

iDEN Radio Control on Legacy Tone Systems Using IP-223s

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iDEN Radio Control on Legacy Tone Systems Using the IP-223

1.0 General

This application note is intended to show how to configure and connect a Telex IP-223, N-I223 and an iDEN radio to a legacy tone control system and provide direct connect control to an operator.

The following features are supported using this method:

- **Last call -**
F1 can be configured to call the last unit to call in or the last outgoing call.
- **Up to 16 Preprogrammed Direct Connects -**
FTone button limit on most consoles is 16, only 15 available if the Last call function is active.
- **Manual Entry of Direct Connect Numbers -**
Possible if the console is equipped with DTMF keys A-D (direct connect # followed by the D key)
- **Group Calls -**
Possible if the console is equipped with DTMF keys A-D (direct connect group number followed by the C key) 5.
- **Alerts -**
Possible if the console is equipped with DTMF keys A-D (direct connect number followed by the A key)

NOTE: Phone functions are not supported.

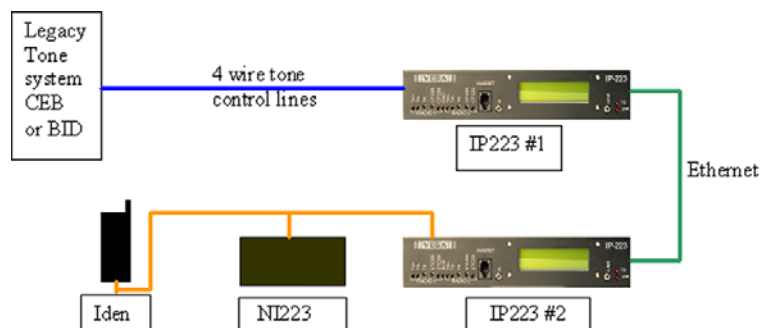


FIGURE 1. Legacy Tone System to iDEN

1.1 Tone Control of iDEN

Control tones (2175Hz/F-tone/2175hz PTT) are generated by the legacy system either at the console output or at the CEB/BIN output. These tones are inserted into the first IP-223 (IP-223 1 in the following example) via 4-wire tone control where this first IP-223 is running in Console mode. The first IP-223 decodes the tones and generates TX packets to the Ethernet port. The second IP-223 (IP-223 2 in the following example), running in iDEN mode, receives the TX packets via Ethernet and sends a Direct Connect command to the iDEN radio.

The iDEN radio connects to the system, provides a clear-to-talk tone which is sent back through the second IP-223's RX circuits, generates RX packets through the Ethernet port to the first IP223 and back to console operator's speaker via the RX input on the console system.

NOTE: Both Multicast and Unicast are supported; however, only Multicast setup is discussed here. For more information about Unicast Setup, contact technical support.

2.0 IP-223 1 Setup

IP-223 1 requires jumper and Multicast configuration for Console mode operation and line 1 settings.

2.1 IP-223 1 Jumper Settings

Set the jumpers of IP-223 1 to Console mode.

REFERENCE: For more information, see the IP-223 Technical Manual (P/N 803641).
This document is available for download at www.telex.com/Downloads/.

2.2 IP-223 1 Multicast Setup

To **configure IP-223 1 for Multicast**, do the following:

1. From the IP-223 web browser configuration window, click **Multicast Setup**.
The Multicast setup window appears.
2. Select the **Enable via Ethernet** for both Line Number 1 and Line Number 2.
3. From the Line Type drop down menu, select **Console Mode** for both line 1 and line 2.
4. Enter a name in the **Line Name** field for both line 1 and line 2.
5. In the **Rx Multicast** field enter the same Multicast Address for both line 1 and line 2.
(For example 225.8.11.81).
6. In the **Tx Multicast** field enter the same Multicast Address used in the Rx Multicast field for both line 1 and line 2. (For example 225.8.11.81).
7. In **line 1's Rx Port** field, enter a unique port number. (For example, 1054).
8. In **line 1's Tx Port** field, enter a unique port number. (For example, 1254).
9. In **line 2's Rx Port** field, enter a unique port number. (For example, 1055)
10. In **line 2's Tx Port** field, enter a unique port number. (For example 1255).
11. Click **Submit**.
The changes are temporarily saved.
12. Click **Save to EEPROM**.
The EEPROM window appears.
13. Click **Save Parameters**.
The Changes are permanently saved to IP-223 1.

Line Number:	Enable via Ethernet:	Line Type:	Line Name:	Rx Mcast Address:	Rx Port:	Tx Mcast Address:	Tx Port:	Tx Group Port:	TTL:
1	☒	Console Mode	Line 1	225.8.11.81	1054	225.8.11.81	1254	0	6
2	☒	Console Mode	Line 2	225.8.11.81	1055	225.8.11.81	1255	0	6

FIGURE 2. Multicast Address Setup—IP-223 1

2.3 IP-223 1 Per Line Setup

To configure IP-223 1's **Per Line Setup**, do the following:

1. From the IP-223 1 web browser configuration window, click **Per Line Setup**.
The Per Line Setup window appears
2. Select the **Full Duplex** check box.
3. Select the **RxAGC** check box

REFERENCE: For more information, see the IP-223 Technical Manual (P/N 803641).
This document is available for download at www.telex.com/Downloads/.

Per Line Setup - Line 1

Line Select: Line 1 Enabled: ☒

Line Type: **Console Mode** (Change in Multicast Address Setup)

Options

☐ Supervisor	☐ Cross Mute	☒ Full Duplex	☒ RxAGC
☐ Hi-Pass RX	☐ Pre-Emphasize TX	☐ TX Monitor	☐ 2 Wire
☐ FI Last Call	☒ Parallel Tone Console	☐ PTT Notch Filter	☐ iR1600 Modem
☐ Busy Channel Lockout			

PTT Setup

Full Duplex Check Box RxACG Check Box

FIGURE 3. Per Line Setup—IP-223 1

3.0 IP-223 2 Configuration

IP-223 2 requires jumper and Multicast configuration for iDEN mode operation and line 1 settings.

3.1 IP-223 2 Jumper Settings

Set the jumpers of IP-223 2 to iDEN mode.

REFERENCE: For more information, see the NI-223 Technical Manual (P/N 804165).
This document is available for download at www.telex.com/Downloads/.

3.2 IP-223 2 Multicast Address Setup

To configure IP-223 2 for Multicast, do the following:

1. Follow **steps 1, 2,** and **steps 4** through **10**, in “IP-223 1 Multicast Setup” on page 5.
2. From the Line Type drop down menu select iDEN mode for both **line 1** and **line 2**.
3. Click **Submit**.
The changes are temporarily saved.
4. Click **Save to EEPROM**,
The Save to EEPROM window appears.
5. Click **Save Parameters**.

The screenshot shows a web-based configuration interface for IP-223 2 Multicast Address Setup. At the top, there is a navigation bar with links: Account Setup, Additional Feature, Clone Console, CRP Setup, CRP PIN Table, Pass Change, and Tone Freq & Durations. Below this is the title "Multicast Address Setup". A blue header bar reads "Line Multicast Setup". The main content is a table with the following columns: Line Number, Enable via Ethernet, Line Type, Line Name, Rx Mcast Address, Rx Port, Tx Mcast Address, Tx Port, Tx Group Port, and TTL. Two lines are configured:

Line Number	Enable via Ethernet	Line Type	Line Name	Rx Mcast Address	Rx Port	Tx Mcast Address	Tx Port	Tx Group Port	TTL
1	☒	iDen Radio	Line 1	225.8.11.81	1054	225.8.11.81	1254	0	6
2	☒	iDen Radio	Line 2	225.8.11.81	1055	225.8.11.81	1255	0	6

FIGURE 4. IP-223 1 Multicast Address Setup—IP-223 2 (iDEN Mode)

3.3 IP-223 Per Line Setup

To configure IP-223 2 Per Line Setup, do the following:

1. From the web browser configuration window, click **Per Line Setup**.
The Per Line Setup window appears.
2. In the **TX Delay** field, enter 50 (ms).
3. Click **Submit**.
The configuration is temporarily saved.
4. Click **Save to EEPROM**.
The Save to EEPROM window appears.
5. Click **Save Parameters**.
The configuration is permanently saved to the IP-223.

Account Setup | Additional Feature | Clone Console | CRP Setup | CRP PIN Tab | Pass Change | Tone Freq & Durations

Per Line Setup - Line 1

Line Select: Line 1 Enabled: ☒

Line Type: **iDen Radio** (Change in Multicast Address Setup)

Delay Setup

TX Delay: ms RX Delay: ms
Squelch Tail Delay: ms

Function Tone Setup

Jump to Entry:

Function Tone	Enable	Relay	Relay Group	Relay Time (ms)	Digital Output	Call Type	iDen Number
1	☒		1	0	1		
2	☒	R01	1	0	3	Direct Connect	123*20671*15
3	☒	R02	1	0	7	Direct Connect	123*20671*14
4	☒	BOTH	1	0	15	Group Call	123*20671*15
5	☒		1	0	31	Call Alert	#15
6	☒	R01	1	0	63		

Options

☐ Supervisor ☐ Cross Mute ☒ Full Duplex ☒ RxAGC
☐ Hi-Pass RX ☐ Pre-Emphasize TX ☐ TX Monitor ☐ 2 Wire
☒ F1 Last Call ☐ Parallel Tone Console ☐ PTT Notch Filter ☐ iR1600 Modem
☐ Busy Channel Lockout

PTT Setup

FIGURE 5. Per Line Setup—IP-223 2 (iDEN Mode)

Revision History		
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A	Update brand, format and new document number.	30-NOV-2009

Suggestions or comments:

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