ignion

Your innovation.
Accelerated.

TRIO mXTEND™ (NN03-310)

DATASHEET

TRIO mXTEND™: The ultra slim, top performance antenna

The power of 3. TRIO mXTEND™ can combine cellular connectivity, GNSS and Bluetooth in a single chip antenna component. Leverage the possibilities of three independent radios in a powerful, slimline configuration.

Thanks to its 1mm height, it can be integrated into nearly all wireless platforms. It also offers worldwide coverage and works in multiple frequency regions thanks to its modular, multiband, and multiport configuration.

TRIO mXTEND™ component (NN03-310)

Most used industries.

- **Asset Tracking & Logistics.**
- **Smart Metering.**
- **Industrial IoT.**

TRIO mXTEND™ benefits.

- **Top performance**: Top multiband worldwide sub-6GHz cellular/IoT performance in a multi-RAT and 3 independent port antenna components.
- **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, ultra-slim antenna package: 30 mm x 1.0 mm x 3.0 mm.
- **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, LTE-M, NB-IoT, 5G, GNSS, Bluetooth, and many more within the range of 400 MHz to 8000 MHz.

1. AVAILABLE CONFIGURATIONS SUMMARY

Configuration	Frequency range	Frequency Regions
CELLULAR LTE	698 – 960 MHz & 1710 – 2690 MHz	2
CELLULAR LTE + 5G	698 – 960 MHz, 1710 – 2690 MHz & 3400 – 3800 MHz	3
CELLULAR LTE + GNSS	824 – 960 MHz, 1710 – 2170 MHz, 1561 MHz, 1575 MHz & 1598 – 1606 MHz	5
MOBILE + GNSS + BLUETOOTH	824 – 960 MHz, 1710 – 1990 MHz, 1561 MHz, 1575 MHz, 1598 – 1606 MHz & 2400 – 2500MHz	6
ISM	863 – 928 MHz	2

2. DETAILED AVAILABLE CONFIGURATIONS

2.1. LTE CONFIGURATION

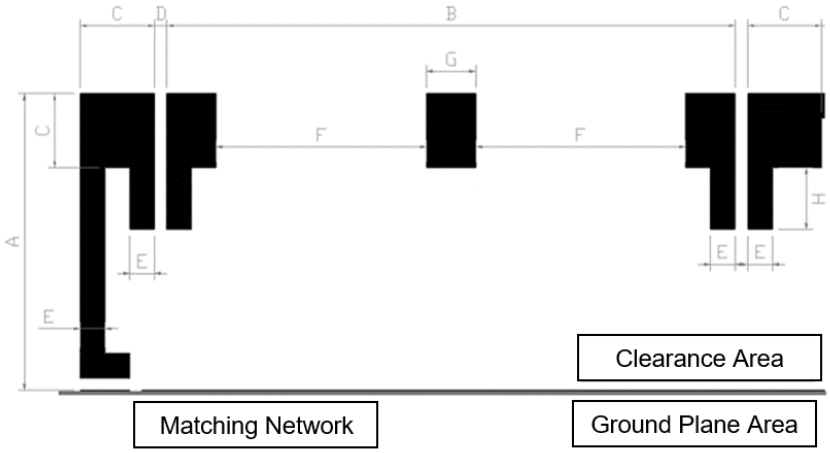
Technical features	698 – 960 MHz	1710 – 2690 MHz
Average Efficiency	> 55 %	> 65 %
Peak Gain	1.1 dBi	2.4 dBi
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.25 g	
Temperature	-40 to +125 ºC	
Impedance	50 Ω	
Dimensions (L x W x H)	30.0 mm x 3.0 mm x 1.0 mm	

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: ±0.05mm



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

2.3. LTE + 5G CONFIGURATION

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 ºC		
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 CONFIGURATION

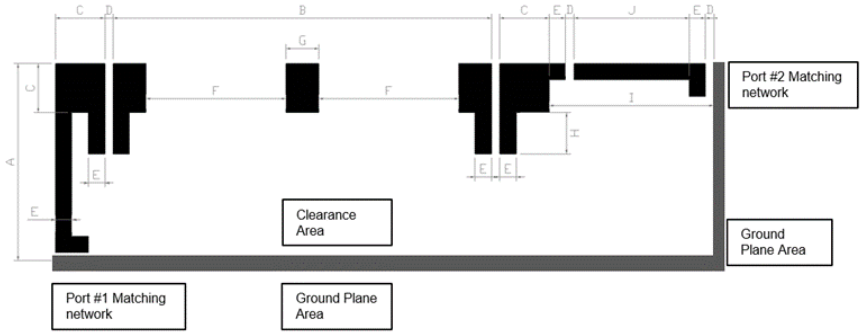
Technical features	824 – 894 MHz	1850 – 2170 MHz
Average Efficiency	> 65%	> 70%
Peak Gain	1.9	2.0
VSWR	< 3:1	
Radiation Pattern	Omnidirectional	
Polarization	Linear	
Weight (approx.)	0.02 g.	
Temperature	-40 to +125 ºC	
Impedance	50 Ω	
Dimensions (L x W x H)	7.0 mm x 3.0 mm x 1.0 mm	

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: ±0.05mm



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

2.6. LTE + GNSS + BLUETOOTH CONFIGURATION

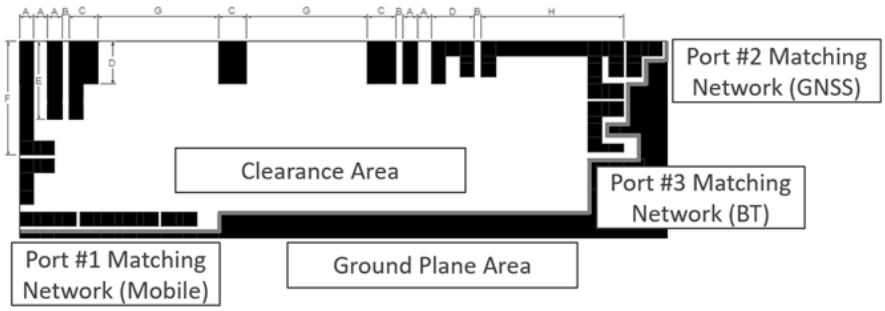
Technical features	Port 1 824-960 MHz	Port 1 1710-1990 MHz	Port 2 1561-1606 MHz	Port 3 2400-2500MHz
Average Efficiency	> 50%	> 60%	> 50%	> 75%
Peak Gain	0.4 dBi	1.9 dBi	0.9 dBi	2.4 dBi
VSWR	< 2.8:1	< 2.1:1	< 2.1:1	< 2.0:1
Radiation Pattern	Omnidirectional			
Polarization	Linear			
Weight (approx.)	0.25 g.			
Temperature	-40 to +125 ºC			
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 are designing a device with a different size or operating frequency than shown above, you can assess the performance of this configuration using our free-of-charge Oxion™ platform. This tool provides a complete design report, including expected performance and tailored design guide, within 24 hours. For additional information about Ignion's range of R&D services, please visit: https://ignion.io/resources-support/technical-center/engineering-support/. If you require further assistance, please contact support@ignion.io.

Purchase this or other evaluation boards through our main distributors by visiting the following link: https://ignion.io/distributors/.

ignion

Your innovation.
Accelerated.

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Ignion:

NN03-310