XTRACER

Declaration concerning Antenna Specification

It is hereby declared that the product

Model No.: XC Tracer Maxx II

FCC ID: 2AVOQ02

fulfills the requirement in FCC test relating to the antenna type.

The device specified above confirms to the FCC recommendations for internal antenna types described below:

(1)
And the Bluetooth Antenna integrated in the PCB according ublox reference design.

Peak Gain of the antenna:	0.7 dBi
Frequency range:	2402-2482 MHz

(2)
Model No. of antenna: XC_Tracer_Maxx_R01_Antenna_2020-01-14
Type of antenna: PCB antenna soldered directly to the main PCB

Peak Gain of the antenna:	3.6 dBi
Frequency range:	866-930 MHz

The mounting of the antenna is fixed to the radio module and no other antenna should be used.

Company name:	XC Tracer GmbH
Address:	Junkerngasse 53
City:	Bern
ZIP / Postal code:	3011
Country:	Switzerland

Place: Bern Date: 23/03/2023

Signature: 

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XC Tracer Maxx II Antenna Report

Contents

1 Bluetooth Low Energy Antenna

The BLE Antenna is integrated in the printed circuit board of the XC Tracer. It conforms to the reference design of the ANNA-B112 module, with FCC ID: XPYANNAB1 .

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1.1 Mechanical specification

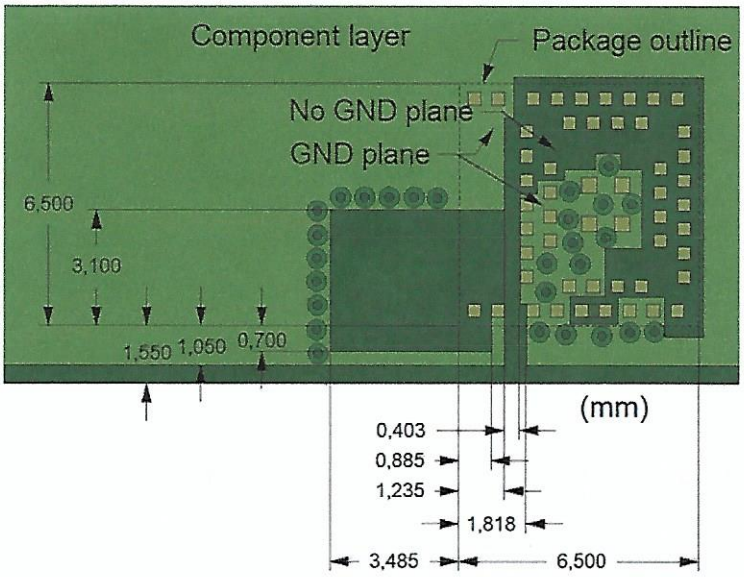

Figure 32: Reference design for internal antenna, edge version, top layer. Traces and vias for other signals are not present

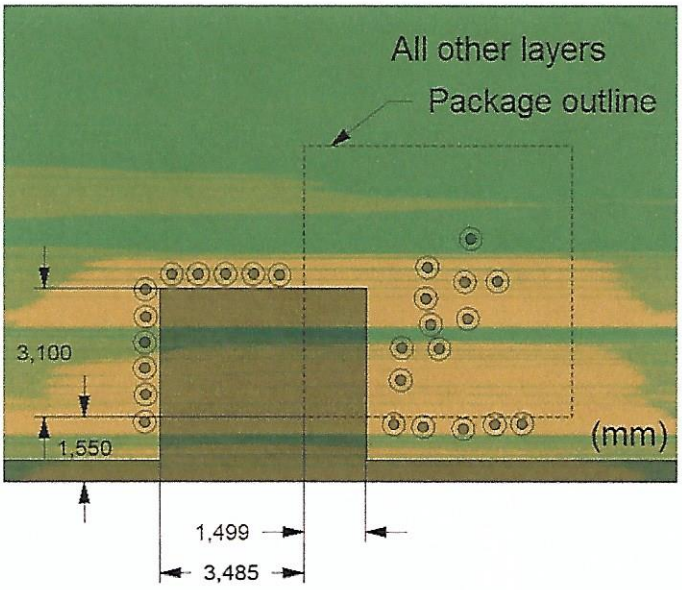

Figure 33: Reference design for internal antenna, edge version, other layers. Traces and vias for other signals not present

The mechanical specification corresponds to the reference design of the manufacturer ublox.

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1.2 Electrical specification

4.2.4 RF performance

Parameter	Test condition	Min	Typ	Max	Unit
Receiver input sensitivity	Conducted at 25 °C		-91		dBm
Output power	Conducted at 25 °C		+4		dBm

Table 15: RF performance

1.3 Max Gain , Plots

7.1 Approved antennas

ANNA-B112 internal antenna	
Gain	+0.7 dBi
Comment	Internal antenna on ANNA-B112. For more information, see also 2.4 GHz Bluetooth low energy (ANT) and the ANNA-B112 system integration manual [1]. Should not be mounted inside a metal enclosure.
Approval	FCC, IC, RED, MIC, NCC, KCC, ANATEL, ACMA and ICASA

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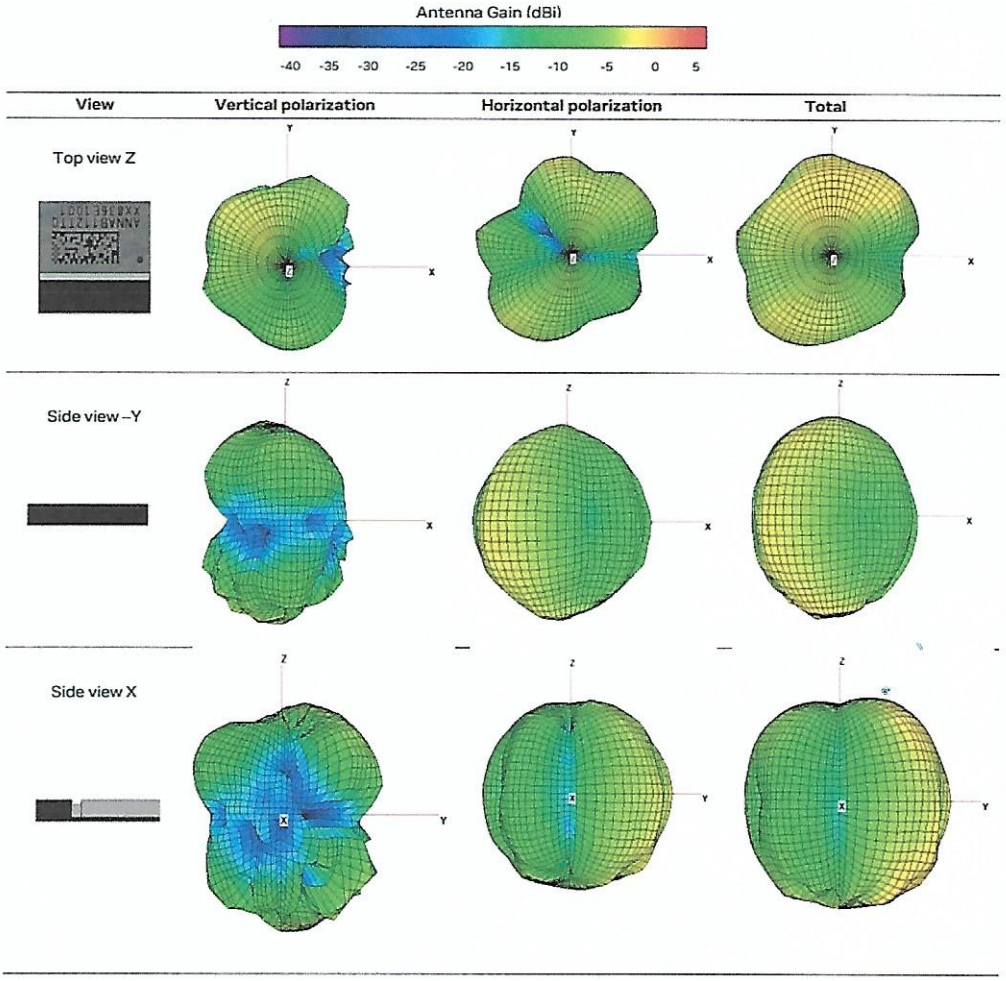
4.2.5 ANNA-B112 radiation patterns

The antenna radiation test set-up utilizes the reference design based on evaluation board with ANNA-B112 situated in the corner of the board, EVK-ANNA-B112C. For more information, see also the ANNA-B112 system integration manual [1].



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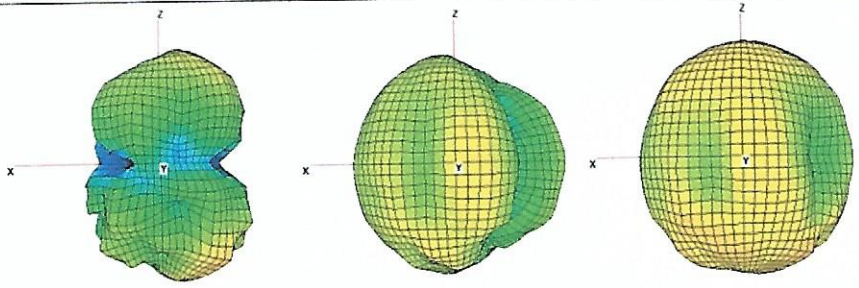
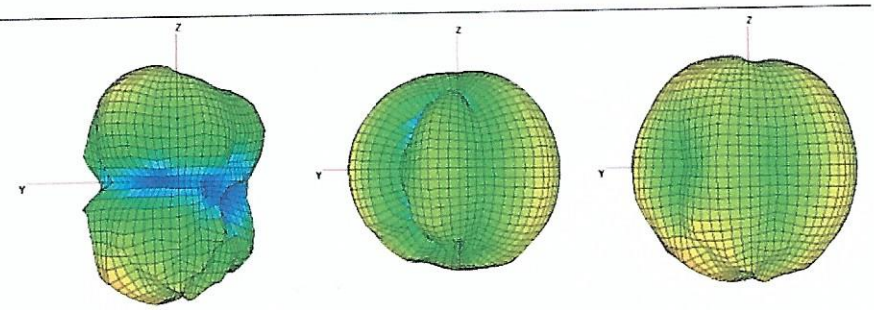
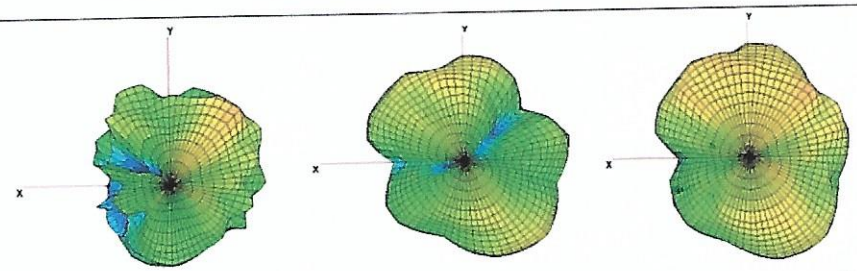
View	Vertical polarization	Horizontal polarization	Total
Side view Y			
Side view -X			
Bottom view –Z			

Table 16: Antenna radiation patterns

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1.4 References

[1] ANNA-B112 system integration manual, UBX-18009821

[2] ANNA-B112 data sheet, UBX-18011707

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2 Antenna Maxx II R61 for FLARM / LoRa

The PCB antenna is soldered directly to the main PCB.

2.1 Mechanical specification

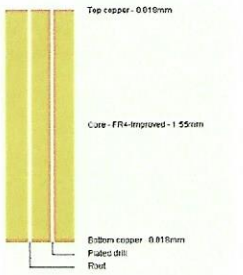
PCB Visualizer

Leiterplatten-Bilder

Ansicht BS : 

Ansicht LS : 

Lagenaufbau & mechanische Zeichnung



Technologie und Optionen

Leiterplatten Eigenschaften

Lagen	2	Delivery format	einzelne LP
Leiterplattengröße X	50.58 mm	Leiterplattengröße Y	11.76 mm
kompatibel mit EC registration System	nein		

Leiterplatten Eigenschaften

LSL BS	grün	LSL LS	grün
BSD BS	kein BSD	BSD LS	kein BSD
Löt-Oberfläche	chem. Nickel-Gold (partiell)		
Elektrischer Test	ja		

Leiterplatten-Technologie

Leiterbildklasse	6	Bohrklasse	Bohrkl. C
Leiterbahnbreite Aussenlagen (OL-TW)	0.150 mm	Bohrdichte	<1000/dm2
Isolationsabstand Aussenlage (OL-TT-TP-PP)	0.150 mm	Endlochdurchmesser verkleinern ab	0.45 mm

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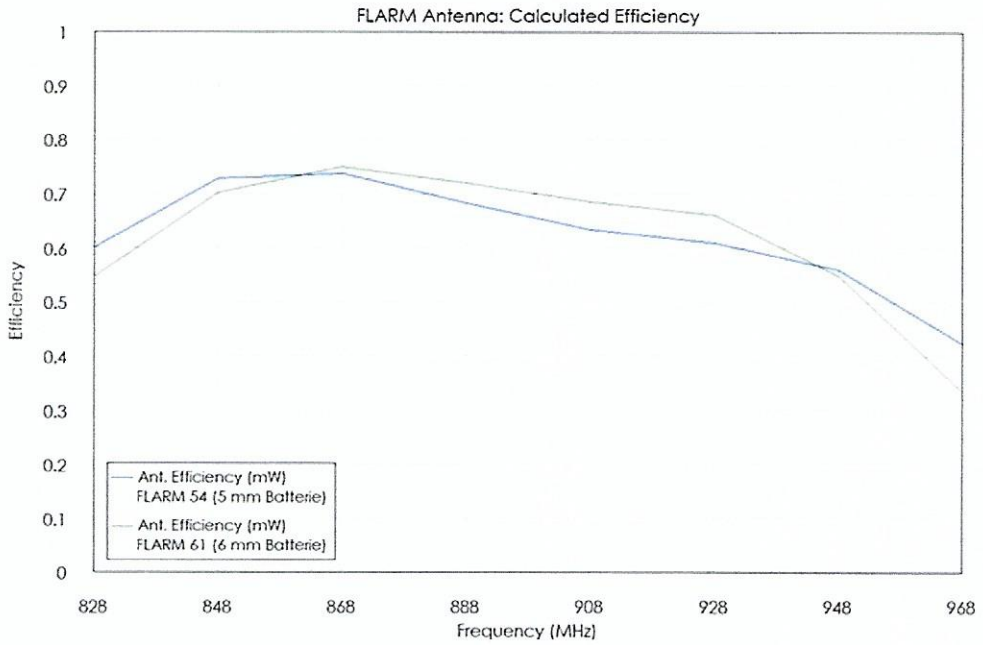
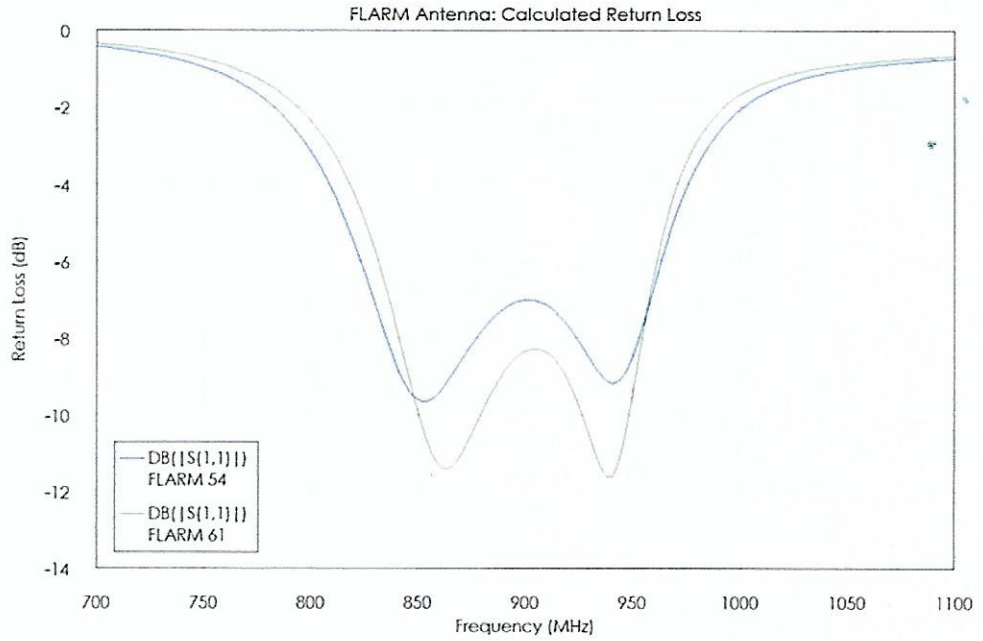
2.2 Electrical specification



The green curve does apply



The green curve does apply

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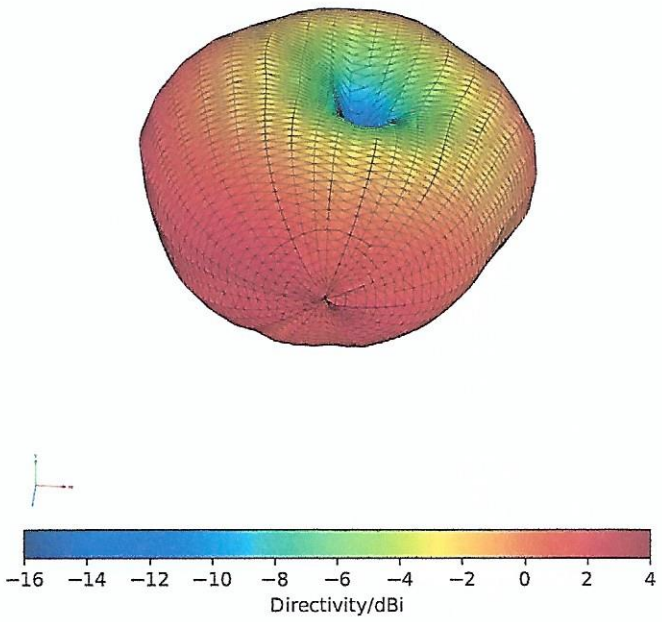
2.3 Max Gain, Plots

Max Gain 3.0 dBi @ 868 Mhz
Max Gain 3.5 dBi @ 915 MHz
Max Gain 3.6 dBi @ 928 MHz

XC Tracer

XC Tracer III R61, f=914.995 MHz



Total radiated power: 12.4 dBm
Peak direcitvity: 3.5 dBi
Peak EIRP: 15.9 dBm

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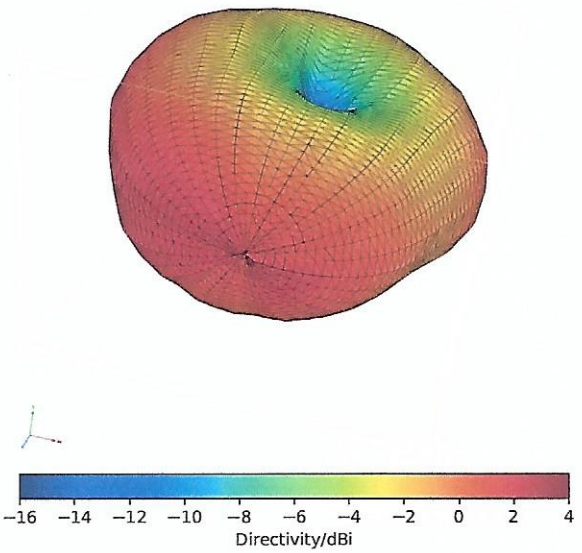
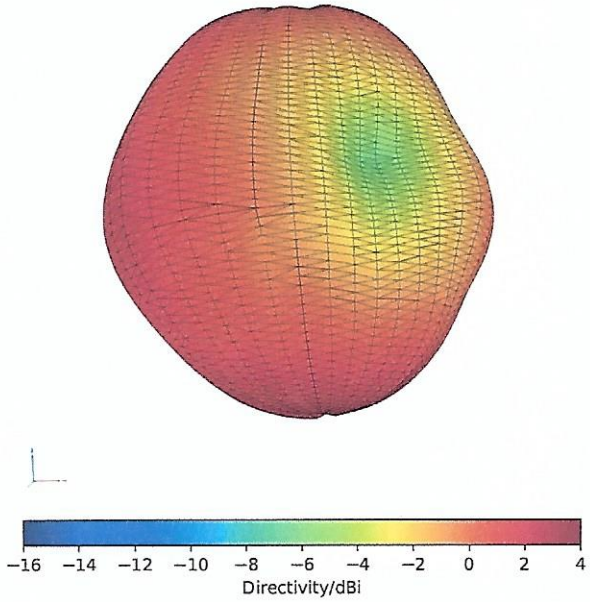
Gewerbestrasse 11
CH-3053 Lätti b. Münchenbuchsee

Wednesday 23rd October, 2019
13:04





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