



Modular Media Converter Center System

KC-3600

and

Slide-in 10/100 Media Converter Modules

Slide-in Gigabit Media Converter Modules

Slide-in 10M Media Converter Modules

Operation Manual

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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
URL: <http://www.ktinet.com/>

International

Fax: 886-2-26983873
E-mail: kti@ktinet.com.tw
URL: <http://www.ktinet.com.tw/>

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WARNING:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference in which case the user will be required to correct the interference at his own expense.

NOTICE:

- (1) The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- (2) Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.


CISPR A COMPLIANCE:

This device complies with EMC directive of the European Community and meets or exceeds the following technical standard.

EN 55022 - Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment. This device complies with CISPR Class A.

WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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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:

EN 55022: Limits and Methods of Measurement of Radio Interference characteristics of Information Technology Equipment.

EN 50082/1: Generic Immunity Standard -Part 1: Domestic Commercial and Light Industry.

EN 60555-2: Disturbances in supply systems caused by household appliances and similar electrical equipment - Part 2: Harmonics.

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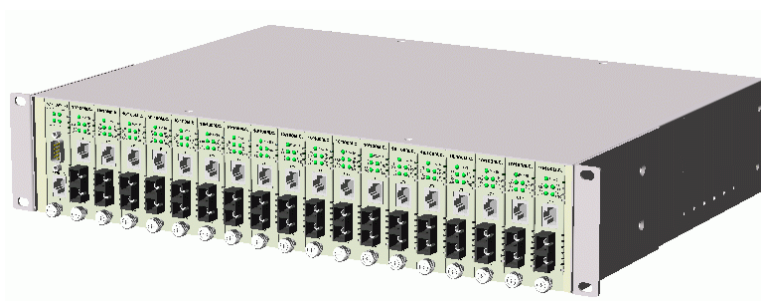
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1. Introduction

The Modular Converter System KC-3600 is a managed media converter rack that can host 18 slots of 10M Ethernet, 10/100 Fast Ethernet or Gigabit Ethernet network media converter modules. A wide range of media modules are available depending on your variety of network cabling environment. These optional media converter modules include UTP to multimode or single mode fiber cable for Ethernet, Fast Ethernet and Giga Ethernet networks.

The rack unit provides a centered power supply to the converter modules and serves as a converter center and wiring concentrator.



In addition to the system information, this manual also described the detailed specifications of the 10/100 Fast Ethernet, Gigabit and 10M Ethernet media converter modules supported by the system in Chapter 7, Chapter 8 and Chapter 9 respectively.

1.1 Features

Some of the key features include:

- Managed modular Media Converter Center Rack
- 19-inch rack-mountable 2U chassis
- Managed system accommodates up to 18 media converter modules
- Highly modularized chassis design with
 - modular media converter modules
 - modular management module
 - two system power modules for power redundancy
- Provides high availability and maintainability
- Power backup feature with two power chassis
- Visible system status indication
- Supports in-band Telnet, SNMP and web-based management
- Supports out-of-band direct console management
- Management from anywhere and any platform using a web browser
- Easy-to-use point and click user interface
- Photographic quality interface to configure and monitor the system
- Supports in-band event SNMP trap report
- Photographic quality interface to configure and monitor the system
- TFTP Software Upgrade

1.2 Technical Specifications

System Model	KC-3600/1A	KC-3600/2A	KC-3600/1D	KC-3600/2D
19-inch rack mount	Yes	Yes	Yes	Yes
Number of slots	19	19	19	19
Number of power slots	2	2	2	2
Management support	Managed	Managed	Managed	Managed
Number of MC slots	18 slots	18 slots	18 slots	18 slots
Plug-in power modules	1 power	2 power	1 power	2 power
Module type	AC power	AC power	DC power	DC power
Rated Input voltage	100~240V	100~240V	-48V	-48V
Power supply rating	90W	90W	130W	130W
Cooling	1 DC Fan	1 DC Fan	1 DC Fan	1 DC Fan

Mechanical

Chassis Height(2U)	88mm	88mm	88mm	88mm
Width	443mm	443mm	443mm	443mm
Depth	328mm	328mm	328mm	328mm
Weight (no MC modules)	7.7Kg	8.8Kg	7.1Kg	7.7Kg

Common Specifications

Chassis withstand static load	60Kg
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Vibration

Vibration 1	X-Y-Z / 16.7Hz / 4mm / 1 hour
Vibration 2	X-Y-Z / 10-20Hz / 1.3mm / 20min

Environmental

Operating temperature	-10~50°C
Storage temperature	-20~75°C
Operating humidity	10~90%RH

Emission standard

Conducted emission	EN55022, CISPR 22
Radiated emission	EN55022, CISPR 22
Voltage harmonics	EN61000-3-2
Voltage fluctuation & flicker	EN61000-3-3

Susceptibility

Electrostatic discharge immunity	EN61000-4-2, IEC61000-4-2
Radiated immunity	EN61000-4-3, IEC61000-4-3
EFT/Burst immunity	EN61000-4-4, IEC61000-4-4
Surge immunity	EN61000-4-5, IEC61000-4-5
Continuous wave voltage immunity	EN61000-4-6, IEC61000-4-6
PFMF immunity	EN61000-4-8, IEC61000-4-8
Voltage DIP/Interrupt immunity	EN61000-4-11, IEC61000-4-11

Certifications

FCC	Part 15, Class A
CE	EMC Class A, EN50081-1, EN50082-1

AC Power Chassis Module KC3600-AC Specifications

Dimension	298.2mm x 160.6mm x 40.6mm
Installation method	Plug in from system rear panel
Maintenance	Modular design for easy maintenance
AC power switch	System power on/off switch
AC power receptacle	IEC320 type receptacle
Electric	
Input voltage rating	100 ~ 240VAC
Input voltage range	90 ~ 264VAC
Input frequency	47 ~ 63Hz
Input surge current	30A max. @115VAC
Output power	90W (5V and 3.3V)
Protection	Over voltage, over power, short circuit
Safety	UL1950, TUV EN60950
Insulation Resistance	>10M Ohm @DC500V
Dielectric withstands	1500VAC 10mA 1min.

DC Power Chassis Module FC3600-DC Specifications

Dimension	298.2mm x 160.6mm x 40.6mm
Installation method	Plug in from system rear panel
Maintenance	Modular design for easy maintenance
Input power switch	System power on/off switch
Input power receptacle	Terminal connector (screw type)
Electric	
Input voltage rating	-48VDC
Input voltage range	-36 ~ -75VDC
Efficiency	73% full load
Output power rating	130W
Protection	Output overvoltage protection Short circuit protection Over temperature protection (auto-restart)
Safety	UL1950, TUV EN60950
Insulation Resistance	>10M Ohm @DC500V
Dielectric withstands	1500VDC 1min.

Management Module Specifications

Dimension	156.5mm x 44.4mm x 86.4mm
Slot position	Slot 0
CPU	RISC-based ARM7
RAM size	1M bytes
Flash size	512K bytes

System interface

Connector	DIN type connector
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Console interface

Interface	RS-232 DTE
Connector	9-pin male D-SUB connector
Baud rate	38400, N, 8, 1, 0
Flow control	Disabled

In-band interface

Interface	10/100M LAN port
Connector	Shielded RJ-45 MDI
Standard	IEEE 802.3 10BASE-T/100BASE-TX
Auto-negotiation	Support

LED Indicators

POWER	Green LED, module power status
INIT.	Green LED, CPU initialization
CONSOLE	Green LED, Console RS-232 Rx activities
LNK/ACT.	Green LED, LAN port link and activities status

Slide-in Media Converter Modules Supported

10/100TX to 100FX Media Converter series
10BASE-T to 10BASE-FL Media Converter series
1000BASE-T to 1000BASE-SX Media Converter series
1000BASE-T to 1000BASE-LX Media Converter series

Refer to the separated user manual for 3600 media converter modules for more information.

Management Specifications

Management interface

Telnet	Via direct RS-232 console connection
Telnet	Via TCP/IP Telnet software
SNMP agent	Via TCP/IP SNMP manager software
HTTP server	Via web browser software

Protocols

IPv4	IP version4	RFC791
TCP	Transmission Control Protocol	RFC793
UDP	User Datagram Protocol	RFC768
ICMP	Internet Control Message Protocol	RFC792
SNMP	SNMP agent v1	RFC1157
MIB-II	Standard MIB	RFC1213
TFTP	Trivial File Transfer Protocol	RFC1350
TELNET	Telnet protocol	RFC854
HTTP	HTTP server for web management	RFC1945

Management Objects

Password for access control	Set and monitor
System status : CPU, memory, flash, software	Monitor
System power 1&2 status	Monitor
System power 1&2 temperature status	Monitor
System fan status	Monitor
IP address of the system	Set and monitor
Subnet mask of the system	Set and monitor
Default gateway IP address	Set and monitor
SNMP name information	Set and monitor
SNMP location information	Set and monitor
SNMP contact information	Set and monitor
SNMP community names (up to 4)	Set and monitor
SNMP community access right (up to 4)	Set and monitor
SNMP trap host IP address (up to 3)	Set and monitor
Slot status : MC module installed or not	Monitor
MC Module status : media type, speed, duplex	Monitor
MC Module link status of two ports	Monitor

SNMP Traps

Cold Start	System is powered on and completes initialization
Authentication failure	SNMP community authentication failure
Power status	The system power 1&2 failure and recovery
Temperature status	Power 1&2 temperature warning and recovery
Fan failure	System fan failure and recovery
Slot # Port A link	Slot # MC module Port A link down or up
Slot # Port B link	Slot # MC module Port B link down or up

Update Firmware

Via TFTP protocol

Remote boot system

2. Installation

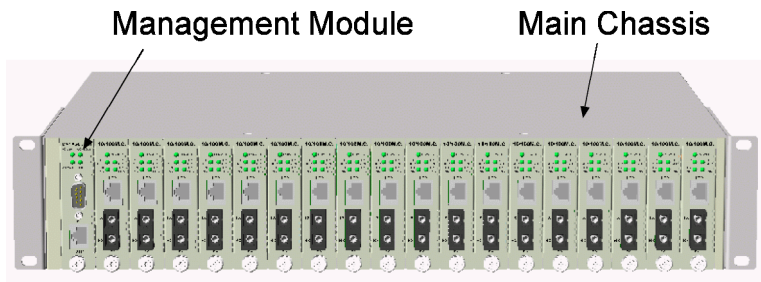
2.1 Unpacking

The product package contains:

- The system unit
- One power cord
- One 19-inch rack mounting kit
- Operation Manual

2.2 System Units

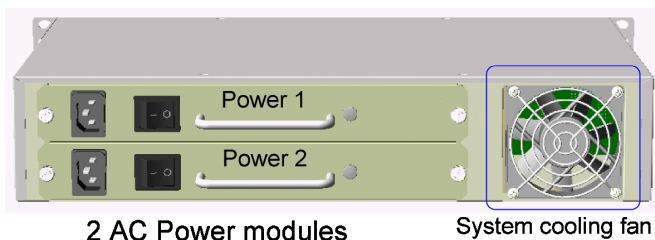
The figure below illustrates the front view of the KC-3600 system:



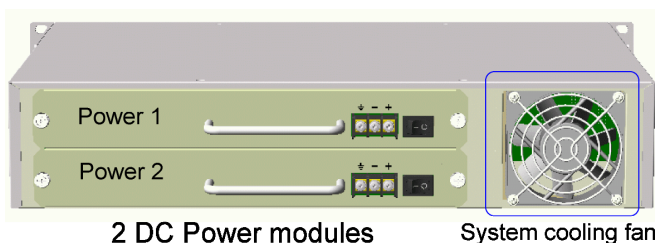
Depending on the model purchased, the type and numbers of the pre-installed media converter modules may be different. The figure shows a system which is fully installed with media converter modules.

The following figures show the rear view of the KC-3600 system. The main chassis provides two power chassis slots on the rear panel. Each power chassis slot can be installed with one AC power chassis or one DC power chassis. Two power slots design features the system a power redundant function.

The following figure shows the model equipped with two AC power chassis.



The following figure shows the model equipped with two DC power chassis.



Main Chassis : provides insertion slots on front panel for CPU management module and optional add-on media converter modules. It also provides two chassis slots on rear for mounting power chassis modules.

Management Module : serves as a management agent to monitor system status and add-on converter modules for in-band and out-of-band management requests.

AC Power Chassis : provides full centered power supply for whole system unit. It can receive commercial AC power.

DC Power Chassis : provides full centered power supply for whole system unit. It can receive DC -48V input.

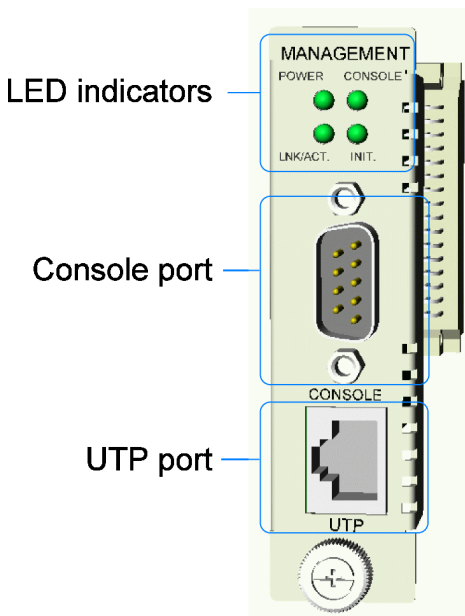
System Cooling Fan : provides forced air to cool down the temperature for the system unit.

2.2.2 Management Module

The system unit comes with one pre-installed Management module. The module facilitates the following functions:

- Direct out-of-band management via RS-232 console port
- SNMP agent to serve in-band management via SNMP protocol
- Telnet console in-band management via TCP/IP protocol
- HTTP host to serve web-based in-band management

See figure below for major components on the panel:



Console Port

This port is a 9-pin male D-sub connector. It serves as an RS-232 DTE port. Refer to Chapter xx for the console operation. The pin definitions are:

Pin 2	RXD
Pin 3	TXD
Pin 4	DTR
Pin 5	GND
Pin 6	DSR

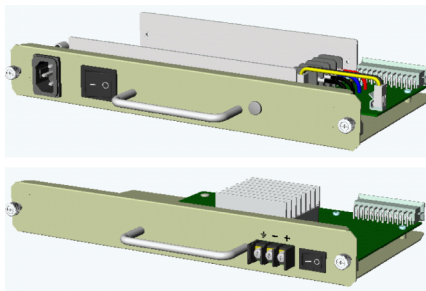
UTP Port

This is an auto-negotiation 10/100BASE-TX LAN port and provides a shielded RJ-45 jack with MDI definition. This port must connect to your TCP/IP network for all in-band management operations.

<u>LED Indicators</u>	<u>Color</u>	<u>States</u>	<u>Interpretation</u>
POWER	Green	On	System is powered on
CONSOLE	Green	On	Tx activities of console port
LNK/ACT	Green	On	UTP port link is active
	Green	Blink	Tx/Rx activities of UTP port
INIT	Green	On	SNMP module in initialization

2.2.3 Power Chassis Modules

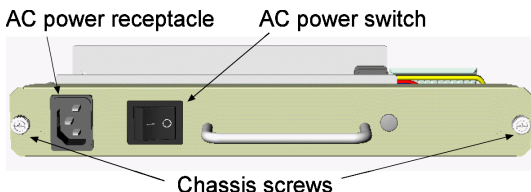
The system power supply is assembled in a plug-in chassis module. Two types of system power chassis are illustrated as follows:



Each single power module is capable to supply full power for system operation with full media converter modules installed.

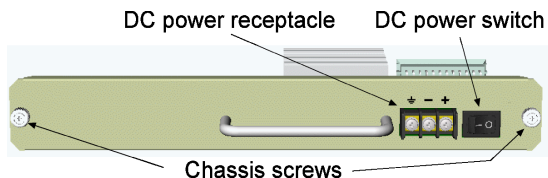
AC Power Chassis Specifications (KC3600-AC-)

AC power switch	System power on/off switch
AC power receptacle	IEC320 type receptacle
Input voltage rating	100~240VAC
Input voltage range	90~264VAC
Input frequency	47~63Hz
Output power	90W
AC power cord	IEC320 type power cord
Over temperature Protection	Over 70±5°C send warning signal to CPU Below 45±10°C recovery automatically

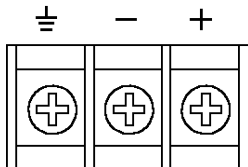


DC Power Chassis Specifications (KC3600-DC)

Input power switch	System power on/off switch
Input power receptacle	Terminal connector (screw type)
Input voltage rating	-48VDC
Input voltage range	-36~-75VDC
Output power	130W
Over temperature Protection	Over $70\pm5^{\circ}\text{C}$ send warning signal to CPU Below $45\pm10^{\circ}\text{C}$ recovery automatically



The connection definition of the DC power receptacle is:



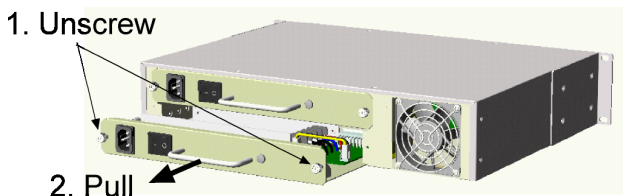
Removal of System Power Chassis

The system power chassis is pre-installed in the system unit when system unit is shipped from factory. The chassis is designed for easy un-installation from system unit in case of any inspection purpose. However, note that this removal only can be performed by a well-trained technical person.

For safety reason before removing the power chassis, make sure:

- The power switch is turned off.
- The power cord is disconnected from the power chassis.

To remove the chassis, unscrew two chassis screws until they are released from system chassis, hold the handle and pull the chassis out from the system chassis smoothly. See the following example figure:

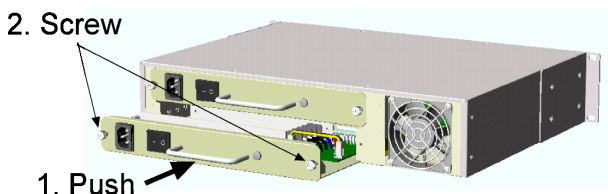


Insertion of System Power Chassis

Before inserting the power chassis into system unit, make sure:

- The system power switch is turned off.
- The power cord is disconnected from the power chassis.

To insert the power chassis, hold the handle and push it into system unit until it is seated in system chassis properly. Screw the chassis securely in the system unit. See figure below:



The power chassis is designed to be hot plugged into or unplugged from the system even when another power chassis is installed in another power slot and in operation.

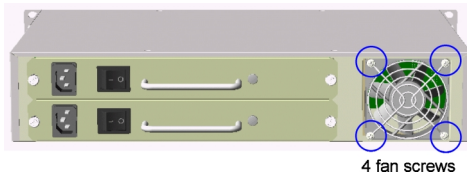
2.2.4 System Cooling Fan

The system chassis provides one cooling fan. The operation status of the fan can be monitored via all supported management interfaces.

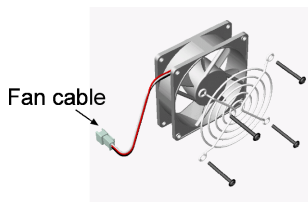
It is also featured with mechanical design to be removed and installed without opening the system chassis.

The procedure to remove the fan is:

1. Unscrew four fan screws as shown below:



2. Unplug the fan cable.



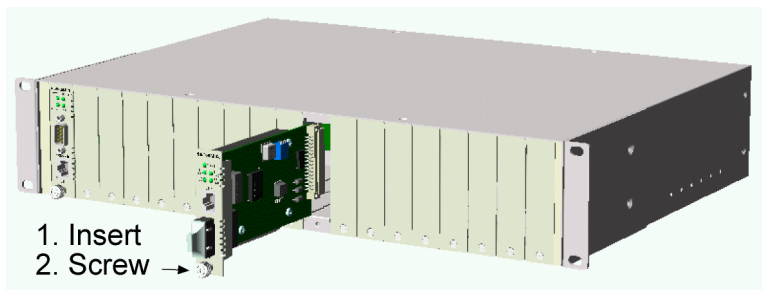
Reverse the above steps to install the fan. The fan can be removed or installed even when the system is in operation.

2.2.5 Media Converter Slots

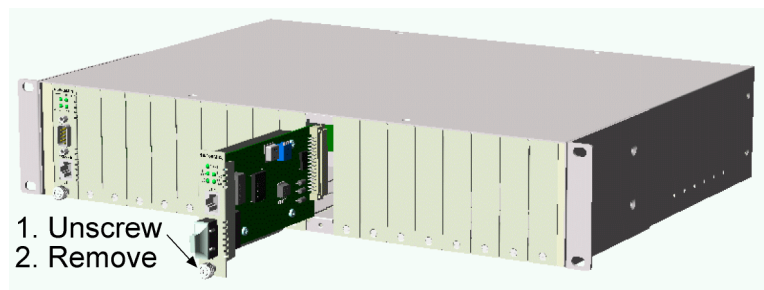
The system chassis provides eighteen module slots for installing optional slide-in media converter modules.

A media converter module can be inserted into an available slot or removed from a slot anytime even when system unit is powered on. This hot-plug design keeps all exiting connections on the other slots running with no influence.

To insert a converter module into a slot, remove slot cover first and insert the module into slot slowly until it is seated in slot properly. Screw it onto system unit securely before making any cable connection.

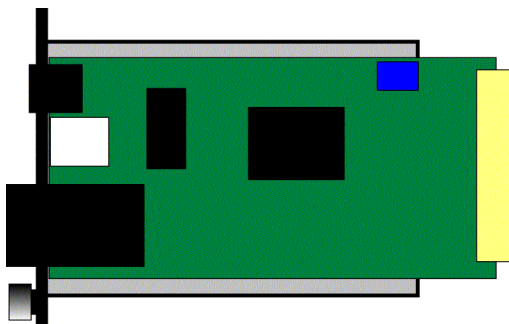


To remove a converter module from slot, disconnect all cable connections on the module first and unscrew the module until it is released from system unit. Hold the screw and pull module slowly out from the slot.



The media converter modules are designed with hot-plug feature, which allows insertion and removal of the modules can be performed even when the system is in operation.

The following figure illustrates an example of a media converter module:

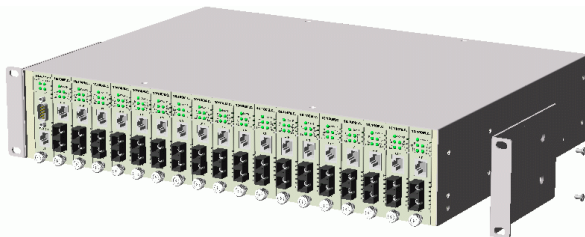


For more information about the converter slide-in module, refer to Chapter 7 and Chapter 8.

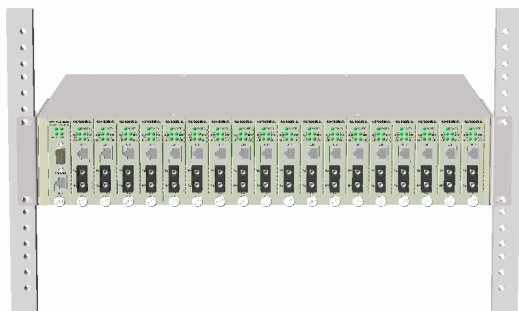
2.3 Rack Mounting

One rack mounting kit is supplied in the product package. It includes two brackets and bracket screws for installing the system unit into a 19-inch rack.

Mount both brackets onto the system unit as shown below:



Install the system unit into a 19-inch rack as shown below:



3. Network Management

3.1 Management Functions

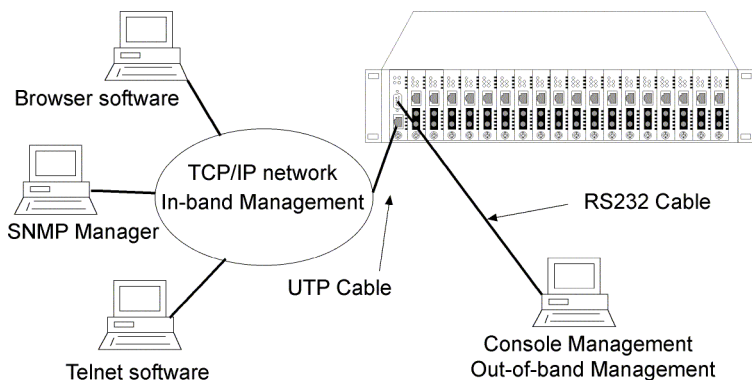
The managed converter rack system series is featured with management functions and can be managed by using the following methods:

- Direct console connection over an RS-232 cable
- Telnet software over TCP/IP network
- SNMP manager software over TCP/IP network
- Web browser software from Internet or Intranet over TCP/IP network

Management Interface RS-232 / Protocol

Console operation	RS-232 console port
Console operation	Telnet over TCP/IP
SNMP management	SNMP over TCP/IP
Web browser	HTTP over TCP/IP

The following figure illustrates a management model diagram:



The system unit is equipped with one management module which serves as a management agent to monitor the system status and all installed media converter modules. The agent also responses to either in-band management requests coming from network or out-of-band requests from directly connected console.

3.2 Protocols Supported

<u>Protocols</u>	<u>Name</u>	<u>Reference</u>
IPv4	IP version4	RFC791
TCP	Transmission Control Protocol	RFC793
UDP	User Datagram Protocol	RFC768
ICMP	Internet Control Message Protocol	RFC792
SNMP	SNMP agent v1	RFC1157
MIB-II	Standard MIB	RFC1213
TFTP	Trivial File Transfer Protocol	RFC1350
TELNET	Telnet protocol	RFC854
HTTP	HTTP server for web management	RFC1945

3.3 Setup for Out-of-band (Console) Management

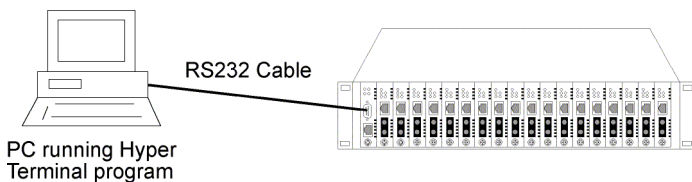
Before doing any in-band management, it is necessary to perform console operation for configuring IP and SNMP related settings for the first time the system is received for installation. The console port is located on the SNMP module.

Any PC running Windows 95/98/ or NT can be used as a console via COM port. Windows Hyper Terminal program is an ideal and the most popular software for such console terminal operations.

To setup console operation, the steps are:

1. Find a proper RS-232 cable for the connection to a console terminal.
If you are using PC as a terminal, make sure the cable pin assignments comply to the following requirement.

Console port			9-pin PC COM port	
Pin2	RXD	-----		3
3	TXD	-----		2
4	DTR	-----		6
5	GND	-----		5
6	DSR	-----		4



2. Connect one end to the console port and connect the other end to the PC COM port.
3. Configure your PC COM port setting to match the RS-232 settings of the console port and start your terminal software.

Factory default settings of the Console port

Baud rate : 38400, N, 8, 1, 0

Flow control : disabled

4. Turn the system power on.
5. Press <Enter> key several times in your terminal software until a login prompt comes up. It means the connection is proper.

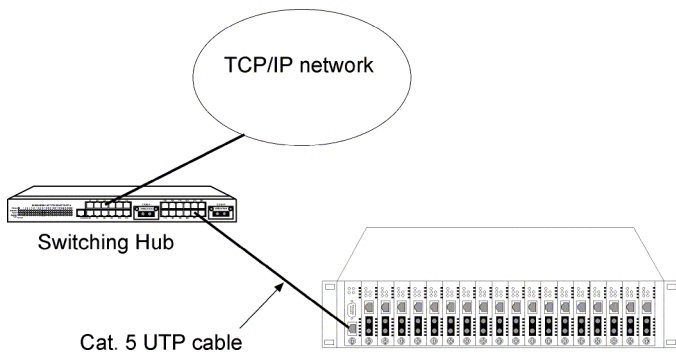
The console port does not support modem connection.

Refer to Chapter 4 for more information about Console management.

3.4 Setup for In-band Management

To perform an in-band management, it is necessary to connect the system to your TCP/IP network. The steps are:

1. Configure IP and SNMP related settings to the system using direct console management when you receive it first time for the installation.
2. Find a proper straight-through Category 5 UTP cable (maximal length 100 meters) for the connection.
3. Connect one end of the UTP cable to the UTP port on SNMP module and connect the other end to the device, such as a switching hub, in your TCP/IP network.



4. Start your in-band management operations. For different management methods, refer to:
 - Chapter 4 for Telnet management
 - Chapter 5 for SNMP management
 - Chapter 6 for Web management

4. Console and Telnet Operation

Functions supported:

- Set and display IP parameters for the system.
- Set and display SNMP parameters for the SNMP agent function.
- Monitor system power status, power temperature status, system fan status and other system information.
- Monitor installation status of each slots.
- Monitor the configuration and link status of each module installed.
- Restore default settings for the system
- Change administrator password for access control.
- Update system software.
- Reboot (warm start) the system remotely.

Management Objects

<u>Objects</u>	<u>Modify</u>	<u>Monitor</u>
Password for access control	Y	-
System : CPU, memory, flash, software version	-	Y
Power 1&2 status	-	Y
Power temperature 1&2 status	-	Y
System fan status	-	Y
IP address of the system	Y	Y
Subnet mask of the system	Y	Y
Default gateway IP address	Y	Y
SNMP name	Y	Y
SNMP location	Y	Y
SNMP contact	Y	Y
SNMP community name (up to 4)	Y	Y
SNMP community access right (up to 4)	Y	Y
SNMP trap host IP address (up to 3)	Y	Y
Slot status : module installed or not	-	Y
Module status : media type, speed, duplex	-	Y
Module link status of two ports	-	Y

Cold Start

When the power to the system is turned on, the system start initialization and self-test process. The self-test messages are displayed as follows if a console connection is established successfully.:

Power-on Self-test

```
-----  
$$$ System LOADER Checksum O.K !!!  
$$$ System IMAGE Checksum O.K !!!  
$$$ System DATA Checksum O.K !!!  
$$ Waiting Copy Rom to Sdram  
$$$ System Power On Self Test....  
$$$ ARM Reg R/W Test Success !!!  
$$$ System EEPROM Checksum O.K !!  
$$$ Get parameter O.K !!  
My Mac Address is xxxxxxxxxxxx  
-----
```

This chapter describes the detailed console operation. It can be applied to either out-of-band console management or in-band Telnet management. Both are same in operation starting from login prompt.

Direct Console Management

When you can see the self-test messages shown on screen properly, you can press <Enter> key to start console login operation. Go to **Login Prompt** section in next page directly.

Telnet Management

Use Telnet software to perform the management operation. The most convenient solution is using the built-in Telnet function in a Windows 95/98/ or NT PC. Enter into DOS window and invoke Telnet command :

```
>tel net xxx. xxx. xxx. xxx
```

to connect to the system unit. The specified xxx.xxx.xxx.xxx is the IP address of the system unit. A welcome message and login prompt are displayed if the connection is established properly.

Login Prompt

The following figure illustrates the login screen:

```
-----  
Wel come  to  Console  
Logi n: admi n  
password: * * *  
-----  
  
Username : admin  
Factory default Password : 123
```

For security reason, the system supports a function to change the password in setup menu. It is recommended to change the default password immediately after a successful login.

When login successfully, a Setup menu is shown as follows:

```
-----  
Setup Menu  
TCP/IP stack for KC-3600 V1.xx  
[0] Print this menu  
[1] IP Menu  
[2] SNMP Menu  
[3] View System status  
[4] View Converter Slots Status  
[5] Restore Default Value  
[6] Security Manager  
[7] Update Firmware  
[8] Reboot System  
[9] Exit  
Please Select (0-9 )....  
Enter Esc to abort....  
INET>
```

After prompt, type a number followed by [Enter] key for selecting an operation item to perform. See example below:

```
INET> n <Enter>
```

Select [0] to display main menu again. [Esc] key can be used to abort the operation of any item and back to main menu.

The following sections describe the detailed operation of each item.

4.1 IP Menu

Select [1] from Setup menu to set IP related settings.

IP Menu

[0] Print this menu

[1] Set IP Address

[2] View IP Status

[3] Exit

Please Select (0-3)

Set IP Address

Enter ESC to abort.

Please Input IP Address(xxx.xxx.xxx.xxx): 192.168.0.23

replacing net[0] IP address nnn.nnn.nnn.nnn with 192.168.0.23

Please Input Subnet Mask(xxx.xxx.xxx.xxx): 255.255.255.0

replacing subnet mask[0] IP address nnn.nnn.nnn.nnn with 255.255.255.0

Please Input Gateway IP(xxx.xxx.xxx.xxx): 192.168.0.1

replacing gateway IP addr[0] nnn.nnn.nnn.nnn with 192.168.0.1

Do you want to Change IP setting ? (Y/N)Y

Please reboot system and use new IP to connection it !

IP Address : Unique IP address designated to this system

Subnet Mask : The subnet mask of the IP address specified above

Gateway : The IP address of the default gateway (router)

Note that all current in-band network management connections on the system will be killed if system IP address is changed. This change does not affect the operation of the media converter modules in slots.

View IP Status

IP Addr: 192.168.0.23 Submask: 255.255.255.0 Gateway: 192.168.0.1

4.2 SNMP Menu

Select [3] from Setup menu to perform SNMP related settings. The following figure illustrates the SNMP menu:

```
-----  
Snmp Menu  
[0] Print this menu  
[1] View Snmp Setting  
[2] Set Snmp Name  
[3] Set Snmp Location  
[4] Set Snmp Contact  
[5] Set Snmp Community  
[6] Set Snmp Trap Manager  
[7] Exit  
Please Select (0-7)....  
I NET>  
-----
```

SNMP related settings are:

Name : Logic name for the system (127 characters)
Location : Location where the system is installed (127 characters)
Contact : Contact person regarding the system (127 characters)
Community : SNMP communities to which the system belongs and
access right to the system (R : read only, W : read/write)
Maximum of four communities are supported.
Trap manager: IP address of the trap host to which a trap is issued
and the trap community to which the system belongs.
Maximum of three trap hosts are supported.

[Esc] key can be used to abort unfinished setting.

4.3 View System Status

Select [4] from Setup menu to view system status. The system status are shown as follows:

```
-----  
Power 1 Status: Good , Power 2 Status: Good  
Temperature 1 Status :Normal , Temperature 2 Status :Normal  
FAN status: Good  
CPU status:  
Cpu Type = ARM7, Flash Size = 512K, Sdram Size = 2M Bytes  
Software version 1.xx  
-----
```

Power status indicates the status of system power 1&2 chassis.

Power Status : Good, Bad

Temperature status indicates the temperature status of the system power 1&2 chassis.

Temperature Status : Normal, Warning

FAN status indicates the status of system cooling fan.

FAN Status : Good, Bad

CPU information and software version are static information for reference.

4.4 View Converter Slots Status

Select [5] from setup menu to view current status of all media converter modules in the system. The slot status are shown as follows:

Slot	Port	Media	Speed	Duplex	Link	Slot	Port	Media	Speed	Duplex	Link
01	A	TX	100M	Ful l	Up	01	B	FX	100M	Ful l	Up
02	A	TX	100M	Ful l	Up	02	B	FX	100M	Ful l	Up
03	A	TX	100M	Ful l	Up	03	B	FX	100M	Ful l	Up
04	A	TX	100M	Ful l	Up	04	B	FX	100M	Ful l	Up
05	A	TX	100M	Ful l	Up	05	B	FX	100M	Ful l	Up
06	A	TX	100M	Ful l	Up	06	B	FX	100M	Ful l	Up
07	A	TX	100M	Ful l	Up	07	B	FX	100M	Ful l	Up
08	A	TX	100M	Ful l	Up	08	B	FX	100M	Ful l	Up
09	A	TX	100M	Ful l	Up	09	B	FX	100M	Ful l	Up
10	A	TX	100M	Ful l	Up	10	B	FX	100M	Ful l	Up
11	A	TX	100M	Ful l	Up	11	B	FX	100M	Ful l	Up
12	A	TX	100M	Ful l	Up	12	B	FX	100M	Ful l	Up
13	A	TX	100M	Ful l	Up	13	B	FX	100M	Ful l	Up
14	A	TX	100M	Ful l	Up	14	B	FX	100M	Ful l	Up
15	A	TX	100M	Ful l	Up	15	B	FX	100M	Ful l	Up
16	A	TX	100M	Ful l	Up	16	B	FX	100M	Ful l	Up
17	A	TX	100M	Ful l	Up	17	B	FX	100M	Ful l	Up
18	A	TX	100M	Ful l	Up	18	B	FX	100M	Ful l	Up

The slot status definitions are:

<u>Column</u>	<u>States</u>	<u>Interpretation</u>
Slot	01-18	Slot position in the system Slot #1 - slot #18 are for media converter module
Port	N/A A B	No module is installed in slot Upper port of the module in slot Lower port of the module in slot
Media	N/A TX FX	No module is installed in slot. 10BASE-T, 10/100BASE-TX port or 1000BASE-T port 10BASE-FL, 100BASE-FX port or 1000BASE-SX/LX port
Speed	N/A 10M 100M 1000M	No module is installed in slot 10Mbps 100Mbps 1000Mbps
Duplex	N/A Full Half	No module is installed in slot. Full duplex Half duplex
Link	N/A Up Down	No module is installed in slot. Link up Link down

4.5 Restore Default Values

Select [6] from Setup menu to restore factory default settings.

Factory default settings are:

IP Address	192.168.0.2
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
User Name	admin
Password	123
Name	(null)
Location	(null)
Contact	(null)
SNMP Communities:	
No.1 Community name	public
No.1 Access right	Read only
No.2 Community name	(null)
No.2 Access right	(N/A)
No.3 Community name	(null)
No.3 Access right	(N/A)
No.4 Community name	(null)
No.4 Access right	(N/A)
SNMP Trap Managers:	
No.1 Trap manager IP	(null)
No.1 Community name	(null)
No.2 Trap manager IP	(null)
No.2 Community name	(null)
No.3 Trap manager IP	(null)
No.3 Community name	(null)

4.6 Security Manager

Select [7] from Setup menu to change login user name and password.

The steps are:

Display current user name

```
-----  
Current  username:  admin  
Current  password:  *****
```

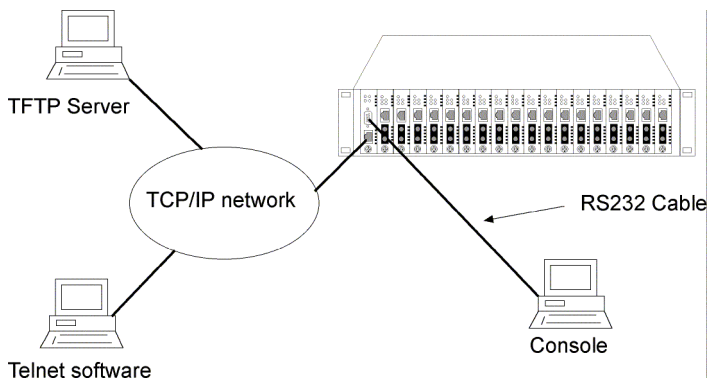
Press Esc to abort

Change user name and password

```
-----  
Change username [admin]:  xxxxxx  
Enter password(1-8):  *****  
Confirm password:  *****  
Password updating  ....  
Password updated.  
INET>
```

4.7 Update Firmware

Select [7] from Setup menu to perform firmware (system software) upgrade via TFTP protocol. Before doing TFTP operation, one TFTP server is required and installed in the network to where this system connects and new firmware file **image.bin** must be placed in the TFTP server.



The following information are required for TFTP operations:

TFTP Server IP Address: IP address of the TFTP server where the firmware image.bin is downloaded from.

The steps are:

Specify TFTP server IP address

Enter ESC to abort.

Please Input TFTP Server IP Address (xxx. xxx. xxx. xxx): 192. 168. 0. 88

TFTP Server: 192. 168. 0. 88

Confirm to start downloading

Do you want to start download new image ? (Y/N) Y

Download image and please wait.....

Confirm to update system flash memory

Download new image complete, do you want to update flash ? (Y/N) Y

Update flash and please wait

Update flash complete and please reboot system !

INET>

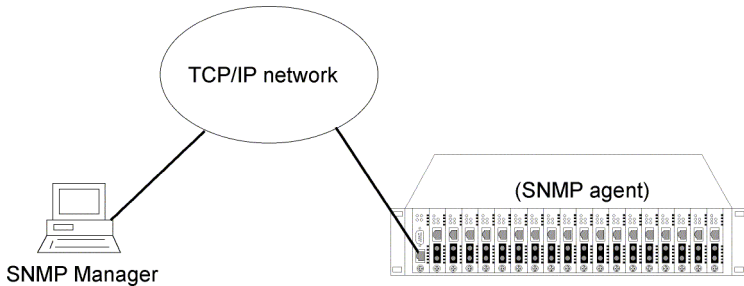
4.8 Reboot System

Select [8] from Setup menu to reboot the system. This reboot function allows you to perform a warm start to the system.

Do you want to reboot system ? (Y/N) Y

5. SNMP Management

SNMP management are performed at a network management station running SNMP network management application manager software with graphical user interface. The following figure illustrates an example model:



The system unit serves as an **SNMP agent** and provides the capabilities that allows network administrators via **SNMP** protocol to set parameters and view system status and media converter status defined in the standard **MIB-II** and private **MIB**.

5.1 Configuring SNMP Settings via Console Operation

Before performing SNMP operation, proper SNMP settings must be configured in the system unit. The SNMP related settings are:

Name	: Logic name to identify a specific system unit
Location	: Location where the system is installed
Contact	: Contact person regarding the system
Community	: SNMP communities to which the system belongs and access right to the system (read only or read/write)
Trap hosts	: IP addresses of trap hosts to which a trap is issued and the trap community to which the system belongs.

Up to four SNMP communities and up to three trap hosts are supported by the system SNMP agent.

These settings can be configured through console or telnet operation. Refer to Chapter 4 for more information.

5.2 SNMP Private MIB

Use the SNMP management application software to compile the MIB file first before performing any management operation. In addition to standard MIB-II (RFC1213), the system supports private MIB as below:

<u>Private MIB Objects</u>	<u>Get</u>	<u>Remark</u>
ssPowerStatus(kti.30.1.1)	Y	Power 1&2 status
ssTempStatus(kti.30.1.2)	Y	Temperature 1&2 status
ssFanStatus(kti.30.1.3)	Y	System fan status
cputype(kti.30.2.1)	Y	ARM7
flashrom(kti.30.2.2)	Y	512KB
memsize(kti.30.2.3)	Y	2MB
softwarever(kti.30.2.4)	Y	1xx
mibFileVer(kti.30.2.5)	Y	1xx
portNumber(kti.30.3.1)	Y	Total number of slots
portTable(kti.30.3.2)	-	
portEntry(1)	-	
slotIndex(1)	Y	Slot ID 1 - 18
slotIndexDescription(2)	Y	Slot1 - Slot18
slotModuleDescription(3)	Y	
slotModuleType(4)	Y	
sotModuleStatus_PortA_Media(5)	Y	Port A media type
slotModuleStatus_PortA_LineSpeed(6)	Y	Port A line Speed
slotModuleStatus_PortA_Duplex(7)	Y	Port A duplex mode
slotModuleStatus_PortA_LinkStatus(8)	Y	Port A Link status
slotModuleStatus_PortB_Media(9)	Y	Port B media type
slotModuleStatus_PortB_LineSpeed(10)	Y	Port B line speed
slotModuleStatus_PortB_Duplex(11)	Y	Port B duplex mode
slotModuleStatus_PortB_LinkStatus(12)	Y	Port B link status

Remark: Port A : the upper port of the converter module
Port B : the lower port of the converter module

Refer to MIB file, KC3600-v1.xx.mib for the details. This file can be used for MIB compiler.

5.3 SNMP Traps

The system also supports the following SNMP traps. When the trap event occurs, the SNMP agent will generate a trap notification to SNMP management station.

<u>Trap Name</u>	<u>Event of Trap Generated</u>
Cold Start	The system is powered on and complete initialization
Authentication failure	SNMP community authentication failure
Power status	Any power failure of Power1 and Power2
Power status	Any power recovery of Power1 and Power2
Temperature status	Any temperature warning of Power1 & Power2
Temperature status	Any temperature recovery of Power1 & Power2
Fan status	Fan failure
Fan status	Fan recovery
Slot # Port A link	Slot # module Port A link down or up
Slot # Port A link	Slot # module Port A link recovery
Slot # Port B link	Slot # module Port B link down or up
Slot # Port B link	Slot # module Port B link recovery

The binding information together with a trap is :

<u>Trap Name</u>	<u>VarBind</u>
Cold Start	sysDescr, ie KC-3600
Authentication failure	sysDescr, ie, KC-3600
Power Status	Power status for Power1 and Power2
Temperature Status	Temperature status for Power1 and Power2
Fan Status	Fan status
Slot # Port A link	Slot description and Port A link status
Slot # Port B link	Slot description and Port B link status

Remark: The slot # can be slot 1 up to slot 18.
Port A : the upper port of the module installed in slot.
Port B : the lower port of the module installed in slot.

6. Web Management

The system features an http server which can serve the management requests coming from any web browser software over internet or intranet network.

Web Browser

Compatible web browser software with JAVA support

Microsoft Internet Explorer 4.0 or later

Netscape Communicator 4.x or later

Set IP Address for the System Unit

Before the system can be managed from a web browser software, make sure a unique IP address is configured to the system. Refer to Chapter 4 for how to set IP address.

6.1 Start Browser Software and Making Connection

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

URL : `http://xxx.xxx.xxx.xxx/`

Factory default IP address : 192.168.0.2

6.2 Login to the System Unit

When browser software connects to the system unit successfully, a Login screen is provided for you to login to the device as follows:

A screenshot of a web browser dialog box titled "Enter Network Password". The dialog has a blue title bar with a question mark icon and a close button. The main area is light gray. It contains a yellow key icon with a blue arrow pointing right. To the right of the icon is the text "Please type your user name and password." Below this, there are two labels: "Site:" followed by the text "192.168.0.27" and "Realm:" followed by the text "index.htm". Below these are two text input fields. The first is labeled "User Name" and the second is labeled "Password". Below the password field is a checkbox with the label "Save this password in your password list". At the bottom right are two buttons: "OK" and "Cancel".

Enter Network Password

Please type your user name and password.

Site: 192.168.0.27

Realm: index.htm

User Name

Password

☐ Save this password in your password list

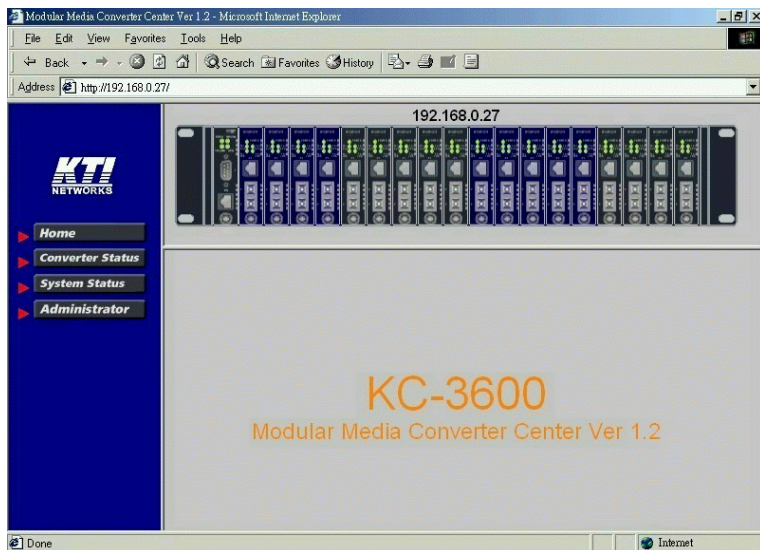
OK Cancel

Login

Username : Admin

Factory default Password : 123

The following screen shows welcome screen when a successful login is performed.



In addition to the device image, the screen supports the following functions on the right side:

1. Home : home page and device image
2. Converter Status : view all slot status
3. System Status : view system related status
4. Administrator : other management functions

6.3 Converter Status

Modular Media Converter Center Ver 1.2 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites History

Address http://192.168.0.27/

192.168.0.27

KTI NETWORKS

- Home
- Converter Status**
- System Status
- Administrator

The following information provides a view of the current status of the unit.

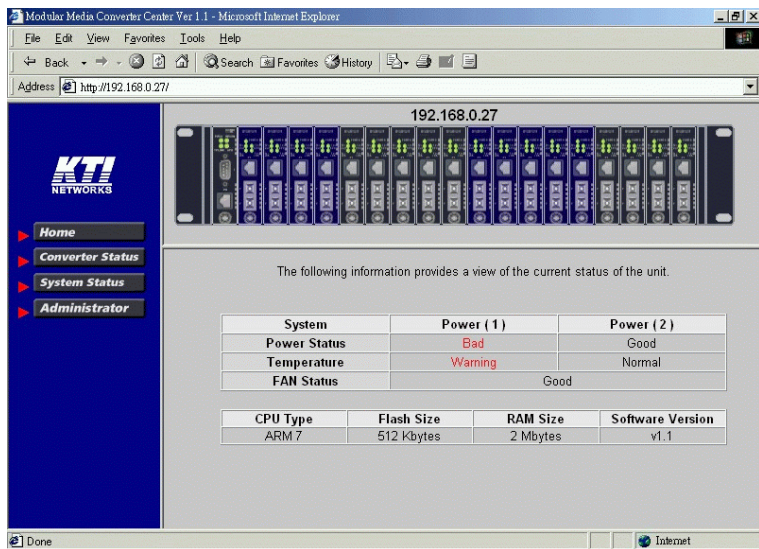
Slot	Port	Media	Link status	Speed Status	Duplex Status
1	A	TX	Down	1000 Mbps	Full
	B	FX	Down	1000 Mbps	Full
2	A	TX	Down	1000 Mbps	Full
	B	FX	Down	1000 Mbps	Full
3	A	TX	Down	1000 Mbps	Full
	B	FX	Down	1000 Mbps	Full
4	A	TX	Down	1000 Mbps	Full
	B	FX	Down	1000 Mbps	Full
5	A	TX	Down	10 Mbps	Half
	B	FX	Down	100 Mbps	Full
6	A	TX	Down	10 Mbps	Half
	B	FX	Down	100 Mbps	Full

Done Internet

Click [**Converter Status**] to view all slot status in a table list. The information includes:

<u>Column</u>	<u>States</u>	<u>Interpretation</u>
Slot	1-18	Slot position in the system Slot #1 - slot #18 are for media converter module
Port	A B	Upper port of the module in slot Lower port of the module in slot
Media	TX FX	10BASE-T, 10/100BASE-TX, 1000BASE-T port 100BASE-FL, 100BASE-FX, 1000BASE-SX/LX port
Link	Green Red	Link up Link down
Speed	10Mbps 100Mbps 1000Mbps	10BASE-T or 10BASE-FL 100BASE-TX or 100BASE-FX 1000BASE-T or 1000BASE-SX/LX
Duplex	Full Half	Full duplex Half duplex

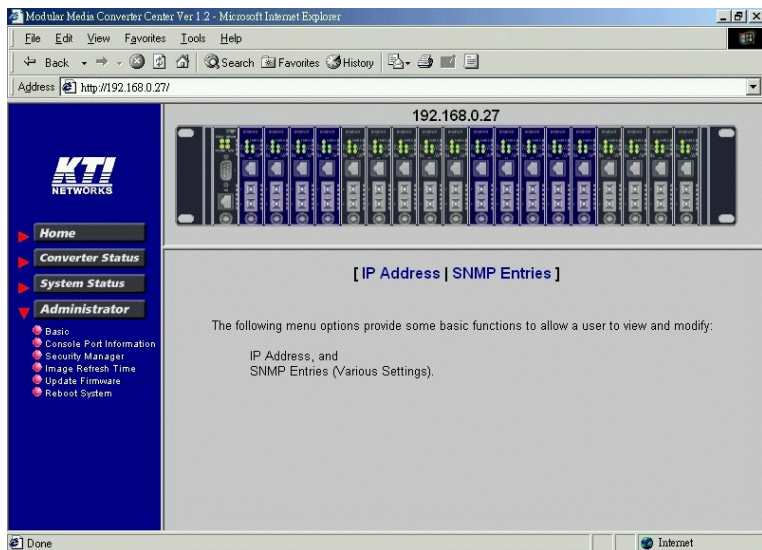
6.4 System Status



Click [**System Status**] to view system related status in a table list. The information includes:

Slot Number	: slot number where the status belongs to
Power Status	: system power 1&2 chassis condition
Temperature	: system power 1&2 temperature status
FAN Status	: system fan status
CPU type	: CPU model equipped in management module
RAM size	: Memory size equipped in management module
Flash size	: Flash memory equipped in management module
Software version	: Software version built in management module

6.5 Administrator Menu



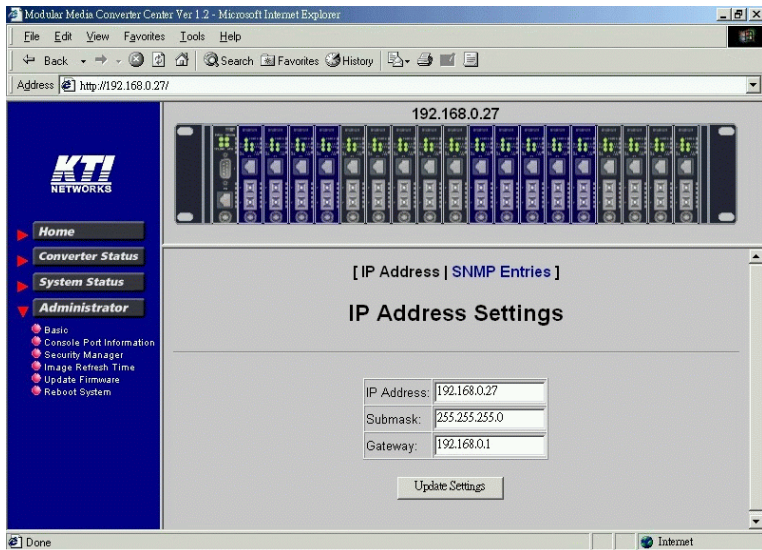
Click [**Administrator**] to show administrator menu. The menu includes the following options:

1. Basic : Set / View IP and SNMP related settings
2. Console Port Information : View RS-232 console configuration
3. Security Manager : Change login user name and password
4. Image Refresh Time : Set refresh time interval of the image
5. Update Firmware : Update the software built in SNMP module
6. Reboot System : Reboot the system remotely

Refer to the following sections for the details.

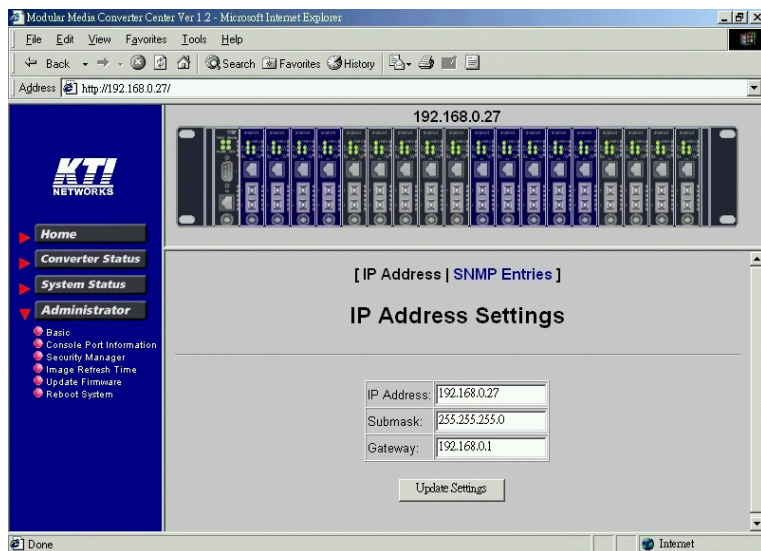
6.5.1 Basic

Click [Basic] to perform IP setting and SNMP settings.



IP setting and SNMP setting are described in the following sections respectively.

Click [**IP Address**] button to set IP settings.

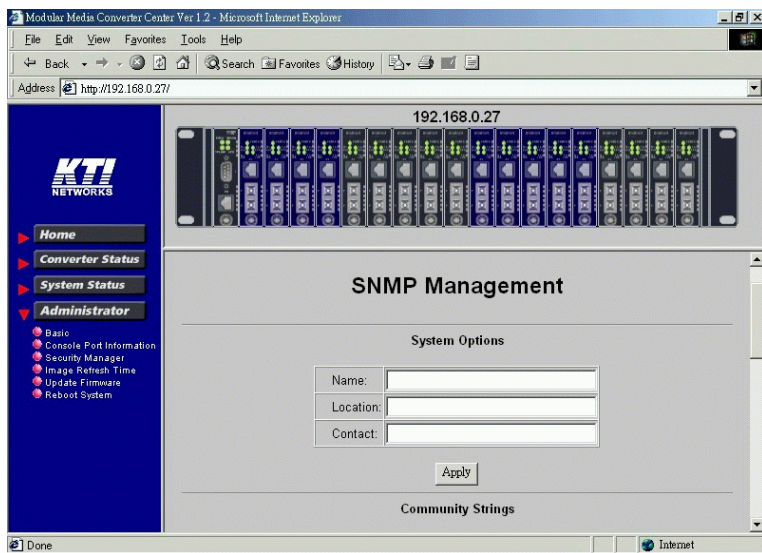


IP settings include:

- IP Address** : Unique IP address designated to this system
Subnet Mask : The subnet mask of the IP address specified above
Gateway : The IP address of the default gateway (router)

Click [**Update Settings**] to make new settings effective. However, a new IP address change will make your current connection invalid. Restart your web link with new IP address to connect the system.

Click [**SNMP Entries**] button to set SNMP settings.

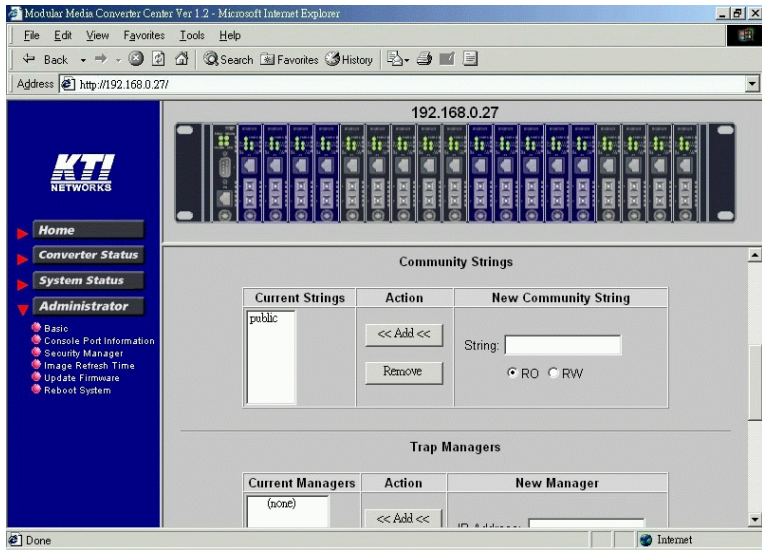


SNMP Entries - System options

SNMP related settings are:

- Name** : Logic name for the system
Location : Location where the system is installed
Contact : Contact person regarding the system
[Apply] : Click button to make the settings effective

SNMP Entries - Community Strings



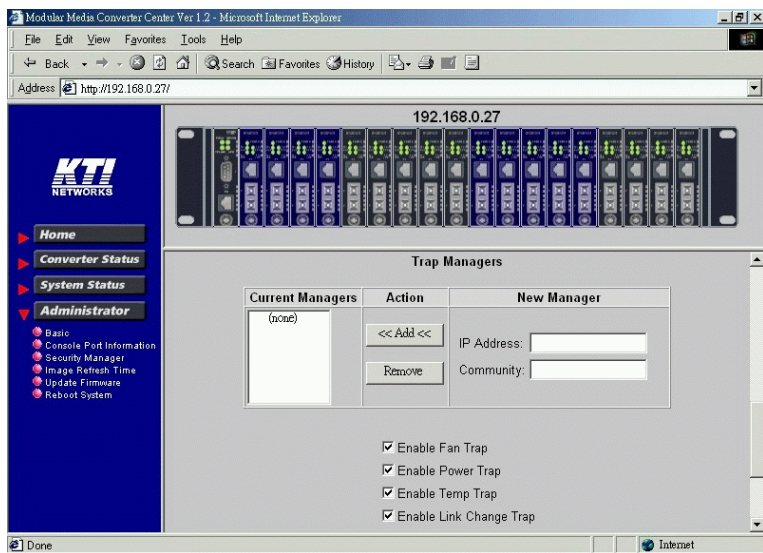
One community contains two settings:

Community name : SNMP communities to which the system belongs
Access right : Access right associated with the community name

Click [**Add**] button to add one new community into the community list.
Click [**Remove**] button to remove one community from the community list.

Up to four entries are supported in the community list.

SNMP Entries - Trap Managers



One Trap Manager contains two settings:

IP Address : IP address of the trap host to which a trap is issued

Community : The trap community to which the system belongs

Enable Fan Trap: Enable trap for Fan failure events

Enable Power Trap: Enable trap for power failure events

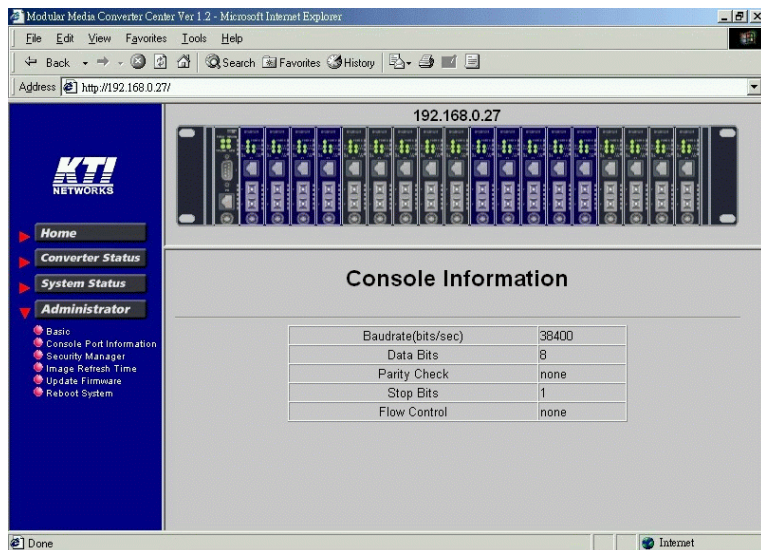
Enable Temp. Trap: Enable trap for power temperature warning events

Enable Link Change Trap: Enable trap for any link change events

Click [**Add**] to add one trap manager into the manager list.

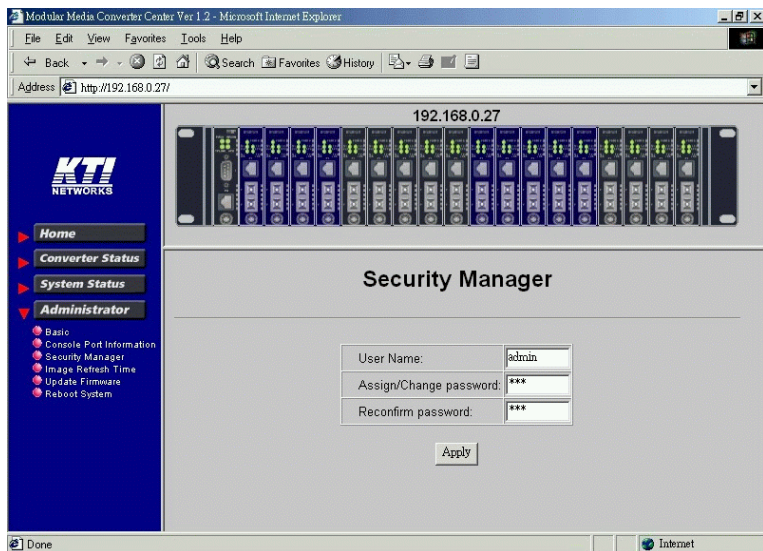
Click [**Remove**] to remove one trap manager from the manager list.

6.5.2 Console Port Information



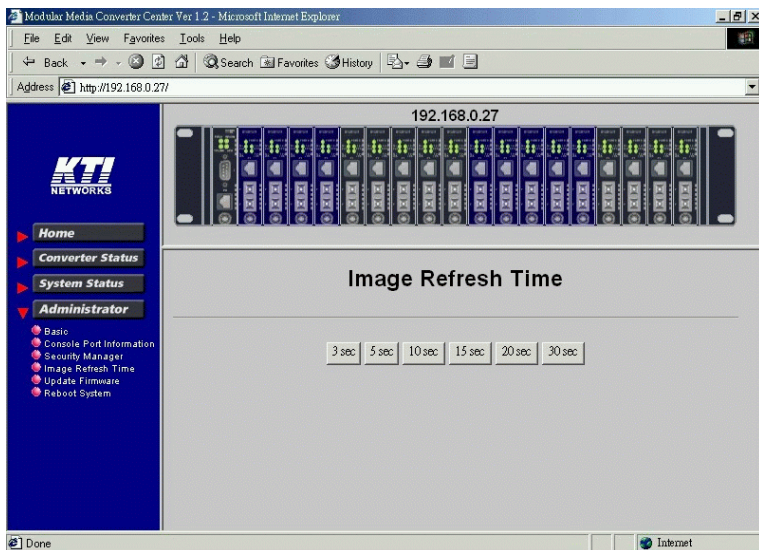
This screen displays configuration of RS-232 console port.

6.5.3 Security Manager



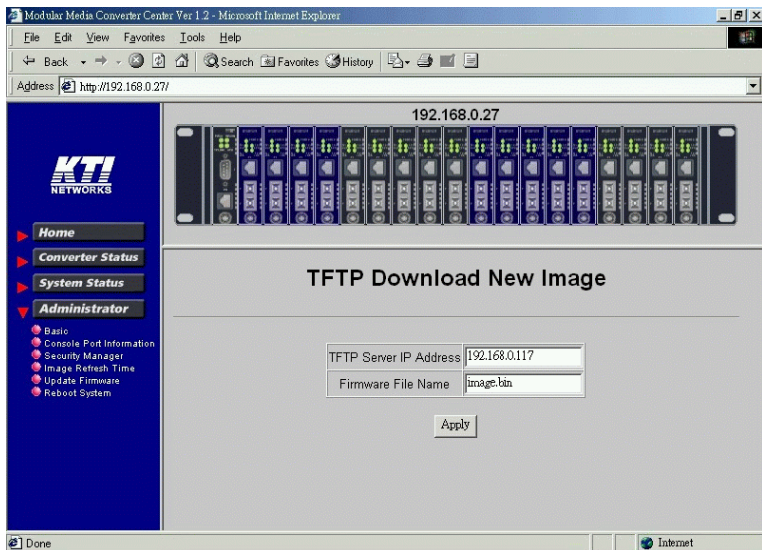
Security Manager allows you to change login user name and password. Click [**Apply**] to make the changes effective.

6.5.4 Image Refresh Time



The system image is updated periodically to present the latest status. The default time interval of refreshing the image is 20 seconds. It can be changed by clicking any of the time buttons displayed. This is a run time setting and not a permanent setting.

6.5.5 Update Firmware

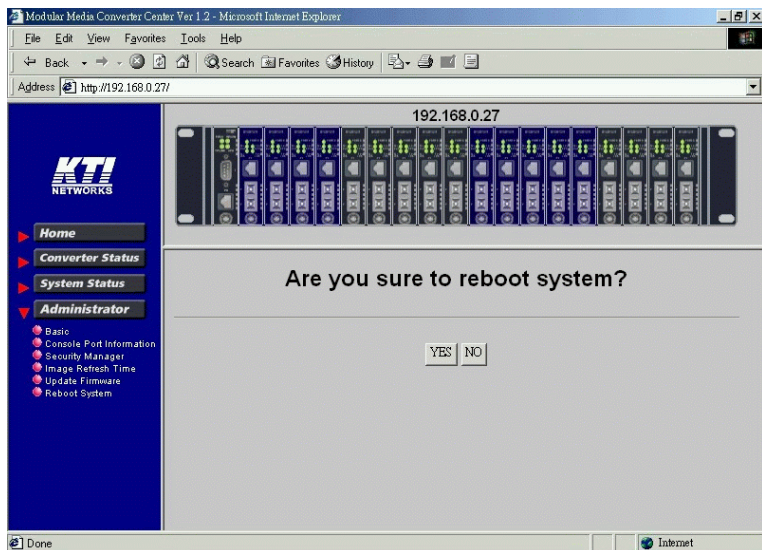


[**Update Firmware**] allows you to perform firmware (system software) upgrade via TFTP protocol. Before doing TFTP operation, one TFTP server is required and installed in the network to where this system connects and new firmware file **image.bin** must be placed in the TFTP server.

Set IP address for the TFTP server from where the firmware image is to be downloaded. Specify the file name as Image.bin.

Click [**Apply**] to start the file transfer operation.

6.5.6 Reboot System

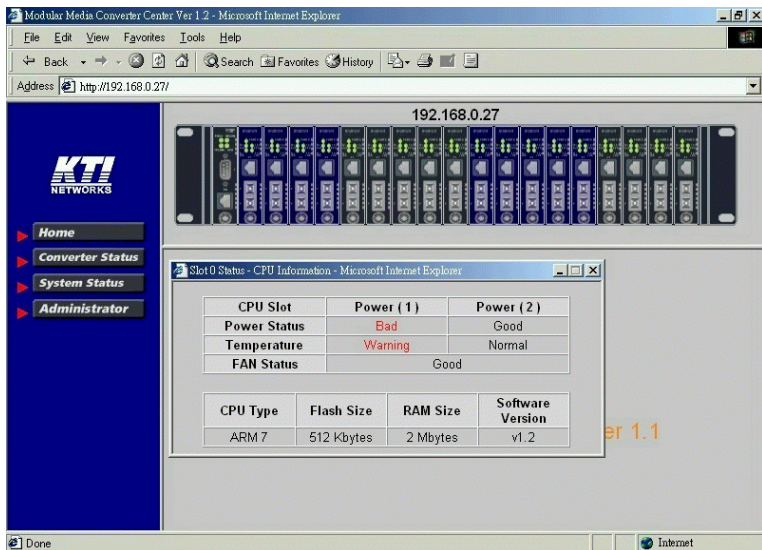


[**Reboot System**] allows you to reboot the system unit remotely. Starting this command will make your current http connection lost. You must rebuild the connection to perform any management operation to the unit.

6.6 Slot Icon Operations

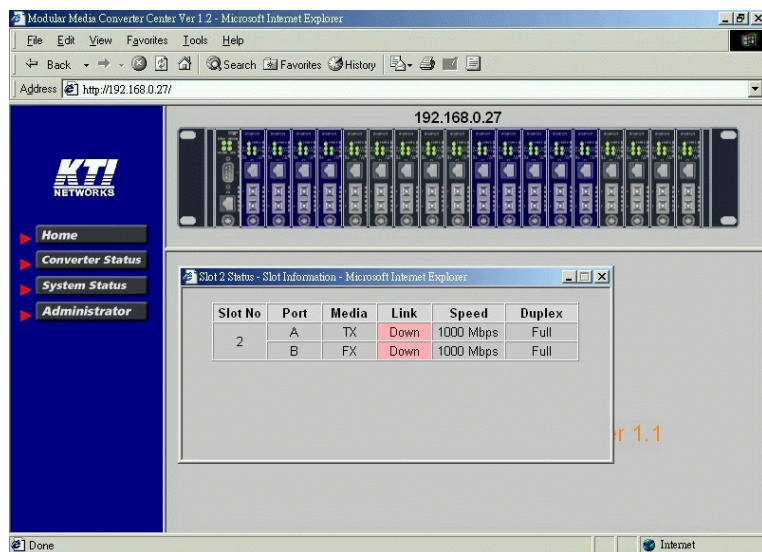
In addition to the menu supported, you may click the following image icons to show specific status.

Click slot 0 on the system image shown on screen



Power Status : system power 1&2 condition
Temperature : system power 1&2 temperature status
Fan Status : system fan status
CPU type : CPU model equipped in management module
RAM size : Memory size equipped in management module
Flash size : Flash memory equipped in management module
Software version : Software version built in management module

Click any one slot in slot 1 to slot 18 to view one specific slot status.
The following figure illustrates slot 9 status:



<u>Column</u>	<u>States</u>	<u>Interpretation</u>
Slot	1-18	Slot position in the system Slot #1 - slot #18 are for media converter module
Port	A	Upper port of the module in slot
	B	Lower port of the module in slot
Media	TX	10BASE-T, 10/100BASE-TX or 1000BASE-T port
	FX	10BASE-FL, 100BASE-FX or 1000BASE-SX/LX port
Link	Green	Link up
	Red	Link down
Speed	10Mbps	10BASE-T or 10BASE-FL
	100Mbps	100BASE-TX or 100BASE-FX
	1000Mbps	1000BASE-T or 1000BASE-SX/LX
Duplex	Full	Full duplex
	Half	Half duplex