CTC Laboratories, Inc.

TEST REPORT

Report No. ·····:	**CTC2024276401**
FCC ID……..:	**2A4EP-JP336**
Applicant·····:	**Zhuhai Tessan Power Technology Co.,Ltd.**
Address·····:	Building 14, Xiangzhou Chuanggang Center, No.199, Weikang Road, Xiangzhou District, Zhuhai, Guangdong Province, China
Manufacturer·····:	Zhuhai Tessan Power Technology Co.,Ltd.
Address·····:	Building 14, Xiangzhou Chuanggang Center, No.199, Weikang Road, Xiangzhou District, Zhuhai, Guangdong Province, China
Product Name·····:	**Wireless Power Bank**
Trade Mark·····:	TESSAN
Model/Type reference·····:	JP336
Listed Model(s) ·····:	/
Standard·····:	**FCC CFR Title 47 Part 15 Subpart C**
Date of receipt of test sample…:	Nov. 25, 2024
Date of testing……..:	Nov. 25, 2024 to Dec. 4, 2024
Date of issue……....:	Dec. 12, 2024
Result……:	**PASS**

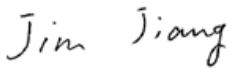
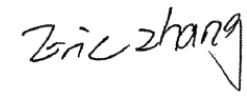
Compiled by: (Printed name+signature)	Jim Jiang	
Supervised by: (Printed name+signature)	Eric Zhang	
Approved by: (Printed name+signature)	Totti Zhao	

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Table of Contents Page

1. TEST SUMMARY

1.1. Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.209: Radiated emission limits; general requirements.
ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

1.2. Report Version

Revised No.	Report No.	Date of issue	Description
01	CTC2024276401	Dec. 12, 2024	Original

1.3. Test Description

FCC Part 15 Subpart C			
Test Item	**Standard Section**	**Result**	**Test Engineer**
Antenna Requirement	15.203	Pass	Jim Jiang
AC Power Line Conducted Emissions	15.207	Pass	Cary Chen
Spurious Emission	15.209	Pass	Jim Jiang
20dB Bandwidth	15.215	Pass	Jim Jiang

Note:
1. The measurement uncertainty is not included in the test result.
2. N/A: means this test item is not applicable for this device according to the technology characteristic of device.

1.4. Test Facility

CTC Laboratories, Inc.

Add: Room 101 of Building B, Room 107, 108, 207, 208 of Building A, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

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

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements fo r the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. 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 inour files. Registration 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.
Below is the best measurement capability for CTC Laboratories, Inc.

Test Items	Measurement Uncertainty	Notes
DTS Bandwidth	±0.0196%	(1)
Maximum Conducted Output Power	±0.686 dB	(1)
Maximum Power Spectral Density Level	±0.743 dB	(1)
Band-edge Compliance	±1.328 dB	(1)
Unwanted Emissions In Non-restricted Freq Bands	9kHz-1GHz: ±0.746dB 1GHz-26GHz: ±1.328dB	(1)
Conducted Emissions 9kHz~30MHz	±3.08 dB	(1)
Radiated Emissions 30~1000MHz	±4.51 dB	(1)
Radiated Emissions 1~18GHz	±5.84 dB	(1)
Radiated Emissions 18~40GHz	±6.12 dB	(1)

Note (1): This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

1.6. Environmental Conditions

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

Temperature:	20~25 °C
Relative Humidity:	50~55 %RH
Atmospheric Pressure:	101 kPa

2. GENERAL INFORMATION

2.1. Client Information

Applicant:	Zhuhai Tessan Power Technology Co.,Ltd.
Address:	Building 14, Xiangzhou Chuanggang Center, No.199, Weikang Road, Xiangzhou District, Zhuhai, Guangdong Province, China
Manufacturer:	Zhuhai Tessan Power Technology Co.,Ltd.
Address:	Building 14, Xiangzhou Chuanggang Center, No.199, Weikang Road, Xiangzhou District, Zhuhai, Guangdong Province, China
Factory:	Shenzhen Joway Power Supply Co.,Ltd.
Address:	Floor 1-5 of Bldg 10th and Bldg 11th, Antuoshan High-Tech Industrial Park, Sha'er Community, Shajing Street, Bao'an District, Shenzhen

2.2. General Description of EUT

Product Name:	Wireless Power Bank
Trade Mark:	TESSAN
Model/Type reference:	JP336
Listed Model(s):	/
Model Difference:	/
Power Supply:	Capacity: 10000mAh(38.5Wh) Wireless Output: 15W(Max) Input Type-C: 5V⎓3A, 9V⎓2A Output Type-C: 5V⎓3A, 9V⎓2.22A, 12V⎓1.67A Total Output: 5V⎓3A
Sample ID:	CTC241106-002-S001
Hardware Version:	/
Software Version:	/
Wireless Charger	
Frequency Range:	127.8kHz, 360kHz
Modulation Type:	ASK
Antenna Type:	Induction Coil
Exposure category:	General population/uncontrolled environment
Device Type:	Portable Device

2.3. Accessory Equipment Information

Equipment Information			
Name	Model	S/N	Manufacturer
iPhone 16 Pro	A3294	FTV1FQNJHG	Apple
iPhone 14	A2884	FN2JW4Q4HQ	Apple
Power Adapter	MDY-12-EF	/	Xiaomi
Cable Information			
Name	Shielded Type	Ferrite Core	Length
USB Cable	Unshielded	NO	100cm

2.4. Operation State

The EUT has been tested under test mode condition. The Applicant provides software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Operation Frequency List:

Channel	Frequency (kHz)
1	**127.8**
2	**360**

Note: iPhone iOS versions before 17.2 use 127.8kHz for wireless charging. iPhone iOS version 17.2 and later, wireless charging use 360kHz.

Test Mode:

For RF test items
The engineering test program was provided and enabled to make EUT continuous transmit. (duty cycle>98%).
For AC power line conducted emissions:
EUT is in test mode 1.
For Radiated spurious emissions test item:
The engineering test program was provided and enabled to make EUT continuous transmit. The EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report. Pretest each test mode, with test mode 2 being the worst case.

Test Mode 1	Adapter charging
Test Mode 2	iPhone wireless charging (EUT Output 15W, iPhone Battery status: < 1%)
Test Mode 3	iPhone wireless charging (EUT Output 15W, iPhone Battery status: < 50%)
Test Mode 4	iPhone wireless charging (EUT Output 15W, iPhone Battery status: < 99%)
Test Mode 5	iPhone wireless charging (EUT Output 10W, iPhone Battery status: < 1%)
Test Mode 6	iPhone wireless charging (EUT Output 10W, iPhone Battery status: < 50%)
Test Mode 7	iPhone wireless charging (EUT Output 10W, iPhone Battery status: < 99%)
Test Mode 8	iPhone wireless charging (EUT Output 7.5W, iPhone Battery status: < 1%)
Test Mode 9	iPhone wireless charging (EUT Output 7.5W, iPhone Battery status: < 50%)
Test Mode 10	iPhone wireless charging (EUT Output 7.5W, iPhone Battery status: < 99%)
Test Mode 11	iPhone wireless charging (EUT Output 5W, iPhone Battery status: < 1%)
Test Mode 12	iPhone wireless charging (EUT Output 5W, iPhone Battery status: < 50%)
Test Mode 13	iPhone wireless charging (EUT Output 5W, iPhone Battery status: < 99%)
Test Mode 14	Standby

2.5. Measurement Instruments List

RF Test System - SRD					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	MXA Signal Analyzer	Keysight	N9020A	MY52091402	Aug. 21, 2025
2	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 12, 2024
3	PSG Analog Signal Generator	Agilent	E8257D	MY46521908	Dec. 12, 2024
4	USB Wideband Power Sensor	Keysight	U2021XA	MY55130004	Mar. 21, 2025
5	USB Wideband Power Sensor	Keysight	U2021XA	MY55130006	Mar. 21, 2025
6	Wideband Radio Communication Tester	R&S	CMW500	102414	Dec. 12, 2024
7	RF Control Unit	Tonscend	JS0806-2	/	Aug. 21, 2025
8	Test Software	Tonscend	JS1120-3	V3.3.38	/
9	High and low temperature test chamber	ESPEC	MT3035	/	Mar. 21, 2025

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9163	01026	Dec. 18, 2024
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Sep. 25, 2025
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 12, 2024
4	Broadband Amplifier	SCHWARZBECK	BBV9743B	259	Dec. 12, 2024
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 12, 2024
6	3m chamber 3	YIHENG	EE106	/	Aug. 28, 2026
7	Test Software	FARA	EZ-EMC	FA-03A2	/
8	Loop Antenna	ETS	6507	1446	Dec. 12, 2024

Conducted Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	LISN	R&S	ENV216	101112	Dec. 12, 2024
2	LISN	R&S	ENV216	101113	Dec. 12, 2024
3	EMI Test Receiver	R&S	ESCS30	100353	Dec. 12, 2024
4	ISN CAT6	Schwarzbeck	NTFM 8158	CAT6-8158-0046	Dec. 12, 2024
5	ISN CAT5	Schwarzbeck	NTFM 8158	CAT5-8158-0046	Dec. 12, 2024
6	Test Software	R&S	EMC32	6.10.10	/

Note: 1. The Cal. Interval was one year.

2. The Cal. Interval was three years of the antenna.

3. The cable loss has been calculated in test result which connection between each test instruments.

3. TEST ITEM AND RESULTS

3.1. Conducted Emission

Limit

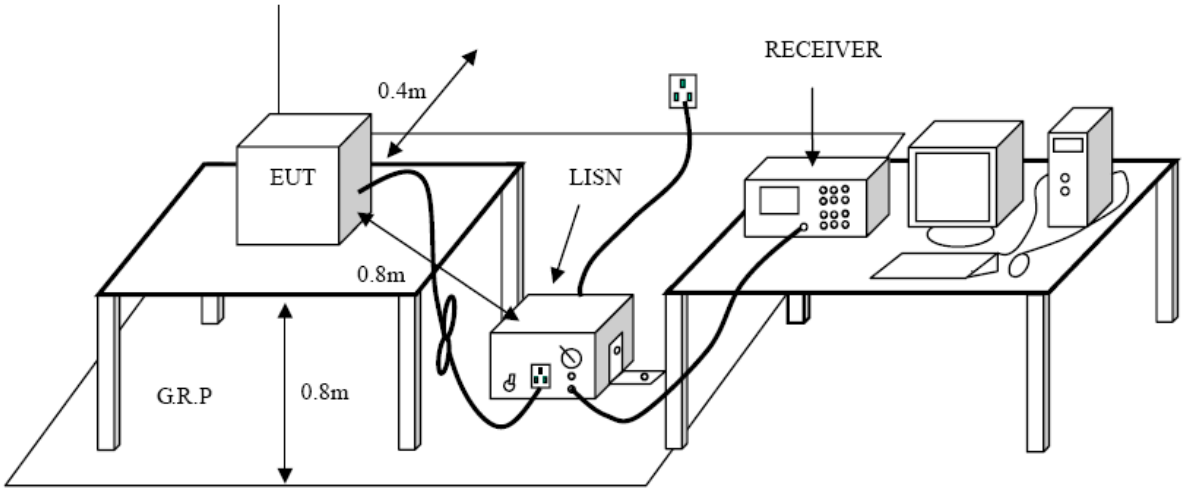
FCC CFR Title 47 Part 15 Subpart C Section 15.207

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration

Test Procedure



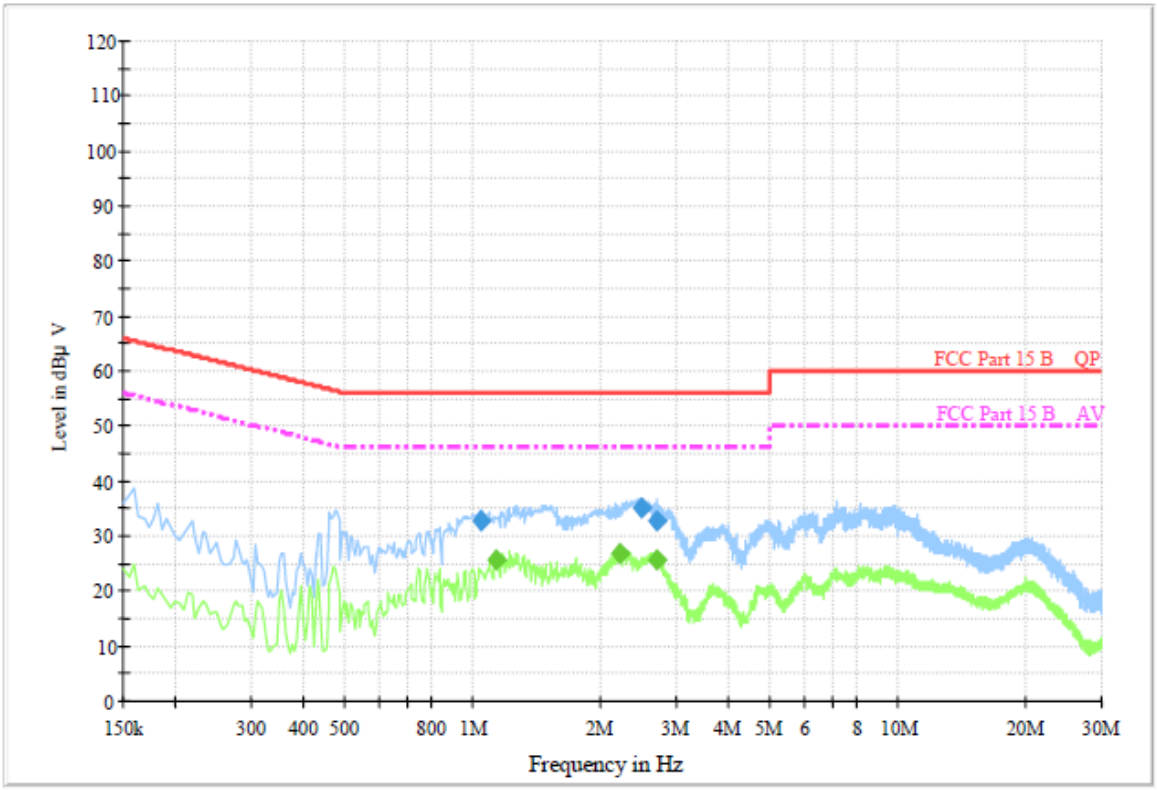
1. The EUT was setup according to ANSI C63.10:2013 requirements.
2. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface.
3. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm / 50 μH coupling impedance for the measuring equipment.
4. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs)
5. Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source.
6. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length.
7. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.
8. During the above scans, the emissions were maximized by cable manipulation.

Test Mode

Please refer to the clause 2.4.

Test Results

Test Voltage:	AC 120V/60Hz
Terminal:	Line
Remark:	Only worse case is reported.



Final Measurement Detector 1

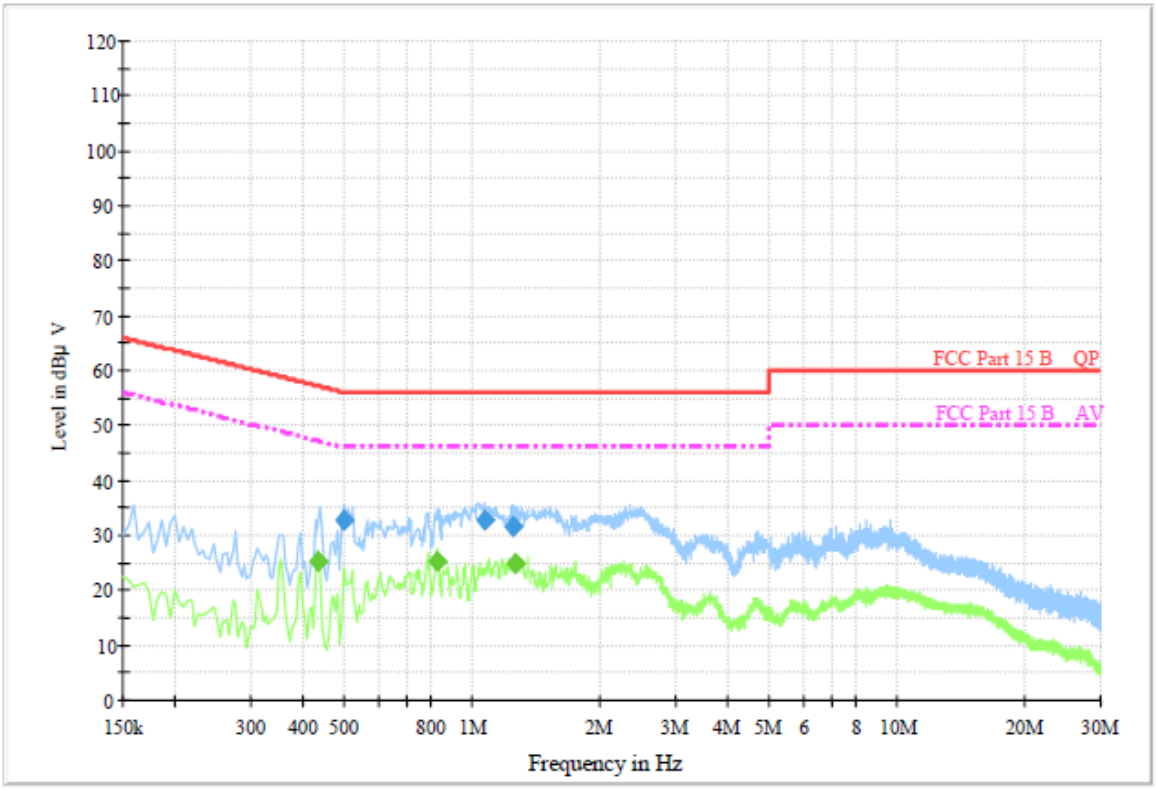
Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
1.045500	32.9	1000.00	9.000	On	L1	9.5	23.1	56.0	
2.476500	35.0	1000.00	9.000	On	L1	9.5	21.0	56.0	
2.697000	32.6	1000.00	9.000	On	L1	9.5	23.4	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
1.131000	25.8	1000.00	9.000	On	L1	9.5	20.2	46.0	
2.220000	26.8	1000.00	9.000	On	L1	9.5	19.2	46.0	
2.701500	25.8	1000.00	9.000	On	L1	9.5	20.2	46.0	

Emission Level = Read Level + Correct Factor

Test Voltage:	AC 120V/60Hz
Terminal:	Neutral
Remark:	Only worse case is reported.



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.496500	32.7	1000.00	9.000	On	N	9.4	23.4	56.1	
1.068000	32.7	1000.00	9.000	On	N	9.4	23.3	56.0	
1.239000	31.5	1000.00	9.000	On	N	9.5	24.5	56.0	

Final Measurement Detector 2

Frequency (MHz)	Average (dBµ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµ V)	Comment
0.433500	25.2	1000.00	9.000	On	N	9.4	22.0	47.2	
0.820500	25.3	1000.00	9.000	On	N	9.4	20.7	46.0	
1.257000	24.8	1000.00	9.000	On	N	9.4	21.2	46.0	

Emission Level = Read Level + Correct Factor

3.2. Radiated Spurious Emission

Limit

FCC CFR Title 47 Part 15 Subpart C Section 15.209

Frequency (MHz)	Field Strength (microvolts/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
960~1000	500	3

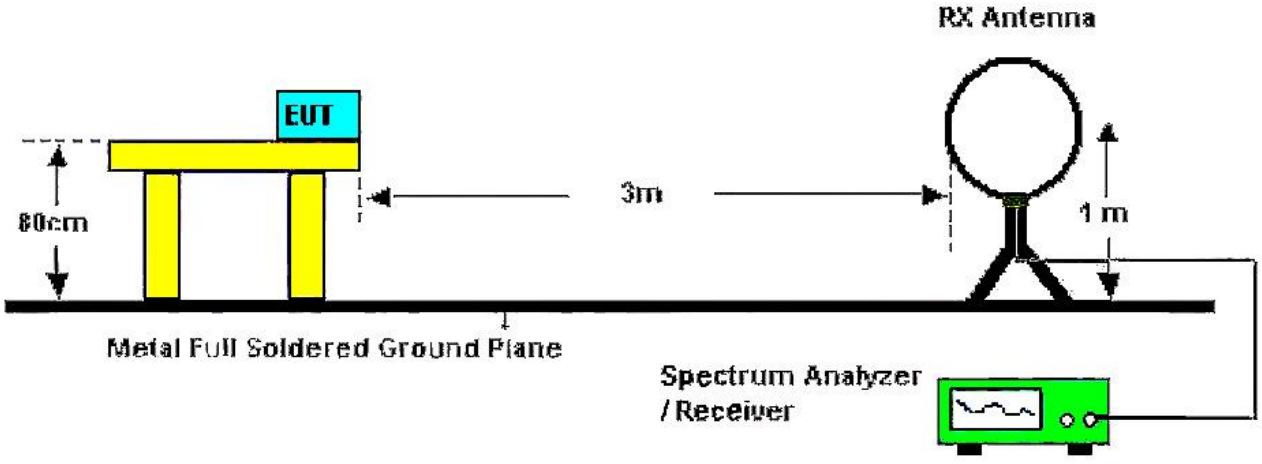
Frequency Range (MHz)	dBμV/m (at 3 meters)	
	Peak	Average
Above 1000	74	54

Note:

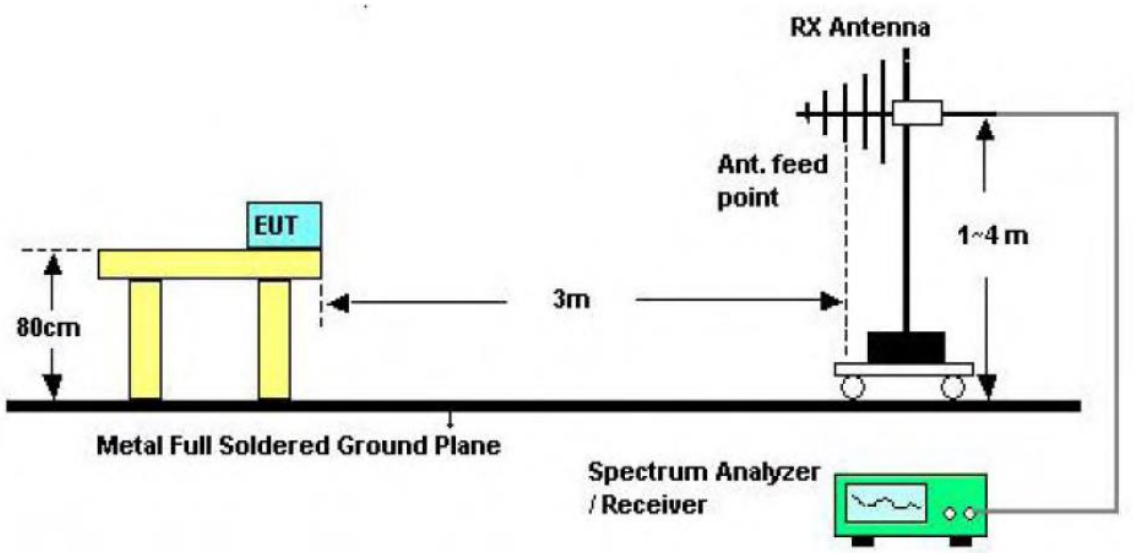
(1) The tighter limit applies at the band edges.

(2) Emission Level (dBuV/m)=20log Emission Level (uV/m).

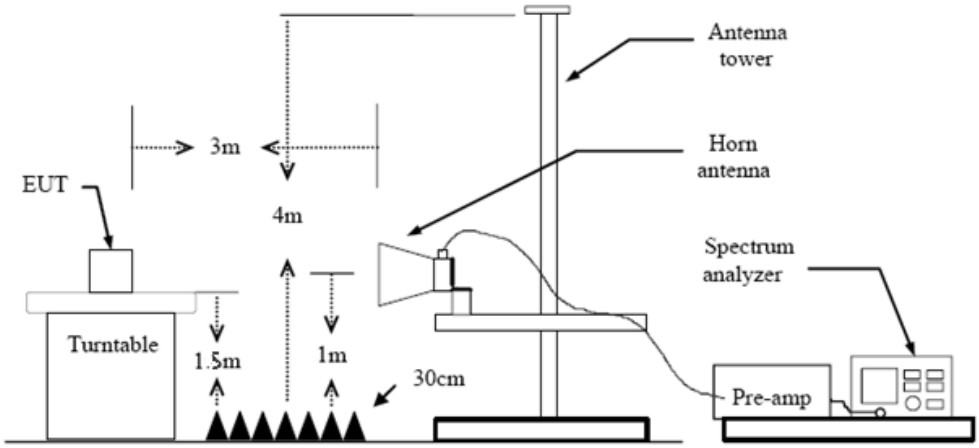
Test Configuration



Below 30MHz Test Setup



30-1000MHz Test Setup



Above 1GHz Test Setup

Test Procedure

1. The EUT was setup and tested according to ANSI C63.10:2013
2. The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The turn table is rotated 360 degrees to determine the position of the maximum emission level.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the top of a variable height antenna tower.
4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.
5. Set to the maximum power setting and enable the EUT transmit continuously.
6. Use the following spectrum analyzer settings

(1) Span shall wide enough to fully capture the emission being measured;
(2) 9k – 150kHz:
RBW=300 Hz, VBW=1 kHz, Sweep=auto, Detector function=peak, Trace=max hold
(3) 0.15M – 30MHz:
RBW=10 kHz, VBW=30 kHz, Sweep=auto, Detector function=peak, Trace=max hold
(4) 30M - 1 GHz:
RBW=120 kHz, VBW=300 kHz, Sweep=auto, Detector function=peak, Trace=max hold;
If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the

quasi-peak detector and reported.
(5) From 1 GHz to 10th harmonic:
RBW=1MHz, VBW=3MHz Peak detector for Peak value.
RBW=1MHz, VBW=10Hz with Peak Detector for Average Value.

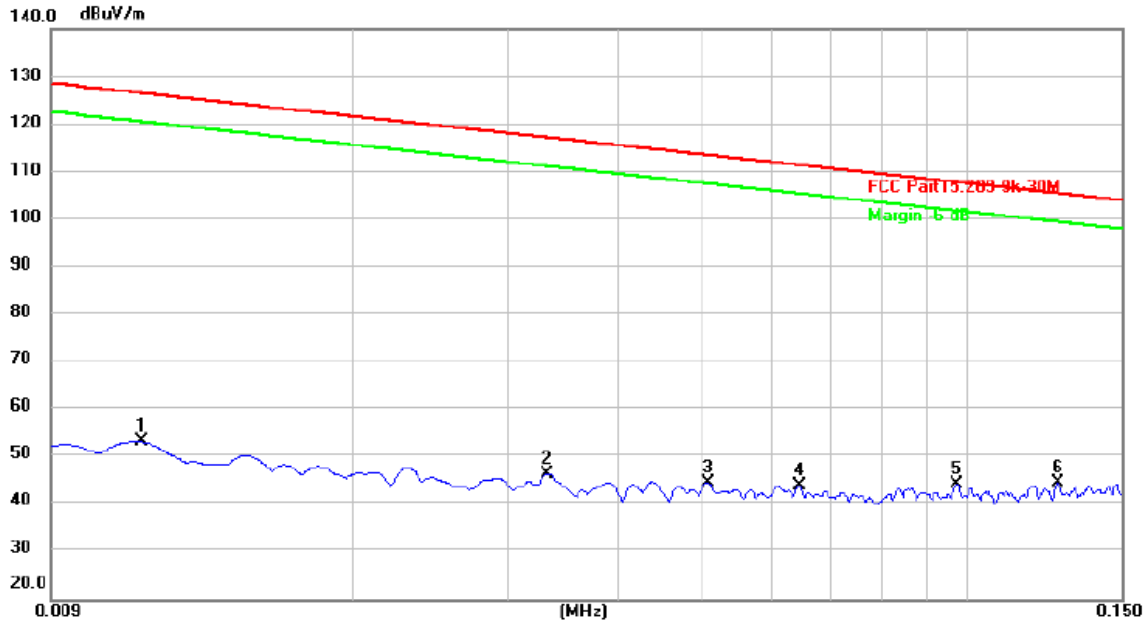
Test Mode

Please refer to the clause 2.4.

Test Result

9 kHz~150 kHz

Test Frequency	360kHz
Ant. Pol.	Coaxial
Remark	Only worse case is reported.

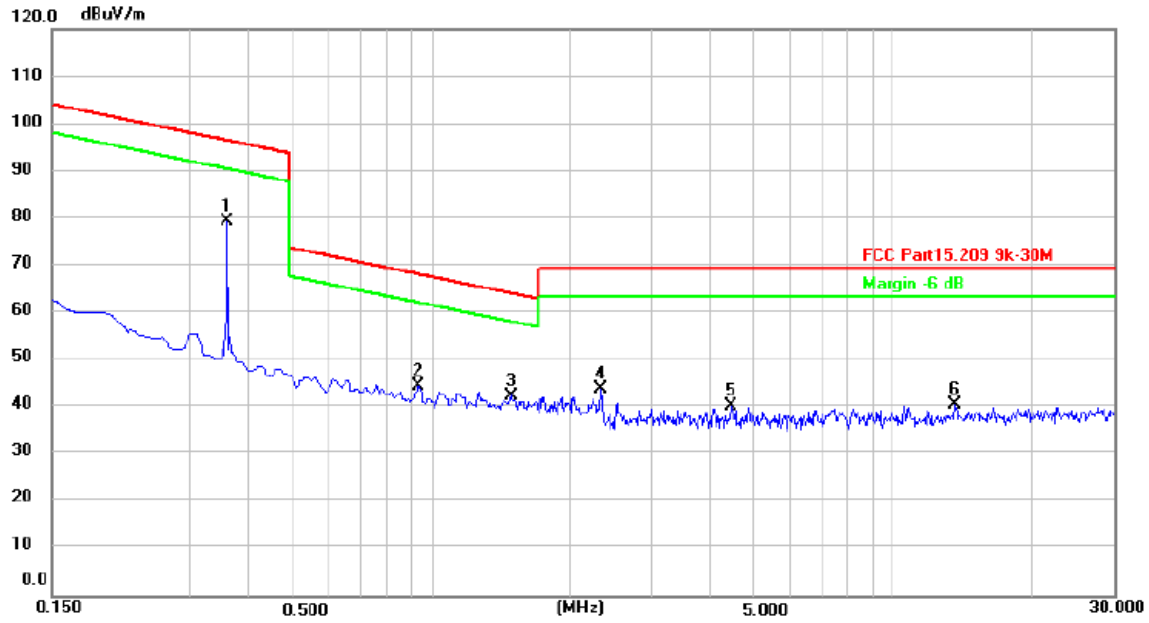


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	0.0113	25.50	27.91	53.41	126.52	-73.11	peak
2	0.0331	25.63	20.96	46.59	117.19	-70.60	peak
3	0.0506	25.46	19.21	44.67	113.51	-68.84	peak
4	0.0643	25.24	18.82	44.06	111.43	-67.37	peak
5	0.0974	26.44	17.91	44.35	107.83	-63.48	peak
6 *	0.1270	26.84	18.03	44.87	105.52	-60.65	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

150 kHz~30 MHz

Test Frequency	360kHz
Ant. Pol.	Coaxial
Remark	Only worse case is reported.

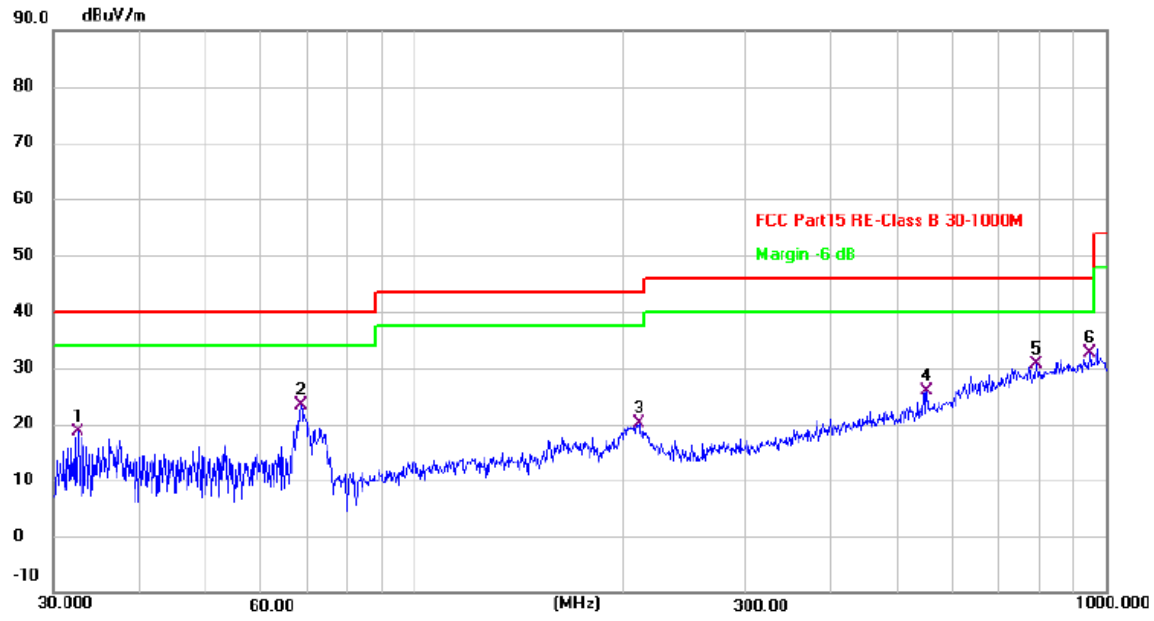


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	0.3598	61.70	17.64	79.34	96.48	-17.14	peak
2	0.9360	26.60	17.96	44.56	68.19	-23.63	peak
3	1.4833	24.47	18.13	42.60	64.21	-21.61	peak
4	2.3289	25.73	18.15	43.88	69.50	-25.62	peak
5	4.4484	22.17	18.10	40.27	69.50	-29.23	peak
6	13.5823	22.91	17.83	40.74	69.50	-28.76	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

30 MHz~1000 MHz

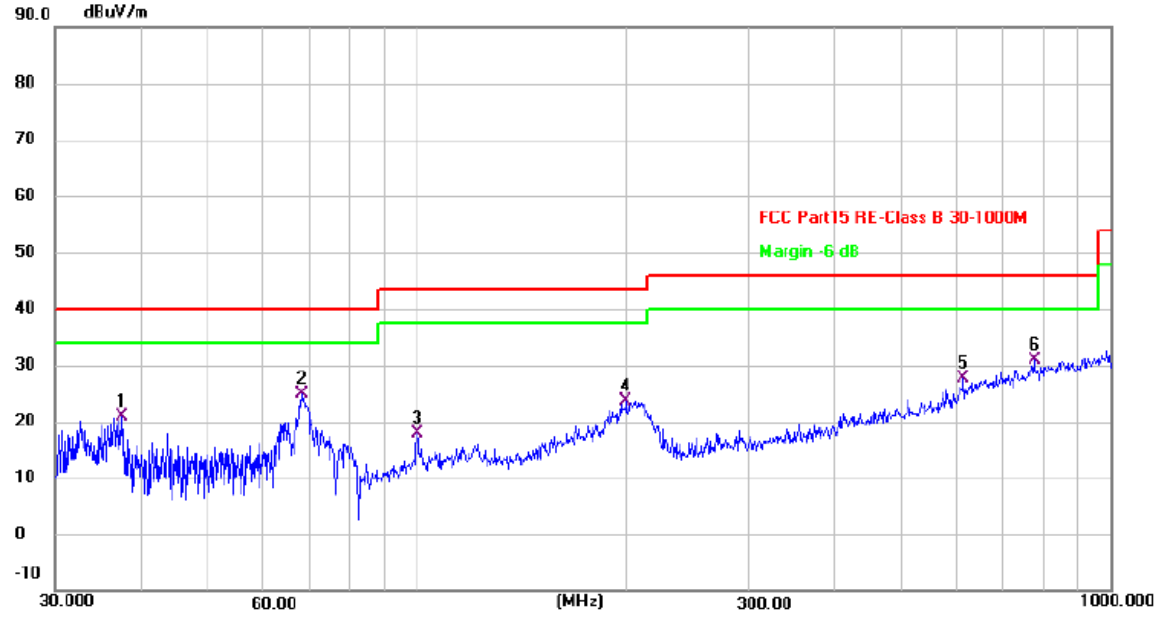
Test Frequency	360kHz
Ant. Pol.	Horizontal
Remark	Only worse case is reported.



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	32.5197	34.97	-16.41	18.56	40.00	-21.44	QP
2	68.3908	41.81	-18.54	23.27	40.00	-16.73	QP
3	210.7860	39.11	-18.99	20.12	43.50	-23.38	QP
4	550.9480	35.09	-9.18	25.91	46.00	-20.09	QP
5	793.3958	34.58	-3.91	30.67	46.00	-15.33	QP
6 *	948.7608	34.43	-1.71	32.72	46.00	-13.28	QP

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

Test Frequency	360kHz
Ant. Pol.	Vertical
Remark	Only worse case is reported.



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	37.4165	37.06	-16.07	20.99	40.00	-19.01	QP
2	68.1514	43.42	-18.50	24.92	40.00	-15.08	QP
3	99.8777	37.96	-19.98	17.98	43.50	-25.52	QP
4	199.9856	43.05	-19.37	23.68	43.50	-19.82	QP
5	614.2142	34.94	-7.41	27.53	46.00	-18.47	QP
6 *	776.8778	35.17	-4.24	30.93	46.00	-15.07	QP

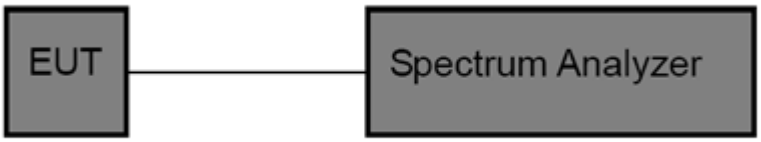
Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

3.3. 20dB Bandwidth

Limit

/

Test Configuration



Test Procedure

1. The transmitter output was connected to the spectrum analyzer through an attenuator, the path loss was compensated to the results for each measurement.
2. Set to the maximum power setting and enable the EUT transmit continuously
3. Use the following spectrum analyzer settings:
   a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.
   b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW, unless otherwise specified by the applicable requirement.
4. Measure and record the results in the test report.

Test Mode

Please refer to the clause 2.4

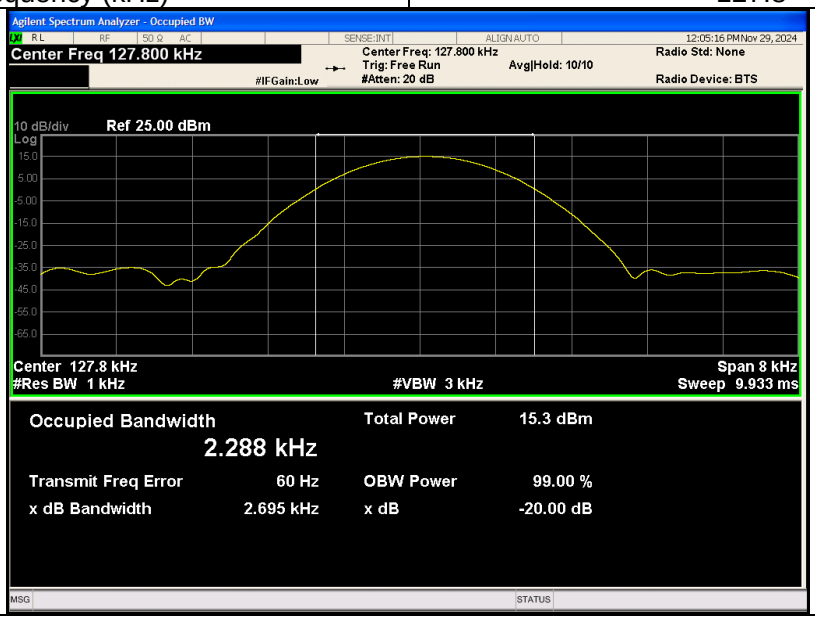
Test Results

Frequency (kHz)	20dB Bandwidth (kHz)
127.8	2.695
360	2.694

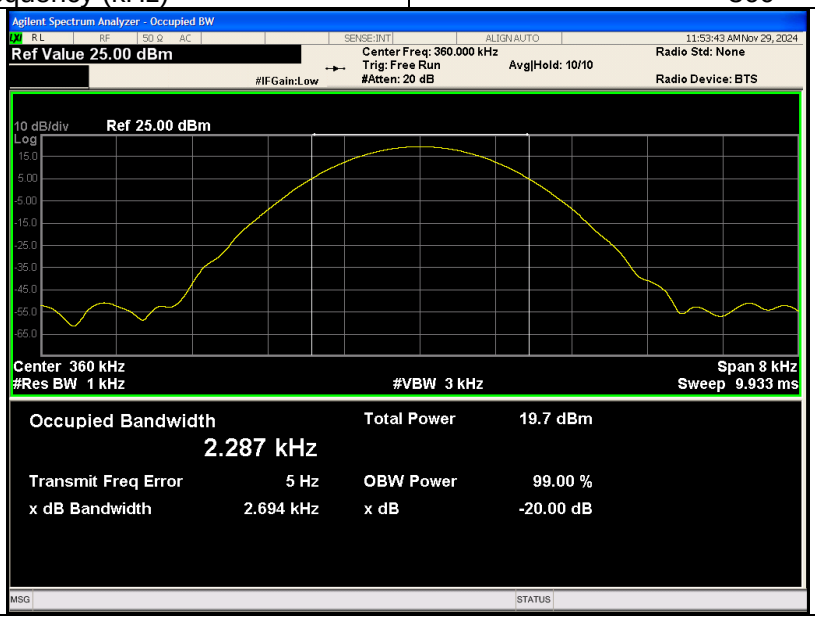
Note: Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measurement bandwidth will always follow the RBW. The RBW is set to 1 kHz to perform the occupied bandwidth test.

Test Graphs:

Frequency (kHz)	127.8



Frequency (kHz)	360



3.4. Antenna Requirement

Requirement

FCC CFR Title 47 Part 15 Subpart C 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. The use of a permanently attached antenna or of antenna that uses a unique coupling to the intentional radiator, 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.

Test Result

The EUT's antenna is an Inductive Loop coil Antenna, there is no gain requirement.

************************THE END*************************