

Quartzlock E8-Y

Breakthrough
Very Low Phase Noise
**GPS Timing & Frequency
Standards**



-110dBc/Hz @ 1Hz offset
Holdover 100us/day

Description

The Quartzlock E8-Y represents a breakthrough in very low phase noise, traceable, **calibration-free "off air" frequency & time standards**. These references maintain the high frequency & time accuracy required for demanding applications. **The E8-Y may be considered as a primary reference clock.**

Low distortion & Very Low Phase Noise 10MHz Sine & 1PPS outputs. RS232 connection.

Features & Benefits

- 1×10^{-12} accuracy
- High Stability
- 1 Year Warranty
- Lowest Cost Available
- Very long production life & support. The Quartzlock 2A series (E8-X predecessor) has been in production for > 30 years, 3 generations of design.
- Many versions of the E8 series are available. PCB, Mil spec & Ultra Low Noise etc. Please contact Quartzlock for details.

- No Calibration Required
- Traceable Reference, nationally & internationally

Applications:

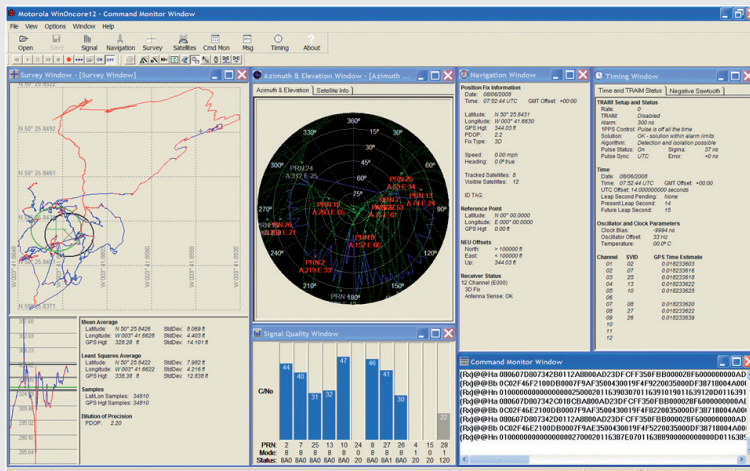
- **Calibration, Higher Performance Referencing & Servicing of:** Counters, Frequency Meters, Spectrum & Network Analysers, Synthesizers, & Communication Analysers, VHF, UHF & PMR TX, CDMA, Tetra, DTV & DAB
- Production Test Frequency Standard
- Network Time Protocol use in Financial, Utilities, Security & Communications Timing
- Test Solution System Integration
- OEM
- **Frequency & Time Standard for:** Calibration Labs, Radio Workshops, Labs, Work Stations, RF Test Bench and in Higher Education.

Quality:

- Quartzlock's Hydrogen Maser based laboratory is used in production test & QA to ensure compliance with offset and stability specifications.

Survey, Satellite Azimuth & Elevation, Navigation, Timing & Signal Quality Monitoring

These software packages will find educational survey and GNSS (Global Navigation Satellite Systems) applications. Demonstration of the location, timing and navigation functions are provided. As an educational tool, this monitor function demonstrates some of the elements of GNSS.



Quartzlock GPS instruments have been designed to work with various external software packages such as WinOncore. **These programmes enable the main parameters of the GPS signals to be easily verified, particularly input signal level and satellites in view.**

WinOncore12 has been designed for use as an evaluation and testing tool in conjunction with Motorola's GT, UT and M12 Oncore GPS receivers. This utility will aid the user in initializing and operating the Oncore receiver, displaying, plotting and printing data from the receiver, and recording and replaying data files.

Other Oncore receivers such as the VP, Basic or XT Oncore may also be used with WinOncore12; however, not all of the input and output (I/O) messages are defined. If you are using a receiver which supports I/O messages not defined in WinOncore12, you may customize support for each desired message in the Command Manager.

WinOncore12 supports both NMEA and Motorola Binary protocol, and thus may be used to record live data or playback previously recorded data from a NMEA (*.GPS) file or Motorola Binary (*.bin) file.

WinOncore12 will run under Windows 95/98/2000 and NT.

Quartzlock accept no responsibility for accuracy or performance of these external programs.

Timing & Frequency Standards



E8-Y SPECIFICATION		
Outputs		
a) 10MHz, Sinewave, 12dBm +/- 2dBm into 50 Ohms Harmonics < -50dBc Spurii < -75dBc		
b) 1PPS, TTL, 3.3VCMOS, Jitter 7ns RMS std dev		
Frequency Accuracy	1x10 ⁻¹² Long Term	
Holdover	100us/day	
Short Term Stability	tau	Allan Variance
	1s	<8x10 ⁻¹³
	10s	<4x10 ⁻¹³
	100s	<5x10 ⁻¹²
	1000s	<2x10 ⁻¹²
Phase Noise (typ)	1Hz	-110 dBc
	10Hz	-136 dBc
	100Hz	-145 dBc
	1kHz	-155 dBc
	10kHz	-157 dBc
Lock Indicator	On - Not Locked Off - Locked, Low Phase Error Short flash every second - Locked, High Phase Error	
GPS Indicator	Green - Indicates number of satellites used in time solution Amber - Indicates number of satellites tracked but not used in time solution	
Warm Time	<30 minutes to specified accuracy	
Power Supply & Antenna	15V dc (ac psu provided) Active GPS antenna supplied	
Current Consumption	250mA typical	
Size	E8-Y	105 x 30 x 125mm desktop module
	E8-Y PCB OEM	100 x 120mm
	E8-Y MIL	CNC machined microwave housing

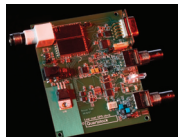
See E8-X Datasheet for lower performance, low cost version

E5-X6



6 output distribution amplifier

E8-Y - OEM



100 x 120mm

E8000



1U rack mount version of E8-Y

E8-X



Industry standard, exceptionally low cost

E8-Y Short Term Stability



E8-Y Phase Noise



E8-Y Rear Panel

The E8-Y is supplied with GPS antenna and wall plug power supply with international connector fittings.

Interface

Shared between DPLL and GPS receiver

DPLL

9.6kbaud, RS232, PC compatible (8bits no parity, no handshake)

GPS

9.6kbaud, Motorola binary format (8bits no parity, no handshake)

DPLL Tracking

5mHz to 500mHz typical in 8 binary Bandwidths increments default 20mHz

Option 43

PCB version (OEM use)

Option 47

High gain antenna & PSU

The E8000 is a GPS disciplined OCXO in 1U rack format (similar spec to E8-Y) but with many options including multiple outputs, ultra-low phase noise & customer specified frequencies. Ask Quartzlock for details.

The E8010 is a GPS disciplined Rubidium in 1U rack format, ask Quartzlock for details.

Quartzlock

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