TCC-NTP - NTP Server Card

TELECOM NETWORKS

PROFESSIONAL COMMUNICATION

TIME & FREQUENCY

Version with port on tile set.

Version with port on front panel.

Highlights

- Stratum 1 NTP server

- 64 bits RSA Data Security, Inc. MD5 Message-Digest Algorithm

- Supervision and configuration through Ethernet and RS-232

- "Plug-and-play" installation

- Up to 10 cards in OSA 5548C SSU-E200

- Up to 3 cards in OSA 5548C SSU-E60

Applications

- Computer Network Time Synchronization

- Equipment management alarm/event time stamping

- Synchronization of time displays

- Network-wide precise time-stamping of alarms to establish the exact sequence of events.

The availability and distribution of accurate timing information across networks is important for many reasons. Even timing discrepancies as small as a fraction of a second can cause serious errors e.g. where distributed procedures depend on coordinated times to ensure that proper sequences are followed. The availability of precise timing not only helps meet QoS targets and increased customer satisfaction, it also ensures more accurate operations and precise billing systems.

Oscilloquartz's high performance TCC-NTP (Time Code Card Network Time Protocol) module together with the OSA 5548C SSU delivers a complete NTP solution to any IP-based network. The TCC-NTP Card is a NTP Stratum 1 server which provides a reliable and easy synchronization of Ethernet TCP/IP network. The TCC-NTP card can be installed by just plugging it into in any empty Output card (OUC) group slot of the OSA 5548C SSU/TSG. Up to 10 TCC-NTP cards can be installed in the OSA 5548C SSU-200, making the OSA 5548C as the most redundant and protected NTP server in the market.

Its own base time and algorithm guarantee a high level of accuracy when the GPS card is tracked. Furthermore, the TCC-NTP takes full advantage of the exceptionally high availability and superior holdover performance of the OSA 5548C SSU.

In case of GPS loss, the TCC-NTP references its time base to the best source available: one of the 8 OSA 5548C's sync inputs or the internal Rubidium or OCXO sources. In these conditions, the time needed to accumulate a time error of 1ms in holdover is more than 4 months when locked on its internal Rubidium and more than 10 days when locked on its internal OCXO.

Each TCC-NTP card provides a high security level: 64 bits RSA™ MD5 encryption, leap time protection, high stability time base and an independent Ethernet port that guarantee security and reliability of its NTP timing service.

The TCC-NTP is easily and safely manageable via the Oscilloquartz' SyncView™ *Plus* Management Software.

OSCILLOQUARTZ
An ADVA Optical Networking Company

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Protocols

- NTP v3 (RFC 1305)
- SNTP v4 (RFC 4330)

NTP Output Port

One Ethernet RJ-45 10/100 Base-T per TCC-NTP card

- Port Location, two versions:
    1) On NTP tile
    2) On card front panel
- Card location: on Output slots (one card per Output Group)
- Number of cards and ports:
    - One card occupies one Output Group (8TE)
    - 1 to 3 cards in OSA 5548C SSU-E60
    - 1 to 10 cards in OSA 5548C SSU-E200

NTP Port Configuration

- DHCP or Fixed IP
- Ethernet speed selection:
    - Manual (10 or 100 Mbit/s)
    - Automatic
- Half or Full Duplex mode

Capacity

- 800 requests per second typical, >50'000 NTP clients
- 400 requests per second with MD5, >25'000 NTP clients

NTP Protection and Security

- 1+n protection, each NTP port can be protected by any other from the NTP client

Time Server Precision

- ±25 µs when locked to GPS

Time Reference

Time code is always available with the accuracy provided by the selected synchronization source amongst:

- Integrated GPS card
- Synchronization inputs
    - up to 4 in OSA 5548C SSU-E60
    - up to 8 in OSA 5548C SSU-E200
- Internal sync references oscillator when OSA 5548C is running in holdover (Rubidium or OCXO)

Communication

Integrated into OSA 5548C management system and physically separated from the NTP port.

- Management Software: SyncView PLUS or CLI
- Language: TL1
- Protocol: Raw data or Telnet
- Communication port:
    - Local: 2x RS-232
    - Remote: Ethernet RJ-45 10/100 Base-T

NTP Client

Optional: NTP/SNTP synchronization software for MS Windows® 10 users licence.

Subject to change without prior notice.

OSA 5548C SSU-E60 & SSU-E200

Thanks to the versatile architecture, output cards can be replaced with NTP server (TCC-NTP).