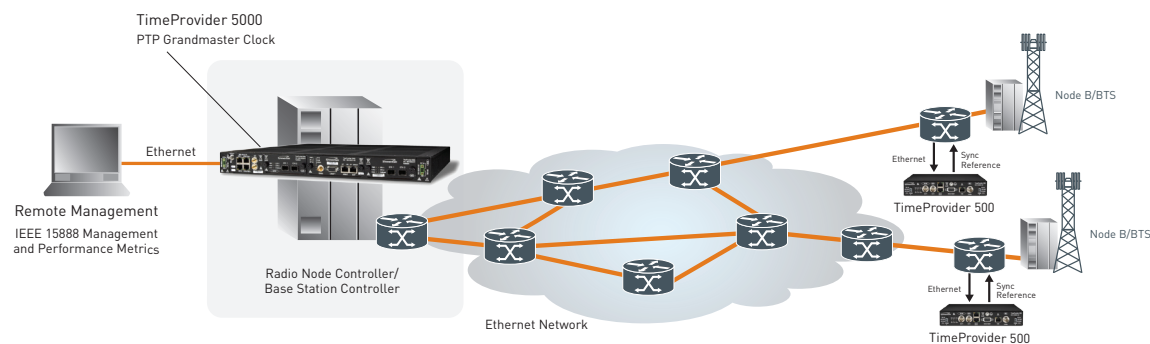


TimeProvider 500



Typical application using the TimeProvider 5000 Grandmaster Clock and TimeProvider 500 PTP Translators to provide precise timing and frequency for remote base stations over an Ethernet backhaul network infrastructure.

Specifications

INPUT

- 1 port, RJ-45, 10/100Base-T Ethernet
- IEEE 1588-2008 (PTP v2)

OUTPUTS

- 2048 kHz - G.703/13 compliant
- 1544 kHz - Square wave 3.2Vpp
- E1/DS1 framer output
 - Line code:
 - E1: HDB3
 - DS1: AMI with B8ZS
 - Frame format
 - E1: Double-frame or multi-frame
 - DS1: D4 (F12) or ESF (F24)
 - Alarm indication signal: AIS
 - CRC: Yes
 - Signaling mechanism: CAS, CCS
 - Compliance: G.703/5/9
- G.823/G.824 sync interface compliant
- 10MHz/1PPS
- TOD messaging via serial port

PTP OVER PACKET SUPPORT

- IEEE 1588-2008
- Unicast/multicast (hybrid)
- ITU-T G.8261 compliant

CONNECTORS

- E1/T1/1PPS outputs
 - 2 BNC (co-axial)
 - 2 RJ-48C [differential]
- 1 RS-232
- 1 Ethernet 100Base-T
- BNC for sinusoidal 10 MHz
- Redundant - 48DC power connectors

TYPICAL TIMING PERFORMANCE

- Advanced G.8261-based tests (more severe conditions)
- Fractional Frequency Offset: < 1ppb
 - 1PPS Output (compared with Grandmaster 1PPS): < ±3µs
- G.8261-based tests (5 switches)
- Fractional Frequency Offset: < 1ppb
 - 1PPS Output (compared with Grandmaster 1PPS): < ±1µs

Transport includes microwave, SHDSL, or TDM over packet

- Fractional Frequency Offset: < 5ppb

HOLDOVER PERFORMANCE

- Aging performance compliant with G.812 Type III and GR-1244 stratum 3E requirements

PROTOCOL

- IEEE 1588-2008
- T1 (1.544 Mbps and 1.544 MHz)
- E1 (2.048 Mbps and 2.048 MHz)
- DHCP
- TELNET

LEDs

- Power on
- Sync status
- Outputs active
- Power alarms

MANAGEMENT AND DIAGNOSTICS

- SNMP Proxy via TimeProvider 5000
- CLI based configuration using local craft port
- Console port for local management
- Telnet
- Logging
 1. Configuration log
 2. Event log
- Firmware remotely upgradable
- Configuration save/restore – non volatile configuration
- Factory default reset
- System administrator password protection
- Hardware and firmware version query
- LEDs and system status
- IEEE 1588 V2 PTP client status
- IEEE 1588 V2 PTP network status and performance statistics
- IPDV
- PTP metrics

PHYSICAL SPECIFICATIONS

- Size: 216.7mm W X 203.2mm D X 41.4mm H (8.53 in W X 8.00 in D X 1.63 in H)
- Options 19" rack mountable, 1 RU 19" rack side-by-side mountable, 1RU
- Weight: 870g (1.9 lbs)

POWER REQUIREMENTS

- -48VDC (operating range: -40VDC to -72VDC)
- 5.3W typical

EMISSIONS/IMMUNITY

- FCC Part 15 Class B
- ICES-003 Class B
- VCCI Class A
- AS/NZS CISPR Class B
- ETSI 300 386 Class B
- EN 55022/24 Class B
- KN 55022/24 Class B
- EMC Immunity meets criteria
 - EN61000
 - 4-2 ESD
 - 4-3 Radiated immunity
 - 4-4 Electrical fast transient
 - 4-5 Surge
 - 4-6 Conducted immunity
- GR-1089-CORE sections 2 and 3

ENVIRONMENTAL SPECIFICATIONS

- Operating temperature: -5°C to +65°C
- Storage temperature: -40°C to +70°C
- Operating humidity: 5% to 95% relative humidity
- ETSI EN 300 019-2-1
- ETSI EN 300 019-2-2
- ETSI EN 300 019-2-3
- ETSI EN 300 019-2-4
- ETS 300 753
- GR-63-CORE sections 4.1, 4.3, 4.4

REGULATORY

- UL
- CE mark
- cUL
- RoHS, 6 of 6
- CB scheme