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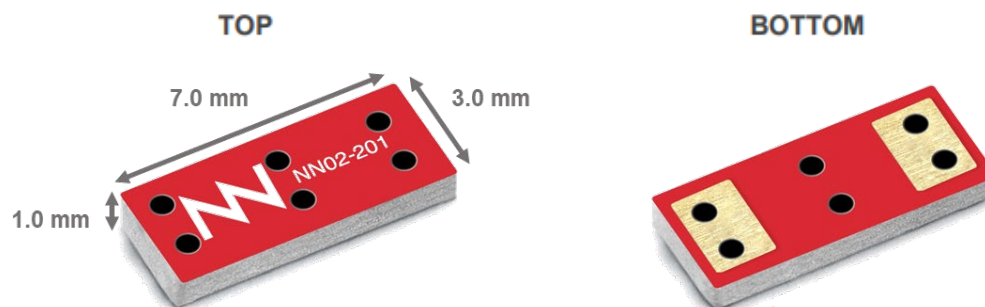
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# ONE mXTEND<sup>™</sup> (NN02-201)

DATASHEET

## ONE mXTEND<sup>™</sup> (NN02-201)

The ONE mXTEND<sup>™</sup> antenna booster, with a **volume of only 21mm<sup>3</sup>**, is the smallest chip of the Virtual Antenna<sup>™</sup> family. This miniature, multipurpose and ultra slim component is designed to provide multiband connectivity at **cellular IoT**, including connectivity within several 2G, 3G, 4G and 5G bands, but also for other regions of the spectrum, such as **Wi-Fi 6E**.



### Product 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 miniature trackers, IoT sensors, wearables and alike.

### Operation Bands Summary

- GSM, UMTS, 5G, Wi-Fi 6E (824 – 960MHz, 1710 – 2170MHz, 3300 – 5000MHz, 5170 – 5835 MHz and 5925 – 7125 MHz)

## 1. AVAILABLE SOLUTIONS SUMMARY

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

## 2. DETAILED AVAILABLE SOLUTIONS

### 2.1. 5G SOLUTION

Technical features	3300 MHz – 5000 MHz
Average Efficiency	> 70 %
Peak Gain	4.1
VSWR	< 3:1
Radiation Pattern	Omnidirectional
Polarization	Linear
Weight (approx.)	0.02 g.
Temperature	-40 to +125 °C
Impedance	50 Ω
Dimensions (L x W x H)	7.0 mm x 3.0 mm x 1.0 mm

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	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.02 g.	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	7.0 mm x 3.0 mm x 1.0 mm	

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	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.02 g.	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	7.0 mm x 3.0 mm x 1.0 mm	

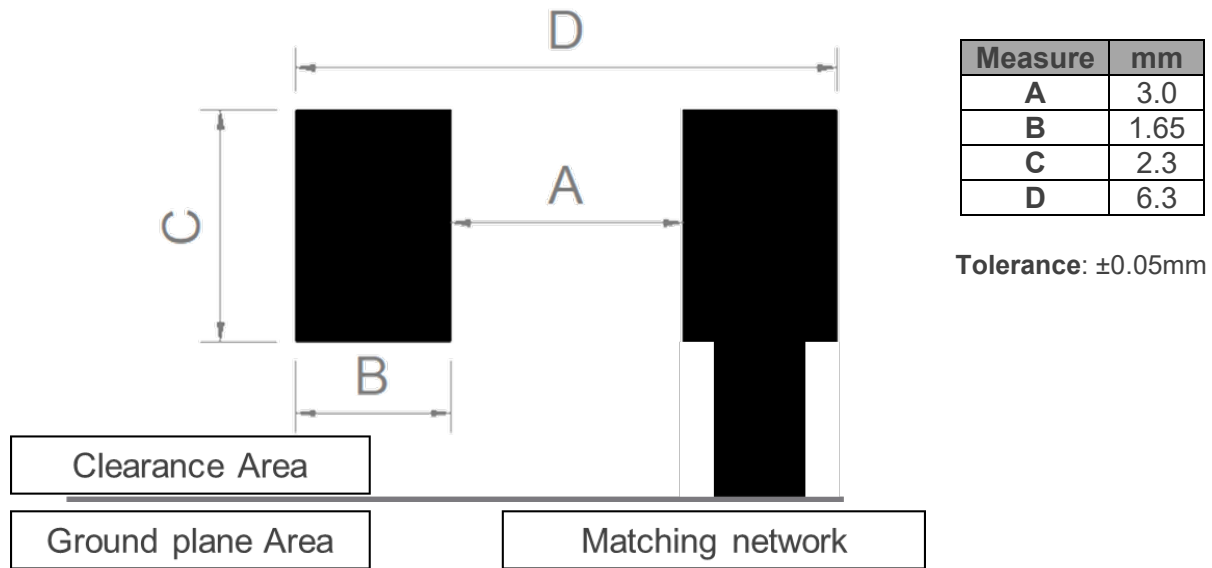
Technical features. Measures from the evaluation board (131 mm x 60 mm x 1 mm).

## 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		
Radiation Pattern	Omnidirectional		
Polarization	Linear		
Weight (approx.)	0.02 g.		
Temperature	-40 to +125 °C		
Impedance	50 Ω		
Dimensions (L x W x H)	7.0 mm x 3.0 mm x 1.0 mm		

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<sup>™</sup> (NN02-201) antenna booster.

If you need assistance to design your matching network beyond this application note, please contact [support@ignion.io](mailto:support@ignion.io), or if you are designing a **different device size** or a **different frequency band**, we can assist you in less than 24 hours. Please, try our free-of-charge<sup>1</sup> [Antenna Intelligence Cloud](#), which will get you a complete design report including a custom matching network for your device in 24h<sup>1</sup>. Additional information related to Ignion's range of R&D services is available at: <https://ignion.io/rdservices/>

<sup>1</sup> See terms and conditions for a free Antenna Intelligence Cloud service in 24h at: <https://www.ignion.io/antenna-intelligence/>

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