

1-100MHz Low Noise Distribution Amplifier

- Excellent stability and phase noise
- Low 1/f PM noise
- 1MHz – 100MHz Bandwidth
- Two years warranty



Description

The Quartzlock A5-8 Distribution Amplifier is a precision distribution amplifier for use with Frequency Standards or other signals where a multiple outputs from a single generator is required. Available in 8 outputs. The A5-8 replaces previous A5 models; the specification has improved isolation and other parametric. The A5-8 Distribution Amplifier standard configuration is 1U Rack Mount unit. See box dimensions on page 3.

Features

- Multiple inputs & outputs
- High Isolation between inputs and outputs
- Retains original input signal characteristics
- No cross channel interference between outputs for mission critical applications
- Internal battery backup (Optional)
- Very low harmonic distortion

Applications

- National Standards Laboratories
- Telecom applications
- Industrial calibration laboratories
- Production Test Reference for instrumentation

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

Available products in the same family

- **E5000** : Low noise sinewave, distribution amplifier. 1, 2 or 3 inputs and 12, 24 or 36 outputs.
- **A5000P** : Pulse, CMOS, TTL distribution amplifier. 1, 2 or 3 inputs and 12, 24 or 36 outputs.
- **E5-6** : 1 input 6 outputs distribution amplifier
- **E5-6P** : 1 input 6 outputs Pulse, CMOS, TTL distribution amplifier

Specification

Outputs *See options*

See options 11, 12 & 13		
No of inputs	1-4	Multiple inputs available Note¹
No of outputs	8	Multiple of 8 or 16 outputs available
Connector	BNC	SMA (Optional)

Input characteristics

Impedance	50Ω	75Ω (Options A)
Input level	+13dBm Nominal into 50 Ohms	
Input SWR	<1.3:1 at 10MHz <2:1 at 100MHz	
Input return loss	>18dBm (SWR<1.3)	

Output characteristics

Impedance	50Ω	75Ω (Options B)
Output level	+13dBm (max) into 50 Ω at 10MHz	
Output SWR	<1.2:1 (Max output: +16dBm at 10MHz)	

Frequency response

Range	2MHz to 100MHz (±1.5dBm)	
Harmonics	Source harmonics <-60dBc 2 nd Harmonic <-38dBc 3 rd Harmonics <-48dBc	

Isolation

Output to output	>95dB at 10MHz, adjacent output 110dB, non-adjacent output 85dB at 100MHz, adjacent output 90dB, non-adjacent output	
Output to input	>110dB at 10MHz >90dBm at 100MHz	
Crosstalk	>55dB at 100MHz, input to input	

Frequency Stability *Allan Deviation*

Frequency	10MHz	
$\tau = 1s$	<2x10 ⁻¹³	
$\tau = 10s$	<2x10 ⁻¹⁴	
$\tau = 100s$	<5x10 ⁻¹⁵	

Phase Noise (SSB)

1Hz	-140 dBc	
10Hz	-150 dBc	
100Hz	-160 dBc	
1 kHz	-165 dBc	
10KHz	-168 dBc	

Spurious

Spurious Note²	<-110dBc/Hz above 1MHz, typically -120dBc	
Broadband Noise	<-148dBm/Hz	
Delay match between outputs	<2ns (within group of 4 outputs <0.3ns)	
Temp stability of delays	10ps/°C	
Phase change at output	Due to open or short at any output. Calculated from isolation: 0.5ps at 10MHz	

Environmental

Temperature :	Operating	-20°C +60°C
	Storage	-40°C +80°C
Temp stability :	-20°C +60°C	1x10 ⁻⁹
Relative humidity :	95% non-condensing	
Magnetic Field sensitivity :	2x10 ⁻¹¹ Gauss	
Approximate MTBF :	200,000 Hrs, Stationary	
Dimensions :	1U 19" rack mount 44 X 444 X 221	

Power supply

AC power: 90-245V AC, 50Hz

Optional redundancy switch: see option 00

Seamless battery back-up switch

Built-in options

- Option 00:** Redundant switchover for external power back-up
- Option 11:** 1 input 16 output
- Option 12:** 2 independent inputs 16 outputs
- Option 13:** 3 independent inputs
- Option 18:** Extended warranty to 3 years
- Option 51:** Rack Mount 19" 1U
- 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 24 hours of battery life.
- Option 91:** 10MHz input 1MHz output
- Option 92:** 10MHz input 5MHz output
- Option 93:** 10MHz input 1PPS output

Note 1: Mixed frequencies are permitted in one unit

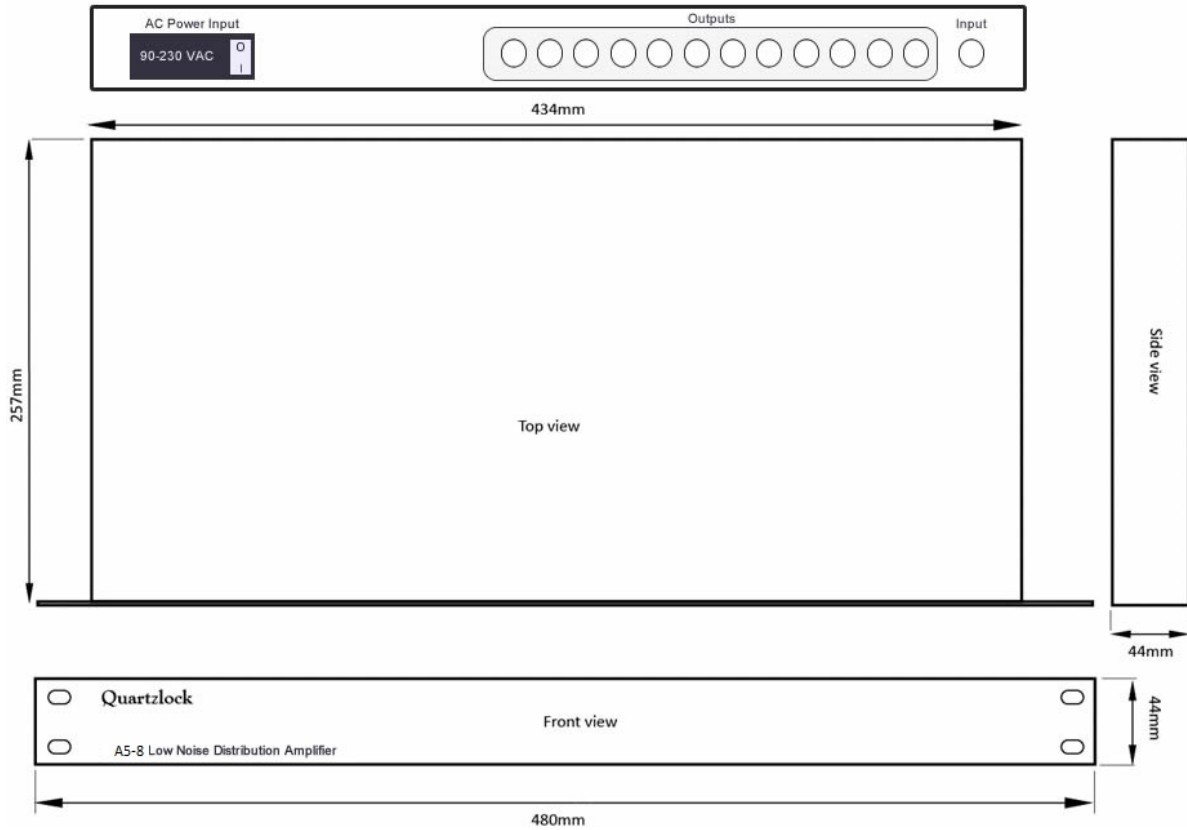
Note 2: Spurious outputs are exclusively from the switch mode power supply.

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

Typical configuration

The A5-8 can be configured to multi input multi outputs frequencies from 1 to 100MHz.
Standard input & output connectors: BNC and SMA



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