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TRIO mXTEND[™] (NN03-310)

DATASHEET

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The TRIO mXTEND[™] chip antenna component is an **ultra slim**, off-the-shelf, component that measures only 1.0 mm in height, giving the designer freedom to integrate it in just about all wireless platforms. Thanks to its modular, multiband and **multiport configuration**, this chip antenna works in multiple frequency regions, including connectivity within **2G, 3G, 4G and 5G bands**, but also for other regions of the spectrum such as **GNSS and Bluetooth**.



Product Benefits

- **Top performance:** Top multiband worldwide sub-6GHz cellular/IoT performance in a multi-RAT and 3 independent port antenna component.
- **Multiband & Multiport:** All cellular/ISM bands: 2G/3G/4G/5G and NB-IoT/LTE-M applications with additional GNSS, Bluetooth, Wi-Fi 6E, UWB simultaneously.
- **Versatile:** Triple radio architecture in a single, small and ultra-slim antenna package: 30mm x 1.0mm x 3.0mm.
- **Global reach:** Through multiband performance (worldwide standard compatible)
- **Reliability:** Off-the-Shelf standard product, no antenna part customization (electronic optimization)
- **Use cases:** Best for top performing compact tracking devices, IoT sensors, IoT cellular/ISM modules and mobile devices.

Operation Bands Summary

- GSM, UMTS, LTE, 5G, GNSS, Bluetooth (617 – 960MHz, 1710 – 2690MHz, 3300 – 3800MHz, 1561 – 1606 MHz and 2400 – 2500 MHz)

1. AVAILABLE SOLUTIONS SUMMARY

Class	Frequency Regions	Frequency range	More detailed info
1 Port	2	698 – 960 MHz & 1710 – 2690 MHz	<u>CELLULAR LTE</u>
1 Port	1	863 – 928 MHz	<u>ISM</u>
2 Ports	3	698 – 960 MHz, 1710 – 2690 MHz & 3400 – 3800 MHz	<u>CELLULAR LTE + 5G</u>
2 Ports	5	824 – 960 MHz, 1710 – 2170 MHz, 1561 MHz, 1575 MHz & 1598 – 1606 MHz	<u>CELLULAR LTE + GNSS</u>
3 Ports	6	824 – 960 MHz, 1710 – 1990 MHz, 1561 MHz, 1575 MHz, 1598 – 1606 MHz & 2400 – 2500MHz	<u>MOBILE + GNSS + BLUETOOTH</u>

2. DETAILED AVAILABLE SOLUTIONS

2.1. LTE SOLUTION

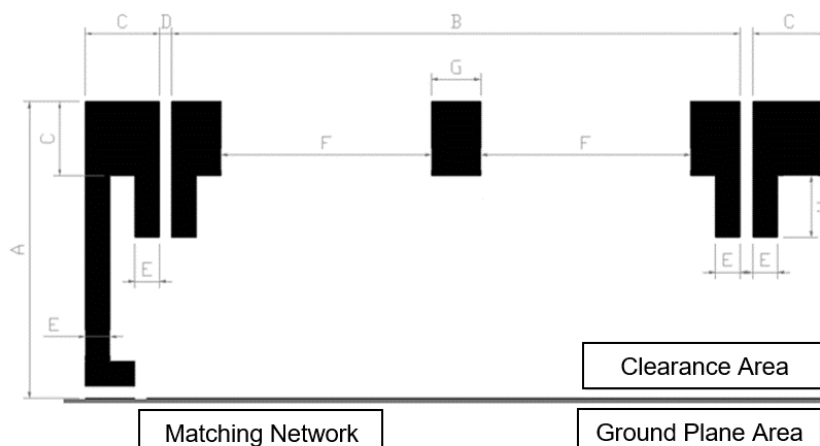
Technical features	698 – 960 MHz	1710 – 2690 MHz
Average Efficiency	> 55 %	> 65 %
Peak Gain	1.1 dBi	2.4 dBi
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.25 g	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	30.0 mm x 3.0 mm x 1.0 mm	

Technical features. Measures from the evaluation board (142 mm x 60 mm x 1 mm).

2.2. ANTENNA FOOTPRINT: 1 PORT CONFIGURATION

Measure	mm
A	12.0
B	23.0
C	3.0
D	0.5
E	1.0
F	8.5
G	2.0
H	2.5

Tolerance: $\pm 0.05\text{mm}$



Footprint dimensions for the single chip antenna component in one port configuration.

2.3. LTE + 5G SOLUTION

Technical features	698 – 960 MHz	1710 – 2690 MHz	3400 – 3800 MHz
Average Efficiency	> 50 %	> 60 %	> 65 %
Peak Gain	1.5 dBi	2.7 dBi	3.8 dBi
VSWR	< 3:1		< 2:1
Radiation Pattern	Omnidirectional		
Polarization	Linear		
Weight (approx.)	0.25 g		
Temperature	-40 to +125 °C		
Impedance	50 Ω		
Dimensions (L x W x H)	30.0 mm x 3.0 mm x 1.0 mm		

Technical features. Measures from the evaluation board (142 mm x 60 mm x 1 mm)

2.4. LTE + GNSS SOLUTION

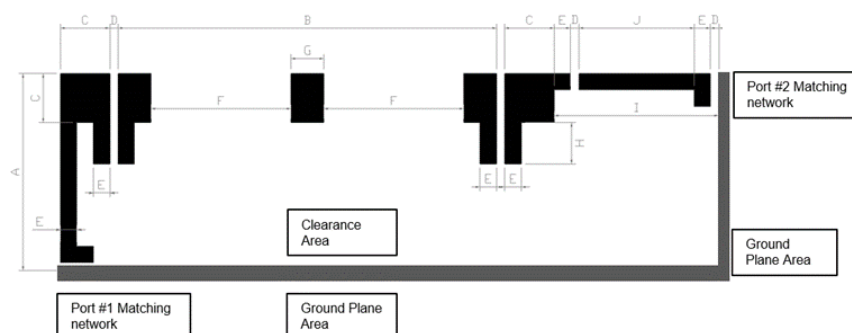
Technical features	824 – 894 MHz	1850 – 2170 MHz
Average Efficiency	> 65%	> 70%
Peak Gain	1.9	2.0
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.02 g.	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	7.0 mm x 3.0 mm x 1.0 mm	

Technical features. Measures from the evaluation board (142 mm x 60 mm x 1 mm).

2.5. ANTENNA FOOTPRINT: 2 PORT CONFIGURATION

Measure	mm
A	12.0
B	23.0
C	3.0
D	0.5
E	1.0
F	8.5
G	2.0
H	2.5
I	10.0
J	7.0

Tolerance: $\pm 0.05\text{mm}$



Footprint dimensions for the single chip antenna component in two port configuration.

2.6. LTE + GNSS + BLUETOOTH SOLUTION

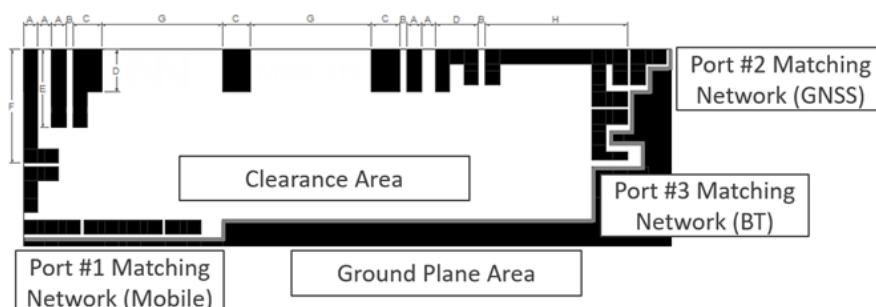
Technical features	Port 1 824-960 MHz	Port 1 1710-1990 MHz	Port 2 1561-1606 MHz	Port 3 2400-2500MHz
Average Efficiency	> 50%	> 60%	> 50%	> 75%
Peak Gain	0.4 dBi	1.9 dBi	0.9 dBi	2.4 dBi
VSWR	< 2.8:1	< 2.1:1	< 2.1:1	< 2.0:1
Radiation Pattern	Omnidirectional			
Polarization	Linear			
Weight (approx.)	0.25 g.			
Temperature	-40 to +125 °C			
Impedance	50 Ω			
Dimensions (L x W x H)	30.0 mm x 3.0 mm x 1.0 mm			

Technical features. Measures from the evaluation board (142 mm x 60 mm x 1 mm).

2.7. ANTENNA FOOTPRINT: 3 PORT CONFIGURATION

Measure	mm
A	1.0
B	0.5
C	2.0
D	3.0
E	5.5
F	8.0
G	8.5
H	10.0

Tolerance: ±0.2mm



Footprint dimensions for the single chip antenna component in three port configuration.

If you need assistance to design your matching network, please contact support@ignion.io

You can also try our free of charge¹ **[NN Wireless Fast Track service](#)** you will receive a tailored antenna design approach for free in 24h¹. discover the feasibility of your next wireless project including the antenna!

¹ 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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