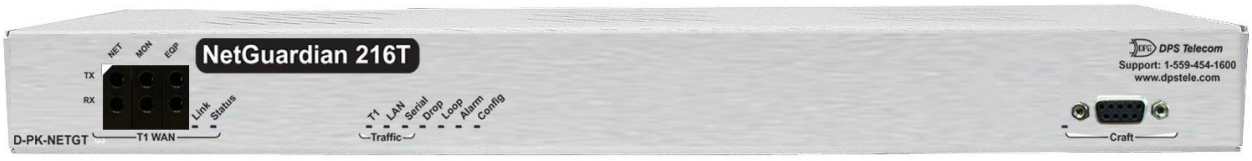
DPS Telecom

"Your Partners In Network Alarm Monitoring"

NetGuardian 216T

USER MANUAL



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July 28, 2010 **D-OC-UM107.28100** **Firmware Version 1.0E**

Revision History

July 28, 2010	Misc, minor edits.
August 5, 2009	Removed obsolete items from shipping list.
December 5, 2008	Added notes indicating changes if T1 is enabled/disabled.
November 19, 2008	Added note on expanding discrete inputs and control outputs with NetGuardian DX.
July 26, 2007	NetGuardian 216T User Manual (D-OC-UM077.26100) released.
September 11, 2006	NetGuardian 216T User Manual (D-OC-UM069.11100) released.
June 26, 2006	NetGuardian 216T User Manual (D-OC-UM066.26100) released. Supports Firmware Version 1.0B.

Notice

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1 NetGuardian 216T Overview

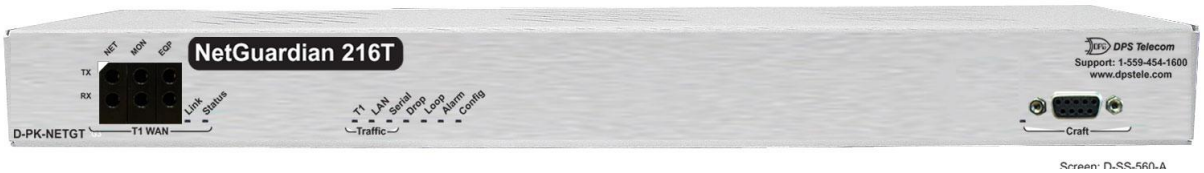


Fig. 1.1. *The NetGuardian has all the tools you need to manage your remote site*

The NetGuardian 216T — The Intelligent RTU for Complete Site Management
The NetGuardian 216T is a wide temperature range, T1 and Ethernet-based, SNMP/DCPx remote telemetry unit. The NetGuardian has all the tools you need to manage your remote sites, including a T1 WAN and 7 port 10-BaseT Ethernet hub interface, built-in alarm monitoring, paging, and e-mail capabilities that can eliminate the need for an alarm master. The NetGuardian is the ideal solution for collecting equipment and environmental alarms from your outdoor enclosures and reporting these alarm conditions via Frame Relay/T1. The 7 port Ethernet hub can also be utilized to provide connectivity to other far-end devices from the T1 WAN.

Some of the benefits of the NetGuardian 216T include:

- Frame Relay/T1 interface–At 1 RU, saves space and allows you to use your preferred interface.
- Integrated 7 port hub–Saves space, provides Ethernet connectivity for other equipment
- Web Browser support for monitoring and configuring the units–Convenient access
- Remote Firmware download ability–Easy initial deployment, and avoids costly trips to the sites for routine upgrades. Firmware upgradable via Ethernet or T1 WAN.
- Unique wire-wrap termination–Quick and easy installation and enables the unit to be removed without rewiring.
- Multiple master support–Disaster recovery scenarios.
- Alarm qualification times–Reduce nuisance alarm, avoids alarm desensitization.
- Extreme temperature rating– -22°F to 158°F (-30°C to 70°C)–A must in harsh environments.
- Multi-level password access–Control who accesses your units and to what level.
- Ping IP network devices and verify that they're online and operating.
- Optional build would include 4 additional data ports. Contact DPS Sales for more information at **(800) 622-3314**
- Expandable up to 160 discrete alarm inputs and 26 control outputs with the NetGuardian DX chassis.

The NetGuardian 216T is a 1 rack unit alarm remote that supports 16 discrete alarms that are "software reversible" to support both N/O and N/C alarm wiring, 7 analog inputs (4 general purpose, 1 for monitoring internal temperature, adfcznd 2 for monitoring battery feeds) as well as a digital temperature sensor. The sensor probe has 10-ft long leads, so once connected to the NetGuardian 216T, it may be placed in the most appropriate location within the cabinet. The NetGuardian 216T also allows you to remotely control external devices via its 2 internal relays. These controls are a convenient and time efficient way of remotely switching equipment in the field. The Web browser interface allows you to have quick and convenient access for programming or simply to spot-check the alarm status for any given site.

The NetGuardian 216T's operational temperature range of -22°F to 158°F (-30°C to 70°C) makes it ideal for deployment in very harsh environments. It's hardened design means it will continue to deliver real time telemetry when the weather is at its worst.

The NetGuardian can be configured many different ways including TTY for the initial IP settings through the front craft port, standard Web browser software, and a Windows-based utility called Edit216T, included at no additional cost. This software will allow you to create a NetGuardian 216T configuration file without being connected to the NetGuardian 216T, then download that database remotely from a WAN, Ethernet, or serial connection.

2 About This Manual

There are three separate user manuals for the NetGuardian 216T: the Hardware Manual (which you're reading now), the Edit216T User Manual, and the NetGuardian 216T Web Interface User Manual.

This Hardware Manual provides instructions for hardware installation and using the TTY interface. The Edit216T and Web Interface User Manuals, included on the NetGuardian Resource CD, provide instructions for configuring the NetGuardian using the Windows-based Edit216T utility software or the Web Interface.

3 Shipping List

While unpacking the NetGuardian, 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**.

NetGuardian 216T
D-PK-NETGT

NetGuardian 216T Hardware Manual D-OC-UM107.28100

NetGuardian 216T Resource CD
(includes manuals, MIBs, and software)

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

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

Pads
2-015-00030-00

23" Rack Ears
D-CS-325-10A-01

19" Rack Ears
D-CS-325-10A-00

Eight 3/8" Ear Screws
1-000-60375-05

Four Standard Rack Screws
1-000-12500-06

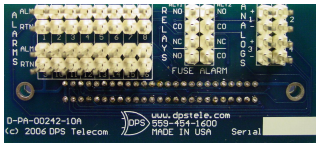
Four Metric Rack Screws
2-000-80750-03

Four 3/4-Amp GMT Main Power Fuses
2-741-00750-00

Two Large Power Connector Plugs for Main Power
2-820-00852-02

Two 4 Pin Analog Connectors
2-820-00804-02

Optional Items



(Standard in Build D-PK-NETGT-12004.0001)

Wire-Wrap Back Panel
D-PA-00242-10A
(The NetGuardian 216T's Wire-Wrap back panel allows for wire-wrap connections for the discrete alarms, analog alarms, and control relays)

(Standard in Build D-PK-NETGT-12004.0001)

Temperature Sensor
D-PR-984-10A-10
(The NetGuardian 216T's external temperature sensor cable for manual hook-up. **Note:** The NetGuadian 216T also has an internal temperature sensor)

Pluggable Back Panel
D-PK-16PAN
The NetGuardian 216's pluggable back panel allows for screw-in barrier plug connections for the NetGuardian's alarms and control relays.

4 Optional Accessories

You can extend the capabilities of the NetGuardian 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 NetGuardian, providing a total of 160 alarm points.

5 Specifications

Key Specs:

- 1 RU, 19" Mountable
- 16 Discrete alarms, 7 analog alarms (4 general purpose, 1 for temperature monitoring, 2 for battery monitoring), 2 controls
- Frame Relay/T1 interface
- 7 ports of 10BaseT Ethernet brought out for client use. Internally, an 8 port hub.
- Dual -48VDC power feed
- Front Craft port, LEDs & buttons
- Extended temp range, -22°F to 158°F (-30°C to 70°C)
- Firmware downloadable via LAN or T1 WAN
- Web browser!! (with multi-level security access or T1 WAN)
- SNMP–Traps to at least 2 masters natively
- Special amphenol to WW termination module
- Includes our new digital temperature probe on 10-ft lead, connects to rear of unit via pluggable screw lug connector.
- Windows-based configuration utility (serial/LAN/T1)

Analog Input Range:	(–94 to 94 VDC or 4 to 20 mA)
Control Relays:	Form A or Form C
Maximum Voltage:	60 VDC/120 VAC
Maximum Current:	3/4 Amp, AC/DC
Discrete Alarms:	16
Ping Alarms:	32
Protocols:	SNMP, DCPx, DCPf, TRIP SMTP, TAP
Interfaces:	1 RJ45 for T1 WAN 1 T1 WAN access jack panel 7 RJ45 10BaseT Ethernet ports 1 DB9 RS-232 Craft port 1 RJ45 Yost RS-232 port 4 RJ45 Yost RS-232 ports (*optional build*) 1 50-pin female amphenol connector (discretes, controls, and analogs) 1 4-pin screw connector (external temp sensor) 1 4-pin screw connector (analogs)
Dimensions:	1.75"H x 17"W x 12"D (4.5 cm x 43.2 cm x 30.5 cm)
Weight:	4 lbs. 3 oz. (1.9 kg)
Mounting:	19" or 23" rack
Power Input:	–48VDC (–40 to –70 VDC)
Current Draw:	200 mA
Fuse:	3/4 amp GMT for power inputs
Visual Interface:	12 bicolor LEDs 11 unicolor LEDs
Operating Temperature:	-22°–158° F (-30°–70° C)
Operating Humidity:	0%–95% noncondensing

6 Hardware Installation

6.1 Tools Needed

To install the NetGuardian, you'll need the following tools:

Phillips No. 2 Screwdriver

Small Standard No. 2 Screwdriver

Wire Strippers/Cutter

Punch Down Tool (if 66 blocks are used)

PC with Edit216T software

6.2 Mounting

Fig. 6.2.1. *The NetGuardian can be flush or rear-mounted*

The NetGuardian mounts in a 19" rack or a 23" rack 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 6.2.1.

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

6.3 Power Connection

Fig. 6.3.1. *Power connectors and fuses*

The NetGuardian has two screw terminal barrier plug power connectors, located on the left side of the back panel. (See Figure 6.3.1.)

Before you connect a power supply to the NetGuardian, test the voltage of your power supply:

- Connect the black common lead of a voltmeter to the ground terminal of the battery, and connect the red lead of the voltmeter to the battery's –48 VDC terminal. The voltmeter should read **between –43 and –53 VDC**. If the reading is outside this range, test the power supply.

To connect the NetGuardian to a power supply, follow these steps:

1. Remove Fuse A and Fuse B from the back panel of the NetGuardian. **Do not reinsert the fuse until all connections to the unit have been made.**

2. Remove the power connector plug from Power Connector A. Note that the plug can be inserted into the power connector only one way — this ensures that the barrier plug can only be reinserted with the correct polarity. Note that the **–48V terminal is on the left** and the **GND terminal is on the right**.

3. Use the grounding lug to properly ground the unit.

4. Insert a **battery ground** into the power connector plug's **right terminal** and tighten the screw; then insert a **–48 VDC** line to the plug's **left terminal** and tighten its screw.

5. Push the power connector plug firmly back into the power connector. If the power feed is connected correctly, the LED by the connector will light **GREEN**. The LED by the power connector will be off if the power feed is reversed.

6. Repeat Steps 2–5 for Power Connector B.

7. Reinsert Fuse A and Fuse B to power the NetGuardian. The front panel LEDs will flash **RED** and **GREEN**.

6.4 LAN Connection

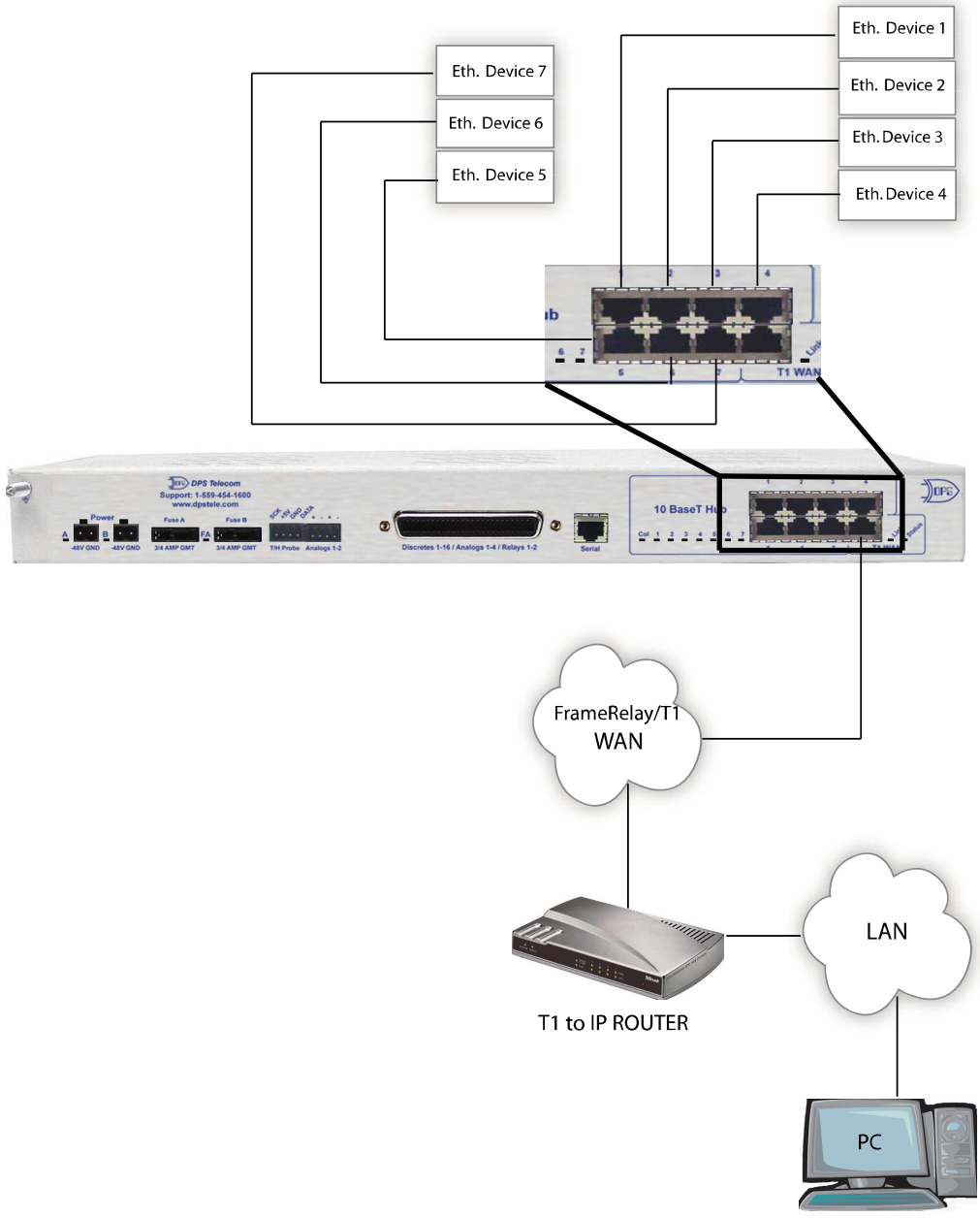


Fig. 6.4.1. *Chart of Ethernet and T1 WAN Connections*

The NetGuardian 216T has a 10-BaseT Ethernet hub for connecting through LAN. To connect the NetGuardian 216T to the LAN, insert a standard RJ45 Ethernet cable into one of the Ethernet ports.

From the NetGuardian 216T, the connection can be routed via Ethernet to a local subnet of up to 7 devices. Or, as shown in Figure 6.4.1 above, the connection can be routed through the T1 WAN connector, which sends it through a router and then on to multiple other PCs (gateways) via LAN in the wider area network.

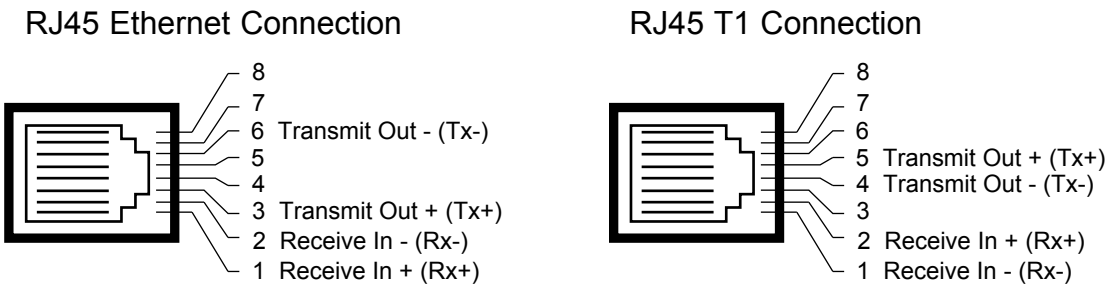


Fig. 6.4.2 *Ethernet ports and T1 WAN port pinouts*

The pinouts for the Ethernet hub ports and the T1 WAN port are shown in Figure 6.4.2, above.

6.5 Alarm and Control Relay Connections

Fig. 6.5.1. *Alarm and control relay connectors*

The NetGuardian's discrete alarm inputs, control relay outputs, and analog alarm inputs are connected through the 50-pin connectors labeled "Discretes 1–16, Analogs 1-4, and Relays 1-2" on the back panel. (See Figure 6.5.1.)

6.5.1 Alarm and Control Relay Connector Pinout Table

Discretes 1–16					
	RTN	ALM		RTN	ALM
ALM 1	1	26	**ALM 9**	9	34
ALM 2	2	27	**ALM 10**	10	35
ALM 3	3	28	**ALM 11**	11	36
ALM 4	4	29	**ALM 12**	12	37
ALM 5	5	30	**ALM 13**	13	38
ALM 6	6	31	**ALM 14**	14	39
ALM 7	7	32	**ALM 15**	15	40
ALM 8	8	33	**ALM 16**	16	41

Table 6.5.1.A. *Alarm, amphenol connector, and control relay pinout (continued on next page)*

Analogs 1–4		
	+	–
ANA 1	21	46
ANA 2	22	47
ANA 3	23	48
ANA 4	24	49
GND	25	50

Control Relatys 1–2		
	NO/NC	CO
CTRL 1	17/42	43
CTRL 2	19/44	18
FUSE	20/NA	45

Table 6.5.1.A. (continued) *Alarm, amphenol connector, and control relay pinout*

Table 6.5.1.A shows the pinouts for the 50-pin connectors "Discretes 1-16," and "Analogs 1-4" and "Control Relays 1-2."

6.5.2 Discretes 1–16 Connector Pinout Diagram

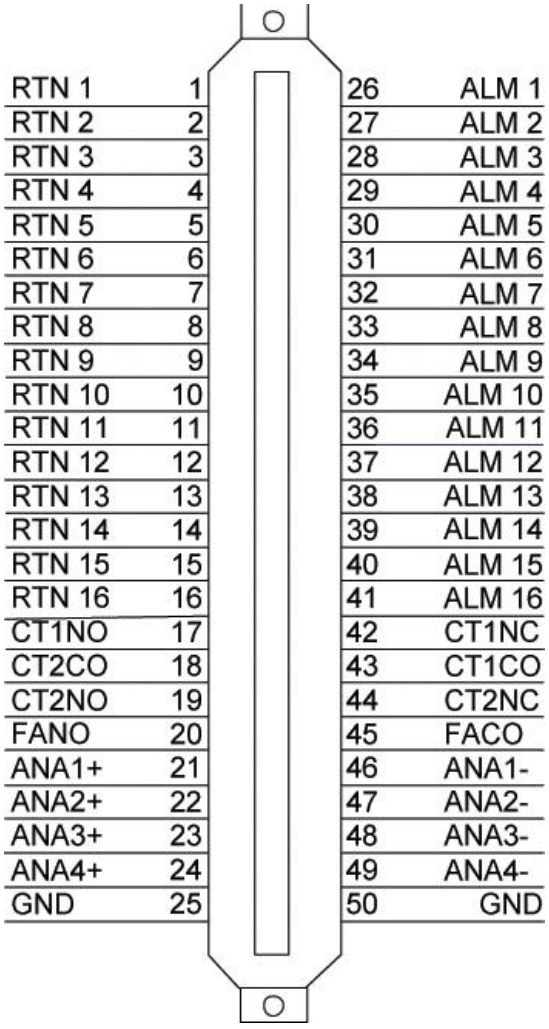


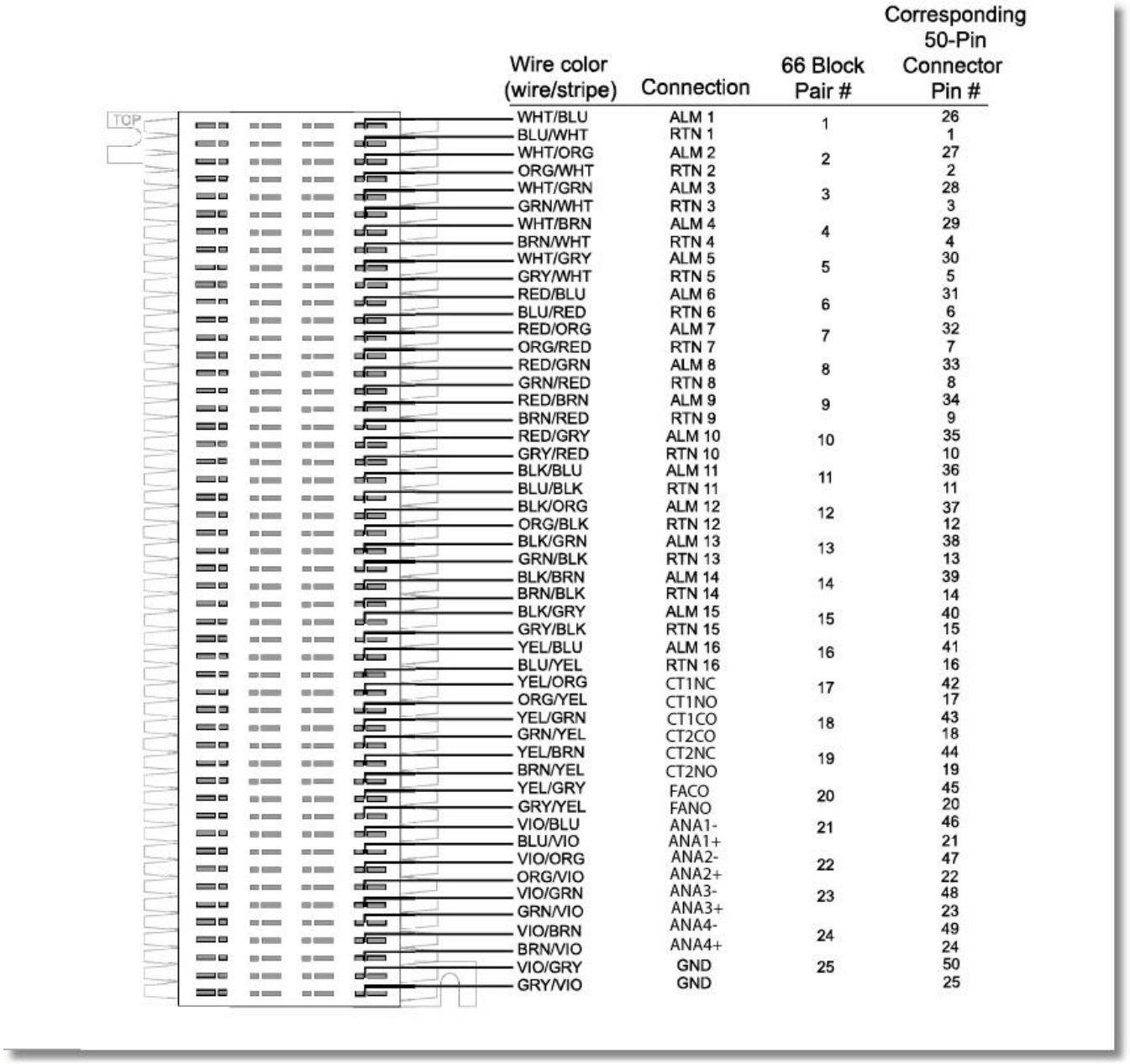
Fig. 6.5.2.*. Pinout Diagram for Discretes 1-16 connector*

6.5.3 Optional 66 Block Connector

Both of the 50-pin connectors on the back panel of the NetGuardian can be connected to the optional 25-pair 66 Block Connector (part number D-PR-966-10A-00). For 66 block pinout and color code information, see Figure 6.5.3 for Discretes 1–16.

Note: If connecting to a 50-pair split block, all connections should be made on the two pin columns closest to the right-hand side of the block or bridge clips should be installed.

Fig 6.5.3. *Optional 66 block pinout for Discretes 1–16*



6.5.4 Integrated Temperature and Battery Sensor

The integrated temperature and battery sensor monitors the ambient temperature and the NetGuardian's current draw. This option is available only if it was ordered with your NetGuardian. The integrated temperature sensor measures a range of -22° F to 158° F (-30° C to 70° C) within an accuracy of ± 1°.

Analog Function	Location	Channel Mapping
User Channel 1	Amphenol or 4-pin connector	Reported as analog channel 1
User Channel 2	Amphenol or 4-pin connector	Reported as analog channel 2
User Channel 3	Amphenol only	Reported as analog channel 3
User Channel 4	Amphenol only	Reported as analog channel 4
Monitor Power Feed A	Internal	Reported as analog channel 5
Monitor Power Feed B	Internal	Reported as analog channel 6
Monitor Internal Temperature	Internal	Reported as analog channel 7
Monitor External Temperature	4-pin connector	Reported as analog channel 8

Table 6.5.4.A. *Integrated sensor connection options*

Between the Amphenol connector and Fuse B resides the 4-pin connection for the external temperature sensor, as well as the 4-pin connection for Analogs 1-2, as shown in Figure 6.5.4.1.

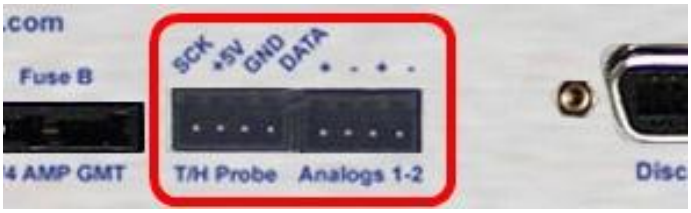


Fig. 6.5.4.1. *Temperature Sensor and Analog Connectors*

6.5.5 Analog Dipswitches

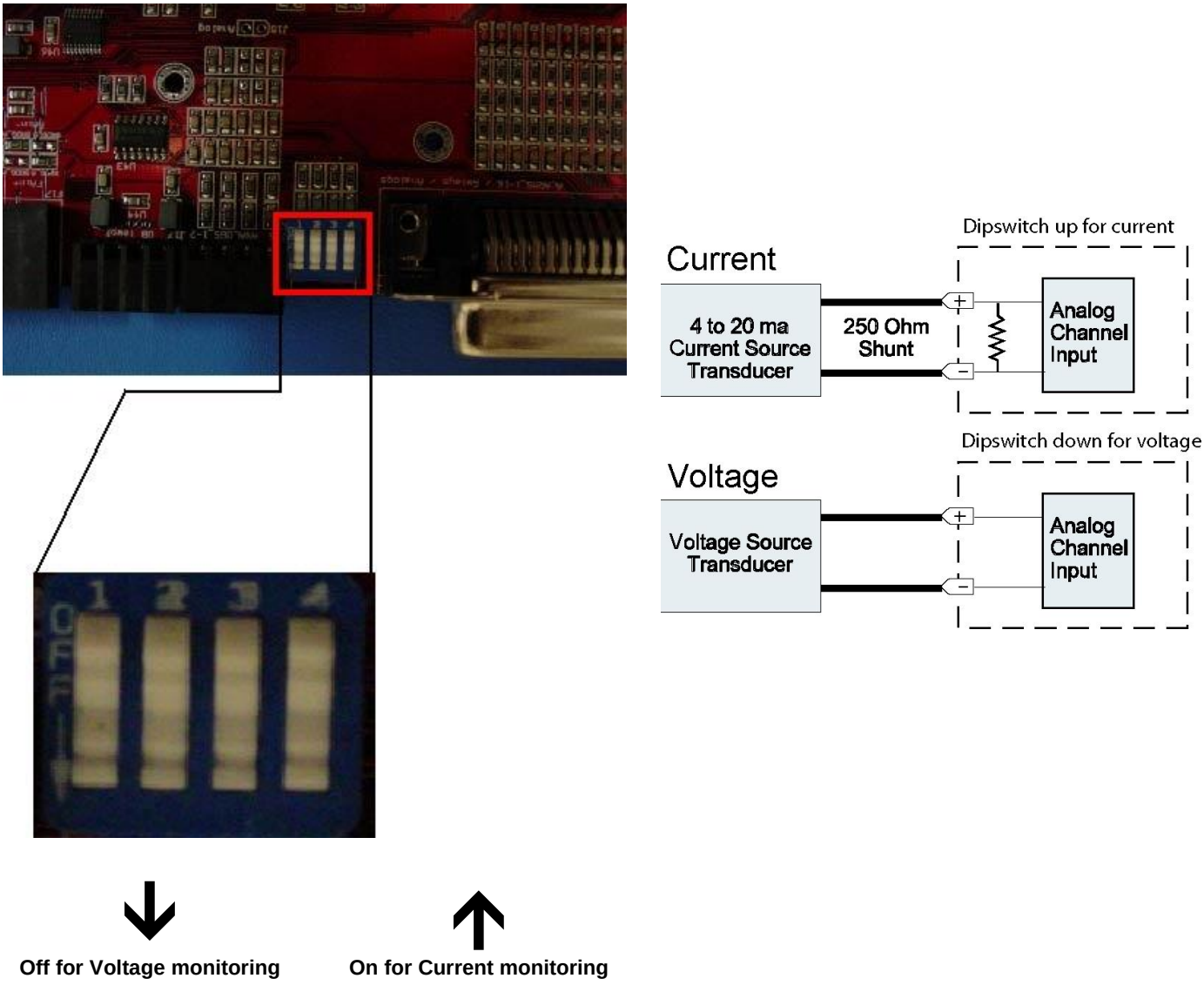


Fig. 6.5.5. *Dipswitch and layout*

The analogs are controlled by the dipswitches to the left of the Amphenol connector (located at the back of the unit). For milliamp sensor operation, turn the dipswitch on by placing it in the on position. For normal operation, place the dipswitch in the off position. Note that the dipswitch is internal, and requires the case to be opened in order to change the setting.

Hot Tip!

WARNING

WARNING: Do not put the dipswitches in the on position unless you are sure of the analog setting. Having the dipswitchs on will put a 250 ohm resistor across the input lines. Any voltage beyond 5V or 20 mA will damage components.

6.6 Data Port

The NetGuardian's data port provides reach-through terminal server functionality for connecting the user to external equipment via Telnet over LAN. The port can function as a proxy connection to an external device, a craft port, a DCPx port, a TCP, a UDP reach-through port, or a NetGuardian DX (Expansion) port.

The NetGuardian 216T is also available with 4 additional data ports. Contact DPS Sales for more information at **(800) 622-3314**

Fig. 6.6.1. *216T data ports (Serial 1 is standard, Serials 2-5 are optional)*

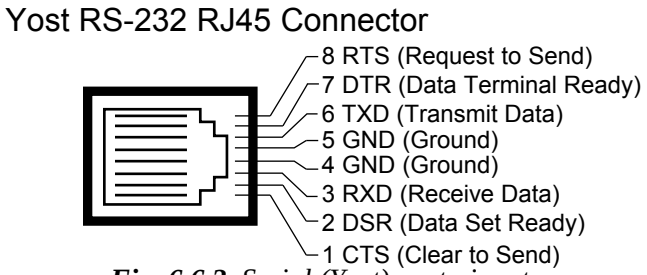


Fig. 6.6.2. *Serial (Yost) port pinout*

6.6.1 Connecting NetGuardian Accessories

If you are using a NetGuardian Expansion, connect it to the Serial port. Additional configuration requires using Edit216T for Windows configuration software.

6.7 Optional Wire-Wrap Back Panel

Fig. 6.7.1. *The wire-wrap back panel (arrows indicate screw locations for mounting)*

The optional wire-wrap back panel provides wire-wrap connections for the NetGuardian's alarms (discrete and analog) and control relays. Screw the board into the holes on either side of the "Discretes 1-16/Analogs 1-4/Relays 1-2 connector" (as shown in Figure 6.7.1). To connect discrete alarms, analog alarms, and control relays to the wire-wrap panel, connect them to the pin block on the front of the panel.

6.8 Integrated 10BaseT Ethernet Hub

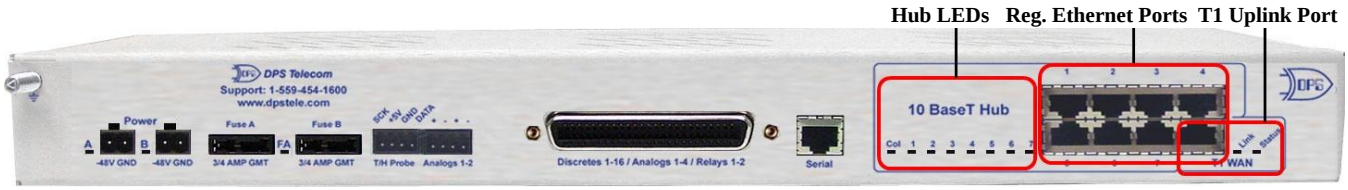


Fig. 6.8.1. *NetGuardian integrated Ethernet Hub*

The NetGuardian 216T comes equipped with an integrated 10-BaseT Ethernet hub, which provides seven regular Ethernet ports (see Figure 6.8.1). The integrated Ethernet hub is powered by the same –48 VDC power as the NetGuardian, which provides more secure, more robust operation than hubs that run off commercial power. The integrated hub also frees valuable rack space by eliminated an unnecessary extra unit.

7 Front Panel LEDs

Fig. 7.1. *Front panel LEDs*

The NetGuardian's front panel LEDs indicate communication and alarm reporting status. LED status messages are described below in Table 7.A.

LED	Status	Description
WAN Link	Solid Green	T1 signal detected
	Solid Red	No T1 signal detected
WAN Status	Blink Green	LMI (Link Management Interface) is synchronized)
	Blink Red	LMI is not synchronized (Link is down)
T1	Blink Green	Transmit over T1
	Blink Red	Receive over T1
LAN	Blink Green	Transmit over Ethernet
	Blink Red	Receive over Ethernet
Serial	Blink Green	Transmit over Serial
	Blink Red	Receive over Serial
Drop	Blink Red	Packet lost in WAN/LAN mediation
Loop	Solid Green	CSU Loopback mode active
	Off	CSU Loopback mode inactive (normal operation)
Alarm	Blink Red	New COS alarm*
	Solid Red	One or more standing alarms*
Config	Blink Green	Valid Configuration
	Blink Red	Invalid Configuration
Craft	Blink Green	Transmit over Craft serial port
	Blink Red	Receive over Craft serial port

***NOTE:** Alarm must be configured for notification to be reflected in LED

Table 7.A. *Front panel LED Status message descriptions*

8 Back Panel LEDs

Fig. 8.1. *Back panel LEDs for Power and Ethernet connections*

The back panel LEDs indicate the status of power and Ethernet connections. LED status messages are described below in Table 8.A.

	LED	Status	Description
Power	Power A	Solid Green	Polarity is correct on power feed A
		Off	No power or polarity is reversed on power feed A
	Power B	Solid Green	Polarity is correct on power feed B
		Off	No power or polarity is reversed on power feed B
	FA	Solid Red	Fuse failure on either Power feed A, B, or both
Serial	2,3,4,5	Blink Green	Transmit over Serial
		Blink Red	Receive over Serial
10BaseT Hub	Col	Blink Green	One or more of the Ethernet hub ports are active
	1-7	Blink Green	Transmit or Receive over indicated integrated Ethernet hub port
T1	Link	Solid Green	T1 Signal detected
		Solid Red	No T1 Signal detected
	Status	Blink Green	LMI (Link Management Interface) is synchronized
		Blink Red	LMI is not synchronized (Link is down)

Table 8.A. *Back panel LED Status message descriptions*

9 Configuring the NetGuardian

The NetGuardian must be provisioned with log-on passwords, alarm descriptions, port parameters, ping targets, control descriptions, and other system information. You can provision the NetGuardian using either the Edit216T software or the Web interface. The NetGuardian also supports a limited TTY interface for configuring some basic options. (For full instructions on configuring the NetGuardian, see the software configuration guides on the NetGuardian Resource CD.)

You can provision the NetGuardian either locally through the craft port or remotely through a LAN connection. However, to access the NetGuardian via LAN you must first make a temporary connection to the NetGuardian and assign it an IP address on your network. For more information, see Section 10, "Connecting to the NetGuardian."

10 Connecting to the NetGuardian

10.1 ... via Craft Port

Fig. 10.1 *NetGuardian Craft Port*

The simplest way to connect to the NetGuardian is over a physical cable connection between your PC's COM port and the NetGuardian's craft port.

Note: You must be connected via craft port to use the TTY interface, but you don't have to be connected to a NetGuardian unit to use Edit216T. You only need a connection to the unit to read or write configuration files to its NVRAM. You can use Edit216T on an unconnected PC to create and store NetGuardian configuration files.

Use the DB9M-DB9F download cable provided with your NetGuardian to make a craft port connection.

You can perform all configuration tasks via the craft port — but if you like, you can connect via the craft port just to configure the NetGuardian's Private LAN IP address, and then do the rest of your configuration via a LAN connection.

10.2 ... via LAN

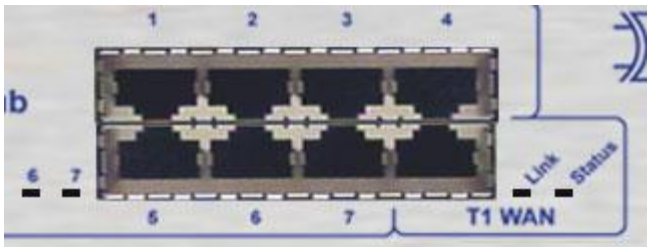


Fig. 10.2. *NetGuardian LAN Link*

Once LAN settings are provisioned, you can connect to the NetGuardian over a LAN connection by connecting to one of the seven 10-BaseT Ethernet Hub ports. This is a very convenient way to provision multiple NetGuardian units at multiple locations. **Note:** You don't have to be connected to a NetGuardian unit to use Edit216T. You only need a connection to the unit to read or write configuration files to its NVRAM. You can use Edit216T on an unconnected PC to create and store NetGuardian configuration files.

To connect to the NetGuardian via LAN, all you need is the unit's IP address (Default IP address is 192.168.1.100).

If you have physical access to the NetGuardian, the easiest thing to do is connect to the unit through the craft port and then assign it an IP address. Then you can complete the rest of the unit configuration over a remote LAN connection, if you want. For instructions, see Section 10.1, "Connecting to the NetGuardian via Craft Port."

If you DON'T have physical access to the NetGuardian, you can make a LAN connection to the unit by temporarily changing your PC's IP address and subnet mask to match the NetGuardian's factory default IP settings. Follow these steps:

1. Look up your PC's current IP address and subnet mask, and write this information down.

2. Reset your PC's IP address to **192.168.1.200**.

3. Reset your PC's subnet mask to **255.255.0.0**. You may have to reboot your PC to apply your changes.

4. Once the IP address and subnet mask of your computer coincide with the NetGuardian's, you can access the NetGuardian via a Telnet session or via Web browser by using the NetGuardian's default IP address of **192.168.1.100**.

5. Provision the NetGuardian with the appropriate information, then change your computer's IP address and subnet mask back to their original settings.

Note: You can ping the NetGuardian to confirm connectivity through the Ethernet hub ports.

10.3 ...via WAN

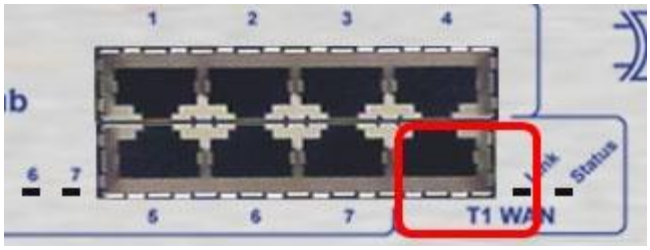


Fig. 10.3. *NetGuardian WAN Link*

Once WAN settings are provisioned, you can also connect to the NetGuardian over a WAN connection by connecting to the T1 WAN port. **Note:** You don't have to be connected to a NetGuardian unit to use Edit216T. You only need a connection to the unit to read or write configuration files to its NVRAM. You can use Edit216T on an unconnected PC to create and store NetGuardian configuration files.

When the NetGuardian is properly connected over WAN, the Link LED will be green. The Status LED will blink red for a few seconds during synchronization but should then always blink green. This indicates a successful LMI connection, and the NetGuardian is communicating with the router.

Note: You can ping the NetGuardian for connectivity through the WAN port.

11 TTY Interface

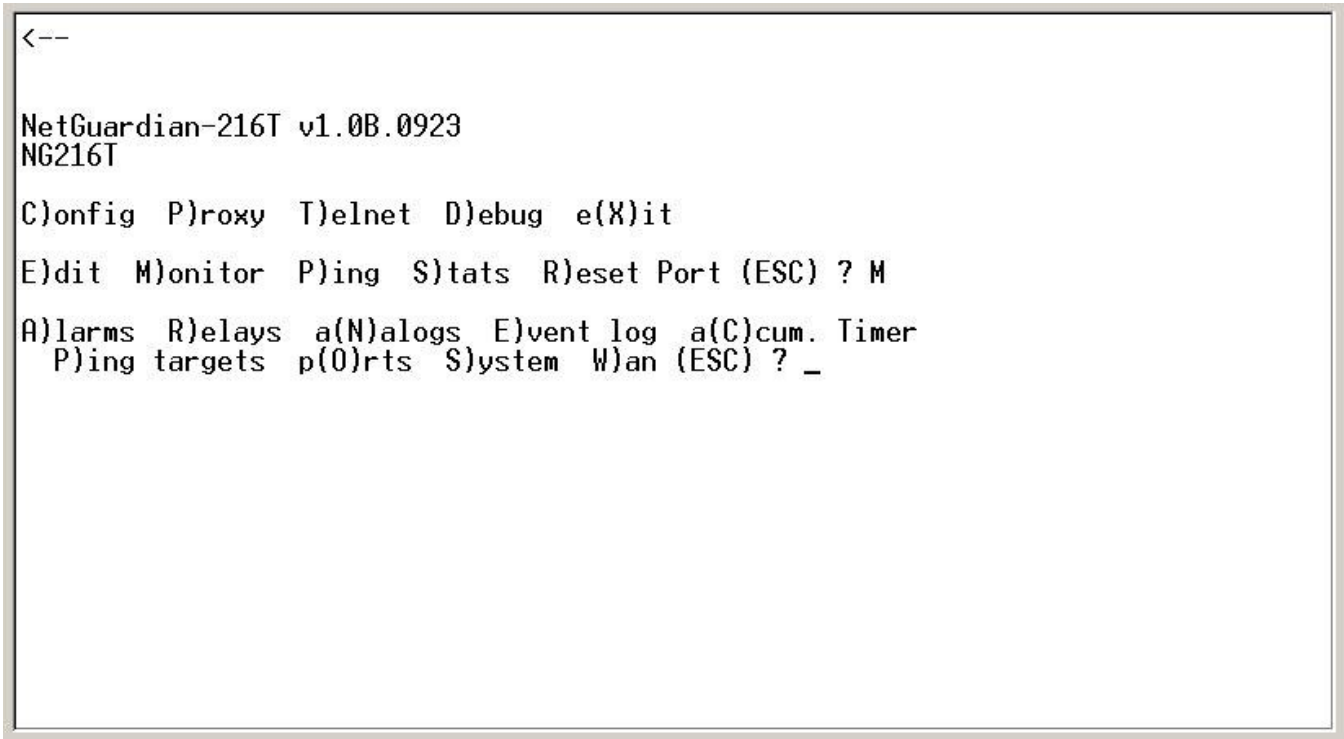


Fig. 11.1. *The TTY interface initial configuration screen*

The TTY interface is the NetGuardian's built-in provision controls for basic configuration of the NetGuardian. Configure the NetGuardian's Ethernet port settings, monitor the status of base and system alarms, operate control relays, view live ping targets , view debug or create proxy connections to other ports. For more advanced configuration tools, please use the Web browser interface or the Edit216T utility.

To use the TTY interface with the NetGuardian, all you need is any PC with terminal emulation software and a connection to the NetGuardian. This connection can be a direct connection to the NetGuardian's front panel craft port or a remote connection via Telnet. Some initial software configuration must be performed before you can use a remote connection to the NetGuardian.

The TTY interface is primarily used for configuring and provisioning the NetGuardian, but you can also use it to ping IP targets, view system statistics, and data port activity.

NOTE: The TTY default password is "dpstelecom".

11.1 Menu Shortcut Keys

The letters before or enclosed in parentheses ( ) are menu shortcut keys. Press the shortcut key to access that option. Pressing the ESC key will always bring you back to the previous level. Entries are not case sensitive.

11.2 Unit Configuration

11.2.1 Ethernet Port Setup

The NetGuardian must be assigned an IP address before you will be able to connect via LAN using a Telnet client or a Web browser. To connect via LAN, the minimum configuration requires setup of the IP address and subnet mask. Follow the instructions below to configure the NetGuardian's IP address, subnet mask, and default gateway for Ethernet connectivity.

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

1)LAN  2)T1 WAN  n(V)ram  D)ate/time  R)eboot (ESC) ? 1

LAN Interface

Unit Address    : 126.010.230.191 (126.010.230.191)
Subnet Mask     : 255.255.255.000 (255.255.255.000)
**Default Gateway : 251.255.255.255 (251.255.255.255)
IP Filter       : Disabled

MAC Address     : 00.10.81.00.15.62
Features        : 6EDE-A4-DEE4

U)nit Address  S)ubnet Mask  G)ateway  I)P Filter  F)eatures (ESC) ? <--

1)LAN  2)T1 WAN  n(V)ram  D)ate/time  R)eboot (ESC) ? 2
```

Fig. 11.2.1.1. *Configure the Ethernet port parameters*
*** Gateway will not be configurable if T1 is enabled*

1. Once a connection is established, the NetGuardian will respond with "Password."
2. Type the default password, "dpstelecom," then press Enter.

   Note: DPS strongly recommends changing the default password.
3. The NetGuardian's main menu will appear.
4. Type C for the C)onfig menu.
5. Type E for E)dit menu.
6. Type E for port settings.
7. Configure the unit address, subnet mask, and default gateway.
8. ESC to the main menu.
9. When asked if you would like to save changes, type Y (yes).
10. Reboot to save the new configuration to the NetGuardian.
11. Now you can connect to the NetGuardian via LAN and complete the configuration.

11.2.2 T1 WAN Setup

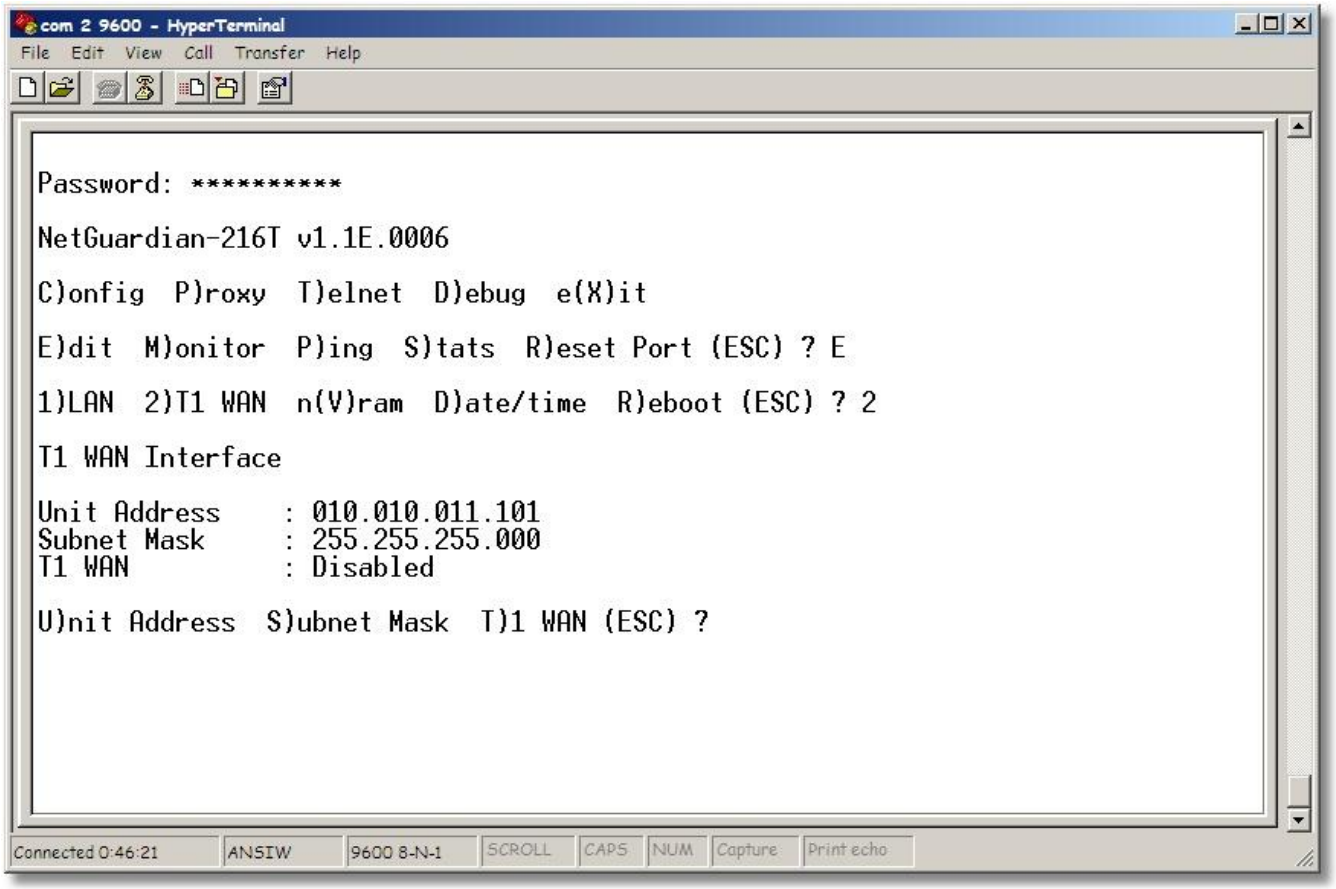


Fig. 11.2.2.1. *TTY interface*

Verify that T1 is enabled, if using WAN interface. (Config > Edit > T1 WAN) Go to the Web browser page to configure T1 WAN.

1. To connect to the NetGuardian from the Web browser, you must know its IP address or domain name if it has been registered with your internal DNS. Enter it in the address bar of your Web browser.

2. After connecting to the NetGuardian's IP address, enter your password and click Submit. **Note:** The factory default password is dpstelecom. It's highly recommended that you change this password.

3. In the left frame there is a Monitor menu button and an Edit menu button. Most of the software configuration will occur in the Edit menu, and this is true for T1WAN.

Click on Edit, then click on the T1 WAN button on the Edit screen. A screen for T1 WAN port parameters appears on the right, and you can configure the settings from there. The following table briefly explains the configuration options:

Field	Description
Unit Address	WAN address of the NetGuardian
Subnet Mask	The Subnet mask is a road sign to the NetGuardian telling it whether your packets should stay on your local network or be forwarded somewhere else on a wide area network.

DS0 Start	The default DS0 value is 1 (64 kbps), but the NetGuardian supports up to 24 DS0 channels (24 DS0s=1.536 mbps). **Note:** The value entered here must match the DS0 end value.
DS0 End	The default DS0 value is 1 (64 kbps), but the NetGuardian supports up to 24 DS0 channels (24 DS0s=1.536 mbps).
WAN and IP Routing	The Enable box should be checked if you want to route packets between T1 WAN and Ethernet hub.
B8ZS Line Mode	The Enable box should be checked here for B8ZS line mode operation.
Frame Mode	Default frame mode is ESF, but you have the option of switching to D4.
Clock Source	Default clock is Network, but you have the option of switching to an internal clock source.
Protocol	The NetGuardian's T1 protocol is Frame Relay
DLCI	DLCI (Data Link Connection Identifier) is a channel number attached to the Frame Relay that tells the network how to route the data. The NetGuardian default is 16.
LMI	LMI (Link Management Interface) is a signaling standard used between routers and Frame Relay switches. The default mode is ANSI, but can be changed to ITU.

Table 11.2.2.A. *T1 WAN configuration options and descriptions*

11.2.2.1 Network Address Translation with T1 WAN

11.2.2.1.1 Gateway Mode

Gateway mode tells the NetGuardian to automatically pass all inbound Ethernet traffic not destined for an IP address on the Ethernet subnet to the T1 WAN channel. Similarly, inbound IP packets encapsulated within Frame Relay on the T1 WAN channel are forwarded out the Ethernet Hub*.

To enable Gateway mode of operation, all entries in the Static Network Address Translation (NAT) table must have the "Enable" box unchecked. Addresses are not translated in Gateway mode.

*Exception: IP packets will not forward to the Hub if the destination address is the NetGuardian's Ethernet address.

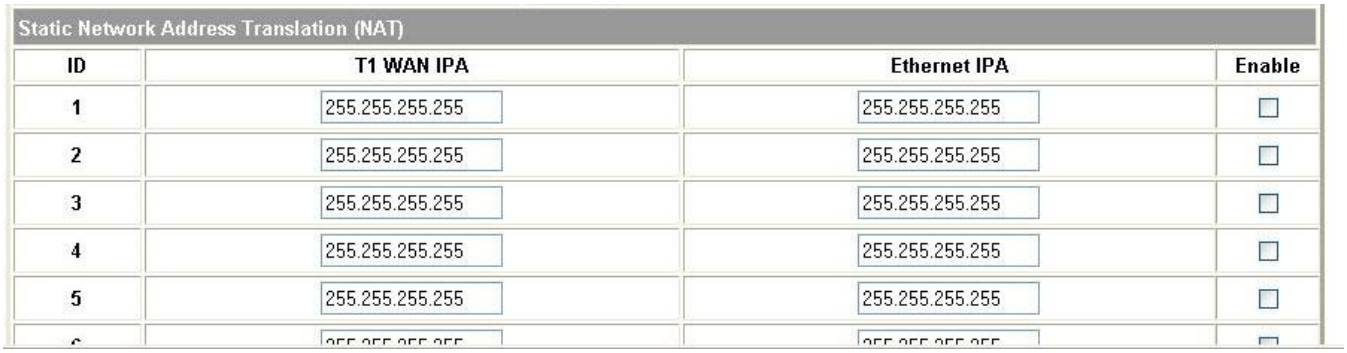


Fig. 11.2.2.1.1. *Configuration for Ethernet gateway traffic*

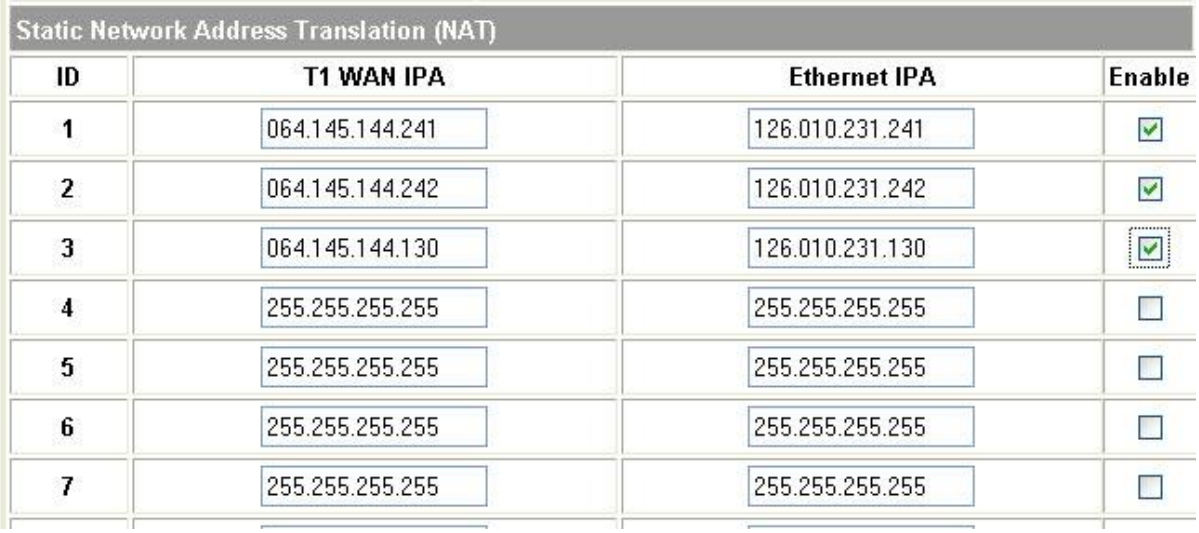
11.2.2.1.2 Router Mode

The wide area network (WAN) connects two separate, private networks, allowing for mutual communication. Before this can happen, the IP address of the local computer must be translated so that it will be recognized and passed through to another network. This is where Network Address Translation (NAT) is used. NAT translates the IP address for traffic coming into and leaving the local network.

From the Web browser T1 WAN menu, you can configure network computers for NAT translation in the Static Network Address Translation fields. Be sure to select (check) the "Enable" column box.

Note: The submask number must be the same for the first three octets, which are followed by the computer's ID number. If your submask number is outside the subnet range, then use the gateway address to route the connection.

Figure 11.2.2.1.2 shows an example of a static Network Address Translation (NAT) for 3 network computers.



Static Network Address Translation (NAT)

ID	T1 WAN IPA	Ethernet IPA	Enable
1	064.145.144.241	126.010.231.241	☑
2	064.145.144.242	126.010.231.242	☑
3	064.145.144.130	126.010.231.130	☑
4	255.255.255.255	255.255.255.255	☐
5	255.255.255.255	255.255.255.255	☐
6	255.255.255.255	255.255.255.255	☐
7	255.255.255.255	255.255.255.255	☐

Fig. 11.2.2.1.2. *Example NAT translations of several local network computers*

11.3 Monitoring

11.3.1 Monitoring the NetGuardian

Connect a PC running VT100 terminal emulation software to the craft port or connect via LAN using a Telnet client with VT100 emulation to port 2002 to reach the monitor menu selection. This section allows you to do full system monitoring of the NetGuardian including: all alarms, ping information, relays, analogs, and system status.

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

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

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

Fig. 11.3.1.1. *The monitor menu allows status checking on all elements*

11.3.1.1 Monitoring WAN

```
  P)ing targets  p(O)rts  S)ystem  W)an (ESC) ? W

T1 WAN Statistics:

   WAN Link Sts: down (ups=0, downs=0)
   LMI Link Sts: down (ups=0, downs=0)
   Far Link Sts: down (ups=0, downs=0)

 HDLC Pkts Recv: 0 (lmi=0, fr=0)
 HDLC Pkts Sent: 51 (lmi=51, fr=0)
 HDLC Recv Errs: 0 (crc=0, abort=0, over=0)
 HDLC Send Errs: 0 (under=0, giveup=0)

     WAN Tx Que: 0 in use (0 max used of 128 avail, 0 pkts lost)
     WAN Rx Que: 0 in use (0 max used of 128 avail, 0 pkts lost)

   Wan2Eth Pkts: 0 (routed=0, drop=0)
   Eth2Wan Pkts: 0 (routed=0, drop=0)

  T1 IRQ Status: normal (0 recoveries)
  T1 Bandwidth : 64 kbps (DS0 1)
  T1 Clock     : network (line)

W)an  C)lear  P)oll (ESC) ?
```

Fig. 11.3.1.1.1. *T1 WAN Statistics screen*

Select W)an and the T1 WAN statistics screen comes up. This lets you know the status of your WAN connection.

The three stats at the top; WAN Link, LMI Link, and Far Link; indicate connectivity based on LED signals and router connection. For WAN Link status, the number following "ups" indicates how many times the Link LED flashed red after a WAN link is established. Once is normal, so a "1" would appear in that case. LMI Link status indicates how many times the Status LED flashed red. Again, one time is normal. Far Link status indicates router connectivity. A "1" will appear after "ups" if the router is connected to the unit. The "downs" fields indicate the number of times a link was broken after being established.

The next bunch of data is High-level Data Link Control (HDLC), which shows T1 WAN channel protocol activity in the form of packets sent and received, and the errors registered in both receiving and sending. CRC (Cyclic Redundancy Checking) contains an error checking number that the destination can use to verify that the packet is error free. The Abort field shows the number of error frames aborted (discarded). The Over field indicates a data overflow condition during packet reception.

WAN Tx and Rx Que indicates how well the system is keeping up mediating packets between the LAN and WAN interfaces.

The "Wan2Eth Pkts" field shows the number of WAN packets routed and dropped, the first number being a combination of the two. "Eth2WAN Pkts" shows the number of Ethernet packets routed and dropped, the first number being a combination of the two.

The last three T1 queries show the T1's interrupt request line (IRQ) status, the bandwidth size in kbps (based on the DS0 number used), and the clock line being used (network is the default).

11.3.1.2 Monitoring Base Alarms

View the status of the device connected to the discrete alarms from the M)onitor menu > A)larms option. Under `Status`, the word `Alarm` will appear if an alarm has been activated and `Clear` will appear if an alarm condition is not present. If groups are used the user defined status will be displayed.

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

B)ase  E)xpansions (ESC) ? B

 ID Description                                    Status
  1 PNT 1                                         Clear
  2 PNT 2                                         Clear
  3 PNT 3                                         Clear
  4 PNT 4                                         Clear
  5 PNT 5                                         Clear
  6 PNT 6                                         Clear
  7 PNT 7                                         Clear
  8 PNT 8                                         Clear
  9 PNT 9                                         Clear
 10 PNT 10                                        Clear
 11 PNT 11                                        Clear
 12 PNT 12                                        Clear
 13 PNT 13                                        Clear
 14 PNT 14                                        Clear
 15 PNT 15                                        Clear
 16 PNT 16                                        Clear

B)ase  E)xpansions (ESC) ?
```

Fig. 11.3.1.2.1. *This example shows page two of the discrete alarms*

11.3.1.3 Monitoring Ping Targets

View the status of all your ping targets from the M)onitor menu > P)ing targets option. This screen displays the ping target ID, description, and IP address. Under `Status` the word `Alarm` will appear if an alarm has been activated and `Clear` will appear if an alarm condition is not present.

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

 ID Description                                        IP Address      Status
  1 TARGET 1                                          255.255.255.255 Clear
  2 TARGET 2                                          255.255.255.255 Clear
  3 TARGET 3                                          255.255.255.255 Clear
  4 TARGET 4                                          255.255.255.255 Clear
  5 TARGET 5                                          255.255.255.255 Clear
  6 TARGET 6                                          255.255.255.255 Clear
  7 TARGET 7                                          255.255.255.255 Clear
  8 TARGET 8                                          255.255.255.255 Clear
  9 TARGET 9                                          255.255.255.255 Clear
 10 TARGET 10                                         255.255.255.255 Clear
 11 TARGET 11                                         255.255.255.255 Clear
 12 TARGET 12                                         255.255.255.255 Clear
 13 TARGET 13                                         255.255.255.255 Clear
 14 TARGET 14                                         255.255.255.255 Clear
 15 TARGET 15                                         255.255.255.255 Clear
 16 TARGET 16                                         255.255.255.255 Clear
ESC to exit  Any key to continue
```

Fig. 11.3.1.3.1. *The Ping info submenu allows you to change ping targets*

11.3.1.4 Monitoring and Operating Relays (Controls)

The NetGuardian comes equipped with 2 relays that can be used to control external devices. Monitor the status of your relays from the M)onitor menu > R)elays option.

Relays are set to normally open (N/O) as the factory default, but each or all of them can be changed to normally closed (N/C) by changing their respective jumper.

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

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

B)ase  E)xpansions (ESC) ? B

Base Relays

 ID Description                                        Mode    Status
  1                                                   Normal  Clear
  2                                                   Normal  Clear

S)tatus       O)pr  R)ls  M)om (ESC) ? _
```

Fig. 11.3.1.4.1 *The relays can be operated from this screen*

11.3.1.5 Monitoring Analogs

View the current reading and the alarm status of your analog devices from the M)onitor menu > a(N)logs option. The value shown is a snapshot of the channels measurement, not a real-time reading. Refresh the readings by re-selecting the analogs option. Alarm status indicates that a preset threshold has been crossed and is designated by an x.

The four analog measuring inputs are set to measure voltage as the factory default. If your sensors output is current, change the appropriate analog dipswitch, to the current measuring position. The scaling worksheet in the provisioning section converts all readings shown here into native units, such as degrees Celsius.

Note that channels 5 and 6 are reserved for Power Feed A and Power Feed B, respectively; and that channel 7 is reserved for internal temperature monitoring ("iF"=internal Fahrenheit) while channel 8 is for external temperature monitoring ("eF"=external Fahrenheit).

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

A)larms  R)elays  a(N)alogs  E)vent log  a(C)cum. Timer
  P)ing targets  p(O)rts  S)ystem  W)an (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   MNA   -    -    -    -    -
 6                                       0.0000   MNB   -    -    -    -    -
 7                                       0.0000   iF    -    -    -    -    -
 8                                      -40.0000  eF    -    -    -    -    -
```

Fig. 11.3.1.5.1. *This display allows you to monitor your eight analog inputs*

11.3.1.6 Monitoring System Alarms

View the status of the NetGuardian's system alarms from the M)onitor menu > S)ystem option. Under `Status`, the word `Alarm` will appear if an alarm has been activated and `Clear` will appear if an alarm condition is not present. See Section 12.1.1, "System Alarms Display Map," for more information. If groups are used, the user defined status will be displayed.

```
 17 Timed Tick            Clear
 19 Network Time Server   Clear
 20 Accumulation Event    Clear
 21 Duplicate IP Address  Clear
 22 External Sensor Down  Clear
 33 Unit Reset            Clear
 36 Lost Provisioning     Clear
 37 DCP Poller Inactive   Clear
**38 T1 WAN down          Clear
 39 LAN down              Clear
 40 LAN Link Down         Clear
 43 SNMP Trap not Sent    Alarm
 44 Pager Que Overflow    Clear
 45 Notification Failed   Clear
 46 Craft RcvQ Full       Clear
 48 Data 1 RcvQ Full      Clear
 56 NGDdx 1 Fail          Clear
 57 NGDdx 2 Fail          Clear
 58 NGDdx 3 Fail          Clear
 63 Craft Timeout         Clear
 64 Event Que Full        Clear

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

Fig. 11.3.1.6.1. *System Alarms can be viewed from the M)onitor menu > S)ystem option*

*** System Alarm 38 will not be used if T1 is disabled.*

11.3.1.7 Monitoring Data Port Activity

View the status of the NetGuardian's data port from the M)onitor menu > p(O)rts option.

The NetGuardian provides an ASCII description under `Transmit` and `Receive`. Choose a) Transmit to view data transmitted to another device. Choose b) Receive to view data received from another device. See Section 12.4, "ASCII Conversion," for specific ASCII symbol conversion.

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

A)larms  re(L)ays  a(N)alogs  E)vent log  a(C)cum. Timer
  P)ing targets  p(O)rts  S)ystem  W)an  a(R)p (ESC) ? O

a)Transmit  b)Receive  c)Transmit-HEX  d)Receive-HEX (ESC) ? _
```

Fig. 11.3.1.7.1. *Data port activity can be viewed from the M)onitor menu > p(O)rts option*

11.3.1.8 Monitoring the Accumulation Timer

The Accumulation Timer keeps a running total of the amount of time a point is in an alarm state. An alarm point that exceeds a user defined threshold will trigger an Accumulation Event system alarm. Refer to Figure 11.3.1.8.1. and Table 11.3.1.8.A to define the accumulation timer.

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

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

A)larms  re(L)ays  a(N)alogs  E)vent log  a(C)cum. Timer
  P)ing targets  p(O)rts  S)ystem  W)an  a(R)p (ESC) ? C

Accumulation Timer: enabled
 Display Reference: 1
   Point Reference: 11
 Point Description:
      Point Status: Clear
   Event Threshold: 00:01:01 (dd:hh:mm)
  Accumulated Time: 00:00:00 (dd:hh:mm)
 Accumulated Since: 22-July-2001 03:16

R)eset AccTmr (ESC) ?
```

Fig. 11.3.1.8.1. *Monitor and reset the Accumulator Timer*

Field	Description
Display and Point Reference	Indicates which alarm point is to be monitored.
Point Description	The user-defined description of the monitored alarm point.
Point Status	The current status of the monitored point.
Event Threshold	Amount of time allowed to accumulate before the system alarm, “Accumulation Event” is triggered. **Note:** Maximum is 45 days.
Accumulated Time	The total time the monitored point has been in an ALARM state.
Accumulated Since	Indicates the last time the accumulation timer was reset.
Reset Accumulation Timer	Placing a check mark here will reset the timer when the user presses the Submit button.

Table 11.3.1.8.A. *Field descriptions in the Accumulator Timer Settings*

11.3.2 Viewing Live Target Pings

Choose P)ing to ping any of the NetGuardian's user defined IP addresses. Then enter the ID number (1-32) of the IP address or enter any IP address to ping.

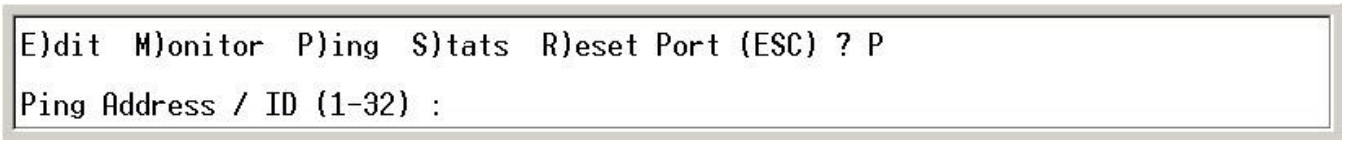


Fig. 11.3.2.1. *Continuously ping an IP address that has been defined in the NetGuardian's ping table*

11.3.3 Proxy Menu

You can create proxy connections to reach-through to the craft port or serial port from the P)roxy menu. You'll be able to monitor and control additional devices via proxy connection to the NetGuardian. Data presented and handshaking will be specified by the connected device.

To cancel the proxy connection wait a half second, then quickly type @@@ and press ENTER.

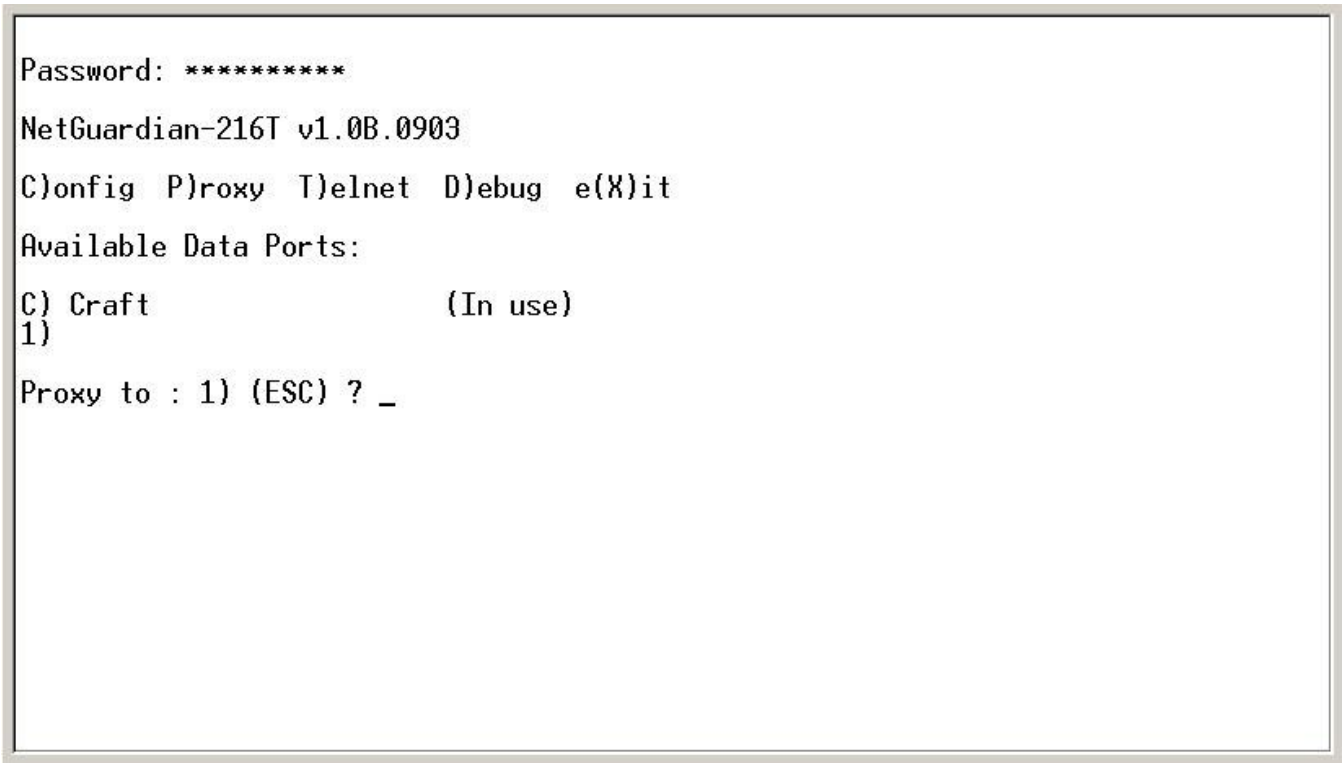


Fig. 11.3.3.1. *Access devices connected to the eight data ports on the back panel through M)onitor menu > P)roxy option*

11.3.4 Event Logging

Choose E)vent log to view the up to 100 events posted to the NetGuardian; including unit reset, base and system alarms, ping alarms, analog alarms, and controls. Posted events for the various alarms include both alarm and clear status. Refer to Table 11.3.4.A for event log field descriptions.

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

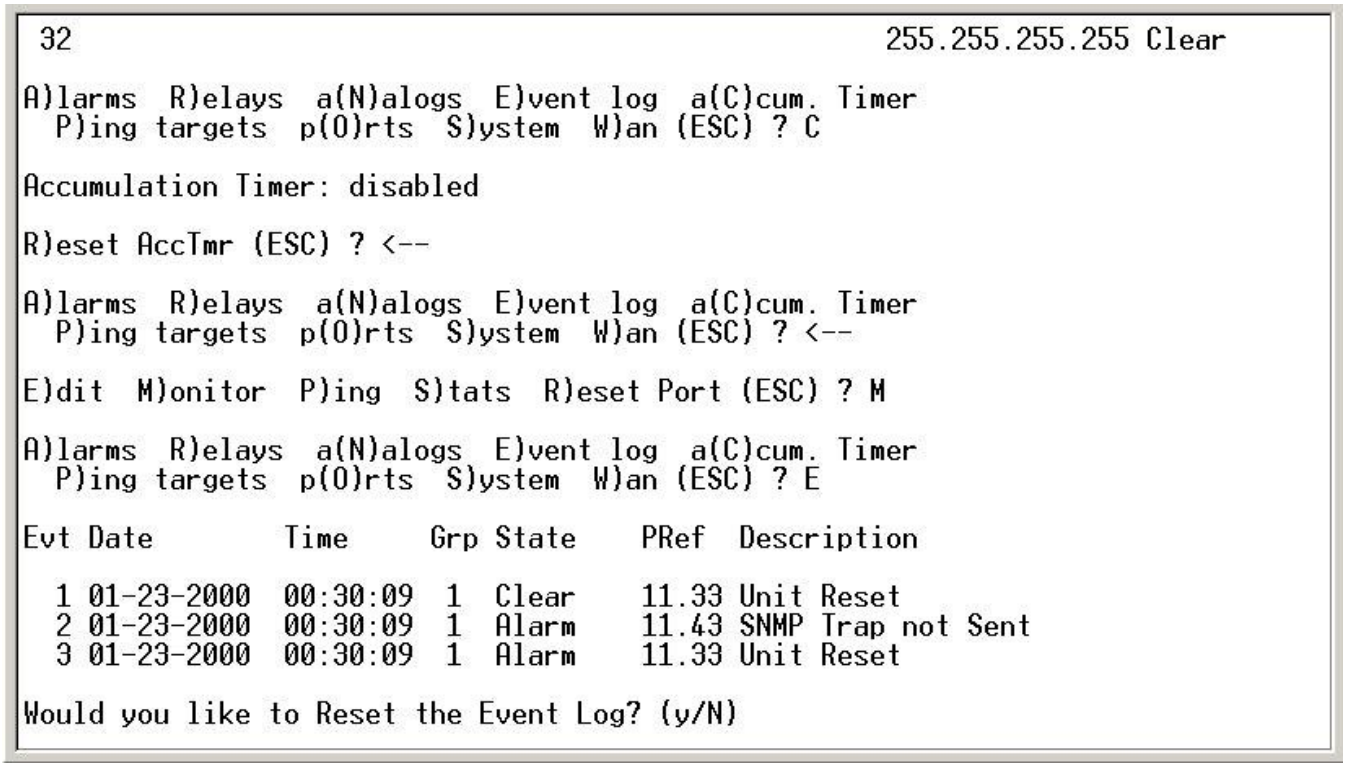


Fig. 11.3.4.1. *Monitor the last 100 events recorded by the NetGuardian from the M)onitor menu > E)vent log option*

Event Log Field	Description
Evt	Event number (1–100)
Date	Date the event occurred
Time	Time the event occurred
Grp	Alarm Group
State	State of the event (A=alarm, C=clear)
PRef	Point reference (See Appendix A for display descriptions).
Description	User defined description of the event as entered in the alarm point and relay description fields.

Table 11.3.4.A. *Event Log field descriptions*

11.3.5 Backing Up NetGuardian Configuration Data via FTP

1. From the Start menu on your PC, select RUN.
2. Type "ftp" followed by the IP address of the NetGuardian you are backing up (example: ftp 126.10.120.199).
3. After the connection is made press Enter.
4. Enter the password of the NetGuardian (default password is dpstelecom), then press Enter.
5. Type "binary" and press Enter (necessary for NetGuardian 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 NetGuardian backup file. Add the extension ".ngd" to the file name (example: get ngdbkup.ngd) and press Enter.

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

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

11.3.5.1 Reloading NetGuardian Configuration Data

1. From the Start menu on your PC, select RUN.

2. Type "ftp" followed by the IP address of the NetGuardian you are backing up (example: ftp 126.10.120.199).

3. After the connection is made press Enter.

4. Enter the password of the NetGuardian (default password is dpstelecom), then press ENTER.

5. Type "binary" and press Enter (necessary for NetGuardian 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 NetGuardian backup file and press Enter (example: put ngdbkup.ngd).

8. Type "literal REBT" to reboot the NetGuardian.

9. After reloading, type "bye" and press Enter to exit.

11.3.6 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 information and NGEdit4 serial communication.
e	(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) HDLC debug switch. Shows T1 WAN channel protocol activity
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
b	(21) IP broadcasting block. Shows IPA
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) Proxy base. Connects craft port to the hub
r	(26) Report toggle switch. Shows reporting event activity, including SNMP, pagers, email, etc. Also shows PPP negotiation for NG 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
T	(30) T1 toggle switch. Shows UDP/TCP port handling. The camera and network time (NTP) jobs also use the TERM toggle switch
w	(31) HTTP toggle switch. Shows handling of web browser packets
W	(32) WEB toggle switch 2. Dump HTML text from web browser

Table. 11.3.6.A. *Debug Input and Filter Options (previous page)*

12 Reference Section

12.1 Display Mapping

Port	Address	Display	Description	Set	Clear
99	1	1	Discrete Alarms 1-16	8001-8032	9001-9032
99	1	2	Ping Table	8065-8096	9065-9096
99	1	3	Analog Channel 1**	8129-8132	9129-9132
99	1	4	Analog Channel 2**	8193-8196	9193-9196
99	1	5	Analog Channel 3**	8257-8260	9257-9260
99	1	6	Analog Channel 4**	8321-8324	9321-9324
99	1	7	Analog Channel 5–Power Feed A**	8385-8388	9385-9388
99	1	8	Analog Channel 6–Power Feed B**	8449-8452	9449-9452
99	1	9	Analog Channel 7–Internal Temp Sensor**	8513-8516	9513-9516
99	1	10	Analog Channel 8–External Temp Sensor**	8577-8580	9577-9580
99	1	11	Relays/System Alarms (See table below)	8641-8674	9641-9674
99	1	12	NetGuardian Expansion 1 Alarms 1-48	6001-6064	7001-7064
99	1	13	NetGuardian Expansion 1 Relays 1-8	6065-6072	7065-7072
99	1	14	NetGuardian Expansion 2 Alarms 1-48	6129-6177	7129-7177
99	1	15	NetGuardian Expansion 2 Relays 1-8	6193-6200	7193-7200
99	1	16	NetGuardian Expansion 3 Alarms 1-48	6257-6305	7257-7305
99	1	17	NetGuardian Expansion 3 Relays 1-8	6321-6328	7321-7328

Table 12.1.A. *Display descriptions and SNMP Trap numbers for the NetGuardian*

* 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, for 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
17	Timed Tick	8657	9657
19	Network Time Server	8659	9659
21	Duplicate IP Address	8661	9661
22	External Sensor Down	8662	9662
33	Unit Reset	8673	9673
36	Lost Provisioning	8676	9676
37	DCP Poller Inactive	8677	9677
38	T1 WAN Inactive**	8678	9678
39	LAN Inactive	8679	9679
43	SNMP Trap not Sent	8683	9683
44	Pager Que Overflow	8684	9684
45	Notification failed	8685	9685
46	Craft RcvQ full	8686	9686
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
56	NetGuardian DX 1 fail	8696	9696
57	NetGuardian DX 2 fail	8697	9697
58	NetGuardian DX 3 fail	8698	9698
63	Craft Timeout	8703	9703
64	Event Que Full	8704	9704

Table 12.1.B *Display 11 System Alarms point descriptions*

***** Data Ports 2-5 are included on optional expansion card.
** Not used if T1 is disabled.

Note: See Section 12.1.1, "System Alarms Display Map," for detailed descriptions of the NetGuardian's system alarms.

12.1.1 System Alarms Display Map

Display	Points	Alarm Point	Description	Solution
11	17	Timed Tick	Toggles state at constant rate as configured by the Timed Tick timer variable. Useful in testing integrity of SNMP trap alarm reporting.	To turn the feature off, set the Timed Tick timer to 0.
	19	Network Time Server	Communication with Network Time Server has failed.	Try pinging the Network Time Server's IP address as it is configured. If the ping test is successful, then check the port setting and verify the port is not being blocked on your network.
	20	Accumulation Event	An alarm has been standing for the time configured under Accum. Timer. The Accumulation timer enables you to monitor how long an alarm has been standing despite system reboots. Only the user may reset the accumulated time; a reboot will not.	To turn off the feature, under Accum.Timer, set the display and point reference to 0.
	21	Duplicate IP Address	The unit has detected another node with the same IP Address.	Unplug the LAN cable and contact your network administrator. Your network and the unit will most likely behave incorrectly. After assigning a correct IP address, reboot the unit to clear the System alarm.
	22	External Sensor Down	External Sensor is not active	Check to see if External Sensor cable is properly connected.
	33	Unit Reset	The unit has just come online. The set alarm condition is followed immediately by a clear alarm condition.	Seeing this alarm is normal if the unit is powering up.
	36	Lost Provisioning	The internal NVRAM may be damaged. The unit is using default configuration settings.	Use Web or Edit216T to configure the unit. Power the cycle to see if the alarm goes away. May require RMA.

Table 12.1.1.A. *System Alarms Descriptions*

Note: Table 12.1.1.A. continues on following page.

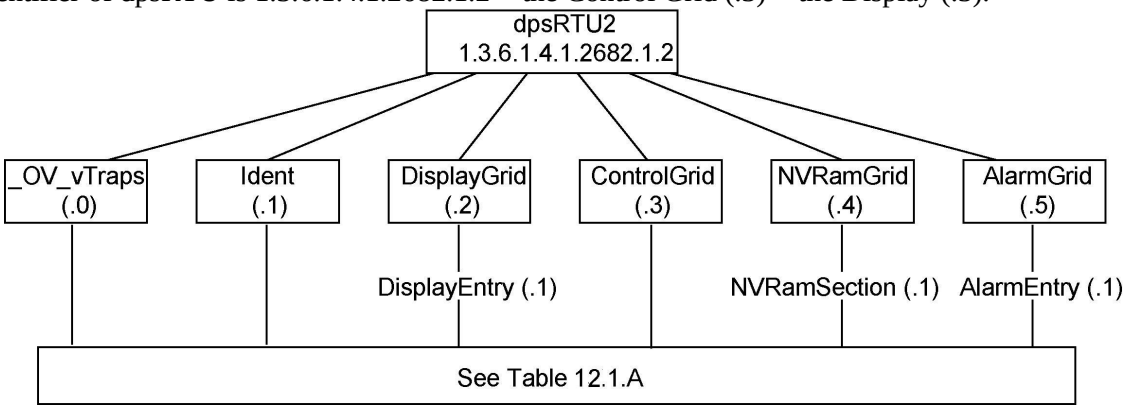
Display	Points	Alarm Point	Description	Solution
11	37	DCP Poller Inactive	The unit has not seen a poll from the Master for the time specified by the DCP Timer setting.	If DCP responder is not being used, then set the DCP Unit ID to 0. Otherwise, try increasing the DCP timer setting under Timers, or check how long it takes to cycle through the current polling chain on the Master system.
	38	** T1 WAN not active	T1 WAN port is down.	Check LAN/WAN cable. Ping to and from the unit.
	39	Ethernet not active	Ethernet LAN ports are down.	
	40	LNK Alarm	Hardware failure between integrated Ethernet Hub and the unit.	
	43	SNMP Trap not Sent	SNMP trap address is not defined and an SNMP trap event occurred.	Define the IP address where you would like to send SNMP trap events, or configure the event not to trap.
	44	Pager Que Overflow	Over 250 events are currently qued in the pager que and are still trying to report.	Check for failed notification events that may be filling up the pager queue. There may be a configuration or communication problem with the notification events.
	45	Notification failed	A notification event, like a page or email, was unsuccessful.	Use RPT filter debug to help diagnose notification problems.
	46	Craft RcvQ full	The Craft port received more data than it was able to process.	Disconnect whatever device is connected to the craft serial port. This alarm should not occur.
	48	Data 1 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	49	*Data 2 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	50	*Data 3 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	51	*Data 4 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	52	*Data 5 RcvQ full	Data port 1 receiver filled with 1 K of data.	Check proxy connection. The serial port data may not be getting collected as expected.
	56	NetGuardian DX 1 fail	NGDdx 1 Fail (Expansion shelf 1 communication link failure)	Under Ports>Options, verify the number of configured NGDdx units. Use EXP filter debug and port LEDs to help diagnose the problem. Use of DB9M to DB9M will null crossover for cabling. Verify the DIP addressing on the back of the NGDdx unit.
	57	NetGuardian DX 2 fail	NGDdx 2 Fail (Expansion shelf 2 communication link failure)	
	58	NetGuardian DX 3 fail	NGDdx 3 Fail (Expansion shelf 3 communication link failure)	
	63	Craft Timeout	The Craft Timeout Timer has not been reset to the specified time. This feature is designed so other machines may keep the TTY link active. If the TTY interface becomes unavailable to the machine, then the Craft Timeout alarm is set.	Change the Craft Timeout Timer to 0 to disable the feature.
	64	Event Que Full	The Event Que is filled with more than 500 uncollected events.	Enable DCP timestamp polling on the master so events are collected, or reboot the system to clear the alarm.

Table 12.1.1.A *System Alarms Descriptions (continued)*

*Data Ports 2-5 are included on optional expansion card.
** Not used if T1 is disabled.

12.2 SNMP Manager Functions

The SNMP Manager allows the user to view alarm status, set date/time, issue controls, and perform a resync. The display and tables below outline the MIB object identifiers. Table B.1 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)
P0001Set (.10001) 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. B3 (.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 (.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 alarm points, see Table B6

Hot Tip! The NetGuardian 216T OID has changed from 1.3.6.1.4.1.2682.1.4 to 1.3.6.1.4.1.2682.1.2 Updated MIB files are available on the Resource CD or upon request.

	Description	Port	Address	Display	Points
Disp 1	Base Discrete Alarms	99	1	1	1-16
	Undefined**	99	1	1	17-64
Disp 2	Ping Target Alarms	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 Power Feed A	99	1	7	1-4
	Undefined**	99	1	7	5-64
Disp 8	Analog 6 Power Feed B	99	1	8	1-4
	Undefined**	99	1	8	5-64
Disp 9	Analog 7 Internal Temp Sensor	99	1	9	1-4
	Undefined**	99	1	9	5-64
Disp 10	Analog 8 External Temp Sensor	99	1	10	1-4
	Undefined**	99	1	10	5-64

Table 12.2.A. *Alarm point descriptions (continued on next page)*

Disp 11	No Data*	99	1	11	1-8
	Undefined**	99	1	11	9-16
	Timed Tick	99	1	11	17
	Undefined**	99	1	11	18
	Network Time Server	99	1	11	19
	Accumulation Event	99	1	11	20
	Duplicate IP Address	99	1	11	21
	External Sensor down	99	1	11	22
	Undefined**	99	1	11	23-32
	Unit Reset	99	1	11	33
	Undefined**	99	1	11	34-35
	Lost Provisioning	99	1	11	36
	DCP poller inactive	99	1	11	37
	T1 WAN inactive	99	1	11	38
	LAN inactive	99	1	11	39
	LAN Link down	99	1	11	40
	Undefined**	99	1	11	41-42
	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
	Undefined**	99	1	11	47
	Data 1 RCVQ	99	1	11	48
	Data 2 RCVQ^	99	1	11	49
	Data 3 RCVQ^	99	1	11	50
	Data 4 RCVQ^	99	1	11	51
	Data 5 RCVQ^	99	1	11	52
	Undefined**	99	1	11	53-55
	NGDdx 1-3 fail	99	1	11	56-58
	Undefined**	99	1	11	59-62
	CRFT timeout	99	1	11	63
	Event Que full	99	1	11	64

Table 12.2.A (continued). *Alarm Point Descriptions*

* "No data" indicates that the alarm point is defined but there is no description entered.
** "Undefined" indicates that the alarm point is not used.
^ Data Ports 2-5 are included on optional expansion card.

12.3 SNMP Granular Trap Packets

Tables 12.3.A and 12.3.B provide a list of the information contained in the SNMP Trap packets sent by the NetGuardian.

SNMP Trap managers can use one of two methods to get alarm information:
1. Granular traps (not necessary to define point descriptions for the NetGuardian)

or

2. The SNMP manager reads the description from the Trap.

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

Table 12.3.A *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
NetGuardian 216T v1.0B	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
1.3.6.1.4.1.2682.1.2.5.1.4.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.3.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.2.5.1.2.99.1.1.1	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 12.3.B. *SNMP Headers and descriptions*

12.4 ASCII Conversion

The information contained in Table 12.4.A 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 port. Port transmit and receive activity can be viewed from the Web browser interface.

- Printable ASCII characters will appear as ASCII.
- Non-printable ASCII characters will appear as labels surrounded by { } brackets (e.g. {NUL}).
- Non-ASCII characters will appear as hexadecimal surrounded by [ ] brackets (e.g. [1F]).
- A received BREAK will appear as <BRK>.

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 12.4.A. *ASCII symbols*

13 Frequently Asked Questions

Here are answers to some common questions from NetGuardian users. The latest FAQs can be found on the NetGuardian support web page, **http://www.dpstelecom.com.**

If you have a question about the NetGuardian, please call us at **(559) 454-1600** or e-mail us at **support@dpstele.com**

13.1 General FAQs

Q. How do I telnet to the NetGuardian?

A. You must use **Port 2002** to connect to the NetGuardian. 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 NetGuardian and Port 2002. For example, to connect to the NetGuardian using the standard Windows Telnet client, click Start, click Run, and type "telnet <NetGuardian IP address> 2002."

Q. How do I connect my NetGuardian to the LAN?

A. To connect your NetGuardian to your LAN, you need to configure the unit IP address, the subnet mask and the default gateway. 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
Save your changes by writing to NVRAM and reboot. Any change to the NetGuardian's IP configuration requires a reboot.

Q. How do I connect my NetGuardian to the WAN?

A. To connect the NetGuardian to the WAN, configure T1 WAN settings in the Web browser's T1 WAN menu. You need to know the NetGuardian's IP address or domain name if it has been registered with your internal DNS and the subnet mask (see LAN example above). After T1 WAN settings are provisioned, make sure you're connected to the NetGuardian's T1 WAN port. If using a router, you will need to use Static Network Address Translation (NAT) to enable WAN communication (see Section 11.2.2.1.2 for NAT information).

Q. I'm connected to the WAN port, but the LINK and STATUS LEDs are off.

A. If the power is on, no LED illumination means that the T1 port has not been enabled. Go to the Web browser, click on Edit, click on T1 WAN, and enable the WAN and IP Routing and B8ZS Line Mode. Configure the remainder of the settings as needed.

Q. When I connect to the NetGuardian 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. Your COM port settings should read:
Bits per second: 9600 (9600 baud)
Data bits: 8
Parity: None
Stop bits: 1
Flow control: None
Important! 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 NetGuardian.

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

A. If you select a higher baud rate, you must set your terminal emulator program to the new baud rate and then

type `DPSCFG` and press Enter. If your terminal emulator is set to a slower baud rate than the craft port, normal keys can appear as a break key — and the craft port interprets a break key as an override that resets the baud rate to the standard 9600 baud.

Q. How do I use the NetGuardian to access TTY interfaces on remote site equipment?

A. If your remote site device supports RS-232, you can connect it to one of the eight data ports located on the NetGuardian back panel. To make the data port accessible via LAN, configure the port for TCP/IP operation. You now have a LAN-based proxy port connection that lets you access your device's TTY interface through a Telnet session.

Q. How do I telnet to the NetGuardian?

A. Configure your Telnet client with these options:

- Connect using TCP/IP (**not** "Telnet," or any other port options)
- Enter the IP address of the NetGuardian
- Enter **Port 2002**

Example:

To connect using the Windows Telnet client, click Start, click Run, and type `telnet 126.12.220.8 2002`.

Telnet is connected through the 10BaseT Hub. Make sure you're connected to one of the Hub's 7 connectors.

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 NetGuardian must be rebooted. Whenever you make changes, remember to write them to the NetGuardian's NVRAM so they will be saved when the unit is rebooted.

Q. The LAN link LED is green on my NetGuardian, but I can't poll it from my T/Mon.

A. Some routers will not forward packets to an IP address until the MAC address of the destination device has been registered on the router's Address Resolution Protocol (ARP) table. Enter the IP address of your gateway and your T/Mon system to the ARP table.

Q. What do the terms "port," "address," "display" and "alarm point" mean?

A. These terms refer to numbers that designate the location of a network alarm, from the most general (a port to which several devices are connected) to the most specific (an individual alarm sensor).

Port: A number designating a serial port through which a monitoring device collects data.

Address: A number designating a device connected to a port.

Display: A number designating a logical group of 64 alarm points.

Alarm Point: A number designating a 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 an open/close sensor in a door.

These terms originally referred only to physical things: actual ports, devices, and contact closures. For the sake of consistency, port-address-display-alarm point terminology has been extended to include purely logical elements: for example, the NetGuardian reports internal alarms on Port 99, Address 1.

Q. What characteristics of an alarm point can be configured through software? For instance, can point 4 be used to sense an active-low signal, or point 5 to sense a level or a edge?

A. The NetGuardian's standard configuration is for all alarm points to be level-sensed. You **cannot** use configuration software to convert alarm points to TTL (edge-sensed) operation. TTL alarm points are a hardware option that must be specified when you order your NetGuardian. Ordering TTL points for your NetGuardian does not add to the cost of the unit What you can do with the configuration software is change any alarm point from "Normal" to "Reversed" operation. Switching to Reversed operation has different effects, depending on the kind of input connected to the alarm point:

- **If the alarm input generates an active-high signal,** switching to Reversed operation means the NetGuardian will declare an alarm in the absence of the active-high signal, creating the practical equivalent

of an active-low alarm.

- **If the alarm input generates an active-low signal,** switching to Reversed operation means the NetGuardian will declare an alarm in the absence of the active-low signal, creating the practical equivalent of an active-high alarm.
- **If the alarm input is normally open,** switching to Reversed operation converts it to a normally closed alarm point.
- **If the alarm input is normally closed,** switching to Reversed operation converts it to a normally open alarm point.

Q. Every time my NetGuardian starts up, I have to reenter the date and time. How can I get the NetGuardian to automatically maintain the date and time setting?

A. You have three options for keeping the correct time on your NetGuardian:
Real Time Clock Option: You can order your NetGuardian with the Real Time Clock hardware option. Once it's set, the Real Time Clock will keep the correct date and time, regardless of reboots.
Network Time Protocol Synchronization: If your NetGuardian has Firmware Version 2.9F or later, you can configure the unit to automatically synchronize to a Network Time Protocol (NTP) server.

- To get the latest NetGuardian firmware, sign in to MyDPS at www.dpstelecom.com/mydps.
- For instructions on configuring your NetGuardian to use NTP synchronization, see your Edit216T or NetGuardian Web Browser Interface user manual.

T/Mon RTU Time Sync Signal: You can configure your T/Mon NOC to send an RTU Time Sync signal at a regular interval, which you can set to any time period between 10 and 10,080 minutes. The Time Sync will automatically synchronize the NetGuardian's clock to the T/Mon's clock. And if you set your T/Mon to NTP synchronization, you'll make sure you have consistent, accurate time stamps throughout your monitoring network.

Q. How do I back up my NetGuardian configuration?

A. There are two ways to back up NetGuardian configuration files:
Use Edit216T
NGEdit4 can read the configuration of a NetGuardian unit connected to your PC via LAN, modem or COM port. You can then use NGEdit4 to save a NetGuardian configuration file on your PC's hard disk or on a floppy disk. With Edit216T you can also make changes to the configuration file and write the changed configuration to the NetGuardian's NVRAM.
Use FTP
You can use File Transfer Protocol (FTP) to read and write configuration files to the NetGuardian's NVRAM, but you can't use FTP to edit configuration files.

13.2 SNMP FAQs

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

A. SNMP v1 and v2.0c.

Q. How do I configure the NetGuardian to send traps to an SNMP manager? Is there a separate MIB for the NetGuardian? 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 NetGuardian begins sending traps as soon as the SNMP managers are defined. The NetGuardian MIB is included on the NetGuardian 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 is configured by selecting the secondary SNMP managers as pager recipients. Community strings are configured globally for all SNMP managers. To configure the community strings, choose System from the Edit menu, and enter appropriate values in the Get, Set, and Trap fields.

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

A. The NetGuardian supports the bulk of MIB-2.

Q. Does the NetGuardian SNMP agent support both NetGuardian and T/MonXM variables?
A. The NetGuardian SNMP agent manages an embedded MIB that supports only the NetGuardian's 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 NetGuardian 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 Appendix, "Display Mapping," in any of the NetGuardian software configuration guides.

Q. How can I associate descriptive information with a point for the RTU granular traps?
A. The NetGuardian alarm point descriptions are individually defined using the Web Browser, TTY, or Edit216T configuration interfaces.

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 NetGuardian and the SNMP manager are both on the network. Use the NetGuardian's ping command to ping the SNMP manager.

14 Technical Support

DPS Telecom products are backed by our courteous, friendly Technical Support representatives, who will give you the best in fast and accurate customer service. To help us help you better, please take the following steps before calling Technical Support:

1. Check the DPS Telecom website.
You will find answers to many common questions on the DPS Telecom website, at **http://www.dpstelecom.com/support/**. Look here first for a fast solution to your problem.

2. Prepare relevant information.
Having important information about your DPS Telecom product in hand when you call will greatly reduce the time it takes to answer your questions. If you do not have all of the information when you call, our Technical Support representatives can assist you in gathering it. Please write the information down for easy access. Please have your user manual and hardware serial number ready.

3. Have access to troubled equipment.

Please be at or near your equipment when you call DPS Telecom Technical Support. This will help us solve your problem more efficiently.

4. Call during Customer Support hours.
Customer support hours are Monday through Friday, from 7 A.M. to 6 P.M., Pacific time. The DPS Telecom Technical Support phone number is **(559) 454-1600**.

Emergency Assistance: *Emergency assistance is available 24 hours a day, 7 days a week. For emergency assistance after hours, allow the phone to ring until it is answered with a voicemail message(the only time DPS allows voicemail!!). You will be asked to enter your phone number. An on-call technical support representative will return your call as soon as possible. If the on-call staff is unable to resolve the problem, they will be able to escalate the call to the appropriate DPS personnel.*

Technical support features have been built into many of our products. In many cases, our technicians, in conjunction with customer permission, can dial directly into our units to correct problems first-hand.

15 RMA Policy

DPS Telecom guarantees all products for two years. We will repair any deficiency in workmanship during this warranty period free of charge. DPS Telecom products not under warranty can still be repaired with a service charge.

In the event that a DPS Telecom product needs repaired, contact Technical Support and a technician can help solidify the field diagnosis, and issue and RMA number if needed. An RMA will be issued if the product has a failed feature or component, if the technicians are unable to resolve the issue remotely, or if the wrong product is ordered or shipped.

DPA Telecom, on average, returns RMA units within 4 weeks and will email the RMA submitter on the return shipment with a tracking number.

Under urgent circumstances, DPS Telecom will issue an advanced replacement. DPS Telecom will send a replacement unit in advance if the problem affects service or if technicians can better troubleshoot an issue. In both cases the advance replacement depends on DPS Telecom stock on hand.

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