

# Low Noise Distribution Amplifier

- Excellent short term stability and phase noise
- Comprehensive specification & options
- 1MHz – 100MHz Bandwidth
- Adjustable output level
- Two years warranty



## Description

The E5-6 Distribution Amplifier is a 1U Rack Mount unit. The E5-6 allows a cost and space efficient way to distribute reference frequencies throughout a system or lab with virtually no signal degradation. The standard E5-6 accepts input frequencies of 1MHz to 100MHz and provides outputs of the same frequency.

## Features

- Multiple inputs & outputs
- -130dB phase noise at 1Hz offset at 10MHz
- >80dB at 10MHz isolation
- Unity gain
- 0 dBm to +12dBm input
- Internal battery backup
- High isolation & Low distortion

## Applications

- Industrial calibration laboratories
- Telecom applications
- Laboratories reference distribution
- Production Test Reference for instrumentation

### ***Included with shipment:***

*Calibration certificate, Certificate of Conformance, and 24 month warranty.*

## Available products in the same family

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

## Specification

Outputs <i>See options</i>		
<b>See options 11, 12 &amp; 13</b>		
No of inputs	1	Multiple inputs available
No of outputs	6	Multiple of 6 outputs available
Connector	BNC	SMA (Optional)
Input characteristics		
<b>Options A</b>		
Impedance	50Ω	75Ω
Input level range	0 to +12dBm	
Input SWR	<1.2:1 at 10MHz	
Input return loss	>21dBm	
Output characteristics		
<b>Options B</b>		
Impedance	50Ω	75Ω
Output level range	+5 to +12dBm (max) into 50 Ω at 10MHz	
Output SWR	<1.2:1	
Frequency response		
Range	1MHz to 100MHz	
Harmonics	Source harmonics <-60dBc 2 <sup>nd</sup> Harmonic <-50dBc 3 <sup>rd</sup> Harmonics <-50dBc	
Isolation		
Output to output	>80dB at 10MHz	
Output to input	>80dB at 10MHz	
Non- adjacent output	>80dB at 10MHz	
Frequency Stability <i>Allan Deviation</i>		
Frequency	<b>10MHz</b>	
$\tau = 1s$	$2 \times 10^{-13}$	
$\tau = 10s$	$2 \times 10^{-14}$	
$\tau = 100s$	$5 \times 10^{-15}$	
Phase Noise (SSB)		
Frequency	<b>10MHz</b>	
1Hz	-130 dBc	
10Hz	-144 dBc	
100Hz	-153 dBc	
1 kHz	-158 dBc	
10KHz	-160 dBc	
Spurious		
Spurious	<-100dBc/Hz	
Broadband Noise	<-155dBc/Hz	

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

## Environmental

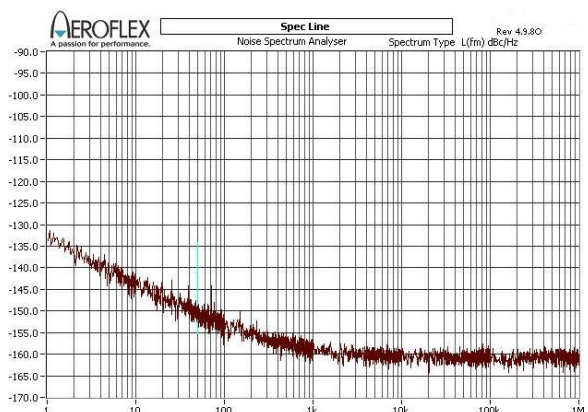
<i>Temperature :</i>	Operating	-20°C +60°C
	Storage	-40°C +80°C
<i>Temp stability :</i>	-20°C +60°C	1x10 <sup>-9</sup>
<i>Relative humidity :</i>	95% non-condensing	
<i>Magnetic Field sensitivity :</i>	2x10 <sup>-11</sup> Gauss	
<i>Approximate MTBF :</i>	200,000 Hrs, Stationary	
<i>Dimensions :</i>	See page 3	

## Power supply

<i>AC power:</i>	90-245V AC, 50Hz
<i>Optional redundancy switch:</i>	see option 00
Seamless battery back-up switch	

## Built-in options

- Option 00:** Redundant switchover for external power back-up
- Option 11:** 1 input 12 output
- Option 12:** 2 inputs 6/12 outputs
- Option 13:** 3 inputs 6/12/18 outputs
- 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



E5-6 phase noise measurement at 10MHz

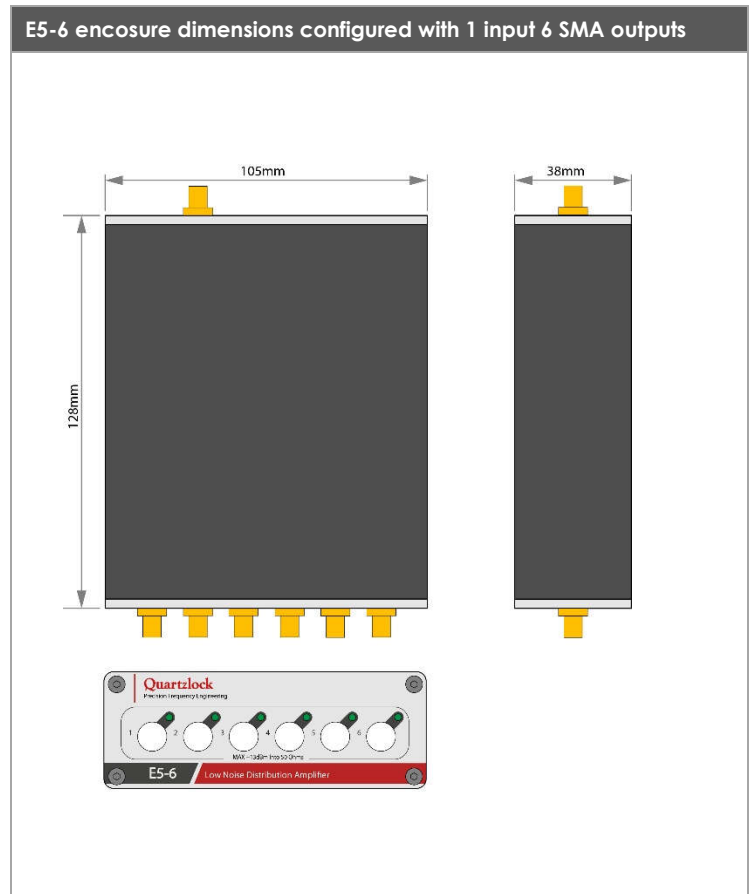
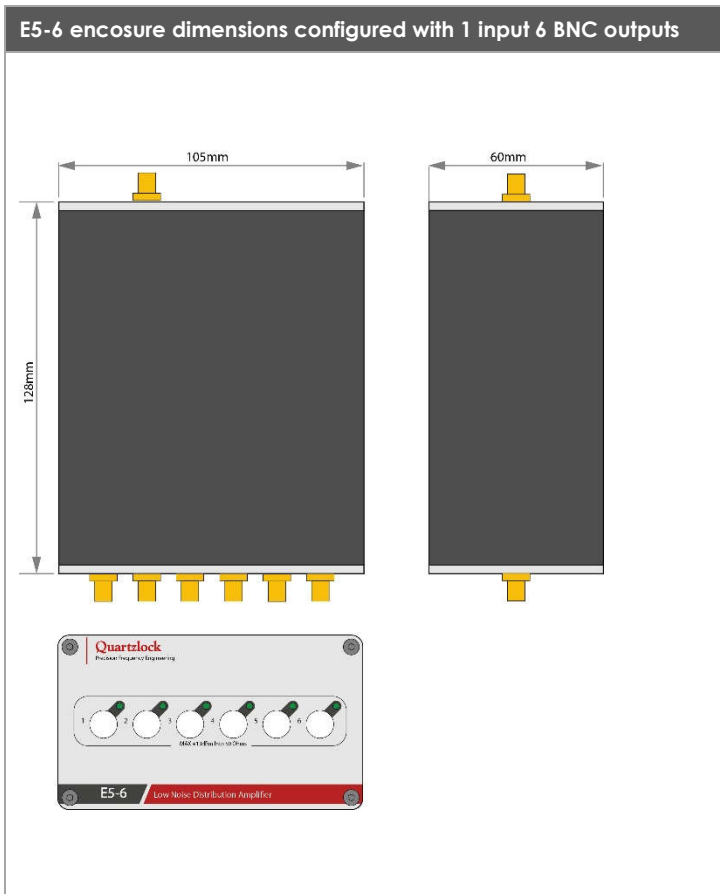
Contact us to configure this product to meet your requirement.  
Designed and manufactured in the U.K.

## Typical configuration

The E5-6 can be configured to multi input multi outputs frequencies from 1 to 100MHz.  
Standard input & output connectors: BNC and SMA



Example of rear panel configuration



The Quartzlock logo is a registered trademark.  
Quartzlock continuous improvement policy: spec subject to change without notice and not part of any contract.  
Copyright © 2020. Issue 020.1