



Features and Benefits

- Ultra-low power consumption 60mW Typical
- 1pps input and 1pps output for GPS synchronization
- Discipline to 1ns RMS in phase and <10-12 in frequency
- 1 Second continuous phase measurement and report system
- Resolution<=1ns
- ToD and lock time since warm up
- User accessible memory, optional
- Holdover <1.5uSec. 24 hours
- 10MHz, 16.384MHz, HCMOS output
- RS232 digital interface

Typical Applications

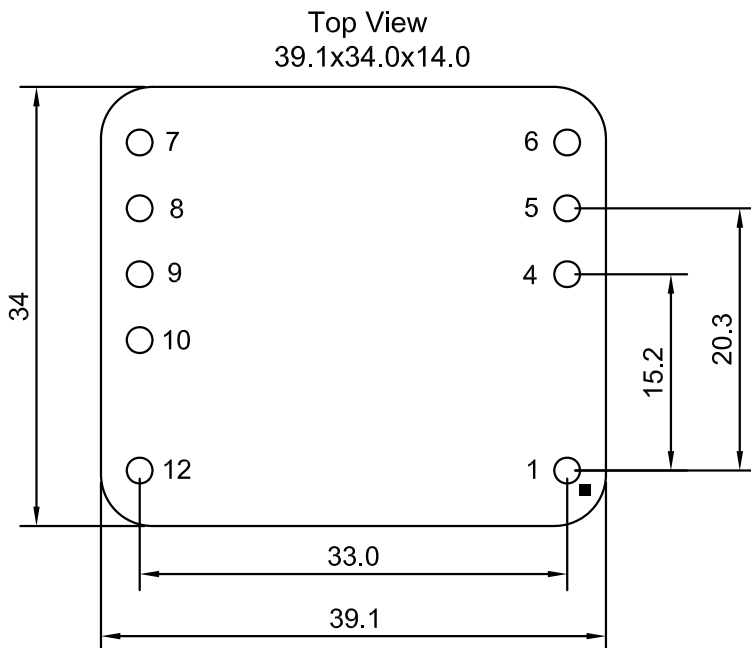
- Under water sensor and network system
- Telecom
- Low Orbit Satellite
- Oil and Gas exploration
- Smart Power Grid
- Test and measurement equipment
- Battery powered Portable communication systems

Description

Ultra-High Precision 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: MD160041-4



Pin Connections:

Pin	Function	Pin	Function
1	N.C.	8	GND
4	Oven Ready	9	1PPS Input
5	TX	10	1PPS Output
6	RX	12	RF Output
7	+3.3V		

Unit in mm
1mm = 0.0394 inches



Specifications

Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Operational Frequency	F _{nom}			16.384		MHz	
RF Output							
Output wave form			CMOS				
Output Level				2.6		V	
Rise/Fall time					10	ns	
Load			10Mohm//10pF				
Time Output							
1 PPS				1		Hz	
Output amplitude			3.3V CMOS				
Pulse width				20		us	
Rise/Fall time					10	ns	
Load			10Mohm//10pF				
Time Input							
1 PPS				1		Hz	
Input amplitude			3.3V CMOS				
Timing edge			Rising edge				
Input impedance			10Mohm				
Digital Communications							
Protocol			RS-232				
Logic level			3.3V CMOS				
Baud Rate				57600		bps	
Power Supply							
Supply Voltage				3.3		V	
Power Consumption (at 25°C ambient)		-10°C to +50°C			60	mW	Referring to 25°C
		-10°C to +70°C			80	mW	Referring to 25°C
		-40°C to +85°C			100	mW	Referring to 25°C
Warm up Power					550	mW	DEI configurable
Warm-up Time			1		4	min	DEI configurable for fast warm up
Frequency Stability							
Versus Operating Temperature Range		-10°C to +50°C			1.0	ppb	Consult DEI for temperature range, stability. Warm-up power and warmup time.
		-10°C to +70°C			1.4	ppb	
		-40°C to +85°C			2.0	ppb	
Allan Deviation			<5E-12 flicker floor				
Aging		After 30 days		±0.2	±0.5	ppb/day	
		First year			50	ppb	
Frequency Control		Digital Tuning			±0.7	ppm	
Acceleration sensitivity					±1.0	ppb/G	
Phase noise@10MHz		1Hz			-95	dBc/Hz	
		10Hz			-125	dBc/Hz	
		100Hz			-145	dBc/Hz	
		1KHz			-155	dBc/Hz	
		10KHz			-165	dBc/Hz	
Environmental, Mechanical Conditions							
Mechanical shock		>100G, 11ms; Mil-STD-202					
Vibration		5G up to 2KHz; Mil-STD-202					