ANTENNA TEST REPORT **Antenna operating within the 2400 MHz – 2483.5 MHz band**	
Report Reference No	G0M-2311-2313-TFCAUT-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Applicant	Phillips-Medisize A/S
Address	Gimsinglundvej 20 7600 Struer DENMARK
Equipment under Test (EUT):	
Product Description	IDA0097 Auto-Injector
Model(s)	IDA0097 Auto-Injector, Model 02
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	2089879486
Software Version(s)	11.04.00
FCC ID	2AAGY-SKYT2

Testing:		
Test Lab Temperature	20 °C - 30 °C	
Test Lab Humidity	25 % - 55 %	
Date of receipt of test item	2024-08-21	
Report:		
Compiled by	Md Abu Bakar Siddique	
Tested by (+ signature) (Responsible for Test)	Md Abu Bakar Siddique	
Approved by (+ signature)	Wilfried Treffke	
Date of Issue	2024-09-09	
Total number of pages	19	
General Remarks:		
The test results presented in this report relate only to the object tested. **The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.** This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		
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VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2024-09-05	Initial Release	--

ABBREVIATIONS AND ACRONYMS

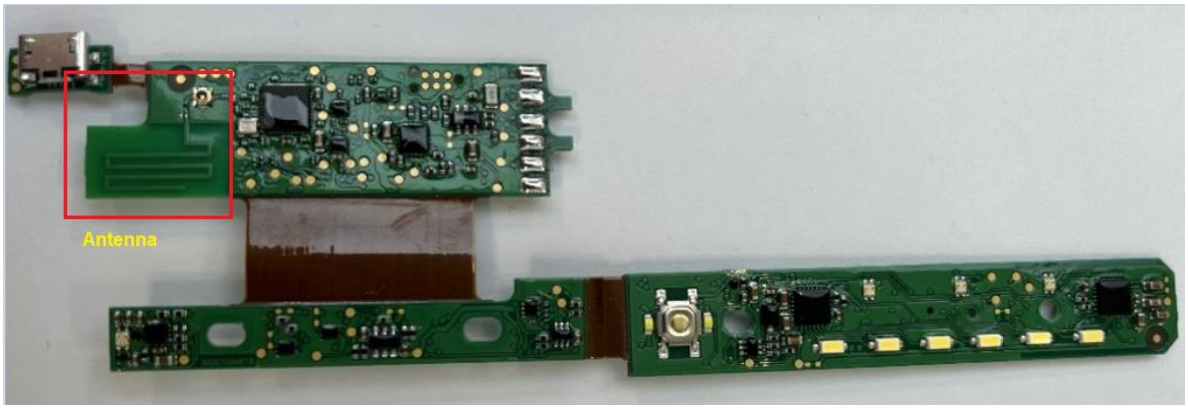
Acronyms	
Acronym	Description
EUT	Equipment Under Test
FCC	Federal Communications Commission

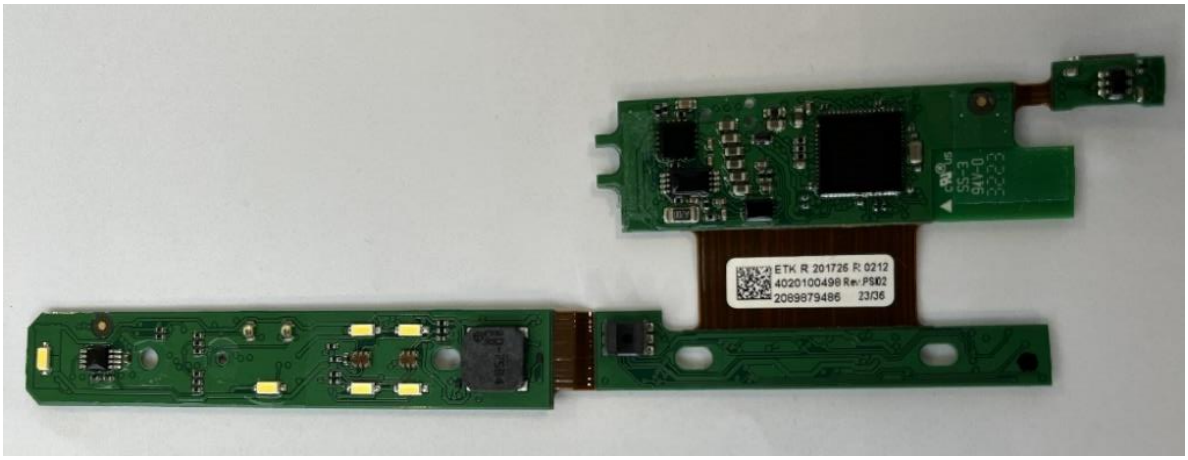
REPORT INDEX

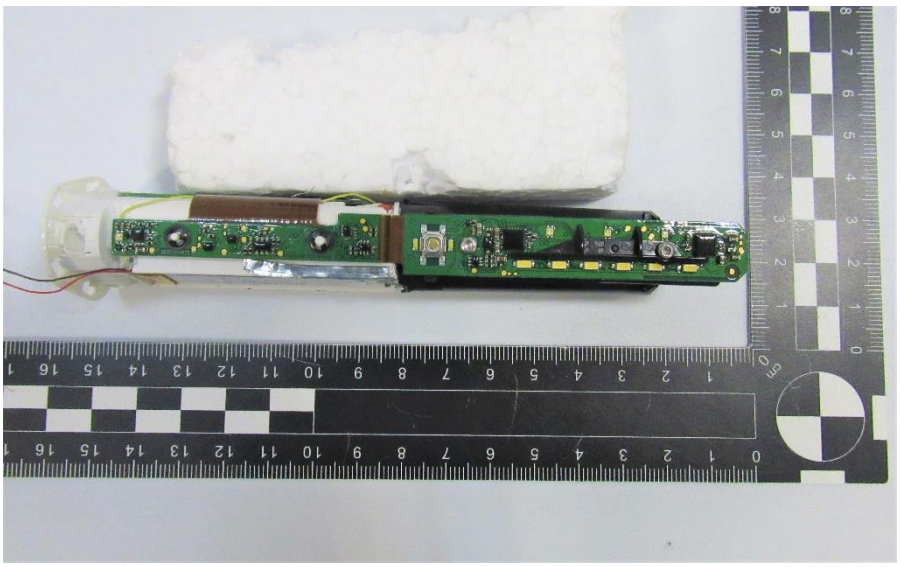
1 Equipment (Test Item) Under Test

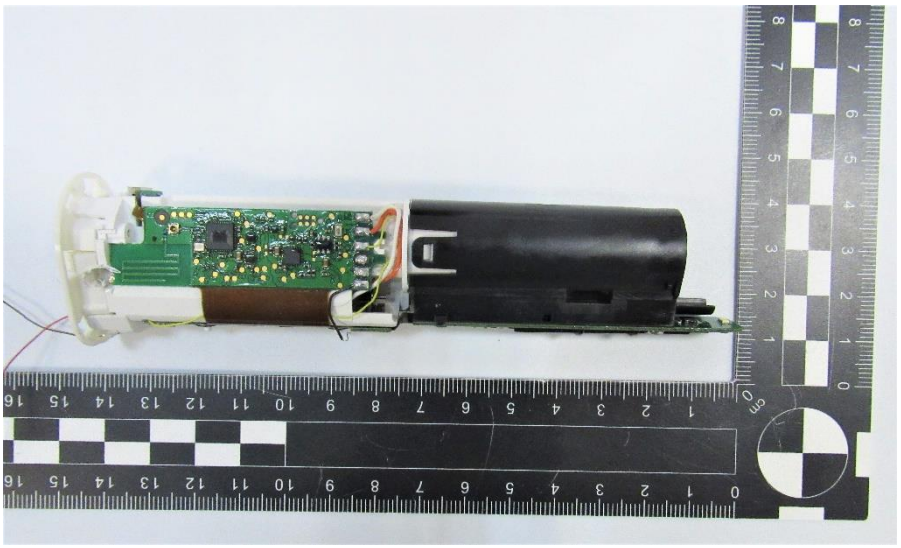
Description	IDA0097 Auto-Injector			
Model	IDA0097 Auto-Injector, Model 02			
Additional Model(s)	None			
Brand Name(s)	None			
Sample Identification	EUT #	Sample-ID	Serial Number	Date of receipt
	EUT 1	48528	24030040002450	2024-08-21
Hardware Version(s)	2089879486			
Software Version(s)	11.04.00			
Equipment type	End Product			
Radio type	Transceiver			
Radio technologies	Bluetooth LE 5.3			
Assigned frequency bands	2400.0 MHz - 2483.5 MHz			
Modulation	GFSK			
Number of antenna ports	1			
Antenna	Type	Integrated antenna		
	Model	Custom PCB antenna		
	Manufacturer	Vivid Resourcing		
	Gain	-3.84 dBi (Measured)		
Supply Voltage	V_{NOM}	3.7 V DC via internal rechargable Lithium battery 110/220 V AC via Dedicated AC/DC-adapter		
Operating Temperature	T_{NOM}	23°C		
	T_{MIN}	15°C		
	T_{MAX}	30°C		
Dedicated AC/DC-Adaptor	Model	ASSA54a-050100		
	Vendor	Shenzehn Aquilstar		
	Input	100-240 V AC		
	Output	5 V DC		
Manufacturer	Phillips-Medisize A/S Gimsinglundvej 20 7600 Struer DENMARK			

1.1 Photos – Equipment Internal

PCB - top


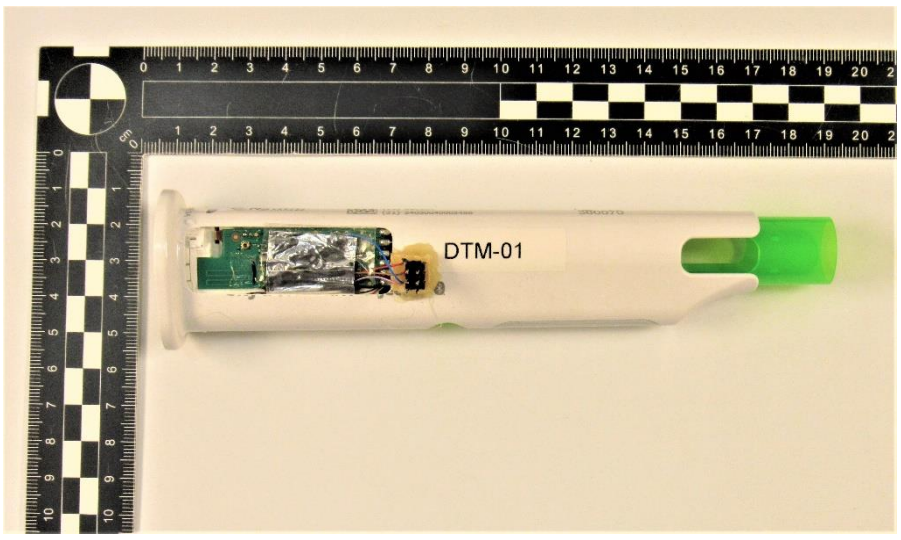
PCB - bottom


EUT - case opened - A


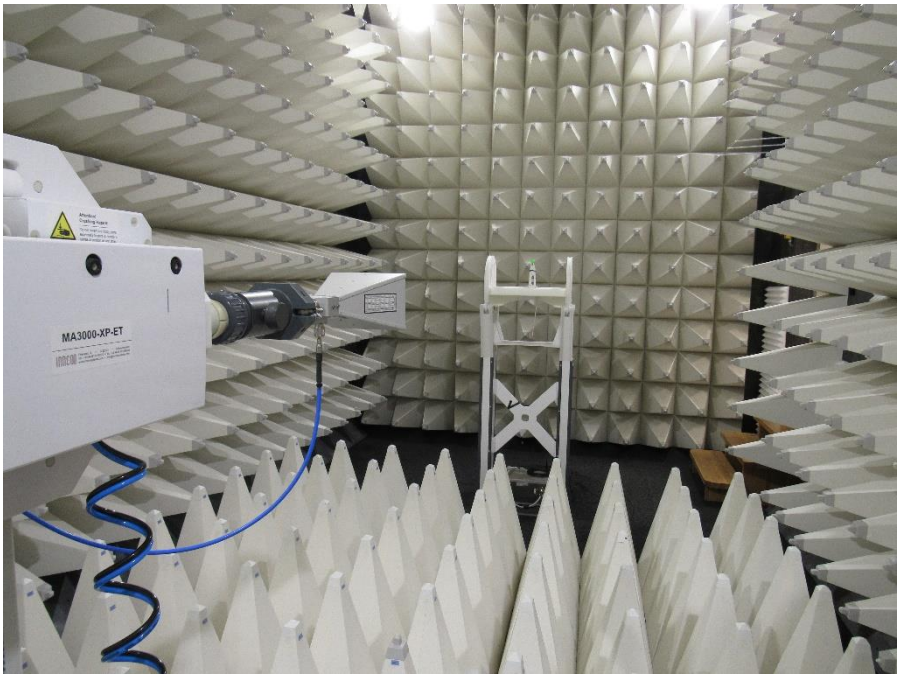
EUT - case opened - B


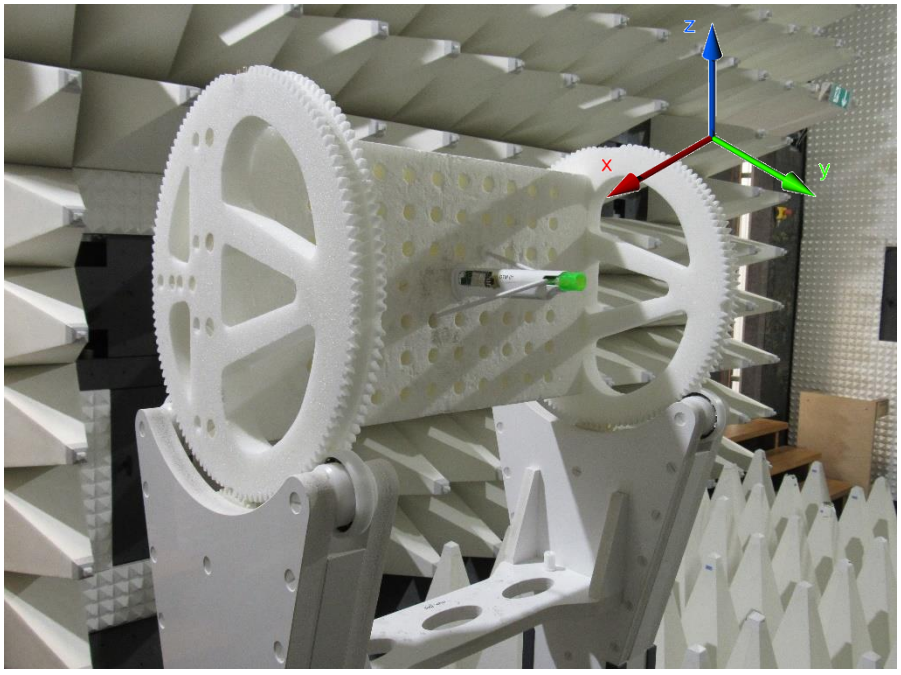
1.2 Equipment External

EUT - top view



EUT - bottom view

Test setup


Test setup – EUT position to the Axis


1.3 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE 1	Charger	Shenzehn Aquilstar	ASSA54a-050100	--
AE 2	Cable	Shenzehn Aquilstar	Micro B USB	--
AE 3	Laptop	HP	Elitebook 840 G5	Used for setting up modes
SFT	nRF Connect	nRF	V2.4.0	Used for setting up modes
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment: none				

1.4 Test Modes

Mode	Description
GFSK	Mode = Transmit Modulation = GFSK Spreading = None Power setting = 8 dBm (Software setting) Duty cycle = 88.7% Data rate = 1 MBit/s
Comment: The test mode with the highest possible output power was used for the measurement.	

1.5 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx	19	2440

2 Test Conditions and Results

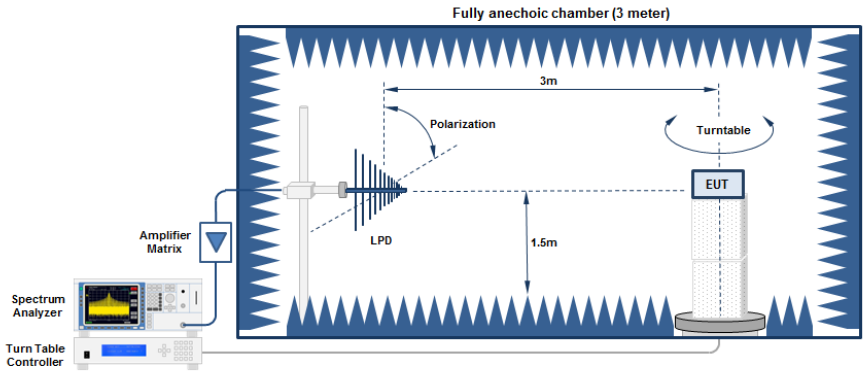
2.1 Test Conditions and Results – Antenna pattern

2.1.1 Information

Test Information	
Operator	Md Abu Bakar Siddique
Measurement uncertainty	±2.86 %
Date	2024-07-17

2.1.2 Setup

Test Setup



2.1.3 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC2	EF01616	2023-12	2024-12
Spectrum analyzer	R&S	FSW43	EF00896	2023-08	2024-08
Antenna	Schwarzbeck	BBHA 9120B	EF01678	2024-05	2027-05

2.1.4 Procedure

Test Procedure

1. EUT set to the test mode and the conducted output power has been determined as reference value.
2. EUT is placed on a non conducting support at the centre of a turn table 1.5 m above the ground.
3. The Spectrum analyzer is set to the appropriate RBW, and detector.
4. The EIRP is measured and recorded in the azimuth plane through 0° to 360° and in the elevation plane through 0° to 180°.
5. procedure is repeated for horizontal and vertical polarization.

2.1.5 Results

Test Result				
Channel [MHz]	Receive antenna polarization	Conducted Power [dBm]	Max. rad. Power [dBm e.i.r.p]	Max. antenna gain [dBi]
2440	Vertical	6.377	-0.288	-6.66
	Horizontal	6.377	2.529	-3.84

ANNEX A Antenna patterns

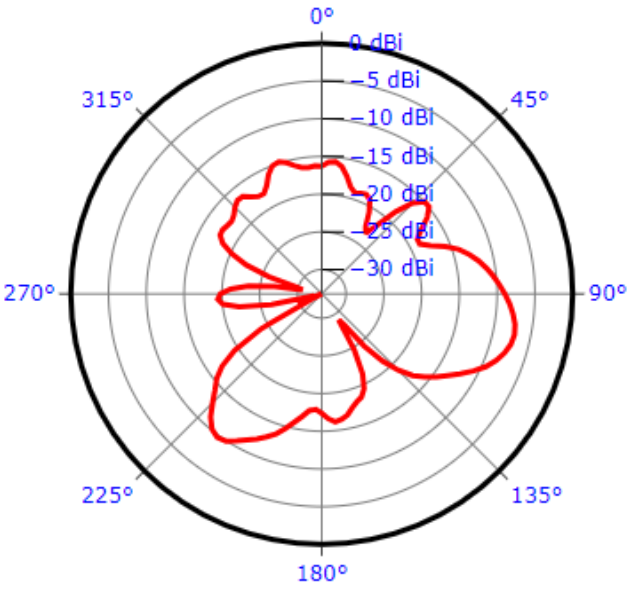
Antenna Pattern (Receive antenna vertical)

Project Number:	G0M-2311-2313
Product:	IDA0097 Auto-Injector
Model:	IDA0097 Auto-Injector, MODEL 02
Operating Frequency:	2440 MHz
Detector:	RMS
RBW:	1 MHz
VBW:	10 MHz
Sweep Time:	20 ms
Conducted Power:	6.377 (Measured)
Operator:	Md Abu Bakar Siddique
Date:	2024-08-29

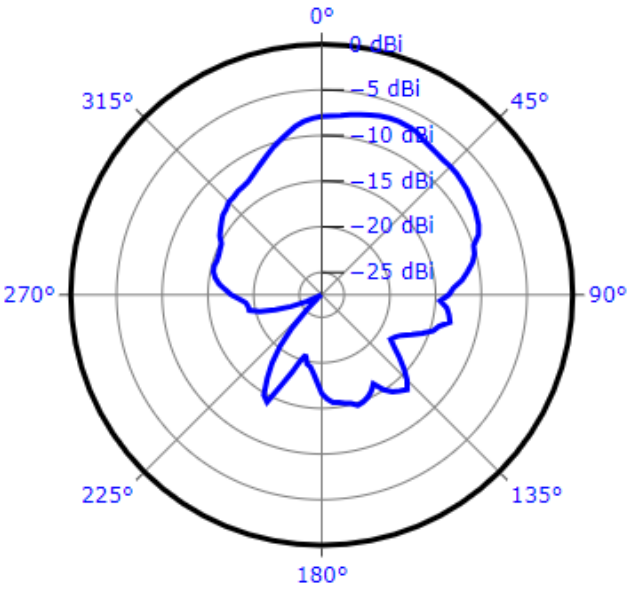
Result Summary

Antenna Polarization	Turn table Angle [°]	Max. rad. power [dBm e.i.r.p.]	Max. antenna gain [dBi]
Vertical	103	-0.288	-6.665

Polar radiation pattern at θ = 28°



Polar radiation pattern at ϕ = 103°



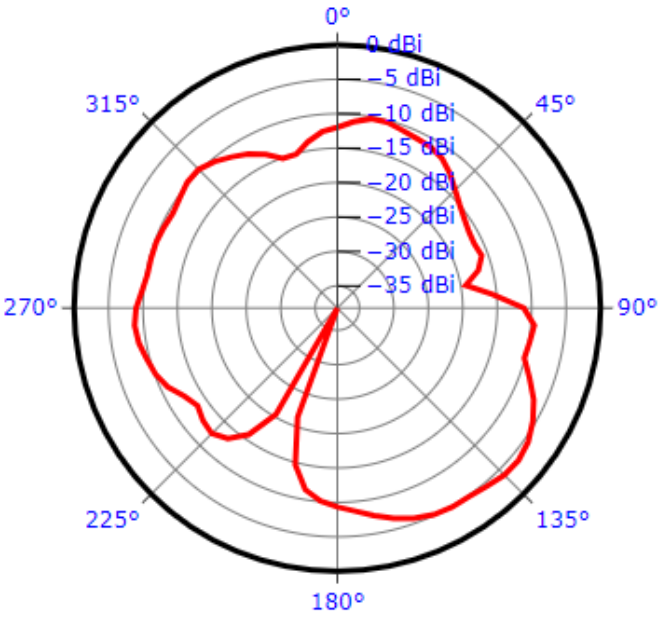
Antenna Pattern (Receive antenna horizontal)

Project Number:	G0M-2311-2313
Product:	IDA0097 Auto-Injector
Model:	IDA0097 Auto-Injector, MODEL 02
Operating Frequency:	2440 MHz
Detector:	RMS
RBW:	1 MHz
VBW:	10 MHz
Sweep Time:	20 ms
Conducted Power:	6.377 (Measured)
Operator:	Md Abu Bakar Siddique
Date:	2024-08-29

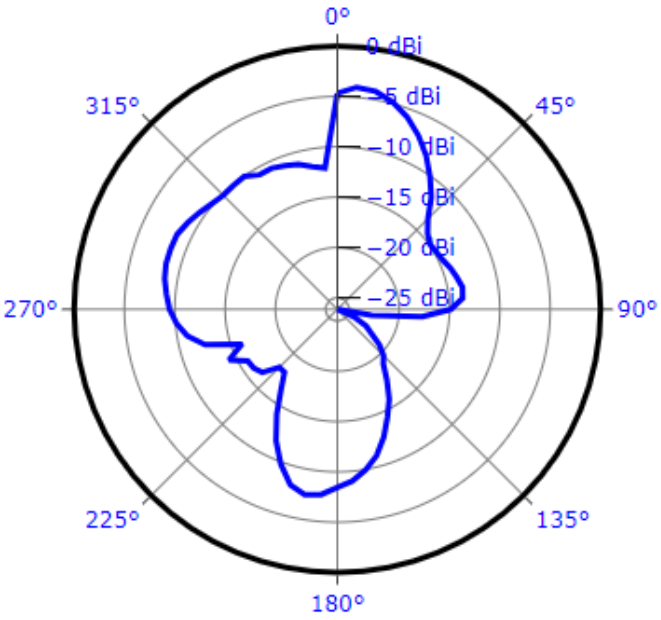
Result Summary

Antenna Polarization	Turn table Angle [°]	Max. rad. power [dBm e.i.r.p.]	Max. antenna gain [dBi]
Horizontal	132	2.529	-3.848

Polar radiation pattern at θ = 6°



Polar radiation pattern at ϕ = 132°



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