



BS EN 55032:2015/A11:2020
BS EN 55035:2017+A11:2020
BS EN IEC 61000-3-2:2019
BS EN 61000-3-3:2013/A1:2019

TEST REPORT

For

Shenzhen Huafurui Technology Co., Ltd.

Unit 1401 & 1402, 14/F, Jinqi Zhigu Mansion (No.4 Building of Chongwen Garden), Crossing of the Liuxian Street and Tangling Road, Taoyuan Street, Nanshan District, Shenzhen, P.R. China

Tested Model: KINGKONG 7

Report Type: Original Report	Product Type: Smartphone
Report Number: SZ1210506-15265E-01B	
Report Date: 2021-06-21	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Smartphone
Tested Model	KINGKONG 7
Trade mark	CUBOT
Voltage Range	DC 3.85V from battery or DC 5V from adapter.
Highest operating frequency	5250MHz
Equipment Class	Class B
Date of Test	2021-05-06 to 2021-06-12
Sample serial number	SZ1210506-15265E-EM-4NH(Assigned by ATC)
Received date	2021-05-06
Sample/EUT Status	Good condition
Adapter 1 information	Model: HJ-0502000W2-EU Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5V, 2.0A
Adapter 2 information	Model: HJ-0502000-UK Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5V, 2.0A

Objective

This test report is in accordance with BS EN 55032: Electromagnetic compatibility of multimedia equipment -Emission Requirements. BS EN 55035: Electromagnetic compatibility of multimedia equipment -Immunity requirements. BS EN IEC 61000-3-2:2019: Limits for harmonic current emissions (equipment input current ≤ 16 A per phase), and also in accordance with BS EN 61000-3-3:2013/A1:2019, Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection

The objective is to determine the compliance of EUT with BS EN 55032, BS EN 55035, BS EN IEC 61000-3-2:2019 and BS EN 61000-3-3:2013/A1:2019.

Performance criterion

Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion B

During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test. After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed.

Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

Test Methodology

All measurements contained in this report were conducted with CISPR 16-1-1:2010+A1:2010+A2:2014, specification for radio disturbance and immunity measuring apparatus and methods P1-1: radio disturbance and immunity measuring apparatus measuring apparatus. CISPR 16-1-4:2010+A1:2012, Specification for radio disturbance and immunity measuring apparatus and methods-Part 1-4: Radio disturbance and immunity measuring apparatus -Ancillary equipment -Radiated disturbances. CISPR 16-2-1:2014, specification for radio disturbance and immunity measuring apparatus and methods P2-1: methods of measurement of disturbance and immunity conducted disturbance measurements. CISPR 16-2-3:2010+A1:2010+A2:2014, specification for radio disturbance and immunity measuring apparatus and methods P2-3 methods of measurement of disturbances and immunity radiated disturbance measurements. CISPR 16-4-2:2011, Specification for radio disturbance and immunity measuring apparatus and methods-Part 4-2: Uncertainties, statistics and limit modeling-Uncertainty in EMC measurements.

Test Facility

Name of Firm: Shenzhen Accurate Technology Co., Ltd

Site Location: 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

Subcontracted Items: Radiated RF Electromagnetic Fields and Radio frequency, common mode

Subcontractor: Bay Area Compliance Labs Corp.(Shenzhen)

Site Location: 6/F, the 3rd Phase of Wan Li Industrial Bldg., Shihua Rd., FuTian Free Trade Zone, Shenzhen, China

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expanded combined standard uncertainty of test at Shenzhen Accurate Technology Co., Ltd. is shown as below. And the uncertainty will be taken into consideration for the test data recorded in the report

Item		Expanded Measurement uncertainty
Conducted Emissions	AC Mains	2.72 dB (k=2, 95% level of confidence)
Radiated emission	30MHz-1GHz	4.28 dB (k=2, 95% level of confidence)
	1GHz-18GHz	4.98 dB (k=2, 95% level of confidence)

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in normal mode.

EUT exercise software

No exercise software was used.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

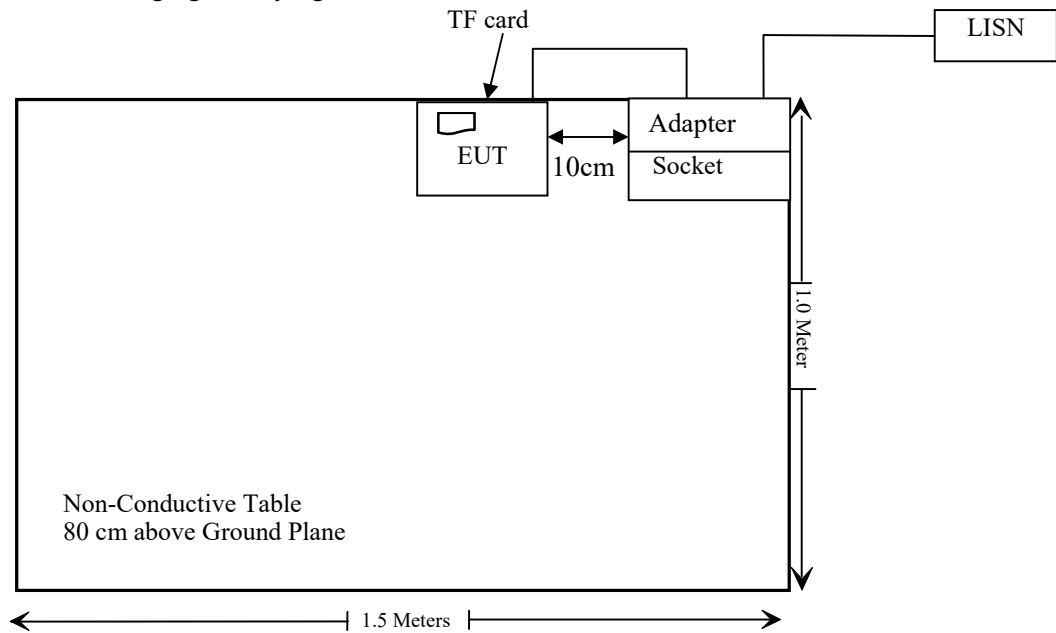
Manufacturer	Description	Model	Serial Number
Unknown	Earphone	Unknown	Unknown
DELL	PC	Latitude E5570	28693335458
DELL	PC	Latitude E6410	11429208685
TF Card	TOSHIBA	1849PZ41056	Unknown
FM Generator	Rohde& Schwarz	SML01	10161

External I/O Cable

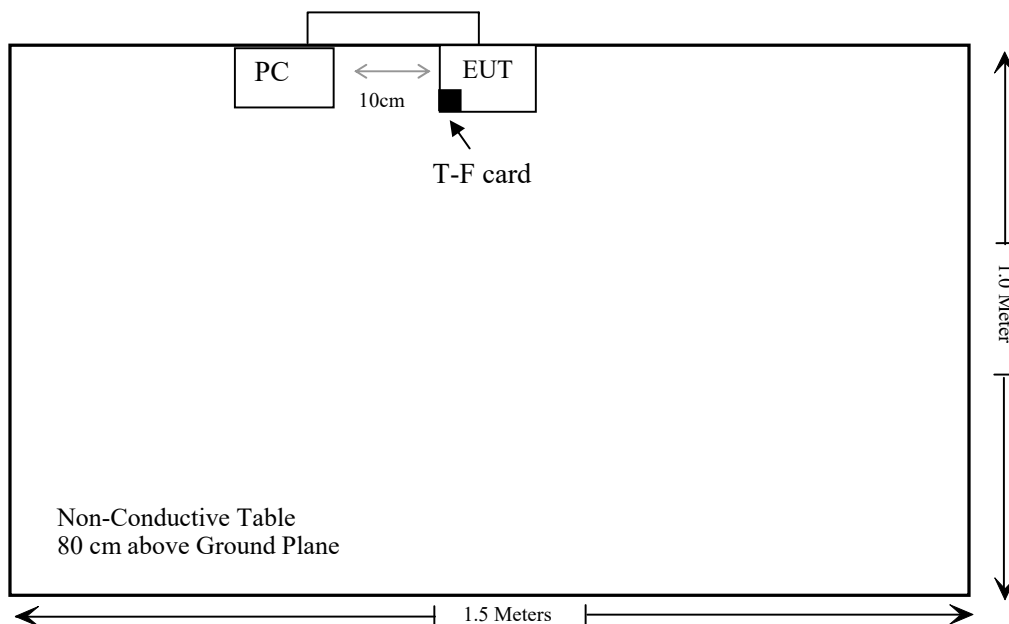
Cable Description	Length (m)	From/Port	To
Un-Shielding Detachable DC Cable	1.0	EUT	Adapter
Un-Shielding Detachable USB Cable	1.2	EUT	PC

Block Diagram of Test Setup

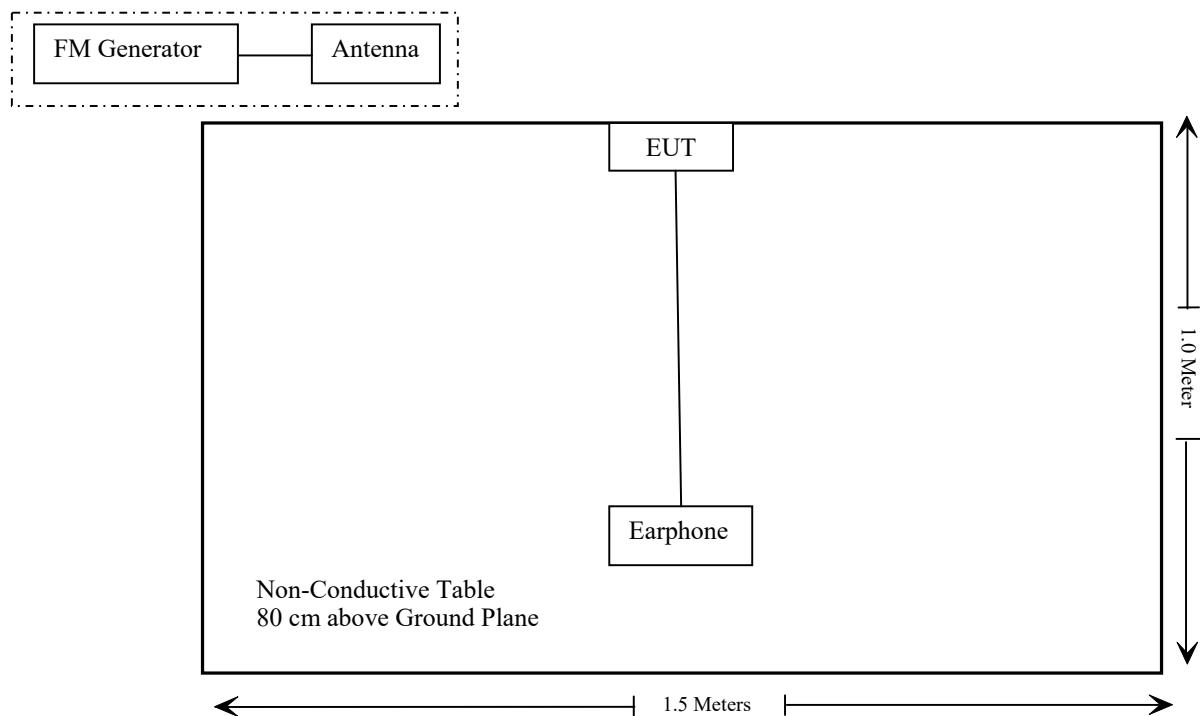
EUT operation mode: Charging & Playing



Test mode: Downloading



Test mode: Test mode: FM receiving



SUMMARY OF TEST REPORT**BS EN 55032**

RULE	DESCRIPTION	RESULTS
§ A.3	Conducted Disturbance at Mains Terminals	Compliance
§ A.2	Radiated Disturbance	Compliance

BS EN 55035

RULE	DESCRIPTION	RESULTS
§4.2.1	Electrostatic Discharge IEC 61000-4-2	Compliance
§4.2.2.2	Continuous Radiated Immunity IEC 61000-4-3	Compliance
§4.2.2.3	Continuous Conducted Immunity IEC 61000-4-6	Compliance
§4.2.3	Power Frequency Magnetic Fields IEC 61000-4-8	Compliance
§4.2.4	Electrical Fast Transients IEC 61000-4-4	Compliance
§4.2.5	Surges IEC 61000-4-5	Compliance
§4.2.6	Voltage Dips And Interruptions, IEC 61000-4-11	Compliance
§4.2.7	Broadband impulsive conducted disturbances	Not Applicable

BS EN IEC 61000-3-2

Rule	Description	Results
§7	Harmonic Current Emissions	Not Applicable

BS EN 61000-3-3:

Rule	Description	Results
§5	Voltage Fluctuation and Flicker	Compliance

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EMI					
Rohde & Schwarz	Test Receiver	ESPI3	100396	2020/12/24	2021/12/23
R & S	L.I.S.N.	ENV216	101314	2020/12/25	2021/12/24
Anritsu Corp	50Ω Coaxial Switch	MP59B	6100237248	2020/12/25	2021/12/24
Conducted Emission Test Software: ES-K1 V1.71					
Rohde&Schwarz	Spectrum Analyzer	FSV40	101495	2020/12/24	2021/12/23
Rohde& Schwarz	Test Receiver	ESR	101817	2020/12/24	2021/12/23
Schwarzbeck	Log-periodic antenna	VULB9163	9163-323	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
SONOMA INSTRUMENT	Amplifier	310 N	186131	2020/12/25	2021/12/24
Preamplifier	A.H. Systems, inc.	PAM-0118P	531	2020/07/08	2021/07/07
Anritsu Corp	50 Coaxial Switch	MP59B	6200283933	2020/12/24	2021/12/23
Radiated Emission Test Software: EZ_EMV V 1.1.4.2					
California Instruments	AC Power Source	5001iX-400	55689	2020/12/25	2021/12/24
California Instruments	Test analyzer	PACS-1	72254	2020/12/24	2021/12/23
Flicker Test Software: CTS 4 Version 4.26.0					
EFT/SURGE/DIPS/ESD/PFMF					
THERMO	IMMUNITY TESTER	UCS 500 N5	V0928104968	2020/12/24	2021/12/23
TESEQ	ESD Tester	NSG 437	823	2020/12/26	2021/12/25
Magnetic Field Tester	HAEFELY	MAG100	150577	2020/12/25	2021/12/24

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RS					
HP	Signal Generator	8665B	3744A01692	2020/7/31	2021/7/30
AR	Amplifier	500W1000B	0348446	2021/2/28	2022/2/27
AR	Amplifier	60S1G6	0348712	2021/2/28	2022/2/27
AR	Antenna	ATL80M1G	0348837	NCR	NCR
AR	Antenna	ATT700M12G	0349411	NCR	NCR
RS Test Software: VEE PRO V2.3 VXE					
CS					
HP	Signal Generator	8648C	3426A01345	2020/07/31	2021/07/30
A&R	Power Amplifier	15A250	13444	2020/12/29	2021/12/28
WEINSCHL	6dB Attenuator	50-6	R4376	NCR	NCR
Com-Power Corporation	CDN	CDN M325E	521145	2020/08/04	2021/08/03

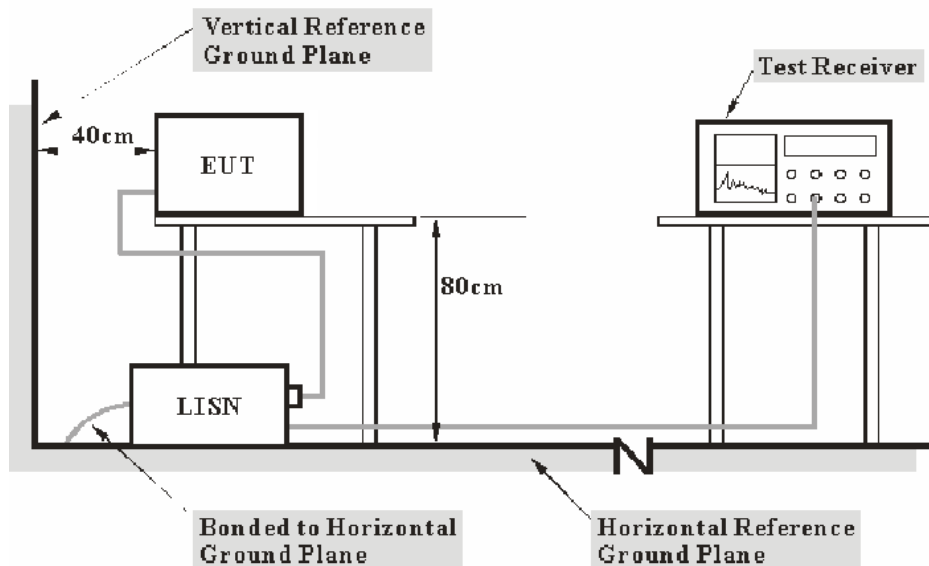
*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

BS EN 55032 §A.3 - CONDUCTED DISTURBANCE

Applicable Standard

According to BS EN 55032 §A.3

Test System Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is in according with CISPR 16-1-1:2010+A1:2010+A2:2014, CISPR 16-2-1:2014. The related limit was specified in the BS EN 55032.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.

All final data was recorded in the Quasi-peak and average detection mode.

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

$$\text{Correction Factor} = \text{LISN/ISN VDF} + \text{Cable Loss} + \text{Transient Limiter Attenuation}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

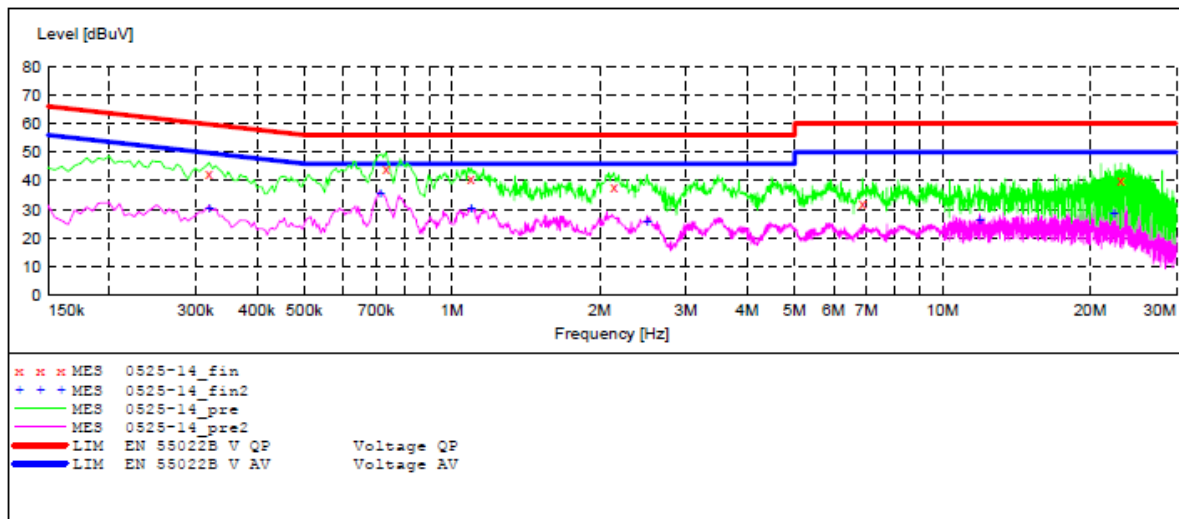
According to the recorded data in following table, the EUT complied with the limit of BS EN 55032.

Test Data

Environmental Conditions

Temperature:	25°C
Relative Humidity:	46%
ATM Pressure:	101.0 kPa

The testing was performed by Amy Cao on 2021-05-25.

AC Mains:*Mode: Charging and playing***Adapter 1****AC 230 V/ 50 Hz, Line:****MEASUREMENT RESULT: "0525-14_fin"**

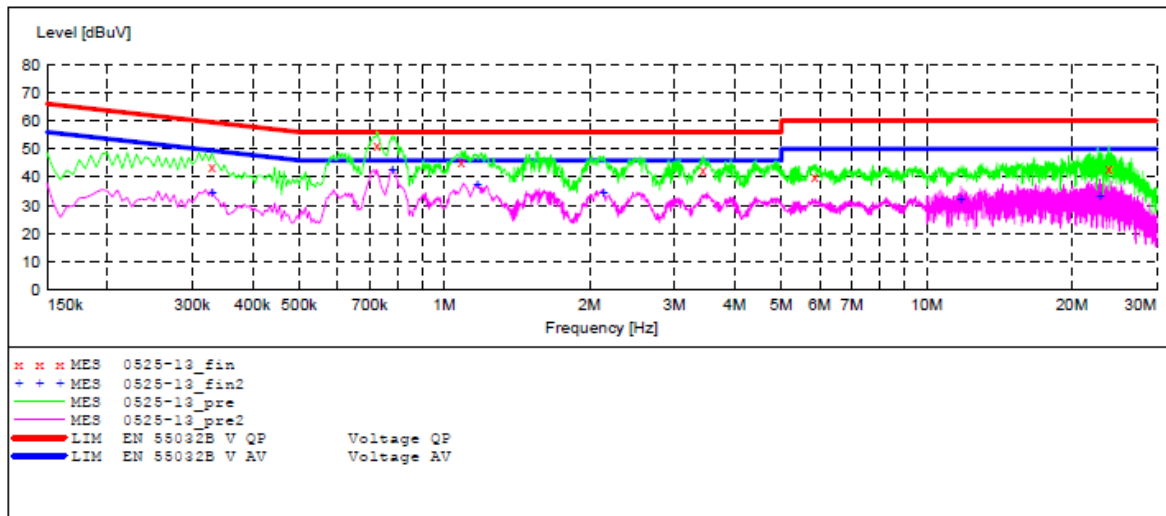
2021-5-25 09:54

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.320000	42.50	10.9	60	17.5	QP	L1	GND
0.735000	44.40	11.1	56	11.6	QP	L1	GND
1.095000	40.90	11.1	56	15.1	QP	L1	GND
2.140000	37.90	11.3	56	18.1	QP	L1	GND
6.870000	32.40	11.5	60	27.6	QP	L1	GND
23.150000	40.20	11.7	60	19.8	QP	L1	GND

MEASUREMENT RESULT: "0525-14_fin2"

2021-5-25 09:54

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.320000	30.50	10.9	50	19.5	AV	L1	GND
0.715000	35.80	11.1	46	10.2	AV	L1	GND
1.095000	30.50	11.1	46	15.5	AV	L1	GND
2.500000	26.00	11.3	46	20.0	AV	L1	GND
11.925000	26.10	11.6	50	23.9	AV	L1	GND
22.450000	28.40	11.7	50	21.6	AV	L1	GND

AC 230 V/ 50 Hz, Neutral:**MEASUREMENT RESULT: "0525-13_fin"**

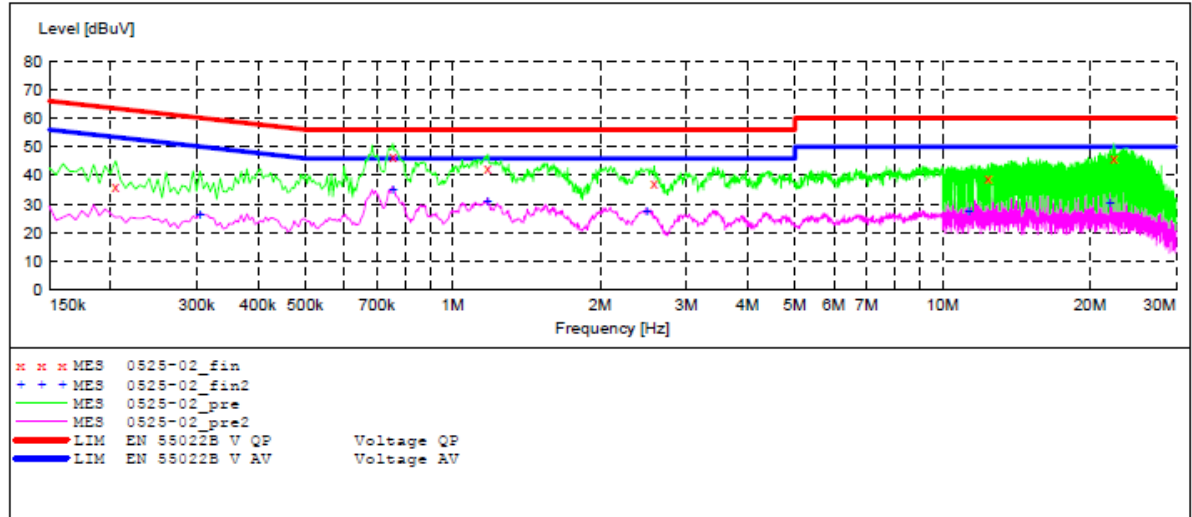
2021-5-25 09:52

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.330000	44.40	10.9	60	15.6	QP	N	GND
0.725000	51.40	11.1	56	4.6	QP	N	GND
1.085000	45.30	11.1	56	10.7	QP	N	GND
3.440000	42.80	11.4	56	13.2	QP	N	GND
5.870000	40.30	11.5	60	19.7	QP	N	GND
23.925000	43.00	11.7	60	17.0	QP	N	GND

MEASUREMENT RESULT: "0525-13_fin2"

2021-5-25 09:52

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.330000	34.50	10.9	50	15.5	AV	N	GND
0.780000	42.50	11.1	46	3.5	AV	N	GND
1.170000	37.60	11.2	46	8.4	AV	N	GND
2.140000	34.70	11.3	46	11.3	AV	N	GND
11.775000	31.90	11.6	50	18.1	AV	N	GND
22.875000	33.50	11.7	50	16.5	AV	N	GND

Adapter 2**AC 230 V/ 50 Hz, Line:****MEASUREMENT RESULT: "0525-02_fin"**

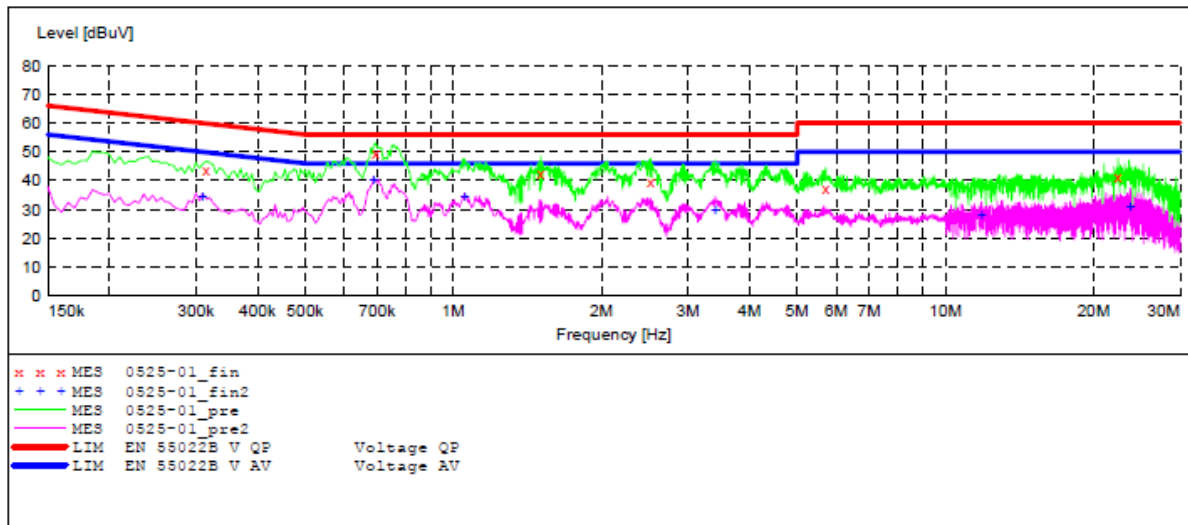
2021-5-25 09:23

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.205000	36.00	10.8	63	27.0	QP	L1	GND
0.755000	47.00	11.1	56	9.0	QP	L1	GND
1.180000	42.70	11.2	56	13.3	QP	L1	GND
2.580000	37.30	11.3	56	18.7	QP	L1	GND
12.375000	39.20	11.6	60	20.8	QP	L1	GND
22.400000	46.40	11.7	60	13.6	QP	L1	GND

MEASUREMENT RESULT: "0525-02_fin2"

2021-5-25 09:23

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.305000	26.20	10.9	50	23.8	AV	L1	GND
0.755000	35.10	11.1	46	10.9	AV	L1	GND
1.180000	30.70	11.2	46	15.3	AV	L1	GND
2.490000	27.40	11.3	46	18.6	AV	L1	GND
11.325000	27.20	11.6	50	22.8	AV	L1	GND
22.000000	30.40	11.7	50	19.6	AV	L1	GND

AC 230 V/ 50 Hz, Neutral:**MEASUREMENT RESULT: "0525-01_fin"**

2021-5-25 09:21

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.315000	43.70	10.9	60	16.3	QP	N	GND
0.695000	49.50	11.1	56	6.5	QP	N	GND
1.505000	42.70	11.2	56	13.3	QP	N	GND
2.520000	39.70	11.3	56	16.3	QP	N	GND
5.720000	37.60	11.5	60	22.4	QP	N	GND
22.425000	41.30	11.7	60	18.7	QP	N	GND

MEASUREMENT RESULT: "0525-01_fin2"

2021-5-25 09:21

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.310000	34.40	10.9	50	15.6	AV	N	GND
0.690000	40.10	11.1	46	5.9	AV	N	GND
1.055000	34.70	11.1	46	11.3	AV	N	GND
3.410000	30.00	11.4	46	16.0	AV	N	GND
11.850000	28.20	11.6	50	21.8	AV	N	GND
23.750000	31.10	11.7	50	18.9	AV	N	GND

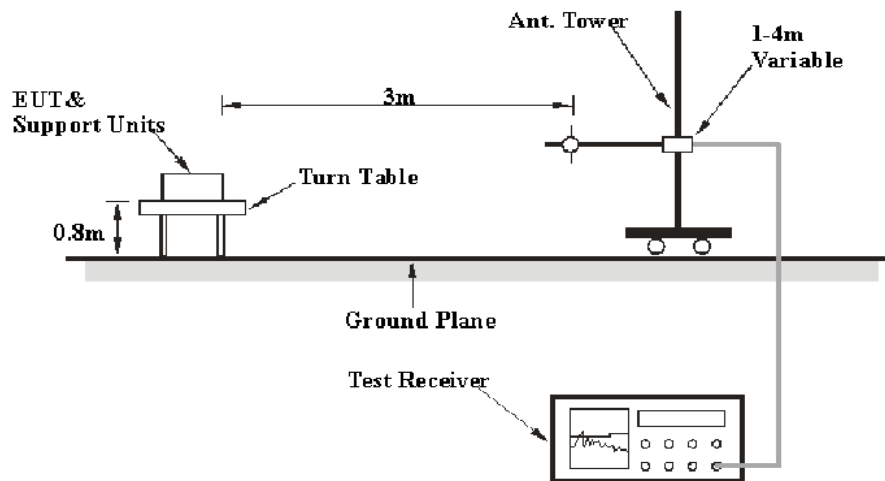
BS EN 55032 §A.2-RADIATED DISTURBANCE

Applicable Standard

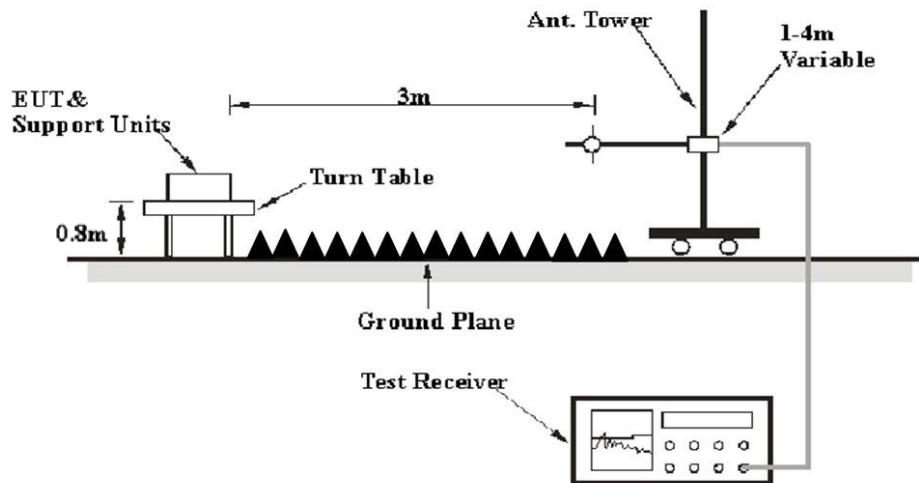
BS EN 55032 §A.2

Test System Setup

Below 1 GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the CISPR16-1-4:2010+A1:2012, CISPR 16-2-3:2010+A1:2010+A2:2014. The limit was specified in BS EN 55032.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
1 GHz~6 GHz	1 MHz	3 MHz	/	Peak
1 GHz~6 GHz	1 MHz	10 Hz	/	Average

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit for Class B. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Result}.$$

Test Results Summary

According to the data in the following table, the EUT complied with the limit of BS EN 55032.

Test Data

Environmental Conditions

Temperature:	25°C
Relative Humidity:	46%
ATM Pressure:	101.0 kPa

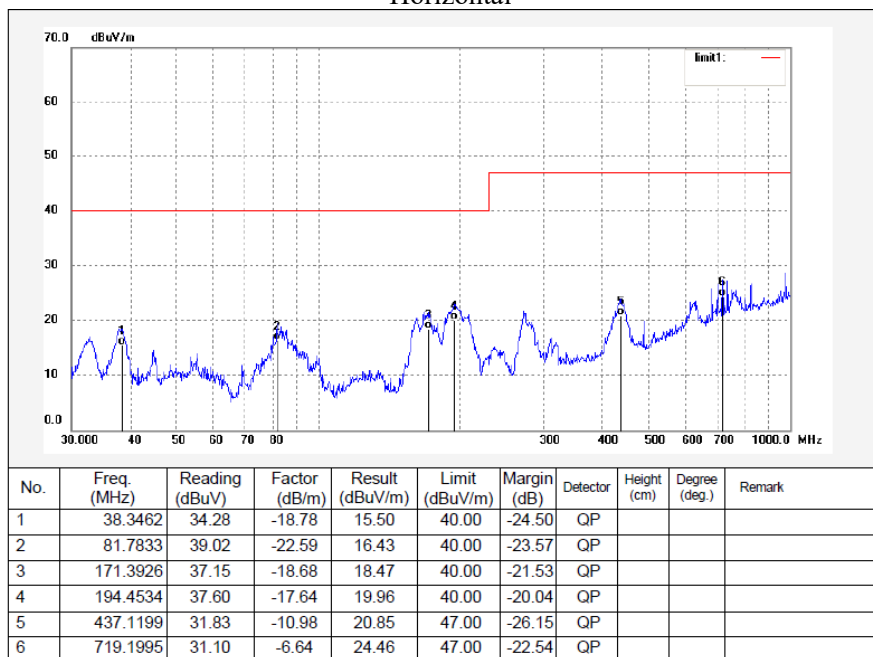
The testing was performed by Amy Cao on 2021-05-27 & 2021-06-09.

EUT Operation Mode: Charging and playing

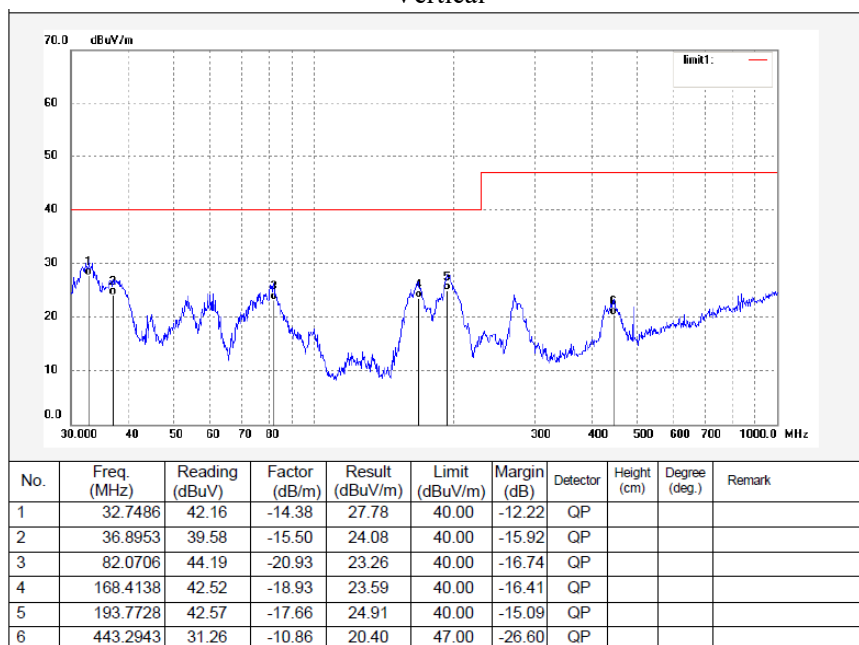
Adapter 1

30 MHz-1 GHz:

Horizontal



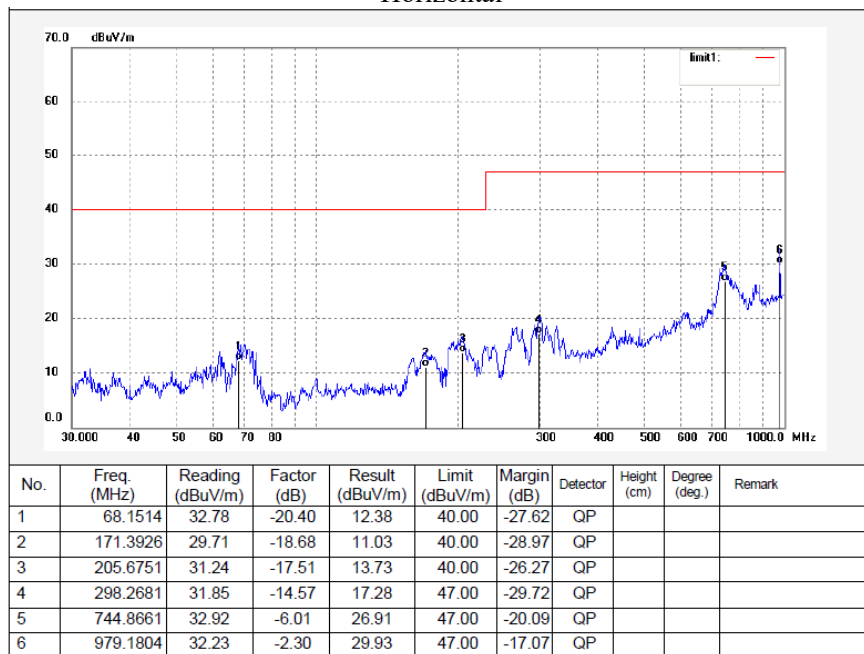
Vertical



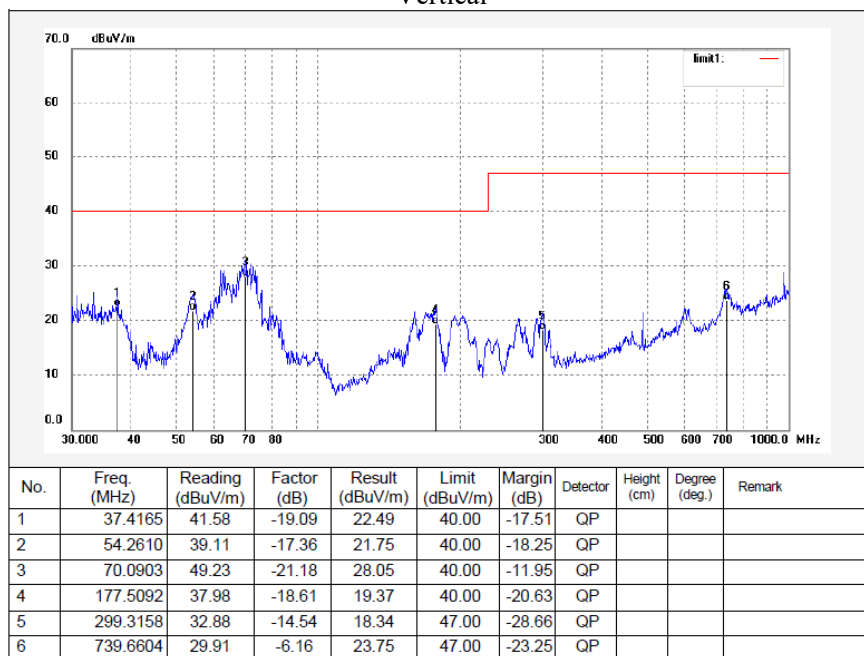
Adapter 2

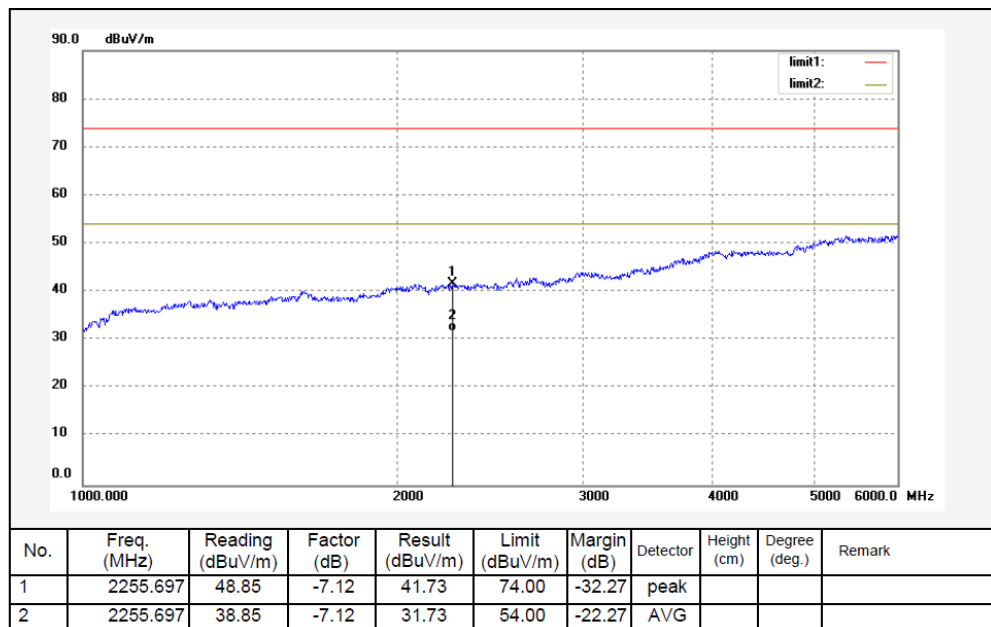
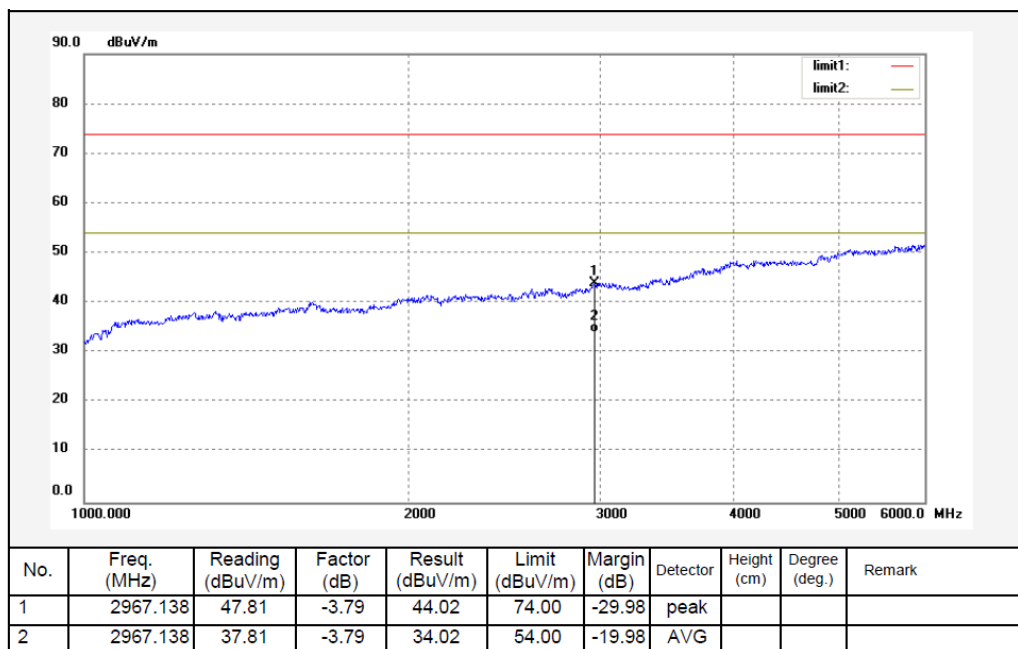
30 MHz-1 GHz:

Horizontal



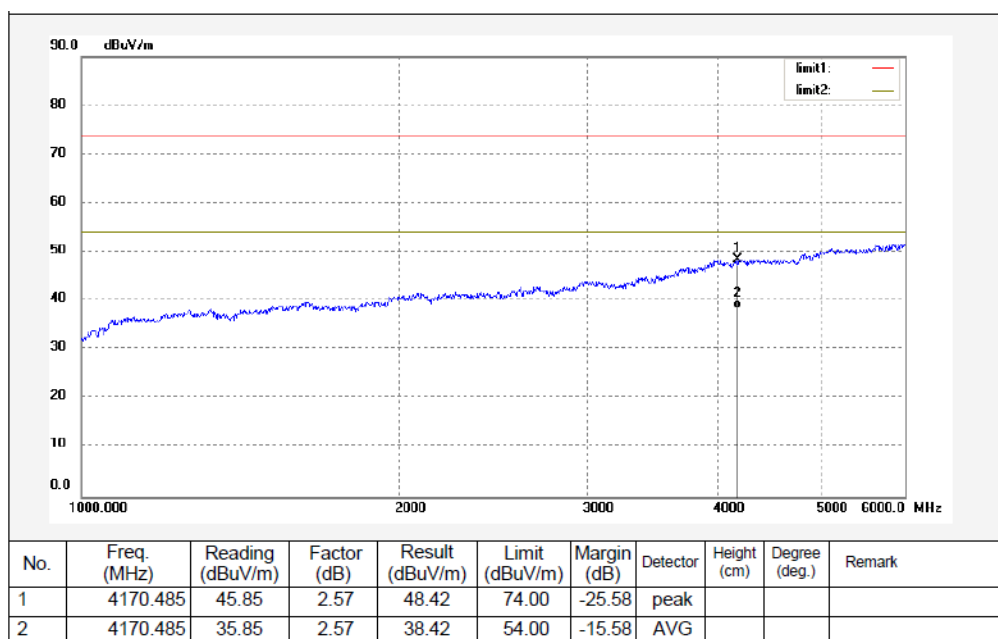
Vertical



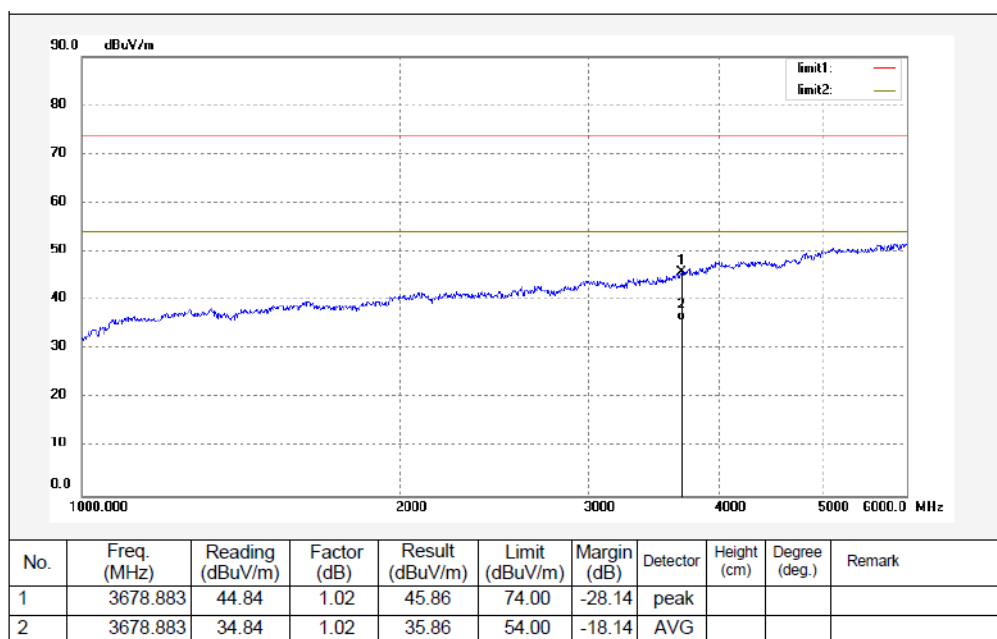
**1-6 GHz:
Adapter 1****Horizontal****Vertical**

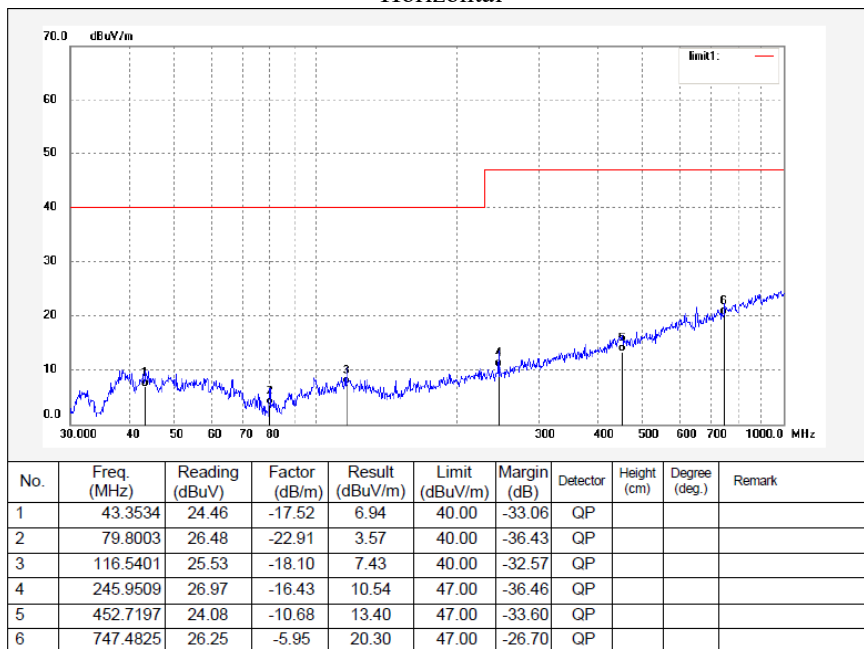
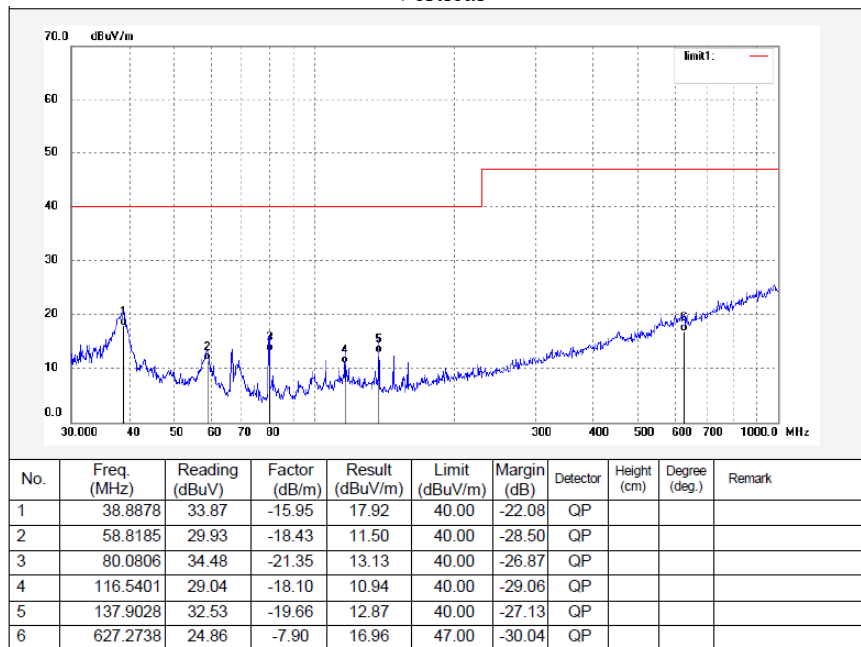
Adapter 2

Horizontal



Vertical

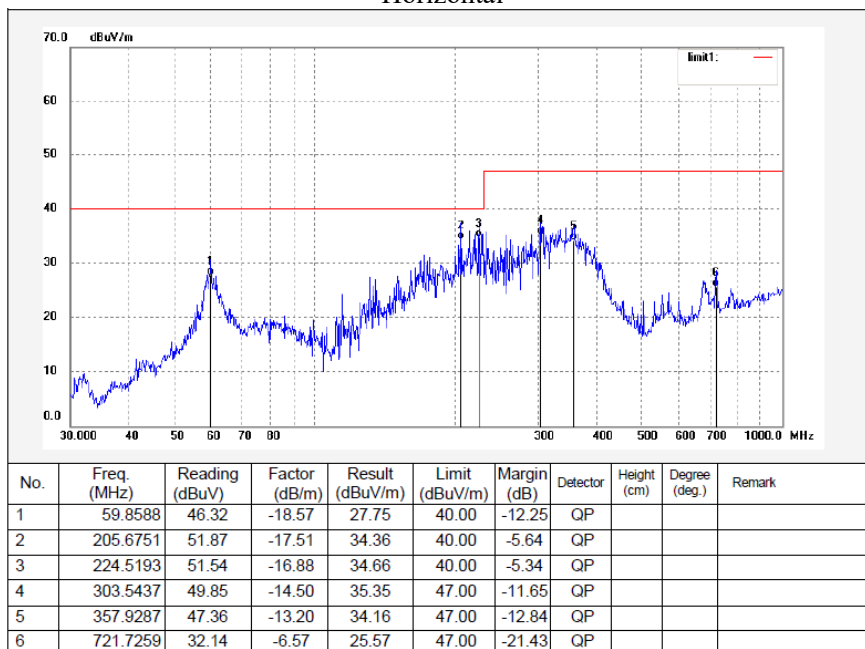


*EUT Operation Mode: FM receiving***30 MHz-1 GHz:****Horizontal****Vertical**

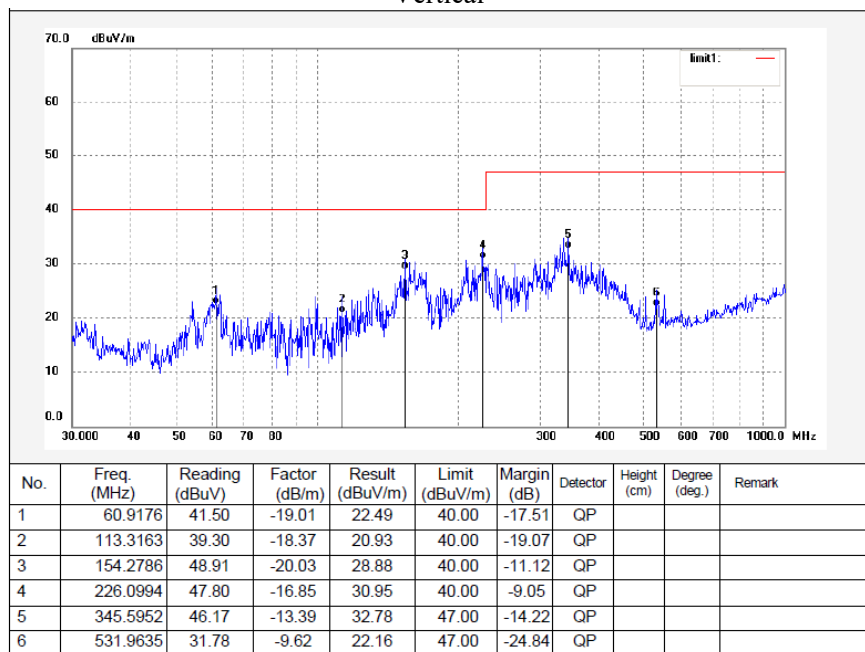
EUT Operation Mode: Downloading

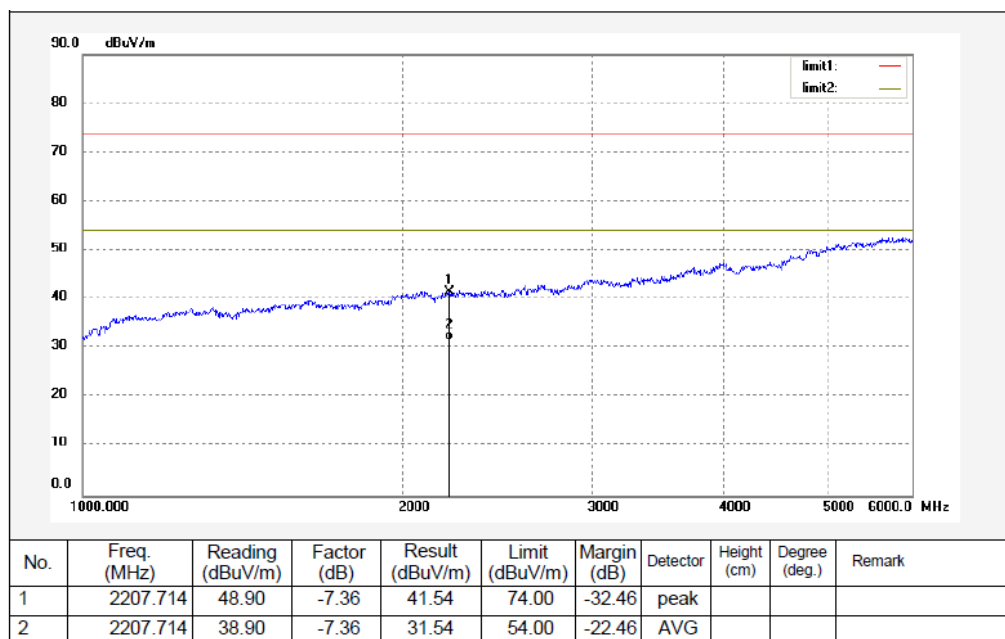
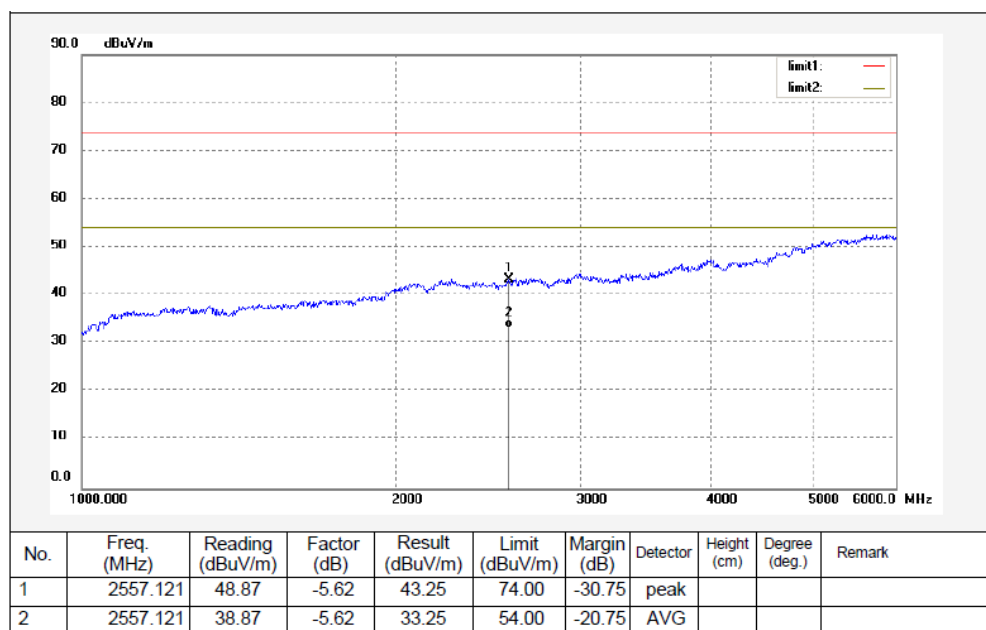
30 MHz-1 GHz:

Horizontal



Vertical



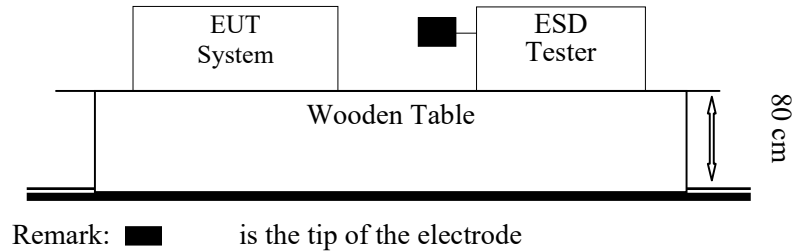
1-6 GHz:**Horizontal****Vertical**

Note:

- 1) Result = Reading + Factor
- 3) Margin = Limit - Result

BS EN 55035 §4.2.1-ELECTROSTATIC DISCHARGES (IEC 61000-4-2)

Test System Setup



IEC 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on a insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.6 by 0.8-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by 0.5-millimeter thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

Test Standard

BS EN 55035:2017 (IEC 61000-4-2:2008)

Test Level

Level	Test Voltage Contact Discharge (±kV)	Test Voltage Air Discharge (±kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

Performance criterion: B

Test Procedure

Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Contact Discharge:

All the procedure shall be same as Section 8.3.1 of IEC 61000-4-2, except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

Indirect discharge for horizontal coupling plane

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1 m from the EUT and with the discharge electrode touching the coupling plane.

Indirect discharge for vertical coupling plane

At least 20 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m × 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

Test Data

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	57 %
ATM Pressure:	101.0 kPa

The testing was performed by Amy Cao on 2021-05-12.

For Adapter1 & Adapter2:

EUT Operation Mode: Charging and playing

EUT Operation Mode: FM receiving

EUT Operation Mode: Downloading

Table 1: Electrostatic Discharge Immunity (Air Discharge)

EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV
Screen	A	A	A	A	A	A	/	/
Camera	A	A	A	A	A	A	/	/
Button	A	A	A	A	A	A	/	/
Speaker	A	A	A	A	A	A	/	/
Charging port	A	A	A	A	A	A	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

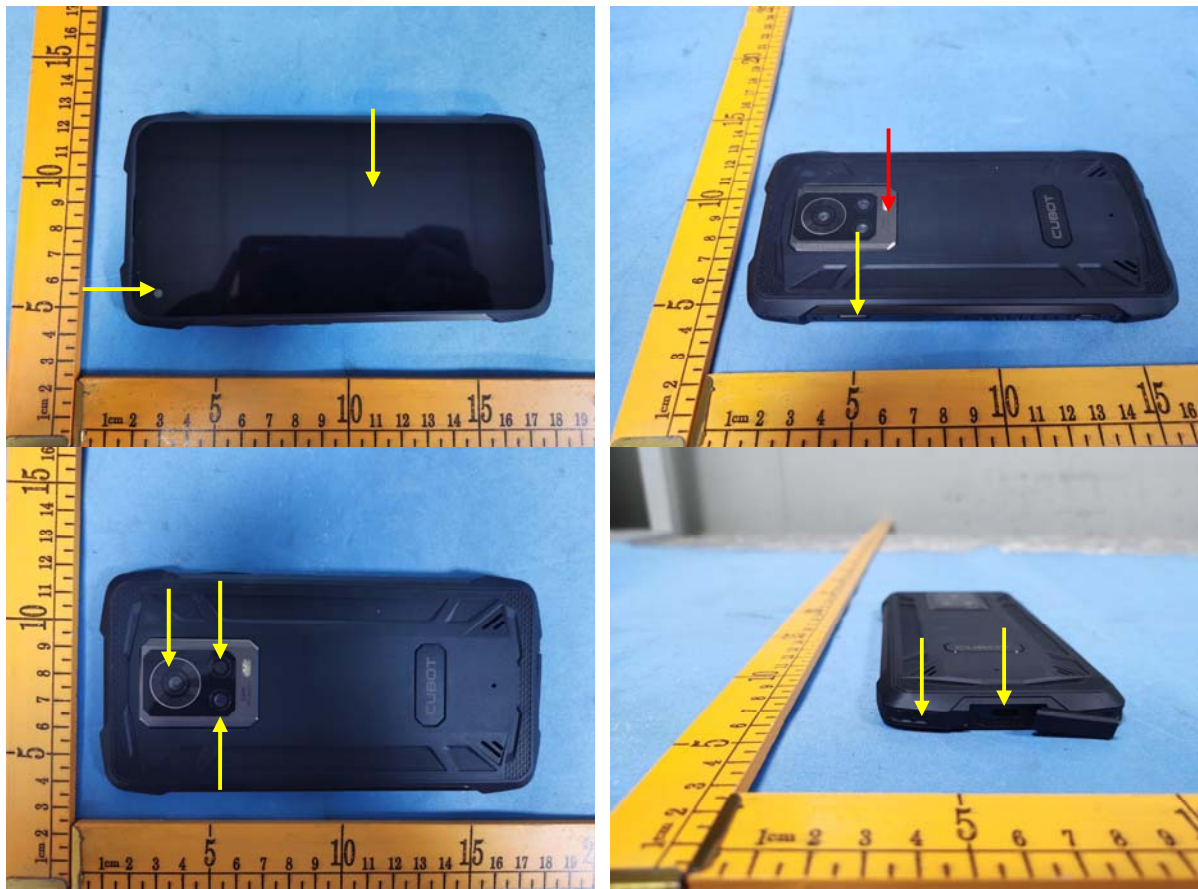
EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Metal	A	A	A	A	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	/	/	/	/
Back Side	A	A	A	A	/	/	/	/
Left Side	A	A	A	A	/	/	/	/
Right Side	A	A	A	A	/	/	/	/

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

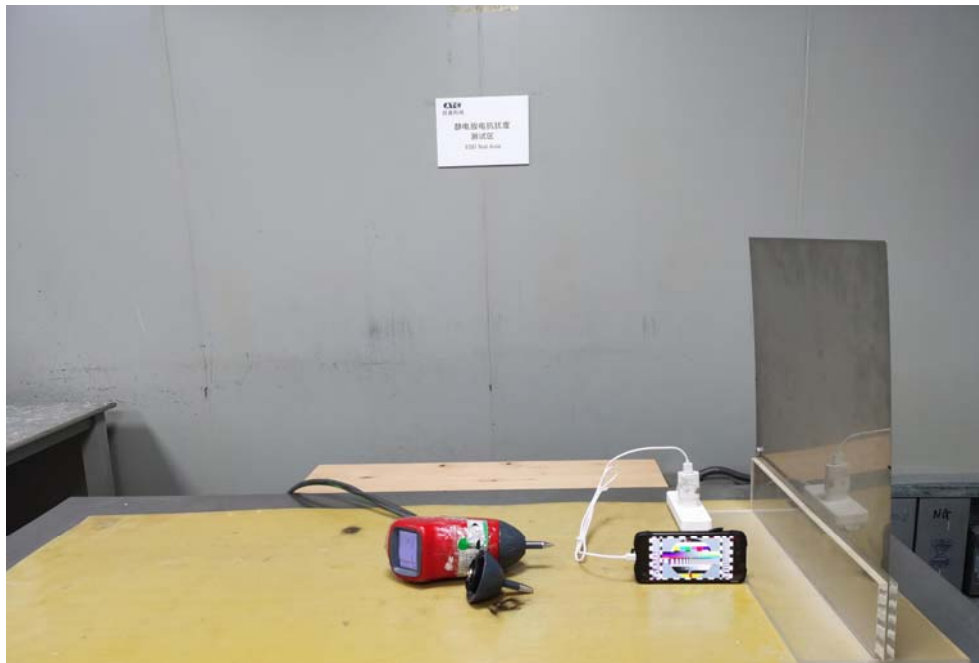
EN 61000-4-2 Test Points Location	Test Levels							
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV
Front Side	A	A	A	A	/	/	/	/
Back Side	A	A	A	A	/	/	/	/
Left Side	A	A	A	A	/	/	/	/
Right Side	A	A	A	A	/	/	/	/



Note: —→ represents direct contact —→ represents air discharge

Note: The list is only for photos of the location where the discharge can be made, the others not listed are without discharge points, or not the EUT part.

Charging and playing



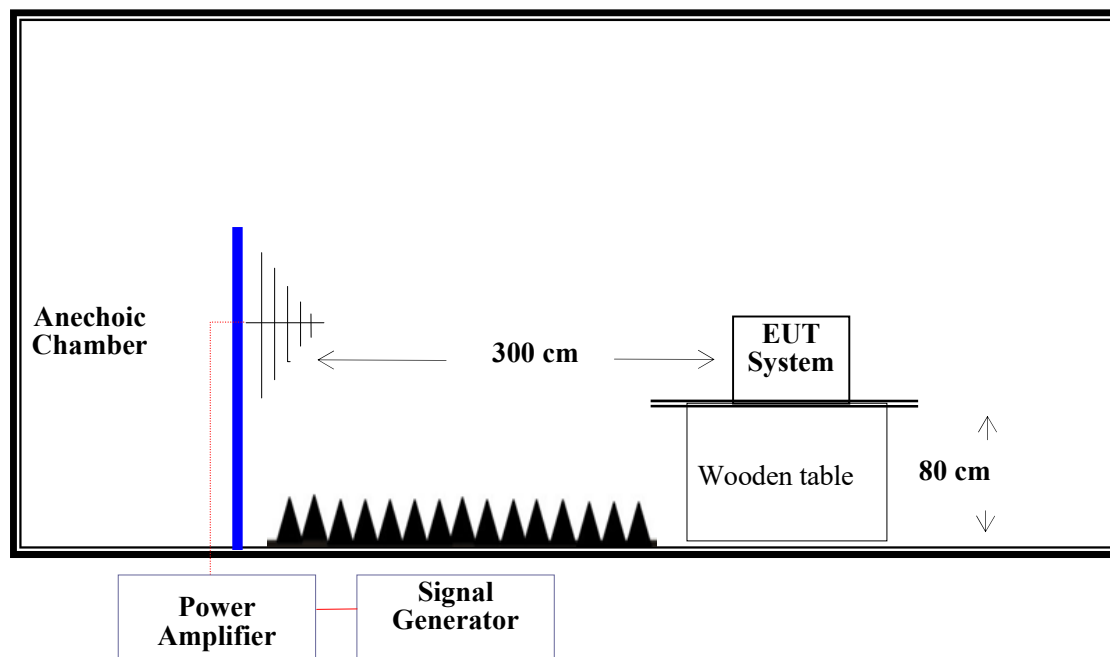
Downloading



FM Receiving



Test setup photos

BS EN 55035 §4.2.2.2-CONTINUOUS RADIATED IMMUNITY (IEC 61000-4-3)**Test System Setup****Test Standard**

BS EN 55035:2017 (IEC 61000-4-3: 2006 + A1:2007 + A2:2010)

Test Level

Level	Field Strength V/m
1.	1
2.	3
3.	10
X.	Special

Performance Criterion: A

Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarizations of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera was used to monitor the EUT.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m (Test level 2)
2. Radiated Signal	AM 80%, 1 kHz Modulation
3. Scanning Frequency	80 – 1000 MHz, 1800MHz, 2600MHz, 3500MHz, 5000MHz
4. Frequency step	1%
5. Dwell Time	1 sec.

Test Data

Environmental Conditions

Temperature:	25°C
Relative Humidity:	46%
ATM Pressure:	101.0 kPa

The testing was performed by Logic Lin on 2021-05-12.

For Adapter1 & Adapter2:

EUT Operation Mode: Charging and playing

EUT Operation Mode: FM receiving

EUT Operation Mode: Downloading

Table 1: Radiated RF-Electromagnetic Field Immunity

Frequency Range (MHz)	Front Side		Rear Side		Left Side		Right Side	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	A	A	A	A	A	A	A	A

Table 2: Radiated RF-Electromagnetic Field Immunity

Spot Test (MHz)	Front Side		Rear Side		Left Side		Right Side	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
1800, 2600, 3500, 5000	A	A	A	A	A	A	A	A

Table 3: Not Supporting Telephony Audio output function Acoustic measurements

Frequency Range (MHz)	Field Strength	L0(dB)	L1(dB)	Margin(dB)	Limit(dB)	Perform Criterion	Remark
80-1000	3V/m	75	46	-29	≤-20	A	PASS

Table 4: Not Supporting Telephony Audio output function Acoustic measurements

Spot Test (MHz)	Field Strength	L0(dB)	L1(dB)	Margin(dB)	Limit(dB)	Perform Criterion	Remark
1800	3V/m	75	45	-30	≤-20	A	PASS
2600	3V/m	75	46	-29	≤-20	A	PASS
3500	3V/m	75	43	-32	≤-20	A	PASS
5000	3V/m	75	47	-28	≤-20	A	PASS

NOTE:

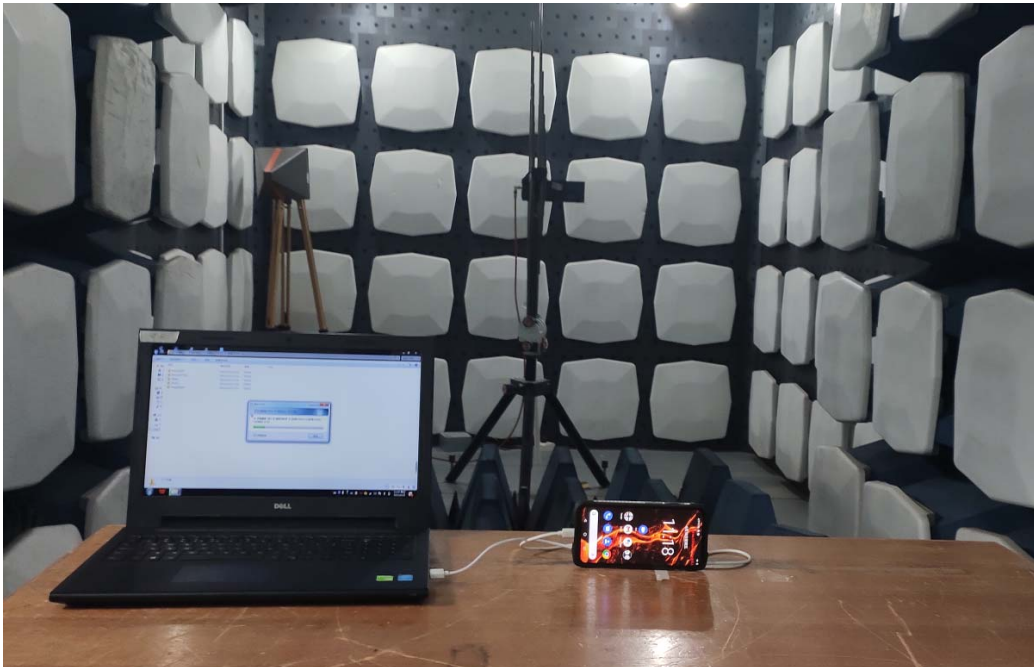
Electrical measurement procedures

1. Record the resulting dB(spl) level (or other appropriate unit) as the value of L0.
2. Apply the RF disturbance to the EUT and record the resulting dB(spl) level as the value of L1.
3. Calculate the interference ratio using the following formula: Acoustic Interference Ratio = L1 - L0.

Charging and Playing



Downloading



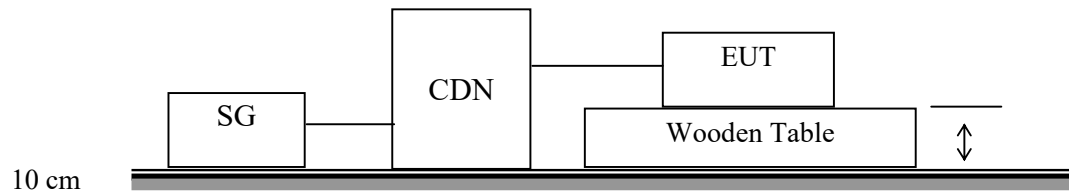
FM Receiving



Test setup photos

BS EN 55035 §4.2.2.3-CONTINUOUS CONDUCTED IMMUNITY (IEC 61000-4-6)

Test Setup



Test Standard

BS EN 55035:2017 (IEC 61000-4-6:2008)

Test Level

Frequency(MHz)	Voltage Level (r.m.s.) (V)
0.15 to 10	3
10 to 30	3 to 1
30 to 80	1

Performance Criterion: A

Test Procedure

- 1) Let the EUT work in test mode and test it.
- 2) The EUT are placed on an insulating support 0.1 m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3 m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
- 3) The disturbance signal described below is injected to EUT through CDN.
- 4) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 5) The frequency range is swept from 150 kHz to 80 MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.
- 6) The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 7) An artificial ear and sound level meter are used to monitor the sound pressure level. RF communication test set is used to monitor the noise level.
- 8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Zero Yan on 2021-05-12.

For Adapter1 & Adapter2:

EUT Operation Mode: Charging and playing

Table 1: AC Mains power input port

Modulation: Amplitude 80%, 1 kHz sine wave

Test Level:

Frequency (MHz)	Voltage Level (r.m.s.) (V)	Pass	Fail
0.15 to 10	3	A	/
10 to 30	3 to 1	A	/
30 to 80	1	A	/
X	Special	/	/

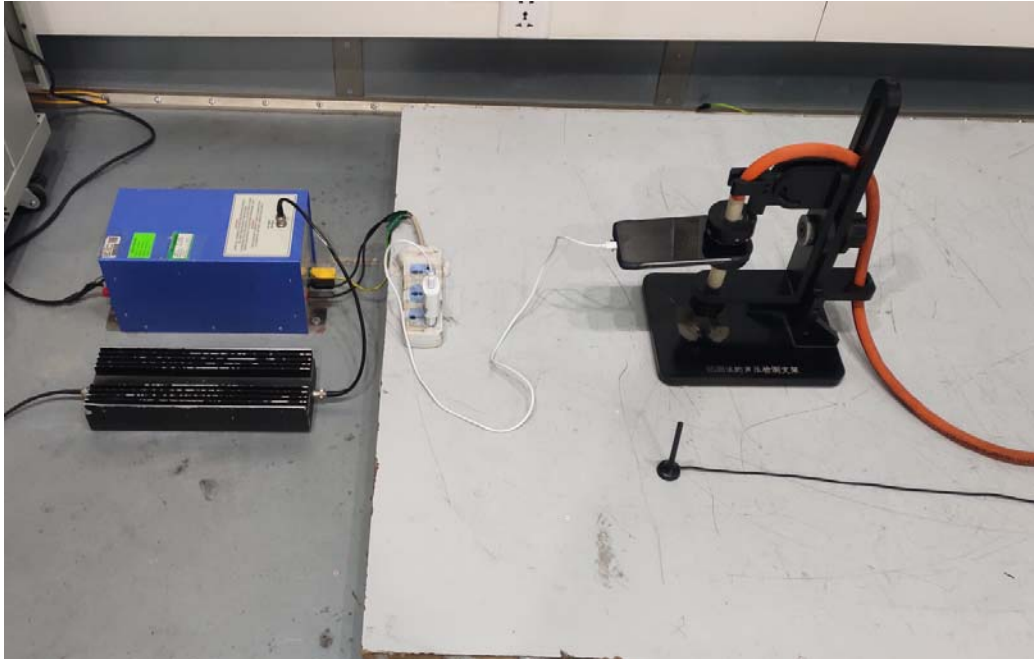
Table 2: Not Supporting Telephony Audio output function Acoustic measurements

Frequency (MHz)	Field Strength	L0 (dB)	L1 (dB)	Margin (dB)	Limit (dB)	Perform Criterion	Remark
0.15-10	3V	75	48	-27	≤-20	A	PASS
10-30	3V-1V						
30-80	1V						

NOTE:

Electrical measurement procedures

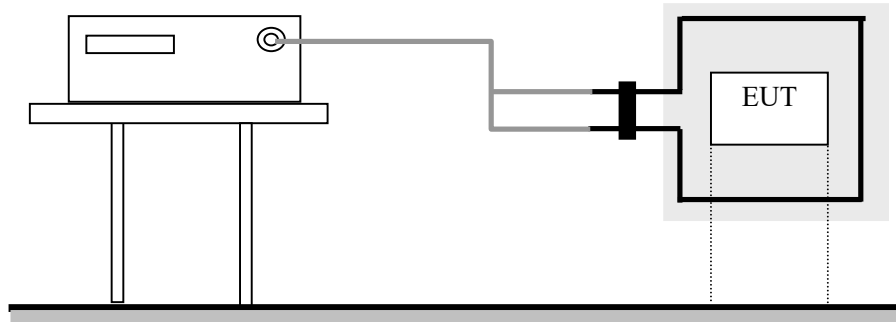
- 1.Record the resulting dB(spl) level (or other appropriate unit) as the value of L0.
- 2.Apply the RF disturbance to the EUT and record the resulting dB(spl) level as the value of L1.
- 3.Calculate the interference ratio using the following formula:Acoustic Interference Ratio = L1 - L0.



Test setup photo

BS EN 55035 §4.2.3-POWER FREQUENCY MAGNETIC FIELDS (IEC 61000-4-8)

Test Setup



Test Standard

BS EN 55035:2017 (IEC 61000-4-8:2009)

Test Level

Level	Magnetic Field Strength A/m
1	1
2	3
3	10
4	30
5	100
X.	Special

Performance criterion: A

Test Procedure

The EUT shall be subjected to the test magnetic field by using the induction coil of standard dimensions (1 m*1 m). The induction coil shall then be rotated by 90° in order to expose the EUT to the test field with different orientations.

Test Data and Setup Photo**Environmental Conditions**

Temperature:	25°C
Relative Humidity:	46%
ATM Pressure:	101.0 kPa

The testing was performed by Amy Cao on 2021-05-12.

For Adapter1 & Adapter2:

EUT Operation Mode: Charging and playing

EUT Operation Mode: FM receiving

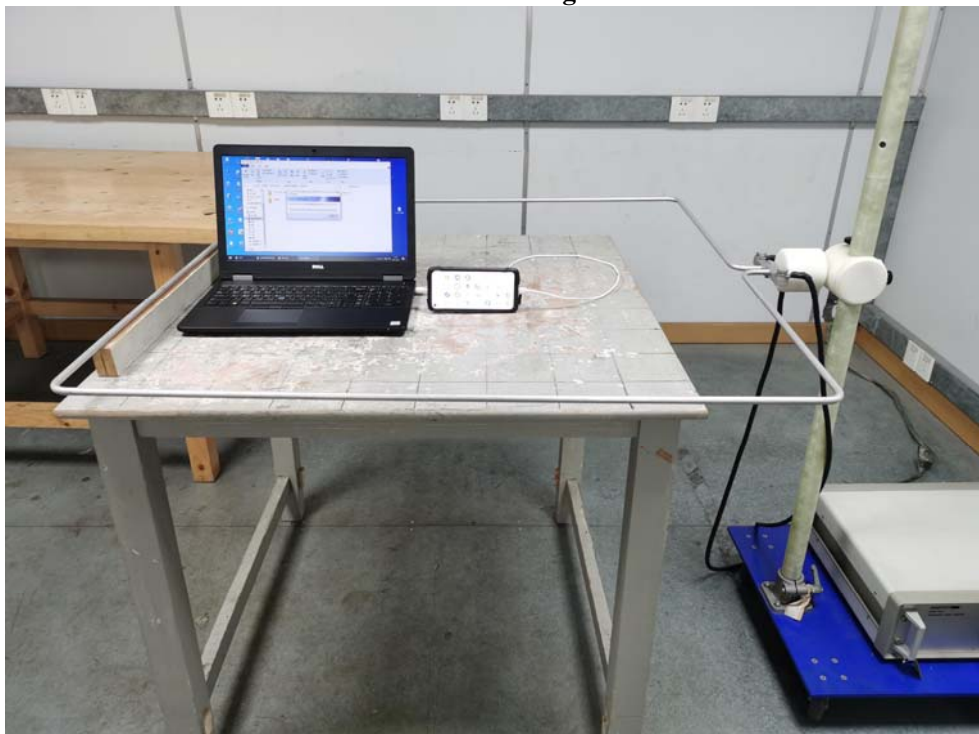
EUT Operation Mode: Downloading

Level	Magnetic Field Strength A/m	X (Horizontal)	Y (Vertical)	Z (Special)
1	1	A	A	A
2	3	/	/	/
3	10	/	/	/
4	30	/	/	/
5	100	/	/	/
X	Special	/	/	/

Charging and playing



Downloading



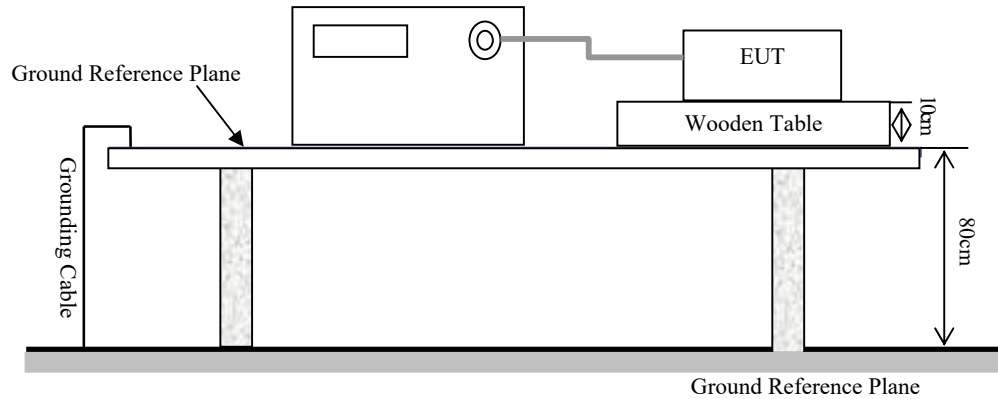
FM Receiving



Test setup photos

BS EN 55035 §4.2.4-ELECTRICAL FAST TRANSIENTS (IEC 61000-4-4)

Test System Setup



Test Standard

BS EN 55035:2017 (IEC 61000-4-4:2012)

Test Level

Open Circuit Output Test Voltage $\pm 10\%$		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1	0.5 kV	0.25 kV
2	1 kV	0.5 kV
3	2 kV	1 kV
4	4 kV	2 kV
X	Special	Special

Performance Criterion: B

Test Procedure

The EUT was arranged for Power Line Coupling and for I/O Line Coupling through a capacitive clamp, where applicable. (Note: The I/O coupling test using a capacitive clamp is performed on the I/O interface cables that are longer in length than 3 meters.) A metal ground plane 2.4 meter by 2.0 meter was placed between the floor and the table and is connected to the earth by a 2.0 meter ground rod. The ground rod is connected to the test facility's electrical earth.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Amy Cao on 2021-05-12.

For Adapter1 & Adapter2:

EUT Operation Mode: Charging and playing

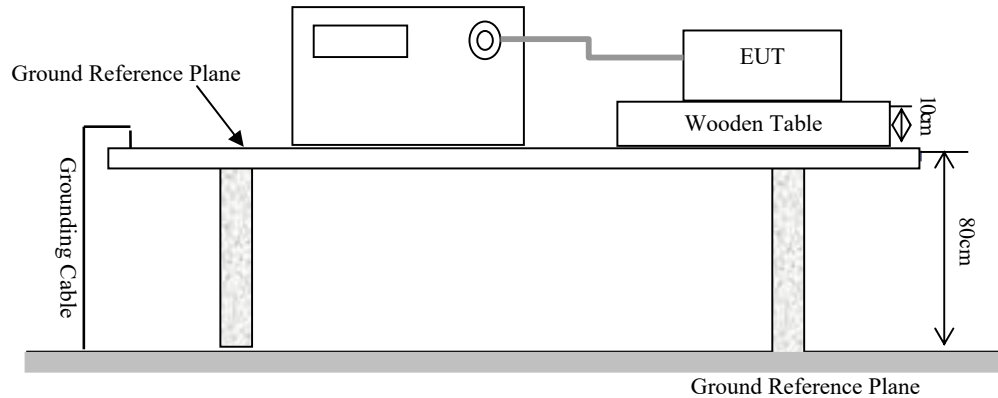
IEC 61000-4-4 Test Points		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC mains power input ports	L1	/	/	A	A	/	/	/	/
	N	/	/	A	A	/	/	/	/
	PE	/	/	/	/	/	/	/	/
	L1/N	/	/	A	A	/	/	/	/
	L1/PE	/	/	/	/	/	/	/	/
	N/PE	/	/	/	/	/	/	/	/
	L1/N/PE	/	/	/	/	/	/	/	/
Signal Port	/	/	/	/	/	/	/	/	/



Test setup photo

BS EN 55035 §4.2.5-SURGES (IEC 61000-4-5)

Test System Setup



Test Standard

BS EN 55035:2017 (IEC 61000-4-5:2005)

Test Level

Level	Open Circuit Output Test Voltage $\pm 10\%$	Performance Criterion	
		AC Mains	Signal Port
1	0.5 kV	B	C
2	1 kV	B	C
3	2 kV	B	C
4	4 kV	B	C
X	Special	/	/

Test Procedure

- 1) For input a.c. power ports, provide a $1.2/50\mu\text{s}$ voltage surge (at open-circuit condition) and a $8/20\mu\text{s}$ current surge into a short circuit.
- 2) For telecommunication port, provide a $10/700\mu\text{s}$ voltage surge (at open-circuit condition) and a $5/320\mu\text{s}$ current surge into a short circuit.
- 3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 4) Different phase angles are done individually.
- 5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Amy Cao on 2021-05-12.

For Adapter1 & Adapter2:

EUT Operation Mode: Charging and playing

AC Mains Port

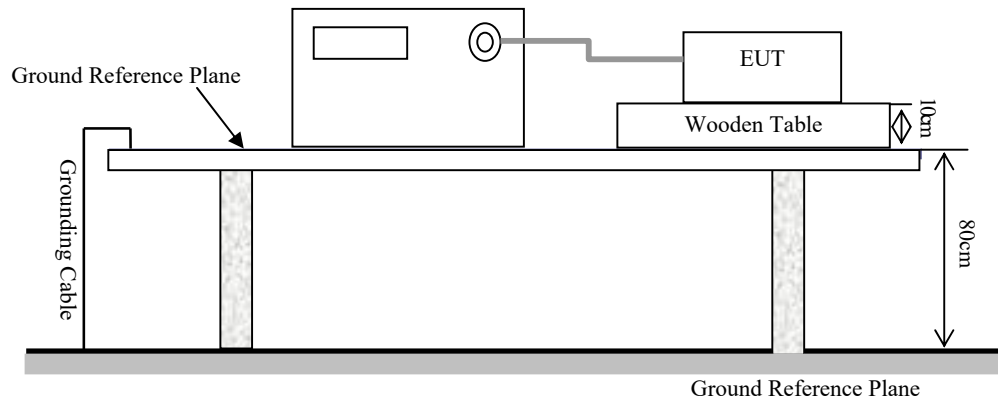
Level	Voltage	Poll	Path	Pass	Fail
1	0.5kV	±	L1/N	A	/
2	1kV	±	L1/N	A	/
3	2kV	±	L1/N, L1/PE, N/PE, L1/N/PE	/	/
4	4kV	±	L1/N, L1/PE, N/PE, L1/N/PE	/	/



Test setup photo

BS EN 55035 §4.2.6-VOLTAGE DIPS AND INTERRUPTIONS (IEC 61000-4-11)

Test Setup



Test Standard

BS EN 55035:2017 (IEC 61000-4-11:2004)

Test levels and Performance Criterion

Test Level	Voltage dip and short interruptions %UT	Duration (Periods)	Performance Criterion
1	>95	0.5	B
2	30	25	C
3	>95	250	C

Test Procedure

- 1) The interruption is introduced at selected phase angles with specified duration.
- 2) Record any degradation of performance.

Test Data

Environmental Conditions

Temperature:	25°C
Relative Humidity:	46%
ATM Pressure:	101.0 kPa

The testing was performed by Amy Cao on 2021-05-12.

For Adapter1 & Adapter2:

EUT Operation Mode: Charging and playing

Level	U2 (% Reduction)	Td(Periods)	Phase Angle	N	Pass	Fail
1	100	0.5	0/180	3	A	/
2	30	25	0/180	3	A	/
3	100	250	0/180	3	B	/

NOTE: “B” means Charging was interrupted during test, and resumed by itself after test.



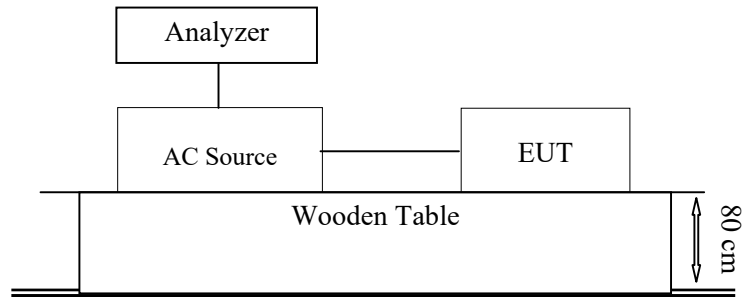
Test setup photo

BS EN IEC 61000-3-2 – HARMONIC CURRENT EMISSIONS

According to BS EN IEC 61000-3-2:2019 section 7: Equipment with a rated power of 75 W or less, other than lighting equipment, are not included in this standard.

BS EN 61000-3-3– VOLTAGE FLUCTUATION AND FLICKER

Test System Setup



Test Standard

According to BS EN 61000-3-3:2013/A1:2019

Flicker Test Limits:

The limits shall be applicable to voltage fluctuations and flicker at the supply terminals of the equipment under test, measured or calculated according to clause 4 under test conditions described in clause 6 and annex A. Tests made to prove compliance with the limits are considered to be type tests.

The following limits apply:

- the value of Pst shall not be greater than 1,0;
- the value of Plt shall not be greater than 0,65;
- the value of d(t) during a voltage change shall not exceed 3,3 % for more than 500 ms;
- the relative steady-state voltage change, dc, shall not exceed 3,3 %;
- the maximum relative voltage change dmax, shall not exceed
 - a) 4 % without additional conditions;
 - b) 6 % for equipment which is:
 - switched manually, or
 - switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.
 - Note: The cycling frequency will be further limited by the Pst and Plt limit. For example: a dmax of 6 % producing a rectangular voltage change characteristic twice per hour will give a Plt of about 0.65.
 - c) 7 % for equipment which is
 - attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or
 - switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

In the case of equipment having several separately controlled circuits in accordance with 6.6, limits b) and

c) shall apply only if there is delayed or manual restart after a power supply interruption; for all equipment with automatic switching which is energized immediately on restoration of supply after a power supply interruption, limits a) shall apply; for all equipment with manual switching, limits b) or c) shall apply

depending on the rate of switching. Pst and Plt requirements shall not be applied to voltage changes caused by manual switching. The limits shall not be applied to voltage changes associated with emergency switching or emergency interruptions.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	101.0 kPa

Date of test:	2021-05-06
Tester:	Amy Cao
Standard used:	BS EN/IEC 61000-3-3 Flicker
Long time (Pst):	10 min
Observation time:	120 min (12 Flicker measurement)
Flicker meter:	230V / 50Hz
Model:	KINGKONG 7
EUT operation mode:	Charging and playing

Maximum Flicker results**Adapter 1:**

Item	EUT values	Limit	Result
Pst	0.248	1.00	Pass
Plt	0.108	0.65	Pass
dc [%]	0.00	3.30	Pass
dmax [%]	0.00	4.00	Pass
dt [s]	0.00	0.50	Pass

Adapter 2

Item	EUT values	Limit	Result
Pst	0.261	1.00	Pass
Plt	0.114	0.65	Pass
dc [%]	0.00	3.30	Pass
dmax [%]	0.00	4.00	Pass
dt [s]	0.00	0.50	Pass

**Test setup photo**

EXHIBIT A - EUT PHOTOGRAPHS

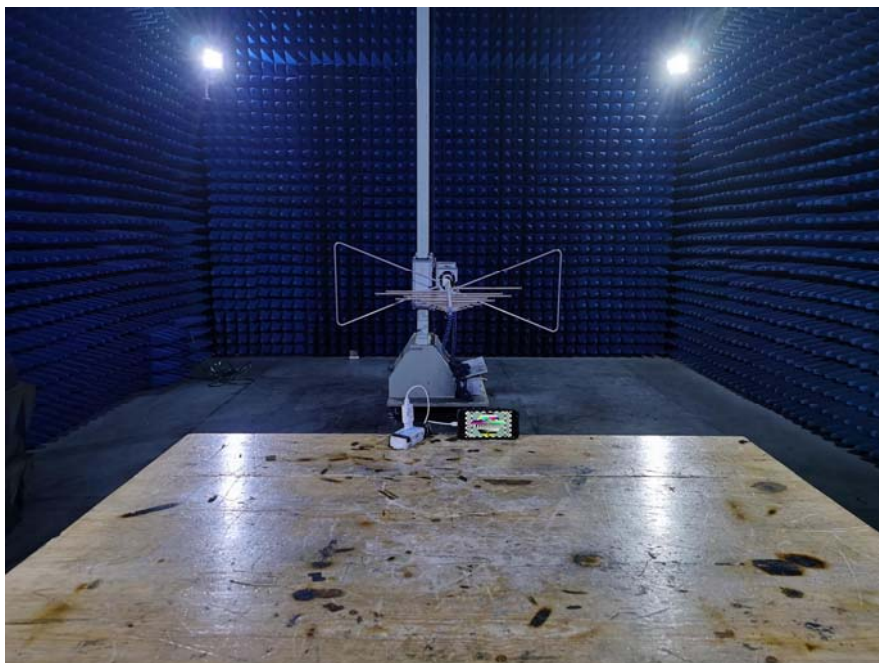
Please refer to the Attachment.

EXHIBIT B - TEST SETUP PHOTOGRAPHS

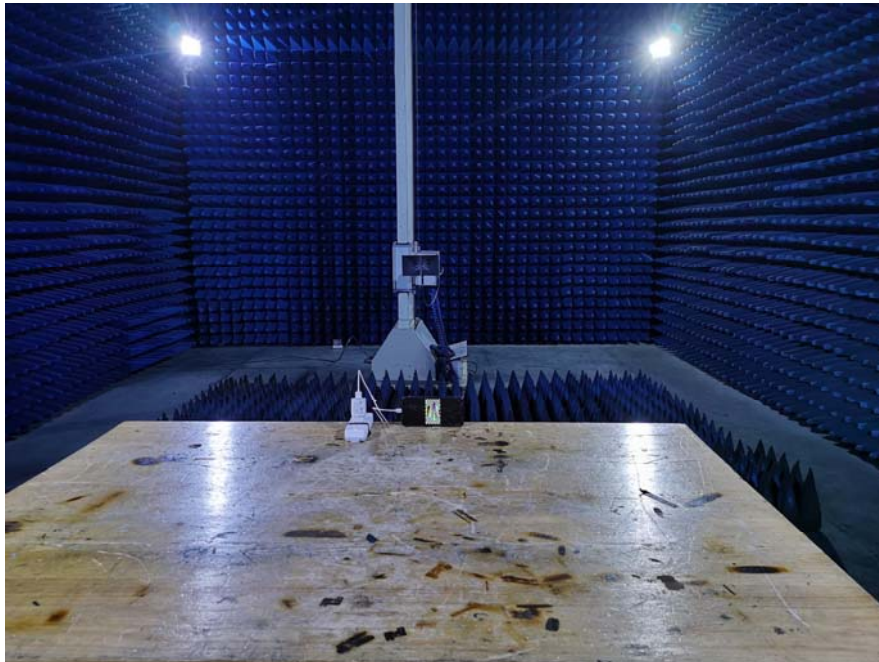
Conducted Disturbance at Mains Terminals



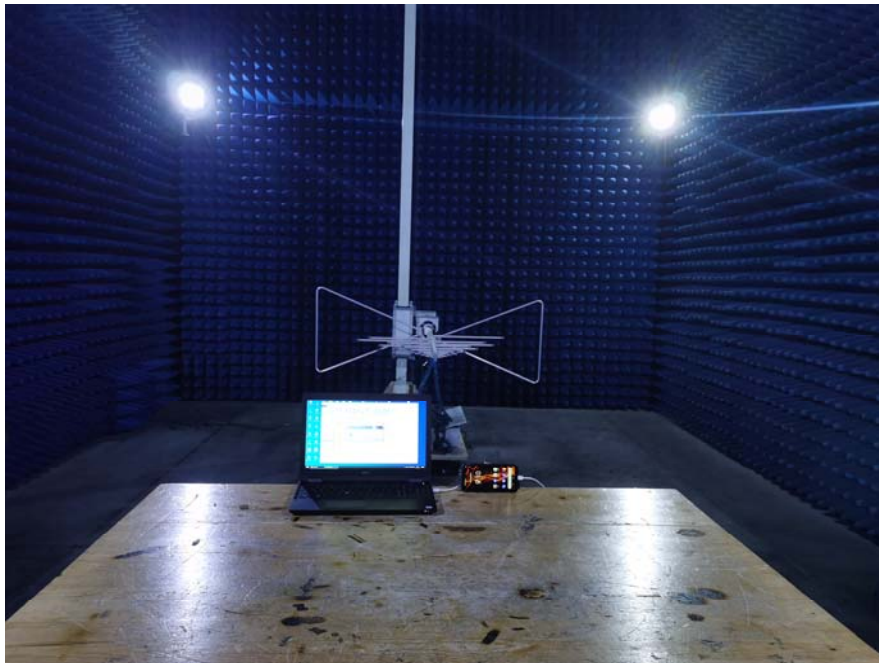
Radiated Disturbance - Charging & Playing (Below 1GHz)



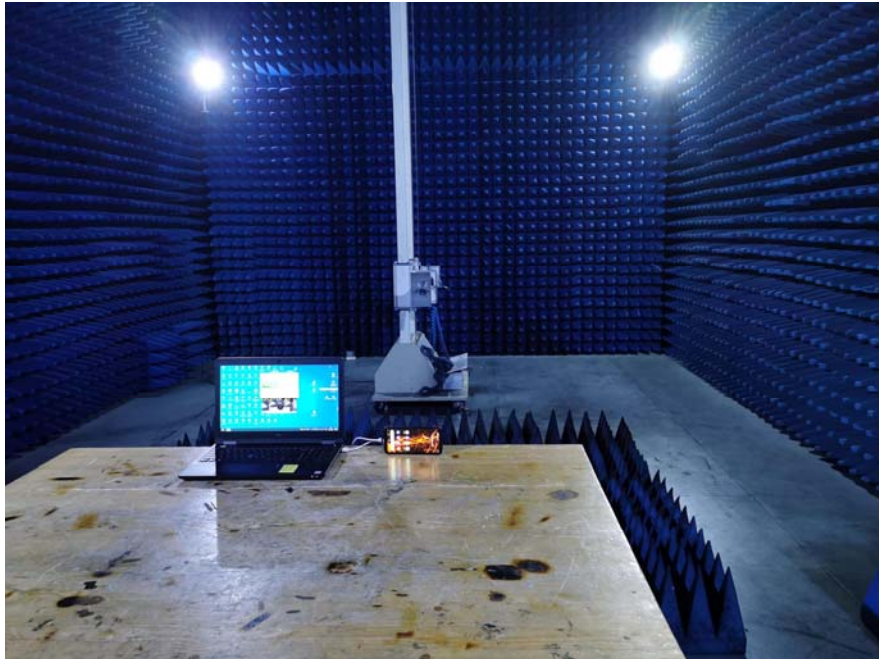
Radiated Disturbance- Charging & Playing (Above 1GHz)



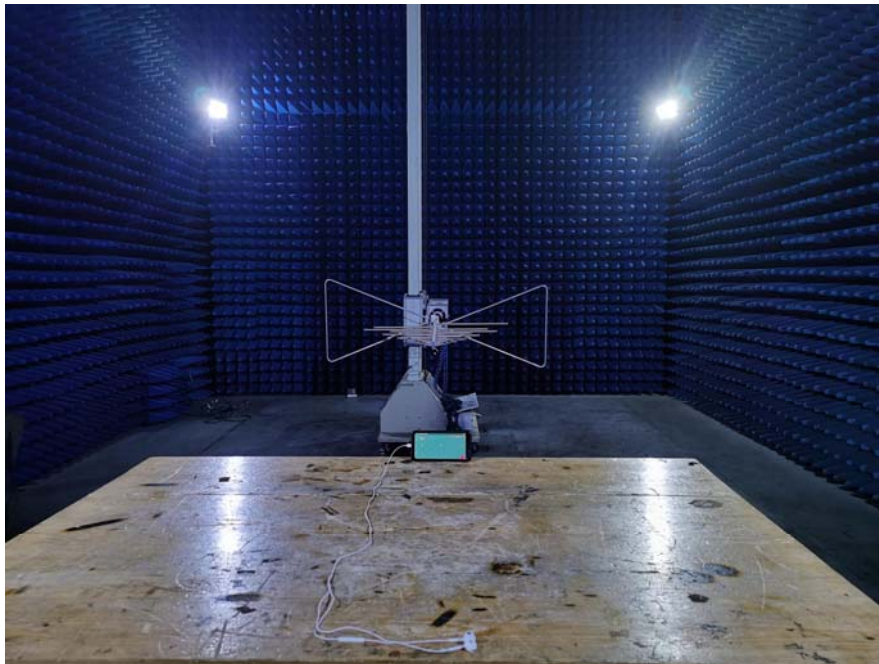
Radiated Disturbance - Downloading (Below 1GHz)



Radiated Disturbance - Downloading (Above 1GHz)



Radiated Disturbance - FM receiving (Below 1GHz)



******* END OF REPORT *******