



# **KGS-0600**

**Web Smart 6-Port Gigabit Ethernet Switch  
with 1 mini-GBIC Port**

User's Manual



DOC.120206

(C) 2012 KTI Networks Inc. All rights reserved. No part of this documentation may be reproduced in any form or by any means or used to make any derivative work (such as translation or transformation) without permission from KTI Networks Inc.

KTI Networks Inc. reserves the right to revise this documentation and to make changes in content from time to time without obligation on the part of KTI Networks Inc. to provide notification of such revision or change.

For more information, contact:

**United States**      KTI Networks Inc.  
P.O. BOX 631008  
Houston, Texas 77263-1008

Phone: 713-2663891  
Fax: 713-2663893  
E-mail: [kti@ktinet.com](mailto:kti@ktinet.com)  
URL: <http://www.ktinet.com/>

**International**      Fax: 886-2-26983873  
E-mail: [kti@ktinet.com.tw](mailto:kti@ktinet.com.tw)  
URL: <http://www.ktinet.com.tw/>

The information contained in this document is subject to change without prior notice. Copyright (C) All Rights Reserved.

## **TRADEMARKS**

Ethernet is a registered trademark of Xerox Corp.

## **FCC NOTICE**

This device complies with Class A Part 15 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.

## **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

EN55022:2006/A1:2007 Class A

EN61000-3-2:2006

EN61000-3-3:2008

EN 55024:1998/A1:2001/A2:2003

IEC 61000-4-2:2009

IEC 61000-4-3:2006/A1:2008

IEC 61000-4-4:2004

IEC 61000-4-5:2006

IEC 61000-4-6:2009

IEC 61000-4-8:1993/A1:2001

IEC 61000-4-11:2004

## Table of Contents

1. Introduction .....	5
2. Highlight Features .....	5
3. Product Panels.....	6
4. LED Indicators .....	6
5. Specifications.....	6
6. Installation.....	8
7. Mounting the Switch on a Wall.....	9
8. Applying Power .....	9
9. Reset Button .....	10
10. Making UTP Connections .....	10
11. Making Fiber Connection .....	11
12. LED Indication.....	13

## 1. Introduction

The KGS-0600 is a Gigabit Ethernet switch which is featured with the following switched ports:

- Five 10/100/1000Mbps Gigabit copper ports
- One 1000Base-X SFP port



It provides five 10/100/1000Mbps copper ports for connections to Ethernet, Fast Ethernet, and Gigabit Ethernet devices. With the featured auto-negotiation function, the switch can detect and configure the connection speed and duplex automatically. The switch also provides auto MDI/MDI-X function, which can detect the connected cable and switch the transmission wire pair and receiving pair automatically. This auto-crossover function can simplify the type of network cables used. The fiber port provides one 1000M SFP slot, which can be installed with one optional SFP optical fiber transceiver to support one Gigabit 1000Base-X fiber connection when needed.

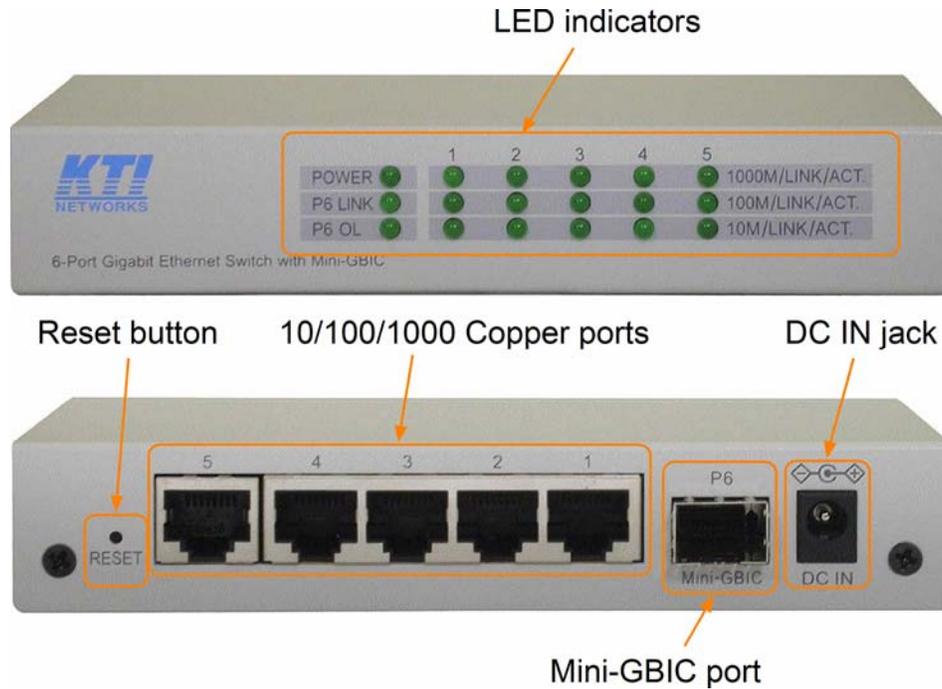
With large packet buffer, the switch supports jumbo frame forwarding under wire speed performance smoothly. It is also featured with IGMP snooping function which only forward multicast packet to the ports which need it.

## 2. Highlight Features

- Plug and play
- Full wire speed Gigabit performance
- Optional fiber connectivity
- Jumbo frame support
- IGMP snooping
- High power saving

### 3. Product Panels

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



### 4. LED Indicators

<u>LED</u>	<u>Function</u>
POWER	Power status
1000M/LINK/ACT	Network port 1000M link status (Port 1 - Port 5)
100M/LINK/ACT	Network port 100M link status (Port 1 - Port 5)
10M/LINK/ACT	Network port 10M link status (Port 1 - Port 5)
P6 LINK	Port 6 1000M link status
P6 OL	Port 6 optical link status

### 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

**1000Mbps Mini-GBIC SFP**

Compliance            IEEE 802.3z 1000Base-SX/LX (mini-GBIC)  
Connectors            SFP for optional SFP type fiber transceivers  
Configuration        Auto/Forced, 1000Mbps, Full duplex  
Transmission rate    1000Mbps  
Network cables        MMF 50/125 60/125, SMF 9/125  
Eye safety            IEC 825 compliant

**Switch Functions**

MAC Addresses Table 8K entries  
Forwarding & filtering Non-blocking, full wire speed  
Switching technology Store and forward  
Maximum packet length 9.6K bytes  
Flow control            IEEE 802.3x pause frame base for full duplex operation  
                              Back pressure for half duplex operation

**DC Power Input**

Interfaces            DC Jack ( -D 6.3mm / + D 2.0mm)  
Operating Input Voltages +5 ~ +12VDC (+/-5%)  
Power Consumption    5W max. @+5V

**Mechanical**

Dimension (base)    144 x 104.5 x 26 mm  
Housing            Enclosed metal with no fan  
Mounting            Desktop mounting, wall mounting, Din-rail mounting

**Environmental**

Operating Temperature Typical 0°C ~ 40°C  
Storage Temperature -20°C ~ 80°C  
Relative Humidity    10% ~ 90%

**Electrical Approvals**

FCC                    Part 15 rule Class A  
CE                    EMC, CISPR22 Class A

## **6. Installation**

### **Unpacking**

The product package contains:

- The switch unit
- One power adapter
- One product CD-ROM

### **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.

## 7. Mounting the Switch on a Wall

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



## 8. Applying Power

Before you begin the installation, check the AC voltage of your area. The AC power adapter which is used to supply the DC power for the unit should have the AC voltage matching the commercial power voltage in your area.

The AC-DC power adapter bundled in the product package may be one of the following options:

Rated AC120V/60Hz DC options: 7.5V / 5V / 12V

Rated AC100V/60Hz DC options: 7.5V / 5V / 12V

Rated AC230V/50Hz DC options: 7.5V / 5V / 12V

Rated AC240V/50Hz DC options: 7.5V / 5V / 12V

All options are working within the DC IN specifications.

The steps to apply the power to the product are:

1. Connect power adapter DC plug to the DC input jack located on the back of the unit before connecting to the AC outlet.
2. Connect the power adapter to the AC outlet.
3. Check Power LED indication.

*Note: Before you begin the installation, check the AC voltage of your area. The AC power adapter which is used to supply the DC power for the unit should have the AC voltage matching the commercial power voltage in your area.*

## 9. 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.

## 10. 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.

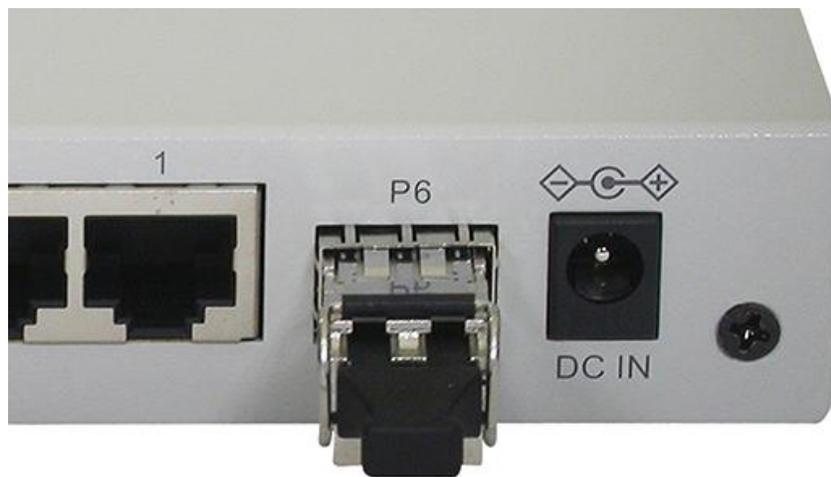
## 11. Making Fiber Connection

The 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 is shipped.

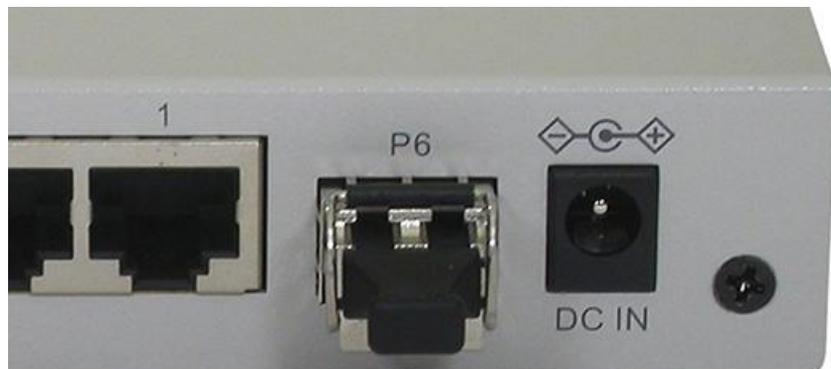
### Installing SFP Fiber Transceiver

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.  
Hold the bail and make insertion.

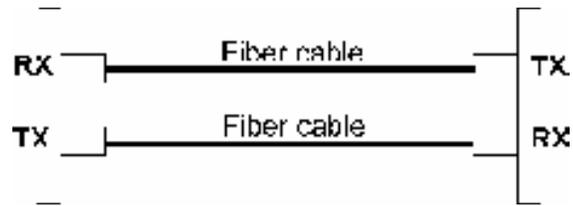


3. Until the SFP transceiver is seated securely in the slot, place the bail in lock position.



### Connecting Fiber Cables

LC connectors are commonly equipped on most SFP transceiver modules. Identify TX and RX connector before making cable connection. The following figure illustrates a connection example between two fiber ports:



Make sure the Rx-to-Tx connection rule is followed on the both ends of the fiber cable.

### Network Cables

Multimode (MMF) - 50/125 $\mu$ m, 62.5/125 $\mu$ m

Single mode (SMF) - 9/125 $\mu$ m

## 12. LED Indication

LED	Function	State	Interpretation
POWER	Power status	ON	The power is supplied to the switch.
		OFF	The power is not supplied to the switch.
1000M/LINK/ACT	Port link status	ON	A 1000Mbps link is established. (No traffic)
		BLINK	Port link is up and there is traffic.
		OFF	Port link is down.
100M/LINK/ACT	Port link status	ON	A 100Mbps link is established. (No traffic)
		BLINK	Port link is up and there is traffic.
		OFF	Port link is down.
10M/LINK/ACT	Port link status	ON	A 10Mbps link is established. (No traffic)
		BLINK	Port link is up and there is traffic.
		OFF	Port link is down.
P6 LINK	Port6 link status	ON	A 1000M link is established on Port 6.
		BLINK	Port 6 link is up and there is traffic.
		OFF	Port 6 link is down.
P6 OL	Port6 optical link	ON	Optical signal is detected on Port 6.
		OFF	No optical signal is detected on Port 6.