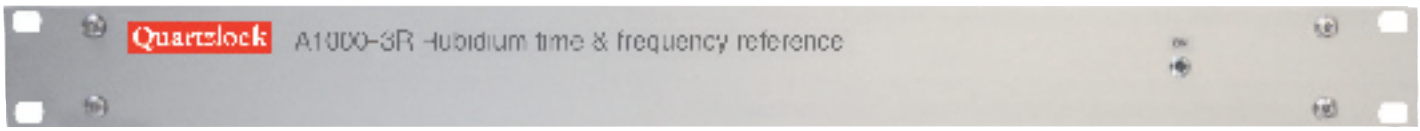
Quartzlock **A1000-3R**

Provisional

10MHz Redundant Rubidium Reference

Employs Quartzlock Digital PLL Technology



Description

The Quartzlock A1000-3R Redundant Rubidium Frequency Reference is a 10MHz high stability standard with multiple rubidium oscillators whose outputs are phase aligned. In the event of a rubidium failure, the failed unit may be exchanged during operation, the new rubidium joins the ensemble when warm. No phase hit or step in frequency registers at the output.

Features

- Three Rubidium Oscillators in a Redundant System
- Hot Swap option
- Multiple PSU switch option
- External dc BBU Battery Back-Up option
- Low Phase Noise
- Low Drift
- High Stability
- 3 Year Warranty

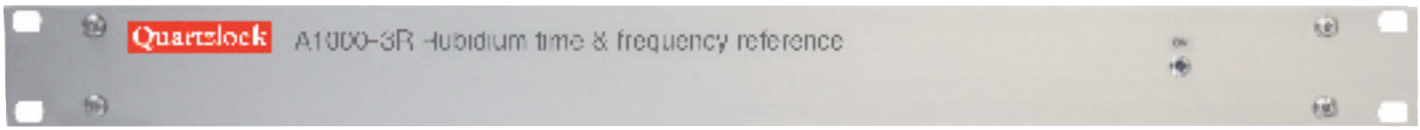
Applications:

- HDTV TX reference
- Systems & Test Solutions
- Frequency Reference
- Frequency Standard
- Wireless Transmitter Ref.

Quartzlock A1000-3R

10MHz Redundant Rubidium Reference

Employs Quartzlock Digital PLL Technology



Low phase noise • low drift • high stability

SPECIFICATION

Output (50 ohms)		10MHz sine 0.5V rms +7dBm
OPTION A		1V rms +13dBm
OPTION B		Custom output frequencies
Accuracy		±5x10^{-11} at shipment @25°C
Phase to Noise (SSB)	10Hz	-100dBc
	100Hz	-120 dBc
	1KHz	-140 dBc

(Lower Phase Noise Options available – ask Quartzlock)

Input Power	13W
Input Voltage Range	90-240V ac
Warm Time	5 minutes to lock @ 25°C
Retrace	±3x10^{-11}
Frequency Control Internal (external – ask Quartzlock)	
Internal trim range (trimpot)	greater than 2x10^{-9}
External trim range	greater than 2x10^{-9} (0V~5V)

Short term stability	1s	3x10^{-11}
	10s	1x10^{-11}
	100s	3x10^{-12}
	hour	x10^{-13}
	day	1x10^{-12}

(Higher short term stability available – ask Quartzlock)

Harmonics	
Second Harmonic	-48 dBc
Third Harmonic	-45 dBc
Frequency Drift	3x10^{-12}/d, 3x10^{-11}/m, 5x10^{-10}/yr
Status Monitors	Lock and On LED

RS232 i/o NMEA NTP, lock advice etc.

Operating Temp. Range	-20°C to +50°C
Temperature Coefficient (ambient)	3x10^{-10} (-20° to 50°C)
Storage Temperature	-40° to 70°C
MTBF	100,000 hours
Connectors	BNC RF & IEC line supply input
Size	19" Rack 1 U (44mm/1.75")

For hot-swap Rubidium and PSU options a 2U rack (88mm/3.5" high) case is used

Weight 3.5kg approx (for hot swap options to 8kg approx)

Warranty 3 years

MULTIPLE REDUNDANCY TECHNIQUE

A number of parameters may be used to define in any combination an output failure. The customer may decide his applications tolerance to amplitude or frequency change before failure correction.

The ideal performance is where no change in amplitude or frequency is apparent at the output and no hit or step in frequency, amplitude or phase is seen.

The Quartzlock solution employs a number of rubidium oscillators (usually three) whose outputs are phase aligned and combine into a single output.

Three rubidium oscillators enable a single failed rubidium to be detected against the two 'good' rubidium.

The Quartzlock A1000-3R may be customised to suit exactly any application.

Options

Low Noise and Ultra Low Noise versions
– see A10-Y data sheet for oscillator specifications

24V DC BBU (Battery Back-Up switch) Input

1PPS Output

1MHz to 40MHz output frequencies

Multiple Outputs Option 9 6 x 10MHz Distortion Outputs

Contact us:

Telephone: +44(0)1803 862062

Fax: +44(0)1803 867962

e-mail: sales@quartzlock.com

Web: quartzlock.com