FCC Part 15B Test Report
FCC ID: 2A5SN-XD852

Applicant:	Hangzhou Sanford Technology Co., Ltd
Address:	2853 Yuhangtang Rd., Building 1 Room 1203, Hangzhou, 311121, China
Manufacturer:	Zhejiang Sanford Intelligent Gate Control System Co., Ltd.
Address:	889 Huanchengbei Rd., Building 40, Deqing County, Huzhou, 313205, China
EUT:	Smart Swing Gate
Trade Mark:	TOPENS
Model Number:	XD852 XD551, XD552, XD551S, XD552S, XD851, XD851S, XD852S, EK365WIFI, EKD365WIFI, EK700WIFI, EKD700WIFI, EN365WIFI, END365WIFI, EN700WIFI, END700WIFI
Date of Receipt:	Apr. 15, 2025
Test Date:	Apr. 15, 2025 - Apr. 29, 2025
Date of Report:	Apr. 29, 2025
Prepared By:	Shenzhen DL Testing Technology Co., Ltd.
Address:	101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China
Applicable Standards:	FCC Part 15 Subpart B ANSI C63.4:2014
Test Result:	Pass
Report Number:	DLE-250415066R

Prepared (Test Engineer):	Faith Li
Reviewer (Supervisor):	Jack Bu
Approved (Manager):	Jade Yang

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

TABLE OF CONTENT

Test Report Declaration Page

1. **VERSION** 3
2. **TEST SUMMARY** 3
3. **ENERAL INFORMATION** 4
4. **TEST INSTRUMENT USED** 5
5. **CONDUCTED EMISSION TEST** 6
6. **RADIATION EMISSION TEST** 8
7. **SETUP PHOTOGRAPHS** 14
8. **EUT PHOTOGRAPHS** 14

1. VERSION

Version No.	Date	Description
00	Apr. 29, 2025	Original

2. TEST SUMMARY

EMC Emission				
Standard	Test Item	Limit	Result	Remark
FCC PART 15 B	Conducted Emission at power ports	Class B	N/A	
	Radiated Emission below 1GHz	Class B	PASS	
	Radiated Emission above 1GHz	Class B	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

(2) Test Facility: Shenzhen DL Testing Technology Co., Ltd.
Address: 101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China

3. ENERAL INFORMATION

3.1 Description of Device (EUT)

EUT:	Smart Swing Gate
Trade Mark:	TOPENS
Model Number:	XD852 XD551, XD552, XD551S, XD552S, XD851, XD851S, XD852S, EK365WIFI, EKD365WIFI, EK700WIFI, EKD700WIFI, EN365WIFI, END365WIFI, EN700WIFI, END700WIFI
Test Model:	XD852
Model difference:	All models are same as the samples except model name and appearance color, they have the same structure and circuit.
Power Supply:	Input: DC 24-36V 10A 240W Output: DC 24V 9A
Working Frequency:	2.4GHz

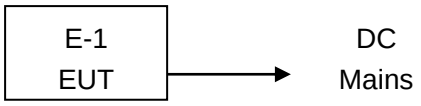
NOTE:
(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
(2) The EUT's all information provided by client.

3.2 Tested System Details

None.

3.3 Block Diagram of Test Set-up

Radiated Spurious Emission Test



3.4 Test Mode Description

Mode1.: On Mode(2.4G) Mode2.: On Mode(WIFI)

Mode3.: On Mode(433 RX)

Note: we pretest all mode, only the Mode 3 was worst and the data recording in the report.

3.5 Test Auxiliary Equipment

None.

3.6 Test Uncertainty

Conducted Emission Uncertainty:	±2.56dB
Radiated Emission Uncertainty below 1GHz:	±3.65dB
Radiated Emission Uncertainty above 1GHz:	±4.89dB

4. TEST INSTRUMENT USED

Radiation test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 01, 2024	Oct. 31, 2025
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 01, 2024	Oct. 31, 2025
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 01, 2024	Oct. 31, 2025
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 01, 2024	Oct. 31, 2025
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 01, 2024	Oct. 31, 2025
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 01, 2024	Oct. 31, 2025
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 01, 2024	Oct. 31, 2025
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 01, 2024	Oct. 31, 2025
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 01, 2024	Oct. 31, 2025
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 01, 2024	Oct. 31, 2025
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 01, 2024	Oct. 31, 2025
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 01, 2024	Oct. 31, 2025
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 01, 2024	Oct. 31, 2025
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 01, 2024	Oct. 31, 2025
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 01, 2024	Oct. 31, 2025
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 01, 2024	Oct. 31, 2025

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
2	EMI Receiver	R&S	ESR	101421	Nov. 01, 2024	Oct. 31, 2025
3	LISN	R&S	ENV216	102417	Nov. 01, 2024	Oct. 31, 2025
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 01, 2024	Oct. 31, 2025

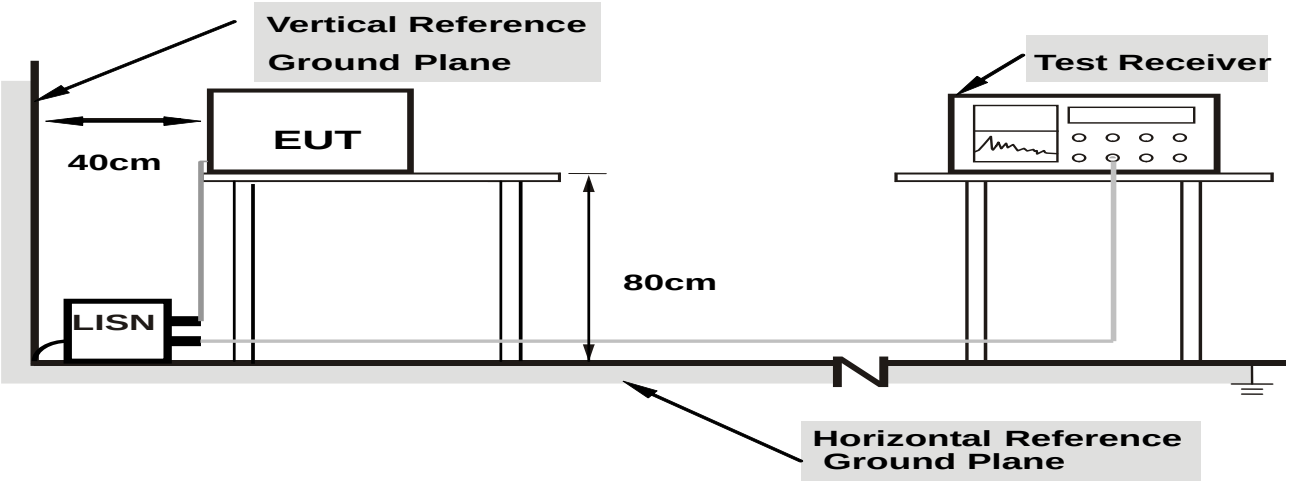
Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0

5. CONDUCTED EMISSION TEST

5.1 Block Diagram of Test Setup

For Mains Terminals Test



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

5.2 Test Standard and Limit

FCC PART 15 B

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15~0.50	66 ~ 56*	56 ~ 46*
0.50~5.00	56	46
5.00~30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

5.3 EUT Configuration on Test

The following equipment's are installed on conducted emission test to meet FCC PART 15 B requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

5.4 Operating Condition of EUT

5.4.1 Setup the EUT and simulators as shown in Section 5.1.

5.4.2 Turn on the power of all equipments.

5.4.3 Let the EUT work in test modes and test it.

5.5 Test Procedure

The EUT is put on the table and connected to the AC mains through a Artificial Mains Network (AMN) or ISN. This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the **ANSI C63.4** regulations during conducted emission test.

The bandwidth of the test receiver (R&S Test Receiver ESR) is set at 10KHz.

The frequency range from 150 KHz to 30 MHz is investigated.

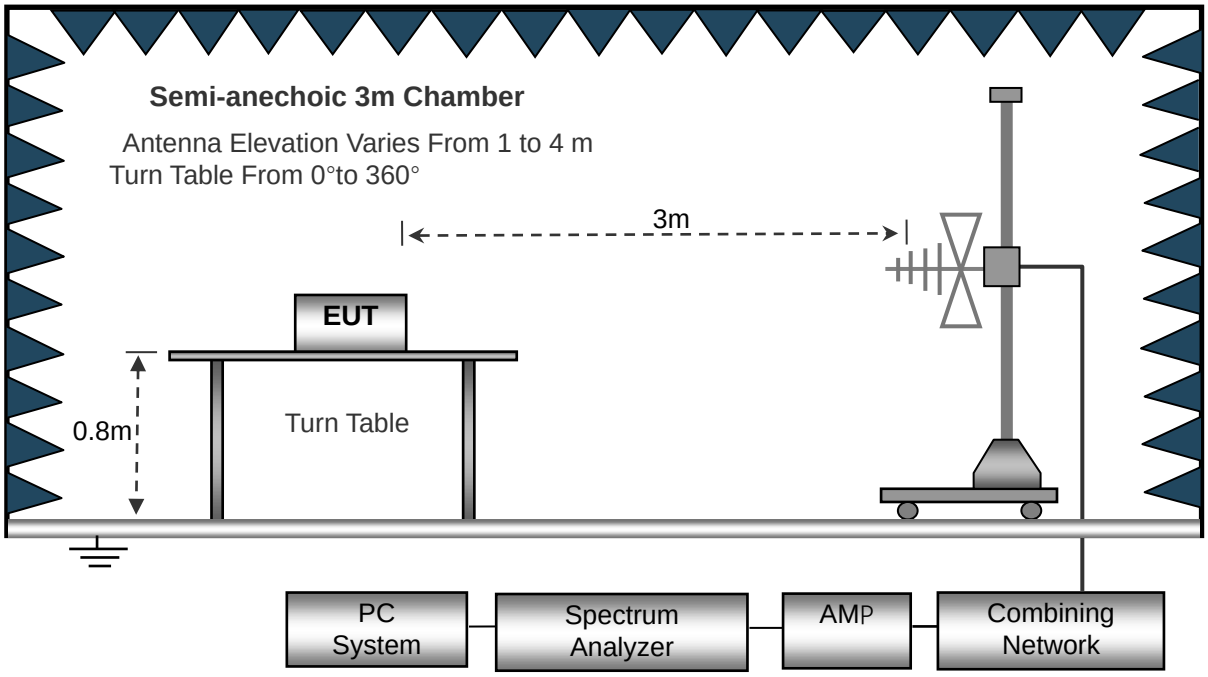
5.6 Test Result

The EUT is powered by DC, no requirements for this item.

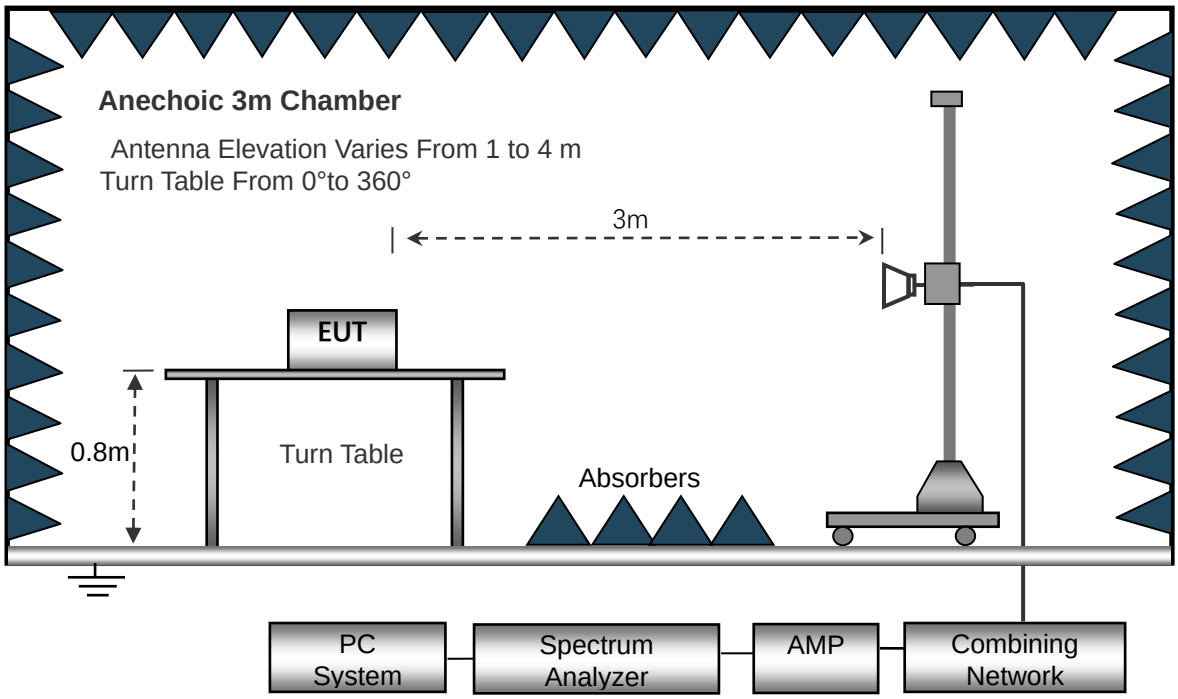
6. RADIATION EMISSION TEST

6.1 Block Diagram of Test Setup

Below 1GHz



Above 1GHz



6.2 Test Standard and Limit

FCC PART 15 B

Below 1GHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Above 1GHz

Frequency MHz	Distance (Meters)	Field Strengths Limits dB(μV)/m	Detector
1000～6000	3	74.0	PEAK
1000～6000	3	54.0	AVERAGE

Remark:

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

(2) Distance refers to the distance in meters between the measuring instrument, antenna and the closed point of any part of the device or system.

6.3 EUT Configuration on Test

The FCC PART 15 B regulations test method must be used to find the maximum emission during radiated emission test.

The configuration of EUT is the same as used in conducted emission test.

Please refer to Section 5.3.

6.4 Operating Condition of EUT

Same as conducted emission test, which is listed in Section 5.4 except the test set up replaced as Section 6.2.

6.5 Test Procedure

1) The radiated emissions test was conducted in a semi-anechoic chamber.

2) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.

3) Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.

4) The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

5) The bandwidth setting on the field strength meter (R&S Test Receiver ESCI) is set at 120KHz.

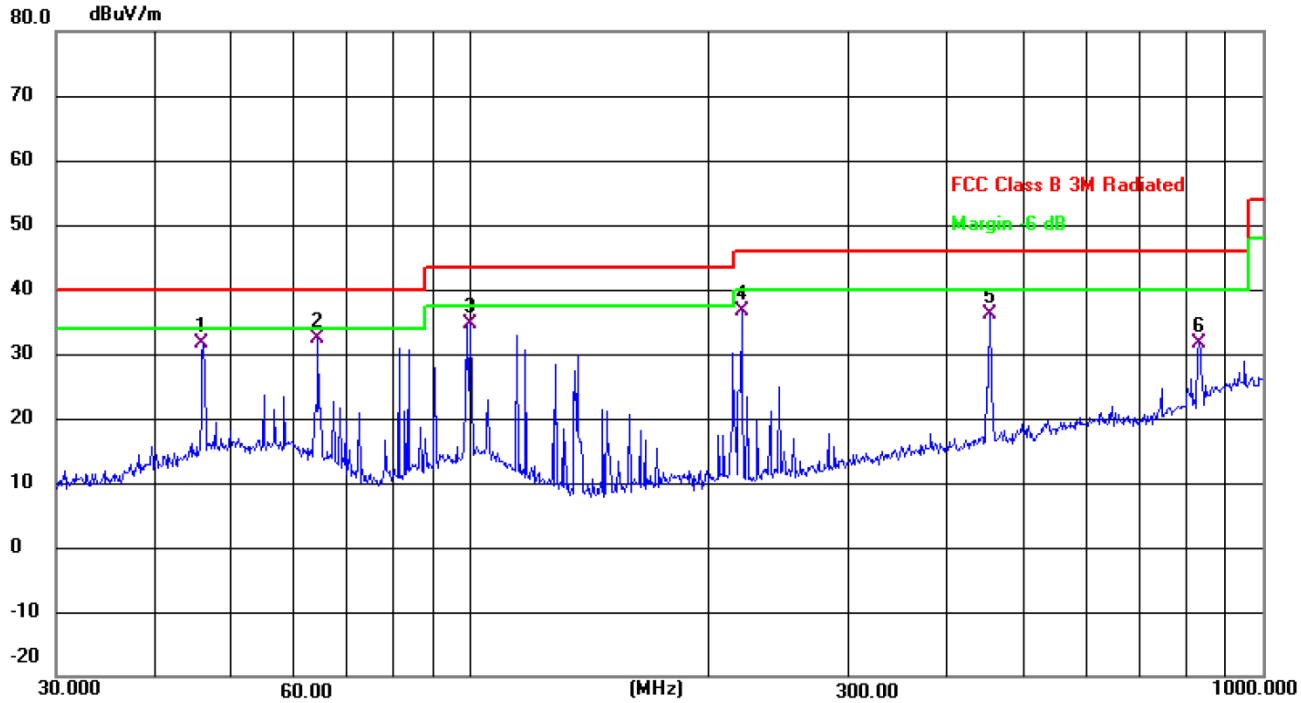
6) The frequency range from 30MHz to 6000MHz is checked. For above 1GHz, If the peak level below the AV's limit, the Average's emission was no recording.

6.6 Test Result

PASS

Please refer to the following page.

Radiation Emission Test Data below 1GHz			
Temperature:	24.5℃	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Horizontal
Test Voltage:	DC 36V	Test Mode:	Mode 3



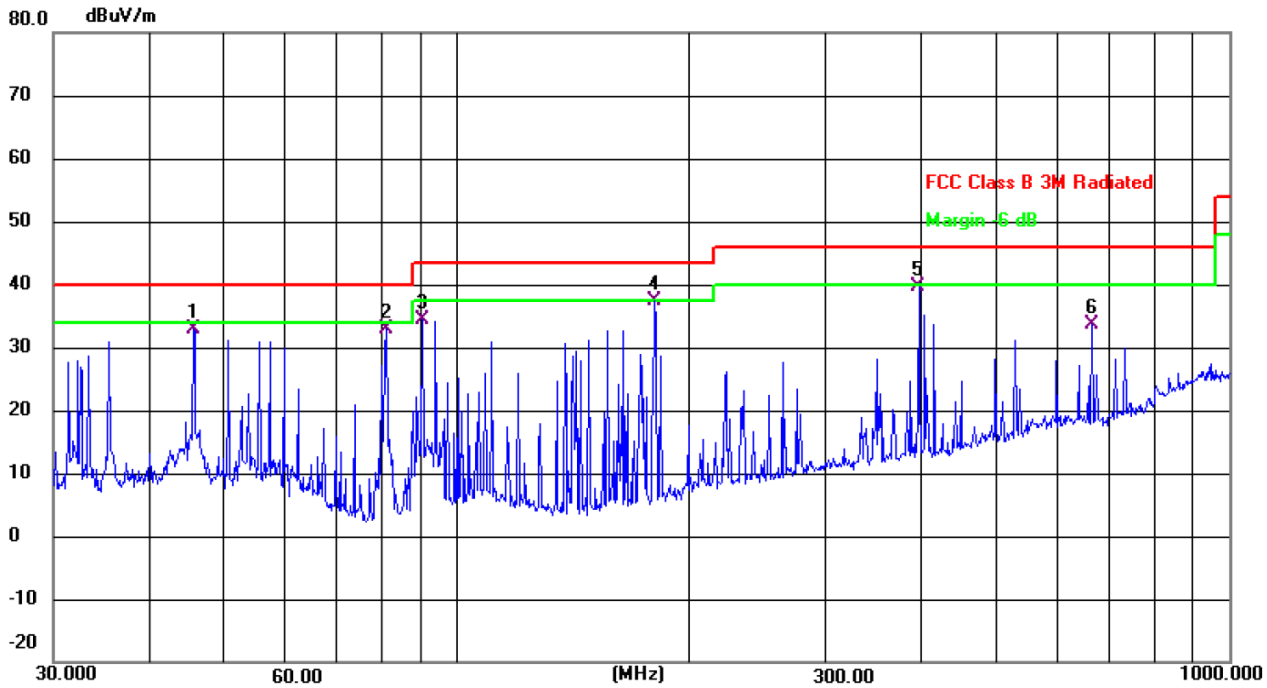
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		46.0162	45.15	-13.62	31.53	40.00	-8.47	QP
2	*	64.2074	48.31	-15.94	32.37	40.00	-7.63	QP
3		99.8777	51.02	-16.51	34.51	43.50	-8.99	QP
4		219.8446	53.20	-16.46	36.74	46.00	-9.26	QP
5		452.7196	47.60	-11.53	36.07	46.00	-9.93	QP
6		830.4000	36.04	-4.37	31.67	46.00	-14.33	QP

Remark:

Correct Factor=Cable loss+Antenna factor-Preamplifier

Measurement Level = Reading Level + Correct Factor; Margin = Measurement Level- Limit;

Radiation Emission Test Data below 1GHz			
Temperature:	24.5℃	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Vertical
Test Voltage:	DC 36V	Test Mode:	Mode 3



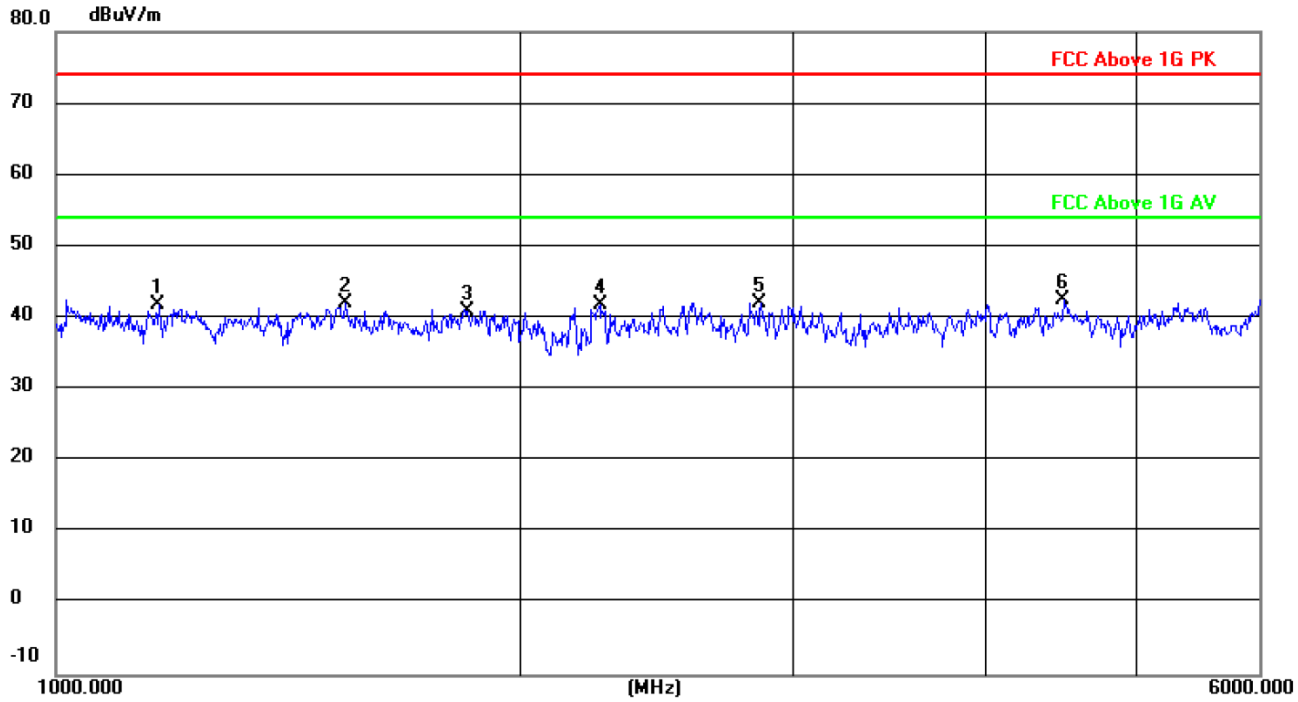
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		45.5347	46.65	-13.89	32.76	40.00	-7.24	QP
2		80.9274	53.32	-20.51	32.81	40.00	-7.19	QP
3		90.2202	53.02	-18.72	34.30	43.50	-9.20	QP
4	*	180.0164	55.67	-18.24	37.43	43.50	-6.07	QP
5		396.2412	52.60	-12.90	39.70	46.00	-6.30	QP
6		663.4728	42.12	-8.50	33.62	46.00	-12.38	QP

Remark:

Correct Factor=Cable loss+Antenna factor-Preamplifier

Measurement Level = Reading Level + Correct Factor; Margin = Measurement Level- Limit;

Radiation Emission Test Data Above 1GHz			
Temperature:	24.5℃	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Horizontal
Test Voltage:	DC 36V	Test Mode:	Mode 3



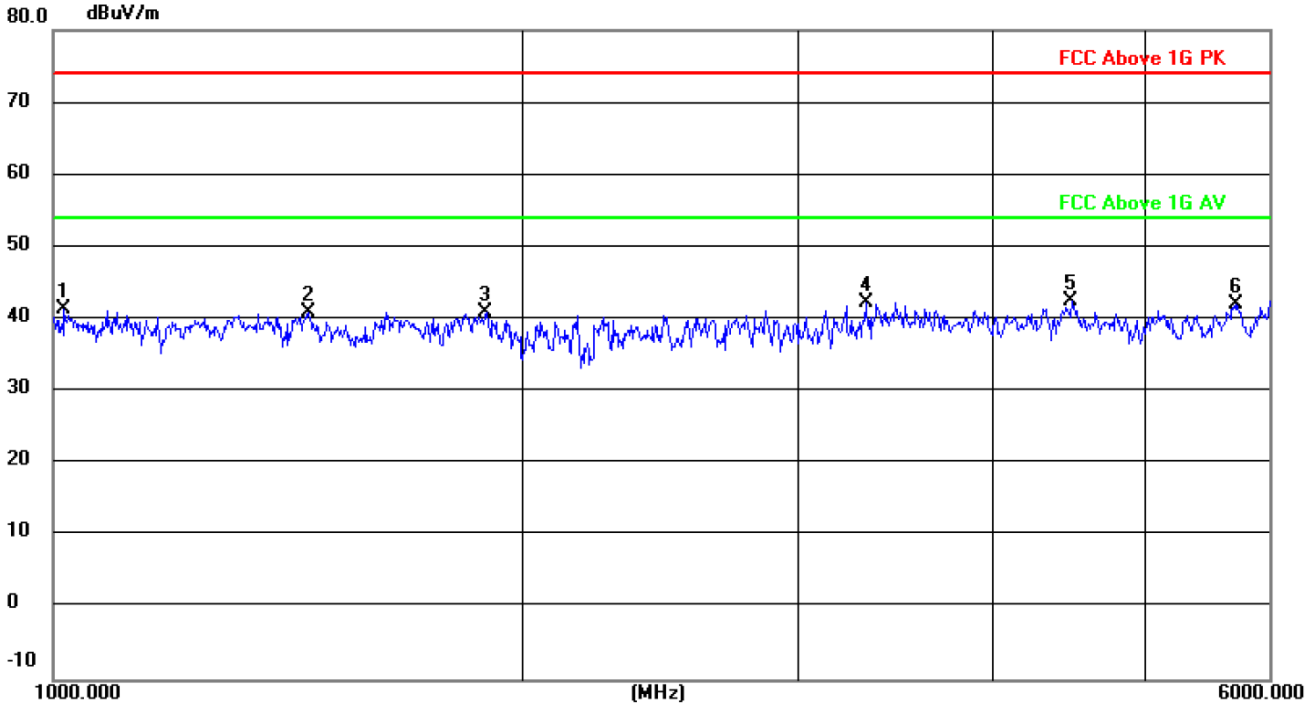
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		1166.597	61.92	-20.07	41.85	74.00	-32.15	peak
2		1540.049	60.87	-18.81	42.06	74.00	-31.94	peak
3		1845.558	58.11	-17.08	41.03	74.00	-32.97	peak
4		2247.628	56.82	-15.00	41.82	74.00	-32.18	peak
5		2857.568	56.56	-14.38	42.18	74.00	-31.82	peak
6	*	4488.391	49.38	-6.78	42.60	74.00	-31.40	peak

Remark:

Correct Factor=Cable loss+Antenna factor-Preamplifier

Measurement Level = Reading Level + Correct Factor; Margin = Measurement Level- Limit;

Radiation Emission Test Data Above 1GHz			
Temperature:	24.5℃	Relative Humidity:	54%
Pressure:	1009hPa	Polarization:	Vertical
Test Voltage:	DC 36V	Test Mode:	Mode 3



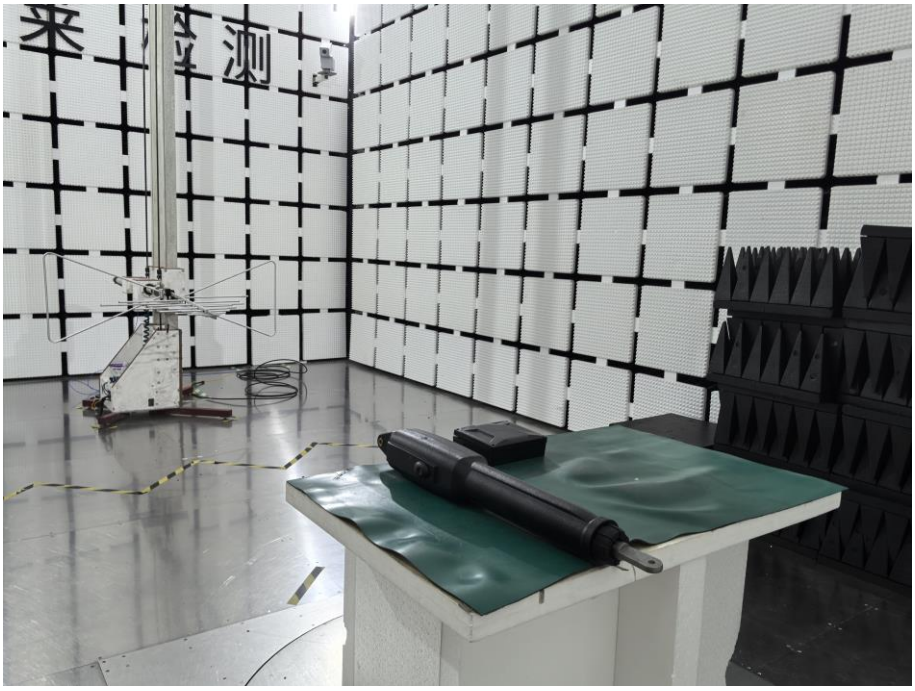
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		1016.256	62.37	-20.89	41.48	74.00	-32.52	peak
2		1456.840	59.75	-18.68	41.07	74.00	-32.93	peak
3		1892.438	57.44	-16.41	41.03	74.00	-32.97	peak
4		3309.825	54.52	-12.12	42.40	74.00	-31.60	peak
5	*	4488.391	49.38	-6.78	42.60	74.00	-31.40	peak
6		5716.644	44.68	-2.55	42.13	74.00	-31.87	peak

Remark:

Correct Factor=Cable loss+Antenna factor-Preamplifier

Measurement Level = Reading Level + Correct Factor; Margin = Measurement Level- Limit;

7. SETUP PHOTOGRAPHS



8. EUT PHOTOGRAPHS

Reference to the appendix II for details.

※※※※※ **END OF REPORT** ※※※※※