

ignionTM

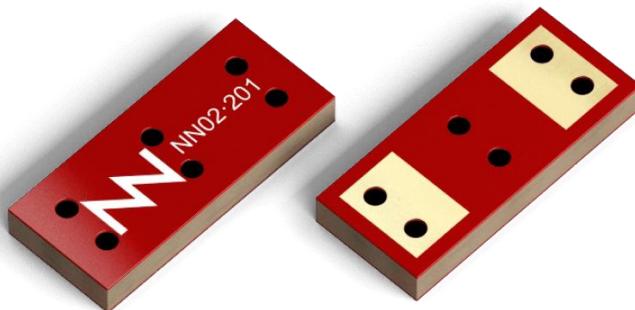
Your innovation.
Accelerated.

ONE mXTENDTM (NN02-201)

DATASHEET

ONE mXTEND™: Highly versatile and powerful.

ONE mXTEND™ is the smallest Virtual Antenna® chip for both **cellular** and **unlicensed IoT** wireless devices (ISM). Featuring a size of 7 x 3 x 1mm, this antenna chip has been designed to fit just about every **IoT device**, particularly *small, light, entry-level products*. **ONE mXTEND™** is enabled by Virtual Antenna® technology, thus featuring the unique properties of this class of products: versatile tunability within the broadest operating range in the market: 800 MHz up to 10600 MHz. This makes the perfect product for **multiband connectivity** at cellular IoT, including connectivity within several **2G, 3G, 4G, and 5G** bands, but also for unlicensed regions of the spectrum such as for instance the entire range of **WiFi-6E**.



ONE mXTEND™ component (NN02-201)

Most used industries.

- **Asset Tracking & Logistics**
- **Industrial IoT**
- **Smart Home & Buildings**
- **Wearables & Hearables**
- **Smart Metering**

ONE mXTEND™ benefits.

- **Smallest volume:** Multiband cellular/ISM IoT performance in the smallest volume form factor: 7.0 mm x 3.0 mm x 1.0 mm.
- **Multiband:** 2G/3G, NB-IoT/LTE-M, 5G, ISM and Wi-Fi 6E applications.
- **Wide reach:** Multi regional product (compatible with multiple regional standards).
- **Reliability:** Off-the-Shelf standard product, no antenna part customization (electronic optimization).
- **Use cases:** Wi-Fi 6E devices and IoT entry level products such as trackers, IoT sensors, wearables and alike.

Operation bands summary.

LTE/LTE-M/NB-IoT, GSM, UMTS, 4G, 5G, Bluetooth, Wi-Fi 7, and many more within the frequency range of 800 MHz to 10600 MHz.

1. AVAILABLE SOLUTIONS SUMMARY

Class	Frequency Regions	Frequency range	More detailed info
1 Port	1	3300 – 5000 MHz	<u>5G</u>
1 Port	2	880 – 894 MHz & 1710 – 2170 MHz	<u>CELLULAR EUROPE</u>
1 Port	2	824 – 960 MHz & 1710 – 2170 MHz	<u>CELLULAR USA</u>
1 Port	3	2400 – 2500 MHz & 5170 – 5835 MHz & 5925 – 7125 MHz	<u>Wi-Fi 6E</u>

2. DETAILED AVAILABLE SOLUTIONS

The following table presents the technical specifications of the ONE mXTEND™ antenna booster, including its radiation pattern, polarization, weight, temperature range, impedance, and dimensions. These features make the ONE mXTEND™ antenna booster a highly versatile and durable component that can be easily integrated into a wide range of wireless applications.

Technical Features	ONE mXTEND™ (NN02-201)
Radiation Pattern	Omnidirectional
Polarization	Linear
Weight (approx.)	0.02 g
Temperature	-40 to + 125 °C
Impedance	50 Ω

Technical features for the ONE mXTEND™.

2.1. 5G SOLUTION

Technical features	3300 MHz – 5000 MHz
Average Efficiency	> 70 %
Peak Gain	4.1
VSWR	< 3:1

Technical features. Measures from the evaluation board (131 mm x 60 mm x 1 mm).

2.2 CELLULAR EUROPE SOLUTION

Technical features	880 – 960 MHz	1710 – 2170 MHz
Average Efficiency	> 55%	> 65%
Peak Gain	1.3 dBi	1.7 dBi
VSWR	< 3:1	

Technical features. Measures from the evaluation board (131 mm x 60 mm x 1 mm).

2.3 CELLULAR USA SOLUTION

Technical features	824 – 894 MHz	1850 – 2170 MHz
Average Efficiency	> 65%	> 70%
Peak Gain	1.9	2.0
VSWR		< 3:1

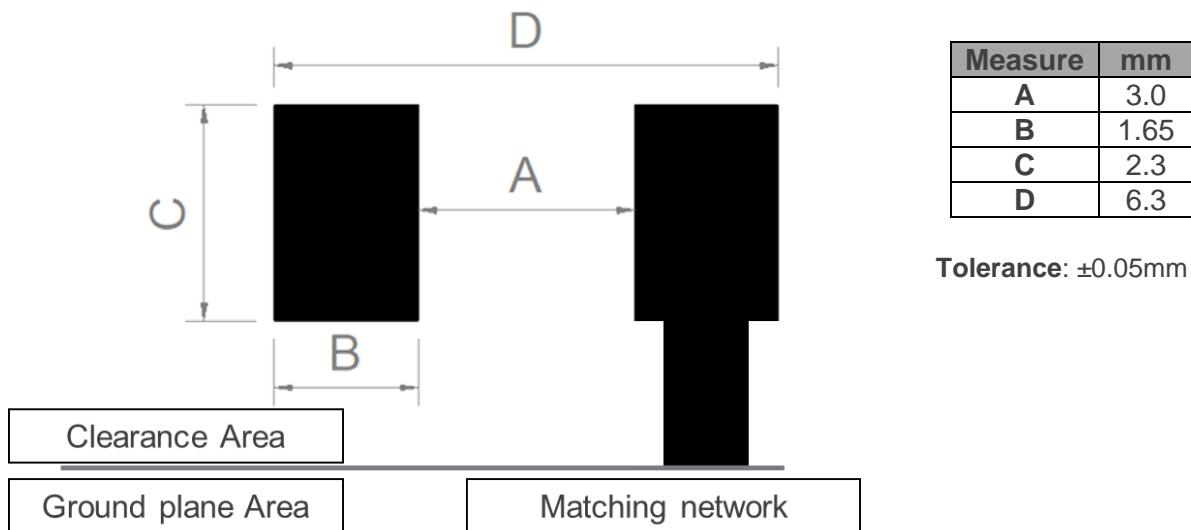
Technical features. Measures from the evaluation board (131 mm x 60 mm x 1 mm).

2.4 WI-FI 6E SOLUTION

Technical features	2400 – 2500 MHz	5170 – 5835 MHz	5925 – 7125 MHz
Average Efficiency	> 80%	> 85%	> 85%
Peak Gain	3.2	3.3	5.0
VSWR		< 2.5:1	

Technical features. Measures from the evaluation board (86 mm x 54 mm x 1 mm).

2.5 ANTENNA FOOTPRINT



Footprint dimensions for the ONE mXTEND™ (NN02-201) antenna booster.

If you are designing a device with a different size or operating frequency than shown above, you can assess the performance of this configuration using our free-of-charge [Oxion™](#) platform. This platform provides a complete design report, including expected performance and tailored design guide, within 24 hours. For additional information about Ignion's range of R&D services, please visit: <https://ignion.io/resources-support/technical-center/engineering-support/>. If you require further assistance, please contact support@ignion.io.

Purchase this or other evaluation boards through our main distributors by visiting the following link: <https://ignion.io/distributors/>.

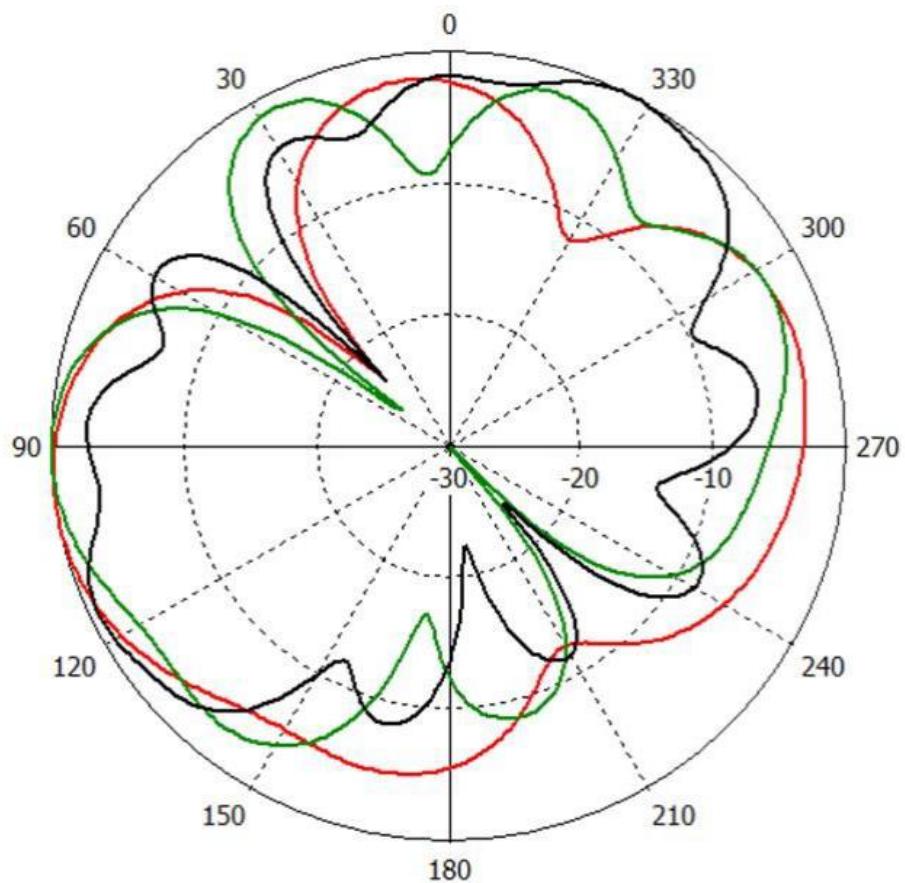
The Manufacture is: Ignion

The antenna gain is : 3.1 to 3.2 dBi across the band.

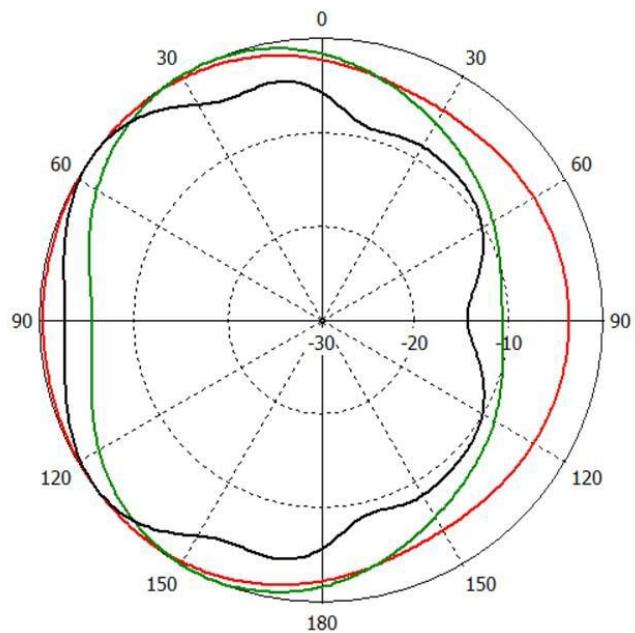
The dimensions are: 7.0 mm x3.0 mm x 1.0 mm

The patterns are:

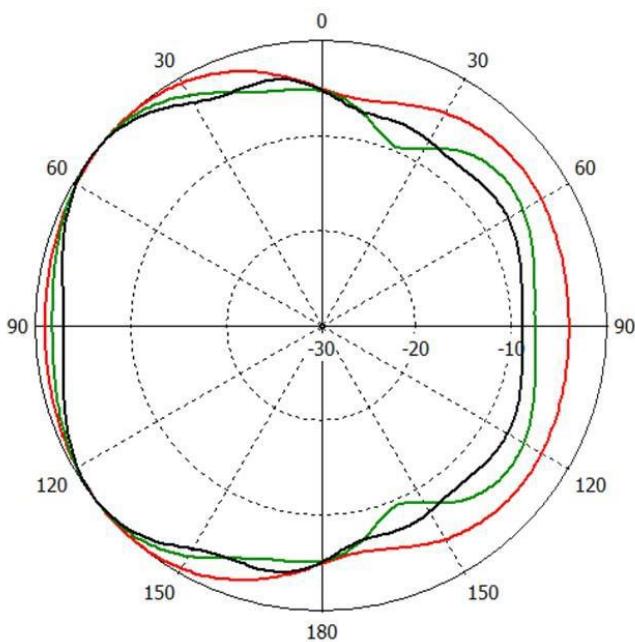
Plane XY at 2.450 GHz



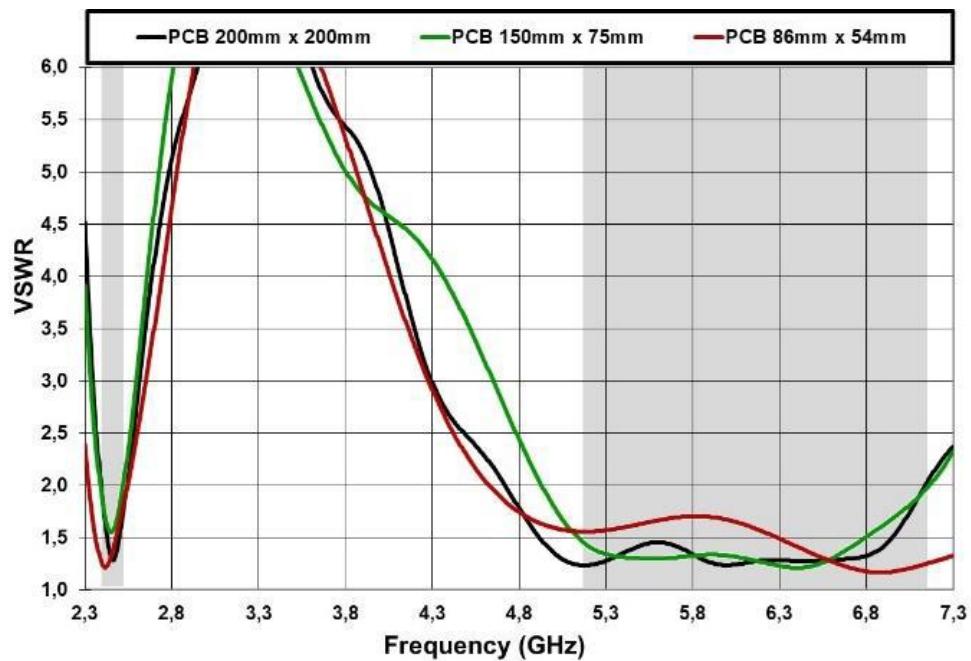
Plane XZ at 2.450 GHz



Plane YZ at 2.450 GHz



VSWR





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