Introduction

This 2-port Gigabit Ethernet Bridging Converter is ideal to couple copper and fiber optic segments in an Ethernet network. The device has one 10/100/1000Base-T (RJ-45) port and one Fiber Port according to 1000Base-X. There are versions with build in transceiver for Multimode and Single Mode fibers or optional a version with a SFP slot for pluggable transceivers available.

Packing list

Please check the following items in the package before installing the Bridging Converter:

Gigabit Ethernet Bridging Converter	1 pc.
AC/DC adapter	1 pc.
User manual	1 pc.

Please contact your reseller immediately for any loss or damage to the above items.
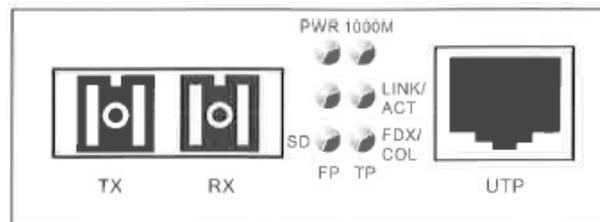
Installation

RJ-45 interface:

The transmission media supports min. CAT5 twisted-pair cable with a maximum length of 100 meter. It supports auto-negotiation feature with automatic detection of the speed (10/100/1000 Mbps), the duplex mode and auto-crossing (MDI/MDIX).
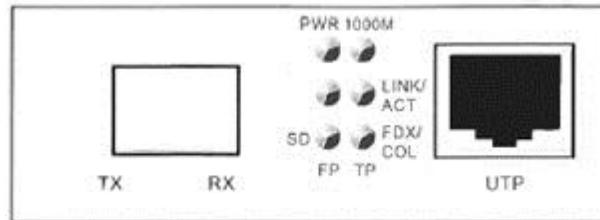
Fiber interface:

Available as duplex or simplex SC. The duplex version includes two connectors, labelled TX (transmit) and RX (receive). The connection between two duplex fiber ports has to be crossed, so the connection has to be RX-TX and TX-RX.

Connection

The network device (e.g. PC, Switch, Access Point) with copper interface is connected to RJ-45 port of the Bridging Converter through a twisted-pair cable. The Multi or Single Mode fiber cable is connected to SC fiber interface (optional to the SFP transceiver). After powering on the Bridging Converter, the LEDs should show correct connections by the corresponding Link LED. (See the table below for the LED description).

Fixed SC Transceiver Version

Pluggable SFP Transceiver Version

Drawing of LEDs DIP Switches

Description for LEDs

LED indicator lamps serve as device monitoring and for trouble shooting. The functions of the LEDs are described in the following table.

LED	Status	Function
PWR	On	Ready for operation
1000M	On	RJ-45 with 1000 Mbps
	Off	RJ-45 with 10/100 Mbps
LINK/ACT (FX)	On	Link at fiber port
	Flashing	Data activity on fiber port
	Off	No connection at fiber port
LINK/ACT (TX)	On	Link at RJ-45 port
	Flashing	Data activity on RJ-45 port
	Off	No connection at RJ-45 port
SD	On	Fiber signal detected
	Off	No fiber signal detected
FDX/COL (TX)	On	RJ-45 connection full duplex
	Off	RJ-45 connection half duplex

Technical Specifications optical transceiver simplex:

Version	Optical wavelength (nm)	Optical power (dBm)	Sensitivity (dBm)	Distance (km)
TP/SM simplex	1310/1550	-3..-8	<-22	20
TP/SM simplex	1310/1550	0..-5	<-24	40
TP/SM simplex	1310/1550	0..-3	<-25	60

Technical Specifications optical transceiver duplex:

Version	Optical wavelength (nm)	Optical power (dBm)	Sensitivity (dBm)	Distance (km)
TP/MM	850	-12..-15	<-20	0.55
TP/SM 20	1310	-3..-8	<-22	20
TP/SM 40	1310	0..-5	<-24	40
TP/SM 60	1310	0..-3	<-25	60
TP/SM 80	1550DFB	0..-1	<-25	80

DIP-Switch configuration:

Switch	Status	Function
1	On	Link Through enabled
1	Off	Link Through disabled
2	On	Not used
2	Off	Not used
3	On	Copper port forced to 10Mb
3	Off	10/100/1000T Auto-negotiation
4	On	Not used
4	Off	Not used

Main features:

- Compact Gigabit Ethernet Bridging Converter
- Compliant to IEEE 802.3, 802.3u, and 802.3x, IEEE 802.3ab 1000BaseT, IEEE 802.3z Standards
- Integrated Link-Through function (links status forwarding)
- Automatic configuration via auto-negotiation
- Manual configuration via DIP-switches possible
- Integrated auto-crossing (MDI/MDIX) on RJ-45 port

Technical Specifications:

Type: Gigabit Ethernet Bridging Converter for coupling of twisted-pair (10/100/1000Base-T) and fiber (1000Base-X)

Cable type: Shielded twisted-pair cable, 100 Ohm, min. Cat 5e

Fiber type: Multimode fiber 50 or 62,5/125 µm, Single Mode fiber 9/125 µm, duplex SC-connector (optional SC simplex), optional SFP slot for pluggable transceivers

Power supply: 5 V DC / max. 1 A via external power supply (included at delivery)

Operating temperature: 0 °C to 50 °C

Storage temperature: -20 °C to 80 °C

Humidity: 5 % to 90 % non-condensing

Dimensions: 26 x 70 x 94 mm (H x B x T)

Products

Article-No	Description
MS400240	Gigabit Ethernet Bridge 10/100/1000Base-T to 1000Base-SX SC, 850 nm Multimode
MS400241	Gigabit Ethernet Bridge 10/100/1000Base-T to 1000Base-LX SC, 1310 nm Single Mode
MS400249	Gigabit Ethernet Bridge 10/100/1000Base-T to 1000Base-X, SFP Slot

MICROSENS

Gigabit Ethernet Bridging Converter

User Manual

(Do not use this device until you read this manual carefully!)