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# Tradenet MX Advanced System Center Manual 14.1

**Part Number B0119300101**

**Release 14.1**

**IPC Information Systems, Inc.  
777 Commerce Drive  
Fairfield, CT 06432-5500 USA**

**Produced by IPC Technical Publications**





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**IPC Information Systems, Inc.  
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### **United States Regulatory Section**

The Tradenet MX Telephone System complies with Part 68 of the FCC Rules. On the front of the equipment cabinet is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for the equipment. The following information must be provided to the telephone company if requested.

FCC Registration No. USA: 2GKUSA-73740-KF-E and 2GKUSA-75523-MF-E

Ringer Equivalence Number (REN): 1.7B

USOC: RJ21X, RJ2DX, RJ2GX, RJ2HX, RJ48C

FIC (2 wire local switched access loop start): 02LS2

FIC (2 wire private line manual ringdown): 02AC2

FIC (2 wire private line automatic ringdown): 02LR2

FIC (4 wire private line no signalling): 04NO2

FIC (1.544 Mbs Superframe Format): 04DU9-BN

FIC (1.544 Mbs Superframe Format with B8ZS): 04DU9-DN

FIC (1.544 Mbs Extended Superframe Format with B8ZS): 04DU9-ISN

SOC: 9.0F, 6.0Y, 6.0N

Notes: Metallic pairs services might not be available from the telephone company at all locations.

The REN is used to determine the quantity of devices that can be connected to the telephone line. Excessive RENs on the telephone line can result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five. To be certain of the number of devices that can be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

If the Tradenet MX System causes harm to the telephone network, the telephone company will notify you in advance that service might need to be temporarily discontinued. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. You will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company can make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice for you to make the necessary modifications to maintain uninterrupted service.

If trouble is experienced with the Tradenet MX Telephone System, contact IPC Information Systems, (203) 339-7800 for repair and/or warranty information. If the trouble is causing harm to the telephone network, the telephone company might ask you to remove the equipment from the network until the problem is resolved.

This equipment cannot be used on public coin service provided by the telephone company. Connection to Party Line Service is subject to state tariffs. (Contact the state public utility commission, public service commission, or corporation commission for information.)

The Tradenet MX System is hearing-aid compatible (HAC).

This equipment is capable of providing access to interstate providers of operator services through the use of equal access codes. Modifications by aggregates to alter these capabilities might be a violation of the telephone operator consumer services improvement act of 1990 and Part 68 of the FCC Rules.

This equipment complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this equipment in a residential area might cause unacceptable interference to radio and TV reception, requiring the operator to take whatever steps are necessary to correct the interference.

### **United Kingdom Regulatory Section**

This equipment complies with the EMC directive for Class A as well as the safety compliance EN60950.

Registration No. UK: NS-2666-23-M-602603

### **Germany Regulatory Section**

This equipment complies with the EMC directive for Class A as well as the safety compliance EN60950.

Registration No.: A122500F

### **Canada Regulatory Section**

Model Number: Tradenet MX Telephone System

Type of Equipment: Key Telephone System

Certification Number: 632 4980 A

Interface(s): LS/B/CT/D1/D1E/D2/D3/D4

Connecting Methods: CA21A/CA2GA/CA2HA/CA21A

Load Number: 16

Equipment Attachment Limitations

CP-01, Part I

Section 10.1

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connections. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above conditions might not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

**CAUTION:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician as appropriate.

CP-01, Part I

Section 10.2

The **Load Number (LN)** assigned to each terminal device denotes the percentage to the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the total of the Load Numbers of all the devices does not exceed 100.

### **Netherlands Regulatory Section**

This equipment complies with the EMC directive for Class A as well as the safety compliance EN60950.

HTP No.: NL 95051101.

### **Switzerland Regulatory Section**

BAKOM No.: 96.0737.P.N.

# Contacting Systems Support Engineering



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If you require technical assistance, contact your local IPC branch office or distributor. If you need additional assistance, call IPC Systems Support Engineering: in the USA and Canada, dial 1-800-NEED-IPC; elsewhere, dial the North America country access code, then 203-339-7800.

Before contacting Systems Support Engineering, please have the following information available:

- *modem telephone number*—Each System Center is installed with a modem so that the System Center can be accessed by Systems Support Engineering for diagnostics and troubleshooting.
- *software release*—Systems Support Engineering will ask you what software release you are using with your Tradenet MX System. To find out the software release on a stand-alone System Center, take the following steps:
  1. At the System Center workstation, open a shell tool window.
  2. Move your mouse cursor inside the shell tool window so the window is active.
  3. Type **ckversion** and press ENTER. Your software version will be listed.
- *system size*—Systems Support Engineering will ask you how large your system is; that is, the number of terminal units (TU), or terminal shelves, you have.
- *system power*—Systems Support Engineering will ask you what type of power you are using to power your Tradenet MX System. You need to tell them whether you are using AC or DC power. If you are using AC power, you need to tell them whether you are using HC or KEPCO equipment; if you are using DC power, you need to tell them whether you are using HC or Unipower equipment.

In addition, be prepared to provide a description of the problem and what steps you took leading up to the problem.

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## Reader's Comments

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**Tradenet MX Advanced System Center Manual**

**Release 14.1**

**May 1999**

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In a continuing effort to improve our manuals, the Technical Publications department invites all readers to use this form for submitting comments and suggestions. We appreciate your feedback. Instructions: fill out this form, fold along the dotted lines, tape form closed, place stamp where indicated, and mail this form.

Identify any words in the manual that we used incorrectly or used instead of more suitable words.

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Indicate any terms that you could not find easily using the table of contents and index.

Indicate any illustrations that were difficult to understand (for example, blurry or small text).

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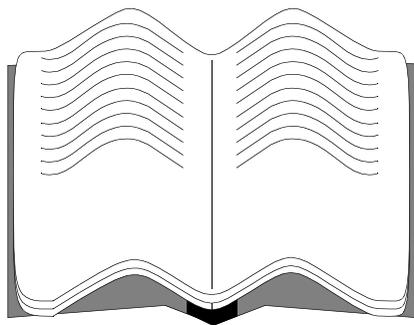
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# Chapter 1 Introduction



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## OVERVIEW

This manual contains additional topics about the System Center not covered in the *Tradenet MX System Center Manual 14.1* (part number B0086185104).

Tradenet MX Release 11.2 and later is year 2000 compliant.

This manual is divided as follows:

- [Chapter 1 Introduction on page 1-1](#)—This chapter provides you with introductory material that will be useful to you when you are reading this manual.
- [Chapter 2 Engineering Tables on page 2-1](#)—This chapter describes the engineering tables you access through Iview. The engineering tables should only be used by qualified personnel.
- [Chapter 3 Line Networking on page 3-1](#)—This chapter provides detailed descriptions of the procedures needed to efficiently administer and maintain the line networking capabilities of the Tradenet MX System.

## AUDIENCE

This document is intended for:

- senior administrators of Tradenet MX Systems
- IPC installers and Systems Support Engineering personnel
- IPC technical sales support personnel

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*Note*    *The title of the individual responsible for the operation of the Tradenet MX System might be system administrator, site manager, site administrator, or something else; in this manual, we use the generic term **administrator**.*

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## OTHER REFERENCES

For more information about the Tradenet MX System, refer to the *Tradenet MX System Center Manual 14.1* (part number B0086185104), the *Tradenet MX Technical Reference Manual 14.1* (part number B0108800003), the *Tradenet MX Installation & Maintenance Manual 14.1* (part number B0108900003), and the *Tradenet MX Platform Manual 14.1* (part number B0087686104). Release Notes for the particular software version you have are also helpful.

## DEFINITIONS OF TERMS

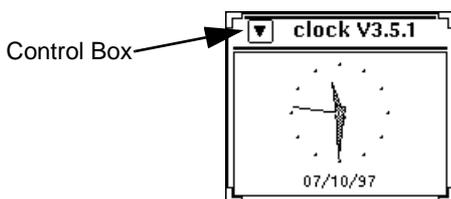
CLI	Calling line identification is the telephone number identification of the calling party. This number may include country codes, for international calls, carrier codes, or other information, along with the telephone number identifying the caller.
CO	Central office.
D/A Box	IPC Bridge digital-to-analog converter box.
FTS	Flexible trading speaker modules used with analog turrets.
Iview	Installer View. The tool used by IPC to update data in Tradenet MX databases. Iview is written in the Hyper- Script language™ (owned by Informix, Inc.) and uses Wingz™ to store data in tabular form.
Latch time	The period of time from the moment you press a button to the time a line is seized. A slow latch time results in voice clipping during fast trading. The Tradenet MX System provides a fast latch time of 80 ms.
MWM	Motif Window Manager. This window manager is used with Tradenet MX Release 10.1.
Netconfig	Software you use to set up the line networking feature.
NetMan	Software you use at the master site to set up line networking.
OLWM	OpenLook Window Manager. Used with Tradenet MX in all releases except 10.1.
SNMP	Simplified Network Management Protocol. A network management architecture used to manage all network types including non-TCP devices.
VME	VersaModule-Europe. VME was adopted by the ANSI/IEEE in 1987 as the standard mechanical and electrical bus. It is the most common bus on computers larger than PCs.
Wingz™	Spreadsheet interface used in the Tradenet MX System and owned by Investment Intelligence Systems Group.

## USING THE MOUSE

When you are instructed to click a mouse button, press down on the button once and release it. When you are instructed to press a mouse button, press down and hold the mouse button. Assume the left mouse button is the button you should click with, unless otherwise stated.

*Click* the left mouse button on the control box in the upper left corner of a window to minimize that window, and *press* the *right* mouse button on the control box to select a command.

**FIGURE 1-1** OLWM Window



If you are using a three-button optical mouse, the optical pad should be positioned squarely with the mouse for best results. The felt strips on the underside of the pad should be horizontal to the work surface.

If your keyboard has two mouse ports, the mouse can be set for either right-handed or left-handed users. System installation assumes that you are right-handed. If you have a keyboard that has two mouse ports (one for right-handed users and one for left-handed users), switch mouse ports after turning off the system. The mouse still functions in the same way. For more information, refer to the *Tradenet MX Platform Manual 14.1* (part number B0087686104).

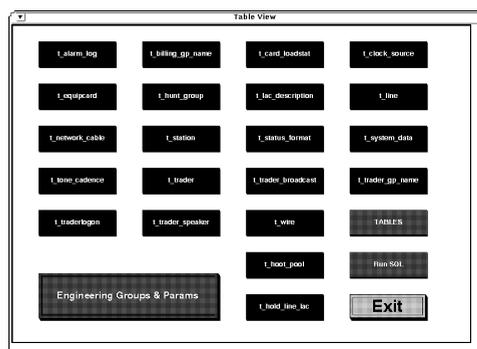
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***Warning!***      ***Do not disconnect the keyboard while the application is running.***

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# Chapter 2 Engineering Tables



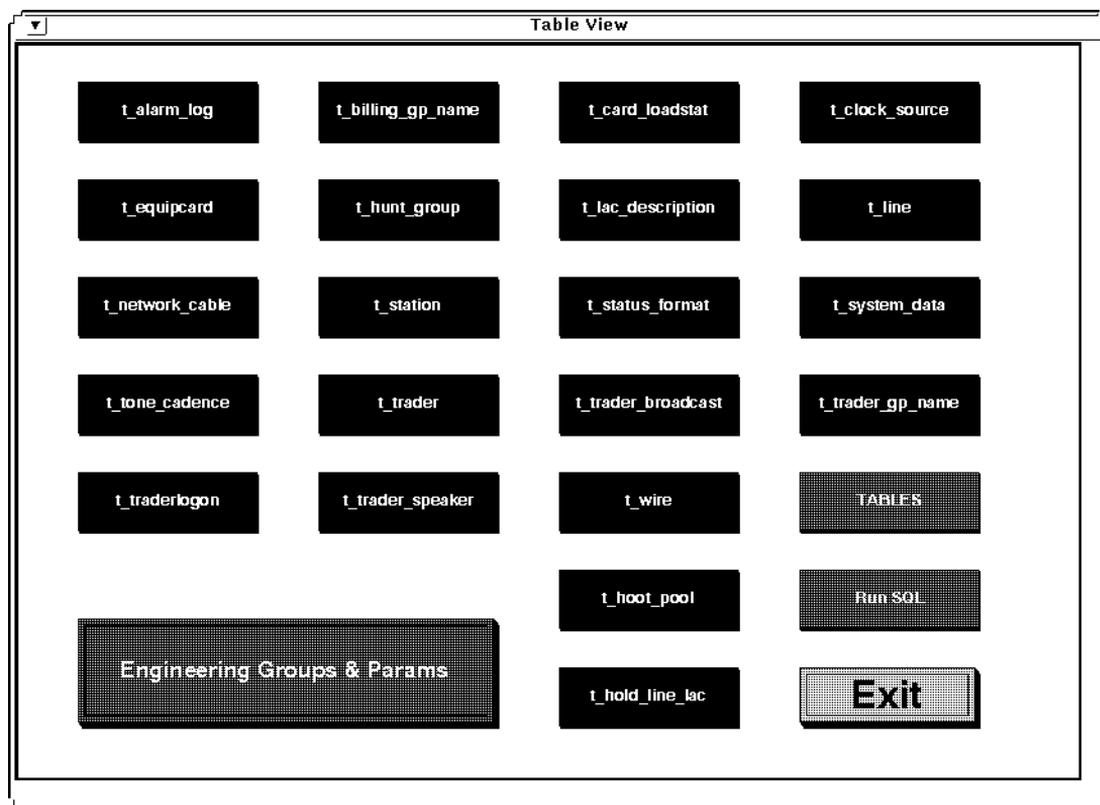
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<b>T_EQUIPCARD</b> .....	<b>2-3</b>
<b>T_SYSTEM_DATA</b> .....	<b>2-4</b>
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## INTRODUCTION

When you click **Table View** in the **System Center Data View** window, you see the **Table View** table.

*Note* This button is available only if you logged on as *install*, not as *sm*.

FIGURE 2-1 **Table View** Window



Use this dialog box to edit the Engineering tables. The only buttons you should use in this window are **t\_equipcard**, **t\_system\_data**, **t\_trader**, **t\_trader\_broadcast**, **t\_traderlogon**, **t\_trader\_speaker**, **t\_hold\_line\_lac**, and **Engineering Groups & Params**. Make sure you know what you are doing before you make any changes to these tables because you can adversely affect your MX System.

# T\_EQUIPCARD

Use this button to equip and un-equip existing cards in your system, not new cards. The only column you need to modify in this table is column K. Use 0 for spare cards and 1 for equipped cards.

FIGURE 2-2 t\_equipcard Table

t_equipcard											
1	A	B	C	D	E	F	G	H	I	J	K
2	CABINET	SHELF	SLOT	IPC_CARD_NUM	IPC_ROM_NUM	CARD_TYPE	CARD_STATUS	PLAC	INSTALL_DATE	PTAC	EQUIPPED
3	1	1	1	**Unknown**	**ROM-?*	BRIC	6	16708	05-22-97	472	1
4	1	1	2	4002651xx00	A-00275-0-01-19	IPIC	4	16596	03-25-97	481	1
5	1	1	3	4002651xx00	A-00275-0-01-19	BRIC	6	16748	05-22-97	472	1
6	1	1	4	4002651xx00	VXWORKS 5.2 rom	BSIC	4	16667	03-25-97	472	1
7	1	1	5	4001640xx03	A-00275-0-01-20	aLIC	4	16662	03-25-97	400	1
8	1	1	6	**Unknown**	**ROM-?*	aLIC	6	16663	03-25-97	400	1
9	1	1	7	**Unknown**	**ROM-?*	aLIC	6	16664	03-25-97	400	1
10	1	1	8	4001650xx03	A-00275-0-01-20	pLIC	4	16665	03-25-97	400	1
11	1	1	9	**Unknown**	**ROM-?*	pLIC	6	16666	03-25-97	400	1
12	1	1	10	4007420xx00	A-00275-0-01-20	NEMC	4	16790	05-28-97	440	1
13	1	1	11	**Unknown**	**ROM-?*	aLIC	6	16788	05-22-97	400	1
14	1	1	12	4001650xx03	A-00275-0-01-19	aLIC	6	16789	05-22-97	400	1
15	1	1	13	4007421xx00	VXWORKS 5.2 rom	NESC	4	16821	07-11-97	440	1
16	1	1	14	4010060xx02	A-00276-2-01-01	SCGC	4	32	11-26-96	434	1
17	1	1	15	4000660xx04	A-00275-0-01-19	ASEC	4	16553	11-26-96	414	1
18	1	1	16	4000660xx04	A-00275-0-01-19	ASEC	4	16554	11-26-96	414	1
19	1	1	17	4000660xx04	A-00275-0-01-12	ASEC	6	16555	11-26-96	414	1
20											
21											
22											
23											
24											
25											
26											

## T\_SYSTEM\_DATA

If you are using the Simplex Broadcast feature, you might need to edit your **t\_system\_data** table. Change the **CALL\_PARTIES\_LIMIT** and **CALL\_DLTN\_LN\_LIMIT** columns to 25 (not to 24) to broadcast to up to 24 parties simultaneously. Set the value in these columns to the maximum number of parties desired *plus one*. (These columns are usually set to 10.) Note that if the values in these two columns is set to 24, there will be no activity on the first simplex button at the turret, but simplex buttons 2, 3, and 4 will work correctly. Also, if you are using a STIC with 5 turrets and 16 speaker channels, make sure the **hoot\_pool\_size** of this table does not exceed 7 if you want 11 dynamic and 3 shared speakers (hoots). Likewise, if you are using a STIC with 3 turrets and 24 speaker channels, make sure the **hoot\_pool\_size** does not exceed 4 if you want 18 dynamic and 4 shared speakers (hoots).

FIGURE 2-3 t\_system\_data Table

	A	B	C	D	E	F
1	CUST_CO	CUST_NAME	COUNTRY	SITE_ADDR1	SITE_ADDR2	SITE_ADDR3
2	CHRIS	Chris S.	7	One Station Place	Metro Center 3rd Fl	Stamford Conn.
3						
4						

Use the **i\_system\_data** table to edit any other fields of this table. (Refer to *System Data* in chapter 8 of the *Tradenet MX System Center Manual 14.1*, part number B0086185104.)

## T\_TRADER

Use this button only to modify passwords. Whenever possible, use the **Password** option under **Utilities** instead. The only column you should ever need to modify in this table is column B.

FIGURE 2-4 t\_trader Table

1	A	B	C	D	E	F	
1	TRID	PASSWORD	TRADER_LABEL	TRADER_NAME	TRADER_GROUP_ID	BILLING_GROUP_ID	MODUL
2	1	1		Test Trader - 1	1	1	
3	2	2		Test Trader - 2	1	1	
4	3	3		Test Trader - 3	1	1	
5	4	4		Test Trader - 4	1	1	
6	5	5		Test Trader - 5	1	1	
7	6	6		Test Trader - 6	1	1	
8	7	7		Test Trader - 7	1	1	
9	8	8		Test Trader - 8	1	1	
10	9	9		Test Trader - 9	1	1	
11	10	10		Test Trader - 10	1	1	
12	11	11		Test Trader - 11	2	2	
13	12	12		Test Trader - 12	2	2	
14	13	13		Test Trader - 13	2	2	
15	14	14		Test Trader - 14	2	2	
16	15	15		Test Trader - 15	2	2	
17	16	16		Test Trader - 16	2	2	
18	17	17		Test Trader - 17	2	2	
19	18	18		Test Trader - 18	2	2	
20	19	19		Test Trader - 19	2	2	
21	20	20		Test Trader - 20	2	2	
22	21	21		Test Trader - 21	3	3	
23	22	22		Test Trader - 22	3	3	
24	23	23		Test Trader - 23	3	3	
25	24	24		Test Trader - 24	3	3	
26	25	25		Test Trader - 25	3	3	
27	26	26		Test Trader - 26	3	3	

*Note* You might find it helpful to view this table when you want to see all the passwords in your system. This can be faster than running a report.

# T\_TRADER\_BROADCAST

If you are setting up broadcast groups, you need to edit this table.

FIGURE 2-5 t\_trader\_broadcast Table

t_trader_broadcast							
1	A	B	C	D	E	F	
1	TRID	INTERNAL_BGRP00	INTERNAL_BGRP10	INTERNAL_BGRP20	INTERNAL_BGRP30	INTERNAL_BGRP40	INTERNAL
2	1	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
3	2	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
4	3	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
5	4	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
6	5	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
7	6	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
8	7	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
9	8	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
10	9	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
11	10	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
12	11	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
13	12	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
14	13	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
15	14	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
16	15	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
17	16	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
18	17	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
19	18	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
20	19	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
21	20	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
22	21	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
23	22	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
24	23	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
25	24	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
26	25	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN
27	26	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNNNNNNNNN	NNN

## **T\_TRADERLOGON**

With early iterations of Release 11.2, there was a problem where the t\_traderlogon table was deleted when you exported a database. This problem was fixed in the final released version of Release 11.2.

## **T\_TRADER\_SPEAKER**

The `t_trader_speaker` table contains up to 32 LAC values for each TRID. If you add speakers to a station, you need to add the additional speaker LACs. For example, if you upgrade a station from two speakers (16 LACs) to four speakers (32 LACs), you need to specify the additional 16 LACs.

There are two ways you can add speaker LACs: from the turret, or from the System Center using the `t_trader_speaker` table. If you are upgrading several traders at one time, it is probably easier to edit the `t_trader_speaker` table on the System Center.



The **GROUP\_TALKBACK**, **GROUP\_MONITOR**, and **BUTTON\_LATCH** columns contain 32 **Y** or **N** entries, one for each speaker LAC.

## T\_HOLD\_LINE\_LAC

This table indicates music sources for the music on hold feature. For more information about music on hold, refer to *Music on Hold* in chapter 2 of the *Tradenet MX System Center Manual 14.1* (part number B0086185104). The **AUDIO\_ON\_HOLD\_ID** column contains unique index numbers for music sources. The **HOLD\_LAC** column contains unique valid physical LAC numbers.

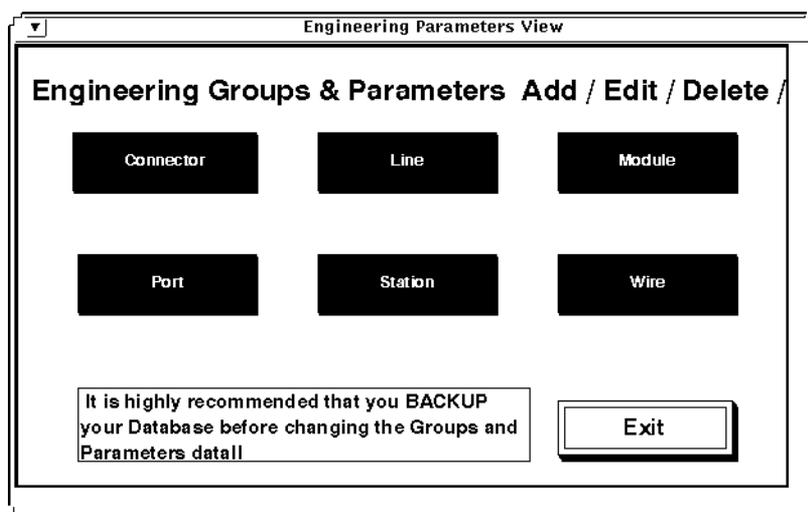
FIGURE 2-8 t\_hold\_line\_lac Table

t_hold_line_lac						
1	A	B	C	D	E	F
1	AUDIO_ON_HOLD_ID	HOLD_LAC				
2	1	-1				
3	2	-1				
4	3	-1				
5	4	-1				
6	5	-1				
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						

## ENGINEERING GROUPS & PARAMS

When you click **Engineering Groups & Params** in the **Table View** window, you see the **Engineering Parameters View** window.

FIGURE 2-9 Engineering Parameters View Window



### Line

You use the **Line** button to set up the Tradenet FXS forward disconnect feature and the Flexible Bit Signaling feature. (For more information about these features, refer to *Tradenet FXS Forward Disconnect* and *Flexible Bit Signalling* in chapter 2 of the *Tradenet MX System Center Manual 14.1*, part number B0086185104.)

#### Tradenet FXS Forward Disconnect Feature

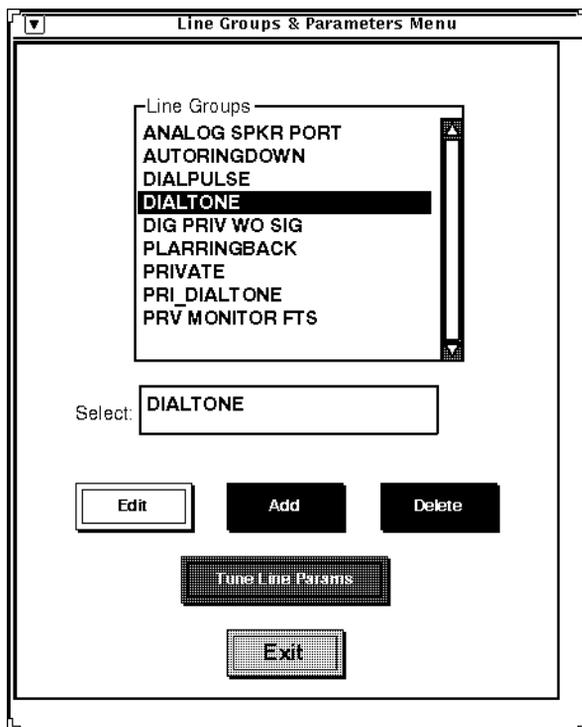
To set up the Tradenet FXS Forward Disconnect feature, you need to perform one of the following procedures:

- If seven or fewer lines need to be changed, you need to tune the line parameters.
- If all T1 lines are in one line group, you need to edit that line group.
- If more than seven lines need to be changed, you need to add a new line group to an existing database.

To tune the line parameters, take the following steps:

1. Click **Line** in the **Engineering Groups & Params** window. You see the **Line Groups & Parameters Menu**.

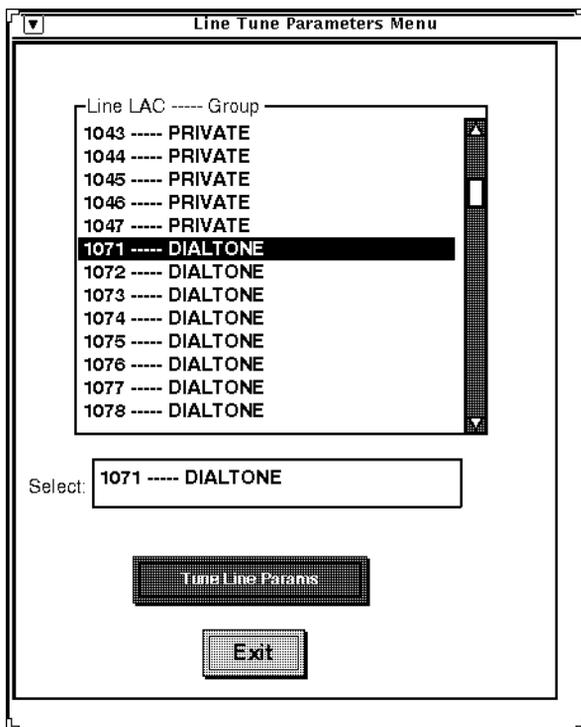
FIGURE 2-10 **Line Groups & Parameters Menu**



2. Click **DIALTONE**, then **Tune Line Params**.

3. You see the **Tune Line Parameters Menu**. Click the dialtone LAC that you want to convert from regular dialtone to forward disconnect and verify that the LAC is a line LAC (the window should read **Line LAC**).

FIGURE 2-11 Tune Line Parameters Menu



4. Click **Tune Line Params**.

- You see the **p\_Line Params** table. Locate the row with the **Param Name** value of **DIGITAL SIG TYPE** and change the **New Param Value** to 4, for forward disconnect.

FIGURE 2-12 p\_Line Params Table

p_Line Params										
	A	B	C	D	E	F	G	H	I	J
1	Group Id	Group Name	Param Id	Param Name	Param Type	Min	Max	Param Value	New Param Value	
2	4	DIALTONE	1	LINE USAGE	enum	1	2	2		
3	4	DIALTONE	3	LINE DIAL TYPE	enum	1	2	1		
4	4	DIALTONE	4	DIGITAL SIG TYPE	enum	1	4	1		
5	4	DIALTONE	5	FLASH TYPE	enum	1	2	2		
6	4	DIALTONE	6	FLASH TIME	number	0	32767	650		
7	4	DIALTONE	7	PREDIAL PAUSE	number	0	32767	1000		
8	4	DIALTONE	10	NO-RING TIMEOUT	number	0	32767	6000		
9	4	DIALTONE	11	HOLD ABNDN TIME	number	90	600	600		
10	4	DIALTONE	12	HANGUP TIME	number	0	32767	0		
11	4	DIALTONE	13	RECALL TIME	number	0	32767	0		
12	4	DIALTONE	14	LINE CLASS REF	enum	1	3	2		
13	4	DIALTONE	15	CONF HOLD XFR	number	0	1	0		
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										

- On the Iview main menu bar, click **Table Operations** and **Save Table**.
- You see a confirmation message. Click **OK** to save the table.
- Repeat steps 1 – 7 for as many line LACs as required.
- On the Iview main menu bar, click **Table Operations** and **Quit Table**.
- You see a confirmation message. Click **OK**.
- Reload the line cards.

To edit an existing line group, take the following steps:

- Click **Line** in the **Engineering Groups & Params** window. You see the **Line Groups & Parameters Menu**.
- Click **DIALTONE** and **Edit**.

- You see the **p\_Line Edit Group** table. Locate the row with column G, the **Param Name** value, of **DIGITAL SIG TYPE** and change the **Param Value** to 4, for forward disconnect.

FIGURE 2-13 p\_Line Edit Group Table, Columns A-G

p_Line Edit Group							
	A	B	C	D	E	F	G
1	Group Name	Group Class	Group Description	Param Value	Param Min	Param Max	Param Na
2	DIALTONE	Public DialTone	Normal Dial Tone line	2	1	2	LINE USA
3	DIALTONE	Public DialTone	Normal Dial Tone line	1	1	2	LINE DIAL T
4	DIALTONE	Public DialTone	Normal Dial Tone line	1	1	4	DIGITAL SIG
5	DIALTONE	Public DialTone	Normal Dial Tone line	2	1	2	FLASH TY
6	DIALTONE	Public DialTone	Normal Dial Tone line	650	0	32767	FLASH TI
7	DIALTONE	Public DialTone	Normal Dial Tone line	1000	0	32767	PREDIAL PA
8	DIALTONE	Public DialTone	Normal Dial Tone line	6000	0	32767	NO-RING TIM
9	DIALTONE	Public DialTone	Normal Dial Tone line	600	90	600	HOLD ABNDT
10	DIALTONE	Public DialTone	Normal Dial Tone line	0	0	32767	HANGUP T
11	DIALTONE	Public DialTone	Normal Dial Tone line	0	0	32767	RECALL T
12	DIALTONE	Public DialTone	Normal Dial Tone line	2	1	3	LINE CLASS
13	DIALTONE	Public DialTone	Normal Dial Tone line	0	0	1	CONF HOLD
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

FIGURE 2-14 p\_Line Edit Group Table, Columns G–K

p_Line Edit Group							
DIALTONE							
	G	H	I	J	K	L	M
	Param Name	Param Description	Param Type	Param Id	Group Id		
1	LINE USAGE	Trader's view; eg. Private Dial Tone	enum	1	4		
2	LINE DIAL TYPE	Tone, Pulse etc.	enum	3	4		
3	DIGITAL SIG TYPE	Normal, WATS, etc.	enum	4	4		
4	FLASH TYPE	Ground-flash or Loop Flash	enum	5	4		
5	FLASH TIME	Flash Time, in mS	number	6	4		
6	PREDIAL PAUSE	Pre-Dial Pause, in mS	number	7	4		
7	NO-RING TIMEOUT	No Ring Timeout, in mS	number	10	4		
8	HOLD ABNDN TIME	Hold Abandon Timeout 90ms or 600mS	number	11	4		
9	HANGUP TIME	Hangup Delay Time, in mS	number	12	4		
10	RECALL TIME	Recall Time, in mS	number	13	4		
11	LINE CLASS REF	Maps Line Group Name to Line Class	enum	14	4		
12	CONF HOLD XFR	Conference, hold or transfer	number	15	4		
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

4. On the Iview main menu bar, click **Table Operations** and **Save Table**.
5. You see a confirmation message. Click **OK** to save the table.
6. On the Iview main menu bar, click **Table Operations** and **Quit Table**.
7. You see a confirmation message. Click **OK**.
8. Insert this group where needed in the **LINE GROUP** column of the **LINE** table.
9. Save the line table.
10. Reload the line cards.

If you need to add a new line group to an existing database, call IPC Systems Support Engineering at 1-203-399-7800 and they will walk you through this procedure.

### Flexible Bit Signaling Feature

To use the Flexible Bit Signaling feature, you need to assign signaling information using the **Line** button in the **System Center Data View** window. (Refer to *Line* in chapter 8 of the *Tradenet MX System Center Manual 14.1*, part number B0086185104.) If you want to change these values before you assign Flexible Bit Signaling information, you need to overwrite parameters using the **Line** button under **Engineering Groups & Params**. Remember, you are not destroying the default parameters, just overwriting them.

*Note* You can overwrite parameters for the **PRIV CAS PDMX** option only.

To change the default parameter values for this feature, take the following steps:

1. Log in to the System Center as *install* (not *sm*).
2. Open the **System Center Data View** window.

3. Click the **Table View** button to open the **Table View** window.
4. Click the **Engineering Groups & Params** button to open the **Engineering Parameters View** window.
5. Click the **Line** button to open the **Line Groups & Parameters Menu**.
6. Click **PRIV CAS PDMX** then click the **Edit** button to open the **p\_Line Edit Group** window.

FIGURE 2-15 p\_Line Edit Group Table, Columns A–G

	A	B	C	D	E	F	G
1	Group Name	Group Class	Group Description	Param Value	Param Min	Param Max	Param Name
2	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	1	1	2	LINE USAGE
3	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	2	1	5	PRV LINE SIG TYP
4	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	1000	0	32767	MIN SIGNAL TIME
5	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	6000	0	32767	NO-RING TIMEOUT
6	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	0	0	32767	HANGUP TIME
7	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	0	0	32767	RECALL TIME
8	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	1	1	3	LINE CLASS REF
9	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	0	0	1	CONF HOLD XFR
10	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	1	0	15	DISCONNECT CLEAR
11	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	9	0	15	CAI SILENCE STAT
12	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	5	0	15	SEIZE STATE
13	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	13	0	15	IDLE STATE
14	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	5	0	15	CAI RINGING STAT
15	PRIV CAS PDMX	Private Line	Private E1 Line for New Uk Sites	15	0	15	BLOCK STATE
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

If necessary, change the values in the **Param Value** column. The **Param Min** and **Param Max** columns determine the minimum and maximum values for **Param Value**. Your network provider will give you your ABCD four-bit signaling pattern. Use the following table to convert this pattern to the decimal value you should type in the **Param Value** column.

TABLE 2-1 Conversion of Signaling Bits to Param Value

If Your Signaling Bit Pattern is (ABCD)	Use a Param Value of
0000	0
0001	1
0010	2
0011	3
0100	4
0101	5
0110	6
0111	7

If Your Signaling Bit Pattern is (ABCD)	Use a Param Value of
1000	8
1001	9
1010	10
1011	11
1100	12
1101	13
1110	14
1111	15

The **Param Name** is determined by the **Param Value**. Parameters listed in the **Param Id** column having the values 22–27 identify the new parameters. The only column you can modify in this table is **Param Value**.

FIGURE 2-16 p\_Line Edit Group Table, Columns G–K

p_Line Edit Group							
PRIV CAS PDMX							
	G	H	I	J	K	L	M
1	Param Name	Param Description	Param Type	Param Id	Group Id		
2	LINE USAGE	Trader's view; eg. Private Dial Tone	enum	1	10		
3	PRV LINE SIG TYP	Signal type for wet/dry private lines	enum	2	10		
4	MIN SIGNAL TIME	Minimum Signal On Time, in mS	number	9	10		
5	NO-RING TIMEOUT	No Ring Timeout, in mS	number	10	10		
6	HANGUP TIME	Hangup Delay Time, in mS	number	12	10		
7	RECALL TIME	Recall Time, in mS	number	13	10		
8	LINE CLASS REF	Maps Line Group Name to Line Class	enum	14	10		
9	CONF HOLD XFR	Conference, hold or transfer	number	15	10		
10	DISCONNECT CLEAR	Disconnect clear signalling state	number	22	10		
11	CAI SILENCE STAT	CAI silence signalling state	number	23	10		
12	SEIZE STATE	Seize signalling state	number	24	10		
13	IDLE STATE	Idle signalling state	number	25	10		
14	CAI RINGING STAT	CAI ringing signalling state	number	26	10		
15	BLOCK STATE	Block signalling state	number	27	10		
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

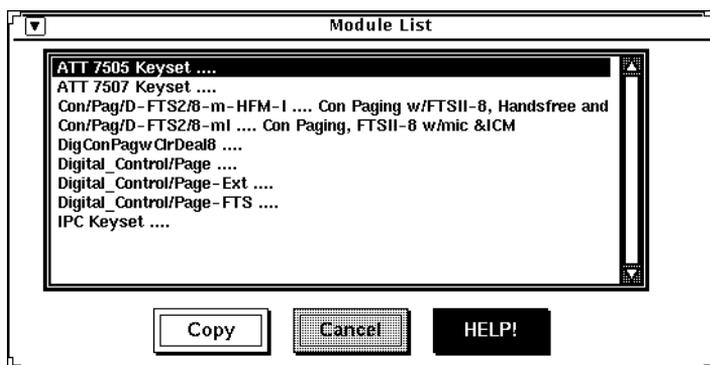
- Save your changes by clicking **Table Operations** on the Iview main menu bar, then clicking **Save Table**. You see a confirmation message.
- Click **OK**.
- Quit the **p\_Line Edit Group** window by clicking **Table Operations** on the Iview main menu bar, then clicking **Quit Table**. You see a confirmation message.
- Click **OK**.
- Click **Exit** to close the **Line Groups & Parameters Menu**.

12. Click **Exit** to close the **Engineering Parameters View** window.
13. Re-synchronize the card for your changes to go into effect using the **Synchronize Data (Card Configuration Data)** option on the **MAINTENANCE** and **CARD** menus in the System Center **MAIN MENU**. (Refer to *Synchronize Data (Card Configuration Data) Option* in chapter 4 of the *Tradenet MX System Center Manual 14.1*, part number B0086185104.)

## Module

You use the **Module** button to create module groups that are available from the **Module Groups** pick list. (To get to this pick list, click **Table Operations** on the Iview main menu bar, then click **Params. List**, and **Module Groups**.) Use this pick list to populate the **Module Group** column of the `i_station` table. (To get to this table, click **Station** in the **System Center Data View** window.)

FIGURE 2-17 Module List Menu



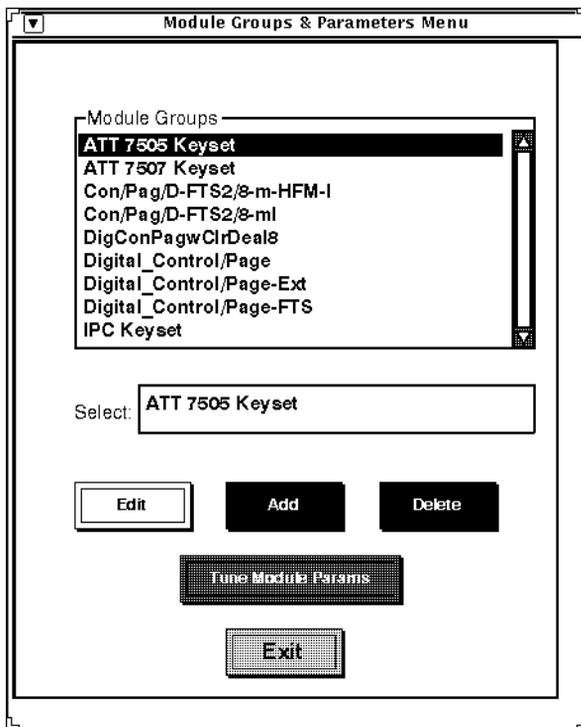
**Warning!**

*Do not modify the module tables (or any of the Engineering tables) if you are not sure of what you are doing. You can adversely affect your system. Adding module groups should only be done by Level II technicians. If you have any questions, call IPC Systems Support Engineering.*

To create a module group, take the following steps:

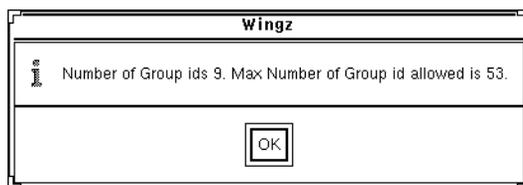
1. Click **Module** in the **Engineering Groups & Params** window. You see the **Module Groups & Parameters** menu.

FIGURE 2-18 Module Groups & Parameters Menu



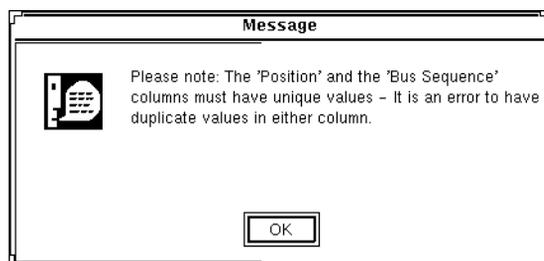
2. To add a module group, select an existing module group that is similar to the new module group and click **Add**. You see a message indicating the maximum number of module groups you have and the number you can have. With Release 11.1 and later, the maximum number of module groups you can have is 53.

FIGURE 2-19 Wingz Message



3. Click **OK**. You see the following message.

FIGURE 2-20 Message



- Click **OK**. You see the **p\_Module Add Group** dialog box and the **Module Type List** dialog box.

FIGURE 2-21 p\_Module Add Group Dialog Box, Columns A–B

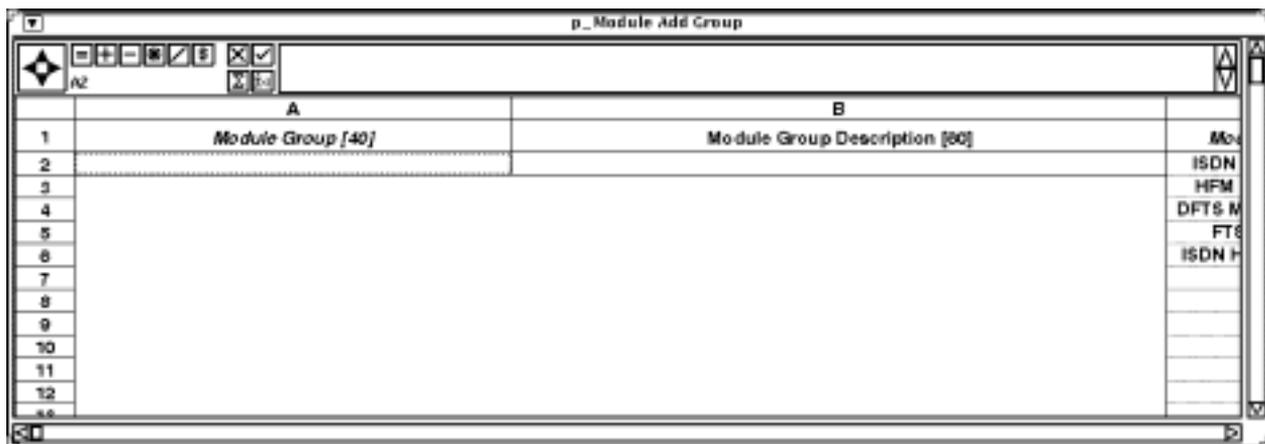
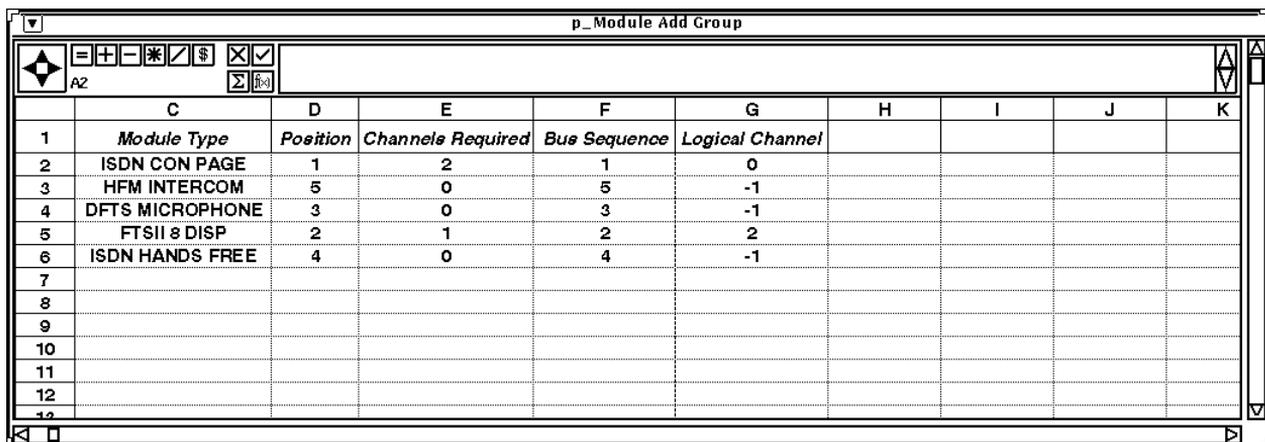


FIGURE 2-22 p\_Module Add Group Dialog Box, Columns C–G



The **p\_Module Add Group** dialog box allows you to create a module group from one or more module types.

FIGURE 2-23 Module Type List Dialog Box



- For the module group you want to create, determine which module types already listed in column C you want to keep and which you need to change and delete.
- Click in a row of column C that you want to change.

7. Using the scroll bars if necessary, select a new module type in the **Module Type List** dialog box.
8. Click **Copy**. The new module type replaces the old module type you selected in column C of the **p\_module Add Group** dialog box.
9. Change columns D–G if necessary. (The **Position** and **Bus Sequence** columns must be unique.) You should not have duplicate numbers in either the **Position** column or the **Bus Sequence** column.
10. Repeat steps 6–9 for each module type you want to change.
11. If you need to add additional module types, click in the first blank row of column C and copy a module type from the **Module Type List** dialog box. Populate columns D–G appropriately.
12. Repeat step 11 for each module type you want to add.
13. If you need to delete any existing module types, highlight the row in column C you want to delete, press CTRL-K, and click **Delete**.

---

*Note* With Release 11.1 and later, if you delete all module groups in preparation for adding new module groups, you will have a problem. At all times, make sure you have at least one module group in your system. Therefore, if you need to delete the module groups in your system and then add new module groups, delete all module groups **except one**, add your new module groups, then delete the one module group that you didn't delete.

---

14. In column A of the **p\_Module Add Group** dialog box, type a name of up to 40 characters for the module group you created. (Prior to Release 8.0.2, the name could only be up to 16 characters.) This is the name that appears in the **Module Groups** pick list.

Use the following formula for creating module group names:

**R**<turret or keyset type>/<# of handsets>-Pg-<# of speakers>/<speaker type>/<# of hoots>hm-HF/IS

- separate portions of the module group with hyphens (-)
- use slashes (/) to separate distinct parts of each portion
- Include **R** in the name only if you are connecting through a remote turret device
- if <# of handsets> is one, use **S** and if <# of handsets> is two, use **D**
- only include **Pg** in the name if you have an additional ISDN external pagination module
- only include <# of hoots>**h** in the name if you have hoot speakers
- only include **m** in the name if you have a microphone
- only include **HF/IS** in the name if you have an ISDN hands free module (add on intercom module)
- see the following table for abbreviations for **turret or keyset type** and **speaker type**

**TABLE 2-2** Module Group Name Abbreviations

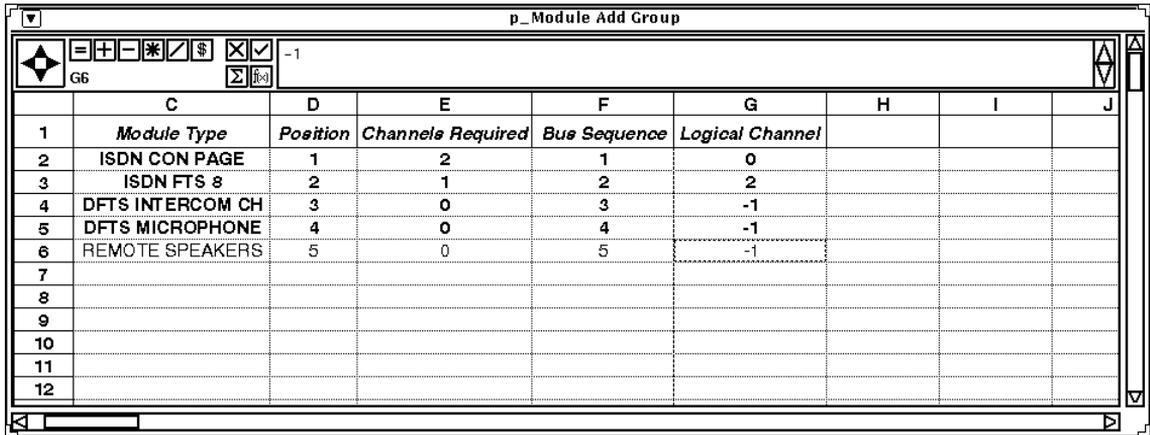
Abbreviation	Description
CNTL	Tradenet Analog Control Module
EL	Tradenet Analog EL Module
PCD	Tradenet Analog PCD Module
TouchScreen	Tradenet Analog TouchScreen Module
Sp	Third Party Analog Orator

Abbreviation	Description
Con	ISDN Standalone Control Module
Con/Pag	ISDN Standalone Control Module with ISDN Consolidated Pagination Module
ConPag	ISDN Consolidated Control/Pagination Module
Con/PCD	ISDN Consolidated Control/PCD Module
H/Con	High Resolution ISDN Standalone Control Module
H/Con/Pag	High Resolution ISDN Control/Pagination Module
H/Con/PCD	High Resolution ISDN Control/PCD Module
FTS4	ISDN FTS4 Module
FTS8	ISDN FTS8 Module
INLN	ISDN 8 Channel Speaker Pod
FS24	ISDN Model Two FTS4
FS28	ISDN Model Two FTS8
ISDN ATT 7505	ISDN Station Model ATT 7505
ISDN ATT 7506	ISDN Station Model ATT 7506
ISDN ATT 7507	ISDN Station Model ATT 7507
ISDN ATT 8503	ISDN Station Model ATT 8503
ISDN ATT 8510	ISDN Station Model ATT 8510
ISDN ATT 8520	ISDN Station Model ATT 8520
IPC Keypad	TradePhone MX
STIC-Turret	Turret Using a Station Interface Card (STIC) Instead of a BRIC

15. In column B, type a description of up to 60 characters for the module group you created. (Prior to Release 8.0.2, the description could only be up to 40 characters.)
16. On the Iview main menu bar, click **Table Operations**, and **Save Table**. You see a confirmation message.
17. Click **OK**.
18. Click **Table Operations** on the Iview main menu bar, then click **Quit Table**. You see a confirmation message.
19. Click **OK**.
20. Click **Exit** in the **Module Groups & Parameters Menu**.

If you are specifying a module that includes remote speakers, the entries in columns C–G of the p\_Module Add Group table must be as shown in the figure below. Specifically, the entry in column E, Channels Required, must be 0 (zero), and the entry in column G, Logical Channel, must be -1:

FIGURE 2-24 p\_Module Add Group Table



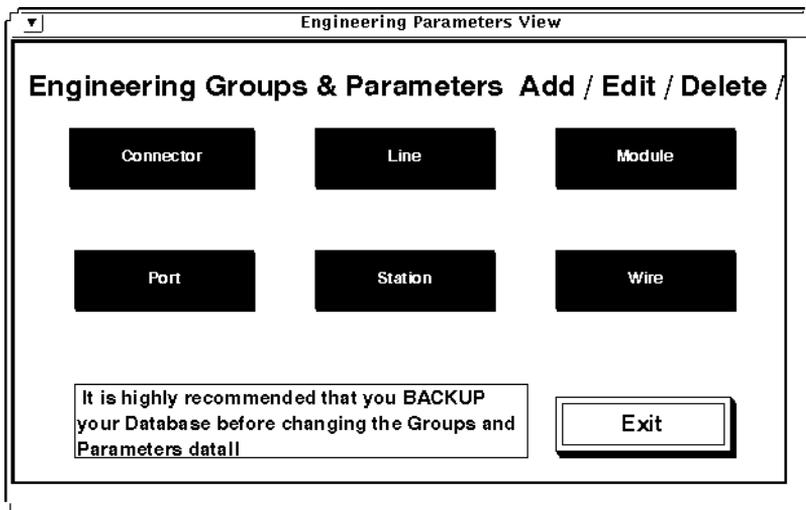
	C	D	E	F	G	H	I	J
1	<i>Module Type</i>	<i>Position</i>	<i>Channels Required</i>	<i>Bus Sequence</i>	<i>Logical Channel</i>			
2	ISDN CON PAGE	1	2	1	0			
3	ISDN FTS 8	2	1	2	2			
4	DFTS INTERCOM CH	3	0	3	-1			
5	DFTS MICROPHONE	4	0	4	-1			
6	REMOTE SPEAKERS	5	0	5	-1			
7								
8								
9								
10								
11								
12								

You might notice that your microphone audio level is lower than your handset audio level.

This problem occurs only in Releases 9.0.1 Maintenance and 9.2 Maintenance. If you have Release 9.0.1 Maintenance or Release 9.2 Maintenance and wish to adjust microphone audio level, take the following steps:

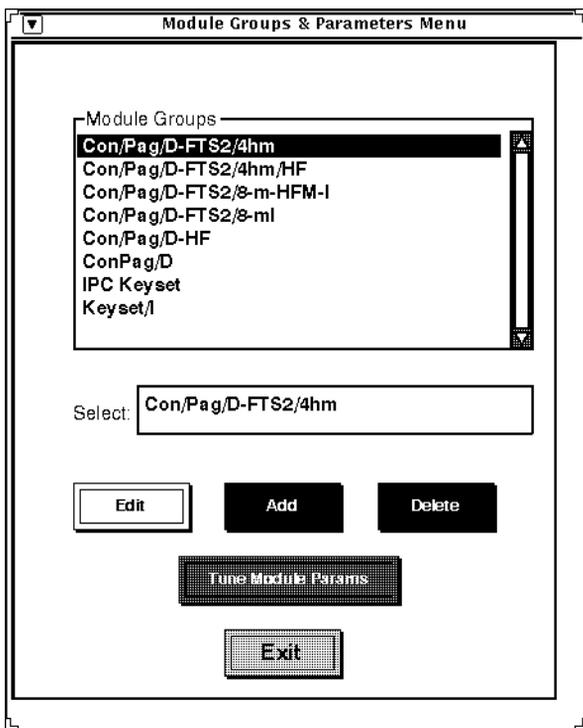
1. In the **System Center Data View** window, click **Table View**. You see the **Table View** window.
2. Click **Engineering Groups & Params**. You see the **Engineering Parameters View** window.

FIGURE 2-25 Engineering Parameters View Window



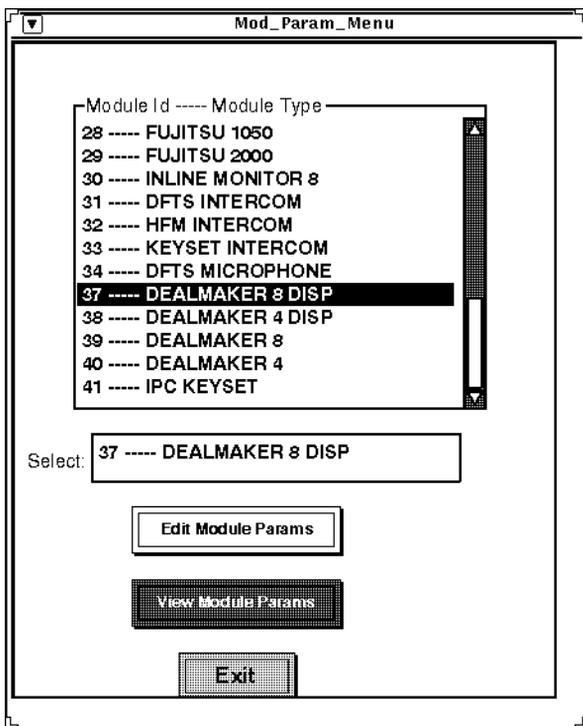
3. Click **Module**. You see the **Module Groups & Parameters** menu.

FIGURE 2-26 Module Groups & Parameters Menu



4. Click **Tune Module Params**. You see the **Mod\_Param\_Menu** window.

FIGURE 2-27 Mod\_Param\_Menu Window



5. Click **DEALMAKER 8 DISP**. This is the ClearDeal eight-channel display speaker module.
6. Click **Edit Module Params**. You see the **p\_Module Edit Params** window.

FIGURE 2-28 p\_Module Edit Params Window, Columns A–F

p_Module Edit Params							
1	A	B	C	D	E	F	G
	Module Id	Module Type	Param Id	Param Name	Param Description	Param Type	Mi
2	37	DEALMAKER 8 DISP	2	VOICE TX GAIN	Nominal gain table offset value, XMIT	number	1
3	37	DEALMAKER 8 DISP	3	VOICE TX MAX	Max permitted gain table offset, XMIT	number	0
4	37	DEALMAKER 8 DISP	4	VOICE TX MIN	Min permitted gain table offset, XMIT	number	1
5	37	DEALMAKER 8 DISP	5	VOICE RX GAIN	Nominal gain table offset value, RCV	number	1
6	37	DEALMAKER 8 DISP	6	VOICE RX MAX	Max permitted gain table offset, RCV	number	0
7	37	DEALMAKER 8 DISP	7	VOICE RX MIN	Min permitted gain table offset, RCV	number	1
8	37	DEALMAKER 8 DISP	8	MAX CHAN CONNECT	Max. # voice ch. allowed on this module	number	0
9	37	DEALMAKER 8 DISP	9	MAX MIX CHAN	Max. # of speaker voice sources 1 mix ch	number	0
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

FIGURE 2-29 p\_Module Edit Params window, Columns D-I

p_Module Edit Params							
37							
D	E	F	G	H	I	J	
1	Param Name	Param Description	Param Type	Min	Max	Param Value	New Value
2	VOICE TX GAIN	Nominal gain table offset value, XMIT	number	1	40	40	
3	VOICE TX MAX	Max permitted gain table offset, XMIT	number	0	40	40	
4	VOICE TX MIN	Min permitted gain table offset, XMIT	number	1	40	1	
5	VOICE RX GAIN	Nominal gain table offset value, RCV	number	1	40	19	
6	VOICE RX MAX	Max permitted gain table offset, RCV	number	0	40	40	
7	VOICE RX MIN	Min permitted gain table offset, RCV	number	1	40	1	
8	MAX CHAN CONNECT	Max. # voice ch. allowed on this module	number	0	8	8	
9	MAX MIX CHAN	Max. # of speaker voice sources 1 mix ch	number	0	8	8	
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							

7. Scroll down to the row with **Param Name** of **VOICE TX GAIN** and **Param Id** of **2**.
8. In that row, change the **Param Value** to **40**.
9. Click **Table Operations** and **Save Table**.
10. Click **OK**.
11. In the **Mod\_Param\_Menu**, click **DEALMAKER 4 DISP**. This is the ClearDeal four-channel display speaker module.
12. Click **Edit Module Params**. You see the **p\_Module Edit Params** window.
13. Scroll down to the row with **Param Name** of **VOICE TX GAIN** and **Param Id** of **2**.
14. In that row, change the **Param Value** to **40**.
15. Click **Table Operations** and **Save Table**.
16. Click **OK**.
17. In the **Mod\_Param\_Menu**, click **DEALMAKER 8**. This is the ClearDeal eight-channel non-display speaker module.
18. Click **Edit Module Params**. You see the **p\_Module Edit Params** window.
19. Scroll down to the row with **Param Name** of **VOICE TX GAIN** and **Param Id** of **2**.
20. In that row, change the **Param Value** to **40**.
21. Click **Table Operations** and **Save Table**.
22. Click **OK**.

23. In the **Mod\_Param\_Menu**, click **DEALMAKER 4**. This is the ClearDeal four-channel non-display speaker module.
24. Click **Edit Module Params**. You see the **p\_Module Edit Params** window.
25. Scroll down to the row with **Param Name** of **VOICE TX GAIN** and **Param Id** of **2**.
26. In that row, change the **Param Value** to **40**.
27. Click **Table Operations** and **Save Table**.
28. Click **OK**.
29. In the **Mod\_Param\_Menu**, click **Exit**.
30. In the **Module Groups & Parameters Menu**, click **Exit**.
31. In the **Engineering Parameters View**, click **Exit**.
32. In the **Table View** window, click **Exit**.

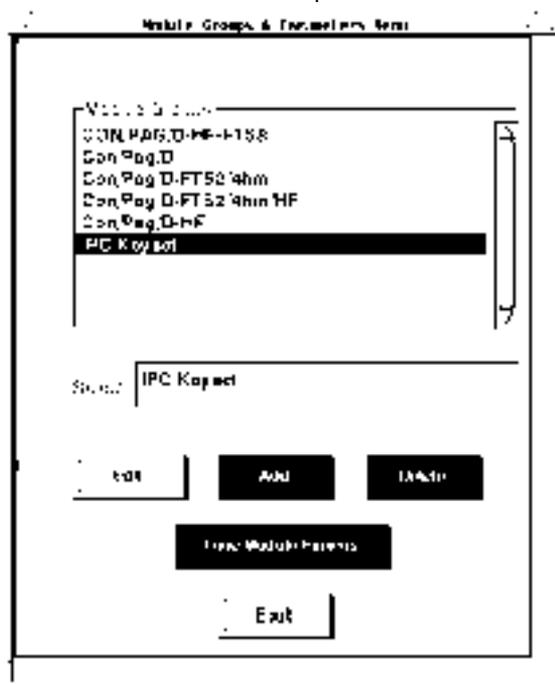
The TradePhone MX requires two B channels, whereas the AT&T keyset requires only one. (The AT&T keyset and the TradePhone MX cannot coexist on the same station interface card.)

If one B channel is specified for an IPIC (TradePhone MX interface card), the card might restart unexpectedly.

If an IPIC restarts unexpectedly at a site equipped with the TradePhone MX, verify that two B channels are specified. To do this, check the entry in column E of the **p\_Module Edit Group** table, by taking the following steps:

1. In the **System Center Data View** window, click **Table View**. You see the **Table View** window.
2. Click **Engineering Groups & Params**. You see the **Engineering Parameters View** window.
3. Click **Module**. You see the **Module Groups & Parameters Menu** window:

FIGURE 2-30 Module Groups & Parameters Menu



4. Click the name of a module group that includes the TradePhone MX. (In the example above, the TradePhone MX module is identified by the name **IPC Keyset**.)

- Click **Edit**. You see the **p\_Module Edit Group** table. If the entry in column E, **Channels Required**, is other than 2, change it to 2.

FIGURE 2-31 p\_Module Edit Group Table

	B	C	D	E
2	Module Group Description	Module Type	Position	Channels Required
3	IPC Keyset with no MX	FC KEYSIT		2
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

- If more than one module group includes the TradePhone MX, click the top bar of the **Module Groups & Parameters Menu**, to activate the window. Select the name of another module that includes the TradePhone MX. Repeat steps 4-6 until all module groups that include the TradePhone MX have been checked.
- Save the table: On the Wingz main menu bar, click **Table Operations**; then click **Save Table** on the drop-down menu. You see a confirmation message.
- Click **OK**.
- Quit the table: On the Wingz main menu bar, click **Table Operations**; then click **Quit Table** on the drop-down menu. You see a confirmation message.
- Click **OK**.
- Click **Exit** to close the **Module Groups & Parameters Menu** window.
- Click **Exit** to close the **Engineering Parameters View** window.
- Click **Exit** to close the **Table View** window.

## Station

Use the **Station** button to:

- set up digital recording to a STIC
- adjust the sidetone on the ClearDeal or on an FTS speaker module

### **Warning!**

*Do not modify the station tables (or any of the Engineering tables) if you are not sure of what you are doing. You can adversely affect your system. Adding station groups should only be done by Level II technicians. If you have any questions, call IPC Systems Support Engineering.*

There is a problem when trying to record from the microphone on a second ClearDeal Classic speaker module if you are not using Y-cables. If you are not using Y-cables, the transmit volume from the microphone on the second ClearDeal Classic is not sufficient to cause recording. This problem has occurred on Release 11.2 and later systems only; it has not occurred on Release 10.1 Maintenance systems. The Y-cable is necessary for full volume microphone recording. Adjusting the **SIDETONE\_GAIN\_1** and **SIDETONE\_GAIN\_2** parameters, whether or not the Y-cable is used, will bring the sidetone back to the Release 11.2 and earlier levels.

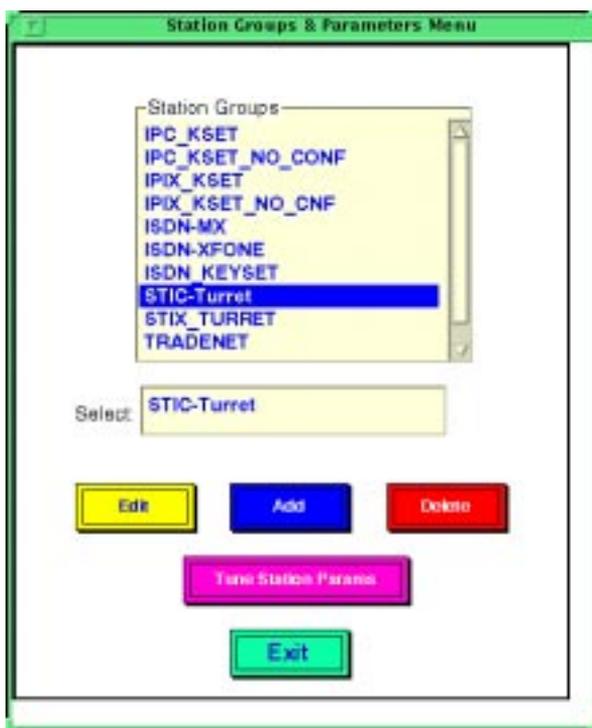
This problem does not occur on Slimline ClearDeals since the microphone is fed internally to each module, provided that the modules are joined. To adjust sidetone, see [Adjusting Sidetone on the ClearDeal or on the FTS Speaker Module on page 2-32](#).

## Digital Recording to a STIC

To set up digital recording to a STIC, take the following steps:

1. Click the left mouse button on **Station** in the **Engineering Parameters View** menu. You see the **Station Groups & Parameters Menu**.

FIGURE 2-32 **Station Groups & Parameters Menu Window**



2. Select **STIC-Turret**, then click on the **Edit** button.
3. Scroll down to the row where column **J, Param Id**, is **348**.

- In that row, set column **D, Param Value**, to **0**.

FIGURE 2-33 p\_Station Edit Group Table

	D	E	F	G	H	I	J	K
	Param Value	Param Min	Param Max	Param Name	Param Description	Param Type	Param Id	Gr
153	0	-32767	32767	DSP2_FIR_COEF_1	DSP FIR Coefficient	number	277	
154	0	-32767	32767	DSP2_FIR_COEF_2	DSP FIR Coefficient	number	278	
155	0	-32767	32767	DSP2_FIR_COEF_3	DSP FIR Coefficient	number	279	
156	0	-32767	32767	DSP2_FIR_COEF_4	DSP FIR Coefficient	number	280	
157	0	-32767	32767	DSP2_FIR_COEF_5	DSP FIR Coefficient	number	281	
158	0	-32767	32767	DSP2_FIR_COEF_6	DSP FIR Coefficient	number	282	
159	0	-32767	32767	DSP2_FIR_COEF_7	DSP FIR Coefficient	number	283	
160	0	-32767	32767	DSP2_FIR_COEF_8	DSP FIR Coefficient	number	284	
161	0	-32767	32767	DSP2_FIR_COEF_9	DSP FIR Coefficient	number	285	
162	0	-32767	32767	DSP2_FIR_COEF_10	DSP FIR Coefficient	number	286	
163	0	-32767	32767	DSP2_FIR_COEF_11	DSP FIR Coefficient	number	287	
164	0	-32767	32767	DSP2_FIR_COEF_12	DSP FIR Coefficient	number	288	
165	0	-32767	32767	DSP2_FIR_COEF_13	DSP FIR Coefficient	number	289	
166	0	-32767	32767	DSP2_FIR_COEF_14	DSP FIR Coefficient	number	290	
167	0	-32767	32767	DSP2_FIR_COEF_15	DSP FIR Coefficient	number	291	
168	27570	0	32767	SIDETONE_GAIN_1	FTS1 DSP Coefficient	number	292	
169	32767	0	32767	SIDETONE_GAIN_2	FTS2 DSP Coefficient	number	293	
170	0	0	1	PORT_10_SELECT	0=recorder, 1=ARI	number	348	
171	1	0	1	RECORD_TYPE	recorder type 0=T1, 1=E1	number	349	
172	0	0	4	RECORD_FRAMING	0=D4, 1=ESF2, 2=ESF4, 3=ESF16; T1	enum	350	
173	0	0	1	RECORD_ALARM	report recorder alarms 1=yes 0=no	number	351	
174	0	0	1	RECORD_COMPAND	recorder compand 0=Ulaw 1=Alaw	number	352	
175	16384	0	32767	REC_MIC_ATTEN_1	mic atten level for recorder 1st ds0	number	353	
176	16384	0	32767	REC_MIC_ATTEN_2	mic atten level for recorder 2nd ds0	number	354	
177	16384	0	32767	REC_MIC_ATTEN_3	mic atten level for recorder 3rd ds0	number	355	
178	16384	0	32767	REC_MIC_ATTEN_4	mic atten level for recorder 4th ds0	number	356	

- Click **Table Operations** and **Save Table**.
- Click **OK**.
- Click **Table Operations** and **Quit Table**.
- Click **OK**.

### Adjusting Sidetone on the ClearDeal or on the FTS Speaker Module

It may be necessary to adjust the sidetone on the ClearDeal or on an FTS module. If so, IPC recommends that the adjustment be made by a Level 2 trained technician. The procedure for adjusting sidetone that follows is valid for both the ClearDeal and FTS speaker modules.

*Note* The sidetone changes that the user hears will affect both the ClearDeal Classic and the Slimline speaker modules.

To adjust sidetone:

- Log on as *install*.
- In the **System Center Data View** screen, click **Table View**. You see the **Table View** screen.
- In the **Table View** screen, click **Engineering Groups & Params**. You see the **Engineering Parameters View** screen.

- In the **Engineering Parameters View** screen, click Station. You see the **Station Groups & Parameters Menu**.

*Note* At this point you must pick a station group. For the purposes of this example we are using **ISDN-MX**, but you should adjust any station group (either standard or custom groups) that controls speaker modules.

- Highlight **ISDN-MX** then click **Edit**. You see the **p\_Station Edit Group** spreadsheet.
- Scroll down until you see 292 and 293 in column **J (Param Id)**.

*Note* These values, 292 and 293, are **not** the row numbers, but are found in the **Param Id** column.

- Verify that you are in the right place by scrolling left to column **G (Param Name)**. You should see **SIDETONE\_GAIN\_1** and **SIDETONE\_GAIN\_2**.
- Continue scrolling left to column **D (Param Value)**. Change this value in both rows to **11000**.

*Note* The possible range of parameter values is from 32767 (off) to 0 (maximum). IPC recommends that you use 11000.

- Save your changes and exit out of the screen.

FIGURE 2-34 p\_Station Edit Group window

	D	E	F	G	H	I	J	K	L
1	Param Value	Param Min	Param Max	Param Name	Param Description	Param Type	Param Id	Group Id	
147	0	-32767	32767	DSP_IIR_COEFF_10	Distone Detect Filter Coeff.	number	271	1	
148	18384	0	32767	ALLCALL_SND	Group term atten	number	272	1	
149	18384	0	32767	ALLCALL_RCV	Group per atten	number	273	1	
150	24576	0	32767	ICM_SND	Group term atten	number	274	1	
151	24576	0	32767	ICM_RCV	Group per atten	number	275	1	
152	32767	-32767	32767	DSP2_FIR_COEF_0	DSP FIR Coefficient	number	276	1	
153	0	-32767	32767	DSP2_FIR_COEF_1	DSP FIR Coefficient	number	277	1	
154	0	-32767	32767	DSP2_FIR_COEF_2	DSP FIR Coefficient	number	278	1	
155	0	-32767	32767	DSP2_FIR_COEF_3	DSP FIR Coefficient	number	279	1	
156	0	-32767	32767	DSP2_FIR_COEF_4	DSP FIR Coefficient	number	280	1	
157	0	-32767	32767	DSP2_FIR_COEF_5	DSP FIR Coefficient	number	281	1	
158	0	-32767	32767	DSP2_FIR_COEF_6	DSP FIR Coefficient	number	282	1	
159	0	-32767	32767	DSP2_FIR_COEF_7	DSP FIR Coefficient	number	283	1	
160	0	-32767	32767	DSP2_FIR_COEF_8	DSP FIR Coefficient	number	284	1	
161	0	-32767	32767	DSP2_FIR_COEF_9	DSP FIR Coefficient	number	285	1	
162	0	-32767	32767	DSP2_FIR_COEF_10	DSP FIR Coefficient	number	286	1	
163	0	-32767	32767	DSP2_FIR_COEF_11	DSP FIR Coefficient	number	287	1	
164	0	-32767	32767	DSP2_FIR_COEF_12	DSP FIR Coefficient	number	288	1	
165	0	-32767	32767	DSP2_FIR_COEF_13	DSP FIR Coefficient	number	289	1	
166	0	-32767	32767	DSP2_FIR_COEF_14	DSP FIR Coefficient	number	290	1	
167	0	-32767	32767	DSP2_FIR_COEF_15	DSP FIR Coefficient	number	291	1	
168	11000	0	32767	SIDETONE_GAIN_1	FTS1 DSP Coefficient	number	292	1	
169	11000	0	32767	SIDETONE_GAIN_2	FTS2 DSP Coefficient	number	293	1	
170	1	-5	5	TERM_SHIFT	gain/loss into ipc network	number	398	1	
171	1	-5	5	PERIPH_SHIFT	gain/loss into public network	number	399	1	

## Wire

Use the **Wire** button to:

- tune line networking parameters
- bring up DASS2 cards that do not come up in the System X Central Office (CO)
- change between overlap and enbloc signalling

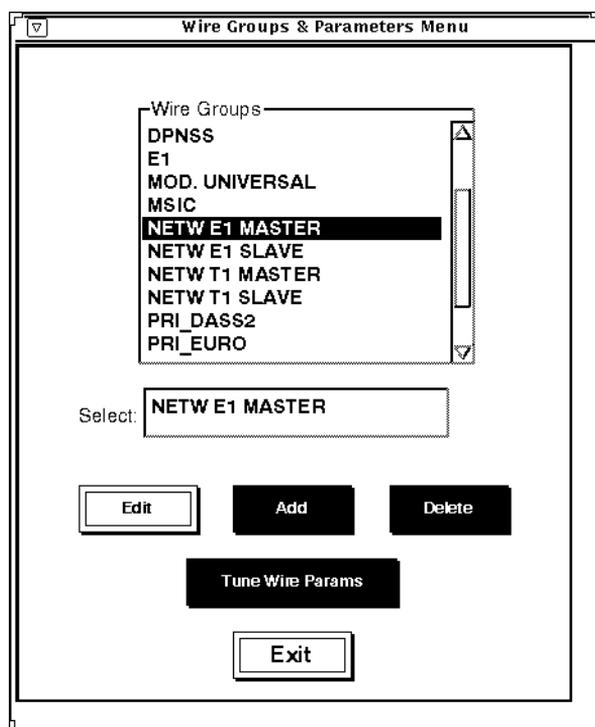
### Tuning Line Networking Parameters

Tuning line networking parameters is only necessary if you are using the line networking feature and if some of your networked sites with T1 networking cards are connected to other networked sites that use E1 networking cards, or vice versa.

To tune the wire parameters, take the following steps:

1. Click the left mouse button on **Wire** in the **Engineering Parameters View** window. You see the **Wire Groups & Parameters Menu**.
2. Scroll through the **Wire Groups** list and you see the four line networking wire groups: **NETW E1 MASTER**, **NETW E1 SLAVE**, **NETW T1 MASTER**, and **NETW T1 SLAVE**.

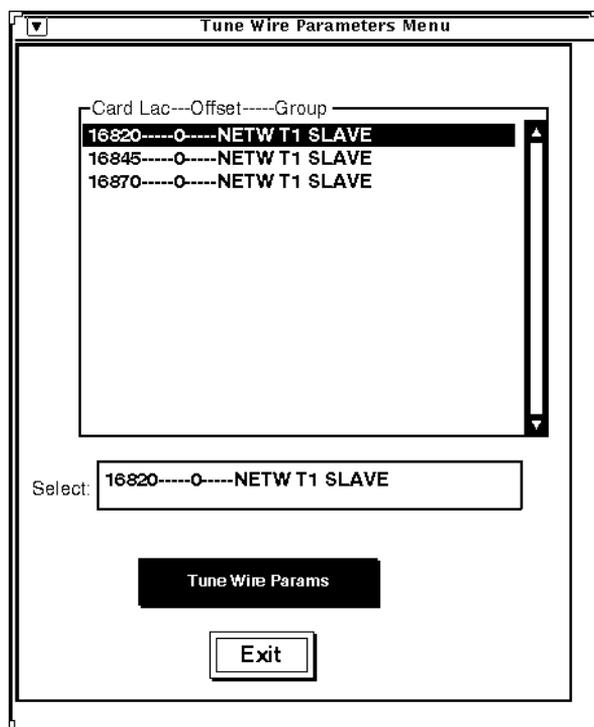
FIGURE 2-35 Wire Groups & Parameters Menu



3. If your site has any T1 slave cards that are connected to other networked sites' E1 networking cards, take the following steps:

- a. Click **NETW T1 SLAVE** and **Tune Wire Params**. You see the **Tune Wire Parameters Menu**.

FIGURE 2-36 Tune Wire Parameters Menu



- b. Select the card Lac of the T1 slave card that is connected to other networked sites' E1 networking cards and click **Tune Wire Params**. You see the **p\_Wire\_Params** table.
- c. Scroll through the table and look for a row with **Param Name** of **DSP\_CUT\_LEVEL0** and **Param Id** of **90**.
- d. In that row, if **Param Value** is not set to **17376**, change **New Param Value** to **17376**.
- e. Scroll through the table and look for a row with **Param Name** of **DSP\_VBALANCE** and **Param Id** of **138**.
- f. In that row, if **Param Value** is not set to **8191**, change **New Param Value** to **8191**.
- g. Scroll through the table and look for a row with **Param Name** of **DSP\_TERM\_ATTEN** and **Param Id** of **141**.
- h. In that row, if **Param Value** is not set to **20675**, change **New Param Value** to **20675**.
- i. Scroll through the table and look for a row with **Param Name** of **TERM\_SHIFT** and **Param Id** of **362**.
- j. In that row, if **Param Value** is not set to **0**, change **New Param Value** to **0**.
- k. Scroll through the table and look for a row with **Param Name** of **PERIPH\_SHIFT** and **Param Id** of **363**.

- l. In that row, if **Param Value** is not set to **2**, change **New Param Value** to **2**.

FIGURE 2-37 p\_Wire Params

p_Wire Params										
1	A	B	C	D	E	F	G	H	I	J
	Group Id	Group Name	Param Id	Param Name	Param Type	Min	Max	Param Value	New Param Value	
105	17	NETW T1 SLAVE	239	BLUE_CLR_THR_CLK	number	0	32767	0		
106	17	NETW T1 SLAVE	240	BLUE_CLR_TIME	number	10	32767	100		
107	17	NETW T1 SLAVE	241	EXCESS_BPV_THR	number	1	32767	1544		
108	17	NETW T1 SLAVE	242	EXCS_BPV_THR_CLK	number	1	32767	8		
109	17	NETW T1 SLAVE	243	BPV_DET_TIME	number	1	32767	8		
110	17	NETW T1 SLAVE	244	BPV_CLR_THR	number	1	32767	7		
111	17	NETW T1 SLAVE	245	BPV_CLR_THR_CLK	number	1	32767	7		
112	17	NETW T1 SLAVE	246	BPV_CLR_TIME	number	1	32767	2		
113	17	NETW T1 SLAVE	247	FRM_ERR_THR	number	1	32767	100		
114	17	NETW T1 SLAVE	248	FRM_ERR_THR_CLK	number	1	32767	100		
115	17	NETW T1 SLAVE	249	FRM_ERR_DET_TIME	number	10	32767	2000		
116	17	NETW T1 SLAVE	250	FRM_ERR_CLR_THR	number	0	32767	100		
117	17	NETW T1 SLAVE	251	FERR_CLR_THR_CLK	number	0	32767	100		
118	17	NETW T1 SLAVE	252	FRM_ERR_CLR_TIME	number	1	32767	2		
119	17	NETW T1 SLAVE	253	FRM_SLIP_THR	number	1	32767	100		
120	17	NETW T1 SLAVE	254	FRM_SLIP_THR_CLK	number	1	32767	100		
121	17	NETW T1 SLAVE	255	FRM_SLIP_DET_TIM	number	10	32767	2000		
122	17	NETW T1 SLAVE	256	SLIP_CLR_THR_CLK	number	0	32767	100		
123	17	NETW T1 SLAVE	257	FRM_SLIP_CLR_THR	number	0	32767	100		
124	17	NETW T1 SLAVE	258	FRM_SLIP_CLR_TIM	number	1	32767	2		
125	17	NETW T1 SLAVE	259	JITTER_DET_TIME	number	10	32767	2000		
126	17	NETW T1 SLAVE	260	JITTER_CLR_TIME	number	10	32767	2000		
127	17	NETW T1 SLAVE	362	TERM_SHIFT	number	-5	5	0		
128	17	NETW T1 SLAVE	363	PERIPH_SHIFT	number	-5	5	0	2	
129										

- m. Click **Table Operations** and **Save Table**.
- n. Click **OK**.
- o. Click **Table Operations** and **Quit Table**.
- p. Click **OK**.
- q. Repeat this procedure for any other card Lacs connected to other networked sites' E1 networking cards.
4. If your site has any T1 master cards that are connected to other networked sites' E1 networking cards, take the following steps:
- Click **NETW T1 MASTER** and **Tune Wire Params**. You see the **Tune Wire Parameters Menu**.
  - Select the card Lac of the T1 master card that is connected to other networked sites' E1 networking cards and click **Tune Wire Params**.
  - Scroll through the table and look for a row with **Param Name** of **DSP\_CUT\_LEVEL0** and **Param Id** of **90**.
  - In that row, if **Param Value** is not set to **17376**, change **New Param Value** to **17376**.
  - Scroll through the table and look for a row with **Param Name** of **DSP\_VBALANCE** and **Param Id** of **138**.
  - In that row, if **Param Value** is not set to **8191**, change **New Param Value** to **8191**.
  - Scroll through the table and look for a row with **Param Name** of **DSP\_TERM\_ATTEN** and **Param Id** of **141**.
  - In that row, if **Param Value** is not set to **20675**, change **New Param Value** to **20675**.
  - Scroll through the table and look for a row with **Param Name** of **TERM\_SHIFT** and **Param Id** of **362**.
  - In that row, if **Param Value** is not set to **0**, change **New Param Value** to **0**.

- k. Scroll through the table and look for a row with **Param Name** of **PERIPH\_SHIFT** and **Param Id** of **363**.
  - l. In that row, if **Param Value** is not set to **2**, change **New Param Value** to **2**.
  - m. Click **Table Operations** and **Save Table**.
  - n. Click **OK**.
  - o. Click **Table Operations** and **Quit Table**.
  - p. Click **OK**.
  - q. Repeat this procedure for any other card Lacs connected to other networked sites' E1 networking cards.
5. If your site has any E1 master cards that are connected to other networked sites' T1 networking cards, take the following steps:
    - a. Click **NETW E1 MASTER** and **Tune Wire Params**. You see the **Tune Wire Parameters Menu**.
    - b. Select the card Lac of the T1 master card that is connected to other networked sites' E1 networking cards and click **Tune Wire Params**.
    - c. Scroll through the table and look for a row with **Param Name** of **DSP\_CUT\_LEVEL0** and **Param Id** of **90**.
    - d. In that row, if **Param Value** is not set to **16518**, change **New Param Value** to **16518**.
    - e. Scroll through the table and look for a row with **Param Name** of **DSP\_VBALANCE** and **Param Id** of **138**.
    - f. In that row, if **Param Value** is not set to **4095**, change **New Param Value** to **4095**.
    - g. Scroll through the table and look for a row with **Param Name** of **DSP\_TERM\_ATTEN** and **Param Id** of **141**.
    - h. In that row, if **Param Value** is not set to **8316**, change **New Param Value** to **8316**.
    - i. Scroll through the table and look for a row with **Param Name** of **TERM\_SHIFT** and **Param Id** of **362**.
    - j. In that row, if **Param Value** is not set to **0**, change **New Param Value** to **0**.
    - k. Scroll through the table and look for a row with **Param Name** of **PERIPH\_SHIFT** and **Param Id** of **363**.
    - l. In that row, if **Param Value** is not set to **2**, change **New Param Value** to **2**.
    - m. Click **Table Operations** and **Save Table**.
    - n. Click **OK**.
    - o. Click **Table Operations** and **Quit Table**.
    - p. Click **OK**.
    - q. Repeat this procedure for any other card Lacs connected to other networked sites' T1 networking card.
  6. If your site has any E1 slave cards that are connected to other networked sites' T1 networking cards, take the following steps:
    - a. Click **NETW E1 SLAVE** and **Tune Wire Params**. You see the **Tune Wire Parameters Menu**.
    - b. Select the card Lac of the T1 master card that is connected to other networked sites' E1 networking cards and click **Tune Wire Params**.
    - c. Scroll through the table and look for a row with **Param Name** of **DSP\_CUT\_LEVEL0** and **Param Id** of **90**.
    - d. In that row, if **Param Value** is not set to **16518**, change **New Param Value** to **16518**.
    - e. Scroll through the table and look for a row with **Param Name** of **DSP\_VBALANCE** and **Param Id** of **138**.
    - f. In that row, if **Param Value** is not set to **4095**, change **New Param Value** to **4095**.
    - g. Scroll through the table and look for a row with **Param Name** of **DSP\_TERM\_ATTEN** and **Param Id** of **141**.

- h. In that row, if **Param Value** is not set to **8316**, change **New Param Value** to **8316**.
  - i. Scroll through the table and look for a row with **Param Name** of **TERM\_SHIFT** and **Param Id** of **362**.
  - j. In that row, if **Param Value** is not set to **0**, change **New Param Value** to **0**.
  - k. Scroll through the table and look for a row with **Param Name** of **PERIPH\_SHIFT** and **Param Id** of **363**.
  - l. In that row, if **Param Value** is not set to **2**, change **New Param Value** to **2**.
  - m. Click **Table Operations** and **Save Table**.
  - n. Click **OK**.
  - o. Click **Table Operations** and **Quit Table**.
  - p. Click **OK**.
  - q. Repeat this procedure for any other card Lacs connected to other networked sites' T1 networking cards.
7. Click **Exit** in the **Tune Wire Parameters Menu**.
  8. Click **Exit** in the **Wire Groups & Parameters Menu**.

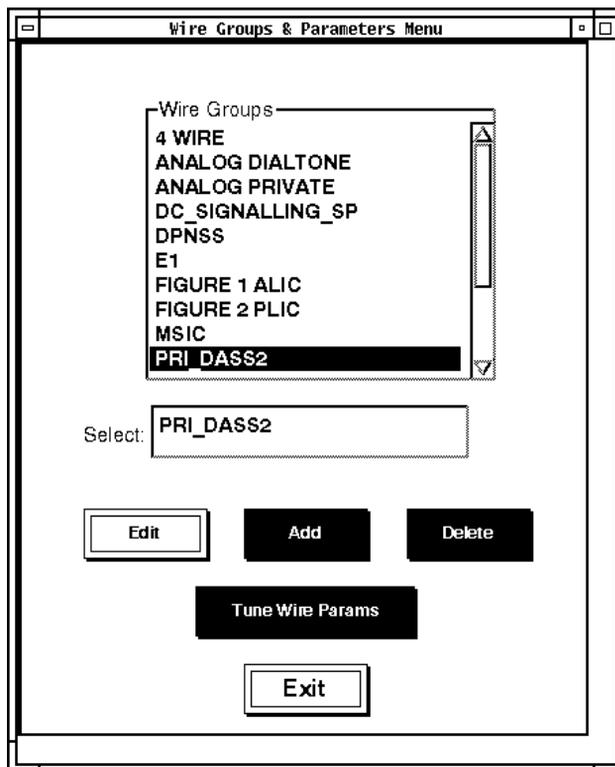
### **Bringing Up DASS2 Cards**

In Release 10.1 Maintenance and later, DASS2 cards sometimes do not come up in the Mercury (GPT System X) Central Office (CO). To bring all cards into service, take the following steps:

1. Click the left mouse button on **Wire** in the **Engineering Parameters View** window. You see the **Wire Groups & Parameters Menu**.
2. Scroll through the **Wire Groups** list and you see **PRI\_DASS**.

3. Click **PRI\_DASS2**.

FIGURE 2-38 Wire Groups &amp; Parameters Menu



4. If your DASS2/DDI line cards are connected to the newer System X Central Office (CO), take the following steps:
  - a. Click **Edit**. You see the **p\_Wire Edit Group** table.
  - b. Scroll down to the line that has **Param Name** equal to **AIS\_CLR\_TIME** and **Param Id** equal to 168.

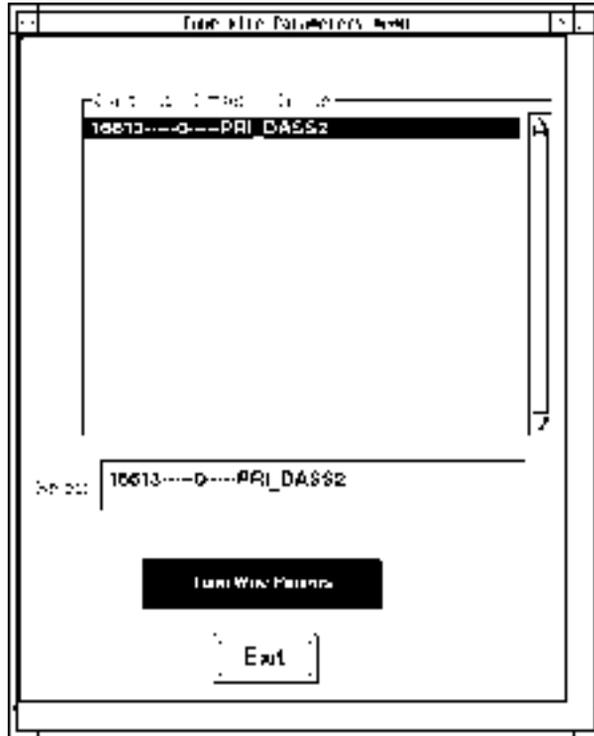
FIGURE 2-39 p\_Wire Edit Group Table

p_Wire Edit Group								
	D	E	F	G	H	I	J	K
1	Param Value	Param Min	Param Max	Param Name	Param Description	Param Type	Param Id	Group Id
83	2000	10	32767	AIS_CLR_TIME	AIS clear time (msec)	number	168	9
84	0	0	32767	AIS_CLR_THR	AIS clear threshold	number	169	9
85	0	0	32767	AIS_CLR_THC	AIS clear threshold (clock)	number	170	9
86	2000	10	32767	BER_DET_TIME	Bit Error detect time (msec)	number	174	9
87	28	1	32767	BER_DET_THR	Bit Error detect threshold	number	175	9
88	3	1	32767	BER_DET_THC	Bit Error detect threshold (clock)	number	176	9
89	2000	10	32767	BER_CLR_TIME	Bit Error clear time (msec)	number	177	9
90	27	1	32767	BER_CLR_THR	Bit Error clear threshold	number	178	9
91	3	1	32767	BER_CLR_THC	Bit Error clear threshold (clock)	number	179	9
92	11469	1	32767	DSP_INTRUS_FREQ	dsp intrusion frequency	number	180	9
93	10	10	32767	LOS_DET_TIME	LOS detect time (msec)	number	195	9
94	1	1	32767	LOS_DET_THR	LOS detect threshold	number	196	9
95	1	1	32767	LOS_DET_THC	LOS detect threshold (clock)	number	197	9
96	2000	10	32767	LOS_CLR_TIME	LOS clear time (msec)	number	198	9
97	0	0	32767	LOS_CLR_THR	LOS clear threshold	number	199	9
98	0	0	32767	LOS_CLR_THC	LOS clear threshold (clock)	number	200	9
99	10	10	32767	REM_ALM_DET_TIME	Remote alarm detect time (msec)	number	201	9
100	1	1	32767	REM_ALM_DET_THR	Remote alarm detect threshold	number	202	9
101	1	1	32767	REM_ALM_DET_THC	Remote alarm detect threshold (clock)	number	203	9
102	2000	10	32767	REM_ALM_CLR_TIME	Remote alarm clear time (msec)	number	204	9
103	0	0	32767	REM_ALM_CLR_THR	Remote alarm clear threshold	number	205	9
104	0	0	32767	REM_ALM_CLR_THC	Remote alarm clear threshold (clock)	number	206	9
105	10	10	32767	SIG_ALM_DET_TIME	Remote signal alarm detect time (msec)	number	207	9
106	1	1	32767	SIG_ALM_DET_THR	Remote signal alarm detect threshold	number	208	9
107	1	1	32767	SIG_ALM_DET_THC	Remote signal alarm detect thres (clock)	number	209	9
108	2000	10	32767	SIG_ALM_CLR_TIME	Remote signal alarm clear time (msec)	number	210	9
109	0	0	32767	SIG_ALM_CLR_THR	Remote signal alarm clear threshold	number	211	9

- c. In that line, change **Param Value** from **2000** to **500**.
- d. Scroll down to the line that has **Param Name** equal to **BER\_CLR\_TIME** and **Param Id** equal to **177**.
- e. In that line, change **Param Value** from **2000** to **500**.
- f. Scroll down to the line that has **Param Name** equal to **LOS\_CLR\_TIME** and **Param Id** equal to **198**.
- g. In that line, change **Param Value** from **2000** to **500**.
- h. Scroll down to the line that has **Param Name** equal to **REM\_ALM\_CLR\_TIME** and **Param Id** equal to **204**.
- i. In that line, change **Param Value** from **2000** to **500**.
- j. Click **Table Operations** and **Save Table**.
- k. Click **OK**.
- l. Click **Table Operations** and **Quit Table**.
- m. Click **OK**.

5. If your DASS2/DDI line cards are connected to both types of systems, take the following steps:
  - a. Click **Tune Wire Params**. You see the **Tune Wire Parameters Menu**.

FIGURE 2-40 Tune Wire Parameters Menu



- b. Click **Tune Line Params**. You see the **p\_Wire Params** table.

- c. Scroll down to the line that has **Param Name** equal to **AIS\_CLR\_TIME** and **Param Id** equal to **168**.

FIGURE 2-41 p\_Wire Params Table

1	A	B	C	D	E	F	G	H	I
	Group Id	Group Name	Param Id	Param Name	Param Type	Min	Max	Param Value	New Param Value
83	9	PRI_DASS2	168	AIS_CLR_TIME	number	10	32767	2000	
84	9	PRI_DASS2	169	AIS_CLR_THR	number	0	32767	0	
85	9	PRI_DASS2	170	AIS_CLR_THC	number	0	32767	0	
86	9	PRI_DASS2	174	BER_DET_TIME	number	10	32767	2000	
87	9	PRI_DASS2	175	BER_DET_THR	number	1	32767	28	
88	9	PRI_DASS2	176	BER_DET_THC	number	1	32767	3	
89	9	PRI_DASS2	177	BER_CLR_TIME	number	10	32767	2000	
90	9	PRI_DASS2	178	BER_CLR_THR	number	1	32767	27	
91	9	PRI_DASS2	179	BER_CLR_THC	number	1	32767	3	
92	9	PRI_DASS2	180	DSP_INTRUS_FREQ	number	1	32767	11469	
93	9	PRI_DASS2	195	LOS_DET_TIME	number	10	32767	10	
94	9	PRI_DASS2	196	LOS_DET_THR	number	1	32767	1	
95	9	PRI_DASS2	197	LOS_DET_THC	number	1	32767	1	
96	9	PRI_DASS2	198	LOS_CLR_TIME	number	10	32767	2000	
97	9	PRI_DASS2	199	LOS_CLR_THR	number	0	32767	0	
98	9	PRI_DASS2	200	LOS_CLR_THC	number	0	32767	0	
99	9	PRI_DASS2	201	REM_ALM_DET_TIME	number	10	32767	10	
100	9	PRI_DASS2	202	REM_ALM_DET_THR	number	1	32767	1	
101	9	PRI_DASS2	203	REM_ALM_DET_THC	number	1	32767	1	
102	9	PRI_DASS2	204	REM_ALM_CLR_TIME	number	10	32767	2000	
103	9	PRI_DASS2	205	REM_ALM_CLR_THR	number	0	32767	0	
104	9	PRI_DASS2	206	REM_ALM_CLR_THC	number	0	32767	0	
105	9	PRI_DASS2	207	SIG_ALM_DET_TIME	number	10	32767	10	
106	9	PRI_DASS2	208	SIG_ALM_DET_THR	number	1	32767	1	
107	9	PRI_DASS2	209	SIG_ALM_DET_THC	number	1	32767	1	

- d. In that line, change **Param Value** from **2000** to **500**.
- e. Scroll down to the line that has **Param Name** equal to **BER\_CLR\_TIME** and **Param Id** equal to **177**.
- f. In that line, change **Param Value** from **2000** to **500**.
- g. Scroll down to the line that has **Param Name** equal to **LOS\_CLR\_TIME** and **Param Id** equal to **198**.
- h. In that line, change **Param Value** from **2000** to **500**.
- i. Scroll down to the line that has **Param Name** equal to **REM\_ALM\_CLR\_TIME** and **Param Id** equal to **204**.
- j. In that line, change **Param Value** from **2000** to **500**.
- k. Click **Table Operations** and **Save Table**.
- l. Click **OK**.
- m. Click **Table Operations** and **Quit Table**.
- n. Click **OK**.
6. After making the software changes, reload your DASS2 and DDI cards.

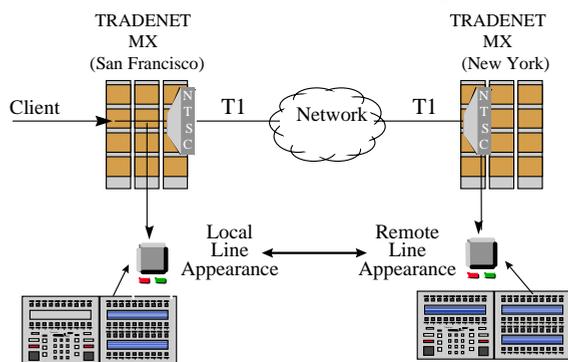
## Change Between Overlap and Enbloc Signalling

*Overlap* signalling occurs when the MX System sends the dialed digits at the time each digit is pressed. *Enbloc* signalling means that the MX System collects the dialed digits as they are dialed, and then sends them together, as a package. This package is sent after no digits have been dialed for the duration of the interdigit timeout parameter. When the interdigit timeout parameter is 0, the MX System uses overlap signalling for the particular wire group.

The interdigit timeout can be set through parameter 364 in the **p\_Wire Params** table. This parameter is called **INTERDIGIT\_TO**. A U.S. countrybase will use enbloc for a wiregroup of QSIG.



# Chapter 3 Line Networking



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## INTRODUCTION

Tradenet MX Release 11.1 and later includes line networking. This feature is controlled by Netconfig, NetMan, and by the **LineNetw** button in the **View Selection** dialog box, as described in [Using the LineNetW Button on page 3-57](#). You need to go to the tables accessed from the **LineNetw** button only when you are equipping sites, or making changes.

---

*Note* Before setting up the line networking feature, you need to attend IPC's training class **Tradenet MX Line Networking Course for Technicians** in Westbrook, CT. Prerequisites for this class include the **Tradenet MX Installation & Maintenance** class and the **Tradenet MX Level II** class.

---

---

With line networking, a Tradenet MX site can use lines from another site if the sites are networked. The line networking feature is a cost option that also requires additional hardware: namely, T1 and/or E1 networking cards.

There are two types of T1 and E1 networking cards: *master cards* and *slave cards*. All together, there are four flavors of networking cards:

- T1 master (NTMC)
- T1 slave (NTSC)
- E1 master (NEMC)
- E1 slave (NESC)

Master cards provide clock source, slave cards get their clocking from the master source. Tradenet MX Systems normally get their clock source from the CO. Therefore, in general, you should not need T1 or E1 *master* networking cards, only T1 and E1 *slave* cards.

With networked sites, you select one site as the *master site* and the other sites are *slave sites*.

---

**Warning!** Do not confuse the terms master/slave networking cards and master/slave sites. They are unrelated.

---

---

Only one site can be the master site. When you are planning to set up a group of networked sites, determine ahead of time which site will be the master site.

---

**Warning!** Be careful when designating a master site. Once you specify a master site using the Netconfig and NetMan software, you cannot easily change its designation to a slave site and select another site as the master site. Trying to change the master site designation will require help from IPC Systems Support Engineering.

---

---

Once you have installed a Release 14.1 hard drive with its software loaded, you can set up line networking. (For more information about installing the Release 14.1 hard drive and customer database, refer to the *Tradenet MX Platform Manual 14.1*, part number B0087686104.)

---

*Note* One application of line networking is to link Tradenet MX Systems that are within the same building. For example, a Tradenet MX System on the third floor could be linked to another System on the fourth floor. In the United States, as long as the two systems are linked without going through the CO, you can link the systems through an E1 connection instead of a T1 connection. Using an E1 connection will give you 30 channels, instead of 24 on a T1.

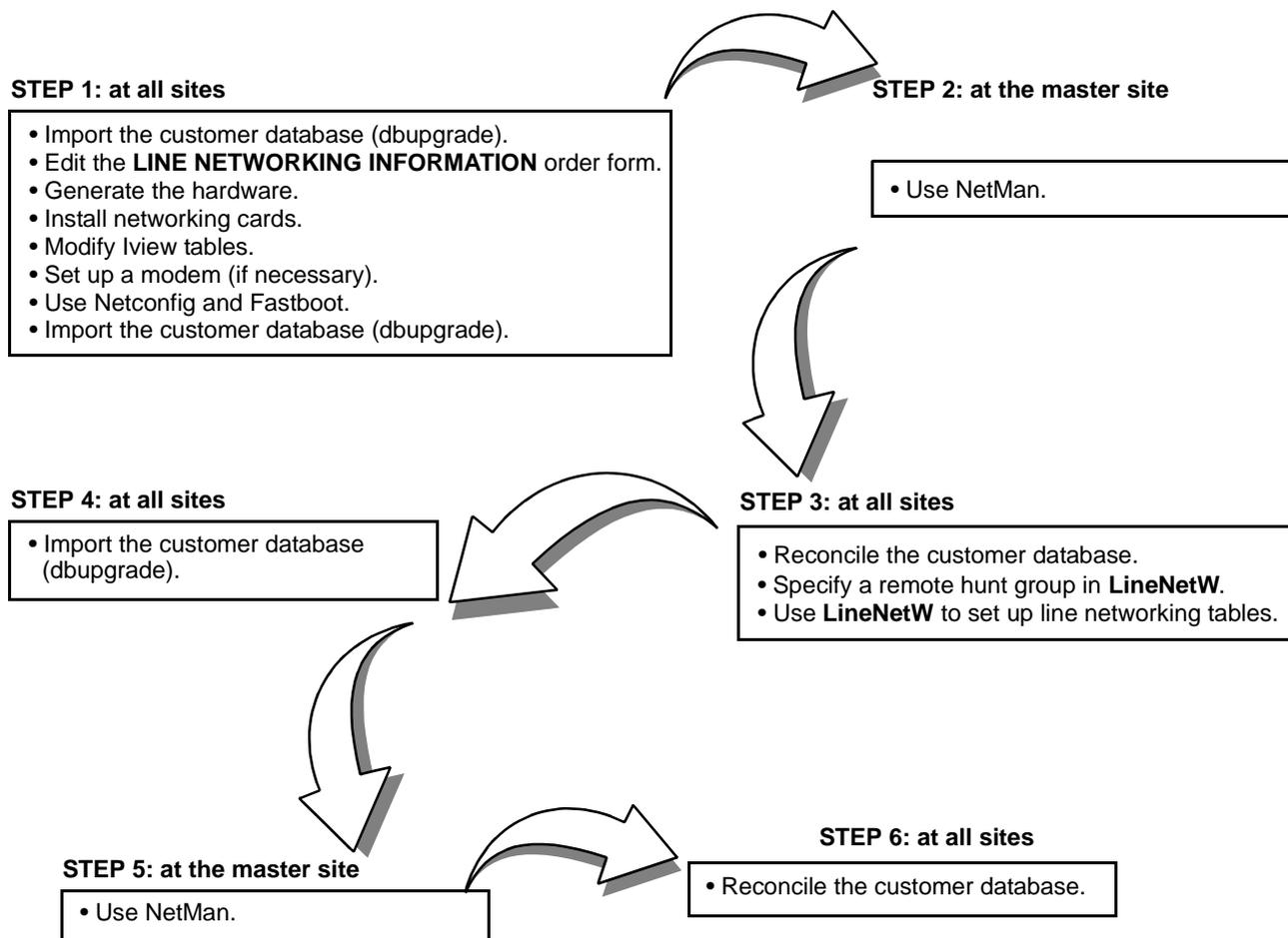
---

To set up line networking, take the following steps:

1. At each site (the master site and all remote sites), perform the following tasks:
  - a. Enable the cost options **Networking** and **Multi Hunt Groups** using Featureman.
  - b. Import the customer database using dbupgrade.
  - c. Edit the **LINE NETWORKING INFORMATION** order form in the Database Reconfigurator.
  - d. Generate the hardware.
  - e. Install networking cards.
  - f. Modify Iview tables.
  - g. Set up a modem, if necessary.
  - h. Use Netconfig.
2. At the master site, perform the following tasks:
  - a. Import the customer database using dbupgrade.
  - b. Use NetMan.
  - c. Reconcile the customer database.
3. At each site (the master site and all remote sites), perform the following tasks:
  - a. Specify a remote hunt group in **LineNetW**.
  - b. Use **LineNetW** to set up line networking tables.
4. At each site (the master site and all remote sites), import the customer database using dbupgrade.
5. At the master site, use NetMan.
6. At each site (the master site and all remote sites), reconcile the customer database.

The following figure illustrates the order of these steps.

**FIGURE 3-1** Steps in Setting Up Line Networking



These steps are expanded upon in this chapter.

---

**Warning!** *These steps for setting up line networking need to be done immediately following one after another during down time. When you are setting up line networking you are changing the customer database. If changes unrelated to line networking are made to the customer database while you are setting up line networking, the customer database can be corrupted.*

---

Setting up line networking requires a significant amount of coordination between sites. All the tasks in step 1 above must be performed at all sites before the master site can use NetMan. Likewise, all the tasks in step 3 above must be performed at all sites before the master site can use NetMan the second time. For example, the administrator at the master site might tell all the remote sites what time he plans to use NetMan at the master site. This gives all the remote sites a deadline of when they need to complete the tasks in step 1 above.

If you cannot perform all these steps at all sites during one down time window, you could break up this procedure into as many as four periods. Step 1 could be performed during one downtime window (weekend 1). Then, step 2 could be performed during a second downtime window (weekend 2). Then, step 3 could be performed during a third downtime window (weekend 3). And finally, steps 4, 5, and 6, which should be performed sequentially, can happen during a fourth downtime window.

When using line networking with Release 11.1, when a remote line is assigned to a speaker channel, you might experience a delay of several seconds when accessing that line before you get audio on that speaker channel. This occurs only on heavily used systems where there is no free networking channel available when you try to use that speaker channel. When you press a speaker channel button, the system will continually retry until a networking channel becomes available.

## MODIFYING THE LINE NETWORKING INFORMATION ORDER FORM

To edit the **LINE NETWORKING** order form, you need to perform the following procedures:

1. Import the customer database using dbupgrade.
2. Edit the **LINE NETWORKING** order form.
3. Restore the customer database to the /usr/sx/db directory.

---

*Note* This procedure for editing the **LINE NETWORKING** order form could be completed on a live system (not during the downtime window). If you are importing the customer database when the system is live, skip steps 2 and 3 in [Importing the Customer Database on page 3-7](#).

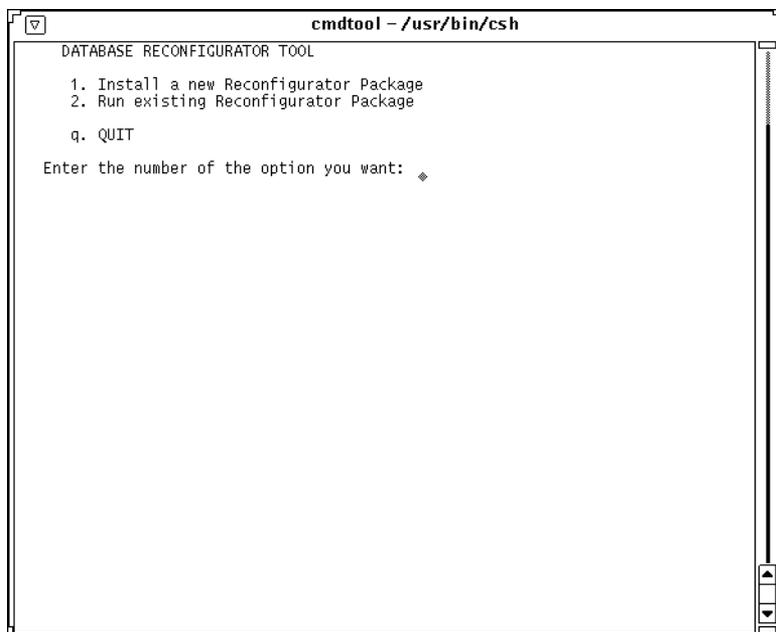
---

## Importing the Customer Database

To import the customer database, take the following steps:

1. Back up the customer database. (Refer to *Backing Up the Database* in chapter 10 of the *Tradenet MX System Center Manual 14.1*, part number B0086185104.)
2. Type **killsync** and press RETURN.
3. Log in as *install*.
4. Open a command tool or shell tool window.
5. Type **dbupgrade** and press RETURN. You see the **DATABASE RECONFIGURATOR TOOL** menu.

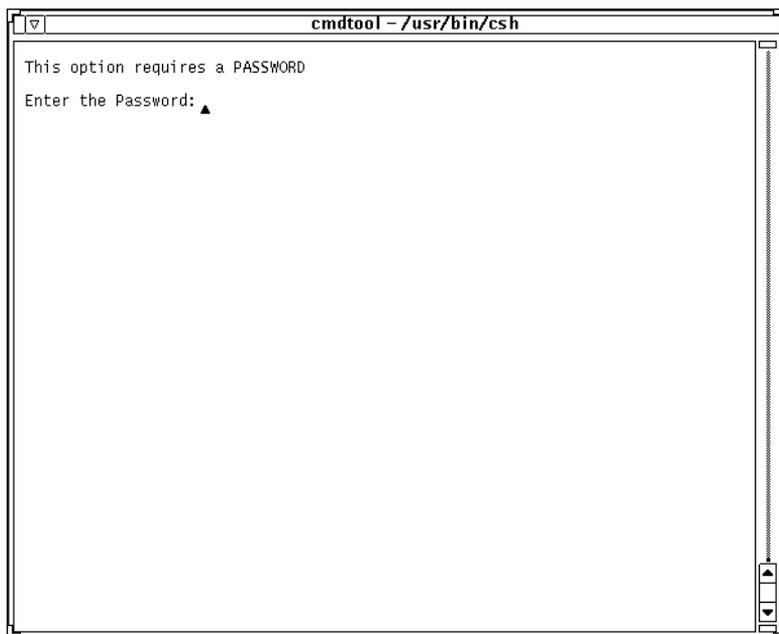
**FIGURE 3-2 DATABASE RECONFIGURATOR TOOL Menu**





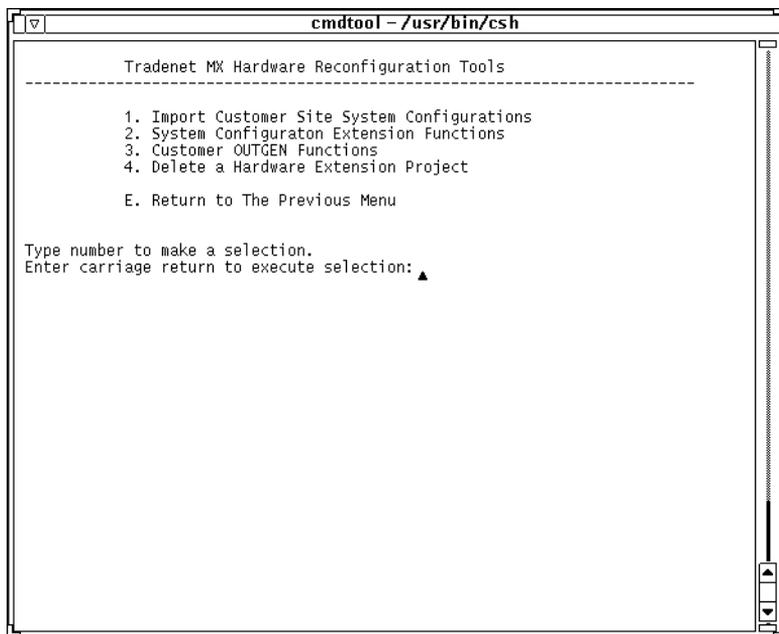
8. Type **3** and press RETURN to select **Tradenet MX Hardware Reconfiguration Tools**. You are prompted for a password.

**FIGURE 3-5 Password Prompt**



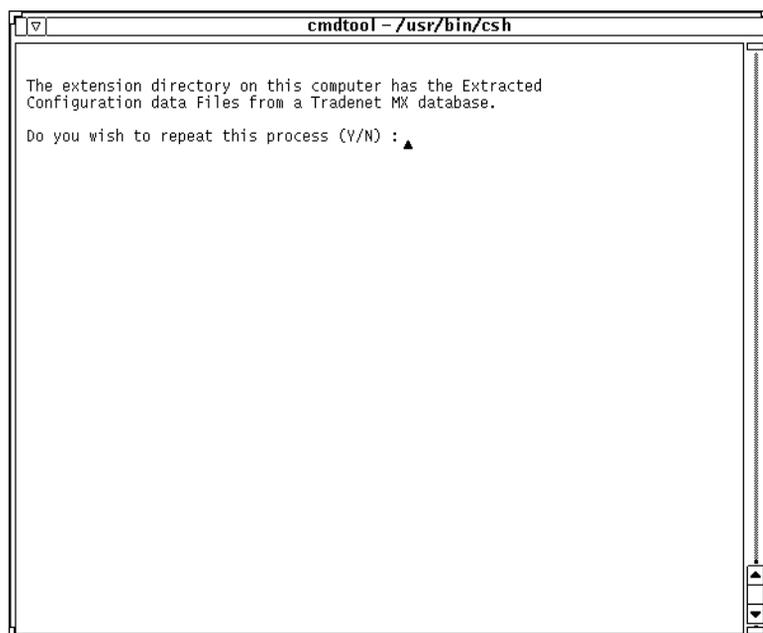
9. Enter the Database Reconfigurator password. You see the **Tradenet MX Hardware Reconfiguration Tools** menu.

**FIGURE 3-6 Tradenet MX Hardware Reconfigurator Tools Menu**



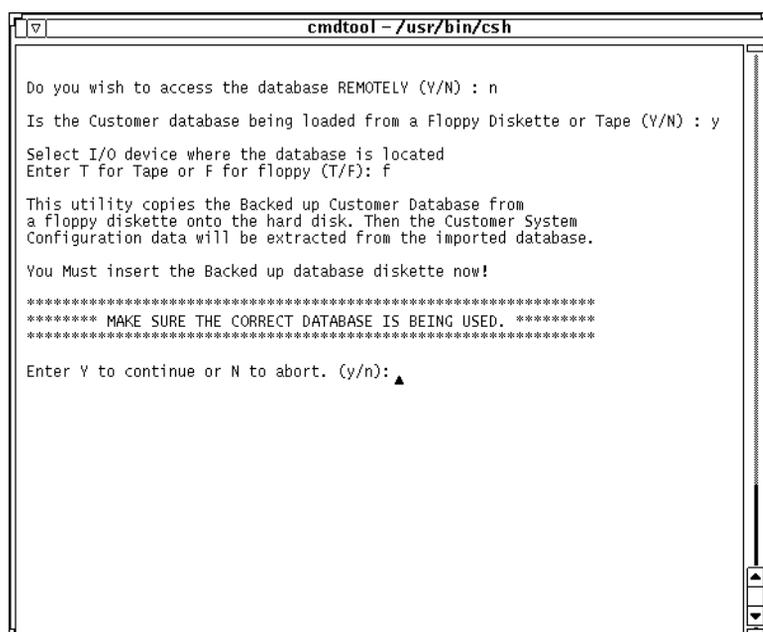
10. Type **1** and press RETURN to select **Import Customer Site System Configurations**.

**FIGURE 3-7** Prompt



11. At the prompt, type **y** and press RETURN.
12. At the prompt to access the database remotely, type **n** and press RETURN.
13. At the prompt to load from floppy diskette or tape, type **y** and press RETURN.
14. If you are importing the database from floppy diskette, type **f** and press RETURN.

**FIGURE 3-8** Importing the Database From Diskette



15. If you are importing the database from tape, type **t** and press RETURN.

**FIGURE 3-9** Importing the Database From Tape

```

cmdtool - /usr/bin/csh

Do you wish to access the database REMOTELY (Y/N) : n
Is the Customer database being loaded from a Floppy Diskette or Tape (Y/N) : y
Select I/O device where the database is located
Enter T for Tape or F for Floppy (T/F): t

This utility copies the Backed up Customer Database from
a Tape drive onto the hard disk. Then the Customer System
Configuration data will be extracted from the imported database.

You Must insert the Backed up database Tape now!

*****
***** MAKE SURE THE CORRECT DATABASE IS BEING USED. *****
*****

Enter Y to continue or N to abort. (y/n): ▲

```

16. Insert the diskette or tape.

17. Type **y** and press RETURN.

18. Press RETURN. You return to the **Tradenet MX Hardware Reconfiguration Tools** menu.

**FIGURE 3-10** Tradenet MX Hardware Reconfigurator Tools Menu

```

cmdtool - /usr/bin/csh

-----
Tradenet MX Hardware Reconfiguration Tools
-----

1. Import Customer Site System Configurations
2. System Configuraton Extension Functions
3. Customer OUTGEN Functions
4. Delete a Hardware Extension Project

E. Return to The Previous Menu

Type number to make a selection.
Enter carriage return to execute selection: ▲

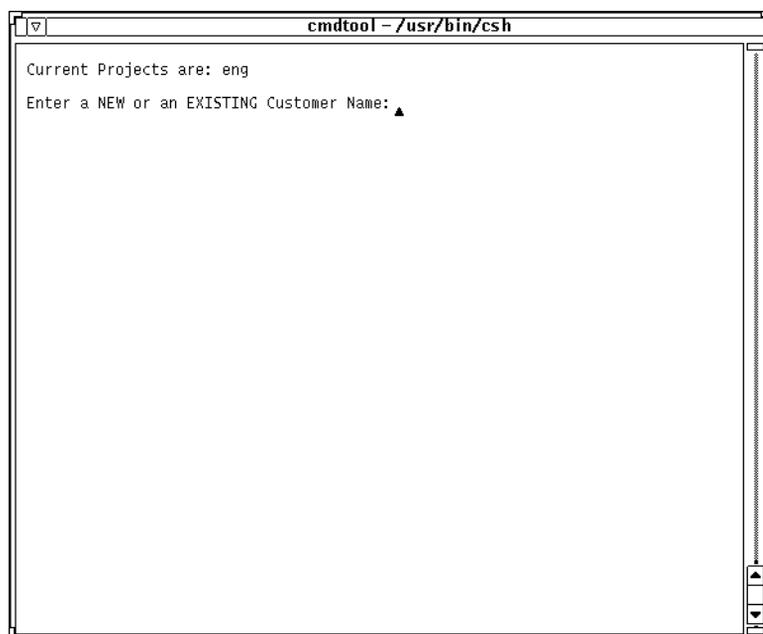
```

## Editing the LINE NETWORKING INFORMATION Order Form

After importing the customer database, you can edit the **LINE NETWORKING** order form to add line networking cards. To edit the **LINE NETWORKING** order form, take the following steps:

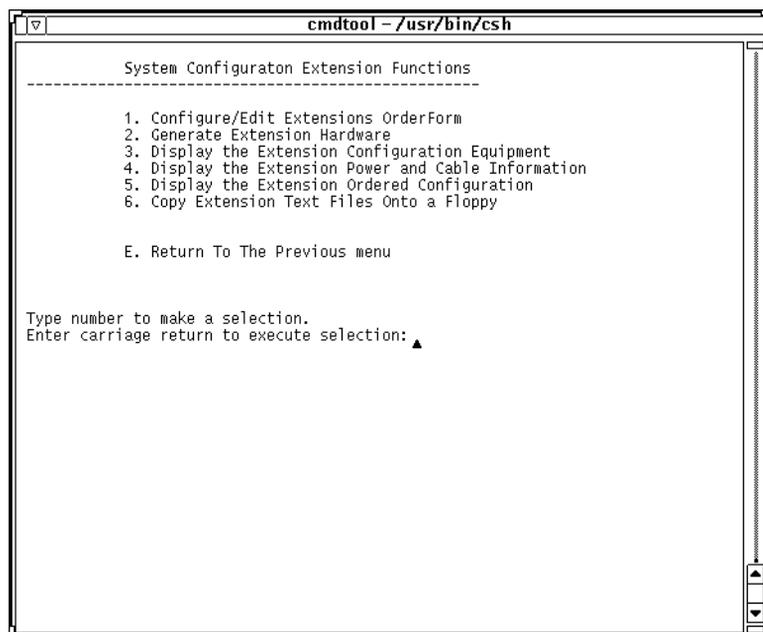
1. Type **2** and press RETURN to select **System Configuration Extension Functions**. You are prompted for a project name.

**FIGURE 3-11** Project Name Prompt



2. Type the name of your project and press RETURN. You see the **System Configuration Extension Functions** menu.

**FIGURE 3-12** System Configuration Extension Functions Menu



- At the **System Configuration Extension Functions** menu, type **1** and press RETURN to select **Configure/Edit Extensions OrderForm**. You see the order forms.

FIGURE 3-13 Order Forms

```

cmdtool - /usr/bin/csh
PERFORM: Query Next Previous View Add Update Remove Table Screen ...
Searches the active database table. ** 1: xcfgform table**
===== CONFIGURATION INFORMATION =====
Project: [ ] Country Abbreviation: [ ]
Customer Rep: [ ] Country Name: [ ]
Address1: [ ] Salesperson: [ ]
Address2: [ ] Job #: [ ]
Address3: [ ] Date: [ ]
===== DIGITAL COMPONENT INFORMATION =====
Digital Control Module: [ ] Digital FTS-4: [ ]
Digital Control/Pagination Module: [ ] Digital FTS-8: [ ]
Digital Control/PCD Module: [ ] Inline Monitors: [ ]
High Res. (HR) Control Module: [ ] FTS II 4 Chan. Speaker: [ ]
High Res. Ctrl/Pagination Module: [ ] LCD FTS II 4 Chan. Speaker: [ ]
High Res. (HR) Control/PCD Module: [ ] FTS II 8 Chan. Speaker: [ ]
High Res. LCD FTS II 4 Chan. Spkr: [ ] LCD FTS II 8 Chan. Speaker: [ ]
High Res. LCD FTS II 8 Chan. Spkr: [ ] Add ON Intercom Module: [ ]

Add ON Pagination Module: [ ] Total # Jackboxes: [ ]
Remote Turret Interface: [ ] Total # Handsets: [ ]
Total # Microphones: [ ]
WARNING: This form consists of 9 Screens. Use the S command to view Screens.

```

- Press **a** (for **Add**). Your cursor moves to the **Project** field.
- Type in your project name.

FIGURE 3-14 Adding to the Order Forms

```

cmdtool - /usr/bin/csh
ADD: ESCAPE adds new data. INTERRUPT discards it. ARROW keys move cursor.
Adds new data to the active database table. ** 1: xcfgform table**
===== CONFIGURATION INFORMATION =====
Project: [eng] Country Abbreviation: [USA]
Customer Rep: [ ] Country Name: UNITED STATES
Address1: [ ] Salesperson: [ ]
Address2: [ ] Job #: [ ]
Address3: [ ] Date: [10/02/1997]
===== DIGITAL COMPONENT INFORMATION =====
Digital Control Module: [0] Digital FTS-4: [0]
Digital Control/Pagination Module: [0] Digital FTS-8: [0]
Digital Control/PCD Module: [0] Inline Monitors: [0]
High Res. (HR) Control Module: [0] FTS II 4 Chan. Speaker: [0]
High Res. Ctrl/Pagination Module: [0] LCD FTS II 4 Chan. Speaker: [0]
High Res. (HR) Control/PCD Module: [0] FTS II 8 Chan. Speaker: [0]
High Res. LCD FTS II 4 Chan. Spkr: [0] LCD FTS II 8 Chan. Speaker: [0]
High Res. LCD FTS II 8 Chan. Spkr: [0] Add ON Intercom Module: [0]

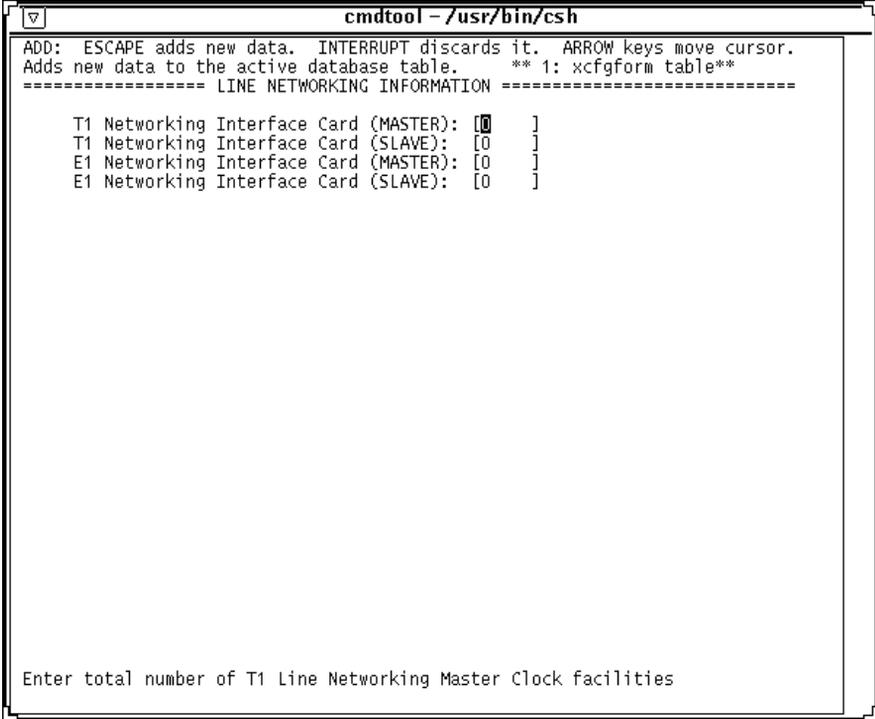
Add ON Pagination Module: [0] Total # Jackboxes: [0]
Remote Turret Interface: [0] Total # Handsets: [0]
Total # Microphones: [0]
WARNING: This form consists of 9 Screens. Use the S command to view Screens.

Enter Customer or Project Name

```

6. Scroll through the order forms until you reach the **LINE NETWORKING INFORMATION** order form.

**FIGURE 3-15 LINE NETWORKING INFORMATION** Order Form



```
cmdtool - /usr/bin/csh
ADD: ESCAPE adds new data. INTERRUPT discards it. ARROW keys move cursor.
Adds new data to the active database table.      ** 1: xcfgform table**
===== LINE NETWORKING INFORMATION =====

T1 Networking Interface Card (MASTER): [0 ]
T1 Networking Interface Card (SLAVE):  [0 ]
E1 Networking Interface Card (MASTER): [0 ]
E1 Networking Interface Card (SLAVE):  [0 ]

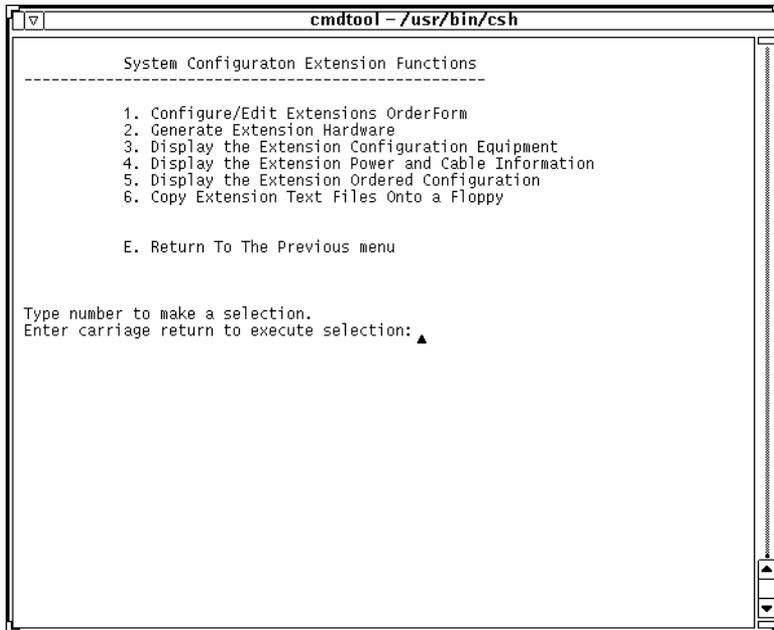
Enter total number of T1 Line Networking Master Clock facilities
```

7. In this order form, indicate the number of T1/E1 master and slave cards in your system.
8. Press ESCAPE to return to the menu bar.
9. Type **e** to exit.

## Generating the Hardware

After importing and editing the order form, you need to generate the extension hardware, Outgen the database, and then restore the reconfigured database to the /usr/sx/db directory.

**FIGURE 3-16 System Configuration Extension Functions Menu**



1. At the **System Configuration Extension Functions** menu, type **2** and press RETURN to select **Generate Extension Hardware**.
2. Type the name of your trial project and press RETURN.
3. Press RETURN.

4. At the **System Configuration Extension Functions** menu, type **3**, for **Display the Extension Configuration Equipment**, and press RETURN. The Extension Report will be displayed to show the equipment added to your configuration.

FIGURE 3-17 Extension Report

```

cmdtool - /usr/bin/csh
Date : 10/17/1997
***** Extension Report *****
cabinet shelf slot card_type LAC pLAC room plane SS2 SS1 SS0
5 1 5 NTSC 2062 16696 U 31 3 1 5
5 1 15 ASEC 17909 17909 U 1 3 1 0
5 1 16 ASEC 17910 17910 U 2 3 1 0
5 1 17 ASEC 17911 17911 U 3 3 1 0
6 1 8 SSEC 17817 17817 U 6 3 0 31
6 1 7 SSEC 17816 17816 U 5 3 0 31
6 1 6 SSEC 17815 17815 U 4 3 0 31
6 1 5 SSEC 17480 17480 U 3 3 0 31
6 1 4 SSEC 17479 17479 U 2 3 0 31
6 1 3 SSEC 17478 17478 U 1 3 0 31
6 2 9 RSEC 16426 16426 U 6 0 13 31
6 2 8 RSEC 16425 16425 U 6 0 12 31
6 2 7 RSEC 16424 16424 U 6 0 11 31
6 2 6 RSEC 16423 16423 U 5 0 13 31
6 2 5 RSEC 16422 16422 U 5 0 12 31
6 2 4 RSEC 16953 16953 U 5 0 11 31
6 2 3 RSEC 16952 16952 U 4 0 13 31
6 2 2 RSEC 16951 16951 U 4 0 12 31
6 2 1 RSEC 16950 16950 U 4 0 11 31
2 2 9 RSEC 17126 17126 U 3 0 13 31
2 2 8 RSEC 17125 17125 U 3 0 12 31
2 2 7 RSEC 17124 17124 U 3 0 11 31
2 2 6 RSEC 17123 17123 U 2 0 13 31
2 2 5 RSEC 17472 17472 U 2 0 12 31
2 2 4 RSEC 17471 17471 U 2 0 11 31
2 2 3 RSEC 17470 17470 U 1 0 13 31
2 2 2 RSEC 17469 17469 U 1 0 12 31
2 2 1 RSEC 17818 17818 U 1 0 11 31

Do you wish to make a print out of the Extension Equipment configuration
Press Y to Print or RETURN to continue :

```

5. To print the report, type **y**.
6. Press RETURN.
7. Type **e** and press RETURN to return to the **Tradenet MX Hardware Reconfiguration Tools** menu.

FIGURE 3-18 Tradenet MX Hardware Reconfigurator Tools Menu

```

cmdtool - /usr/bin/csh

-----
Tradenet MX Hardware Reconfiguration Tools
-----

1. Import Customer Site System Configurations
2. System Configuraton Extension Functions
3. Customer OUTGEN Functions
4. Delete a Hardware Extension Project

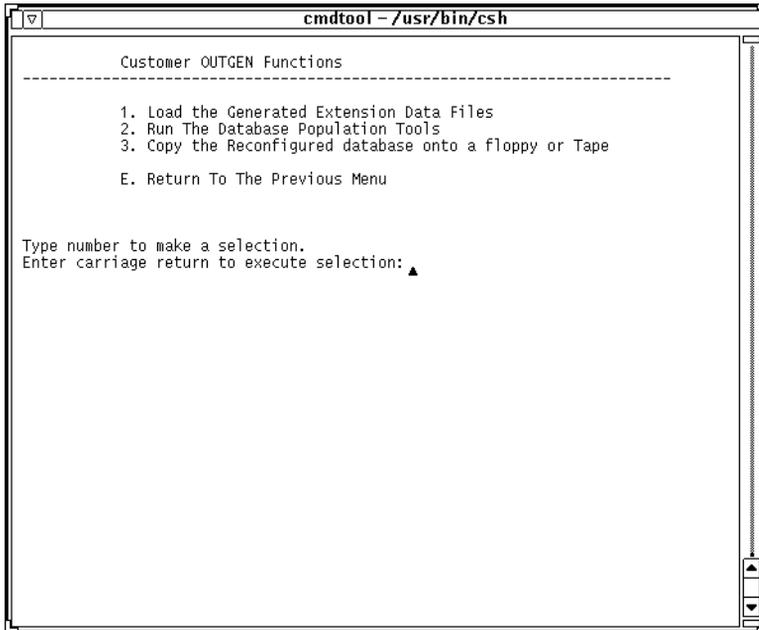
E. Return to The Previous Menu

Type number to make a selection.
Enter carriage return to execute selection:

```

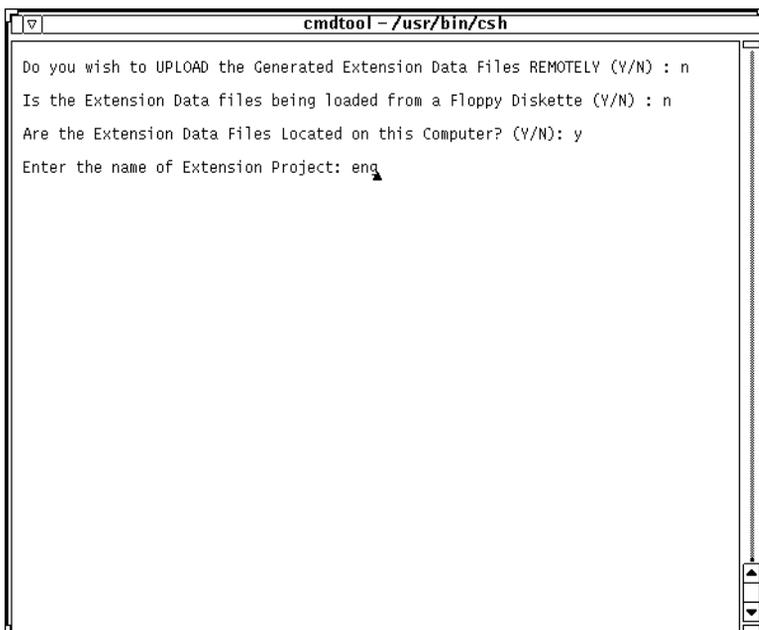
8. Type **3** and press RETURN to select **3. Customer OUTGEN Functions**.

**FIGURE 3-19 Customer OUTGEN Functions Menu**



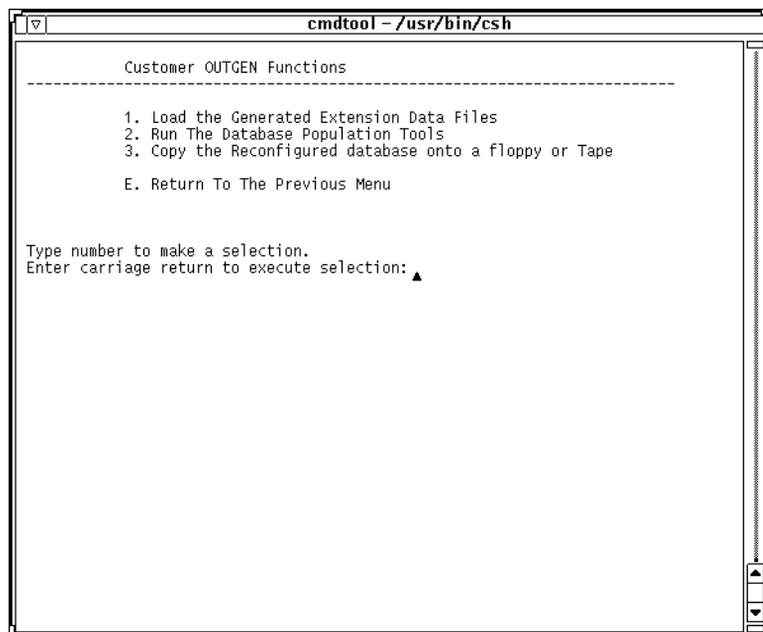
9. Type **1** and press RETURN to select **1. Load the Generated Extension Data Files**.
10. Type **n** and press RETURN.
11. Type **n** and press RETURN.
12. Type **y** and press RETURN.
13. Type the name of your project and press RETURN.

**FIGURE 3-20 Uploading the Extension Data Files**



14. Type **2** and press RETURN to select **2. Run the Database Population Tools**.
15. Type **y** and press RETURN.
16. Several messages will scroll through in your window. Press RETURN.

**FIGURE 3-21 Customer OUTGEN Functions Menu**



17. At the **Customer OUTGEN Functions** menu, type **3** and press RETURN to select **3. Copy the Reconfigured database onto a floppy or Tape**.
18. If you are exporting the database onto a floppy diskette, type **f** and press RETURN.
19. If you are exporting the database onto a tape, type **t** and press RETURN.
20. Insert the diskette or tape.
21. Type **y** and press RETURN.
22. If you are exporting the database from floppy diskette, type **y** and press RETURN.
23. Press RETURN to begin formatting.
24. When the formatting completes, press RETURN to continue.
25. If you have no more diskettes to format, type **n** and press RETURN.
26. Insert the diskette you formatted.

27. Press RETURN to continue.

FIGURE 3-22 Exporting the Database

```

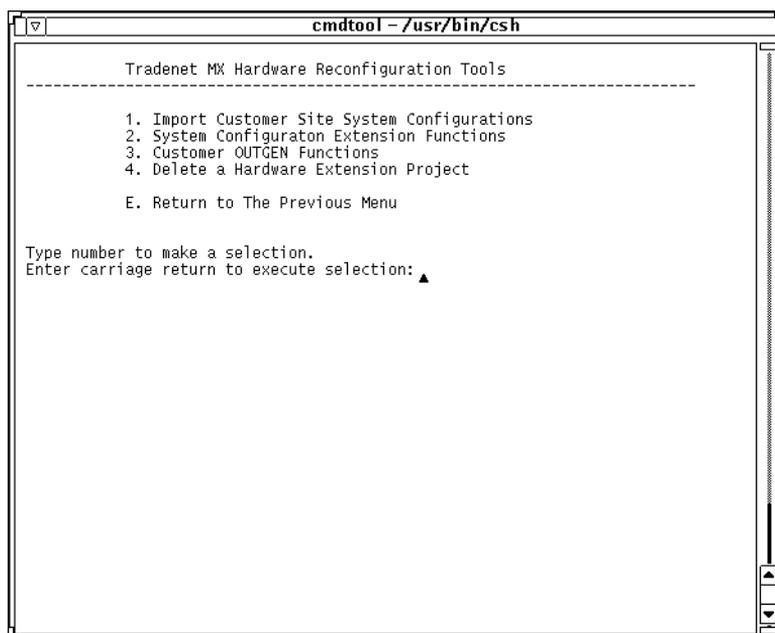
cmdtool - /usr/bin/csh
a ./sxdb1.dbs/t_loa00170.dat 1 blocks 1
a ./sxdb1.dbs/t_vla00171.idx 1 blocks 1
a ./sxdb1.dbs/t_vla00171.dat 1 blocks 1
a ./sxdb1.dbs/t_vla00172.idx 1 blocks 1
a ./sxdb1.dbs/t_vla00172.dat 1 blocks 1
a ./sxdb1.dbs/t_rmt00177.idx 4 blocks 1
a ./sxdb1.dbs/t_rmt00177.dat 7 blocks 1
a ./sxdb1.dbs/t_sit00178.idx 3 blocks 1
a ./sxdb1.dbs/t_sit00178.dat 3 blocks 1
a ./sxdb1.dbs/t_net00179.idx 1 blocks 1
a ./sxdb1.dbs/t_net00179.dat 1 blocks 1
a ./sxdb1.dbs/t_spk00182.idx 1 blocks 1
a ./sxdb1.dbs/t_spk00182.dat 1 blocks 1
a ./sxdb1.dbs/t_voi00183.idx 1 blocks 1
a ./sxdb1.dbs/t_voi00183.dat 1 blocks 1
a ./sxdb1.dbs/t_cro00184.idx 1 blocks 1
a ./sxdb1.dbs/t_cro00184.dat 1 blocks 1
a ./sxdb1.dbs/t_fre00185.idx 2 blocks 1
a ./sxdb1.dbs/t_fre00185.dat 1 blocks 1
a ./sxdb1.dbs/t_por00186.idx 1 blocks 1
a ./sxdb1.dbs/t_por00186.dat 2 blocks 1
a ./sxdb1.dbs/t_rmm00187.idx 1 blocks 1
a ./sxdb1.dbs/t_rmm00187.dat 1 blocks 1
a ./sxdb1.dbs/t_trd00188.idx 1 blocks 1
a ./sxdb1.dbs/t_trd00188.dat 1 blocks 1
a ./sxdb1.dbs/t_trd00189.idx 1 blocks 1
a ./sxdb1.dbs/t_trd00189.dat 1 blocks 1
a ./sxdb1.dbs/t_trd00190.idx 1 blocks 1
a ./sxdb1.dbs/t_trd00190.dat 1 blocks 1
a ./sxdb1.dbs/t_trd00191.idx 1 blocks 1
a ./sxdb1.dbs/t_trd00191.dat 1 blocks 1
a ./sxdb1.dbs/t_lin00192.idx 1 blocks 1
a ./sxdb1.dbs/t_lin00192.dat 1 blocks 1
a ./sxdb1.dbs/t_lin00193.idx 1 blocks 1
a ./sxdb1.dbs/t_lin00193.dat 1 blocks 1
a ./sxdb1.dbs/t_lin00194.idx 1 blocks 1
a ./sxdb1.dbs/t_lin00194.dat 1 blocks 1
a ./sxdb1.dbs/t_lin00195.idx 1 blocks 1
a ./sxdb1.dbs/t_lin00195.dat 1 blocks 1
a ./sxdb1.dbs/t_ns_00683.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00683.dat 4 blocks 1
a ./sxdb1.dbs/t_ns_00684.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00684.dat 8 blocks 1
a ./sxdb1.dbs/t_ns_00685.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00685.dat 1 blocks 1
a ./sxdb1.dbs/t_ns_00687.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00687.dat 1 blocks 1
a ./sxdb1.dbs/t_ns_00689.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00689.dat 9 blocks 1
a ./sxdb1.dbs/t_ns_00690.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00690.dat 9 blocks 1
a ./sxdb1.dbs/t_ns_00686.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00686.dat 9 blocks 1
a ./sxdb1.dbs/t_ns_00688.idx 1 blocks 1
a ./sxdb1.dbs/t_ns_00688.dat 5 blocks 1
a ./ALIP.pd 2 blocks 1
a ./ATIP.pd 1 blocks 1
a ./BTIP.pd 1 blocks 1
a ./IPIP.pd 1 blocks 1
a ./NWIP.pd 1 blocks 1
a ./SCGP.pd 1 blocks 1
a ./SELP.pd 6 blocks 1
a ./STIP.pd 1 blocks 1
a ./dpsdata.dps 10 blocks 1
Database is now ready for release!
Press RETURN to exit!

```

28. Press RETURN.

29. Type **e** and press RETURN to return to the **Tradenet MX Hardware Reconfiguration Tools** menu.

**FIGURE 3-23 Tradenet MX Hardware Reconfigurator Tools Menu**



30. Type **4** and press RETURN to select **4. Delete Hardware Extension Project**.
31. Type the trial project name and press RETURN.
32. Type **y** and press RETURN.
33. Type **e** and press RETURN to return to the **DATABASE RECONFIGURATOR TOOL** menu.
34. Type **e** and press RETURN to return to the **/usr/sx/db** prompt.
35. Type **exit** and press RETURN to close the window.
36. Restore the database from diskette. Refer to *Installing or Restoring a Database* in chapter 10 of the *Tradenet MX System Center Manual 14.1* (part number B0086185104) for more information.

For more information about using the Database Reconfigurator, refer to the *Tradenet MX Database Reconfigurator Manual 14.1* (part number B0098986304).

After reconfiguring the customer database, you are ready to install the line networking cards.

## INSTALLING NETWORKING CARDS

After reconfiguring your customer database, you are ready to install the line networking hardware. You need to install the line networking hardware to each site in your line networking group. Install the line networking cards where the reconfigurator indicates they should go.

---

*Note* Check to be sure that the Gateway is down, then use the **killsync** command to bring down the System Center.

---

To see where the reconfigurator placed your new cards, take the following steps:

1. Open the background menu by clicking the right mouse button on the screen background.
2. Click the right mouse button on **System-Management**.
3. Click the left mouse button on **Reports**. You see a shell tool window containing the reports menu.
4. Type **5** and press RETURN to select **Card Inventory Reports**.
5. Type **1** and press RETURN to select **Short SwC equipped card list sorted by cabinet/shelf/slot**.
6. View the report and look for your networking cards and the locations they were placed in.
7. Type **e** and press RETURN.
8. Type **dbupgrade** and press RETURN. You see the **DATABASE RECONFIGURATOR TOOL** menu.

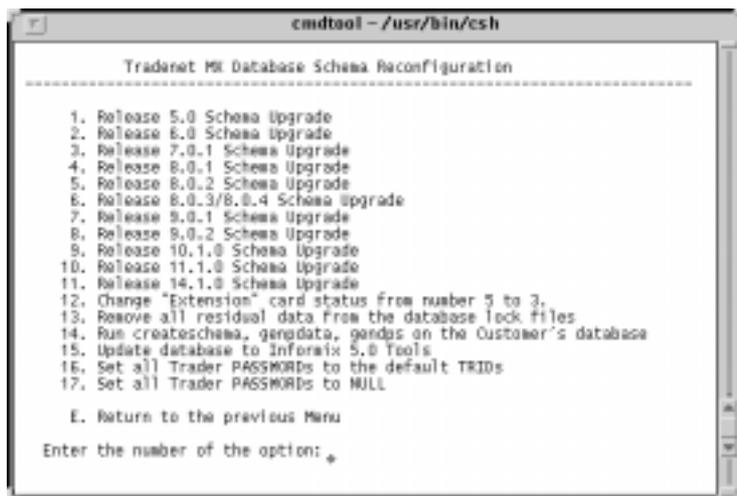
**FIGURE 3-24 DATABASE RECONFIGURATOR TOOL Menu**





- Type **6** and press RETURN to select the **Tradenet MX Database Schema Reconfiguration** Menu.

**FIGURE 3-27 Tradenet MX Database Schema Reconfiguration Menu**



- Type **12** and press RETURN to select **Change "Extension" card status from number 5 to 3**.
- Type **14** and press RETURN to select **Run createschema, genpdata, genps on the Customer's database**.
- Type **e** and press RETURN to exit the menu.
- Type **e** and press RETURN, again, to exit the menu.

Install the networking cards. For information about installing cards, refer to the *Tradenet MX Installation & Maintenance Manual 14.1* (part number B0108900003). If some of your networked sites use T1 cards and some of your networked sites use E1 cards, you need to tune the wire parameters. For information about tuning the wire parameters, see [Wire on page 2-34](#).

After installing the networking cards, you are ready to modify the appropriate Iview tables.

## MODIFYING IVIEW TABLES

**Warning!** *Before modifying the Iview tables, make sure you have turned on the **Networking cost option** and the **Multiple Hunt Groups cost option** in Featureman.*

After installing the line networking cards, you need to edit some of the Iview tables.

- Click **System Feat** in the **System Center Data View** window and enable the option **Multi Hunt Groups**.
- In the system feature table, enable the **Networking** option.
- Open the line table.
- Set the line networking cards to use the **PRIVATE** line group.
- In the line table, equip all lines. For the digital channels, set the **Telco Channels** column to **1-24** (for US sites) or **1-30** (for UK sites).
- Open the wire table.
- For the line networking cards, select the appropriate wire group from the pick list. The choices are **NETW E1 MASTER**, **NETW E1 SLAVE**, **NETW T1 MASTER**, and **NETW T1 SLAVE**. Because Tradenet MX Systems normally get their clock source from the CO, you will probably select either **NETW E1 SLAVE** or **NETW T1 SLAVE** and not any master cards.

8. Save changes to the table and exit the table.
9. Start up the System Center.
10. Bring up the Gateway.
11. Verify the System Center is working.
12. If you have problem with the System Center, do a forced system load by taking the following steps:
  - a. In a command tool or shell tool window, type **killsysc** and press RETURN.
  - b. Shut off the Gateway.
  - c. Start the System Center processes.
  - d. Do a system load.
  - e. Turn on the Gateway tower.

After modifying the Iview tables, you are ready to define the connections between sites in your line networking group. If you plan to use a modem to connect to other sites (instead of, or in addition to, the customer's LAN), see [Setting Up a Modem on page 3-25](#). Otherwise, go to [Defining Line Networking Sites Using Netconfig on page 3-33](#).

## SETTING UP A MODEM

After installing the line networking cards in your system, you are ready to define the System Center connections. You can connect to remote sites through the customer's LAN and/or using a modem. If you plan to use a modem to connect to remote sites, install a modem to your Tradenet MX System. For information about setting up a modem, refer to the *Tradenet MX Platform Manual 14.1* (part number B0087686104). If you plan to connect to other sites using the customer's LAN only, not a modem, skip this section and go to [Defining Line Networking Sites Using Netconfig on page 3-33](#).

There are three different modems you can configure to use with Release 11.1 and later:

- US Robotics Courier V.Everything modem
- Telebit 8820 modem
- Telebit T3000 modem

---

*Note*    *The Telebit T1000 modem is not supported with Release 11.1 and later.*

---

---

## Configuring the US Robotics Modem With Release 11.1 and Later

The US Robotics Courier V.Everything modem is password protected. When you use this modem to connect to another site, you are prompted for a password. If you plan to use the line networking feature, you must disable the password protection so that line networking will work correctly. There are two ways you can configure the US Robotics Courier V.Everything modem:

- without line networking
- with line networking

The following procedure tells you how to configure the US Robotics Courier V.Everything modem with line networking. For more information about configuring modems with the System Center, refer to the *Tradenet MX Platform Manual 14.1* (part number B0087686104).

---

*Note*    *The US Robotics Courier V.Everything modem can be configured to work with passwords. However, if you are using the line networking feature, you must configure the Courier modem to not use passwords.*

---

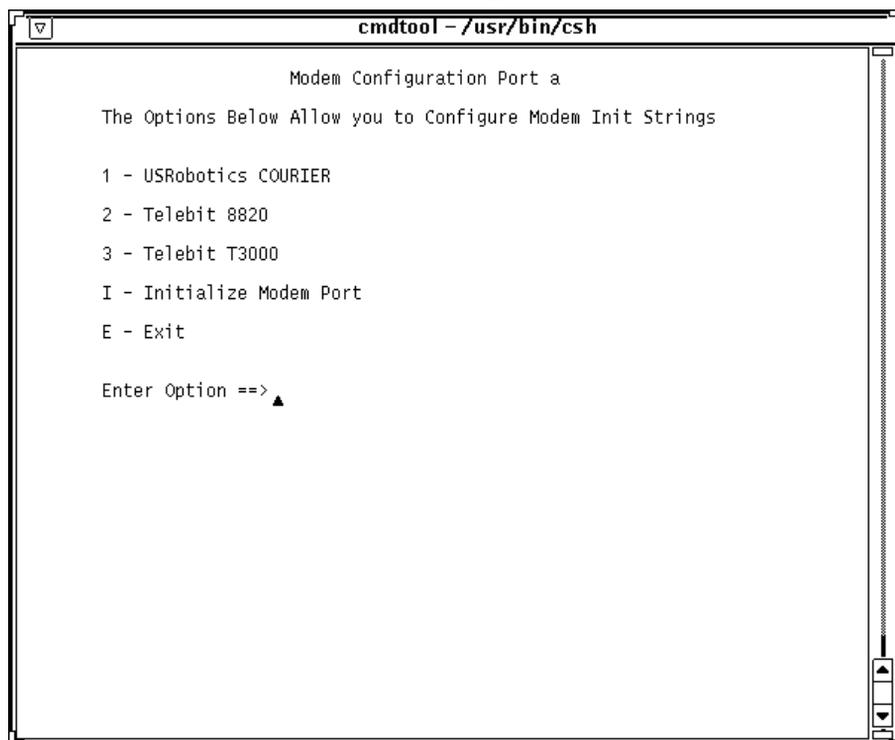
---

To configure the US Robotics Courier V.Everything modem when you are using line networking, take the following steps:

1. Open a command tool or shell tool window.
2. If necessary, move to the `/usr/sx/db` directory by typing `cd /usr/sx/db` and pressing RETURN.

3. Type **configure\_modem** and press RETURN. You see the following menu.

**FIGURE 3-28 Modem Configuration Port a Menu**



```
cmdtool - /usr/bin/csh

Modem Configuration Port a

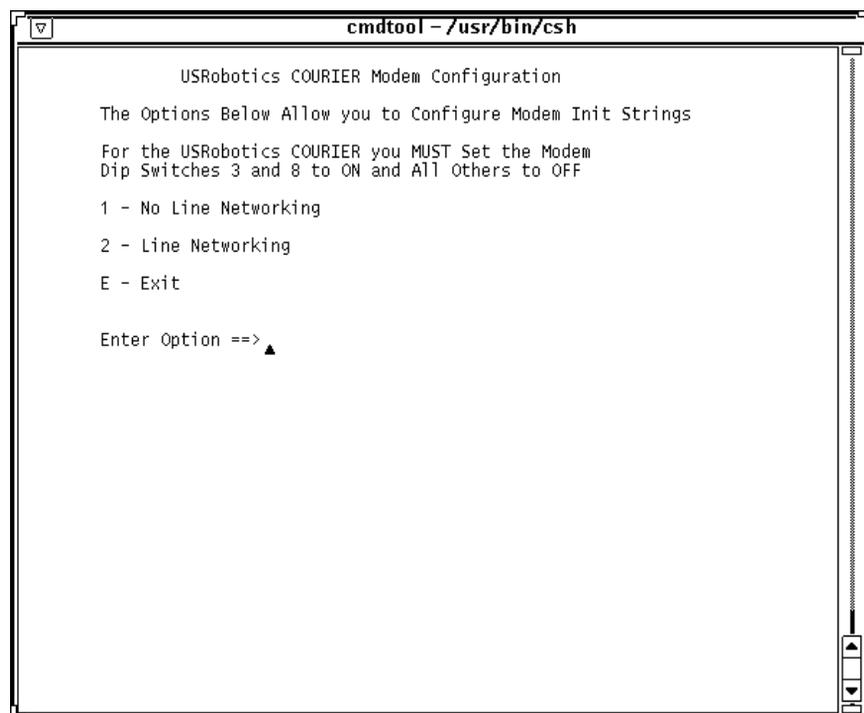
The Options Below Allow you to Configure Modem Init Strings

1 - USRobotics COURIER
2 - Telebit 8820
3 - Telebit T3000
I - Initialize Modem Port
E - Exit

Enter Option ==> ▲
```

4. Type **1** and press RETURN. You see the following menu.

**FIGURE 3-29 Configuring the US Robotics Courier V.Everything Modem**



```
cmdtool - /usr/bin/csh

USRobotics COURIER Modem Configuration

The Options Below Allow you to Configure Modem Init Strings

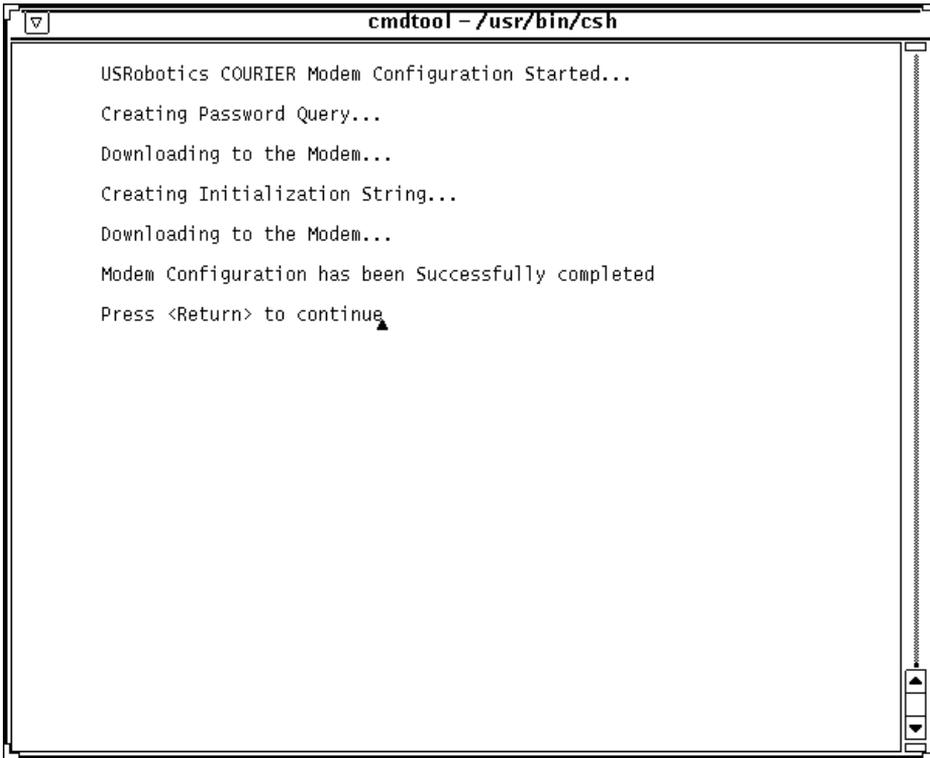
For the USRobotics COURIER you MUST Set the Modem
Dip Switches 3 and 8 to ON and All Others to OFF

1 - No Line Networking
2 - Line Networking
E - Exit

Enter Option ==> ▲
```

5. Type **2** and press RETURN. If errors are encountered during the download, they will be displayed to your screen.

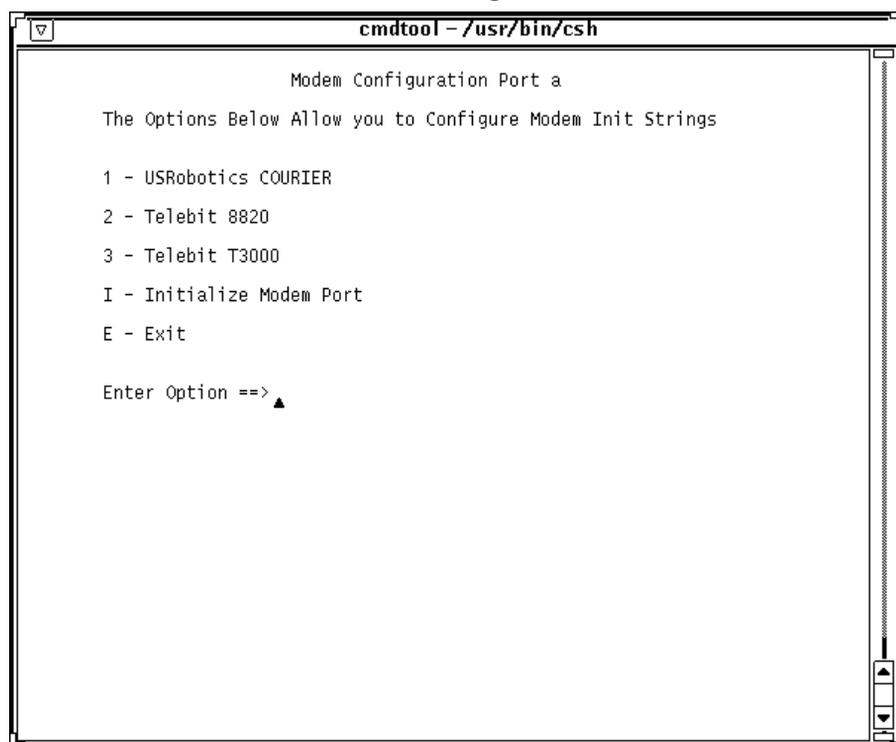
**FIGURE 3-30** COnfiguring the Courier Modem When Using Line Networking



```
cmdtool - /usr/bin/csh
USRobotics COURIER Modem Configuration Started...
Creating Password Query...
Downloading to the Modem...
Creating Initialization String...
Downloading to the Modem...
Modem Configuration has been Successfully completed
Press <Return> to continue
```

6. After the configuration is complete, press RETURN when prompted. You return to the opening menu.

**FIGURE 3-31 Modem Configuration Port a Menu**



7. Type **e** and press RETURN.
8. Type **exit** and press RETURN to close the command tool or shell tool window.

After setting up your modem, you are ready to define the connections using Netconfig.

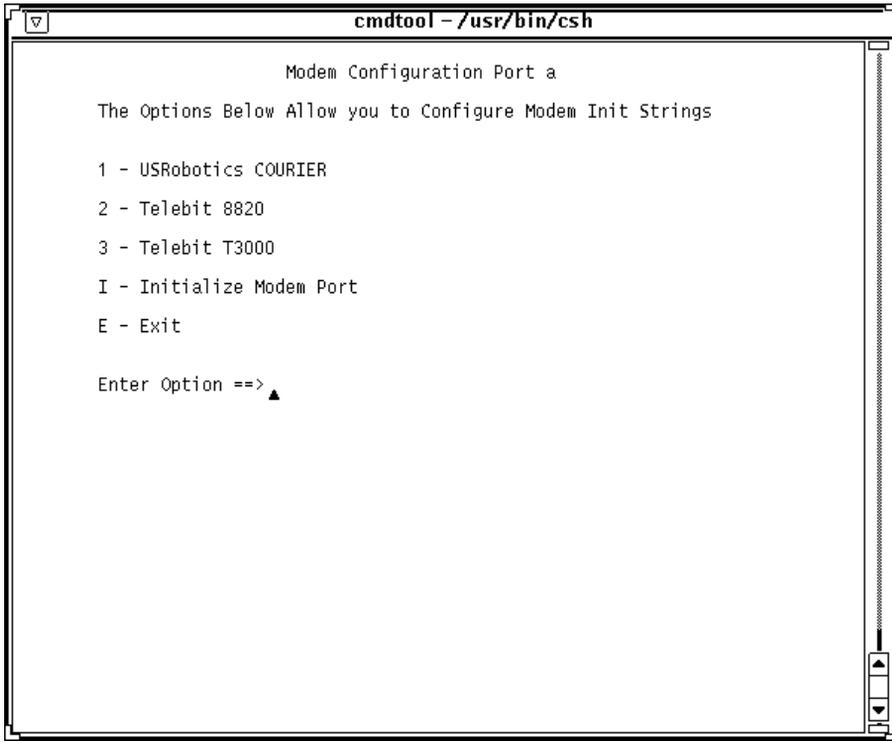
## Configuring the Telebit 8820 Modem With Release 11.1 and Later

To configure the Telebit 8820 modem, take the following steps:

1. Open a command tool or shell tool window.
2. If necessary, move to the /usr/sx/db directory by typing **cd /usr/sx/db** and pressing RETURN.

3. Type `configure_modem` and press RETURN. You see the following menu.

**FIGURE 3-32 Modem Configuration Port a Menu**



```
cmdtool - /usr/bin/csh

Modem Configuration Port a

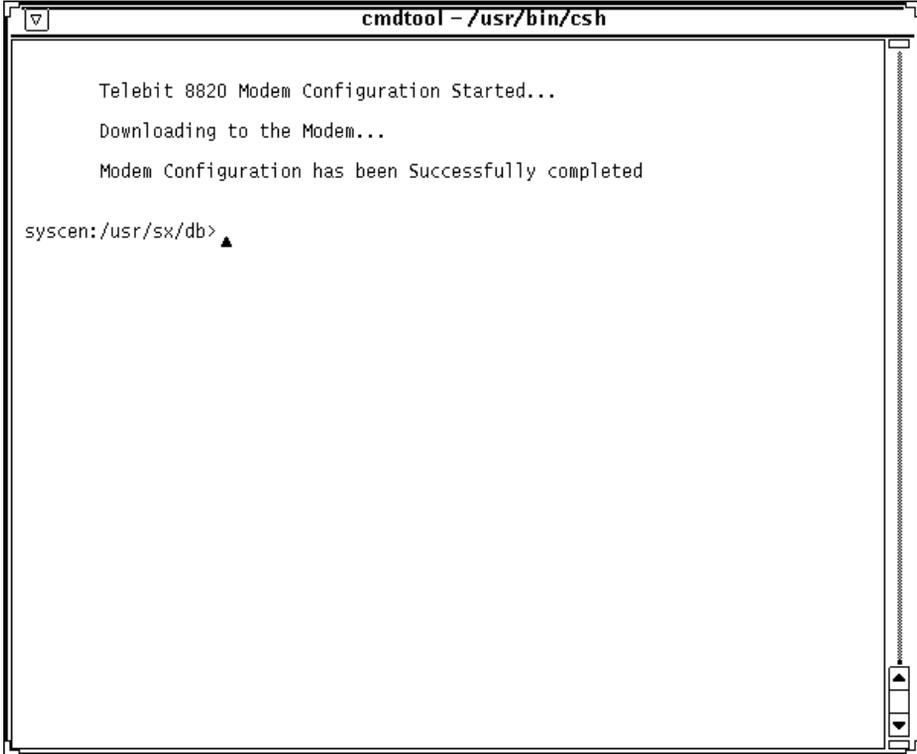
The Options Below Allow you to Configure Modem Init Strings

1 - USRobotics COURIER
2 - Telebit 8820
3 - Telebit T3000
I - Initialize Modem Port
E - Exit

Enter Option ==> ▲
```

4. Type **2** and press RETURN. If errors are encountered during the download, they will be displayed on your screen.

**FIGURE 3-33** Configuring a Telebit 8820 Modem

A terminal window titled 'cmdtool - /usr/bin/csh' showing the execution of a configuration script. The output text is: 'Telebit 8820 Modem Configuration Started...', 'Downloading to the Modem...', and 'Modem Configuration has been Successfully completed'. The prompt 'syscon:/usr/sx/db>' is visible with a cursor. The window has a scroll bar on the right side.

```
cmdtool - /usr/bin/csh

Telebit 8820 Modem Configuration Started...
Downloading to the Modem...
Modem Configuration has been Successfully completed

syscon:/usr/sx/db>
```

5. After the successful completion of the configuration script, type **exit** and press RETURN to close the command tool or shell tool window.

After setting up your modem, you are ready to define the connections using Netconfig.

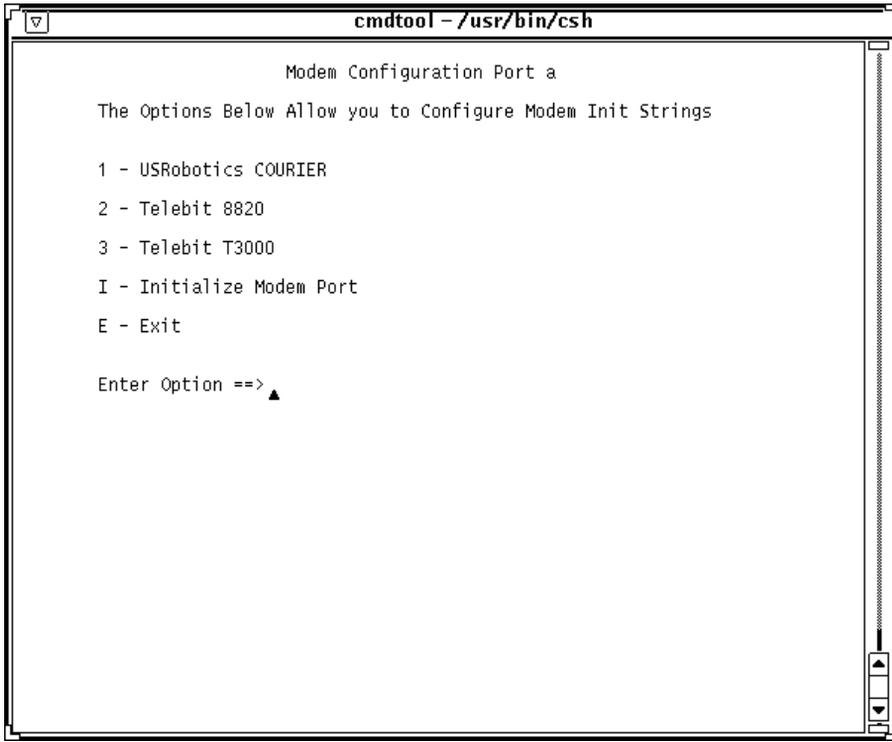
## Configuring the Telebit T3000 Modem With Release 11.1 and Later

To configure the Telebit T3000 modem, take the following steps:

1. Open a command tool or shell tool window.
2. If necessary, move to the /usr/sx/db directory by typing **cd /usr/sx/db** and pressing RETURN.

3. Type `configure_modem` and press RETURN. You see the following menu.

**FIGURE 3-34 Modem Configuration Port a Menu**



```
cmdtool - /usr/bin/csh

Modem Configuration Port a

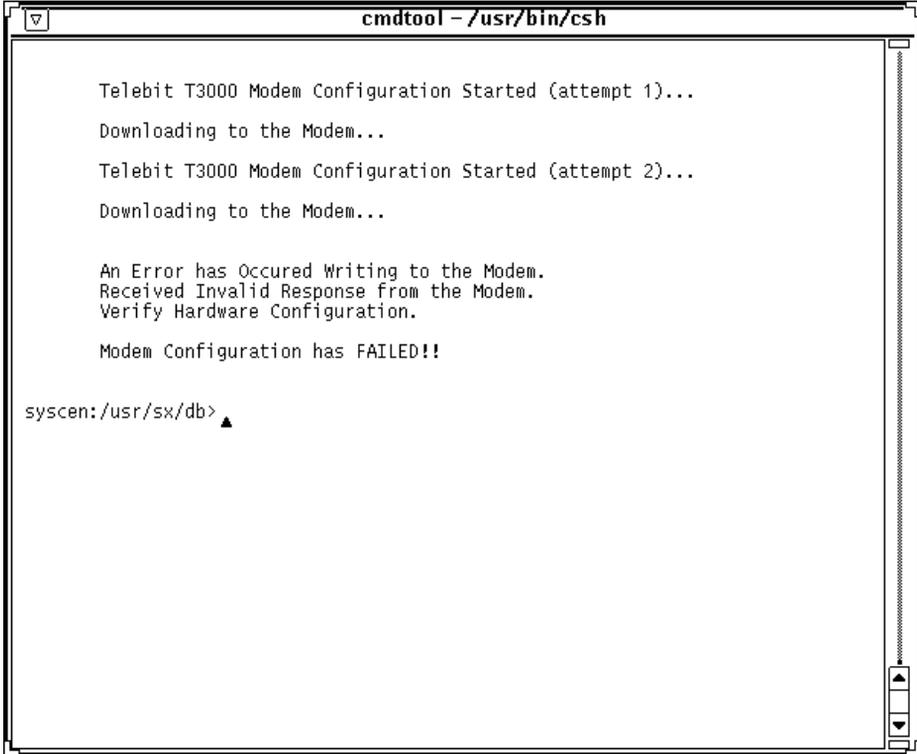
The Options Below Allow you to Configure Modem Init Strings

1 - USRobotics COURIER
2 - Telebit 8820
3 - Telebit T3000
I - Initialize Modem Port
E - Exit

Enter Option ==> ▲
```

4. Type **3** and press RETURN. If errors are encountered during the download, they will be displayed on your screen. The following figure shows an example of an error you can encounter.

**FIGURE 3-35** Sample Error Encountered When Configuring a Modem

A screenshot of a terminal window titled "cmdtool - /usr/bin/csh". The terminal displays the following text:

```
Telebit T3000 Modem Configuration Started (attempt 1)...  
Downloading to the Modem...  
Telebit T3000 Modem Configuration Started (attempt 2)...  
Downloading to the Modem...  
  
An Error has Occured Writing to the Modem.  
Received Invalid Response from the Modem.  
Verify Hardware Configuration.  
  
Modem Configuration has FAILED!!  
  
syscen:/usr/sx/db> ▲
```

The terminal window has a standard window border with a title bar, a close button in the top-left corner, and a vertical scrollbar on the right side.

5. After the successful completion of the configuration script, type **exit** and press RETURN to close the command tool or shell tool window.

After setting up your modem, you are ready to define the connections using Netconfig.

## DEFINING LINE NETWORKING SITES USING NETCONFIG

After installing hardware, modifying Iview tables, and setting up a modem (if necessary), use Netconfig to define the line networking sites. You use Netconfig to specify how you want to connect remote sites: through the customer's LAN or using a modem.

---

*Note* Before setting up line networking at each site, you need to decide what the site ID will be at each site. The master site is always site ID 1.

---

---

If you need to add sites to an established line networking group, do this in Netconfig.

To use Netconfig, take the following steps:

1. Log in as *install*.
2. Open a shell tool or command tool window.
3. Type `cd /usr/sx/db` and press RETURN.
4. Type `netconfig` and press RETURN. You see the **NetMan UNIX System Files Configuration Tool** window. In this window, you specify the sites connected by line networking and the sites' IP addresses.
5. In the **Site ID** field, select the site ID of this site. Valid site IDs are 1–97. (Up to 97 sites can be connected with line networking.)
6. You can connect to your remote sites in either of the following ways:
  - If you want to connect to your remote sites through a local LAN, in the **Direct Connection Settings** box, type the LAN IP address of this site. (This information is customer-supplied.) To connect to the customer's LAN, you need to install a second Ethernet card in the Tradenet MX System Sun workstation as described in *Chapter 3 Remote Terminals* of the *Tradenet MX Platform Manual 14.1* (part number B0087686104).
  - If you want to connect to your remote sites through your modem, in the **Modem Settings** box, define the IP address for the modem used to connect this site to remote sites. (You can also use the **Pick Default** button to get a default IP address you can use for the modem.) Click the **Modem Port** button to choose the port to which the modem is connected to the System Center: either **Port A** or **Port B** (usually **Port A**). Click the **Modem Type** button to choose the type of modem you are using: **T3000**, **8820**, or **COURIER**.

---

*Note* If this is the master site, you might need to specify both your modem's IP address and the customer LAN's IP address (for example, if you plan to connect to some of your remote sites with a modem, but to other remote sites through the customer's LAN). This is only true for the master site; all other sites connect with only one method.

---

---

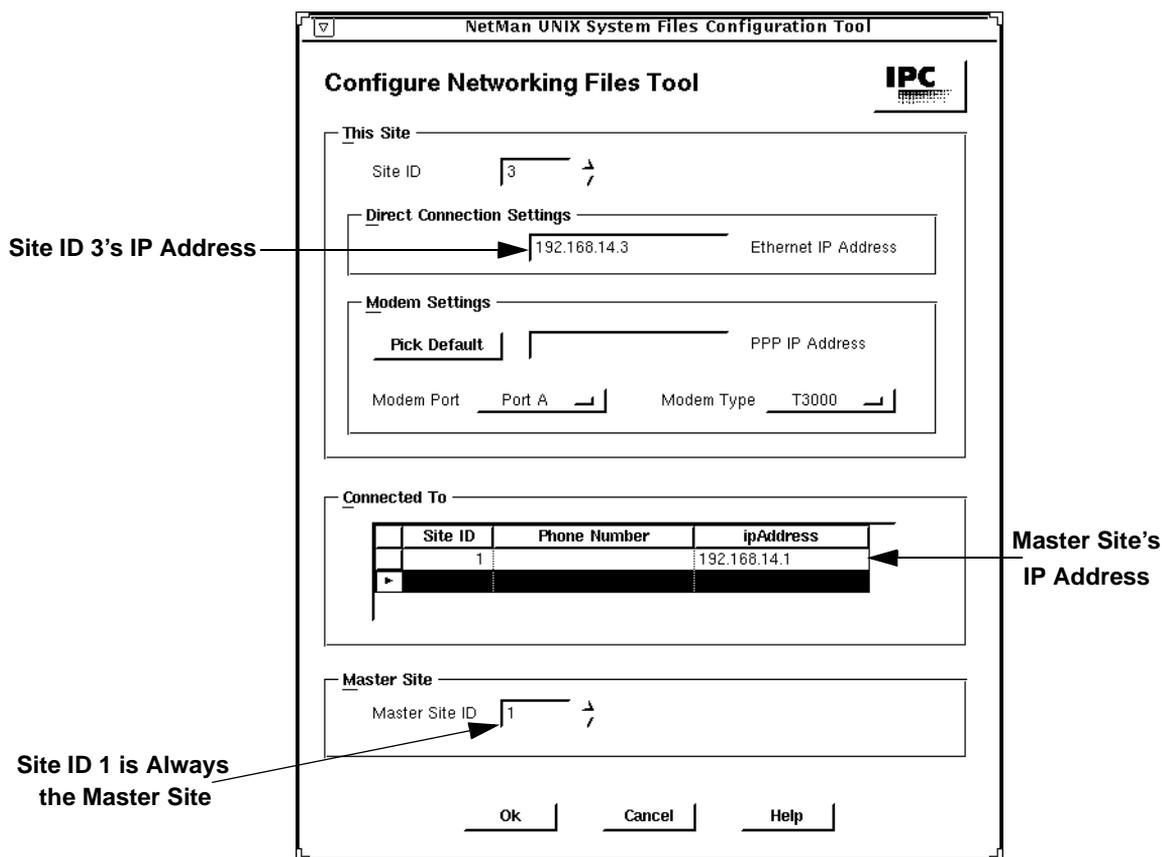
- In the **Connected To** box, fill in the appropriate information for each site connected to this site through line networking: the site ID, the phone number of the modem at that site (if you are connected with a modem), and the IP address of that remote site or modem. (You can fill in this information using TAB and RETURN.) When you get to the **ipAddress** field, a default IP address is shown and you can press RETURN to accept this default IP address, or you can scroll through the addresses and edit as necessary, then press RETURN.

If this is the master site, put information for all slave sites in the **Connected To** box. If this is a slave site, put information for only the master site in the **Connected To** box.

*Note* If this is a remote site, you should put in information only for the master site. Although it is possible to put connection information for sites other than the master site, there is no need to do so.

The following figure shows an example of how the **NetMan UNIX System Files Configuration Tool** dialog box could be filled out at a slave site. The site's ID is 3 and it is connected directly through the customer's network to the master site (site ID 1).

**FIGURE 3-36** Setting Up a Slave Site



- In the **Master Site ID** field, select **1** as the site ID of the master site. (There can be only one master site, and the master site ID is always 1.)

The following figure shows an example of how this screen could be filled in at a master site.

**FIGURE 3-37 NetMan UNIX System Files Configuration Tool Window**

The screenshot shows the 'Configure Networking Files Tool' window. It is titled 'NetMan UNIX System Files Configuration Tool' and features the IPC logo. The window is divided into several sections:

- This Site:**
  - Site ID:** 1 (Annotated: Site ID 1 (the master site))
  - Direct Connection Settings:** Ethernet IP Address: 192.168.14.1 (Annotated: Site ID 1 is connected to at least one remote site directly through site ID 1's customer LAN)
  - Modem Settings:**
    - Pick Default:** PPP IP Address: 192.168.10.1
    - Modem Port:** Port A
    - Modem Type:** T3000 (Annotated: Site ID 1 is connected to at least one remote site with a Telebit T3000 modem in port A)
- Connected To:** A table listing remote sites:

Site ID	Phone Number	ipAddress
2		192.168.14.2
3		192.168.14.3
4	12223334444	192.168.10.4

  - Annotations for Site ID 2: Site ID 1 is connected to site IDs 2, 3, and 4; IP address of site ID 2's customer LAN (192.168.14.2)
  - Annotations for Site ID 4: Telephone number of site ID 4's modem (12223334444); IP address of site ID 4's modem (192.168.10.4)
- Master Site:** Master Site ID: 1

Buttons at the bottom: Ok, Cancel, Help.

9. After adding each line in the **Connected To** box, click the first column of that row (the row selector).

**FIGURE 3-38** Adding Another Site

The screenshot shows the 'Configure Networking Files Tool' dialog box. It is titled 'NetMan UNIX System Files Configuration Tool' and 'Configure Networking Files Tool'. The 'This Site' section has a 'Site ID' field with the value '1'. The 'Direct Connection Settings' section has an 'Ethernet IP Address' field with the value '192.168.14.1'. The 'Modem Settings' section has a 'Pick Default' button, a 'PPP IP Address' field with the value '192.168.10.1', a 'Modem Port' dropdown menu set to 'Port A', and a 'Modem Type' dropdown menu set to 'T3000'. The 'Connected To' section contains a table with the following data:

Site ID	Phone Number	ipAddress
2		192.168.14.2
3		192.168.14.3
4	12223334444	192.168.10.4

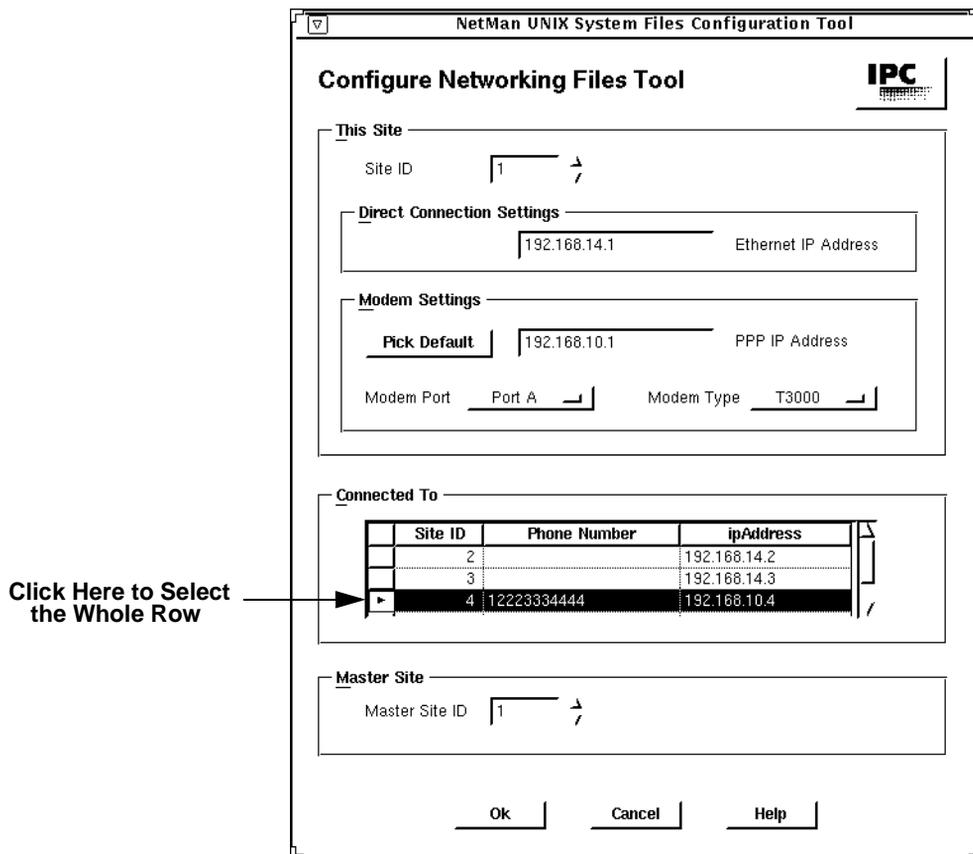
An arrow points to the first column of the table, with the text 'Click Here to Select the Whole Row'.

The 'Master Site' section has a 'Master Site ID' field with the value '1'. At the bottom of the dialog are 'Ok', 'Cancel', and 'Help' buttons.

*Note* If you used *Netconfig* to set up a site as a modem-connected site, then later you want to go back and change that connection so the site is connected directly through the customer's LAN only, you need to re-run option **2, Install MX software**, in the **mxinstall** menu to run **MX-SETUP** and erase certain files created with *Netconfig*. For information about reloading the startup files, refer to the **Tradenet MX Platform Manual 14.1** (part number B0087686104). If you do not reload the startup files, you will see an error message, **ifconfig: nmlocalhost: bad address**, when you do a fastboot command.

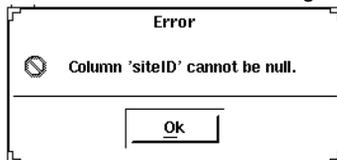
10. If necessary, you can delete sites in the **Connected To** area. To delete a site, select the entire row and press the DELETE key.

**FIGURE 3-39** Adding Another Site



If you do not select the entire line correctly, you see the following error message.

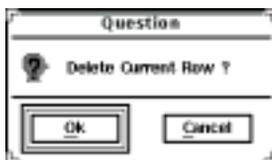
**FIGURE 3-40** Error Message



Click **OK** on the error message and delete the entire row.

After you press DELETE, you are prompted as follows.

**FIGURE 3-41** Prompt to Delete a Row



Click **OK** to confirm that you want to delete the row.

FIGURE 3-42 After Deleting a Row

NetMan UNIX System Files Configuration Tool

---

**IPC**

### Configure Networking Files Tool

**This Site**

Site ID

**Direct Connection Settings**

Ethernet IP Address

**Modem Settings**

Pick Default  PPP IP Address

Modem Port  Modem Type

**Connected To**

	Site ID	Phone Number	ipAddress
<input type="checkbox"/>	2		192.168.14.2
<input type="checkbox"/>	3		192.168.14.3
<input checked="" type="checkbox"/>			

**Master Site**

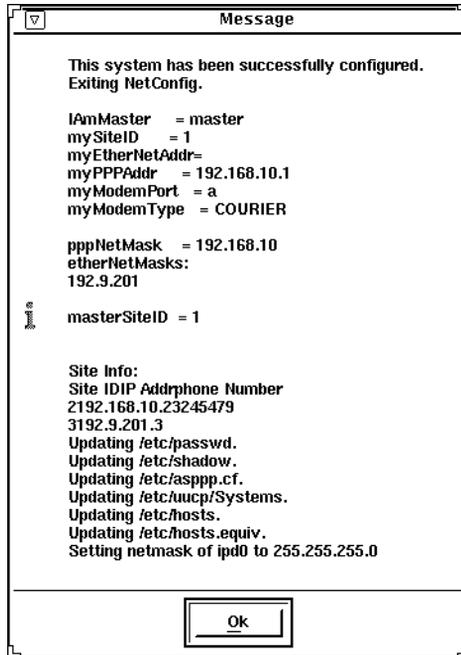
Master Site ID

11. Click **OK** to save the configuration files.

*Note* If you try to close Netconfig by clicking **OK** when you have not yet defined a master site ID, you will see an error message.

After closing the **NetMan UNIX System Files Configuration Tool** dialog box, you see a message similar to the following message shown.

**FIGURE 3-43** Configuration Message



12. Click **OK** to close this window.
13. Exit the window manager.

## CONFIGURING A SECOND ETHERNET CARD

When you set up the line networking feature, there are two methods for site-to-site System Center connectivity: using a modem or using the customer's LAN. If you installed a second Ethernet card in the Sun workstation to use the customer's LAN, as described in the *Tradenet MX Platform Manual 14.1* (part number B0087686104), you need to configure that second Ethernet card.

To configure a second Ethernet card in your Sun workstation, take the following steps:

1. Log in as *root@sh*. This is necessary to create and edit the hostname file.
2. Change to the /etc directory by typing `cd /etc` and pressing RETURN.
3. Use `vi` or another text editor to edit the existing Ethernet hostname file, or to create a new file if it does not exist. If the Sun workstation in which you are installing the Ethernet card is an Ultra, edit or create the file `hostname.hme1`. If the Sun workstation is a SPARC, edit or create the file `hostname.le1`.
4. Type or edit the line in this file so that it contains:

```
site<site number>
```

where `<site number>` is the site number you selected in the **Site ID** field of Netconfig. (See [Defining Line Networking Sites Using Netconfig](#) on page 3-33.)

5. Save and exit the hostname file.
6. Type `exit` and press RETURN to log out as *root@sh*.

NetMan UNIX System Files Configuration Tool

### Configure Networking Files Tool

**This Site**

Site ID: 3

**Direct Connection Settings**

Ethernet IP Address: 192.168.14.3

**Modem Settings**

Pick Default

Modem Port: Port A | Modem Type: T3000

PPP IP Address: \_\_\_\_\_

**Connected To**

Site ID	Phone Number	ipAddress
1		192.168.14.1

**Master Site**

Master Site ID: 1

Ok Cancel Help

The line in your hostname file should match the Site ID you selected here in Netconfig. For example, if you selected Site ID 3 in Netconfig, the line in your hostname file should read:

```
site3
```

## RE-BOOTING THE SYSTEM CENTER

After making changes in Netconfig, you need to re-boot the System Center. To re-boot the System Center, take the following steps:

1. Type **fastboot** and press RETURN.
2. Enter the password. The System Center re-boots. As the System Center re-boots, you see several lines of information written to the screen. When the System Center finishes re-booting, look for lines on the screen similar to the following lines:

```

Starting Informix SQL server se 7_1p
Starting Informix SQL server se 7 1

```

Indicates Modem Connection

Indicates the Site ID of This System

Blank Indicates Ethernet Connection

This example shows that this system is the master site (site ID is 1), and that there are two connections to this master site: one connection is a modem connection, and the other connection is an Ethernet connection. (That is, this master site connects to some slave sites using a modem, and it connects to other slave sites directly through the customer's LAN.) A slave site will always have only one of these lines. A master site can have one or two.

After using Netconfig at all sites, you are ready to use NetMan at the master site.

---

*Note* If you later go back to Netconfig to view the information, make sure you click **Cancel** to exit Netconfig and not **OK**.

---

## DEFINING MASTER SITE CONNECTIONS USING NETMAN

After installing hardware and using Netconfig at all sites in your line networking group, use NetMan to specify all master site connections. Netconfig allows you to specify a master site and other remote sites.

To define master site connections using NetMan, you need to take the following steps *at all networking sites*:

1. Import the customer database.
2. Open NetMan and fill in the fields.
3. Reconcile the customer database to the /usr/sx/db directory.

### Importing the Customer Database

To import the customer database, take the following steps:

1. Back up the customer database. Refer to *Backing Up the Database* in chapter 10 of the *Tradenet MX System Center Manual 14.1* (part number B0086185104) for more information.
2. Type **killsysc** and press RETURN.
3. Exit the window manager.
4. Log in as *install*.
5. Open a command tool or shell tool window.
6. Type **dbupgrade** and press RETURN. You see the **DATABASE RECONFIGURATOR TOOL** menu.

**FIGURE 3-44 DATABASE RECONFIGURATOR TOOL** Menu



7. Type **2** and press RETURN. You see a welcome screen.

**FIGURE 3-45** Database Reconfigurator Welcome Screen

```

cmdtool - /usr/bin/csh
*****
*
*
*
*          IPC INFORMATION SYSTEMS
*
*
*          TRADENET MX
*
*
*          DATABASE RECONFIGURATOR
*
*
*
*
*****
*
Press RETURN to Continue .....

```

8. At the welcome screen, press RETURN. You see the **Tradenet MX DATABASE RECONFIGURATOR** menu.

**FIGURE 3-46** Tradenet MX DATABASE RECONFIGURATOR Menu

```

cmdtool - /usr/bin/csh
-----
Tradenet MX DATABASE RECONFIGURATOR
-----
1. Country Parameters Reconfiguration Tools
2. Reports for Unused Configuration Resources
3. Tradenet MX Hardware Reconfiguration Tools
4. Removing a Tradenet MX Device
5. Adding Speakers To an Existing Station
6. Tradenet MX Database Schema Reconfiguration
7. Line Cards Adaptive Balancing

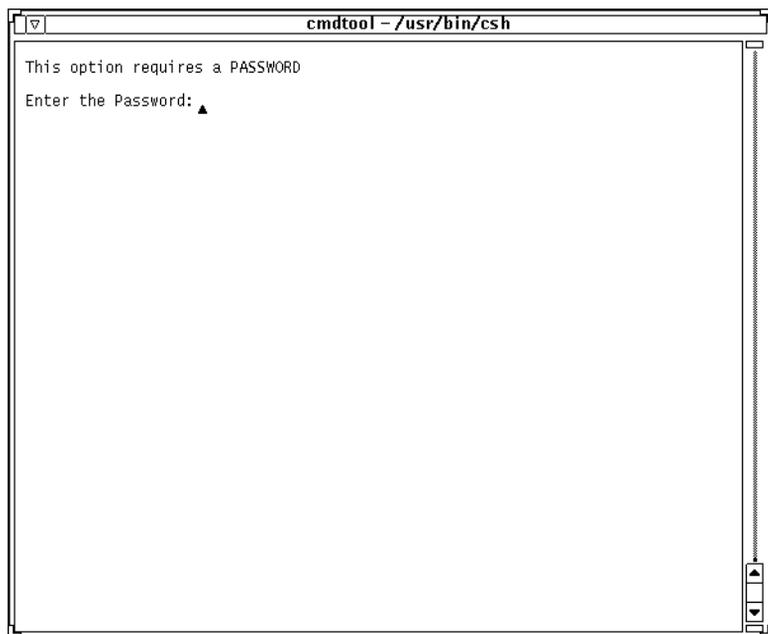
E. EXIT

Type number to make a selection.
Enter carriage return to execute selection:

```

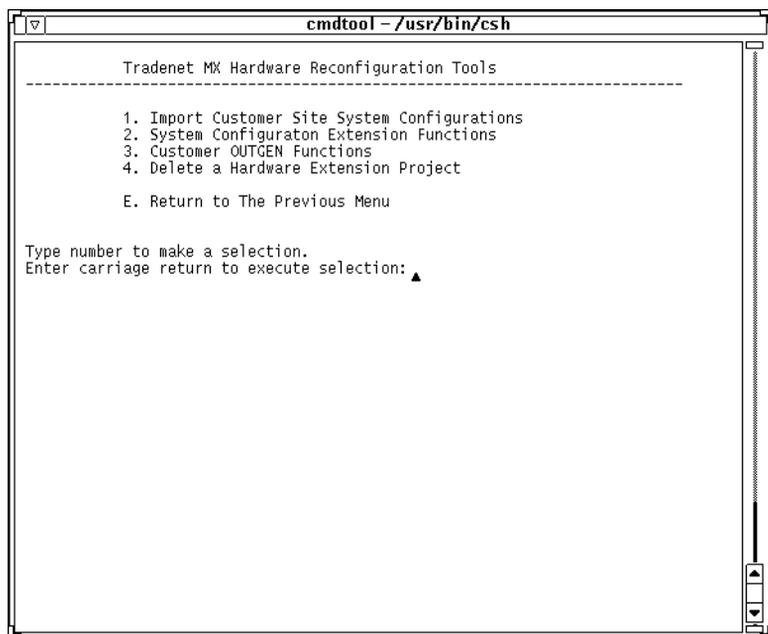
9. Type **3** and press RETURN to select **Tradenet MX Hardware Reconfiguration Tools**. You are prompted for a password.

**FIGURE 3-47** Password Prompt



10. Enter the Database Reconfigurator password. You see the **Tradenet MX Hardware Reconfiguration Tools** menu.

**FIGURE 3-48** Tradenet MX Hardware Reconfigurator Tools Menu



11. Type **1** and press RETURN to select **Import Customer Site System Configurations**.

**FIGURE 3-49** Prompt

```

cmdtool - /usr/bin/csh

The extension directory on this computer has the Extracted
Configuration data Files from a Tradenet MX database.

Do you wish to repeat this process (Y/N) : ▲

```

12. At the prompt, type **y** and press RETURN.
13. At the prompt to access the database remotely, type **n** and press RETURN.
14. At the prompt to load from floppy diskette or tape, type **y** and press RETURN.
15. If you are importing the database from floppy diskette, type **f** and press RETURN.

**FIGURE 3-50** Importing the Database From Diskette

```

cmdtool - /usr/bin/csh

Do you wish to access the database REMOTELY (Y/N) : n
Is the Customer database being loaded from a Floppy Diskette or Tape (Y/N) : y
Select I/O device where the database is located
Enter T for Tape or F for floppy (T/F): f

This utility copies the Backed up Customer Database from
a floppy diskette onto the hard disk. Then the Customer System
Configuration data will be extracted from the imported database.

You Must insert the Backed up database diskette now!

*****
***** MAKE SURE THE CORRECT DATABASE IS BEING USED. *****
*****

Enter Y to continue or N to abort. (y/n): ▲

```

16. If you are importing the database from tape, type **t** and press RETURN.

**FIGURE 3-51** Importing the Database From Tape

```

cmdtool - /usr/bin/csh

Do you wish to access the database REMOTELY (Y/N) : n
Is the Customer database being loaded from a Floppy Diskette or Tape (Y/N) : y
Select I/O device where the database is located
Enter T for Tape or F for Floppy (T/F): t

This utility copies the Backed up Customer Database from
a Tape drive onto the hard disk. Then the Customer System
Configuration data will be extracted from the imported database.

You Must insert the Backed up database Tape now!

*****
***** MAKE SURE THE CORRECT DATABASE IS BEING USED. *****
*****

Enter Y to continue or N to abort. (y/n): ▲

```

17. Insert the diskette or tape.

18. Type **y** and press RETURN.

19. Press RETURN. You return to the **Tradenet MX Hardware Reconfiguration Tools** menu.

**FIGURE 3-52** Tradenet MX Hardware Reconfigurator Tools Menu

```

cmdtool - /usr/bin/csh

-----
Tradenet MX Hardware Reconfiguration Tools
-----

1. Import Customer Site System Configurations
2. System Configurator Extension Functions
3. Customer OUTGEN Functions
4. Delete a Hardware Extension Project

E. Return to The Previous Menu

Type number to make a selection.
Enter carriage return to execute selection: ▲

```

20. Type **e** and press RETURN, and then type **e** and press RETURN, again, to exit the reconfigurator.

Once you have imported the customer database, you can use NetMan.

## Opening NetMan

While you are using NetMan, the System Center at each of the networked sites should not be running. (Use the **killsysc** command to stop the System Center.) If any moves, adds, or changes (MAC) are done while you are using NetMan, that MAC work will be lost.

To open NetMan, take the following steps:

1. Open the background menu by clicking the right mouse button on the screen background.
2. Click the right mouse button on **System Management**.
3. Click the left mouse button on **NETMAN**. You see the **NetMan** dialog box with the **Define Sites** screen on top open.

---

*Note* You can access NetMan only from the **install** account, not the **sm** account. If the dialog box is titled **NetViewer** instead of **NetMan**, you are logged in to a non-master site. You can edit NetMan information only if you are logged in at the master site.

---

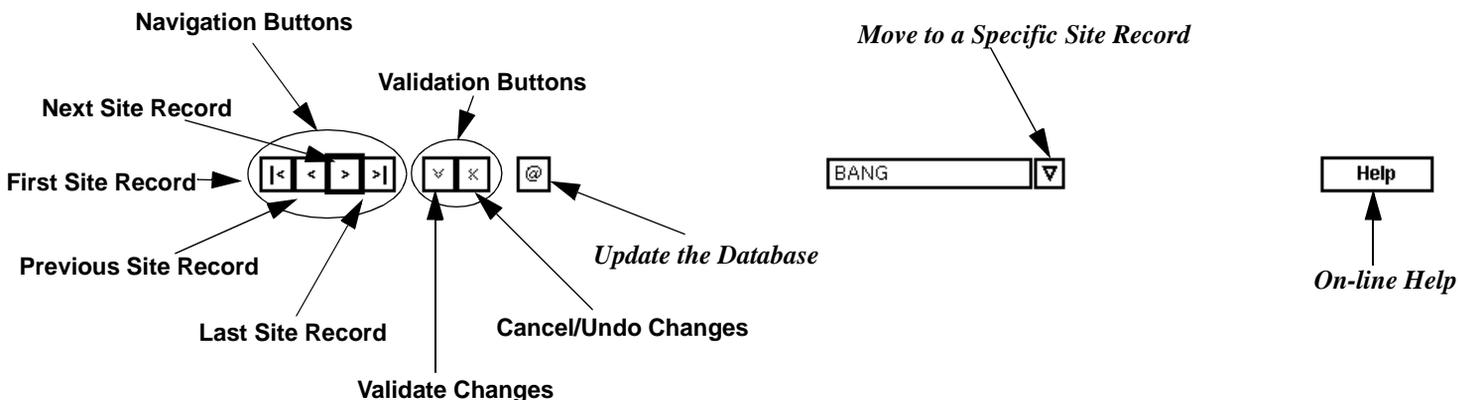
There are three screens in NetMan: **Define Sites**, **Define Connections**, and **Show Connection Summary**.

### Define Sites Screen

Use the **Define Sites** screen to describe the sites. To fill in the **Define Sites** screen, take the following steps:

1. Use the **Define Sites** screen to define both master and remote site. From this screen, you can also view a summary of the site's network connection. In this screen, you can move through the site records in two different ways: the navigation buttons or the drop down list box. The following figure describes the buttons in the **Define Sites** screen.

FIGURE 3-53 NetMan Control Buttons



When you move your cursor (without clicking) over the NetMan control buttons, you see a popup help box describing the button. For more information about the navigation buttons, click **Help**.

2. Use the first site record as the master record. In the **Define Sites** screen, edit the following fields:
  - a. In the **Name** field, type the four-character abbreviation for this master site. This name will be used on the **Define Connections** screen.
  - b. In the **Site ID** field, enter 1.
  - c. Select the **Master Site** button.



5. Edit the **Name**, **Description**, and **Host Name** fields.
6. Leave the **Master Site** button de-selected so that only site ID 1 is indicated as a master site.
7. Click **v** to validate the changes you made. If you get an error, check that the following conditions are true:
  - **Name** is one–four alphanumeric characters
  - **Description** is 0–40 alphanumeric characters
  - **Host Name** is 1–16 alphanumeric characters and the first character is an alpha character
  - you are not using the same **Name** for two or more sites
  - you are not using the same **Host Name** for two or more sites
8. If you have more than two networked sites, continue clicking **>** and editing the **Name**, **Description**, and **Host Name** fields to add sites. Remember to click **v** to validate changes after each site record you add.
9. After adding all site records, click **@** to update the database.

FIGURE 3-55 Define Sites Screen of NetMan

NetMan

File Help

1) Define Sites 2) Define Connections 3) Show Connection Summary

Define Sites |< < > >| v @ SASK Help

Name SASK Site id: 4 Master Site ◇

Description  
Saskatoon lab system

Host Name saskatoon Default Hunt Group 4

Connections to this site

	Name	ID	Voice Channels	Max Number of RLLI
▶				

**Note:**  
Each site must be defined within UNIX.  
Press the help button above for more instructions on how to configure UNIX with this information.

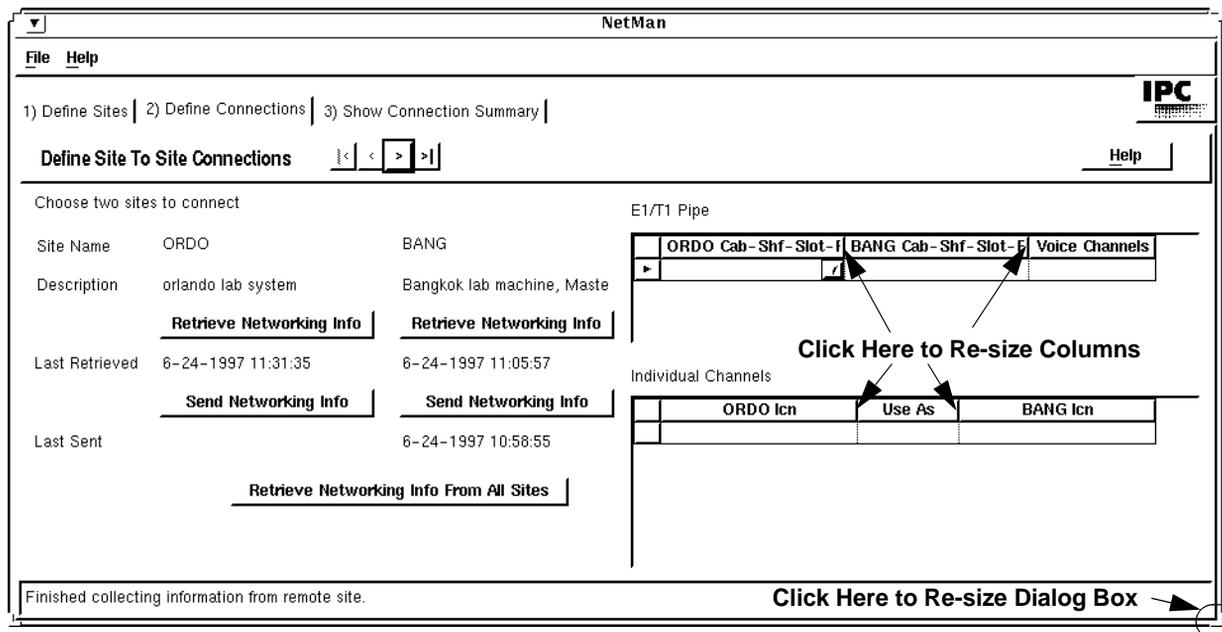
## Define Connections Screen

Use the **Define Connections** screen to specify what networking cards are used in each connection between all sites. After filling in the **Define Sites** screen, take the following steps:

1. Click **Define Connections**. You see the **Define Connections** screen of NetMan.
2. You can re-size the NetMan screens by clicking and dragging on the corners of the NetMan dialog box. You can also re-size the drop down list boxes by clicking and dragging on the column sides.
3. Use this screen to define the connection between any two MX sites. The navigation buttons work in the same way as in the **Define Sites** screen.

- Click the first **Retrieve Networking Info** button to download information from the first site. During the download, you see messages written in the bottom border of the **NetMan** window. When the download is complete, you will notice the date and time stamp under the **Retrieve Networking Info** button is updated.

**FIGURE 3-56 Define Connections** Screen of NetMan

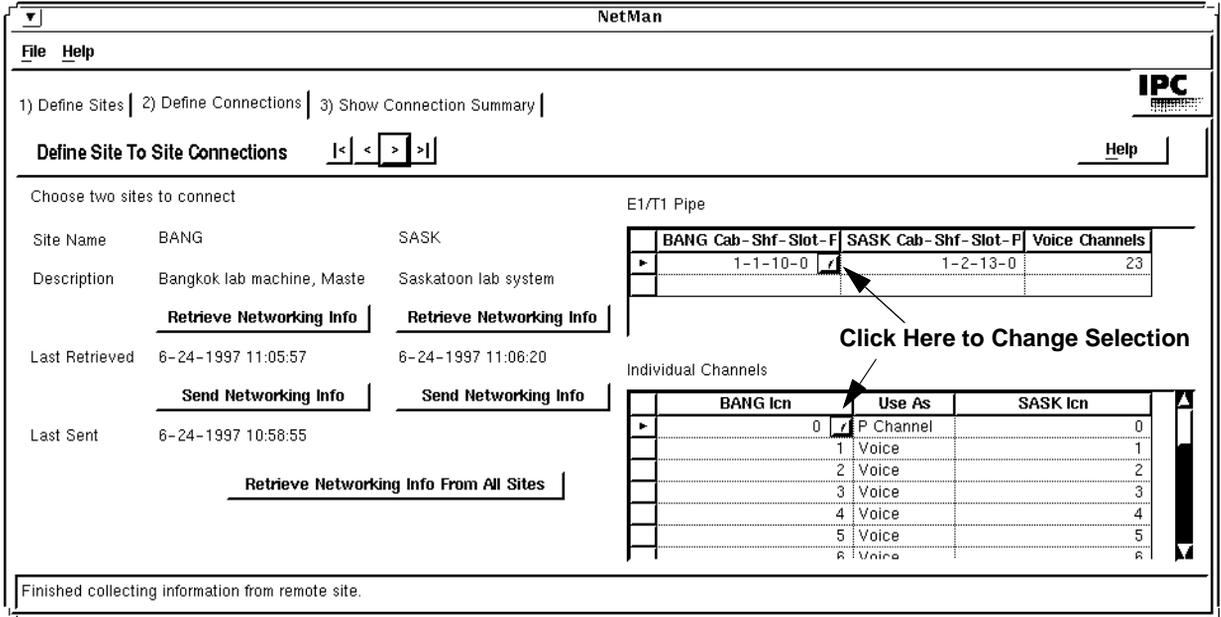


*Note* You must click the **Retrieve Networking Info** buttons before clicking the **Send Networking Info** buttons. This is true whether you are setting up the line networking feature for the first time, or making changes to an existing setup. If you accidentally click **Send Networking Info** before clicking **Retrieve Networking Info**, you will get unpredictable results and will need to contact IPC Systems Support Engineering for help.

- Click the second **Retrieve Networking Info** button. When you click the **Retrieve Networking Info** buttons, you are retrieving the card information from each site so that NetMan knows the location of the line networking cards.
- Click **>** to move to the next site record.
- Repeat steps 4–6 until you have gone through all sites.
- Click **|<** to return to the first site.

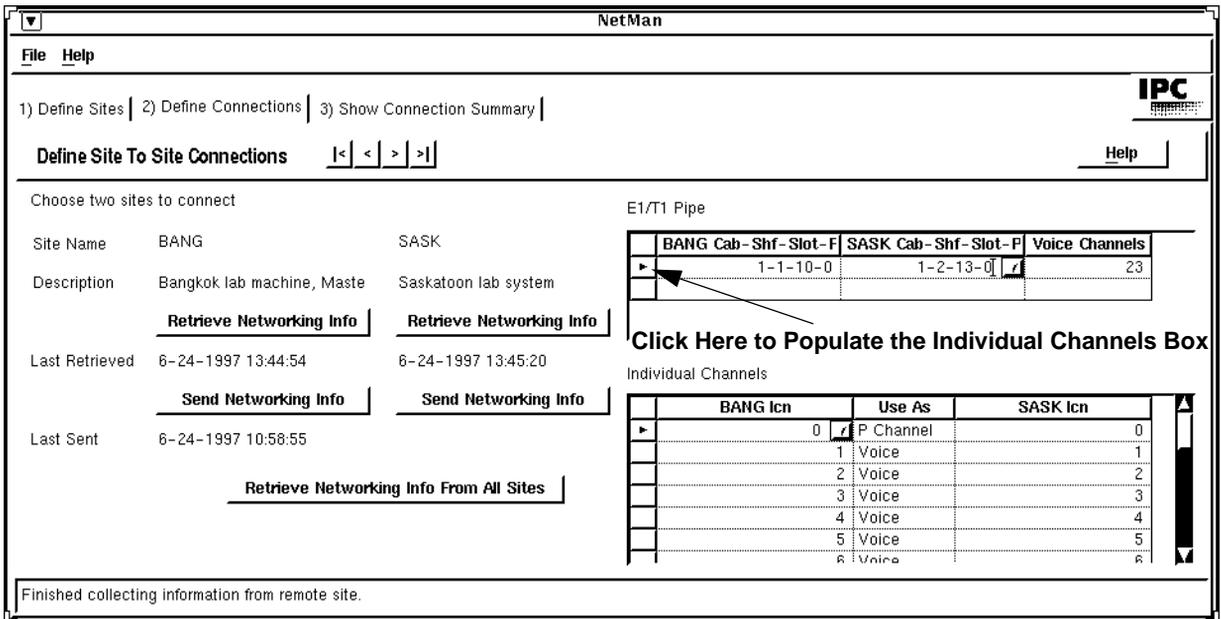
- Click the drop down arrow in the first column under **E1/T1 Pipe**.

**FIGURE 3-57 Define Connections Screen of NetMan**



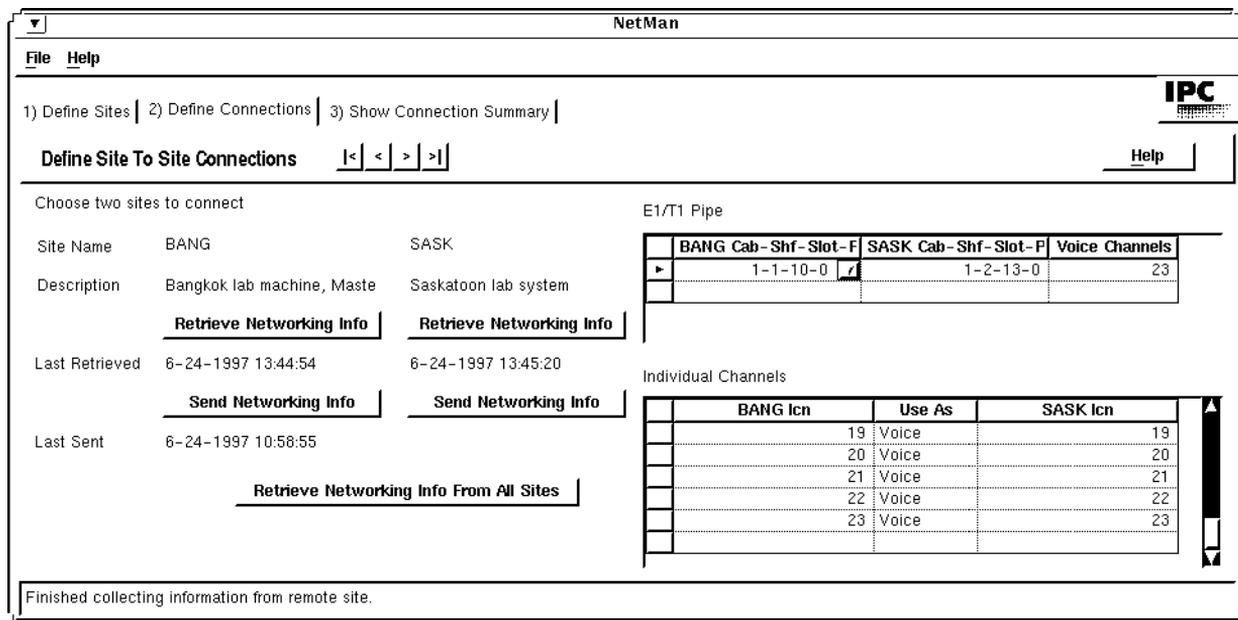
- In the first column (first site), select a networking card you want to use for the connection to the second site (second column).
- Click in the second column under **E1/T1 Pipe**.
- In the second column (second site), select a networking card you want to use for the connection to the first site (first column).

**FIGURE 3-58 Define Connections Screen of NetMan**



13. Click in the **Voice Channels** field and type the number of voice channels you are using. The maximum number of E1 channels you can use is 29; the maximum number of T1 channels you can use is 23.
  14. Select the row for the pipe that you configured, and the **Individual Channels** box will populate (See [FIGURE 3-58 Define Connections Screen of NetMan on page 3-51](#)).
  15. Click in the first column under **Individual Channels** and select the first channel at the first site (0).
  16. Click in the **Use As** column and select either **P Channel** or **Voice**. (Channel 0 is usually the p channel.)
- 
- Note* In the **Individual Channels** area of the **Define Connections** screen, only one channel can be defined as a **P Channel**. Because the P channel carries data (instead of voice), you need to make sure your P channel is a clear channel (no compression and no echo cancellers).
- 
17. Click in the third column under **Individual Channels** and select the channel at the second site to which you want to connect the first site's channel shown in the first column. The pairing of channels between the first site and the second site is usually one-to-one; that is, channel 0 is mapped to channel 0, channel 1 is mapped to channel 1, and so on. However, it is possible to alter this mapping. For example, if your sites are using 11 channels (half a pipe), you could map channel 0 at the first site to channel 12 at the second site; channel 1 at the first site to channel 13 at the second site, and so on.
  18. Click > to move to the next site record.
  19. Repeat steps 8–18 until you have gone through all the sites.
  20. Click |< to return to the first site.

**FIGURE 3-59 Define Connections Screen of NetMan**



21. After making changes in the **Define Connections** screen, you need to send the new information to the appropriate sites. Click the first **Send Networking Info** button under the first site.

- 22. Click the second **Send Networking Info** under the second site. After you click **Send Networking Info**, the date and time under the button changes.

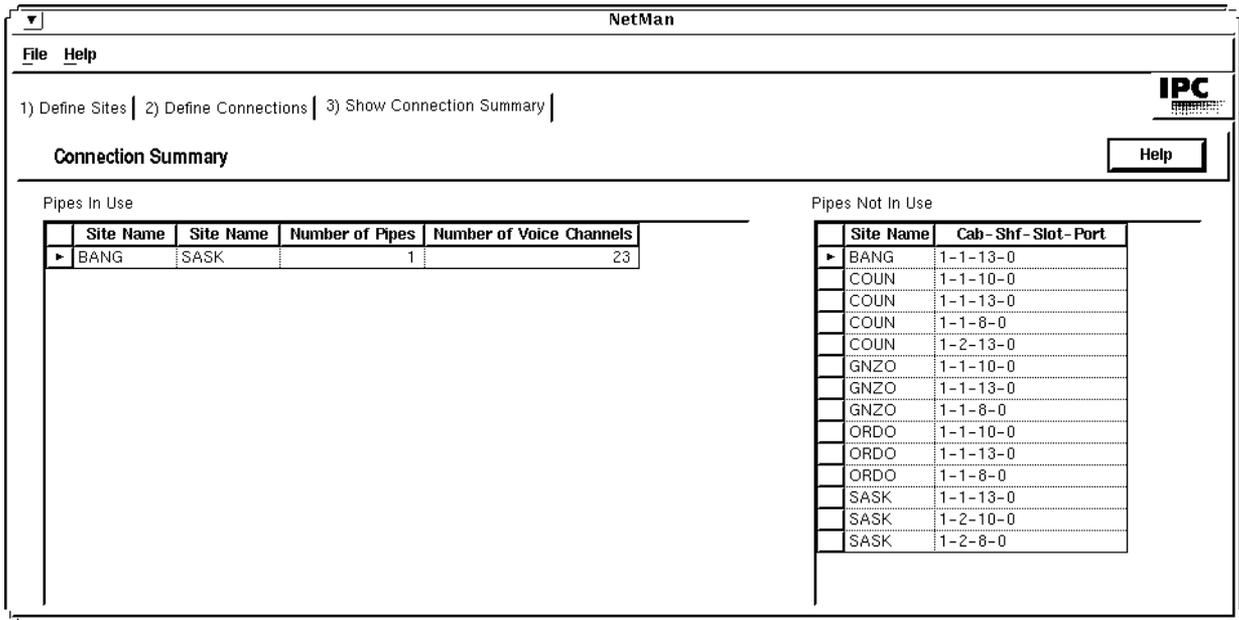
*Note* If you modify a connection between the master site and a remote site, you must download the new information to both the master and remote sites.

- 23. Click > to move to the next site record.
- 24. Repeat until you have gone through all the sites.

**Show Connection Summary Screen**

To view the connections you have created in NetMan, click **Show Connection Summary**. This screen shows networking connectivity between all sites in your line networking group. This screen is useful for verifying what pipes are in use and not in use.

**FIGURE 3-60 Show Connection Summary Screen of NetMan**



You cannot edit this screen. In the **Pipes Not In Use** area, the master site is indicated with an arrow next to it.

Exit NetMan. When you exit NetMan, the information you added is saved to the NetMan database. This database is backed up with the customer database in the /usr/sx/db directory during the usual backup procedure. When you restore the customer database, you are also restoring the last backed-up version of the NetMan information.

**Reconciling the Customer Database**

After using NetMan to specify all the master site connections in your line networking group, you need to reconcile the customer database and use **LineNetW** at all sites.

**Warning!** Failure to reconcile the customer database after making any changes to Netconfig or NetMan will result in inconsistent data between NetMan and the production database. That is, the customer database will not be using the information shown in NetMan.

To reconcile the customer database, take the following steps:

1. Open a command tool or shell tool window.
2. Type **dbupgrade** and press RETURN. You see the **DATABASE RECONFIGURATOR TOOL** menu.
3. Type **2** and press RETURN.
4. At the welcome screen, press RETURN. You see the **Tradenet MX DATABASE RECONFIGURATOR** menu.
5. Type **4** and press RETURN to select **Removing a Tradenet MX Device**. You are prompted for a password.
6. Enter the Database Reconfigurator password.
7. Type **y** and press RETURN.
8. Type **9** and press RETURN.
9. If you are using a diskette, type **f** and press RETURN. If you are using a tape, type **t** and press RETURN.
10. Type **y** and press RETURN.
11. To format the diskette, type **y** and press RETURN.
12. Insert the diskette or tape.
13. Exit the menus.
14. Now you need to restore the database using the *rstdb* login. (For more information, refer to the *Tradenet MX Platform Manual 14.1*, part number B0087686104.)

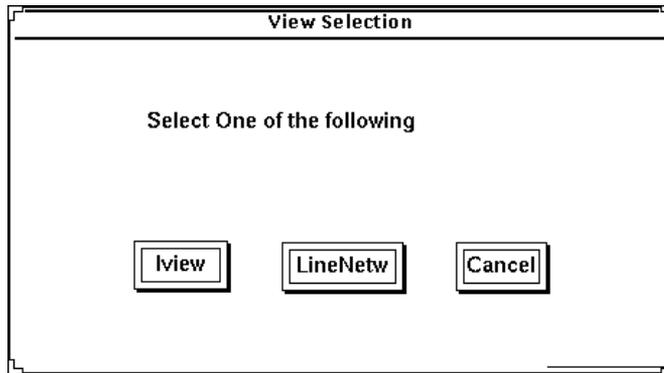
## SPECIFYING A DEFAULT REMOTE HUNT GROUP

In order for any remote site to hunt on your lines, you must provide a *default remote hunt group*. The default remote hunt group defines which lines you are making available for the remote site(s) to hunt on. Each site assigns only one remote hunt group.

To specify a site's default remote hunt group, take the following steps:

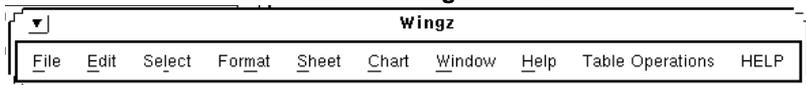
1. Log in as *install*.
2. Open the background menu by clicking the right mouse button on the screen background.
3. Press the right mouse button on **System Management**.
4. Select **Spreadsheet Data View**. You see the **View Selection** dialog box.

**FIGURE 3-61 View Selection Dialog Box**

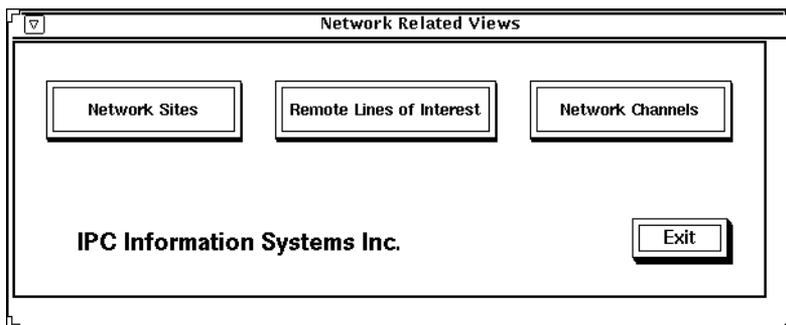


5. Click **LineNetw**. You see the **Wingz** menu bar and the **Network Related Views** dialog box.

**FIGURE 3-62 Wingz Menu Bar**

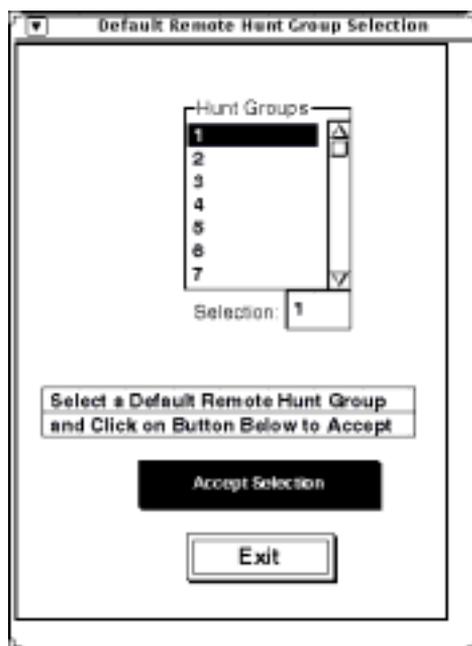


**FIGURE 3-63 Network Related Views Dialog Box**



6. In the **Wingz** menu bar, click **Table Operations, Utilities**, then **Remote Hunt**. You see the **Default Remote Hunt Group Selection** dialog box.

**FIGURE 3-64** Default Remote Hunt Group Selection Dialog Box



7. The Tradenet MX System can have up to 200 hunt groups. Select the hunt group you want remote sites to use at this site and click **Accept Selection**.

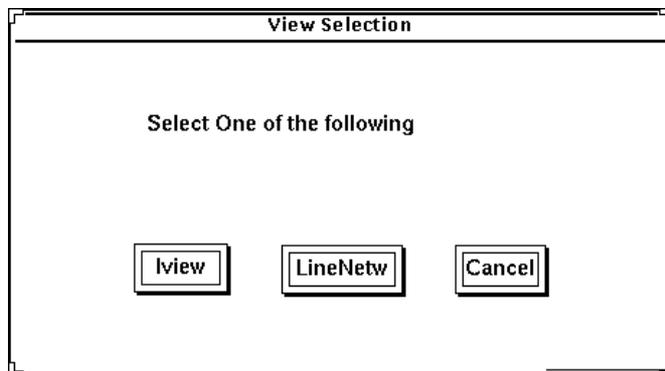
## USING THE LINENETW BUTTON

After using NetMan to define all the connections to the master site, use **LineNetw** to specify what remote lines will be available to turrets at that site. Along with specifying a remote hunt group at each networked site (see [Specifying a Default Remote Hunt Group on page 3-55](#)), you also need to use the **LineNetw** button at each networked site to specify what remote lines will be available to turrets at that site.

To use **LineNetw**, take the following steps:

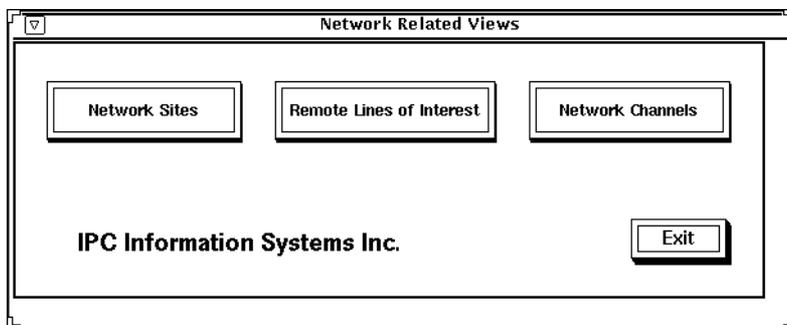
1. After starting the **Spreadsheet Data View** window from the background menu, you see the **View Selection** dialog box.

FIGURE 3-65 View Selection Dialog Box



2. Click **LineNetw**. You see the **Network Related Views** dialog box.

FIGURE 3-66 Network Related Views Dialog Box



Use the **Network Sites**, **Remote Lines of Interest**, and **Network Channels** buttons to access the following tables:

- `i_netw_site_id_view`
- `i_netw_remote_line_view`
- `i_netw_channel_view`

- To set up line networking, click **Network Sites**. You see the `i_netw_site_id_view` dialog box.

**FIGURE 3-67** `i_netw_site_id_view` Dialog Box

1	A	B	C	D	E	F	G
2	Site Id	Load Share	Site Abbv	Site Host Name	Default Hunt	Site Description	Site Equipped
3		Group Id	Char[4]	Char[16]	Group	Char[40]	
4	1	1	LRRY	larry	21	Triplet A	1
5	2	2	CURL	curly	0	Triplet B	0
6	3	-1	MOE	MOE	4	System Test Standalone System	1
7	4	3	SHMP	Shemp	20	Westbrook System Test Lab	0
8	5	-1	?5	?h5	0	?	0
9	6	-1	?6	?h6	0	?	0
10	7	-1	?7	?h7	0	?	0
11	8	-1	?8	?h8	0	?	0
12	9	-1	?9	?h9	0	?	0
13	10	-1	?10	?h10	0	?	0
14	11	-1	?11	?h11	0	?	0
15	12	-1	?12	?h12	0	?	0
16	13	-1	?13	?h13	0	?	0
17	14	-1	?14	?h14	0	?	0
18	15	-1	?15	?h15	0	?	0
19	16	-1	?16	?h16	0	?	0
20	17	-1	?17	?h17	0	?	0
21	18	-1	?18	?h18	0	?	0
22	19	-1	?19	?h19	0	?	0
23	20	-1	?20	?h20	0	?	0
24	21	-1	?21	?h21	0	?	0
25	22	-1	?22	?h22	0	?	0
26	23	-1	?23	?h23	0	?	0
27	24	-1	?24	?h24	0	?	0
28	25	-1	?25	?h25	0	?	0
29	26	-1	?26	?h26	0	?	0
30	27	-1	?27	?h27	0	?	0
	28	-1	?28	?h28	0	?	0

- Verify that the information listed for each site is correct.

*Note* The information in the columns: **Site Id**, **Load Share Group Id**, **Site Abbv**, **Site Host Name**, **Default Hunt Group**, and **Site Description** cannot be edited and comes from NetMan.

- Type 0 or 1 in the **Site Equipped** column. Use 0 if the site is not active, and use 1 if the site is using the line networking feature to connect to remote lines. All sites that are connected to this site should be equipped, otherwise traders will not be able to see buttons programmed to the site left un-equipped. (On the turret, when you use the **View** button, you see all sites shown in the `i_netw_site_id_view` table, even the un-equipped sites; however, from the turret you can only program buttons of equipped sites.)

*Note* If you have a site that you plan to set up for line networking, but that site is not yet ready to be connected, you can include that site in Netconfig and NetMan, and then leave the site un-equipped in the `i_netw_site_id_view` table. By doing this, it is easier to bring the site up when it is ready; you just need to equip it in this table, you do not need to add it in Netconfig and NetMan.

- Press TAB (or press RETURN).
- In the **Wingz** menu bar, click **Table Operations**, then **Save Table**. You see a confirmation dialog box.
- Click **OK**.
- Click on **Table Operations**, then **Quit Table**. You see a confirmation dialog box.
- Click **OK**.

11. To view the network channels equipped, from the **Network Related Views** window, click **Network Channels**. You see the `i_netw_channel_view` table.

**FIGURE 3-68** `i_netw_channel_view` Table

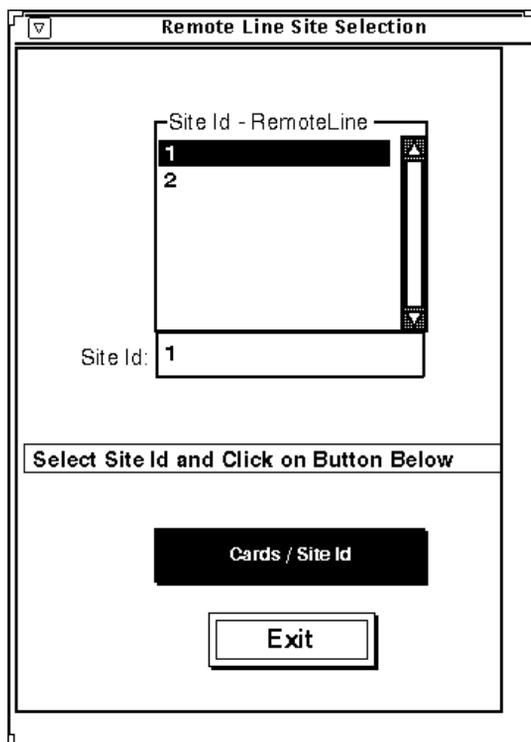
i_netw_channel_view										
	A	B	C	D	E	F	G	H	I	J
1	Card Lac	Site Id	Network Index	Channel Type	Channel Lac					
2	16790	1	1	1	1094					
3	16790	1	2	1	1095					
4	16790	1	3	1	1096					
5	16790	1	4	1	1097					
6	16790	1	5	1	1098					
7	16790	1	6	1	1099					
8	16790	1	7	1	1100					
9	16790	1	8	1	1101					
10	16790	1	9	1	1102					
11	16790	1	10	1	1103					
12	16790	1	11	1	1104					
13	16790	1	12	1	1105					
14	16790	1	13	1	1106					
15	16790	1	14	1	1107					
16	16790	1	15	1	1108					
17	16790	1	16	1	1109					
18	16790	1	17	1	1110					
19	16790	1	18	1	1111					
20	16790	1	19	1	1112					
21	16790	1	20	1	1113					
22	16790	1	21	1	1114					
23	16790	1	22	1	1115					
24	16790	1	23	1	1116					
25	16790	1	24	1	1117					
26	16790	1	25	1	1118					

You cannot edit this table.

12. Verify that all networking card Lacs are included in this table with the correct site IDs. This table shows what channels you configured in NetMan; it does not show all available channels. For example, if you configured 10 of 23 possible channels in NetMan, only those 10 configured channels will appear in this table.
13. In the **Wingz** menu bar, click on **Table Operations**, then **Quit Table**. You see a confirmation dialog box.
14. Click **OK**.

15. To add a remote line to your Tradenet MX System, from the **Network Related Views** window, click **Remote Lines of Interest**. You see the **Remote Line Site Selection** dialog box.

**FIGURE 3-69 Remote Line Site Selection Dialog Box**



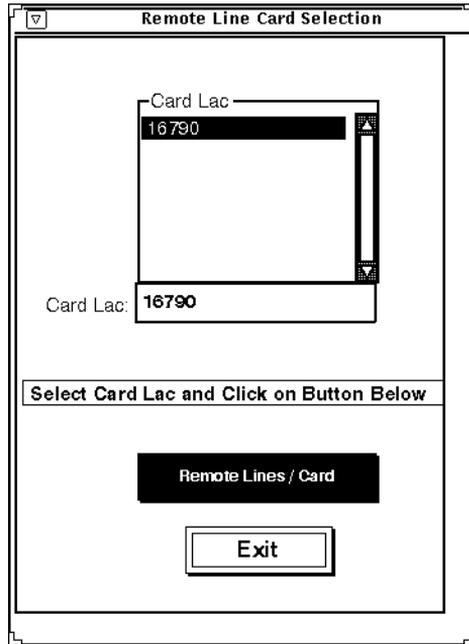
This dialog box shows you the site IDs of other sites to which you can connect.

*Note* The **Remote Line Site Selection** dialog box allows you to select an un-equipped site. That is, you can program remote lines to your turrets, even if those remote lines are coming from un-equipped sites. There might be instances where you want to do this. However, keep in mind that your turret users will not be able to use those remote lines, even though they appear on the turret.

16. Select the site Id of the remote site from which you want to add a line.

17. Click **Cards/Site Id**. You see the **Remote Line Card Selection** dialog box.

**FIGURE 3-70 Remote Line Card Selection Dialog Box**



This dialog box shows you the card Lacs of T1/E1 networking cards to which you have access at the remote site.

18. In this dialog box, you select the networking card Lac to which you want access. Select the card Lac and click **Remote Lines/Card**. You see the `i_netw_remote_line_view` table.

FIGURE 3-71 `i_netw_remote_line_view` Table

	A	B	C	D	E	F	G
1	Site Id	Card Lac	vLAC	Remote Lac	Line Description [label/sys descriptor]		
2					Char[40]		
3	1	16790	60132	1186	[Count]aLIC 1186		
4	1	16790	60131	1185	[Count]aLIC 1185		
5	1	16790	60130	1184	[Count]aLIC 1184		
6	1	16790	60129	1183	[Count]aLIC 1183		
7	1	16790	60128	1182	[Count]aLIC 1182		
8	1	16790	60127	1181	[Count]aLIC 1181		
9	1	16790	60126	1180	[Count]aLIC 1180		
10	1	16790	60125	1179	[Count]aLIC 1179		
11	1	16790	60124	1178	[Count]aLIC 1178		
12	1	16790	60123	1177	[Count]aLIC 1177		
13	1	16790	60122	1176	[Count]aLIC 1176		
14	1	16790	60121	1175	[Count]aLIC 1175		
15	1	16790	60120	1174	[Count]aLIC 1174		
16	1	16790	60119	1173	[Count]aLIC 1173		
17	1	16790	60118	1172	[Count]aLIC 1172		
18	1	16790	60117	1171	[Count]aLIC 1171		
19	1	16790	60116	1170	[Count]aLIC 1170		
20	1	16790	60115	1169	[Count]aLIC 1169		
21	1	16790	60114	1168	[Count]aLIC 1168		
22	1	16790	60113	1167	[Count]aLIC 1167		
23	1	16790	60112	1166	[Count]aLIC 1166		
24	1	16790	60111	1165	[Count]aLIC 1165		
25	1	16790	60110	1164	[Count]aLIC 1164		
26	1	16790	60109	1163	[Count]aLIC 1163		

Each card Lac can have up to 200 rows of data.

19. Click your cursor in the **Remote Lac** column. In this column, you enter the line Lacs given to you by the remote site's administrator.

*Note You cannot edit the **vLAC** column. The software populates this column for you based on the other data you enter. This prevents you from selecting a vLAC that is already used by other networking cards or for features such as DDI, and it prevents you from entering duplicate vLACs.*

20. Type the remote Lac. You cannot have duplicate remote Lacs on the same networking card Lac. Likewise, you cannot have duplicate remote Lacs on separate card Lacs, if those remote Lacs and card Lacs are at the same site.
21. Press TAB (or press RETURN).
22. Type a description for the line in the **Line Description** column.
23. Continue entering data in this table until you have added all the remote Lacs to which you have access.
24. When you are finished editing this table, in the **Wingz** menu bar, click **Table Operations**, then **Save Table**. You see a confirmation dialog box.
25. Click **OK**.
26. Click on **Table Operations**, then **Quit Table**. You see a confirmation dialog box.
27. Click **OK**. You return to the **Remote Line Card Selection** dialog box.
28. Click **Exit**. You return to the **Remote Line Site Selection** dialog box.

29. Click **Exit**. You return to the **Network Related Views** dialog box.
30. Click **Exit**.
31. After adding and removing data for the line networking cards, you need to reload the network and station cards. (Either from the button on the card or at the System Center. In the System Center **MAIN MENU**, select **1. Maintenance**, **1. Card**, and **2. Load Card Processor**. For more information, refer to the *Tradenet MX System Center Manual 14.1*, part number B0086185104.)

You need to use the **LineNetW** button at all sites in your line networking group.

## SENDING REMOTE HUNT GROUP INFORMATION USING NETMAN

After specifying a default hunt group at each site, you need to send that information to all sites using NetMan. To send information using NetMan, you need to take the following steps:

1. Import the customer database to the /usr/sx/db/xtensions directory at all sites.
2. Open NetMan and send information to all sites.
3. Reconcile the customer database to the /usr/sx/db directory.

### Importing the Customer Database

To import the customer database to the /usr/sx/db/xtensions directory, take the following steps:

1. Back up the customer database. Refer to *Backing Up the Database* in chapter 10 of the *Tradenet MX System Center Manual 14.1* (part number B0086185104) for more information.
2. Type **killsync** and press RETURN.
3. Exit the window manager.
4. Log in as *install*.
5. Open a command tool or shell tool window.
6. Type **dbupgrade** and press RETURN. You see the **DATABASE RECONFIGURATOR TOOL** menu.

**FIGURE 3-72 DATABASE RECONFIGURATOR TOOL** Menu



7. Type **2** and press RETURN. You see a welcome screen.

**FIGURE 3-73** Database Reconfigurator Welcome Screen

```

cmdtool - /usr/bin/csh
*****
*
*
*
*          IPC INFORMATION SYSTEMS
*
*
*          TRADENET MX
*
*
*          DATABASE RECONFIGURATOR
*
*
*
*
*****
*
Press RETURN to Continue .....

```

8. At the welcome screen, press RETURN. You see the **Tradenet MX DATABASE RECONFIGURATOR** menu.

**FIGURE 3-74** Tradenet MX DATABASE RECONFIGURATOR Menu

```

cmdtool - /usr/bin/csh
-----
Tradenet MX DATABASE RECONFIGURATOR
-----
1. Country Parameters Reconfiguration Tools
2. Reports for Unused Configuration Resources
3. Tradenet MX Hardware Reconfiguration Tools
4. Removing a Tradenet MX Device
5. Adding Speakers To an Existing Station
6. Tradenet MX Database Schema Reconfiguration
7. Line Cards Adaptive Balancing

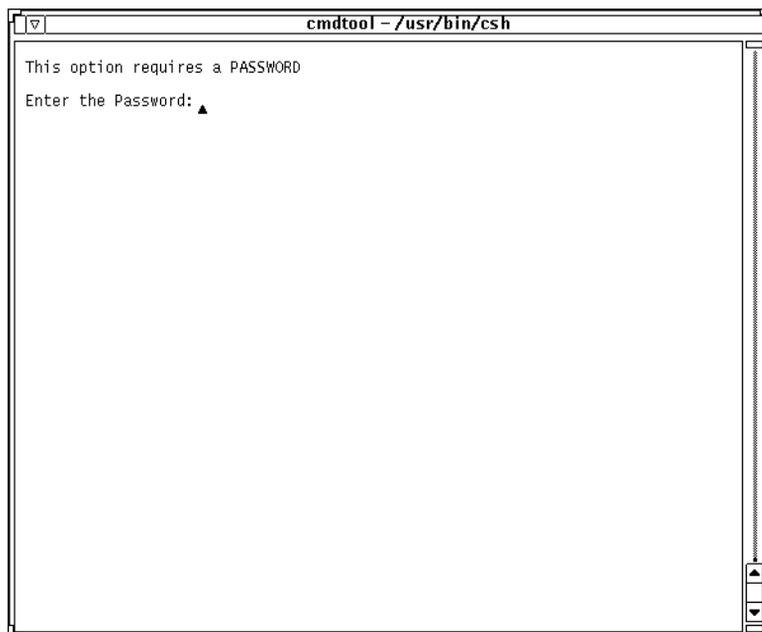
E. EXIT

Type number to make a selection.
Enter carriage return to execute selection:

```

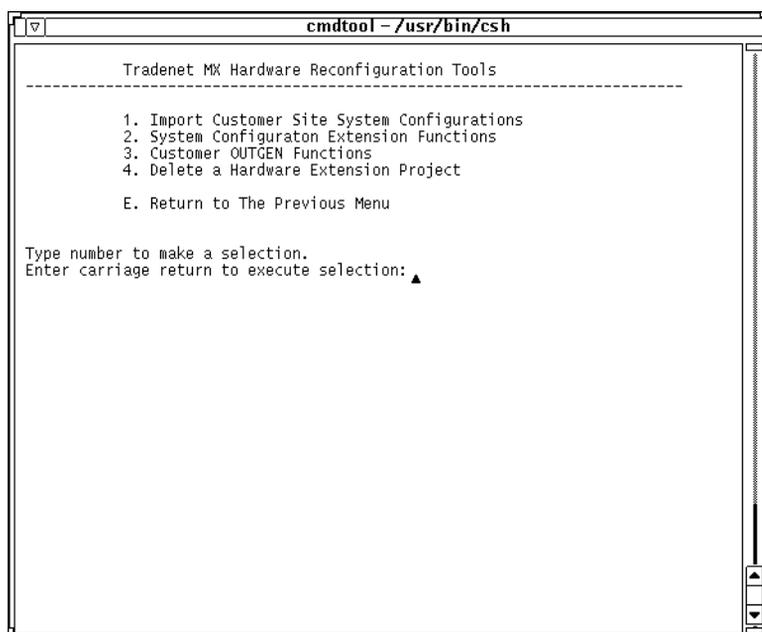
9. Type **3** and press RETURN to select **Tradenet MX Hardware Reconfiguration Tools**. You are prompted for a password.

**FIGURE 3-75** Password Prompt



10. Enter the Database Reconfigurator password. You see the **Tradenet MX Hardware Reconfiguration Tools** menu.

**FIGURE 3-76** Tradenet MX Hardware Reconfigurator Tools Menu



11. Type **1** and press RETURN to select **Import Customer Site System Configurations**.

**FIGURE 3-77** Prompt

```

cmdtool - /usr/bin/csh

The extension directory on this computer has the Extracted
Configuration data Files from a Tradenet MX database.

Do you wish to repeat this process (Y/N) : ▲

```

12. At the prompt, type **y** and press RETURN.
13. At the prompt to access the database remotely, type **n** and press RETURN.
14. At the prompt to load from floppy diskette or tape, type **y** and press RETURN.
15. If you are importing the database from floppy diskette, type **f** and press RETURN.

**FIGURE 3-78** Importing the Database From Diskette

```

cmdtool - /usr/bin/csh

Do you wish to access the database REMOTELY (Y/N) : n
Is the Customer database being loaded from a Floppy Diskette or Tape (Y/N) : y
Select I/O device where the database is located
Enter T for Tape or F for floppy (T/F): f

This utility copies the Backed up Customer Database from
a floppy diskette onto the hard disk. Then the Customer System
Configuration data will be extracted from the imported database.

You Must insert the Backed up database diskette now!

*****
***** MAKE SURE THE CORRECT DATABASE IS BEING USED. *****
*****

Enter Y to continue or N to abort. (y/n): ▲

```

16. If you are importing the database from tape, type **t** and press RETURN.

**FIGURE 3-79** Importing the Database From Tape

```

cmdtool - /usr/bin/csh

Do you wish to access the database REMOTELY (Y/N) : n
Is the Customer database being loaded from a Floppy Diskette or Tape (Y/N) : y
Select I/O device where the database is located
Enter T for Tape or F for Floppy (T/F): t

This utility copies the Backed up Customer Database from
a Tape drive onto the hard disk. Then the Customer System
Configuration data will be extracted from the imported database.

You Must insert the Backed up database Tape now!

*****
***** MAKE SURE THE CORRECT DATABASE IS BEING USED. *****
*****

Enter Y to continue or N to abort. (y/n): ▲

```

17. Insert the diskette or tape.

18. Type **y** and press RETURN.

19. Press RETURN. You return to the **Tradenet MX Hardware Reconfiguration Tools** menu.

**FIGURE 3-80** Tradenet MX Hardware Reconfigurator Tools Menu

```

cmdtool - /usr/bin/csh

-----
Tradenet MX Hardware Reconfiguration Tools
-----

1. Import Customer Site System Configurations
2. System Configurator Extension Functions
3. Customer OUTGEN Functions
4. Delete a Hardware Extension Project

E. Return to The Previous Menu

Type number to make a selection.
Enter carriage return to execute selection: ▲

```

20. Exit the reconfigurator by typing **e** and then RETURN.

21. Type **e** and then RETURN, again.

## Opening NetMan

To open NetMan, take the following steps:

1. Open the background menu by clicking the right mouse button on the screen background.
2. Click the right mouse button on **System Management**.
3. Click the left mouse button on **NETMAN**. You see the **NetMan** dialog box with the **Define Sites** screen on top open.

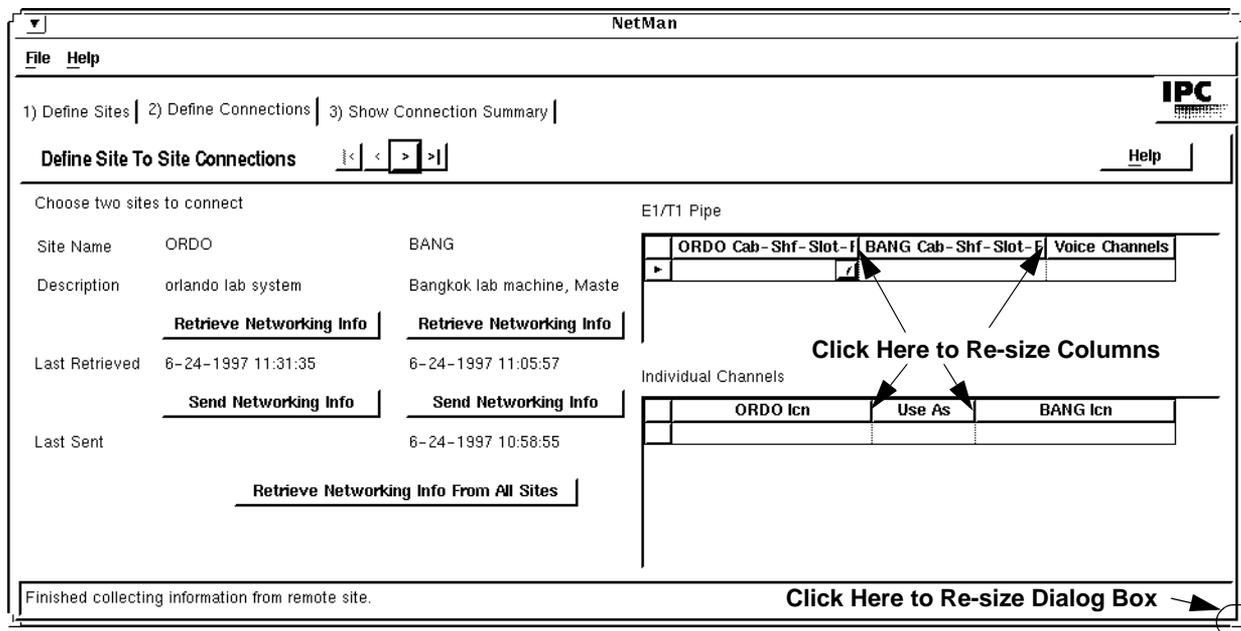
*Note* You can access NetMan only from the **install** account, not the **sm** account. If the dialog box is titled **NetViewer** instead of **NetMan**, you are logged in to a non-master site. You can edit NetMan information only if you are logged in at the master site.

There are three screens in NetMan: **Define Sites**, **Define Connections**, and **Show Connection Summary**. To send remote hunt group information to all sites, you need to use only the **Define Connections** screen.

To use the **Define Connections** screen, take the following steps:

1. Click **Define Connections**. You see the **Define Connections** screen of NetMan.
2. You can re-size the NetMan screens by clicking and dragging on the corners of the NetMan dialog box. You can also re-size the drop down list boxes by clicking and dragging on the column sides.
3. Click the first **Retrieve Networking Info** button to download the remote hunt group information from the first site and to download changes made in Netconfig. During the download, you see messages written in the bottom border of the **NetMan** window. When the download is complete, you will notice the date and time stamp under the **Retrieve Networking Info** button is updated.

**FIGURE 3-81 Define Connections Screen of NetMan**



4. Click the second **Retrieve Networking Info** button.
5. Click **>** to move to the next site record.
6. Repeat steps 4–6 until you have gone through all sites.
7. Click **|<** to return to the first site.

8. Click the first **Send Networking Info** button under the first site.
9. Click the second **Send Networking Info** button under the second site.
10. Click **>** to move to the next site record.
11. Repeat until you have gone through all the sites.

Exit NetMan. When you exit NetMan, the information you added is saved to the NetMan database. This database is backed up with the customer database in the /usr/sx/db directory during the usual backup procedure. When you restore the customer database, you are also restoring the last backed-up version of the NetMan information.

## Reconciling the Customer Database

After using NetMan to specify all the master site connections in your line networking group, you need to reconcile the customer database and use **LineNetW** at all sites.

---

**Warning!**      *Failure to reconcile the customer database after making any changes to Netconfig or NetMan will result in inconsistent data between NetMan and the production database. That is, the customer database will not be using the information shown in NetMan.*

---

---

To reconcile the customer database, take the following steps:

1. Open a command tool or shell tool window.
2. Type **dbupgrade** and press RETURN. You see the **DATABASE RECONFIGURATOR TOOL** menu.
3. Type **2** and press RETURN.
4. At the welcome screen, press RETURN. You see the **Tradenet MX DATABASE RECONFIGURATOR** menu.
5. Type **4** and press RETURN to select **Removing a Tradenet MX Device**. You are prompted for a password.
6. Enter the Database Reconfigurator password.
7. Type **y** and press RETURN.
8. Type **9** and press RETURN.
9. If you are using a diskette, type **f** and press RETURN. If you are using a tape, type **t** and press RETURN.
10. Type **y** and press RETURN.
11. To format the diskette, type **y** and press RETURN.
12. Insert the diskette or tape.
13. Exit the menus.
14. Now you need to restore the database using the *rstdb* login. (For more information, refer to the *Tradenet MX Platform Manual 14.1*, part number B0087686104.)

## TROUBLESHOOTING

### Ping Results

To verify the connection of line networking card is working, take the following steps:

1. At the System Center, open a command tool or shell tool window.
2. Type `mxping <cabinet #>.<shelf #>.<slot #>.<site ID>` and press RETURN, where `<cabinet #>.<shelf #>.<slot #>` is the location of the networking card and site ID is the site to which you want to confirm the networking connection is valid. `<site ID>` is an optional field. The results from this command tells you how long it takes to connect to the remote site and back to your site. If there is no networking card in this location or the connection to the specified site is not working, you see an error message.

### Fastboot

After setting up Netconfig, you need to do a fastboot. When the System Center re-boots, you see a message that describes the connections at that site.

To see this message, take the following steps:

1. Type `fastboot` and press RETURN.
2. Enter the password. The System Center re-boots. As the System Center re-boots, you see several lines of information written to the screen. When the System Center finishes re-booting, look for lines on the screen similar to the following lines:

```
Starting Informix SQL server se 7_1p
Starting Informix SQL server se 7_1
```

Indicates Modem Connection

Indicates the Site ID of This System

Blank Indicates Ethernet Connection

This example shows that this system is the master site (site ID is 1), and that there are two connections to this master site: one connection is a modem connection, and the other connection is an Ethernet connection. (That is, this master site connects to some slave sites using a modem, and it connects to other slave sites directly through the customer's LAN.) A slave site will always have only one of these lines. A master site can have one or two.

---

*Note* If you used Netconfig to set up a site as a modem-connected site, then later you want to go back and change that connection so the site is connected directly through the customer's LAN only, you need to reload the startup files. For information about reloading the startup files, refer to the **Tradenet MX Platform Manual 14.1** (part number B0087686104). If you do not reload the startup files, you will see an error message when you do a fastboot command.

---

### Hosts File

If you experience problems with your connections after going through all the procedures in this chapter, use a text editor to look at the `/etc/hosts` file. This file lists the sites to which the system is connected.

## MAINTAINING LINE NETWORKING

Once you have set up networked sites, you need to maintain them. The types of changes you might need to make include:

- adding new sites
- removing sites
- equipping and un-equipping networked sites
- changing your remote hunt group
- adding and removing channels in NetMan

### Adding New Sites

If you need to add new sites, you need to go through all the same steps you did when you initially set up line networking:

1. At the new site, perform the following tasks:
  - a. Import the customer database. (See [Importing the Customer Database on page 3-7.](#))
  - b. Edit the **LINE NETWORKING INFORMATION** order form. (See [Editing the LINE NETWORKING INFORMATION Order Form on page 3-12.](#))
  - c. Restore the customer database to the /usr/sx/db directory. (See [Generating the Hardware on page 3-15.](#))
  - d. Install networking cards. (See [Installing Networking Cards on page 3-21.](#))
  - e. Modify Iview tables. (See [Modifying Iview Tables on page 3-23.](#))
  - f. Set up a modem, if necessary. (See [Setting Up a Modem on page 3-25.](#))
  - g. Use Netconfig. (See [Defining Line Networking Sites Using Netconfig on page 3-33.](#))
2. At the master site, perform the following tasks:
  - a. Import the customer database to the /usr/sx/db/xtensions directory. (See [Importing the Customer Database on page 3-42.](#))
  - b. Use NetMan to retrieve then add connections to the new site. (See [Opening NetMan on page 3-47.](#))
  - c. Reconcile the customer database. (See [Reconciling the Customer Database on page 3-53.](#))
3. At the new site, perform the following tasks:
  - a. Import the customer database to the /usr/sx/db/xtensions directory. (See [Importing the Customer Database on page 3-42.](#))
  - b. Reconcile the customer database. (See [Reconciling the Customer Database on page 3-53.](#))
  - c. Specify a remote hunt group using **LineNetW**. (See [Specifying a Default Remote Hunt Group on page 3-55.](#))
  - d. Use **LineNetW** to look at line networking tables. (See [Using the LineNetW Button on page 3-57.](#))
4. At the master site, perform the following tasks:
  - a. Import the customer database to the /usr/sx/db/xtensions directory. (See [Importing the Customer Database on page 3-64.](#))
  - b. Use NetMan to retrieve then send the latest remote hunt group information to all sites, and to retrieve this information at the new site. (See [Opening NetMan on page 3-69.](#))
  - c. Reconcile the customer database. (See [Reconciling the Customer Database on page 3-70.](#))

5. At the new site, perform the following tasks:
  - a. Import the customer database to the /usr/sx/db/xtensions directory. (See *Importing the Customer Database on page 3-42.*)
  - b. Reconcile the customer database. (See *Reconciling the Customer Database on page 3-53.*)

## Removing Sites

Removing sites is a very involved administrative task. Note that you can stop using a site that is no longer valid without removing anything, but you might get error messages about that site.

To remove a site, you need to edit the line networking tables (under **LineNetW**).

## Equipping and Un-equipping Sites

If you need to equip and un-equip networked sites, you only need to use the **LineNetW** button to update the `i_netw_site_id_view` button. See *Using the LineNetW Button on page 3-57.*

## Changing Your Remote Hunt Group

If you need to change your remote hunt group, you need to take the following steps:

1. At the new site (the master site and all remote sites), perform the following tasks:
  - a. Specify a remote hunt group using **LineNetW**. (See *Specifying a Default Remote Hunt Group on page 3-55.*)
  - b. Use **LineNetW** to look at line networking tables. (See *Using the LineNetW Button on page 3-57.*)
2. At the master site (and remote sites, depending on which site is changing the remote hunt group), perform the following tasks:
  - a. Import the customer database to the /usr/sx/db/xtensions directory. (See *Importing the Customer Database on page 3-64.*)
  - b. Use NetMan to retrieve send the latest remote hunt group information to all sites, and to retrieve this information at the new site. (See *Opening NetMan on page 3-69.*)
  - c. Reconcile the customer database. (See *Reconciling the Customer Database on page 3-70.*)

## Adding and Removing Channels in NetMan

If you need to add channels or remove channels in NetMan, you need to take the following steps:

1. At the master site, take the following steps:
  - a. Import the customer database to the /usr/sx/db/xtensions directory. (See *Importing the Customer Database on page 3-64.*)
  - b. Use NetMan to add or remove channels, then retrieve and send the latest information to all sites. (See *Opening NetMan on page 3-69.*)
  - c. Reconcile the customer database. (See *Reconciling the Customer Database on page 3-70.*)
2. At the remote site, take the following steps:
  - a. Import the customer database to the /usr/sx/db/xtensions directory. (See *Importing the Customer Database on page 3-64.*)
  - b. Reconcile the customer database. (See *Reconciling the Customer Database on page 3-70.*)

## SPECIAL CONSIDERATIONS

### Networking Channels

If your turret users get the following center line message **No network channel available.**, you should explore the possibility of purchasing more networking channels.

If you place a call on hold and all your site's networking channels become busy before you retrieve the call on hold, you cannot retrieve the call on hold until a channel frees up. When you try to retrieve a call on hold when all channels are busy, you see the center line message **No network channel available.** If this proves to be a significant problem at your site, you should explore the possibility of purchasing more networking channels.

### Forced Line Clear

If you have the line networking feature, forced line clear works only for local lines. For information about how to perform a forced line clear, refer to *Forced Line Clear* in chapter 10 of the *Tradenet MX System Center Manual 14.1* (part number B0086185104).

### Exclusive Hold

If you have the line networking feature, you cannot put remote calls on exclusive hold.

### Intrusion Tone

If you have line networking, and you have intrusion tone turned off, you might still hear intrusion tone if you are using a remote line with intrusion tone on. This is also true for recording tone.

Also, if you have line networking, and you have intrusion tone turned on, if more than two TRIDs try to bridge onto the same line, you will not get intrusion tone at all the TRIDs on that line.

### Music on Hold

If you have line networking, Music on Hold is not supported with networked lines.

### Speaker Muting

If you have line networking, global muting (both with dynamic and hoot speakers) on a microphone works differently on a remote line than it does on a local line. On a local line, you do not hear the other party; with a remote line, you do hear the other party.

Forced talkback muting also works differently with remote lines. With local lines, when forced talkback mute is on and microphone muting is set to *GLOBAL MUTE SPKR*, group talkback microphone audio is mute at all speakers in the group. However, if one or more of the lines in the group are remote lines, the line is mute *only* on your speaker. In this case global muting is acting like local muting.

### Billing Groups

If you have line networking, all line networking calls use billing group 16.

## Maximum 97 Sites

You can have a maximum of 97 networked sites. If you have more than 97 networked sites, you get the following error message when you use the **fastboot** command at sites with site IDs greater than 97.

```
Server se7_<site ID number>p is not listed as a server
```

If you get this error message, you need to contact IPC Systems Support Engineering for assistance because some of your internal database tables have been corrupted.

## Sequential Site IDs

Site IDs must be sequential. For example, if you plan to have four networked sites, they must be assigned site IDs 1, 2, 3, and 4.

## Bad Data in Netconfig

When filling in the **NetMan UNIX System Files Configuration Tool** window, be careful not to use a period (.) in the **Phone Number** field of the **Connected To** box. You can, however, use commas (.). If you accidentally enter a period in the **Phone Number** field of the **Connected To** box, you will no longer be able to run Netconfig and you will need to contact IPC Systems Support Engineering for assistance.

## Modem Problems

You should use dedicated lines for modems. Because you cannot be sure of the quality of your CO, you could lose your modem connection. If a modem connection is lost, the modem must be physically reset by turning it off and on. For this reason, it is necessary to have personnel at all sites when you are first setting up line networking.

If you are using a T3000 modem, you need to edit the Dialers file as follows:

1. Log in to the Sun workstation as *root*.
2. Type **cd /etc/uucp** and press RETURN.
3. Type **ls -l** and press RETURN. You should see a file listed called Dialers.
4. Type **chmod 777 Dialers** and press RETURN to change permission of the Dialers file so you can edit it.
5. Type **vi Dialers** and press RETURN.
6. Cursor down to the line that begins **tb3000 =W-**. That line includes the parameter **CONNECTs14400 STTY=**. You need to change this parameter to **CONNECT STTY=**.
7. Use the right arrow key to move to the \ in **CONNECTs14400 STTY=**.
8. Type **x** seven times to change **CONNECTs14400 STTY=** to **CONNECT STTY=**.
9. Press ESCAPE.
10. Type **:wq** to save the Dialers file.
11. Type **chmod 644 Dialers** and press RETURN.
12. Log out.

## T1 Line Networking Specifications

The required framing mode for a T1 line is ESF. With a T1 tester you should verify that your T1 line is set for ESF (not D4).

*Note Because the default for a T1 line is D4, you must perform this procedure to change the framing mode from D4 to ESF.*

With T1 echo cancellers, line coding should be set to B8ZS and framing mode should be set to ESF. For the full line networking specifications, refer to *Chapter 4 Specifications of the Tradenet MX Technical Reference Manual 14.1* (part number B010880003).

Also, you must edit a table to specify ESF. To edit this table, take the following steps:

1. From the **System Center Data View** window, click **Table View**. You see the **Table View** window.
2. From the **Table View** window, click **Engineering Groups & Params**. You see the **Engineering Parameters View** window.
3. Click **Wire**. You see the **Wire Groups & Parameters Menu**.
4. Scroll through the **Wire Groups** list to the **NETW T1 MASTER** and **NETW T1 SLAVE** entries.
5. Click **NETW T1 MASTER**.
6. Click **Edit**. You see the **p\_Wire Edit Group** table.
7. Scroll down to the row with **Param Name FRAMING\_MODE** and **Param Id 144**.
8. Change the value in the **Param Value** column of that row from **0** to **1**. (The default value of this parameter is 0.)

**FIGURE 3-82 p\_Wire Edit Group Table**

	D	E	F	G	H	I	J	K
1	Param Value	Param Min	Param Max	Param Name	Param Description	Param Type	Param Id	Group Id
78	1	0	4	FRAMING_MODE	0=D4, 1=ESF2, 2=ESF4, 3=ESF10; T1	enum	144	19
79	2	0	2	LINE_LENGTH	0=Short, 1=Med, 2=Long; Used on T1	enum	145	19
80	0	0	1	FDL_TYPE	Facility Data Link; 0=ANSI, 1=ATT	enum	146	19
81	2	1	26	BUILD_TYPE	0:none; defined in Compatibility Base	enum	147	19
82	2	1	45	CARD_TYPE	Card Type Required for this wire	enum	163	19
83	1	0	1	LINE_CODE	Line Code 0=AMI, 1=B8ZS	enum	164	19
84	11400	1	32767	DSP_INTRUS_FREQ	dsp intrusion frequency	number	190	19
85	2500	10	32767	LOS_CLR_TIME	LOS clear time (msec)	number	198	19
86	2000	10	32767	CLK_DET_TIME	Duration (msec) any Clk Threshold alarms	number	219	19
87	120	3	32767	CLK_CLR_TIME_PM	Duration (msec) no Clk Thres Alarms master	number	221	19
88	0	0	1	OCF_METHOD	Framing bit error method 2 out of 4 or 5	number	222	19
89	200	1	32767	RED_ALARM_THR	OCF count to declare valid Red alarm	number	223	19
90	20	1	32767	RED_ALM_THR_CLK	OCF count for clock threshold Red alarm	number	224	19
91	2500	10	32767	RED_DET_TIME	Duration (msec) any Red Alarm	number	225	19
92	0	0	32767	RED_CLR_THR	Max Frame Errors to reset RED ALARM	number	226	19
93	0	0	32767	RED_CLR_THR_CLK	Max Frame Errs to reset clock RED ALARM	number	227	19
94	2500	10	32767	RED_CLR_TIME	Duration (msec) to clear RED ALARM	number	228	19
95	35	1	32767	YEL_ALARM_THR	Count to declare valid Yel alarm flags	number	229	19
96	3	1	32767	YEL_ALRM_THR_CLK	Count to declare valid clock Yel alarm	number	230	19
97	350	10	32767	YEL_DET_TIME	Duration (msec) any Yellow Alarms	number	231	19
98	0	0	32767	YEL_CLR_THR	Max YEL count to reset YEL ALARM	number	232	19
99	0	0	32767	YEL_CLR_THR_CLK	Max count to reset clock YEL ALARM	number	233	19
100	100	10	32767	YEL_CLR_TIME	Duration (msec) to clear YEL ALARM	number	234	19
101	30	1	32767	BLUE_ALARM_THR	Count to declare valid Blue alarm	number	235	19
102	3	1	32767	BLU_ALRM_THR_CLK	Count to declare clock Blue alarm	number	236	19
103	350	10	32767	BLUE_DET_TIME	Duration (msec) any Blue Alarms	number	237	19
104	0	0	32767	BLUE_CLR_THR	Max BLUE count to reset BLUE ALARM	number	238	19

9. Click **Table Operations**, then **Save Table**.

10. At the confirmation message, click **OK**.
11. Click **Table Operations**, then **Quit Table**.
12. At the confirmation message, click **OK**.
13. At the **Wire Groups & Parameters Menu**, click **NETW T1 SLAVE**.
14. Click **Edit**. You see the **p\_Wire Edit Group** table.
15. Scroll down to the row with **Param Name FRAMING\_MODE** and **Param Id 144**.
16. Change the value in the **Param Value** column of that row from **0** to **1**. (The default value of this parameter is 0.)
17. Click **Table Operations**, then **Save Table**.
18. At the confirmation message, click **OK**.
19. Click **Table Operations**, then **Quit Table**.
20. At the confirmation message, click **OK**.
21. At the **Wire Groups & Parameters Menu**, click **Exit**.
22. At the **Engineering Parameter View** window, click **Exit**.
23. At the **Table View** window, click **Exit**.

## Hoot Speakers

If you are not using line networking and you are populating the t\_hoot\_pool table, you must fill the **Site ID** column with 0; do not leave it blank.

## Line Networking Work Sheet

The following page is a work sheet you can use when setting up line networking. Use one of these sheets for each connection as described below.

<b>If you have...</b>	<b>use this many copies of the following page...</b>
2 networked sites	copy #1: connection between site 1 and site 2
3 networked sites	copy #1: connection between site 1 and site 2
	copy #2: connection between site 2 and site 3
	copy #3: connection between site 1 and site 3
4 networked sites	copy #1: connection between site 1 and site 2
	copy #2: connection between site 2 and site 3
	copy #3: connection between site 3 and site 4
	copy #4: connection between site 1 and site 3
	copy #5: connection between site 1 and site 4
	copy #6: connection between site 2 and site 4



Site ID:	Site ID:
IP Address:	IP Address:
Modem Number:	Modem Number:
Site Label:	Site Label:
Site Description:	Site Description:
Host Name:	Host Name:
Cab/Shelf/Slot:	Cab/Shelf/Slot:
Card LAC:	Card LAC:
IDNX Node ID Number:	IDNX Node ID Number:
IDNX Cable ID Number:	IDNX Cable ID Number:
Card Type:	Card Type:
P Channel Assignment:	P Channel Assignment:
Number of Voice Channels:	Number of Voice Channels:
Remote Hunt Group ID:	Remote Hunt Group ID:

Link #	Line LAC	Label	Link #	Line LAC	Label
1			1		
2			2		
3			3		
4			4		
5			5		
6			6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		
13			13		
14			14		
15			15		
16			16		
17			17		
18			18		
19			19		



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