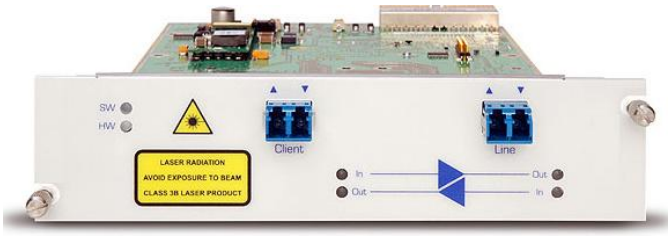
# Next generation of Optical Amplifier – Erbium Doped

- Booster, Inline and Pre-amplifier
- Output power up to 23 dBm
- Data rate independent
- Amplifies multiple wavelengths to several hundred km
- Bi-direction Amplifier
- Low noise figure and variable nominal gain
- Integrated Optical supervisory channel insertion and extraction
- Low power consumption
- Automatic fiber aging compensation
- Works in constant output power or constant gain mode




## OVERVIEW

Carrier networks continue to grow, with Service Level Agreements becoming ever more demanding. As networks grow, so does the need for efficient optical amplification. MICROSENS continues to lead the way in optical performance and amplification with the new MICROSENS amplifier family. It allows optical signals to be transmitted over longer distances without the need for regeneration or external power control modules. The MICROSENS amplifier family automatically compensates the gain settings as fibers degrade over time due to aging or splicing, and seamlessly adjusts the optical power as channels are added and removed. This eliminates the need to manually adjust the network as it evolves.

The MICROSENS next generation amplifier family relies on EDFAs (Erbium Doped Fiber Amplifiers) which are protocol and data-rate independent and can be used in 10G, 40G, 100G networks and beyond.

The MICROSENS next generation amplifier family amplifies optical signals bi-directionally and can be ordered as integrated Optical Boost and Pre-amp (OABP) or Integrated Optical In-Line Amplifier (OAIL) in a single unit form factor.

The booster amplifies the outgoing DWDM signals from the transmit side to overcome the attenuation of the fiber span. As a preamplifier amplifies the DWDM signals coming into the receiver in order to allow a sufficient optical power level for the receiver of each wavelength. The MICROSENS In – Line Amplifier when used for bidirectional inline amplification offers a mid-stage access for Chromatic Dispersion devices. Both options provide up to 23dBm per channel optical gain while requiring minimal power.

The new family also integrates an Optical Supervisory Channel to provide the most features in the best in class footprint and at the best possible price point.

The implemented span loss monitoring functionality deals efficiently with fiber aging and fiber fixes-related issues, avoiding OSNR impact on any channels.

Furthermore, when operating in constant gain mode, a channel count modification at the amplifier's input (channel drops or adds) is successfully handled by the span insertion loss monitoring functionality.

This allows it to cope with fast transients by maintaining the channels' powers constant, so the stability of the optical system layer is warranted.

MICROSENS amplifiers are unique in the industry in that they can be upgraded in service in the field.

The MICROSENS solution distributes the cost of the amplifier over time as the customer gains economic benefit from the network. It is truly a pay as you grow transport solution.

## Order Information

| Article no. | Description | |
|---|---|---|
| MS430848M-17 | Variable Gain Line Amplifier +32dBm (can be reduced to 18dB) unit, +17dBm output power for WDM application with one external pump input for 20Bm upgrade. Includes 1510 optical supervisory channel. | |
| MS430848M-20 | Variable Gain Line Amplifier +32dBm (can be reduced to 18dB) unit, +20dBm output power for WDM application with one external pump input for 23dBm upgrade. Includes 1510 optical supervisory channel. | |
| MS430849M-17 | Variable Gain Optical Booster 18dB (can be reduced to 10dB) & variable gain pre-amplifier 32 dB (can be reduced to 18 dB) unit, +17dBm output power for WDM application with one external pump input for 20dBm upgrade. Includes 1510 optical supervisory channel. | |
| MS430849M-20 | Variable Gain Optical Booster 18dB (can be reduced to 10dB) & variable gain pre-amplifier 32 dB (can be reduced to 18 dB) unit, +20dBm output power for WDM application with one external pump input for 23dBm upgrade. Includes 1510 optical supervisory channel. | |
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## Technical specifications

**Type**
Optical Amplifier

**Amplifier characteristics**
Booster - Output power:
Gain- variable 10 to 18dB
DWDM – up to 23 dBm (options)
Booster- Noise figure:
DWDM – 5,5 dB

Pre-Amp - Gain:
DWDM – variable from 18 to 32dB
Pre-Amp - Noise figure:
DWDM – 5,5 dB

Inline-Amp (DWDM):
Gain– variable from 18 to 32dB
Output power up to 23dB (options)
Noise figure – 5,5 dB

**Management**
MIB - SNMPV2c Private MIB
Remote Management – OSC channel

**Optical Connectors**
Dual LC

**Operating Temperature**
0°C to +50°C

**Storage Temperature**
-20°C to +70°C

**Power Consumption**
5 W for Pre-Amp
6 W for Inline-Amp

**Size**
2 slots

**Reference standard**
ITU-T G.691, ITU-T G959.1, ITU-T G694.1

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