



## RESOLUTION SMT EMBEDDED GPS TIMING BOARD

### KEY FEATURES

- Extended temperature range (-40/+85 °C)
- 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 GPS or UTC within 15 nanoseconds ( $1 \sigma$ )
- T-RAIM-Timing Receiver Autonomous Integrity Monitoring provides high PPS integrity
- Automatic self-survey
- TSIP and NMEA protocols

Trimble delivers the next generation GPS timing solution in the Resolution SMT™ GPS board. Designed specifically for compact, high-volume applications, the Resolution SMT shrinks its form factor to a surface mount package, about the same size as a postage stamp. With the same pulse per second (PPS) accuracy and timing features, the Resolution SMT is the most cost-effective timing board ever produced by Trimble.

#### Lowers total cost of operation

The Resolution SMT lowers your total cost of operation by reducing the form factor to enable this timing functionality in the most compact user applications. The surface mount package enables high-volume and low-cost manufacturing, eliminating the need for costly connectors and substantial board space.

#### Standard Timing features

The Resolution SMT includes many of Trimble's standard timing features, including the Timing Receiver Autonomous Integrity Monitoring (T-RAIM) algorithm, automatic self-survey, and GPS disciplining of the oscillator to provide an accurate frequency reference.



#### Starter Kit and Carrier Board Options

The Resolution SMT 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 board, including the Resolution SMT on a carrier board, AC/DC power converter, antenna and USB interface cable.

# RESOLUTION SMT EMBEDDED GPS BOARD

## PERFORMANCE SPECIFICATIONS

Sensitivity  
Tracking .....-160 dBm  
Acquisition .....-155 dBm

## INTERFACE CHARACTERISTICS

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

## 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

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature .....-40 °C to +85 °C  
Vibration 0.008 g<sup>2</sup>/Hz ..... 5 Hz to 20 Hz  
0.05 g<sup>2</sup>/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

## 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

## PINOUT ASSIGNMENTS

1	GND	GND	28
2	GND	VCC	27
3	RFIN	GND	26
4	GND	External Reset	25
5	OPEN	GND	24
6	SHORT	Reserved	23
7	Reserved	Reserved	22
8	Reserved	Reserved	21
9	Reserved	GND	20
10	Reserved	PPS / Even Second	19
11	Reserved	GND	18
12	Reserved	TXD	17
13	Reserved	RXD	16
14	GND	GND	15

## GENERAL INFORMATION & ACCESSORIES

Module ..... available as 10 single modules for evaluation  
Production quantities on tape on reel (500 pieces)  
Reference Board ..... GPS 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  
GPS antenna, ultra-compact embedded antenna,  
USB interface cable, TSIP and NMEA protocols  
Ultra-Compact Embedded Antenna .....



3.3 V active miniature unpackaged antenna  
Cable length: 8 cm  
Dim: 22 mm W x 21 mm L x 7.5 mm H  
(0.866" x 0.827" x 0.295")  
Connector: HFL

Compact Magnetic-Mount Antenna, MCX or SMA .....



3 V active micropatch antenna with magnetic mount  
Cable length: 5 m  
Dim: 34 mm W x 37.4 mm L x 12.95 mm H  
(1.34" x 1.47" x 0.51")  
Connectors: MCX or SMA

See [www.trimble.com/timing](http://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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