



iMux Modular Multiplexer System

Software Manual

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Every effort has been made to ensure that the information in this manual is accurate. RLH is not responsible for printing or clerical errors. Because we are constantly seeking ways to improve our products, specifications and information contained in this document are subject to change without notice.

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1. Introduction

Product Description

The iMux is a powerful fiber optic modular multiplexer capable of providing up to 16 channels of T1, RS232, 4 wire data/600 Ohm audio and analog phone FXO/FXS services, plus four built-in Gigabit Ethernet ports, over a single fiber. Each of these services are supplied by our communication modules, each module will transport up to 4 channels of the specified service and may be installed in any combination. Spares or add-on modules may be ordered separately and are field installable.

Gigabit SFPs are used for the back-haul fiber transport of the communication services. Each iMux will take up to 2 SFPs for redundancy. The SFPs are hot swappable and automatically fail over in case of a failure in the primary fiber path.

The iMux may be managed through SNMP, web Interface, craft port or menu keys on the front panel. It also has an external alarm port for alarm monitoring, as well as 4 programmable alarm contacts. The system provides local/ remote loopback functions that are ideal for network testing and maintenance.

Standard Features

Multiplexes up to 16 voice and data channels plus Gigabit Ethernet over a single fiber

Up to 4 modules (each with 4 channels) may be used in any combination to mix and match services

Convenient front LED status indicators

T1, RS232, POTS, & 4 Wire Data service modules

4 built-in Gigabit Ethernet ports

Aggregated Ethernet throughput are up to 800 Mbps

Supports VLAN/QOS and port rate control

SFP's are hot swappable & provide 1+1 redundancy

Ethernet Ports can be configured to be Isolated Channels or Shared.

Supports SNMP , HTTP / FTP / TFTP remote software upgradeable

Supports TELNET function to configure and monitor local and remote devices through TCP/IP network

The POTS modules support phone extensions as well as ring down.

Redundant 48VDC or AC/DC powering options

2. Configuration with a Web Browser

Establishing Connection to Device

RLH iMux may be configured and managed via an intuitive, web-based graphical user interface or GUI. The Web GUI may be accessed by any updated common web browser such as Microsoft Internet Explorer, Google Chrome, or Mozilla Fire Fox.

Default Settings

In most cases you will need to assign a temporary static IP to your workstation to initially access the switch web access page. The assigned temporary address should be within the same subnet as the default IP address.

Example Workstation Address:

- IP: 192.168.0.50
- Subnet: 255.255.255.0

Now access the device via: http://192.168.0.1

IP Address: 192.168.0.1 Subnet: 255.255.255.0

Username: admin Password: 1234

Default IP Address

Default Username/Password

🔍 🔍 📋 iMux-S Login	×	θ
\leftarrow \rightarrow C (i) 192.168.1.251	/login.asp	☆ :
	iMux-S Fiber Optical Multiplexer	
	User Name	
	Password	
	login	

Login Web Interface Screen

System Group

The System Group section is where a majority of device management and configuration procedures take place.

System Information

iMux-S	×		θ
← → C ① 192.168.1.251/		☆	:
📂 System Group		Logout	
System Information	Local		
Device Networking	System Name: RLH Test iMUX 1		
august and the second s	System Location: RLH Server Room		
🎭 SNMP Agent	System Contact: Ramin and Dave		
SW Upgrade and Reboot	System Clock: 2016 / 10 / 5 17 : 52 : 24 Set Clock		
Network Time	System Up Time: 4 days, 22: 55: 43		
🔳 Scheduling Job	For Software Version: 10.2		
Networking Service			
LCD Login Parameter	EtherSwitch Software Version: 1.0.0		
Event Class Processing	🛩 Confirm 🧳 Reset		
Event Alarm Processing			
Profile Management			
🗟 Config File Upload			
🗟 Config File Download			
🗑 HTTP File Transfer			

System Information Web Interface

Settings	Description
System Name	Enter the desired hostname of the device.
System Location	Enter the geographic location information of the device.
System Contact	Enter the name and/or contact information of the designated manager.
System Clock	Displays the current Date + Time configuration of the device. Displayed in as: Year /Month /Day HH : MM :SS
System Up Time	The amount of time that has passed since the last device boot.
Fom Software Version	Currently loaded multiplexer system software version.
EtherSwitch Software Version	Currently loaded Ethernet Switch software version.
Confirm	Apply Settings.
Reset	Remove unconfirmed settings.
Confirm Local + Remote	Apply settings to both the local and remote iMux units.

Device Networking

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\leftrightarrow \rightarrow C (i) 192.168.1.251/		\$:
🍃 System Group		Logout	
System Information	Local		
Device Networking	Device IP Address: 192.168.1.251		
al User Account	Device IP NetMask: 255.255.255.0		
🎭 SNMP Agent	Default Gateway IP Address: 192.168.1.1		
SW Upgrade and Reboot	IP Setup Mode: Set only Set and Apply		
🙆 Network Time	Running IP Status:		
🔳 Scheduling Job	Mac Address: F0:DA:7C:0F:6E:81		
Untworking Service	Running IP Address: 192 168 1 251		
LCD Login Parameter			
Event Class Processing	Running IP NetMask: 255.255.255.0		
Event Alarm Processing	Running Gateway IP Address: 192.168.1.1		
🗏 Profile Management	🛩 Confirm 🏼 🧐 Reset		
🗟 Config File Upload			
🗟 Config File Download			
TTP File Transfer			

Device Networking Web Interface

Sett	ings	Description
Device IP Ad	dress	Desired IP Address of the device.
Device IP Ne	tMask	Desired Ethernet Subnet Mask of the device.
Default Gate IP Address	way	IP Address of the network's Default Gateway.
IP Setup Set Only		Sets the IP values entered without saving or applying the new configuration.
Mode		NOTE: After confirming, the device configuration must be saved in the Profile Management section to save changes.
		NOTE: Reboot device to apply the new IP configuration.
	Set and Apply	Sets and applies the IP values entered without saving the new configuration to the running profile.
		NOTE: After confirming, the configuration must be saved on the Profile Management page to the applicable running profile.
IP Running		Displays the different device addresses.
Status	MAC Address	Displays the Media Access Control (MAC) Address of the device.
	IP Address	Displays the current working IP address of the device.
	IP NetMask	Displays the current configured IP Network Subnet Mask.
	Gateway IP Address	Displays the current configured IP address of the network's default gateway.

User Account

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📂 System Group									Logout	
System Information	Local									
👳 Device Networking	Edit	User Name	Password	Confirm Pass	Group	Auto	Logout	Status		
a User Account		admin	•••••	•••••	Admin \$	0	Secs	Enable 🛊		
🎭 SNMP Agent		operator		•••••	Control \$	0	Secs	Disable \$		
SW Upgrade and Reboot		monitor			Monitor \$	0	Secs	Disable \$		
🙆 Network Time	+ Add				Admin 🛔	0	Secs	Enable 🔹		
🔳 Scheduling Job	1 744						5603			
Networking Service			6	Edit X Delet	e					
LCD Login Parameter										
Event Class Processing										
 Event Alarm Processing 										
🗏 Profile Management										
🗟 Config File Upload										
🗟 Config File Download										
🗑 HTTP File Transfer										

User Account Web Interface

Setting	IS	Description
Edit		Account selection box to left of the user account being modified.
		Note: usernames may not be altered after the accounts are created.
	Add	Complete the new user account information and click the button to create.
	Edit	Button to modify the user account(s) that are selected in the edit column.
	Delete	Button to remove the user account(s) that are selected in the edit column.
User Name		Create a Username using 1-8 characters. (letters, numbers, and symbols)
Password		Create a Password using 1-8 characters. (letters, numbers, and symbols)
Confirm Passwo:	rd	Verify password by typing in the same password as in the Password field.
Group		Required to determine the level of access the user is granted to the system.
	Admin	Access to all levels and areas of the system are granted.
Edit Delete User Name Password Confirm Password Group Admin Contro Monito Auto-Logout Status Enable Disabl		Administer all areas of the system outside of the System Group sub menu.
	Monitor	Users will only be able to monitor the status of the system.
Auto-Logout		Specifies the amount of time, in seconds, that will pass before the user is automatically logged out of the system and will be forced to log in again.
Status	Enable	Enable the user account and allow the user to log in.
	Disable	Disable the user account and prevent the user from logging in to the system.
		Note: Message sent to user to check username and password information.

SNMP Agent

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← → C ① 192.168.1.251/		☆	:
📂 System Group		Logout	
System Information	Local		
喿 Device Networking 🍓 User Account	Trap IP Address 1: 0.0.0.0 Port: 162		
🎭 SNMP Agent	Trap IP Address 2: 0.0.0 Port: 162		
SW Upgrade and Reboot	Trap IP Address 3: 0.0.0.0 Port: 162		
Network Time	Trap IP Address 4: 0.0.0.0 Port: 162		
🔳 Scheduling Job	Read Community Name: public		
Networking Service	Write Community Name: private		
LCD Login Parameter	Trap Community Name: public		
Event Class Processing	Sond Some Authentication Eailure Trans CNe. OVec		
Event Alarm Processing	Send Shimp Authentication Failure Trap: ONO Ores		
Profile Management	Seset		
🗟 Config File Upload			
🗟 Config File Download			
TTP File Transfer			J

SNMP Agent Web Interface

Settings		Description
Trap IP	1~4	Enter the IPv4 Address of the SNMP trap into the designated field.
Address	Port	Enter the Port number of the SNMP trap in the designated field.
Read Community Name		Enter the desired SNMP Read Community Name of the device.
Write Community N	Jame	Enter the desired SNMP Write Community Name of the device.
Trap Community Name		Enter the desired SNMP Trap Community Name of the device.
Send SNMP		Determines whether the device will transmit SNMP authentication traps.
Authentication	Yes	SNMP trap will be transmitted on SNMP authentication failure.
	No	SNMP trap will not be transmitted on SNMP authentication failure.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local + F	Remote	Apply settings to both the local and remote iMux units.

SW Upgrade and Reboot

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彦 System Group	1	Logout	
System Information	Local		
👳 Device Networking			
a User Account			
🎭 SNMP Agent	Access Protocol: FTP \$		
SW Upgrade and Reboot	Server IP Address: 0.0.0.0		
🕗 Network Time	Fom File Name (.cmp):		
🔳 Scheduling Job	EtherSwitch File Name (.wrp):		
Networking Service	Chin Eile Name (ume)		
LCD Login Parameter			
 Event Class Processing 	Login User Name:		
Event Alarm Processing	Login Password:		
🖹 Profile Management	🖌 Confirm 🔘 UpGrade 🚺 Reboot		
🗟 Config File Upload			
🗟 Config File Download			
💽 HTTP File Transfer			

SW Upgrade and Reboot Web Interface

Software Source - FTP/TFTP

Settings	Description	
FTP/TFTP	Access upgrade files from a configured FTP or TFTP server on the network.	
Access Protocol	Select the desired file transfer protocol from the drop down menu.	
Server IP Address	Enter the IP Address of the file server to access the upgrade files.	
Image File Name (.cmp)	Name must be exactly as it is saved on the file server, case sensitive.	
EtherSwitch File Name (.wrp)	Name must be exactly as it is saved on the file server, case sensitive.	
Chip File Name (.vme)	Name must be exactly as it is saved on the file server, case sensitive.	
Login User Name	Enter the username of the account that will be used to access the file server.	
Login Password	Enter the password of the account that will be used to access the file server.	
Confirm	Checks validity of the entered information prior to initiation of upgrade.	
Upgrade	Initiates the upgrade operation on the respective device once its been confirmed.	
Reboot	Initiates the reboot with the upgraded files to the respective device.	
Confirm Local + Remote	Checks validity of the entered information for both devices simultaneously prior to initiation of upgrade.	

Software Source - Local File

Settings	Description	
Local File	Access local files to upload stored in local device storage.	
Confirm	Checks validity of the entered information prior to initiation of upgrade.	
Upgrade	Initiates the upgrade operation on the respective device once its been confirmed.	
Reboot	Initiates the reboot with the upgraded files to the respective device.	
Confirm Local + Remote	Checks validity of the entered information for both devices simultaneously prior to initiation of upgrade.	

Software Source - HTTP

Settings	Description	
HTTP Upload a configuration file from your workstation via HTTP.		
Image File	Click Choose File to select the desired upgrade file from the workstation storage.	
Confirm	Checks validity of the entered information prior to initiation of upgrade.	
Upgrade	Initiates the upgrade operation on the respective device once its been confirmed.	
Reboot	Initiates the reboot with the upgraded files to the respective device.	
Confirm	Checks validity of the entered information before starting the upgrade.	

Network Time

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\leftrightarrow \rightarrow C (i) 192.168.1.251/		☆	:
 System Group System Information Device Networking User Account SNMP Agent SW Upgrade and Reboot Network Time Scheduling Job 	Local System Clock: 2016 / 10 / 5 17 :59 :11 Clock Server IP Address: 0.0.0.0 Time Zone: GMT + ✓ Confirm @ Synchronize	Logout	
Q Networking Service LCD Login Parameter Curvent Class Processing Event Alarm Processing Profile Management Config File Upload Config File Download F HTTP File Transfer			

Network Time Web Interface

Settings	Description			
System Clock	Displays the current Date + Time configuration of the device.			
	Year / Month / Day, HH : MM : SS			
Clock Server IP Address	Enter the IPv4 address of the NTP server on the network (local or internet) that will provide the current time and date.			
Time Zone	Select the desired time zone from the drop down menu.			
Confirm	Checks validity of the new settings prior to synchronizing the devices.			
Synchronize	Click to open the synchronization dialogue box.			
	Operation target menu options include local, remote, or local + remote.			
Reset	Reverts any unconfirmed changes to the settings back to their unaltered state.			
Confirm Local + Remote	Checks validity of the entered information for both devices simultaneously prior to synchronization.			

Scheduling Job

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📂 System Group		Logout	
System Information	Local		
Device Networking	Operation Job Type Time Type Interval/Time Job Status		
a User Account	No cobeduling job available!		
🎭 SNMP Agent			
SW Upgrade and Reboot	Add New Job		
Network Time			
🔳 Scheduling Job			
Networking Service			
LCD Login Parameter			
Event Class Processing			
Event Alarm Processing			
Profile Management			
🗟 Config File Upload			
🗟 Config File Download			
💽 HTTP File Transfer			

Scheduling Job Web Interface

Settings		Description
Operation		Lists the existing scheduling job operations. Edit of delete them by clicking on the corresponding button to the left.
Job Type		There are 3 types of jobs available
	Periodic	The job is performed repeatedly over the time interval that is designated.
	One Shot	A single instance of the job is performed after the designated time interval.
	Booting	The job is carried out on system boot.
Time Type		There are 2 Time Types available.
	Interval	The time interval may be a whole number of minutes from 1 to 3000.
	Day	A daily designated time that is executed on a 24 hour time interval.
Interval/Tim	ie	Displays the configured time interval or daily run time of the scheduled job.
Job		Schedule any of the following job types: Send Schedule Trap, Time Sync Trap, Software Upgrade, Network Time Sync, System Reboot, Config Upload, Config Download, or Do Nothing.
Status		Displays the running status of the scheduled job.
	Completed	Denotes a job that has occurred and is not scheduled to occur again in the future.
	Waiting	Denotes a job that is scheduled to run in the future.
Add New Job		Click the button to open the Add New Scheduling sub window.

Network Service

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\leftrightarrow \rightarrow C (i) 192.168.1.251/					☆ :
📂 System Group					Logout
System Information	Local				
Several Section Sectio	Server	Service	Port No	1	
august User Account	SNMP Agent:	ON \$	161		
🎭 SNMP Agent	TELNET Server:	ON \$			
SW Upgrade and Reboot	ETD Convers				
Network Time	FIP Server:				
🔳 Scheduling Job	Web Server:	ON \$	80		
Networking Service	All Service:	Select \$			
LCD Login Parameter					
Event Class Processing				Confirm Seset	
Event Alarm Processing					
Profile Management					
🗟 Config File Upload					
🗟 Config File Download					
💽 HTTP File Transfer					

Network Service Web Interface

Settings		Description
SNMP Agent	ON	Enable Device SNMP Agent.
	OFF	Disable Device SNMP Agent.
	Port No	Enter the desired IP port through which the SNMP Agent will be available. Entered value must be between 1 and 65535.
Telnet Server	ON	Enable Device Telnet.
	OFF	Disable Device Telnet.
FTP Server	ON	Enable Device FTP.
	OFF	Disable Device FTP.
Web Server	ON	Enable Device Web Server.
	OFF	Disable Device Web Server.
	Port No	Enter the desired IP port that the iMux Web Server will be available. Entered port value must be between 1 and 65535.
All Service	Select	Default setting. Enable or disable all services by selecting ON or OFF.
	ON	Enable ALL network services listed above.
	OFF	Enable ALL network services listed above.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local + H	Remote	Apply settings to both the local and remote iMux units.

LCD Login Parameters

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\leftrightarrow \rightarrow C (i) 192.168.1.251/		☆ :
System Group		Logout
 System Information Device Networking User Account SNMP Agent SW Upgrade and Reboot Network Time Scheduling Job Networking Service LCD Login Parameter Event Class Processing Event Alarm Processing Profile Management Config File Upload Config File Download HTTP File Transfer 	Local LCD Login: Enable \$ Auto LCD Logout Seconds: 0 Auto Backlight Off Seconds: 600 LCD Pass Key 1: Home \$ LCD Pass Key 5: Home \$ LCD Pass Key 2: Up \$ LCD Pass Key 6: Up \$ LCD Pass Key 3: Down \$ LCD Pass Key 7: Down \$ LCD Pass Key 4: Right \$ LCD Pass Key 8: Right \$ ✓ Confirm \$ Reset	

LCD Login Parameters Web Interface

Settings		Description
LCD Login		LCD Panel can be used to login the device.
	Disable	Disables login via the LCD Panel.
	Enable	Enables login via the LCD Panel.
Auto LCD Log Out	Seconds	Enter the number of minutes of inactivity that will elapse before the logged in user is automatically logged out.
Auto Backlight Of Seconds	f	Enter the number of minutes of inactivity that will elapse before the LCD backlight turns off.
LCD Pass Keys 1~8		The LCD panel password consists of 8 button presses using the Home, Up, Down, and Right keys.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local + F	Remote	Apply settings to both the local and remote iMux units.

Event Class Processing

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芦 System Group		Logout
System Information	Local	
👷 Device Networking	Event Class Save Flash Send Trap	
a User Account		
🎭 SNMP Agent		
SW Upgrade and Reboot		
Network Time	Operation: No	
🔳 Scheduling Job	Select All: Select \$ Select \$	
Networking Service	🖌 Confirm 🗳 Reset	
LCD Login Parameter		
Event Class Processing		
Event Alarm Processing		
Profile Management		
🗟 Config File Upload		
🗟 Config File Download		
Transfer File Transfer		

Event Class Processing Web Interface

Settings	Description
Event Class	Indicates the class of event that is being considered for logging.
	Use the respective dropdown menu to determine the instances for each.
Save Flash	Determines the instances to be saved to device flash storage.
Send Trap	Determines the instances that will trigger SNMP Traps to be sent.
Config	Includes any configuration changes events that are made to the system.
Alarm	System alarm events.
Operation	System operational events that are not listed as alarm events.
Select All	Set all above mentioned Event Classes simultaneously.
Confirm	Apply Settings.
Reset	Remove unconfirmed settings.
Confirm Local + Remote	Apply settings to both the local and remote iMux units.

Event Alarm Processing

🖲 😑 🕒 🗋 iMux-S	×/					θ
\leftrightarrow \rightarrow C (i) 192.168.1.25	1/				\$]:
赺 System Group					Logou	ıt
System Information	Local					
Device Networking	Alarm Svrity	Save Flash	Send Trap			
al User Account	Critical	No 1	No 1			
🎭 SNMP Agent	Maiam					
SW Upgrade and Reboot	Major:	NO Ç	NO Ç			
Network Time	Minor:	No 🗘	No 🗘			
🔳 Scheduling Job	Warning:	No 🗘	No 🗘			
Networking Service	Message:	No 🗘	No 🛊			
LCD Login Parameter	Select All:	Select \$	Select \$			
Event Class Processing						
Event Alarm Processing			√ C	Confirm 🤊 Reset		
Profile Management						l.
🗟 Config File Upload						
🗟 Config File Download						
🗑 HTTP File Transfer						

Event Alarm Processing Web Interface

Set	ttings		Description
Alarm Svrit	У		Alarm Severity describes the degree or severity of the system notice.
			Use the respective dropdown menu to determine the instances for each.
	Save	Flash	Determines if the event will be saved to flash memory on the device.
	Send	Trap	Determines if the event will result in the transmission of an SNMP trap.
Critical			Critical Alarm Class is the most serious system message classification available.
Major			Major Alarm Class is the next level down from Critical.
Minor			Minor Alarm Class is the next level down from Major.
Warning			Warning Alarm Class is the next level down from Minor.
Message			Message Alarm Class is the next level down from Warning and is also the lowest system alert level classification.
Select All			Each respective drop down menu is used to configure the Yes/No setting for all alarm classes in the Save Flash or Send Trap Columns.
Confirm			Apply Settings.
Reset			Remove unconfirmed settings.
Confirm Loc	al +	Remote	Apply settings to both the local and remote iMux units.

Profile Management

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\leftrightarrow \rightarrow C (i) 192.168.1.251/					☆	:
📂 System Group					Logout	t
System Information	Local					
👻 Device Networking	Operation	Profile Id	Booting	Modification		
all User Account	E Sava Aland	Profile T	~			
🎭 SNMP Agent	Save Coau	Prome I	^			
SW Upgrade and Reboot	Save ULoad	Profile II				
Network Time	😃 Load	Factory Default				
🔳 Scheduling Job	😃 Load	Factory Default(192.168.0.1)				
Networking Service						
LCD Login Parameter	Auto-Saving: OFF	Auto-Saving Interval: 1	inutes			
Event Class Processing			ind cos			
Event Alarm Processing		🛩 Confirm 🧳 Re	set			
Profile Management						
🗟 Config File Upload						
🗟 Config File Download						
💽 HTTP File Transfer						

Profile Management Web Interface

Settin	gs	Description
Operation		Save or Load system configurations to/from the Profile ID locations.
	Save	Saves the current system configuration to the respective Profile ID.
	Load	Loads the stored system configuration from the respective Profile ID.
Profile ID		The locations in the system memory that the configuration can be saved.
Profile Save/Lo	I ad	The first system configuration storage location.
Profile Save/Lo	II ad	The second system configuration storage location.
Factory Load On	Default ly	The first of two factory default configuration storage location.
Factory (192.16 Load On	Default 8.0.1) ly	The second of two factory default configuration storage location has an IP address.
Booting		Identifies the profile or configuration image file that was booted and applied on the last system startup.
Modification	S	Identifies that changes have been made to the respective configuration profile that have not been saved yet.
Auto Saving		Enable to auto-save the system configuration over the defined time interval.
Auto Saving		The time interval in minutes between Auto-Save operations being carried out.
Interval	Minutes	A value of 1 - 999 is accepted.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.

Configuration File Upload

iMux-S	×		θ
← → C ③ 192.168.1.251/		$\overrightarrow{\mathbf{x}}$:
📂 System Group	U	ogout	
 System Information Device Networking User Account SNMP Agent SW Upgrade and Reboot Network Time Scheduling Job Networking Service LCD Login Parameter Event Class Processing Event Alarm Processing Profile Management Config File Upload 	Local Access Protocol: FTP Server IP Address: 0.0.0.0 File Name: Login User Name: Login Password Name: File Name Extension: None		

Configuration File Upload Web Interface

Settings		Description
Access		Select the protocol to upload the configuration file.
Protocol	TFTP	Trivial File Transfer Protocol.
	FTP	File Transfer Protocol.
Server IP Addre	ss	Enter the IPv4 address of the FTP/TFTP Server the file will be uploaded.
File Name		Enter the desired filename of the uploaded configuration file.
Login User Name		Enter the username of the account used to log in to the FTP/TFTP Server.
Login Password Name		Enter the password of the account used to log in to the FTP/TFTP Server.
File Name Extension		Select the system attribute (if any) to be used as a file extension for the uploaded config file. The list is in the following table below.
Confirm		Apply Settings.
Upload		File configuration procedure using the information entered.
Reset		Remove unconfirmed settings.
Confirm Local +	Remote	Apply settings to both the local and remote iMux units.

File Name Extension Options

Settings	Description
None	No file extension is added to the configuration file name.
System Name	Hostname of the device will be used.
Device IP	IPv4 address of the device will be used.
Site	Site attribute of the device will be used.
System Name + Device IP	Hostname and IPv4 address of the device will be used.
System Name + Site	Hostname and site attribute of the device will be used.
Device IP + Site	IPv4 address and site attribute of the device will be used.
System Name + Device IP + Site	Hostname, IPv4 address, and site attribute of the device will be used.

Configuration File Download

🖲 🔍 🕒 🕒 iMux-S	×		0
← → C 🛈 192.168.1.251	1	☆	÷
📂 System Group		Logout	
System Information			
👽 Device Networking			
a User Account	Software Source: Remote Server \$		
🎭 SNMP Agent	Access Protocol: FTP \$		
SW Upgrade and Reboot	Server IP Address: 0.0.0.0		
🕗 Network Time	File Name:		
🔳 Scheduling Job			
Networking Service			
LCD Login Parameter	Login Password Name:		
Event Class Processing	File Name Extension: None		
Event Alarm Processing	🛩 Confirm 🔯 Download 🏼 🔊 Reset		
🗧 Profile Management			
🗟 Config File Upload			
🗟 Config File Download			
NTTP File Transfer			

Configuration File Download Web Interface

Settings	Description
Software Source	Use the drop down menu to download file via FTP/TFTP or from a local file.
Remote Server	Displays the FTP/TFTP download parameter dialogue boxes.
Local File	Displays a list of available local files for selection.
Access Protocol	Select either protocol to be used when uploading the configuration file.
TFTP	Sets the Trivial File Transfer Protocol when uploading the configuration file.
FTP	Sets the File Transfer Protocol when uploading the configuration file.
Server IP Address	Enter the IPv4 address of the FTP/TFTP Server to upload the file to.
File Name	Enter the desired filename of the uploaded configuration file.
Login User Name	Enter the username of the account used to log in to the FTP/TFTP Server.
Login Password	Enter the password of the account used to log in to the FTP/TFTP Server.
File Name Extension	Select what system attribute (if any) will be used as a file extension for the uploaded configuration file. The list is in the table on the following page.
Confirm	Apply Settings.
Download	File configuration procedure using the information entered.
Reset	Remove unconfirmed settings.
Confirm Local + Remote	Apply settings to both the local and remote iMux units.

NOTE: The File Name Extension Option list can be found on the following page.

File Name Extension Options

Settings	Description
None	No file extension is added to the configuration file name.
System Name	Hostname of the device will be used.
Device IP	IPv4 address of the device will be used.
Site	Site attribute of the device will be used.
System Name + Device IP	Hostname and IPv4 address of the device will be used.
System Name + Site	Hostname and site attribute of the device will be used.
Device IP + Site	IPv4 address and site attribute of the device will be used.
System Name + Device IP + Site	Hostname, IPv4 address, and site attribute of the device will be used.

HTTP File Transfer

🖲 😑 🕒 🕒 iMux-S	×	Θ
\leftrightarrow \rightarrow C (i) 192.168	3.1.251/	☆ :
📂 System Group		Logout
🧱 System Information	Local	
👳 Device Networking		
august Scount 🔒	Operation Available Local File File Size	
🎭 SNMP Agent	X Delete ConfLo.xml 55684	
SW Upgrade and Reboot	X Delete ConfRe.xml 55684	
Network Time	EventLog.TXT.0 5536	
E Scheduling Job	Select file: Choose File No file chosen	
Networking Service		
LCD Login Parameter		
Event Class Processing		
Event Alarm Processing		
Profile Management		
🔄 Config File Upload		
🗟 Config File Download		
TTP File Transfer		

HTTP File Transfer Web Interface

Settings		Description		
Operation		Add or delete files to the device memory.		
Dele	ete	Delete the respective file from the device memory.		
Available Local	File	The file names of the available files are listed in this column.		
File Size		Displays the file size. (In Bytes)		
Select File		Dialog box used to select a file to upload.		
Choo	ose File	Select a file from the local PC workstation in use.		

Optical Configuration

The iMux system optical network device parameters and redundancy configuration may be managed from the Optical Configuration section.

Optical Configuration Settings

🖲 😑 🕒 🕒 iMux-S	×		θ
\leftrightarrow \rightarrow C (i) 192.168.1.251/		☆	:
🍃 System Group		Logout	t
🚰 Optical Config	Local		
📂 Tributary Parameters			
📂 Ethernet Parameters	Aggr Circuit Identifier:		
📂 Performance Management	OE 1 Circuit Identifier:		
📂 Fault Management	OE 2 Circuit Identifier:		
🔀 External Clock	Working OE: 1 + ALS: OFF +		
🌮 OE Protection Switching	Standby OE Service: ON \$		
🌮 SFP Information			
Equipment Monitoring	APS: ON Q		
📂 Performance Monitoring	OE Revertive: ON \$		
🤱 Alarm Monitoring	OE Locked: ON \$		
👌 MAC Address Monitoring	OE Locked Rule: 10 min 6 times OE Lock AutoRel Sec: 3600		
Loopback/V.54 Testing	Confirm Desat		
🌽 PRBS Testing	V Commin V Keset		
Event Browsing			

Optical Configuration Settings Web Interface

Settings	Description
Aggr Circuit Identifier	Name and identify the optical circuits of the connected iMux devices.
OE 1 Circuit Identifier	Enter the desired name of the Primary Optical Circuit.
OE 2 Circuit Identifier	Enter the desired name of the Secondary / Redundant Optical Circuit.
Working OE	Allows the administrator to designate the primary working optical circuit.
ALS	Automatic Laser Shutdown, system will automatically terminate all light transmission when a fiber break is detected by either system.
	NOTE: Both sides of the fiber interface must have ALS enabled, ON.
	NOTE : Prevents dangerous light levels from being emitted from broken fibers when they are unintentionally severed.
Standby OE Service	Enables the system to automatically switch over to the alternate optical circuit in the event communications become impossible on the primary circuit.
APS	Enables Automatic Protection Switching.

NOTE: Optical Configuration settings are continued on the following page.

Optical Configuration Settings Continued...

	S	ettings		Description
OE	Reverti	ve		Dictates the system behavior after restoring the primary optical circuit function.
			ON	System will revert to the primary optical circuit when connection is restored.
			OFF	Administrator must login to manually switch to the primary optical circuit.
OE	Locked			Enable lock rule threshold by selecting ON and set the rule below.
OE	Locked	Rule		Sets frequency threshold of communication failure events detected on the primary fiber circuit before the secondary optical path locks until the primary path reliability improves.
			Min	Optical circuit error threshold count time interval. Specified in minutes.
			Times	Defines the threshold for the frequency of communication errors on the given optical circuit for the above defined time interval.
OE	Locked	AutoRe	al Sec	Defines the time interval, in seconds, that the OE lock remains engaged.
Co	nfirm			Apply Settings.
Re	set			Remove unconfirmed settings.
Co	nfirm Lo	cal +	Remote	Apply settings to both the local and remote iMux units.

Tributary Parameters

Tributary refers to the 4 slots in the rear of the iMux-S where the different types of communications modules may be installed and utilized. The Tributary Parameters section allows administrators to enable and configure the communications modules installed in the tributary slots.

T1 Configuration

Fributary Parameters								lor
		al						LUS
T1 Config								
	T1 Ir	terface	Parameters				Slot: All 🗘 Cł	iannel: All 🗘
EV35 Conng				Slot 1				
	Edit	Ch#	Circuit	id Serv	vice	Coding	Framing	T1 LBO
RS232 Config	0	Ch1	CH 1	IS	\$	B8ZS \$	ESF \$	0-133 ft 🛊
RS232E Config		Ch2	СН 2	IS	¢	B8ZS \$	ESF \$	0-133 ft 🛊
2W/4W Config		Ch3	СН 3	IS	\$	B8ZS \$	ESF \$	0-133 ft 🛊
E&M Config		Ch4	CH 4	IS	•	B8ZS \$	ESF \$	0-133 ft 🛊
TSA Config							<u> </u>	
	Y			Slot 4				
	Edit	Ch#	Circuit	ld Serv	vice	Coding	Framing	T1 LBO
		Ch1		00	S \$	B8ZS \$	Unframe \$	0-133 ft 🗳
		Ch2		00	S \$	B8ZS \$	Unframe \$	0-133 ft 🗳
		Ch3		00	s \$	B8ZS \$	Unframe \$	0-133 ft 🛊
		Ch4		00	s \$	B8ZS \$	Unframe \$	0-133 ft 💠
								C + 11 - 1

T1 Configuration Web Interface

Settings		Description
T1 Interface		Configure T1 service module circuits to the respective tributary slot.
Parameters	Slot	Identifies slot module is located in (1-4).
	Channel	Identifies the interfaces position in the Module.
slot 1~4	Edit	Must be selected when editing parameters on the interface.
	All	When selected all channels in the slot will be updated.
	Ch#	Identifies the channel being updated.
	Circuit ID	Naming space to include circuit details or description.
	Service	IS - In Service - Indicates the channel is active.
		OOS - Out of service - Indicates the channel is disabled.
	Coding	AMI or B8ZS.
	Framing	ESF, SF, Unframed.
	T1 LBO	Adjusts the gain based on the length of copper present. 0-133 ft, 133-266 ft, 266-399ft, 399-533ft, 533-655ft
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local	+ Remote	Apply settings to both the local and remote iMux units.

FXO/FXS Configuration

0 192.100.1	.2017		}
ributary Parameters			Logo
E1 Config	Local		
T1 Config	FXO/FXS Interface Paramete	rs.	Slot: All & Channel: All &
V35 Config			
FXO/FXS Config		Slot 1	
RS232 Config	Edit Ch#	Circuit Id	Service
RS232E Config	Ch1		005 \$
2W/4W Config	Ch2		00S \$
E&M Config	Ch3		00S \$
TSA Config	□ Ch4		OOS \$
	Ý	Slot 4	
	Edit Ch#	Circuit Id	Service
	□ Ch1		OOS 🗘
	□ Ch2		OOS \$
	□ Ch3		OOS \$
	Ch4		OOS \$
			All 🗘

POTS (FXO/FXS) Configuration Web Interface

Settin	igs	Description			
FXO/FXS		Configure POTS service module circuits to the respective tributary slot.			
Interface Parameters	Slot	Identifies slot module is located in (1-4).			
	Channel	Identifies the interfaces position in the Module.			
slot 1~4	Edit	Must be selected when editing parameters on the interface.			
	A11	When selected all channels in the slot will be updated.			
	Ch#	Identifies the channel being updated.			
	Circuit ID	Naming space to include circuit details or description.			
	Service	IS - In Service - Indicates the channel is active.			
		OOS - Out of service - Indicates the channel is disabled.			
Confirm		Apply Settings.			
Reset		Remove unconfirmed settings.			
Confirm Local	+ Remote	Apply settings to both the local and remote iMux units.			

RS-232 Configuration

🖲 🔍 🕒 🕒 iMux-S	×			
← → Ĉ 🛈 192.168.1.251/				\$
📂 Tributary Parameters				Logout
₩E1 Config	Local			
₩T1 Config	RS232 Interface Parame	ters	Slot:	All 🗘 Channel: All 🗘
₩V35 Config		Slot 1		
FXO/FXS Config	Edit Ch#	Circuit Id	Service	DataReadyDetect
Im RS232 Config		circuit Iu		Enable 1
🖼 RS232E Config				Enable \$
₩2W/4W Config				Enable \$
🚂 E&M Config				Enable \$
IIII TSA Config				
Ν.	<u> </u>	Slot 4		1
	Edit Ch#	Circuit Id	Service	DataReadyDetect
	Ch1		OOS \$	Enable 🗘
	Ch2		OOS \$	Enable 🗘
	Ch3		OOS \$	Enable 🗘
	Ch4		OOS \$	Enable 🗘
			All 🗘	All 💠
		🛩 Confirm 🥑 Re	eset	

RS-232 Configuration Web Interface



Svnc/DCE (DB-9 Male) Pin Detail

Sett	ings	Description
RS-232		Enable or disable RS-232 service module circuits in the respective tributary slot.
Interface Parameters	Slot	Identifies the slot module is located in (1-4).
	Channel	Identifies the position of the interface in the module.
slot 1~4	Edit	Must be selected when editing parameters on the selected interface.
	All	Configuration updates will apply to all channels/circuits.
	Ch#	Identifies the channel being updated.
	Circuit ID	Naming space to include circuit details or description.
	Service	IS - In Service - Indicates the channel is enabled.
		OOS - Out of service - Indicates the channel is disabled.
Data	aReadyDetect	Enable or disable the following pins: DCD, DTR, DSR, RTS, CTS.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Loca	al + Remote	Apply settings to both the local and remote iMux units.

2W/4W Configuration

→ C ① 192.168.1.	251/		7
> Tributary Parameters			Log
JE1 Config	Local		
FI Config	2W/4W Analog Interface Para	meters	Slot: All 🗘 Channel: All 🗘
W35 Config		Slot 1	
FXO/FXS Config	Edit Ch#	Circuit Id	Service
RS232 Config			005 \$
RS232E Config			005 \$
🖼2W/4W Config			005 \$
₩ E&M Config			005 \$
Ima TSA Config			
	Y	Slot 4	
	Edit Ch#	Circuit Id	Service
	□ Ch1		OOS \$
	□ Ch2		OOS \$
	□ Ch3		OOS \$
	Ch4		OOS \$
			All 🗘

2W / 4W Analog Data Configuration Web Interface

Analog Channel	Pin	Description
Input	1	Tip
input	4	Ring
Output	2	Tip
	3	Ring
	Analog Channel Input Output	Analog ChannelPinInput14Output23

2W/4W Interface Pin Detail

Note: This 2W/4W module interface only supports unidirectional 2W analog data transmission. 2W data signals transmit over Pins 1/4, with the signals received on Pins 2/3 of the opposing module.

Settin	gs	Description
2W/4W Analog		Configure 2W/4W Analog module circuits to the respective tributary slot.
Interface Parameters	Slot	Identifies the modules located in slots (1-4).
	Channel	Identifies the interfaces position in the Module.
slot 1~4	Edit	Must be selected when editing parameters on the interface.
	A11	Select to update all channels in the slot.
	Ch#	Identifies the channel being updated.
	Circuit ID	Naming space to include circuit details or description.
	Service	IS - In Service - Indicates the channel is active.
		OOS - Out of service - Indicates the channel is disabled.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local	+ Remote	Apply settings to both the local and remote iMux units.

Ethernet Parameters

The configuration of the iMux Ethernet network ports are controlled and managed in this section.

General Configuration

🗧 🔍 🕒 🕒 iMux-S	×	θ
\leftarrow \rightarrow C (1) 192.168.1.2	251/	☆ :
📂 Ethernet Parameters		Logout
General Config	Local	
Port Config	Run Mode: P2P 💠	
Link Parameters	Age Time: 300 seconds(0=disable, 10-1000000 seconds)	
MAC Parameters	Rate Unit: 1000 kbps(2-32000 kbps)	
2005 Bandwidth Limit	Confirm Desat	
QOS Port		
QOS Tag Priority		
VLAN Port		
📊 VLAN Table		
MAC Address Table		
Port Aggregation		
Port Mirror		

General Ethernet Configuration Web Interface

Settin	gs	Description
Run Mode		Configure the Ethernet ports as either P2P or Switch.
	P2P	The Ethernet port is connected ONLY to the corresponding Ethernet Port on the Remote system. The VLAN configuration is disregarded.
	Switch	The Ethernet port is connected and acting as a managed switch, VLAN, Rate Limiting, and QoS Configuration will apply.
Age Time		Specifies the aging time of the auto-learned MAC Addresses (Default value is 300 seconds, 0 seconds disables auto-learning).
Rate Unit		Specifies the rate unit to be used for bandwidth shaping and policing.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local +	Remote	Apply settings to both the local and remote iMux units.

Port Configuration

🔴 🔍 🗋 iMux-S	×					
ightarrow $ ightarrow$ $ ightarrow$ 192.168.1.	251/				T	2
Ceneral Config	Local				Log	out
Port Config	Ethernet Port Paramete	rs				
Link Parameters	Edit Port#	Circuit Id	Service	PortMode	Flow-Ctrl	
MAC Parameters	Port 1		OOS \$	AUTO \$	ON \$	
	Port 2		OOS \$	AUTO \$	ON \$	
2005 Fort	Port 3		OOS \$	AUTO 🗘	ON \$	
VLAN Port	Port 4		OOS \$	AUTO \$	ON \$	
VLAN Table			All 🗘	All 🗘	All 💠	
MAC Address Table		🛩 Confirm 🏼 🔊 Reset				
Port Aggregation						
Port Mirror						

Ethernet Port Configuration Web Interface

Set	tings	Description
Ethernet Po Parameters	rt	Allows management of the Ethernet ports.
Edit		Must be selected when editing parameters on the interface.
	All	Select to update all channels in the slot.
Port# 1~4		Ethernet port identification.
Circuit Id		Name or describe the connected device.
Service		IS - In Service - Indicates the channel is active.
		OOS - Out of service - Indicates the channel is disabled.
PortMode		Select the speed and duplex mode desired for each port.
	Auto	Automatically detect speed and duplex.
	10HDX	10 Mbps and half duplex.
	10FDX	10 Mbps and Full Duplex.
	100HDX	100 Mbps and Half Duplex.
	100FDX	100 Mbps and Full Duplex.
	1000FDX	1000 Mbps and Full Duplex.
Flow-Ctrl		Disable or Enable Flow Control.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.

Link Parameters

😑 🕒 🗋 iMux-S		×				
ightarrow C (i) 192.168.1.2	251/				\$	•]
> Ethernet Parameters					Logou	ut
General Config	Local	J				
Port Config	Etherne	et Link Cor	nfig			
Link Parameters						
MAC Parameters	Edit	Port#	AggrFaultPropagation	LinkFaultPropagation	PauseFrameForward	
- QOS Bandwidth Limit		Port 1	Disable 🕏	Disable 🕏	Disable 🛊	
OOS Port		Port 2	Disable \$	Disable 🖨	Disable 🖨	
- OOS Tag Priority		Port 3	Disable 🖨	Disable \$	Disable 🖨	
VLAN Port		Port 4	Disable \$	Disable \$	Disable 🖨	
🚮 VLAN Table		All	All 💠	All 🗘	All 🗘	
💼 MAC Address Table			🛩 Cor	afirm 🗳 Reset		
Port Aggregation			•	,		
Port Mirror						

Ethernet Link Parameters Web Interface

Settings	Description
Ethernet Link Config	These options only apply when Ethernet ports are configured in P2P mode.
Edit	Must be selected when editing parameters on the interface.
All	Select to update all channels in the slot.
Port# 1~4	Ethernet port identification.
AggrFaultPropagation	When Enabled Ethernet port will turn off when the Aggregate interface is in alarm (LOF or AIS).
LinkFaultPropagation	When Enabled if the remote correlating Ethernet port link goes down, the local port will go down (LFP).
PauseFrameForward	When Enabled any ingress pause frames will be forwarded to the remote unit and transmitted to the connected Ethernet device.
Confirm	Apply Settings.
Reset	Remove unconfirmed settings.

MAC Parameters

🗧 😑 🕒 🕒 iMux-S	>					θ
\leftrightarrow \rightarrow C (i) 192.168.1.257	1/				\$]:
Ethernet Parameters					Logou	t
General Config	Local					ļ
Port Config	Ethernet M	AC Parameters (Config			
Link Parameters	Edit	Bort#	MacLoarning	MaxExamplion(1518-0600)		
MAC Parameters	Ealt	Port#	MacLearning	MaxFrameLen(1518-9600)		
		Port 1	Enable 🗣	1518		
QOS Port		Port 2	Enable 🛊	1518		
Sector 2005 Tag Priority		Port 3	Enable \$	1518		
-VLAN Port		Port 4	Enable 🛊	1518		
VLAN Table		Port T	Enable \$	1518		
MAC Address Table		All	All 🗘			
Port Aggregation			🖌 Confirm	🔊 Reset		
💼 Port Mirror						

Ethernet MAC Parameters Web Interface

Settin	gs	Description vs the configuration of MAC address learning by Ethernet port. t be selected when editing parameters on the interface. ct to update all channels in the slot. rnet port identification. ble or Disable MAC address learning for each Ethernet port. he maximum MTU size for Ethernet frames received. co Frames are supported when configured to 9600. nes exceeding the configured size will be dropped. y Settings.
Ethernet MAC Parameters Config		gs Description ig Allows the configuration of MAC address learning by Ethernet port. Must be selected when editing parameters on the interface. All Select to update all channels in the slot. Ethernet port identification. Enable or Disable MAC address learning for each Ethernet port. 8-9600) Set the maximum MTU size for Ethernet frames received. Jumbo Frames are supported when configured to 9600. Frames exceeding the configured size will be dropped. Apply Settings. Remove unconfirmed settings.
Edit	Settings Description MAC Allows the configuration of MAC address learning by Ethernet port. Must be selected when editing parameters on the interface. All Select to update all channels in the slot. and T Ethernet port identification. ng Enable or Disable MAC address learning for each Ethernet port. en(1518-9600) Set the maximum MTU size for Ethernet frames received. Jumbo Frames are supported when configured to 9600. Frames exceeding the configured size will be dropped. Apply Settings. Remove unconfirmed settings.	
	All	Select to update all channels in the slot.
Port# 1-4 and 1	ſ	Ethernet port identification. Enable or Disable MAC address learning for each Ethernet port.
MacLearning		Enable or Disable MAC address learning for each Ethernet port.
MaxFrameLen(151	L8-9600)	Set the maximum MTU size for Ethernet frames received.
		Jumbo Frames are supported when configured to 9600.
		Frames exceeding the configured size will be dropped.
Confirm		Description s the configuration of MAC address learning by Ethernet port. be selected when editing parameters on the interface. ct to update all channels in the slot. net port identification. le or Disable MAC address learning for each Ethernet port. net maximum MTU size for Ethernet frames received. po Frames are supported when configured to 9600. es exceeding the configured size will be dropped. / Settings. pove unconfirmed settings.
Reset		Description the configuration of MAC address learning by Ethernet port. te selected when editing parameters on the interface. to update all channels in the slot. et port identification. or Disable MAC address learning for each Ethernet port. e maximum MTU size for Ethernet frames received. Frames are supported when configured to 9600. s exceeding the configured size will be dropped. Settings. re unconfirmed settings.

QoS Bandwidth Limit

🗧 😑 🗧 🕒 iMux-S	:	× \					
\leftrightarrow \rightarrow C \bigcirc 192.168.1.2	251/					7	☆
🍃 Ethernet Parameters						Log	jout
General Config	Local						٦
Port Config	Ethernet (OS Bandwidth	Limit Parameters Co	nfig			
Link Parameters	T dia	Deutsti	Delieer	Deta(1.21)	Chaman	Bate(1.21)	
MAC Parameters	Edit	Port#	Policer	Rate(1-31)	Snaper	Kate(1-31)	
🚑 QOS Bandwidth Limit		Port 1	Disable 🕈	10	Disable \$	10	
OOS Port		Port 2	Disable 🛊	10	Disable 🛊	10	
• OOS Tag Priority		Port 3	Disable \$	10	Disable \$	10	
		Port 4	Disable 🖨	10	Disable \$	10	
JULAN Port		All	All 🗘		All 🗘		
MAC Address Table							
Port Aggregation			¥ 1	Confirm 7 Reset			

QoS Bandwidth Limit Web Interface

Settings	Description
Ethernet QoS Bandwidth Limit Parameters Config	Allows the configuration of QoS Bandwidth Limit by Ethernet port.
Edit	Must be selected when editing parameters on the interface
All	SDescriptionadwidth s ConfigAllows the configuration of QoS Bandwidth Limit by Ethernet port.Must be selected when editing parameters on the interfaceallSelect to update all channels in the slot.Ethernet port identification.Enable or Disable Traffic Policer for each port.The rate set here will be the multiplier for the Rate Unit set in the Ethernet Parameters > General Config section.Enable or Disable Traffic Shaper for each port.The rate set here will be the multiplier for the Rate Unit set in the Ethernet Parameters > General Config section.Enable or Disable Traffic Shaper for each port.The rate set here will be the multiplier for the Rate Unit set in the
Settings Description Ethernet QoS Bandwidth imit Parameters Config Allows the configuration of QoS Bandwidth Limit by Ethernet port. Alit Must be selected when editing parameters on the interface Al1 Select to update all channels in the slot. brt# 1~4 Ethernet port identification. charter (1-30) The rate set here will be the multiplier for the Rate Unit set in the Ethernet Parameters > General Config section. haper Enable or Disable Traffic Shaper for each port. Ate (1-31) The rate set here will be the multiplier for the Rate Unit set in the Ethernet Parameters > General Config section. boffirm Apply Settings. eset Remove unconfirmed settings.	
Policer	Enable or Disable Traffic Policer for each port.
Rate (1-30)	The rate set here will be the multiplier for the Rate Unit set in the Ethernet Parameters > General Config section.
Shaper	Enable or Disable Traffic Shaper for each port.
Rate (1-31)	The rate set here will be the multiplier for the Rate Unit set in the Ethernet Parameters > General Config section.
Confirm	Apply Settings.
Reset	Remove unconfirmed settings.

QoS Port

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ightarrow $ ightarrow$ $ ightarrow$ 192.168.1.	251/									z	Y
ờ Ethernet Parameters	_	_								Logo	out
General Config	Loc	al									ר
Port Config	Ether	rnet QOS	S Port Con	fig							
Link Parameters	Edit	Port#	Mode	0.000	TagId	Mada	Low	Normal	Modium	High	
MAC Parameters	Euit	POIL#	Mode	Queue	Tagiú	Mode	LOW	Normai	Medium	nign	
		Port 1	Port 🗘	Low 🗘	0 🗧	StrictPriority	• - •				
OOS Port		Port 2	Port 🗘	Low 🗘	0 \$	StrictPriority	♦ [- \$	- \$	- 🛊	- \$	
- OOS Tag Priority		Port 3	Port 🗘	Low 🗘	0 🖨	StrictPriority	♦ - ♦			- 🔹	
		Port 4	Port \$	Low \$	0 \$	StrictPriority	• - •	- \$		- \$	
VLAN Fold		Port T	Port \$	Low \$	0 \$	StrictPriority	\$ [- \$]	- \$		- \$	
MAC Address Table		All	All 🗘 🗍	All 🗘		All 🗘		All \$	All 🗘	All \$	
Port Aggregation					~	Confirm 🧐 Reset					
Port Mirror											

QoS Port Web Interface

Set	tings	Description
Ethernet Qos	Port Config	Allows the configuration of packet prioritization based on port and/or VLAN.
Edit		Must be selected when editing parameters on the interface.
	All	When selected all channels in the slot will be updated.
Port# 1~4 ar	nd T	Ethernet port identification.
Mode		Use the drop down menu to set the port mode.
	Tag	QoS will be determined on the VLAN Tag.
	Port	All ingress traffic per Ethernet port will be assigned to Queue.
Queue		Four QoS Queues are present in this device in order of prority lowest to Highest (Low, Normal, Medium, High).
TagId (1-7)		Assigning a TagID to the port will further prioritize Ethernet traffic within a Queue, 1 the lowest and 7 the highest.
Mode		Use the drop down menu to set the method of QoS packeting.
	StrictPriority	Traffic will be queued and sent strictly by the priority assigned.
Weigh	ltedRoundRobin	Traffic will be queued and sent with higher priority traffic getting a weighted preference. (1/2/4/8) weight can be assigned.
Low		Assign the weighted preference to this Queue.
Normal		Assign the weighted preference to this Queue.
Medium		Assign the weighted preference to this Queue.
High		Assign the weighted preference to this Queue.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.

QoS Tag Priority

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ightarrow $ ightarrow$ $ ightarrow$ 192.168.1.	251/																☆
Ethernet Parameters																	Logo
General Config	LO	cal															
Port Config	Eth	ernet OC	S Tag P	riorii	ty Confi	a											
Link Parameters						9											
MAC Parameters	Edi	t Port#	0		1		2		3		4		5	 6		7	
Regional Contract Con		Port 1	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$ Low	\$	Low	\$
QOS Port		Port 2	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$ Low	\$	Low	\$
		Port 3	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$ Low	\$	Low	\$
VLAN Port		Port 4	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$ Low	\$	Low	\$
VLAN Table		Port T	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$	Low	\$ Low	\$	Low	\$
MAC Address Table		All 🚺	JI \$		All -	•	All :		All	•	All	•	All	\$ All	¢	All	\$
💼 Port Aggregation								Cont	5 rm	0.0							
Port Mirror								com		-, к	eset						

QoS Tag Priority Interface

Settin	igs	Description				
Ethernet QoS Tag Priority Config		Assign priority by port when tag mode is utilized with QoS tag id.				
Edit		Must be selected when editing parameters on the interface.				
	All	Select to update all channels in the slot.				
Port# 1~4 and	Т	Ethernet port identification.				
0~7		In tag mode, assign a priority to each QoS TagID.				
		Dropdown options include: Low, Normal, Medium, and High.				
Confirm		Apply Settings.				
Reset		Remove unconfirmed settings.				

VLAN Port

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📂 Ethernet Parameters		_					Logo	out
General Config	Local	<u> </u>						1
Port Config	Ethern	et VLAN Po	ort Config					
Link Parameters								
MAC Parameters	Edit	Port#	TagAware	IngressFiltering	FrameType	Pvid	EgressTagMode	
- QOS Bandwidth Limit		Port 1	Disable \$	Disable 🛊	All 💠	1	TagNone 💠	
OOS Port		Port 2	Disable \$	Disable \$	All 🗘	1	TagNone 💠	
- OOS Tag Priority		Port 3	Disable 🖨	Disable \$	All 🛊	1	TagNone 💠	
July VLAN Port		Port 4	Disable 🖨	Disable \$	All 🗘	1	TagNone 💠	
January VLAN Table		Port T	Disable 🛊	Disable 🖨	All 🗘	1	TagNone 💠	
MAC Address Table		All	All 🗘	All 🗘	All 🗘		All 🗘	
				of Confirm	2 Barat	_		
Port Mirror				₩ Confirm	-y keset			

VLAN Port Web Interface

Settin	gs	Description
Ethernet VLAN	Port Config	Each VLAN port can be individual configured.
Edit		Must be selected when editing parameters on the interface.
	All	Select to update all channels in the slot.
Port# 1~4 and 2	Г	Ethernet port identification.
TagAware		VLAN tags may be forwarded with the Ethernet Frame.
	Enable	Removes VLAN tags.
	Disable	Forwards the VLAN tags.
IngressFilterin	ng	Filters out all Ethernet frames not matching the configured VLAN tags.
FrameType		Use the drop down menu to accept all or only tagged Ethernet frames.
	All	Accepts all Ethernet frames. (tagged or untagged)
	Tagged	Accepts only tagged Ethernet frames.
Pvid		Untagged Frames will be assigned to this VLAN ID.
EgressTagMode		Selections for Egress Ethernet tagging.
	Tagnone	No VLAN tag will be applied to outbound Ethernet Frames.
	TagNonPVID	Frames that don't match configured PVID will be re-tagged with the PVID.
	TagAll	Every Frame will have a VLAN tag applied.
	Note: Ensure Ta	agAware is enabled on the Ingress port before selecting the TagALL mode.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.

VLAN Table

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Ethernet Parameters						Logout
General Config	Local					
Port Config	Edit VI	LAN ID Port 1	Port 2 Port 3	Port 4 F	Port T	
Link Parameters		1 ON \$	ON \$ ON \$	ON \$	ON \$	
MAC Parameters	🕂 Add	OFF \$	OFF \$ OFF \$	OFF \$	OFF \$	
ROS Bandwidth Limit						
🚮 QOS Port			🛩 Confirm	n 🗙 Dele	ete	
Res QOS Tag Priority						
🚮 VLAN Port						
ULAN Table						
- MAC Address Table						

VLAN Table Web Interface

Se	ettings	Description
Edit		Must be selected when editing parameters on the interface.
	Add	Create new VLAN ID's as needed.
VLAN ID		Enter your desired VLAN ID.
Port 1~T	OFF	The port will not be a member of the VLAN ID being created.
	ON	The port will be a member of the VLAN ID Being created.
Confirm		Apply Settings.
Delete		Remove unconfirmed settings.

MAC Address Table

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\leftrightarrow \rightarrow C \odot 192.168.1.	251/	☆ :
Ethernet Parameters		Logout
General Config	Local	
Port Config	Edit Port Members	
Link Parameters	Edit VLAN ID MAC Address Port 1 Port 2 Port 3 Port 4	
MAC Parameters		
QOS Bandwidth Limit		
🔂 QOS Port	× Delete	
QOS Tag Priority		
ULAN Port		
📊 VLAN Table		
MAC Address Table		
Bort Aggregation		

MAC Address Table Web Interface

S	Settings	Description
Edit		Must be selected when editing parameters on the interface.
	Add	Create new MAC-Based VLAN addresses as needed.
VLAN ID		Enter your desired VLAN ID.
MAC Address	3	Enter the static MAC address to be associated with this VLAN ID.
Port 1~4		Turn ON the member ports to listen for this MAC-Address.
Delete		Remove unconfirmed settings.

Port Aggregation

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Ethernet Parameters		_					Logou	it
General Config	Loc	al]	
Port Config	Edit			Port M	embers			
🚔 Link Parameters	Edit	AGGR ID	Port 1	Port 2	Port 3	Port 4		
MAC Parameters		1	OFF \$	OFF \$	OFF \$	OFF \$		
2005 Bandwidth Limit						OEE Å		
QOS Port		2						
QOS Tag Priority						🛩 Confirm		
📊 VLAN Port								
📊 VLAN Table								
MAC Address Table								
Port Aggregation								
Port Mirror								

Port Aggregation Web Interface

Settings	Description
Edit	Change the parameters of this AGGR ID.
AGGR ID	Lists the ID of the aggregated port, only two aggregated links are allowed.
Port 1~4	Select ports to add to a single aggregated logical link.
Confirm	Apply Settings.
Confirm Local + Remote	Apply settings to both the local and remote iMux units.

Port Mirror

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\leftrightarrow \rightarrow C (i) 192.168.1.2	51/						\$:
彦 Ethernet Parameters							Logout	t
General Config	Local							
Port Config			Po	ort Membe	rs			
Link Parameters	Mirror	Port 1	Port 2	Port 3	Port 4	Port T		
MAC Parameters	Port							
🚆 QOS Bandwidth Limit	Mode	Disable 🛔	Disable 1			Disable 1		
📊 QOS Port	Houe							
and QOS Tag Priority					؇ Confirm	•		
🚮 VLAN Port								
VLAN Table								
MAC Address Table								
Port Aggregation								
Port Mirror								

Port Mirror Web Interface

Settings		Description				
Mirror		assive analysis of network traffic for diagnosis purposes.				
	Port 1~4 and T	The selected port will become the destination (output) of mirrored traffic.				
	Mode	When enabled this port will mirror its traffic to the selected port.				
Confirm		Apply Settings.				
Confirm L	ocal + Remote	Apply settings to both the local and remote iMux units.				

Performance Management

The alarm threshold values for the various communications hardware attributes as well error counter or failure detection thresholds for the various communications links that are available in the system, can be set manually by system administrators in the Performance Management section.

Note: The Performance Management area can only be used to set these error threshold values for when a system attribute enters into the alarm state. The Equipment Monitoring, Performance Monitoring, and Alarm Monitoring sections should be used to monitor the status of alarm conditions and alerts from the system.

Dsx1 Threshold - Quarter (15 Minute), Hour and Day



Dsx1 Threshold Quarter Parameters Web Interface

Sett	ings	Description
Dsx1		Alarm threshold values can be set for 15 minute, hour, and 24 hour increments.
Threshold Parameters	Slot	Slot Module is inserted into.
i ai ameter b	Channel	Channel on the module.

NOTE: Dsx1 Threshold settings are continued on the following page.

Sett	ings	Description
slot 1~4		Set a counter threshold, to meet or exceed, for the TCA alarm.
		Placing a zero (0) in the field disables the TCA alarm for each value.
	Edit	Must be selected when editing parameters on the interface.
	All	When selected all channels in the slot will be updated.
	Ch#	Each slot has 4 channels.
	PCV	Path Code Violation.
	PES	Path Error Second.
	PSES	Path Several Error Second.
	PUAS	Path Unavailable Second.
	LES	Line Error Second.
	LSES	Line Severity Error Second.
	LCV	Line Code Violation.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local + Remote		Apply settings to both the local and remote iMux units.

Aggregate Threshold

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Performance Management Dsx1 Quart Threshold Dsx1 Hour Threshold	- Loca Aggre	al egate Threshold	d Parameters						Logout	
Sx1 Day Threshold	Edit	PmType#	PCV	PES	PSES	PUAS	LES	LSES		
Ethernet Threshold		Quarter	0	0	0	0	0	0		
🔜 Ethernet Counter		Hour	0	0	0	0	0	0		
SFP UserDef Threshold		Day	0	0	0	0	0	0		
		All								
				🛩 Con	firm 🤊 Res	et				

Aggregate Threshold Web Interface

Settings	Description				
Aggregate Threshold Parameters	Enter a value for the aggregate alarm threshold of all DSX1 circuits.				
Edit	Must be selected when editing parameters on the interface.				
All	When selected all channels in the slot will be updated.				
РМТуре#	Select the performance management time interval.				
PCV	Path Code Violation.				
PES	Path Error Second.				
PSES	Path Several Error Second.				
PUAS	Path Unavailable Second.				
LES	Line Error Second.				
LSES	Line Severity Error Second.				
Confirm	Apply Settings.				
Reset	Remove unconfirmed settings.				
Confirm Local + Remote	Apply settings to both the local and remote iMux units.				

Ethernet Threshold

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Performance Management BSX1 Quart Threshold DSX1 Hour Threshold	Local -	Threshol	d Parameters				Logout	
Bx1 Day Threshold	Edit Po	ort#	RxPacket	RxDrops	RxCrc	Interval		
Ethernet Threshold	C Po	ort 1	0	0	0	1		
Ethernet Counter	C Po	ort 2	0	0	0	1		
SFP UserDef Threshold	🗆 Po	ort 3	0	0	0	1		
	D Po	ort 4	0	0	0	1		
	D Po	ort 5	0	0	0	1		
	- A	All						
				🛩 Confirm 🄊 Rese	t			

Ethernet Threshold Web Interface

Settings	Description				
Ethernet Threshold	TCA Alarm based on the Ethernet Counters exceeding configured values.				
Parameters	Placing a zero (0) in the field disables the threshold.				
Edit	Must be selected when editing parameters on the interface.				
All	When selected all channels in the slot will be updated.				
Port# 1~5	Ethernet port identification.				
RxPacket	Received Packets.				
RxDrops	Packet Drops. (Packet Loss)				
RxCrc	CRC Errors on received packets.				
Interval	Interval in minutes considered for the threshold values.				
Confirm	Apply Settings.				
Reset	Remove unconfirmed settings.				

Ethernet Counter

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Performance Management					Logout
Bsx1 Quart Threshold	Local				
Bsx1 Hour Threshold	Counter Id	Rx Counter	Tx Counter		
Dsx1 Day Threshold	Counter 1:	Packets \$	Packets	\$	
Aggregate Threshold	Counter 2:	CRC \$	Total Drops	•	
Ethernet Threshold	Counter 3:	Total Drops	Total Error Packets	•	
Ethernet Counter	counter or				
SFP UserDef Threshold	Counter 4:	Total Errors Packets 🗘	Pause	•	
	Counter 5:	Broadcasts + MultiCasts 🖨	Broadcasts + MultiCast	ts 🗘	
			🛩 Confirm 🤊 Rese	t	



Settings	Description				
Counter ID	Select to monitor up to 5 configured Transmit or Receive Counters.				
Confirm	Apply Settings.				
Reset	Remove unconfirmed settings.				
Confirm + Reset	Apply settings to both the local and remote iMux units.				

Counter Packet Options

- Packets	- 64	- FIFO Drops
- Broadcasts & Multicasts	- 65-127	- Backward Drops
- Total Error	- 128-255	- Classifier Drops
- Packets	- 256-511	- CRC
- Broadcasts	- 512-1023	- undersize
- Multicasts	- 1024	- Oversize
- Rx Packet	- Jumbo	- Fragments
- Tx Packet	- Pause	

SFP User Defined Threshold Edit



SFP User Defined Threshold Configuration Web Interface

S	Settings	Description		
SFP User Defined Threshold Edit		These options are only available when SFP's supporting DDI are used, standard bundled iMux SFPs do not provide this information.		
		Please contact us for our SFP DDI modules to enable this functionality.		
OE 1~2		Threshold options can be defined per OE port.		
Temperature (C)		Temperature provided by the SFP.		
Vcc (V)		Voltage being provided to the SFP.		
Bias (mA)		Current consumed by the SFP.		
TxPower(dBn	n)	Transmitting optical power of the SFP.		
RxPower(dBn	n)	Received signal.		
Туре	High	Set the over alarm Threshold.		
	Low	Set the under alarm threshold.		
Alarm		When thresholds are exceeded the SFP TCA will alarm.		
Warning		Will send a warning alarm to the even log.		
Load Vendor		Load threshold points from the SFP.		
Confirm		Apply Settings.		
Reset		Remove unconfirmed settings.		

Fault Management

The Fault Management section is used to classify the various system alarm types by severity categories. Classifying the alarm types into categories will then allow admins to assign severity levels to different types of failures detected by the system. This section also provides a means to manage power and SFP alarm types.

Alarm Severity Configuration

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📂 Fault Management	_				Logout
Alarm Severity Config	Local				
👙 Power Failure Monitoring	Working OE LOS:	Major \$	Dsx1 LOS:	Major \$	
🏺 SFP Alarm Monitoring	Standyby OE LOS:	Major \$	Dsx1 LOF:	Major \$	
	Aggregate LOF:	Major \$	Dsx1 AIS:	Minor \$	
	Aggregate AIS:	Minor \$	V35 LOS:	Major 🗘	
	Aggregate RDI:	Minor \$	Ether Linkdown:	Critical 🖨	
	Board Failed:	Critical 🛟	RS232 LOS:	Major 🗘	
	Power Failed:	Critical 🗘	External Clock LOS:	Critical 🖨	
	Fan Failed:	Critical 🗘	PM TCA:	Warning \$	
	Remote Power Failed:	Critical 🗘			
			✓ Confirm ♥ Reset		

Alarm Severity Configuration Web Interface

Setting	IS	Description					
Drop Down Menu Options		Use the drop down menu to designate the desired alarm class for the respective system events listed below.					
	Critical	The most serious form of system message classification available.					
	Major	The next level down from Critical.					
	Minor	The next level down from Major.					
	Warning	The next level down from Minor.					
	Message	The lowest system alert level classification.					
Working OE LOS		The Primary optical circuit experiences loss of signal.					
Standby OE LOS		The Secondary optical circuit experiences loss of signal.					
Aggregate LOF		The aggregate loss of fiber is a condition where both optical circuits are down.					
Aggregate AIS		Aggregate alarm indication signal is present.					
Aggregate RDI		Aggregate remote defect indication is present.					
Board Failed		Main circuit board failure detected.					
Power Failed		AC or DC power input failure detected.					
Fan Failed		Internal cooling fan failure detected.					
Remote Power Fa	ailed	AC or DC power input failure detected on the remote iMux system.					
Dsx1 LOS		Dsx1 loss of signal condition exists.					
Dsx1 LOF		Dsx1 loss of fiber condition exists.					
Dsx1 AIS		Dsx1 alarm indication signal is present.					

NOTE: Alarm severity configuration settings are continued on the following page.

Settings	Description
V35 LOS	V35 loss of signal condition exists.
Ether Linkdown	A link loss event has occurred on an Ethernet port.
RS232 LOS	RS232 loss of signal condition exists.
External Clock LOS	An external clock loss of signal condition exists.
PM TCA	A performance monitoring alert and/or threshold crossing alert indication is present.
Confirm	Apply Settings
Reset	Remove unconfirmed settings
Confirm Local + Remote	Apply settings to both the local and remote iMux units

Power Failure Monitoring

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 Fault Management Alarm Severity Config Power Failure Monitoring SFP Alarm Monitoring 	Local Power 1 Failure Monitoring: ON Power 2 Failure Monitoring: ON V Confirm Reset	Logou	It

Power Failure Monitoring Web Interface

Settings		Description
Failure Power 1~2		Enable or disable power failure monitoring for the two power inputs.
Monitoring	ON	Enable.
	OFF	Disable.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm + Re	set	Apply settings to both the local and remote iMux units.

SFP Alarm Monitoring

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Fault Management	Least	1					Lo	gout
Alarm Severity Config	SEP A	larm Monitorir	na Edit					
Power Failure Monitoring	00		ig zon				Log	
🖕 SFP Alarm Monitoring	ID	Temperature	Vcc	Bias	Tx Power	Rx Power	Interval(min)	
	Oe 1	Off \$	Off	♦ Off ♦	Off \$	Off \$	60	
	Oe 2	Off \$	Off	 Off Image: Image: Image:	Off \$	Off \$	60	
				🛩 Confirm	🔊 Reset			

SFP Alarm Monitoring Web Interface

Settings		Description
SFP Alarm Monitoring		Use the drop down menu to select one of the four following reference options for the respective SFP attribute.
Edit	OFF	No set alarm monitoring.
	Vendor	Set to manufacturing provided values from DDI compatible SFP's.
	User	Set to the manually defined alarm threshold values.
	VendorUser	Assigns priority to vendor provided threshold values. User threshold is applied in the case of no vendor supplied values.
OE ID		Refers to the SFP installed in one of the two SFP slots.
	OE 1	Primary SFP slot.
	OE 2	Secondary SFP slot.
Temperature		SFP Temperature Attribute measured in Celsius (C).
Vcc		SFP Voltage Supply Attribute measured in Volts (V).
Bias		SFP Power Bias measured in milliamps (mA).
Tx Power		SFP detected Optical Transmission Power Ratio in Decibels (dBm).
Rx Power		SFP detected Optical Power Ratio Received in Decibels (dBm).
Log Interval (min)		The time interval between logging events of the attributes that have been selected for logging.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local	+ Remote	Apply settings to both the local and remote iMux units.

External Clock

This section manages the External Clock input to the device in cases where the use an external clock is indicated.

External Clock Settings



External Clock Web Interface

Settings		Description
EquipStatus		The detection status of the external clock is displayed.
	Unequipped	External Clock not Detected.
	Equipped	External Clock Detected.
Alarm/Severity		The alarm status of the external clock is displayed along with the severity of the alarm.
External Clock		Use the dropdown menu to select from the following options that will enable or disable the external clock.
Service	005	Out Of Service disables the external clock.
	IS	In Service enables the external clock.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Local	+ Remote	Apply settings to both the local and remote iMux units.

OE Protection Switching

This section provides basic information regarding the status of the optical networking modules or SFP's installed in the iMux-S system, as well as providing a means to test optical modules themselves as well as testing the redundancy or failover behavior of the optical modules.

Status



OE Protection Switching Status Web Interface

Settings		Description
Protection Switching		This section displays the OE link status and provides the capability to test and restart optical hardware as needed.
Status	Operation	Lock/Unlock, Restart, and Restart-Test operation types are offered here.
	Working OE	Displays the OE port currently the operating link port to the remote iMux system.
	SwNo	Displays the SwNo number.
	Locked	Displays the lock status of the respective OE. When an OE is locked, the system will be forced to only utilize the locked optical port only. (ON = Locked , OFF = Unlocked)
	LeftRelSec	Displays the remaining amount of time in seconds, before the locked OE automatically returns to unlocked status.
OE Status		This section displays the status of the SFP modules an provides the capability to test and restart the SFPs as needed.
	Operation	Two operation types are offered in this section. Restart and Restart-Test.
		Restart = Restart the respective SFP.
		Restart-Test = Restart the SFP and perform diagnostics.
	OE ID	Displays the ID tag of the respective OE port.
	Alarm	Displays the alarm status of the respective OE when an alarm condition exists.
	LSR(TX)	Displays whether the SFP in the respective EO port is actively transmitting or not.
		ON = The SFP is currently transmitting light.
		OFF = The SFP is not transmitting light.
Confirm		Apply Settings.
Reset		Remove unconfirmed settings.
Confirm Loca	al + Remote	Apply settings to both the local and remote iMux units.

SFP Information

This section provides device administrators with detailed information regarding the SFP modules installed in the system. If the SFP modules are DDI compatible, the data retrieved from the diagnostic circuits of the SFP will be displayed in this section.

Basic Information



SFP Basic Information Web Interface

	Settings	Description					
OE :	Information	his section displays detailed SFP module information when available.					
OE :	ID	Displays the ID tag of the respective OE.					
OE :	Туре	Displays the speed classification of the installed SFP module.					
Fib	er	Displays the type of optical fiber the SFP is designed to transmit signal across.					
	Mode	SM = Singlemode					
		MM = Multimode					
	Туре	Displays the installed SFP is a Dual Fiber or Single Fiber/Bi-Directional module.					
Leng	gth	This section displays the length and wavelength specification of the fiber link.					
	Link	Provides an estimate of the length of the link in meters. (M or kM)					
	Wave	Displays the wavelength of light that is employed by the SFP module.					
Vend	dor	Displays vendor specific information gathered from SFP modules.					
	OUI	Displays the Organizationally Unique Identifier of the installed SFP module.					
	Rev	Displays the manufacturer revision code.					
	Name	Displays the name of the manufacturer of the installed SFP module.					
	PN	Displays the part number of the installed SFP module.					
	SN	Displays the serial number of the installed SFP module.					
	Date Code	Displays the date code of the installed SFP module.					

Note: SFP diagnostic monitoring settings are continued on the next page.

Set	tings	Description					
SFP Diagnostic		For DDMI or DDI enabled SFP modules, the retrieved diagnostic information will be displayed in this section.					
Monitoring	OE ID	Displays the ID tag of the respective OE.					
	Туре	Displays the detected monitoring type of the installed SFP module.					
Temperature		Displays the current operating temperature of the SFP module.					
	Vcc	Displays the current voltage of the SFP module.					
	Bias	Displays the current being actively drawn by the installed SFP module.					
	TxPower	Displays the current transmission power of the installed SFP module.					
	RxPower	Displays the received signal power of the installed SFP module.					

Vendor Threshold

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SFP Information												Lo	ogoı
Vendor Threshold	SFP Ver	ndor Alarm	ı/Warnin	g Thresho	ld								
👂 DD Log Monitoring			Tempera	ature(°C)	Vcc	:(V)	Bias	(ma)	TxPowe	er(dBm)	RxPowe	er(dBm)	
	OE ID	Туре	High	Low	High	Low	High	Low	High	Low	High	Low	
		Alarm	None	None	None	None	None	None	None	None	None	None	
	Oe 1	Warning	None	None	None	None	None	None	None	None	None	None	
		Alarm	None	None	None	None	None	None	None	None	None	None	
	Oe 2	Warning	None	Nono	None	None	None	Nono	Nono	None	None	Nono	1

Vendor Threshold Web Interface

Setting	S	Description
SFP Vendor Alarm/Warning		This section displays the vendor supplied attribute values that are retrieved from compatible SFP modules. Compatible SFP modules will display values.
Threshold		If "None" is displayed, the information could not be retrieved from the SFP module.
OE ID		Displays the ID tag of the optical link or SFP port.
Туре		Displays the type of the attribute being listed.
	Alarm	Threshold values that need immediate attention.
	Warning	Threshold values that bring attention to potential issues.
Temperature (C)	Set the system high and low temperature threshold for notifications.
Vcc(V)		Set the system high and low voltage threshold for notifications.
Bias(ma)		Set the over high and low current threshold for notifications.
TxPower(dBm)		Set the transmission optical power high and low threshold for notifications.
RxPower(dBm)		Set the system reception optical power high and low threshold for notifications.

DD Log Monitoring

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5 SFP Information							Logout	
🌮 Basic Information	Local							
🌮 Vendor Threshold	SFP DD Log Monitoring							
🖇 DD Log Monitoring			(De 1				
	Time	Temperature	Vcc	Bias	TxPower	RxPower		
			(De 2				
	Time	Temperature	Vcc	Bias	TxPower	RxPower		

DD Log Monitoring Web Interface

Settings	Description
0e 1~2	Identifies each optical link or SFP port.
Time	Displays the date and time of the log entry.
Temperature	Displays the logged temperature of the respective SFP at the time of logging.
Vcc	Displays the logged voltage of the respective SFP at the time of logging.
Bias	Displays the logged current of the respective SFP at the time of logging.
TxPower	Displays the transmitted optical power of the respective SFP at the time of logging.
RxPower	Displays the received optical power of the respective SFP at the time of logging.

Equipment Monitoring

The Equipment Monitoring section is an ideal graphical dashboard for the local and remotely connected iMux-S systems in operation. Any major alarms and alerts will be graphically displayed on this page along with the LED status of the systems connected.

Equipment Monitoring

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\leftarrow \rightarrow C (i) 192.168.1	251/							\$
🍃 System Group								Logout
 Optical Config Tributary Parameters Ethernet Parameters Performance Management 	OE 1 • wk • LOS • LSR	OE 2 • wk • Los • LSR	1 2 3	MAJ MIN LBK RDI	 PWR SYN LCK ACO 	TB 1 2 1 • • • • 2 • • • • 3 • • • • 4 • • •		
📂 Fault Management	Sys	tem Info	Equipment	Info		TB Card	Trunk	Ethernet
DE Protection Switching	HW Version: SW Version: EthSW Version:	1.2.3 1.0.2 1.0.0	Power 1: Power 2: Remote Power	Normal Failed Normal	Tb 1: Tb 2: Tb 3:	4xT1S 4xFXO 4x4WA	Lan 1: Lan 2: Lan 3:	1GFDX 100FDX DOWN
 SFP Information Equipment Monitoring 	Mac Address: System Up Time:	F0:DA:7C:0F:6E:81 5 days, 17: 25: 43	Fan : Ext Alarm 1 / 2:	Normal L / L	Tb 4:	4xRS232/C	Lan 4:	DOWN
Reformance Monitoring								

Equipment Monitoring Web Interface

	Settings	Description
System 1	Info	This section serves as an effective dashboard for the simplification of device monitoring and management by offering an all encompassing, one glance view of the system modules and their status.
	HW Version	Displays the hardware version of the system.
	SW Version	Displays the software version of the system.
	EthSW Version	Displays the Ethernet management software version of the system.
	MAC Address	Displays the physical address (MAC Address) of the system.
	System Up Time	Displays the system uptime since the last boot up.
Equipmer	nt Info	Consists of power inputs, remote power, internal fans, and external alarms.
	Power 1	Displays the status of the primary power input of the system.
	Power 2	Displays the status of the secondary power input of the system.
	Remote Power	Displays the power input status of the connected remote system.
		Note : Both power inputs on the remote iMux must fail in order for remote power failure status to be displayed.
	Fan	Displays the status of the internal cooling fan.
	Ext Alarm 1 / 2	Displays the status of the external alarm contacts.
Tb Card		Displays the type of tributary card installed in each of the four (4) slots.
	Tb 1~4	Type of tributary card installed in the designated slot location.
Trunk Et	thernet	Displays the status of each of the four (4) Ethernet ports.
	Lan 1~4	Status of the designated Ethernet port.

Performance Monitoring

The Performance Monitoring section displays system performance, warning and alarm statuses for the communications systems being monitored, such as T1 and Ethernet channels.

Aggregate/Dsx1

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Performance Monitoring										L	.ogoi
🐼 Aggregate/Dsx1	Performance	e Monitor	ing								٦
🔀 Ethernet	🔊 Reset All							Slot:	VII 🗘 Cha	nnel: All 🗘	
	Ope	ration	Interface	Site	Slot	Ch	ValidQuarter	ValidDay	Alarm	Severity	
	Monitor	🄊 Reset	Aggregate	Local			96	7	-	-	
	Monitor	🄊 Reset	Τ1	Local	1	1	96	7	-	-	
	Monitor	🎝 Reset	Τ1	Local	1	2	96	7	-	-	
	Monitor	🎝 Reset	Τ1	Local	1	3	96	7	-	-	
	Monitor	🎝 Reset	T1	Local	1	4	96	7	-	-	
	Monitor	🎝 Reset	Aggregate	Remote			96	7	-	-	
	Monitor	🎝 Reset	T1	Remote	1	1	96	7	-	-	
	Monitor	🄊 Reset	Τ1	Remote	1	2	96	7	-	-	
	Monitor	🄊 Reset	Τ1	Remote	1	3	96	7	-	-	
	Monitor	🔊 Reset	T1	Remote	1	4	96	7	-	-	

Aggregate / Dsx1 Web Interface

Se	ttings	Description
Performance	Monitoring	Monitor and reset T1 circuits.
Reset All		Issues a reset procedure to all of the connection types listed in this section.
Slot		Filters the tributary slots displayed below.
Channel		Filters the signal channel numbers of the slots and displays them below.
Operation		Click to monitor or reset the circuit.
	Monitor	Obtain detailed statistics for the respective signal channel being observed.
	Reset	Restarts the respective signal channel being selected.
Interface		The signal interface type is displayed here.
	Aggregate	Refers to all the channels on the tributary card listed below that line item.
Site		Displays the location of the tributary card.
Slot		Displays the tributary slot in which the respective signal channel is located.
Channel		Displays the signal channel number of the respective tributary card installed.
Valid Quart	er	Displays the valid quarter of the signal channel or aggregate of signal channels being considered.
Valid Day		Displays the valid day of the signal channel or aggregate of signal channels being considered.
Alarm		Displays the alarm type for the signal channel.
	AIS	Alarm Indication Signal.
	LOS	Loss of Signal.
Severity		Displays the severity of the alarm type detected.

Ethernet Performance

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Performance Monitoring Magregate/Dsx1 Mithernet	Ethernet P	erforman	Counter						Port: All 🔷	Logout	
	Operation	Select 🖨	Interface \$	Site ¢	Port¢	Rx Packets 🗢	Rx CRC 🗢	Tx Packets 🗢	Alarm 🔶		
	Monitor		LAN	Local	1	2138	0	0	-		
	Monitor		LAN	Local	2	1269	0	0	-		
	Monitor		LAN	Local	3	0	0	0	LinkDown		
	Monitor		LAN	Local	4	0	0	0	LinkDown		
	Monitor		LAN	Local	La	in/Lo/1					
	Operation	Select 🖨	Interface \$	Site \$		Receive Counter	r	Trans	mit Counter		
	Monitor		LAN	Remote		Bytes:	C)	Bytes:	0	
	Monitor		LAN	Remote		Packets:	C) P	ackets:	0	
	Monitor		LAN	Remote		CRC:	0) Tot	al Drops:	0	
	Monitor		LAN	Remote		Total Drops:) Total E	rror Packets:	0	
	Monitor		LAN	Remote	T(otal Errors Packe	i ts: ()	Pause:	0	
						Broadcasts + MultiCasts:	c) Mu	adcasts + IltiCasts:	0	
								4 Back			

Monitoring Local Port 1 Example

Ethernet Performance Web Interface

Settings	Description
Select All	Select Local and Remote iMux systems.
Reset Counter	Select the Local, Remote, or All check boxes and then select the Reset Counter button to zero out all counters.
Port 1~4 and T	Filters the Ethernet ports and optical port displayed below.
Operation	Select this field to view current counts of all counter options configured in Performance Management > Ethernet Counter section.
Monitor	Click the button to see an individual port's performance.
Interface	All ports are LAN in the Ethernet performance web interface.
Site	Identifies the port as either on the local or remote system.
Port	Identifies Ethernet ports and adjusts the list in ascending or descending order.
Rx Packets	Indicates the number of packets received by port and sorts the list in ascending or descending order.
Rx CRC	Indicates the Ethernet port's CRC failure information and sorts the list in ascending or descending order.
Tx Packets	Indicates the number of packets transmitted by port and sorts the list in ascending or descending order.
Alarm	Indicates the Ethernet ports alarm state. May be sorted by port alarm state.

Alarm Monitoring

The Alarm Monitoring section allows detailed alarm status conditions to be displayed and viewed by administrators.

Alarm Monitoring Settings

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📂 System Group			_								Logout
Prical Config	- Alarm M	Monitori	ng								
📂 Tributary Parameters						Interface: All	¢ St	/Pt All 🔷 Cha	nnel: All 🔷 PM 1	Table: All 🗘	
📂 Ethernet Parameters	Deth	A		David T		Ethomat TOA		Environ			·
📂 Performance Management	Path Aggregate TCA			DSXTTCA Ethernet TCA SFP TCA Equipr				Equipme	int		
📂 Fault Management	Inter	face	Site	St/Pt	Ch	Alarn	n	Severity	Loopback	PRBS-Gen	
🔀 External Clock	Aggre	egate	Local						-		
CE Protection Switching	LA	N	Local	1		-			-		
SEP Information	LA	N	Local	2					•		
	LA	N	Local	3		LinkDo	wn	Major	•		
Sequipment Monitoring		N	Local	4		LinkDo	wn	Maior	-		
📂 Performance Monitoring			Remete	4	2					OFF	
👌 Alarm Monitoring		4	Remote	1	3			•	•	OFF	
A MAC Address Monitoring	- · ·		Remote	1	4					orr	
Loophack/V 54 Testing											

Alarm Monitoring Web Interface

Setting	gs	Description
Interface		Select the type of interface you would like to filter.
	All	Displays every communication port and circuit.
	Aggregate	Displays any communication line on the device that has log events.
	OE	Displays Optic ports that has log events.
	тв	Displays any tributary ports that has log events.
	LAN	Displays any Ethernet ports that has log events.
St/Pt		Filters the slot or Ethernet ports (1-4) and lists them below.
Channel		Filters the tributary channels and lists those that have log events.
PM Table		Filter through time intervals of the performance monitoring tables.
Path		Interface type.
Aggregate TCA		Displays any Aggregate DSX1 threshold alarms.
Dsx1 TCA		Displays any DSX1 threshold alarms.
Ethernet TCA		Displays any Ethernet threshold alarms.
SFP TCA		Displays any SFP threshold alarms.
Equipment		Displays equipment alarms and severity.

MAC Address Monitoring

The MAC Address Monitoring section allows administrators to view the MAC addresses of devices that have communicated with the iMux-S system.

Mac Address Monitoring

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📂 System Group	_					Lo	gout
🔎 Optical Config	Ethe	ernet MAC A	ddress Table I	Monitoring]
📂 Tributary Parameters	Refi	resh Flush			MAC Table Site: Local	Auto Refresh: Off	
📂 Ethernet Parameters	No	Туре	VlanId		MAC Address	TkE SI/Ch	
📂 Performance Management	1	Dynamic	1		F0-DA-7C-06-00-1F	1	
📂 Fault Management	2	Dynamic	2		C4-D6-55-3B-E9-6A	2	
🙀 External Clock							J
🌮 OE Protection Switching							
🌮 SFP Information							
Equipment Monitoring							
📂 Performance Monitoring							
🤱 Alarm Monitoring							
🛓 MAC Address Monitoring							
D Loophack/V 54 Testing							

Mac Address Monitoring Web Interface

Settings		Description					
Refresh		Update table information.					
Flush		Flush address table and relearn dynamic addresses.					
MAC Table Site		Select the local or remote MAC Address table.					
Auto Refresh		Auto refresh the page.					
Ethernet MAC Address Table Monitoring		Supports up to 8192 MAC Addresses.					
No		Line number of the table.					
Туре		Dynamic or Static MAC Address.					
VlanId		VLAN MAC Address resides in.					
MAC A	ddress	MAC Address Field.					
TKE S	l/Ch	Ethernet Port 1-4 or T.					

Loopback / V.54 Testing

The Loopback / V.54 Testing section allows administrators to create loopback conditions in order to perform diagnostic testing during installation and repair operations.

Loopback / V.54 Testing

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← → C ③ 192.168.1.251/ ☆ :						☆ :			
📂 System Group								1	Logout
🟓 Optical Config	Loopi	back/V.54	Testing						
芦 Tributary Parameters	② LoLbk/ANA ② ReLbk/DIG ② Rem Slot: All ¢ Channel: All ¢								
📂 Ethernet Parameters	Select	Interface	Site	Slot	Ch	LoLbk/ANA	ReLbk/DIG	REM Alarm	
Performance Management		Aggregate	Local			OFF	OFF	-	
📂 Fault Management		LAN	Local	1		OFF	OFF	-	
🔀 External Clock		LAN	Local	2		OFF	OFF	-	
🌮 OE Protection Switching		LAN	Local	3		OFF	OFF	LinkDown	
📁 SFP Information		LAN	Local	4		OFF	OFF	LinkDown	
Equipment Monitoring		T1	Local	1	1	OFF	OFF	-	
📂 Performance Monitoring	Ý								-1×
🛓 Alarm Monitoring		Τ1	Remote	1	3	OFF	OFF	-	
🛓 MAC Address Monitoring		Τ1	Remote	1	4	OFF	OFF	-	
Loopback/V.54 Testing									
PRBS Testing									

Loopback / V.54 Testing Web Interface

Settings	Description	
LoLbk/ANA	Local Loopback / Analog.	
ReLbk/DIG	Remote Loopback / digital.	
Rem	Remove the loopback.	
Slot	Tributary slot being constrained and/or individual VLAN ports.	
Channel	Numbered port of the tributary slot.	
Select	Check one or more box to test the circuits.	
Interface	T1 or Aggregate. (All)	
Site	Local or Remote iMux Unit.	
Slot	Slot the T1 module is located in.	
Ch	The slot T1 channel number (1-4).	
LoLbk/ANA	Loop Back the Local T1 Interface.	
ReLbk/DIG	Loop Back the Remote T1 interface.	
REM	REM is only for V.54 Testing.	
Alarm	Will display Alarm if present.	

Event Browsing

The Event Browsing section allows administrators to observe the log entries in the system event log as well as clearing the log entries from both RAM and flash memory types when deemed appropriate.

Event Browsing Log

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🍃 System Group						Log	jout
🚰 Optical Config	Event Broswing						
📂 Tributary Parameters	Clear Ram Clear F	lash			Class: All 💠 Severity: All	¢	
📂 Ethernet Parameters	Time	Operator	Class	Action	Information		
📂 Performance Management	12:29:33 10/06/16	system	Alarm	Clear	Lan/Re/3/LinkDown/MAJ		
📂 Fault Management	11:14:59 10/06/16	system	Alarm	Issue	Lan/Re/4/LinkDown/MAJ		
🕼 External Clock	11:14:59 10/06/16	system	Alarm	Issue	Lan/Re/2/LinkDown/MAJ		
🌮 OE Protection Switching	11:14:58 10/06/16	system	Alarm	Issue	Lan/Re/3/LinkDown/MAJ		
🌮 SFP Information	11:14:58 10/06/16	system	Alarm	Issue	Lan/Re/1/LinkDown/MAJ		
🔷 Equipment Monitoring	11:14:54 10/06/16	admin	Config	Set	Lan/Re/4		,
📂 Performance Monitoring	Ý					<u> </u>	/
🤱 Alarm Monitoring	18:57:19 09/30/16	system	Operat	Boot	Welconme to iMux-S		
👌 MAC Address Monitoring	18:56:41 09/30/16	system	Operat	Load	Profile I/Lo		
Loopback/V.54 Testing							
🌽 PRBS Testing							
Event Browsing							

Event Browsing Web Interface

Settings		Description			
Clear Ram		Clear events in running RAM memory.			
Clear Flash		Clear events stored on local flash.			
Class		Filter event categories. (Config, Operat, or Alarm)			
	All	Shows all categories.			
Severity		Filter Events. (Critical, Major, Minor, & Warning)			
	All	Shows all events.			
Event	Time	Device time when the event occurred.			
Browsing	Operator	Displays the originator of the event. (administrator or System)			
	Class	Displays the classification of event that occurred. (Config, Operat, or Alarm)			
	Action	Displays what took place.			
	Information	Displays the path to where the event took place.			

Logout

The logout link can be found in the same spot on any of the management pages. By clicking the Logout link the user is logged out of the web interface. The user is returned to the login screen.

Logout

iMux-S Fiber Optical Multiplexer

Web Interface Header - Logout

Settings	Description
Logout	Logs out of system and returns to the login page.

Logout

3. Support

Technical Support

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