

**Remote manageable**

**125M~4.25G、10G OEO Converter**

**10/100M、10/100/1000M、10G Media Converter**

# User Manual

## Safety Notice



Please read the following items carefully before installing or using this device, we are not responsible for the damage due to improper use.



The output of this media converter is invisible laser radiation, which may cause damage to eyes, so do not look to the optical port. Cover the cap when do not use it.



This is integrated device including delicate components. No vibration or collision, or there will be damage to structure due. Please uninstall or maintain this device with the guidance of technical person, also operate according to the anti-static electronic process.



To protect the stable and safe operation, please ground it carefully when use it. Please do not take it apart without guidance, or there maybe irrevocable loss and we won't be responsible for that.

## Content

<b>Chapter 1</b>	<b>Introduction of management system</b> .....	2
<b>Chapter 2</b>	<b>Instruction for Hardware</b> .....	7
	I. Instruction for management card.....	7
	II. Instruction for cascading card.....	8
	III. Instruction for 10/100M media converter card.....	9
	IV. Instruction for 10/100M 1FX + 2TP media converter card.....	10
	V. Instruction for 10/100/1000M media converter card.....	11
	VI. Instruction for 125M~2.5G OEO card.....	12
	VII. Instruction for 125M~4.25G OEO card(3R).....	12
	VIII. Instruction for 10G OEO card.....	13
	IX. Instruction for 10G OEO card(3R).....	13
	X. Instruction for 10G media converter card.....	14
	XI. Instruction for 10G media converter fan card.....	15
	XII. Instruction for chassis.....	16
	XIII. Technical Parameters.....	16
<b>Chapter 3</b>	<b>Instruction for Software</b> .....	17
	I. Hardware platform and software environment.....	17
	II. Installation of NMS management software.....	18
	III. Introduction of SNMP software.....	21
	IV. Introduction of WEB software.....	30
	V. Introduction of FTP.....	34
	VI. Introduction of CONSOLE.....	36
<b>Chapter 4</b>	<b>Trouble shooting</b> .....	37

## Chapter 1 Introduction of management system

16-slot multifunctional management system is a Ethernet and SDH transmission equipment with high price/performance ratio, and it can support 10/100M Ethernet fiber media converter, 10/100/1000M Ethernet fiber media converter, 1 fiber + 2 RJ45 Ethernet fiber media converter, 10G Ethernet fiber media converter, 125M~4.25G OEO, and 10G OEO at the same time. It can support variety of data rate, SM/MM, single fiber/double fiber, SFP, SFP+ and XFP etc. With simple set-up and complete function management interface, it supports protocols like SNMP, WEB, CONSOLE and TELNET, and realizes the integrated management to all chassis

### Functions:

- ◆ Network based on GUI, easy operation with graded management mode (common user, super user and administrator)
- ◆ With centralized management and Top tree, several chassis can be managed in the same interface at the same time; with grouping management any converter can be conveniently manipulated among many converters
- ◆ Master/slave structure, providing management module (master, slave), maximum 4 chassis which can hold 128 fiber ports and RJ45 ports cascaded can be managed
- ◆ Supporting protocols like CONSOLE, WEB, Telnet and SNMP
  - ◇ Console management: Users can set up IP and users' authority, display/control local and remote media converters with WINDOWS
  - ◇ WEB management: Users can set up IP and users' authority, display/control local and remote media converters with WEB on browser, such as IE
  - ◇ Standard SNMP protocol: It offers MIB files, convenient to be merged to the third party's SNMP; users' can set up 4 TRAP address, choose TRAP irritation factor according to users' needs, such as Link to Down for TX, and Link to Down for FX.
  - ◇ Special management software: Control center operates backstage with special management software, adopts information and keeps in management PC hard disk as database. It can set up users' authority and display/control local and remote media converters
- ◆ Management information
  - ◇ Supporting network device auto-sensing and adding
  - ◇ Complete system information can be set up and displayed, including the name of the chassis, terrain information, related information of IP, constant operating time and the versions of the hardware and soft ware
  - ◇ Real time display of voltage and temperature on the cards of the media converters, temperature of chassis and report fault in time
  - ◇ Supporting SFP/SFP+/XFP, CWDM SFP/SFP+/XFP and DWDM SFP/SFP+/XFP, and it can show the SFP/SFP+/XFP information and digital diagnosis function
  - ◇ Remote power off alarming, precisely distinguish remote failure
  - ◇ Supporting LFP, quickly locates the failure
  - ◇ Equipment restart, system or module restart by management software, set-up information on each module will be stored spontaneously when power off



- ◇ Reset to factory set up or dip switch status are optional
  - ◇ Each port at local or remote devices can be set up or tracked, including the connecting status, connecting speed, half/full duplex, port locked and LFP etc.
  - ◇ Supporting Loopback and PRBS, precisely locating the failure, convenient for link test
  - ◇ Supporting management within bandwidth, managing remote equipments conveniently
  - ◇ Powerful historical alarming and operating log information tracking and management function
- ◆ Supporting FTP online upgrading

## Products:

### 10/100M manageable media converter(Remote management is available)

- With high performance auto-sensing exchanging chipset meeting industrial standard, securing steady and non-traffic jam data transmission and exchanging
- Supporting 10/100M, full/half duplex autosensing
- Supporting IEEE802.3 ,IEEE802.3X
- Supporting auto-MDI/MDIX
- Max. 2046 bytes packet at store-and-forward mode; Max. 9K bytes packet at cut-through mode
- Rate Limit function, 32Kbps
- Supporting Loopback, precisely locating the failure, convenient for link test
- Supporting LFP, quickly locates the failure
- Supporting remote power off alarming
- Economical management function within bandwidth
- The status of 10/100M media converters with IP113A/C/F/M chipsets can be monitored and queried at the same chassis system
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- With powerful network management function, supporting WEB and SNMP
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power supply(support OLP function)

### 10/100M 1FX+2TP manageable media converter(Remote management is available)

- Supporting 2 RJ45 ports
- Supporting 10/100M, full/half duplex autosensing
- Supporting auto-MDI/MDIX
- Rate Limit function, 32Kbps
- Supporting 1600byte super data packet transmission



- Supporting remote power off alarming
- Economical management function within bandwidth
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- With powerful network management function, supporting WEB and SNMP
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power supply(support OLP function)

**10/100/1000M manageable media converter (Remote management is available)**

- With high performance auto-sensing exchanging chipset meeting industrial standard, securing steady and non-traffic jam data transmission and exchanging
- Supporting 10/100M, full/half duplex autosensing
- Supporting auto-MDI/MDIX
- Supporting 1\*9 transceiver and SFP transceiver
- Support SFP DMI(Diagnostic Monitoring Interface) function
- Supporting 850nm, 1310nm, 1550nm and DWDM/CWDM wavelength ruled by ITUT
- Max. 2046 bytes packet at store-and-forward mode; Max. 9K bytes packet at cut-through
- Rate Limit function, 32Kbps
- Supporting Loopback, precisely locating the failure, convenient for link test
- Supporting LFP, quickly locates the failure
- Supporting remote power off alarming
- Economical management function within bandwidth, supporting 802.3ah and TS 1000
- With powerful network management function, supporting WEB and SNMP
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power supply(support OLP function)

**125M~2.5G manageable OEO**

- Supporting SFP to SFP
- Supporting Fast Ethernet, STS-3/STM-1, ESCON/SBCON, STS-12/STM-4, 1×Fiber Channel, Gigabit Ethernet, 2×Fiber Channel, STS-48/STM-16, 2.5 Infini Band,
- Transmission rate 125Mbps~2.5Gbps
- Short delay time when transparent transmission
- Supporting Jumbo frame transmission
- Supporting DMI(Diagnostic Monitoring Interface) function of optical transceivers
- Supporting 850nm, 1310nm, 1550nm and DWDM/CWDM wavelength ruled by ITUT
- With powerful network management function, supporting WEB and SNMP
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power



supply(support OLP function)

### **125M~4.25G 3R manageable OEO (Remote management is available)**

- Supporting SFP to SFP
- Supporting Fast Ethernet, STS-3/STM-1, ESCON/SBCON, STS-12/STM-4, 1×Fiber Channel, Gigabit Ethernet, 2×Fiber Channel, STS-48/STM-16, 2.5 Infini Band, 4×Fiber Channel
- Transmission rate 125Mbps~4.25Gbps
- 3R function, stable data transmission
- Short delay time when transparent transmission
- Supporting Jumbo frame transmission
- Supporting DMI(Diagnostic Monitoring Interface) function of optical transceivers
- Supporting 850nm, 1310nm, 1550nm and DWDM/CWDM wavelength ruled by ITUT
- Supporting PRBS31 Pattern Generator and Checker and Loopback test, precisely locating the failure, convenient for link test
- Economical management function within bandwidth
- With powerful network management function, supporting WEB and SNMP
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power supply(support OLP function)

### **10G manageable OEO**

- Optical to optical series: supporting XFP to XFP
- Supporting SONET OC192,SDH STM-64,10G WAN,10G LAN, ONT OUT-2,10G LAN with 255/237 FEC coding, 10G Fiber Channel,10G POS
- Supporting 10Gbase-SR/LR to 10Gbase-SR/LR
- Supporting 9.95Gbps~11.32Gbps
- Short delay time when transparent transmission
- Supporting Jumbo frame
- Supporting DMI(Diagnostic Monitoring Interface) function of optical transceivers
- Supporting 850nm, 1310nm, 1550nm and DWDM/CWDM wavelength ruled by ITUT
- With powerful network management function, supporting WEB and SNMP
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power supply(support OLP function)

### **10G 3R manageable OEO (Remote management is available)**

- Optical to optical series: supporting SFP+ to SFP+, SFP+ to XFP, XFP to XFP
- Supporting 10Gbase-SR/LR/ER/ZR/LRM to 10Gbase-SR/LR/ER/ZR/LRM
- Supporting 10Gbase LAN (10.3125 Gbps) and WAN (9.95328 Gbps)





- 3R function, stable data transmission
- Short delay time when transparent transmission
- Supporting Jumbo frame
- Supporting DMI(Diagnostic Monitoring Interface) function of optical transceivers
- Supporting 850nm, 1310nm, 1550nm and DWDM/CWDM wavelength ruled by ITUT
- Supporting PRBS31 Pattern Generator and Checker and Loopback test, precisely locating the failure, convenient for link test
- Economical management function within bandwidth
- With powerful network management function, supporting WEB and SNMP
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power supply(support OLP function)

## 10G manageable media converter

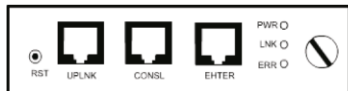
- With high performance auto-sensing exchanging chipset meeting industrial standard, securing steady and non-traffic jam data transmission and exchanging
- Supporting 10G full duplex autosensing
- Supporting auto-MDI/MDIX
- Supporting 10Gbase-T to 10Gbase-SR/LR/ER/ZR
- 3R function, stable data transmission
- Short delay time when transparent transmission
- Supporting Jumbo frame
- Supporting transmission length of RJ45 network cable
- Supporting DMI(Diagnostic Monitoring Interface) function of optical transceivers
- Supporting 850nm, 1310nm, 1550nm and DWDM/CWDM wavelength ruled by ITUT
- Supporting Loopback, precisely locating the failure, convenient for link test
- Economical management function within bandwidth
- With powerful network management function(Web, SNMP, Console), supporting WEB and SNMP
- Supporting hot plug
- Easy installation with complete LED indicators for working situation
- Supporting 2U chassis (16 slots) and standalone chassis. Standalone chassis with internal special communication power supply, chassis support dual redundant power supply(support OLP function)



## Chapter 2. Instruction for Hardware

### I. Instruction for management card

#### 1. Front panel



#### 2. Ports

ETHER: 10/100M RJ45 connecting to Internet, management center can manage by WEB, SNMP, and TELNET through this port

CONSL: standard RS232 for local CLI management

UPLNK: cascading port

#### 3. LED introduction

LED	color	Definition
PWR	Green	ON: power normal OFF: power abnormal or power down
UPLNK	Green	ON: internet connection normal OFF: non-connection to Ethernet FLASH: data transmission
ERR	Red	ON: abnormal(normal with flash for one time when power on) OFF: normal

#### 4. Buttons introduction

RST: recover to factory default setting (IP Address :192.168.1.251, Sub mask: 255.255.255.0, Gateway:192.168.1.1)

**Notice: Please press RST and insert management card to the chassis when use RST function. After around 30 minutes, the management card will recover to factory setting.**

#### 5. Port connection introduction

- 5.1 ETHER port: When connect to switch/Hub please use Straight-through cable, when connect to PC card please use Cross-over cable
- 5.2 CONSL port: Please use the matched serial cable(RJ45 TO DB9)
- 5.3 UPLNK port: use standard straight-through or cross-over cable

## II. Instruction for Cascading card

### 1. Front panel



### 2. Ports:

SLAVE: connect to management card or other cascading card

SLAVE: connect to management card or other cascading card

**Notice: either port is applicable since they have same function.**

### 3. LED introduction:

LED	Color	Definition
PWR	Green	ON: Normal OFF: abnormal
LNK	Green	ON: connect to management card FLASH: chassis in polling OFF: Disconnection
ERR	Red	ON: Error, wrong chassis No. OFF: normal
SL1	Green	ON: chassis No. 1
SL2	Green	ON: chassis No. 2
SL3	Green	ON: Chassis No.3

### 4. Cable connection introduction

Communicate with standard RS485 cable, connector RJ45, transmitting distance can reach 1KM, please use either straight-through cable or cross-over cable to connect the sub card.

### 5. Switch introduction

There is a switch in the cascading card, used for setting cascading card No.. Please finish above operation before starting power supply.

**Notice: When there are more than one cascading cards, each cascading card should be setting with different numbers, or there will be clash causing wrong data transmission.**



Cascading card 1



cascading card2

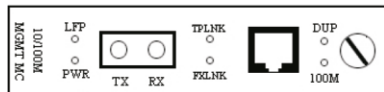


cascading card 3



### III. Instruction for 10/100M media converter card

#### 1. Front panel:



#### 2. LED indicators

LED	Color	Definition
DUP	Green	ON: FULL Duplex OFF: HALF Duplex Flash: clash when working in half duplex
100M	Green	ON: 100M OFF: 10M
TPLNK	Green	ON: TX Link connected OFF: TX link disconnected Flash: data transmission
FXLNK	Green	ON: FX link connected OFF: FX link disconnected Flash: data transmission
LFP	Green	ON: LFP enable OFF: LFP closed
PWR	Green	ON: Normal OFF: Abnormal

#### 3. Introduction to dip switches

SW1	ON	RJ45 port auto negotiation closed
	OFF	RJ45 port auto negotiation enable (default)
SW2	ON	Half Duplex
	OFF	Full Duplex (default)
SW3	ON	Connect to 10M
	OFF	Connect to 100M (default)
SW4	ON	LFP enable
	OFF	LFP disable (default)
SW5	ON	Remote control closed
	OFF	Remote control enable (default)
SW6	ON	Cut-through
	OFF	Store-and-forward (default)
SW7	NULL	
SW8	NULL	

Notice: Central media converter module and remote media converter module can be replaceable as follows:



(Central module)

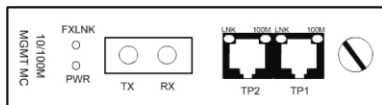


(Remote module)



### IV. Instruction for 10/100M 1FX + 2TP media converter card

#### 1. Front panel:



#### 2. LED indicators

LED	Color	Definition
100M	Green	ON: 100M OFF: 10M
LNK	Green	ON: TX Link connected FLASH: data transmission OFF: TX link disconnected
FXLNK	Green	ON: FX link connected FLASH: data transmission OFF: FX link disconnected
PWR	Green	ON: Normal OFF: Abnormal

#### 3. Introduction to dip switches

<b>SW1</b>	ON	Remote control enable (default)
	OFF	Remote control closed
<b>SW2</b>	NULL	

Notice: Central media converter module and remote media converter module can be replaceable as follows:



(Central module)

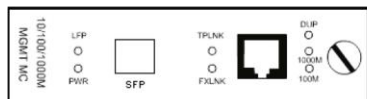
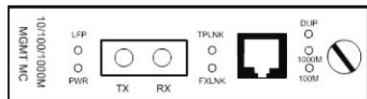


(Remote module)



## V. Instruction for 10/100/1000M media converter card

### 1. Front panel:



### 2. LED indicators:

LED	Color	Definition
DUP	Green	ON: FULL Duplex OFF: HALF Duplex
1000M	Green	ON: 1000M OFF: 100M or 10M
100M	Green	ON: 100M OFF: 1000M or 10M
TPLNK	Green	ON: TX Link connected Flash: data transmission OFF: TX link disconnected
FXLNK	Green	ON: FX link connected Flash: data transmission OFF: FX link disconnected
LFP	Green	ON: LFP enable OFF: LFP closed
PWR	Green	ON: Normal OFF: Abnormal

### 3. Introduction for dip switches

SW1	ON	Remote control enable (default))
	OFF	Remote control closed
SW2	NULL	

Notice: Central media converter module and remote media converter module can be replaceable as follows:



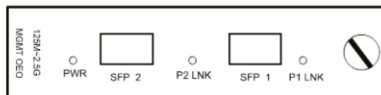
(Central module)



(Remote module)

## VI. Instruction for 125M~2.5G OEO card

### 1. Front panel

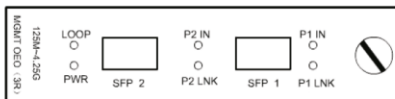


### 2. LED indicators:

LED	Color	Definition
P1 LNK	Green	ON: SFP1 connect normally
P2 LNK	Green	ON: SFP2 connect normally
PWR	Green	ON: Normal

## VII. Instruction for 125M~4.25G 3R OEO card

### 1. Front panel:



### 2. LED indicators:

LED	Color	Definition
P1 IN	Green	ON: SFP1 inserted
P1 LNK	Green	ON: SFP1 connect normally
P2 IN	Green	ON: SFP2 inserted
P2 LNK	Green	ON: SFP2 connect normally
LOOP	Green	ON: Loopback enable
PWR	Green	ON: Normal

### 3. Introduction to dip switches

APP	Gbps	SW1	SW2	SW3	SW4
ESCON	0.2	OFF	OFF	OFF	OFF
FE	0.125	OFF	OFF	OFF	ON
GE	1.25	OFF	OFF	ON	OFF
FC×1	1.0625	OFF	OFF	ON	ON
FC×2	2.1250	OFF	ON	OFF	OFF
FC×4	4.2500	OFF	ON	OFF	ON
STM1	0.15552	OFF	ON	ON	OFF
STM4	0.62208	OFF	ON	ON	ON
STM16	2.48832	ON	OFF	OFF	OFF
Infini	2.5000	ON	OFF	OFF	ON



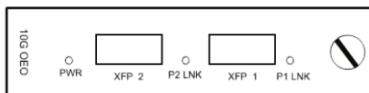
SW5	ON	Remote control closed
	OFF	Remote control enable
SW6	ON	Loopback enable
	OFF	Loopback closed
SW7	ON	Repeater Mode
	OFF	Retimer Mode

**Notice:**

1. In coordination with central OEO manage remote, SW5 is on, P2 connects central P2, can realize remote management
2. Repeater and Retimer can just be chosen in FC\*1, FC\*2, and FC\*4, other rates are all Retimer default

**VIII. Instruction for 10G OEO card**

**1. Front panel:**

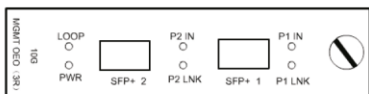


**2. LED indicators**

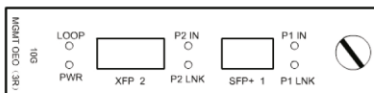
LED	Color	Definition
P1 LNK	Green	ON: XFP1 connect normally
P2 LNK	Green	ON: XFP2 connect normally
PWR	Green	ON: Normal

**IX. Instruction for 10G 3R OEO card**

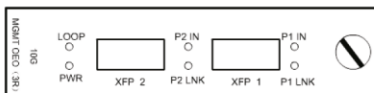
**1. Front panel:**



**SFP+ TO SFP+**



**XFP TO SFP+**



**XFP TO XFP**



**2. LED indicators:**

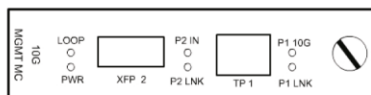
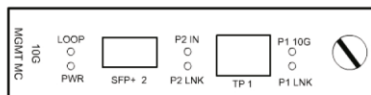
LED	Color	Definition
P1 IN	Green	ON: SFP+1 or XFP1 inserted
P1 LNK	Green	ON: SFP+1 or XFP1 connect normally FLASH: Data transmitting
P2 IN	Green	ON: SFP+2 or XFP2 inserted
P2 LNK	Green	ON: SFP+1 or XFP1 connect normally FLASH: Data transmitting
LOOP	Green	ON: Loopback enable
PWR	Green	ON: Normal

**3. Introduction for dip switches**

SW1	ON	WAN (9.95328G)
	OFF	LAN (10.3125G)
SW2	ON	Loopback enable
	OFF	Loopback closed
SW3	ON	Remote control closed
	OFF	Remote control enable
SW4	NULL	

**Notice:**

- In coordination with central OEO manage remote, SW3 is on, P2 connects central P2, can realize remote management**

**X. Instruction for 10G media converter card****1. Front panel:****RJ45 TO XFP****RJ45 TO SFP+****2. LED Indicators:**

LED	Color	Definition
P1 10G	Green	ON: 10G
P1 LNK	Green	ON: TX Link connected
		FLASH: data transmission

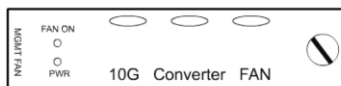
P2 IN	Green	ON: SFP+2 or XFP2 inserted
P2 LNK	Green	ON: SFP+2 or XFP2 connect normally
LOOP	Green	ON: Loopback enable
PWR	Green	ON: Normal

### 3. Introduction for dip switches

SW1	ON	Loopback enable
	OFF	Loopback disable
SW2	ON	Remote control enable
	OFF	Remote control closed

## XI. 10G converter fan card

### 1. Front panel:



### 2.LED Indicators:

LED	Color	Definition
FAN ON	Green	ON: Fan works normally
PWR	Green	ON: Normal

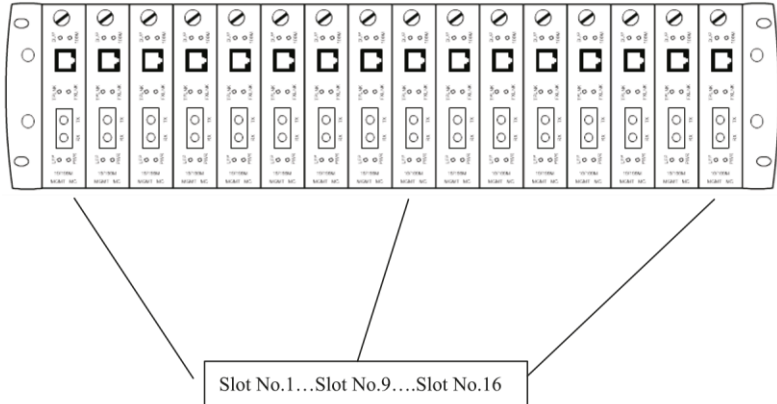
Notice

1. When 10G products work in chassis, a manageable fan card is provided

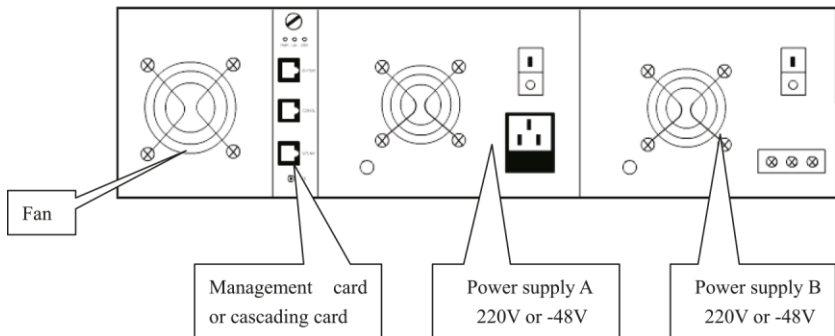


## XII. Instruction for chassis

### Front panel



### Back panel



## XIII. Technical Parameters

### 9.1. Ethernet port

- 1) Standards: IEEE802.3, IEEE802.3u, IEEE802.3x, IEEE802.3z
- 2) Data rate: 10Mbps, 100Mbps, 1000Mbps; HALF/DUPLEX auto-sensing
- 3) Connector: RJ45



4) Connecting cable: UTP CAT5 or UTP CAT5E, transmission distance up to 100m.

**9.2. Fiber port**

- 1) Connector: ST, SC, FC, LC
- 2) Operating wavelength: MM 850nm ,1310nm and SM 1310nm ,1490nm,1550nm,
- 3) Connecting fibers: MM: 50/125, 62.5/125, 100/140µm  
SM 8.3/125, 8.7/125, 9/125, 10/125µm

**9.3. Optical parameters**

Data rate	Distance	TX (nm)	S (dBm)	Pout (dBm)
155m bps	20 km	1310	< -35	-14 ~ -8
155m bps	40 km	1310	< -35	-4 ~ 0
155m bps	80 km	1550	< -36	-4 ~ 0
1.25G bps	20 km	1310	< -24	-9.5 ~ -3
1.25G bps	40 km	1310	< -24	-11.5 ~ -3
1.25G bps	80 km	1550	< -23	-3 ~ -2
2.5G bps	20km	1310	< -25	-3~-10
2.5G bps	40km	1310	< -30	-2~ 3

**9.4.Working Environment:**

- Operating Temperature: 0~50°C
- Storage Temperature:-10~70°C
- Humidity: 5%~90%(non-condensing)
- Dimension for rack:315mm (L)×425mm (W)×92mm (H)
- Dimension for standalone type: 156mm (L)×128mm (W) ×32mm (H)
- AC power: 85VAC~265VAC
- DC power: -40VDC~-57VDC

**Chapter 3. Instruction for Software**

**I. Hardware platform and software environment**

**1. Hardware platform**

- \* The hardware platform of NMS is micro server like DELL POWEREGGE 1300, SUN working station, IPX or more advanced are also applicable.
- \* System memory is above 64M, 128M is recommended.
- \* Capacity of hard disk should be over 10G, 20G is recommended for storing vase management data.
- \* CPU should be more advanced than Intel PIII 500E, Intel PIII 800EB is recommended.
- \* 1280\*1024 displayer is recommended.

## 2. Software Environment

\* Java environment is set as default while installing NMS, user can use java in the system or default jre in the installation file. Jre 1.5 above should be used if choose java environment in the system.

\* Mysql should be newer than version 5.0

\* Web management supports Netscape4.0, IE5.0 and higher version web browser.

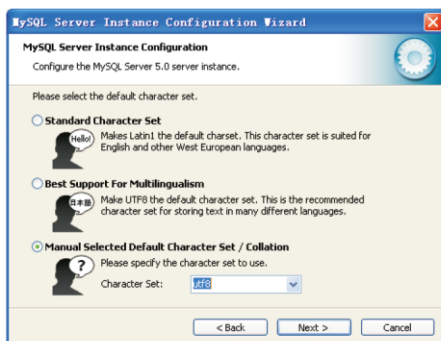
## II. Installation of NMS management software

Please insert the disk



### 1. MYSQL Installation

Click disk and install MySQL Setup.exe, then click “next” continuously to finish the installation, and please pay attention to 3 steps:



Choose “Manual Selected Default Character Set / Collation”, and then choose Character Set as “utf8”, then choose “Next”;



Choose “Include Bin Directory in Windows PATH”, then click “Next”



Input “New root password” 1234, “Confirm” 1234, and then click “Next”.

Click “Finish” to finish Mysql configuration.



## 2. EMS Operation

Put the installation disk into CD-ROM driver, then double click setup.exe, then enter the following interface, and a group of configuration file is provided to help user actively deploy the software. All configuration files are in contents "resource\config".

### 2.1 Database connection configuration (db.xml)

Configuration files are in contents "resources\config", including options as follow:

- \* driver: always configured as com.mysql.jdbc.Driver
- \* url: connection string of database, format :  
jdbc:mysql://[ip]:[port]/[database]?autoReconnect=true&useUnicode=true&characterEncoding=utf8, substitute IP in the string with installed server IP address of mysql database, also substitute [port] with server port with mysql database, substitute [database] with nms database name, database default as nmsdb.
- \* name: appoint user name for database connection and using, default as root
- \* password: appoint password for database connection and using, default as 1234
- \* maxidle、maxactive、maxwait is the configuration of database connection pool, operate with the default setting.

### 2.2 EMS operation configuration (server.xml)

Configuration files are in contents "resources\config", including configurations follow:

- \* trapport: appointed port for receiving alarming and monitoring, default as 62
- \* maxtrap: Mark the Max. storage for historical alarming record(default as 60000),when alarming record is over 60000, the oldest alarming record will be deleted automatically. Trapdel decides the deleting quantity.
- \* trapdel: Appoint the deleting quantity by the system automatically at one time, default as 5000.
- \* maxlog: mark the Max storage for system operation log, default as 60000.when the operation log is over 60000, the oldest operation log will be deleted automatically. Logdel decides the deleting quantity.
- \* logdel: Appoint the deleting quantity by the system automatically at one time, default as 5000.
- \* pollsync: appoint thread pool using in polling of system, thread No defaulted as 8,, less than the value of thread pool minus 5.

### 2.3 Thread pool configuration (server.xhml)

Threadpool under server.xml configures the thread pool of the system. With advanced thread pool technology in NMS, the capability to deal with software has been highly advanced. But it does not mean the more thread, the better, so generally these are not recommended to revise. But user can set the size of the thread pool according to PC's property.



- \* initsize: configure the initial size of thread, default as 15
- \* maxactive: Configure the Max. enable thread of the system, default as 15
- \* maxidle: Configure the Max. free thread of the system, default as 15  
default set for pollsync mentioned above, is 8, which means 8 of the present 15threadintread pool are used in polling device. The rest 7 are used for processing other services and temporary tasks.

## 2.4 Interface configuration (gui.xml)

Configuration files are in contents “resources\config”, including configurations as follow:

- \* language: Appoint system language, including Chinese and English, indicating English and Chinese interface respectively. This can be set while logging in the logging interface, or through “language” under “help” main menu.
- \* Skin: appoint system interface style, this can be set through “outline” under main menu “help”.
- \* font: appoint the font in the interface
- \* size: appoint the size of the characters in the interface
- \* style: appoint the character style, 0 stands for standard, 1 stands for thick heavy lines, 2 stands for italic, 3 stands for italic thick heavy lines.

## 2.5 Device Configuration

In installation contents “resources\config\device”, these files show the configuration of the devices, no need of revision.

## 2.6 Trap rules configuration

Configuration files in contents “resources\config\device” are system Trap rules configuration files. User can set configuration through “alarming rules” under “alarming menu” in main interface.

# III. Introduction of SNMP software

## 1. Log in

Double click nms.batin installation contents to start system. After initiation log in interface shows itself automatically as follow:



**Notice: the initial super user name is “admin”, and default password is “123”.**

## 2. Adding Node

### 2.1 Add node manipulating

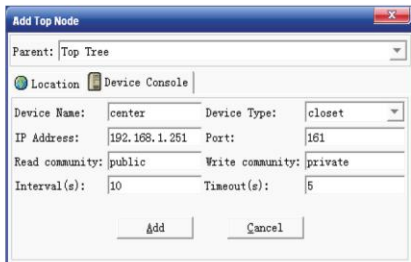
Choose menu “【configuration】”→ “adding node”, system will pop out adding node window as follow:



#### 2.1.1 Add location node

Choose location page in window, and input location name in the location input frame. Mark the adding location belongs to which node in the father node, then click button “Add”, then system will add new location node under “father node”.

#### 2.1.2 Add IP node



Input device name, device model that will be added, master management card IP address, SNMP port (default as 161), read community (default as public), write community (default as private), Interval(default 10 seconds), Timeout((default 5 seconds))

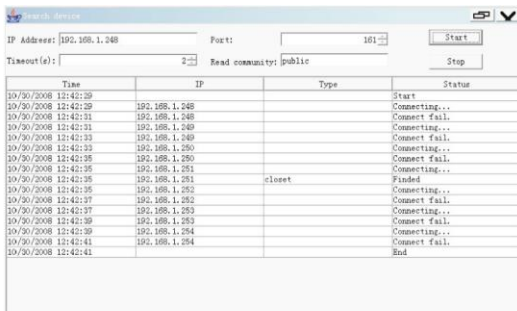
Notice:

1. Hereby polling interval means the minimum time interval between two polling at the same node, default value is 10 seconds.

2. Read community of the adding device must be the same as SNMP community configured in network management card (refer to web management user manual), or system can not be visited, can not check and change the working status of adding devices.

### 2.2 Add node automatically

Choose menu “system”→ “auto searching”, and see the interface as follow:



Time	IP	Type	Status
10/30/2008 12:42:29			Start
10/30/2008 12:42:30	192.168.1.248		Connecting...
10/30/2008 12:42:31	192.168.1.248		Connect fail.
10/30/2008 12:42:31	192.168.1.249		Connecting...
10/30/2008 12:42:32	192.168.1.249		Connect fail.
10/30/2008 12:42:33	192.168.1.250		Connecting...
10/30/2008 12:42:35	192.168.1.250		Connect fail.
10/30/2008 12:42:35	192.168.1.251		Connecting...
10/30/2008 12:42:35	192.168.1.251	closed	Finded
10/30/2008 12:42:35	192.168.1.252		Connecting...
10/30/2008 12:42:37	192.168.1.252		Connect fail.
10/30/2008 12:42:37	192.168.1.253		Connecting...
10/30/2008 12:42:39	192.168.1.253		Connect fail.
10/30/2008 12:42:39	192.168.1.254		Connecting...
10/30/2008 12:42:41	192.168.1.254		Connect fail.
10/30/2008 12:42:41			End

### Search devices automatically

Input the beginning IP, SNMP(default as) Input the initial IP address, SNMP port (default as 161), overtime time (default value at 2 sec), SNMP read community (default public) in the interface, then click start. System will find 255 one by one from inputting the initial IP address, like showing in the above diagram, system will visit 192.168.1.248 to 192.168.1.255 in succeed. If device is found, device will be added into root node "top tree".

## 3. System

### 3.1 User switching

Input new user name and password in the log-in interface, then confirm. If user name and password are both right, after confirmation the log-in interface will close itself, and on the left of the status bar there will be the newest log-in user and user name.

### 3.2 User management

User right is divided into 3 grades:

1. System Admin: Super user has all user right.
2. Net Manager: Network administrator, has all other rights except the user management.
3. Comm User: common user, can only browse system and device information, cannot revise system data or change device working status.

**Notice: Only System Admin can add, delete user.**

### 3.3 Polling

3.3.1 Only after the polling function is started, system will show the status of the device in time on top tree, and automatically will find chassis, slave chassis, local and remote media converter under the IP node.

When polling starts, system will automatically visit each IP node in the polling queue. And there will be chassis nodes via querying results.

3.3.2 Cancel/recover polling of the appointed node

Cancel polling node: choose an IP node in top tree. Then choose "configuration" → "cancel polling", or click the right of the mouse to choose "cancel polling" to delete the chosen IP node from the polling queue. Then system polling will automatically skip this node when polling, and

this node's name will appears as grey.

Recover polling node: choose an IP node which is not included in the poling queue, then choose "configuration"→ "add polling", or click the right of the mouse to choose menu "add polling". Then add the chosen IP node to the polling queue to recover polling.

### 3.4 Backup

Choose menu "system"→ "backup", system will back up database to "resources\backup" under installation contents. The format of the backup file is: [backup time].sql. The backup contents include the structure of the database, all records in the database (user table, top tree nodes, historical alarming information, historical operation log and device model No. system supports.)

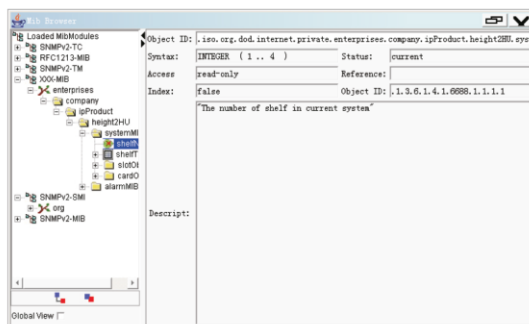
### 3.5 Recover

The up of the interface list the backup file in content "resources\backup" under installation contents. Click "refresh", file table will be recreated.

Choose a backup file, click "recover", system will recover database according to chosen backup files.

### 3.6 Mib browser

System provides a visual interface for querying SNMP mib files, this function can be provided to the third party's network management software application. Choose menu "alarm"→ "Mib Browser", see as below:



### 3.7 Query alarming history

Please choose querying conditions in the up of the window, but alarming time, operating status, alarming status, class for alarming, NE and number of record are relations. Alarming time is prerequisite condition, other conditions do not need to be added to the query conditions if not chosen. After input query conditions click "filter", all tracked alarming information will be displayed in the alarming information table.

Choose deleting alarming in alarming information table, then click "delete", system will delete the chosen alarm from database.

Click "condition delete", the input query condition will be taken as "deleting condition", delete all record that comply with the condition.



Click “store as”, the storing-file dialog box will pop out; all alarm information in alarming information table will be stored to the appointed file.

Click “reset” to clear the alarming table.

### 3.8 Operation log query

System will store user’s operation log to database, and display all operation log (for this after log-in) on operation log page in the main interface. Or choose menu “alarm”→ “operation log” to track historical operation log record.

On the up of the window there are query conditions choices, including time range, user. Click “query” after chose a condition, and then the queried log condition will be seen in the log table.

Choose the deleting record in the log table, click “delete choice” to delete the chosen record from the database.

Click “delete condition”, the above query condition will be set as the condition for the operation log that will be deleted.



Click “store as”, store-file box will pop out, and then store the operation log record to the appointed file.



Click “reset”, the log table will be cleared.

### 3.9 Alarming rules configuration

3.9.1 All alarms are listed in this rule-window, including rules as below:

1. Alarming grades: user can set each alarming’s grade, when alarm information is received, system will mark its grade as the configured grade.
2. Alarming voice: if voice file is appointed, when alarm information is received, system will play the voice file.
3. Pop-out window: if this item is chosen, when alarm information is received system will pop out a window to remind.
4. Filter: if this item is chosen, system will quit the alarm information when it receives it, do not store in database or inform in the interface.
5. Mail alarming: if this item is chosen, system will send alarm signal through mails

When alarming voice is on the status of edition, click “” to open choose-file dialog box, and then choose voice file there. All input the full path of the voice file, and then click “” to play the appointed voice file.

After finish configuration, click “” to store the configuration to the configuration file. Click “” to reload rules from configuration files.

#### 3.9.2 Trap Alarm

There are two prerequisites that should be met to ensure the receiving of the sending alarming information.

1. Alarming receiving IP address should be set the same as that of the PC operating NMS.
2. The standard alarming port of SNMP is 162. Since system will send alarming information to PC through 162, so all other Trap monitoring software like SNMPc should be closed



before start NMS.

After receiving one piece of alarming information, system will set the class for alarming by “alarming rules”, and then display it in the device alarming page of the main interface. Different colors mean alarming in different classes: red means serious alarming; orange means main alarming; yellow means minor alarming and green means common ones.

The alarming table in the alarming page is as below:

General	192.168.1.251	192.168.1.251	Link with 192.168.1.251 resume
Minor A...	mc_1_7	192.168.1.251	Media converter card Tx down(Shelf Index:master Slot Index:slot0)
Major A...	mc_1_3	192.168.1.251	Media converter card Tx down(Shelf Index:master Slot Index:slot0)
General	mc_1_3	192.168.1.251	Media converter card Tx up(Shelf Index:master Slot Index:slot0)

Double click one of the alarming; system will automatically apply network element function in right-key menu.

Choose right-key menu “already know”, system will automatically mark the one who dealt with this alarming record is the current log-in user.

Choose right-key menu “locate to NE”, system will choose related device node in top tree.

Choose right-key menu “delete”, this alarming information will be deleted, but it can still be tracked by “query alarming history”.

Choose right-key menu “clear”, all alarming in the table will be cleared, also alarming can be tracked by “query alarming history”.

### 3.10 Device setting copy/paste

Choose a media converter node in device top tree, then choose menu “config”—> “config copy”, or click the right of the mouse to choose menu “config copy”, system then will copy the chosen media converter’s setting in “media converter management” interface to memory.

User can choose the media converter node whose setting will be pasted in top tree (multi-options or one option ) but the type of the chosen node should be the same as that of the copying device. ) , then choose menu “set”—> “paste setting”, system will set the copied setting to the chosen device one by one.

### 3.11 Device name management

ID	Node	IP	Shelf	master	Select	Save	Online Status	Type
No. 01 Slot	Locals	MC_1_1					Card Detected	1P113S
No. 02 Slot	Locals	MC_1_3					Card Detected	1P113S
	Remote	MC_1_3					Card Detected	1P113S-R
No. 05 Slot	Locals	MC_1_5					Card Detected	1P113S
	Remote	MC_1_5					Card Detected	1P113S-R
No. 07 Slot	Locals	MC_1_7					Card Detected	MTL6213M
	Remote	MC_1_7					Card Detected	MTL6213M-R
No. 09 Slot	Locals	MC_1_9					Card Detected	MTL6213M
	Remote	MC_1_9					Card Detected	MTL6213M-R
No. 11 Slot	Locals	080_1_11					Card Detected	4.255-080
	Remote	080_1_11					Card Detected	4.255-080-R
No. 13 Slot	Locals	080_1_13					Card Detected	100-080
	Remote	080_1_13					Card Detected	100-080-R
No. 15 Slot	Locals	MC_1_15					Card Detected	MTL6213M



Choose IP node in the interface, then choose chassis, and then click “choose”. Then system will display all information of local and remote media converters under the chosen chassis. The name can be edited. After modifying the name of media converters, click button “restore”, and apply it to top tree.

### 3.12 Outline

User can choose Metal、CDE/Motif、Windows、Windows Classic independently.

## 4. Media converter management



From up to down, the diagram shows the main chassis, slave chassis 1, slave chassis 2 and slave chassis 3. If there is slave chassis, slave chassis status will be displayed in related place in the diagram. The number on the up of the chassis diagram indicates the slot No.

Each indicator’s status of the media converters showing in the diagram is the same as that of the related media converter’s indicators, which is convenient for user to know the working status directly.

- Slot No.1--- The remote media converters are not connected and covered with red mist
- Slot No.3--- For 10/100M media converter, central media converter and remote media converter work normally
- Slot No.5--- For 10/100M 1fiber + 2 RJ45 media converter, central media converter and remote media converter work normally
- Slot No.7--- For 10/100/1000M SFP media converter, central media converter and remote media converter work normally
- Slot No.9--- For 10/100/1000M media converter, central media converter and remote media converter work normally
- Slot No.11--- For 125M-4.25G OEO, central media converter and remote media converter

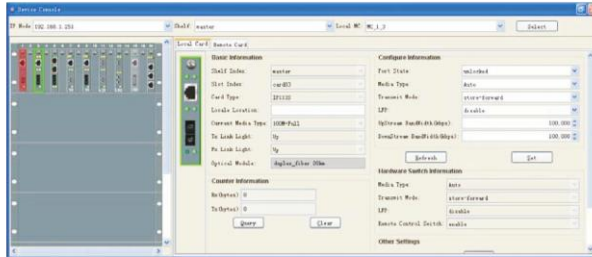




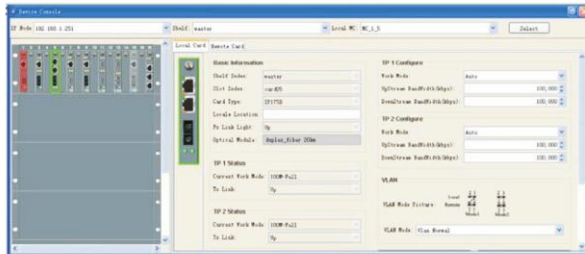
work normally

Slot No.13--- For 10G OEO, central media converter and remote media converter work normally

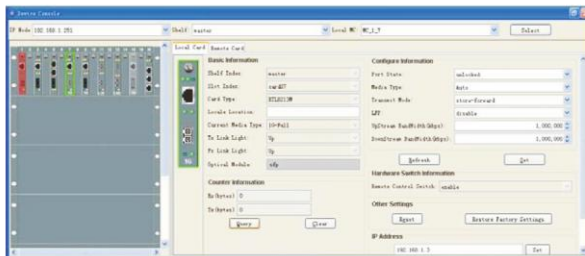
Slot No.15--- Remote media converter is taken away(if delete the card, search the card in the top tree and delete the node)



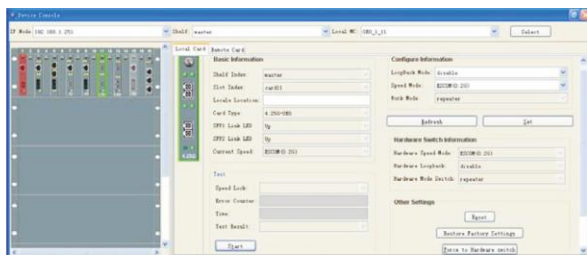
10/100M media converter management interface



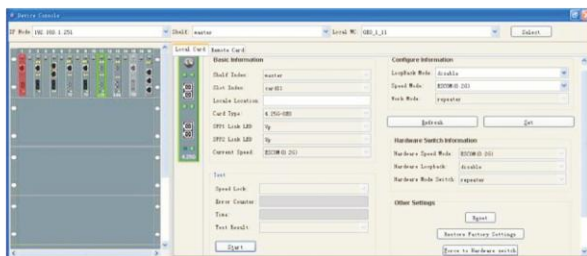
10/100M 1FX + 2TP media converter management interface



10/100/1000M SFP media converter management interface



125M-4.25G OEO 3R management interface



10G (SFP+ to XFP) OEO 3R management interface

The device information interface includes two parts: central card information and remote card information.

Only items on the status configuration panel can be set, basic information and hardware switch's status is only for read.

Basic information includes slot position, Model No., full duplex and half duplex, FX port information, TX port information and optical module information.

#### Information:

- \* Port status means opening or closing the Tx port of media converter.
- \* 10/100M card bandwidth means upstream band width/ down stream bandwidth value of Tx port, 32K×N;
- \* 10/100M 1fiber + 2 RJ45 media converter bandwidth is 32K×N;
- \* 10/100/1000M card bandwidth means upstream band width/ down stream bandwidth value of Tx port, 64K×N;
- \* Link test means the test of the integrity of the fiber link.
- \* Loopback refers to optical port enable/closed
- \* Power-down test is to diagnose failure in remote card is caused by power down or disconnection of fiber link. If remote card can not be found due to power down, then in "power-down detect" bar of remote card basic information power-down will be shown.

- \* Click “refresh” to regain from device all configuration and status information of media converters.
- \* Click “set” to send configuration of status setting panel to management card, the management will apply the configuration to the current media converters.
- \* Click button “reposition” to reposition the media converter, no influence to other devices.
- \* Click “recover to default setting” will recover the status of the media converters to the initial setting.
- \* Click “force to switch setting”, management card will apply the hardware switch setting for Tx data rate, transmission mode to current media converters.

**Notice:**

**1. Central and remote media converters turn on and turn off LFP function respectively**

**2. If “REM” switch in local card is set as disable, system can not configure local and remote media converter. Buttons like “set”, “reposition”, “recover to default setting”, “force to switch setting” will be in Grey, can not be activated.**

**3. 4.25G & 10G OEO:OEO coordinate with central OEO manage remote, remote P2 connects central P2, can realize remote management**

**4. 4.25G & 10G OEO:OEO shave PRBS, no need to connect other test equipments, it test over remote card P2, pay attention central and remote have to be with the same rate.**

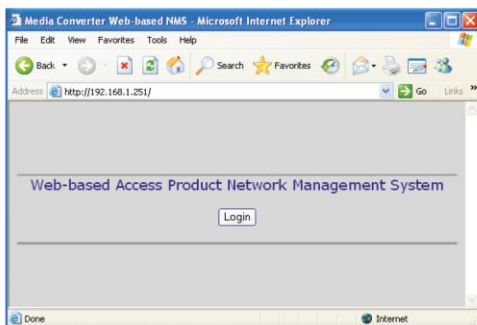
## IV. Introduction of WEB software

### 1. Login

Each main management card has a set of embedded software visited by web, which is convenient for user visit the rack directly through web page.

Input <http://management card's IP> in the address bar of IE browser, then enter web management log-in interface as below:

**(Notice: The IP of all management cards is default as 192.168.1.251)**



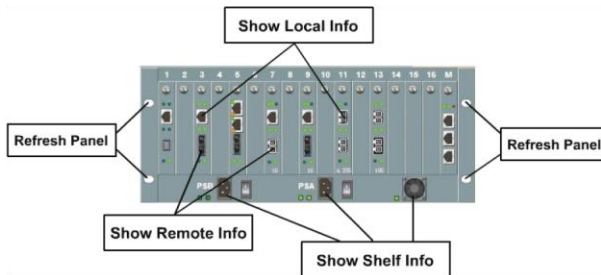
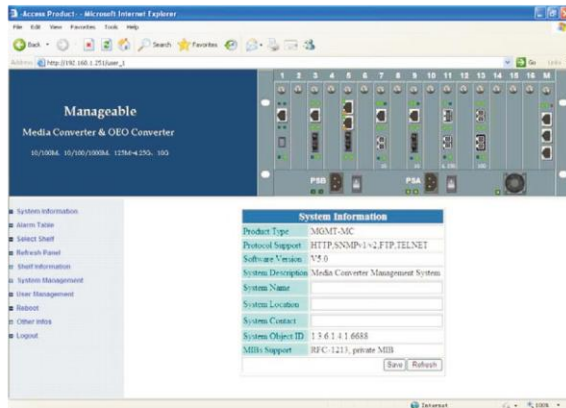
Click “login” in this page, login window will pop out as below:



Input user name, password; the initial user name is “admin” and password is “123”.

## 2. System information

After login, the web page will automatically shift to system information page as below:



Slot No.1 --- the remote media converters are not connected

Slot No.3 ---10/100M central media converter and remote media converter work normally

Slot No.5 ---10/100M 1fiber + 2 RJ45 central media converter and remote media converter work normally



Slot No.7 ---10/100/1000M SFP central media converter and remote media converter work normally

Slot No.9 ---10/100/1000M central media converter and remote media converter work normally

Slot No.11 ---1.25M~4.25G OEO central and remote OEO work normally

Slot No.13 ---10G OEO(SFP+ to XFP)OEO central and remote OEO work normally

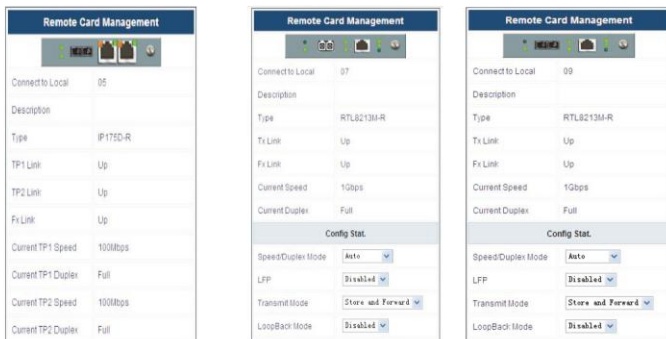
**Click electrical port of media converter shows the information of central card**

**Click optical port of media converter shows the information of remote card**



10/100M remote media converter

(Separately connect managed media converter with IP113S chipset and unmanaged media converter with IP113A/C/F/M chipset)



10/100M 1FX + 2 TP remote media converter

10/100/1000M remote media converter



125M-4.25G remote OEO



10G remote OEO

**Notice:**
**1.In SNMP community configuration table**

SNMP Community Configuration			
SNMP Community	Access Right		Delete
public	Read Only		<input type="checkbox"/>
private	Read/Write		<input type="checkbox"/>

SNMP Trap Receiver Configuration			
Trap Ip Address	Trap Community	Trap Version	Delete
192.168.1.66	public	V1	<input type="checkbox"/>
192.168.1.77	public	V1	<input type="checkbox"/>
192.168.1.88	public	V1	<input type="checkbox"/>
192.168.1.99	public	V1	<input type="checkbox"/>

Apply Refresh

If right of visit is Read Only, then configuration is SNMP read community, which means when PC software sends SNMP pack reading device information, and associating password must be the same as the configuration value, management card will return to query result, which is relative to appointed read community when NMS adds IP node.

If right of visit is Read Write, then configuration is SNMP Write community. If when PC software operates on configuration for devices, associating password must be the same as the configuration value, management card will set configuration, which is relative to appointed Write community when NMS adds IP node.

The configuration of SNMP Trap receiving address configuration table is the device Trap alarming receiving IP address table, Max.4 addresses. If use NMS, then the address table must include the IP address of the PC where NMS is. The version of Trap means whether the format of the Trap information pack is defined by SNMP Version 1 or SNMP Version2.

Click "apply" to keep Read and Write community of the current page and Trap receiving address to management card.



If choose “delete choice box” on the right of Trap receiving address table, click “apply.

Click “refresh” to show the latest SNMP configuration information.

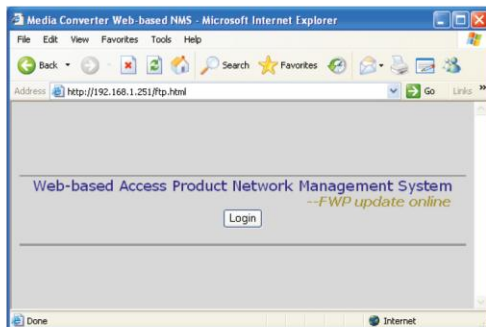
**2. If software version is higher than V5.0, hardware has to support the above version**

System HardWare Verision Support	
10/100M	Media Converter V3.0 ↑ (Remote Managable)
10/100M(1FX+2TP)	Media Converter V2.1 ↑ (Remote Managable)
10/100/1000M	Media Converter V3.0 ↑ (Remote Managable)
125M-4.25G(3R)	OEO Converter V3.1 ↑ (Remote Managable)
10G	OEO Converter V1.0 ↑
10G(3R)	OEO Converter V8.0 ↑ (Remote Managable)
10G	Media Converter V2.0 ↑

**V. Introduction of FTP**

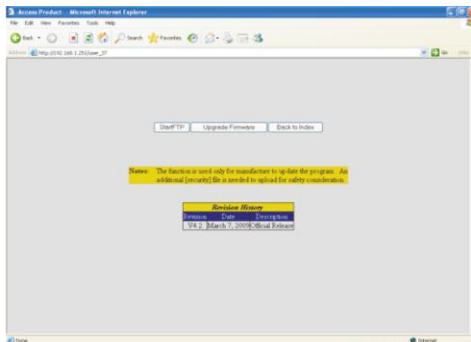
Software of management can be upgraded online through FTP function. See the steps as below:

1.input <http://management card's IP/ftp.html> in the browser's address bar to enter into FTP login interface as below:

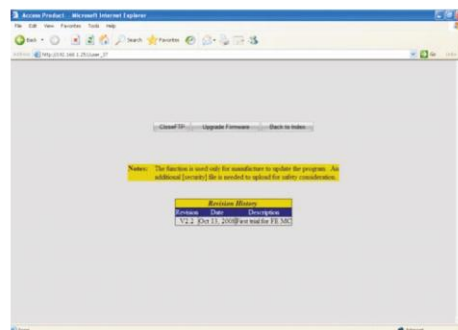


Click “login” on the page, and then input user name and password to enter into.

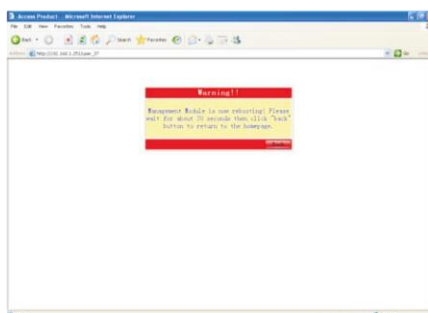




2. Click “start” to start service, and enter into the page as below:



3. Let upgrading files cover the existing files in the management card by FTP. click “upgrade programs” to start upgrading and see the page as below:



4. Click “confirm” to finish upgrading.

## VI. Introduction of CONSOLE

### 1. CONSOLE connection

Connect PC with the matched RJ45 TO DB9, open the super terminal of Windows and set as follows:

Baud Rate	115200 bps
Data Bite	8
Parity	None
Stop Bits	1
Flow Control	None

And then restart the PC, input the name and password and see the following information:

```

"----- V2.0 -----"
[Auth]>login:admin
[Auth]>password:***
Commands as follows:(abbr in () )
help(h)           : Help command
show(s)           : Show system configuration information
show card(c)      : Show the deailed status of a card
show(s) bw        : Show bandwidth
create user       : Create an account
del XXXX         : Delete an user
set username(u) XXXX : Modify username currently used
set password(p) XXXX : Modify password currently used
set readcommunity(r) XXXX : Set SNMPv1/v2 Read community string
set writecommunity(w) XXXX : Set SNMPv1/v2 Write community string
set ip(i) XXXX.X.X.X : Set network configuration
set netmask(n) XXXX.X.X.X : Set network configuration
set gateway(g) XXXX.X.X.X : Set network configuration
control(c)        : Configure a card
default(d)        : Restore system to a factory status
logout           : Logout
[CLI]>_
    
```

### 3. Description:

Order	Diameter	Explanation
help(h)	show the system hint	
show(s)	check the system information	
show card (c)	No. of chassis (0 refers to the main chassis)	Chassis the information of media converter
show (s) bw	No. of chassis (0 refers to the main chassis)	check the band width
creat username	creat new user	
del XXXX	delete named user	
	username(u) XXXX	change current user's name
	password(p) XXXX	change current user's password
Set	writcommunity(w)	set the writing of SNMP
	ip ( i ) XXXX	set the internet IP address
	netmask XXXX	set mask off code
	gateway(g) XXXX	set gateway
control (c)	No. of chassis (0 refers to the main chassis) No. of media converter(1-16)	set information of media converter card
default(d)	recover to the factory setting	
logout	exit	

## Chapter 4. Trouble shooting

If there are problem when installation like below, please solve them as below:

Failure	Causing
PWR indicators OFF after power on	<ul style="list-style-type: none"> <li>● check the power supply of the chassis, whether card is inserted firmly</li> </ul>
FXLNK indicator OFF	<ul style="list-style-type: none"> <li>● make sure the connection cable connects two end firmly</li> <li>● Check LFP, if it is ON, then disable LFP</li> <li>● the transmission rate of media converter does not match with that of network working device</li> </ul>
TPLNK indicator OFF	<ul style="list-style-type: none"> <li>● fiber connector does not match with transceiver's port</li> <li>● fiber link dispassion value is over high, receiving power is lower than the receiving sensitivity.</li> </ul>
High package loss rate	<ul style="list-style-type: none"> <li>● link rate or duplex mode unmatched, please subject to the recommened connection method.</li> <li>● Plug head of CAT5 does not connect to RJ45 firmly; Fiber connector does not connect to transceiver firmly</li> <li>● Wrong configuration of CAT5</li> </ul>
Can not see the status of remote media converter	<ul style="list-style-type: none"> <li>● Please make sure the remote control function of local media converter enable</li> </ul>

Annex: please pay attention to the following items when installation.

### 1. When to start LFP?

There will be inconvenience even LFP is useful, because after enable LFP, it will be hard to judge the well connection of TP link. It can be the reason of remote TP link failure. So we suggest user close LFP when installation media converters, then user can judge the TO link through link LED. After installation, management center will start Link Loss function for all.

### 2. How to configure switch and router?

If all devices connecting to media converters are auto-sensing, then there is no need to do configuration. When the connecting device does not support auto-sensing, user has to configure the working mode of the media converter.

(If user's device working in fix rate, and media converter works in auto-sensing mode, media converter will auto sense to the mode of half duplex causing abnormal.)