Data Sheet

ICM SMT 360™
Multi-GNSS Timing Module

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)

Miniature Multi-GNSS Timing Module with Super-Sized Features

Ideal for Low Signal Environment
Trimble® 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 can be 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.

Trimble

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היפר-טק מערכות

ICM SMT 360™ Multi-GNSS DISCIPLINED CLOCK MODULE

GENERAL SPECIFIATIONS

Receiving Signal……..GPS, GLONASS, Galileo[1], Beidou
Supports GNSS incl. …… QZSS
Positioning System……SPS, Timing
1 PPS Timing Accuracy ……15 ηs (1 sigma)
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 Fix[2]……<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] Hardware ready: a firmware update is required to enable the Galileo constellation.
[2] The performance criteria and times given for TTFF & reacquisition are with GPS satellites in the constellation set.

PINOUT ASSIGNMENTS

ICM-SMT 360 PINOUTS

1	GND	GND	28
2	GND	VCC	27
3	RFIN	GND	26
4	GND	EXTRESET	25
5	OPEN	GND	24
6	SHORT	SYSCLK	23
7	NC	TXD2	22
8	NC	RXD2	21
9	NC	GND	20
10	NC	1PPS	19
11	PPS_IN	GND	18
12	HW_ALARM	TXD	17
13	AUX1 (BOOT_0)	RXD	16
14	GND	GND	15

PHYSICAL CHARACTERISTICS

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

Visit www.trimble.com/timing for part numbers and information about where to buy.

Parts of the product are patent protected.

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

Specifications subject to change without notice.

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

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