

Status Research & Development GmbH

TEST REPORT

SCOPE OF WORK:

FCC Part 15B&ICES - EMC report

Model:

Shell

REPORT NUMBER

2510B0394SHA-001

ISSUE DATE

November 14, 2025

DOCUMENT CONTROL NUMBER

TTRFFCCPART15b_V1

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TEST REPORT

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Report no. 2510B0394SHA-001

Applicant : Status Research & Development GmbH
Baarerstrasse 10, 6302 Zug, Switzerland

Manufacturer : Status Research & Development GmbH
Baarerstrasse 10, 6302 Zug, Switzerland

Manufacturing site : ALTYOR Industries (Shanghai) Co., Ltd.
152/1421 Zhuan Xing Dong Road Minhang District Shanghai,
201108, CHINA

Summary

The equipment complies with the requirements according to the following standard(s) or Specification:


47CFR Part 15 (2024): Radio Frequency Devices (Subpart B)

ANSI C63.4 (2014)+A1 (2017): American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

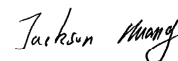
ICES-003 Issue 7: Information Technology Equipment (Including Digital Apparatus)

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Project Engineer



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Reviewer

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Revision History

Report No.	Version	Description	Issued Date
2510B0394SHA-001	Rev. 01	Initial issue of report	November 14, 2025

Measurement result summary

TEST ITEM	FCC REFERENCE	IC REFERENCE	TEST RESULT	NOTE
Conducted emission	15.107	3.2.1	Pass	
Radiation emission	15.109	3.2.2	Pass	

Notes: 1: NA =Not Applicable

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product Name : Smart card adapter

Type/Model : Shell

Description of EUT : One model was tested and the worst data was listed as the representative.

Rating : Input: 5VDC 1A (USBc),
Battery: 3.7VDC 800mAh

Brand name : Keycard

Data cable : USB-C to USB-C cable

Category of EUT : Class B

EUT type : ☒ Table top
☐ Floor standing

Highest operating frequency : <250MHz

Date of test : October 22, 2025

1.2 Description of Test Facility

Name : Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Address : Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R.
China
Telephone : 86 21 61278200
Telefax : 86 21 54262353

The test facility is : CNAS Accreditation Lab
recognized, certified, Registration No. CNAS L21189
or accredited by these FCC Accredited Lab
organizations Designation Number: CN0175
IC Registration Lab
IC Registration Lab: CN0014
VCCI Registration Lab
Registration No.: R-14243, G-10845, C-14723, T-12252
A2LA Accreditation Lab
Certificate Number: 3309.02

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2024): Radio Frequency Device: Subpart B

ANSI C63.4 (2014)+A1 (2017): Interim Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz.

ICES-003 Issue 7: Information Technology Equipment (Including Digital Apparatus)

2.2 Mode of operation during the test

Within this test report, EUT was tested in both charging mode and working mode, with an additional AC/DC adapter used for the charging mode.

2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	EMC-I	SKET	V1.5.0.4
Radiated emission	EMC-I	SKET	V1.5.0.4

2.4 Test peripherals list

Item No.	Name	Band and Model	Description
1	AC/DC adaptor	TAILI, K-86	NA

2.5 Record of climatic conditions

Test Item	Temperature (°C)	Relative Humidity (%)	Pressure (Kpa)
Conducted emission	24	43	NA
Radiated Emission	24	43	NA

Notes: NA =Not Applicable

2.6 Instrument list

Conducted Emission/Disturbance Power/Tri-loop Test/CDN method					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Test Receiver	R&S	ESR7	EC 6194	2026-02-17
<input checked="" type="checkbox"/>	Attenuator	Hua Xiang	Ts5-10db-6g	EC 6194-1	2026-01-14
<input checked="" type="checkbox"/>	A.M.N.	R&S	ESH2-Z5	EC 3119	2026-07-22
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Test Receiver	R&S	ESIB 26	EC 3045	2026-08-05
<input checked="" type="checkbox"/>	TRILOG broadband Antenna	Schwarzbeck	VULB9168	EC 6402	2026-04-06
<input checked="" type="checkbox"/>	Pre-amplifier	Tonscend	tap01018050	EC 6432-1	2025-12-03
<input checked="" type="checkbox"/>	Horn antenna	Tonscend	bha9120d	EC 6432-2	2026-04-10
Test Site					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Shielded room	Zhongyu	-	EC 2838	2027-01-08
<input checked="" type="checkbox"/>	Semi-anechoic chamber	Albatross project	-	EC 3048	2026-07-11
Additional instrument					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	Thermo-Hygrograph	Testo	175h1	EC 6640	2026-08-03
<input checked="" type="checkbox"/>	Thermo-Hygrograph	Testo	175h1	EC6642	2026-08-25
Test software					
Used	Test project	Software name		Version	
<input checked="" type="checkbox"/>	CE	EMC-I		V1.5.0.4	
<input checked="" type="checkbox"/>	RE	EMC-I		V1.5.0.4	

2.7 Measurement Uncertainty

Measurement	Frequency	Expanded Uncertainty (k=2) (\pm)
Conducted emission at mains ports	9kHz ~ 150kHz	3.52 dB
	150kHz ~ 30MHz	3.19 dB
Radiated Emissions up to 1 GHz	30MHz ~ 1GHz	4.90 dB
Radiated Emissions above 1 GHz	1GHz ~ 6GHz	5.02 dB
	6GHz ~ 18GHz	5.28 dB

3 Conducted emission

Test result: Pass

3.1 Limits


3.1.1 Limits for conducted emission of class A device

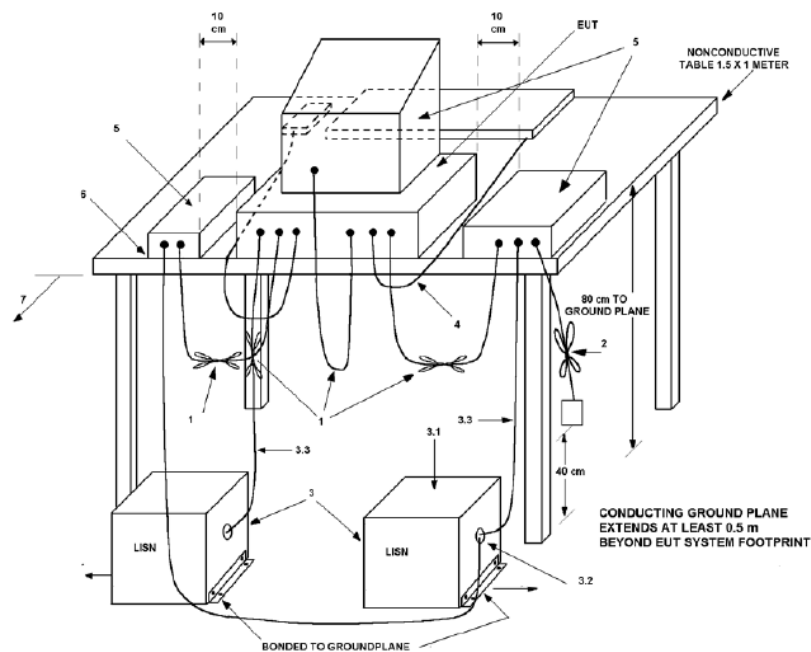
Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 ~ 0.5	79	66
0.5 ~ 30	73	60
Note: If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out.		

3.1.2 Limits for conducted emission of class B device

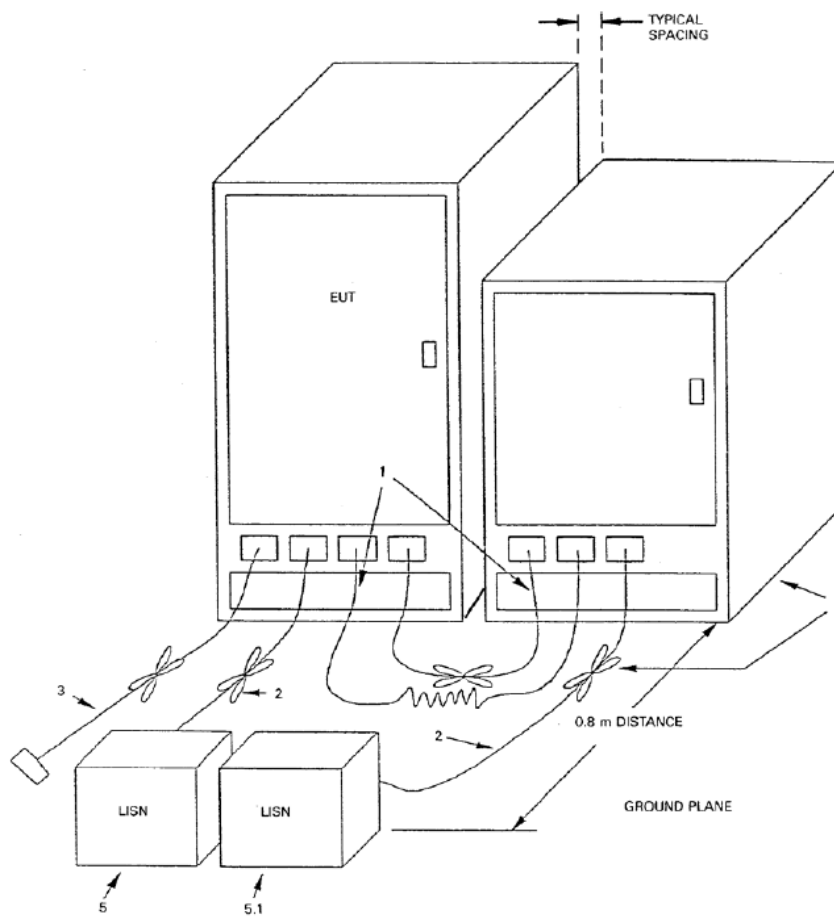
Frequency range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 ~ 56 *	56 ~ 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50
Note: 1. * Means the limit decreasing linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz 2. If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out.		

3.2 Test setup

 For table top equipment



☐ For floor standing equipment



3.3 Test Setup and Test Procedure

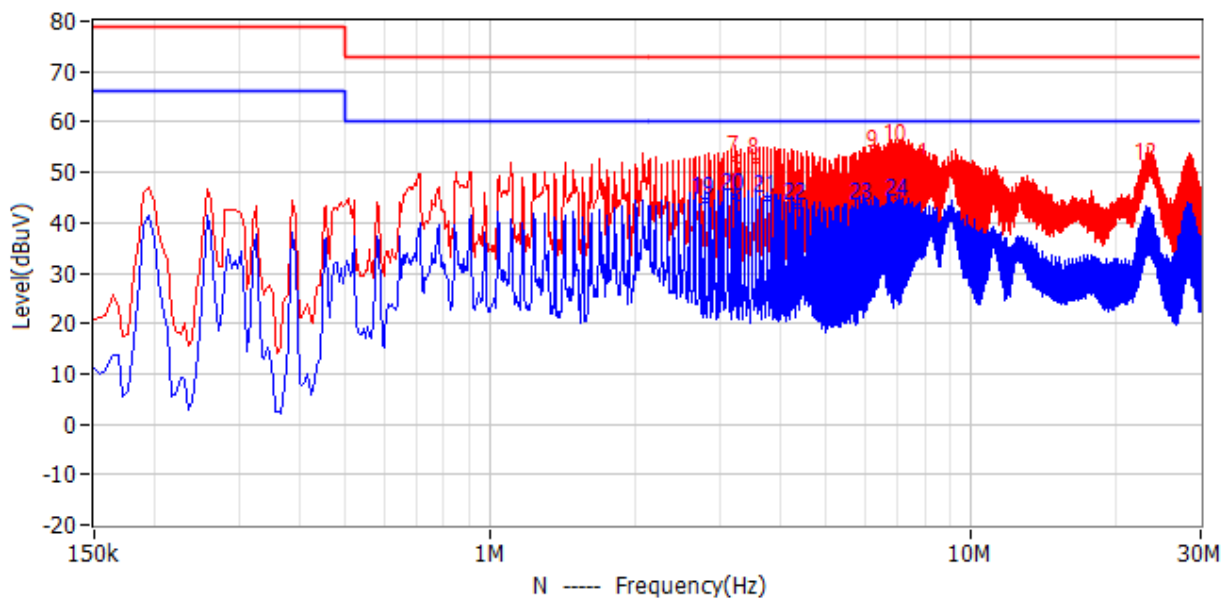
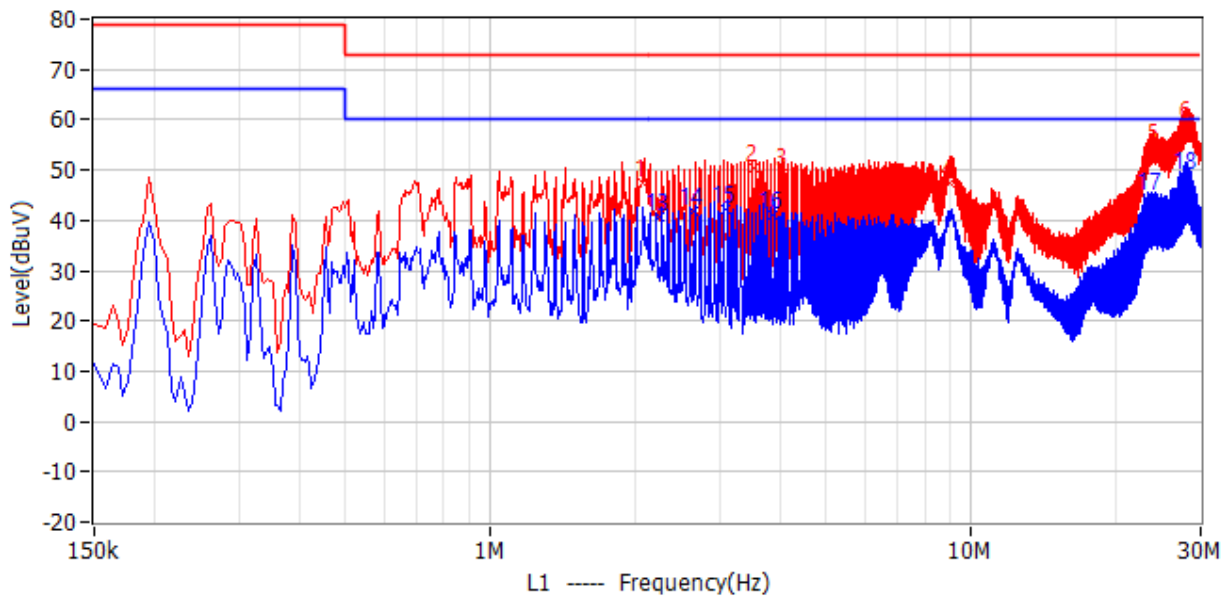
Measurement was performed in shielded room, and instruments used were following clause 4 and clause 5 of ANSI 63.4.

Detailed test procedure was following clause 7.3 of ANSI 63.4.

EUT arrangement and operation conditions were according to clause 6 and clause 7 of ANSI 63.4.

Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

3.4 Test Protocol



No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
1	2.067MHz	73.00	47.53	-25.47	37.13	10.40	QP	L1
2	3.548MHz	73.00	50.36	-22.64	39.86	10.50	QP	L1
3	4.065MHz	73.00	49.69	-23.31	39.09	10.60	QP	L1
4	9.047MHz	73.00	47.33	-25.67	36.53	10.80	QP	L1
5	24.131MHz	73.00	54.65	-18.35	42.95	11.70	QP	L1
6	28.073MHz	73.00	59.14	-13.86	47.14	12.00	QP	L1
7	3.233MHz	73.00	52.82	-20.18	42.22	10.60	QP	N
8	3.557MHz	73.00	52.25	-20.75	41.65	10.60	QP	N

No.	Frequency	Limit dBuV	Level dBuV	Delta dB	Reading dBuV	Factor dB	Detector	Phase
9	6.270MHz	73.00	53.85	-19.15	43.15	10.70	QP	N
10	7.044MHz	73.00	54.95	-18.05	44.25	10.70	QP	N
11	7.818MHz	73.00	51.31	-21.69	40.61	10.70	QP	N
12	23.321MHz	73.00	51.24	-21.76	39.64	11.60	QP	N
13	2.256MHz	60.00	40.77	-19.23	30.37	10.40	CAV	L1
14	2.643MHz	60.00	41.81	-18.19	31.31	10.50	CAV	L1
15	3.098MHz	60.00	42.30	-17.70	31.80	10.50	CAV	L1
16	3.872MHz	60.00	41.21	-18.79	30.61	10.60	CAV	L1
17	23.685MHz	60.00	44.77	-15.23	33.07	11.70	CAV	L1
18	28.082MHz	60.00	48.89	-11.11	36.89	12.00	CAV	L1
19	2.783MHz	60.00	44.40	-15.60	33.90	10.50	CAV	N
20	3.233MHz	60.00	45.26	-14.74	34.66	10.60	CAV	N
21	3.750MHz	60.00	44.94	-15.06	34.34	10.60	CAV	N
22	4.331MHz	60.00	43.20	-16.80	32.60	10.60	CAV	N
23	5.946MHz	60.00	43.38	-16.62	32.68	10.70	CAV	N
24	7.049MHz	60.00	44.04	-15.96	33.34	10.70	CAV	N

Remark: 1. Factor = ISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.

2. Level = Reading + Factor

3. Delta = Level - Limit

4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming LISN Factor = 10.00dB, Cable Loss = 2.00dB

Original Receiver Reading = 10.00dBuV, Limit = 66.00dBuV.

Then Factor = 10.00 + 2.00 = 12.00dB;

Level = 10dBuV + 12.00dB = 22.00dBuV;

Delta = 22.00dBuV – 66.00dBuV = -44.00dB.

4 Radiated emission

Test result: Pass

4.1 Radiated emission limits

4.1.1 Limits for radiated emission of class A device

For FCC

Frequency (MHz)	Permitted limit in dB μ V/m (Quasi-peak) of Measurement Distance 10m
30 ~ 88	39
88 ~ 216	43.5
216 ~ 960	46.4
960 ~ 1000	49.5
Above 1000	69.5(Peak)/49.5(Average)
Note: for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.	

For ICES

Frequency (MHz)	Permitted limit in dB μ V/m (Quasi-peak) of Measurement Distance 3m
30 ~ 88	50.0
88 ~ 216	54.0
216 ~ 230	56.9
230 ~ 960	57.0
960 ~ 1000	60.0
Above 1000	80.0(Peak)/60.0(Average)
Note: The more stringent limit applies at transition frequencies.	

4.1.2 Limits for radiated emission of class B device

For FCC

Frequency (MHz)	Permitted limit in dB μ V/m (Quasi-peak) of Measurement Distance 3m
30 ~ 88	40.0
88 ~ 216	43.5
216 ~ 960	46.0
960 ~ 1000	54.0
Above 1000	74.0(Peak)/54.0(Average)
Note: for the measurement distance other than 3m and 10m, the limit is varied according to 20dB/10 decades.	

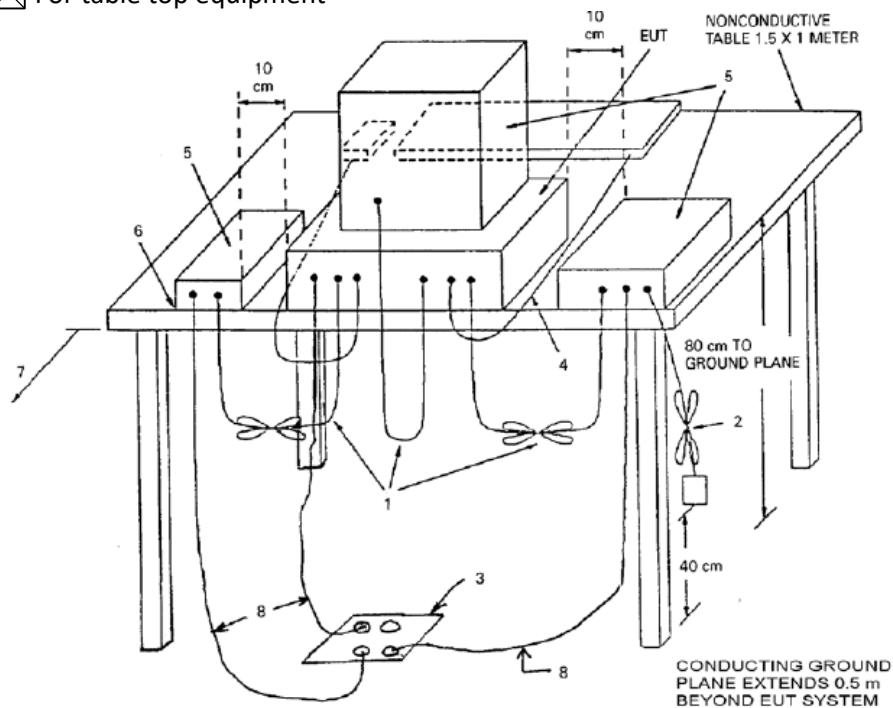
For ICES

Frequency (MHz)	Permitted limit in dB μ V/m (Quasi-peak) of Measurement Distance 3m
30 ~ 88	40.0
88 ~ 216	43.5
216 ~ 230	46.0
230 ~ 960	47.0
960 ~ 1000	54.0
Above 1000	74.0(Peak)/54.0(Average)

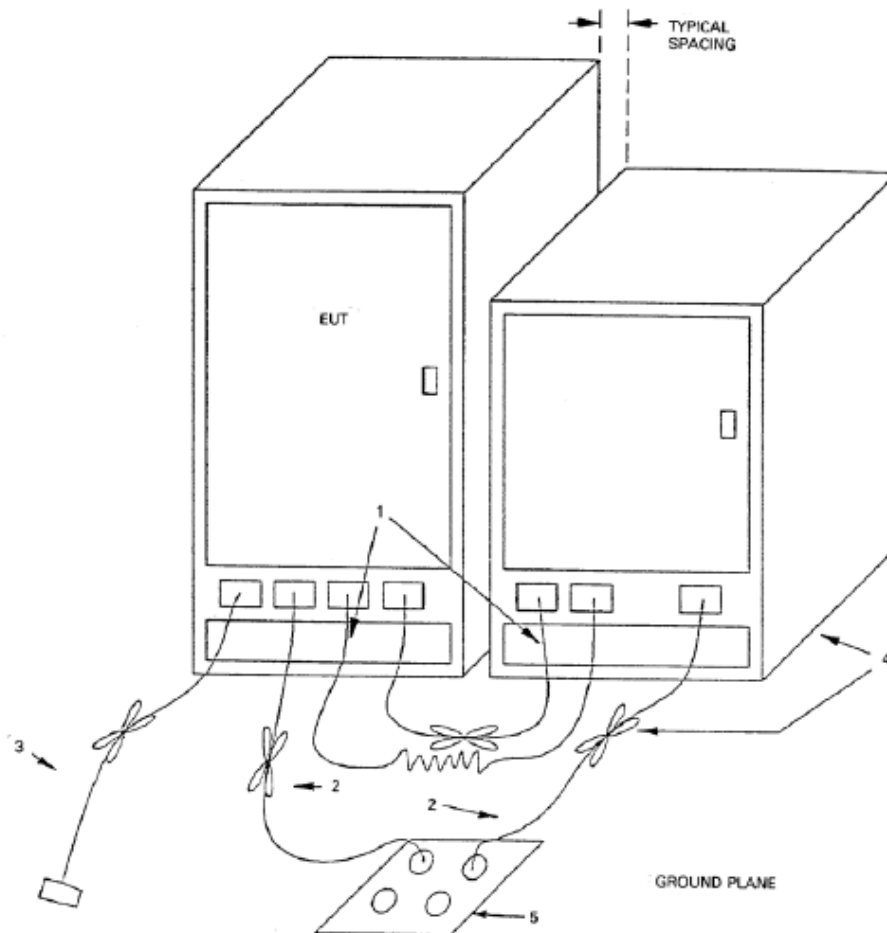
Note: The more stringent limit applies at transition frequencies.

4.2 Block diagram and test set up

☒ For table top equipment



☐ For floor standing equipment



4.3 Test Setup and Test Procedure

The measurement was performed in a semi-anechoic chamber.

The distance from EUT to receiving antenna is 3 meters.

Measurement was performed according to clause 4 and clause 5 of ANSI 63.4.

Test procedure was according to clause 8.3 of ANSI 63.4.

EUT arrangement and operate condition were according to clause 6 and clause 8 of ANSI 63.4.

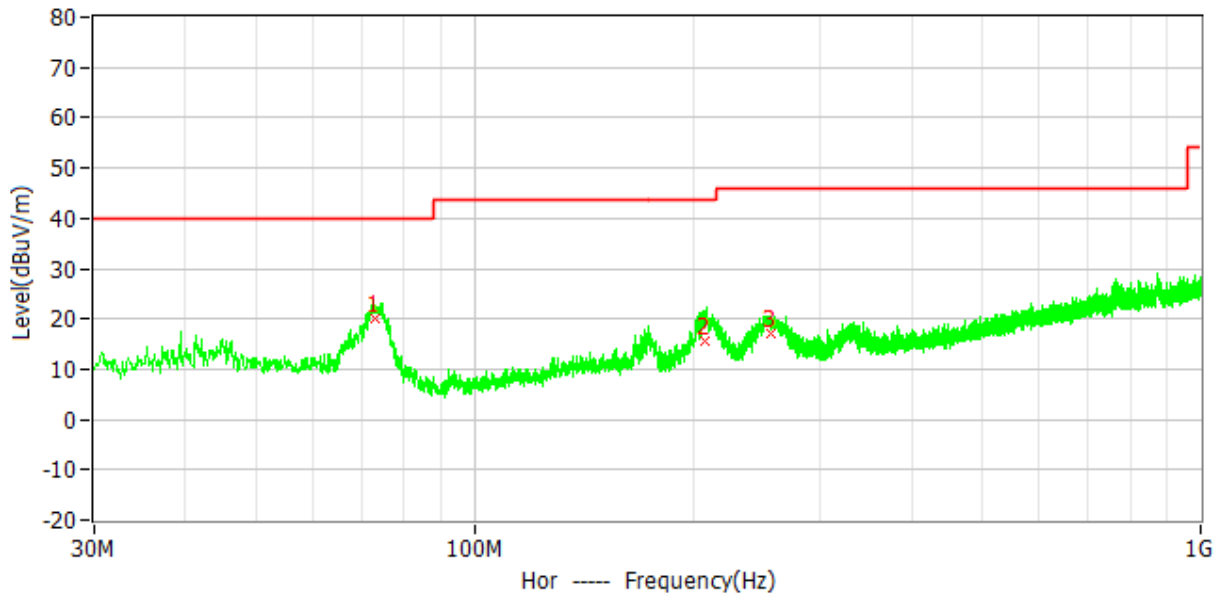
The bandwidth setting on R&S Test Receiver was 120 kHz.

The required measurement frequency range was checked.

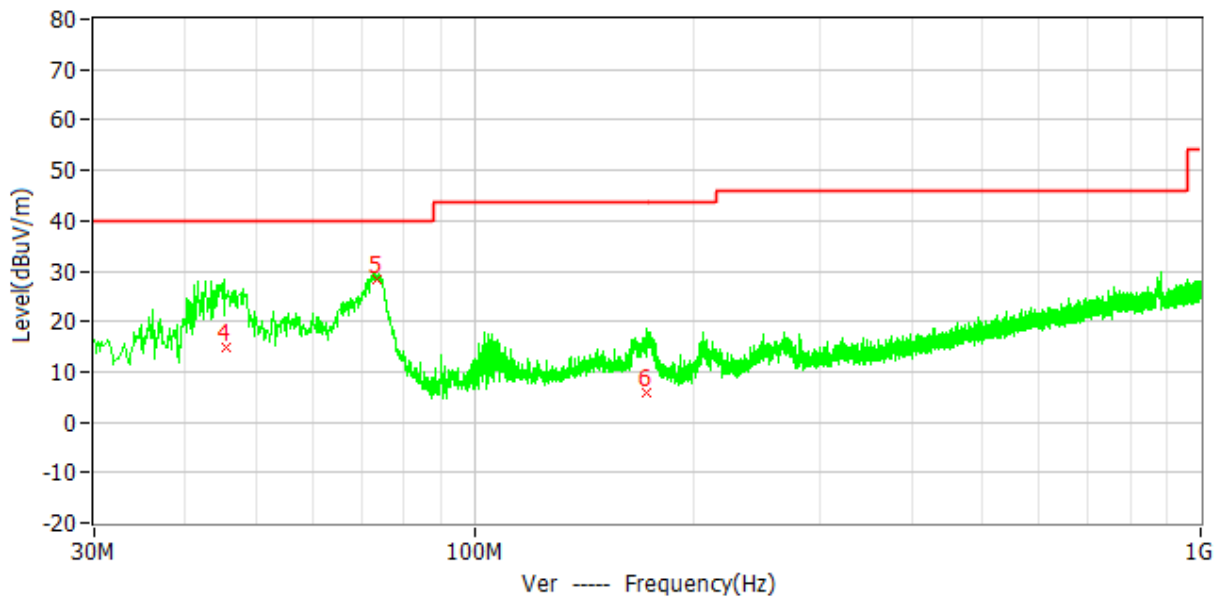
4.4 Test Protocol

Charging mode:

Horizontal

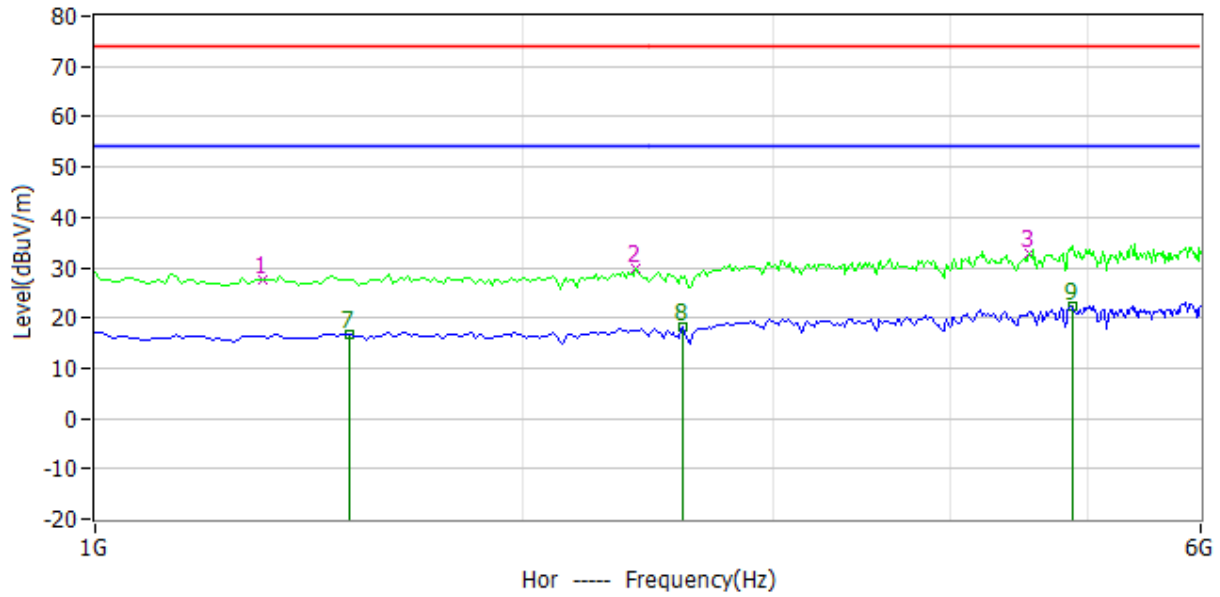


Vertical

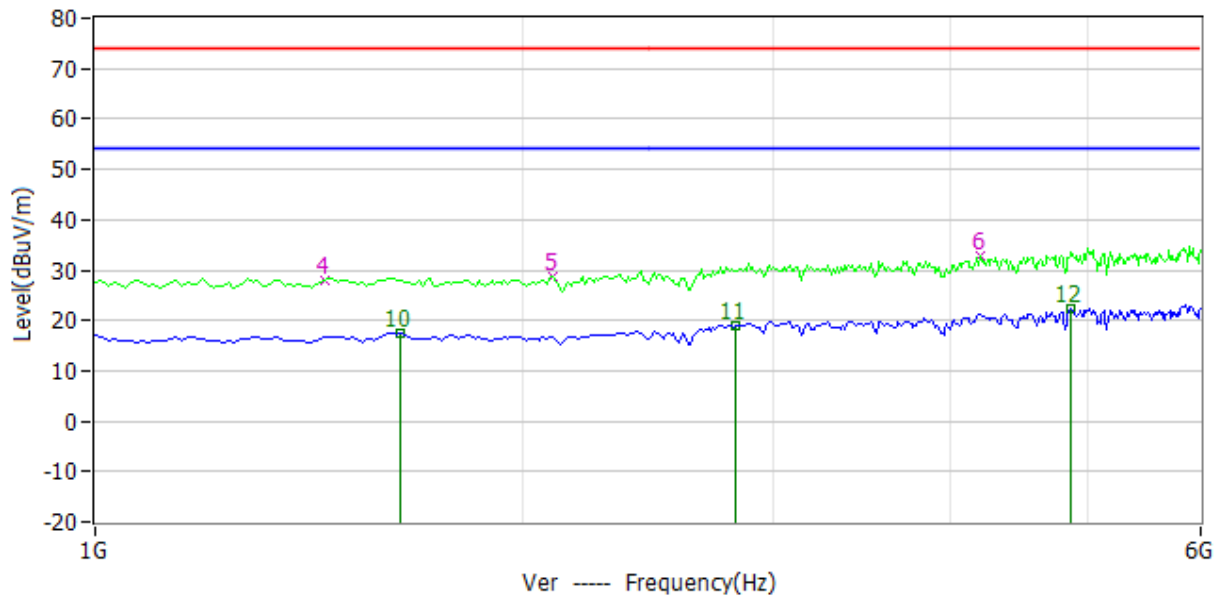


No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	72.993MHz	40.0	20.2	-19.8	8.3	11.9	QP	Hor
2	207.504MHz	43.5	15.6	-27.9	3.8	11.8	QP	Hor
3	256.867MHz	46.0	16.9	-29.1	3.0	13.9	QP	Hor
4	45.446MHz	40.0	14.9	-25.1	0.6	14.3	QP	Ver
5	73.498MHz	40.0	28.5	-11.5	16.8	11.7	QP	Ver
6	172.687MHz	43.5	5.9	-37.6	-7.8	13.7	QP	Ver

Horizontal



Vertical

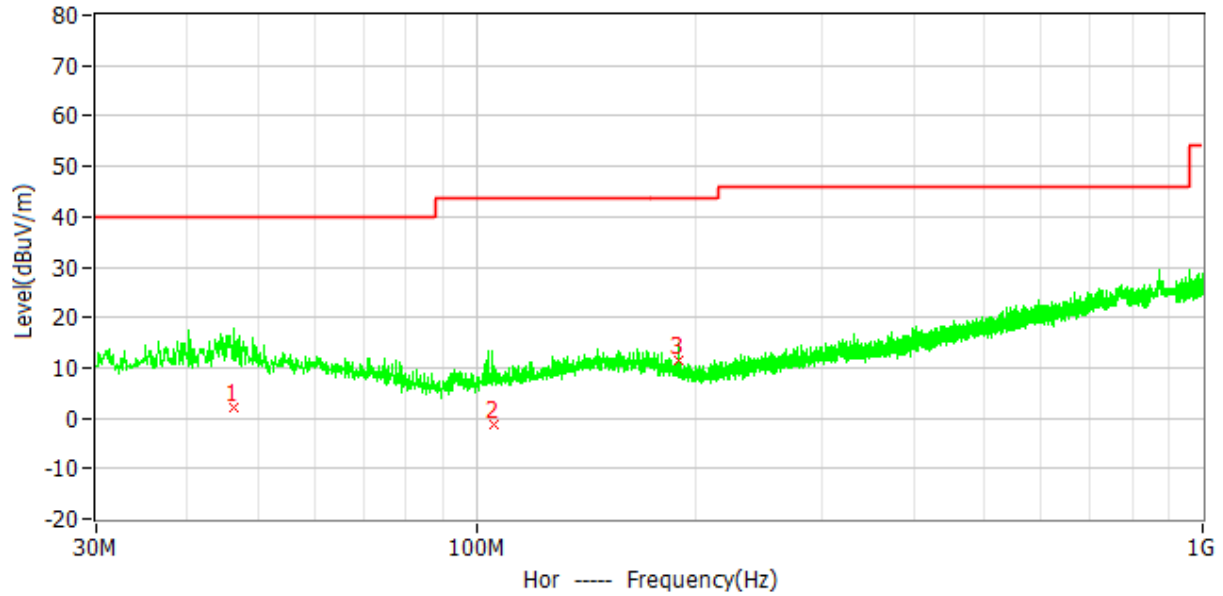


No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	1.311GHz	74.00	27.71	-46.29	51.73	-24.02	PK	Hor
2	2.403GHz	74.00	29.74	-44.26	50.90	-21.16	PK	Hor
3	4.547GHz	74.00	32.69	-41.31	47.72	-15.03	PK	Hor
4	1.451GHz	74.00	27.87	-46.13	51.78	-23.91	PK	Ver
5	2.102GHz	74.00	28.75	-45.25	51.07	-22.32	PK	Ver
6	4.196GHz	74.00	32.70	-41.30	48.66	-15.96	PK	Ver
7	1.511GHz	54.00	16.78	-37.22	40.65	-23.87	AV	Hor
8	2.593GHz	54.00	18.21	-35.79	38.52	-20.31	AV	Hor
9	4.868GHz	54.00	22.34	-31.66	36.08	-13.74	AV	Hor

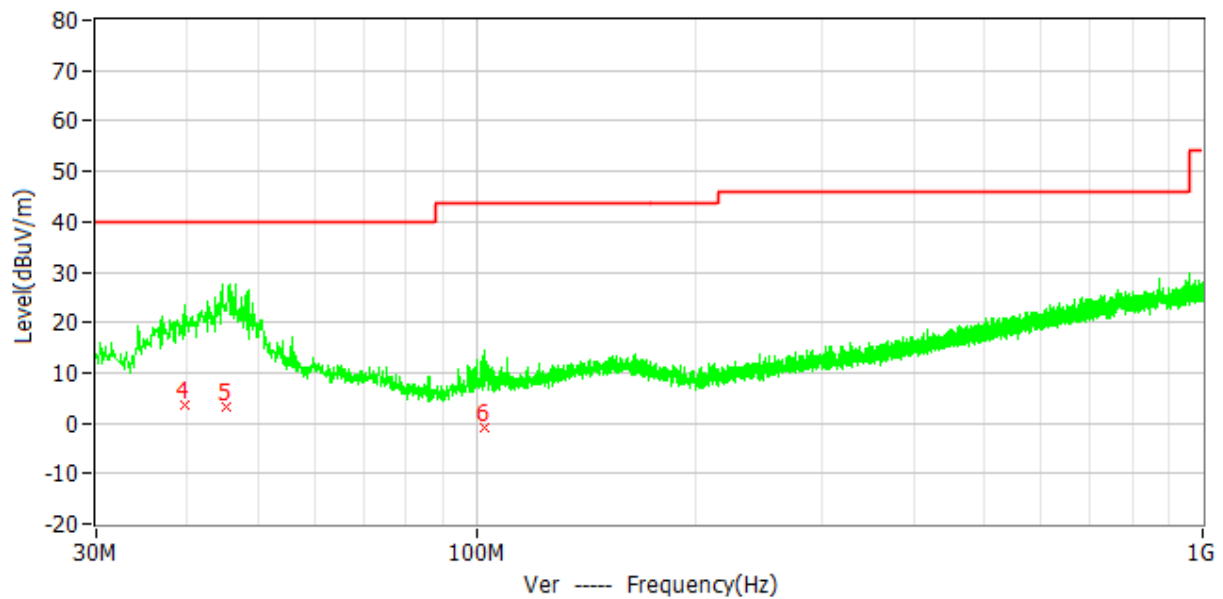
No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
10	1.641GHz	54.00	17.41	-36.59	40.96	-23.55	AV	Ver
11	2.824GHz	54.00	19.01	-34.99	38.20	-19.19	AV	Ver
12	4.858GHz	54.00	22.40	-31.60	36.18	-13.78	AV	Ver

Working mode:

Horizontal

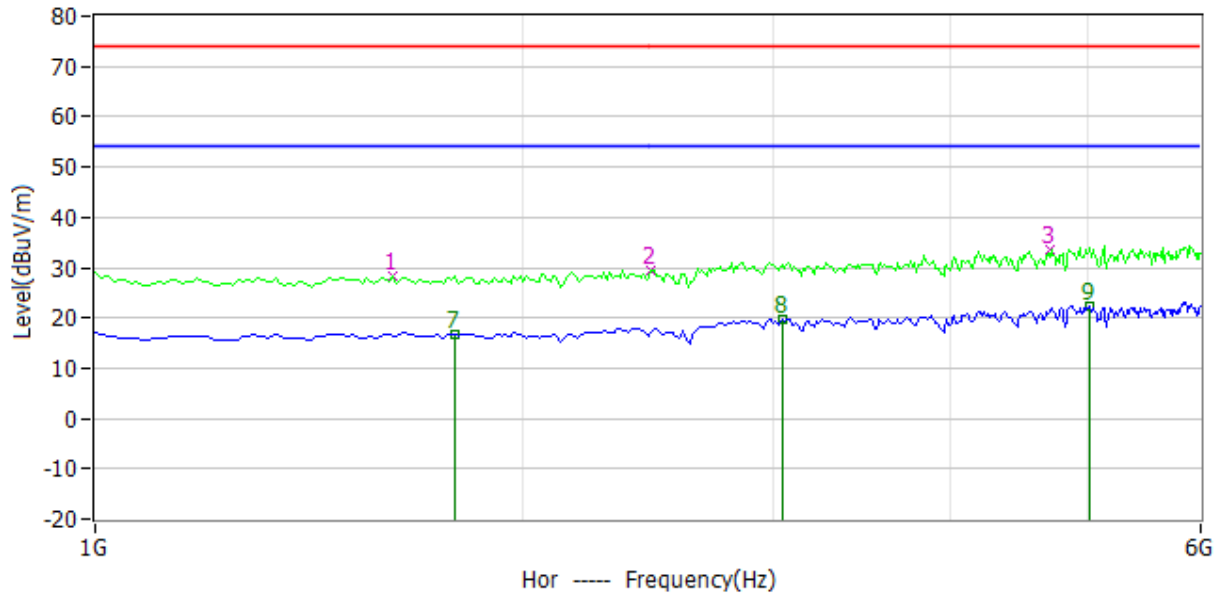


Vertical

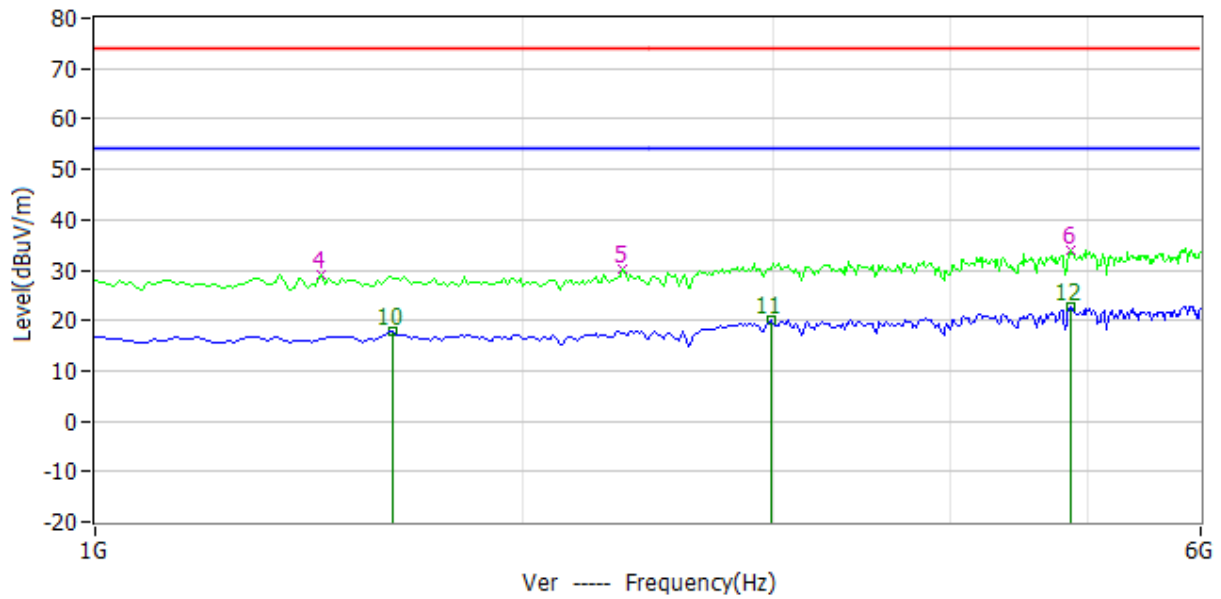


No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	46.503MHz	40.0	2.1	-37.9	-12.3	14.4	QP	Hor
2	105.632MHz	43.5	-1.2	-44.7	-11.8	10.6	QP	Hor
3	189.988MHz	43.5	11.6	-31.9	-0.7	12.3	QP	Hor
4	39.837MHz	40.0	3.6	-36.4	-10.4	14.0	QP	Ver
5	45.280MHz	40.0	3.2	-36.8	-11.1	14.3	QP	Ver
6	102.726MHz	43.5	-1.0	-44.5	-11.3	10.3	QP	Ver

Horizontal



Vertical



No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
1	1.621GHz	74.00	28.21	-45.79	51.79	-23.58	PK	Hor
2	2.463GHz	74.00	29.49	-44.51	50.40	-20.91	PK	Hor
3	4.707GHz	74.00	33.68	-40.32	48.09	-14.41	PK	Hor
4	1.441GHz	74.00	28.97	-45.03	52.86	-23.89	PK	Ver
5	2.353GHz	74.00	30.30	-43.70	51.67	-21.37	PK	Ver
6	4.858GHz	74.00	33.95	-40.05	47.73	-13.78	PK	Ver
7	1.792GHz	54.00	16.85	-37.15	40.01	-23.16	AV	Hor
8	3.044GHz	54.00	19.62	-34.38	37.98	-18.36	AV	Hor
9	5.018GHz	54.00	22.49	-31.51	35.80	-13.31	AV	Hor

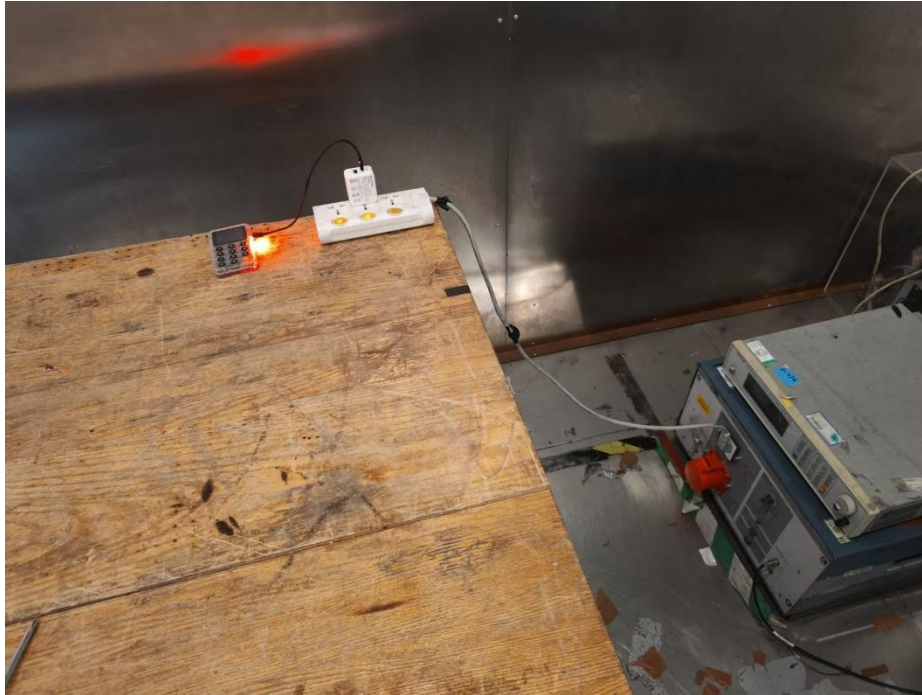
No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar
10	1.621GHz	54.00	17.70	-36.30	41.28	-23.58	AV	Ver
11	2.994GHz	54.00	19.96	-34.04	38.40	-18.44	AV	Ver
12	4.858GHz	54.00	22.58	-31.42	36.36	-13.78	AV	Ver

- Remark: 1. Factor = Antenna Factor + Cable Loss (+ Amplifier, for higher than 1GHz)
 2. Level = Original Receiver Reading + Factor
 3. Delta = Level - Limit
 4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,
 Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV, limit = 40.00dBuV/m.
 Then Factor = 30.20 + 2.00 – 32.00 = 0.20dB/m; Level = 10.00dBuV + 0.20dB/m =
 10.20dBuV/m; Delta = 10.20dBuV/m - 40.00dBuV/m = -29.80dB.

Appendix I: Photograph of Test setup

Conducted Emission

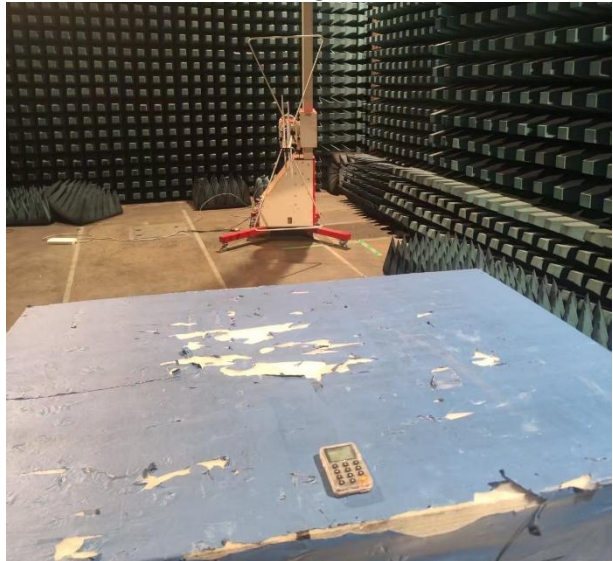


Radiated Emission

Charging mode



Working mode



Charging mode

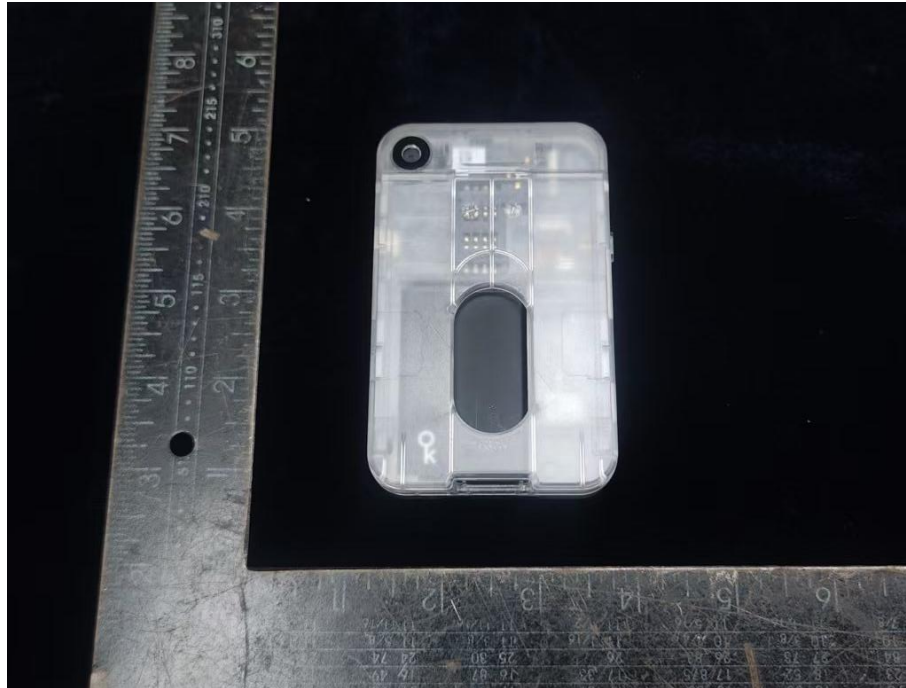


Working mode



Appendix II: Photograph of equipment under test





END of the report