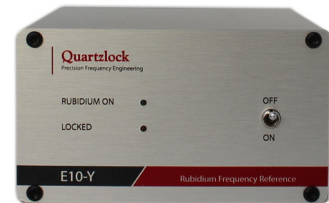


Low Noise Rubidium Frequency Reference

Features

- Sine wave or CMOS/TTL output
- Short term stability $<2 \times 10^{-12}$ at 1sec
- Accuracy of 5×10^{-11}
- Ultra Low phase noise -115dBc at 1Hz
- Available 1 to 8 outputs
- Two years warranty



Description

The Quartzlock E10-Y rubidium frequency reference is a 10 MHz, high-stability and low phase noise Rubidium frequency standard with flexible output options and very low cost of ownership primarily for production test of quartz oscillators and RF instrumentation frequency referencing. The E10-Y incorporates the latest high stability and low drift designs. It can be configured to frequencies from 1 to 100MHz outputs presented on the rear panel.

Applications

- Frequency Calibration
- Telecom Network Synchronization
- Broadcast – Radio & TV & Satellite Communications
- Microwave Test Bench or Test Solution
- Production Test Reference for instrumentation
- HDTV

Related frequency reference products

- **A10-M**: Low Noise 1U 19" rack mount Rubidium Frequency standard up to 12 output, 1 to 100MHz
- **A1000** : Low Noise 2U 19" rack mount Rubidium Frequency standard up to 24 output, 1 to 100MHz
- **E10-LN**: Low phase noise Rubidium oscillator module
- **E10-X**: Low cost Desktop Rubidium frequency reference, 1 to 4 outputs
- **E10-P** : Portable Desktop & Bench top Frequency reference 1 to 4 outputs

E10-Y Specification

Outputs <i>See options</i>			
10MHz	+10dBm into 50 Ohms, 0.7V _{rms} (Specify for 75Ω load)		
Connector	BNC (Standard), SMA (specify)		
No. outputs	1-8		
Frequency Stability <i>Allan Deviation</i>			
	Options A	Options B	
Frequency	10MHz	10MHz	
$\tau = 1s$	$\leq 2 \times 10^{-12}$	$\leq 8 \times 10^{-13}$	
$\tau = 10s$	$\leq 3 \times 10^{-12}$	$\leq 2 \times 10^{-12}$	
$\tau = 100s$	$\leq 6 \times 10^{-12}$	$\leq 3 \times 10^{-12}$	
Phase Noise (SSB)			
	Options A	Options B	Options C
Frequency	10MHz	10MHz	10MHz
1Hz	-108 dBc	-110 dBc	-115 dBc
1Hz	-130 dBc	-135 dBc	-140 dBc
100Hz	-140 dBc	-145 dBc	-152 dBc
1 kHz	-155 dBc	-155 dBc	-155 dBc
10KHz	-155 dBc	-158 dBc	-158 dBc
Harmonics		Options C	
	10MHz	10MHz	
	<-40dBc	<-50dBc	
Spurious			
100 KHz BW	<-100dBc		
Aging (After 30 days)			
Frequency	10MHz		
Per day	5×10^{-12}		
Per Month	5×10^{-11}		
Per Year	5×10^{-10}		
Frequency accuracy			
Accuracy at shipping	5×10^{-11}		
Frequency retrace			
After 1 hours of continues operation	8×10^{-11}		
Frequency Adjustment			
Mechanical	$\pm 2 \times 10^{-9}$	Optional	
Electrical	$\pm 2 \times 10^{-9}$	Control voltage 0 to +5V	
Warm up time			
<6 minutes, time to lock			
<7 minutes to 1×10^{-10} at room temperature 25°C			

Included with shipment: Calibration certificate, Certificate of Conformance, product test sheet and 24 month warranty.

Environmental		
Temperature :	Operating	-40°C +65°C
	Storage	-40°C +80°C
Temp stability :	-20°C +60°C	1×10^{-9}
Relative humidity :	95% non-condensing	
Magnetic Field sensitivity :	3×10^{-11} Gauss	
Atmospheric pressure :	-60m -4000m $< 2 \times 10^{-11}$ Per mbar	
Approximate MTBF :	100,000 Hrs, Stationary	
Dimensions :	122 x 105 x 60mm LWH	
Weight:	Without internal battery	600gms
	With internal battery	750gms
Power supply		
DC power:	External +12 to +15V	
Power consumption:	22W Max at start (25°C) 6W at steady state	
Data output & monitoring		
RS232, 9600 baud rate		
Built-in options		
Option 02:	Output 2048kHz	
Option 03:	Output 1544kHz	
Option 04:	13MHz Output	
Option 05:	CMOS/TTL Output	
Option 06:	1PPS Output	
Option 07:	10.24MHz Output	
Option 08:	10.23MHz Output	
Option 10:	26MHz Output	
Option 11:	1MHz Output	
Option 12:	5MHz Output	
Option 18:	Extend warranty to 3 years	
Option 20:	External synch input. 1PPS, 5MHz or 10MHz	
Option 21:	2 x 1PPS Output	
Option 42:	Low noise floor -170dBc at 10KHz	
Option 52:	Rack Mount 19" 1U	
Option 53:	Rack Mount 19" 2U	
Option 75:	Add internal battery, up to 4 hours of battery life.	

Contact us to configure this product to meet your requirement.
Designed and manufactured in the U.K.

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Quartzlock continuous improvement policy: spec subject to change without notice and not part of any contract.
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