

2.2.6 SDH and EoS service unit NUSA1 and NUSA1-F



Figure 33: NUSA1 (left) and NUSA1-F (right) unit view

The NUSA1 is a 1-slot wide SDH uplink service unit of the XMC20. It provides 2 STM-16/STM-4 dual speed and 2 STM-4/STM-1 dual speed ports and 4 10/100/1000BASE-T ports for the Ethernet over SDH (EoS) application. NUSA1 accesses the PBUS with a maximum capacity of 64 x P12 and also connects to the Gb-Ethernet star. The unit must be operated in an actively cooled XMC20 subrack.

The NUSA1-F is a 2-slot wide SDH and EoS service unit of the XMC20. It can be operated in actively and passively cooled XMC20 subracks.

NUSA1 and NUSA1-F are functionally identical. In the following the term “NUSA1” is thus used to name the SDH and EoS service units NUSA1 and NUSA1-F.

The NUSA1 unit can be configured as an SDH access system with termination and add/drop functionality from STM-16, STM-4 and STM-1 trunks. The interfaces can be used as aggregate interfaces or as tributary interfaces for the access to subtended network elements. The interfaces are implemented on NUSA1 with four SFP cages.

Ethernet traffic from the front Ethernet ports or from the XMC20 Switch is transported over up to 32 Ethernet over SDH (EoS) channels.

The NUSA1 unit implements also the synchronous equipment timing source (SETS) for the unit.

The NUSA1 unit provides the following functions:

- 2 STM-16/STM-4 dual speed ports with optical SFP modules.
- 2 STM-4/STM-1 dual speed ports, STM-4 with optical SFP modules, STM-1 with optical or electrical SFP modules.
- SDH cross connect for 125x125 AU-4, 48x48 TU-3 and 1261x1261 TU-12.
- Access to the PBUS with up to 64 P12 signals.
- Four 10/100/1000BASE-T Ethernet ports used for the Ethernet over SDH (EoS) application.
- Up to 32 EoS channels.
- EoS framing procedure GFP according ITU-T G.7041.
- Virtual concatenation according to ITU-T G.783.
- Link capacity adjustment (LCAS) scheme according to ITU-T G.7042.
- Synchronous equipment timing source (SETS) with local oscillator.
- Multiplex section protection on the unit or with a protecting unit in a dedicated subrack slot.
- Subnetwork connection protection between any virtual channels on the unit.
- 1:1 equipment protection.
- Performance monitoring according to ITU-T G.826.

The NUSA1 has two LEDs for unit- and traffic related failure indication.