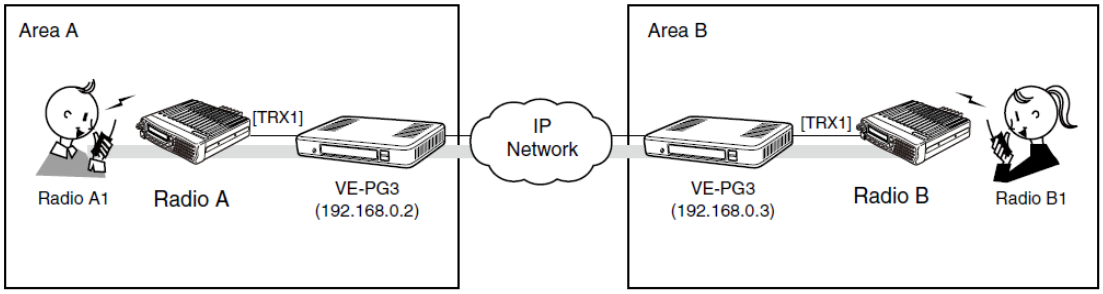
Icom America, Inc.
12421 Willows Rd NE
Kirkland, WA 98034

VE-PG3 Application Notes

RADIO TO RADIO OVER IP

Introduction



In this configuration, we have two geographically isolated radios that are connected through two VE-PG3 units over an IP network. Because OPC-2275 cables are used to route common audio to and from the radios to the VEPG3 input ports, radios can be programmed as digital or analog depending on the customers' requirements. VE-PG3 programming is not affected by the digital or analog state of the radio.

In this scenario, when Radio A1 keys up and is received by Radio A, its signal will be passed over the network to the Area B VE-PG3 and to Radio B, where it is transmitted.

Equipment

- Two VE-PG3 RoIP Gateway units connected through a properly configured IP network.
- Two F5061 series radios
- Two portable radios
- CAT-5 LAN cables
- Two OPC-2275 cables to connect the mobile radios to the VE-PG3 units

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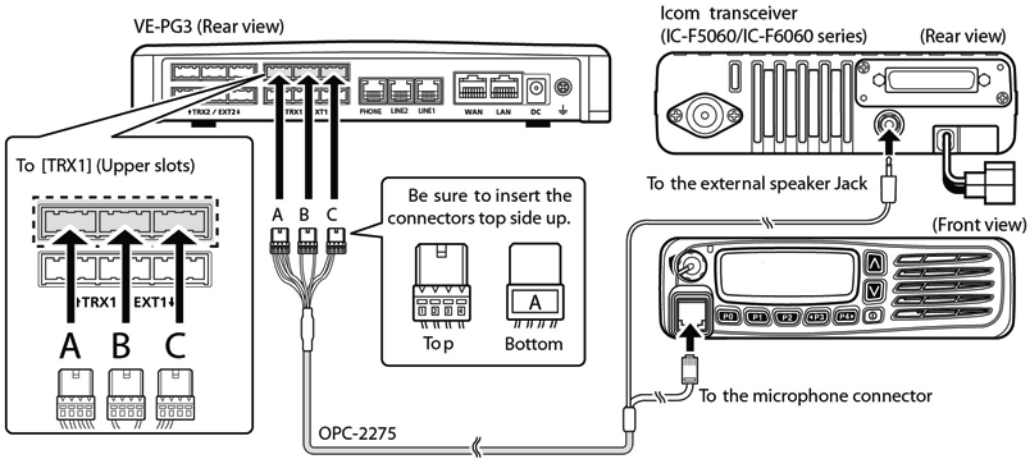
Prerequisites

- A professionally-configured IP network that allows the VE-PG3 device addresses to communicate
- F5061 radio software: Latest revision
- F5061 firmware: Latest revision
- VE-PG3 firmware: v2.14 or greater

Connection

Connect the VE-PG3 units and radios as shown in the following diagram using ports TRX1 and TRX2 specifically.

Note: Ensure that the radio and VE-PG3 are turned off before connecting.



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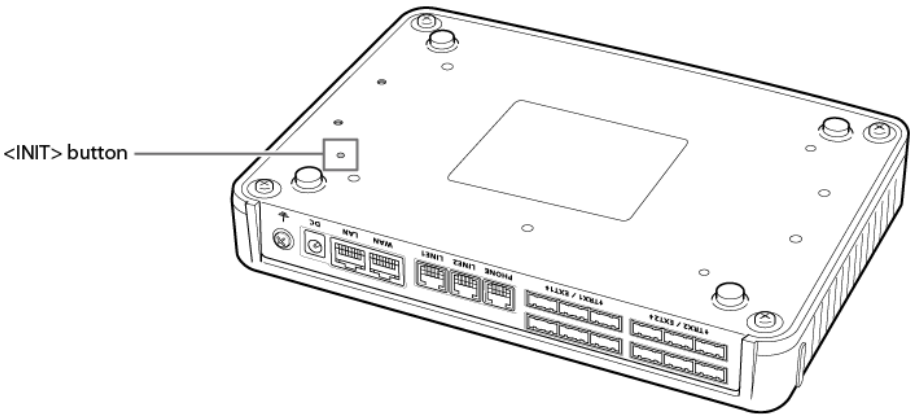
IMPORTANT:

To remove any settings that may conflict with the following configurations, it is extremely important to do a complete reset of each VE-PG3 before proceeding. Failure to do so will result in inconsistent results.

Reset the VE-PG3

1. Power on the VE-PG3.
2. Set the VE-PG3 to factory defaults (initialize) by pressing and holding the reset button on the bottom of the case until the VE-PG3 Display flashes.



3. Repeat for the second VE-PG3.

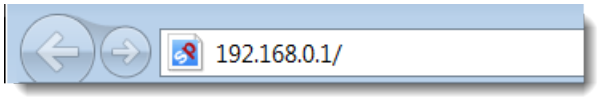
Area A VE-PG3 Programming

The following paragraphs describe programming that applies to the *Area A* VE-PG3. While much of the Area B programming is the same, start Area B programming at the end of the Area A programming steps.

Area A: Setting the VE-PG3 IP Address

To be used in your system, you will need to change the default IP addresses of both VE-PG3s to match your network's IP plan as directed by your IP network administrator.

1. Open your web browser. The default IP address is: 192.168.0.1.



2. Enter the newly assigned IP address (as assigned by your network administrator) of the VE-PG3 in the address field.
3. After pressing Enter, the Login Authentication window will appear.

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4. Enter the default user name and password: “admin” for User Name and Password.

5. Go to **Network Settings/IP Address**.

6. Enter your network’s IP address for this device.
7. Click **Apply**.

Area A: Operating Mode

The Operating Mode setting is a *global* setting for this VEPG3 and will determine the VEPG3’s signal routing capabilities for all devices connected to the VE-PG3.

There are 2 choices for the Operation Mode setting:

- **Bridge Mode**- Designed for communications where a PTT initiates the routing of a call to a pre-determined port(s) for immediate reception by the target radio. No radio or phone IDs are entered to initiate this routing. This applies to devices connected to one VEPG3 or between devices on different VEP-G3 units. This mode is commonly used between conventional radios.
- **Converter Mode**- Each PTT must be preceded by entering a target ID before the signal can be routed through the VEPG3 to other ports or to other VEPG3 units.

In this scenario, Bridge Mode is appropriate operating mode.

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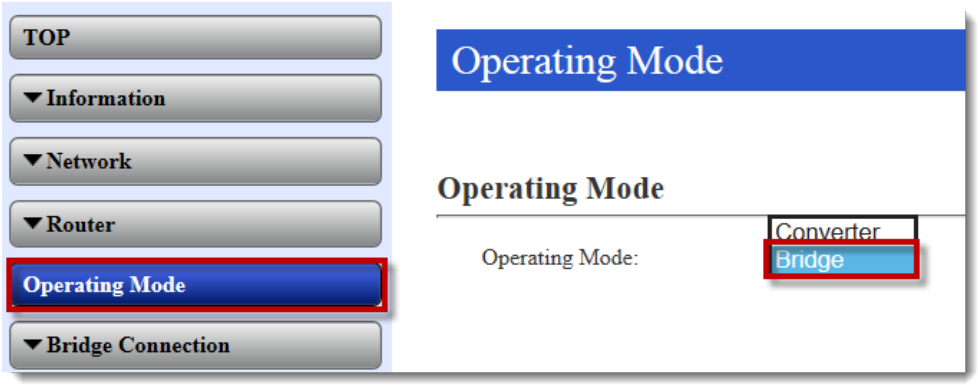
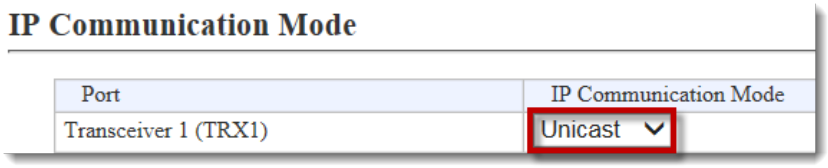
1. Go to **Operating Mode/Operating Mode** and set to **Bridge**.



2. At **IP Connection Mode/Transcriber 1 (TRX1)**, select **Unicast**.

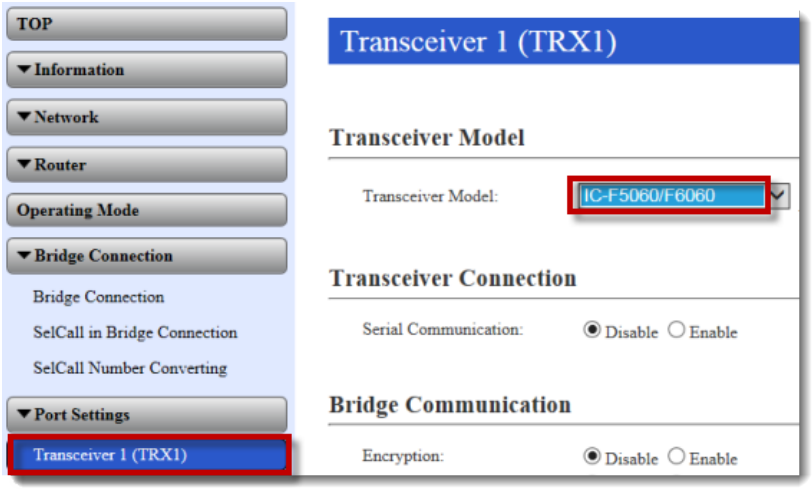


3. Click **Apply**. A message box will appear prompting you to reboot the VE-PG3.

Radio A: Port Settings (TRX1)

This window assigns various characteristics to the radio connected to the described port. In this application, no other changes are made to the TRX1 port besides assigning it as an F5061. Other models of radios can be connected here, thus requiring some settings changes.

1. Go to **Port Settings/Transceiver 1 (TRX1)**.



2. At **Transceiver Model:** select **IC-F5060/F6060**.
3. Click **Apply**.

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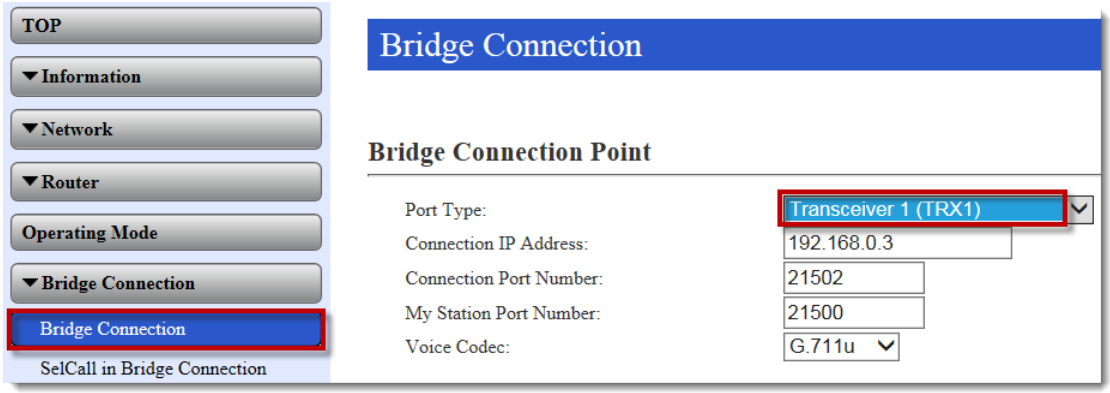
Radio A: Bridge Connection Settings (TRX1)

Bridge Connection settings specify where signals will be routed, in both directions. This can be programmed as ports and IP addresses.

1. Go to **Bridge Connection/Bridge Connection Point** and enter the following settings:
    - **Port Type**: Select **Transceiver 1 (TRX1)**
    - **Connection IP Address**: Enter **192.168.0.3** (example only, follow system IP plan). In this example, this IP address is that of the VEPG3 on the ***other*** site (Area B).
    - **Connection Port Number**: Enter **21502.** This is the port number of the radio on Area B.
    - **My Station Port Number**: Enter **21500.** This is ***this*** radio's port number
    - **Voice Codec**: Select **G.711u.** In this example, all voice processing within the VEPG3 occurs in G.711u format before it is converted back to audio and sent out to the recipient radio.



2. Click **Apply**.
3. At **List of Bridge Connection Point Entries**, confirm that **Connection Status** shows "During Transmit".

Area B VE-PG3 Programming

Many of the following steps are programmed exactly the same as the Area A settings. Any differences are noted in each paragraph.

Area B: Set the VE-PG3 IP Address

Use a different IP address as defined by your network IP plan.

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Area B: Set the Operating Mode

Verify **Operating Mode/Operating Mode** is set to **Bridge** and **Unicast**, exactly like the Area A VE-PG3.

Radio B: Port Settings (TRX1)

Verify that **Port Settings/Transceiver 1 (TRX1)** is set to F5060/F6060 and click **Apply,** exactly like Radio A in Area A. Note: *TRX1* is being used again as it is being set on a separate VE-PG3.

Radio B: Bridge Connection Settings (TRX1)

These setting differ slightly from those for Radio A.

Go to **Bridge Connection/Bridge Connection Point** and enter the following settings:

- **Port Type**: Select **Transceiver 1 (TRX1)**
- **Connection IP Address**: Enter **192.168.0.2** (example only, follow system IP plan). In this example, this IP address is that of the VEPG3 on the *other* site (Area A).
- **Connection Port Number**: Enter **21500.** This is the port number of the radio on Area A.
- **My Station Port Number**: Enter **21502.** This number is *this* radio's port number.

  Note: port numbers are reversed as compared to those set in Area A programming.
- **Voice Codec**: Select **G.711u.**