



# INDUSTRY CANADA RSS-247

## TEST REPORT

for

**Tablet Computer**

**MODEL: A7002**

**Marketing name: B3-A40FHD**

**Brand: acer**

**Test Report Number:**

**C170515Z01-RC1-3**

**Issued Date: June 13, 2017**

Issued for

**Acer Incorporated**

**8F, 88, Sec 1, Xintai 5th Rd. Xizhi, New Taipei City 221 Taiwan, R.O.C**

Issued by:

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Certificate Number: 2861.01

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	June 13, 2017	Initial Issue	ALL	Sabrina Wang



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# 1 TEST CERTIFICATION

<b>Product</b>	Tablet Computer
<b>Model</b>	A7002
<b>Marketing name</b>	B3-A40FHD
<b>Brand</b>	A7002
<b>Tested</b>	May 15~June 13, 2017
<b>Applicant</b>	<b>Acer Incorporated</b> 8F, 88, Sec 1, Xintai 5th Rd. Xizhi, New Taipei City 221 Taiwan, R.O.C
<b>Manufacturer</b>	<b>Acer Incorporated</b> 8F, 88, Sec 1, Xintai 5th Rd. Xizhi, New Taipei City 221 Taiwan, R.O.C

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IC RSS-247 ISSUE 2 with amendment February 2017	No non-compliance noted

### We hereby certify that:

Compliance Certification Services (Shenzhen) Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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

**Approved by:**

**Reviewed by:**

**Sunday Hu**  
Supervisor of EMC Dept.  
Compliance Certification Service (Shenzhen)  
Inc.

**Ruby Zhang**  
Supervisor of Report Dept.  
Compliance Certification Service (Shenzhen)  
Inc.



## 2 EUT DESCRIPTION

<b>Product</b>	Tablet Computer
<b>Model</b>	A7002
<b>Marketing name</b>	B3-A40FHD
<b>Brand</b>	acer
<b>Model Discrepancy</b>	N/A
<b>Identify Number</b>	C170515Z01-RC1-3
<b>Received Date</b>	May 15, 2017
<b>Power Supply</b>	DC5.35V or DC5.2V supplied by the Adapter or DC3.7V supplied by the battery
<b>Adapter Manufacturer /Model No.</b>	<b>Adapter 1:</b> Delta / ADP-10HW A I/P: 100-240Vac, 50/60Hz, 0.4A O/P: 5.35Vdc, 2A <b>Adapter 2:</b> Liteon / PA-1100-25 I/P: 100-240Vac, 50/60Hz, 0.3A O/P: 5.2Vdc, 2.0A
<b>Battery Manufacturer /Model No.</b>	<b>Battery 1:</b> TCL/ PR-279594N O/P:DC3.7V <b>Battery 2:</b> Huizhou Highpower Technology Co., LTD / HPP279594AB O/P: DC3.7V
<b>Frequency Range</b>	2402MHz ~2480MHz
<b>Transmit Power</b>	1.91dBm
<b>Modulation Technique</b>	GFSK for 1Mbps
<b>Number of Channels</b>	40 Channels
<b>Antenna Specification</b>	FPC antenna with 1.81dBi gain (Max)
<b>Temperature Range</b>	0°C ~ +35°C
<b>Hardware Version</b>	A10M_MB_V2.0
<b>Software Version</b>	Aver_AV0N0_B3-A40FHD_RV00RA00_WW_GEN1



### 3 TEST METHODOLOGY

The tests documented in this report were performed in accordance with IC RSS-247, IC RSS-Gen, and ANSI C63.10

This submittal(s) (test report) is intended for IC: 1754F-A7002\_filing to comply with Industry CANADA RSS247.

#### 3.1. RSS-247 RESTRICTED BANDS OF OPERATIONS

Restricted bands, identified in Table 3 of RSS-Gen.

Table 3: Restricted Frequency Bands <sup>(Note)</sup>

MHz	MHz	MHz	GHz
0.090-0.110	12.57675-12.57725	960-1427	9.0-9.2
2.1735-2.1905	13.36-13.41	1435-1626.5	9.3-9.5
3.020-3.026	16.42-16.423	1645.5-1646.5	10.6-12.7
4.125-4.128	16.69475-16.69525	1660-1710	13.25-13.4
4.17725-4.17775	16.80425-16.80475	1718.8-1722.2	14.47-14.5
4.20725-4.20775	25.5-25.67	2200-2300	15.35-16.2
5.677-5.683	37.5-38.25	2310-2390	17.7-21.4
6.215-6.218	73-74.6	2655-2900	22.01-23.12
6.26775-6.26825	74.8-75.2	3260-3267	23.6-24.0
6.31175-6.31225	108-138	3332-3339	31.2-31.8
8.291-8.294	156.52475-156.52525	3345.8-3358	36.43-36.5
8.362-8.366	156.7-156.9	3500-4400	Above 38.6
8.37625-8.38675	240-285	4500-5150	
8.41425-8.41475	322-335.4	5350-5460	
12.29-12.293	399.9-410	7250-7750	
12.51975-12.52025	608-614	8025-8500	

**Note:** Certain frequency bands listed in Table 3 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to the devices are set out in the 200– and 300– series RSSs, such as RSS-247 and RSS-310, which contain the requirements that apply to licence-exempt radio apparatus.



### 3.2. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Used the EngineerMode software to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Test Item	Test mode	Worse mode
Conducted Emission	<b>Mode 1:</b> Charge (Adapter 1)+Battery 1+Play Vide (USB2.0)	<input checked="" type="checkbox"/>
	<b>Mode 2:</b> Charge (Adapter 2)+Battery 1+Play Video(USB2.0)	<input type="checkbox"/>
	<b>Mode 3:</b> Charge (Adapter 1)+Battery 1+ Record Video(TF Card)	<input type="checkbox"/>
	<b>Mode 4:</b> Charge (Adapter 2)+Battery 1+Record Video (TF Card)	<input type="checkbox"/>
	<b>Mode 5:</b> Charge (Adapter 1)+Battery 2+Play Video(USB2.0)	<input type="checkbox"/>
	<b>Mode 6:</b> Charge (Adapter 2)+Battery 2+Play Video(USB2.0)	<input type="checkbox"/>
	<b>Mode 7:</b> Charge (Adapter 1)+Battery 2+Record Video(TF Card)	<input type="checkbox"/>
	<b>Mode 8:</b> Charge (Adapter 2)+Battery 2+ Record Video(TF Card)	<input type="checkbox"/>
	<b>Mode 9:</b> Charge (PC)+Battery 1+Play Vide (USB2.0)	<input type="checkbox"/>
	<b>Mode 10:</b> Charge (PC)+Battery 2+Play Vide (USB2.0)	<input type="checkbox"/>
	<b>Mode 11:</b> Charge (PC) +Battery 1+ Record Video (TF Card)	<input type="checkbox"/>
	<b>Mode 12:</b> Charge (PC) +Battery 2+ Record Video (TF Card)	<input type="checkbox"/>
Radiated Emission	<b>Mode 1:</b> Continuously Transmitting	<input checked="" type="checkbox"/>

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz, which worst case was in normal link mode only.



## 4 FACILITIES AND ACCREDITATIONS

### 4.1. FACILITIES

All measurement facilities used to collect the measurement data are located at

**No.10-1 Mingkeda Logistics park, No.18, Huanguan South Rd., Guan Lan Town, Baoan District, Shenzhen, China**

The sites are constructed in conformance with the requirements of ANSI C63.10, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### 4.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following accreditation body according to ISO/IEC 17025.

<b>USA</b>	<b>A2LA</b>
<b>China</b>	<b>CNAS</b>

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

<b>USA</b>	<b>FCC</b>
<b>Japan</b>	<b>VCCI(C-4815, R-4320, T-2317, G-10624)</b>
<b>Canada</b>	<b>INDUSTRY CANADA</b>

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.ccssz.com>

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Parameter	Uncertainty
Radiated Emission, 30 to 200 MHz Test Site : 966(2)	+/-3.6880dB
Radiated Emission, 200 to 1000 MHz Test Site : 966(2)	+/-3.6695dB
Radiated Emission, 1 to 8 GHz	+/-5.1782dB
Radiated Emission, 8 to 18 GHz	+/-5.2173dB
Conducted Emissions	+/-3.6836dB
Band Width	178kHz
Peak Output Power MU	+/-1.906dB
Band Edge MU	+/-0.182dB
Channel Separation MU	416.178Hz
Duty Cycle MU	0.054ms
Frequency Stability MU	226Hz

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

The measured result is above (below) the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliance based on the 95% level of confidence. However, the result indicates that compliance (non-compliance) is more probable than non-compliance) with the specification limit.





## 5 SETUP OF EQUIPMENT UNDER TEST

### 5.1. 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.

### 5.2. SUPPORT EQUIPMENT

No.	Equipment	Model No.	Serial No.	FCC ID	Brand	Data Cable	Power Cord
1	Notebook	Thinkpad S2	SL 10K92342	N/A	Lenovo	N/A	N/A
2	Earphone	ST909	N/A	N/A	Senic	Unshielded 1.20m	N/A
3	TF Card	MB-MP 16D	N/A	N/A	SAMSUNG	N/A	N/A
4	Flash Disk	N/A	N/A	N/A	Kingston	N/A	N/A
5	Adapter(For Notebook)	PA-1900-56LC	36001927	N/A	Lenovo	N/A	Unshielded 1.020m (AC Cable) Unshielded 1.50m (DC Cable)

**Note:**

- 1) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



## 6 RSS 247 REQUIREMENTS

### 6.1. 99% BANDWIDTH

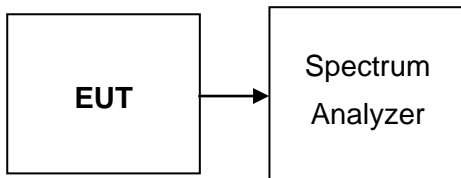
The test of the item was performed in accordance with the standards RSS-Gen 4.6.1.

#### MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2017	02/20/2018
Cable	HuberSuhner	SUCOFLEX104PEA	N/A	N/A	N/A

**Remark:** Each piece of equipment is scheduled for calibration once a year.

#### Test Configuration



#### TEST PROCEDURE

The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth.

#### TEST RESULTS

##### Test Plot

The test plots please refer to 6.2 for detail.

##### Test Data

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2402	1.0470
Mid	2442	1.0460
High	2480	1.0448



## 6.2. 6dB BANDWIDTH

### LIMIT

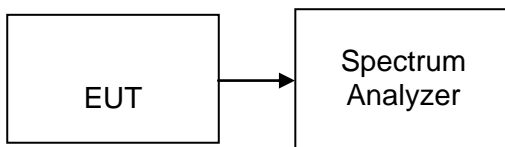
According to RSS-247 §5.2(1), the minimum 6 dB bandwidth shall be at least 500 kHz.

### MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2017	02/20/2018
Cable	HuberSuhner	SUCOFLEX104PEA	N/A	N/A	N/A

*Remark: Each piece of equipment is scheduled for calibration once a year.*

### TEST CONFIGURATION



### TEST PROCEDURE

#### 8.2 Option 2:

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW  $\geq$  3 RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be  $\geq$  6 dB.

### TEST RESULTS

*No non-compliance noted*

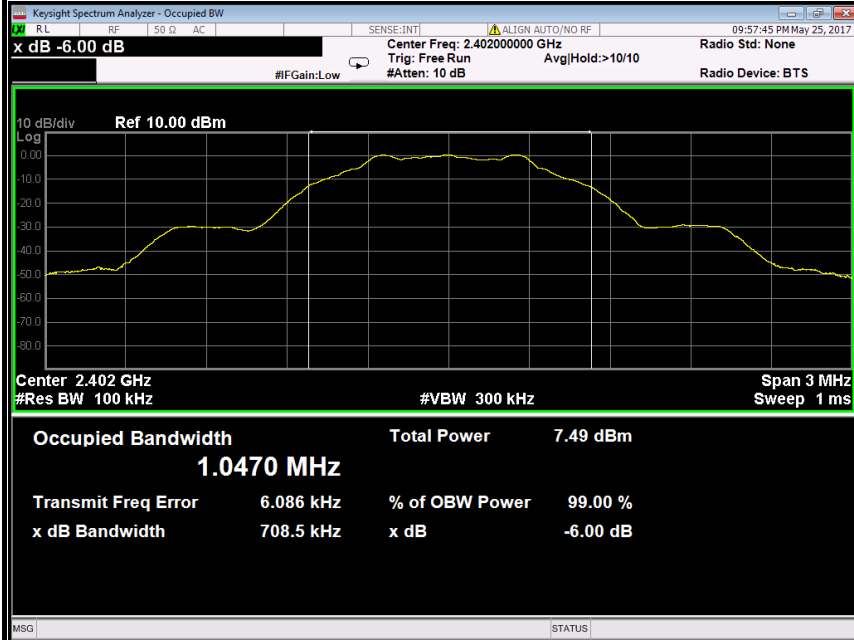
#### Test Data

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Margin (kHz)
Low	2402	708.5	>500	PASS
Mid	2442	709.2		PASS
High	2480	702.7		PASS

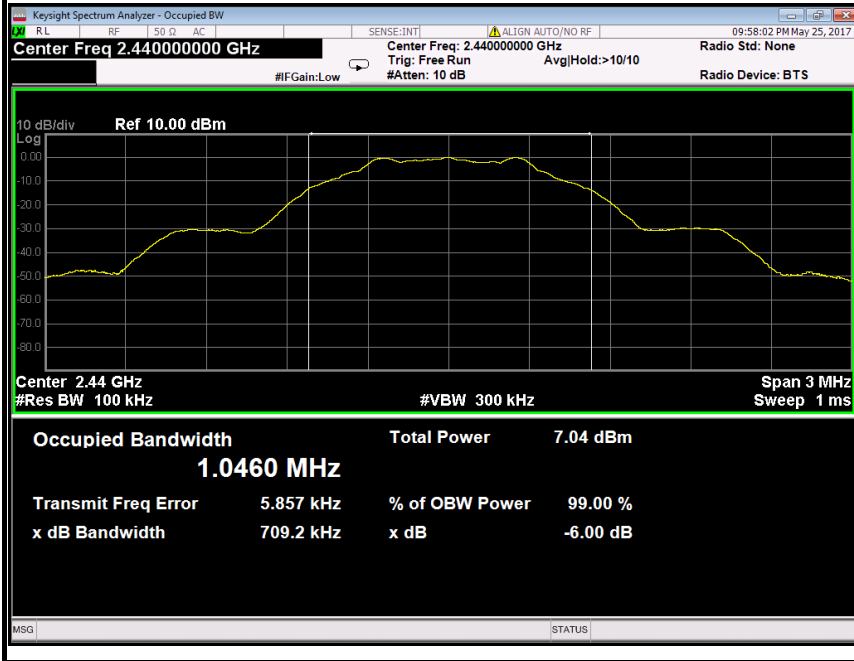


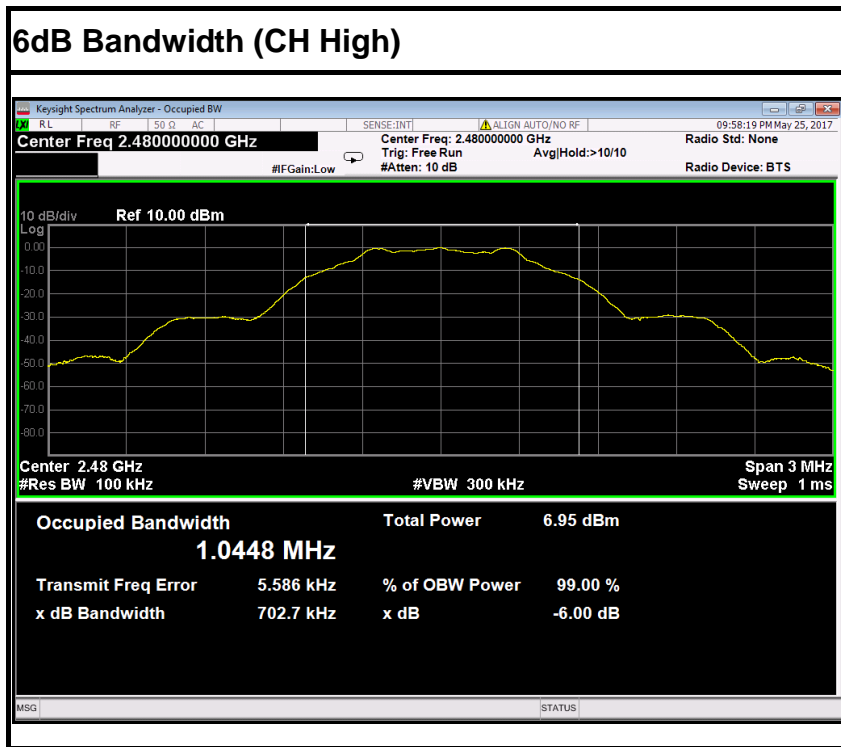
**Test Plot**

**6dB Bandwidth (CH Low)**



**6dB Bandwidth (CH Mid)**







### 6.3. PEAK POWER

#### LIMIT

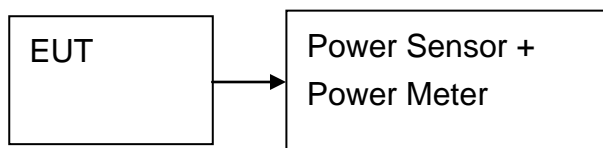
According to RSS-247 §5.4(4), for systems employing digital modulation techniques operating in the 902-928 MHz, 2400-2483.5 MHz bands, the maximum peak conducted power shall not exceed 1 W.

#### MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Power Meter	Anritsu	ML2495A	1204003	02/21/2017	02/20/2018
Power Sensor	Anritsu	MA2411B	1126150	02/21/2017	02/20/2018
Cable	HuberSuhner	SUCOFLEX104PEA	N/A	N/A	N/A

**Remark:** Each piece of equipment is scheduled for calibration once a year.

#### Test Configurations



### TEST PROCEDURE

#### 9.1.1 RBW ≥ DTS bandwidth

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the *DTS bandwidth*.

- Set the RBW ≥ *DTS bandwidth*.
- Set VBW ≥ 3 RBW.
- Set span ≥ 3 x RBW
- Sweep time = auto couple.
- Detector = peak.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use peak marker function to determine the peak amplitude level.

#### 9.1.3 PKPM1 Peak power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.



## **TEST RESULTS**

*No non-compliance noted*

### **Test Data**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Peak /AVG	Result
Low	2402	1.91	0.00155	1	peak	PASS
Mid	2440	1.82	0.00152			PASS
High	2480	1.26	0.00134			PASS
Low	2402	1.61	0.00145	1	AVG	PASS
Mid	2440	1.53	0.00142			PASS
High	2480	1.00	0.00126			PASS



## 6.4. ANTENNA GAIN

### MEASUREMENT

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module.

### MEASUREMENT PARAMETERS

Measurement parameter	
Detector	Peak
Sweep time	Auto
Resolution bandwidth	3 MHz
Video bandwidth	3 MHz
Trace-Mode	Max hold

### LIMITS

FCC	IC
Antenna Gain	
6 dBi	

### TEST RESULTS

PASS

Please refer to antenna report;





## 6.5. BAND EDGES MEASUREMENT

### LIMIT

According to RSS-247 §5.5, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the

100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

### MEASUREMENT EQUIPMENT USED

Radiated Emission Test Site 966(2)					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2017	02/20/2018
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2017	02/20/2018
Amplifier	EMEC	EM330	060661	03/18/2017	03/17/2018
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2017	02/20/2018
Loop Antenna	COM-POWER	AL-130	121044	09/25/2016	09/24/2017
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2017	02/20/2018
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2017	02/27/2018
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2017	02/27/2018
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2017	02/20/2018
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

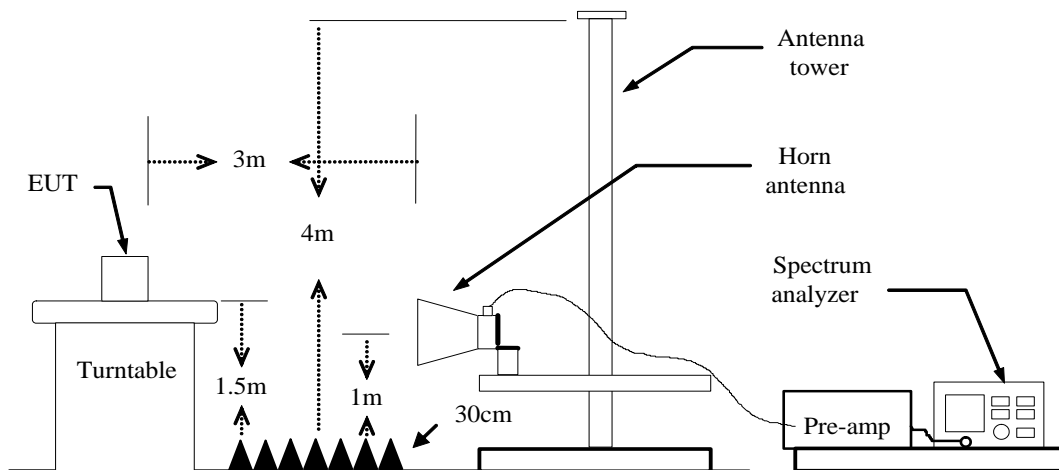
**NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The FCC Site Registration number is 101879.

3. N.C.R = No Calibration Required.

**6.5.4. TEST PROCEDURES** (please refer to measurement standard)

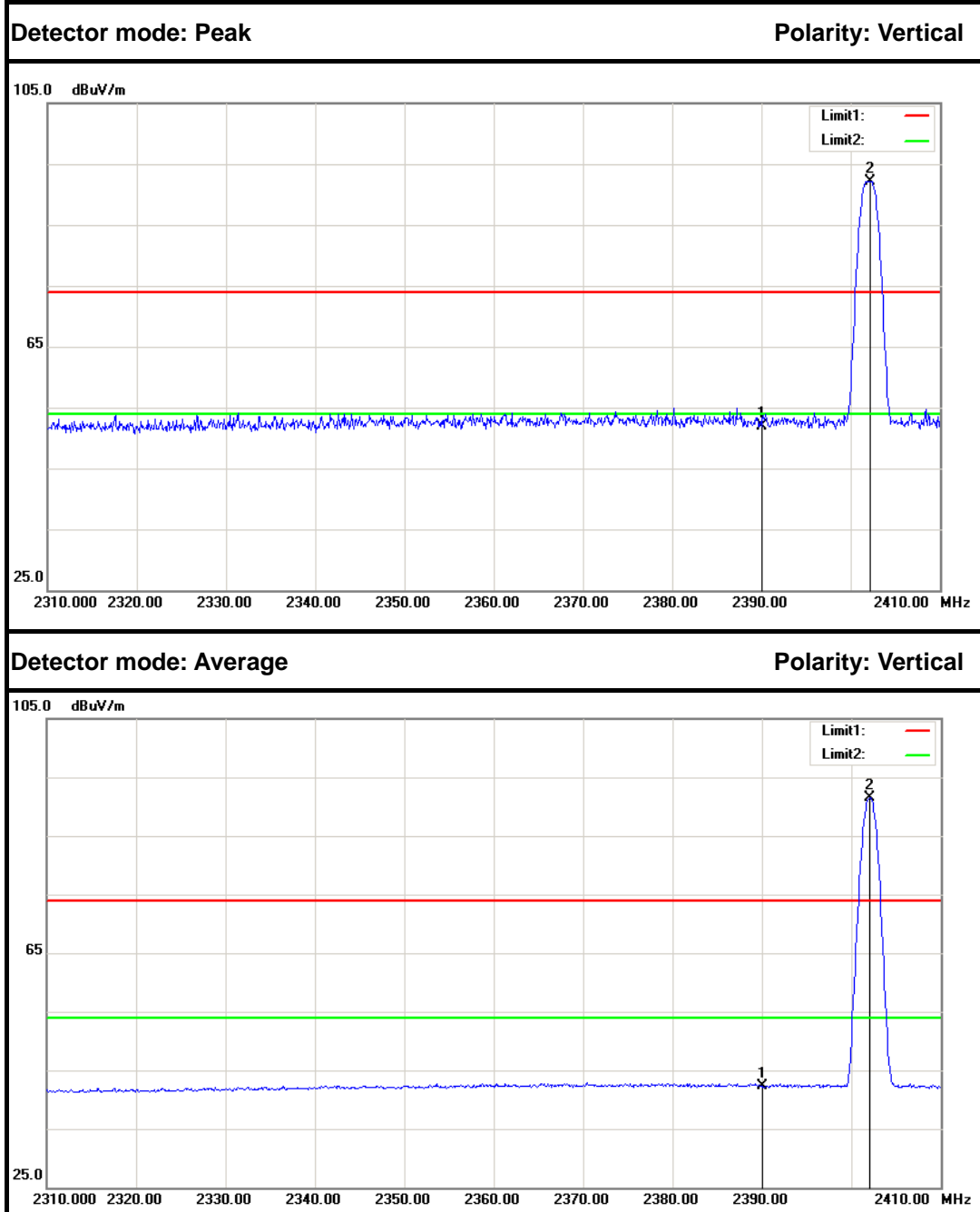
1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=1MHz / VBW=3MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

**6.5.5. TEST SETUP**

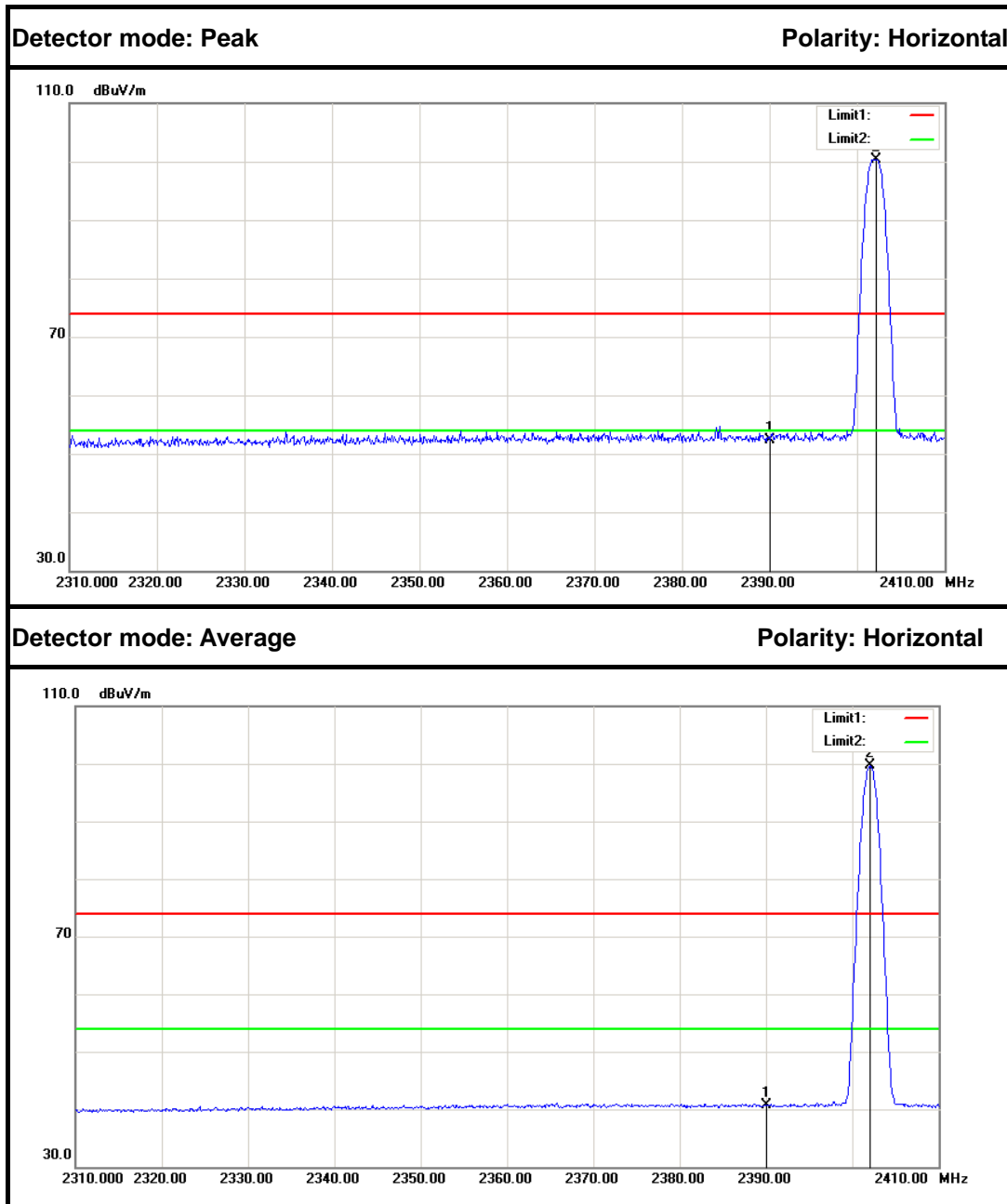


6.5.6. TEST RESULTS

**Test Plot**  
**Band Edges (CH Low)**



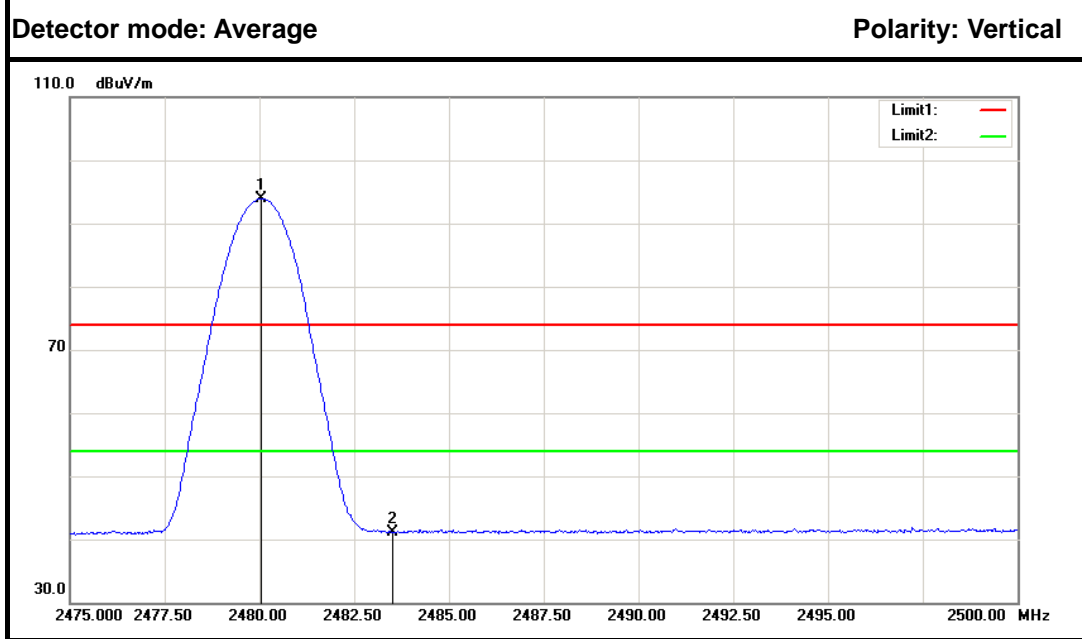
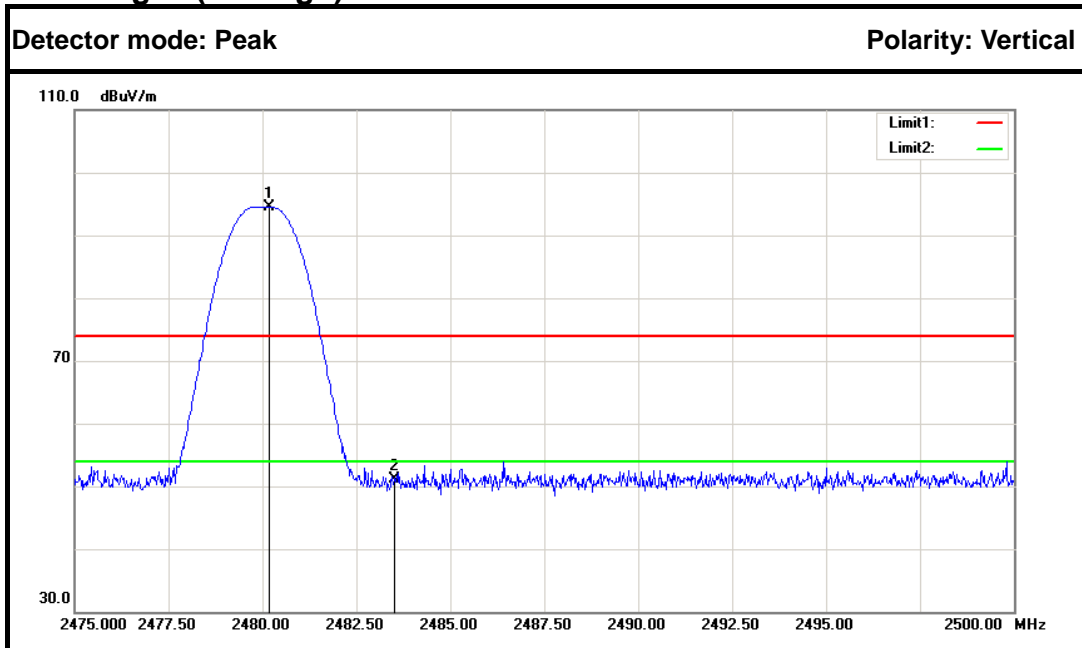
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	54.42	-2.86	51.56	74.00	-22.44	Peak	Vertical
2	2401.800	97.19	-2.80	94.39	---	---	Peak	Vertical
1	2390.000	43.41	-2.86	40.55	54.00	-13.45	Average	Vertical
2	2402.100	96.55	-2.80	93.75	---	---	Average	Vertical



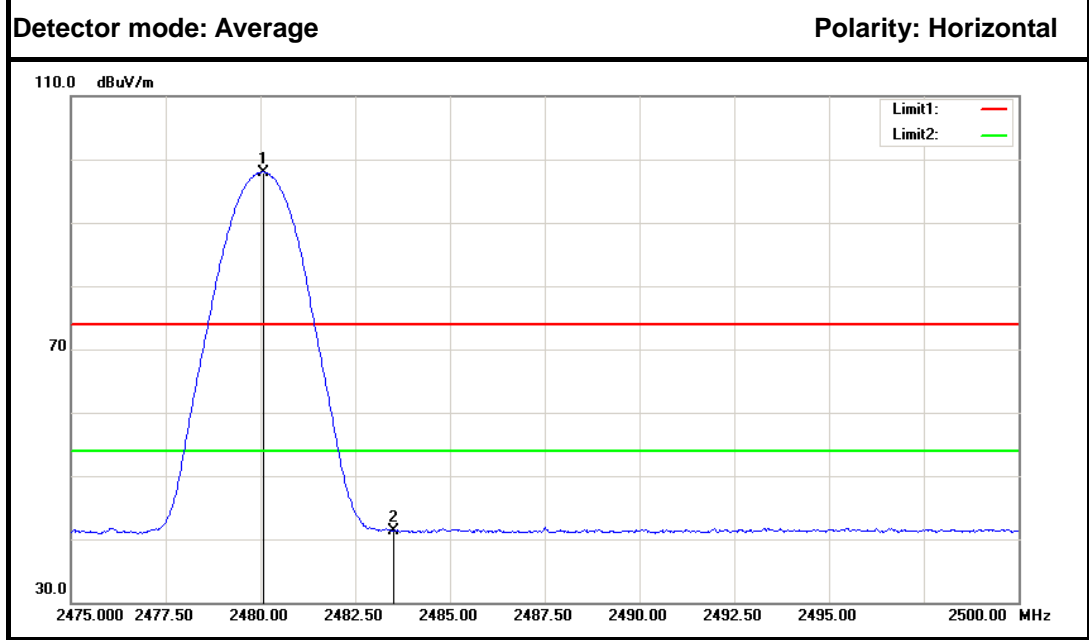
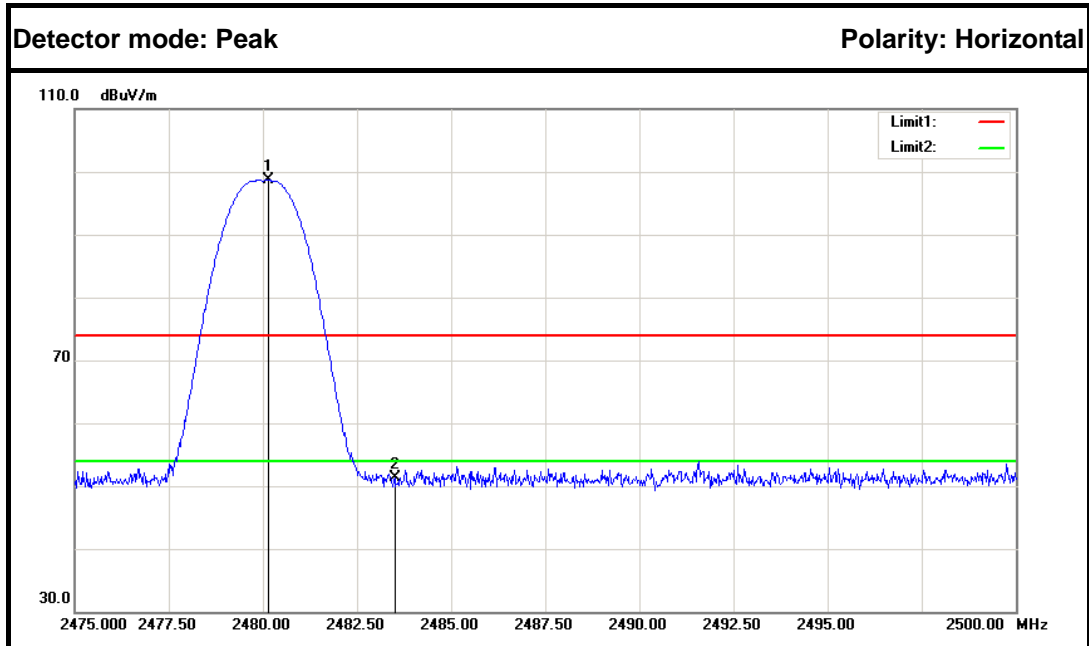
No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2390.000	55.25	-2.86	52.39	74.00	-21.61	Peak	Horizontal
2	2402.200	103.07	-2.80	100.27	---	---	Peak	Horizontal
1	2390.000	43.58	-2.86	40.72	54.00	-13.28	Average	Horizontal
2	2402.000	102.41	-2.80	99.61	---	---	Average	Horizontal



**Band Edges (CH-High)**



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2480.175	96.94	-2.37	94.57	---	---	Peak	Vertical
2	2483.500	53.53	-2.35	51.18	74.00	-22.82	Peak	Vertical
1	2480.050	96.30	-2.37	93.93	---	---	Average	Vertical
2	2483.500	43.52	-2.35	41.17	54.00	-12.83	Average	Vertical



No.	Frequency (MHz)	Reading (dB)	Factor (dB/m)	Result (dB/m)	Limit (dB/m)	Margin (dB)	Remark	Antenna Polar
1	2480.150	101.01	-2.37	98.64	---	---	Peak	Horizontal
2	2483.500	53.62	-2.35	51.27	74.00	-22.73	Peak	Horizontal
1	2480.075	100.37	-2.37	98.00	---	---	Average	Horizontal
2	2483.500	43.68	-2.35	41.33	54.00	-12.67	Average	Horizontal



## 6.6. PEAK POWER SPECTRAL DENSITY

### LIMIT

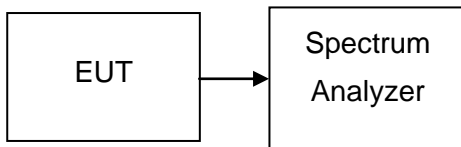
According to RSS-247 §5.2, The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4(4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

### MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2017	02/20/2018
Cable	HuberSuhner	SUCOFLEX104PEA	N/A	N/A	N/A

*Remark: Each piece of equipment is scheduled for calibration once a year.*

### TEST CONFIGURATION



### TEST PROCEDURE

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
4. Set the VBW  $\geq 3 \text{ RBW}$ .
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



## **TEST RESULTS**

*No non-compliance noted*

### **Test Data**

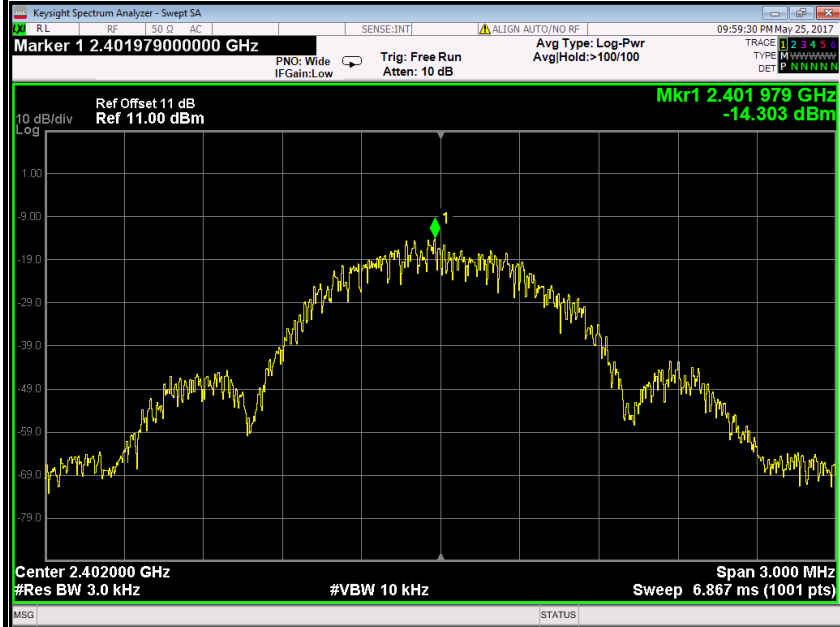
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2402	-14.303	8.00	PASS
Mid	2442	-14.722		PASS
High	2480	-14.823		PASS



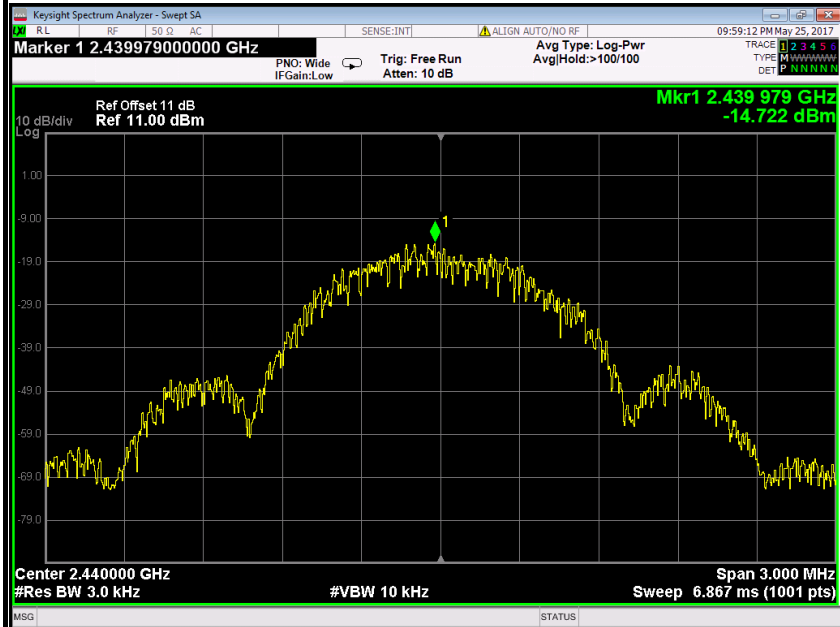


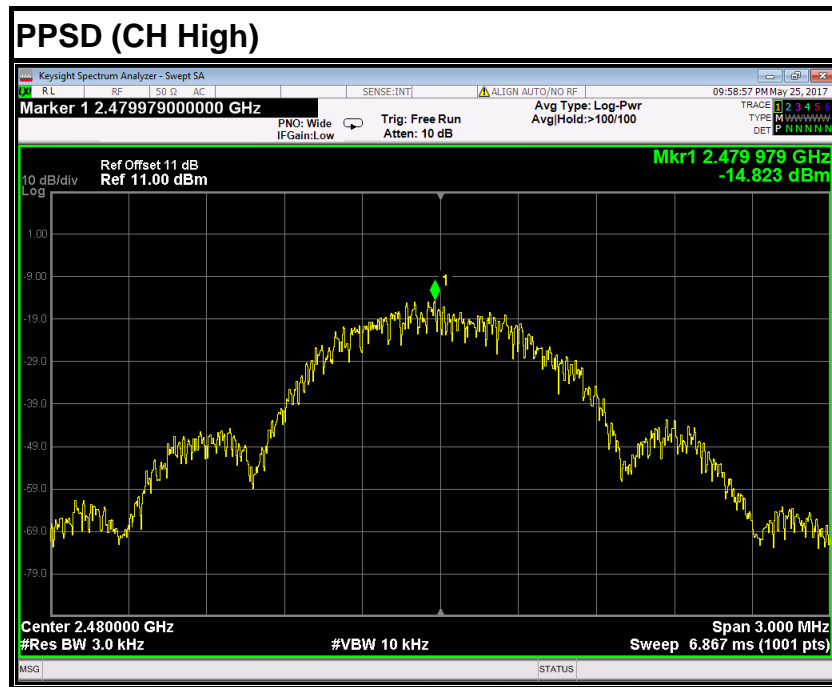
Test Plot

PPSD (CH Low)



PPSD (CH Mid)







## 6.7. SPURIOUS EMISSIONS MEASUREMENT

### 6.7.1. CONDUCTED EMISSIONS MEASUREMENT

#### 6.7.1.1 LIMITS OF CONDUCTED EMISSIONS MEASUREMENT

According to RSS-247 §5.5, in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

#### 6.7.1.2 TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Due Calibration
Spectrum Analyzer	Agilent	N9010A	MY55370330	02/21/2017	02/20/2018
Cable	HuberSuhner	SUCOFLEX104PEA	N/A	N/A	N/A

#### 6.7.1.3 TEST PROCEDURE (please refer to measurement standard)

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

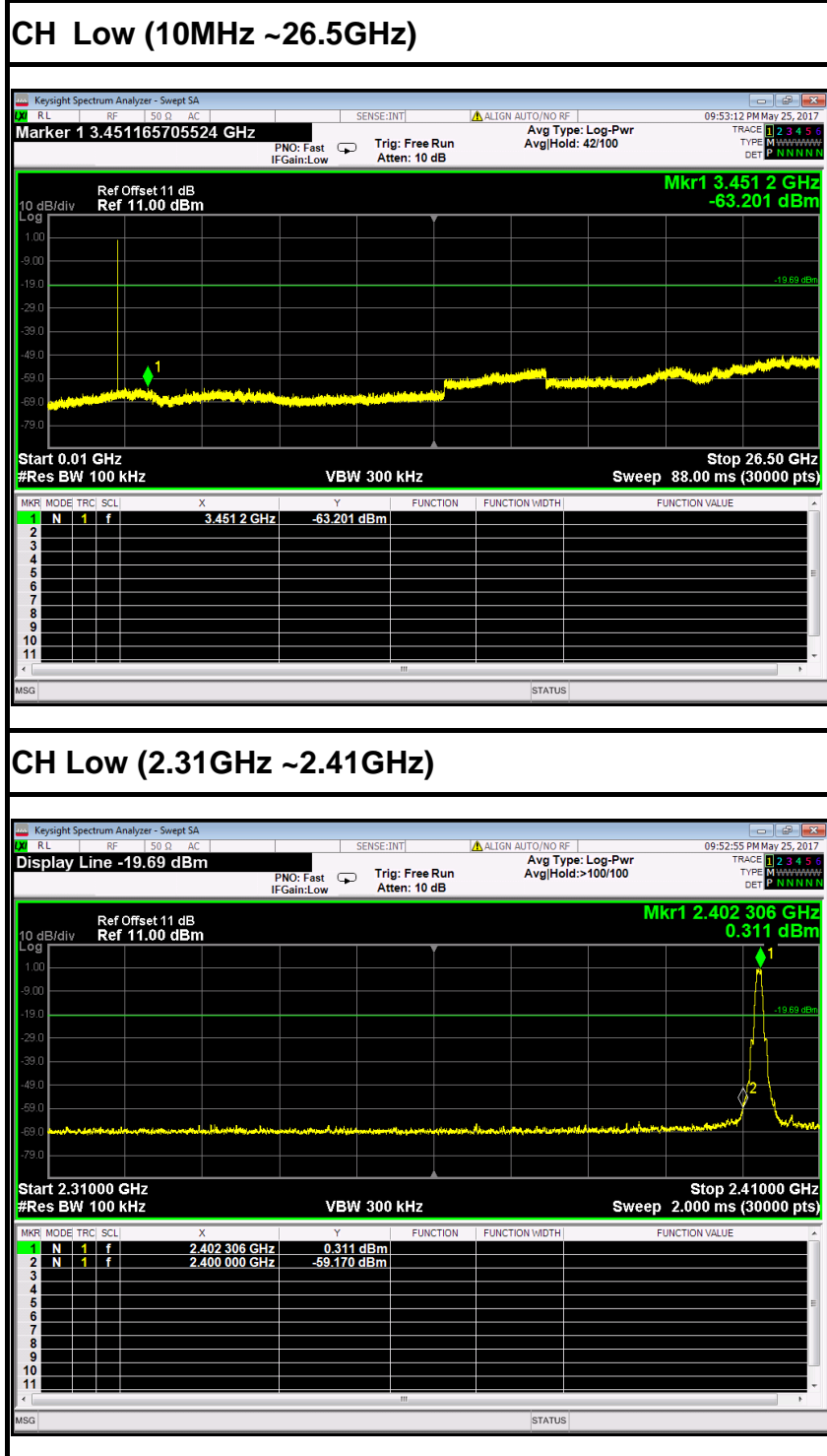
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

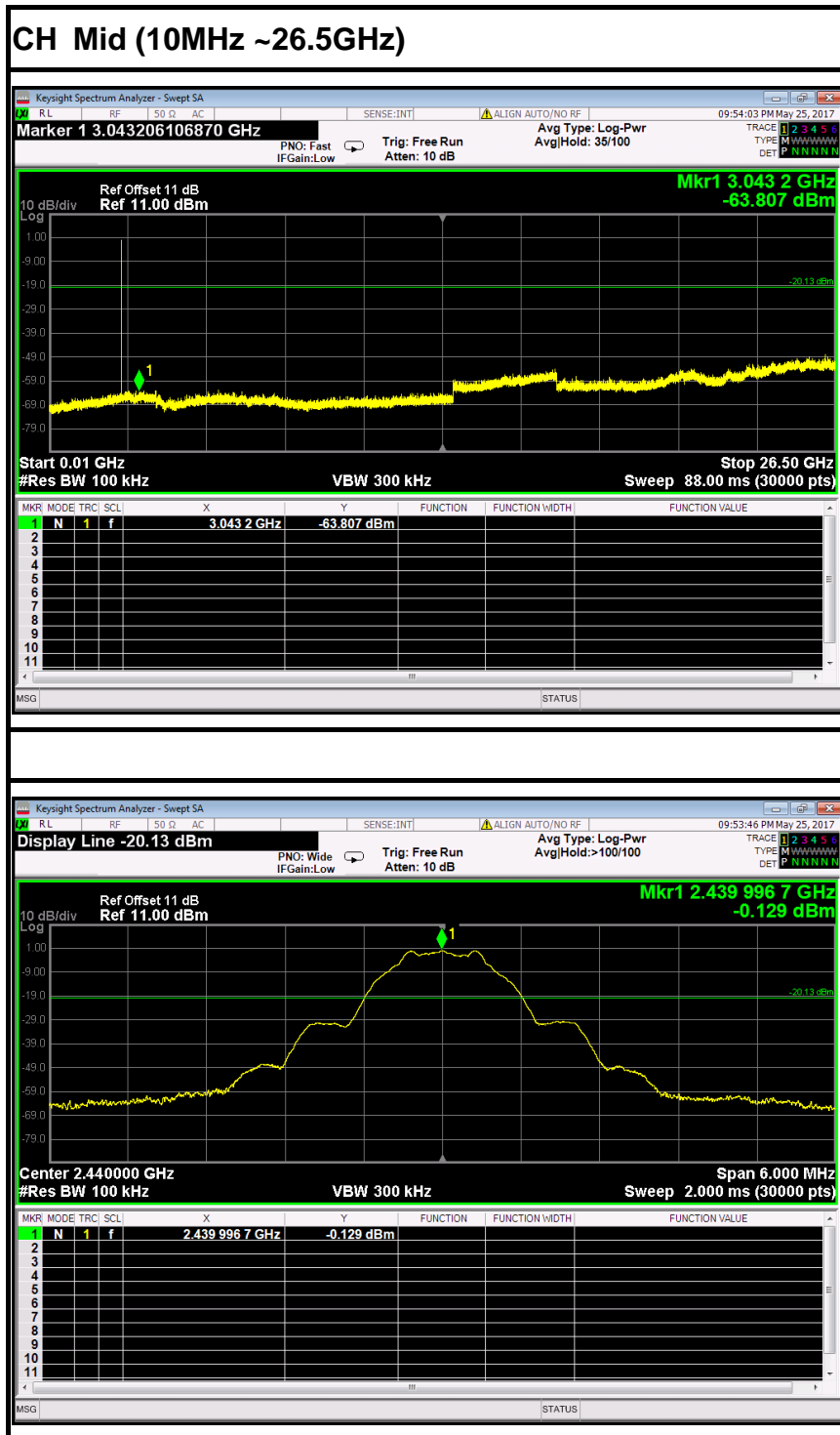
Measurements are made over the 9 kHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels. No emission found between lowest internal used/generated frequency to 10MHz, it is only recorded 10MHz to 26GHz



### 6.7.1.4 TEST RESULTS

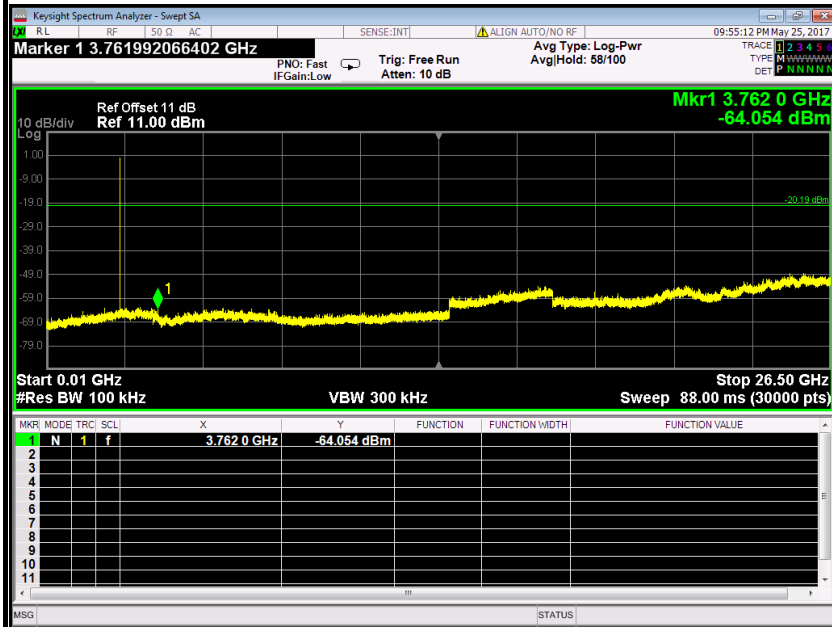
#### Test Plot



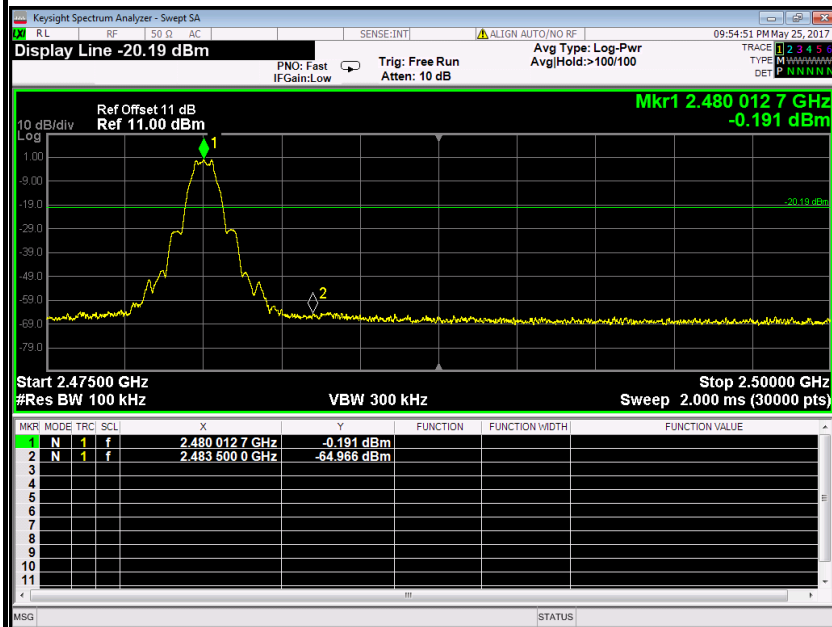




### CH High (10MHz ~26.5GHz)



### CH High( 2.475GHz ~2.5GHz)





## 6.7.2. RADIATED EMISSIONS MEASUREMENT

### 6.7.2.1. LIMITS OF RADIATED EMISSIONS MEASUREMENT

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:

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

**NOTE:** (1) The lower limit shall apply at the transition frequencies.  
(2) Emission level ( $\text{dB}\mu\text{V}/\text{m}$ ) =  $20 \log$  Emission level ( $\mu\text{V}/\text{m}$ ).

**6.7.2.2. TEST INSTRUMENTS**

Radiated Emission Test Site 966(2)					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	02/21/2017	02/20/2018
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/21/2017	02/20/2018
Amplifier	EMEC	EM330	060661	03/18/2017	03/17/2018
High Noise Amplifier	Agilent	8449B	3008A01838	02/21/2017	02/20/2018
Loop Antenna	COM-POWER	AL-130	121044	09/25/2016	09/24/2017
Bilog Antenna	SCHAFFNER	CBL6143	5082	02/21/2017	02/20/2018
Horn Antenna	SCHWARZBECK	BBHA9120	D286	02/28/2017	02/27/2018
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	02/28/2017	02/27/2018
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/21/2017	02/20/2018
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. The FCC Site Registration number is 101879.  
3. N.C.R = No Calibration Required.





### 6.7.2.3. Measuring Instruments and Setting

The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP/AVG
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP/AVG
Start ~ Stop Frequency	30MHz~1000MHz / RB 100kHz for QP

### 6.7.2.4. TEST PROCEDURE (please refer to measurement standard)

#### 1) Sequence of testing 9 kHz to 30 MHz

##### Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

##### Pre measurement:

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 0.8 meter.
- At each turntable position the analyzer sweeps with peak detection to find the



maximum of all emissions

**Final measurement:**

--- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

**2) Sequence of testing 30 MHz to 1 GHz**

**Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

**Pre measurement:**

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 3 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.



**Final measurement:**

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position ( $\pm 45^\circ$ ) and antenna movement between 1 and 4 meter.
- The final measurement will be done with QP detector with an EMI receiver.
- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

**3) Sequence of testing 1 GHz to 18 GHz**

**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- The measurement distance is 3 meter.
- The EUT was set into operation.

**Pre measurement:**

- The turntable rotates from  $0^\circ$  to  $315^\circ$  using  $45^\circ$  steps.
- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 2.5 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

**Final measurement:**

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of premeasurement the



software maximize the peaks by changing turntable position ( $\pm 45^\circ$ ) and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.

--- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.  
--- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

#### **4) Sequence of testing above 18 GHz Setup:**

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.  
--- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.  
--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.  
--- Auxiliary equipment and cables were positioned to simulate normal operation conditions  
--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.  
--- The measurement distance is 1 meter.  
--- The EUT was set into operation.

#### **Pre measurement:**

--- The antenna is moved spherical over the EUT in different polarisations of the antenna.

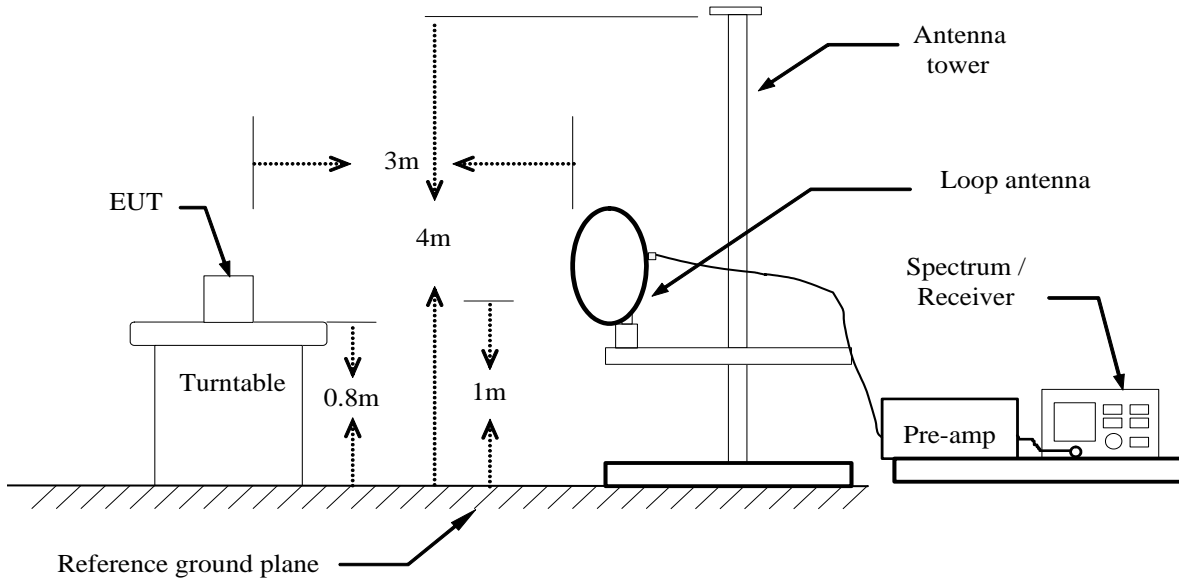
#### **Final measurement:**

--- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the premeasurements with Peak and Average detector.  
--- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

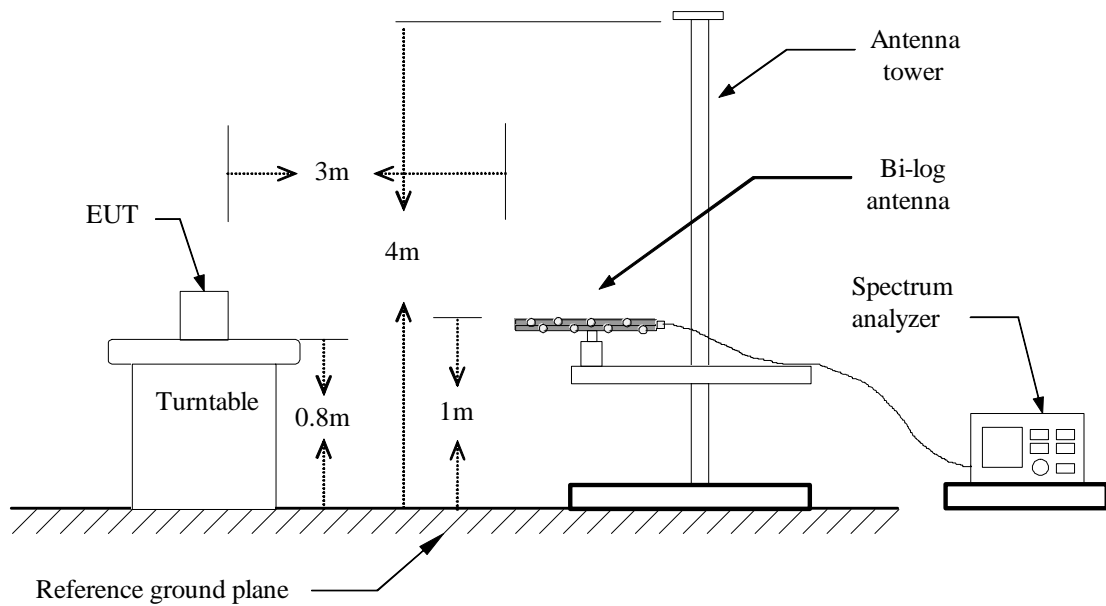


### 6.7.2.5. TEST SETUP

#### Below 30MHz

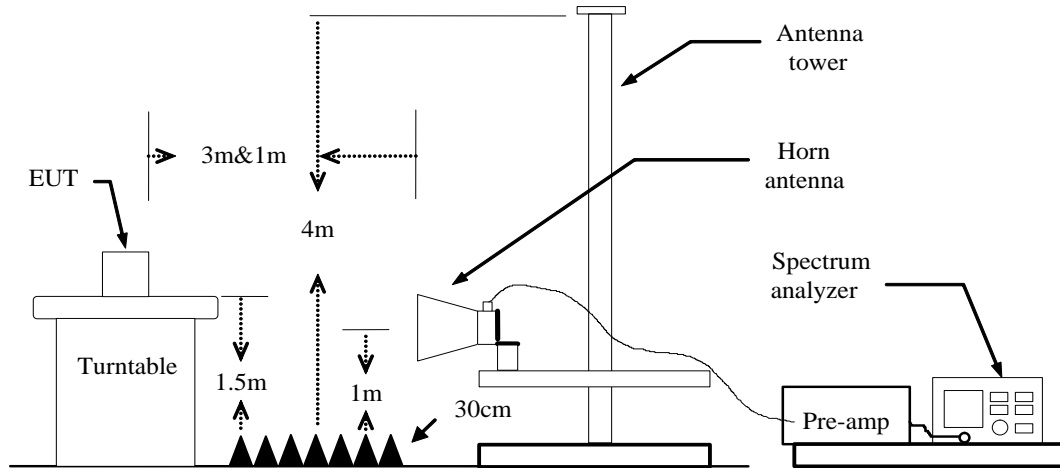


#### Below 1 GHz





**Above 1 GHz**



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.



6.7.2.6. DATA SAPLE

Below 1GHz

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXX.XXXX	36.37	-12.20	24.17	40.00	-15.83	V	QP

Frequency (MHz) = Emission frequency in MHz  
 Reading (dBuV) = Uncorrected Analyzer / Receiver reading  
 Correct Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain  
 Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)  
 Limit (dBuV/m) = Limit stated in standard  
 Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)  
 Q.P. = Quasi-peak Reading

Above 1GHz

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
XXXX.XXXX	62.09	-11.42	50.67	74.00	-23.33	V	Peak
XXXX.XXXX	49.78	-11.42	38.36	54.00	-15.64	V	AVG

Frequency (MHz) = Emission frequency in MHz  
 Reading (dBuV) = Uncorrected Analyzer / Receiver reading  
 Correction Factor (dB/m) = Antenna factor + Cable loss – Amplifier gain  
 Result (dBuV/m) = Reading (dBuV) + Corr. Factor (dB/m)  
 Limit (dBuV/m) = Limit stated in standard  
 Margin (dB) = Result (dBuV/m) – Limit (dBuV/m)  
 Peak = Peak Reading  
 AVG = Average Reading

**Calculation Formula**

Margin (dB) = Result (dBuV/m) – Limits (dBuV/m)  
 Result (dBuV/m) = Reading (dBuV) + Correction Factor



**6.7.2.7. TEST RESULTS**

**Below 1 GHz**

**Test Mode:** TX / GFSK(CH Low)

**Tested by:** Eve Wang

**Ambient temperature:** 24°C **Relative humidity:** 52% RH

**Date:** May 25, 2017

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
51.3400	55.28	-21.56	33.72	40.00	-6.28	V	QP
93.0500	57.56	-24.42	33.14	43.50	-10.36	V	QP
311.3000	41.17	-19.15	22.02	46.00	-23.98	V	QP
382.1100	36.79	-16.45	20.34	46.00	-25.66	V	QP
456.8000	35.09	-15.27	19.82	46.00	-26.18	V	QP
560.5900	34.81	-13.25	21.56	46.00	-24.44	V	QP
54.2500	53.77	-22.47	31.30	40.00	-8.70	H	QP
91.1100	54.90	-24.62	30.28	43.50	-13.22	H	QP
154.1600	51.88	-22.08	29.80	43.50	-13.70	H	QP
221.0900	45.06	-20.51	24.55	46.00	-21.45	H	QP
337.4900	45.07	-18.21	26.86	46.00	-19.14	H	QP
445.1600	39.35	-15.57	23.78	46.00	-22.22	H	QP

**\*\*Remark:** No emission found between lowest internal used/generated frequency to 30MHz.

Pre-scan all mode and recorded the worst case results in this report (BT LE (Low Channel)).

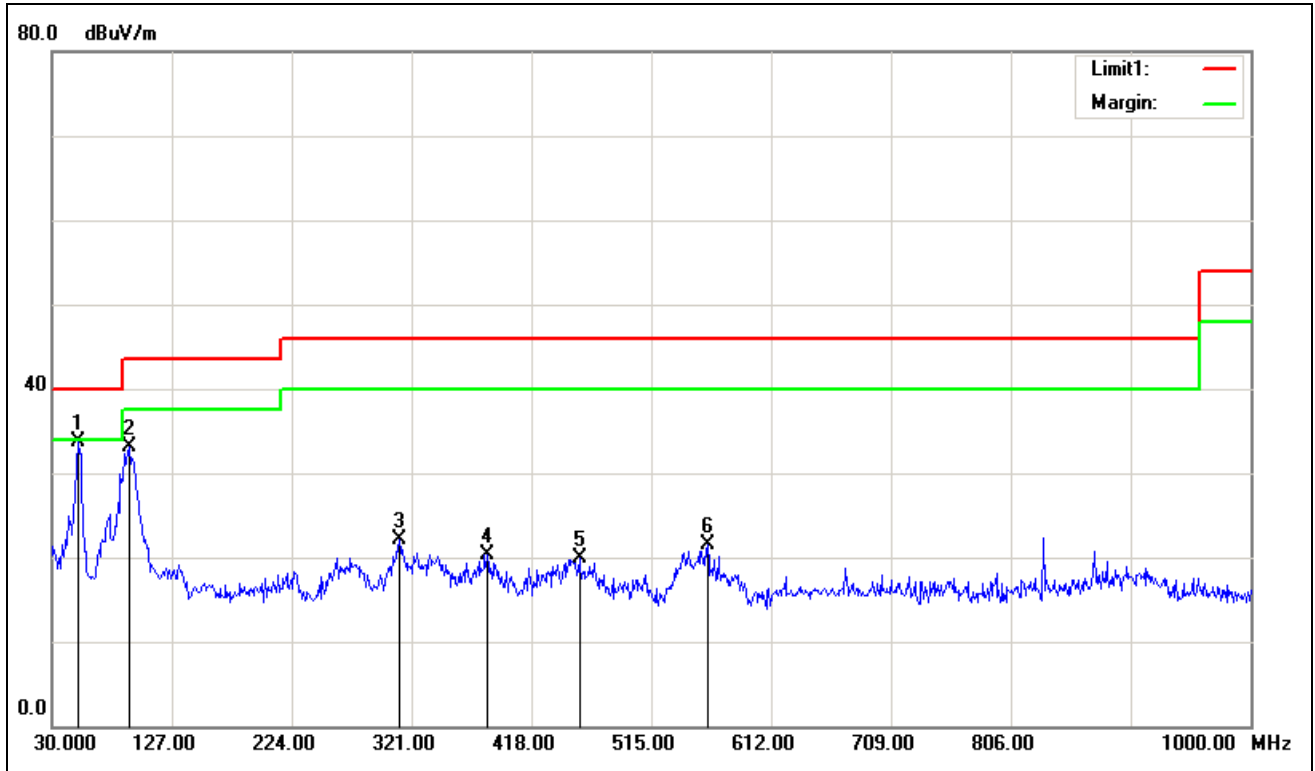
**Notes:**

- Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.
- |                        |  |
|------------------------|--|
| Frequency (MHz).       | = Emission frequency in MHz                    |
| Reading (dBuV/m)       | = Receiver reading                             |
| Correction Factor (dB) | = Antenna factor + Cable loss – Amplifier gain |
| Limit (dBuV/m)         | = Limit stated in standard                     |
| Margin (dB)            | = Measured (dBuV/m) – Limits (dBuV/m)          |
| Antenna Pole (H/V)     | = Current carrying line of reading             |

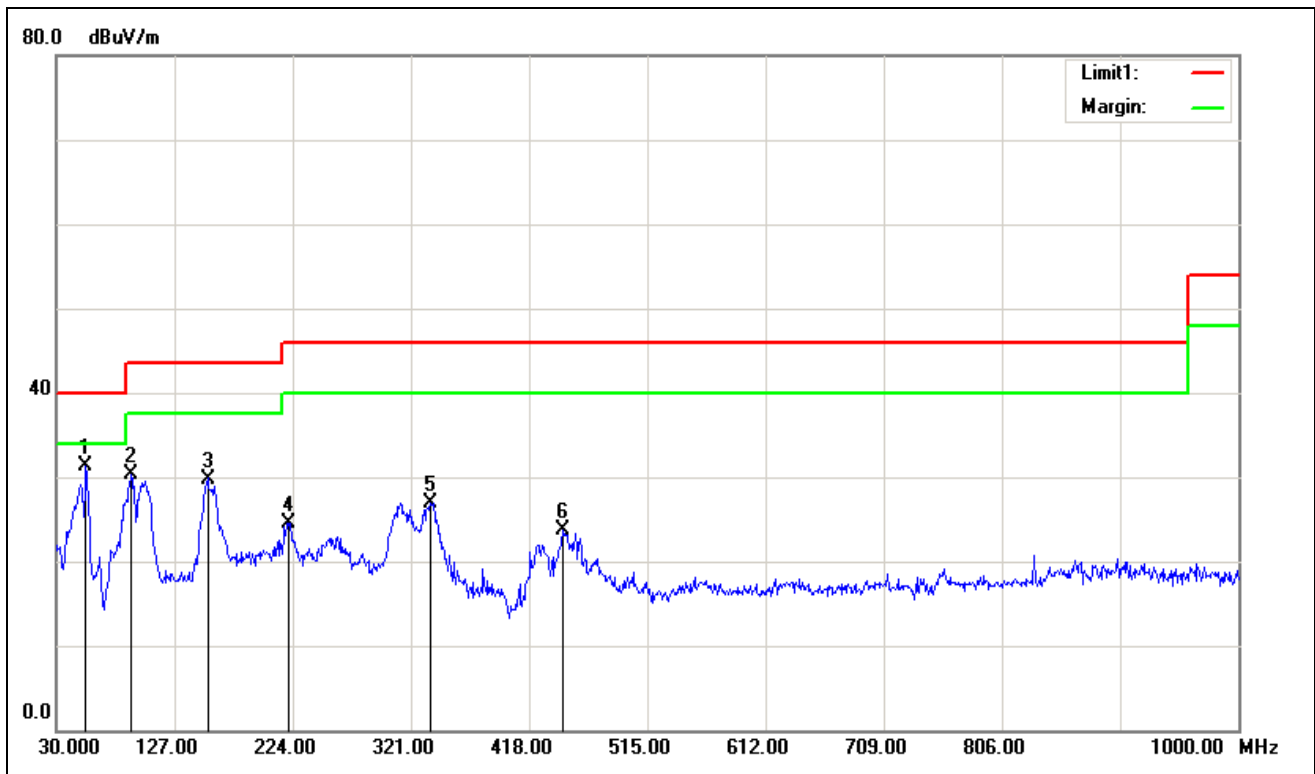




### Vertical



### Horizontal





**Above 1 GHz**

Test Mode: GFSK (CH Low)

Tested by: Sam Zeng

Ambient temperature: 24°C Relative humidity: 52% RH

Date: May 28, 2017

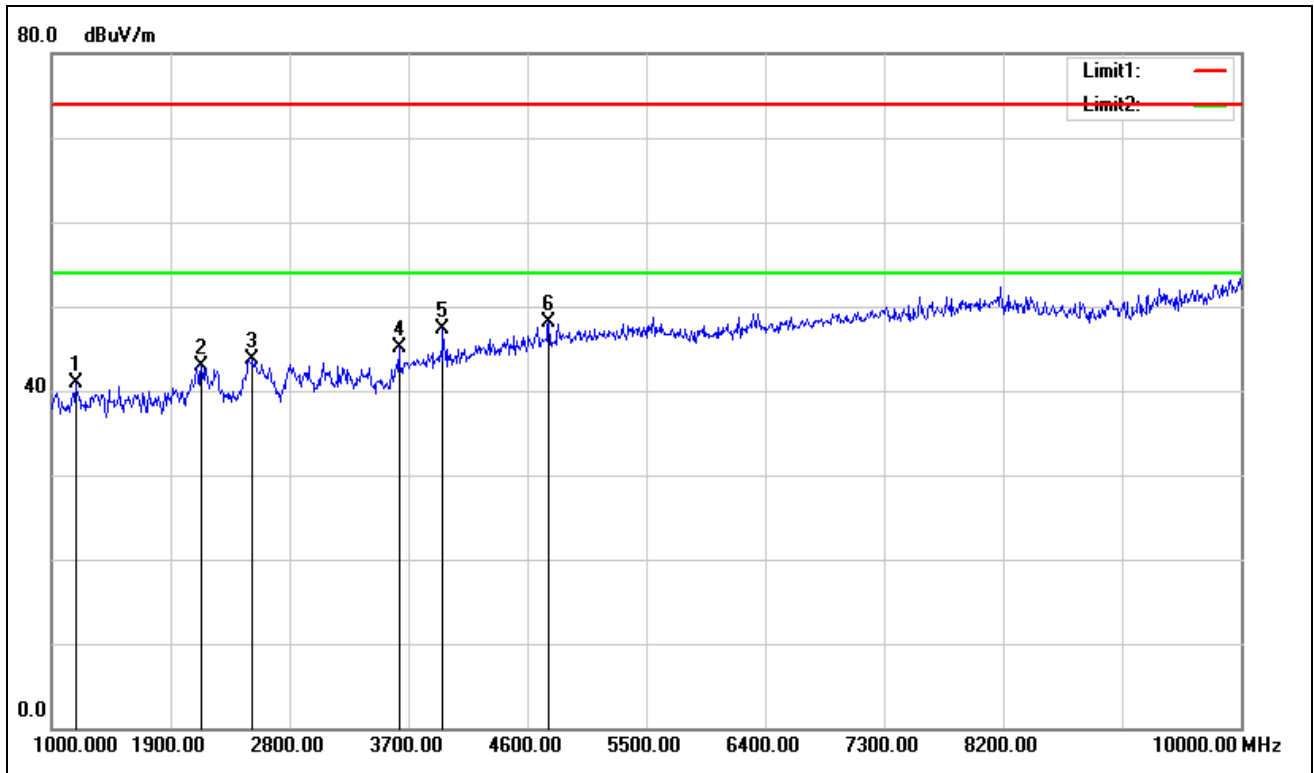
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1180.000	48.73	-7.87	40.86	74.00	-33.14	V	peak
2134.000	47.18	-4.27	42.91	74.00	-31.09	V	peak
2521.000	45.99	-2.22	43.77	74.00	-30.23	V	peak
3628.000	45.05	0.02	45.07	74.00	-28.93	V	peak
3961.000	45.84	1.43	47.27	74.00	-26.73	V	peak
4762.000	43.96	4.20	48.16	74.00	-25.84	V	peak
1189.000	48.59	-7.83	40.76	74.00	-33.24	H	peak
2143.000	46.88	-4.22	42.66	74.00	-31.34	H	peak
2494.000	46.63	-2.29	44.34	74.00	-29.66	H	peak
2809.000	45.11	-1.70	43.41	74.00	-30.59	H	peak
3934.000	43.79	1.31	45.10	74.00	-28.90	H	peak
4582.000	43.27	3.62	46.89	74.00	-27.11	H	peak

**REMARKS:**

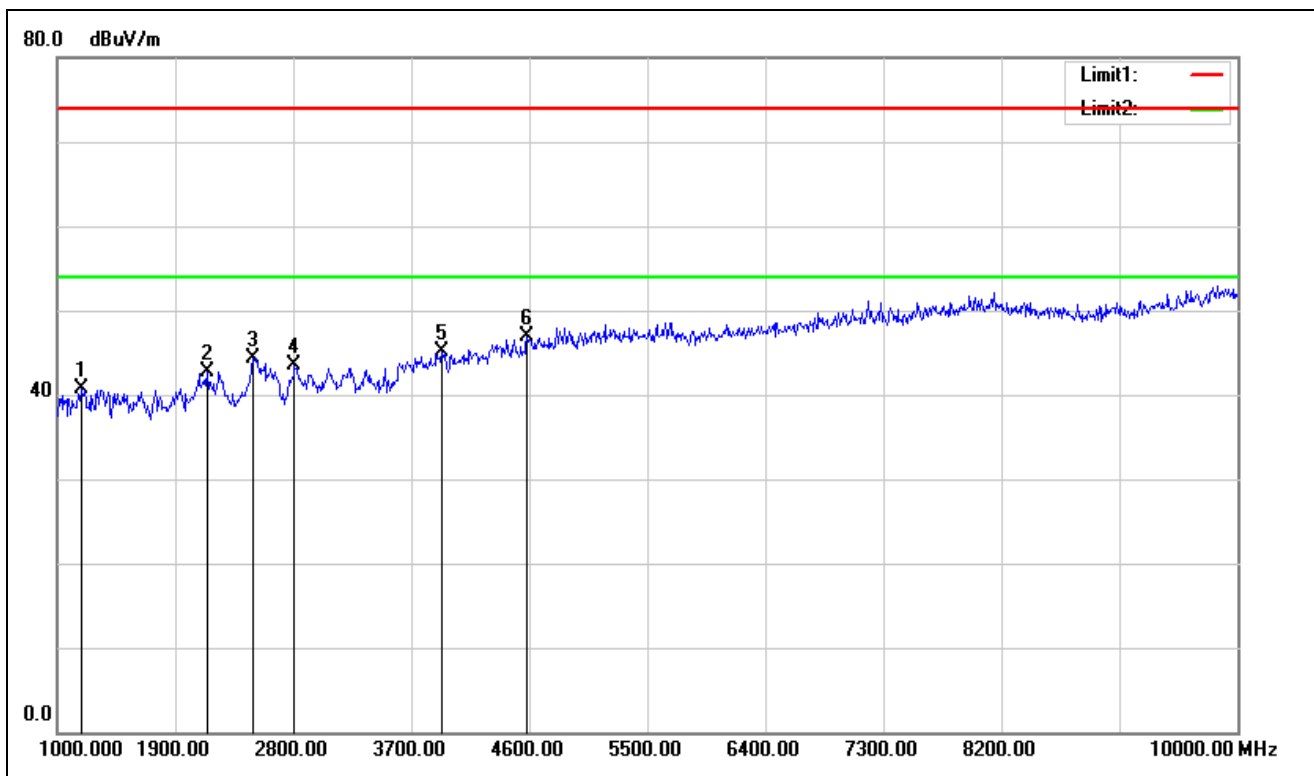
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



### Vertical



### Horizontal



Test Mode: GFSK (CH Mid)Tested by: Sam ZengAmbient temperature: 24°C Relative humidity: 52% RHDate: May 28, 2017

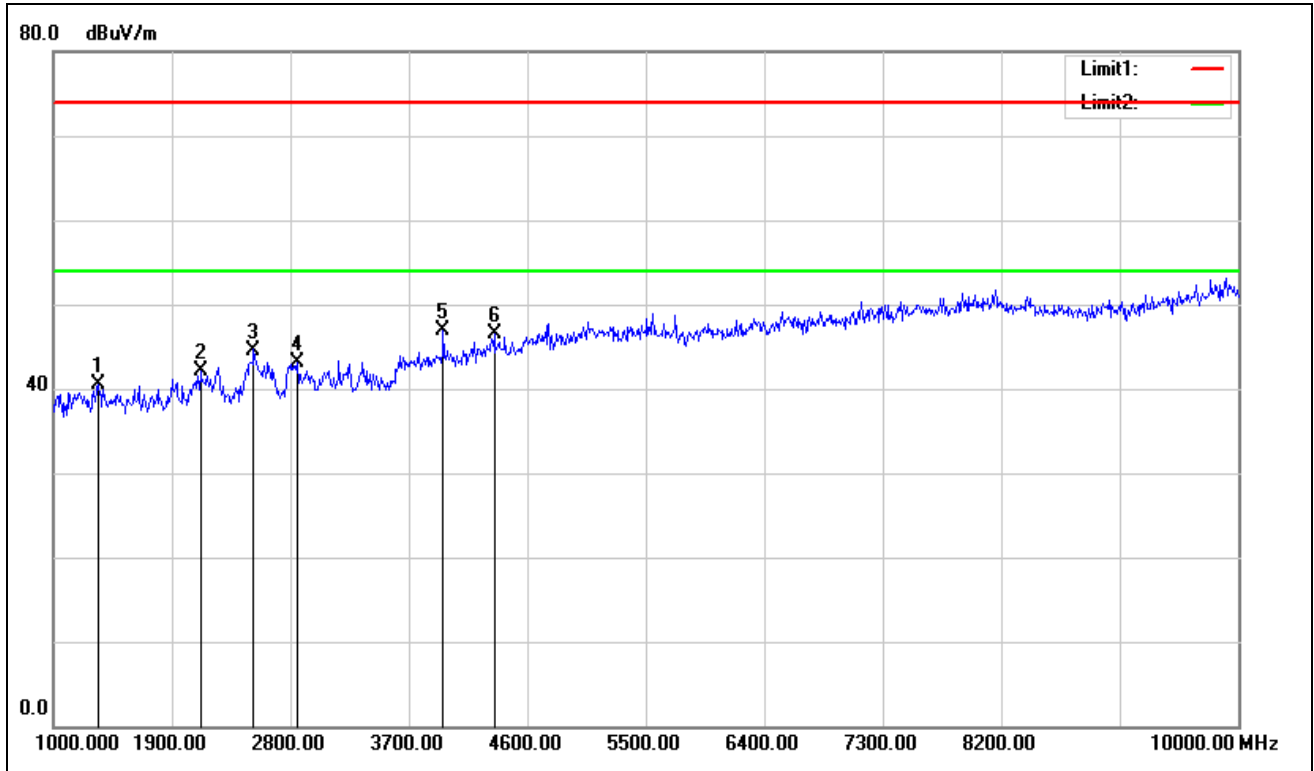
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1342.000	47.71	-7.27	40.44	74.00	-33.56	V	peak
2116.000	46.47	-4.36	42.11	74.00	-31.89	V	peak
2521.000	46.82	-2.22	44.60	74.00	-29.40	V	peak
2854.000	44.70	-1.62	43.08	74.00	-30.92	V	peak
3961.000	45.55	1.43	46.98	74.00	-27.02	V	peak
4348.000	43.78	2.81	46.59	74.00	-27.41	V	peak
1297.000	47.91	-7.44	40.47	74.00	-33.53	H	peak
2116.000	47.23	-4.36	42.87	74.00	-31.13	H	peak
2503.000	46.55	-2.25	44.30	74.00	-29.70	H	peak
2917.000	44.88	-1.51	43.37	74.00	-30.63	H	peak
3745.000	44.54	0.51	45.05	74.00	-28.95	H	peak
4258.000	43.78	2.50	46.28	74.00	-27.72	H	peak

**REMARKS:**

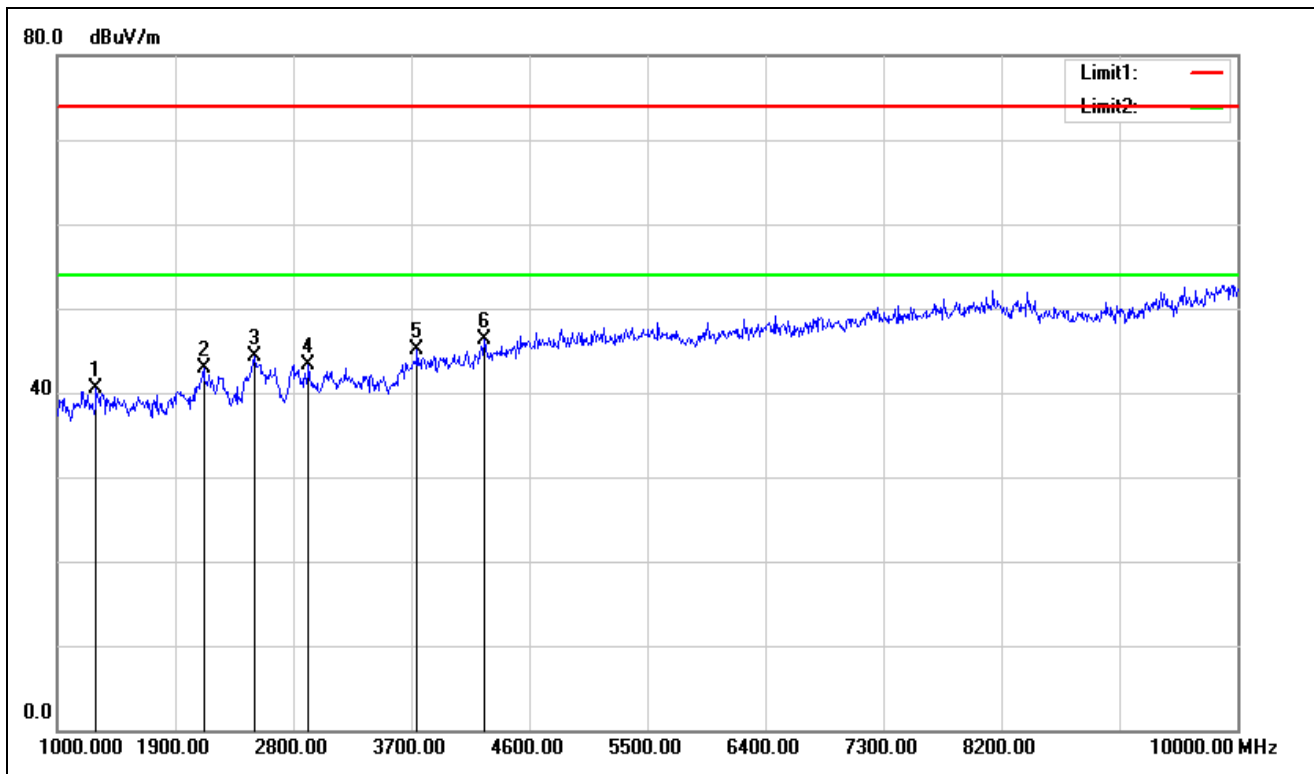
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



### Vertical



### Horizontal



Test Mode: GFSK (CH High)Tested by: Sam ZengAmbient temperature: 24°C Relative humidity: 52% RHDate: May 28, 2017

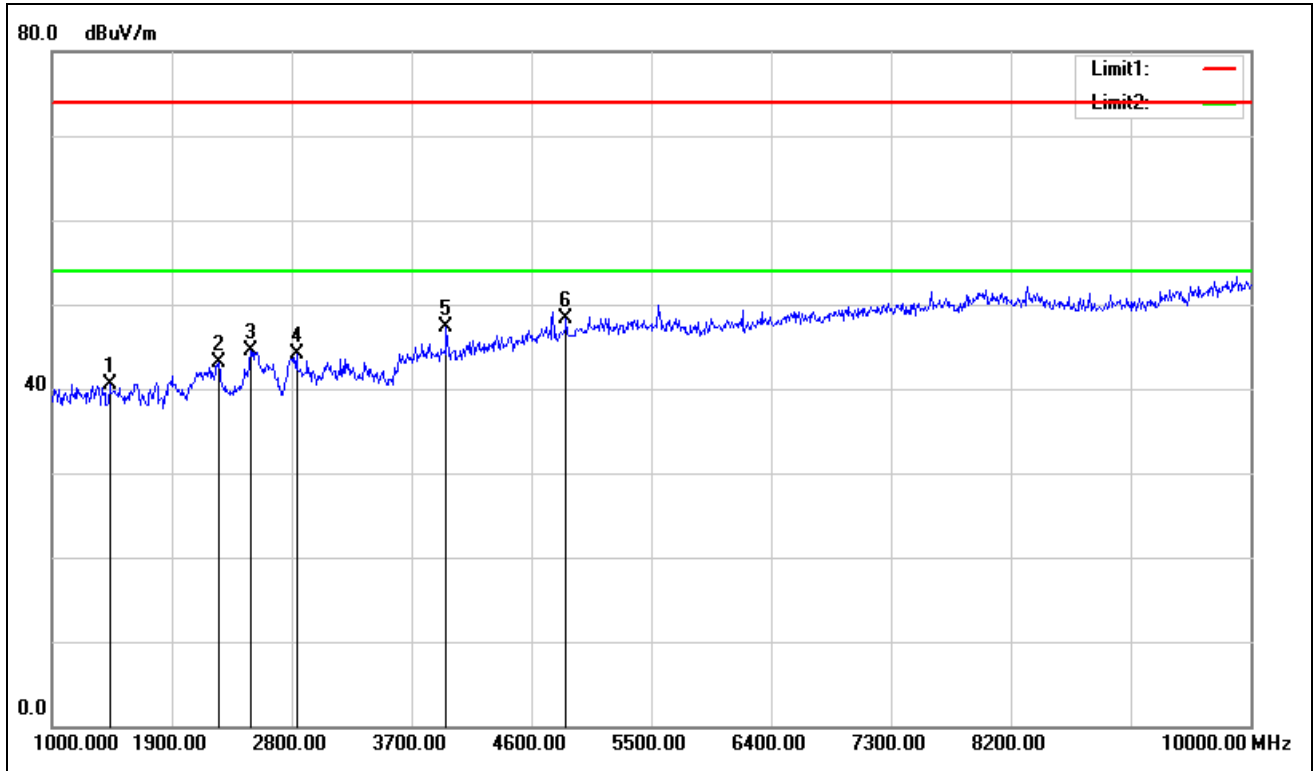
Frequency (MHz)	Reading (dBμV)	Correction Factor (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1432.000	47.42	-7.00	40.42	74.00	-33.58	V	peak
2251.000	46.63	-3.62	43.01	74.00	-30.99	V	peak
2494.000	46.84	-2.29	44.55	74.00	-29.45	V	peak
2836.000	45.78	-1.66	44.12	74.00	-29.88	V	peak
3961.000	45.83	1.43	47.26	74.00	-26.74	V	peak
4861.000	43.77	4.53	48.30	74.00	-25.70	V	peak
1180.000	48.67	-7.87	40.80	74.00	-33.20	H	peak
1459.000	47.24	-6.95	40.29	74.00	-33.71	H	peak
2107.000	48.61	-4.41	44.20	74.00	-29.80	H	peak
2818.000	45.72	-1.69	44.03	74.00	-29.97	H	peak
3637.000	44.96	0.06	45.02	74.00	-28.98	H	peak
4267.000	44.07	2.53	46.60	74.00	-27.40	H	peak

**REMARKS:**

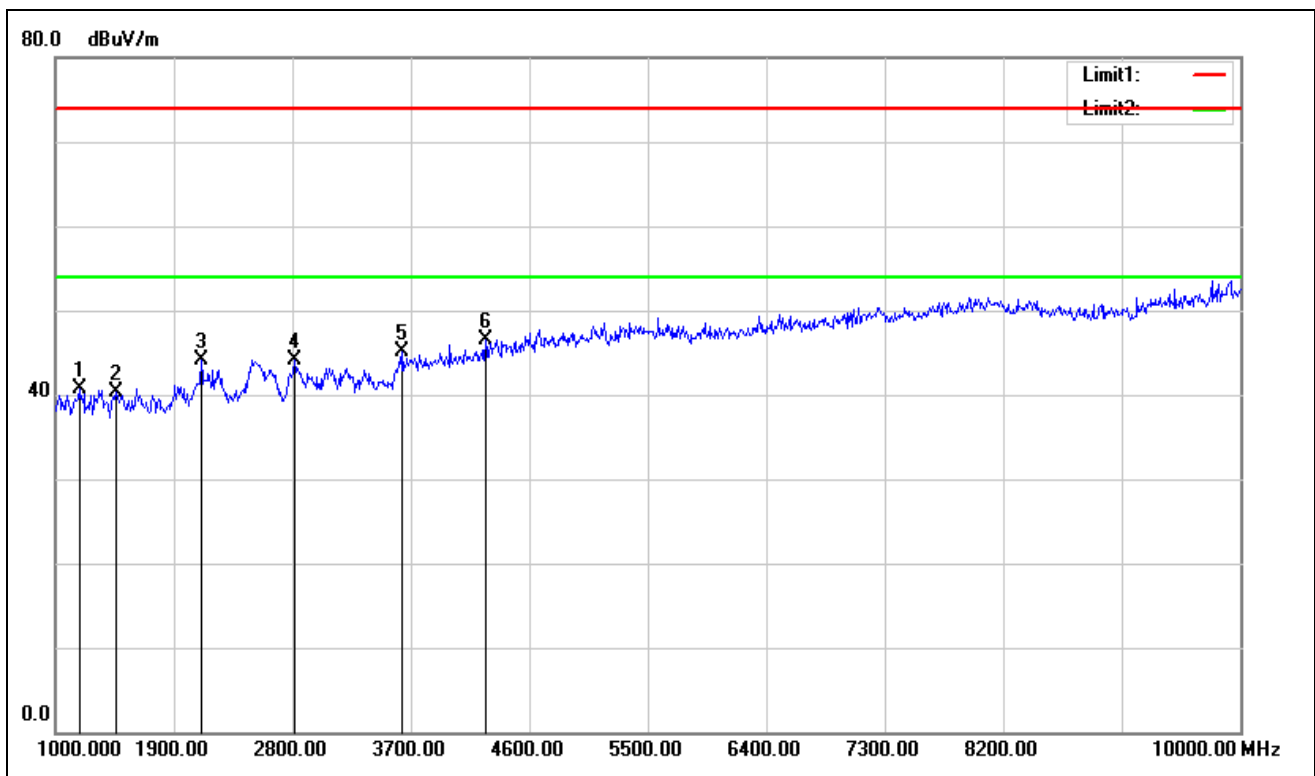
1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



### Vertical



### Horizontal





## 7 POWERLINE CONDUCTED EMISSION

### LIMIT

According to RSS-Gen §7.2.2, except when the requirements applicable to a given device state otherwise, for any licence-exempt radio communication device equipped to operate from the public utility AC power supply, either directly or indirectly, the radio frequency voltage that is conducted back onto the AC power lines in the frequency range of 0.15 MHz to 30 MHz shall not exceed the limits shown in Table 2. The tighter limit applies at the frequency range boundaries.

The conducted emissions shall be measured with a 50 ohm/50 microhenry line impedance stabilization network. A description of the method of measurement that is acceptable to Industry Canada is found in RSS-Gen.

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

### NOTE:

- (1) The lower limit shall apply at the transition frequencies.
- (2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
- (3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

### 7.3.1. TEST INSTRUMENTS

Conducted Emission Test Site					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	02/11/2017	02/10/2018
LISN(EUT)	ROHDE&SCHWARZ	ENV216	101543-WX	02/11/2017	02/10/2018
LISN	EMCO	3825/2	8901-1459	02/12/2017	02/11/2018
Temp. / Humidity Meter	VICTOR	HTC-1	N/A	02/15/2017	02/14/2018
Test S/W	FARAD	EZ-EMC/ CCS-3A1-CE			

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.  
2. N.C.R = No Calibration Request.



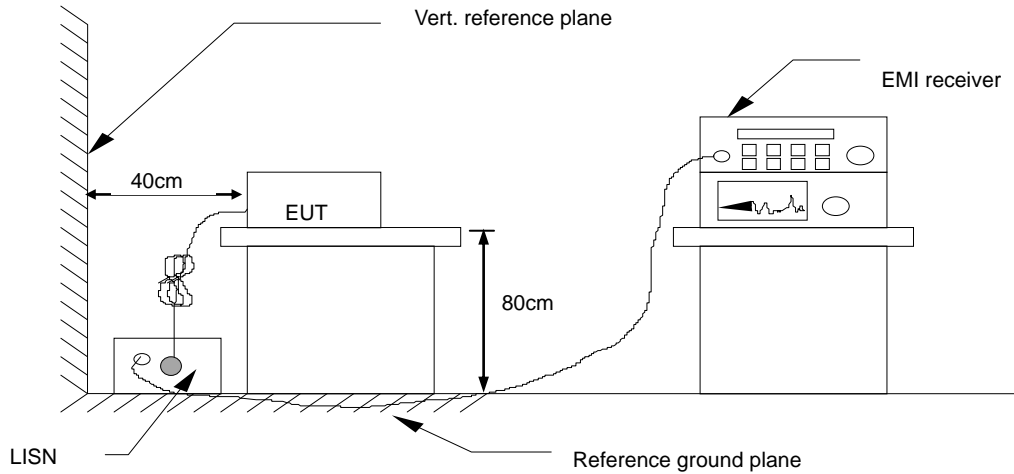


### 7.1.2. TEST PROCEDURES (please refer to measurement standard)

- The EUT and Support equipment, if needed, was placed on a non-conducted table, which is 0.8m above the ground plane and 0.4m away from the conducted wall.
- The test equipment EUT installed received AC main power, through a Line Impedance Stabilization Network (LISN), which supplied power source and was grounded to the ground plane. All support equipment power received from a second LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- The EUT test program was started. Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.
- The frequency range from 150 kHz to 30 MHz was searched. The test data of the worst-case condition(s) was recorded. Emission levels under limit 20dB were not recorded.



### 7.1.3. TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

### 7.3.4. DATA SAMPLE

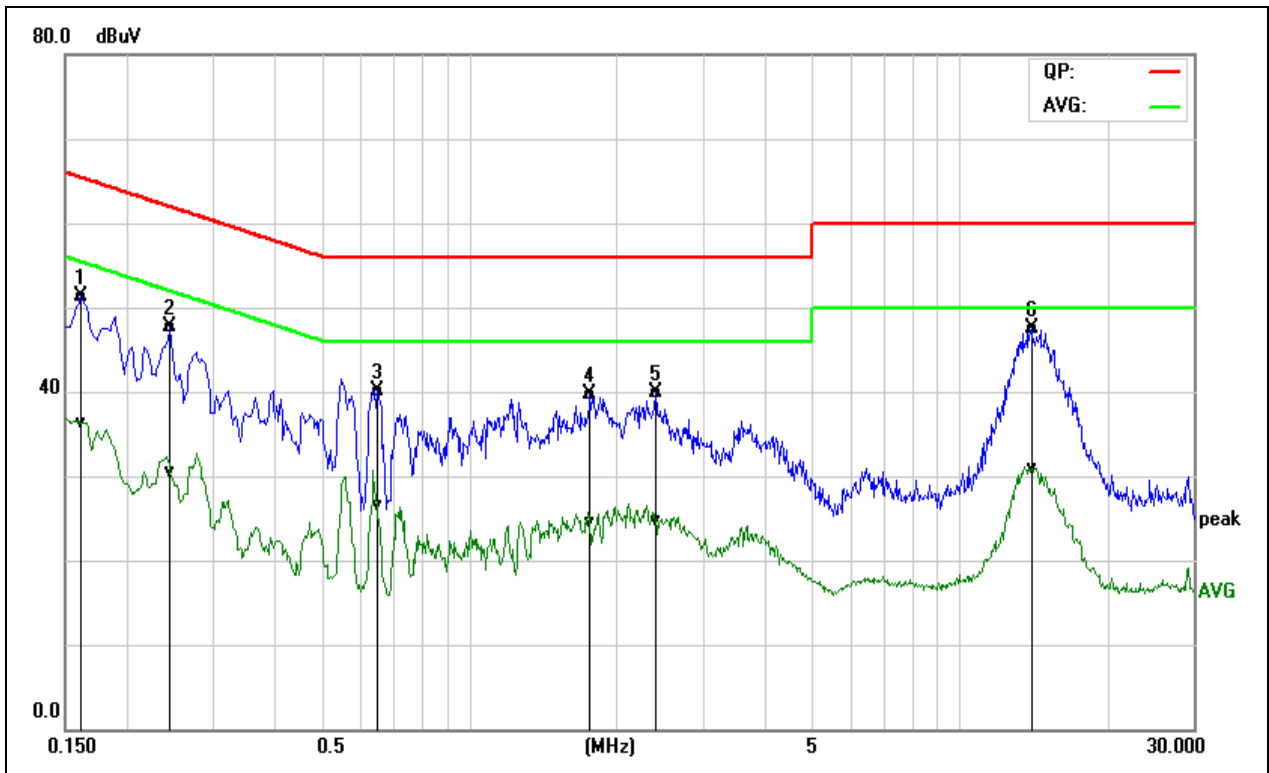
Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

- Factor = Insertion loss of LISN + Cable Loss
- Result = Quasi-peak Reading/ Average Reading + Factor
- Limit = Limit stated in standard
- Margin = Result (dBuV) – Limit (dBuV)



7.1.5. TEST RESULTS

<b>Model No.</b>	A7002	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 1
<b>Tested by</b>	Fade Zhong	<b>Line</b>	L1
<b>Test Date</b>	May 23, 2017	<b>Test Voltage</b>	AC 120V/60Hz

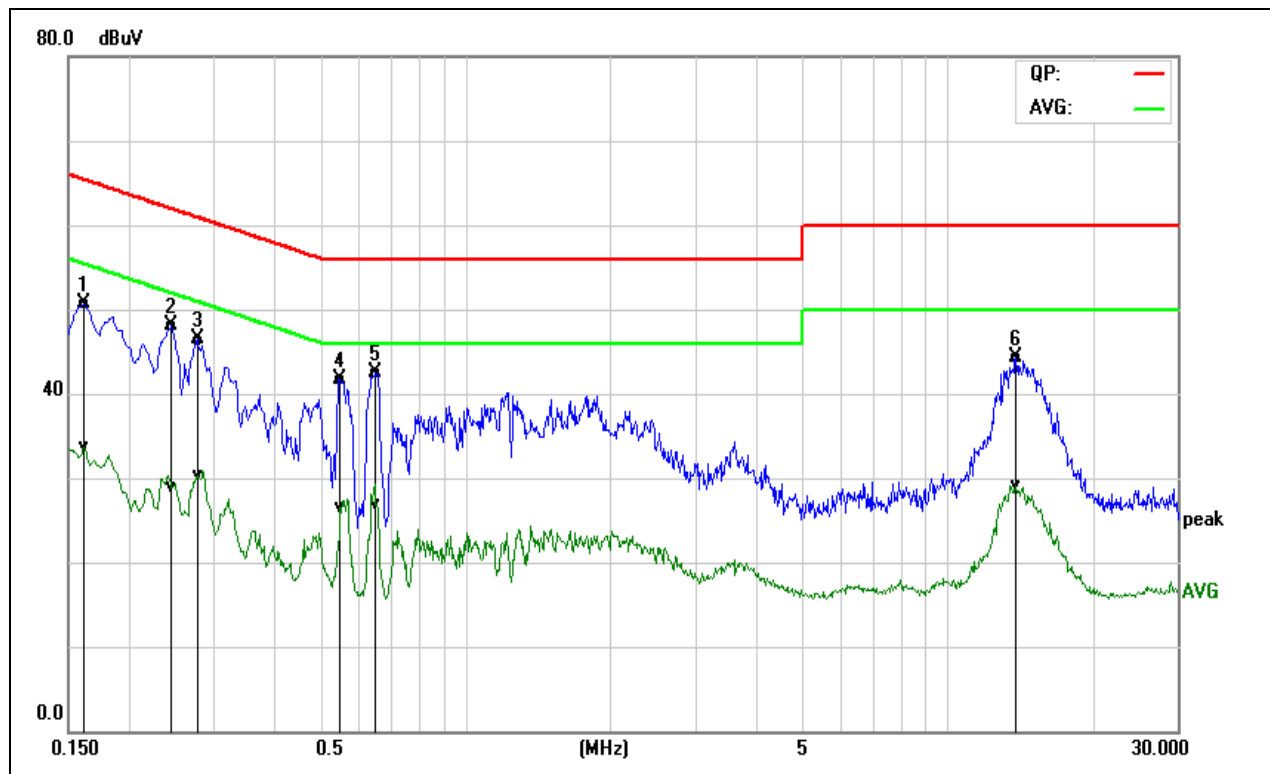


Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
0.1620	31.64	16.68	19.62	51.26	36.30	65.36	55.36	-14.10	-19.06	Pass
0.2460	28.18	10.86	19.62	47.80	30.48	61.89	51.89	-14.09	-21.41	Pass
0.6500	20.59	6.98	19.59	40.18	26.57	56.00	46.00	-15.82	-19.43	Pass
1.7700	19.93	4.76	19.68	39.61	24.44	56.00	46.00	-16.39	-21.56	Pass
2.4020	20.25	5.02	19.72	39.97	24.74	56.00	46.00	-16.03	-21.26	Pass
14.0580	27.48	10.87	20.04	47.52	30.91	60.00	50.00	-12.48	-19.09	Pass

REMARKS: L1 = Line One (Live Line)



<b>Model No.</b>	A7002	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 1
<b>Tested by</b>	Fade Zhong	<b>Line</b>	L2
<b>Test Date</b>	May 23, 2017	<b>Test Voltage</b>	AC 120V/60Hz

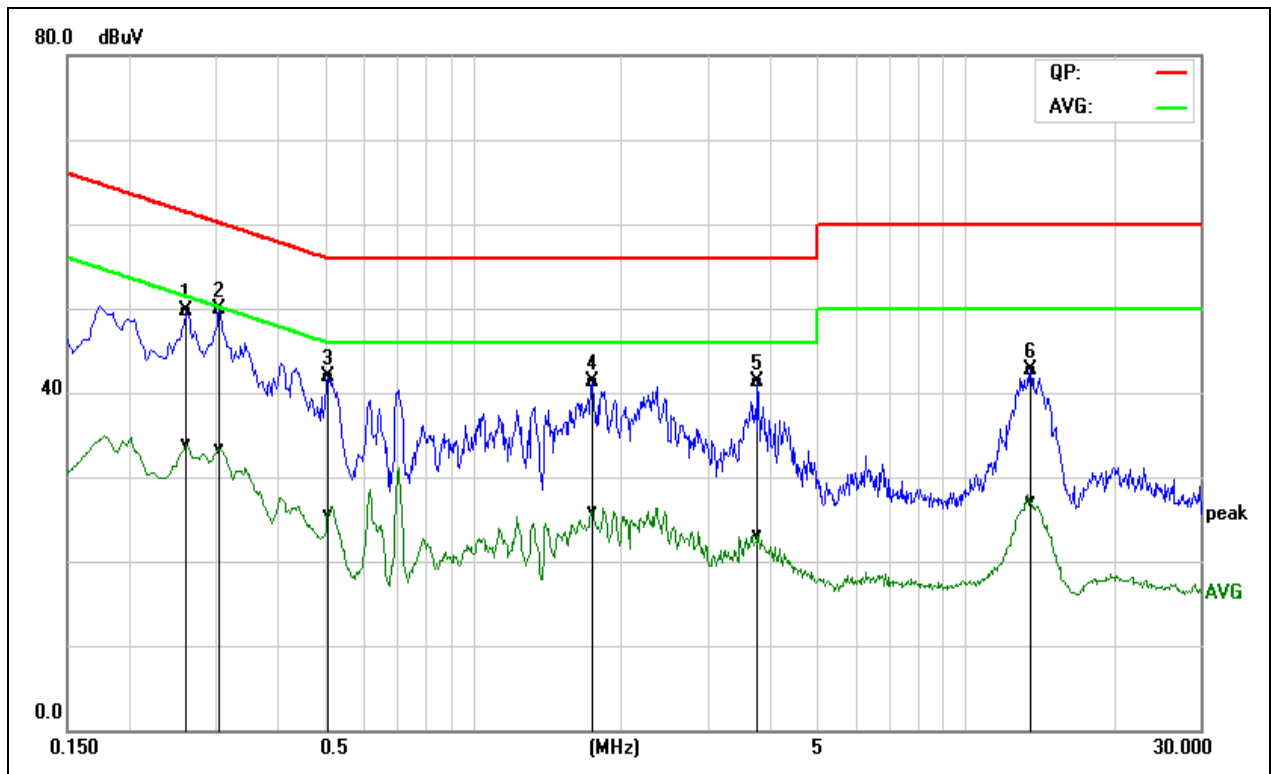


Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
0.1620	31.13	14.14	19.52	50.65	33.66	65.36	55.36	-14.71	-21.70	Pass
0.2460	28.59	9.33	19.54	48.13	28.87	61.89	51.89	-13.76	-23.02	Pass
0.2779	26.86	10.76	19.54	46.40	30.30	60.88	50.88	-14.48	-20.58	Pass
0.5500	22.23	6.91	19.55	41.78	26.46	56.00	46.00	-14.22	-19.54	Pass
0.6540	22.83	7.30	19.59	42.42	26.89	56.00	46.00	-13.58	-19.11	Pass
13.9060	24.24	9.03	20.04	44.28	29.07	60.00	50.00	-15.72	-20.93	Pass

**REMARKS:** L2 = Line Two (Neutral Line)



<b>Model No.</b>	A7002	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 1
<b>Tested by</b>	Fade Zhong	<b>Line</b>	L1
<b>Test Date</b>	May 23, 2017	<b>Test Voltage</b>	AC 240V/50Hz

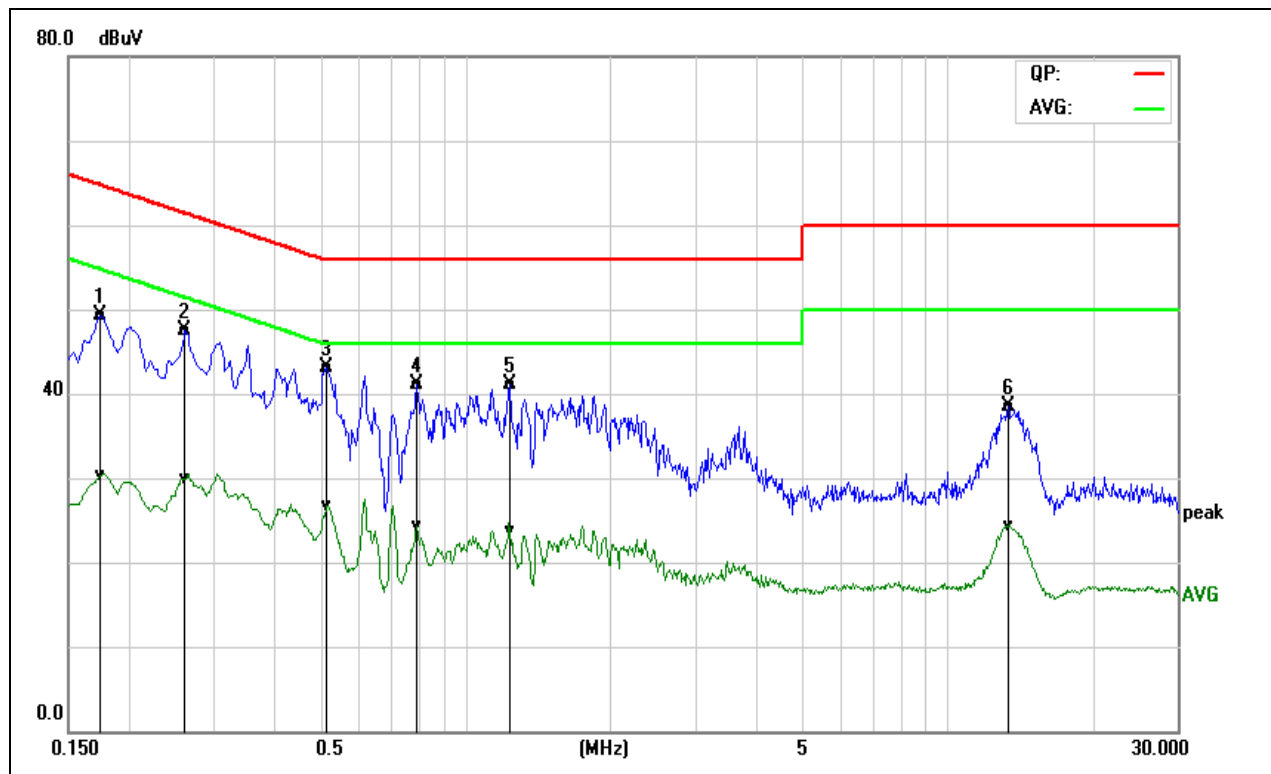


Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
0.2620	30.01	14.35	19.62	49.63	33.97	61.36	51.37	-11.73	-17.40	Pass
0.3060	30.38	13.79	19.60	49.98	33.39	60.08	50.08	-10.10	-16.69	Pass
0.5100	22.47	6.07	19.53	42.00	25.60	56.00	46.00	-14.00	-20.40	Pass
1.7460	21.71	6.30	19.67	41.38	25.97	56.00	46.00	-14.62	-20.03	Pass
3.7940	21.61	3.41	19.73	41.34	23.14	56.00	46.00	-14.66	-22.86	Pass
13.5740	22.66	7.11	20.05	42.71	27.16	60.00	50.00	-17.29	-22.84	Pass

**REMARKS:** L1 = Line One (Live Line)



<b>Model No.</b>	A7002	<b>RBW,VBW</b>	9 kHz
<b>Environmental Conditions</b>	22°C, 45% RH	<b>Test Mode</b>	Mode 1
<b>Tested by</b>	Fade Zhong	<b>Line</b>	L2
<b>Test Date</b>	May 23, 2017	<b>Test Voltage</b>	AC 240V/50Hz



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 (Pass/Fail)
0.1740	29.79	10.71	19.53	49.32	30.24	64.76	54.77	-15.44	-24.53	Pass
0.2620	28.05	10.27	19.54	47.59	29.81	61.36	51.37	-13.77	-21.56	Pass
0.5180	23.61	7.22	19.54	43.15	26.76	56.00	46.00	-12.85	-19.24	Pass
0.7940	21.55	4.68	19.59	41.14	24.27	56.00	46.00	-14.86	-21.73	Pass
1.2380	21.49	4.12	19.59	41.08	23.71	56.00	46.00	-14.92	-22.29	Pass
13.3460	18.42	4.33	20.06	38.48	24.39	60.00	50.00	-21.52	-25.61	Pass

**REMARKS:** L2 = Line Two (Neutral Line)