NEC

DSX

DSX SIP Setup

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Revision History		
Issue	Date	Revisions
1.02	1/18/11	• Added the requirement to program the DSX router's WAN IP address in 1104-09. • Removed the requirement to customize DTMF for profile 4. • Added the application reset requirement.
1.03	1/19/11	• Removed a reference to Profile 3 on page 4. DSX SIP uses Profile 4.
1.04	4/22/11	• Updated required software level, expanded RTP port forwarding range, and added System Administrator screen shots. • Removed requirement for 1104-09.

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1 Overview

You can link two DSX systems together by using an unused IP extension in a remote DSX as the SIP service provider for a SIP Trunk in a local DSX. This sets up a VoIP tie-line emulation between two IP-equipped DSX systems. Press a DSX SIP line key in a local DSX system and dial any destination in the remote DSX. You can dial remote system extensions and Department Groups, use outside lines, and log into the remote system's voice mail.

- To place a call ***to*** the remote DSX ***from*** the local, a local user presses the SIP Trunk line key and dials an extension or other valid destination in the remote.
- To place a call ***from*** the remote DSX back ***to*** the local system, a remote user places an Intercom call to the IP extension in their own system that is the provider for the SIP Trunk in the local system. The SIP Trunk line key in the local system will ring.

The SIP Trunk in the local system can be set up as a Loop Start line or DID Wink Start line. If set as a DID, the SIP Trunk will route to a local destination based on the digits the caller dials and the settings in the DID Translation Table. DID support is now included in the DSX-40.

Note: DSX SIP Trunks do not currently support fax.

2 DSX SIP Setup

To set up the SIP Trunk link between two DSX systems, you need some information about the remote system.

Table 1: What You Need To Know in the Remote DSX

Option	Description
WAN IP Address	You have to know the WAN IP address of the router to which the remote DSX is connected.
VoIP Extension Username and Password	An unused IP extension in the remote DSX will act as the provider for the SIP trunk in the local DSX. This extension must be unused, have a valid username and password, and be set to use Profile 4.
Important Note on IP Extension Numbering When setting up DSX SIP between two systems, the IP extensions cannot overlap. For example, if the local DSX system has IP extensions 401-408, the remote system IP extensions ***must be*** at 409 or higher. You have to skip IP extensions 401-408 in the remote system. IP extensions 401-408 in the remote system ***must*** remain unused.	

3 System Router Setup

3.1 NAT and SIP

In the router to which each DSX is connected, enable NAT and disable all special SIP management features (such as SIP ALG).

3.2 Port Forwarding

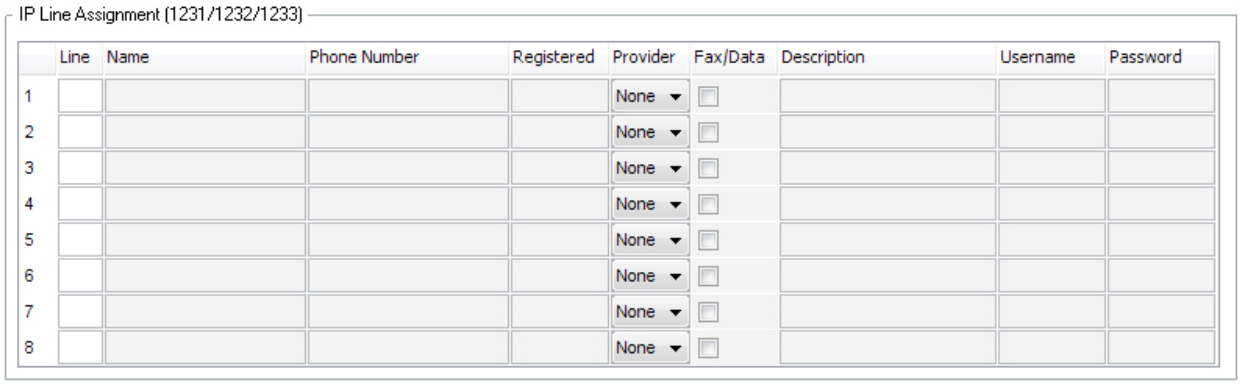
In the router to which each DSX is connected, forward UDP ports 5060 and 1024 through 1215 to the DSX system’s IP address.

4 DSX Setup

4.1 Software Level

3.31.96 or higher.

4.2 Assign SIP Lines



1231-01: IP Lines [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]
The first DSX SIP line is the first line beyond the last assigned line. Each IP line uses an IP resource (licensed VoIP port) in DSX. The maximum number of VoIP licenses is 8 in DSX-40 and 16 in DSX-80/160.

Example with DSX-40:

- The first IP line in a DSX-40 without a COIU expansion card is line 5. Available SIP line numbers are 5-12.
- With the COIU expansion card installed, the first SIP line is line 9. Available IP line numbers are 9-16.
- DSX-40 supports a maximum of 8 VoIP licenses. When the total number of licenses are in use, only Peer-to-Peer calls are available.

Example with DSX-80/160:

- The first IP line in a DSX-80/160 with a single 8COIU card is line 9. Available IP lines are 9-17.
- The last line number in DSX-80/160 is 64. In a system with an 8COIU and two T1/PRI cards, this will limit the available number of IP lines.
- DSX-80/160 supports a maximum of 16 VoIP licenses. When the total number of licenses are in use, only Peer-to-Peer calls are available.

1232-01: IP Line Provider Number [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]
Assign each IP line in DSX to a provider number (1 or 2). DSX supports up to two providers simultaneously.

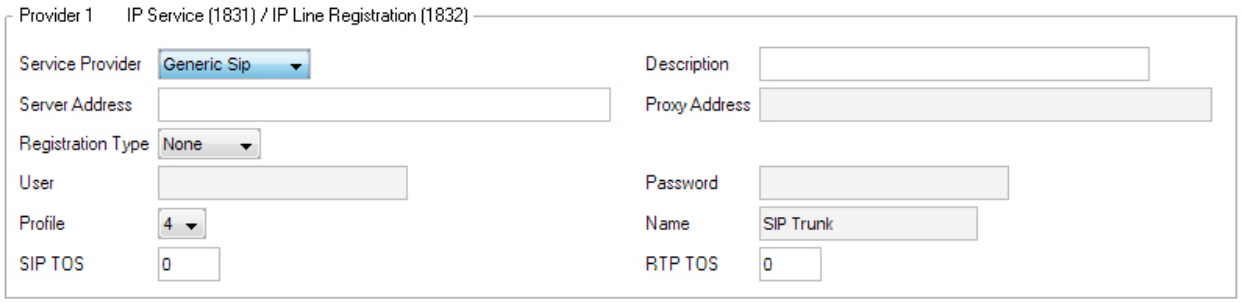
Example: If the remote DSX is your only SIP trunk provider, assign all the IP lines designated in 1231-01 to provider 1.

1232-02: IP Line Username [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]
For each DSX SIP trunk, enter the username. This is the extension number of an unused IP extension in the remote DSX that will be the provider for the DSX SIP trunk in the local system.

1232-03: IP Line Password [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT]
For each DSX SIP trunk, enter the password. This is the password for the VoIP extension in the remote DSX that will be the provider for the DSX SIP trunk in the local system.

2106-01: VoIP Profile [STATION: CONFIG: SETUP, VOIP]
For the VoIP extension in the remote DSX used as the provider for the local DSX, set *2106-01: VoIP Profile* to Profile 4.

4.3 Select the SIP Trunk Provider Type



1831-01: Service Number [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2)]
Select the provider number you want to set up. This selection corresponds to the provider number you assigned to the SIP lines in *1232-0*1.

Example: If the remote DSX is your only DSX SIP trunk provider, and you have chosen provider 1 in *1232-01*, select provider 1 for this option also.

1831-02: Provider Type [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): SERVICE PROVIDER]
Dial 02 to choose *DSX SIP* as the type for the provider selected in 1831-01.

1831-03: Provider Name [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): DESCRIPTION]
The provider name is an optional 18-character entry that describes the provider. Enter any name you like – the entry does not affect provider setup or registration.

1831-04: Profile [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): PROFILE]
Select the VoIP profile that the system will use when connecting to the DSX SIP trunk provider. ***Choose profile 4***.

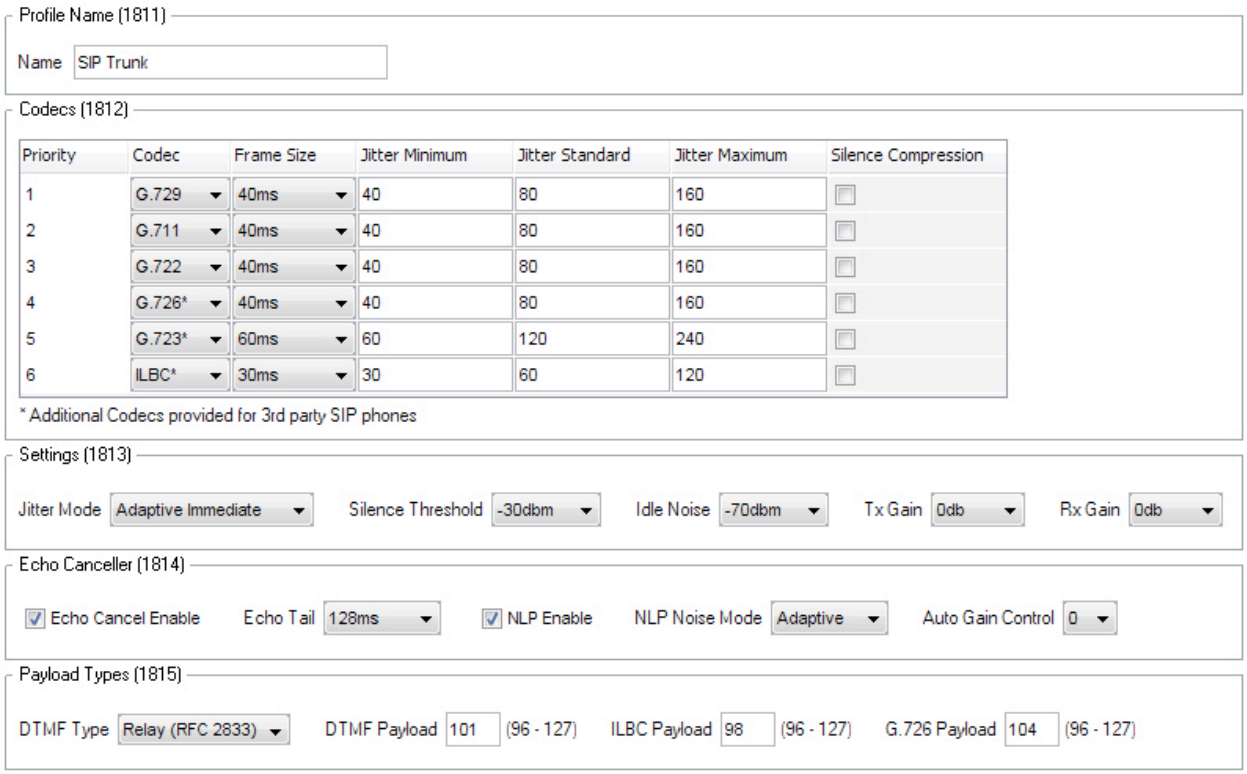
4.4 Set Up the SIP Trunk Registration

1832-01: Provider IP Registration [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): SERVER ADDRESS]
Select the provider number you want to set up (see 1831-01) and enter the WAN IP address of the remote DSX router.

1832-02: Registration Type [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): REGISTRATION TYPE]
Choose the IP line registration type (*02: Per Line)*.

1832-03: Account Username [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): USER]
1832-04: Account Password [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): PASSWORD]
1832-05: Proxy [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): PROXY ADDRESS]
1832-06: SIP Type or Service (ToS) [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): SIP TOS]
1832-07: RTP Type of Service (ToS) [SYSTEM: VOIP: PROVIDERS: PROVIDER (1 OR 2): RTP TOS]
These options are not used with DSX SIP trunks.

4.5 Codec Setup

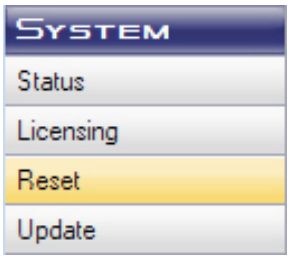


1812: Codecs [SYSTEM: VOIP: PROFILE 4: CODECS]
For DSX SIP Trunks, leave Profile 4 at default.

4.6 Assign Phone Numbers to your SIP Lines

3101-07: Telephone Number [LINES: CONFIG: SETUP: TYPE: PHONE NUMBER]
For each of your SIP lines, enter the number of the unused IP extension in the remote DSX to which the line is registered. This is the same as the entry you made in *1232-02: IP Line Username* [SYSTEM: PORTS: IP LINES: IP LINE ASSIGNMENT].

4.7 Reset the System Application



9001: System Reset [SYSTEM: RESET]
Using telephone programming or the System Administrator, reset both DSX systems. ***Do not*** reset by turning the power off and on or by pressing the red Reset Button.