

Fast Ethernet Bridge PC Card 10/100Base-TX/100Base-FX

MICROSENS

General

The internal MICROSENS bridge offers a direct connection of twisted pair cables (10/100Base-TX) to multimode or single mode fiber segments (100Base-FX) in a Fast Ethernet network (IEEE802.3u). Additional to the media converter the speed is also adapted.

The speed is adapted with 10/100 Mbps and the full and half duplex mode. Existing limitations due to the collision domains at Ethernet (5 km) and Fast Ethernet (412 m) are eliminated (segment splitting).

The bridge allows to continuously using the existing integrated, copper based PC Network Interface Card (NIC). The PC Bridge is installed **without any software and driver modifications** into the PC. The connection to the integrated NIC is done by a short twisted pair patch cable. The power supply is done by the existing PC power supply unit.

The bridge supports additional features such as link through. This ensures that the link status of each segment is forwarded. The integrated configurable autonegotiation function allows the set up of full duplex connections.

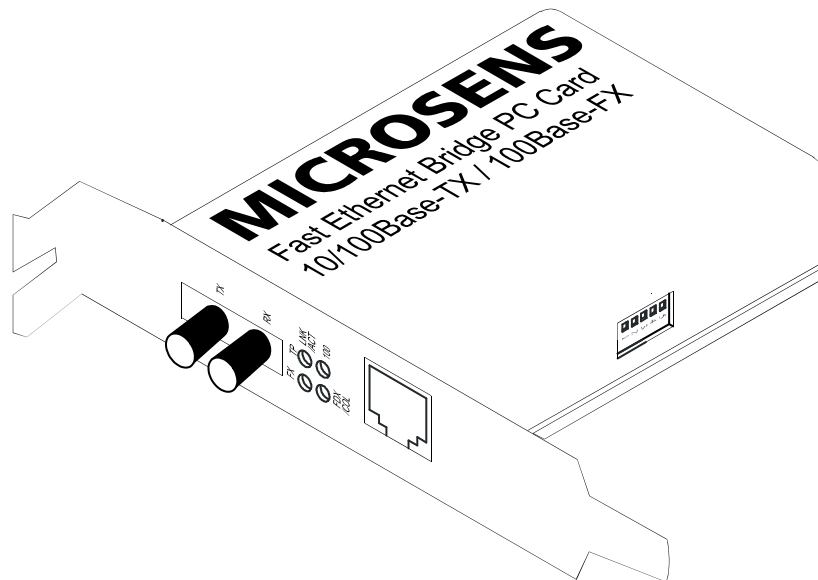
Technical Specifications

Type	Fast Ethernet Bridge PC Card for the connection of twisted pair and (10/100Base-TX) and fiber (100Base-FX) segments	
Fiber type	Multimode 62.5/125 or 50/125 μm , Single mode 9/125 μm , duplex	
Cable type	Shielded Twisted Pair cable, 100 Ohm, Category 5,	
Max. cable length	100 m	
Data rate	100 Mbps	
LED displays	<i>FX-Link</i>	<i>fiber link</i>
	<i>FX-FDX</i>	<i>fiber connection in full duplex mode</i>
	<i>TX-Link</i>	<i>twisted pair link</i>
	<i>TX100</i>	<i>twisted pair speed 100 Mbps</i>
Power Supply	5 V DC / max. 1500 mA via PC internal power supply	
Operating temperature	0 °C to 55 °C	
Storage temperature	-20 °C to 80 °C	
Rel. humidity	5 % to 80 % non condensing	

Optical Parameters

Multimode version	<i>min. distance:</i>	2 km (full duplex)
	<i>min. power:</i>	-19 dBm
	<i>min. sensitivity:</i>	-31 dBm
	<i>Wavelength:</i>	1300 nm
	<i>Connector:</i>	SC (MS484160) ST (MS484161) MT-RJ (MS484181)
Single mode version	<i>min. distance:</i>	15 km (full duplex)
	<i>min. power:</i>	-15 dBm
	<i>min. sensitivity:</i>	-31 dBm
	<i>Wavelength</i>	1300 nm
	<i>Connector:</i>	SC (MS484162) ST (MS484163)

Construction



Length Reduction

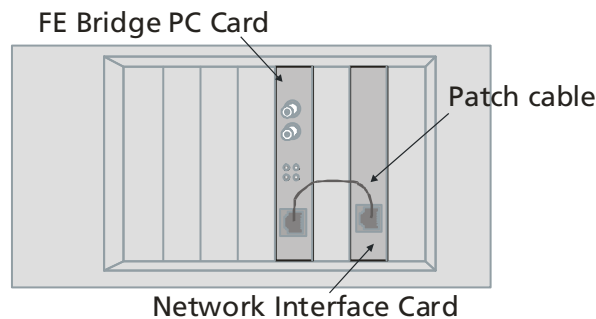
Due to the bridging function the fiber port can be operated in full duplex mode, independent from the copper port so that it is possible to realise fiber segment lengths of 2 km (multimode) and 15 km (single mode).

Power Supply

The power supply is done by the PC internal power supply with 5 V DC max. The PC bridge card is supplied with a special adapter for the connection.

Connection

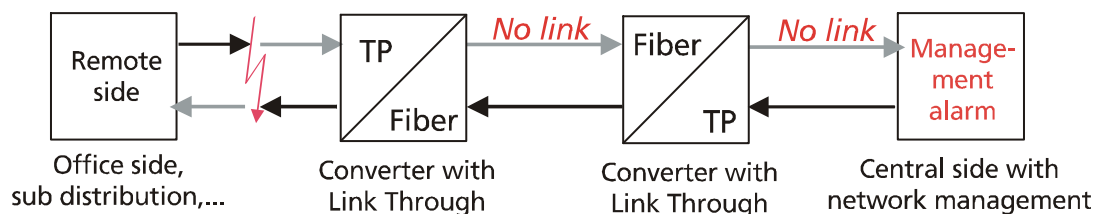
The connection of the bridge to the RJ-45 port of the built-in network interface card can be done by a straight 1:1 or crossed 1:x patch cable, due to the integrated auto crossing feature of the bridge.



Link Through

This Fast Ethernet bridge supports Link Through (LT) function in TX/FX converter application. The link status on one port is propagated to the other port to notice the remote nodes. If TP port is unplugged, this converter stops transmission on fiber port.

This causes the remote fiber node link to fail. The LEDs show a failure on both, TP and fiber ports. If fiber link fails, this converter restarts autonegotiation on TP port but always stays in the link failure state. This causes the remote TP node link to fail. The LEDs also show the link failure on both, TP and fiber port.



Link Through function only takes effect when switch 4 is set to activated.

Warning: The Link Through function works only when these bridges are used in a pair and both have the link through activated. Furthermore both link through bridges should be supplied by the same manufacturer. Connections coming from old link through bridges or bridges without link through will cease the link through function.

Configuration

With 5 DIP-switches it is possible to set configuration of main features of the bridge. With switch 1 one can activate or deactivate autonegotiation protocol on copper port. When autonegotiation is deactivated switches 2 and 3 select speed (10 or 100 Mbps) and mode (full or half duplex).

Fiber optic port speed is always 100Mbps (switch 5 selects half/full duplex mode). Switch 4 can activate or deactivate the Link Through function.

Order Information

Art.-No.	Description	Connectors
MS484160	Fast Ethernet Bridge PC Card 1x100Base-FX Multimode 1310nm SC-connector, 1x10/100Base-TX	2 x SC 1 x RJ-45
MS484161	Fast Ethernet Bridge PC Card 1x100Base-FX Multimode 1310nm ST- connector, 1x10/100Base-TX	2 x ST 1 x RJ-45
MS484162	Fast Ethernet Bridge PC Card 1x100Base-FX single mode 1310nm SC- connector, 1x10/100Base-TX	2 x SC 1 x RJ-45
MS484160A	Fast Ethernet Bridge PC Card 1x100Base-FX Multimode 1310nm SC- connector, 1x10/100Base-TX, ATX-Standby-Power-Adapter	2 x SC 1 x RJ-45
MS484161A	Fast Ethernet Bridge PC Card 1x100Base-FX Multimode 1310nm ST- connector, 1x10/100Base-TX, ATX-Standby-Power-Adapter	2 x ST 1 x RJ-45
MS484162A	Fast Ethernet Bridge PC Card 1x100Base-FX single mode 1310nm SC- connector, 1x10/100Base-TX, ATX-Standby-Power-Adapter	2 x SC 1 x RJ-45

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