

### Product Overview

Synchronization Supply Units (SSU) are widely deployed for SONET/SDH legacy network synchronization in carrier and enterprise network infrastructure. With the migration to packet-switched network technology and SONET/SDH continuing to be used in production networks, the smooth migration from legacy to next-generation network synchronization becomes a critical task.

IEEE 1588v2 Precision Time Protocol (PTP) has been established for precise frequency, phase and time-of-day synchronization across packet networks. In addition to deploying stand-alone PTP Grandmaster devices, PTP Grandmaster functionality can be integrated into existing SSU and TSG solutions, leveraging existing infrastructure and enabling smooth migration.

The High-Capacity Telecom IEEE 1588 PTP Module from Oscilloquartz is designed to deliver precise and reliable synchronization from existing SSU platforms. It supports a large and market-leading number of PTP slave clients and is compatible with the OSA 5548C SSU/TSG platforms as well as the OAS 5335 modular PTP Grandmaster. The scalable and modular design allows operators to increase the number of PTP clients as their network grows.



### Features & Benefits

- PTP Grandmaster module for highly accurate synchronization
- Compliant with ITU-T G.8272 Primary Reference Time Clock
- Compliant with ITU-T G.8265.1 Telecom Profile for frequency delivery
- Compliant with ITU-T G.8275.1 Telecom Profile for phase and time delivery
- Synchronous Ethernet according to ITU-T G.8262 and G.8264
- High slave capacity with up to 1024 PTP clients per module
- Support 1:1 card redundancy
- Scalable system architecture and software licensing

### Technical Information

#### Network Protocol

- G.8265.1 and G.8275.1 Telecom Profile
- HW ready G.8275.2 Telecom Profile
- IPv4 Unicast, IPv6 (future)
- Up to 32 Master IP's (virtual master) per card
- One- or two-step clock
- Single-way or two-way time transfer
- Simple configuration including automatic and dynamic remote client registration (unicast message negotiation)

#### Remote Client Capacity

- Up to 1024 remote slave clients at full rate of 128 pkt/s in IP unicast
- Software licenses for 256, 512 and 1024 remote slaves (128 by default) over IP unicast
- Software license for G.8275.1 phase delivery profile

#### VLAN Support

- Untagged and IEEE 802.1Q customer-tagged
- Up to 32 VLANS per port

#### Input References

- GNSS (GPS, GLONASS and combined mode)
- Up to 2 GNSS receivers , active L1 antenna
- Up to 4 or 8 inputs depending on chassis and input module used, optionally 1:1 protected
- Input types: E1, 2.048MHz, 5MHz, 10MHz individually software-selectable

#### PTP Port

- One combo Ethernet 100/1000BaseT or 1000BaseX (SFP) port
- Synchronous Ethernet (SyncE) – ITU-T G.8261/G.8262/G.8264 compliant including Ethernet Synchronization Message Channel (ESMC)

#### Management

- Based on management card (MAC)
- Status LEDs on front panel
- Contact relay alarm closures (2x3 N.O. or N.C. contacts)
- Electrical alarm collection inputs (10)
- Specific user-definable alarm messages
- Local RS232C port, TL1 protocol on front and rear panels
- SNMP v2 & v3
- Remote 10/100BaseT
- Remote management via SyncView™Plus and FSP Network Manager
- Remote software upgrade
- Full FCAPS capability

#### Frequency and Time Tracking

- Time & Phase – G.8272 PRTC when locked to GNSS ( $\pm 100$ nsec from UTC)
- Frequency: G.811 PRC reference with embedded GNSS (or external Cesium) source

#### Others

- Highly accurate hardware-based time stamping
- Can be inserted in any of the output slots
- Please refer to the OSA 5548C SSU and OSA 5335 PTP GM user manuals for more details