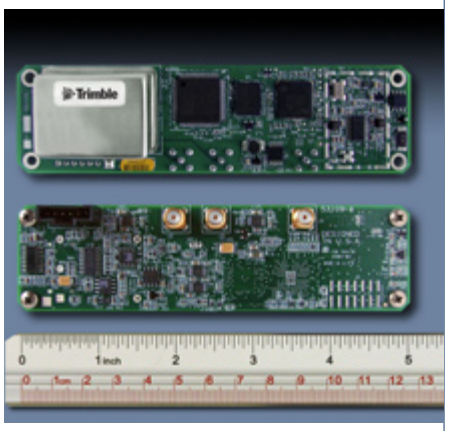
The right one.™

MINI-T GPS DISCIPLINED CLOCK BOARD

KEY FEATURES

- Ultra-Compact one-board design
- 10 MHz and PPS output
- High-precision oscillator disciplined by GPS
- Proven GPS clock technology
- Custom frequencies and form factors available
- RoHS-compliant (Pb-free)



DESIGNED TO EMBED PRECISE TIME AND FREQUENCY IN YOUR APPLICATION

The Trimble Mini-T™ takes GPS disciplined clocks to a new level of integration that provides a simple, cost effective and high performance solution in Trimble's smallest form factor to date.

The Mini-T gives OEMs the opportunity to embed a low-cost precise time and frequency reference, in our smallest form-factor yet. Trimble created the Mini-T using clock technology proven in generations of deployed units used in CDMA, WLL, WiMAX, and broadcasting applications. It utilizes the latest in GPS technology, combined with a precision ovenized oscillator for near-atomic clock precision timing.

Ease of integration and use

The Mini-T eliminates the need for expensive rack-mount timing boards, because you can embed the Mini-T on your board to save space and power. Trimble integrates the GPS and timing circuitry all on a single board—no extra GPS daughter board means that Trimble offers a lower part count, resulting in higher reliability and lower cost.

On power-up, the Mini-T performs a self-survey automatically, and only one satellite is required for on-going operation. Timing Superpackets™ offer the user all of the timing information required by the host application, in an easy-to-use format.

The Trimble proprietary Time-Receiver Autonomous Integrity Monitoring (T-RAIM) carefully validates the satellite signals, ignoring inaccurate information that could interfere with the precision outputs.

Proven reliability

Trimble has deployed tens of thousands of GPS clocks into the field over the last decade, which continue to perform year after year. The Mini-T offers proven reliability and performance will exceed your expectations, and enable you to provide your customers with the highest quality GPS solution available today.

The Mini-T GPS Clock Board is offered with a standard 10 MHz output, but it is also available in custom frequencies. A starter kit is also available for customer evaluations.

Trimble®

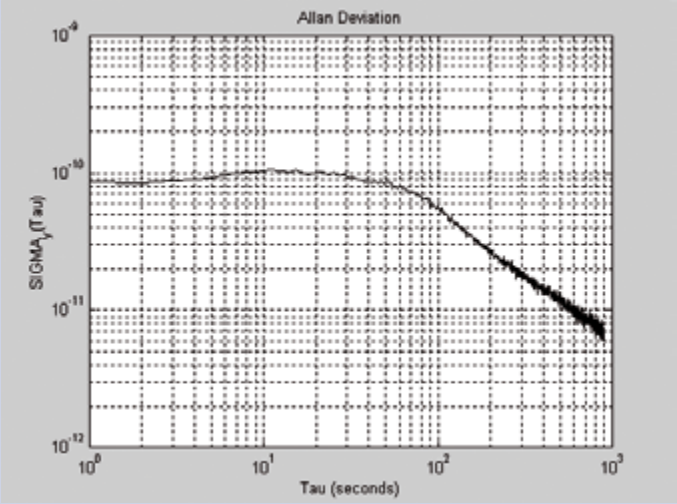
MINI-T GPS DISCIPLINED CLOCK BOARD

PERFORMANCE SPECIFICATIONS

General . . . . . L1 frequency, C/A code (SPS) 12-channel, continuous tracking receiver
Update Rate . . . . . 1 Hz
1 PPS Accuracy . . . . . 15 nanoseconds (one sigma)
Output Frequency . . . . . 10 MHz
Phase Noise. . . . . 10 Hz –120 dBc
100 Hz –135 dBc
1 KHz –145 dBc
10 KHz –145 dBc
100 KHz –145 dBc

10 MHz Output
Waveform. . . . . Sinewave
Source Impedance . . . . . 50 Ohms
Amplitude. . . . . 5 dBm ±2.5 dB into 50 Ohms
Harmonics . . . . . <–30 dBc
Spurious . . . . . <–70 dBc
Accuracy . . . . . 1.16 x 10^{-12} (one day average)

Allan Variance Plot for Stability



ENVIRONMENTAL SPECIFICATIONS

Operating Temp. . . . . 0 °C to +60 °C
Storage Temp . . . . . –40 °C to +85 °C
Operating Humidity. . . . . 5% to 95%, non-condensing

INTERFACE SPECIFICATIONS

1 PPS Interface Specifications

- Connector SMA-f TTL levels into 50 ohms 10 microsecond-wide pulse with the leading edge synchronized to GPS within 15 nanoseconds (one sigma) in static, time-only mode.
- Rising time: <20 nanoseconds Pulse shape affected by distributed capacitance of interface cable/circuit.

10 MHz . . . . . SMA-f
Antenna Interface . . . . . SMA-f
Power and I/O. . . . . 6-pin Molex
Pin 1 . . . . . NC
Pin 2 . . . . . GPS TXD 3.3V CMOS Level
Pin 3 . . . . . GPS RXD 3.3V CMOS Level (5V tolerant) Pulled to 3.3V through a 10 k Ohm resistor
Pin 4 . . . . . Ground
Pin 5 . . . . . +3V Antenna Supports 2.7V DC to 5.5V DC @ up to 100ma
Pin 6 . . . . . +5V ±0.25V @ <750 ma (cold) and <350 ma (warm)
Serial Protocol . . . . . Trimble Standard interface Protocol (TSIP) binary protocol @ 9600, 8-None-1

PHYSICAL CHARACTERISTICS

Mounting . . . . . Four 0.130" diameter mounting holes

ORDERING INFORMATION & ACCESSORIES

Please go to www.trimble.com/timing for the latest documentation & tools, mechanical drawings, part numbers and ordering information.

Trimble has relied on representations made by its suppliers in certifying this product as RoHS compliant.

Trimble Navigation Limited is not responsible for the operation or failure of operation of GPS satellites or the availability of GPS satellite signals.

Specifications subject to change without notice.

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