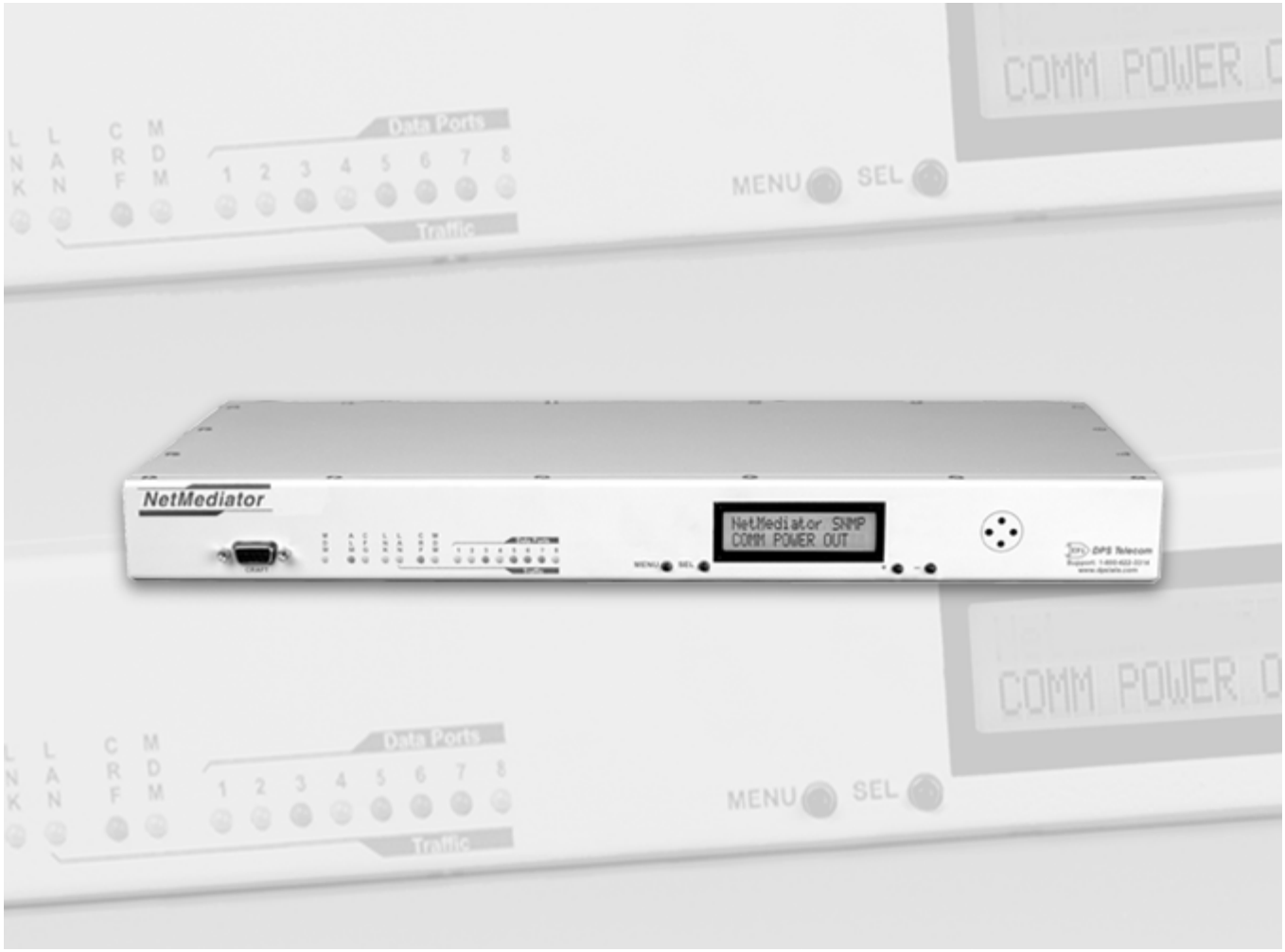
DPS Telecom

"Your Partners in Network Alarm Monitoring"

NetMediator T2S

USER MANUAL



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July 28, 2006 **D-OC-UM067.28110** **Firmware Version 1.0J**

Revision History	
July 28, 2006	NetMediator T2S User Manual D-OC-UM067.28110 released.
April 15, 2005	NetMediator T2S User Manual D-OC-UM054.15100 released.
December 29, 2004	NetMediator T2S User Manual (D-OC-UM04C.29100) released.
May 18, 2004	NetMediator T2S User Manual (D-OC-UM045.18200) released.

Notice

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Contents

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1 Introduction

Fig. 1. The NEBs certified NetMediator T2S monitors alarms, pings network elements, and reports via pager or email

The NetMediator T2S mediates sixty-four displays of TBOS alarm data to SNMP traps, enabling more productive monitoring of microwave radios and other TBOS devices from contemporary SNMP-based network operation centers.

With the NetMediator T2S, you don't have to rely on uninformative major/minor summary alarms to monitor your radios. The NetMediator T2S fully captures TBOS data and converts it to detailed, highly informative SNMP traps.

You'll be able to diagnose equipment problems with a high degree of accuracy — so you can send the right technician with the right tools on the very first truck roll, reducing maintenance costs and windshield time.

And there's a lot more to the NetMediator T2S — like built-in terminal server functionality through four reach through serial ports, so you can access, configure, and reboot on-site equipment through a remote Telnet session.

The NetMediator T2S also serves as a medium-capacity RTU, so you can take care of most of your monitoring needs with just this one unit.

The NetMediator's 32 discrete inputs bring back the contact closure alarms you need to monitor in your facility, saving you the expense of buying additional RTUs. Eight analog inputs monitor voltage or current and report actual live values of temperatures and battery levels. Eight relays give you control over additional remote site equipment.

Summary of Features

Mediation

- Four RS-232 ports accessible via TELNET.
- Four RS-485 ports for TBOS.
- TBOS alarm forwarding to SNMP managers.
- 32 discrete inputs for environmental alarms, equipment alarms, intrusion alarms, and much more.
- DCP and SNMP relay commands forwarded to TBOS channel.
- Monitor TBOS points from HTML interface.
- 32 "PING" alarms, a low level device check for IP aware equipment.
- Eight analog alarms with four user defined thresholds set for each input.
- Eight relay operated controls for remotely activating standby equipment, locking doors, or any other event that can be triggered by a relay closure or opening.
- PPP (dial-up network access).
- Works seamlessly with DPS Masters T/Mon or IAM — DCP(x) version.

Physical

- NEBs and CE certification available.
- One rack unit tall and mounts in 23" rack.
- Connectorized back panel (hinged wire-wrap back panel or connection to 66 blocks available).
- LCD for descriptive display of alarms.
- LED indications for alarm and communication status.

Access

- Dial-up access available.
- TELNET over LAN connection.
- Local access with laptop through front panel craft port.
- Web browser access for monitoring.
- T2SEdit access via LAN, serial connection, or dial-up.

Upgradeability

- Firmware updates are easily downloaded without affecting provisioning information, and can be done either locally or remotely using NG Loader software.

Enhancements

- The default port settings revert to 2400 baud 8,0,2 rts 30/10 when the port is selected for TBOS.
- The TBOS port is no longer hard-coded: it is configurable on the fly and does not require a reboot for changes to take place.
- Each TBOS display is configurable for a specific device type.
- New TBOS device types have been added.
- Code space is expanded with the removal of BAC support.
- Displays may be expanded with the enabling of expansion card support.
- Maintain TBOS alarm summary count and device status.
- Alternate path dial-up reporting of alarms to T/Mon.

2 NetMediator T2S Functional Diagram

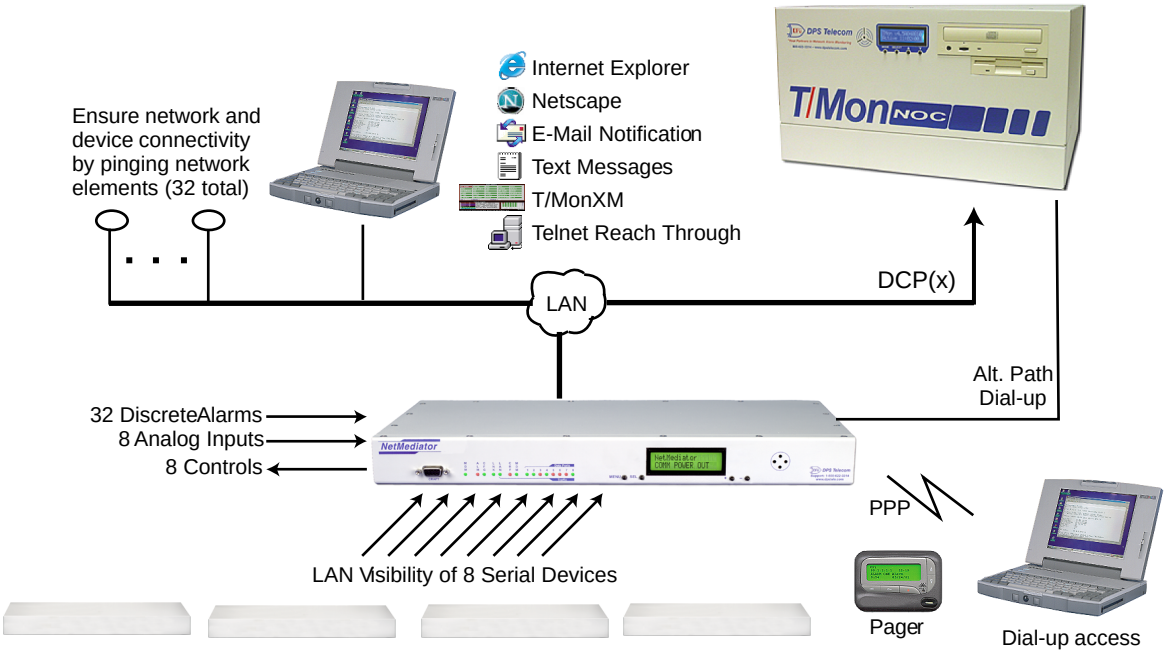


Fig. 2. The NetMediator T2S monitors all your remote site equipment and supports multiple visibility options.

3 Shipping List

While unpacking the NetMediator T2S, please make sure that all of the following items are included. If some parts are missing, or if you ever need to order new parts, please refer to the part numbers listed and call DPS Telecom at **(800) 622-3314**.

NetMediator T2S
D-PK-NETMD-12024

NetMediator T2S User Manual
D-OC-UM067.28110

DB9M-DB9F Download Cable 6 ft.
D-PR-045-10A-04

Ethernet Cable 14 ft.
D-PR-923-10A-14

Telephone Cable 6 ft.
D-PR-045-10A-01

Two ¾-Amp GMT Fuses
(Three with sensor power supply)

23" Rack Ears

19" Rack Ears

Eight 3/8" Ear Screws and Eight Lock Washers

Four Rack Screws
(Eight with hinged panel)

Four Alternate Rack Screws

(Eight with hinged panel)

Power Screw Lug Barrier

(Two for dual power feed units)

Four Cable Ties
(Sixteen with hinged panel)

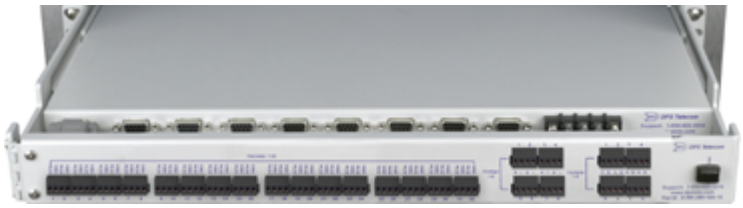
4 Optional Accessories

You can extend the capabilities of the NetMediator T2S through accessory units that provide greater discrete alarm capacity, remote audiovisual alarm notification, visual surveillance of remote sites, and other options. If you would like to order any of these accessories, or if you would like more information about them, call DPS Telecom at **(800) 622-3314**.

NetGuardian Expansion (NetGuardian DX)
D-PC-293-10A-04
The NetGuardian Expansion provides an additional 48 discrete alarm points. Up to three NetGuardian Expansions can be daisy-chained off one NetMediator T2S, providing a total of 176 alarm points.

General LCD Display (GLD)
D-PC-820-10A-04
The General LCD Display (GLD) is a small wall-mounted remote terminal for the NetMediator T2S. The LCD display shows system status and alarm messages, and the built-in speaker gives an audible notice of alarms. Up to 12 GLDs can be daisy-chained off the NetMediator T2S. (NetMediator T2S with optional RS-485 port required.)

Hinged Wire-Wrap Back Panel
For 19" rack: D-PK-290-10A-19
For 23" rack: D-PK-290-10A-23
The hinged wire-wrap back panel provides wire-wrap connections for the NetMediator T2S's alarms and control relays.



Pluggable Barrier Panel
D-AS-00140-10B
The pluggable barrier panel provides screw-lug barrier plug connections for the NetMediator T2S's alarms and control relays.

5 Specifications

These specifications refer to NetMediator T2S model D-PK-NETMD-12024.

Dimensions:	1¾"H x 17"W x 12"D (4.45 cm x 43.18 cm x 30.48 cm)
with Shipping Box:	6"H x 22"W x 12"D (15.24 cm x 55.88 cm x 30.48 cm)
Weight:	4 lbs. 3 oz. (1.9 kg)
Mounting:	19" or 23" rack
Power Input:	+24 VDC or –48 VDC
Current Draw:	200 mA
Fuse:	¾ amp GMT
Interfaces: (as per current model)	4 DB9 RS-232 ports (1-4) 4 DB9 RS-485 ports (5-8) 1 RJ45 10BaseT Ethernet port 1 RJ11 POTS jack 2 50-pin connectors (discretes, controls, and analogs) 1 4-pin screw connector (analogs)
Protocols:	TBOS — in bound SNMP and DCP(x) — out bound
Modem:	33.6K internal

Discrete Inputs:	32 (expandable)
Alarm Detection Speed:	User-defined (3 to 999 msec)
Analog Inputs:	8
Analog Input Range:	(–70 to 94 VDC or 4 to 20 mA)
Control Outputs:	8 Form C relay contacts
Maximum Voltage:	60 VDC/120 VAC
Maximum Current:	.3 Amp DC/.5 Amp AC
IP Address Ping Targets:	32
NVRAM Data Retention:	Indefinite (data will remain in NVRAM until memory is erased by user)
Visual Interface:	LCD display with descriptive text 16 bicolor LEDs
Audible Interface:	Alarm speaker
Operating Temperature:	32°–140° F (0°–60° C)
Operating Humidity:	0%–95% noncondensing
TBOS Devices Monitored:	MDR-4000E DS-3 MDR-6000 MDR-7000 MDR-8000 DS-1 MDR-8000 DS-3 Multiplex Lynx SC JungleMux

6 Hardware Installation Overview

Follow this order of steps when installing your NetMediator T2S.

1. Unpack the NetMediator T2S and check parts.
Please see the shipping list on pp. 3-4 to verify that all parts were included in your shipment.

2. Mount the NetMediator T2S.
The NetMediator T2S can be mounted in a 19" or 23" rack.

3. Connect power leads to the NetMediator T2S.

4. Connect communication lines to the NetMediator T2S.
The NetMediator T2S has two communication lines: a LAN connection (for Telnet and Web browser access) and a standard telephone line (for dial-up access and paging capabilities).

5. Connect discrete alarm inputs.

6. Connect control outputs.

7. Connect analog alarm inputs.

8. Connect serial devices.
Up to eight serial devices can be connected to the NetMediator T2S's data ports. There are 4 DB9 RS-232 data ports and 4 DB9 RS-485 data ports. These ports are also used for NetGuardian Expansion units and General LCD Displays (see section 6.7, "Data Ports" for detailed information).

9. If necessary, set jumper positions on the circuit board and speaker.
You can change the operation of analog alarm inputs and control relays by resetting the jumpers on the NetMediator T2S's circuit board — see section 6.10, "Jumper Options."

10. Install any NetMediator T2S accessories.
NetMediator T2S accessories include: NetGuardian expansion units, General LCD Displays, and a hinged wire-wrap back panel and 66 blocks for alternate connectivity options. For full descriptions of NetMediator T2S accessories see section 4, "Optional Accessories."

11. Connect to the NetMediator T2S.
You can connect to the NetMediator T2S either through the front panel craft port or through a network connection.

12. Provision the NetMediator T2S.
The NetMediator T2S must be provisioned with log-on passwords, alarm descriptions, port parameters, ping targets, control descriptions, and other system information. Basic provisioning and monitoring can be done in the TTY interface — see section 9. All other provisioning must be done using the T2SEdit utility — see T2SEdit User Manual for more information.

6.1 Tools Needed

To install the NetMediator T2S, you'll need the following tools:

Phillips No. 2 Screwdriver

Small Standard No. 2 Screwdriver

Wire Strippers/Cutter

wire-wrap Gun
(if hinged wire-wrap panel is used)

Punch Down Tool (if 66 blocks are used)

Computer with terminal software or web browser

6.2 Mounting

Fig. 3. The NetMediator T2S can be flush or rear-mounted

The NetMediator T2S can be mounted in a 19" rack or a 23" rack by using the provided rack ears for each size. Two rack ear locations are provided. Attach the appropriate rack ears in the flush-mount or rear-mount locations shown in Figure 3.

Note: Rack ears can be rotated 90° for wall mounting or 180º for other mounting options not shown.

6.3 Back Panel Connections

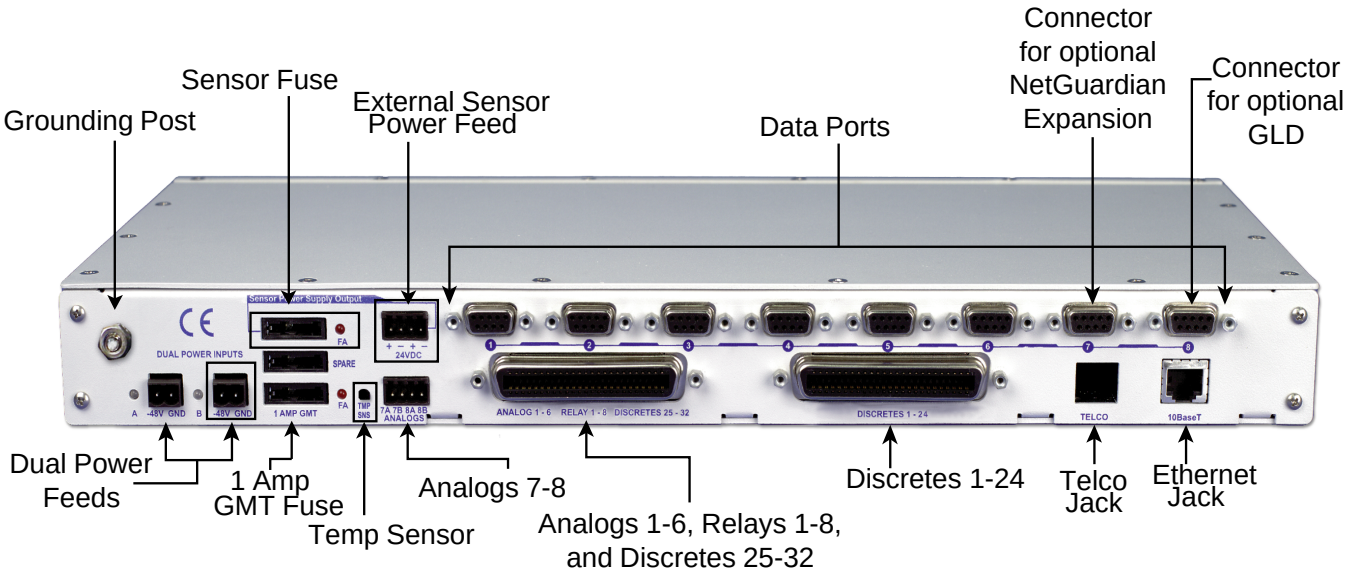


Fig. 4. NetMediator T2S back panel

Connectors for power feeds, alarm inputs, control outputs, data ports, and communication lines are on the back panel of the NetMediator T2S, as shown in Figure 4. The unit shown has some optional features not included in the standard NetMediator T2S. Optional features are indicated by a dashed box.

6.4 Power Connection

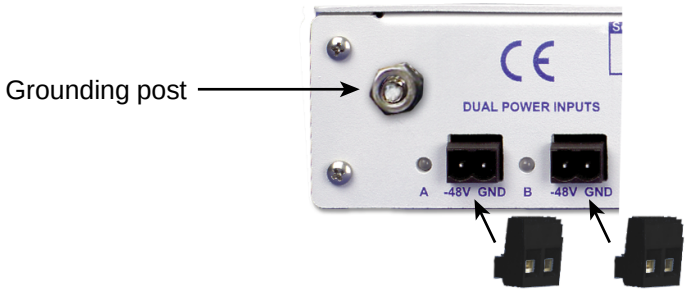


Fig. 5. Power screw lug barrier plugs

The NetMediator T2S's power connections are convenient screw lug barrier plugs. If you require a backup power source, optional dual power feeds are available. NetMediator T2S models with dual power feeds will automatically draw from the backup power source if the primary power source becomes unavailable.

To connect the NetMediator T2S to a power source, follow these steps:

1. Remove the fuse from the rear panel of the NetMediator T2S and make sure that the power supply to the unit is off.

2. Remove the screw lug barrier plug from the front panel of the NetMediator T2S.

3. Connect a –48 VDC line to the –48V terminal and a battery ground to the GND terminal of the screw lug. Seat the barrier screws firmly, but be careful not to nick the bare wire. Repeat for power source B if you have dual power inputs.

Note: Observe polarity when connecting battery leads. If using the –48 VDC red/black cables supplied with the unit, connect the black lead to battery GND and the red lead to –BATT. Standard gauge is 20 AWG, but may vary between 18 to 24 AWG.

4. Push the plug firmly back into its socket. Note that this connection is keyed and the plug must be properly aligned within the socket.

5. For earth/frame grounding, connect a copper wire with a ring terminal to the grounding post located on the back panel of the NetMediator T2S. DPS Telecom recommends wire of at least 14 gauge. Place the ring terminal between the two nuts and secure the nuts on the grounding post. Connect the other end of the wire to an earth/frame ground.

6. With the NetMediator T2S fuse still removed, turn on the power supply.

7. Connect the black common lead of a voltmeter to the GND terminal and the red lead to the –48V terminal. The voltmeter should read between –43 and –53 VDC. If the reading is outside this range, check your power supply.

8. Do not power the unit until all connections have been made.

9. Insert the fuse to power the NetMediator T2S. The power LED by the power feed will light **green**.

6.5 Communication Lines

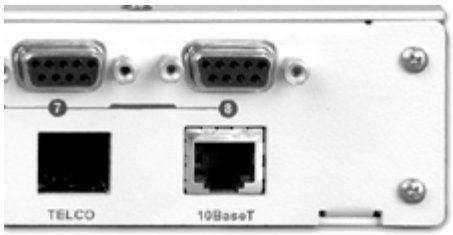


Fig. 6 Telco and 10BaseT ports

Telco and 10BaseT Ethernet jacks are on the lower right corner of the NetMediator T2S's back panel, as shown in Figure 6. Pinouts for the communication line connectors are shown in Figure 7.

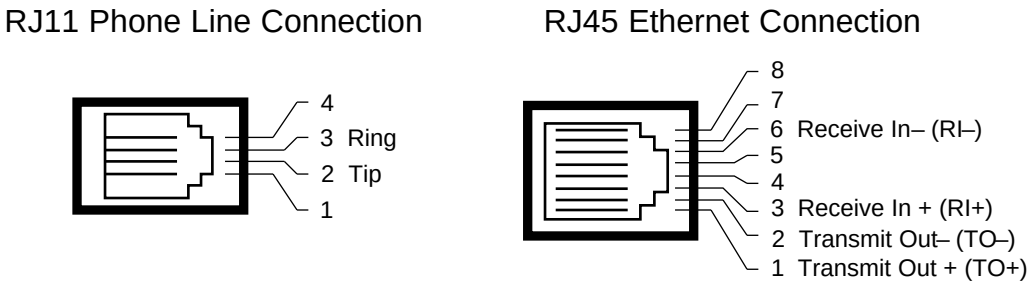


Fig. 7. Pinouts for the RJ11 Telco jack and RJ45 10BaseT Ethernet connection

6.5.1 LAN Connection

The NetMediator T2S's LAN connection is used for many functions: Telnet or Ethernet access, provisioning, firmware download, pinging network elements, and reporting alarms.

Connect a standard RJ45 Ethernet cable from your local area network (LAN) to the 10BaseT jack on the NetMediator T2S back panel. (See Figures 6 and 7)

6.5.2 Phone Line Connection

The standard telephone connection is used for dial-up access and paging.

Connect a standard telephone cable from a POTS line to the RJ11 telco jack on the NetMediator T2S back panel. (See Figures 6 and 7)

6.6 Alarm and Control Relay Connections

Fig. 8. Alarm and control relay connectors

Discrete alarms, analog alarms, and control relays are connected to the NetMediator T2S using the two 50-pin connectors and the screw lug connectors on the back panel, shown in Figure 8. Pinouts for all three connections are shown in Table A.

Table A. Alarm and relay connection pinouts

Note: The polarity of alarm point A is positive and alarm point B is negative. See Figure 9 for more alarm point polarity information.

To simplify installation, DPS Telecom offers several optional accessories for alternative connections: 50-pin-to-open-end cables, a 50-pin-to-66 block, and a hinged back panel. Contact DPS Telecom at 1-800-622-3314 for more information.

6.6.1 Discrete Alarms

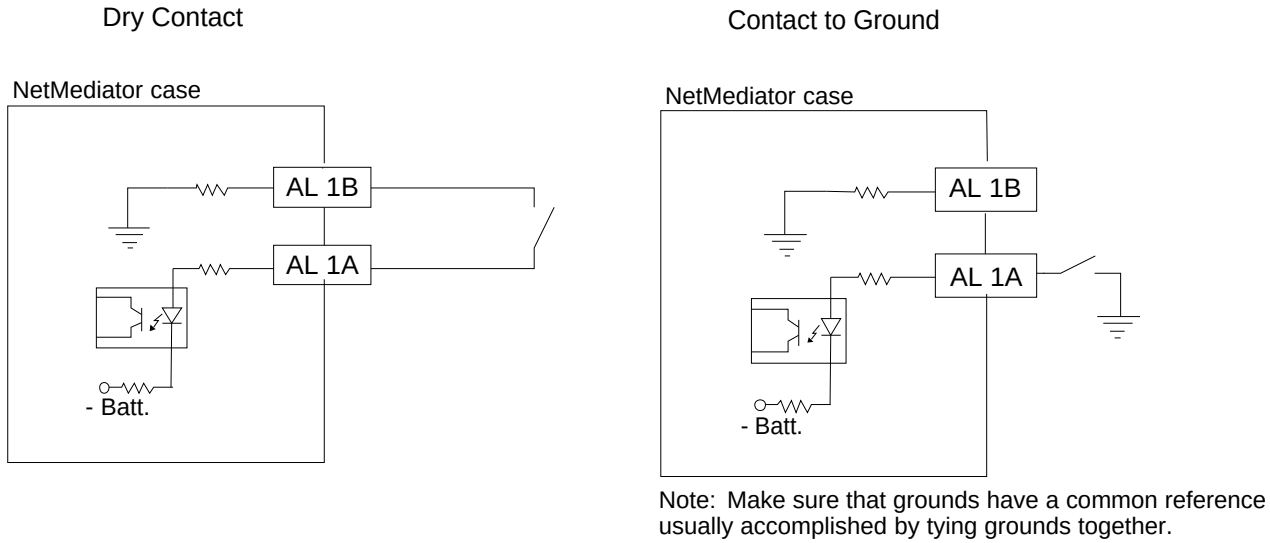


Fig. 9. Discrete alarm points can connect as a dry contact or a contact to ground

The NetMediator T2S supports up to 32 discrete alarm inputs. Discrete alarms are typically used to monitor door alarms, power outages, equipment failures, and other on/off conditions.

Discrete alarm points connected to the NetMediator T2S are single-lead signals referenced to ground. The B side of each alarm point is internally wired to ground, so either a single wire bringing a contact to ground or a dry closure with the second lead connected to the B side will be sensed as an alarm signal. (See Figure 9 for an alarm connection diagram.)

Connect discrete alarms to the two 50-pin connectors on the back panel. Refer to Table A for discrete alarm connection pinouts and the T2SEdit user manual for discrete alarm software configuration instructions.

6.6.2 Control Relays

The NetMediator T2S can control up to eight external devices. Controls can be used for starting or stopping equipment, unlocking doors, and other functions.

Connect control relays to the 50-pin connector on the back panel labeled "Analog 1–6 Relay 1–8 Discretes 25–32." Refer to Table A for control relay connection pinouts. Refer to the T2SEdit user manual for instructions on setting the relay parameters and monitoring and operating relays.

The default setting for the relays is Normally Open (NO). The default setting can be changed to Normally Closed (NC) by resetting the circuit board jumpers. For instructions on changing jumper settings, see Section 6.10, "Jumper Settings."

6.6.3 Analog Alarms

The NetMediator T2S's eight analog inputs measure ranges of voltage or current inputs and can be used to measure battery voltage, charging current, temperature, or other continuously variable conditions. The measurement range of the analog channels is –94 to +94 VDC or 4 to 20 mA.

Connect analog inputs 1–6 to the 50-pin connector on the back panel labeled "Analog 1–6 Relay 1–8 Discretes 25–32." Connect analog inputs 7–8 to the screw lug connector labeled "Analog 7–8." Refer to Table A for analog input pinouts. See the T2SEdit user manual for setting analog parameters.

The default setting for the analog channels is to measure voltage, but each channel can be separately set to measure current by resetting the circuit board jumpers. For instructions on changing jumper settings, see Section 6.10, "Jumper Settings."

6.6.4 Integrated Temperature and Battery Sensor (Optional)

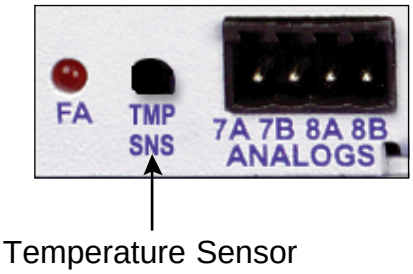


Fig. 10. The integrated temperature sensor

The optional integrated temperature and battery sensor monitors the ambient temperature and the NetMediator T2S's current draw. This option is available only if it was ordered with your NetMediator T2S.

The integrated temperature sensor measures a range of 32°–140°F (0°–60°) within an accuracy of +/– 1°.

No external connections are necessary for using the integrating sensors, but each integrated sensor takes the place of an analog input. No other analog input can be connected to the input point used for the integrated sensors. However, the analog inputs that are not used for the integrated sensors can still be used for external analog inputs. Table B lists the connection options for the integrated temperature sensor. Note that these options are set at the factory, based on the option ordered. These settings are not adjustable by the user.

Sensor Function	Analog Input Options
Temperature	Can be used on analog inputs 4 or 8
Power Feed A	Can be used on analog inputs 5 or 7
Power Feed B	Must be used on analog input 6

Table B. Integrated sensor connection options

6.7 Data Ports

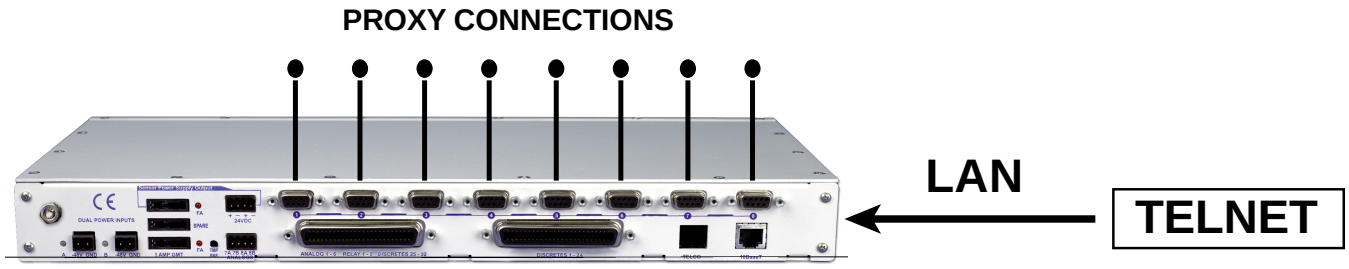
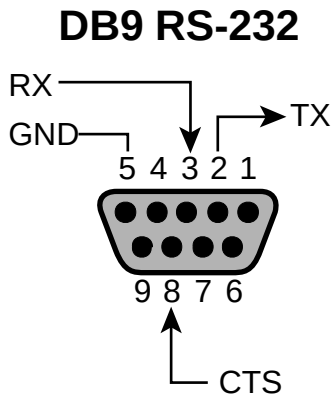


Fig. 11. Concurrent proxy connections for multiple users to connect to different ports/devices via Telnet over LAN

The eight DB9 RS-232 data ports on the back panel of the NetMediator T2S can be used for several different functions. Each port can function as a proxy connection to an external device, a craft port, a channel port, or a TBOS polling port. See the T2SEdit user manual for data port configuration information and a description of each function.

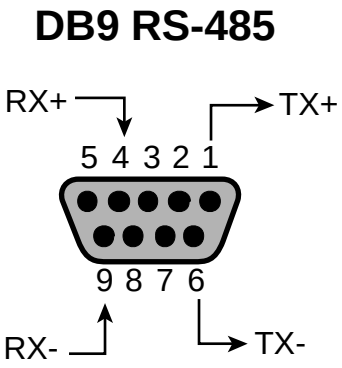
The NetMediator T2S can support simultaneous proxy connections via Telnet over LAN for up to eight users.

Some NetMediator T2S accessories must be connected to particular data ports. If you don't use these accessories, the data ports are available for other uses. If you are using a NetGuardian Expansion unit, it must be connected to Port 7. If you are using a General LCD Display (GLD) unit, it must be connected to Port 8 with a DB9 RS–485, see Figure 13.



Pin #	Signal	Description
1		Not connected
2	**TX**	**Transmit data**
3	**RX**	**Receive data**
4		Not connected
5	**GND**	**Ground**
6		Not connected
7		Not connected
8	**CTS**	**Clear to send**
9		Not connected

Fig. 12. Pinouts for DB9 RS-232 data ports



Pin #	Signal	Description
1	**TX+**	**Transmit data +**
2		Not connected
3		Not connected
4	**RX+**	**Receive data +**
5		Not connected
6	**TX-**	**Transmit data -**
7		Not connected
8		Not connected
9	**RX-**	**Receive data -**

Fig. 13. Pinouts for DB9 RS-485 data ports

6.8 66 Block (Optional)

Both of the 50–pin connectors on the back panel of the NetMediator T2S can be connected to the optional 66 block, 25 pair, block (part number D-PR-966-10A-00). See Figure 14 for pinout and color code information for Discretes 1-24 and Figure 15 for pinouts and color code information for Discretes 24-32, Relays 1-8, and Analogs 1-6.

Note: If connecting to a 25-pair split block, all connections should be made on the two pin columns closest to the right-hand side of the block.

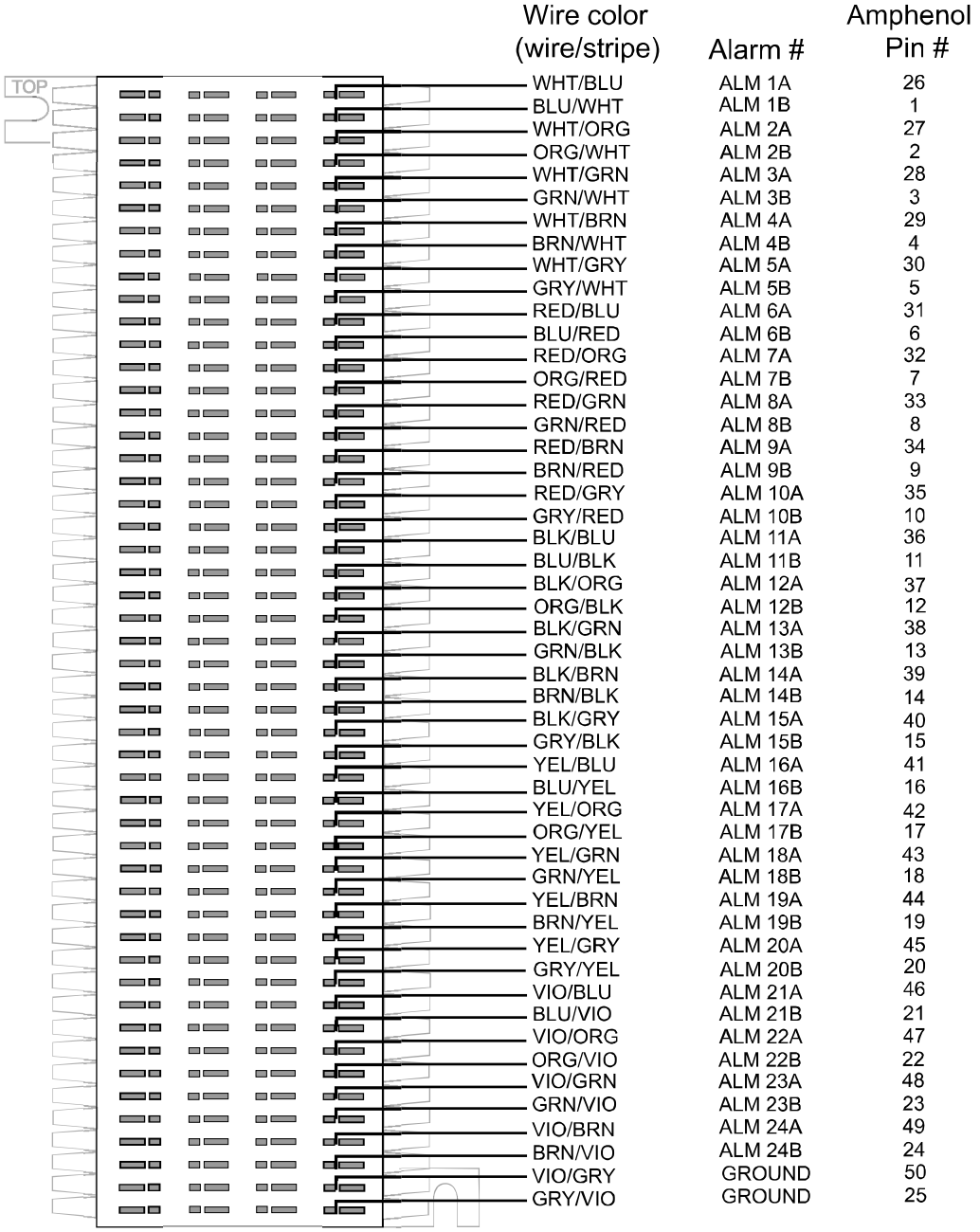


Fig. 14. 66 Block connections for Discretes 1–24

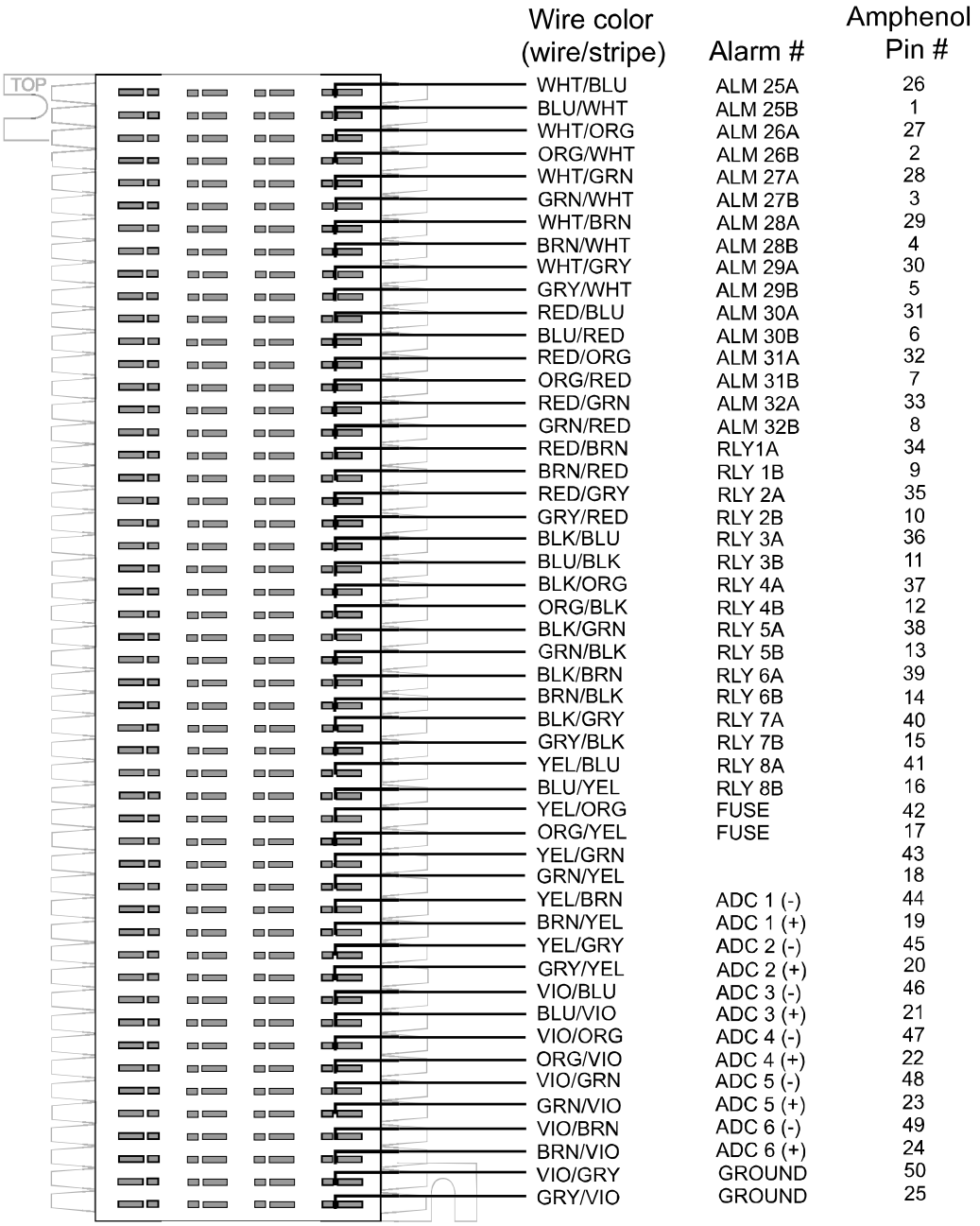


Fig. 15. 66 Block connections for Discretes 25–32, Relays 1–8, and Analogs 1–6

6.9 Hinged Wire-Wrap Back Panel (Optional)

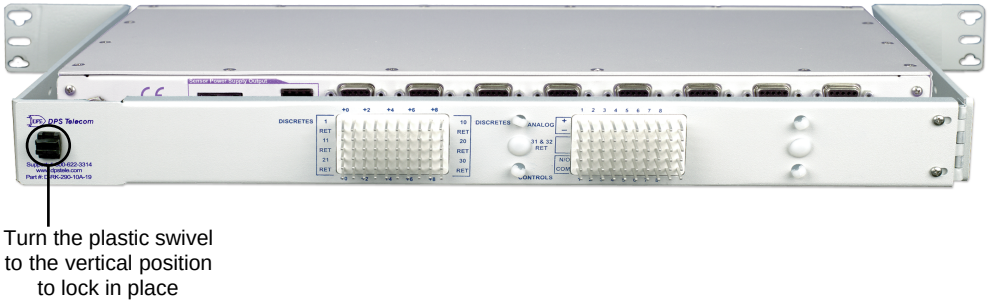


Fig. 16. The hinged wire-wrap back panel is mounted on the mounting rack of the NetMediator T2S

To connect alarms and control relays to the optional hinged wire-wrap back panel, follow these steps:

1. Mount the hinged wire-wrap back panel on the mounting rack of the NetMediator T2S. (See Figure 16.)

2. Close the hinged back panel and lock in place by turning the black plastic locking swivel to the vertical position.

3. Connect discrete alarms, analog alarms, and control relays to the two pin blocks. Figures 17 and 18 show the pinouts for the wire-wrap back panel.

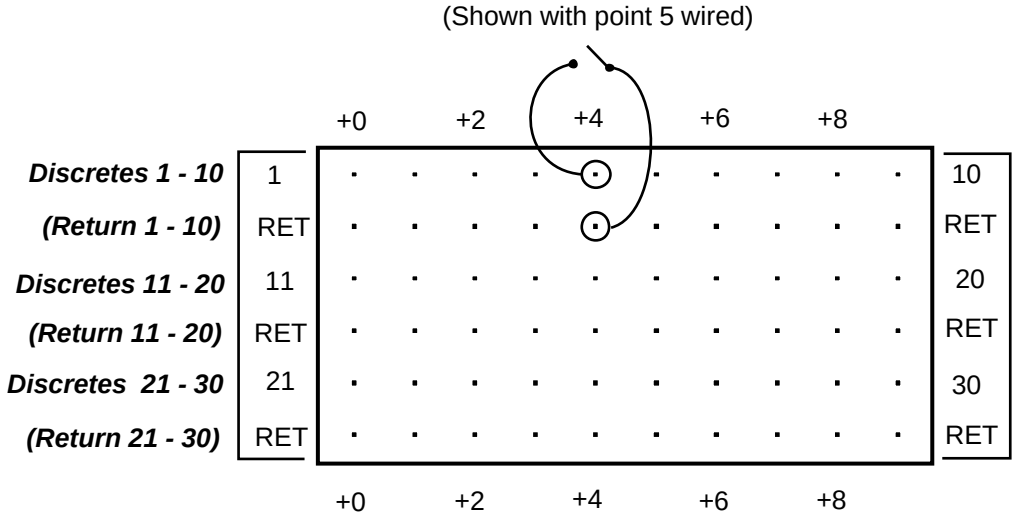


Fig. 17. Wire-wrap pinouts for Discretes 1–30

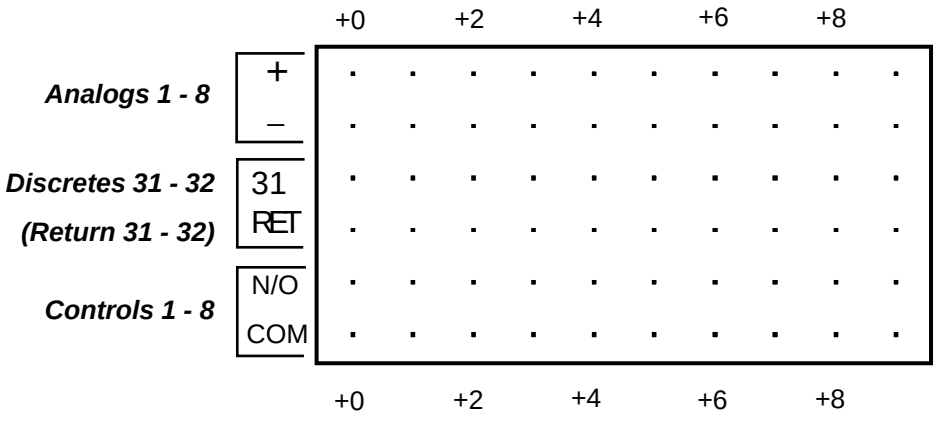


Fig. 18. Wire-wrap pinouts for Discretes 31–32, Analogs 1–8, and Controls 1–8

6.9.1 Lexan Wire-Wrap Cover

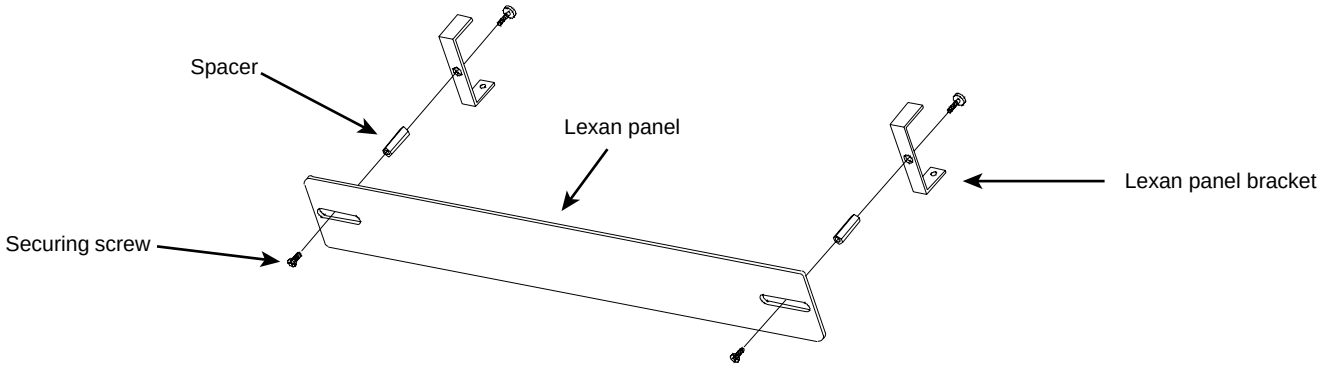


Fig. 19. Lexan panel assembly

To attach the Lexan cover to the hinged wire-wrap panel, follow these steps:

1. Attach communication lines to the wire-wrap pins before connecting the Lexan cover.

2. Attach the Lexan cover to the mounting clips and connect to the hinged panel — see Figure 19.

6.10 Jumper Options

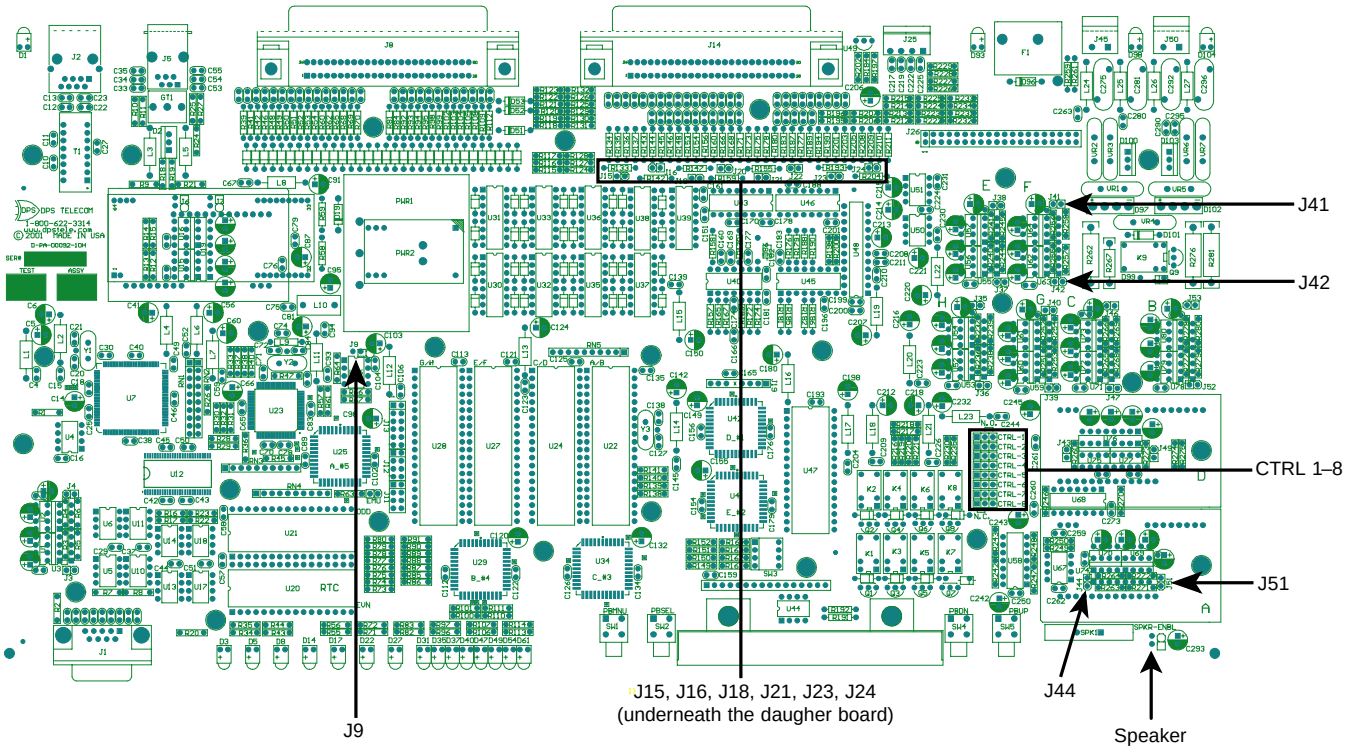


Fig. 20. Adjustable jumpers on the NetMediator T2S circuit board

You can change the settings for analog alarm inputs by resetting the jumpers on the NetMediator T2S's circuit board. To open the unit and expose the circuit board, remove the screws from the top of the NetMediator T2S. Lift the top cover off. Figure 20 shows the circuit board and the location of the adjustable jumpers.

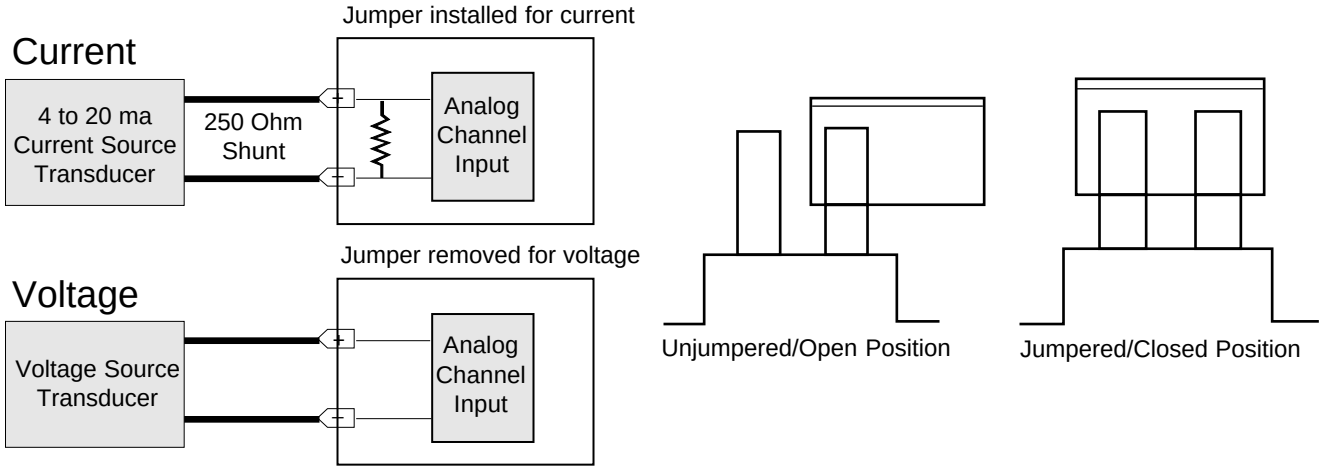


Fig. 21. Jumper settings for analog alarm inputs and control relays

By default, all the adjustable jumpers are open, except for the speaker jumper. For analog alarm input jumpers, the open position corresponds to voltage input, and the closed position corresponds to current input. For control relay jumpers, the open position corresponds to normally open operation, and the closed position corresponds to normally closed operation — see Figure 21. See Table C for default jumper settings and descriptions.

Note: Default settings may be different if you ordered a special configuration NetMediator T2S.

Jumper	Description	Open	Closed
J9	Factory Use Only	N/O*	----
J15	Analog 1	Voltage*	Current
J16	Analog 2	Voltage*	Current
J18	Analog 3	Voltage*	Current
J20	Analog 4	Voltage*	Current
J21	Analog 5	Voltage*	Current
J22	Analog 6	Voltage*	Current
J24	Analog 7	Voltage*	Current
J23	Analog 8	Voltage*	Current
J41	Factory Use Only	N/O*	----
J42	Factory Use Only	N/O*	----
J44	Factory Use Only	N/O*	----
J51	Factory Use Only	N/O*	----
CTRL 1	Control Relay 1	N/O*	----
CTRL 2	Control Relay 2	N/O*	----
CTRL 3	Control Relay 3	N/O*	----
CTRL 4	Control Relay 4	N/O*	----
CTRL 5	Control Relay 5	N/O*	----
CTRL 6	Control Relay 6	N/O*	----
CTRL 7	Control Relay 7	N/O*	----
CTRL 8	Control Relay 8	N/O*	----
SPKR	Speaker	----	N/C*

Table C. Jumper descriptions and settings

* = Default position.

7 Front Panel Controls and Displays

LCD Display and Menu

Fig. 22. The NetMediator T2S LCD display

The front panel LCD displays the current alarm and control status. It also provides an option menu for controlling the NetMediator T2S's basic functions.

Using the LCD display menu
The four buttons surrounding the front panel LCD display are used to access the LCD display menu. Press the MENU button To access the menu. To scroll the menu, use the + and – buttons. To select a menu command, press the SEL button.

Standard Prompt
When no menu item is selected, the LCD panel will display the firmware version and the standard prompt, "Press MENU for front panel operations."

Controlling Display Speed
The scroll speed can be temporarily increased by pressing and holding the + button while the message is active.

7.1 Alarm and Control Status Messages

The LCD panel will display the following messages to indicate alarm and control status:

Discrete Alarms: If there are any standing discrete alarms, the display will read "Discrete Alarms:", followed by the user-defined descriptions of the standing alarm points.

Relays: If there are any latched relays, the display will read "Relays:", followed by the user-defined descriptions of the latched relays.

Ping Alarms: If any ping targets have failed to respond within the specified time, the display will read "Ping Alarms:", followed by the user-defined descriptions of the ping targets.

Analogs: If any analog channels have crossed a threshold value, the display will read "Analogs", followed by a status report for each analog channel that has crossed a threshold. The status report consists of the user-defined description of the analog channel, the channel's last voltage reading, and a letter indicating which threshold the channel has crossed.

The letter codes represent the following thresholds:

Major Over: a capital "O"

Minor Over: a lower-case "o"

Minor Under: a lower-case "u"

Major Under: a capital "U"

Note: There is also an option to always show analog values on the LCD screen. See the T2SEdit user manual (System Settings) for further information.

7.2 Sound Controls

The LCD menu option "Sound off" will suppress all sounds for a 10-, 20- or 30-minute period. Select 0 to cancel the suppression. The alarm will sound for the time set in the provisioning information — see T2SEdit user manual.

The NetMediator T2S's audible alarm sounds under two conditions:

If there is an Ethernet link failure, the NetMediator T2S will emit a high-low warbling tone.

If there is a reportable alarm, the NetMediator T2S will emit an intermittent beep.

An alarm sound can be turned off by pressing any front panel button. Any reporting alarm sound will continue to its normal end even when a subsequent alarm is detected. Stopping the sound by pressing a front panel button allows the next alarm, if any, to sound.

7.3 Front Panel LEDs

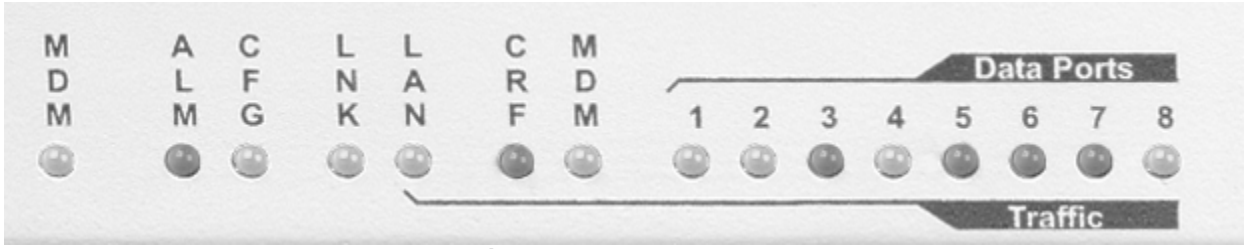


Fig. 23. Front panel LEDs

The front panel LEDs display alarm and communication status. Table D shows the meaning of the LED display messages.

LED	Status	Description
ALM	Flashing Red	New alarm status
	Solid Red	Standing alarm acknowledged
CFG	Flashing Red	NVRAM not verified (download needed)
	Flashing Green	NVRAM verified, system operational
LNK	Green	Ethernet link OK
	Red	Ethernet link failure
LAN, CRF, MDM, DATA 1 – 8	Flashing Green	Data transmit
	Flashing Red	Data receive

Table D. LED status messages

8 Preliminary Software Configuration

The NetMediator T2S must be provisioned with log-on passwords, alarm descriptions, port parameters, ping targets, control descriptions, and other system information. Basic provisioning and monitoring can be done in the TTY interface — see section 9. All other provisioning must be done using the T2SEdit utility — see T2SEdit User Manual for more information.

Provision the NetMediator T2S locally through the craft port (see section 8.2) or remotely through a LAN connection. To access the NetMediator T2S via LAN, make a temporary connection to the NetMediator T2S and assign it an IP address on your network — see section 8.1.

8.1 Temporarily Changing Your Computer's IP Address and Subnet Mask

The factory default IP address is 192.168.1.100, and the default subnet mask is 255.255.0.0.

To temporarily adjust your computer's IP address and subnet mask to correspond to these settings, follow these steps:

1. Access and write down your computer's IP address and subnet mask.

2. Temporarily change your computer's IP Address to 192.168.1.200 (In a Microsoft Windows setting, the IP Address and Subnet Mask settings are typically found in the Control Panels - Network - TCP/IP window).

3. Temporarily change your computer's Subnet Mask to 255.255.0.0 (A reboot of your computer may be necessary to initiate the changes).

4. You can now access the NetMediator T2S through the TTY or Ethernet interfaces, using the NetMediator T2S's factory default IP address, 192.168.1.100. Assign the NetMediator T2S an IP address and subnet mask on your network.

5. Change your computer's IP address and subnet mask back to their original settings.

Once the IP Address and Subnet Mask of your computer coincide with the NetMediator T2S's, you can access the NetMediator T2S via a TELNET session or via web browser (See Web Browser user manual) by using the NetMediator T2S's default IP Address of 192.168.1.100. After you have provisioned the NetMediator T2S with the appropriate information, change your computer's IP Address and Subnet Mask back to their original settings.

Note: NetMediator Ethernet setting changes take effect only after a reboot.

8.2 Connecting to the NetMediator T2S via the Craft Port

Fig. 24. The NetMediator T2S's front panel craft port

To make a local connection to the NetMediator T2S, use the provided DB9M-DB9F cable to connect the COM port of your PC to the front panel craft port of the NetMediator T2S — see Figure 24.

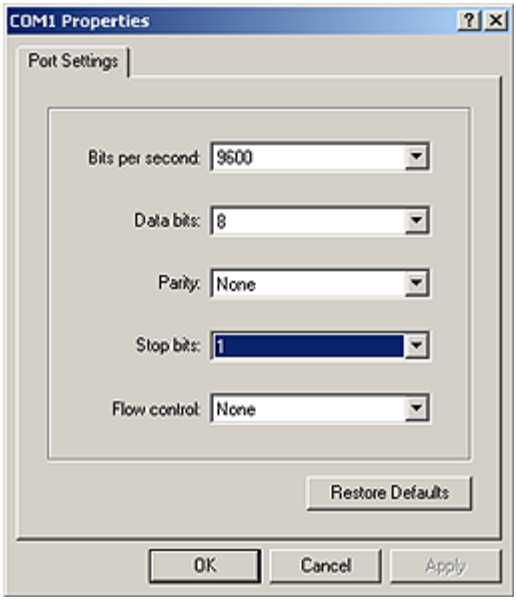


Fig. 24. Port settings to connect to the NetMediator T2S

Open your terminal emulation software, Windows™ HyperTerminal for example, and set your computer's serial port to match the NetMediator T2S's default data rate and word format settings by select the following COM port options, as shown in Figure 24:

• Bits per second: 9600

• Data bits: 8

• Parity: None

• Stop bits: 1

• Flow control: **None**

Note: It is **extremely important** to set Flow Control to **None**. Flow control normally defaults to "Hardware" in most terminal programs, this will not work correctly with the NetMediator T2S.

Assign the NetMediator T2S an IP address and subnet mask on your network. For instructions on assigning an IP address, see section 8.1. Once a connection is established (sometimes accompanied by receipt of a hex byte), type "DPSCFG" <Enter> to activate the TTY configuration menu.

8.3 LAN Connection and Ethernet Port Setup

You can connect to the NetMediator T2S using any standard TELNET client or web browser, but the Ethernet port must first be configured. For TELNET, connect to the NetMediator T2S's IP address at port 2002 to access the configurator menus after initial LAN/WAN setup. As an added security measure, TELNET sessions are established at port 2002 — **not the standard TELNET port 23**. For web browser connections, enter the IP address of the NetMediator T2S into the web browser's address bar and refer to the Web Browser Interface user manual.

Initially, the NetMediator T2S must be provisioned with an appropriate IP address before you will be able to connect via LAN/WAN using a TELNET client or a web browser. To connect via LAN, the minimum configuration requires setup of the IP Address and Subnet Mask. Minimum WAN configuration requires that the Default Gateway be set as well. Follow the instructions below to configure the NetMediator T2S's IP Address, Subnet Mask, Default Gateway, Trap Address, SNMP Port Number, Proxy Base, and DCHP option.

1. Connect to the NetMediator T2S via the craft port using the provided DB9M-DB9F cable (D-PR-045-10A-04), see section 8.2 for connection settings.
2. Once a connection is established, the NetMediator T2S will respond with the Password: prompt.
3. Type "dpstelecom" (Factory default), then press <Enter>.
   Note: DPS strongly recommends changing the default password.
4. The NetMediator T2S 's main menu will appear.
   Note: Menu selection Hot Keys: The letters before a parentheses or enclosed in parentheses ( ) are hot keys. Press the hot key to access that submenu. Pressing the <Esc> key will always bring you back to the previous menu level. Entries are not case sensitive.
5. Type <C> to configure your unit.
6. Type <E> to edit your unit settings.
7. Type <E> to edit the Ethernet port.
8. Enter the unit address, subnet mask, and default gateway.
9. To save changes press <Esc> until prompted to save, choose Y)es.
10. Return to the C)onfig menu, go to the E)dit menu, then the S)ystems menu, and type <R> R)eboot. Type <Y> to reboot. This will load the saved configuration.
11. Now you can connect over LAN using T2SEdit to complete the configuration, or configure the

NetMediator T2S using the current connection.

```
Password: **********

NetMediator T2S v1.0F.0137

C)onfig  P)roxy  T)elnet  D)ebug  e(X)it

E)dit  M)onitor  P)ing  S)tats  T)une Modem  R)eset Port (ESC) ? E

E)thernet  n(V)ram  P)PP  R)eboot  s(Y)stem (ESC) ? E

Unit Address    : 126.010.230.030 (126.010.230.030)
Subnet Mask     : 255.255.255.000 (255.255.255.000)
Default Gateway : 126.010.230.001 (126.010.230.001)

MAC Address     : 00.10.81.00.12.CA
Features        : 3893-3B-0C5C

U)nit Address  S)ubnet Mask  G)ateway  F)eatures (ESC) ?
```

Fig. 26. Configure the Ethernet port parameters

9 TTY Interface

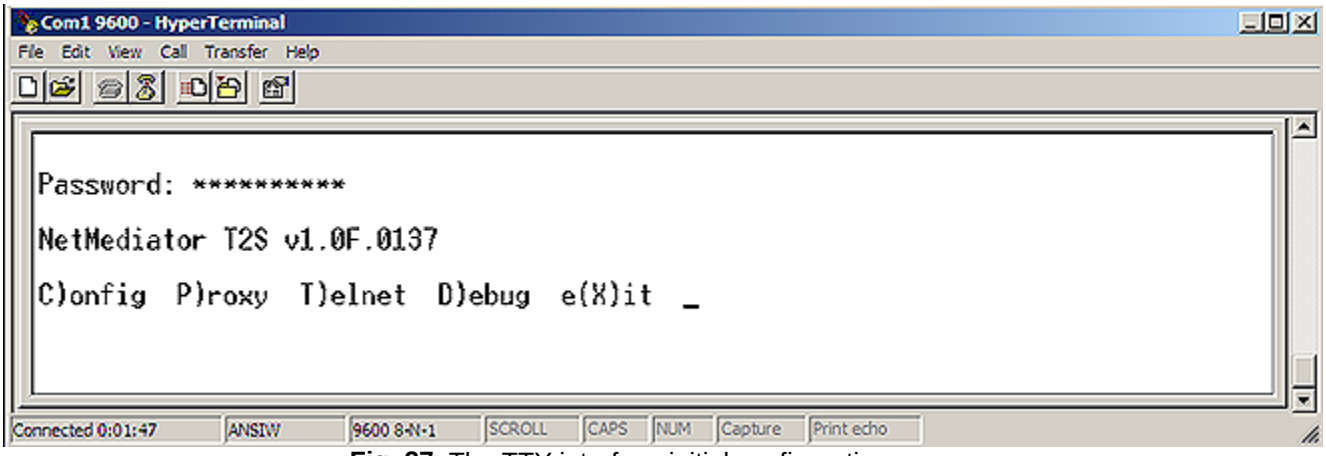


Fig. 27. The TTY interface initial configuration screen

The TTY interface — one of the three available software interfaces for the NetMediator T2S — is primarily used for basic configuring and provisioning the NetMediator T2S, but you can also use it to ping IP targets, view system statistics, and data port activity. You must use the Windows-based T2SEdit utility for all other provisioning — see T2SEdit user manual. You may also use the web browser interface to monitor your NetMediator T2S alarm status — see Web Browser user manual.

To use the TTY interface with the NetMediator T2S, all you need is a computer with terminal emulation software and a connection to the NetMediator T2S. This connection can be a direct connection to the NetMediator T2S's front panel craft port (see section 8.1) or a remote connection via Telnet or dial-up (see section 8.3). Some initial software configuration must be performed before you can use a remote connection to the NetMediator T2S.

9.1 Unit Configuration

9.1.1 Connecting to the NetMediator T2S

In order for the NetMediator T2S to become configurable via TTY Interface or web browser, the IP address of the NetMediator T2S must be in the same Subnet or on the same hub as your computer or network. The NetMediator T2S has a default IP Address of 192.168.1.100 and a default Subnet Mask of 255.255.0.0.

Configuring the NetMediator T2S to be in the same Subnet as your computer or network can be achieved in one of two ways:

1. By temporarily changing the IP Address and Subnet Mask of your computer in order to coincide with the NetMediator T2S's default IP Address and Subnet Mask. Once you are in the same Subnet as the NetMediator T2S's default settings, you can access the NetMediator T2S and change it's IP Address and Subnet Mask in order to coincide with your computer or network settings (see section 8.1)

or

2. By accessing the NetMediator T2S via the front panel craft port and changing the IP Address and Subnet Mask of the NetMediator T2S to match those of your computer or network (see section 8.2).

9.1.1.1 Remote Connection (Dial-up)

Set up a computer running TTY terminal emulation software, for example HyperTerminal, to dial the NetMediator T2S's modem. When a connection is established (sometimes accompanied by receipt of a hex byte), type DPSCFG, then press <Enter> to activate the TTY password prompt.

Note: If the system has been previously configured, it might be set for quiet login, which is part of the security system. Enter your password without prompting until you are logged on.

9.2 Monitoring the NetMediator T2S

Connect a computer running VT-100 terminal emulation software to the craft port or connect via LAN using a TELNET client (with VT-100 emulation) to port 2002 to reach the M)onitor menu selection. In TTY interface you can monitor all alarms, ping information, relays, analogs, and system status.

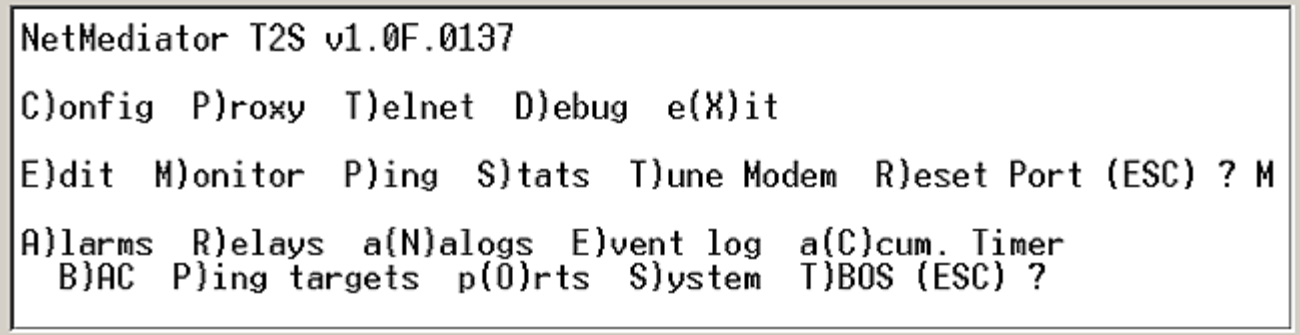


Fig. 28. The monitor menu allows status checking on all elements

9.2.1 Monitoring Base Alarms

The A)larm choice of the M)onitor menu allows you to view the status of the device connected to the discrete input. Under the "Status" heading, the word "Alarm" will appear if an alarm has been activated and the word "Clear" will appear if an alarm condition is not present.

```
A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  B)AC  P)ing targets  p(O)rts  S)ystem  T)BOS (ESC) ? A

B)ase  E)xpansions (ESC) ? B

 ID Description                                                Status
  1 123456789A123456789B123456789C123456789D12345678 Clear
  2                                                            Clear
  3                                                            Clear
  4                                                            Clear
  5                                                            Clear
  6                                                            Clear
  7                                                            Clear
  8                                                            Clear
  9                                                            Clear
 10                                                            Clear
 11                                                            Clear
 12                                                            Clear
 13                                                            Clear
 14                                                            Clear
 15                                                            Clear
 16                                                            Clear
ESC to exit  Any key to continue_
```

Fig. 28. This example shows page two of the discrete alarms

9.2.2 Monitoring TBOS Ports

Select the T)BOS option by pressing <T> from the M)onitor menu to monitor the NetMediator T2S's defined TBOS ports — see Figure 30. You can define up to eight ports as TBOS port types in the T2SEdit interface — see T2SEdit user manual. You can also monitor the preset points of each device by entering the defined display number after the prompt — see Figure 31.

```
E)dit  M)onitor  P)ing  S)tats  T)une Modem  R)eset Port (ESC) ? M

A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  B)AC  P)ing targets  p(O)rts  S)ystem  T)BOS (ESC) ? T

Port (1-8) (ESC) ? 1

TBOS Port 1
                              Device  Alarm  Status
 Disp Device                  Status  Count  Count
  1   MDR-4000E DS-3 Radio    Failed    1      0
  2   MDR-8000 DS-3 Radio     Failed    1      0
  3   MDR-8000 DS-1 Radio     Failed    1      0
  4   MDR-6000 Radio          Failed    1      0
  5   MDR-4000E DS-3 Radio    Failed    1      0
  6   MDR-8000 DS-3 Radio     Failed    1      0
  7   MDR-8000 DS-1 Radio     Failed    1      0
  8   MDR-6000 Radio          Failed    1      0

Display (1-8)  R)efresh (ESC) ?
```

Fig. 30. This example shows display 1–8 of Port 1

```
Display (1-8)  R)efresh (ESC) ? 3
                    TBOS Alarms for Port 1, Display 3
Device - MDR-8000 DS-1 Radio

 ID Description                                  TrapEnab  Status
  1 A COMMON LOSS ALARM                            Yes     Clear
  2 A POWER SUPPLY ALARM                           Yes     Clear
  3 A PA POWER ALARM                                No     Clear
  4 A TRANSMIT POWER ALARM                         Yes     Clear
  5 A PA POWER SUPPLY ALARM                        Yes     Clear
  6 A ATPC HIGH POWER ALARM                        Yes     Clear
  7 A DS1 TRANSMIT ALARM                           Yes     Clear
  8 A DS1 LOSS OF INPUT ALARM                      Yes     Clear
  9 B COMMON LOSS ALARM                            Yes     Clear
 10 B POWER SUPPLY ALARM                           Yes     Clear
 11 B PA POWER ALARM                               Yes     Clear
 12 B TRANSMIT POWER ALARM                         Yes     Clear
 13 B PA POWER SUPPLY ALARM                        Yes     Clear
 14 B ATPC HIGH POWER ALARM                        Yes     Clear
 15 B DS1 TRANSMIT ALARM                            No     Clear
 16 B DS1 LOSS OF INPUT ALARM                      Yes     Clear
ESC to exit  Any key to continue
```

Fig. 30. Traps for each point can only be enabled in T2S Edit

Port types and Traps can only be enabled and configured in T2SEdit — refer to T2SEdit User Manual. There are 64 preset points for each device. To see a display map of the all the points refer to section 9.3.

9.2.3 Monitoring Ping Targets

Select P)ing targets from the M)onitor menu displays the status of all your ping targets. Under the "Status" heading, the word "Alarm" will appear if an alarm has been activated and the word "Clear" will appear if an alarm condition is not present. Press <P> to display your ping targets.

```
Data Port ID (1-8): <--

A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  B)AC  P)ing targets  p(O)rts  S)ystem  T)BOS (ESC) ? P

 ID Description                                  IP Address      Status
  1                                              126.010.230.001 Clear
  2                                              126.010.230.002 Fail
  3                                              126.010.230.003 Fail
  4                                              126.010.230.004 Clear
  5                                              126.010.230.203 Clear
  6                                              255.255.255.255 Clear
  7                                              255.255.255.255 Clear
  8                                              255.255.255.255 Clear
  9                                              255.255.255.255 Clear
 10                                              255.255.255.255 Clear
 11                                              255.255.255.255 Clear
 12                                              255.255.255.255 Clear
 13                                              255.255.255.255 Clear
 14                                              255.255.255.255 Clear
 15                                              255.255.255.255 Clear
 16                                              255.255.255.255 Clear
ESC to exit  Any key to continue_
```

Fig. 32. The P)ing targets submenu allows you to change ping targets

9.2.4 Monitoring and Operating Relays (Controls)

The NetMediator T2S comes equipped with 8 relays, which can be used to control external devices. Select the M)onitor > R)elays option by pressing <R> to monitor the status of your relays. The NetMediator T2S's 8 relays are factory set to normally open (NO), but each or all of them can be changed to normally closed (NC) by changing their respective jumper — see section 6.10.

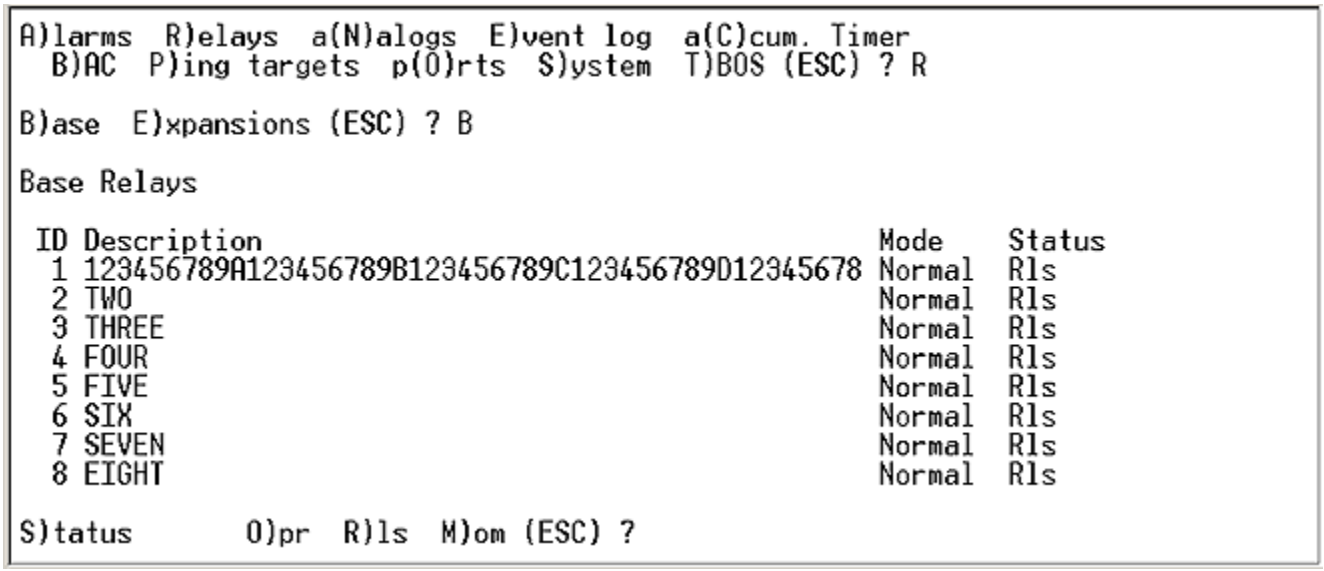


Fig. 33. The NetMediator's eight relays can be operated from the M)enu > R)elays screen

9.2.5 Monitoring Analogs

The M)onitor > a(N)logs option displays the descriptions previously entered for your NetMediator T2S's eight analogs, the current reading, and the alarm status. To select the analog screen, press <N> from the M)onitor menu.

The value shown is a snapshot of the channels measurement, not a real-time reading. Each adjustment should be followed by the a(N)alog menu choice to refresh the readings. The alarm status indicates when a preset threshold has been crossed, designated by an "x".

The eight analog measuring inputs, are set to measure voltage as the factory default. If your sensors output is current, you will need to change the appropriate analog jumpers to the current measuring position — see section 6.10, "Jumper Options." To adjust your scaling reference for real world value monitoring and thresholds refer to the "Analog Parameters" section of the T2SEdit user manual.

```
A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  B)AC  P)ing targets  p(O)rts  S)ystem  T)BOS (ESC) ? N

Chn Description                          Reading Units MjU  MnU  MnO  MjO  Err
 1                                       0.0000   VDC   -    -    -    -    -
 2                                       0.0000   VDC   -    -    -    -    -
 3                                       0.0000   VDC   -    -    -    -    -
 4                                       0.0000   VDC   -    -    -    -    -
 5                                       0.0000   VDC   -    -    -    -    -
 6                                       0.0000   VDC   -    -    -    -    -
 7  SEVEN                                0.0000   VDC   -    -    -    -    -
 8  123456789A123456789B123456789C1234>  0.0000   VDC   -    -    -    -    -

A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  B)AC  P)ing targets  p(O)rts  S)ystem  T)BOS (ESC) ? _
```

Fig. 34. Select M)onitor > a(N)logs to monitor your eight analog inputs

9.2.6 Monitoring System Alarms

Select M)onitor > A)larms by pressing <A> to monitor the NetMediator T2S's system alarms status. Figure 35 illustrates an example of the system alarms screen in the TTY interface. Under the "Status" heading, the word "Alarm" will appear if an alarm has been activated and the word "Clear" will appear if an alarm condition is not present.

```
E)dit  M)onitor  P)ing  S)tats  T)une Modem  R)eset Port (ESC) ? M

A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  B)AC  P)ing targets  p(O)rts  S)ystem  T)BOS (ESC) ? S

 ID Description          Status
 17 Timed Tick           Clear
 18 Exp.Module Callout   Clear
 19 Network Time Server  Alarm
 20 Accumulation Event   Clear
 33 Unit Reset           Clear
 36 Lost Provisioning    Clear
 37 DCP Poller Inactive  Clear
 38 LAN not Active       Clear
 41 Modem not Responding Clear
 42 No Dialtone          Clear
 43 SNMP Trap not Sent   Clear
 44 Pager Que Overflow   Clear
 45 Notification Failed  Clear
 46 Craft RcvQ Full      Clear
 47 Modem RcvQ Full      Clear
 48 Data 1 RcvQ Full     Clear
ESC to exit  Any key to continue
```

Fig. 35. System alarms can be monitored from the M)onitor > S)ystem submenu by pressing the "S" key

9.2.7 Monitoring Data Port Activity

Monitor the status of the NetMediator T2S's eight data ports by pressing <O> from the M)onitor menu. The M)onitor > p(O)rts option provides an ASCII description of your selected port. Press <a> to monitor "Transmit" data, <b> for "Receive" data, <c> for "Transmit-HEX" data, or <d> for "Receive-HEX" data. See section 10.5, "ASCII Conversion," for ASCII symbol conversion descriptions.

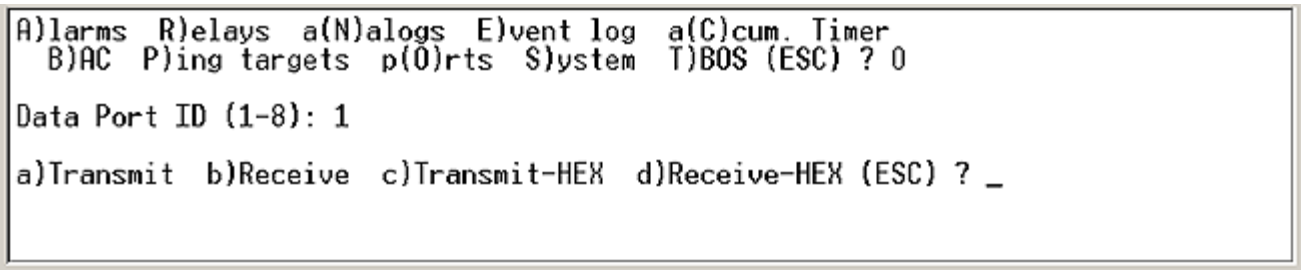


Fig. 36. Select M)onitor > p(O)rts to receive ASCII data from your NetMediator T2S's eight data ports

9.2.8 Viewing Live Ping Targets

To monitor any of the 32 pre-defined IP addresses on the NetMediator, press <P> from the C)onfig (Configuration) menu. Inputting the IP address ID number (1-32) or a different IP address causes the NetMediator T2S to ping that address in real time until you hit <Esc>. If you are not in the C)onfig (Configuration) menu, press <Esc> to return to the previous menu level.

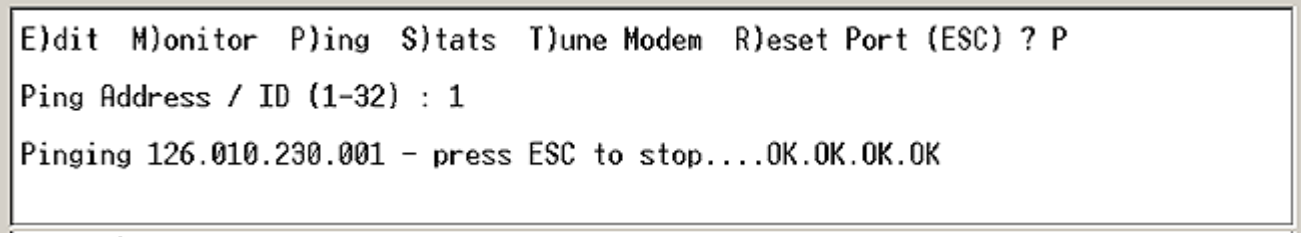


Fig. 37. Watch the NetMediator T2S continuously ping an IP address defined in the ping table

9.2.9 Proxy Menu

You can access devices connected to the seven DCE type data ports via the main menu > P)roxy menu option. Proxy connections can take place via reach-through to the craft port, modem port or any of the NetMediator T2S's 8 serial ports. To monitor your proxy connection to the NetMediator T2S press <P> from the main menu.

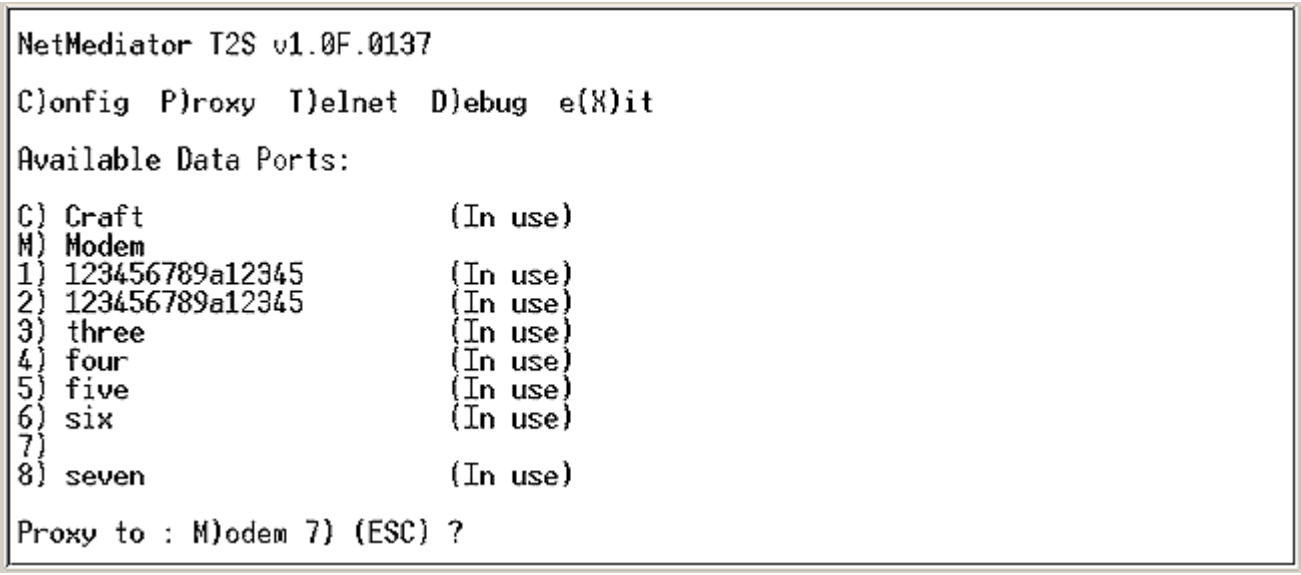


Fig. 38. Access devices connected to the seven DCE type data ports via the P)roxy menu selection

9.2.10 Event Logging

In the Event Log you can post and monitor up to 100 events including power up, base and system alarms, ping alarms, analog alarms, and controls. To view the Event Log, press <E> from the M)onitor menu.

Posted events for the various alarms include both alarm and clear status. See Table. E for event log field descriptions.

Note: All information in the Event Log will be erased upon reboot or a power failure.

```
NetMediator T2S v1.0M.0024

C)onfig  P)roxy  T)elnet  D)ebug  e(X)it

E)dit  M)onitor  P)ing  S)tats  T)une Modem  R)eset Port (ESC) ? M

A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  B)AC  P)ing targets  p(O)rts  S)ystem  T)BOS (ESC) ? E

Evt Date       Time  St PRef   Description

  1 03-20-2006 14:05 A  66.1   Fresno-Madera - A-SIDE COMMON LOSS ALARM

ESC to exit  Any key to continue
```

Fig. 39. Monitor the last 100 events recorded by the NetMediator T2S in the Event Log window

Event Log Field	Description
Evt	Event number (1 -100)
Date	Date the event occurred
Time	Time the event occurred
St	State of the event (A=alarm, C=clear)
Pref	Point reference (See Appendix A for display descriptions)
Description	The name of the Data Port followed by a user defined description of the event as entered in the alarm

Table E. Event Log field descriptions

9.2.11 Backing-Up NetMediator T2S Configuration Data via FTP

To back-up the NetMediator T2S's configuration data via FTP, follow the directions below:

1. Select "Run" from the "Start" menu on your computer.
2. Type "ftp" followed by the IP address of the NetMediator T2S you are backing up (e.g. "ftp 126.10.120.199").
3. After the connection is made press <Enter>.
4. Enter the password of the NetMediator T2S (no username necessary, default password is "dpstelecom") and press <Enter>.
5. Type "binary" and press <Enter> (necessary for NetMediator T2S file transfer).
6. Type "lcd" and press <Enter> (this allows you to change the directory of your local machine).
7. Type "get" followed by the name you wish to define for the NetMediator T2S backup file. Add the extension "nmd" to the file name (e.g. "get nmdbkup.nmd") and press <Enter>.
8. After back-up is finished, type "bye" and press <Enter> to exit.

Note: The back-up file name can have a maximum of eight characters before the file extension.

9.2.11.1 Reloading NetMediator T2S Configuration Data

To reload your NetMediator T2S configuration via FTP, use the following steps:

1. Select "Run" from the "Start" menu on your computer.

2. Type "ftp" followed by the IP address of the NetMediator T2S to which you are reloading the backup information (e.g."ftp 126.10.120.199").

3. After the connection is made press <Enter>.

4. Enter the password of the NetMediator T2S (no username necessary, default password is "dpstelecom") and press <Enter>.

5. Type "binary" and press <Enter> (necessary for NetMediator T2S file transfer).

6. Type "lcd" and press <Enter> (this allows you to change the directory of your local machine).

7. Type "put" followed by the name you defined for the NetMediator T2S backup file and press <Enter> (e.g. "put nmdbkup.nmd").

8. After reloading, type "bye" and press <Enter> to exit.

Note: Depending on setting changed by the database restore, you many need to reboot the unit.

9.2.12 Debug Input and Filter Options

Debug Input Options	
ESC	Exit Debug
B	Show BAC status points
T	Show task status
U	Show DUART information
R	Show network routing table
X	Clear debug enable bitmap. Turn all debug filters OFF
?	Display options
Debug Filter Options:	
a	(1) Alarm toggle switch. Shows posting of alarm data
A	(2) Analog toggle switch. Shows TTY interface debug
c	(3) Config toggle switch. Shows TTY interface debug
C	(4) Control relay toggle switch. Shows relay operation
d	(5) DCP responder toggle switch. Shows DCP protocol
D	(6) Device toggle switch. Shows telnet and proxy info, and T2SEdit serial communication.
Ee	(7) Expansion poller toggle switch. Shows NGDdx polling
E	(8) ECU Interrogator toggle switch. Shows BAC processing
f	(9) FTP Command toggle switch. Shows command string parsing
F	(10) FTP Data toggle switch. Shows FTP Read / Write
G	(11) GLD poller toggle switch. Shows GLD polling
H	(12) HTML debug switch. Shows Web Browser processing
H	(13) HWACS debug switch. Shows hardware access operation
i	(14) PING toggle switch
k	(15) Socket toggle switch. Shows current dcu resources
l	(16) LED toggle switch. Shows current LED state
L	(17) LCD display toggle switch. Shows LCD control and text
m	(18) Modem toggle switch. Shows modem vectored initialization
M	(19) Undefined
o	(20) Osstart toggle switch. Miscellaneous application debug, including nvram read and write operation, and event posting
O	(21) Undefined
p	(22) SPORT toggle switch. Port init debug and channeled port debug
P	(23) PPP toggle switch. Shows PPP functioning
q	(24) QAccess toggle switch. Reserved for future use
Q	(25) Undefined
r	(26) Report toggle switch. Shows reporting event activity, including SNMP, pagers, email, etc. Also shows PPP negotiation for NM-T2S client PPP mode.
s	(27) SNMP toggle switch. Reserved for future use
S	(28) STAK toggle switch. Shows network processing and IPA of arp requests. Also shows packets discarded by Filter IPA.
t	(29) TERM toggle switch. Shows UDP/TCP port handling. The camera and network time (NTP) jobs also use the TERM toggle switch
V	(30) Undefined
w	(31) HTTP toggle switch. Shows handling of web browser packets
W	(32) WEB toggle switch 2. Dump HTML text from web browser

10 Reference Information

10.1 Display Mapping

PORT	DISPLAY	DESCRIPTION	SNMP TRAP #	
			SET	CLEAR
99	1	BASE ALARMS	8001–8064	9001–9064
99	2	PING TARGET ALARMS	8065–8128	9065–9128
99	3–10	ANALOG CHANNEL 1..8	8129–8640	9129–9640
99	11	RELAY/HOUSEKEEPING	8641–8704	9641–9704
99	12	EXPANSION 1 ALARMS	6001–6064	7001–7064
99	13	EXPANSION 1 RELAY/HOUSEKEEPING	6065–6128	7065–7128
99	14	EXPANSION 2 ALARMS	6129–6192	7129–7192
99	15	EXPANSION 2 RELAY/HOUSEKEEPING	6129–6192	7129-7162
99	16	EXPANSION 3 ALARMS	6256–6320	7256–7320
99	17	EXPANSION 3 RELAY/HOUSEKEEPING	6321–6384	7321–7384
99	18–25	TBOS PORT 1 DISPLAYS 1–8	10001–10512	11001–11512
99	26–33	TBOS PORT 2 DISPLAYS 1–8	12001–12512	13001–13512
99	34–41	TBOS PORT 3 DISPLAYS 1–8	14001–14512	15001–15512
99	42–49	TBOS PORT 4 DISPLAYS 1–8	16001–16512	17001–17512
99	50–57	TBOS PORT 5 DISPLAYS 1–8	18001–18512	19001–19512
99	58–65	TBOS PORT 6 DISPLAYS 1–8	20001–20512	21001–21512
99	66–73	TBOS PORT 7 DISPLAYS 1–8	22001–22512	23001–23512
99	74–81	TBOS PORT 8 DISPLAYS 1–8	24001–24512	25001–25512

Table A1. Display descriptions and SNMP Trap numbers for the NetMediator T2S

* The Trap number ranges shown correspond to the point range of each display. For example, the SNMP Trap Set number for alarm 1 (in Display 1) is 8001, Set for alarm 2 is 8002, Set for alarm 3 is 8003, etc.

** The TRAP number descriptions for the Analog channels (1-8) are in the following order: minor under, minor over, major under, and major over. For example, Analog channel 1, the Set number for minor under is 8129, minor over is 8130, major under is 8131, and major over is 8132.

		SNMP TRAP #S	
POINTS	DESCRIPTION	SET	CLEAR
1	RELAYS	8641	9641
2	RELAYS	8642	9642
3	RELAYS	8643	9643
4	RELAYS	8644	9644
5	RELAYS	8645	9645
6	RELAYS	8646	9646
7	RELAYS	8647	9647
8	RELAYS	8648	9648
17	TIMED TICK	8657	9657
18	EXP. MODULE CALLOUT	8658	9658
19	NETWORK TIME SERVER	8659	9659
33	UNIT RESET	8673	9673
36	LOST PROVISIONING	8676	9676
37	DCP POLLER INACTIVE	8677	9677
38	LAN NOT ACTIVE	8678	9678
41	MODEM NOT RESPONDING	8681	9681
42	NO DIAL TONE	8682	9682
43	SNMP TRAP NOT SENT	8683	9683
44	PAGER QUE OVERFLOW	8684	9684
45	NOTIFICATION FAILED	8685	9685
46	CRAFT RCVQ FULL	8686	9686
47	MODEM RCVQ FULL	8687	9687
48	DATA 1 RCVQ FULL	8688	9688
49	DATA 2 RCVQ FULL	8689	9689
50	DATA 3 RCVQ FULL	8690	9690
51	DATA 4 RCVQ FULL	8691	9691
52	DATA 5 RCVQ FULL	8692	9692
53	DATA 6 RCVQ FULL	8693	9693
54	DATA 7 RCVQ FULL	8694	9694
55	DATA 8 RCVQ FULL	8695	9695
56	NETGUARDIAN DX 1 FAIL	8696	9696
57	NETGUARDIAN DX 2 FAIL	8697	9697
58	NETGUARDIAN DX 3 FAIL	8698	9698
59	GLD 1 FAIL	8699	9699
60	GLD 2 FAIL	8700	9700
61	GLD 3+ FAIL	8701	9701
62	CHAN. PORT TIMEOUT	8702	9702
63	CRAFT TIMEOUT	8703	9703
64	EVENT QUE FULL	8704	9704

Table A2. Display 11 System Alarms point descriptions

10.2 TBOS Devices Point Descriptions

Use the information in Tables A3-A9 for alarm point descriptions for specific TBOS devices.

10.2.1 MDR-4000E DS-3 TBOS Point Description

PT #	MDR-4000E DS-3	PT #	MDR-4000E DS-3
1	A COMMON LOSS ALARM	33	A COMBINER ALARM
2	A COMMON POWER SUPPLY	34	A CHANNEL FAIL
3	A RF TRANSMIT POWER ALARM	35	A RADIO FRAME LOSS
4	A PA POWER SUPPLY	36	A EYE CLOSURE
5	A TRANSMIT LO LOCK	37	A RECEIVER DS3 FAIL
6	A ATPC HIGH POWER	38	A WS DS1 RECEIVER ALARM
7	A TRANSMIT DS3 FAIL	39	NOT USED
8	A DS1 INPUT ALARM	40	A SYNC LOSS
9	B COMMON LOSS ALARM	41	B COMBINER ALARM
10	B COMMON POWER SUPPLY	42	B CHANNEL FAIL
11	B RF TRANSMIT POWER ALARM	43	B RADIO FRAME LOSS
12	B PA POWER SUPPLY	44	B EYE CLOSURE
13	B TRANSMIT LO LOCK	45	B RECEIVER DS3 FAIL
14	B ATPC HIGH POWER	46	B DS1 RECEIVER ALARM
15	B TRANSMIT DS3 FAIL	47	NOT USED
16	B DS1 INPUT ALARM	48	B SYNC LOSS
17	A TRANSMIT ON LINE	49	RECEIVER ON LINE
18	A TRANSMIT SERVICE CHANNEL	50	A RECEIVER SERVICE CHANNEL
19	ONLINE	51	ONLINE
20	A ATPC ACTIVE	52	A WS DS1 ON LINE
21	A AIS DETECT	53	A AIS DETECT
22	TRANSMIT OVERRIDE	54	PCA LOCKOUT
23	SWITCH OFF NORMAL	55	A ATPC DOWN COMMAND
24	COMMAND PATH FAIL	56	A ATPC UP COMMAND
25	CONTROLLER ALARM	57	RECEIVER OVERRIDE
26	B TRANSMIT ON LINE	58	B RECEIVER ON LINE
27	B TRANSMIT SERVICE CHANNEL ON	59	B RECEIVER SERVICE CHANNEL
28	LINE	60	ONLINE
29	B ATPC ACTIVE	61	B WS DS1 ON LINE
30	B AIS DETECT	62	B AIS DETECT
31	WS DS1 LOOPBACK LINE 1	63	PCA LOCKIN
32	WS DS1 LOOPBACK LINE 2	64	B ATPC DOWN COMMAND

Table A3. MDR-4000E DS-3 TBOS point descriptions

Note: Alarm point 64 is set if a TBOS display is not polling.

10.2.2 MDR-6000 TBOS Point Descriptions

PT #	MDR-6000	RELAY	PT #	MDR-6000	RELAY
1	A-SIDE COMMON LOSS ALARM	NO/NC	34	A-SIDE CHANNEL FAIL	NO/NC
2	A-SIDE POWER SUPPLY	NO/NC	35	A-SIDE RADIO FRAME LOSS	NO/NC
3	A-SIDE RF TRANSMIT POWER	NO/NC	36	A-SIDE EYE CLOSURE	NO/NC
6	A-SIDE ATPC HIGH POWER	NO/NC	37	A-SIDE RADIO DADE	
7	A-SIDE DS1/E1 MUX ALARM	NO/NC	38	A-SIDE DS1/E1 DEMUX ALARM	NO/NC
8	A-SIDE DS1/E1 INPUT ALARM		39	A-SIDE AGC STATUS	NO/NC
9	B-SIDE COMMON LOSS ALARM	NO/NC	40	A-SIDE SYNC LOSS	NO/NC
10	B-SIDE POWER SUPPLY	NO/NC	41	B-SIDE PATH DISTORTION	
11	B-SIDE RF TRANSMIT POWER	NO/NC	42	B-SIDE CHANNEL FAIL	NO/NC
14	B-SIDE ATPC HIGH POWER	NO/NC	43	B-SIDE RADIO FRAME LOSS	NO/NC
15	B-SIDE DS1/E1 MUX ALARM	NO/NC	44	B-SIDE EYE CLOSURE	NO/NC
16	B-SIDE DS1/E1 INPUT ALARM		45	B-SIDE RADIO DADE	
17	A-SIDE TRANSMIT ON LINE	NO/NC	46	B-SIDE DS1/E1 DEMUX ALARM	NO/NC
19	TRANSMIT OVERRIDE		47	B-SIDE AGC STATUS	NO/NC
20	A-SIDE ATPC ACTIVE		48	B-SIDE SYNC LOSS	NO/NC
21	PREVIOUS SECTION		49	A-SIDE RECEIVE ON LINE	NO/NC
22	SWITCH OFF-NORMAL	NO/NC	50	A-SIDE I/O ON LINE	NO/NC
23	COMMAND PATH FAIL		51	RECEIVE OVERRIDE	
24	CONTROLLER ALARM	NO/NC	52	A-SIDE ATPC DOWN COMMAND	
25	B-SIDE TRANSMIT ON LINE	NO/NC	55	A-SIDE ATPC UP COMMAND	
27	B-SIDE ATPC ACTIVE		56	B-SIDE RECEIVE ON LINE	NO/NC
29	DS1/E1 LOOPBACK LINES 1-4		57	B-SIDE I/O ON LINE	NO/NC
30	DS1/E1 LOOPBACK LINES 5-8		59	I/O OVERRIDE	
31	DS1/E1 LOOPBACK LINES 9-12		62	B-SIDE ATPC DOWN COMMAND	
32	DS1/E1 LOOPBACK LINES 13-16		63	B-SIDE ATPC UP COMMAND	
33	A-SIDE PATH DISTORTION		64	COMM FAILURE	

Table A4. MDR-6000 TBOS point descriptions

Note: Alarm point 64 is set if a TBOS display is not polling.

10.2.3 MDR-7000 TBOS Point Descriptions

PT #	MDR-7000	PT #	MDR-7000
1	A-SIDE COMMON LOSS ALARM	32*	DS1/E1 LOOPBACK LINES 13-16
2	A-SIDE IDU POWER SUPPLY	33	A-SIDE BER ALARM
3	A-SIDE RF TRANSMIT POWER	34	A-SIDE CARRIER UNLOCK
4	A-SIDE ODU POWER SUPPLY	35	A-SIDE RX RADIO FRAME LOSS
5	A-SIDE TRANSMIT BLOCK SYNC	36	A-SIDE TX RADIO FRAME LOSS
6	A-SIDE PROVISIONING ERROR	37	A-SIDE RADIO DADE
7	A-SIDE DS1/E1 MUX ALARM	38	A-SIDE DS1/E1 DEMUX ALARM
8	A-SIDE DS1/E1 INPUT ALARM	39	A-SIDE RECEIVE RSL ALARM
9	B-SIDE COMMON LOSS ALARM	40	A-SIDE SYNC LOSS
10	B-SIDE IDU POWER SUPPLY	41	B-SIDE BER ALARM
11	B-SIDE RF TRANSMIT POWER	42	B-SIDE CARRIER UNLOCK
12	B-SIDE ODU POWER SUPPLY	43	B-SIDE RX RADIO FRAME LOSS
13	B-SIDE TRANSMIT BLOCK SYNC	44	B-SIDE TX RADIO FRAME LOSS
14	B-SIDE PROVISIONING ERROR	45	B-SIDE RADIO DADE
15	B-SIDE DS1/E1 MUX ALARM	46	B-SIDE DS1/E1 DEMUX ALARM
16	B-SIDE DS1/E1 INPUT ALARM	47	B-SIDE RECEIVE RSL ALARM
17*	A-SIDE TRANSMIT ONLINE	48	B-SIDE SYNC LOSS
18	A-SIDE IF SYNTHESIZER	49*	A-SIDE RECEIVE ONLINE
19	TRANSMIT OVERRIDE	50	A-SIDE SUPERVISORY ALARM
20	A-SIDE ODU RF SYNTHESIZER	51	A-SIDE I/O ONLINE
21	PREVIOUS SECTION	52	RECEIVE OVERRIDE
22	SWITCH OFF-NORMAL	53	TEMPERATURE ALARM
23	COMMAND PATH FAIL	54	OPTION KEY ABSENT
24	CONTROLLER ALARM	55	DS3 ID MISMATCH
25*	B-SIDE TRANSMIT ONLINE	57*	B-SIDE RECEIVE ONLINE
26	B-SIDE IF SYNTHESIZER	58	B-SIDE SUPERVISORY ALARM
28	B-SIDE ODU RF SYNTHESIZER	59	B-SIDE I/O ONLINE
29*	DS1/E1 LOOPBACK LINES 1-4	60	I/O OVERRIDE
30*	DS1/E1 LOOPBACK LINES 5-8	61-63	NOT USED
31*	DS1/E1 LOOPBACK LINES 9-12	64	COMM FAILURE

Table A5. MDR-7000 TBOS point descriptions

***** TBOS Control Points (XMT Switch, RCV Swtich, I/O Switch, and Loopback Commands).
Note: Alarm point 64 is set if a TBOS display is not polling.

10.2.4 MDR-8000 DS-1 TBOS Point Descriptions

PT #	MDR-8000 DS-1	PT #	MDR-8000 DS-1
1	A COMMON LOSS ALARM	33	A PATH DISTORTION
2	A POWER SUPPLY ALARM	34	A CHANNEL FAIL
3	A PA POWER ALARM	35	A RADIO FRAME LOSS
4	A TRANSMIT POWER ALARM	36	A EYE CLOSURE
5	A PA POWER SUPPLY	37	A TERMINAL SYNC ALARM
6	A ATPC HIGH POWER	38	A DS1 RECEIVER ALARM
7	A WS DS1 TRANSMIT ALARM	39	A RECEIVE SIGNAL LEVEL ALARM
8	A WS DS1 TRANSMIT LOSS OF INPUT	40	A REPEATER SYNC ALARM
9	ALARM	41	B PATH DISTORTION
10	B COMMON LOSS ALARM	42	B CHANNEL FAIL
11	B POWER SUPPLY ALARM	43	B RADIO FRAME LOSS
12	B PA POWER ALARM	44	B EYE CLOSURE
13	B TRANSMIT POWER ALARM	45	B TERMINAL SYNC ALARM
14	B PA POWER SUPPLY	46	B DS1 RECEIVER ALARM
15	B ATPC HIGH POWER	47	B RECEIVE SIGNAL LEVEL ALARM
16	B WS DS1 TRANSMIT ALARM	48	B REPEATER SYNC ALARM
17	B WS DS1 TRA NSMIT LOSS OF INPUT	49	A RECEIVER ON LINE
18	ALARM	50	NOT USED
19	A TRANSMIT ON LINE	51	A I/O ON LINE
20	A PA TEMPERATURE ALARM	52	RECEIVER OVERRIDE
21	TRANSMIT OVERRIDE	53	NOT USED
22	A ATPC OFF NORMAL	54	FAN ALARM
23	PREVIOUS SECTION ALARM	55	A ATPC LOCKED LOW
24	OFF NORMAL	56	A ATPC LOCKED HIGH
25	RF COMMAND PATH ALARM	57	B RECEIVER ONLINE
26	CONTROLLER POWER ON RESET	58	NOT USED
27	B TRANSMIT ON LINE	59	B I/O ON LINE
28	B PA TEMPERATURE ALARM	60	I/O OVERRIDE
29	A ATPC OFF NORMAL	61	NOT USED
30	DAD E ALARM	62	B ATPC LOCKED LOW
31	DS1 LOOPBACK LINE 1 - 4	63	B ATPC LOCKED HIGH
32	DS1 LOOPBACK LINE 5 - 8	64	COMM FAILURE

Table A6. MDR-8000 DS-1 TBOS point descriptions

Note: Alarm point 64 is set if a TBOS display is not polling.

10.2.5 MDR-8000 DS-3 TBOS Point Descriptions

PT #	MDR-8000 DS-3	PT #	MDR-8000 DS-3
1	A COMMON LOSS ALARM	33	A COMBINER ALARM
2	A POWER SUPPLY ALARM	34	A CHANNEL FAIL
3	A PA POWER ALARM	35	A RADIO FRAME LOSS
4	A TRANSMIT POWER ALARM	36	A EYE CLOSURE
5	A PA POWER SUPPLY	37	A RECEIVER DS3 FAIL
6	A ATPC HIGH POWER	38	A WS DS1 RECEIVER ALARM
7	A WS DS1 TRANSMIT ALARM	39	A RECEIVE SIGNAL LEVEL ALARM
8	A WS DS1 TRANSMIT LOSS OF INPUT	40	A REPEATER SYNC ALARM
9	ALARM	41	B COMBINER ALARM
10	B COMMON LOSS ALARM	42	B CHANNEL FAIL
11	B POWER SUPPLY ALARM	43	B RADIO FRAME LOSS
12	B PA POWER ALARM	44	B EYE CLOSURE
13	B TRANSMIT POWER ALARM	45	B RECEIVER DS3 FAIL
14	B PA POWER SUPPLY	46	B WS DS1 RECEIVER
15	B ATPC HIGH POWER	47	B RECEIVE SIGNAL LEVEL ALARM
16	B WS DS1 TRANSMIT ALARM	48	B REPEATER SYNC ALARM
17	B WS DS1 TRANSMIT LOSS OF INPUT	49	A RECEIVER ON LINE
18	ALARM	50	A RECEIVER SERVICE CHANNEL
19	A TRANSMIT ON LINE	51	ON LINE
20	A PA TEMPERATURE ALARM	52	A I/O ON LINE
21	TRANSMIT OVERRIDE	53	RECEIVER OVERRIDE
22	A ATPC OFF NORMAL	54	A RECEIVER AIS DETECT
23	A TRANSMIT AIS DETECT	55	FAN ALARM
24	OFF NORMAL	56	A ATPC LOCKED LOW
25	RF COMMAND PATH ALARM	57	A ATPC LOCKED HIGH
26	CONTROLLER POWER ON RESET	58	B RECEIVER ONLINE
27	B TRANSMIT ON LINE	59	B RECEIVER SERVICE CHANNEL
28	B PA TEMPERATURE ALARM	60	ON LINE
29	A ATPC OFF NORMAL	61	B I/O ON LINE
30	B TRANSMIT AIS DETECT	62	I/O OVERRIDE
31	WS DS1 LOOPBACK LINE 1	63	B RECEIVER AIS DETECT
32	WS DS1 LOOPBACK LINE 2	64	B ATPC LOCKED LOW

Table A7. MDR-8000 DS-3 TBOS point descriptions

Note: Alarm point 64 is set if a TBOS display is not polling.

10.2.6 Multiplex Lynx SC TBOS Point Descriptions

PT #	Multiplex Lynx SC	PT #	Multiplex Lynx SC
1	MODEL ID MSB	33	LINE CODE CH1
2	MODEL ID LSB+2	34	LINE CODE CH2
3	MODEL ID LSB+1	35	LINE CODE CH3
4	MODEL ID LSB	36	LINE CODE CH4
5	NOT USED	37	FAR-END ADDRESS INVALID
6	CHANNEL ID MSB	38	FAR-END ADDRESS MSB
7	CHANNEL ID LSB	39	FAR-END ADDRESS LSB+1
8	CHANNEL ID TX (HIGH/LOW)	40	FAR-END ADDRESS LSB
9	RADIO FAIL	41	NEAR-END RSL MSB
10	AIS OUT	42	NEAR-END RSL MSB-1
11	FAN	43	NEAR-END RSL MSB-2
12	RX SYNC	44	NEAR-END RSL MSB-3
13	LOOPBACK ERROR	45	NEAR-END RSL MSB-4
14	BER	46	NEAR-END RSL MSB-5
15	FAR END	47	NEAR-END RSL MSB-6
16	TELEMETRY DOWN	48	NEAR-END RSL MSB-7
17	DATA LOSS CH 1	49	NEAR-END TX MSB
18	DATA LOSS CH 2	50	NEAR-END TX MSB-1
19	DATA LOSS CH 3	51	NEAR-END TX MSB-2
20	DATA LOSS CH 4	52	NEAR-END TX MSB-3
21	DATA LOSS DISABLE CH 1	53	NEAR-END TX MSB-4
22	DATA LOSS DISABLE CH 2	54	NEAR-END TX MSB-5
23	DATA LOSS DISABLE CH 3	55	NEAR-END TX MSB-6
24	DATA LOSS DISABLE CH 4	56	NEAR-END TX MSB-7
25	LOOPBACK SOURCE	57	DUAL FAN FAIL
26	LOOPBACK ERROR MODE	58	TX SYNC UNLOCK
27	LOOPBACK CH1 ENABLE	59	RX SYNC UNLOCK
28	LOOPBACK CH2 ENABLE	60	INPUT LINER DRIVER
29	LOOPBACK CH3 ENABLE	61	DIGITAL HARDWARE
30	LOOPBACK CH4 ENABLE	62	NOT USED
31	AIS DISABLED	63	NOT USED
32	BRIDGE DISABLED	64	COMM FAILURE

Table A8. Multiplex Lynx SC TBOS point descriptions

Note: Alarm point 64 is set if a TBOS display is not polling.

10.2.7 JungleMux TBOS Point Description

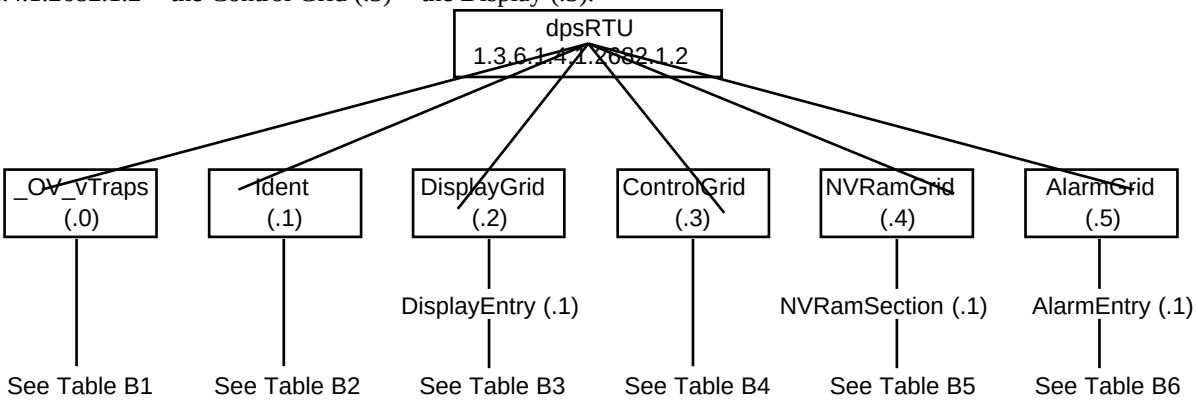
PT #	JungleMux	PT #	JungleMux
1	NODE A MINOR	33	NODE B MINOR
2	NODE A SYNC/L	34	NODE B SYNC/L
3	NODE A MAJOR	35	NODE B MAJOR
4	NODE A POWER	36	NODE B POWER
5	NODE A CHAN/L	37	NODE B CHAN/L
6	NODE A JMUX/L	38	NODE B JMUX/L
7	NODE A SPE/L	39	NODE B SPE/L
8	NODE A AIS/L	40	NODE B AIS/L
10	NODE A SYNC/R	42	NODE B SYNC/R
13	NODE A CHAN/R	45	NODE B CHAN/R
14	NODE A JMUX/R	46	NODE B JMUX/R
15	NODE A SPE/R	47	NODE B SPE/R
16	NODE A AIS/R	48	NODE B AIS/R
32	NOT USED	64	COMM FAILURE

Table A9. JungleMux TBOS point descriptions

Note: Alarm point 64 is set if a TBOS display is not polling.

10.3 SNMP Manager Functions

The SNMP Manager allows the user to view alarm status, set date/time, issue controls, and perform a re-sync. The display and tables below outline the MIB object identifiers. Table B1 begins with dpsRTU, however, the MIB object identifier tree has several levels above it. The full English name is as follows: root.iso.org.dod.internet.private.enterprises.dps-Inc.dpsAlarmControl.dpsRTU. Therefore, dpsRTU's full object identifier is 1.3.6.1.4.1.2682.1.2. Each level beyond dpsRTU adds another object identifying number. For example, the object identifier of the Display portion of the Control Grid is 1.3.6.1.4.1.2682.1.2.3.3 because the object identifier of dpsRTU is 1.3.6.1.4.1.2682.1.2 + the Control Grid (.3) + the Display (.3).



Tbl. B1 (O.)_OV_Traps points
_OV_vTraps (1.3.6.1.4.1.2682.1.2.0)
PointSet (.20)
PointClr (.21)
SumPSet (.101)
SumPClr (.102)
ComFailed (.103)
ComRestored (.014)
P0001Clr (.20001) through P0064Set (.10064)
P0001Clr (.20001) through P0064Clr (.20064)

Tbl. B2 (.1) Identity points
Ident (1.3.6.1.4.1.2682.1.2.1)
Manufacturer (.1)
Model (.2)
Firmware Version (.3)
DateTime (.4)
ResyncReq (.5)*
* Must be set to "1" to perform the resync request which will resend TRAPs for any standing alarm.

Tbl. B3 (.2) DisplayGrid points
DisplayEntry (1.3.6.1.4.1.2682.1.2.2.1)
Port (.1)
Address (.2)
Display (.3)
DispDesc (.4)*
PntMap (.5)*

Tbl. B4 (.3) ControlGrid points
ControlGrid (1.3.6.1.4.1.2682.1.2.3)
Port (.1)
Address (.2)
Display (.3)
Point (.4)
Action (.5)

Tbl. B5 (.4) NVRamSection points
NVRamSection (1.3.6.1.4.2682.1.2.4.1)
NVsNmbr (.1)
NvsData (.2)
NvsStatus (.3)

Tbl. B6 (.5) AlarmEntry points
AlarmEntry (1.3.6.4.1.2682.1.2.5.1)
APort (.1)
AAddress (.2)
ADisplay (.3)
APoint (.4)
APntDesc (.5)*
AState (.6)
* For specific point descriptions, see Table B7.

Table B1. MIB object identifier tree descriptions

In Table B7, * "No data" indicates the alarm point is defined but there is no description entered, and ** "Undefined" indicates that the alarm point is not used. Refer to sections 10.1 – 10.2.5 for descriptions of TBOS displays.

	Description	Port	Address	Display	Points
Disp 1	No data*	99	1	1	1-32
	Undefined**	99	1	1	33-64
Disp 2	No data*	99	1	2	1-32
	Undefined**	99	1	2	33-64
Disp 3	Analog 1	99	1	3	1-4
	Undefined**	99	1	3	5-64
Disp 4	Analog 2	99	1	4	1-4
	Undefined**	99	1	4	5-64
Disp 5	Analog 3	99	1	5	1-4
	Undefined**	99	1	5	5-64
Disp 6	Analog 4	99	1	6	1-4
	Undefined**	99	1	6	5-64
Disp 7	Analog 5	99	1	7	1-4
	Undefined**	99	1	7	5-64
Disp 8	Analog 6	99	1	8	1-4
	Undefined**	99	1	8	5-64
Disp 9	Analog 7	99	1	9	1-4
	Undefined**	99	1	9	5-64
Disp 10	Analog 8	99	1	10	1-4
	Undefined**	99	1	10	5-64
Disp 11	No data*	99	1	11	1-8
	Undefined**	99	1	11	9-32
	Power up	99	1	11	33
	Undefined**	99	1	11	34-35
	Lost	99	1	11	36
	DCP poll inactive	99	1	11	37
	LAN not active	99	1	11	38
	Undefined**	99	1	11	39-40
	Modem not	99	1	11	41
	No dial-tone	99	1	11	42
	SNMP trap not	99	1	11	43
	Pager Que	99	1	11	44
	Notification	99	1	11	45
	Craft RCVQ full	99	1	11	46
	Modem RCVQ	99	1	11	47
	Data 1-8 RCVQ	99	1	11	48-55
	NGdx 1-3 fail	99	1	11	56-58
	GLD 1-3 fail	99	1	11	59-61
	CHAN timeout	99	1	11	62
	CRFT timeout	99	1	11	63
Disp 12	Expansion1 Alarms	99	1	12	1-64
Disp 13	Expansion 1 Relay/Housekeeping	99	1	13	1-64
Disp 14	Expansion 2 Alarms	99	1	14	1-64
Disp 15	Expansion 2 Relay/Housekeeping	99	1	15	1-64
Disp 16	Expansion 3 Alarms	99	1	16	1-64
Disp 17	Expansion Relays/Housekeeping	99	1	17	1-64
Disp 18	TBOS PORT 1 DISPLAYS 1-8	99	1	18	1-64
Disp 26	TBOS PORT 2 DISPLAYS 1-8	99	1	19	1-64
Disp 34	TBOS PORT 3 DISPLAYS 1-8	99	1	20	1-64
Disp 42	TBOS PORT 4 DISPLAYS 1-8	99	1	21	1-64
Disp 50	TBOS PORT 5 DISPLAYS 1-8	99	1	22	1-64
Disp 58	TBOS PORT 6 DISPLAYS 1-8	99	1	23	1-64
Disp 66	TBOS PORT 7 DISPLAYS 1-8	99	1	24	1-64
Disp 74	TBOS PORT 8 DISPLAYS 1-8	99	1	25	1-64

Table B2. Alarm Point Descriptions

10.4 SNMP Granular Trap Packets

UDP Header	Description
1238	Source port
162	Destination port
303	Length
0xBAB0	Checksum

Table C1. UDP Headers and descriptions

SNMP Header	Description
0	Version
public	Request
Trap	Request
1.3.6.1.4.1.2682.1.2	Enterprise
126.10.230.181	Agent address
Enterprise Specific	Generic Trap
8001	Specific Trap
617077	Time stamp
1.3.7.1.2.1.1.1.0	Object
NetMediator T2S v.1.0F	Value
1.3.6.1.2.1.1.6.0	Object
1-800-622-3314	Value
1.3.6.1.4.1.2682.1.2.4.1.0	Object
01-02-1995 05:08:27.760	Value
1.3.6.1.4.1.2682.1.2.5.1.1.99.1.1.1	Object
99	Value
1.3.6.1.4.1.2682.1.2.5.1.2.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.3.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.4.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.5.99.1.1.1	Object
Rectifier Failure	Value
1.3.6.1.4.1.2682.1.2.5.1.6.99.1.1.1	Object
Alarm	Value

Table C2. SNMP headers and descriptions

Tables C1 and C2 provide a list of the information contained in the SNMP Trap packets sent by the NetMediator T2S. SNMP Trap managers can use 1 of 2 methods to get alarm information: 1. Granular traps (not necessary to define point descriptions for the NetMediator T2S) or 2. The SNMP manager reads the description from the Trap.

10.5 ASCII Conversion

Abbreviation	Description	Abbreviation	Description
NUL	Null	DLE	Data Link Escape
SOH	Start of Heading	DC	Device Control
STX	Start of Text	NAK	Negative Acknowledge
ETX	End of Text	SYN	Synchronous Idle
EOT	End of Transmission	ETB	End of Transmission Block
ENQ	Enquiry	CAN	Cancel
ACK	Acknowledge	EM	End of Medium
BEL	Bell	SUB	Substitute
BS	Backspace	ESC	Escape
HT	Horizontal Tabulation	FS	File Separator
LF	Line Feed	GS	Group Separator
VT	Vertical Tabulation	RS	Record Separator
FF	Form Feed	US	Unit Separator
CR	Carriage Return	SP	Space (blank)
SO	Shift Out	DEL	Delete
SI	Shift In	BRK	Break Received

Table D1. ASCII symbols

The information contained in Table D is a list of ASCII symbols and their meanings. Refer to the bulleted list below to interpret the ASCII data transmitted or received through the data ports. Port transmit and receive activity can be viewed from the Ethernet interface.

- Printable ASCII characters will appear as ASCII.
- Non-printable ASCII characters will appear as labels surrounded by { } brackets, for example {NUL}.
- Non-ASCII characters will appear as hexadecimal surrounded by [ ] brackets, for example [IF].
- A received BREAK will appear as BRK.

11 Frequently Asked Questions

Here are answers to some common questions from NetMediator T2S users.

The latest FAQs can be found on the NetMediator T2S support web page:

http://www.dpstele.com/support/techfaqs/netmediator.html

If you have a question about the NetMediator T2S, please call us at

(559) 454-1600

or e-mail us at

support@dpstele.com

Q. How do I Telnet to the NetMediator T2S?
A. You must use **Port 2002** to connect to the NetMediator T2S. Configure your Telnet client to connect using TCP/IP (**not** Telnet, or any other port options). For connection information, enter the IP address of the NetMediator T2S and Port 2002. For example, to connect to the NetMediator T2S using the standard Windows Telnet client, click Start, click Run, and type Telnet <NetMediator T2S IP address > 2002.

Q. How can I back up the current configuration of my NetMediator T2S?
A. There are two ways. T2SEdit can read the configuration of your NetMediator T2S and save the configuration to your PC's hard disk or a floppy disk. With T2SEdit you can also make changes to the configuration file and write the changed configuration to the NetMediator T2S NVRAM. The other way is to use File Transfer Protocol (FTP). You can use FTP to read configuration files from or write files to the NetMediator T2S NVRAM, but you can't use FTP to edit configuration files.

Q. Can I use my NetMediator T2S as a proxy server to access TTY interfaces on my third-party serial equipment?
A. You can use data ports 1–8, located on the back of the NetMediator T2S, to connect to serial devices, as long as your devices support RS-232. To make a proxy connection, you must define the correct TCP port for each serial port. To define TCP ports, you must first connect directly to the NetMediator T2S through its IP address. Once you have connected to the NetMediator T2S, you can define the TCP ports through the NetMediator T2S — T2SEdit utility.

Q. What do the terms alarm point, display, port, and address mean?
A. **These** terms define the exact location of a network alarm, from the most specific (an individual alarm point) to the most general (an entire monitored device). An alarm point is a number representing an actual contact closure that is activated when an alarm condition occurs. For example, an alarm point might represent a low oil sensor in a generator or a open/closed sensor in a door. A display is a logical group of 64 alarm points. A port is traditionally the actual physical serial port through which the monitoring device collects data. The address is a number representing the monitored device. The terms port and address have been extended to refer to logical, or virtual, ports and addresses. For example, the NetMediator T2S reports internal alarms on Port 99, address 1.

Q. What characteristics of an alarm point can I configure through software? For instance, can I configure Point 4 to sense an active-low (normally closed) signal, or Point 5 to sense a level or edge?
A. The NetMediator T2S alarm points are level sensed and can be software-configured to generate an alarm on either a high (normally open) or low (normally closed) level.

Q. When I connect to the NetMediator T2S through the Craft port on the front panel it either doesn't work right

or it doesn't work at all. What's going on?

A. Make sure your using the right COM port settings. The standard settings for the Craft port are 9600 baud, 8 bits, no parity, and 1 stop bit. Flow control **must** be set to **none**. Flow control normally defaults to hardware in most terminal programs, and this will not work correctly with the NetMediator T2S.

Q. I just changed the port settings for one of my data ports, but the changes did not seem to take effect even after I wrote the NVRAM.

A. In order for data port and Craft port changes (including changes to the baud rate and word format) to take effect, the NetMediator T2S must be rebooted. When you make changes, remember to write them to the NetMediator T2S NVRAM so they will be saved when the unit is rebooted.

Q. How do I get my NetMediator T2S on the network?

A. Before the NetMediator T2S will work on your LAN, the unit address (IP address), the subnet mask, and the default gateway must be set. A sample configuration could look like this:

unit address: 192.168.1.100
subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1

Always remember to save your changes by writing to the NVRAM. Any modifications of the NetMediator T2S IP configuration will also require a reboot.

Q. I'm using HyperTerminal to connect to the NetMediator T2S through the Craft port, but the unit won't accept input when I get to the first level menu.

A. Make sure you turn off all handshaking in HyperTerminal.

Q. I can't change the Craft port baud rate.

A. Once you select a higher baud rate, you must set your terminal emulation to that new baud rate and enter the DPSCFG and press Enter. The Craft port interprets a break key as an override to 9600 baud. At slower baud rates, normal keys can appear as a break.

Q. The LAN line LED is green on my NetMediator T2S, but I can't poll it from my T/MonXM master.

A. Some routers will not forward to an IP address until the MAC address has been registered with the router. You need to enter the IP address of your T/MonXM system or your gateway in the ping table.

Q. How will I know if the TBOS ports are polling correctly?

A. The front panel LEDs will flash **red** and **green**.

11.1 SNMP Questions

Q. Which version of SNMP is supported by the SNMP agent on the NetMediator T2S?

A. SNMP v1.

Q. How do I configure the NetMediator T2S to send traps to an SNMP manager? Is there a separate MIB for the NetMediator T2S? How many SNMP managers can the agent send traps to? And how do I set the IP address of the SNMP manager and the community string to be used when sending traps?

A. The NetMediator T2S begins sending traps as soon as the SNMP managers are defined. The NetMediator T2S MIB is included on the NetMediator T2S Resource CD. The MIB should be compiled on your SNMP manager. (**Note:** MIB versions may change in the future.) The unit supports a main SNMP manager, which is configured by entering its IP address in the trap address field of Ethernet Port Setup. You can also configure up to eight secondary SNMP managers, which are configured by selecting the secondary SNMP managers as pager recipients. Community strings are configured globally for all SNMP managers. To configure the community strings configure them in the T2SEdit utility.

Q. Does the NetMediator T2S support MIB-2 and/or any other standard MIBs?

A. The NetMediator T2S supports the bulk of MIB-2.

Q. Does the NetMediator T2S SNMP agent support both NetMediator T2S and T/MonXM variables?
A. The NetMediator T2S SNMP agent manages an embedded MIB that supports only the NetMediator T2S RTU variables. The T/MonXM variables are included in the distributed MIB only to provide SNMP managers with a single MIB for all DPS Telecom products.

Q. How many traps are triggered when a single point is set or cleared? The MIB defines traps like major alarm set/cleared, RTU point set, and a lot of granular traps, which could imply that more than one trap is sent when a change of state occurs on one point.
A. Generally, a single change of state generates a single trap, but there are two exception to this rule. Exception 1: the first alarm in an all clear condition generates an additional summary point set trap. Exception 2: the final clear alarm that triggers an all clear condition generates an additional summary point clear trap.

Q. What does point map mean?
A. A point map is a single MIB leaf that presents the current status of a 64-alarm-point display in an ASCII-readable form, where a "."represents a clear and an "x" represents an alarm.

Q. The NetMediator T2S manual talks about two control relay outputs. How do I control these from my SNMP manager?
A. The control relays are operated by issuing the appropriate set commands, which are contained in the DPS Telecom MIB. For more information about the set commands, see Reference Information, Display Mapping, in any of the NetMediator T2S software configuration guides.

Q. How can I associate descriptive information with a point for the RTU granular traps?
A. The NetMediator T2S alarm point descriptions are individually defined using the T2SEdit utility.

Q. My SNMP traps aren't getting through. What should I try?
A. Try these three steps:
1. Make sure that the trap address (IP address of the SNMP manager) is defined. (If you changed the trap address, make sure you saved the change to NVRAM and rebooted.)
2. Make sure all alarm points are configured to send SNMP traps.
3. Make sure the NetMediator T2S and the SNMP manager are both on the network. Use the NetMediator T2S ping command to ping the SNMP manager.

11.2 Pager FAQs

Q. Why won't my alpha pager work?
A. To configure the NetMediator T2S to send alarm notifications to an alpha pager, enter the **data** phone number for your pager in the Phone Number field. This phone number should connect to your pager services modem. Then enter the PIN for your pager in the PIN/Rcpt/Port field. You don't need to enter anything in any of the other fields. If you still don't receive pages, try setting the Dial Modem Init string to ATS37=9. This will limit the NetMediator T2S connection speed.

Q. Numeric pages don't come in or are cut off in the middle of the message. What's wrong?
A. You need to set a delay between the time the NetMediator T2S dials your pager number and the time the NetMediator T2S begins sending the page message. You can set the delay in the Pager Number field, where you enter your pager number. First enter the pager number, then enter some commas directly after the number. Each comma represents a two-second delay. So, for example, if you wanted an eight-second delay, you would enter 555-1212,,,, in the Pager Number field.

Q. What do I need to do to set up e-mail notifications?
A. You need to assign the NetMediator T2S an e-mail address and list the addresses of e-mail recipients. Let's explain some terminology. An e-mail address consists of two parts, the user name (everything before the @ sign) and the domain (everything

after the @ sign). To assign the NetMediator T2S an e-mail address, enter your email addresses in the T2SEdit utility. Enter the NetMediator T2S user name in the Name field (it can't include any spaces) and the domain in the Location field. For example, if the system configuration reads:

Name: NetMediatorT2S
Location: proactive.com

Then e-mail notifications from the NetMediator T2S will be sent from the address NetMediatorT2S@proactive.com.
The next step is to list the e-mail recipients. Choose Pagers from the Edit menu. For each e-mail recipient, enter his or her e-mail domain in the Phone/Domain field and his or her user name in the PIN/Rcpt/Port field. You must also enter the IP address of an SNMP server in the IPA field.

12 Technical Support

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