

Description: GPS Guided Oscillator Module

Nominal Freq.: 10 MHz

DEI P/N: GPSGO1202

Revision: 01

Date: 2012.06.05

Approved / Date	Checked / Date	Prepared / Date
Greg/2012.06	David/2012.06.05	Catherine/2012.06.05

Customer: _____

Customer P/N: N/A

REVISION HISTORY

Revision #	Revised Page(s)	Revision Content	Date	Ref Number	Revision Requested by	Reviser
1		Initial Release	06/04/12	QA12-0043		

Features

Provides 10MHz and 1 PPS outputs
Outputs synchronized to GPS
1E-12 / day avg. stability in LOCK
Excellent holdover with internal OCXO
UART PORT with NMEA protocol
5V and 12V supply options

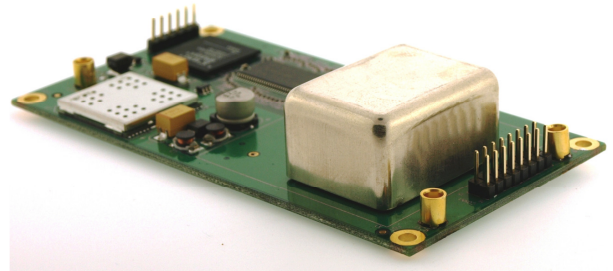
Typical Applications

Instrument Calibration
System Synchronization
Broadcast Reference Standard
WiMax , LTE base stations
Stringent Timing Accuracy

Descriptions

The GPSGO1202 is a component level module that utilizes an internal GPS receiver chip to LOCK onto GPS to Achieve long term stability of on-board satellite cesium clocks nearing 1E-12 per 24 hours. When phase lock to GPS is lost the module will assume the holdover performance of the internal OCXO.

Picture of Part



Specification

Specification	Sym.	Condition	Value			Unit	Note	
			Min.	Typ.	Max.			
Operational Frequency Range	f_0			10.000		MHz		
Outputs								
	1 PPS Output		TTL levels into 50 ohms		1.0	PPS	PPS (pulses per second)	
	LOCK Indicator		LED, LVCMOS levels		Active	High		
	SYNC Indicator		LED, LVCMOS levels		Active	High		
Sine-wave Output @ 10MHz	Level	L		5	7	9	dBm	
	Load	R _L		45	50	55	Ohm	
	Harmonics					-25	dBc	
Power supply								
Voltage	V _{cc}			11.4	12.0	12.60	V	5V supply option available
Current Consumption			Warm-up state Steady state, +25 °C			6 3	W W	
Warm-up time***	t _{up}		To within +/- 200 ppb at +25 °C			3	min	
1 PPS ACCURACY			Timing output accuracy when LOCKED to GPS	-50		+50	NS	Over any 20 minute interval at constant temperature
1 PPS ACCURACY			Holdover mode Out of LOCK			1.0	us	Over a 4 hour period
WHEN LOCKED to GPS				-0.001		+0.001	ppb	1E - 12 when locked
SSB Phase noise of sine wave 10 MHz output during LOCK or in holdover			10 Hz		-120		dBc/Hz	for 10MHz operational freq. IN GPS LOCK or NOT in LOCK FREE RUNNING
			100 Hz		-140			
			1000 Hz		-155			
			10 kHz		-155			
Operating temperature range				-40 °C to +85 °C.				
Operating Altitude				-60 to 12000 meters				
Operating Humidity				Non-condensing 90%				

Specification	Sym.	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency Range	f_0			10.000		MHz	
Communications Interface		9600 Baud, 8 bits, 1 stop bit Odd parity					
	Communications Protocol	Custom Commands to support Module control					NMEA - 0183
GPS Input		L1 GPS C/A Code from Active antenna					1575.42 MHz
GPS Antenna	Power	100 mA max. short circuit protection					@ 5V dc
		12 independent tracking channels					
GPS Receiver Capability		TTFF Cold Start		36		Sec	
		TTFF Hot Start		4		Sec	
GPS Receiver Acquisition		Cold		-141		dBm	
		HOT		-149		dBm	
GPS Sensitivity		Tracking and Navigation		-156		dBm	
				-155		dBm	
EXTERNAL REF		LVC MOS LOGIC			1.0	PPS	
Package Dimensions (114 x 60 x 27 mm)		Antenna Input					Detailed Mechanical Package Drawing based on customer Final design requirements
		1 PPS output					
		10 MHz output					
		All MCX connectors					
16 pin Header Connections							
		Pin 1 : 1 PPS EXTERNAL input ; Pin 2 : N/C ; Pin 3 : Gnd ; Pin 4 : Gnd ; Pin 5 : RX ; Pin 6 : TX ; Pin 7 : 10MHz					
		Pin 8 : N/C ; Pin 9 : LOCK INDICATOR ; Pin 10 : SYNC INDICATOR ; Pin 11 : N/C ; Pin 12 : RST					
		Pin 13 : Gnd ; Pin 14 : Gnd ; Pin 15 : Supply Voltage ; Pin 16 : Supply Voltage					
16 Pin Header Input / Output Voltage Levels		Input High Voltage Minimum : 2.0 V Input Low Voltage Maximum : 0.8 V Output High Voltage Minimum : 3.0 V Output Low Voltage Maximum : 0.8 V					