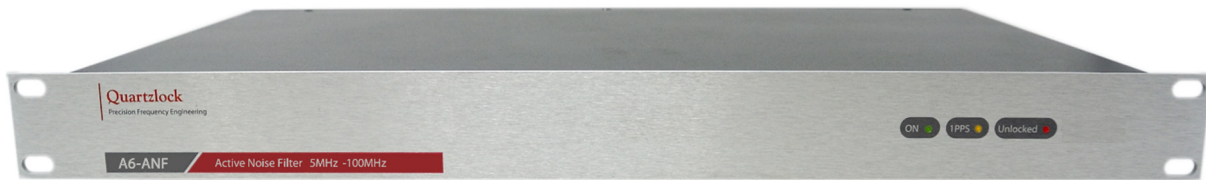


Active Noise Filter Atomic Clock Clean up Oscillator

- Sine or Square wave output
- Available from 1 to 100MHz
- Available 1 to 12 outputs
- Short term stability $<5 \times 10^{-13}$ at 1sec
- Ultra Low phase noise -118dBc at 1Hz
- Available with Internal rubidium oscillator



Description

The A6-ANF Active Noise Filter has an Ultra Low Noise internal oscillator which is used in Quartzlock’s Active Noise Filter Clean Technology to filter input reference signals. The A6-ANF provides an ultra low noise, excellent short term stability filtered output to make a significant improvement in Rubidium or Cesium frequency reference.

Applications & Features

- Improve primary reference phase noise
- Improve primary short-term stability
- Improve primary Jitter
- 5G Network
- Master clock instrumentation
- Microwave and radar application

Related frequency reference products

- **A10-M**: Low Phase Noise 1U 19” rack mount Rubidium Frequency standard up to 12 output, 1 to 100MHz
- **E10-Y**: Low Phase Noise Desktop/Bechtop Rubidium Frequency standard, 1 to 8 output, 1 to 100MHz
- **E10-LN**: Low Phase Noise Rubidium oscillator module
- **E10-Y**: Low cost Desktop Rubidium frequency reference, 1 to 4 outputs
- **E10-P**: Portable Desktop & Bench top Frequency reference 1 to 4 outputs

A6-ANF Specification

Outputs *See options*

10MHz	+10dBm (± 2 dBm) into 50 Ohms, 0.7V _{rms} Available from 5MHz to 100MHz
Connector	BNC (Standard), SMA (specify)

Frequency Stability *Allan Deviation*

	Options A	Options B
Frequency	10MHz	10MHz
$\tau = 1s$	$\leq 2 \times 10^{-12}$	$\leq 5 \times 10^{-13}$
$\tau = 10s$	$\leq 3 \times 10^{-12}$	$\leq 8 \times 10^{-13}$
$\tau = 100s$	$\leq 6 \times 10^{-12}$	$\leq 8 \times 10^{-13}$

Phase Noise (SSB)

Frequency	Options B		Options C	
	10MHz	5MHz (optional)	10MHz	5MHz (optional)
1Hz	-115 dBc	-115 dBc	-118 dBc	-123 dBc
10Hz	-140 dBc	-138 dBc	-143 dBc	-145 dBc
100Hz	-150 dBc	-152 dBc	-150 dBc	-153 dBc
1 kHz	-155 dBc	-154 dBc	-158 dBc	-155 dBc
10KHz	-158 dBc	-155 dBc	-160 dBc	-158 dBc

Harmonics

	Options C			
	10MHz	5MHz	10MHz	5MHz
	<-40dBc	<-40dBc	<-50dBc	<-50dBc

Spurious

100 KHz BW	<-100dBc	<-100dBc	<-100dBc	<-100dBc
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Aging 10MHz (After 7 days) free running

Frequency	With option 82	Without option 82
<i>Per day</i>	5×10^{-12}	1×10^{-10}
<i>Per Month</i>	5×10^{-11}	4×10^{-10}
<i>Per Year</i>	5×10^{-10}	4×10^{-19}

Frequency accuracy (option 82)

Accuracy at shipping 5×10^{-11}

Frequency retrace (option 82)

After 1 hours of continues operation 3×10^{-11}

Warm up time

<10 minutes, time to lock

<8 minutes to 1×10^{-9} at room temperature 25°C

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

Environmental

<i>Temperature :</i>	Operating	-20°C +70°C
	Storage	-40°C +80°C

<i>Temp stability (free running) :</i>	-20°C +70°C	< 1×10^{-9}
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<i>Relative humidity:</i>	95% non-condensing	
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<i>Magnetic Field sensitivity :</i>	5×10^{-11} Gauss	
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<i>Atmospheric pressure :</i>	-60m –4000m < 2×10^{-11} Per mbar	
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<i>Approximate MTBF :</i>	100,000 Hrs, Stationary	
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<i>Dimensions :</i>	44mm (1.75") 1U 19" rack mount	
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<i>Power supply</i>	90-245V AC, 47 to 63Hz	
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AC power: 90-245V AC, 47 to 63Hz

Optional redundancy switch: see option 00

Seamless battery back-up switch

Data output & monitoring

	Options D	
RS232, 9600 baud rate	USB	Ethernet

Built-in options

Option 00: Redundant switchover for external power back-up

Option 02: Output 2048kHz

Option 03: Output 1544kHz

Option 04: 13MHz Output

Option 05: Square wave Output, CMOS, TTL

Option 06: 6 x 1PPS Output, pulse width 10 millisecond

Option 07: 10.24MHz Output

Option 08: 10.23MHz Output

Option 09: Add 6 Output Distribution Card

Option 10: 26MHz Output

Option 11: 1MHz Output

Option 12: 5MHz Output

Option 18: Extended warranty to 3 years

Option 21: Add 1PPS Output

Option 52: Rack Mount 19" 2U

Option 53: Rack Mount 19" 3U

Option 62: AC Input 110V

Option 64: DC input: Specify +12V, +24V, +48V or +60V

Option 75: Add internal battery, up to 4 hours of battery life.

Option 80: Benchtop enclosure

Option 81: 100MHz output

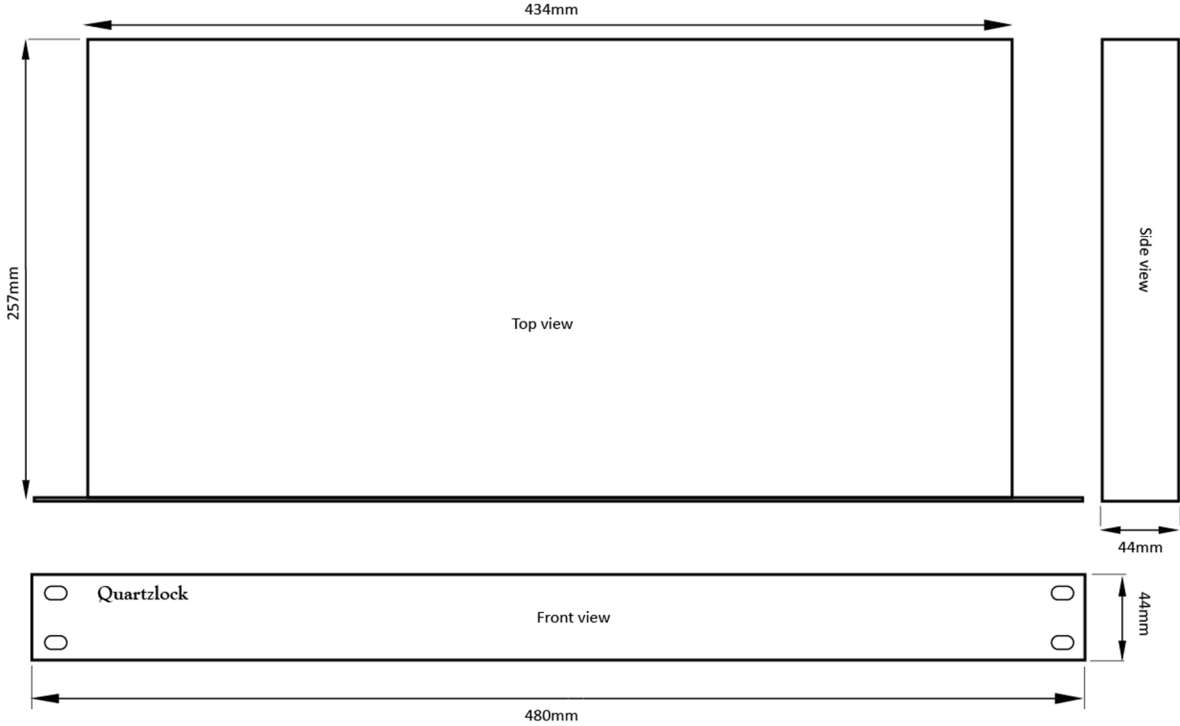
Option 82: Add internal rubidium standard

Contact us to configure this product to meet your requirement.

Designed and manufactured in the U.K.

Product mechanical drawing

The mechanical drawing is 1U rack mount box.



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