

# NuWaves

## RF Solutions

### HILNA CX

#### Low Noise Amplifier

5 - 10 GHz  
35 dB Gain

P/N: HILNA-CX



**NuWaves' HILNA CX™ is the latest addition to the family of HILNA broadband low noise amplifiers covering C- to X- band frequencies. This model features a miniature form factor of 1.2 cubic inches and weighs only 0.50 ounces, allowing ease of integration into space-constrained systems.**

This high-performance module delivers over 35 dB of gain across the entire broad range of 5 GHz to 10 GHz with a noise figure of 2.5 dB (typ) and OIP3 of +21 dBm (typ). The HILNA CX's ultra-broadband coverage allows the user comprehensive spectrum coverage within a single module.

HILNA CX's robust power supply also operates over a very broad range, easily allowing the unit to be integrated into systems without regard to power supply precision.

### Features

- Broadband Operation
- Miniature Form Factor (1.77" x 1.52" x 0.45")
- Low Noise and High Gain
- High Intercept Point
- Rugged Chassis
- Over-Voltage Protection
- Reverse-Voltage Protection
- Wide Input Voltage Range
- Internal Regulator/Active Bias Devices for Stability

### Benefits

- Low Level Signal Amplification
- Improved Link Margin
- Ruggedized Chassis for Harsh Environments

### Applications

- Wideband RF Front Ends
- General Purpose Amplification
- High Performance Receivers
- Broadband High Gain Block
- Low Noise Transmit Driver
- RF Preamplifier
- RF Repeater
- Base Station LNA
- University Research and Instruction
- Multi-Signal Environment Amplifier

# HILNA CX Low Noise Amplifier

## Specifications

### Absolute Maximums

| Parameter                             | Rating | Unit |
|---------------------------------------|--------|------|
| Max Device Voltage                    | 20     | V    |
| Max Device Current                    | 170    | mA   |
| Max RF Input Power, $Z_L = 50 \Omega$ | 15     | dBm  |
| Max Operating Temperature             | 70     | °C   |
| Max Storage Temperature               | 85     | °C   |

| Export Classification |
|-----------------------|
| EAR99                 |

### Electrical Specifications @ 12VDC, 25 °C, $Z_S=Z_L=50 \Omega$

| Parameter                         | Symbol   | Min | Typ   | Max | Unit | Condition                     |
|-----------------------------------|----------|-----|-------|-----|------|-------------------------------|
| Operating Frequency               | BW       | 5   |       | 10  | GHz  | (Usable from 3 GHz to 12 GHz) |
| RF Gain                           | G        | 35  |       | 45  | dB   |                               |
| Reverse Isolation                 |          |     | 53    |     | dB   |                               |
| VSWR                              | VSWR     |     | 2.5:1 |     |      | Input                         |
|                                   |          |     | 2.5:1 |     |      | Output                        |
| Noise Figure                      | NF       |     | 2.5   |     | dB   |                               |
| Third Order Order Intercept Point | OIP3     |     | +21   |     | dBm  |                               |
| Output Power @ 1dB Compression    | P1dB     |     | +11   |     | dBm  |                               |
| Operating Voltage                 | VDC      | 5.5 | 12    | 20  | V    |                               |
| Operating Current                 | $I_{DD}$ |     | 170   |     | mA   | @ 12VDC (typ)                 |

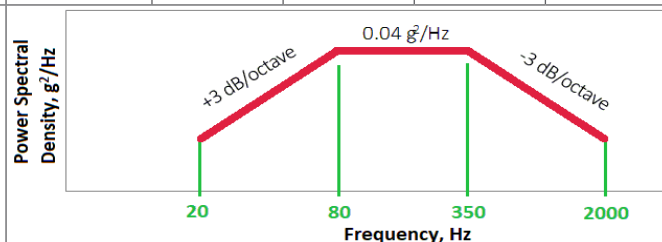
### Mechanical Specifications

| Parameter                            | Value              | Unit | Limits |
|--------------------------------------|--------------------|------|--------|
| Dimensions                           | 1.77 x 1.52 x 0.45 | in   | Max    |
| Weight                               | 1.3                | oz   | Max    |
| RF Bulkhead Connector                | SMA Female         |      |        |
| RF Input and Output Mating Connector | SMA Male           |      |        |
| DC Power Connector                   | EMI Feed Through   |      |        |

### Environmental Specifications

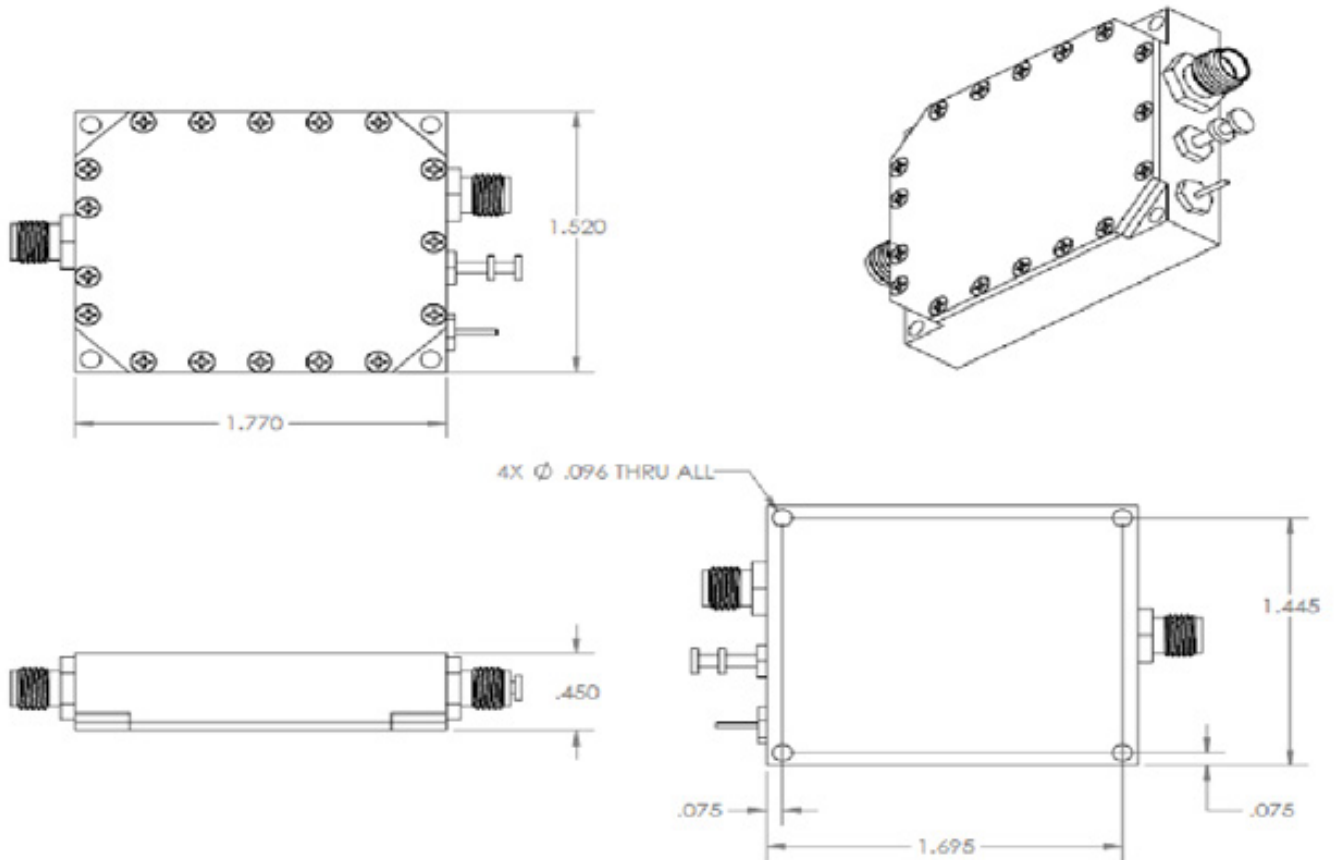
| Parameter                               | Symbol    | Min | Typ | Max    | Unit |
|---|-----------|-----|-----|--------|------|
| Operating Temperature                   | $T_C$     | -20 |     | +60    | °C   |
| Storage Temperature                     | $T_{STG}$ | -40 |     | +85    | °C   |
| Relative Humidity (non-condensing)      | RH        |     |     | 95     | %    |
| Altitude<br>MIL-STD-810F - Method 500.4 | ALT       |     |     | 30,000 | ft   |

Vibration / Shock Profile  
(Random profile in x,y, z axis, as per Figure for 15 minute duration in each axis)



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## Mechanical Outline



For information on product disposal (end-of-life), please refer to this document:  
<https://nuwaves.com/wp-content/uploads/Product-Disposal-End-of-Life.pdf>

## Contact NuWaves



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