



RF TEST REPORT

Report No.: SET2019-06658

Product Name: Gaming Headphone

FCC ID: 2ARXY-ARK200S

Model No. : ARK200

Applicant: Tritton technology Beijing limited.

Address: B25-929, Ziyushanzhuang, Chaoyang District, Beijing, China.

Dates of Testing: 06/01/2018 — 06/11/2019

Issued by: CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd.

Lab Location: Building 28/29, East of Shigu Xili Industrial Zone, Nanshan District
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Test Report

Product Name: Gaming Headphone

Brand Name: TRITTON

Trade Name: TRITTON

Applicant.....: Tritton technology Beijing limited.

Applicant Address.....: B25-929, Ziyushanzhuang, Chaoyang District, Beijing, China.

Manufacturer: Dongguan Laccess Electronic Technology Co., Ltd.

Manufacturer Address: Huaxing Industrial Park, Tianxing, Qiaotou Town
Dongguan, Guangdong China

Test Standards.....: 47 CFR Part 15.249

Test Result: PASS

Tested by:

2019.06.11

Shallwe Yang, Test Engineer

Reviewed by:

2019.06.11

Chris You, Senior Engineer

Approved by:

2019.06.11

Shuangwen Zhang, Manager



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Change History		
Issue	Date	Reason for change
1.0	2019.06.11	First edition



1. General Information

1.1. EUT Description

EUT Type	Gaming Headphone
Frequency Range	2403~2478MHz
Channel Number	26
Bit Rate of Transmitter	2Mbps
Modulation Type	GFSK
Antenna Type	PCB Antenna
Antenna Gain	Antenna 1: 3dBi Antenna 2: 3dBi

Note 1: The EUT is a Gaming Headphone, it operating at 2.4GHz ISM band;

Note 2: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 3: The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

Note 4: the ANT 1, ANT 2 cannot transmit at the same time.



1.2. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C, Section 15.249:

No.	Identity	Document Title
1	47 CFR Part 15 Subpart C 2017	Radio Frequency Devices
2	ANSI C63.10 2013	American National Standard for Testing Unlicensed Wireless Devices

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

No.	Section in CFR 47	Description	Result
1	15.203	Antenna Requirement	PASS
2	15.215(c)	20dB Bandwidth	PASS
3	15.207(a)	Conducted Emission	PASS
4	15.205 15.209 15.249(a)	Radiated Emission	PASS

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10-2013.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
0	2403	16	2451
1	2406	17	2454
2	2409	18	2457
3	2412	19	2460
4	2415	20	2463
5	2418	21	2466
6	2421	22	2469
7	2424	23	2472
8	2427	24	2475
9	2430	25	2478
10	2433		
11	2436		
12	2439		
13	2442		
14	2445		
15	2448		



Test Items	Modulation Type	Channel
20dB Bandwidth Conducted and Spurious Emission Radiated and Spurious Emission	GFSK	0/12/24
Band Edge(Restricted Band)	GFSK	0/24

1.3. Table for Supporting Units

No.	Equipment	Brand Name	Model Name	Manufacturer	Serial No.	Note
1	Notebook	DELL	PP11L	DELL	H5914A03	FCC DOC

1.4. Facilities and Accreditations

1.4.1. Facilities

FCC-Registration No.: CN5031

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Designation Number: CN5031, valid time is until Dec. 31, 2019.

ISED Registration: 11185A-1

CAB identifier: CN0064

CCIC Southern Electronic Product Testing (Shenzhen) Co., Ltd. EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 11185A-1 on Aug. 04, 2016, valid time is until Dec. 03, 2019.

NVLAP Lab Code: 201008-0

CCIC-SET is a third party testing organization accredited by NVLAP according to ISO/IEC 17025. The accreditation certificate number is 201008-0.



1.4.2. Test Environment Conditions

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

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

2. 47 CFR Part 15C Requirements

2.1. Antenna requirement

2.1.1. Applicable Standard

According to FCC 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

And according to FCC 47 CFR Section 15.247(c), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

2.1.2. Antenna Information

Antenna Category: Internal Antenna

A internal Antenna was soldered to the antenna port of EUT via an adaptor cable, can't be removed.

Antenna General Information:

No.	EUT	Ant. Type	Gain(dBi)
1	Gaming Headphone	PCB	3

2.1.3. Result: comply

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

2.2. 20dB Bandwidth

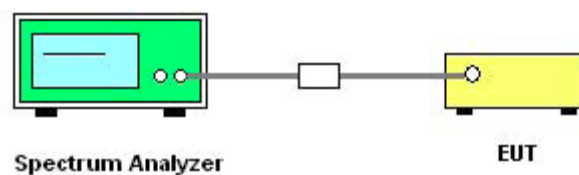
2.2.1. Limit of 20dB Bandwidth

Intentional radiators must be designed to ensure that 20dB bandwidth of the emission in the specific band.

2.2.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.2.3. Test Setup



2.2.4. Test Procedures

1. 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 30 kHz.

Set the Video bandwidth (VBW) = 100 kHz.

6. Measure and record the results in the test report.



2.2.5. Test Results of 6dB Bandwidth

ANT 1

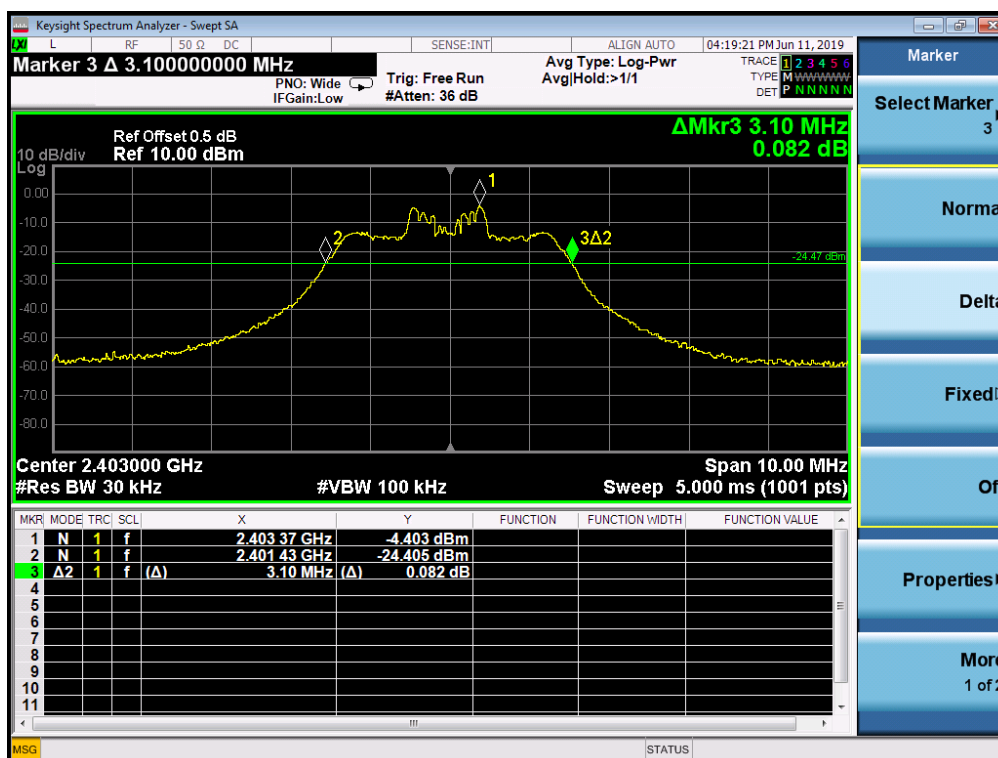
Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
0	2403	3.10
13	2442	3.35
25	2478	3.15

ANT 2

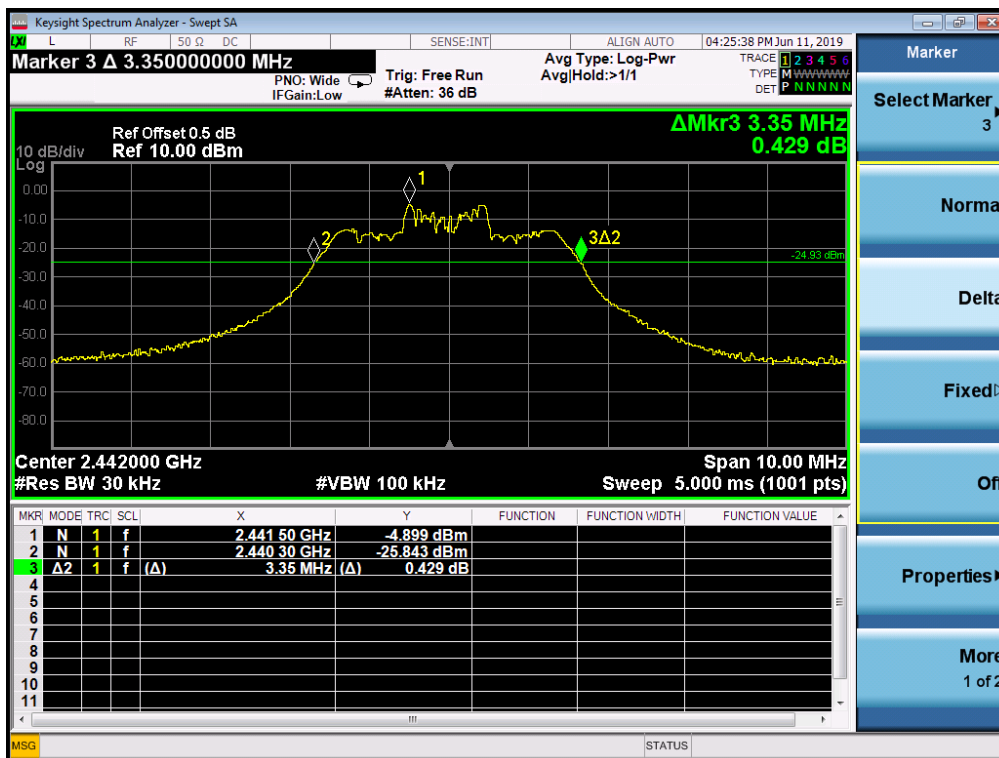
Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
0	2403	2.82
13	2442	3.33
25	2478	3.17

2.2.6. Test Results (plots) of 20dB Bandwidth

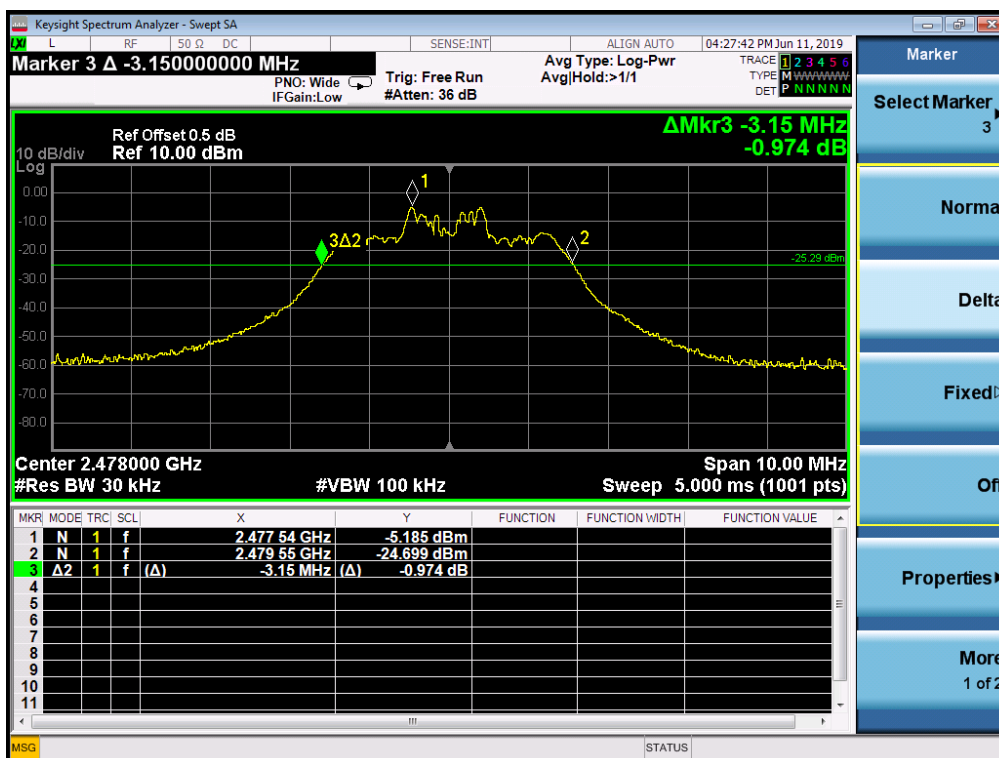
ANT1



2403MHz



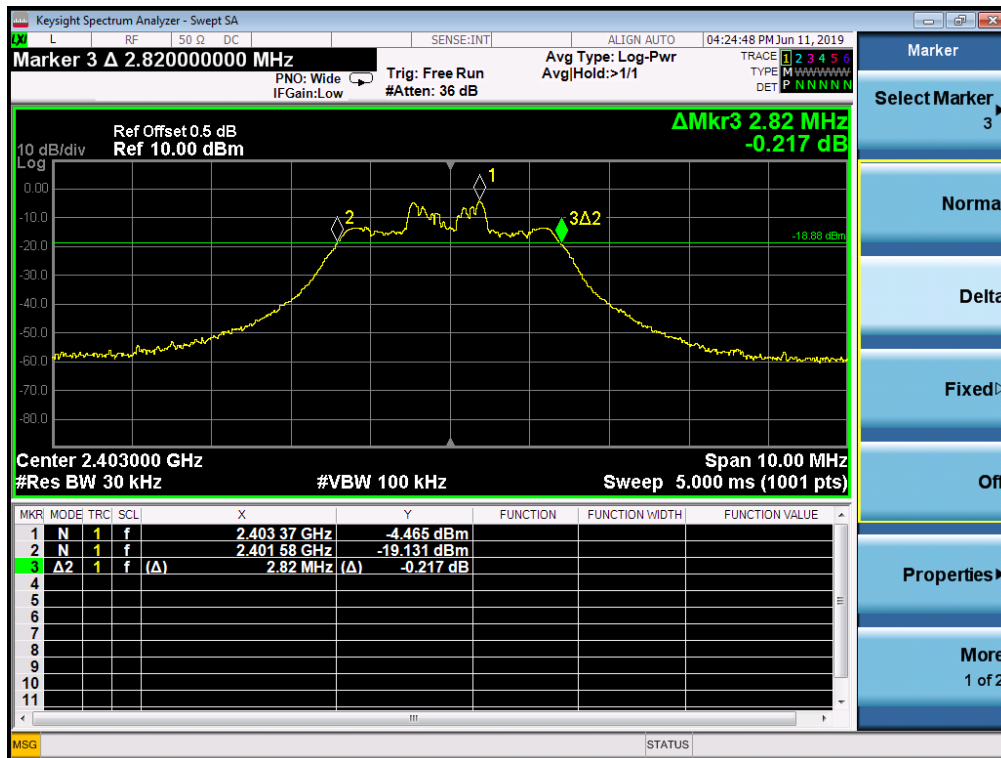
2442MHz



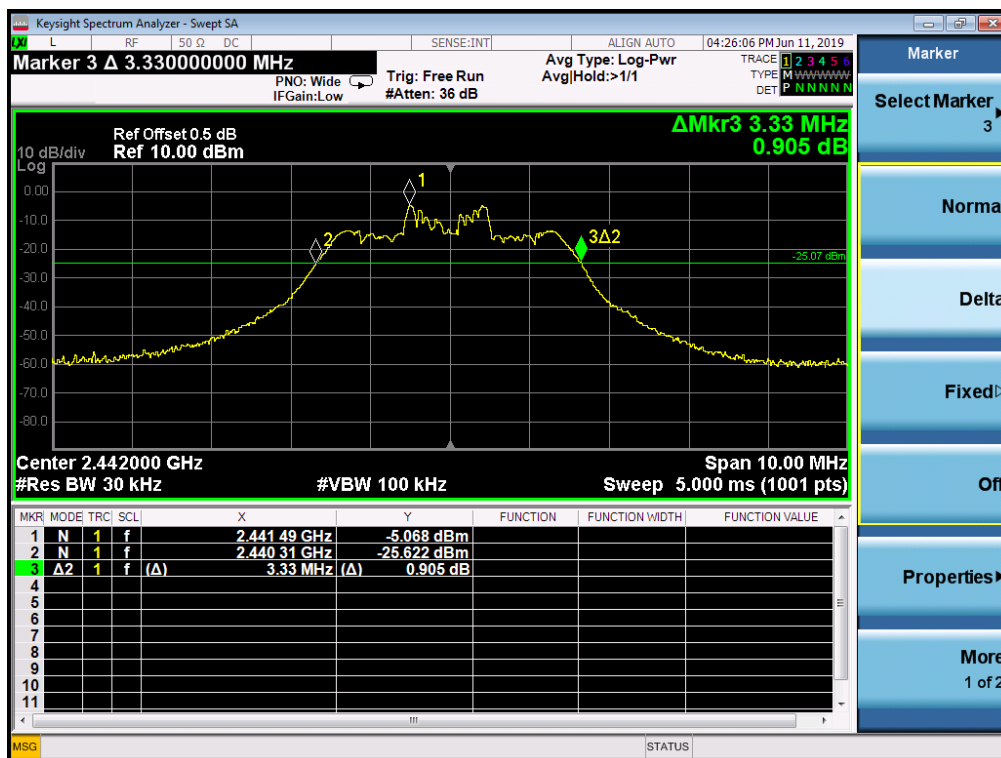
2478MHz



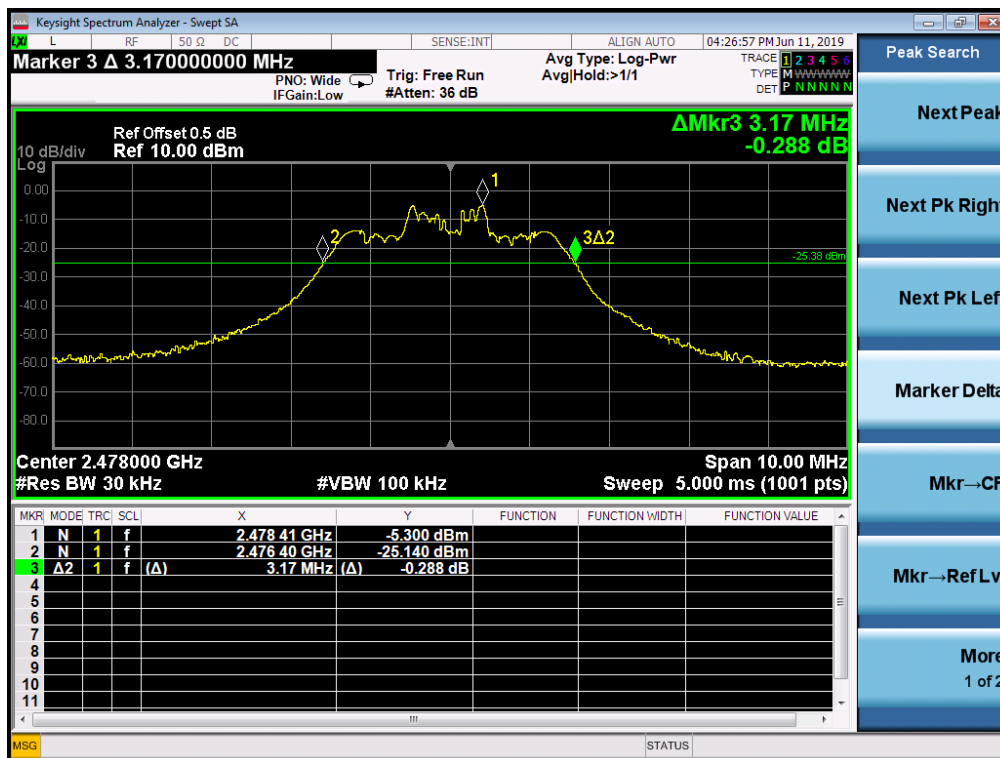
ANT2



2403MHz



2442MHz



2480MHz



2.3. Radiated Emission

2.3.1. Limit of Radiated Emission

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$)	Measurement Distance (m)
0.009 - 0.490	$2400/F(\text{kHz})$	300
0.490 - 1.705	$24000/F(\text{kHz})$	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

According to §15.249(a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply.

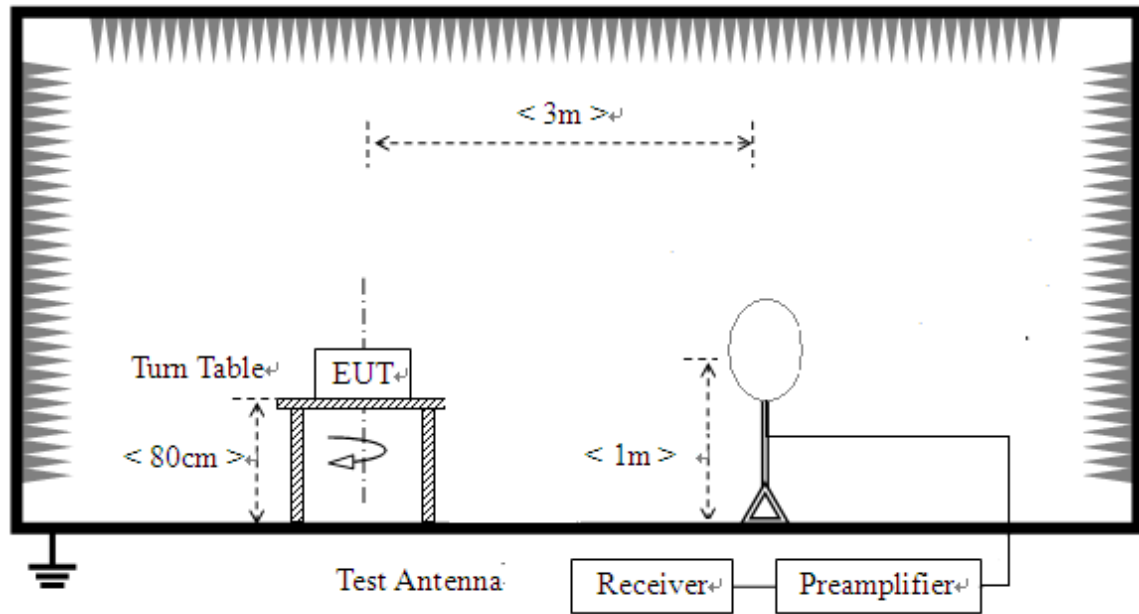
Note: Emission level(dBuV/m)=20log Emission level(uV/m)

2.3.2. Measuring Instruments

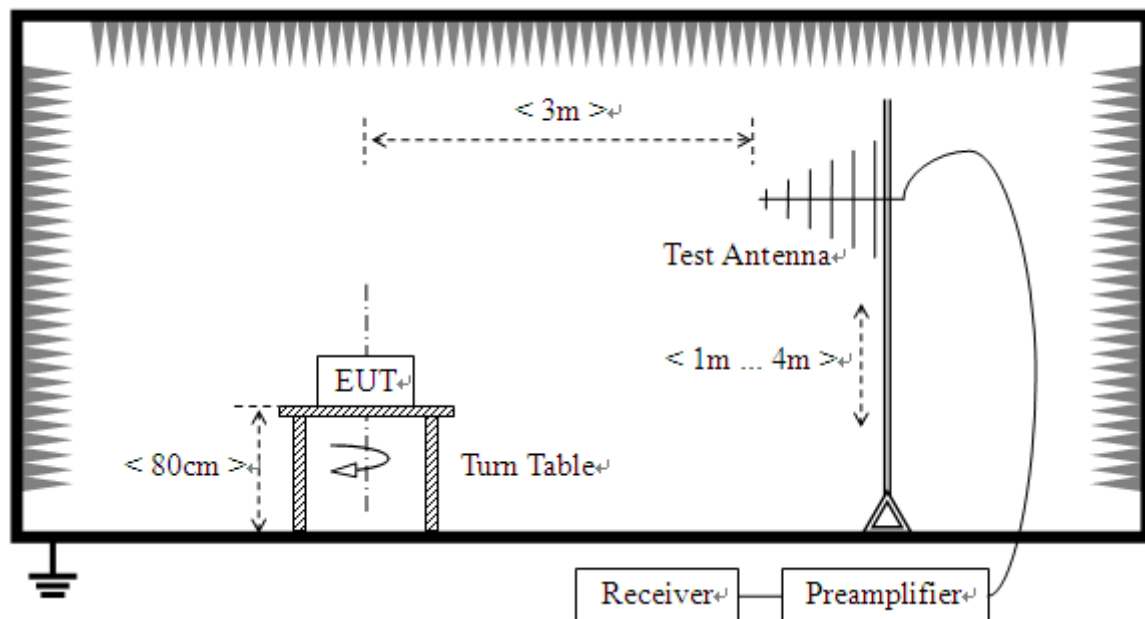
The measuring equipment is listed in the section 3 of this test report.

2.3.3. Test Setup

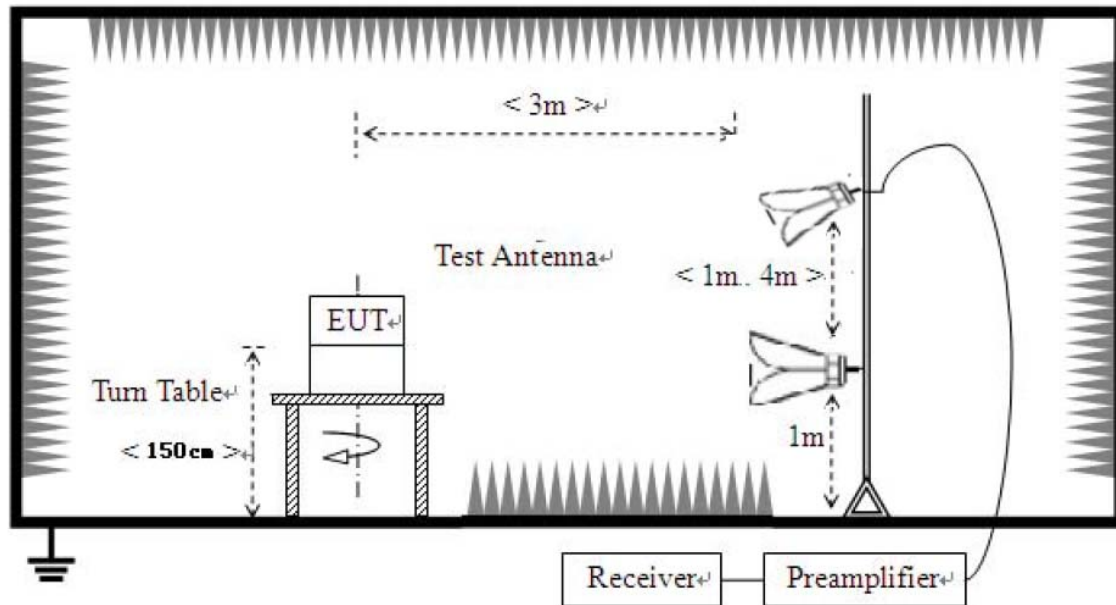
For radiated emissions from 9 KHz to 30 MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



2.3.4. Test Procedures

1. The EUT was placed on the top of a rotating table 0.8/1.5 meters above the ground at a 3 meters semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
3. Height of receiving antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported.
Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

7. For the radiated emission test above 1GHz:

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.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle > 98%) for Average detection (AV) at frequency above 1GHz.
4. 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.

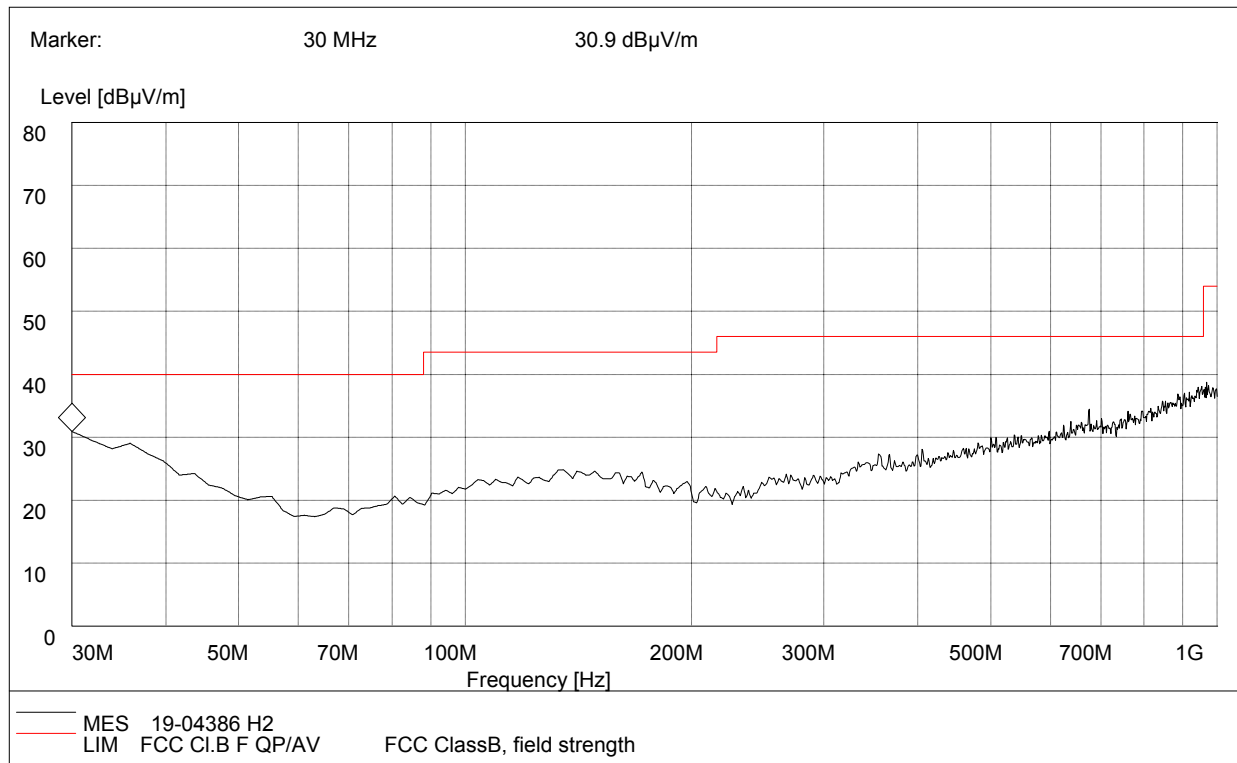
2.3.5. Test Results of Radiated Band Edge and Spurious Emission

For 9 kHz to 30MHz

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

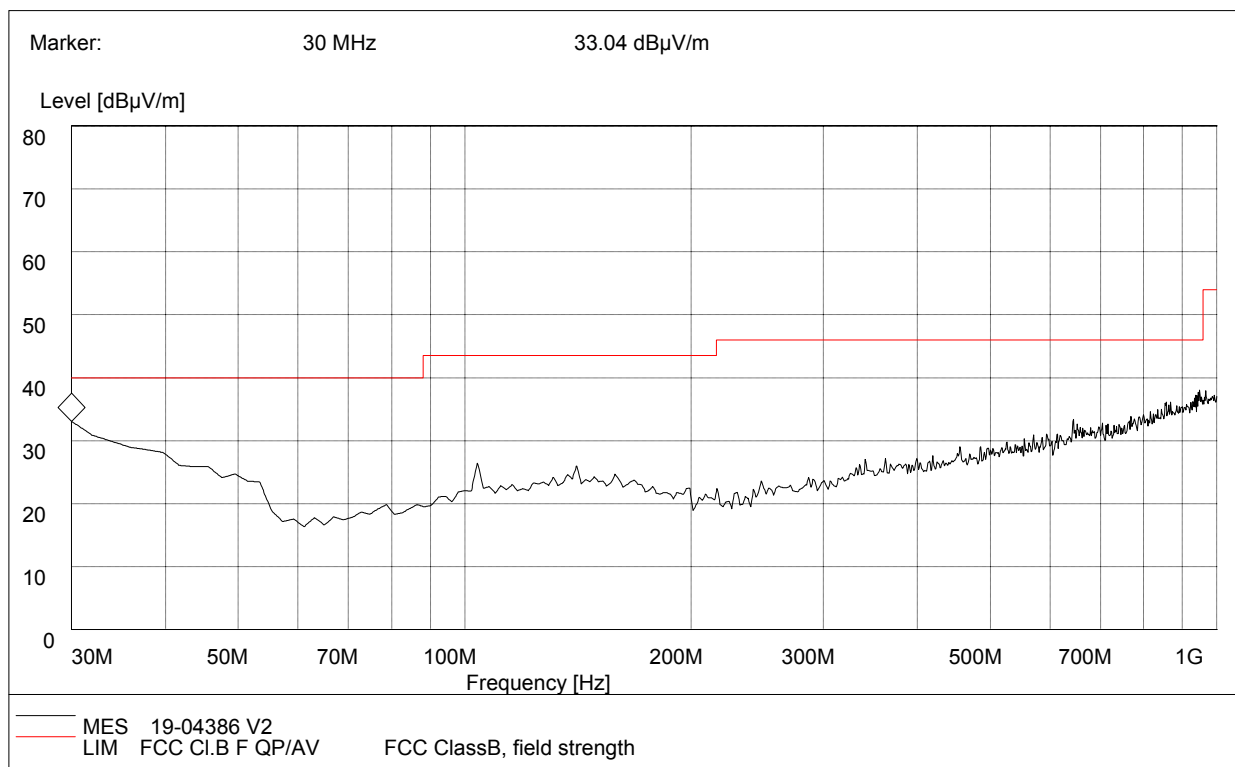
For 30MHz to 1000 MHz

The worst data (Ant 1)reported only



30MHz to 1GHz, Antenna Horizontal

Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB μ V/m)	Antenna	Verdict
30	30.9	120.000	150.0	40.0	Horizontal	Pass



30MHz to 1GHz, Antenna Vertical

Frequency (MHz)	QuasiPeak (dB μ V/m)	Bandwidth (kHz)	Antenna height (cm)	Limit (dB μ V/m)	Antenna	Verdict
30.00	33.04	120.000	150.0	40.0	Vertical	Pass



For 1GHz to 25 GHz

Antenna 1

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (0CH_2404MHz)

No.	Fre. (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390	50.29	PK	74.00	-23.71	1.5	260	48.99	5.2	28.60	32.5	1.3
2	2390	42.11	AV	54.00	-11.89	1.5	260	40.81	5.2	28.60	32.5	1.3
3	2403*	84.67	PK	114.00	-29.33	1.5	260	83.07	5.3	28.70	32.4	1.6
4	2403*	80.21	AV	94.00	-13.79	1.5	260	78.61	5.3	28.70	32.4	1.6
5	4806	47.65	PK	74.00	-26.35	1.5	270	41.25	7.4	30.40	31.4	6.4
6	4806	39.15	AV	54.00	-14.85	1.5	270	32.75	7.4	30.40	31.4	6.4
7	7209	49.58	PK	74.00	-24.42	1.5	260	40.28	9.9	31.50	32.1	9.3
8	7209	41.32	AV	54.00	-12.68	1.5	260	32.02	9.9	31.50	32.1	9.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (0CH_2404MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390	48.95	PK	74.00	-25.05	1.2	320	47.65	5.2	28.60	32.5	1.3
2	2390	39.30	AV	54.00	-14.7	1.2	320	38	5.2	28.60	32.5	1.3
3	2403*	80.36	PK	114.00	-33.64	1.2	320	78.76	5.3	28.70	32.4	1.6
4	2403*	78.24	AV	94.00	-15.76	1.2	320	76.64	5.3	28.70	32.4	1.6
5	4806	46.69	PK	74.00	-27.31	1.2	320	40.29	7.4	30.40	31.4	6.4
6	4806	38.32	AV	54.00	-15.68	1.2	320	31.92	7.4	30.40	31.4	6.4
7	7209	48.95	PK	74.00	-25.05	1.2	320	39.65	9.9	31.50	32.1	9.3
8	7209	40.69	AV	54.00	-13.31	1.2	320	31.39	9.9	31.50	32.1	9.3

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (19CH_2440MHz)

No.	Fre. (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2442*	75.36	PK	114.00	-38.64	1.5	260	73.26	5.4	28.7	32	2.1
2	2442*	70.14	AV	94.00	-23.86	1.5	260	68.04	5.4	28.7	32	2.1
3	4884	45.68	PK	74.00	-28.32	1.5	270	39.28	6.7	31.20	31.5	6.4
4	4884	37.48	AV	54.00	-16.52	1.5	270	31.08	6.7	31.20	31.5	6.4
5	7326	47.77	PK	74.00	-26.23	1.5	260	41.37	6.7	31.20	31.5	6.4
6	7326	38.19	AV	54.00	-15.81	1.5	260	31.79	6.7	31.20	31.5	6.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (19CH_2440MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2442*	73.25	PK	114.00	-40.75	1.2	320	71.15	5.4	28.7	32	2.1
2	2442*	70.38	AV	94.00	-23.62	1.2	320	68.28	5.4	28.7	32	2.1
3	4884	46.35	PK	74.00	-27.65	1.2	320	39.95	6.7	31.20	31.5	6.4
4	4884	36.37	AV	54.00	-17.63	1.2	320	29.97	6.7	31.20	31.5	6.4
5	7326	46.67	PK	74.00	-27.33	1.2	320	40.27	6.7	31.20	31.5	6.4
6	7326	39.11	AV	54.00	-14.89	1.2	320	32.71	6.7	31.20	31.5	6.4

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (24CH_2476MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2478*	86.69	PK	114.00	-27.31	1.5	260	82.89	6.1	29.2	31.5	3.8
2	2478*	81.47	AV	94.00	-12.53	1.5	260	77.67	6.1	29.2	31.5	3.8
3	2483.5	46.95	PK	74.00	-27.05	1.5	260	43.55	5.7	29.50	31.8	3.4
4	2483.5	39.46	AV	54.00	-14.54	1.5	260	36.06	5.7	29.50	31.8	3.4
5	4956	47.87	PK	74.00	-26.13	1.5	270	42.32	7	30.05	31.5	5.55
6	4956	39.62	AV	54.00	-14.38	1.5	270	34.07	7	30.05	31.5	5.55
7	7434	48.57	PK	74.00	-25.43	1.5	260	33.37	16	31.20	32	15.2
8	7434	40.99	AV	54.00	-13.01	1.5	260	25.79	16	31.20	32	15.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (24CH_2476MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2478*	87.74	PK	114.00	-26.26	1.2	320	83.94	6.1	29.2	31.5	3.8
2	2478*	86.14	AV	94.00	-7.86	1.2	320	82.34	6.1	29.2	31.5	3.8
3	2483.5	46.67	PK	74.00	-27.33	1.2	320	43.27	5.7	29.50	31.8	3.4
4	2483.5	38.42	AV	54.00	-15.58	1.2	320	35.02	5.7	29.50	31.8	3.4
5	4956	48.95	PK	74.00	-25.05	1.2	320	43.4	7	30.05	31.5	5.55
6	4956	41.47	AV	54.00	-12.53	1.2	320	35.92	7	30.05	31.5	5.55
7	7434	49.22	PK	74.00	-24.78	1.2	320	34.02	16	31.20	32	15.2
8	7434	41.04	AV	54.00	-12.96	1.2	320	25.84	16	31.20	32	15.2



Antenna 2

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (0CH_2404MHz)

No.	Fre. (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390	50.17	PK	74.00	-23.83	1.6	280	48.87	5.2	28.60	32.5	1.3
2	2390	41.99	AV	54.00	-12.01	1.6	280	40.69	5.2	28.60	32.5	1.3
3	2403*	76.35	PK	114.00	-37.65	1.5	330	74.75	5.3	28.70	32.4	1.6
4	2403*	71.35	AV	94.00	-22.65	1.5	330	69.75	5.3	28.70	32.4	1.6
5	4806	48.65	PK	74.00	-25.35	1.5	330	42.25	7.4	30.40	31.4	6.4
6	4806	40.15	AV	54.00	-13.85	1.5	330	33.75	7.4	30.40	31.4	6.4
7	7209	48.85	PK	74.00	-25.15	1.5	330	39.55	9.9	31.50	32.1	9.3
8	7209	40.59	AV	54.00	-13.41	1.5	330	31.29	9.9	31.50	32.1	9.3

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (0CH_2404MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2390	47.58	PK	74.00	-26.42	1.6	270	46.28	5.2	28.60	32.5	1.3
2	2390	37.93	AV	54.00	-16.07	1.6	270	36.63	5.2	28.60	32.5	1.3
3	2403*	74.25	PK	114.00	-39.75	1.6	300	72.65	5.3	28.70	32.4	1.6
4	2403*	70.14	AV	94.00	-23.86	1.6	300	68.54	5.3	28.70	32.4	1.6
5	4806	47.65	PK	74.00	-26.35	1.6	300	41.25	7.4	30.40	31.4	6.4
6	4806	39.28	AV	54.00	-14.72	1.6	300	32.88	7.4	30.40	31.4	6.4
7	7209	48.00	PK	74.00	-26	1.6	300	38.7	9.9	31.50	32.1	9.3
8	7209	39.74	AV	54.00	-14.26	1.6	300	30.44	9.9	31.50	32.1	9.3

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (19CH_2440MHz)

No.	Fre. (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2442*	73.26	PK	114.00	-40.74	1.5	330	71.16	5.4	28.7	32	2.1
2	2442*	69.98	AV	94.00	-24.02	1.5	330	67.88	5.4	28.7	32	2.1
3	4884	47.87	PK	74.00	-26.13	1.5	330	41.47	6.7	31.20	31.5	6.4
4	4884	39.67	AV	54.00	-14.33	1.5	330	33.27	6.7	31.20	31.5	6.4
5	7326	48.88	PK	74.00	-25.12	1.5	330	42.48	6.7	31.20	31.5	6.4
6	7326	39.30	AV	54.00	-14.7	1.5	330	32.9	6.7	31.20	31.5	6.4

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (19CH_2440MHz)

No.	Frequency (MHz)	Emssion Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2442*	74.15	PK	114.00	-39.85	1.6	300	72.05	5.4	28.7	32	2.1
2	2442*	70.22	AV	94.00	-23.78	1.6	300	68.12	5.4	28.7	32	2.1
3	4884	45.95	PK	74.00	-28.05	1.6	300	39.55	6.7	31.20	31.5	6.4
4	4884	35.97	AV	54.00	-18.03	1.6	300	29.57	6.7	31.20	31.5	6.4
5	7326	48.82	PK	74.00	-25.18	1.6	300	42.42	6.7	31.20	31.5	6.4
6	7326	41.26	AV	54.00	-12.74	1.6	300	34.86	6.7	31.20	31.5	6.4

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M (24CH_2476MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2478*	76.65	PK	114.00	-37.35	1.2	150	72.85	6.1	29.2	31.5	3.8
2	2478*	72.34	AV	94.00	-21.66	1.5	150	68.54	6.1	29.2	31.5	3.8
3	2483.5	47.95	PK	74.00	-26.05	1.8	260	44.55	5.7	29.50	31.8	3.4
4	2483.5	40.46	AV	54.00	-13.54	1.8	260	37.06	5.7	29.50	31.8	3.4
5	4956	47.87	PK	74.00	-26.13	1.8	260	42.32	7	30.05	31.5	5.55
6	4956	39.62	AV	54.00	-14.38	1.8	260	34.07	7	30.05	31.5	5.55
7	7434	49.87	PK	74.00	-24.13	1.8	260	34.67	16	31.20	32	15.2
8	7434	42.29	AV	54.00	-11.71	1.8	260	27.09	16	31.20	32	15.2

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M (24CH_2476MHz)

No.	Frequency (MHz)	Emission Level (dBuV/m)		Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV/m)	Cab. Loss (dB)	Ant. Factor (dB)	Pre. Amp. (dB)	Cor. Factor (dB/m)
1	2478*	77.95	PK	114.00	-36.05	1.6	300	74.15	6.1	29.2	31.5	3.8
2	2478*	72.57	AV	94.00	-21.43	1.6	300	68.77	6.1	29.2	31.5	3.8
3	2483.5	46.36	PK	74.00	-27.64	1.6	300	42.96	5.7	29.50	31.8	3.4
4	2483.5	38.11	AV	54.00	-15.89	1.6	300	34.71	5.7	29.50	31.8	3.4
5	4956	48.85	PK	74.00	-25.15	1.6	300	43.3	7	30.05	31.5	5.55
6	4956	41.37	AV	54.00	-12.63	1.6	300	35.82	7	30.05	31.5	5.55
7	7434	49.79	PK	74.00	-24.21	1.6	300	34.59	16	31.20	32	15.2
8	7434	41.61	AV	54.00	-12.39	1.6	300	26.41	16	31.20	32	15.2

REMARKS:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB)
- Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level - Limit value
5. " * ": Fundamental frequency.

2.4. Conducted Emission

2.4.1. Limit of Conducted Emission

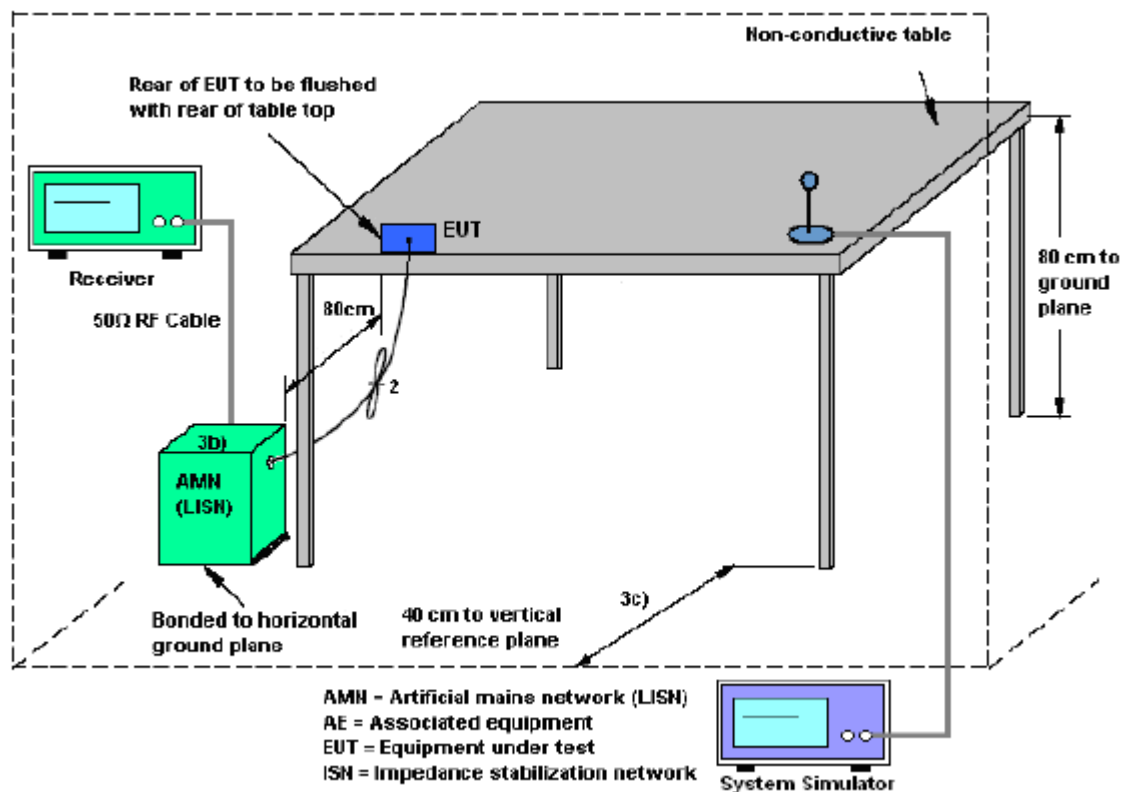
For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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

2.4.2. Measuring Instruments

The measuring equipment is listed in the section 3 of this test report.

2.4.3. Test Setup

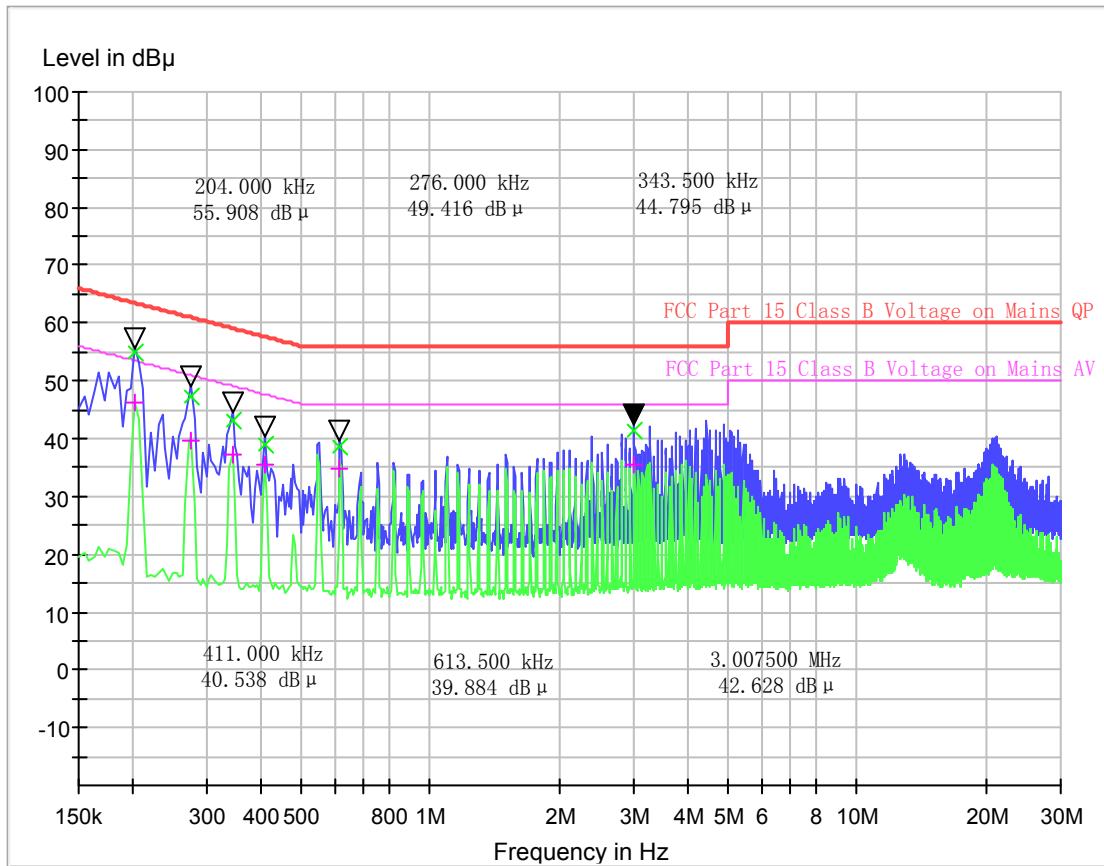


2.4.4. Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 micrometry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

2.4.5. Test Results of Conducted Emission

1. The EUT configuration of the emission tests is Tx Mode + USB (Charging)

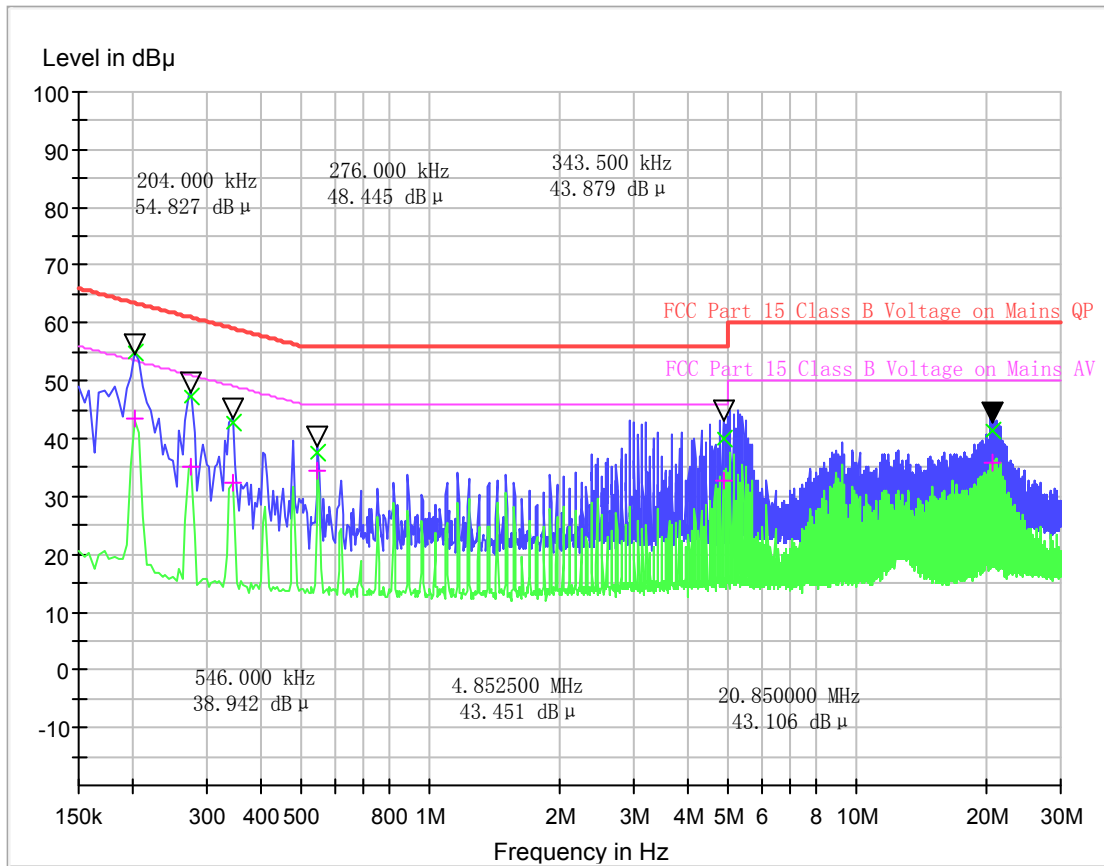


(Plot A: L Phase)

Conducted Disturbance at Mains Terminals

L Test Data

QP			AV		
Frequency (MHz)	Limits (dBμV)	Measurement Value (dBμV)	Frequency (MHz)	Limits (dBμV)	Measurement Value (dBμV)
0.204000	63.4	55.06	0.204000	53.4	46.09
0.276000	60.9	47.29	0.276000	50.9	39.72
0.343500	59.1	43.02	0.343500	49.1	37.26
0.411000	57.6	39.07	0.411000	47.6	35.43
0.613500	56.0	38.70	0.613500	46.0	34.80
3.007500	56.0	41.48	3.007500	46.0	35.35



(Plot B: N Phase)

Conducted Disturbance at Mains Terminals

N Test Data

QP			AV		
Frequency (MHz)	Limits (dBμV)	Measurement Value (dBμV)	Frequency (MHz)	Limits (dBμV)	Measurement Value (dBμV)
0.204000	63.4	54.95	0.204000	53.4	43.53
0.276000	60.9	47.27	0.276000	50.9	35.05
0.343500	59.1	42.87	0.343500	49.1	32.20
0.546000	56.0	37.70	0.546000	46.0	34.36
4.852500	56.0	40.10	4.852500	46.0	32.69
20.850000	60.0	41.25	20.850000	50.0	35.79

Test Result: PASS



3. List of measuring equipment

Description	Manufacturer	Model	Serial No.	Cal. Date	Due Date	Remark
EMI Test Receiver	R&S	ESIB26	A0304218	2018.09.03	2019.09.20	Radiation
Loop Antenna	Schwarz beck	HFH2-Z2	100047	2019.04.26	2022.04.25	Radiation
Broadband antenna (30MHz~1GHz)	R&S	HL562	101341	2017.07.14	2020.07.13	Radiation
Broadband antenna (30MHz~1GHz)	R&S	HL562	101339	2019.05.25	2022.05.24	Radiation
Double ridge horn antenna (1GHz~18GHz)	R&S	HF906	100150	2019.04.27	2022.04.26	Radiation
Double ridge horn antenna (1GHz~18GHz)	R&S	HF906	100149	2019.04.17	2022.04.16	Radiation
Horn antenna (18GHz~26.5GHz)	AR	AT4002A	305753	2017.11.10	2020.11.09	Radiation
Horn antenna (18GHz~26.5GHz)	AR	AT4003A	0329293	2018.09.17	2020.09.16	Radiation
Amplifier 1GHz-18GHz	AR	25S1G4AM1	22018	2018.09.17	2020.09.16	Radiation
Ampilier 20M~3GHz	MILMEGA	80RF1000-25 0	1064573	2019.10.09	2020.10.8	Radiation
Ampilier 18G~40GHz	R&S	JS42-1800260 0-28-5A	12111.0980.00	2019.05.15	2020.05.14	Radiation
Spectrum Analyzer	KEYSIGHT	N9030A	A160702554	2018.11.15	2019.11.14	Conducted
LISN	ROHDE&SCHW ARZ	ESH2-Z5	A0304221	2019.04.30	2020.04.29	Conducted
Test Receiver	KEYSIGHT	N9038A	A141202036	2018.12.10	2019.12.09	Conducted
Power Supply	R&S	NGMO1	101037	2018.08.06	2019.08.05	Conducted

**** END OF REPORT ****