Data Sheet



Mini-T™ GG Multi-GNSS Disciplined Clock

KEY FEATURES

- Multi-Constellation
- Simultaneous GPS and GLONASS tracking
- Extended temperature range (-40°C / +85°C)
- Holdover stability of ±5us over 24 hour period @ 25°C
- Small foot print and low profile, suited for digital broadcast and small cells
- PPS and 10MHz output
- T-RAIM (Disciplined Clock Autonomous Integrity Monitoring) provides high PPS integrity

Multi-GNSS Disciplined Clock

The Trimble® Mini-T™ GG is a multi-GNSS (GPS, GLONASS) Disciplined Clock, optimized to generate precise timing signal. Designed specifically for compact, high-volume applications. When operating in Over Determined Timing Mode the accuracy of pulse per second (PPS) is within 15 nanoseconds of GNSS/UTC.

Synchronization for next generation

The Mini-T™ GG 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™ GG using clock technology proven in generations of deployed units used in 4G networks (LTE, WiMAX, HSPA+) and digital broadcasting applications. It utilizes the latest in GNSS technology, combined with a precision ovenized oscillator for near atomic clock precision timing

Standard timing feature

The Mini-T™ GG includes many of Trimble's standard timing features, including the Disciplined Clock Autonomous Integrity Monitoring (T-RAIM) algorithm, and automatic self-survey. The Mini-T™ GG is factory default with the TSIP protocol that follows specific timing products and applications



Proven Reliability

The Mini-T™ GG offers proven reliability and performance, will exceed your expectations, and enable you to provide your customers with the highest quality GNSS solution available today

The Mini-T™ GG GNSS Clock Board is offered with a standard 10 MHz output, but it is also available in custom frequencies.



MINI-T™ GG MULTI-GNSS DISCIPLINED

GENERAL SPECIFIATIONS

Receiving Signal	GPS L1 & GLONASS G1
Positioning System	
Acquisition Channels	_
Tracking Channels	
1 PPS Timing Accuracy	15 ηs (1 sigma)
Holdover Stability<±5us	over 24Hr period @ 25°C
Horizontal Position Accuracy	<6m (50%), <9m (90%)
Vertical Position Accuracy	<11m (50%), <18m (90%)
Update Rate	1 Hz
Data Format	TSIP or NMEA
Typical Min Acq Sensitivity	150dBm cold start
Typical Min Tracking Sensitivity	160dBm
Time to First Fix<46s (50)	%), <50s (90%) cold start
Typical Time to Re-acquisition	<2s (90%)

INTERFACE CHARACTERISTICS

Serial Port	1 serial port
PPS / Even Second	CMOS-compatible
TTL-level pulse, once per second	
Protocols	TSIP, NMEA 0183
GNSS Input Connector	SMA
PPS Out	SMA
Frequency Out	SMA
I/O Connector	2x15 Pin

OSCILLATOR SPECIFICATIONS

Frequency Output	10MHz
Phase Noise	90dBc/Hz @ 1Hz
	-120dBc/Hz @ 10Hz
	-135dBc/Hz @ 100Hz
	-145dBc/Hz @ >1KHz

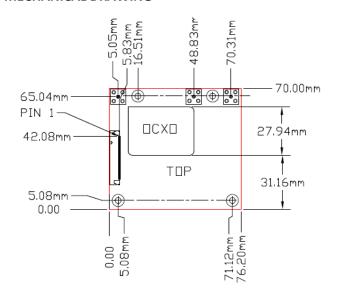
ELECTRICAL CHARACTERISTICS

Supply Voltage Range..... 5.0V DC ±5%

ENVIRONMENTAL SPECIFICATIONS

Operating Temperatu	re	40°C to +85°C
Vibration	0 008 g ² /Hz	5 Hz to 20 Hz
	0 05 g ² /Hz	20 Hz to 100 Hz
	-3 dB/octave	100 Hz to 900 Hz
Operating Humidity	5%-95% RH non-	condensing (+60°C)

MECHANICAL DRAWING



GENERAL INFORMATION & ACCESSORIES

 $\textit{Visit}\ \underline{\textit{www.trimble.com/timing}}\ \textit{for part numbers and information about where to buy.}$

 ${\it Parts~of~the~product~are~patent~protected}.$

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

Specifications subject to change without notice.

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

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