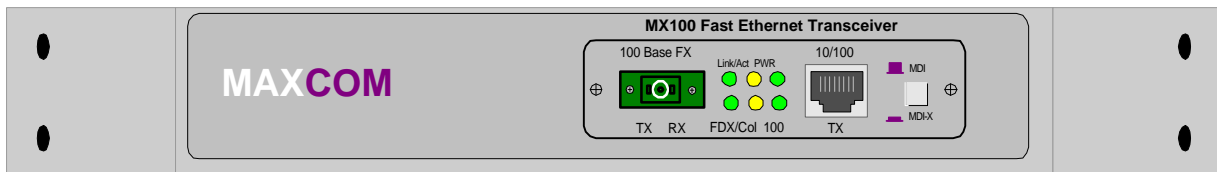# Two Port Fiber Optic 10/100 Ethernet Switch

Model MX200

Description

The rack-mountable MX200 Switch is ideal for operating any size client/server network and is designed for bandwidth-constrained workgroups, which require faster speed connections. This product will increase the performance of your network by bringing full Ethernet bandwidth to individual workgroups and/or clients, which will eliminate the need for all stations to share the bandwidth of a single network. The 100Mbps Fast Ethernet capability of these Switches eliminates bottlenecks in connection to servers, and can link your existing 10Mbps work-groups to a 100Mbps Fast Ethernet backbone.

Features

- 10/100 Auto-Sensing/Force Full Duplex
- 2 Switch Ports (2 RJ-45 connectors)
- 1 or 2 FX 100Mbps Fiber Port
- Provide full wire-rate 10/100Mbps Switch Ports for greater network performance
- Supports " Store and Forward" switching architecture
- Connect 10Mbps, 100Mbps, Half and Full Duplex simultaneously
- 4K MAC address entries per port
- Two-way (incoming and outgoing) address learning supported for each port
- 170 full-size data packet buffer for 100Mbps port
- Routing decision less than 0.5 u sec
- Filtering and forwarding rate - 14880 packets per second for 10Mbps ports, 148800 per second for 100Mbps ports.
- Plug-n-Play Ethernet & Fast Ethernet Switch
- Easy migration from 10Mbps to 100Mbps
- IEEE 802.3, 802.3u Compliant
- Guaranteed Switch performance and hardware compatibility with other Switches, Hubs and Adapter

Model Selection Guide

Model	Description
MX200-1S-SCA-40	10/100 Fiber Optic Ethernet Switch, 2 Port, 1 Fiber, SC/APC Connector, 40 Km
MX200-1S-SCA-80	10/100 Fiber Optic Ethernet Switch, 2 Port, 1 Fiber, SC/APC Connector, 80 Km
MX200-2S-SCA-60	10/100 Fiber Optic Ethernet Switch, 2 Port, 2 Fiber, SC/APC Connector, 60 Km
MX200-2S-SCA-110	10/100 Fiber Optic Ethernet Switch, 2 Port, 2 Fiber, SC/APC Connector, 110 Km
MX200-1M-SC-2	10/100 Fiber Optic Ethernet Switch, 2 Port, 1 Fiber, SC/PC Connector, 2 Km

Other Connectors and Distances Available Upon Request

Application Drawing

10/100Base Network Switch or Hub

Work Station

One Optical Fiber
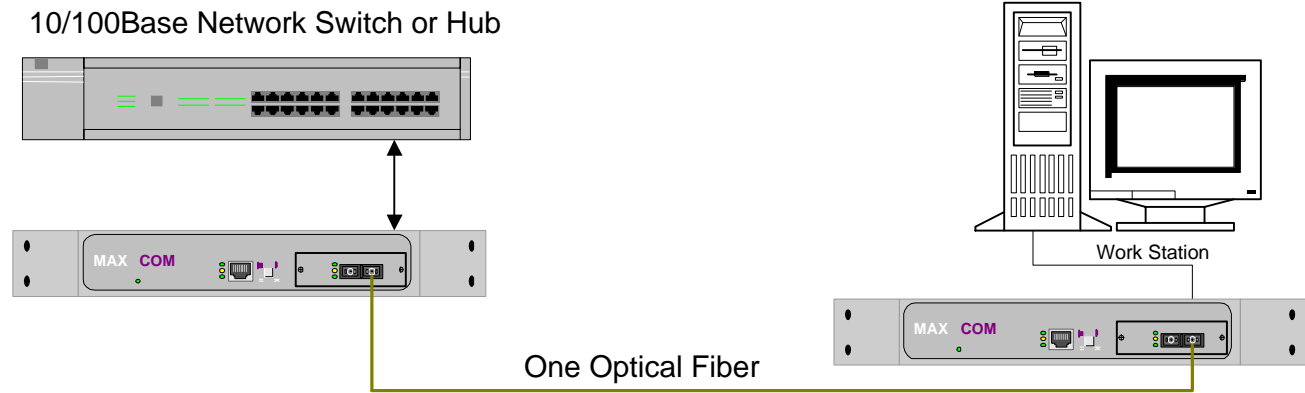
Standards	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet
Connection Ports	1 Port UTP & 1 Port Fiber Switch; 1 RJ-45 Dual Speed UTP port and 1 100Base-FX fiber port
Network Media	10BaseTX : UTP category 3 or better 100BaseTX: UTP category 5 100BaseFX: SC 62.5/125u or 9/125u Fiber cable
Crossover Push Button	1 crossover button for the UTP port
LED indicators	Power, Link/Activity, Full or Half Duplex/Collision,10/100Mbps
Physical Dimensions	260mm x 44mm x 145mm
Environment	Temperature: Operating: 0C to 40C Storage: -20C to 70C Humidity: Operating: 10% to 90% RH Storage: 5% to 90% RH
Input Power Requirements:	Voltage: 110/220V Auto-sense Internal Power, USA
Registration	FCC Part 15 Class A, CE, UL, CUL, TUV, VCCI 1

Package Includes

- Two Port 10/100TX - 100FX Switch
- Power Cord
- Rack-mountable hardware
- Easy to follow owner's manual

System Requirements

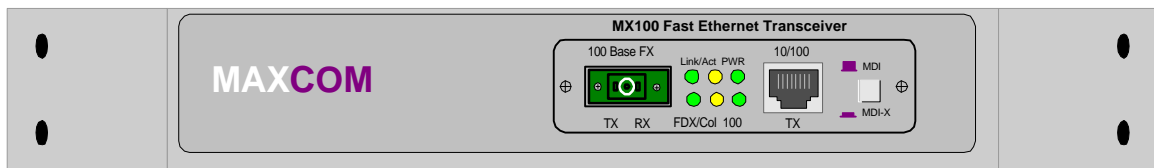- IEEE 802.3 10BaseT Ethernet or IEEE 802.u 100BaseTX Fast Ethernet

Warranty

User's Manual

MX200 Series

MAXCOM

MX100 Fast Ethernet Transceiver

100 Base FX   Link/Act PWR   10/100

MDI

MDI-X

TX   RX   FDX/Col 100   TX

Fiber Optic Fast Ethernet Switch

MX200 Users Manual and Installation Guide

MX200 Overview

Product Features

- One-channel media conversion between 10/100BASE-TX and 100BASE-FX
- Fiber media allows:
  multi-mode fiber using SC, ST, VF-45 or MT-RJ connector; single-mode fiber using SC connector
- Auto negotiation of speed and duplex mode on TX port
- One DIP switch for configuring fixed speed and half/full duplex modes
- Store-and-forward mechanism
- Full wire-speed forwarding rate
- Back-pressure & IEEE802.3x compliant flow control
- Front panel status LEDs
- One push button for uplink purpose
- Used as a stand-alone device or with a chassis
- Hot-swappable when used with a chassis

Ports

The Converter provides one TX port and one FX port. For the FX port, it provides options of either multi-mode or single-mode fiber and a wide range of connectors. For the TX port, it uses RJ-45 connector and full duplex 100Mbps.

Front Panel & LEDs

MDI/MDI-X button

There is one MDI/MDI-X button next to the TX port for uplink use. Push the button to enable the uplink function.

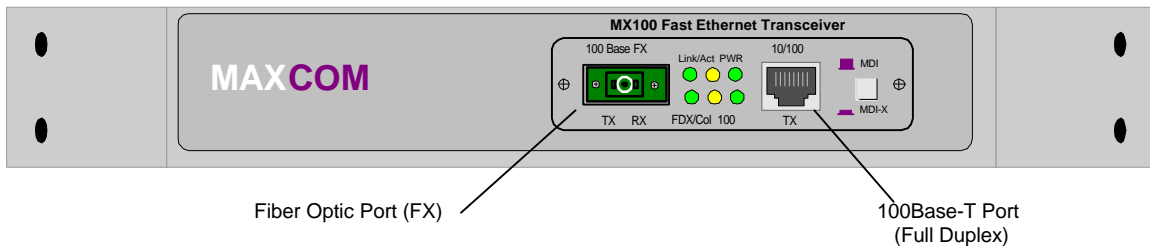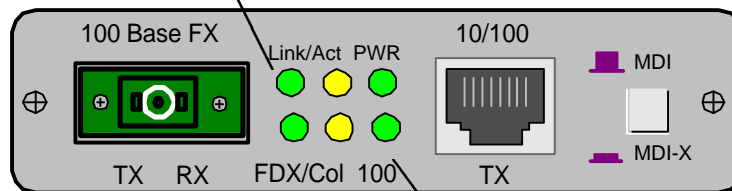**Front Panel - Single Fiber with SC/APC Fiber Optic Connectors**

Fiber Optic Port (FX)

100Base-T Port
(Full Duplex)

Figure 2: Front Panel of MX200

LED Indicators

The LED indicators give you instant feedback on status of the converter:

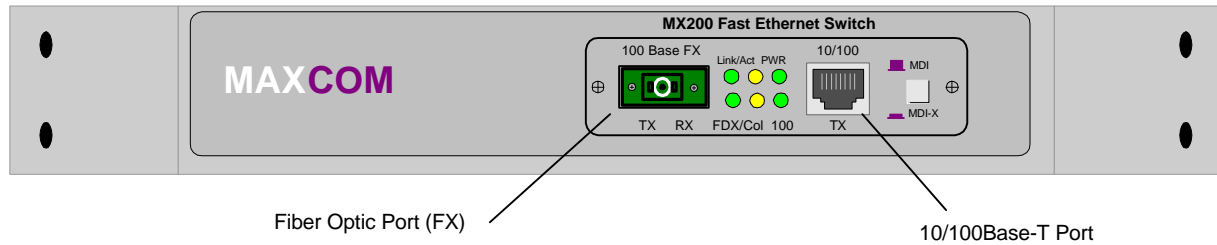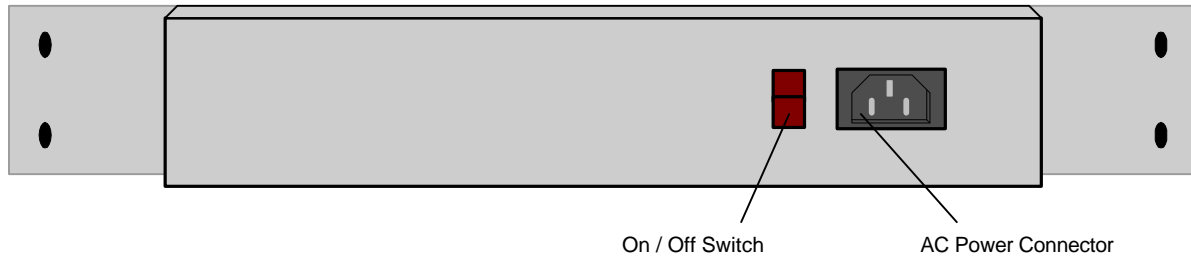| LEDs	State	Indication
Power	Steady	Power on
	Off	Power off
100 (Mbps)	Steady	Connection at speed of 100Mbps
	Off	Connection at speed of 10Mbps
LNK/ACT	Steady	A valid network connection established LNK stands for LINK
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
FDX/COL	Steady	Connection in full duplex mode FDX stands for FULL-DUPLEX
	Flashing	Collision occurred COL stands for COLLISION
	Off	Connection in half-duplex mode

Upper Row:
Fiber Optic Port LEDs

Lower Row:
100BaseTX LED Status

MX200 Installation Guide

Front Panel - Single Fiber with SC/APC Fiber Optic Connectors

MX200 Fast Ethernet Switch

MAX**COM**

100 Base FX

Link/Act PWR 10/100

MDI

MDI-X

TX   RX   FDX/Col 100   TX

Fiber Optic Port (FX)

10/100Base-T Port

Rear Panel

On / Off Switch

AC Power Connector

Installation Procedure:

1. Mount the unit in either an EIA 19" Rack, desk top or wallmount configuration.

2. Ensure that the unit is properly ventilated.

3. Connect AC power to the IEC Power Connector located in the rear of the unit.

4. Connect the Fiber Optic Connectors to the Fiber Span. Verify that the Link LED is Green when a compatible 100BaseFX transceiver is transmitting over the fiber.

5. Connect the 100Base-TX port to either a PC, HUB or Switch that supports 100Base-TX Links. Verify that the LINK LED is GREEN. If the LINK LED is NOT GREEN, toggle the front panel's MDI front from straight connection to a crossover connection.

6. When both the 100Base-TX LINK LED is GREEN and the 100Base-FX LINK LED is GREEN, test the link by PINGing a known IP address on the remote end.

Troubleshooting Tips

1. ***10/100Base-TX LINK LED is NOT GREEN***
   a. Try toggling the front panel MDI switch
   b. Try a different CAT-5 Jumper

2. ***100Base-FX LED is NOT GREEN***
   a. Verify that an Optical Signal is present
   b. Try looping back a fiber optic jumper from the TX port to the RX Port

Special Installation Note For MX200-1S-SCA-80 Models

The MX200-1S-SCA-80 model transmits full duplex on 1 fiber by using two wavelengths: 1310 and 1550. The following table indicates the wavelength for each version:

Model	Wavelength
MX200-1S-SCA-80-13	1310 nm
MX200-1S-SCA-80-15	1550 nm

When Installing MX100-1S-SCA-80 version, install the 1310nm version at one end of the link and the 1550nm version at the other end of the link, as shown.
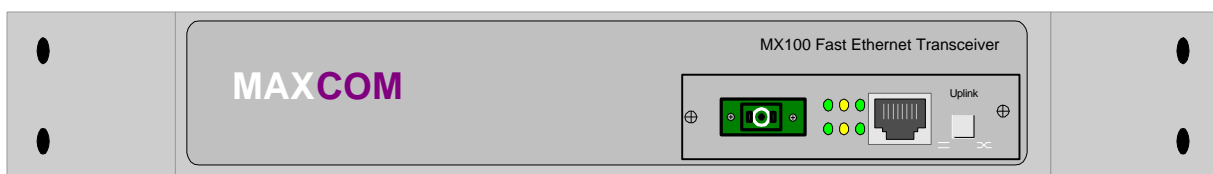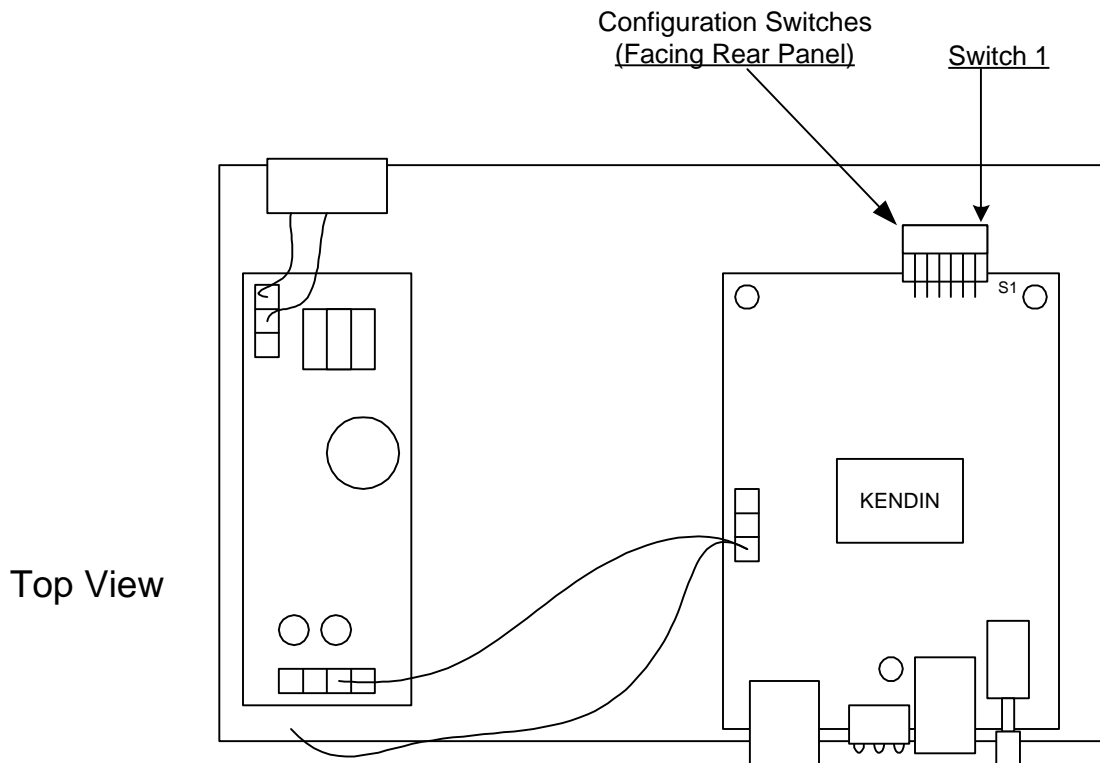
MX200-1S-SCA-80-15

1550 nm version

Fiber Optic Cable

MX200-1S-SCA-80-13

1310 nm Version
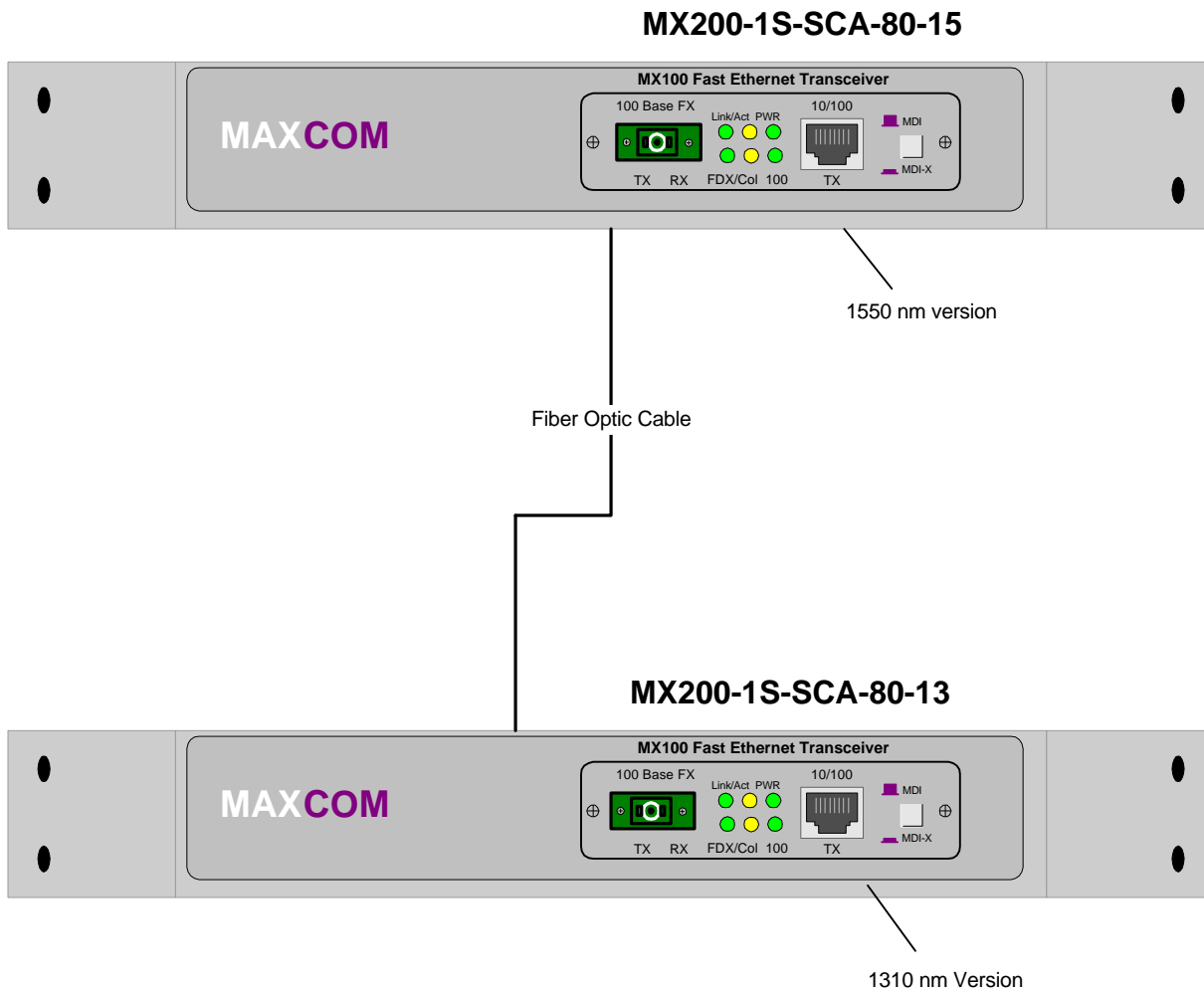
Note: The MX200s WILL NOT operate correctly if the same version is installed at both ends.

MX200 Configuration:
10/100 Auto-Negotiate Switch Settings

Installation Procedure for Units with Configuration Switches:

1. Remove Power from Unit, remove AC power cord and remove Top Cover

2. Locate Configuration Switches.
   If Configuration Switches not present, use the installation procedure for units without switches

3. **For units with configuration switches:**
   a. Turn S6 to ON (UP).
   b. Turn S1, S2, S3, S4 and S5 to OFF (DOWN).

4. Replace Top Cover and re-install the unit

Configuration Switches
(Facing Rear Panel)

Switch 1

S1

KENDIN

Top View

MX100 Fast Ethernet Transceiver

MAXCOM

Uplink

MX200 Front Panel