FCC Test Report

Report No.: AGC10025200604FE03

FCC ID	:	2AE8UASM01
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	remote control
BRAND NAME	:	N/A
MODEL NAME	:	ASM36, ASM01, ASM02, ASM03, ASM04, ASM05, ASM06, ASM07, ASM08, ASM09, ASM10, ASM11, ASM12, ASM13, ASM14, ASM15, ASM16, ASM17, ASM18, ASM19, ASM20, ASM21, ASM22, ASM23, ASM24, ASM25, ASM26, ASM27, ASM28, ASM29, ASM30, ASM31, ASM32, ASM33, ASM34, ASM35, ASM37, ASM38, ASM39, ASM40.
APPLICANT	:	AOSENMA TOYS FACTORY
DATE OF ISSUE	:	Jul. 09, 2020
STANDARD(S) **TEST PROCEDURE(S)**	:	FCC Part 15 Rules
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

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REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul. 09, 2020	Valid	Initial Release

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1. VERIFICATION OF CONFORMITY

Applicant	AOSENMA TOYS FACTORY
Address	NO 8 MEIHU DISTRICT, CHENHAI DISTRICT, SHANTOU CITY GUANGDONG PROVINCE CHINA
Manufacturer	AOSENMA TOYS FACTORY
Address	NO 8 MEIHU DISTRICT, CHENHAI DISTRICT, SHANTOU CITY GUANGDONG PROVINCE CHINA
Factory	AOSENMA TOYS FACTORY
Address	NO 8 MEIHU DISTRICT, CHENHAI DISTRICT, SHANTOU CITY GUANGDONG PROVINCE CHINA
Product Designation	remote control
Brand Name	N/A
Test Model	ASM36
Series Model	ASM01, ASM02, ASM03, ASM04, ASM05, ASM06, ASM07, ASM08, ASM09, ASM10, ASM11, ASM12, ASM13, ASM14, ASM15, ASM16, ASM17, ASM18, ASM19, ASM20, ASM21, ASM22, ASM23, ASM24, ASM25, ASM26, ASM27, ASM28, ASM29, ASM30, ASM31, ASM32, ASM33, ASM34, ASM35, ASM37, ASM38, ASM39, ASM40.
Difference description	All the same except for the model name and packaging.
Date of test	May 22, 2020 to Jul. 09, 2020
Deviation	None
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-BR/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Prepared By	Erik Yang (Project Engineer)	Jul. 09, 2020
Reviewed By	Max Zhang (Reviewer)	Jul. 09, 2020
Approved By	Forrest Lei (Authorized Officer)	Jul. 09, 2020

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

A major technical description of EUT is described as following

Operation Frequency	2.405GHz - 2.475GHz
Maximum field strength	83.27dBuV/m(peak)@3m 73.45dBuV/m(average)@3m
Modulation	GFSK
Number of channels	71
Antenna Gain	2dBi
Antenna Designation	Internal Antenna (Met 15.203 Antenna requirement)
Hardware Version	ASM-033T-GPS
Software Version	V1.0
Power Supply	DC 3.7V by battery

2.2. TABLE OF CARRIER FREQUENCY

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	1	2405MHZ
	2	2406MHZ
	3	2407MHZ
	:	:
	69	2473 MHZ
	70	2474 MHZ
	71	2475 MHZ

3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in measurement” (GUM) published by CISPR and ANSI.

- Uncertainty of Conducted Emission, Uc = ±3.1 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±4.0 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB

4. DESCRIPTION OF TEST MODES

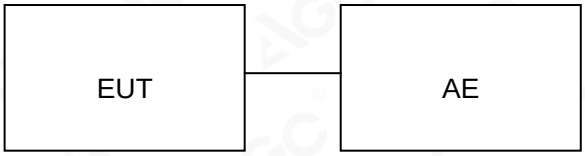
NO.	TEST MODE DESCRIPTION
1	Low channel GFSK
2	Middle channel GFSK
3	High channel GFSK

Note:

1. All the test modes can be supply by battery(100%), only the result of the worst case was recorded in the report, if no other cases.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM



5.2 EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	remote control	ASM36	2AE8UASM01	EUT
2	Adapter	I05010EU	N/A	AE

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.249&15.209	Radiated Emission	Compliant
§15.249	Band Edges	Compliant
§15.215	20dB bandwidth	Compliant
§15.207	Conducted Emission	Compliant

6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	May 15, 2020	May 14, 2022
LISN	R&S	ESH2-Z5	100086	Aug. 26, 2019	Aug. 25, 2020
Test software	R&S	ES-K1(Ver.V1.71)	N/A	N/A	N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2022
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 12, 2019	Dec. 11, 2020
2.4GHz Fliter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 09, 2019	Sep. 08, 2020
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 09, 2019	Sep. 08, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00154520	Oct. 26, 2019	Oct. 25, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Oct. 15, 2019	Oct. 16, 2020
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 09, 2019	Jan. 08, 2021
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A

7. RADIATED EMISSION

7.1TEST LIMIT

Standard FCC15.249

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
900-928MHz	50	500
2400-2483.5MHz	50	500
5725-5875MHz	50	500
24.0-24.25GHz	250	2500

Standard FCC 15.209

Frequency (MHz)	Distance Meters	Field Strengths Limit	
		μV/m	dB(μV)/m
0.009 ~ 0.490	300	2400/F(kHz)	---
0.490 ~ 1.705	30	24000/F(kHz)	---
1.705 ~ 30	30	30	---
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other:74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

Remark: (1) Emission level dBμV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

7.2. MEASUREMENT PROCEDURE

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use minimum resolution bandwidth of 1 MHz. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

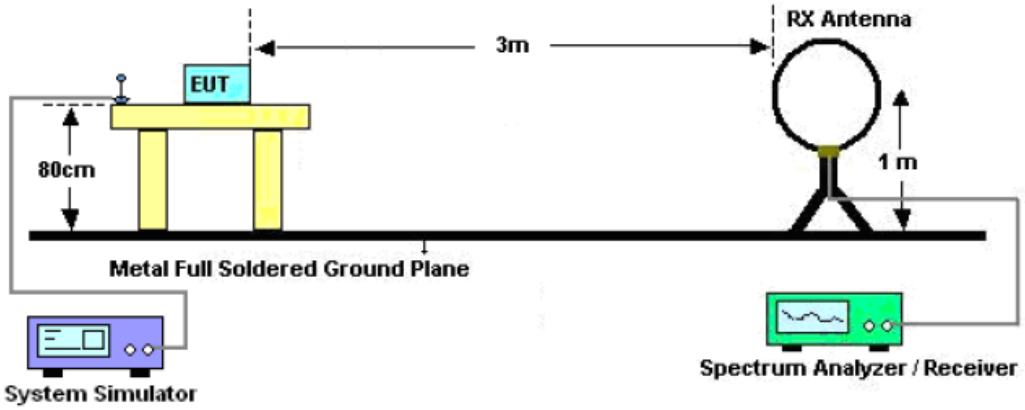
The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP
Start ~Stop Frequency	1GHz~26.5GHz RBW 2.4MHz/ VBW 8MHz for Peak, RBW 2.4MHz/10Hz for Average

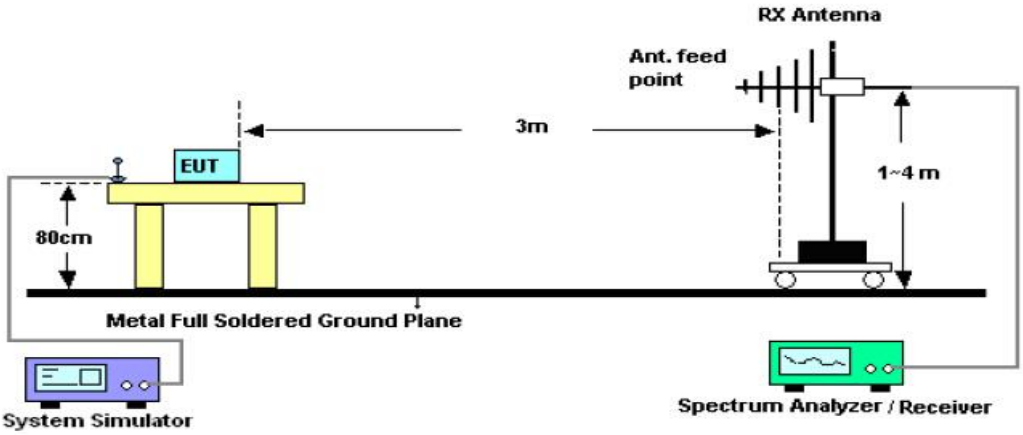
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

7.3. TEST SETUP

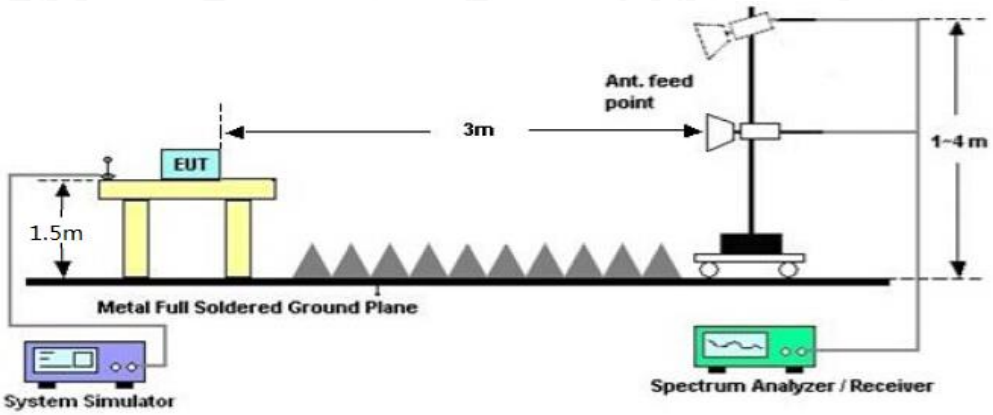
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



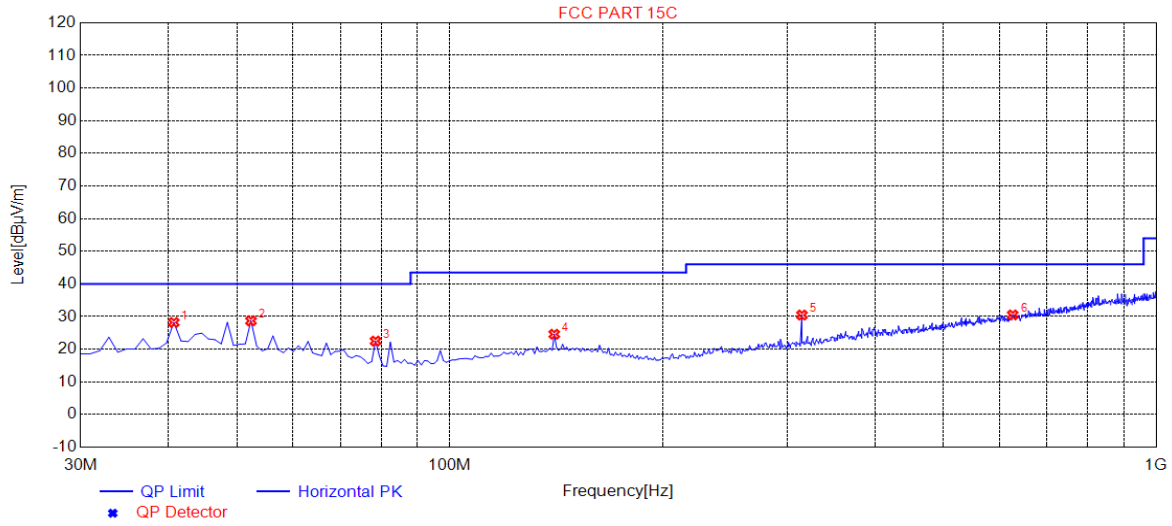
7.4. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION 30MHz- 1GHZ

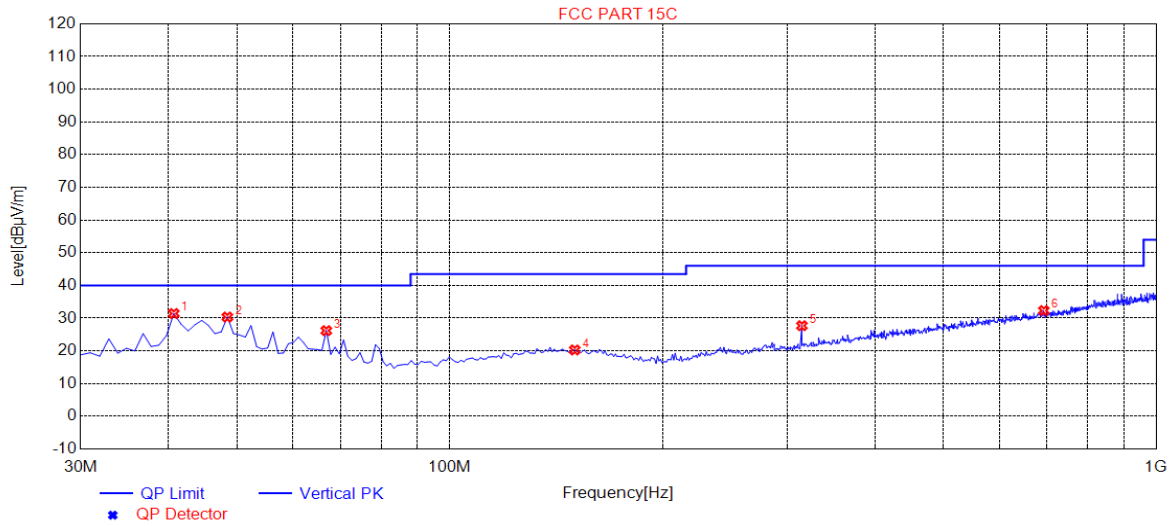
EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Mode	Mode 1	Polarization	Horizontal



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.6700	28.20	14.91	40.00	11.80	100	130	Horizontal
2	52.3100	28.70	14.49	40.00	11.30	100	138	Horizontal
3	78.5000	22.50	10.46	40.00	17.50	100	53	Horizontal
4	140.5800	24.60	14.88	43.50	18.90	100	14	Horizontal
5	315.1800	30.48	16.48	46.00	15.52	100	45	Horizontal
6	626.5500	30.51	24.79	46.00	15.49	100	326	Horizontal

RESULT: PASS

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Mode	Mode 1	Polarization	Vertical



NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.6700	31.44	14.91	40.00	8.56	100	162	Vertical
2	48.4300	30.35	14.71	40.00	9.65	100	346	Vertical
3	66.8600	26.19	12.76	40.00	13.81	100	54	Vertical
4	150.2800	20.29	14.88	43.50	23.21	100	59	Vertical
5	315.1800	27.70	16.48	46.00	18.30	100	120	Vertical
6	693.4800	32.33	25.87	46.00	13.67	100	91	Vertical

RESULT: PASS

Note: Factor=Antenna Factor + Cable loss, Margin=Result-Limit.

The “Factor” value can be calculated automatically by software of measurement system.

The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

FIELD STRENGTH OF FUNDAMENTAL

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	GFSK	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2405.022	34.22	49.05	83.27	114.00	-30.73	peak
2405.022	23.93	49.05	72.98	94.00	-21.02	AVG
2445.022	33.36	49.12	82.48	114.00	-31.52	peak
2445.022	22.12	49.12	71.24	94.00	-22.76	AVG
2475.022	33.86	49.25	83.11	114.00	-30.89	peak
2475.022	24.20	49.25	73.45	94.00	-20.55	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	GFSK	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
2405.022	40.96	49.05	81.49	114.00	-32.51	peak
2405.022	27.83	49.05	71.02	94.00	-22.98	AVG
2445.022	41.21	49.12	81.37	114.00	-32.63	peak
2445.022	28.66	49.12	71.33	94.00	-22.67	AVG
2475.022	40.87	49.25	81.18	114.00	-32.82	peak
2475.022	28.84	49.25	71.42	94.00	-22.58	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

RADIATED EMISSION ABOVE 1GHZ

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	Mode 1	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4810.044	55.34	0.08	55.42	74.00	-18.58	peak
4810.044	46.91	0.08	46.99	54.00	-7.01	AVG
7215.066	51.48	2.21	53.69	74.00	-20.31	peak
7215.066	42.18	2.21	44.39	54.00	-9.61	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	Mode 1	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4810.044	57.62	0.08	57.70	74.00	-16.30	peak
4810.044	47.27	0.08	47.35	54.00	-6.65	AVG
7215.066	52.15	2.21	54.36	74.00	-19.64	peak
7215.066	42.91	2.21	45.12	54.00	-8.88	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	Mode 2	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4890.044	56.91	0.14	57.05	74.00	-16.95	peak
4890.044	46.27	0.14	46.41	54.00	-7.59	AVG
7335.066	53.27	2.36	55.63	74.00	-18.37	peak
7335.066	42.16	2.36	44.52	54.00	-9.48	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	Mode 2	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4890.044	57.13	0.14	57.27	74.00	-16.73	peak
4890.044	47.25	0.14	47.39	54.00	-6.61	AVG
7335.066	54.16	2.36	56.52	74.00	-17.48	peak
7335.066	44.28	2.36	46.64	54.00	-7.36	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	Mode 3	Polarization	Horizontal

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4950.044	58.34	0.22	58.56	74.00	-15.44	peak
4950.044	47.12	0.22	47.34	54.00	-6.66	AVG
7425.066	53.28	2.64	55.92	74.00	-18.08	peak
7425.066	43.67	2.64	46.31	54.00	-7.69	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Modulation	Mode 3	Polarization	Vertical

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Value Type
4950.044	59.34	0.22	59.56	74.00	-14.44	peak
4950.044	48.22	0.22	48.44	54.00	-5.56	AVG
7425.066	54.51	2.64	57.15	74.00	-16.85	peak
7425.066	44.32	2.64	46.96	54.00	-7.04	AVG
Remark:						
Factor = Antenna Factor + Cable Loss – Pre-amplifier.						

Note: Other emissions from 8G to 25 GHz are considered as ambient noise. No recording in the test report.
Factor=Antenna Factor + Cable loss - Amplifier gain, Margin=Measurement-Limit.
The “Factor” value can be calculated automatically by software of measurement system.

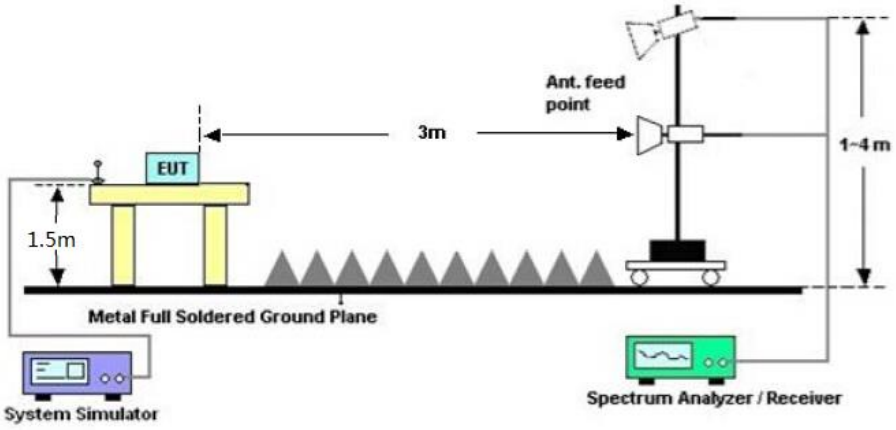
8. BAND EDGE EMISSION

8.1. MEASUREMENT PROCEDURE

1. The EUT operates at transmitting mode. The operate channel is tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
2. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission: (a) PEAK: RBW=1MHz, VBW=3MHz / Sweep=AUTO
(b) AVERAGE: RBW=1MHz ; VBW=1/on time(1KHz) / Sweep=AUTO
3. Other procedures refer to clause 7.2.

8.2 TEST SETUP

RADIATED EMISSION TEST SETUP



8.3 RADIATED TEST RESULT

Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level
2. The factor had been edited in the “Input Correction” of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μV) to represent the Amplitude. Use the F dB(μV/m) to represent the Field Strength. So A=F.

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Mode	Mode 1	Polarization	Horizontal

Peak Value

Average Value

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Mode	Mode 1	Polarization	Vertical

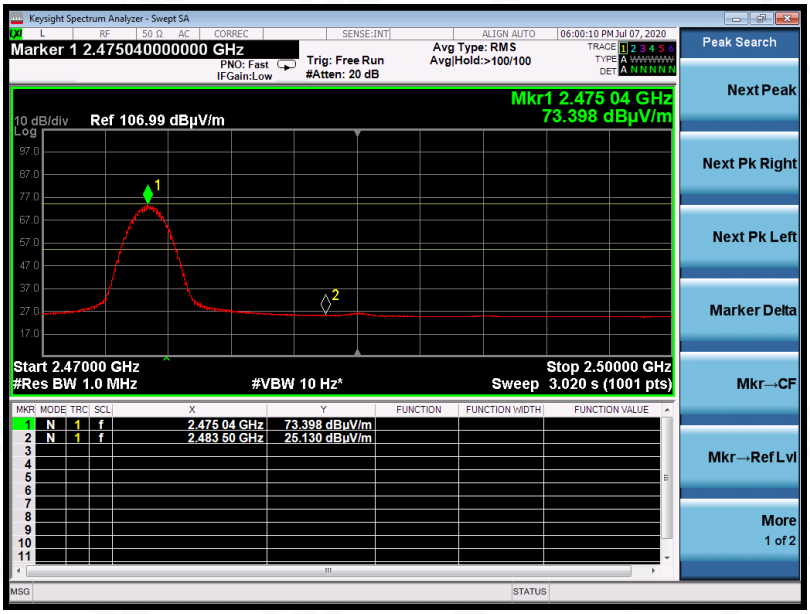
Peak Value

Average Value

EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Mode	Mode 3	Polarization	Horizontal

Peak Value

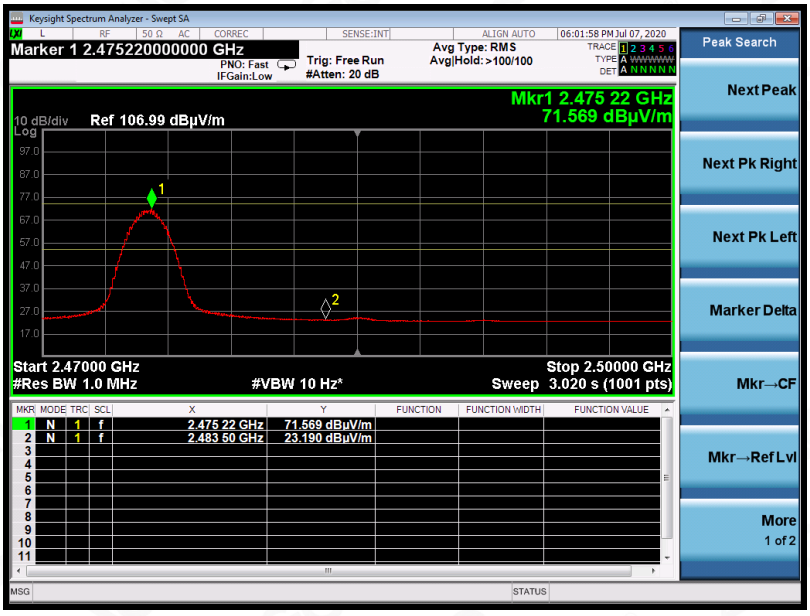
Average Value



EUT	remote control	Model Name	ASM36
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Voltage	DC 3.7V
Test Mode	Mode 3	Polarization	Vertical

Peak Value

Average Value

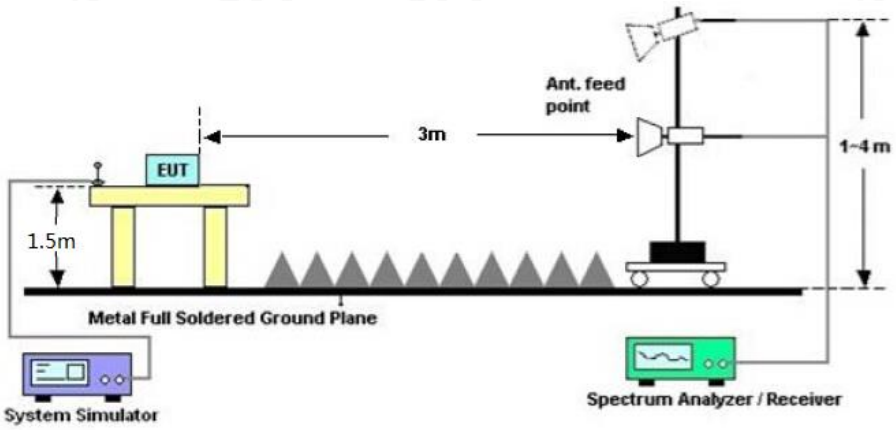


9. 20DB BANDWIDTH

9.1. MEASUREMENT PROCEDURE

1. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
2. Set SPA Centre Frequency = Operation Frequency, RBW= 30 KHz, VBW≥3×RBW.
3. Set SPA Trace 1 Max hold, then View.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



9.3. MEASUREMENT RESULTS

TEST ITEM	20DB BANDWIDTH
TEST MODULATION	GFSK

Test Data (MHz)		Criteria
Low Channel	1.149	PASS
Middle Channel	1.113	PASS
High Channel	1.153	PASS

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

10. FCC LINE CONDUCTED EMISSION TEST

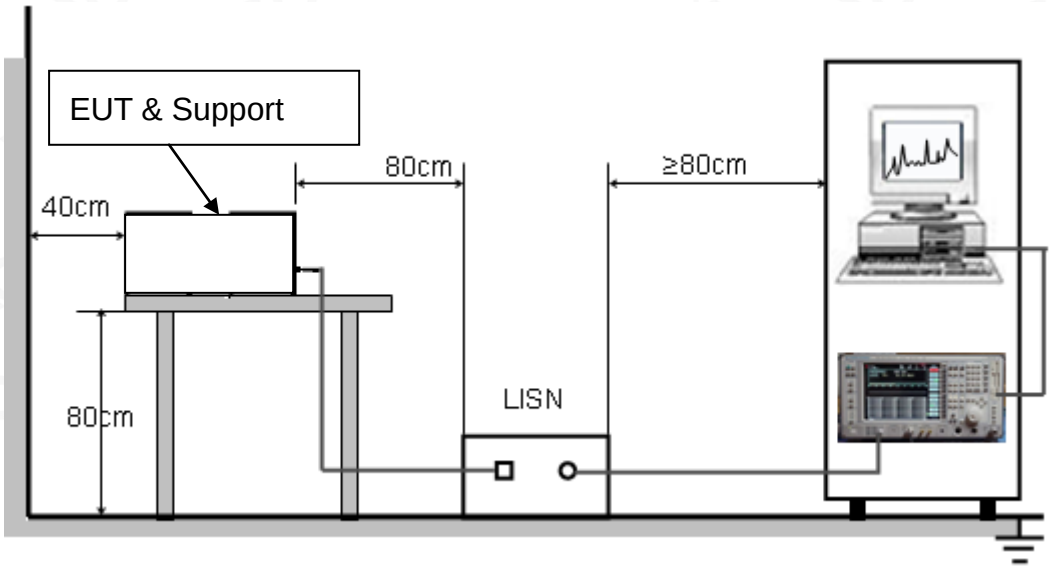
10.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.

10.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



10.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When 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 C63.10 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received charging voltage by adapter which received 120V/60Hzpower by a LISN..
6. The 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.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

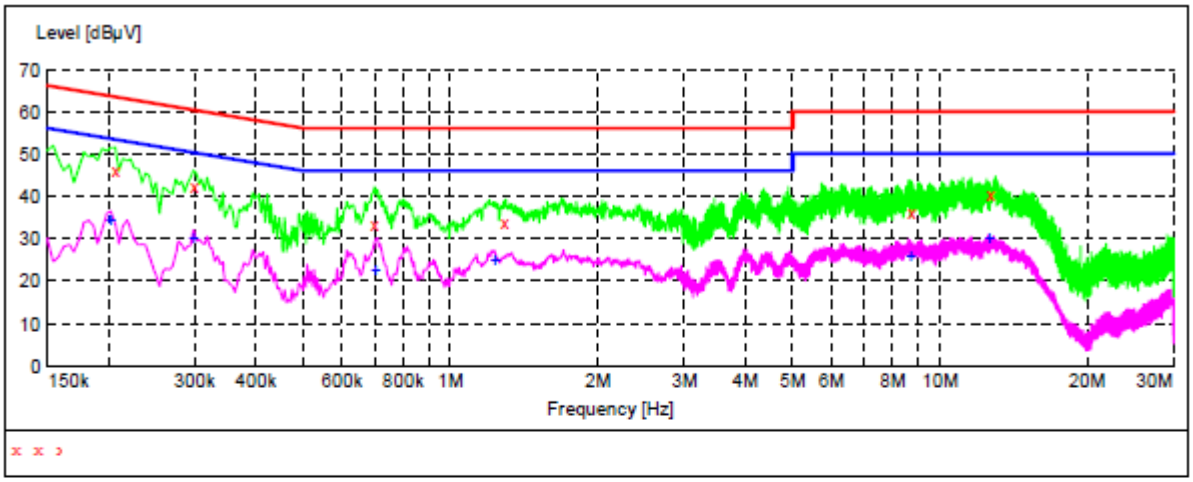
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

10.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

10.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST-L



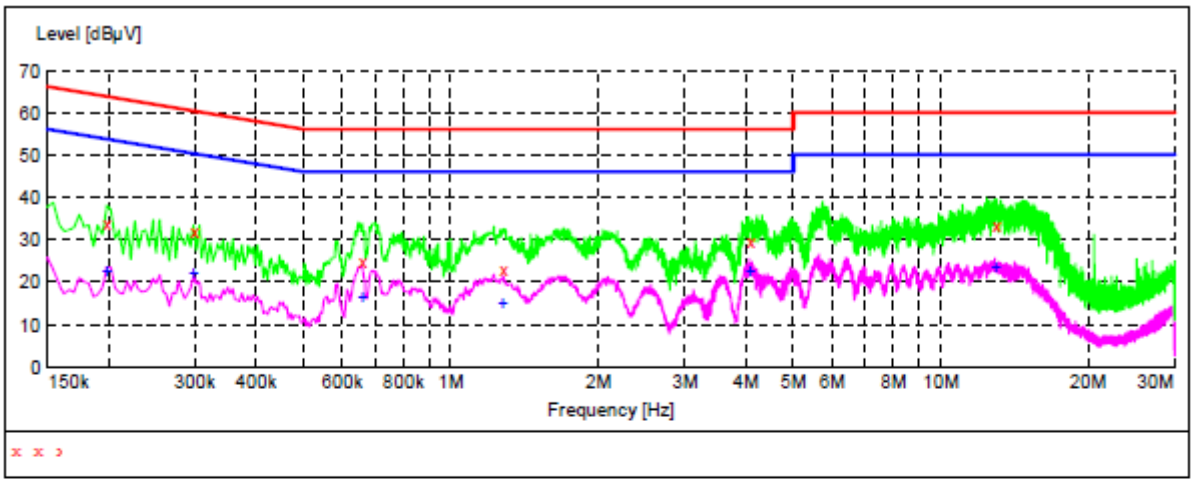
MEASUREMENT RESULT

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.206000	46.00	10.3	63	17.4	QP	L1
0.298000	42.20	10.2	60	18.1	QP	L1
0.698000	33.30	10.3	56	22.7	QP	L1
1.290000	34.00	10.4	56	22.0	QP	L1
8.714000	36.20	10.7	60	23.8	QP	L1
12.646000	40.50	10.8	60	19.5	QP	L1

MEASUREMENT RESULT

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.202000	34.70	10.3	54	18.8	AV	L1
0.298000	30.40	10.2	50	19.9	AV	L1
0.702000	22.80	10.3	46	23.2	AV	L1
1.234000	25.40	10.4	46	20.6	AV	L1
8.714000	26.40	10.7	50	23.6	AV	L1
12.646000	30.50	10.8	50	19.5	AV	L1

LINE CONDUCTED EMISSION TEST-N



MEASUREMENT RESULT

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.198000	33.80	10.3	64	29.9	QP	N
0.298000	31.90	10.2	60	28.4	QP	N
0.658000	25.10	10.3	56	30.9	QP	N
1.274000	23.20	10.4	56	32.8	QP	N
4.078000	29.80	10.4	56	26.2	QP	N
12.946000	33.30	10.8	60	26.7	QP	N

MEASUREMENT RESULT

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line
0.198000	22.90	10.3	54	30.8	AV	N
0.298000	22.40	10.2	50	27.9	AV	N
0.658000	17.00	10.3	46	29.0	AV	N
1.274000	15.60	10.4	46	30.4	AV	N
4.078000	23.00	10.4	46	23.0	AV	N
12.938000	24.00	10.8	50	26.0	AV	N

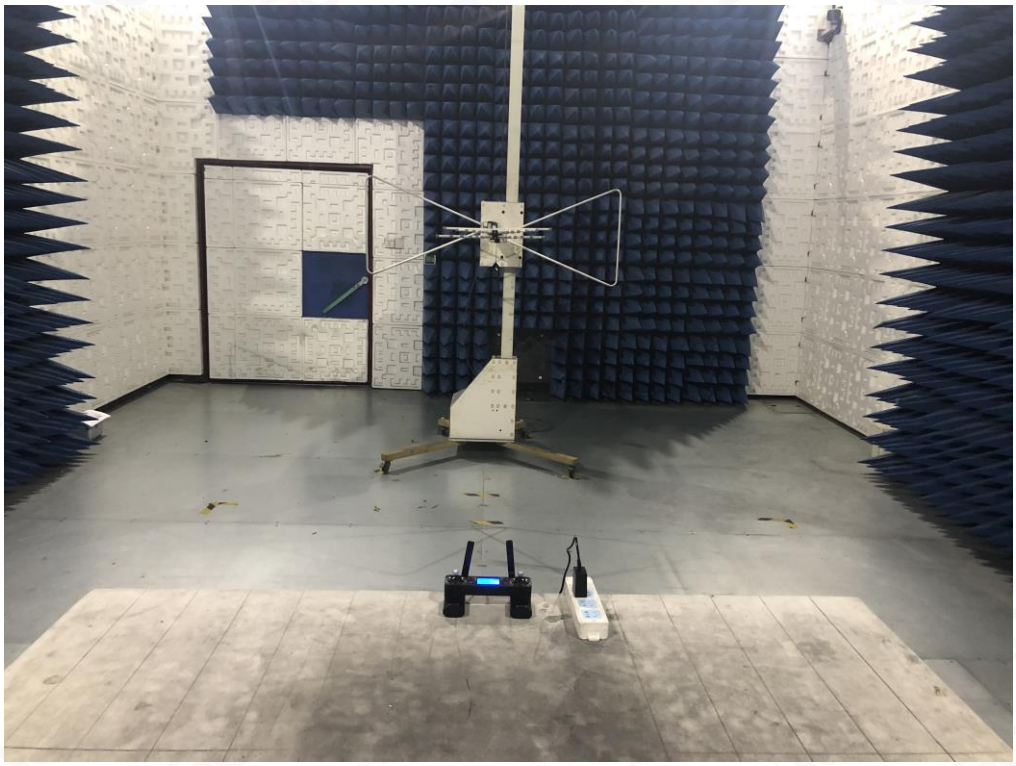
RESULT: PASS

Note: The mode 1 is the worst case, and only the data of the worst case recorded in this test report.

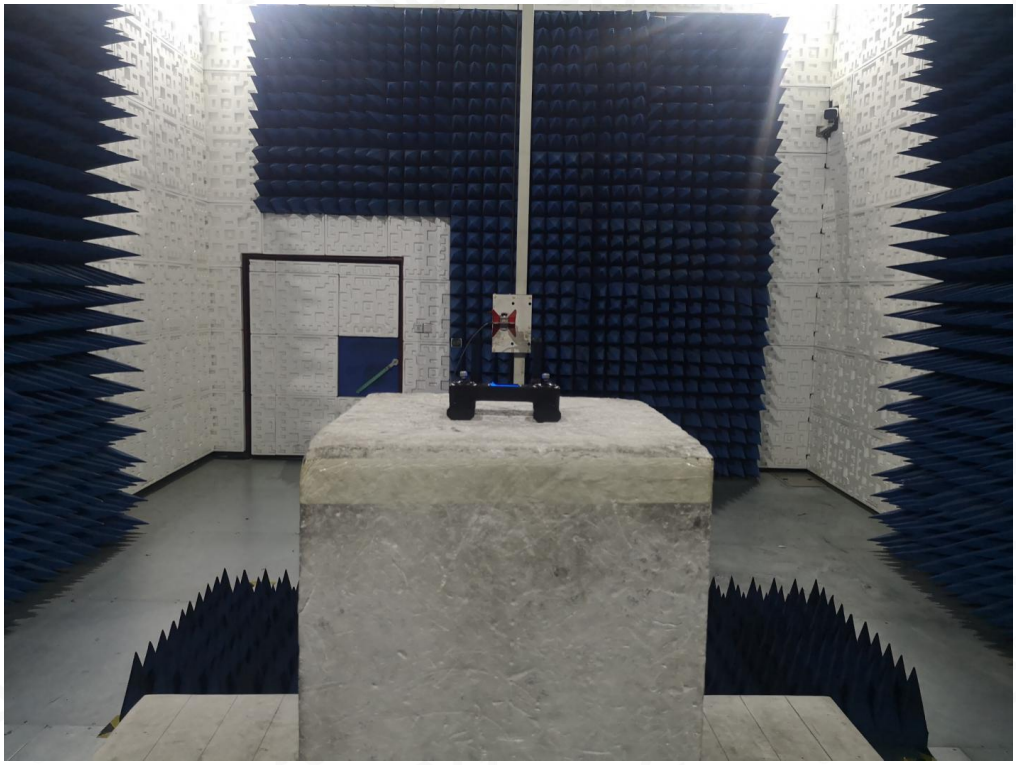
APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP BELOW 1GHZ



FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ



APPENDIX B: PHOTOGRAPHS OF THE EUT

TOP VIEW OF EUT

BOTTOM VIEW OF EUT