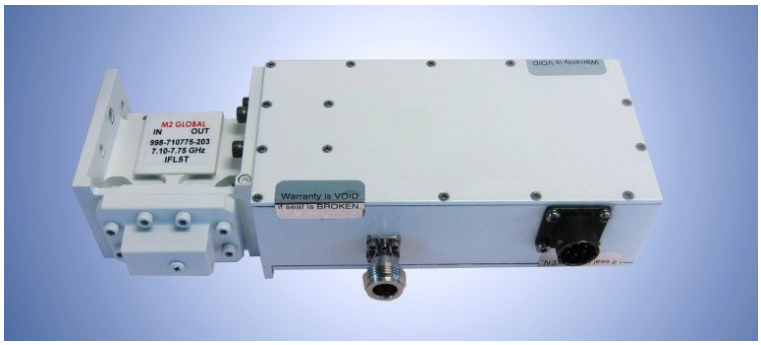
LX-7000 series X-Band Low Noise Amplifiers are specifically designed for satellite earth station receiver front ends and other telecommunications applications.

Utilizing state-of-the-art HEMT and GaAs FET technology, these amplifiers have been designed for both fixed and transportable applications. High performance models are available in several gains, with noise temperatures as low as 45 K. Noise temperature specifications are guaranteed over the full bandwidth of the LNA.



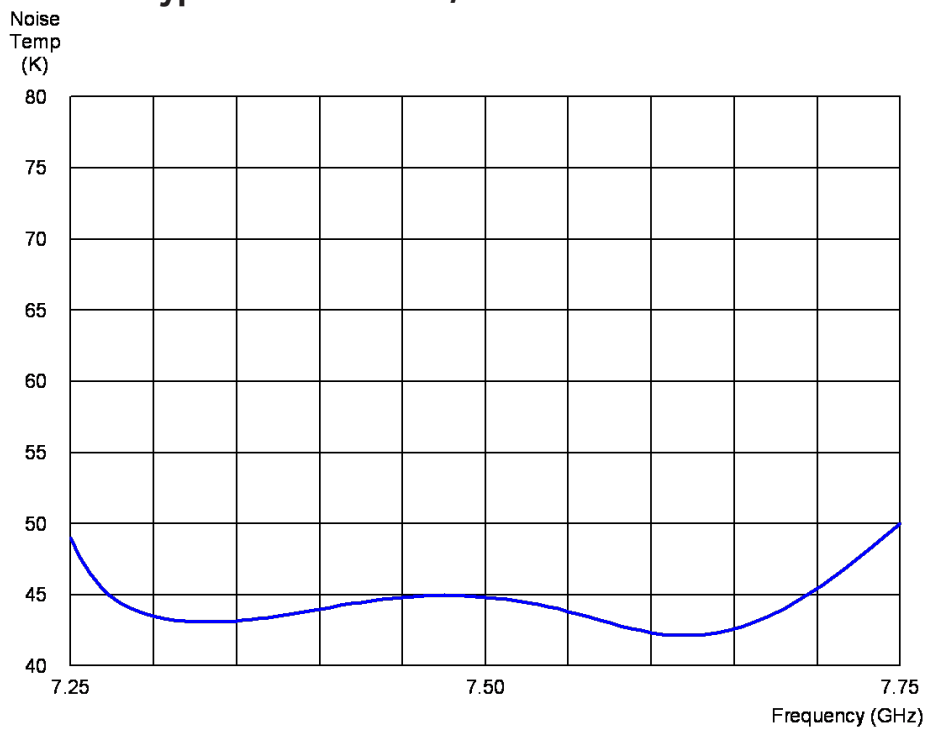
FEATURES:

- State-of-the-art noise performance
- HEMT/GaAs FET design
- Weatherproof enclosure
- Internal low-loss input isolator
- Internal regulator
- Reverse polarity protection
- Surge and transient protection
- High reliability
- Form 'C' alarm

OPTIONS:

- Low gain, 50 dB
- High output power, +20 dBm
- Interstage transmit reject filter
- Universal AC input power supply

Typical Performance, Model LXA7S50-XXXX



System Specifications

Parameter	Notes	Specification
Frequency Range		7.25 to 7.75 GHz
Gain	Standard Option 1	60 dB min., 63 dB typical, 65 dB max. 50 dB min., 53 dB typical, 55 dB max.
Gain Flatness		±0.5 dB over the full band ±0.2 dB per 40 MHz
VSWR	Input Output	1.20:1 typical, 1.25:1 max. 1.30:1 typical, 1.50:1 max.
Noise Temperature (1)	At +23°C Versus Temperature	See Table 1 See Table 2
Power Output at 1dB compression ($P_{1\ dB}$)	Standard Option 2	+15 dBm min., +17 dBm typical +20 dBm min., +21 dBm typical
3rd Order Output Intercept Point	Standard Option 2	+25 dBm min., +27 dBm typical +30 dBm min., +31 dBm typical
Group Delay per 40 MHz	Linear (Standard) Parabolic (Standard) Ripple (Standard) Linear (Option 7) Parabolic (Option 7) Ripple (Option 7)	0.01 ns/MHz 0.001 ns/MHz^2 0.1 ns peak to peak 0.05 ns/MHz 0.005 ns/MHz^2 1.0 ns peak to peak
AM/PM Conversion		0.05°/dB max., -5 dBm output power
Gain Stability (Constant Temperature)	Short term (10 min.) Medium term (24 hrs) Long term (1 week)	±0.1 dB ±0.2 dB ±0.5 dB
Gain Stability vs. Temperature	-Standard -Option 1	-0.05 dB per °C typical -0.04 dB per °C typical
Maximum Input Power	Damage threshold Desens. threshold, Std. Desens. threshold, Opt. 7 (2)	0 dBm max. -50 dBm max. -30 dBm max.
Connectors	Input Output Power, Standard (3)	CPR112G Flange Type N Female PT02E10-6P-027 (mate supplied)
Power Requirements	Voltage, Standard Current, Standard Current, Option 2 Option 4, AC voltage Frequency	12 V min., 15 V typical, 24 V max. 240 mA typical, 270 mA max. 300 mA typical, 330 mA max. 90 VAC min., 265 VAC max. 47 Hz min., 63 Hz max.
Operating Temperature	Ambient air temperature	-40°C to +60°C

(1) Maximum noise temperature at +23°C at any frequency in the specified band.
(2) Desens threshold for 7.90-8.40 GHz frequency range.
(3) Power may be supplied either via the RF output connector (cable powered) or via the MS connector.

Table 1 - Part Number Ordering Information

LX□7S□-□□□□

Frequency Band
7.25–7.75 GHz ..... A

Noise Temperature
50 K 50
45 K 45

Options
Standard gain: 60 dB gain X
• Option 1: 50 dB gain 1
Standard output: +15 dBm output X
• Option 2: +20 dBm output 2
Standard DC power (12–24 Vdc) X
• Option 4: Universal AC Input (90–265 Vac, 47–63 Hz) 4
Standard, no interstage filter X
• Option 7: Interstage Tx reject filter, >15 dB rejection, 7.90-8.40 GHz ... 7

Table 2 - Noise Temperature vs Ambient Temperature

Noise temperature vs. ambient temperature can be found from the equation,

$$NT_2/NT_1 = (T_2/T_1)^{1.6}$$

where:

NT_2	=	Noise Temperature at T_2
NT_1	=	Noise Temperature at T_1
T_2	=	Temperature 2 in K
T_1	=	Temperature 1 in K
		(K = °C + 273)

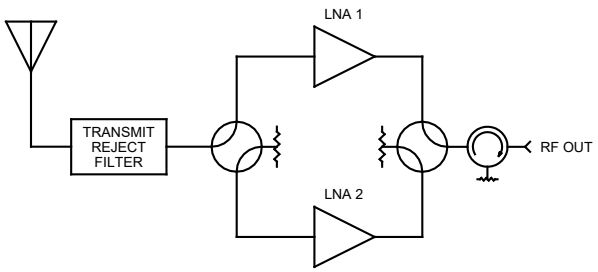
For the case where T_1 = 296 K (+23 °C), the ratio NT_2/NT_1 is shown in the table below:

Ambient Temperature T_2 (°C)	Ratio NT_2 / NT_1
0	0.88
+23	1.00
+40	1.09
+50	1.15
+60	1.21

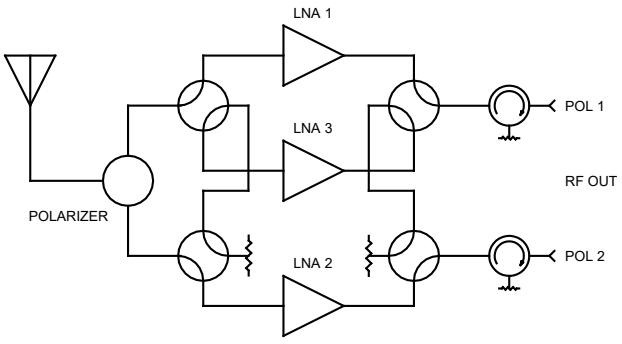
Example: For model LXA7S50-XXXX, NT_1 = 50 K at +23 °C; what is NT_2 at +40 °C?

Typical Applications

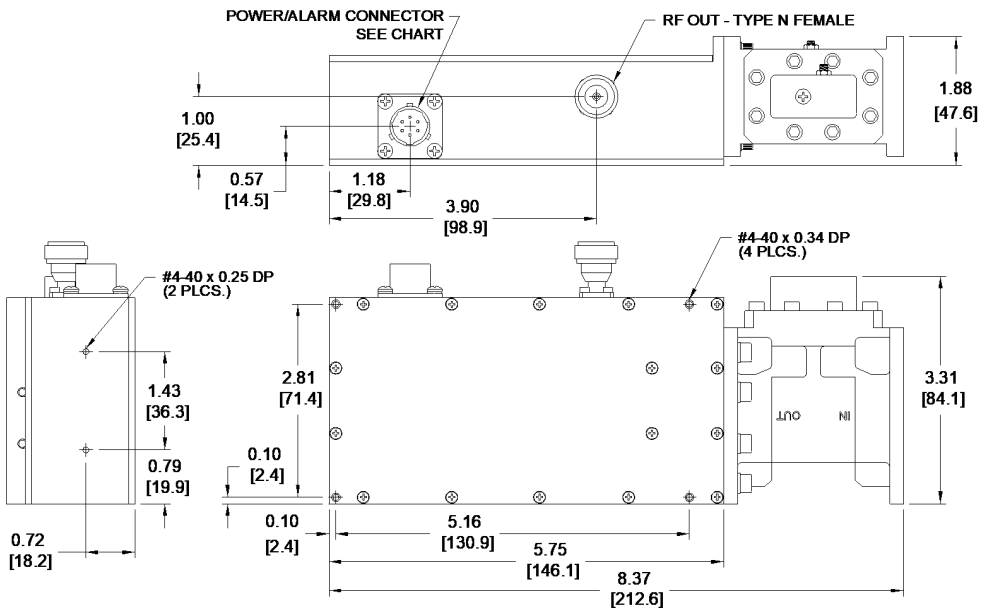
1:1 Redundant Systems



1:2 Redundant Systems



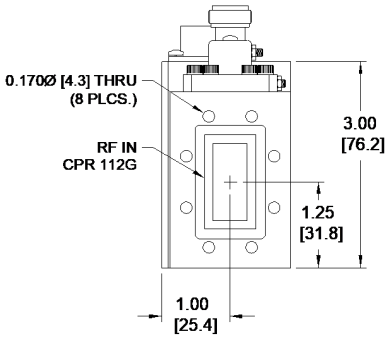
Outline Drawing, Standard LNA



NOTES:

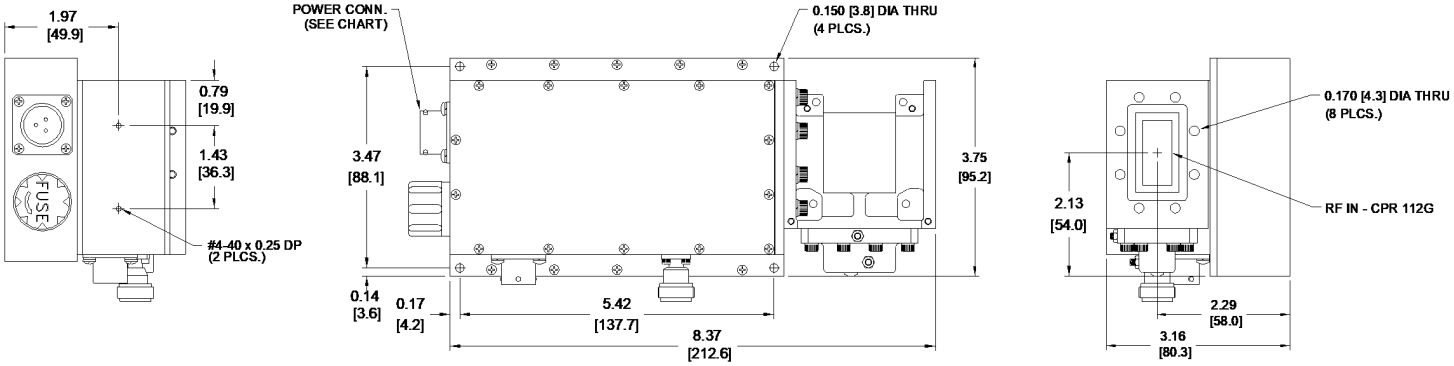
1. DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
2. TOLERANCE - ±0.02 [0.5].

PIN	6 PIN MS CONNECTOR
A	+12 TO + 24Vdc
B	GROUND
C	GROUND
D	OPEN ON FAULT
E	COMMON
F	CLOSED ON FAULT



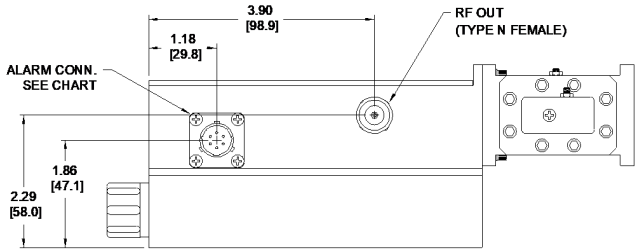
Outline 14360-1

Outline Drawing, LNA with AC Power Supply



NOTES:

1. DIMENSIONS ARE IN INCHES AND [MM].
2. TOLERANCE - ±0.02 [0.5].



PIN	6 PIN MS CONNECTOR
A	N/C
B	N/C
C	N/C
D	OPEN ON FAULT
E	COMMON
F	CLOSED ON FAULT

PIN	3 PIN MS CONNECTOR
A	AC LINE 1
B	GROUND
C	AC LINE 2/NEUTRAL

Outline 14360-2

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For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.