

**Vertex Standard  
VXR-7000 Repeater to  
223 Series Adapter Panels**



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# Vertex Standard VXR-7000 Repeater to 223 Series Adapter Panels

## 1.0 General

This application note is intended to assist technical staff with cable assembly, software configuration and hardware setup of different 223 series adapter panels (TRA-223, DSP-223 and IP-223) to the Vertex VXR-7000 series repeater.

## 2.0 Interconnect Cable Assembly

A cable assembly is required to connect the Vertex VXR-7000's DB 25-pin accessory connector to the various 223 Series adapter panels.

Use Table 1 to manufacture this cable assembly.

TABLE 1. Cable Assembly Pin Outs

TRA-223 DB-25 Pin'	DSP-223 DB-25 Pin	IP-223 DB-25 Pin	VX DB-25	Signal
25	25	25	3	MIC +
24	24	24	6	RX +
14	14	14	12	PTT
2 and 7	2 and 7	2 and 7	1	GND
	8	8	19	D0
	21	21	18	D1
	9	9	17	D2
	22	22	16	D3

**NOTE:** The pins in the gray shaded cells are for Vertex frequency change. Up to 16 channels of control are supported.

**NOTE:** Shield wires need to be connected between both DB connector's shrouds.

## 3.0 223 Series Panels

### 3.1 TRA-223 Setup

Set the front panel dip-switch for the following settings:

TABLE 2. TRA-223 Dip Switch Settings

Switch	Setting	Signal
1	As appropriate	2-Wire = On 4-Wire = Off
2	As appropriate	4-Wire = On 2-Wire = Off
3	As appropriate	Full Duplex = On Half Duplex = Off
4	On	Squelch
5	Off	Radio Rx Level On = Speaker Off = High Impedance
6	On	Radio Tx Level On = Low level Off = High Level
7	On	Ground on PTT Relay Common
8	Off	Ground on Monitor Relay Common

**REFERENCE:** For more information, see the TRA-223 Technical Manual (P/N 803570). This document is available for download at [www.telex.com/Downloads/](http://www.telex.com/Downloads/).

### 3.2 DSP-223 Software Setup

The DSP-223 requires specific software and jumper settings.

To configure the DSP-223 for channel change using digital outputs, do the following:

1. Open the **DSP-223** application.  
*The DSP-223 Configuration Application window appears.*
2. In the Digital Output field for function tone 1, enter **1**.
3. In the Digital Output field for function tones 2–10, increment each **digital output value by 1**.

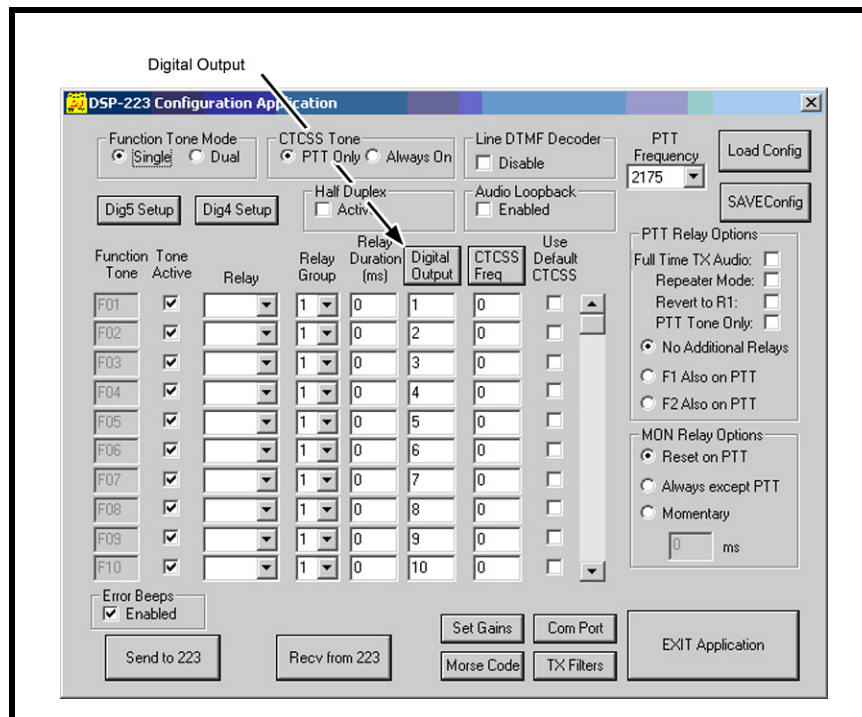


FIGURE 1. DSP-223 Configuration

#### 3.2.1 DSP-223 Jumper Settings

To set the **DSP-223 jumpers**, do the following:

1. Set the following jumpers to the **A position**:
  - J14, J15, J22, J23, J24, J25, J27.
2. Set the following jumpers to the **B position**:
  - J12 and J13.
3. Set **J16** to the center pin (hanging).

**NOTE:** J19, J20 and J21 are for selecting 2- or 4-wire operation.

**REFERENCE:** For more information, see the DSP-223 Technical Manual (P/N 803274).

### 3.3 IP-223 Setup

The IP-223 requires specific software and jumper settings.

#### 3.3.1 IP-223 Software Settings

To **configure the IP-223 software settings**, do the following:

1. Open **TSM**.
2. In the Processed Devices pane, select the **IP-223** to configure.
3. Click the **Per Line Setup** tab.  
*The Per Line Setup page appears.*
4. Select the **Local** radio button for the channel to configure.
5. Click **Configure**.  
*The Per Line Setup notebook appears. See Figure 2.*
6. In the Digital Output drop down menu for Function Tone 1, select **1**.
7. In the Digital Output drop down menu for Function Tones 2–10, increment each **digital output field by a value of 1**.

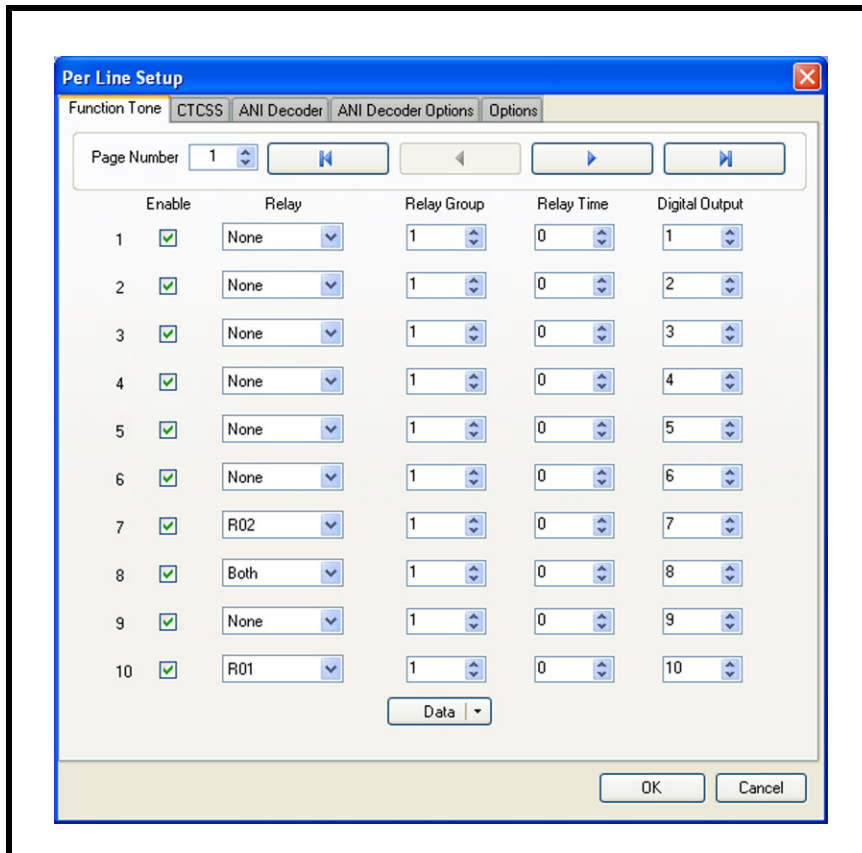


FIGURE 2. Per Line Setup Notebook—Function Tone Page

8. From the Per Line Setup notebook, click the **Options** tab.  
*The Options page appears. See Figure 3.*
9. Select the **RxAGC** check box.
10. Click **OK**.
11. From the menu bar, select **Edit|Record Configuration To Device**.  
*The Record Configuration window appears.*

12. From the Destination Device pane, select the **device** to record the configuration to.
13. Click **Record**.  
*The configuration is permanently saved to the IP-223.*

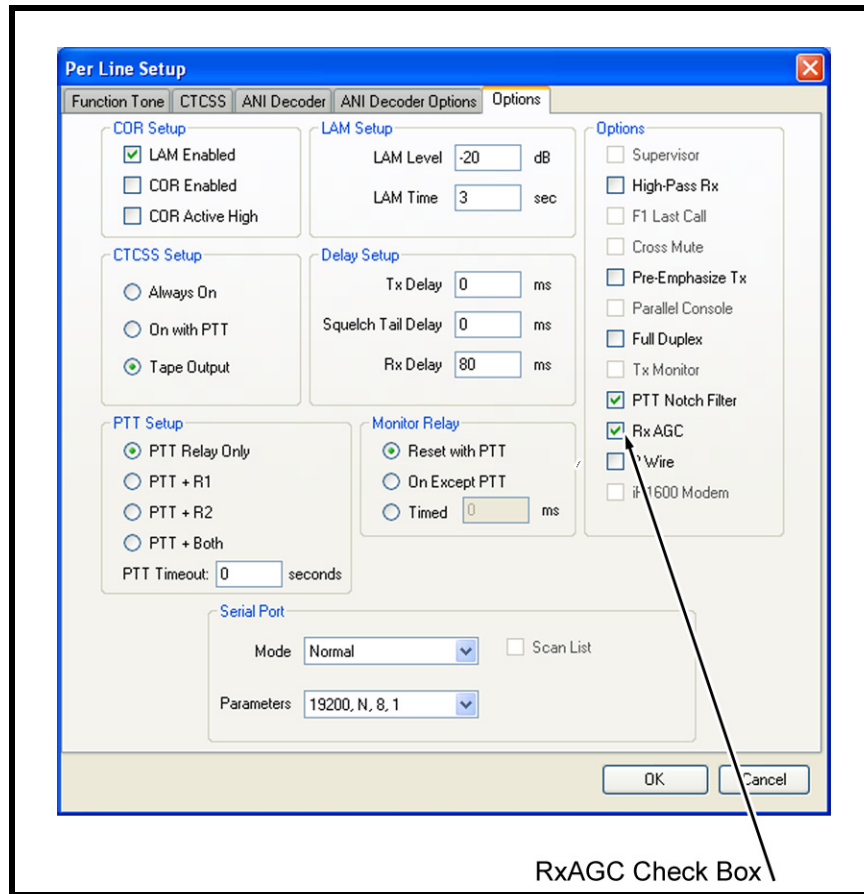


FIGURE 3. Per Line Setup Notebook—Options Page

### 3.3.2 IP-223 Jumper Settings

Use Table 3 to configure the IP-223 jumpers settings.

TABLE 3. IP-223 Jumper Settings

Line 1	Jumper Setting	Line 2
J33, J34	B = 4-Wire	J5, J6
J16, J21	A = Single Ended	J19, J20
J14	Hanging on center pin = 10K Ohm	J24
J3, J9, J11	A = Single Ended	J25, J28, J29
J13	B = High	J27
J17, J22	B = 600 Ohms	J10, J15
J8	Hanging on center pin = No pull-up voltage	J30

**REFERENCE:** For more information, see the IP-223 Technical Manual (P/N 803641)

**Notes:**



Revision History		
<b>Document Title:</b> Vertex Standard VXR-7000 Repeater to 223 Series Adapter Panels		
<b>Document Number:</b> AN-DISPATCH-047		
Revision	Change Description	Date
A	Released 03-OCT-2012	03-OCT-2012

**Suggestions or comments:**

Contact technical support with suggestions or comments concerning this application note.

**Technical Support:**

**Email:** TelexDispatchtechsupport@us.bosch.com

**Fax:** 1-402-467-3279

**Phone:** 1-800-898-6723

Bosch Security Systems, Inc.  
8601 East Cornhusker Highway  
Lincoln Nebraska 68507

**Phone: (800) 752-7560 Fax: (402) 467-3279**

**Email: Telexdispatch@us.bosch.com**  
**Web: www.telex.com**