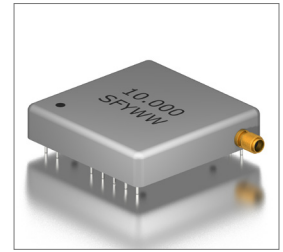


Features
<ul style="list-style-type: none"> <li>• 1PPS &amp; 10MHz Output</li> <li>• Compatible With GPS / GLONASS, BEIDOU And GALILEO</li> <li>• Holdover Stability upto 1.5µS</li> <li>• NMEA0183 Data Available</li> </ul>

Applications
<ul style="list-style-type: none"> <li>• 4G/5G/LTE</li> <li>• Clock Source</li> <li>• Base Stations</li> <li>• Test Equipment</li> <li>• Military Communication Equipment</li> </ul>



Part Numbering Guide

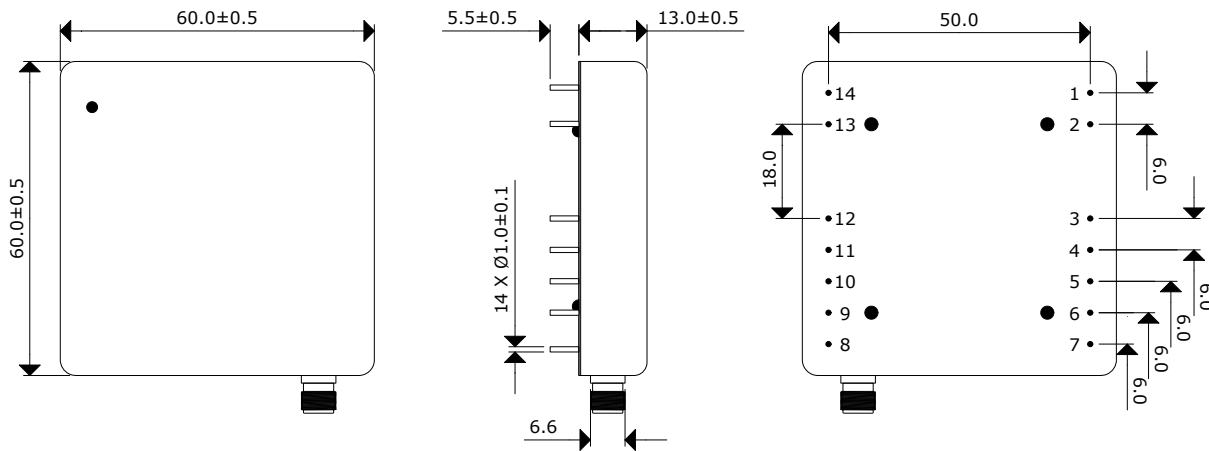
**SGO10S - 10.000M**



Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency	MHz		10.00		Synchronizing with GNSS 1PPS output.
Frequency Accuracy	ppt	-1		+1	24hrs average value when locked to 1PPS.
Freq. Stability vs. Op Temp.	ppb	-0.2		+0.2	
Short-term Stability	ppb	-0.02		+0.02	
Freq. Stability vs. Aging/Day	ppb	-0.2		+0.2	
Freq. Stability vs. Aging/Year	ppb	-10		+10	
Pulse Width (1 PPS Output)	ms		100		
Accuracy (1 PPS Output)	ns	-20		+20	
Holdover 24Hrs Drift (1 PPS Output)	µs	-1.5		+1.5	24h holdover after turn on 7days & GPS Lock 3Days
Operating Temperature	°C	-40		+85	
Storage Temperature	°C	-55		+105	
Supply Voltage (VDD)	V	4.75	5.0	5.25	
Power Consumption At Turn On	mA			2000	
Power Consumption At 25°C	mA			1000	
Output Logic (CMOS)	pF		15		
Output Logic Level - High (VOH)	V	2.7			
Output Logic Level - Low (VOL)	V			0.4	
Symmetry (Duty Cycle)	%	45	50	55	
Phase Noise 10Hz Offset	dBc/Hz		-118	-113	
Phase Noise 100Hz Offset	dBc/Hz		-138	-133	
Phase Noise 1kHz Offset	dBc/Hz		-148	-143	
Phase Noise 10kHz Offset	dBc/Hz		-150	-145	
Phase Noise 100kHz Offset	dBc/Hz		-150	-145	
Phase Noise 1MHz Offset	dBc/Hz		-150	-150	
No. Of Channels (Internal Receiver)				50	
Tracking Code (Internal Receiver)	dBm				C/A Code
Tracking Capability (Internal Receiver)	dBm			12	12 Satellites
Sensitivity (Internal Receiver)	dBm		-159		Tracking & Navigation
Sensitivity (Internal Receiver)	dBm		-144		Acquisition
Freq Band (Internal Receiver)	dBm	BD2 B1 (1561.098MKz) & L1 (1575.42MHz)			

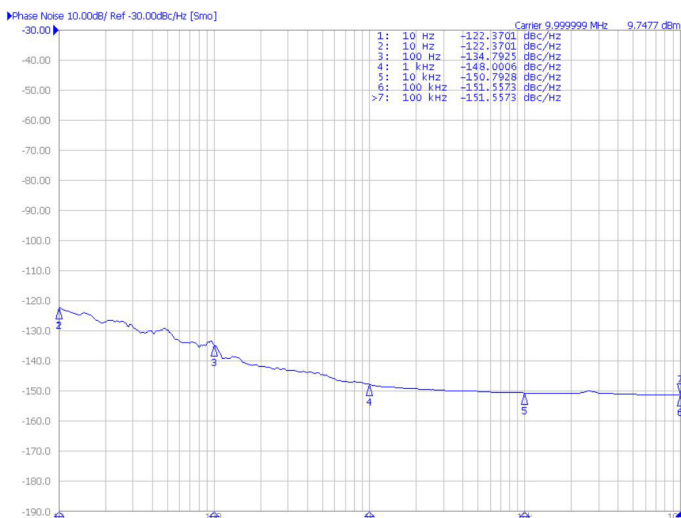
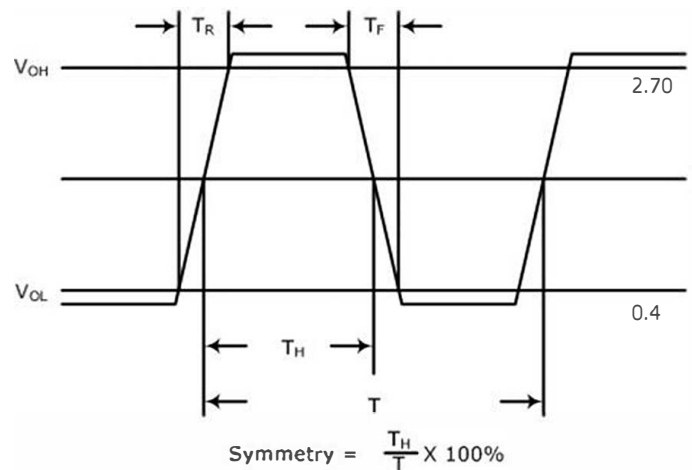
**Outline Drawing**

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

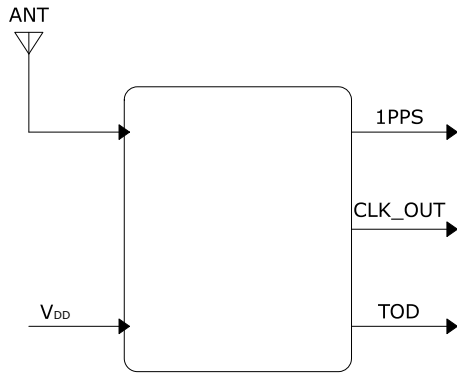

 General Tolerance (Unless stated) =  $\pm 0.2$ MM

**Pin Orientation**

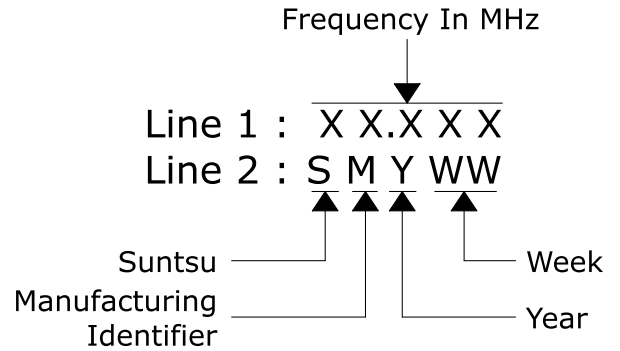
PIN GROUP	PIN#	PIN NAME	TYPE	DESCRIPTION
SUPPLY VOLTAGE	4, 9, 11, 13	GND	GND	GROUND
	12	V <sub>DD</sub>	PWR	POWER SUPPLY
CONTROL & STATUS PINS	8	SYNC_CTRL	I	SYNCHRONIZING PROCEDURE CONTROL
	5	LOCK	O	LOCK STATUS
UART	6	RXD0	I	ASYNCHRONOUS SERIES DATA OUTPUT/INPUT 9600-N-8-41
	7	TXD0	O	
GNSS	10	1PPS_OUT	O	1PPS OUTPUT FROM THE INTERNAL GNSS RECEIVER.
	SMA-KE	ANT	I	GNSS ANT SIGNAL INPUT
OUTPUT CLOCKS	3	1PPS_OUT	O	1PPS OUTPUT
	2	CLK_OUT	O	10.000MHz OUTPUT
RESERVE	1, 14	NC		NOT CONNECTED

**Typical Phase Noise Performance (Measured By Agilent E5052B)**

**Waveform (CMOS)**


**Test Circuit**



**Part Marking**



**Notes**

**UART: -**

UART interfaces are used for management and TOD, which has a fixed baud rate (9600) using 1 stop bit and no parity. It is a LVTTTL compatible port and needs an external translator to work with other signal types (such as RS 232C or RS 485).

**Control and Status Pins: -**

CM66K is a clock module which synchronizes the local clock to reference such as 1 PPS retrieving from GNSS. CM66K will work normally performing synchronizing algorithm when the SYNC\_CTRL pin is driven high. It also could be force to work in free run or holdover status when the SYNC\_CTRL pin is driven low.

The LOCK pin indicates the lock status of CM66K . High level indicates the module is locked to GNSS reference. When the module never is locked to reference after power up, the status of module is free run, the LOCK pin outputs low. When the GNSS signal is lost, the status of module is holdover, the LOCK pin also output low.

**Environmental & Mechanical Specifications**

Storage Humidity	30% - 50%	Storage Relative Humidity	20% - 70%
Moisture Sensitivity Level	Not Humidity Sensitive	Storage Temperature	-10°C - 35°C
Mechanical Shock	50g ; 11ms ; Half sine wave (directions X, Y & Z) IEC68-2-27 Test Ea / Severity 50A		
ESD Level	Human Body Model, Class 2 : 2,000V to 4,000V ; ANSI / ESDA / JEDEC JS-001-2010 Machine Model, Class B : 200V to 400V ; JESD22-A115C		
Vibration	Test Condition: 0.75mm ; Acceleration : 10g ; 10Hz - 500Hz, One cycle per 30 min, test 2hrs. (3 times for each 3 directions X, Y & Z), IEC 68-2-06 Test Fc.		