RES SMT 360™ Multi-GNSS Timing Module

Miniature Multi-GNSS Timing Module with Super-Sized Features

Ideal for Low Signal Environment

Protempis designed the RES SMT 360™ Timing Module to work in the most demanding weak signal environments, including femtocells and in-building systems.

With its robust performance in low signal environments, users can save on expensive cabling and externally mounted antennas. In addition, the RES SMT 360™ timing module accepts aiding data for environments requiring the highest levels of enhanced sensitivity.

PPS and Frequency Outputs

The RES SMT 360™ timing module outputs a precise1 pulse-per-second (1PPS) and 10 MHz frequency to maximize your network performance and synchronize systems at a global level. Custom frequencies are also available for volume sale.

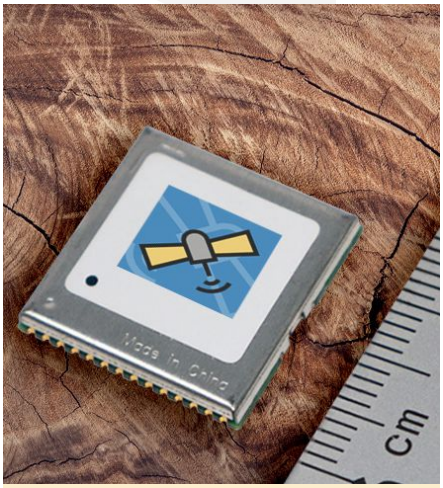
Standard Timing Features

The RES SMT 360™ timing module includes many of Trimble's standard timing features, including Time-Receiver Autonomous Integrity Monitoring (T-RAIM) algorithm, automatic self-survey, and GNSS disciplining of the oscillator to provide an accurate frequency reference.

Carrier Board and Starter Kit Options

The RES SMT 360™ timing module can be loaded directly onto the customer's application board.

The Starter Kit provides everything you need to evaluate the RES SMT 360™ timing module, including the RES SMT 360™ on a carrier board, AC/DC power converter, antenna and USB interface cable.



Key Features

- Multi-Constellation
- Simultaneous GPS / GLONASS or GPS / Beidou tracking
- Ideal for populated urban and indoor environments with limited sky-view
- PPS and PP2S outputs, synchronized to GNSS / UTC within 15ns (1 sigma)
- Extended temperature range (-40°C / +85°C)

Protempis Precision Time. Perfected.

Datasheet

General Specifications

Receiving Signal……GPS, GLONASS, Galileo, Beidou
Supports GNSS incl. ……SBAS, QZSS
Positioning System……SPS, Timing
1 PPS Timing Accuracy ……15 ηs (1 sigma)
Update Rate……1 Hz
Typical Min Acq Sensitivity……-148dBm 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

Connections……28 surface-mount edge castellations
Serial Port……2 serial port
PPS / Even Second……CMOS-compatible
LVTTL-level pulse, once per second
Protocols……TSIP, NMEA 0183

Pinout Assignments

RES SMT 360 PINOUTS

GND	1	28	GND
GND	2	27	VCC
RFIN	3	26	GND
GND	4	25	RESET
OPEN	5	24	GND
SHORT	6	23	RESERVED
RESERVED	7	22	TXDB
RESERVED	8	21	RXDB
RESERVED	9	20	GND
RESERVED	10	19	PPS
RESERVED	11	18	GND
RESERVED	12	17	TXDA
RESERVED	13	16	RXDA
GND	14	15	GND

Enclosure……Metal Shield
Dimensions 19 mm W x 19 mm L x 2.54 mm H (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……3.3VDC to ±5%
Power Consumption……0.5W max.

Environmental Specifications

Operating Temperature……-40°C to +85°C
Operating Humidity……5%-95% RH non-condensing (+60°C)
Storage Temperature……-50°C to +105°C

General Information

Module available in 20 piece trays 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, Bullet 360 antenna, USB interface cable, TSIP and NMEA protocols

Antenna…….. Bullet 360

Please go to www.protempis.com for the latest documentation and tools, part numbers and ordering information.

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