

# ***NetGuardian-16S***

## **USER MANUAL**



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## Revision History

November 8, 2005	NetGuardian-16S User Manual (D-OC-UM05B.08100) released. Supports Firmware Version 1.0.
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# 1 NetGuardian-16S Overview



*Fig. 1.1. NetGuardian-16S: High capacity and versatile capabilities make it a powerhouse RTU*

## NetGuardian-16S — Proven Hardware and Software, New and Expanded Capabilities

The NetGuardian-16S is a multifunction, high capacity, NEBS-certified, LAN-based, SNMP/DCPx remote telemetry unit. The NetGuardian-16S is based on the proven hardware and software capabilities of DPS Telecom's popular NetGuardian 832A RTU, but the NetGuardian-16S adds greatly expanded functionality.

The NetGuardian-16S incorporates many functions that previously required several separate units, while occupying only 1 RU on any standard 19" or 23" equipment rack, freeing valuable rack space for revenue-generating equipment.

The NetGuardian-16S features:

- Built-in Web Interface: monitor your alarms from any computer, without an alarm master
- Two separate IP addresses for security: one IP address for private company LAN access, and a second IP address for public Internet access
- Voice Call Out for reporting alarms via telephone call
- Integrated Building Status Unit for local alarm visibility
- **32 reversible discrete alarm inputs** (expandable to 176 alarm points by adding NetGuardian DX Expansion Units)
- **16 reach-through serial ports** with terminal server functionality for connecting multiple concurrent users via Telnet over LAN to telecom switches, servers, radios, PBXs and other equipment
- **8 programmable NO/NC control relays** (expandable to 32 by adding NetGuardian DX Expansion Units)
- **32 ping alarms**
- Automatic 24/7 email and pager alarm notification
- Alarm reporting to any SNMP manager or the T/Mon NOC Alarm Monitoring System
- Backup dial-up alarm reporting
- Dual -48 VDC power inputs
- Free lifetime firmware updates, installed via LAN or serial connection
- NEBS Level 3 compliance

### Dual IP address security model for safe public access

For enhanced security, the NetGuardian-16S has two separate IP addresses on separate subnets. This allows you to safely connect the NetGuardian-16S to both your private company LAN and the public Internet. Since the public IP address is on a separate subnet, there is no possibility that users from the outside can connect to your company LAN.

### Connect via LAN to telecom switches, servers, radios and more

The NetGuardian-16S's 16 reach-through serial ports provide LAN-based terminal server access to up to 16 serial devices. Multiple users can simultaneously connect to the NetGuardian-16S via Telnet over LAN to connect and control telecom switches, servers, radios, multiplexers, PBXs and many other types of remote site equipment.

### NEBS-compliant for guaranteed reliability

The NetGuardian-16S is compliant with NEBS Level 3 electrical, environmental and safety standards. NEBS-certified NetGuardian-16S models are available as an option.

## 2 Shipping List

Please make sure all of the following items are included with your NetGuardian-16S. If parts are missing, or if you ever need to order new parts, please refer to the part numbers listed and call DPS Telecom at **1-800-622-3314**.



**NetGuardian-16S**  
**D-PK-NETGD-12001**



**NetGuardian-16S User Manual**  
**D-OC-UM05B.08100**



**NetGuardian-16S Resource CD**  
**(includes manuals, MIBs, and software)**



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



**Two Ethernet Cables 14 ft.**  
**D-PR-923-10A-14**



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



**23" Rack Ears**



**19" Rack Ears**



**Eight 3/8" Ear Screws**



**Four Standard Rack Screws**



**Four Metric Rack Screws**



**Two 3/4-Amp GMT Fuse**



**Two Power Connector Plugs**



**Pads**

### 3 Optional Accessories

Extend the capabilities of your NetGuardian-16S with these optional hardware accessories. To order or for more information, call DPS Telecom at **1-800-622-3314**.



#### **NetGuardian Expansion (NetGuardian DX)**

##### **D-PC-293-10A-04**

The NetGuardian Expansion provides an additional 48 discrete alarm points and 8 control relays (optional). Up to three NetGuardian Expansion units can be daisy-chained off one NetGuardian-16S, providing configurations of:

- 1 NetGuardian Expansion unit: 80 discrete alarms and 16 control relays
- 2 NetGuardian Expansion units: 128 discrete alarms and 24 control relays
- 3 NetGuardian Expansion units: 176 discrete alarms and 32 control relays



#### **Building Status Unit (BSU)**

##### **D-PK-BSU02-12001**

The Building Status Unit provides auxiliary local enunciation of alarms. The BSU features a single large visual indicator for local alerts. Alarms may be acknowledged locally on the BSU, which will in turn acknowledge the alarm in the NetGuardian-16S. Sound level of the audible speaker can be adjusted with the volume control.



## 4 Specifications

<b>Discrete Alarm Inputs:</b>	32 (reversible; expandable to 80, 138 or 176 alarm points)
<b>Control Relays:</b>	8 Form C (expandable to 16, 24 or 32 control relays)
<b>Maximum Voltage:</b>	60 VDC/120 VAC
<b>Maximum Current:</b>	1 Amp, AC/DC
<b>Protocols:</b>	SNMP DCPx, (T/Mon NOC reporting)
<b>Interfaces:</b>	16 RJ45 RS-232 reach-through serial ports (1200 to 115,200 baud) 2 50-pin connectors (discrete alarm inputs and control relay outputs) 2 RJ45 10BaseT Ethernet ports 1 RJ45 NetGuardian Expansion port 1 RJ11 telco jack 2 DB9 front panel craft ports
<b>Dimensions:</b>	1.75" H x 8" W x 6" D (4.5 cm x 20.3 cm x 15.2 cm)
<b>Mounting:</b>	19" or 23" rack
<b>Power Inputs:</b>	Dual –48 VDC (–40 to –70 VDC)
<b>Current Draw:</b>	200 mA (350 mA at power up)
<b>Fuse:</b>	3/4 Amp GMT
<b>Modem:</b>	33.6K internal
<b>Visual Interface:</b>	LCD display 3 Critical-Major-Minor alarm status lights 30 bicolor LEDs 7 unicolor LEDs
<b>Audible Notification:</b>	Alarm speaker
<b>Unit Controls:</b>	4 LCD menu control buttons
<b>Operating Temperature:</b>	32°–140° F (0°–60° C)
<b>Operating Humidity:</b>	0%–95% noncondensing

## 5 Installation

### 5.1 Tools Needed

To install the NetGuardian-16S, you'll need the following tools:



**Phillips No. 2 Screwdriver**



**Small Standard No. 2 Screwdriver**



**PC with Edit16S software**

### 5.2 Mounting



***Fig. 5.2.1.** The NetGuardian-16S 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 5.2.1.

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

## 5.3 Power Connection



*Fig. 5.3.1. Power connectors and fuse.*

The NetGuardian-16S has two screw terminal barrier plug power connectors, located on the left side of the back panel. (See Figure 5.3.1.)

**Before you connect a power supply to the NetGuardian-16S, 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-16S to a power supply, follow these steps:**

1. Remove the fuse from the back panel of the NetGuardian-16S. **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  **$-48$ V terminal is on the left** and the **GND terminal is on the right**.
3. 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.
4. 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**. If the polarity of the power feed is reversed, the LED by the power connector will light **RED**.
5. Repeat Steps 2–4 for Power Connector B.
6. Reinsert the fuse to power the NetGuardian-16S. The front panel LEDs will flash **RED** and **GREEN**.

## 5.4 LAN Connection



*Fig. 5.4.1. Ethernet ports*

For enhanced security, the NetGuardian-16S has two 10BaseT Ethernet ports. Each port has its own separate IP address and subnet, so you can safely connect one port to your private company LAN and the other to the public Internet.

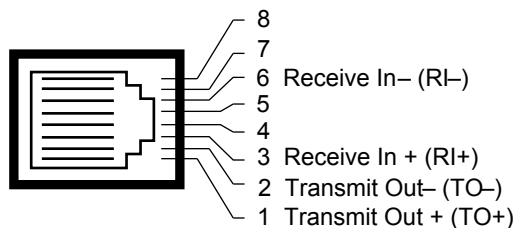
Connect the **Private** Ethernet port to the company LAN.

Connect the **Public** Ethernet port to the Internet.

By default, outbound data traffic from the NetGuardian-16S will be sent over the Public Ethernet port. Only outbound data that is specifically directed for the company LAN will be sent over the Private Ethernet port.

Both ports are standard RJ45 ports that take standard RJ45 Ethernet cables. If the IP connection is OK, the LNK LED will light **SOLID GREEN** when the cable is connected.

### RJ45 Ethernet Connection



*Fig. 5.4.2 Ethernet port pinout*

The pinout for the Ethernet ports is shown in Figure 5.4.2, above.

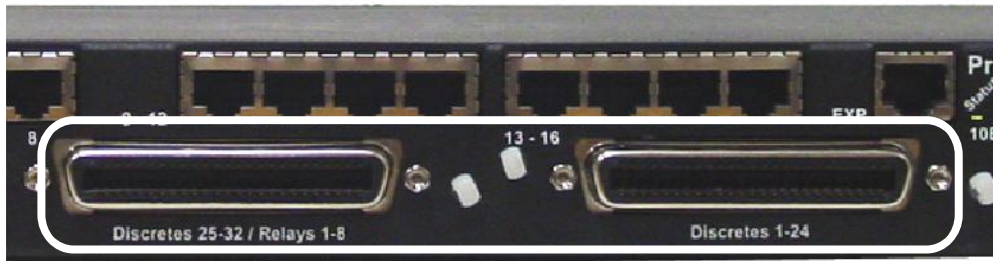
## 5.5 Telco Connection



*Fig. 5.5.1. Telco jack*

The rear panel telco jack (see Figure 5.5.1) connects the NetGuardian-16S internal modem to a standard phone line for dial-up access and pager alarm notification.

## 5.6 Alarm and Control Relay Connections



*Fig. 5.6.1. Alarm and control relay connectors*

The NetGuardian-16S's discrete alarm inputs and control relay outputs are connected through the two 50-pin connectors labeled "Discretes 1–24" and "Discretes 25–32/Relays 1–8" on the back panel. (See Figure 5.6.1.)

### 5.6.1 Alarm and Control Relay Connector Pinout Table

Discretes 1–25					
	RTN	ALM		RTN	ALM
ALM 1	1	26	ALM 13	13	38
ALM 2	2	27	ALM 14	14	39
ALM 3	3	28	ALM 15	15	40
ALM 4	4	29	ALM 16	16	41
ALM 5	5	30	ALM 17	17	42
ALM 6	6	31	ALM 18	18	43
ALM 7	7	32	ALM 19	19	44
ALM 8	8	33	ALM 20	20	45
ALM 9	9	34	ALM 21	21	46
ALM 10	10	35	ALM 22	22	47
ALM 11	11	36	ALM 23	23	48
ALM 12	12	37	ALM 24	24	49
			GND	25	50

Discretes 25–32		
	RTN	ALM
ALM 25	1	26
ALM 26	2	27
ALM 27	3	28
ALM 28	4	29
ALM 29	5	30
ALM 30	6	31
ALM 31	7	32
ALM 32	8	33

Control Relays 1–8		
	NO/NC	CO
CTRL 1	9	34
CTRL 2	10	35
CTRL 3	11	36
CTRL 4	12	37
CTRL 5	13	38
CTRL 6	14	39
CTRL 7	15	40
CTRL 8	16	41
FUSE	17	42
GND	25	50

*Table 5.6.1.A. Alarm and control relay connector pinout*

Table 5.6.1.A, above, shows the pinouts for the 50-pin connectors "Discretes 1–24" and "Discretes 25–32/Relays 1–8."

Note that the NetGuardian-16S's control relays can be set for either Normally Open or Normally Closed operation. By factory default, all control relays are set to Normally Open. You can reset all relays for Normally Closed operation at the hardware level by resetting a jumper on the NetGuardian-16S circuit board.

For instructions on resetting control relays for Normally Closed operation, see Section 5.10, "Jumper Options — Switch Control Relays from Normally Open to Normally Closed."

5.6.2 Discretes 1–24 Connector Pinout Diagram

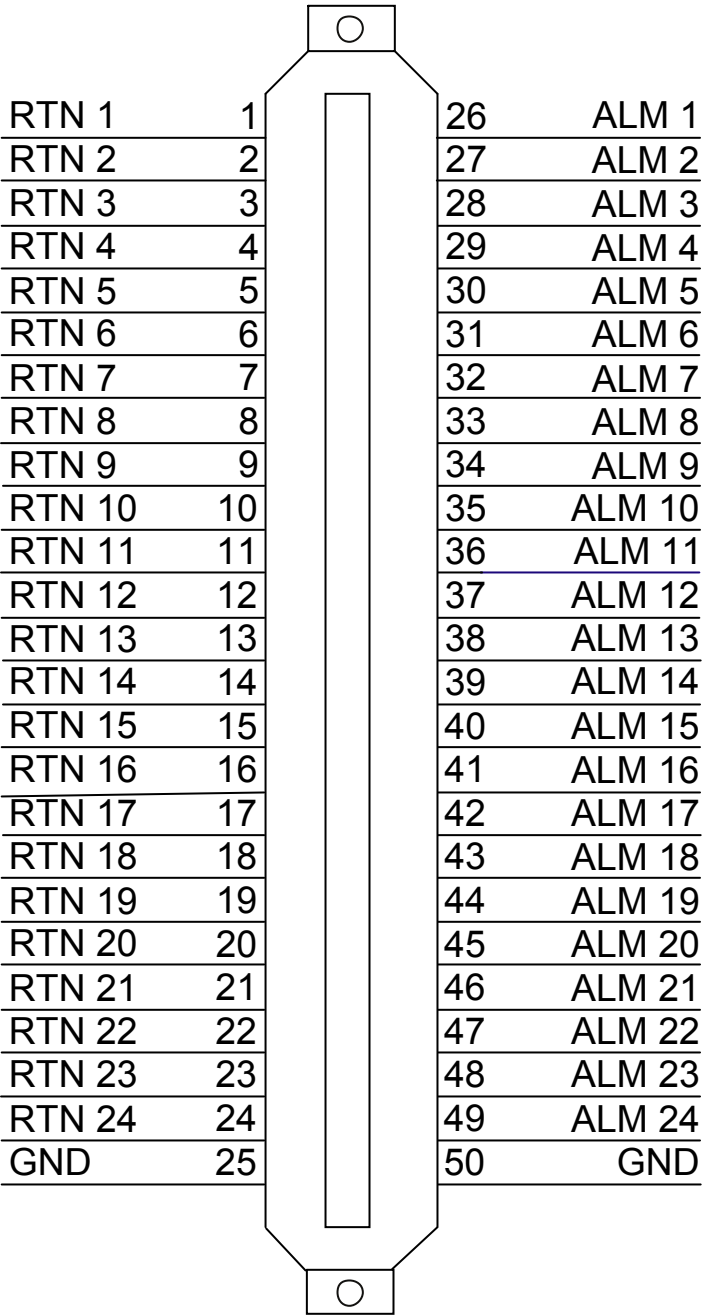
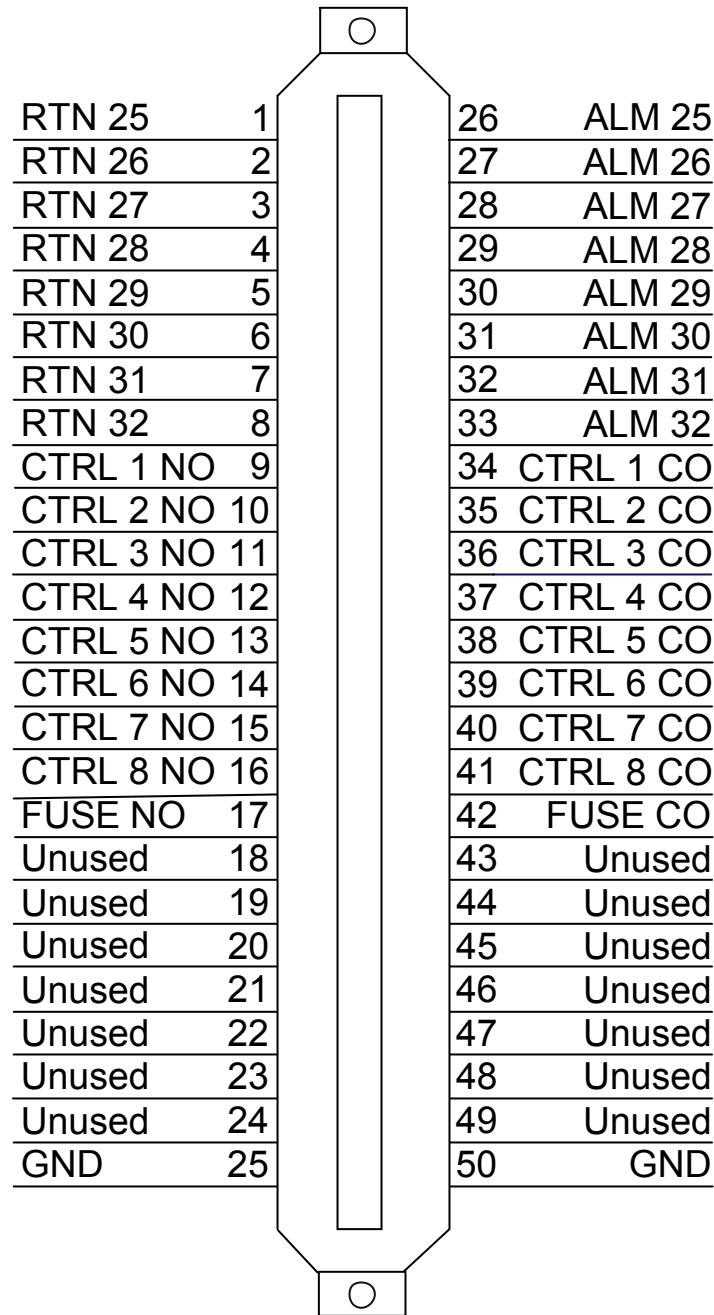


Fig. 4.6.2.1. Pinout Diagram for Discretes 1–24 connector

### 5.6.3 Discretes 25–32/Relays 1–8 Connector Pinout Diagram



*Fig. 4.6.3.1. Pinout Diagram for Discretes 25–32/Relays 1–8 connector*

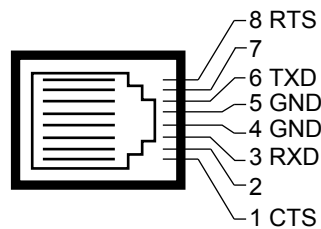
## 5.7 Data Ports



*Fig. 5.7.1. Data ports 1–16*

The NetGuardian-16S's 16 data ports provide reach-through terminal server functionality for connecting multiple simultaneous users to external equipment via Telnet over LAN. Each port can function as a proxy connection to an external device, a craft port, a channel port, a TCP or UDP reach-through port. The NetGuardian-16S can support simultaneous proxy connections for up to five users.

### RJ45 RS-232 Serial Port



*Fig. 5.7.2 Data port pinout*

The pinout for Data Ports 1–16 is shown in Figure 5.7.2, above.

## 5.8 NetGuardian Expansion Port



*Fig. 5.8.1. NetGuardian Expansion port*

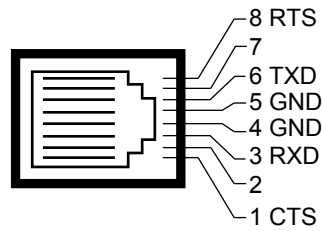
The EXP port (see Figure 5.8.1) connects the NetGuardian-16S to a NetGuardian DX Expansion Unit. Up to three NetGuardian DX Expansion Units can be daisy-chained from the NetGuardian-16S. Each NetGuardian DX adds 48 discrete alarm points, or 48 discrete alarms and 8 control relays, to the NetGuardian-16S, for configurations of:

- 1 NetGuardian DX Expansion Unit: 80 discrete alarms and (optional) 16 control relays
- 2 NetGuardian DX Expansion Units: 128 discrete alarms and (optional) 24 control relays
- 3 NetGuardian DX Expansion Units: 176 discrete alarms and (optional) 32 control relays

To order NetGuardian DX Expansion units, call DPS Telecom at **1-800-622-3314**.



### RJ45 RS-232 Serial Port



*Fig. 5.8.2 NetGuardian expansion port pinout*

The pinout for the NetGuardian expansion port is shown in Figure 5.8.2, above.

## 5.9 Craft Ports



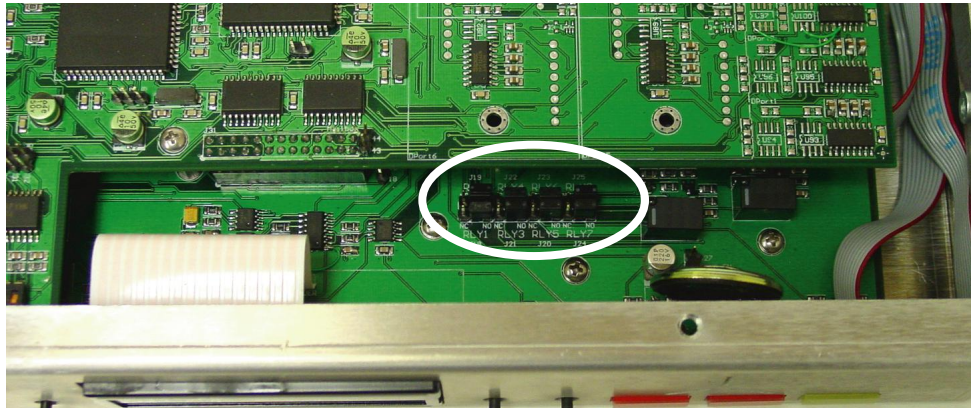
*Fig. 5.9.1. Craft ports*

The NetGuardian-16S has two craft ports, one for each of the unit's two internal circuit boards.

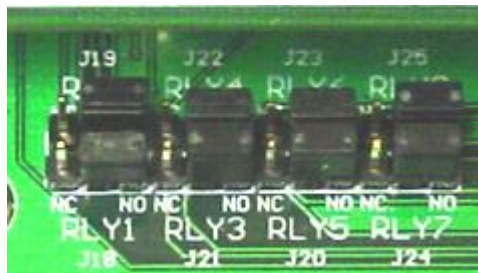
The upper craft port is used for : 1) connecting a PC running the Edit16S configuration software via a COM port connection; 2) accessing the NetGuardian-16S TTY configuration interface; and 3) loading firmware updates to the upper circuit board.

The lower craft port is used for loading firmware updates to the lower circuit board.

## 5.10 Jumper Options — Switch Control Relays from Normally Open to Normally Closed



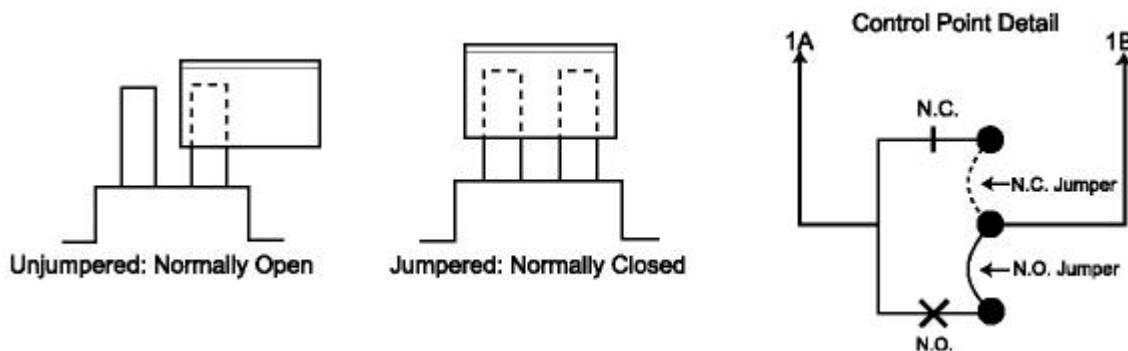
*Fig. 5.10.1. The control relay jumpers are accessible through a notch in the upper circuit board, on the front right corner of the unit*



*Fig. 5.10.2. Detail view showing how the jumpers are labeled on the circuit board*

By factory default, the NetGuardian-16S's eight control relays are configured for Normally Open operation. You can reconfigure the control relays for Normally Closed operation by resetting jumpers on the NetGuardian circuit board. Each control relay can be individually reconfigured by setting the jumpers.

To open the unit and expose the circuit board, remove the screws from the top of the NetGuardian and lift the top cover off. The control relay jumpers are on the lower circuit board, on the front right of the unit. The upper circuit board is cut to allow access to the adjustable jumpers, as shown in Figure 5.10.1, above. Each jumper has a label etched on the circuit board that shows which control relay it corresponds to, as shown in Figure 5.10.2.



*Fig. 5.10.3. Jumper settings for configuring the control relays*

To switch a control relay to Normally Closed operation, place its corresponding jumper in the closed position, as shown in Figure 5.10.3.

## 6 Building Status Unit



*Fig. 6.1. Integrated Building Status Unit alarm status lights, speaker and Ack/+ button*

The NetGuardian-16S incorporates an integrated Building Status Unit (BSU) that provides local notification of selected alarms. The Building Status Unit panel consists of the three Critical-Major-Minor lights on the right front panel, plus the alarm speaker.

When an alarm occurs, the BSU alarm status lights will show the alarm's severity (see Figure 6.1, above), and the alarm speaker will emit a continuous tone. To silence the speaker, press the Ack/+ button.

**(Note:** Audible alarms from the BSU cannot be silenced by the Sound off command on the LCD Command Menu. For details on the Sound off command, see Section 8.2.1, "Sound off.")

The BSU operates in two modes: **Standard Mode** and **Standalone Mode**.

### 6.1 Standard Mode

In **Standard Mode**, the BSU is controlled by the CopperCom CopperController. The CopperController's configuration determines which alarms will trigger a BSU notification. If a selected alarm occurs, the CopperController will issue a Sound Alarm command to the BSU (and any external Building Status units connected to the NetGuardian-16S). Pressing the Ack/+ button on the NetGuardian-16S or the Ack button on the CopperController sends an acknowledgment signal to the CopperController, and the CopperController then sends a Silence Alarm command to the BSU (and any external BSUs).

## 6.2 Standalone Mode

If the NetGuardian-16S loses its connection to the CopperControler, the BSU will enter **Standalone Mode**. In Standalone Mode, the NetGuardian-16S's internal configuration determines which alarms will trigger a BSU notification. If a selected alarm occurs, the NetGuardian-16S will trigger the BSU alarm and send a Sound Alarm command to any external BSUs. Pressing the Ack/+ will silence the alarm speaker directly, and send an Silence Alarm command to any external BSUs.

The NetGuardian-16S determines whether to put the BSU in Standalone Mode by pinging the CopperControler. The NetGuardian-16S will put the BSU in Standalone Mode only if it does not receive a ping response from the CopperControler.

If the BSU enters Standalone Mode the BSU SM LED will light **SOLID RED** and the NetGuardian-16S will declare a Critical alarm.

In Standalone Mode, the NetGuardian-16S determines which alarms will trigger a BSU notification, and the alarm severity level of the BSU notification, by referring to which alarms have been assigned to Alarm Point Groups 6, 7 and 8 by the system administrator.

Group 6 = BSU Critical

Group 7 = BSU Major

Group 8 = BSU Minor

Alarm Point Group assignments can only be configured by the system administrator. For more information on Alarm Point Groups, see Section 12.5.1, "Alarm Summary."

## 7 Voice Call Out

The NetGuardian-16S features Voice Call Out, which provides alarm reporting via telephone call. The Voice Call Out function will call up to 10 user-defined contact phone numbers to announce Critical and Major alarms with up to 16 dialogs. For a reference to possible Voice Call Out dialogs, see Section 13.4, "Voice Call Out Default Dialogs," in the Reference section.

Voice Call Out is controlled by the CopperCom CopperControler in Standard Mode and by the NetGuardian-16S in Standalone Mode.

Voice Call Out is available only for Critical and Major alarms. No Major alarm can be added to the Voice Call Out queue until all Critical alarms are acknowledged. When a Critical alarm occurs, all pending Major alarms will be removed from the Voice Call Out queue.

The contacts for Voice Call Out are defined in the user-configurable Call List. Each contact can be configured to receive only Critical alarm calls, Major alarm calls, or both Critical and Major alarm calls. For instructions on configuring the Call List, see Section 12.6.1, "Call List."

You can also dial in to the NetGuardian-16S and receive a voice update on current alarm status. For some example dial-in dialogs, see Section 13.4, "Default Voice Call Out Dialogs," in the Reference section.

## 7.1 Voice Call Out Sequence of Operations

1. In Standard Mode, Voice Call Out is initiated when the CopperCom CopperController sends an SNMP SET command. In Standalone Mode, Voice Call Out is initiated when an alarm occurs that has been assigned to Group 6 - BSU Critical or Group 7 - BSU Major by the system administrator.
2. If the modem is busy with data traffic, Voice Call Out is paused until the modem is clear.
3. If and when the modem is clear, Voice Call Out is paused for the **Call Qual Time** period set by the system administrator.
4. If the alarm that triggered Voice Call Out clears during the **Call Qual Time**, Voice Call Out will be canceled. (If the alarm clears during the call, Voice Call Out will play the message "Alarm Cleared" and hang up.)
5. Critical call outs always supersede Major call outs. If a Major call out is in progress when a Critical alarm occurs, the Major call out will be cancelled. (If a Major call out is terminated during a call, the NetGuardian-16S will play the message "Critical abort" and hang up.)
6. When Voice Call Out is initiated, the NetGuardian-16S will dial the first number listed on the Call List for the alarm's severity level.
7. The NetGuardian-16S will play the dialog determined by the CopperController's SNMP SET command. If the SET command does not specify an alarm dialog, the NetGuardian-16S will play the dialog selected for this contact in the Call List.
8. The dialog will be repeated up as many times as specified in the Repeat Count setting. There will be a pause after each repetition to allow the user to enter the DTMF acknowledge code.
9. The user can interrupt the dialog at any time by pressing the Star (\*) key. The user can then enter the DTMF Acknowledge Code.
10. If the user makes a mistake entering the acknowledge code, he or she can clear the entry by pressing the Star (\*) key.
11. If the user enters the correct code, the notification sequence will end.
12. If the call remains unacknowledged after a user-defined time period, the NetGuardian-16S will call the next contact listed in the Call List.
13. If the alarm clears during the call, the NetGuardian-16S will play the message "Alarm Cleared" and hang up. Critical clears will not cancel a Major call out, and Major clears will not cancel Critical call outs. Major call outs (but **NOT** Critical call outs) can also be aborted by pressing the BSU Ack button.
14. The notification sequence will continue until the alarm is acknowledged or the NetGuardian-16S has attempted to reach every contact on the Call List. A system alarm will be declared if no contact successfully acknowledged the alarm.

## 8 LCD Display



*Fig. 8.1. NetGuardian-16S LCD showing the Standard Prompt*

The front panel LCD displays the current alarm and control status and provides a command menu for controlling the NetGuardian's basic functions.

### Using the LCD command menu

The four buttons surrounding the front panel LCD are used to access the LCD Command Menu. To access the menu, press the Menu button. To scroll the menu, use the Ack/+ and – buttons. To select a menu command, press the Sel (Select) button.

### Standard Prompt

When no Command Menu item is selected and no alarms or relays are active, the LCD displays the firmware version and the standard prompt, `Press MENU for front panel options.`

### Controlling Display Speed

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

## 8.1 Alarm and Control Status Messages

If an alarm or control relay is active, the LCD will display the following messages to indicate alarm and control status:

- |                         |  |
|-------------------------|--|
| <b>Discrete Alarms:</b> | If there are any standing discrete alarms, the display will read "Discrete Alarms:", followed by the user-defined descriptions of the standing alarm points.               |
| <b>Relays:</b>          | If there are any latched relays, the display will read "Relays:", followed by the user-defined descriptions of the latched relays.   |
| <b>Ping Alarms:</b>     | 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. |

## 8.2 LCD Command Menu



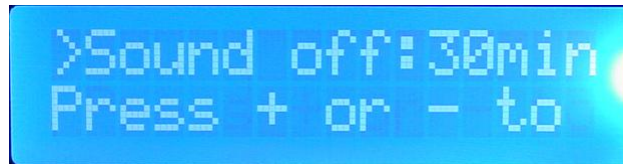
*Fig. 8.2.1. LCD display, showing the Standard Prompt*

The LCD Command Menu provides commands for controlling some of the NetGuardian-16S's basic functions: temporarily silencing the alarm speaker, rebooting the unit, and running the TTY configuration utility.

When no Command Menu item is selected and no alarms or relays are active, the LCD displays the firmware version and the Standard Prompt, **Press MENU for front panel options**. (See Figure 8.2.1, above.)

To access the Command Menu, press the Menu button.

### 8.2.1 Sound off



*Fig. 8.2.1.1. Sound Off command*

#### **Sound off**

The Sound off command suppresses sounds from the alarm speaker for a user-defined period of 10, 20, or 30 minutes. (**Note:** The Sound off command setting **does not** silence audible alarms from the integrated Building Status Unit. For details on the integrated BSU, see Section 6, "Building Status Unit.")

**To scroll to the next menu command**, press the – button.

**To change the Sound off setting**, press Sel to select the command. The arrow cursor (>) will move to the right of the colon (:) in **Sound off:** to indicate that the command submenu is selected. Press the Ack/+ and – buttons to scroll through the Sound off time period options. Select 0 minutes to allow all sounds. When the time period you want is displayed, press Sel to make your selection.

**To exit the Command Menu** without changing the Sound off setting, press Menu.

## 8.2.2 Reboot



*Fig. 8.2.2.1. Reboot command*

### Reboot

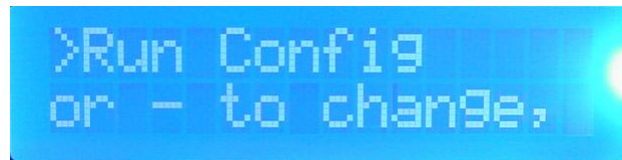
The Reboot command reboots the NetGuardian-16S.

**To scroll to the next menu command,** press the – button.

**To reboot the NetGuardian-16S,** press Sel. The LCD will briefly display the message `Rebooting ...`, and the normal boot sequence will begin.

**To exit the Command Menu** without rebooting, press Menu.

## 8.2.3 Run Config



*Fig. 8.2.3.1. Run Config command*

### Run Config

The Run Config command forces the TTY configuration interface to run over the upper craft port at 9600 baud.

**To scroll to the next menu command,** press the – button.

**To run the TTY configuration utility,** press Sel.

**To exit the Command Menu** without running the TTY interface, press Menu.



## 8.2.4 Contrast



*Fig. 8.2.4.1. Contrast command*

### Contrast

The **Contrast** command provides controls for adjusting the contrast of the LCD.

**To scroll to the next menu command**, press the – button.

**To adjust the contrast**, press Sel to select the command. The arrow cursor (>) will move to the right of the colon (:) in **Contrast:** to indicate that the command submenu is selected. Press the Ack/+ or – button until you're satisfied with the contrast setting, then press Sel to make your selection.

**To exit the Command Menu and revert to the default contrast setting**, press Menu.

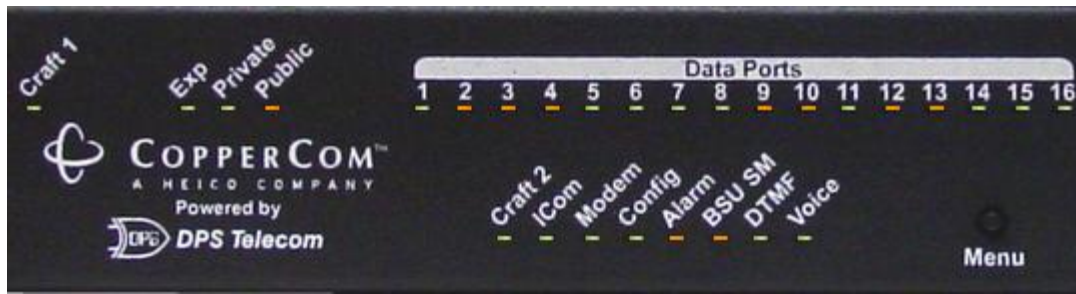
## 9 Alarm Speaker

The NetGuardian-16S's alarm speaker emits distinctive tones for three different circumstances:

1. **If the integrated Building Status Unit alarm sounds**, the speaker will emit a **continuous tone**. If the BSU is in Standard Mode, the sound will continue until the CopperCom CopperController issues a Silence Alarm command. To request a Silence Alarm command, press the Ack/+ button. If the BSU is in Standalone Mode, pressing the Ack/+ button will silence the speaker immediately.
2. **If there is an Ethernet connection failure**, the speaker will emit a **high-low warbling tone**. Press any front panel button to silence the speaker.
3. **If a "reportable" discrete alarm occurs** (that is, an alarm that is configured to trigger an SNMP Trap or pager notification), the speaker will emit an **intermittent beep**. Press any front panel button to silence the speaker. If you do not silence the speaker, the beep will continue for a few seconds.. Silencing the speaker will allow the next alarm, if any, to sound.

The Sound off command on the LCD Command Menu (see Section 8.2.1, "Sound off") will suppress sounds from Ethernet connection failures and discrete alarms, but will not prevent BSU alarms from sounding.

## 10 Front Panel LEDs



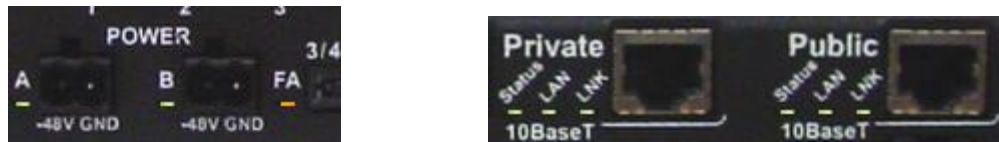
*Fig. 10.1. Front panel LEDs*

The NetGuardian-16S's front panel LEDs indicate communication and alarm reporting status. LED status messages are described below in Table 10.A.

LED	Status	Description
Craft 1	Blink Green	Transmit over upper craft port
	Blink Red	Receive over upper craft port
Exp	Blink Green	Transmit to NetGuardian Expansion
	Blink Red	Receive from NetGuardian Expansion
Private	Blink Green	Transmit over Private Ethernet connection
	Blink Red	Receive over Private Ethernet connection
Public	Blink Green	Transmit over Public Ethernet connection
	Blink Red	Receive over Public Ethernet connection
Data Ports 1–16	Blink Green	Transmit over indicated data port
	Blink Red	Receive over indicated data port
Craft 2	Blink Green	Transmit over lower craft port
	Blink Red	Receive over lower craft port
ICom	Blink Green	Lower board transmit to upper board
	Blink Red	Upper board transmit to lower board
Modem	Blink Green	Transmit over modem
	Blink Red	Receive over modem
Config	Blink Green	Valid configuration
	Blink Red	Invalid configuration
Alarm	Blink Red	New COS alarm
	Solid Red	One or more standing alarms
BSU SM	Solid Red	BSU Standalone Mode active
	Off	BSU Standalone Mode disabled
DTMF	Blink Green	DTMF tone transmit for Voice Call Out
	Blink Red	Receiving DTMF tones from Voice Call Out user's phone
Voice	Solid Green	Voice Call Out voice playback active
	Off	Voice Call Out voice playback off

*Table 10.A. Front panel LED Status message descriptions*

## 11 Back Panel LEDs



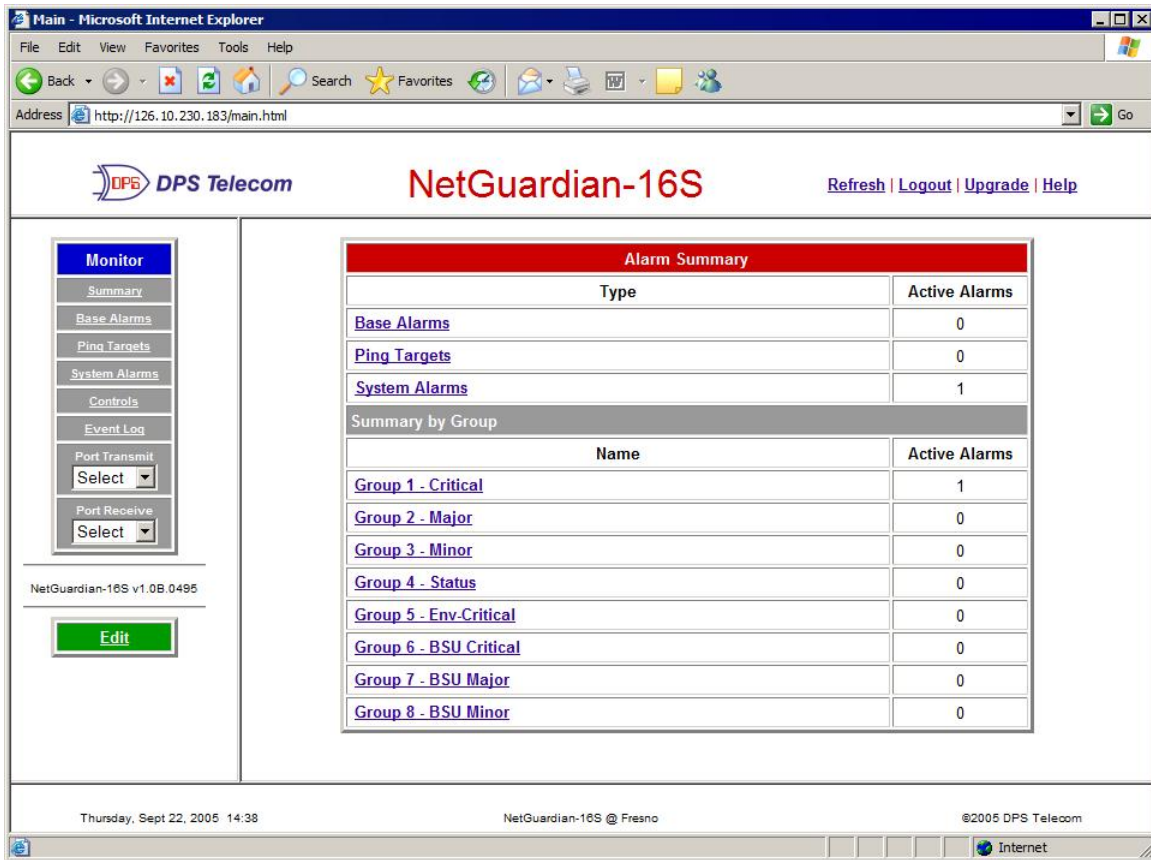
*Fig. 11.1. Back panel LEDs for Power (left) and Ethernet connections*

The back panel LEDs indicate the status of power and Ethernet connections. LED status messages are described below in Table 11.A.

	LED	Status	Description
<b>Power</b>	Power A	Solid Green	Correct polarity on power feed A
		Solid Red	Reversed polarity on power feed A
	Power B	Solid Green	Correct polarity on power feed B
		Solid Red	Reversed polarity on power feed B
	FA	Solid Red	Fuse failure
<b>Ethernet</b>	Status	Blink Green	Bus activity between LAN chip and processor
	LAN	Blink Green	Transmit and receive activity
	LNK	Solid Green	Ethernet link OK

*Table 11.A. Back panel LED Status message descriptions*

## 12 Web Browser Interface



*Fig 12.1. The NetGuardian-16S Web Browser Interface*

The NetGuardian-16S's Web Browser Interface lets you connect to the unit and view alarms from any computer. Using the Web Browser Interface, you can view alarms, operate controls, and provision user-configurable settings.

### 12.1 Logging On to the Web Browser Interface



*Fig. 12.1.1. NetGuardian-16S Web Browser logon*

To log on to the Web Browser Interface, enter the NetGuardian-16S unit's IP address in the address bar of your Web browser. When you first connect to the NetGuardian-16S, you will see the logon page shown in Figure 12.1.1, above. Enter your password and click **submit**.

Your system administrator should have already assigned the NetGuardian-16S an IP address and a logon password. If you do not know the IP address and password for your NetGuardian-16S unit, check with your

system administrator.

No more than four users can simultaneously log on to the Web Browser Interface. Each user session is tracked by IP address, and the NetGuardian-16S will automatically log out users after 12 minutes of inactivity, unless the system administrator has configured a different timeout duration.

## 12.2 Logging Out of the Web Browser Interface



*Fig. 12.2.1. Web Browser interface Logout link*

To log out of a Web Browser Interface session, click the **Logout** link in the top frame of your Web browser. The Logout link is always available while you're using the Web Browser Interface. It's a good idea to log out before closing your browser window. Exiting the Web Browser Interface without logging out can deny other users access to the Edit menu. (See Section 12.3, "Monitor and Edit Menus," for more information.)

## 12.3 Other Top Frame Links

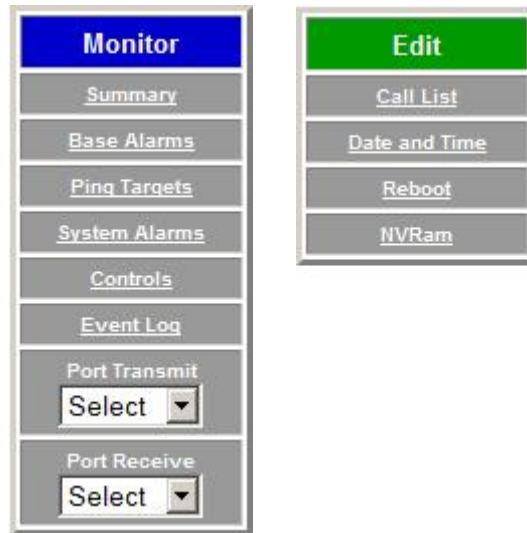
The top frame of the Web Browser Interface has three other links that are always available:

**Refresh:** Refreshes the browser window.

**Upgrade:** Opens a new browser window containing the firmware upgrade download page on the DPS Telecom website.

**Help:** Opens a new browser window containing Web-based help for the NetGuardian-16S Web Browser Interface.

## 12.4 Monitor and Edit Menus



*Fig. 12.3.1. Monitor and Edit menus*

After logging on, you will see the Alarm Summary page shown in Figure 12.1 on page 24. Note the Monitor and Edit menus in the left frame of your browser. The Monitor menu provides links to pages that present current alarm monitoring data. The Edit menu (which can be expanded by clicking the **Edit** link) provides links to pages that provide options for configuring the NetGuardian-16S.

Clicking the **Edit** link expands the Edit menu and collapses the Monitor menu to button size. To switch back to the Monitor menu, click the **Monitor** link.

If the Edit menu does not appear in the left frame after logging on, it means that another user has already logged on as the primary user. Only the primary user (the first user to log on) can use the Edit menu. If the primary user exits the Web Browser Interface without logging out, other users cannot access the Edit menu.

## 12.5 Monitor Menu

### 12.5.1 Alarm Summary

Alarm Summary	
Type	Active Alarms
<a href="#">Base Alarms</a>	1
<a href="#">Ping Targets</a>	0
<a href="#">System Alarms</a>	0
Summary by Group	
Name	Active Alarms
<a href="#">Group 1 - Critical</a>	1
<a href="#">Group 2 - Major</a>	0
<a href="#">Group 3 - Minor</a>	0
<a href="#">Group 4 - Status</a>	0
<a href="#">Group 5 - Env.Critical</a>	0
<a href="#">Group 6 - BSU Critical</a>	0
<a href="#">Group 7 - BSU Major</a>	0
<a href="#">Group 8 - BSU Minor</a>	0

*Fig. 12.5.1.1. Alarm Summary page*

When you first log on to the Web Browser Interface, you'll see the Alarm Summary (Fig 12.5.1.1, above) in the main frame of your browser. The Alarm Summary provides an at-a-glance view of all NetGuardian-16S alarms.

The Alarm Summary lists alarms in two categories, Summary by Type and Summary by Group.

The Summary by Type lists alarms by their origin: Base Alarms (discrete alarms), Ping Targets, Analogs (not supported on all NetGuardian-16S models) and System Alarms. Clicking a Type link will take you to the alarm list page for that alarm type. (For details, see Sections 12.5.2–12.5.4, "Base Alarms," "Ping Targets" and "System Alarms.")

The Summary by Group lists alarms according to the logical Alarm Point Group they have been assigned by the system administrator. Clicking a Group link will take you to the Event Log page. (For details, see Section 12.6, "Event Log.")

Note that the same alarm may appear twice in the Alarm Summary. In the example in Figure 12.5.1.1, the same discrete alarm appears in the Base Alarms summary and the Group 1-Critical summary.

## 12.5.2 Base Alarms

Base Alarms		
Point	Description	State
1	EQUIP MAJOR	Critical
2	EQUIP MINOR	Clear
3	INTRSN	Clear
4	BEACON	Clear
5	SIDE LT	Clear
6	HMDTY	Clear
7	H2O LEAK	Clear
8	FIRE	Clear
9	TXA ACTIVE	Clear
10	TXB ACTIVE	Clear
11	DELAYED	Clear
12	FUSE 112.10	Clear
13	FUSE 112.11	Clear
14	RECTIFIER 1	Clear

*Fig. 12.5.2.1. Base Alarm summary*

Clicking the **Base Alarms** link in the Monitor menu opens the Base Alarm page (see Figure 12.5.2.1, above). This page shows the Alarm or Clear status of each of the NetGuardian-16S's 32 discrete alarms. You'll probably have to scroll down the page to view all 32 discrete alarms.

The Base Alarms page lists each discrete alarm by its point number and the alarm description configured by the system administrator. The State column will display "Clear" in **GREEN** if the alarm is inactive and "Alarm" in **RED** if the alarm is active. If the system administrator has assigned an Alarm Point Group to the alarm point, the Group name will appear in **RED** in the State column when the alarm is active. In Figure 12.5.2.1, above, Alarm Point 1, "EQUIP MAJOR," has been assigned to the "Critical" Group.

## 12.5.3 Ping Targets

Ping Targets		
Point	Description	State
1	WEB SERVER	Clear
2	MAIL SERVER	Clear
3	ROUTER G49	Clear
4	ROUTER G48	Clear
5	ROUTER G47	Clear

*Fig. 12.5.3.1. Ping Targets summary*

Clicking the **Ping Targets** link in the Monitor menu opens the Ping Targets page (see Figure 12.5.3.1, above). This page shows the Alarm or Clear status of each of the NetGuardian-16S's 32 ping alarms. You'll probably have to scroll down the page to view all 32 ping alarms.

The NetGuardian-16S declares a ping alarm when a ping target (a server, router, or any other device on an IP network) does not respond to a ping request in a time interval configured by the system administrator.

The Ping Targets page lists each ping alarm by its point number and the alarm description configured by the system administrator. The State column will display "Clear" in **GREEN** if the alarm is inactive and "Alarm" in **RED** if the alarm is active. If the system administrator has assigned an Alarm Point Group to the alarm point, the Group name will appear in **RED** in the State column when the alarm is active.



## 12.5.4 System Alarms

System Alarms		
Point	Description	State
9	Modem not Responding	Clear
10	No Dialtone	Clear
11	Pager Que Overflow	Clear
12	Pager Notify Failed	Clear
13	Callout Notify Failed	Clear
33	Unit Reset	Clear
34	Lost Provisioning	Clear
35	Intra-communication Fail	Clear
36	Private LAN not Active	Alarm
37	Public LAN not Active	Clear
38	Duplicate Private IPA	Clear
39	Duplicate Public IPA	Clear
40	DCP Poller Inactive	Clear
41	DCP Event Que Full	Clear
42	SNMP Trap not Sent	Alarm
43	Network Time Server	Clear
44	BSU Standalone Mode	Clear
45	Serial Rcv Overflow	Clear
46	Serial Rcv Que Overflow	Clear
47	Timed Tick	Clear

*Fig. 12.5.4.1. System Alarms summary*

Clicking the **System Alarms** link in the Monitor menu opens the System Alarms page (see Figure 12.5.4.1, above). This page shows the Alarm or Clear status of each of the NetGuardian-16S's 26 internal housekeeping alarms. You'll probably have to scroll down the page to view all 26 system alarms.

For a full description of the NetGuardian-16S's system alarms, see Section 13.5, "System Alarm Descriptions," in the Reference section.

The System Alarms page lists each system alarm by its point number and alarm description. The State column will display "Clear" in **GREEN** if the alarm is inactive and "Alarm" in **RED** if the alarm is active.

## 12.5.5 Controls

Controls			
ID	Description	Mode	State
1	UTILITY GENERATOR 1	Normal	Rls
2	UTILITY GENERATOR 2	Normal	Opr
3	SWITCH ROOM DOOR 1	Normal	Rls
4	SWITCH ROOM DOOR 2	Normal	Rls
5	SERVER ROOM DOOR	Normal	Rls
6	BATTERY ROOM DOOR	Normal	Rls
7	SECURITY LIGHTS EAST	Normal	Rls
8	SECURITY LIGHTS WEST	Normal	Rls

Submit Data

*Fig. 12.5.5.1. Controls page*

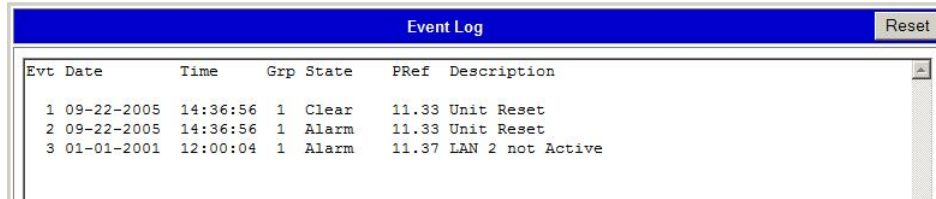
Clicking the **Controls** link in the Monitor menu opens the Controls page (see Figure 12.5.5.1, above). From this page you can operate the NetGuardian-16S's eight control relays.

The Controls page lists each control relay by its ID number and the description configured by the system administrator.

### To operate a control relay:

- Choose an operation from the relay's drop-down menu in the State column. For each relay, the choices are:
  - Opr (operate): Latch the relay
  - Rls (release): Unlatch the relay
  - Mom (momentary): Latch the relay for 600 msec
- Click the **Submit Data** button to issue the control.

## 12.5.6 Event Log



Event Log						Reset
Evt	Date	Time	Grp	State	PRef	Description
1	09-22-2005	14:36:56	1	Clear	11.33	Unit Reset
2	09-22-2005	14:36:56	1	Alarm	11.33	Unit Reset
3	01-01-2001	12:00:04	1	Alarm	11.37	LAN 2 not Active

*Fig. 12.5.6.1. Event Log*

Clicking the **Event Log** link in the Monitor menu opens the Event Log page. The Event Log maintains a history of up to 100 events including reboots, base and system alarms, ping alarms, and controls. Posted events for the various alarms include both alarm and clear status.

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 Reference section for display descriptions.
Description	Alarm or control relay description configured by system administrator

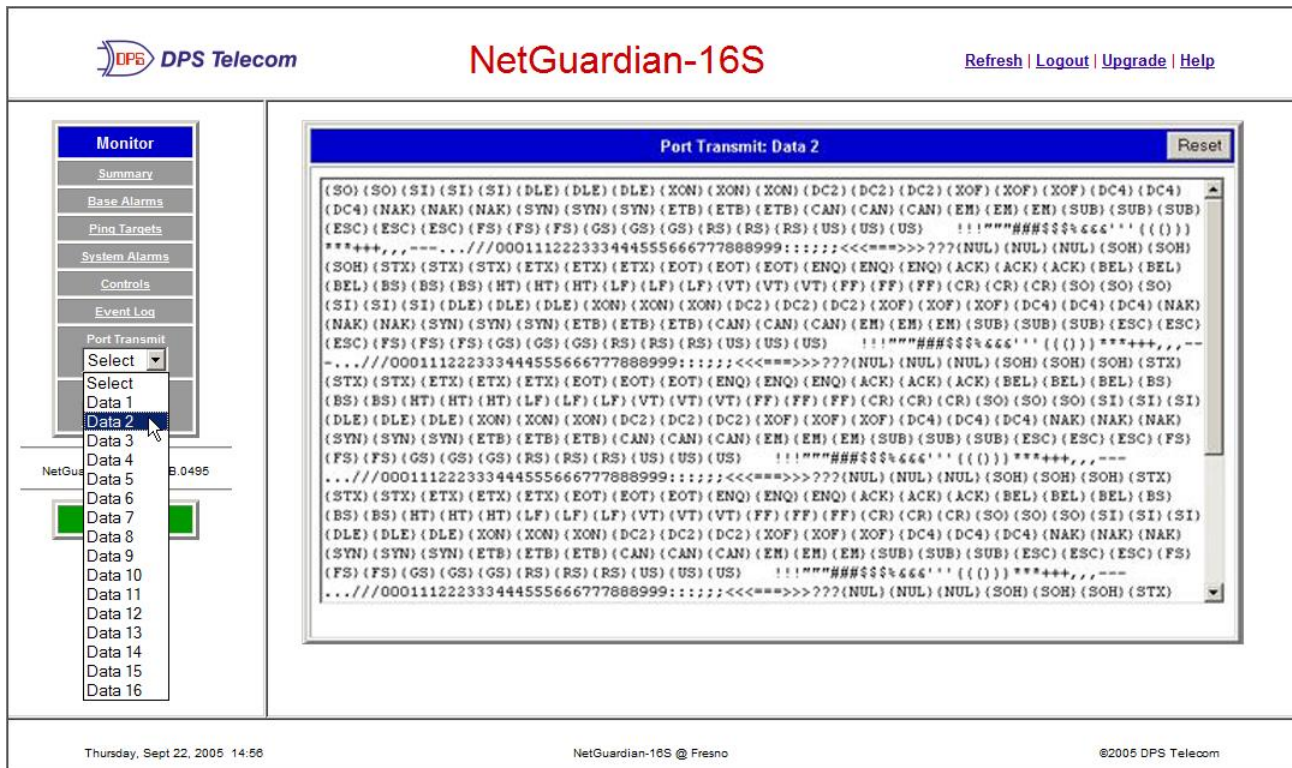
*Table 12.5.6.A. Event Log fields and descriptions*

Table 12.5.6.A., above, describes the information fields in the Event Log.

**To clear and reset the Event Log**, click the **Reset** button in the top right corner of the Event Log page.

**Note:** The Event Log is automatically cleared whenever the NetGuardian-16S reboots.

## 12.5.7 Port Transmit and Port Receive



*Fig. 12.5.7.1. Port Transmit page*

The **Port Transmit** and **Port Receive** pages display live data being transmitted or received over the NetGuardian-16S's 16 data ports. The port data traffic is displayed in ASCII symbols.

**To view transmit or receive port traffic**, select the data port you want to see from either the **Port Transmit** or **Port Receive** drop-down menus in the Monitor menu. (See Figure 12.5.7.1, above.)

**To clear and reset the display**, click the **Reset** button in the top right corner of the page.

For a descriptions of the ASCII symbols, see Section 13.6, "ASCII Symbol Descriptions," in the Reference section.

## 12.6 Edit Menu

### 12.6.1 Call List

Call List	
Global Settings	
Acknowledge Code	1234
DTMF Call ID	6
Call-In Msg.	1-Default-Call-In
Wait for PIN	5 (1-16) sec
Repeat Count	2 (0-6)
Contact 1	
Phone	555-1212
Comments	Primary Technician
Delay Before Call	30 (0-99) sec
Critical Msg.	1-Default-CR
Major Msg.	2-Default-MJ
Contact 2	
Phone	867-5309
Comments	Secondary Technician
Delay Before Call	30 (0-99) sec
Critical Msg.	1-Default-CR
Major Msg.	2-Default-MJ
Contact 3	
Phone	736-5000
Comments	

*Fig. 12.6.1.1. Call List edit page*

Clicking the **Call List** in the Edit menu opens the Call List edit page (see Figure 12.6.1.1, above). On this page you can configure the Acknowledge Code and contacts for the Voice Call Out feature. (See Section 7, "Voice Call Out," for more information about this feature.)

- Up to 10 Voice Call Out Contacts can be defined.
- Each contact can receive Voice Call Out messages for Critical alarms, Major alarms, or both Critical and Major alarms.
- You have a choice of 16 different voice messages to assign to a contact for an alarm severity level.

**To define the Call List**, complete all fields for each contact you want to define, then scroll to the bottom of the Call List page and click the **Submit Data** button. Call List configuration fields are described in Table 12.6.1.A on page 34.

Call List Field	Description
<b>Global Settings</b>	
Acknowledge Code	DTMF code entered by contact to acknowledge alarm
DTMF Call ID	ID number of pre-recorded voice message to be played at the start of the call to identify the NetGuardian-16S unit.
Call-in Msg.	Drop-down menu to select voice dialog heard by call-in users
Wait for PIN	Length of pause between message repetitions to allow user to enter Acknowledge Code (1–16 sec)
Repeat Count	Number of times NetGuardian-16S will repeat message
<b>Contact Settings</b>	
Phone	Contact's phone number
Comments	Optional contact description (30 character limit)
Delay Before Call	Incremental delay time from initial SNMP set or end of previous call before new call (0–99 sec)
Critical Msg.	Drop-down menu to select voice message for Critical alarms
Major Msg.	Drop-down menu to select voice message for Major alarms

*Table 12.6.1.A. Call List configuration fields*

## 12.6.2 Date and Time

Date and Time	
<b>Current Setting</b>	
Date	09 / 22 / 2005
Day	Thursday
Time	11 : 29 : 20
<b>Network Time Configuration</b>	
Time Server IPA	255.255.255.255 (Disabled)
Time Server Port	123
Timezone	Pacific
Observe DST	<input checked="" type="checkbox"/>
Submit Data	

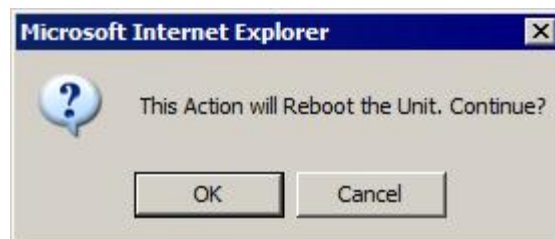
*Fig. 12.6.2.1. Date and Time edit page*

Clicking the **Date and Time** link in the Edit menu opens the Date and Time edit page (see Figure 12.6.2.1, above). On this page you can reset the NetGuardian-16S's internal clock or configure the NetGuardian-16S to automatically set its clock to a Network Time Protocol Server.

**To set the NetGuardian-16S internal clock**, enter the current date, day of the week, and time in the Current Setting area. Note that the Date field uses U.S. MM/DD/YYYY format, and the Time field uses 24-hour time. After entering the correct time, click the **Submit Data** button to save your changes.

**To set the time automatically using Network Time Protocol**, enter the IP address and port of a network time server in the Network Time Configuration area. (For a list of network time servers, click the **Time Server IPA** link.) Select your time zone in the Time Zone drop-down menu, and check the Observe DST check box if you're currently observing daylight saving time. After making your selections, click the **Submit Data** button to save your changes.

## 12.6.3 Reboot



*Fig. 12.6.3.1. Reboot command confirmation prompt*

Clicking the **Reboot** link in the Edit menu will reboot the NetGuardian-16S. A dialog box (see Figure 12.6.3.1) will ask you to confirm the Reboot command. Click **OK** to execute the reboot or click **Cancel**.

## 12.6.4 NVRam

NVRam	
Action	Description
Write	Writes current values to NVRam.
Initialize	Sets NVRam to default values.

Action Select ▼ Submit Data

Clicking the **NVRam** link in the Edit menu opens the NVRam page. On this page you can write your configuration changes to the NetGuardian-16S's internal memory, or you can reset the unit's memory to its default settings.

**Note:** If you're not a system administrator, your access privileges may not include rights to access this page.

The NetGuardian-16S stores its configuration data in nonvolatile RAM (NVRAM). The NVRAM will safely store all of the NetGuardian-16S's configuration data, even if the unit's power supply fails.

**To write your database changes to the NVRAM,** choose **Write** from the Action drop-down menu and click the **Submit Data** button.

**To initialize the NVRAM and erase all configuration data,** choose **Initialize** from the Action menu drop-down menu and click the **Submit Data** button.



## 13 Reference Section

### 13.1 NetGuardian-16S Alarm Map

Description	Port	Address	Display	Points	SNMP Trap Numbers	
					Set	Clear
NetGuardian-16S Base Unit						
Discrete Alarms	99	1	1	1–32	8001–8032	9001–9032
Ping Alarms	99	1	2	1–32	8065–8096	8065–9096
Control Relays	99	1	11	1–8	8641–8648	9641–9648
System Alarms 9–15	99	1	11	9–15	8649–8655	9649–9655
System Alarms 33–50	99	1	11	33–50	8673–8690	9673–9690
NetGuardian Expansion #1						
Discrete Alarms	99	1	12	1–48	6001–6064	7001–7064
Control Relays	99	1	13	1–8	6065–6072	7065–7072
NetGuardian Expansion #2						
Discrete Alarms	99	1	14	1–48	6129–6177	7129–7177
Control Relays	99	1	15	1–8	6193–6200	7193–7200
NetGuardian Expansion #3						
Discrete Alarms	99	1	16	1–48	6257–6305	7257–7305
Control Relays	99	1	17	1–8	6321–6328	7321–7328

*Table 13.1.A. NetGuardian-16S alarm map*

## 13.2 System Alarm Descriptions

Point	System Alarm	Description
9	Modem not Responding	Modem not responding to initialization string
10	No Dialtone	Dial tone not detected during dial-out attempt
11	Pager Que Overflow	Over 250 unsent events in pager queue
12	Pager Notify Failed	Attempted pager notification unsuccessful
13	Callout Que Overflow	Over 8 unsent calls in Voice Call Out queue
14	Callout Notify Failed	Attempted Voice Call Out unsuccessful
15	Exp. Module Callout	Alarm collected from Entry Control Unit (ECU)
33	Unit Reset	Toggles whenever unit reboots
34	Lost Provisioning	Unit using default configuration settings. NVRAM may be damaged
35	Intra-communication Fail	Communications failure between the NetGuardian-16S's two circuit boards
36	Private LAN not Active	Ethernet link not detected on Private port
37	Public LAN not Active	Ethernet link not detected on Public port
38	Duplicate Private IPA	Unit detects another node with same IP address as the Private port
39	Duplicate Public IPA	Unit detects another node with same IP address as the Public port
40	DCP Poller Inactive	Unit has not received poll from T/Mon for longer than DCP Timer period set by system administrator
41	DCP Event Que Full	More than 500 uncollected events in DCP event queue
42	SNMP Trap not Sent	SNMP trap address is not defined and an SNMP Trap event occurred
43	Network Time Server	Communication to network time server failure
44	BSU Standalone Mode	Communication with CopperControler failure and BSU enters Standalone Mode.
45	Serial Rcv Overflow	UART hardware overflowed during receive
46	Serial Rcv Que Full	Alarm set when any data port is filled with more than 16K of information
47	Timed Tick	Toggles state at constant rate set by Timed Tick period configured by system administrator
48	Channel Port Timeout	Channel port has not forwarded any traffic for longer than Channel Port Timeout period set by system administrator
49	Craft Port Timeout	Craft Timeout Timer has not been reset in the period set by system administrator
50	NGDdx Expansion Fail	Communication to NetGuardian Expansion unit(s) failure

*Table 13.5.A. System alarm descriptions*

## 13.3 Voice Call Out Default Dialogs

### 13.3.1 Dialog 1: Default Critical

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

"A Critical alarm exists. A Critical alarm exists. A Critical alarm exists."

"Enter PIN to acknowledge alarm."

*(User enters Acknowledge Code followed by pound (#) to acknowledge alarm.)*

If **Wait for PIN** time elapses, and the user has not entered the code, then replay message.

If user enters incorrect code, then: "**Problem invalid acknowledgement code.**"

If errors exceed repeat count, then: "**Thank you. Goodbye.**"

If code correct then: "**Acknowledgement accepted. Thank you. Goodbye.**"

### 13.3.2 Dialog 2: Default Major

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

"A Major alarm exists. A Major alarm exists. A Major alarm exists."

"Enter PIN to acknowledge alarm."

*(User enters Acknowledge Code followed by pound (#) to acknowledge alarm.)*

If **Wait for PIN** time elapses, and the user has not entered the code, then replay message.

If user enters incorrect code, then: "**Problem invalid acknowledgement code.**"

If errors exceed repeat count, then: "**Thank you. Goodbye.**"

If code correct then: "**Acknowledgement accepted. Thank you. Goodbye.**"

### 13.3.3 Dialog 3: Default Secure Dial-In

"Please enter password."

*(User enters Acknowledge Code followed by pound (#) as user ID password.)*

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

If no alarms, then: "No alarms exist. No alarms exist. No alarms exist."

If Critical alarm, then: "A Critical alarm exists. A Critical Alarm exists. A Critical Alarm exists."

If Major alarm, then: "A Major alarm exists. A Major Alarm exists. A Major Alarm exists."

"Thank you. Goodbye."

### 13.3.4 Dialog 4: Critical GR-474

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

"A Critical alarm exists. A Critical alarm exists. A Critical alarm exists."

**BONG-BONG, BONG-BONG, BONG-BONG** *(Double-stroke "bong" every 1.5 seconds, 6 strokes total)*

"Enter PIN to acknowledge alarm."

*(User enters Acknowledge Code followed by pound (#) to acknowledge alarm.)*

If **Wait for PIN** time elapses, and the user has not entered the code, then replay message.

If user enters incorrect code, then: "Problem invalid acknowledgement code."

If errors exceed repeat count, then: "Thank you. Goodbye."

If code correct then: "Acknowledgement accepted. Thank you. Goodbye."

### 13.3.5 Dialog 5: Major GR-474

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

"A Major alarm exists. A Major alarm exists. A Major alarm exists."

**BONG, BONG, BONG** (*Single "bong" every 1.5 seconds, 3 strokes total*)

"Enter PIN to acknowledge alarm."

*(User enters Acknowledge Code followed by pound (#) to acknowledge alarm.)*

If **Wait for PIN** time elapses, and the user has not entered the code, then replay message.

If user enters incorrect code, then: "**Problem invalid acknowledgement code.**"

If errors exceed repeat count, then: "**Thank you. Goodbye.**"

If code correct then: "**Acknowledgement accepted. Thank you. Goodbye.**"

### 13.3.6 Dialog 6: GR-474 Secure Dial-In

"Please enter password."

*(User enters Acknowledge Code followed by pound (#) as user ID password.)*

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

If no alarms, then: "**No alarms exist. No alarms exist. No alarms exist.**"

If Critical alarm, then:

"A Critical alarm exists. A Critical Alarm exists. A Critical Alarm exists."

**BONG-BONG, BONG-BONG, BONG-BONG** (*Double-stroke "bong" every 1.5 seconds, 6 strokes total*)

If Major alarm, then:

"A Major alarm exists. A Major Alarm exists. A Major Alarm exists."

**BONG, BONG, BONG** (*Single "bong" every 1.5 seconds, 3 strokes total*)

"Thank you. Goodbye."

### 13.3.7 Dialog 7: Critical RUS-FORM-522

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

"A Critical alarm exists. A Critical alarm exists. A Critical alarm exists."

"Enter PIN to acknowledge alarm."

*(User enters Acknowledge Code followed by pound (#) to acknowledge alarm.)*

If **Wait for PIN** time elapses, and the user has not entered the code, then replay message.

If user enters incorrect code, then: "**Problem invalid acknowledgement code.**"

If errors exceed repeat count, then: "**Thank you. Goodbye.**"

If code correct then: "**Acknowledgement accepted. Thank you. Goodbye.**"

### 13.3.8 Dialog 8: Major RUS-FORM-522

"Hello, this is telephone number <DTMF ID>."

"The time is <time> <A.M./P.M.>"

"A Major alarm exists. A Major alarm exists. A Major alarm exists."

**BUSY-BUSY-BUSY** *(Busy tone, 3 pulses; .5 seconds on and .5 seconds off)*

"Enter PIN to acknowledge alarm."

*(User enters Acknowledge Code followed by pound (#) to acknowledge alarm.)*

If **Wait for PIN** time elapses, and the user has not entered the code, then replay message.

If user enters incorrect code, then: "**Problem invalid acknowledgement code.**"

If errors exceed repeat count, then: "**Thank you. Goodbye.**"

If code correct then: "**Acknowledgement accepted. Thank you. Goodbye.**"

### 13.3.9 Dialog 9: RUS-FORM-522 Secure Dial-In

**"Please enter password."**

*(User enters Acknowledge Code followed by pound (#) as user ID password.)*

**"Hello, this is telephone number <DTMF ID>."**

**"The time is <time> <A.M./P.M.>"**

If no alarms, then:

**"No alarms exist. No alarms exist. No alarms exist."**

**RING-RING, RING-RING, RING-RING...** (Continuous 2-ring ringback tone)

If Critical alarm, then: **"A Critical alarm exists. A Critical Alarm exists. A Critical Alarm exists."**

If Major alarm, then:

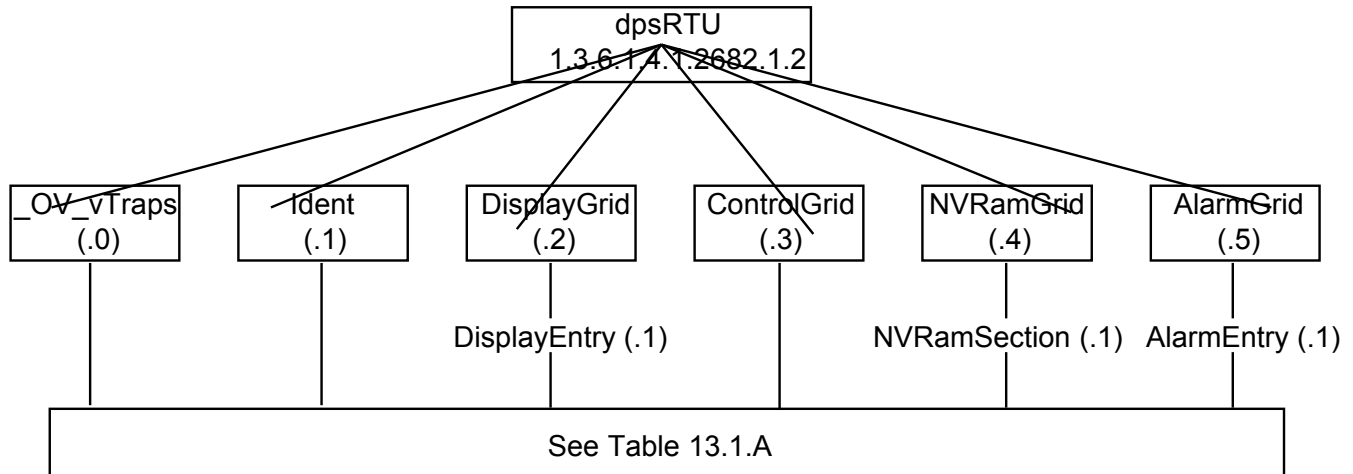
**"A Major alarm exists. A Major Alarm exists. A Major Alarm exists."**

**BUSY-BUSY-BUSY** *(Busy tone, 3 pulses; .5 seconds on and .5 seconds off)*

**"Thank you. Goodbye."**

## 13.4 NetGuardian-16S Trap OIDs

The illustration and tables below outline the SNMP OIDs for NetGuardian-16S alarm points. This illustration begins with dpsRTU; however, the MIB object identifier tree has several levels above that. 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).



<b>(0.) _OV_Traps points</b> <b>_OV_vTraps</b> <b>(1.3.6.1.4.1.2682.1.2.0)</b> PointSet (.20) PointClr (.21) SumPSet (.101) SumPClr (.102) ComFailed (.103) ComRestored (.014) P0001Clr (.20001) through P0064Set (.10064) P0001Clr (.20001) through P0064Clr (.20064)	<b>(.1) Identity points</b> <b>Ident</b> <b>(1.3.6.1.4.1.2682.1.2.1)</b> 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.	<b>(.2) DisplayGrid points</b> <b>DisplayEntry</b> <b>(1.3.6.1.4.1.2682.1.2.2.1)</b> Port (.1) Address (.2) Display (.3) DispDesc (.4)* PntMap (.5)*
<b>(.3) ControlGrid points</b> <b>ControlGrid</b> <b>(1.3.6.1.4.1.2682.1.2.3)</b> Port (.1) Address (.2) Display (.3) Point (.4) Action (.5)	<b>(.4) NVRamSection points</b> <b>NVRamSection (1.3.6.1.4.2682.1.2.4.1)</b> NVsNmbr (.1) NvsData (.2) NvsStatus (.3)	<b>(.5) AlarmEntry points</b> <b>AlarmEntry</b> <b>(1.3.6.4.1.2682.1.2.5.1)</b> APort (.1) AAddress (.2) ADisplay (.3) APoint (.4) APntDesc (.5)* AState (.6) * For specific alarm points, see Table 13.1.A.

Table 20.3.A. MIB object identifier tree descriptions



## 13.5 SNMP Granular Trap Packets

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
NetGuardian16S	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 12.3.A.** Example of SNMP headers and descriptions

Table 12.3.A shows the information contained in the SNMP Trap packets sent by the NetGuardian-16S. The NetGuardian-16S sends a unique, granular Trap OID for each alarm point, and the Trap includes the user-configured alarm description in a variable binding value field.

There are two ways your SNMP manager can identify alarms from the NetGuardian-16S:

- Read the unique, granular Traps OID for each alarm
- Read the generic Trap OID for any NetGuardian-16S Trap (1.3.6.1.4.1.2682.1.2.5.1.2.99.1.1.1) and parse the variable binding for the alarm description.

## 13.6 ASCII Symbol Descriptions

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 13.6.A. ASCII symbols*

Table 13.6.A lists all possible ASCII symbols displayed on the Port Transmit and Port Receive pages. (For more information about Port Transmit and Port Receive, see Section 12.5.7, "Port Transmit and Port Receive.")

Some notes on the ASCII port display:

- 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 (e.g. [IF]).
- A received BREAK will appear as <BRK>.

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