TELEX Application Note

Sprint Direct Connect SDC
to
223 and 224 Series Adapter Panels

VOIProven

TELEX Radio Dispatch

Sprint Direct Connect SDC to 223 and 224 Series Adapter Panels

1.0 General

This application note is intended to assist technical staff with cable assembly and setting up the hardware of different 223 and 224 Series Adaptor Panels (TRA-223, DSP-223, IP-223, and IP-224) to ONLY the Kyocera DuraPlus Sprint Direct Connect (SDC) Series phone.

NOTE: This application note only supports communications of one (1) of the following types per connected phone (phone is configured to do with PTT is pressed):

- A single dedicated Talk-Group
- A single dedicated User
- Call last received

2.0 Interconnect Cable Assembly

A cable assembly is required to connect the 4-pin headset jack of the DuraPlus phone to the various 223 and 224 Series Adaptor Panels. The cable assembly can be purchased from Digi-Key (http://www.digikey.com/) using P/N CP-254CS-ND.

Additionally, a DB-25 or DB-37 male connector and cover is required based on the installed adaptor panel being used.

Use Table 1 to manufacture this cable assembly.

TABLE 1. Cable Pin-out

All 223 Series DB-25 Pin	IP-224 DB-37 Pin	Digi-Key Cable	Signal
25	1	Red	MIC+
24	20	Black	RX+
14	24	Yellow	PTT
2 & 7	29	Green & Shield	GND

3.0 Kyocera DuraPlus Sprint Direct Connect (SDC) Series phones

3.1 Configuring a Direct Connect a Group

Before you set up a direct connect to a group, ensure the desired TeamDC group is in the phone's contact list and is operational.

To **configure a direct connect to a group**, do the following:

1. From the menu screen, select **Settings**.
2. Select **DC Settings**.
3. Select **One Touch DC**.
4. Select **Action**.
5. Select **DC a Group**.
6. Select **Contacts**.
7. Select the **desired group** from the list.
8. Select **When Screen Off**.
9. Select **Enable**.
10. Select **Exit** to return to the idle screen.
11. From the menu screen, select **Settings**.
12. Select **Keyguard**.
13. Select **Off**.
14. Select **Exit** to return to the idle screen.
15. Press the **PTT and verify the desired TeamDC group** is invoked.
16. With the cable attached to the phone headset jack, set the **headset earpiece level to 4**.

NOTE: The phone needs to be attached to the charger, no charging is provided using this connection type.

3.2 Configuring a Direct Connect to a Specific Contact

Before you set up a direct connect to a specific contact, ensure the desired contact is in the phone's contact list and is operational.

To **configure a direct connect to a specific contact**, do the following:

1. From the menu screen, select **Settings**.
2. Select **DC Settings**.
3. Select **One Touch DC**.
4. Select **Action**.
5. Select **DC a Contact**.
6. Select **Contacts**.
7. Select the **desired contact** from the list.
8. Select **When Screen Off**.
9. Select **Enable**.
10. Select **Exit** to return to the idle screen.
11. From the menu screen, select **Settings**.
12. Select **Keyguard**.
13. Select **Off**.
14. Select **Exit** to return to the idle screen.
15. Press the **PTT and verify the desired contact** is invoked.
16. With the cable attached to the phone headset jack, set the **headset earpiece level to 4**.

NOTE: The phone needs to be attached to the charger, no charging is provided using this connection type.

3.3 Configuring a Direct Connect to the Most Recent Number

To **configure a direct connect to a specific contact**, do the following:

1. From the menu screen, select **Settings**.
2. Select **DC Settings**.
3. Select **One Touch DC**.
4. Select **Action**.
5. Select **DC Most Recent Number**.
6. Select **When Screen Off**.
7. Select **Enable**.
8. Select **Exit** to return to the idle screen.
9. From the menu screen, select **Settings**.
10. Select **Keyguard**.
11. Select **Off**.
12. Select **Exit** to return to the idle screen.
13. Press the **PTT and verify the most recent number** is invoked.
14. With the cable attached to the phone headset jack, set the **headset earpiece level to 4**.

NOTE: The phone needs to be attached to the charger, no charging is provided using this connection type.

4.0 TRA-223 Series Panels

4.1 TRA-223 Setup

Set the front panel dip switch for the following settings:

Positions 6 and 7	ON
Positions 4, 5, and 8	OFF

2-Wire Operation

Position 1	ON
Positions 2 and 3	OFF

4-Wire Operation

Position 1	OFF
Positions 2 and 3	ON

NOTE: If operating in 2-wire simplex mode, Go Ahead tones are not heard at dispatch.

For more information on alignment steps, see the TRA-223 (P/N 803570) technical manual for configuration details. This document is available at:

http://www.telex.com/us/dispatch/downloads/d

4.2 TRA-223 Alignment

With phone configured and attached, the hardware levels can be set. See the alignment section in the TRA-223 manual for basic tips.

5.0 DSP-223 Series Panels

5.1 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. For 2-Wire operation, set J19 to B; set J20 and J21 to A.
   For 4-Wire operation, set J19 to A; set J20 and J21 to B.

NOTE: If operating in 2-wire simplex mode, Go Ahead tones are not heard at dispatch.

For more information on alignment steps, see the DSP-223 Technical Manual (P/N 803274) Console Line Connection section. This document is available at: http://www.telex.com/us/dispatch/downloads/d

5.2 DSP-223 Alignment

With phone configured and attached, the hardware levels can be set. See the alignment section in the DSP-223 manual for basic tips.

6.0 IP-223 Series Panels

6.1 IP-223 Jumper Settings

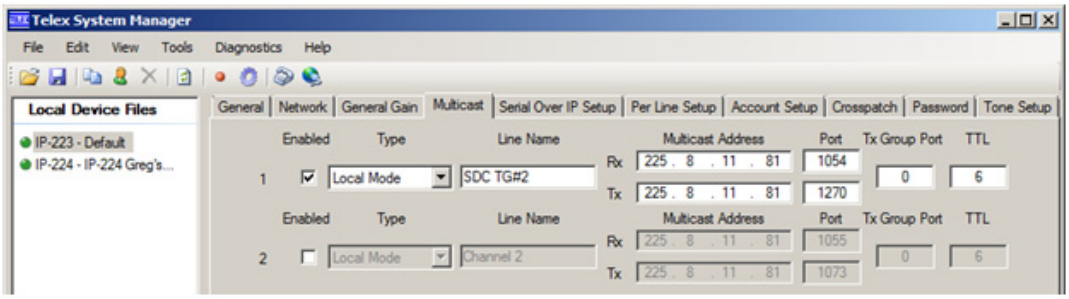
TABLE 2. IP-223 Jumper Settings

Line 1	Jumper Setting	Line 2
J33, J34	B=4-Wire	J5, J6
J16, J21	A=Single Ended	J19, J20
J14	B=10 Ω	J24
J3, J9, J11	A=Single Ended	J25, J28, J29
J13	A=Low	J27
J17, J22	B= 600 Ω	J10, J15

6.2 IP-223 Software Setup

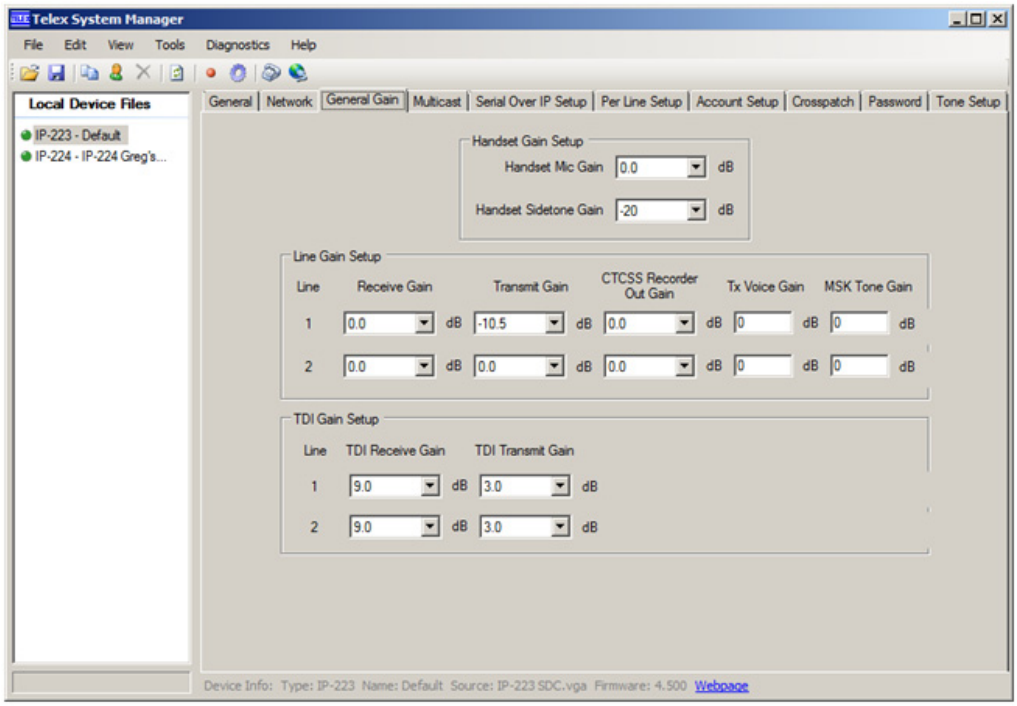
The IP-223 configuration is accomplished in the Telex System Manager application. Set up the desired IP-223 lines for local radio control and set the jumpers per the following instructions.

For more information, see the Telex System Manager Technical Manual (P/N LIT000259000). This document is available to authorized dealers for download at http://www.telex.com/us/dispatch/downloads/d

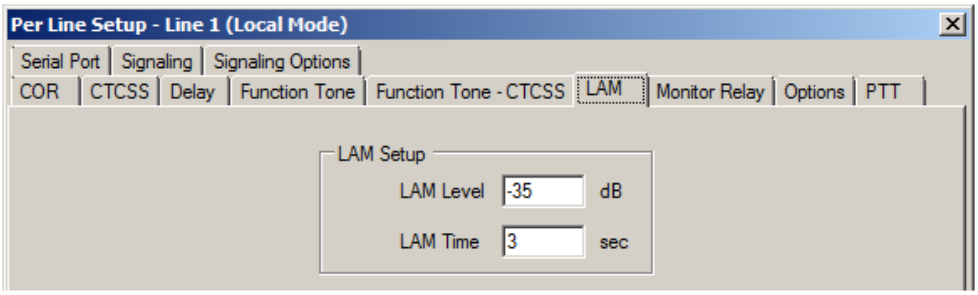


To **configure the IP-223 for local control**, do the following:

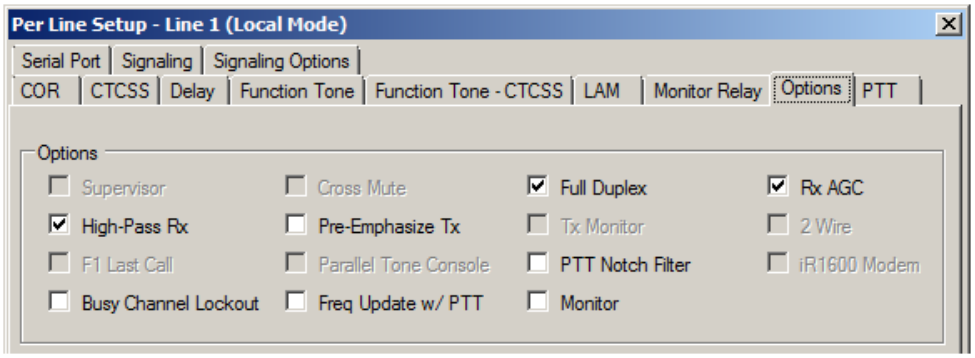
1. Open **Telex System Manager**.
2. In the Processed Devices pane, select the **IP-223** you want to configure.
3. Click the **Multicast** tab.
   The Multicast page appears.
4. Select **Enable** for the line to configure.
5. From the Type drop down menu, select **Local**.
6. In the Line Name field, enter a **name** for the line.
7. In the RX Multicast Address field, enter the **RX Multicast Address**.
8. In the Port field, enter the **port number** for the receive audio.
9. In the TX Multicast Address field, enter the **TX Multicast Address**.
10. In the Port field, enter the **port number** to transmit audio.



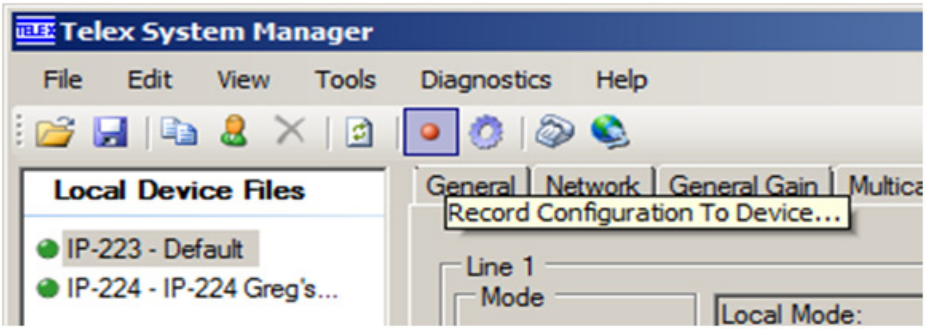
8. Click the **LAM tab**.
   The LAM page appears.



9. In the LAM Level field, enter **-35**.
10. In the Lam Time field, enter **3**.



11. Select the **Full Duplex check box**.
12. Select the **Rx AGC check box**.
13. Select the **High-Pass Rx check box**.
14. Click **OK** to close the Per Line Setup window.



15. Using the Record Configuration To Device button, push the **changes** to the device.

6.3 IP-223 Alignment

Once the phone is configured and attached, the IP-223 hardware levels can be configured.

6.3.1 Setting RX Levels

1. Set RX buffer amplifiers R175 (Line 1) or R110 (Line 2) to **Mid-range position**.
2. Set RX AGC compression RV5 (Line 1) and RV1 (Line 2) by turning the FCW (fully clockwise), then CCW (counterclockwise) **25%**.

6.3.2 Setting TX Levels

1. Set the TX buffer amplifier R47 (Line 1) or R61 (Line 5) to **Mid-range position**.

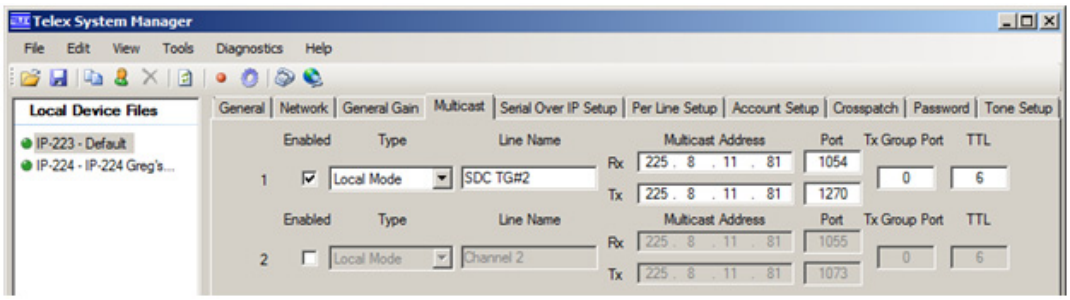
Using the VU Meter application, console generated voice peaks of -6 on the Ethernet TX traffic should give good clear audio to field units. Complete audio test to and from the console, fine tune hardware adjustments, as needed, for good clear audio to field units.

7.0 IP-224 Series Panels

7.1 IP-224 Software Setup

The IP-224 configuration is accomplished in the Telex System Manager application. Set up the desired IP-224 lines for local radio control and set the jumpers per the following instructions.

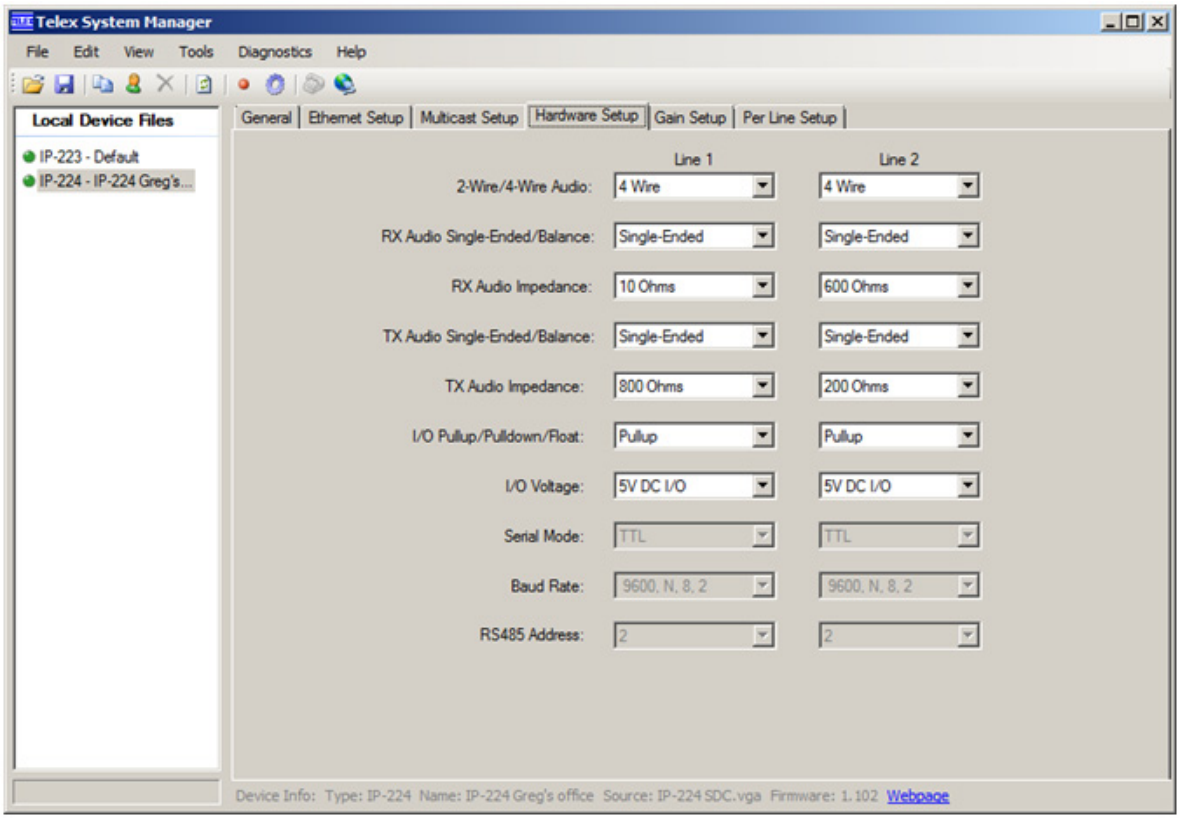
For more information, see the Telex System Manager Technical Manual (P/N LIT000259000). This document is available to authorized dealers for download at http://www.telex.com/us/dispatch/downloads/d



To **configure the IP-223 for local control**, do the following:

1. Open **Telex System Manager**.
2. In the Processed Devices pane, select the **IP-224** you want to configure.
3. Click the **Multicast** tab.
   The Multicast page appears.
4. Select **Enable** for the line to configure.
5. In the LIne Name field, enter **a name** for the line.
6. From the Line Type drop down menu, select **Local Mode**.
7. In the RX Multicast Address field, enter the **RX Multicast Address**.
8. In the Port field, enter the **port number** for the receive audio.
9. In the TX Multicast Address field, enter the T**X Multicast Address.**
10. In the Port field, enter the **port number** for the transmit audio.

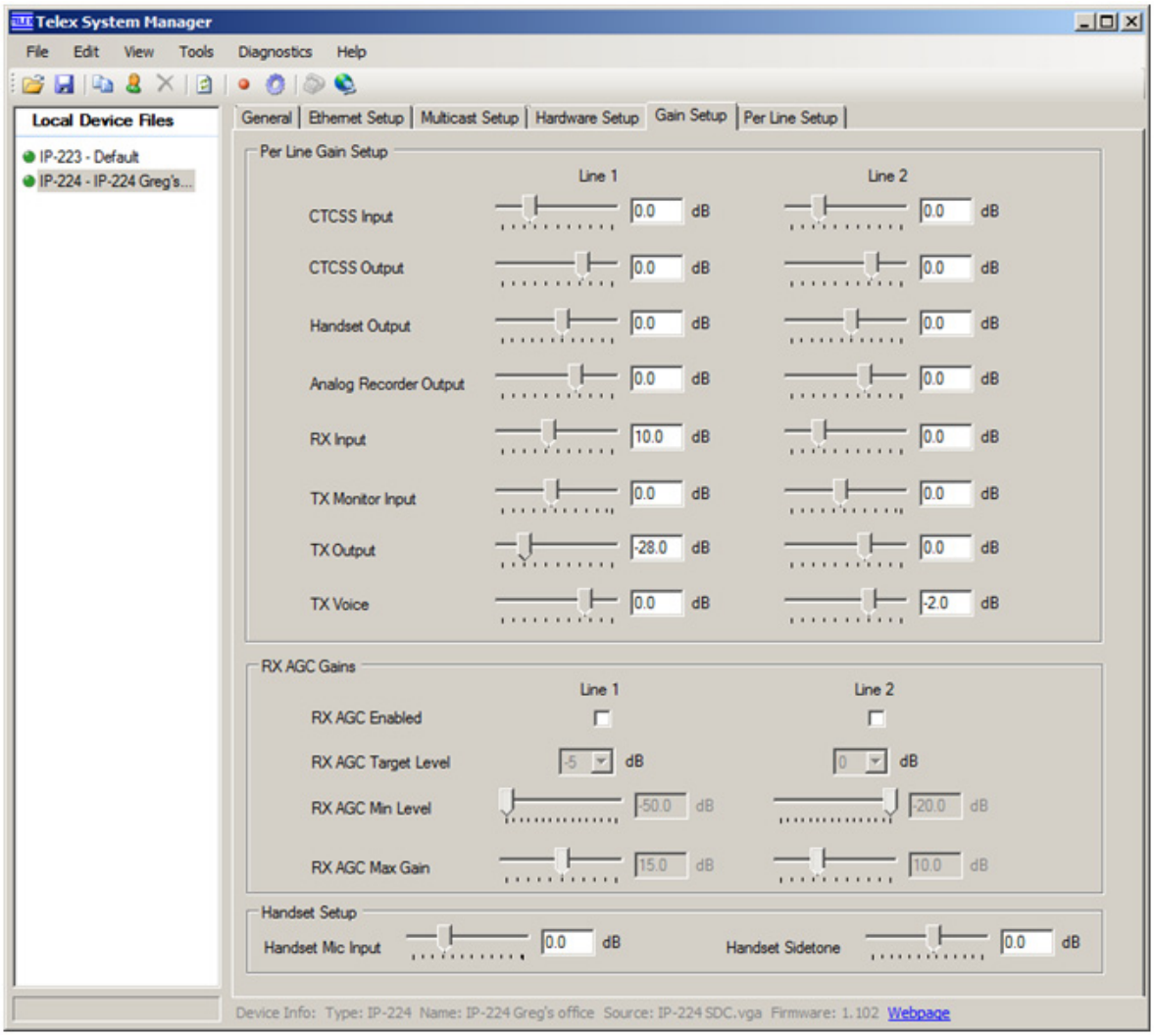
11. Click the **Hardware Setup tab**.
    The Hardware Setup window appears.



Under Line 1

12. From the 2-Wire/4-Wire Audio drop down menu, select **4 Wire**.
13. From the RX Audio Single-Ended/Balance drop down menu, select **Single-Ended**.
14. From the RX Audio Impedance drop down menu, select **10 Ohms**.
15. From the TX Audio Single-Ended/Balance drop down menu, select **Single-Ended**.
16. From the TX Audio Impedance drop down menu, select **800 Ohms**.
17. From the I/O Pullup/Pulldown/Float drop down menu, select **Pullup**.
18. From the I/O Voltage drop down menu, select **5V DC I/O**.

19. Click the **General Gains** tab.
    The General Gains window

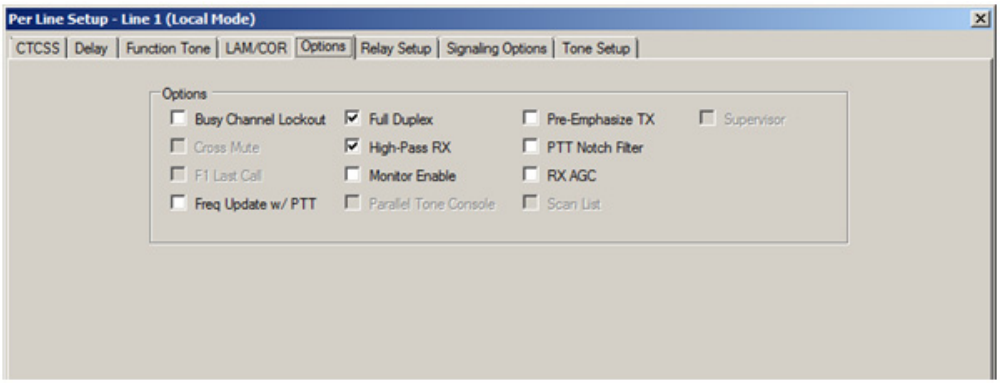


20. Configure the **gain sliders** as shown in Line 1, above.

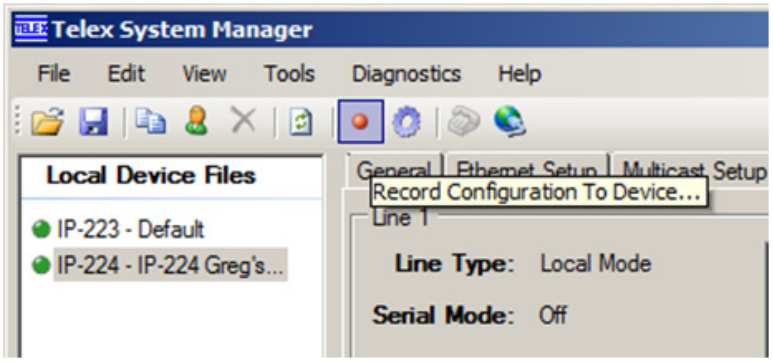
To **configure the IP-224 Per Line Setup page**, do the following:

1. Open the **IP-224 Configuration software**.
2. Click the **Per Line tab**.

11. Click the **Options** tab.
    The Options page appears.



12. Select the **Full Duplex check box**.
13. Select the **High-Pass RX check box**.
14. Click **OK** to exit.



15. Using the Record Configuration To Device button, push the **changes** to the device.

7.2 IP-224 Alignment

Once the phone is configured and attached, testing levels and fine tuning may be required.

No physical hardware adjustments in the IP-224 exist.

Using the VU Meter application, console generated voice peaks of -6 on the Ethernet TX traffic should give good clear audio to field units.

Complete audio test to and from the console, fine tune hardware adjustments, as needed, for good clear audio to field units.

Revision History		
Document Title: Sprint Direct Connect SDC to 223 and 224 Series Adaptor Panels		
Document Number: AN-DISPATCH-049		
Revision	**Change Description**	**Date**
A	Update brand, format and new document number	10-APR-2013

Suggestions or comments:

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

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