TEST REPORT

FCC ID: 2ADYY-K16SAA

Product: Laptop Computer

Model No.: K16SAA

Trade Mark: TECNO

Report No.: WSCT-ANAB-R&E240700030A-15B

Issued Date: 12 August 2024

Issued for:

TECNO MOBILE LIMITED
FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG

Issued By:

World Standardization Certification & Testing Group(Shenzhen) Co.,Ltd.
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1. Test Certification

Product:	Laptop Computer
Model No.:	K16SAA
Trade Mark:	TECNO
Applicant:	**TECNO MOBILE LIMITED**
Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
Manufacturer:	**TECNO MOBILE LIMITED**
Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
Date of Test:	11 July 2024 to 12 August 2024
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart B

The above equipment has been tested by World Standardization Certification & Testing Group(Shenzhen) Co., Ltd. and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: Jiang Guanliang **(Jiang Guanliang)** **Checked By:** Chen Xu **(Chen Xu)**

Approved By: Li Huaibi **(Li Huaibi)** **Date:** 12 August 2024

2. GENERAL DESCRIPTION OF EUT

Equipment Type:	Laptop Computer
Test Model:	K16SAA
Trade Mark	TECNO
Operating Voltage:	Adapter1: E065-1R200325VU INPUT: 100-240V~50/60Hz, 1.5A OUTPUT:20.0V⎓3.25A Rechargeable Li-ion Polymer Battery: K16S Nominal Voltage: 11.55V Rated Capacity: 6060mAh Rated nergy:70.00Wh Limited Charge Voltage: 13.2V
Remark:	N/A.

Configuration differences

Configuration/ Processor	Camera
K16SAA (i5)	1M(Shengtai)
K16SAA (i7)	1M(Visual Era)
Note: The prototypes of both configurations have been tested, and the K16SAA (i7) has the worst test result, which is the main test model reported	

3. Test Result Summary

Requirement	CFR 47 Section	Result
CONDUCTED EMISSION	§15.107	PASS
RADIATED EMISSION	§15.109	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

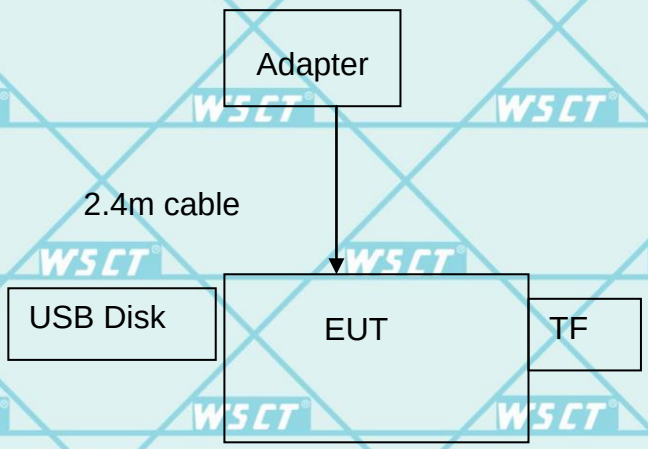
4. TEST METHODOLOGY

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Video Recording
Model 2	Video Playing
Mode 3	Transferring with USB Disk (the worst case)
Mode 4	TF Card Playing

4.1. CONFIGURATION OF SYSTEM UNDER TEST

Mode 1&2&3&4



(EUT: Laptop Computer)

I/O Port of EUT			
I/O Port Type	**Q'TY**	**Cable**	**Tested with**
Power	1	2.4m cable, unshielded	1
USB cable	1	1.8m USB cable, unshielded	1

4.2. DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
1	TF	Kingston	DTX/64GB	/	/
2	Adapter	/	E065-1R200325VU	/	/
3	USB Disk	Kingston	/	/	/

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

5. MEASUREMENT INSTRUMENTS

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibrated	Calibrated until
Test software	--	EZ-EMC	CON-03A	--	--
ESCI Test Receiver	R&S	ESCI	100005	11/05/2023	11/04/2024
LISN	AFJ	LS16	16010222119	11/05/2023	11/04/2024
LISN(EUT)	Mastic	AN3016	04/10040	11/05/2023	11/04/2024
pre-amplifier	CDSI	PAP-1G18-38	--	11/05/2023	11/04/2024
System Controller	CT	SC100	-	11/05/2023	11/04/2024
Bi-log Antenna	Chase	CBL6111C	2576	11/05/2023	11/04/2024
Spectrum analyzer	R&S	FSU26	200409	11/05/2023	11/04/2024
Horn Antenna	SCHWARZBECK	9120D	1141	11/05/2023	11/04/2024
Bi-log Antenna	SCHWARZBECK	VULB9168	01488	11/05/2023	11/04/2024
Pre Amplifier	H.P.	HP8447E	2945A02715	11/05/2023	11/04/2024
9*6*6 Anechoic	--	--	--	11/05/2023	11/04/2024

6. Facilities and Accreditations

6.1. Facilities

All measurement facilities used to collect the measurement data are located at
World Standardization Certification & Testing Group (Shenzhen) Co., Ltd.
Building A-B,Baoli'an Industrial Park,No.58 and 60,Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen City, Guangdong Province, China

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 32. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6.2. ACCREDITATIONS

ANAB - Certificate Number: AT-3951

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (ANAB).Certification Number: AT-3951

6.3. Measurement Uncertainty

The reported uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission Test	±3.2dB
2	RF power, conducted	±0.16dB
3	Spurious emissions, conducted	±0.21dB
4	All emissions, radiated(<1GHz)	±4.7dB
5	All emissions, radiated(>1GHz)	±4.7dB
6	Temperature	±0.5°C
7	Humidity	±2.0%

7. EMC EMISSION TEST

7.1. CONDUCTED EMISSION MEASUREMENT

7.1.1. POWER LINE CONDUCTED EMISSION LIMITS

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

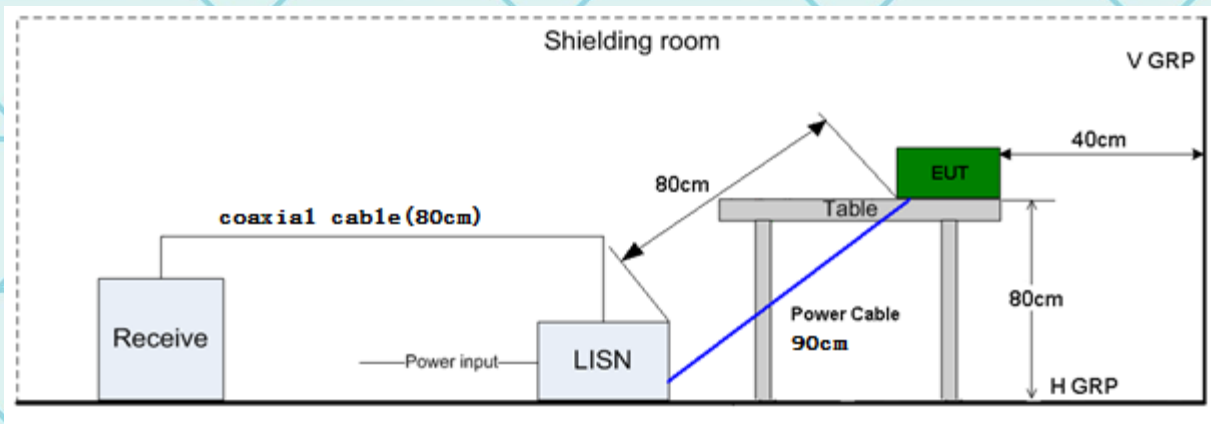
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

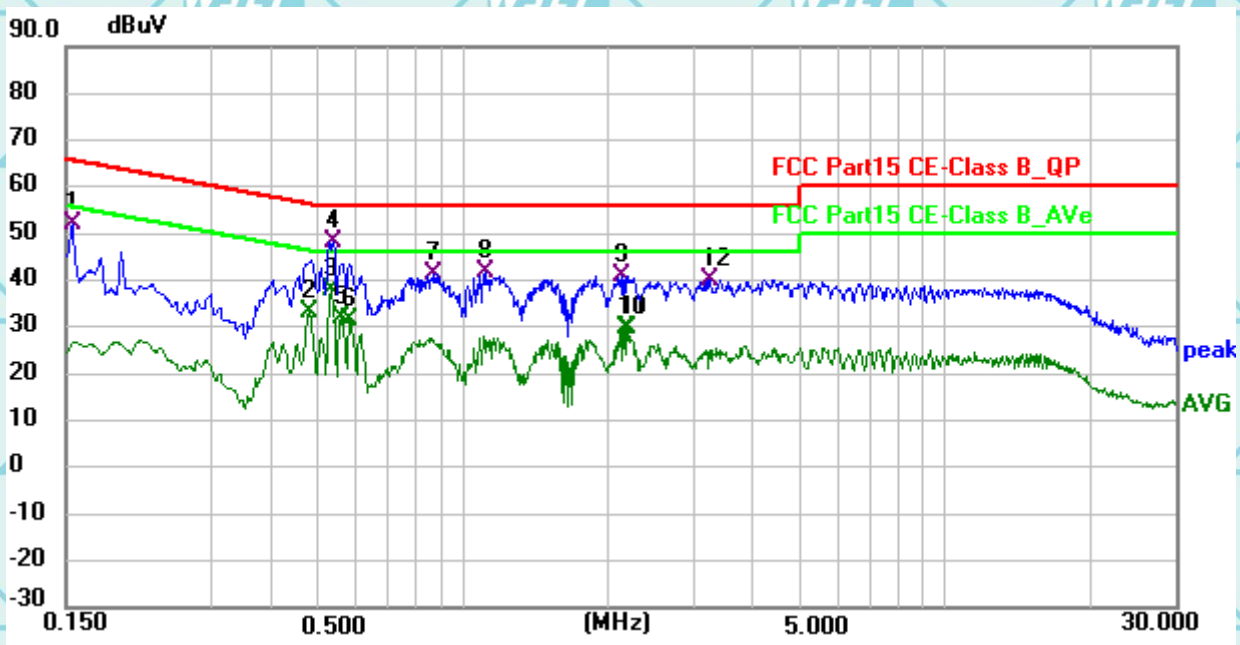
TEST SETUP



7.1.2. Test Results

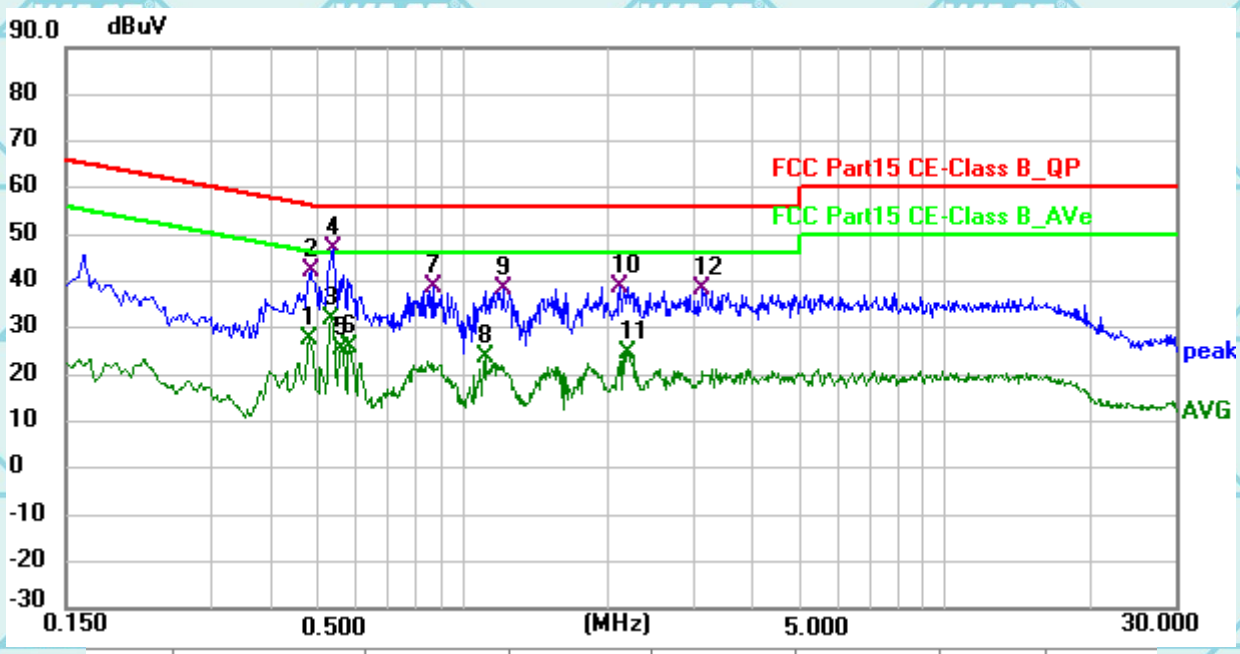
Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Mode	Adapter: Mode 3(the worst case)

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1545	31.49	20.73	52.22	65.75	-13.53	QP
2	0.4785	12.53	20.52	33.05	46.37	-13.32	AVG
3	0.5325	17.33	20.51	37.84	46.00	-8.16	AVG
4 *	0.5370	27.74	20.52	48.26	56.00	-7.74	QP
5	0.5595	11.53	20.52	32.05	46.00	-13.95	AVG
6	0.5820	10.95	20.52	31.47	46.00	-14.53	AVG
7	0.8745	20.89	20.62	41.51	56.00	-14.49	QP
8	1.1130	21.22	20.66	41.88	56.00	-14.12	QP
9	2.1390	20.41	20.61	41.02	56.00	-14.98	QP
10	2.1705	9.05	20.61	29.66	46.00	-16.34	AVG
11	2.1975	9.32	20.61	29.93	46.00	-16.07	AVG
12	3.2460	19.68	20.59	40.27	56.00	-15.73	QP

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4785	7.15	20.52	27.67	46.37	-18.70	AVG
2	0.4830	21.89	20.52	42.41	56.29	-13.88	QP
3	0.5325	11.48	20.51	31.99	46.00	-14.01	AVG
4 *	0.5370	26.27	20.52	46.79	56.00	-9.21	QP
5	0.5595	5.14	20.52	25.66	46.00	-20.34	AVG
6	0.5820	5.52	20.52	26.04	46.00	-19.96	AVG
7	0.8745	18.28	20.62	38.90	56.00	-17.10	QP
8	1.1130	3.23	20.66	23.89	46.00	-22.11	AVG
9	1.2120	17.76	20.66	38.42	56.00	-17.58	QP
10	2.1165	18.32	20.61	38.93	56.00	-17.07	QP
11	2.1975	4.21	20.61	24.82	46.00	-21.18	AVG
12	3.1470	17.79	20.59	38.38	56.00	-17.62	QP

Note1:

Freq. = Emission frequency in MHz
Reading level (dBμV) = Receiver reading
Corr. Factor (dB) = LISN factor + Cable loss
Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)
Limit (dBμV) = Limit stated in standard
Margin (dB) = Measurement (dBμV) – Limits (dBμV)
Q.P. =Quasi-Peak AVG =average
** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.*

7.2.RADIATED EMISSION MEASUREMENT

7.2.1. Radiated Emission Limits

The field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15B.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 1Hz for Average

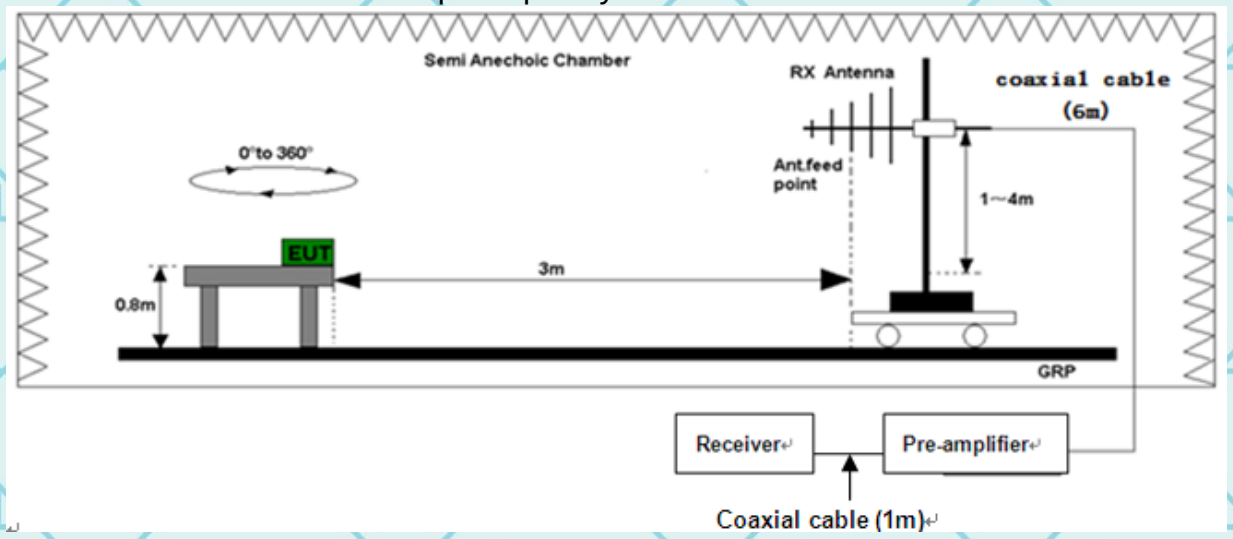
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

TEST PROCEDURE

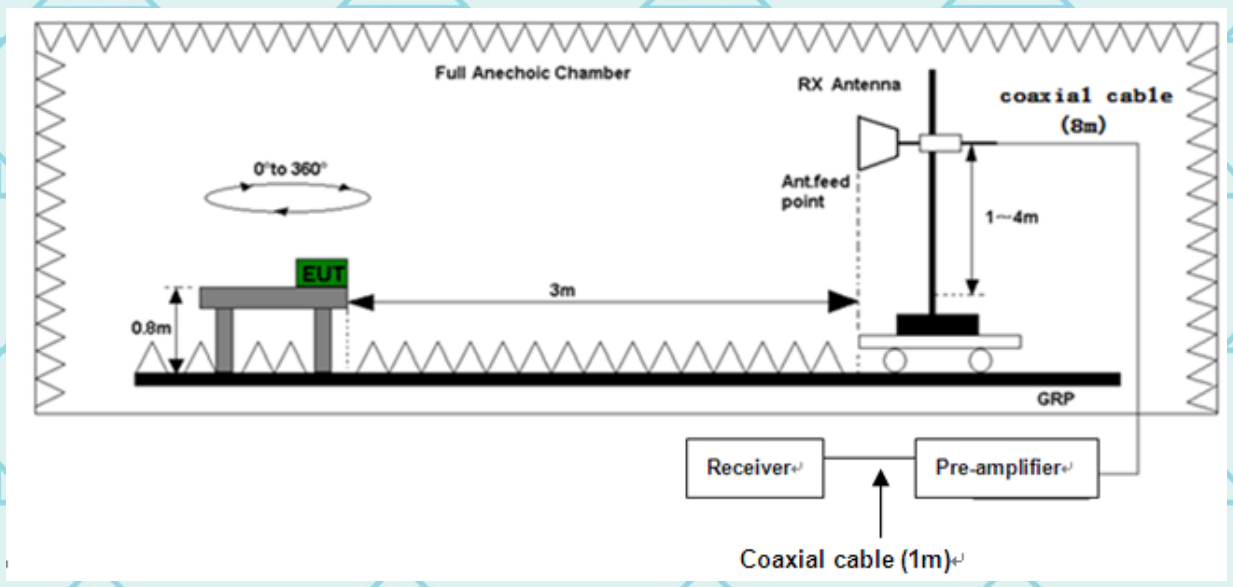
a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

TEST SETUP

（A）Radiated Emission Test-Up Frequency 30MHz~1GHz



（B）Radiated Emission Test-Up Frequency Above 1GHz



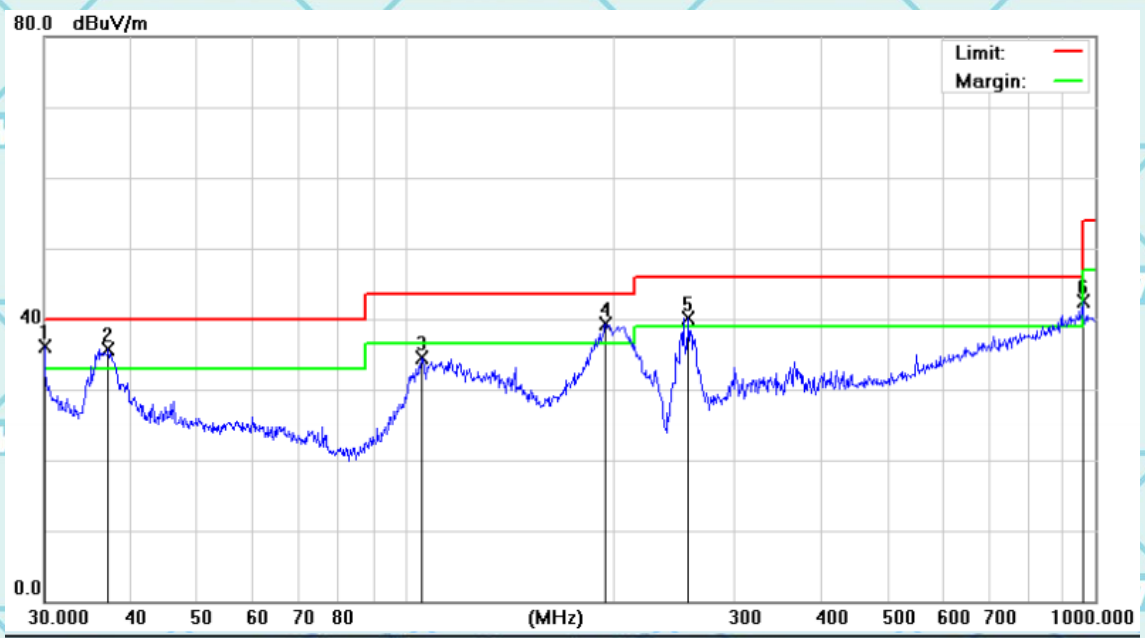
7.2.2. Test Results

Temperature	20 ℃	Relative Humidity	48%
Pressure	1010 hPa	Test Mode	Adapter: Mode 3(the worst case)

Please refer to following diagram for individual

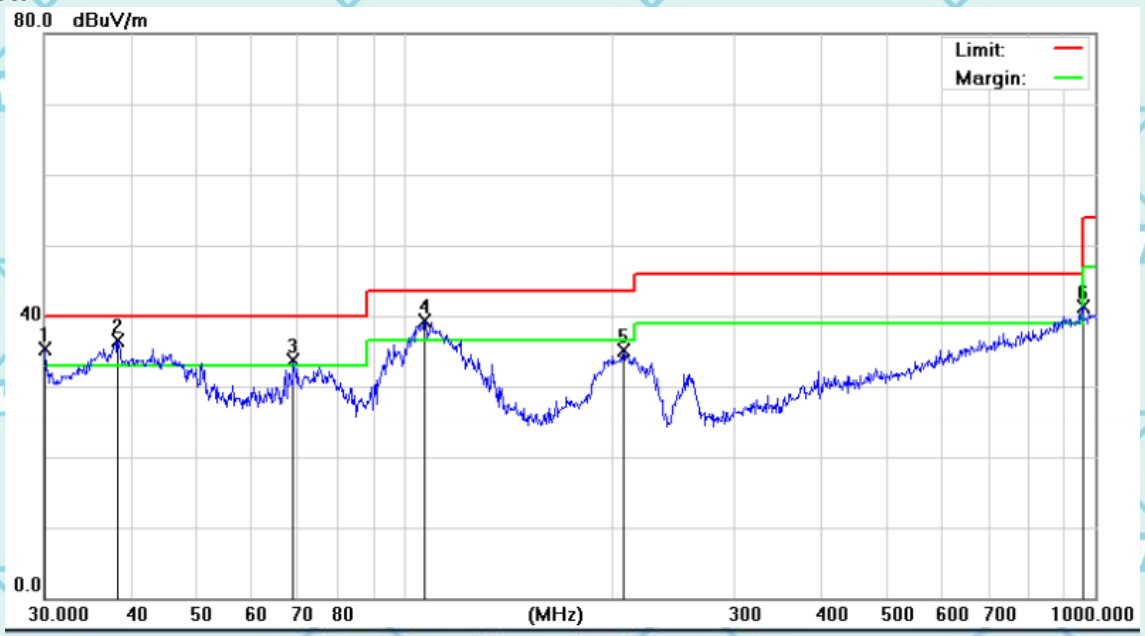
Below 1GHz

Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	30.0000	37.91	-1.73	36.18	40.00	-3.82	QP
2	!	37.1550	36.73	-0.94	35.79	40.00	-4.21	QP
3		105.6415	38.04	-3.45	34.59	43.50	-8.91	QP
4	!	195.1365	43.18	-3.81	39.37	43.50	-4.13	QP
5	!	257.4222	41.61	-1.49	40.12	46.00	-5.88	QP
6	*	958.7943	28.67	13.92	42.59	46.00	-3.41	QP

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	!	30.1054	36.98	-1.73	35.25	40.00	-4.75	QP
2	*	38.3462	37.15	-0.73	36.42	40.00	-3.58	QP
3	!	68.8721	37.18	-3.57	33.61	40.00	-6.39	QP
4	!	106.7587	42.67	-3.37	39.30	43.50	-4.20	QP
5		207.1226	38.79	-3.66	35.13	43.50	-8.37	QP
6	!	958.7943	27.44	13.92	41.36	46.00	-4.64	QP

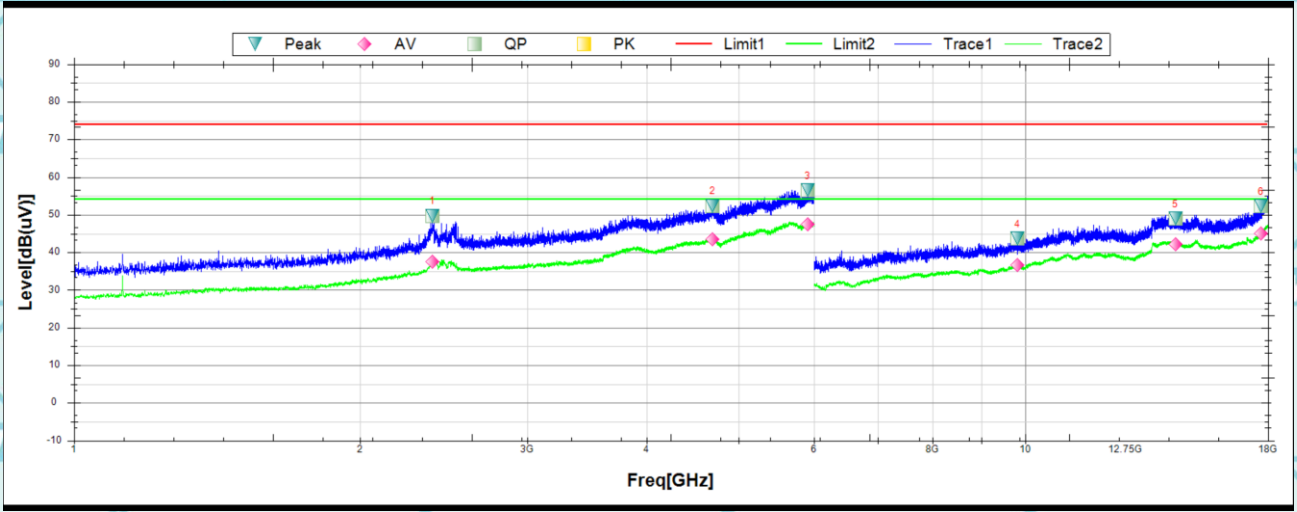
Note:
Freq. = Emission frequency in MHz
Reading level (dBµV) = Receiver reading
Corr. Factor (dB) = Antenna factor + Cable loss - Amplifier factor.
Measurement (dBµV) = Reading level (dBµV) + Corr. Factor (dB)
Limit (dBµV) = Limit stated in standard
Margin (dB) = Measurement (dBµV) – Limits (dBµV)

TEST RESULTS

Above 1GHz(1~26GHz) :(Adapter:Mode 3—worst case)

Note : The spurious above 18G is noise only, do not show on the report.

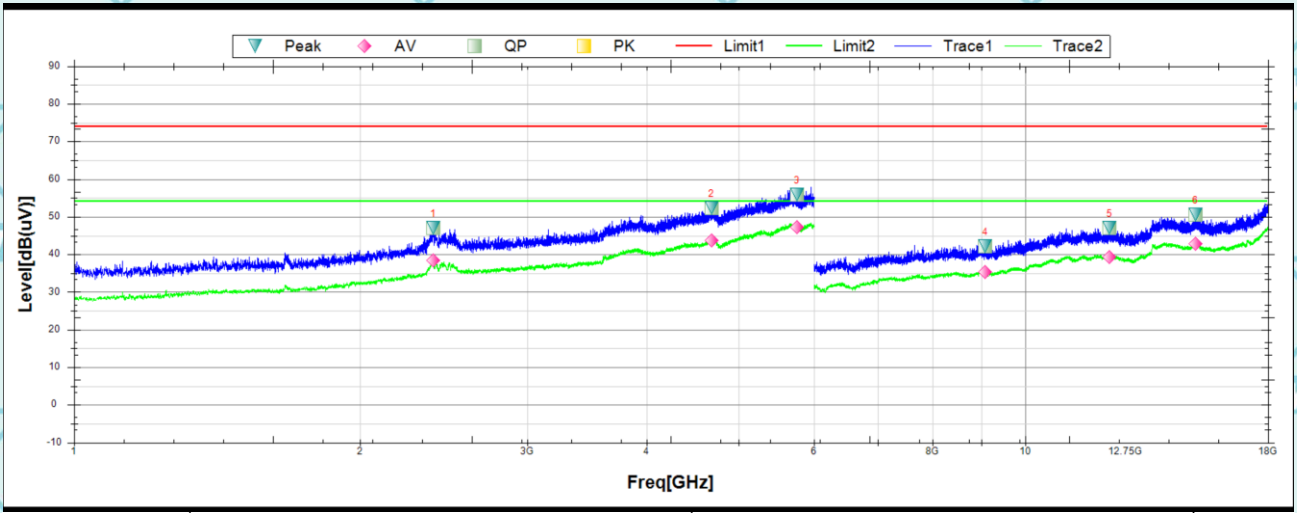
Horizontal:



Susputed Data List										
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	2381.8750	49.76	27.2	22.56	74	-24.24	63.8	Horizontal	PK	Pass
2	4695.6250	52.41	30.99	21.42	74	-21.59	63.8	Horizontal	PK	Pass
3	5910.6250	56.48	32.66	23.82	74	-17.52	23.3	Horizontal	PK	Pass
4	9819.0000	43.61	11.94	31.67	74	-30.39	114.5	Horizontal	PK	Pass
5	14388.0000	49.08	18.74	30.34	74	-24.92	359.4	Horizontal	PK	Pass
6	17704.5000	52.22	22	30.22	74	-21.78	359	Horizontal	PK	Pass

Final Data List										
NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB (uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	2381.8750	37.51	27.2	10.31	54	-16.49	63.8	Horizontal	AV	Pass
2	4695.6250	43.57	30.99	12.58	54	-10.43	63.8	Horizontal	AV	Pass
3	5910.6250	47.34	32.66	14.68	54	-6.66	23.3	Horizontal	AV	Pass
4	9819.0000	36.53	11.94	24.59	54	-17.47	114.5	Horizontal	AV	Pass
5	14388.0000	42.19	18.74	23.45	54	-11.81	359.4	Horizontal	AV	Pass
6	17704.5000	45.06	22	23.06	54	-8.94	359	Horizontal	AV	Pass

Vertical:



Susputed Data List

NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB(uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	2387.5000	46.91	27.22	19.69	74	-27.09	0.6	Vertical	PK	Pass
2	4681.8750	52.38	30.96	21.42	74	-21.62	153.4	Vertical	PK	Pass
3	5759.3750	55.93	32.42	23.51	74	-18.07	265.8	Vertical	PK	Pass
4	9084.0000	42.06	9.91	32.15	74	-31.94	-0.1	Vertical	PK	Pass
5	12274.5000	46.98	16.48	30.5	74	-27.02	35.6	Vertical	PK	Pass
6	15103.5000	50.57	19.64	30.93	74	-23.43	13	Vertical	PK	Pass

Final Data List

NO.	Freq. [MHz]	Reading [dB(uV)]	Factor [dB]	Level [dB (uV)]	Limit [dB]	Margin [dB]	Deg [°]	Polarity	Trace	Verdict
1	2387.5000	38.35	27.22	11.13	54	-15.65	0.6	Vertical	AV	Pass
2	4681.8750	43.7	30.96	12.74	54	-10.3	153.4	Vertical	AV	Pass
3	5759.3750	47.22	32.42	14.8	54	-6.78	265.8	Vertical	AV	Pass
4	9084.0000	35.36	9.91	25.45	54	-18.64	-0.1	Vertical	AV	Pass
5	12274.5000	39.33	16.48	22.85	54	-14.67	35.6	Vertical	AV	Pass
6	15103.5000	42.73	19.64	23.09	54	-11.27	13	Vertical	AV	Pass

Remark:
All emissions not reported were more than 20dB below the specified limit or in the noise floor.
All the x/y/z orientation has been investigated, and only worst case is presented in this report.

Please refer to Annex "Set Up Photos-15B" for test setup photos

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