

# KGS-2422-B

# Managed 24-Port Modular Gigabit Ethernet Switches with 100BASE-FX Support

Installation Guide



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## **FCC NOTICE**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including the interference that may cause undesired operation.

## **CE NOTICE**

Marking by the symbol indicates compliance of this equipment to the EMC directive of the European Community. Such marking is indicative that this equipment meets or exceeds the following technical standards:

EMC Class A
EN55022
EN61000-3-2
EN61000-3-3 Class A
EN 55024

IEC 61000-4-2

IEC 61000-4-3

IEC 61000-4-4

IEC 61000-4-5

IEC 61000-4-6

IEC 61000-4-8

IEC 61000-4-11

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# 1. Introduction

The 24-port Managed Gigabit Ethernet Switches are standard L2 switches that meets all IEEE 802.3/u/x/z Gigabit, Fast Ethernet specifications. The switches provide three 8-port modular slots. Each slot can accommodate one 8-port module. A variety of modules is available for selection. They include 10/100/1000M copper module, 100/1000M SFP module, Copper and SFP mixed modules, and Fast Ethernet fiber modules. Different modules can be installed flexibly in one device rack. The system detects the types of the installed modules and configures the modules automatically. With variety of modules and flexibility of installation, the switches can meet most requirements of deployment of fiber networks no matter they are Gigabit Ethernet base, Fast Ethernet base or even combination of both.

The switches support Telnet CLI, Web GUI, SNMP and console CLI interface for switch management. The network administrator can logon the switch to monitor and configure port operating mode, Quality of Service, and powerful L2 switching functions such as VLAN, IGMP, RSTP etc. In addition, the switches are also featured with powerful security functions such as SSH, HTTPS, IEEE 802.1x & MAC-based authentication, and ACL control to make them suitable for office core applications.

The following figure illustrates the switch has 3 empty slots with no module installed.



#### **Model Definition**

Model No.	Model	Power Input	Power connector	
KGS-2422-B-S	422-B-S AC powered model AC 100 ~ 240V		IEC320	
KGS-2422-B-D	DC powered model	DC +/-48V	Screw terminals	

## 1.1 Features

- Fully modular design with three 8-port module slots supporting Gigabit and Fast Ethernet
- A variety of optional modules is available for selection including Gigabit copper, Gigabit fiber, Gigabit mix of copper and fiber, and Fast Ethernet fiber
- The copper ports support 10/100/1000Mbps auto-negotiation and auto-MDI/MDI-X detection.
- The SFP port can support both 100Mbps fiber transceivers and Gigabit Ethernet SFP fiber transceivers
- Support connectivity for Fast Ethernet fiber, 100BASE-FX with SC/ST/BiDi transceivers
- Flexible installation with any combination of different modules in one rack
- Provides L2 switching at Gigabit full wire speed
- Provides L3 switching functions for IPv4/IPv6 Unicast routing and IPv4 Multicast routing
- Supports power saving mode when port link down
- Supports 802.3x flow control for full-duplex and backpressure for half-duplex
- Supports console and in-band Web/Telnet/SSH/HTTPS/SNMP interfaces for switch management
- Supports configurable maximum frame length from 1518 up to 10056 jumbo frame
- Supports port-based ,802.1Q tag-based VLAN and private VLAN
- Provides QoS function
- Supports port bandwidth control for ingress and egress
- Supports packets storm control function for broadcast, unicast and multicast
- Supports MAC address learning, ageing and filtering control
- Supports LACP port link aggregation
- Supports IEEE 802.1d, 802.1w, 802.1s STP (Spanning Tree Protocol), RSTP, MSTP
- Provides port mirroring function
- Provides IP Multicasting with IGMP & MLD Snooping function
- Supports DHCP client & server for dynamic IP configuration
- Supports DHCP option 82 relay
- Supports 802.1X port-based radius authentication for access security
- Provides ACL filtering function
- Provides port data rate control function
- Supports NTPv4 Client
- Supports LLDP
- Provides SNMP v1/v2C/v3 agent and event trap function
- Supports Configuration download and upload
- 19" rack mountable
- Both AC powered model and DC powered model are available for choice

## **Management Features:**

- Port Control
  - Port Speed/Duplex Mode/Flow Control/Power saving configuration
  - Port frame size control (Jumbo frame support)
- QoS
  - Traffic Classification up to 8 active priorities
  - Port QoS configuration
  - QoS Control List for policy rules
  - Port bandwidth control for ingress and egress
  - Storm Control for UC, MC and Unknown MAC
  - Port ingress bandwidth policer
  - Policers for ACL rules
  - Port egress bandwidth shaper
  - Queue egress bandwidth shaper
  - DiffServ (RFC2474) DSCP based classification and remarking
  - Tag based remarking
  - Port scheduler mode for egress queue
- Layer2
  - Auto MAC address learning and ageing
  - Static MAC address filtering
  - 802.1Q VLAN
  - Private VLAN, Port Isolation, MAC-based VLAN, Protocol-based VLAN, IP subnet-based VLAN
  - VLAN trunking
  - LAN Trunking
  - Multiple Registration Protocol MRP
  - IEEE-802.1ad Provider Bridge (Native or Translated VLAN)
  - Link Aggregation LACP
  - MSTP, RSTP, STP
  - Port Mirroring
  - IGMP, MLD snooping
  - DHCP client for IP configuration
- Layer 3 Switching
  - DHCP option 82 relay
  - UPNP
  - IPv4 Unicast: Static routing
  - IPv4 Unicast: RIPv1/RIPv2
  - IPv4 Multicast Routing

- IPv6 Unicast Routing
- Security features
  - Port-based 802.1X
  - Single 802.1X
  - Multiple 802.1X
  - MAC-based authentication
  - ADIUS Accounting
  - MAC Address Limit
  - MAC address limit by VLAN
  - MAC Freeze All learned MAC addresses on specified ports become static MAC addresses
  - MAC Spoofing Network protection against changing MAC address to bypass the ACL services
  - IP MAC binding
  - IP/MAC binding dynamic to static
  - TACACS+ Protocol for authenticating users that wish to manage the switch.
  - TACACS+ Accounting
  - Web & CLI Authentication
  - User Authorization Levels for CLI and Web management.
  - Web-based Authentication
  - Authorization (15 user levels)
  - ACLs for filtering/policing/port copy
  - Access Control Lists for filtering, policing or port copy
  - IP source guard Access Control List for L2/L3 protocol filtering, ingress rate limit, port copy
- Management
  - DHCP Client
  - DHCPv6 Client
  - DHCP Server
  - DNS client, proxy
  - HTTP Server Web management
  - Console CLI
  - Telnet CLI
  - Industrial Standard CLI
  - Industrial Standard Configuration
  - Management access filtering
  - HTTPS
  - SSHv2
  - System Syslog
  - Software Upload via web

- SNMP v1 / v2c / v3 Agent
- RMON (Group 1, 2, 3 & 9)
- SNMP trap group
- Link Layer Discovery LLDP
- LLDP-MED
- Cisco Discovery filtering CDP
- sFlow
- Software Download via Web
- Configuration download and upload
- SNMP MIBs

# 1.2 Product Panels

The following figure illustrates the front panel and rear panel of the switch:

Model	Front Panel	Rear Panel (Power Input)
AC powered model		A ADP-2-001
DC powered model	**************************************	Countries PCCH+

# **1.3 Optional Modules**

Module Part No.	Image	Specifications		
8GT		<ul> <li>8 10/100/1000 copper ports</li> <li>8 RJ-45 jacks</li> </ul>		
8GX		<ul> <li>8-port 100/1000 SFP module</li> <li>8 dual-speed SFP slots</li> <li>Supports standard 100M or 1000M SFP optical fiber transceivers</li> </ul>		

8G4	<ul> <li>4 10/100/1000 copper ports (4 RJ-45) support 10/100/1000Mbps</li> <li>4 dual-speed SFP slots support standard 100M or 1000M SFP optical fiber transceivers</li> </ul>
8FX-xxx	<ul> <li>8 fixed 100M fiber ports</li> <li>8 duplex SC transceivers support 100Mbps</li> <li>Options: MMF 2km, SMF 20km</li> </ul>
8FM-xxx	<ul> <li>6 fixed 100M fiber ports with 6 duplex SC transceivers supporting 100Mbps</li> <li>2 10/100/1000 copper ports (2 RJ-45)</li> <li>Fiber options:         MMF 2km, SMF 20km     </li> </ul>
8FX-T	<ul> <li>8 fixed 100M fiber ports</li> <li>8 duplex ST transceivers support 100Mbps and MMF 2km</li> </ul>
8FM-T	<ul> <li>6 fixed 100M fiber ports with 6 duplex ST transceivers supporting 100Mbps and MMF 2km</li> <li>2 10/100/1000 copper ports (2 RJ-45)</li> </ul>

8FX-Wxxyy	<ul> <li>8 fixed 100M fiber ports</li> <li>8 BiDi SC transceivers support 100Mbps</li> <li>Options: Tx1310/Rx1550 SMF 20km Tx1550/Rx1310 SMF 20km</li> </ul>
8FM-Wxxyy	<ul> <li>6 fixed 100M fiber ports with 6         BiDi SC transceivers support         100Mbps</li> <li>2 10/100/1000 copper ports (2         RJ-45)</li> <li>Fiber options:         Tx1310/Rx1550 SMF 20km         Tx1550/Rx1310 SMF 20km</li> </ul>

# 1.3.1 Optional Module Table

Module Part No.	10/100/1000M Copper ports	100/1000M pluggable SFP	Fixed 100M Fiber
8GT	8 RJ-45		
8GX		8 SFP	
8G4	4 RJ-45	4 SFP	
8FX-T			8 ST for MMF 2km
8FX-C			8 SC for MMF 2km
8FX-SL2			8 SC for SMF 20km
8FX-W3520			8 BiDi SC
8FX-W5320			for single SMF 20km
8FM-SL2	2 RJ-45		6 SC for SMF 20km
8FM-C	2 RJ-45		6 SC for MMF 2km
8FM-T	2 RJ-45		6 ST for MMF 2km
8FM-W3520	2 RJ-45		6 BiDi SC
8FM-W5320			for single SMF 20km

## 1.4 LED Indicators

LED Function
POWER Power sta

POWER Power status

Mngt Management status

1000M Port speed 1000Mbps status

Link/Act. Port link and activity status (Port 1 – Port 24)

## 1.5 Specifications

## 10/100/1000 Copper Ports

Compliance IEEE 802.3 10Base-T, IEEE 802.3u 100Base-TX, IEEE 802.3u 1000Base-T

Connectors Shielded RJ-45 jacks

Pin assignments Auto MDI/MDI-X detection

Configuration Auto-negotiation or software control

Transmission rate 10Mbps, 100Mbps, 1000Mbps

Duplex support Full/Half duplex

Network cable Cat.5 UTP

## **Dual-speed SFP Slots**

Compliance IEEE 802.3z 1000BASE-SX/LX (mini-GBIC)

IEEE 802.3u 100BASE-FX

Connectors SFP slot supports optional both 100M and 1000M SFP type fiber transceivers

Configuration options Auto-negotiation 1000Mbps Full duplex

Forced 100Mbps Full duplex

(Software configurable)

Network cables MMF 50/125μm 60/125μm, SMF 9/125μm

Eye safety IEC 825 compliant

## **Fixed 100M Fiber Ports**

Compliance IEEE 802.3u 100BASE-FX

Connector options Duplex SC for multimode fiber

Duplex SC for single mode fiber Duplex ST for multimode fiber BiDi SC for single SM fiber

Configuration 100Mbps, full duplex

Network cables MMF 50/125μm 60/125μm, SMF 9/125μm

Eye safety IEC 825 compliant

## **Console Port**

Interface RS-232, DTE type

Connector 9-pin D-sub

#### **Switch Functions**

MAC Addresses Table 8K entries

Forwarding & filtering Non-blocking, full wire speed

Switching technology Store and forward

Maximum packet length 10056 bytes (Jumbo frame support)

Flow control IEEE 802.3x pause frame base for full duplex operation

Back pressure for half duplex operation

VLAN function Port-based VLAN and IEEE 802.1Q Tag-based VLAN

VLAN support 4096 VLANs (IEEE 802.1Q)

Aggregation LACP Port link aggregation (port trunking)

QoS function Ethernet type, IP-based, DSCP, TOS-based, VID-based, VLAN Tag-based packet

classification

Port rate control, storm control

Port Mirroring Mirror received frames to a sniffer port

#### **AC Power Input (AC powered models)**

Interfaces IEC320 receptacle

Operating Input Voltages 100 ~ 240VAC / 0.75-0.38A

Power Consumption 46W max.

#### **DC Power Input (DC powered models)**

Interfaces Screw-type terminal block

Operating Input Voltages  $+40 \sim +72$ VDC,  $-40 \sim -72$ VDC

Power Consumption 46W max.

#### **Mechanical**

Dimension (base) 443 x 245 x 43 mm (WxDxH)

Housing Enclosed metal

Mounting Desktop mounting, 19" rack mounting

#### **Environmental**

Operating Temperature Typical -5°C ~ +50°C

Storage Temperature  $-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$ 

Relative Humidity 10% ~ 90% non-condensing

## **Electrical Approvals**

FCC Part 15 rule Class A

CE EMC, CISPR22 Class A

Safety LVD, IEC60950-1

## 2. Installation

## 2.1 Unpacking

The product package contains:

- The switch unit
- One AC power cord (AC powered Model)
- One 19" rack mounting kit
- One product CD-ROM

## 2.2 Safety Cautions

To reduce the risk of bodily injury, electrical shock, fire and damage to the product, observe the following precautions.

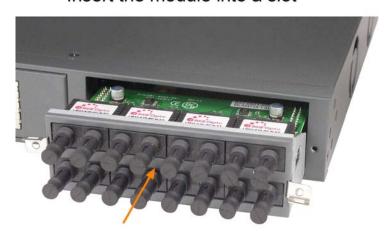
- Do not service any product except as explained in your system documentation.
- Opening or removing covers may expose you to electrical shock.
- Only a trained service technician should service components inside these compartments.
- If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:
  - The power cable, extension cable, or plug is damaged.
  - An object has fallen into the product.
  - The product has been exposed to water.
  - The product has been dropped or damaged.
  - The product does not operate correctly when you follow the operating instructions.
- Do not push any objects into the openings of your system. Doing so can cause fire or electric shock by shorting out interior components.
- Operate the product only from the type of external power source indicated on the electrical ratings label. If
  you are not sure of the type of power source required, consult your service provider or local power
  company.

# 2.3 Installing Module

The steps to install a module are:

- 1. Unscrew and open the cover of the module slot.
- 2. Insert the module into the slot until it is plugged on the slot connector properly.

## Insert the module into a slot

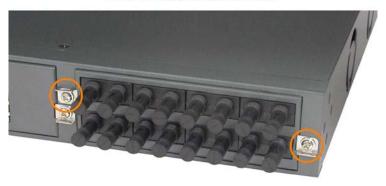


3. Screw the module on the front panel of the base chassis securely.

## Screw the module into the base



The module screwed



# 2.4 Removing the Module

The steps to remove an installed module from a base chassis are:



1. Unscrew the module first.



2. Loosen two screw brackets and pull them out as shown below:



3. Use the brackets as handles to pull the module out from the module slot connector.



4. Remove the module from the slot.

## 2.5 Mounting the Switch

## **Desktop Mounting**

The switch can be mounted on a desktop or shelf. Make sure that there is proper heat dissipation from and adequate ventilation around the device. Do not place heavy objects on the device.



## **Rack Mounting**

Two 19-inch rack mounting brackets are supplied with the switch for 19-inch rack mounting. The steps to mount the switch onto a 19-inch rack are:

- 1. Turn the power to the switch off.
- 2. Install two brackets with supplied screws onto the switch as shown in figure below.

Install rack mounting brackets



After bracket mounting



2. Mount the switch onto 19-inch rack with rack screws securely.



3. Turn the power to the switch on.

# 2.6 Applying AC Power Supply

If the purchased switch is with AC power input, one AC power cord which meets the specification of your country of origin was supplied in package. Before installing AC power cord to the switch, make sure the AC power is OFF and the AC power to the power cord is turned off.



AC power input specifications

Connector: IEC320 type

Power Rating: 100 ~ 240VAC, 50/60Hz

Voltage Range: 90 ~ 264VAC

Frequency: 47 ~ 63 Hz

Power Consumption: 46W max.

#### **Important Notes:**

1. The socket-outlet shall be installed near the switch and shall be easily accessible.

2. Use of an approved power supply cord not lighter than IEC 60227, H03VV-F, 3G, 0.75mm2 or alternatively IEC 60245, H05RR-F, 3G, 0.75mm2.

## 2.7 Applying DC Power Supply

If the purchased switch is with DC power input, the power connector is shown below:



#### DC power input specifications

Receptacle: Screw-type terminal block

Operating Voltages:  $+40 \sim +72$ VDC or  $-40 \sim -72$ VDC

Power Consumption: 46W max.

#### Contacts

+ Vdc+ input

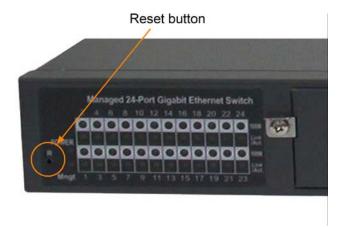
Vdc- input

Protective earth (Connected chassis and isolated with Vdc+ & Vdc-)

#### Important Note:

- 1. For a PERMANENTLY CONNECTED SWITCH EQUIPMENT, a readily accessible power disconnect device shall be incorporated external to the switch equipment.
- 2. The power disconnecting device be installed near the switch and shall be easily accessible.
- 3. The power wiring between the DC power supply and the switch must be stranded copper wire within the range of 10 to 24 AWG.

## 2.8 Reset Button



The reset button is used to perform a reset to the switch. It is not used in normal cases and can be used for diagnostic purpose. If any network hanging problem is suspected, it is useful to push the button to reset the switch without turning off the power. Check whether the network is recovered.

The button can also be used to restore the software configuration settings to factory default values. The operations are:

Operation	Function
Press the button during system boot-up and release	Restore factory default settings
it after boot-up. The boot-up takes about 27 seconds	
and ends with LED diagnostics.	
Press the button and release during switch operation	Re-boot the switch unit

# 2.9 Making UTP Connections

The 10/100/1000 RJ-45 copper ports support the following connection types and distances:

#### **Network Cables**

10BASE-T: 2-pair UTP Cat. 3, 4, 5, EIA/TIA-568B 100-ohm

100BASE-TX: 2-pair UTP Cat. 5, EIA/TIA-568B 100-ohm

1000BASE-T: 4-pair UTP Cat. 5 or higher (Cat.5e is recommended), EIA/TIA-568B 100-ohm

Link distance: Up to 100 meters

#### **Auto MDI/MDI-X Function**

This function allows the port to auto-detect the twisted-pair signals and adapts itself to form a valid MDI to MDI-X connection with the remote connected device automatically. No matter a straight through cable or crossover cable are connected, the ports can sense the receiving pair automatically and configure themselves to match the rule for MDI to MDI-X connection. It simplifies the cable installation.

## **Auto-negotiation Function**

The ports are featured with auto-negotiation function and full capability to support connection to any Ethernet devices. The port performs a negotiation process for the speed and duplex configuration with the connected device automatically when each time a link is being established. If the connected device is also auto-negotiation capable, both devices will come out the best configuration after negotiation process. If the connected device is incapable in auto-negotiation, the switch will sense the speed and use half duplex for the connection.

## **Port Configuration Management**

For making proper connection to an auto-negotiation INCAPABLE device, it is suggested to use port control function via software management to set forced mode and specify speed and duplex mode which match the configuration used by the connected device.

## 2.10 Making SFP Fiber Connection

The dual-speed SFP slot must be installed with an SFP fiber transceiver for making fiber connection. Your switch may come with some SFP transceivers pre-installed when it was shipped.

Since the SFP slot is dual-speed support, it may be installed with a 1000M SFP fiber transceiver or a 100M SFP fiber transceiver. Choose a right transceiver which matches the requirements for connection speed, fiber type and connection distance for your application.

#### **Installing SFP Fiber Transceiver**

To install an SFP fiber transceiver into SFP slot, the steps are:

- 1. Turn off the power to the switch.
- 2. Insert the SFP fiber transceiver into the SFP slot. Normally, a bail is provided for every SFP transceiver. Hold the bail and make insertion.





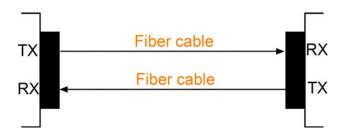
3. Until the SFP transceiver is seated securely in the slot, place the bail in lock position.

## The transceiver seated properly



## **Connecting Fiber Cables**

LC connectors are commonly equipped on most SFP transceiver modules. Identify TX and RX connector before making cable connection. Plug in the cables as shown below. Make sure RX-to-TX connection rule is followed between two ends of the connected cable.



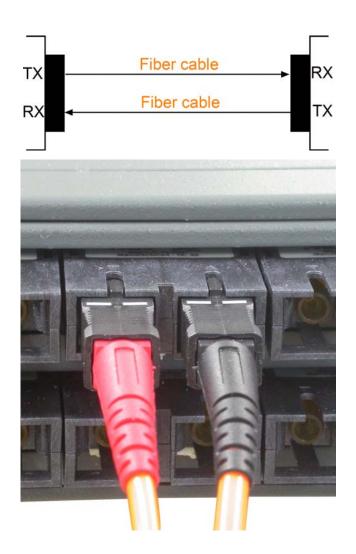
## 2.11 Making Fixed Duplex Fiber Connection

The following figure illustrates an example of fixed duplex fiber port with duplex SC connectors.



A module with fixed duplex ST connectors is also available in the listed optional modules.

Identify TX and RX connector before making cable connection. Plug in the cables as shown below. Make sure RX-to-TX connection rule is followed between two ends of the connected cable.

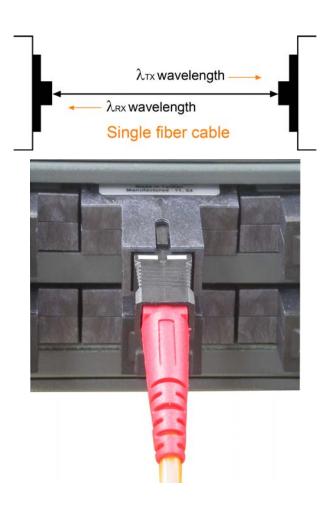


# 2.12 Making Fixed Bi-Di (Bi-Directional) Fiber Connection

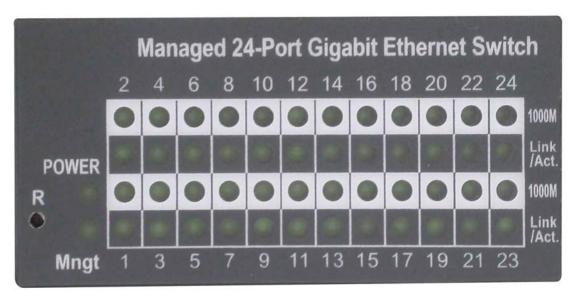
The following figure illustrates an example of fixed Bi-Di (Bi-directional) fiber port with one SC connector.



A Bi-Di port supports single fiber connection. It uses different optical wavelengths for transmission and receiving individually as figure illustrated below:



## 2.13 LED Indication



LED	Function	Color Sta	te Interpretation
POWER	Power status	Green ON	The power is supplied to the switch.

			OFF	The power is not supplied to the switch.
Mngt	Management status	Green	OFF	The switch is in initialization and diagnostics.
			BLINK	The switch is initialized completely with diagnostic error.
			ON	The switch is initialized completely and normal.
1000M	Port speed status	Green	ON	1000Mbps is selected
			OFF	100Mbps or 10Mbps is selected.
Link/Act.	Port link status	Green	ON	Port link is established. (No traffic)
			BLINK	Port link is up and there is traffic.
			OFF	Port link is down.

# 2.14 Making Console Connection

Console port is a DB9 connector. It serves as an RS-232 DTE port.

## **Pin Definitions**

Pin 2	RXD
Pin 3	TXD
Pin 5	GND
Pin 1,4,6-9	NC

Use simple RS232 null modem without handshaking to connect the console port to PC's DB9 COM port as follows:

Conso	<u>le Pins</u>	COM Po	ort Pins
Pin 2	RXD	Pin 3	TXD
Pin 3	TXD	Pin 2	RXD
Pin 5	GND	Pin 5	GND

## **Baud Rate Information**

Baud rate: 115200

Data bits: 8
Parity: none
Stop bit: 1

Flow control: disabled

# 3. Managing the Switch

The switch provides the following methods to configure and monitor the switch as follows:

- Making out of band management via RS-232 console port
- Making in-band management via telnet interface over TCP/IP network
- Making in-band management via web interface over TCP/IP network
- Making in-band SNMP management over TCP/IP network

## 3.1 IP Address & Password

The IP Address is an identification of the switch in a TCP/IP network. Each switch should be designated a new and unique IP address in the network. The switch is shipped with the following factory default settings for software management:

Default IP address of the switch: 192.168.0.2 / 255.255.255.0

Fixed Username: admin

Privilege level: 15

No password

The switch supports local authentication instead of RADIUS authentication with factory defaults. No password is required with factory default. However, the password is used for local authentication in accessing to the switch via console, telnet and Http web-based interface. For security reason, it is recommended to change the default settings for the switch before deploying it to your network.

## 3.2 Configuring IP Address via console and telnet CLI

The steps to configure a fixed IPv4 address for the switch via CLI are:

## **Example for Fixed IP address:**

```
# configure terminal
(config)# interface vlan 1
(config-if-vlan)# ip address 192.168.4.171 255.255.255.0
```

#### Remark:

- With factory default, vlan 1 is the only one that includes all switched ports as port members.
- Address 192.168.4.171 255.255.255.0 is assigned to vlan 1.

#### **Example for DHCP:**

```
# configure terminal
(config)# interface vlan 1
(config-if-vlan)# ip address dhcp fallback 192.168.4.171 255.255.255.0
```

#### Remark:

- 1. With factory default, vlan 1 is the only one that includes all switched ports as port members.
- 2. vlan 1 uses dhcp for IP configuration.
- 3. Address 192.168.4.171 255.255.255.0 is the fallback IP address when dhcp server is not available.

## 3.3 Configuring Local Authentication via console and telnet CLI

## **Example:**

(config)# username michael privilege 15 password unencrypted 12345

#### Remark:

- 1. The username example is Michael and the password is unencrypted 12345.
- 2. Michael is given privilege 15, the highest level.
- 3. The username and password is used as local authentication for CLI and web UI.

Since default username admin can not be deleted and not protected with password, it is necessary to configure a password for admin for security purpose.

#### Configure password for default username admin:

(config)# username admin password unencrypted 12345

Password unencrypted 12345 is an example.

## 3.4 Configuring IP Address & Password via Web Interface

#### **Start Web Browser**

Start your browser software and enter the default IP address to which you want to connect. The IP address is used as URL for the browser software to search the device.

URL: http://192.168.0.2/

## Login to the switch

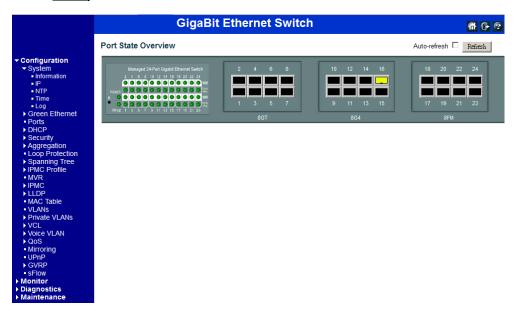
When browser software connects to the switch successfully, a Login screen is provided for you to login to the device as the left display below:



Enter the following default values in the login page:

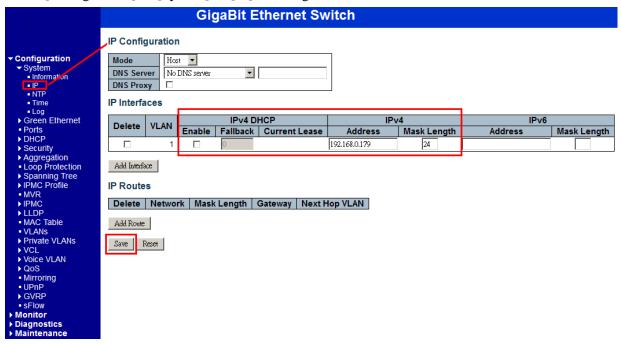
Fixed User Name: admin No password is required.

Click OK to login into the switch.



## **IP Address Configuration**

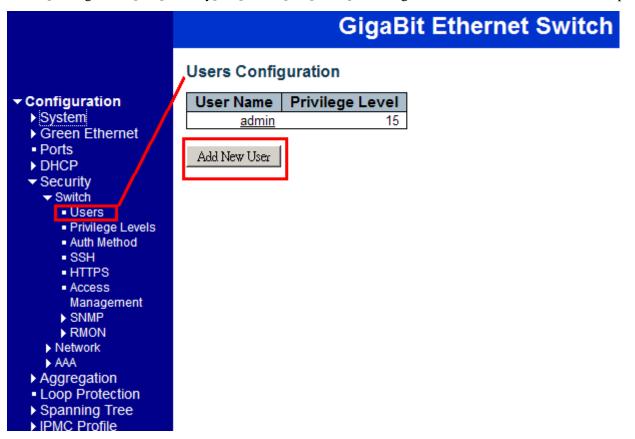
Select [Configuration] -> [System] -> [IP] to configure IP address for VLAN 1



Configuration	Description
IPv4 DHCP	DHCP client configuration
Enable	Enable the DHCP client by checking this box. If this option is enabled, the system
	will configure the IPv4 address and mask of the interface using the DHCP protocol.
Fallback	The number of seconds for trying to obtain a DHCP lease. After this period expires, a
	configured IPv4 address will be used as IPv4 interface address. A value of zero
	disables the fallback mechanism, such that DHCP will keep retrying until a valid
	lease is obtained. Legal values are 0 to 4294967295 seconds.
Current Lease	For DHCP interfaces with an active lease, this column shows the current interface
	address, as provided by the DHCP server.
Address	The IPv4 address of the interface in dotted decimal notation. If DHCP is enabled, this
	field configures the fallback address. The field may be left blank if IPv4 operation on
	the interface is not desired - or no DHCP fallback address is desired.
Mask Length	The IPv4 network mask, in number of bits (prefix length). Valid values are between 0
	and 30 bits for a IPv4 address. If DHCP is enabled, this field configures the fallback
	address network mask. The field may be left blank if IPv4 operation on the interface
	is not desired - or no DHCP fallback address is desired.
Save	Click to save the changes.
Reset	Click to undo any changes made locally and revert to previously saved values.

## **User Configuration**

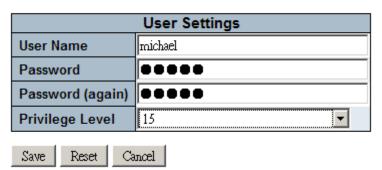
Select [Configuration] -> [Security] -> [Switch] -> [Users] to configure a new user, Michael as an example.



## Configuration **Description** User Name The name identifying the user. This is also a link to Add/Edit User interface. Privilege Level The privilege level of the user. The allowed range is 1 to 15. If the privilege level value is 15, it can access all groups, i.e. that is granted the fully control of the device. But others value need to refer to each group privilege level. User's privilege should be same or greater than the group privilege level to have the access of that group. By default setting, most groups privilege level 5 has the read-only access and privilege level 10 has the read-write access. And the system maintenance (software upload, factory defaults and etc.) need user privilege level 15. Generally, the privilege level 15 can be used for an administrator account, privilege level 10 for a standard user account and privilege level 5 for a guest account. Add New User Click to add a new user.

## **Add New User**

## Add User



Configuration	Description	
User Name	A string identifying the user name that this entry should belong to. The allowed string	
	length is 1 to 31. The valid user name allows letters, numbers and underscores.	
Password	The password of the user. The allowed string length is 0 to 31. Any printable	
	characters including space are accepted.	
Password (again)	Re-enter the password again.	
Privilege Level	The privilege level of the user. The allowed range is 1 to 15. If the privilege level	
	value is 15, it can access all groups, i.e. that is granted the fully control of the device.	
	But others value need to refer to each group privilege level. User's privilege should	
	be same or greater than the group privilege level to have the access of that group. By	
	default setting, most groups privilege level 5 has the read-only access and privilege	
	level 10 has the read-write access. And the system maintenance (software upload,	
	factory defaults and etc.) need user privilege level 15. Generally, the privilege level	
	15 can be used for an administrator account, privilege level 10 for a standard user	
	account and privilege level 5 for a guest account.	
Save	Click to save the changes.	
Reset	Click to undo any changes made locally and revert to previously saved values.	
Cancel	Click to undo any changes made locally and return to the Users.	

# Click Save

## **Users Configuration**

User Name	Privilege Level
<u>admin</u>	15
<u>michael</u>	15

Add New User

## Configure password for admin user

Select [Configuration] -> [Security] -> [Switch] -> [Users] to show all users.

## **Users Configuration**

User Name	Privilege Level
<u>admin</u>	15
<u>michael</u>	15
Add New User	

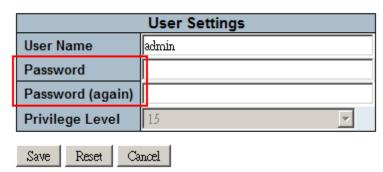
Click admin to edit configuration.

## Users Configuration



Edit user page to configure password for admin user:

#### Edit User



## 3.5 Reference Manuals for Web, Console, Telnet Management

The following operation manuals are also provided separately for Console, Telnet and Web management:

Operation manual - telnet & console management xxxxxx.doc

Operation manual - web management xxxxx.doc

The manuals describe the detailed commands and information.

## 3.6 Configuration for SNMP Management

The switch supports SNMP v1, SNMP v2c, and SNMP v3 management. Make sure the related settings are well-configured for the switch before you start the SNMP management from an SNMP manager.

## **Using Telnet CLI**

The following are available commands in telnet SNMP command group to configure SNMP-related settings:

```
(config)# snmp-server ?
   access
                     access configuration
   community
                     Set the SNMP community
   contact
                     Set the SNMP server's contact string
   engine-id
                     Set SNMP engine ID
   host
                     Set SNMP host's configurations
   security-to-group security-to-group configuration
                     Set trap's configurations
   trap
                     Set the SNMPv3 user's configurations
   user
                     Set the SNMP server's version
   version
   view
                     MIB view configuration
```

## **Using Web Interface**



The commands supports configuration for:

- Basic system configuration for SNMP v1, SNMP v2c and SNMP v3
- Basic system configuration for SNMP v1 trap, SNMP v2c trap and SNMP v3 trap
- Communities that permit to access to SNMPv3 agent
- User table for SNMPv3
- Group table for SNMPv3
- Viewer table for SNMPv3
- Accesses group table for SNMPv3

## 3.7 SNMP MIBs

The switch provides the following SNMP MIBs:

RFC 1213 - MIB II	MIB for Network Management of TCP/IP-based internets.
DEC 2674 O Bridge MID (VI ANI MID)	VLAN Bridge MIB module for managing Virtual Bridged LANs,
RFC 2674 - Q-Bridge MIB (VLAN MIB)	as defined by IEEE802.1Q-1998.
RFC 2819 - RMON (Group 1, 2. 3 & 9)	MIB module for managing remote monitoring device
(Gloup 1, 2. 3 & 9)	implementations.
RFC 2863 - Interface Group (IF) MIB	MIB module to describe generic objects for network interface
THE 2003 - Interface Group (IF) WIIB	sub-layers.
RFC 3411 - SNMP Management Frameworks	
RFC 3414 - User Based Security Model	MIB module for the SNMP User-based Security Model.
(USM)	
RFC 3415 - View Based Access Control	MIB module for the View-based Access Control Model for
Model (VACM)	SNMP,
RFC 3635 - EtherLike MIB	MIB module to describe generic objects for Ethernet-like
IXI C 3033 - LitterLike WIID	network interfaces.
RFC 3636 - 802.3 Medium Attachment Units	MIB module for 802.3 MAU.
(MAUs) MIB	
RFC 4133 - Entity MIB	MIB module for representing multiple logical entities supported
TO 4100 Entity Will	by a single SNMP agent.
RFC 4188 - Bridge MIB	Bridge MIB module for managing devices that support IEEE
TO 4 100 - Bridge Wild	802.1D
RFC4292-IP-Forwarding-MIB	
RFC4293-IP-MIB	
DECASS DADILIS Authoritorion Client MID	MIB module for entities implementing the client side of the
RFC4668 - RADIUS Authentication Client MIB	RADIUS authentication protocol.
RFC4670-RADIUS-ACC-CLIENT-MIB	MIB module for entities implementing the client side of the

	RADIUS accounting protocol.
RFC 5519 - Multicast Group Membership	MIB module for MGMD management
Discovery (MGMD) MIB	(Obsoletes RFC 2933 and RFC 3019 MIBs)
IEEE 802.1 MSTP MIB	MIB module for managing devices that support IEEE
IEEE 802.1 WSTF WIIB	802.1multiple spanning tree groups.
IEEE 802.1AB LLDP MIB	MIBs defined in 802.1AB.
IEEE 802.1X Port Access Entity (PAE) MIB	MIBs defined in 802.1X.
IEEE 802.1-Q-BRIDGE MIB	The VLAN Bridge MIB module for managing Virtual Bridged
IEEE 802.1-Q-BRIDGE WIB	LANs, as defined byIEEE 802.1Q-2005.
IEEE 802.3ad Link Aggregation (LAG) MIB	MIBs defined in 802.3ad.
TIA 1057 LLDP Media Endpoint Discovery	The LLDP MIB extension module for TIA-TR41.4 Media
(MED) MIB	Endpoint Discovery information.
Private - SFLOW MIB	

One product MIB file is also available in the product CD for SNMP manager software.