



FCC Test Report

APPLICANT : Shenzhen Gotron Electronic CO.,LTD.
EQUIPMENT : Mobile Phone
BRAND NAME : ulefone
MODEL NAME : Armor 23 Ultra, GQ5005, Armor 23, Armor 23E,
Armor 23S, Armor 23 Lite, Armor 23 Pro,
Armor 23 Pro+, Armor 23s, Armor 23s Pro
FCC ID : 2AOWK-5005AF1
STANDARD : 47 CFR Part 15 Subpart B
CLASSIFICATION : Supplier's Declaration of Conformity
TEST DATE(S) : Nov. 23, 2023 ~ Nov. 25, 2023

We, Sporton International Inc. (ShenZhen), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (ShenZhen), the test report shall not be reproduced except in full.



Jason Jia

Approved by: Jason Jia

Responsible Party (Name) :

Responsible Party (Title) :

Responsible Company :

Sporton International Inc. (ShenZhen)

1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055
People's Republic of China



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FD391513	Rev. 01	Initial issue of report	Dec. 13, 2023
FD391513	Rev. 02	Update model name	Jan. 03, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 13.20 dB at 0.22 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 5.53 dB at 84.32 MHz

Conformity Assessment Condition:

The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. Please refer to each test results in the section "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.



1. General Description

1.1. Applicant

Shenzhen Gotron Electronic CO.,LTD.

7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China

1.2. Manufacturer

Shenzhen Gotron Electronic CO.,LTD.

7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Phone
Brand Name	uifone
Model Name	Armor 23 Ultra, GQ5005, Armor 23, Armor 23E, Armor 23S, Armor 23 Lite, Armor 23 Pro, Armor 23 Pro+, Armor 23s, Armor 23s Pro
FCC ID	2AOWK-5005AF1
EUT supports Radios application	MES
IMEI Code	351525100826180/351525100826198
HW Version	A500_02
SW Version	Armor 23 Ultra_AF1_V10
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. The differences between model names are the model naming and appearance color.

1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	Band 23 : 2000 MHz ~ 2020 MHz Band 24 : 1626.5 MHz ~ 1660.5 MHz Band 255 : 1626.5 MHz ~ 1660.5 MHz
Rx Frequency	Band 23 : 2180 MHz ~ 2200 MHz Band 24 : 1525 MHz ~1559 MHz Band 255 : 1525 MHz ~1559 MHz
Antenna Type	PIFA Antenna
Type of Modulation	BPSK/QPSK

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Test Location

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	CO01-SZ	CN1256	421272

Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH05-SZ	CN1256	421272

1.7. Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH05-SZ	AUDIX	E3	6.2009-8-24a1
2.	CO01-SZ	AUDIX	E3	6.120613b

1.8. Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart B
- ♦ ANSI C63.4-2014

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2. Test Configuration of Equipment Under Test

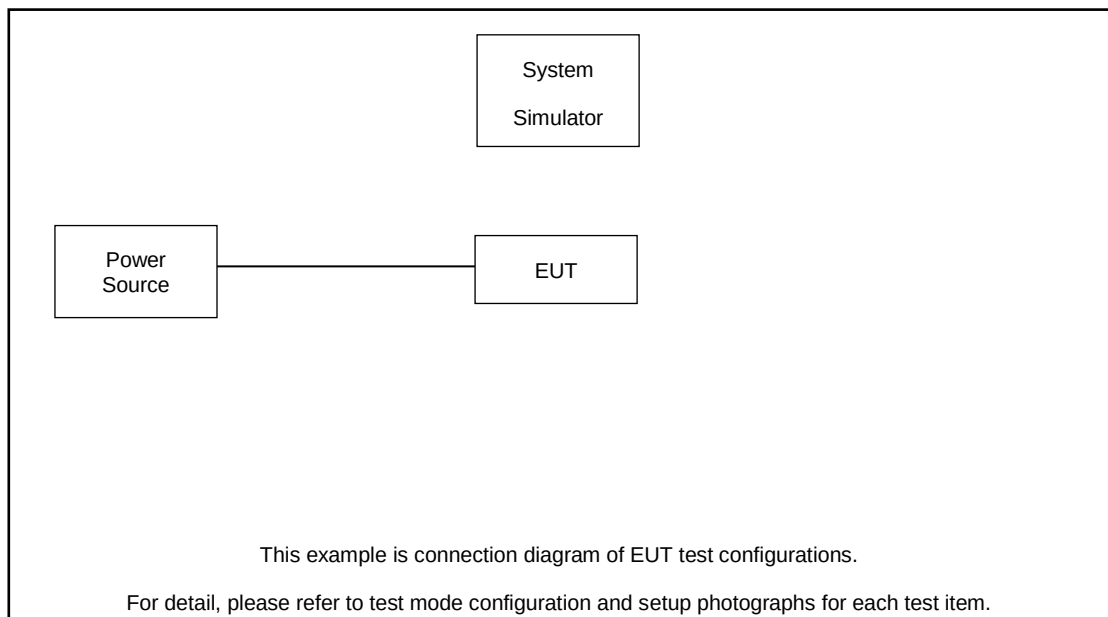
2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (30MHz to the 5th harmonic of the highest frequency or to 40 GHz, whichever is lower).

Test Items	Function Type
AC Conducted Emission	Mode 1: Band 23 Idle + Camera(Rear) + USB Cable (Charging from Adapter) + Battery + E-SIM
	Mode 2: Band 255 Idle + MPEG4 (Color Bar) + USB Cable (Charging from Adapter) + Battery + E-SIM
Radiated Emissions	Mode 1: Band 23 Idle + Camera(Rear) + USB Cable (Charging from Adapter) + Battery + E-SIM
	Mode 2: Band 255 Idle + MPEG4 (Color Bar) + USB Cable (Charging from Adapter) + Battery + E-SIM
Remark: - The worst case of AC is mode 2; only the test data of this mode is reported. - The worst case of RE is mode 1; only the test data of this mode is reported.	

2.2.Connection Diagram of Test System



The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application



2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMW500	Fcc DoC	N/A	Shielded, 1.5m

2.4. EUT Operation Test Setup

The following programs installed in the EUT were programmed during the test.

1. MES band Idle with base-station.
2. Turn on camera to capture images.
3. Turn on MPEG4 function.

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

<Class B Limit>

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

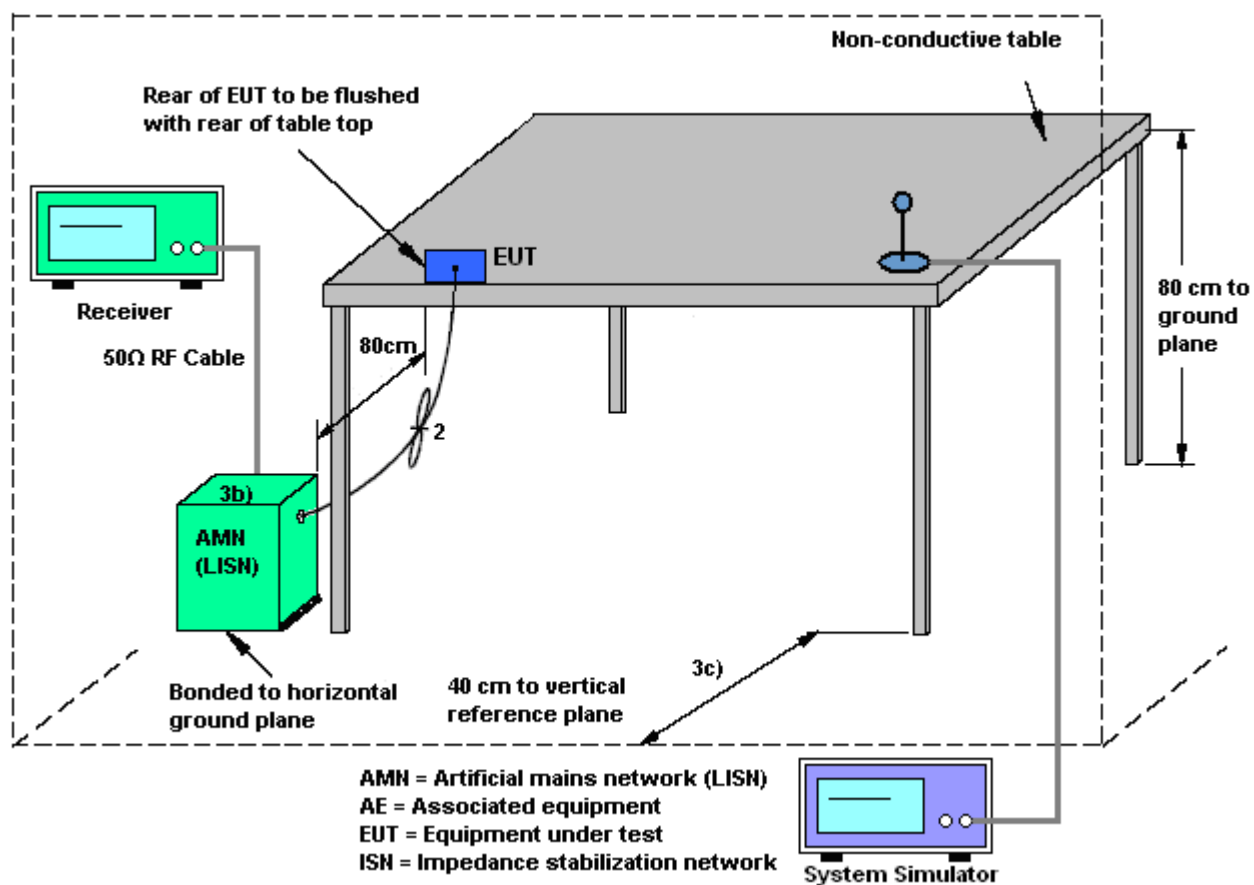
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedure

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

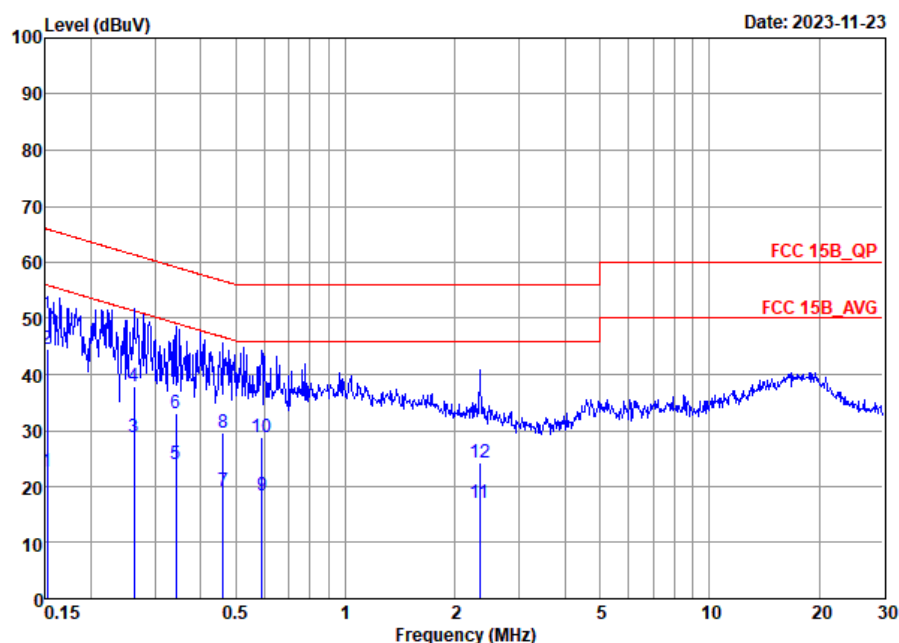
3.1.4 Test Setup





3.1.5 Test Result of AC Conducted Emission

Test Engineer :	FangMing Liang	Temperature :	22~24°C
		Relative Humidity :	44~50%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



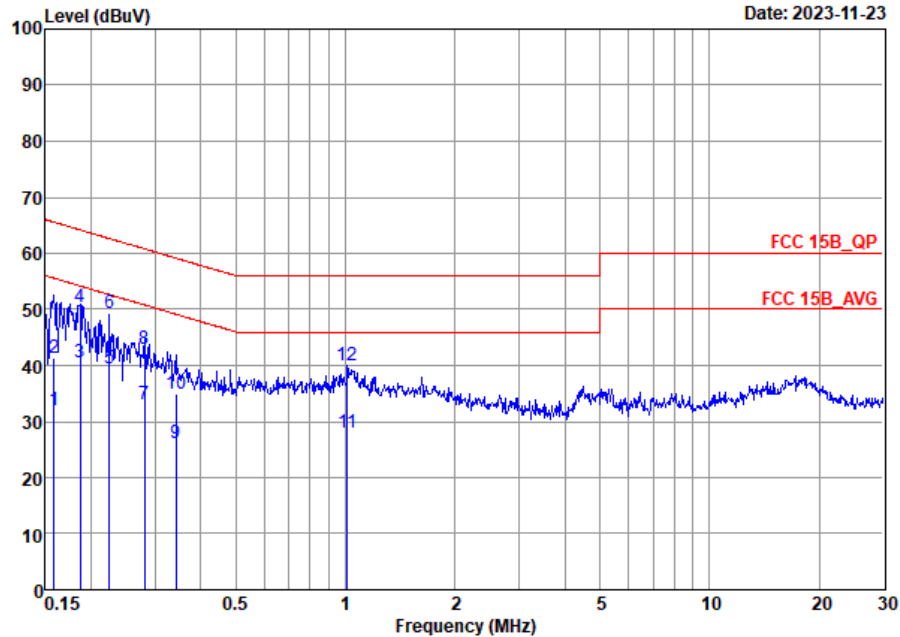
Site : C001-SZ

Condition: FCC 15B_QP AC LISN 100063_L LINE

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15	22.71	-33.20	55.91	2.20	10.38	10.13	Average
2 *	0.15	44.51	-21.40	65.91	24.00	10.38	10.13	QP
3	0.26	28.86	-22.48	51.34	8.61	10.10	10.15	Average
4	0.26	37.86	-23.48	61.34	17.61	10.10	10.15	QP
5	0.34	23.96	-25.17	49.13	3.60	10.20	10.16	Average
6	0.34	33.06	-26.07	59.13	12.70	10.20	10.16	QP
7	0.46	19.29	-27.38	46.67	-1.20	10.33	10.16	Average
8	0.46	29.59	-27.08	56.67	9.10	10.33	10.16	QP
9	0.59	18.53	-27.47	46.00	-1.80	10.17	10.16	Average
10	0.59	28.73	-27.27	56.00	8.40	10.17	10.16	QP
11	2.33	17.17	-28.83	46.00	-3.50	10.42	10.25	Average
12	2.33	24.37	-31.63	56.00	3.70	10.42	10.25	QP



Test Engineer :	FangMing Liang	Temperature :	22~24°C
		Relative Humidity :	44~50%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
Condition: FCC 15B_QP AC LISN 100063_N NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.16	32.02	-23.54	55.56	11.59	10.29	10.14	Average
2	0.16	41.32	-24.24	65.56	20.89	10.29	10.14	QP
3	0.19	40.52	-13.68	54.20	20.00	10.37	10.15	Average
4	0.19	50.32	-13.88	64.20	29.80	10.37	10.15	QP
5 *	0.22	39.46	-13.20	52.66	19.10	10.21	10.15	Average
6	0.22	49.46	-13.20	62.66	29.10	10.21	10.15	QP
7	0.28	33.11	-17.70	50.81	12.60	10.36	10.15	Average
8	0.28	42.81	-18.00	60.81	22.30	10.36	10.15	QP
9	0.34	26.01	-23.12	49.13	5.50	10.35	10.16	Average
10	0.34	34.81	-24.32	59.13	14.30	10.35	10.16	QP
11	1.01	27.88	-18.12	46.00	7.50	10.22	10.16	Average
12	1.01	40.08	-15.92	56.00	19.70	10.22	10.16	QP

Note:

- Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
- Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)

3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

<Class B Limit>

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

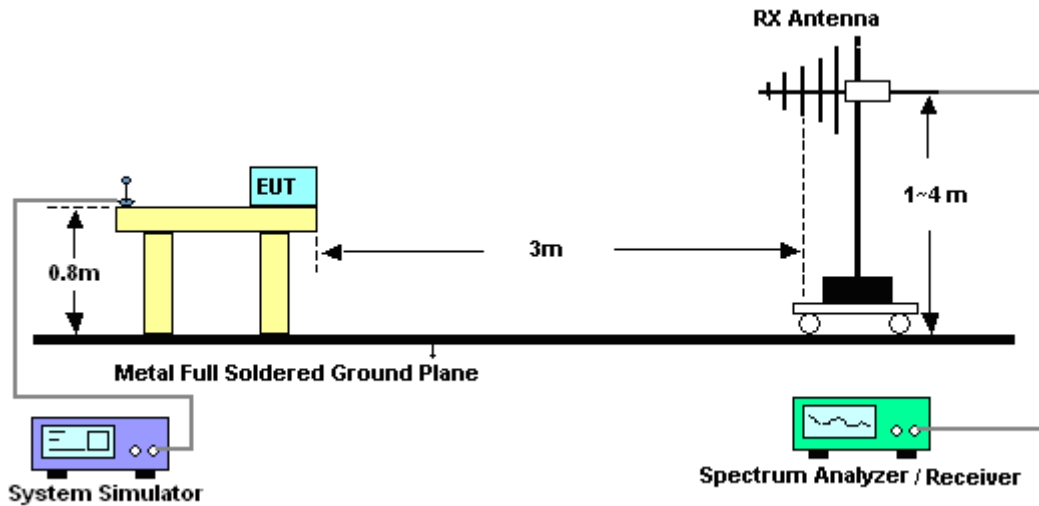
3.2.3. Test Procedures

1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, 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.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

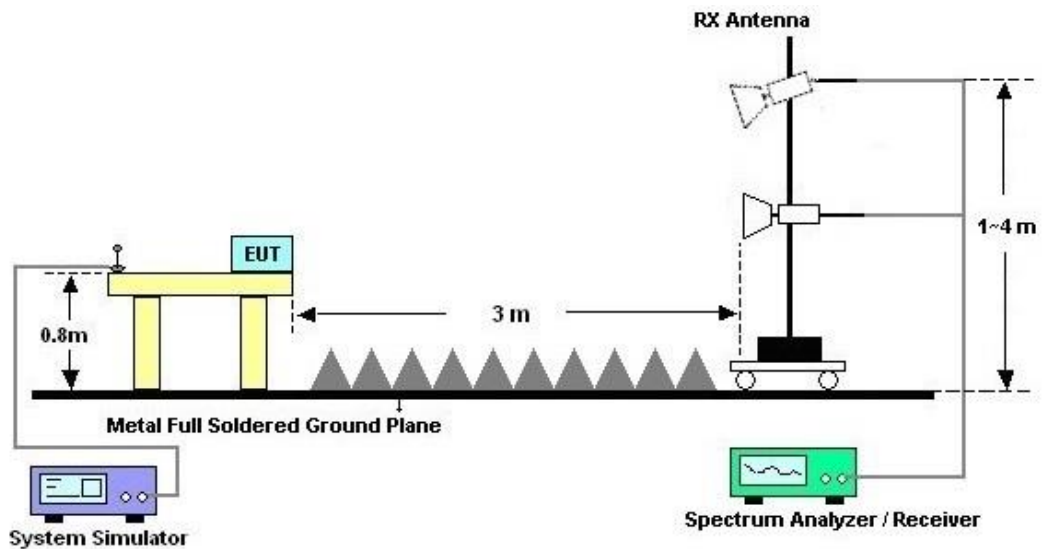
10. Exploratory radiated emissions testing of handheld and/or body-worn devices shall include rotation of the EUT through three orthogonal axes (X/Y/Z Plane) to determine the orientation (attitude) that maximizes the emissions.

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

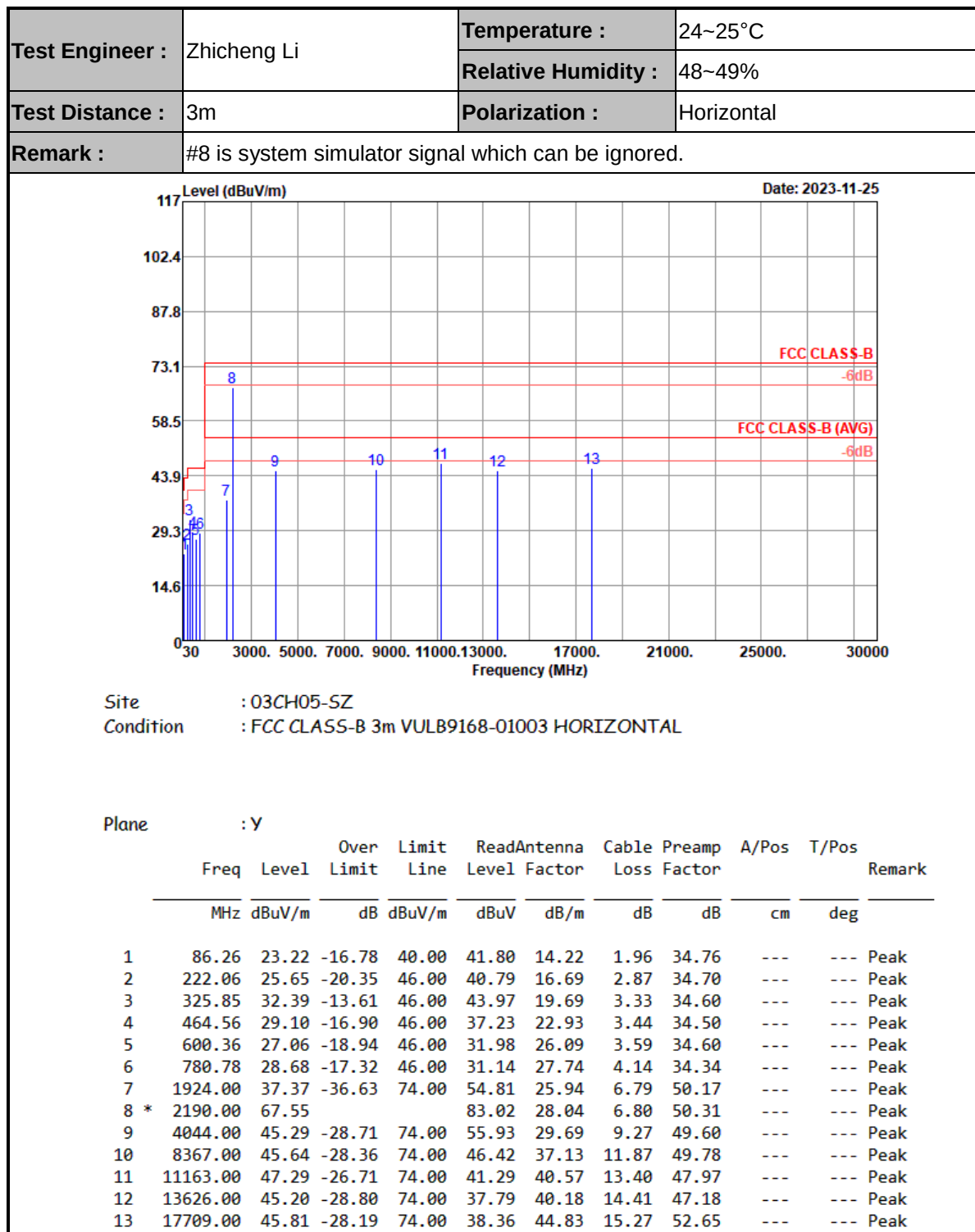


For radiated emissions above 1GHz



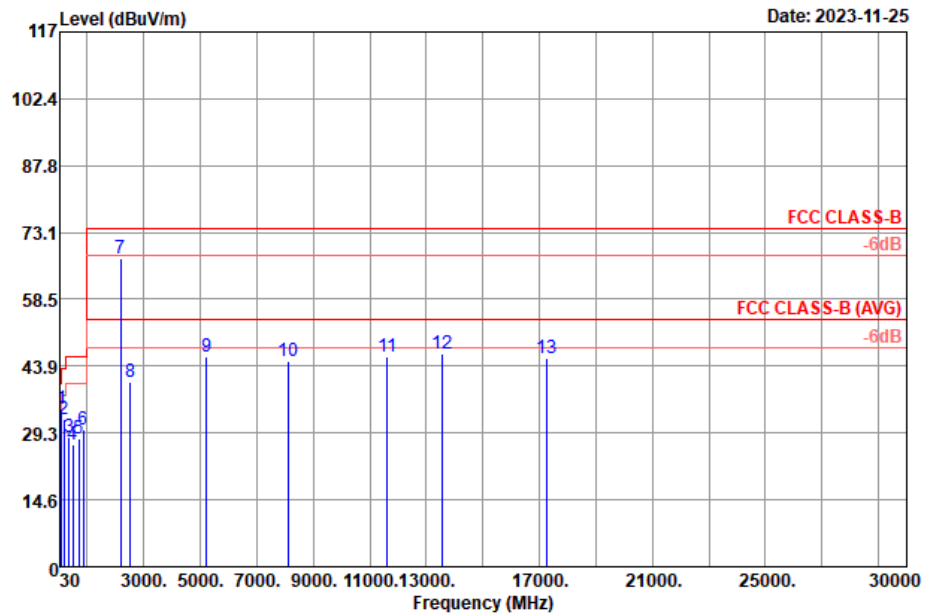


3.2.5. Test Result of Radiated Emission





Test Engineer :	Zhicheng Li	Temperature :	24~25°C
		Relative Humidity :	48~49%
Test Distance :	3m	Polarization :	Vertical
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH05-SZ
Condition : FCC CLASS-B 3m VULB9168-01003 VERTICAL

Plane : Y

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 *	84.32	34.47	-5.53	40.00	52.80	14.47	1.94	34.74	---	Peak
2	181.32	32.37	-11.13	43.50	47.46	17.10	2.51	34.70	---	Peak
3	369.50	28.41	-17.59	46.00	38.89	20.69	3.39	34.56	---	Peak
4	482.02	26.86	-19.14	46.00	34.81	23.14	3.41	34.50	---	Peak
5	709.97	28.18	-17.82	46.00	31.64	27.20	3.74	34.40	---	Peak
6	873.90	30.12	-15.88	46.00	31.30	28.72	4.40	34.30	---	Peak
7	2190.00	67.40			82.87	28.04	6.80	50.31	---	Peak
8	2524.00	40.27	-33.73	74.00	55.88	27.55	7.31	50.47	---	Peak
9	5226.00	45.85	-28.15	74.00	54.13	31.64	9.44	49.36	---	Peak
10	8112.00	45.13	-28.87	74.00	46.23	37.39	11.44	49.93	---	Peak
11	11613.00	45.88	-28.12	74.00	40.02	40.18	13.56	47.88	---	Peak
12	13557.00	46.51	-27.49	74.00	39.18	40.03	14.38	47.08	---	Peak
13	17271.00	45.68	-28.32	74.00	39.70	42.67	15.25	51.94	---	Peak

Note:

- Level(dBμV/m) = Read Level(dBμV) + Antenna Factor(dB/m) + Cable Loss(dB) - Preamp Factor(dB)
- Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Receiver	R&S	ESR7	101630	9kHz~7GHz;	Jul. 06, 2023	Nov. 23, 2023	Jul. 05, 2024	Conduction (CO01-SZ)
AC LISN	R&S	ENV216	100063	9kHz~30MHz	Aug. 21, 2023	Nov. 23, 2023	Aug. 20, 2024	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Oct. 16, 2023	Nov. 23, 2023	Oct. 15, 2024	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000891	100Vac~250Vac	Jul. 07, 2023	Nov. 23, 2023	Jul. 06, 2024	Conduction (CO01-SZ)
EMI Test Receiver	R&S	ESR7	102261	9kHz~7GHz	Apr. 04, 2023	Nov. 25, 2023	Apr. 03, 2024	Radiation (03CH05-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010B	MY59071191	10Hz~44GHz	Apr. 04, 2023	Nov. 25, 2023	Apr. 03, 2024	Radiation (03CH05-SZ)
Log-periodic Antenna	SCHWARZBECK	VULB 9168	01001	20MHz~1.5GHz	Jul. 08, 2023	Nov. 25, 2023	Jul. 07, 2024	Radiation (03CH05-SZ)
Amplifier	EM Electronics	EM330	060756	0.01Hz~3000MHz	Apr. 04, 2023	Nov. 25, 2023	Apr. 03, 2024	Radiation (03CH05-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-2206	1GHz~18GHz	Apr. 04, 2023	Nov. 25, 2023	Apr. 03, 2024	Radiation (03CH05-SZ)
HF Amplifier	EM Electronics	EM01G18GA	060781	1GHz~18GHz	Apr. 04, 2023	Nov. 25, 2023	Apr. 03, 2024	Radiation (03CH05-SZ)
HF Amplifier	EM Electronics	EM18G40G	060778	18GHz~40GHz	Apr. 04, 2023	Nov. 25, 2023	Apr. 03, 2024	Radiation (03CH05-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	00983	15GHz~40GHz	Apr. 08, 2023	Nov. 25, 2023	Apr. 07, 2024	Radiation (03CH05-SZ)
AC Power Source	APC	AFV-S-600	F119050013	N/A	Oct. 18, 2023	Nov. 25, 2023	Oct. 17, 2024	Radiation (03CH05-SZ)
Turn Table	EMEC	T-200-S-1	060925-T	0~360 degree	NCR	Nov. 25, 2023	NCR	Radiation (03CH05-SZ)
Antenna Mast	EMEC	MBS-400-1	060927	1 m~4 m	NCR	Nov. 25, 2023	NCR	Radiation (03CH05-SZ)

NCR: No Calibration Required

5. Measurement Uncertainty

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.7dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.2dB
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Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1dB
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Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.1dB
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