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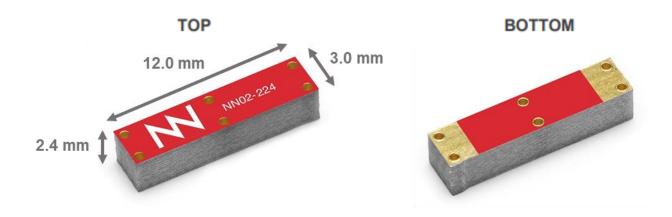
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# RUN mXTEND<sup>TM</sup> (NN02-224)



# RUN mXTEND™ (NN02-224)

The RUN mXTEND™ cellular embedded **IoT antenna** is an example of the new generation of tiny antenna boosters available for multiband connectivity. The miniature antenna booster is connected to the RF transceiver through a matching network that shapes the frequency response of the wireless platform such as **2G**, **3G**, **4G** bands, but also for other regions of the spectrum for example **GNSS** and **Bluetooth**.



#### **Product Benefits**

- **Top performance**: Top multiband IoT performance in a ultracompact form factor: 12.0 mm x 3.0 mm x 2.4 mm.
- Multiband & Multiport: 2G/3G/4G/5G, LTE-M and NB-IoT applications
- **Global reach:** Through multiband performance (compatible with multiple regional standards).
- **Reliability**: Off-the-Shelf standard product, no antenna part customization (electronic optimization).
- Use cases: Small tracking devices, IoT sensors and IoT cellular/ISM modules, mobile devices.

#### **Operation Bands Summary**

GSM, UMTS, 4G, GNSS, Bluetooth, Wi-Fi Dual Band (824 – 960MHz, 1710 – 2690MHz, 1561 – 1606MHz, 2400 – 2500MHz and 4900 – 5875MHz)



# 1. AVAILABLE SOLUTIONS SUMMARY

Class	Frequency Regions	Frequency range	More detailed info
1 Port	2	824 – 960 MHz & 1710 – 2690 MHz	CELLULAR LTE
1 Port	1	863 – 928 MHz	<u>ISM</u>
1 Port	3	1561 MHz, 1575 MHz & 1598 – 1606 MHz	<u>GNSS</u>
1 Port	1	2400 – 2500MHz	<u>BLUETOOTH</u>
1 Port	2	2400 – 2500MHz & 4900 – 5875MHz	<u>Wi-Fi DUAL BAND</u>

## 2. DETAILED AVAILABLE SOLUTIONS

### 2.1. LTE SOLUTION

Technical features	824 – 960 MHz	1710 – 2690 MHz	
Average Efficiency	> 65 %	> 70 %	
Peak Gain	1.8 dBi	1.9 dBi	
VSWR	< 3:1		
Radiation Pattern	Omnidirectional		
Polarization	Linear		
Weight (approx.) 0.19 g		19 g	
Temperature	-40 to	-40 to + 125 °C	
Impedance	50 Ω		
Dimensions (L x W x H)	12.0 mm x 3.0 mm x 2.4 mm		

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

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#### 2.2 ISM SOLUTION

Technical features	863 – 870 MHz	902 – 928 MHz	863 – 928 MHz
Average Efficiency	> 85 %	> 85 %	> 85 %
Peak Gain	2.1 dBi	2.1 dBi	2.2 dBi
VSWR	< 2:1	< 2:1	< 2:1
Radiation Pattern	Omnidirectional		
Polarization	Linear		
Weight (approx.)	0.19 g		
Temperature	-40 to +125 °C		
Impedance	50 Ω		
Dimensions (L x W x H)	12.0 mm x 3.0 mm x 2.4 mm		

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

#### 2.3 GNSS SOLUTION

Technical features	1561 MHz	1575 MHz	1598 – 1606 MHz
Average Efficiency	> 75 %	> 75 %	> 80 %
Peak Gain	2.9 dBi	3.0 dBi	3.3 dBi
VSWR	< 1.5:1		
Radiation Pattern	Omnidirectional		
Polarization	Linear		
Weight (approx.)	0.19 g		
Temperature	-40 to +125 °C		
Impedance	50 Ω		
Dimensions (L x W x H)	12.0 mm x 3.0 mm x 2.4 mm		

Technical features. Measures from the evaluation board with UFL cables (126.5 mm x 60 mm x 1 mm).

Last Update: January 2021

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#### 2.4 BLUETOOTH SOLUTION

Technical features	2400 – 2500MHz	
Average Efficiency	> 75%	
Peak Gain	4.2 dBi	
VSWR	< 1.5:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.19 g	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	12.0 mm x 3.0 mm x 2.4 mm	

Technical features. Measures from the evaluation board with UFL cables (126.5 mm x 60 mm x 1 mm).

#### 2.5 Wi-Fi-DUAL BAND SOLUTION

Technical features	2400 – 2500 MHz	4900 – 5875 MHz
Average Efficiency	> 70 %	> 70 %
Peak Gain	2.9 dBi	3.1 dBi
VSWR	< 2.5:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.19 g	
Temperature	-40 to + 125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	12.0 mm x 3.0 mm x 2.4 mm	

Technical features. Measures from the evaluation board with a coplanar grounded transmission line (126.5 mm x 60 mm x 1 mm).

If you need assistance to design your matching network, please contact <a href="mailto:support@ignion.io">support@ignion.io</a>

You can also try our free of charge<sup>1</sup> NN Wireless Fast Track service you will receive a tailored antenna design approach for free in 24h<sup>1</sup>. discover the feasibility of your next wireless project including the antenna!

Last Update: January 2021

<sup>&</sup>lt;sup>1</sup> See terms and conditions for a free NN Wireless Fast-Track service in 24h at: https://www.ignion.io/fast-track-project/

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