<th>Wireless Transmitter</th>
<th>Product Code</th>
<th>Input Number</th>
<th>Physical Link</th>
<th>Alarm Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Transmitter</td>
<td>EN1210</td>
<td>1</td>
<td>Input</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td>Universal Transmitter Dual Inputs</td>
<td>EN1212</td>
<td>1</td>
<td>Input 1</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Input 2</td>
<td></td>
</tr>
<tr>
<td>Universal Transmitter Dual Inputs with Wall Tamper</td>
<td>EN1216</td>
<td>1</td>
<td>Input 1</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Input 2</td>
<td></td>
</tr>
<tr>
<td>Universal Transmitter with EOL protection</td>
<td>EN1215EOL</td>
<td>1</td>
<td>Input</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td>Door/Window Transmitter</td>
<td>EN1210W</td>
<td>1</td>
<td>Input</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Reed</td>
<td></td>
</tr>
<tr>
<td>Door/Window Transmitter with EOL protection</td>
<td>EN1215WEOL</td>
<td>1</td>
<td>Input</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Reed</td>
<td></td>
</tr>
<tr>
<td>Wireless Transmitter</td>
<td>Product Code</td>
<td>Input Number</td>
<td>Physical Link</td>
<td>Alarm Messages</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>----------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Water Resistant Pendant Single Button</td>
<td>EN1223S</td>
<td>1</td>
<td>Button Press</td>
<td>Low Battery</td>
</tr>
<tr>
<td>Water Resistant Pendant Double Button</td>
<td>EN1223D</td>
<td>1</td>
<td>Both Buttons</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td>Pendant Single Button</td>
<td>EN1233S</td>
<td>1</td>
<td>Button Press</td>
<td>Low Battery</td>
</tr>
<tr>
<td>Pendant Double Button</td>
<td>EN1233D</td>
<td>1</td>
<td>Both Buttons</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td>Multiple Condition Pendant Transmitter</td>
<td>EN1224</td>
<td>1</td>
<td>Button 1</td>
<td>Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Button 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>Button 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>Button 4</td>
<td></td>
</tr>
<tr>
<td>Multiple Condition On/Off Pendant Transmitter</td>
<td>EN1224-ON</td>
<td>1</td>
<td>Button 1</td>
<td>Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Button 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>ON</td>
<td>Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Belt Clip Transmitter Single Button</td>
<td>EN1235S</td>
<td>1</td>
<td>Button Press</td>
<td>Low Battery</td>
</tr>
<tr>
<td>Belt Clip Transmitter Double Button</td>
<td>EN1235D</td>
<td>1</td>
<td>Both Buttons</td>
<td>Low Battery</td>
</tr>
<tr>
<td>ShatterPro Transmitter</td>
<td>EN1247</td>
<td>1</td>
<td>Trigger</td>
<td>Low Battery</td>
</tr>
<tr>
<td>Bill Trap Transmitter</td>
<td>EN1249</td>
<td>1</td>
<td>Bait Bill removed</td>
<td>Tamper Low Battery</td>
</tr>
<tr>
<td>High Traffic Four Element Motion Detector</td>
<td>EN1261HT</td>
<td>1</td>
<td>Sensor</td>
<td>Tamper Low Battery</td>
</tr>
<tr>
<td>PIR</td>
<td>EN1260</td>
<td>1</td>
<td>Sensor</td>
<td>Tamper Low Battery</td>
</tr>
<tr>
<td>Pet Immune PIR</td>
<td>EN1262</td>
<td>1</td>
<td>Sensor</td>
<td>Tamper Low Battery</td>
</tr>
<tr>
<td></td>
<td>EN1263</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ceiling Mount PIR</td>
<td>EN1265</td>
<td>1</td>
<td>Sensor</td>
<td>Tamper Low Battery</td>
</tr>
<tr>
<td></td>
<td>EN1266</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Inputs Table (PRT-IVO-IF-EU)

This section applies only to the European variant of the Inovonics Receiver Module (PRT-IVO-IF-EU).

Refer to the table below to correctly program the specific button/input that will trigger the input operation.

<table>
<thead>
<tr>
<th>Wireless Transmitter</th>
<th>Product Code</th>
<th>Input Number</th>
<th>Physical Link</th>
<th>Alarm Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Universal Transmitter Dual Inputs with Wall Tamper</td>
<td>EE1216</td>
<td>1</td>
<td>Input 1</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Input 2</td>
<td></td>
</tr>
<tr>
<td>Water Resistant Pendant Single Button</td>
<td>EE1223S</td>
<td>1</td>
<td>Button Press</td>
<td>Low Battery</td>
</tr>
<tr>
<td>Water Resistant Pendant Double Button</td>
<td>EE1223D</td>
<td>1</td>
<td>Both Buttons</td>
<td>Case Tamper Low Battery</td>
</tr>
<tr>
<td>Belt Clip Transmitter Double Button</td>
<td>EE1235D</td>
<td>1</td>
<td>Both Buttons</td>
<td>Low Battery</td>
</tr>
<tr>
<td>Ceiling Mount PIR</td>
<td>EE1265</td>
<td>1</td>
<td>Sensor</td>
<td>Tamper Low Battery</td>
</tr>
</tbody>
</table>

Input States

The inputs that are linked to the Inovonics devices will appear in one of four states in a status list. Each state is outlined below:

<table>
<thead>
<tr>
<th>Input State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed</td>
<td>The input is closed and in normal operating state, registered and polling with the module</td>
</tr>
<tr>
<td>Open</td>
<td>The input has been triggered and received by the module</td>
</tr>
<tr>
<td>Tamper</td>
<td>The case tamper has been triggered on an Inovonics device and received by the module</td>
</tr>
<tr>
<td>Short Circuit</td>
<td>The Inovonics device has lost polling with the module and is offline. This will take place approximately 30 minutes after loss of polling with the module</td>
</tr>
</tbody>
</table>

Trouble Inputs

Each Inovonics receiver module can monitor 2 trouble inputs used to report trouble conditions such as module communications problems.

Trouble inputs are used to monitor the module status and in most cases are not physically connected to an external input.

The following table details the trouble inputs that are configured in the system and the trouble type and group that they activate.

<table>
<thead>
<tr>
<th>Input Number</th>
<th>Description</th>
<th>Type</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>RDxxx:01</td>
<td>Module Tamper</td>
<td>Tamper</td>
<td>System</td>
</tr>
<tr>
<td>RDxxx:16</td>
<td>Module Communication</td>
<td>Module Lost</td>
<td>System</td>
</tr>
</tbody>
</table>

Replace 'xxx' with the appropriate address of the module that you are programming.
Creating Trouble Inputs to Monitor Low Battery on Inovonics Remote Devices

In order for Protege to monitor and report low battery function on a connected Inovonics remote device, a dedicated trouble input must be created. The trouble input will be associated with the Inovonics device via its unique Device ID, similar to the assignment of inputs to Inovonics devices.

The table below indicates the Contact ID event codes which will be sent to the monitoring station:

<table>
<thead>
<tr>
<th>Trouble</th>
<th>Contact ID Event Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device offline / Polling fail</td>
<td>357</td>
</tr>
<tr>
<td>Device has low battery</td>
<td>384</td>
</tr>
</tbody>
</table>

Linking trouble inputs to Inovonics devices

1. Navigate to Programming | Trouble inputs.
2. Select a trouble input to link to the Inovonics device or click Add to create a new input.
3. Set the following Address options:
   - Module type: Reader expander.
   - Module address: the Inovonics module Physical address as assigned above.
   - Module input: This cannot be 01-16 as these are reserved.
4. In the Commands field add the command: GenericDeviceID=# where # is the serial number of the device.
   Enter the full serial number of the device, including the first two digits in small font.
5. Click Save and download the changes to the controller.

Battery Events

Events are generated to indicate the battery level of the Inovonics devices assigned to inputs and used for access control.

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery OK</td>
<td>The Inovonics device battery has registered as OK with the module and no action is required.</td>
</tr>
<tr>
<td>Battery Low</td>
<td>The Inovonics device battery has registered as low with the module. Replace device battery when possible.</td>
</tr>
</tbody>
</table>

Access Control

Creating a Credential Type

1. In Protege GX, navigate to Sites | Credential types.
   In Protege WX, navigate to Users | Credential Types.
2. Click Add to create a new credential type, e.g. Inovonics Remotes.
3. Set the Format to Numeric.
4. Click Save.

Creating a Door Type and Linking to Credential Type and Door

1. Navigate to Programming | Door types and create a new door type, e.g. Inovonics Credential.
2. Set the Entry reading mode to Custom.
3. In the **Entry credential types** section, add the new **Inovonics** credential type.
4. Set the **Exit reading mode** to Custom.
5. In the **Exit credential types** section, add the new **Inovonics** credential type.
6. Click **Save**.
   
   **Important:** Do not enable antipassback.

7. Navigate to **Programming | Doors** and assign the new door type to the door to be controlled by Inovonics remotes.
8. Click **Save**.

### Linking an Inovonics Module to a Door

1. Navigate to **Expanders | Reader expanders** and select the Inovonics module.
2. In the **Commands** field add **InovonicsCredential=#**
   where # is the database ID of the Inovonics credential type.
3. Click **Save**.
4. Select the **Reader 1** tab and assign the **Reader 1 door** to be controlled, e.g. Inovonics Door RD1 DRI.
5. Click **Save**.

### Creating an Access Level

1. Navigate to **Users | Access levels** and **Add** an access level for the door to be controlled by the Inovonics device, e.g. Inovonics Access.
2. Go to the **Doors** tab.
3. Click **Add** and select the **Door** to be controlled for this access level, then click **Ok**.
4. Click **Save**.

### Linking to a User

1. Navigate to **Users | Users** and select or add a user requiring access to the Inovonics device controlled door.
2. In the **Credentials** section, enter into the **Credential** field of the Inovonics Credential Type the serial number of the Inovonics device to be used for access.
   
   **When entering the serial number as a credential the leading zeros must not be included.**

3. Go to the **Access levels** tab.
4. Click **Add** and select the Inovonics **Access level** to be assigned to the user, then click **Ok**.
5. Click **Save**.

   **Remember to download the above settings to the controller before testing.**
Error Code Indication

When the module attempts to register or communicate with the system controller a registration error can be generated indicating that it was not successful.

Error Code Display

The following table is only valid if the fault indicator is constantly on and the status indicator is flashing red. If the fault indicator is flashing the module requires a firmware update or is currently in firmware update mode. The status indicator will flash red with the error code number. The error code number is shown with a 250ms on and off period (duty cycle) with a delay of 1.5 seconds between each display cycle.

<table>
<thead>
<tr>
<th>Flash</th>
<th>Error Description</th>
</tr>
</thead>
</table>
| 1     | **Unknown Error Code**  
The error code returned by the system controller could not be understood by the module. |
| 2     | **Firmware Version**  
The firmware version on the module is not compatible with the system controller. To clear this error, update the module using the module update feature in the controller’s web interface. |
| 3     | **Address Too High**  
The module address is above the maximum number available on the system controller. To clear this error change the address to one within the range set on the system controller, restart the module by disconnecting the power. |
| 4     | **Address In Use**  
The address is already in use by another module. To clear this error set the address to one that is not currently occupied. Use the view network status command to list the attached devices, or the network update command to refresh the registered device list. |
| 5     | **Controller Secured Registration Not Allowed**  
The controller is not accepting any module registrations. To allow module registrations use the network secure command to change the setting to not secured. |
| 6     | **Serial Number Fault**  
The serial number in the device is not valid. Return the unit to the distributor for replacement. |
| 7     | **Locked Device**  
The module or system controller is a locked device and cannot communicate on the network. Return the unit to the distributor for replacement. |
Mechanical Layout

162.0mm / 6.38"
91.4mm / 3.60"
### Technical Specifications

The following specifications are important and vital to the correct operation of this product. Failure to adhere to the specifications will result in any warranty or guarantee that was provided becoming null and void.

#### Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRT-IVO-IF</td>
<td>Protege Inovonics Wireless Receiver Module (for use in the US, AU, NZ)</td>
</tr>
<tr>
<td>PRT-IVO-IF-EU</td>
<td>Protege Inovonics Wireless Receiver Module (for use in the EU region)</td>
</tr>
</tbody>
</table>

#### Power Supply

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Voltage</td>
<td>11-14V DC</td>
</tr>
<tr>
<td>Operating Current</td>
<td>160mA @ 13.0V DC (Typical)</td>
</tr>
</tbody>
</table>

#### Communication

<table>
<thead>
<tr>
<th>Module Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-485</td>
<td>Module Network</td>
</tr>
<tr>
<td>Ethernet</td>
<td>110/100Mbps Ethernet Communication Link</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operating Frequency</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>902-928 MHz</td>
</tr>
<tr>
<td>AUS</td>
<td>915-928 MHz</td>
</tr>
<tr>
<td>NZ</td>
<td>922-928 MHz</td>
</tr>
<tr>
<td>EU</td>
<td>868-870 MHz</td>
</tr>
</tbody>
</table>

#### Outputs

<table>
<thead>
<tr>
<th>Output Type</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay Output</td>
<td>1 Form C Relay - 7A 250V Max resistive</td>
</tr>
</tbody>
</table>

#### Dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (L x W x H)</td>
<td>162.0mm x 91.4mm x 27.9mm (6.38 x 3.60 x 1.10”)</td>
</tr>
<tr>
<td>Net Weight</td>
<td>180g (6.4oz)</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>240g (8.5oz)</td>
</tr>
</tbody>
</table>

#### Operating Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>-10° to 55°C (14° to 131°F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-10° to 85°C (14° to 185°F)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0% - 93% non-condensing, indoor use only (relative humidity)</td>
</tr>
</tbody>
</table>

It is important that the unit is installed in a dry cool location that is not affected by humidity. Do not locate the unit in air conditioning or a boiler room that can exceed the temperature or humidity specifications.

Integrated Control Technology continually strives to increase the performance of its products. As a result these specifications may change without notice. We recommend consulting our website ([www.ict.co](http://www.ict.co)) for the latest documentation and product information.
New Zealand and Australia

General Product Statement
The RCM compliance label indicates that the supplier of the device asserts that it complies with all applicable standards.
European Standards

CE Statement


This equipment complies with the rules, of the Official Journal of the European Union, for governing the Self Declaration of the CE Marking for the European Union as specified in the above directive(s).

WEEE

Information on Disposal for Users of Waste Electrical & Electronic Equipment

This symbol on the product(s) and / or accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product(s) to designated collection points where it will be accepted free of charge.

Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.
UK Conformity Assessment Mark

General Product Statement
The UKCA Compliance Label indicates that the supplier of the device asserts that it complies with all applicable standards.
FCC Compliance Statements

FCC Rules and Regulations CFR 47, Part 15, Subpart B

This equipment complies with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. Operation is subject to the following two conditions:

⦁ This device may not cause harmful interference.
⦁ This device must accept any interference received, including interference that may cause undesired operation.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.
Industry Canada Statement

ICES-003
This class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.
CAN ICES-3 (A)/NMB-3(A)
Disclaimer and Warranty

Disclaimer: Whilst every effort has been made to ensure accuracy in the representation of this product, neither Integrated Control Technology Ltd nor its employees shall be liable under any circumstances to any party in respect of decisions or actions they may make as a result of using this information. In accordance with the ICT policy of enhanced development, design and specifications are subject to change without notice.

For warranty information, see our Standard Product Warranty.
Designers & manufacturers of integrated electronic access control, security and automation products.

Designed & manufactured by Integrated Control Technology Ltd.

Copyright © Integrated Control Technology Limited 2003-2022. All rights reserved.

Disclaimer: Whilst every effort has been made to ensure accuracy in the representation of this product, neither Integrated Control Technology Ltd nor its employees shall be liable under any circumstances to any party in respect of decisions or actions they may make as a result of using this information. In accordance with the ICT policy of enhanced development, design and specifications are subject to change without notice.