



Trusted RF Solutions™

## HILNA HF

Low Noise Amplifier

2 - 50 MHz

30 dB Gain

P/N: HILNA-HF

HILNA-HF-M/F (with mounting flanges)

[Includes NW-LN-ACC-CB09MD interface cable]

**NuWaves' HILNA HF™ is a broadband low noise amplifier designed to achieve high gain while maintaining low noise and a high third-order intercept point in the High Frequency (HF) bands.**

This high-performance module delivers 30 dB of gain across the entire broad range of 2 to 50 MHz with an OIP3 of +30 dBm and a P1dB of +18 dBm. The HILNA HF is also available with optional Automatic Gain Control (AGC); see the HILNA HF AGC for details.

The HILNA HF'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

- 2 to 50 MHz
- Broadband Operation
- 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
- Optional Programmable AGC

### 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 HF Low Noise Amplifier

## Specifications

### Absolute Maximums

| Parameter                             | Rating | Unit |
|---------------------------------------|--------|------|
| Max Device Voltage                    | 30     | V    |
| Max Device Current                    | 300    | mA   |
| Max RF Input Power, $Z_L = 50 \Omega$ | 12     | dBm  |
| Max Operating Temperature             | 70     | °C   |
| Max Storage Temperature               | 85     | °C   |

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

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

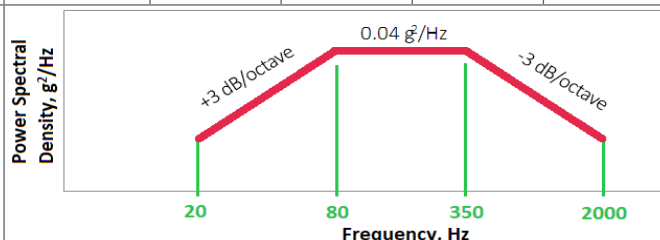
| Parameter                         | Symbol   | Min | Typ   | Max | Unit | Condition     |
|-----------------------------------|----------|-----|-------|-----|------|---------------|
| Operating Frequency               | BW       | 2   |       | 50  | MHz  |               |
| RF Gain                           | G        |     | 30    |     | dB   |               |
| Reverse Isolation                 |          |     | 53    |     | dB   |               |
| VSWR                              | VSWR     |     | 1.5:1 |     |      | Input         |
|                                   |          |     | 1.5:1 |     |      | Output        |
| Noise Figure                      | NF       |     |       | 5   | dB   |               |
| Third Order Order Intercept Point | OIP3     |     | +30   |     | dBm  |               |
| Output Power @ 1dB Compression    | P1dB     |     | +18   |     | dBm  |               |
| Operating Voltage                 | VDC      | 12  | 12    | 30  | V    |               |
| Operating Current                 | $I_{DD}$ |     | 150   | 300 | mA   | @ 12VDC (typ) |

### Mechanical Specifications

| Parameter                            | Value              | Unit | Limits |
|--------------------------------------|--------------------|------|--------|
| Dimensions                           | 3.15 x 2.50 x 1.18 | in   | Max    |
| Weight                               | 5.0                | oz   | Max    |
| RF Bulkhead Connector                | SMA Female         |      |        |
| RF Input and Output Mating Connector | SMA Male           |      |        |
| DC Power Connector                   | Micro-DB9          |      |        |

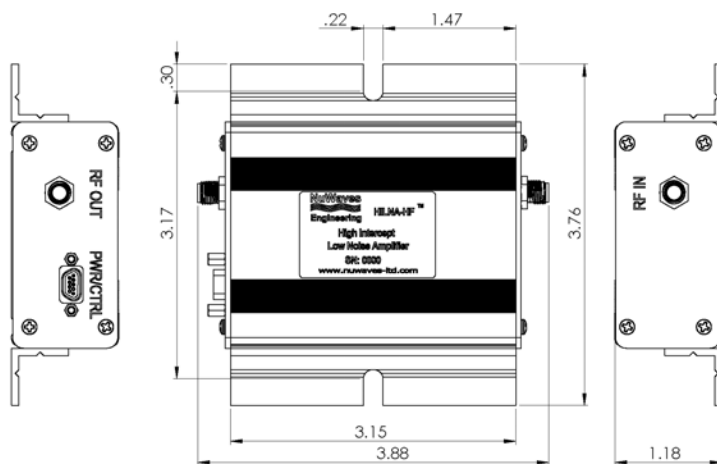
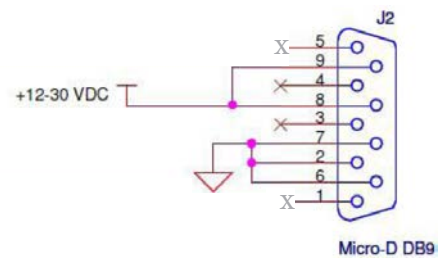
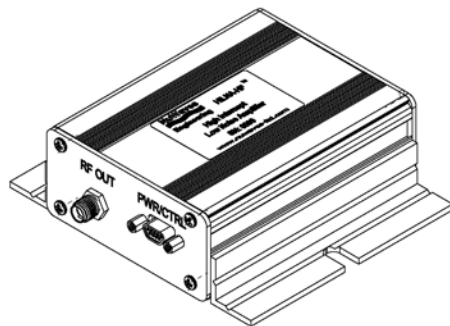
### Environmental Specifications

| 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<br>(Random profile in x,y, z axis, as per Figure for 15 minute duration in each axis) |           |     |     |        |      |



# HILNA HF Low Noise Amplifier

## Mechanical Outline



## Accessory Part Numbers

| Part Number      | Description   |
|------------------|---|
| NW-LN-ACC-CB09MD | Standard Interface Cable Assembly - Flying Leads (included w/ module) |
| NW-LN-ACC-CT09MD | Upgraded Interface Cable Assembly - Banana Plug Termination           |

## Pinout

| Function                  | I/O | Pin        |
|---------------------------|-----|------------|
| No Connect                | -   | 1, 3, 4, 5 |
| Ground                    | I   | 2, 6, 7    |
| DC Power (+12 to +30 VDC) | I   | 8, 9       |

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



NuWaves Engineering  
132 Edison Drive  
Middletown, OH 45044

[www.nuwaves.com](http://www.nuwaves.com)  
[product.sales@nuwaves.com](mailto:product.sales@nuwaves.com)  
513.360.0800

**NuWaves**  
engineering  
Trusted RF Solutions™