

From
XC-HWP/EEA2

Our Reference
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Stuttgart-Weilimdorf
September 22, 2025

Report

Issue V0.4
Topic **Antenna Specification PK Gen3 PKA3AA, PKA3BA**
Description Antenna Characteristics

Inhalt

1	Antenna Structure	2
1.1	UWB.....	2
2	Antenna Maximum Gains.....	3
2.1	UWB.....	3

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1 Antenna Structure

All antennas are company-own PCB antennas. Overview of PCB with its antennas can be taken from Layout.

1.1 UWB

UWB uses three monopole antennas. One for transmission and two for reception (dependent on direction and functionality). The structure of both RX antennas is identical.

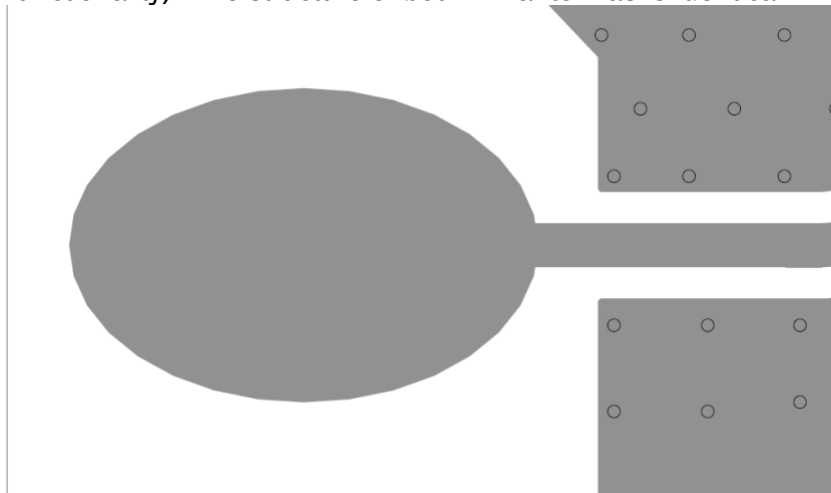


Figure 1: UWB TX monopole antenna

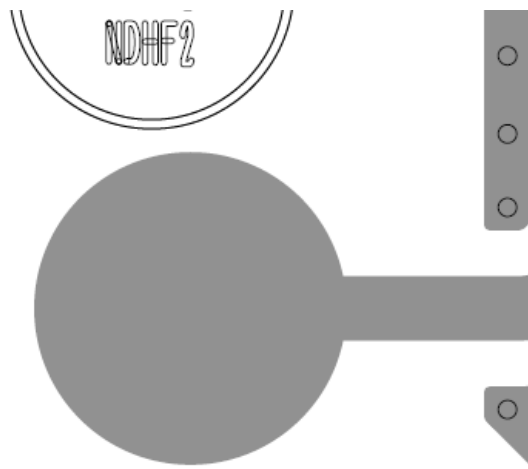


Figure 2: RX antenna (both RX antennas are identical).

Figure 3: Inverted F antenna.

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2 Antenna Maximum Gains

2.1 UWB

Maximum antenna Gains can be found in the following table:

Frequency (GHz)	UWB Tx	
	El (dBi)	Az (dBi)
64MHz	-73.9	
125MHz	-62.3	
249MHz	-50.2	
498MHz	-37.9	
1.6	-13.41	-14.51
2.7	0.21	-1.65
2.43GHz	-1.5	
3.49GHz	-0.5	
4.37	0.04	-2.99
4.7	0.03	-3.08
6.115	2.22	-0.09
6.3649	2.32	-0.16
6.489	2.24	-0.12
6.6768	2.18	-0.27
6.988	2.10	-0.08
7.2096	2.11	0.02
7.25	2.13	0.08
7.488	2.27	0.44
7.587	2.3	0.34
7.662	2.34	0.35
7.987	2.40	0.54
8.4	2.47	0.09
8.498	2.55	0.13
8.5	2.55	0.13
10.25	2.36	-0.34
10.6	1.85	-0.10
10.7	2.02	-0.16
11.7	4.33	-0.54
12.75	2.7	2.02
15.974	4.93	0.16
18	5.46	0.16

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26	1.23	0.61
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UWB Rx:

Frequency	Ant 2 (PCB side of UWB TX antenna)	
	Az Gain (dBi)	El Gain (dBi)
6.489GHz	3.9	3.8
7.987GHz	1.9	2.3