

## SGTM10/20

### Ultra Low Power Timing Module for MIL / Aero / General Industry

#### PRODUCT OVERVIEW

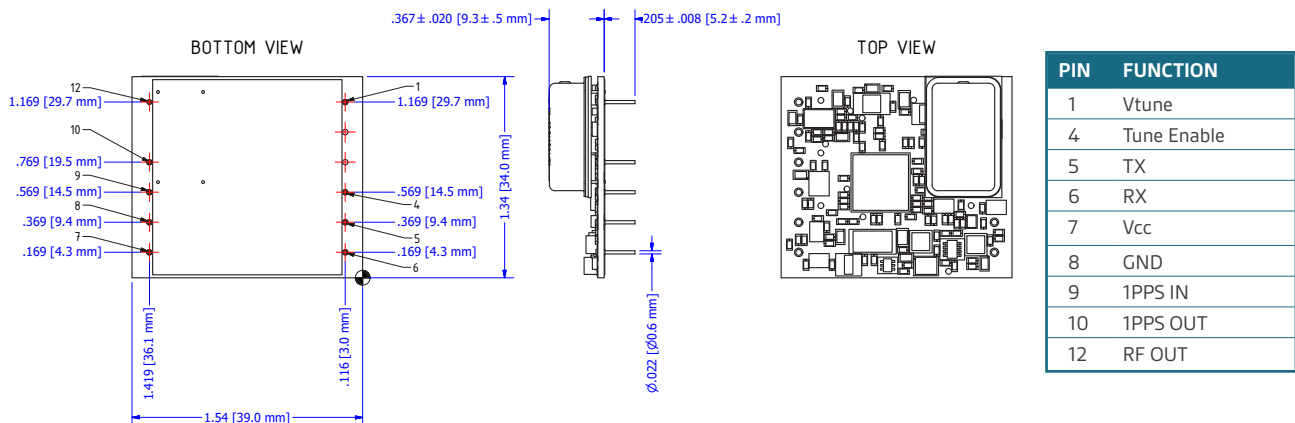
SGTM10/20 is the generic ultra-low power Timing module of Syrlinks using a low power EWOS10/20 OCXO. This SGTM delivers a PPS, a Sine 50ohm and a HCMOS output with a standard frequency of 10 or 20MHz. Its core low aging performance and low power consumption makes it ideal for all applications with drastic precision timing constraints under GNSS denied area. The module consumes less than 100 mW at 25°C and shows a thermal sensitivity less than  $\pm 100$ ppb across the full temperature range (ordering Code B). A specific firmware brings its thermal sensitivity to  $\pm 2$ ppb (on demand).



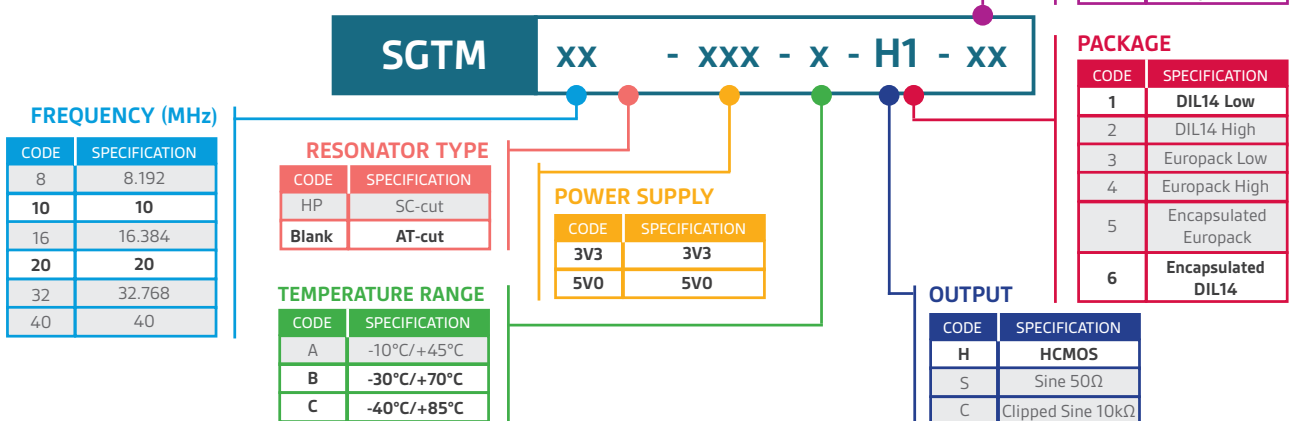
#### KEY FEATURES

- 10 or 20 MHz HCMOS output
- $\pm 100$  ppb thermal sensitivity (typ., CO version, ordering Code B)
- $\pm 2$  ppb thermal sensitivity (typ., CT version)
- 100 mW at 25°C (typ.)
- $\pm 2$  ppb/day after 30 days (typ.)
- Pin-to-pin compatible replacement of Chip Scale Atomic Clock

#### DIMENSIONS & PIN-OUT



#### ORDERING INFORMATION



**ELECTRICAL CHARACTERISTICS**

PARAMETERS	Unit	Min	Typ.	Max	Note	Comments
<b>Output Frequency</b>	MHz		10		1	Other freq. on request (20 MHz, 40 MHz)
<b>Temperature Range</b>						
• Operating	°C	-30		+70		Ordering Code B
	°C	-40		+85		Ordering Code C
• Storage	°C	-55		+95		
<b>Supply Voltage</b>	V	3.15	3.3	3.45		±5% / 5V power supply on request
<b>Supply Current</b>						
• Warm-up	mA			330	3	During 10s max
• Steady state / -40°C	mA		60	65	1	Ordering Code C
• Steady state / +25°C	mA		30	35	1	Ordering Code C
• Steady state / +70°C	mA		15	17	1	Ordering Code C
• Steady state / +85°C	mA		12	15	1	Ordering Code C
<b>Frequency Stability</b>						
• Initial frequency accuracy	ppm		±0.1	±0.2	1	+25°C referred to nominal frequency
• Vs operating temperature range	ppb		±100	±200	1	Ordering Code B
	ppb		±150	±250	1	Ordering Code C
• Vs supply voltage variation	ppm		±0.1	±0.2	2	3.3V ± 5%
• Vs load	ppm		±0.1	±0.2	2	(10kΩ // 15 pF) load ±10%
• Short-term	(τ=0.1s)	10 <sup>-11</sup>	2	10	2	Allan deviation @ 16.384 MHz
	(τ=1s)	10 <sup>-11</sup>	3	10	2	
• Aging						
	Per day	ppb	±2	±5	2	After 30 days
	First year	ppm		±1	2	
	After 10 years	ppm		±5	2	
• Acceleration sensitivity	ppb/G		±1		2	Worst direction
• Warm-Up Time	sec			10	3	to ± 1 ppm of final frequency (1 hour) at 25°C
	sec			60	3	to ± 100 ppb of final frequency (1 hour) at 25°C
• Retrace	ppb			±10	3	24h work after 24 off
<b>HCMOS RF Output Parameters</b>						
• Load	pF		15		3	1 MΩ
• Signal Level - Vh	V	2.4			3	
• Signal Level - Vl	V			0.4	3	
• Rise \ Fall Time	ns			8	3	10% - 80%
• Duty Cycle	%	45		55	3	
<b>1 PPS Output Parameters</b>						
• Load	pF		10		3	1 MΩ
• Rise \ Fall Time	ns			8	3	10% - 80%
• Signal Level - Vh	V	2.4			3	
• Signal Level - Vl	V			0.4	3	
• Level	V	0		Vcc	3	
<b>1 PPS Input Parameters</b>						
• Format				Rising edge		
• Load	MΩ		1		3	
• Logic low level	V	< 0.4			3	
• Logic high level	V			2.4 to Vcc	3	
<b>Serial Communications</b>						
• Protocol				RS-232		
• Format	V	0		Vcc		CMOS
• Baud Rate			57600		3	
<b>1 PPS accuracy 1σ</b>	ns		±10			
<b>Hold over stability</b>	μs	±100		±600		over 24h (at +25°C)
<b>Weight</b>	grams		10			

**Notes**

1. Parameter inspected at 100% | 2. Parameter inspected by sampling | 3. Parameter guaranteed by design and characterization

**ENVIRONMENTAL CONDITIONS**

<b>Soldering instructions</b>	Hand soldering only, with recommended pins soldering temperature : 235°C ±5°C, t=10s ±0.5s (260°C max for 5s max) Reflow soldering and other soldering methods are prohibited
<b>Mounting instructions</b>	Pin receptacles mounted into PCB can be used. Reference example : 0338-0-15-XX-15-XX-10-0
<b>PCB cleaning/washing</b>	Not washable

**OCXO HERMETICITY**

Metallic housing hermetically sealed  
Fine Leaks and Gross Leaks tests performed 100%