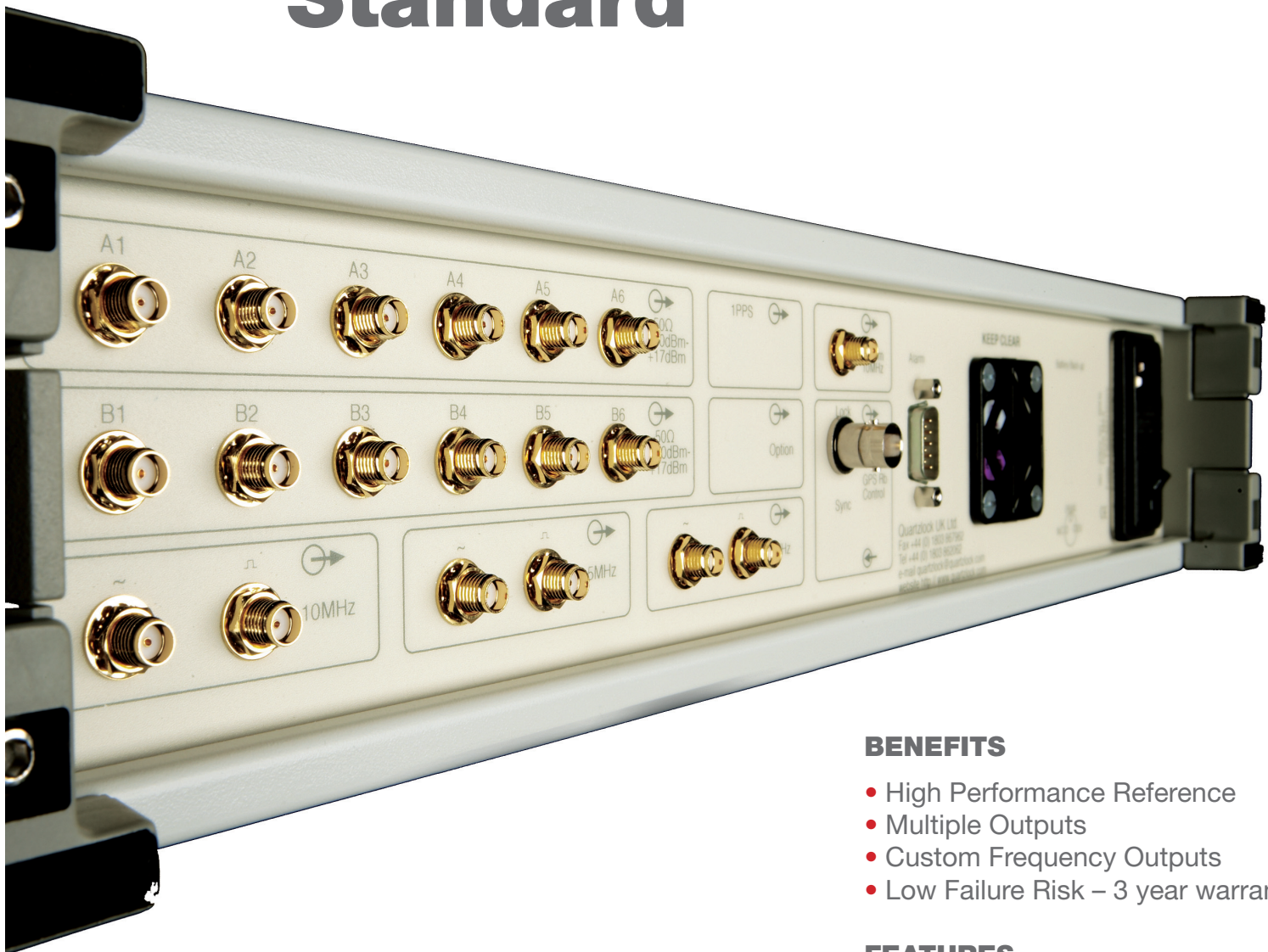


Ultra Low Noise Rubidium Frequency Standard



APPLICATIONS

- Frequency Calibration
- Telecom Network Synchronisation
- Broadcast – Radio & TV
- HDTV
- Production Test Reference
- Microwave Test Bench or Solution

BENEFITS

- High Performance Reference
- Multiple Outputs
- Custom Frequency Outputs
- Low Failure Risk – 3 year warranty

FEATURES

- Low Phase Noise -165dBc/Hz (-173dBc/Hz option)
- Aging: 4×10^{-10} /year
- Stability to 5×10^{-13} /s
- 10MHz Standard Output
- 1–40MHz optional
- 100MHz option (-180dBc/Hz)



STANDARD SPECIFICATIONS		This product replaces the HSRO	
Output (100MHz ULN option)	10MHz, +7dBm into 50Ω, 0.5VRMS - see options		
Adjustment Mechanical Range Electrical Range Control Voltage Factory Setting	2x10 ⁻⁹ min 2x10 ⁻⁹ min 0 ~ 5V ±5x10 ⁻¹¹		
Frequency Stability typical	A10-M	A10-MX	
	STD	LN	ULN
1s	3x10 ⁻¹²	1x10 ⁻¹²	5x10 ⁻¹³
10s	2x10 ⁻¹²	5x10 ⁻¹²	2x10 ⁻¹³
100s	8x10 ⁻¹³	4x10 ⁻¹³	4x10 ⁻¹³
1day	x10 ⁻¹²	1x10 ⁻¹²	x10 ⁻¹²
Aging			
1 day	3x10 ⁻¹²	1x10 ⁻¹²	5x10 ⁻¹³
1 month	4x10 ⁻¹¹	4x10 ⁻¹¹	4x10 ⁻¹¹
1 year	5x10 ⁻¹⁰	4x10 ⁻¹⁰	4x10 ⁻¹⁰
Phase Noise dBc/Hz in 1Hz BW	Std	LN	ULN
1Hz	-90	-110	-115
10Hz	-120	-139	-148
100Hz	-135	-152	-158
1kHz	-145	-162	-165
10kHz	-150	-160	-170
100kHz	-150	-170	-173
Harmonics	<40dBc		
Spurious	<80dBc		
Warm time to 1x10⁻⁹	5min		
Retrace after 24h off & 1h on, same temp	<3x10 ⁻¹¹		
Power Supply Power at steady state at 25°C	90 ... 245V ac Battery Back Up option 13W @ 24V (22~30Vdc) @ 25°C, Max 2A		
Freq offset over output voltage range	<2x10 ⁻¹¹		
Temperature Operating Storage Freq offset over operating temperature range	-20°C ~ +50°C -40°C ~ +70°C <3x10 ⁻¹⁰		
Magnetic Field Sensitivity Atmospheric Pressure Approx MTBF, Stationary	<2x10 ⁻¹¹ /Gauss -60m ~ 4000m <1x10 ⁻¹³ /mbar Approx MTBF, Stationary		
Mechanical	88mm (3.5") 2U x 19" rack mounted		

OPTIONS

- Multiple Outputs
- 1 ... 40MHz Output Frequency
- Ultra Low Noise. 50 ... 100MHz Outputs (-180dBc Noise Floor)
- 24V dc Battery Back-up Input

A10-MX Uses Quartzlock DPPL-DDS Clean Up Loop Technology

Please contact Quartzlock about your application. We can help you choose the most cost effective low noise solution.

The Quartzlock A10-M or A10-MX find applications in standards laboratories, as low noise frequency references and as calibrators.

EXTERNAL CALIBRATOR OPTION 4A

Separate outputs are provided.

Calibrator outputs specification
Sinewave +13dBm 50 Ohm 1Vrms

Output frequencies:

1MHz
5MHz
10MHz
100MHz
1GHz

Ultra low frequency option for calibration use:

Specification
Square wave TTL output

Output frequencies:

From 0.01Hz to 500kHz in 1, 2 & 5 steps
(24 separate switched frequencies)
This ULF option is a separate module.
This option includes a 1MHz square wave output from A10-M or A10-MX.

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