

Datasheet

MSP 1000

Dual TDM-Module 2x 1G with Backup-Function

 Made
 in
 Germany



General

The Dual TDM module 2x 1G of the MICROSENS MSP1000 platform is used for the aggregation of Gigabit Ethernet or Gigabit fiber channel services and to optimize xWDM infrastructures.

The 2G signal resulting from the time-division multiplexing process can be fed directly onto a fiber or into the xWDM system.

By using pluggable SFP transceivers, any wavelength (850 nm, 1310 nm, 1550 nm, CWDM or DWDM) can be used to optimally adapt to the respective network topology (point-to-point, ring, star). Especially when using TDMs, the number of required wavelengths is halved.

The TDM module also has an integrated backup switch as well as the corresponding logic to switch autonomously to the backup path in case of an error (see application).

Technical Details

Type Dual TDM-Modul 2x 1G

Typ. Applications Ethernet (1000Base-X), Fiber Channel (1G), FICON

Connections 4x SFP-Slots
DDM (wavelength, optical level, SFP type, error detection)

Data Rates 1062 Mbit/s (Fiber Channel, FICON), 1250 Mbit/s (Gigabit Ethernet). Both channels can be operated with different data rates

Data Security Checking the data for 'Code Violation' and 'Running Disparity' with corresponding statistics. It is not possible to intercept the data via the management system.

Dimensions Space requirement 1 Slot in MSP1000-Chassis

LED-Displays
(2 LEDs per Port)

Application Ports 1 / 2 (Local)

Signal Detect	Invalid Tx Data	Betriebszustand
OFF	OFF	Tx Path or remote data rate OK, but no input signal or port disabled
OFF	ON	No optical input signal and Tx path Faulty
ON	OFF	normal operation: input signal available, no error detected
<i>Blink</i>	ON	Input signal available, but PLL not 'locked' due to mismatch of application data rates. Tx Path incorrect
ON	ON	Input signal available, but PLL not locked due to missing remote data or mismatch of remote data rates. Tx Path incorrect.

Line Ports A / B (Line)

Signal Detect A	Link Error A	Signal Detect B	Backup Active B	Betriebszustand
ON	OFF	ON	OFF	Both Links ok. Link A in use
ON	OFF	ON	ON	Both links ok. Backup Link B in use
ON	<i>Blink</i>	OFF	OFF	Link A is used. Link B Faulty. <i>No backup is available in case of emergency</i>
OFF	<i>Blink</i>	ON	ON	Backup link b is used. Link A is defective
OFF	ON	OFF	OFF	<i>No communication.</i> both links are faulty or if no backup has been installed, the data link is faulty
OFF	ON	OFF	ON	both links are faulty with link B being the last working link to fail

Test functions Independent loop test of all interfaces, optical level, clock synchronization. Performance monitoring of all ports with comprehensive bit error detection.

Operating temp. 0..+40 °C

Storage temp. -40..+85 °C

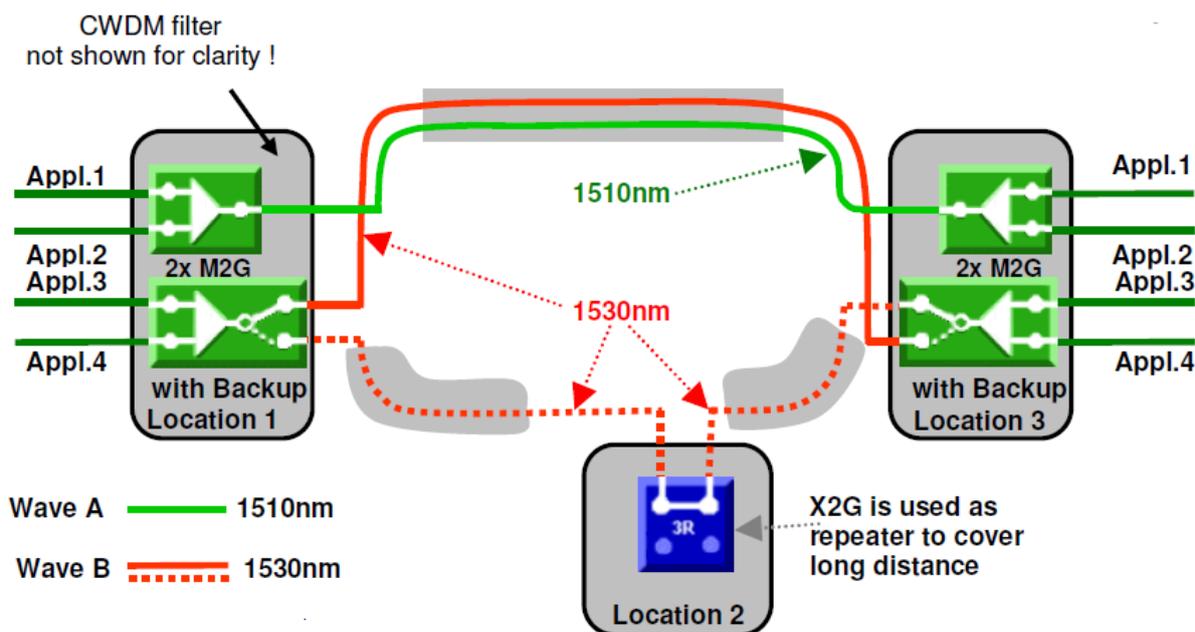
Humidity 5% up to 80 % non-condensing

Standards CE Conform
CDRH 21 CFR 1040
FCC Part 15
Laser Class 1M Product

Operating modes Crossbar

- The 2.5G link of the TDM module (port A) can be connected directly to a fiber with a 1310 nm SFP, for example. This can be useful if the distance is not very long (typically < 15 km) and there are enough fibers. In this way, a balanced ratio between fiber savings (50%) and costs is achieved.
- For longer distances, or if only one fiber is available, the TDM module can be equipped directly with CWDM or DWDM SFP - no additional transponder card is required. Using the MICROSENS 40-channel DWDM multiplexer MS419880) up to 80 Gigabit connections can be combined on one fiber.
- The automatic backup circuit of the TDM module increases the availability of the link by protecting against transmission line failures as well as failures of the WDM SFPs. Especially for SAN applications, link backup is a recurrent necessity.

Example of application



Order Information

Description	Art.-No.
MSP1000 TDM-Module 2x 1G 2x 1G (Ethernet/Fiber Channel/FICON) over 2.5G, opt. redundant Backup, 4x LC/PC duplex	MS425610M

Alternativ Transpondermodule MSP1000

Description	Art.-No.
MSP1000 2-Kanal Crossbar Transpondermodule 2.7G 100MBit/s - 2.7Gbit/s Multirate 3R, 4x SFP-Slots	MS425601M
MSP1000 2-Kanal Transpondermodule 4G 100MBit/s - 4.25Gbit/s Multirate 3R, 4x SFP-Slots	MS425602M
MSP1000 2-Kanal Transpondermodule 16G 100MBit/s - 16Gbit/s Multirate, 40G-capable, 4x SFP+ -Slots	MS425608M

Accessoires MSP1000 (Selection)

Description	Art.-No.
MSP1000 Enterprise 4U Chassis (further models see Data sheet „Chassis“)	
MSP1000 Enterprise 4U Chassis AC 19" 2 Slots für 2x 230 VAC-Power Suppl prep., 11 Modulslots, incl. Backplane, incl. 3-fold Fanmodule	MS425500M
MSP1000 1U Chassis	
MSP1000 1U Chassis DC 19" 3 Modulslots, incl. Backplane, incl. Fan Module	MS425504M-48-V2
MSP1000 Power Supply	
MSP1000 Enterprise AC Power Supply Module Input: 90..264 VAC, 50..60 Hz, max. 250 W	MS425510
MSP1000 Enterprise DC Power Supply Module Input: 36..75 VDC, max. 250 W	MS425511
MSP1000 Power Supply 54V/1,2A 65W prim. Euro-8 Cable	MS700701

* For more information on the MSP1000 portfolio, please refer to our document [„Technical Description MICROSENS MSP1000 Optical Platform.pdf“](#).

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