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Test – Results

Order-No.:

80223571-00 Rev0

Client	ACD Elektronik GmbH, Engelberg 2, 88480 ACHSTETTEN, GERMANY	
Manufacturer	ACD Elektronik GmbH, Engelberg 2, 88480 ACHSTETTEN, GERMANY	
Product Description	Plug-on module: UHF-RFID Reader	
Type / Model Name	M2UHF-RFID Midrange, HVIN: 2035	
Testing commenced on	2024-09-26	Pretest is made according to Customer specific
Testing concluded on	2024-10-02	
Serial - No.	N/A	

Remarks:

Customer specific tests in order to determine antenna gain and antenna performance.

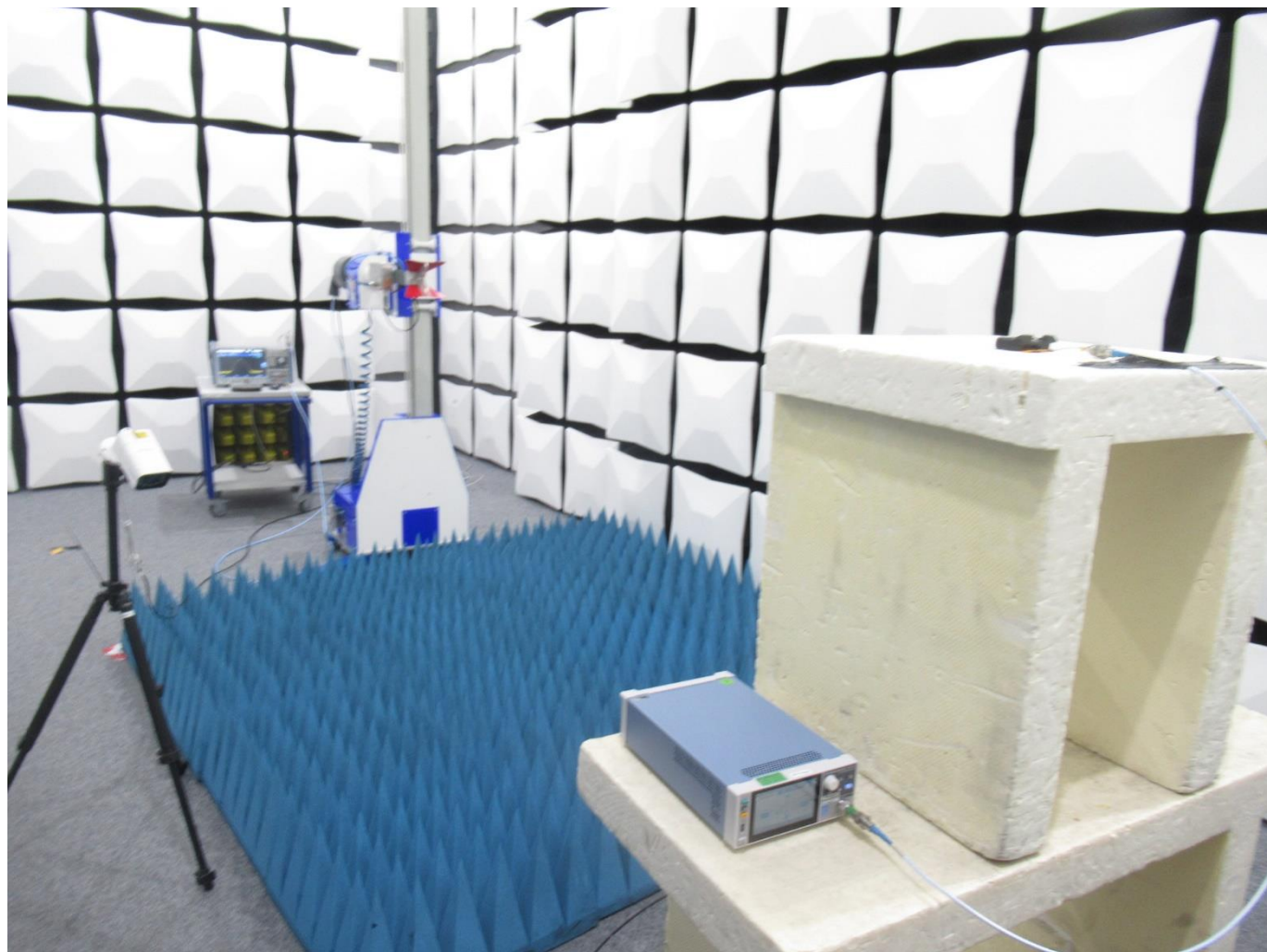
This test result consists of 17 page(s). The test result only corresponds to the tested sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

Date	Checked by	Tested by	Result
2024-10-16			Not applicable, no standards used

Photo documentation and setup description

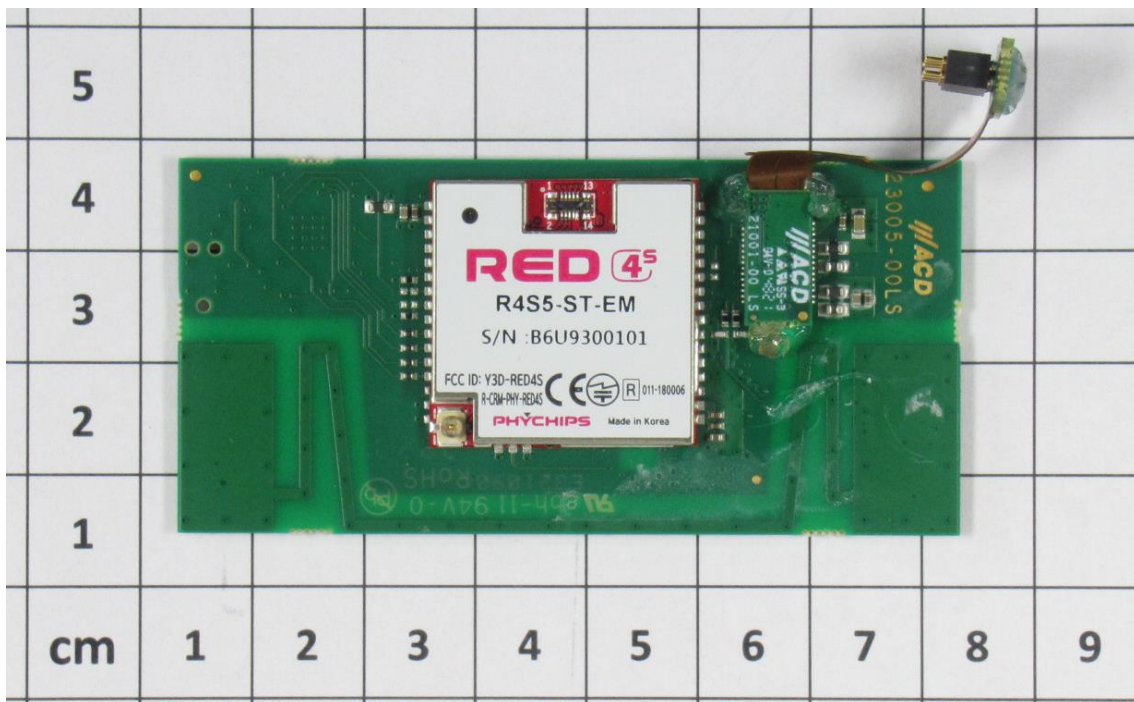
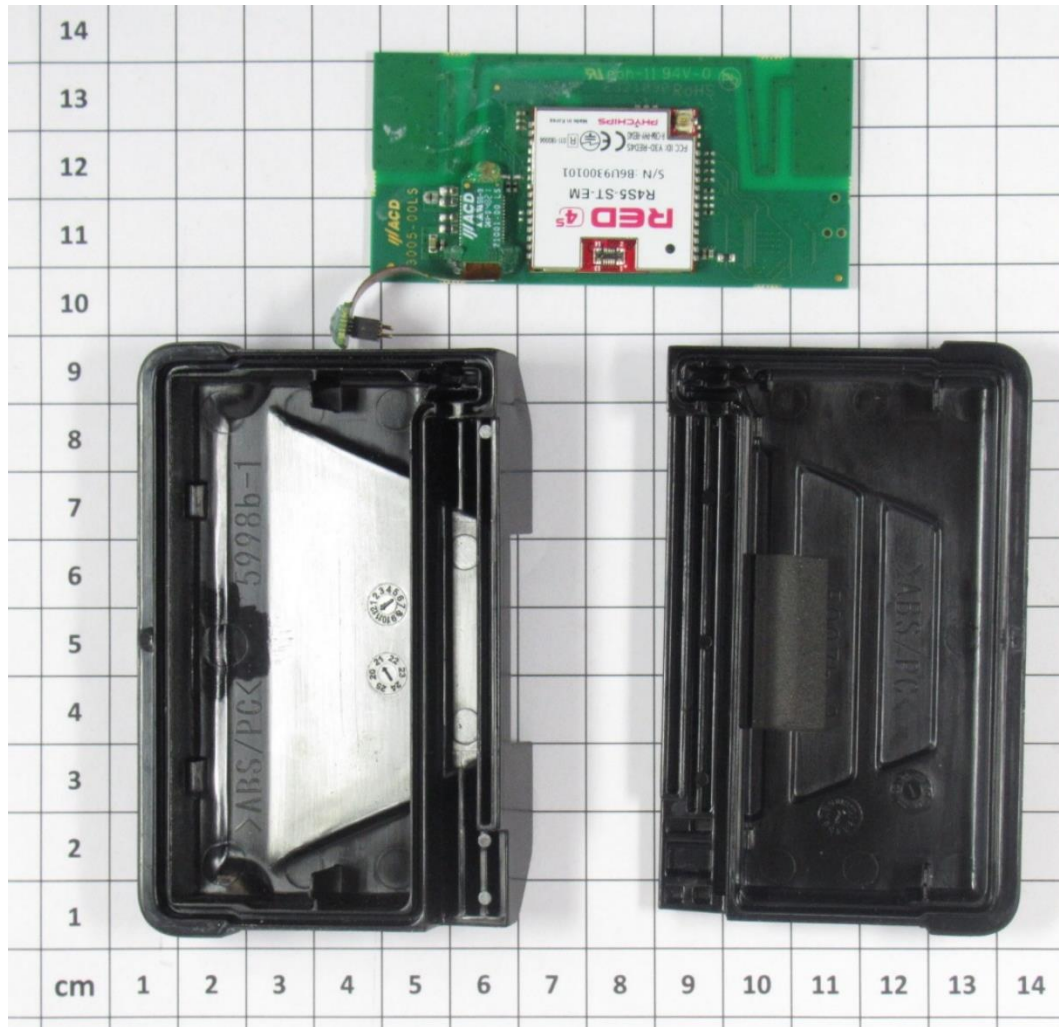
Measurements are performed with a 3-meter test setup in fully anechoic chamber FAR1. The verified measurement system 02-02/30-17-001 for EIRP measurements is used.

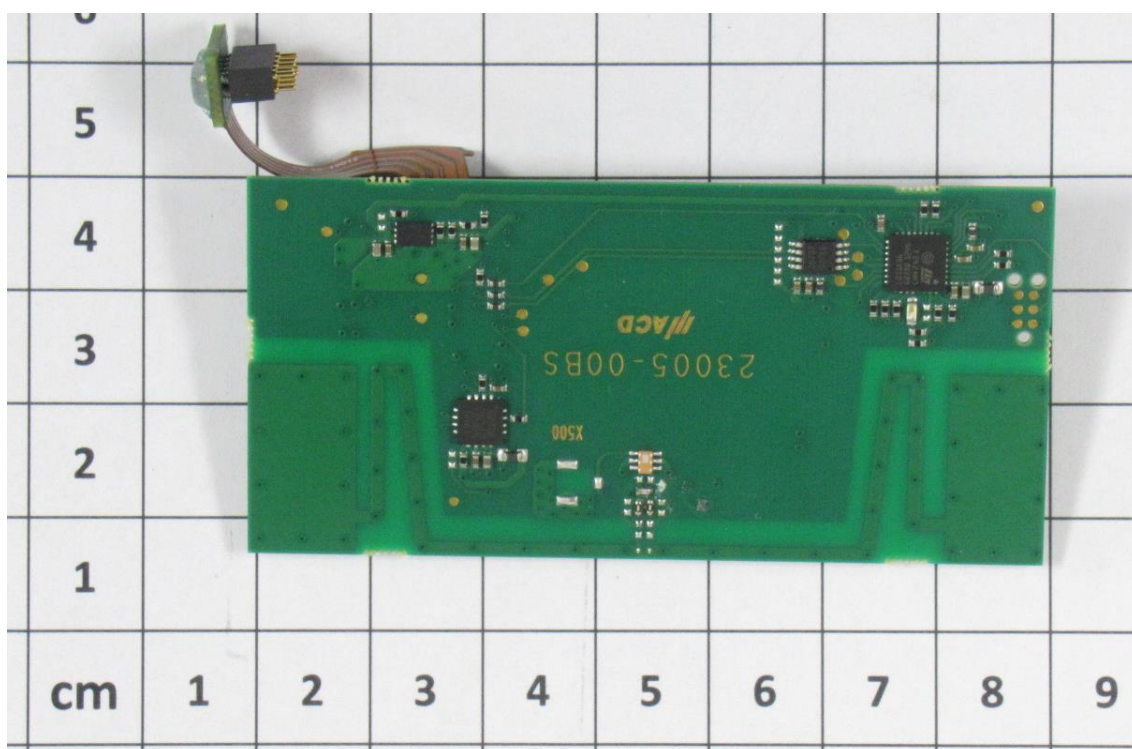
Height of EUT:	1.5 m
Height of receiving antenna:	1.5 m
Test distance:	3.0 m
Polarisation of receiving antenna	horizontal, vertical
Measured frequencies:	900 MHz, 915 MHz, 930 MHz
Output power of signal generator	0.0 dBm
Attenuator and cable loss	20.6dB
Power at antenna	- 20.6 dBm



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Photo documentation of EUT without temporary antenna connector

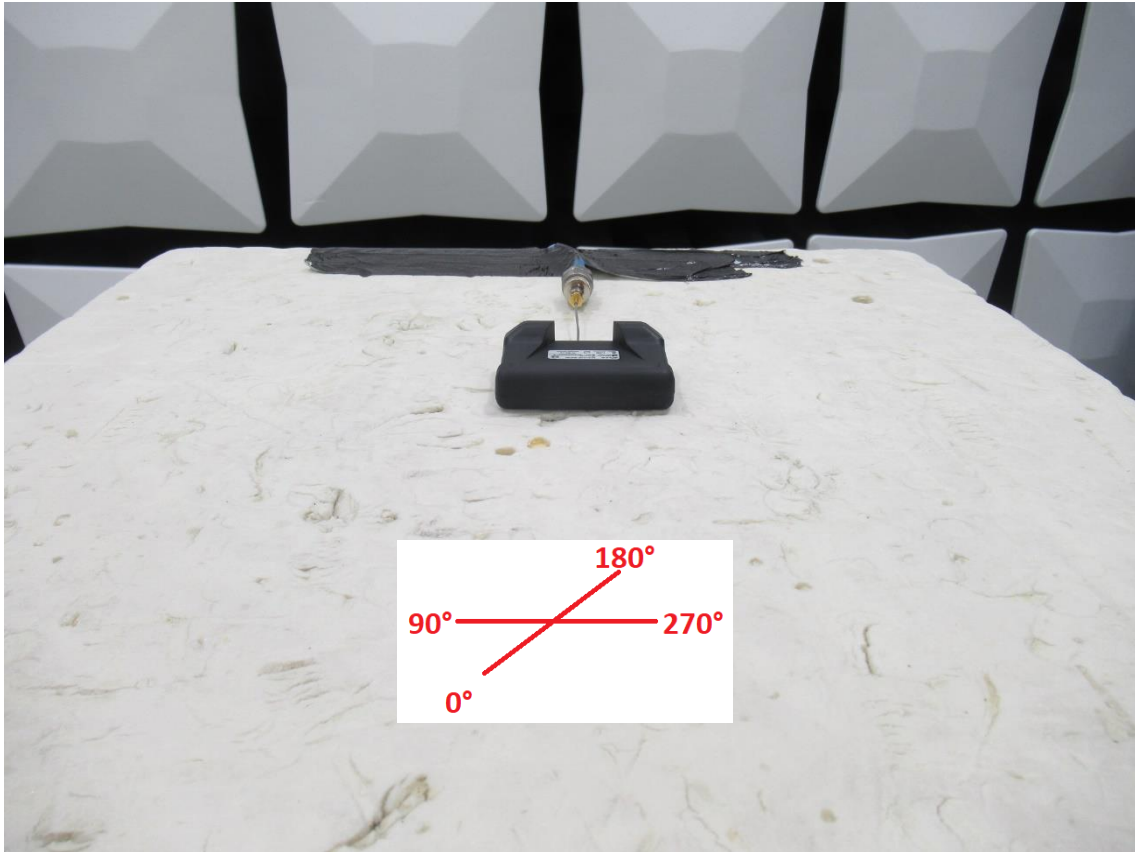




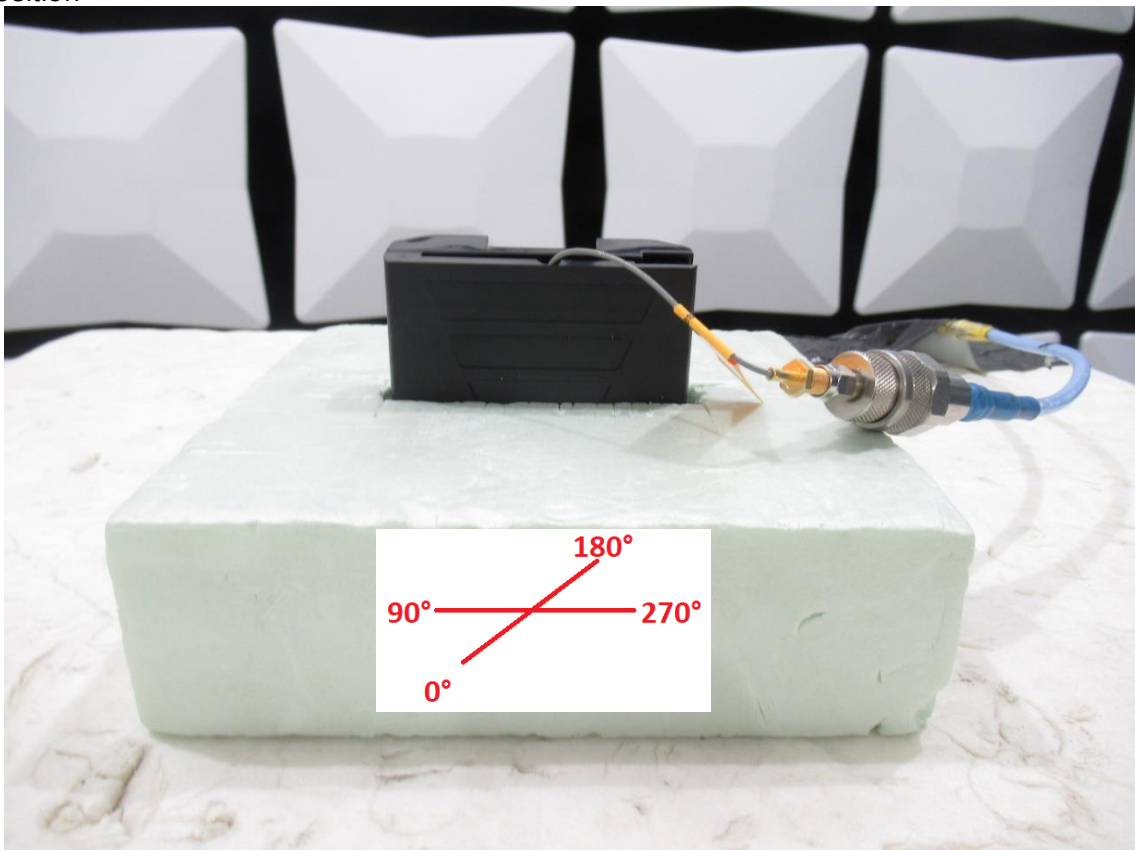
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The turntable is rotated counter-clockwise. The starting point of the measurement is the position shown in the test setup photos. This leads to the following relationship in the polar plots of the test result graphs:

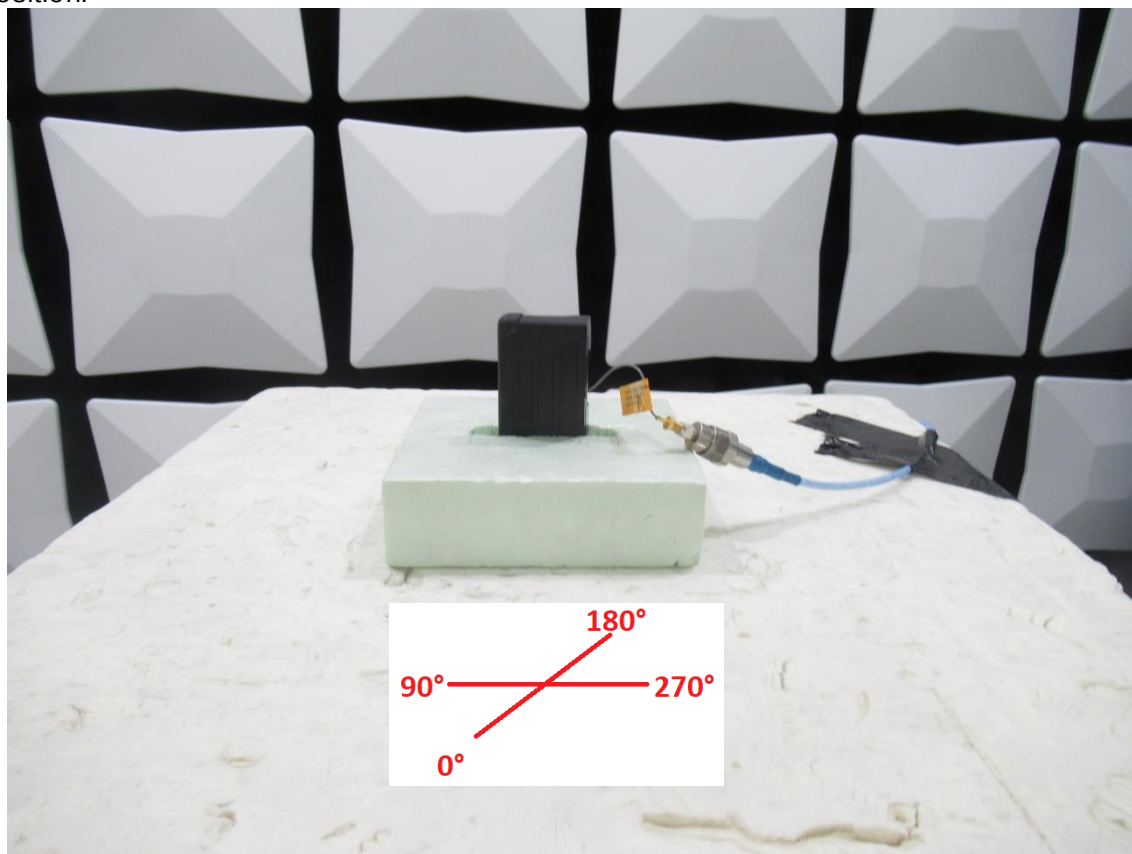
EUT X position



EUT Y position



EUT Z position:



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Test results

for test instruments and accessories used see **CPR 3**

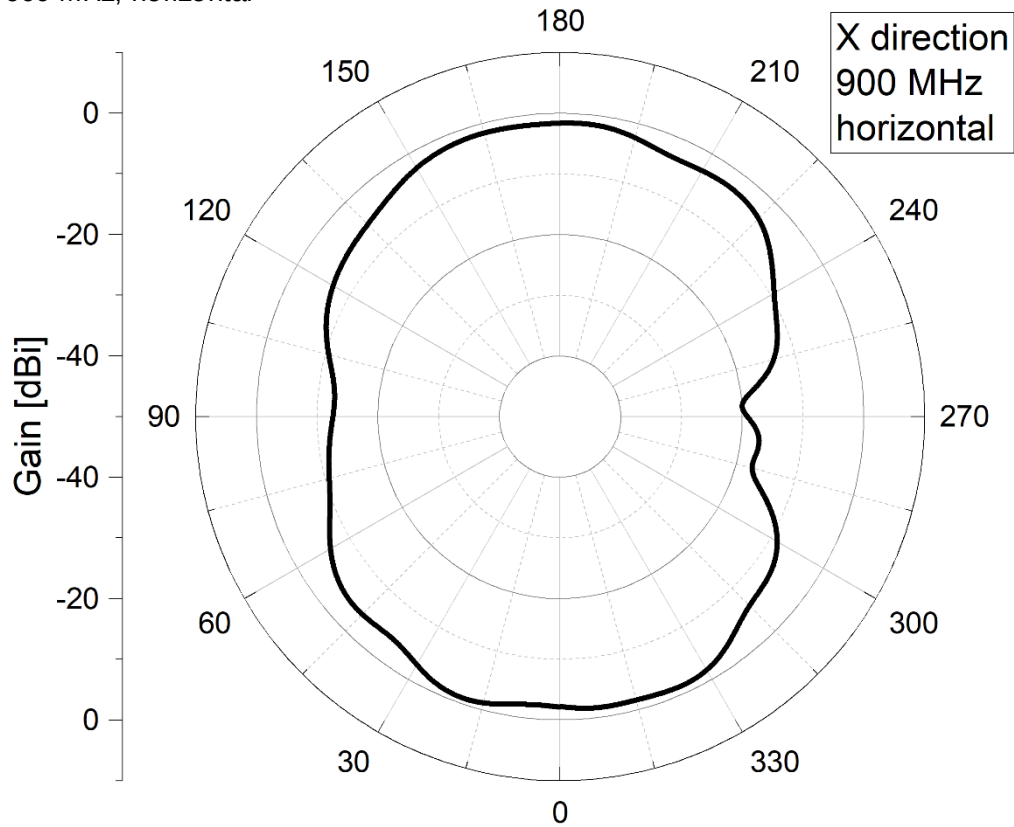
Peak performance overview

Peak Gain (dBi)	X hor	X ver	Y hor	Y ver	Z hor	Z ver
900 MHz	-0.94	-14.59	0.08	-11.39	-13.21	-0.79
915 MHz	0.09	-11.64	-0.81	-13.11	-13.14	-0.09
930 MHz	-2.83	-16.79	-3.15	-12.41	-13.56	-1.87

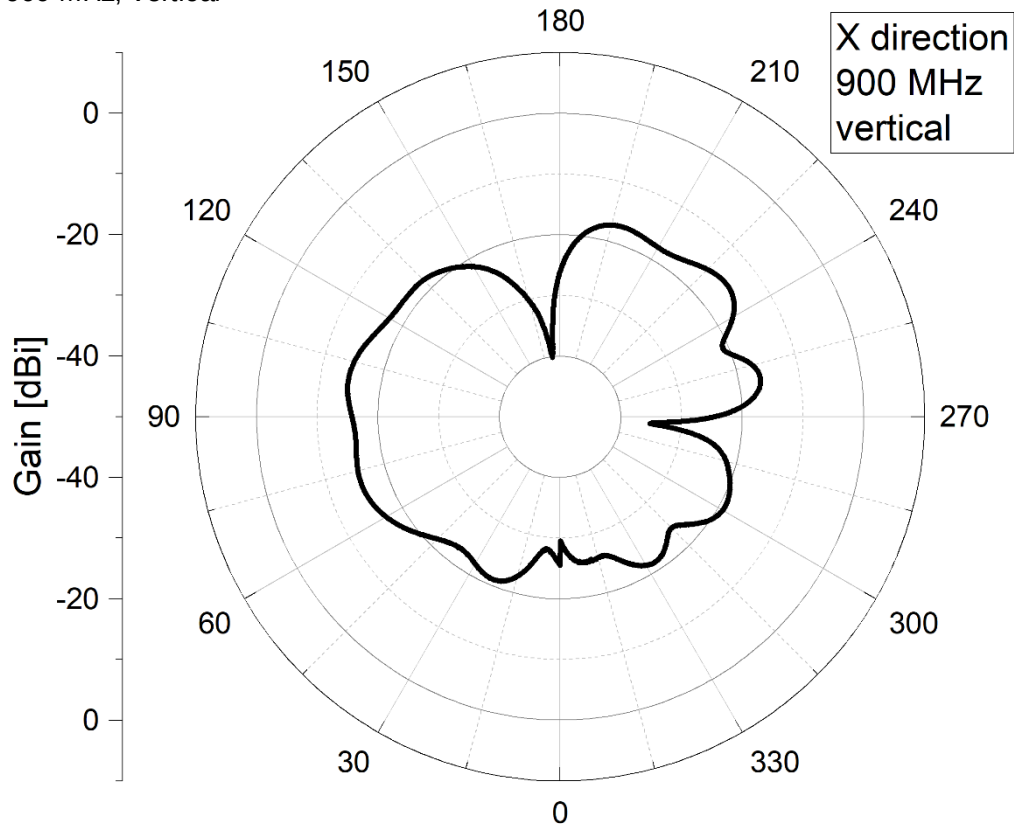
The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

Detailed graphical representation

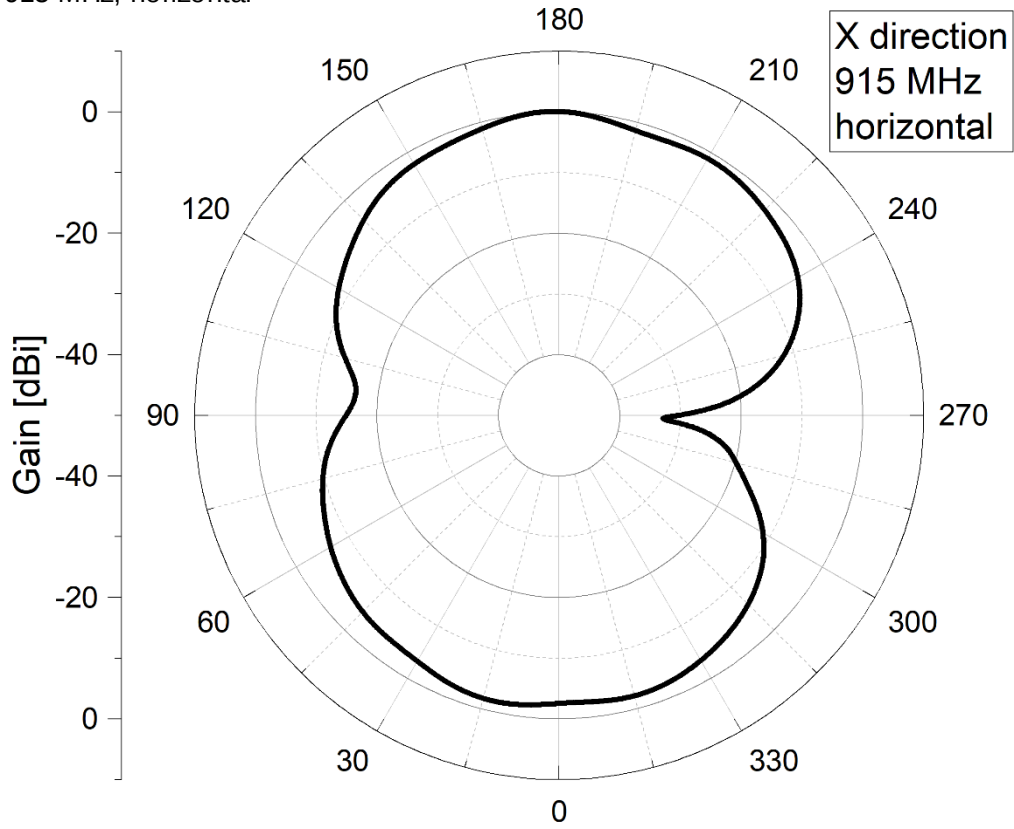
x direction, 900 MHz, horizontal



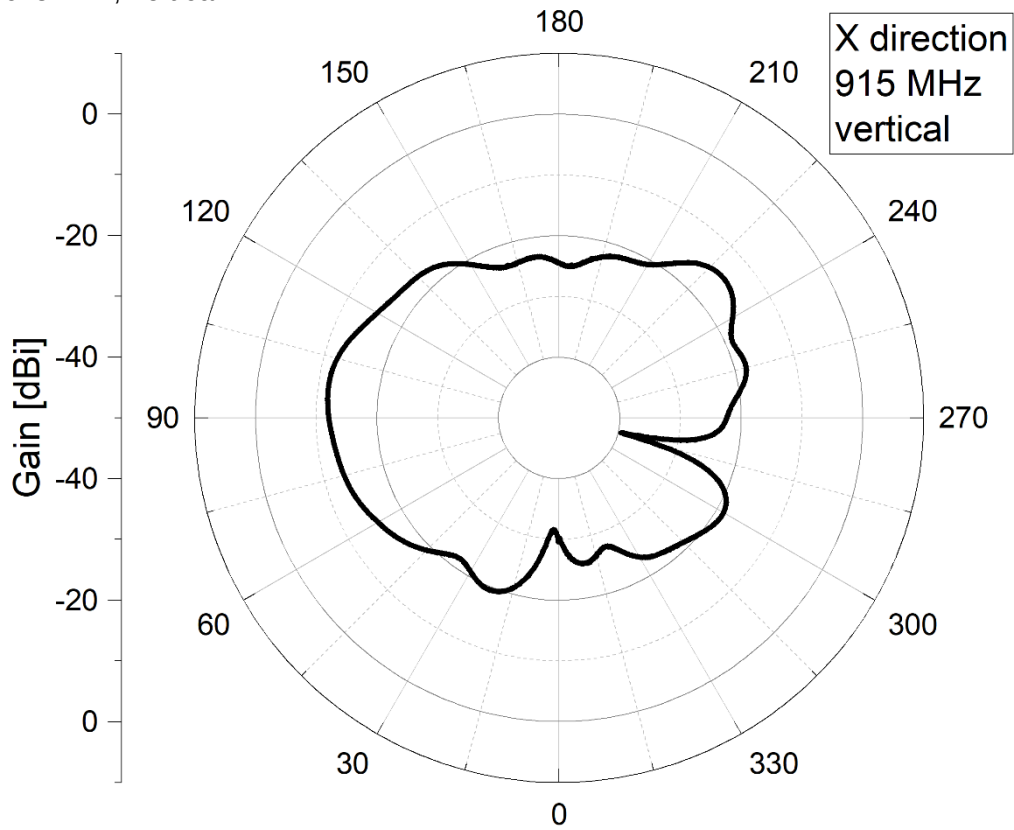
x direction, 900 MHz, vertical



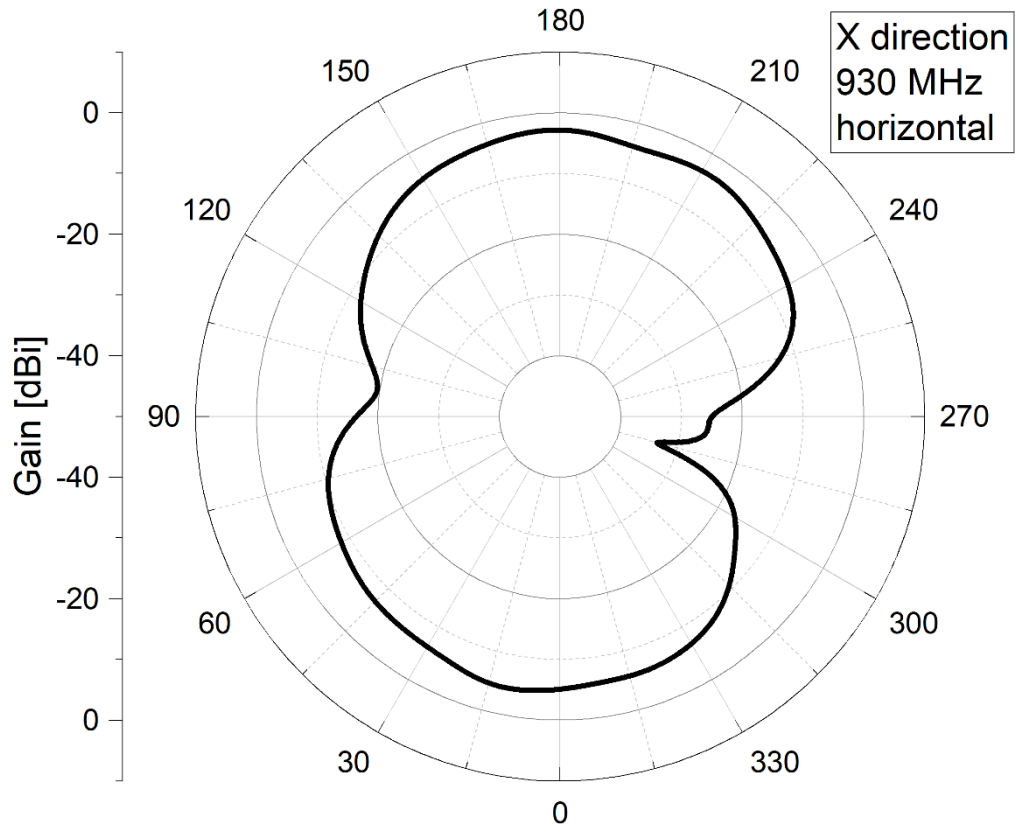
x direction, 915 MHz, horizontal



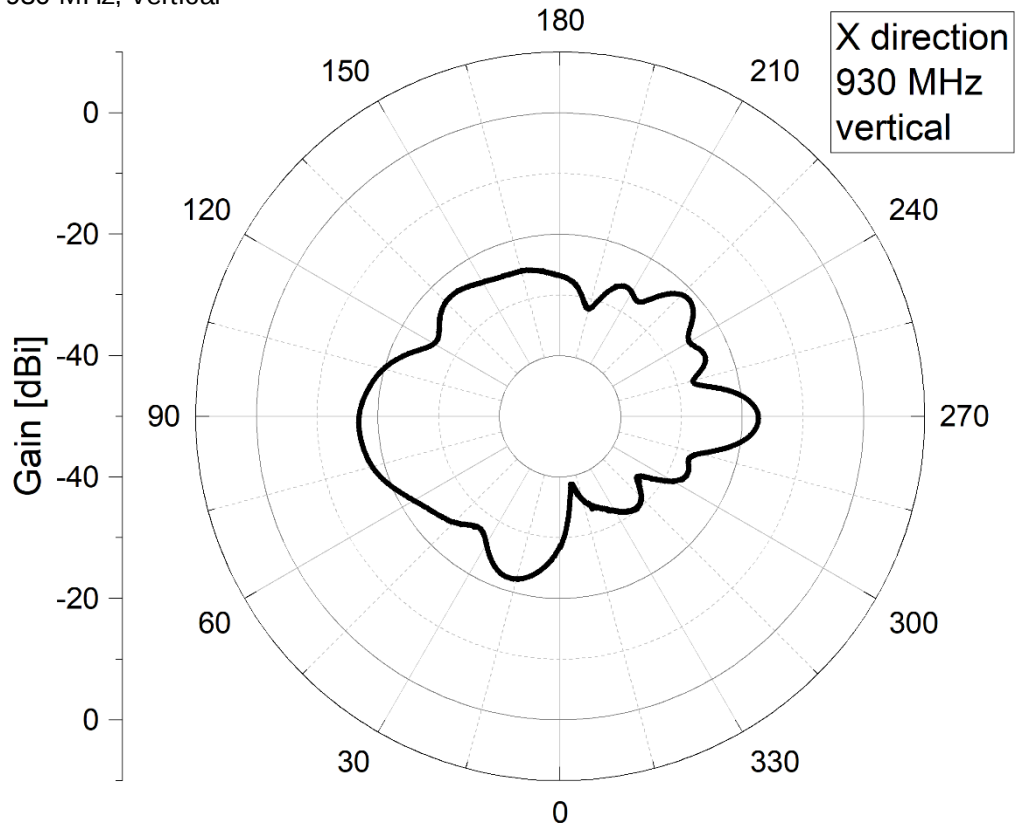
x direction, 915 MHz, vertical



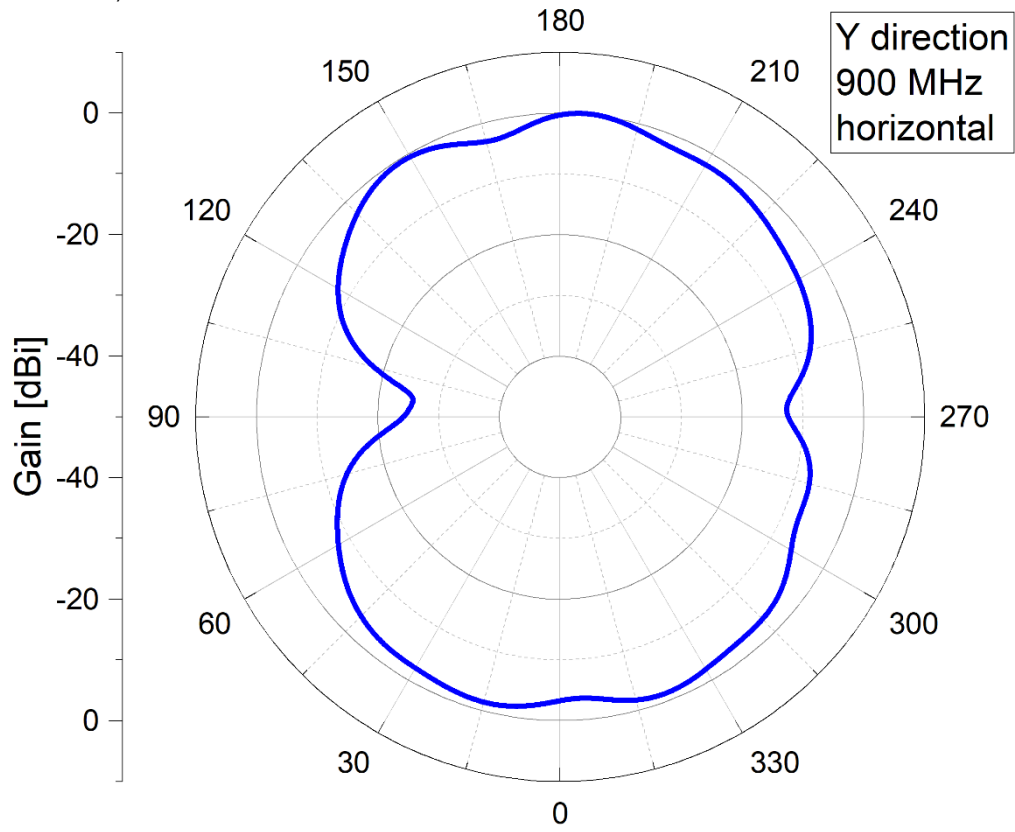
x direction, 930 MHz, horizontal



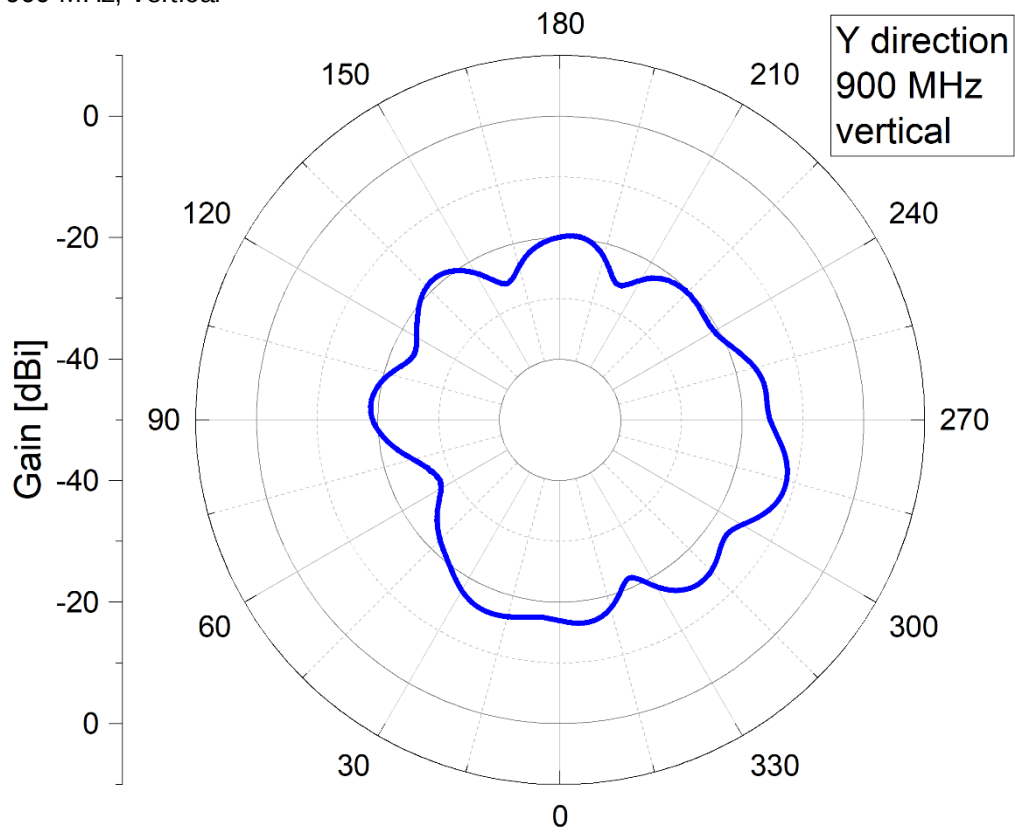
x direction, 930 MHz, vertical



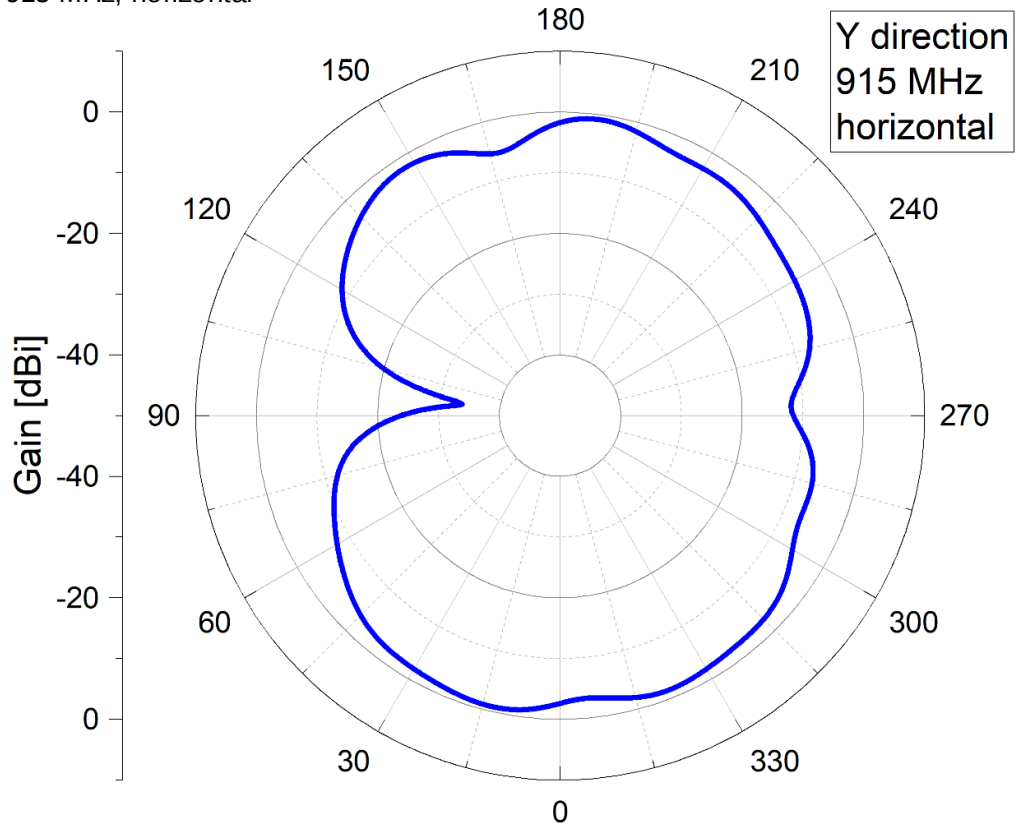
y direction, 900 MHz, horizontal



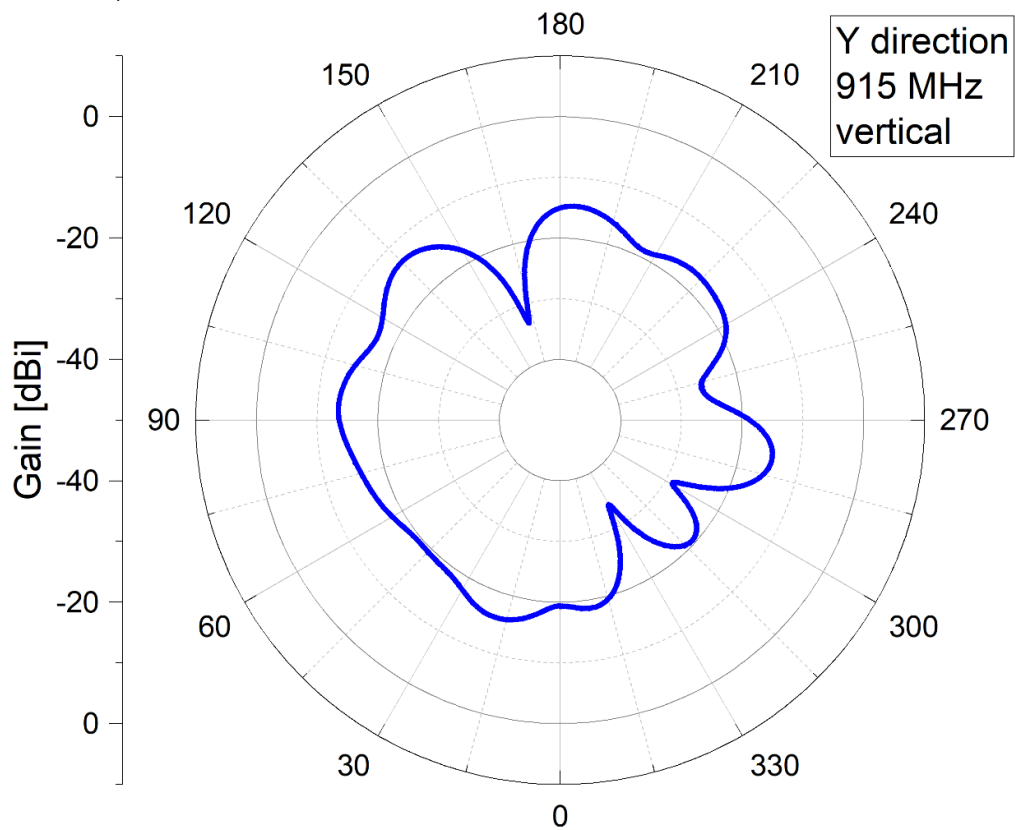
y direction, 900 MHz, vertical



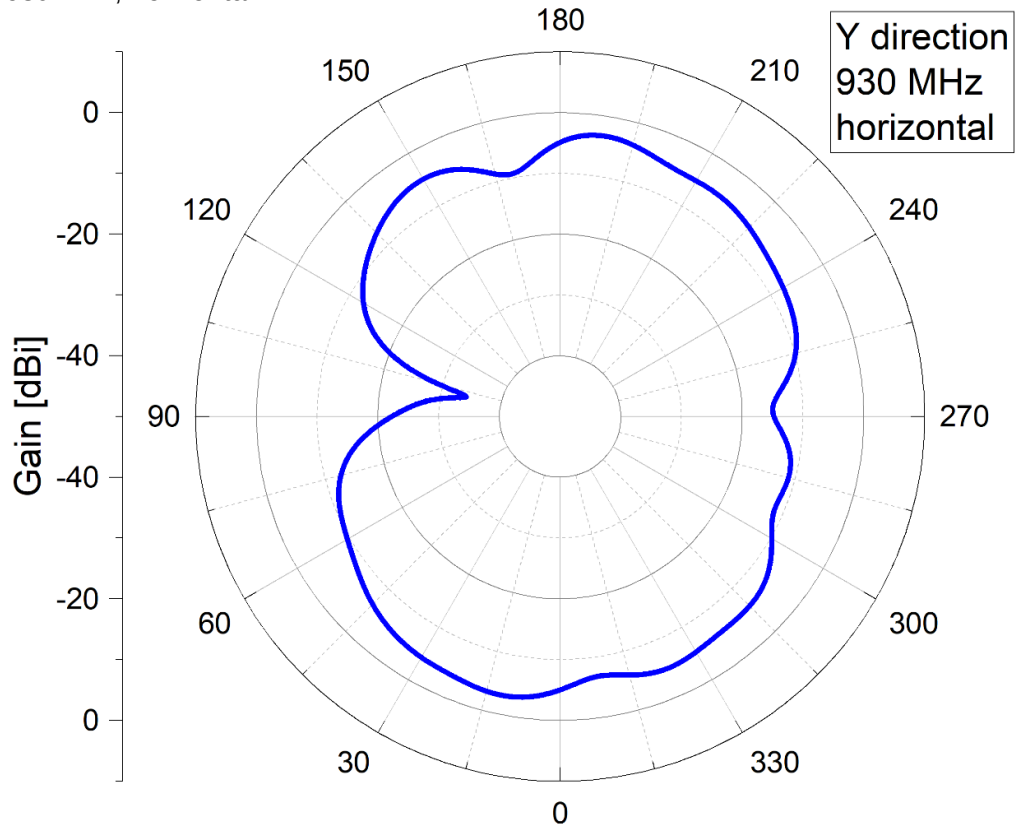
y direction, 915 MHz, horizontal



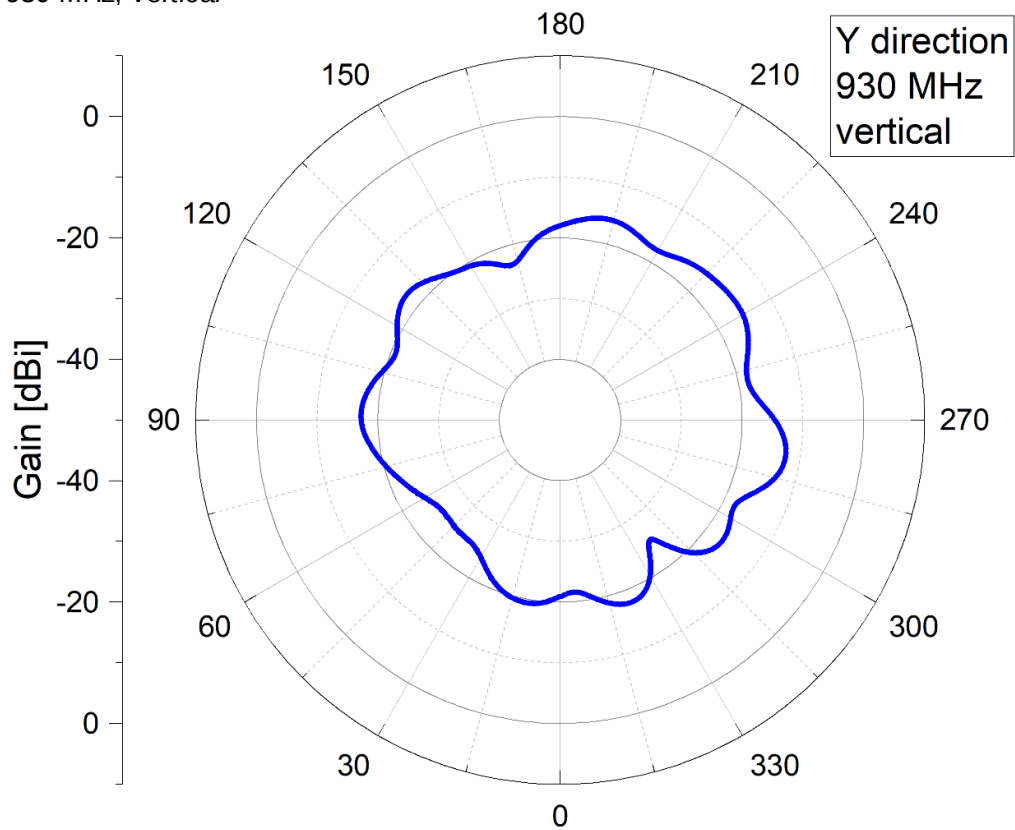
y direction, 915 MHz, vertical



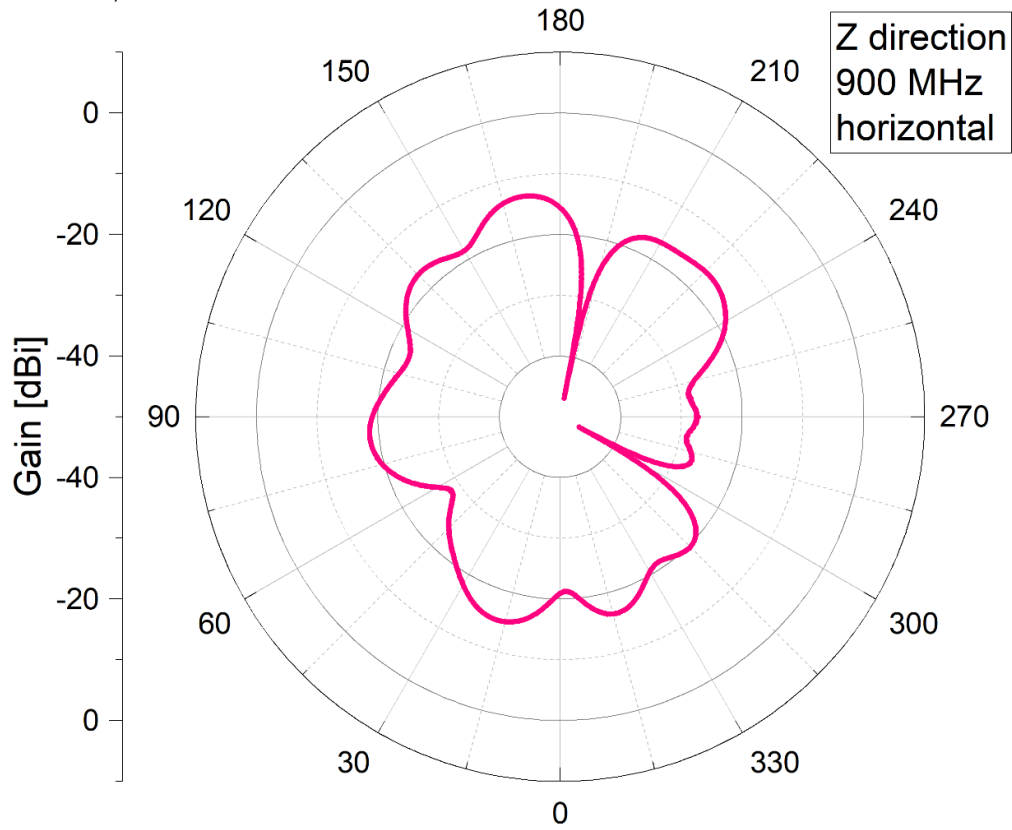
y direction, 930 MHz, horizontal



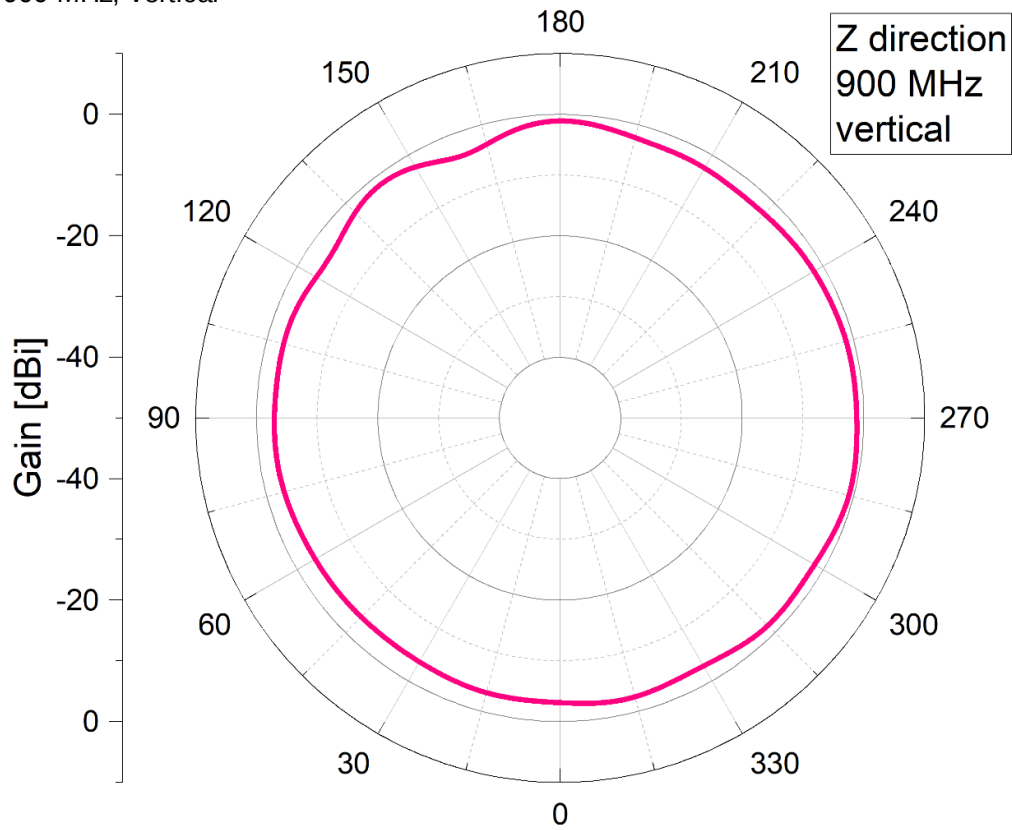
y direction, 930 MHz, vertical



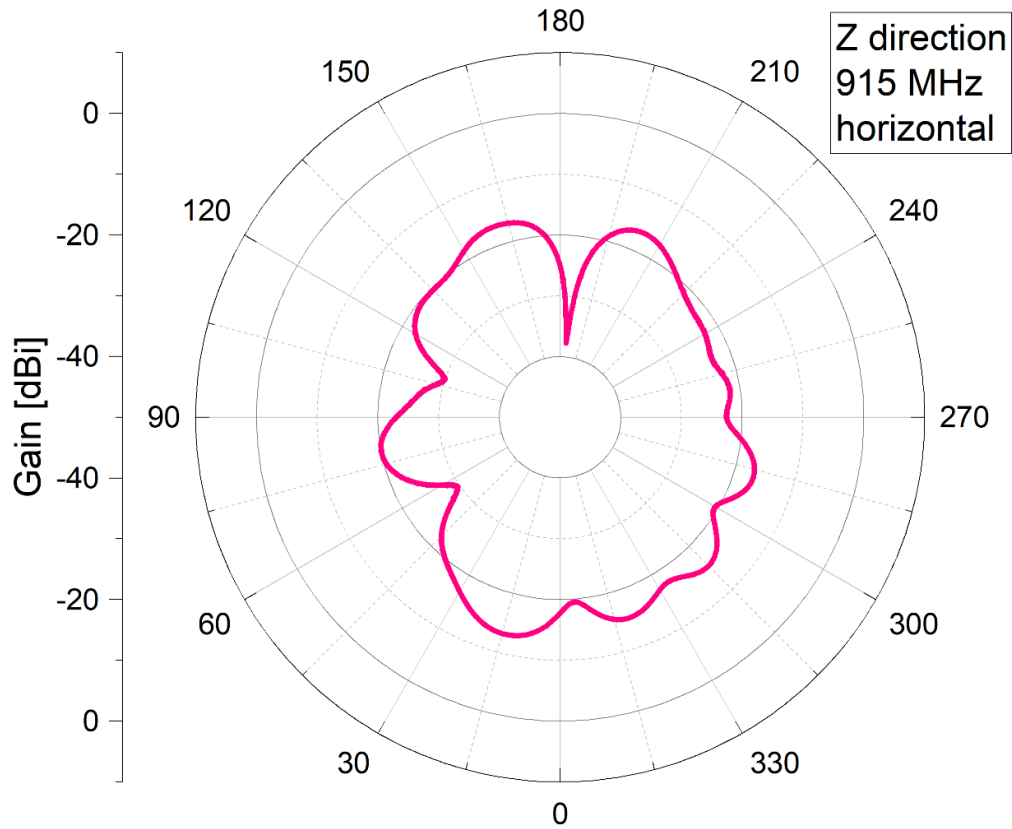
z direction, 900 MHz, horizontal



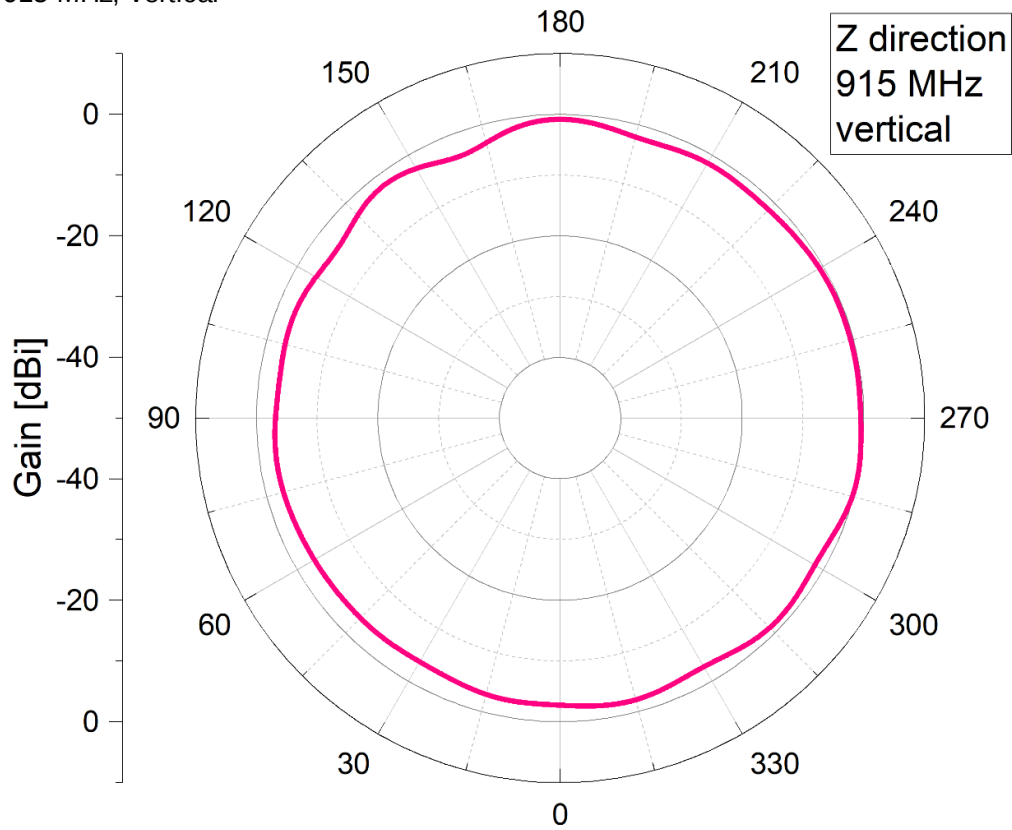
z direction, 900 MHz, vertical



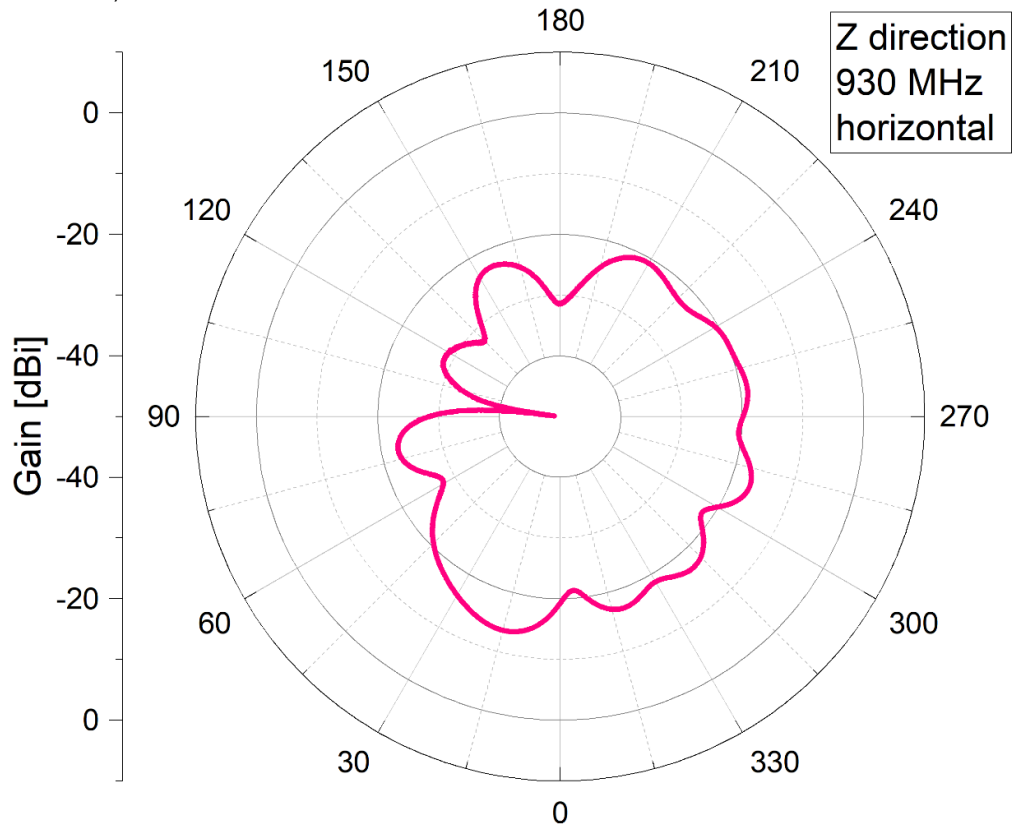
z direction, 915 MHz, horizontal



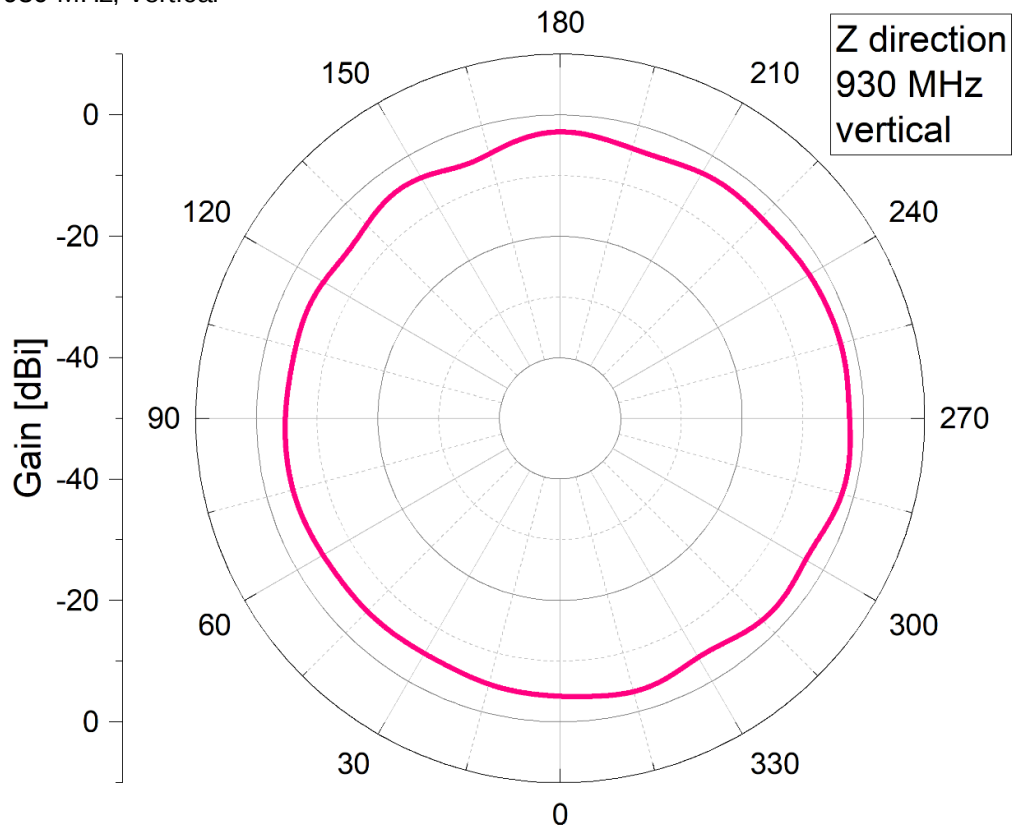
z direction, 915 MHz, vertical



z direction, 930 MHz, horizontal



z direction, 930 MHz, vertical



USED TEST EQUIPMENT AND ACCESSORIES

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

Test ID	Model / Type	Kind of Equipment	Manufacturer	Equipment No.
CPR 3	FSW43	Spectrum Analyser	Rohde & Schwarz München	02-02/11-15-001
	AMF-6D-01002000-22-10P	RF Amplifier	MITEQ, Inc.	02-02/17-15-004
	BBHA 9120 E 251	Broadband Horn Antenna	Schwarzbeck Mess-Elektronik	02-02/24-05-006
	3117Horn Antenna 1 - 18 GHz	EMCO Elektronik GmbH	02-02/24-05-009	
	SF104/11N/11N/1500MM	RF Cable 1.5 m	Huber + Suhner AG	02-02/50-17-009
	BAM 4.5-P	Antenna Mast	maturo GmbH	02-02/50-17-024
	NCD	Controller for Antenna Mast	maturo GmbH	02-02/50-17-025
	KK-SF106-2X11N-6,5M	RF Cable	Huber + Suhner	02-02/50-18-016
	18N-20	Coax Attenuator 20dB	Tactron Elektronik	02-02/50-21-009
	BAT-EMC 2023.0.8.0	Nexio Software	EMCO Elektronik GmbH	02-02/68-13-001
	SMCV100B	Signal Generator	Rohde & Schwarz Memmingen	09-16/05-23-001

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