

# Creating Cross Band Repeaters or Extended Radio Coverage Using IP-223s



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# Creating Crossband Repeaters or Extended Radio Coverage Using IP-223s

## 1.0 General

This application note is intended to show how to create a crossband repeater or extend radio coverage using IP-223's in either a **LAN** (Local Area Network) or **WAN** (Wide Area Network).

## 2.0 Local Crossband Repeating

To create a local crossband repeater, an IP-223's radio line 1 and line 2 can be placed into crosspatch, see Figure 1.

The crosspatch offers receive audio from one (1) line as transmit audio to the adjacent line, along with appropriate **PTT** (Push-To-Talk) signaling. The crosspatch can be fixed or dynamically applied—by a function tone from an associated console.



FIGURE 1. Local Crossband Diagram

## 2.1 Local Crosspatch Setup

The crosspatch configuration is accomplished in the Telex System Manager application on the Crosspatch page.

**Navigation:** Open Telex System Manager and click the Crosspatch tab.

**Note:** Refer to the Telex System Manager Technical Manual for user instructions.

### 2.1.1 Line to Line Crosspatch

The Enable Line-Line check box allows audio from one line to be routed to the other line. TX traffic from the console will override the crosspatch to allow dispatchers to take control of the line.

To **permanently set a line-to-line crosspatch**, do the following:

1. Select the **Enable Line-Line** check box.
2. Select the **Record Configuration to Device** button.
3. From the Record Configuration window, select the **source** and **destination** devices.
4. Click **Record**.

*The webpage and firmware are updated with the configuration.*

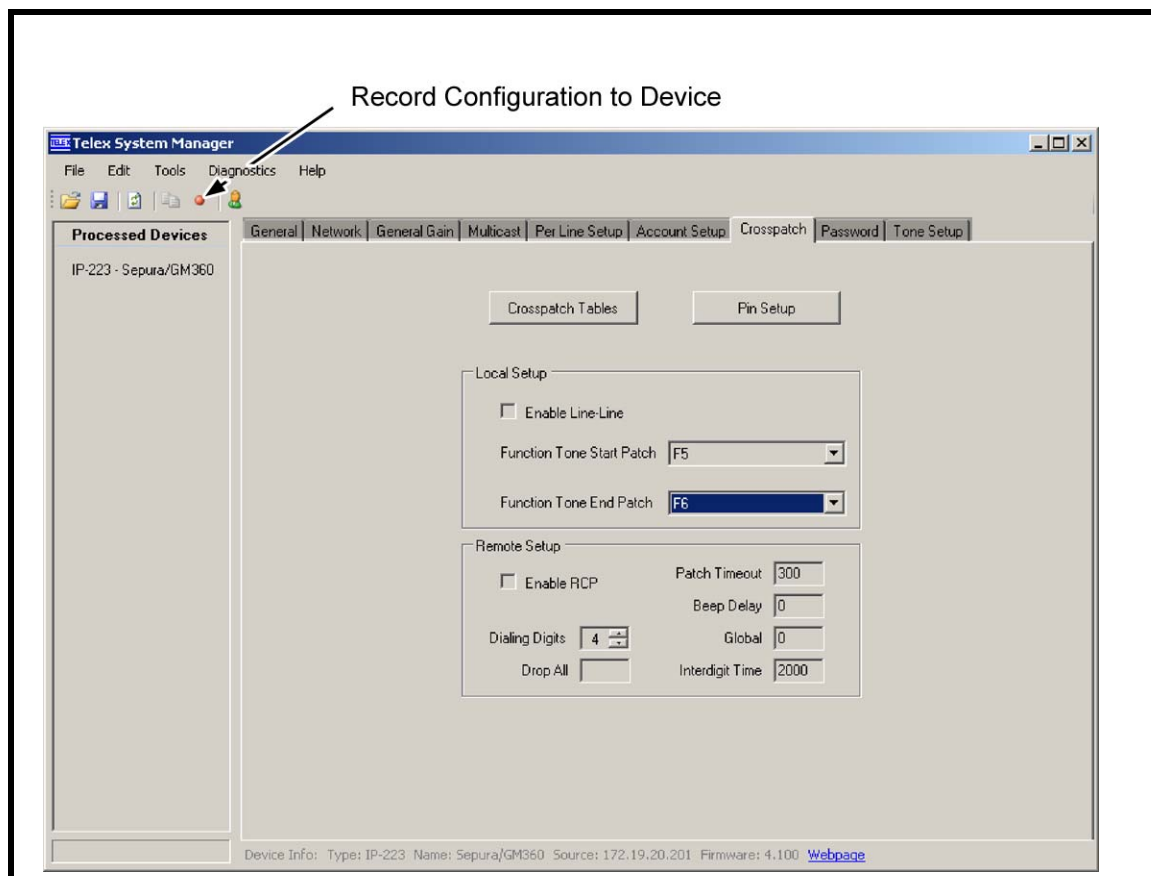


FIGURE 2. Telex System Manager—Crosspatch Page

### 2.1.2 Local Setup: Crosspatch with Function Tone

To **configure a function tone initiated crosspatch**, do the following:

1. From the Function Tone Start Patch drop down menu, select a **function tone** to initiate the crosspatch.
2. From the Function Tone End Patch drop down menu, select a **function tone** to terminate the crosspatch.
3. Click **Record**.

*The webpage and firmware are updated with the configuration.*

**Example:** The example in Figure 2 shows the line-to-line crosspatch is created when the IP-223 receives an F5 function tone from an associated console. The crosspatch is released when the F6 function tone is received.

## 3.0 Extended Crossband Repeating with Two Radios

The ability to use two (2) IP-223's separated over a LAN or WAN is possible and will allow for extended RF coverage or a crossband repeater.

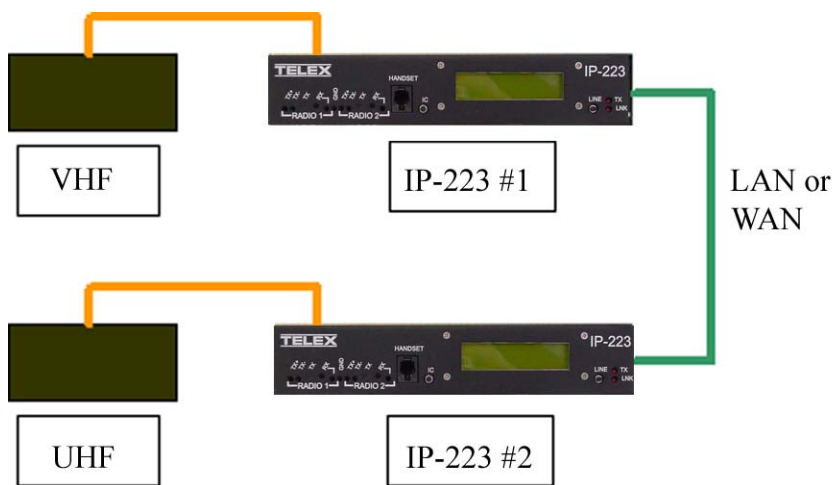


FIGURE 3. Extended Crossband with Two Radios

### 3.1 Multicast Setup

Both Unicast and Multicast are supported for this feature, enter either the static IP address of the opposite IP-223 or the desired Multicast address into both Multicast Address fields. Next the radio Tx and Rx ports on one IP-223 must be transposed, see example below.

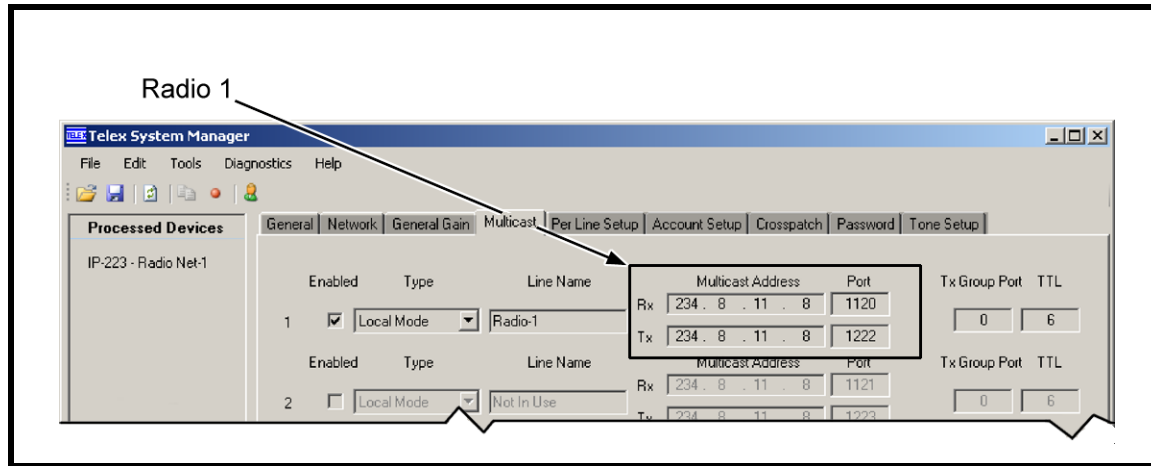


FIGURE 4. IP-223 #1 Multicast Settings

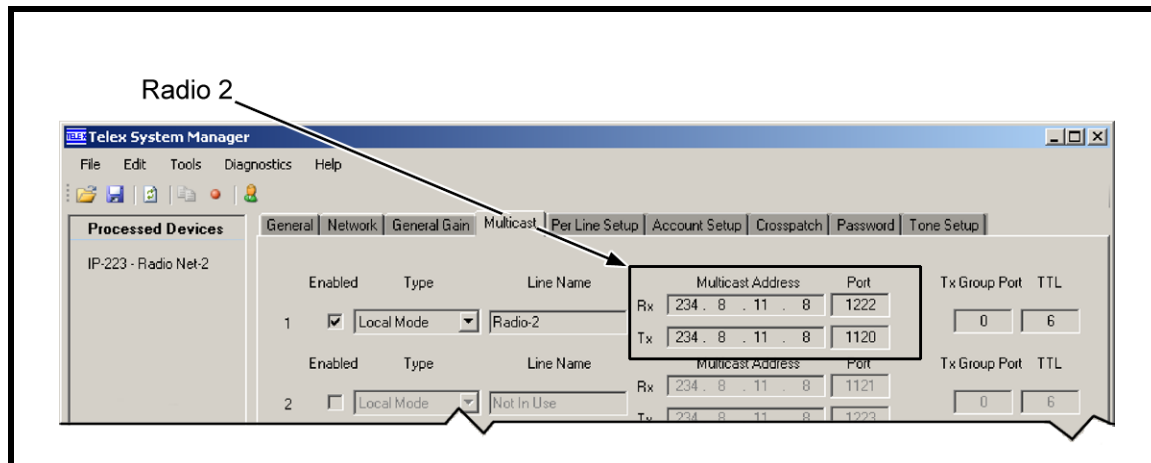


FIGURE 5. IP-223 #2 Multicast Settings

## 4.0 Extended Crossband Repeating with Three or More Radios

The ability to use IP-223's separated over a LAN or WAN is possible and allows for extended RF coverage or a crossband repeater.

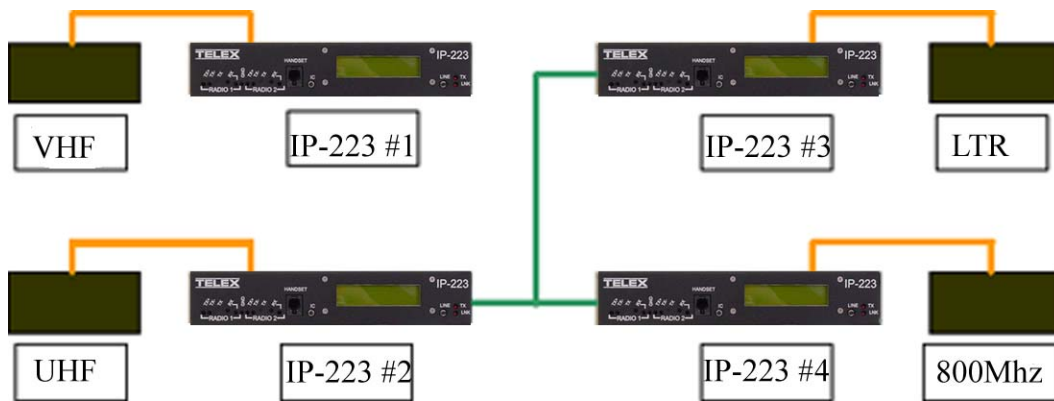


FIGURE 6. Extended Crossband with Three (3) or More Radios

## 4.1 Multicast Setup

Using Multicast for this feature. Enter the desired Multicast Address into both Multicast Address fields for all crosspatched IP-223s. The radio Tx and Rx ports must also be set to the same port number, see Figure 7

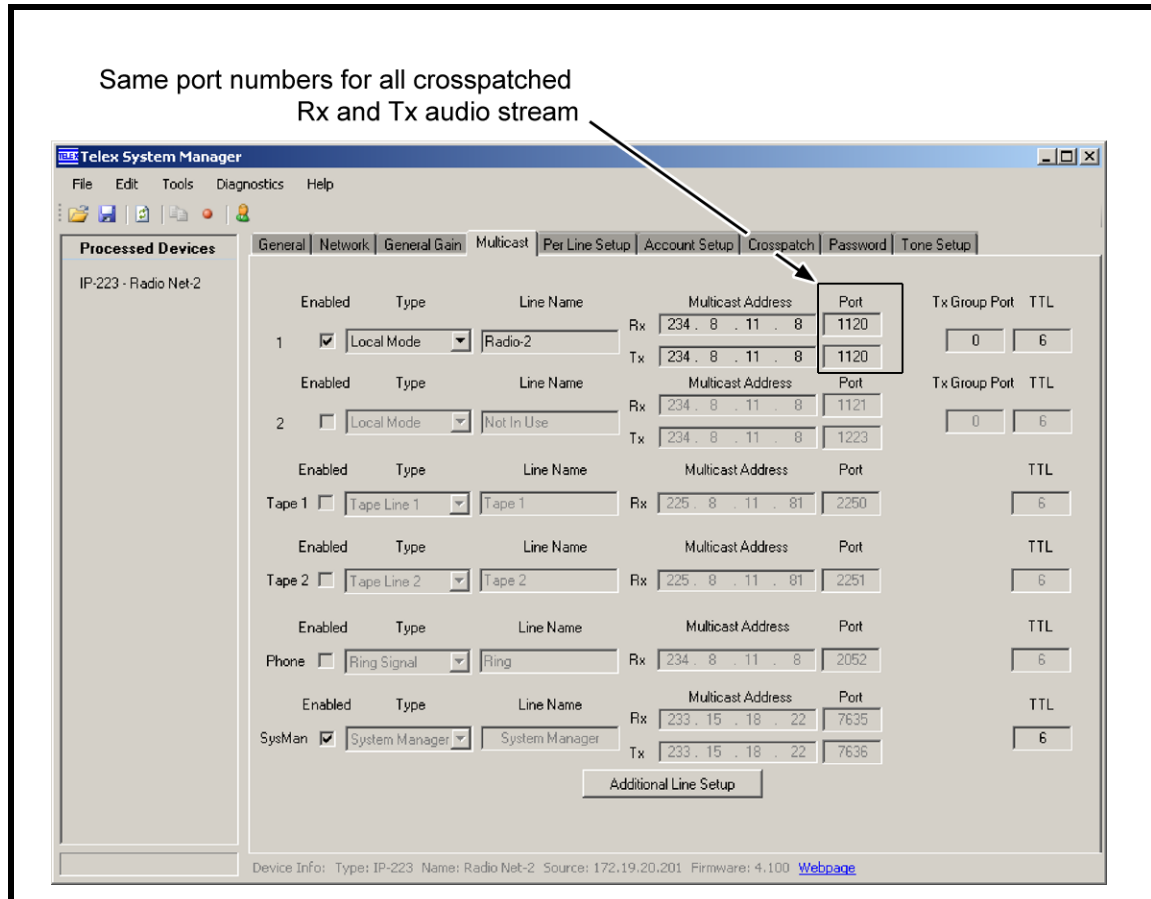


FIGURE 7. Multicast Address Setup with Three or More Radios



**Notes:**

Revision History		
<b>Document Title:</b> Creating Cross Band Repeaters or Extended Radio Coverage Using IP-223s		
<b>Document Number:</b> AN-DISPATCH-007		
Revision	Change Description	Date
A	Update brand, format and new document number. (Reference rev B)	05-AUG-2009

**Suggestions or comments:**

Please contact technical support with suggestions or comments concerning this application note.

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