

FCC Test Report

**Test Report
On Behalf of
Dongguan Aika Electronic Technology Co., Ltd.
For
Kids Karaoke Machine - Sparkle
Model No.: Sparkle K1**

FCC ID: 2BCRN-SPARKLEK1

Prepared For: Dongguan Aika Electronic Technology Co., Ltd.
Room 201, Building 2, No. 388, Bihu Road, Fenggang Town Dongguan City,
Guangdong Province, China

Prepared By: Shenzhen HUAKE Testing Technology Co., Ltd.
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Date of Test: Jan. 12, 2026 ~ May 26, 2026

Date of Report: May 26, 2026

Report Number: HK2601120080-4E

Test Result Certification

Applicant's Name..... : Dongguan Aika Electronic Technology Co., Ltd.
Address..... : Room 201, Building 2, No. 388, Bihu Road, Fenggang Town
Dongguan City, Guangdong Province, China
Manufacturer's Name..... : Guangdong Taide Zhilian Technology Co., Ltd.
Address..... : No. 388, Bihu Avenue, Fenggang Town, Dongguan City, Guangdong
Province, China

Product Description

Trade Mark..... : Ikarao
Product Name..... : Kids Karaoke Machine - Sparkle
Model(s) Name..... : Sparkle K1

Standards..... : **FCC Rules and Regulations Part 15 Subpart C Section 15.249**
ANSI C63.10: 2020

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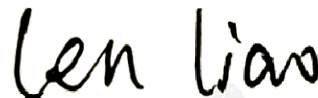
Date of Test..... :

Date (s) of Performance of Tests..... : Jan. 12, 2026 ~ May 26, 2026

Date of Issue..... : May 26, 2026

Test Result..... : Pass

Testing Engineer



(Len Liao)

Technical Manager



(Sliver Wan)

Authorized Signatory



(Jason Zhou)



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**** Issued History ****

Revision	Description	Issued Date	Remark
Revision 1.0	Initial Test Report Release	May 26, 2026	Jason Zhou

1. Summary

1.1 Test Procedures and Results

Test Item	Standard Section	Result
AC Conducted Emissions Test	15.207	PASS
Radiated Emission Test	15.249(a)/15.209	PASS
Band Edge	15.249(d)/15.205	PASS
Occupied Bandwidth Measurement	15.215(c)	PASS
Antenna Requirement	15.203	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.

1.2 Information of the Test Laboratory

Shenzhen HUAKE Testing Technology Co., Ltd.
 Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street,
 Bao'an District, Shenzhen, Guangdong, China

1.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded 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 0.15~30MHz	$\pm 2.22\text{dB}$
2	All Emissions, Radiated(<1G)	$\pm 3.60\text{dB}$
3	All Emissions, Radiated(1-18G)	$\pm 3.86\text{dB}$
4	All Emissions, Radiated(18-40G)	$\pm 4.76\text{dB}$
5	Transmitter Power Conducted	$\pm 0.37\text{dB}$
6	Conducted Spurious Emission	$\pm 2.20\text{dB}$
7	Occupied Bandwidth	$\pm 3.68\%$
8	Temperature	$\pm 0.1^{\circ}\text{C}$
9	Humidity	$\pm 1.0\%$



2. General Information

2.1 General Description of EUT

Product Name:	Kids Karaoke Machine - Sparkle
Model Name:	Sparkle K1
Series Model(s):	N/A
Model Difference:	N/A
Antenna Type:	FPC Antenna
Antenna Gain:	4.24dBi
Operation Frequency:	2402-2480MHz
Number of Channels:	40CH
Modulation Type:	GFSK
Power Source:	DC 12V, 1A From Adapter with AC 100-240V, 50/60Hz, 0.4MAX
Power Rating:	DC 12V, 1A From Adapter with AC 100-240V, 50/60Hz, 0.4MAX
Hardware Version:	V1.0
Software Version:	V1.0
Note: 1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2. Antenna gain Refer to the antenna specifications. 3. The cable loss data is obtained from the supplier. 4. The test results in the report only apply to the tested sample.	

2.2 Carrier Frequency of Channels

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

2.3 Operation of EUT during Testing

Operating Mode

The mode is used: **Transmitting mode**

Low Channel: 2402MHz

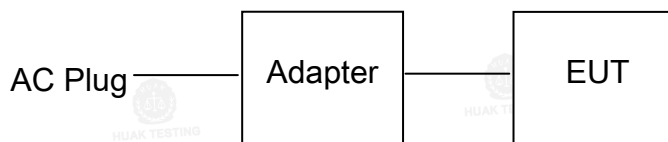
Middle Channel: 2440MHz

High Channel: 2480MHz

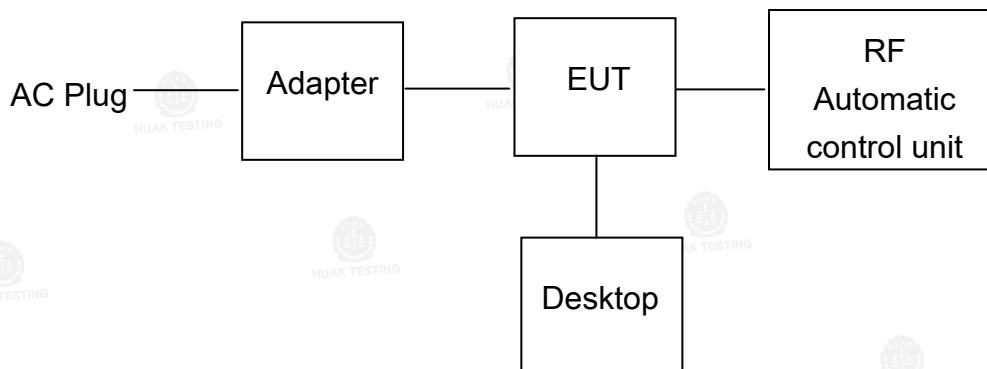


2.4 Description of Test Setup

Operation of EUT during AC Conducted testing and Radiation testing:



Operation of EUT during RF Conducted testing:



The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The report only reflects the worst emission test results. The worst case is X position.

2.5 Description of Support Units

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	Product Name	Trade Mark	Model Name	Specification	Remark
1	Kids Karaoke Machine - Sparkle	Ikarao	Sparkle K1	N/A	EUT
2	Adapter	N/A	CW1201000US	Input: 100-240V, 50/60Hz, 0.4MAX Output: 12V, 1.0A 12.0W	

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (20dB Bandwidth), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.



2.6 Measurement Instruments List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	L.I.S.N.	R&S	ENV216	HKE-002	2026/02/11	1 Year
2	L.I.S.N.	R&S	ENV216	HKE-059	2026/02/04	1 Year
3	EMI Test Receiver	R&S	ESR-7	HKE-005	2026/02/06	1 Year
4	Spectrum analyzer	Agilent	N9020A	HKE-025	2026/02/06	1 Year
5	Spectrum analyzer	KEYSIGHT	N9020A	HKE-117	2026/02/06	1 Year
6	Spectrum analyzer	R&S	FSV3044	HKE-126	2026/02/06	1 Year
7	Preamplifier	Schwarzbeck	EMC051845S E	HKE-006	2026/02/04	1 Year
8	Preamplifier	Agilent	83051A	HKE-016	2026/02/04	1 Year
9	Preamplifier	QJD	QJD18-40-50	HKE-030	2026/02/05	1 Year
10	6dB Attenuator	Pasternack	6dB	HKE-152	2026/02/06	1 Year
11	EMI Test Receiver	R&S	ESR-7	HKE-010	2026/02/06	1 Year
12	Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	2026/02/06	2 Year
13	Loop Antenna	COM-POWER	AL-130R	HKE-014	2026/02/06	2 Year
14	Horn Antenna	Schwarzbeck	9120D	HKE-013	2026/02/06	2 Year
15	Broadband Horn Antenna	A-INFO	LB-180400-KF	HKE-031	2026/02/06	2 Year
16	EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
17	EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
18	RF Automatic control unit	Tonscend	JS0806-2	HKE-060	2026/02/06	1 Year
19	High pass filter unit	Tonscend	JS0806-F	HKE-055	2026/02/06	1 Year
20	Wireless Communication Test Set	R&S	CMW500	HKE-027	2026/02/06	1 Year
21	High-low temperature chamber	Guangke	HT-80L	HKE-118	2025/06/09	1 Year
22	Temperature and humidity meter	Boyang	HTC-1	HKE-075	2025/06/09	1 Year
23	RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	/	/
24	10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	2026/02/04	1 Year
25	RSE Test Software	Tonscend	JS36-RSE 5.0.0	HKE-184	/	/



3. AC Conducted Emissions Test

3.1 AC Conducted Power Line Emission Limit

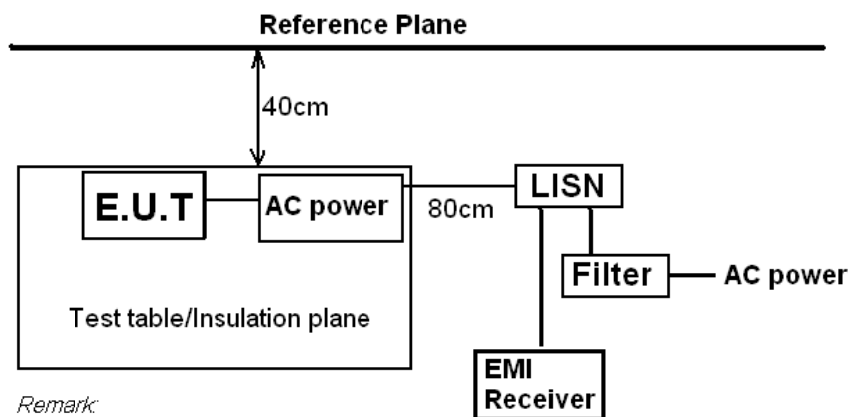
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following.

Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency.

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.2 Test Setup



Remark:

E.U.T.: Equipment Under Test

LISN: Line Impedance Stabilization Network

Test table height=0.8m

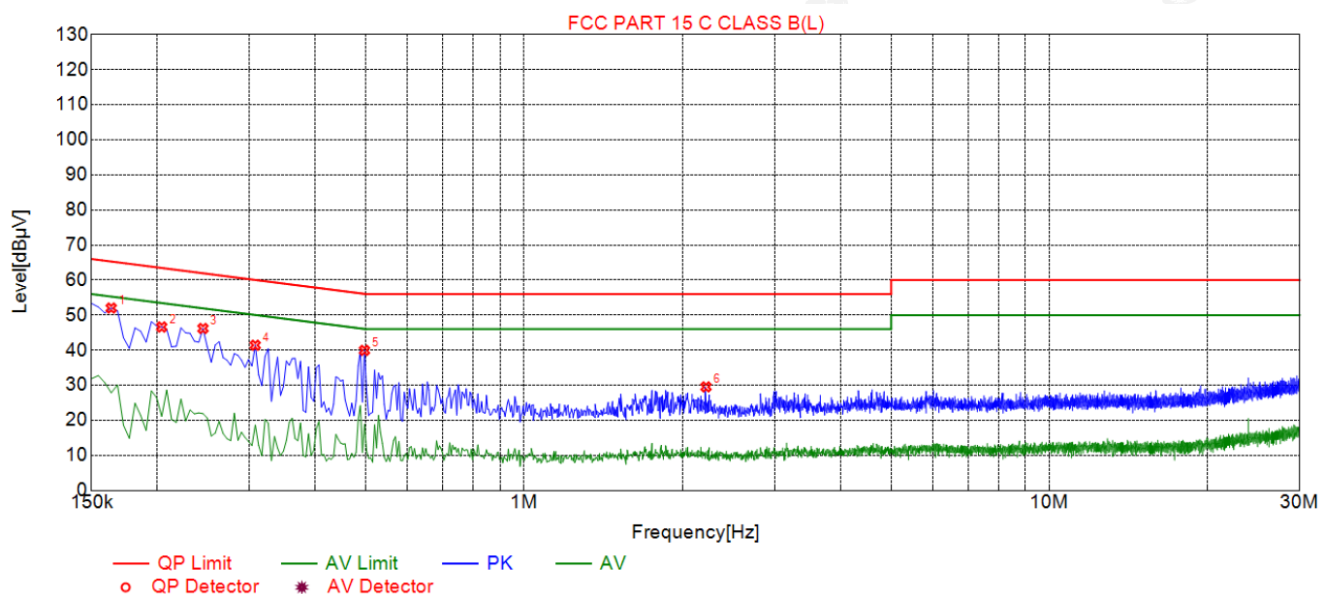
3.3 Test Procedure

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. 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.
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. If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT 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.

3.4 Test Result

All the test modes completed for test. Only the worst result was reported as below:

Test Specification: Line



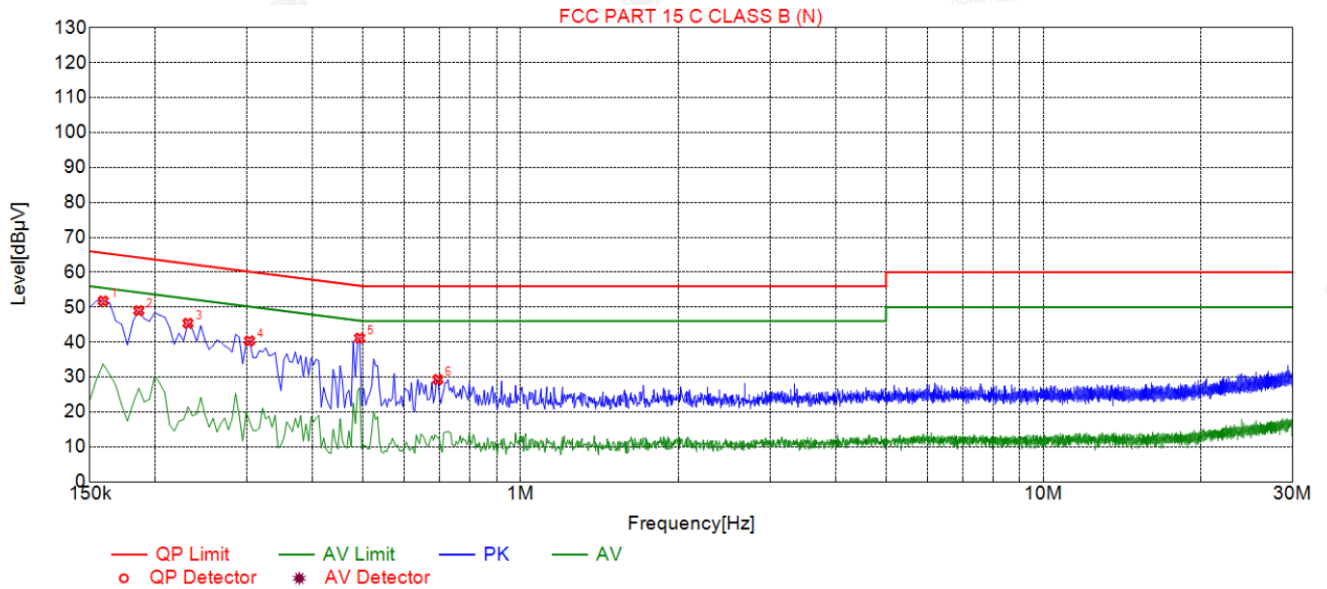
Suspected List								
NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1635	52.02	19.82	65.28	13.26	32.20	PK	L
2	0.2040	46.62	19.75	63.45	16.83	26.87	PK	L
3	0.2445	46.20	19.76	61.94	15.74	26.44	PK	L
4	0.3075	41.41	19.79	60.04	18.63	21.62	PK	L
5	0.4965	39.94	19.85	56.06	16.12	20.09	PK	L
6	2.2200	29.53	20.08	56.00	26.47	9.45	PK	L

Remark: $\text{Margin} = \text{Limit} - \text{Level}$

Correction factor = Cable loss + LISN insertion loss

$$\text{Level} = \text{Test receiver reading} + \text{correction factor}$$

Test Specification: Neutral



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1590	51.77	19.91	65.52	13.75	31.86	PK	N
2	0.1860	48.99	19.81	64.21	15.22	29.18	PK	N
3	0.2310	45.40	19.77	62.41	17.01	25.63	PK	N
4	0.3030	40.34	19.82	60.16	19.82	20.52	PK	N
5	0.4920	41.14	19.94	56.13	14.99	21.20	PK	N
6	0.6945	29.29	19.95	56.00	26.71	9.34	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



4. Radiated Emission Test

4.1 Radiation Limit

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.490	300	$20\log 2400/F$ (kHz)	2400/F (kHz)
0.490-1.705	30	$20\log 24000/F$ (kHz)	24000/F (kHz)
1.705-30	30	$20\log 30$	30
30-88	3	40	100
88-216	3	43.5	150
216-960	3	46	200
Above 960	3	54	500

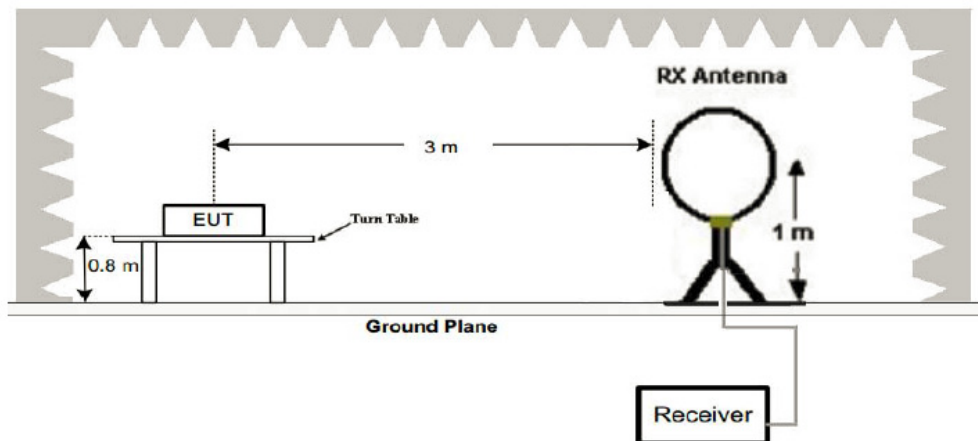
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

For unintentional device, according to § 15.249(a), Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

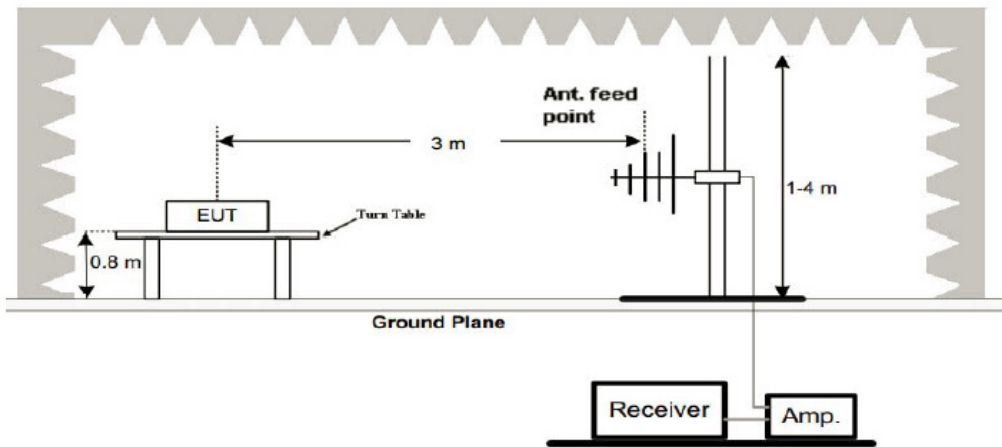
Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

4.2 Test Setup

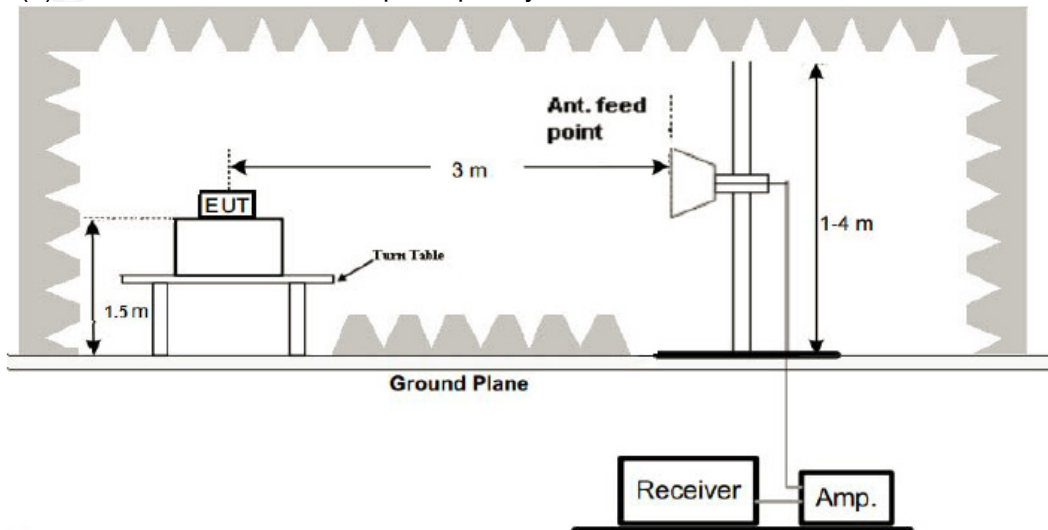
(1) Radiated Emission Test-Up Frequency Below 30MHz



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



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



4.3 Test Procedure

1. Below 1GHz measurement the EUT is placed on turntable which is 0.8m above ground plane. And above 1GHz measurement EUT was placed on low permittivity and low tangent turn table which is 1.5m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The test frequency range from 9KHz to 26GHz per FCC PART 15.33(a).

Note:

For battery operated equipment, the equipment tests shall be performed using a new battery.

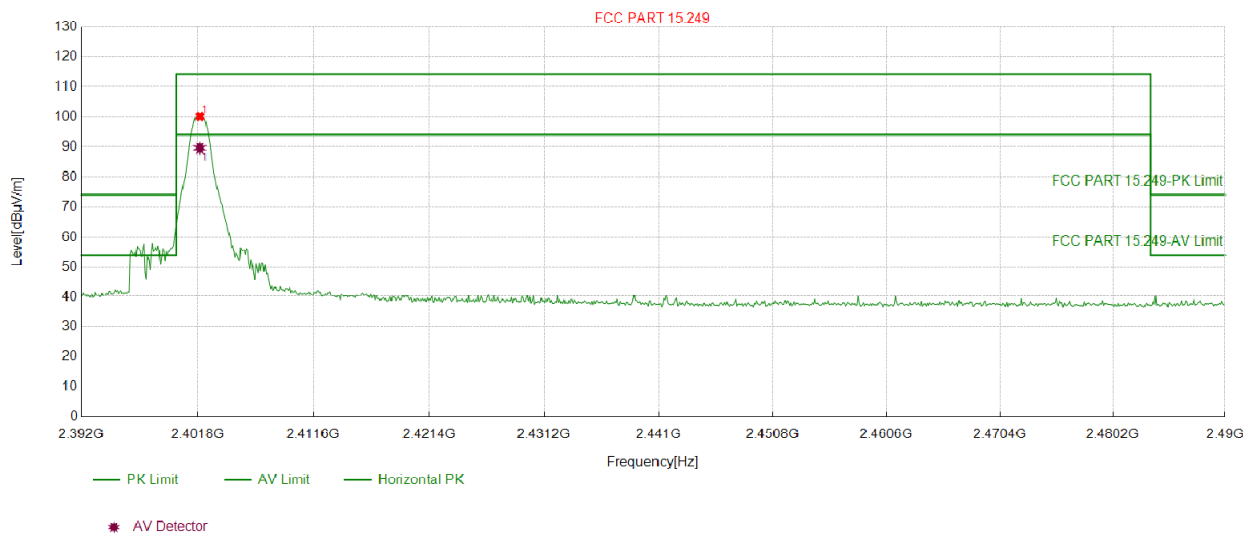
4.4 Test Result

PASS

Field strength of fundamental:

Operation Mode: TX CH Low (2402MHz)

Antenna polarity: Horizontal



Suspected Data List

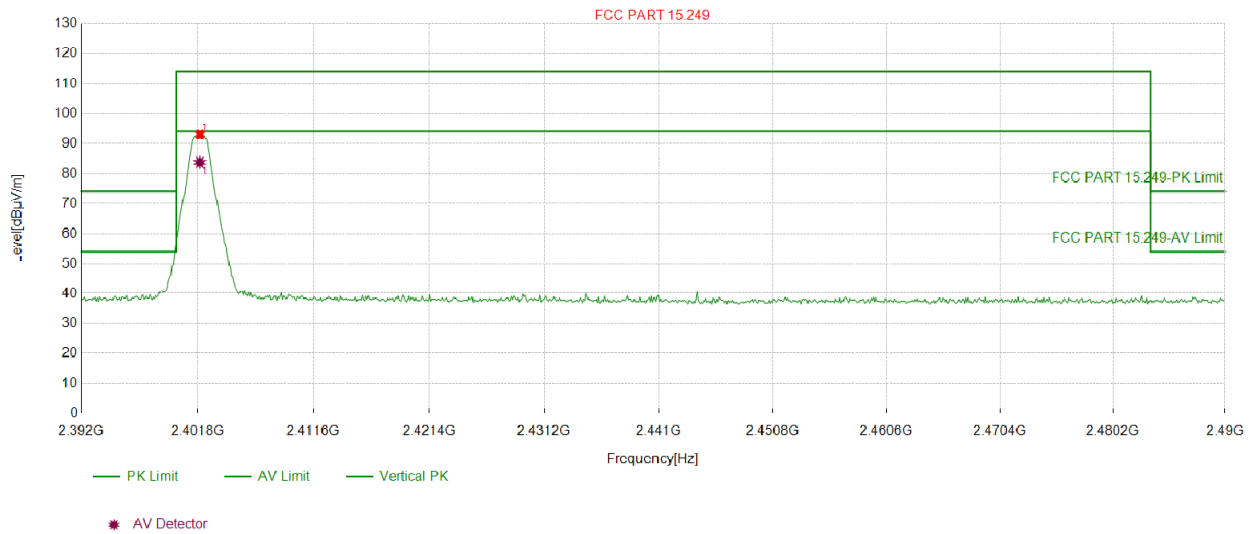
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2402.006	114.45	100.11	-14.34	114.00	13.89	150	288	Horizontal

AV Final Data List

NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2401.992	-14.34	89.57	94.00	4.43	150	288	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical

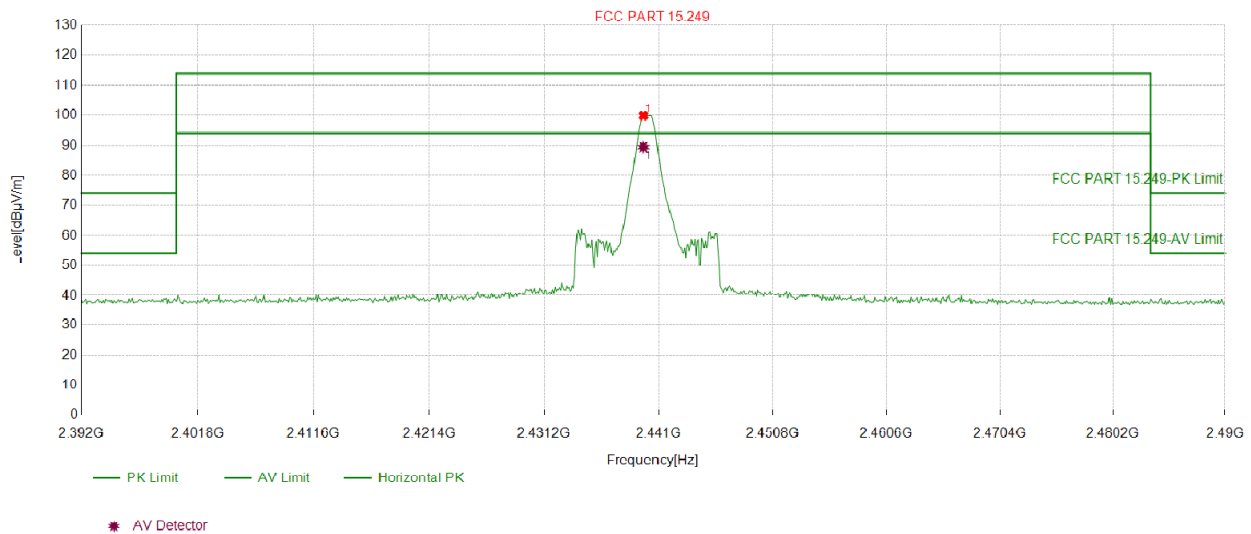


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2402.006	107.29	92.95	-14.34	114.00	21.05	150	201	Vertical

AV Final Data List								
NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2401.992	-14.34	83.85	94.00	10.15	150	201	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Operation Mode: TX CH Middle (2440MHz)
Antenna polarity: Horizontal

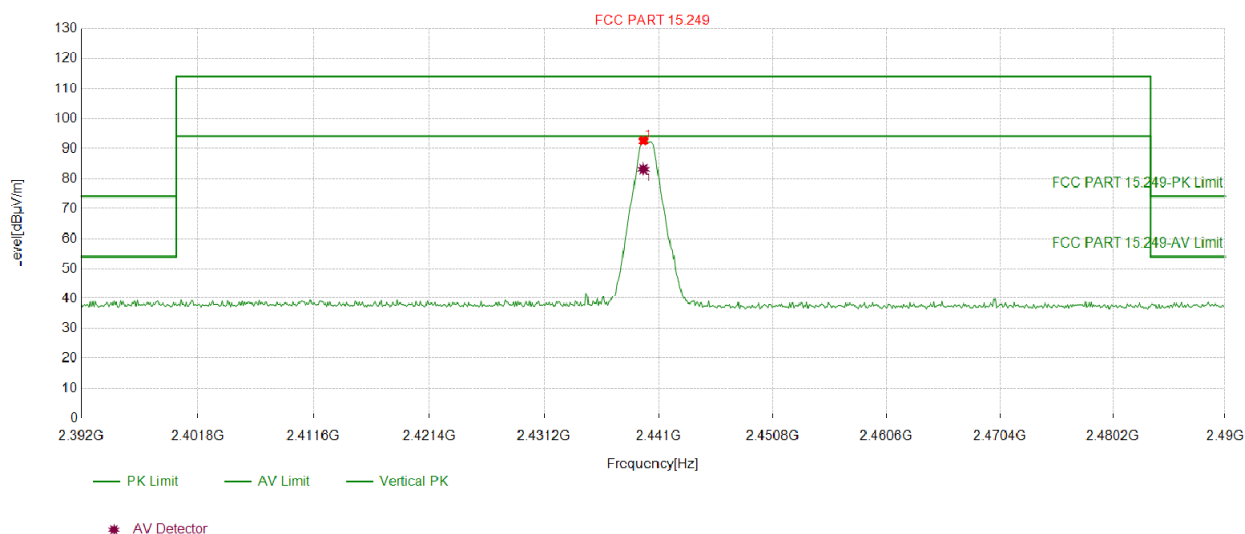


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2439.676	114.31	99.76	-14.55	114.00	14.24	150	281	Horizontal

AV Final Data List									
NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	2439.676	-14.55	89.48	94.00	4.52	150	281	Horizontal	

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



Suspected Data List

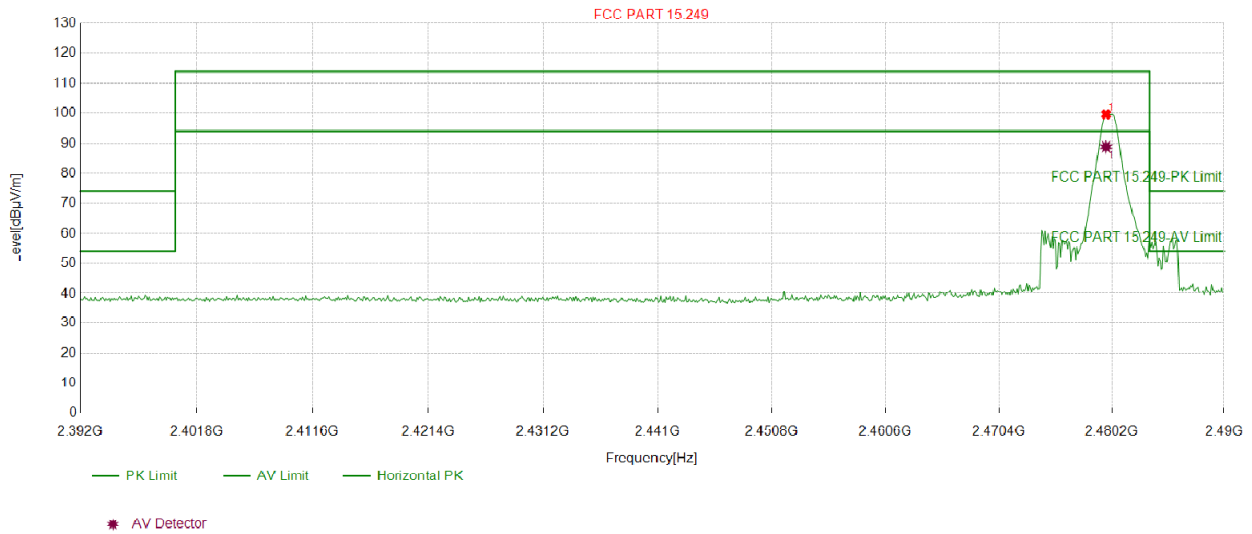
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2439.676	107.03	92.48	-14.55	114.00	21.52	150	203	Vertical

AV Final Data List

NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2439.676	-14.55	83.24	94.00	10.76	150	203	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Operation Mode: TX CH High (2480MHz)
Antenna polarity: Horizontal



Suspected Data List

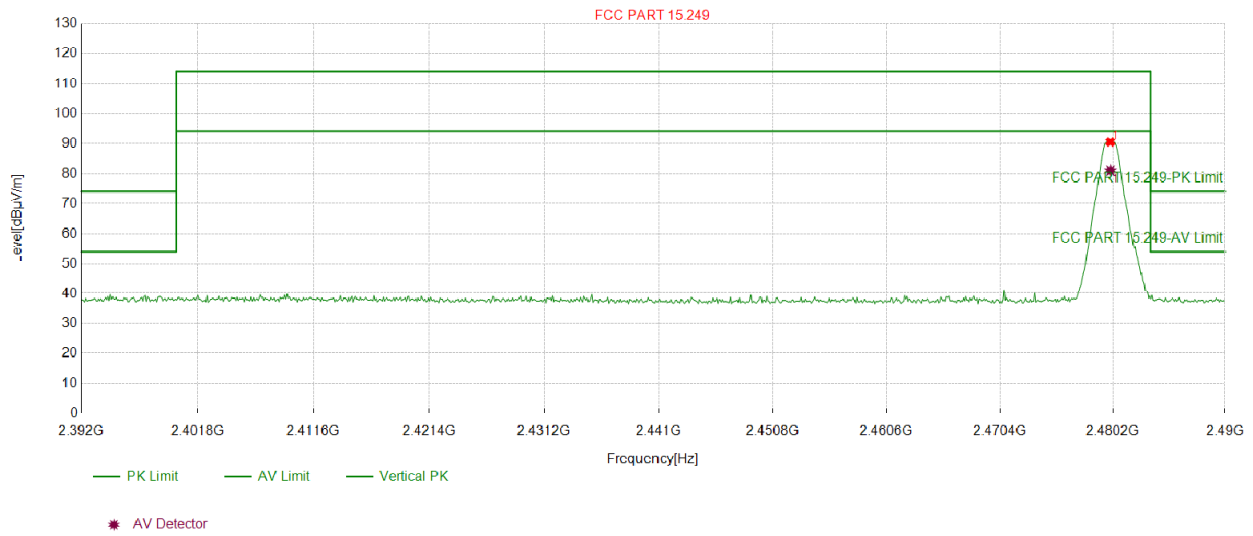
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.700	114.23	99.52	-14.71	114.00	14.48	150	289	Horizontal

AV Final Data List

NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.700	-14.71	88.93	94.00	5.07	150	289	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



Suspected Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2479.994	105.25	90.54	-14.71	114.00	23.46	150	334	Vertical

AV Final Data List

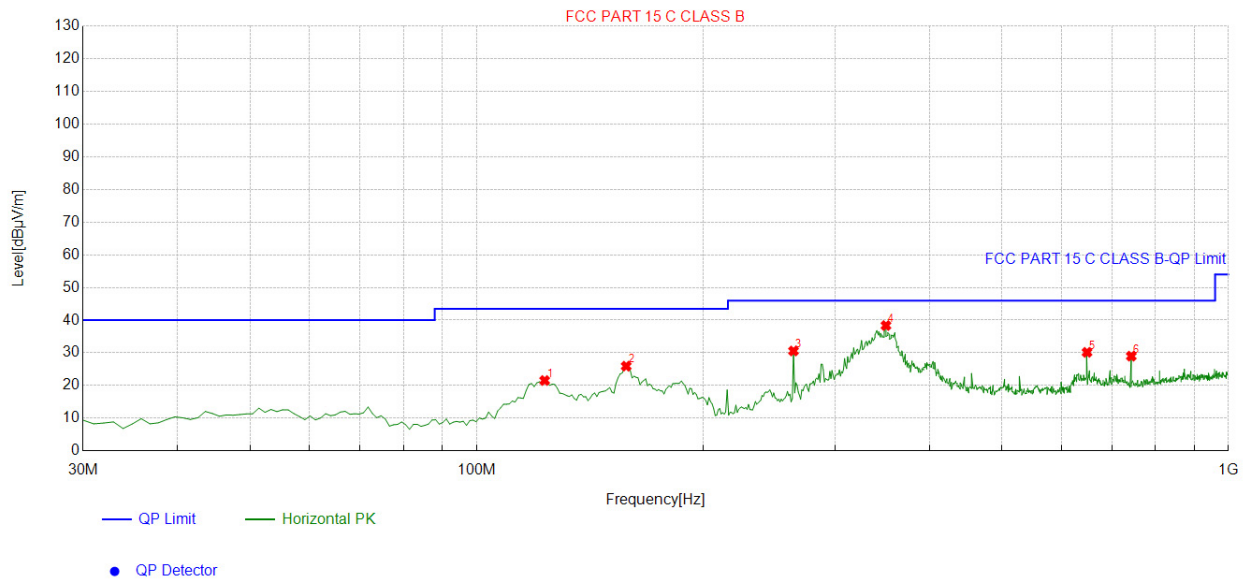
NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.006	-14.71	81.03	94.00	12.97	150	334	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

All the test modes completed for test. Only the worst result was reported as below:

Below 1GHz Test Results:

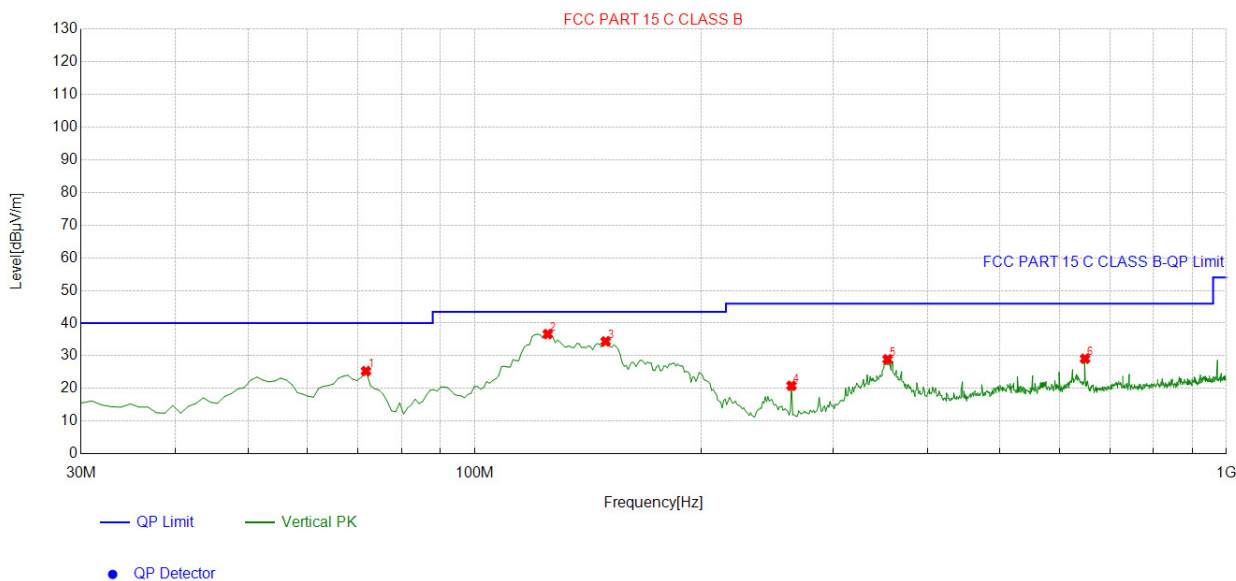
Antenna polarity: Horizontal



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	123.213	-16.91	38.46	21.55	43.50	21.95	100	308	Horizontal
2	158.168	-17.63	43.56	25.93	43.50	17.57	100	208	Horizontal
3	264.004	-12.71	43.29	30.58	46.00	15.42	100	168	Horizontal
4	350.420	-10.53	48.89	38.36	46.00	7.64	100	4	Horizontal
5	648.509	-4.79	34.96	30.17	46.00	15.83	100	172	Horizontal
6	742.693	-3.46	32.46	29.00	46.00	17.00	100	179	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	71.752	-17.75	43.09	25.34	40.00	14.66	100	217	Vertical
2	125.155	-17.32	53.99	36.67	43.50	6.83	100	185	Vertical
3	149.429	-18.24	52.66	34.42	43.50	9.08	100	98	Vertical
4	264.004	-12.71	33.57	20.86	46.00	25.14	100	88	Vertical
5	354.304	-10.55	39.48	28.93	46.00	17.07	100	337	Vertical
6	648.509	-4.79	33.93	29.14	46.00	16.86	100	257	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBμV/m)	Limit@3m (dBμV/m)
--	--	--
--	--	--
--	--	--
--	--	--

Note: 1. Emission Level=Reading+ Cable loss+ Antenna factor-Amp factor.

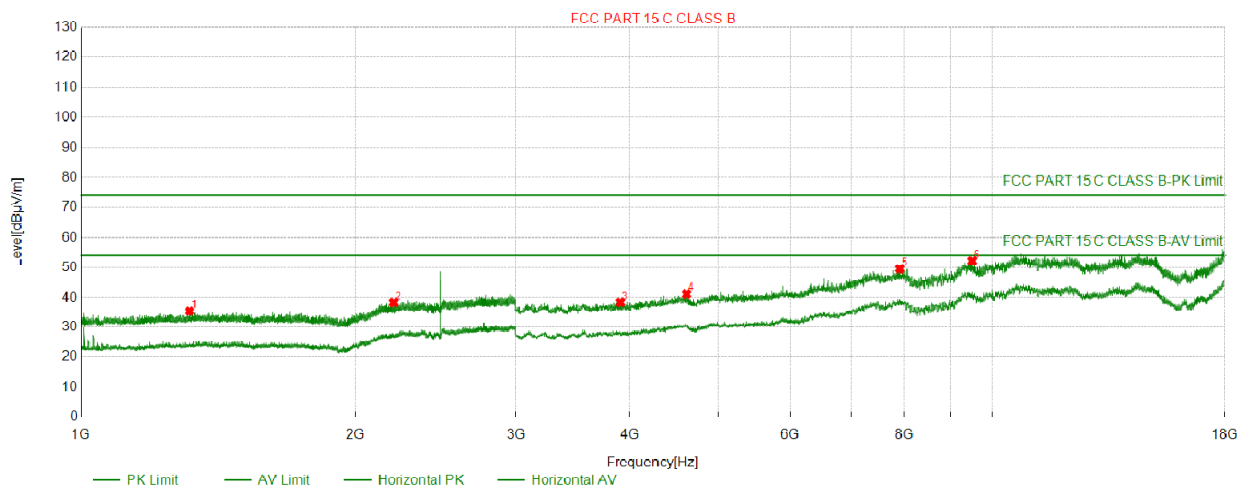
2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

Above 1GHz Test Results

All the test modes completed for test. Only the worst result was reported as below:

For 1GHz to 18GHz

Antenna polarity: Horizontal

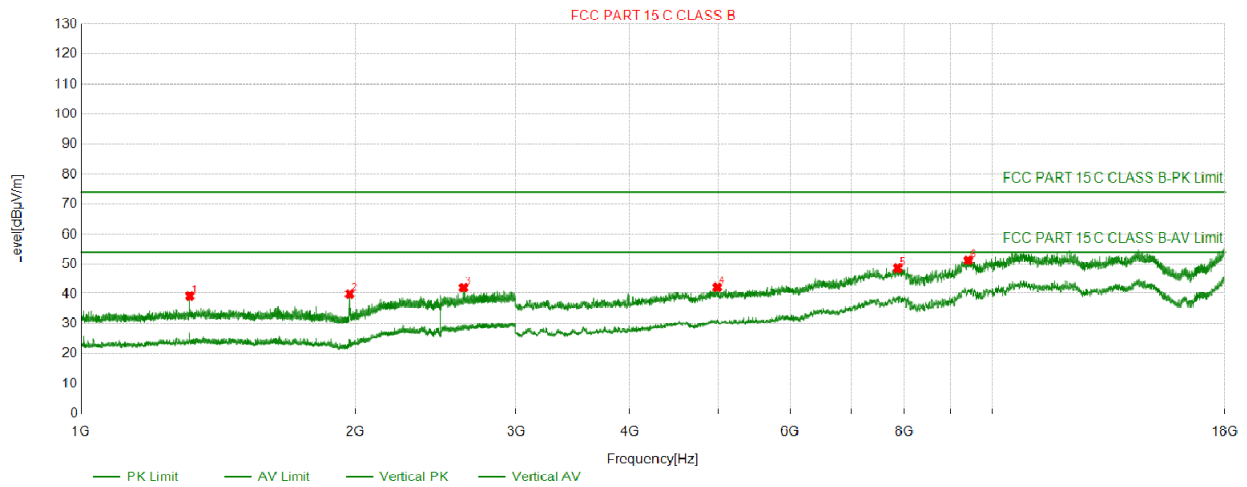


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1315.632	54.18	35.51	-18.67	74.00	38.49	150	146	Horizontal
2	2203.320	53.10	38.39	-14.71	74.00	35.61	150	223	Horizontal
3	3904.590	52.09	38.45	-13.64	74.00	35.55	150	218	Horizontal
4	4617.162	52.69	41.22	-11.47	74.00	32.78	150	344	Horizontal
5	7911.491	51.97	49.47	-2.50	74.00	24.53	150	152	Horizontal
6	9503.150	51.75	52.12	0.37	74.00	21.88	150	28	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1316.432	57.99	39.32	-18.67	74.00	34.68	150	246	Vertical
2	1971.297	56.61	39.95	-16.66	74.00	34.05	150	95	Vertical
3	2628.763	56.01	42.09	-13.92	74.00	31.91	150	83	Vertical
4	4990.699	52.46	42.23	-10.23	74.00	31.77	150	107	Vertical
5	7870.987	51.25	48.62	-2.63	74.00	25.38	150	278	Vertical
6	9405.641	51.16	51.26	0.10	74.00	22.74	150	34	Vertical

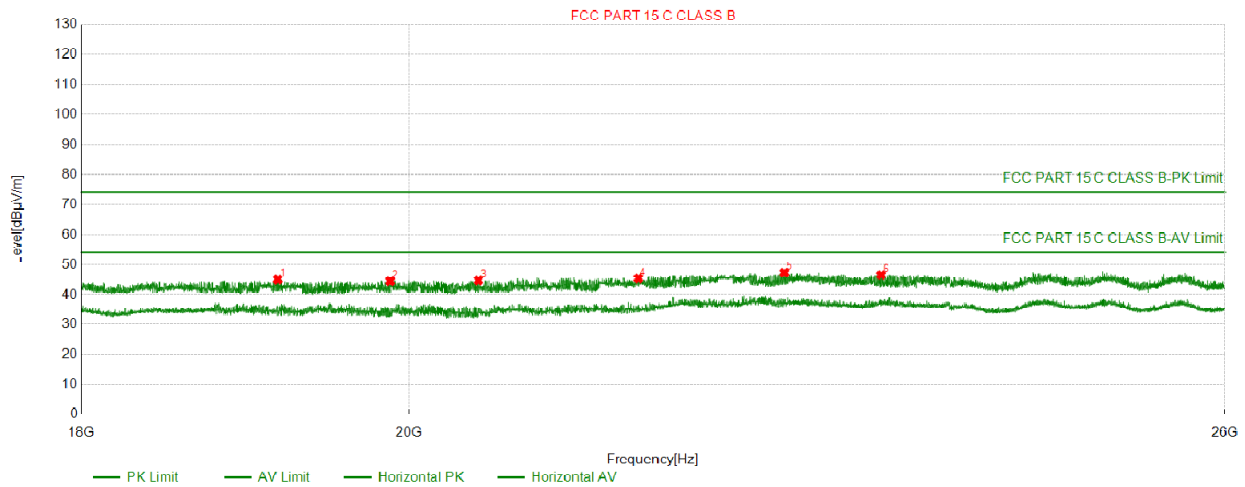
Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor;
Margin = Limit – Level



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For 18GHz to 26GHz

Antenna polarity: Horizontal

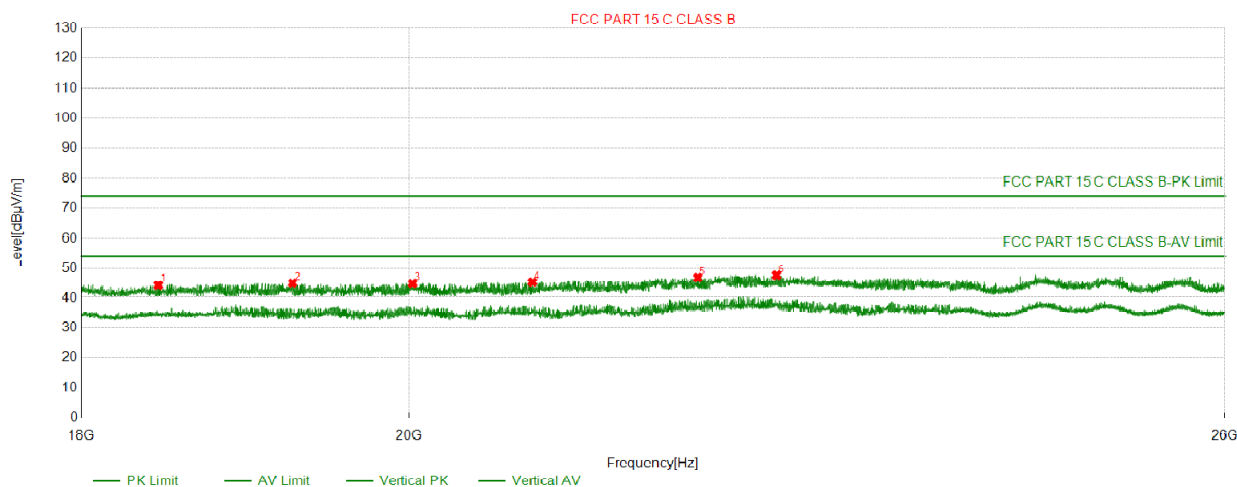


Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19175.318	39.07	44.97	5.90	74.00	29.03	150	360	Horizontal
2	19880.188	38.29	44.45	6.16	74.00	29.55	150	200	Horizontal
3	20452.245	38.68	44.67	5.99	74.00	29.33	150	50	Horizontal
4	21531.553	40.01	45.34	5.33	74.00	28.66	150	90	Horizontal
5	22565.257	41.61	47.22	5.61	74.00	26.78	150	200	Horizontal
6	23278.928	40.76	46.43	5.67	74.00	27.57	150	170	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level



Antenna polarity: Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18452.045	38.82	44.23	5.41	74.00	29.77	150	240	Vertical
2	19265.727	38.96	44.96	6.00	74.00	29.04	150	180	Vertical
3	20023.402	38.66	44.85	6.19	74.00	29.15	150	200	Vertical
4	20810.681	39.68	45.30	5.62	74.00	28.70	150	50	Vertical
5	21945.995	41.07	46.77	5.70	74.00	27.23	150	10	Vertical
6	22510.051	41.99	47.63	5.64	74.00	26.37	150	170	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor;

Margin = Limit – Level

5. Band Edge

5.1 Limits

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

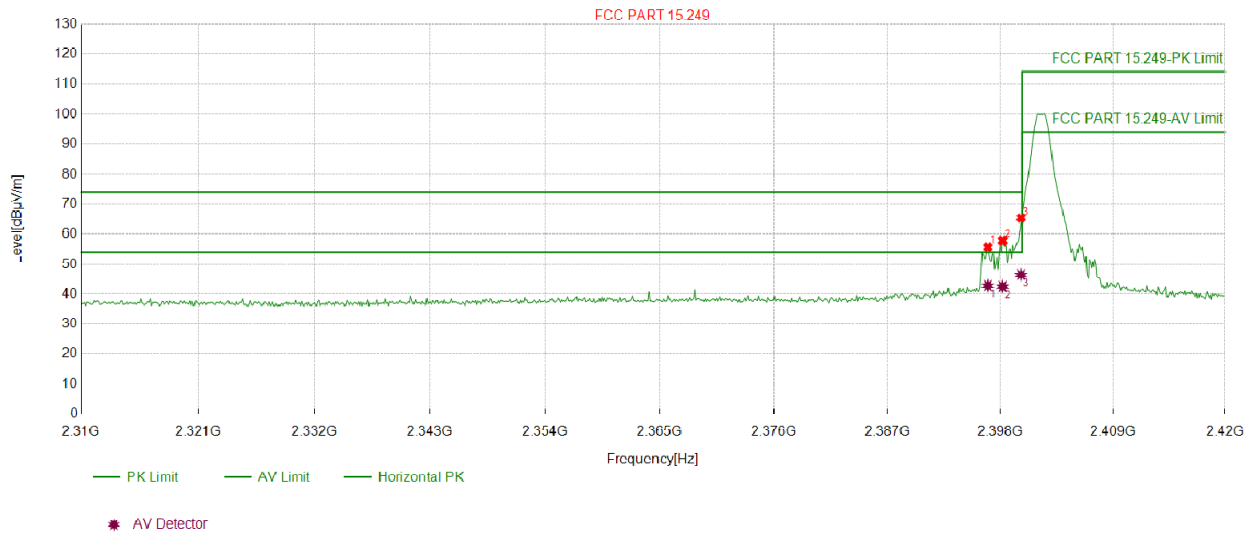
5.2 Test Procedure

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc.

5.3 Test Result

Operation Mode: TX CH Low (2402MHz)

Antenna polarity: Horizontal



Suspected Data List

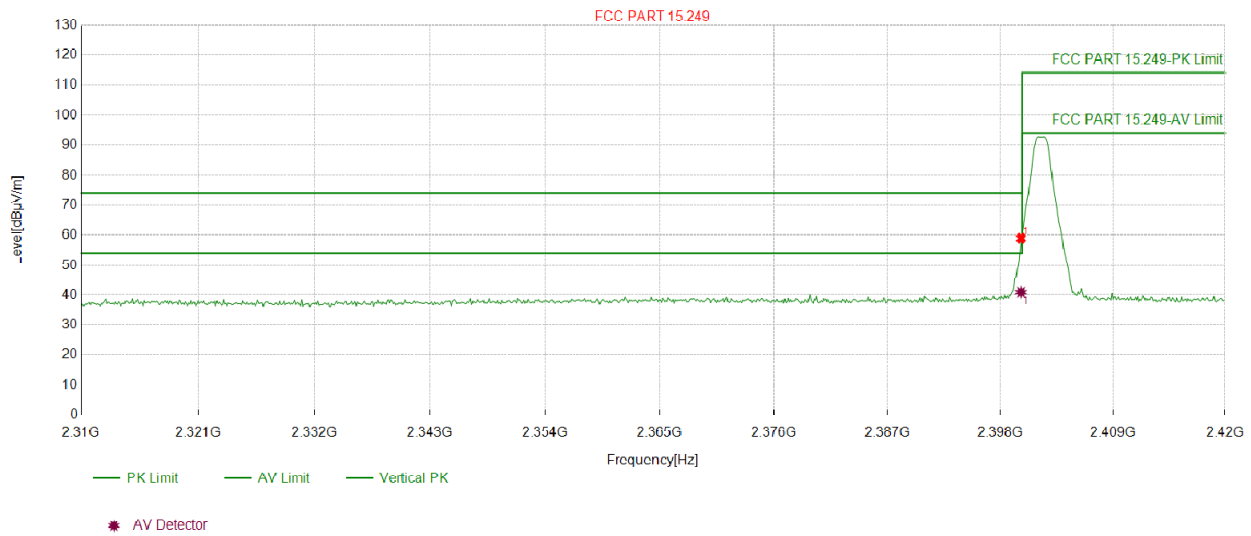
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2396.767	70.04	55.69	-14.35	74.00	18.31	150	291	Horizontal
2	2398.198	72.16	57.81	-14.35	74.00	16.19	150	288	Horizontal
3	2400.000	79.62	65.29	-14.33	74.00	8.71	150	283	Horizontal

AV Final Data List

NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2396.767	-14.35	42.76	54.00	11.24	150	291	Horizontal
2	2398.198	-14.35	42.46	54.00	11.54	150	288	Horizontal
3	2400.000	-14.33	46.43	54.00	7.57	150	283	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



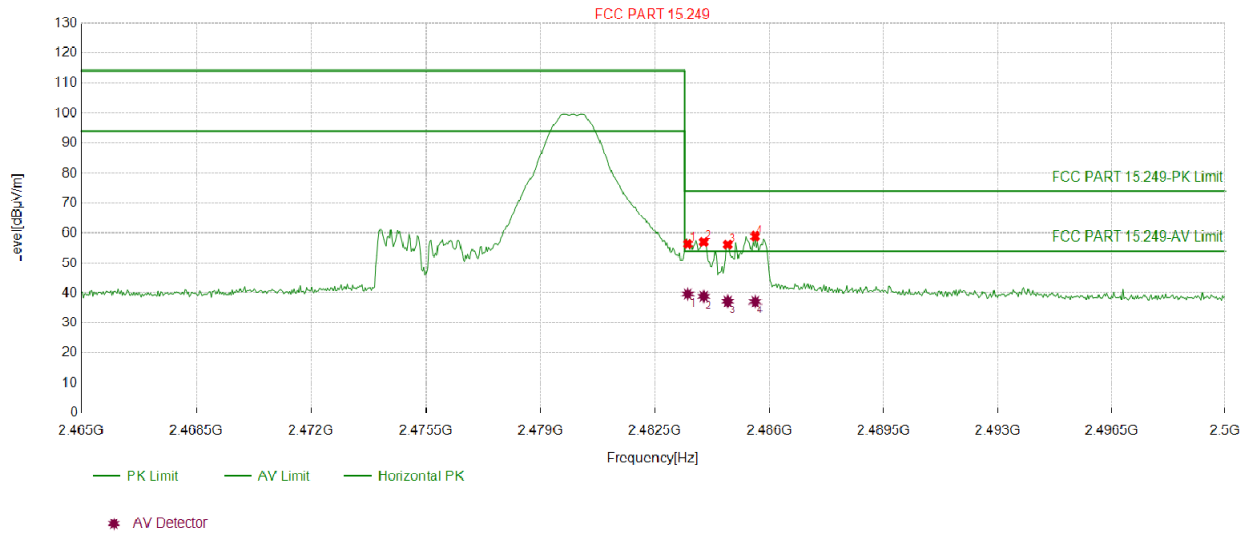
Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2400.000	73.18	58.85	-14.33	74.00	15.15	150	201	Vertical

AV Final Data List								
NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2400.000	-14.33	40.90	54.00	13.10	150	201	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Operation Mode: TX CH High (2480MHz)

Antenna polarity: Horizontal



Suspected Data List

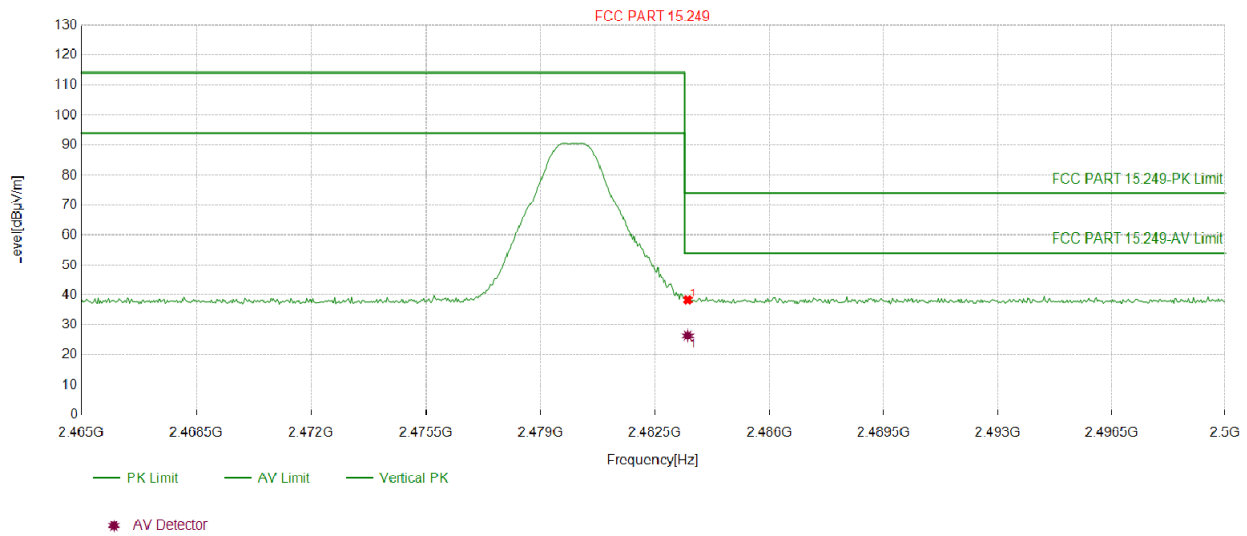
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2483.500	71.15	56.43	-14.72	74.00	17.57	150	281	Horizontal
2	2483.989	71.81	57.09	-14.72	74.00	16.91	150	281	Horizontal
3	2484.725	70.94	56.21	-14.73	74.00	17.79	150	285	Horizontal
4	2485.566	73.57	58.84	-14.73	74.00	15.16	150	281	Horizontal

AV Final Data List

NO	Freq. [MHz]	Factor [dB]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2483.500	-14.72	39.67	54.00	14.33	150	281	Horizontal
2	2483.989	-14.72	38.89	54.00	15.11	150	281	Horizontal
3	2484.725	-14.73	37.32	54.00	16.68	150	285	Horizontal
4	2485.566	-14.73	37.24	54.00	16.76	150	281	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Pre-amplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



Suspected Data List

NO.	Freq. [MHz]	Reading [dBuV/m]	PK Level [dBuV/m]	Factor [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2483.500	52.99	38.27	-14.72	74.00	35.73	150	226	Vertical

AV Final Data List

NO	Freq. [MHz]	Factor [dB]	AV Value [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2483.500	-14.72	26.55	54.00	27.45	150	226	Vertical

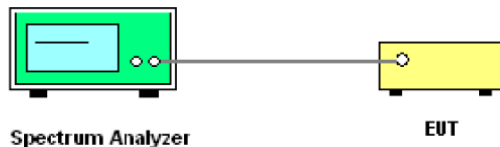
Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor;
Margin = Limit – Level

Note: When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



6. Occupied Bandwidth Measurement

6.1 Test Setup



6.2 Test Procedure

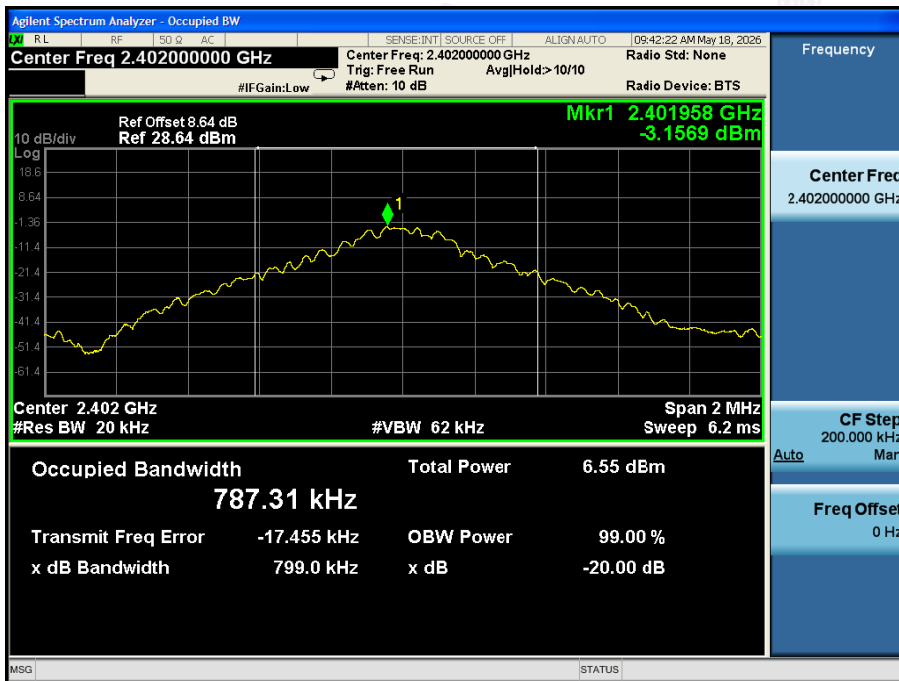
1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.
2. Set to the maximum power setting and enable the EUT transmit continuously.
3. Use the following spectrum analyzer settings for 20dB Bandwidth measurement.
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a Transmitting channel;
RBW = 1% to 5% of the Occupied Bandwidth; VBW = 3RBW; Sweep = auto; Detector function = peak;
Trace = max hold.
4. Measure and record the results in the test report.

6.3 Test Result

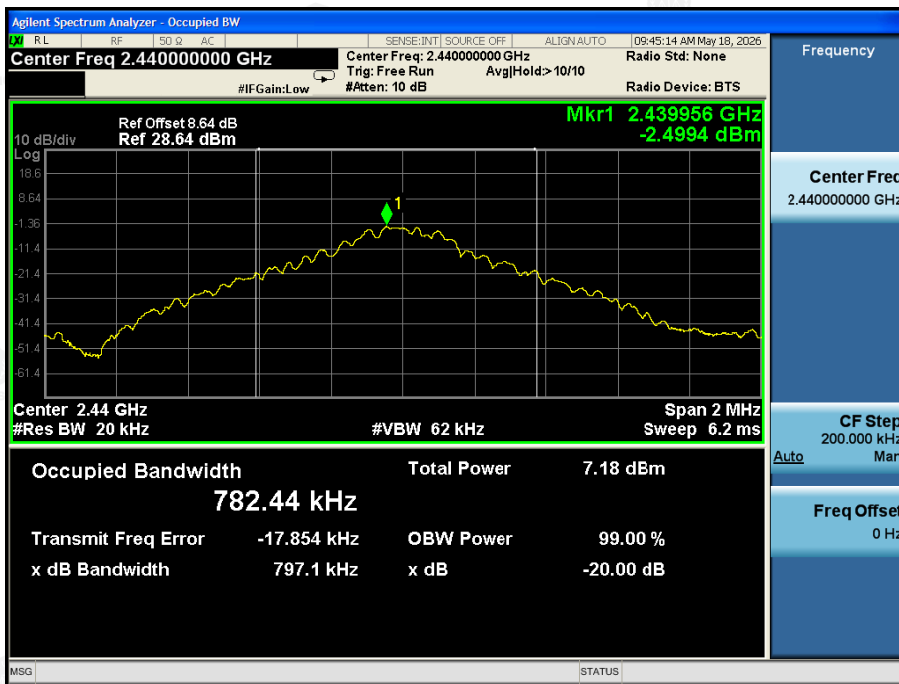
PASS

Test Rate	Frequency	20dB Bandwidth (MHz)	Result
1M	2402 MHz	0.7990	PASS
	2440 MHz	0.7971	PASS
	2480 MHz	0.7982	PASS
2M	2402 MHz	1.409	PASS
	2440 MHz	1.412	PASS
	2480 MHz	1.408	PASS

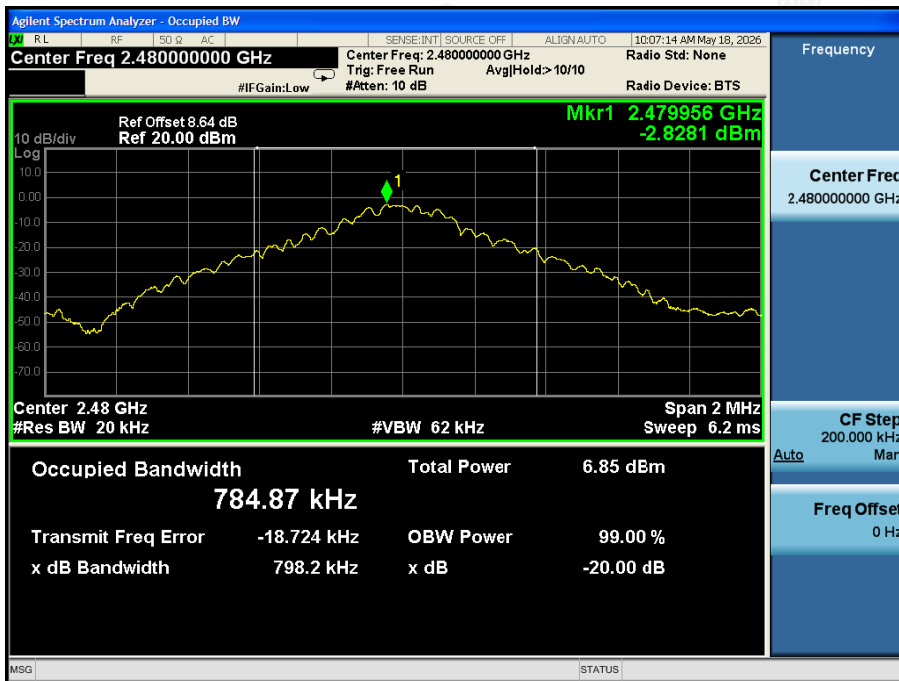
1M CH:2402MHz



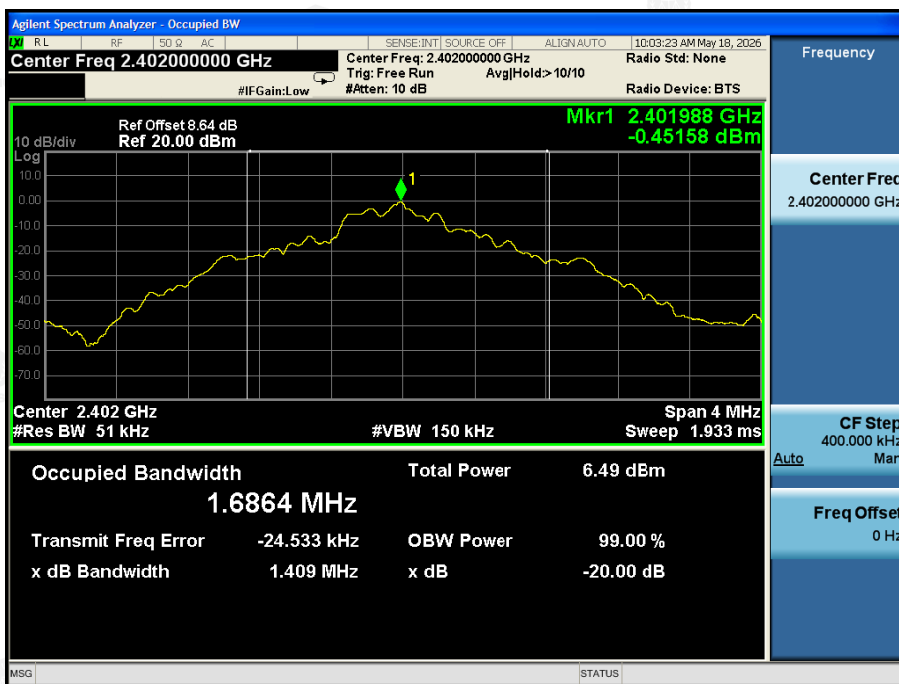
1M CH:2440MHz



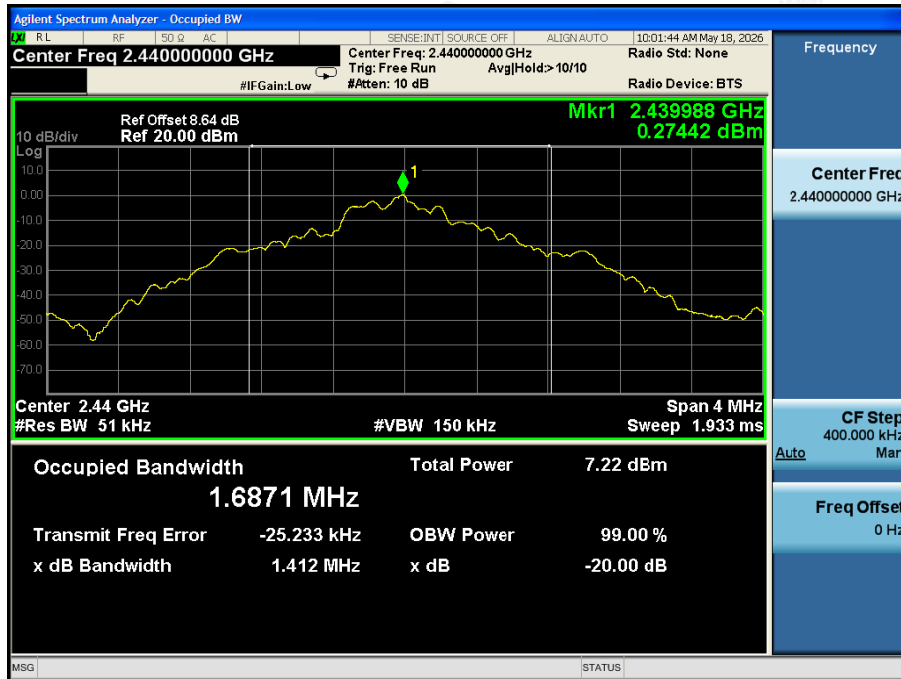
1M CH:2480MHz



2M CH:2402MHz



2M CH:2440MHz



2M CH:2480MHz



7. Antenna Requirement

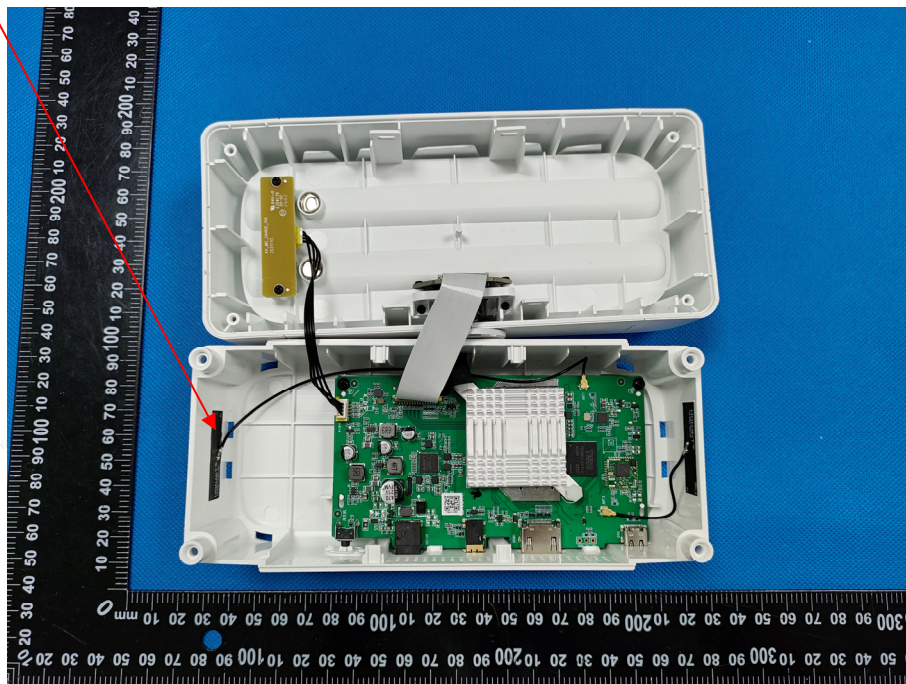
Standard Applicable

For intentional device, according to FCC 47 CFR Section 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.

Antenna Connected Construction

The antenna used in this product is a FPC Antenna, need professional installation, not easy to remove. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 4.24dBi.

Antenna

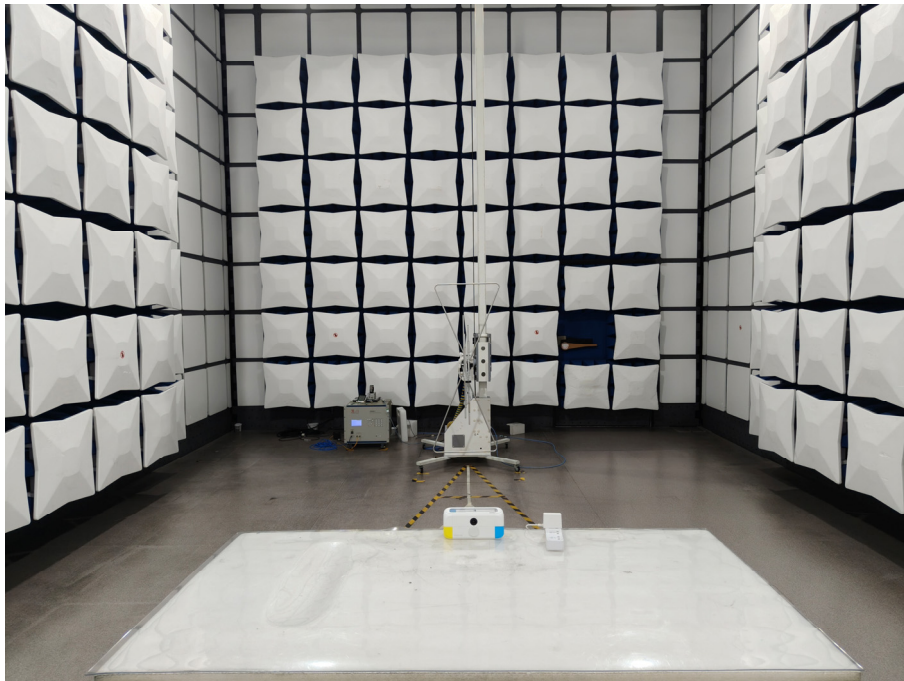




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8. Test Setup Photos of the EUT

Radiated Emission

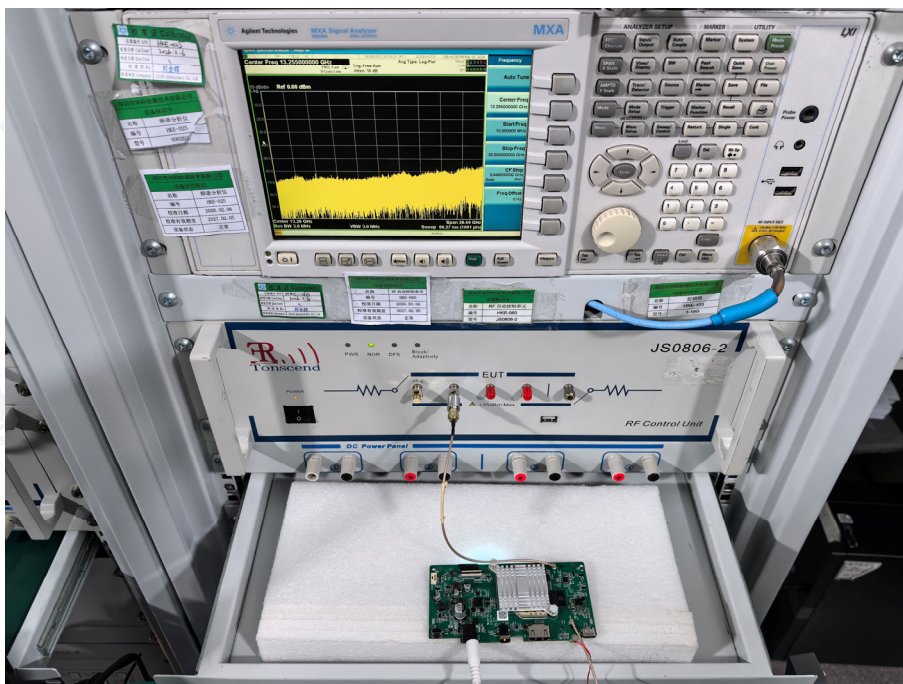


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AC Conducted Emission



RF Conducted Emission



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9. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos.

-----End of test report-----

