



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 precise 1 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.

ICM SMT 360™ Multi-GNSS DISCIPLINED CLOCK MODULE

GENERAL SPECIFICATIONS

Receiving Signal.....GPS, GLONASS, Galileo¹, Beidou
Supports GNSS incl.SBAS, QZSS
Positioning System.....SPS, Timing
1 PPS Timing Accuracy15 ns (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 Fix².....<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
LVTTTL-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	28
2	GND	27
3	RFIN	VCC
4	GND	26
5	OPEN	GND
6	SHORT	EXTRESET
7	NC	GND
8	NC	SYSCLK
9	NC	TXD2
10	NC	RXD2
11	NC	GND
12	PPS_IN	1PPS
13	HW_ALARM	GND
14	AUX1 (BOOT_0)	TXD
	GND	RXD
		15

PHYSICAL CHARACTERISTICS

Enclosure.....Metal Shield
Dimensions19 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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