



Report No.: TW2202132E

File Reference No.: 2022-03-28

Applicant: Shenzhen Xiaojia Technology Co.,Ltd

Product: 5 IN 1 MAGNETIC WIRELESS CHARGING PAD

Model No.: Z9

Trademark: N/A

Test Standards: FCC Part 15 Subpart C

Test Result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.4&FCC Part 15 Subpart C, for the evaluation of electromagnetic compatibility

Approved By

A handwritten signature in black ink that reads 'Terry Tang'.

Jack Chung

Manager

Dated: March 28, 2022

**Results appearing herein relate only to the sample tested**

**The technical reports is issued errors and omissions exempt and is subject to withdrawal at**

**SHENZHEN TIMEWAY TESTING LABORATORIES**

**Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West,  
Tong Le Village, Nanshan District, Shenzhen, China**

**Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com**



### **Special Statement:**

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meets with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

#### **CNAS-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

#### **FCC-Registration No.: 744189**

The 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. Registration No.: 744189.

#### **Industry Canada (IC) —Registration No.:5205A**

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

#### **A2LA (Certification Number:5013.01)**

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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## Test Report Conclusion

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## 1.0 General Details

### 1.1 Test Lab Details

Name : SHENZHEN TIMEWAY TESTING LABORATORIES.  
Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China  
Telephone: +86 755 83448688  
Fax: +86 755 83442996  
Site on File with the Federal Communications Commission – United States  
Registration Number: 744189  
For 3m Anechoic Chamber

### 1.2 Applicant Details

Applicant: Shenzhen Xiaojiu Technology Co.,Ltd  
Address: 6 Floor, C Building, Huamingcheng High-Tech Park, Matian Street, Guangming District, Shenzhen city, Guangdong province, China  
Telephone: --  
Fax: --

### 1.3 Description of EUT

Product: 5 IN 1 MAGNETIC WIRELESS CHARGING PAD  
Manufacturer: Shenzhen Xiaojiu Technology Co.,Ltd  
Address: 6 Floor, C Building, Huamingcheng High-Tech Park, Matian Street, Guangming District, Shenzhen city, Guangdong province, China  
Trademark: N/A  
Model Number: Z9  
Additional Model Name: N/A  
Additional Trade Name: N/A  
Rating: Input: DC9V, 3A or 12V, 3A (Type-C Port);  
Top:  
Magnetic wireless charging output power: 5W/7.5W/10W/15W;  
Watch wireless charging output power: 2.5W(MAX) ;  
Bottom:  
Wireless charging output power: 5W/7.5W/10W/15W;  
Headphone wireless charging output power: 3W(MAX);  
USB-A output power: 5V/2A (10W)  
Hardware Version: V1  
Software Version: V1  
Serial No.: SN000000111

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Operation Frequency: See below table

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	0.1115	06	0.140	11	0.165	16	0.190
02	0.120	07	0.145	12	0.170	17	0.195
03	0.125	08	0.150	13	0.175	18	0.200
04	0.130	09	0.155	14	0.180	19	0.205
05	0.135	10	0.160	15	0.185		
Test channel		Frequency (MHz)					
CH13		0.175 MHz					

Modulation Type: MSK  
Antenna Designation: Inductive Loop Antennas with gain 0dBi Max for each one (Declared by the applicant)

Test Mode:  
Mode1: Magnetic wireless charging (Top)  
Mode 2: Watch wireless charging (Top)  
Mode 3: Wireless charging (Bottom)  
Mode 4 Headphone wireless charging (Bottom)  
Mode 5: Mode1 + Mode 2 + Mode 3

Note: 1. For mode 3 and 4, using the same coil and mode 3 has the maximum wireless output;  
2. for Mode 1, 2 and 3, all wireless outputs power were tested and only the worst cases were recorded in the report, and the maximum wireless output power was the worst case

1.4 Submitted Sample  
1 Samples

1.5 Test Duration  
2022-02-23 to 2022-03-26

1.6 Test Uncertainty  
Conducted Emissions Uncertainty =3.6dB  
Radiated Emissions below 9kHz-30MHz Uncertainty =4.3dB  
Radiated Emissions below 30MHz-1GHz Uncertainty =4.7dB

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Radiated Emissions above 1GHz Uncertainty =6.0dB  
Conducted Power Uncertainty =6.0dB  
Occupied Channel Bandwidth Uncertainty =5%

1.7 Test Engineer

The sample tested by

*Andy Xing*

Print Name: Andy Xing

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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2021-06-18	2022-06-17
LISN	R&S	EZH3-Z5	100294	2021-06-18	2022-06-17
LISN	R&S	EZH3-Z5	100253	2021-06-18	2022-06-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2021-06-18	2022-06-17
Loop Antenna	EMCO	6507	00078608	2021-06-18	2024-06-17
Spectrum	R&S	FSIQ26	100292	2021-06-18	2022-06-17
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2021-06-18	2022-06-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2021-07-02	2024-07-01
Power meter	Anritsu	ML2487A	6K00003613	2021-06-18	2022-06-17
Power sensor	Anritsu	MA2491A	32263	2021-06-18	2022-06-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2021-07-02	2024-07-01
9*6*6 Anechoic	--	--	N/A	2021-07-02	2022-07-01
EMI Test Receiver	RS	ESVB	826156/011	2021-06-18	2022-06-17
EMI Test Receiver	RS	ESH3	860904/006	2021-06-18	2022-06-17
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2021-06-18	2022-06-17
Spectrum	HP/Agilent	E4407B	MY50441392	2021-06-18	2022-06-17
Spectrum	RS	FSP	1164.4391.38	2021-01-16	2022-01-15
RF Cable	Zhengdi	ZT26-NJ-NJ-8 M/FA	--	2021-06-18	2022-06-17
RF Cable	Zhengdi	7m	--	2021-06-18	2022-06-17
RF Switch	EM	EMSW18	060391	2021-06-18	2022-06-17
Pre-Amplifier	Schwarebeck	BBV9743	#218	2021-06-18	2022-06-17
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2021-06-18	2022-06-17
LISN	SCHAFFNER	NNB42	00012	2022-01-05	2023-01-04

## 2.2 Automation Test Software

### For Conducted Emission Test

Name	Version
EZ-EMC	Ver.EMC-CON 3A1.1

### For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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### 3.0 Technical Details

#### 3.1 Summary of test results

The EUT has been tested according to the following specifications:				
Standard	Test Type	Result	Notes	
FCC Part 15, Paragraph 15.203	Antenna requirements	Pass	Compliant	
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Compliant	
FCC Part 15, Paragraph 15.209 (a) (f)	General Requirement	Pass	Compliant	
FCC Part 15, Paragraph 15.215	20dB Bandwidth Testing	Pass	Compliant	

#### 3.2 Test Standards

**FCC Part 15 Subpart C , ANSI C63.4 :2014 and ANSI C63.10 :2013**

#### 4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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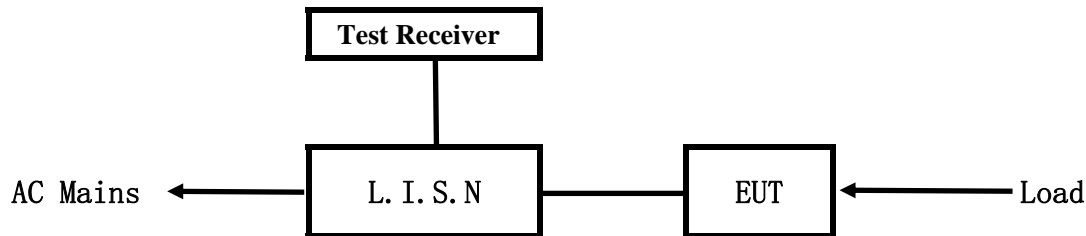
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## 5. Power Line Conducted Emission Test

### 5.1 Schematics of the test



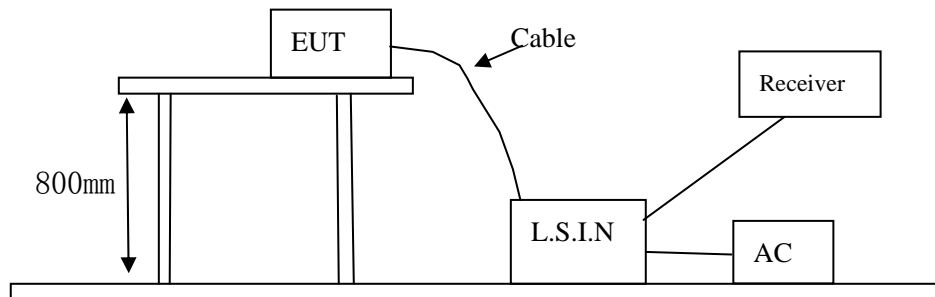
EUT: Equipment Under Test

### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10-2013.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



### 5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

#### A. EUT

Device	Manufacturer	Model	FCC ID
5 IN 1 MAGNETIC WIRELESS CHARGING PAD	Shenzhen Xiaojiu Technology Co.,Ltd	Z9	2A573-Z9

#### B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

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C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	MEIZU	UP0830S	Input: 100-240V~, 50-60Hz, 0.8A; Output: DC5V/3A, DC8V/3A or 12V/3A

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10 -2013.

A Setup the EUT and simulators as shown on follow

B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

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

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz. (The average detector is necessary when the Quasi-peak emission level beyond the average Limit.)

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**A: Conducted Emission on Live Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

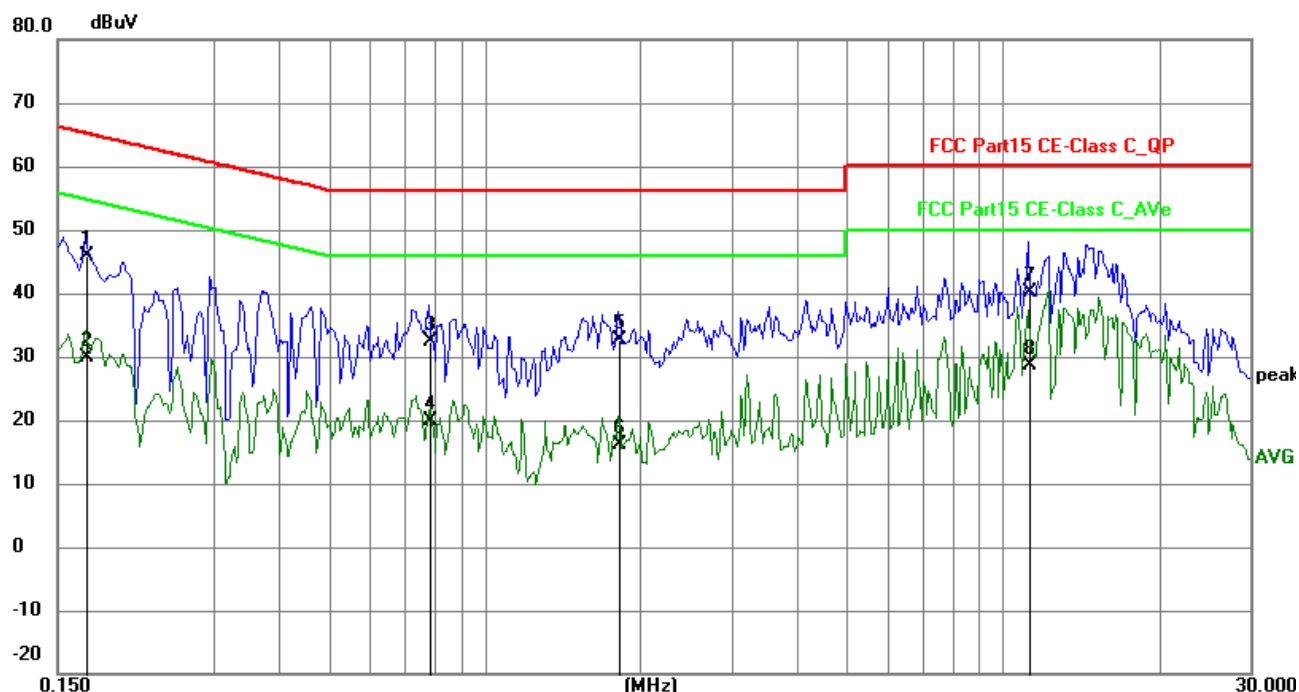
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 1**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1695	36.14	9.77	45.91	64.98	-19.07	QP	P
2	0.1695	20.22	9.77	29.99	54.98	-24.99	AVG	P
3	0.7818	22.56	9.78	32.34	56.00	-23.66	QP	P
4	0.7818	10.20	9.78	19.98	46.00	-26.02	AVG	P
5	1.8153	22.91	9.80	32.71	56.00	-23.29	QP	P
6	1.8153	6.45	9.80	16.25	46.00	-29.75	AVG	P
7	11.2407	29.94	10.21	40.15	60.00	-19.85	QP	P
8	11.2407	18.44	10.21	28.65	50.00	-21.35	AVG	P

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**B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

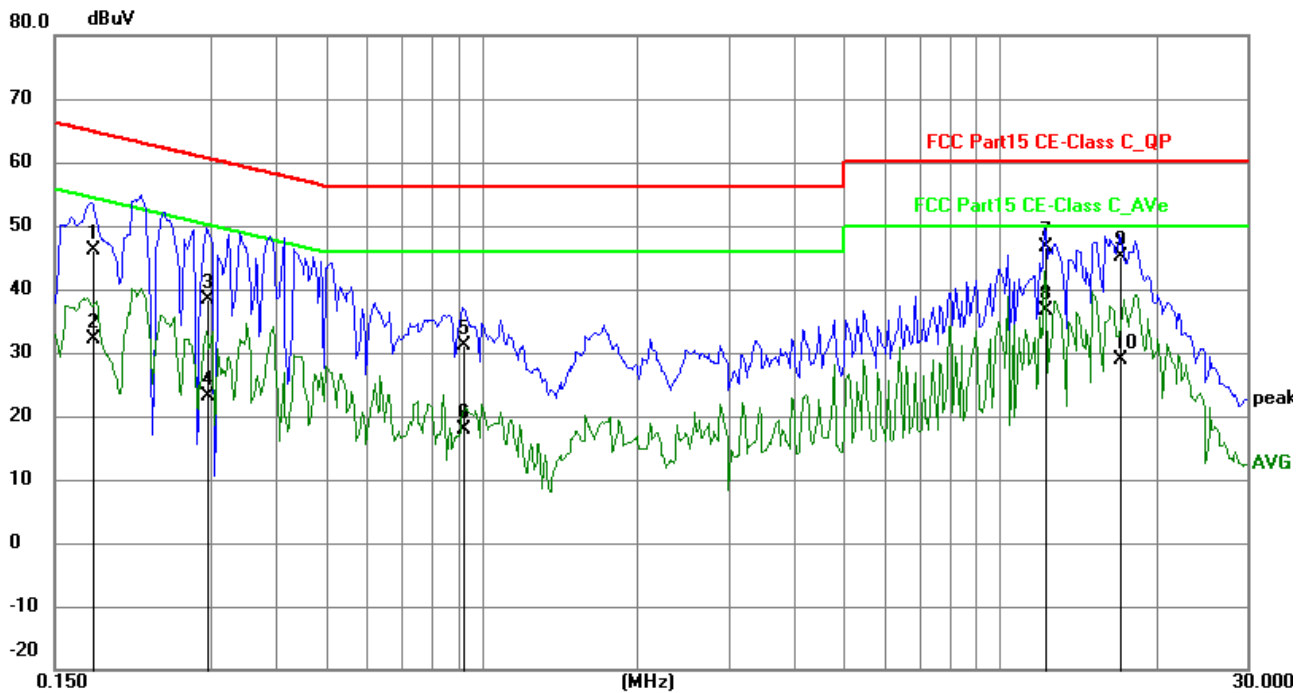
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 1**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1773	36.44	9.77	46.21	64.61	-18.40	QP	P
2	0.1773	22.36	9.77	32.13	54.61	-22.48	AVG	P
3	0.2943	28.61	9.76	38.37	60.40	-22.03	QP	P
4	0.2943	13.36	9.76	23.12	50.40	-27.28	AVG	P
5	0.9222	21.34	9.79	31.13	56.00	-24.87	QP	P
6	0.9222	8.17	9.79	17.96	46.00	-28.04	AVG	P
7	12.2313	36.35	10.26	46.61	60.00	-13.39	QP	P
8	12.2313	26.39	10.26	36.65	50.00	-13.35	AVG	P
9	17.0205	34.64	10.50	45.14	60.00	-14.86	QP	P
10	17.0205	18.43	10.50	28.93	50.00	-21.07	AVG	P

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**C: Conducted Emission on Live Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

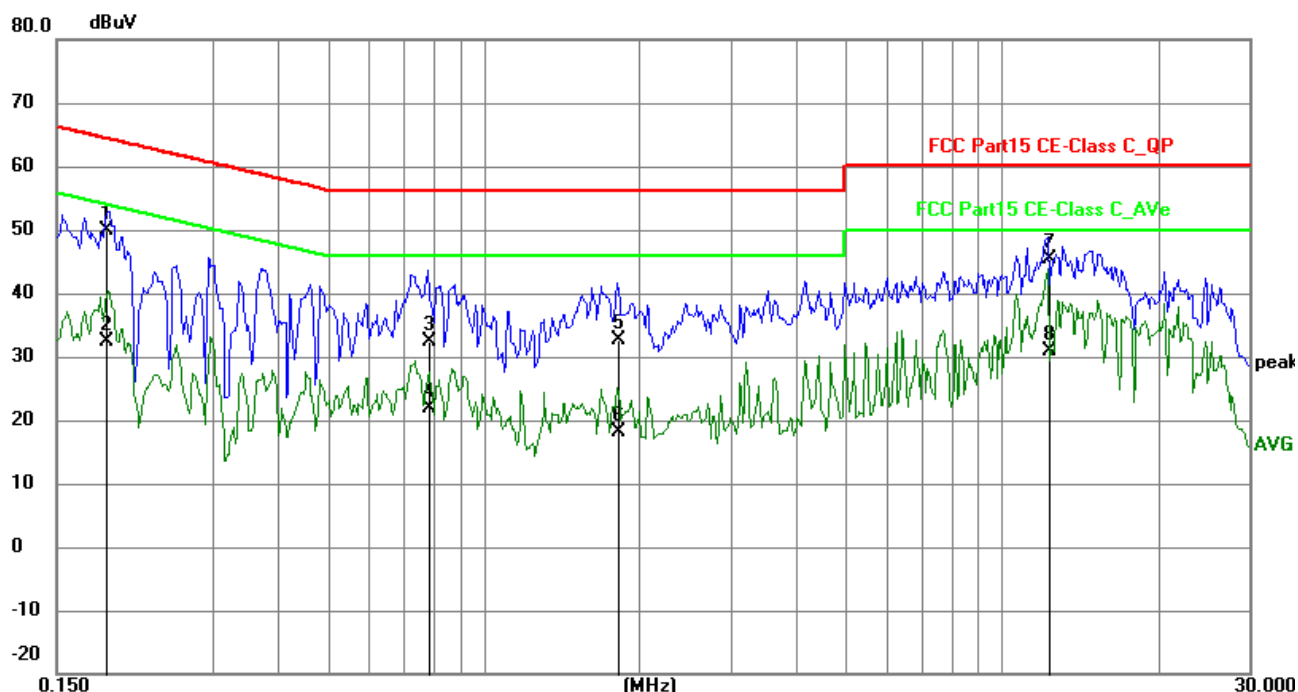
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 2**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1869	40.13	9.76	49.89	64.17	-14.28	QP	P
2	0.1869	22.68	9.76	32.44	54.17	-21.73	AVG	P
3	0.7818	22.56	9.78	32.34	56.00	-23.66	QP	P
4	0.7818	12.03	9.78	21.81	46.00	-24.19	AVG	P
5	1.8153	22.91	9.80	32.71	56.00	-23.29	QP	P
6	1.8153	8.39	9.80	18.19	46.00	-27.81	AVG	P
7	12.3235	35.16	10.26	45.42	60.00	-14.58	QP	P
8	12.3235	20.68	10.26	30.94	50.00	-19.06	AVG	P

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**D: Conducted Emission on Neutral Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

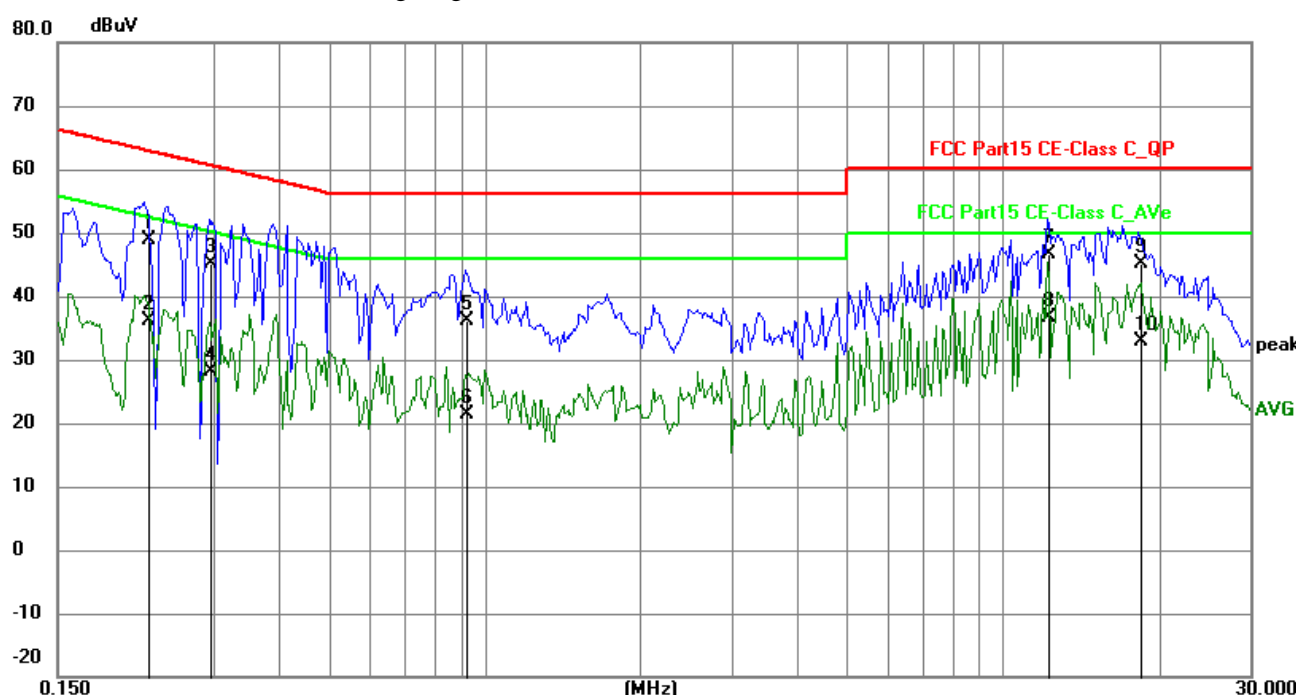
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 2**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2248	39.13	9.75	48.88	62.64	-13.76	QP	P
2	0.2248	26.31	9.75	36.06	52.64	-16.58	AVG	P
3	0.2943	35.48	9.76	45.24	60.40	-15.16	QP	P
4	0.2943	18.36	9.76	28.12	50.40	-22.28	AVG	P
5	0.9222	26.35	9.79	36.14	56.00	-19.86	QP	P
6	0.9222	11.48	9.79	21.27	46.00	-24.73	AVG	P
7	12.2313	36.35	10.26	46.61	60.00	-13.39	QP	P
8	12.2313	26.39	10.26	36.65	50.00	-13.35	AVG	P
9	18.3540	34.56	10.58	45.14	60.00	-14.86	QP	P
10	18.3450	22.34	10.58	32.92	50.00	-17.08	AVG	P

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**E: Conducted Emission on Live Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

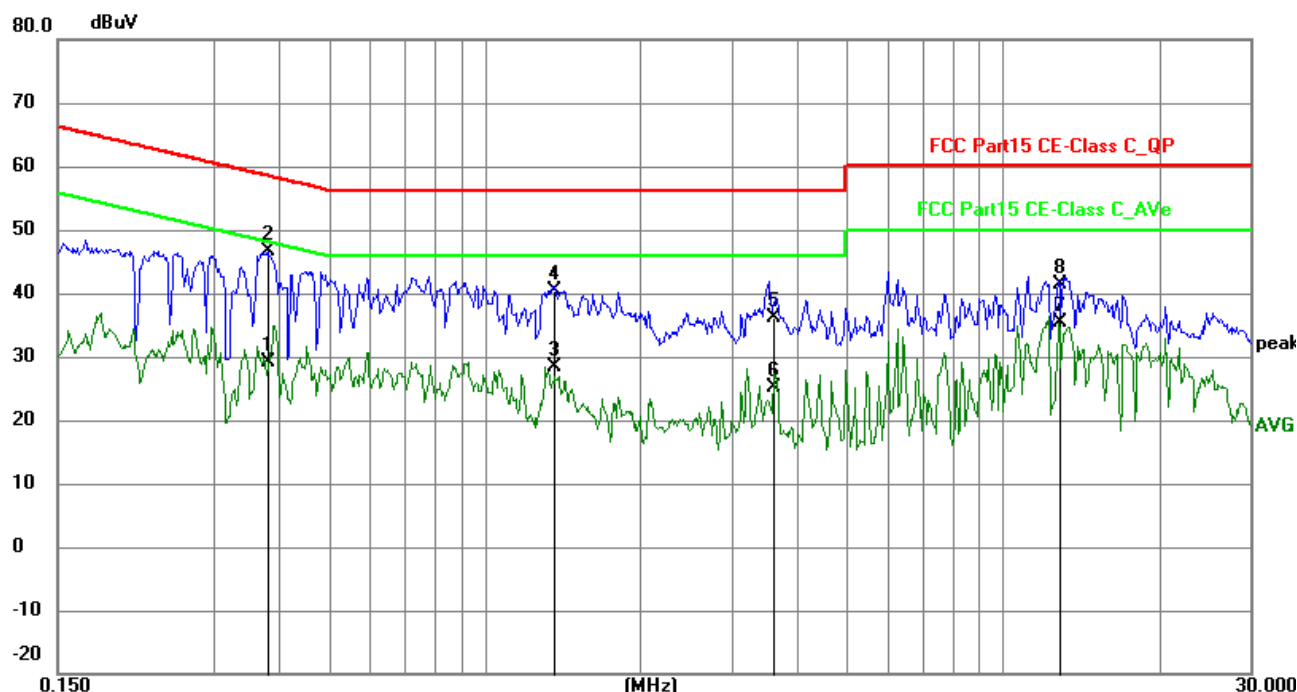
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 3**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.3810	19.46	9.76	29.22	48.26	-19.04	AVG	P
2	0.3810	36.85	9.76	46.61	58.26	-11.65	peak	P
3	1.3665	18.69	9.79	28.48	46.00	-17.52	AVG	P
4	1.3665	30.65	9.79	40.44	56.00	-15.56	peak	P
5	3.6084	26.31	9.87	36.18	56.00	-19.82	peak	P
6	3.6084	15.19	9.87	25.06	46.00	-20.94	AVG	P
7	12.8358	25.00	10.28	35.28	50.00	-14.72	AVG	P
8	12.8358	31.06	10.28	41.34	60.00	-18.66	peak	P

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**F: Conducted Emission on Neutral Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

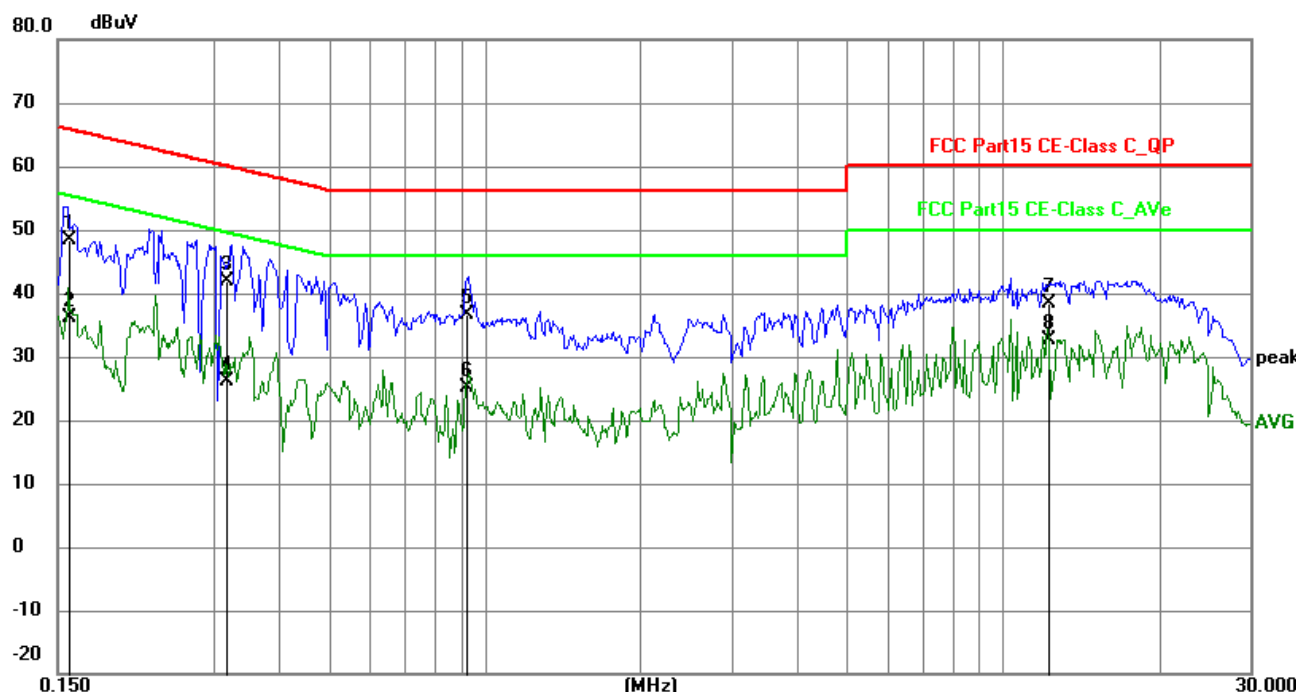
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 3**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1576	38.64	9.78	48.42	65.59	-17.17	QP	P
2	0.1576	26.35	9.78	36.13	55.59	-19.46	AVG	P
3	0.3169	32.06	9.76	41.82	59.79	-17.97	QP	P
4	0.3169	16.49	9.76	26.25	49.79	-23.54	AVG	P
5	0.9222	26.94	9.79	36.73	56.00	-19.27	QP	P
6	0.9222	15.34	9.79	25.13	46.00	-20.87	AVG	P
7	12.2313	28.19	10.26	38.45	60.00	-21.55	QP	P
8	12.2313	22.34	10.26	32.60	50.00	-17.40	AVG	P

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**G Conducted Emission on Live Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

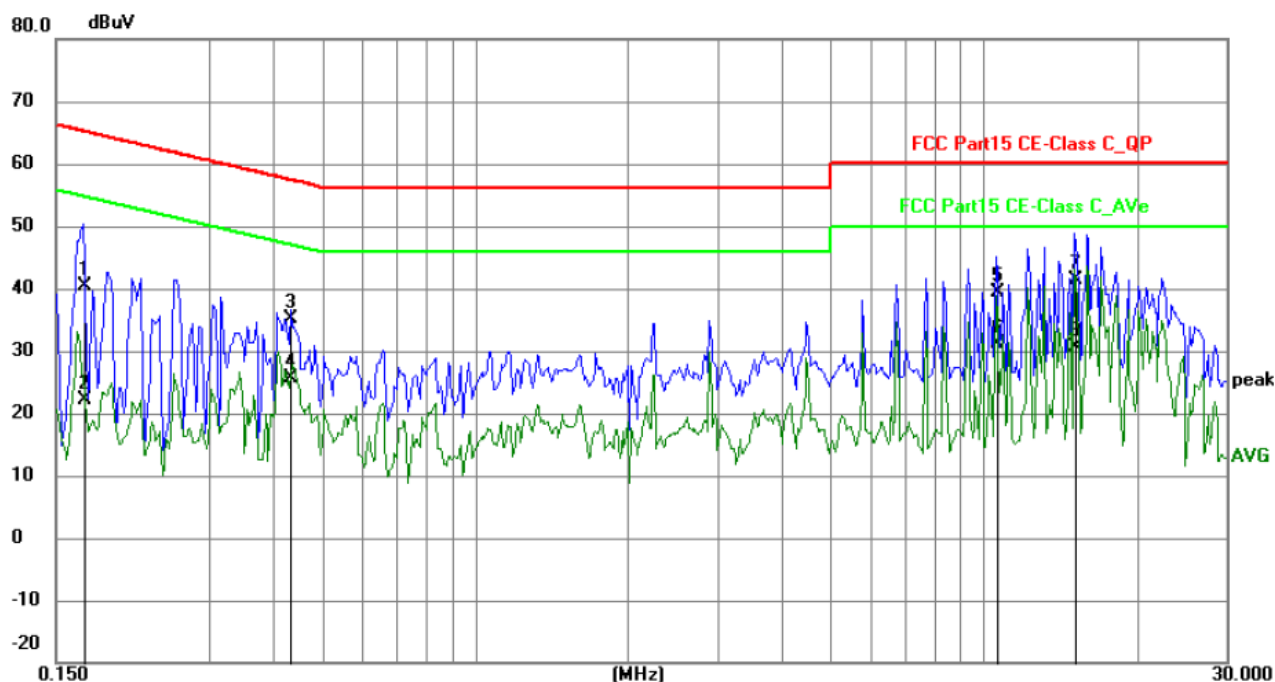
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 5**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1695	30.65	9.77	40.42	64.98	-24.56	QP	P
2	0.1695	12.41	9.77	22.18	54.98	-32.80	AVG	P
3	0.4347	25.24	9.77	35.01	57.16	-22.15	QP	P
4	0.4347	15.76	9.77	25.53	47.16	-21.63	AVG	P
5	10.5894	29.21	10.19	39.40	60.00	-20.60	QP	P
6	10.5894	20.91	10.19	31.10	50.00	-18.90	AVG	P
7	15.0783	31.08	10.38	41.46	60.00	-18.54	QP	P
8	15.0783	20.29	10.38	30.67	50.00	-19.33	AVG	P

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**H: Conducted Emission on Neutral Terminal (150kHz to 30MHz)**

**EUT Operating Environment**

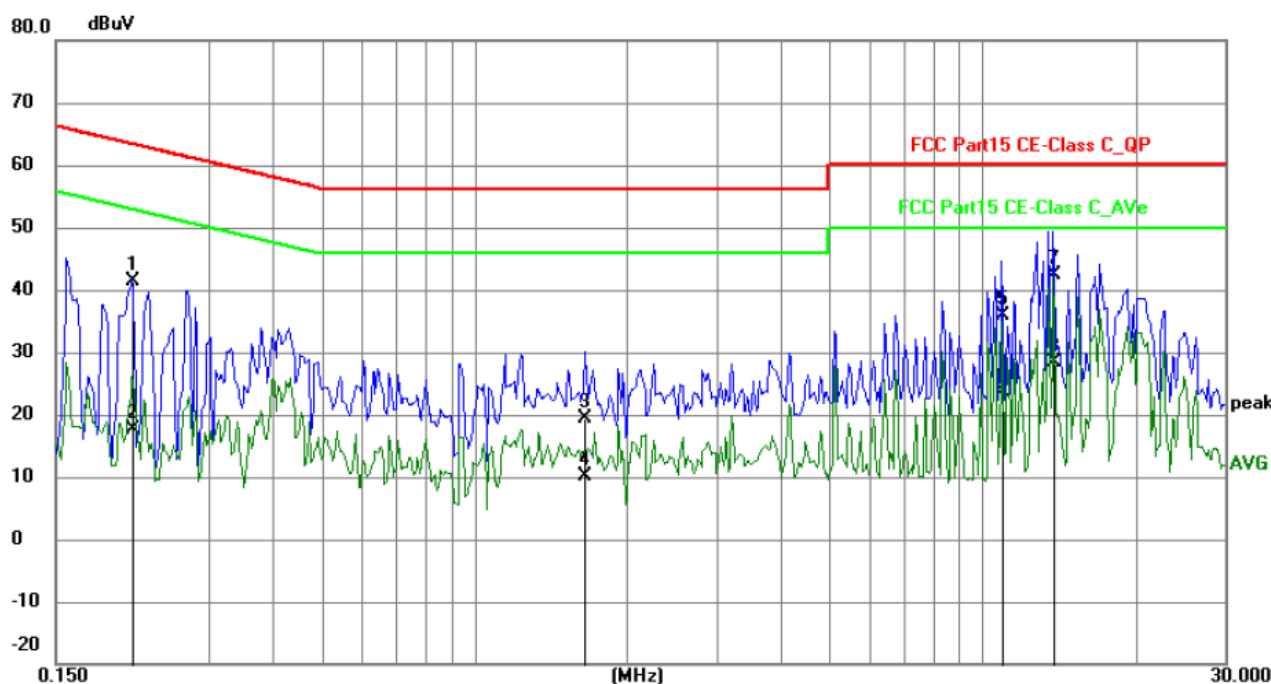
Temperature: 25°C Humidity:75%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Keep Transmitting**

**Mode: Mode 5**

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2124	31.56	9.75	41.31	63.11	-21.80	QP	P
2	0.2124	7.88	9.75	17.63	53.11	-35.48	AVG	P
3	1.6515	9.66	9.80	19.46	56.00	-36.54	QP	P
4	1.6515	0.44	9.80	10.24	46.00	-35.76	AVG	P
5	10.9053	25.77	10.20	35.97	60.00	-24.03	QP	P
6	10.9053	13.34	10.20	23.54	50.00	-26.46	AVG	P
7	13.7952	32.12	10.33	42.45	60.00	-17.55	QP	P
8	13.7952	18.14	10.33	28.47	50.00	-21.53	AVG	P

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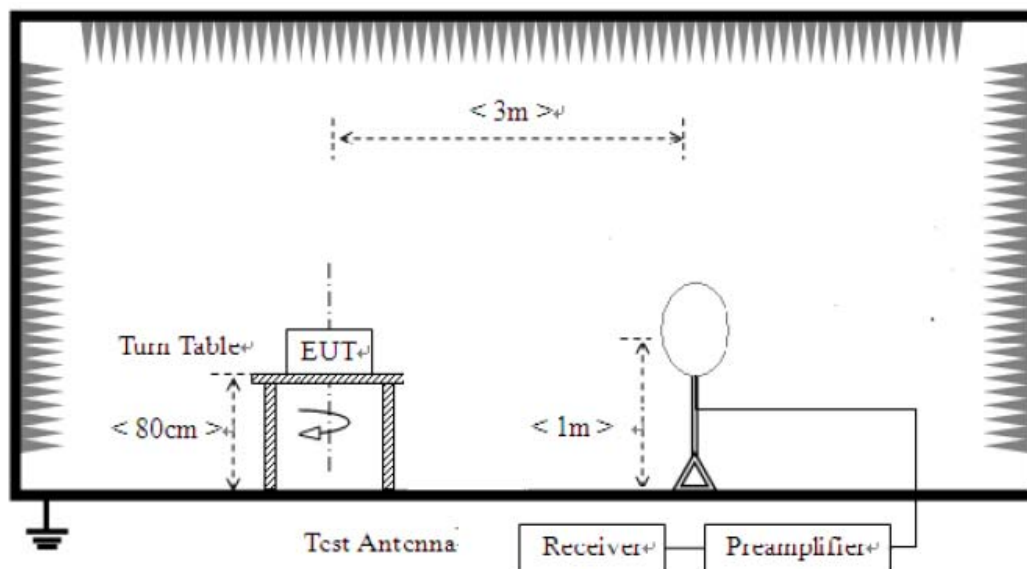
## 6 Radiated Emission Test

### 6.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at TIMEWAY EMC Laboratory. This site is on file with the FCC laboratory division, Registration No.744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 9 kHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with RBW=120 kHz/VBW=300 kHz; All readings from 9 kHz to 30 MHz are quasi-peak values with RBW=10 kHz/VBW=30 kHz. For the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission test in these three bands are based on measurements employing an average detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

### Block diagram of Test setup

#### 9kHz-30MHz



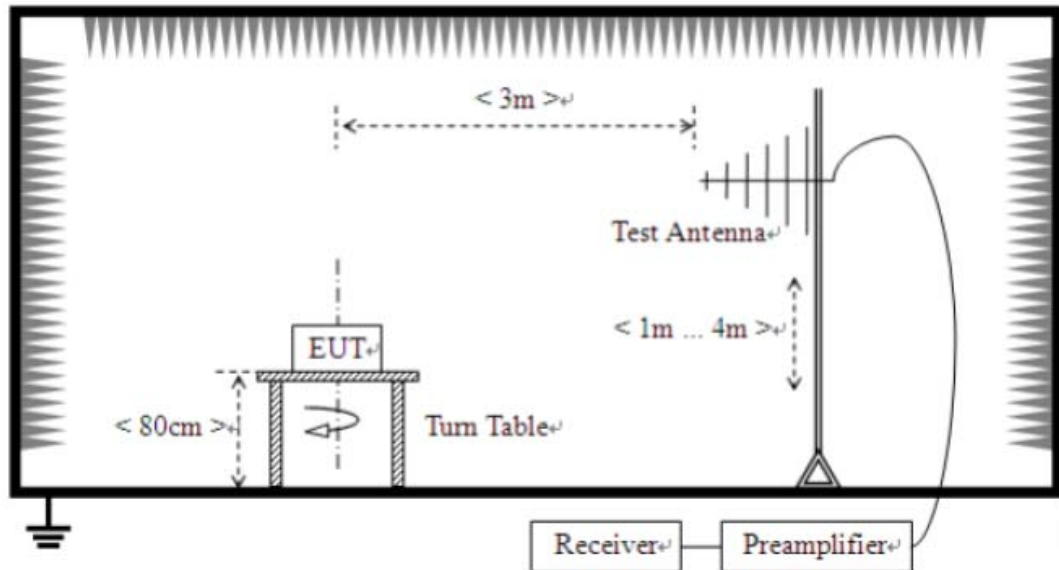
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### 30MHz-1000MHz



#### 6.2 Configuration of The EUT

Same as section 5.3 of this report

#### 6.3 EUT Operating Condition

Same as section 5.4 of this report.

#### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

### B. Frequencies in restricted band are compiled to limit on Paragraph 15.209.

#### Limits for frequency below 30MHz

Frequency Range (MHz)	Distance (m)	Field strength (V/m)
0.009-0.490	300	$2400/F(\text{kHz})$
0.490-1.705	30	$24000/F(\text{kHz})$
1.705-30	30	30

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**Limits for frequency above 30MHz**

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

- Note:
1. RF Voltage (dBuV) = 20 log RF Voltage ( $\mu$ V)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
  4. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

## 6.5 Test result

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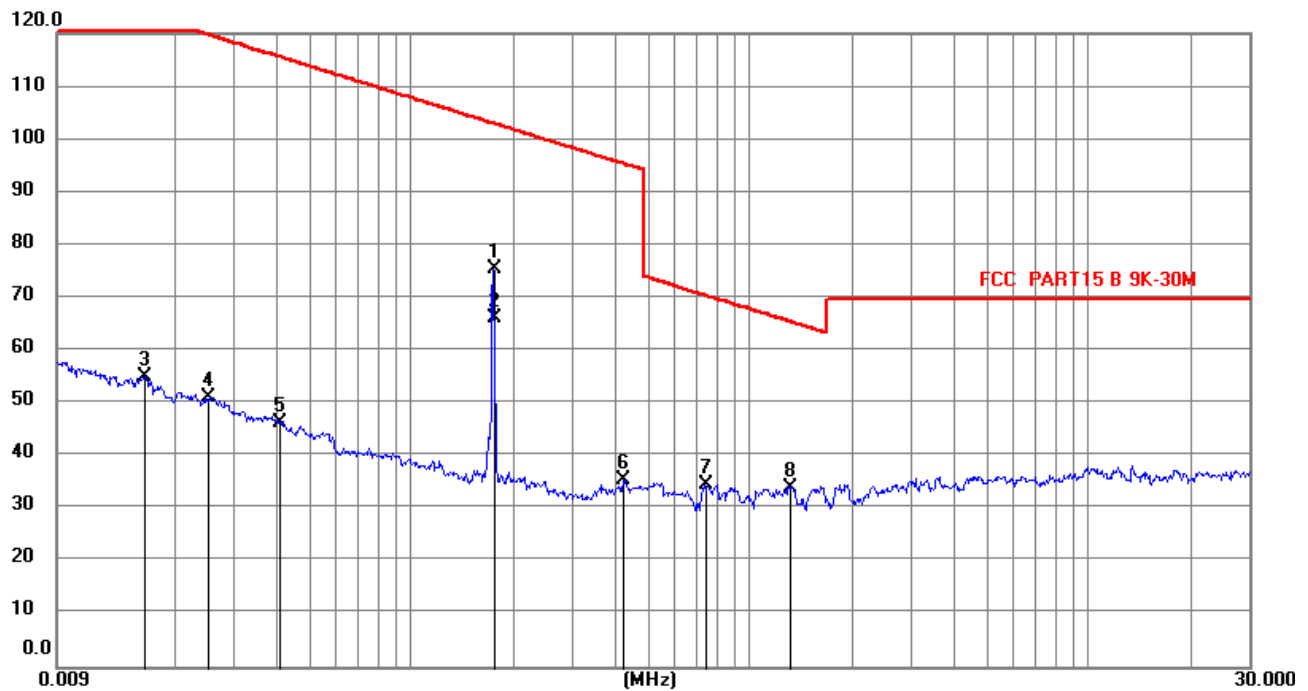
**Mode: Mode 1**

**Measurement data:**

**Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80**

**Limit dBuV/m @3m = Limit dBuV/m @30m + 40**

**9 kHz~30 MHz**



No.	Frequency (MHz)	Reading ( )	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1753	65.56	9.77	75.33	102.68	-27.35	peak	P
2	0.1753	56.49	9.77	66.26	102.68	-36.42	AVG	P
3	0.0164	44.70	10.23	54.93	123.14	-68.21	peak	P
4	0.0252	40.94	10.26	51.20	119.43	-68.23	peak	P
5	0.0407	36.23	9.97	46.20	115.29	-69.09	peak	P
6	0.4238	25.86	9.76	35.62	95.05	-59.43	peak	P
7	0.7469	24.77	9.78	34.55	70.15	-35.60	peak	P
8	1.3204	24.19	9.79	33.98	65.21	-31.23	peak	P

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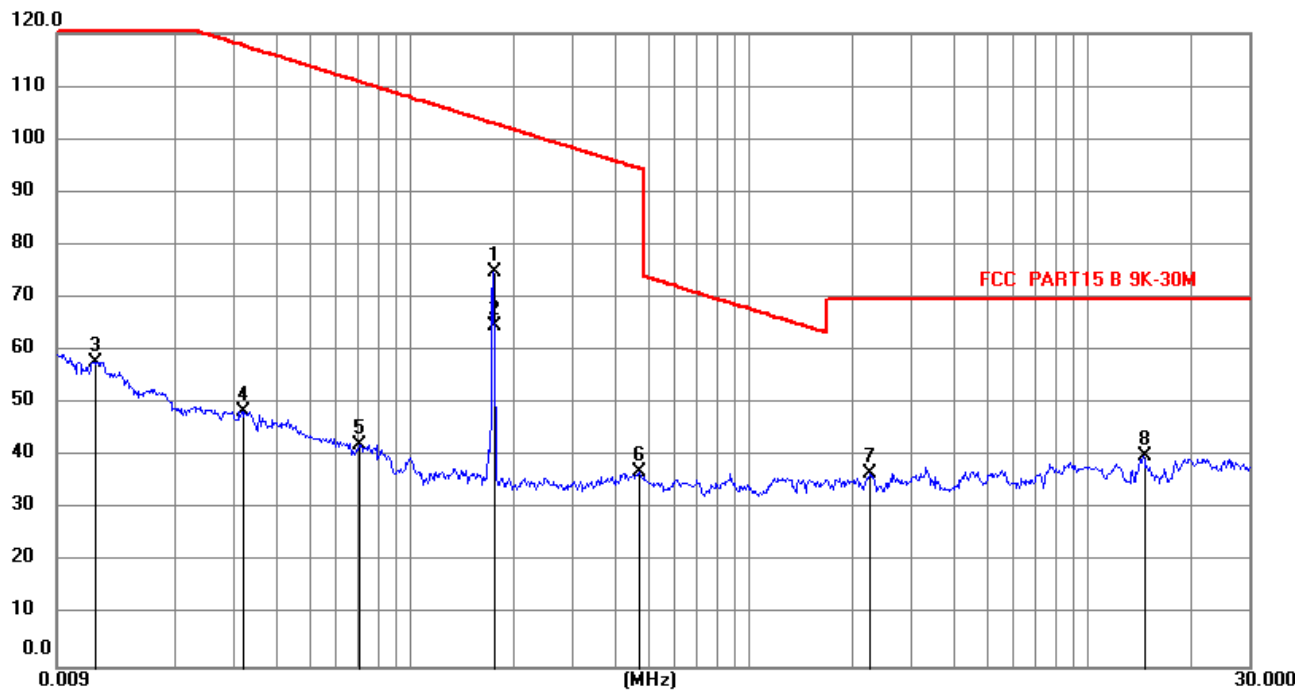
**Mode: Mode 2**

**Measurement data:**

**Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80**

**Limit dBuV/m @3m = Limit dBuV/m @30m + 40**

**9 kHz~30 MHz**



No.	Frequency (MHz)	Reading ( )	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1753	65.06	9.77	74.83	102.68	-27.85	peak	P
2	0.1753	54.95	9.77	64.72	102.68	-37.96	AVG	P
3	0.0117	47.83	10.06	57.89	126.06	-68.17	peak	P
4	0.0320	38.45	10.14	48.59	117.37	-68.78	peak	P
5	0.0704	32.33	9.76	42.09	110.56	-68.47	peak	P
6	0.4702	27.24	9.77	37.01	94.16	-57.15	peak	P
7	2.2659	27.08	9.81	36.89	69.51	-32.62	peak	P
8	14.6250	29.68	10.36	40.04	69.57	-29.53	peak	P

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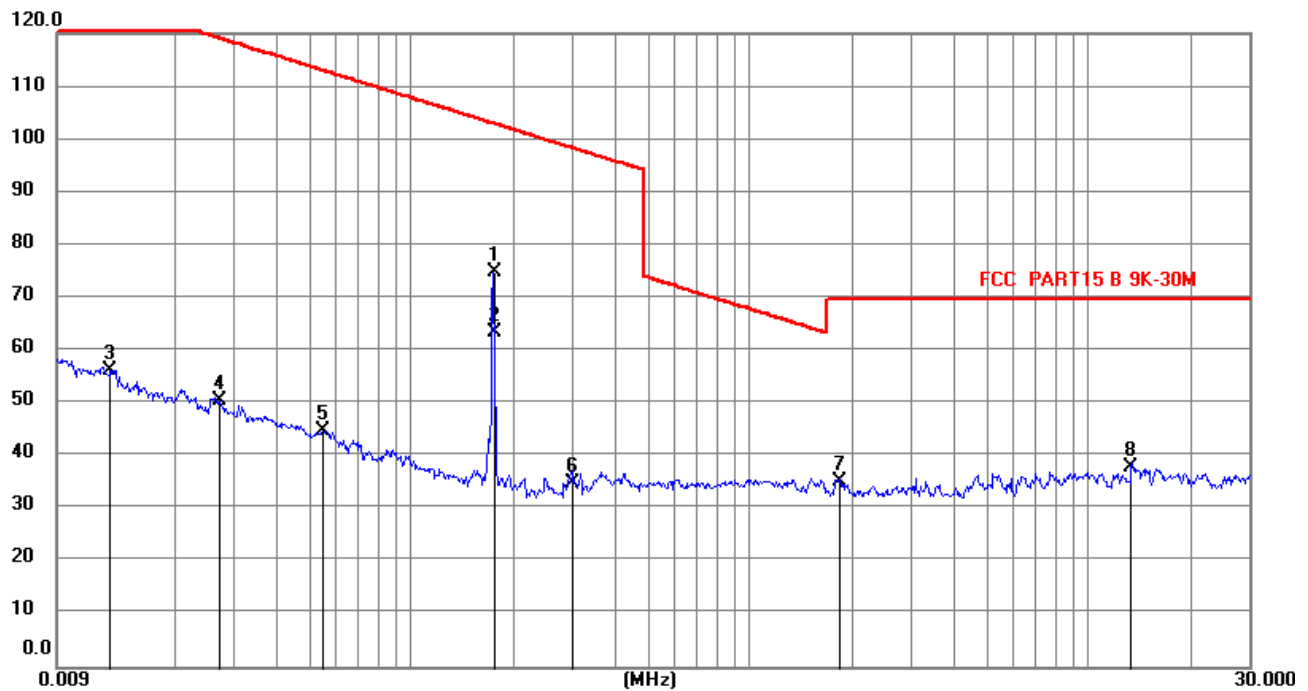
**Mode: Mode 3**

**Measurement data:**

**Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80**

**Limit dBuV/m @3m = Limit dBuV/m @30m + 40**

**9 kHz~30 MHz**



No.	Frequency (MHz)	Reading ( )	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1753	65.06	9.77	74.83	102.68	-27.85	peak	P
2	0.1753	53.57	9.77	63.34	102.68	-39.34	AVG	P
3	0.0128	46.18	10.10	56.28	125.28	-69.00	peak	P
4	0.0273	40.47	10.22	50.69	118.74	-68.05	peak	P
5	0.0548	35.16	9.79	44.95	112.72	-67.77	peak	P
6	0.3004	25.32	9.76	35.08	98.03	-62.95	peak	P
7	1.8387	25.39	9.80	35.19	69.50	-34.31	peak	P
8	13.3750	27.57	10.31	37.88	69.57	-31.69	peak	P

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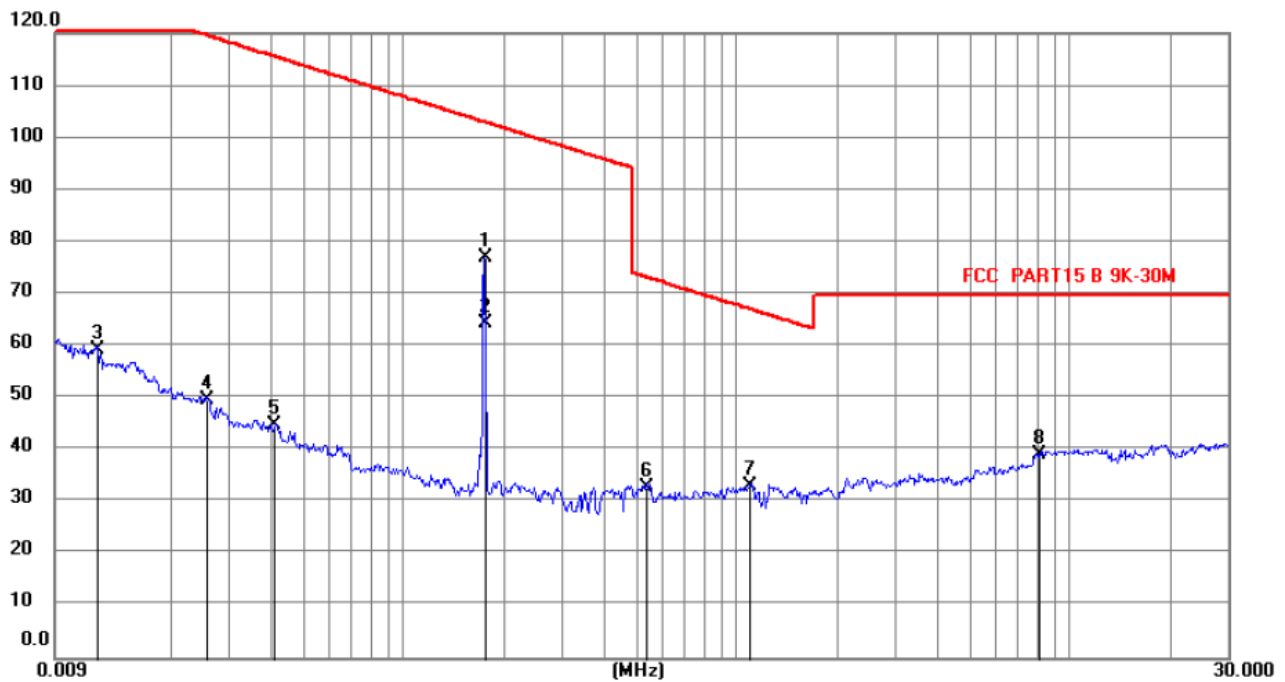
**Mode: Mode 5**

**Measurement data:**

**Note: Limit dBuV/m @3m = Limit dBuV/m @300m+ 80**

**Limit dBuV/m @3m = Limit dBuV/m @30m + 40**

**9 kHz~30 MHz**



No.	Frequency (MHz)	Reading ( )	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F
1	0.1753	67.12	9.77	76.89	102.68	-25.79	peak	P
2	0.1753	54.67	9.77	64.44	102.68	-38.24	AVG	P
3	0.0120	49.16	10.07	59.23	125.84	-66.61	peak	P
4	0.0258	39.51	10.25	49.76	119.23	-69.47	peak	P
5	0.0410	34.74	9.97	44.71	115.23	-70.52	peak	P
6	0.5332	23.23	9.77	33.00	73.07	-40.07	peak	P
7	1.0962	23.44	9.79	33.23	66.83	-33.60	peak	P
8	8.0625	28.97	10.06	39.03	69.55	-30.52	peak	P

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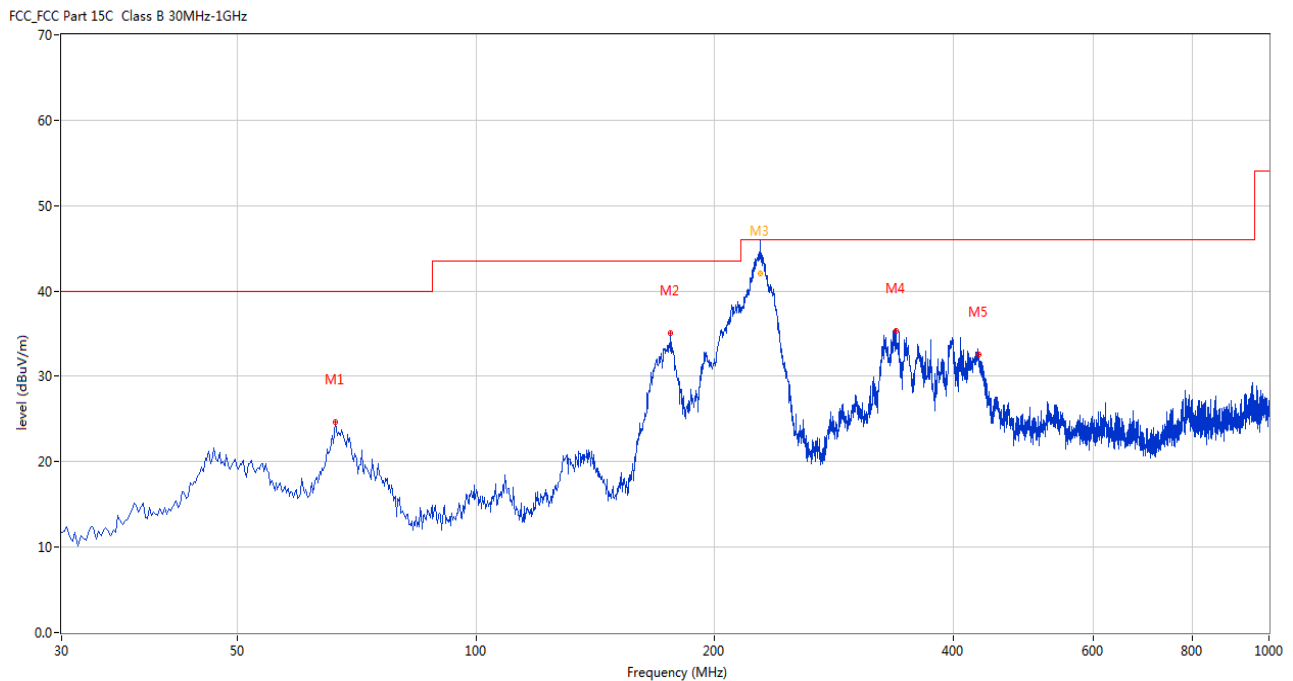
## A. General Radiated Emission Data

### Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 1

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	66.366	24.64	-14.08	40.0	-15.36	Peak	347.00	100	Horizontal	Pass
2	175.949	35.09	-15.62	43.5	-8.41	Peak	26.00	100	Horizontal	Pass
3	228.364	45.36	-12.75	46.0	-0.64	Peak	297.00	134	Horizontal	Pass
3*	228.364	42.04	-12.75	46.0	-3.96	QP	297.00	134	Horizontal	Pass
4	338.868	35.28	-9.77	46.0	-10.72	Peak	240.00	100	Horizontal	Pass
5	430.510	32.56	-7.98	46.0	-13.44	Peak	33.00	100	Horizontal	Pass

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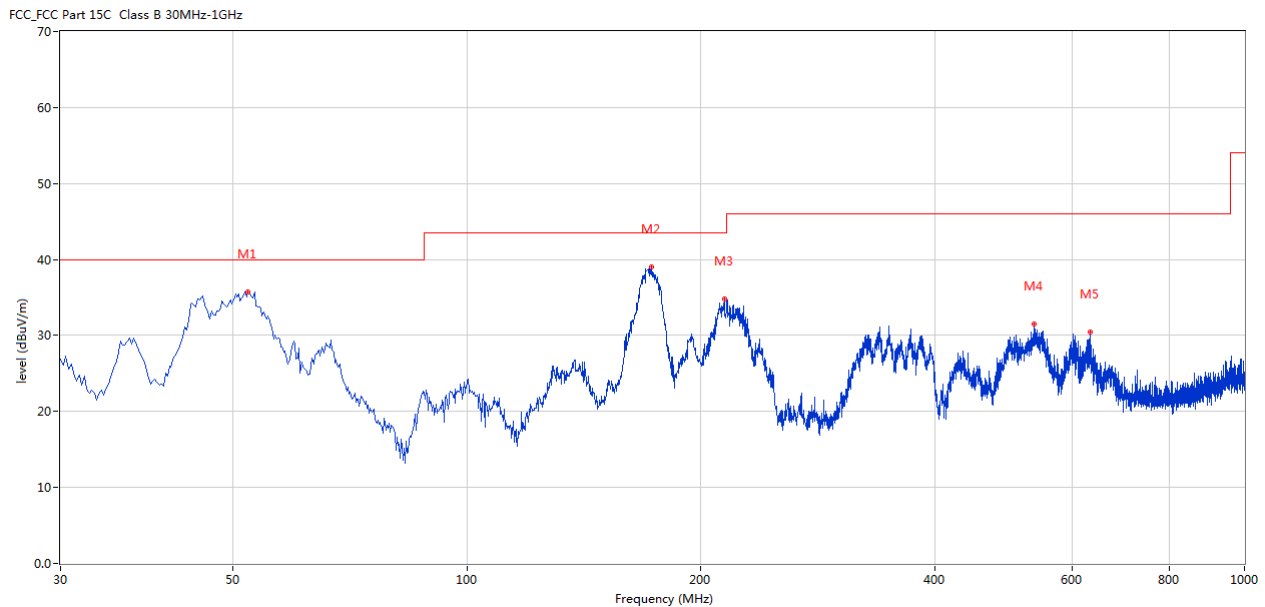
## B. General Radiated Emission Data

### Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 1

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	52.304	35.77	-11.45	40.0	-4.23	Peak	221.00	100	Vertical	Pass
2	172.797	39.06	-15.93	43.5	-4.44	Peak	279.00	100	Vertical	Pass
3	214.496	34.78	-13.58	43.5	-8.72	Peak	221.00	100	Vertical	Pass
4	536.698	31.53	-6.40	46.0	-14.47	Peak	337.00	100	Vertical	Pass
5	632.704	30.44	-4.84	46.0	-15.56	Peak	285.00	100	Vertical	Pass

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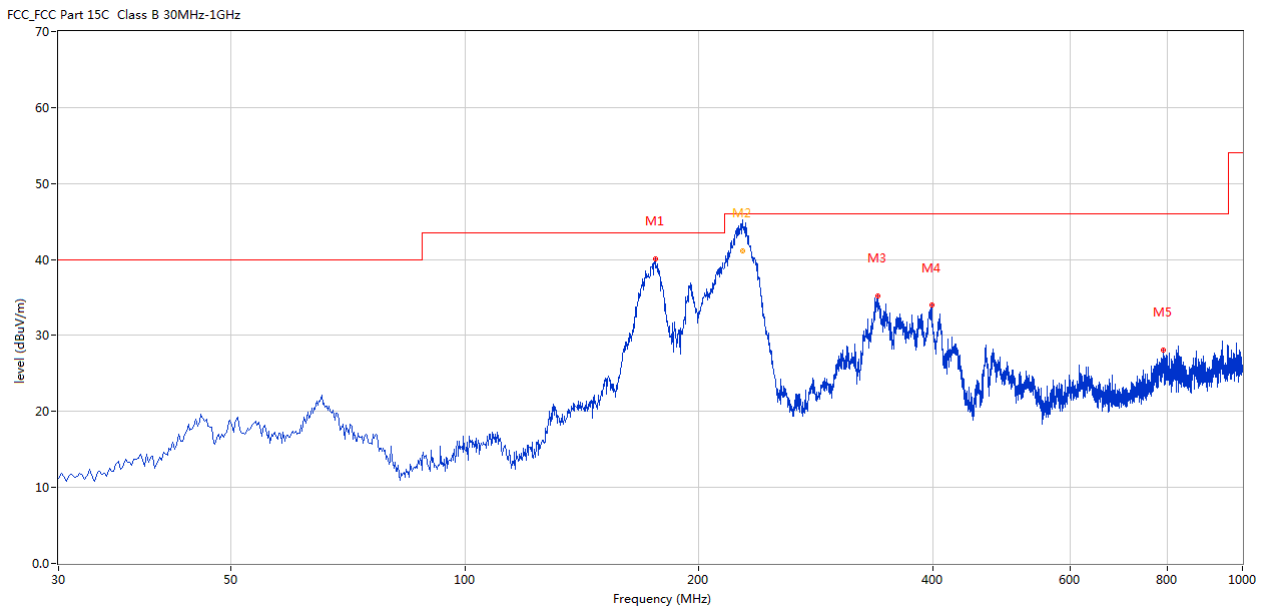
## C. General Radiated Emission Data

### Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 2

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	175.706	40.10	-15.59	43.5	-3.40	Peak	200.00	100	Horizontal	Pass
2	227.652	45.63	-12.79	46.0	-0.37	Peak	272.00	127	Horizontal	Pass
2*	227.652	41.16	-12.79	46.0	-4.84	QP	272.00	127	Horizontal	Pass
3	339.595	35.16	-9.80	46.0	-10.84	Peak	213.00	100	Horizontal	Pass
4	398.508	33.95	-8.65	46.0	-12.05	Peak	239.00	100	Horizontal	Pass
5	790.290	28.09	-3.21	46.0	-17.91	Peak	272.00	100	Horizontal	Pass

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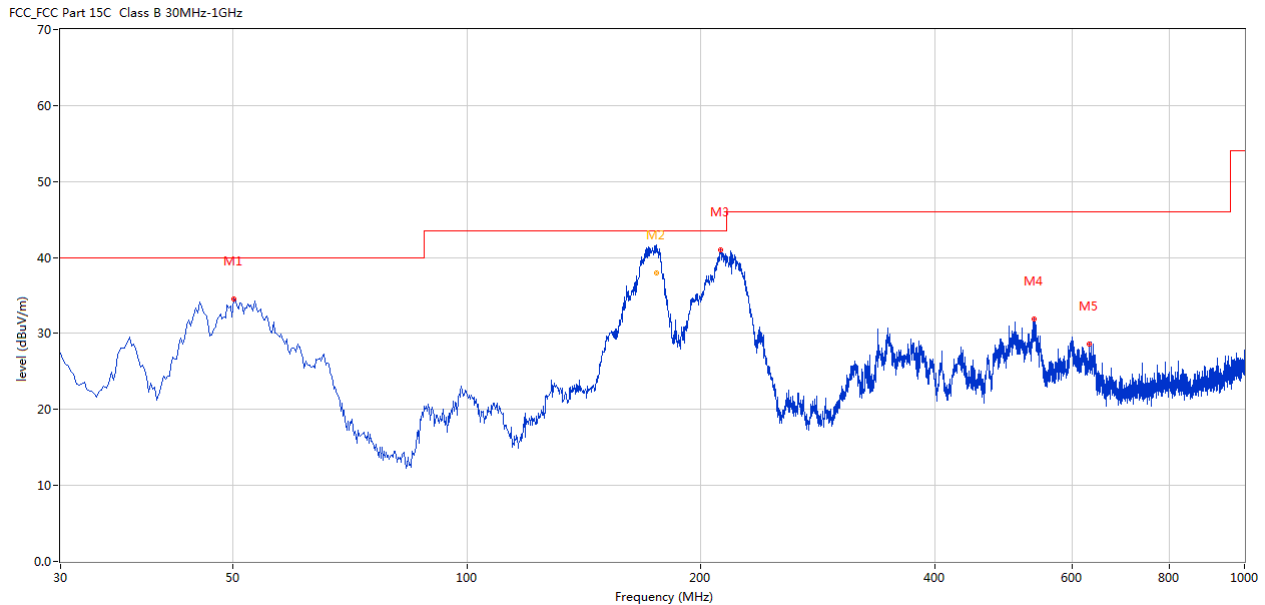
## D. General Radiated Emission Data

### Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 2

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	50.122	34.54	-11.38	40.0	-5.46	Peak	250.00	100	Vertical	Pass
2	175.376	41.31	-15.57	43.5	-2.19	Peak	37.00	112	Vertical	Pass
2*	175.376	37.95	-15.57	43.5	-5.55	QP	37.00	112	Vertical	Pass
3	212.072	41.05	-13.68	43.5	-2.45	Peak	114.00	100	Vertical	Pass
4	536.213	31.88	-6.41	46.0	-14.12	Peak	94.00	100	Vertical	Pass
5	631.007	28.56	-4.90	46.0	-17.44	Peak	250.00	100	Vertical	Pass

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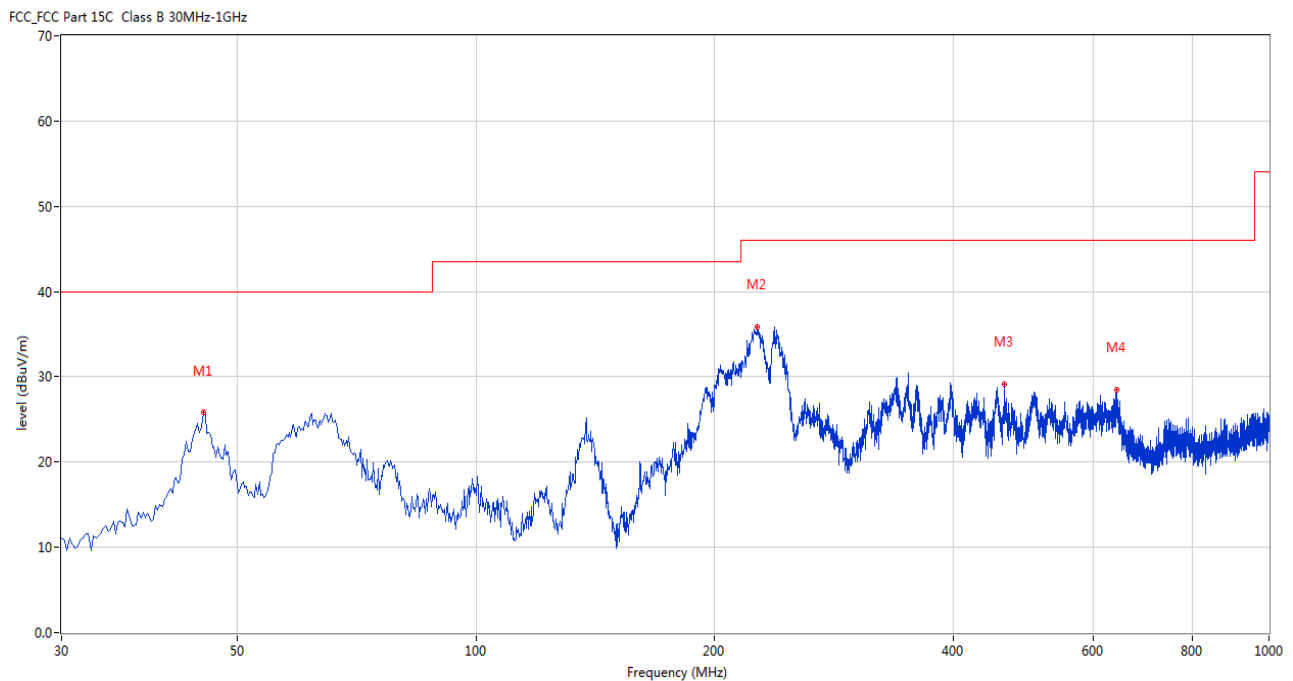
## E. General Radiated Emission Data

### Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 3

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	45.274	25.78	-11.40	40.0	-14.22	Peak	11.00	100	Horizontal	Pass
2	226.133	35.87	-12.83	46.0	-10.13	Peak	38.00	100	Horizontal	Pass
3	464.209	29.16	-7.75	46.0	-16.84	Peak	2.00	100	Horizontal	Pass
4	642.644	28.53	-4.67	46.0	-17.47	Peak	17.00	100	Horizontal	Pass

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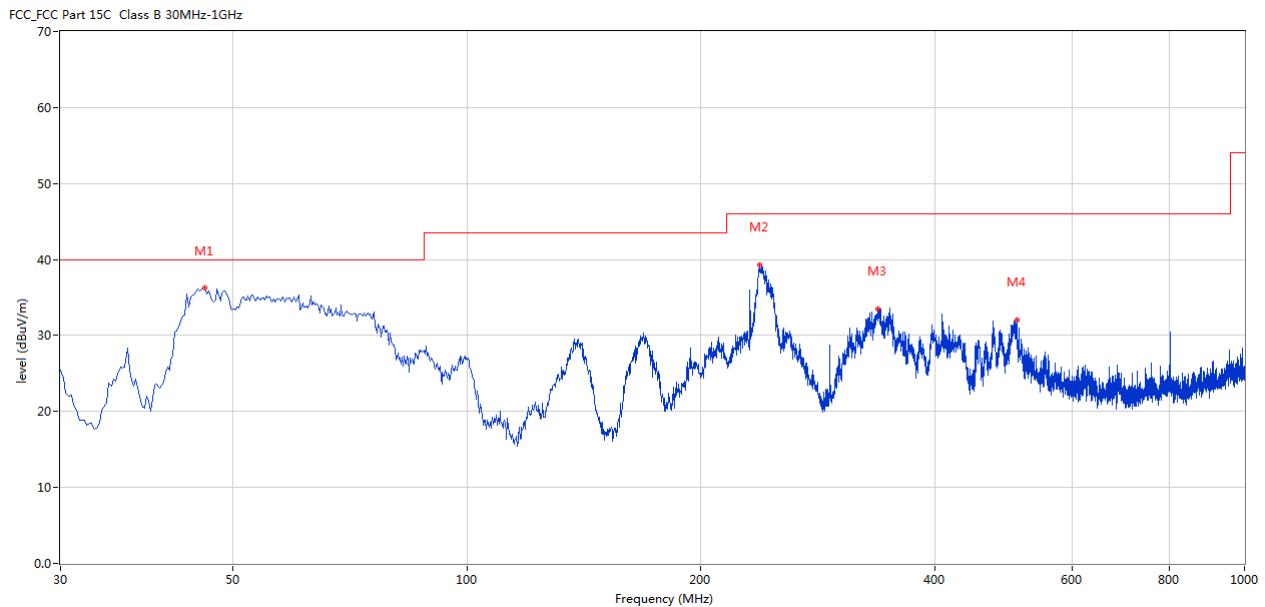
## F. General Radiated Emission Data

### Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 3

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	46.001	36.21	-11.40	40.0	-3.79	Peak	291.00	100	Vertical	Pass
2	238.013	39.26	-12.46	46.0	-6.74	Peak	260.00	100	Vertical	Pass
3	337.656	33.50	-9.81	46.0	-12.50	Peak	156.00	100	Vertical	Pass
4	509.788	32.04	-6.84	46.0	-13.96	Peak	271.00	100	Vertical	Pass

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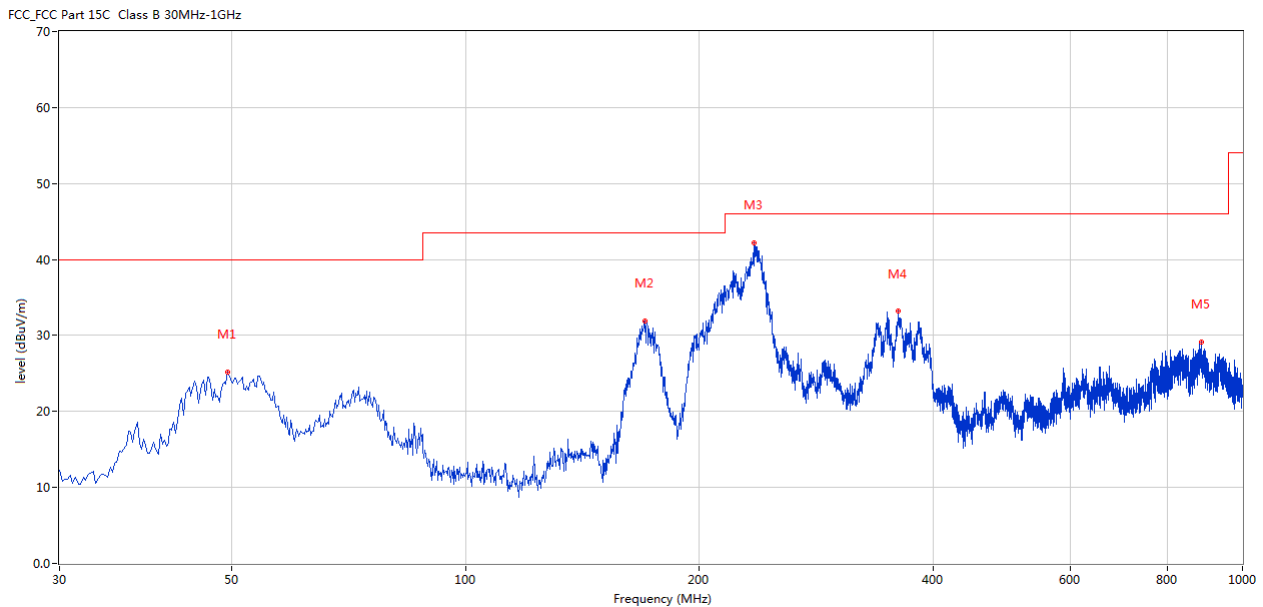
## G. General Radiated Emission Data

### Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 5

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	49.395	25.18	-11.28	40.0	-14.82	Peak	1.00	100	Horizontal	Pass
2	170.372	31.90	-15.95	43.5	-11.60	Peak	40.00	100	Horizontal	Pass
3	235.346	42.18	-12.51	46.0	-3.82	Peak	6.00	100	Horizontal	Pass
4	360.930	33.16	-9.52	46.0	-12.84	Peak	11.00	100	Horizontal	Pass
5	885.811	29.16	-2.04	46.0	-16.84	Peak	29.00	100	Horizontal	Pass

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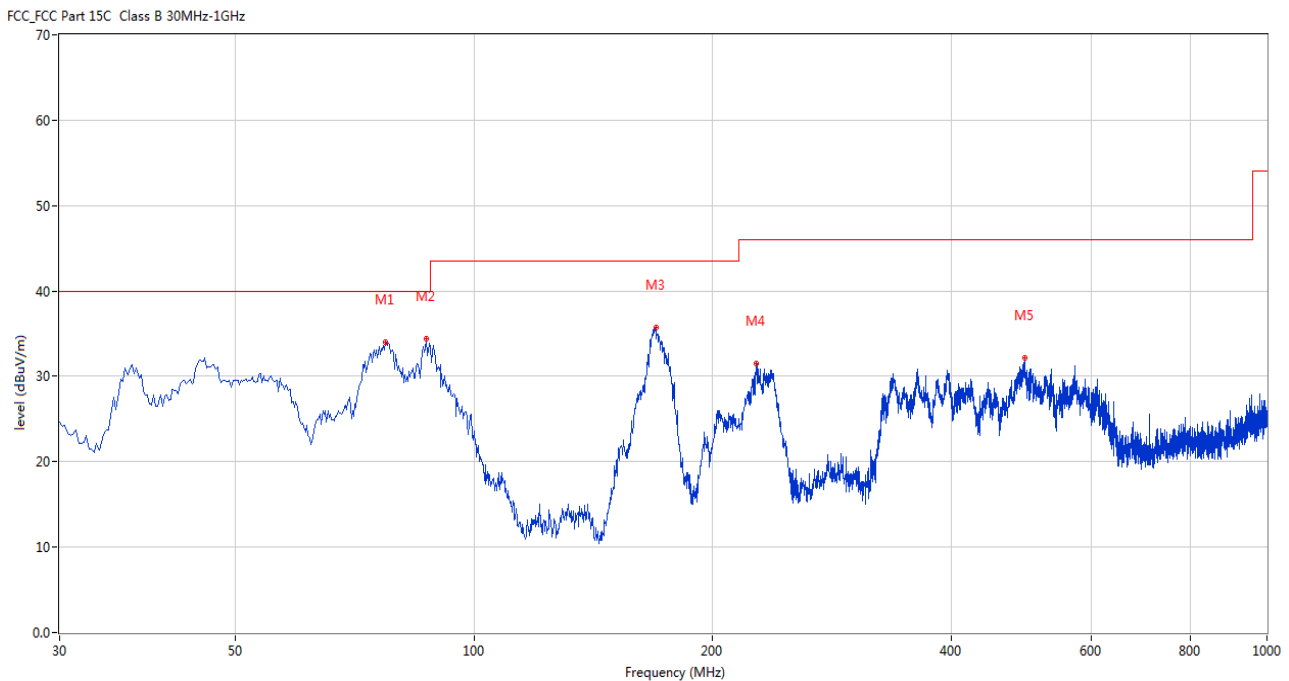
## H. General Radiated Emission Data

### Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Transmitting  
Mode: Mode 5

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	77.276	34.07	-17.58	40.0	-5.93	Peak	309.00	100	Vertical	Pass
2	86.973	34.38	-15.88	40.0	-5.62	Peak	309.00	100	Vertical	Pass
3	169.403	35.74	-16.09	43.5	-7.76	Peak	270.00	100	Vertical	Pass
4	227.103	31.53	-12.80	46.0	-14.47	Peak	267.00	100	Vertical	Pass
5	494.514	32.22	-7.12	46.0	-13.78	Peak	327.00	100	Vertical	Pass

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## 7.0 20dB Bandwidth Testing

### 7.1 Test Procedure

With the EUT's antenna attached, the EUT's 20dB Bandwidth was received by the test antenna which was connected to the spectrum analyzer with the START and STOP frequencies set to the EUT's operation band.

### 7.3 Test Data

#### Mode: Mode 1

Frequency (MHz)	20dB Bandwidth Emission (kHz)	Limit (kHz)	Result
0.175	3.3818	--	Pass

#### Mode: Mode 2

Frequency (MHz)	20dB Bandwidth Emission (kHz)	Limit (kHz)	Result
0.175	3.4569	--	Pass

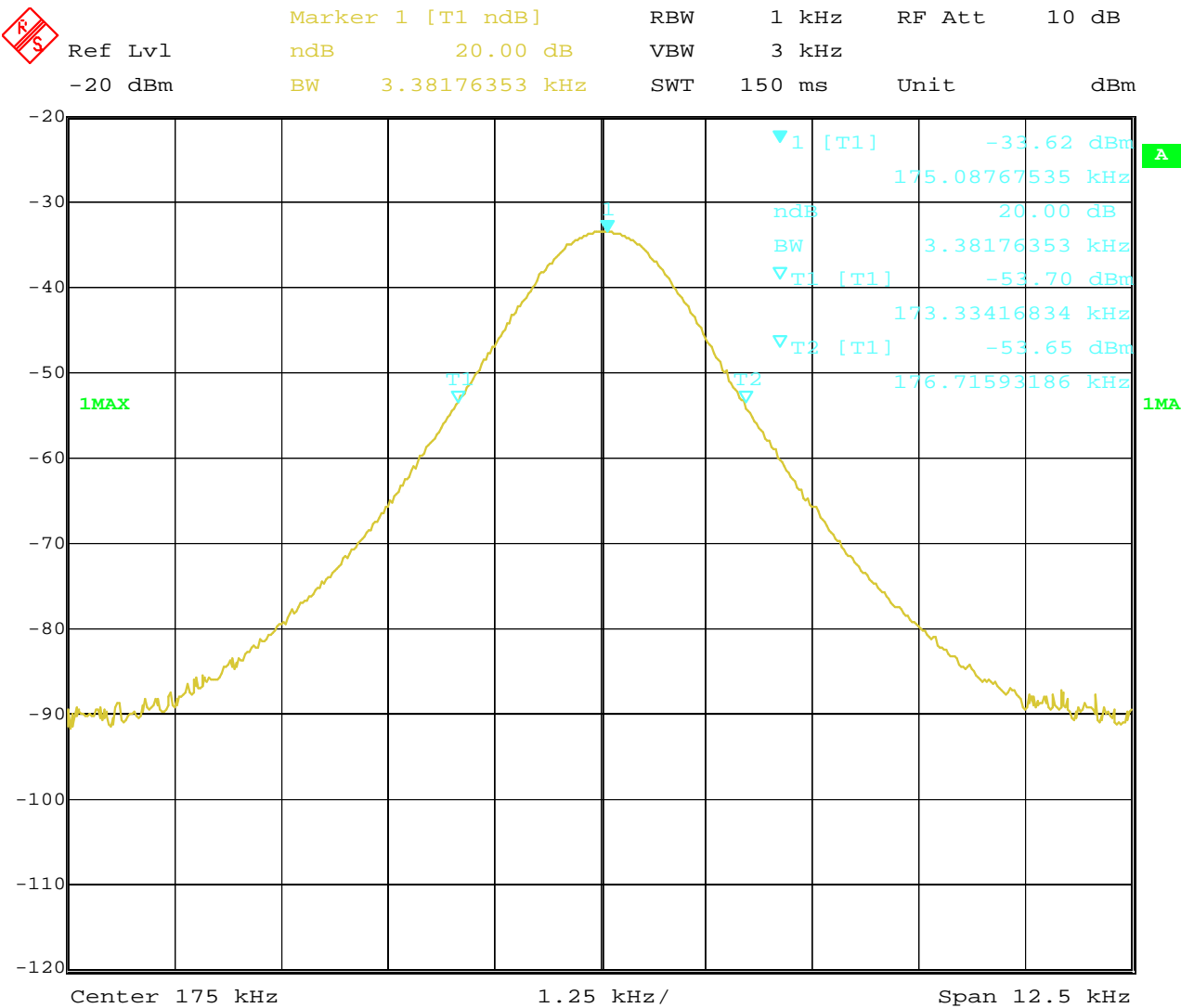
#### Mode: Mode 3

Frequency (MHz)	20dB Bandwidth Emission (kHz)	Limit (kHz)	Result
0.175	3.4569	--	Pass

Refer to attached plots:



20dB Bandwidth  
Mode: Mode 1

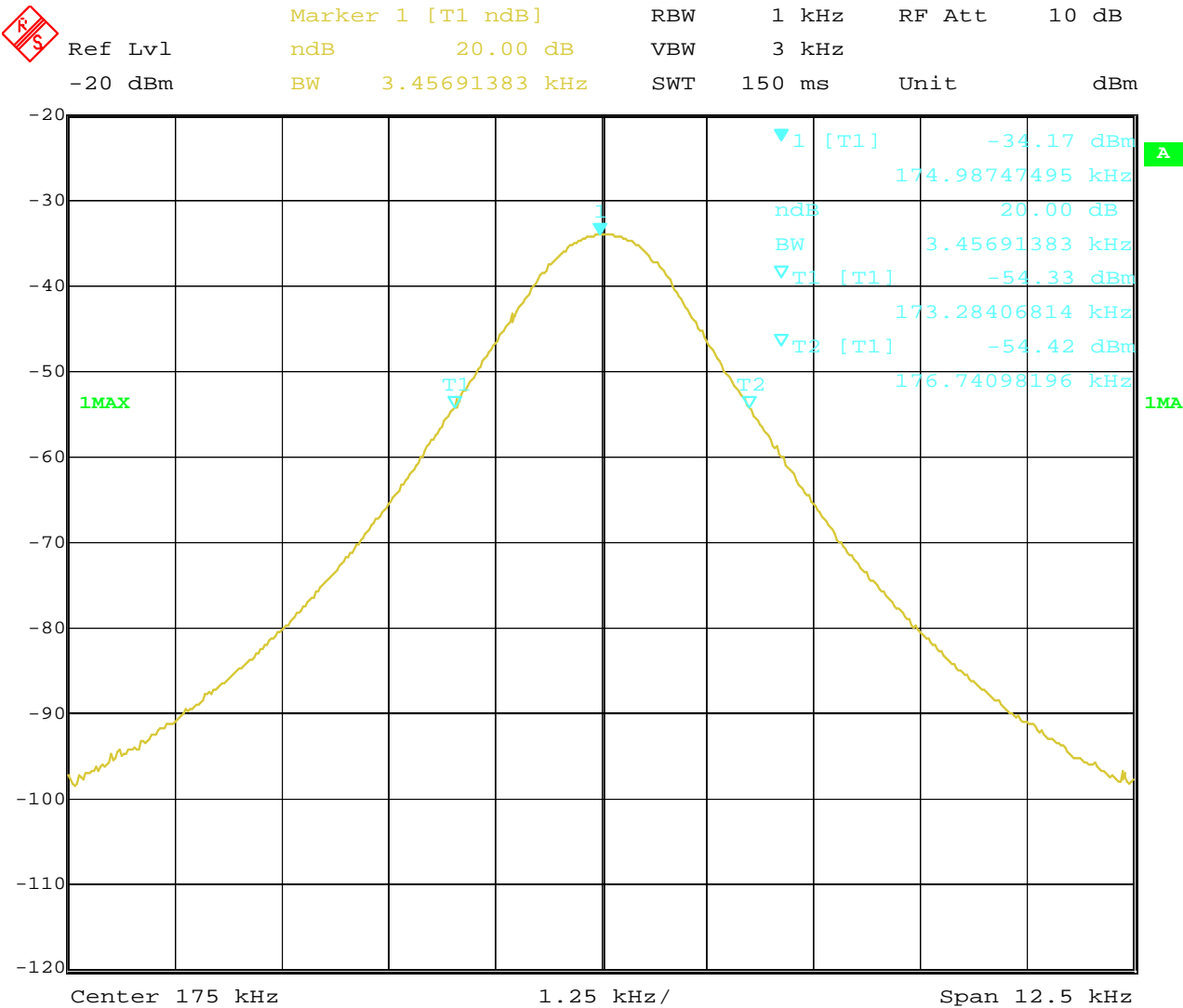


Date: 27.FEB.2022 18:19:09

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20dB Bandwidth  
Mode: Mode 2

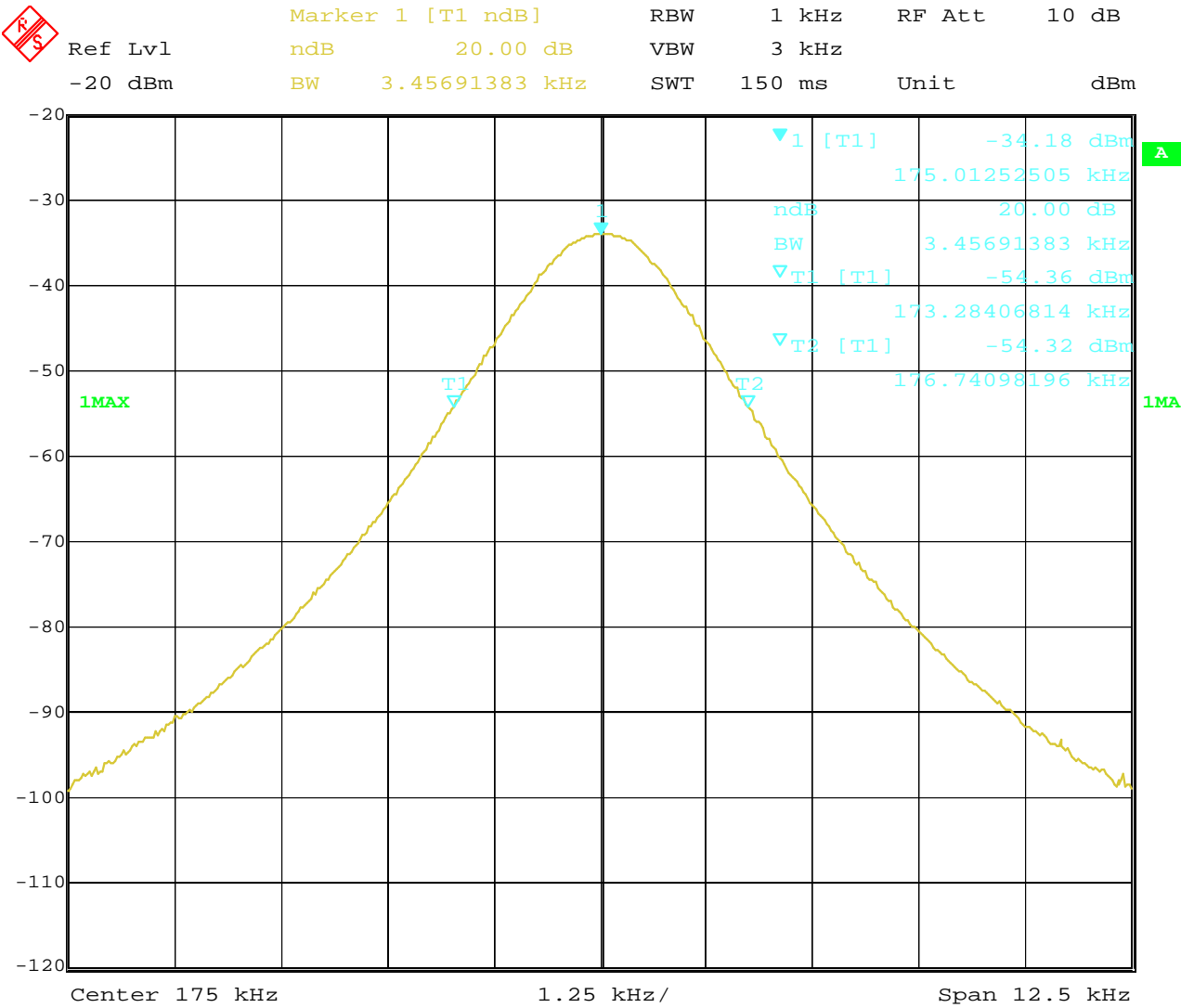


Date: 5.MAR.2022 16:43:33

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20dB Bandwidth  
Mode: Mode 3



Date: 5.MAR.2022 16:45:01

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## 8.0 Antenna Requirement

### 8.1 Standard Applicable

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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

### 8.2 Antenna Connected constructions

The antennas are Inductive Loop Antennas. The antenna gain is 0dBi for each one. So it meets the requirement of 15.203

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## 9.0 FCC ID Label

### FCC ID: 2A573-Z9

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

### Mark Location:



FCC Label Location

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**10.0. Photo of testing**

**10.1 Conducted test View**



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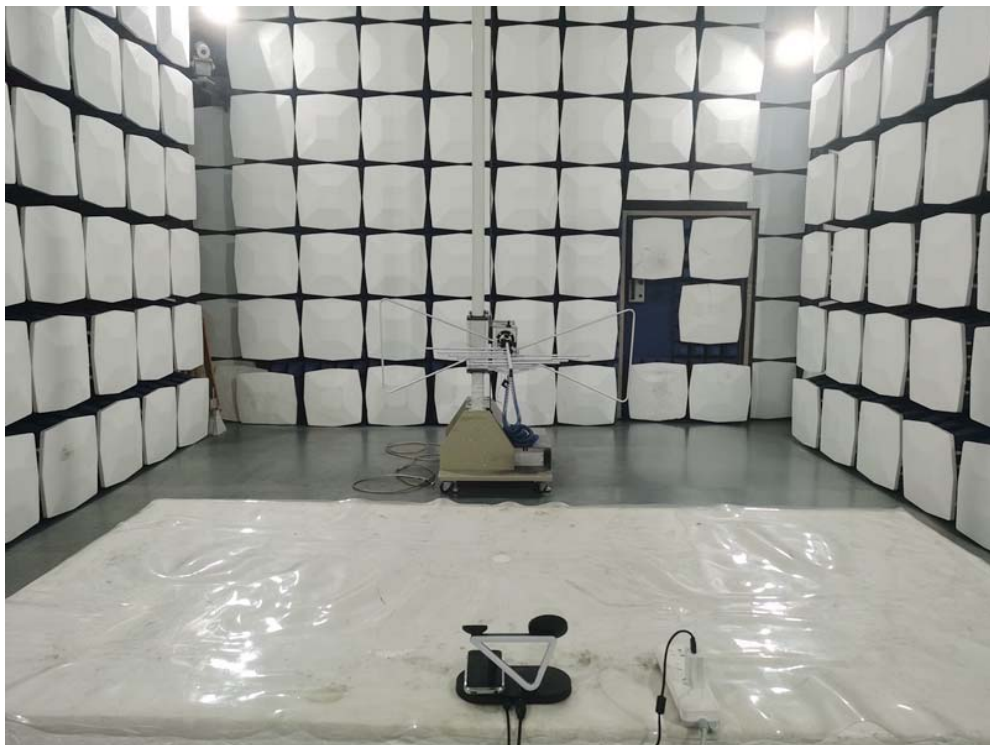
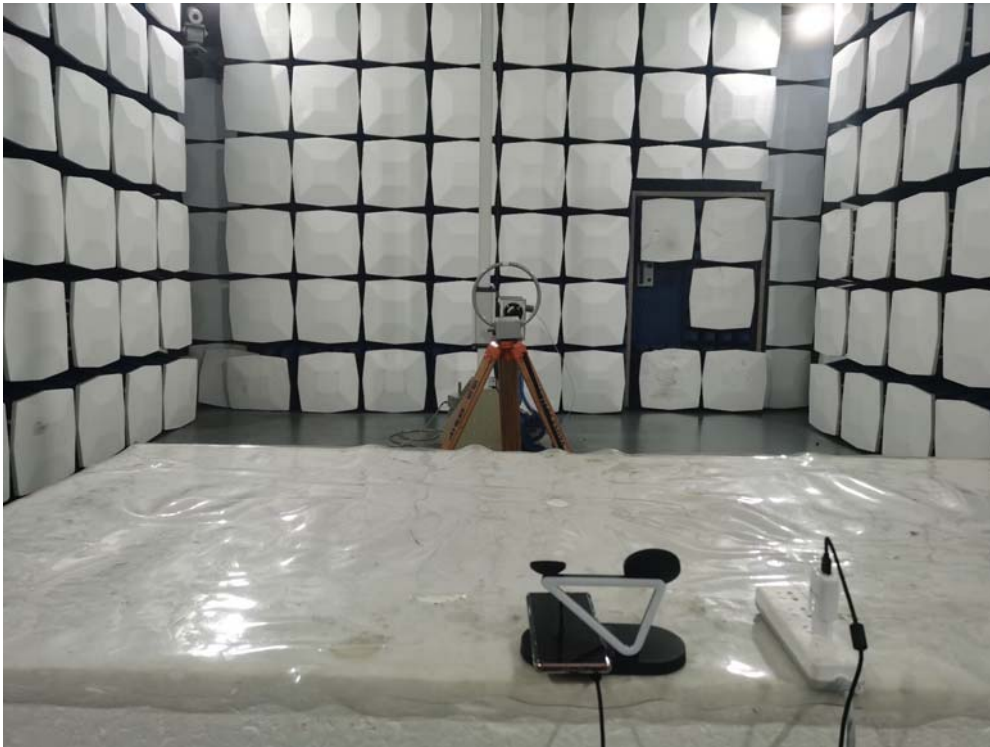
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10.2 Radiated emission test view



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Photographs – EUT

Outside View



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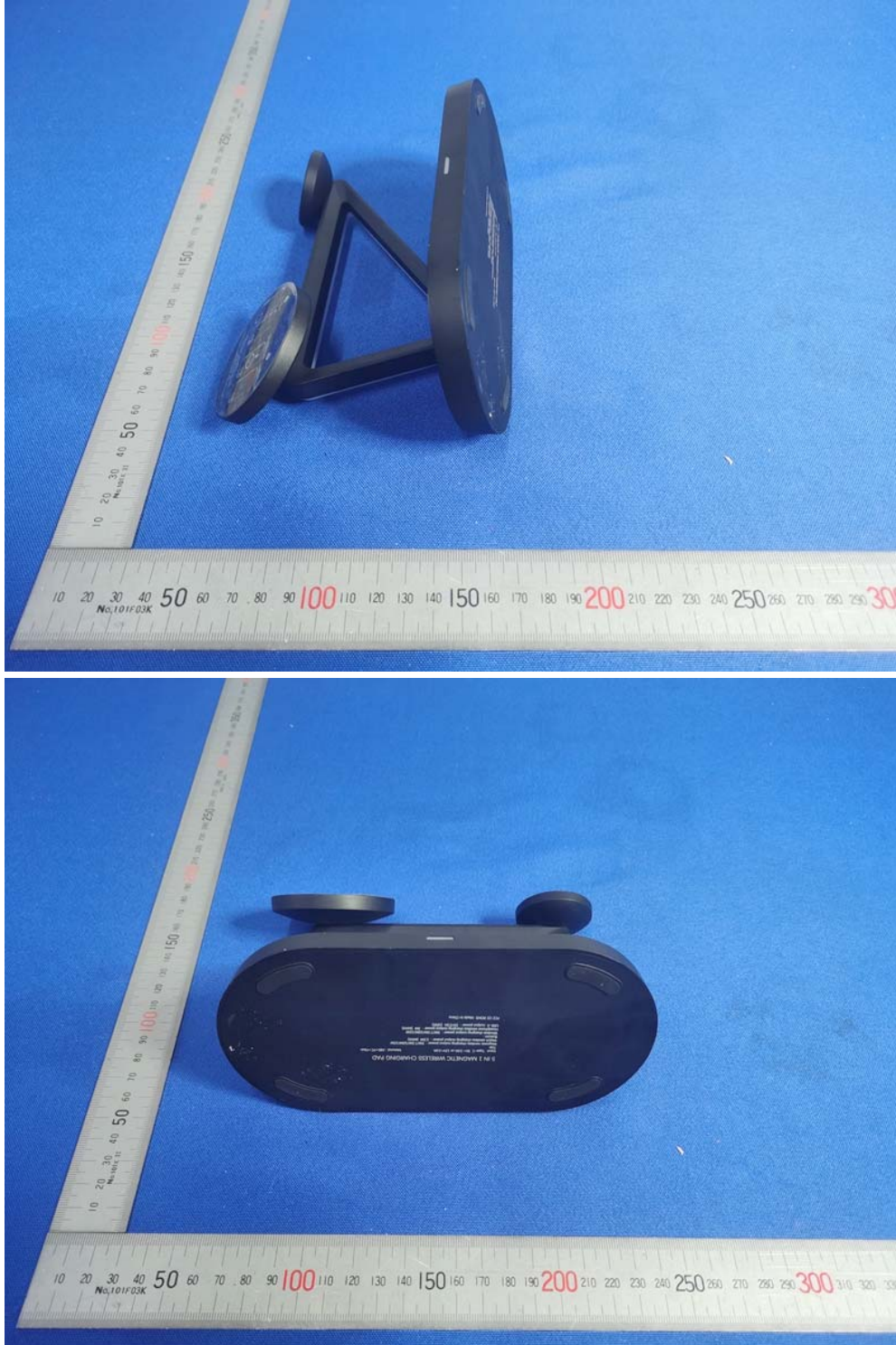
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Photographs – EUT

Outside View



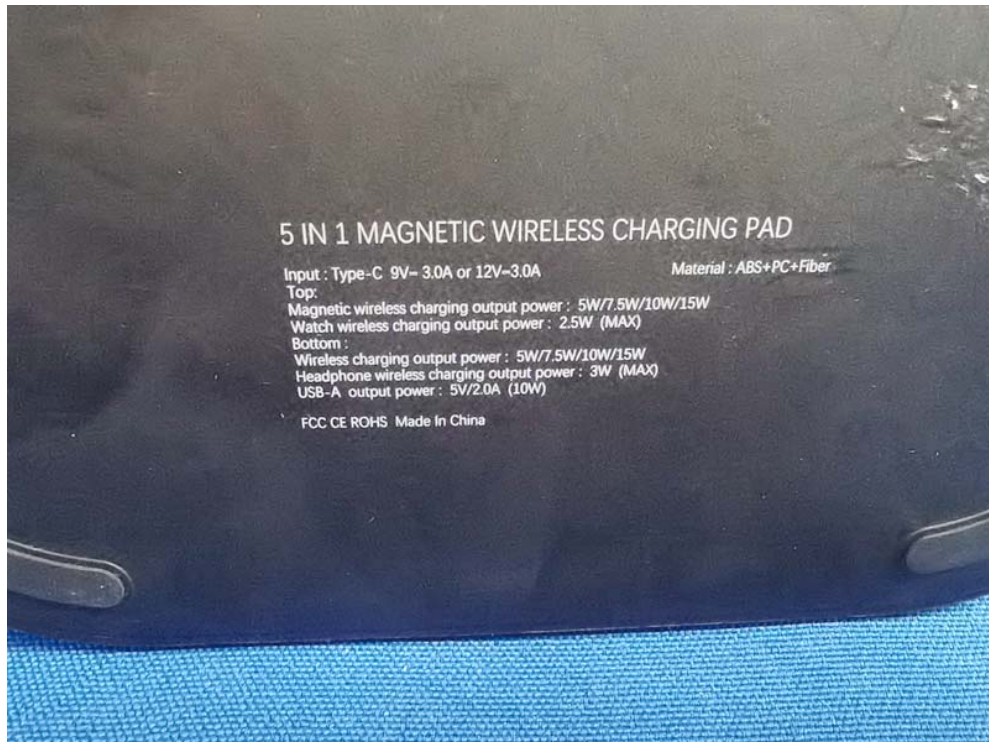
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Outside View



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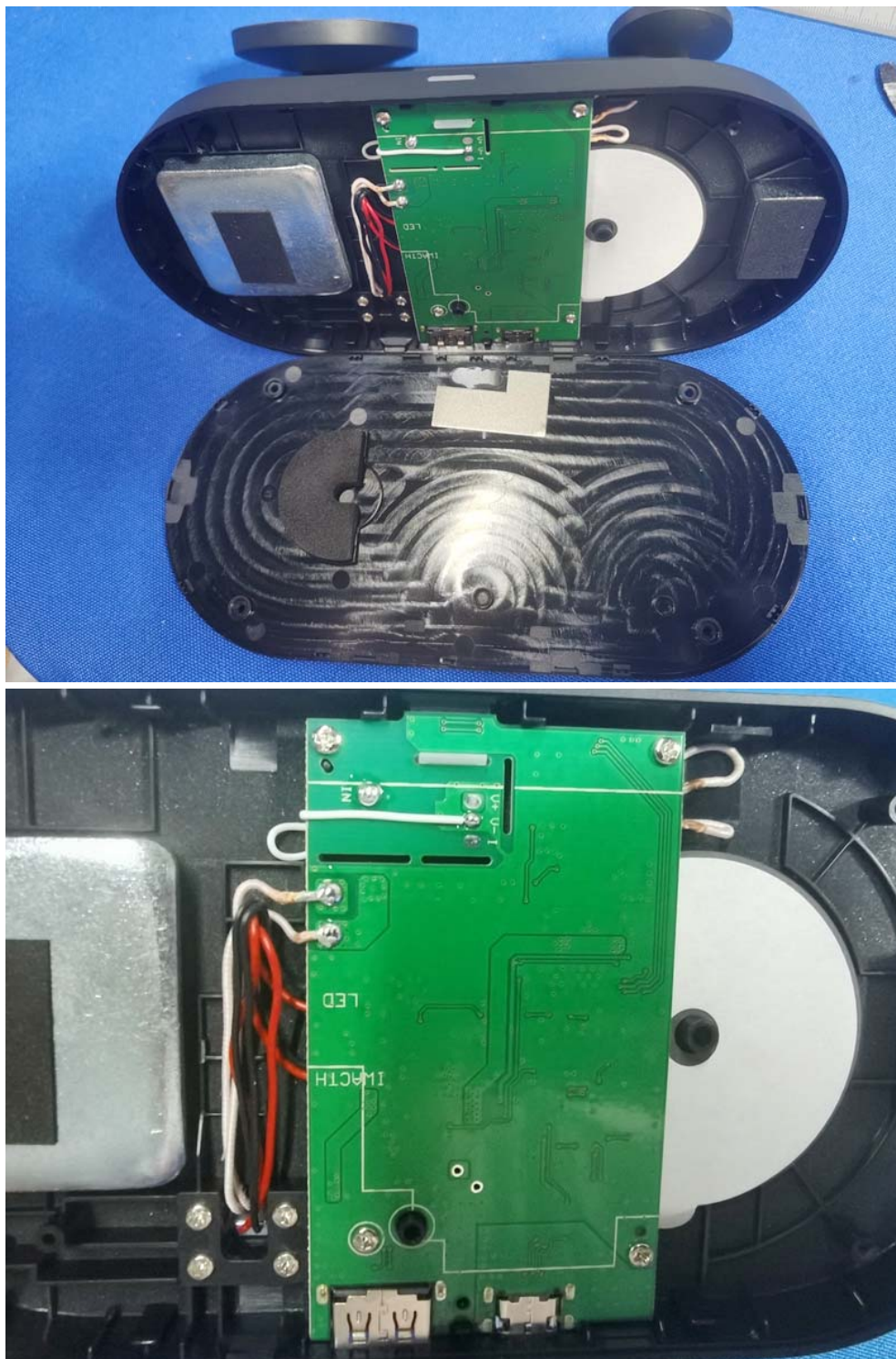
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Inside View



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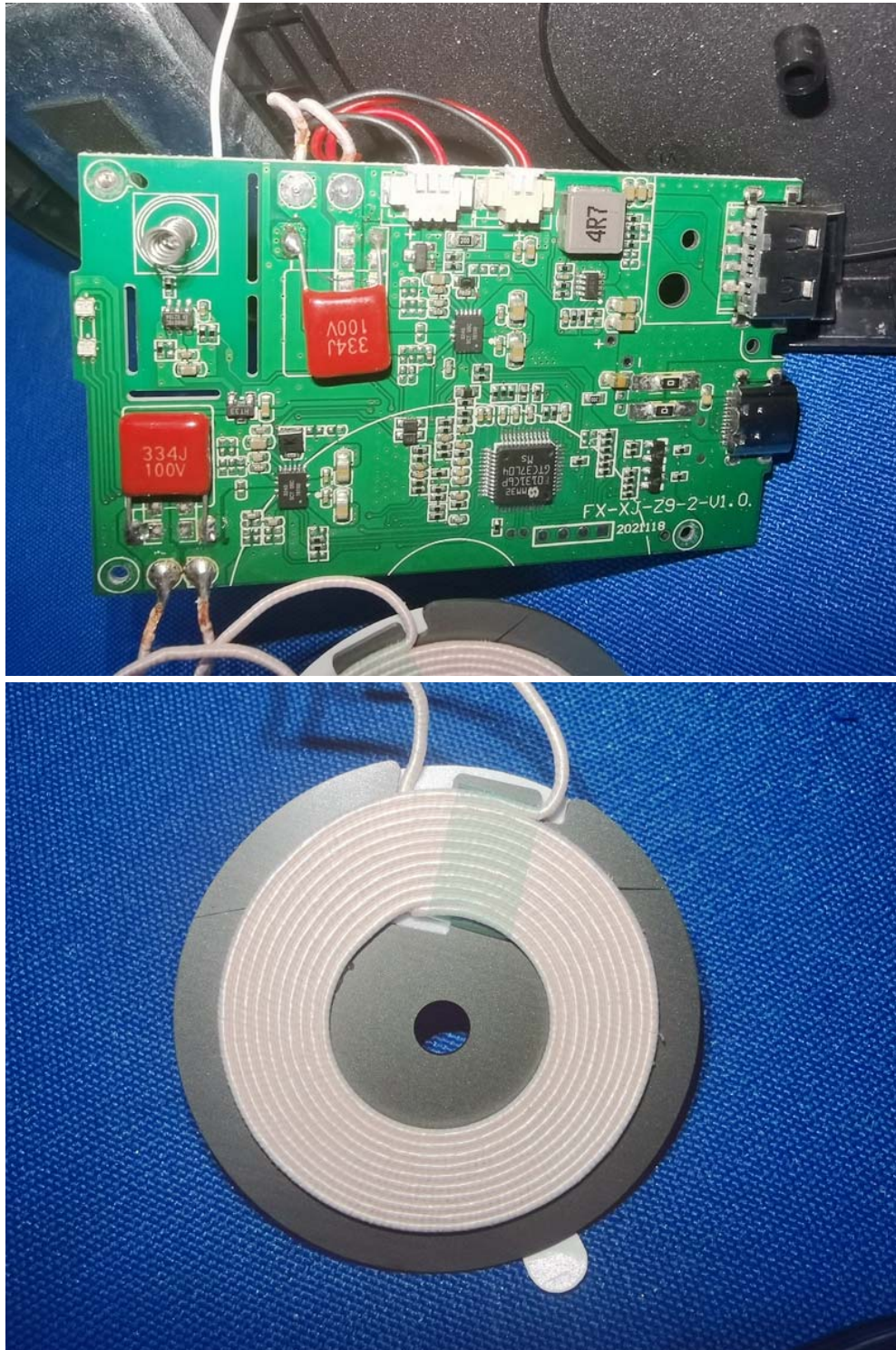
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Inside View



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Inside View



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