

# LNDA-10 Distribution Amplifier



The LNDA-10 is a High Performance Distribution and Isolation Amplifier designed to distribute state-of-the-art atomic frequency standards. This model offers exceptionally low additive phase noise and is designed for operation at 10 MHz.

The amplifier is a 1U, 19-inch rackmount instrument with 12 buffered and isolated outputs. The input and all output power levels are monitored and compared to a user set threshold. If the signal level on the input or any output drops below the set threshold, the monitor LED will turn off indicating a fault condition, and the fault will be reported through the Ethernet interface.

The LNDA-10 is designed with a redundant power supply system, it can be powered by one or two 100 to 240 VAC mains sources. In the event that the amplifier is powered by two AC sources, and one of them fails, the instrument will continue uninterrupted operation. The loss of either AC source will activate an alarm sending a signal through the Ethernet interface and turning off the corresponding monitor LED located on the front panel.

## FEATURES

- Low VSWR
- High isolation
- High output
- Low distortion
- Low phase noise
- Low temperature coefficient
- Signal Monitor LEDs
- Ethernet: remote monitor and control
- Redundant power supply system

## APPLICATIONS

- Atomic frequency standards
- Atomic time scales
- High performance testing facilities
- Laboratory frequency distribution
- Reference frequency distribution

## LNDA SELECTION GUIDE

Part Number	Number of Inputs	Number of Outputs	Frequency
LNDA-5	1	12	5 MHz
LNDA-10	1	12	10 MHz
LNDA-100	1	12	100 MHz

## SPECIFICATIONS

PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
Max Input Level	1 dB compression	19	18	-	dBm
Min Input Level **	no fault	7	8	-	dBm
Bandwidth	+/- 1 dB	1-14	1-15	-	MHz
Gain	@ 10 MHz	-0.5	-0.3	0.5	dB
Impedance	output	-	50	-	Ohms
Return Loss	input(S <sub>11</sub> )	-	-30	-25	dB
Return Loss	output(S <sub>22</sub> )	-	-40	-35	dB
Distortion*	+13 dBm	-	-57	-45	dBc
Isolation	output to output	80	110	-	dB
	output to input	80	130	-	dB
Spurious		-	-	-90	dBc
Phase Noise* (Referred to the Input)	1 Hz	-	-147	-144	dBc/Hz
	10 Hz	-	-158	-155	
	100 Hz	-	-164	-161	
	1 kHz	-	-169	-166	
	10 kHz	-	-171	-168	
	100 kHz	-	-171	-168	
Allen Deviation (ADEV)	1 s		2.7 E -14	1.5 E -14	
	10 s		3.6 E -15	5 E -15	
	100 s		5.4 E -16	6 E -16	
	1000 s		1.4 E -16	2 E -16	
	10000 s		6.9 E -17	9 E -17	
Temperature-delay Coefficient	0 - 50 °C	--	1.5	3	ps/°C

**All tests are done at 10 MHz and +13 dBm input unless otherwise specified.**

\*\* Default setting is +7 dBm, this can be changed by the user through a Telnet command interface.

- ◆ Rackmount chassis: 1U H, 19" W, 14" D
- ◆ Weight 4.5 kg (10 lbs)
- ◆ AC Input Voltage Range: 90-264 VAC, 22 W, 47-63 Hz,
- ◆ DC Input Voltage Range: 12-36 VDC, 13 W
- ◆ Operation environment: 0 to +50 °C,
- ◆ Humidity: 5% to 95% Non-condensing
- ◆ Storage temperature: -10 to +75 °C