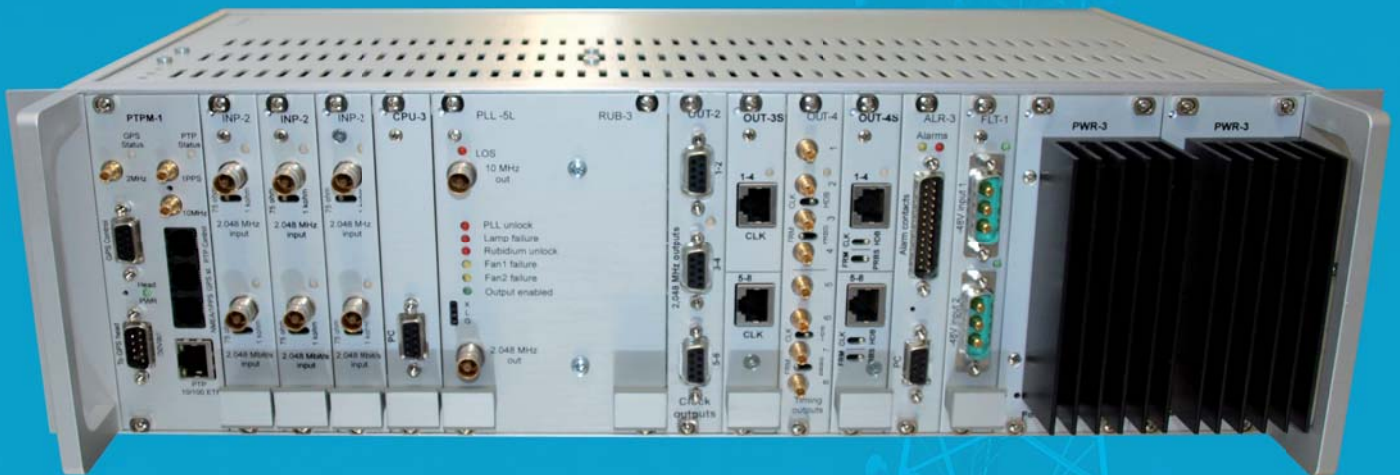


■ Primary Reference Clocks (PRC/SSU)



IEEE1588-2008 Compliant Grandmaster clock

SyncE source with ESMC

Up to 8 synchronizing inputs (6 in PW1008HGP)

Up to 32 outputs in one SSU subrack

Up to 128 outputs with Output Extension Units

2.048 MHz 2.048 Mbit/s and 10 MHz synchronizing outputs

PDH SSM transmission in 2.048 Mbit/s output frames, ClockClasses in PTP

Modular design and scalability

Local and centralized supervision, alarm outputs

ClockView centralized alarm, configuration, and quality management

Intelligent tracking algorithm and input signal quality adaptation

No phase transient on outputs during input source switchover

No phase transient on outputs during switch to holdover

Excellent holdover stability

Duplicated power supply

Integrated GPS receiver for PRC quality source

PERFORMANCES, EQUIPMENT VERSIONS

■ IEEE1588/PTP V2-2008 Grandmaster clock with rubidium reference and GPS receiver as PRC (Primary Reference Clock)

| | | |
|--|-------------------------------------|---|
| Grandmaster in Telecom networks. Packet Network Time and Frequency synchronization clock | According to IEEE1588-2008 standard | PW1008 HGP PRC quality Telecom Grand Master Clock |
| Tracking to GPS disciplined internal rubidium reference | According to EN 300 462-6 standard | |
| Initial holdover frequency offset: | 5×10^{-12} | |
| Holdover temperature variation: | 0.02 ns/s | |
| Aging in holdover without tracking: | 5×10^{-11} /month | |

■ Operation with rubidium reference and GPS receiver as PRC (Primary Reference Clock)

| | | |
|--|------------------------------------|--|
| Tracking to internal GPS receiver output signal: | According to EN 300 462-6 standard | PW1008 HG PRC quality source |
| Initial holdover frequency offset: | 5×10^{-12} | |
| Holdover temperature variation: | 0.02 ns/s | |
| Aging in holdover without tracking: | 5×10^{-11} /month | |

PERFORMANCES, EQUIPMENT VERSIONS

■ Operation with rubidium reference as SSU (Synchronization Supply Unit, Transit Node Clock)

| | | |
|--|---|--|
| Tracking to inputs: | According to EN 300 462-4 standard | <h2>PW1008 H</h2> <p>SSU, Transit node clock</p> |
| Maximum phase hits on outputs at inputs rearrangement: | 4 ns (1 ms observation time) 8 ns (4 s observation time) 16 ns (above 4 s observation time) | |
| Initial holdover frequency offset: | 5×10^{-12} | |
| Holdover temperature variation: | 0.02 ns/s | |
| Aging in holdover without tracking: | 5×10^{-11} /month | |

■ Operation without internal reference (GPS receiver and clock distributor)

| | | |
|-----------------------------------|--|--|
| Tracking to external sources: | Transparent, no SSU performance | <h2>PW1008 OG</h2> <p>GPS receiver and clock distributor</p> |
| Tracking to internal GPS receiver | MTIE: EN 300 462-3-1 (1998-05), Figure 5. TDEV: EN 300 462-3-1 (1998-05), Figure 6. Holdover time: 10 minutes 2000ns Freq. stability: $\pm 1 \times 10^{-11}$ 1 day average in GPS locked state | |

TECHNICAL DATA

IEEE1588-2008 Precision Time Protocol and SyncE Unit (PTPM-1)

| | |
|---|--|
| Packet Network Time and Frequency Synchronization clock | Fully compliant with IEEE1588-2008 standard and G.8262, G.8264 |
| Functions: | Grandmaster in Telecom networks, SyncE source |
| PTP connection: | 10/100 Base-T 8P8C (RJ45) Ethernet connector |
| Number of supported PTP slaves: | Up to 64 (depending on packet rates); Best Master Clock Algorithm is fully supported |
| Compatibility | Fully compatible with PolyNet NTP1003 server |

Inputs (INP-2)

| | |
|--|--|
| Synchronizing input 1: | 2.048 MHz, G.703, 75 ohm or high impedance |
| Synchronizing input 2: | 2.048 Mbps, G.703 75 ohm or high impedance |
| Jitter and wander tolerance on inputs: | According to EN 300 462-4 standard |
| AIS and LOS detection on input 2 | According to ITU-T G.775 recommendation |

Output performances

| | |
|--|--|
| Jitter on outputs: | max. 0.05 UIpp (0.020...100 kHz) |
| Stability in GPS locked mode in PRC operation: | MTIE: EN 300 462-3-1 (1998-05), Figure 3. PRC network limit TDEV: EN 300 462-3-1 (1998-05), Figure 4. PRC network limit |
| Stability in locked mode in SSU operation: | MTIE: EN 300 462-3-1 (1998-05), Figure 5. SSU network limit TDEV: EN 300 462-3-1 (1998-05), Figure 6. SSU network limit |

TECHNICAL DATA

Output card versions

| Type of output card: | OUT-2 | OUT-3 | OUT-4 | OUT-5 |
|--------------------------------|-------------------|------------------|---------------------------------|-------------------------|
| Number of outputs in one card: | 6 | 8 | 8 | 8 |
| Impedance: | 75 ohm or 120 ohm | 75 ohm | 75 ohm | 50 ohm |
| Output signal: | 2.048 MHz G.703 | 2.048 MHz G.703 | 2.048 MHz or 2,048 Mbit/s G.703 | 10 MHz 1Vpp square wave |
| Output connector type | 9p D-sub female | 1.0 / 2.3 female | 1.0 / 2.3 female | 1.0 / 2.3 female |

GPS receiver outdoor unit (GPS-HD)

| | |
|------------------------|------------------------------|
| GPS receiver: | 12 channel C/A code receiver |
| Receiver frequency: | L1 carrier, 1575.42 MHz |
| 1 PPS output accuracy: | 30 ns rms, <5ns resolution |
| Environment: | -25...+70°C; IP 67 |
| Dimensions, weight: | Ø75 x 300 mm; 1 kg |

GPS receiver indoor card (GPS-4)

| | |
|-------------------------------|--|
| Interface to the GPS-HD head: | RS-485 (Satellite data reception, clock reception 1 PPS reception, GPS Head config.) |
| PC connection | RS 232; 115.2 kbps, 8/1/N |
| Output: | 2.048 MHz, G.703, 75 ohm |
| Environment: | $\pm 1 \times 10^{-11}$ One day average in GPS locked state |
| 2.048 MHz output connector: | 1.6/5.6 female coax |

TECHNICAL DATA

■ General

| | |
|---------|--|
| Power: | Duplicated, -36...-72 Vdc 50 W max. |
| Size: | W 448 mm; H 133 mm; D 271 mm (3U, 19") |
| Weight: | 8 kg |

