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# ALL mXTEND<sup>™</sup> (NN02-220)

DATASHEET

## ALL mXTEND<sup>™</sup> (NN02-220)

The ALL mXTEND<sup>™</sup> chip antenna component has been specifically designed for providing multiband performance in mobile applications, such as LTE (698 – 960MHz and 1710 – 2690MHz) that enables **worldwide coverage**. Among other applications, it is used for designing **Smart Meters** and **Sharkfin** devices able to operate in full mobile communication standards.



### Product Benefits

- **High Performance:** A global cellular antenna for IoT and mobile devices with a high performance in the subGHz frequency range.
- **Multiband:** All cellular bands covered: 2G/3G/4G/5G and NB-IoT/LTE-M applications in a 24.0 mm x 12.0 mm x 2.0 mm antenna package.
- **Global reach:** Through multiband performance (worldwide standards compatible).
- **Reliability:** Off-the-Shelf standard product, no antenna part customization (electronic optimization).
- **Use cases:** Smart metering, smart city sensors, automotive.

### Operation Bands Summary

- GSM, UMTS, LTE (698 – 960MHz and 1710 – 2690MHz)

## 1. AVAILABLE SOLUTIONS SUMMARY

Class	Frequency Regions	Frequency range	More detailed info
1 Port	2	698 – 960 MHz & 1710 – 2690 MHz	<u><a href="#">CELLULAR MOBILE</a></u>
1 Port	2	698 – 960 MHz & 1710 – 2690 MHz	<u><a href="#">CELLULAR FOR SMART METERS</a></u>
1 Port	2	698 – 960 MHz & 1710 – 2690 MHz	<u><a href="#">CELLULAR FOR SHARKFIN AUTOMOTIVE</a></u>

## 2. DETAILED AVAILABLE SOLUTIONS

### 2.1. LTE SOLUTION

Technical features	698 – 960 MHz	1710 – 2690 MHz
Average Efficiency	> 55 %	> 75 %
Peak Gain	2.3 dBi	3.1 dBi
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	1.23 g	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	24.0 mm x 12.0 mm x 2.0 mm	

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

### 2.2 LTE FOR SMART METERS SOLUTION

Technical features	698 – 960 MHz	1710 – 2690 MHz
Average Efficiency	> 65 %	> 70 %
Peak Gain	2.2 dBi	0.1 dBi
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	1.23 g	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	24.0 mm x 12.0 mm x 2.0 mm	

Technical features. Measures from the evaluation board (145 mm x 130 mm x 1 mm).

## 2.3 LTE FOR SHARKFIN AUTOMOTIVE SOLUTION

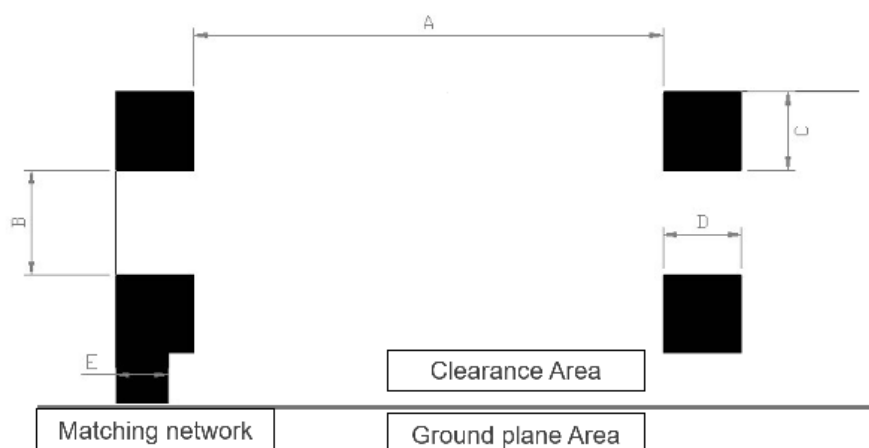
<sup>3</sup> Technical features	698 – 960 MHz	1710 – 2690 MHz
Average Efficiency	> 35 %	> 60 %
Peak Gain	1.8 dBi	7.1 dBi
VSWR	< 4.5:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	1.23 g	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	24.0 mm x 12.0 mm x 2.0 mm	

Technical features. Measures from the evaluation board (40 mm x 40 mm x 1 mm) mounted at a centre of metallic ground plane of 600 mm x 600 mm.

## 2.4 ANTENNA FOOTPRINT

Measure	mm
A	18.0
B	4.0
C	3.1
D	3.1
E	2.0

Tolerance: ±0.05mm



Footprint dimensions for the single 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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