

# TEST REPORT

**Product Name** : Smart Phone  
**Brand Name** : ulefone  
**Model** : GQ5021RH  
**Series Model** : Armor X32, Armor X32 Ultra, Armor X32E, Armor X32S, Armor X32 Lite, Armor X32s, Armor X32s Pro  
**FCC ID** : 2AOWK-5021RH  
**Applicant** : **Shenzhen Gotron Electronic CO.,LTD.**  
**Address** : 7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China  
**Manufacturer** : **Shenzhen Gotron Electronic CO.,LTD.**  
**Address** : 7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China  
**Standard(s)** : FCC CFR Title 47 Part 15 Subpart B  
ICES-003 Issue 7  
**Date of Receipt** : Mar. 06, 2025  
**Date of Test** : Mar. 07, 2025~ Mar. 24, 2025  
**Issued Date** : Mar. 25, 2025

**Issued By:** **Guangdong Asia Hongke Test Technology Limited**

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China  
Tel.: +86 0755-230967639 Fax.: +86 0755-230967639

**Reviewed by:**



Leon.yi

**Approved by:**



Sean She



Note: This device has been tested and found to comply with the standard(s) listed, this test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory. This report shall not be reproduced except in full, without the written approval of Guangdong Asia Hongke Test Technology Limited. If there is a need to alter or revise this document, the right belongs to Guangdong Asia Hongke Test Technology Limited, and it should give a prior written notice of the revision document. This test report must not be used by the client to claim product endorsement.

**Guangdong Asia Hongke Test Technology Limited**

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China.

**Report Revise Record**

Report Version	Issued Date	Notes
M1	Mar. 25, 2025	Initial Release

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## 1 TEST SUMMARY

### 1.1 Test Standards

The tests were performed according to following standards:

[47 CFR FCC Part 15 Subpart B - Unintentional Radiators](#)

[ICES-003 Issue 7 - Information Technology Equipment \(including Digital Apparatus\)](#)

[ANSI C63.4: 2014 – 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 40GHz](#)

### 1.2 Test Summary

Test Item	Section in CFR 47	Test Result
AC Power Line Conducted Emission	FCC Part 15 B (Section15.107) ICES-003 Issue 7 (Section 3.1)	PASS
Electric Field Radiated Emissions	FCC Part 15 B (Section15.109) ICES-003 Issue 7 (Section3.2)	PASS

## 1.3 Test Facility

### Test Laboratory:

**Guangdong Asia Hongke Test Technology Limited**

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

The test facility is recognized, certified or accredited by the following organizations:

**FCC-Registration No.: 251906 Designation Number: CN1376**

Guangdong Asia Hongke Test Technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

**IC —Registration No.: 31737 CAB identifier: CN0165**

The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

**A2LA-Lab Cert. No.: 7133.01**

Guangdong Asia Hongke Test Technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

## 1.4 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Guangdong Asia Hongke Test Technology Limited's quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Asia Hongke laboratory is reported:

Test	Measurement Uncertainty	Notes
Power Line Conducted Emission	150KHz~30MHz $\pm$ 1.20 dB	(1)
Radiated Emission	9KHz~30Hz $\pm$ 3.10dB	(1)
Radiated Emission	9KHz~1GHz $\pm$ 3.75dB	(1)
Radiated Emission	1GHz~18GHz $\pm$ 3.88 dB	(1)
Radiated Emission	18GHz-40GHz $\pm$ 3.88dB	(1)
RF power, conducted	30MHz~6GHz $\pm$ 0.16dB	(1)
RF power density, conducted	$\pm$ 0.24dB	(1)
Spurious emissions, conducted	$\pm$ 0.21dB	(1)
Temperature	$\pm$ 1 °C	(1)
Humidity	$\pm$ 3%	(1)
DC and low frequency voltages	$\pm$ 1.5%	(1)
Time	$\pm$ 2%	(1)
Duty cycle	$\pm$ 2%	(1)

The report uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty Multiplied by a coverage factor of  $k=2$  , providing a level of confidence of approximately 95%

## 2 GENERAL INFORMATION

### 2.1 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

### 2.2 General Description of EUT

Product Name:	Smart Phone
Model/Type reference:	GQ5021RH
Serial Model:	Armor X32, Armor X32 Ultra, Armor X32E, Armor X32S, Armor X32 Lite, Armor X32s, Armor X32s Pro
Power Supply:	Input: DC 5V/9.0V/12.0V DC 3.87V Rechargeable Li-ion battery
Adapter information:	Model: QZ-0180AA2H Input: 100-240V AC50/60Hz 0.5A Output: 5.0V=3.0A 15.0W or 9.0V=2.22A 20.0W Max. or 12.0V=1.67A 20.0W Max.
I.O port	Type-C

### 2.3 Description of Test Modes

The device, according to the function of the EUT, select the following operating modes for testing.

Test Modes:	
Mode 1	Data transfer with PC
Mode 2	Charging with adapter

Note:

1. Pre-testing on all test modes, only the worst case mode was recorded in this report.
2. After the pre-testing, the following test modes were found to be the worst mode for the corresponding test items and recorded in the report

Test item	Test mode (Worse case operation mode)
EMI	Test mode 1

## 2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Serial No.	Provided by	Other
Computer	GIGABYTE	610L	/	Test lab.	/
/	/	/	/	/	/
/	/	/	/	/	/
/	/	/	/	/	/

## 2.5 Equipment List for the Test

<input checked="" type="checkbox"/> Radiation Emission Test Equipment (AiT 966 chamber)						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1	EMI Measuring Receiver	R&S	ESR	101160	2024.09.25	2025.09.24
2	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00282	2024.09.25	2025.09.24
3	Low Noise Pre Amplifier	CESHENG	CSKJLNA231 016A	CSKJLNA 231016A	2024.09.25	2025.09.24
4	Spectrum Analyser	R&S	FSV40	101470	2024.09.23	2025.09.22
5	Passive Loop	ETS	6512	00165355	2024.08.29	2026.08.28
6	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2024.08.29	2026.08.28
7	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2024.08.29	2026.08.28
8	6dB Attenuator	JFW	50FPE-006	4360846-949-1	2024.09.24	2025.09.23
9	Filter	MICRO-TRONICS	BRM50702-02	16	2024.09.23	2025.09.22
10	Filter	MICRO-TRONICS	BRC50703-02	17	2024.09.23	2025.09.22
11	Filter	MICRO-TRONICS	BRC50705-02	18	2024.09.23	2025.09.22

<input checked="" type="checkbox"/> Conducted Emission Test Equipment (AiT shiled room)						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due
1	EMI Test Receiver	R&S	ESPI	100771	2024.09.25	2025.09.24
2	LISN	R&S	NNLK 8129	8130179	2024.09.24	2025.09.23
3	ISN	TESEQ	T800	29429	2024.09.26	2025.09.25
4	Pulse Limiter	R&S	ESH3-Z2	102789	2024.09.24	2025.09.23

### 3 TEST CONDITIONS AND RESULTS

#### 3.1 Conducted Emission

##### LIMIT

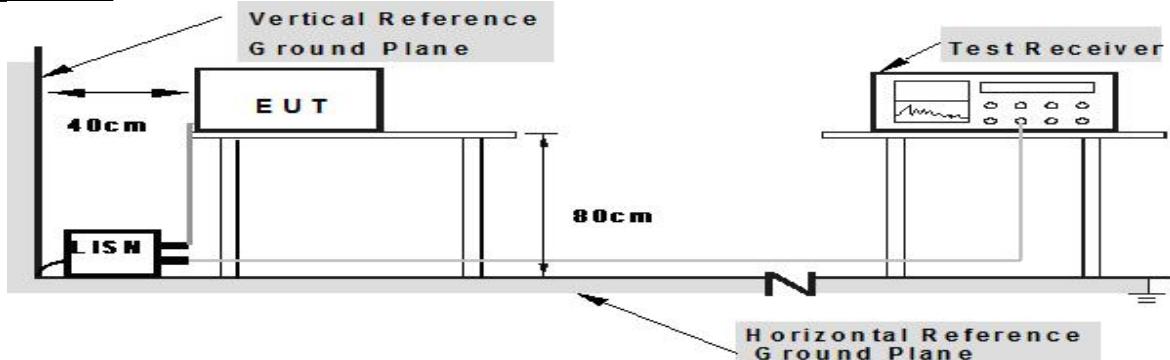
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following :

FREQUENCY (MHz)	□ Class A (dBuV)		☒ Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

##### TEST PROCEDURE

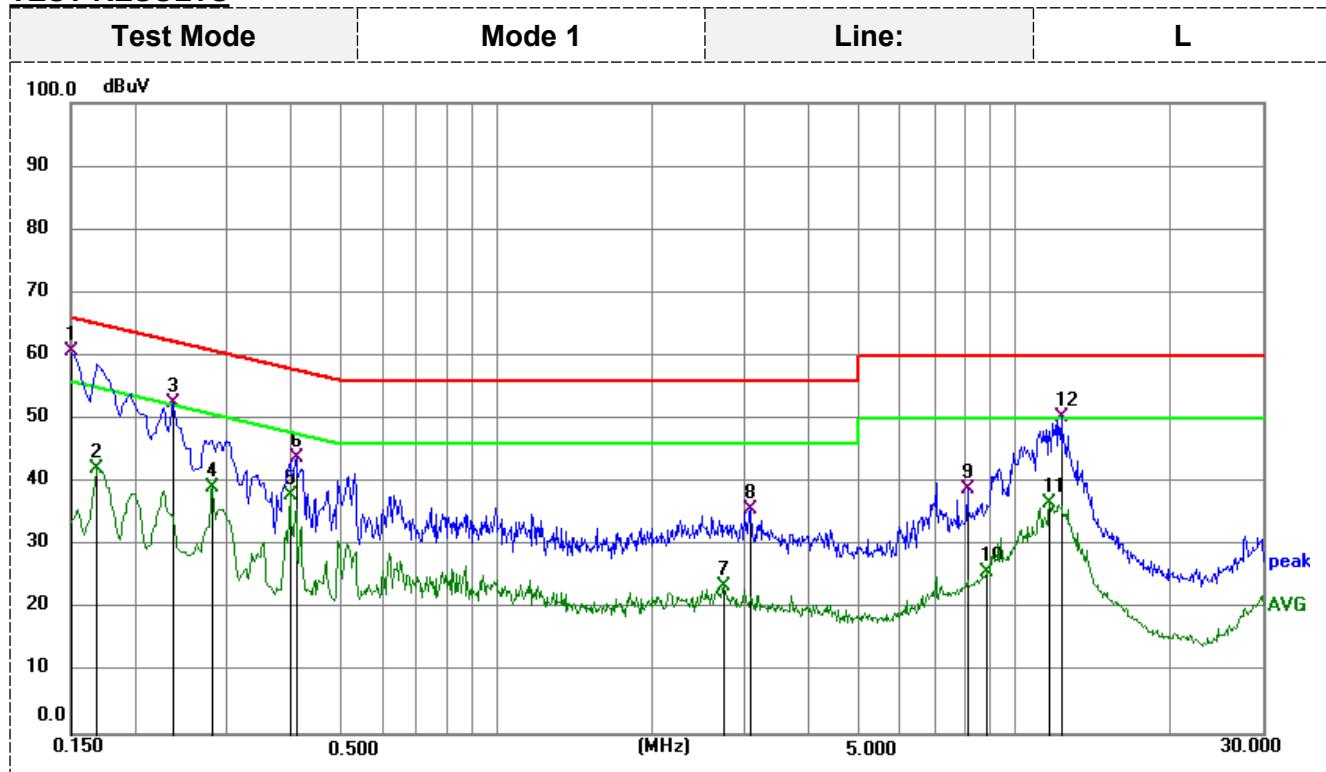
- a) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4-2014.
- b) Support equipment, if needed, was placed as per ANSI C63.4-2014.
- c) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4-2014.
- d) The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- e) All support equipments received AC power from a second LISN, if any.
- f) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- g) Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
- h) During the above scans, the emissions were maximized by cable manipulation.

##### TEST SETUP



**Note: 1. Support units were connected to second LISN.**

**2. Both of LISNs (A and B) are 80 cm from EUT and at least 80 cm from other units and other metal planes**

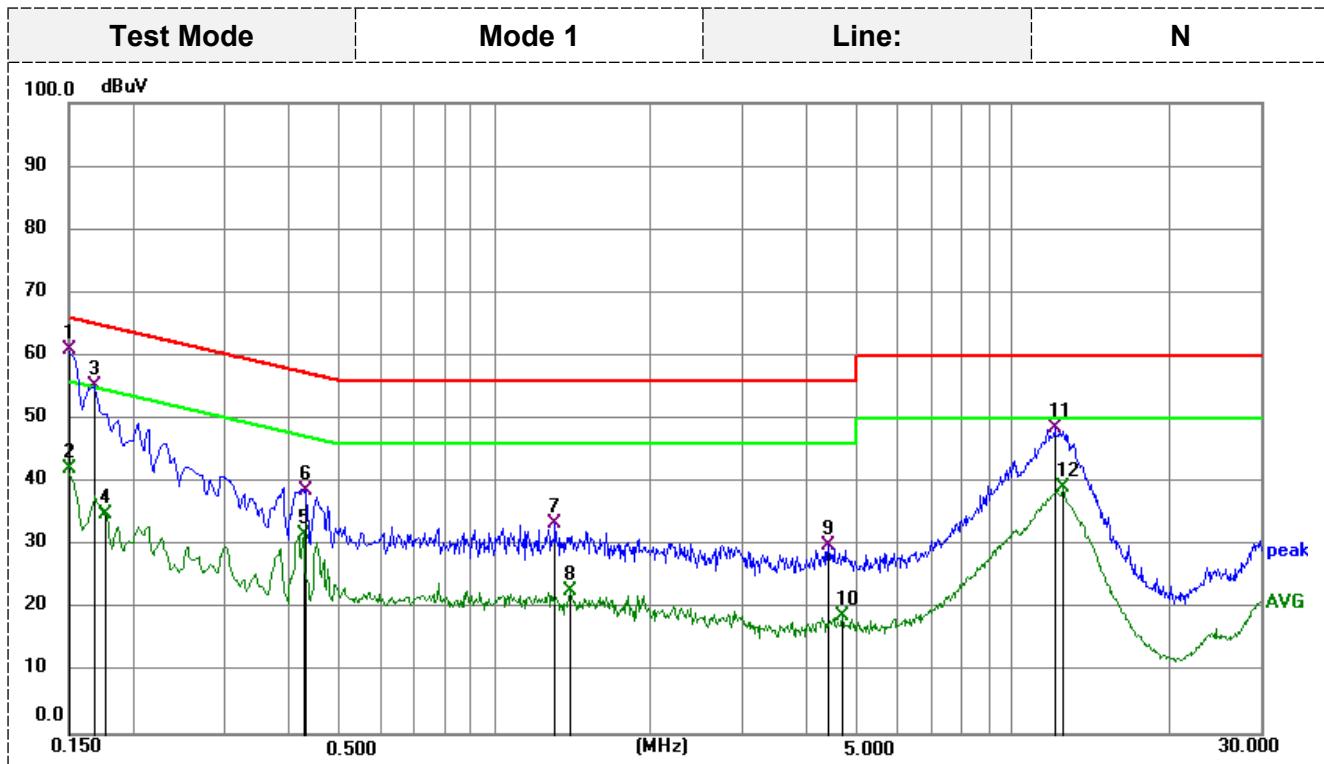
**TEST RESULTS**


Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;

Measurement Result = Reading Level +Correct Factor;

Margin = Measurement Result- Limit

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	48.87	11.84	60.71	66.00	-5.29	QP
2	0.1680	31.44	10.67	42.11	55.06	-12.95	AVG
3	0.2355	41.68	10.70	52.38	62.25	-9.87	QP
4	0.2805	28.45	10.70	39.15	50.80	-11.65	AVG
5	0.3975	27.15	10.69	37.84	47.91	-10.07	AVG
6	0.4065	33.17	10.69	43.86	57.72	-13.86	QP
7	2.7465	12.58	10.81	23.39	46.00	-22.61	AVG
8	3.0750	24.80	10.79	35.59	56.00	-20.41	QP
9	8.0880	27.87	11.06	38.93	60.00	-21.07	QP
10	8.8260	14.52	11.08	25.60	50.00	-24.40	AVG
11	11.6385	25.38	11.24	36.62	50.00	-13.38	AVG
12	12.2865	39.07	11.30	50.37	60.00	-9.63	QP



Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;

Measurement Result = Reading Level +Correct Factor;

Margin = Measurement Result- Limit

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1500	48.97	11.84	60.81	66.00	-5.19	QP
2	0.1500	30.14	11.84	41.98	56.00	-14.02	AVG
3	0.1680	44.42	10.67	55.09	65.06	-9.97	QP
4	0.1768	24.11	10.68	34.79	54.63	-19.84	AVG
5	0.4245	20.95	10.69	31.64	47.36	-15.72	AVG
6	0.4290	27.87	10.69	38.56	57.27	-18.71	QP
7	1.3065	22.63	10.68	33.31	56.00	-22.69	QP
8	1.3965	12.13	10.69	22.82	46.00	-23.18	AVG
9	4.3935	18.99	11.00	29.99	56.00	-26.01	QP
10	4.6770	7.61	11.01	18.62	46.00	-27.38	AVG
11	12.0570	37.21	11.25	48.46	60.00	-11.54	QP
12	12.4530	27.88	11.28	39.16	50.00	-10.84	AVG

### 3.2 Radiated Emission

#### LIMITS

##### **LIMITS OF RADIATED EMISSION MEASUREMENT (Below 1000MHz)**

FREQUENCY (MHz)	<input type="checkbox"/> Class A (at 10m)	<input checked="" type="checkbox"/> Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

##### **LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)**

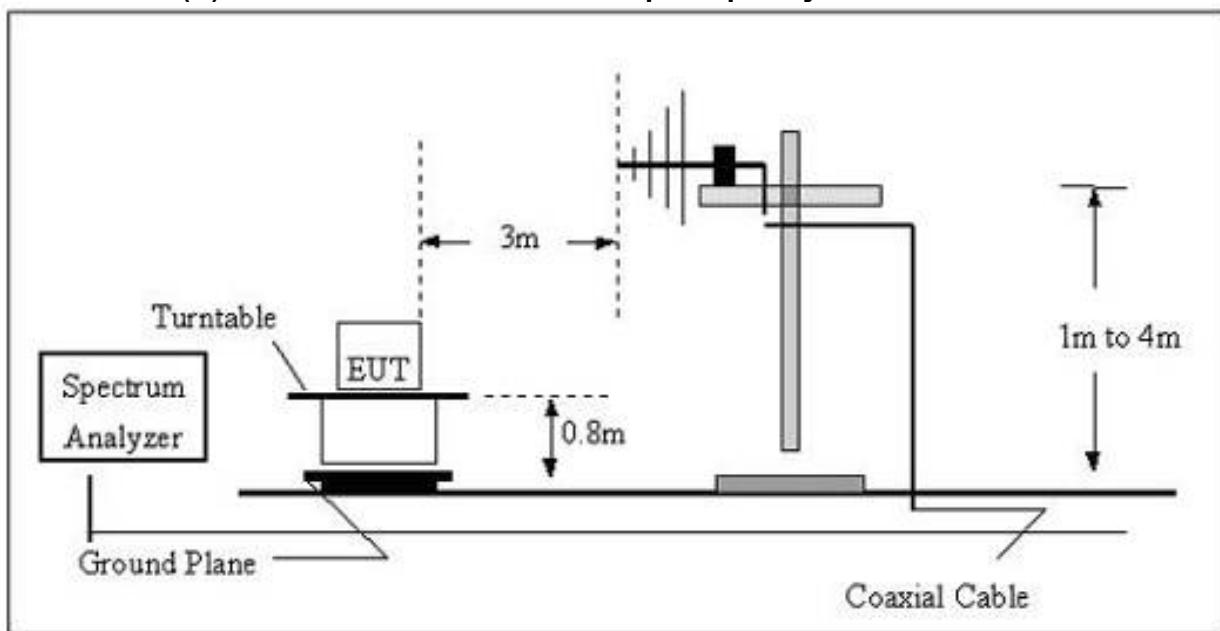
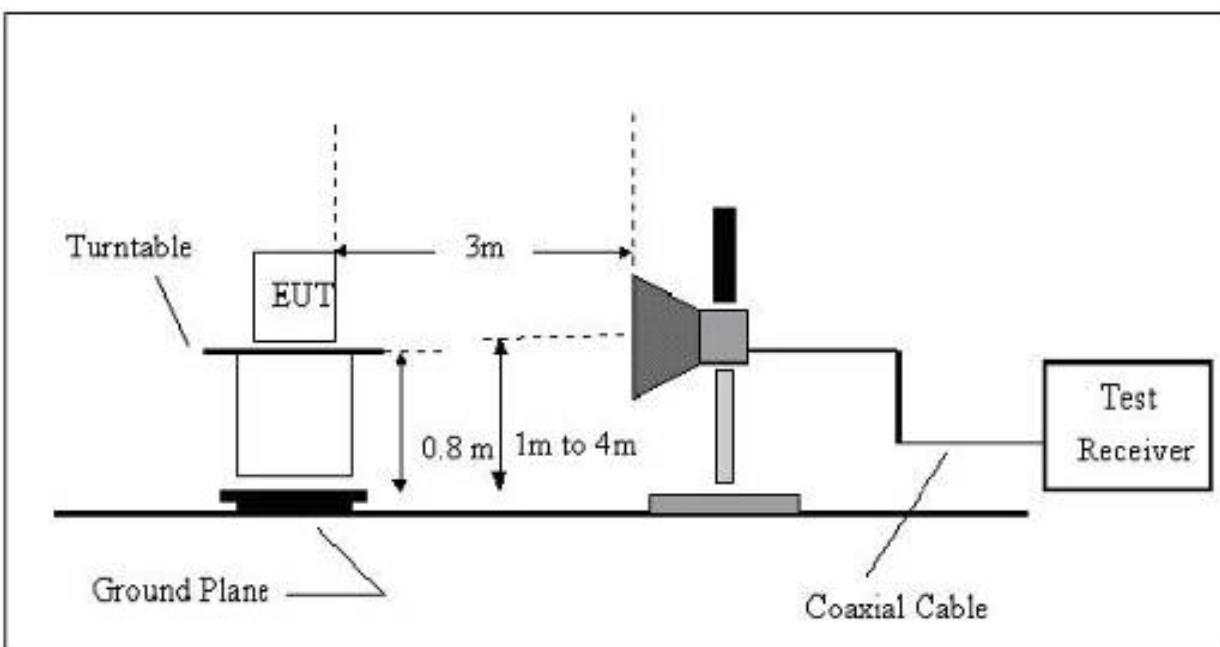
FREQUENCY (MHz)	Class A (at 3m) dBuV/m		Class B (at 3m) dBuV/m	
	Peak	Avg	Peak	Avg
Above 1000	80	60	74	54

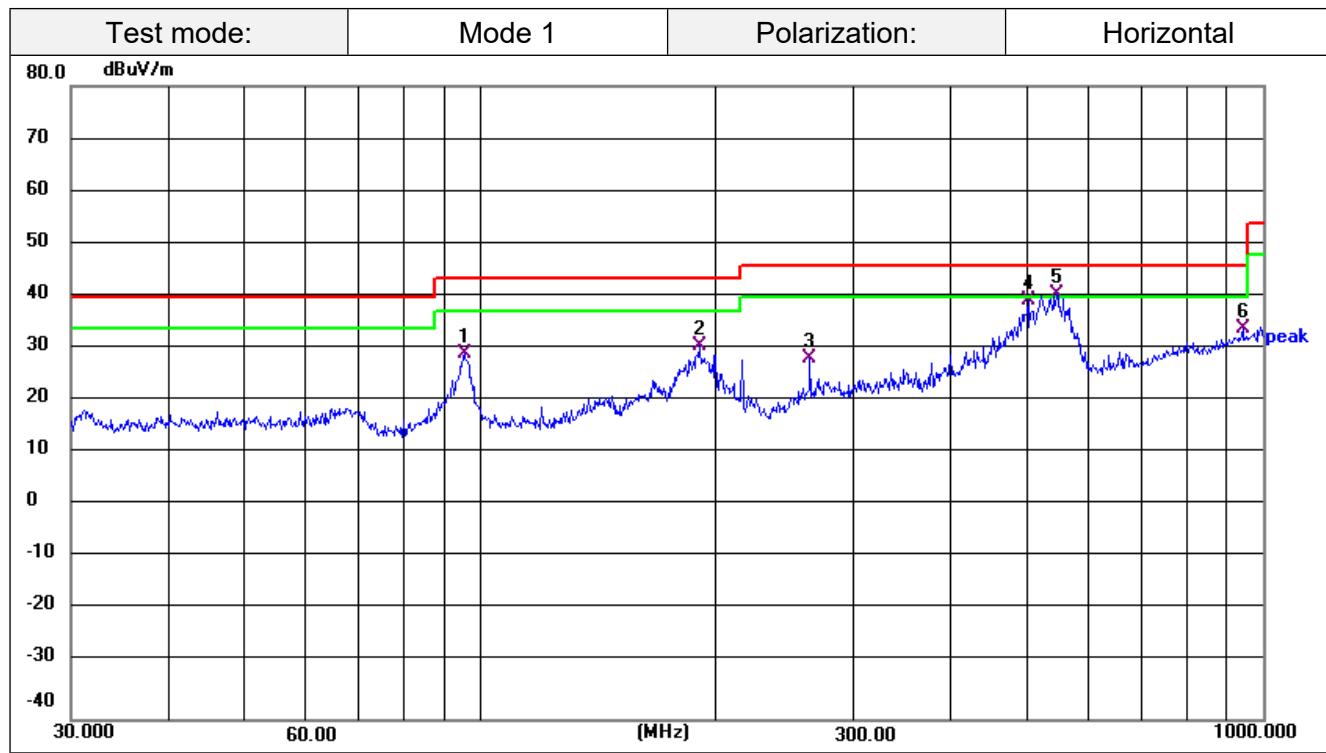
Notes:

- 1) The limit for radiated test was performed according to as following:  
CISPR 22/ FCC PART 15B /ICES-003.
- 2) The tighter limit applies at the band edges.
- 3) Emission level (dBuV/m)=20log Emission level (uV/m).

#### TEST PROCEDURE

- a) The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c) The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d) 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 1G Average detector mode will be instead.
- e) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP (AV) Limits and then no additional QP Mode measurement performed.
- f) For the actual test configuration, please refer to the related Item –EUT Test Photos.

**TEST SETUP****(A) Radiated Emission Test Set-Up Frequency Below 1 GHz****(B) Radiated Emission Test Set-UP Frequency Above 1GHz**

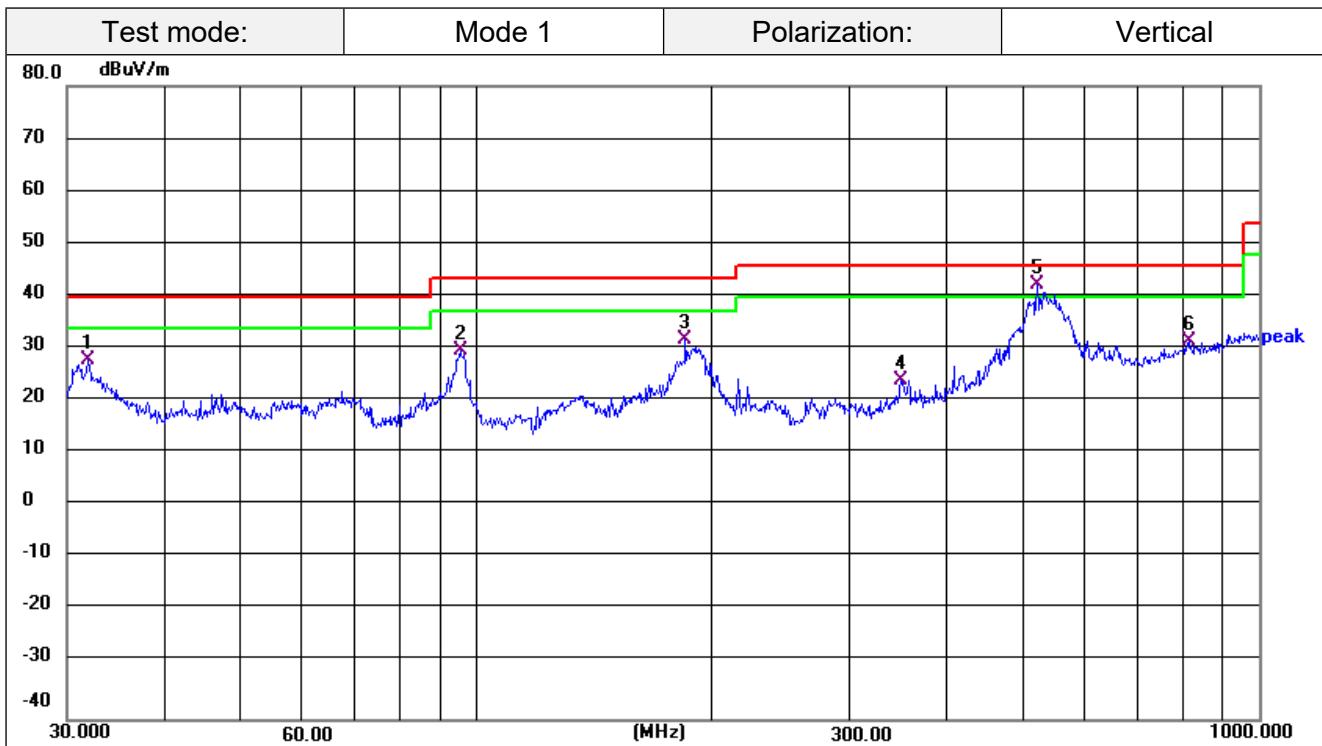
**30-1GHz:**

**Remark:**

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	95.4270	50.03	-20.62	29.41	43.50	-14.09	QP
2	190.4050	50.44	-19.47	30.97	43.50	-12.53	QP
3	263.8190	46.46	-18.07	28.39	46.00	-17.61	QP
4	501.1790	51.91	-12.50	39.41	46.00	-6.59	QP
5	545.1826	52.00	-11.31	40.69	46.00	-5.31	QP
6	942.1305	37.86	-3.72	34.14	46.00	-11.86	QP

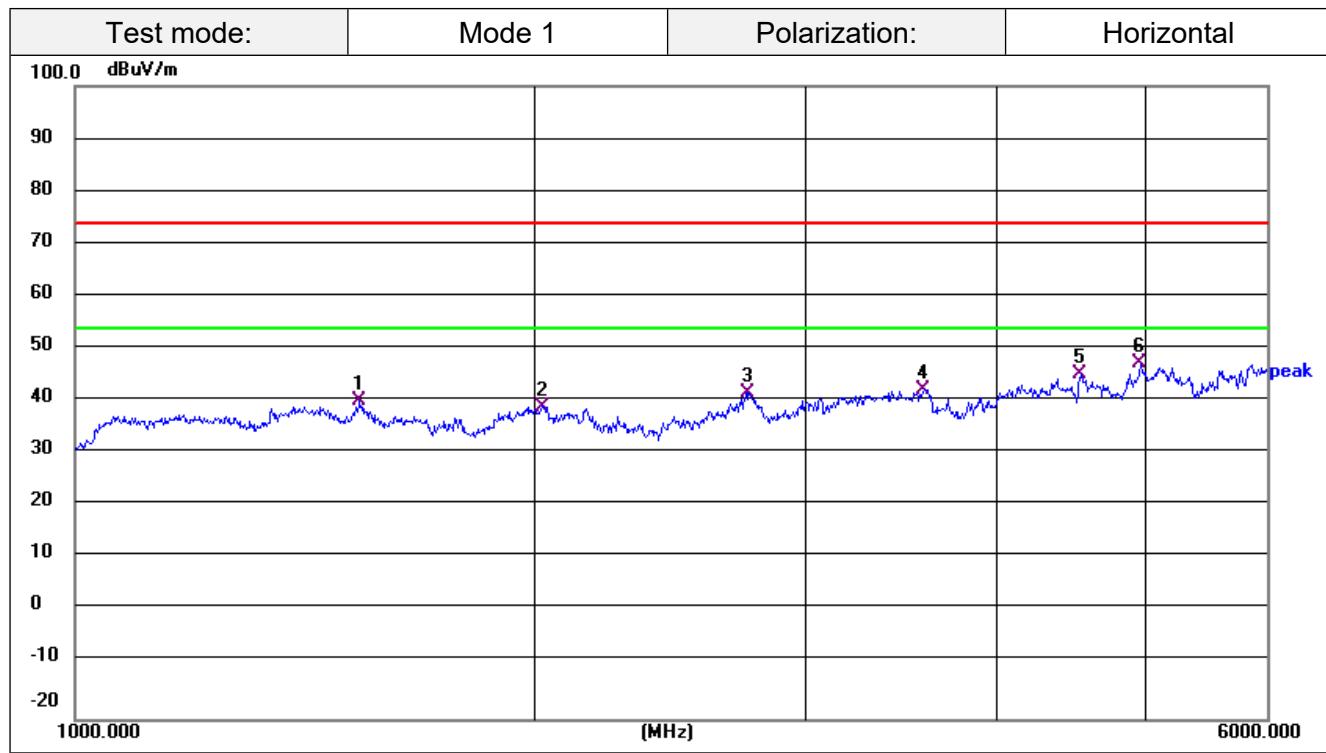

**Remark:**

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	31.9546	45.62	-17.43	28.19	40.00	-11.81	QP
2	95.4270	50.44	-20.62	29.82	43.50	-13.68	QP
3	185.1379	50.80	-18.91	31.89	43.50	-11.61	QP
4	349.2500	40.08	-15.77	24.31	46.00	-21.69	QP
5	520.8882	54.60	-12.06	42.54	46.00	-3.46	QP
6	813.1115	37.56	-5.83	31.73	46.00	-14.27	QP

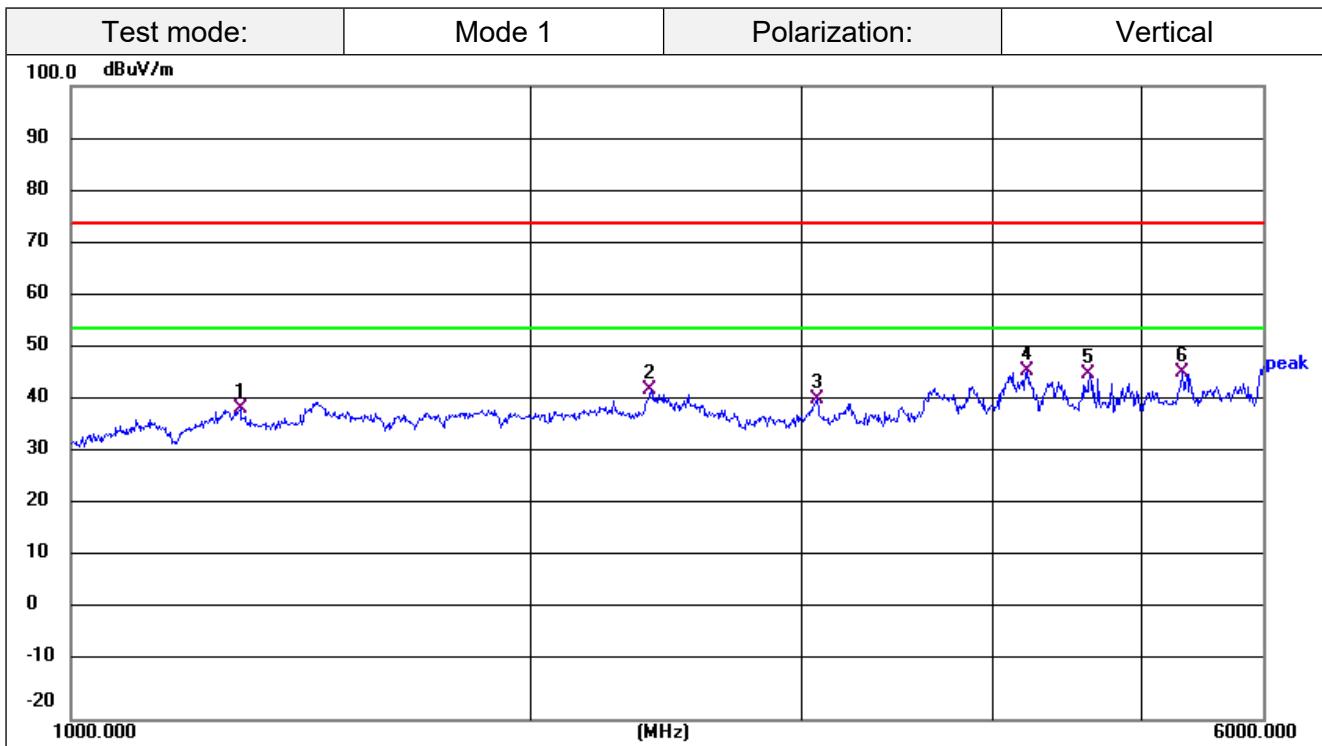
**1GHz-6GHz:**

**Remark:**

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1534.540	50.43	-9.86	40.57	74.00	-33.43	QP
2	2022.150	48.25	-8.90	39.35	74.00	-34.65	QP
3	2752.044	45.24	-3.20	42.04	74.00	-31.96	QP
4	3587.747	42.26	0.36	42.62	74.00	-31.38	QP
5	4536.904	40.52	4.93	45.45	74.00	-28.55	QP
6	4962.119	42.42	5.22	47.64	74.00	-26.36	QP


**Remark:**

Emission Level = Reading + Factor;

Factor = Antenna Factor + Cable Loss – Pre-amplifier;

Margin= Emission Level - Limit.

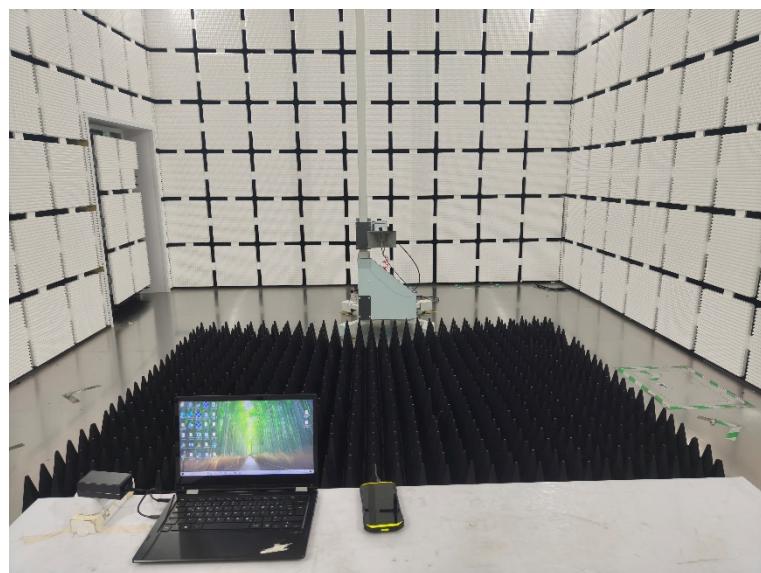
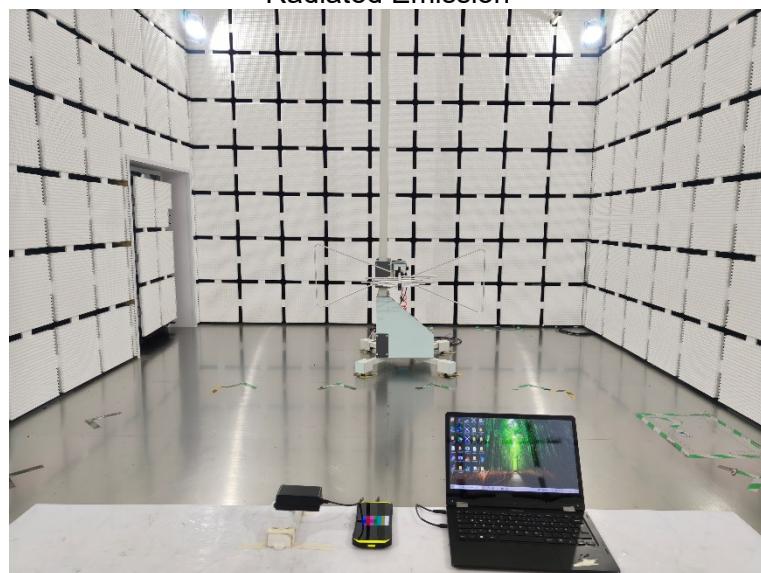
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1289.726	49.45	-10.36	39.09	74.00	-34.91	QP
2	2393.093	48.30	-5.75	42.55	74.00	-31.45	QP
3	3069.889	42.22	-1.51	40.71	74.00	-33.29	QP
4	4208.015	42.06	4.15	46.21	74.00	-27.79	QP
5	4627.211	40.45	5.07	45.52	74.00	-28.48	QP
6	5311.742	41.29	4.38	45.67	74.00	-28.33	QP

## 4 Test Setup Photographs of EUT

Conducted Emission



Radiated Emission



## 5 Photographs of EUT

Please refer to test Report No.: AiTSZ-250306009FW1.

\*\*\*\*\* End of Report \*\*\*\*\*