

User's Manual



MX ASI-IP & MX IP-ASI



DVB-ASI Over Ethernet Network Adapters

Installation and User Guide



TABLE OF CONTENTS

MX ASI-IP Network Adapter.....	2
Command Line Description.....	4
MX IP-ASI Network Adapter.....	6
Command Line Description.....	8
Network Adapter Installation and User Manual.....	10

MX ASI-IP Network Adapter



The MX ASI-IP Network Adapter is a special purpose device capable of converting from DVB ASI to IP UDP, which can be used in any ASI (270Mbps) data to IP application.

Main Features

- PowerPC embedded CPU is used for the hardware, enabling stable and reliable performance;
- Open Linux operating system is used for the software;
- Complete Ethernet protocol, providing 10B/100BaseT network interface and IP routing function;
- UDP connection mode, specially designed for video data application;
- Support up to 20 IP point to point transmission and multicast, with each IP target address supporting the functions of enable, disable or delete;
- DVB ASI loop out;
- RS232 interface;
- Communication protocol and remote control software package for development;
- Compact design, easy to mount;
- Output/Input status indicator, easy to operate.

Technical Specifications

Specifications	MX ASI-IP Network Adapter
RS-232 Interface	Male DB-9
Ethernet Interface	100BaseT, RJ45 interface
ASI Output Interface	BNC, 75 Ω
Power Supply	DC 5V
Power Consumption	< 2W



Dimension/Weight	220mm * 145mm * 40mm / 0.6KG
Temperature	0°C to 40°C
Humidity	10-90%, non-condensing

Technical Parameters

Parameters	Specification
Ethernet Interface	10/100M, duplex/semi-duplex self-adaptive IP throughput< 50Mbps
ASI Input Interface	< 38Mbps
ASI Output Interface	< 108Mbps
RS232 Serial Port	Data Bit:8; Stop Bit:1; Check Bit: O; Rate:19200; Flow Control: No
Expandability	Can customize for industrial users when required.

MX ASI-IP Command Line Description

System requirements:

- PC with free ASC0 channel
- Windows 95 and above, Windows NT 4.0 and above
- One cable

Cable connecting:

Directly connect between MX box to PC COM port (RS232)

MX box DB9	To	PC COM (RS232)
Pin 2 (Rx)	-----	Pin 3 (Tx)
Pin 3 (Tx)	-----	Pin 2 (Rx)
Pin 5 (GND)	-----	Pin 5 (GND)

Getting Start:

- Connecting the cable.
- Turn on the computer
- Using the 'Hyper terminal' from the Accessories.
- Run the 'Hypertrm.exe'
- Enter a name and choose a icon
- Select free COM port in 'connect using'
- Select Bits per second is '19200', Data bits is '8', Parity is 'None', Stop bits is '1', Flow control is 'None' in Ports setting and then click on the "OK" button.
- The "xxx—Hyper Terminal" window will appear.
- Select the menu File\Properties.
- Select the 'Setting' tab and click the "ASCII Setup..." button.
- Choice the 'Echo typed characters locally'.
- Choice the 'Send line ends with line feeds'.
- Click on the "OK" button and click on the "OK" button again.
- Close all dialog boxes.
- Turn on the MX box. Wait a moment.
- "Welcome" will appear in the Hyper terminal window.

```
+++++
Welcome to enter MX ASI To IP
+++++
Please input command. If you need help pls enter ?
=>
The local ip address is 200.162.162.200
The gateway is 200.162.162.1
The netmask address is 255.255.255.0
The Mul-ts ipaddress list:
1 224.162.162.100:3000:enable
  2 null
  3 null
  .....
  20 null
```

-
-



```

=>?
ipaddress xxx.xxx.xxx.xxx      ----- setup the local ip address
gateway xxx.xxx.xxx.xxx       ----- setup the local gateway address
netmask xxx.xxx.xxx.xxx       ----- setup the local netmask address
add xxx.xxx.xxx.xxx:xxxx      ----- add a new ip address and port
del xx                          ----- delete one ip channel
alldel                          ----- delete all ip channel
enable xx                       ----- enable one channel
disable xx                      ----- disable one channel
G                               ----- get parameter
?                               ----- help
=>

```

Command :

Command	Parameter	Parameter Description
G	Null	Get IP board information that include local ip address, netmask, gateway and Multi destination ip address and port.
ipaddress	xxx.xxx.xxx.xxx	Set local ip address. xxx.xxx.xxx.xxx is local ip address
gateway	xxx.xxx.xxx.xxx	Set gateway ip address. xxx.xxx.xxx.xxx is gateway address
netmask	xxx.xxx.xxx.xxx	Set netmask address. xxx.xxx.xxx.xxx is netmask address
add	xxx.xxx.xxx.xxx:yyyy	Add a destination ip address and port . xxx.xxx.xxx.xxx Dest ip address yyyy Dest port no.
del	No.	Delete one channel No. is channel No.
alldel	Null	Delete all destination ip channel.
enable	No.	Enable one channel destination ip address. No. is channel No.
disable	No.	Disable one channel destination ip address. No. is channel No.
?	Null	help command. Can get help information



MX IP-ASI Network Adapter



The MX IP-ASI Network Adapter is a special purpose device that converts IP UDP back to DVB ASI. Using in pairs with MX ASI-IP Network Adapter, A DVB ASI stream can be transmitted through Ethernet Networks.

Main Features

- PowerPC embedded CPU is used for the hardware, enabling stable and reliable performance;
- Open Linux operating system is used for the software;
- Complete Ethernet protocol, providing 10B/100BaseT network interface and IP routing function;
- UDP connection mode, specially designed for video data application;
- RS232 interface;
- Compact design, easy to mount;
- Communication protocol and remote control software package for development;
- Output/Input status indicator, easy to operate.

Technical Specifications

Specifications	MX IP-ASI Network Adapter
RS-232 Interface	Male DB-9
Ethernet Interface	100BaseT, RJ45 interface
ASI Output Interface	BNC, 75 Ω
Power Supply	DC 5V
Power Consumption	< 2W
Dimension/Weight	220mm * 145mm * 40mm / 0.6KG
Temperature	0°C to 40°C



Humidity	10-90%, non-condensing
----------	------------------------

Technical Parameters

Parameters	Specification
Ethernet Interface	10/100M, duplex/semi-duplex self-adaptive IP throughput< 50Mbps
ASI Output Interface	< 26Mbps
RS232 Serial Port	Data Bit:8; Stop Bit:1; Check Bit: 0; Rate:19200; Flow Control: No
Expandability	Can customize for industrial users when required.



MX IP-ASI

Command Line Description

System requirements:

- PC with free ASC0 channel
- Windows 95 and above, Windows NT 4.0 and above
- One cable

Cable connecting:

Directly connect between MX IP-ASI box to PC COM port (RS232)

MX box DB9	To	PC COM (RS232)
Pin 2 (Rx)	-----	Pin 3 (Tx)
Pin 3 (Tx)	-----	Pin 2 (Rx)
Pin 5 (GND)	-----	Pin 5 (GND)

Getting Start:

- Connecting the cable.
- Turn on the computer
- Using the 'Hyper terminal' from the Accessories.
- Run the 'Hypertrm.exe'
- Enter a name and choose a icon
- Select free COM port in 'connect using'
- Select Bits per second is '19200', Data bits is '8', Parity is 'None', Stop bits is '1', Flow control is 'None' in Ports setting and then click on the "OK" button.
- The "xxx—Hyper Terminal" window will appear.
- Select the menu File\Properties.
- Select the 'Setting' tab and click the "ASCII Setup..." button.
- Choice the 'Echo typed characters locally'.
- Choice the 'Send line ends with line feeds'.
- Click on the "OK" button and click on the "OK" button again.
- Close all dialog boxes.
- Turn on the MX IP2ASI box.
- "Welcome" will appear in the Hyper terminal window.

```
+++++  
Welcome to enter MX IP To ASI  
+++++  
Please input command. If you need help pls enter ?  
=>  
The local ip address is xxx.xxx.xxx.xxx  
The gateway is xxx.xxx.xxx.xxx  
The netmask address is xxx.xxx.xxx.xxx  
The Source ip address is xxx.xxx.xxx.xxx  
● The Source ip address port is xxxx  
=>
```



```

=>?
ipaddress xxx.xxx.xxx.xxx      ----- setup the local ip address
gateway xxx.xxx.xxx.xxx       ----- setup the local gateway address
netmask xxx.xxx.xxx.xxx       ----- setup the local netmask address
tsaddress xxx.xxx.xxx.xxx:xxxx ----- setup the source ip address and port
G                               ----- get parameter
?                               ----- help
=>

```

Command :

Command	Parameter	Parameter Description
G	Null	Get IP board information that include local ip address, netmask, gateway and Multi destination ip address and port.
ipaddress	xxx.xxx.xxx.xxx	Set local ip address. xxx.xxx.xxx.xxx is local ip address
gateway	xxx.xxx.xxx.xxx	Set gateway ip address. xxx.xxx.xxx.xxx is gateway address
netmask	xxx.xxx.xxx.xxx	Set netmask address. xxx.xxx.xxx.xxx is netmask address
tsaddress	xxx.xxx.xxx.xxx:yyyy	Set the source ip address and port . xxx.xxx.xxx.xxx is source ip address yyyy is source port no.
?	Null	help command. Can get help information

MX ASI-IP and MX IP-ASI

Network Adapters

Users Manual

Chapter I Preface

1.1 Introduction

This manual provides detailed description on the functions, features, operation and maintenance of Maxcom innovational MX Network Adapters. MX Network Adapters include a pair of units: MX ASI-IP Network Adapter, and MX IP-ASI Network Adapter.

1.2 Structure of User's Manual

- ✓ **1 Preface:** Introduction of Manual
- ✓ **2 Product Introduction:** Introduction of MX Basic Features
- ✓ **3 Equipment Installation:** Equipment Installation, Equipment Hardware, Front Panel and Rear Panel Structure
- ✓ **4 Serial Port Control:** Definition of RS232 serial port, use of serial controlling command and introduction of control display.
- ✓ **5 Technical Specifications:** Introduction of specifications and system parameters definition.
- ✓ **6 Trouble Shooting:** Introduction of ways of trouble shooting.

Chapter II Product Introduction

The MX ASI-IP and MX IP-ASI series network adapters to achieve the conversion between DVB ASI and IP UDP. MX include a pair of equipment – MX ASI-IP Network Adapter and MX IP-ASI Network Adapter. The MX ASI-IP Network Adapter helps to convert DVB ASI to IP UDP, which is applicable in any ASI to IP requirement. MX IP-ASI Network Adapter is to convert the ASI stream with IP UDP format back to DVB ASI stream. When it is used together with ASI-IP Network Adapter, DVB ASI stream can be easily transmitted through Ethernet.

MX Network Adapters are of compact design which can be either wall-hang mounted or used as a desk-top.

The user can control one MX unit or multiple MX units through RS232 port or 100M Ethernet interface.

2.1 Features

Figure 1: Basic Features of MX Network Adapters

<i>Features</i>		<i>Description</i>
Hardware	Chassis	Wall-hanging design, compact and flexible
	Main Chip	PowerPC embedded CPU, reliable operation
Software	OS	Open Linux operating system, modular design
Interface	DVB-ASI	TS input and output interface
	IP	10/100BaseT

2.2 Panel

The front panel of MX provides power supply socket, power indicator, ASI input and ASI output interfaces.



- 5V:

Power Input: 5VDC; Power Consumption: < 2W.

Please use the DC transformer enclosed with the equipment.

- DATA: Power status indication

- ASI IN (BNC75): ASI input interface

In MX ASI-IP Network Adapter, ASI IN is for ASI input signal;

In MX IP-ASI Network Adapter, ASI IN is not used.

- ASI OUT (BNC75): ASI output interface

In MX ASI-IP Network Adapter, ASI OUT is for the loop out signal of ASI input;

In MX IP-ASI, ASI OUT is for ASI output signal

The rear panel of MX provides IP interface, network indicator, RS-232 port.

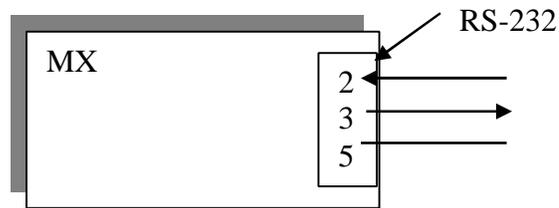


- RS-232: the control interface of MX.

Rate: 19200bps; Data Bit: 8; Stop Bit: 1; Check Bit: No;

Connector: DB-9 Male

- LINK RX TX: Ethernet network indicator



- IP: Ethernet 100Base-standard RJ-45/UTP interface. Full duplex/semi-duplex adaptive.

Pin	Signal
1	Transmit Data (TD) +
2	Transmit Data (TD) –
3	Receive Data (RD) +
4	Not connected
5	Not connected
6	Receive Data (RD) –
7	Not connected
8	Not connected

Chapter III Equipment Installation

3.1 Installation Requirements:

The MX Network Adapters can be used as a desk-top unit or mounted on the wall as per the following ways:

1. Make sure to use the enclosed transformer;
2. Use four screws to the holes on the panel to fix MX on the wall.

3.2 Cable and Power Supply Installation

1. Connect with the transformer
2. Connect the cables with the input and output interfaces
3. Connect with the serial port and Ethernet interface
4. Plug in 5V DC

When the power is on, the power indicator illumines, and the equipment enters into BOOT and OS initialization. Don't operate on the equipment at this time to avoid causing errors. The initialization takes around 20~30 seconds. After that words of "Welcome" can be seen from the serial port.

Chapter IV Serial Port Control

RS-232 port allows all operation on the unit including reading and setting the parameters. MX ASI-IP and MX IP-ASI have different command, but they use the same controlling way. Please refer to the following files for the detailed control protocol.

For MX ASI-IP, refer to MX ASI TO IP Command Line Description.

For MX IP-ASI, refer to MX IP TO ASI Command Line Description.

Chapter V Technical Specifications

5.1 Technical Specifications

Specifications	MX Network Adapter
RS-232 Interface	Male DB-9
Ethernet Interface	100BaseT , RJ45
ASI Input Interface	BNC, 75 Ω
ASI Output Interface	BNC, 75 Ω
Power Supply	DC 5V
Power Consumption	$\ll 2W$
Dimension/Weight	220mm * 145mm * 40mm / 0.6KG
Storage Temperature	0° C to 40° C
Humidity	10-90%, non-condensing

5.2 MX ASI-IP Specifications

Items	Specifications
Ethernet Interface	10/100M, full duplex/semi-duplex self-adaptive; IP throughput < 50Mbps
ASI Input Interface	< 38Mbps
ASI Output Interface	< 108Mbps
RS-232 Serial Port	Data Bit:8; Stop Bit:1; Check Bit: 0; Rate:19200; Flow Control: No
Expandability	Can customize for industrial users when required.

5.2 MX IP-ASI Specifications

Items	Specifications
Ethernet Interface	10/100M, duplex/semi-duplex adaptive; IP throughput < 50Mbps
ASI Output Interface	< 26Mbps
RS-232 Serial Port	Data Bit:8; Stop Bit:1; Check Bit: 0; Rate:19200; Flow Control: No
Expandability	Can customize for industrial users when required.

Chapter VI Trouble Shooting

No Power Supply Indicator

Please check whether the DC transformer has been connected with the AC power supply. Please check whether the enclosed transformer is used.

No Network Indicator

Please check whether the network is well connected, and the HUB or switch on the other end of the network work normally.

No Display or Error Display from Serial Port

If MX just initiates, please wait for about 20~30 seconds, the display from the serial port appears then. Please make sure that the serial port of the HUB is set at the same as what is required in this manual, and no other application software in the HUB is being used for the same serial port.

Image Quality Problem

MX ASI-IP

- If no image, please check whether the input ASI signal is normal and whether the cable is well connected. Check whether the setting of IP address and port are correct.
- If there is mosaic or picture intermittence, please check whether the code stream of the input ASI signal conform to the requirement in the manual, and whether there are other operations running to affect the network bandwidth.

MX IP-ASI

- If no image, please check whether the cable and power supply are well connected. Check whether the setting of the source IP address and port are correct.
- If there is mosaic or picture intermittence, please check whether the flow of input IP signal conform to the requirement in the manual, and whether there are other operations running to affect the network bandwidth.