# *Precision TimeBase*

## *GPS-Synchronized, Modular Time and Frequency Standard*

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The second-generation Meridian II combines our state-of-the-art time and frequency technology m ı h ¥ Ma powerful nep Γ ʒ M timing packep engine to synchronize virtually any stand-alone or nep Ρ ʒ ϖ ε ε ς ϖ Ɛ Ψ M | Ɛ ԁ Ð in the

The modular architecp re allows you to configure Meridian II to meep your requiremenp of today, and add option module field to meet future needs. Meridian IIôs high-reliability design and trouble-free operation, combined with our efficient sales and free support, provides the lowest total cost of ownership in the industry. Meridian II supports mission-critical operations in a wide range of government and commercial applications including telecommunications, satellite communications, radar, digital video broadcast, simulcast radio, test range, test and measurement, calibration labs, power utilities and many more.

At the core of Meridian II is an EndRun GPS Receiver optimized to provide an industry-best Coordinated Universal Time (UTC) accuracy (<10 nanoseconds RMS) and stability (<6 parts in $10^{-14}$ averaged 10k seconds). For ultimate performance, the innovative Real-Time Ionospheric Corrections (RTIC) option measures and removes the ionospheric delay that meets or exceeds the performance of L1/L2 solutions.

- Modular, 1U or 2U plug-and-play design supports up to 36 outputs.
- Timing accuracy: <10 nanoseconds RMS to UTC(USNO).
- Real-Time Ionospheric Corrections for L1/L2 level performance (optional).
- Frequency accuracy: <6 x $10^{-14}$.
- No frequency steps - guaranteed.
- Ultra-low phase noise 5 & 10 MHz output options.
- Short-term stability <4 x $10^{-13}$ at 1 second (optional).
- Dual-gigabit Ethernet ports.
- NTP Stratum 1 Server.
- IEEE-1588 PTP Grandmaster (optional).
- SyncE with SSM (optional).
- IRIG-B time code and 1 PPS outputs.
- Telecom T1/E1 output option.
- Cesium Control Module disciplines a 5071A cesium to UTC (optional).
- GPS almanac/ephemeris data, YUMA/RINEX formats.
- Free technical support and software upgrades.
- 60-day money-back guarantee.

- Time standard traceable to UTC(USNO).
- Frequency standard with atomic clock stability.
- Ultra low phase noise frequency reference for communication systems.
- Master Clock with time code generator.

elsewhere. The proprietary design uses a 3rd-overtone, SC-cut crystal built with the highest-quality components and subjected to rigorous testing to guarantee industry-leading performance. The Ultra-Low Phase Noise option enables spectrally-pure 5 and 10 MHz outputs with phase noise less than -118 dBc and -113 dBc, respectively, at a 1 Hz carrier offset.

Meridian II uses EndRunös power-efficient, fanless design and thermal packaging with an estimated MTBF of over 25 years (16 years with Rubidium). The system is made in America, backed by a two-year warranty, a 60-day money-back guarantee, and supported by EndRunös top notch technical support team free of charge!

The Meridian II web interface is designed with security in mind, so its use is restricted to monitoring status, alarms, configuration settings, and installing firmware upgrades. Configuration and control is conducted via the network or serial command line interface. Firmware upgrades are enabled only after an authentication process. In addition, the web interface can be completely disabled for those who need the highest level of security.

The web page tabbed panels offer quick access to information about the GPS Receiver, Clock, I/O, Faults, NTP, PTP and the Firmware. Firmware upgrades are easy with the point & click upgrade process. Also, a link to the resident User Manual is available on the Home page.

Real-time charting of GPS, Oscillator, NTP and CPU statistics are available via the Web Interface. Measurements are continuously computed and displayed in real-time with daily and weekly charts. The charts are automatically archived into month and year directories that remain resident for up to ten years.

The GPS chart provides a valuable, quick reference to assess the current and historical status of the GPS link to insure the Meridian II is and was performing to specification. The number of satellites in view, carrier-to-noise ratio, and the automatic-gain-control (AGC) are key metrics that reflect the quality and operation of the GPS receiver. The Oscillator chart shows the internal chassis temperature, oscillator electronic frequency control value and the offset of the receiver subsystem to the GPS reference. It is useful for verifying

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