

M-4000

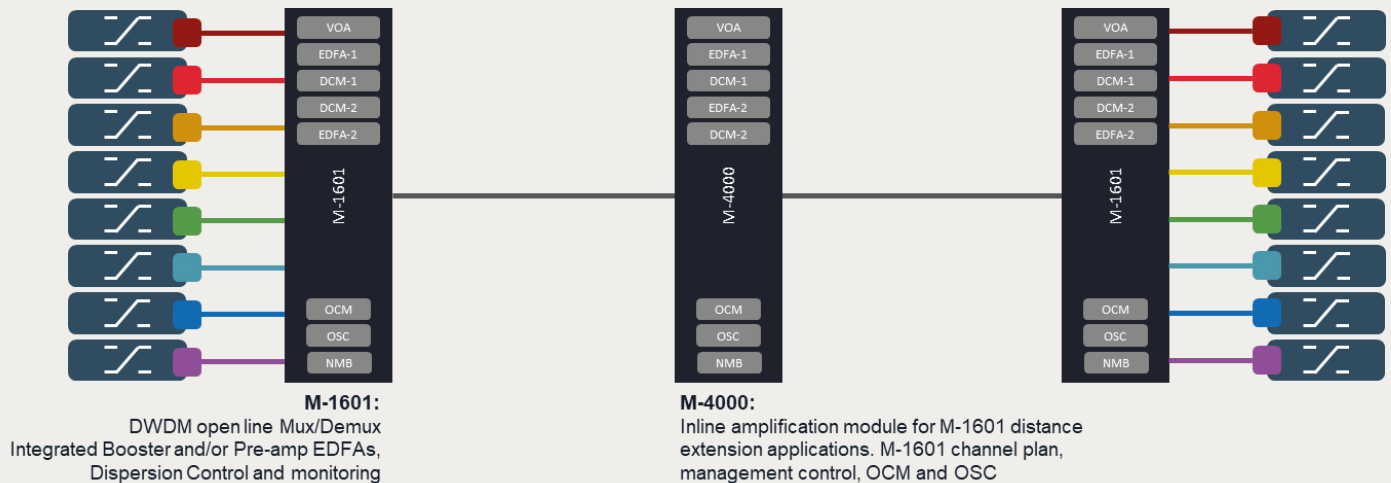
Inline EDFA amplifier module, auto setup & configure, 1510nm OSC, OCM



M-4000 IN SHORT

- Dedicated Inline amplifier to extend the distance of a DWDM network built using M-1601 open line system
- Continuity of end to end M-1601 optical control
- Same management commands, OSC and OCM functions as M-1601
- Fully automatic system setup adjusts all power levels to optimum values
- Supports M-1601 and M-1600 channel plan (supports full C-Band)
- ETSI 300 1Ux19" form factor
- Redundant hot pluggable power supply units (PSUs).
- Field serviceable NMB without traffic interruption.

SCHEMATIC DIAGRAM



DESCRIPTION

The M-4000 is an EDFA (Erbium Doped Fibre Amplifier) that extends the distance of a DWDM network by delivering additional power budget to the system. It is designed to work as an inline amplifier in networks built using the M-1601 open line system. It offers all the self-configuring and easy setup features of the M-1601 with the SmartOS Management System ensuring a truly plug and play experience. The system automatically adjusts to the correct power levels and intuitive front panel LEDs guide the user through the installation process.

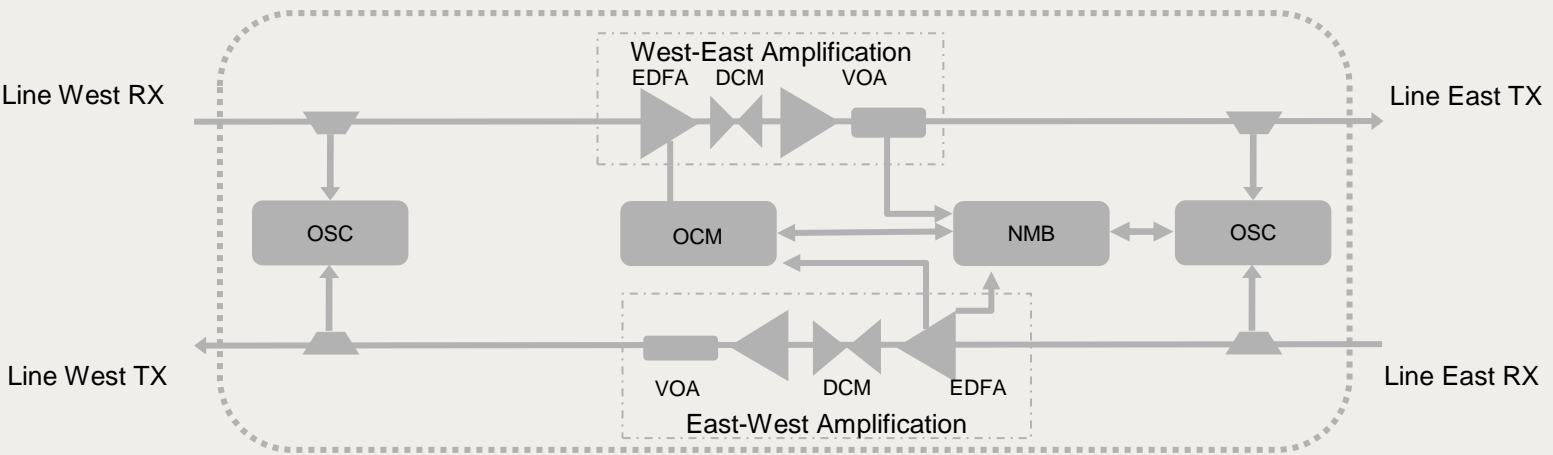
With a power consumption of just 68W and small 1U ETSI300 form factor the module doesn't take up much space or power. The M-4000 comes with mid-stage access dispersion control units for both EDFA-1 and EDFA-2 and VOA (Variable Optical Attenuator) providing gain control.

CONFIGURATION

M-4000-0xzxz02

0 = mux/demux: 0 = no mux/demux
 x = Line West EDFA (inline): 4 = 30dB gain / +23dBm output power
 z = Line West DCM: 0 = no DCM, A = 40km, B = 80km
 x = Line East EDFA (inline): 4 = 30dB gain / +23dBm output power
 z = Line East DCM: 0 = no DCM, A = 40km, B = 80km
 0 = mux/demux: 0 = no mux/demux
 0 = OSC: 2 = 1510nm OSC East and OSC West

DCM at mid-stage access
 EDFA with line VOA at output (gain adjustment)



TECHNICAL SPECIFICATIONS

| System | |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Topology | Point-to-point DWDM networks using M-1601 open line system |
| Transport Network | Metro WDM / dark fibre |
| Approvals | CE Class B, FCC, RoHS-6 |
| Standardization | Long term storage according to ETSI EN 300 019-1-1 V2.1.4 Class 1.1 "Weather protected, partly temperature controlled storage locations" Transport according to ETSI EN 300 019-1-2 Class 2.3: Public transportation Operation according to ETSI EN 300019-1-3 V2.3.2 Class 3.1: Temperature controlled locations |
| Operating Temp | 0° C to +45° C |
| Size | ETSI 45 mm (H) x 440 mm (W) x 250 mm (D) |
| Weight | 8 kg |
| Channel count | Full C-Band |
| Supported protocols | Fast Ethernet to 100G Ethernet 1/2/4/8/16G Fibre Channel |
| Eye Safety | Automatic laser shut down |
| Network management | |
| Management Ports | 3x10/100Base-T RJ-45 2x 100Base-FX SFP 1x console port RJ45 |
| Software upgrade | Traffic hitless - dual image |
| Protocols | CLI, SNMP |
| DCN | LAN/WAN/VPN |
| Management Channel | Optical Supervisory Channel (OSC) at 1510nm (standard) |
| Visual Indicators | LED status indicators for client ports, line interfaces, power, shelf |
| Power supply | |
| Characteristics | 90-254 VAC, -48 VDC, <68 Watts |
| Redundancy | Single/Dual feeding, Hot Swappable |

ORDERING INFORMATION

| Part number | Description |
|--------------------|----------------------------------------------------------------|
| Inline EDFA | |
| M-4000-0xzxz02 | x=4 = 30dB/+22dBm output power (with mid-stage access for DCM) |
| Dispersion control | |
| M-4000-0xzxz02 | z=0 = no DCM, A= 40km, B= 80km |

| Options and spare parts | |
|-------------------------|------------------------------------|
| M-420 | AC power supply, M-Series |
| M-410 | DC power supply, M-Series |
| M-310 | Network Management Board, M-Series |
| M-110 | Fan unit, M-Series |