TEST REPORT

Applicant Name:	JEM ACCESSORIES INC.
Address:	32 Brunswick Avenue, Edison, New Jersey, United States,08817
Report Number:	SZ3240220-05885E-RF-00A
FCC ID:	2AHAS-AWC81016

Test Standard (s)

FCC Part 15C

Sample Description

Product Type:	15W Wireless Charging Mount
Model No.:	AWC8-1016-BLK
Multiple Model(s) No.:	AWC8-1016-***
Trade Mark:	N/A
Date Received:	2024/02/20
Issue Date:	2024/04/28

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

April Zhang

RF Engineer

Approved By:

Nancy Wang

RF Supervisor

Note: The information marked# is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZ3240220-05885E-RF-00A	Original Report	2024/04/28

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	15W Wireless Charging Mount
Tested Model	AWC8-1016-BLK
Multiple Model(s)	AWC8-1016-***
Frequency	134.8kHz
Antenna Type	Coil
Input Voltage	DC 5V/3A, 9V/2A
Wireless Output Power	5/7.5/10/15Watts
Sample serial number	2HB7-1 (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A
Note: The Multiple models are electrically identical with the test model except for model number. Please refer to the declaration letter# for more detail, which was provided by manufacturer.	

Objective

This test report is in accordance with Part 2, Subpart J, and Part 15, Subparts A and C of the Federal Communications Commission's rules.

The objective is to determine the compliance of EUT with FCC rules, section 15.203, 15.205 and 15.209.

Measurement Uncertainty

Parameter		Uncertainty
AC Power Lines Conducted Emissions	9kHz-150kHz	3.94dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.84dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz – 30MHz	3.30dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a test mode.

EUT Exercise Software

No software used in test.

Local Support Equipment

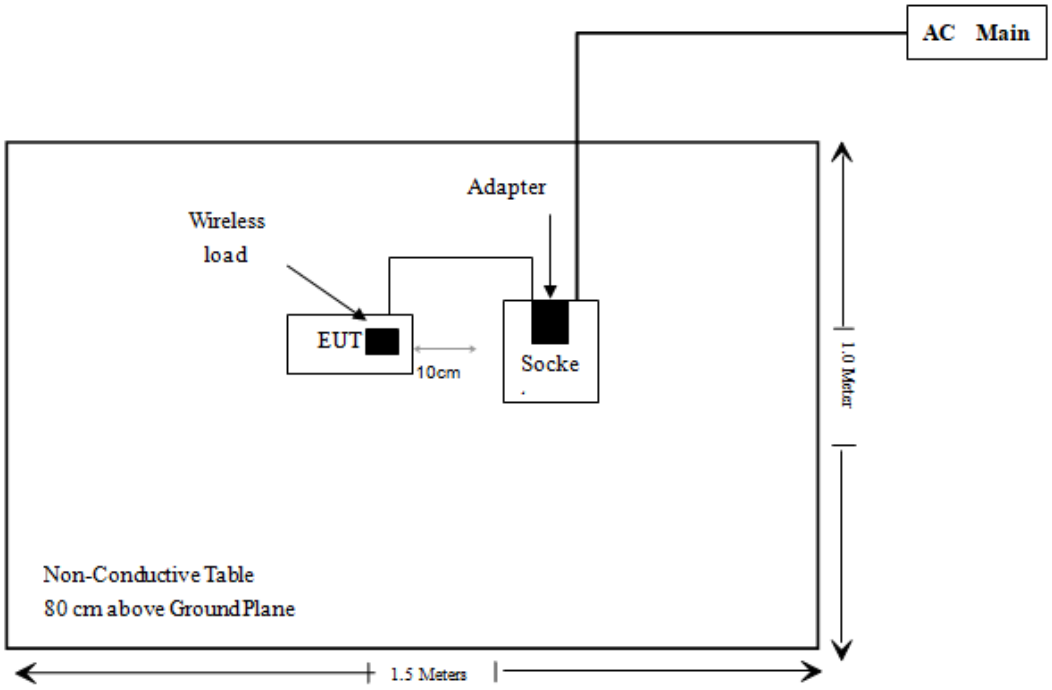
Manufacturer	Description	Model	Serial Number
Unknown	Wireless load	Unknown	Unknown
YANZI	Adapter	LJL-02	Unknown

External I/O Cable

Cable Description	Length (m)	From Port	To
USB Cable	0.8	EUT	Adapter

Block Diagram of Test Setup

For Radiated Emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC§1.1310 & §2.1091	Maximum Permissible Exposure(MPE)	Compliant
FCC§15.203	Antenna Requirement	Compliant
FCC§15.207	AC Line Conducted Emission	Not Applicable
§15.209 §15.205	Radiated Emission Test	Compliant
§15.215 (c)	20dB Bandwidth	Compliant

Not Applicable: The EUT was used in the vehicle condition.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Test Below 1GHz					
R&S	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
Sonoma instrument	Pre-amplifier	310 N	186238	2023/06/08	2024/06/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2024/07/19
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Radiated Test Below 30MHz					
R&S	EMI Test Receiver	ESR3	102455	2024/01/16	2025/01/15
BACL	Active Loop Antenna	1313-1A	4031911	2024/03/21	2025/03/20
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
MPE					
SPEAG	Probe	MAGPy-8H3D-E3D	3106	2024/03/04	2025/03/03
SPEAG	Data Acquisition System	MAPGPY-DAS	3089	2024/03/04	2025/03/03

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC§15.203 – ANTENNA REQUIREMENT

Applicable Standard

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.

Antenna Connected Construction

The EUT has one coil antenna arrangement which was permanently attached, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant.

FCC §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According with 680106 D01 Wireless Power Transfer v04 clause 3.2

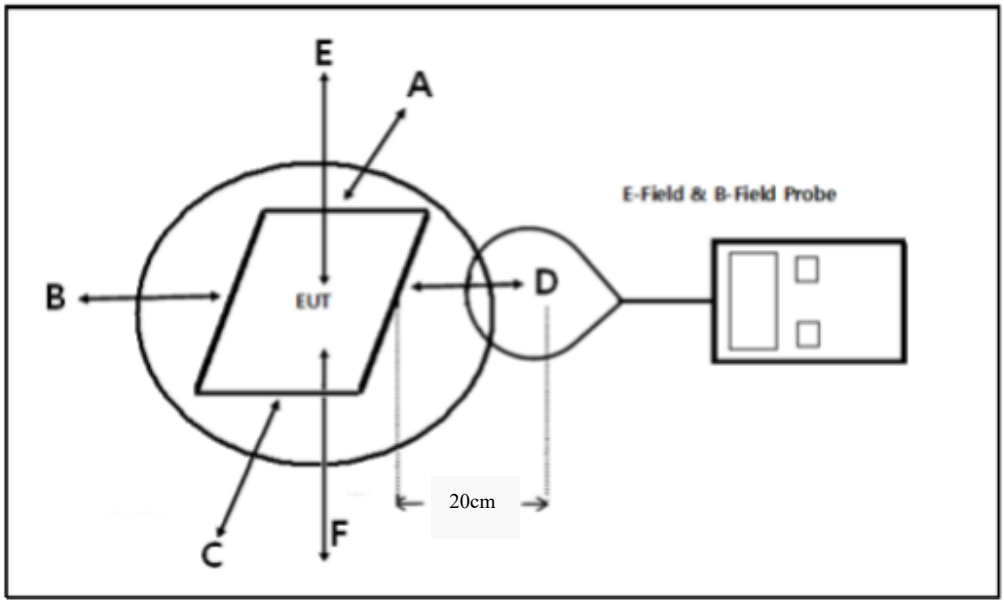
Accordingly, for § 2.1091-Mobile devices, the MPE limits between 100 kHz to 300 kHz are to be considered the same as those at 300 kHz in Table 1 of § 1.1310, that is, 614 V/m and 1.63 A/m, for the electric field and magnetic field, respectively. For § 2.1093-Portable devices below 4 MHz and down to 100 kHz, the MPE limits in § 1.1310 (with the 300 kHz limit applicable all the way down to 100 kHz) can be used for the purpose of equipment authorization in lieu of SAR evaluations.

There might be situations where the WPT RF emissions are limited enough that even operations in a "crowded" environment, where many similar WPT devices are present, do not pose significant EMC and RF exposure concerns. In this scenario, and for devices operating within a one-meter distance from the receiver, as defined above, a manufacturer will not have to submit an "Equipment Compliance Review" KDB, and receive FCC concurrence before proceeding with equipment authorization. This exception to the requirement of submitting the ECR to obtain FCC concurrence only applies when all the following criteria (1) through (6) are met:

(1)The power transfer frequency is below 1 MHz.
(2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.
(3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)
(4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).
(5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.
(6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating

structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.

Block Diagram of Test Setup



Test Procedures

1) Perform H-field and E-field measurements for each all sides of the EUT at 20cm, along all the principal axes defined with respect to the orientation of the transmitting element (e.g., coil or antenna).
2) The highest emission level was recorded and compared with limit.
3) The EUT was measured according to 680106 D01 Wireless Power Transfer v04.

Test Data

Environmental Conditions

Temperature:	24.4 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Bamboo Zhan on 2024-04-28.

Test mode: Wireless charging (Maximum output power)

H-Field Strength

Test Frequency (MHz)	Position A (A/m)	Position B (A/m)	Position C (A/m)	Position D (A/m)	Position E (A/m)	Position F (A/m)	50% Limit (A/m)	Limit (A/m)
0.1348	0.04	0.26	0.29	0.02	0.015	0.075	0.815	1.63

E-Field Strength

Test Frequency (MHz)	Position A (V/m)	Position B (V/m)	Position C (V/m)	Position D (V/m)	Position E (V/m)	Position F (V/m)	50% Limit (V/m)	Limit (V/m)
0.1348	1.35	2.24	2.62	0.64	0.95	0.76	307	614

Note: Test with 20cm distance from the center of the probe(s) to the edge of the device.

(1) The power transfer frequency is below 1 MHz.

The operation frequency is 134.8 kHz.

(2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.

The maximum output power is 15 watts.

(3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact)

The load is physical contact with the EUT.

(4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).

The EUT is used in the mobile exposure condition.

(5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.

The E-field and H-field strengths are less than 50% of the limit.

(6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.

The EUT has only one coil.

FCC §15.205 & §15.209 - RADIATED EMISSIONS TEST

Applicable Standard

As per FCC Part 15.209

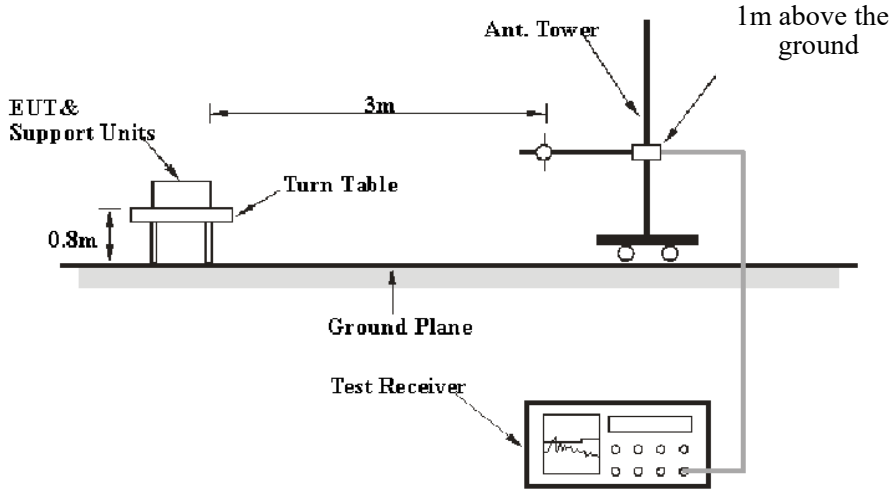
(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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

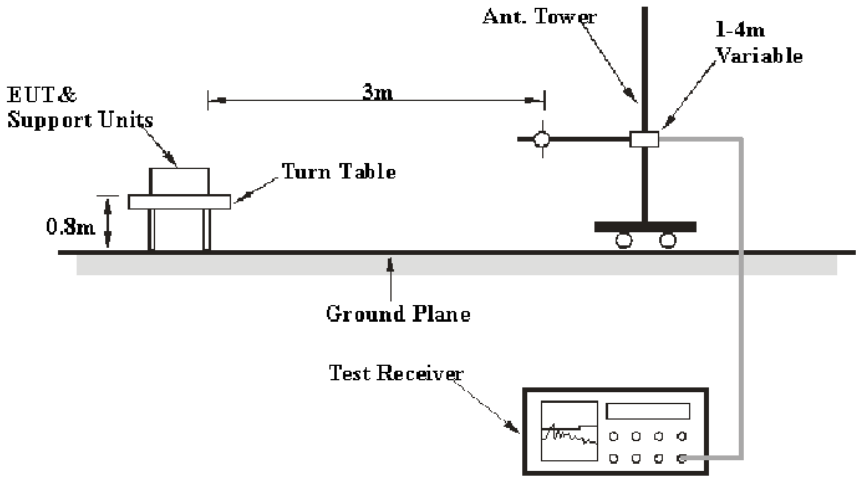
**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permItted under other sections of this part, e.g., §§15.231 and 15.241.

EUT Setup

9 kHz-30MHz:



30MHz-1GHz:



The radiated emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC Part Subpart C limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 9 kHz to 1000MHz.

Frequency Range	RBW	Video B/W	IF B/W	Measurement
9 kHz – 150 kHz	/	/	200 Hz	QP
	300 Hz	1 kHz	/	PK
150 kHz – 30 MHz	/	/	9 kHz	QP
	10 kHz	30 kHz	/	PK
30 MHz – 1000 MHz	/	/	120 kHz	QP
	100 kHz	300 kHz	/	PK

Note 1: For the frequency bands 9–90 kHz, 110–490 kHz are based on measurements employing an average detector.
Note 2: If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

Factor & Over Limit/Margin Calculation

The Factor is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain. The basic equation is as follows:

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The "**Over Limit/Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit/margin of -7dB means the emission is 7dB below the limit. The equation for calculation is as follows:

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Data

Environmental Conditions

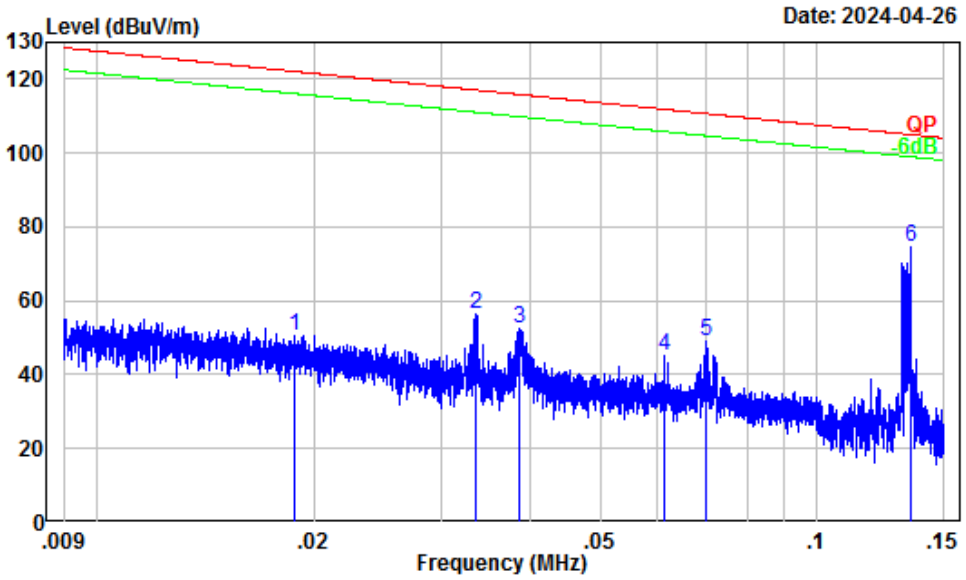
Temperature:	23 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Warren Huang from 2024-02-24 to 2024-04-26 for below 1GHz.

Test Mode: Wireless Charging (Maximum output power)

Parallel:

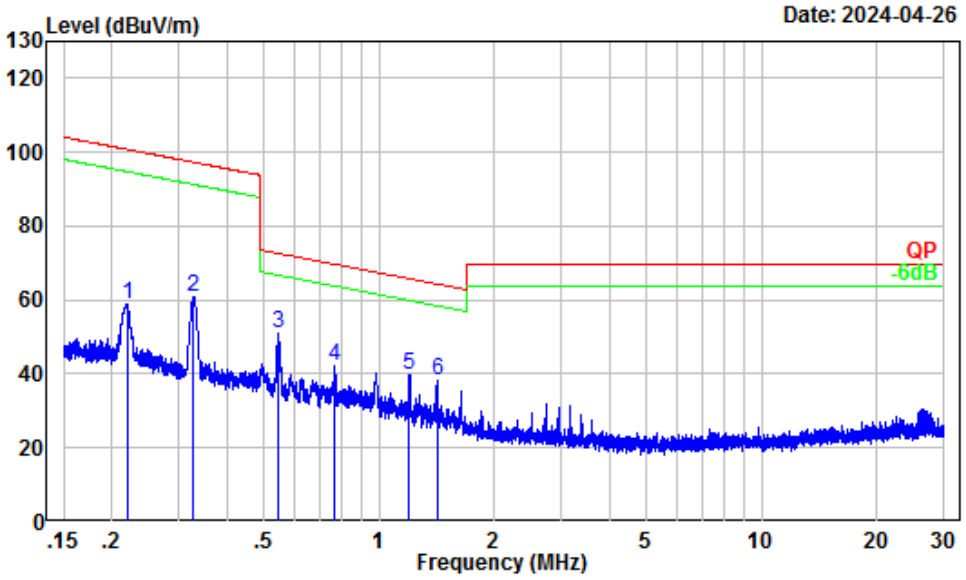
9 kHz~150 kHz



Site : Chamber A
Condition : 3m
Project Number: SZ3240220-05885E-RF
Note : working
Note : Parallel
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.02	33.20	17.43	50.63	122.13	-71.50	Peak
2	0.03	26.71	29.82	56.53	117.10	-60.57	Peak
3	0.04	25.59	26.74	52.33	115.88	-63.55	Peak
4	0.06	21.52	23.82	45.34	111.83	-66.49	Peak
5	0.07	20.35	28.49	48.84	110.68	-61.84	Peak
6	0.13	15.43	58.93	74.36	105.01	-30.65	Peak

150 kHz~30 MHz

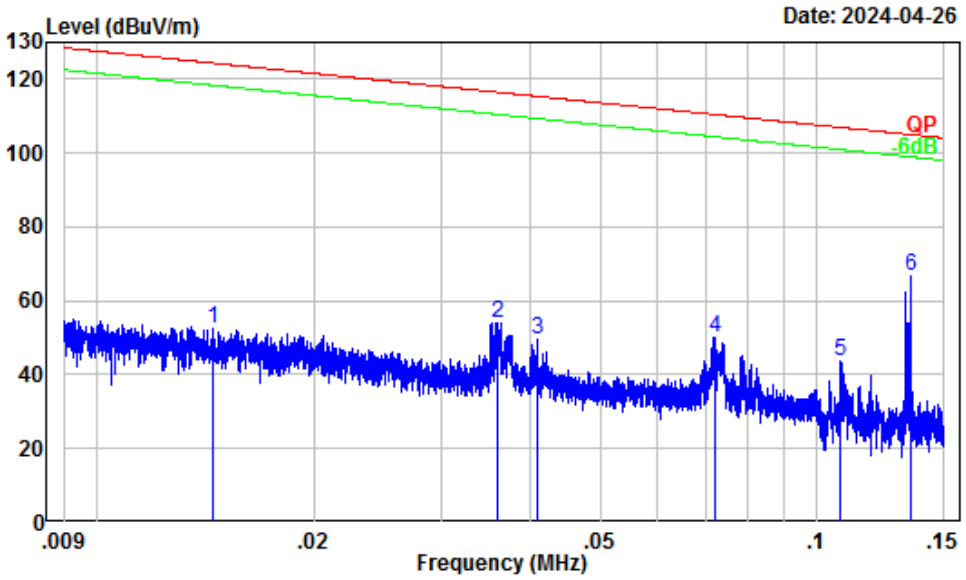


Site : Chamber A
Condition : 3m
Project Number: SZ3240220-05885E-RF
Note : working
Note : Parallel
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.22	11.44	47.21	58.65	100.75	-42.10	Peak
2	0.33	7.12	53.82	60.94	97.28	-36.34	Peak
3	0.55	2.92	47.96	50.88	72.82	-21.94	Peak
4	0.76	0.31	41.76	42.07	69.85	-27.78	Peak
5	1.20	-2.29	42.21	39.92	65.85	-25.93	Peak
6	1.42	-3.05	41.13	38.08	64.37	-26.29	Peak

Perpendicular:

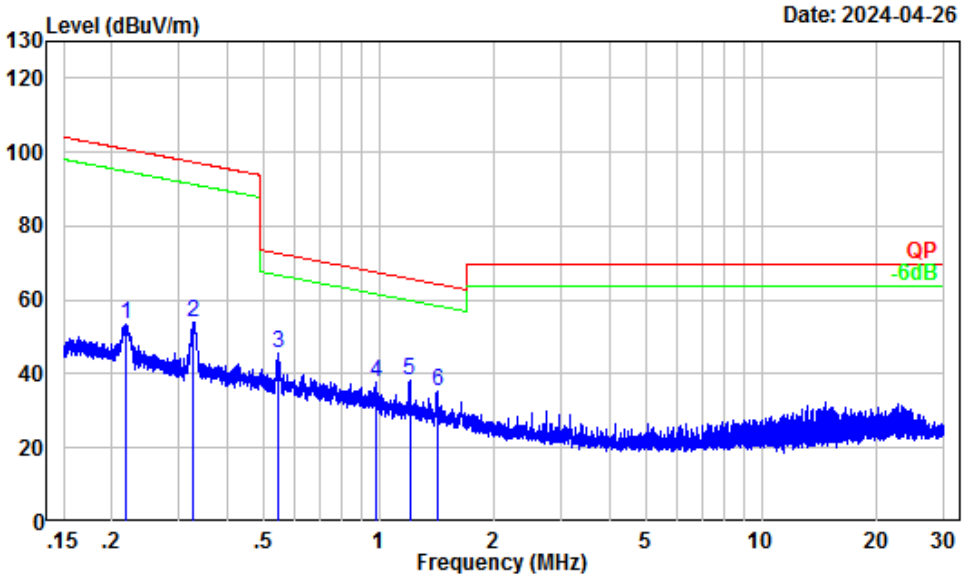
9 kHz~150 kHz



Site : Chamber A
Condition : 3m
Project Number: SZ3240220-05885E-RF
Note : working
Note : Perpendicular
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	35.39	16.94	52.33	124.37	-72.04	Peak
2	0.04	26.17	28.03	54.20	116.49	-62.29	Peak
3	0.04	25.09	24.22	49.31	115.38	-66.07	Peak
4	0.07	20.09	30.01	50.10	110.45	-60.35	Peak
5	0.11	16.68	26.81	43.49	106.94	-63.45	Peak
6	0.13	15.42	51.07	66.49	105.00	-38.51	Peak

150 kHz~30 MHz

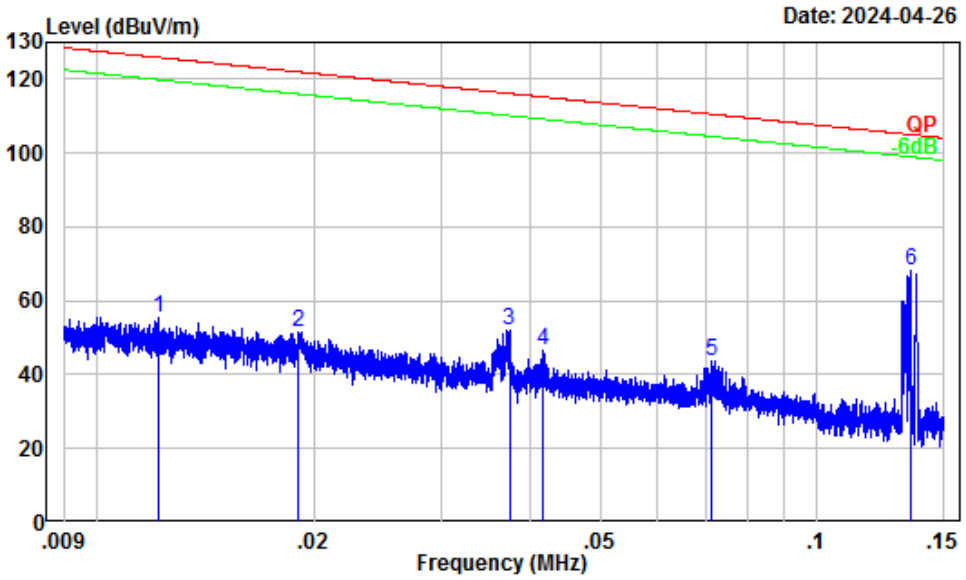


Site : Chamber A
Condition : 3m
Project Number: SZ3240220-05885E-RF
Note : working
Note : Perpendicular
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.22	11.53	41.80	53.33	100.82	-47.49	Peak
2	0.33	7.16	46.85	54.01	97.33	-43.32	Peak
3	0.55	2.94	42.57	45.51	72.85	-27.34	Peak
4	0.98	-1.43	39.07	37.64	67.67	-30.03	Peak
5	1.20	-2.30	40.49	38.19	65.83	-27.64	Peak
6	1.42	-3.06	38.19	35.13	64.36	-29.23	Peak

Ground-parallel:

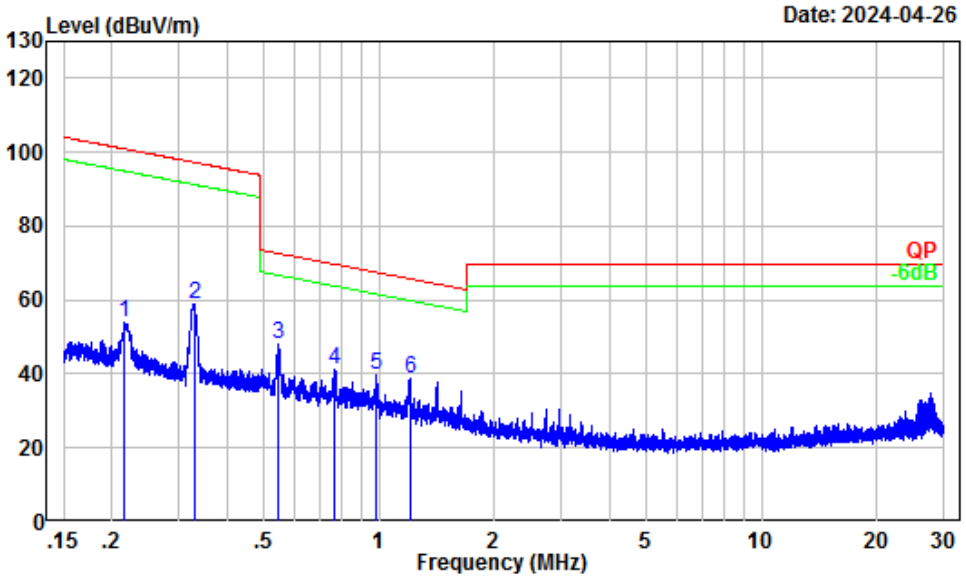
9 kHz~150 kHz



Site : Chamber A
Condition : 3m
Project Number: SZ3240220-05885E-RF
Note : working
Note : Ground-parallel
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	36.58	18.95	55.53	125.90	-70.37	Peak
2	0.02	33.05	18.56	51.61	121.99	-70.38	Peak
3	0.04	25.85	26.23	52.08	116.15	-64.07	Peak
4	0.04	24.94	21.73	46.67	115.24	-68.57	Peak
5	0.07	20.19	23.48	43.67	110.53	-66.86	Peak
6	0.13	15.42	52.97	68.39	105.01	-36.62	Peak

150 kHz~30 MHz

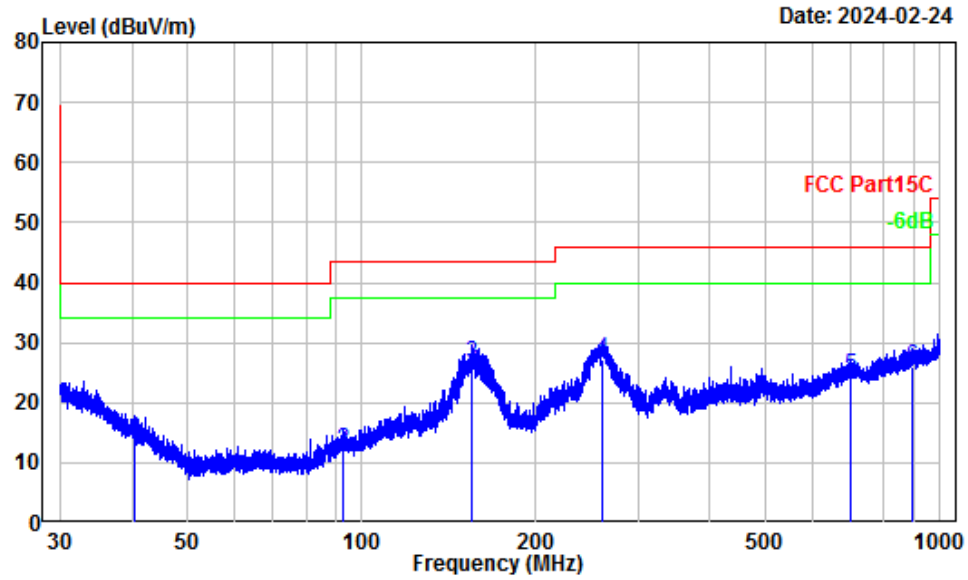


Site : Chamber A
Condition : 3m
Project Number: SZ3240220-05885E-RF
Note : working
Note : Ground-parallel
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.22	11.62	42.13	53.75	100.90	-47.15	Peak
2	0.33	7.09	51.81	58.90	97.24	-38.34	Peak
3	0.54	2.94	45.36	48.30	72.86	-24.56	Peak
4	0.76	0.32	40.66	40.98	69.86	-28.88	Peak
5	0.98	-1.47	41.12	39.65	67.62	-27.97	Peak
6	1.20	-2.30	41.22	38.92	65.82	-26.90	Peak

30MHz~1GHz:

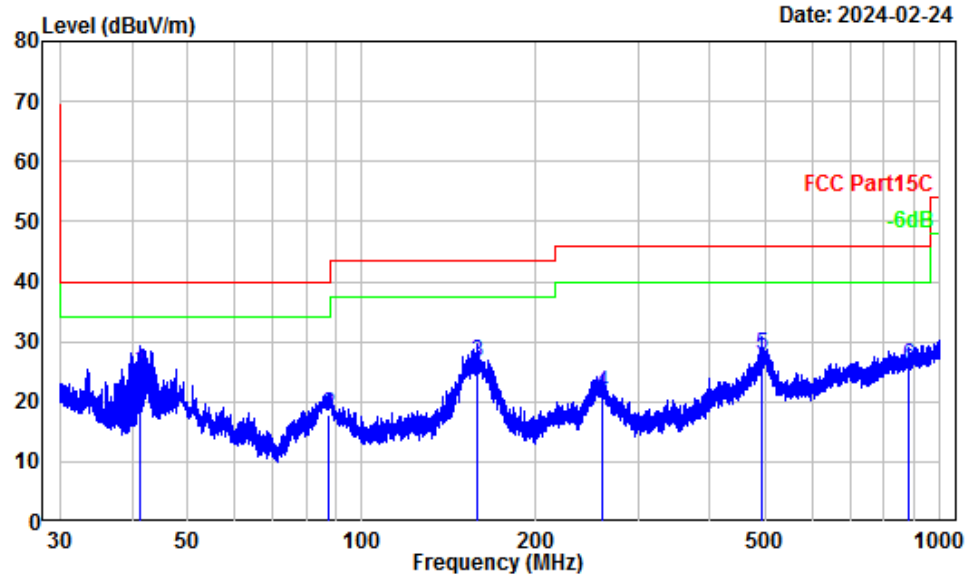
Horizontal



Site : chamber
Condition : 3m Horizontal
Project Number: SZ3240220-05885E-RF
Note : Charging
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.45	-10.68	24.57	13.89	40.00	-26.11	QP
2	92.83	-15.76	27.95	12.19	43.50	-31.31	QP
3	154.75	-11.60	38.15	26.55	43.50	-16.95	QP
4	260.83	-11.44	38.48	27.04	46.00	-18.96	QP
5	699.92	-1.51	25.84	24.33	46.00	-21.67	QP
6	898.57	0.99	25.04	26.03	46.00	-19.97	QP

Vertical



Site : chamber
Condition : 3m Vertical
Project Number: SZ3240220-05885E-RF
Note : Charging
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	41.28	-12.61	37.79	25.18	40.00	-14.82	QP
2	87.80	-17.33	35.10	17.77	40.00	-22.23	QP
3	158.46	-12.01	38.43	26.42	43.50	-17.08	QP
4	260.60	-11.85	33.22	21.37	46.00	-24.63	QP
5	490.96	-5.41	33.33	27.92	46.00	-18.08	QP
6	882.57	0.36	25.59	25.95	46.00	-20.05	QP

FCC §15.215 (c) – 20 dB EMISSION BANDWIDTH

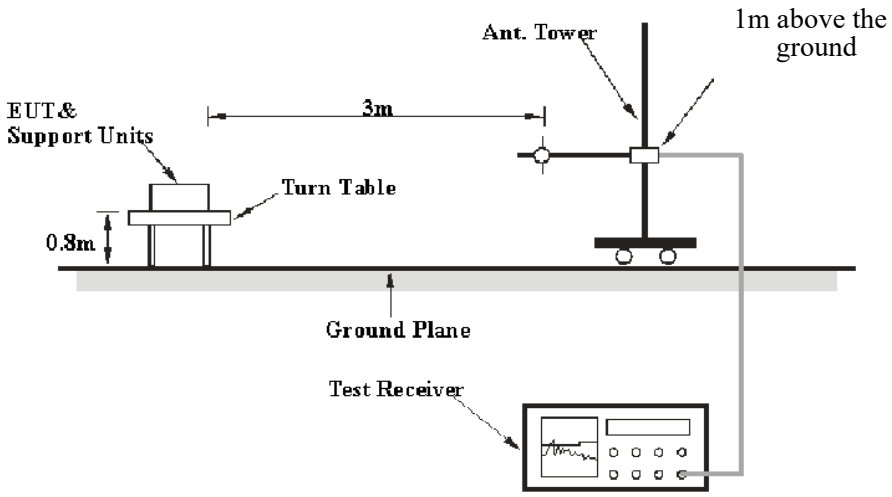
Applicable Standard

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. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. 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.

Test Procedure

Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.



Test Data

Environmental Conditions

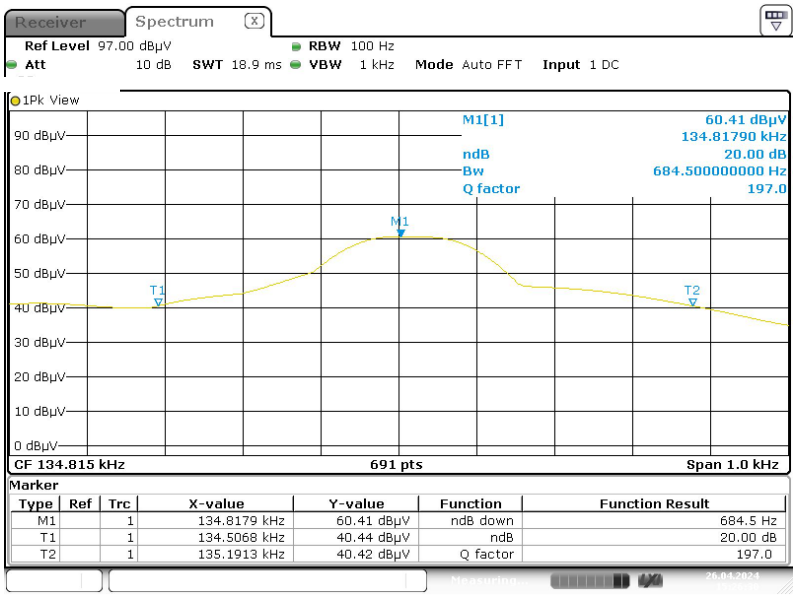
Temperature:	26 °C
Relative Humidity:	53 %
ATM Pressure:	101.0 kPa

The testing was performed by Warren Huang on 2024-04-26.

EUT operation mode: Transmitting

Test Result: Compliant. *Please refer to following table and plot.*

Frequency (kHz)	20 dB Emission Bandwidth (kHz)
134.8	0.685



EUT PHOTOGRAPHS

Please refer to the attachment SZ3240220-05885E-RF External photo and SZ3240220-05885E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment SZ3240220-05885E-RFA & SZ3240220-05885E-RFB Test Setup photo.

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