

**FCC 47 CFR PART 15 SUBPART C****TEST REPORT****For****Product Name: Control Box****Brand Name: N/A****Model No.: CB18****Series Model: N/A****FCC ID: 2AEQWCB18HHC004****Test Report Number:****C150630R01-1-RPW****Issued for****HHC CHANGZHOU CORP****No. 61 Xianggang Road, Zhonglou Economic Development Zone, 213023, Changzhou, P.R.C.****Issued by****Compliance Certification Services Inc.****Kun shan Laboratory****No.10 Weiye Rd., Innovation park, Eco&Tec,  
Development Zone, Kunshan City, Jiangsu, China****TEL: 86-512-57355888****FAX: 86-512-57370818**

TESTING CERT #2541.01

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## TABLE OF CONTENTS

<b>1.</b>	<b>TEST RESULT CERTIFICATION.....</b>	<b>3</b>
<b>2.</b>	<b>EUT DESCRIPTION.....</b>	<b>4</b>
<b>3.</b>	<b>TEST METHODOLOGY .....</b>	<b>5</b>
3.1.	EUT CONFIGURATION .....	5
3.2.	EUT EXERCISE .....	5
3.3.	GENERAL TEST PROCEDURES.....	5
3.4.	FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS.....	6
3.5.	DESCRIPTION OF TEST MODES.....	6
<b>4.</b>	<b>INSTRUMENT CALIBRATION.....</b>	<b>7</b>
4.1.	MEASURING INSTRUMENT CALIBRATION .....	7
<b>5.</b>	<b>FACILITIES AND ACCREDITATIONS .....</b>	<b>9</b>
5.1.	FACILITIES .....	9
5.2.	EQUIPMENT.....	9
5.3.	LABORATORY ACCREDITATIONS AND LISTING .....	9
5.4.	TABLE OF ACCREDITATIONS AND LISTINGS .....	10
<b>6.</b>	<b>SETUP OF EQUIPMENT UNDER TEST .....</b>	<b>11</b>
6.1.	SETUP CONFIGURATION OF EUT .....	11
6.2.	SUPPORT EQUIPMENT.....	11
<b>7.</b>	<b>FCC PART 15.249 REQUIREMENTS.....</b>	<b>12</b>
7.1.	FIELD STRENGTH OF FUNDAMENTAL .....	12
7.2.	RADIATED EMISSIONS.....	13
7.3.	POWERLINE CONDUCTED EMISSIONS .....	21

**1. TEST RESULT CERTIFICATION**

<b>Product Name:</b>	Control Box
<b>Trade Name:</b>	N/A
<b>Model Name.:</b>	CB18
<b>Series Model:</b>	N/A
<b>Applicant Discrepancy:</b>	Initial
<b>Device Category:</b>	Mobile Device
<b>Date of Test:</b>	July 1, 2015 ~ July 7, 2015
<b>Applicant:</b>	<b>HHC CHANGZHOU CORP</b> No. 61 Xianggang Road, Zhonglou Economic Development Zone, 213023, Changzhou, P.R.C.
<b>Manufacturer:</b>	<b>HHC CHANGZHOU CORP</b> No. 61 Xianggang Road, Zhonglou Economic Development Zone, 213023, Changzhou, P.R.C.
<b>Application Type:</b>	Certification

**APPLICABLE STANDARDS**

<b>STANDARD</b>	<b>TEST RESULT</b>
FCC 47 CFR Part 15 Subpart C	No non-compliance noted

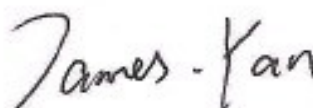
**We hereby certify that:**

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2009 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.249.

The test results of this report relate only to the tested sample EUT identified in this report.

**Approved by:**

Jeff.Fang  
RF Manager  
Compliance Certification Service Inc.

**Tested by:**

James.Yan  
Test Engineer  
Compliance Certification Service Inc.



## 2. EUT DESCRIPTION

<b>Product Name:</b>	Control Box
<b>Brand Name:</b>	N/A
<b>Model Name:</b>	CB18
<b>Series Model:</b>	N/A
<b>Model Discrepancy:</b>	N/A
<b>Power Adapter Power Rating :</b>	Model :PSK2920A Input: AC 100-240V~1.5A 50-60Hz Output: 29V 2A
<b>Frequency Range:</b>	2.4G:2400MHz-2460MHz
<b>Channels Spacing:</b>	1 MHz
<b>Number of Channels:</b>	60 Channels
<b>Antenna Specification:</b>	0 dBi

### Remark:

1.The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

2.This submittal(s) (test report) is intended for **FCC ID: 2AEQWCB18HHC004** filing to comply with Section 15.207, 15.209 and 15.249 of the FCC Part 15, Subpart C Rules.

### **3. TEST METHODOLOGY**

The tests documented in this report were performed in accordance with ANSI C63.4 2009 and FCC CFR 47 15.207, 15.209 and 15.249.

#### **3.1. EUT CONFIGURATION**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

#### **3.2. EUT EXERCISE**

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.249 under the FCC Rules Part 15 Subpart C.

#### **3.3. GENERAL TEST PROCEDURES**

##### **Conducted Emissions**

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 2009 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and average detector modes.

##### **Radiated Emissions**

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4 2009.

**3.4.FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS**

Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41			

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

**3.5.DESCRPTION OF TEST MODES**

Software used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

**4. INSTRUMENT CALIBRATION****4.1. MEASURING INSTRUMENT CALIBRATION**

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

**Equipment Used for Emissions Measurement**

Conducted Emissions Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-11-12	2015-11-11
DETECTOR NEGATIVE	Agilent	8473B	MY42240176	2015-5-11	2016-5-10
OSCILLOSCOPE	Agilent	DSO6104A	MY44002585	2015-3-16	2016-3-15
Power Sensor	Anritsu	MA2411A	0917072	2015-6-3	2016-6-2
Power Meter	Agilent	U2021XA	MY53120005	2014-9-13	2015-9-12
Power SPLITTER	Mini-Circuits	ZN2PD-9G	SF078500430	N.C.R	N.C.R
DC Power Supply	AGILENT	E3632A	MY50340053	N.C.R	N.C.R
Temp. / Humidity Chamber	TERCHY	MHK-120AK	X30109	2015-1-22	2016-1-21
Test Software			EZ-EMC		

977 Chamber					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY44020154	2014-11-16	2015-11-11
EMI Test Receiver	R&S	ESCI	101378	2015-1-22	2016-1-21
Pre-Amplifier	MINI	ZFL-1000VH2	d041703	2015-1-22	2016-1-21
Pre-Amplifier	Miteq	JS41-00101800-32-10P	1675713	2015-1-22	2016-1-21
Bilog Antenna	Sunol	JB1	A062604	2015-3-6	2016-3-5
Horn-antenna	SCHWARZBECK	BBHA9120D	D:266	2015-3-7	2016-3-6
Turn Table	CT	CT123	4165	N.C.R	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R	N.C.R
Controller	CT	CT100	95637	N.C.R	N.C.R
Test Software			EZ-EMC		



Conducted Emission					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI TEST RECEIVER	R&S	ESCI	100781	2015-3-16	2016-3-15
V (V-LISN)	SCHWARZBECK	NNLK 8129	8129-143	N.C.R	N.C.R
LISN (EUT)	FCC	FCC-LISN-50/2 50-50-2-02	05012	2015-3-16	2016-3-15
Pulse LIMITER	R&S	ESH3-Z2	100524	2014-9-25	2015-9-24
Test Software	EZ-EMC				

**Remark:** The measurement uncertainty is less than +/- 2.81dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.

Expanded Uncertainty (95% CONFIDENCE INTERVAL): K=2



## **5. FACILITIES AND ACCREDITATIONS**

### **5.1.FACILITIES**

All measurement facilities used to collect the measurement data are located at CCS China Kunshan Lab at 10#Weiye Rd, Innovation Park Eco. & Tec. Development Zone Kunshan city JiangSu, (215300), CHINA.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 2009 and CISPR Publication 22.

### **5.2.EQUIPMENT**

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.



Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### **5.3.LABORATORY ACCREDITATIONS AND LISTING**

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, IC5743 for 10m chamber 10m, IC5743 for 10m chamber 3m.

**5.4. TABLE OF ACCREDITATIONS AND LISTINGS**

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	47 CFR FCC Part 15/18 (using ANSI C63.4 :2009); VCCI V3; CNS 13438; CNS 13439; CNS 13803; CISPR 11; EN 55011; CISPR 13; EN 55013; CISPR 22:2005; CISPR 22:1997 +A1 :2000+A2 :2002; EN 55022:2006; EN55022 :1998 +A1 :2001+A2 :2003; EN 61000-6-3 (excluding discontinuous interference); EN 61000-6-4; AS/NZS CISPR 22; CAN/CSA-CEI/IEC CISPR 22; EN 61000-3-2; EN 61000-3-3; EN550024; EN 61000-4-2; EN 61000-4-3; EN61000-4-4; EN 61000-4-5; EN 61000-4-6; IEC 61000-4-8; EN 61000-4-11; IEC61000-3-2; IEC61000-3-3; IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6; IEC 61000-4-8; IEC 61000-4-11; EN 300 220-3; EN 300 328; EN 300 330-2; EN 300 440-1; EN 300-440-2; EN 300 893; EN 301 489-01; EN 301 489-3; EN 301 489-07; EN 301 489-17; 47 CFR FCC Part 15, 22, 24	 TESTING CERT #2541.01
USA	FCC	3/10 meter Sites to perform FCC Part 15/18 measurements	 93105, 90471
Japan	VCCI	3/10 meter Sites and conducted test sites to perform radiated/conducted measurements	<b>VCCI</b> R-1600 C-1707 G-216

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## 6. SETUP OF EQUIPMENT UNDER TEST

### 6.1. SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### 6.2. SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID
1.	Notebook	DELL	E5430	CN8YYW1	N/A

**Remark:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

**7. FCC PART 15.249 REQUIREMENTS****7.1.FIELD STRENGTH OF FUNDAMENTAL****SPECIFICATION REFERENCE**

FCC CFR 47 Part 15C, Clause 15.249 (a)

**LIMIT**

Clause 15.249 (a) and A2.9

Fundamental Frequency (MHz)	Field Strength of Fundamental (millivolts/meter)
902 to 928	50
2400 to 2483.5	50
5725 to 5875	50
24000 to 24250	250

**TEST PROCEDURE**

The EUT is placed on a test table 800mm above the ground plane.

During formal measurement the spectrum analyser is tuned to the frequency of the fundamental. The turntable azimuth is adjusted from 0 to 360 degrees to determine the point at which the maximum level occurs. Then the height of the measuring antenna is adjusted from a height of 1m to 4m to determine the height at which the maximum level occurs. Once the point of maximum emission has been determined the emission is measured.

**TEST RESULTS****Ch Low**

Fundamental Frequency (MHz)	Fundamental Frequency (MHz)	Reading Level	Factor	Field Strength	Over Limit	Limit		Type
		(dBµV/m)	(dB)	dBµV/m	(dB)	(dBµV/m)	mV/m	AV/PK
2401.956	H	85.85	-7.57	78.28	-35.72	114.0	500	PK
2401.989	V	91.79	-7.57	84.22	-29.78	114.0	500	PK

**Ch Mid**

Fundamental Frequency (MHz)	Fundamental Frequency (MHz)	Reading Level	Factor	Field Strength	Over Limit	Limit		Type
		(dBµV/m)	(dB)	dBµV/m	(dB)	(dBµV/m)	mV/m	AV/PK
2436.588	H	87.84	-7.52	80.32	-33.68	114.0	500	PK
2436.959	V	92.18	-7.52	84.66	-29.34	114.0	500	PK

**Ch High**

Fundamental Frequency (MHz)	Fundamental Frequency (MHz)	Reading Level	Factor	Field Strength	Over Limit	Limit		Type
		(dBµV/m)	(dB)	dBµV/m	(dB)	(dBµV/m)	mV/m	AV/PK
2459.869	H	96.49	-7.47	89.02	-24.98	114.0	500	PK
2459.988	V	88.68	-7.47	81.21	-32.79	114.0	500	PK

**Remark:** Form the peak reading test found the emission below the AV limit, so the average (AV) test doesn't need to be performed.

## 7.2.RADIATED EMISSIONS

### SPECIFICATION REFERENCE

FCC CFR 47 Part 15C, Clause 15.249 (a)

### LIMIT

Radiated emissions from 9 kHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2009. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

1. According to §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:

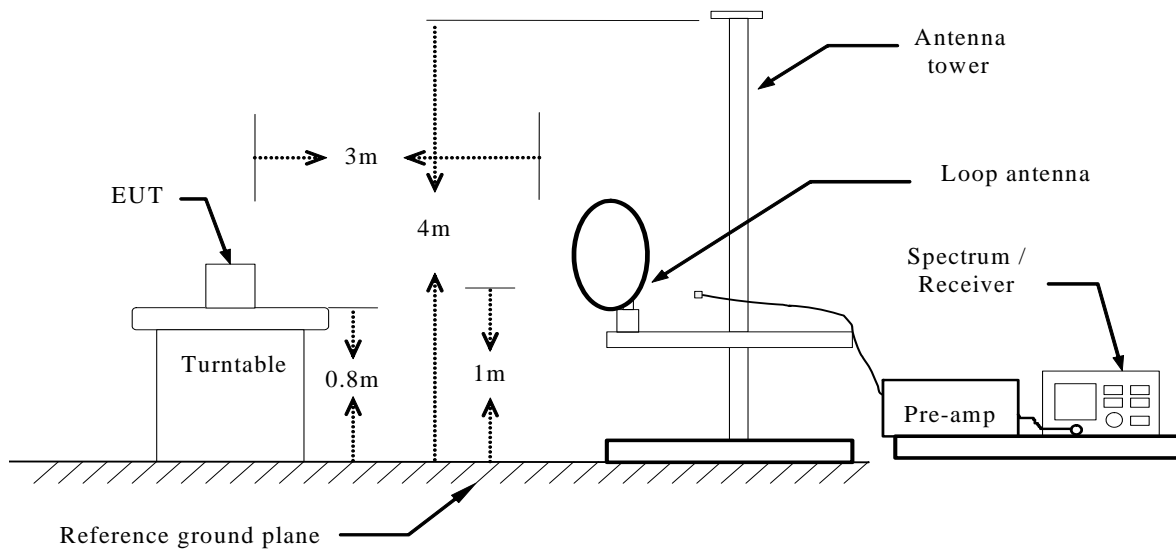
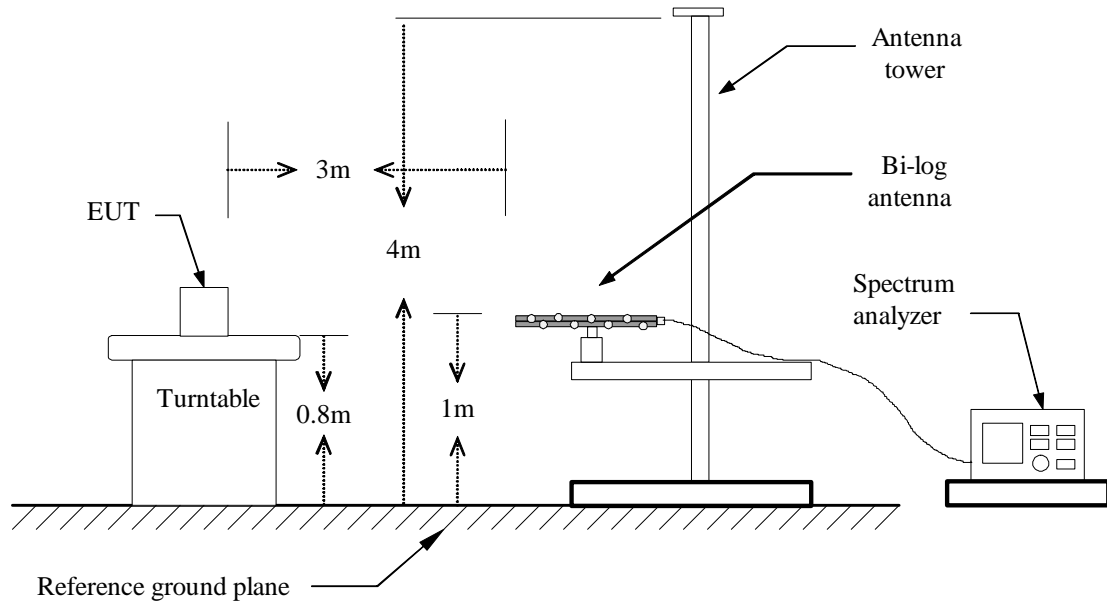
FREQUENCIES(MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE(meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

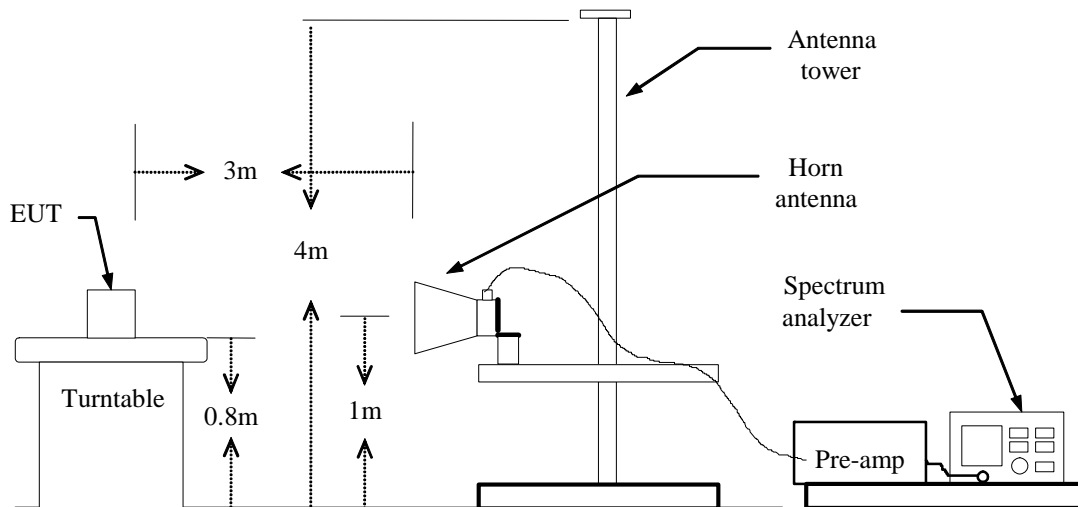
**Remark:** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections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

2. In the emission table above, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength ( $\mu$ V/m at 3-meter)	Field Strength (dB $\mu$ V/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

### Test Configuration

**Below 30MHz****Below 1 GHz**

**Above 1 GHz****TEST PROCEDURE**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:

Below 1GHz:

RBW=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz:

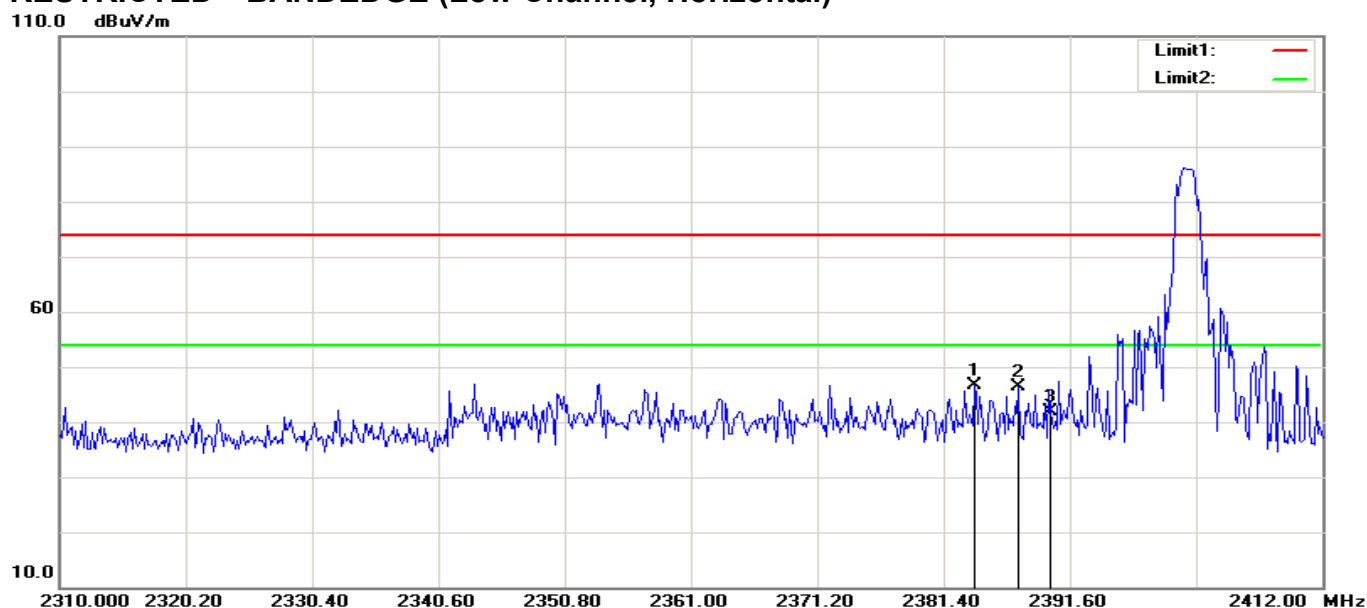
PEAK: RBW=VBW=1MHz / Sweep=AUTO

AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

7. Repeat above procedures until the measurements for all frequencies are complete.

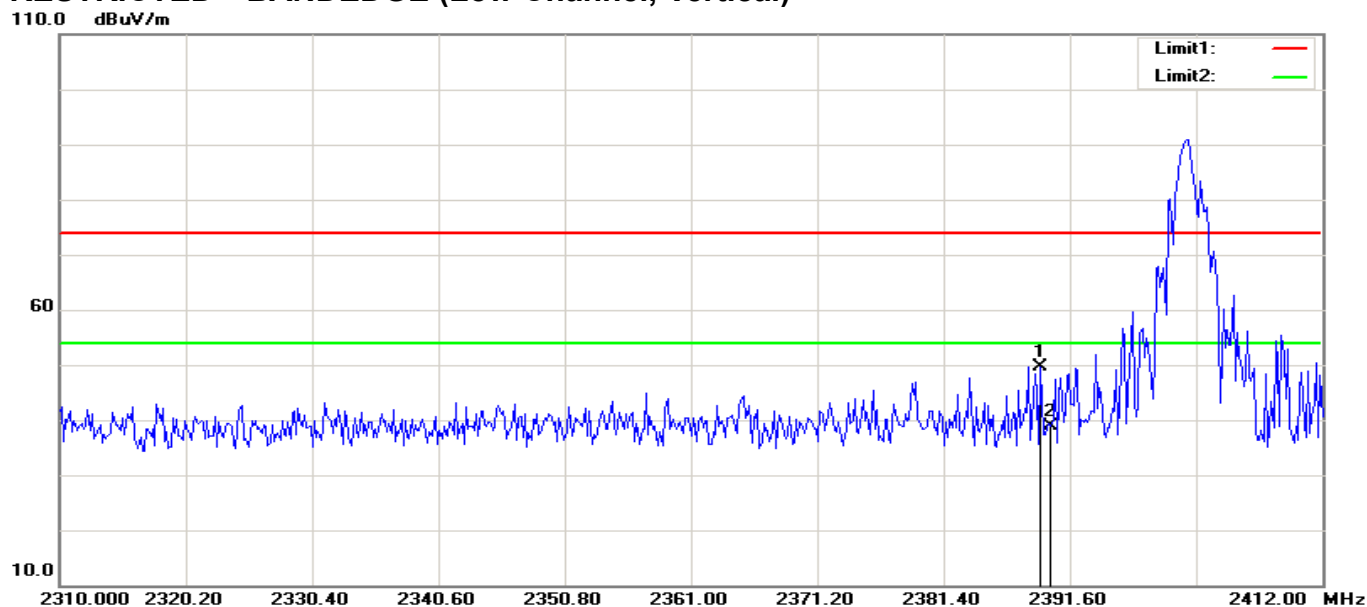
**TEST RESULTS**

**RESTRICTED BANDEDGE (Low Channel, Horizontal)**



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2383.885	54.41	-7.90	46.51	74.00	-27.49	100	3	peak
2	2387.481	54.26	-7.88	46.38	74.00	-27.62	100	3	peak
3	2390.000	49.86	-7.87	41.99	74.00	-32.01	100	34	peak

**RESTRICTED BANDEDGE (Low Channel, Vertical)**

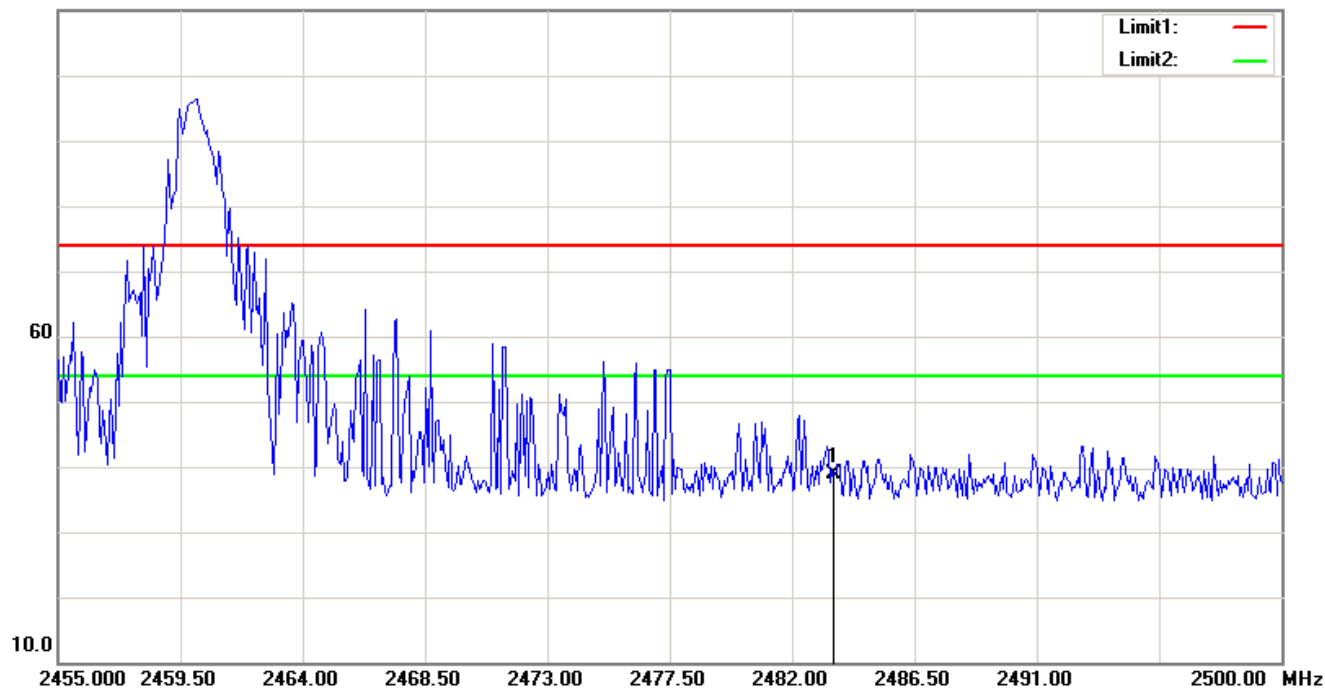


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2389.279	57.62	-7.88	49.74	74.00	-24.26	100	1	peak
2	2390.000	46.70	-7.87	38.83	74.00	-35.17	100	19	peak



**RESTRICTED BANDEDGE (High Channel, Horizontal)**

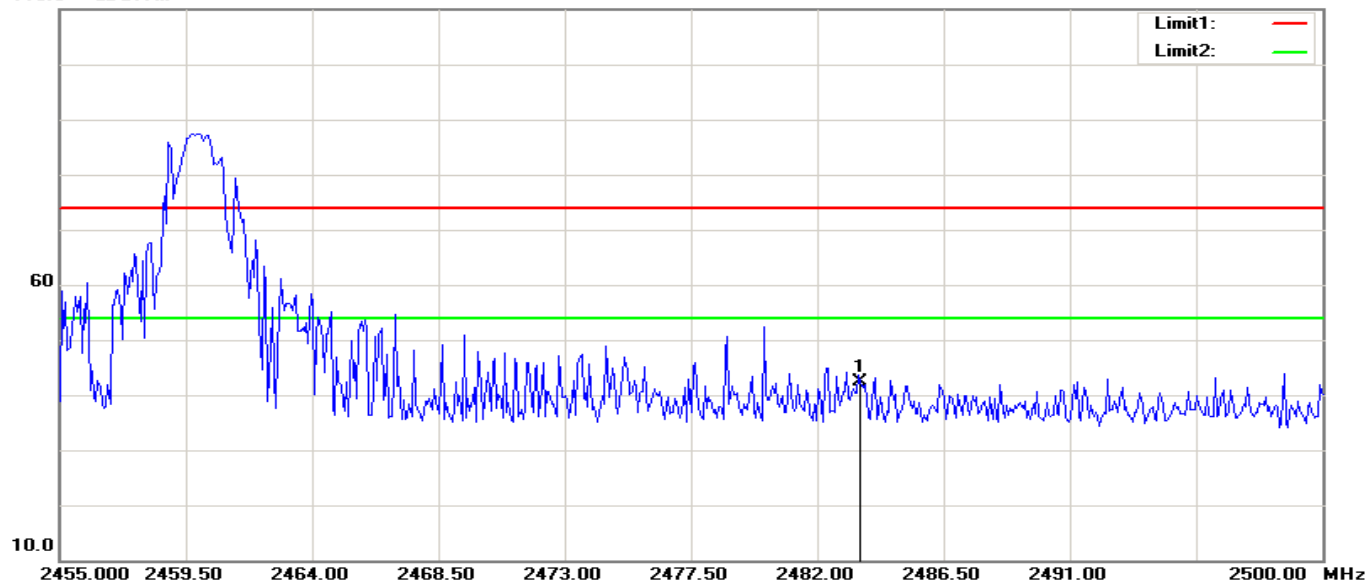
110.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	46.40	-7.47	38.93	74.00	-35.07	100	52	peak

**RESTRICTED BANDEDGE (High Channel, Vertical)**

110.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	2483.500	49.90	-7.47	42.43	74.00	-31.57	100	48	peak

**Below 1GHz****Operation Mode:** Normal Link**Test Date:** 2015-6-19**Temperature:** 24°C**Tested by:** James.Yan**Humidity:** 48% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
48.0090	V	25.43	14.44	39.87	40.00	-0.13	Peak
95.9600	V	26.03	12.38	38.41	43.50	-5.09	Peak
167.7400	V	22.88	13.09	35.97	43.50	-7.53	Peak
191.9900	V	25.89	11.89	37.78	43.50	-5.72	Peak
455.8300	V	20.11	19.97	40.08	46.00	-5.92	Peak
480.0800	V	23.09	19.52	42.61	46.00	-3.39	Peak
47.4600	H	20.86	14.63	35.49	40.00	-4.51	Peak
79.4700	H	26.20	9.95	36.15	40.00	-3.85	Peak
95.9600	H	28.38	12.38	40.76	43.50	-2.74	Peak
191.9900	H	28.50	11.89	40.39	43.50	-3.11	Peak
216.2400	H	27.47	12.49	39.96	46.00	-6.04	Peak
480.0800	H	22.87	19.52	42.39	46.00	-3.61	Peak

**Remark:**

1. Measuring frequencies from 30 MHz to the 1GHz (No emission found between lowest internal used/generated frequency to 30 MH).
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
3. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
4.  $\text{Margin (dB)} = \text{Result (dBuV/m)} - \text{Limit (dBuV/m)}$ .

**Above 1 GHz****Operation Mode:** TX /CH Low**Test Date:** 2015-6-19**Temperature:** 24°C**Tested by:** James.Yan**Humidity:** 48 % RH**Polarity:** Ver. / Hor.**Horizontal**

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4786.859	55.87	-2.90	52.97	74.00	-21.03	100	232	peak
2	7184.295	42.34	4.83	47.17	74.00	-26.83	100	213	peak
N/A									

**Vertical**

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4786.667	35.59	-2.90	32.69	54.00	-21.31	100	360	AVG
2	4786.859	61.39	-2.90	58.49	74.00	-15.51	100	359	peak
3	7402.244	42.26	5.04	47.30	74.00	-26.70	100	34	peak
N/A									

**Operation Mode:** TX / CH Mid**Test Date:** 2015-6-19**Temperature:** 24°C**Tested by:** James.Yan**Humidity:** 48 % RH**Polarity:** Ver. / Hor.**Horizontal**

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4841.346	54.84	-2.72	52.12	74.00	-21.88	100	139	peak
2	7756.410	41.70	6.00	47.70	74.00	-26.30	100	96	peak
N/A									

**Vertical**

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4841.346	66.32	-2.72	63.60	74.00	-10.40	100	148	peak
2	4843.333	38.55	-2.71	35.84	54.00	-18.16	100	148	AVG
3	7701.923	42.02	5.82	47.84	74.00	-26.16	100	94	peak
N/A									



# Compliance Certification Services Inc.

Date of Issue : July 8, 2015

Report No: C150630R01-1-RPW

FCC ID: 2AEQWCB18HHC004

Operation Mode: TX / CH High

Test Date: 2015-6-19

Temperature: 24°C

Tested by: James.Yan

Humidity: 48 % RH

Polarity: Ver. / Hor.

## Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	54.01	-2.44	51.57	74.00	-22.43	100	173	peak
2	7729.167	41.55	5.91	47.46	74.00	-26.54	100	301	peak
N/A									

## Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	4923.077	63.92	-2.44	61.48	74.00	-12.52	100	292	peak
2	4923.077	35.03	-2.44	32.59	54.00	-21.41	100	292	AVG
3	7729.167	40.94	5.91	46.85	74.00	-27.15	100	219	peak
N/A									

### 7.3. POWERLINE CONDUCTED EMISSIONS

#### LIMIT

According to §15.207(a), 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  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

\* Decreases with the logarithm of the frequency.

#### Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

#### TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

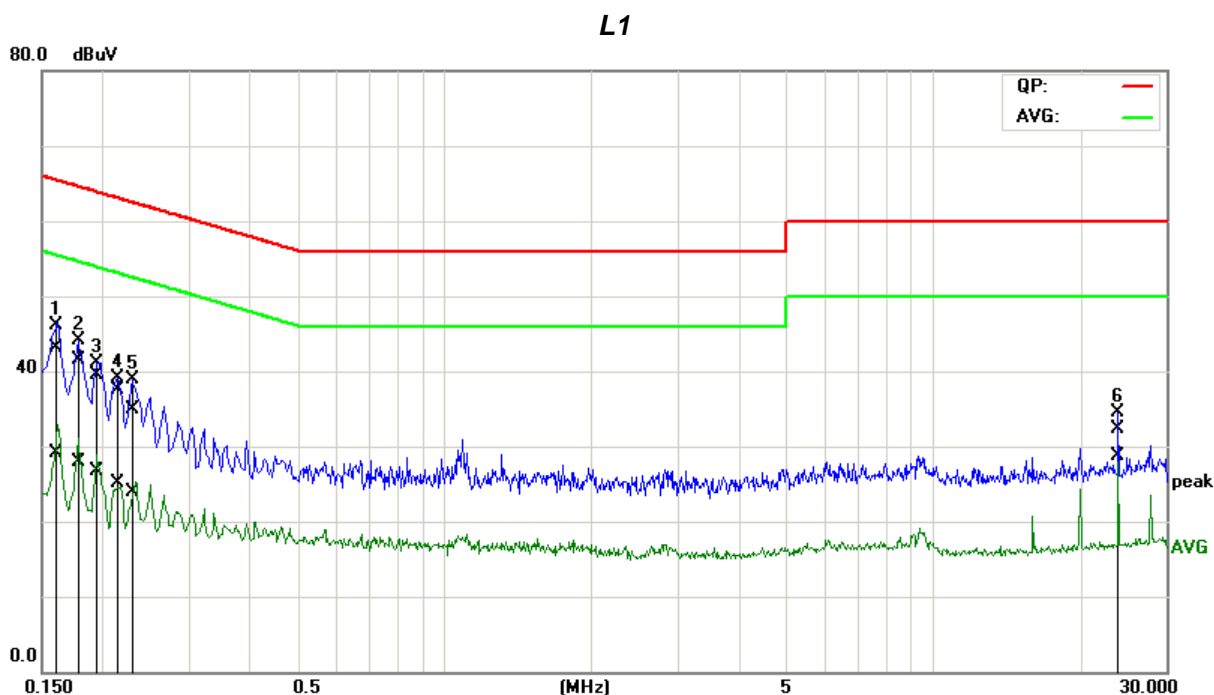
#### TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

#### TEST DATA

Job No.: C150630R01-1  
 Model: CB11  
 Standard: FCC Class B  
 Test item: Conduction test  
 Line: L1  
 Model:

Date: 2015-7-4  
 Time: 15:32:29  
 Temp.(C)/Hum.(%): 22(C)/48%  
 Test By: James.Yan  
 Test Voltage: AC 120V/60Hz  
 Description:

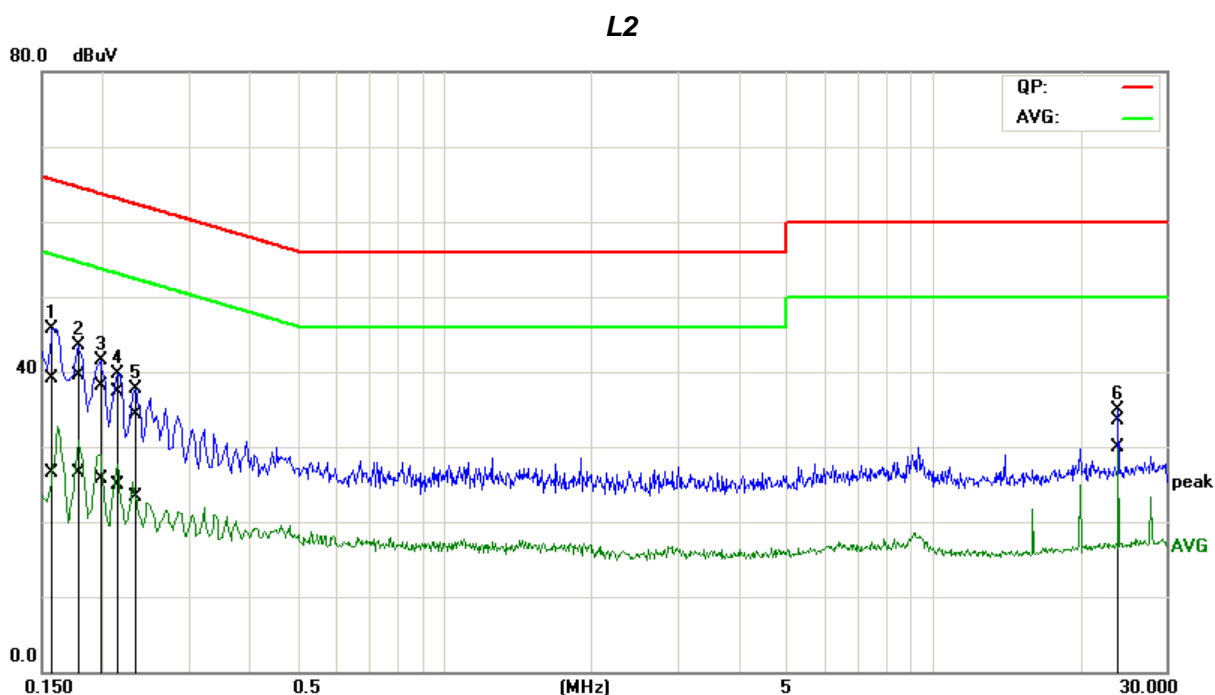


No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1585	23.26	9.26	19.77	43.03	29.03	65.54	55.54	-22.51	-26.51	Pass
2	0.1779	21.89	8.16	19.69	41.58	27.85	64.58	54.58	-23.00	-26.73	Pass
3	0.1967	19.81	7.15	19.61	39.42	26.76	63.75	53.75	-24.33	-26.99	Pass
4	0.2133	17.85	5.50	19.61	37.46	25.11	63.08	53.08	-25.62	-27.97	Pass
5*	0.2300	15.31	4.30	19.62	34.93	23.92	62.45	52.45	-27.52	-28.53	Pass
6	24.0025	11.08	7.42	21.19	32.27	28.61	60.00	50.00	-27.73	-21.39	Pass

**Note:** 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).

Job No.: C150630R01-1  
 Model: CB11  
 Standard: FCC Class B  
 Test item: Conduction test  
 Line: L2  
 Model:

Date: 2015-7-4  
 Time: 15:36:59  
 Temp.(C)/Hum.(%): 22(C)/48%  
 Test By: James.Yan  
 Test Voltage: AC 120V/60Hz  
 Description:



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1564	19.44	6.75	19.72	39.16	26.47	65.65	55.65	-26.49	-29.18	Pass
2	0.1758	19.92	6.92	19.68	39.60	26.60	64.68	54.68	-25.08	-28.08	Pass
3	0.1982	18.54	6.11	19.64	38.18	25.75	63.69	53.69	-25.51	-27.94	Pass
4	0.2133	17.71	5.27	19.65	37.36	24.92	63.08	53.08	-25.72	-28.16	Pass
5*	0.2340	14.55	3.61	19.66	34.21	23.27	62.31	52.31	-28.10	-29.04	Pass
6	24.0006	12.37	8.80	21.18	33.55	29.98	60.00	50.00	-26.45	-20.02	Pass

**Note:** 1. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line).