



**FCC 47 CFR PART 15 SUBPART C**

**TEST REPORT**

*For*

**Polaris Charger**

**MODEL NUMBER: K002WC**

**FCC ID: SXO-K002WC**

**REPORT NUMBER: 4788510752.3-3**

**ISSUE DATE: July 05, 2018**

*Prepared for*

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*Prepared by*

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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	07/05/2018	Initial Issue	



<b>Summary of Test Results</b>		
<b>Description of Test Item</b>	<b>Standard</b>	<b>Results</b>
20dB Bandwidth	FCC 15.215	PASS
Radiated Emission	FCC 15.209	PASS
Conducted Emission Test For AC Power Port	FCC 15.207	PASS



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# 1. ATTESTATION OF TEST RESULTS

## Applicant Information

Company Name: Sphero HK Limited  
Address: 4/F, 299QRC, 287-299 Queen's Road Central, Sheung Wan.  
Hong Kong

## Manufacturer Information

Company Name: Sphero, Inc.  
Address: 4772 Walnut Street, Suite 206, Boulder, CO 80301  
USA

## EUT Description

EUT Name: Polaris Charger  
Model: K002WC  
Brand Name: Sphero  
Sample Status: Normal  
Sample ID: 1645606  
Sample Received Date: June 04, 2018  
Date of Tested: July 03, 2018 ~ July 04, 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15 Subpart C	PASS

Tested By:

Checked By:

Denny Huang  
Engineer Project Associate  
Approved By:

Shawn Wen  
Laboratory Leader

Stephen Guo  
Laboratory Manager



## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB414788 D01 Radiated Test Site v01, ANSI C63.10-2013, FCC CFR 47 Part 2, FCC CFR 47 Part 15.

## 3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p><b>A2LA (Certificate No.: 4102.01)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>IAS (Lab Code: TL-702)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has demonstrated compliance with ISO/IEC Standard 17025:2005, General requirements for the competence of testing and calibration laboratories</p> <p><b>FCC (FCC Designation No.: CN1187)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>IC(Company No.: 21320)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320.</p> <p><b>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011</p>
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Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.
3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OATS.



## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Measurement Frequency Range	K	U(dB)
Conducted disturbance at mains terminals ports	0.15MHz ~ 30MHz	2	2.90
Radiated disturbance test	9kHz-150kHz	2	2.76
	150kHz-30MHz	2	2.45
Radiated Emission Test	30MHz~1GHz	2	4.52

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



## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

EUT Name	Polaris Charger	
EUT Description	The EUT wireless charging cradle for K002.	
Model	K002WC	
Product Description	Operation Frequency	125KHz
Number of channel	1	
Modulation Type	CW	
Rate Power	DC 5V, 500mA Input from USB cable	
Antenna	0dBi	
Antenna type	Coil	

### 5.2. TEST MODE

For Radiated Test	
Test Mode	Description
Mode 1	Zero Charge
Mode 2	Intermediate Charge
Mode 3	Full Charge





### 5.3. ACCESSORY

#### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remark
1	Sphero BOLT	Sphero	K002	/
2	Power Adapter	Microsoft	AC-19C	Input: AC100~240V,50~60Hz,100mA Output: DC 5V, 550mA

#### I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	USB	Unshielded	0.8	/

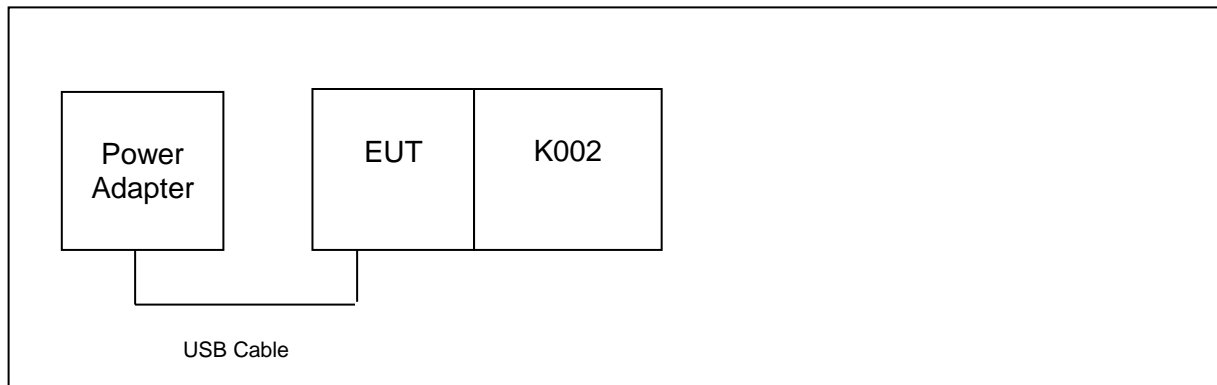
#### ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	/	/	/	/

#### TEST SETUP

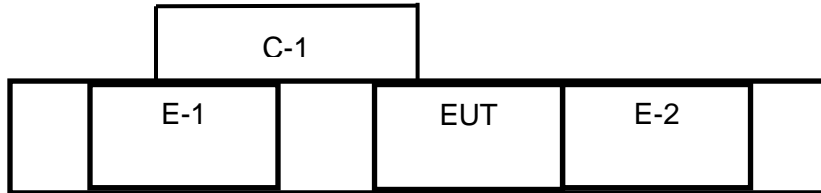
The EUT support wireless charging.

#### SETUP DIAGRAM FOR TEST





#### 5.4. BLOCK DIAGRAM SHOWING THE CONIGURATION OF SYSTEM TESTED



#### 5.5. DESCRIPTION OF SUPPROT 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.

Item	Equipment	Mfr/Brand	Model/Type No.	Specification	Series No.
E-1	Power Adapter	Microsoft	AC-19C	Input: AC100~240V,50~60Hz,100mA Output: DC 5V, 550mA	/
E-2	Sphero BOLT	Sphero	K002	/	/

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.80m	USB Cable

Note:

- (1) For detachable type I/O cable should be specified the length in m in 『Length』 column.



**5.6. MEASURING INSTRUMENT LIST**

<b>Conducted Emissions</b>						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR3	101961	Dec.12,2017	Dec.11,2018
<input checked="" type="checkbox"/>	Two-Line V-Network	R&S	ENV216	101983	Dec.12,2017	Dec.11,2018
<input checked="" type="checkbox"/>	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.12,2017	Dec.11,2018
Software						
Used	Description	Manufacturer	Name	Version		
<input checked="" type="checkbox"/>	Test Software for Conducted disturbance	Farad	EZ-EMC	Ver. UL-3A1		
<b>Radiated Emissions</b>						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	MXE EMI Receiver	KESIGHT	N9038A	MY56400 036	Dec.12,2017	Dec.11,2018
<input checked="" type="checkbox"/>	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Jan.09, 2016	Jan.09, 2019
<input checked="" type="checkbox"/>	Preamplifier	HP	8447D	2944A090 99	Dec.12,2017	Dec.11,2018
<input checked="" type="checkbox"/>	Loop antenna	Schwarzbeck	1519B	00008	Mar. 26, 2016	Mar. 25, 2019
Software						
Used	Description	Manufacturer	Name	Version		
<input checked="" type="checkbox"/>	Test Software for Radiated disturbance	Farad	EZ-EMC	Ver. UL-3A1		
<b>Other instruments</b>						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.12,2017	Dec.11,2018

## 6. 20dB BANDWIDTH TEST

### LIMITS

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.215, 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.

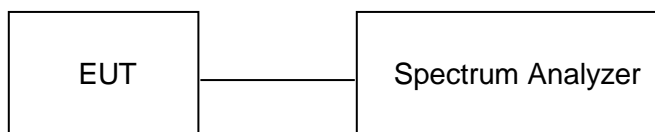
### TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	1%~5% of the OBW
VBW	approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB relative to the maximum level measured in the fundamental emission.

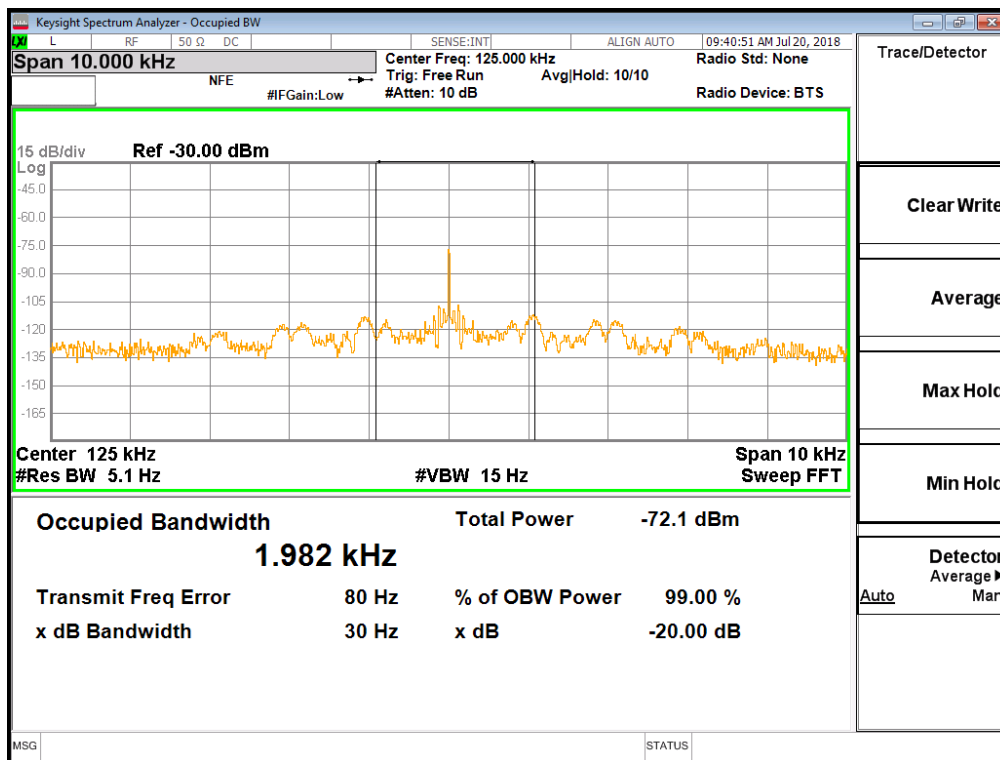
### TEST SETUP





**RESULTS**

Frequency (KHz)	20dB Bandwidth (Hz)
125	30





## 7. EMISSION TEST

### LIMITS

Please refer to FCC §15.205 and §15.209

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

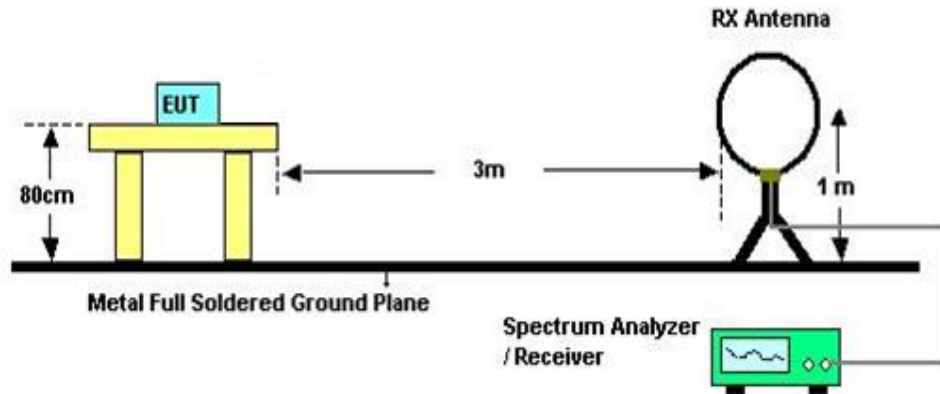
Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

**TEST SETUP AND PROCEDURE**

Below 30MHz

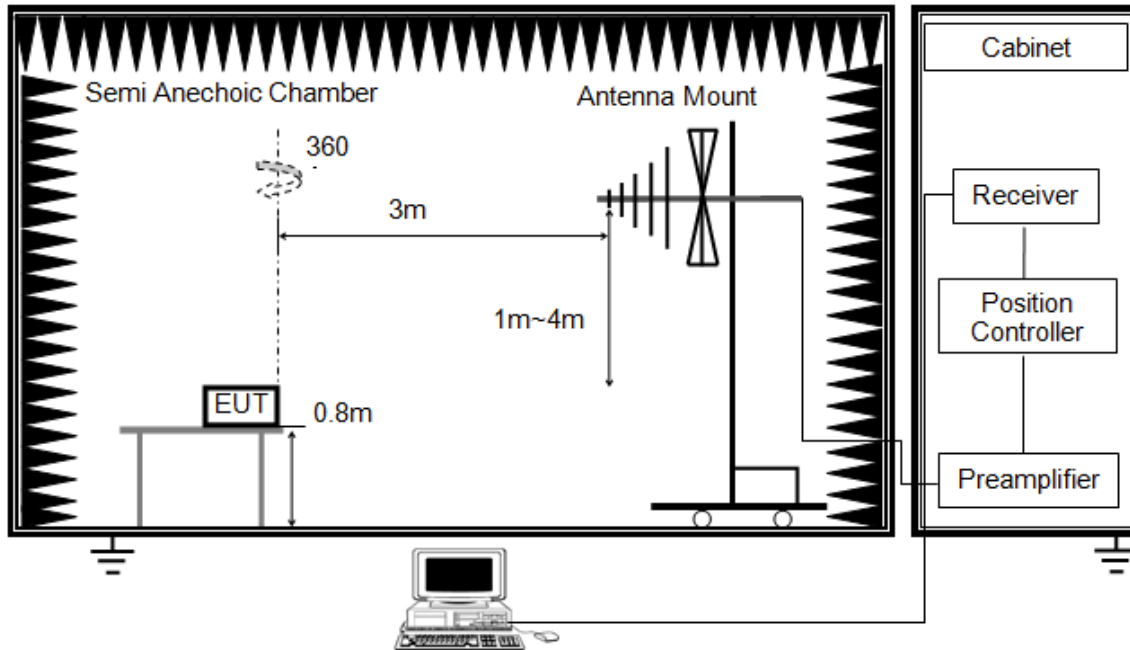


The setting of the spectrum analyzer

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 and 414788 D01 Radiated Test Site v01.
2. The EUT was arranged to its worst case and then 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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. The radiated emission limits 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.
6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. 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.
7. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G and above 30MHz



The setting of the spectrum analyzer

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.
2. 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. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. 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.

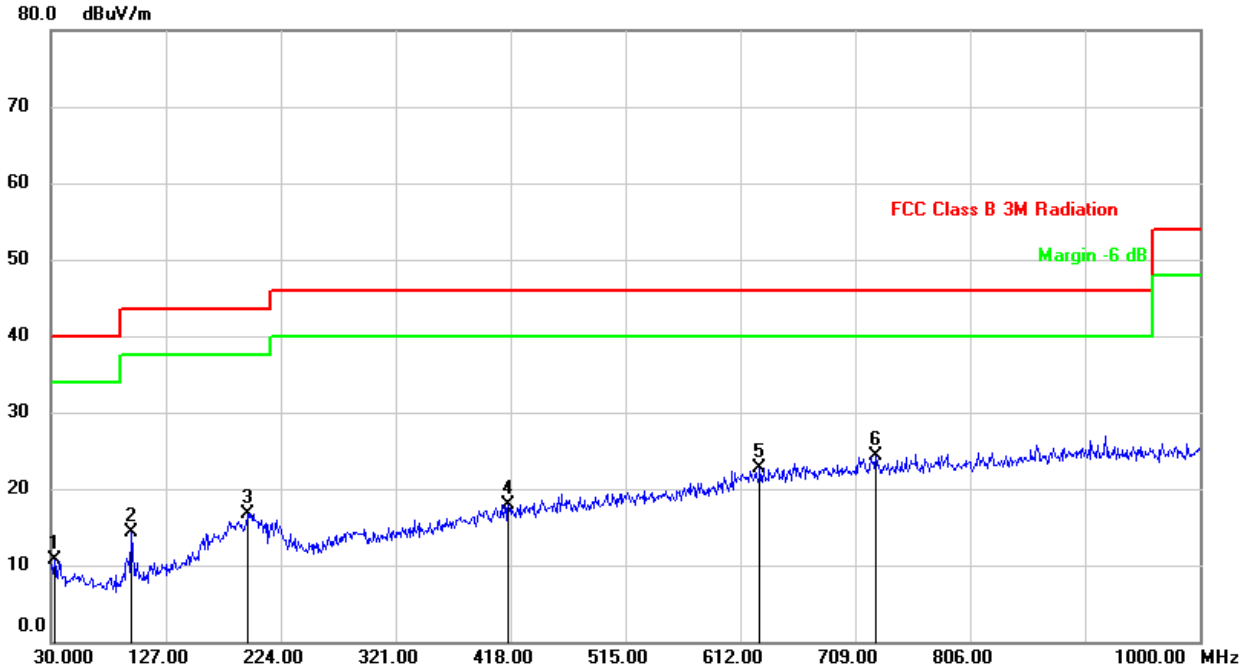




**RESULTS**

**7.1. SPURIOUS EMISSIONS 30M ~ 1 GHz**

**SPURIOUS EMISSIONS (MODE 2, WORST-CASE CONFIGURATION, HORIZONTAL)**

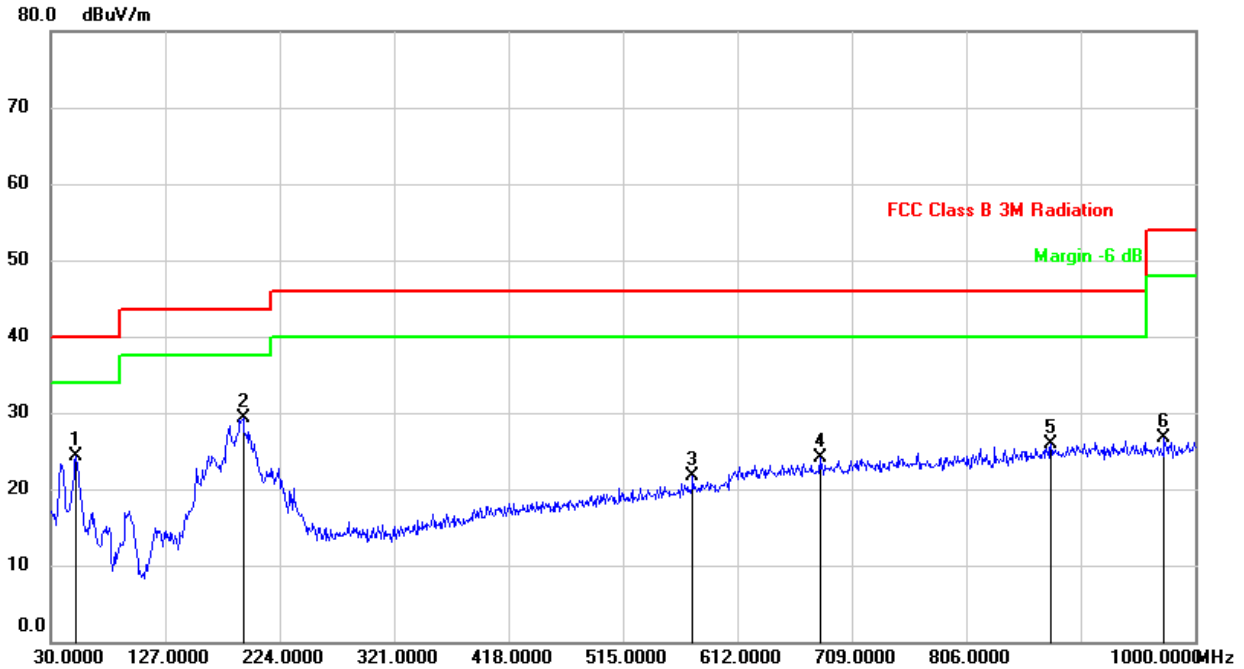


No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	32.9100	29.91	-19.21	10.70	40.00	-29.30	QP
2	97.9000	36.30	-21.95	14.35	43.50	-29.15	QP
3	195.8700	31.71	-14.94	16.77	43.50	-26.73	QP
4	416.0600	30.08	-12.13	17.95	46.00	-28.05	QP
5	628.4900	31.59	-8.85	22.74	46.00	-23.26	QP
6	726.4600	32.00	-7.68	24.32	46.00	-21.68	QP

Note: 1. Result Level = Read Level + Correct Factor.  
 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.  
 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



**SPURIOUS EMISSIONS (MODE 2, WORST-CASE CONFIGURATION, VERTICAL)**



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	51.3400	44.78	-20.53	24.25	40.00	-15.75	QP
2	192.9600	44.20	-14.96	29.24	43.50	-14.26	QP
3	574.1700	31.23	-9.54	21.69	46.00	-24.31	QP
4	681.8400	32.19	-8.05	24.14	46.00	-21.86	QP
5	877.7800	31.60	-5.64	25.96	46.00	-20.04	QP
6	973.8100	31.51	-4.71	26.80	54.00	-27.20	QP

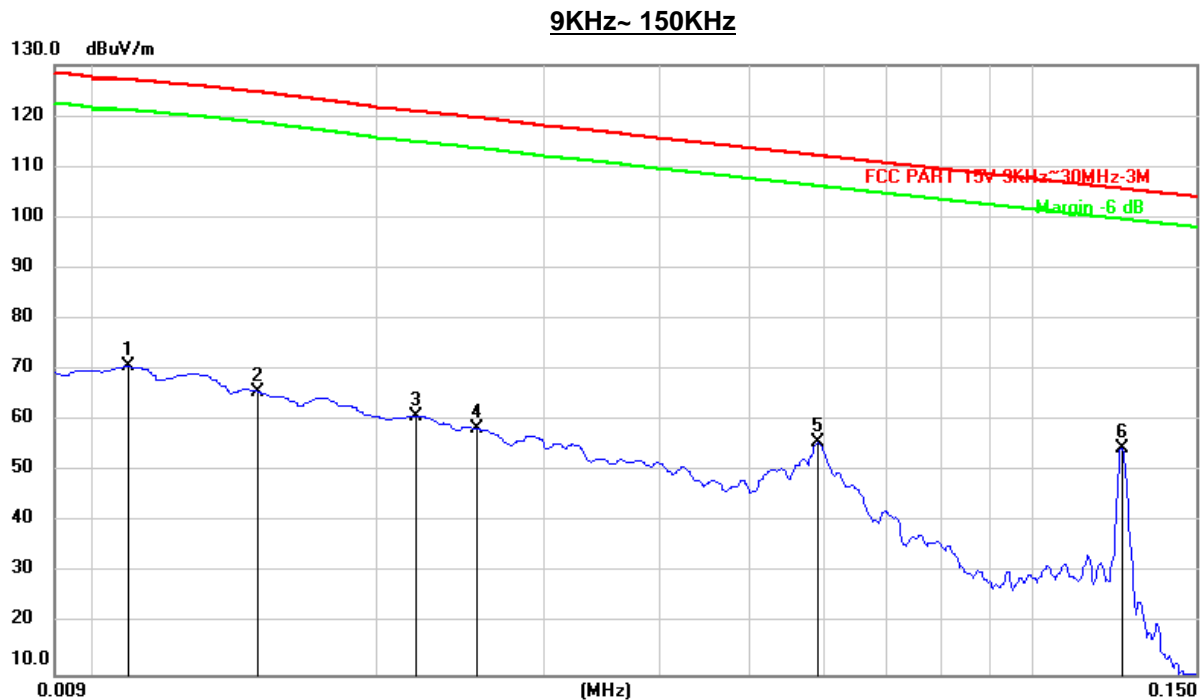
- Note: 1. Result Level = Read Level + Correct Factor.  
 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.  
 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

Note: All the modes had been tested, but only the worst data recorded in the report.



## 7.2. SPURIOUS EMISSIONS BELOW 30M

### SPURIOUS EMISSIONS (MODE 2, WORST-CASE CONFIGURATION, VERTICAL)



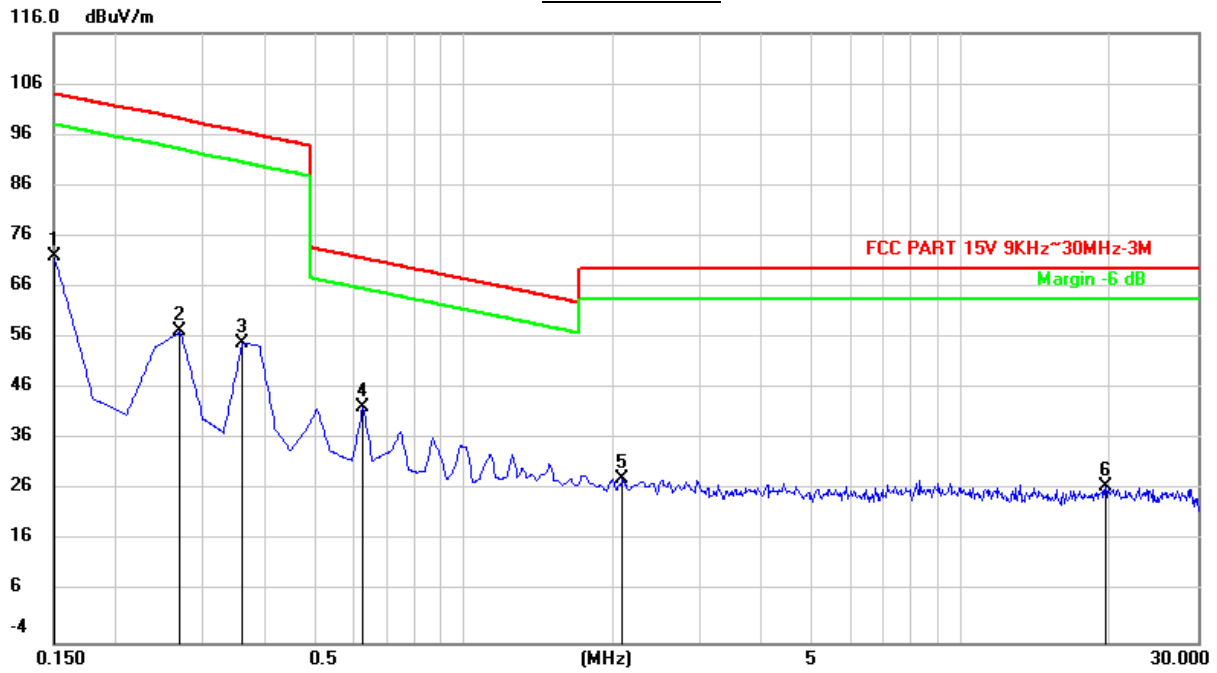
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0108	111.28	-40.55	70.73	127.12	-56.39	peak
2	0.0149	106.26	-40.56	65.70	124.65	-58.95	peak
3	0.0218	101.45	-40.57	60.88	120.95	-60.07	peak
4	0.0255	99.00	-40.58	58.42	119.64	-61.22	peak
5	0.0591	96.40	-40.65	55.75	112.18	-56.43	peak
6	0.1249	95.35	-40.78	54.57	105.68	-51.11	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.



**150KHz ~ 30M**



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1500	92.61	-20.43	72.18	104.08	-31.90	peak
2	0.2694	78.05	-20.80	57.25	99.14	-41.89	peak
3	0.3590	76.07	-21.00	55.07	96.59	-41.52	peak
4	0.6276	64.04	-21.57	42.47	71.67	-29.20	peak
5	2.0903	50.36	-21.97	28.39	69.54	-41.15	peak
6	19.6122	48.92	-22.14	26.78	69.54	-42.76	peak

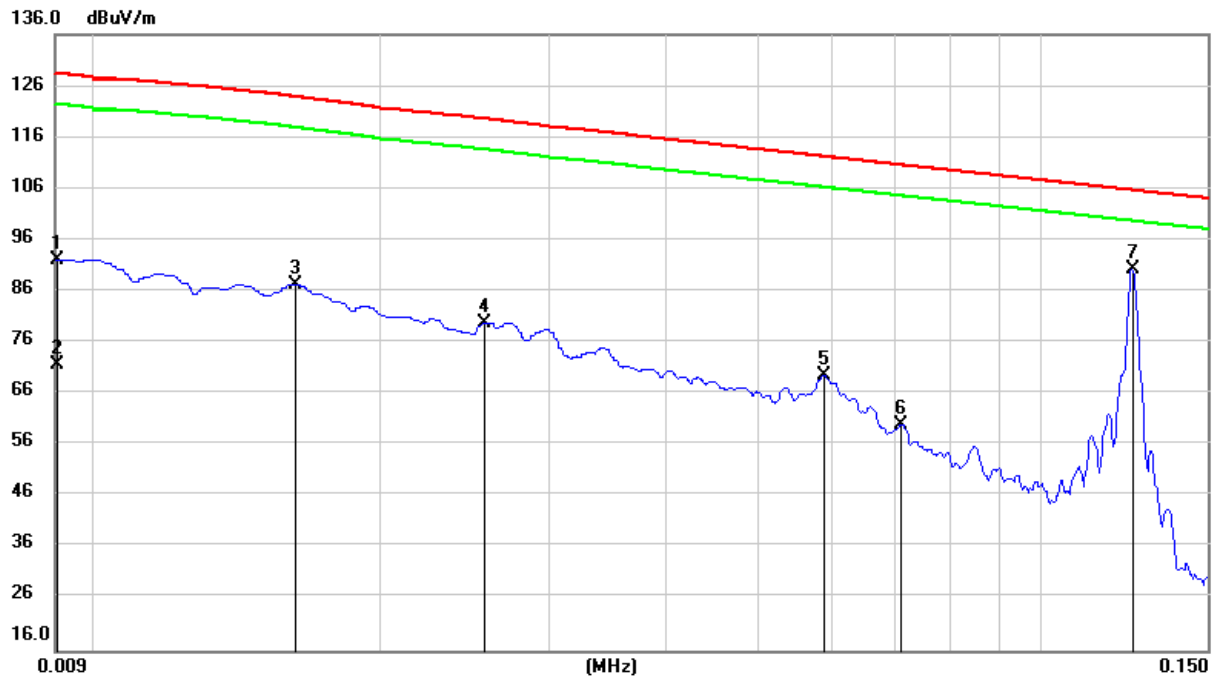
Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.



**SPURIOUS EMISSIONS (MODE 2, WORST-CASE CONFIGURATION, HORIZONTAL)**

**9KHz~ 150KHz**



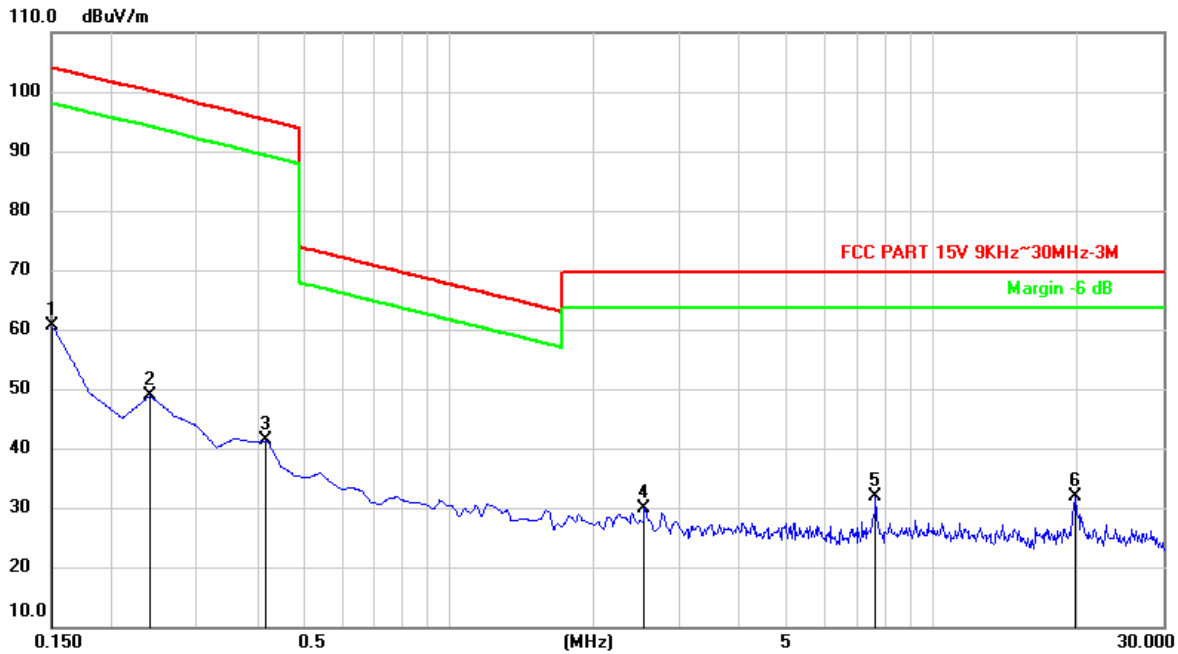
No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0091	71.86	20.33	92.19	128.35	-36.16	peak
2	0.0091	51.33	20.33	71.66	128.35	-56.69	AVG
3	0.0161	107.64	-20.30	87.34	123.93	-36.59	peak
4	0.0257	100.13	-20.28	79.85	119.57	-39.72	peak
5	0.0588	89.92	-20.35	69.57	112.23	-42.66	peak
6	0.0710	80.41	-20.37	60.04	110.58	-50.54	peak
7	0.1248	110.61	-20.48	90.13	105.69	-15.56	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.



**150KHz ~ 30M**



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1500	81.17	-20.43	60.74	104.08	-43.34	peak
2	0.2395	69.61	-20.73	48.88	100.19	-51.31	peak
3	0.4187	62.41	-21.14	41.27	95.19	-53.92	peak
4	2.5380	51.78	-21.89	29.89	69.54	-39.65	peak
5	7.6125	53.83	-22.02	31.81	69.54	-37.73	peak
6	19.7615	53.94	-22.14	31.80	69.54	-37.74	peak

Note: 1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

Note: All the modes had been tested, but only the worst data recorded in the report.

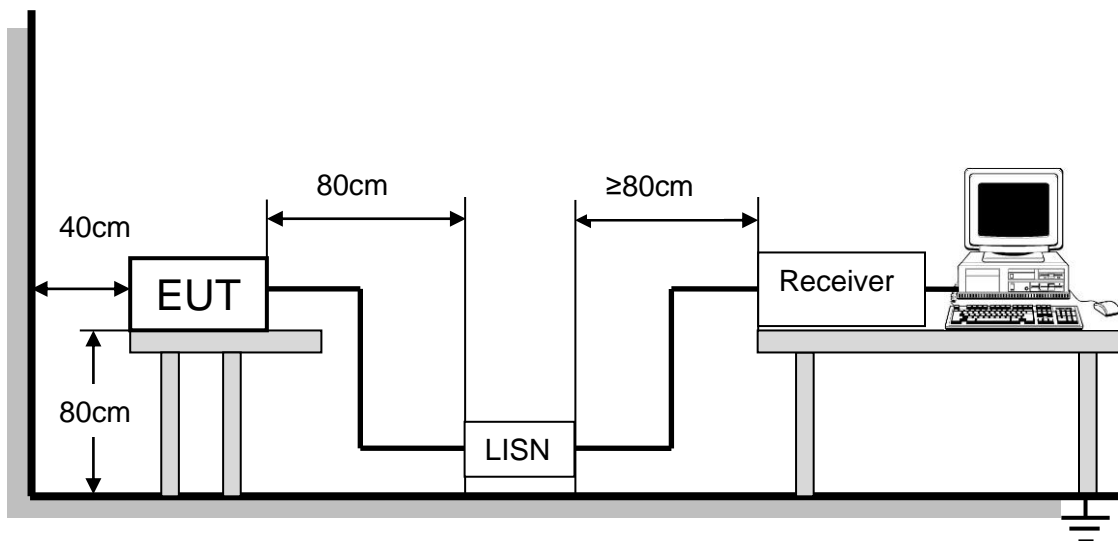
## 8. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

Please refer to FCC §15.207 (a) and RSS-Gen Clause 8.8.

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

### TEST SETUP AND PROCEDURE

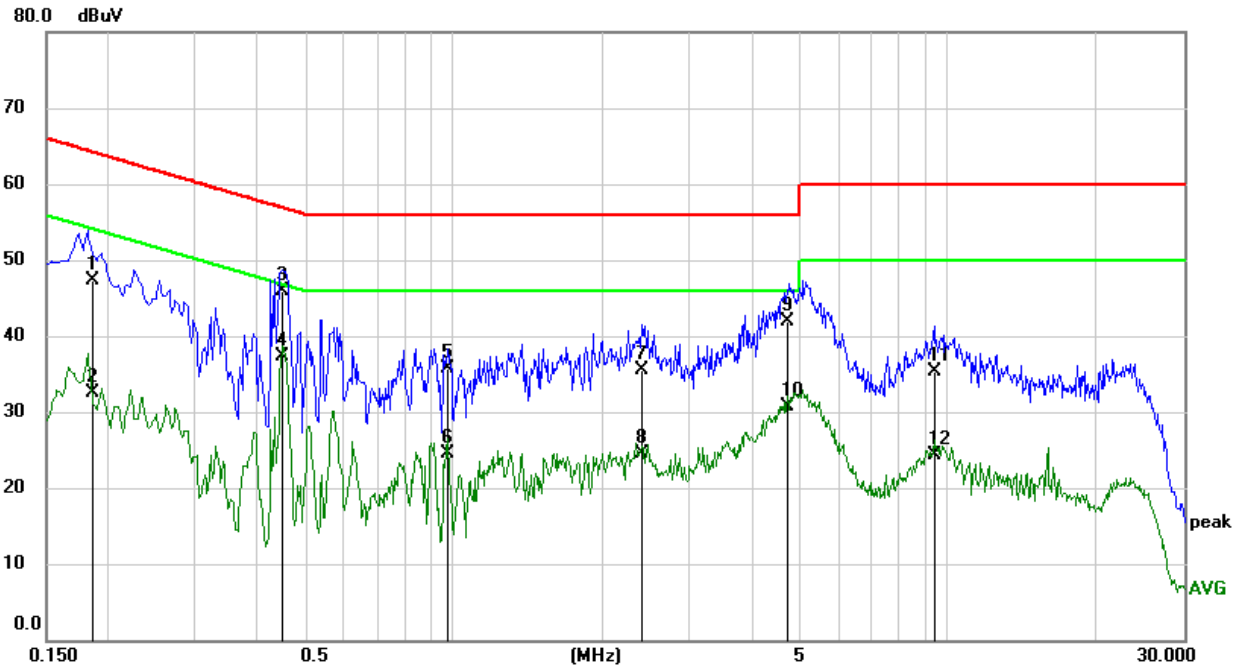


The EUT is put on a table of non-conducting material that is 0.8m high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through an Artificial Mains Network (A.M.N.). An EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz. The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.



**TEST RESULTS (MODE 2, WORST-CASE CONFIGURATION)**

**LINE L1 RESULTS**



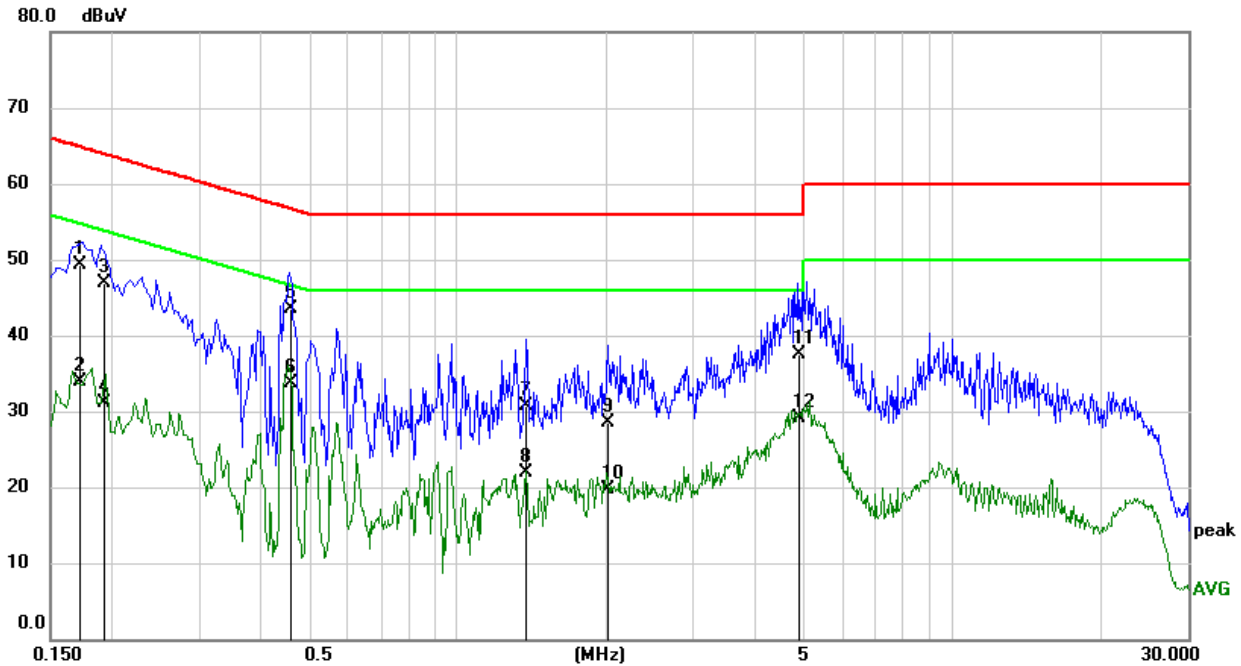
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1860	37.71	9.63	47.34	64.21	-16.87	QP
2	0.1860	22.92	9.63	32.55	54.21	-21.66	AVG
3	0.4498	36.27	9.63	45.90	56.88	-10.98	QP
4	0.4498	27.77	9.63	37.40	46.88	-9.48	AVG
5	0.9756	26.08	9.64	35.72	56.00	-20.28	QP
6	0.9756	14.91	9.64	24.55	46.00	-21.45	AVG
7	2.4076	25.77	9.67	35.44	56.00	-20.56	QP
8	2.4076	14.90	9.67	24.57	46.00	-21.43	AVG
9	4.7469	32.16	9.70	41.86	56.00	-14.14	QP
10	4.7469	20.93	9.70	30.63	46.00	-15.37	AVG
11	9.3769	25.17	10.05	35.22	60.00	-24.78	QP
12	9.3769	14.27	10.05	24.32	50.00	-25.68	AVG

Note: 1. Result = Reading +Correct Factor.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.  
 5. The extension cord/outlet strip was calibrated with the LISN as required by ANSI C63.10:2013 Clause 6.2.2.





**LINE N RESULTS**



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1716	39.65	9.62	49.27	64.88	-15.61	QP
2	0.1716	24.25	9.62	33.87	54.88	-21.01	AVG
3	0.1926	37.28	9.62	46.90	63.92	-17.02	QP
4	0.1926	21.41	9.62	31.03	53.92	-22.89	AVG
5	0.4590	33.95	9.63	43.58	56.71	-13.13	QP
6	0.4590	23.98	9.63	33.61	46.71	-13.10	AVG
7	1.3748	21.09	9.64	30.73	56.00	-25.27	QP
8	1.3748	12.33	9.64	21.97	46.00	-24.03	AVG
9	2.0081	18.85	9.65	28.50	56.00	-27.50	QP
10	2.0081	10.15	9.65	19.80	46.00	-26.20	AVG
11	4.9082	27.84	9.70	37.54	56.00	-18.46	QP
12	4.9082	19.33	9.70	29.03	46.00	-16.97	AVG

Note: 1. Result = Reading +Correct Factor.  
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.  
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).  
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.  
 5. The extension cord/outlet strip was calibrated with the LISN as required by ANSI C63.10:2013 Clause 6.2.2.

Note: All the modes had been tested, but only the worst data recorded in the report.



## 9. ANTENNA REQUIREMENTS

### APPLICABLE REQUIREMENTS

Please refer to FCC §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. 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.

Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### ANTENNA CONNECTOR

EUT has a coil antenna without an antenna connector.

### ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.

**END OF REPORT**

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