

english

Transport

MICROSENS
fiber optic solutions
a company of the euromicron group

10GBE
STM-64
Fibre Channel
G.709
OC-192



10G Platform

10G Transport Platform

Telecom carriers need to increase their core networks capacities constantly in order to meet the growing requirements of their customers. CWDM or DWDM optical multiplexing is a common choice, but more and more the 10G transmission speed per individual channel is required.

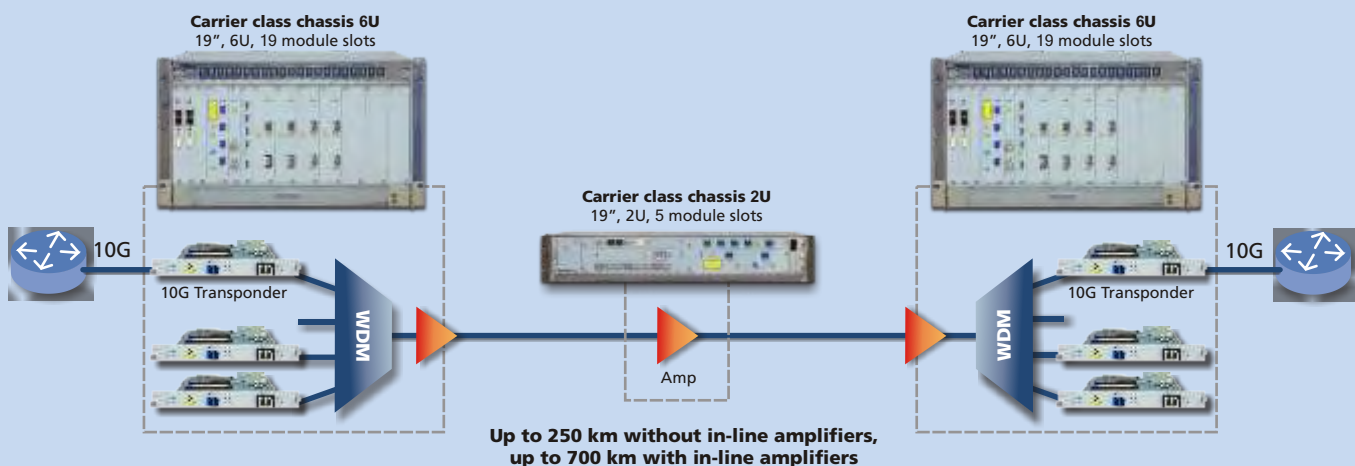
The high performance optical transport solutions are moving closer to the end user. Today not only carriers but also enterprises need to take advantage of 10G technology.

The new 10G Transport Platform comes towards the expectations of both carriers and enterprises and offers leading system flexibility and performance combined with cost effectiveness.

The System

The **MICROSENS 10G Transport Platform** is a high performance and flexible carrier-class transmission system. It enables increasing transport capacities in CWDM, DWDM and SDH networks. A wide range of TDM modules optimizes the number of required wave-lengths, reduces the overall cost of the application and provides direct support for lower speed protocols. Ethernet over SDH modules enable the use of existing SDH/SONET infrastructure for IP transmission.

10G long haul transport



1/2/4/10G Fibre Channel

Functional Modules

The 10G Transport Platform from MICROSENS is based on a wide range of functional modules for installation in different chassis types.

TDMs

- 8x GBE or GFC to 10G/OC-192/STM-64
- 5x GBE or 2GFC to OC-192/STM-64
- 4x OC-48/STM-16 to 10G/OC-192/STM-64
- 2x GBE or GFC to OC-48/STM-16
- 4x GBE or GFC to OC-48/STM-16 (1 or 2 lines)
- 4x STM1/ESCON/Fast Ethernet to GBE

Transponder

- 10G transponder with 3R, XFP and fixed Laser versions
- 10G long haul transponder with 3R, FEC - fixed Laser versions

Protocol converter

- 10G protocol converter 10G LAN to 10G WAN (OC-192/STM-64)

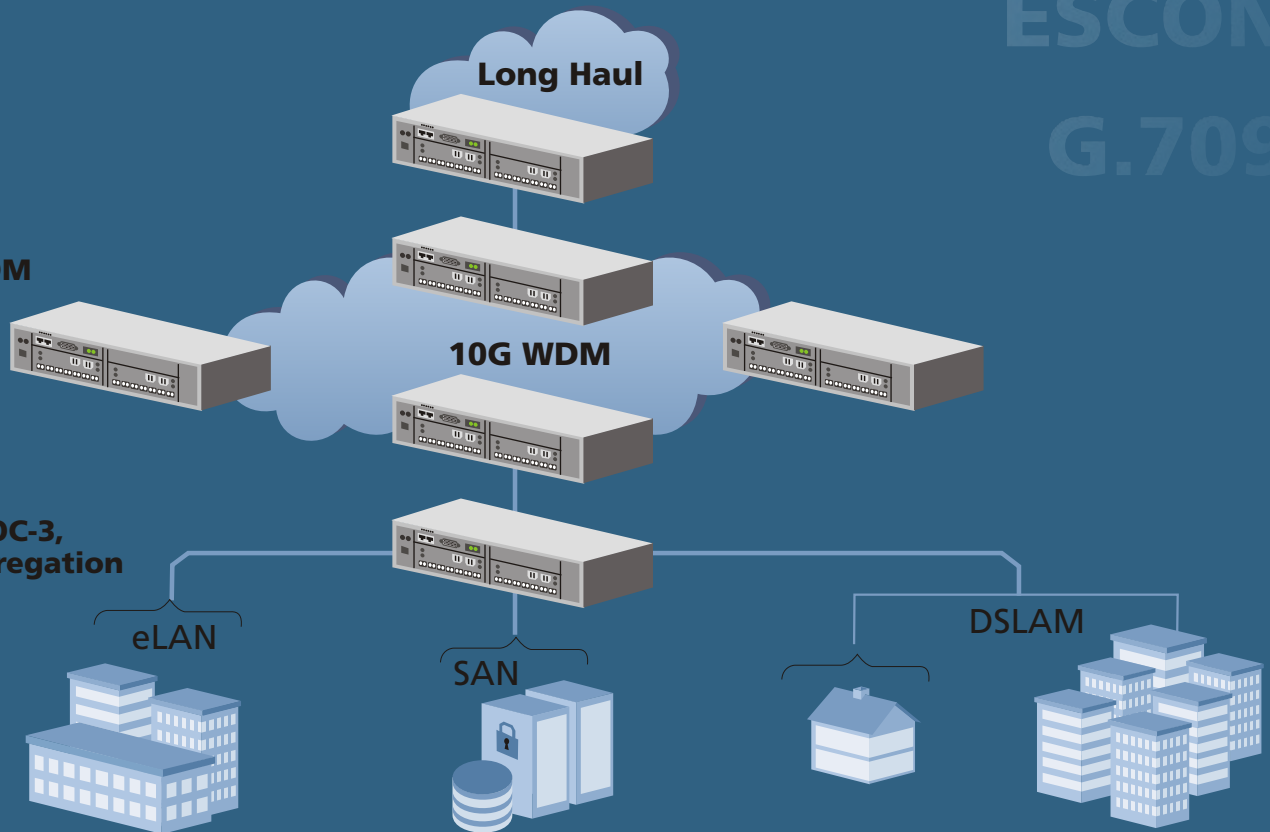
Optical Multiplexing

- DWDM MUX/DeMUX, OADMs, EDFAs

Backbone: Sonet/SDH

Metro: WDM

GbE, GFC OC-3, OC-12 aggregation



Applications

MICROSENS 10G Platform supports the optical multiplexing of up to 32x 10G channels (can be extended to 128 channels) with transmission distances of up to 700 km (using optical EDFA line amplifiers), or 300 km (repeaterless). The system supports all topologies of optical networks (point-to-point, add/drop and ring). Apart from standard duplex fiber transmission optical DWDM multiplexing via single fiber can be realized. The usage of Forward Error Correction (FEC) offers higher performance for long distance applications.

The optimized design provides significant CAPEX and OPEX cost reduction and enables state-of-the-art 10G transmission together with low entry cost.

Management

Operations and management of the 10G Transport Platform is provided by **HTTP**, **CLI** and **SNMP** protocols.

- MICROSENS Element Manager (**Web Based Craft Terminal**) provides device status information via a standard Internet browser.
- The integrated **Telnet console** (CLI) permits text based access.
- MICROSENS **Network Management Platform** provides network visualisation and features like configuration management, performance management, security management, monitoring, alarm collection and processing, events logging, software upgrades, etc.
- Compatibility with all major 3rd party management platforms is assured through the **SNMP** protocol.
- **Inband management** is supported by all functional modules.
- Optionally **Optical Service Channel** can be used in both, amplified and unamplified applications.



Flexible Chassis Concept

The modular concept allows the use of identical modules in 2 different chassis types.

- -48 VDC power supply
- Redundant power supply
- Hot-swap of modules
- Fan unit
- Dust filter
- Carrier class, NEBS & ETSI compliant



Carrier class chassis 2U
19", 2U, 5 module slots



Carrier class chassis 6U
19", 6U, 19 module slots

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10G Long Haul Transponder

- 10G Long Haul transport
- STM-64/OC-192/10GBE LAN/WAN client
- 3R retiming (reclocking, reshaping and reamplification) signal regeneration
- Client XFP interfaces
- Line Fixed Fiber Interface (FFI)
 - Fixed Fiber Interface (FFI): 40 & 80 km DWDM
 - G.709 rate and FEC
- Remote monitoring
 - Embedded 10 Mbps data communication channel



TDM 8x GBE/GFC to 10G

- Gigabit Ethernet aggregation 8 x GBE/GFC on 10G OC-192 line bit rate
- Client SFP interfaces
- Line XFP or Fixed Fiber Interface (FFI)
- Fixed Fiber Interface (FFI): 40 & 80 km DWDM
 - Optional FEC
 - Optional line protection
- SDH/SONET performance monitoring
- Remote monitoring
 - Embedded 10 Mbps data communication channel



STM16 Aggregation Module

- 4 x STM-16/OC-48 on 10 Gbps (OC-192 / STM-64 or G.709 line bit rate)
- Client SFP interfaces
- Line XFP or Fixed Fiber Interface (FFI)
- Fixed Fiber Interface (FFI): 40 & 80 km DWDM
 - Optional FEC
 - Optional line protection
- Remote monitoring
 - Embedded 10 Mbps data communication channel



Optical Multiplexers & Amplifiers

- Optical multiplexers CWDM, DWDM
- Amps, pre-amps, boosters,... (EDFAs)
- Optical Add Drop Multiplexers (OADMs)
- Dispersion Compensators (DCs)
- Optical Service Channel support (OSC)







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