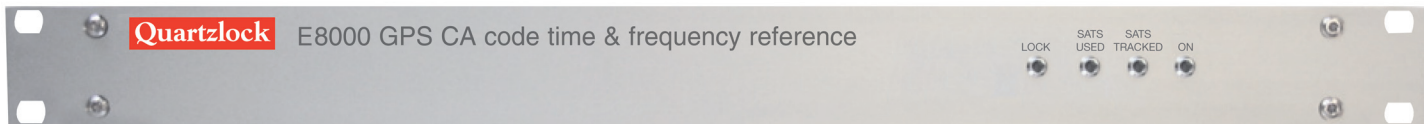


# Economy GPS-Rubidium Timing & Frequency Standard



## Description

The Quartzlock E8010 represents a breakthrough in exceptionally low cost, traceable, **calibration-free “off air” frequency & time standards**. These references maintain the high frequency & time accuracy required for demanding applications. Low distortion 10MHz Sine & 1PPS outputs. Excellent holdover performance with a 3 state Kalman filter to correct constant drift rate.

## Features

- $x10^{-13}$  accuracy/offset
- Very low phase noise to -115dBc/Hz
- No drift
- High stability to  $x10^{-13}/s$
- 3 Year warranty
- Lowest cost available
- Very long production life & support

## Benefits

- No calibration required
- Internationally traceable reference
- Replaces cesium
- Provides local UTC 1PPS

E8010 is also available in an OEM enclosed (open frame) module. Please contact Quartzlock.

## Applications:

- **Calibration of:** Counters, Frequency Meters, Spectrum & Network Analysers, Synthesizers, & Communication Analysers
- **Reference for:** DTV, DAB, VHF, UHF & PMR TX, CDMA and Tetra
- Production Test Frequency Standard
- Network Time Protocol use in Financial, Utilities, Security & Communications Timing
- OEM
- **Standard for:** Calibration Labs, Radio Workshops, Labs and Stations

## Quality:

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

## Economy GPS-Rubidium Timing & Frequency Standard

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SPECIFICATION	
<b>Outputs</b>	
a) Sinewave Harmonics Spuri	10MHz, 12dBm +/- 2dBm into 50 Ohms <-50dBc <-75dBc
b) TTL, 3.3VCMOS, Accuracy	1pulse per second 4ns standard deviation
<b>Frequency Accuracy</b>	x10 <sup>-13</sup> Long Term
<b>Hold over</b>	1us per day
<b>Short Term Stability</b>	tau Allan Variance (typical)
1s	3x10 <sup>-12</sup>
10s	2x10 <sup>-12</sup>
100s	8x10 <sup>-13</sup>
1000s	5x10 <sup>-13</sup>
10000s	5x10 <sup>-13</sup>
1 hour	x10 <sup>-13</sup>
<b>Phase Noise (typ)</b> (see low noise options)	1Hz -90 dBc 10Hz -120 dBc 100Hz -135 dBc 1kHz -145 dBc 10kHz -150 dBc
<b>Hold-over</b>	Exceeds telecom stratum 1 requirements
<b>Lock Indicator</b>	On - Not Locked Off - Locked, Low Phase Error Short flash every second - Locked, High Phase Error
<b>GPS Indicator</b>	Green - Indicates number of satellites used in time solution Amber - Indicates number of satellites tracked but not used in time solution
<b>Warm Time</b>	<15 minutes to specified accuracy
<b>Power Supply</b>	85 ... 240V ac (BBU option)
<b>Current Consumption</b>	250mA typical
<b>Size</b>	19" x 1.75" 1U rack mount
<b>Antenna</b>	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 A5000 Spec  
Outputs 6 x10MHz low distortion, sinewave, isolated, +13dBm 1V rms 50 Ohms

**OPTION 48** Low Noise & Ultra Low Noise (contact Quartzlock)

Short Term Stability		Phase Noise	
tau	Allan Variance	A10-Y Options	(typ -dBc/Hz) (contact Quartzlock)
		LN	ULN
0.1s	x10 <sup>-13</sup>	1Hz	110 115
1s	x10 <sup>-13</sup>	10Hz	139 148
10s	x10 <sup>-13</sup>	100Hz	157 158
100s	4x10 <sup>-13</sup>	1kHz	162 165
1000s	5x10 <sup>-13</sup>	10kHz	168 170
10000s	5x10 <sup>-13</sup>	100kHz	170 173

**OPTION 0** 24V dc BBU (Battery Back-Up switch)

**OPTION 42** 1MHz to 40MHz Output Frequencies

**OPTION 1** 4 Outputs – see model A5 spec

### Contact us:

Telephone: +44(0)1803 862062 Fax: +44(0)1803 867962

e-mail: sales@quartzlock.com Web: quartzlock.com

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.

