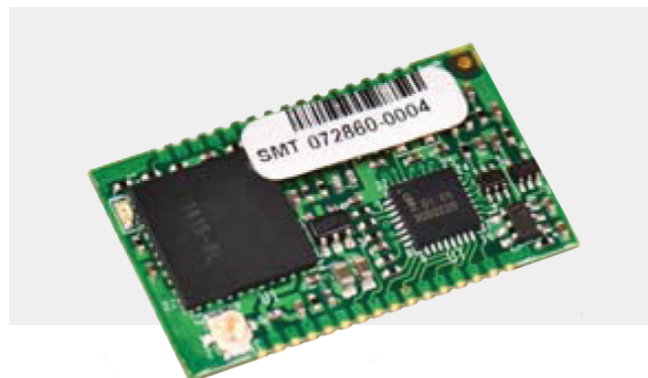


LTE-Lite 24.576 MHz

LTE-Lite Low Cost Ultra Small 24.576 MHz SMT GPSDO Module

Typical Electrical Specifications

Module Specifications	
1 PPS Timing Accuracy from GPS receiver	<8 ns to UTC RMS (1-Sigma) GPS Locked
Holdover Stability (1 week with GPS)	<±50 µs over 3-hour period @+25°C (No Motion, No Airflow)
1 PPS Output	3.3 V DC CMOS
Serial Port	TTL Level, GPS NMEA Output with 1 Hz or 5 Hz update rate
GPS Frequency	L1, C/A 1574 MHz
GPS Antenna	Active or Passive (0 dB to +30 dB gain)
GPS Receiver	65 Channels, QZSS, SBAS WAAS, EGNOS, MSAS capable Supports Position and Hold over-determined clock mode
Sensitivity	
Acquisition	-148 dBm
Tracking	-165 dBm
GPS TTFF	
Cold Start	<32 sec
Warm Start	1 sec
Hot Start	1 sec
ADEV	
10 s	<7E-011
10 Ks	<2E-012 (GPS Locked, 25°C, no motion, no airflow)
TTL Alarm Output	GPS LOCK indicator, ALARM output, Survey status, Warmup status



LTE-Lite 24.576 MHz

Typical Electrical Specifications continued

Warm Up Time / Stabilization Time	<10 min at +25°C to better than 1E-09 Accuracy	
Supply Voltage (Vdd)	3.3 V Single-Supply, +0.2 V/-0.15 V	
Power Consumption	<0.16 W	
Operating Temperature	-10°C to +70°C, -40°C to +85°C optional	
Additional Features	Status LED, external oscillator option	
Oscillator Specification (Internal)		
Frequency Output of low Phase Noise crystal	20 MHz CMOS 3 Vpp	
Secondary Synthesized CMOS output	TTL selectable: 98.304 MHz / 49.152 MHz / 32.768 MHz / 16.384 MHz / 12.288 MHz / 8.192 MHz / 4.089 MHz (Phase-Locked to 24.576 MHz)	
24.576 MHz Retrace	±2E-08 After 1 Hour @ +25°C without GPS	
Frequency Stability Over Temperature	±0.1 ppm (internal TCXO without GPS), (0°C to +60°C)	
RF Output Amplitude	3 Vpp CMOS	
24.576 MHz Phase Jitter	<0.135 ps rms	
Phase Noise (at 24.576 MHz)	1 Hz	-62 dBc/Hz
	10 Hz	-90 dBc/Hz
	100 Hz	-112 dBc/Hz
	1 kHz	-132 dBc/Hz
	10 kHz	-144 dBc/Hz
	100 kHz	<-153 dBc/Hz
Connections		
Connector Type		
1 PPS Output (2x), 19.2 MHz Output, power, system status, NMEA, ISP mode enable, antenna input, Synthesized reference frequency output	SMT module with 50 mils (1.27 mm) pin spacing, U.FL RF antenna	

Available Crystal options and PLL synthesized output frequencies:

FREQ_SEL	10 MHz TCXO	15.36 MHz TCXO	19.2 MHz TCXO	20 MHz TCXO	24.576 MHz TCXO
111	disabled	disabled	disabled	disabled	disabled
110	5 MHz	4.608 MHz	4.8 MHz	5 MHz	4.096 MHz
101	13.33333333 MHz	10.24 MHz	9.6 MHz	10 MHz	8.192 MHz
100	16 MHz	15.36 MHz	12.8 MHz	13.33333333 MHz	12.288 MHz
011	20 MHz	23.04 MHz	15.36 MHz	16 MHz	16.384 MHz
010	26.66666667 MHz	30.72 MHz	25.6 MHz	26.66666667 MHz	32.768 MHz
001	40 MHz	46.08 MHz	38.4 MHz	40 MHz	49.152 MHz
000	80 MHz	92.16 MHz	76.8 MHz	80 MHz	98.304 MHz



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