



Features and Benefits

- Build-in GPS receiver module and provides +5.0V for Active Antenna
- Very low power consumption due to its high performance TCXO
- Unmatched price and performance over traditional GPS-OCXO reference solutions
- 10MHz CMOS output and 1pps CMOS output
- Enable external 1pps input for discipline
- Discipline to 75ns RMS in phase
- GPS NMEA output

Typical Applications

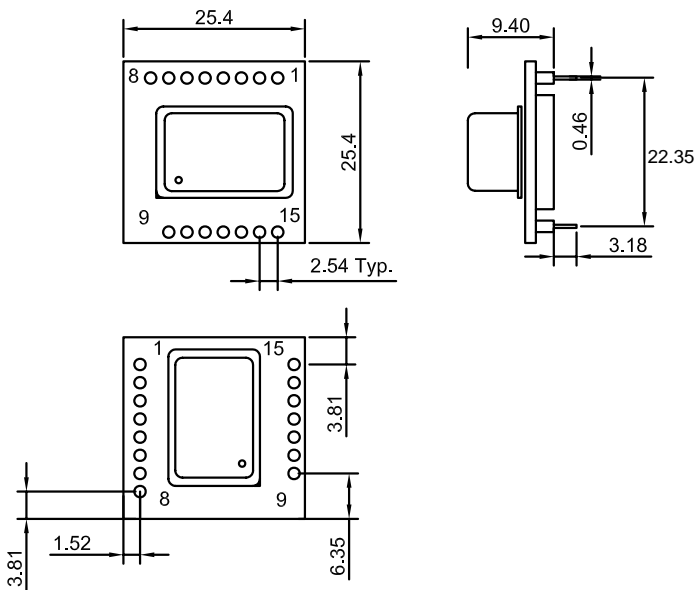
- Low Cost, Affordable Reference Clock
- Test and measurement equipment

Description

GPS Disciplined Oscillator is a range of advanced clock modules which provide electrical timing functionality for telecommunication network systems to synchronize timing. These units primarily revolve around the 1PPS (pulse per second) timing synchronization signal and utilize the best performing oscillators with our proprietary algorithms to achieve the performance of atomic based oscillator.

Mechanical Drawing & Pin Connections

Drawing No: MD210020-1



Pin Connections:

Pin#	Name	Description
1	Ground	
2	10MHz Output	10MHz CMOS Output
3	Lock OK	3.3V CMOS Output
4	1PPS Output	3.3V CMOS Output
5	1PPS Input	3.3V to 5.0V CMOS(Rising Edge)
6	+5V Output	<100 ma
7	Ground	
8	+3.3V VDO In	
9	Ground	
10	Antenna Input	Module provides +5.0V Power Supply for Active Antenna
11	Ground	
12	NMEA Transmit	NEMA-0183 GGA Format GPS Data Output
13	1PPS Input Enable	High: Internal PPS , Low: External PPS
14	N/C	No External Connection Allowed
15	N/C	No External Connection Allowed

Unit in mm
1mm = 0.0394 inches



Specifications

Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			10		MHz	
RF Output (via PIN2)							
Output wave form			LVCMOS				
Output Level	V _{OL}				0.4	V	
	V _{OH}		2.6			V	
ADEV		5E-12 (Tau = 10Ks, GPS Locked, 25°C, no motion)			0.005	ppb	
1 PPS Output (via PIN4)							
Output amplitude			LVCMOS				
1PPS Accuracy		To UTC RMS (1-Sigma) GPS Locked		75		ns	
Load			10Mohm//10pF				
External 1PPS Reference Input (via PIN 5)							
Input amplitude		Rising Edge	LVCMOS				
Input impedance			10Mohm//10pF				
GPS (via PIN 10)							
GPS Frequency		Factory default GPS & GLONASS, SBAS, OZSS	GPS : L1, C/A 1574MHz; GLONASS : L1, 1602MHz + K*0.5625MHz				
Receiver Sensitivity			Acquisition -148 dBm; Tracking -164dBm				
Antenna		Active antenna – GPS, GLONASS, Bei Dou bands. Module provides +5.0V Power Supply for Active Antenna	Active				
Interface (via PIN12)							
Serial Control		NMEA-0183 GGA Format GPS Data Output Baud rate 38400	GPS NMEA Output				
Power Supply (via PIN8)							
Supply Voltage			3.135	3.3	3.465	V	
Power Consumption					600	mW	
Environmental							
Operating Temperature		0°C to +60°C					
Storage Temperature		-45°C to +85°C					
Mechanical Shock		JESD22-B104					
Vibration		JESD22-B103					
Solderability		IPC J-STD-002					
Thermal Shock		Thermal Shock					