



# LNF-LNC0.3\_14B s/n 5415H

## 0.3-14 GHz Cryogenic Low Noise Amplifier

2025-05-27



### Absolute maximum ratings

Parameter	Min	Max
$V_{ds}$	-0.5 V	2.5 V
$I_{ds}$		100 mA
$V_{gs}$	-20 V	20 V
RF Input drive level		0 dBm

### Nominal bias @ 296 K

Parameter	Value
$V_{ds}$	2.00 V
$I_{ds}$	45 mA
$V_{gs}$	1.46 V

### Nominal bias @ 4 K

Parameter	Value
$V_{ds}$	1.20 V
$I_{ds}$	20 mA
$V_{gs}$	2.21 V

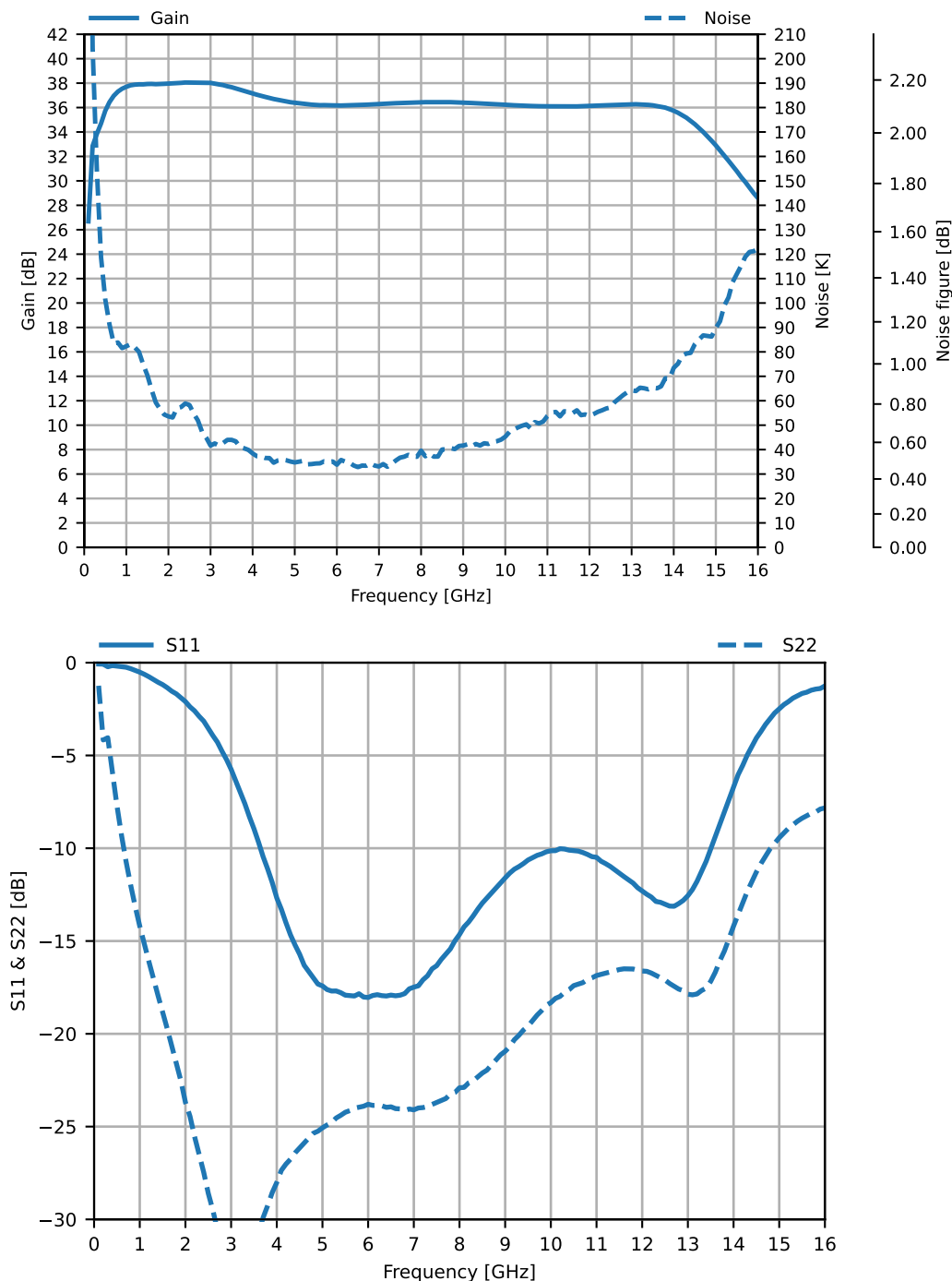


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Measured data,  $T_{amb}=296\text{ K}$



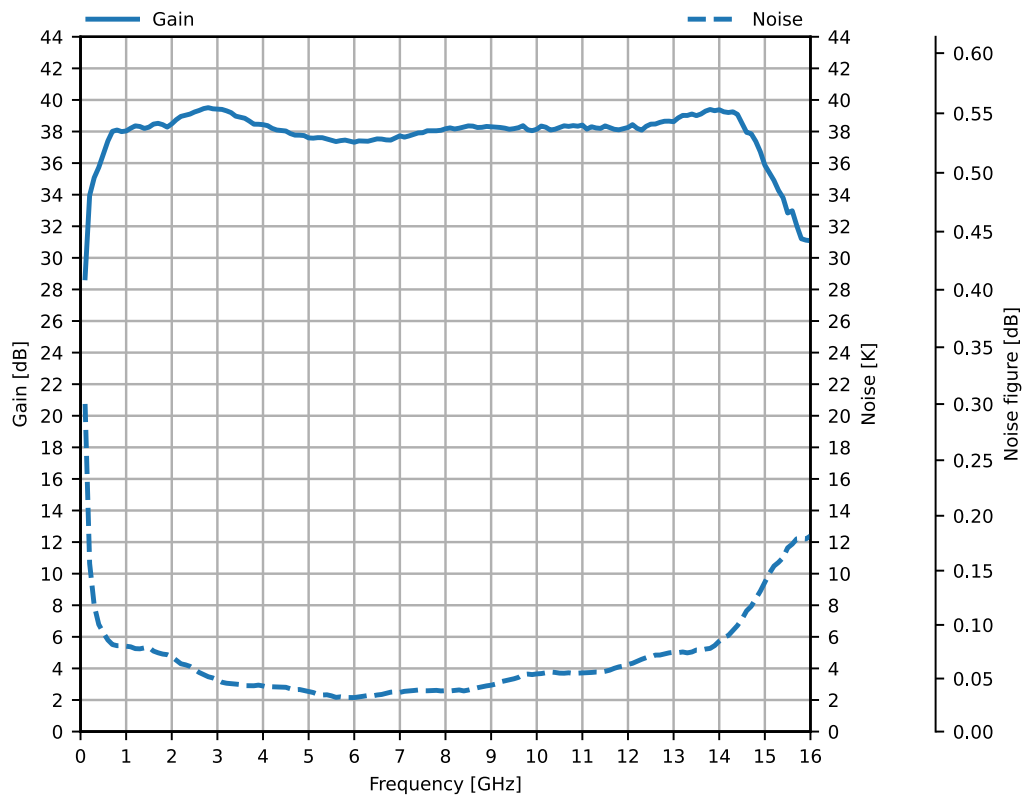


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### Measured data, $T_{amb}=4\text{ K}$

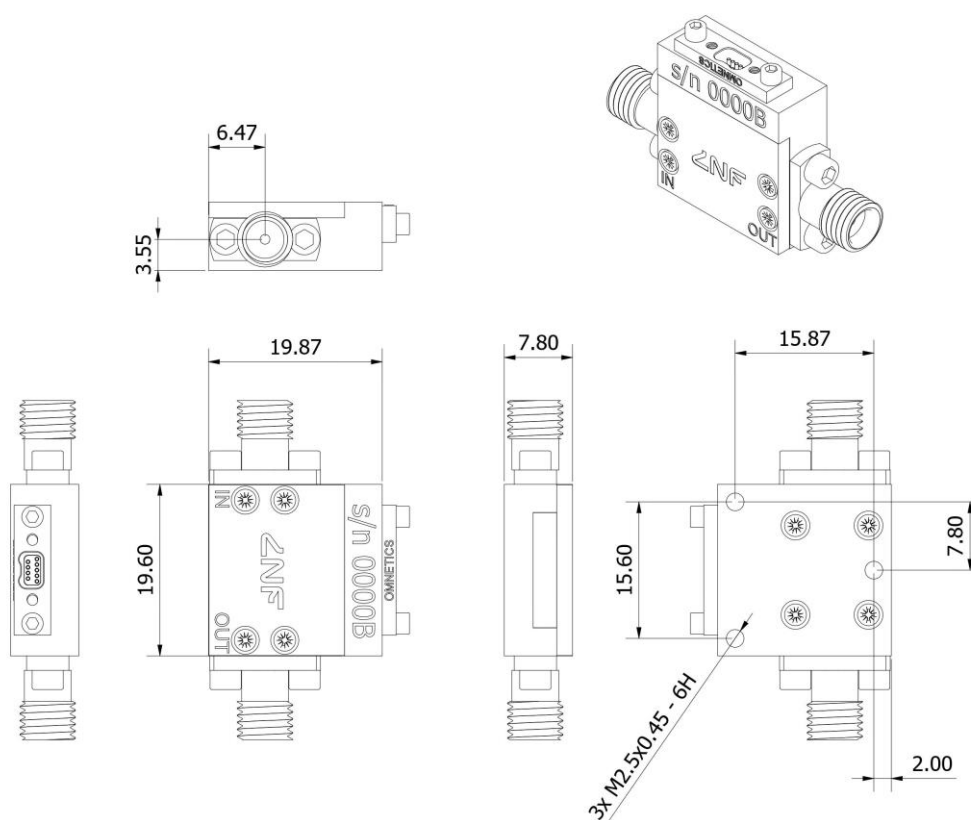




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**Dimensions are in millimeter**

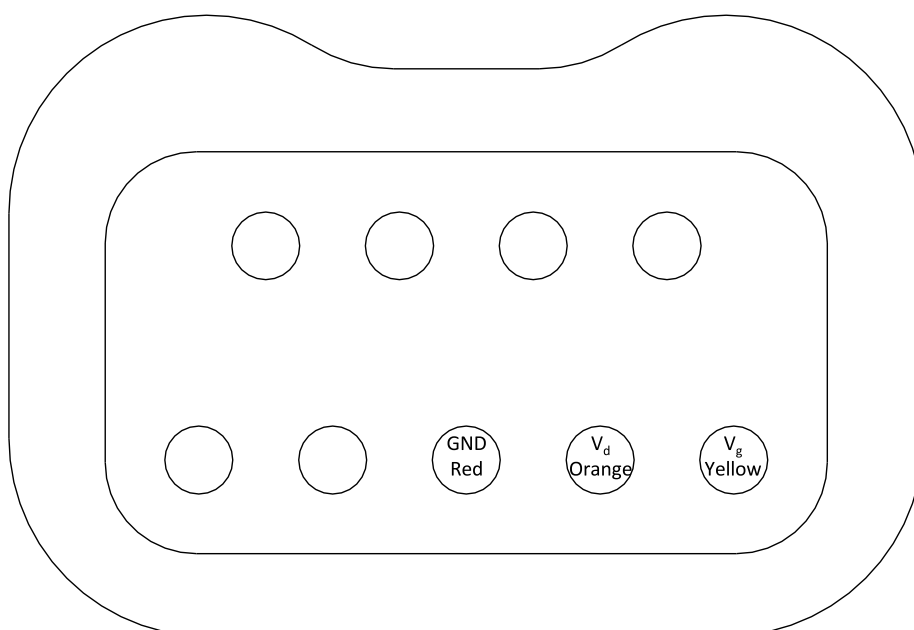


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**Nano-D panel connector seen from outside the LNA**





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### **Biasing procedure**

For safe operation of the LNA, please carefully follow the instructions below. Always honor the maximum ratings stated in the datasheet.

#### **With constant current supply, e.g. LNF-PS\_3, LNF-PS\_4 and LNF-PS\_EU2**

##### **Power up:**

1. Switch on the power supply
2. Double check that  $V_d$  is set to the nominal voltage in the datasheet
3. Connect the LNA's RF input and output to your grounded test set-up
4. Connect the power supply to the LNA
5. Check that the measured  $I_{ds}$  is equal to the nominal value in this datasheet. Tune to the correct value if necessary.
6. Before starting a cool down, make sure that the power supply is set to the stated values at 10K. Do not cool down with the power supply set to the room temperature values.

##### **Power down:**

1. Disconnect the power supply from the LNA
2. Disconnect the LNA's RF input and output
3. Switch off the power supply

#### **With constant voltage supply, e.g. LNF-PS\_1**

##### **Power up:**

1. Switch on the power supply
2. Set  $V_d$  and  $V_g$  to the nominal voltages stated in this datasheet
3. Connect the LNA's RF input and output to your grounded test set-up
4. Connect the power supply to the LNA
5. Fine tune  $V_g$  to get the nominal  $I_{ds}$  stated in this datasheet. The actual  $V_g$  can deviate a bit from the value in the datasheet depending on ground wire resistance in your set-up.
6. Before starting a cool down, make sure that the power supply is set to the stated values at 10K. Do not cool down with the power supply set to the room temperature values.

##### **Power down:**

1. Disconnect the power supply from the LNA
2. Disconnect the LNA's RF input and output
3. Switch off the power supply