



TEST REPORT

APPLICANT : Nubia Technology Co.,Ltd

PRODUCT NAME : NX619J

MODEL NAME : NX619J

BRAND NAME : NUBIA

FCC ID : 2AHJO-NX619J

STANDARD(S) : 47 CFR Part 15 Subpart B

RECEIPT DATE : 2018-11-22

TEST DATE : 2018-11-27 to 2018-12-23

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Change History		
Version	Date	Reason for change
1.0	2018-12-27	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Nubia Technology Co.,Ltd
Applicant Address:	10/F, Tower A, Hans Innovation Mansion, North Ring Rd., No.9018, High-Tech Park, Nanshan District, Shenzhen, China
Manufacturer:	Nubia Technology Co.,Ltd
Manufacturer Address:	10/F, Tower A, Hans Innovation Mansion, North Ring Rd., No.9018, High-Tech Park, Nanshan District, Shenzhen, China

1.2. Equipment Under Test (EUT) Description

EUT Type:	NX619J
Serial No:	(N/A, marked #1 by test site)
Hardware Version:	NX619J_V1AMB
Software Version:	NX619J_ENCommon_V1.07
SIM Cards Description:	SIM 1 and SIM 2 is a chipset unit and tested as a single chipset. The SIM 1 is chosen for test
Tx Frequency:	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band II: 1850 MHz ~ 1910 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 824 MHz ~ 849 MHz CDMA 800MHz (BC 0): 824.7 MHz ~ 848.31 MHz LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 7: 2500 MHz ~ 2570 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 17: 704 MHz ~ 716 MHz LTE Band 18: 815 MHz ~ 830 MHz LTE Band 19: 830 MHz ~ 845 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 30: 2305 MHz ~ 2315 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 40: 2300 MHz ~ 2400 MHz



	LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 1710 MHz ~ 1780 MHz Bluetooth: 2402 MHz ~ 2480 MHz 802.11b/g/n-20: 2412 MHz ~ 2462 MHz 802.11n-40: 2422 MHz ~ 2452 MHz 802.11a/ac/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz; 5745 MHz ~ 5825 MHz;
Rx Frequency:	GSM850: 869 MHz ~ 894 MHz GSM1900: 1930 MHz ~ 1990 MHz WCDMA Band II: 1930 MHz ~ 1990 MHz WCDMA Band IV: 1710 MHz ~ 1755 MHz WCDMA Band V: 869 MHz ~ 894 MHz CDMA 800MHz (BC 0): 869.7 MHz ~ 893.31 MHz LTE Band 2: 1930 MHz ~ 1990 MHz LTE Band 4: 2110 MHz ~ 2155 MHz LTE Band 5: 869 MHz ~ 894 MHz LTE Band 7: 2620 MHz ~ 2690 MHz LTE Band 12: 729 MHz ~ 746 MHz LTE Band 17: 734 MHz ~ 746 MHz LTE Band 18: 860 MHz ~ 875 MHz LTE Band 19: 875 MHz ~ 890 MHz LTE Band 25: 1930 MHz ~ 1995 MHz LTE Band 26: 859 MHz ~ 894 MHz LTE Band 30: 2350 MHz ~ 2360 MHz LTE Band 38: 2570 MHz ~ 2620 MHz LTE Band 40: 2300 MHz ~ 2400 MHz LTE Band 41: 2496 MHz ~ 2690 MHz LTE Band 66: 2110 MHz ~ 2200 MHz Bluetooth: 2402 MHz ~ 2480 MHz 802.11b/g/n-20: 2412 MHz ~ 2462 MHz 802.11n-40: 2422 MHz ~ 2452 MHz 802.11a/ac/n: 5180 MHz ~ 5240 MHz; 5260 MHz ~ 5320 MHz; 5500 MHz ~ 5720 MHz; 5745 MHz ~ 5825 MHz; GPS/Galileo/GLONASS/BDS: 1559 MHz ~ 1610 MHz
Ancillary Equipment:	Battery Brand Name: ATL Model No.: Li3937T44P6h886639 Serial No.: (N/A, marked #1 by test site) Capacity: 3800mAh Rated Voltage: 3.85V Charge Limit: 4.4V



AC Adapter 1	
Brand Name:	CHENYANG
Model No.:	CYNBY090200-A00
Serial No.:	(N/A, marked #1 by test site)
Rated Input:	100-240V ~ 50/60Hz 0.5A
Rated Output:	5V=3.0A; 9V=2.0A; 12V=1.5A
AC Adapter 2	
Brand Name:	XINSPower
Model No.:	Q183
Serial No.:	(N/A, marked #1 by test site)
Rated Input:	100-240V ~ 50/60Hz 0.5A
Rated Output:	3.6~6V=3.0A; 6~9V=2.0A; 9~12V=1.5A

Note:

1. The NX619J supports GSM850MHz, 1900MHz, GPRS, EDGE, WCDMA Band II, Band IV, Band V, HSDPA, HSUPA, HSPA+, CDMA(BC0), LTE Band2/4/5/7/12/17/18/19/25/26/30/38/40/41/66, WIFI and GPS/Galileo/GLONASS/BDS.
2. The EUT is equipped with a T-Flash card slot, two SIM card slots and a Micro USB port which can be connected to ancillary equipments.
3. There are two kinds of adapters, both adapters have been tested, only the worst case (CYN BY090200-A00) was recorded in this report.
4. For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer



2. Test Results

2.1. Applied Reference Documents

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result
1	15.107	Conducted Emission	2018.11.27	Wang Dalong	PASS
2	15.109	Radiated Emission	2018.12.03	Wang Dalong	PASS

NOTE: The tests were performed according to the method of measurements prescribed in ANSI C63.4-2014.



2.2. EUT Setup and Operating Conditions

Frequency range was investigated: Conducted emission test: from 150 KHz to 30 MHz; Radiated emission test: from 30 MHz to 6000 MHz.

Test Item	
Radiated Emission	
Mode 1	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + Camera + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle
Mode 2	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + MP4 + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle
Mode 3	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + GPS Rx
Mode 4	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + Galileo Rx
Mode 5	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + GLONASS Rx
Mode 6	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + BDS Rx
Mode 7	EUT + USB Cable + PC + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle
Conducted Emission	
Mode 1	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + Camera + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle
Mode 2	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + MP4 + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle
Mode 3	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + GPS Rx
Mode 4	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + Galileo Rx
Mode 5	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + GLONASS Rx
Mode 6	EUT + USB Cable + Adapter + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle + BDS Rx
Mode 7	EUT + USB Cable + PC + Battery + SIM Card + Earphone + GSM Idle + WCDMA Idle + CDMA Idle + LTE Idle + Bluetooth Idle + WIFI Idle
Remark:	
The above test modes in boldface (Mode 7) were the worst cases of conducted emission, radiated	



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emission tests; only the test data of these modes was reported.

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

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

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3. 47 CFR Part 15B Requirements

3.1. Conducted Emission

3.1.1. Requirement

According to FCC section 15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

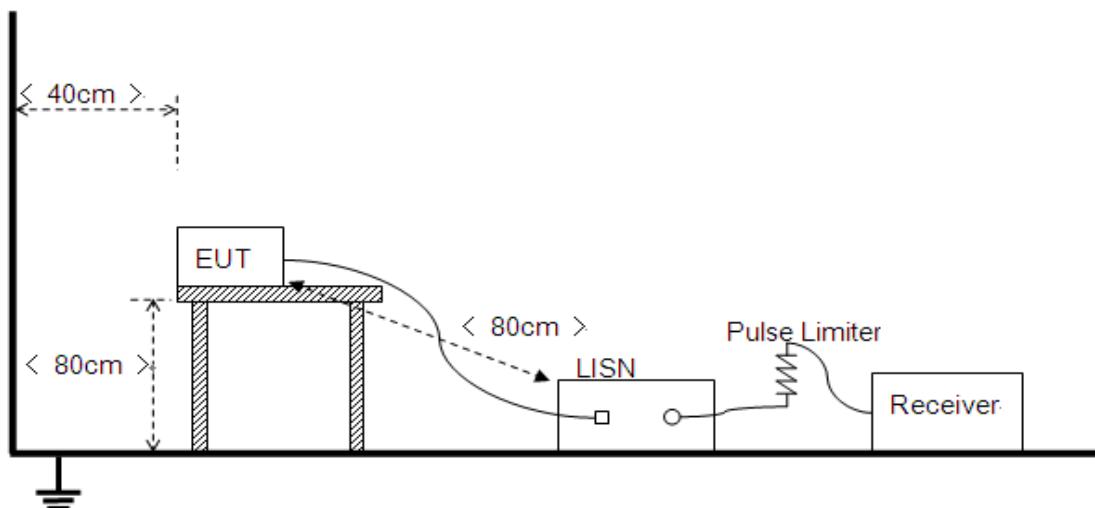
Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

- a) The limit subjects to the Class B digital device.
- b) The lower limit shall apply at the band edges.
- c) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.1.2. Test Setup

Please refer to Annex A for the photographs of the Test Configuration.



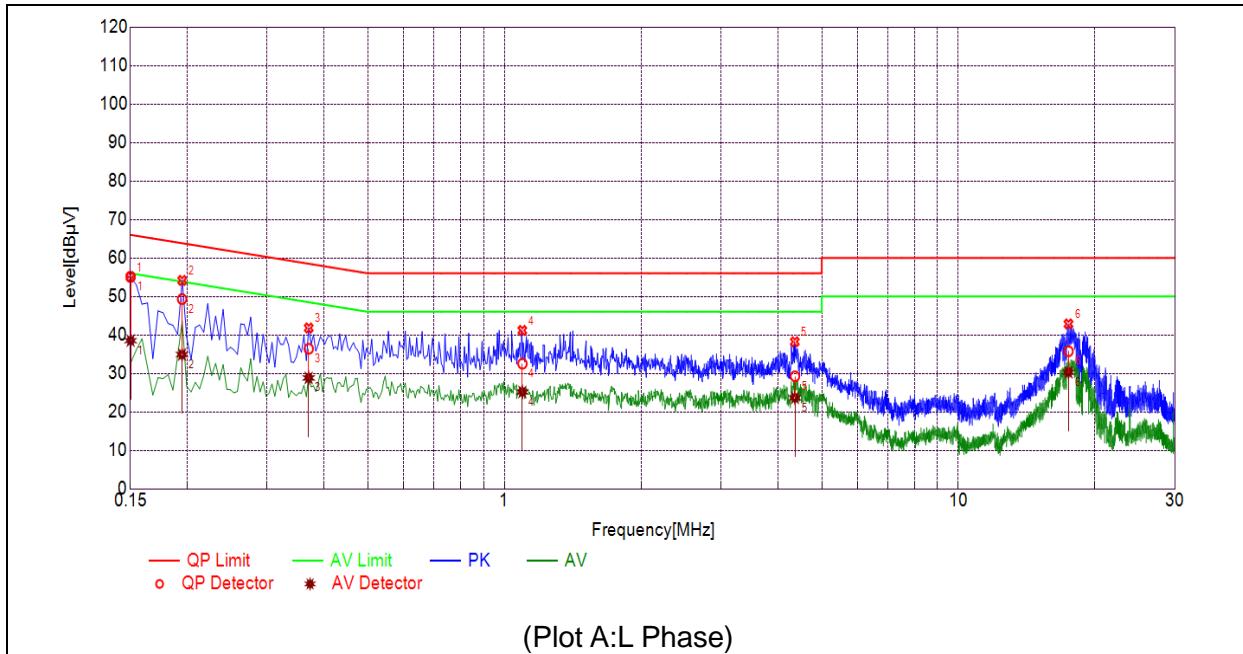


The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides $50\Omega/50\mu\text{H}$ of coupling impedance for the measuring instrument. A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

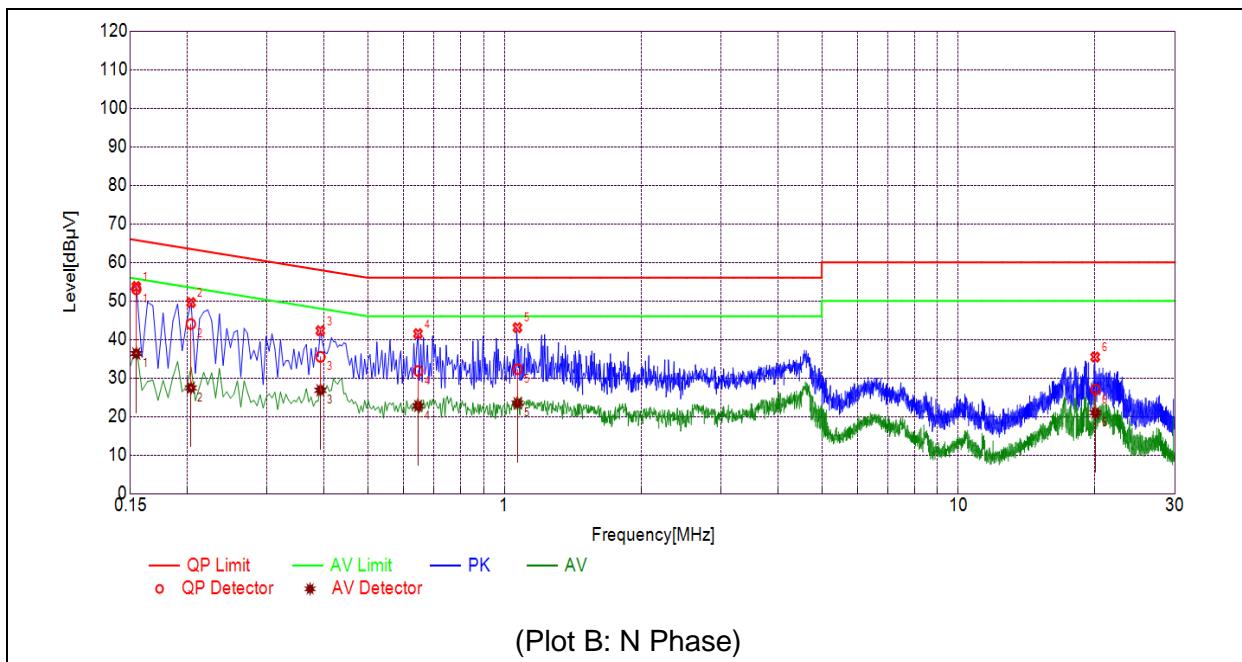
The power strip or extension cord has been investigated to make sure that the LISN integrity is maintained with respect to the impedance characteristics as prescribed in ANSI C63.4-2014 at Clause 4.3.

3.1.3. Test Result

The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

A. Test Plot and Suspicious Points:


NO.	Fre. (MHz)	Emission Level (dB μ V)		Limit (dB μ V)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1501	55.09	38.52	66.00	56.00	Line	PASS
2	0.1948	49.31	34.89	63.83	53.83		PASS
3	0.3704	36.40	28.82	58.49	48.49		PASS
4	1.0952	32.52	25.17	56.00	46.00		PASS
5	4.3646	29.25	23.65	56.00	46.00		PASS
6	17.484	35.76	30.28	60.00	50.00		PASS



NO.	Fre. (MHz)	Emission Level (dB μ V)		Limit (dB μ V)		Power-line	Verdict
		Quai-peak	Average	Quai-peak	Average		
1	0.1545	53.02	36.34	65.76	55.76	Neutral	PASS
2	0.2038	44.01	27.44	63.45	53.45		PASS
3	0.3931	35.49	26.82	58.00	48.00		PASS
4	0.6455	31.83	22.73	56.00	46.00		PASS
5	1.0685	32.30	23.46	56.00	46.00		PASS
6	20.039	27.00	20.96	60.00	50.00		PASS



3.2. Radiated Disturbance

3.2.1. Requirement

According to FCC section 15.109 (a), the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency range (MHz)	Field Strength Limitation at 3m Measurement Dist	
	(μ V/m)	(dB μ V/m)
30.0 - 88.0	100	20log 100
88.0 - 216.0	150	20log 150
216.0 - 960.0	200	20log 200
Above 960.0	500	20log 500

As shown in FCC section 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector. When average radiated emission measurements are specified in this part, including emission measurements below 1000MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules.

Note:

- 1) The tighter limit shall apply at the boundary between two frequency range.
- 2) Limitation expressed in dB μ V/m is calculated by 20log Emission Level(μ V/m).

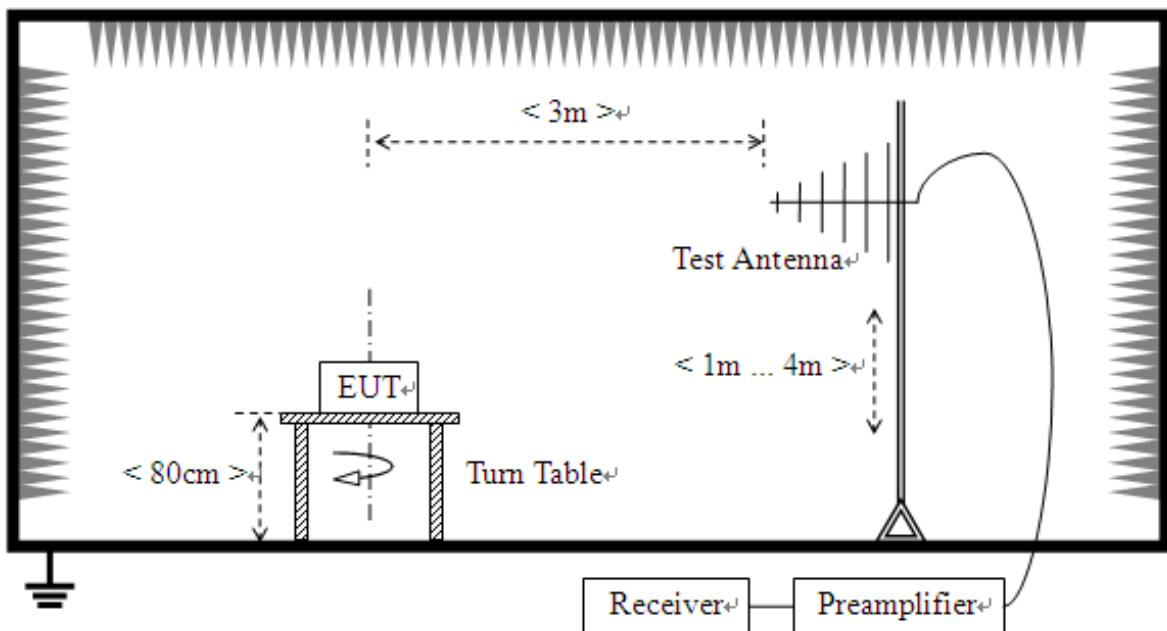
3.2.2. Frequency range of measurement

According to 15.33(b)(1), the frequency range of radiated measurement for the EUT is listed in the following table:

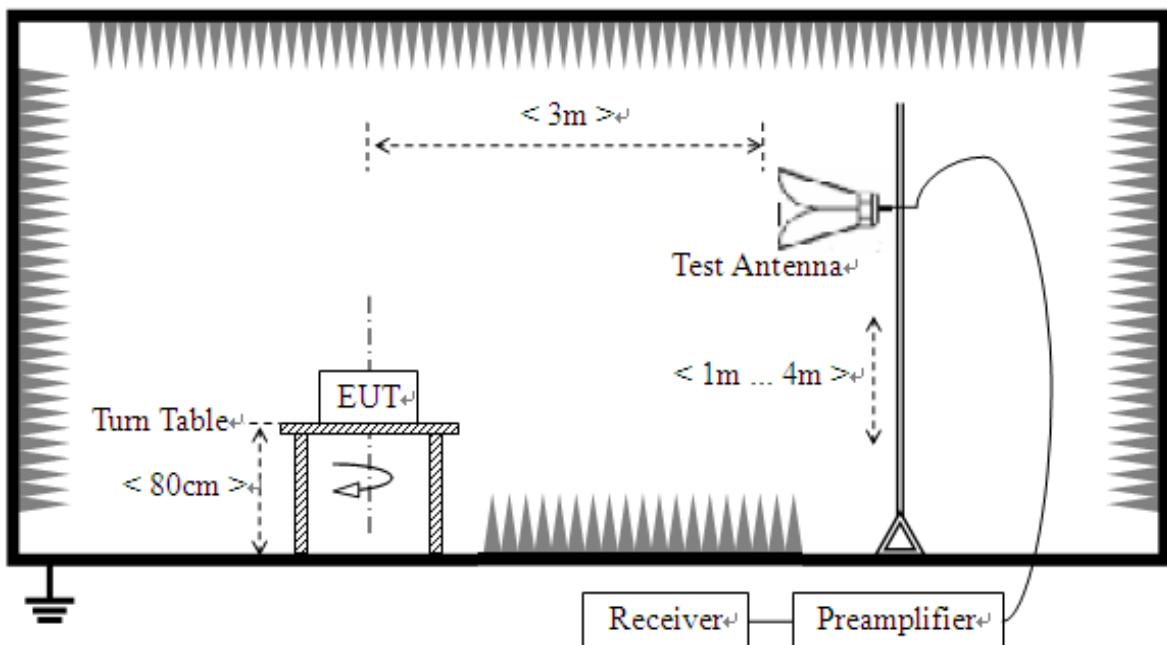
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

3.2.3. Test Setup

- 1) For radiated emissions from 30MHz to1GHz



- 2) For radiated emissions above 1GHz





The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.

For the test Antenna:

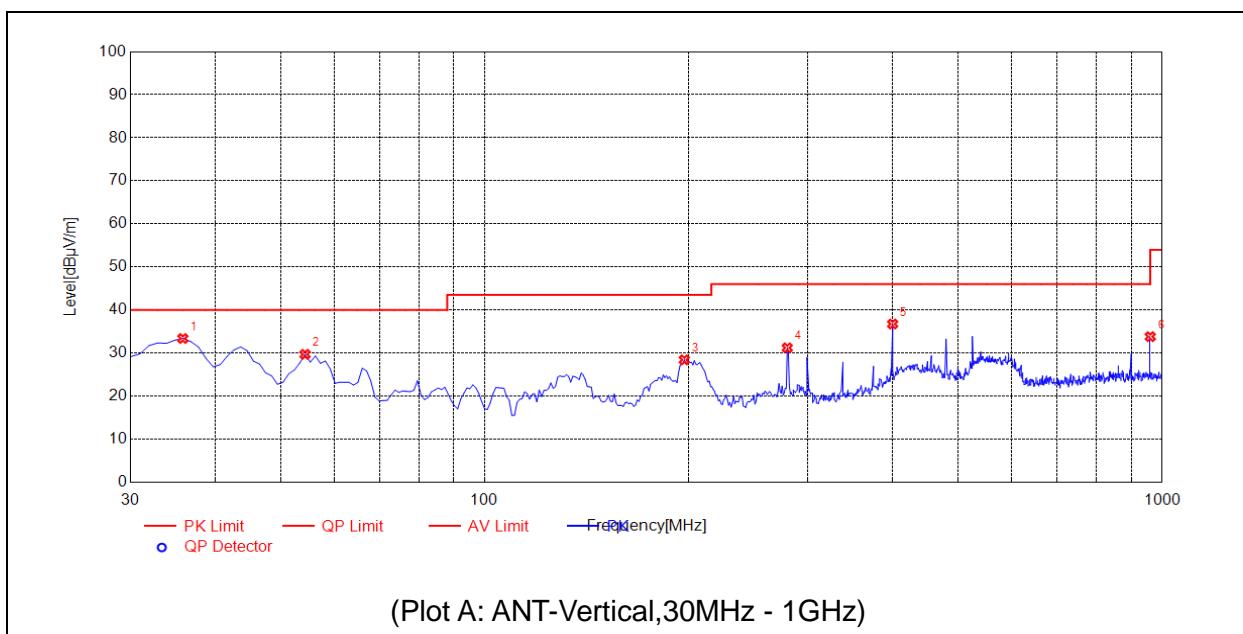
In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

3.2.4. Test Result

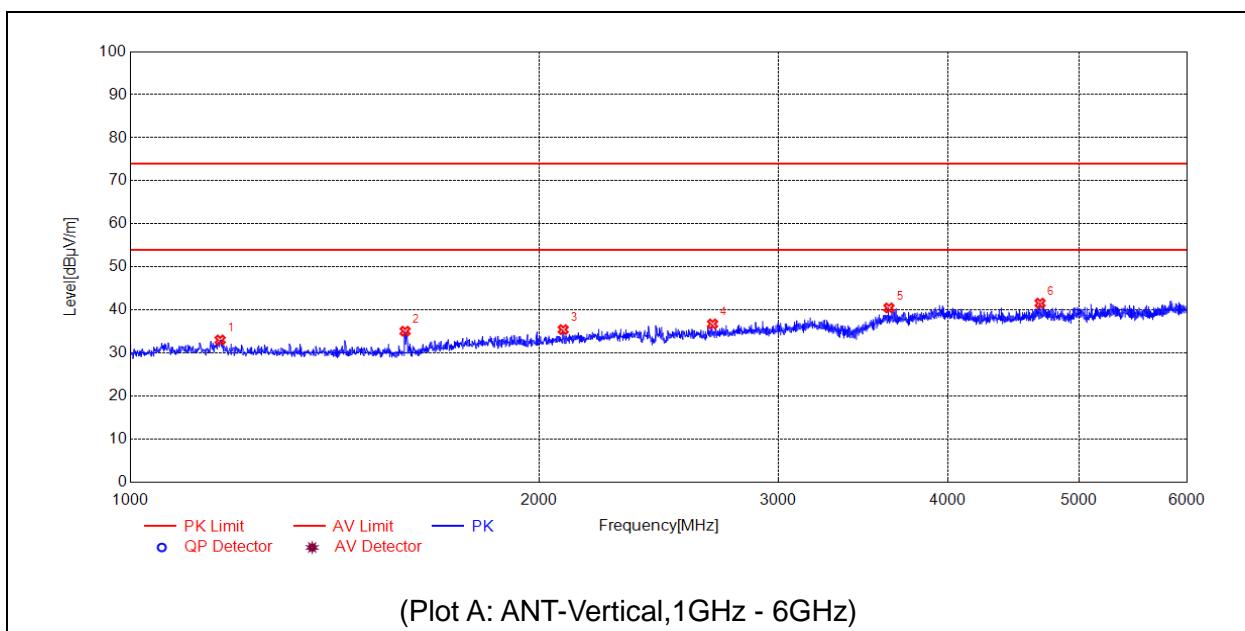
The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

The amplitude of emissions (6GHz-30GHz) which are attenuated more than 20 dB below the permissible value need not be reported.

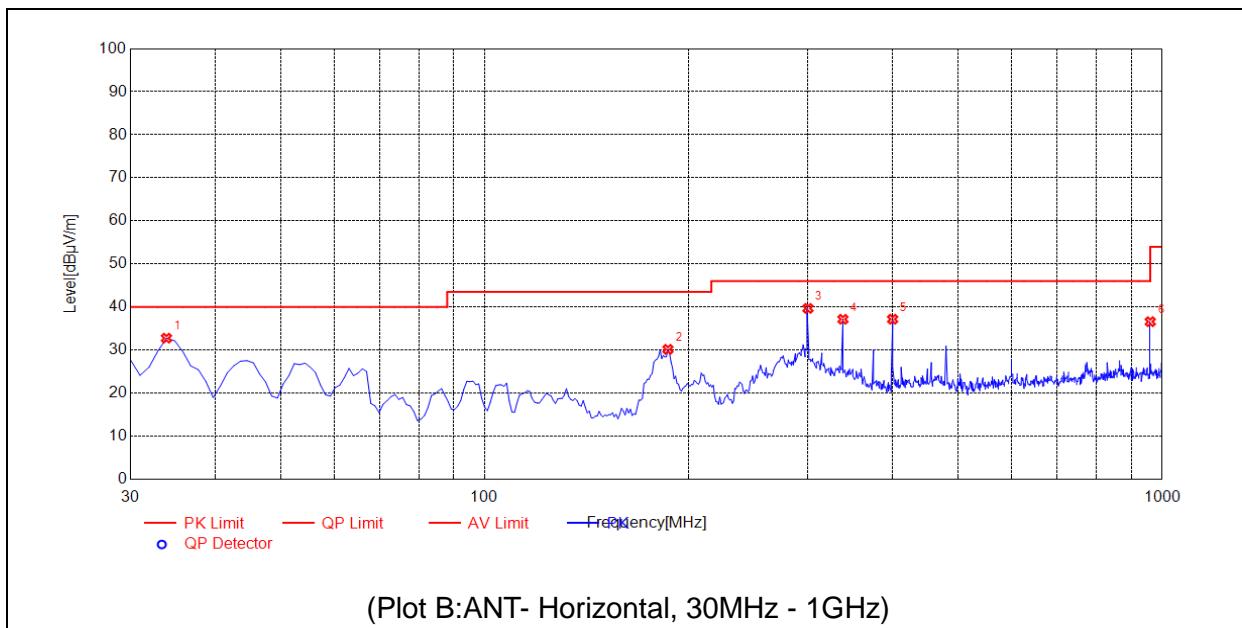
Note: All radiated emission tests were performed in X, Y, Z axis direction, and only the worst axis test condition was recorded in this test report.



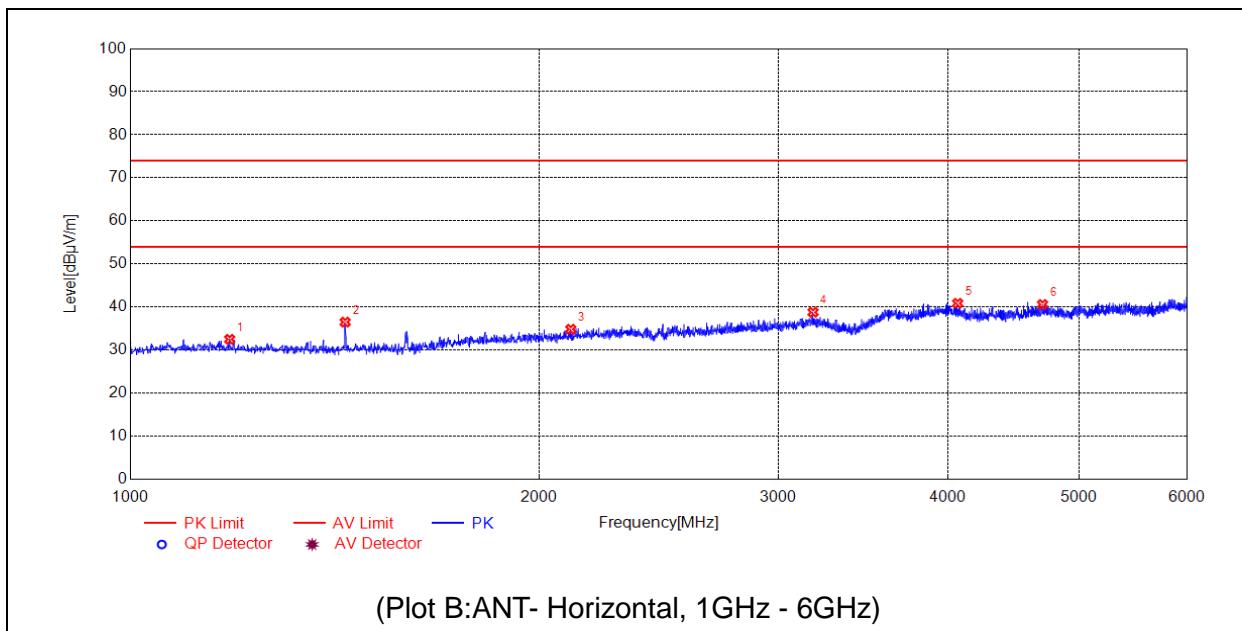
No.	Fre. MHz	Pk dB μ V/m	QP dB μ V/m	AV dB μ V/m	Limit-PK dB μ V/m	Limit-QP dB μ V/m	Limit-AV dB μ V/m	ANT	Verdict
1	35.8258	33.39	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
2	54.2743	29.72	N.A.	N.A.	N.A.	40.00	N.A.	V	PASS
3	197.0070	28.44	N.A.	N.A.	N.A.	43.50	N.A.	V	PASS
4	279.5395	31.23	N.A.	N.A.	N.A.	46.00	N.A.	V	PASS
5	399.9399	36.76	N.A.	N.A.	N.A.	46.00	N.A.	V	PASS
6	960.1902	33.82	N.A.	N.A.	N.A.	54.00	N.A.	V	PASS



No.	Fre. MHz	Pk dB μ V/m	QP dB μ V/m	AV dB μ V/m	Limit-PK dB μ V/m	Limit-QP dB μ V/m	Limit-AV dB μ V/m	ANT	Verdict
1	1164.0328	33.05	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
2	1593.1186	35.09	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
3	2083.2166	35.46	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
4	2684.3369	36.78	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
5	3620.5241	40.50	N.A.	N.A.	74.00	N.A.	54.00	V	PASS
6	4678.7357	41.61	N.A.	N.A.	74.00	N.A.	54.00	V	PASS



No.	Fre. MHz	Pk dB μ V/m	QP dB μ V/m	AV dB μ V/m	Limit-PK dB μ V/m	Limit-QP dB μ V/m	Limit-AV dB μ V/m	ANT	Verdict
1	33.8839	32.78	N.A.	N.A.	N.A.	40.00	N.A.	H	PASS
2	186.3263	30.18	N.A.	N.A.	N.A.	43.50	N.A.	H	PASS
3	299.9299	39.69	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS
4	337.7978	37.17	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS
5	399.9399	37.18	N.A.	N.A.	N.A.	46.00	N.A.	H	PASS
6	960.1902	36.60	N.A.	N.A.	N.A.	54.00	N.A.	H	PASS



No.	Fre. MHz	Pk dB μ V/m	QP dB μ V/m	AV dB μ V/m	Limit-PK dB μ V/m	Limit-QP dB μ V/m	Limit-AV dB μ V/m	ANT	Verdict
1	1183.0366	32.51	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
2	1439.0878	36.50	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
3	2110.2220	34.85	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
4	3183.4367	38.79	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
5	4068.6137	40.87	N.A.	N.A.	74.00	N.A.	54.00	H	PASS
6	4698.7397	40.60	N.A.	N.A.	74.00	N.A.	54.00	H	PASS

Annex A Photographs of Test Setup

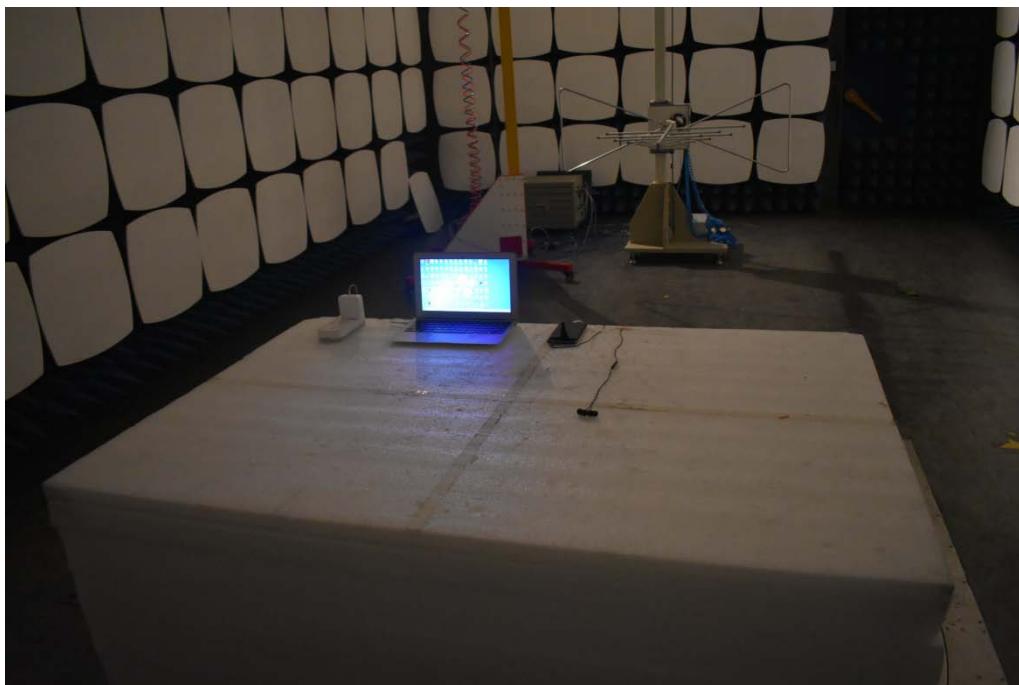
1. Mains Terminal Disturbance Voltage Measurement



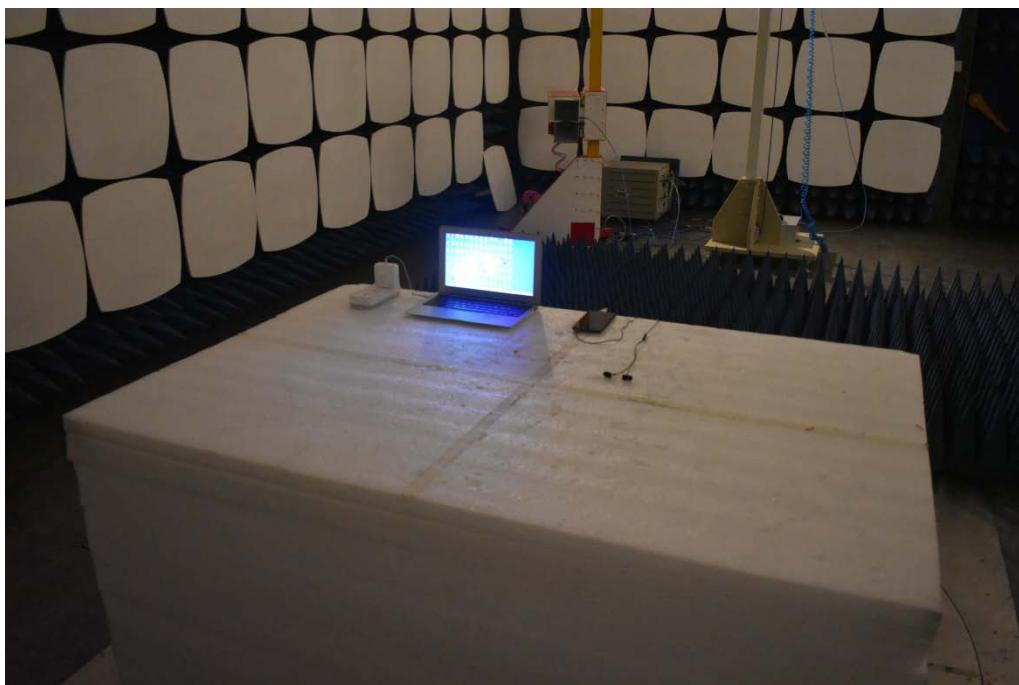
2. Conducted emission main's port side view



3. Radiated Field Strength Measurement(30MHz-1GHz)



4. Radiated Field Strength Measurement(above 1GHz)





Annex B Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2U _c (y))	9kHz-150kHz	±4.1 dB
	150kHz-30MHz	±3.7dB

Uncertainty of Radiated Emission Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2U _c (y))	30MHz-200MHz	±5.06dB
	200MHz-1000MHz	±5.24dB
	1GHz-6GHz	±5.18dB
	6GHz-18GHz	±5.48dB



Annex C Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Accreditation Certificate

Accredited Testing Laboratory:	The FCC designation number is CN1192. Test firm registration number is 226174. (Shenzhen Morlab Communications Technology Co., Ltd.)
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4. Test Software Utilized

Model	Version Number	Producer
JS32-RE	Version 2.0.2.0	Tonscend
TS+ -[JS32-CE]	Version2.5.0.0	Tonscend



5. Test Equipments Utilized

Description	Manufacturer	Model	Serial No.	Cal. Date	Due. Date
MXE EMI Receiver	Agilent	N9038A	MY54130016	2018.08.04	2019.08.03
Test Receiver	R&S	ESPI	101052	2018.08.04	2019.08.03
LISN	Schwarzbeck	NSLK 8127	812744	2018.10.15	2019.04.15
Pulse Limiter (20dB)	VTSD	9561D	9537	2018.10.15	2019.04.15
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-519	2018.05.08	2019.05.07
Test Antenna - Horn	Schwarzbeck	BBHA 9120D	1774	2018.03.03	2019.03.02
Radiated Disturbance Preamplifier	rflight	S020180L320 3	61171/61172	2018.07.12	2019.07.11
Radiated Disturbance Preamplifier	rflight	S10M100L38 02	46732	2018.07.12	2019.07.11
Semi-Anechoic Chamber	CRT	9m*6m*6m	N/A	2017.01.12	2020.01.11
PC	Apple	A1370	C02FQ2PYD DQW	N/A	N/A
PC Adapter	LITE-ON POWER TECHNOLOGY(DONGGUAN) Co., LTD	A1374	C517271EA1 000085	N/A	N/A

———— END OF REPORT ————