Media Converter-Module
Token Ring
MS416130

MICROSENS

Features

The MICROSENS Token Ring Media Converter Module enables the conversion of electrical Token Ring signals to fiber optics according to the IEEE 802.5J standard. The converter is constructed in the form of an insertion card, which can be built into the MICROSENS 19'' modular system, with a central PSU.
The unit houses a maximum of up to 12 converters and one PSU
Main applications are especially in economic convertion of TP ports to FO and extension of several TP segments as well as increasing the elasticity of network connections..

Technical Specifications

Type	Token Ring Converter (IEEE 803.5J) for a mouting in to the MICROSENS 19″ chassis
Connectors	1 x RJ45 connector, pin connector crossed, 2 x ST connector
Data rate	4/16 Mbps
Cable type	Shielded Twisted Pair Kabel, Category 5, 100 Ohm
Max. segment length	100 m
Fibre type	Multimode fiber, duplex, 50 or 62/125 µm, Single mode 9/125 µm, ST connector
Opt. power	-19 dBm (min., 62,5/125 µm)
Opt. sensivity	-32 dBm (max.)
Max. fiber length	2 km
LED displays	Power, Link, Phantom, Insert, Bypass, Modus
Power supply	12 V DC / max. 400 mA via backplane
Operating temp.	0°C to 55°C
Storage temp.	-20°C to 85°C
Rel. humidity	5% to 80% non condensing
Dimensions	3 HU x 6 DU (128 x 31 mm)

Connectors

LEDs

Rj45 connector

FO sender

FO receiver
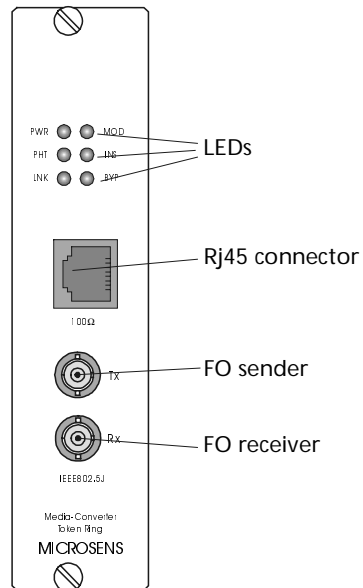
Configuration

The converter is constructed in the form of an insertion card, which can be built into the MICROSENS 19'' modular system. It can be combined with all other converters insertions of the same series.

Power supply of the insertion module occurs by a central unit via the backplanes. Accept the power supply unit up to 12 insertion modules can be mounted into a case.

Optionally a second power supply unit can be built-in for redundancy.
In this case, 10 converter insertions modules may be used.
During a partial equipping, the unloaded slots with blank covers are masked.

Installation

The MICROSENS Token Ring Media Converter Module permits the direct conversion between electrical and fiber optic segments according to the IEEE 802.5J standard.
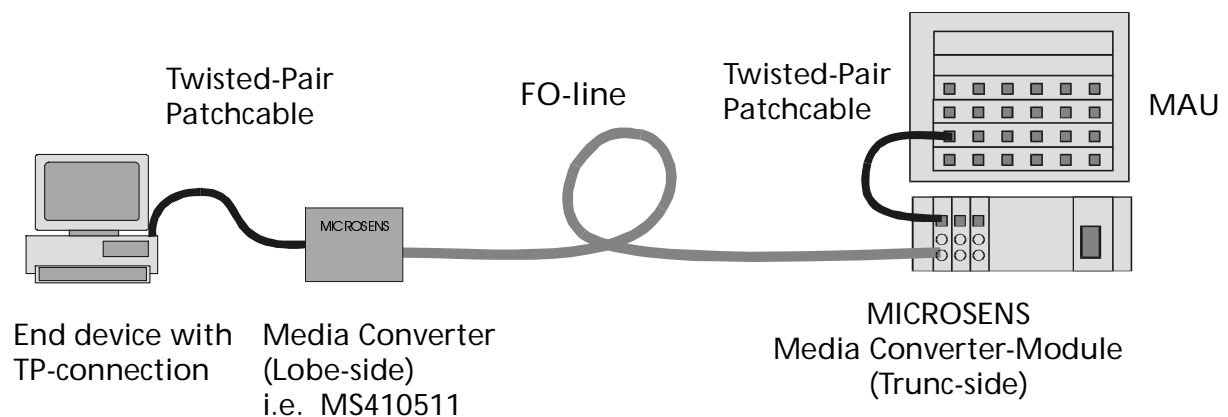
The converter can be used as a single device or in pairs, depending on application. The converter detects the position in the segment and configures itself accordingly.

An internal jumper-field permits the crossing of send- and receive-wire on the electrical side. No special crossed patch cables are needed.

Using of the media converter modular system is intended to take place in distribution area.

For end device connection a stand-alone device can be used (MS410511 or any IEEE 802:5J compatible)

The illustration shows the schematic construction of a such installation:

Twisted-Pair
Patchcable   FO-line   Twisted-Pair
                                                        Patchcable   MAU

End device with   Media Converter   MICROSENS
TP-connection   (Lobe-side)   Media Converter-Module
                    i.e. MS410511   (Trunc-side)

Functionally the converter on lobe-side (end-device)and trunc-side (MAU) must be distinguished.
The converter on the lobe-side detects the phantom voltage from the end-device and converts it to optical signals. The converter on the trunc-side receives these signals and generates the phantom voltage for the MAU.

The configuration of these modes is done automatically and is indicated by the Lb/Tr-LED.

To connect the trunc side converter to the MAU using a 1:1 RJ45-patchcable, the pinout of the connector in the converter must be switched.

The converter moduleis delivered as a default in this configuration.

Despite of its design on to the primary employment in the Trunc area, the converter insertion card can also be functionally used in the Lobe area.

Pin Assignment

For the use of standard 1:1 RJ45-patch cables the pinout of the device™s RJ45 jack can be changed. This is done via an internal jumper-field. To open the device the four external screws must be removed.

Jumper area
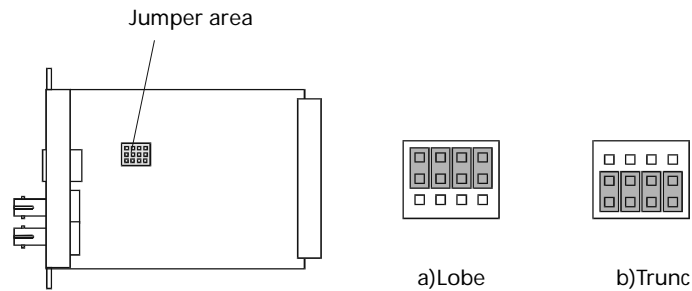
a)Lobe   b)Trunc

As shown above, the jumper-field is located besides the power connector. Two different arrangements of pins are possible:

a) **Lobe**   (default) The RJ45 jack behaves like a MAU lobe port.
                An end-device can be attached via 1:1 patchcable.
b) **Trunc**   The RJ45 jack behaves like an end-device port. The converter can be
                attached to a MAU lobe-port via 1:1 patchcable.
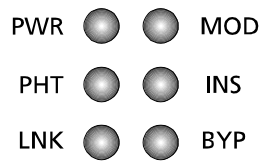
The RJ45 jack has following pin assignement:

1   8
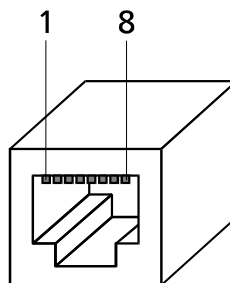
Pin	Trunc (default)	Lobe
3,6	TX-Pair (output)	RX-Pair (output)
4,5	RX-Pair (input)	TX-Pair (input)
1,2,7,8	unused	unused

Displays

Multiple LEDs show the status of the converter. They can be used for network diagnostics.

PWR ⬤ ⬤ MOD

PHT ⬤ ⬤ INS

LNK ⬤ ⬤ BYP

LED		Description
PWR	*Power*	Power applied
LNK	*Link*	FO- Fiber-connection established (link-signal is being received)
PHT	*Phant*	Phantom voltage detected (lobe-mode only)
INS	*Insert*	Converter is inserted into the ring (active)
BYP	*Bypass*	Converter is not inserted into the ring (not active)
MOD	*Mode*	Converter mode *LED off* Converter on lobe-side (receives phantom voltage) *LED on* Converter on trunc-side (generates phantom voltage)

Power supply

The power for the converter is supplied via backplane by central power supply unit (MS416001).

Adapter RJ45 / SUB-D 9

To connect the converter to devices with SUB-D 9 connector, an adapter cable with the following pin assignement must be used:

Signal	RJ45 connector of Converter		SUB-D 9 of End Device	
TX-A	3	in	5	out
TX-B	6	in	9	out
RX-A	4	out	1	in
RX-B	5	out	6	in