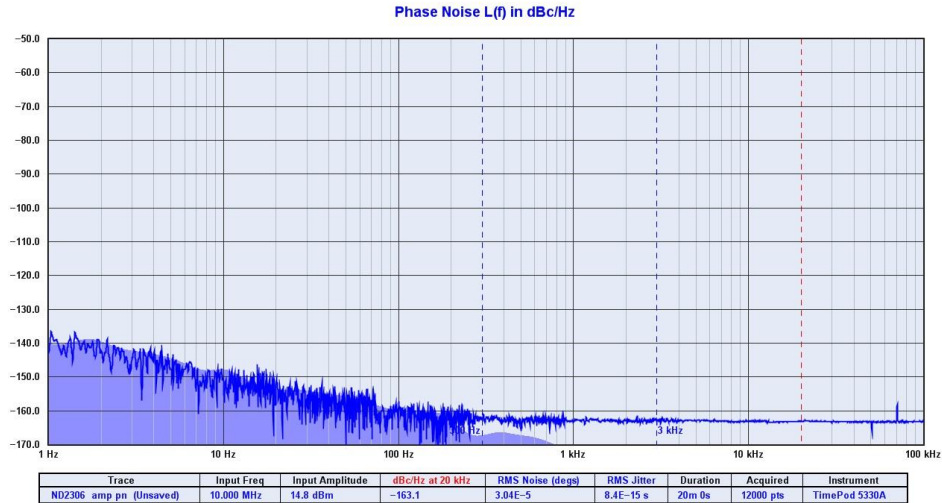
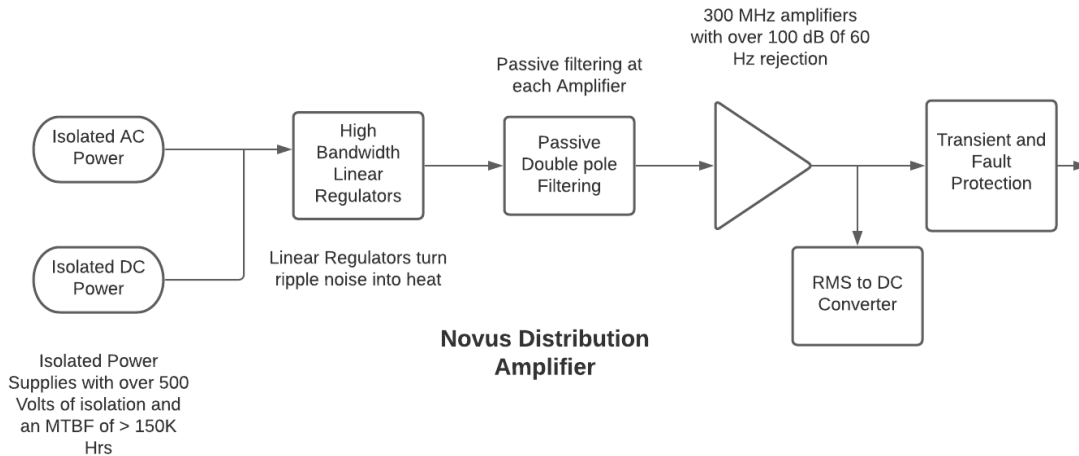


# NOVUS DISTRIBUTION AMPLIFIER DESIGN CONSIDERATIONS

Novus has standardized our multi-channel distribution amplifiers. All are designed for minimal noise contribution, reliability, and cost effectiveness. Below is a typical phase noise contribution curve for a Novus amplifier:



To achieve this level of performance, our amplifiers are configured as shown below:



We start off with high-performance switching converters to isolate the unit from the primary power bus and provide the system with a well-regulated DC bus. The converters provide over 500 volts of isolation and feature an MTBF > 150,000 hours (> 17 years). Novus selects all our power converters to be operated at less than 50 % of rated power. Global power and DC power in the range of  $\pm 60$  Vdc can be used. Power supply redundancy is available

# NOVUS DISTRIBUTION AMPLIFIER DESIGN CONSIDERATIONS

The Novus NS2310D is a ten-channel redundant switch that can be used with Novus references or distribution amplifiers for greater system assurance.

The switching regulator is followed by a high bandwidth linear regulator to turn switching noise created by the switching regulator into heat. It has been our experience that it is always best to stop the noise at the source.

Each amplifier has a double pole passive low pass filter to further reduce noise.

The amplifiers are 300 MHz amplifiers with over 100 dB of power supply rejection at 60 Hz and over 50 dB at the power supply switching frequency.

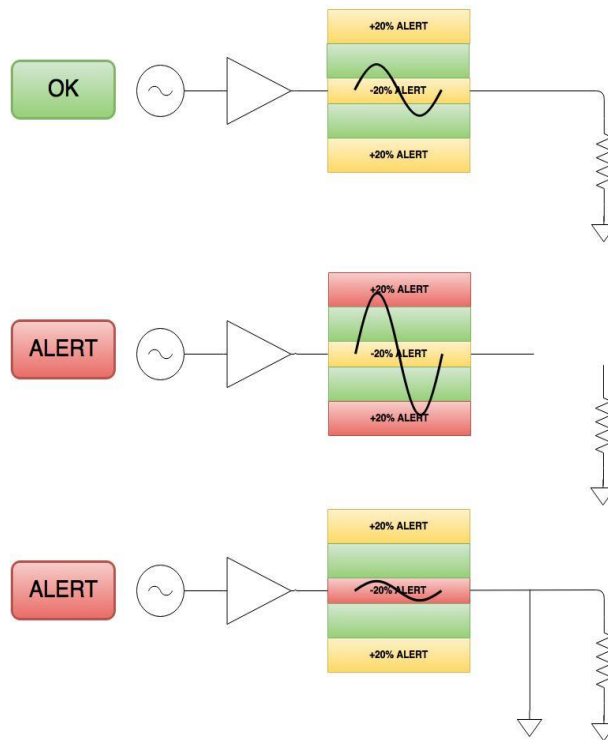
All passive components are operated at <50% of rated voltage.

Each amplifier is transient, and fault protected. Each output is individually monitored with a rms to DC converter.

The alarm limits for each channel can be programmed individually.

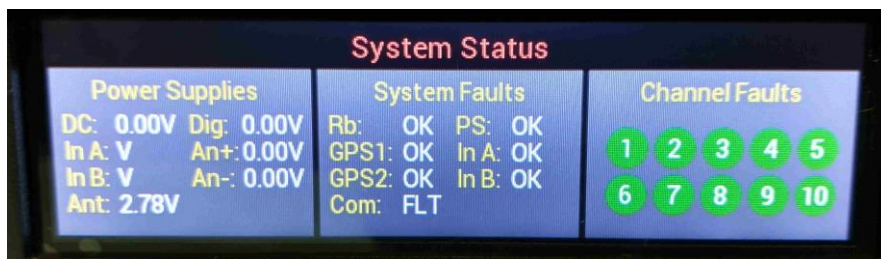


# NOVUS DISTRIBUTION AMPLIFIER DESIGN CONSIDERATIONS



The status of each channel is reported individually via the front panel display - the RS232 port and/or SNMP depending upon the amplifier options selected. The low and high alert limit settings allow the unit to likely detect a failing cable or a disconnected cable condition and will alert the system of a problem.

Internal power supplies and other critical circuitry are monitored continuously:



Many of the Novus distribution amplifiers offer either BNC or SMA connectors.

A Novus amplifier will distribute your reference signal with a minimum of noise with meaningful status information and provide years of unattended service.