ignion

Your innovation.
Accelerated.

Matching Network Service

ABTK – F2pro Receiver

ABTK.RF.F2pro Receiver.2023.001M1

Date 06/04/2023

Sant Cugat del Vallès, Barcelona

Outline

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)

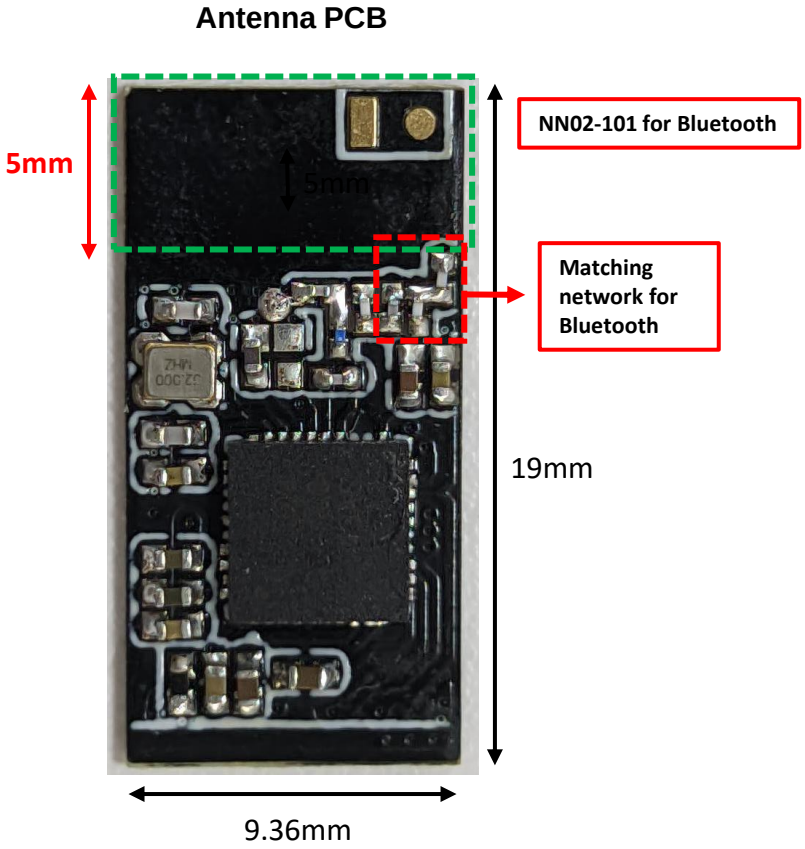
This product and/or its use is protected by at least the following patents and other domestic and international patents pending. Any update on new patents linked to this product will appear in https://ignion.io/files/Patent-list-NN.pdf

Pb lead-free

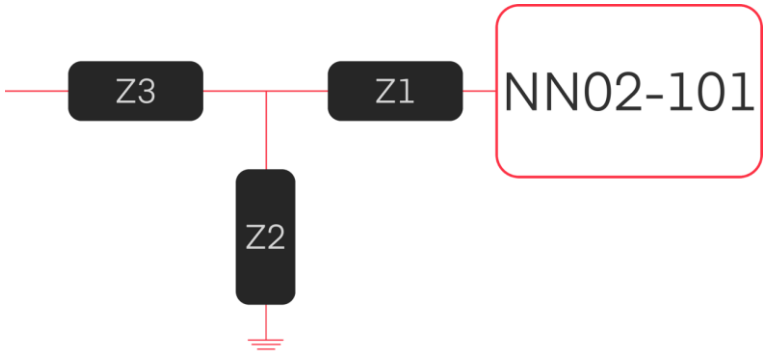
RoHS 2002/95/EC

ISO 9001 BUREAU VERITAS Certification

3. Set-up(1/2)

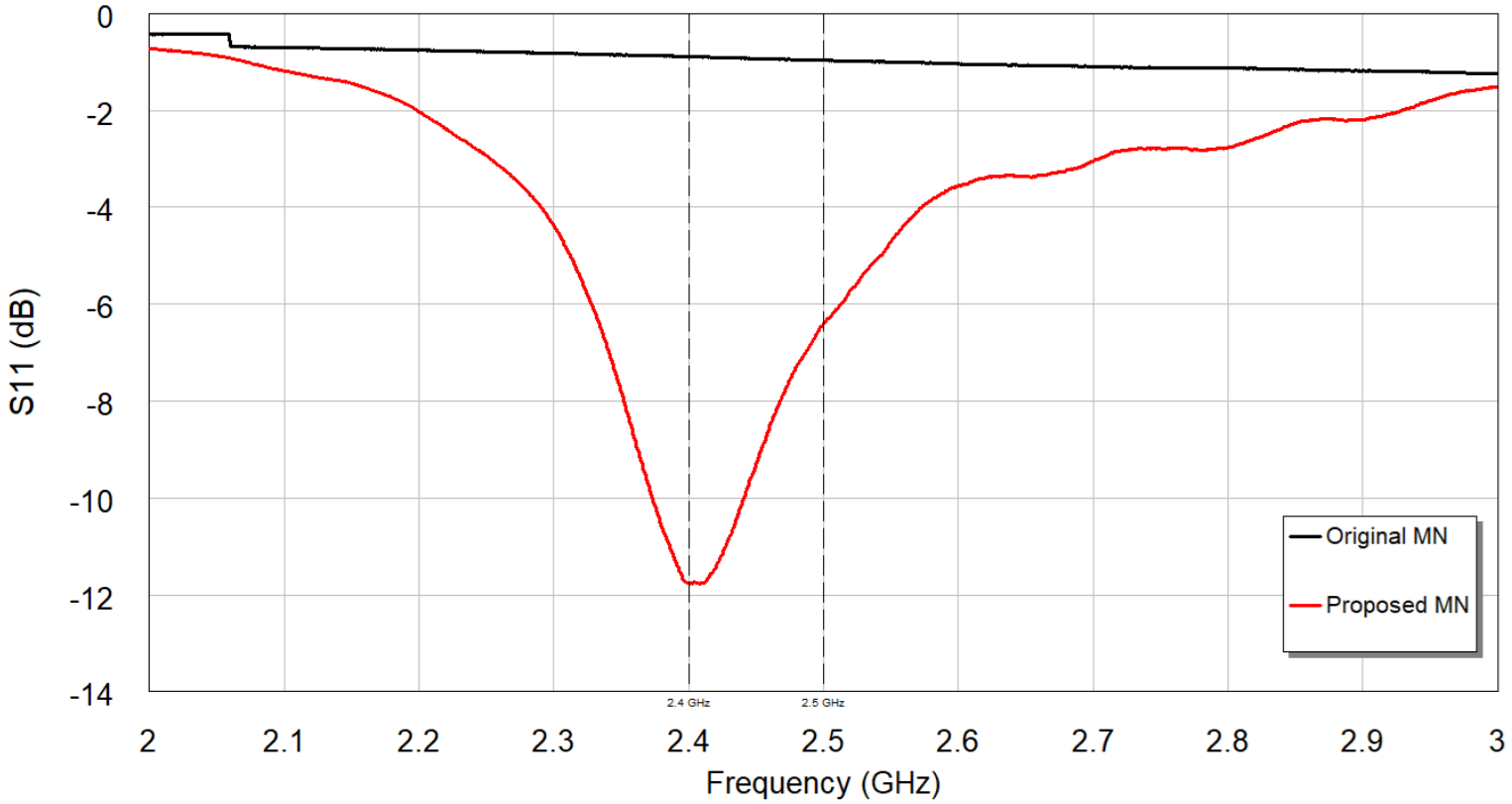

Antenna PCB
5mm
5mm
NN02-101 for Bluetooth
Matching network for Bluetooth
19mm
9.36mm

4. Proposed Matching Network

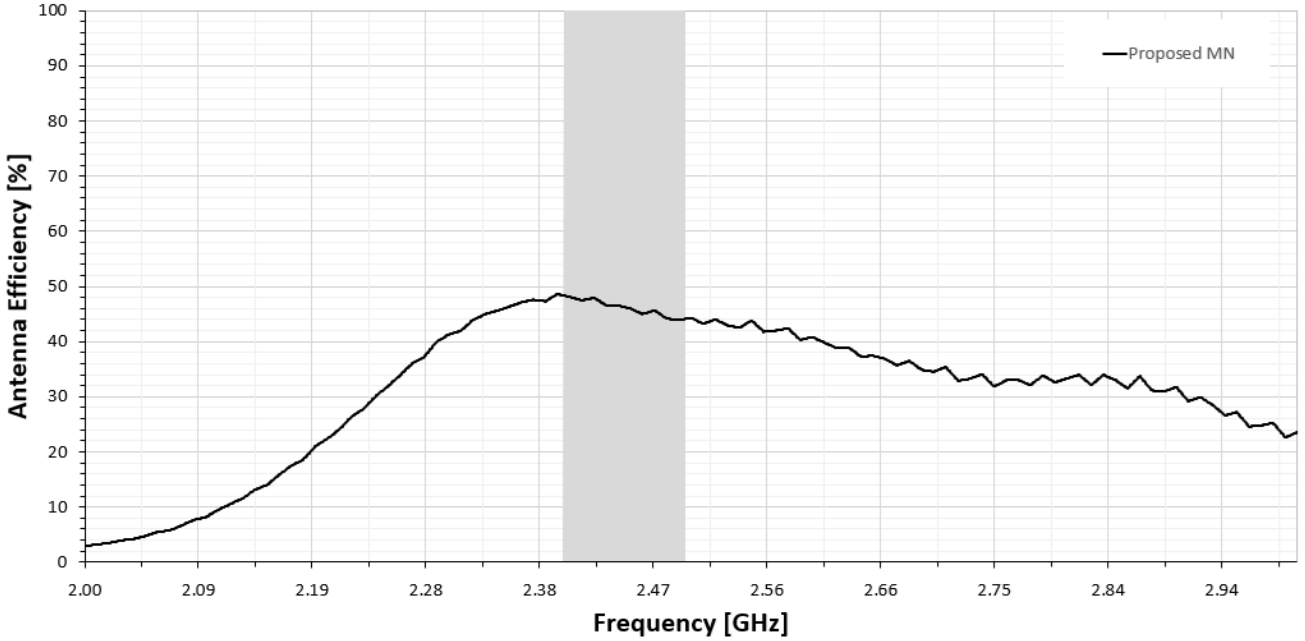


Bluetooth Proposed Matching Network		
Z	**Value**	**Part Number**
Z_1	0 Ohm	-
Z_2	5.4 nH	LQW03AW5N4J00
Z_3	0.3 pF	GJM0335C1HR30WB01

5.1 Performance Analysis: Reflection Coefficient (dB)



5.3 Performance Analysis: Antenna Efficiency (%)

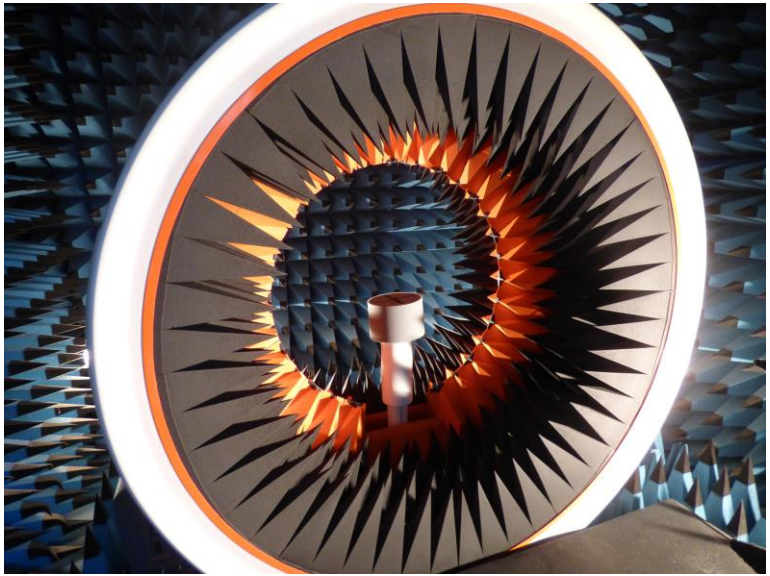


	η_a 2400MHz (%)	η_a 2500MHz (%)	Average η_a (%)
Proposed MN	48.1	44.3	**46**

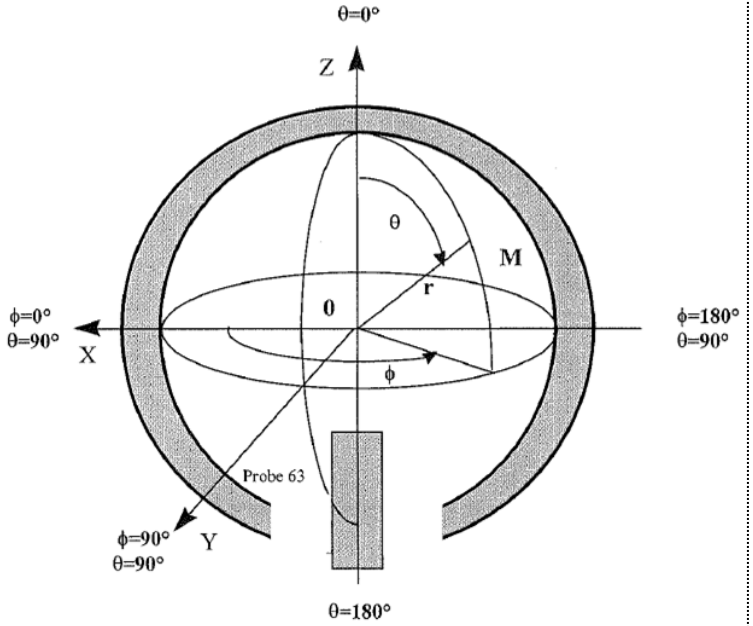
*Original MN antenna efficiency is not measured since it is totally mismatched.

5.4 Performance Analysis: Coordinates for the Radiation Pattern

MVG StarLab18



Measurement coordinate system

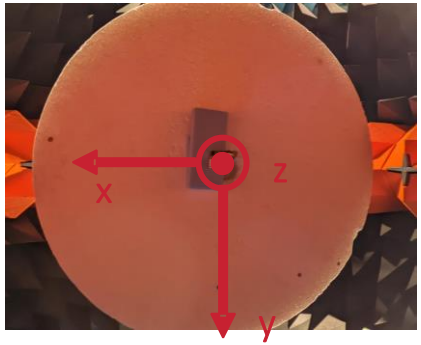


Radiation Pattern Phi 0º (1/3)

φ= 0º

Plane XZ

Y=0

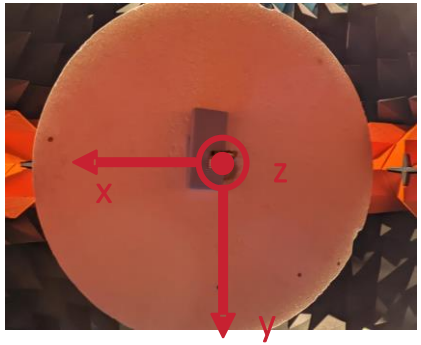


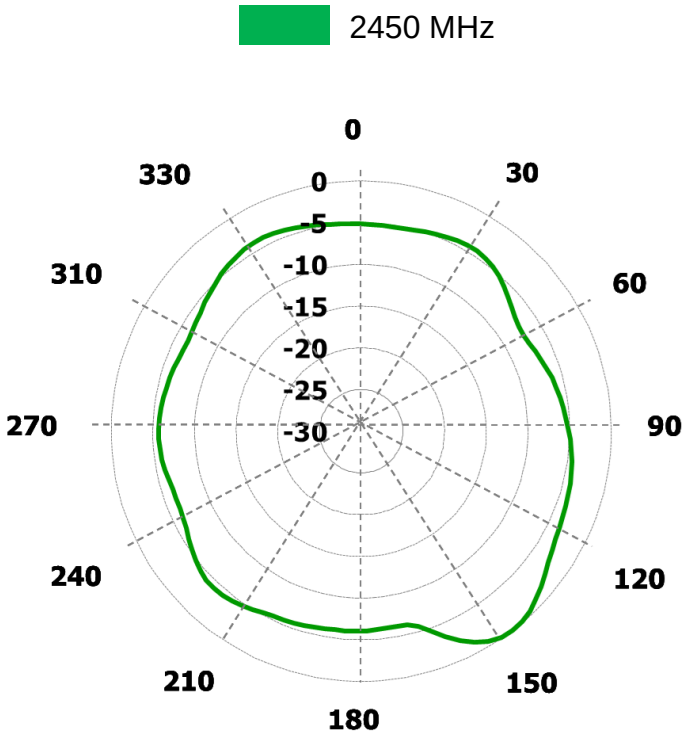
Radiation Pattern Phi 90º (2/3)

φ= 90º

Plane YZ

X=0



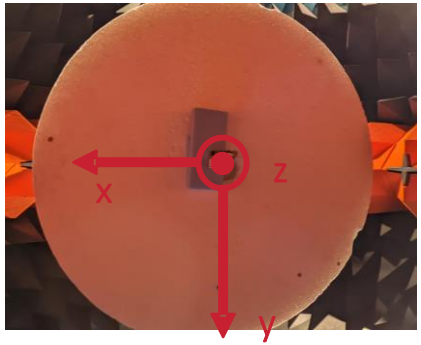


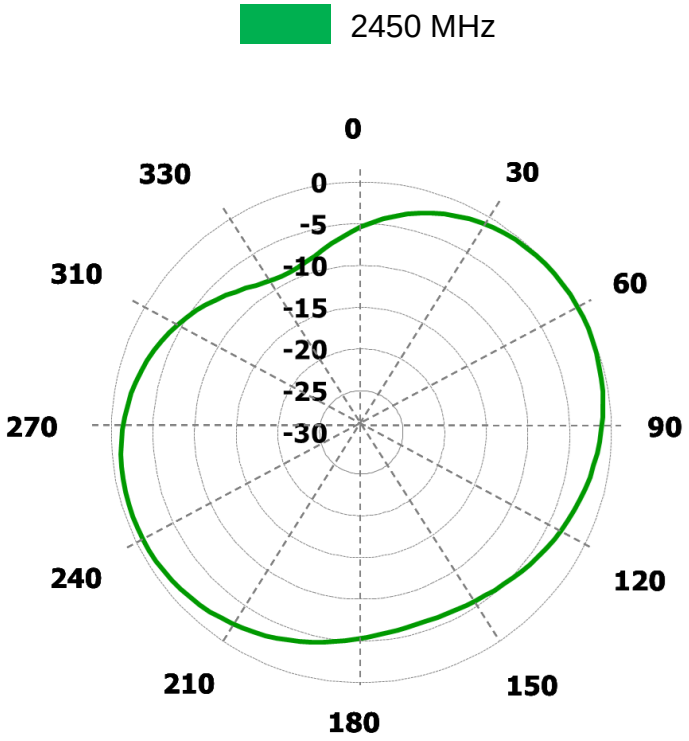
Radiation Pattern Theta 90º (3/3)

θ = 90º

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.

ignion

Your innovation.
Accelerated.

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, №3369 - Room 2303
Shenzhen, 518000
China

+86 13826538470