



## EKINOPS PM OA-HCS

### High Capacity Next Generation Optical Amplifier

DATA SHEET 07 | 2023

#### KEY FEATURES & BENEFITS

- Flexible options such as Optical Booster and Pre-amplifier (OABP), or bidirectional Optical In-Line Amplifier (OAIL)
- Output power up to 20 dBm
- Data rate and protocol independent
- Amplifies multiple wavelengths over several hundred kilometers
- Erbium Doped Fiber Amplifier (EDFA)
- Bidirectional amplifier on a single board
- Low noise and variable nominal gain
- Integrated Optical Supervisory Channel (OSC) insertion and extraction
- Easy to install and operate (Plug and Play)
- Low power consumption
- Automatic fiber aging compensation
- Works in constant output power or constant gain mode

#### APPLICATIONS

- Bidirectional in-line amplification for WDM
- High power boosting and low noise pre-amplification for WDM
- Where low noise, fiber aging compensation mechanism and Optical Supervisory Channels (OSC) are required

#### 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. Ekinops continues to lead the way in optical performance and amplification with the new Ekinops HCS amplifier family. It allows optical signals to be transmitted over longer distances without the need for regeneration or external power control modules. The Ekinops HCS 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 Ekinops HCS 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 Ekinops HCS amplifier family amplifies optical signals bidirectionally 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. As a booster, the PM OA-HCS amplifies the outgoing DWDM signals from the transmit side to overcome the attenuation of the fiber span. As a preamplifier, the PM OABP-HCS amplifies the DWDM signals coming into the receiver in order to allow a sufficient optical power level for the receiver of each wavelength. The Ekinops PM OAIL-HCS when used for bidirectional inline amplification offers a mid-stage access for Chromatic Dispersion devices. Both options provide up to 20 dBm per channel optical gain while requiring minimal power. The Ekinops HCS amplifier 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.

#### MANAGEMENT

The EKINOPS PM OA-HCS family of modules can be managed through SNMP or via the Ekinops standard element level management interfaces, which include a Command Line Interface (CLI) and an Ekinops Graphical User Interface (GUI). The CLI is accessible via Secure Socket Shell (SSH) and Telnet remotely or via a local serial port on the management board.

Complete performance monitoring and management are provided, including laser shutdown status, amplifier configuration parameters, input power, and output power.

The EKINOPS PM OA-HCS family of modules is also supported by **Celestis NMS**, the Ekinops advanced Network Management System.

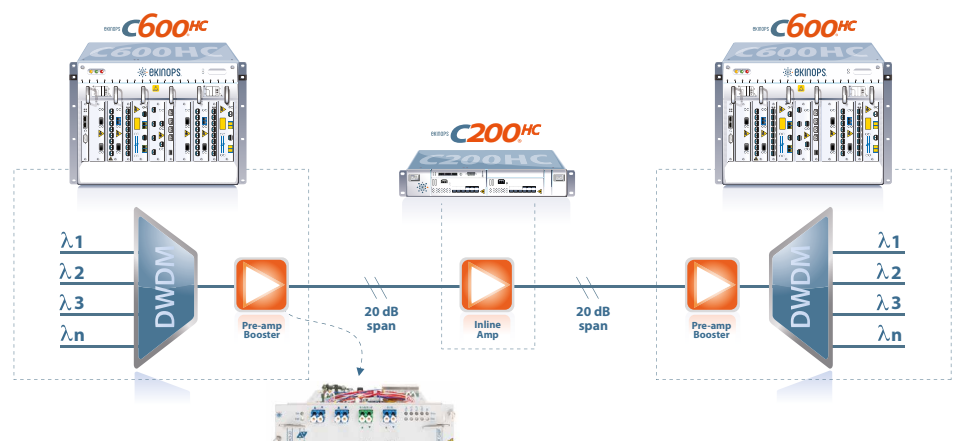


Figure 1 : Optical amplifiers extend the reach in long haul and metro networks



## EKINOPS PM OA-HCS

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### SPECIFICATIONS

#### • AMPLIFIER CHARACTERISTICS

BOOSTER MODULE	DWDM
Output power	+17 dBm / +20 dBm
Gain	variable from 10 to 18 dB
Noise figure	5.5 dB

#### • PRE-AMP MODULE

Output power	+17 dBm / +20 dBm
Gain variable	from 18 to 32 dB
Noise figure	5.5 dB

#### • INLINE-AMP MODULE

Output power	+17 dBm / +20 dBm
Gain variable	from 18 to 32 dB
Noise figure	5.5 dB

#### • PHYSICAL SPECIFICATIONS

Optical connectors	Dual LC
Power consumption*	12 W
Size	Two slots in Ekinops chassis
Operating temperature	0°C to +50°C / +32°F to +122°F
Storage temperature	-20°C to +85°C / -4°F to +185°F

\* power consumption values are given for a room temperature of 25°C / 77°F

#### • MANAGEMENT

MIB	SNMP V2c private MIB
Remote Management	1510 nm OSC channel

#### • REFERENCE STANDARDS

ITU-T G.691, ITU-T G959.1, ITU-T G994.1

### ORDERING INFORMATION

#### PLUGGABLE MODULE (PM)

PRODUCT CODE	DESCRIPTION
PM_OABP-HCS2-17*	Variable gain Optical Booster 10-18 dB & Variable gain Pre Amplifier 18-32 dB Unit, +17 dBm output power for WDM application with embedded 1510 nm OSC channel
PM_OABP-HCS-20	Variable gain Optical Booster 10-18 dB & Variable gain Pre Amplifier 18-32 dB Unit, +20 dBm output power for WDM application with embedded 1510 nm OSC
PM_OAIL-HCS2-17*	Variable gain Optical Line Amplifier 18-32 dB Unit, +17 dBm output power for WDM application with embedded 1510 nm OSC channel
PM_OAIL-HCS-20	Variable gain Optical Line Amplifier 18-32 dB Unit, +20 dBm output power for WDM application with embedded 1510 nm OSC channel

#### EKINOPS CHASSIS

C600HC	High Capacity Modular Chassis 7RU
C200HC	High Capacity Modular Chassis 2RU
PM_MNGT4-2	Management Card
400EEM	Ekinops Craft Interface Software

\* PM\_OAIL-HCS2-17 and PM\_OABP-HCS2-17 are functionally aligned and fully compatible with all existing PM\_OABP-HCS-17 and PM\_OAIL-HCS-17 modules.

### CONTACT



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