

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



- 0.7 X 1.18 x 0.09 inch SMT Module
- Excellent ADEV performance
- 60+ Channel WAAS, QZSS GPS
- 24.576MHz, and Synthesized output:
98.304MHz/49.152/32.768/16.384
12.288/8.192/4.089MHz

TYP. PRELIMINARY ELECTRICAL SPECIFICATIONS:

Module Specification:													
1 PPS Timing Accuracy from GPS receiver	<8ns to UTC RMS (1-Sigma) GPS Locked												
Holdover Stability (1 week with GPS)	<±50us over 3 Hour Period @+25°C (No Motion, No Airflow)												
1 PPS Output	3.3VDC CMOS												
Serial Port	TTL Level, GPS NMEA Output with 1Hz or 5Hz update rate												
GPS Frequency	L1, C/A 1574MHz												
GPS Antenna	Active or Passive (0dB to +30dB 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	10s: <7E-011, 10Ks: <2E-012 (GPS Locked, 25°C, no motion, no airflow)												
TTL Alarm Output	GPS LOCK indicator, ALARM output, Survey status, Warmup status												
Warm Up Time / Stabilization Time	<10 min at +25°C to better than 1E-09 Accuracy												
Supply Voltage (Vdd)	3.3V Single-Supply, +0.2V/-0.15V												
Power Consumption	<0.16W												
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	24.576MHz CMOS 3Vpp												
Secondary Synthesized CMOS output (Phase-Locked to 24.576MHz)	98.304MHz/49.152MHz/32.768/16.384/12.288/8.192/4.089MHz												
24.576MHz Retrace	±2E-08 After 1 Hour @ +25°C without GPS												
Frequency Stability Over Temperature (0°C to +60°C)	±0.1ppm (internal TCXO without GPS)												
RF Output Amplitude	3Vpp CMOS												
24.576MHz Phase Jitter (100Hz to 10MHz)	<0.135ps rms												
Phase Noise at 24.576MHz	<table border="1"> <tbody> <tr> <td>1Hz</td> <td>-62dBc/Hz</td> </tr> <tr> <td>10Hz</td> <td>-90dBc/Hz</td> </tr> <tr> <td>100Hz</td> <td>-112dBc/Hz</td> </tr> <tr> <td>1kHz</td> <td>-132dBc/Hz</td> </tr> <tr> <td>10kHz</td> <td>-144dBc/Hz</td> </tr> <tr> <td>100KHz</td> <td><-153dBc/Hz</td> </tr> </tbody> </table>	1Hz	-62dBc/Hz	10Hz	-90dBc/Hz	100Hz	-112dBc/Hz	1kHz	-132dBc/Hz	10kHz	-144dBc/Hz	100KHz	<-153dBc/Hz
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Connections:													
2x 1PPS Outputs, 24.576MHz Output, power, system status, NMEA, ISP mode enable, antenna input, Synthesized reference frequency output	Connector Type: SMT module with 50 mils (1.27mm) pin spacing, U.FL RF antenna												

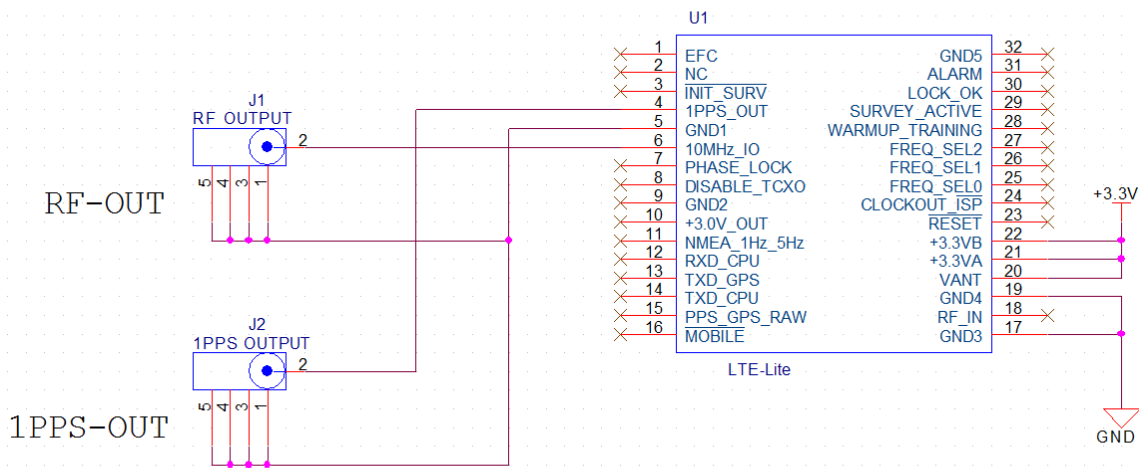


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Table 1. Available Crystal options and PLL synthesized output frequencies:

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

EXAMPLE 1: MINIMUM OPERATING SETUP



EXAMPLE 2: CONNECTING AN EXTERNAL TCXO

