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.
# RESOLUTION SMT GG EMBEDDED MULTI-GNSS TIMING MODULE

## 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%)
- Accuracy Altitude Position: <9 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/sec^2)
  - Jerk: 20 m/sec^3

## ENVIRONMENTAL SPECIFICATIONS
- Operating Temperature: -40 °C to +85 °C
- Storage Temperature: -50 °C to +105 °C
- Vibration: 0.008 g^2/Hz at 5 Hz to 20 Hz, 0.05 g^2/Hz at 20 Hz to 100 Hz, -3 dB/octave at 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

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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.

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