ICM SMT 360™ Multi-GNSS Timing Module

Miniature Multi-GNSS Timing Module with Super-Sized Features

Ideal for Low Signal Environment

Protempis designed the ICM 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 ICM SMT 360™ timing module accepts aiding data for environments requiring the highest levels of enhanced sensitivity.

PPS and Frequency Outputs

The ICM 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.

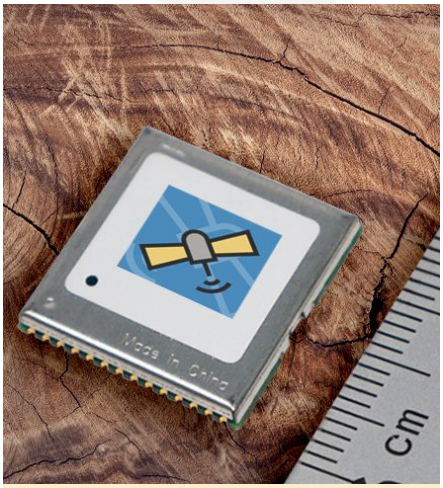
Standard Timing Features

The ICM 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 ICM SMT 360™ timing module canbe loaded directly onto the customer's application board.

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

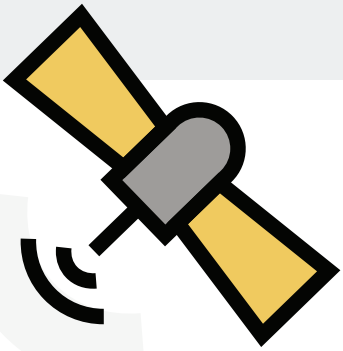


Key Features

- Multi-Constellation
- Simultaneous GPS / GLONASS or GPS / Beidou tracking
- Ideal for populated urban and indoor environments with limited sky-view
- Holdover:
  ±7us over 5 minute period
  (min. 1 hour learning)
  100ppb over 24 hours
- PPS, PP2S and 10MHz output
  (custom frequencies available)
- Extended temperature range
  (-40°C / +85°C)

Protempis
Precision Time. Perfected.

Datasheet



General Specifications

Receiving Signal……GPS, GLONASS, Galileo, Beidou
Supports GNSS incl. …… QZSS
Positioning System……SPS, Timing
1 PPS Timing Accuracy ……15 ηs (1 sigma) @ room temp
Holdover Stability……<±7us over 5 min period
(Min. 1hr learning)
(100ppb over 24hrs.)
Update Rate……1 Hz
Typical Min Acq Sensitivity……-148dBm cold start
Typical Min Tracking Sensitivity …… -162dBm
Time to First Fix1……<46s (50%), <50s (90%) cold start
Typical Time to Re-acquisition…… <2s (90%)

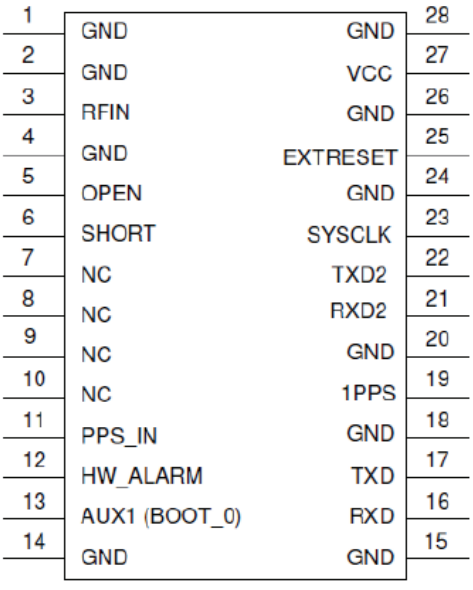
Interface Characteristics

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

1 The performance criteria and times given for TTFF & reacquisition are with GPS satellites in the constellation set.

Pinout Assignments

ICM-SMT 360 PINOUTS



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)

Phase Noise

Maximum, over temperature range:
-100dBc/Hz @ 100Hz
-120dBc/Hz @ 1KHz
-135dBc/Hz @ 10KHz
-140dBc/Hz @ 100KHz

Typical:
-105dBc/Hz @ 100Hz
-125dBc/Hz @ 1KHz
-140dBc/Hz @ 10KHz
-145dBc/Hz @ 100KHz

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

www.protempis.com

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