



**MX45 SERIES
C-BAND DWDM VGA
NEXT-GENERATION VARIABLE GAIN EDFA**



Technical Specification



www.maxcomcorp.com



Product description

The Maxcom 4500 series is a next-generation variable gain EDFA. The series combines excellent performance along with superior functionality. The MX4500 series with excellent optical performance, gain flatness, advanced electronic technology and software function is one of the most versatile in today's market. Robust transient suppression control technology and heat management control technology provide excellent environmental stability. The flexibility of Maxcom multifunction optical amplifiers allow for best-in-class architectures with increased reliability, scalability, and cost-effectiveness.

This next generation variable gain amplifier module is composed using two stages of amplifiers: variable gain pre-amplifier (PA) and variable gain booster amplifier (BA). Gain Flatness is achieved through the combining of the filter and the electronic circuit control algorithms.

The MX4500 meets the demands of today's multi wavelength communication networks. These EDFA's support C-Band, up to 44 or 88 channel DWDM systems, commonly used in long distance and ultra-long distance transmission networks. Because of the MX4500's flexibility, it can be used as a booster amplifier, line amplifier, or pre-amplifier.



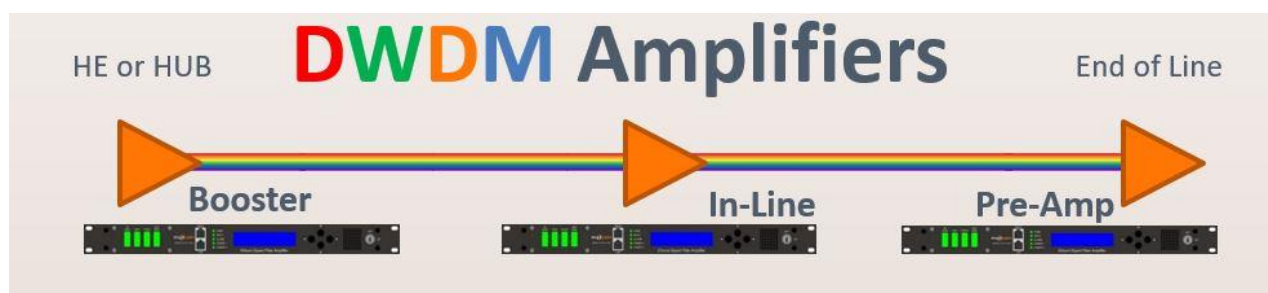
PRODUCT FEATURES



- Next-generation Variable Gain Amplifiers
- Support C-Band, up to 44 or 88 channel DWDM systems
- Adopts the latest full integration electronic transient control technology
- Adopts digital control technology with adaptive heat management
- Saturation output power (Max Power) options: 18dBm, 20dBm, 23dBm
- AGC, APC, ACC operating modes
- RS232 command interface
- Front panel with LCD, providing status monitoring, fault diagnostics, alarm, and safety power-off features.
- Optical monitoring ports at input and output
- Carrier-class security and reliability
- Low power consumption
- 1+1 power supply backup, supporting hot-pluggable
- Excellent P/P ratio

APPLICATIONS

- Long distance DWDM transmissions
- Booster amplifier, In-line amplifier, Pre-amplifier





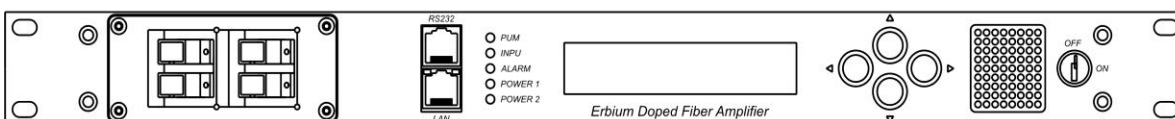
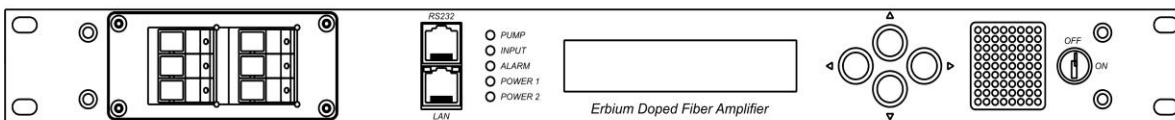
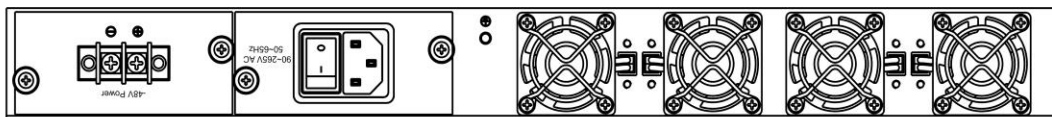
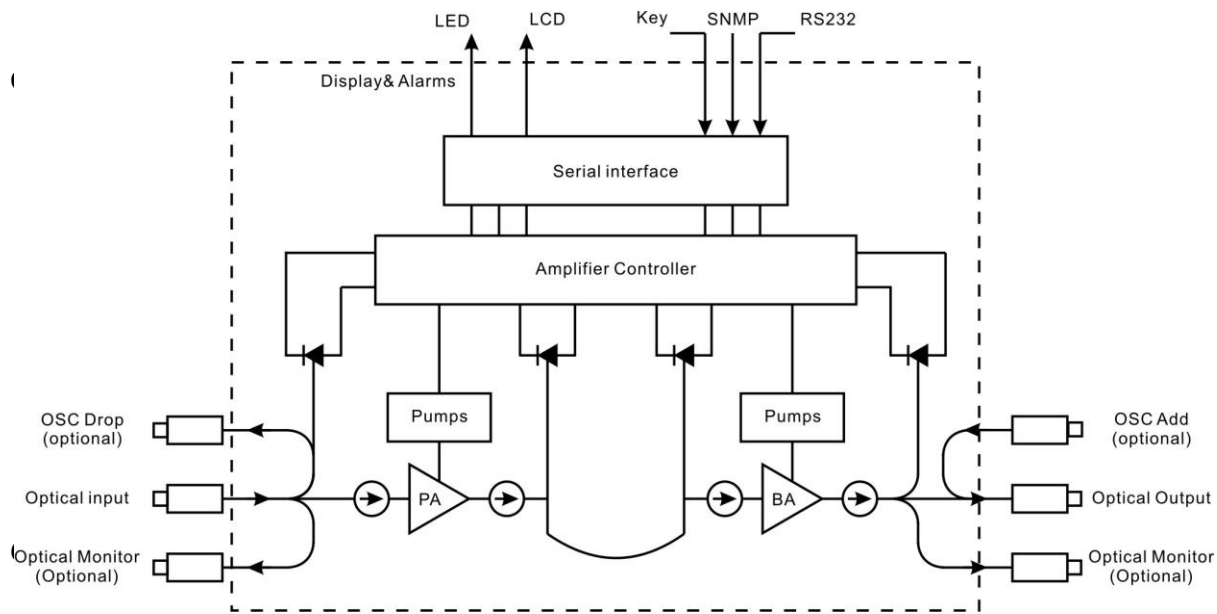
| Performance | | | Index | | | Supplement |
|-----------------------------|--|--------------|---------|------|---------------|--------------|
| | | | Min. | Typ. | Max. | |
| Optical features | Operating wavelength range (λ) | (nm) | 1529.16 | | 1563.86 | ITU 88CH |
| | Input power range Typical | (dBm) | -30 | | 5 | MX4518 |
| | | | -30 | | 5 | MX4520 |
| | | | -30 | | 5 | MX4523 |
| | Gain range Typical | (dB) | 12 | | 21.5 | G21Typ |
| | | | 12 | | 26 | G25Typ |
| | | | 18 | | 30 | G30Typ |
| | Max. output power | (dBm) | | | 18 | MX4518 |
| | | | | | 20 | MX4520 |
| | | | | | 23 | MX4523 |
| | Gain flatness | (dB) | | 0.7 | 1 | Peak-to-peak |
| | Noise figure | (dB) | | 5.5 | 5.9 | Max gain |
| | Polarization dependence loss | (dB) | | | 0.3 | |
| | Polarization dependence gain | (dB) | | | 0.3 | |
| | Polarization mode dispersion | (ps) | | | 0.3 | |
| Pump power leakage | (dBm) | | | -30 | | |
| Return loss | (dB) | 50 | | | APC | |
| Transient over /under shoot | (dB) | 1.5 | | 1 | 16dB Add/Drop | |
| Transient offset | (dB) | | | 0.5 | | |
| General features | SNMP interface | | RJ45 | | | |
| | Serial interface | | RS232 | | | |
| | Power supply | (V) | 90 | | 265 | VAC |
| | | | 30 | | 72 | -48VDC |
| | Power consumption | (W) | | | 25 | |
| | Operating temp. | (°C) | -5 | | 70 | 23~158 (°F) |
| | Storage temp. | (°C) | -40 | | 85 | |
| | Operating humidity | (%) | 5 | | 95 | |
| Size (W)×(D)×(H) | (") | 19×7.87×1.75 | | | 1RU | |

The above optical features are for typical applications. Parameters may be customized according to customers' requirements.

SOFTWARE FUNCTIONS, MONITORS AND ALARMS

| | |
|-----------|---|
| Functions | In Service Firmware Upgrades |
| | Auto Shut Down |
| | Gain Control Mode with Automatic Power limiting (VGA) |
| | Gain tilt Control |
| | Output Power Control Mode |
| | Pump Current Control Mode |
| | Eye-Safe Power Mode |
| | Non-Volatile Event Log |
| | Total Input Power |
| Monitors | Total Output Power |
| | Optical Back reflection |
| | Pump Status |
| | Chassis Temperature |
| Alarms | Low Output Power Alarm |
| | Loss-of-Signal Alarm |
| | Chassis Temperature Alarm |
| | Pump Temperature Alarm |
| | Pump Bias Alarm |





PRODUCT SERIES

| Model | Max. output | Gain range | Input power range |
|------------|-------------|-------------|-------------------|
| | power (dBm) | Typ.(dB) | Typ. (dBm) |
| MX4518-G21 | 18 | 13 ~ 21.5 | +3 ~ -30 |
| MX4518-G25 | | 12 ~ 26 | +3~ -35 |
| MX4518-G30 | | 18 ~ 30 | 0 ~ -35 |
| MX4520-G21 | 20 | 13 ~ 21.5 | +3 ~ -30 |
| MX4520-G25 | | 12 ~ 26 | 0 ~ -26 |
| MX4520-G30 | | 28.5 ~ 30.5 | +3 ~ -35 |
| MX4523-G21 | 23 | 13 ~ 21.5 | +3 ~ -30 |
| MX4523-G25 | | 12 ~ 26 | 0 ~ -35 |
| MX4523-G30 | | 19 ~ 30 | 0 ~ -35 |

Model Number Ordering Matrix

| MX | | 4 | | 5 | | □□ | | G□□ | | □□ - | | □ / | | □□ - | | M□□ | |
|----------------|----------------------|-------------|-----------------|--------------------|------------------------|------|----------------------|---------|------------------------|--------|--------------|-----------------------|--------------|------------------|--------------------------------|-----------------------------|--|
| Product Series | Operating Wavelength | | Production Type | | Max Output Power (dBm) | | Gain Range Typ (dBm) | | Optical Connector type | | Power Option | | Power Supply | | In/Output optical port monitor | | |
| Model Series | 4 | 1528-1564nm | 5 | Variable Gain EDFA | 18 | 18.5 | 21 | 13-21.5 | LA | LC/APC | P | Dual PS Hot Pluggable | 11 | AC Power 90~265V | MIO | With In/Output Port Monitor | |
| | | | | | 20 | 20 | 25 | 12-26 | SA | SC/APC | | | 48 | -48VDC | | | |
| | | | | | 23 | 23 | 30 | 18-30 | | | | | 41 | -48VDC & AC PS | | | |



*Note - Some options only available of certain chassis or models

Please consult with your Maxcom Rep for ordering options