

DESCRIPTION

The HLNA Series of Low Noise Amplifiers covers the frequency ranges from 20 to 100+ GHz. A wide variety of gain and bandwidth combinations are available to provide the designer with a solution for most applications. Custom designs are available and in many cases NRE is not required. MMIC technology is employed for high reliability and repeatability.

The amplifiers can be used to lower system noise figure in communication and radar systems and also as gain blocks in LO chains and test equipment. Low noise amplifier stages can be combined with power amplifier stages for higher P1dB levels. LNAs can also be packaged with other components for custom configurations.

Each LNA contains a voltage regulator and bias sequencing circuitry allowing the use of a single bias to power the amplifier.



Applications

Radar Front Ends
MMW Radio Links
Test Equipment

Features

Low Noise Figure
Multiple Gain / P1dB options
High Bandwidth models
Single Bias / Internal Regulation
Internal Bias Sequencing

Low Noise Amplifier Specifications - 20 to 70 GHz

This is just a sample listing of available low noise amplifiers.
Please choose from these models or contact factory with your requirements.
Please identify your required frequency range with any inquiry.

Coaxial LNAs

Model Number	Frequency Range (GHz)	Input/Output	Noise Figure (dB) typical	Gain (dB) typical	P _{1dB} (dBm) typical
HLNAAK - 076	24.0 - 31.0	2.9 mm, Female	3.2	30	+8
HLNAAK-522	26.5 - 40.0	2.9 mm, Female	2.8	35 - 43	+8
HLNAB2.4-435	43.0 - 45.0	2.4 mm, Female	3.5	20	+5
HLNAVC - 289	50.0 - 65.0	1.85 mm, Female	5.5	33	+10
HLNAVC - 290	50.0 - 65.0	1.85 mm, Female	5.5	24	+10
HLNAVC - 265	55.0 - 65.0	1.85 mm, Female	5.5	16	+10
HLNAVC - 465	57.0 - 66.0	1.85 mm, Female	5.5	24	+10

Waveguide LNAs

HLNAA - 314	28.0 - 36.0	WR-28 / UG- 599/U	3.5	19	+13
HLNAA - 266	32.0 - 34.0	WR-28 / UG-599/U	3.0	40	+20
HLNAA - 372	33.0 - 36.0	WR-28 / UG-599/U	3.2	35	+10
HLNAA - 346	34.0 - 36.0	WR-28 / UG- 599/U	3.6	25	+8
HLNAU - 229	50.0 - 60.0	WR-19, UG-383/U-M	5.2	34	+10
HLNAV - 283	50.0 - 60.0	WR-15 / UG-385/U	5.2	16	+10
HLNAV - 364	50.0 - 65.0	WR-15 / UG-385/U	5.2	25	+10
HLNAV - 383	50.0 - 67.0	WR-15 / UG-385/U	5.2	30	+10
HLNAV - 262	55.0 - 65.0	WR-15 / UG- 385/U	4.8	16	+10
HLNAV - 357	57.0 - 64.0	WR-15 / UG-385/U	5.0	34	+10
HLNAV - 361	57.0 - 66.0	WR-15 / UG-385/U	5.0	28	+10

See next page for LNAs above 70 GHz.

Specifications @ 35°C T_{CASE}, Specifications subject to change w/o notice.

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Low Noise Amplifier Specifications - 70 to 100 GHz

This is just a sample listing of available low noise amplifiers.
Please choose from these models or contact factory with your requirements.
Please identify your required frequency range with any inquiry.

Model Number	Frequency Range (GHz)	Input/Output	Noise Figure (dB) typical	Gain (dB) typical	P _{1dB} (dBm) typical
HLNAE - 285	70.0 - 80.0	WR-12 / UG-387/U	5.5	22	+3
HLNAE - 513	71.0 - 76.0	WR-12 / UG-387/U	5.8	11	+3
HLNAE - 270	71.0 - 76.0	WR-12 / UG- 387/U	5.8	28	+3
HLNAE - 417	71.0 - 76.0	WR-12 / UG- 387/U	6.7	28	+13
HLNAE - 356	72.0 - 78.0	WR-12 / UG-387/U	6.0	20	+3
HLNAE - 496	75.0 - 85.0	WR-12 / UG-387/U	6.1	20	+3
HLNAE - 084	76.0 - 77.0	WR-12 / UG-387/U	5.5	20	+3
HLNAW - 405	76.0 - 77.0	WR-10 / UG-387/U-M	6.0	25	+13
HLNAE - 455	76 - 81.0	WR-12 / UG-387/U	5.5	20	+3
HLNAW - 276	77.0 - 81.0	WR-10 / UG-387/U-M	5.5	20	+3
HLNAE - 286	80.0 - 90.0	WR-12 / UG-387/U	5.5	22	+3
HLNAE - 514	81.0 - 86.0	WR-12 / UG-387/U	5.8	11	+3
HLNAE - 139	81.0 - 86.0	WR-12 / UG-387/U	5.8	20	+3
HLNAE - 418	81.0 - 86.0	WR-12 / UG-387/U	6.7	27	+13
HLNAW - 345	89.0 - 95.0	WR-10 / UG-387/U-M	5.5	35	+15
HLNAW - 241	90.0 - 98.0	WR-10 / UG-387/U-M	6.0	32	+8
HLNAW - 277	90.0 - 101.0	WR-10 / UG-387/U-M	5.5	22	+2
HLNAW - 379	92.0 - 96.0	WR-10 / UG-387/U-M	5.5	16	+2
HLNAW - 380	92.0 - 96.0	WR-10 / UG-387/U-M	5.5	30	+2
HLNAW - 127	92.0 - 96.0	WR-10 / UG-387/U-M	5.5	34	+2

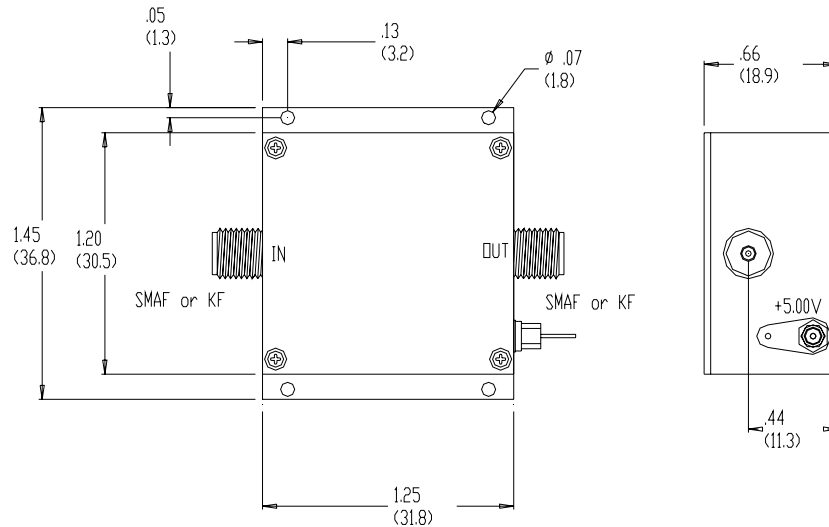
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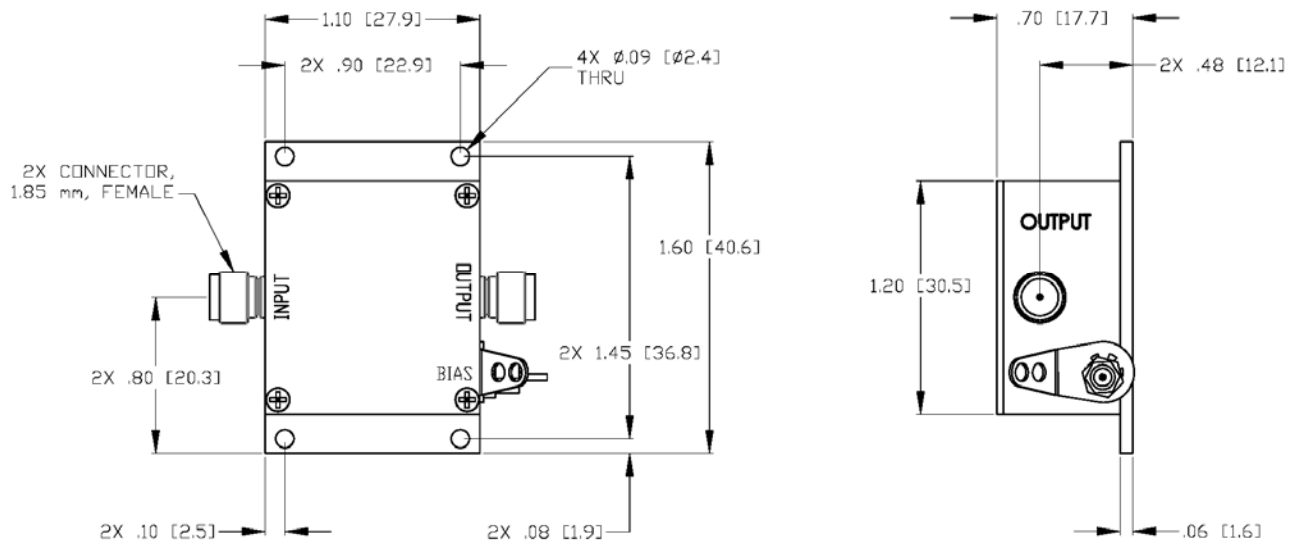
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Low Noise Amplifier Outlines

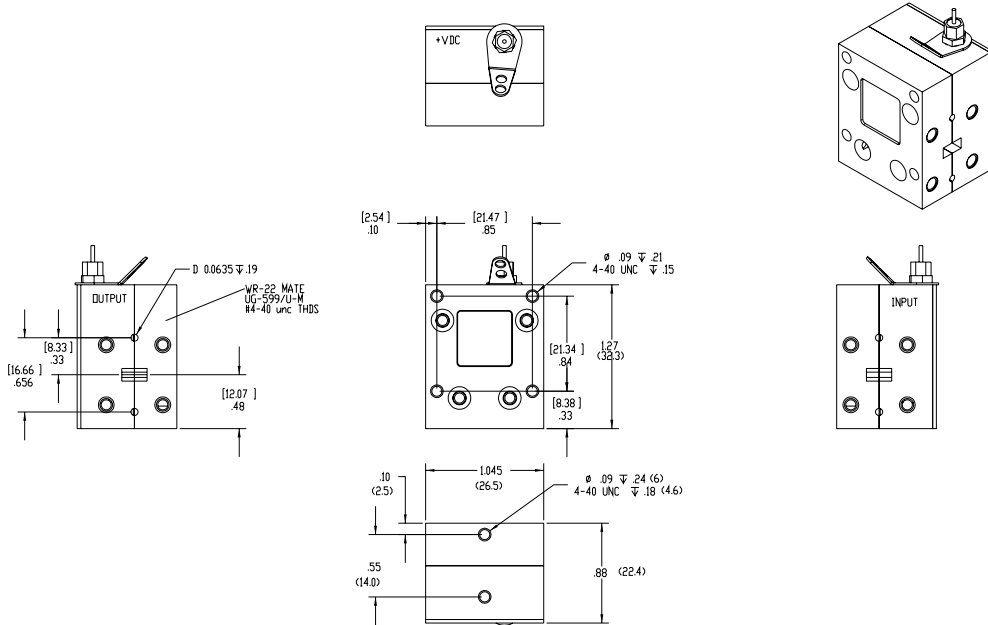


Coaxial Low Noise Amplifier (2.9 mm & 2.4 mm Connectors)

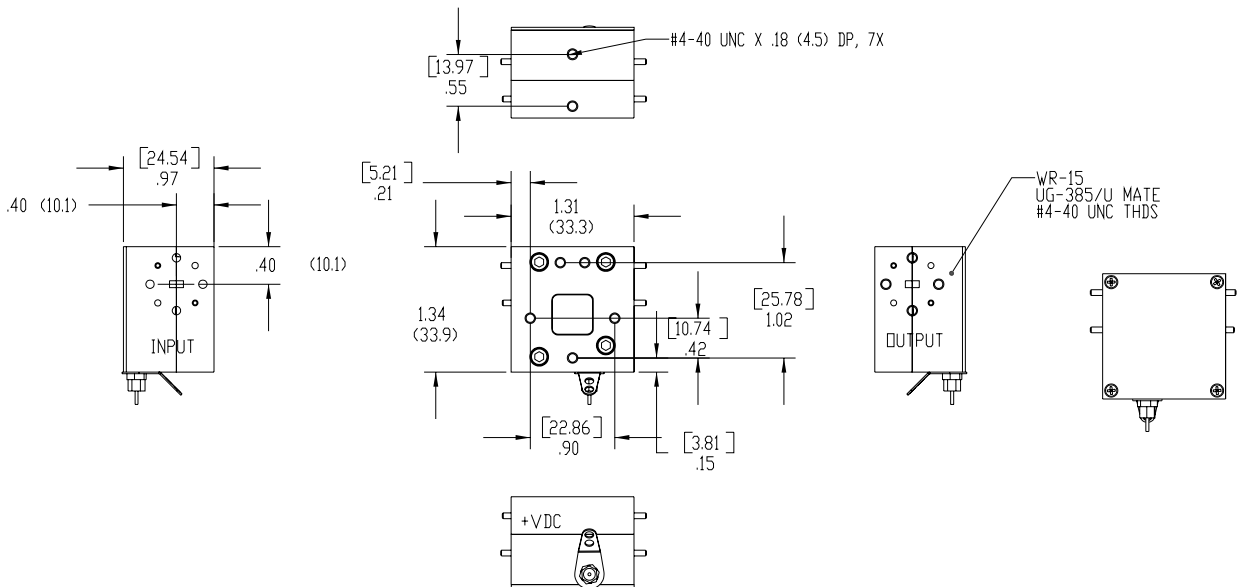


Coaxial Low Noise Amplifier (1.85 mm Connectors)

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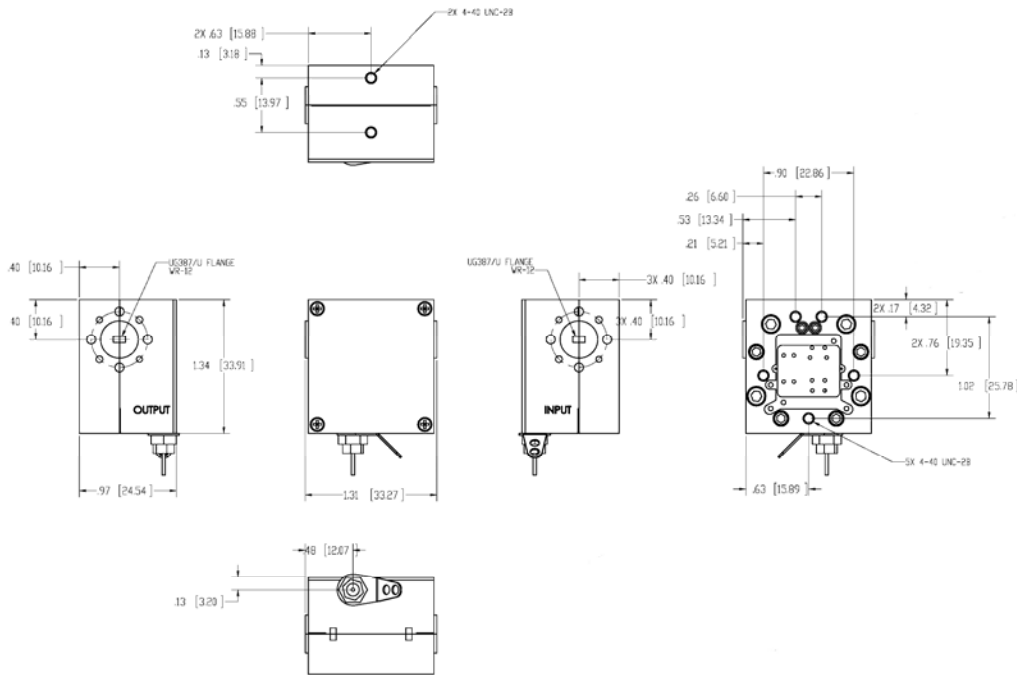


Q-Band (B-Band, WR-22) Low Noise Power Amplifier (Outline is also valid for Ka-Band, WR-28.)

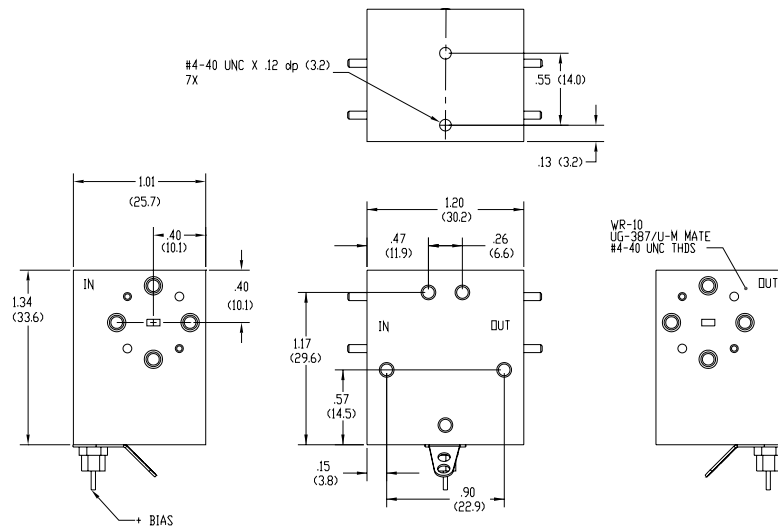


V-Band (WR-15) Low Noise Amplifier

Low Noise Amplifier Outlines



E-Band (WR-12) Low Noise Amplifier



W-Band (WR-10) Low Noise Amplifier

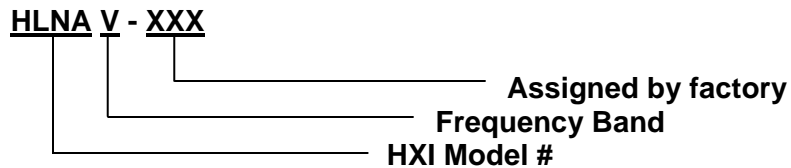


Series HLNA Low Noise Amplifiers

Revised November 2014

Requesting Quotes

When requesting a quote for HLNA Low Noise Amplifiers, please specify required frequency range and any other required specifications. HLNA amplifiers are built to order and will be optimized for the bandwidth specified by the customer. The part number guide below can also be used as a reference for requesting quotes.



Interface Options

***SMA female connectors available to 20 GHz.
2.9 mm connectors available through 40 GHz.
2.4 mm connectors available through 50 GHz.
1.85 mm connectors available through 67 GHz.***