



## THUNDERBOLT E GPS DISCIPLINED CLOCK

### KEY FEATURES

- Ovenized quartz oscillator provides stable 10 MHz and 1 PPS output to maximizes bandwidth
- Combined GPS receiver and ovenized oscillator on one board
- High volume manufacturing provides reliable low-cost products
- RoHS-Compliant (Pb-free)



### PRECISE GPS CLOCK FOR WIRELESS INFRASTRUCTURE

The Trimble® Thunderbolt® E GPS Disciplined Clock is Trimble's latest offering for GPS synchronization devices targeting the wireless infrastructure. This fifth-generation GPS clock combines a 12-channel GPS receiver, control circuitry, and a high-quality ovenized oscillator on a single board, providing increased integrity and reliability at a lower size and cost.

The Thunderbolt E's level of integration makes it a perfect solution for precise timing applications in the wireless industry. Among its uses are synchronizing the E911 positioning infrastructure and maximizing bandwidth for wireless local loop.

The architecture is comparable to systems currently used to maintain the tough CDMA holdover specification. This makes the Thunderbolt E GPS clock a natural for a CDMA clock, the digital standard for cellular phones.

The Thunderbolt E GPS clock outputs a 10 MHz reference signal and a 1 PPS signal with an over-determined solution synchronized to GPS or UTC time. The 10 MHz reference accommodates applications requiring sub-microsecond timing.

The Trimble T-RAIM (Time-Receiver Autonomous Integrity Monitor) algorithm is used to monitor satellites to ensure signal integrity.

Matching the Thunderbolt E GPS Clock with the Trimble Bullet™ antenna creates a system that provides reliable performance in hostile R/F environments. The system can be easily calibrated for different cable lengths.

The high level of integration and volume production techniques make the Thunderbolt E GPS Disciplined Clock an extremely cost-competitive timing solution for volume synchronization applications.

