MCR12

12 Slot 1RU Managed Media Converter Rack

User Manual

Version 1.0.0.1 – March 2009

Caution

Electronic Circuit devices are sensitive to static electricity. Dry weather conditions or walking across a carpeted floor may cause you to acquire a static electrical charge.

To protect your switch, always:

- Touch the metal chassis of your computer to ground the static electrical charge before you handle the switch.

- Pick up the switch by holding it on the left and right edges only.

Electronic Emission Notices

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

European Community (CE) Electromagnetic Compatibility Directive

This equipment has been tested and found to comply with the protection requirements of European Emission Standard EN55022/EN60555-2 and the Generic European Immunity Standard EN50082-1.

EMC:	EN55022(1988)/CISPR-22(1985)	class A
	EN60555-2(1995)	class A
	EN60555-3	
	IEC1000-4-2(1995)	4K V CD, 8KV, AD
	IEC1000-4-3(1995)	3V/m
	IEC1000-4-4(1995)	1KV – (power line), 0.5KV – (signal line)

Australian C-Tick Compliance.

This equipment is compliant with the required Australian C-Tick standard.

1. Introduction

1.1. Overview of the MCR12 Series

The MCR12 Series Managed Media Converter Racks are a 12 Slot 1RU system built to hold up to 12 Fast Ethernet or Gigabit Ethernet Media Converters. A mix and match of both Fast Ethernet and Gigabit Ethernet modules can be installed in to the one chassis. Both the Fast Ethernet and Gigabit Ethernet Modules are Hot Swappable, with support for Multimode and Single Mode Fibre options and come in a range of Fibre Optic Connections.

The MCR12 Series support a range of single and dual redundant power supply options. With two Hot Swap slide in power module options the MCR12 can be fitted with a Single AC, Dual AC, Single DC, Dual DC or a Single AC and Single DC Power Supplies.

Management of the MCR12 is provided by a single RS-232 Console port or via the supplied two Fast Ethernet Management ports.

1.2. MCR12 Model Descriptions

Model	Description
MCR12AC	12 Slot 1RU Managed Media Converter Chassis with Single AC Power Supply
MCR12RAC	12 Slot 1RU Managed Media Converter Chassis with Dual AC Power Supplies
MCR12DC	12 Slot 1RU Managed Media Converter Chassis with Single DC Power Supply
MCR12RDC	12 Slot 1RU Managed Media Converter Chassis with Dual DC Power Supplies
MCR12RADC	12 Slot 1RU Managed Media Converter Chassis with Single AC and Single DC Power Supplies

Model	Description
MSPS1	AC Power Module
MSPS2	DC Power Module

Model	Description
MFCR100SC	10/100Base-TX to 100Bse-FX Converter Module, SC Multimode
MFCR100ST	10/100Base-TX to 100Bse-FX Converter Module, ST Multimode
MFCR100SC.05	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 5Km
MFCR100SC.20	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 20Km
MFCR100SC.40	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 40Km
MFCR100SC.60	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 60Km
MFCR100BS5.20	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 20Km, 1550nm
MFCR100BS3.20	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 20Km, 1310nm
MFCR100BS5.40	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 40Km, 1550nm
MFCR100BS3.40	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 40Km, 1310nm
MFCR100BS5.60	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 60Km, 1550nm
MFCR100BS3.60	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 60Km, 1310nm
MGCR1000SC	1000Base-T to 1000Base-X Converter Module, SC Multimode
MGCR1000SC.10	1000Base-T to 1000Base-X Converter Module, SC Single mode, 10Km
MGCR1000SC.30	1000Base-T to 1000Base-X Converter Module, SC Single mode, 30Km
MGCR1000SC.50	1000Base-T to 1000Base-X Converter Module, SC Single mode, 50Km
MGCR1000BS5.20	1000Base-T to 1000Bse-X Converter Module, Bidi SC Single mode, 20Km, 1550nm
MGCR1000BS3.20	1000Base-T to 1000Bse-X Converter Module, Bidi SC Single mode, 20Km, 1310nm

1.3. Checklist

Before you start installing your switch, verify that the package contains the following:

- 12 Slot Media Converter Chassis

- Mounting Accessories (for 19" Rack Shelf mounting)

- This Users Manual CD-ROM

- RS-232 Serial Cable

- AC Power Cord

Please notify your supplier immediately if any of the aforementioned items are missing or damaged.

1.4. View of the Converter Chassis

Figure 1.1

2. Installation

2.1. Management Board LED Indicator and Reset Switch
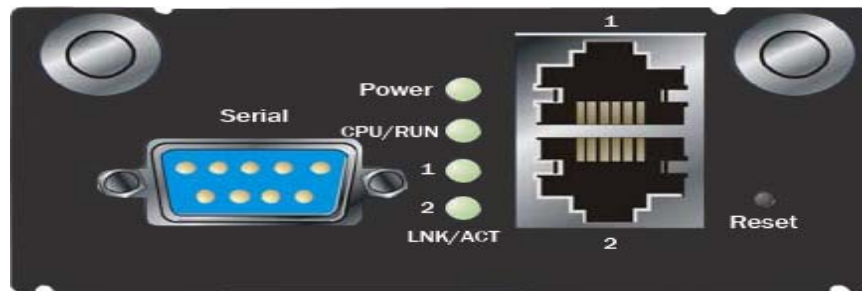
Figure 2.1

Serial:

DB-9 RS-232 Port for Local CLI management.

Use null modem cable when connecting a computers COM port.

LED's:

Link/Act LED (10/100Mbps Port), Power and CPU/RUN LED's.

Ethernet Ports:

10/100 Port NWAY Ethernet for In-Band management with auto-crossover function.

Reset:

Reset switch is used to reset the management board and has no affect on the modules themselves.

LED	Colour	Function
Power	Green	Lit when power is applied
CPU/RUN	Green	Lit when CPU is active
LED for 10/100Mbps NWay Ethernet Port		
Link/Act	Green	Lit when connected to a remote device. Blinks when traffic is present.
LED for Redundant Power Unit A and Unit B		
A	Green	Lit when power unit A is active. Blinks when power unit A has failed.
B	Green	Lit when power unit B is active. Blinks when power unit B has failed.

2.2. Installation

2.2.1 Installing Converter Chassis to a 19" Rack

Caution: Allow proper ventilation for air intake on the bottom of the unit and also allow proper ventilation at the rear of the unit for the fans.

⇨ Wear a grounding device for electrostatic discharge

⇨ Install four screws through mounting ears into each side of the converter chassis

⇨ Place converter chassis in 19" rack and secure using four rack mount screws

⇨ Attach power cord to converter rack and turn on using the switch on the power supply
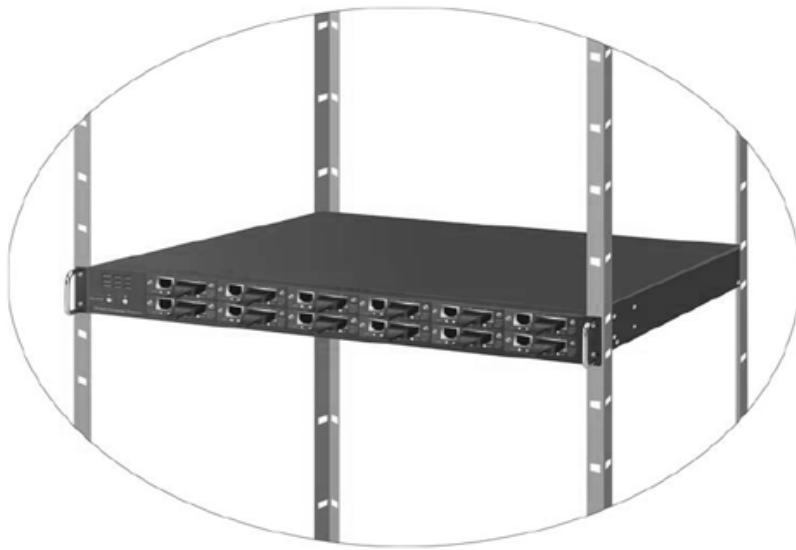
Figure 2.2

2.2.2 Installing Converter Modules into the Converter Chassis

Note: Converter modules are Hot Swappable

⇨ Wear a grounding device for electrostatic discharge

⇨ Unscrew and remove the face plate on the chassis

⇨ Verify the converter is the correct model for the chassis

⇨ Slide the module along the two guides and fasten the two knobs on the module

⇨ Install the media cable for network connection

⇨ Repeat above steps for all media converter modules

2.3. Maintenance and Replacement

2.3.1 Power Supply Replacement

Note: If a power supply fails the Status LED for the power supply will blink.

➪   Wear a grounding device for electrostatic discharge

➪   Turn off the power unit switch on the power supply

➪   Unscrew the power supply from the chassis

➪   Remove the defective unit

➪   Slide in the replacement power supply

➪   Install and tighten the screws

➪   Turn on the power unit switch

Figure 2.3

2.3.2 Converter Module Replacement

Note: All Converter Modules are Hot Swappable

⇨   Wear a grounding device for electrostatic discharge

⇨   Unscrew the thumb screw from the chassis

⇨   Remove the defective converter module

⇨   Slide in the replacement converter module along the two guides

⇨   Install and tighten the screws

Figure 2.4

2.3.3 Management Board Module Replacement

Note: If the Management fails and needs to be replaced, only management functions will stop working. Media Converter functionality will continue to operate.
Management Board is Hot Swappable.

- ⇨ Wear a grounding device for electrostatic discharge

- ⇨ Unscrew the thumb screw from the chassis

- ⇨ Remove the defective management board module

- ⇨ Slide in the replacement management board module along the two guides

- ⇨ Install and tighten the screws

With thumb knobs, it will be easy to swap the module.

Figure 2.5

3. Web Based Management

3.1. Web Based Management, In-Band Management

The following chapter allows the administrator to monitor and manage the MCR12 Series through the web management interface.

To access the web management of the MCR Series Converter Chassis open up a web browser such as Internet Explorer or Mozilla Firefox and enter the default IP address in to the address bar.
The default network settings for the MCR Series Converter Chassis are shown below:

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Gateway: 192.168.1.254
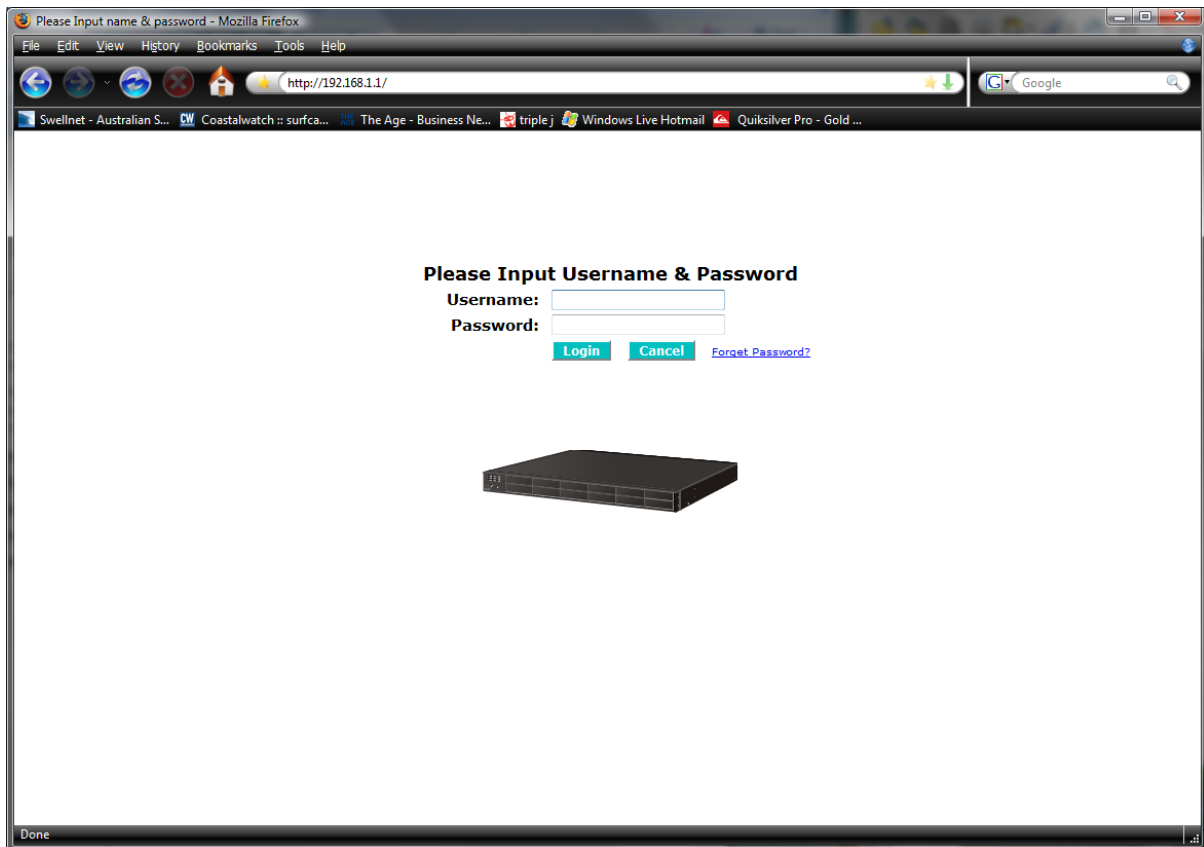
Username: admin

Password: admin

Fig. 3.1

3.2. System

3.2.1 System Information

The System Information page contains information relating to the MCR12 chassis including, Model Name, System Description, System Up Time, Current Time, BIOS version, Firmware version, Mechanical version, IP Address, System Temperature, Fan Status and rotation speed etc.

Figure 3.2

3.2.2 IP

The IP Configuration page is used to set the IP Address settings of the MCR12 chassis.
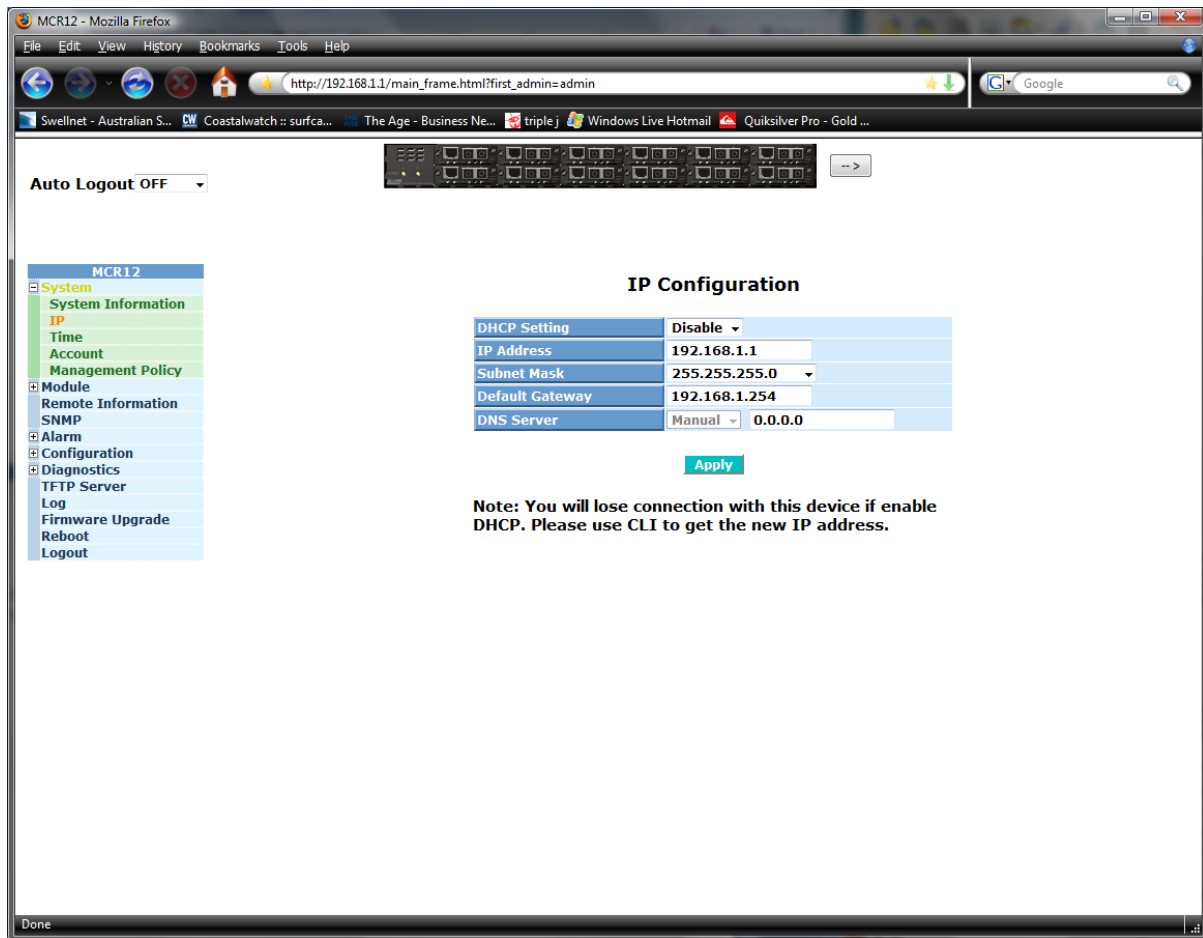
Figure 3.3

DHCP Setting: DHCP (Dynamic Host Configuration Protocol) is used to issue IP Addresses
to clients on the network. The MCR12 is a DHCP Client and is used to
receive an IP Address from a DHCP Server. This option can be enabled or
disabled.
Default: Disabled

IP Address: When the DHCP Setting is set to Disabled a Static IP Address must be set
into the MCR12. Enter the appropriate IP Address into the section
provided.
Default: 192.168.1.1

Subnet Mask: The Subnet Mask is used to distinguish between the network and the client
section of the IP Address. Default subnet mask is a class C mask allowing
254 network client addresses.
Default: 255.255.255.0

Default Gateway: The default gateway is used to determine the path taken when accessing a network outside of its own network range.
Default: 192.168.1.254

DNS Server: A DNS server is used to translate a Host Name to an IP Address. If using DHCP this value can be set automatically, otherwise it can be set manually.
Default: 0.0.0.0

Once all values have been set accordingly please click on the Apply button to apply these settings.

3.2.3 Time

The MCR12 provides two methods to keep the time settings correct, they are via manual input and via a Time Server on the internet. If you are manually entering your time settings enter the "Year", "Month", "Day, "Hour", "Minute" and "Seconds" in to the space provided. If you enter a number that is invalid, for instance you enter 61 in the seconds field it will be rounded down to the nearest valid number, in this case 59.

If you are using NTP (Network Time Protocol) there are four built in Internet Time Servers that you can use, or there is a space provided where you can enter a particular Time Server address. When using NTP you will also need to specify what time zone you are presently located in. The Time Zone is Greenwich-Centered which uses the expression form of GMT +/- xx hours.

Figure 3.4

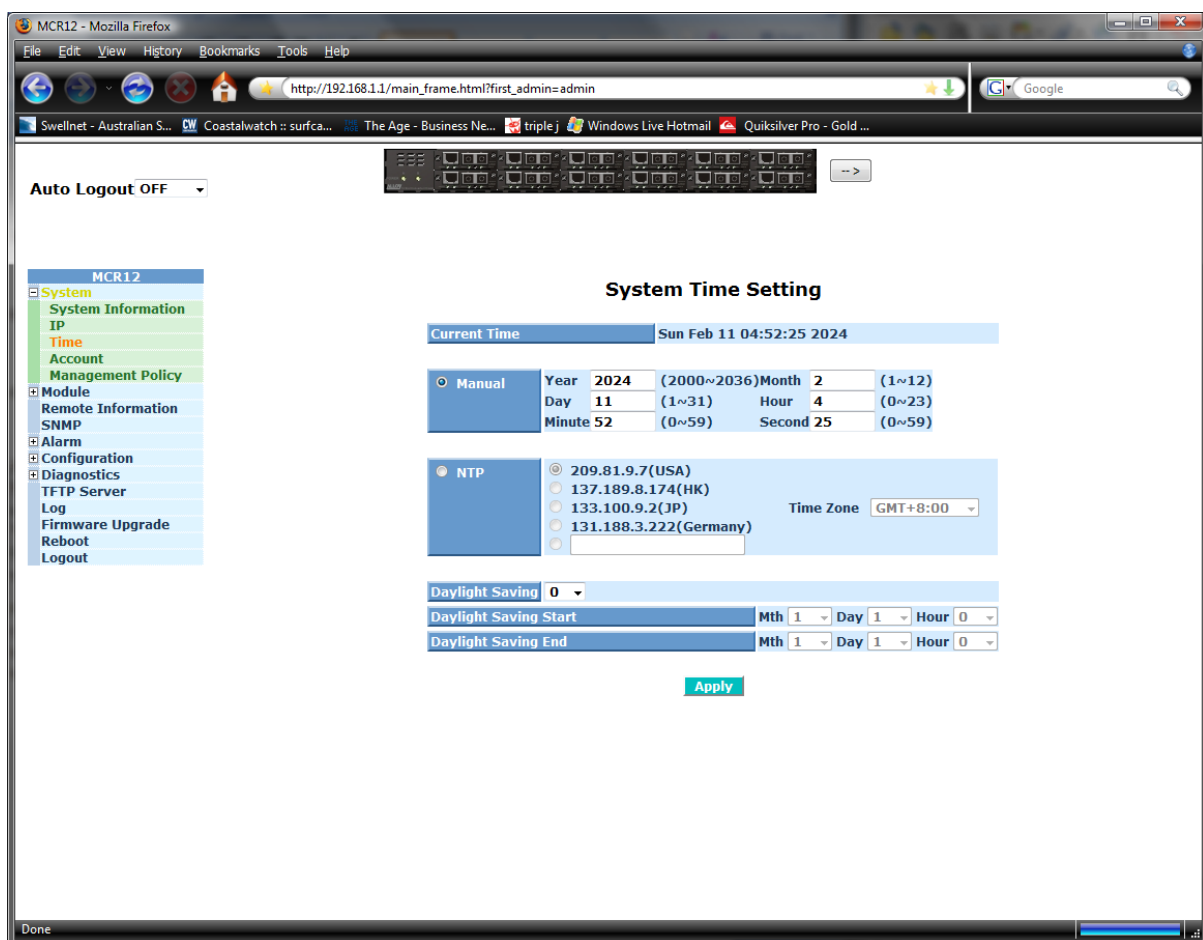**Current Time:**   Shows the current system time.

Manual: A manual time can be set in to the switch here. Enter the Year, Month, Day, Hour, Minute and Seconds in to the spaces provided. The valid figures for the parameters Year, Month, Day, Hour, Minute and Seconds are >= 2000, 1 – 12, 1 – 31, 0 – 23, 0 – 59, respectively.

Default: Year 2000, Month = 1, Day = 1, Hour = 0, Minute = 0, Second = 0

NTP: NTP is used to sync the network time with a time server on the internet based on the Greenwich Mean Time (GMT). Once the user has selected one of the built in time servers or entered a manual time server and selected the correct time zone click the *<apply>* button to update. The switch will now sync with the selected time server, however this syncronisation does not occur periodically if the time does become out of sync for some unknown reason the administrator will manually have to click the apply button again to re-sync with the time server.

The Time Zone is an offset time of the GMT. The switch supports a configurable time zone from -12 to +13 hours in increments of 1 hour.

Default: +8 Hours

Daylight Savings: Daylight Savings can be configured from -5 ~ +5 hours in increments of 1 hour. If your location has adopted daylight savings please enter the appropriate value in the daylight savings drop down box. If your area does have daylight savings you will need to enter a starting and ending date of the daylight savings period. Once the date passes the starting date of the daylight savings settings the switches time will be adjusted by the amount of hours entered in the drop down box.
Default: 0

Default values for starting and ending date:
Start: Month = 1, Day = 1, Hour = 0
End: Month = 1, Day = 1, Hour = 0

Once all values have been set accordingly please click on the Apply button to apply these settings.

3.2.4 Account

The account configuration is used to create or modify guest and administrator accounts. The MCR12 allows the administrator to create up to 4 guest accounts. Accounts can only be created by the administrator. When a Guest user logs in they will not be able to modify any parameters, they just have read only rights. A Guest user can log in to the MCR12 and change their own password, but will not be able to modify any other accounts. The Guest account is purely created for monitoring purposes only. Administrators have the ability to delete accounts and also change the username and passwords of each account. The Administrator account can't be deleted.
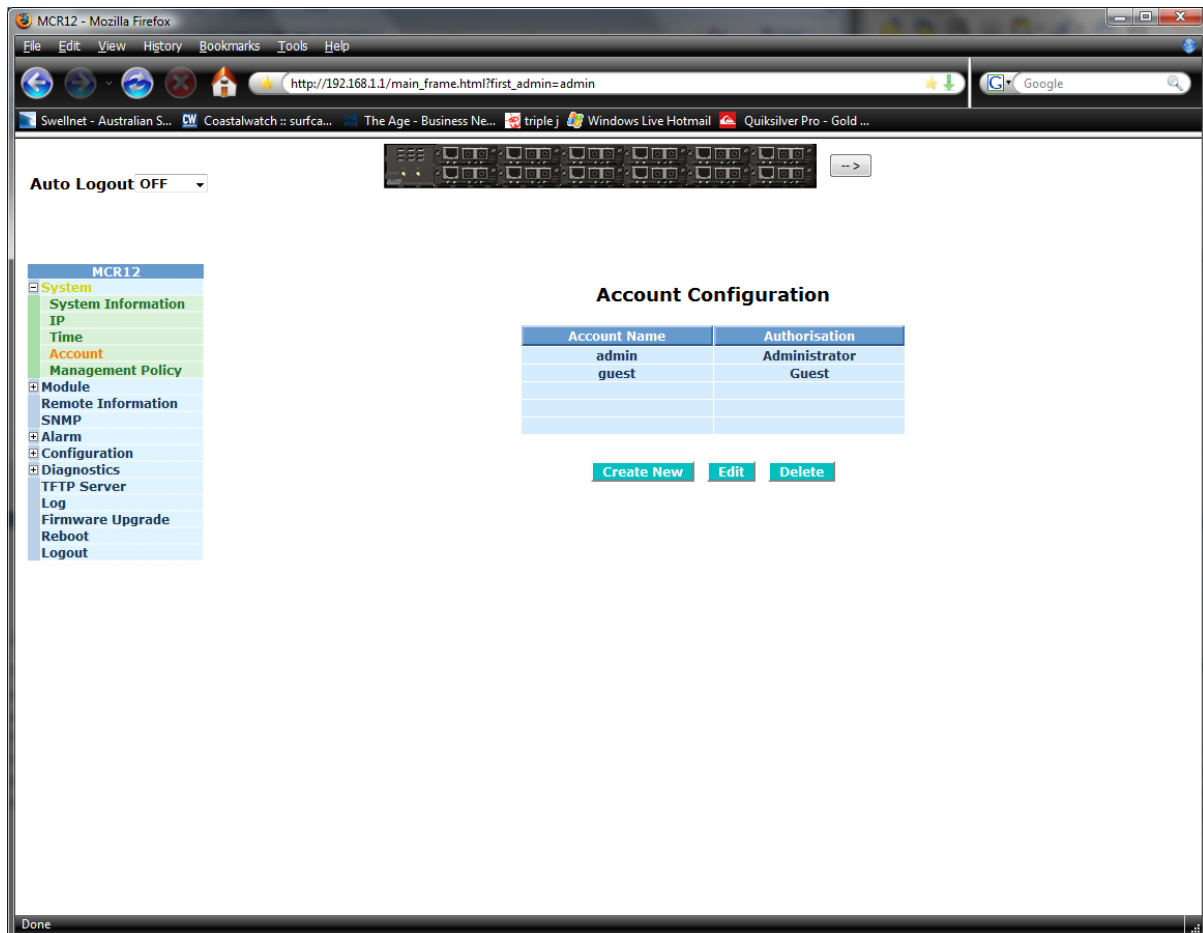
Figure 3.5

Create New: Click the Create New button to create a new guest account.

Edit: Select the account that you want to edit and click the Edit button.

Delete: Select the account that you want to delete and click the Delete button.

Authorisation: Specifies what rights the user has. Only Administrator and Guest accounts can be created.

Username: Please enter a username for the administrator or guest account, a maximum of 15 alphanumeric characters only.

Password: Please enter a password for the administrator or guest account, a maximum of 15 alphanumeric characters only.

Confirm Password: Please confirm the password.

3.2.5 Management Policy

The Management Policy is used to implement security rules based on what type of management access a certain user has. The user management can be locked down so that only users that have a valid IP address in a predetermined range can access the MCR12 management interfaces. Rules can then be broken down even further to allow particular management access to these IP Ranges or Ports. We can specify whether we want to allow or deny access to the Web Management, Telnet or SNMP access.
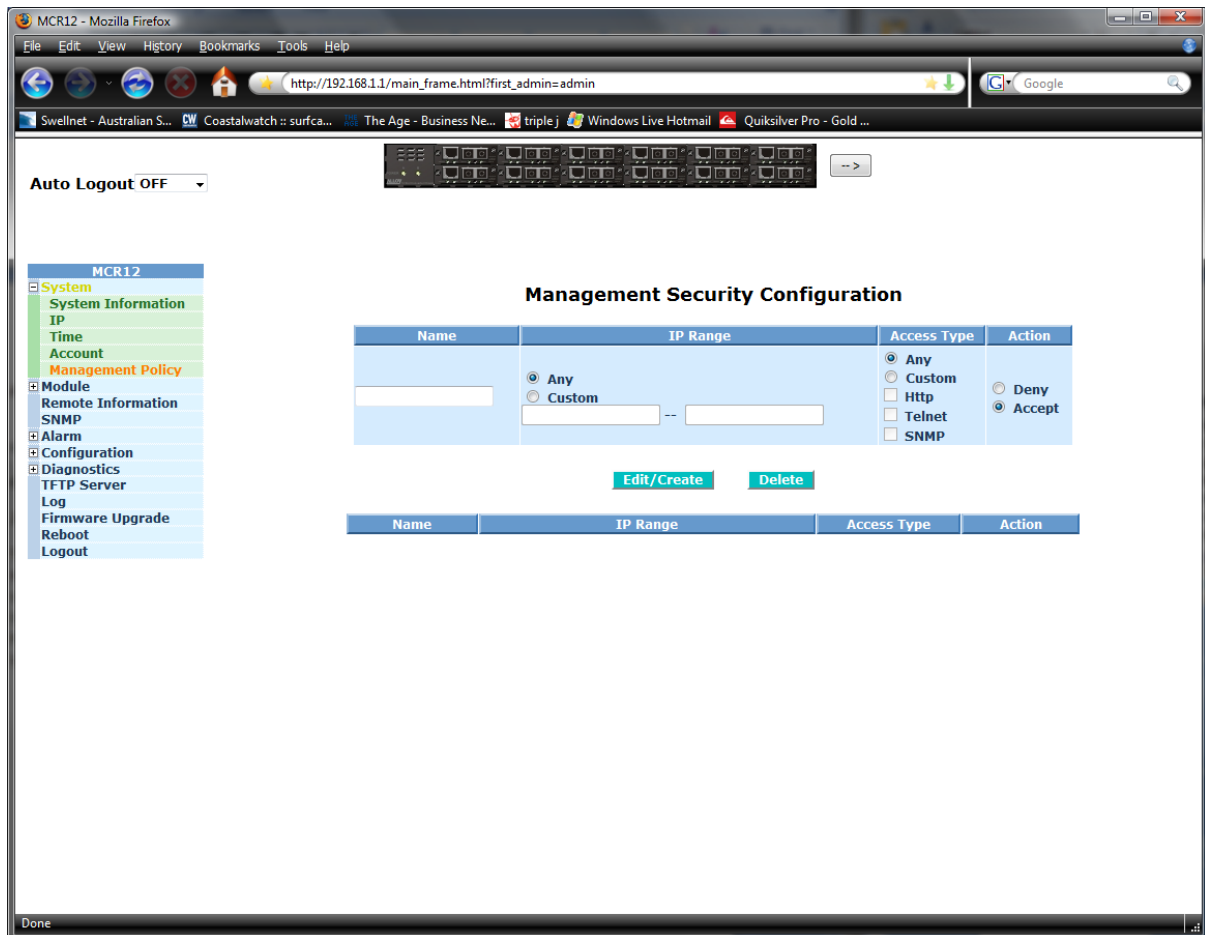
Figure 3.6

Name: Enter a Descriptive name for the rule.

IP Range: If you wish to lock the management down to a particular IP range please select the Custom radio button and enter the IP range in the space provided. Otherwise select the Any radio button.

Access Type: After you have determined what physical access has been granted or denied to the management you now need to specify what management access is allowed.
If you wish to allow/deny a particular type of access, select the Custom radio button and select the type of access required, HTTP, Telnet or SNMP. Otherwise select the Any radio button.

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Action: Now that you have created your management access rule you now need to specify whether the rule is going to be used to allow or deny access to the management. Select the desired radio button.

Edit/Create: Click Edit/Create to apply rule you have just created. Or if you want to edit an existing rule, highlight the rule and click Edit/Create.

Delete: Highlight the rule that you want to delete and click delete.

3.3. Module

3.3.1 Information

Displays the information related to the current modules you have installed in the MCR12 chassis.

Figure 3.7

Module Name: Displays the model name of the module. E.g. MFCR100ST, MGCR1000SC

Media: Shows the media type on the converter module, TP and Fibre.

Link: Displays the Link status of the media converter. If the module has an active Link, Up will be displayed. If there is no link present, Down will be displayed.

State: Displays the state of the module, Enable or Disabled. When enabled the module will function as normal, when disabled the module will not work.

Auto Nego.:   Displays whether Auto Negotiation is enabled or disabled for the Copper port. Auto Negotiation allows the copper port to auto detect the speed and duplex settings of the connected device and determine the fastest speed to operate at.

Speed/Duplex: Displays the status of the speed and duplex settings of the connected device. Also displays whether the port was set using Auto Negotiation or whether the speed and duplex settings of the module were manually set.

Flow Control: Displays whether Flow Control is enabled or disabled on the module ports.

Ingress Bandwidth: Displays the Ingress Bandwidth setting of the Copper port.

Egress Bandwidth: Displays the Egress Bandwidth setting of the Copper port.

3.3.2 System Information

Displays the system information of each of the installed modules.

Figure 3.8

Module Name: Displays the model name of the module. E.g. MFCR100ST, MGCR1000SC

System Description: Displays the description of the installed module.
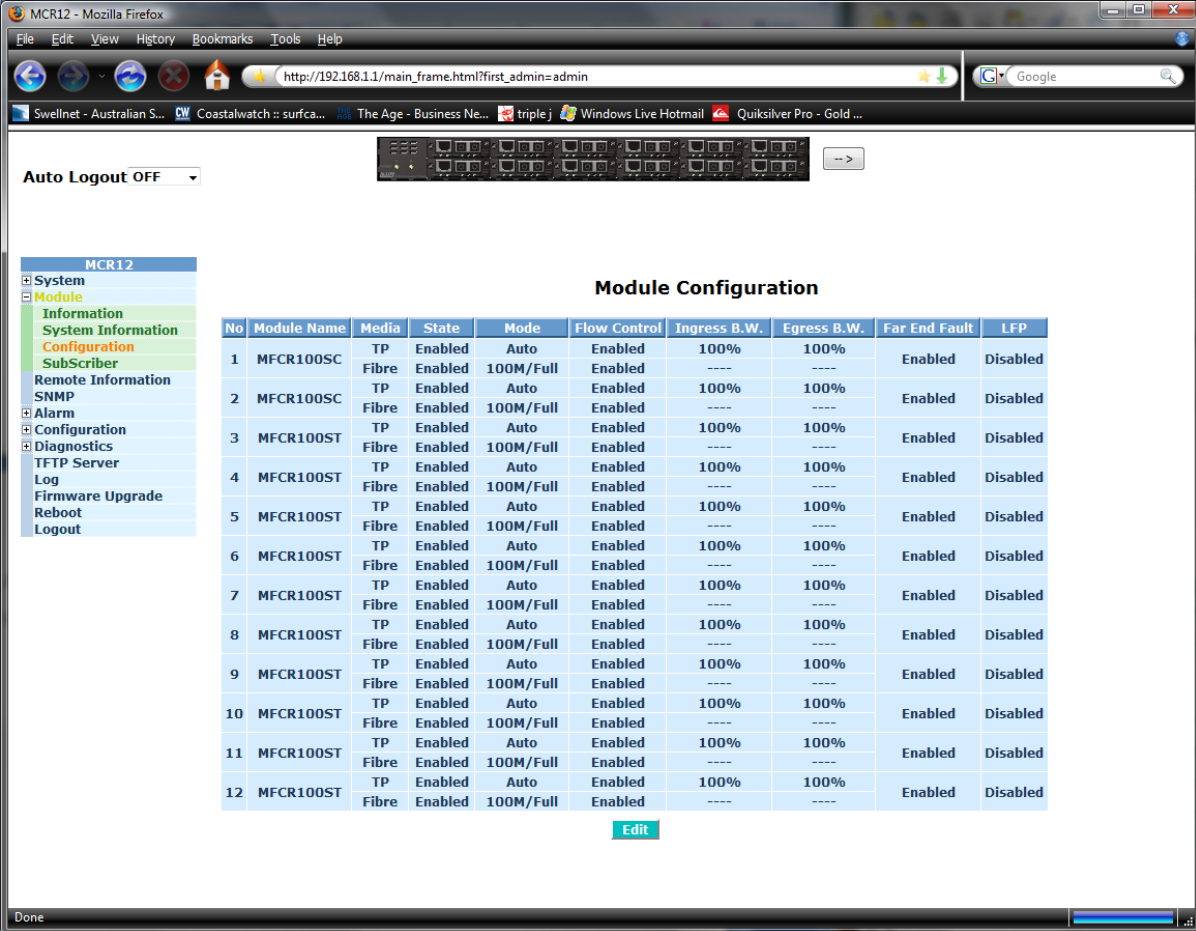
**Hardware-Mechanical
 Version:**   Displays the Hardware and Mechanical version of the module.

Code Number: Displays the code number of the module.

3.3.3 Configuration

Used to configure various settings of the converter module.

Figure 3.9

Edit: Highlight the required module and click the Edit button to edit the settings of the module.
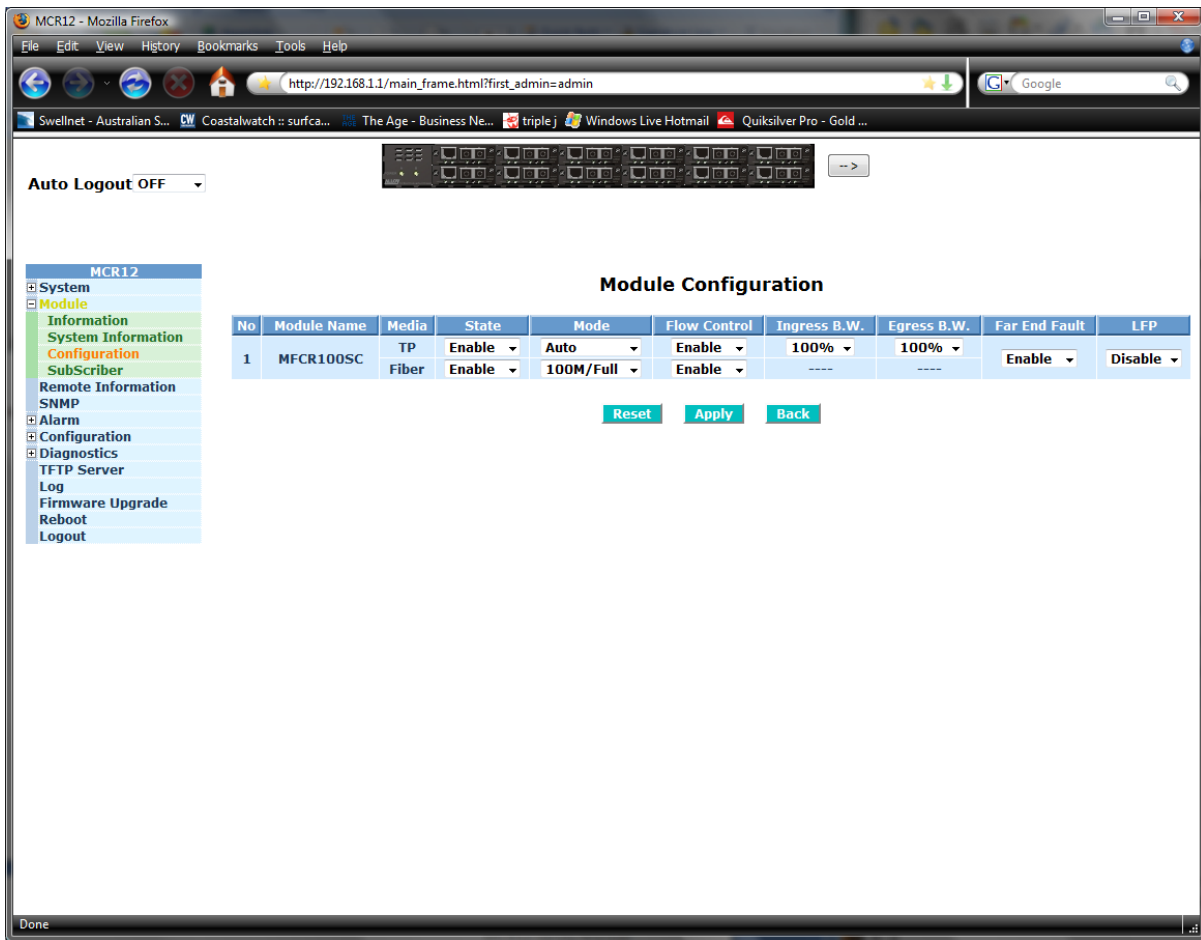
Figure 3.10

Module Name: Displays the model name of the module. E.g. MFCR100ST, MGCR1000SC

Media: Shows the media type on the converter module, TP and Fibre.

State: Used to enable or disabled the physical port on the converter module.

Mode: Set the speed and duplex settings of the copper and fibre ports. The copper port can be set to Auto (Auto Negotiation), 100Mb Full Duplex, 100Mb Half Duplex, 10Mb Full Duplex and 10Mb Half Duplex. The fibre port can be set to 100Mb Full Duplex and 100Mb Half Duplex.

Flow Control: Used to enable or disable flow control on the copper and fibre ports.

Ingress Bandwidth: Set the ingress bandwidth setting on the copper port. Bandwidth can be allocated from 25% to 100% of the actual speed. E.g. 24% is 25Mb, 100% is 100Mb

Egress bandwidth: Set the Egress bandwidth setting on the copper port. Bandwidth can be allocated from 25% to 100% of the actual speed. E.g. 24% is 25Mb, 100% is 100Mb

LFP: Used to enable or disable the LFP (Link Fault Propagation) on the converter. LFP is used to pass the fault indication of a link failure to the end device using the Far End Fault mechanism.

Reset: Click reset to reset module configuration settings back to default.

Apply: Click Apply to apply changes.

Back: Click back to go back to the previous page.

3.3.4 Subscriber

Used to manually set the information of the device at the remote location. This is mainly used for applications where fibre to the home is used for connection to the internet.
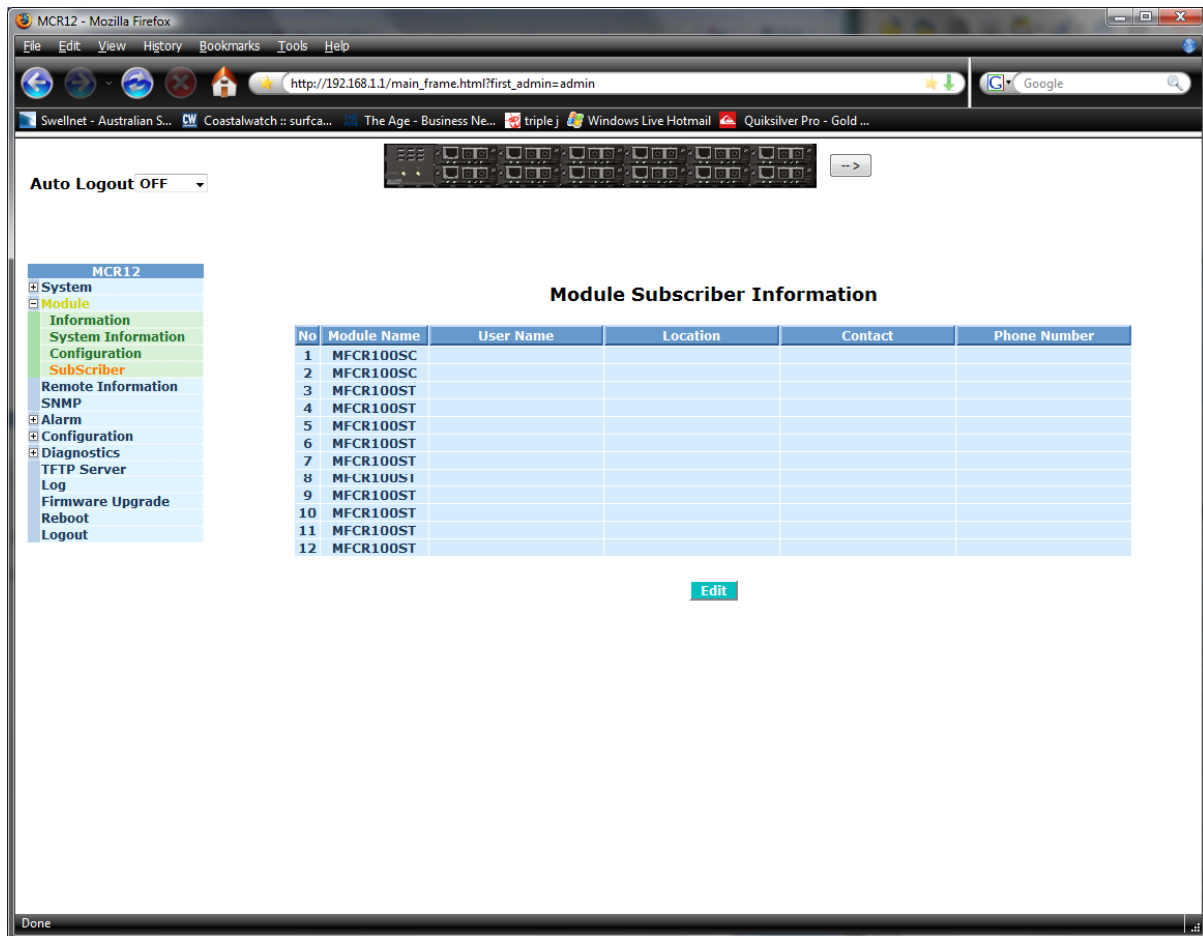
Figure 3.11

Edit: Highlight the required module and click the Edit button to edit the settings of the module.
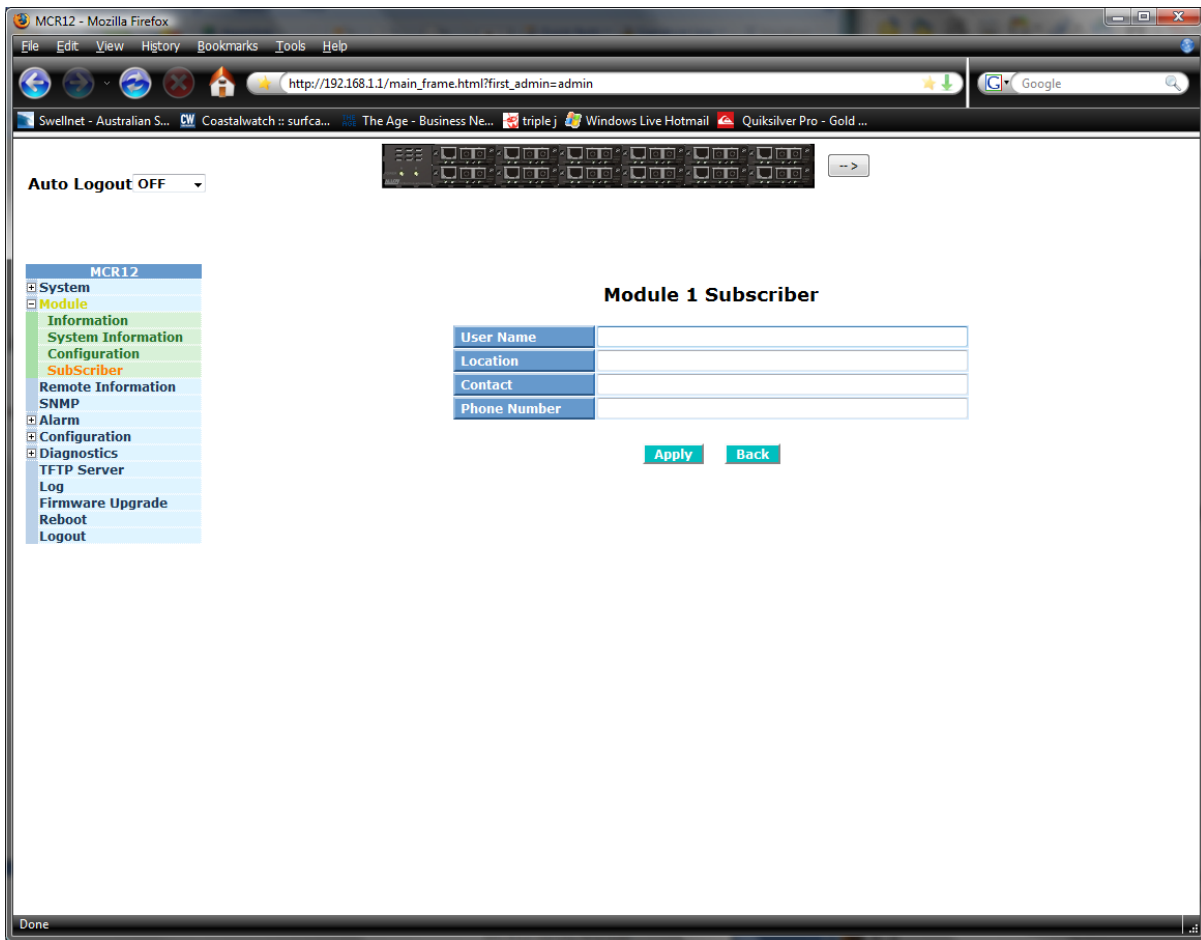
Figure 3.12

Username: Enter the username of the user of the remote device.

Location: Enter the Location of the remote device.

Contact: Enter the contact person for the remote device.

Phone Number: Enter the phone number of the contact at the remote device.

3.4. Remote Information

Using a protocol called OAM the converter can automatically detect the device connected at the remote end of the link. For this to work the remote device must also support the OAM function.
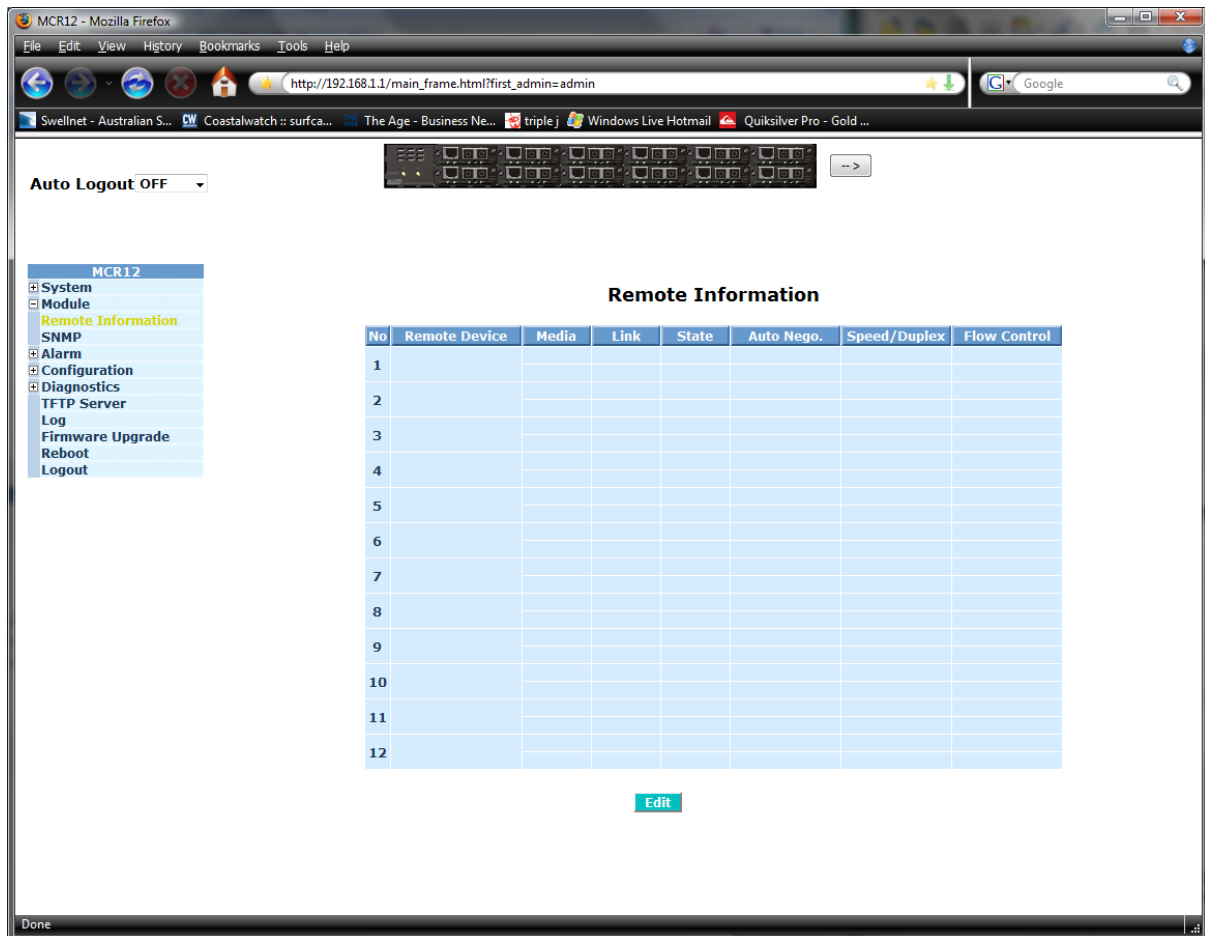
Figure 3.13

Remote Device: The name of the remote device connected to the converter module.

Media: The media type of the remote device.

Link: The link state of the remote device. Up or Down.

State: The state of the remote device. Enabled or Disabled.

Auto Negotiation: The Auto Negotiation settings of the remote device.

Speed/Duplex: The speed and duplex settings of the remote device.

Flow Control: The flow control settings of the remote device.

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3.5. SNMP

Any Network Management System (NMS) running the Simple Network Management Protocol (SNMP) can manage the Managed devices equipped with SNMP agents, provided that the Management Information Base (MIB) is installed correctly on the managed devices. The SNMP is a protocol that is used to govern the transfer of information between SNMP manager and agent and traverses the Object Identity (OID) of the management Information Base (MIB), described in the form of SMI syntax. The SNMP agent is running on the switch to respond to the requests issued by a SNMP manager.

Basically, it is passive except issuing the trap information. The MCR12 supports a switch to turn on or off the SNMP agent. If you set the field SNMP "Enable", SNMP agent will be enabled. All supported MIB OIDs, including RMON MIB, can be accessed via SNMP manager. If the field SNMP is set to "Disable", the SNMP agent will be de-activated, the related Community Name, Trap Host IP Address, Trap and all MIB counters will be ignored.
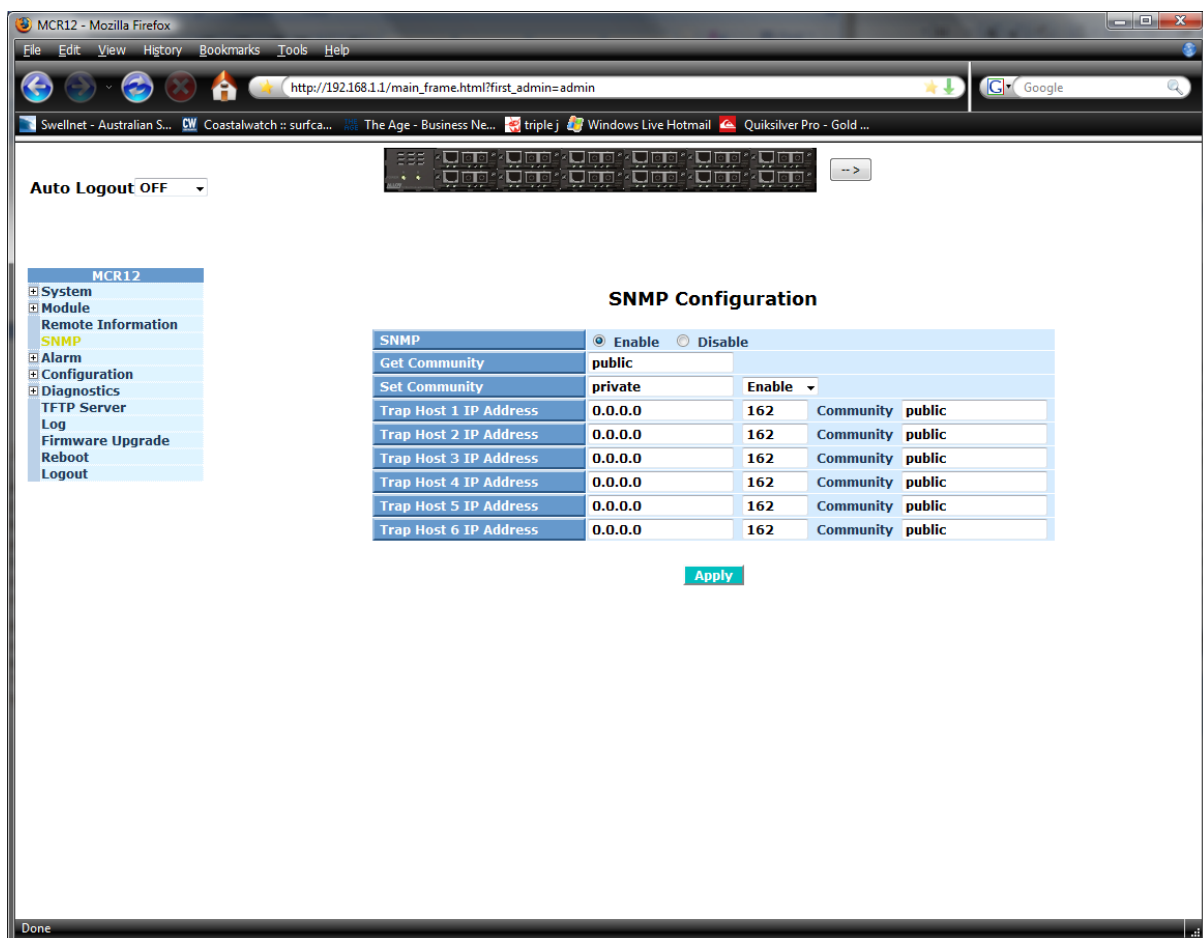
Figure 3.14

SNMP:	The term SNMP here is used for the activation or de-activation of SNMP. Default is Enabled.
Get/Set Community:	The Community name is used as a password for authenticating, if the requesting network management unit belongs to the same community group. If they both don't have the same community name, they don't belong to the same group. Hence, the requesting network management unit can't access the device with a different community name via SNMP

protocol; If they both have the same community name, they can talk to each other.

The Community name is user-definable field with a maximum length of 15 characters and is case sensitive. There is not allowed to be any blank spaces in the community name string. Any printable character is allowed.
The community name for each function works independently. Each function has its own community name. The community name for GET only works for the GET function and can't be applied to other functions such as SET.
Default SNMP function : Enable
Default community name for GET: public
Default community name for SET: private

Trap: In the MCR12, there are 6 trap hosts supported. Each of them has its own community name and IP address; this is user-definable. To set up a trap host means to create a trap manager by assigning an IP address to host the trap message. In other words, the trap host is a network management unit receiving the trap message from the MCR12 with SNMP agent issuing the trap message; 6 trap hosts can be configured.

Once all values have been set accordingly please click on the Apply button to apply these settings.

3.6. Alarm

3.6.1 Events

The MCR12 supports a number of trap messages that can be sent to an administrator if certain events occur on the converter chassis. The MCR12 offers 23 different trap events that can be sent to the administrator in 2 different ways; email or trap.
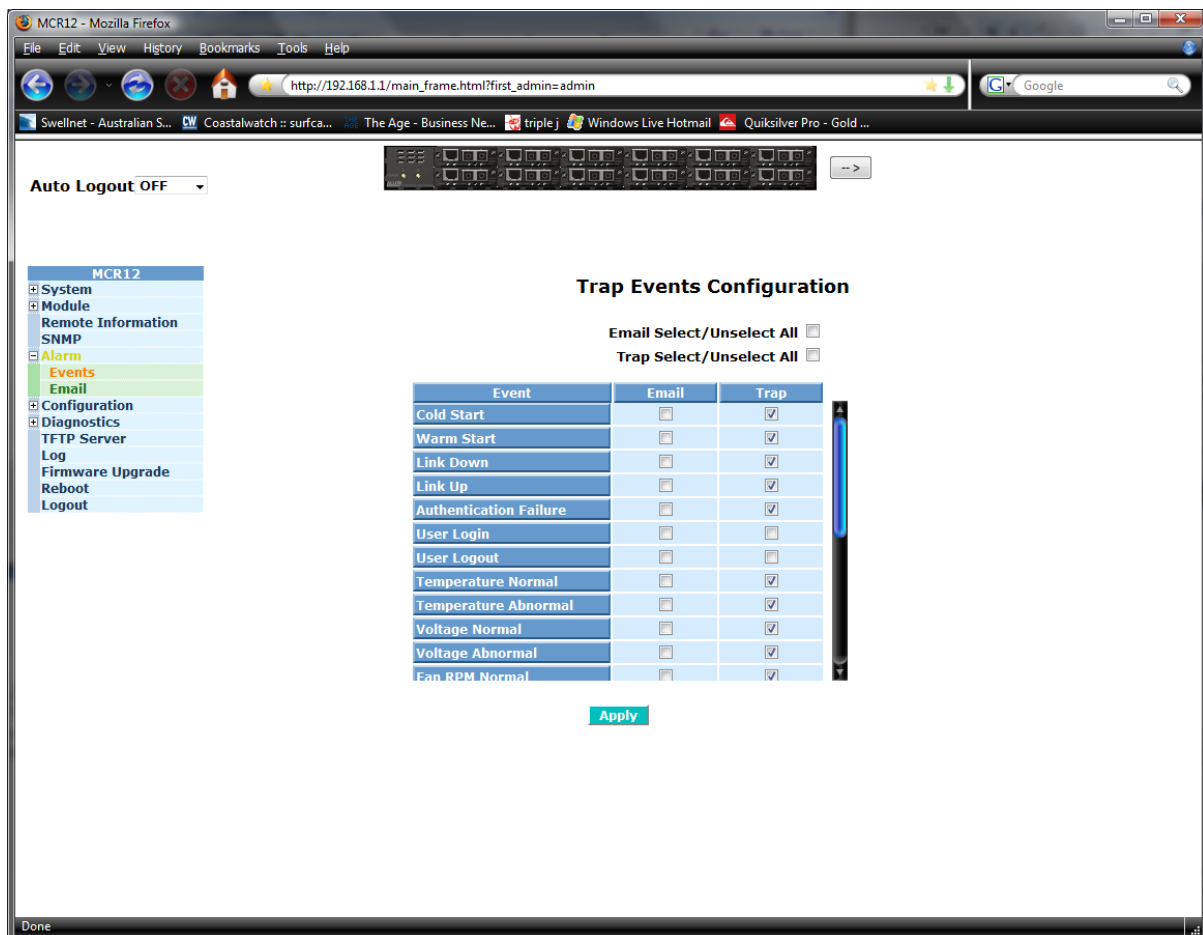
Figure 3.15

Email Select/Unselect All: Tick this check box to automatically select or unselect all Email tick boxes.

Trap Select/Unselect All: Tick this check box to automatically select or unselect all Trap tick boxes.

Cold Start: Tick the required trap method to send a trap when the MCR12 performs a Cold Start.

Warm Start: Tick the required trap method to send a trap when the MCR12 performs a Warm Start.

Link Down: Tick the required trap method to send a trap when link goes down one any of the installed modules.

Link Up: Tick the required trap method to send a trap when link is restored to any of the installed modules.

Authentication Failure: Tick the required trap method to send a trap when authorisation to the MCR12 fails.

User Login: Tick the required trap method to send a trap when a user logs in to the MCR12.

User Logout: Tick the required trap method to send a trap when a user logs out of the MCR12.

Temperature Normal: Tick the required trap method to send a trap when the MCR12 is running at normal temperature.

Temperature Abnormal: Tick the required trap method to send a trap when the MCR12 is running at a high or low temperature.

Voltage Normal: Tick the required trap method to send a trap when voltage to the MCR12 is correct.

Voltage Abnormal: Tick the required trap method to send a trap when voltage to the MCR12 is high or low.

Fan RPM Normal: Tick the required trap method to send a trap when the Fan speed is normal.

Fan RPM Abnormal: Tick the required trap method to send a trap when the Fan speed is running slow or fast.

Power Inserted: Tick the required trap method to send a trap when a Power Module has been inserted.

Power Removed: Tick the required trap method to send a trap when a Power Module has been removed.

Power Normal: Tick the required trap method to send a trap when Power from the power module is correct.

Power Abnormal: Tick the required trap method to send a trap when Power from the power module is incorrect.

Module Egress BW Change: Tick the required trap method to send a trap when the Egress Bandwidth setting has been changed on a module.

Module Ingress BW Change: Tick the required trap method to send a trap when the Ingress Bandwidth setting has been changed on a module.

Module Inserted: Tick the required trap method to send a trap when a converter module has been inserted.

Module Removed: Tick the required trap method to send a trap when a converter module has been removed.

Remote Link Up: Tick the required trap method to send a trap when a remote devices link becomes active.

Remote Link Down: Tick the required trap method to send a trap when a remote devices link goes down.

3.6.2 Alarms
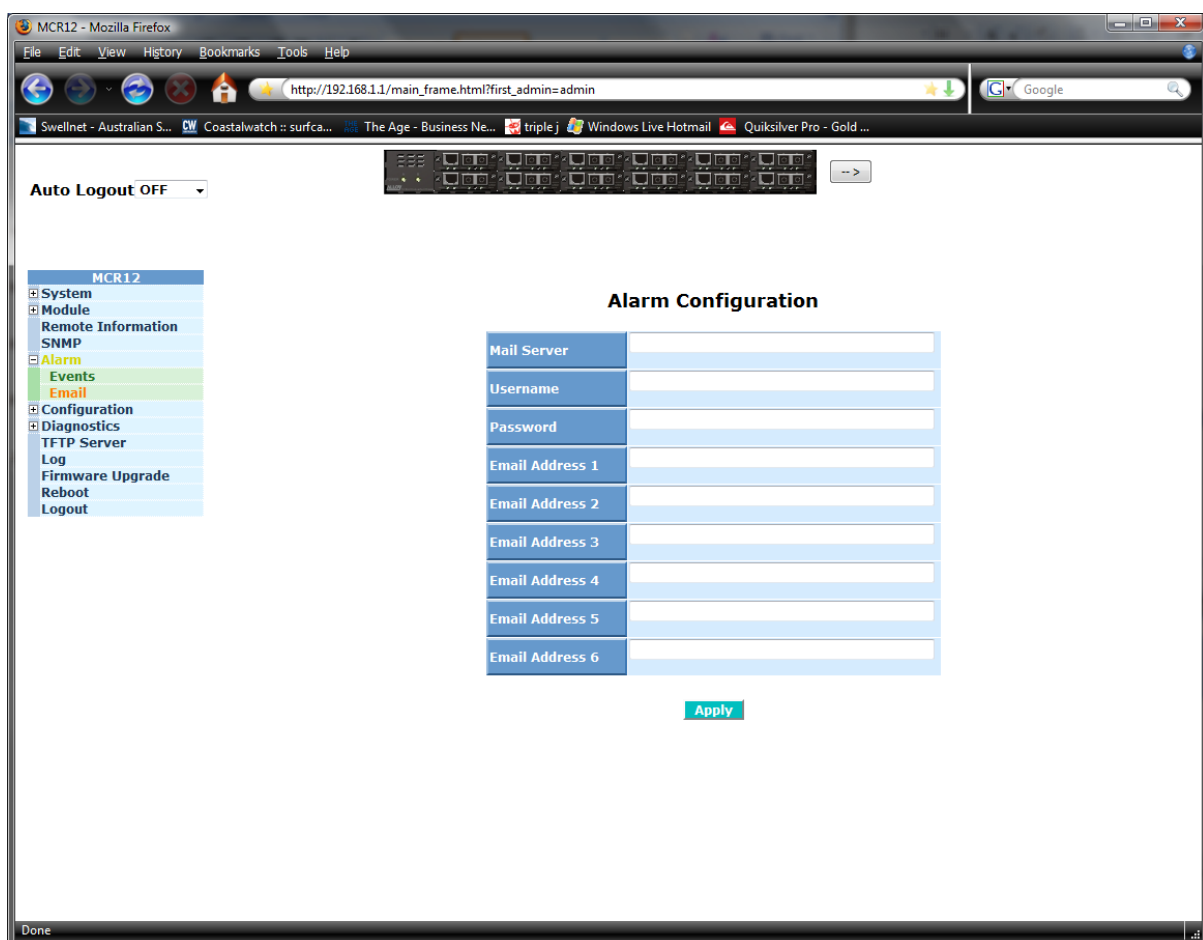
Figure 3.16

Mail Server: Enter the mail server into the space provided. This is used to send trap information via Email.

Username: Enter the username for the Email Server. This should not be needed.

Password: Enter the password for the Email Server. This should not be needed.

Email Address 1 -6: Enter up to 6 email addresses of where the trap information will be sent to.

3.7. Configuration

3.7.1 Save/Restore
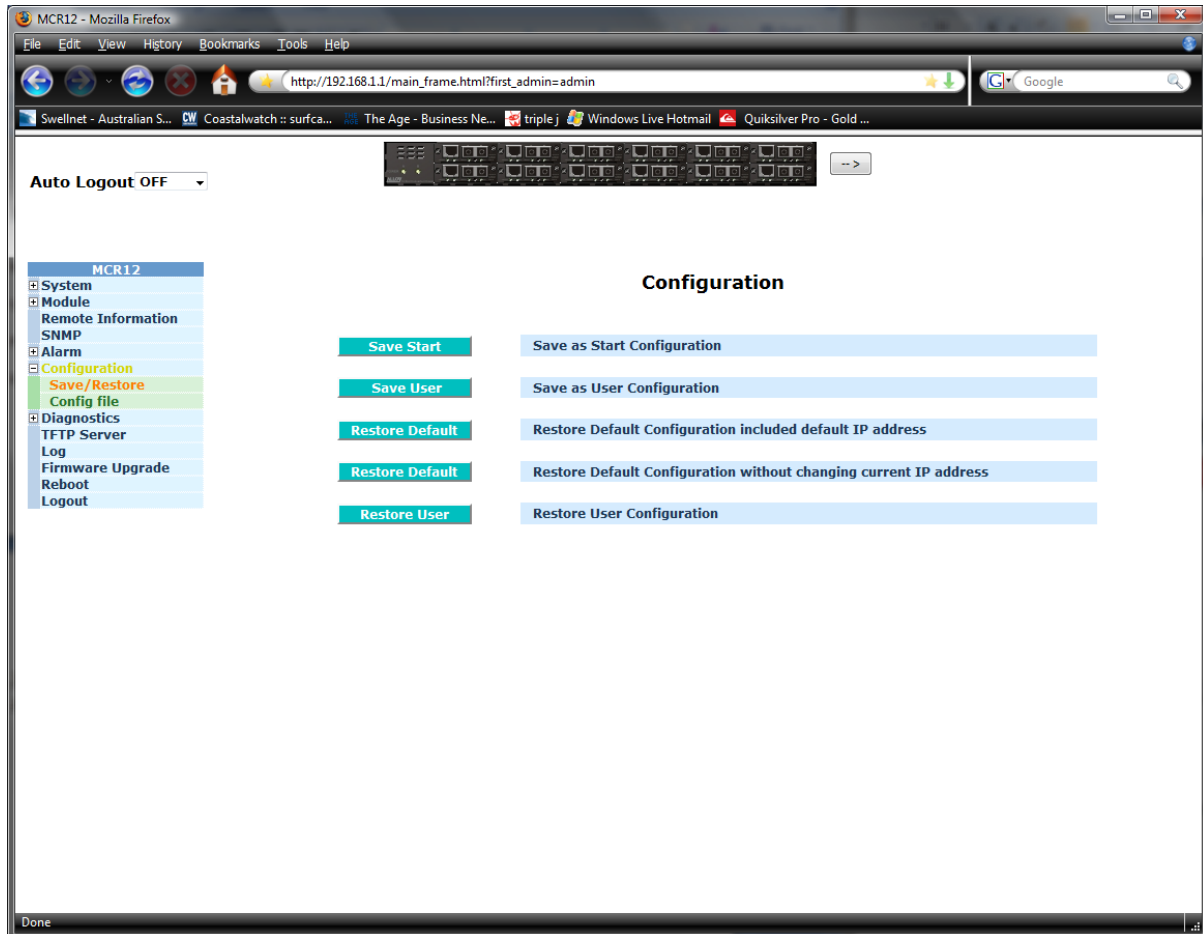
Figure 3.17

Save Start:	Used to save the current running configuration as the startup configuration.
Save User:	Used to save the current running configuration as a user startup configuration.
Restore Default:	Used to restore the MCR12 to its factory default settings, including the IP settings.
Restore Default:	Used to restore the MCR12 to its factory default settings, without changing the current IP settings.
Restore User:	Used to restore the saved user configuration.

3.7.2 Config File
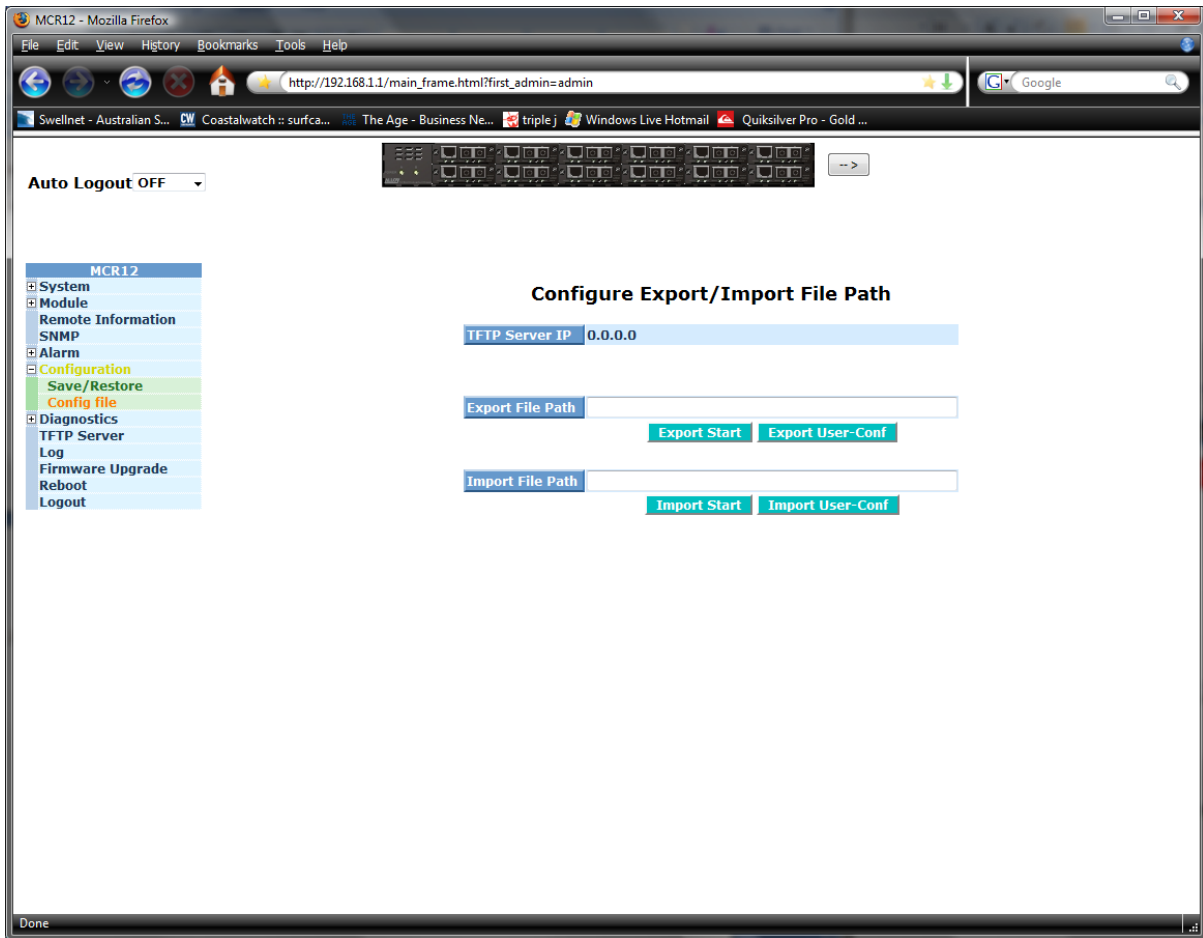
Figure 3.18

TFTP Server IP: Displays the currently configured TFTP Server IP Address.

Export File Path: Enter the location of where the file will be saved.

Export Start: Export the startup configuration.

Export User-Conf: Export the User Configuration File.

3.8. Diagnostics

3.8.1 Diag
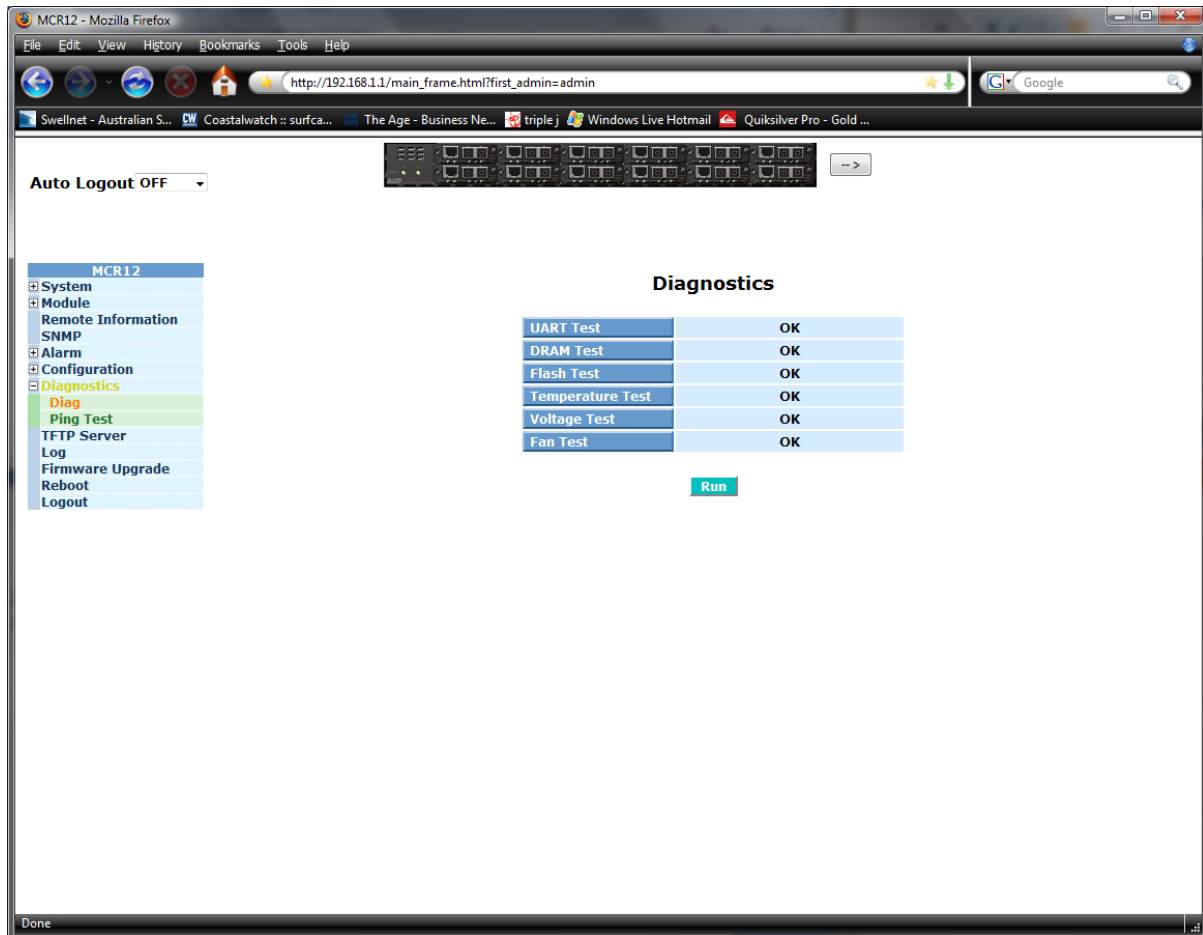
Figure 3.19

UART Test: Tests the UART in the MCR12.

DRAM Test: Test the DRAM used in the MCR12.

Flash Test: Tests the Flash Memory in the MCR12.

Temperature Test: Tests the temperature of the MCR12.

Voltage Test: Tests the voltage of the MCR12.

Fan Test: Tests the FAN's in the MCR12.

3.8.2 Ping Test
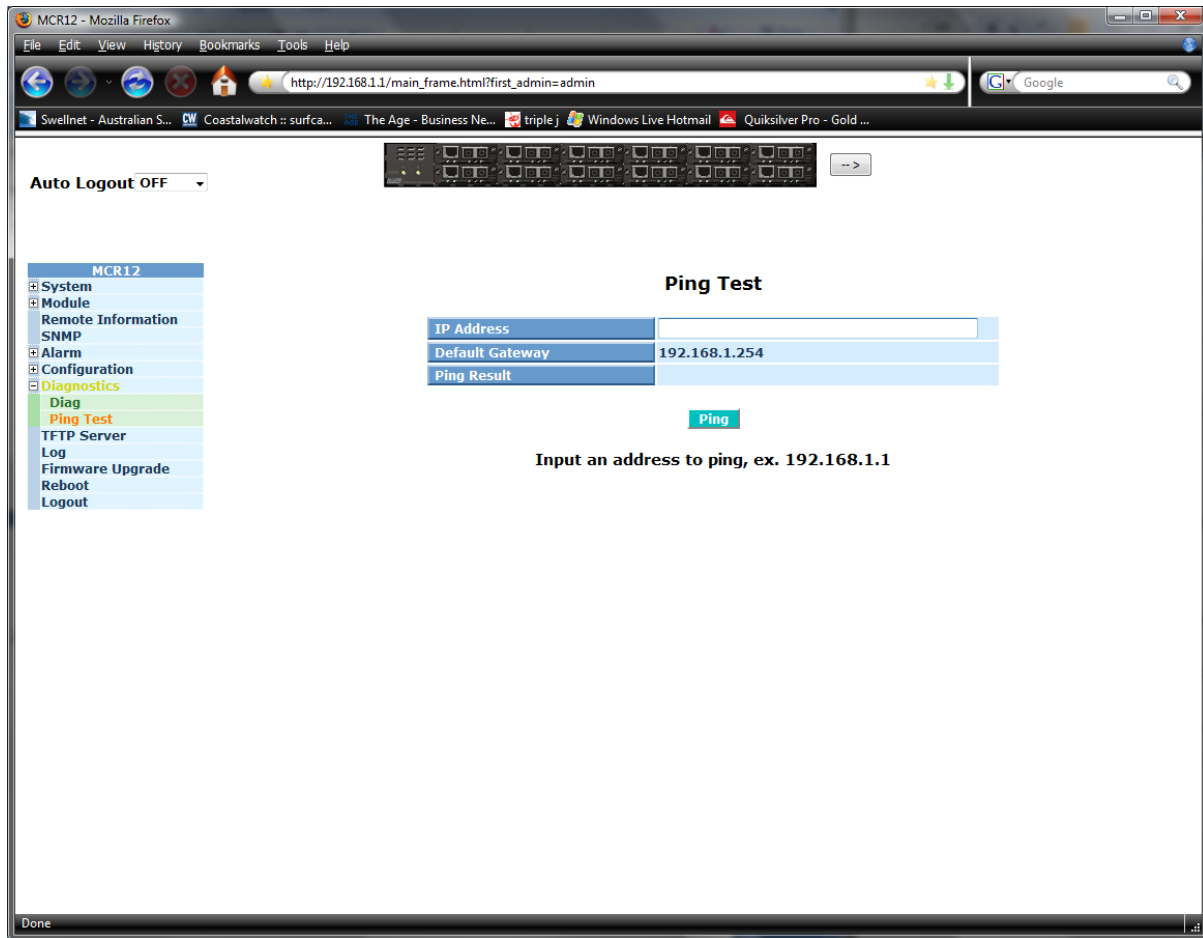
Figure 3.20

IP Address: Enter the IP Address you are trying to ping.

Default Gateway: Displays the default gateway set in the MCR12.

Ping Result: Display the result of the ping test.

3.9. TFTP Server
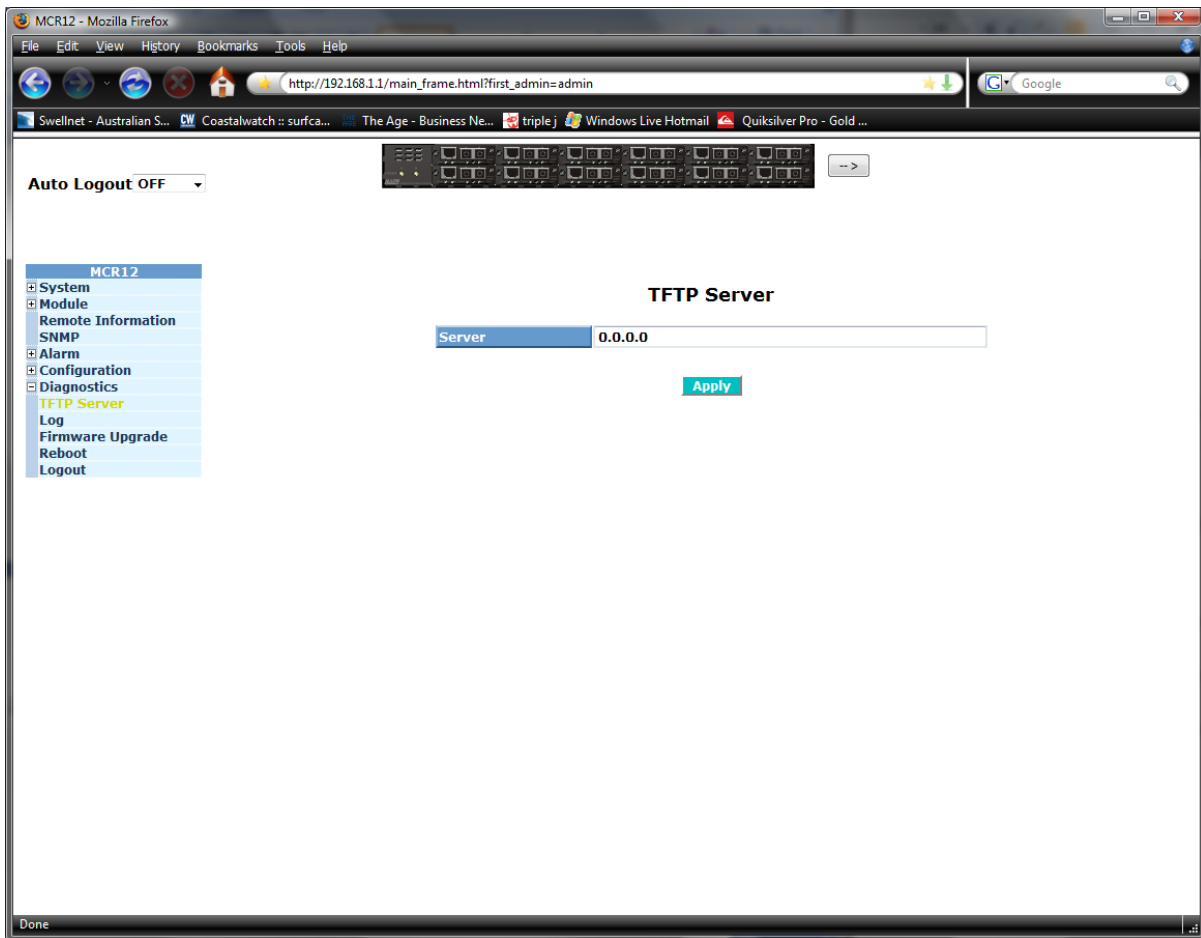
Figure 3.21

Server: Enter the IP Address of the TFTP Server.

Once all values have been set accordingly please click on the Apply button to apply these settings.

3.10. Log
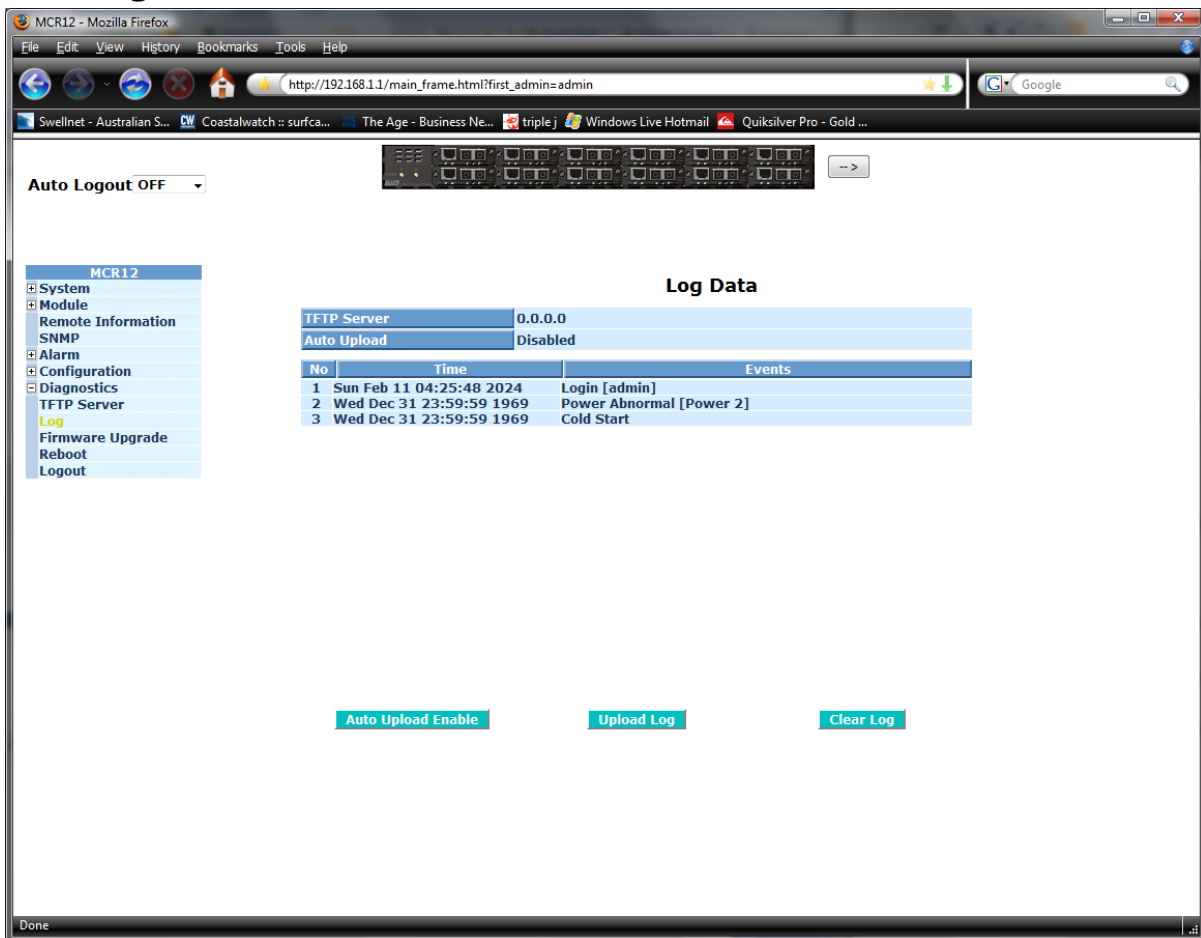
Figure 3.22

TFTP Server: Displays the current configured TFTP server.

Auto Upload: Displays the status of the Auto Upload feature. Enabled or Disabled.

Auto Upload Enable: Used to enable the auto upload feature.

Upload Log: Click Upload log to manually upload a log.

Clear Log: Used to clear the log.

3.11. Firmware Upgrade
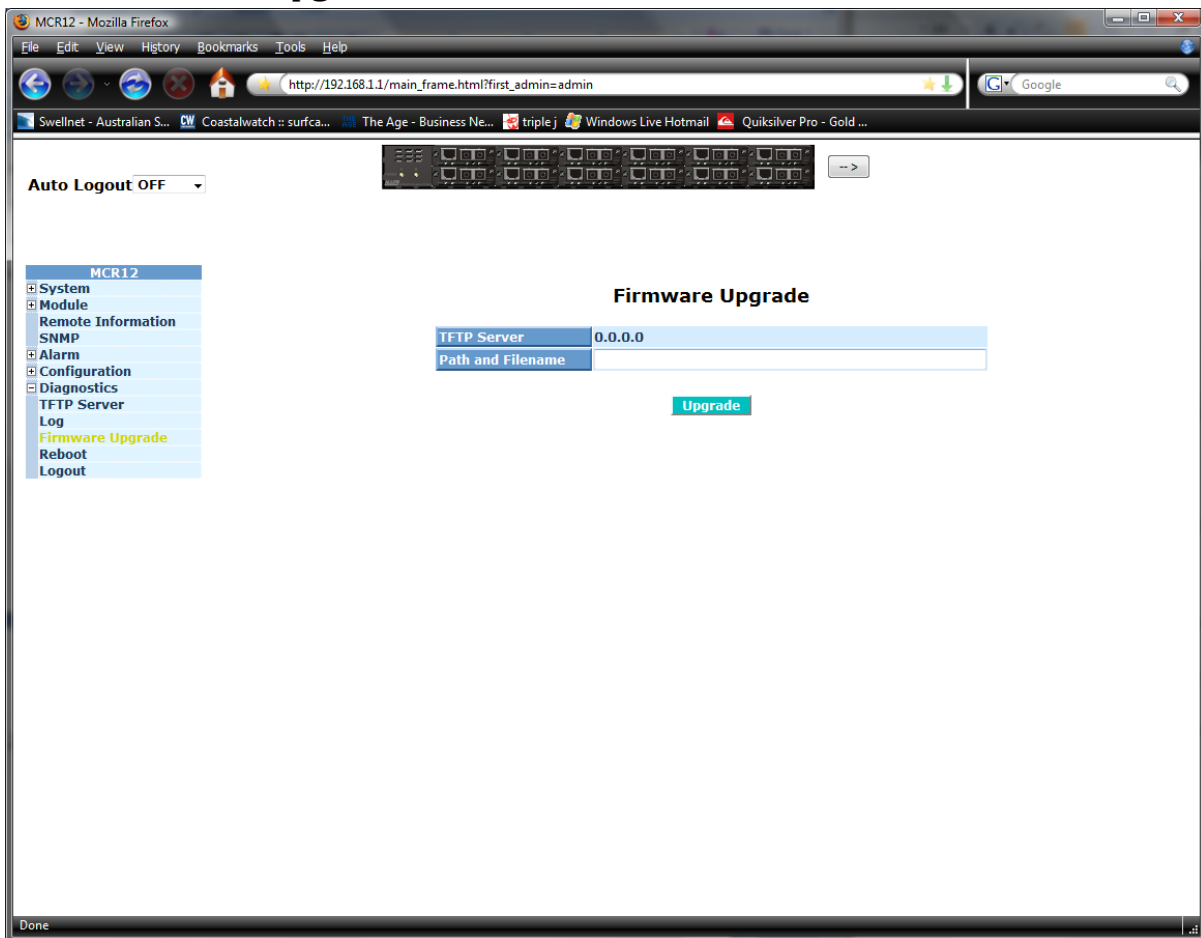
Figure 3.23

TFTP Server: Displays the current configured TFTP Server.

Path and Filename: Shows the firmware file to be uploaded.

Upgrade: Press upgrade to perform the upgrade process.

3.12. Reboot
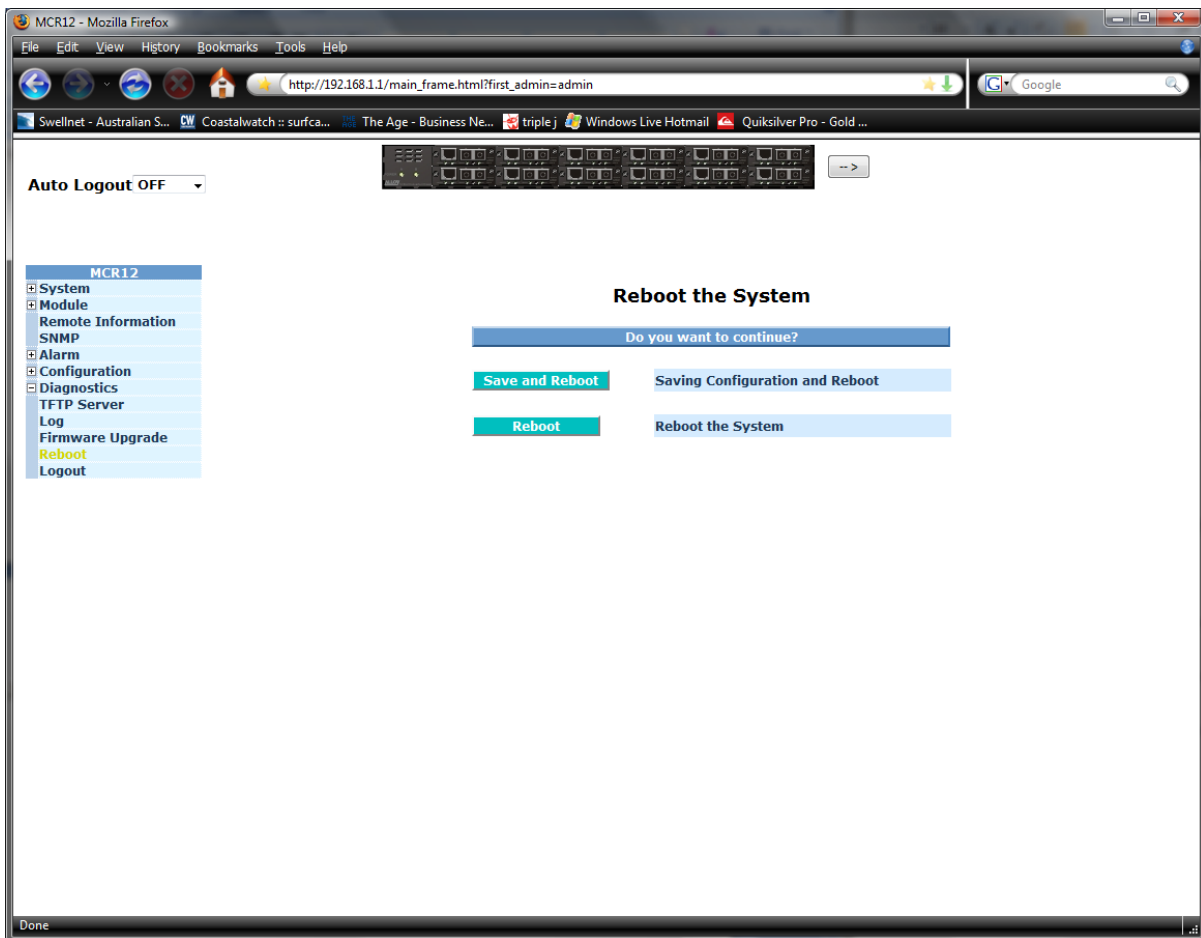
Figure 3.24

Save and Reboot: Click to save current settings and reboot the MCR12.

Reboot: Click to reboot the MCR12 without saving settings.

3.13. Logout
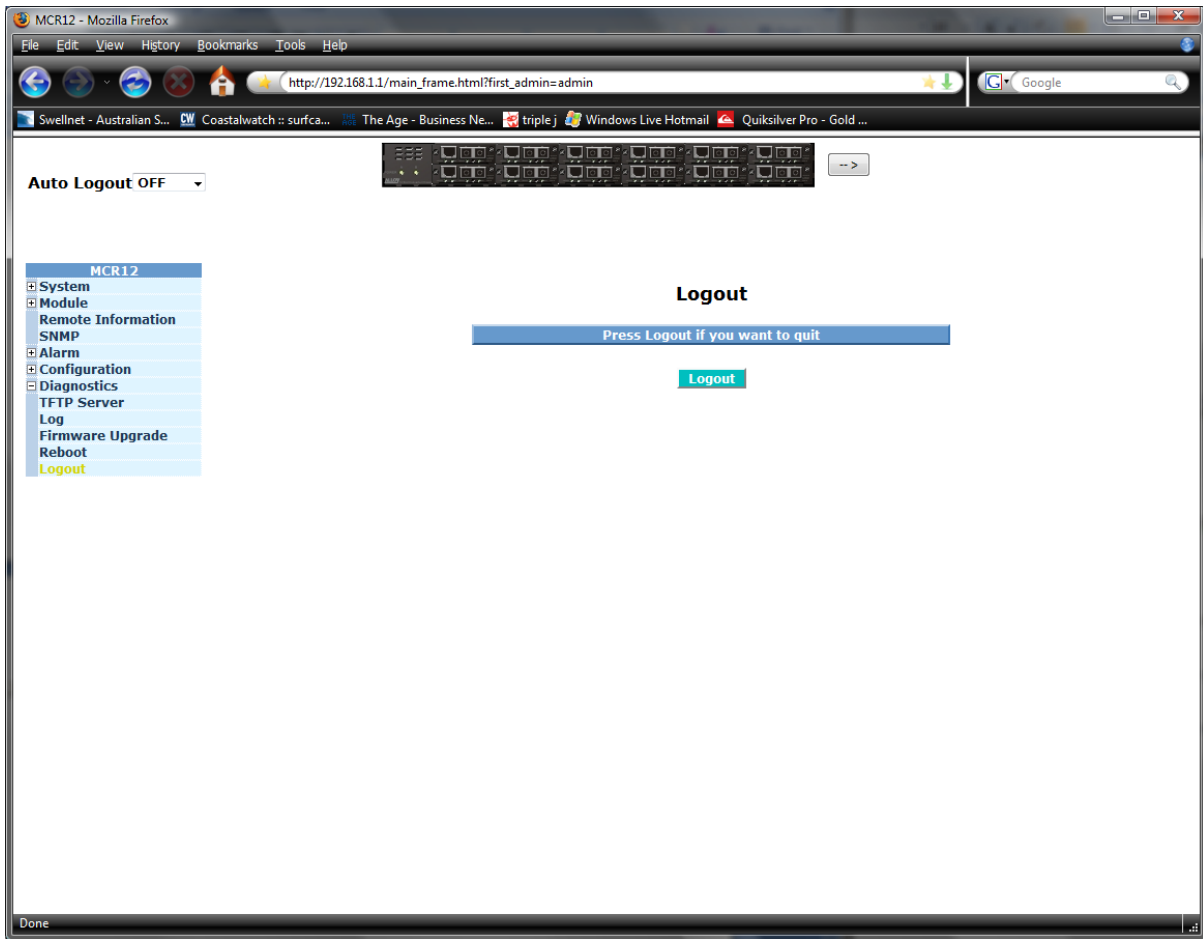
Figure 3.25

Logout: Press logout to logout of the web management interface.

4. Operation of CLI Management

4.1. CLI Management

Refer to chapter 2 for basic installation.

When configuring the MCR12 via the RS-232 console please connect via the provided serial cable to a DCE device such as a PC. Once you have connection run a terminal emulation program such as Hyper Terminal. When connecting please use the serial settings to create the connection, the default settings are below:

Baud Rate: 115200

Data Bits: 8

Parity: None

Stop Bits: 1

Flow Control: None

The same interface can also be accessed using Telnet.

The default IP Address, Subnet Mask and Gateway addresses are shown below:

IP Address: 192.168.1.1

Subnet Mask: 255.255.255.0

Gateway: 192.168.1.254

Open a command prompt and telnet to the default IP address shown above.

4-1-1. Login

The command line interface (CLI) is a text based interface; users can access the CLI through either a direct serial connection to the device or a Telnet session. The default username and password for the device is shown below:

Username: admin

Password: admin

After you have logged in successfully the prompt will be shown as "#" meaning that you are the first to login to the switch with administrator rights. If a "$" prompt is shown it means that you have logged in as a guest and you are only allowed to view the system, no changes can be made to the switch.

Figure 4.1

4.2. Commands of CLI

To display the list of commands that are supported on the MCR12 CLI type "?" and press enter. All commands on the converter are divided into 2 groups Global commands and Local commands. The Global commands include "exit", "end", "help", "history", "logout", "save" and "restore". For more details, please refer to Section 4-2-1.

All Local commands will be run through in Section 4-2-2.
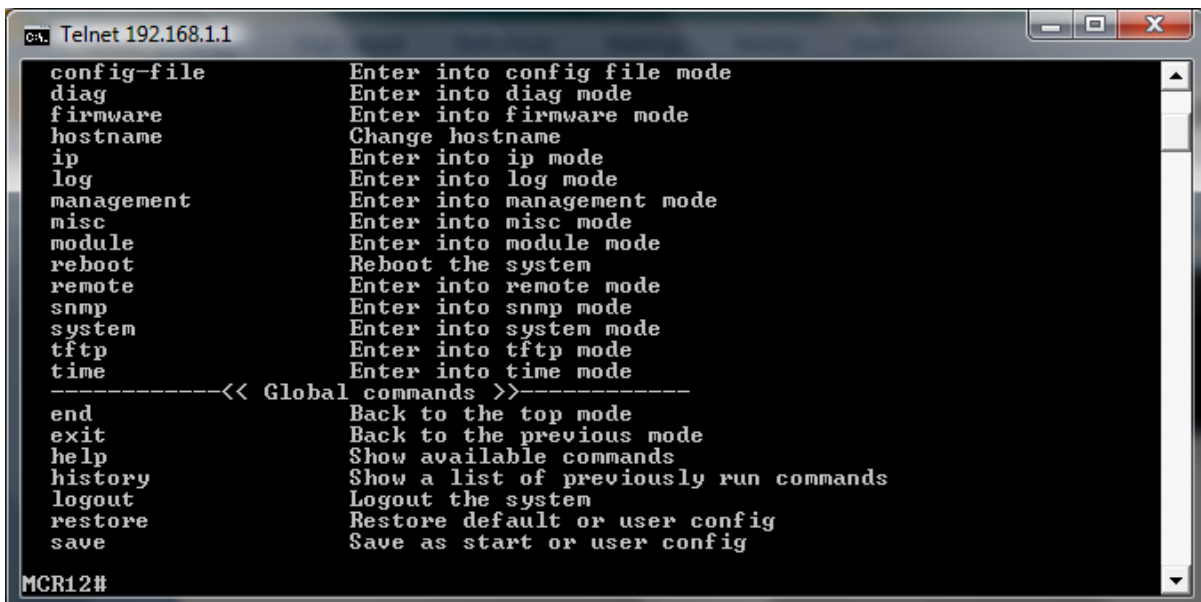
Figure 4.2

4.2.1. Global Commands

end

Syntax:

end

Description:

Back to the root menu.

Use this command to return to the root menu. Unlike the exit command which will take you back to the previous menu, the end command will take you directly to the root menu.

Argument:

None.

Possible value:

None.

Example:

MCR12# alarm

MCR12 (alarm)# events

MCR12 (alarm-events)# end

MCR12#

exit

Syntax:

exit

Description:

Back to the previous menu.

Use this command to navigate back to previous menus.

Argument:

None.

Possible value:

None.

Example:

MCR12# trunk

MCR12 (trunk)# exit

MCR12#

help

Syntax:

help

Description:

Displays available commands in the current menu.

To display the available commands in any given menu enter the appropriate menu and type help. This will display all available commands for that menu.

Argument:

None.

Possible value:

None.

Example:

MCR12# ip

MCR12 (ip)# help

Commands available:

------------<< Local commands >>------------

set ip   Set ip, subnet mask and gateway

set dns   Set dns

enable dhcp   Enable DHCP, and set dns auto or manual

disable dhcp   Disable DHCP

show   Show IP Configuration

------------<< Global commands >>------------

exit   Back to the previous mode

end   Back to the top mode

help   Show available commands

history   Show a list of previously run commands

logout   Logout of the system

save   Save config

restore   Restore config

MCR12 (ip)#

history

Syntax:

history [#]

Description:

Shows you a list of commands that have previously been entered.

When you enter this command, the CLI will show a list of commands which you have entered before. The CLI supports up to 256 records. If no argument is typed, the CLI will list all records up to 256. If an optional argument is given, the CLI will only show the last number of records given by the argument.

Argument:

[#]: show last number of history records. (optional)

Possible value:

[#]: 1, 2, 3, ..., 256

Example:

MCR12 (ip)# history

 Command history:

 0. trunk

 1. exit

 2. MCR12# trunk

 3. MCR12 (trunk)# exit

 4. MCR12#

 5. ?

 6. trunk

 7. exit

 8. alarm

 9. events

10. end

11. ip

12. help

13. ip

14. history

MCR12 (ip)# history 3

 Command history:

13. ip

14. history

15. history 3

logout

Syntax:

logout

Description:

When you enter this command via a Telnet connection, you will be automatically logged out of the system and disconnected. If you connect to the system via a direct serial port, you will be logged out of the system and the login prompt will be displayed.

Argument:

None.

Possible value:

None.

Example:

None.

save start

Syntax:

save start

Description:

To save the current configuration as the startup configuration.

When you enter this command, the CLI will save your current configuration into the non-volatile FLASH as the start up configuration.

Argument:

None.

Possible value:

None.

Example:

MCR12# save start

Saving start...

Save Successfully

MCR12#

save user

Syntax:

save user

Description:

To save the current configuration as the user-defined configuration.

When you enter this command, the CLI will save your current configuration into the non-volatile FLASH as the user-defined configuration.

Argument:

None.

Possible value:

None.

Example:

MCR12# save user

Saving user...

Save Successfully

MCR12#

restore default

Syntax:

restore default

Description:

To restore the startup configuration back to the original factory default configuration.

If the switch has been correctly restored back to default you will be prompted immediately to reboot the switch. If you press "Y" or "y" the switch will be rebooted and loaded with the default configuration. If you select "N" or "n" you will return to the previous screen.

Argument:

None.

Possible value:

None.

Example:

MCR12# restore default

Restoring ...

Restore Default Configuration Successfully

Press any key to reboot system.

restore user

Syntax:

restore user

Description:

To restore the startup configuration as the user defined configuration.

If the switch has been correctly restored back to the user defined configuration you will be prompted immediately to reboot the switch. If you press "Y" or "y" the switch will be rebooted and loaded with the user defined configuration. If you select "N" or "n" you will return to the previous screen.

Argument:

None

Possible value:

None

Example:

MCR12# restore user

Restoring ...

Restore User Configuration Successfully

Press any key to reboot system.

4.2.2. Local Commands

Remote

clear counter

Syntax:

clear counter

Description:

To clear the counter information for the remote port.

Argument:

None.

Possible value:

None.

Example:

MCR12(port)# clear counter

show port-counter

Syntax:

show port-counter

Description:

To show current remote port counter. The CLI would show current available remote

side's port counter, including RX packet, RX byte, TX packet, TX byte, error, and

collision counters.

Argument:

None.

Possible value:

None.

Example:

MCR12 (remote)# show port-counter

Remote port counter:

Slot RxPkt RxByte TxPkt TxByte Error Collision

---- -- --------- --------- --------- --------- --------- ---------

2 TP 0 0 0 0 0 0

FX 1208 77334 1260 80640 0 0

show port-config

Syntax:

show port-config

Description:

Displays the current remote port configuration. The CLI shows the current available remote

side's port configuration, which consists of media, link, state, auto negotiation,

speed/duplex, flow control, and bandwidth. The unit of the bandwidth is set to 100Kbps.

Argument:

None.

Possible value:

None.

Example:

MCR12 (remote)# show port-config

Remote port config: (Bandwidth Unit: Mbps)

Slot Media State Auto Nego. Speed/Duplex Flow Control Bandwidth

---- ----- ------- ---------- ------------ ------------ --------------

2 TP Enable Auto 100M/Full Enable 100

FX Enable Force 100M/Full Enable

show port-status

Syntax:

show port-status

Description:

Shows the current remote port status. The CLI would show current available remote side's

port status, which consists of media, link, state, auto negotiation, speed/duplex, flow

control, and bandwidth. The unit of the bandwidth is set to 100Kbps.

Argument:

None.

Possible value:

None.

Example:

MCR12 (remote)# show port-status

Remote port status: (Bandwidth Unit: Mbps)

Slot Media Link State Auto Nego. Speed/Duplex Flow Control Bandwidth

---- ----- ---- ------- ---------- ------------ ------------ ---------------

2 TP Down Enable Auto 10M/Half Enable 100

FX Up Enable Force 100M/Full Enable

show system

Syntax:

show system <#>

Description:

Shows the remote side's system information.

Argument:

<#>: remote slot number, available from 1 to 12 (required)

Possible value:

<#>: 1, 2, 3,…, 12

Example:

MCR12 (remote)# show system 2

Remote system information slot : 2

Model Name : RC-2002 - 1590nm

System Description : Managed Media Converter

Location :

Contact :

System Up Time : 0 Day(s) 1 Hour(s) 32 Min(s) 56 Sec(s)

MAC Address : 00-00-8c-d1-11-e4

BIOS Version : v1.01

Firmware Version : v2.14

Hardware-Mechanical Version : v1.01-v1.01

System Temperature : 34.5 C

Code Number : 010342000002

Voltage : 5.1 VDC

Case Detection : Close

FX Connector : LC

FX Mode : Single-Mode

FX Cable : Two Wires

FX Wave Length : 1590nm

show tp-management

Syntax:

show tp-management

Description:

Shows the current remote tp port management status. The CLI shows the current

available remote side's tp port management status, which may be enabled, or disabled.

Argument:

None.

Possible value:

None.

Example:

MCR12 (remote)# show tp-management

Remote tp port management:

Slot Status

---- -------

2 Disable

show ip-less

Syntax:

To show ip-less

Description:

Show current remote device management mode, which may be IP mode or IP-less

mode.

Argument:

None.

Possible value:

None.

Example:

MCR12 (remote)# show ip-less

Remote ip less:

Slot Status

---- -------

2 Disable

show diag

Syntax:

show diag

Description:

Shows the current remote diagnostic results. The CLI would show current available remote

side's diagnostic item, consisting of UART test, DRAM test, Flash test, temperature test,

voltage test, and case detection. Results may be shown as "OK", "Fail", or "Closed",

"Open".

Argument:

None.

Possible value:

None.

Example:

MCR12 (remote)# show diag

Remote Diagnostic:

Slot UART DRAM Flash Temperature Voltage Case

---- ---- ---- ----- ----------- ------- ------

2 OK OK OK OK OK Closed

show loopback-test

Syntax:

show loopback-test <#> <cnt>

Description:

Shows the remote side's loop back test.

Argument:

<#>: remote slot number, available from 1 to 12.

<cnt>: repeated packets counter for loopback test, range: 1 to 100.

Possible value:

<#>: 1, 2, 3,…, 12

<cnt>: 1, 2, 3,…, 100

Example:

MCR12 (remote)# show loopback-test 2 10

Remote slot loobback test slot: 2

Sent = 10, Received = 10, Lost = 0 (0 % loss)

set tp-nego

Syntax:

set tp-nego <range> <auto|force>

Description:

To set remote tp port negotiation mode.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<auto|force>:

"auto" means to set tp port as auto negotiation

"force" means to set tp port as force mode

Possible value:

<range>: 1 to 16

<auto|force>: auto or force

Example:

MCR12 (remote)# set tp-nego 2 auto

set fx-nego

Syntax:

set fx-nego <range> <auto|force>

Description:

To set remote fx port negotiation mode

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<auto|force>:

"auto" means to set fx port as auto negotiation

"force" means to set fx port as force mode

Possible value:

<range>: 1 to 12

<auto|force>: auto or force

Example:

MCR12 (remote)# set fx-nego 2 auto

set tp-speed-duplex

Syntax:

set tp-speed-duplex <range> <1000|100|10> <full|half>

Description:

To set remote side's tp port speed and duplex mode.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<1000|100|10>:

"1000" means to set tp port's speed to 1000Mbps

"100" means to set tp port's speed to 100Mbps

"10" means to set tp port's speed to 10Mbps

<full|half>:

"full" means to set tp port's duplex mode as full duplex

"half" means to set tp port's duplex mode as half duplex

Possible value:

<range>: 1 to 12

<1000|100|10>: 1000, 100 or 10

<full|half>: full or half

Example:

MCR12 (remote)# set tp-speed-duplex 2 100 full

set fx-duplex

Syntax:

set fx-duplex <range> <full|half>

Description:

To set remote side's fibre port duplex mode.

Argument:

<range>: syntax 1,5-7, available from 1 to 12

<full|half>:

"full" means to set fibre port's duplex mode as full duplex

"half" means to set fibre port's duplex mode as half duplex

Possible value:

<range>: 1 to 12

<full|half>: full or half

Example:

MCR12 (remote)# set fx-duplex 3 half

set bandwidth

Syntax:

set bandwidth <range> <value>

Description:

To set the bandwidth of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<value>: bandwidth, range: 0 to 100, unit: Mbps

Possible value:

<range>: 1 to 12

<value>: 0, 1, 2, …, 100

Example:

MCR12 (remote)# set bandwidth 3 100

set location

Syntax:

set location <range> <location>

Description:

To set the location information of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

< location>: set remote location information

Possible value:

<range>: 1 to 12

<location>: max. 32 characters

Example:

MCR12 (remote)# set location 3 Taipei

set contact

Syntax:

set contact <range> <contact>

Description:

To set the contact information of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<contact>: set remote contact information

Possible value:

<range>: 1, 2, 3, …, 12, available from 1 to 12

<contact>: set remote contact, max. 32 characters

Example:

MCR12 (remote)# set contact 4 ABC

set reboot

Syntax:

set reboot <range>

Description:

To reboot the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# set reboot 3

enable tp-state

Syntax:

enable tp-state <range>

Description:

To enable the tp port state of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# enable tp-state 3

enable tp-flowcontrol

Syntax:

enable tp-flowcontrol <range>

Description:

To enable the tp port's flow control of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# enable tp-flowcontrol 4

enable tp-management

Syntax:

enable tp-management <range>

Description:

To enable the tp port management function of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# enable tp-management 4

enable ip-less

Syntax:

enable ip-less <range>

Description:

To enable the ip-less function of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# enable ip-less 4

enable fx-flowcontrol

Syntax:

enable fx-flowcontrol <range>

Description:

To enable the fibre port's flow control of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# enable fx-flowcontrol 4

disable tp-state

Syntax:

disable tp-state <range>

Description:

To disable the tp port state of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# disable tp-state 3

disable tp-flowcontrol

Syntax:

disable tp-flowcontrol <range>

Description:

To disable the tp port's flow control of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# disable tp-flowcontrol 4

disable tp-management

Syntax:

disable tp-management <range>

Description:

To disable the tp port management function of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# disable tp-management 4

disable ip-less

Syntax:

disable ip-less <range>

Description:

To disable the ip-less function of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# disable ip-less 4

disable fx-flowcontrol

Syntax:

disable fx-flowcontrol <range>

Description:

To disable the fiber port's flow control of the remote device.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (remote)# disable fx-flowcontrol 4

Module

enable tp-state

Syntax:

enable tp-state <range>

Description:

To enable the TP port state of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (module)# enable tp-state 2-8

enable fx-state

Syntax:

enable fx-state <range>

Description:

To enable the fibre port state of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>:1 to 12

Example:

MCR12 (module)# enable fx-state 5-10

enable tp-flowcontrol

Syntax:

enable tp-flowcontrol <range>

Description:

To enable the TP port's flow control function of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (module)# enable tp-flowcontrol 1

enable fx-flowcontrol

Syntax:

enable fx-flowcontrol <range>

Description:

To enable the fibre port's flow control function of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>:1 to 12.

Example:

MCR12 (module)# enable fx-flowcontrol 2-5

disable tp-state

Syntax:

disable tp-state <range>

Description:

To disable the TP port state of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (module)# disable tp-state 2-8

disable fx-state

Syntax:

disable fx-state <range>

Description:

To disable the fiber port state of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>:1 to 12

Example:

MCR12 (module)# disable fx-state 5-10

disable tp-flowcontrol

Syntax:

disable tp-flowcontrol <range>

Description:

To disable the TP port's flow control function of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (module)# disable tp-flowcontrol 1

disable fx-flowcontrol

Syntax:

disable fx-flowcontrol <range>

Description:

To disable the fibre port's flow control function of the module on the converter chassis.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>:1 to 12.

Example:

MCR12 (module)# disable fx-flowcontrol 2-5

set tp-nego

Syntax:

set tp-nego <range> <auto|force>

Description:

To set tp port's negotiation mode of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<auto|force> :

"auto" means to set tp port as auto negotiation

"force" means to set tp port as force mode

Possible value:

<range>: 1 to 12

<auto|force>: auto or force

Example:

MCR12 (module)# set tp-nego 1 auto

set fx-nego

Syntax:

set fx-nego <range> <auto|force>

Description:

To set the fibre port's negotiation mode of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<auto|force> :

"auto" means to set fibre port as auto negotiation

"force" means to set fibre port as force mode

Possible value:

<range>: 1 to 12

<auto|force>: auto or force

Example:

MCR12 (module)# set fx-nego 1 auto

set tp-speed-duplex

Syntax:

set tp-speed-duplex <range> <1000|100|10> <full|half>

Description:

To set up the TP port's speed and duplex mode of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<1000|100|10>:

"1000" means to set module TP port's speed to 1000Mbps.

"100" means to set module TP port's speed to 100Mbps.

"10" means to set module TP port's speed to 10Mbps.

<full|half>:

"full" means to set module TP port's duplex mode as full duplex.

"half" means to set module TP port's duplex mode as half duplex.

Possible value:

<range>: 1 to 12

<1000|100|10>: 1000,100 or 10

<full| half>: full or half

Example:

MCR12 (module)# set tp-speed-duplex 5-8 100 full

set fx-duplex

Syntax:

set fx-duplex <range> <full|half>

Description:

To set up the fibre port's duplex mode of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<full|half>:

"full" means to set module fiber port duplex mode as full duplex.

"half" means to set module fiber port duplex mode as half duplex.

Possible value:

<range>: 1 to 12

<full|half>: full or half

Example:

MCR12 (module)# set fx-duplex 5-8 full

set ingress-bandwidth

Syntax:

set ingress-bandwidth <range> <value>

Description:

To set up the ingress bandwidth of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<value>: ingress bandwidth, range: 1 to 1000, unit: Mbps

Possible value:

<range >: 1 to 12

<value>: 1 to 1000

Example:

MCR12 (module)# set ingress-bandwidth 5-8 100

set egress-bandwidth

Syntax:

set egress-bandwidth <range> <value>

Description:

To set up the module's egress bandwidth.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<value>: egress bandwidth, range: 1 to 1000, unit: Mbps

Possible value:

<range>: 1 to 12

<value>: 1 to 1000

Example:

MCR12 (module)# set egress-bandwidth 1-3 200

set upgrade

Syntax:

set upgrade <range>

Description:

To set up the file path and the filename for upgrading the firmware of the module. The

file path and the filename are shared with firmware mode's TFTP server IP address and

path.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (module)# set upgrade 1

set reboot

Syntax:

set reboot <range>

Description:

To reboot the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>:1 to 12

Example:

MCR12 (module)# set reboot 9-14

clear counter

Syntax:

clear counter <range>

Description:

To clear the port counter information of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1 to 12

Example:

MCR12 (module)# clear counter 3-5

show port-counter

Syntax:

show port-counter

Description:

To display TP and fibre port counter of all modules on the converter chassis.

Argument:

None.

Possible value:

None.

Example:

MCR12 (module)# show port-counter

Slot RxPkt RxByte TxPkt TxByte Error Collision

---- -- ----------- ----------- ---------- ----------- ----------- -----------

1 TP 0 0 0 0 0 0

FX 0 0 0 0 0 0

2 TP 0 0 0 0 0 0

FX 0 0 0 0 0 0

3 TP 0 0 0 0 0 0

FX 9786 740708 8810 678684 0 0

4 TP 0 0 0 0 0 0

FX 9691 729396 8702 666540 0 0

5 TP 0 0 0 0 0 0

FX 0 0 0 0 0 0

show port-config

Syntax:

show port-config

Description:

To display TP and fibre port configuration of all modules on the CR-2600.

Argument:

None.

Possible value:

None.

Example:

MCR12 (module)# show port-config

Module port config: (IBW, EBW Unit: Mbps)

Slot Name Media State Auto Nego. Speed/Duplex Flow Control IBW EBW

---- --------- ----- ------- ---------- ----------- ----------- ---- ----

1 MFCR100SC TP Enable Auto 100M/Full Enable 100 100

FX Enable Force 100M/Full Enable

2 MGCR1000SC TP Enable Auto 1000M/Full Enable 100 1000

FX Enable Auto 1000M/Full Enable

show port-status

Syntax:

show port-status

Description:

To display TP and fibre port status of all modules on the converter chassis.

Argument:

None.

Possible value:

None.

Example:

MCR12 (module)# show port-status

show system

Syntax:

show system <#>

Description:

To display the module's system information.

Argument:

<#>: module slot number, available from 1 to 12.

Possible value:

<#>: 1 to 12

Example:

MCR12 (module)# show system 2

Module system information slot : 2

Model Name : MFCR100ST

System Description : Managed Converter Module

MAC Address : 00-00-8c-f0-ff-3c

Firmware Version : v1.00

Hardware-Mechanical Version : v1.01-v1.01

Code Number : 010E01000003

Subscriber

set username

Syntax:

set username <range> <name>

Description:

To set up the username of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<name>: user name, max. 47 characters

Possible value:

<range>: 1 to 12

<name>: max. 47 characters

Example:

MCR12 (module-subscriber)# set username 1 ABC

set location

Syntax:

set location <range> <location>

Description:

To set up the location of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<location>: max. 47 characters

Possible value:

<range>: 1 to 12

<location>: max. 47 characters

Example:

MCR12 (module-subscriber)# set location 1 Australia

set contact

Syntax:

set contact <range> <contact>

Description:

To set up the contact of the module.

Argument:

<range>: syntax 1,5-7, available from 1 to 12.

<contact>: max. 47 characters

Possible value:

<range>: 1 to 12

<contact>: max. 47 characters

Example:

MCR12 (module-subscriber)# set contact 1 Alloy

set phone

Syntax:

set phone <range> <phone>

Description:

To set up the contact phone number of the module.

Argument:

<range syntax>: 1,5-7, available from 1 to 12.

<phone>: max. 47 characters

Possible value:

<range syntax>: 1 to 12

<phone>: max. 47 characters

Example:

MCR12 (module-subscriber)# set phone 85629000

show

Syntax:

show <#>

Description:

To display module subscriber information

Argument:

<#>: module slot number, available from 1 to 12.

Possible value:

<#>: 1 to 12

Example:

MCR12 (module-subscriber)# show 1

Module subscriber information slot : 1

User Name : ABC

Location : Australia

Contact : Alloy

Phone Number : 85629000

 System

show

Syntax:

show

Description:

To display the basic information of converter chassis.

Argument:

None.

Possible value:

None.

Example:

MCR12 (system)# show

Model Name : MCR12

System Description : Managed Converter Chassis

Location :

Contact :

CID-RID : 00-00

System Up Time : 0 Days 4 Hours 5 Mins 16 Secs

Current Time : Tue Mar 03 17:10:48 2009

BIOS Version : v1.02

Firmware Version : v1.16

CPU HW-Mech Version : v1.01-v1.01

CPU Code Number : 010D04021757

Chassis HW-Mech Version : v1.01-v1.01

Chassis Code Number : 010D01000017

Host IP Address : 192.168.1.1

Host MAC Address : 00-00-8C-CD-FF-80

Device Port : UART*1 TP*2

RAM Size : 16 M

Flash Size : 4 M

System Temperature : 28.0'C, 82.0'F

Fan : fan1:0 fan2:4326 fan3:3924

Voltage : 5.1v

Device Name : MCR12

set location

Syntax:

set location <location>

Description:

To set the location description of the converter chassis.

Argument:

<location>: system location, string length up to 31 characters

Possible value:

<location>: A, b, c, d, ... ,z and 1, 2, 3, …. etc.

Example:

MCR12 (system)# set location Australia

set contact

Syntax:

set contact <contact>

Description:

To set the contact description of the converter chassis.

Argument:

<contact>: system contact, string length up to 31 characters.

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Possible value:

<contact>: A, b, c, d, … ,z and 1, 2, 3, …. etc.

Example:

MCR12 (system)# set contact Melbourne

set device-name

Syntax:

set device-name <device-name>

Description:

To set the device name description of the converter chassis.

Argument:

<device-name>: device name, string length up to 31 characters.

Possible value:

<device-name>: A, b, c, d, … ,z and 1, 2, 3, …. etc.

Example:

MCR12 (system)# set device-name MCR12

 IP

set ip

Syntax:

set ip <ip> <mask> <gateway>

Description:

To set the system IP address, subnet mask and gateway.

Argument:

<ip> : system ip address

<mask> : system ip subnet mask

<gateway> : system default gateway

Possible value:

<ip> : 192.168.1.1 or others

<mask> : 255.255.255.0 or others

<gateway> : 192.168.1.254 or others

Example:

MCR12 (ip)# set ip 192.168.1.1 255.255.255.0 192.168.1.254

set dns

Syntax:

set dns <auto|ip>

Description:

To set the IP address of DNS server. The DNS is allowed to set "auto" mode when

DHCP is enabled.

Argument:

<ip>: ip address

<auto>: set dns assigned by dhcp server

Possible value:

<ip> : 168.95.1.1

Example:

MCR12 (ip)# set dns auto (To change the dns mode to auto)

MCR12 (ip)# set dns 168.95.1.1 (To change the dns mode to manual)

enable dhcp

Syntax:

enable dhcp <manual|auto>

Description:

To enable the DHCP function of the system, and set dns as auto or manual

Argument:

<manual|auto>:

"manual" means to enable dhcp with manual dns

"auto" means to enable dhcp with auto dns

Possible value:

<manual|auto>: auto or manual

Example:

MCR12 (ip)# enable dhcp manual

disable dhcp

Syntax:

disable dhcp

Description:

To disable the DHCP function of the system.

Argument:

None.

Possible value:

None.

Example:

MCR12 (ip)# disable dhcp

show

Syntax:

show

Description:

To display the system's DHCP function state, IP address, subnet mask, default gateway,

DNS mode, DNS server IP address and current IP address.

Argument:

None.

Possible value:

None.

Example:

MCR12 (ip)# show

DHCP : Disable

IP Address : 192.168.1.2

Subnet mask : 255.255.255.0

Gateway : 192.168.1.253

DNS Setting : Manual

DNS Server : 0.0.0.0

Current IP : 192.168.1.2

Time

set manual

Syntax:

set manual <YYYY/MM/DD> <hh:mm:ss>

Description:

To set up the current time manually.

Argument:

<YYYY>: Year (2000-2036)

<MM>: Month (01-12)

<DD>: Day (01-31)

<hh>: Hour (00-23)

<mm>: Minute (00-59)

<ss>: Second (00-59)

Possible value:

<YYYY>: 2000-2036

<MM>: 01-12

<DD>: 01-31

<hh>: 00-23

<mm>: 00-59

<ss>: 00-59

Example:

MCR12 (time)# set manual 2009/3/03 16:18:00

set ntp

Syntax:

set ntp <ip> <timezone>

Description:

To set up the current time via NTP server.

Argument:

<ip>: ntp server ip address or domain name

<timezone> : time zone (GMT), range: -12 to +13

Possible value:

<timezone>: -12,-11…,0,1…,13

Example:

MCR12 (time)# set ntp 210.59.157.10 10

set daylightsaving

Syntax:

set daylightsaving <hr> <MM/DD/HH> <mm/dd/hh>

Description:

To set up the daylight saving.

Argument:

<hr>: daylight saving hour, range: -5 to +5

<MM>: daylight saving start Month (01-12)

<DD>: daylight saving start Day (01-31)

<HH>: daylight saving start Hour (00-23)

<mm>: daylight saving end Month (01-12)

<dd>: daylight saving end Day (01-31)

<hh>: daylight saving end Hour (00-23)

Possible value:

<hr>: -5 to +5 <MM>: 01-12 <DD>: 01-31 <HH>: 00-23

<mm>: 01-12 <dd>: 01-31 <hh>: 00-23

Example:

MCR12 (time)# set daylightsaving 3 10/12/01 11/12/01

Save Successfully

show

Syntax:

show

Description:

To show the time configuration, including "Current Time", "NTP Server"," Timezone",

" Daylight Saving"," Daylight Saving Start" and "Daylight Saving End"

Argument:

None.

Possible value:

None.

Example:

MCR12 (time)# show

Current Time : Wed Sep 07 10:27:04 2005

NTP Server : 209.81.9.7

Timezone : GMT+10:00

Day light Saving : +3 Hours

Day light Saving Start: Mth: 10 Day: 12 Hour: 1

Day light Saving End : Mth: 11 Day: 12 Hour: 1

Account

add manager

Syntax:

add manager <name>

Description:

To create a new manager user. When you create a new manager user, you must type in

password and confirm password.

Argument:

<name>: new account name

Possible value:

<name>: A string must be at least 5 characters.

Example:

MCR12 (account)# add manager aaaaa

Password:

Confirm Password:

Save Successfully

add guest

Syntax:

add guest <name>

Description:

To create a new guest user. When you create a new guest user, you must type in

password and confirm password.

Argument:

<name>: new account name

Possible value:

<name>: A string must be at least 5 characters.

Example:

MCR12 (account)# add guest bbbbb

Password:

Confirm Password:

Save Successfully

del

Syntax:

del <name>

Description:

To delete an existing account.

Argument:

<name> : existing user account

Possible value:

None.

Example:

MCR12 (account)# del aaaaa

Account aaaaa deleted

password

Syntax:

password <name>

Description:

To change the password of an existing account.

Argument:

<name> : existing user account

Possible value:

None.

Example:

MCR12 (account)# password aaaaa

Password:

Confirm Password:

Account aaaaa password changed.

show

Syntax:

show

Description:

To display system account, including account name and identity.

Argument:

None.

Possible value:

None.

Example:

MCR12 (account)# show

Account Name Identity

----------- --------

admin : Manager

guest : guest

bbbbb : guest

Snmp

enable

Syntax:

enable snmp

enable set-community

Description:

To enable snmp and set-community.

Argument:

None.

Possible value:

None.

Example:

MCR12 (snmp)# enable snmp

MCR12 (snmp)# enable set-community

disable

Syntax:

disable snmp

disable set-community

Description:

To disable snmp and set-community.

Argument:

None.

Possible value:

None.

Example:

MCR12 (snmp)# disable snmp

MCR12 (snmp)# disable set-community

set

Syntax:

set get-community <community>

set set-community <community>

set trap <#> <ip> <port> <community>

Description:

The Set here is used for the setup of get-community, set-community, trap host ip, host

port and trap- community.

Argument:

<#>: trap number, range: 1 to 6

<ip>: ip address or domain name

<port>: trap port

<community>: community name

Possible value:

<trap number>: 1 to 6

<port>: 1~65535

Example:

MCR12 (snmp)# set get-community public

MCR12 (snmp)# set set-community private

MCR12 (snmp)# set trap 1 192.168.1.1 162 public

show

Syntax:

show

Description:

The Show here is to display the configuration of SNMP.

Argument:

None.

Possible value:

None.

Example:

MCR12 (snmp)# show

SNMP : Disable

Get Community: public

Set Community: private [Enable]

Trap Host 1 IP Address: 0.0.0.0 Port: 162 Community: public

Trap Host 2 IP Address: 0.0.0.0 Port: 162 Community: public

Trap Host 3 IP Address: 0.0.0.0 Port: 162 Community: public

Trap Host 4 IP Address: 0.0.0.0 Port: 162 Community: public

Trap Host 5 IP Address: 0.0.0.0 Port: 162 Community: public

Trap Host 6 IP Address: 0.0.0.0 Port: 162 Community: public

Alarm

set trap

Syntax:

set trap <range>

Description:

To enable the trap of the events.

Argument:

<range>: set the range of trap, syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1~12

Example:

MCR12 (alarm-events)# set trap 1-3

set all

Syntax:

set all <range>

Description:

To enable email, sms and trap of events.

Argument:

<range>:set the range of email and trap of events, syntax 1,5-7, available from

1 to 12.

Possible value:

<range>: 1~22

Example:

MCR12 (alarm-events)# set all 1-3

del email

Syntax:

del email <range>

Description:

To disable the email of the events.

Argument:

<range>:del the range of email, syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1~12

Example:

MCR12 (alarm-events)# del email 1-3

del trap

Syntax:

del trap <range>

Description:

To disable the trap of the events.

Argument:

<range>:del the range of trap, syntax 1,5-7, available from 1 to 12.

Possible value:

<range>: 1~12

Example:

MCR12 (alarm-events)# del trap 1-3

del all

Syntax:

del all <range>

Description:

To disable email, sms and trap of events.

Argument:

<range>:del the range of email, sms and trap of events, syntax 1,5-7, available from

1 to 12.

Possible value:

<range>: 1~12

Example:

MCR12 (alarm-events)# del all 1-3

show

Syntax:

show

Description:

The Show here is used to display the configuration of alarm event.

Argument:

None.

Possible value:

None.

Example:

MCR12 (alarm-events)# show

Events Email SMS Trap

----

1 Cold Start v

2 Warm Start v

3 Link Down v

4 Link Up v

5 Authentication Failure v

6 User Login v

7 User Logout v

8 VDC Normal

9 VDC Over/Under v

10 Fan Normal

11 Fan Abnormal v

12 Power Inserted v

13 Power Abnormal v

14 Power Removed v

15 Temperature Normal

16 Temperature Abnormal v

17 Module Egress Rated BW changed v

18 Module Ingress Rated BW changed v

19 Module Inserted v

20 Module Removed v

21 Remote Fiber Link Up v

22 Remote Fiber Link Down v

23 Remote TP Link Up

24 Remote TP Link Down

<<email>>

set server

Syntax:

set server <ip>

Description:

To set up the IP address of the email server.

Argument:

<ip>:email server ip address or domain name

Possible value:

None.

Example:

MCR12 (alarm-email)# set server 192.168.1.6

set user

Syntax:

set user <username>

Description:

To set up the account of the email server.

Argument:

<username>: email server account

Possible value:

None.

Example:

MCR12 (alarm-email)# set user admin

set mail-address

Syntax:

set mail-address <#> <mail address>

Description:

To set up the email address.

Argument:

<#>: email address number, range: 1 to 6

<mail address>: email address

Possible value:

<#>: 1 to 6

Example:

MCR12 (alarm-email)# set mail-address 1 abc@mail.abc.com

del

Syntax:

del <#>

Description:

To remove the e-mail address.

Argument:

<#>: email address number, range: 1 to 6

Possible value:

<#>: 1 to 6

Example:

MCR12 (alarm-email)# del 2

show

Syntax:

show

Description:

To display the configuration of e-mail trap event.

Argument:

None.

Possible value:

None.

Example:

MCR12 (alarm-email)# show

Mail Server : 192.168.1.6

Username : admin

Password : ****************

Email Address 1: support@alloy.com.au

Email Address 2:

Email Address 3:

Email Address 4:

Email Address 5:

Email Address 6:

set user

Syntax:

set user <username>

Description:

To set up user account and password of sms server.

Argument:

<username>: SMS server account

Possible value:

None.

Example:

MCR12 (alarm-sms)# set user ABC

show (alarm)

Syntax:

show

Description:

The Show for alarm here is used to display the configuration of Trap, SMS or E-mail.

Argument:

None.

Possible value:

None.

Example:

MCR12 (alarm)# show events

MCR12 (alarm)# show email

MCR12 (alarm)# show sms

Management

add

Syntax:

Usage: set <name> <value>|<ip> <value>|<type> <value>|<action> <value>

Synopsis: set name Mary ip 192.168.1.1-192.168.1.90 type h,s action a

Synopsis: set name Mary ip 192.168.1.1-192.168.1.90

Description:

To save the adding management policy records.

When you don't know how to set the management policy records, you can use this

command as follows:

MCR12 (management-add)# set

This command will show exhaustive operating explanation for setting the management

policy records.

Argument:

[<name><value>] ACL entry name.

[<ip> <value>] IP range.

[<type> <value>] Access type.

[<action> <value>] a(ccept) or d(eny).

Possible value:

[<name> <value>] No default and it can be set or not.

[<ip> <value>] For example, 192.168.1.90-192.168.1.90 or any.

[<type> <value>] For example, h(ttp),s(nmp),t(elnet) or any.

[<action> <value>] No default and it must be set.

Example:

MCR12 (management-add)# set name Mary ip 192.168.1.1-192.168.1.90

type h,s action a

MCR12 (management-add)# show

#: 1

Name : Mary IP : 192.168.1.1-192.168.1.90

Type : Http,SNMP Action : Accept

edit [#]: the specific management policy entry. Available range: 1 to 125.

Syntax:

Usage: set <name> <value>|<ip> <value>|<type> <value>|<action> <value>

Synopsis: set name Mary ip 192.168.1.1-192.168.1.90 type h,s action a

Synopsis: set name Mary ip 192.168.1.1-192.168.1.90

Description:

To edit management policy record.

Argument:

[<name> <value>] ACL entry name.

[<ip> <value>] IP Range.

[<type> <value>] Access type.

[<action> <value>] a(ccept) or d(eny).

Possible value:

[<name> <value>] No default and it can be set or not.

[<ip> <value>] For example, 192.168.1.90-192.168.1.90 or any.

[<type> <value>] For example, h(ttp),s(nmp),t(elnet) or any.

[<action> <value>] No default and it must be set.

Example:

MCR12 (management)# edit 1

MCR12 (management-edit-1)# set name Tom ip 192.168.1.30-192.168.1.80

type s action d

MCR12 (management-edit-1)# show

#: 1

Name : Tom IP : 192.168.1.30-192.168.1.80

Type : SNMP Action : Deny

delete

Syntax:

delete #

Description:

To delete a specific record or range.

Argument:

[#]: a specific or range management policy entry(s)

Possible value:

None.

Example:

MCR12 (management)# show

#: 1

Name : Tom IP : 192.168.1.30-192.168.1.80

Type : SNMP Action : Deny

MCR12 (management)# delete 1

MCR12 (management)# show

Security rule list is empty now

show

Syntax:

show

Description:

To show the specific management policy record.

Argument:

None.

Possible value:

None.

Example:

MCR12 (management)# show

#: 1

Name : Tom IP : 192.168.1.30-192.168.1.80

Type : SNMP Action : Deny

Diag

ping

Syntax:

ping <ip>

Description:

To confirm that whether the remote end-station or switch itself is alive or not.

Argument:

<ip>: IP address or domain name

Possible value:

IP address, e.g. 192.168.2.65 or domain name, e.g. www.alloy.com.au

Example:

MCR12 (diag)# ping 192.168.1.105

Gateway : 192.168.1.254

Success rate is 100% (5/5) round-trip min/avg/max = 0.0/0.0/0.0 ms

diag

Syntax:

diag

Description:

Diag is used to test if UART, DRAM, Flash, Temperature, Voltage and Fan RPM are

normal or not.

Argument:

None.

Possible value:

None.

Example:

MCR12 (diag)# diag

UART Test : Ok

DRAM Test : Ok

Flash Test : Ok

Temperature Detection: Ok

Voltage Detection : Ok

Fan RPM Detection : Ok

Log

show log

Syntax:

show log

Description:

To display a list of trap log events. When any of log events happens, it will be recorded

and using show command in log function to query. Up to 160 log records are supported.

Argument:

None.

Possible value:

None.

Example:

MCR12 (log)# show log

No 1 Wed Sep 07 13:13:37 2005 Login [admin]

No 2 Wed Sep 07 13:12:33 2005 POWER A Removed

No 3 Wed Sep 07 13:12:28 2005 Cold Start

show tftp-server

Syntax:

show tftp-server

Description:

To show the current tftp setting.

Argument:

None.

Possible value:

None.

Example:

MCR12 (log)# show tftp-server

TFTP Server IP Address: 192.168.1.2

set tftp-server

Syntax:

set tftp-server <ip>

Description:

To set up the TFTP server IP address for exporting log file.

Argument:

<ip>: tftp server IP address or domain name

Possible value:

IP address, e.g. 192.168.2.65 or domain name, e.g. www.alloy.com.au

Example:

MCR12 (log)# set tftp-server 192.168.3.202

export

Syntax:

export

Description:

To export the current log file to the directory assigned by TFTP Server.

Argument:

None.

Possible value:

None.

Example:

MCR12 (log)# export

Firmware

set tftp-server

Syntax:

set tftp-server <ip>

Description:

To set up the TFTP server IP address or domain name for upgrading the system

firmware.

Argument:

<ip>: tftp server IP address or domain name

Possible value:

IP address, e.g. 192.168.2.65 or domain name, e.g. tw.yahoo.com

Example:

MCR12 (firmware)# set tftp-server 192.168.3.159

set upgrade-path

Syntax:

set upgrade-path <filepath>

Description:

To set up the file path and the filename for upgrading the firmware of the system.

Argument:

<filepath>: TFTP server file path

Possible value:

<filepath>: TFTP server file path

Example:

MCR12 (firmware)# set upgrade-path cr1200.bin.gz

upgrade

Syntax:

upgrade

Description:

To execute firmware upgrade. When finishing the upgrade process, you may choose

reboot directly by pressing 'Y' or 'y'; press other keys to return to the system.

Argument:

None.

Possible value:

None.

Example:

MCR12 (firmware)# upgrade

Upgrading firmware ...

Upgrade firmware successfully, Reboot the system

Press Y or y to reboot, others to exit :

show

Syntax:

show

Description:

To show the current firmware upgrade setting.

Argument:

None.

Possible value:

None.

Example:

MCR12 (firmware)# show

TFTP Server IP Address: 192.168.3.159

Path and Filename : cr1200.bin.gz

Config-file

set tftp-server

Syntax:

set tftp-server <ip>

Description:

To set up the tftp-server that you want to import or export configure file ip address.

Argument:

<ip>: tftp server ip address or domain name

Possible value:

IP address, e.g. 192.168.2.65 or domain name, e.g. tw.yahoo.com

Example:

MCR12 (config-file)# set tftp-server 192.168.2.30

set config-path

Syntax:

set config <filename>

Description:

To set up the path of configuration-path that you want to import or export configure file.

Argument:

<filename>: Import/Export file path and file name

Possible value:

<filename>: Import/Export file path and file name

Example:

MCR12 (config-file)# set config-path /config/configfile1

import

Syntax:

import

Description:

To execute the action of importing configure file.

Argument:

None.

Possible value:

None.

Example:

MCR12 (config-file)# import

Importing ...

export

Syntax:

export

Description:

To execute the action of exporting configure file.

Argument:

None.

Possible value:

None.

Example:

MCR12 (config-file)# export

Exporting ...

show

Syntax:

show

Description:

To show the information of TFTP Server IP Address as well as path and filename of

configure file.

Argument:

None.

Possible value:

None.

Example:

MCR12 (config-file)# show

TFTP Server IP Address: 192.168.2.30

Path and Filename : /config/configfile1

Hostname

hostname

Syntax:

hostname <name>

Description:

To change the hostname.

Argument:

<name>: hostname, max. 128 characters.

Possible value:

<name>: hostname, max. 128 characters.

Example:

MCR12# hostname Company

Company#

Autologout

autologout

Syntax:

autologout <time>

Description:

To set up the auto logout time. When you idle over the configuration time, the system

will auto logout.

Argument:

<time>: range 1 to 3600 seconds, 0 for autologout off

Possible value:

<time>: 0,1 to 3600

Example:

MCR12# autologout 5

Set autologout time to 5 seconds

Reboot

reboot

Syntax:

reboot

Description:

To reboot the system.

Argument:

None.

Possible value:

None.

Example:

MCR12# reboot

Appendix A

Technical Specifications

Features:

- Hot Swappable converter modules
- Hot Swappable CPU Module
- Hot Swappable redundant power supplies
- 1RU chassis accommodates up to 12 Media Converter Modules
- Supports fibre optic network OAM function for "Remote Failure Indication", "Remote Monitoring", "Remote Configuration" and "Loop back testing" with TS-1000 mechanism.
- Supports both Web, Telnet and CLI management interfaces
- Supports SNMPv2C
- Supports NTP
- 2 Fans and 'hot-cool-down' design to ensure the reliability of the chassis, with chassis temperature indication and fan speed detection.
- CPU Module has 2 Ethernet ports and 1 RS-232 DB-9 management interface
- Supports Link Fault Pass-Through (LFP)
- RoHS Compliant

Specifications:

Standards Compliance: IEEE 802.3, 802.3u, 802.3z and 802.3x

Management Port: *2x 10/100 UTP Ports and 1x DB-9 RS-232 Port.*

Input Power: 2x Load balanced redundant power supplies: 85W

Power Consumption: Min 6.5W, Max 42W

Cooling Fans: 2 fans with fan status monitoring

Temperature Detection: Temperature sensor to detect internal temperature

Flash: 2M bytes

CPU Main Memory: 16M bytes

LED Display:

      Management LED: Link/Act, Power A/B, CPU

      Converter: TP Link/Act/Speed, Fibre Link/Act, Power

Operating Temperature: 0 ~ 40°C

Storage Temperature: -20 ~ 70°C

Humidity: 5% ~ 95%

Dimensions: 445.6 x 347.2 x 45.4 (W x D x H) mm

Emissions: Complies with C-Tick, FCC Part 15 Class A & CE Approval

Ordering Information:

MCR12RAC	12-Slot Smart Media Converter Chassis with Dual AC Redundant Power Supply
MCR12RDC	12-Slot Smart Media Converter Chassis with Dual DC Redundant Power Supply
MCR12RADC	12-Slot Smart Media Converter Chassis with AC & DC Redundant Power Supply
MCR12AC	12-Slot Smart Media Converter Chassis with single AC Power Supply
MCR12DC	12-Slot Smart Media Converter Chassis with single DC Power Supply
MSPS1	AC Power Module
MSPS2	DC Power Module

Module Ordering Information:

10/100Base-TX to 100Base-FX Converter Modules	
MCR100SC	10/100Base-TX to 100Bse-FX Converter Module, SC Multimode
MCR100ST	10/100Base-TX to 100Bse-FX Converter Module, ST Multimode
MCR100SC.05	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 5Km
MCR100SC.20	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 20Km
MCR100SC.40	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 40Km
MCR100SC.60	10/100Base-TX to 100Bse-FX Converter Module, SC Single mode, 60Km
MCR100BS5.20	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 20Km, 1550nm
MCR100BS3.20	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 20Km, 1310nm
MCR100BS5.40	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 40Km, 1550nm
MCR100BS3.40	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 40Km, 1310nm
MCR100BS5.60	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 60Km, 1550nm
MCR100BS3.60	10/100Base-TX to 100Bse-FX Converter Module, Bidi SC Single mode, 60Km, 1310nm

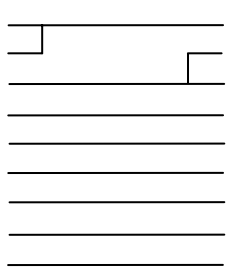| 1000Base-T to 1000Base-X Converter Modules	
MCR1000SC	1000Base-T to 1000Base-X Converter Module, SC Multimode
MCR1000SC.10	1000Base-T to 1000Base-X Converter Module, SC Single mode, 10Km
MCR1000SC.30	1000Base-T to 1000Base-X Converter Module, SC Single mode, 30Km
MCR1000SC.50	1000Base-T to 1000Base-X Converter Module, SC Single mode, 50Km
MCR1000BS5.20	1000Base-T to 1000Bse-X Converter Module, Bidi SC Single mode, 20Km, 1550nm
MCR1000BS3.20	1000Base-T to 1000Bse-X Converter Module, Bidi SC Single mode, 20Km, 1310nm

Appendix B

Null Modem Cable Specifications

The DB-9 cable is used for connecting a terminal or terminal emulator to the Managed Switch's RS-232 port to access the command-line interface.

The table below shows the pin assignments for the DB-9 cable.

Function	Mnemonic	Pin
Carrier	CD	1
Receive Data	RXD	2
Transmit Data	TXD	3
Data Terminal Ready	DTR	4
Signal Ground	GND	5
Data Set Ready	DSR	6
Request To Send	RTS	7
Clear To Send	CTS	8

9 Pin Null Modem Cable

CD	1		4	DTR
DSR	6		1	CD
DTR	4		6	DSR
RXD	2		3	TXD
TXD	3		2	RXD
GND	5		5	GND
RTS	7		8	CTS
CTS	8		7	RTS
Reserve	9	9	Reserve	