Secure uPNT™ FURY GPS Disciplined Oscillator

Exceptional holdover drift capability in GNSS-denied environments or for extended periods without GNSS signals

Defense | 5G Communications | SATCOM | Transportation | Data Center Energy | Financial | Critical Infrastructure

The uPNT™ Fury GPSDO presents unprecedented frequency accuracy by combining the highest GPS timing performance with the very latest in OCXO technology in one low-cost module. Fury is useful as a high performance, low Phase Noise, low ADEV noise, high holdover performance reference. Fury works exceptionally well to provide 1 PPS, various 10 MHz, and NMEA output in laboratory conditions, and the DOCXO variant provides exceptional holdover drift capability in GNSS-denied environments or for extended periods without GNSS signals.

Typical Electrical Specifications

Module Specifications	
Dimensions	
OEM PCB	100 mm x 100 mm x 25 mm
Desktop Enclosure	140 mm x 170 mm x 58 mm
Applications	In-House Frequency Standard; Military and Industrial Applications; Battery operation
1 PPS Output	
Connector	BNC (Desktop), Molex 100 mil type connector (OEM PCB)
Output Voltage	3.3 V TTL/CMOS compatible with <2 ns RiseTime. 50 Ohm terminated or open ended
10 MHz Sine Wave	
Connector	BNC (Desktop), Molex 100 mil type connector (OEM PCB)
Output Power	+6 dBm ±3 dBm into 50 Ohms
Stability	Better than 5E-013/24 hours when locked to GPS (Double Oven OCXO)
Holdover	Better than 7 microseconds/24 hours (better than 8.1E-011/24 hours average) DOCXO

Key Features & Benefits

- Allan Deviations of less than 1E-011 are possible for measurement intervals greater than 0.1 seconds
- Phase noise of <125 dBc at >10 Hz offsets is standard
- Power consumption of <5 W from 11.0 V to 14 V allows battery operation
- Hold-over mode with aging and temperature compensation
- Sine-wave and CMOS outputs are standard
- GPSCon Windows graphing and SNTP server software compatible

Applications

- In-House Frequency Standard
- Military and Industrial Applications
- Battery operation

Typical Electrical Specifications continued

Module Specifications continued		
Phase Noise (AT-cut OCXO)	1 Hz	-90 dBc/Hz
	10 Hz	-122 dBc/Hz
	100 Hz	-140 dBc/Hz
	1 kHz	-155 dBc/Hz
	10 kHz	-155 dBc/Hz
	100 kHz	-157 dBc/Hz
	1 MHz	-160 dBc/Hz
Jitter	380 Femtoseconds RMS (measured with Agilent E5052B)	
Harmonics	<-50 dBc/Hz	
10 MHz CMOS/TTL		
Connector	BNC	
Output Voltage	3.3 Vpp or 5 Vpp Square Wave. Performance similar to 10 MHz Sine Wave Output	
1 PPS GPS- FailSafe™ Input		
Description	External 1 PPS input with auto-switching in case internal GPS fails or goes into holdover. Allows fails-save GPS operation, or external (noisy) Atomic backup references, etc.	
Connector	Molex 100 mil type	
Input Voltage	TTL, CMOS 3.3 V/5 V	
Timing Accuracy		
GPS Locked	Better than ±20 ns UTC offset 1-Sigma (RMS)	
Holdover Mode	Better than 7 microseconds/24 hours (better than 8.1E-011/24 hours average) DOCXO	
Xtal Compensation	Automatic OCXO aging and temperature coefficient measurement and compensation	
GPS Specification		
SAT Signal	12-Channel GPS L1, 1575.42 MHz, C/A 1.023 MHz Timing-Optimized Receiver	
Cold Start	Auto Survey mode, or 3D-Fix mode. 15 Minutes warmup to better than 1E-09 (DOCXO)	
Status LED's Alarm Output		
LED Indicators	1 PPS cadence indicator LED. Lock Indicator LED	
Alarm Output	3.3 V TTL, can drive LED. System Error, GPS error, and PLL unlock alarm	
Serial Interface		
Connector	RS-232, 9600 to 115200 Baud	
Protocol	SCPI-99 Command Interface. Industry Standard Commands for drop-in replacement	
Environmental Characteristics		
Temperature	0-50°C (single OCXO), 0-70°C (double OCXO)	
Power	11.0 V to 14.0 V DC less than 4.5 W at 25°C ambient	

Ordering Information

Product Number	Product Description	SOCXO	DOCXO	Enclosure
22174841	Super Fury SOCXO OEM Board - RoHS	■		
22174842	Super Fury DOCXO OEM Board - RoHS		■	
22174843	Super Fury SOCXO Desktop - RoHS	■		■
22174844	Super Fury DOCXO Desktop - RoHS		■	■

NOTE: All specifications typical and quoted at 25.0°C after 3 days operation with GPS reception in still air with <1°C change with +12.0 V power supply unless otherwise specified.

Specifications subject to change without notice.

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