# Broadband Low Noise RF Amplifier (LNA)

## 50kHz-20GHz, 28 dB gain

DATASHEET

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This LNAM broadband Low Noise RF Amplifier provides output power up to 16 dBm with a gain of 28 dB across a frequency range of 50kHz to 20GHz. It features a noise figure (NF) of 3 dB within the 0.1-20GHz range. The amplifier operates on +12V DC at 160 mA and is equipped with a SMA Female connector.

## Features

- Frequency: 50kHz-20GHz
- Small signal gain: 28dB
- NF=3dB
- Vout=4.48Vpp

## Applications

- 5G Communication
- Test Equipment
- Optical Modulator Driver
- Radar System

## Specifications

| Parameter | Min | Typical | Max | Unit |
|---|---|---|---|---|
| Frequency Range | 0.00005 | | 20 | GHz |
| Gain | 26 | 28 | | dB |
| NF (0.1-20GHz) | | 3 | 5 | dB |
| Input Power | | -20 | -10 | dBm |
| P1dB | | +15 | | dBm |
| Psat | | +16 | | dBm |
| Drain Supply | +8V | +12 | +15 | V |
| Current | | 160 | | mA |
| Input Return Loss | | -10 | | dB |
| Output Return Loss | | -10 | | dB |
| Spec Temp | | 25 | | °C |
| Drain Supply | | +18 | | V |
| RF Input Power | | +15 | | dBm |
| Operating Temperature(note) | -40 | | +85 | °C |
| Storage Temperature | -55 | | +125 | °C |
| Input Port | | SMA Female | | |
| Output Port | | SMA Female | | |
| Case Material | | Copper | | |
| Finish | | Gold Plated | | |
| Weight (Without Heatsink) | | 80 | | g |
| Size | | See outline | | |



Rev 10/24/24

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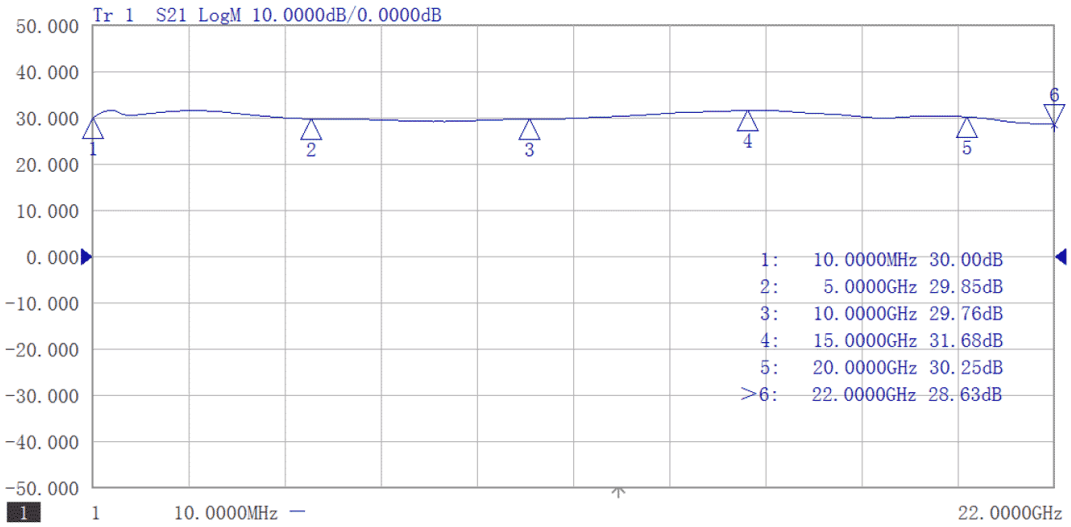
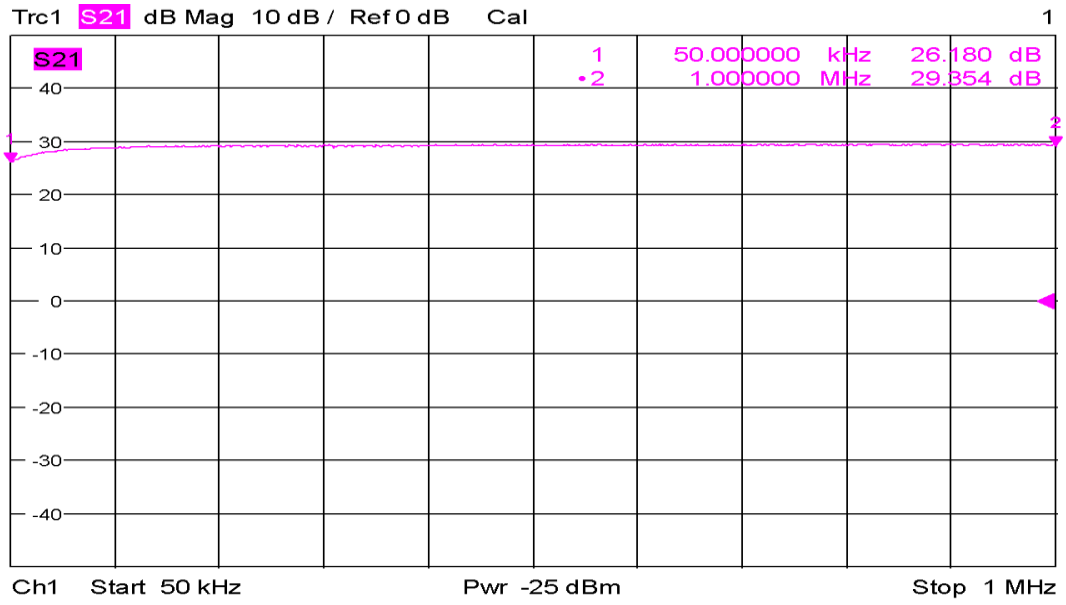
### Test Data (25°C)

**Gain vs Frequency 10MHz-20GHz**




**Gain vs Frequency 50kHz-1MHz**




Date: 30.AUG.2021 18:16:21

# Broadband Low Noise RF Amplifier (LNA)

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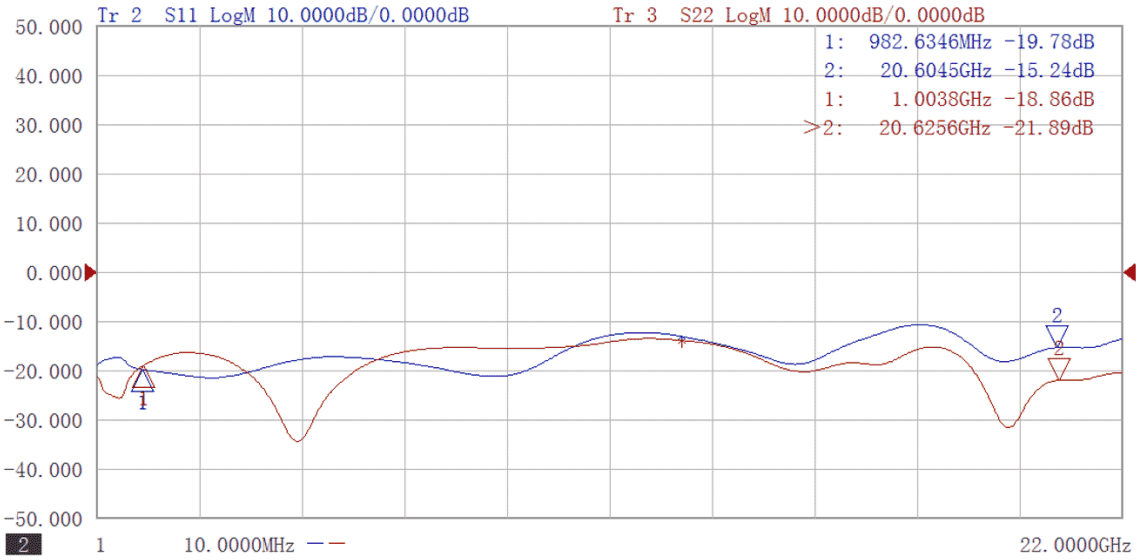
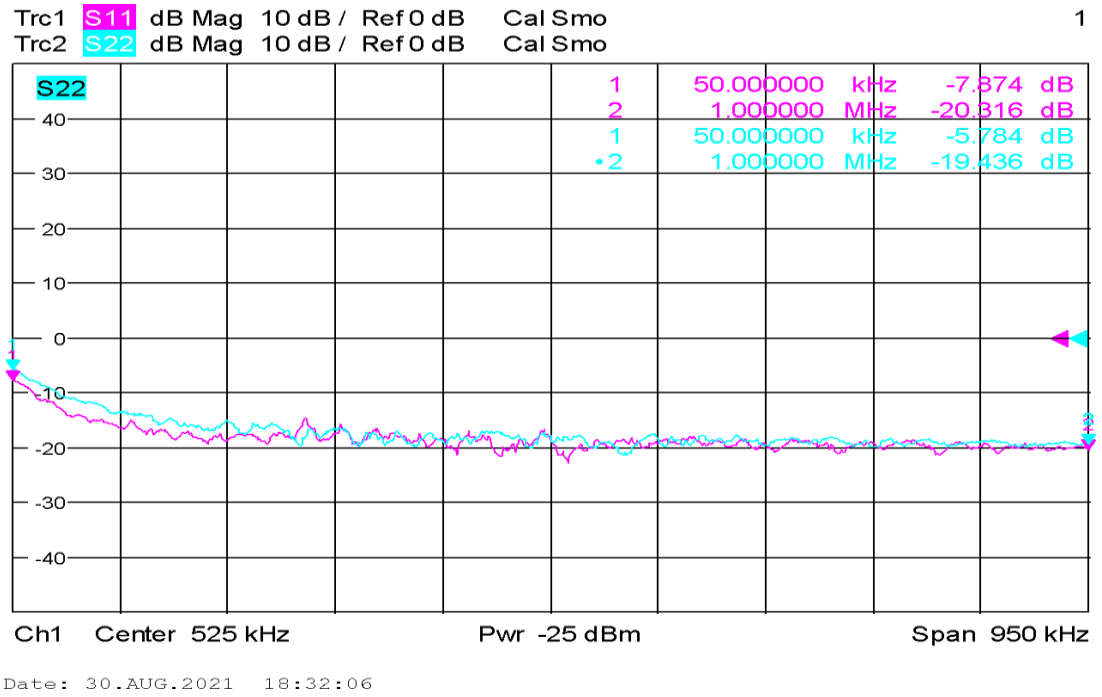
### Return Loss vs Frequency 10MHz-20GHz




### Return Loss vs Frequency 50kHz-1MHz



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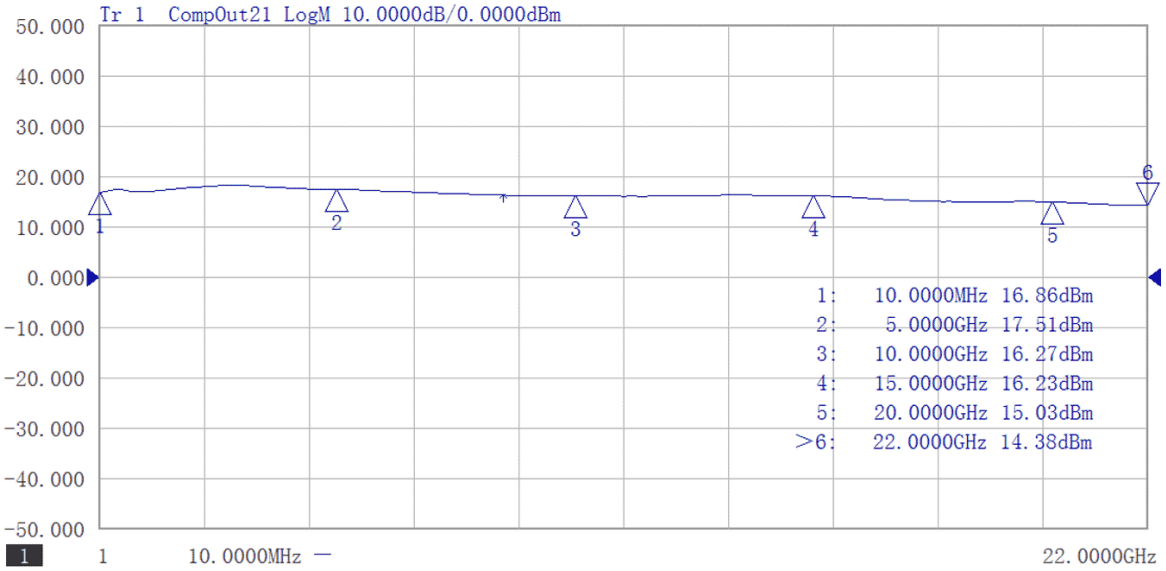
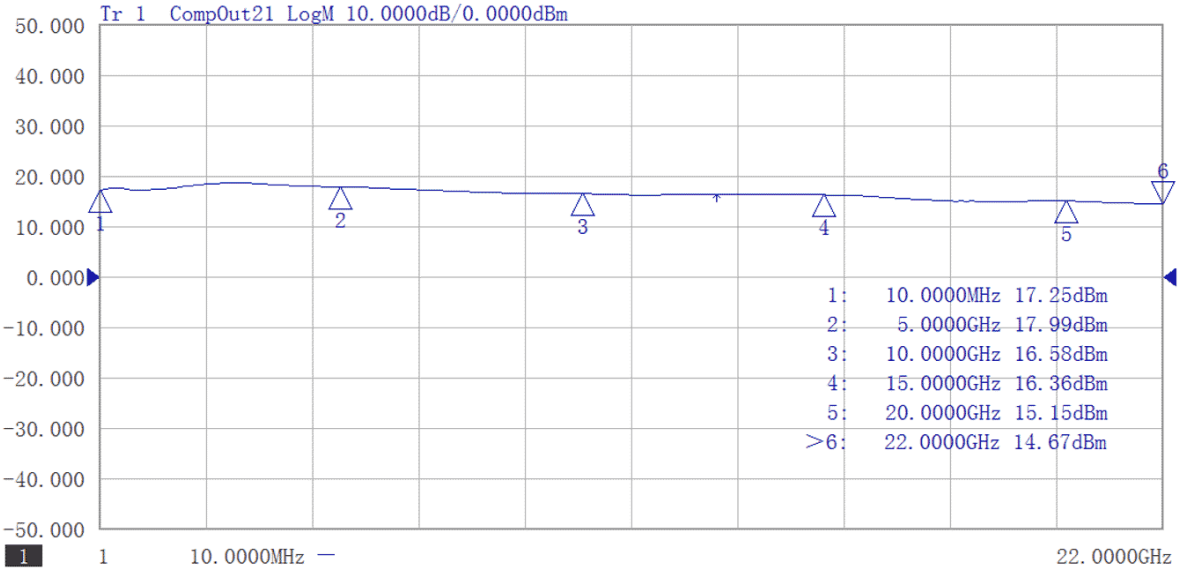
### P1dB vs Frequency




### P3dB vs Frequency



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# Broadband Low Noise RF Amplifier (LNA)

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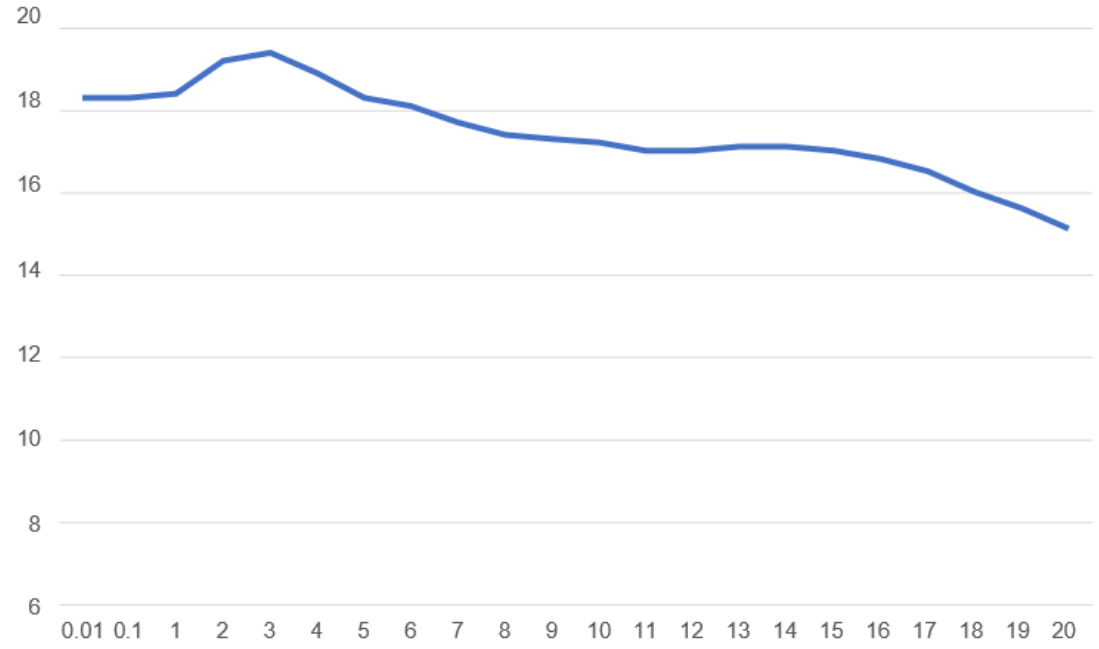
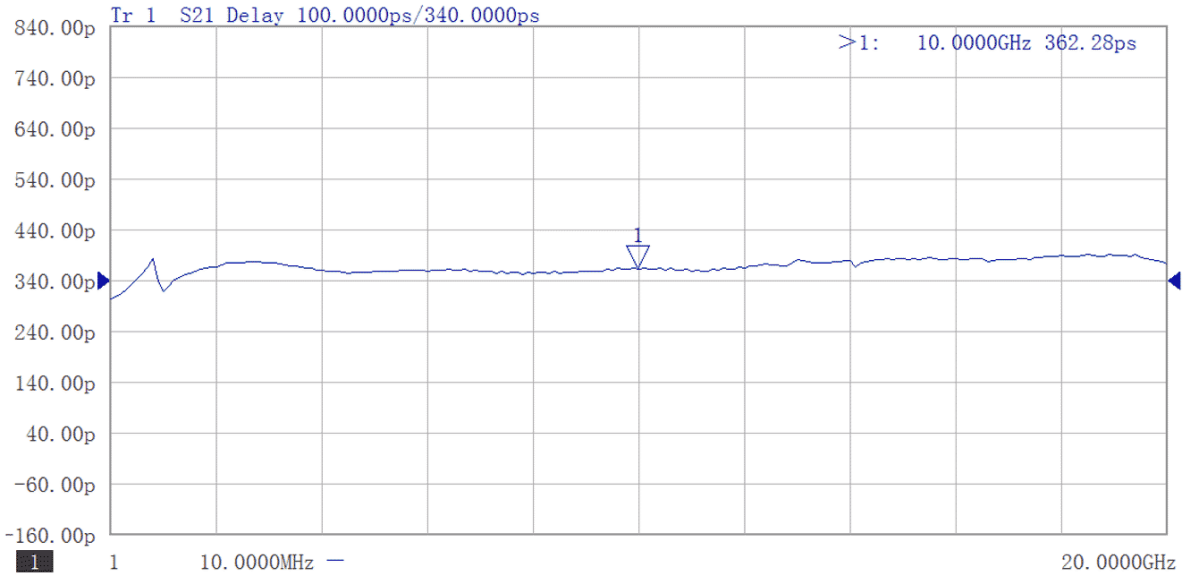
**Psat vs Frequency at Pin=-5dBm from 10MHz-20GHz**




**Phase delay vs Frequency**



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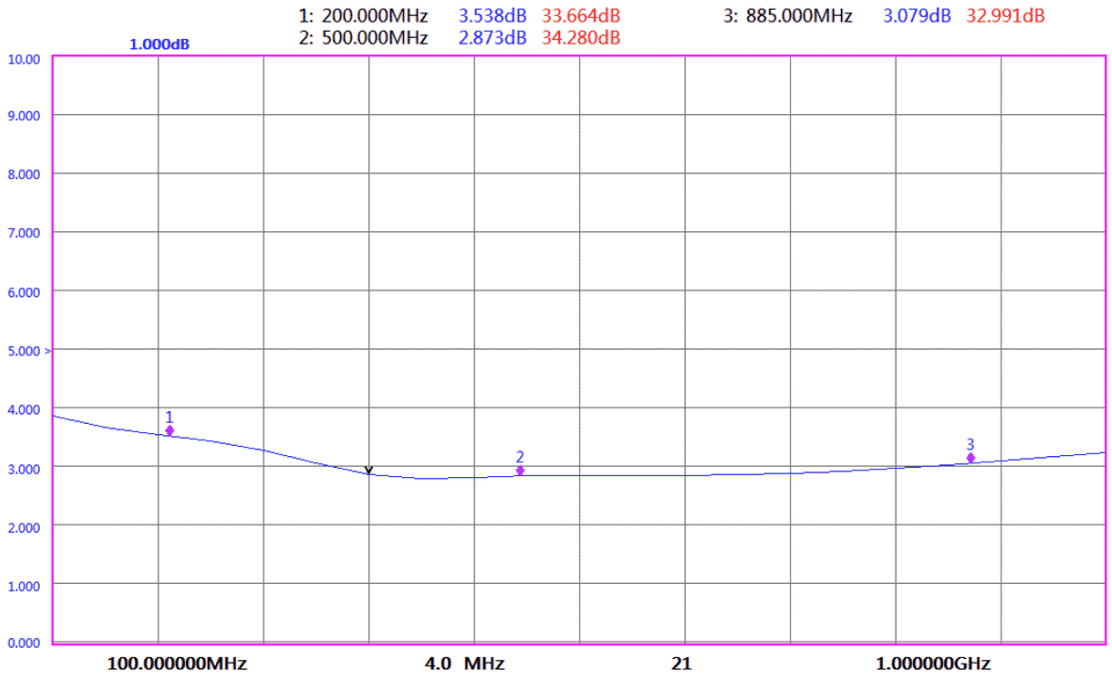
### NF test vs Frequency 10MHz-1GHz




### NF test vs Frequency 1-20GHz

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# Broadband Low Noise RF Amplifier (LNA)

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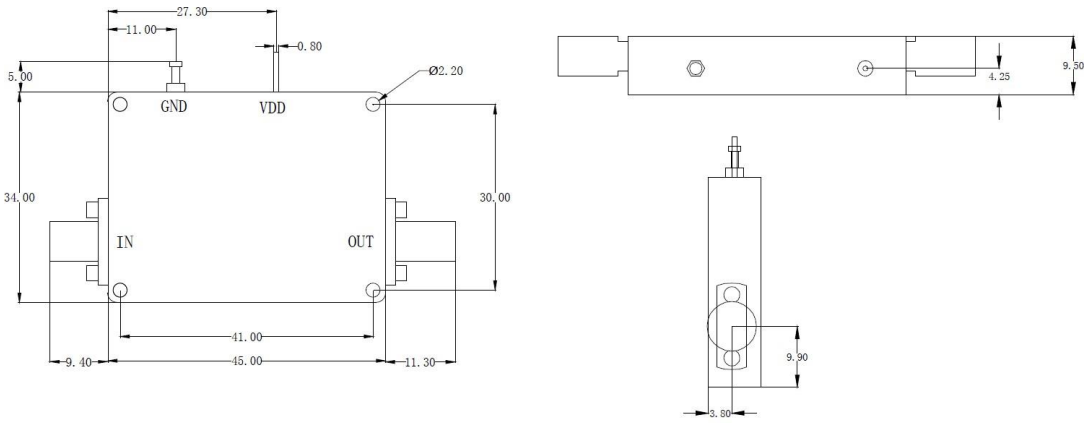
### Dimensions (mm)

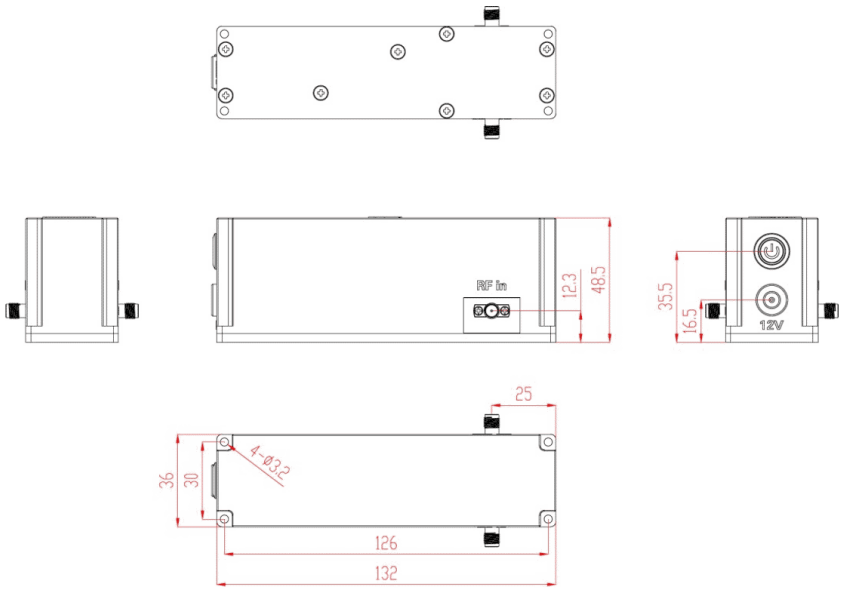


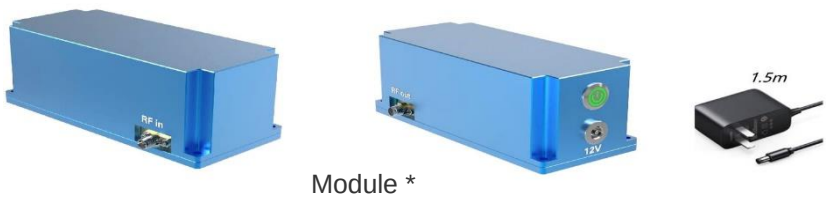

| | <26.5GHz | <40GHz | <50GHz | <67GHz |
|---|---|---|---|---|
| Connector | SMA | 2.92mm | 2.4mm | 1.85mm |
| Lenth of a | 9.4mm | 9.5mm | 10.8mm | 11.3mm |

Note: Female Default. Contact with us for other types.

Standard module outline, Heat sink required if case temp exceeds 50°C

### -LCBT Option Dimension (mm)




Module *



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### Ordering Information

| | 0005 | 20 | 28 | 3 | 15 | ☐ |
|---|---|---|---|---|---|---|
| **Prefix** | **Low Frequency** | **High Frequency** | **Gain** | **NF** | **P1dB** | **Module*** |
| **LNAM-** | 50kHz = 0005 | 20GHz = 20 | 28dB = 28 | 3dB = 3 | 15dBm = 15 | No = 0<br>Yes = 1 |



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