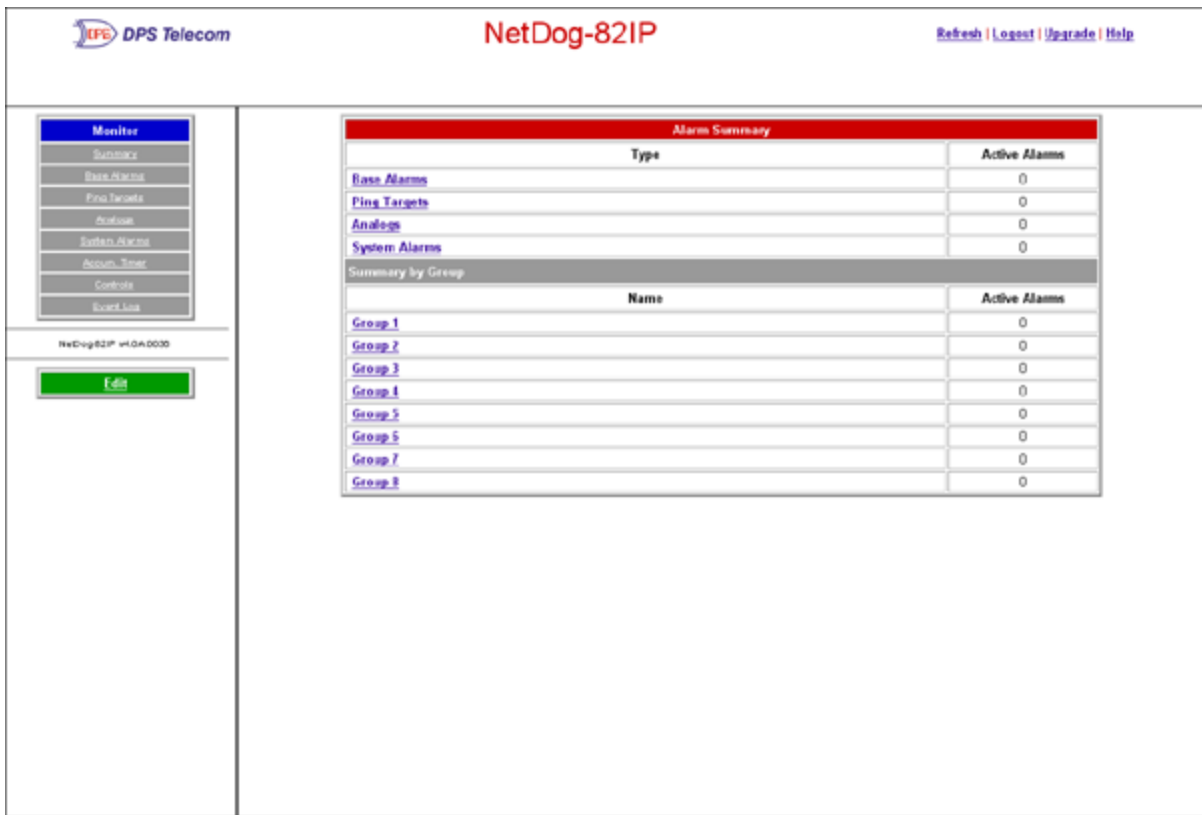


# NetDog-82IP Web Browser

## USER MANUAL



The screenshot shows the NetDog-82IP web browser interface. At the top left is the DPS Telecom logo. The title "NetDog-82IP" is centered at the top. On the top right are links for "Refresh", "Logout", "Upgrade", and "Help".

On the left side, there is a "Monitor" menu with the following options: Summary, Base Alarms, Ping Targets, Analogs, System Alarms, Alarm Time, Controls, and Event Log. Below the menu is the version "NetDog82IP v1.04.0030" and an "Edit" button.

The main content area displays an "Alarm Summary" table:

Type	Active Alarms
<a href="#">Base Alarms</a>	0
<a href="#">Ping Targets</a>	0
<a href="#">Analogs</a>	0
<a href="#">System Alarms</a>	0

Below this is a "Summary by Group" table:

Name	Active Alarms
<a href="#">Group 1</a>	0
<a href="#">Group 2</a>	0
<a href="#">Group 3</a>	0
<a href="#">Group 4</a>	0
<a href="#">Group 5</a>	0
<a href="#">Group 6</a>	0
<a href="#">Group 7</a>	0
<a href="#">Group 8</a>	0

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## Revision History

March 26, 2012	Updated analog temperature sensors section
June 24, 2009	Updated instructions for setting up email notifications. D-OC-UM096.24100 released.
March 8, 2007	NetDog 82IP G2 Web Browser (D-OC-UM073.08110) released.

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# 1 Overview

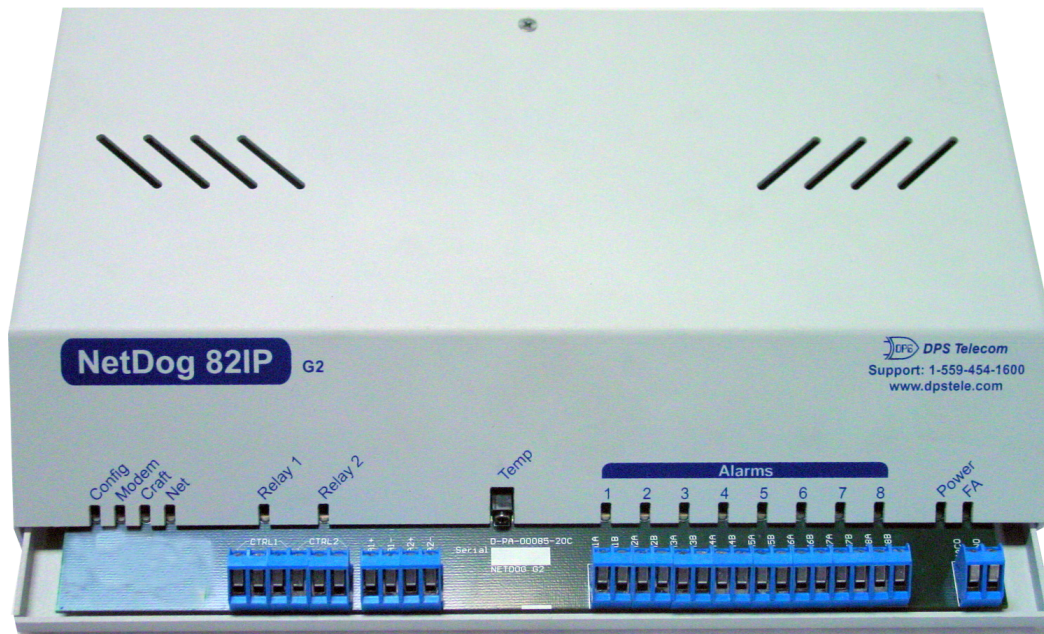


Fig. 1.1. NetDog-82IP monitors alarms, pings network elements, and reports via SNMP, pager, or email

## 1.1 Introduction

The NetDog-82IP's Web Browser Interface lets you manage alarms and configure the unit through the Internet or your Intranet. You can quickly set up alarm point descriptions, view alarm status, issue controls, and configure paging information, and more. The NetDog-82IP supports Internet Explorer versions 5.0 and above and Netscape Navigator versions 4.7 and above.

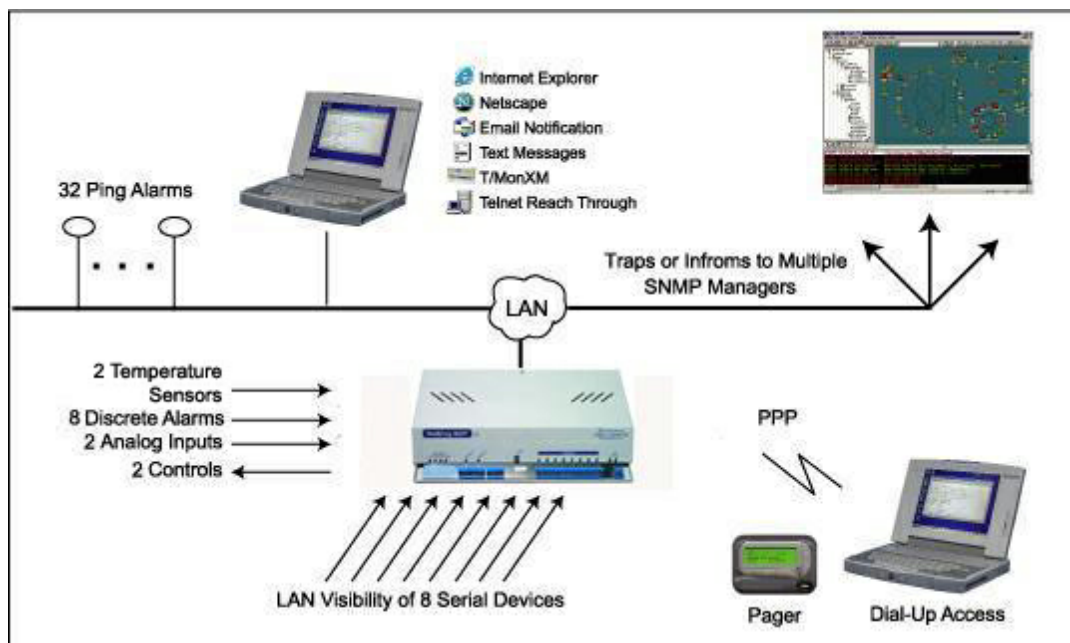


Fig. 1.2- The Net Dog-821P has the capacity to monitor IP-aware devices' network presence and also interfaces discrete alarm points and controls at your network sites

## 1.2 Potential Problems using Web Interface in a Secure Proxy Network

Using the Web Browser Interface for the NetDog-82IP in a secure proxy network can cause certain problems to occur. If you are logged on to the NetDog-82IP from within your network through a proxy, and another user from within your network tries to access the same NetDog-82IP, the second user will not need to login to the NetDog-82IP. Both users will essentially be logged in using the same IP address because of the masking done by the proxy server.

## 1.3 What's New in the Net Dog-82IP

The NetDog-82IP Series adds these new features:

### SNMP v2c Support and Robust Message Delivery

NetDog-82IP supports SNMP v2c, and the SNMP INFORM command, which permits robust delivery of alarm notification to your SNMP manager.

### 2 Analog Channels

The NetDog-82IP has 2 analog channels that can be utilized for monitoring humidity, raw voltage etc. *This is an optional hardware configuration and is not included for all units.*

### 2 Temperature Sensors (Internal and External)

The NetDog's internal and external temperature sensors monitor the ambient temperature. The internal temperature sensor measures a range of 32° F to 140° F (0° C to 60° C) within an accuracy of  $\pm 1^\circ$ . The external temperature sensor provides external temperature readings by plugging the sensor into the Temp port on the NetDog 82IP G2's front panel. *This is an optional hardware configuration and is not included for all units.*

### Alarm Point Grouping

Each NetDog-82IP Alarm point can be assigned to one of eight groups, which are identified with a user-defined label. Some of the ways you can use Alarm Point Grouping include:

#### ***Alarm Severity Levels:***

Configure the NetDog-82IP to indicate assigned alarm security levels like Critical, Major, Minor and Status in a variable binding within the SNMP TRAP or INFORM message - so alarms can be sorted by severity even if your SNMP manager doesn't support severity levels.

#### ***Two Sets of Alarm Severity Levels:***

With 8 alarm groups to work with, you can easily create two different sets of severity levels. For example, you could separate power alarms (rated from Critical to Status) from environmental alarms (also rated Critical to Status).

#### ***Custom Virtual Alarms:***

Create virtual alarms based on easy formulas like All security alarms or Critical power alarms.

#### ***Flexible Custom Derived Controls:***

NetDog-82IP lets you create Derived Controls formulas based on Alarm Point Groups.

#### ***Granular Pager and Email Notification:***

Selectively assign alarm points to specific pager and email notification recipients. The NetDog-82IP can be configured to send pager notifications only for Critical or Major alarms - or you can send power alarms to repair technicians and intrusion alarms to a security guard.

### Global Support for Dual SNMP Managers

NetDog-82IP supports sending all SNMP TRAP and INFORM notifications to **two** global SNMP managers. This makes it easier to configure a secondary SNMP manager and frees up your NetDog-82IP configuration for additional notification devices and more flexible alarm reporting. You can easily send an alarm to your primary SNMP manager at the NOC; to a secondary backup SNMP manager at another location; to the pager of the on-call technician; and the email inbox of the technician's supervisor.

### Reset the NetDog-82IP Event Log

The NetDog-82IP Event Log has been enhanced to support new NetDog-82IP features:

- You can reset the Event Log, to clear old alarms from the display.
- You can reset the Event Log by Alarm Point Group; for example, clear power alarms while retaining intruder alarms.

### Alarm Sync Makes Turnup and Testing Easy

NetDog-82IP also provides a new command to re-synchronize all alarms. This command clears all alarms, so that a new notification is sent for all standing alarms. You can easily test alarm connections during turnup without rebooting the NetDog-82IP unit.

## 2 Unit Configuration

### 2.1 Logging on to the Net Dog-82IP

For Web Interface functionality, the unit must first be configured with some basic network information. If this step has not been done, refer to the NetDog-82IP User Manual for initial software configuration setup.

1. To connect to the NetDog-82IP from your 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. It may be helpful to bookmark the logon page to simplify access.
2. After connecting to the NetDog-82IP's IP address, enter your password and click Submit, see Figure 2.1.  
**Note:** The factory default password is *dpstelecom*.
3. In the left frame there is *Monitor* menu button and an *Edit* menu button. Most of the software configuration will occur in the *Edit* menu. The following sections provide detailed information regarding these functions.



### Hot Tip!

The maximum number of users allowed to simultaneously access the NetDog-82IP via Web is four. The primary user is the only user with access to the editing features.

Exiting the Web interface without logging out prevents other users from accessing the Editing features, as well. Web sessions are tracked by IP Address and the session will time out after twelve minutes of inactivity, unless configured with a longer Web timeout duration. (See section 2.14, "Setting System Timers" for more information.)

*Fig. 2.1. Enter your password to enter the NetDog-82IP Web Browser Interface*

## 2.2 Entering System Settings

From the *System* screen you can enter the name, location, contact, features, and SNMP community names.

Use the following steps to define your NetDog-82IP system information:

1. From the *Edit* menu choose *System*, see Figure 2.2.
2. Enter the designated user name for your NetDog-82IP.\*
3. Enter the location or address of the NetDog-82IP.\*
4. Set the contact by entering the telephone number or other contact information for the person or group responsible for this NetDog-82IP.
5. The *Features* field is used for entering feature codes for future upgrades. Do not change this code unless instructed by DPS Technical Support.
6. Click *Submit* to save your system information settings.

\* If using email pager type refer to Section 2.5 for correct name and location field formatting.

The screenshot shows the NetDog-82IP web browser interface. At the top, there is a logo for DPS Telecom and the title 'NetDog-82IP'. On the right, there are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. The main content area is divided into two sections. On the left is a navigation menu with 'Monitor' and 'Edit' buttons. The 'Edit' menu is expanded, showing various options like 'System', 'Logon', 'Ethernet', 'Ports', 'Filter IP's', 'SNMP', 'Mail-alias', 'Port Groups', 'Email Address', 'System Address', 'Account Time', 'Email Defaults', 'Release', 'Configure', 'Search SQL', 'Select', 'Users', 'Data and Files', 'FTP', 'Camera', 'Alarm Sigs', 'Backup', and 'Options'. The 'System' option is highlighted. The main form area is titled 'System' and contains the following fields: Name (with 'NetDog-82IP' entered), Location, Contact, Phone, Features (with 'D242-B4-DEE4' entered), Unit ID (with '1' entered), DCP Port (with '3301' and a dropdown menu set to 'UDP'), and DCP Protocol (with a dropdown menu set to 'DCPv'). A 'Submit Data' button is located at the bottom of the form.

*Fig. 2.2. Configure the system information by selecting the System screen from the Edit menu*

Field	Description
Name	Used to set the Name@Location email address. <b>Note:</b> Name is the portion before the @ character.
Location	Used to set the Name@Location email address. <b>Note:</b> Location is the portion after the @ character, this is a host name or IP address.
Contact	Information for how to contact the person responsible for this NetDog-82IP.
Phone	Contact's telephone number.
Features	Used for entering feature codes for future upgrade features.
Unit ID	User definable ID number for this NetDog-82IP (DCP Address).
DCP Port	Enter the DCP Port for this NetDog-82IP. (UDC/TCP Port)

*Table 2.A. System fields*



## 2.3 Changing the Logon Password

The password can be configured from the *Edit* menu > *Logon* screen > *Master Password* section. The minimum password length is four characters; however, DPS recommends setting the minimum password length to at least five characters. You can also configure security logon profiles to individual access rights and security dial-back functions in the *Logon Profile* screen. (See section 2.3.1 for dial-back and logon profile configuration information.)

**Note:** The factory default password is *dpstelecom*. DPS Telecom strongly recommends that the default password be changed.

Use the following steps to change the logon password:

1. From the *Edit* menu select *Logon*.
2. Enter the minimum password length you wish to set.
3. Enter your new password in the *Password* and *Confirm Password* fields.
4. Click the *Submit Data* button.

### 2.3.1 Logon Profiles and Access Rights

Creating logon profiles allows you to grant personnel access to certain functions of the NetDog-82IP without allowing access to sensitive or secure areas of the database.

Use the following steps to create logon profiles:

1. From the *Edit* menu select *Logon*, then click on the *Available* link. (See Figure 2.3.)
2. Enter the user information in the appropriate fields. See Table 2.B for field and access privileges descriptions.
3. Click *Submit Data* to save the user profile.

Logon Profile 1	
User	<input type="text"/>
Password	<input type="text"/>
Confirm Password	<input type="text"/>
Call Back	<input type="text"/>
Access Privileges	
Admin	<input checked="" type="checkbox"/>
DB Edit	<input checked="" type="checkbox"/>
Monitor	<input checked="" type="checkbox"/>
SDMonitor	<input checked="" type="checkbox"/>
Control	<input checked="" type="checkbox"/>
Reach-Through	<input checked="" type="checkbox"/>
Modem	<input checked="" type="checkbox"/>
Telnet	<input checked="" type="checkbox"/>
PPP	<input checked="" type="checkbox"/>

*Fig. 2.4. Configure access privileges for users in the Logon Profile screen*

Profile Field	Description
User	Enter a username or a user description. (18 characters maximum)
Password	Enter a unique user password. (4 character minimum) <b>Note:</b> This password will be used by the NetDog-82IP to determine whether or not to initiate the "Call-Back" function and also if any limited access applies.
Confirm Password	Re-enter the password.
Call Back	This is the phone number the NetDog-82IP uses to call back to the user's modem.
Access Privileges	
Admin	Enables the user to add/modify logon profiles and NetDog-82IP password information. <b>Note:</b> Selecting security also automatically activates the DB Edit.
DB Edit	Enables the user to perform database edits in the NetDog-82IP.
Monitor	Enables the user to have Monitor access of the NetDog-82IP.
SDMonitor	Enables the user to view serial port buffers. <i>(Not used in NetDog-82IP design)</i>
Control	Gives the user the ability to issue controls. This also automatically activates Monitor.
Reach-Through	Enables the user to achieve reach-through (Proxy) access.
Modem	Enables the user to call into the unit.
Telnet	Enables the user to have Telnet access to the unit.
PPP	Enables the user to access the PPP server with the user defined password.

*Table 2.B. Logon profile field descriptions*

### 2.3.2 Security Dial-Back

The Dial-Back feature serves as an additional level of security when accessing the NetDog-82IP from the modem. Once users are assigned a logon profile, along with a unique NetDog-82IP logon password, the unit can be set to initiate a dial-back when a valid logon password is entered. If a valid password is entered users will see *accepted, Disconnecting*. The NetDog-82IP will then hang up and dial back to the users modem using the number entered in the logon profile. When the NetDog-82IP dials back, the user will be logged on to whatever security access that user has been granted in their logon profile.



#### **Hot Tip!**

To enable dial-back security, at least one of the access privileges must be activated and a call back phone number must be defined. As long as the dial-back security mode is enabled, that will be the only method of external dial-up access to the unit.

## 2.4 Configuring Port Parameters

The *Edit* menu > *Ports* screen allows you to configure the modem, and craft port settings.

### 2.4.1 Using the Base URL Field

The NetDog-82IP allows users to turn each alarm point description into a hyperlink. When utilized, the alarm description for each alarm point that appears in the monitor mode (for base alarms, ping targets, or system alarms) becomes a link that directs technicians/managers to specific Web pages or to other files viewable by a Web browser. This allows users to create easily accessible informational databases on how to handle specific alarm conditions or other instructions. The hyperlinked page or file will be displayed in the main window frame of the NetDog-82IP Web browser. Follow the directions below to create hyperlinks for alarm point descriptions.

1. From the *Edit* Menu select *Ethernet*. Scroll down to the *Base URL* field, see Figure 2.5.
2. Enter your base URL (e.g. *http://www.dpstelecom.com*). The NetDog-82IP creates the links from the alarm point descriptions based on the URL. Once the base URL is entered, the NetDog-82IP automatically attaches a unique suffix to each alarm point. For example, if the base URL is *http://www.dpstelecom.com* the link for the base alarm at point 1 would be *http://www.dpstele.com/base1.html*, Base Alarm Point 2 would be *http://www.dpstele.com/base2.html*, and so on.
3. To add a suffix other than *html* to the hyperlinks, insert the text *&pntID;* into the base URL. This allows the user to specify the extension. For example, if the base URL is *http://www.dpstele.com/&pntID;.pdf*, the link for the base alarm at point 1 would be *http://www.dpstele.com/base1.pdf*.



### Hot Tip!

Any file type that is viewable in your Web browser (e.g. word document, PDF, txt, etc.) is a linkable file.

4. The same link structure applies to the Ping Alarms, System Alarms, and Analog Alarms fields. See Table 2.D for specific URL extension link information.

Alarm Page	Base URL web page link*
Base Alarms	Base1.html - Base8.html
Ping Alarms	Ping1.html - Ping32.html
System Alarms	System1.html - System64.html
Analog Alarms	Analog1.html - Analog2.html

*Table 2.D. Specific link extensions*

\* Using the *&pntID;* code in the base URL enables you to link to any file type viewable in your Web browser.

### 2.4.2 Setting Up SNMP

Use the following steps to define your NetDog-82IP system information:

1. From the *Edit* menu choose SNMP, see Figure 2.6.
2. Enter the community name for SNMP GET requests.
3. Enter the community name for SNMP SET requests.
4. Enter the community name for SNMP TRAPs.
5. Define the IP address of your trap manager. Set to 255.255.255.255 if not using.
6. Define the UDP port set by the SNMP manager to receive traps; usually 162.
7. Select the Format in which you want your traps to be sent to your manager in.
8. Click *Submit* to save your system information settings.

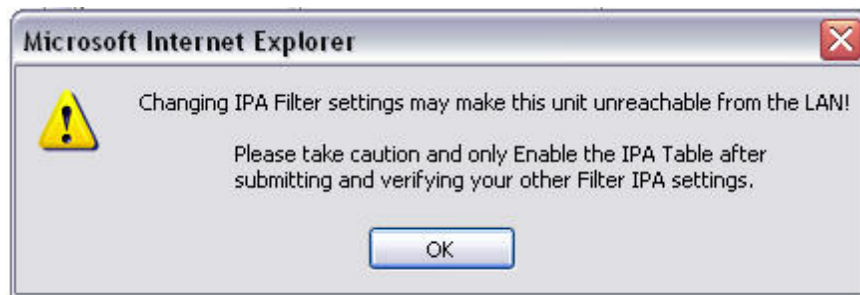
Communities	
G)et	Community name for SNMP requests.
S)et	Community name for SNMP SET requests.
T)rap	Community name for SNMP TRAP requests.
Field	Description
IPA	Defines the SNMP trap manager's IP address. Set to 255.255.255.255 if not using.
Port	The SNMP port is the UDP port set by the SNMP manager to receive traps, usually set to 162.
Format	Select between SNMPv1 TRAP, SNMP v2c TRAP, and SNMP v2c INFORM.

*Table 2.E. Fields in the Edit > SNMP settings*

### 2.4.3 Filter IPA Config and Operation

The Filter IPA table allows you to increase the NetDog-82IP's network security by allowing or blocking packets from specified IP addresses. Addresses which appear in the table will be processed by the NetDog-82IP. Defined IP addresses associated with network cameras or the network time server are automatically processed and will not be filtered out by this feature. Broadcast packets of 255.255.255.255 and ARP requests for the NetDog-82IP IP address are also not filtered.

1. From the *Edit* menu select *Filter IPA*.
2. A warning prompt will appear, see Figure 2.7. Click *OK* to continue, or *Exit* to cancel.



*Fig. 2.7. Filter IPA warning prompt*

3. Once enabled only the IP addresses in the table will be allowed access to the NetDog-82IP.
4. Select to *Enable IPA Table*.
5. Enter the IP address of the machine(s) you would like to give access to the NetDog-82IP.
6. Click *Submit* to save the configuration settings.



Entering a zero in any of the octet fields will declare that part of the octet to be a wildcard.

**WARNING:** Does not work with networks that assign IP addresses. Use the wildcard field to open an entire subnet.

#### **Two Modes:**

Firewall: Block specific addresses

Filter table: only allow specific addresses



## Hot Tip!

Filter IPA table is primarily used for diagnostic purposes and should not be required unless to increase security.

DPS Telecom

# NetDog-82IP

[Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

**Monitor**

NetDog-82IP v4.0A.0038

**Edit**

- System
- Login
- Ethernet
- Ports
- Filter IPA
- SNMP
- Notification
- Point Groups
- Base Alarms
- System Alarms
- Accum. Timer
- Ping Targets
- Analog
- Controls
- Event Qual  
Select ▼
- Timers
- Date and Time
- PPP
- Camera
- Alarm Sigs
- Reboot
- NVRam

**Filter IPA**

**Enable IPA Table**

**Block these Addresses**  
 (Firewall Mode Enable/Disable)

IPA Table	
ID	Address
1	255.255.255.255 (255.255.255.255)
2	255.255.255.255 (255.255.255.255)
3	255.255.255.255 (255.255.255.255)
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)
8	255.255.255.255 (255.255.255.255)
9	255.255.255.255 (255.255.255.255)
10	255.255.255.255 (255.255.255.255)
11	255.255.255.255 (255.255.255.255)
12	255.255.255.255 (255.255.255.255)

*Fig. 2.8. Select Filter IPA from the Edit menu to configure your Filter IPA table*

#### 2.4.4 Changing Craft Port Communication Settings

Use the following steps to change the craft port communication settings:

1. From the *Edit* menu > *Ports* screen, scroll down to the *Craft* section, see Figure 2.9.
2. You can set the baud rate for the craft port to 300, 1200, 2400, 9600, 19200, 38400, 57600, 115200. (Default Baud is 9600)
3. Under the *Wfmt* (word format) field, select the appropriate data bits, parity, and stop bits setting to match your terminal emulation software or device connected to the NetDog-82IP craft port. (Default designation is 8, N,1)
4. Click *Submit Data* to save the craft port settings.

The screenshot shows the NetDog-82IP web interface. At the top, there is a logo for DPS Telecom and the title 'NetDog-82IP'. On the right, there are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. The main interface is divided into two columns. The left column contains a navigation menu with 'Monitor' selected and 'Edit' highlighted. The right column displays the 'Ports' configuration page. Under the 'Craft' section, the 'Baud' rate is set to 9600 and the 'WFmt' is set to 8,N,1. Under the 'Modem' section, the 'Ring Count' is set to 1, and the 'Answer Init' and 'Dial Init' fields are empty. A 'Submit Data' button is located at the bottom of the form.

**Fig. 2.9.** Configure the front panel craft port parameters from the Ports screen

### 2.4.5 Configuring Modem Port Settings

Use the following steps to configure the modem port settings:

1. From the *Edit* menu > *Ports* screen, go to the *Modem* section.
2. In the *Ring Count* field enter the number of rings before answering. (Default = 1)
3. The *Dial Init* and the *Answer Init* fields can be used if any other modem initialization settings need to be set. For example, the modem can be set to ignore the dial-tone by entering a character code in either the *Answer Init* (into the NetDog-82IP) or the *Dial Init* (out from the NetDog-82IP).
4. Click *Submit Data* to save your modem port settings.

**Note:** The default setting for these fields is blank.

Command	Description	
A	Answer command	
Bn	Select communications standard	
D	Dial	
	P	Pulse dial
	T	Tone dial
	R	Connect as answering modem
	W	Wait for dial tone
	,	Pause for the duration of S8
	@	Wait for silence
	!	Switch hook flash
;	Return to the command state	
En	Command echo	
Hn	Switch hook control	
In	Modem identification	
Ln	Speaker volume	
Mn	Speaker activity	
On	Online	
Qn	Responses	
Sr?	Interrogate register	
Sr=n	Set register value	
Vn	Result codes	
Xn	Result code set	
Z	Reset	

*Table 2.F. Standard modem commands (Hayes)*

**Note:** Modem commands may vary. See your modem user manual for commands specific to your modem.

## 2.5 Setting Up Notifications

The *Edit* menu > *Notification* screen allows you to configure several alarm notification methods in addition to pagers. Each notification method is defined as a pager type in this screen. To define a pager as the primary or secondary notification of alarm conditions, select the pager in the appropriate alarm point provisioning screens.



### Hot Tip!

Refer to Section 2.9, "Configuring Base Discrete Alarms," and Section 2.9, "Setting System Alarm Notifications," for more information.

ID	Type	Phone/Domain	Pin/Rcpt/Port	Baud/WFmt	IPA	Group
1	OH			1200 7.E.1	255.255.255.255	0
2	OH			1200 7.E.1	255.255.255.255	0
3	OH			1200 7.E.1	255.255.255.255	0
4	OH			1200 7.E.1	255.255.255.255	0
5	OH			1200 7.E.1	255.255.255.255	0
6	OH			1200 7.E.1	255.255.255.255	0
7	OH			1200 7.E.1	255.255.255.255	0
8	OH			1200 7.E.1	255.255.255.255	0

*Fig. 2.14. Multiple notification methods and group assignments are configured from the Notification screen*

Pager Format	Description
Alphanumeric Paging	Format recognizes numbers, letters, and symbols. Can receive information including alarm point addresses, alarm descriptions, time of alarms, and alarm state.
Numeric Paging	Format recognizes numbers only. Message is reported in the following order: [IP]*[Display][Address]*[State]. When read on the pager it appears as follows: 192.168.1.100 99.01.01.01
Text Paging	Can receive information including alarm point addresses, alarm descriptions, time of alarms, and alarm state. May be accessed using a terminal.
T/Mon Paging	The T/Mon may receive alarm information from the NetDog-82IP via dial-up and display alarm information, alarm description, and threshold status. (Only activates if DCP Poller is inactive)
Email/SMTP Paging	Provides alarm notification via email, with a description similar to the Alphanumeric pager.
SNMP Paging	May send alarm status to multiple SNMP managers, including the SNMP that alarms are reporting to. The SNMP tray format is v1.
TCP (ASCII) Paging	Alarm status notification via multiple TCP or HTCP ports. Connection from a higher level master must be established for alarm notification.
Num17 Paging	Provides alarm notification in a manner similar to that of the Numeric pager. However, Num17 eliminates the (*) symbol from the page. Message is reported in the following order: [IP][Display][Address][State]. When read on the pager it appears as follows: 192.168.1.100 99.01.01.01

*Table 2.G. Notification formats*



### 2.5.1 Alpha Numeric Pager Setup

The alpha numeric pager can receive text messages including alarm descriptions, time of occurrence, and point addresses.

Use the following steps to configure the alpha numeric pager settings:

1. From the *Edit* menu > *Notification* screen, select an ID number to use. See Figure 2.14 for pager descriptions.

**Note:** Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.

2. Under the *Type* column, select type *Alpha* from the drop-down menu, see Figure 2.14.
3. Enter the phone number of the Alpha numeric pager under the *Phone/Domain* heading.
4. Enter a personal identification number under the *PIN/Rcpt/Port* heading.
5. Set the pager data rate (i.e. 300, 1200, 2400 or 9600). The default baud is 1200.
6. Select a pager word format (Data Bits, Parity, Stop Bits). The default setting is 7,Even,1.

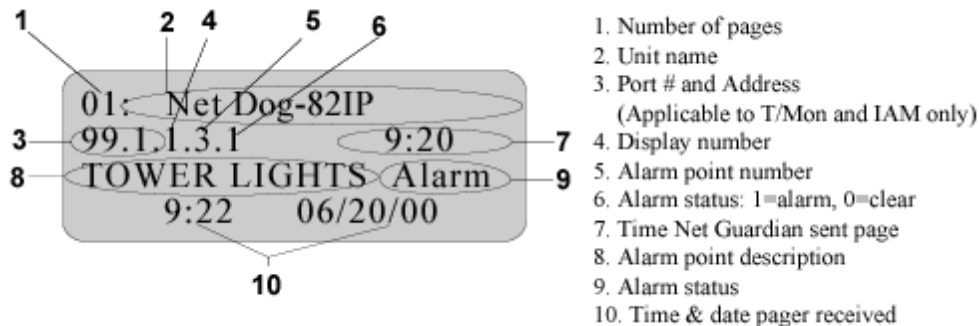


Fig. 2.15. Alpha numeric pager description

### 2.5.2 Numeric Pager Setup

The numeric pager can receive point addresses of alarms.

Use the following steps to configure the numeric pager settings:

1. From the *Edit* menu > *Notification* screen, select an ID number to use, see Figure 2.14.
 

**Note:** Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the *Type* column select *Numeric* from the drop-down menu, see Figure 2.14.
3. Enter the phone number of the numeric pager under the *Phone/Domain* heading, followed by 7 commas (e.g. 555-1212,,,,,,). Placing a comma after the phone number initiates a two second pause (per comma). This allows enough time for the pager to answer before the NetDog-82IP sends the alarm information.
 

**Note:** The Baud/Wfmt and IPA fields are not used from numeric pager types.

### 2.5.3 Text Paging Setup

Text pages can receive information including the point addresses of alarms, the alarm description, time of the alarm, and state (alarm or clear). The text pages may be viewed using a terminal such as HyperTerminal.

Use the following steps to configure the text paging settings:

1. From the *Edit* menu > *Notification* screen, select an ID number to use, refer to Figure 2.14.
 

**Note:** Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the *Type* column select *Text* from the drop-down menu, see Figure 2.14.

3. Enter the phone number of the text paging device under the *Phone/Domain* heading.
4. Set the pager data rate (i.e. 300, 1200, 2400 or 9600). The default baud is 1200.
5. Select a pager word format (e.g Data bits: 7 or 8, Parity: none (N), even (E) or odd (O), and Stop Bits: 1). The default setting is 7, Even,1.

**Note:** To set up text paging from T/Mon see the T/Mon user manual.

#### 2.5.4 Email Notification Setup

Use the following steps to setup the NetDog to send alarm notifications via email:

1. Navigate to the System screen.
  - Click on 'System' from the green Edit menu.
2. Assign the unit an email address.
  - In the 'Name' field, enter in a user name for this NetDog. This will appear before the @ symbol in the email address, and who the server thinks is sending the email. Example: [alarms@dpstele.com](mailto:alarms@dpstele.com)
  - In the 'Location' field, enter the "domain name" portion of the email address (the part after the @ symbol). In this example, when the device sends an email, it will look like it's coming from [alarms@dpstele.com](mailto:alarms@dpstele.com) . (You may need to talk to your IT dept. to allow this email to be sent through your email server.)
3. Configure the alarm recipient's email address.
  - Click on 'Notifications.'
  - Select 'Email' for Type.
  - Enter the email recipient's domain name in the 'Phone/Domain' field.
  - Enter the recipient's user name in the 'Pin/Rcpt/Port' field. The full email address we're sending to in this example is [support@dpstele.com](mailto:support@dpstele.com).
  - Enter the IP address of the SMTP (Email) server in the IPA field. You should be able to get this from your IT dept. If so, skip below to Step 7: "Assign a notification to an alarm point."
4. Verify your email server's IP address.
  - Go to the 'Start Menu' on your PC and click 'Run.'
  - Type the letters CMD in the space provided and click 'Search.'
  - Type: ping<space> email domain address , then hit Enter. Example: ping mail.ptld.twtelecom.net
5. Assign a notification to an alarm point.
  - The Base Alarms primary or secondary number must match the ID number for that pager as seen in this image. This means that when alarm point #1 is triggered, it will send an email to [support@dpstele.com](mailto:support@dpstele.com) .

Base Alarms					Pagers		
ID	Description	Polarity	Trap	primary	secondary	Qual	
1	DOOR ALARM	Reversed	<input type="checkbox"/>	1	0	None	
2	GENERATOR	Normal	<input type="checkbox"/>	1	0	None	
3	RECTIFIER 1	Normal	<input type="checkbox"/>	1	0	None	
4	RECTIFIER 2	Normal	<input type="checkbox"/>	0	0	None	

Pagers						
ID	Type	Phone/Domain	Pin/Rcpt/Port	Baud/WFmt	IPA	
1	Email	dpstele.com	support	1200 7.E.1	216.136.082.077	
2	Off			1200 7.E.1	255.255.255.255	

6. Reboot the NetDog.

- Once you've submitted your data, reboot the unit using the 'Reboot' command button in the Edit menu.
7. Test the response.
- To test and trigger an alarm, reverse the alarm point from the web browser using the Base Alarms tab. Verify that you've received an email reporting this alarm.
  - Be sure to click 'Submit Data' at the bottom of the page. If you still did not receive an email, login to MyDPS and download the TechnoKnowledge Paper "Setup Email Notifications From Your NetGuardian or NetDog." You will find a troubleshooting guide in this TKP.

### 2.5.5 SNMP Paging Setup

The SNMP paging feature allows you to view alarm status from multiple SNMP managers in addition to the main one.

Use the following steps to configure the SNMP paging settings:

1. From the *Edit* menu > *Notification* screen select an ID number to use, refer to Figure 2.14.  
**Note:** Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the *Type* column, select SNMP from the drop-down menu, see Figure 2.14.
3. Set the SNMP port under the *PIN/Rcpt/Port* heading, usually 162.
4. Enter the IP address of the SNMP manager in the *IPA* field.

**Note:** SNMP trap format is v1.

### 2.5.6 TCP Paging Setup

Heading	Description
MSG_BEG MSG_END	Sequential message number used to group the message and detect missing messages (e.g. 00001, 00002, etc...).
VID	Vendor ID
FID	NetDog-82IP Firmware ID.
SITE	NetDog-82IP system name.
PNT	Point ID (port.address.display.point). See Appendix A for display mapping.
DESC	Description set forth in the Alarm parameters.
STAT	Status of the alarm (Clear or Alarm).
DATE	Date the alarm occurred.
TIME	Time the alarm occurred.

**Table 2.H.** TCP alarm message field descriptions

The NetDog-82IP offers alarm status notification via multiple logical TCP ports. When an alarm condition occurs, an alarm condition formatted according to Figure 2.17 will be sent to the specified TCP points for use by a higher level master. This connection must be established by the master. Any applicable alarm activity occurring prior to an established connection will be discarded.

Use the following steps to configure the TCP paging settings:

1. From the *Edit* menu > *Notification* screen, select an ID number to use, see Figure 2.14.  
**Note:** Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.
2. Under the *Type* column, select TCP from the drop-down menu, see Figure 2.14.
3. In the *Pin/Rcpt/Port* field enter the NetDog-82IP TCP port number where alarm messages will be sent (from 1 to 65,536). Multiple ports can be defined by defining multiple pager IDs as TCP pagers and then entering the desired ports.

4. The TCP message can be viewed by a Telnet session by connecting to the NetDog-82IP's IP address and the TCP port entered in this screen. For example, Telnet to 126.10.220.199 5000 if port 5000 is selected and 126.10.220.199 is the unit's IP address. See Figure 2.17 for an example message and Table 2.H for TCP message format information.

### 2.5.7 Num17 Pager Setup

The Num17 Pager can receive point addresses of alarms. It is quite similar to the Numeric Paging format in the way it receives and reports alarms. However, on certain pager systems the symbol \* will cause a freeze or other undesirable situations. Num17 eliminates the \* symbol from the pages it receives and reports alarms as a 17-digit series of numbers.

User the following steps to configure Num17 Pager settings:

1. From the *Edit* menu > *Notification* screen select an ID number to use, refer to Figure 2.14.

**Note:** Pager IDs are used in the alarm provisioning screen to designate the primary and secondary person/device being paged when an alarm condition occurs or clears.

2. Under the *Type* column select **Num17** from the drop-down menu, see Figure 2.14.
3. Enter the phone number of the numeric pager under the **Phone** heading, followed by commas (for example 555-1212,,,,,,). Placing a comma after the phone number initiates a two second pause per comma. This allows enough time for the pager to answer before the NetDog-82IP sends the alarm information. The *Baud/Wfmt* and *IPA* fields are not used from Num17 pager types.
4. Click **Submit Data** to save the configuration settings.

## 2.6 Defining Point Groups



### New Feature!

Each NetDog-82IP Alarm point can be assigned to one of eight groups, which are identified with a user-defined label. Once the point groups are defined, the Point Group IDs can be used to group base and system alarms, see section 2.7, "Configuring Base Discrete Alarms."

Use the following steps to define alarm messages for alarm point groups:

1. To define the point groups, select *Point Group* from the *Edit* menu.
2. Then enter the appropriate descriptions in the *Description*, *When Set* and *When Clear* fields for each point group.
3. Click *Submit Data* to save the point group settings.

The screenshot shows the NetDog-82IP web interface. At the top, there is a header with the DPS Telecom logo on the left, the title "NetDog-82IP" in the center, and links for "Refresh", "Logout", "Upgrade", and "Help" on the right. Below the header is a navigation menu on the left with a "Monitor" button at the top and an "Edit" menu below it. The "Edit" menu contains various options: System, Logon, Ethernet, Ports, Filter IPA, SNMP, Notification, Point Groups, Base Alarms, System Alarms, Accum. Timer, Ping Targets, Analogs, Controls, Event Qual (with a dropdown menu set to "Select"), Timers, Date and Time, PPP, Camera, Alarm Sync, Reboot, and NVRam. The main content area displays a table titled "Point Groups" with a green header. The table has four columns: "ID", "Description", "When Set", and "When Clear". There are eight rows, each with an ID from 1 to 8 and empty input fields for the other three columns. Below the table is a "Submit Data" button.

ID	Description	When Set	When Clear
1	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>	<input type="text"/>
3	<input type="text"/>	<input type="text"/>	<input type="text"/>
4	<input type="text"/>	<input type="text"/>	<input type="text"/>
5	<input type="text"/>	<input type="text"/>	<input type="text"/>
6	<input type="text"/>	<input type="text"/>	<input type="text"/>
7	<input type="text"/>	<input type="text"/>	<input type="text"/>
8	<input type="text"/>	<input type="text"/>	<input type="text"/>

Fig. 2.18. Define the Alarm and Clear messages for up to eight different point groups

## 2.7 Configuring Base Discrete Alarms

All of the NetDog-82IP's 8 discrete alarms are configured from the *Edit* menu > *Base Alarms* screen. Descriptions of the alarm point, polarity (normal or reversed), whether to use an SNMP Trap or not, and the primary and secondary pager used to report the alarm, and group assignments, are configured in this screen.

Use the following steps to configure base discrete alarm settings:

1. From the *Edit* menu select the *Base Alarms* link, see Figure 2.19.

2. Enter a description for each discrete input alarm being used in the *Description* field.
3. Under the *Polarity* column, you can choose to reverse the polarity or leave it normal. If you select *Normal*, a contact closure is an alarm. If the *Reverse* option is selected, the alarm is clear when closed.
4. Select the *Trap* check box to send an SNMP trap for that alarm point in the event of an alarm condition. Leave the box blank if you do not wish the NetDog-82IP to send an SNMP trap.
5. Set the primary and secondary pagers with a pager ID from your defined pager list. (See Section 2.5, "Setting up Notification Methods" for more information.)  
**Note:** The NetDog-82IP will notify both the primary and the secondary notification device when point status changes (both alarm and clear).
6. Under the *Group* column enter the appropriate point group ID, see section 2.6, "Defining Point Groups."
7. Under the *Qual* column click the *None* link to configure an event qualification time setting for the alarm point. The *Event Qual* screen will appear, refer to section 2.8, "Event Qualification Timers" for more information.
8. Click *Submit Data* to save base alarm configuration settings.



### **Hot Tip!**

The pager device can be an ASCII terminal, T/Mon element manager, email, or multiple SNMP managers as well as an alpha or numeric pager.

## **2.8 Event Qualification Timers**

Use the following steps to configure your Event Qual timer settings:

1. From the *Edit* menu select from the *Event Qual* drop down menu.
2. The standard NetDog-82IP units can have up to 128 Event Quals, which are grouped into sections of sixteen.
3. Enter the display and point number for the point you wish to qualify in the appropriate **ID** row.  
**Note:** the ID will correspond to Event Qualification. A list of displays and points can be found in Appendix B.
5. In the *Value* field enter the appropriate amount of time (1 - 127).
6. Under the *Units* column, click on the drop-down menu and select the appropriate unit (min, sec, hour).
7. Under the *Type* column click on the drop-down menu and select the appropriate event type (Alm = alarm, Pri = primary, Sec = secondary).



### **Hot Tip!**

To delete the entry, set the *Type* to None.

8. When you are done making changes, scroll to the bottom of the page and click *Submit Data*.

**CAUTION:** Set conditions are qualified, clears are not.

## 2.9 Setting System Alarm Notifications

The *System Alarms* screen allows you to individually set the notification method for each system alarm. See Appendix A for system alarm point descriptions.

Use the following steps to configure your system alarm notification settings:

1. From the *Edit* menu select the *System Alarms* link, see Figure 2.21.
2. Check the *Trap* box to send an SNMP trap for that alarm point. Selecting the box will set that point to send a SNMP trap, leaving the box blank will set that point to not send an SNMP trap.
3. Set the primary and secondary pagers with a pager ID from your defined pager list. (See Section 2.5, "Setting up Notification Methods" for more information.)

**Note:** The NetDog-82IP will notify both the primary and the secondary notification device when point status changes (both alarm and clear).

4. Under the *Group* column enter the appropriate point group ID, see section 2.6, "Defining Point Groups."
5. Click *Submit Data* to save the configuration settings.

## 2.10 Configure the Accumulation 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	The amount of time allowed to accumulate before the "Accumulation Event" system alarm is set. Maximum is 45 days.
Accumulated Time	The total time the monitored point has been in 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 2.1. Fields in the Accumulation Timer screen*

The NetDog-82IP's *Accumulation Timer* keeps a running total of the amount of time a point is in an alarm state to send an Accumulation Event system alarm once the total time exceeds a defined threshold. Refer to Table 2.1 for field descriptions.

Use the following steps to configure the accumulation timer settings:

1. Go to the *Edit* menu and select the Accum. Timer link, see Figure 2.22.
2. In the *Display Reference* field enter the corresponding display number to be monitored.
3. In the *Point Reference* field enter the corresponding alarm point to be monitored.
4. In the *Event Threshold* row enter the appropriate running total days, hours and minutes a point is in a alarm state in order to send an accumulation event system alarm.
5. Click *Submit Data* to save the configuration settings.



### **Hot Tip!**

Only check the *Reset Accumulation Timer* box if you wish to reset the timer.

The *Point Description*, *Point Status*, *Accumulated Time*, and *Accumulated Since* fields are not configurable. These fields will show the corresponding data of the point you configure for the accumulation timer after you have hit the *Submit Data* button.

## 2.11 Configuring Ping Targets

Each of the 32 ping targets can be provisioned with a description, an IP address, a choice whether to send SNMP Traps, and the primary and secondary pager devices being used.

Use the following steps to configure the ping targets:

1. From the *Edit* menu select *Ping Targets*, see Figure 2.23.
2. In the *Description* field, enter a description of the device to be pinged.
3. In the *IP Address* field enter the IP address of the device to be pinged.
4. Under the *Trap* column check the box to designate that an SNMP trap will be sent when an alarm condition exists. Leaving the box blank designates that an SNMP trap will not be sent when an alarm condition exists.
5. Set the primary and secondary pagers with a pager ID from your defined pager list. (See Section 2.5, "Setting up Notification Methods" for more information.)

**Note:** The NetDog-82IP will notify both the primary and the secondary notification device when point status changes (both alarm and clear).

6. Under the *Group* column enter the appropriate point group ID, see section 2.6, "Defining Point Groups."
7. Click *Submit Data* to save the configuration settings.

## 2.12 Analog Parameters

Both of the NetDog-82IP's analog channels must be individually configured to monitor data. The ADCs (analog to digital converters) support a range of  $-70$  to  $94$  VDC. There are four alarm trip points (thresholds) in ascending order: major under, minor under, minor over, and major over. You can choose the values for each of the thresholds on all channels. As with the other alarms, you can designate whether or not to send an SNMP trap when a threshold is crossed. The primary/secondary pager used to report the alarm is also set here. The thresholds must be set from *Under* to *Over* in either ascending or descending potential (or current) order. Thus the settings of  $-10$ ,  $-5$ ,  $5$  and  $10$  corresponding respectively to major under, minor under, minor over and major over is valid.

The analog alarms are set to measure voltage by default and the thresholds are reported as "native units." For example, you may set Channel 2 to measure outside temperature. If you were using a sensor with a measurable temperature range between  $-4^{\circ}$  to  $167^{\circ}$  Fahrenheit ( $-20^{\circ}$  to  $75^{\circ}$  Celsius). The voltage for that channel varies between  $1$  and  $5$  VDC for that sensor, which is to be reported as  $^{\circ}$  Fahrenheit (native units) where  $1$  volt represents  $-4^{\circ}$  Fahrenheit and  $5$  volts represents  $167^{\circ}$  Fahrenheit.

To change any one analog alarm to measure current instead, a shunt must be changed. The shunts that must be changed are located at J11 for Analog 1 and J12 for Analog 2. The jumper inserts a  $250$  ohm shunt resistor across the input to convert the sensors current output to volts. Use ohms law to find the voltage drop across the  $250$  ohm shunt resistor (multiply the current by the resistance  $250$  ohms). Please refer to the operation manual for your sensor to determine any other conversion factors. This will allow you to correctly set the thresholds for *over* and *under* conditions.



**NetDog-821P**

[Refresh](#) | [Logout](#) | [Upgrade](#) | [Help](#)

**Monitor**

NetDog-821P v4.0B.0014

**Edit**

- System
- Logon
- Ethernet
- Ports
- Filter\_IPA
- SNMP
- Notification
- Point\_Groups
- Base\_Alarms
- System\_Alarms
- Accum\_Timer
- Ping\_Targets
- Analogs
- Controls
- Event\_Queue
- Select
- Timers
- Date\_and\_Time
- PPP
- Camera
- Alarm\_Sync
- Reboot
- NVRam

Analogs									
ID	Description	Unit	Major Under	Minor Under	Minor Over	Major Over	Trap	Pagers	
								primary	secondary
1	Analog 1	VDC	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	0	0
2	Analog 2	VDC	-79.0000	-35.0000	35.0000	79.0000	<input checked="" type="checkbox"/>	0	0
3	Internal Temp	IF	60.0000	70.0000	80.0000	90.0000	<input checked="" type="checkbox"/>	0	0
4	External Temp	IF	60.0000	70.0000	80.0000	90.0000	<input checked="" type="checkbox"/>	0	0

Wednesday, Jan 3, 2007 7:01 NetDog-821P ©2007 DPS Telecom

**Fig.** The Analog Parameters can be viewed and changed from the Analogs screen

1. From the *Edit* menu click on the *Analogs* link.
2. In the *Description* field enter a description for each analog channel being utilized.
3. Under the *Unit* column, click on the abbreviated units link (e.g VDC, RH, F, etc.) to convert the reference units and the native units for that analog channel, see Figure 2.24.
4. Set *Reference 1* (VDC) to the minimum output (in volts DC) of the analog device being configured.
5. In the box next to *VDC* (the space may already contain the abbreviation VDC) enter an abbreviation for the native units (e.g. RH for relative humidity, F for ° Fahrenheit, etc.).
6. In the box below the abbreviated native unit setting enter the native unit amount that corresponds to the minimum output entered in the previous step.
7. Set *Reference 2* (VDC) to the maximum output (in volts DC) of the analog device being configured.
8. In the box next to *VDC* enter an abbreviation for the native units (e.g. RH for relative humidity, F for ° Fahrenheit, etc.).
9. In the box below the abbreviated native unit setting enter the native unit amount that corresponds to the maximum output entered in the previous step.
10. Enter the Point Group ID designated for each alarm level (MjU = Major Under, MnU = Minor Under, MjO = Major Over, MnO = Minor Under), see section 2.6, "Defining Point Groups."
11. Follow these steps for each analog channel being configured.
12. Click the *Submit Data* button to save the configuration settings.

### 2.12.1 Analog Step Sizes

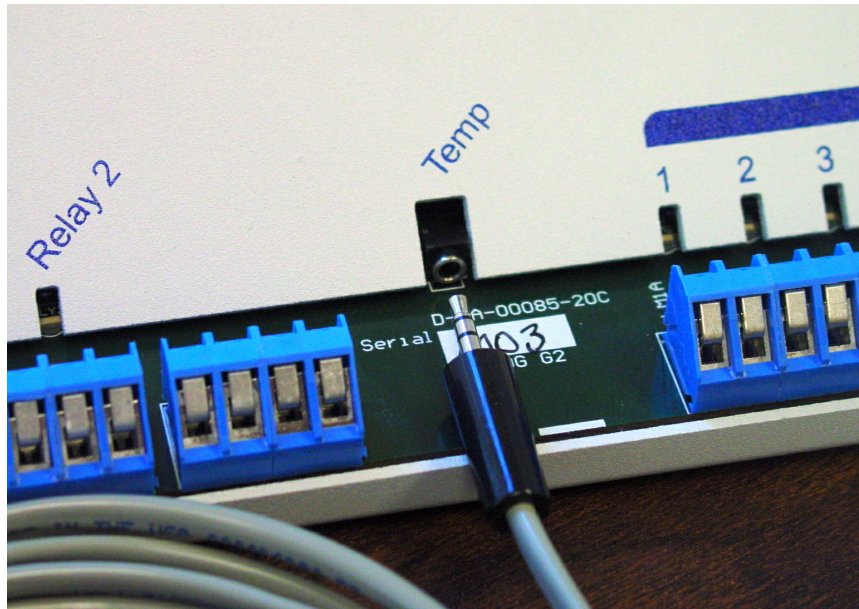
Analog Step Sizes	
Input Voltage Range	Resolution (Step Size)
0-5 V	.0015 V
5-14 V	.0038 V
14-30 V	.0081 V
30-70 V	.0182 V
70-90 V	.0231 V

*Table 2.J. Analog step sizes*

### 2.12.2 Analog Temperature Sensors

The NetDog's internal and external temperature sensors monitor the ambient temperature. The internal temperature sensor measures a range of 32° F to 140° F (0° C to 60° C) within an accuracy of  $\pm 1^\circ$ . The external temperature sensor provides external temperature readings by plugging the sensor into the **Temp** port on the NetDog 82IP G2's front panel.

**Note:** When configuring the display units for product D-PR-991-10A-50 you will need to use "eF" for Fahrenheit or "eC" for Celsius. For all other external temperature sensor jacks (D-PR-991-10A-03, D-PR-991-10A-07 and D-PR-991-10A-20) you will need to use "iF" for Fahrenheit or "iC" for Celsius.



*Probe Plugs into the NetDog-82IP G2's Front Temp Jack*

## 2.13 Configuring the Control Relays

The Relays of the NetDog-82IP can be identified and configured using the *Edit* menu > *Controls* screen. A description can be entered for each of the relays. You can also designate whether or not to send SNMP Traps when a relay is actuated. Relays are normally open (N/O) by default. The Control section on the front of the NetDog breaks out to **NO/C/NC**= Normally Open/Common/Normally Closed

1. From the *Edit* menu, select the *Controls* link, see Figure 2.26.
2. In the *Description* field enter a description for each control/relay being used.
3. Set the *Energize State* to either *Normal* or *Inverted*. Selecting *Normal* sets the relay's normal electrical

state to *De-energized*. Selecting *Inverted* sets the relay's normal electrical state to *Energized*.

4. Check the *Trap* box to send an SNMP trap for that alarm point. Selecting the box will set that point to send a SNMP trap, leaving the box blank will set that point to not send an SNMP trap.
5. Under the *Group* column enter the appropriate point group ID, see section 2.6, "Defining Point Groups."
6. Click *Submit Data* to save the configuration settings.



### Hot Tip!

The **Energize State** is different than the normal state of the physical contact closure position of each relay, which is determined by web browser settings. This gives you the added benefit of being able to monitor the wire. In the event of a power failure, the relay would de-energize back to its normal physical contact closure set by the web browser settings for that relay.

4. Check the *Trap* box designate an SNMP trap when a control point operates.
5. Click *Submit Data* to save the configuration settings.

#### 2.13.1 Derived Control Relays and Virtual Alarming

Control relays and virtual alarms can be created from derived formulas using the following operations:

`_OR` : Set the current operation to OR.

`_AN` : Set the current operation to AND.

`_XR` : Set the current operation to XOR.

`D` : Tag to change the active display number.

`.` : Used like a comma to delimit numbers.

`-` : Used to specify a range of points.

**Note:** Spaces included here are for readability purposes only.



### Hot Tip!

- Precedence of the operations are always left to right.
- All number references can either be one or two digits.

`_OR D1.3-5` is logically equivalent to `(1.3 || 1.4 || 1.5)`

`_AN D 1.3-5 D2.6 _OR D3.7` is logically equivalent to `((1.3 && 1.4 && 1.5 && 2.6) || 3.7)`

`_OR D01.03-05 D02.06 _AN D02.07 D03.10-12` is logically equivalent to `((1.3 || 1.4 || 1.5 || 2.6&& (2.7 && 3.10 && 3.12))`

`_AN D1.3-5D2.6_OR.7D3.10.12` is logically equivalent to `((1.3 && 1.4 && 1.5 && 2.6) || 2.7 || 3.10 || 3.12))`

o will not parse

`_AN D1-2` : Control will parse

`_OR G1` will latch if any alarm in group 1 is active

#### 2.13.2 Relay Operating Modes

A trap is sent on a relay COS (Change-Of-State) for normal or echoed controls when the send trap option is selected.

### 2.13.2.1 Normal Mode

Relay energized state is similar to alarm point polarity. A normal control is latched when the relay state is *opr*, and open when the relay state is *rls*. Conversely, an inverted control is latched when the relay state is *rls*, and open when the relay state is *opr*.

### 2.13.3 Override Default Relay Momentary Time Using Event Qualification

NetDog-82IP v4.0A.0036

**Edit**

- System
- Login
- Ethernet
- Ports
- Filter\_IPA
- SNMP
- Notification
- Point\_Groups
- Base Alarms
- System Alarms
- Accum. Timer
- Ping Targets
- Analogs
- Controls
- Event Qual **Select**
- Timers
- Date and Time
- PPP
- Camera
- Alarm Sine
- Reboot
- NVRam

Event Qual					
ID	PRef		Timer		Type
	Display	Point	Value	Units	
1	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
2	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
3	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
4	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
5	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
6	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
7	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
8	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
9	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
10	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
11	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
12	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
13	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
14	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
15	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None
16	<input type="text"/>	<input type="text"/>	<input type="text"/>	sec	None

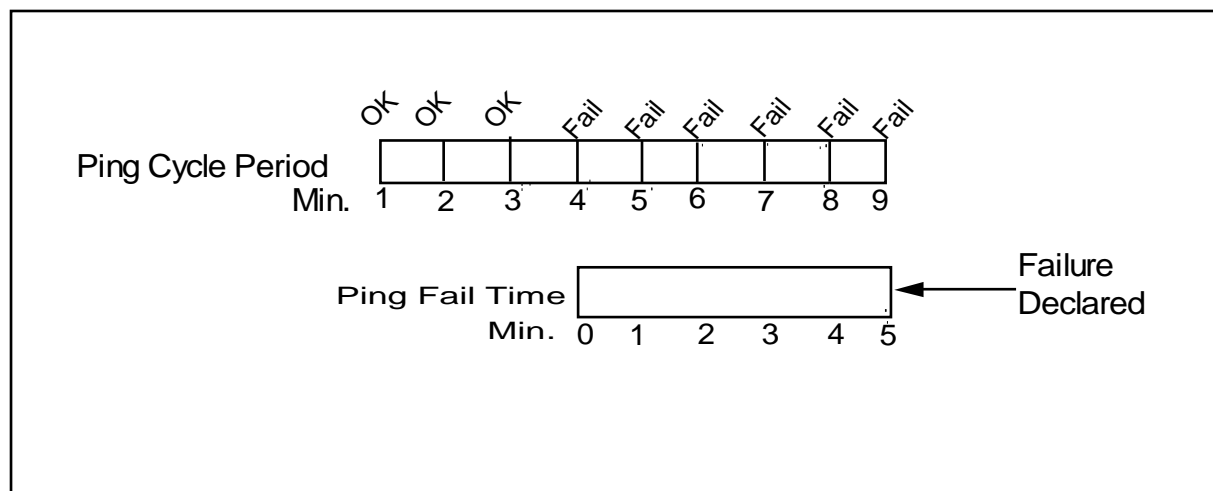
Prev Submit Data Next

**Fig. 2.28.** Using Event Qualification to override default relay momentary time

Use the following steps to override default relay momentary time, using the NetDog-82IP's Event Qualification feature:

1. From the *Edit* menu click on the *Event Qual* drop-down menu and select the appropriate group.
2. In the *Display* text box, type 11.
3. In the *Point* text box, type the number of the relay you would like to change.
4. In the *Value* box, type the amount of time. You may not select more than 127 units.
5. In the *Units* box, select the appropriate units (seconds, minutes, or hours).
6. In the *Type* box, select *Alm*.
7. Click *Submit Data* to save the changes.

## 2.14 Setting System Timers



*Fig. 2.30. Default timer settings*

The NetDog-82IP's System Timers allow you to control the rate of your pinging activity, time of speaker sounding, inactivity time for data ports, and discrete alarm detect time. Ping timer settings allow you to balance network traffic against alarm response times. Although you can change the values from their default settings, it is recommended that you use either the default settings or plan your settings so that there is no conflict among the timers. Specifically, the FAIL time should be set to several times the CYCLE time to allow multiple PINGS before a FAIL is declared. Likewise, the CYCLE time should be set to several times the wait time.



### **Hot Tip!**

The smaller the CYCLE number, the sooner you will find out about failures; however, you will increase traffic on your LAN.

1. From the *Edit* menu select *System Timers*.
2. Set the *Cycle* time. This determines how often the NetDog-82IP will go through its list of ping targets and attempts to reach them with an ICMP ping. Set the value between zero and 120 and set the units to either seconds or minutes. Default is 60 seconds.
3. Set the *Wait* time. The NetDog-82IP waits after sending a ping request before it determines that the target is unreachable. Set the value between zero and 12 and set the units to either seconds or minutes. Default is 8 seconds.
4. Set the *Fail* time. This determines the period of time over which, if a unit has not responded, it is considered failed. Set the value between zero and 120 and set the units to either seconds or minutes. Default is 5 minutes.
5. Set the *Craft* time. This determines the period of time over which, if the device connected through a port designated as a *craft* port doesn't reset the timer, an alarm will be triggered. Set between 0 and 120 (min or sec). Alarm activity is indicated in Display 11, Point 63. (See Appendix A, "Display Mapping.")
6. Set the *DCP* time. Set between 0–120 (sec or min). This determines the period of time over which, if the NetDog-82IP does not receive a DCP poll, to trigger an alarm. Once the alarm is triggered, then dial back-up may be enabled if a T/Mon pager profile is configured.

7. Set the *Timed Tick* between 0–60 minutes. This is a "keep alive or heartbeat" function that can be used by Masters who don't perform integrity checks. For example, if you entered 30, the NetDog-82IP would notify you every 30 minutes. See section 2.5, "Setting Up Notification Methods" for paging information.
8. Set the *PPP* time. Set between 0–120 for onDemand mode.
9. Set the *NTP Sync*. Set between 0–120 (sec or min).

**Hot Tip!**

The timer settings are accurate to  $\pm$  one tick. This means that if a timer is set to one minute, it may actually respond anywhere from zero to two minutes. If your target time is one minute, then set the timer to 60 seconds so that it will respond anywhere from 59-61 seconds.

10. Set the *Web Edit Timeout* time between 5–120 minutes. This determines the period of time a Web edit page may be active without any activity. A logon is required if a Web edit timeout occurs. The default Web edit time is 10 mins.  
**Note:** The time units are preset to minutes by default and cannot be changed.
11. Set the *Web Monitor Refresh* time between 5–120 seconds. This timer enables the user to specify how long the NetDog-82IP should wait before auto-refreshing a Monitor page to the Web browser. The default Web monitor refresh time is 60 seconds.  
**Note:** The time units are preset to seconds by default and cannot be changed.
12. Set the proxy time to 0-120 (sec or min). *The proxy timer is not used.*

## 2.15 Setting the System Date and Time

The screenshot displays the NetDog-821P web interface. At the top left is the DPS Telecom logo, and at the top right are links for Refresh, Logout, Upgrade, and Help. The main content area is divided into two sections. On the left is a vertical navigation menu with a blue 'Monitor' button at the top and a green 'Edit' button below it. The 'Edit' menu lists various system settings. The main section on the right is titled 'Date and Time' and contains two sub-sections: 'Current Setting' and 'Network Time Configuration'. The 'Current Setting' section has input fields for Date (01 / 08 / 2000), Day (Sunday), and Time (17 : 21 : 05). The 'Network Time Configuration' section includes a 'Time Server IPA' field (255.255.255.255) marked as '(Disabled)', a 'Time Server Port' field (123), a 'Timezone' dropdown menu (Pacific), and a checked 'Observe DST' checkbox. A 'Submit Data' button is located at the bottom of the configuration form.

**Fig. 2.31.** The current date and time can be entered from the *Date and Time* screen or from an SNMP manager

The date is entered in the mm/dd/yyyy format and the time is entered in the hh:mm:ss format.



### **Hot Tip!**

The date and time can also be set from an SNMP manager.

Use the following steps to manually set the system's time and date:

1. From the *Edit* menu, select *Date and Time*, see Figure 2.31.
2. Enter the appropriate date, the day of the week, and time.
3. Click *Submit Data* to save the data and time settings.

**Note:** The date and time will need resetting following a power failure or reboot unless your NetDog-821P is equipped with the real-time clock option or network time is enabled. (See the section 2.15.1 for instructions on setting the network time configuration.)

### 2.15.1 Network Time Protocol Support

*Fig. 2.32. Configure the Network Time Protocol feature in the Date and Time screen*

1. From the *Edit* menu select *Date and Time*.
  2. Click on the *Time Zone* drop-down menu and select the appropriate time zone.
  3. Put a check next to *Observe DST* if you are in an area that observes daylight savings.
  4. You may also change the server IP Address that the NetDog-82IP syncs with by entering a the appropriate IP address in the *Time Server IPA* field.
  5. If you do not want your NetDog-82IP to sync with an NTP server, simply set the Time Server IPA to 255.255.255.255.
- Note:** If Time Server IPA is set to 255.255.255.255, you will be able to manually adjust the date and time.
6. Click *Submit Data* to save the date and time settings.

**Note:** Beginning in 2007, Daylight Saving Time is extended one month and begins for most of the United States at:

- 2 a.m. on the Second Sunday in March to
  - 2 a.m. on the First Sunday of November.
- (See chart below.)

DST Start and End date changes beginning March 2007		
Year	DST Begins 2 a.m. (Second Sunday in March)	DST Ends 2 a.m. (First Sunday in November)
2007	March 11	November 4
2008	March 9	November 2
2009	March 8	November 1
2010	March 14	November 7
2011	March 13	November 6
2012	March 11	November 4
2013	March 10	November 3
2014	March 9	November 2
2015	March 8	November 1

*The new start and stop dates were set in the Energy Policy Act of 2005.*



## 2.16 Configuring PPP Modes

The screenshot shows the NetDog-82IP web interface. At the top left is the logo for DPS Telecom. The main title is 'NetDog-82IP'. On the right, there are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. On the left side, there is a navigation menu with a 'Monitor' button at the top and an 'Edit' button below it. Under 'Edit', various system settings are listed, including 'PPP'. The main content area is titled 'PPP' and contains the following configuration fields:

PPP	
<b>Configuration</b>	
Port	Modem
VJ Compression	<input checked="" type="checkbox"/>
<b>Client</b>	
Mode	Off
Phone	
Username	
Password	
<b>Server</b>	
Enable Server	<input type="checkbox"/>
Address	255.255.255.255 (Client Specified)

At the bottom of the configuration area is a 'Submit Data' button.

*Fig. 2.33. Configure the PPP port settings in the Edit menu > PPP screen*

If the LAN connection to your remote sites fails, you can still keep in touch with your remote equipment by using the NetDog-82IP as a PPP (Point-to-Point Protocol) server via dial-up.

Use the following steps to configure the NetDog-82IP as a PPP Server:

1. Select *PPP* from the *Edit* menu.
2. In the *Server* section check the *Enable Server* (also known as *Hosting Mode*) box.
3. Set the IP address that is given to the guest dialing in. (This must be a valid and available IP address for the subnet on the LAN you will be connecting to, the same one the NetDog-82IP is connected to.)
4. Click *Submit Data* to save your PPP settings.

The screenshot shows the 'Ports' configuration screen. It is divided into two sections: 'Craft' and 'Modem'. The 'Craft' section has the following settings:

Ports	
<b>Craft</b>	
Baud	9600
WFmt	8,N,1
<b>Modem</b>	
Ring Count	1
Answer Init	
Dial Init	

*Fig. 2.34. Edit the Modem settings for the PPP server in the Edit menu > Ports screen > Modem section*

5. Select *Ports* from the *Edit* menu.
6. In the *Ring Count* field enter a ring count greater than zero, see Figure 2.34.
7. In Answer Init String field type `&Qb.`
8. Click *Submit Data* to save your Modem changes.

Logon Profile 1	
User	<input type="text"/>
Password	<input type="text"/>
Confirm Password	<input type="text"/>
Call Back	<input type="text"/>
Access Privileges	
Admin	<input checked="" type="checkbox"/>
DB Edit	<input checked="" type="checkbox"/>
Monitor	<input checked="" type="checkbox"/>
SDMonitor	<input checked="" type="checkbox"/>
Control	<input checked="" type="checkbox"/>
Reach-Through	<input checked="" type="checkbox"/>
Modem	<input checked="" type="checkbox"/>
Telnet	<input checked="" type="checkbox"/>
PPP	<input checked="" type="checkbox"/>

Fig. 2.35. Select PPP and Telnet access privileges in the Edit menu > Logon > Logon Profiles screen

9. Select *Logon* in the *Edit* menu.



### Hot Tip!

There can be up to 16 different user names and each one must have its own password.

10. Click the *Available* link or the user you want to have PPP and Telnet access privileges.
11. Under the *Access Privileges* section check the *PPP* and *Telnet* boxes.
12. Click *Submit Data* to save the configuration settings.
13. Select *Reboot* in *Edit* menu to reboot the NetDog-82IP. (See section 2.21, "Rebooting the NetDog-82IP.")

You also need to configure your remote terminal modem in order to access your NetDog-82IP by following these steps:

- Windows 98 users:** Set baud rate to *9600*.
- Windows 2000, XP users:** In *Modem Configuration General* tab uncheck *Enable modem error control* and *Enable compression*.
- Mac OSX users:** Use standard dial-in.

## 2.17 Camera Settings

The NetDog-82IP SiteCam provides users with live streaming video of their remote sites. The direct pan-and-tilt features allows users to visually check the status of their sites from the convenience of their desktop.

Use the following steps to configure your camera settings:

1. From the *Edit* menu select *Camera*, see Figure 2.37.
2. Refer to Table 2.K and enter the appropriate information in the *Name*, *Description*, *IP Address*, and *MAC Address* fields.  
**Note:** See Section 3.9, "Monitoring Camera Activity" for camera viewing options.
3. Click *Submit Data* to save your camera configuration settings.

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Camera					
ID	Name	Description	IP Address	MAC Address	Refresh
1	Camera 1		255.255.255.255	FF.FF.FF.FF.FF.FF	0
2	Camera 2		255.255.255.255	FF.FF.FF.FF.FF.FF	0
3	Camera 3		255.255.255.255	FF.FF.FF.FF.FF.FF	0
4	Camera 4		255.255.255.255	FF.FF.FF.FF.FF.FF	0

Submit Data

*Fig. 2.37. View live streaming video of your remote sites via Web browser*

Camera Field	Description
Name	Enter the name of the camera.
Description	Enter a description of the camera.
IP Address	Enter the IP Address of the camera (not the NetDog-82IP). The NetDog-82IP will provision this in the camera. The unit will also send the NetDog-82IP subnet and gateway information.
MAC Address	Enter the hardware address of the camera (not the NetDog-82IP).
Refresh	Enter the refresh time. This determines the amount of time (in seconds) that elapses before the image will be updated. Entering 0 will cause uninterrupted, live streaming video (bandwidth rated at 146 kB per second).

*Table 2.K. Camera field descriptions*

### Camera Internet Settings

In order to perform the pan-and-tilt functions of the camera, your Web browser must be set to check for newer versions of stored pages at every visit to the page.

**Note:** The directions for checking for newer versions of stored pages may vary depending on what version of Windows you are running. The instructions below are relevant to Windows 2000/Windows XP only.

1. With the Web browser open (Internet Explorer version 5.5 or later), click on *Tools* and select *Internet Options* from the drop-down menu.

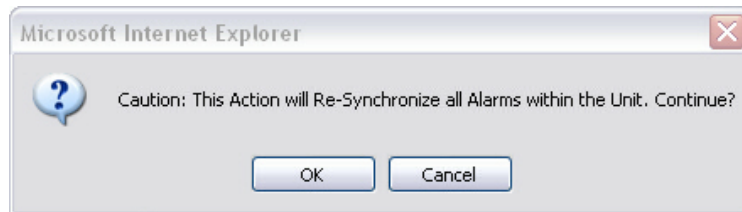
2. Click on the *Settings* button under the *Temporary Internet files* heading.
3. Click on the *Every visit to the page* button and click *Ok*.

## 2.18 Alarm Sync



### **New Feature!**

Clicking on the Alarm Sync link from the Edit menu will re-synchronize all of the NetDog-82IP alarms. This command clears all alarms, so that a new notification is sent for all standing alarms. You can easily test alarm connections during turnup without rebooting the NetDog-82IP unit. A warning prompt will appear, click *Ok* to continue or *Cancel* to exit without resynchronizing your alarms, see Figure 2.38.



*Fig. 2.38. Click Ok to re-synchronize the NetDog-82IP alarms or Cancel to exit*

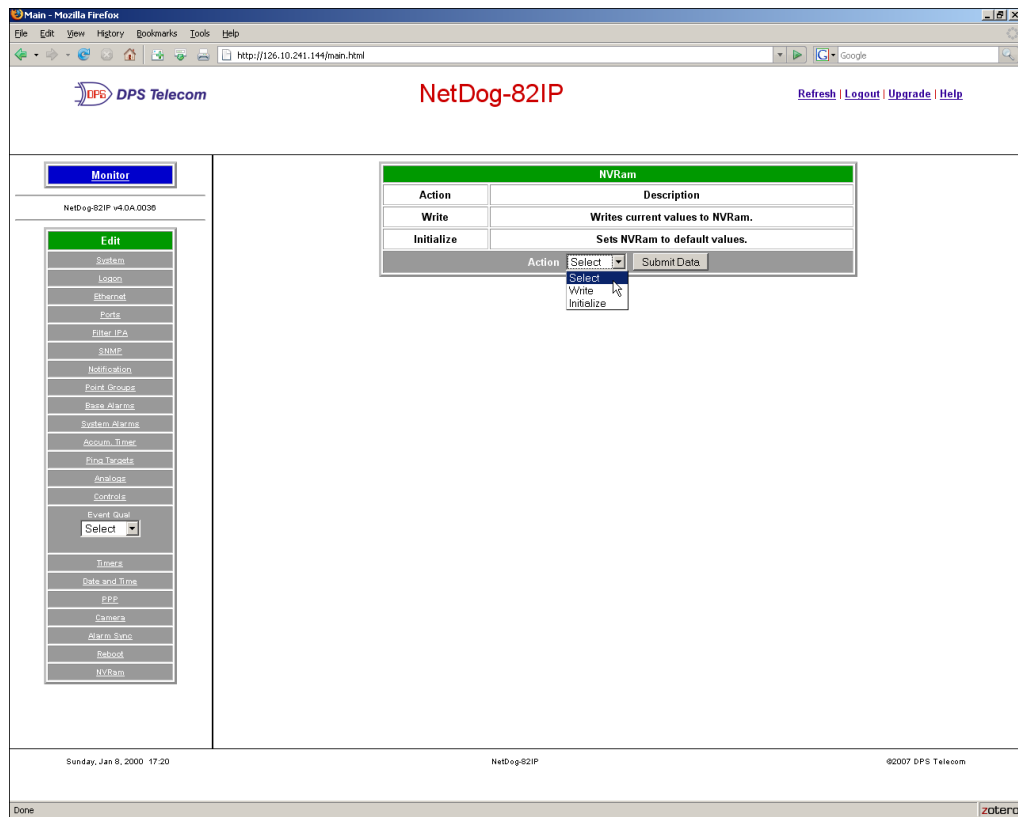
## 2.19 Saving Changes or Resetting Factory Defaults

Your NetDog-82IP comes equipped with Non-Volatile RAM (NVRAM), which enables the retention of data in the event of power loss. This section allows you to write and initialize the NVRAM.

**Note:** Some changes require a reboot of the NetDog-82IP to take effect, see Section 2.21, "Rebooting the NetDog-82IP."

1. From the *Edit* menu select *NVRAM*, see Figure 2.39.
2. Select *Write* to cause the current data in RAM to be written to NVRAM and then verified.
3. Select *Initialize* to reload factory defaults into NVRAM.

**DO NOT SELECT THIS OPTION UNLESS YOU WANT TO RE-ENTER ALL OF YOUR CONFIGURATION INFORMATION AGAIN.**



*Fig. 2.39. NVRAM enables the NetDog-82IP to retain data even through a power loss*

## 2.20 Rebooting the Net Dog-821P

Click on the *Reboot* link from the *Edit* menu to reboot the NetDog-82IP after writing all changes to NVRAM. Any changes to port settings require a reboot to take effect. The window footer will display the text *Reboot Needed* if a reboot is necessary to initiate changes.

## 3 Web Server Monitoring Chapter 3

The Web browser allows you to do full-system monitoring for your NetDog-82IP, which includes all alarms, ping information, relays, analogs and system status. To connect to the NetDog-82IP from your 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 (it may be helpful to bookmark the logon page to simplify access). After connecting to the NetDog-82IP's IP address, enter your password and click *Submit* (factory default password is *dpstelecom*).

**Note:** If the *Edit* menu does not appear in the left frame after logging on, it means that another station has already logged on as the primary user.

### 3.1 Alarm Summary Window

The screenshot shows the NetDog-82IP web interface. At the top, there is a header with the DPS Telecom logo, the title "NetDog-82IP", and links for "Refresh", "Logout", "Upgrade", and "Help". On the left side, there is a navigation menu with a "Monitor" button highlighted. Below the menu, there is a version string "NetDog-82IP v4.0A.0036" and an "Edit" button. The main content area displays the "Alarm Summary" window, which contains two tables. The first table shows the number of active alarms for various types: Base Alarms (0), Ping Targets (0), Analogs (0), and System Alarms (0). The second table, titled "Summary by Group", shows the number of active alarms for eight different groups, all of which are currently at 0.

Alarm Summary	
Type	Active Alarms
<a href="#">Base Alarms</a>	0
<a href="#">Ping Targets</a>	0
<a href="#">Analogs</a>	0
<a href="#">System Alarms</a>	0
Summary by Group	
Name	Active Alarms
<a href="#">Group 1</a>	0
<a href="#">Group 2</a>	0
<a href="#">Group 3</a>	0
<a href="#">Group 4</a>	0
<a href="#">Group 5</a>	0
<a href="#">Group 6</a>	0
<a href="#">Group 7</a>	0
<a href="#">Group 8</a>	0

**Fig. 3.1.** The Alarm Summary display can be accessed by selecting either the Monitor or the Summary link

Clicking on the *Monitor* or *Summary* buttons shows the *Alarm Summary* display. The *Summary* screen gives you a quick indication of any alarms that have been triggered in the NetDog-82IP's base alarms, ping targets, analogs, system alarms, and any NetDog-82IP discrete expansions.

### 3.2 Monitoring Base Alarms

This selection provides the status of the system's base alarms by indicating if an alarm has been triggered. Under the *State* column, the description defined in *Edit menu>Point Groups* will appear in red if an alarm has been activated. The description defined in *Edit menu>Point Groups* will be displayed in green when the alarm condition is not present.

### 3.3 Monitoring Ping Targets

This selection provides the status of the system's ping targets by indicating if an alarm has been triggered. Under the *State* column, the description defined in *Edit menu > Point Groups* will appear in red if an alarm has been activated. The description defined in *Edit menu > Point Groups* will be displayed in green when the alarm condition is not present.

### 3.4 Monitoring Analogs

This selection provides the status of the system's analogs by indicating if an alarm has been triggered. The *Monitor menu > Analogs* screen provides a description of each analog channel, the current reading, the units being read, and alarm conditions (major under, minor under, major over, minor over) according to your analog settings.

### 3.5 Monitoring System Alarms

This selection provides the status of the system alarms by indicating if an alarm has been triggered. Under the *State* column, the description defined in *Edit menu > Point Groups* will appear in red if an alarm has been activated. The description defined in *Edit menu > Point Groups* will be displayed in green when the alarm condition is not present.

Refer to **Appendix A** for system alarm trap numbers.

### 3.6 Operating Controls

Use the following rules to operate controls:

1. Select *Controls* from the *Monitor* menu.
2. Under the *State* field, choose a command (Opr - operate, Rls - release, or Mom - momentary).
3. Click *Submit Data* to issue the control.



#### **Hot Tip!**

The control relay's normal state - open or closed - is determined by a PCB jumper. Operating a control thus changes the normal state of the relay (energizes it) until it is released (de-energized). The momentary command energizes the relay for approximately one second before it is released again.

### 3.7 Event Logging

The screenshot shows the NetDog-821P web interface. At the top, there is a logo for DPS Telecom and the title 'NetDog-821P'. On the right, there are links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. On the left, there is a 'Monitor' menu with options: Summary, Base Alarms, Ping Targets, Analog, System Alarms, Accum. Timer, Controls, and Event Log. Below the menu is the version 'NetDog-821P v4.0A.0036' and an 'Edit' button. The main area shows the 'Event Log' window with a 'Reset' button. The event log table contains the following data:

Evt	Date	Time	Grp	State	PRef	Description
1	01-08-2000	16:45:22	1	Clear	11.33	Unit Reset
2	01-08-2000	16:45:22	1	Alarm	11.33	Unit Reset

Fig 3.7- Monitor the last 100 events recorded by the NetDog-821P in the Event Log window

Event Log Field	Description
Evt	Event number (1-100)
Date	Date the event occurred*
Time	Time the event occurred*
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 3.A. Event Logging window field descriptions

Click on the **Monitor** menu > **Event Log** link to view the event log. The NetDog-821P's Event Log allows the NetDog-821P to post and monitor up to 100 events including power up, base and system alarms, ping alarms, analog alarms, and controls. Posted events for the various alarms include both alarm and clear status. See Table 3. A for Event Alarm field descriptions.

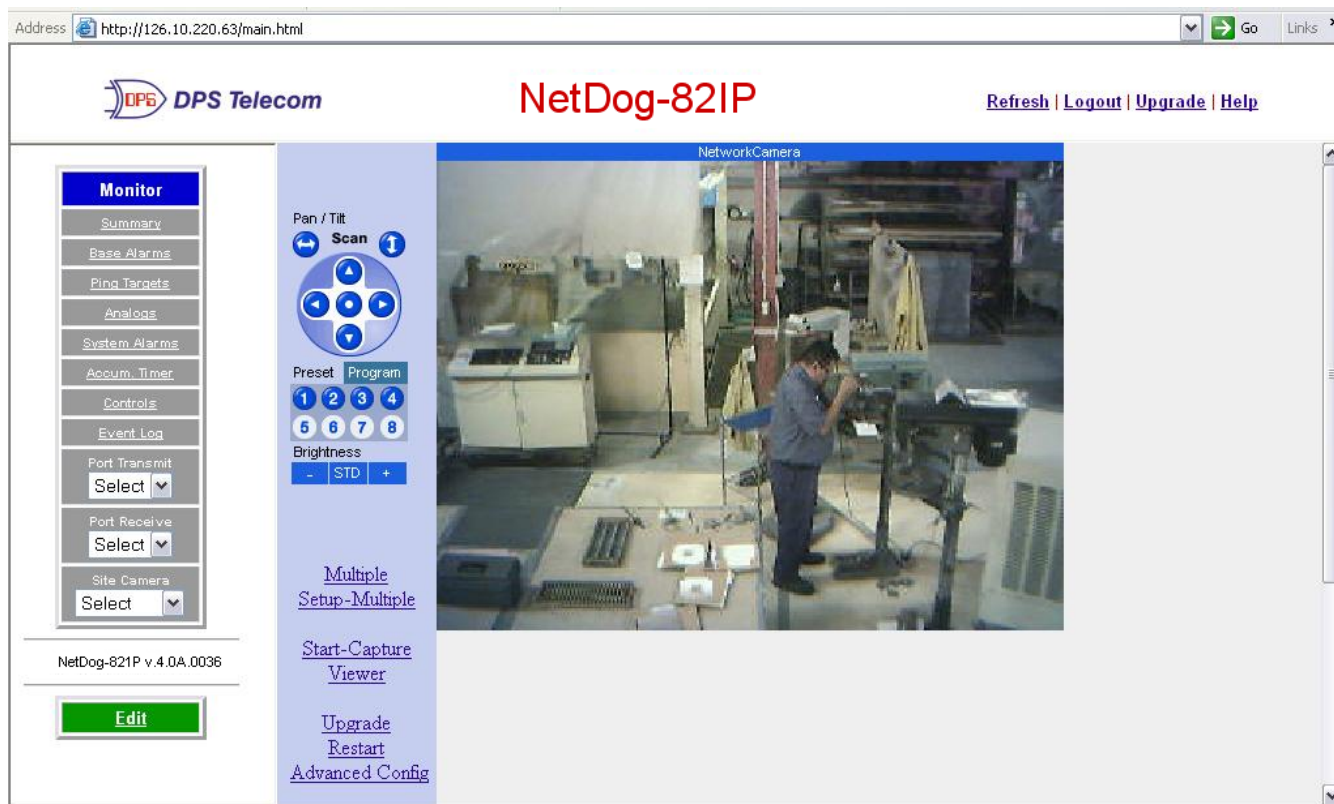
**Note:** All information in the event log will be erased upon reboot or a power failure.

\* DCPx versions of the NetDog-821P automatically timestamp events before sending them to the event logs. The time is based on the real-time clock (if installed). If there is no real-time clock installed, the time is based on the



NetDog-82IP's software clock (requires resetting after power failure or power cycle).

### 3.8 Monitoring Camera Activity



**Fig. 3.10.** Monitor live streaming video via the NetDog-82IP's Web browser

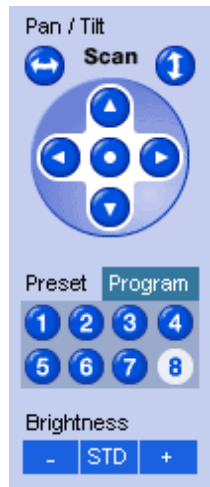
Select the *Site Camera* drop-down menu from the *Monitor* menu to view activity from the site camera. Bandwidth usage in live streaming mode is rated at 146 kB per second.

**Note:** The NetDog-82IP only sends the camera data when a user is monitoring the image.

#### 3.8.1 Pan-and-tilt Camera Controls

Control left-right and up-down viewing options via the *Pan/Tilt* options. Clicking on the image will make that the new center point.

**Note:** In order to have pan-and-tilt controls, your Internet settings must be set to check for newer versions of stored pages every visit to the page, see section 2.18 , "Camera Internet Settings."



**Fig. 3.11.** Use the arrow buttons to use the pan-and-tilt features of the NetDog-82IP SiteCAM

The preset number controls allow you to tilt to the four corners of the screen (1-4). To alter the screen size click on the *Program* link . To adjust the brightness, click on the - to darken the image screen or + to brighten it. Click on *STD* to return to the default settings.

### 3.8.2 Monitoring Multiple Cameras

The screenshot shows the NetDog-82IP web interface. At the top, the address bar shows 'http://126.10.220.63/main.html'. The page header includes the 'DPS Telecom' logo, the title 'NetDog-82IP', and links for 'Refresh', 'Logout', 'Upgrade', and 'Help'. The main content area is titled 'Multi-Camera (Small size: 160x120)'. On the left side, there is a 'Monitor' sidebar with various menu items like 'Summary', 'Base Alarms', 'Ping Targets', 'Analog', 'System Alarms', 'Accum. Timer', 'Controls', 'Event Log', 'Port Transmit', 'Port Receive', and 'Site Camera'. Below the sidebar is an 'Edit' button. The central area displays four camera feeds: 'NetworkCamera', 'SilkScreen', 'PressBrake', and 'PowerCoat'. To the right of the camera feeds, there are links for 'Multiple Setup-Multiple', 'Start-Capture Viewer', 'Upgrade', 'Restart', and 'Advanced Config'. At the bottom of the camera view, there are links for 'Multi-Camera (Normal size: 320x240)' and 'Top Page'.

**Fig. 3.12** View up to 4 multiple cameras.

You can monitor multiple cameras at one time by clicking the **Multiple** link. To view individual screens you may select the site camera under the *Monitor* menu > *Camera* drop-down menu or click on the title of the screen you wish to view individually. To configure your multiple camera settings, click on the Setup-Multiple link, see Figure 3.13.

**Monitor**

Summary

Base Alarms

Find Targets

Analog

System Alarms

Accum. Timer

Controls

Exp. 1 Controls

Exp. 1 Alarms

Event Log

Port Transmit  
Select

Port Receive  
Select

Site Camera  
Select

NetDog-821P v.4.0A.0036

**Multi-Camera**

Pan / Tilt  
Scan

Preset Program  
1 2 3 4  
5 6 7 8

Brightness  
- STD +

[Multiple](#)  
[Setup-Multiple](#)

[Start-Capture](#)  
[Viewer](#)

[Upgrade](#)  
[Restart](#)  
[Advanced Config](#)

**Registration / Modification**

**1. 2nd Network Camera**  Enable  
IP Address or Host Name  
Camera Name (1 to 15 Characters)

**2. 3rd Network Camera**  Enable  
IP Address or Host Name  
Camera Name (1 to 15 Characters)

**3. 4th Network Camera**  Enable  
IP Address or Host Name  
Camera Name (1 to 15 Characters)

Save Cancel

Edit

**Fig. 3.13** Enter the IP Address or Host Name of each camera, and title your camera

Before you can setup multiple camera views, you will need to set up your camera for "live streaming." See your camera user manual to configure your camera for live streaming. You may only use up to 15 alphanumeric characters to name your camera. Once you have finished click the *Save* button.

## 4 Appendixes

### 4.1 Appendix A - Display Mapping

Port	Address	Display	Description	Set	Clear
99	1	1	Discrete Alarms 1-8	8001-8008	9001-9008
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	Internal Temp. Sensor	8257-8260	9257-9260
99	1	6	External Temp. Sensor	8321-8324	9321-9324
99	1	11	Relays/System Alarms (See table below)	8641-8704	9641-9704

*Table A.1. Display descriptions and SNMP Trap numbers for the NetDog-82IP*

\* 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.

Points	Description	SNMP Trap #s	
		Set	Clear
1	Relays	8641	9641
2	Relays	8642	9642
17	Timed Tick	8657	9657
18	Exp. Module Callout	8658	9658
19	Network Time Server	8659	9659
21	Duplicate IP Address	8661	9661
33	Power Up	8673	9673
36	Lost Provisioning	8676	9676
37	DCP Poller Inactive	8677	9677
38	LAN not active	8678	9678
41	Modem not responding	8681	9681
42	No Dial Tone	8682	9682
43	SNMP Trap not Sent	8683	9683
44	Pager Que Overflow	8684	9684
45	Notification failed	8685	9685
46	Craft RcvQ full	8686	9686
47	Modem RcvQ full	8687	9687
62	Chan. Port Timeout	8702	9702
63	Craft Timeout	8703	9703
64	Event Que Full	8704	9704

*Table A.2 Display 11 System Alarms point descriptions*

**Note:** See Table A.3 for detailed descriptions of the NetDog-82IP's system alarms.

### 4.1.1 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.
	33	Power Up	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 latest version of NGEedit4 to configure unit. Power cycle to see if alarm goes away. May require RMA.

*Table A.3. System Alarms Descriptions*

**Note:** Table A.3 continues on following pages.

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	NET1 not active	The Net1 LAN port is down.	Check LAN cable. Ping to and from the unit.
	40	LNK Alarm	No network connection detected	
	41	Modem not responding	An error has been detected during modem initialization. The modem did not respond to the initialization string.	Remove configured modem initialization string, then power cycle the unit. If alarm persists, try resetting the Modem port from the TTY interface, or contact DPS for possible RMA.
	42	No Dial Tone	During dial-out attempt, the unit did not detect a dial tone.	Check the integrity of the phone line and cable.
	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 Queue Overflow	Over 250 events are currently queued in the pager queued 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.
47	Modem RcvQ full	The modem port received more data than it was able to process.	Check what is connecting to the NetDog-82IP. This alarm should not occur.	

*Table A.3 System Alarms Descriptions (continued)*

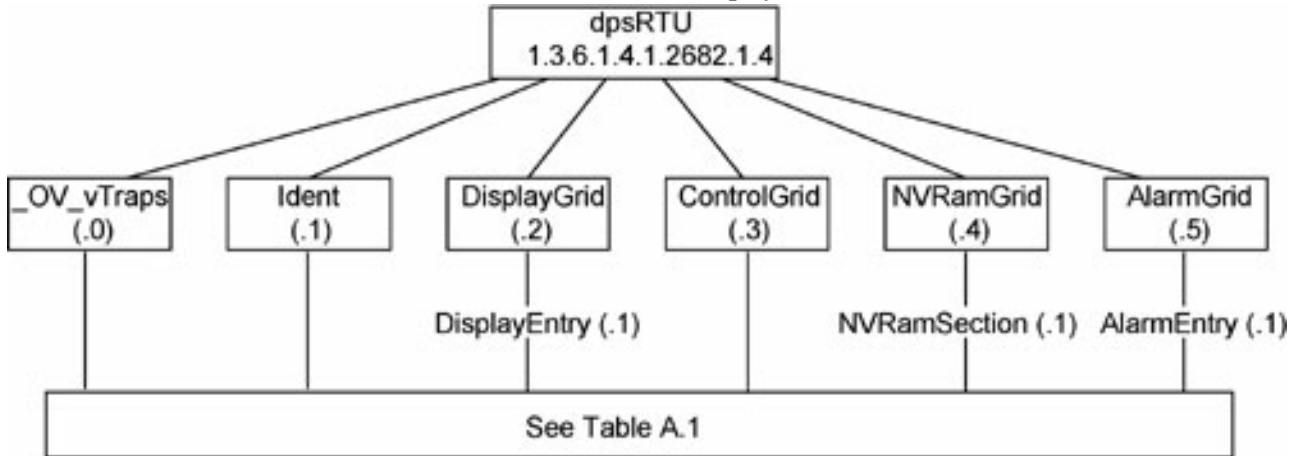
**Note:** Table A.3 continues on following page.

Display	Points	Alarm Point	Description	Solution
	63	Craft Timeout	The Craft Timeout Timer has not been reset in 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 A.3 System Alarms Descriptions (continued)*

## 4.2 Appendix B - 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 1.3.6.1.4.1.2682.1.4. Each level beyond dpsRTU adds another object identifying number. For example, the object identifier of the Display portion of the Control Grid is 1.3.6.1.4.1.2682.1.4.3 because the object identifier of dpsRTU is 1.3.6.1.4.1.2682.1.4 + the Control Grid (.3) + the Display (.3).



Tbl. B1 (0.)_OV_Traps points
<b>_OV_vTraps (1.3.6.1.4.1.2682.1.4.0)</b>
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
<b>Ident (1.3.6.1.4.1.2682.1.4.1)</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.

Tbl. B3 (.2) DisplayGrid points
<b>DisplayEntry (1.3.6.1.4.1.2682.1.4.2.1)</b>
Port (.1)
Address (.2)
Display (.3)
DispDesc (.4)*
PntMap (.5)*

Tbl. B3 (.3) ControlGrid points
<b>ControlGrid (1.3.6.1.4.1.2682.1.4.3)</b>
Port (.1)
Address (.2)
Display (.3)
Point (.4)
Action (.5)

Tbl. B5 (.5) AlarmEntry points
<b>AlarmEntry (1.3.6.1.4.1.2682.1.4.5.1)</b>
Aport (.1)
AAddress (.2)
ADisplay (.3)
APoint (.4)
APntDesc (.5)*
AState (.6)
* For specific alarm points, see Table B6

### 4.3 Appendix C - SNMP Granular Trap Packets

Tables C.1 and C.2 provide a list of the information contained in the SNMP Trap packets sent by the NetDog-82IP.

SNMP Trap managers can use one of two methods to get alarm information:

1. Granular traps (not necessary to define point descriptions for the NetDog-82IP) **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 C.1. UDP Headers and descriptions*

SNMP Header	Description
0	Version
Public	Request
Trap	Request
1.3.6.1.4.1.2682.1.4	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
1.3.6.1.2.1.1.6.0	Object
1-800-622-3314	Value
1.3.6.1.4.1.2682.1.4.4.1.0	Object
01-02-1995 05:08:27.760	Value
1.3.6.1.4.1.2682.1.4.5.1.1.99.1.1.1	Object
99	Value
1.3.6.1.4.1.2682.1.4.5.1.2.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.3.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.4.99.1.1.1	Object
1	Value
1.3.6.1.4.1.2682.1.4.5.1.5.99.1.1.1	Object
Rectifier Failure	Value
1.3.6.1.4.1.2682.1.4.5.1.6.99.1.1.1	Object
Alarm	Value

*Table C.2. SNMP Headers and descriptions*



#### 4.4 Appendix D - ASCII Conversion

The information contained in Table D.1 is a list of ASCII symbols and their meanings. Refer to the bulleted list below to interpret the ASCII data transmitted or received through the data ports. Port transmit and receive activity can be viewed from the 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. [IF]).
- 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 D.1. ASCII symbols*

## 5 Frequently Asked Questions

Here are answers to some common questions from NetDog-82IP users. The latest FAQs can be found on the NetDog-82IP support web page, <http://www.dpstele.com>.

If you have a question about the NetDog-82IP, please call us at **(559) 454-1600** or e-mail us at [support@dpstele.com](mailto:support@dpstele.com)

### 5.1 General FAQs

#### **Q. How do I Telnet to the NetDog-82IP?**

**A.** You must use **Port 2002** to connect to the NetDog-82IP. 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 NetDog-82IP and Port 2002. For example, to connect to the NetDog-82IP using the standard Windows Telnet client, click Start, click Run, and type Telnet <NetDog-82IP IP address> 2002.

#### **Q. How can I back up the current configuration of my NetDog-82IP?**

**A.** There are two ways. NGEEdit can read the configuration of your NetDog-82IP and save the configuration to your PC's hard disk or a floppy disk. With NGEEdit you can also make changes to the configuration file and write the changed configuration to the NetDog-82IP's NVRAM. The other way is to use File Transfer Protocol (FTP). You can use FTP to read configuration files from or write files to the NetDog-82IP's NVRAM, but you can't use FTP to edit configuration files.

#### **Q. Can I use my NetDog-82IP as a proxy server to access TTY interfaces on my third-party serial equipment?**

**A.** You can use Data Ports 1–8, located on the back of the NetDog-82IP, to connect to serial devices, as long as your devices support RS-232. To make a proxy connection, you must define the correct TCP port for each serial port. To define TCP ports, you must first connect directly to the NetDog-82IP through its IP address. Once you have connected to the NetDog-82IP, you can define the TCP ports through the NetDog-82IP's TTY or Web Browser Interface configuration interfaces.

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

**A.** These terms define the exact location of a network alarm, from the most specific (an individual alarm point) to the most general (an entire monitored device). An alarm point is a number representing an actual contact closure that is activated when an alarm condition occurs. For example, an alarm point might represent a low oil sensor in a generator or a open/closed sensor in a door. A display is a logical group of 64 alarm points. A port is traditionally the actual physical serial port through which the monitoring device collects data. The address is a number representing the monitored device. The terms port and address have been extended to refer to logical, or virtual, ports and addresses. For example, the NetDog-82IP reports internal alarms on Port 99, address 1.

#### **Q. What characteristics of an alarm point can I configure through software? For instance, can I configure Point 4 to sense an active-low (normally closed) signal, or Point 5 to sense a level or edge?**

**A.** The NetDog-82IP alarm points are level sensed and can be software-configured to generate an alarm on either a high (normally open) or low (normally closed) level.

#### **Q. When I connect to the NetDog-82IP through the craft port on the front panel it either doesn't work right or it doesn't work at all. What's going on?**

**A.** Make sure your using the right COM port settings. The standard settings for the craft port are 9600 baud, 8 bits, no parity, and 1 stop bit. Flow control **must** be set to **none**. Flow control normally defaults to hardware in most terminal programs, and this will not work correctly with the NetDog-82IP.

**Q. How do I get my NetDog-82IP on the network?**

A. Before the NetDog-82IP will work on your LAN, the unit address (IP address), the subnet mask, and the default gateway must be set. A sample configuration could look like this:

unit address: 192.168.1.100

subnet mask: 255.255.255.0

Default Gateway: 192.168.1.1

Always remember to save your changes by writing to the NVRAM. Any modifications of the NetDog-82IP's IP configuration will also require a reboot.

**Q. Can I upload new firmware to my NetDog over PPP?**

A. No.

**Q. I'm using HyperTerminal to connect to the NetDog-82IP through the craft port, but the unit won't accept input when I get to the first level menu.**

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

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

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

**Q. The LAN line LED is green on my NetDog-82IP, but I can't poll it from my T/MonXM master.**

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

**5.2 SNMP FAQs****Q. Which version of SNMP is supported by the SNMP agent on the NetDog-82IP?**

A. SNMP v1 and v2c on the NetDog-82IP series.

**Q. How do I configure the NetDog-82IP to send traps to an SNMP manager? Is there a separate MIB for the NetDog-82IP? 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 NetDog-82IP begins sending traps as soon as the SNMP managers are defined. The NetDog-82IP MIB is included on the NetDog-82IP 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 NetDog-82IP support MIB-2 and/or any other standard MIBs?**

A. The NetDog-82IP supports the bulk of MIB-2.

**Q. Does the NetDog-82IP SNMP agent support both NetDog-82IP and T/MonXM variables?**

A. The NetDog-82IP SNMP agent manages an embedded MIB that supports only the NetDog-82IP'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 exceptions 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 NetDog-82IP manual talks about two control relay outputs. How do I control these from my SNMP manager?**

A. The control relays are operated by issuing the appropriate set commands, which are contained in the DPS Telecom MIB. For more information about the set commands, see Reference Information, Display Mapping, in any of the NetDog-82IP software configuration guides.

**Q. How can I associate descriptive information with a point for the RTU granular traps?**

A. The NetDog-82IP alarm point descriptions are individually defined using the Web Browser Interface.

**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 NetDog-82IP and the SNMP manager are both on the network. Use the NetDog-82IP's ping command to ping the SNMP manager.

### 5.3 Pager FAQs

**Q. Why won't my alpha pager work?**

A. To configure the NetDog-82IP to send alarm notifications to an alpha pager, enter the **data** phone number for your pager in the Phone Number field. This phone number should connect to your pager services modem. Then enter the PIN for your pager in the PIN/Rcpt/Port field. You don't need to enter anything in any of the other fields. If you still don't receive pages, try setting the Dial Modem Init string to AT\$37=9. This will limit the NetDog-82IP's connection speed.

**Q. Numeric pages don't come in or are cut off in the middle of the message. What's wrong?**

A. You need to set a delay between the time the NetDog-82IP dials your pager number and the time the NetDog-82IP begins sending the page message. You can set the delay in the Pager Number field, where you enter your pager number. First enter the pager number, then enter some commas directly after the number. Each comma represents a two-second delay. So, for example, if you wanted an eight-second delay, you would enter 555-1212,,,,, in the Pager Number field.

**Q. What do I need to do to set up email notifications?**

A. You need to assign the NetDog-82IP an email address and list the addresses of email recipients. Let's explain some terminology. An email address consists of two parts, the user name (everything before the @ sign) and the domain (everything after the @ sign). To assign the NetDog-82IP an email address, choose System from the Edit menu. Enter the NetDog-82IP's user name in the Name field (it can't include any spaces) and the domain in the Location field. For example, if the system configuration reads:

Name: NetDog

Location: proactive.com

Then email notifications from the NetDog-82IP will be sent from the address [NetDog@proactive.com](mailto:NetDog@proactive.com). The next step is to list the email recipients. Choose Pagers from the Edit menu. For each email recipient, enter his or her email domain in the Phone/Domain field and his or her user name in the PIN/Rcpt/Port field. You must also enter the IP address of an SNMP server in the IPA field.

**Q. What if I want to use a real (authenticated) email address to use for email notifications?**

**A.** If you want to send an authenticated email to *user@yourdomain.com* from *from@fromdomain.com*, password = *authentic*, then use the following steps:

1. In the *Pin/Rcpt* field type *authentic*.
2. Click *Submit Data* to save your changes.
3. Click on the *Edit* menu > *System* link.
4. In the *Name* field type *user*.
5. In the *Location* field type *yourdomain.com*.
6. Click *Submit Data* to save the new system information settings.

## 6 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.dpstele.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 paging message. You will be asked to enter your phone number. An on-call technical support representative will return your call as soon as possible.*

## 7 End User License Agreement

All Software and firmware used in, for, or in connection with the Product, parts, subsystems, or derivatives thereof, in whatever form, including, without limitation, source code, object code and microcode, including any computer programs and any documentation relating to or describing such Software is furnished to the End User only under a non-exclusive perpetual license solely for End User's use with the Product.

The Software may not be copied or modified, in whole or in part, for any purpose whatsoever. The Software may not be reverse engineered, compiled, or disassembled. No title to or ownership of the Software or any of its parts is transferred to the End User. Title to all patents, copyrights, trade secrets, and any other applicable rights shall remain with the DPS Telecom.

DPS Telecom's warranty and limitation on its liability for the Software is as described in the warranty information provided to End User in the Product Manual.

End User shall indemnify DPS Telecom and hold it harmless for and against any and all claims, damages, losses, costs, expenses, obligations, liabilities, fees and costs and all amounts paid in settlement of any claim, action or suit which may be asserted against DPS Telecom which arise out of or are related to the non-fulfillment of any covenant or obligation of End User in connection with this Agreement.

This Agreement shall be construed and enforced in accordance with the laws of the State of California, without regard to choice of law principles and excluding the provisions of the UN Convention on Contracts for the International Sale of Goods. Any dispute arising out of the Agreement shall be commenced and maintained only in Fresno County, California. In the event suit is brought or an attorney is retained by any party to this Agreement to seek interpretation or construction of any term or provision of this Agreement, to enforce the terms of this Agreement, to collect any money due, or to obtain any money damages or equitable relief for breach, the prevailing party shall be entitled to recover, in addition to any other available remedy, reimbursement for reasonable attorneys' fees, court costs, costs of investigation, and other related expenses.

# Warranty

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DPS Telecom warrants, to the original purchaser only, that its products a) substantially conform to DPS' published specifications and b) are substantially free from defects in material and workmanship. This warranty expires two years from the date of product delivery with respect to hardware and ninety days from the date of product delivery with respect to software. If the purchaser discovers within these periods a failure of the product to substantially conform to the specifications or that the product is not substantially free from defects in material and workmanship, the purchaser must promptly notify DPS. Within reasonable time after notification, DPS will endeavor to correct any substantial non-conformance with the specifications or substantial defects in material and workmanship, with new or used replacement parts. All warranty service will be performed at the company's office in Fresno, California, at no charge to the purchaser, other than the cost of shipping to and from DPS, which shall be the responsibility of the purchaser. If DPS is unable to repair the product to conform to the warranty, DPS will provide at its option one of the following: a replacement product or a refund of the purchase price for the non-conforming product. These remedies are the purchaser's only remedies for breach of warranty. Prior to initial use the purchaser shall have determined the suitability of the product for its intended use. DPS does not warrant a) any product, components or parts not manufactured by DPS, b) defects caused by the purchaser's failure to provide a suitable installation environment for the product, c) damage caused by use of the product for purposes other than those for which it was designed, d) damage caused by disasters such as fire, flood, wind or lightning unless and to the extent that the product specification provides for resistance to a defined disaster, e) damage caused by unauthorized attachments or modifications, f) damage during shipment from the purchaser to DPS, or g) any abuse or misuse by the purchaser.

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event will DPS be liable for any special, incidental, or consequential damages based on breach of warranty, breach of contract, negligence, strict tort, or any other legal theory. Damages that DPS will not be responsible for include but are not limited to, loss of profits; loss of savings or revenue; loss of use of the product or any associated equipment; cost of capital; cost of any substitute equipment, facilities or services; downtime; claims of third parties including customers; and injury to property.

The purchaser shall fill out the requested information on the Product Warranty Card and mail the card to DPS. This card provides information that helps DPS make product improvements and develop new products.

For an additional fee DPS may, at its option, make available by written agreement only an extended warranty providing an additional period of time for the applicability of the standard warranty.

## Technical Support

If a purchaser believes that a product is not operating in substantial conformance with DPS' published specifications or there appear to be defects in material and workmanship, the purchaser should contact our technical support representatives. If the problem cannot be corrected over the telephone and the product and problem are covered by the warranty, the technical support representative will authorize the return of the product for service and provide shipping information. If the product is out of warranty, repair charges will be quoted. All non-warranty repairs receive a 90-day warranty.

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