

Compact Desktop Rubidium Frequency Reference

Features

- Compact light weight portable for a wide range of application
- Sine wave or CMOS/TTL output
- Accuracy of 5×10^{-11}
- Compact light weight portable for a wide range of application
- Available 1 to 8 outputs
- Two years warranty



E10-X: Standard configuration



E10-X configured with option 09

Description

Compact simple to install, atomic frequency reference for use as a general purpose 10MHz rubidium frequency standard. This frequency standard benefits from having Quartzlock’s SMAC (Sub Miniature Atomic Clock) technology. The E10-X incorporates the latest high stability and low drift designs. It can be configured to frequencies from 1 to 100MHz outputs presented on the front or 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-Y**: Low Phase Noise Desktop Rubidium frequency reference, 1 to 8 outputs
- **E10-P** : Portable Desktop & Bench top Frequency reference 1 to 4 outputs

E10-X 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
Frequency	10MHz
$\tau = 1s$	$\leq 8 \times 10^{-11}$
$\tau = 10s$	$\leq 3 \times 10^{-11}$
$\tau = 100s$	$\leq 8 \times 10^{-12}$
Phase Noise (SSB)	
	Options A
Frequency	10MHz
1Hz	-67 dBc
1Hz	-95 dBc
100Hz	-125 dBc
1 kHz	-135 dBc
10KHz	-145 dBc
Harmonics	
	Options C
	10MHz
	<-40dBc
	<-45dBc
Spurious	
100 KHz BW	<-100dBc
Aging (After 30 days)	
Frequency	10MHz
<i>Per day</i>	5×10^{-12}
<i>Per Month</i>	5×10^{-11}
<i>Per Year</i>	5×10^{-10}
Frequency accuracy	
Accuracy at shipping	5×10^{-11}
Frequency retrace	
After 1 hours of continues operation	8×10^{-11}
Frequency Adjustment	
	Optional
Mechanical	$\pm 2 \times 10^{-9}$ Control voltage 0 to +5V
Warm up time	
<6 minutes, time to lock	
<7 minutes to 1×10^{-10} at room temperature 25°C	

Environmental		
<i>Temperature :</i>	Operating	-40°C +65°C
	Storage	-40°C +80°C
<i>Temp stability :</i>	-20°C +60°C	$< 1 \times 10^{-9}$
<i>Relative humidity :</i>	90% non-condensing	
<i>Magnetic Field sensitivity :</i>	3×10^{-11} Gauss	
<i>Atmospheric pressure :</i>	-60m -4000m $< 2 \times 10^{-11}$ Per mbar	
<i>Approximate MTBF :</i>	100,000 Hrs, Stationary	
<i>Dimensions :</i>	122 x 105 x 60mm LWH	
<i>Weight:</i>	Without battery	>600gms
	With internal battery	>700gms
Power supply		
<i>DC power:</i>	External +12 to +15V	
<i>Power consumption:</i>	18W Max at start (25°C)	
	8W at steady state	
Built-in options		
<i>Option 02:</i>	Output 2048kHz	
<i>Option 03:</i>	Output 1544kHz	
<i>Option 04:</i>	13MHz Output	
<i>Option 05:</i>	CMOS/TTL Output	
<i>Option 06:</i>	1PPS Output	
<i>Option 07:</i>	10.24MHz Output	
<i>Option 08:</i>	10.23MHz Output	
<i>Option 09:</i>	Increase 2, 4, 6 or 8 output distribution card	
<i>Option 10:</i>	26MHz Output	
<i>Option 11:</i>	1MHz Output	
<i>Option 12:</i>	5MHz Output	
<i>Option 18:</i>	Extend warranty to 3 years	
<i>Option 20:</i>	External synch input. 1PPS, 5MHz or 10MHz	
<i>Option 21:</i>	2 x 1PPS Output	
<i>Option 42:</i>	Low Phase Noise 10MHz output	
<i>Option 52:</i>	Rack Mount 19" 1U	
<i>Option 53:</i>	Rack Mount 19" 2U	
<i>Option 75:</i>	Add internal battery, up to 4 hours of battery life.	

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

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

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