Microtest
微 测 检 测

Test Report

Report No.: MTi240419011-01E1

Date of issue: 2024-05-16

Applicant: Winstar Electronics Technology Co., Ltd.

Product: Wireless Charging Phone Holder

Model(s): C02, C03, A13, A17

FCC ID: 2BF9N-C02A17A13C03

Shenzhen Microtest Co., Ltd.

http://www.mtitest.cn

The test report is only used for customer scientific research, teaching, internal quality control and other purposes, and is for internal reference only.

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China.
Tel: (86-755)88850135 Fax: (86-755) 88850136 Web: www.mtitest.cn E-mail: mti@51mti.com

Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

2. The test results in this test report are only responsible for the samples submitted

3. This test report is invalid without the seal and signature of the laboratory.

4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.

5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

Table of contents

1 General Description 5

1.1 Description of the EUT 5
1.2 Description of test modes 5
1.3 Environmental Conditions 6
1.4 Description of support units 6
1.5 Measurement uncertainty 6

2 Summary of Test Result 7

3 Test Facilities and accreditations 8

3.1 Test laboratory 8

4 List of test equipment 9

5 Evaluation Results (Evaluation) 10

5.1 Antenna requirement 10

6 Radio Spectrum Matter Test Results (RF) 11

6.1 Conducted Emission at AC power line 11
6.2 20dB Occupied Bandwidth 18
6.3 Emissions in frequency bands (below 30MHz) 21
6.4 Emissions in frequency bands (30MHz - 1GHz) 28

Photographs of the test setup 35

Photographs of the EUT 36

Test Result Certification	
Applicant:	Winstar Electronics Technology Co., Ltd.
Address:	504, Building B2, Anle Industrial Zone, No.172 Hangcheng Avenue, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen
Manufacturer:	Winstar Electronics Technology Co., Ltd.
Address:	504, Building B2, Anle Industrial Zone, No.172 Hangcheng Avenue, Sanwei Community, Hangcheng Street, Bao'an District, Shenzhen
Product description	
Product name:	Wireless Charging Phone Holder
Trade mark:	N/A
Model name:	C02
Series Model(s):	C03, A13, A17
Standards:	47 CFR Part 15C
Test Method:	ANSI C63.10-2013
Date of Test	
Date of test:	2024-04-22 to 2024-05-14
Test result:	Pass

Test Engineer	:	Yanice Xie
		(Yanice.Xie)
Reviewed By	:	David. Lee
		(David Lee)
Approved By	:	Leon chen
		(Leon Chen)

1 General Description

1.1 Description of the EUT

Product name:	Wireless Charging Phone Holder
Model name:	C02
Series Model(s):	C03, A13, A17
Model difference:	All the models are the same circuit and module, except the model name and appearance. C03 is same as C02, A13 and A17 is different appearance from C02.
Electrical rating:	Input: 5Vdc 2A, 9Vdc 2A Wireless Output: 5W/7.5W/10W/15W
Accessories:	Cable:USB-A to Type-C cable (1.0m)
Hardware version:	C-01
Software version:	S-01
Test sample(s) number:	MTi240419011-01S1001
RF specification	
Operating frequency range:	115-205kHz
Modulation type:	ASK
Antenna(s) type:	Coil Antenna

1.2 Description of test modes

No.	Emission test modes
Mode1	Wireless Output(5W)
Mode2	Wireless Output(7.5W)
Mode3	Wireless Output(10W)
Mode4	Wireless Output(15W)
Mode5	Standby

1.3 Environmental Conditions

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

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

1.4 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.

Support equipment list			
Description	Model	Serial No.	Manufacturer
wireless charging load	YBZ1.1	/	YBZ
HUAWEI QUICK CHARGE(18W)	HW-059200CHQ	B6828JLC215475	HUAWEI
Adaptor(33W)	/	/	XIAOMI
Support cable list			
Description	Length (m)	From	To
/	/	/	/

1.5 Measurement uncertainty

Measurement	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	±3.1dB
Occupied channel bandwidth	±3 %
Radiated spurious emissions (9kHz~30MHz)	±4.3dB
Radiated spurious emissions (30MHz~1GHz)	±4.7dB
Temperature	±1 °C
Humidity	± 5 %

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

2 Summary of Test Result

No.	Item	Requirement	Result
1	Antenna requirement	47 CFR Part 15.203	Pass
2	Conducted Emission at AC power line	47 CFR Part 15.207(a)	Pass
3	20dB Occupied Bandwidth	47 CFR Part 15.215(c)	Pass
4	Emissions in frequency bands (below 30MHz)	47 CFR Part 15.209	Pass
5	Emissions in frequency bands (30MHz - 1GHz)	47 CFR Part 15.209	Pass

3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573
IC Registration No.:	21760
CABID:	CN0093

4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Conducted Emission at AC power line						
1	EMI Test Receiver	Rohde&schwarz	ESCI3	101368	2024-03-20	2025-03-19
2	Artificial mains network	Schwarzbeck	NSLK 8127	183	2024-03-21	2025-03-20
3	Artificial Mains Network	Rohde & Schwarz	ESH2-Z5	100263	2024-03-20	2025-03-19
20dB Occupied Bandwidth						
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2024-03-20	2025-03-19
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2024-03-21	2025-03-20
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2024-03-21	2025-03-20
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2024-03-21	2025-03-20
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2024-03-21	2025-03-20
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2024-03-21	2025-03-20
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2024-03-21	2025-03-20
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2024-03-20	2025-03-19
9	DC Power Supply	Agilent	E3632A	MY40027695	2024-03-21	2025-03-20
Emissions in frequency bands (below 30MHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2024-03-20	2025-03-19
2	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2024-03-23	2025-03-22
3	Amplifier	Hewlett-Packard	8447F	3113A06184	2024-03-20	2025-03-19
Emissions in frequency bands (30MHz - 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2024-03-20	2025-03-19
2	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2023-06-11	2025-06-10
3	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2024-03-23	2025-03-22
4	Amplifier	Hewlett-Packard	8447F	3113A06184	2024-03-20	2025-03-19
5	Multi-device Controller	TuoPu	TPMDC	/	2024-03-20	2025-03-19

5 Evaluation Results (Evaluation)

5.1 Antenna requirement

Test Requirement:	Refer to 47 CFR 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.

5.1.1 Conclusion:

The antenna of the EUT is permanently attached. The EUT complies with the requirement of FCC PART 15.203.

6 Radio Spectrum Matter Test Results (RF)

6.1 Conducted Emission at AC power line

Test Requirement:	Except as shown in paragraphs (b)and (c)of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN).
Test Limit:	

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

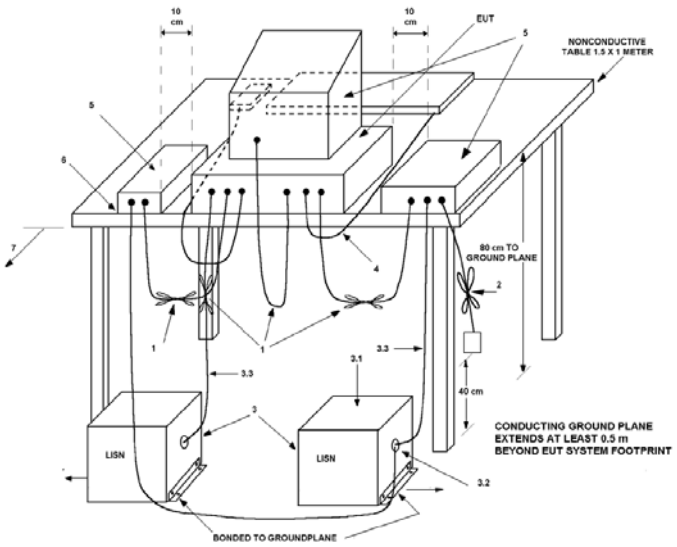
*Decreases with the logarithm of the frequency.

Test Method:	ANSI C63.10-2013 section 6.2
Procedure:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices

6.1.1 E.U.T. Operation:

Operating Environment:					
Temperature:	25.6 °C	Humidity:	56 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode2, Mode3) is recorded in the report				

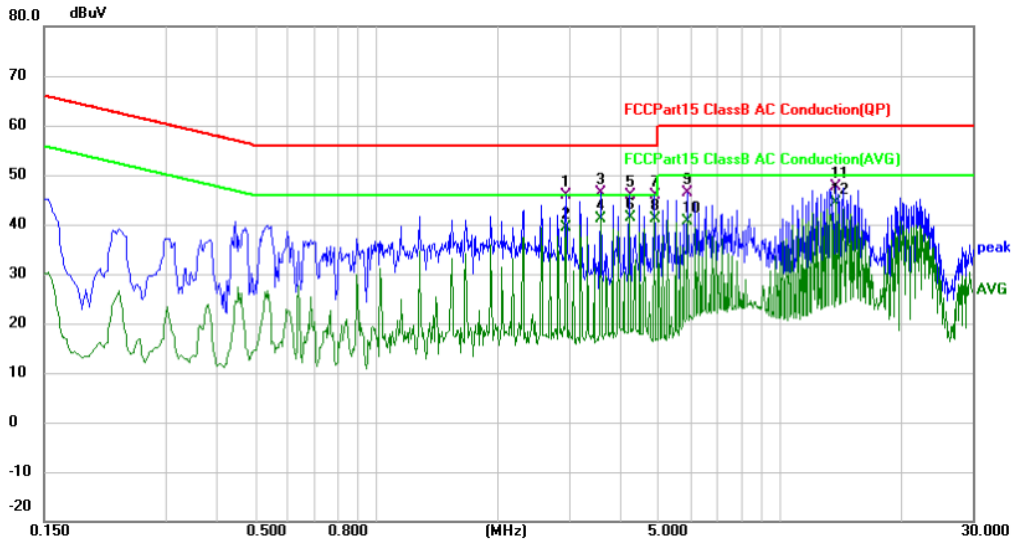
6.1.2 Test Setup Diagram:



6.1.3 Test Data:

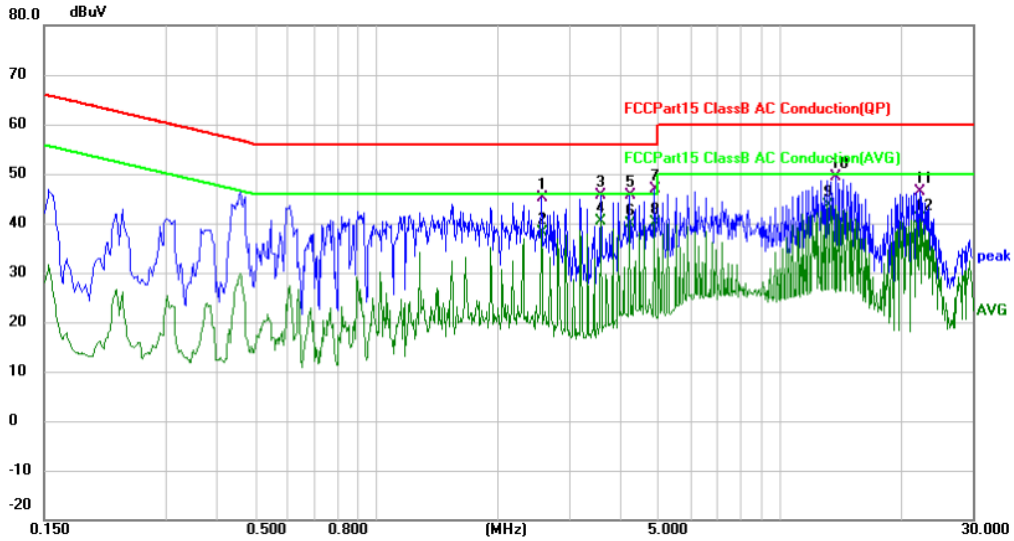
C02:

Mode2 / Line: Line / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		2.9500	35.01	10.80	45.81	56.00	-10.19	QP	
2		2.9500	28.47	10.80	39.27	46.00	-6.73	AVG	
3		3.5900	35.58	10.82	46.40	56.00	-9.60	QP	
4		3.5900	30.25	10.82	41.07	46.00	-4.93	AVG	
5		4.2340	34.95	10.84	45.79	56.00	-10.21	QP	
6	*	4.2340	30.52	10.84	41.36	46.00	-4.64	AVG	
7		4.8740	35.02	10.86	45.88	56.00	-10.12	QP	
8		4.8740	30.20	10.86	41.06	46.00	-4.94	AVG	
9		5.8980	34.91	11.35	46.26	60.00	-13.74	QP	
10		5.8980	29.36	11.35	40.71	50.00	-9.29	AVG	
11		13.7220	36.27	11.35	47.62	60.00	-12.38	QP	
12		13.7220	32.91	11.35	44.26	50.00	-5.74	AVG	

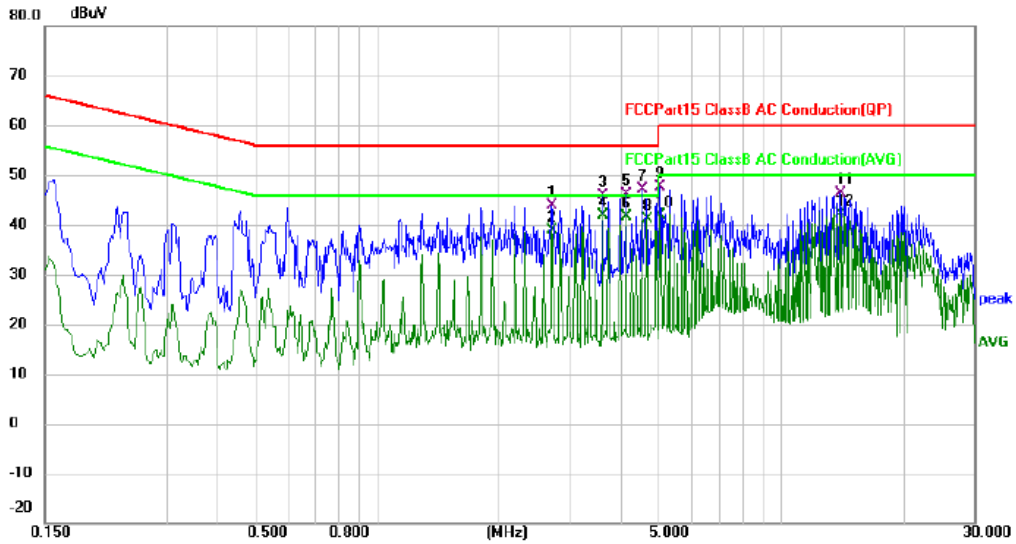
Mode2 / Line: Neutral / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		2.5660	34.39	10.80	45.19	56.00	-10.81	QP	
2		2.5660	27.28	10.80	38.08	46.00	-7.92	AVG	
3		3.5900	34.80	10.84	45.64	56.00	-10.36	QP	
4	*	3.5900	29.61	10.84	40.45	46.00	-5.55	AVG	
5		4.2340	34.79	10.86	45.65	56.00	-10.35	QP	
6		4.2340	28.97	10.86	39.83	46.00	-6.17	AVG	
7		4.8740	35.97	10.88	46.85	56.00	-9.15	QP	
8		4.8740	29.28	10.88	40.16	46.00	-5.84	AVG	
9		13.0820	32.38	11.31	43.69	50.00	-6.31	AVG	
10		13.7220	38.13	11.35	49.48	60.00	-10.52	QP	
11		22.1900	34.64	11.67	46.31	60.00	-13.69	QP	
12		22.1900	29.11	11.67	40.78	50.00	-9.22	AVG	

A13:

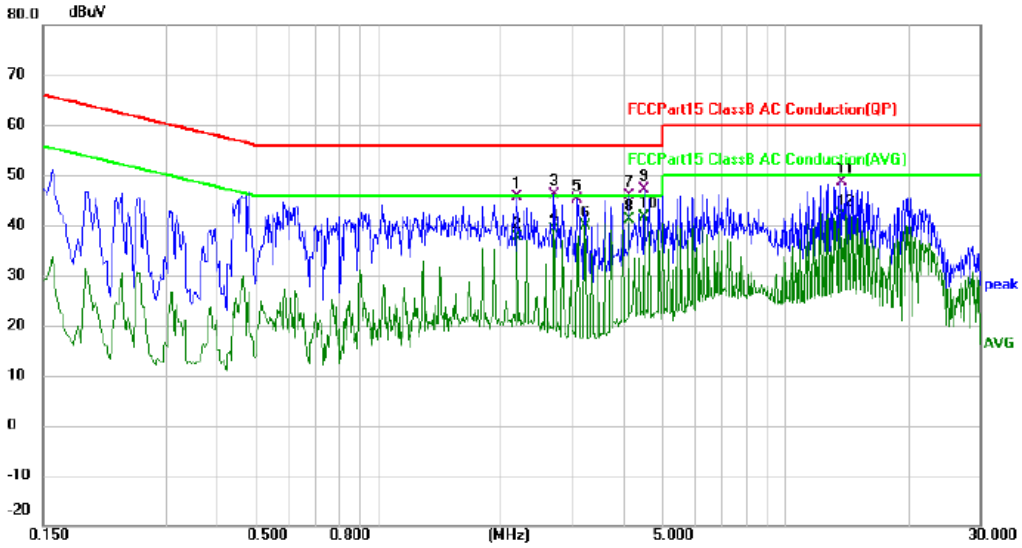
Mode2 / Line: Line / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		2.7060	33.21	10.79	44.00	56.00	-12.00	QP	
2		2.7060	28.12	10.79	38.91	46.00	-7.09	AVG	
3		3.6100	35.15	10.82	45.97	56.00	-10.03	QP	
4	*	3.6100	30.98	10.82	41.80	46.00	-4.20	AVG	
5		4.1260	35.42	10.83	46.25	56.00	-9.75	QP	
6		4.1260	30.89	10.83	41.72	46.00	-4.28	AVG	
7		4.5140	36.16	10.85	47.01	56.00	-8.99	QP	
8		4.6420	30.35	10.85	41.20	46.00	-4.80	AVG	
9		5.0300	36.64	10.88	47.52	60.00	-12.48	QP	
10		5.0300	31.10	10.88	41.98	50.00	-8.02	AVG	
11		13.9260	34.96	11.36	46.32	60.00	-13.68	QP	
12		13.9260	30.79	11.36	42.15	50.00	-7.85	AVG	

Q

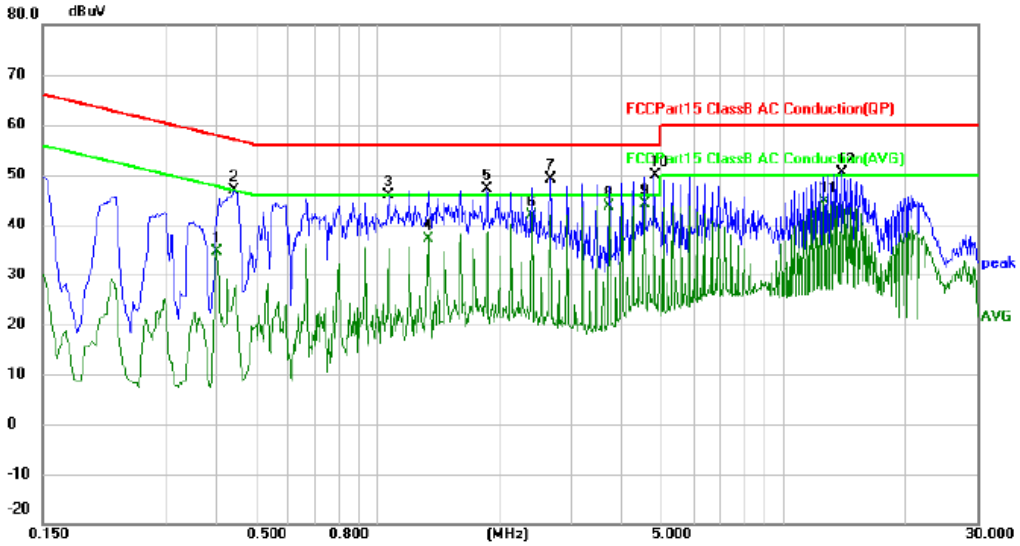
Mode2 / Line: Neutral / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		2.1900	34.89	10.78	45.67	56.00	-10.33	QP	
2		2.1900	26.89	10.78	37.67	46.00	-8.33	AVG	
3		2.7060	35.37	10.81	46.18	56.00	-9.82	QP	
4		2.7060	28.44	10.81	39.25	46.00	-6.75	AVG	
5		3.0900	34.29	10.82	45.11	56.00	-10.89	QP	
6		3.2220	28.97	10.83	39.80	46.00	-6.20	AVG	
7		4.1260	35.01	10.85	45.86	56.00	-10.14	QP	
8		4.1260	30.33	10.85	41.18	46.00	-4.82	AVG	
9		4.5100	36.36	10.87	47.23	56.00	-8.77	QP	
10	*	4.5100	30.83	10.87	41.70	46.00	-4.30	AVG	
11		13.6580	37.25	11.34	48.59	60.00	-11.41	QP	
12		13.6580	30.75	11.34	42.09	50.00	-7.91	AVG	

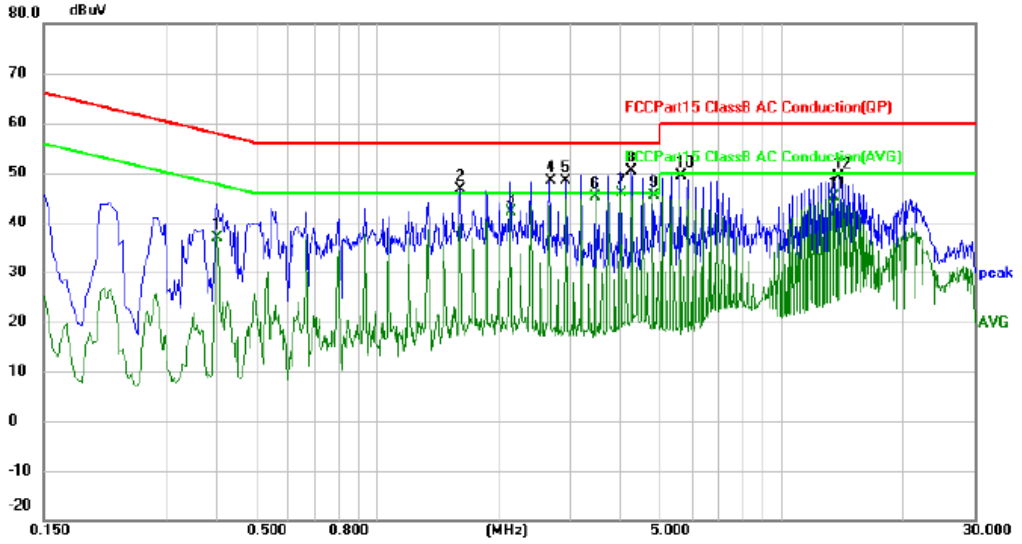
A17:

Mode3 / Line: Line / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4020	23.25	11.27	34.52	47.81	-13.29	AVG	
2		0.4420	35.59	11.37	46.96	57.02	-10.06	peak	
3		1.0660	33.22	12.76	45.98	56.00	-10.02	peak	
4		1.3340	23.87	13.29	37.16	46.00	-8.84	AVG	
5		1.8660	36.39	10.63	47.02	56.00	-8.98	peak	
6		2.4020	31.27	10.63	41.90	46.00	-4.10	AVG	
7		2.6700	38.46	10.64	49.10	56.00	-6.90	peak	
8		3.7380	33.03	10.64	43.67	46.00	-2.33	AVG	
9	*	4.5380	33.60	10.65	44.25	46.00	-1.75	AVG	
10		4.8020	39.24	10.65	49.89	56.00	-6.11	peak	
11		12.5460	33.61	10.90	44.51	50.00	-5.49	AVG	
12		13.8740	39.53	10.97	50.50	60.00	-9.50	peak	

Mode3 / Line: Neutral / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4020	25.64	11.27	36.91	47.81	-10.90	AVG	
2		1.6019	32.80	13.83	46.63	56.00	-9.37	peak	
3		2.1340	31.38	10.63	42.01	46.00	-3.99	AVG	
4		2.6660	37.78	10.64	48.42	56.00	-7.58	peak	
5		2.9340	37.83	10.64	48.47	56.00	-7.53	peak	
6		3.4700	34.37	10.65	45.02	46.00	-0.98	AVG	
7	*	4.0020	35.24	10.65	45.89	46.00	-0.11	AVG	
8		4.2659	39.65	10.65	50.30	56.00	-5.70	peak	
9		4.8019	34.66	10.65	45.31	46.00	-0.69	AVG	
10		5.6019	38.66	10.67	49.33	60.00	-10.67	peak	
11		13.3379	34.12	10.93	45.05	50.00	-4.95	AVG	
12		13.8739	38.24	10.97	49.21	60.00	-10.79	peak	

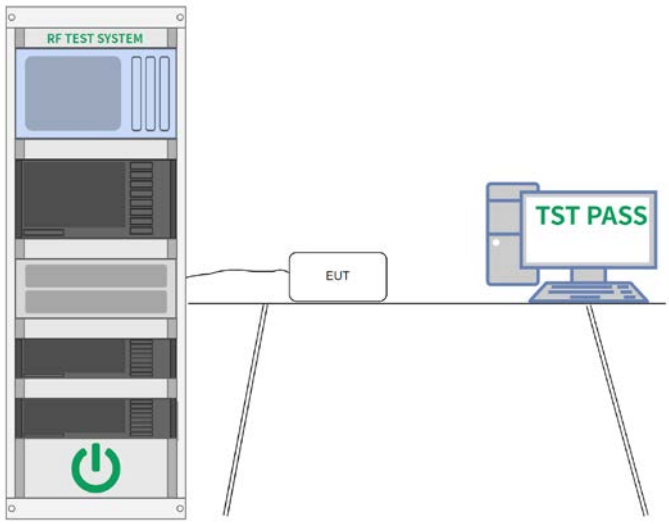
6.2 20dB Occupied Bandwidth

Test Requirement:	47 CFR Part 15.215(c)
Test Limit:	Refer to 47 CFR 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.
Test Method:	ANSI C63.10-2013, section 6.9.2
Procedure:	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. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2. d) Steps a) through c) might require iteration to adjust within the specified tolerances. e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target "−xx dB down" requirement; that is, if the requirement calls for measuring the −20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value. f) Set detection mode to peak and trace mode to max hold. g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value). h) Determine the "−xx dB down amplitude" using [(reference value) − xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument. i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j). j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "-xx dB down amplitude" determined in step h). If a marker is below this "−xx dB down amplitude" value, then it shall be as close as possible to this value. The occupied bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the "-xx dB down amplitude" determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth. k) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

6.2.1 E.U.T. Operation:

Operating Environment:					
Temperature:	25 °C	Humidity:	59 %	Atmospheric Pressure:	99 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode4) is recorded in the report				

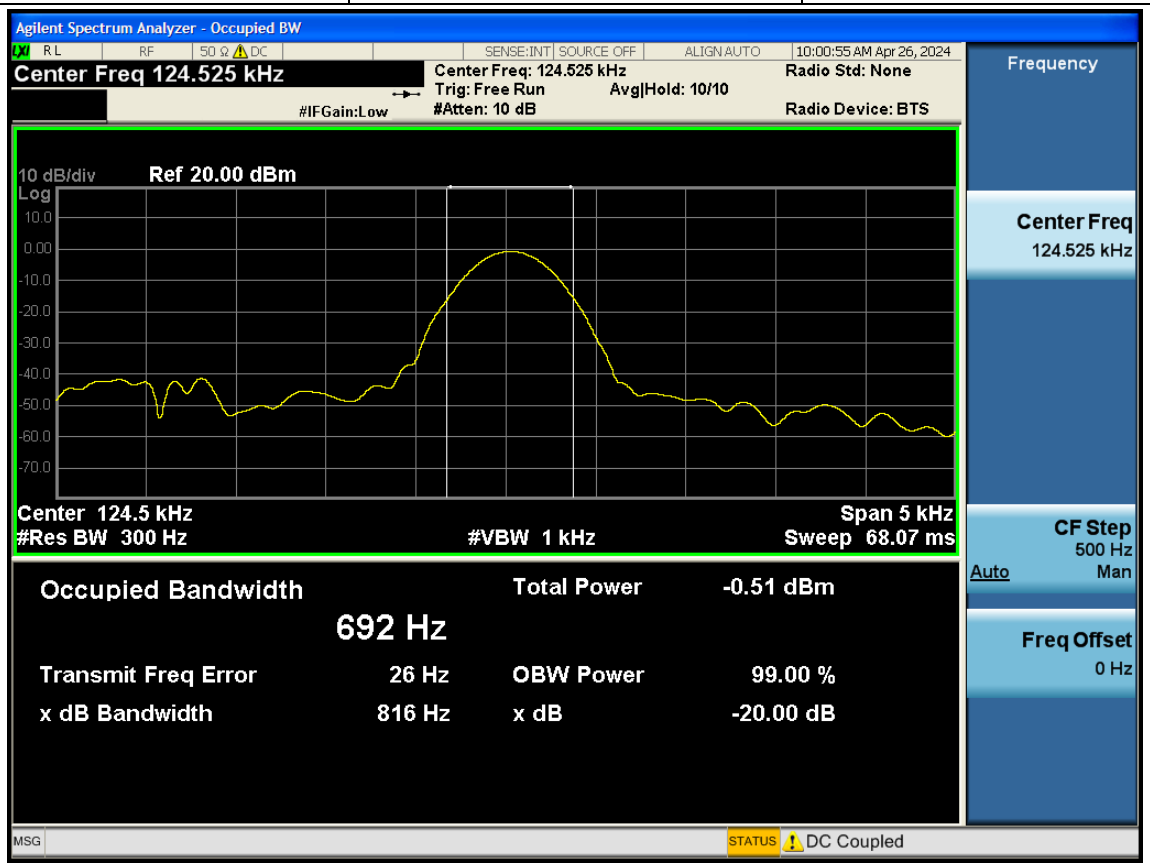
6.2.2 Test Setup Diagram:



6.2.3 Test Data:

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 300 Hz to perform the occupied bandwidth test.

Frequency kHz	20 dB occupied bandwidth Hz	99% occupied bandwidth Hz
124.525	816	692



6.3 Emissions in frequency bands (below 30MHz)

Test Requirement:	47 CFR Part 15.209
Test Limit:	

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
Above 960	500	3

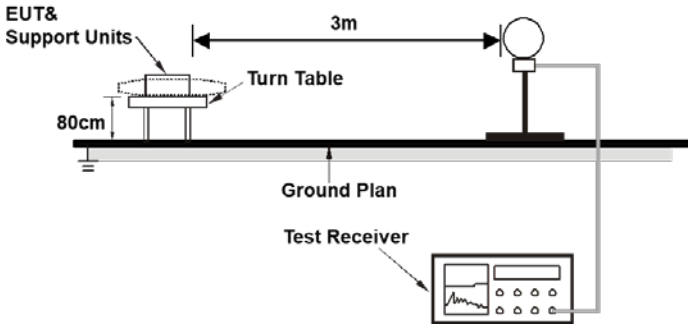
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
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 and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a)and (b)of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

Test Method:	ANSI C63.10-2013 section 6.4
Procedure:	ANSI C63.10-2013 section 6.4

6.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.5 °C	Humidity:	43 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode4) is recorded in the report				

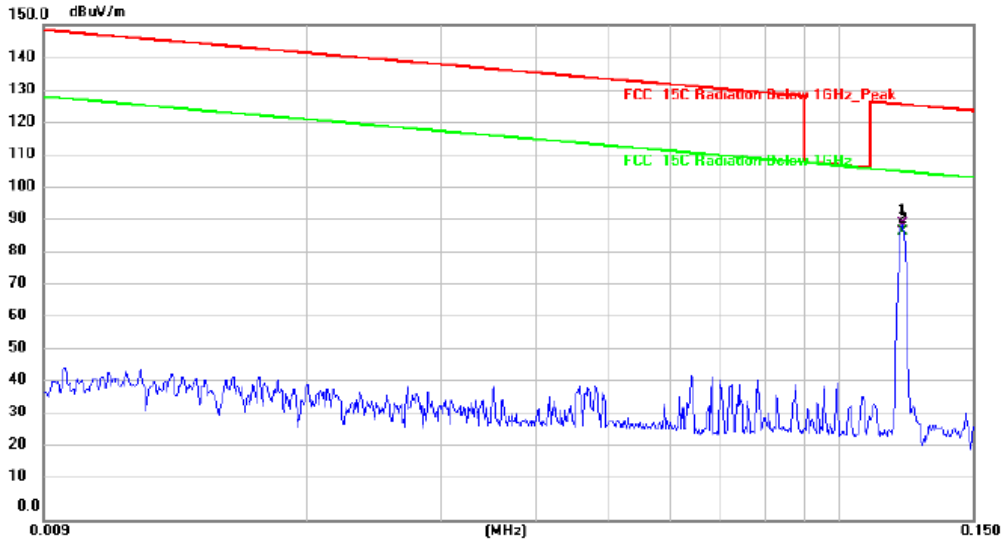
6.3.2 Test Setup Diagram:



6.3.3 Test Data:

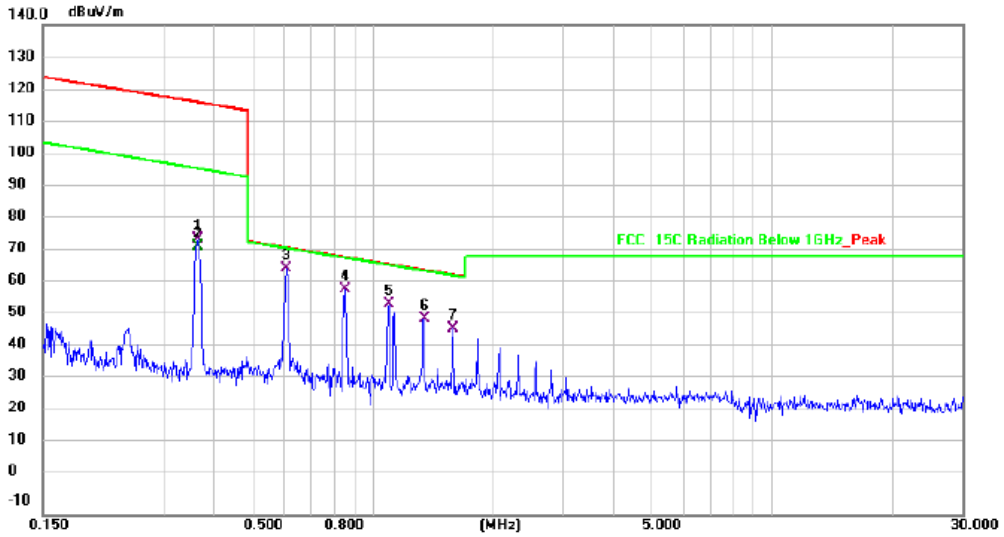
C02:

Mode4 / Polarization: coplane / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1211	69.62	20.21	89.83	125.96	-36.13	Peak	
2	*	0.1211	67.35	20.21	87.56	105.96	-18.40	AVG	

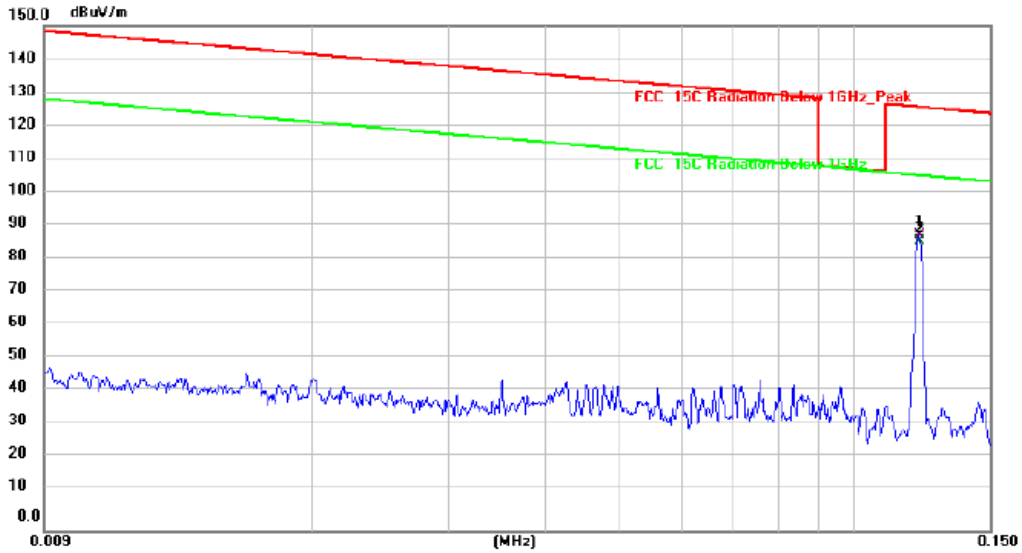
Mode4 / Polarization: coplane / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.3653	54.28	20.33	74.61	116.36	-41.75	Peak	
2		0.3653	51.93	20.33	72.26	96.36	-24.10	AVG	
3	*	0.6075	45.03	20.41	65.44	71.94	-6.50	QP	
4		0.8528	38.53	20.51	59.04	69.00	-9.96	QP	
5		1.0997	34.08	20.57	54.65	66.80	-12.15	QP	
6		1.3450	29.55	20.60	50.15	65.05	-14.90	QP	
7		1.5851	26.65	20.61	47.26	63.63	-16.37	QP	

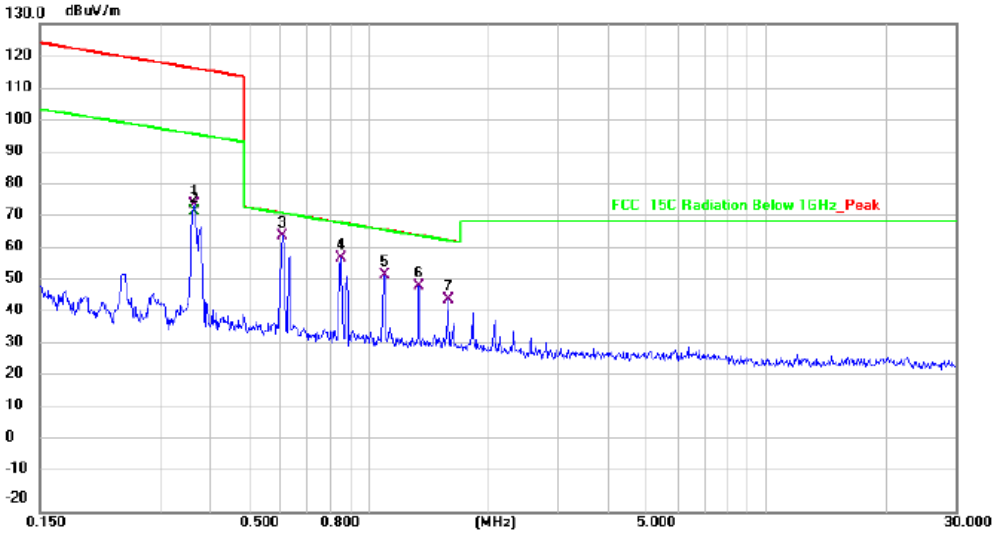
A13:

Mode4 / Polarization: coplane / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1215	67.02	20.98	88.00	125.93	-37.93	Peak	
2	*	0.1215	64.98	20.98	85.96	105.93	-19.97	AVG	

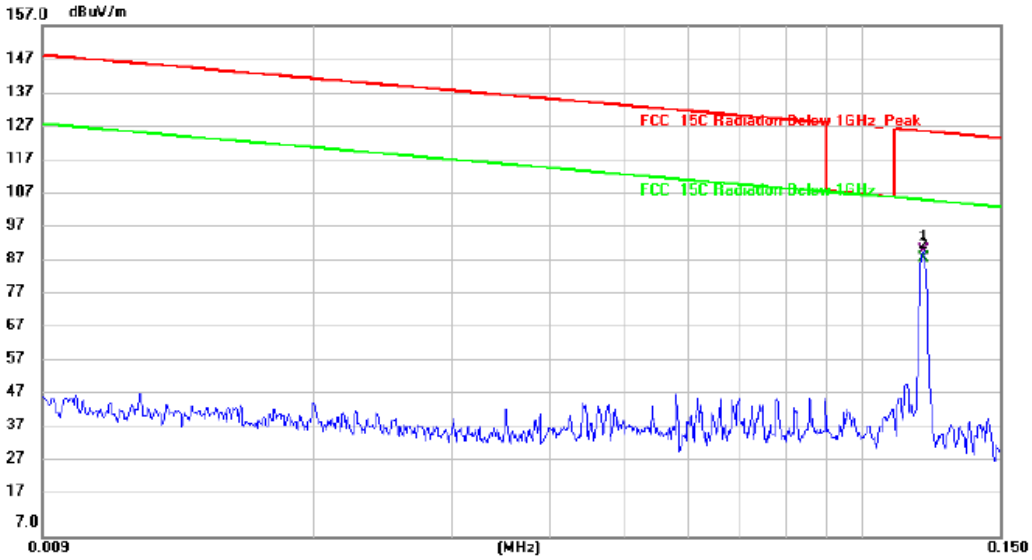
Mode4 / Polarization: coplane / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.3653	53.42	21.10	74.52	116.36	-41.84	Peak	
2		0.3653	51.31	21.10	72.41	96.36	-23.95	AVG	
3	*	0.6075	43.88	21.18	65.06	71.94	-6.88	QP	
4		0.8528	36.99	21.28	58.27	69.00	-10.73	QP	
5		1.0997	31.70	21.34	53.04	66.80	-13.76	QP	
6		1.3379	28.04	21.36	49.40	65.10	-15.70	QP	
7		1.5851	24.15	21.37	45.52	63.63	-18.11	QP	

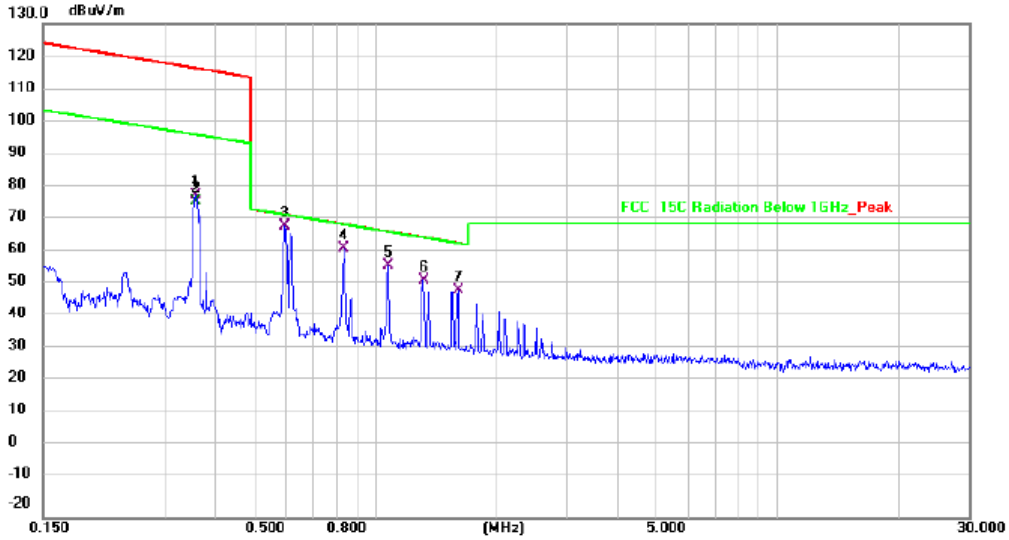
A17:

Mode4 / Polarization: coplane / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.1198	70.03	20.99	91.02	126.06	-35.04	Peak	
2	*	0.1198	68.11	20.99	89.10	106.06	-16.96	AVG	

Mode4 / Polarization: coplane / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.3577	56.98	21.10	78.08	116.54	-38.46	Peak	
2		0.3577	54.93	21.10	76.03	96.54	-20.51	AVG	
3	*	0.5979	47.48	21.18	68.66	72.08	-3.42	QP	
4		0.8393	40.51	21.28	61.79	69.14	-7.35	QP	
5		1.0766	35.53	21.34	56.87	66.98	-10.11	QP	
6		1.3168	30.94	21.36	52.30	65.24	-12.94	QP	
7		1.6105	27.92	21.37	49.29	63.49	-14.20	QP	

6.4 Emissions in frequency bands (30MHz - 1GHz)

Test Requirement:	47 CFR Part 15.209
Test Limit:	

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
Above 960	500	3

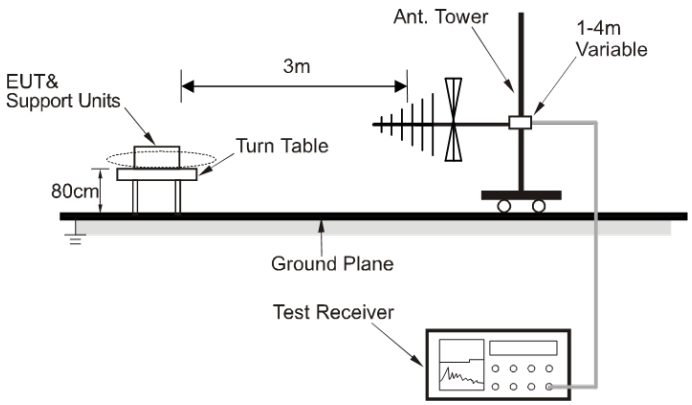
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.
In the emission table above, the tighter limit applies at the band edges.
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 and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
As shown in § 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a)and (b)of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For point-to-point operation under paragraph (b)of this section, the peak field strength shall not exceed 2500 millivolts/meter at 3 meters along the antenna azimuth.

Test Method:	ANSI C63.10-2013 section 6.5
Procedure:	ANSI C63.10-2013 section 6.5

6.4.1 E.U.T. Operation:

Operating Environment:					
Temperature:	22.5 °C	Humidity:	43 %	Atmospheric Pressure:	101 kPa
Pre test mode:	Mode1, Mode2, Mode3, Mode4, Mode5				
Final test mode:	All of the listed pre-test mode were tested, only the data of the worst mode (Mode2, Mode3) is recorded in the report				

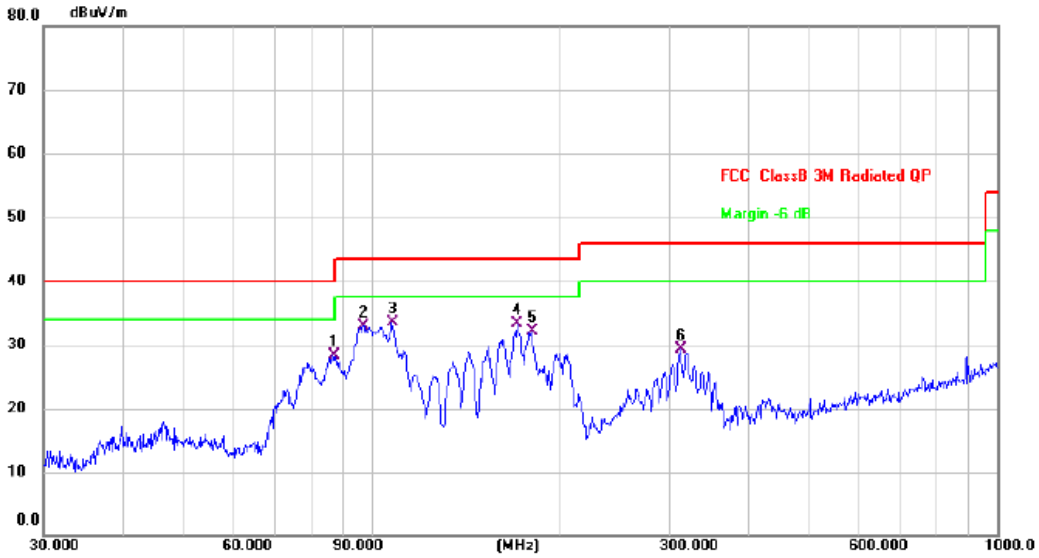
6.4.2 Test Setup Diagram:



6.4.3 Test Data:

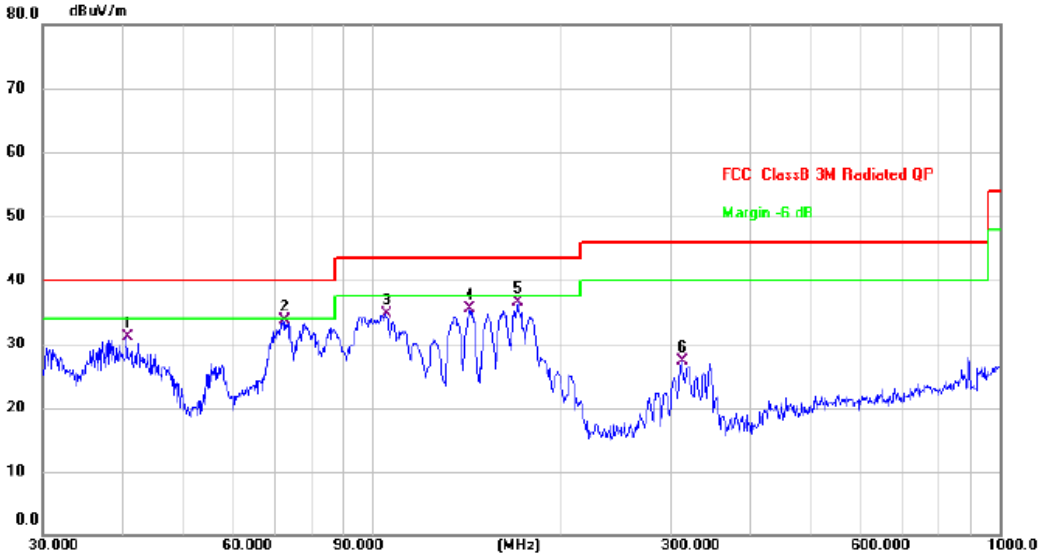
C02:

Mode2 / Polarization: Horizontal / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		86.8068	44.80	-16.58	28.22	40.00	-11.78	QP	
2		97.1148	47.65	-14.68	32.97	43.50	-10.53	QP	
3	*	107.8877	46.12	-12.66	33.46	43.50	-10.04	QP	
4		170.7926	48.79	-15.52	33.27	43.50	-10.23	QP	
5		180.0165	46.88	-14.86	32.02	43.50	-11.48	QP	
6		311.0867	38.98	-9.74	29.24	46.00	-16.76	QP	

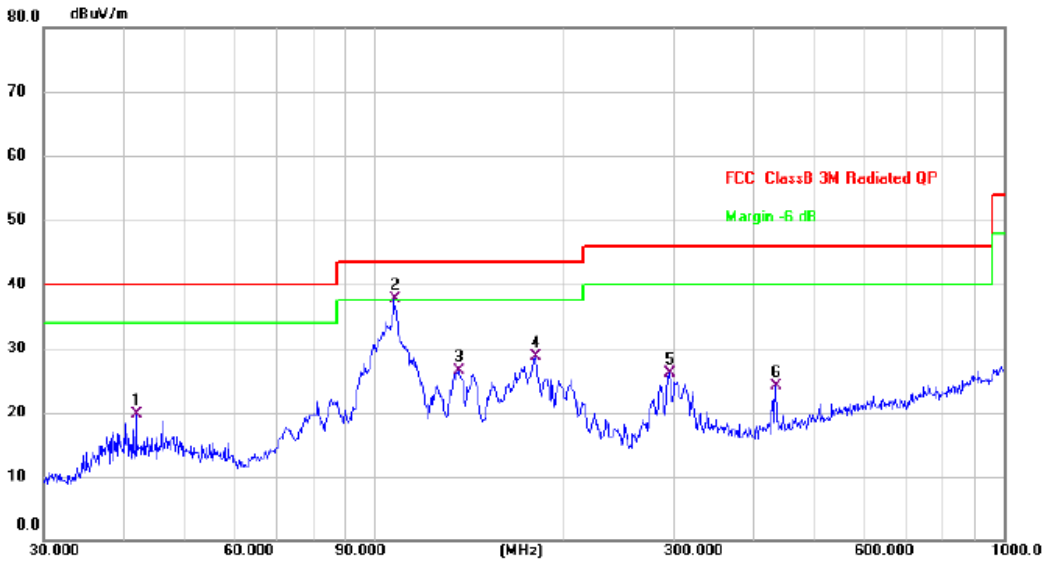
Mode2 / Polarization: Vertical / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		40.7016	44.34	-13.30	31.04	40.00	-8.96	QP	
2	*	72.3376	49.68	-16.02	33.66	40.00	-6.34	QP	
3		105.2718	47.35	-12.69	34.66	43.50	-8.84	QP	
4		142.8243	49.65	-14.16	35.49	43.50	-8.01	QP	
5		170.7926	52.09	-15.52	36.57	43.50	-6.93	QP	
6		311.0867	37.04	-9.74	27.30	46.00	-18.70	QP	

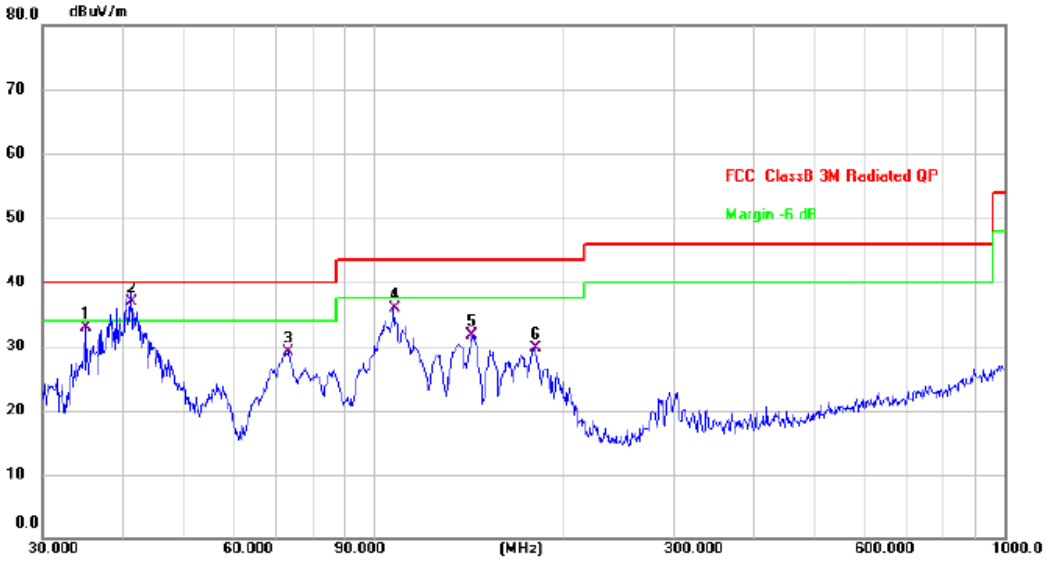
A13:

Mode3 / Polarization: Horizontal / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		42.0066	32.53	-12.90	19.63	40.00	-20.37	QP	
2	*	107.8877	50.30	-12.66	37.64	43.50	-5.86	QP	
3		136.4598	42.06	-15.61	26.45	43.50	-17.05	QP	
4		181.2834	43.54	-14.82	28.72	43.50	-14.78	QP	
5		294.1137	36.37	-10.24	26.13	46.00	-19.87	QP	
6		434.0650	31.93	-7.73	24.20	46.00	-21.80	QP	

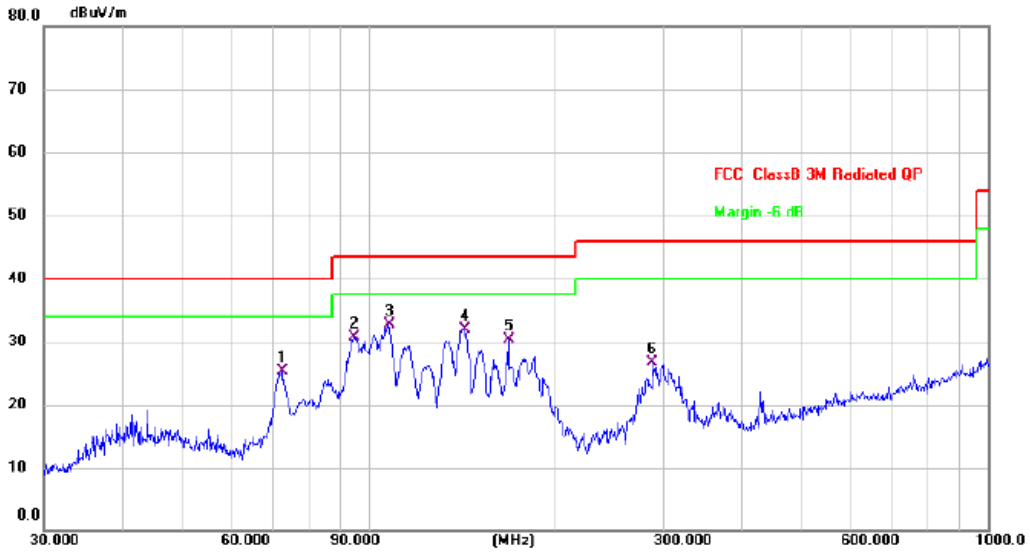
Mode3 / Polarization: Vertical / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		35.0048	47.91	-15.01	32.90	40.00	-7.10	QP	
2	*	41.2765	50.01	-13.12	36.89	40.00	-3.11	QP	
3		73.3593	45.46	-16.43	29.03	40.00	-10.97	QP	
4		107.8877	48.55	-12.66	35.89	43.50	-7.61	QP	
5		142.8243	45.77	-14.16	31.61	43.50	-11.89	QP	
6		180.6488	44.65	-14.86	29.79	43.50	-13.71	QP	

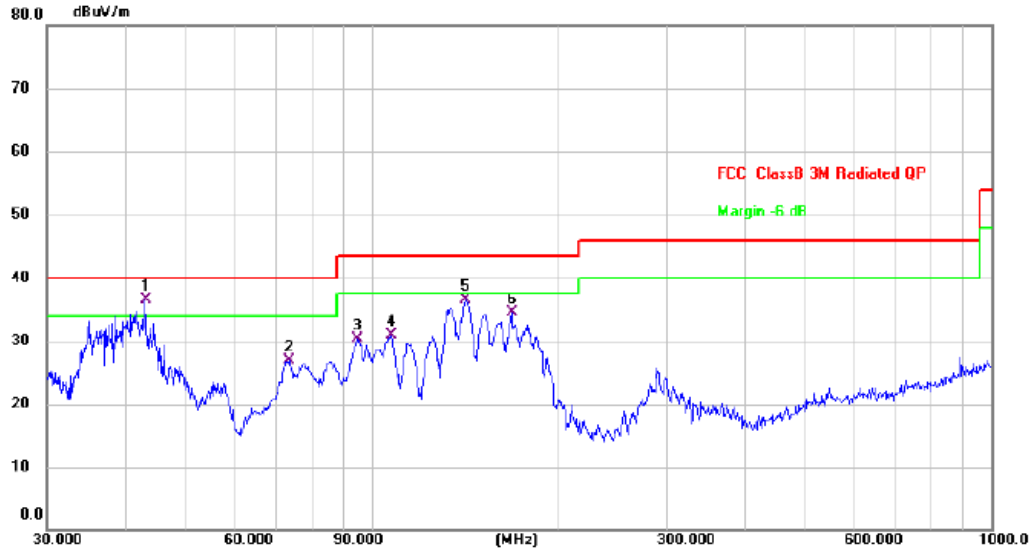
A17:

Mode3 / Polarization: Horizontal / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		72.5916	41.39	-16.09	25.30	40.00	-14.70	QP	
2		95.0929	45.92	-15.13	30.79	43.50	-12.71	QP	
3	*	107.8877	45.41	-12.66	32.75	43.50	-10.75	QP	
4		142.8243	46.09	-14.16	31.93	43.50	-11.57	QP	
5		168.4137	45.68	-15.42	30.26	43.50	-13.24	QP	
6		287.9904	37.27	-10.53	26.74	46.00	-19.26	QP	

Mode3 / Polarization: Vertical / CH: L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	43.0505	49.04	-12.60	36.44	40.00	-3.56	QP	
2		73.8756	43.55	-16.72	26.83	40.00	-13.17	QP	
3		94.7601	45.59	-15.31	30.28	43.50	-13.22	QP	
4		107.5101	43.49	-12.54	30.95	43.50	-12.55	QP	
5		141.8262	50.58	-14.17	36.41	43.50	-7.09	QP	
6		168.4138	49.83	-15.42	34.41	43.50	-9.09	QP	

Photographs of the test setup

Refer to Appendix - Test Setup Photos.

Photographs of the EUT

Refer to Appendix - EUT Photos

----End of Report----