

Key Features

- Amplitude Leveling
- Low Phase Noise
- Exceptional Isolation
- Conveniently Daisy-Chained
- Miniature/Embeddable
- Broad Input Power Range

Applications

- Frequency Standard Distribution
- Test and Instrumentation



Functional Description

The function of a distribution amplifier is to create multiple copies of a signal while minimally degrading its integrity. The DA100 distribution amplifiers are designed to distribute a low-noise RF signal to multiple usage points, where equipment requiring such signals may be employed.

The DA100 has one input and five outputs. It may be configured with either SMA or BNC connectors (see Options Section for more information). The input is AC-coupled, offers an input source impedance of 50 Ω , and is conditioned by a limiter circuit, which provides a fixed output level as well as high input gain. The high input gain allows the amplifier to provide the specified output power over a broad range of input power.

The input limiter is followed by three amplifier/low-pass filter stages, which insure low-distortion sine wave outputs. The outputs from the filter stages are supplied to fixed gain output amplifiers. This configuration minimizes channel-to-channel phase offsets (<1 ns); the phase offset from the input to any output is less than 5 ns at 10 MHz.

Multiple amplifiers may be daisy-chained together by connecting the output of channel five to the input of another distribution amplifier. However, this configuration increases phase offset between amplifiers. If channel-to-channel phase offset is a concern, the recommended configuration would be to use a single amplifier to drive up to five additional amplifiers. This will provide up to 25 outputs with minimal channel-to-channel phase offset.

	Min	Max	Units
Input:¹			
Frequency Range ²	1.0	100.0	MHz
Amplitude	-10.0	+16.0	dBm
	0.2	4.00	Vpp
Impedance	45	55	Ω
Output:			
THD	N/A	1	%
Amplitude (50Ω Load)	+9.0	+11.0	dBm
	0.63	0.79	Vrms
	1.78	2.24	Vpp
Amplitude (High-Z Load)	1.00	1.30	Vrms
	2.83	3.68	Vpp
Channel-to-channel Isolation	70	N/A	dB
Power Requirements³			
Voltage	6	12	VDC
Current ⁴	N/A	250	mA

Notes:

- 1 - Input signal waveform can be any type with a 50% duty cycle
- 2 - Amplifiers are purchased at a fixed frequency. Can accommodate any frequency between 1-100 MHz, with a minimum bandwidth of ± 5%.
- 3 - The device may be powered with a user-supplied voltage via the screw terminal connections or the 2.1 mm plug on the included 6 V, 500 mA power module. When the power module is utilized, the module voltage is made available on the screw terminals, allowing the user to access 6 V, 250 mA to power external circuitry.
- 4 - Max current specified is using a 10 MHz input.

Caution: Do not connect an external supply voltage to the screw terminals when using the power module.

Ordering Information:

DA100-FFM FF-BNC/SMA

- 1 - Frequency in MHz (with M as the decimal)
Example: 10 MHz would be "10M00"
- 2 - Connector type (BNC/SMA)

Outline Drawing: (All dimensions are in inches with a tolerance of ± 0.020").

