

ignion[™]

Your innovation.
Accelerated.

TRIO mXTEND[™] (NN03-310)

DATASHEET

TRIO mXTEND[™] (NN03-310)

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

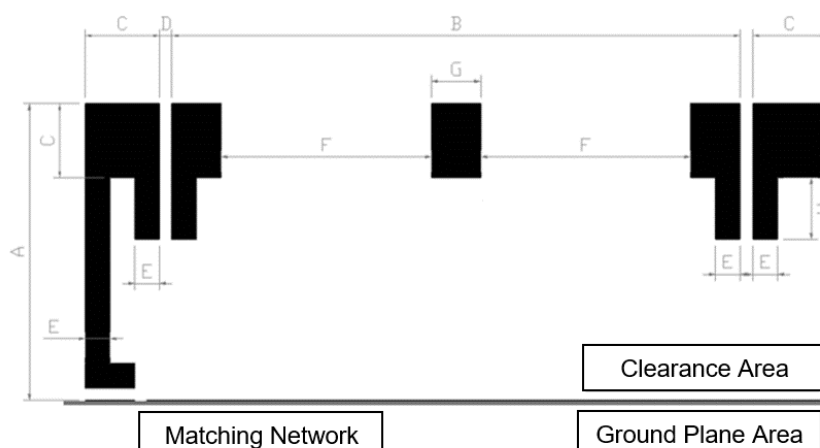
Technical features	698 – 960 MHz	1710 – 2690 MHz
Average Efficiency	> 55 %	> 65 %
Peak Gain	1.1 dBi	2.4 dBi
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.25 g	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	30.0 mm x 3.0 mm x 1.0 mm	

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

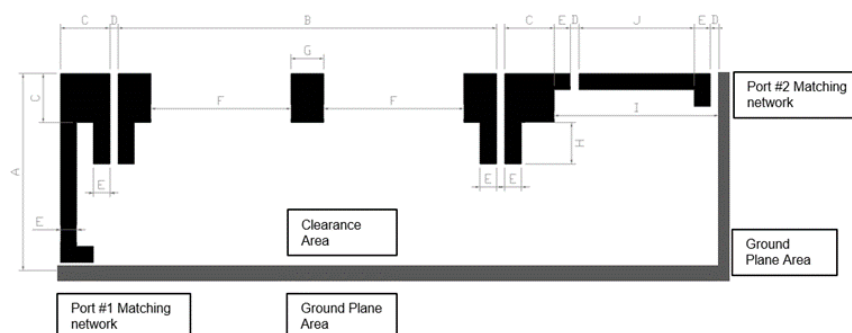
Technical features	824 – 894 MHz	1850 – 2170 MHz
Average Efficiency	> 65%	> 70%
Peak Gain	1.9	2.0
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.02 g.	
Temperature	-40 to +125 °C	
Impedance	50 Ω	
Dimensions (L x W x H)	7.0 mm x 3.0 mm x 1.0 mm	

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

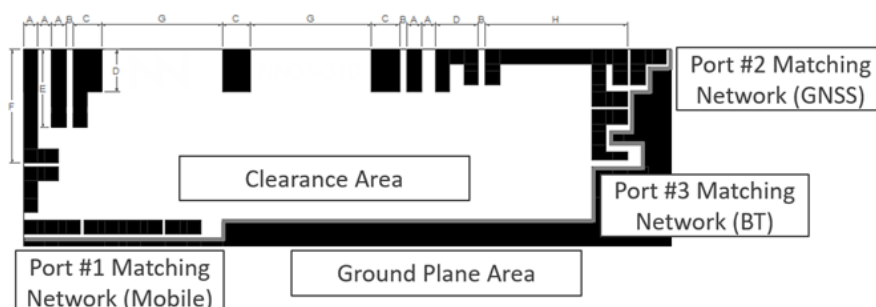
Technical features	Port 1 824-960 MHz	Port 1 1710-1990 MHz	Port 2 1561-1606 MHz	Port 3 2400-2500MHz
Average Efficiency	> 50%	> 60%	> 50%	> 75%
Peak Gain	0.4 dBi	1.9 dBi	0.9 dBi	2.4 dBi
VSWR	< 2.8:1	< 2.1:1	< 2.1:1	< 2.0:1
Radiation Pattern	Omnidirectional			
Polarization	Linear			
Weight (approx.)	0.25 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/>



Your innovation.
Accelerated.

Contact:
support@ignion.io
+34 935 660 710

Barcelona

Av. Alcalde Barnils, 64-68 Modul C, 3a pl.
Sant Cugat del Vallés
08174 Barcelona
Spain

Shanghai

Shanghai Bund Centre
18/F Bund Centre, 222 Yan'an Road East,
Huangpu District
Shanghai, 200002
China

New Dehli

New Delhi, Red Fort Capital Parsvnath Towers
Bhai Veer Singh Marg, Gole Market,
New Delhi, 110001
India

Tampa

8875 Hidden River Parkway
Suite 300
Tampa, FL 33637
USA