



## ASH4

### SDH Plug-in Module for PCM30U-OCH System

The ASH4 device is an SDH transmission device up to the STM-4 level. It provides TDM transmission services of E1 and FE and GBE types and thus enables the integration of TDM and packet transmissions in one unit. It is designed as an access device to SDH or DWDM transport networks, or for the construction of its own SDH networks of smaller capacities. The Ethernet transmission function enables a defined connection between geographically separated LAN networks with precisely defined throughput. By combining SDH ports, it can operate in any topology from a terminal to circular or star structures. Supported backup mechanisms allow backup of both line and post signal. The system is equipped with SDH cross-connect with commutation capability at the level of virtual containers from VC12 to VC4. For Ethernet transmissions, it enables the chaining of containers for the necessary security of transmission capacity.

ASH4 is a plug-in unit of the PCM30U-OCH family with the TOPONET monitoring system. It complements the range of the PCM30U-OCH family with a module of the STH-4 SDH transmission system.

### Main Benefits

- Upgrading the PCM30U-OCH to STM1/4 transmission module
- Multi-service transport (TDM and packet)
- SDH Cross-connect (HO, LO) and PDH (64 kbit/s)

### Basic Parameters

Signal Capacity and Structure:

- LOXC 5 Gb/s commutation capacity (512x VC-12),
- transit with full power 2x STM-4 (16x VC-4),
- ETSI multiplex hierarchy for E1, FE and GE, see figure

Tributary Ports:

- E1 / G.703
- Ethernet with GFP-T/VCAT/LCAS mapping ASH4
- Static or dynamic (in-operation) VCAT/LCAS range setting
- Additional VCAT re-synchronization mode (standard/low delay)

SDH Cross-connect:

- at level: VC-12/TU12 (512 x 512), VC-3/TU3 (24 x 24)

Transmission Backup:

- MSP 1 + 1 on STM-4/1 lines
- SNCP 1 + 1 for VC-12 and VC-3

Synchronization:

- According to G.781 standard, internal SEC quality source
- Reference synchronization from E1 (T12) ports

Management:

- Management channels DCC R / MS-OH ASH4 or in E1 payload (VC-12)
- Routing of the external management system (IPv4) via control channels

Port Numbers:

- SFP STM1/4 (link. signal): 2
- SFP STM1/4 (trib./link. signal): 2
- FE,GE/RJ45 (trib. signal): 4
- E1/(6xRJ45 connector) (trib. signal): 12xE1 (together with SYNC (T12) support)

Other Parameters:

- Optical range: according to available SFPs
- Ambient temperature range: from -40 to +50°C
- Power Consumption: from 14W to 25W depending on equipment and functions

Management System:

- Local LCT: ASH View (Windows)
- Central TOPONET: within the PCM30U-OCH family

## Multiplexer ETSI Hierarchy

