

Test report for
47 CFR Part 15 Subpart B
ICES-Gen, ICES-003



The RvA is signatory to ILAC - MRA

Product name : CMWA 6120
Applicant : SKF
FCC ID : 2AJ99-CMWA-6120
IC : 26053-CMWA6120

Test report No. : P000580120 001 V2.0

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).

Kiwa Nederland B.V. is designated by the FCC as an Accredited Test Firm for compliance testing of equipment subject to Certification under Parts 15 & 18. The Designation number is: NL0001.

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
v0.5	05-05-2026	First draft	TK
v1.0	27-05-2026	Initial release	PvW
v2.0	03-06-2026	Updated address, Mira modulation and model variation	TK

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Summary of Test results

Class B equipment

FCC	ISED*	Description	Section in report	Verdict
15.109 (a)	ICES-003 Table 2	Radiated spurious emissions < 1GHz	3.1	Pass
15.109 (a)	ICES-003 Table 4	Radiated spurious emissions > 1GHz	3.1	Pass

Decision rule: Pass/Fail decisions are based on measurement results without taking into account measurement uncertainty.

*Note: ICES-003 and ICES-Gen are not part of the Kiwa Netherlands L015 accreditation scope. Measurement results according ICES-003 and ICES-Gen are excluded from the accreditation scope.

1 General Description

1.1 Applicant

Client name:	SKF
Address:	Meidoornkade 14
Zip code:	3992 AE, Houten
Telephone:	--
E-mail:	ludo.gommers@skf.com
Contact name:	Ludo Gommers

1.2 Manufacturer

Manufacturer name:	SKF France
Address:	204 Boulevard Charles de Gaulle
Zip code:	37540, Saint Cyr sur Loire
Telephone:	--
E-mail:	narges.mobarhani@skf.com
Contact name:	Narges Mobarhani

1.3 Tested Equipment Under Test (EUT)

Product name:	CMWA 6120
Brand name:	SKF
FCC ID:	2AJ99-CMWA-6120
IC:	26053-CMWA6120
Product description:	Wireless vibration sensor
Variant model(s):	CMWA 6120, CMWA 6120-EX, CMWA 6420
Batch and/or serial No.	--
Software version:	--
Hardware version:	--
Date of receipt:	15-04-2026
Tests started:	15-04-2026
Testing ended:	15-04-2026

1.4 Product specifications of Equipment under test

Main electrical components inside EUT

Component	Manufacturer / trademark:	Type / model
RF Transceiver, Microcontroller	NXP	MKW41Z
NFC Tag (passive)	NXP	NT3H2111W0FHK
MEMS Sensor	Analog Devices	AD22122Z
Flash Memory	Renesas	AT25SL0621C

Disclaimer: above info is declared by the applicant

The EUT is considered as a Class B device.

1.5 Environmental conditions

Test date	15-04-2026
Ambient temperature	22.5°C
Humidity	26%

1.6 Measurement standards

- ANSI C63.4:2014

1.7 Applicable standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart B
- ICES-003 Issue 7*
- ICES-Gen Issue 2*

*Note: ICES-003 and ICES-Gen are not part of the Kiwa Netherlands L015 accreditation scope. Measurement results according ICES-003 and ICES-Gen are excluded from the accreditation scope.

1.8 Observation and remarks

The EUT is battery operated. The battery cannot be recharged and there are no cables attached to the EUT. Therefore no conducted emissions measurements can be performed.

1.9 Conclusions

The sample of the product showed **NO NON-COMPLIANCES** to the specifications stated in paragraph 1.7 of this report.

The results of the test as stated in this report, are exclusively applicable to the product items as identified in this report. Kiwa Nederland B.V. accepts no responsibility for any properties of product items in this test report, which are not supported by the tests as specified in paragraph 1.8 *"Applicable standards"*.

All tests are performed by:

Name : J.J. Strydom

Review of test methods and report by:

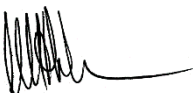
Name : P. van Wanrooij, BASc

The above conclusions have been verified by the following signatory:

Date : 03-06-2026

Name : ing. M.H. Khan

Function : Test Engineer

Signature : 

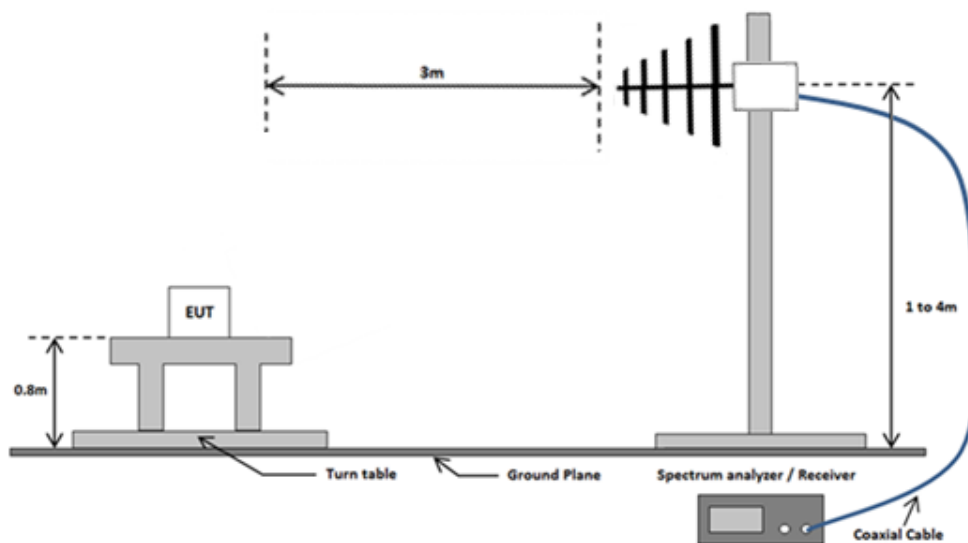
2 Test configuration of the Equipment Under Test

2.1 Test mode

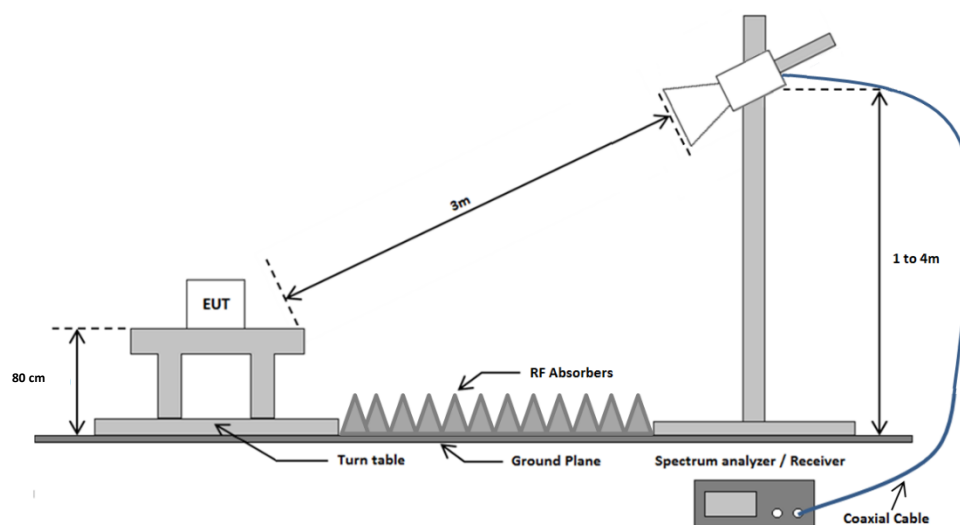
The EUT was active and performing in normal operations.

2.2 Test setups

2.2.1 Radiated emissions test setup 30 MHz - 1 GHz



2.2.2 Radiated emissions test setup above 1 GHz



2.3 Test methodology

The test methodology used is based on the requirements of 47 CFR Part 15, sections 15.31, 15.107 and 15.109, ICES-003 and ICES-Gen. The test methods, which have been used, are based on ANSI C63.4-2014.

2.4 Equipment modifications

No modifications have been made to the equipment.

2.5 Equipment used in the test configuration

Description	Manufacturer	Model	ID	Cal. Done date	Cal. due date	Used at Par.
EMI Receiver	Rohde & Schwarz	ESR7	114870	01-2026	01-2027	3.1
Spectrum Analyzer	Rohde & Schwarz	FSV3044	114923	10-2025	10-2027	3.1
2.5 GHz HPF	Wainwright	WHKX12-2477.75-2650-18000-40SS	115031	08-2025	08-2026	3.1
Biconical antenna + 6dB attenuator	Schwarzbeck + HP	VHA9103 + 8491A	114436	07-2024	07-2027	3.1
Logperiodic antenna	Schwarzbeck	VULP 9118B	115028	11-2024	11-2027	3.1
Horn antenna	EMCO	3115	114607	01-2025	01-2028	3.1
Preamplifier 1-18 GHz	µComp Nordic	MCNA-40-0010800-25-10P	114771	10-2025	10-2026	3.1
Semi-Anechoic Chamber	ETS Lindgren	SAR	114624	04-2026	04-2029	3.1
Test software	Raditeq	Radimation Version 2024.2.1	--	--	--	3.1

NA= Not Applicable

2.6 Sample calculations

All formulas for data conversions and conversion factors are reported in chapter 4 of this test report.

3 Test results

3.1 Radiated spurious emissions

3.1.1 Limit

Except for Class A digital devices, the field strength of radiated emissions from an unintentional radiator shall not exceed the field strength levels specified in the following tables.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a CISPR quasi-peak detector function and related measurement bandwidths, unless otherwise specified.

Unless otherwise specified, on any frequency or frequencies above 1000 MHz, the radiated emission limits are based on the use of measurement instrumentation employing an average detector function.

When average radiated emission measurements are specified in this part, there is also a limit on the peak level of the emissions. Unless otherwise specified, the limit on peak emissions is 20 dB above the average limit.

The product under test shall comply with both the average and the peak limits.

ICES-003 Issue 7 section 3.2.2

The quasi-peak limits for the electric component of the radiated field strength emitted from ITE or digital apparatus, within 30 MHz to 1 GHz, for a measurement distance of 3m are presented in table below.

At and above 1 GHz, except for outdoor units of home satellite receiving systems, the ITE or digital apparatus shall comply with the limits specified in table below up to the frequency F_M , which shall be determined. The product under test shall comply with both the average and the peak limits.

FCC 15.109(a)

Frequency (MHz)	Field strength ($\mu\text{V}/\text{meter}$)	Field strength ($\text{dB}\mu\text{V}/\text{m}$)	Measurement distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

ICES-003 tables 2, 4

Frequency (MHz)	Field strength ($\mu\text{V}/\text{meter}$)	Field strength ($\text{dB}\mu\text{V}/\text{m}$)	Measurement distance (meters)
30-88	100	40.0	3
88-216	150	43.5	3
216-230	200	46.0	3
230 -960	224	47.0	3
Above 960	500	54.0	3

3.1.2 Measurement instruments

The measurement instruments are listed in chapter 2.5 of this report.

3.1.3 Test setup

The test setup is as shown in chapter 2.2.1 and 2.2.2 of this report.

3.1.4 Test procedure

30 MHz to 26.5 GHz: According to ANSI C63.4-2014, section 8.3

30 MHz to 1 GHz: IRN 441 – Method 1

1 GHz to 18 GHz: IRN 441 – Method 2

18 to 26.5 GHz: IRN 441– Method 3

In case of handheld and/or body-worn equipment, the EUT's orientation (X, Y, Z) was varied in order to ensure that maximum emission amplitudes were attained. In all other cases the associated cabling and the EUT orientation was varied for maximum emissions.

The spectrum was examined from 30MHz to the highest measurement frequency according to the table below. Final radiated emission measurements were made at 3m distance.

Highest internal frequency (F_X) ⁱ	Highest measurement frequency (F_M)
$F_X \leq 108 \text{ MHz}$	1 GHz
$108 \text{ MHz} < F_X \leq 500 \text{ MHz}$	2 GHz
$500 \text{ MHz} < F_X \leq 1 \text{ GHz}$	5 GHz
$F_X > 1 \text{ GHz}$	$5 \times F_X$ up to a maximum of 40 GHz
i. F_X is the highest fundamental frequency generated and/or used in the ITE or digital apparatus under test.	

The 6 highest emission amplitudes relative to the appropriate limit were recorded in this report. Field strength values of radiated emissions at frequencies not listed in the tables are more than 20 dB below the applicable limit.

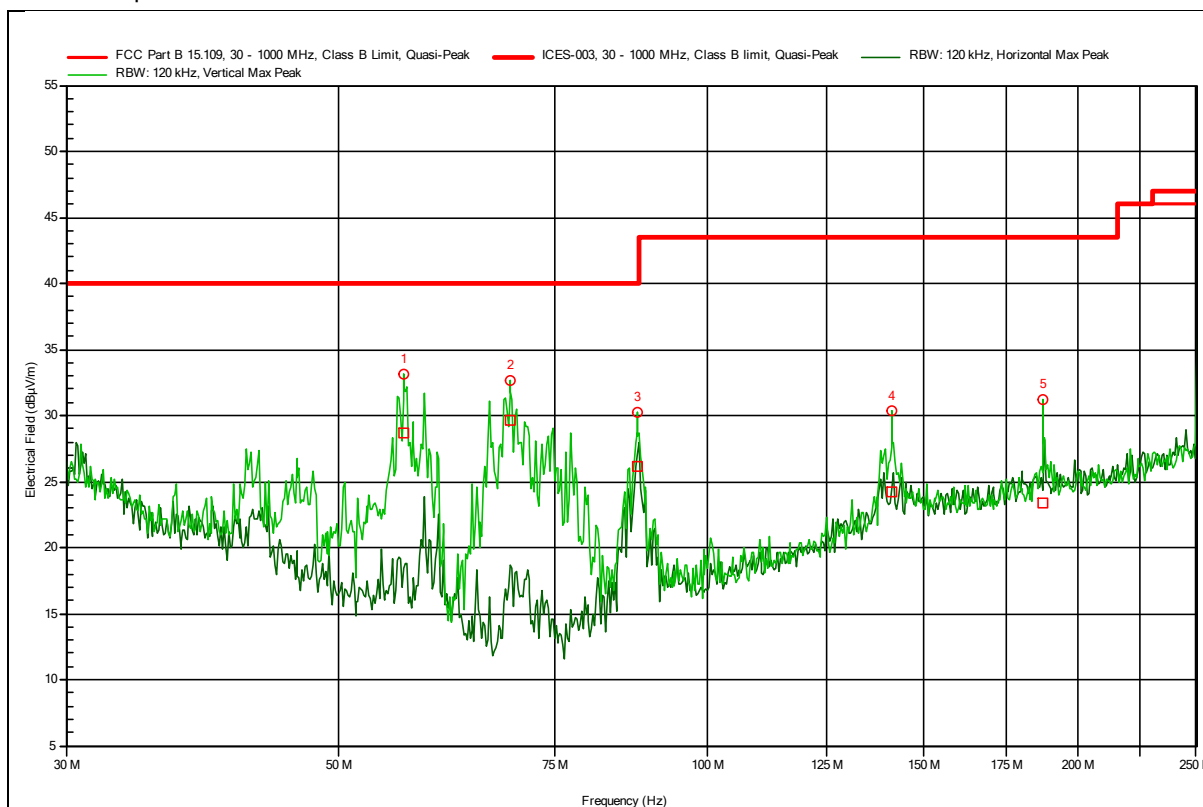
3.1.5 Measurement Uncertainty

Frequency range	Polarization	Uncertainty
30 – 200 MHz	Horizontal	±3.9 dB
	Vertical	±4.6 dB
200 -1000 MHz	Horizontal	±3.4 dB
	Vertical	±4.9 dB
1 – 6 GHz	Both	±4.3 dB
6 – 18 GHz	Both	±5.2 dB
18 – 26.5 GHz	Both	±5.1 dB
26.5 – 40 GHz	Both	±5.3 dB

3.1.6 Test results

Radiated emission semi anechoic chamber 30 MHz to 250 MHz

Resolution 120 kHz Video 300 kHz
bandwidth: bandwidth:
Antenna distance: 3 m Antenna height: 1 - 4 m
Antenna polarization: Both

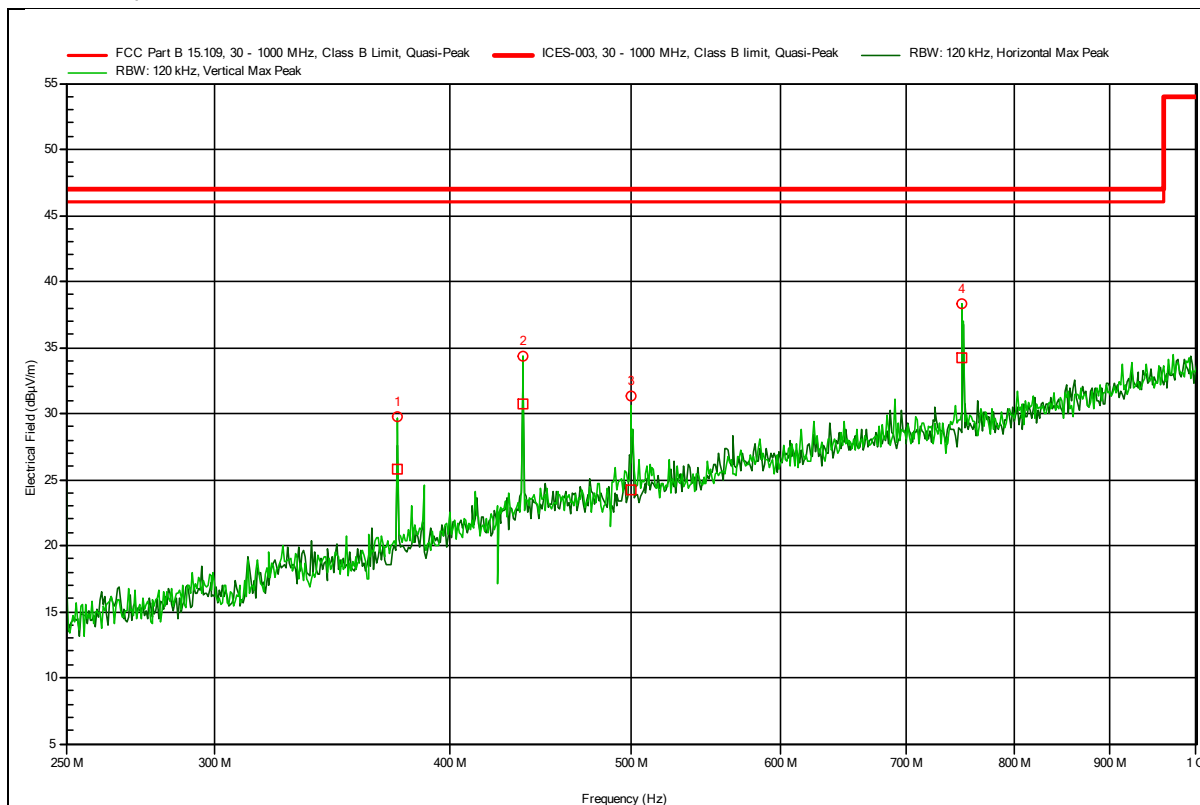


Detected peaks

Peak Number	Frequency (MHz)	Quasi-Peak (dBμV/m)	Quasi-Peak Limit (dBμV/m)	Angle (degrees)	Height (m)	Polarization	Status
2	68,997	29,7	40	344	1	Vertical	Pass
1	56,541	28,6	40	3	1	Vertical	Pass
3	87,633	26,1	40	190	1	Vertical	Pass
4	141,199	24,2	43,5	190	1,2	Vertical	Pass
5	187,525	23,4	43,5	96	2	Vertical	Pass

Radiated emission semi anechoic chamber 250 MHz to 1 GHz

Resolution 120 kHz Video 300 kHz
bandwidth: bandwidth:
Antenna distance: 3 m Antenna height: 1 - 4 m
Antenna polarization: Both

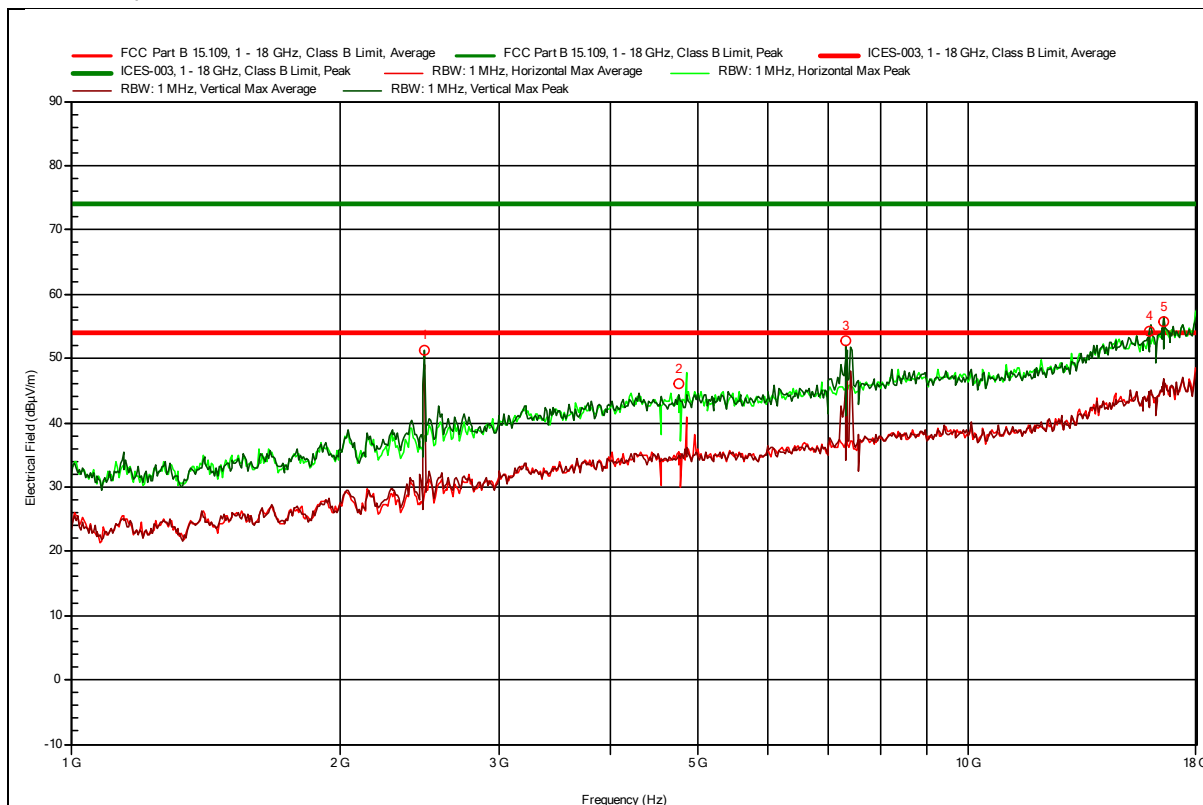


Detected peaks

Peak Number	Frequency (MHz)	Quasi-Peak (dBμV/m)	Quasi-Peak Limit (dBμV/m)	Angle (degrees)	Height (m)	Polarization	Status
1	375,043	25,8	46	313	2	Vertical	Pass
2	437,541	30,7	46	345	3	Vertical	Pass
3	500,015	24,2	46	251	1	Vertical	Pass
4	750,101	34,2	46	159	3,75	Vertical	Pass

Radiated emission full anechoic chamber 1 GHz to 18 GHz

Resolution 1 MHz Video 3 MHz
bandwidth: bandwidth:
Antenna distance: 3 m Antenna height: 1 m to 4 m
Antenna polarization: Both



Detected peaks

Peak Number	Frequency (MHz)	Peak (dBμV/m)	Peak Limit (dBμV/m)	Average (dBμV/m)	Average Limit (dBμV/m)	Angle (degrees)	Height (m)	Polarization	Status
1	2480,247	51,3	74	48,6	54	281	3,25	Vertical	Pass
2	4765,441	46,1	74	33,5	54	360	1,25	Horizontal	Pass
3	7326,471	52,7	74	43,3	54	360	4	Vertical	Pass
4	15946,145	54,3	74	42	54	61	3,25	Vertical	Pass
5	16522,517	55,8	74	43,7	54	12	4,1	Vertical	Pass

4 Sample calculations

Field Strength Measurement:

$$E \left(dB \left(\frac{\mu V}{m} \right) \right) = U(dB\mu V) + AF \left(\frac{dB}{m} \right) + Corr. (dB)$$

Where:

E = Electric field strength

U = Measuring receiver voltage

AF = Antenna factor

Corr. = sum of single correction factors of used cable and amplifier (if applicable).

Linear interpolation will be used for frequencies in between the values in the table.

Tables shows an extract of the values.

Frequency (MHz)	AF (dB/m) ID: 114435 VHA 9103	Cable loss (dB) Id: 114928	Attenuator (dB) ID:114525 Hewlett Packet	Corr. (dB)
30	20.5	1.1	6	7.1
100	10.4	2.5	6	8.5
150	15.5	3.1	6	9.1
200	16.8	3.6	6	9.6
250	18.1	4.2	6	10.2

Frequency (MHz)	AF (dB/m) ID: 114385 Vulp 9118B	Cable loss (dB) Id: 114928	Corr. (dB)
250	11.7	4.2	4.2
300	12.8	4.9	4.9
350	14.1	5.8	5.8
400	15.5	6.6	6.6
450	17	7.1	7.1
500	17.5	7.5	7.5
550	18.3	7.6	7.6
600	19.2	7.8	7.8
650	20.1	7.8	7.8
700	20.5	8.1	8.1
750	21	8.6	8.6
800	21.4	8.9	8.9
850	21.8	9.4	9.4
900	22.6	9.7	9.7
950	23	10	10
1000	23.2	10.4	10.4

Frequency (MHz)	AF (dB/m)	Gain (dB)	Cable loss (dB)	Corr. (dB)
	114607 Emco 3115 SN: 9412-4377	114690 µComp Nordic MCNA-40-0010800-25-10P	114691	
1000	23.6	45.1	2.7	-43
2000	27.1	44.7	3.9	-41.4
3000	30.5	44.2	4.8	-40
4000	32.7	43.5	5.6	-38.6
5000	33.2	43.1	6.3	-37.5
6000	34.6	43.0	6.9	-36.7
7000	35.2	42.9	7.3	-36.5
8000	37.0	43.3	8.2	-36.1
9000	38.1	43.3	8.5	-35.4
10000	38.2	43.0	9.0	-34.8
11000	38.3	42.9	9.5	-34.2
12000	39.1	42.6	9.9	-33.6
13000	39.2	43.6	10.6	-33.8
14000	41.1	44.3	10.8	-34.6
15000	40.2	44.4	11.4	-34
16000	37.5	44.3	11.6	-33.5
17000	41.1	44.5	12.0	-33.1
18000	44.0	44.9	12.3	-33.5

5 Photograph test setup

5.1 Photograph test setup Radiated Emissions

Photo 1 Photograph test setup radiated emissions 30-250 MHz, report section 3.1

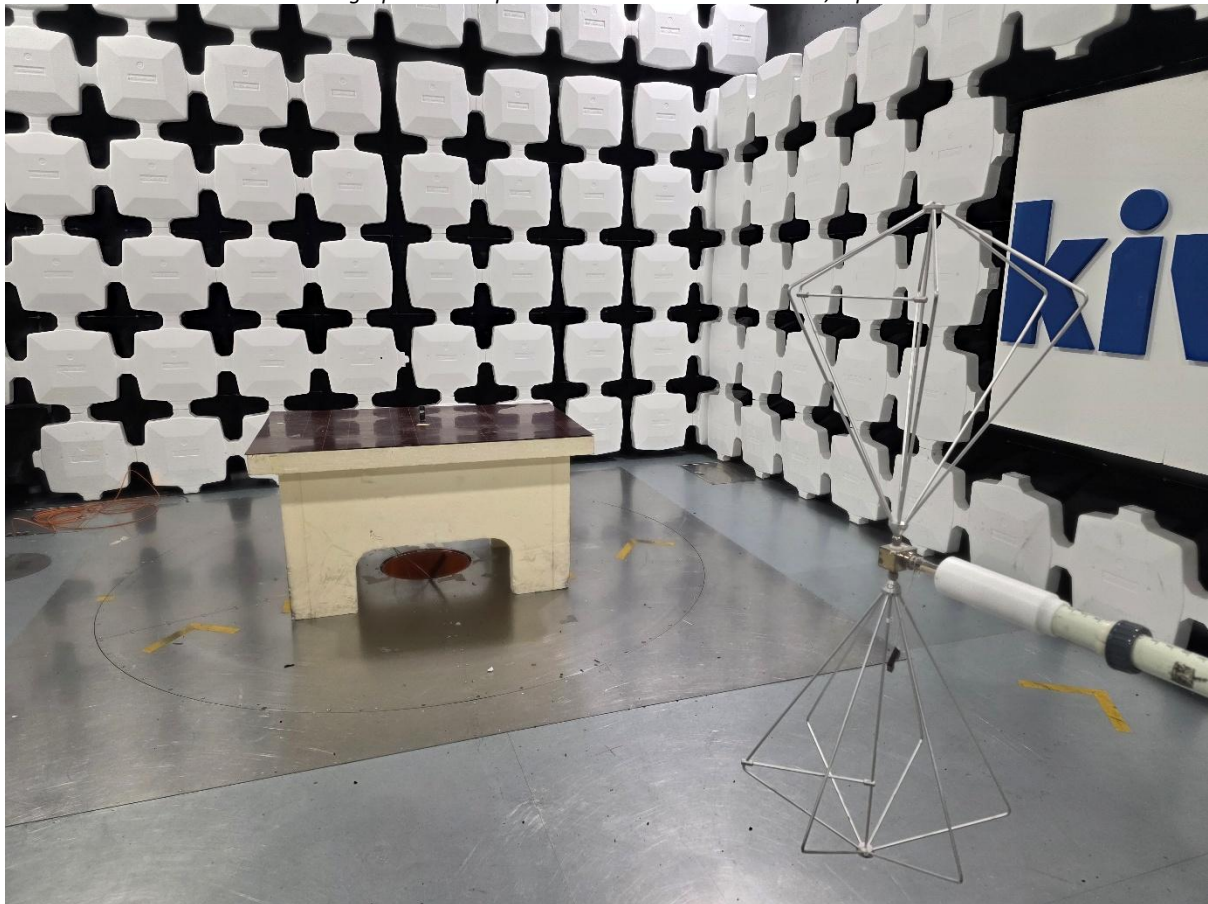
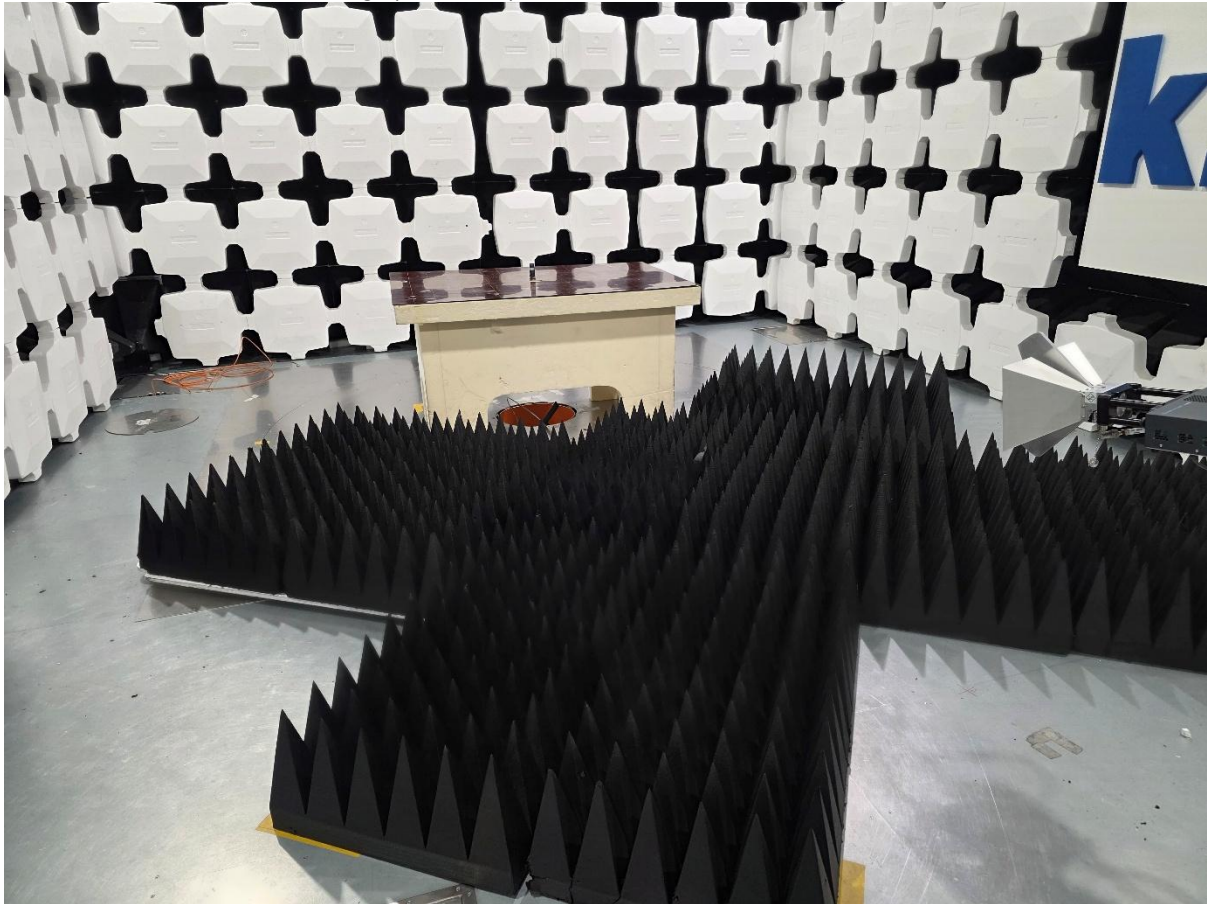


Photo 2 Photograph test setup radiated emissions 250-1000 MHz, report section 3.1



Photo 3 Photograph test setup radiated emissions 1-18 GHz, report section 3.1



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