FCC TEST REPORT

FCC ID: 2A3DE-PLAF301S

Report No.	:	SSP25060231-4E
Applicant	:	Shenzhen Libro Technology Co., Ltd.
Product Name	:	One RFID Smart Feeder
Model Name	:	PLAF301S
Test Standard	:	FCC Part 15.225
Date of Issue	:	2025-08-28

Shenzhen CCUT Quality Technology Co., Ltd.
1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China; (Tel.:+86-755-23406590 website: www.ccuttest.com)

Test Report Basic Information

Applicant.....:	Shenzhen Libro Technology Co., Ltd.
Address of Applicant.....:	12/F, Tower B, GALAXY WORLD, Yabao Road, Longgang District, Shenzhen, China
Manufacturer.....:	Shenzhen Libro Technology Co., Ltd.
Address of Manufacturer.....:	12/F, Tower B, GALAXY WORLD, Yabao Road, Longgang District, Shenzhen, China
Product Name.....:	One RFID Smart Feeder
Brand Name.....:	PETLIBRO
Main Model.....:	PLAF301S
Series Models.....:	6216301
Test Standard.....:	FCC Part 15 Subpart C ANSI C63.4-2014 ANSI C63.10-2013
Date of Test .....:	2025-06-24 to 2025-08-27
Test Result.....:	PASS

Tested By .....:	Walker Wu	(Walker Wu)
Reviewed By.....:	Lorzix Luo	(Lorzix Luo)
Authorized Signatory.....:	Lahm Peng	(Lahm Peng)

Shenzhen CCUT Quality Technology Co., Ltd. APPROVED

Note : This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen CCUT Quality Technology Co., Ltd.. All test data presented in this test report is only applicable to presented test sample.

CONTENTS

Revision History

Revision	Issue Date	Description	Revised By
V1.0	2025-08-28	Initial Release	Lahm Peng

1. General Information

1.1 Product Information

Product Name:	One RFID Smart Feeder
Trade Name:	PETLIBRO
Main Model:	PLAF301S
Series Models:	6216301
Rated Voltage:	DC 6V by AA*4 battery or DC 5V From Adapter
Power Adapter:	Model: :HX05FB-0501000-AU, Input: 100-240V~50/60Hz 0.3A, Output: 5V⎓1A
Battery:	-
Test Sample No:	SSP25060231-1
Hardware Version:	V1.0
Software Version:	V1.0
Note 1: The test data is gathered from a production sample, provided by the manufacturer. Note 2: The color of appearance and model name of series models listed are different from the main model, but the circuit and the electronic construction are the same, declared by the manufacturer.	

Wireless Specification	
Wireless Standard:	RFID
Operating Frequency:	13.56MHz
Max. Field Strength:	61.63dBuV/m
Modulation:	FSK
Antenna Gain:	0dBi
Type of Antenna:	Loop Antenna
Type of Device:	☐ Portable Device ☒ Mobile Device ☐ Modular Device

1.2 Test Setup Information

List of Test Modes		
Test Mode	Description	Remark
TM1	Transmitting	13.56MHz
-	-	-
-	-	-

List and Details of Auxiliary Cable			
Description	Length (cm)	Shielded/Unshielded	With/Without Ferrite
-	-	-	-
-	-	-	-

List and Details of Auxiliary Equipment			
Description	Manufacturer	Model	Serial Number
-	-	-	-
-	-	-	-

1.3 Compliance Standards

Compliance Standards	
FCC Part 15 Subpart C	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Intentional Radiators
All measurements contained in this report were conducted with all above standards	
According to standards for test methodology	
FCC Part 15 Subpart C	FEDERAL COMMUNICATIONS COMMISSION, RADIO FREQUENCY DEVICES, Intentional Radiators
ANSI C63.4-2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.
ANSI C63.10-2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
Maintenance of compliance is the responsibility of the manufacturer or applicant. Any modification of the product, which result is lowering the emission, should be checked to ensure compliance has been maintained.	

1.4 Test Facilities

Laboratory Name:	**Shenzhen CCUT Quality Technology Co., Ltd.** 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China
CNAS Laboratory No.:	L18863
A2LA Certificate No.:	6983.01
FCC Registration No:	583813
FCC Designation No.:	CN1373
ISED Registration No.:	CN0164
All measurement facilities used to collect the measurement data are located at 1F, Building 35, Changxing Technology Industrial Park, Yutang Street, Guangming District, Shenzhen, Guangdong, China.	

1.5 List of Measurement Instruments

Description	Manufacturer	Model	Serial Number	Cal. Date	Due. Date
Conducted Emissions					
AMN	ROHDE&SCHWARZ	ENV216	101097	2025-07-15	2026-07-14
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100242	2025-07-15	2026-07-14
Test Cable	N/A	Cable 5	N/A	2025-07-15	2026-07-14
EMI Test Software	FARA	EZ-EMC	EMEC-3A1+	N/A	N/A
Radiated Emissions					
EMI Test Receiver	ROHDE&SCHWARZ	ESPI	100154	2025-07-15	2026-07-14
Spectrum Analyzer	KEYSIGHT	N9020A	MY48030972	2025-07-15	2026-07-14
Spectrum Analyzer	ROHDE&SCHWARZ	FSV40-N	101692	2025-07-15	2026-07-14
Amplifier	SCHWARZBECK	BBV 9743B	00251	2025-07-15	2026-07-14
Amplifier	HUABO	YXL0518-2.5-45	--	2025-07-15	2026-07-14
Amplifier	COM-MW	DLAN-18G-4G-02	10229104	2025-07-15	2026-07-14
Loop Antenna	DAZE	ZN30900C	21104	2025-07-12	2026-07-11
Broadband Antenna	SCHWARZBECK	VULB 9168	01320	2025-07-12	2026-07-11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02553	2025-07-12	2026-07-11
Horn Antenna	COM-MW	ZLB7-18-40G-950	12221225	2025-07-12	2026-07-11
Attenuator	QUANJUDA	6dB	220731	2025-07-15	2026-07-14
Test Cable	N/A	Cable 1	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 2	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 3	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 4	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 8	N/A	2025-07-15	2026-07-14
Test Cable	N/A	Cable 9	N/A	2025-07-15	2026-07-14
EMI Test Software	FARA	EZ-EMC	FA-03A2 RE+	N/A	N/A
Conducted RF Testing					
RF Test System	MWRFTest	MW100-RFCB	220418SQS-37	2025-07-16	2026-07-15
Spectrum Analyzer	KEYSIGHT	N9020A	ATO-90521	2025-07-16	2026-07-15
RF Test Software	MWRFTest	MTS 8310	N/A	N/A	N/A
Laptop	Lenovo	ThlnkPad E15 Gen 3	SPPOZ22485	N/A	N/A

1.6 Measurement Uncertainty

Test Item	Conditions	Uncertainty
Conducted Emissions	9kHz ~ 30MHz	±1.64 dB
Radiated Emissions	9kHz ~ 30MHz	±2.88 dB
	30MHz ~ 1GHz	±3.32 dB
	1GHz ~ 18GHz	±3.50 dB
	18GHz ~ 40GHz	±3.66 dB
Frequency Stability	9kHz ~ 26GHz	±0.16 ppm
Occupied Bandwidth	9kHz ~ 26GHz	±4.0 %
DC Voltage	DC 0~30V	±0.1 %
Temperature	-40~50℃	±0.3℃

2. Summary of Test Results

FCC Rule	Description of Test Item	Result
FCC Part 15.203	Antenna Requirement	Passed
FCC Part 15.207	Conducted Emissions	Passed
FCC Part 15.209, 15.225(a)	Radiated Emissions	Passed
FCC Part 15.225(b)(c)	Out of Band Emissions	Passed
FCC Part 15.225(e)	Frequency Stability	Passed
FCC Part 15.215(c)	Occupied Bandwidth	Passed
Passed: The EUT complies with the essential requirements in the standard Failed: The EUT does not comply with the essential requirements in the standard N/A: Not applicable		

3. Antenna Requirement

3.1 Standard and Limit

According to FCC Part 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.

3.2 Test Result

This product has an Loop antenna, fulfill the requirement of this section.

4. Conducted Emissions

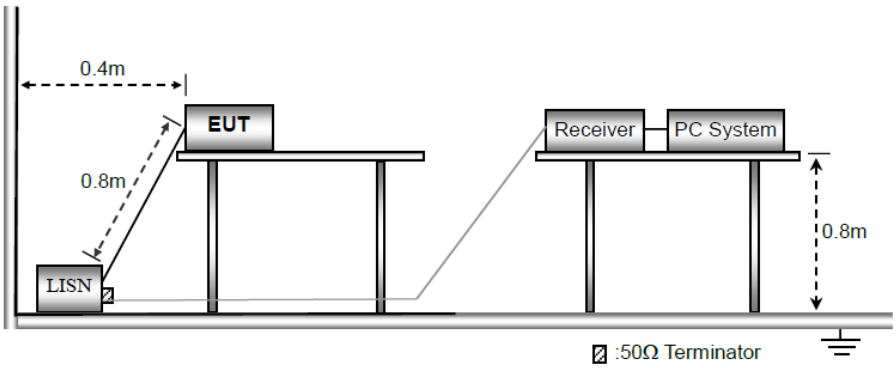
4.1 Standard and Limit

According to the rule FCC Part 15.207, Conducted emissions limit, the limit for a wireless device as below:

Frequency of Emission (MHz)	Conducted emissions (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50
Note 1: Decreases with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz Note 2: The lower limit applies at the band edges		

4.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.2.



Test Setup Block Diagram

a) The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

b) The following is the setting of the receiver
Attenuation: 10dB
Start Frequency: 0.15MHz
Stop Frequency: 30MHz
IF Bandwidth: 9kHz

c) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

d) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
e) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

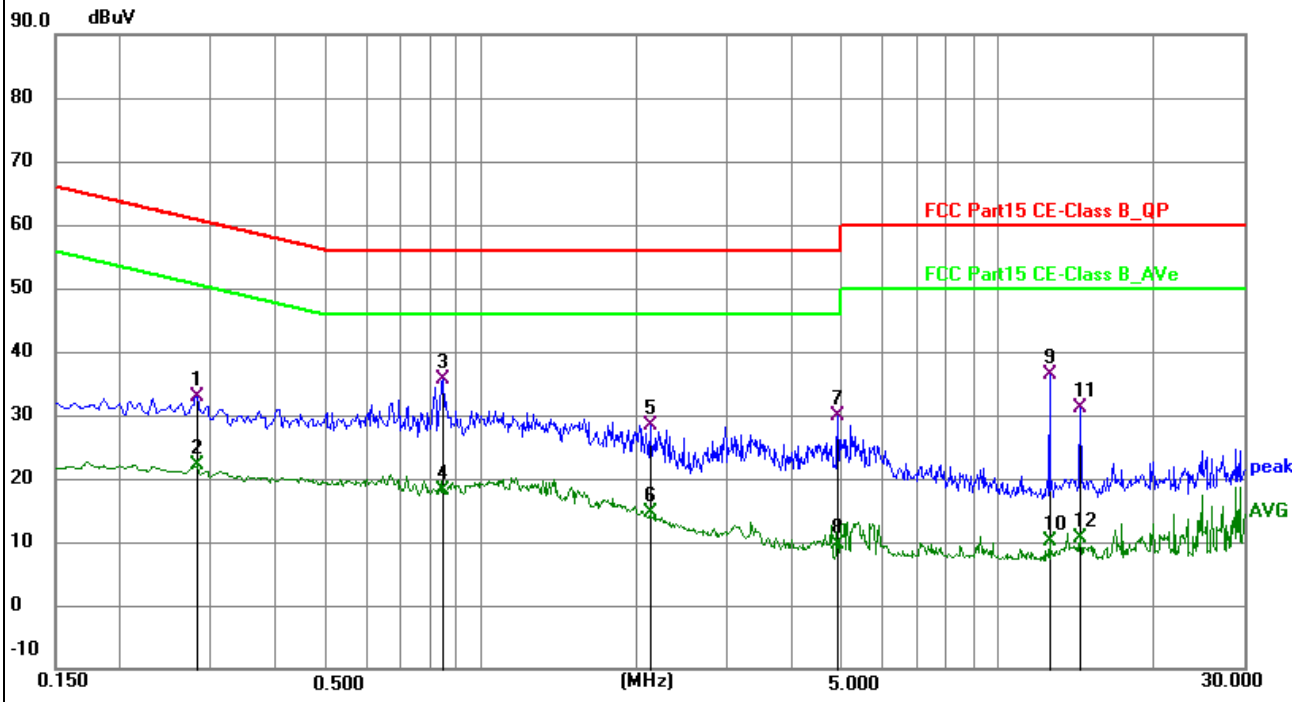
f) LISN is at least 80 cm from nearest part of EUT chassis.

g) For the actual test configuration, please refer to the related Item - photographs of the test setup.

4.3 Test Data and Results

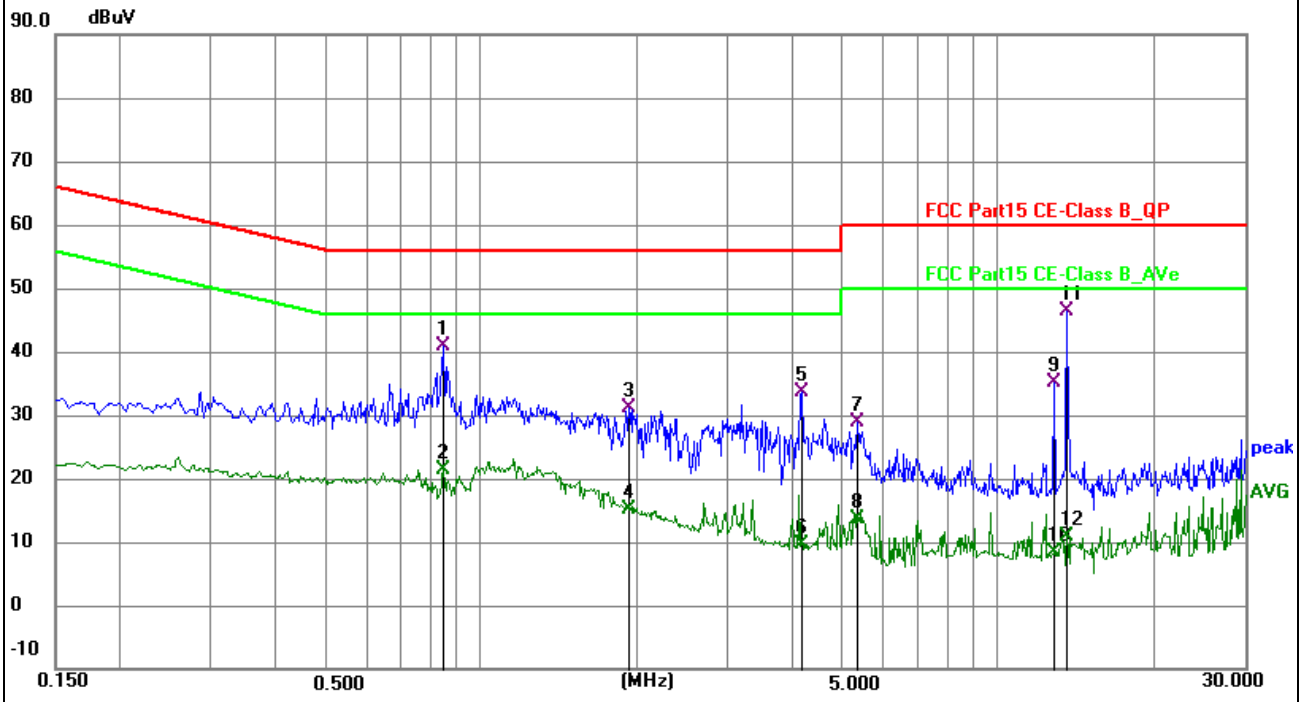
Based on all tested data, the EUT complied with the FCC Part 15.207 standard limit for a wireless device, and with the worst case as below:
Remark: Level = Reading + Factor, Margin = Level - Limit

Test Plots and Data of Conducted Emissions	
Tested Mode:	TM1
Test Voltage:	AC 120V/60Hz
Test Power Line:	Neutral
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.2805	23.54	9.36	32.90	60.80	-27.90	QP	P	
2	0.2805	12.65	9.36	22.01	50.80	-28.79	AVG	P	
3 *	0.8475	26.14	9.40	35.54	56.00	-20.46	QP	P	
4	0.8475	8.76	9.40	18.16	46.00	-27.84	AVG	P	
5	2.1255	18.82	9.47	28.29	56.00	-27.71	QP	P	
6	2.1255	5.11	9.47	14.58	46.00	-31.42	AVG	P	
7	4.9110	20.25	9.57	29.82	56.00	-26.18	QP	P	
8	4.9110	-0.04	9.57	9.53	46.00	-36.47	AVG	P	
9	12.6105	26.81	9.55	36.36	60.00	-23.64	QP	P	
10	12.6105	0.54	9.55	10.09	50.00	-39.91	AVG	P	
11	14.4824	21.65	9.53	31.18	60.00	-28.82	QP	P	
12	14.4824	1.17	9.53	10.70	50.00	-39.30	AVG	P	

Test Plots and Data of Conducted Emissions	
Tested Mode:	TM1
Test Voltage:	AC 120V/60Hz
Test Power Line:	Live
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1	0.8475	31.28	9.59	40.87	56.00	-15.13	QP	P	
2	0.8475	11.91	9.59	21.50	46.00	-24.50	AVG	P	
3	1.9320	21.37	9.65	31.02	56.00	-24.98	QP	P	
4	1.9320	5.57	9.65	15.22	46.00	-30.78	AVG	P	
5	4.1684	23.85	9.73	33.58	56.00	-22.42	QP	P	
6	4.1684	-0.04	9.73	9.69	46.00	-36.31	AVG	P	
7	5.3563	19.04	9.76	28.80	60.00	-31.20	QP	P	
8	5.3563	3.91	9.76	13.67	50.00	-36.33	AVG	P	
9	12.8040	25.28	9.73	35.01	60.00	-24.99	QP	P	
10	12.8040	-1.27	9.73	8.46	50.00	-41.54	AVG	P	
11 *	13.5733	36.63	9.73	46.36	60.00	-13.64	QP	P	
12	13.5733	1.05	9.73	10.78	50.00	-39.22	AVG	P	

5. Radiated Emissions

5.1 Standard and Limit

According to §15.225(a), The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15848 microvolts/meter at 30 meters.

According to §15.225(d) The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in §15.209.

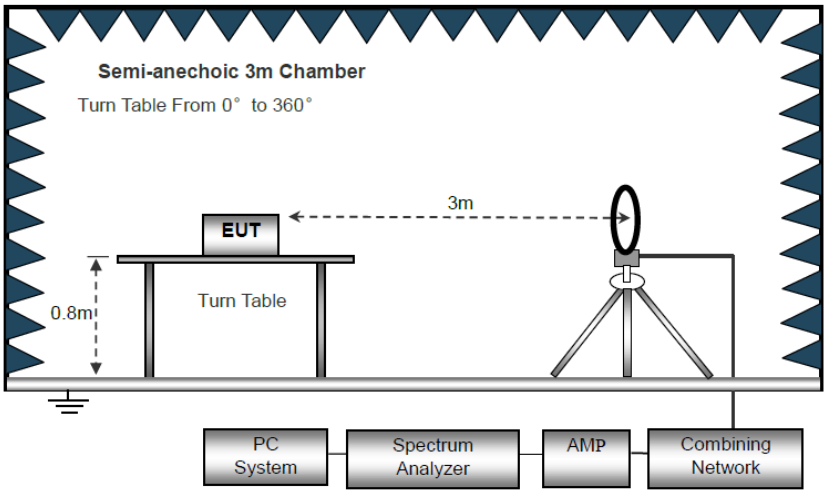
According to the rule FCC Part 15.209, Radiated emission limit for a wireless device as below:

Frequency of Emission (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3
Note: The more stringent limit applies at transition frequencies.		

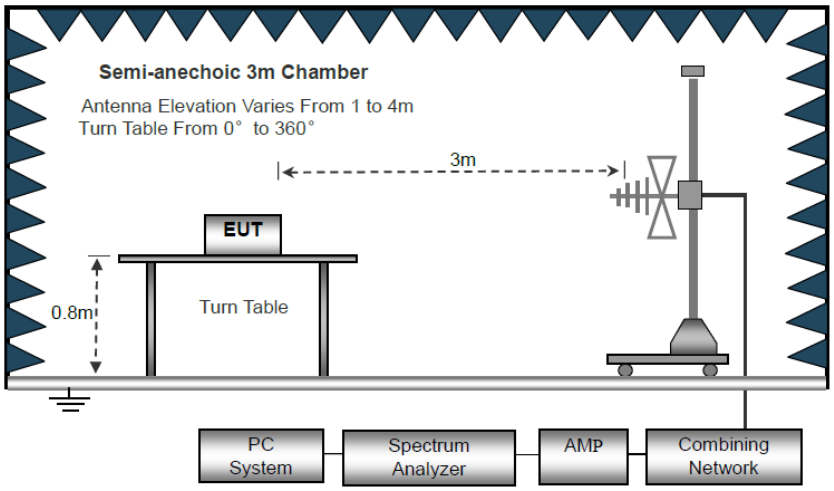
Note: Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

5.2 Test Procedure

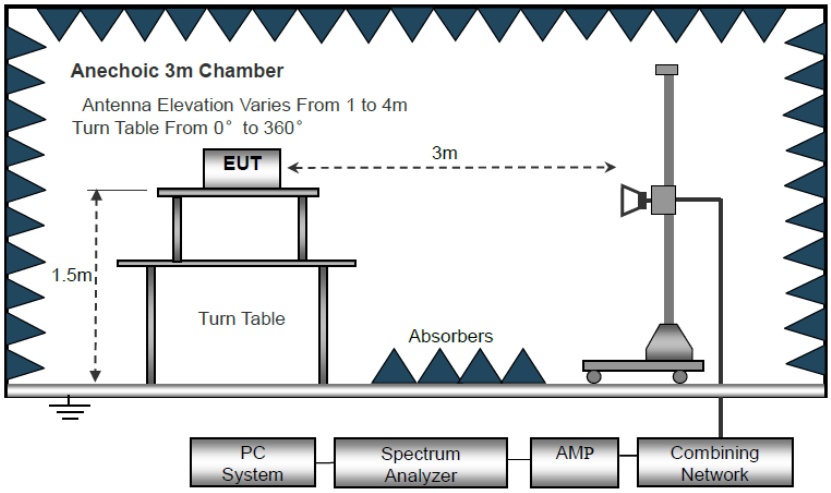
Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.6.



Block Diagram of Radiated Emission Below 30MHz



Block Diagram of Radiated Emission From 30MHz to 1GHz



Block Diagram of Radiated Emission Above 1GHz

a) The EUT is placed on a turntable, which is 0.8m above ground plane for test frequency range below 1GHz, and 1.5m above ground plane for test frequency range above 1GHz.

b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.

c) Use the following spectrum analyzer settings:
Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1GHz, 100 kHz for f < 1 GHz, 10kHz for f < 30MHz
VBW ≥ RBW, Sweep = auto
Detector function = peak
Trace = max hold

d) Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

e) The peak level, once corrected, must comply with the limit specified in Section 15.209. Set the RBW = 1MHz, VBW = 10Hz, Detector = PK for AV value, while maintaining all of the other instrument settings.

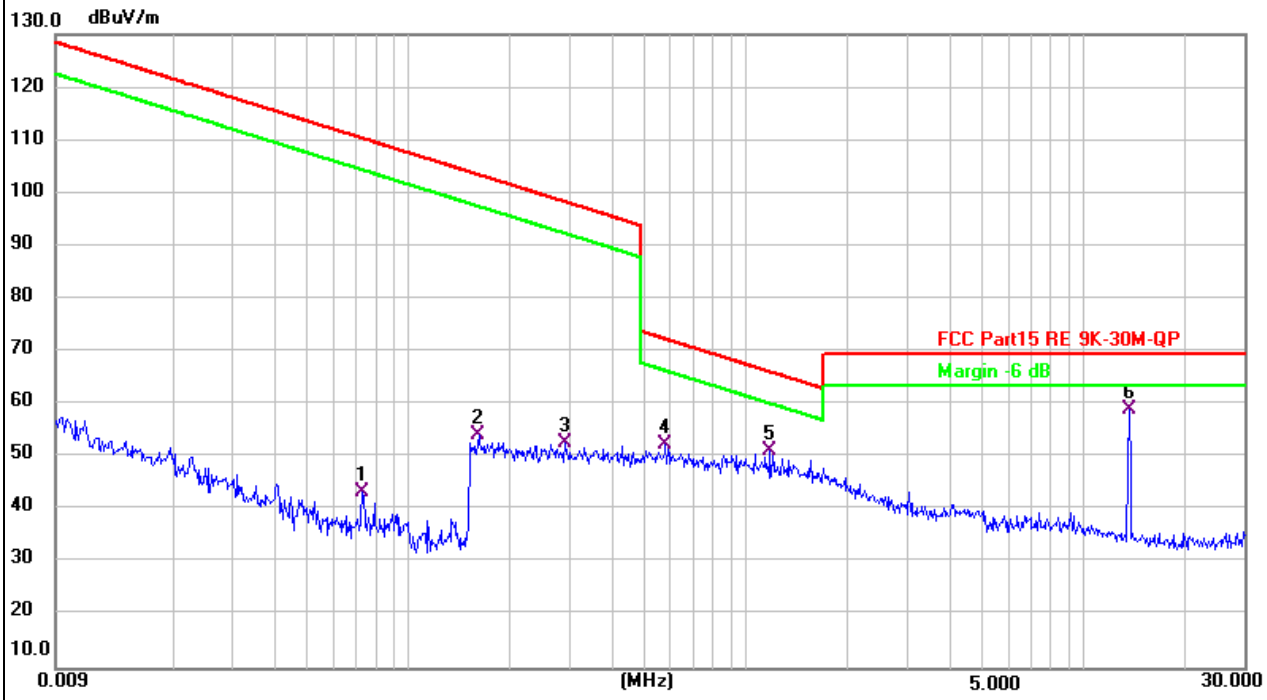
f) For the actual test configuration, please refer to the related item - EUT test photos.

5.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.225 standard limit for a wireless device, and with the worst case as below:

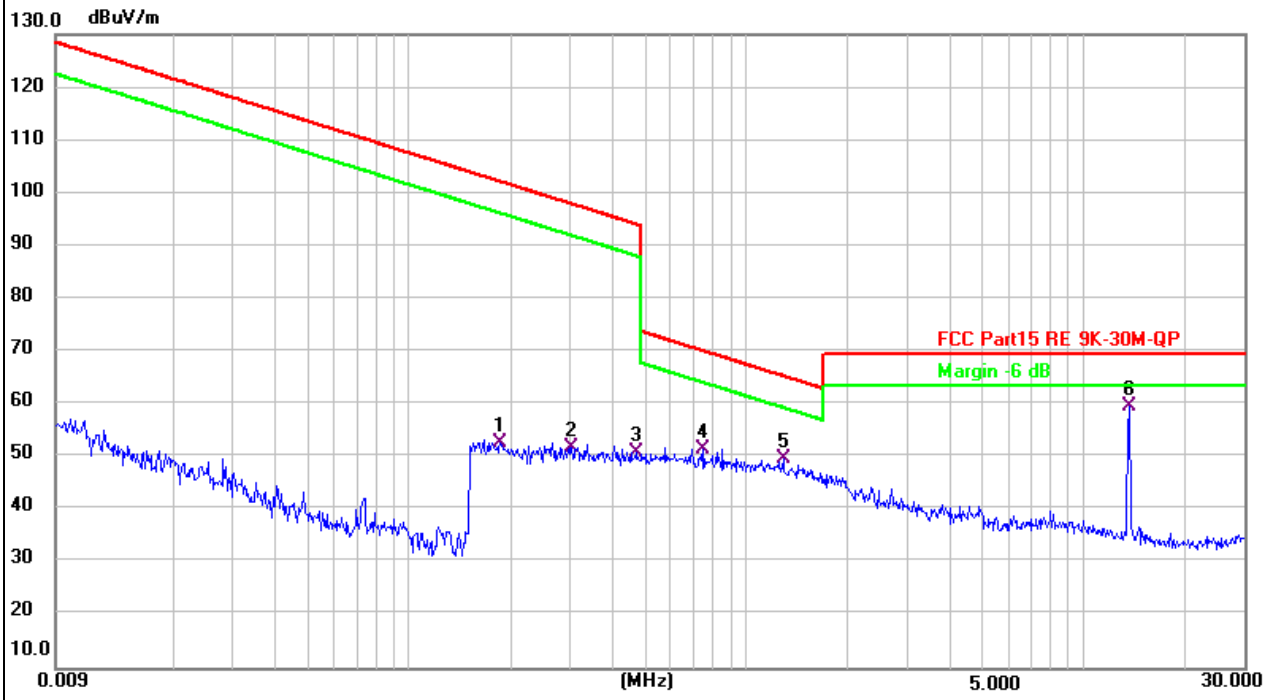
Remark: Level = Reading + Factor, Margin = Level - Limit

Test Plots and Data of Radiated Emissions	
Tested Mode:	TM1
Test Antenna Polarization:	Coplaner
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.0727	17.22	26.20	43.42	110.36	-66.94	QP	100	128	P	
2	0.1604	28.51	25.77	54.28	103.49	-49.21	QP	100	139	P	
3	0.2878	27.01	25.81	52.82	98.42	-45.60	QP	100	182	P	
4	0.5731	26.85	25.64	52.49	72.44	-19.95	QP	100	42	P	
5	1.1720	25.16	25.95	51.11	66.22	-15.11	QP	100	142	P	
6 *	13.6227	33.17	25.96	59.13	69.50	-10.37	QP	100	24	P	

Test Plots and Data of Radiated Emissions	
Tested Mode:	TM1
Test Antenna Polarization:	Coaxial
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	0.1862	27.02	25.76	52.78	102.20	-49.42	QP	100	82	P	
2	0.3034	26.11	25.81	51.92	97.96	-46.04	QP	100	325	P	
3	0.4686	25.24	25.67	50.91	94.19	-43.28	QP	100	7	P	
4	0.7470	25.80	25.77	51.57	70.13	-18.56	QP	100	285	P	
5	1.2822	23.76	25.97	49.73	65.44	-15.71	QP	100	71	P	
6 *	13.6227	33.74	25.96	59.70	69.50	-9.80	QP	100	142	P	

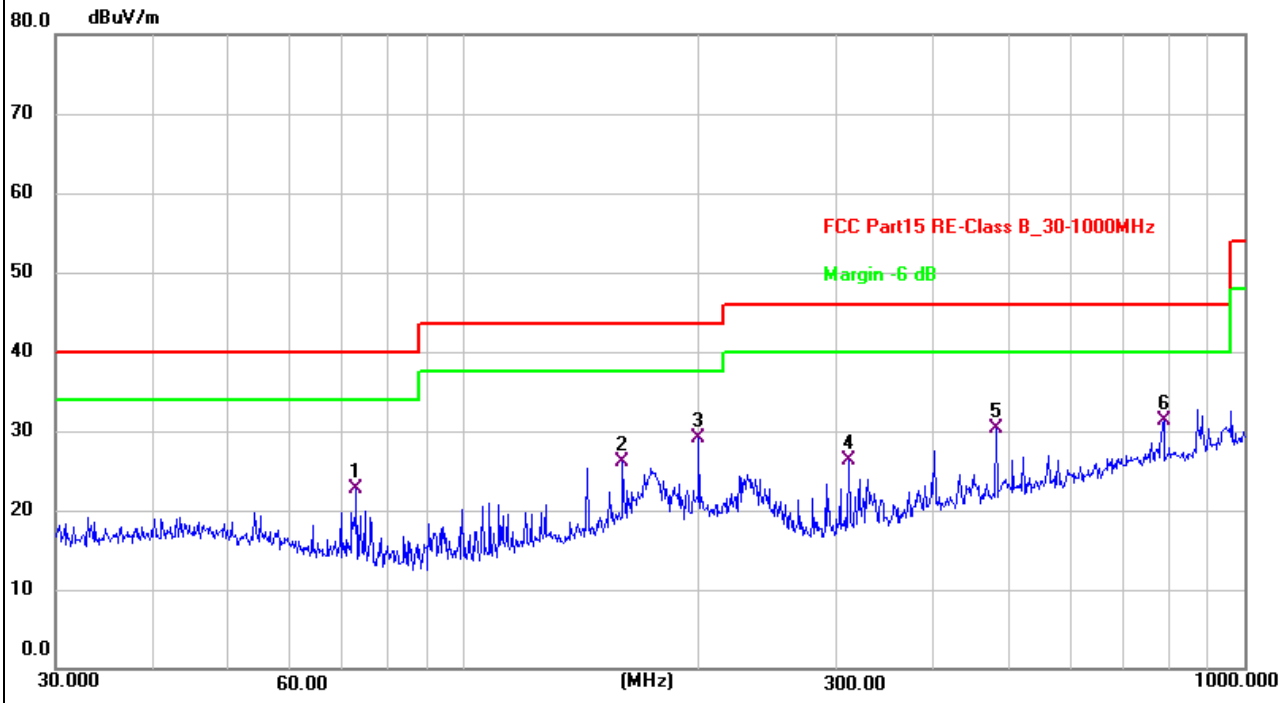
Note 1: this EUT was tested in 3 orthogonal positions, with the X-axis being the worst, and the worst case position data was reported.

Note 2: Testing is carried out with frequency rang 9kHz to the tenth harmonics. The measurements greater than 20dB below the limit from 9kHz to 30MHz.

Note 3: For 9kHz-30MHz, Distance extrapolation factor =40 log (specific distance/test distance)(dB);

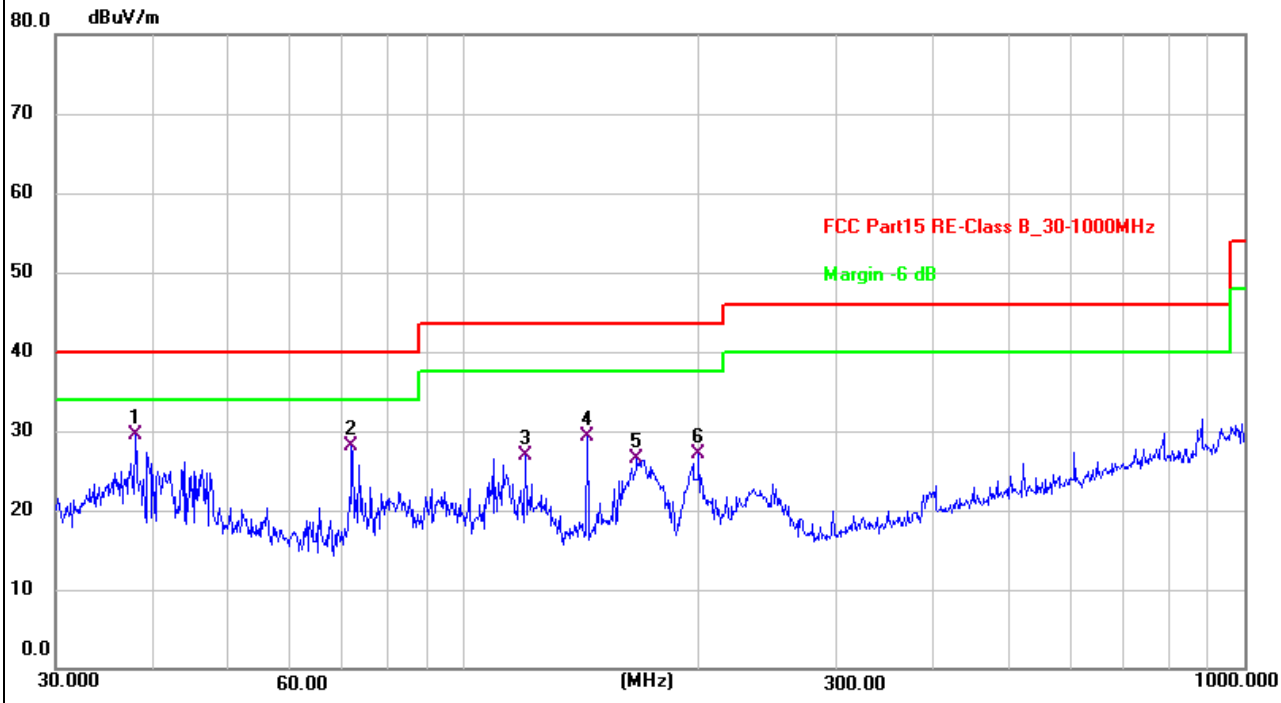
Limit line = specific limits (dBuV) + distance extrapolation factor.

Radiated Emission Test Data (30MHz to 1GHz)	
Tested Mode:	TM1
Test Antenna Polarization:	Horizontal
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	72.8466	34.75	-12.05	22.70	40.00	-17.30	QP	100	141	P	
2	159.7844	33.89	-7.87	26.02	43.50	-17.48	QP	200	248	P	
3 *	199.9856	41.19	-12.06	29.13	43.50	-14.37	QP	100	296	P	
4	311.0867	33.89	-7.61	26.28	46.00	-19.72	QP	100	141	P	
5	480.5276	34.16	-3.76	30.40	46.00	-15.60	QP	100	151	P	
6	787.8513	30.03	1.36	31.39	46.00	-14.61	QP	100	348	P	

Radiated Emission Test Data (30MHz to 1GHz)	
Tested Mode:	TM1
Test Antenna Polarization:	Vertical
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	37.9450	38.07	-8.64	29.43	40.00	-10.57	QP	100	360	P	
2	71.8320	40.03	-11.92	28.11	40.00	-11.89	QP	100	355	P	
3	119.8556	36.68	-9.76	26.92	43.50	-16.58	QP	100	281	P	
4	143.8295	37.25	-8.03	29.22	43.50	-14.28	QP	100	269	P	
5	166.6514	35.03	-8.47	26.56	43.50	-16.94	QP	100	360	P	
6	199.9856	39.23	-12.06	27.17	43.50	-16.33	QP	100	178	P	

6. Band-edge Emissions

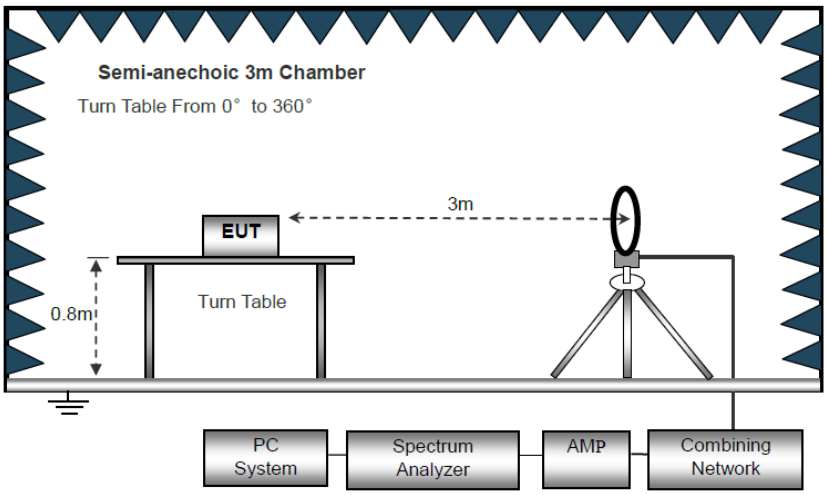
6.1 Standard and Limit

According to FCC 15.225 (b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

According to FCC 15.225 (c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

6.2 Test Procedure

Test is conducting under the description of ANSI C63.10 - 2013 section 6.3 to 6.4 and section 6.10.



Test Setup Block Diagram

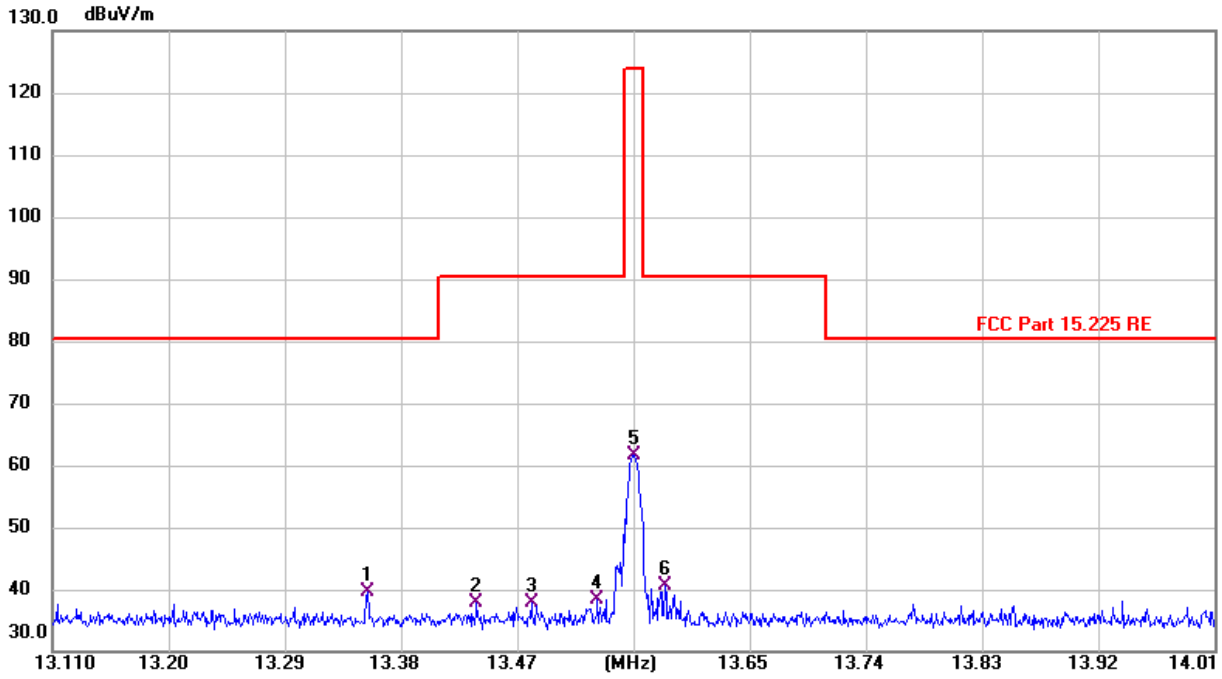
As the radiated emissions testing, set the RBW=10kHz VBW=30kHz, observed the outside band of 13.11MHz to 14.01MHz, than mark the higher-level emission for comparing with the FCC rules.

6.3 Test Data and Results

Based on all tested data, the EUT complied with the FCC Part 15.225 standard limit, and with the worst case as below:

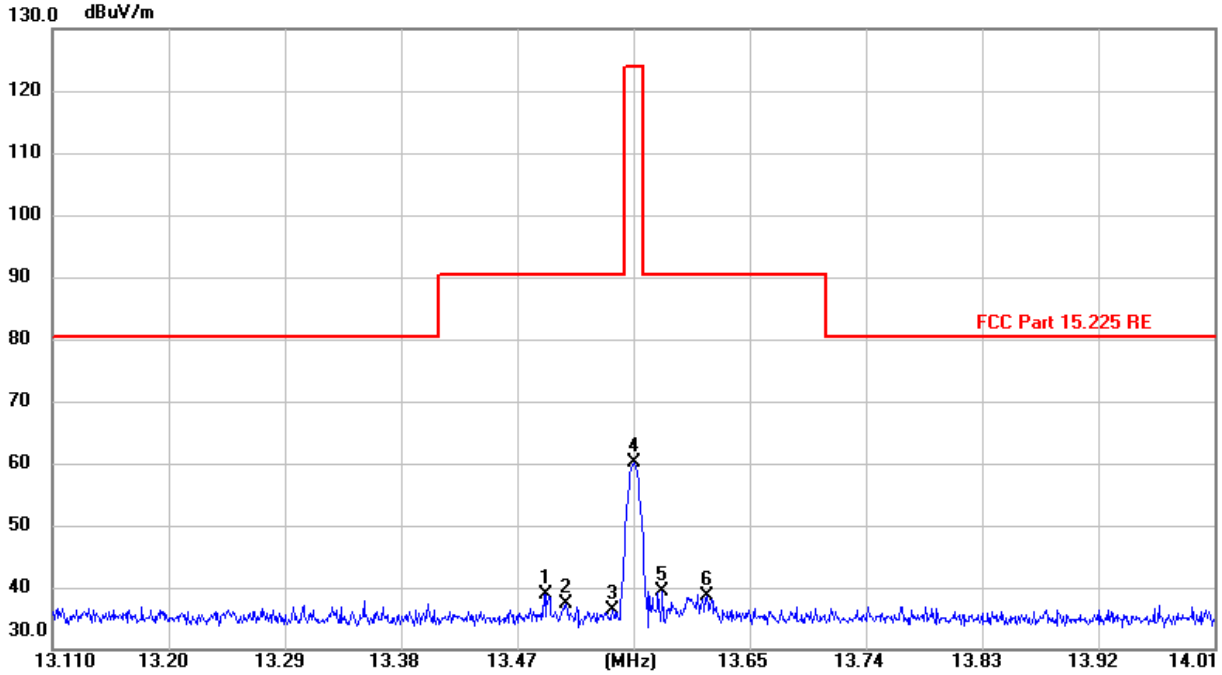
Remark: Level = Reading + Factor, Margin = Level - Limit

Test Plots and Data of Out of Band Emissions	
Tested Mode:	TM1
Test Antenna Polarization:	Coplaner
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1 *	13.3536	13.63	25.99	39.62	80.50	-40.88	QP	100	4	P	
2	13.4382	12.00	25.98	37.98	90.47	-52.49	QP	100	142	P	
3	13.4808	11.88	25.97	37.85	90.47	-52.62	QP	100	7	P	
4	13.5320	12.51	25.97	38.48	90.47	-51.99	QP	100	352	P	
5	13.5600	35.67	25.96	61.63	124.00	-62.37	QP	100	285	P	
6	13.5843	14.61	25.96	40.57	90.47	-49.90	QP	100	142	P	

Test Plots and Data of Out of Band Emissions	
Tested Mode:	TM1
Test Antenna Polarization:	Coaxial
Remark:	



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (deg.)	P/F	Remark
1	13.4924	12.88	25.97	38.85	90.47	-51.62	peak	100	41	P	
2	13.5077	11.33	25.97	37.30	90.47	-53.17	peak	100	224	P	
3	13.5437	10.39	25.97	36.36	90.47	-54.11	peak	100	182	P	
4	13.5600	34.09	25.96	60.05	124.00	-63.95	peak	100	274	P	
5 *	13.5824	13.44	25.96	39.40	90.47	-51.07	peak	100	135	P	
6	13.6166	12.71	25.96	38.67	90.47	-51.80	peak	100	4	P	

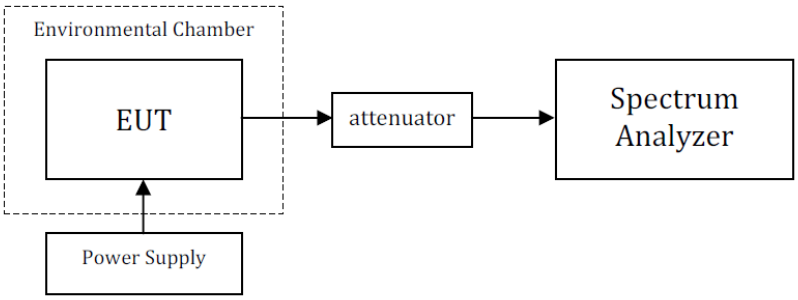
7. Frequency Stability

7.1 Standard and Limit

According to 15.225(e) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

7.2 Test Procedure

Test is conducting under the description of ANSI C63.10-2013 section 6.8.



Test Setup Block Diagram

7.3 Test Data and Results

Reference Frequency: 13.56MHz, Limit: 100ppm			
Temperature (°C)	Power Supplied (VAC)	Frequency Error	
		Error (Hz)	Error (ppm)
50	120	177	13.09
40	120	165	12.19
30	120	136	9.83
20	120	112	8.28
10	120	96	7.16
0	120	83	6.2
-10	120	73	5.32
-20	120	61	4.27

Reference Frequency: 13.56MHz, Limit: 100ppm			
Temperature (°C)	Power Supplied (VAC)	Frequency Error	
		Error (Hz)	Error (ppm)
20	110	113	8.13
	130	108	7.81

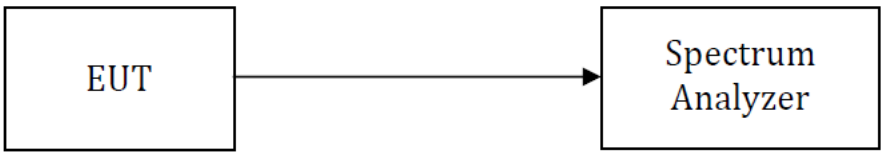
8. Occupied Bandwidth

8.1 Standard and Limit

According to 15.215 (c), intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

8.2 Test Procedure

According to the ANSI 63.10-2013, section 6.9, the emission bandwidth test method as follows.
1) Remove the antenna from the EUT and connect to the spectrum analyzer via a low loss RF cable.
2) Set the spectrum analyzer to any one measured frequency within its operating range.
3) Set RBW = 20Hz, VBW = 200Hz, Sweep = Auto.
4) Set a reference level on the measuring instrument equal to the highest peak value.
5) Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
All the trace to stabilize, use the marker-to-peak function to set the marker to the peak of the emission, use the marker-delta function to measure and record the 20dB down and 99% bandwidth of the emission.

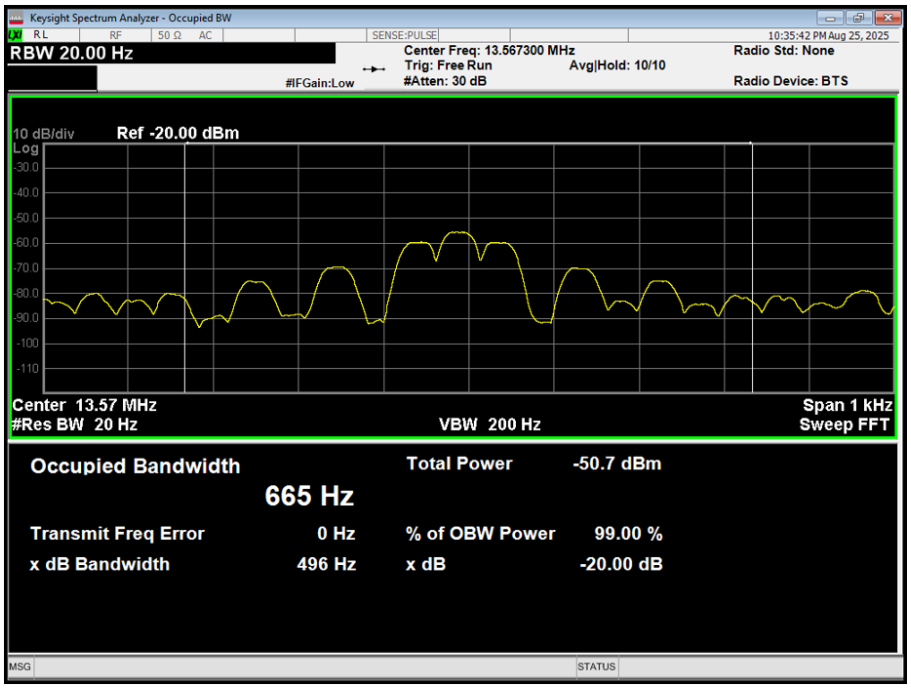


Test Setup Block Diagram

8.3 Test Data and Results

Test Frequency	20dB Bandwidth	99% Bandwidth
13.56MHz	496Hz	665Hz

Test Plots of Occupied Bandwidth



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