

User Manual

Elinx EIRM-EXTEND

Managed Hardened 10/100BASE-TX Ethernet Extender



Model EIRM-EXTEND

Documentation Number: EIRM-EXTEND-0411m



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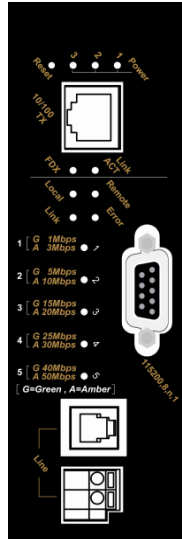
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Chapter 1 – Introduction

The Hardened Managed Ethernet Extender provides one channel Ethernet over existing voice grade copper wire. This Hardened Managed Ethernet Extender solution is perfectly fitted in the industrial applications or rugged environment.

Product Overview



Product Features

- Meets NEMA TS1/TS2 Environmental requirements: temperature, shock, and vibration for traffic control equipment.
- Meets EN61000-6-2 & EN61000-6-4 EMC Generic Standard Immunity for industrial environment.
- Operates transparent to higher layer protocols such as TCP/IP.
- Ethernet port: Supports IEEE802.3/802.3u/802.3x. Auto-negotiation: 10/100Mbps, full/half-duplex; Auto MDI/MDIX.
- Ethernet Extender port: Asymmetrical or Symmetrical on the VDSL, full-duplex 59/31Mbps (downstream/upstream) asymmetrical or full-duplex 50Mbps symmetrical communications link over existing copper telephone line.
- One DIP switch for configuring Local (Loc) and Remote (Rmt).
- Ten speeds with speed indicator LEDs on front panel of unit, up to 50Mbps @ about 300meters (984ft.), down to 1Mbps @ about 1,900meters (6,233ft.).
- Supports RS-232 console, SNMP, Web Browser management.
- Operating voltage and Max. current consumption: 0.5A @ 12VDC, 0.25A @ 24VDC. Power consumption: 6W Max.
- Power Supply: Redundant 12-32VDC Terminal Block power inputs and 12VDC DC JACK with 100-240VAC external power supply.

- Field Wiring Terminal: Use Copper Conductors Only, 12-24 AWG torque value 7 lb-in.
- Operating temperature range @ -40°C to 75°C (-40°F to 167°F).
Tested for functional operation @ -40°C to 85°C (-40°F to 185°F).
UL508 Industrial Control Equipment certified Maximum Surrounding Air Temperature @ 75°C (167°F).
- For use in Pollution Degree 2 Environment.
- Supports Din-Rail or Panel Mounting installation.

Packing List

Please inspect the contents listed below, report any apparent damage or missing items immediately to our authorized reseller.

- The Hardened Managed Ethernet Extender
- User's Manual
- AC to DC Power Adaptor and Power Cable (optional)

One-Channel Hardened Managed Ethernet Extender

Ports

The Hardened Managed Ethernet Extender provides one Ethernet port RJ-45 (10/100Mbps) port and one Ethernet Extender port. The Ethernet Extender port, uses RJ-11 and Terminal Block connectors that will auto sense the speeds 1/3/5/10/15/20/25/30/40/50Mbps.

Ethernet Extender Mode Settings

Ethernet Extender mode settings are DIP switch (Dual Inline Package) selectable. The switch is located on the top panel of the Hardened Managed Ethernet Extender.

DIP switch

There is one pin on the DIP switch for Ethernet Extender mode settings. One unit must be set to LOC and one to RMT.

Loc	Rmt
The device operates in local mode	The device operates in remote mode

Front Panel & LEDs

LED Indicators

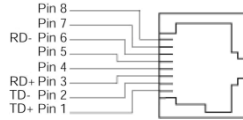
The LED indicators give you instant feedback on status of the Hardened Managed Ethernet Extender:

LEDs	State	Indication
Power 1	Steady	Power on
Power 2 Power 3	Off	Power off
Ethernet		
Link/ACT	Steady	A valid Ethernet connection established
	Flashing	Transmitting or receiving Ethernet data ACT stands for ACTIVITY
	Off	Neither valid Ethernet connection established nor transmitting/receiving Ethernet data
FDX	Steady	Ethernet Connection in full-duplex mode FDX stands for FULL-DUPLEX
	Off	Ethernet Connection in half-duplex mode
Ethernet Extender		
1	Green	The Ethernet Extender port transmitting/receiving at 1Mbps, up to 1900M
	Amber	The Ethernet Extender port transmitting/receiving at 3Mbps, up to 1800M
2	Green	The Ethernet Extender port transmitting/receiving at 5Mbps, up to 1600M
	Amber	The Ethernet Extender port transmitting/receiving at 10Mbps, up to 1400M
3	Green	The Ethernet Extender port transmitting/receiving at 15Mbps, up to 1200M
	Amber	The Ethernet Extender port transmitting/receiving at 20Mbps, up to 1000M
4	Green	The Ethernet Extender port transmitting/receiving at 25Mbps, up to 800M
	Amber	The Ethernet Extender port transmitting/receiving at 30Mbps, up to 700M
5	Green	The Ethernet Extender port transmitting/receiving at 40Mbps, up to 600M
	Amber	The Ethernet Extender port transmitting/receiving at 50Mbps, up to 300M
Remote	Steady	The device operates in remote mode
Local	Steady	The device operates in local mode
Error	Steady	Error occurred
Link	Steady	A valid connection established

The 10/100Base-TX and Ethernet Extender Connectors

The 10/100Base-TX Connection

The following lists the pinouts of 10/100Base-TX RJ-45 port.



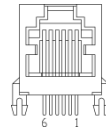
Pin	Regular Ports	Uplink ports
1	Output Transmit Data +	Input Receive Data +
2	Output Transmit Data -	Input Receive Data -
3	Input Receive Data +	Output Transmit Data +
4	NC	NC
5	NC	NC
6	Input Receive Data -	Output Transmit Data -
7	NC	NC
8	NC	NC

The Ethernet Extender Connection

The RJ-11 and Terminal Block port pinouts:

Pin 3: Tip, Pin 4: Ring.

Use a telephone line to connect two RJ-11 or Terminal Block ports between two Hardened Ethernet Extenders. Connections are straight through or crossover.



Tip Ring

Warning: Inappropriate operation might cause the damage of Terminal Block.

Installation

This chapter gives step-by-step installation instructions for the Hardened Managed Ethernet Extender.

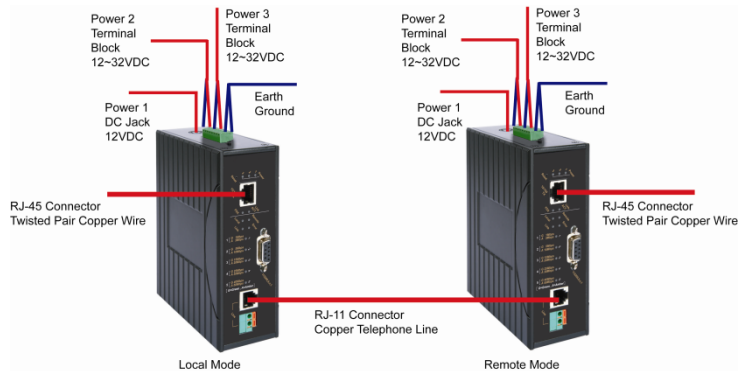
Selecting a Site for the Equipment

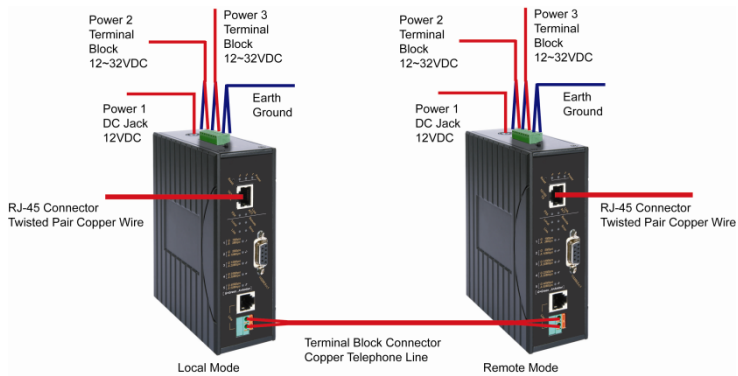
As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

- The Surrounding Air temperature should be between -34 to 60 degrees Celsius.
- The relative humidity should be less than 95 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RF) standards.
- Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes of the equipment.
- The power outlet should be within 1.8 meters of the product.

Wiring Diagram

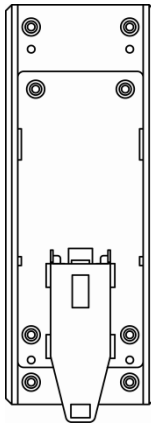
Field Wiring Terminal Markings: Use Copper Conductors Only, 60/75°C, wire range 12-24 AWG, torque value 7 lb-in.





DIN Rail Mounting

- Fix the DIN rail attachment plate to the back panel of the Hardened Managed Ethernet Extender.
- Installation: Place the Hardened Managed Ethernet Extender on the DIN rail from above using the slot. Push the front of the Hardened Managed Ethernet Extender toward the mounting surface until it audibly snaps into place.
- Removal: Pull out the lower edge and then remove the Hardened Managed Ethernet Extender from the DIN rail.



Connecting to Power

Redundant DC Terminal Block Power Inputs or 12VDC DC Jack:

12VDC DC Jack

Step 1: Connect the supplied AC to DC power adapter to the receptacle on the topside of the Hardened Managed Ethernet Extender.

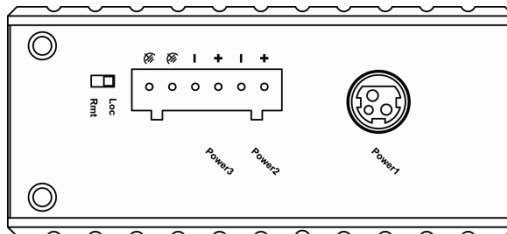
Step 2: Connect the power cord to the AC to DC power adapter and attach the plug into a standard AC outlet with the appropriate AC voltage.


Redundant DC Terminal Block Power Inputs

There are two pairs of power inputs can be used to power up this device. You only need to have one power input connected to run the Hardened Managed Ethernet Extender.

Step 1: Connect the DC power cord to the plug-able terminal block on the Hardened Managed Ethernet Extender, and then plug it into a standard DC outlet.

Step 2: Disconnect the power cord if you want to shut down the Hardened Managed Ethernet Extender.



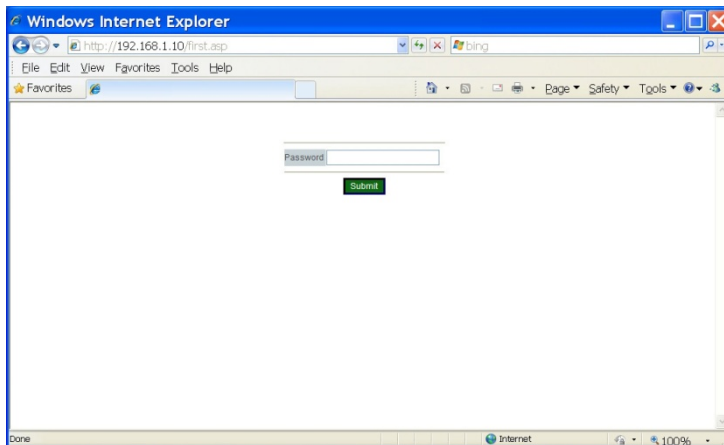
Power Input Assignment		
Power1		12VDC
Power2	<input type="checkbox"/>	12-32VDC
	<input type="checkbox"/>	Power Ground
Power3	<input type="checkbox"/>	12-32VDC
	<input type="checkbox"/>	Power Ground
		Earth Ground
Terminal Block		
DIP Switch Assignment		
Loc		The device operates in local mode
Rmt		The device operates in remote mode

Chapter 2 – Web-Based Browser Management

The Hardened Managed Ethernet Extender provides a web-based browser interface for configuring and managing the Hardened Managed Ethernet Extender. This interface allows you to access the Hardened Managed Ethernet Extender using a preferred web browser.

This chapter describes how to configure the Hardened Managed Ethernet Extender using its web-based browser interface.

Logging in to The Hardened Managed Ethernet Extender



IP Address

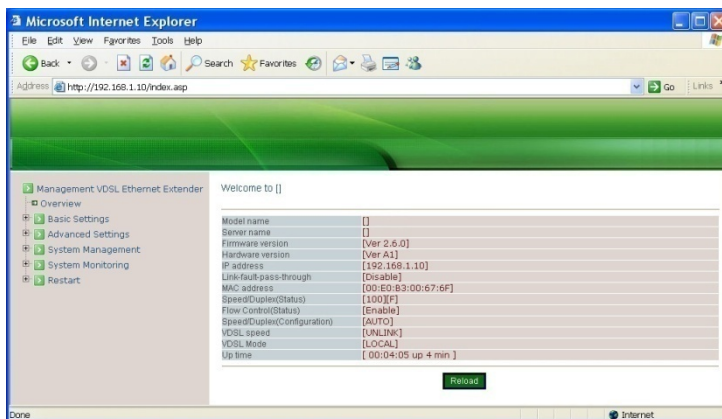
In your web browser, specify the IP address of the Hardened Managed Ethernet Extender. Default IP address is 192.168.1.10.

Password

Enter the factory default password (no password) or user-defined password. Then select the “Submit” button to log on to the Hardened Managed Ethernet Extender.

Understanding the Browser Interface

The web browser interface provides groups of point-and-select buttons at the left field of the screen for configuring and managing the Hardened Managed Ethernet Extender.



Basic Settings

Network Settings, Server Name Settings, NTP Server Settings

Advanced Settings

Lan Settings, VDSL Settings, SNMP Settings, Link-Fault-Pass-Through Settings, Log Settings

System Management

Save Configuration, Change Password, Accessible List, Restore Factory Default, Firmware Upgrade, Reset VDSL, Retrain VDSL

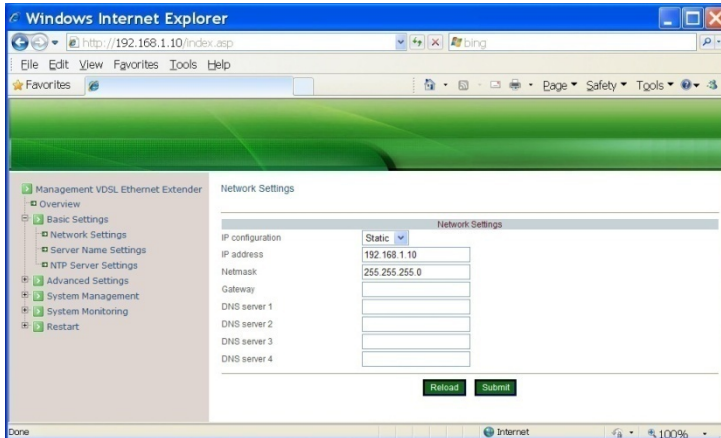
System Monitoring

System Log, VDSL Status

Restart

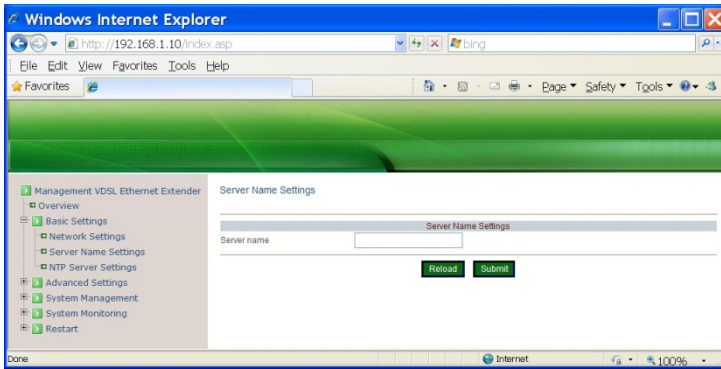
Restart System

Basic Settings



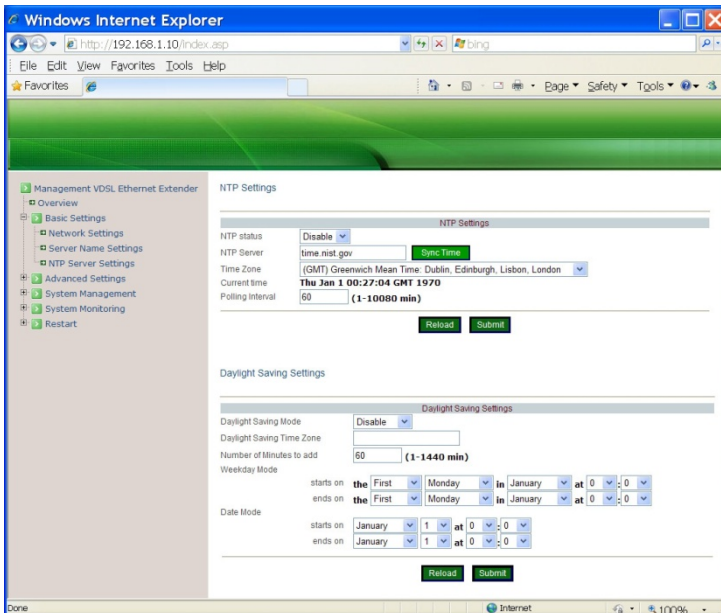
Network Settings

1. IP configuration: Select "IP configuration" drop-down menu to choose "Static" or "DHCP" from the "IP configuration" drop-down list for the Hardened Managed Ethernet Extender to use a static IP or dynamic IP address (the IP address will be automatically assigned by DHCP server over the network).
2. IP address: Select "IP Address" text box and type a new address to change the IP Address.
3. Netmask: Select "Netmask" text box and type a new address to change the Netmask.
4. Gateway: Select the text box and type a new address to change the Gateway.
5. DNS server 1, 2, 3, 4: Select the text box and type a new address to change the DNS server.
6. Reload: Select "Reload" button to reload previous settings.
7. Submit: Select "Submit" button to apply new settings.



Server Name Settings

1. Server name: Select "Server Name" text box. Type a server name if it is blank, or replace the current server name with a new one.
2. Reload: Select "Reload" button to reload previous settings.
3. Submit: Select "Submit" button to apply new settings.



NTP Server Settings

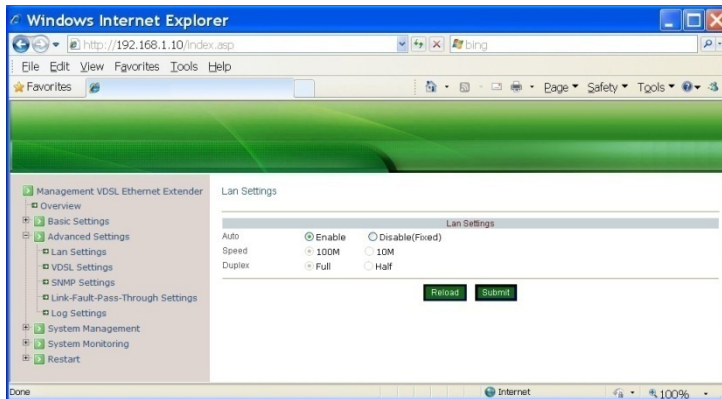
NTP Settings:

1. NTP status: Select “NTP status” drop-down menu to select “Enable” or “Disable” from the “NTP status” drop-down list to enable or disable NTP.
2. NTP Server: Select “NTP Server” text box to enter URL or IP address of NTP server.
3. Sync Time: Select “Sync Time” button to synchronize system time of Hardened Managed Ethernet Extender with NTP server.
4. Time Zone: Select “Time Zone” drop-down menu to select a different time zone from the “Time Zone” drop-down list.
5. Polling Interval (1-10080 min): Select “Polling Interval” text box to enter polling interval for requesting updated NTP information.
6. Reload: Select “Reload” button to reload previous settings.
7. Submit: Select “Submit” button to apply new settings.

Daylight Saving Settings:

1. Daylight Saving Mode: Select “Daylight Saving Mode” drop-down menu to select “Enable” or “Disable” from the “Daylight Saving Mode” drop-down list to enable or disable Daylight Saving settings.
2. Daylight Saving Time Zone: Select “Daylight Saving Time Zone” text box to enter a name for Daylight Saving Time Zone.
3. Number of Minutes to add (1-1440 min): Select “Number of Minutes to add” text box to enter the amount of time to constitute your local Daylight Saving offset.
4. Weekday Mode: Choose the week of the month, the day of the week, and the time that Daylight Saving will start on and end.
5. Date Mode: Choose the month, the day of the month, and the time that Daylight Saving will start on and end.
6. Reload: Select “Reload” button to reload previous settings.
7. Submit: Select “Submit” button to apply new settings.

Advanced Settings

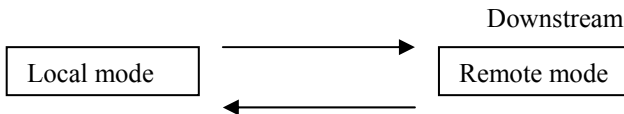


Lan Settings

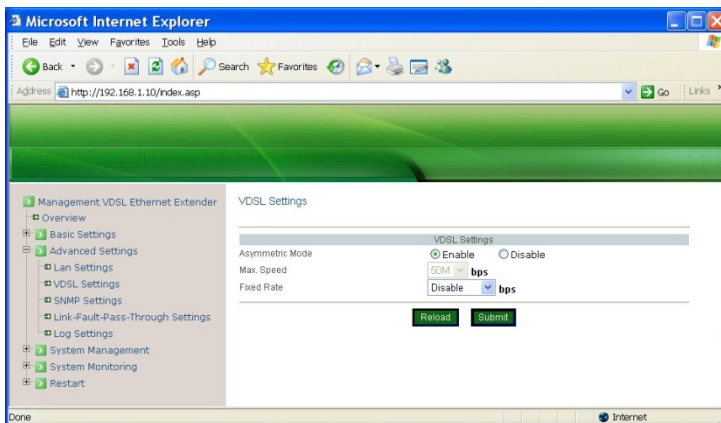
1. Auto: Select "Enable" or "Disable" to enable or disable auto negotiation for Ethernet port of the Hardened Managed Ethernet Extender.
2. Speed: Check "100M" or "10M" to set the speed of Ethernet port to 100Mbps or 10Mbps.
3. Duplex: Check "Full" or "Half" to set the duplex mode of Ethernet port to Full Duplex or Half Duplex.
4. Reload: Select "Reload" button to reload previous settings.
5. Submit: Select "Submit" button to apply new settings.

VDSL Settings

The Ethernet Extender port of this Hardened Managed Ethernet Extender can support asymmetric mode (default setting) or symmetric mode for upstream and downstream transmission.



One requirement is to set Fixed Rate for Local mode Hardened Managed Ethernet Extender. You will not have to set Fixed Rate for Remote mode Hardened Managed Ethernet Extender. Local mode Hardened Managed Ethernet Extender will dominate Fixed Rate for this pair. When Hardened Managed Ethernet Extender is set to Local mode, the speed LEDs will follow downstream speed. And when Hardened Managed Ethernet Extender is set to Remote mode, the speed LEDs will follow upstream speed.



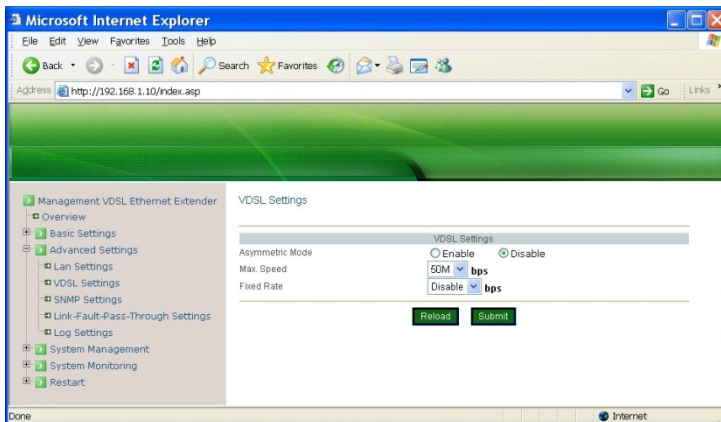
Enable Asymmetric Mode:

1. Asymmetric Mode: Check “Enable” to enable asymmetric mode for Ethernet Extender port of the Hardened Managed Ethernet Extender.
2. Fixed Rate: Select “Fixed Rate” drop-down menu to disable fixed speed rate or select a fixed speed rate for Ethernet Extender port from the “Fixed Rate” drop-down list.

Fixed Rate: bps

Disable
59M / 31M
52M / 24M
47M / 14M
42M / 8M
35M / 6M
28M / 5M
25M / 2M
22M / 1M
14M / 1M
1M / 1M

3. Reload: Select “Reload” button to reload previous settings.
4. Submit: Select “Submit” button to apply new settings.



Disable Asymmetric Mode:

1. Asymmetric Mode: Check “Disable” to disable asymmetric mode for Ethernet Extender port of the Hardened Managed Ethernet Extender.
2. Max. Speed: Select “Max. Speed” drop-down menu to select a maximum speed for Ethernet Extender port from the “Max. Speed” drop-down list.

Max. Speed: bps

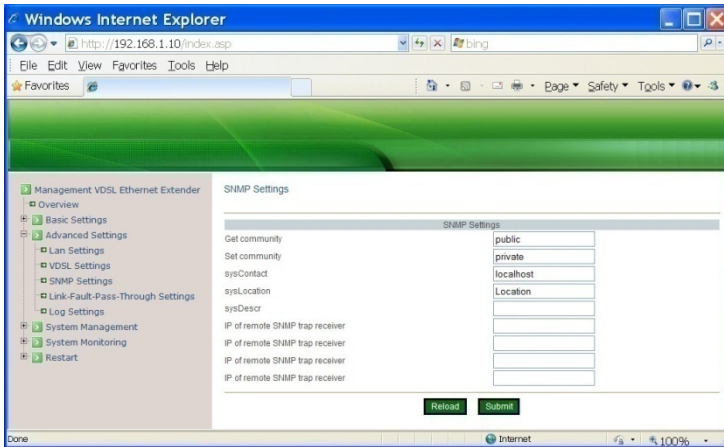
50M
40M
30M
25M
20M
15M
10M
5M
3M
1M

3. Fixed Rate: Select "Fixed Rate" drop-down menu to disable fixed speed rate or select a fixed speed rate for Ethernet Extender port from the "Fixed Rate" drop-down list.

Fixed Rate: bps

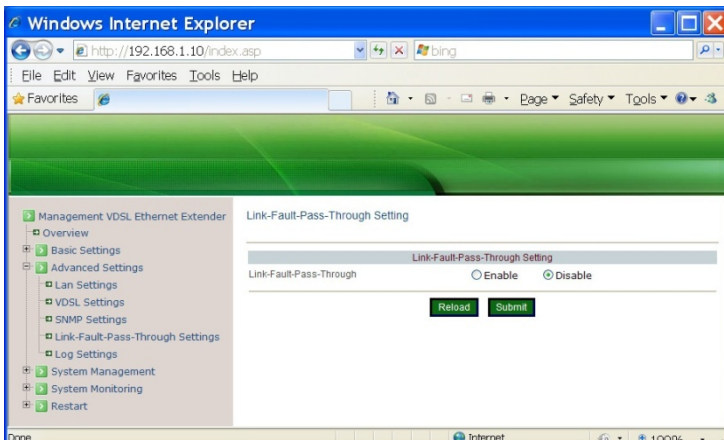
Disable
50M
40M
30M
25M
20M
15M
10M
5M
3M
1M

4. Reload: Select "Reload" button to reload previous settings.
5. Submit: Select "Submit" button to apply new settings.



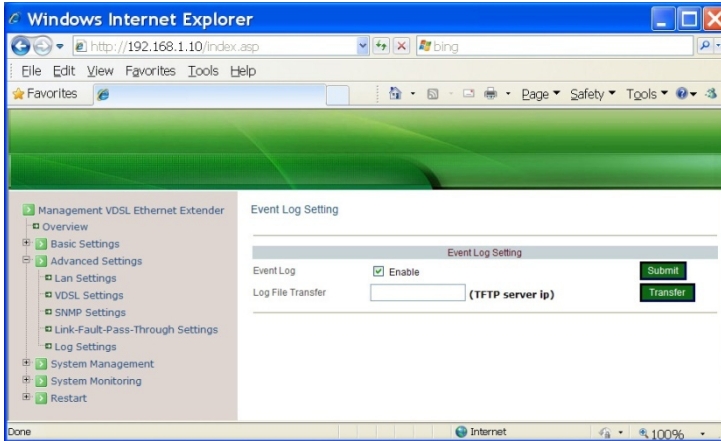
SNMP Settings

1. Get community: Select the “Get community” textbox and specify a get community name.
2. Set community: Select the “Set Community” textbox and specify a set community name.
3. sysContact: Select the “sysContact” textbox and specify a new contact for SNMP.
4. sysLocation: Select the “sysLocation” textbox and specify a new location for SNMP.
5. sysDescr: Select the “sysDescr” textbox and specify a new description for SNMP.
6. IP of remote SNMP trap receiver: For each “IP of remote SNMP trap receiver”, Select the “IP of remote SNMP trap receiver” textbox and specify an IP address of remote SNMP trap receiver.
7. Reload: Select “Reload” button to reload previous settings.
8. Submit: Select “Submit” button to apply new settings.



Link-Fault-Pass-Through Settings

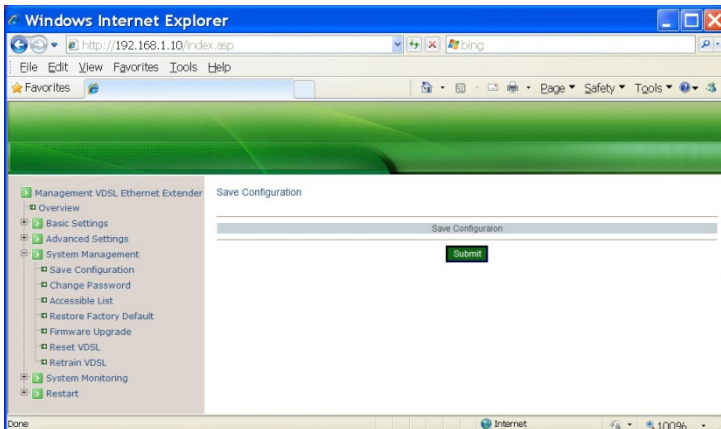
1. Link-Fault-Pass-Through: Check “Enable” or “Disable” to enable or disable link-fault-pass-through for the Hardened Managed Ethernet Extender.
2. Reload: Select “Reload” button to reload previous settings.
3. Submit: Select “Submit” button to apply new settings.



Log Settings

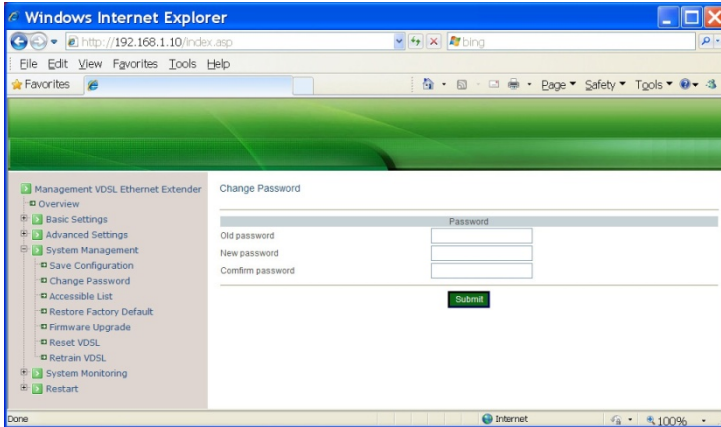
1. Event Log: Check or uncheck “Enable” to enable or disable Event Log Setting for the Hardened Managed Ethernet Extender.
2. Log File Transfer: Select the “Log File Transfer” textbox and specify the IP address of TFTP server.
3. Submit: Select “Submit” button to apply new settings.
4. Transfer: Select “Transfer” button to transfer log file to TFTP server.

System Management



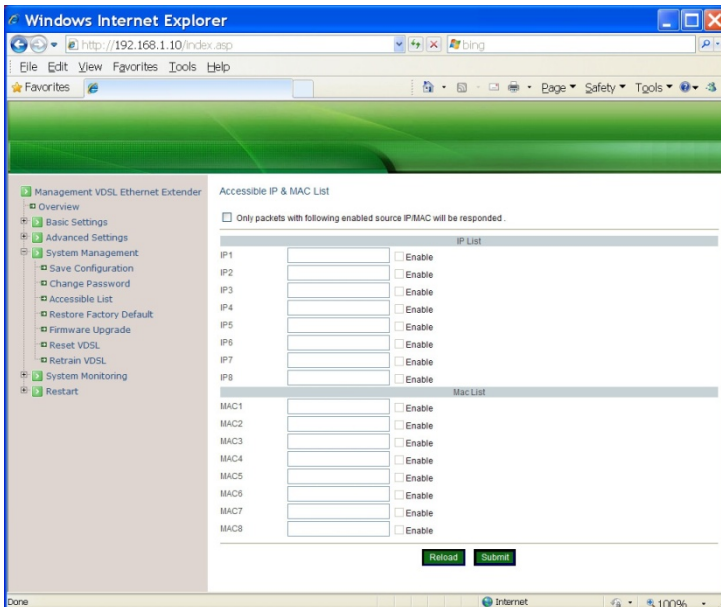
Save Configuration

1. Submit: Select "Submit" button to save configuration.



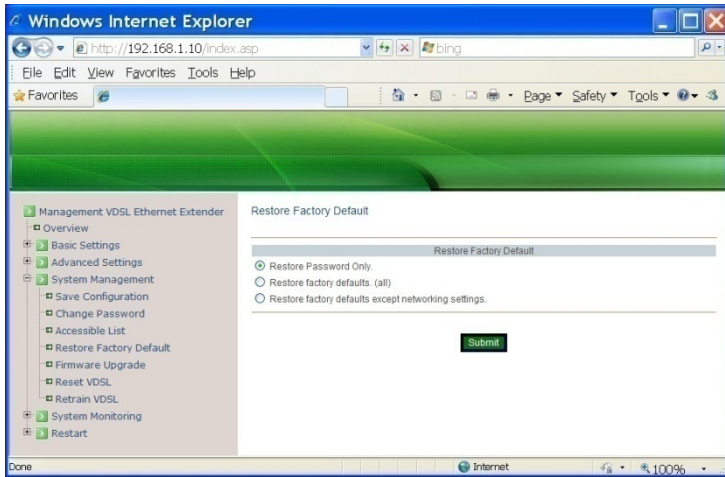
Change Password

1. Old password: Select "Old password" text box and type in the old password.
2. New password: Select "New password" text box and type in the new password.
3. Confirm password: Select "Confirm password" text box. Type the same password in "New password" text box again to verify it.
4. Submit: Select "Submit" button to apply new settings.



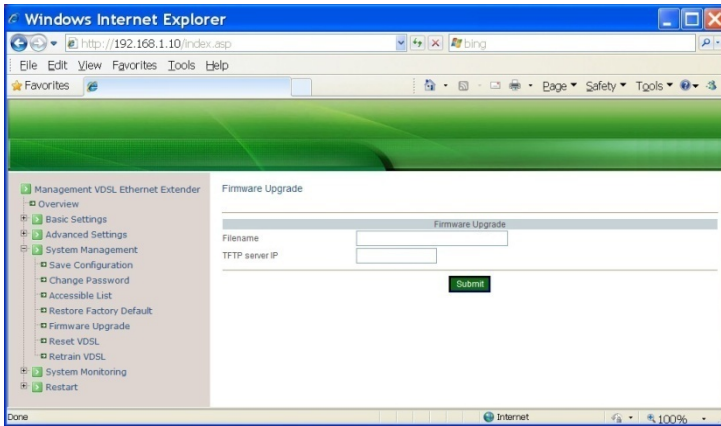
Accessible List

1. Only packets with following enabled source IP/MAC will be responded: Check this option to enable the following accessible source IP/MAC list. Uncheck this option will allow all source IP/MAC's connection request.
2. IP1 ~ 8: Select "IP1 ~ 8" text box and specify IP addresses that can access to the Ethernet port on the Hardened Managed Ethernet Extender. Check "Enable" option to enable the IP addresses.
3. MAC1 ~ 8: Select "MAC1 ~ 8" text box and specify MAC addresses that can access to the Ethernet port on the Hardened Managed Ethernet Extender. Check "Enable" option to enable the MAC addresses.
4. Reload: Select "Reload" button to reload previous settings.
5. Submit: Select "Submit" button to apply new settings.



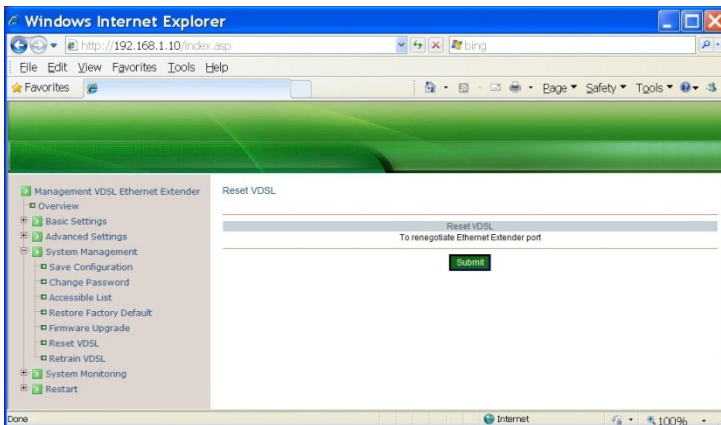
Restore Factory Default

1. Restore Password Only: Check this option to restore the factory default password.
2. Restore factory defaults (all): Check this option to restore the Hardened Managed Ethernet Extender to the factory default values.
3. Restore factory defaults except networking settings: Check this option to restore the Hardened Managed Ethernet Extender to the factory default values but keep networking settings of the Hardened Managed Ethernet Extender.
4. Submit: Select "Submit" button to apply new settings.



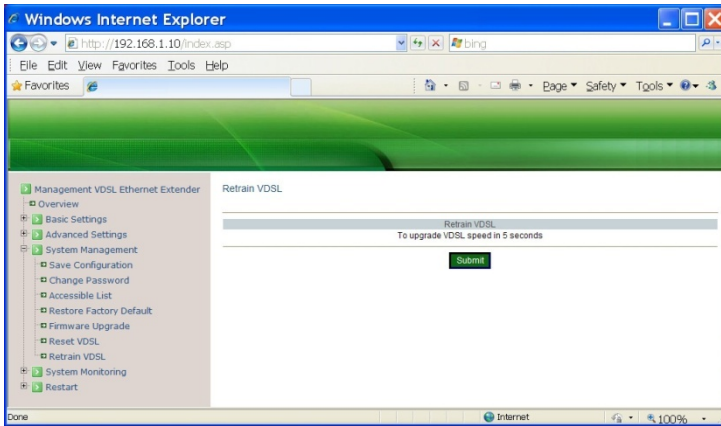
Firmware Upgrade

1. Filename: Select "Filename" text box and type the name of the file that you intend to upgrade it to the Hardened Managed Ethernet Extender.
2. TFTP server IP: Select the "TFTP server IP" textbox and specify the IP address of TFTP server.
3. Submit: Select "Submit" button to apply new settings.



Reset VDSL

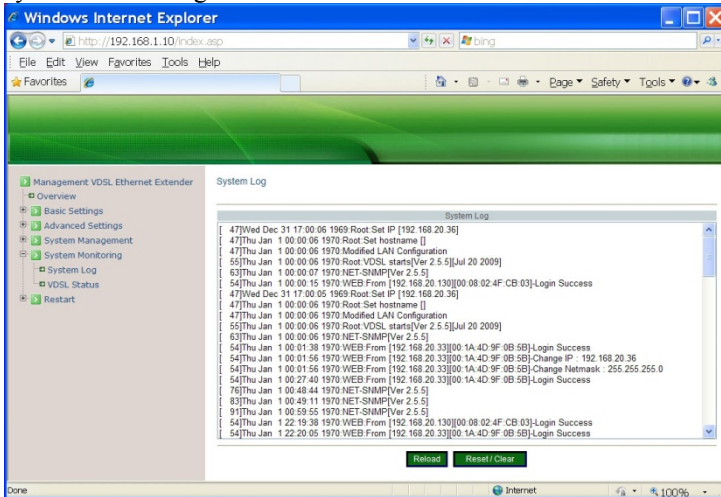
1. Submit: Select "Submit" button to re-negotiate Ethernet Extender port.



Retrain VDSL

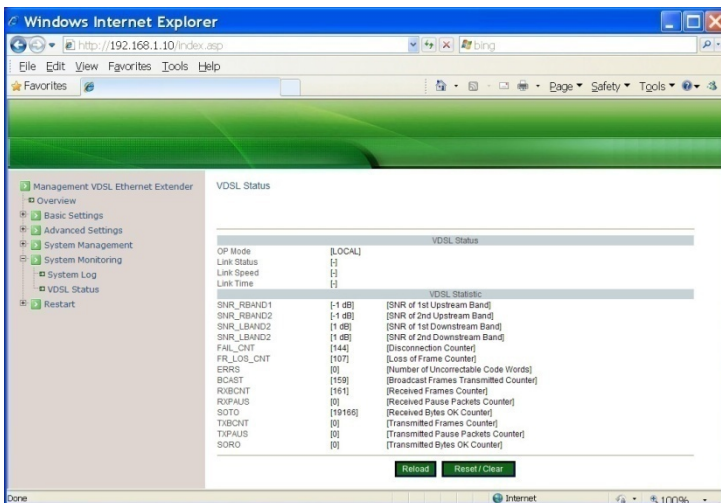
1. Submit: Select “Submit” button to attempt a higher link speed for the Ethernet Extender port. For example, the current link speed of Ethernet Extender port is at 25Mbps. The user can select the “Submit” button which will allow the Ethernet Extender port attempt a link at 30Mbps.

System Monitoring



System Log

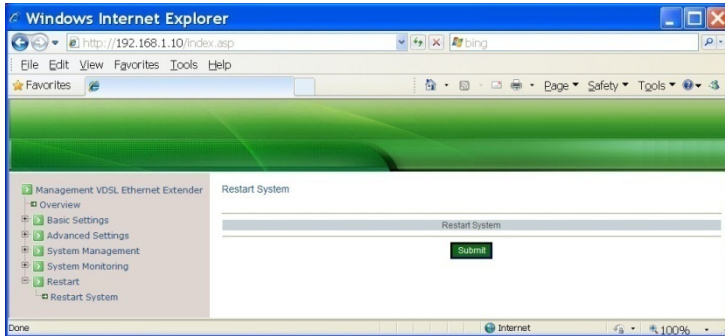
1. Reload: Select the "Reload" button to reload the system log of the Hardened Managed Ethernet Extender.
2. Reset / Clear: Select "Reset / Clear" button to reset and clean the system log of the Hardened Managed Ethernet Extender.



VDSL Status

1. Reload: Select the “Reload” button to reload the VDSL status of the Hardened Managed Ethernet Extender.
2. Reset / Clear: Select “Reset / Clear” button to reset and clean the VDSL status of the Hardened Managed Ethernet Extender.

Restart



Restart System

1. Submit: Select “Submit” button to restart the Hardened Managed Ethernet Extender.

Chapter 3 – Command Line Console Management

The Hardened Managed Ethernet Extender provides a command line console interface for configuration purposes. The Hardened Managed Ethernet Extender can be configured either locally through its RS-232 port or remotely via a Telnet session. For the later, you must specify an IP address for the switch first.

This chapter describes how to configure the Hardened Managed Ethernet Extender using its console by Command Line.

Connect the DB9 straight cable to the DCE female RS-232 serial port of the device to the DTE male RS-232 serial port of the terminal or computer running the terminal emulation application.

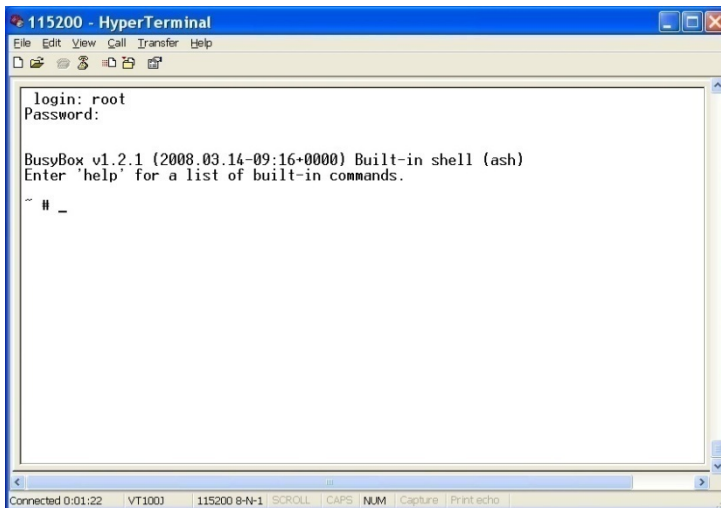
Direct access to the administration console is achieved by directly connecting a terminal or a PC equipped with a terminal-emulation program (such as HyperTerminal) to the Hardened Managed Ethernet Extender console port.

When using the management method, configure the terminal-emulation program to use the following parameters (you can change these settings after login):

```
[Default parameters]
115,200bps
8 data bits
No parity
1 stop bit
```

At the **login:** prompt just type in "root" and press <Enter>.

At the **Password:** prompt just press <Enter> to logon to the Hardened Managed Ethernet Extender.



The basic commands in the Command Line Interface (CLI) are listed in the following table.

System Management

Command	Command Description
sys uptime	Display system uptime.
sys date	Display system date and time.
sys date -s MMDDhhmmYYYY.ss MM : Month DD : Day hh : Hour mm : Minute YYYY : Year ss : Second	Set system date and time.
sys hostname	Display system name.
sys hostname hostname	Set system name.
sys snmp	Display SNMP settings.
sys snmp disp	Display SNMP settings.
sys snmp getcommunity	Display SNMP GetRequest community.
sys snmp getcommunity CommunityName	Set SNMP GetRequest community.
sys snmp setcommunity	Display SNMP SetRequest community.
sys snmp setcommunity CommunityName	Set SNMP SetRequest community.
sys snmp syslocation	Display location of the device.
sys snmp syslocation location	Set location of the device.
sys snmp syscontact	Display contact person for the device.
sys snmp syscontact contact	Set contact person for the device.
sys snmp sysdescr	Display description of the device.
sys snmp sysdescr description	Set description for the device.
sys snmp trapdest add IP	Add destination IP address of SNMP trap.
sys snmp trapdest delete IP	Delete destination IP address of SNMP trap.
sys passwd	Set new password.
sys actl on	Set access control ON to the device.
sys actl off	Set access control OFF to the device.
sys actl disp	Display access control settings.

sys actl add mac MAC	Add MAC address to accessible list.
sys actl add ip IP	Add IP address to accessible list.
sys actl del mac index	Remove index_th MAC address from accessible list.
sys actl del ip index	Remove index_th IP address from accessible list.
sys actl del mac all	Remove all MAC addresses from accessible list.
sys actl del ip all	Remove all IP addresses from accessible list.
sys actl enable mac index	Enable index_th MAC address from accessible list.
sys actl enable ip index	Enable index_th IP address from accessible list.
sys actl disable mac index	Disable index_th MAC address from accessible list.
sys actl disable ip index	Disable index_th IP address from accessible list.
sys reboot	Reboot system.
sys reset level1	Restore default password.
sys reset level2	Restore factory default.
sys reset level3	Restore factory default except network settings.
sys ntp	Display NTP settings.
sys ntp on	Set NTP ON.
sys ntp off	Set NTP OFF.
sys ntp server IP	Set IP address of NTP time server to the device.
sys ntp zone time_zone time_zone: +12.0 ~ -12.0	Set NTP time zone to the device.
sys summer-time off	Set summer-time OFF.
sys summer-time time_zone weekday week day month hh:mm week day month hh:mm offset	Set summer-time ON in the weekday mode.
sys summer-time time_zone date date month hh:mm date month hh:mm offset	Set summer-time ON in the date mode.
sys log	Display log settings.
sys log on	Set log ON.
sys log off	Set log OFF.
sys log reset	Clear content of log.
sys log send IP	Send the log file to TFTP server.
sys log disp	Display log settings.

sys upgrade IP filename	Upgrade system with new firmware from a TFTP server.
sys lfpt	Display Link Fault Pass Through settings.
sys lfpt on	Set Link Fault Pass Through ON.
sys lfpt off	Set Link Fault Pass Through OFF.

The basic commands in the Command Line Interface (CLI) are listed in the following table.

System Management

Command	Command Description
sys uptime	Display system uptime.
sys date	Display system date and time.
sys date -s MMDDhhmmYYYY.ss MM : Month DD : Day hh : Hour mm : Minute YYYY : Year ss : Second	Set system date and time.
sys hostname	Display system name.
sys hostname hostname	Set system name.
sys snmp	Display SNMP settings.
sys snmp disp	Display SNMP settings.
sys snmp getcommunity	Display SNMP GetRequest community.
sys snmp getcommunity CommunityName	Set SNMP GetRequest community.
sys snmp setcommunity	Display SNMP SetRequest community.
sys snmp setcommunity CommunityName	Set SNMP SetRequest community.
sys snmp syslocation	Display location of the device.
sys snmp syslocation location	Set location of the device.
sys snmp syscontact	Display contact person for the device.
sys snmp syscontact contact	Set contact person for the device.
sys snmp sysdescr	Display description of the device.
sys snmp sysdescr description	Set description for the device.
sys snmp trapdest add IP	Add destination IP address of SNMP trap.
sys snmp trapdest delete IP	Delete destination IP address of SNMP trap.
sys passwd	Set new password.
sys actl on	Set access control ON to the device.
sys actl off	Set access control OFF to the device.
sys actl disp	Display access control settings.
sys actl add mac MAC	Add MAC address to accessible list.
sys actl add ip IP	Add IP address to accessible list.

sys actl del mac index	Remove index_th MAC address from accessible list.
sys actl del ip index	Remove index_th IP address from accessible list.
sys actl del mac all	Remove all MAC addresses from accessible list.
sys actl del ip all	Remove all IP addresses from accessible list.
sys actl enable mac index	Enable index_th MAC address from accessible list.
sys actl enable ip index	Enable index_th IP address from accessible list.
sys actl disable mac index	Disable index_th MAC address from accessible list.
sys actl disable ip index	Disable index_th IP address from accessible list.
sys reboot	Reboot system.
sys reset level1	Restore default password.
sys reset level2	Restore factory default.
sys reset level3	Restore factory default except network settings.
sys ntp	Display NTP settings.
sys ntp on	Set NTP ON.
sys ntp off	Set NTP OFF.
sys ntp server IP	Set IP address of NTP time server to the device.
sys ntp zone time_zone time_zone: +12.0 ~ -12.0	Set NTP time zone to the device.
sys summer-time off	Set summer-time OFF.
sys summer-time time_zone weekday week day month hh:mm week day month hh:mm offset	Set summer-time ON in the weekday mode.
sys summer-time time_zone date date month hh:mm date month hh:mm offset	Set summer-time ON in the date mode.
sys log	Display log settings.
sys log on	Set log ON.
sys log off	Set log OFF.
sys log reset	Clear content of log.
sys log send IP	Send the log file to TFTP server.
sys log disp	Display log settings.
sys upgrade IP filename	Upgrade system with new firmware from a TFTP server.
sys lfpt	Display Link Fault Pass Through

	settings.
sys lfpt on	Set Link Fault Pass Through ON.
sys lfpt off	Set Link Fault Pass Through OFF.

Ethernet Extender Management

Command	Command Description
vdsl status	Display link performance of Ethernet Extender port.
vdsl counter	Display statistic counter of Ethernet Extender port.
vdsl disp	Display settings of Ethernet Extender port.
vdsl reset chip	Reset chip of Ethernet Extender port.
vdsl reset counter	Reset counter of Ethernet Extender port.
vdsl au	Display auto upgrade settings of Ethernet Extender port.
vdsl au disp	Display auto upgrade settings of Ethernet Extender port.
vdsl au level number number: 0 ~ 9	Set auto upgrade level for Ethernet Extender port.
vdsl fixedrate level_number level_number: -1 ~ 9	Set fixed rate level (-1 ~ 9) for Ethernet Extender port, -1 to represent disable.
vdsl retrain	Upgrade speed of Ethernet Extender port.
vdsl asym-mode on	Asymmetric mode is enabled.
vdsl asym-mode off	Asymmetric mode is disabled.

Network Management

Command	Command Description
net ifconfig	Display network configuration.
net ifconfig disp	Display network configuration.
net ifconfig ip IP IP: IP address of the device	Set IP address to the device.
net ifconfig netmask IP IP: netmask address for the device	Set netmask address to the device.
net ifconfig up	Activate network interface.
net ifconfig down	Shutdown network interface.
net ping IP IP: IP address	Send ICMP ECHO_REQUEST to network hosts.
net arp	Display ARP table.
net gateway	Display gateway settings.
net gateway disp	Display gateway settings.
net gateway add IP IP: gateway address	Add gateway address to the device.
net gateway del IP IP: gateway address	Remove gateway address from the device.
net dns	Display DNS settings.
net dns disp	Display DNS settings.
net dns add IP IP: DNS address	Add DNS address to the device.
net dns del IP IP: DNS address	Remove DNS address from the device.
net dhcp	Display DHCP settings.
net dhcp disp	Display DHCP settings.
net dhcp on	Set the device to get IP address from DHCP server.
net dhcp off	Set IP address to the device manually.
net dhcp renew	Set the device to get new IP address from DHCP server.
net an	Display auto negotiation settings.
net an disp	Display auto negotiation settings.
net an on	Set auto negotiation ON.
net an off	Set auto negotiation OFF.
net an speed speed speed: 10 or 100	Set LAN speed.
net an duplex duplex duplex: half or full	Set LAN duplex mode.
net disp	Display all settings.

NET-SNMP

Object	Name	Type	Value Setting	Description	
Model	modelName	String(R/W)	String		
	serialNumber	String(R/W)	String		
	versionHW	String(R/W)	String		
	versionSW	String(R/W)	String		
mconf	sysContact	String(R/W)	String		
	sysDescr	String(R/W)	String		
	sysLocation	String(R/W)	String		
	machineName	String(R/W)	String		
	Dhcp	String(R/W)	“1” or “0”		
	Ntp	String(R/W)	“1” or “0”		
	ntpServer	String(R/W)	IP or String		
	timezone	String(R/W)	String	Time Zone	
	gmtOffset	String(R/W)	-12.0~+12.0	GMT Offset	
	ntpPollingInterval	String(R/W)	1~10080		
	ac(Access Control)				
	Checked	String(R/W)	“1” or “0”		
	acIP0~acIP7				
	Checked	String(R/W)	“1” or “0”		
	IP	IP format	IP address		
acMAC0~acMAC7					
Checked	String(R/W)	“1” or “0”			
MAC	MAC format(R/W)	MAC address			
communityGet	String(R/W)	String			
communitySet	String(R/W)	String			
serverTrap					
serverTrap0	String(R/W)	IP address			
serverTrap1	String(R/W)	IP address			
serverTrap2	String(R/W)	IP address			
serverTrap3	String(R/W)	IP address			
Log	String(R/W)	“1” or “0”			
EthernetConf	MAC	MAC format(R/W)	MAC address		
	IP	IP format(R/W)	IP address		
	Netmask	IP format(R/W)	IP address		
	Gateway	IP format(R/W)	IP address		
	DNS				
	DNS0	IP format(R/W)	IP address		
	DNS1	IP format(R/W)	IP address		
	DNS2	IP format(R/W)	IP address		
	DNS3	IP format(R/W)	IP address		
	AN	String(R/W)	“1” or “0”	Auto Negotiation	
	Setspeed	String(R/W)	“10” or “100”	10 = 10M 100 = 100M	
	Setduplex	String(R/W)	“H” or “F”	H = Half F = Full	
	EthernetStatus	Speed	String(R)		LAN speed
		ModeStatus	String(R)		D = Duplex H = Half-Duplex
		FlowControl	String(R)		Flow Control status
VDSLConf	Opmode	String(R)		C = CO P = CPE R = RO	
	UpgradeLevel	Integer(R/W)	“0” or “1”	Max. upgrade	

				level
	ResetVDSL	Integer(R/W)	“0” or “1”	Reset VDSL chip
	ResetVDSLCounter	Integer(R/W)	“0” or “1”	Reset VDSL counter
VDSLStatus				
	LinkPerformance			
	TimeConnect	Integer(R)		
	SnrBand1	Integer(R)		SNR of 1st Upstream Band
	SnrBand2	Integer(R)		SNR of 2st Upstream Band
	ERRS	Integer(R)		Uncorrectable code words
	FailCnt	Integer(R)		Disconnection Counter
	LFrLosCnt	Integer(R)		Loss of Frame Counter
	SOTO	Integer(R)		Bytes transmitted OK counter
	SORO	Integer(R)		Bytes received OK counter
	BCAST	Integer(R)		Broadcast frames received counter
	RXPAUS	Integer(R)		Reception pause packets counter
	TXPAUS	Integer(R)		Transmission pause packets counter
	TXBCNT	Integer(R)		Number of transmitted frames
	RXBCNT	Integer(R)		Number of received frames
LinkFaultPassThrough				
	LFPT	String(R/W)	“1” or “0”	

Specifications

Applicable Standards	IEEE802.3 10Base-T, IEEE802.3u 100Base-TX, Ethernet over VDSL
Fixed Ports	1 x 10/100Mbps Ethernet port with RJ-45 connector 1 x Ethernet Extender port with RJ-11 and Terminal Block connectors
Speed 10Base-T 100Base-TX Ethernet Extender	10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex 1, 3, 5, 10, 15, 20, 25, 30, 40, 50Mbps
Switching Method	Store-and-Forward
Forwarding rate	14,880/148,810pps for 10/100Mbps
Cable 10Base-T 100Base-TX Ethernet Extender	2-pair UTP/STP Cat. 3, 4, 5 up to 100m 2-pair UTP/STP Cat. 5 up to 100m Telephone wires
LED Indicators	Per Unit (3 LEDs)- Power1, Power2, Power3 Per Port- RJ-45 (2 LEDs): Link/ACT, FDX RJ-11, Terminal Block (9 LEDs): Remote, Local, Error, Link, 1, 2, 3, 4, 5
Dimensions	50mm (W) × 110mm (D) × 135mm (H) (1.97" (W) × 4.33" (D) × 5.31" (H))
Weight	0.8Kg (1.76lbs.)
Power	Terminal Block: 12-32VDC DC Jack: 12VDC, External AC/DC required
Operating Voltage & Max. Current Consumption	0.5A @ 12VDC, 0.25A @ 24VDC
Power Consumption	6W Max.
Operating Temperature	-40°C ~ 75°C (-40°F ~ 167°F) Tested for functional operation @ -40°C ~ 85°C (-40°F ~ 185°F) UL508 Industrial Control Equipment certified Maximum Surrounding Air Temperature @ 75□ (167°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Humidity	5 ~ 95%, non-condensing
Safety	UL508, EN60950-1, IEC60950-1

EMI	FCC Part 15, Class A VCCI, Class A EN61000-6-4: EN55022, EN61000-3-2, EN61000-3-3
EMS	EN61000-6-2: EN61000-4-2 (ESD Standard) EN61000-4-3 (Radiated RFI Standards) EN61000-4-4 (Burst Standards) EN61000-4-5 (Surge Standards) EN61000-4-6 (Induced RFI Standards) EN61000-4-8 (Magnetic Field Standards)
Environmental Test Compliance	IEC60068-2-6 Fc (Vibration Resistance) IEC60068-2-27 Ea (Shock) IEC60068-2-32 Ed (Free Fall)
NEMA TS1/2 Environmental requirements for traffic control equipment	

NET-SNMP

Object	Name	Type	Value Setting	Description	
Model	modelName	String(R/W)	String		
	serialNumber	String(R/W)	String		
	versionHW	String(R/W)	String		
	versionSW	String(R/W)	String		
mconf	sysContact	String(R/W)	String		
	sysDescr	String(R/W)	String		
	sysLocation	String(R/W)	String		
	machineName	String(R/W)	String		
	Dhcp	String(R/W)	“1” or “0”		
	Ntp	String(R/W)	“1” or “0”		
	ntpServer	String(R/W)	IP or String		
	timezone	String(R/W)	String	Time Zone	
	gmtOffset	String(R/W)	-12.0-+12.0	GMT Offset	
	ntpPollingInterval	String(R/W)	1-10080		
	ac(Access Control)				
	Checked	String(R/W)	“1” or “0”		
	acIP0-acIP7				
	Checked	String(R/W)	“1” or “0”		
	IP	IP format	IP address		
	acMAC0-acMAC7				
	Checked	String(R/W)	“1” or “0”		
MAC	MAC format(R/W)	MAC address			
communityGet	String(R/W)	String			
communitySet	String(R/W)	String			
serverTrap					
serverTrap0	String(R/W)	IP address			
serverTrap1	String(R/W)	IP address			
serverTrap2	String(R/W)	IP address			
serverTrap3	String(R/W)	IP address			
Log	String(R/W)	“1” or “0”			
EthernetConf	MAC	MAC format(R/W)	MAC address		
	IP	IP format(R/W)	IP address		
	Netmask	IP format(R/W)	IP address		
	Gateway	IP format(R/W)	IP address		
	DNS				
	DNS0	IP format(R/W)	IP address		
	DNS1	IP format(R/W)	IP address		
	DNS2	IP format(R/W)	IP address		
	DNS3	IP format(R/W)	IP address		
	AN	String(R/W)	“1” or “0”	Auto Negotiation	
	Setspeed	String(R/W)	“10” or “100”	10 = 10M 100 = 100M	
	Setduplex	String(R/W)	“H” or “F”	H = Half F = Full	
	EthernetStatus	Speed	String(R)		LAN speed
ModeStatus		String(R)		D = Duplex H = Half-Duplex	
FlowControl		String(R)		Flow Control status	
VDSLConf					
	Opmode	String(R)		C = CO P = CPE R = RO	

	UpgradeLevel	Integer(R/W)	“0” or “1”	Max. upgrade level
	ResetVDSL	Integer(R/W)	“0” or “1”	Reset VDSL chip
	ResetVDSLCounter	Integer(R/W)	“0” or “1”	Reset VDSL counter
VDSLStatus				
	LinkPerformance			
	TimeConnect	Integer(R)		
	SnrBand1	Integer(R)		SNR of 1st Upstream Band
	SnrBand2	Integer(R)		SNR of 2st Upstream Band
	ERRS	Integer(R)		Uncorrectable code words
	FailCnt	Integer(R)		Disconnection Counter
	LFrLosCnt	Integer(R)		Loss of Frame Counter
	SOTO	Integer(R)		Bytes transmitted OK counter
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	RXPAUS	Integer(R)		Reception pause packets counter
	TXPAUS	Integer(R)		Transmission pause packets counter
	TXBCNT	Integer(R)		Number of transmitted frames
	RXBCNT	Integer(R)		Number of received frames
LinkFaultPassThrough				
	LFPT	String(R/W)	“1” or “0”	

