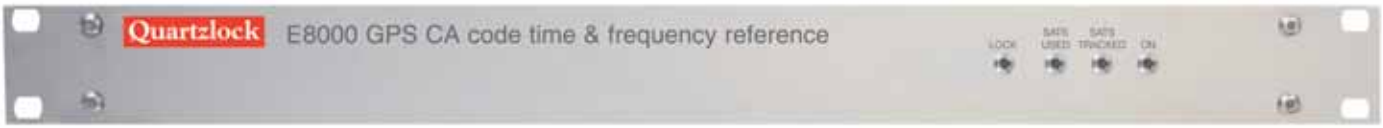
Quartzlock E8010

GPS Disciplined Rubidium Time & Frequency Reference

- No drift
- Internationally traceable standard
- 110dBc/Hz @ 1Hz phase noise option
- Accurate to 25 Nanoseconds RMS UTC



The E8010 provides a stable and accurate calibration free GPS time and frequency reference with multiple output signal formats in an easy to install 1U rack mountable chassis.
These references maintain high time and frequency accuracy required for demanding applications.

Features

- 10MHz Output
- 1PPS outputs
- Network Time Server (NTP) Option
- Excellent hold over performance 1us/day
- 12 Channel GPS Receiver with TRAIM
- $2x10^{-12}$/s AVAR option

Benefits

- No calibration required
- GPS traceable reference
- Caesium replacement
- 12 channel GPS receiver provides high accuracy UTC time and frequency reference

Applications

- Time and frequency reference for satellite communication ground stations, CDMA, LTE, DTV & DAB
- Production test frequency standard
- Time and frequency standard for calibration and rf laboratories
- Frequency standard for counters, signal generators, spectrum and network analysers
- Wired and Wireless network synchronization
- Stratum 1 primary reference clock

Specification

Outputs	**a) Sinewave**	10MHz, 12dBm +/- 2dBm into 50 Ohms
	Harmonics	<-50dBc
	Spurii	<-75dBc
	b) TTL	
	3.3VCMOS	1pulse per second
	Accuracy	4ns standard deviation
Frequency Accuracy	$x10^{-13}$ Long Term	
Hold over	1us per day	
Short Term Stability	**tau**	**Allan Variance (typ)**
	1s	$3x10^{-12}$
	10s	$2x10^{-12}$
	100s	$8x10^{-13}$
	1000s	$5x10^{-13}$
	10000s	$5x10^{-13}$
	1 hour	$x10^{-13}$
Phase Noise (typ) (see low noise options)	1Hz	-70 dBc
	10Hz	-100 dBc
	100Hz	-120 dBc
	1kHz	-140 dBc
	10kHz	-145 dBc
Hold-over	Exceeds telecom stratum 1 requirements	
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	<15 minutes to specified accuracy	
Power Supply	85 ... 240V ac (BBU option)	
Current Consumption	250m A typical	

Size	19" x 1.75" 1U rack mount
Antenna	Supplied with cable & connectors
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 9	See Quartzlock E5-X **Outputs** 6 x10MHz low distortion, sinewave, isolated, +13dBm 1V rms 50 Ohms
Option 48	Ultra Low Noise (contact Quartzlock)
Option 0	24V dc BBU (Battery Back-Up switch)
Option 1	4 Outputs – see model E5 spec. For use with ULN option only.
Option 43	OEM Open Frame version

Quartzlock GPS instruments have been designed to work with various external software packages such as WinOncore. We accept no responsibility for accuracy or performance of these external programs.

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.
See screenshot image on E8000, page 40