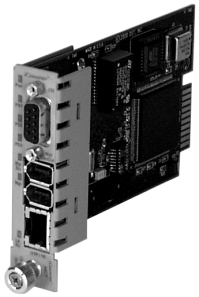
Omnitron Systems Technology, Inc.

iConverter™ NMM
Network Management Module
User's Manual

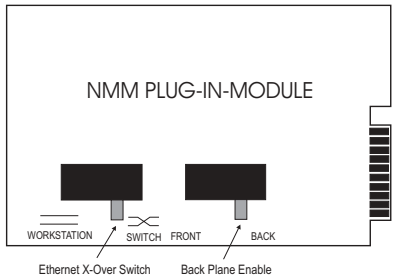


iConverter Network Management Module	
Model	**Description**
8000-0	SNMP Management Module (NMM)
Optional Accessories	
Model	**Description**
8080-3	NMM Cascade Cable (3 ft.)
8081-3	NMM Serial Cable (DB-9, 3 ft.)
8100-0	NetOutlook SNMP Software for Windows 9X//ME/XP/NT/2K

Description

The *iConverter*™ NMM Network Management Module provides SNMP-based monitoring and control for the iConverter product family. The NMM features a serial port for configuration, a front-plane or a backplane 10 Mbps Ethernet management interface port and a pair of multi-chassis management ports enabling it to manage up to 16 chassis using a single IP address.

Board Mounted Switch Settings:



RJ45 Cross-Over Switch:

When connecting the Ethernet front-plane to a hub or switch, set the switch to "switch". When connecting to a workstation, set to "workstation" (factory setting).

Ethernet Port Back-Plane Management Switch:
When the "Ethernet Port" switch is in the "front" position (factory setting), the front-plane RJ45 Ethernet port is enabled and the backplane Ethernet port is disabled.

When the "Ethernet Port" switch is in the "back" position the front-panel port becomes disabled and the backplane port is enabled. In the backplane mode, the NMM module can communicate to an adjacent 10/100 module.

Mounting

iConverter modules are hot-swappable and can be installed into any of the iConverter family of Chassis.

1. Carefully slide the iConverter Slide-in-Module into installation slot, aligning the iConverter Slide-in-Module with installation guides.
2. Secure Slide-in-Module by securing panel fastener screw (attached to Slide-in-Module) to chassis front.
3. If multi-chassis grouping is desired, connect the NMMs together using the iConverter NMM Cascade Cable (Model 8080-3).
4. When front-plane (Out-of-Band Management) is desired, attach the RJ45 Ethernet port via a Category 5 UTP cable to a 10Base-T capable Ethernet device.

LED Indicators

LED	Color	Description
Pwr:	Yellow	On -- Power
PS1:	Yellow	On -- Power Supply #1 OK
PS2:	Yellow	On -- Power Supply #2 OK
PS3:	Yellow	On -- Power Supply #3 OK
Msr/Slv:	Green	On -- Master; Off -- Slave
Mgt:	Green	On -- Management Polling
Lk/Rx:	Green	On -- 10BT Link; Blink -- Activity

When using the iConverter for the first time, initial configuration is required. To configure, attach the NMM to a serial RS-232 equipped PC with terminal emulation software such as HyperTerminal. To attach, use a straight through serial cable with a DB-9 male connector to connect to the NMM (Model 8081-3). Attach other end of the cable to the serial RS-232 port of the PC. Set the PC's serial port to the following:

bits per second	57,600
stop bits	1
data bits	8
parity	NONE

Power the chassis containing the iConverter NMM and press *<ENTER>* to bring up a command line prompt at the attached PC. If a password has been set, the following information will be displayed:

```
OS Initialized and Running
Task Creation Complete
Beginning Discovery:
IP Addr.       = 192.168.1.220
Omnitron Systems Technology, Inc.
iConverter, Serial Agent v1.3
Copyright 2001, 2002 OST, Inc.
Password Entry
```

```
Omnitron Systems Technology
Technical Support: (949) 250-6510
27 Mauchly #201
Sales/Products:      (800) 675-8410
Irvine, CA 92618
On the web at:
www.omnitron-systems.com
```

```
IP Address  192.168.1.220
MAC         00:06:87:00:0A:2C

Please enter the password >
```

Enter the password and hit *<ENTER>*. The NMM should respond with the Management Options menu. If there is no password, the NMM will skip the above message and go straight to the Management Options menu.

```
Management Options
iConverter, Serial Agent v1.3
Network Management
1:  Chassis and Module Management
2:  Set Module Name
NMM Preferences
3:  IP and Control Preferences
4:  SNMP Preferences
5:  Abandon NMM Preference
    Changes
6:  Save NMM Preference Changes
7:  Restore Factory Defaults
8:  Restart NMM
NMM Maintenance
9:  Firmware Update
IP Address       = 192.168.1.220
Chassis Number = 1
Enter Choice, Help(h), Exit(x) >
```

IP and Control Preferences

An IP address is required for the SNMP manager to address the NMM. Its initial factory setting is

192.168.1.220. To configure the IP address and control paramenters, press *3* from the Management Options menu. The following menu should appear:

```
IP and Control Preferences Screen
iConverter, Serial Agent v1.3

1:  Set NMM IP
2:  Set NMM Subnet Mask
3:  Set Gateway
4:  Chassis Number
5:  Chassis Name (also
    sysName)
6:  Enable/Disable Telnet
7:  Enable/Disable FTP
8:  Enable/Disable Redundancy
9:  Enable/Disable Soft-switch
    Reload
10: Telnet   Password
11: FTP      Password
12: Serial   Password
13: Restore NMM Configuration
    Defaults

Enter Choice, Management Options
Screen(0), Help(h), Exit(x) >
```

Setting IP Parameters

To configure the IP address of the NMM, press *1* at the IP Address and Control Preferences screen:


```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 1
Change IP: 192.168.1.220
```

Backspace over the existing value, type the new value (in x.x.x.x format), and press <ENTER>.

To configure the subnet mask of the NMM, press *2* at the IP Address and Control Preferences screen:

```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 2
Change Subnet: 255.255.255.0
```

Backspace over the existing value, type the new value (in x.x.x.x format), and press <ENTER>.

To configure the gateway of the NMM, press *3* at the IP Address and Control Preferences screen:

```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 3
Change Gateway: 192.168.1.1
```

Backspace over the existing value, type the new value (in x.x.x.x format), and press <ENTER>.

To save the new values, press *0* to return to the Management Options menu, then press *6* to Save NMM Preference Changes.

Setting the Chassis Number and Name

In a multi-chassis configuration, each chassis must be assigned a unique number. In this configuration, multiple chassis are cascaded together and are monitored and controlled from a single NMM IP address. The numbers

must be in the range 1 to 16, where 1 is the "master" NMM. In a single-chassis configuration, set this entry to 1.

The Chassis Name, or sysName, allows the network manager to identify the NMM by a common name. The name can be any 1-31 character alphanumeric string.

To set the Chassis Number, press *4* at the IP Address and Control Preferences screen:

```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 4
Change Chassis Number: <1-16>
```

To set the Chassis Name, or sysName, press *5* at the IP Address and Control Preferences screen:

```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 5
Change Chassis Name: <1-31 char-
acter alphanumeric>
```

To save the new values, press *0* to return to the Management Options menu, then press *6* to Save NMM Preference Changes.

Setting NMM Passwords

The NMM is shipped from the factory with no password protection. It is highly recommended that the network administrator set a new password in order to prevent unauthorized access to the unit.

To set the password for telnet access, type *10* at the IP Address and Control Preferences screen:

```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 10
Enter New Telnet Password >
<password>
Please enter again to verify >
<password>
```

To set the password for ftp access, type *11* at the IP Address and Control Preferences screen:

```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 11
Enter New FTP Password >
<password>
Please enter again to verify >
<password>
```

To set the password for serial access, type *12* at the IP Address and Control Preferences screen:

```
Enter Choice, Management Options
Screen(0), Help(h), Exit(x) > 12
Enter New Serial Password >
<password>
Please enter again to verify >
<password>
```

To save the new values, press *0* to return to the Management Options menu, then press *6* to Save NMM Preference Changes.

SNMP Preferences

Because the NMM uses SNMP-based management, the SNMP Preferences must be properly set for full functionality.

To set the NMM's SNMP preferences, press *4* from the Management Options menu. The following menu should appear:

```
SNMP Preferences Screen
iConverter, Serial Agent v1.3

Chassis Number      = 1

1:  sysName (also Chassis Name)
2:  sysContact
3:  sysLocation
4:  Read Community Name
5:  Write Community Name
6:  Traphost Address 1
7:  Traphost Address 2
8:  Traphost Address 3
9:  Traphost Address 4
10: Traphost Address 5
11: Traphost Address 6
12: Traphost Address 7
13: Traphost Address 8
14: Restore SNMP Configuration

Enter Choice, Management Options
Screen(0), Help(h), Exit(x) >
```

Setting the SNMP Read and Write Community Names

The SNMP Read Community Name is necessary for reading data from the NMM. The name can be any 1-31 character alphanumeric string.

To set the SNMP Read Community Name, type *4* at the SNMP Preferences Screen.

```
Enter Choice, Management Options Screen(0),
Help(h), Exit(x) > 4
Change Read Community Name: public
```

Backspace over the existing value, type the new value, and press <*ENTER*>.

The SNMP Write Community Name is necessary for writing data to the NMM. The name can be any 1-31 character alphanumeric string.

To set the SNMP Write Community Name, type *5* at the SNMP Preferences Screen.

```
Enter Choice, Management Options Screen(0),
Help(h), Exit(x) > 5
Change Write Community Name: public
```

Backspace over the existing value, type the new value, and press <*ENTER*>.

To save the new values, press *0* to return to the Management Options menu, then press *6* to Save NMM Preference Changes.

Setting the SNMP Trap IP Addresses

SNMP traps are used to report events that occur during the operation of a network that require the attention of the network administrator. The NMM is capable of sending SNMP traps to up to eight different SNMP management stations.

To enter the IP address of the first trap monitoring station, type *6* at the SNMP Preferences Screen.

```
Enter Choice, Management Options Screen(0),
Help(h), Exit(x) > 6
Change Traphost Address 1: 255.255.255.255
```

Backspace over the existing value, type the new value (in x.x.x.x format), and press <ENTER>.

To enter the IP addresses of additional trap-receiving management stations, repeat this process for Traphost Addresses 2-8.

To save the new values, press *0* to return to the Management Options menu, then press *6* to Save NMM Preference Changes.

NMM Agent Software Update

Updating the Agent Software allows administrators to upgrade the firmware within the management module and take advantage of new features.

To update the Agent software, type *9* at the Management Options menu. The NMM will display the following:

```
Enter Choice, Help(h), Exit(x) > 9
UPDATE: Are you sure? [Y/N] > Y

Please Xmodem file now:
```

From your terminal program, use the Xmodem protocol to send the new **IC_agent.xxx** agent file to the NMM (where *xxx* represents the release level of the software).

Once the file transfer begins, the data will upload to the NMM. The process will take about four minutes over a serial connection.

When the upload is complete, the NMM will display:

```
File received correctly
Flash Server: Decoding Program File.
Flash Server: Program Decoded.
Flash Server: Checking Program Address Range.
Flash Server: Program Range ok.
Flash Server: Erasing Flash.
Flash Server: Flash Erased.
Flash Server: Programming Flash.
Flash Server: Flash Programmed.
Flash Server: Verifying Flash Program.
Flash Server: Flash Program Verified
Flash Server: REBOOTING NMM TO LOAD NEW
              PROGRAM!!
```

The NMM will then restart using the new agent software.

Accessing the NMM via Telnet

The NMM may be accessed and configured via telnet using any standard telnet client. All of the functions available with serial cable access are available with telnet access, with the exception of agent software updating (see *Accessing the NMM via FTP* below).

Telnet access can be enabled or disabled, via serial cable only, at the *IP and Control Preferences* screen. This screen also contains an option to set the telnet password. Telnet will not work without a password.

Accessing the NMM via FTP

The agent software on the NMM can be updated via FTP using any standard FTP client.

FTP access can be enabled or disabled, via serial cable only, at the *IP and Control Preferences* screen. This screen also contains an option to set the FTP password. FTP will not work without a password.

To update the agent software, log in as user "ost" and use the password set during the NMM's configuration. Upload the new agent software into the root directory. When the file transfer is complete, the NMM will verify the file and then restart using the new file.

NMM Specifications

Model	NMM
Protocols	IP, UDP,SNMP, TCP, TFTP, ARP, ICMP, Telnet, FTP
Copper Connectors	RJ-45, DB-9
Controls	UTP X-over, Front/Backplane
LED Displays	Pwr, Pwr supply (3), UTP Link, Master, Slave, Mgt Poll
Supported MIB's	RFC1155, RFC1156, RFC1157, RFC1212, RFC1213, OST MIB
Dimensions	W:0.85" xD:4.5"xH:2.8"
Weight	8 oz.
Compliance	UL, CE, FCC Class A
Temperature -Operating -Storage	0 to 50 C -40 to +80 C
Altitude	0-10,000 ft
MTBF (hrs)	1,336,898

Warning

The operating description in this Instruction Manual is for use by qualified personnel only. To avoid electrical shock, do not perform any servicing of this unit other than that contained in the operating instructions, unless you are qualified and certified to do so by Omnitron Systems Technology, Inc.

Warranty

This product is warranted to the original purchaser against defects in material and workmanship for a period of TWO YEARS from the date of shipment. A LIFETIME warranty may be obtained by the original purchaser by REGISTERING this product with Omnitron within 90 days from the date of shipment. TO REGISTER, COMPLETE AND MAIL OR FAX THE REGISTRATION PORTION OF THIS INSTRUCTION MANUAL TO THE INDICATED ADDRESS. Or you may register your product on the Internet at http://www.omnitron-systems.com. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective.

For warranty service, the product must be sent to an Omnitron designated facility, at Buyer's expense. Omnitron will pay the shipping charge to return the product to Buyer's designated US address using Omnitron's standard shipping method.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized

modifications or tampering with equipment (including removal of equipment cover by personnel not specifically authorized and certified by Omnitron), or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

No other warranty is expressed or implied. Omnitron specifically disclaims the implied warranties of merchantability and fitness for any particular purpose.

Exclusive Remedies

The remedies provided herein are the Buyer's sole and exclusive remedies. Omnitron shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

Technical Support:

For help with this product, contact our Tech. Support:

Phone: (949) 250-6510
Fax: (949) 250-6514
Address: Omnitron Systems Technology, Inc.
27 Mauchly #201
Irvine, CA 92618 USA
E-mail: support@omnitron-systems.com
URL: http://www.omnitron-systems.com

Form: 040-08000-002 7/02