

**Kenwood Radio
TKR-x50
To 223 Series Adapter Panel**

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Kenwood Radio TKR-x50 To 223 Series Adapter Panel

1.0 General

This application note is intended to assist technical staff with cable assembly, software configuration and hardware setup of different 23 series adapter panels (TRA-223, DSP-223, and IP-223) to the Kenwood TKR-x50 radio.

2.0 Interconnect Cable Assembly

A cable assembly is required to connect to the DB-25 pin accessory connector of the Kenwood TKR-x50 to the 223 series adapter panels.

Use Table 1 to manufacture this cable assembly.

TABLE 1. Interconnect Cable Assembly

TRA-223 DB-25 Pin	DSP-223 DB-25 Pin	IP-223 DB-25 Pin	TKR-x50 DB-25 Pin	Signal
25	25	25	9	MIC +
24	24	24	11	RX +
14	14	14	16	PTT
7	7	7	7	GND
10	10	20	x	COR
	8	8	x	D0
	21	21	x	D1
	9	9	x	D2
	22	22	x	D3

NOTE: The pins in the gray area are for frequency change of the Kenwood. The *x* indicates a programmable pin in the radio. Choose pins based on radio programming.

3.0 223 Series Panels

3.1 TRA-223

Use Table 2 to set the front panel dip switches

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

3.2 DSP-223 Programming Setup

To configure the DSP-223, do the following:

1. Open the **DSP-223 application**.
The DSP-223 Configuration Application window appears.
2. Click **Dig4 setup**.
The Dig4 Input COR Setup window appears.
3. On the Dig4 Input COR Setup window, select the **Enable Dig4 as COR Input** check box.

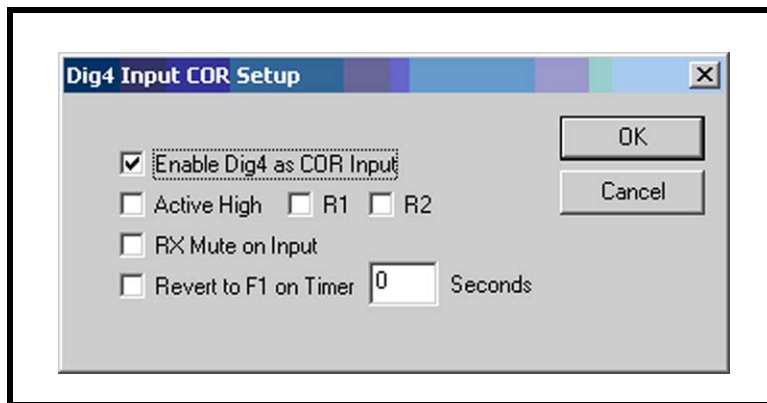


FIGURE 1. Dig4 Input COR Setup Window

4. In the Digital Output drop down menu for Function Tone 1, select **1**.
5. In the Digital Output drop down menu for Function Tones 2–10, **increment each digital output field by a value of 1**.
6. Click **Save Config**.

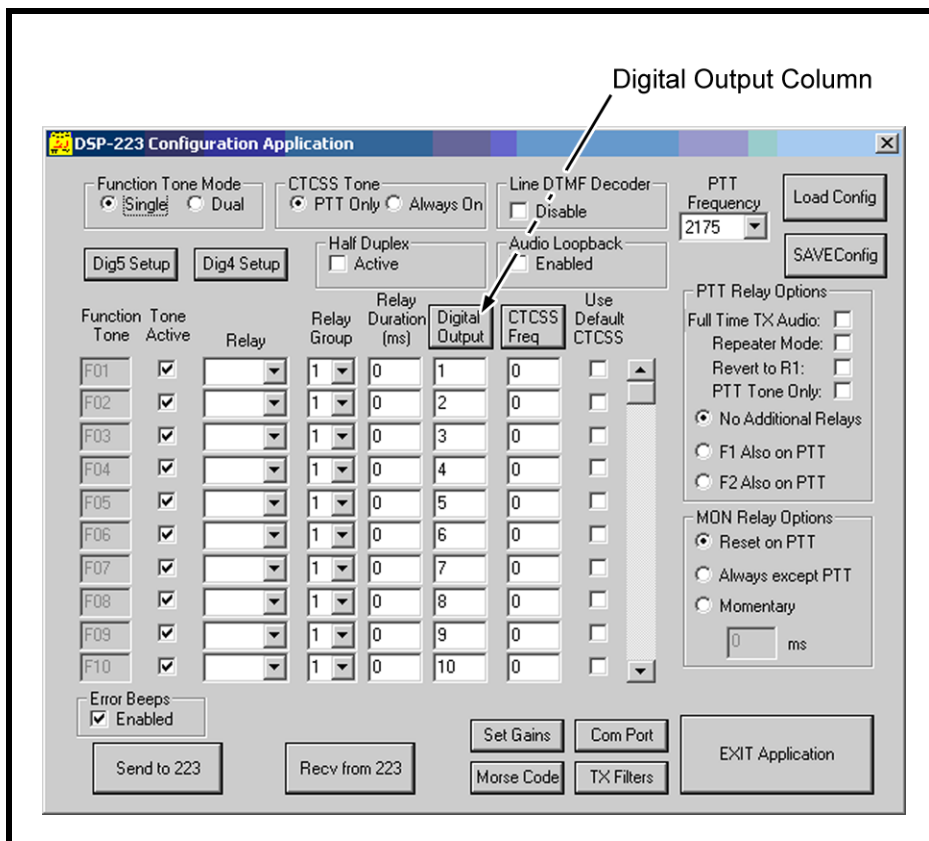


FIGURE 2. DSP-223 Configuration Application Window

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, J13
3. Solder close **JP2**.

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

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.
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**.

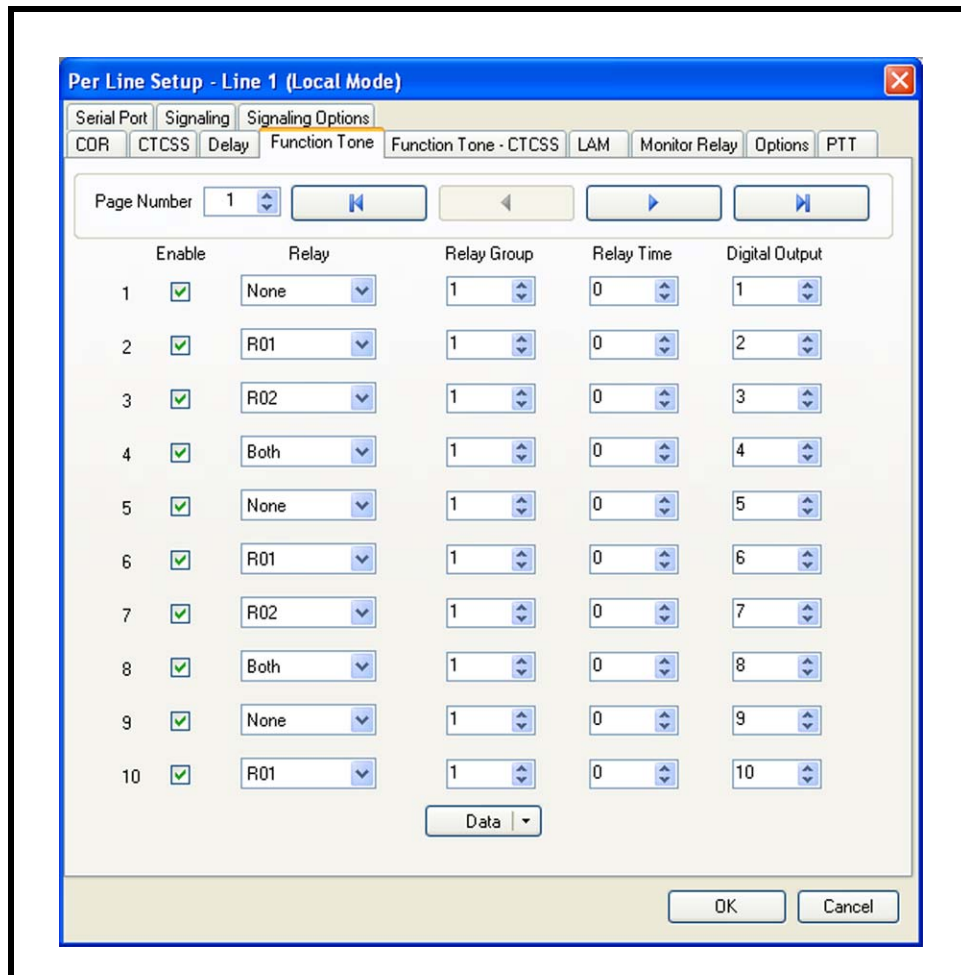


FIGURE 3. Per Line Setup—Function Tone Page

8. From the Per Line Setup notebook, click the **Options** tab.
The Options page appears.
9. Select the **RxAGC** check box.
10. Click **OK**.
11. Select **Edit|Record Configuration To Device** from the menu bar.
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 and the device reboots.

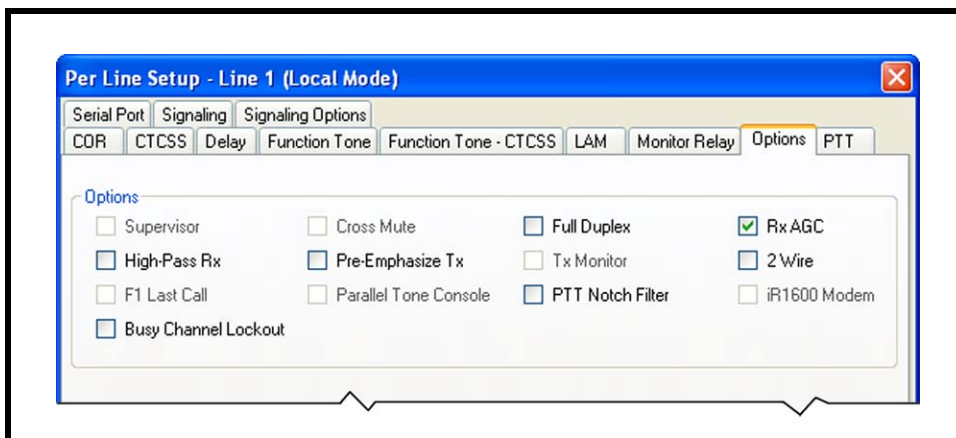


FIGURE 4. Options Page—Per Line Setup

3.3.1 IP-223 Jumper Settings

Use Table 3, to configure the IP-223 jumper 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

3.4 TKR-x50 Configuration

To configure the **TKR-x50**, do the following:

- > Set up the radio for **COR Active Low**.

REFERENCE: For more information, see manufacturer's configuration instructions for details specific to your radio model.

Revision History		
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