

# VIAVI

## DROR-IIA

GPSDO Chip Scale Atomic Clock  
 Vibration-Compensated Reference

### Typical Electrical Specifications

Module Specifications	
Long-Term Oscillator Aging	Less than 0.3 ppb per month in Holdover without GPS
	Zero aging with GPS
Frequency Stability Over Temperature	Better than $\pm 0.5E-09$ (CSAC only, no GPS Disciplining, 0°C to +75°C)
External 1 PPS Input	TTL/LVCMOS/CMOS compatible 1 PPS external input connector
1 PPS Accuracy	$\pm 15$ ns to UTC RMS (1-Sigma) GPS Locked in Position Hold mode
Holdover Stability	$< \pm 2$ $\mu$ s over 24 Hour Period @+25°C (After 96 hours warmup, after 20 minutes with GPS lock)
ADEV (DOCXO after 24 hours with GPS lock)	
1 s	$< 2E-12$
10 s	$< 6E-12$
100 s	$< 7E-12$
1K s	$< 7E-12$
10K s	$< 2E-12$
1 PPS Output (CSAC Flywheel Generated)	Two 5 V CMOS outputs, can be shifted in 1 ns steps relative to UTC
10 MHz Output	Three Isolated 10 MHz Sine Wave +13 dBm $\pm 3$ dBm
5 MHz Output	One 5 MHz CMOS 5 V
Distribution Amplifier Port Isolation	
2 MHz	$> 98$ dB
10 MHz	$> 85$ dB
RS-232/USB Control	SCPI-99 Control at 9.6 K, 19.2 K, 38.4 K, 57.6 K, 115.2 K



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## Module Specifications continued

RS-232/USB NMEA Output Sentences	NMEA 0183 rev. 2.3, Sentences: GGA, RMC, ZDA, GSV, PASHR, and others			
GPS Frequency, Antenna	L1 C/A 1574 MHz, Passive or Active Antenna 5 V, MMCX Connector			
GPS Receiver	50 Channels, Mobile, SBAS: WAAS, EGNOS, MSAS supported			
Sensitivity				
Acquisition	-144 dBm			
Tracking	-160 dBm			
GPS Receiver Motion Adaptive Filter Settings	Optimized depending on vehicle velocity (Auto-sensing, Auto-switching)			
TTL Alarm Output	GPS Unlock and Hardware Failure indicator			
Warm Up Time/Stabilization Time Without GPS	+25°C to <5E-010 Accuracy Typical: CSAC: <3 min, Filter: <12 min			
Supply Voltage (Vdc)	12 V ±1 V, or 12.5 V to 32 V (jumper-selectable)			
Power Consumption	<3.85 W at +25°C 13.6 V Vdd, <8 W warmup			
Temperature				
Operating Temperature	-10°C to +70°C			
Storage Temperature	-45°C to +85°C			
g-sensitivity				
CSAC	<0.2 ppb/g/axis			
Filter	<0.3 ppb/g/axis with low-g option			
Magnetic Sensitivity	Less than 0.4 ppb per Gauss long term			
MTBF	>100,000 Hours (0°C to +70°C)			
USB, LCD support	RS-232 or USB controlled, supports 16x2 LCD Displays			
Phase Noise (standard temp DOXO option)	<b>Offset</b>	<b>CSAC</b>	<b>OXCXO Filter</b>	<b>Vibe Filter On</b>
	1 Hz	NA	-101 dBc/Hz	-100 dBc/Hz
	10 Hz	-90d Bc/Hz	-135 dBc/Hz	-115 dBc/Hz
	100 Hz	-125 dBc/Hz	-145 dBc/Hz	-126 dBc/Hz
	1 kHz	-145 dBc/Hz	-148 dBc/Hz	-151 dBc/Hz
	10 kHz	-152 dBc/Hz	-156 dBc/Hz	-162 dBc/Hz
	100 kHz	-153 dBc/Hz	-158 dBc/Hz	-164 dBc/Hz

NOTE: Specifications subject to change without notice.



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