

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
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Country:	Switzerland

Place: Bern

Date: 23/03/2023

Signature:

A handwritten signature in blue ink, appearing to read 'S. Schuppli', written over a horizontal line.

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XC Tracer Maxx II Antenna Report

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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 .

1.1 Mechanical specification



ANNA-B112 - System integration manual

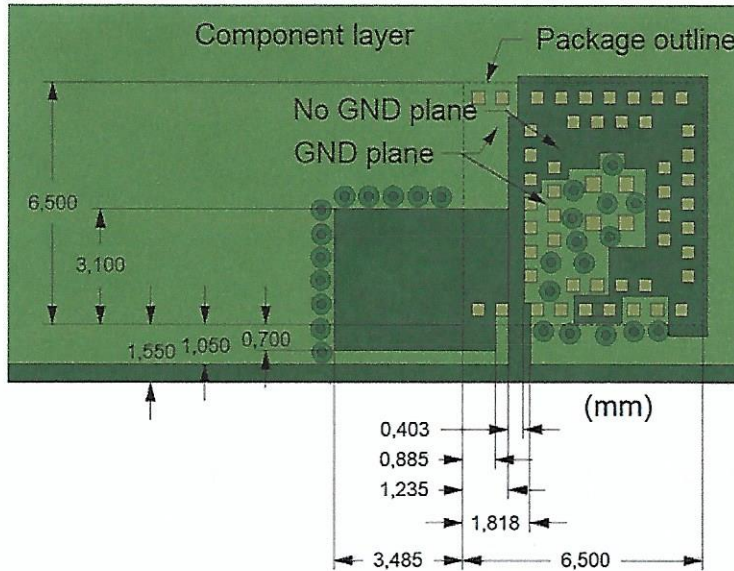


Figure 32: Reference design for internal antenna, edge version, top layer. Traces and vias for other signals are not present

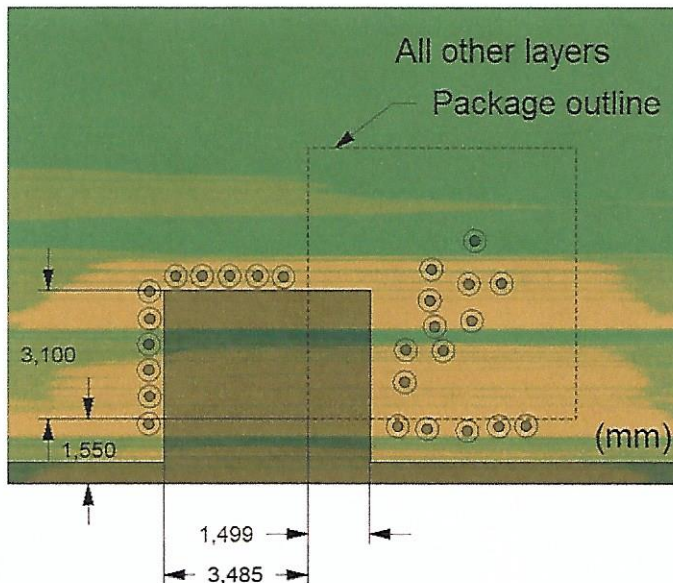


Figure 33: Reference design for internal antenna, edge version, other layers. Traces and vias for other signals not present

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

1.2 Electrical specification



ANNA-B112 - Data sheet

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

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C1-Public

Electrical specifications

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1.3 Max Gain , Plots



ANNA-B112 - Data sheet

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



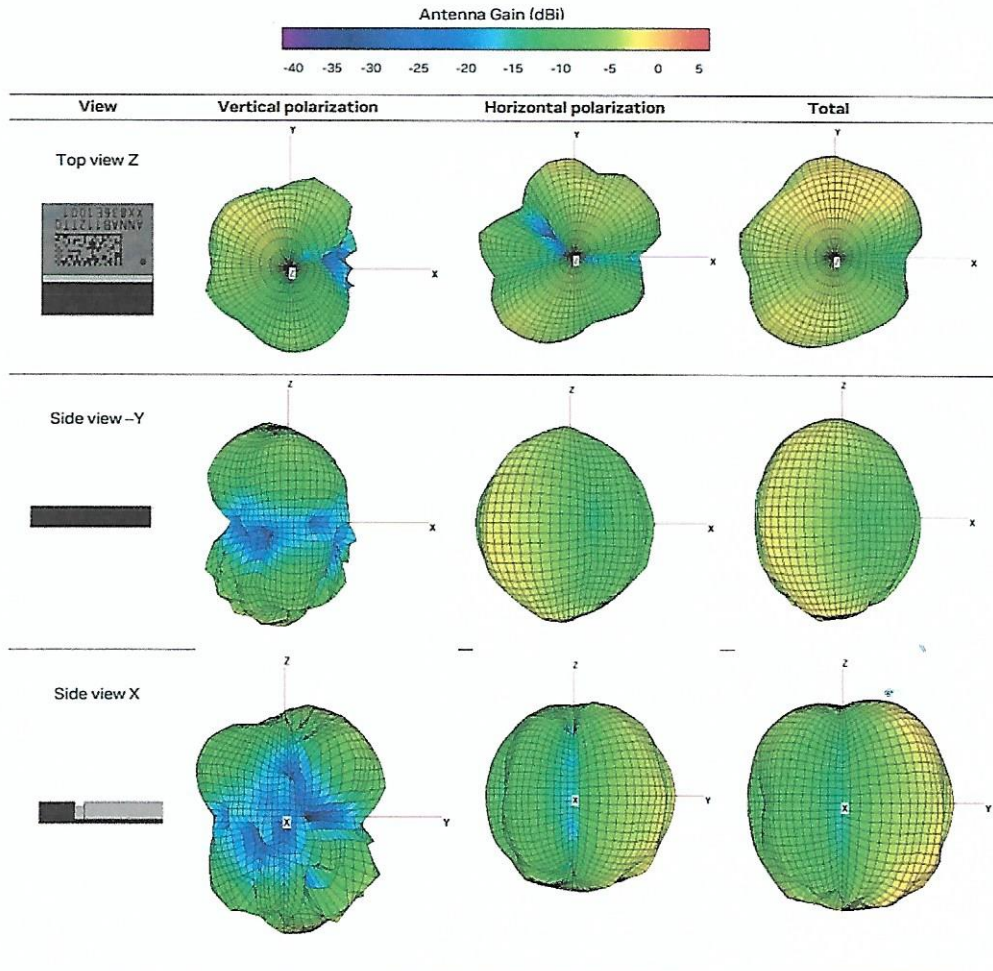
UBX-18011707 - R10
C1-Public

Antennas

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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].



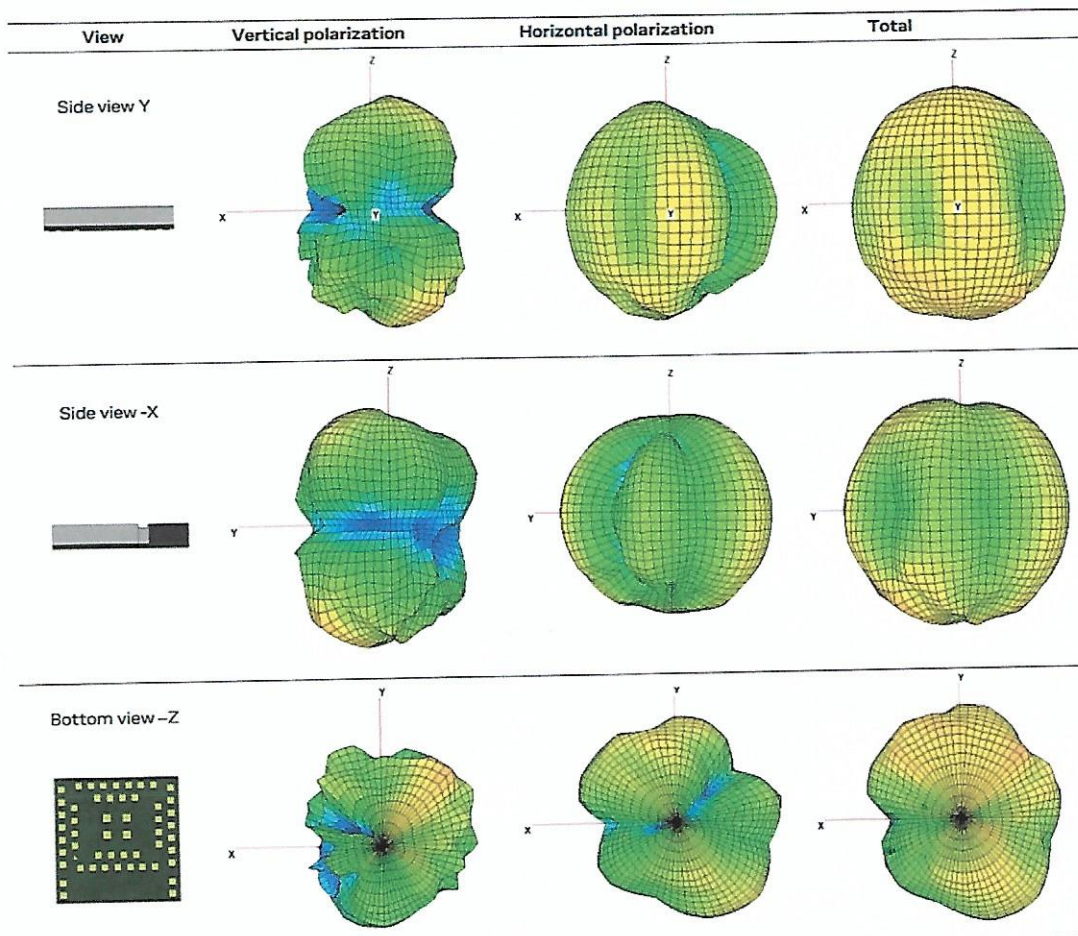


Table 16: Antenna radiation patterns

1.4 References

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

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

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		

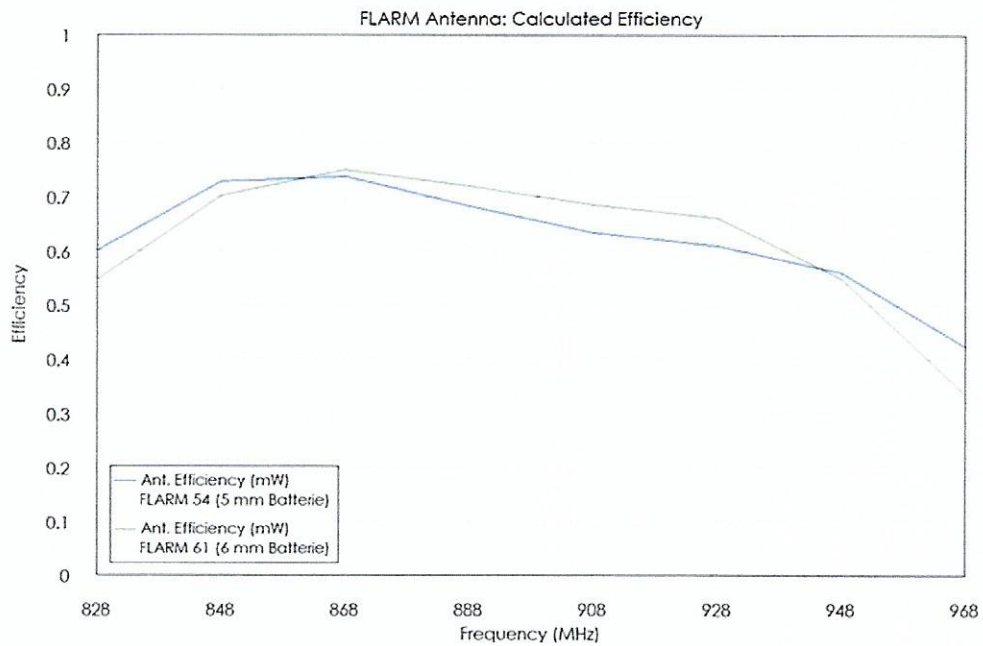
Leiterplatten Eigenschaften

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

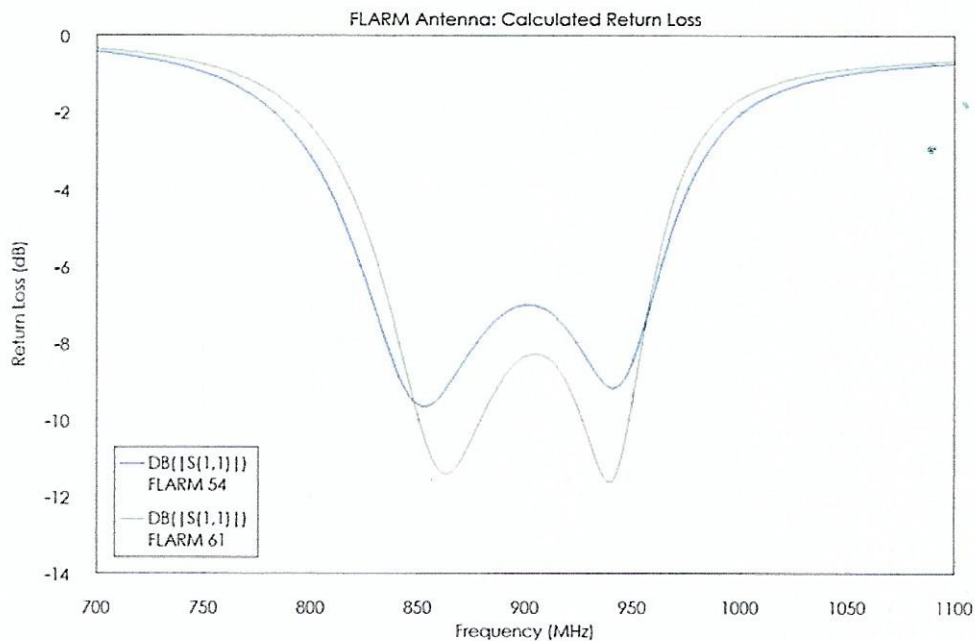
Leiterplatten-Technologie

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

2.2 Electrical specification



The green curve does apply



The green curve does apply

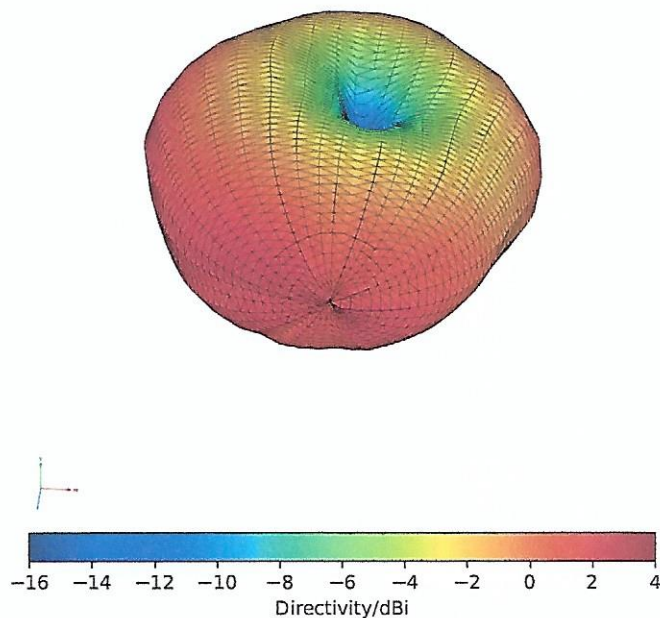
2.3 Max Gain, Plots

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

XC Tracer

WaveLab.

XC Tracer III R61, f=914.995 MHz



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

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Wednesday 23rd October, 2019
13:04

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