

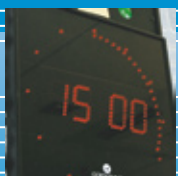
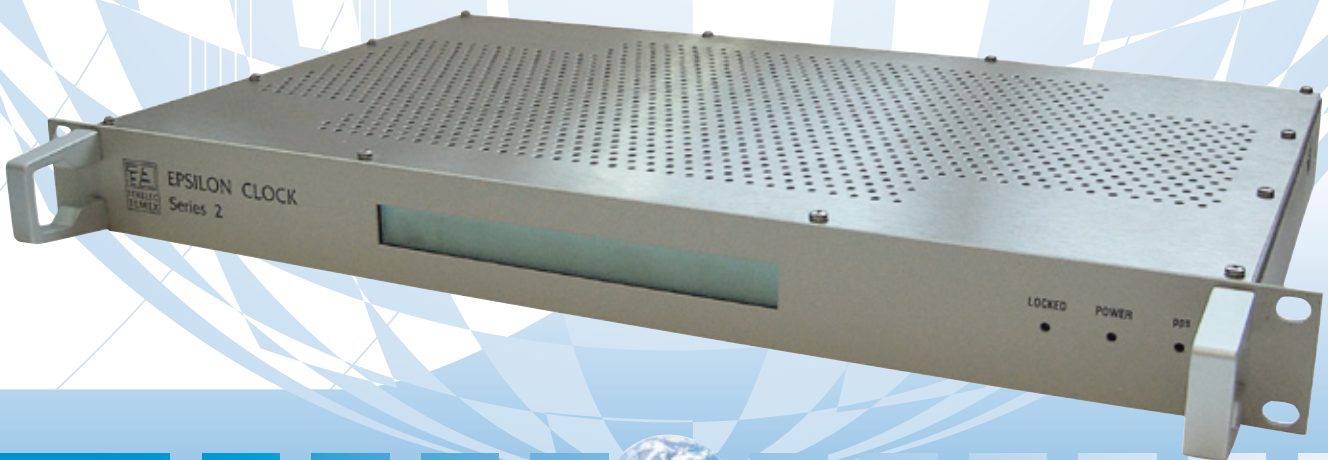


GPS EQUIPMENT

EPSILON CLOCK 2ST



- The EPSILON. CLOCK 2ST is a very high performance GPS clock with high performance OCXO oscillator
- The extremely accurate and stable Time & Frequency signals are held in a compact stand alone chassis (1U high – 19" wide)
- The EPSILON. CLOCK 2ST is synchronized by UTC-GPS reference, broadcast by the GPS satellite constellation all over the world
- Time Integrity Monitoring (T-RAIM) is achieved to discard faulty GPS satellites and then ensures Time integrity
- The EPSILTIME. smart predictive slaving algorithm combined with excellent stability of the internal oscillator mitigates the effects of inherent GPS noise and complies to the most stringent holdover mode requirements when GPS reference is lost
- The frequency reference is cycle locked to the 1 pps, meaning that there are always 10 000 000 cycles between 1pps occurrences. This is essential to avoid phase jumps and wander between time and frequency references, like in SFN broadcasting applications



Specifications

Key Features

- Acquisition of Time Reference**
 - The EPSILON CLOCK 2ST includes a GPS C/A code receiver tracking up to 8 channels on L1 (1575 MHz) as time reference.
- Frequency & Time Keeping**
 - An internal oscillator (High performance OCXO) slaved to the GPS source brings a high level of performance to the EPSILON CLOCK 2ST.
 - In case of input reference disruption, Time & Frequency accuracies are maintained under microprocessor control thus allowing an efficient Holdover Mode.
- Frequency & Time Distribution**
 - The EPSILON CLOCK 2ST delivers frequency reference and 1 pps outputs .
 - Time of Day (TOD) is accessible by a serial interface.
 - Frequency reference output is factory selectable: 1 MHz, 5 MHz, 10 MHz.
 - IRIG-B and STANAG 4430 (Havequick) are available as options.
- Control**
 - Time of Day and Status are displayed on the front panel.
 - The selection of all the settings including the squelch of the frequency outputs, antenna cable delay, choice of time scale (UTC or GPS) are user programmable.
 - Extended status are available via the serial line interface.
 - Optional EPSILWIN32. software achieves complete remote control and supervision.

Frequency Outputs

- 10MHz**
 - Accuracy** (average over 24 hours when GPS locked)
 - < $\pm 2 \times 10^{-11}$
 - Medium Term Stability** (without GPS, at constant T°C, after 2 weeks operation)
 - 2 x 10⁻¹¹
 - Short Term Stability** (Allan Variance)
 - At 1s: 1 x 10⁻¹¹
 - At 10s & 100: 3 x 10⁻¹¹
 - Temperature Stability** (from peak to peak)
 - 1 x 10⁻¹¹ (from 0 to 60°C)
 - Phase Noise**
 - 10 Hz: -120 dBc /Hz
 - 100 Hz: -130 dBc /Hz
 - 1 kHz: -140 dBc /Hz
 - 10 kHz: -145 dBc /Hz
 - 100 kHz: -145 dBc /Hz
 - Signal waveform /Typical level**
 - 4 x 10MHz, Sine-wave > 10 dBm / 50 Ohms (BNC)
 - Harmonic Distortion /Duty Cycle**
 - 20 dBc
- 2048 kbit/s**
 - Connector**
 - BNC Female for 75 Ohms output impedance
 - BR2 Female for 120 Ohms output impedance
 - Type**
 - Synchronization frames at 2048 kbit/s in conformance with ITU-T Recommendation G.703 § 9 and G.704

Time Output (1 pps)

- Accuracy to UTC, GPS locked**
 - ± 100 ns
- Holdover mode** (at constant temperature, after 24 hours of GPS lock)
 - After 4 hours: 0.8 μ s
 - After 1 day: 12 μ s
- Signal waveform and level**
 - 1 pps TTL / 50 Ohms (BNC)

Outputs

- Remote Control Outputs**
 - Remote control and Time of Day on serial lines interface (RS232C)
- Alarm**
 - Relay contact
- Display**
 - 1 line of 20 characters display (Date and Time)

Inputs

- GPS Input for antenna amp.**
 - 1 GPS C/A code (TNC) / 5

Environment & Mechanical Data

- Operating Temperature**
 - 5°C to +60°C
- Storage Temperature**
 - 40°C to +85°C / 95% RH at 40°C, non condensing
- CE Compliance**
 - EN 50082 / EN 55022 / EN 60950
- Housing**
 - 19" instrument cabinet, 1U unit
- Dimensions**
 - 483 x 340 x 44 mm
- Weight**
 - < 5 kilos
- Power Supply**
 - DC Supply on both modules: 18-32 V
 - AC Supply on both modules: 90 to 265 V / 48 to 63 Hz
 - Power Consumption : < 25 W

