



RESOLUTION SMT GG EMBEDDED MULTI-GNSS TIMING MODULE

KEY FEATURES

- **Multi-Constellation**
- **Compact surface-mount package (2.54 mm T x 19 mm W x 19 mm L) in tape and reel packaging for low-cost, high-volume manufacturing**
- **Accurate 1 PPS or even second output, synchronized to GNSS/UTC within 15 nanoseconds (1σ)**
- **T-RAIM-Timing Receiver Autonomous Integrity Monitoring provides high PPS integrity**
- **Automatic self-survey**
- **TSIP and NMEA protocols**

Trimble Resolution SMT GG module is a multi-GNSS (GPS, GLONASS, QZSS, SBAS) receiver, optimized to generate precise timing signal. Designed specifically for integration on a circuit board using surface mount technology. When operating in Over Determined Timing Mode the accuracy of pulse per second (PPS) is within 15 nanoseconds of GNSS/UTC.

Lowers total cost of operation

The Resolution SMT GG lowers your total cost of operation by reducing the form factor to enable this timing functionality in the most compact user applications. Measuring only 19 mm x 19 mm, its small size and surface-mount package makes it the ideal choice for high-volume manufacturing applications

Standard Timing features

The Resolution SMT GG includes many of Trimble's standard timing features, including the Timing Receiver Autonomous Integrity Monitoring (T-RAIM) algorithm, and automatic self-survey.



Starter Kit and Carrier Board Options

The Resolution SMT GG board may be loaded directly onto the customer application board, or can be purchased on a carrier board for integrators who prefer the traditional form factor of the original Resolution T™.

The Starter Kit provides everything you need to evaluate the Resolution SMT GG board, including the Resolution SMT GG on a carrier board, AC/DC power converter, antenna and USB interface cable.

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PHYSICAL CHARACTERISTICS

Enclosure. Metal shield
Dimensions 2.54 mm T x 19 mm W x 19 mm L
(0.75" W x 0.75" L x 0.1" H)
Weight 1.8 grams (0.06 ounce) including shield

ELECTRICAL CHARACTERISTICS

Supply Voltage Range 3.0 V DC to 3.6 V DC
Power Consumption 100 mA @ 3.3 V
Ripple Noise Max 50 mV, peak-to-peak from 1 Hz to 1 MHz

INTERFACE CHARACTERISTICS

Connections 28 surface-mount edge castellations
Serial Port 1 serial port
PPS / Even Second CMOS-compatible, TTL-level pulse,
once per second/even second
Protocols TSIP, NMEA 0183
Bi-directional NMEA messages
Messages selectable by NMEA commands
Selection stored in flash memory

PERFORMANCE SPECIFICATIONS

Accuracy Horizontal Position <6 meters (50%)
<9 meters (90%)
Accuracy Altitude Position <11 meters (50%)
<18 meters (90%)
Time to First Fix (no stored position) <46 sec. (50%)
<50 sec. (90%)
Time to First PPS (stationary with stored position,
e.g., recovery after power outage) <14 sec. (50%)
<18 sec. (90%)
Re-acquisition after 60-second signal loss. <2 sec. (90%)
Sensitivity
Tracking -160 dBm
Acquisition -155 dBm
Dynamics
Velocity 600m/s
Acceleration 4 g (39.2 m/sec²)
Jerk 20 m/sec³

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature. -40 °C to +85 °C
Storage Temperature. -50 °C to +105 °C
Vibration 0.008 g²/Hz 5 Hz to 20 Hz
0.05 g²/Hz 20 Hz to 100 Hz
-3 dB/octave 100 Hz to 900 Hz
Operating Humidity. 5% to 95% R.H. non-condensing, at +60 °C

GENERAL INFORMATION & ACCESSORIES

Module available as 20 piece module package for evaluation
Production quantities on tape on reel (500 pieces)
Reference Board. GNSS module mounted on a carrier
board with I/O and RF connectors, including
RF circuitry with the antenna open detection, as
well as antenna short detection and protection.
Starter Kit Includes Reference Board mounted on
interface motherboard in a durable metal enclosure,
AC/DC power converter, compact magnetic-mount
GNSS antenna, ultra-compact embedded antenna,
USB interface cable, TSIP and NMEA protocols

Antennas

- Compact Magnetic Mount Mini magnet 5m, 5v SMB
- Bullet III, F 5 V DC with 35 dB ga

See www.trimble.com/timing for part number information and where to buy.

Parts of this product are patent protected.

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

Specifications subject to change without notice.

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