

Matching Network Service

ABTK – F2pro Receiver

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Outline

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1. Objectives

The initial requirements from the customer:

- **Frequency bands to cover:**
 - Bluetooth (2400 – 2500MHz)
 - **Number of antennas: 1**
 - **Selected antenna:**
 - NANO mXTEND™ (NN02-101) for Bluetooth
- Antenna Gain:0dBi



2. Proposed Antenna



PN: NN02-101

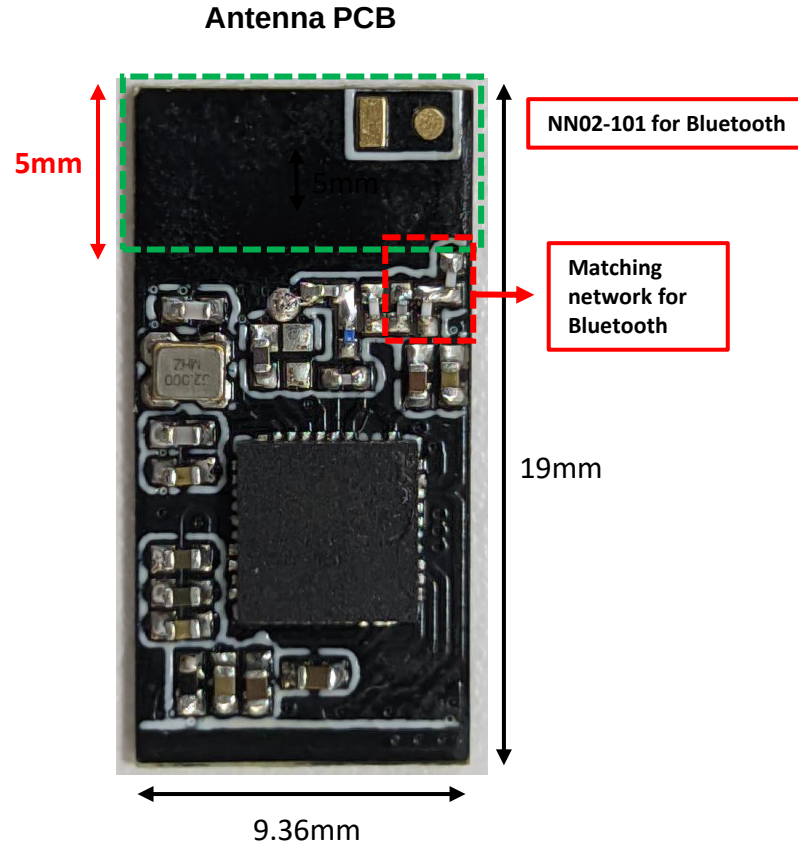
NANO mXTEND™ ANTENNA BOOSTER (NN02-101)

This product and/or its use is protected by at least the following patents and other domestic and international patents pending. Any update on new patents linked to this product will appear in

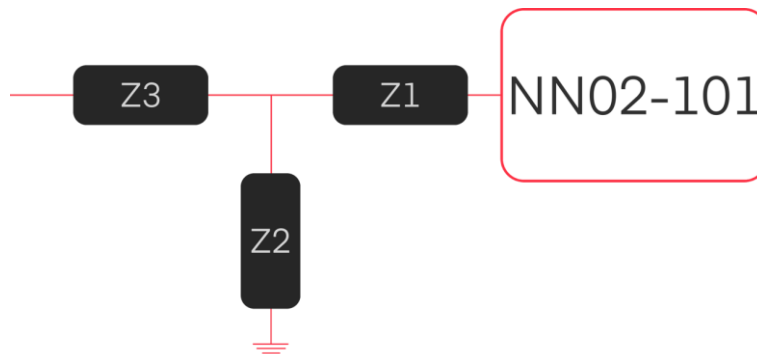
<https://ignion.io/files/Patent-list-NN.pdf>



3. Set-up(1/2)

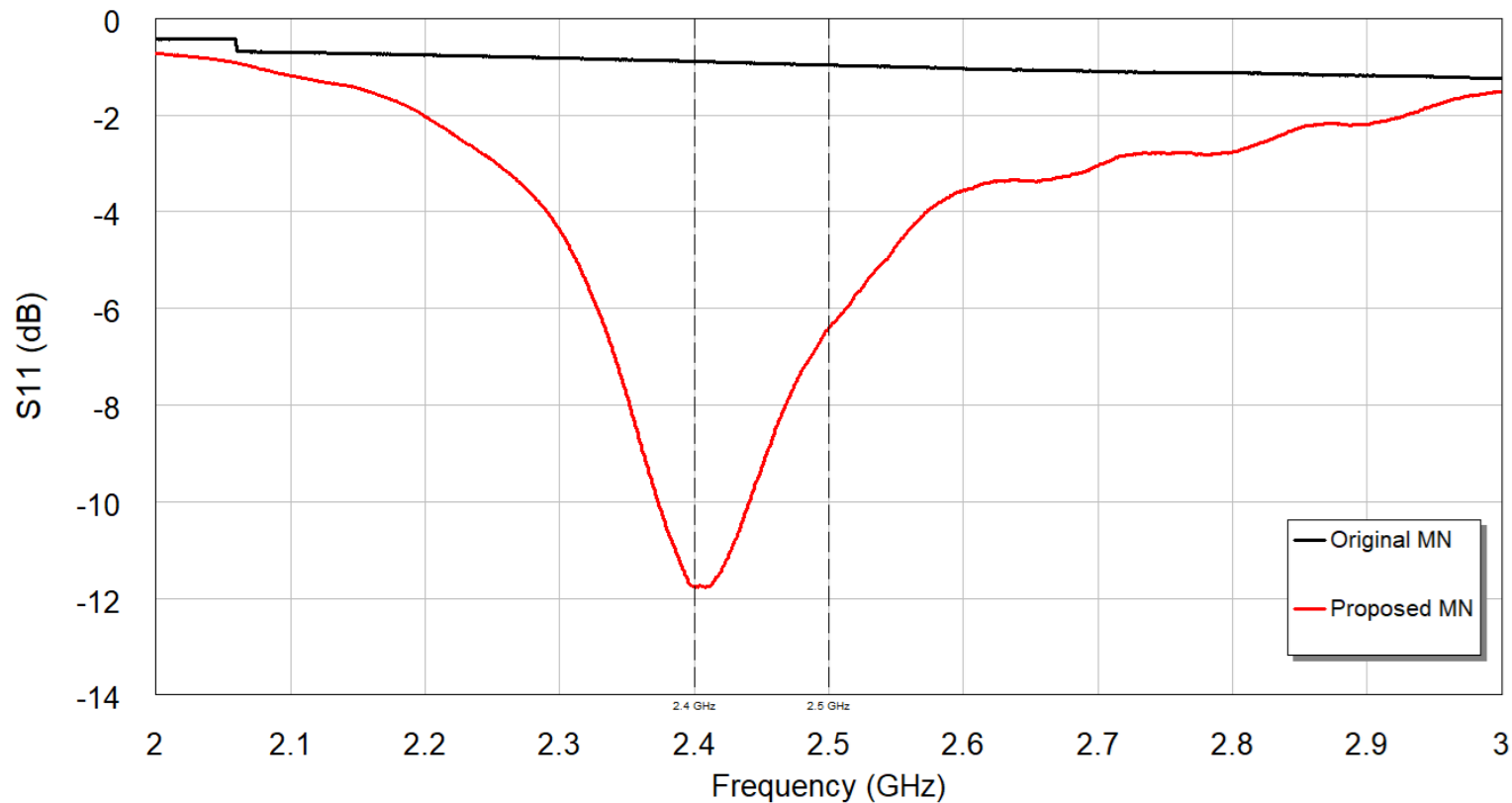


4. Proposed Matching Network

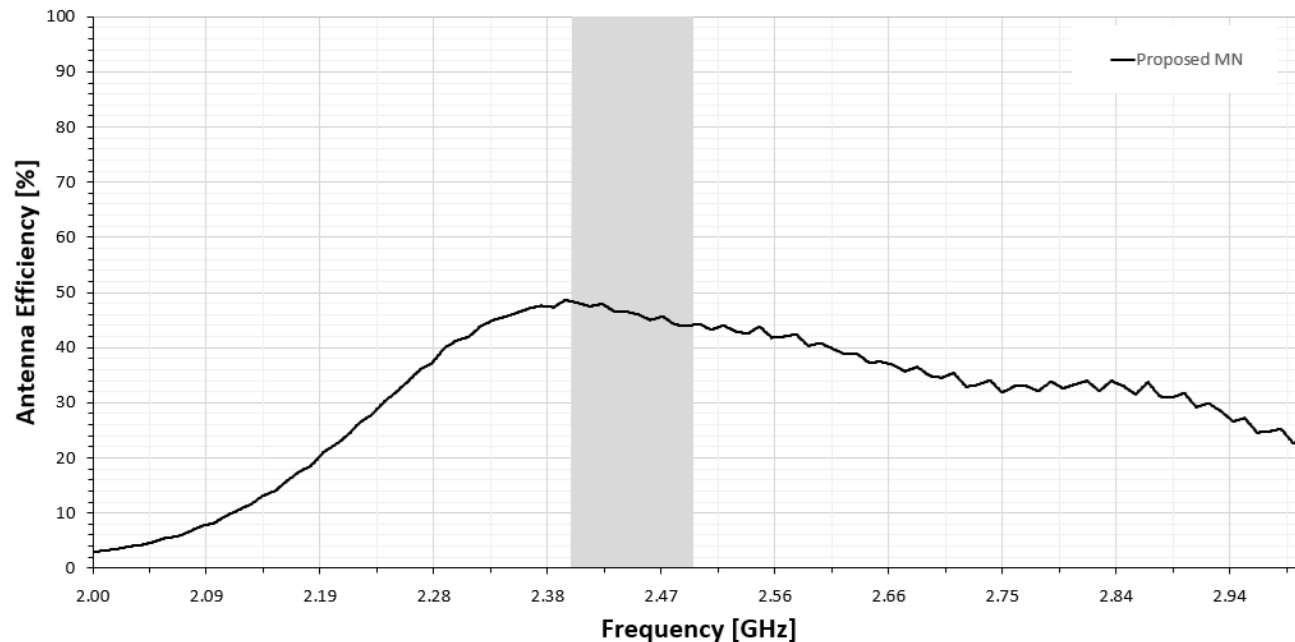


Bluetooth Proposed Matching Network		
Z	Value	Part Number
Z_1	0 Ohm	-
Z_2	5.4 nH	LQW03AW5N4J00
Z_3	0.3 pF	GJM0335C1HR30WB01

5.1 Performance Analysis: Reflection Coefficient (dB)



5.3 Performance Analysis: Antenna Efficiency (%)

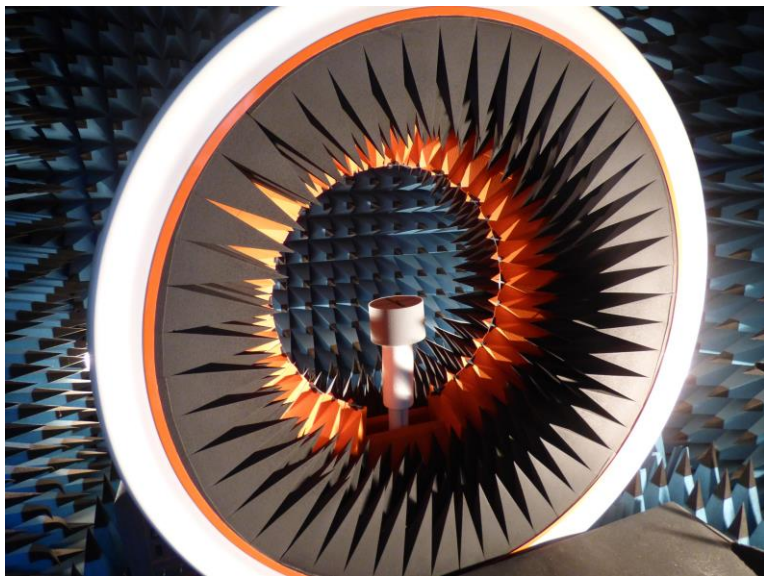


	η_a 2400MHz (%)	η_a 2500MHz (%)	Average η_a (%)
Proposed MN	48.1	44.3	46

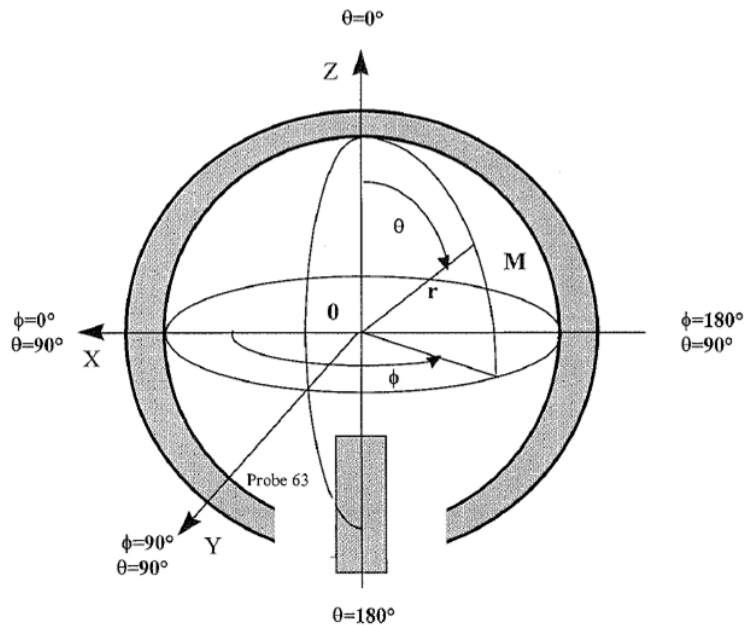
*Original MN antenna efficiency is not measured since it is totally mismatched.

5.4 Performance Analysis: Coordinates for the Radiation Pattern

MVG StarLab18



Measurement coordinate system

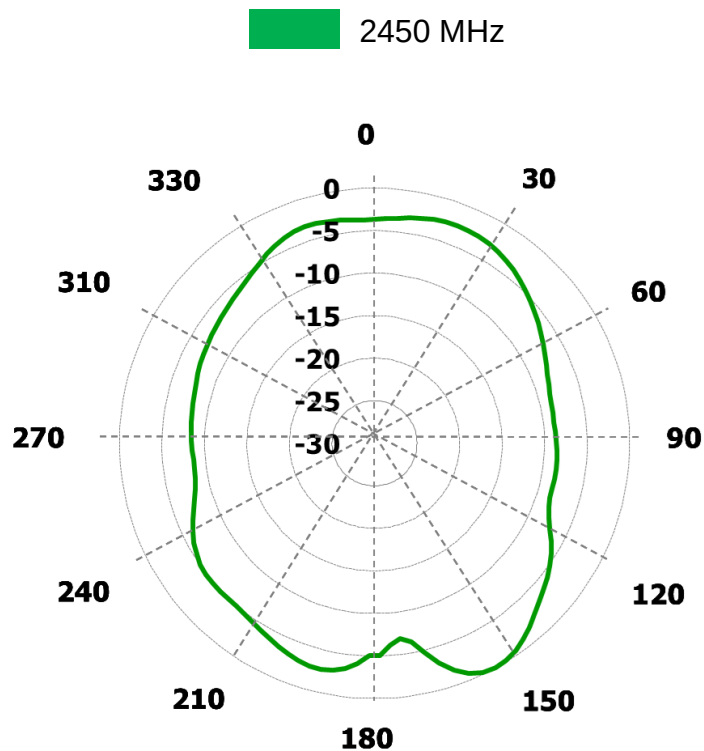
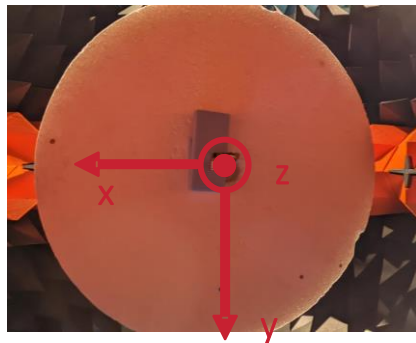


Radiation Pattern Phi 0° (1/3)

$\varphi = 0^\circ$

Plane XZ

Y=0

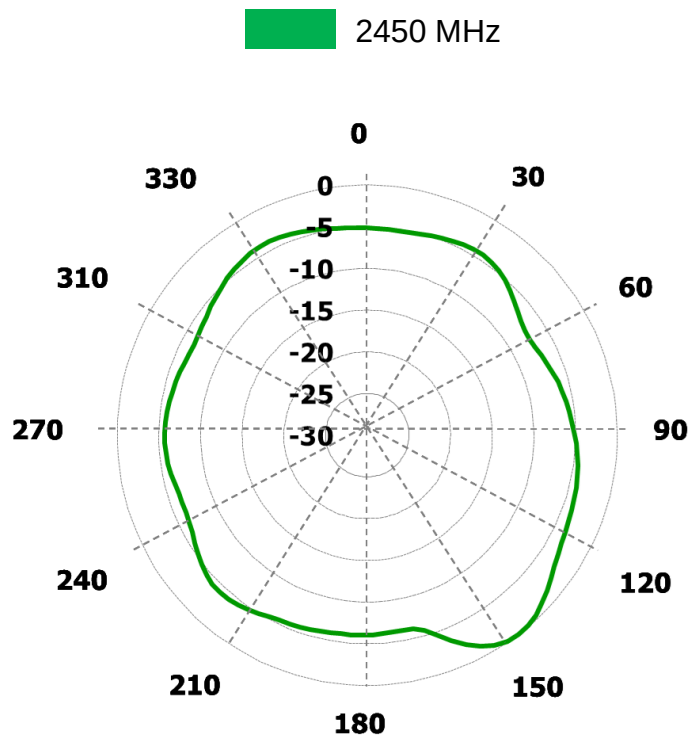
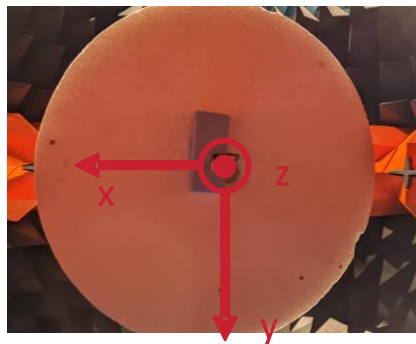


Radiation Pattern Phi 90° (2/3)

$\varphi = 90^\circ$

Plane YZ

X=0

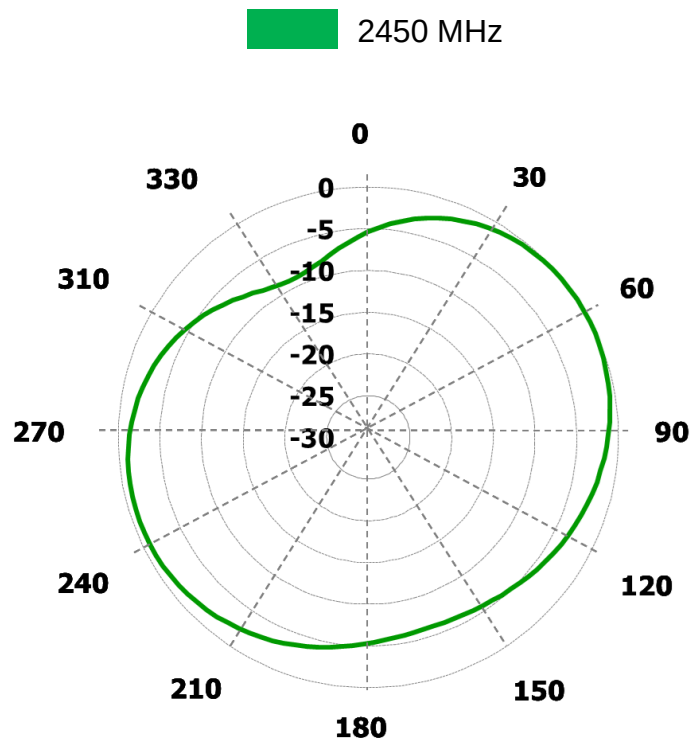
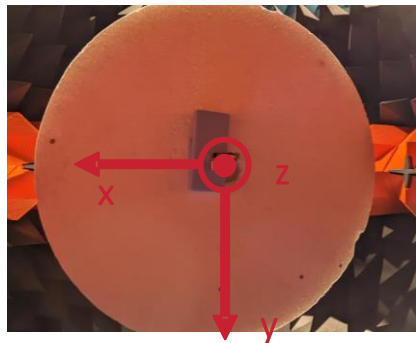


Radiation Pattern Theta 90° (3/3)

$\theta = 90^\circ$

Plane XY

Z=0



6. Summary

- It is integrated
 - **NANO mXTEND™ (NN02-101)** for Bluetooth (2400 – 2500 MHz).
- The average antenna efficiency is
 - **Bluetooth:**
 - **Proposed MN: 46%** for 2400-2500MHz.

Get in touch



ignion.io



info@ignion.io

Barcelona

Av. Alcalde Barnils 64-68, Module C
Sant Cugat del Vallès
Barcelona, 08174
Spain

+34 935 660 710

Tampa

8875 Hidden River Parkway, Suite
300
Tampa, FL 33637
USA

+1 888 726 8366

Shenzhen

Topway Information Building, Binhai Avenue,
Nanshan District, N°3369 - Room 2303
Shenzhen, 518000
China

+86 13826538470