



TELEX[®]

RADIO DISPATCH PRODUCTS

Application Guide

IP-223 to RTS Intercom Products

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P/N AN-DISPATCH-35 Rev A

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1 General:

This application note is designed to show how to configure and connect the Telex Dispatch IP-223 radio adaptor panel to a Telex RTS Intercom system. This connection provides PTT control and audio connections for most standard radios to the operator key panels.

2 RTS Matrix to IP-223 cabling:

RTS Matrix to IP-223 Cabling diagram RJ-11 or DB-9 to DB-25

RTS Matrix		IP-223 supplied wire color	IP-223 DB-25M	Signal
RJ-11	DB-9F			
3	4	Black/White	25	TX Out
4	5	Brown/White	13	TX Out
5	7	Black	12	RX IN
2	8	Gray/Black	24	RX IN
These additional connection points are required for COR operation		Green/White	20	COR IN
		Lt Green	7	Ground

3 LMR Example configuration:

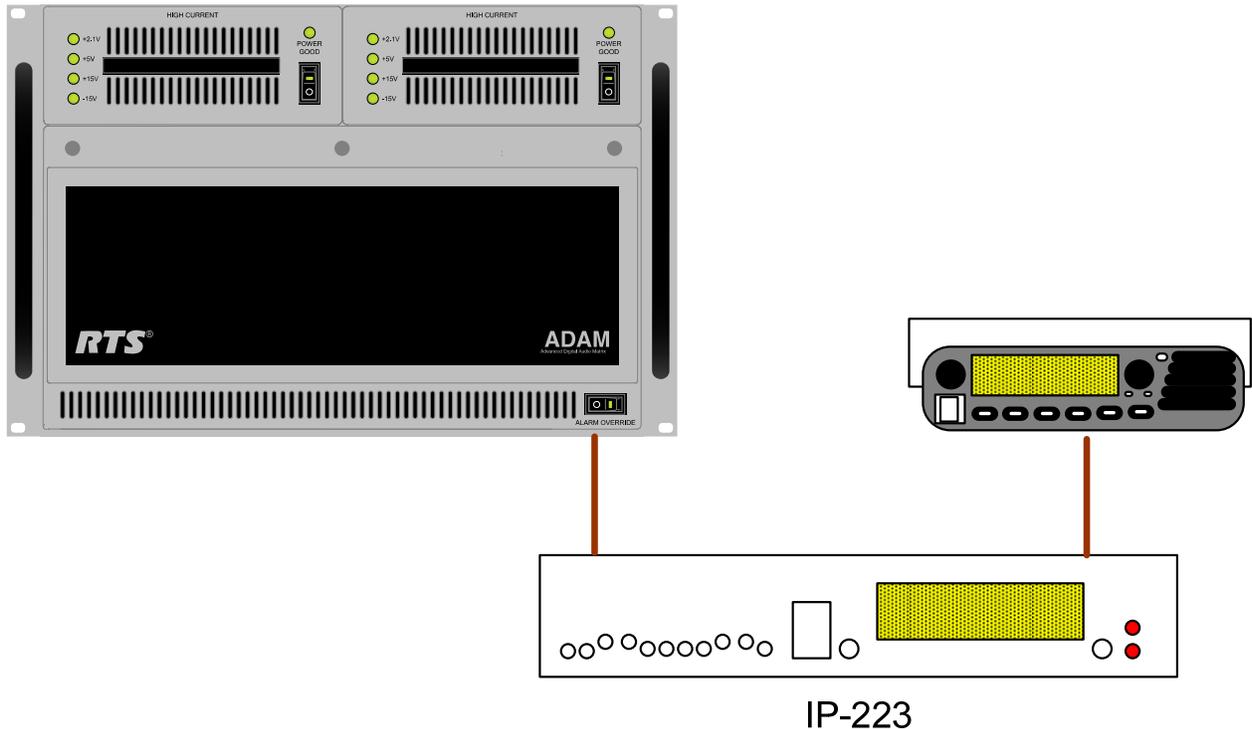


Figure 1 LMR Example

In Figure 1, Line to Line Crosspatch is enabled in the IP-223, control logic and audio (6-wire E&M) are generated by the RTS system; these are connected to line #2 I/O which is configured for Local mode operation. Line #1 I/O of the IP223 is also configured for Local mode operation and is directly connected to a LMR mobile radio.

Receive audio from the LMR is connected to the line 1 I/O of the IP-223 and based on COR or VOX will pass the audio to line 2 of the IP-223 and out to the RTS Intercom system for playback at key panels. PTT presses on a key panel will generate a relay closure and audio that is inserted on line 2 of the IP-223 COR and audio inputs. This creates a PTT relay closure to key the LMR, and audio is coupled and passed from line 2 to 1 and the radio is modulated.

3.1 IP-223 Setup:

The IP-223 needs to be configured for Local mode operation on both lines and Line to Line Crosspatch to be enabled, please refer to the IP-223 manual or appropriate application note for jumper settings on line1 for the type of radio connected.

3.1.1 Multicast screen setup:

The multicast setup screen requires no changes to function for this feature; Figure 2 below is an example of a screen.

TELEX
RADIO DISPATCH PRODUCTS
IP-223
Name: Default
MAC: 00-0B-7C-3C-9E-C8
SN: 23972808 FW: 4.000

Basic Ethernet Setup | General Gain Setup | **Multicast Address Setup** | Per Line Setup | Save to EEPROM

[Additional Feature](#) | [Clone Console](#) | [Crosspatch Setup](#) | [CRP PIN Table](#) | [PIN Change](#) | [Tone Frequency & Durations](#)

Multicast Port Number Setup

Channel Number:	Enable via Ethernet:	Channel Type:	Channel Name:	Multicast Address:	RX Port:	Multicast Address:	TX Port:	TX Group Port:	Channel Hops:
1	<input checked="" type="checkbox"/>	Local Mode	Channel 3	225.8.11.81	1054	225.8.11.81	1072	0	6
2	<input checked="" type="checkbox"/>	Local Mode	Channel 4	225.8.11.81	1055	225.8.11.81	1073	0	6
Tape 1	<input type="checkbox"/>	Tape Channel 1	Tape 1	225.8.11.81	2250				6
Tape 2	<input type="checkbox"/>	Tape Channel 2	Tape 2	225.8.11.81	2251				6
Phone	<input type="checkbox"/>	Ring Signal	Ring	225.8.11.81	2053				6

Submit

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http://172.19.98.38/multicast.htm

Figure 2 LMR Multicast setup screen view

3.1.2 Crosspatch Screen setup:

The Crosspatch screen setup should be configured with Line-Line enabled like the example shown in Figure 3.

IP223 - CrossPatch Setup - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://172.19.98.38/crosspatch.htm> Go Links

TELEX
RADIO DISPATCH PRODUCTS
IP-223

Name: Default
MAC: 00-0B-7C-3C-9E-C8
SN: 23972808 FW: 4.000

Basic Ethernet Setup General Gain Setup Multicast Address Setup Per Line Setup Save to EEPROM

[Additional Feature](#) | [Clone Console](#) | [Crosspatch Setup](#) | [CRP PIN Table](#) | [PIN Change](#) | [Tone Frequency & Durations](#)

Crosspatch Setup

Submit

Local Setup:

Line-Line: Enable

Start Patch FTone: Stop Patch FTone:

Remote Setup:

RCP: Enable

Dialing Digits: Interdigit Time: ms Beep Dly: ms

Patch Timeout: sec Global: sec Drop All:

RCP Tables:

Internet

Figure 3 Crosspatch Setup screen

3.1.3 Per-Line Setup screen Line 1:

Please refer to the IP-223 manual or appropriate application note for any special IP-223 configuration requirements on line2 for the type of radio connected.

3.1.4 Per-Line Setup screen Line 2:

Depending on the connection to the RTS equipment, VOX or COR triggering maybe used. If a relay closure from the RTS equipment is supplied COR Active will need to be checked on line 2 setup, an example is shown in Figure 4.

COR Setup:	<input checked="" type="checkbox"/> COR Active	<input type="checkbox"/> COR Active High	
CTCSS Setup:	<input type="radio"/> Always On	<input type="radio"/> On with PTT	<input checked="" type="radio"/> Tape Output
Delay Setup:	TX Delay:	<input type="text" value="0"/> ms	RX Delay:
	Squelch Tail Delay:	<input type="text" value="0"/> ms	<input type="text" value="80"/> ms
LAM Setup:	LAM Level:	<input type="text" value="-20"/> dB	LAM Time:
			<input type="text" value="3"/> sec
Options:	<input type="checkbox"/> Supervisor	<input type="checkbox"/> Cross Mute	<input type="checkbox"/> Full Duplex
	<input type="checkbox"/> Hi-Pass RX	<input type="checkbox"/> Pre-Emphasize TX	<input type="checkbox"/> TX Monitor
	<input type="checkbox"/> F1 Last Call	<input type="checkbox"/> Parallel Console	<input checked="" type="checkbox"/> RxAGC
			<input type="checkbox"/> 2 Wire
<input type="button" value="Submit"/>			

Figure 4 LMR Per-Line Setup screen - Line 2

4 iDEN Example configuration:

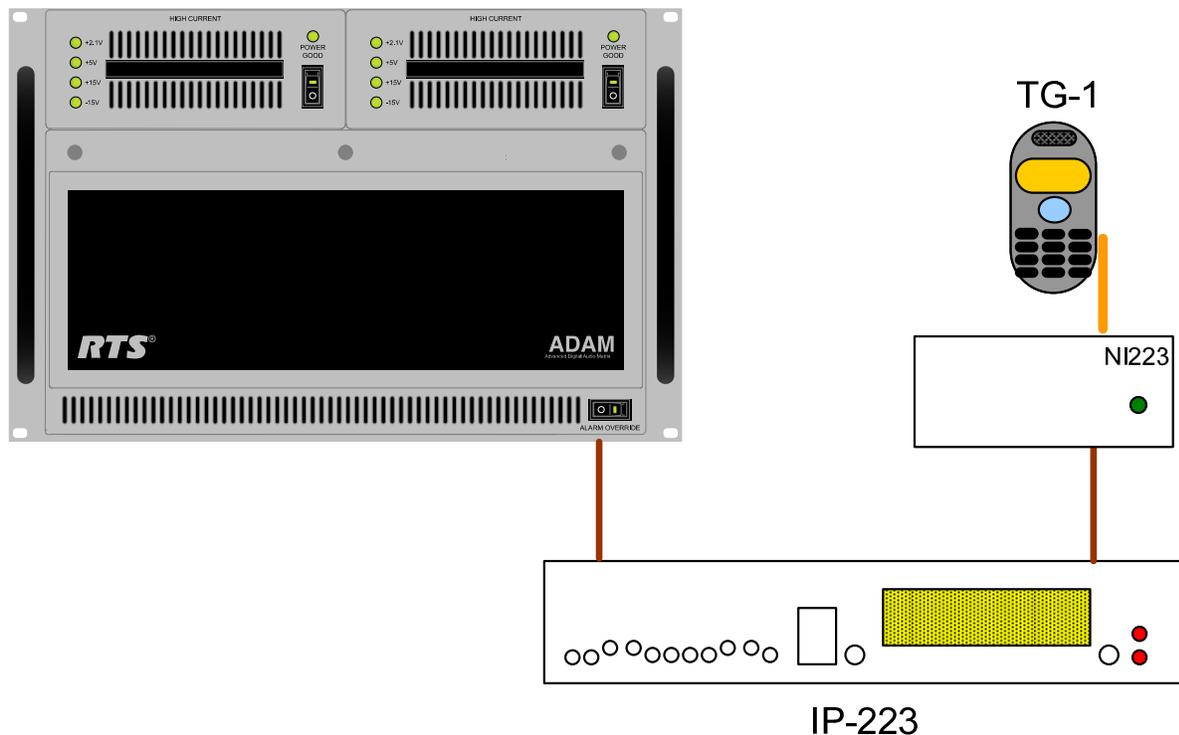


Figure 5 iDEN Example

In Figure 5, Line to Line Crosspatch is enabled in the IP-223, control logic and audio (6-wire E&M) are generated by the RTS system; these are connected to line #2 I/O which is configured for Local mode operation. Line #1 I/O of the IP223 is also configured for Local mode operation with an iDEN as the selected radio, an optional NI-223+ is required.

Receive audio from the iDEN is connected to the line 1 I/O of the IP-223 and based on VOX will pass the audio to line 2 of the IP-223 and out to the RTS Intercom system for playback at key panels. PTT presses on a key panel will generate a relay closure and audio that is inserted on line 2 of the IP-223 COR and audio inputs. This creates a PTT relay closure to key the iDEN, and audio is coupled and passed from line 2 to 1 and the radio is modulated.

The IDEN radio connects to the system, provides a clear to talk tone which is sent back through IP223 RX circuits and is heard by the dispatcher.

4.1 IP-223 Setup:

The IP-223 needs to be configured for iDEN on line 1 and Local mode operation on line 2, Line to Line Crosspatch and F1 last call must be enabled, please refer to the NI-223+ manual for jumper settings and alignment procedures for line1. Note the NI-223+ is required for this to work.

4.1.1 Multicast screen setup:

The multicast setup screen requires that line 1 be configured for iDEN radio as shown in Figure 6, no other changes to function are required for this feature.

TELEX
RADIO DISPATCH PRODUCTS
IP-223
Name: Default
MAC: 00-0B-7C-3C-9E-C8
SN: 23972808 FW: 4.000

Basic Ethernet Setup | General Gain Setup | Multicast Address Setup | Per Line Setup | Save to EEPROM

[Additional Feature](#) | [Clone Console](#) | [Crosspatch Setup](#) | [CRP PIN Table](#) | [PIN Change](#) | [Tone Frequency & Durations](#)

Multicast Port Number Setup

Channel Number:	Enable via Ethernet:	Channel Type:	Channel Name:	Multicast Address:	RX Port:	Multicast Address:	TX Port:	TX Group Port:	Channel Hops:
1	<input checked="" type="checkbox"/>	iDen Radio	Channel 3	225.8.11.81	1054	225.8.11.81	1072	0	6
2	<input checked="" type="checkbox"/>	Local Mode	Channel 4	225.8.11.81	1055	225.8.11.81	1073	0	6
Tape 1	<input type="checkbox"/>	Tape Channel 1	Tape 1	225.8.11.81	2250				6
Tape 2	<input type="checkbox"/>	Tape Channel 2	Tape 2	225.8.11.81	2251				6
Phone	<input type="checkbox"/>	Ring Signal	Ring	225.8.11.81	2053				6

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Figure 6 iDEN Multicast Setup screen view

4.1.2 Crosspatch Screen setup:

The Crosspatch screen setup should be configured like this example in Figure 7.

IP223 - CrossPatch Setup - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://172.19.98.38/crosspatch.htm> Go Links

TELEX
RADIO DISPATCH PRODUCTS
IP-223

Name: Default
MAC: 00-0B-7C-3C-9E-C8
SN: 23972808 FW: 4.000

Basic Ethernet Setup General Gain Setup Multicast Address Setup Per Line Setup Save to EEPROM

[Additional Feature](#) | [Clone Console](#) | [Crosspatch Setup](#) | [CRP PIN Table](#) | [PIN Change](#) | [Tone Frequency & Durations](#)

Crosspatch Setup

Submit

Local Setup:

Line-Line: Enable

Start Patch FTone: Stop Patch FTone:

Remote Setup:

RCP: Enable

Dialing Digits: Interdigit Time: ms Beep Dly: ms

Patch Timeout: sec Global: sec Drop All:

RCP Tables:

Internet

Figure 7 Crosspatch Setup screen

4.1.3 Per-Line Setup screen Line 1:

Line 1 of the Per-Line Screen setup should be configured like this example in Figure 8 for these key areas.

7	<input checked="" type="checkbox"/>	R02	1	0	127		
8	<input checked="" type="checkbox"/>	BOTH	1	0	0		
9	<input checked="" type="checkbox"/>		1	0	1		
10	<input checked="" type="checkbox"/>	R01	1	0	3		
11	<input checked="" type="checkbox"/>	R02	1	0	7		
12	<input checked="" type="checkbox"/>	BOTH	1	0	15		
13	<input checked="" type="checkbox"/>		1	0	31		
14	<input checked="" type="checkbox"/>	R01	1	0	63		
15	<input checked="" type="checkbox"/>	R02	1	0	127		
16	<input checked="" type="checkbox"/>	BOTH	1	0	0		

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

LAM Setup: LAM Level: dB LAM Time: sec

Options:

<input type="checkbox"/> Supervisor	<input type="checkbox"/> Cross Mute	<input checked="" type="checkbox"/> Full Duplex	<input checked="" type="checkbox"/> RxAGC
<input type="checkbox"/> Hi-Pass RX	<input type="checkbox"/> Pre-Emphasize TX	<input type="checkbox"/> TX Monitor	<input type="checkbox"/> 2-Wire
<input checked="" type="checkbox"/> F1 Last Call	<input type="checkbox"/> Parallel Console		

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Internet

Figure 8 iDEN Setup for Line 1 on Per-Line setup screen

4.1.4 Per-Line Setup screen Line 2:

Depending on the connection to the RTS equipment, VOX or COR triggering maybe used. If a relay closure from the RTS equipment is supplied COR Active will need to be checked on line 2 setup, an example is shown in Figure 9.

COR Setup:	<input checked="" type="checkbox"/> COR Active	<input type="checkbox"/> COR Active High	
CTCSS Setup:	<input type="radio"/> Always On	<input type="radio"/> On with PTT	<input checked="" type="radio"/> Tape Output
Delay Setup:	TX Delay: <input type="text" value="0"/> ms	RX Delay: <input type="text" value="80"/> ms	
	Squelch Tail Delay: <input type="text" value="0"/> ms		
LAM Setup:	LAM Level: <input type="text" value="-20"/> dB	LAM Time: <input type="text" value="3"/> sec	
Options:	<input type="checkbox"/> Supervisor	<input type="checkbox"/> Cross Mute	<input type="checkbox"/> Full Duplex
	<input type="checkbox"/> Hi-Pass RX	<input type="checkbox"/> Pre-Emphasize TX	<input checked="" type="checkbox"/> RxAGC
	<input type="checkbox"/> Fl Last Call	<input type="checkbox"/> Parallel Console	<input type="checkbox"/> 2 Wire
<input type="button" value="Submit"/>			

Figure 9 iDEN Per-Line Setup screen - Line 2

5 WAN/LAN Remote Example configuration:

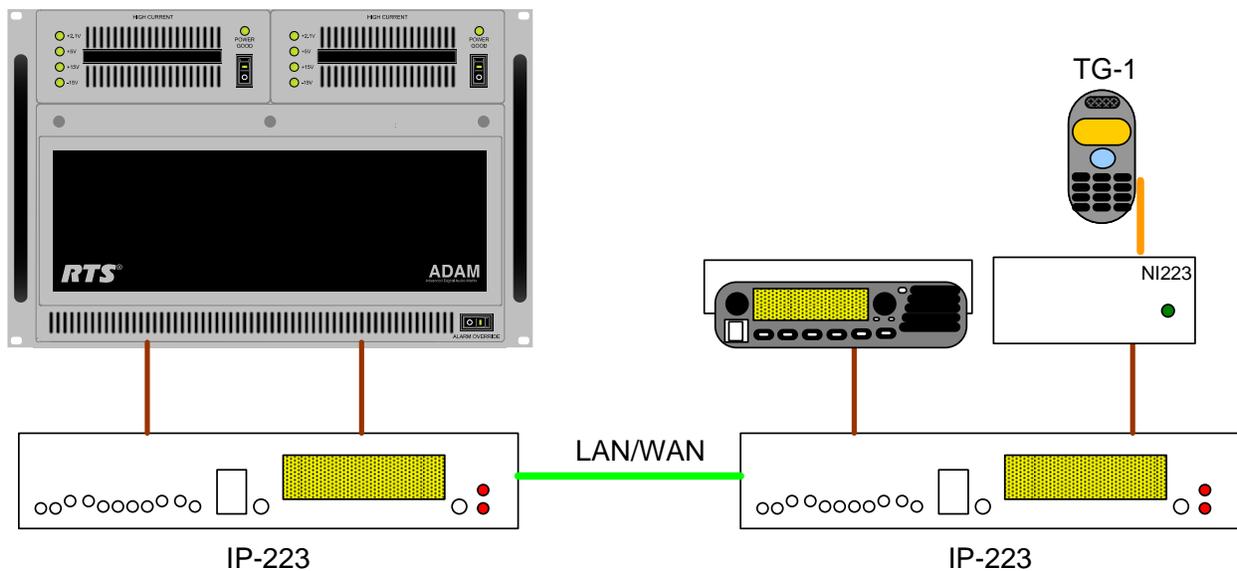


Figure 10 Network Extended LMR and iDEN Example

In Figure 10, a LAN/WAN connection is used to remote the radio's install location, one IP-223 is configured for local mode on both lines with control logic and audio (6-wire E&M) being generated by the RTS system; these are connected to both lines I/O. Ethernet VoIP packets are sent to the second IP-223 where radios are connected for remote control. Each line on this IP-223 can control any LMR or iDEN radio.

Receive audio from the LMR is connected to the line I/O of the remote IP-223 and based on COR or VOX will pass Ethernet VoIP packets of RX audio to corresponding line of the IP-223 at the frame location and out to the RTS Intercom system for playback at key panels. PTT presses on a key panel will generate a relay closure and audio that is inserted on the line I/O of the local IP-223 COR and audio inputs. This causes the generation of TX Ethernet VoIP packets to the remote IP-223, this creates a PTT relay closure to key the LMR, audio is coupled and passed to the correct radio line.

5.1 IP-223 Local Setup:

The IP-223 needs to be configured for Local mode operation on both lines and for Line to Line Crosspatch to be enabled, please refer to IP-223 manual for jumper settings for line1 based on your radio connected.

5.1.1 Local IP-223 Multicast screen setup:

Both Unicast and Multicast are supported for this feature; enter either the static IP address of the opposite end IP-223 or the desired Multicast address into both Multicast Address fields. The multicast setup screen requires no changes to function for this feature; Figure 11 below is an example of a screen.

TELEX
RADIO DISPATCH PRODUCTS
IP-223
Name: Default
MAC: 00-0B-7C-3C-9E-C8
SN: 23972808 FW: 4.000

Basic Ethernet Setup | General Gain Setup | **Multicast Address Setup** | Per Line Setup | Save to EEPROM

[Additional Feature](#) | [Clone Console](#) | [Crosspatch Setup](#) | [CRP PIN Table](#) | [PIN Change](#) | [Tone Frequency & Durations](#)

Multicast Port Number Setup

Channel Number:	Enable via Ethernet:	Channel Type:	Channel Name:	Multicast Address:	RX Port:	Multicast Address:	TX Port:	TX Group Port:	Channel Hops:
1	<input checked="" type="checkbox"/>	Local Mode	Channel 3	225.8.11.81	1054	225.8.11.81	1072	0	6
2	<input checked="" type="checkbox"/>	Local Mode	Channel 4	225.8.11.81	1055	225.8.11.81	1073	0	6
Tape 1	<input type="checkbox"/>	Tape Channel 1	Tape 1	225.8.11.81	2250				6
Tape 2	<input type="checkbox"/>	Tape Channel 2	Tape 2	225.8.11.81	2251				6
Phone	<input type="checkbox"/>	Ring Signal	Ring	225.8.11.81	2053				6

Submit

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http://172.19.98.38/multicast.htm

Figure 11 WAN/LAN Local IP-223 Multicast Setup screen view

5.1.2 Local IP-223 Per-Line Setup screens Lines 1 & 2:

Depending on the connection to the RTS equipment, VOX or COR triggering may be used. If a relay closure from the RTS equipment is supplied COR Active will need to be checked on line 2 setup, an example is shown in Figure 12.

COR Setup:	<input checked="" type="checkbox"/> COR Active	<input type="checkbox"/> COR Active High	
CTCSS Setup:	<input type="radio"/> Always On	<input type="radio"/> On with PTT	<input checked="" type="radio"/> Tape Output
Delay Setup:	TX Delay:	<input type="text" value="0"/> ms	RX Delay:
	Squelch Tail Delay:	<input type="text" value="0"/> ms	<input type="text" value="80"/> ms
LAM Setup:	LAM Level:	<input type="text" value="-20"/> dB	LAM Time:
			<input type="text" value="3"/> sec
Options:	<input type="checkbox"/> Supervisor	<input type="checkbox"/> Cross Mute	<input type="checkbox"/> Full Duplex
	<input type="checkbox"/> Hi-Pass RX	<input type="checkbox"/> Pre-Emphasize TX	<input checked="" type="checkbox"/> RxAGC
	<input type="checkbox"/> F1 Last Call	<input type="checkbox"/> Parallel Console	<input type="checkbox"/> 2 Wire
<input type="button" value="Submit"/>			

Figure 12 WAN/LAN Local IP-223 Per-Line setup screen

5.2 IP-223 Remote Setup:

The IP-223 needs to be configured for Local mode operation on both lines and for Line to Line Crosspatch to be enabled, please refer to IP-223 manual for jumper settings for line1 based on your radio connected.

5.2.1 Remote IP-223 Multicast screen setup:

Both Unicast and Multicast are supported for this feature; enter either the static IP address of the opposite end IP-223 or the desired Multicast address into both Multicast Address fields. The multicast setup screen requires that the RX and TX port numbers be crisscrossed from the Local IP-223's configuration; an example is shown in Figure 13.

The RTS end IP-223 has a line 1 RX port of 1054, which is configured as the TX port in the remote IP-223. Same theory holds for the RX port and line 2 configurations.

TELEX
RADIO DISPATCH PRODUCTS
IP-223
Name: Default
MAC: 00-0B-7C-3C-9E-C8
SN: 23972808 FW: 4.000

Basic Ethernet Setup | General Gain Setup | Multicast Address Setup | Per Line Setup | Save to EEPROM

[Additional Feature](#) | [Clone Console](#) | [Crosspatch Setup](#) | [CRP PIN Table](#) | [PIN Change](#) | [Tone Frequency & Durations](#)

Multicast Port Number Setup

Channel Number:	Enable via Ethernet:	Channel Type:	Channel Name:	Multicast Address:	RX Port:	Multicast Address:	TX Port:	TX Group Port:	Channel Hops:
1	<input checked="" type="checkbox"/>	iDen Radio	Channel 3	225.8.11.81	1072	225.8.11.81	1054	0	6
2	<input checked="" type="checkbox"/>	Local Mode	Channel 4	225.8.11.81	1073	225.8.11.81	1055	0	6
Tape 1	<input type="checkbox"/>	Tape Channel 1	Tape 1	225.8.11.81	2250				6
Tape 2	<input type="checkbox"/>	Tape Channel 2	Tape 2	225.8.11.81	2251				6
Phone	<input type="checkbox"/>	Ring Signal	Ring	225.8.11.81	2053				6

Submit

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Figure 13 WAN/LAN Remote IP-223 Multicast Setup screen view

5.2.2 Remote IP-223 Per-Line Setup screens Line 1 & 2:

Please refer to the IP-223 manual or appropriate application note for any special IP-223 configuration requirements on lines 1 and 2 for the type of radio connected.

6 Remote Tone Control Example configuration:

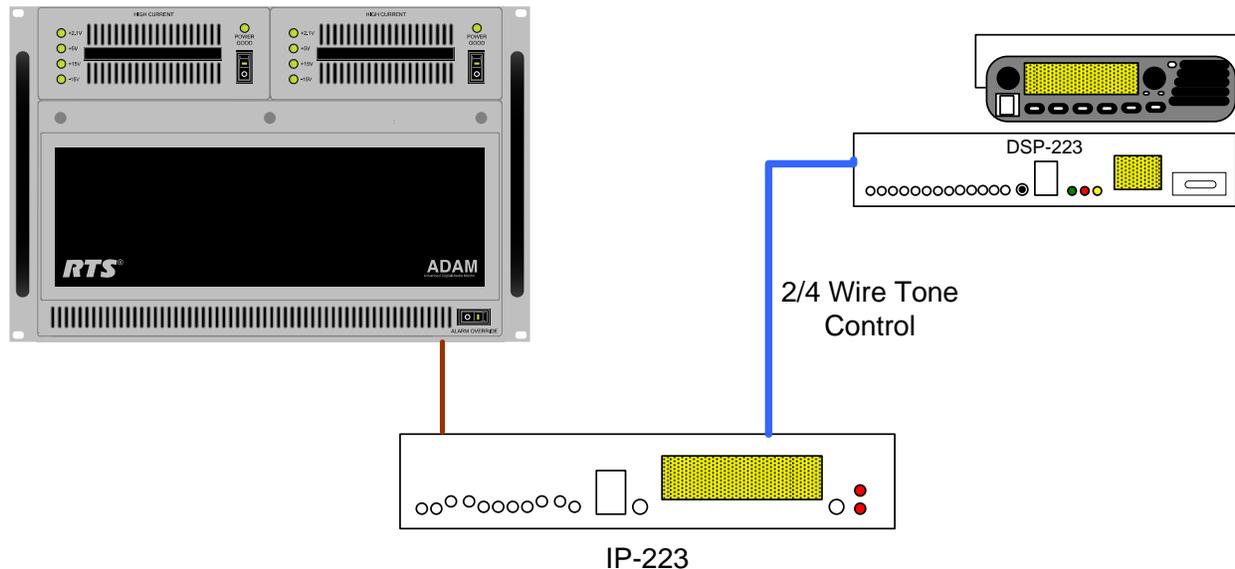


Figure 14 Remote Tone Control Example

In Figure 14, Line to Line Crosspatch is enabled in the IP-223, control logic and audio (6-wire E&M) are generated by the RTS system; these are connected to line #2 I/O which is configured for Local mode operation. Line #1 I/O of the IP223 is configured for Tone mode operation and is connected to a 2/4-wire lease line for Tone Remote operation of a LMR mobile radio. Industry standard radio control tones are generated and coupled with voice audio for control of distant radio locations, these tones are decoded by either a Telex TRA223 or DSP223 Tone Remote Adaptor which is directly connected to the LMR radio.

Receive audio from the LMR is connected to the I/O of the DSP-223 and amplified down the 2/4-wire line to line 1 I/O of the IP-223. The IP-223 based on VOX will pass the audio to line 2 of the IP-223 and out to the RTS Intercom system for playback at key panels. PTT presses on a key panel will generate a relay closure and audio that is inserted on line 2 of the IP-223 COR and audio inputs. This creates a PTT tone generation that is sent out line 1 of the IP-223 onto the 2/4-wire line to the remote radio adaptor, the tone is decoded and a relay closure to key the LMR is generated, audio is coupled and passed to the radio.

6.1 IP-223 Setup:

The IP-223 needs to be configured for Tone mode operation on line 1 and Local mode operation on line 2, with Line to Line Crosspatch to be enabled, please refer to IP-223 manual for jumper settings for line1 based on your radio connected.

6.1.1 Multicast screen setup:

The multicast setup screen requires that line 1 be configured for Tone mode as shown in Figure 15, no other changes to function are required for this feature.

TELEX
RADIO DISPATCH PRODUCTS
IP-223
Name: Default
MAC: 00-0B-7C-3C-9E-C8
SN: 23972808 FW: 4.000

Basic Ethernet Setup | General Gain Setup | Multicast Address Setup | Per Line Setup | Save to EEPROM

[Additional Feature](#) | [Clone Console](#) | [Crosspatch Setup](#) | [CRP PIN Table](#) | [PIN Change](#) | [Tone Frequency & Durations](#)

Multicast Port Number Setup

Channel Number:	Enable via Ethernet:	Channel Type:	Channel Name:	Multicast Address:	RX Port:	Multicast Address:	TX Port:	TX Group Port:	Channel Hops:
1	<input checked="" type="checkbox"/>	Tone Mode	Channel 3	225.8.11.81	1054	225.8.11.81	1072	0	6
2	<input checked="" type="checkbox"/>	Local Mode	Channel 4	225.8.11.81	1055	225.8.11.81	1073	0	6
Tape 1	<input type="checkbox"/>	Tape Channel 1	Tape 1	225.8.11.81	2250				6
Tape 2	<input type="checkbox"/>	Tape Channel 2	Tape 2	225.8.11.81	2251				6
Phone	<input type="checkbox"/>	Ring Signal	Ring	225.8.11.81	2053				6

Submit

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Figure 15 TRC Multicast Setup screen view

6.1.2 Per-Line Setup screen Line 1:

The Per-Line screen setup shown in Figure 16 should require no changes, various fields can be enabled based on the line being 4-wire full duplex and other features, please refer to the IP-223 manual for complete explanation of these fields.

9	None	
10	None	
11	None	
12	None	
13	None	
14	None	
15	None	
16	None	

COR Setup: COR Active COR Active High

CTCSS Setup: Always On On with PTT Tape Output

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

LAM Setup: LAM Level: dB LAM Time: sec

Options: Supervisor Cross Mute Full Duplex RxAGC
 Hi-Pass RX Pre-Emphasize TX TX Monitor 2 Wire
 FI Last Call Parallel Console

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Figure 16 TRC Setup for Line 1 on Per-Line setup screen

6.1.3 Per-Line Setup screen Line 2:

Depending on the connection to the RTS equipment, VOX or COR triggering maybe used. If a relay closure from the RTS equipment is supplied COR Active will need to be checked on line 2 setup, an example is shown in Figure 17.

COR Setup:	<input checked="" type="checkbox"/> COR Active	<input type="checkbox"/> COR Active High	
CTCSS Setup:	<input type="radio"/> Always On	<input type="radio"/> On with PTT	<input checked="" type="radio"/> Tape Output
Delay Setup:	TX Delay: <input type="text" value="0"/> ms	RX Delay: <input type="text" value="80"/> ms	
	Squelch Tail Delay: <input type="text" value="0"/> ms		
LAM Setup:	LAM Level: <input type="text" value="-20"/> dB	LAM Time: <input type="text" value="3"/> sec	
Options:	<input type="checkbox"/> Supervisor	<input type="checkbox"/> Cross Mute	<input type="checkbox"/> Full Duplex
	<input type="checkbox"/> Hi-Pass RX	<input type="checkbox"/> Pre-Emphasize TX	<input checked="" type="checkbox"/> RxAGC
	<input type="checkbox"/> Fl Last Call	<input type="checkbox"/> Parallel Console	<input type="checkbox"/> 2 Wire
<input type="button" value="Submit"/>			

Figure 17 TRC Per-Line Setup screen - Line 2

7 Radio Connection chart:

Some of the radios that can be supported are:

Manufacture	Model	# of CH	Cable Assy. or product	Application Note
BK/Reim	GMH	1		AN-DISPATCH-17
	RM series	1		AN-DISPATCH-19
Datron	Guardian	1		AN-DISPATCH-15
EF Johnson	RS-5300	100	IP-25300	
ICOM	F121/221	1		AN-DISPATCH-22
Kenwood	TK-863	1		AN-DISPATCH-8
	TK-x80	100		AN-DISPATCH-1
	TK-x90	100	301957000	AN-DISPATCH-1
	TK-x150	100	301956000	AN-DISPATCH-1
	TK-x180	100	301956000	AN-DISPATCH-1
	TK-57/5810	100	301956000	AN-DISPATCH-27
	TK-6110	1		AN-DISPATCH-23
	TKR-x40	32		
	TKR-x50	16		AN-DISPATCH-21
M/A-COM- Ericsson GE	M7100	1		
Midland	Base Tech II	16		
Motorola	Astro Spectra	1		
	CDM/PRO	16	301969000	AN-DISPATCH-9
	DIU-3000	1		
	MCS2000	1		AN-DISPATCH-20
	XTL Series	1		AN-DISPATCH-10
	Old mobiles	1		AN-DISPATCH-6
Raytheon/JPS	ACU DSP-1			
	ACU HSP-2			
	NXU-2			
Sepura	SRM2000	100	301961000	AN-DISPATCH-11
Sprint/Nextel	Falcon Series	100	NI-223	

Manufacture	Model	# of CH	Cable Assy. or product	Application Note
Tait	TB-7100	16		
Vertex	VX-4100/4200	16		AN-DISPATCH-18
	VX-5500	16		
	VX-7200	16		
VIPER Connections to portables , cables attach to VIPER rear panel connector or IP-223/400100xxx adaptor P/N 650370				
Tactical Radios	URC and PRC	1	400100161	
BK/Reim	LPX, LPU, LPH, 3142A, LMH, EPU, EPH		400100093	
ICOM	F3/F4		400100144	
	F30GS/F40GS		400100156	
	A3		400100148	
	F11/F21/F3GS/F4GS		400100159	
Kenwood	TK220, 320, 240, 248, 250, 350, 260, 360, 270, TH91A, AT, E, TH25A		400100043	
	TK280, 380, 290, 480, 481		400100150	
M/A-COM- Ericsson GE	MRK, Prism		400100139	
	KPC		400100143	
	LPE		400100154	
	Jaguar		400100160	
Motorola	HT600, MT300, MT1000,P200, MTX800, MTX9000		400100063	
	SABRE, MX1000, ASTRO		400100069	
	HT750, 1250		400100152	
	EX500		400100162	
	GP300, GTX, P110, HT1225, P1225, SP50, GP1250, LTS2000		400100130	
	HT1000, MT2000, MTS2000, MTX838, MTX2000, MTX8000, MTX9000, XTX3000, GP1200, JT1000		400100135	
Vertex	VX210		400100155	
	VX800		400100153	

Suggestions or Comments

We'd appreciate your input. Please send us your suggestions or comments concerning this application note, by fax (402-467-3279) or e-mail them to: **Telexdispatch@us.bosch.com**

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