FCC 47 CFR PART 15 SUBPART C
ISED RSS-210 ISSUE 10

CERTIFICATION TEST REPORT

For

Cabinet lock

MODEL NUMBER: D6PN-00-0P, D6PN-00-0B, D6PN-10-0P, D6PN-10-0B

REPORT NUMBER: E01A23110826F00201

ISSUE DATE: May 21, 2024

FCC ID: 2ABVZ-D6PN

IC: 11790A-D6PN

Prepared for

Security People, Inc. dba Digilock

9 Willowbrook Ct., Petaluma, California 94954, United States

Prepared by

Guangdong GTG Testing Technology Co., Ltd.

1-2/F., Building A, and 1/F., Building B, No. 11, Zongbu 2nd Road, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	May 21, 2024	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	99 % Emission Bandwidth and 20 dB Bandwidth	CFR 47 FCC §15.215 (c) RSS-Gen Clause 6.7	PASS
2	Transmitter Frequency Stability (Temperature & Voltage Variation)	CFR 47 FCC §15.225(e) ISED RSS-Gen Clause 6.11 ISED RSS-210 Annex B.6	PASS
3	Fundamental Field Strength	CFR 47 FCC §5.225(a)(b)(c)(d) ISED RSS-Gen Clause 6.12 ISED RSS-210 Annex B.6	PASS
4	Radiated Emissions	CFR 47 FCC§15.209(a) CFR 47 FCC§15.225(d) ISED RSS-Gen Clause 6.13 ISED RSS-210 Annex B.6	PASS
5	Band Edge Radiated Emissions	CFR 47 FCC §15.209(a) CFR 47 FCC §15.225(c)(d) ISED RSS-Gen Clause 6.13 ISED RSS-210 Annex B.6	PASS
6	Conducted Emission Test for AC Power Port	CFR 47 FCC §15.207 ISED RSS-Gen Clause 8.8	PASS
7	Antenna Requirement	CFR 47 FCC §15.203 ISED RSS-Gen Clause 6.8	Pass
Note 1: This test report is only published to and used by the applicant, and it is not for evidence purpose in China. Note 2: The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C, ISED RSS-210 ISSUE 10 and ISED RSS-GEN Issue 5 > when <Accuracy Method> decision rule is applied.			

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Security People, Inc. dba Digilock
Address:	9 Willowbrook Ct., Petaluma, California 94954, United States

Manufacturer Information

Company Name:	Security People, Inc. dba Digilock
Address:	9 Willowbrook Ct., Petaluma, California 94954, United States

EUT Information

EUT Name:	Cabinet lock
Model:	D6PN-10-0B, D6PN-00-0P
Series Model:	D6PN-00-0B, D6PN-10-0P
Brand:	Digilock
Sample Received Date:	January 29, 2024
Sample Status:	Normal
Sample ID:	A23110826 003
Date of Tested:	May 6, 2024 to May 10, 2024
Hardware version:	V1.0
Software version:	V1.0

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	PASS
ISED RSS-210 ISSUE 10	PASS
ISED RSS-GEN Issue 5	PASS

Prepared By:

Rock Ning

Project Engineer

Checked By:

Dyson Dai

Laboratory Leader

Approved By:

Tiger Xu

Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 414788 D01 Radiated Test Site v01r01, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, ISED RSS-210 ISSUE 10 and RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Test Location	Guangdong GTG Testing Technology Co., Ltd. 1-2/F., Building A, and 1/F., Building B, No. 11, Zongbu 2nd Road, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China
Accreditation Certificate	A2LA (Certificate No.: 4422.01) Guangdong GTG Testing Technology Co., Ltd. has been assessed and proved to be in compliance with A2LA. FCC (FCC Designation No.: CN1230) Guangdong GTG Testing Technology Co., Ltd. has been recognized to perform compliance testing on equipment subject to Supplier's Declaration of Conformity (SDoC) and Certification rules ISED (Company No.: 22768) Guangdong GTG Testing Technology Co., Ltd. has been registered and fully described in a report filed with ISED. The Company Number is 22768 and the test lab Conformity Assessment Body Identifier (CABID) is CN0079.

Note: All tests measurement facilities use to collect the measurement data except Radiated Immunity & Conducted Immunity are located at 1-2/F., Building A, and 1/F., Building B, No. 11, Zongbu 2nd Road, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognize national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Items	k	Uncertainty
DTS Bandwidth	1.96	±9.2 PPM
20dB Emission Bandwidth	1.96	±9.2 PPM
Carrier Frequency Separation	1.96	±9.2 PPM
Time of Occupancy	1.96	±0.57%
Conducted Output Power	1.96	±1.5 dB
Power Spectral Density Level	1.96	±1.9 dB
Conducted Spurious Emission	1.96	9 kHz-30 MHz: ± 0.95 dB 30 MHz-1 GHz: ± 1.5 dB 1GHz-12.75GHz: ± 1.8 dB 12.75 GHz-26.5 GHz: ± 2.1dB
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.		

Test Item	Measurement Frequency Range	K	U(dB)
Conducted emissions from the AC mains power ports (AMN)	150 kHz ~ 30 MHz	2	3.36
Radiated emissions	9 kHz ~ 30 MHz	2	4.59
Radiated emissions	30 MHz ~ 1 GHz	2	4.26
Radiated emissions	1 GHz ~ 18 GHz	2	5.69
Radiated emissions	18 GHz ~ 40 GHz	2	5.54
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Cabinet lock	
Model	D6PN-10-0B, D6PN-00-0P	
Series Model	D6PN-00-0B, D6PN-10-0P	
Model Difference	D6PN-00-0P, D6PN-00-0B: Common RFID D6PN-10-0B, D6PN-10-0P: Common RFID+HID SE protocol chip (The full test were performed on the model D6PN-10-0B, with additional differential tests added on model D6PN-00-0P)	
Product Description	Operation Frequency	13.56 MHz
Ratings	DC 12V	
Power Supply	AC	/
	DC	12V

5.2. MAXIMUM FIELD STRENGTH

Frequency (MHz)	Max Peak field strength (dBμV/m)
13.56	57.45

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
13.56	Coil Antenna	0

Note: The value of the antenna gain was declared by customer.

5.4. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	55 ~ 65 %	
Atmospheric Pressure:	1025 Pa	
Temperature	TN	23 ~ 28 °C
Voltage:	VL	N/A
	VN	DC 12V
	VH	N/A

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperature

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name
1	Laptop	Lenovo	T14
2	Test Card	N/A	N/A

ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	Power Supply	/	GST220A12-C6P	Input: 100-240Vac 50/60Hz Output: 12Vdc 15A, 180W Max
2	Pivot Distribution Module	/	PB-D6PN-X-0X	Input: 12Vdc Output: 4 x RJ45: Carries 12V power and RX andTX communication 2 x RJ45: For data use only

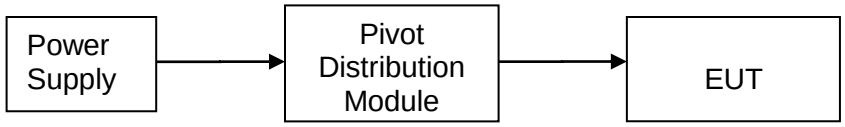
TEST SETUP

The EUT can continue work normally when a card touched.

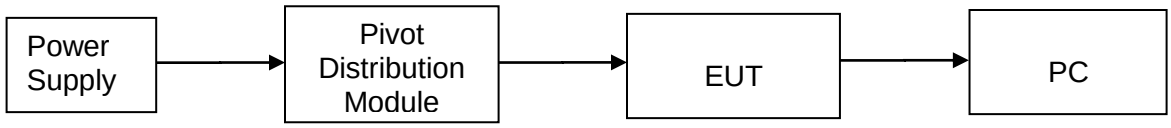
SETUP DIAGRAM FOR TESTS

AC conducted emission :

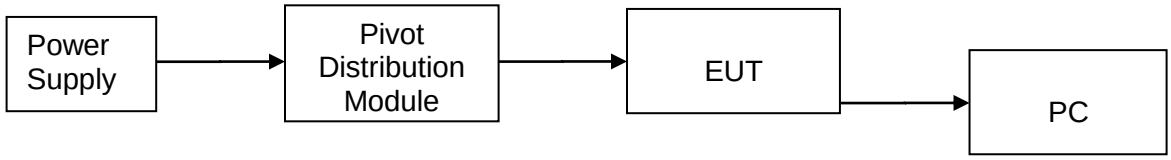
AC conducted emission :



Radiated Emission:



RF conducted:



5.6. MEASURING INSTRUMENT AND SOFTWARE USED

Test Equipment of RF Conducted					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Spectrum Analyzer	Rohde & Schwarz	FSV40N	102257	2023-09-18	2024-09-18
WIDEBAND RADIO COMMUNICATION	Rohde & Schwarz	CMW500	157423	2023-12-13	2024-12-13
MXG Vector Signal Generator	KEYSIGHT	N5182B	MY61250185	2023-12-13	2024-12-13
EXG Analog Signal Generator	KEYSIGHT	N5173B	My61252603	2024-05-08	2025-05-08
RF Power detector box	MWRF-test	MW100-PSB	MW220912	2023-12-13	2024-12-13
Radio Frequency control box	MWRF-test	MW200-RFCB	MW220111	2023-12-13	2024-12-13
Radio Frequency control box	MWRF-test	MW200-RFCB 2#	/	2023-12-13	2024-12-13
RF Test Software	MWRF-test	MTS 8310(V.3.0)	N/A	N/A	N/A

Test Equipment of Radiated emissions below 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
EMI Test Receiver	Rohde & Schwarz	ESCI	100302	2024-05-08	2025-05-08
Pre-Amplifier	Anritsu	MH648A	M57886	2024-05-08	2025-05-08
Bilog Antenna	Schwarzbeck	VULB9163	VULB9163-1290	2021-11-11	2024-11-11
Test Software	Farad	EZ-EMC 1.1.4.2	N/A	N/A	N/A

Test Equipment of Radiated emissions above 1GHz					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
Spectrum Analyzer	Rohde & Schwarz	FSV40N	101413	2023-12-13	2024-12-13
Low noise Amplifiers	A-INFO	LA1018N4009	J1013130524001	2024-05-08	2025-05-08
Horn antenna	A-INFO	LB-10180-SF	J2031090612123	2024-05-08	2025-05-08
Pre-Amplifier	HzEMC	HPA-184057	HYPA21004	2024-05-08	2025-05-08
DRG Horn	ETS	3116C	00246265	2022-03-28	2025-03-28
Test Software	Farad	EZ-EMC 1.1.4.2	N/A	N/A	N/A

Test Equipment of Conducted emissions					
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Last Cal.**	**Due Date**
LISN	ROHDE&SCHWARZ	ENV216	101413	2023-09-18	2024-09-18
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101358	2024-05-08	2025-05-08
Test Software	Farad	EZ-EMC 1.1.4.2	N/A	N/A	N/A

6. ANTENNA PORT TEST RESULTS

6.1. 99 % BANDWIDTH AND 20 DB BANDWIDTH

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2		
Section	Test Item	Limit
ISED RSS-Gen Clause 6.7 Issue 5	99 % Occupied Bandwidth and 20 dB Bandwidth	For reporting purposes only.

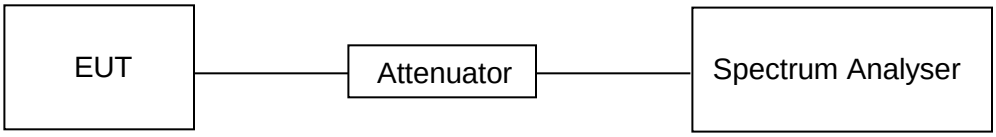
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	1 % to 5 % of the occupied bandwidth
VBW	approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 99 % relative to the maximum level measured in the fundamental emission.

TEST SETUP

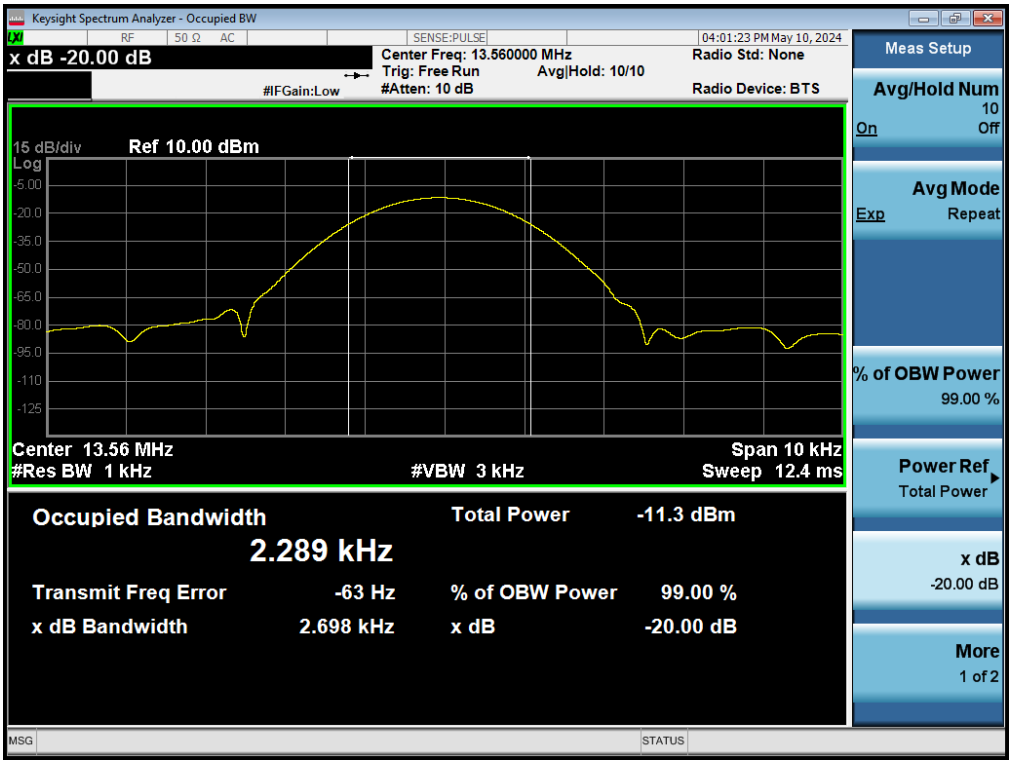


TEST ENVIRONMENT

Temperature	23.1 °C	Relative Humidity	56.0 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 12 V

RESULTS

Frequency (MHz)	99 % bandwidth (kHz)	20 dB bandwidth (kHz)
13.56	2.289	2.698



6.2. TRANSMITTER FREQUENCY STABILITY

LIMITS

CFR 47 FCC §15.225(e)

ISED RSS-210 Annex B.6

The frequency tolerance of the carrier signal shall be maintained within ±0.01 % of the operating frequency over a temperature variation of −20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85 % to 115 % of the rated supply voltage at a temperature of 20 degrees C.

TEST SETUP AND PROCEDURE

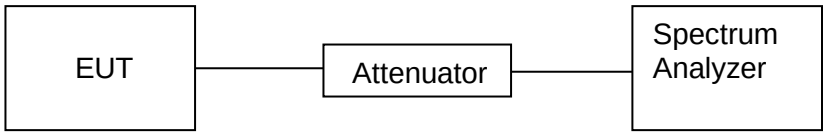
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	PEAK
RBW	10 kHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

Allow the trace to stabilize, find the peak value of the power envelope and record the frequency, then calculated the frequency drift.

The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

TEST SETUP



TEST ENVIRONMENT

Temperature	23.1 °C	Relative Humidity	56.0 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 12 V

TEST RESULTS

Maximum frequency error of the EUT with variations in ambient temperature

Temperature (°C)	Time after Start-			
	0 minutes	2 minutes	5 minutes	10 minutes
NT	13.5607 MHz	13.5608 MHz	13.5608 MHz	13.5608 MHz
LT	13.5608 MHz	13.5608 MHz	13.5607 MHz	13.5608 MHz
HT	13.5607MHz	13.5607 MHz	13.5606 MHz	13.5606 MHz

Maximum frequency error of the EUT with variations in nominal operating voltage at an ambient normal temperature

Supply Voltage (V)	Nominal Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Margin (%)	Result
10.2	13.56	13.5608	800	0.006	0.01	0.004	Pass
12	13.56	13.5606	600	0.004	0.01	0.006	Pass
13.8	13.56	13.5607	700	0.005	0.01	0.005	Pass

7. RADIATED EMISSION TEST RESULTS

LIMITS

Fundamental field strength

FCC Reference:	Part 15.225(a)(b)(c)(d) & 15.209(a)
ISED Canada Reference:	RSS-Gen 6.13 & RSS-210 B.6 & RSS-GEN Clause 8.9
Test Method Used:	ANSI C63.10 Sections 6.3, 6.4 and 6.5

Frequency (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measured Distance (Meters)
13.553-13.567	15848	84	30
13.410-13.553/13.567-13.710	334	50.47	30
13.110-13.410/13.710-14.010	106	40.51	30

Note(s):
1. The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

2. The limit is specified at a test distance of 30 meters. However, as specified by FCC Section 15.31 (f)(2) / RSS-Gen Section 6.4, measurements may be performed at a closer distance and the measured level corrected to the specified measurement distance by using the square of an inverse linear distance extrapolation factor (40dB/decade).

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz-1 GHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

Restricted bands of operation

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

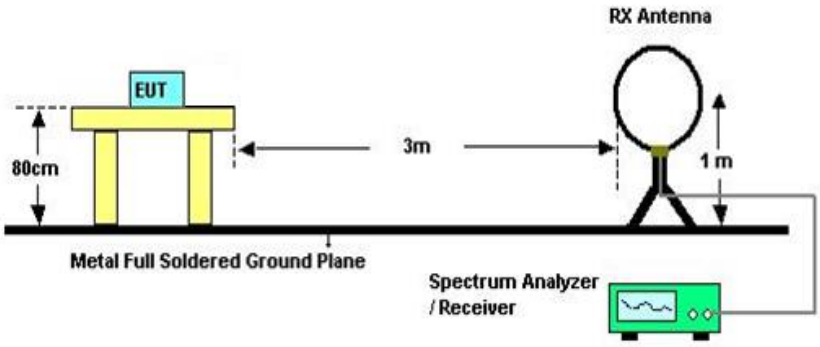
Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c
IC Restricted bands please refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands[Note 1]		
MHz	**MHz**	**GHz**
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm meter above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1m height antenna tower.

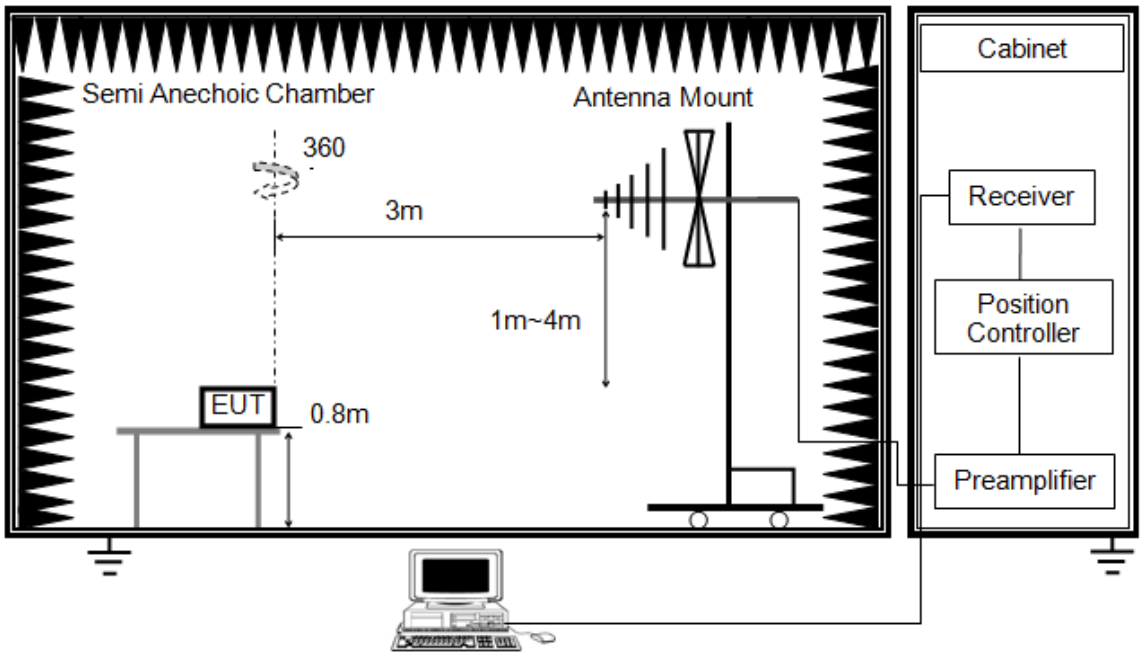
5. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

6. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

7. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

8. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open field site. Therefore, the sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1 GHz



The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

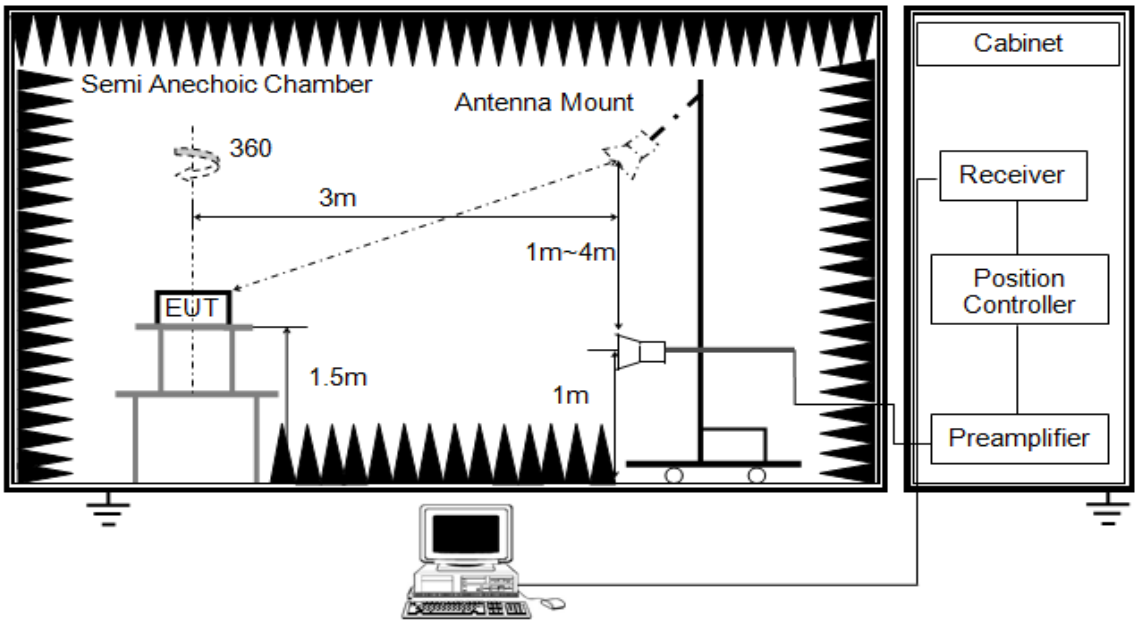
4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

6. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

7. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

Above 1 GHz



The setting of the spectrum analyser

RBW	1 MHz
VBW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter or band reject filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

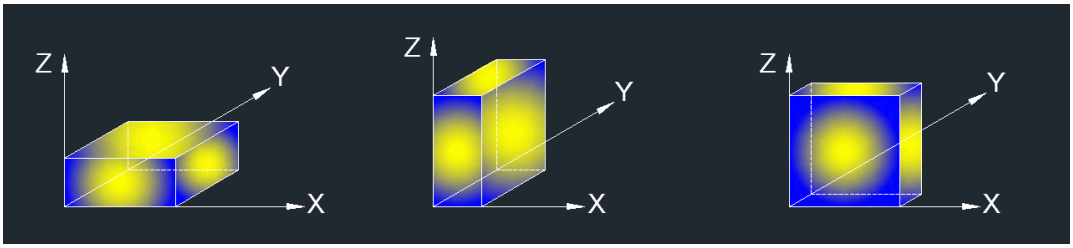
4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements. Where necessary, average emission are determined by applying the Duty Cycle Correction Factor to the peak measurements. For the Duty Cycle and Correction Factor please refer to clause 6.1. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis for horizontal and Y axis for vertical) data recorded in the report.

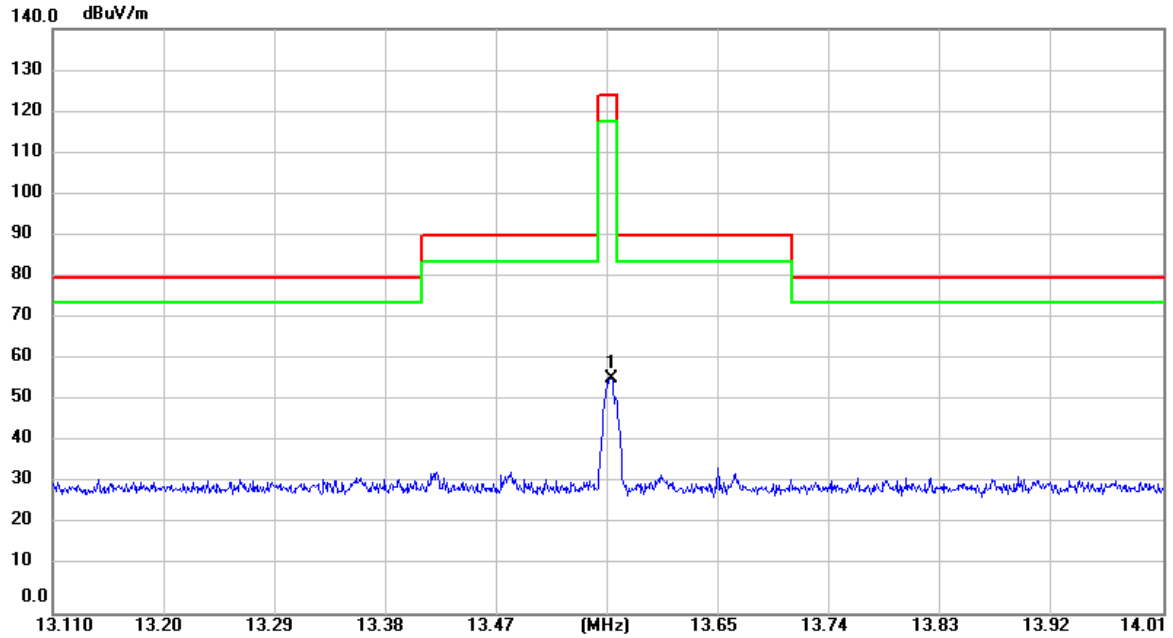
TEST ENVIRONMENT

Temperature	24.9 °C	Relative Humidity	55.8%
Atmosphere Pressure	101 kPa	Test Voltage	DC 12V

RESULTS

7.1. FIELD STRENGTH OF INTENTIONAL EMISSIONS

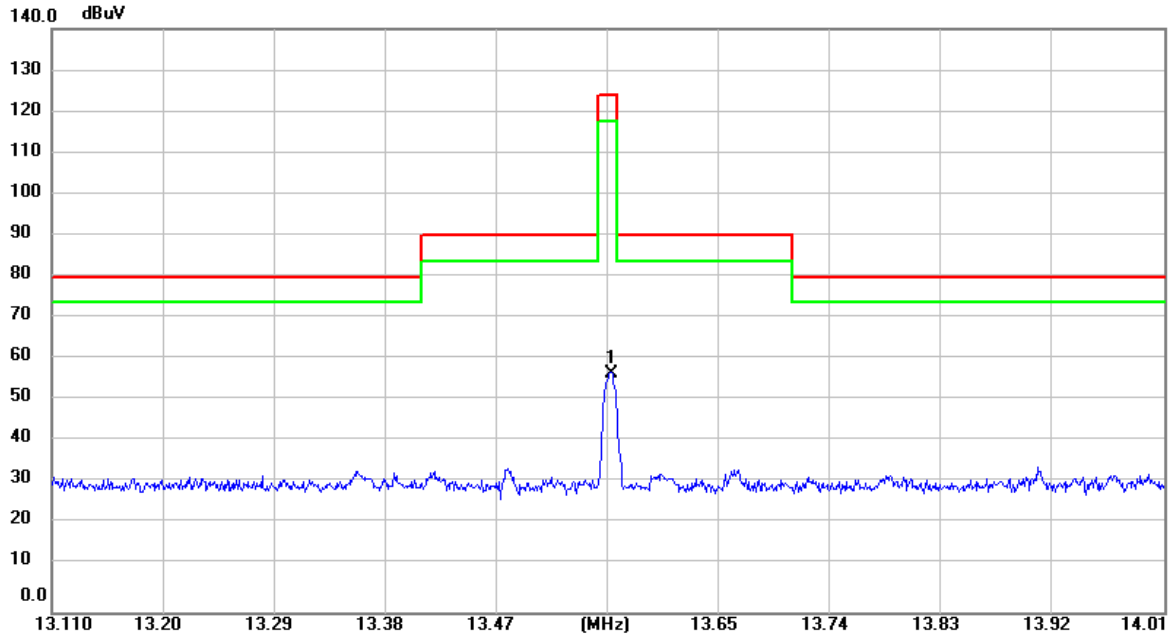
FIELD STRENGTH OF INTENTIONAL EMISSIONS (HORIZONTAL)



No.	Frequency	Reading	Correct	Result 3m	Result 30m	Limit 3m	Limit 30m	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	13.5609	34.23	20.30	56.32	16.32	124.00	84.00	-67.68	peak

Note: 1. Result 3m= Reading+ Correct Factor
2. Result 30m= Result 3m-40

FIELD STRENGTH OF INTENTIONAL EMISSIONS (VERTICAL)

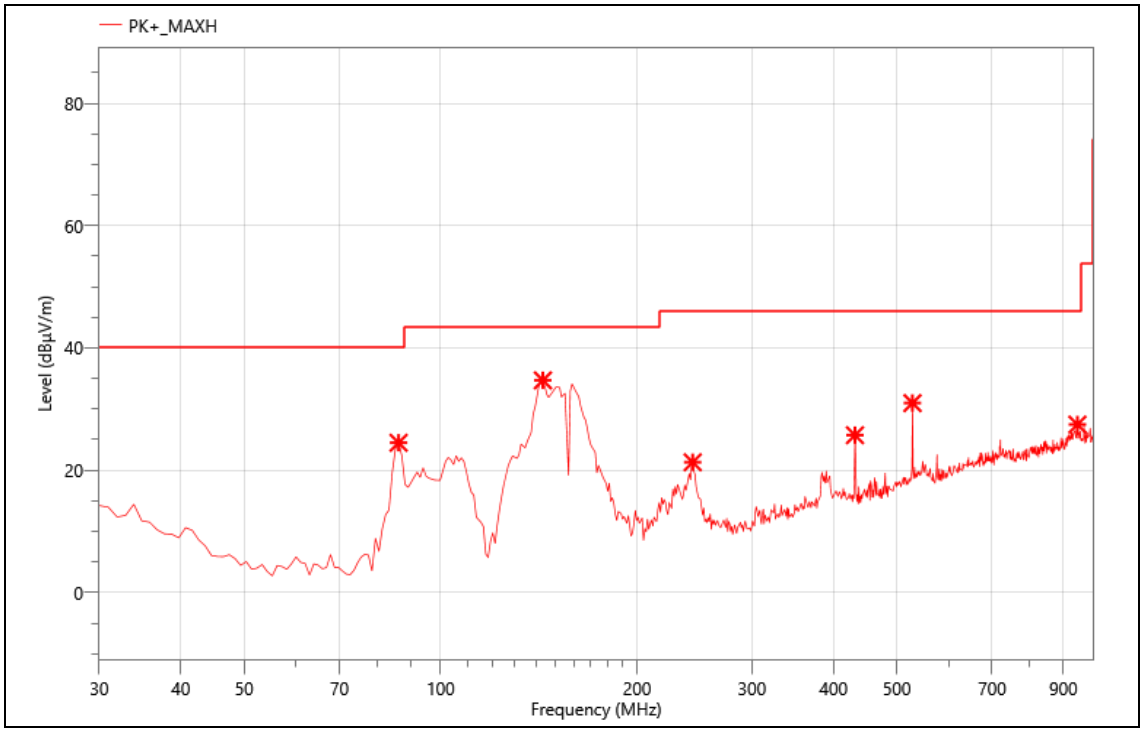


No.	Frequency	Reading	Correct	Result 3m	Result 30m	Limit 3m	Limit 30m	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	13.5636	30.96	20.30	57.45	17.45	124.00	84.00	-66.55	peak

Note: 1. Result 3m= Reading+ Correct Factor
2. Result 30m= Result 3m-40

7.2. SPURIOUS EMISSIONS BELOW 1 GHz AND ABOVE 30 MHz

EUT :	Cabinet lock
MN:	D6PN-10-0B
Mode:	13.56MHz
Power:	DC 12V
TE:	Vier
Date	2024/05/09
T/A/P	24.9℃/55.8%/101Kpa

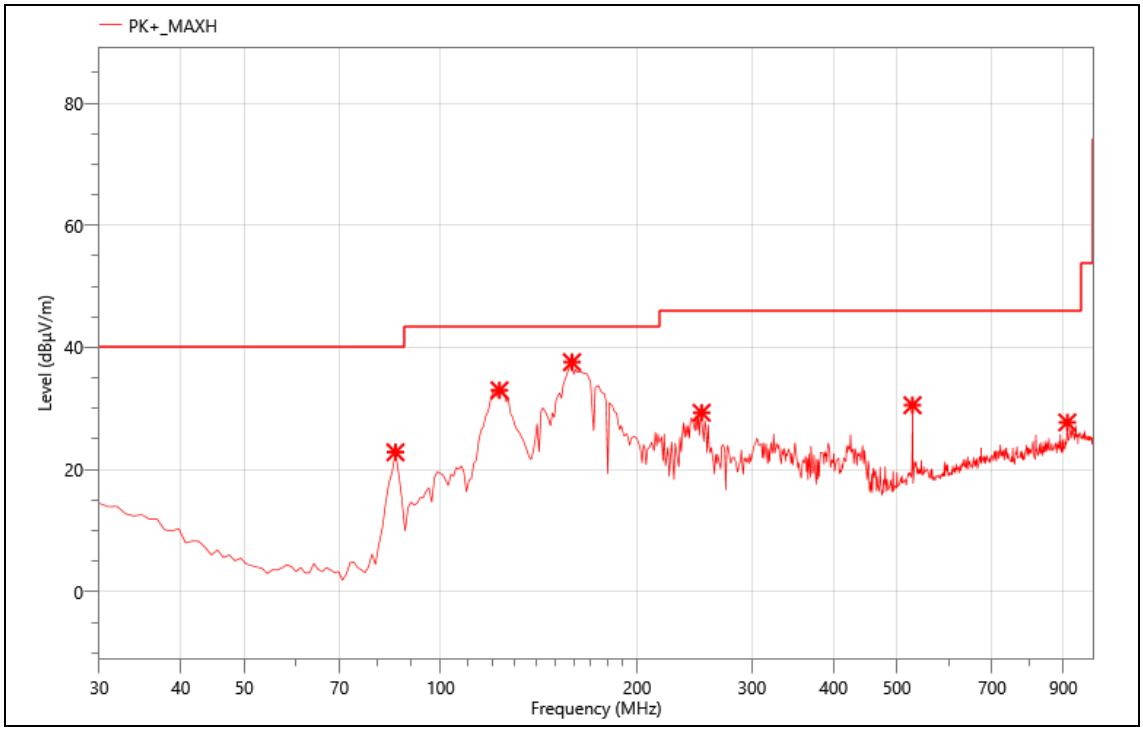


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	86.260	50.12	-25.63	24.49	40.00	15.51	PK+	V
2	143.490	58.22	-23.52	34.70	43.50	8.80	PK+	V
3	243.400	40.70	-19.4	21.30	46.00	24.70	PK+	V
4	431.580	39.89	-14.16	25.73	46.00	20.27	PK+	V
5	528.580	41.77	-10.79	30.98	46.00	15.02	PK+	V
6	945.680	30.80	-3.33	27.47	46.00	18.53	PK+	V

Note: [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

EUT :	Cabinet lock
MN:	D6PN-10-0B
Mode:	13.56MHz
Power:	DC 12V
TE:	Vier
Date	2024/05/09
T/A/P	24.9℃/55.8%/101Kpa

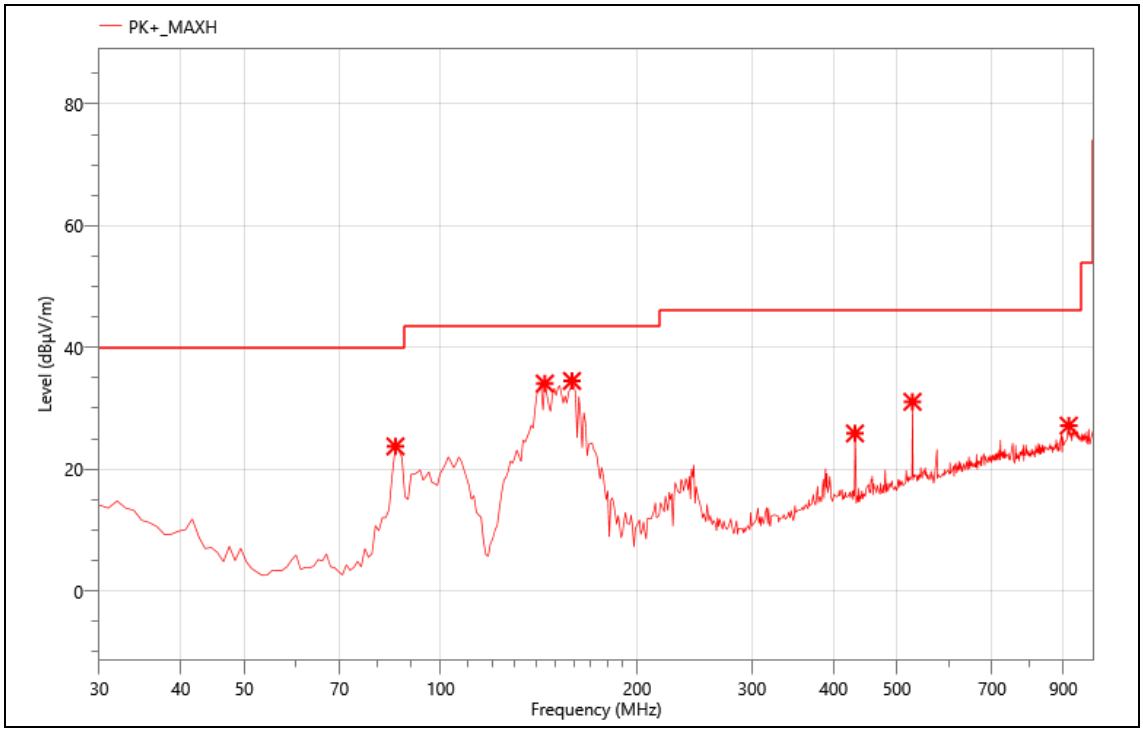


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	85.290	48.48	-25.65	22.83	40.00	17.17	PK+	H
2	123.120	57.70	-24.72	32.98	43.50	10.52	PK+	H
3	159.010	59.23	-21.64	37.59	43.50	5.91	PK+	H
4	251.160	48.32	-19.01	29.31	46.00	16.69	PK+	H
5	528.580	41.33	-10.79	30.54	46.00	15.46	PK+	H
6	912.700	31.89	-4.17	27.72	46.00	18.28	PK+	H

Note: [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

EUT :	Cabinet lock
MN:	D6PN-00-0P
Mode:	13.56MHz
Power:	DC 12V
TE:	Vier
Date	2024/05/09
T/A/P	24.9℃/55.8%/101Kpa

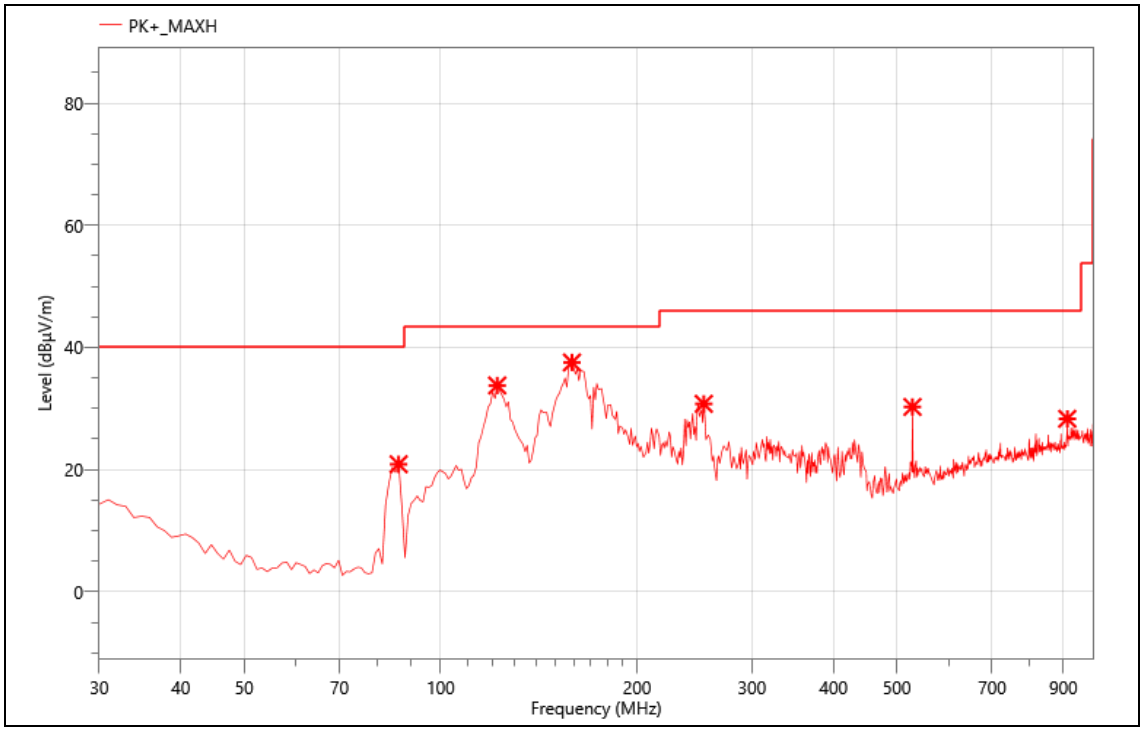


Critical_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	85.290	49.41	-25.65	23.76	40.00	16.24	PK+	V
2	144.460	57.55	-23.47	34.08	43.50	9.42	PK+	V
3	159.010	56.15	-21.64	34.51	43.50	8.99	PK+	V
4	431.580	40.04	-14.16	25.88	46.00	20.12	PK+	V
5	528.580	41.87	-10.79	31.08	46.00	14.92	PK+	V
6	917.550	30.97	-3.8	27.17	46.00	18.83	PK+	V

Note: [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

EUT :	Cabinet lock
MN:	D6PN-00-0P
Mode:	13.56MHz
Power:	DC 12V
TE:	Vier
Date	2024/05/09
T/A/P	24.9℃/55.8%/101Kpa



Critical_Freqs

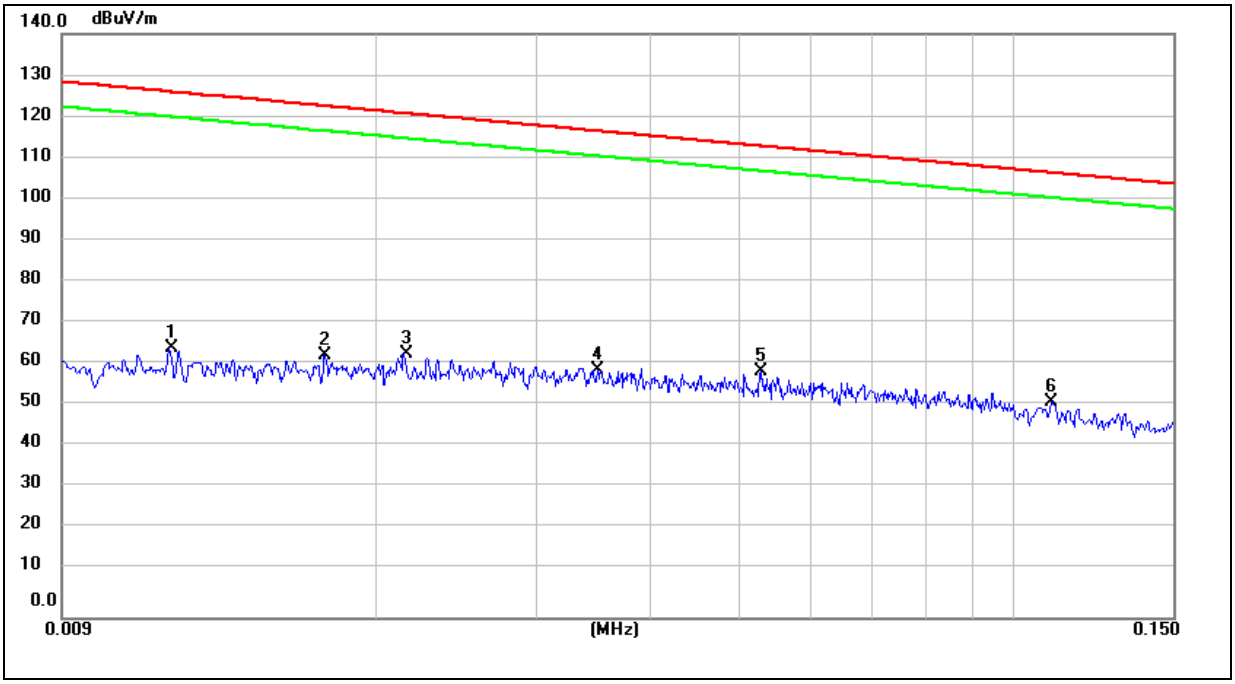
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	86.260	46.51	-25.63	20.88	40.00	19.12	PK+	H
2	122.150	58.47	-24.69	33.78	43.50	9.72	PK+	H
3	159.010	59.18	-21.64	37.54	43.50	5.96	PK+	H
4	253.100	49.71	-18.94	30.77	46.00	15.23	PK+	H
5	528.580	41.05	-10.79	30.26	46.00	15.74	PK+	H
6	912.700	32.49	-4.17	28.32	46.00	17.68	PK+	H

Note: [Margin=Limit-Meas.]; [Meas.=Reading+Corr.]

7.3. SPURIOUS EMISSIONS BELOW 30 MHz

SPURIOUS EMISSIONS (LOOP ANTENNA FACE ON TO THE EUT)

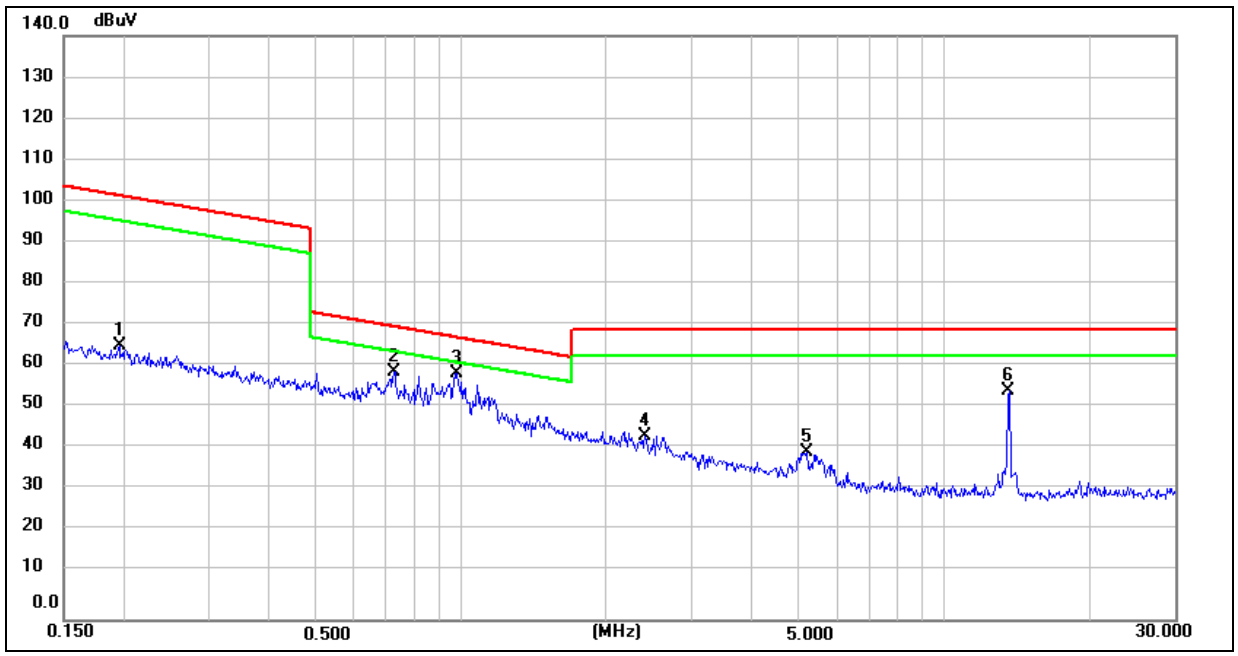
0.09 kHz~ 150 kHz



No.	Frequency (MHz)	Reading Level(dBuV)	Correct Factor(dB/m)	Measure-ment(dBuV/m)	Limit (dBuV/m)	Over (dB)	Detect or
1	0.0118	44.18	20.41	64.59	126.15	-61.56	peak
2	0.0175	42.78	20.33	63.11	122.73	-59.62	peak
3	0.0214	43.20	20.27	63.47	120.98	-57.51	peak
4	0.0350	39.39	20.17	59.56	116.71	-57.15	peak
5 *	0.0528	39.01	20.00	59.01	113.14	-54.13	peak
6	0.1103	32.10	19.76	51.86	106.75	-54.89	peak

Note: Measurement = Reading Level + Correct Factor.

150 kHz ~ 30MHz

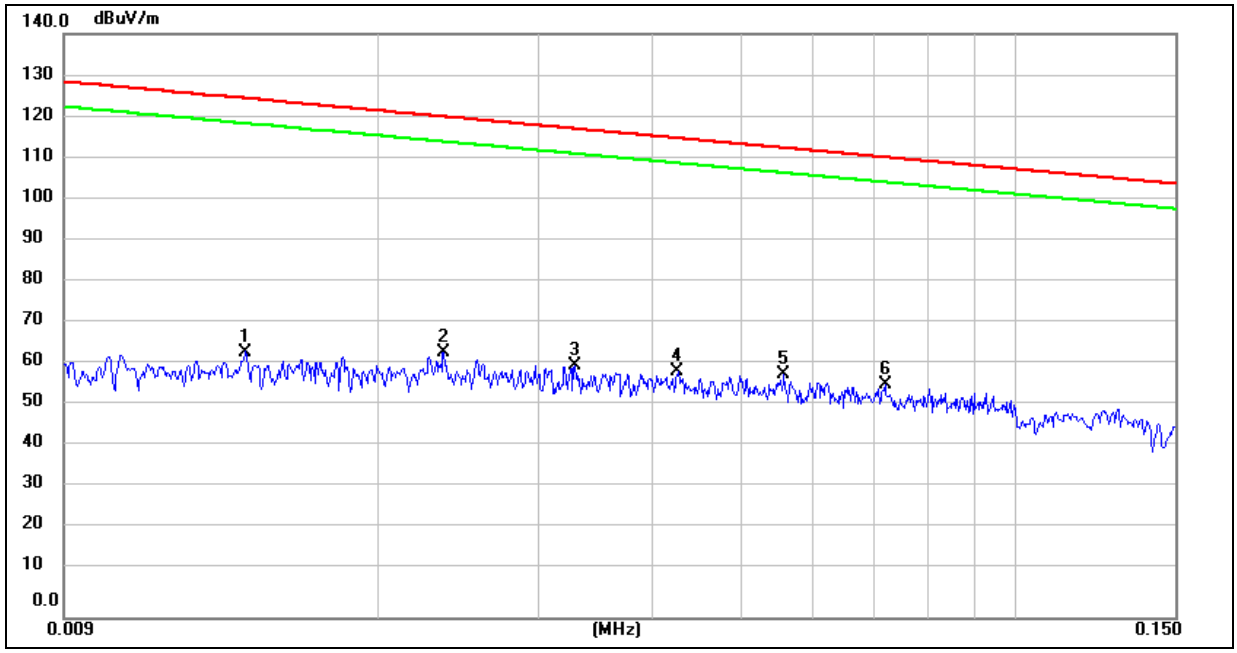


No.	Frequency (MHz)	Reading Level(dBuV)	Correct Factor(dB/m)	Measure-ment(dBuV/m)	Limit (dBuV/m)	Over (dB)	Detect or
1	0.1954	45.60	20.04	65.64	101.78	-36.14	peak
2	0.7235	38.55	20.96	59.51	70.42	-10.91	peak
3 *	0.9787	37.84	21.41	59.25	67.81	-8.56	peak
4	2.3962	19.83	24.37	44.20	69.50	-25.30	peak
5	5.1662	10.28	30.15	40.43	69.50	-29.07	peak
6	13.5628	34.80	20.30	55.10	69.50	-14.40	peak

Note: Note: Measurement = Reading Level + Correct Factor.

SPURIOUS EMISSIONS (LOOP ANTENNA FACE OFF TO THE EUT)

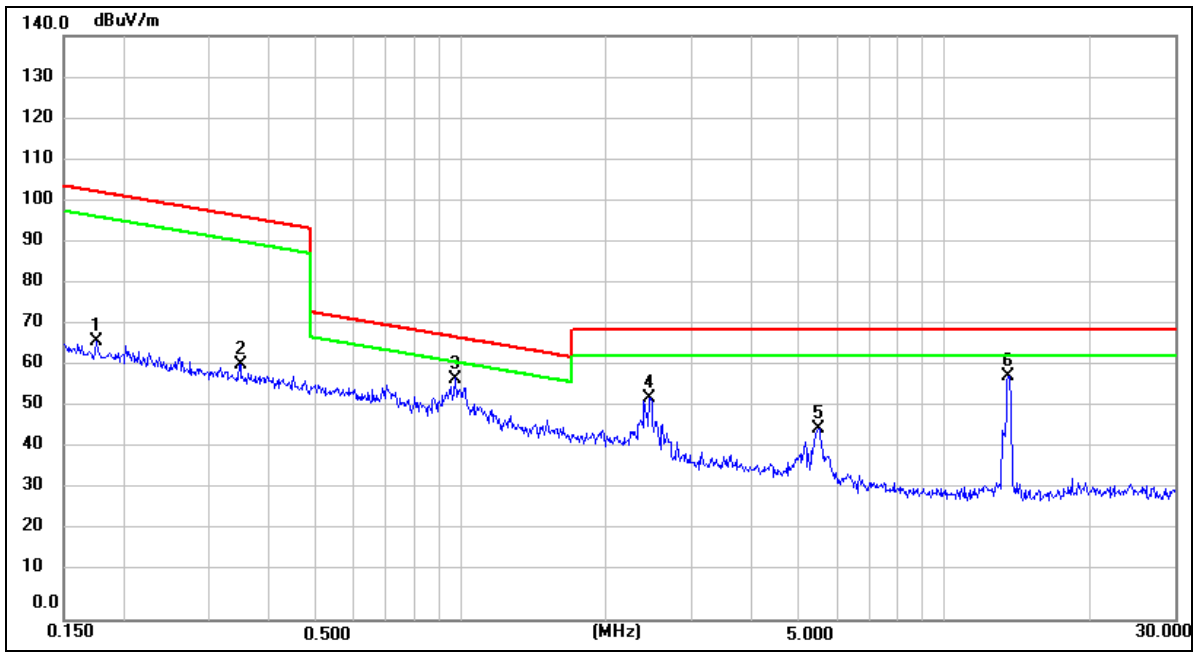
0.09 kHz~ 150 kHz



No.	Frequency (MHz)	Reading Level(dBuV)	Correct Factor(dB/m)	Measure-ment(dBuV/m)	Limit (dBuV/m)	Over (dB)	Detect or
1	0.0142	43.48	20.37	63.85	124.54	-60.69	peak
2	0.0235	43.64	20.24	63.88	120.17	-56.29	peak
3	0.0328	40.32	20.17	60.49	117.27	-56.78	peak
4	0.0425	39.01	20.09	59.10	115.02	-55.92	peak
5 *	0.0557	38.38	19.97	58.35	112.68	-54.33	peak
6	0.0720	36.26	19.79	56.05	110.45	-54.40	peak

Note: Measurement = Reading Level + Correct Factor.

150 kHz ~ 30MHz



No.	Frequency (MHz)	Reading Level(dBuV)	Correct Factor(dB/m)	Measure-ment(dBuV/m)	Limit (dBuV/m)	Over (dB)	Detect or
1	0.1750	46.99	19.98	66.97	102.74	-35.77	peak
2	0.3483	41.10	20.31	61.41	96.76	-35.35	peak
3 *	0.9735	36.55	21.39	57.94	67.85	-9.91	peak
4	2.4475	28.69	24.48	53.17	69.50	-16.33	peak
5	5.4763	15.32	30.73	46.05	69.50	-23.45	peak
6	13.5508	38.12	20.30	58.42	69.50	-11.08	peak

Note: Note: Measurement = Reading Level + Correct Factor.

8. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

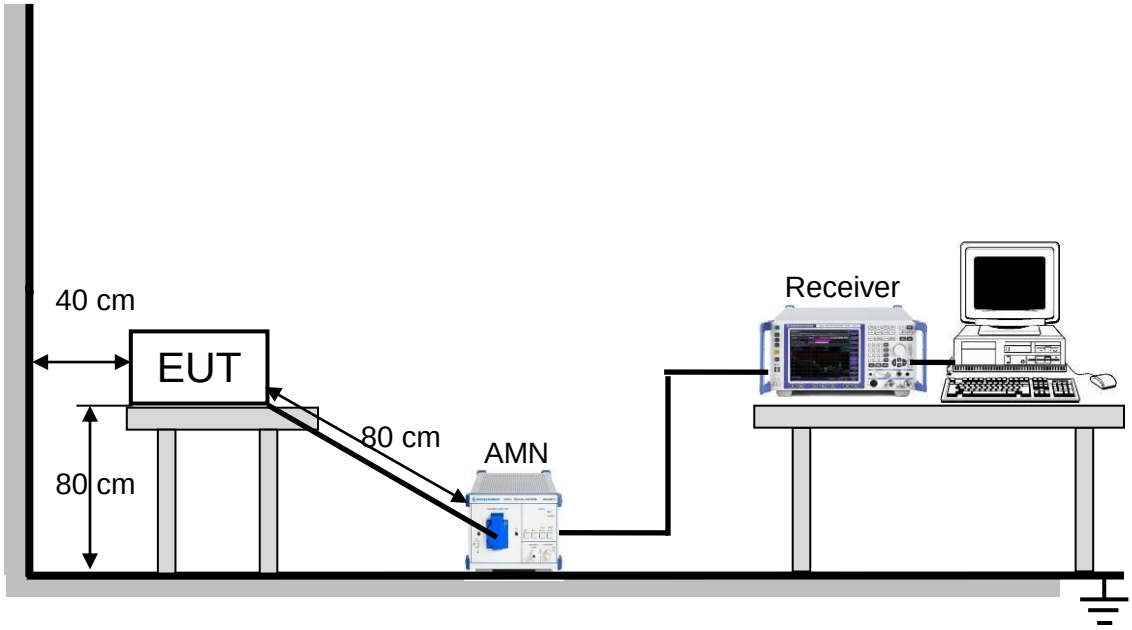
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

TEST SETUP AND PROCEDURE



The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was placed on the top of a rotating table 0.8 meters above the horizontal ground plane and being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument.

3. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

4. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

5. LISN at least 80 cm from nearest part of EUT chassis.

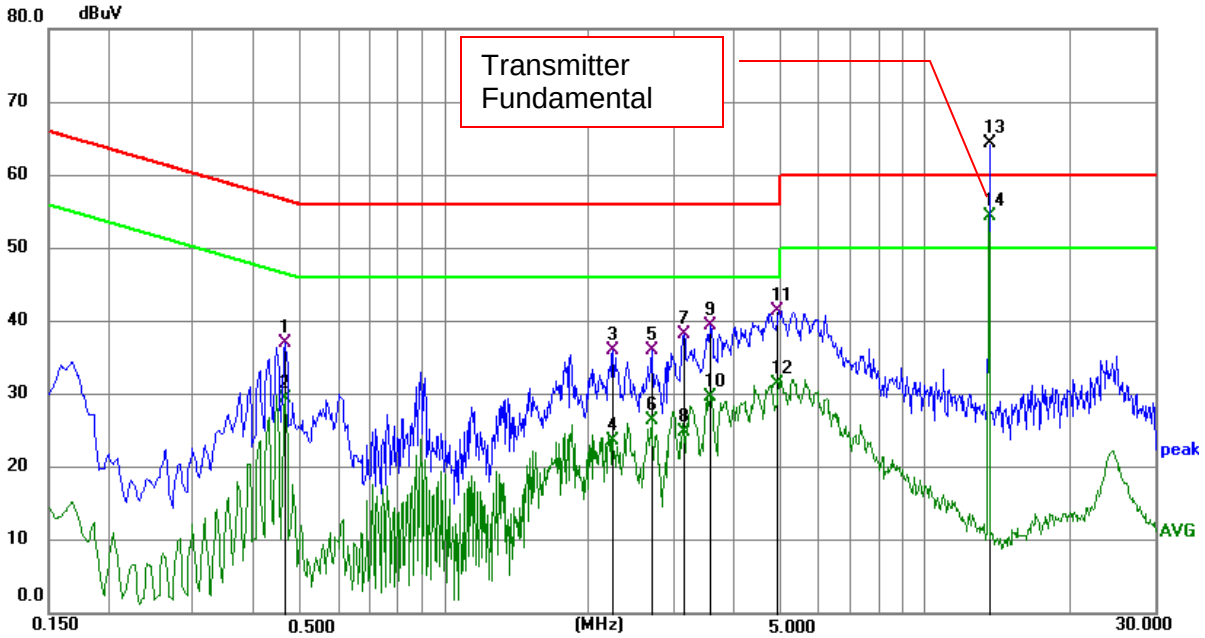
6. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

7. The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

TEST ENVIRONMENT

Temperature	21.6 °C	Relative Humidity	53 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120V 60Hz

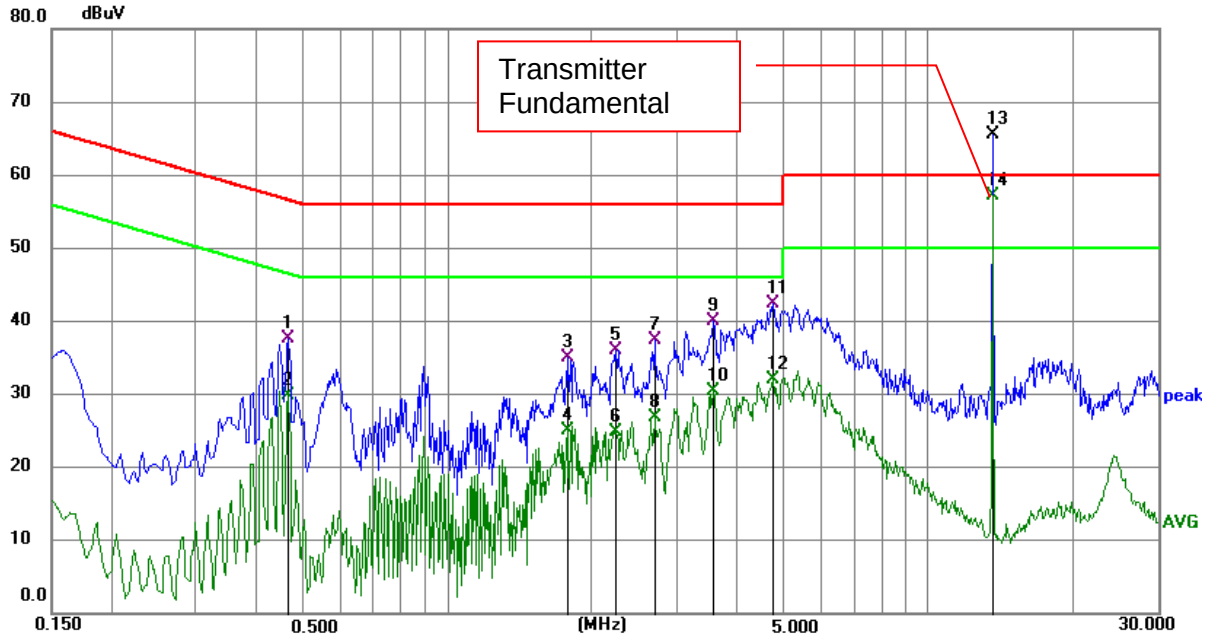
D6PN-10-0B, LINE L RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4650	27.27	9.83	37.10	56.60	-19.50	QP
2	0.4650	19.67	9.83	29.50	46.60	-17.10	AVG
3	2.2470	25.79	10.14	35.93	56.00	-20.07	QP
4	2.2470	13.47	10.14	23.61	46.00	-22.39	AVG
5	2.6970	25.93	10.09	36.02	56.00	-19.98	QP
6	2.6970	16.35	10.09	26.44	46.00	-19.56	AVG
7	3.1425	28.19	10.08	38.27	56.00	-17.73	QP
8	3.1425	14.82	10.08	24.90	46.00	-21.10	AVG
9	3.5700	29.30	10.15	39.45	56.00	-16.55	QP
10	3.5700	19.39	10.15	29.54	46.00	-16.46	AVG
11	4.9694	31.20	10.24	41.44	56.00	-14.56	QP
12	4.9694	21.26	10.24	31.50	46.00	-14.50	AVG
13	13.5645	53.27	10.97	64.24	--	--	peak
14	13.5645	43.45	10.97	54.42	--	--	AVG

Note: Result = Reading +Correct

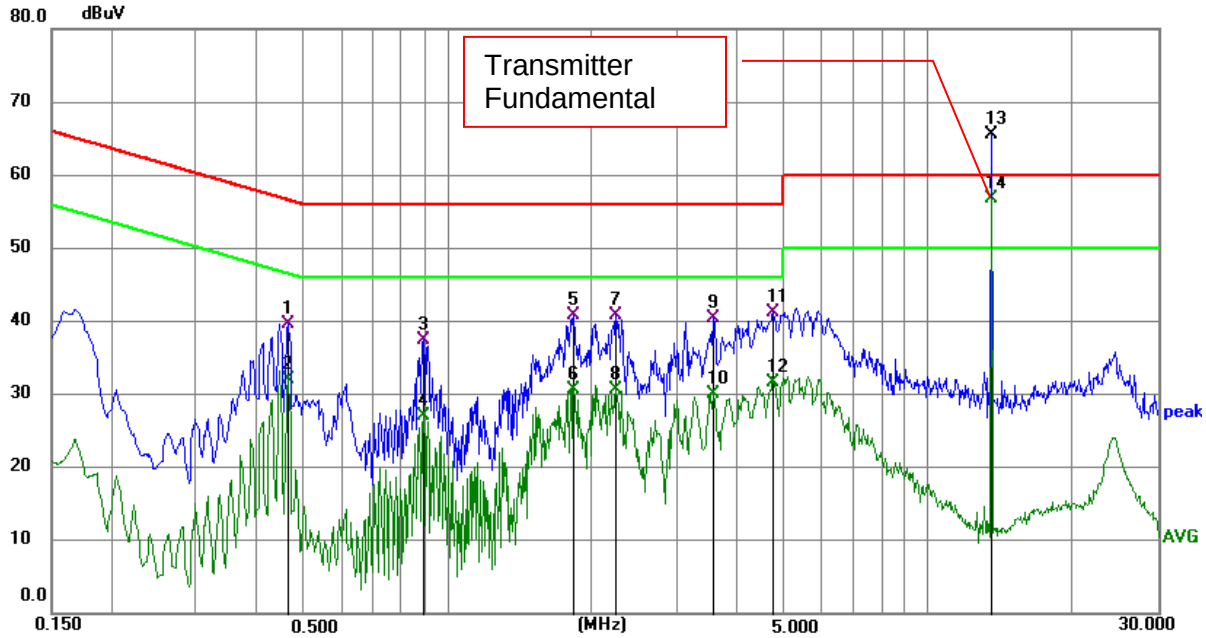
D6PN-10-0B, LINE N RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4661	27.59	9.97	37.56	56.58	-19.02	QP
2	0.4661	19.82	9.97	29.79	46.58	-16.79	AVG
3	1.7810	24.95	10.16	35.11	56.00	-20.89	QP
4	1.7810	14.93	10.16	25.09	46.00	-20.91	AVG
5	2.2367	25.85	10.17	36.02	56.00	-19.98	QP
6	2.2367	14.76	10.17	24.93	46.00	-21.07	AVG
7	2.6924	27.16	10.21	37.37	56.00	-18.63	QP
8	2.6924	16.64	10.21	26.85	46.00	-19.15	AVG
9	3.5653	29.78	10.24	40.02	56.00	-15.98	QP
10	3.5653	20.14	10.24	30.38	46.00	-15.62	AVG
11	4.7463	32.09	10.28	42.37	56.00	-13.63	QP
12	4.7463	21.70	10.28	31.98	46.00	-14.02	AVG
13	13.5508	54.57	10.99	65.56	--	--	peak
14	13.5508	46.18	10.99	57.17	--	--	AVG

Note: Result = Reading +Correct

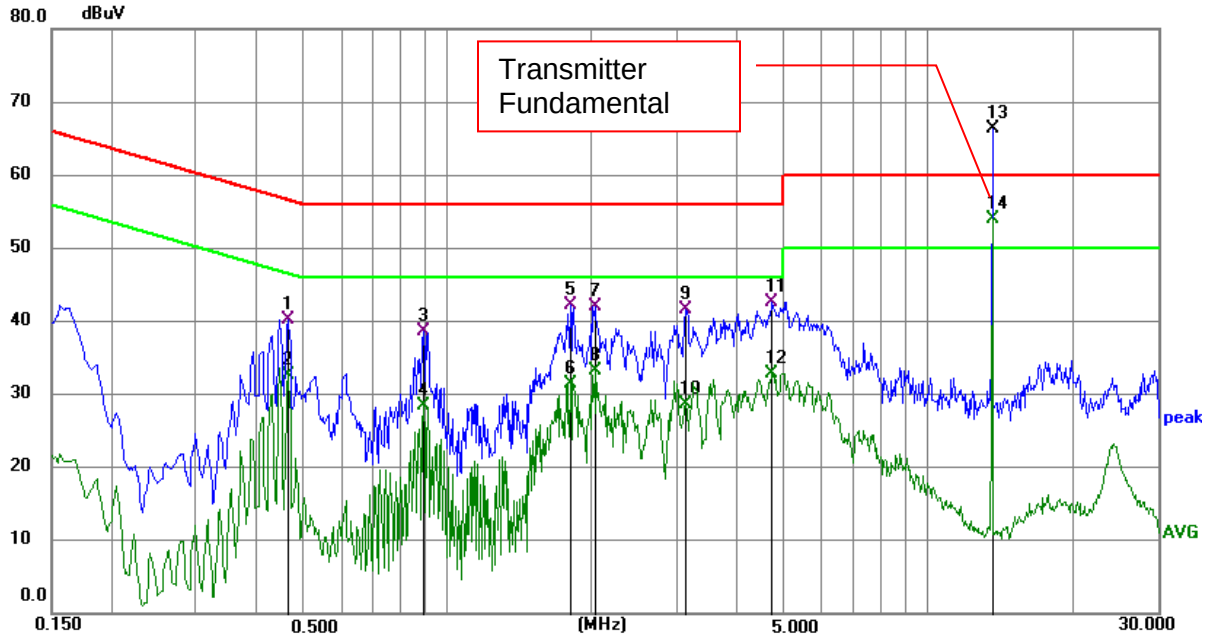
D6PN-00-0P, LINE L RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4650	29.84	9.83	39.67	56.60	-16.93	QP
2	0.4650	22.20	9.83	32.03	46.60	-14.57	AVG
3	0.8922	27.33	10.06	37.39	56.00	-18.61	QP
4	0.8922	16.95	10.06	27.01	46.00	-18.99	AVG
5	1.8372	30.68	10.21	40.89	56.00	-15.11	QP
6	1.8372	20.37	10.21	30.58	46.00	-15.42	AVG
7	2.2470	30.62	10.14	40.76	56.00	-15.24	QP
8	2.2470	20.45	10.14	30.59	46.00	-15.41	AVG
9	3.5700	30.29	10.15	40.44	56.00	-15.56	QP
10	3.5700	19.94	10.15	30.09	46.00	-15.91	AVG
11	4.7490	30.99	10.24	41.23	56.00	-14.77	QP
12	4.7490	21.38	10.24	31.62	46.00	-14.38	AVG
13	13.5373	54.47	10.97	65.44	--	--	peak
14	13.5373	45.82	10.97	56.79	--	--	AVG

Note: Result = Reading +Correct

D6PN-00-0P, LINE N RESULTS



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4650	30.20	9.97	40.17	56.60	-16.43	QP
2	0.4650	22.56	9.97	32.53	46.60	-14.07	AVG
3	0.8923	28.56	10.05	38.61	56.00	-17.39	QP
4	0.8923	18.35	10.05	28.40	46.00	-17.60	AVG
5	1.8015	32.14	10.15	42.29	56.00	-13.71	QP
6	1.8015	21.32	10.15	31.47	46.00	-14.53	AVG
7	2.0264	31.89	10.13	42.02	56.00	-13.98	QP
8	2.0264	23.14	10.13	33.27	46.00	-12.73	AVG
9	3.1380	31.44	10.21	41.65	56.00	-14.35	QP
10	3.1380	18.51	10.21	28.72	46.00	-17.28	AVG
11	4.7310	32.25	10.28	42.53	56.00	-13.47	QP
12	4.7310	22.54	10.28	32.82	46.00	-13.18	AVG
13	13.5510	55.36	10.99	66.35	--	--	peak
14	13.5510	42.90	10.99	53.89	--	--	AVG

Note: Result = Reading +Correct

9. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

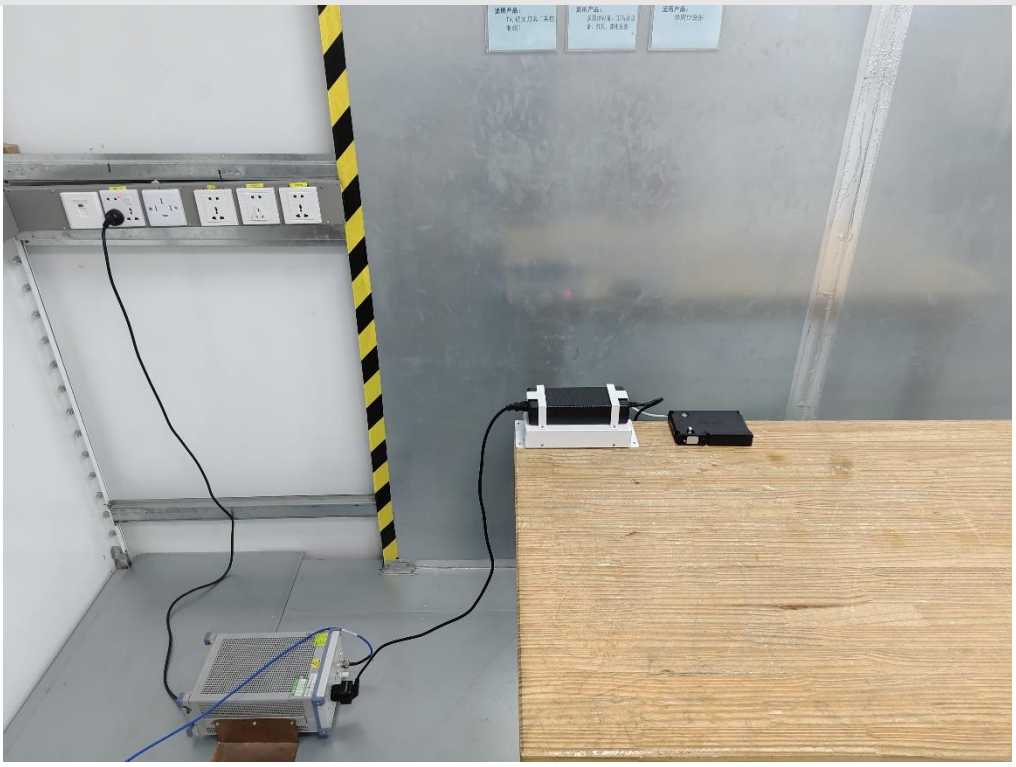
Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

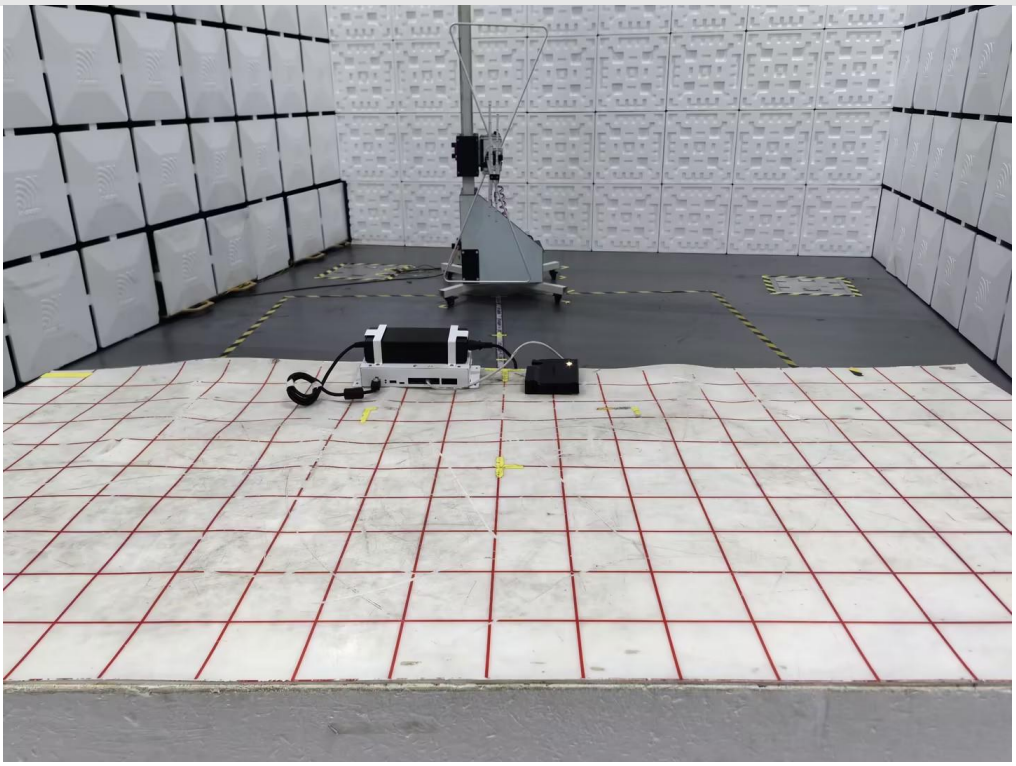
10. PHOTOGRAPHS OF TEST CONFIGURATION

AC Power Line Conducted Emission



Radiated emissions 9K-30MHz

Radiated emissions30-1000MHz



END OF REPORT