

Antenna radiation Pattern Measurement Report



Product name : CMWA 6100

Applicant : SKF

P000580130 Antenna radiation pattern report

Laboratory information

Accreditation

Kiwa Nederland B.V. complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:2017. The accreditation covers the quality system of the laboratory as well as the specific activities as described in the authorized annex bearing the accreditation number L015 and is granted by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie).

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Kiwa Nederland B.V. is a Wireless Device Testing laboratory recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements.

The Industry Canada company number for Kiwa Nederland B.V. is: 4173A. The CABID is NL0001.

Kiwa Nederland B.V. is a registered Conformity Assessment body (CAB) under the Japan-EC MRA (Agreement on Mutual Recognition between Japan and the European Community). The registration number is: 201.

Documentation

The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 10 years at Kiwa Nederland B.V.

Testing Location

Test Site	Kiwa Nederland B.V.
Test Site location	Wilmersdorf 50 7327 AC Apeldoorn The Netherlands Tel. +31 88998 3393
Test Site FCC	NL0001
CABID	NL0001

Revision History

Version	Date	Remarks	By
v1.00	30-04-2026	Final release	TK

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General Description

1.1 Applicant

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1.2 Manufacturer

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1.3 Tested Equipment Under Test (EUT)

Product name:	CMWA 6120
Date of receipt	15-04-2026
Tests started:	23-04-2026
Testing ended:	23-04-2026

1.4 Product specifications of Equipment under test

Operating Frequencies:	2402-2480MHz (Measured at 2450MHz)
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1.5 Environmental conditions

Test date	23-04-2026
Ambient temperature	20.1°C
Humidity	24%

1.6 Observation and remarks

None.

2 Test configuration of the Equipment Under Test

2.1 Test setup

To provide a clearer overview of the test procedure, Figure 1 shows the measurement setup together with the coordinate system used.

The EUT was placed on a rotating platform inside a fully anechoic chamber. During the test, a known input power was applied to the EUT at a fixed frequency, while the device was rotated in 5° steps. At each angular position, measurement data was recorded for both vertical and horizontal polarization. Based on these measurements, the main antenna parameters were derived, including TRP, peak gain, efficiency, and directivity.

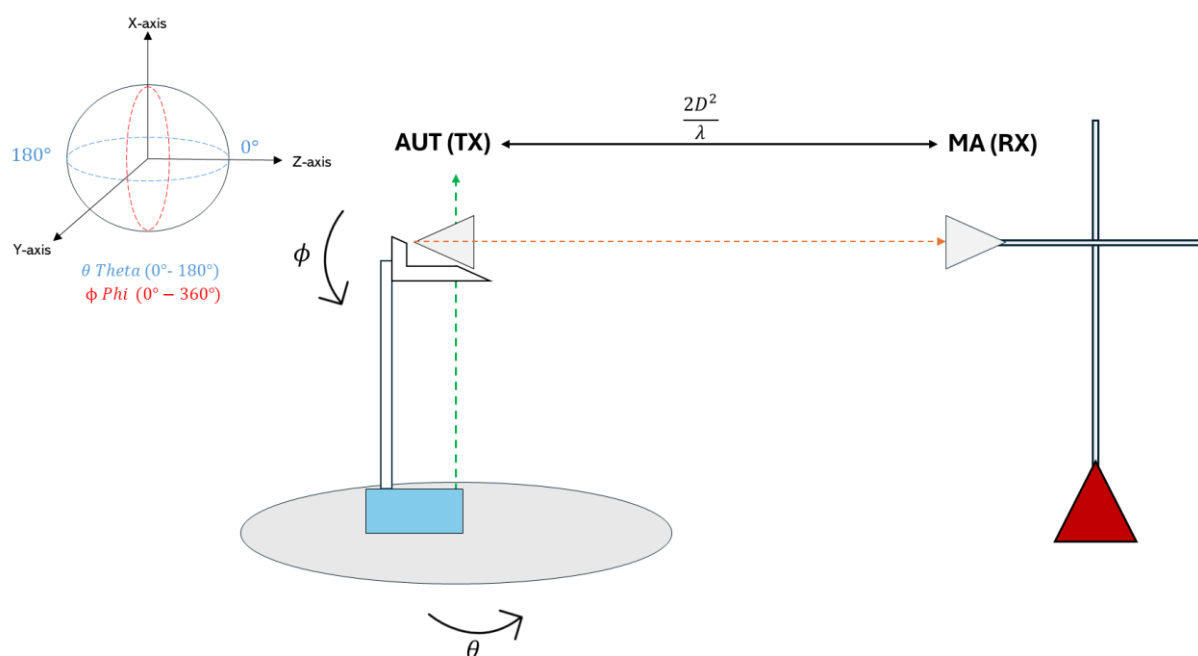


Figure 1- Definition of the coordinate axes used in the measurement setup.

2.2 Equipment used in the test configuration

Description	Manufacturer	Model	ID	Used at Par.
Vector Network Analyzer	Zeenko	LibreVNA	--	3.1, 3.2
Turn device	Maturo	TD 1.5-10kg	114367	3.1, 3.2
Semi-Anechoic Chamber	ETS Lindgren	SAR	114624	3.1, 3.2
Double Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF907	115505	3.1, 3.2
Preamplifier	Rohde & Schwarz	TS-PRE2	115507	3.1, 3.2
TX Cable	Rosenberger	LU7-022-1000	115599	3.1, 3.2
TX Cable	HUBER+SUHNER	ST18/Nm/Nm/72in	115613	3.1, 3.2
TX Cable	---	---	114767	3.1, 3.2
RX Cable	Elspec	SN31920/w302	115578	3.1, 3.2
RX Cable		Sucoflex 106 SN532829/6	115593	3.1, 3.2
RX cable	Elspec	KW31781	115576	3.1, 3.2
Turn table	INNCO	DT3000-4t	---	3.1, 3.2
Antenna Masts	INNCO	MA4765-XP-ET	---	3.1, 3.2
Controller unit	Maturo		114424	3.1, 3.2
Controller unit	INNCO	CO3000	114503	3.1, 3.2

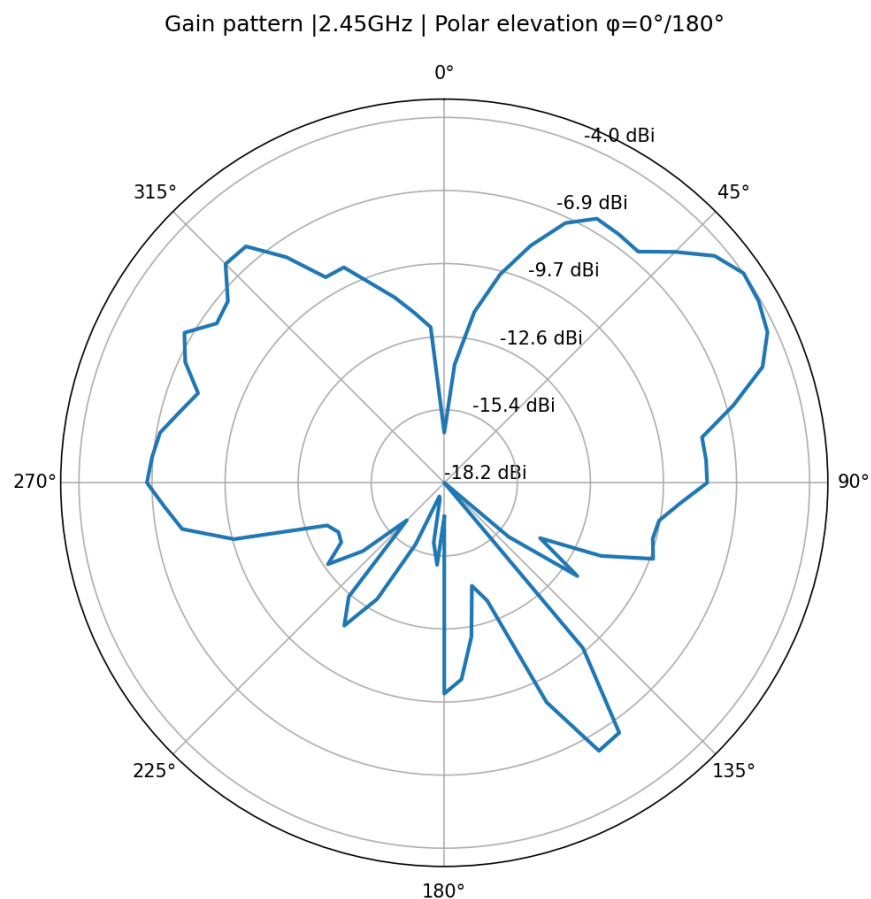
3 Test results

The test results are based on a combination of antenna measurements in both co-polarization and cross-polarization. In this setup, the two components are combined to obtain the total gain of the antenna. The table below shows the measured performance of the antenna.

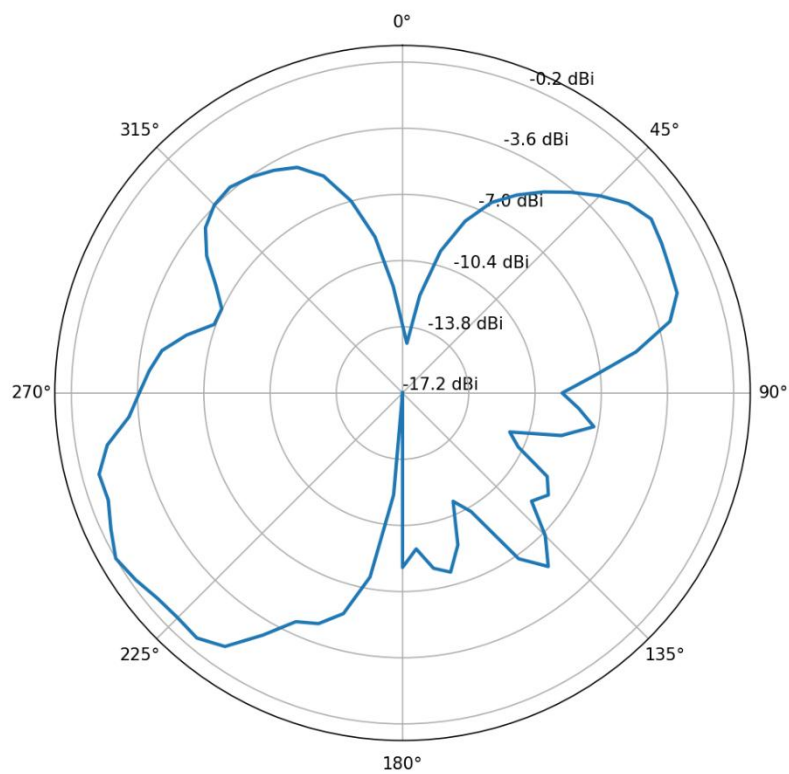
Table 1 - Antenna performance summary

Parameter	Value	Unit
Measurement frequency	2.45	GHz
Total radiated power	-4.58	dBm
Directivity	5.20	dBi
Efficiency	34.84	%
Peak gain	0.62	dBi

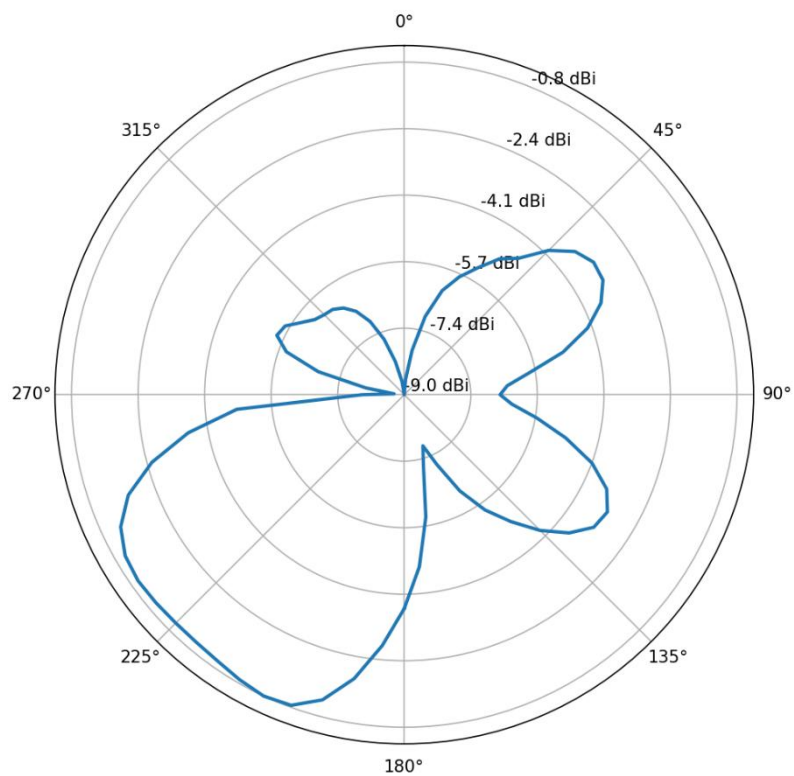
3.1 Polar plot at 2.45GHz



Gain pattern |2.45GHz | Polar elevation $\phi=90^\circ/270^\circ$

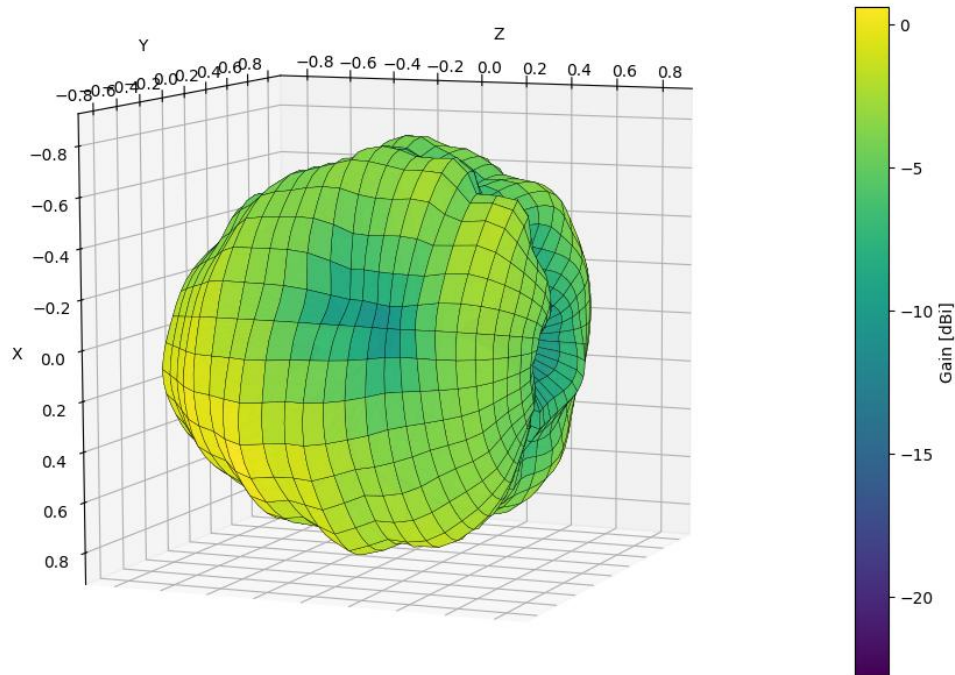


Gain pattern |2.45GHz | Polar azimuth $\theta=90^\circ$

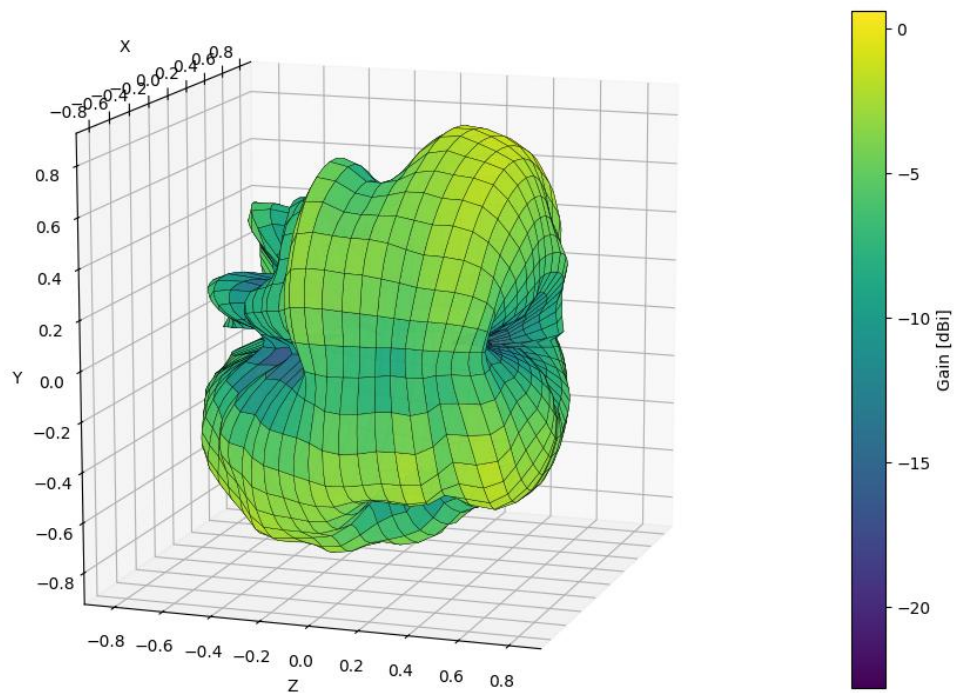


3.2 Radiation pattern 2.45GHz

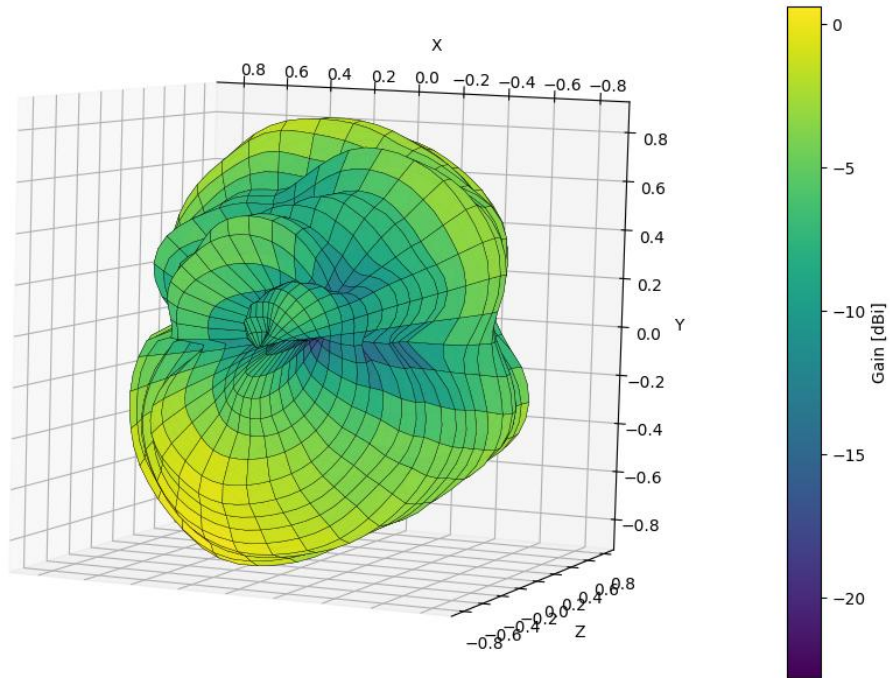
Radiation Pattern | 2.45GHz | Absolute gain [dBi]



Radiation Pattern | 2.45GHz | Absolute gain [dBi]



Radiation Pattern | 2.45GHz | Absolute gain [dBi]



4 Photo module

4.1 Test setups



Figure 2- Photo of EUT setup

4.2 EUT Photos



Figure 3 - Photo of EUT

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