



# GainMaker Node Seg2Way Transponder Installation Instructions

## Overview

### Audience

These installation instructions are intended for all cable system operators or installers who need to install and configure a Seg2Way™ Transponder in a GainMaker® Node.

### Introduction

The Seg2Way Transponder, part number 4026194.xx, is designed to be installed in the GainMaker Node housing lid. The transponder must be configured before it is added to your network and activated by CheetahNet™. These installation instructions describe how to install and configure the transponder.

**Note:** Refer to the CheetahNet Administration Guide (Tollgrade part number 6510-30-0357) provided with your CheetahNet software for information on adding the transponder device to your network after it is configured.

The Seg2Way Transponder can be configured in either of the following conditions:

- On site after it is installed in a powered node
- In a powered node on a test bench

### Qualified Personnel

Only appropriately qualified and skilled service personnel should attempt to install, operate, maintain, and service this product.



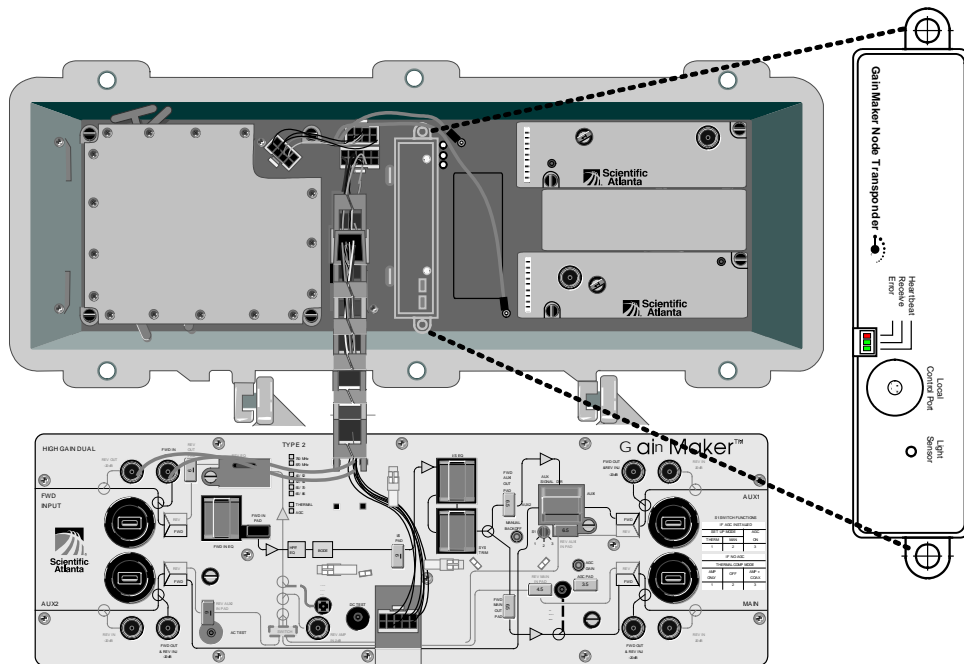
**WARNING:**

Allow only qualified and skilled personnel to install, operate, maintain, and service this product. Otherwise, personal injury or equipment damage may occur.

# Transponder Installation Procedure

## Installing the Transponder

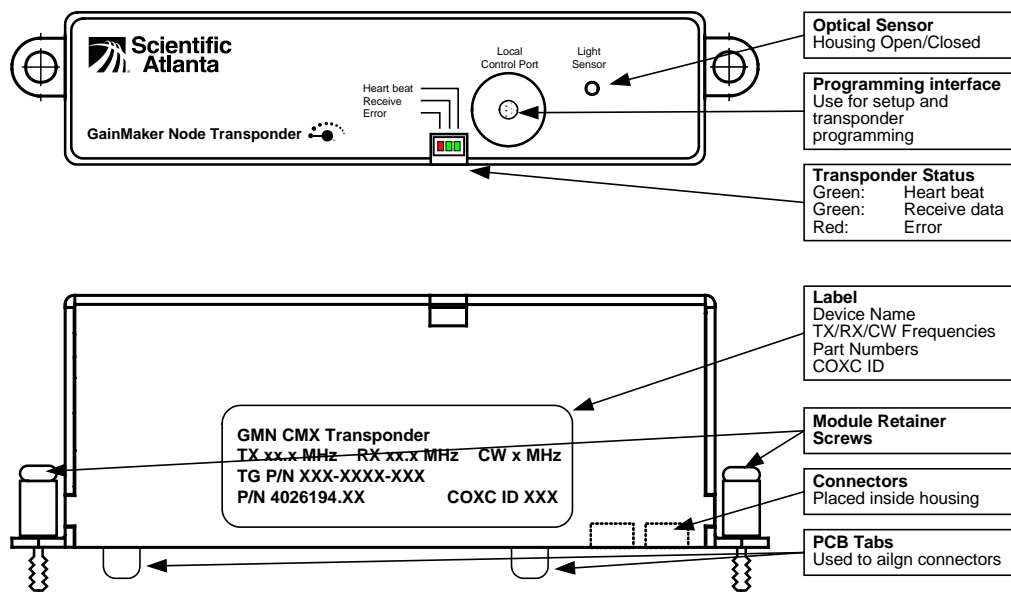
The transponder module mounts in the lid of the GainMaker Node housing. The transponder mounting location is shown in the following illustration.



**Note:** You must mount the transponder module in the GainMaker Node housing before you can configure the transponder module.

Perform the following steps to mount the transponder in the node housing.

- 1 Record the Seg2Way RFID and physical location of the node for reference by network management software and future troubleshooting purposes. Write the physical location on the label on the transponder module.



- 2 Open the GainMaker Node housing. Note the position and orientation of the transponder in the lid of the housing.



**WARNING:**

Protect yourself from electric shock and our system from damage! Take precautions when working with this equipment. Certain components can deliver electrical shock or cause burns.

- 3 Position the transponder module with the product label facing you. Align the connectors on the other side of the transponder module with the mating connectors on the interface board. Use the two tabs on the other side of the transponder as a guide to position the transponder module correctly.
- 4 Push down on the transponder module until it clicks into place and then tighten the two module retaining screws on the transponder to 6.2 in-lb (0.7 Nm).
- 5 Continue to *Transponder Configuration Procedure* (on page 5) to configure the transponder's communication features.

## Transponder Signaling

Three front-panel status LEDs indicate the transponder's operating condition.

<b>LED</b>	<b>Indication</b>
Heart Beat	This green LED flashes approximately once per second if the transponder receives the correct voltage.
Receive	This green LED flashes if data packages are detected (e.g., to another transponder). If the data packages are addressed to this transponder, the LED remains lit.
Error	This red LED flashes during start-up. If this LED illuminates during operation, a system failure has occurred.

# Transponder Configuration Procedure

## Introduction

The transponder must be configured before it is added to your network and activated by CheetahNet.

The following equipment is required:

- The Test2Way for GainMaker (GMTTest2Way) software application
- A local interface cable, part number 1004044
- A Windows-based desktop or laptop computer with a DB-9 serial port connector

## Configuring the Transponder

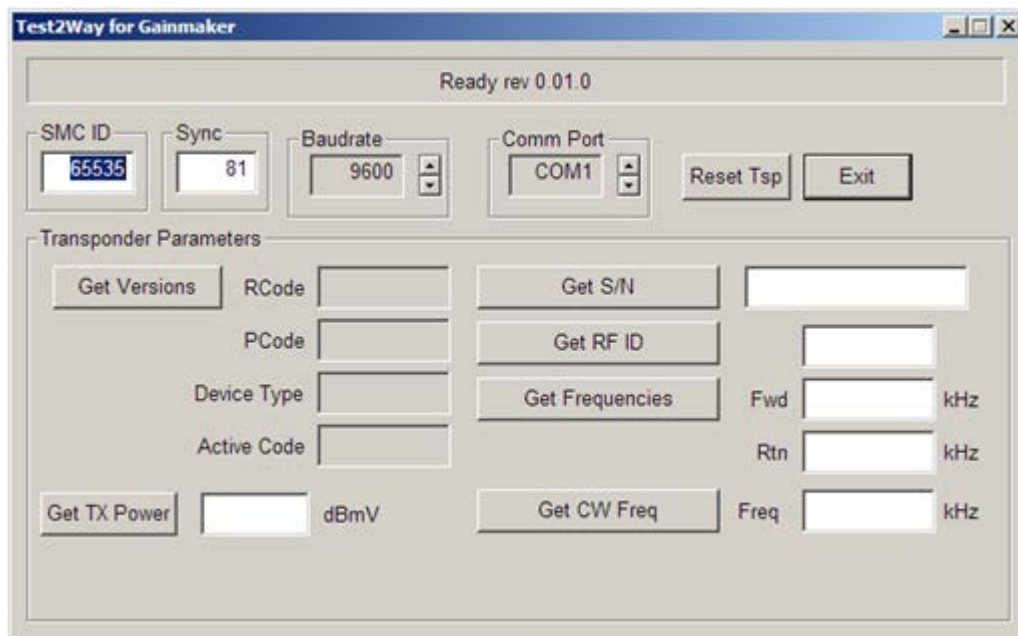
Complete the following steps to configure the transponder.

- 1 Attach the local interface cable from the computer's serial port to the transponder's local control port.

**Note:** Make sure the plugs are fully inserted into the ports.

- 2 Launch the GMTTest2Way application.

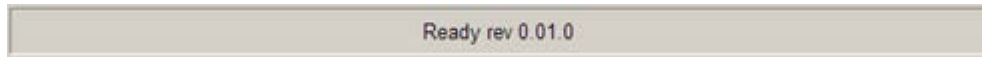
**Results:** The main screen displays.



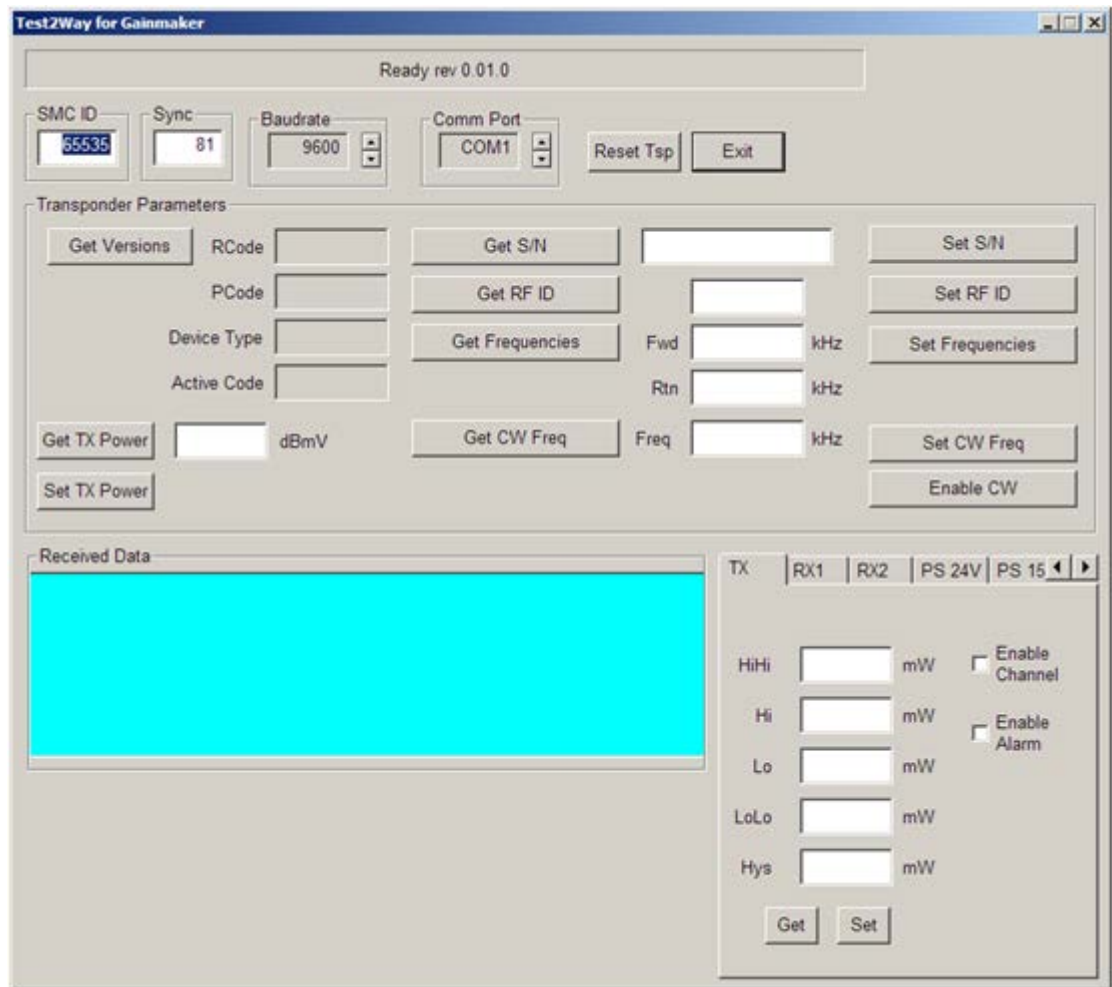
## Transponder Configuration Procedure

**Note:** The parameters shown on the main screen are read-only status displays. Configuring the transponder requires making changes to these values, which can only be done from the expanded configuration screen.

- 3 To display the configuration screen, hold down the **Ctrl + Shift** keys and click the **status box** at the top of the main screen.



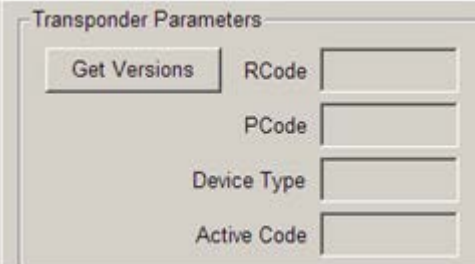


**Results:** The configuration screen displays.






- 4 Continue to *Configuration Screen Controls* (on page 7) for information on setting the configuration parameters for your specific installation.

## Configuration Screen Controls

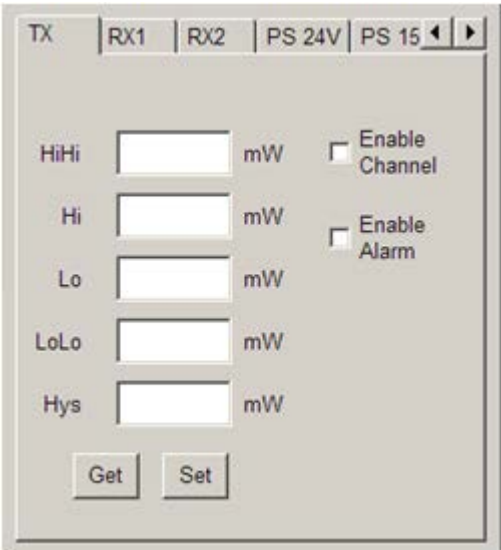
The following table explains each of the configuration screen controls. Use these controls to set the configuration parameters as required for your specific installation.

Configuration Screen Control	Description
Get Versions Button	<p>Click the <b>Get Versions</b> button to retrieve the following, read only, version information:</p> <ul style="list-style-type: none"> <li>■ RCode - the RCode version</li> <li>■ PCode - the PCode version</li> <li>■ Device Type - the type of device</li> <li>■ Active Code - the code currently running, "R" for RCode or "P" for PCode</li> </ul> <p><b>Note:</b> The RCode and PCode versions are the same for the GainMaker Seg2Way transponder. The Active Code should be "P" when the transponder is running normally. The only time the active code should be "R" is during a firmware download.</p> 
Get S/N Button Set S/N Button	<p>Click the <b>Get S/N</b> button to read the transponder serial number. When the configuration screen is opened, the serial number can be changed.</p> <p>Enter a new value in the text box and click the <b>Set S/N</b> button to change the transponder serial number.</p> <p><b>Note:</b> This should only be used in a production environment and never in the field.</p> 
Get RF ID Button Set RF ID Button	<p>Click the <b>Get RF ID</b> button to read the transponder RF ID.</p> <p>Enter a new value in the text box and click the <b>Set RF ID</b> button to change the transponder RF ID.</p> <p><b>Note:</b> The RF ID is a semi-unique value. This value should only be changed if a transponder is being moved from one location to another or when advised by factory personnel.</p> 

Transponder Configuration Procedure

Configuration Screen Control	Description
<p>Get TX Power Button Set TX Power Button dBmV Field</p>	<p>Click the <b>Get TX Power</b> button to display the transmitter power level in the dBmV field.</p> <p>Enter a new value in the text box and click the <b>Set TX Power</b> button to set the transmitter power level.</p> <p><b>Note:</b> This value controls the transmit power of the transponder. The Seg2Way transponder protocol uses a value known as 2-way attenuation. The value varies from 0 to 15 and roughly corresponds to the allowable transmit power levels of 24 to 50 dBmV. For this reason, the set value may not necessarily be the same as the value read back. For example, a set value of 30 dBmV will be read back as 29 dBmV.</p> 
<p>Get Frequencies Button Set Frequencies Button Fwd kHz Field Rtn kHz Field</p>	<p>Click the <b>Get Frequencies</b> button to display the transponder's transmit and receive frequencies in the in the Fwd kHz and Rtn kHz fields respectively.</p> <p>Enter new values in the corresponding text boxes and click the <b>Set Frequencies</b> button to set the transponder's transmit and receive frequencies.</p> <p><b>Note:</b> The transmit and receive frequencies are displayed and/or set in kHz. For example, to set the a frequency of 8,500,000 Hz (8,500 kHz) enter the value 8500.</p> 
<p>Get CW Freq Button Set CW Freq Button Enable CW Button Freq kHz Field</p>	<p>Click the <b>Get CW Freq</b> button to display the frequency used by CW (Continuous Wave) carrier in the Freq kHz field.</p> <p>Enter a new value in the text box and click the <b>Set CW Freq</b> button to set the frequency used by CW (Continuous Wave) carrier.</p> <p><b>Note:</b> CW functionality is not enabled by default. This functionality must be enabled through GMTTest2Way, or it will not be available in the field through CheetahNet. Click the <b>Enable CW</b> button to enable. There is no way to remove this functionality once it is enabled.</p> 



Configuration Screen Control	Description
<p>Alarms Tab Alarm Value Fields</p>	<p>The alarm tabs (for TX, RX1, RX2, etc.) are used to configure the alarm limits, hysteresis, channel enable, and alarm enable for each of the available analog and digital channels.</p> <p>Click the <b>Get</b> button to display the current values.</p> <p>Enter a new value in the corresponding text box and click the <b>Set</b> button to set the various alarm values.</p> 

For Information

## For Information

### If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.





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