



**FCC PART 15 SUBPART C  
ISED RSS-247 ISSUE 2**

**CERTIFICATION TEST REPORT**

*For*

**Appliance**

**MODEL NUMBER: S9N29R**

**FCC ID: 2ANXA-6733**

**IC: 23821-6733**

**REPORT NUMBER: 4788499014-3**

**ISSUE DATE: 12 Jun. 2018**

*Prepared for*

**The Resistor L.L.C.  
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/12/2018	Initial Issue	--

Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	6 dB DTS Bandwidth	FCC 15.247 (a) (2) IC RSS-247 Clause 5.1 (1)	Pass
2	Peak Conducted Power	FCC 15.247 (b) (3) IC RSS-247 Clause 5.4 (4)	Pass
3	Power Spectral Density	FCC 15.247 (3) IC RSS-247 Clause 5.2 (2)	Pass
4	Conducted Band edge And Spurious emission	FCC 15.247 (d) IC RSS-247 Clause 5.5	Pass
5	Radiated Band edges and Spurious emission	FCC 15.247 (d) FCC 15.209 FCC 15.205 IC RSS-247 Clause 5.5 IC RSS-Gen Clause 8.9	Pass
6	Conducted Emission Test For AC Power Port	FCC 15.207 RSS-Gen Clause 8.8	Pass
7	Antenna Requirement	FCC 15.203 RSS-Gen Clause 8.3	Pass

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS .....</b>	<b>6</b>
<b>2. TEST METHODOLOGY .....</b>	<b>7</b>
<b>3. FACILITIES AND ACCREDITATION .....</b>	<b>7</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>8</b>
4.1. <i>MEASURING INSTRUMENT CALIBRATION</i> .....	8
4.2. <i>MEASUREMENT UNCERTAINTY</i> .....	8
<b>5. EQUIPMENT UNDER TEST .....</b>	<b>9</b>
5.1. <i>DESCRIPTION OF EUT</i> .....	9
5.2. <i>MAXIMUM OUTPUT POWER</i> .....	9
5.3. <i>CHANNEL LIST</i> .....	9
5.4. <i>TEST CHANNEL CONFIGURATION</i> .....	10
5.5. <i>THE WORSE CASE POWER SETTING PARAMETER</i> .....	10
5.6. <i>DESCRIPTION OF AVAILABLE ANTENNAS</i> .....	10
5.7. <i>WORST-CASE CONFIGURATIONS</i> .....	10
5.8. <i>DESCRIPTION OF TEST SETUP</i> .....	11
<b>6. MEASURING INSTRUMENT AND SOFTWARE USED .....</b>	<b>12</b>
<b>7. MEASUREMENT METHODS .....</b>	<b>14</b>
<b>8. ANTENNA PORT TEST RESULTS .....</b>	<b>15</b>
8.1. <i>ON TIME AND DUTY CYCLE</i> .....	15
8.2. <i>6 dB BANDWIDTH &amp; 99% BANDWIDTH</i> .....	17
8.3. <i>PEAK CONDUCTED OUTPUT POWER</i> .....	22
8.4. <i>POWER SPECTRAL DENSITY</i> .....	23
8.5. <i>CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS</i> .....	26
<b>9. RADIATED TEST RESULTS.....</b>	<b>30</b>
9.1. <i>LIMITS AND PROCEDURE</i> .....	30
9.2. <i>RESTRICTED BANDEDGE</i> .....	36
9.3. <i>SPURIOUS EMISSIONS 30MHz-1GHz</i> .....	40
9.4. <i>SPURIOUS EMISSIONS 1 GHz-18GHz</i> .....	42
9.5. <i>SPURIOUS EMISSIONS 18GHz-25GHz</i> .....	46
9.6. <i>SPURIOUS EMISSIONS BELOW 30M</i> .....	48



10. AC POWER LINE CONDUCTED EMISSIONS.....	52
11. ANTENNA REQUIREMENTS.....	55

## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: The Resistor L.L.C.  
Address: 8215 SW Tualatin-Sherwood Road Suite 200 Tualatin, Oregon, 97062

### Manufacturer Information

Company Name: Same as Applicant  
Address: Same as Applicant

### EUT Description

EUT Name: Appliance  
Model: S9N29R  
Brand Name: N/A  
Sample Status: Normal  
Sample ID: 03059  
Sample Received Date: 06 Mar. 2018  
Date of Tested: 06 Mar. 2018 ~ 08 Jun. 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15 Subpart C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-Gen Issue 5	PASS

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## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 558074 D01 DTS Meas Guidance v04, 414788 D01 Radiated Test Site v01, FCC CFR 47 Part 2, FCC CFR 47 Part 15 ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-Gen Issue 5.

## 3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p><b>A2LA (Certificate No.: 4338.01)</b> Shenzhen STS Test Services Co., Ltd. has been assessed and proved to be in compliance with A2LA.</p> <p><b>CNAS (Registration No.: L7649)</b> Shenzhen STS Test Services Co., Ltd. has been assessed and proved to be in compliance with CNAS.</p> <p><b>FCC (FCC Designation No.: 625569)</b> Shenzhen STS Test Services Co., Ltd. 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.: 12108A)</b> Shenzhen STS Test Services Co., Ltd. has been registered and fully described in a report filed with Industry Canada. The Company Number is 12108A.</p>
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Note 1: All tests measurement facilities used to collect the measurement data are located at 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

Note 2: The test anechoic chamber in Shenzhen STS Test Services Co., Ltd. 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.

## 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

The reported uncertainty of measurement  $y \pm U$  · where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2** · providing a level of confidence of approximately **95 %**.

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	$\pm 2.88\text{dB}$
2	Conducted Emission (150KHz-30MHz)	$\pm 2.67\text{dB}$
3	RF power,conducted	$\pm 0.71\text{dB}$
4	Spurious emissions,conducted	$\pm 0.63\text{dB}$
5	All emissions,radiated (9KHz-30MHz)	$\pm 3.02\text{dB}$
6	All emissions,radiated (30MHz-200MHz)	$\pm 3.80\text{dB}$
7	All emissions,radiated (200MHz-1000MHz)	$\pm 3.97\text{dB}$
8	All emissions,radiated(>1G)	$\pm 3.03\text{dB}$

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

EUT Name	Appliance		
EUT Description	The EUT is a Connected Appliance		
Model	S9N29R		
Product Description (Bluetooth)	Operation Frequency	2402 MHz ~ 2480 MHz	
	Modulation Type	Data Rate	
	GFSK	1Mbps	
Power Parameter	Input: 120VAC, 60Hz, 1050W; Output 700W		
Bluetooth Version	BLE 4.2		
Hardware Version	EVT3		
Software Version	EVT3		

### 5.2. MAXIMUM OUTPUT POWER

Frequency Range (MHz)	Number of Transmit Chains (NTX)	Bluetooth Mode	Frequency (MHz)	Channel Number	Max PK Conducted Power (dBm)
2400-2483.5	1	BLE	2402-2480	0-39[40]	4.32

### 5.3. CHANNEL LIST

Channel	Frequency (MHz)						
00	2402	11	2424	22	2446	33	2468
01	2404	12	2426	23	2448	34	2470
02	2406	13	2428	24	2450	35	2472
03	2408	14	2430	25	2452	36	2474
04	2410	15	2432	26	2454	37	2476
05	2412	16	2434	27	2456	38	2478
06	2414	17	2436	28	2458	39	2480
07	2416	18	2438	29	2460		
08	2418	19	2440	30	2462		
09	2420	20	2442	31	2464		
10	2422	21	2444	32	2466		

#### 5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	CH 00, CH 19, CH 39	2402MHz, 2440MHz, 2480MHz

#### 5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Modulation Type	Transmit Antenna Number	Test Channel		
		CH 00	CH 19	CH 39
GFSK	1	Default	Default	Default

#### 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2402-2480	PIFA Antenna	1.47

Test Mode	Transmit and Receive Mode	Description
GFSK	<input checked="" type="checkbox"/> 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.

#### 5.7. WORST-CASE CONFIGURATIONS

Bluetooth Mode	Modulation Technology	Modulation Type	Data Rate (Mbps)
BLE	DTS	GFSK	1Mbit/s

## 5.8. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	PC	DELL	VOSTRO.3800	N/A

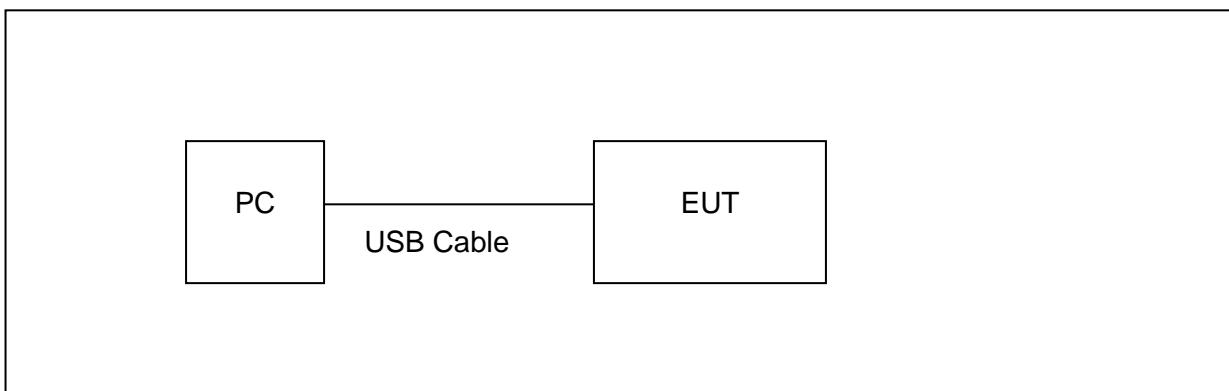
### I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(cm)	Remarks
1	USB Cable	NO	N/A	100cm	N/A

### TEST SETUP

The EUT can work in an engineer mode with a software through a Laptop.

### SETUP DIAGRAM FOR TESTS



## 6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Test Receiver	R&S	ESCI	101427	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	LISN	R&S	ENV216	101242	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	Conduction Cable	EM	C01	N/A	2017.10.18	2018.10.17
<input checked="" type="checkbox"/>	Temperature & Humidity	Mieo	HH660	N/A	2017.10.15	2018.10.14
Radiated Emissions						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESCI	102086	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	Bilog Antenna	TESEQ	CBL6111D	34678	2017.10.30	2018.10.29
<input checked="" type="checkbox"/>	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1343	2017.10.27	2018.10.26
<input checked="" type="checkbox"/>	SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	N/A	2017.03.11	2019.03.10
<input checked="" type="checkbox"/>	Temperature & Humidity	HH660	Mieo	N/A	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	Temperature & Humidity	HH660	Mieo	N/A	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	Pre-Amplifier (0.1M-3GHz)	EM	EM330	60538	2017.10.28	2018.10.27
<input checked="" type="checkbox"/>	Pre Amplifier (1G-26.5GHz)	Agilent	8449B	60538	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	Operational Manual Passive Loop (9K--30MHz)	ETS	6512	00165355	2017.10.18	2018.10.17
<input checked="" type="checkbox"/>	Low frequency cable	EM	R01	N/A	2017.10.18	2018.10.17
<input checked="" type="checkbox"/>	Low frequency cable	EM	R06	N/A	2017.10.18	2018.10.17
<input checked="" type="checkbox"/>	High frequency cable	SCHWARZBEC K	R04	N/A	2017.10.18	2018.10.17
<input checked="" type="checkbox"/>	High frequency cable	SCHWARZBEC K	R02	N/A	2017.10.18	2018.10.17
<input checked="" type="checkbox"/>	Semi-anechoic chamber	Changling	966	N/A	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	turn table	EM	SC100_1	60531	N/A	N/A
<input checked="" type="checkbox"/>	Antenna mast	EM	SC100	N/A	N/A	N/A
<input checked="" type="checkbox"/>	Max-full Antenna Corp	MF	MFA-440H	N/A	N/A	N/A
<input checked="" type="checkbox"/>	Low Noise	A-INFO	LNPA_1840G-	N/A	2017.03.11	2019.03.10

	PreAMP_18-40GHz		50			
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**Other instruments**

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	USB RF power sensor	DARE	RPR3006 W	15I00041SNO03	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	Power Meter	R&S	NRP	100510	2017.10.15	2018.10.14
<input checked="" type="checkbox"/>	Spectrum Analyzer	Agilent	E4407B	MY50140340	2018.03.08	2019.03.07
<input checked="" type="checkbox"/>	Signal Analyzer	Agilent	N9020A	MY49100060	2018.03.08	2019.03.07

## 7. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6dB Bandwidth and 99% Bandwidth	KDB 558074 D01 DTS Meas Guidance v04	8.0
2	Peak Output Power	KDB 558074 D01 DTS Meas Guidance v04	9.1.3
3	Power Spectral Density	KDB 558074 D01 DTS Meas Guidance v04	10.2
4	Out-of-band emissions in non-restricted bands	KDB 558074 D01 DTS Meas Guidance v04	11.0
5	Out-of-band emissions in restricted bands	KDB 558074 D01 DTS Meas Guidance v04	12.1
6	Band-edge	KDB 558074 D01 DTS Meas Guidance v04	13.3.2
7	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	6.2

## 8. ANTENNA PORT TEST RESULTS

### 8.1. ON TIME AND DUTY CYCLE

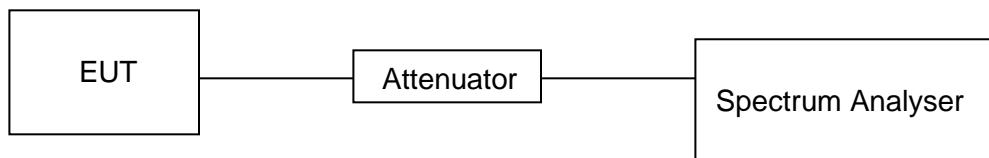
#### LIMITS

None; for reporting purposes only

#### PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

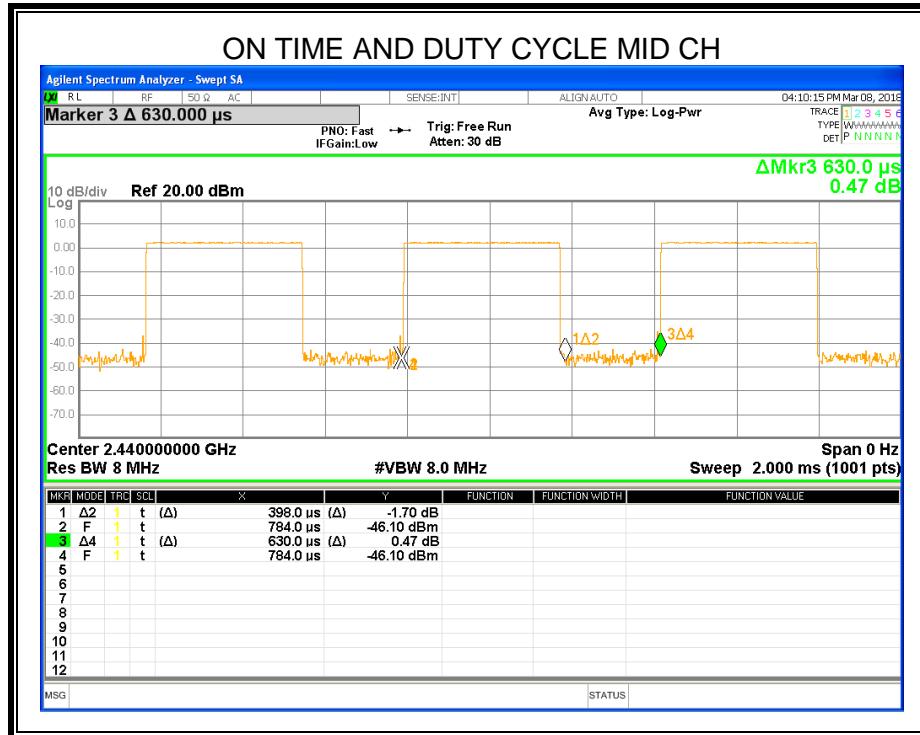
#### RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/B Minimum VBW (KHz)
GFSK	0.398	0.630	0.6317	63.17	1.99	8000

Note: Duty Cycle Correction Factor=10log(1/x).

Where: x is Duty Cycle(Linear)

Where: B is On Time



## 8.2. 6 dB BANDWIDTH & 99% BANDWIDTH

### LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2) RSS-247 5.2 (a)	6dB Bandwidth	$\geq 500\text{KHz}$	2400-2483.5
RSS-Gen Clause 6.6	99% Bandwidth	For reporting purposes only.	2400-2483.5

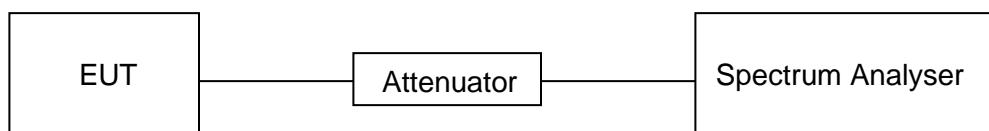
### TEST PROCEDURE

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	For 6 dB Bandwidth :100K For 99% Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : $\geq 3 \times \text{RBW}$ For 99% Bandwidth : approximately $3 \times \text{RBW}$
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 6 dB and 99% relative to the maximum level measured in the fundamental emission.

### TEST SETUP

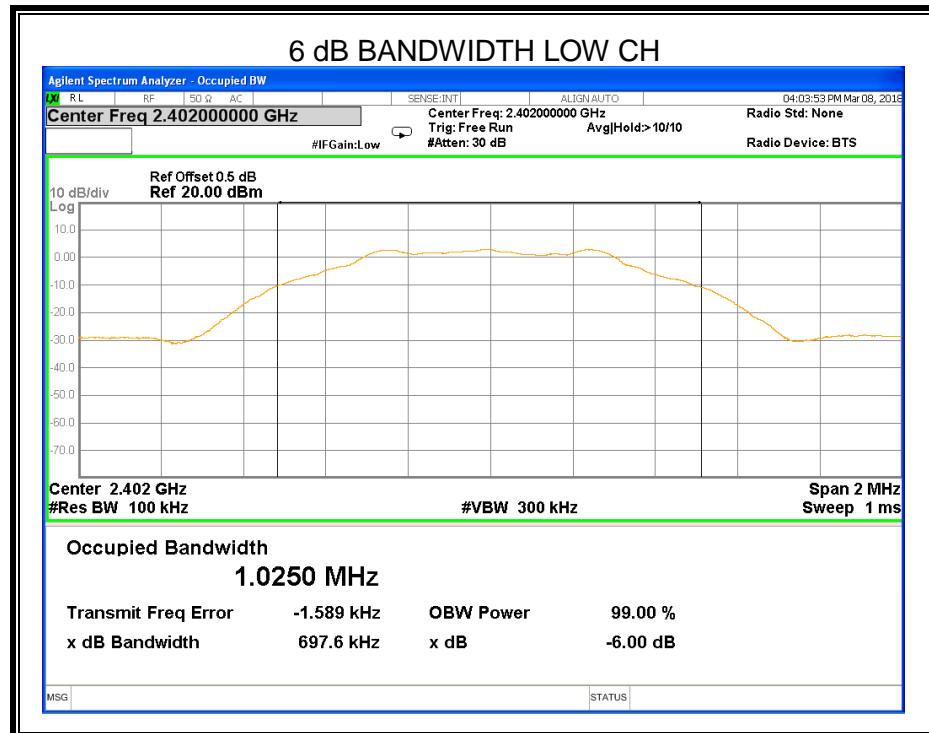


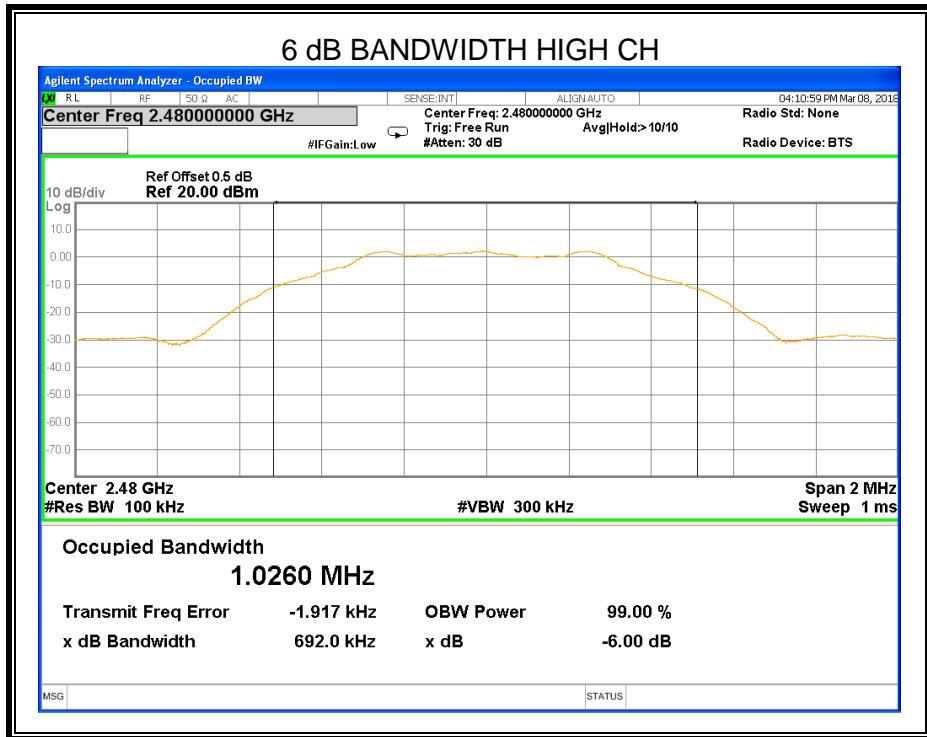
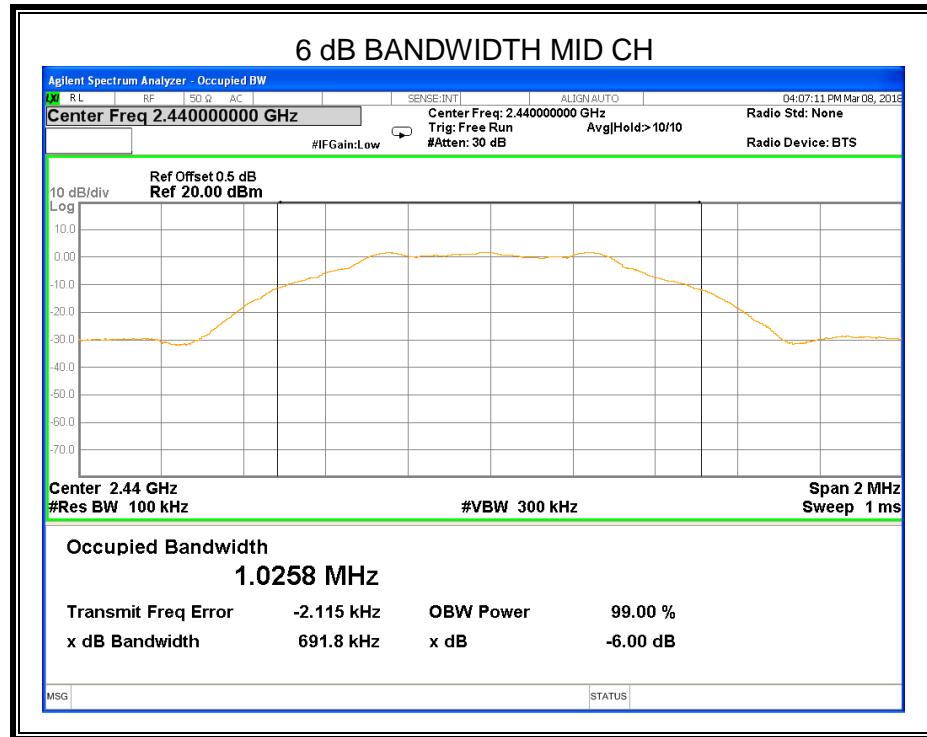
TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

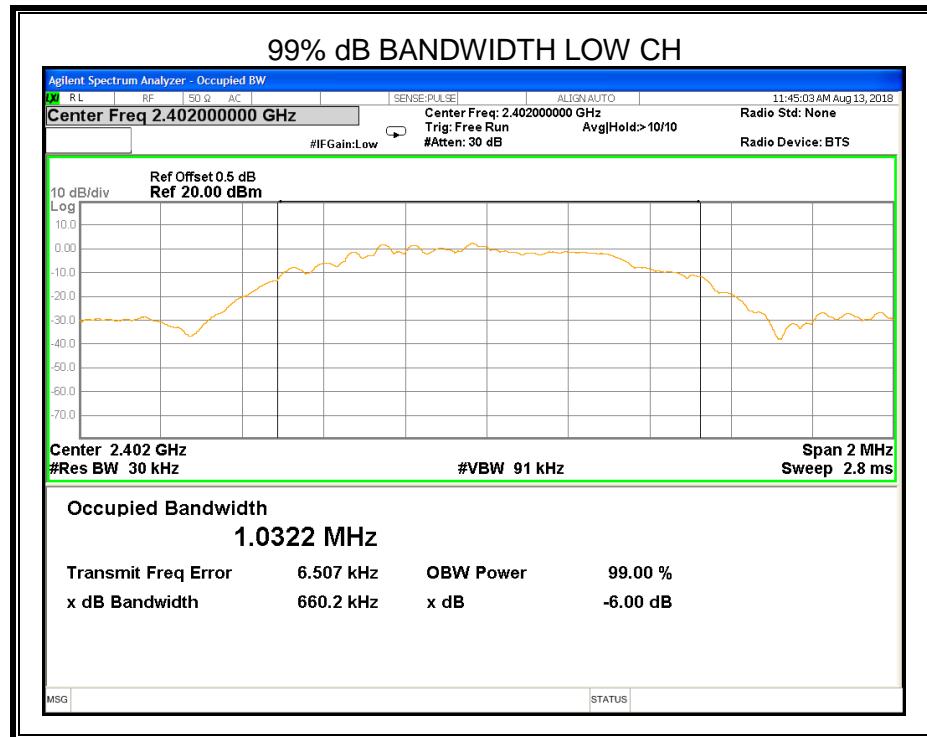
RESULTS

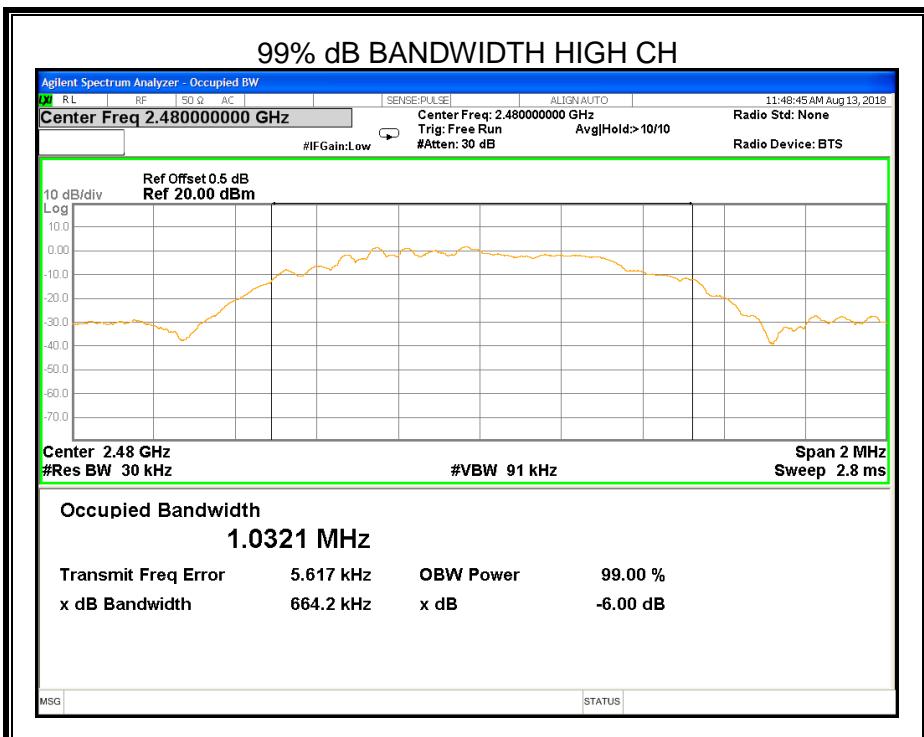
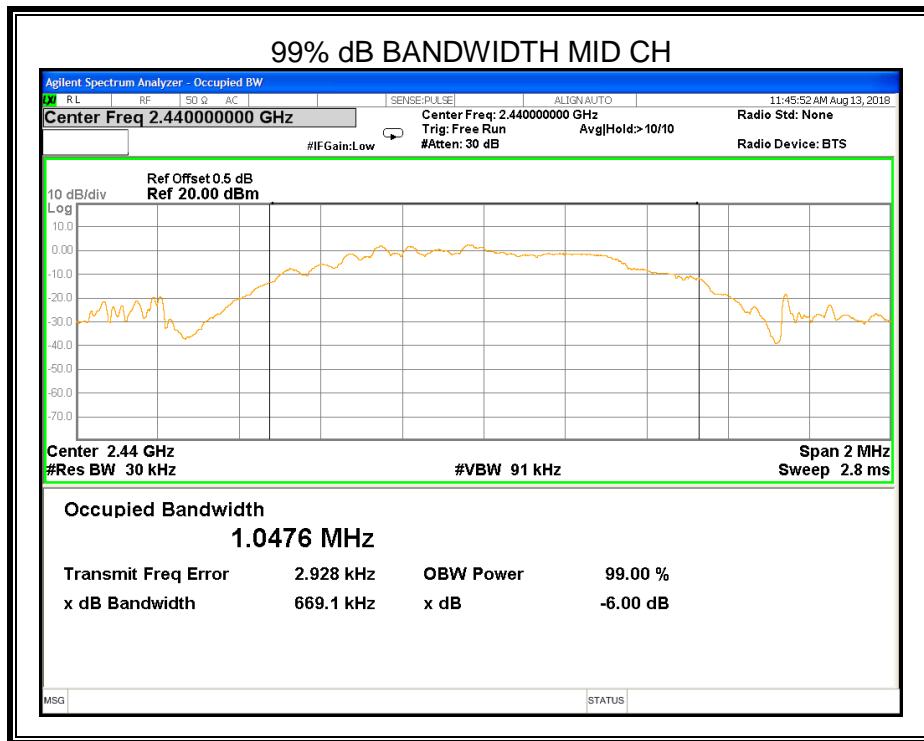
Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
Low	2402	0.698	500	Pass
Middle	2440	0.692	500	Pass
High	2480	0.692	500	Pass





Channel	Frequency (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2402	1.0322	500	Pass
Middle	2440	1.0476	500	Pass
High	2480	1.0321	500	Pass





### 8.3. PEAK CONDUCTED OUTPUT POWER

#### LIMITS

FCC Part15 (15.247) , Subpart C IC RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3) IC RSS-247 5.4 (4)	Peak Output Power	1 watt or 30dBm	2400-2483.5

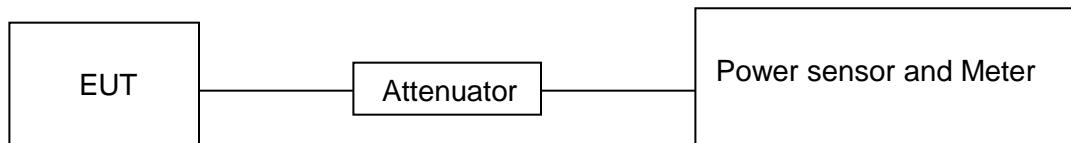
#### TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.

Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.

Measure peak power each channel.

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

#### RESULTS

Test Channel	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
Low	2402	4.32	30
Middle	2440	3.68	30
High	2480	3.29	30

## 8.4. POWER SPECTRAL DENSITY

### LIMITS

FCC Part15 (15.247) , Subpart C IC RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC §15.247 (e) IC RSS-247 5.2 (2)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

### TEST PROCEDURE

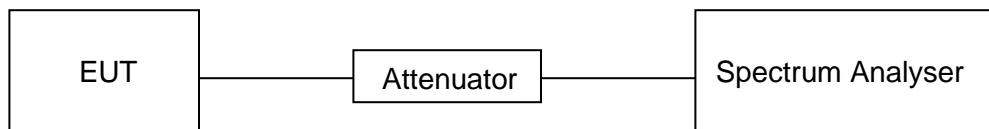
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100\text{kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	$1.5 \times \text{DTS bandwidth}$
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

### TEST SETUP

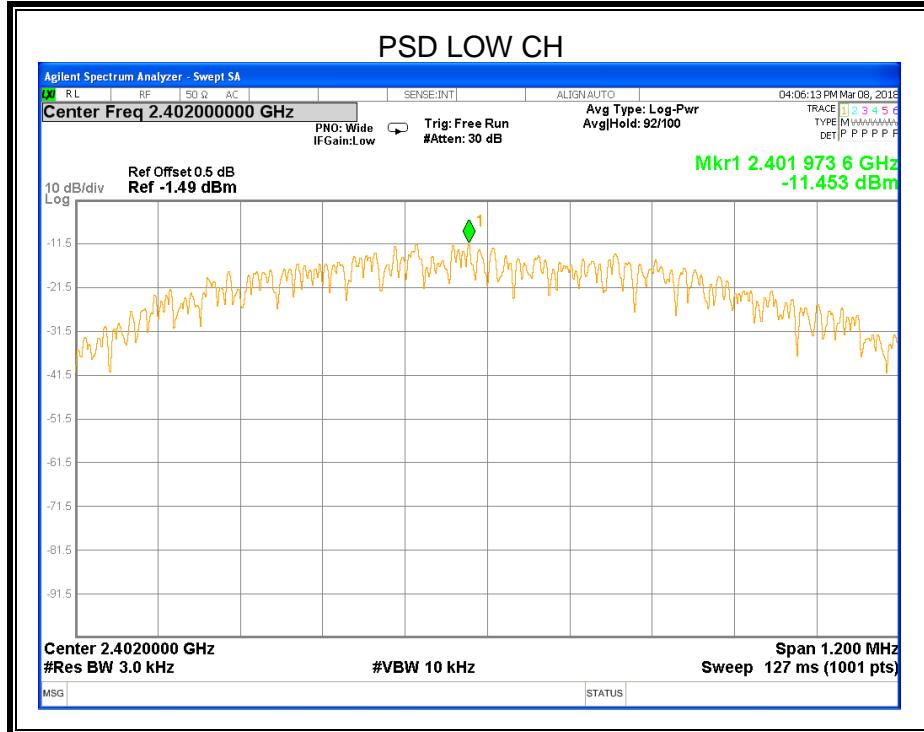


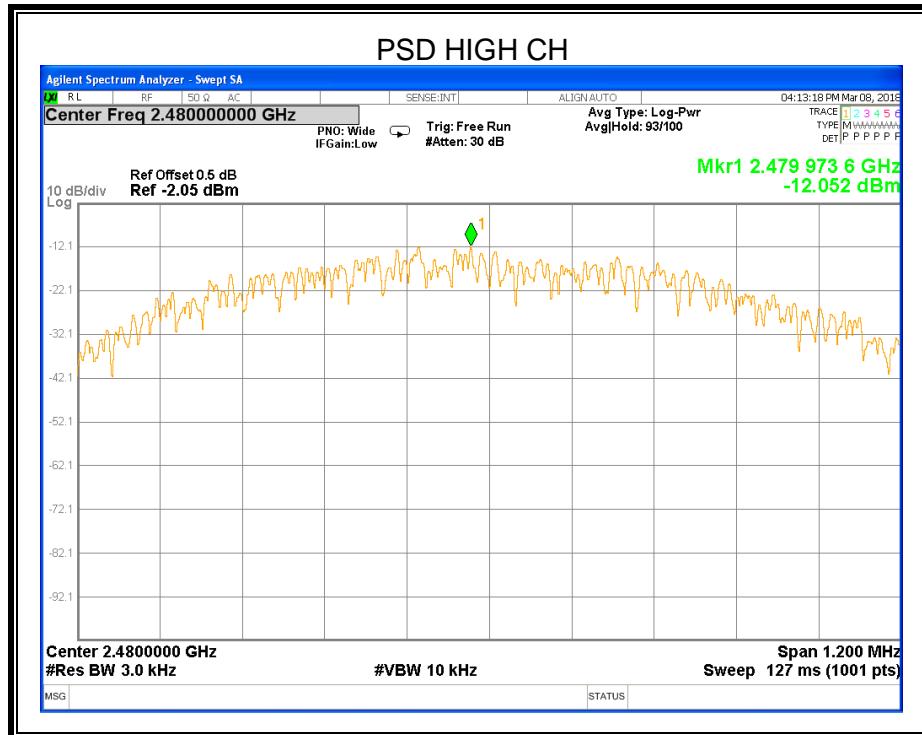
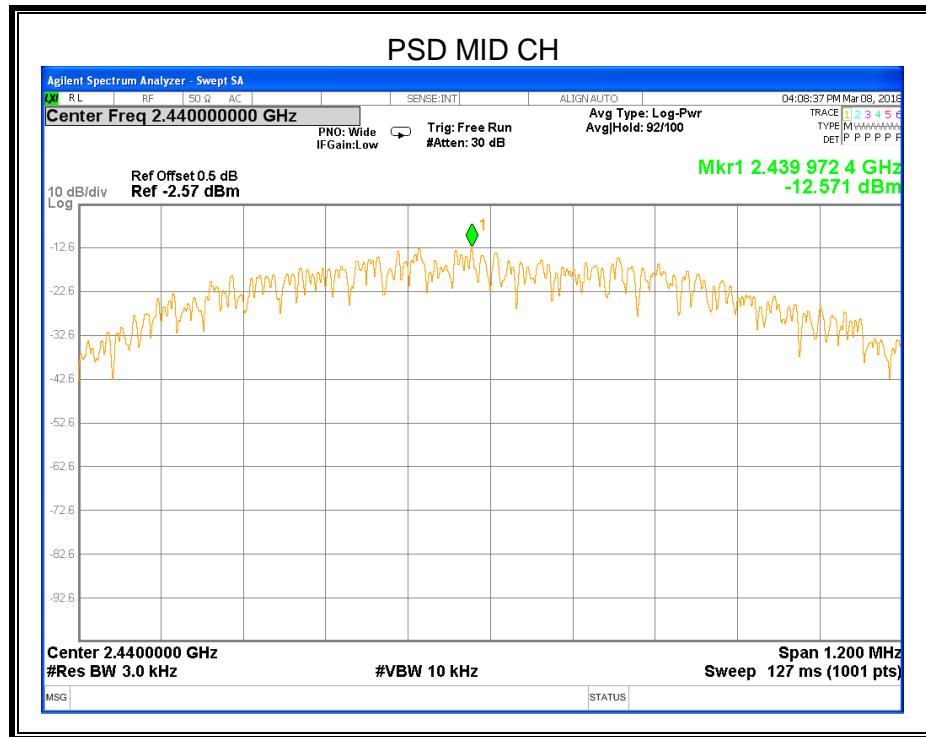
TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

RESULTS

Test Channel	Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	2402MHz	-11.453	8	PASS
Middle	2440MHz	-12.571	8	PASS
High	2480MHz	-12.052	8	PASS





## 8.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

### LIMITS

FCC Part15 (15.247) , Subpart C IC RSS-247 ISSUE 2		
Section	Test Item	Limit
FCC §15.247 (d) IC RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

### TEST PROCEDURE

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

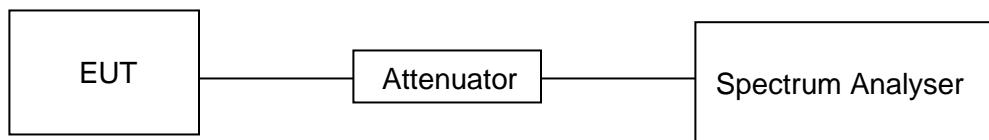
Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	$\geq 3 \times$ RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100K
VBW	$\geq 3 \times$ RBW
measurement points	$\geq$ span/RBW
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level.

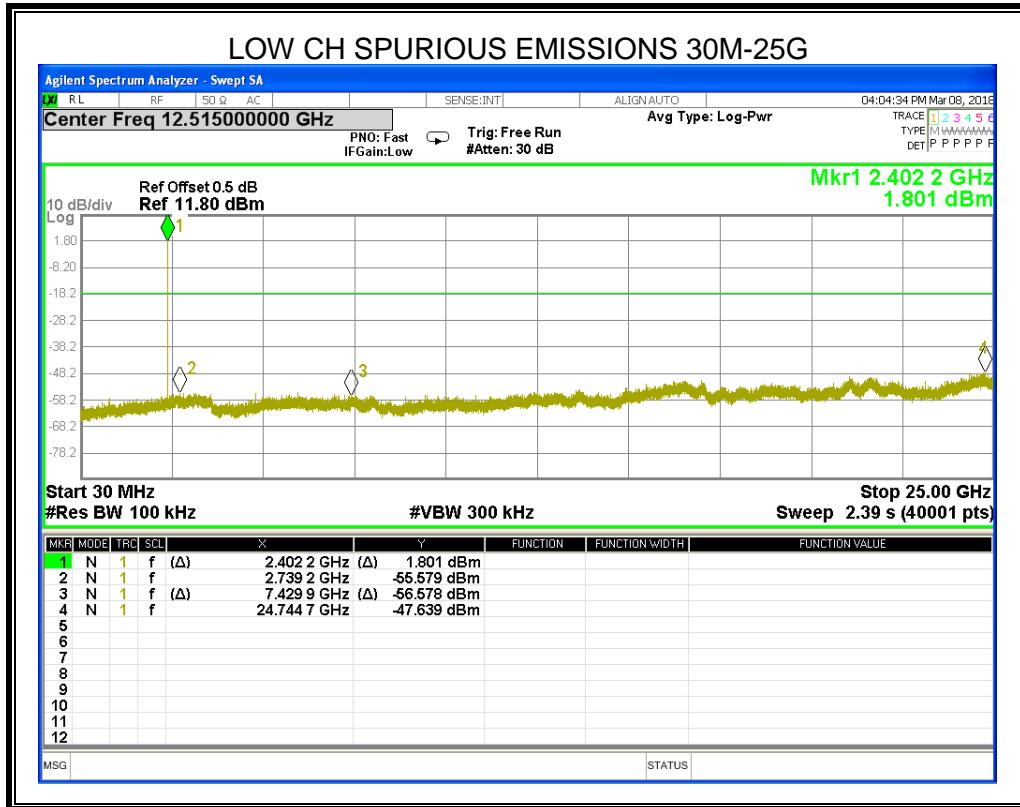
### TEST SETUP

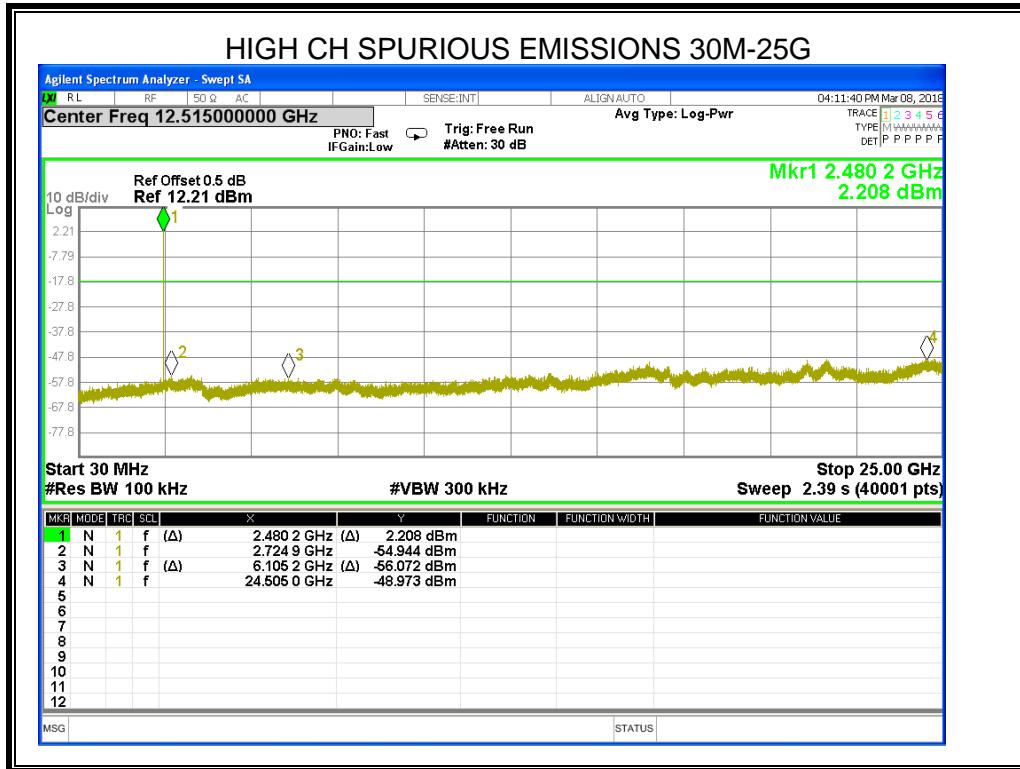
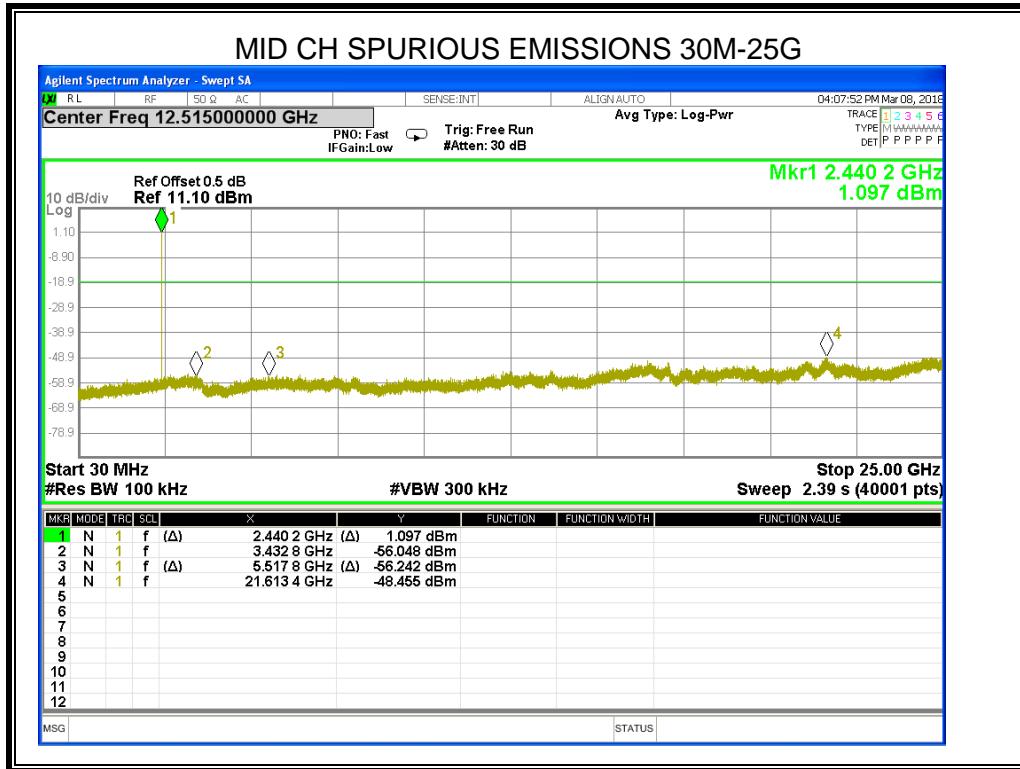


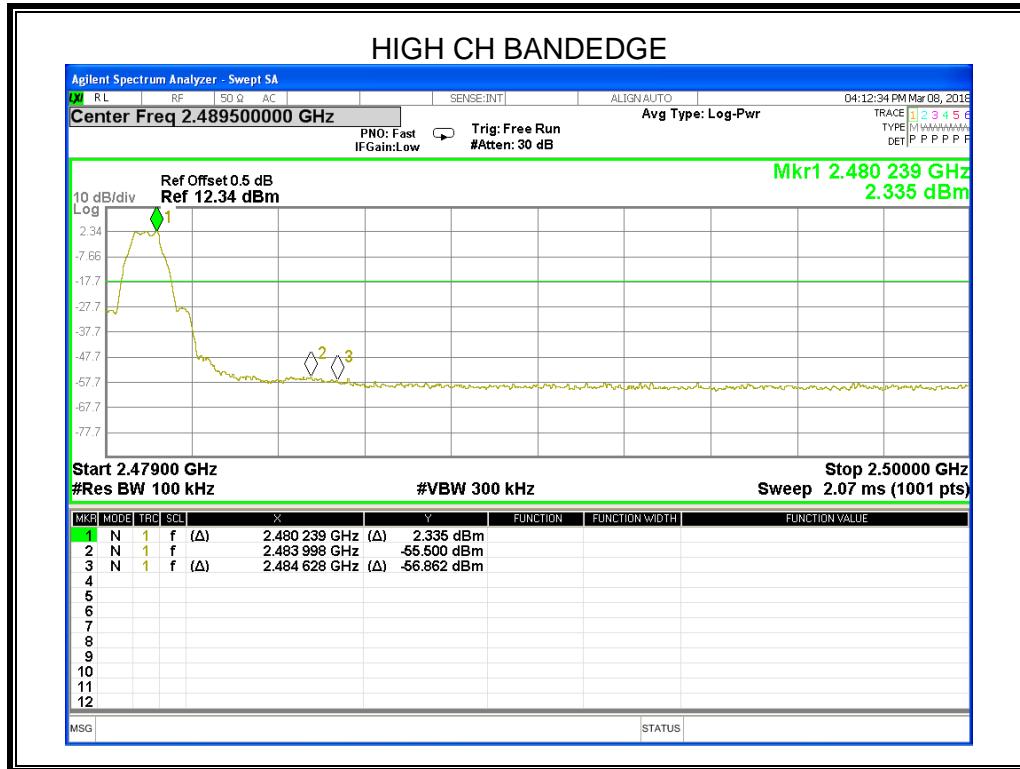
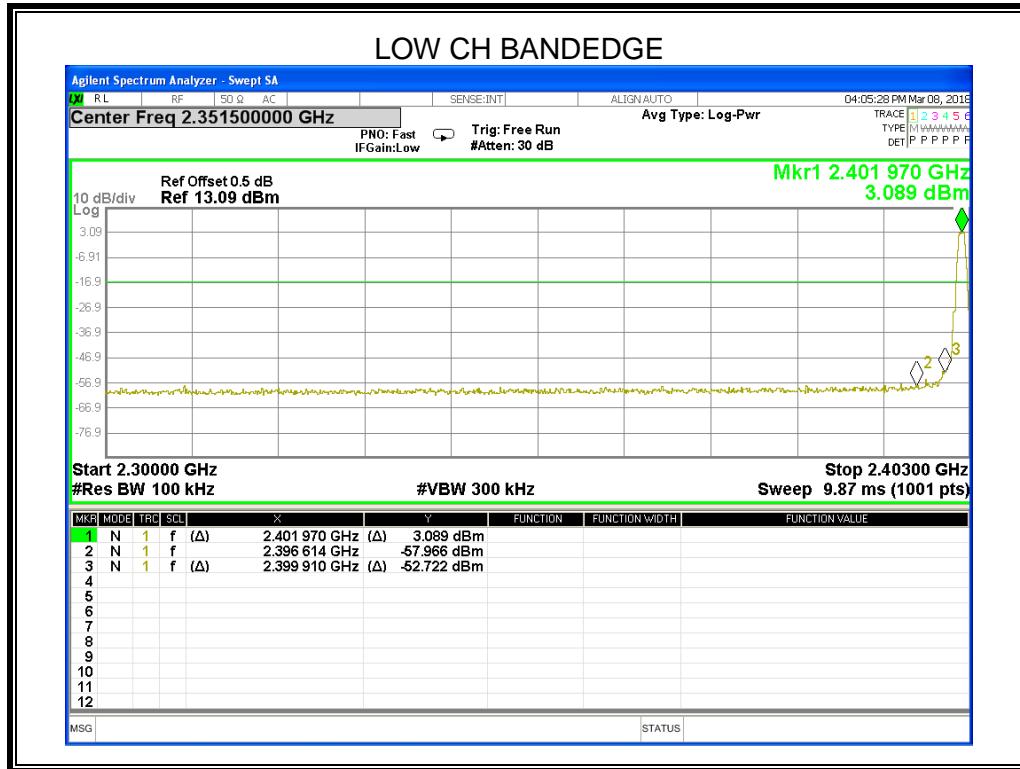
## TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

## **RESULTS**







## 9. RADIATED TEST RESULTS

### 9.1. LIMITS AND PROCEDURE

Please refer to FCC §15.205 and §15.209

Please refer to RSS-Gen Clause 8.9 (Transmitter)

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.

## Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

## Restricted bands of operation

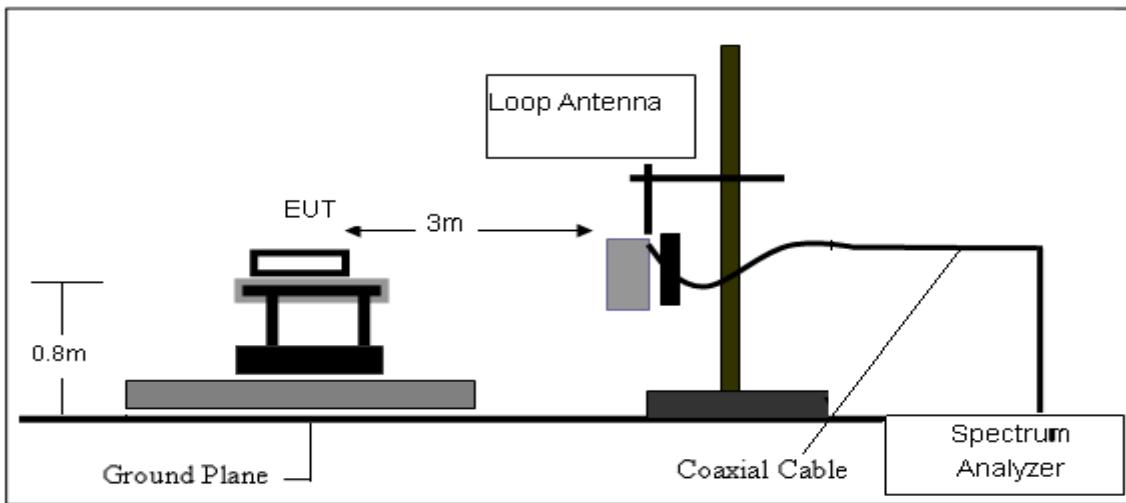
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
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	2690-2900	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			

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

<sup>2</sup>Above 38.6c

**TEST SETUP AND PROCEDURE**

Below 30MHz



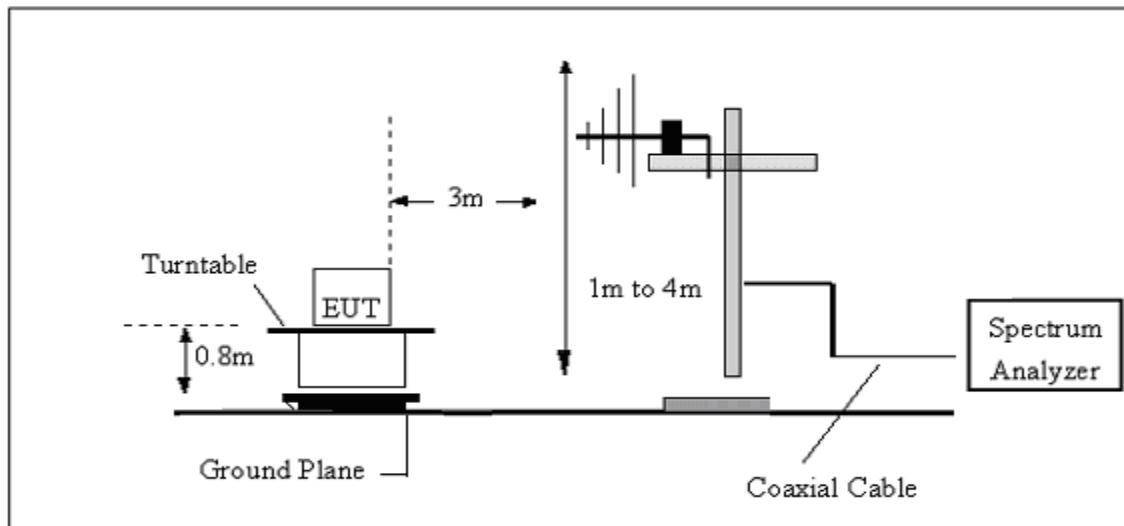
The setting of the spectrum analyser

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
Detector	Peak/QP/ Average
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 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 0.8 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. 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.
6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

Note: 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

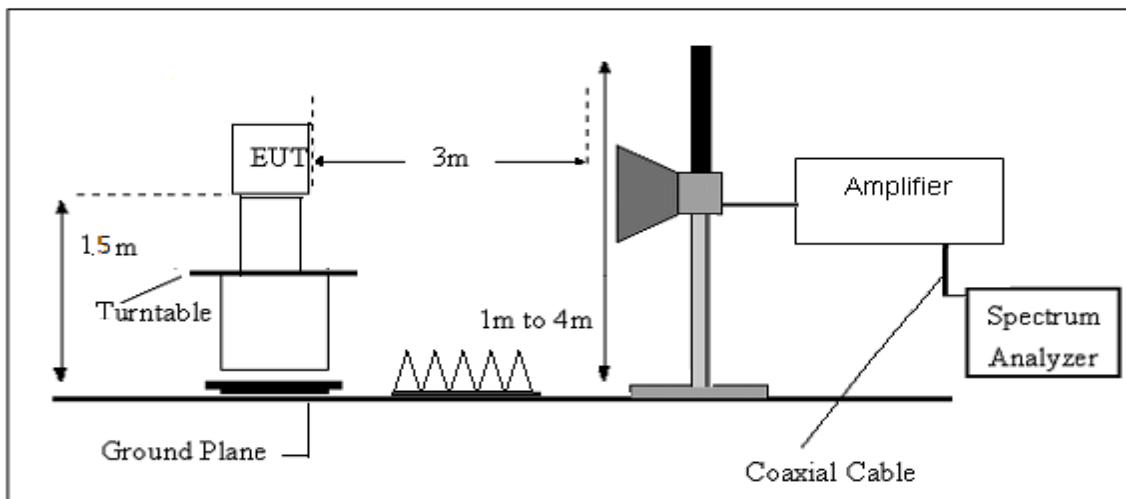


The setting of the spectrum analyser

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 0.8 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. 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.
6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

## ABOVE 1G

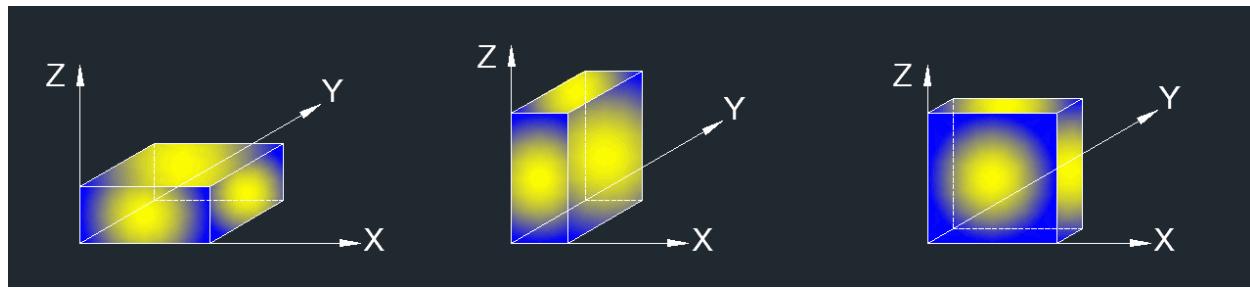


## The setting of the spectrum analyser

RBW	1M
VBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
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 1.5m 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 above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements.
7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

X axis, Y axis, Z axis positions:



8. The EUT as shown in setup Photo is the worst mode, the report only shown the worst mode data.

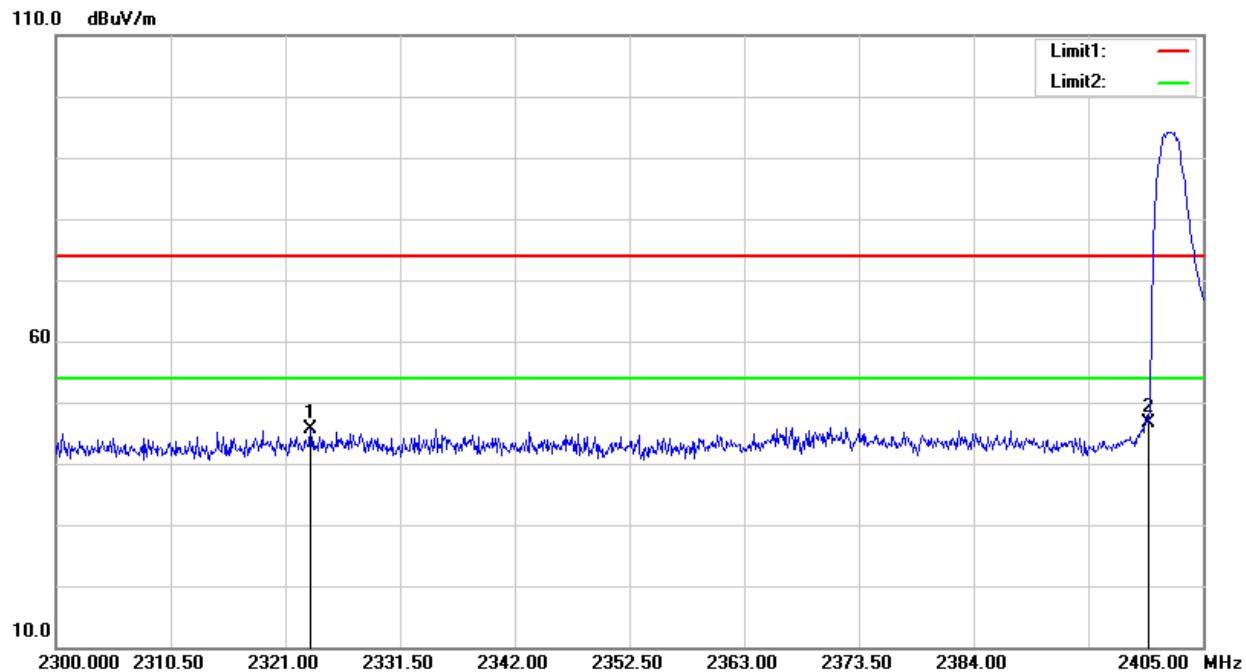
#### **TEST ENVIRONMENT**

Temperature	25C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

## 9.2. RESTRICTED BANDEDGE

GFSK

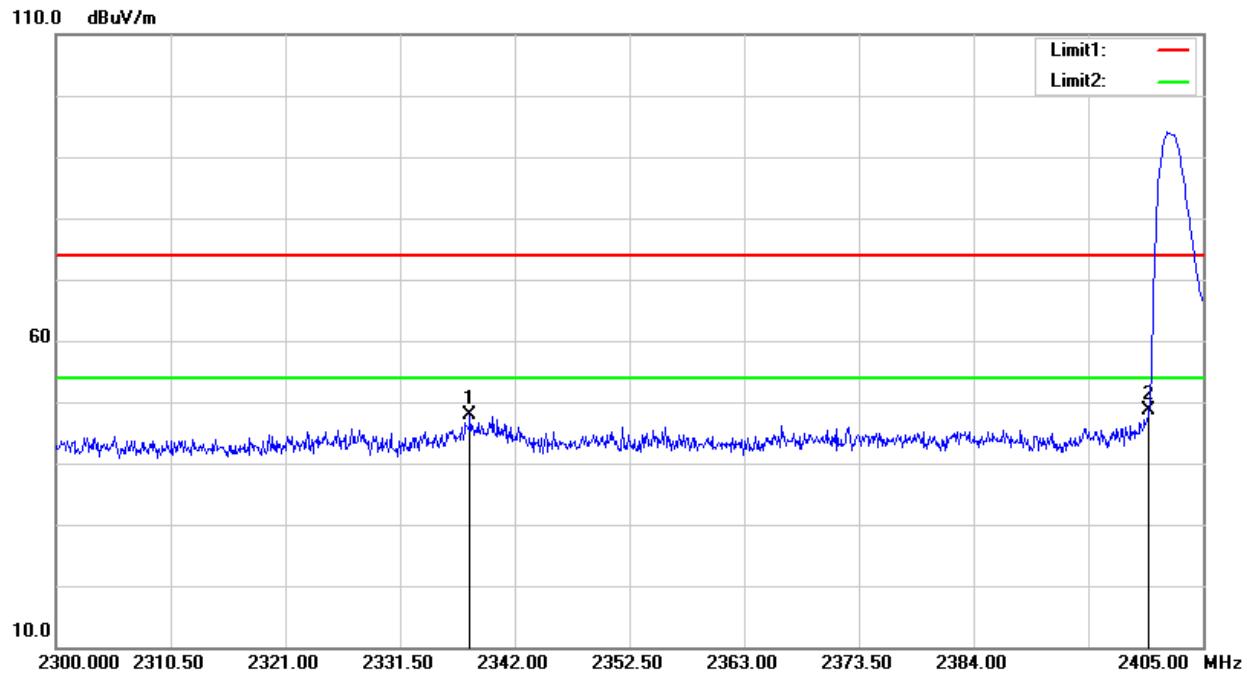
### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading level (dBuV/m)	Correcti on dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2323.310	47.85	-2.15	45.70	74.00	-28.30	peak
2	2400.000	48.42	-1.69	46.73	74.00	-27.27	peak

Note:

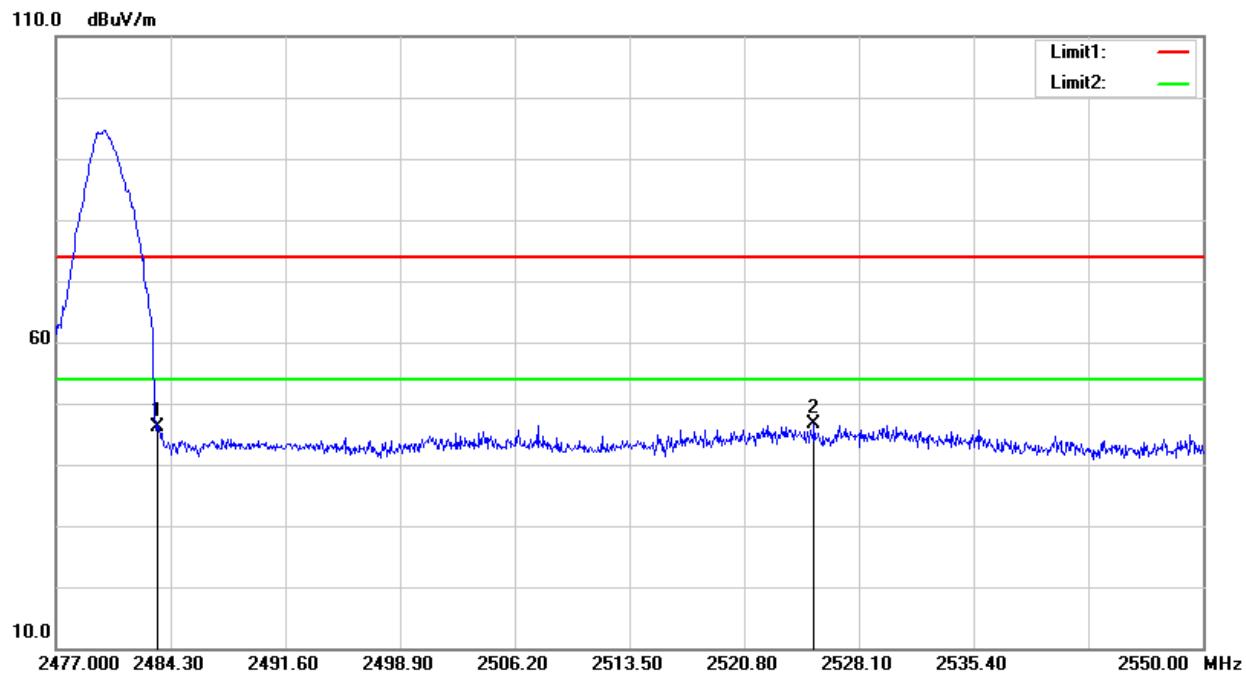
- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading level (dBuV/m)	Correcti on dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2337.905	49.83	-2.05	47.78	74.00	-26.22	peak
2	2400.000	50.32	-1.69	48.63	74.00	-25.37	peak

## Note:

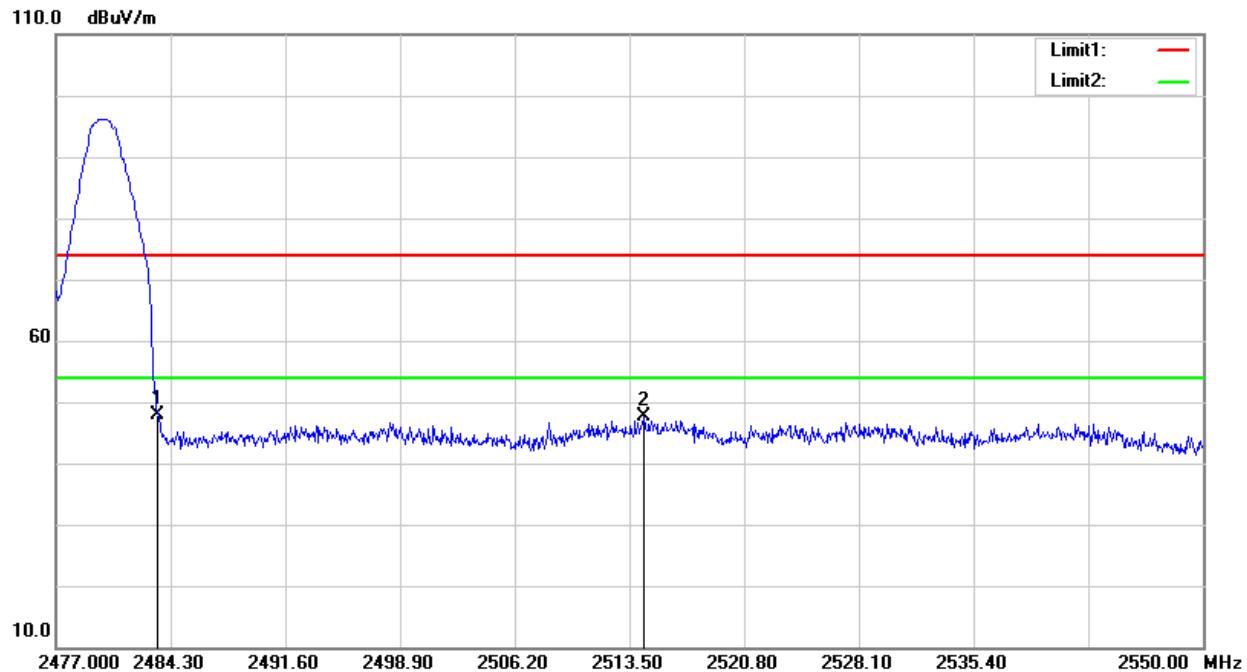
- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading level (dBuV/m)	Correcti on dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	47.38	-1.20	46.18	74.00	-27.82	peak
2	2525.253	47.51	-1.00	46.51	74.00	-27.49	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.

RESTRICTED BANDEdge (HIGH CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading level (dBuV/m)	Correcti on dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	49.08	-1.20	47.88	74.00	-26.12	peak
2	2514.449	48.57	-1.05	47.52	74.00	-26.48	peak

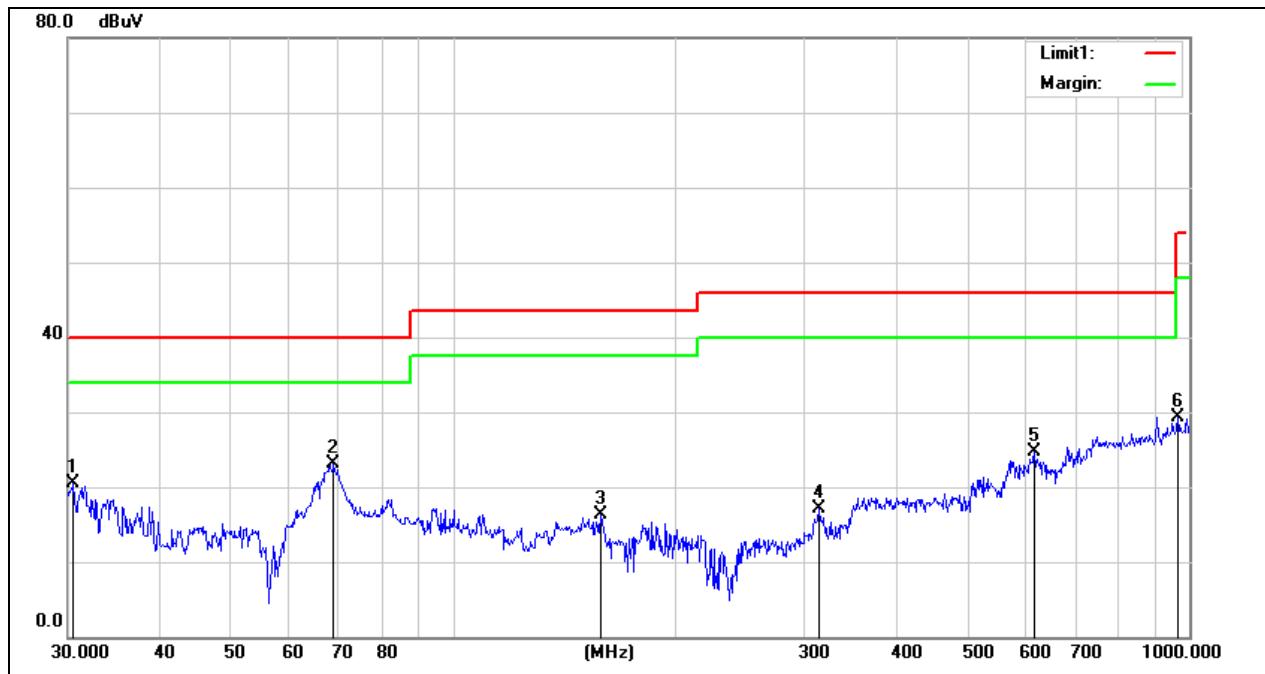
## Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.

### 9.3. SPURIOUS EMISSIONS 30MHz-1GHz

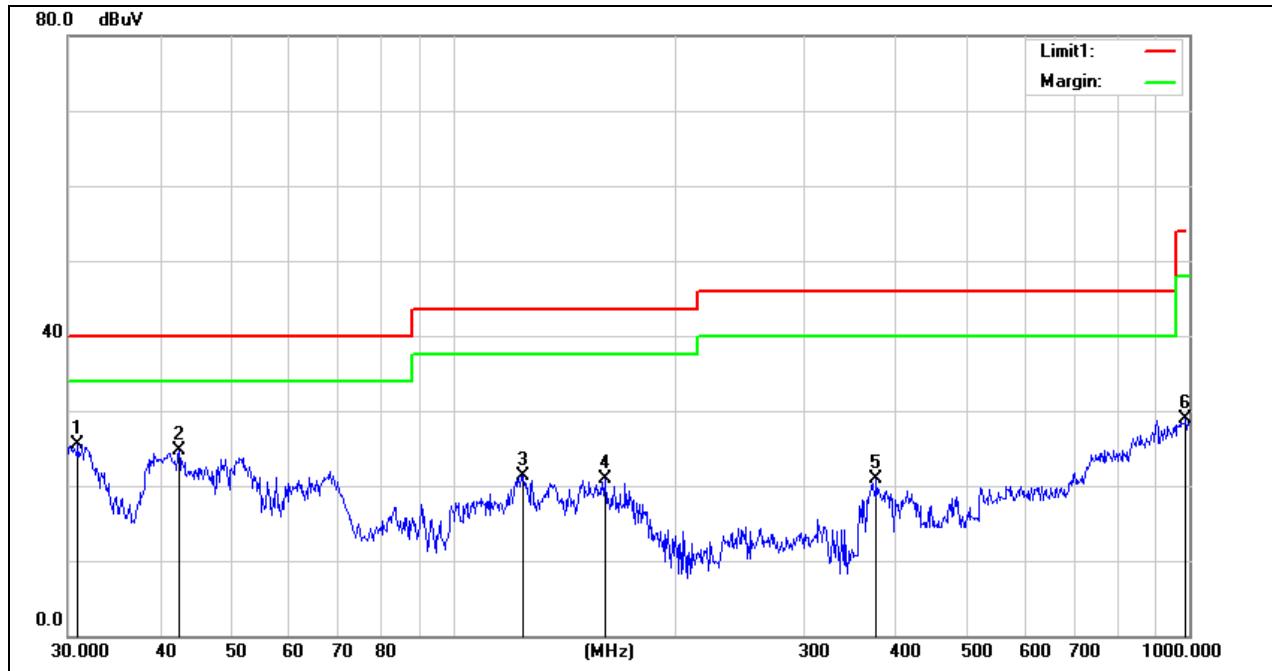
Note: All the channels had been tested, but only the worst data (channel 00) recorded in the report.

#### HARMONICS AND SPURIOUS EMISSIONS (HORIZONTAL)



No.	Frequency (MHz)	Reading level (dBuV/m)	Correcti on dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.5304	31.92	-11.47	20.45	40.00	-19.55	QP
2	68.8721	47.14	-24.13	23.01	40.00	-16.99	QP
3	158.6673	34.79	-18.43	16.36	43.50	-27.14	QP
4	314.3765	31.37	-14.35	17.02	46.00	-28.98	QP
5	616.3718	31.24	-6.59	24.65	46.00	-21.35	QP
6	965.5421	29.52	-0.14	29.38	54.00	-24.62	QP

Note: Measurement = Reading Level + Correction Factor.

HARMONICS AND SPURIOUS EMISSIONS (VERTICAL)

Note: Measurement = Reading Level + Correction Factor.

## 9.4. SPURIOUS EMISSIONS 1 GHz-18GHz Low Channel

Frequency (MHz)	Reading level (dB $\mu$ V)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correctio n Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type	Comment
Low Channel (2402 MHz)										
3264.65	48.91	44.70	6.70	28.20	-9.80	39.11	74.00	-34.89	PK	Vertical
3264.65	39.58	44.70	6.70	28.20	-9.80	29.78	54.00	-24.22	AV	Vertical
3264.81	48.59	44.70	6.70	28.20	-9.80	38.79	74.00	-35.21	PK	Horizontal
3264.81	38.86	44.70	6.70	28.20	-9.80	29.06	54.00	-24.94	AV	Horizontal
4804.56	59.77	44.20	9.04	31.60	-3.56	56.21	74.00	-17.79	PK	Vertical
4804.56	38.66	44.20	9.04	31.60	-3.56	35.10	54.00	-18.90	AV	Vertical
4804.34	59.61	44.20	9.04	31.60	-3.56	56.05	74.00	-17.95	PK	Horizontal
4804.34	38.28	44.20	9.04	31.60	-3.56	34.72	54.00	-19.28	AV	Horizontal
5359.87	45.52	44.20	9.86	32.00	-2.34	43.18	74.00	-30.82	PK	Vertical
5359.87	37.59	44.20	9.86	32.00	-2.34	35.25	54.00	-18.75	AV	Vertical
5359.65	46.71	44.20	9.86	32.00	-2.34	44.37	74.00	-29.63	PK	Horizontal
5359.65	37.51	44.20	9.86	32.00	-2.34	35.17	54.00	-18.83	AV	Horizontal
7205.91	51.72	43.50	11.40	35.50	3.40	55.12	74.00	-18.88	PK	Vertical
7205.91	32.83	43.50	11.40	35.50	3.40	36.23	54.00	-17.77	AV	Vertical
7205.78	50.98	43.50	11.40	35.50	3.40	54.38	74.00	-19.62	PK	Horizontal
7205.78	33.85	43.50	11.40	35.50	3.40	37.25	54.00	-16.75	AV	Horizontal

Note:

- 1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- 2) Emission Level = Reading Level + Factor  
Margin = Limit - Emission Level
- 3) The emission of peak points that did not show above the forms is mainly from the environment noise.
- 4) AVG RBW=1MHz, VBW=1 / Ton where Ton is the transmit duration.

## Mid Channel

Frequency (MHz)	Reading level (dB $\mu$ V)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correctio n Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type	Comment
Mid Channel (2440 MHz)										
3264.60	49.73	44.70	6.70	28.20	-9.80	39.93	74.00	-34.07	PK	Vertical
3264.60	37.91	44.70	6.70	28.20	-9.80	28.11	54.00	-25.89	AV	Vertical
3264.60	49.77	44.70	6.70	28.20	-9.80	39.97	74.00	-34.03	PK	Horizontal
3264.60	39.33	44.70	6.70	28.20	-9.80	29.53	54.00	-24.47	AV	Horizontal
4880.57	58.81	44.20	9.04	31.60	-3.56	55.25	74.00	-18.75	PK	Vertical
4880.57	39.40	44.20	9.04	31.60	-3.56	35.84	54.00	-18.16	AV	Vertical
4880.58	58.80	44.20	9.04	31.60	-3.56	55.24	74.00	-18.76	PK	Horizontal
4880.58	39.89	44.20	9.04	31.60	-3.56	36.33	54.00	-17.67	AV	Horizontal
5359.66	44.99	44.20	9.86	32.00	-2.34	42.65	74.00	-31.35	PK	Vertical
5359.66	38.78	44.20	9.86	32.00	-2.34	36.44	54.00	-17.56	AV	Vertical
5359.70	45.98	44.20	9.86	32.00	-2.34	43.64	74.00	-30.36	PK	Horizontal
5359.70	38.51	44.20	9.86	32.00	-2.34	36.17	54.00	-17.83	AV	Horizontal
7310.93	51.62	43.50	11.40	35.50	3.40	55.02	74.00	-18.98	PK	Vertical
7310.93	33.92	43.50	11.40	35.50	3.40	37.32	54.00	-16.68	AV	Vertical
7310.87	51.22	43.50	11.40	35.50	3.40	54.62	74.00	-19.38	PK	Horizontal
7310.87	33.54	43.50	11.40	35.50	3.40	36.94	54.00	-17.06	AV	Horizontal

## Note:

- 1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- 2) Emission Level = Reading Level + Factor
- Margin = Limit - Emission Level
- 3) The emission of peak points that did not show above the forms is mainly from the environment noise.
- 4) AVG RBW=1MHz, VBW=1 / Ton where Ton is the transmit duration.

## High Channel

Frequency (MHz)	Reading level (dB $\mu$ V)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correctio n Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type	Comment
High Channel (2480 MHz)										
3264.79	48.97	44.70	6.70	28.20	-9.80	39.17	74.00	-34.83	PK	Vertical
3264.79	38.51	44.70	6.70	28.20	-9.80	28.71	54.00	-25.29	AV	Vertical
3264.67	47.86	44.70	6.70	28.20	-9.80	38.06	74.00	-35.94	PK	Horizontal
3264.67	39.83	44.70	6.70	28.20	-9.80	30.03	54.00	-23.97	AV	Horizontal
4960.52	59.43	44.20	9.04	31.60	-3.56	55.87	74.00	-18.13	PK	Vertical
4960.52	38.89	44.20	9.04	31.60	-3.56	35.33	54.00	-18.67	AV	Vertical
4960.34	58.99	44.20	9.04	31.60	-3.56	55.43	74.00	-18.57	PK	Horizontal
4960.34	38.58	44.20	9.04	31.60	-3.56	35.02	54.00	-18.98	AV	Horizontal
5359.64	45.51	44.20	9.86	32.00	-2.34	43.17	74.00	-30.83	PK	Vertical
5359.64	38.71	44.20	9.86	32.00	-2.34	36.37	54.00	-17.63	AV	Vertical
5359.85	45.50	44.20	9.86	32.00	-2.34	43.16	74.00	-30.84	PK	Horizontal
5359.85	37.96	44.20	9.86	32.00	-2.34	35.62	54.00	-18.38	AV	Horizontal
7439.93	51.99	43.50	11.40	35.50	3.40	55.39	74.00	-18.61	PK	Vertical
7439.93	34.28	43.50	11.40	35.50	3.40	37.68	54.00	-16.32	AV	Vertical
7439.83	51.55	43.50	11.40	35.50	3.40	54.95	74.00	-19.05	PK	Horizontal
7439.83	33.98	43.50	11.40	35.50	3.40	37.38	54.00	-16.62	AV	Horizontal

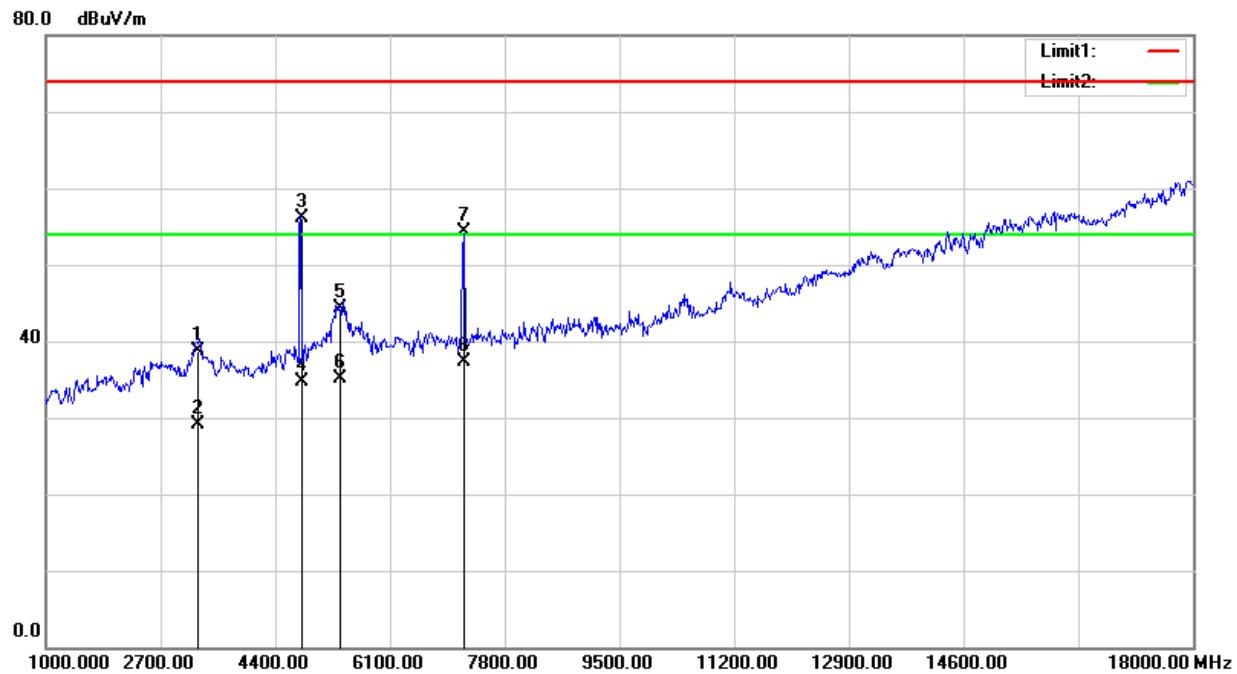
Note:

- 1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- 2) Emission Level = Reading Level + Factor
- Margin = Limit - Emission Level
- 3) The emission of peak points that did not show above the forms is mainly from the environment noise.
- 4) AVG RBW=1MHz, VBW=1 / Ton where Ton is the transmit duration.

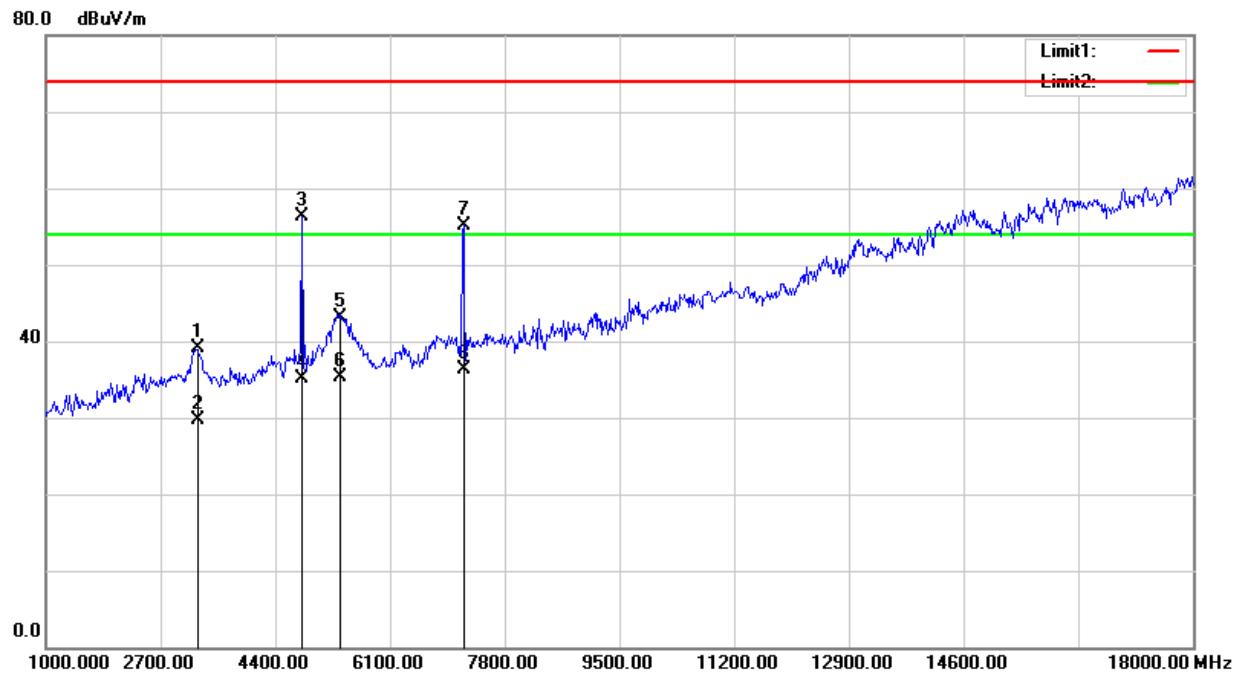
## The worst test plots

High Channel

HORIZONTAL



Vertical



## 9.5. SPURIOUS EMISSIONS 18GHz-25GHz

Frequency (MHz)	Reading level (dB $\mu$ V)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector Type	Comment
Low Channel (2402 MHz)										
19523.68	39.24	32.16	12.57	43.60	24.01	63.25	74.00	-10.75	PK	Vertical
19523.68	22.30	32.16	12.57	43.60	24.01	46.31	54.00	-7.69	AV	Vertical
19523.58	38.49	32.16	12.57	43.60	24.01	62.50	74.00	-11.50	PK	Horizontal
19523.58	22.77	32.16	12.57	43.60	24.01	46.78	54.00	-7.22	AV	Horizontal
23890.79	38.86	30.57	13.92	43.20	26.55	65.41	74.00	-8.59	PK	Vertical
23890.79	21.27	30.57	13.92	43.20	26.55	47.82	54.00	-6.18	AV	Vertical
23890.71	38.88	30.57	13.92	43.20	26.55	65.43	74.00	-8.57	PK	Horizontal
23890.71	20.87	30.57	13.92	43.20	26.55	47.42	54.00	-6.58	AV	Horizontal
Mid Channel (2440 MHz)										
19523.68	39.18	32.16	12.57	43.60	24.01	63.19	74.00	-10.81	PK	Vertical
19523.68	21.91	32.16	12.57	43.60	24.01	45.92	54.00	-8.08	AV	Vertical
19523.57	37.97	32.16	12.57	43.60	24.01	61.98	74.00	-12.02	PK	Horizontal
19523.57	22.05	32.16	12.57	43.60	24.01	46.06	54.00	-7.94	AV	Horizontal
23890.56	38.88	30.57	13.92	43.20	26.55	65.43	74.00	-8.57	PK	Vertical
23890.56	21.96	30.57	13.92	43.20	26.55	48.51	54.00	-5.49	AV	Vertical
23890.51	39.24	30.57	13.92	43.20	26.55	65.79	74.00	-8.21	PK	Horizontal
23890.51	21.63	30.57	13.92	43.20	26.55	48.18	54.00	-5.82	AV	Horizontal
High Channel (2480 MHz)										
19523.66	38.81	32.16	12.57	43.60	24.01	62.82	74.00	-11.18	PK	Vertical
19523.66	22.77	32.16	12.57	43.60	24.01	46.78	54.00	-7.22	AV	Vertical
19523.69	38.61	32.16	12.57	43.60	24.01	62.62	74.00	-11.38	PK	Horizontal
19523.69	22.41	32.16	12.57	43.60	24.01	46.42	54.00	-7.58	AV	Horizontal
23890.78	39.27	30.57	13.92	43.20	26.55	65.82	74.00	-8.18	PK	Vertical
23890.78	22.04	30.57	13.92	43.20	26.55	48.59	54.00	-5.41	AV	Vertical
23890.50	37.89	30.57	13.92	43.20	26.55	64.44	74.00	-9.56	PK	Horizontal
23890.50	21.30	30.57	13.92	43.20	26.55	47.85	54.00	-6.15	AV	Horizontal

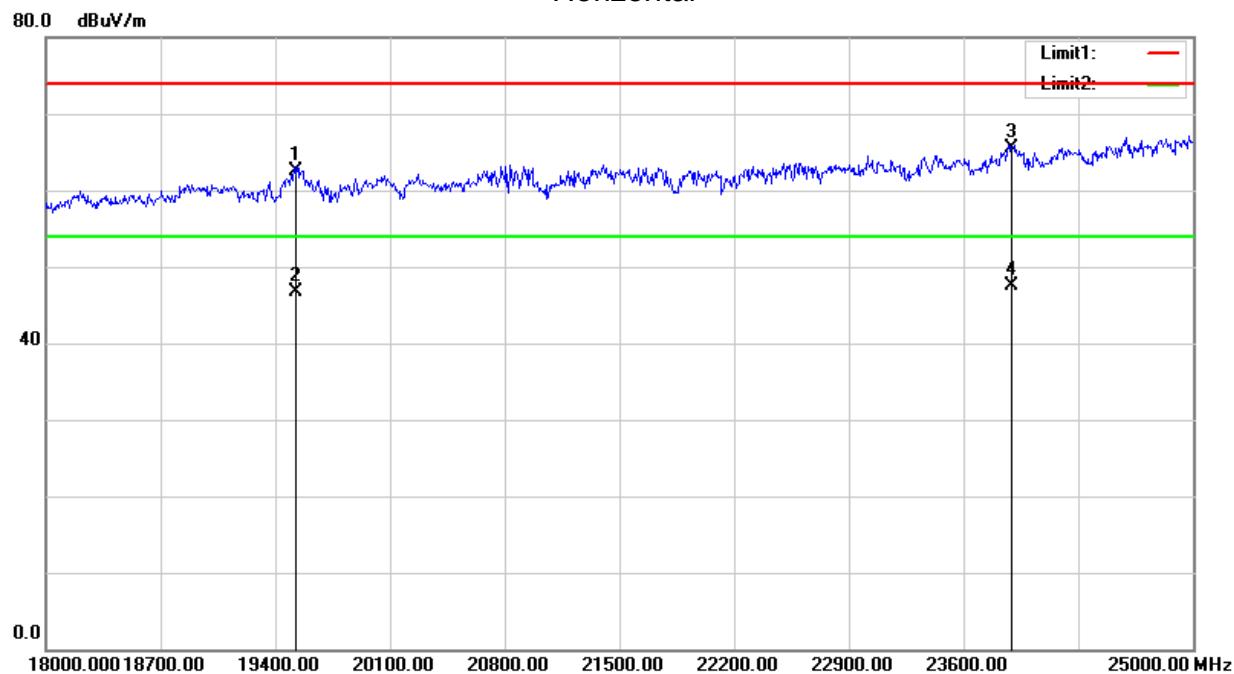
Note:

- 1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- 2) Emission Level = Reading Level + Factor  
Margin = Limit - Emission Level
- 3) The emission of peak points that did not show above the forms is mainly from the environment noise.
- 4) AVG RBW=1MHz, VBW=1 / Ton where Ton is the transmit duration.

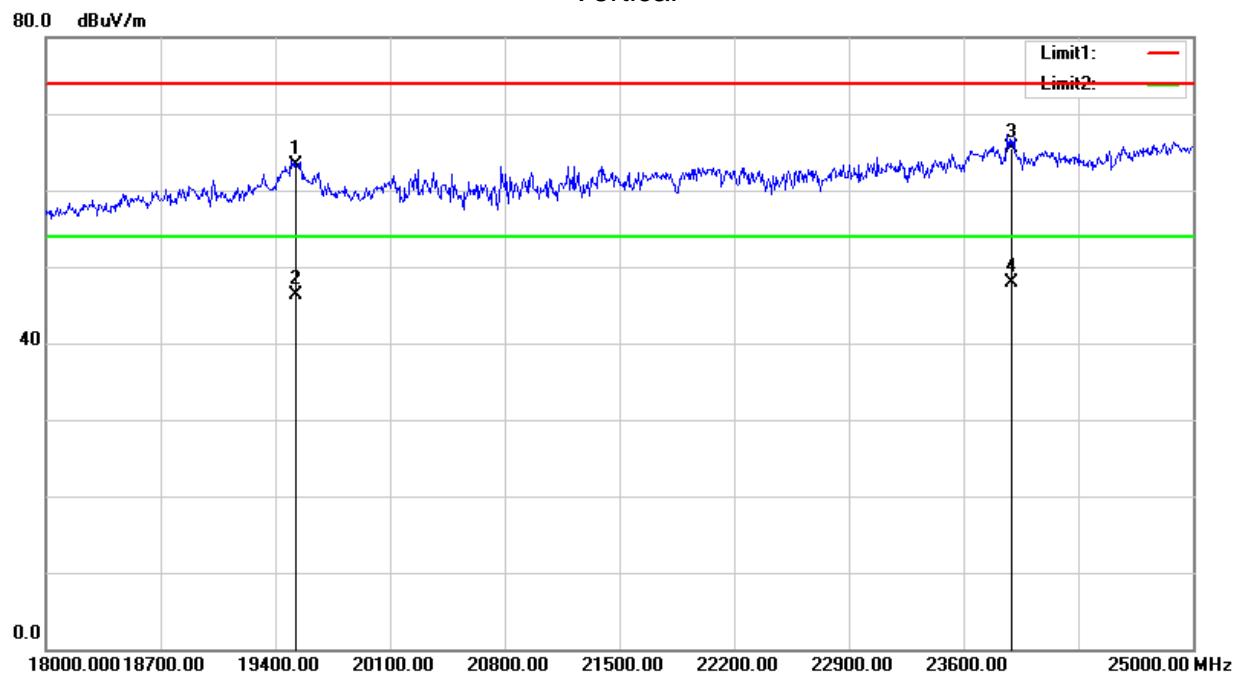
## The worst test plots

High Channel

Horizontal



Vertical

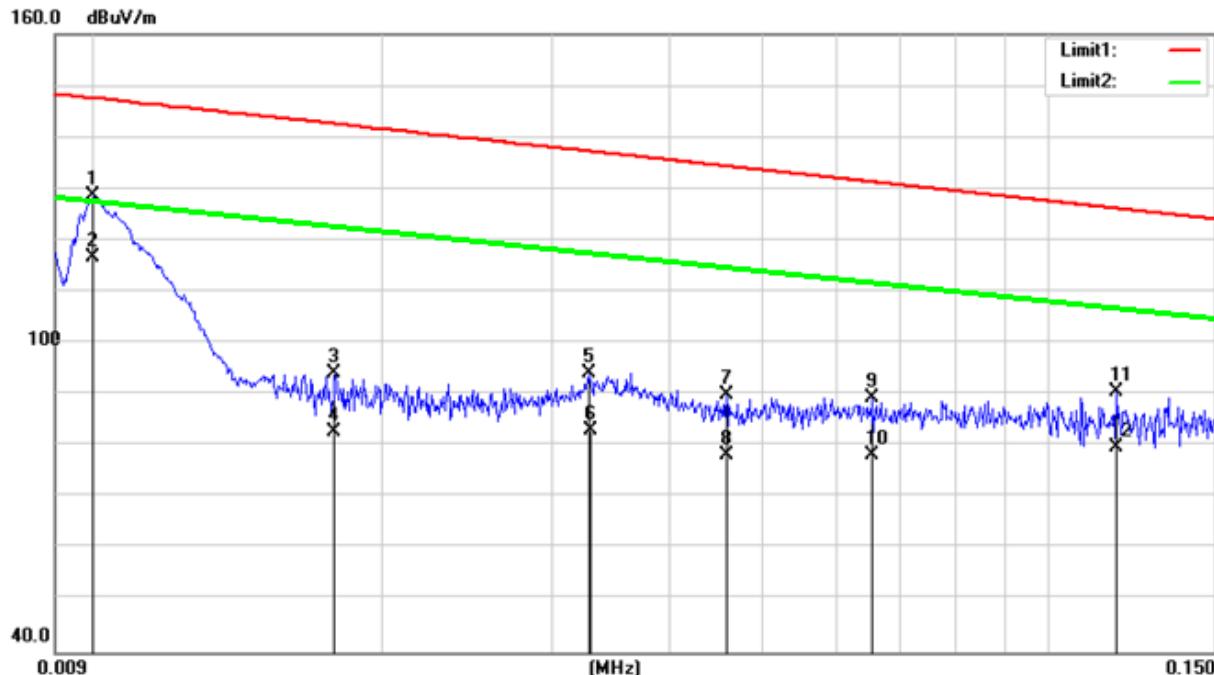


## 9.6. SPURIOUS EMISSIONS BELOW 30M

Note: All the channels had been tested, but only the worst data (channel 00) recorded in the report.

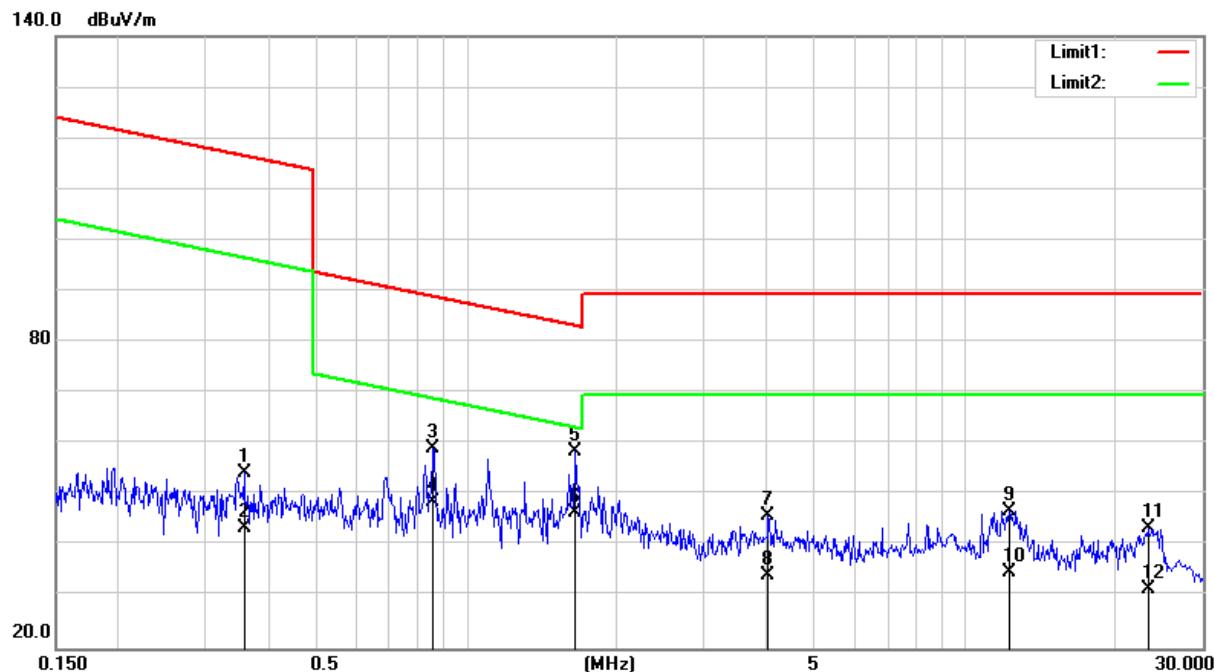
### SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

9KHz~ 150KHz



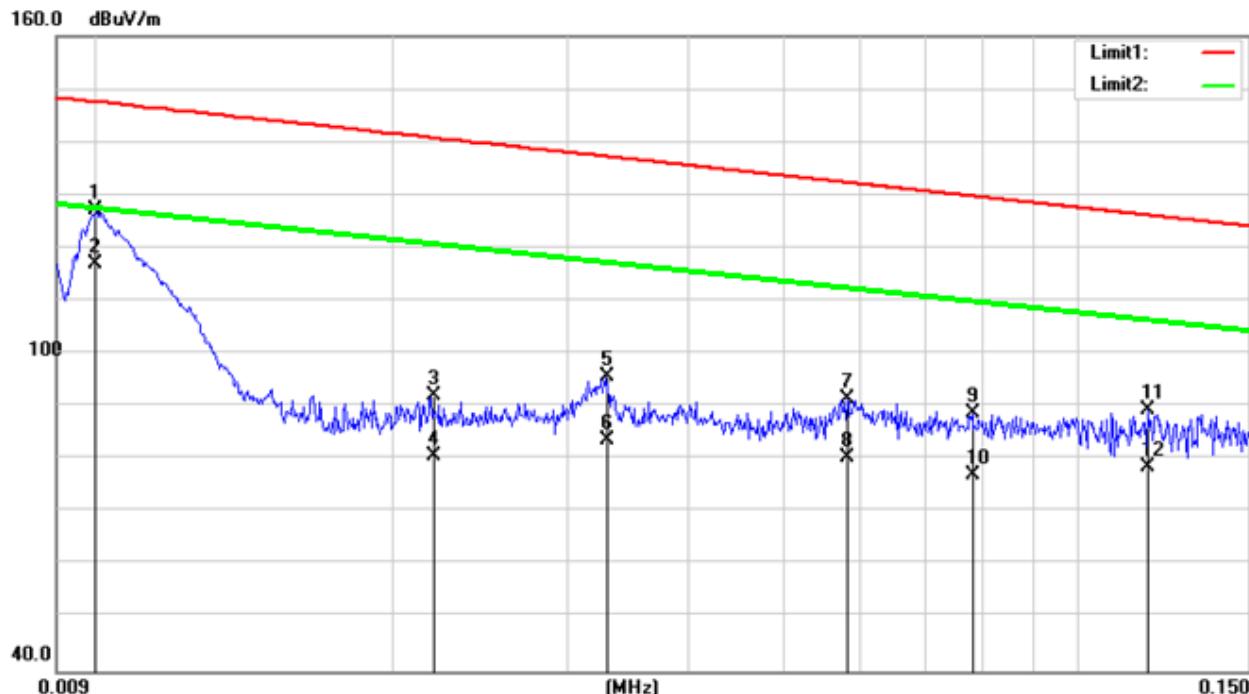
No.	Frequency (MHz)	Reading level (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	53.37	75.31	128.68	147.60	-18.92	QP
2	0.0100	41.48	75.31	116.79	127.60	-10.81	AVG
3	0.0177	21.60	72.46	94.06	142.64	-48.58	QP
4	0.0177	10.40	72.46	82.86	122.64	-39.78	AVG
5	0.0328	24.87	69.43	94.30	137.29	-42.99	QP
6	0.0330	13.51	69.40	82.91	117.23	-34.32	AVG
7	0.0460	22.63	67.20	89.83	134.35	-44.52	QP
8	0.0460	10.96	67.20	78.16	114.35	-36.19	AVG
9	0.0653	26.06	63.36	89.42	131.30	-41.88	QP
10	0.0653	14.80	63.36	78.16	111.30	-33.14	AVG
11	0.1180	34.08	56.39	90.47	126.16	-35.69	QP
12	0.1181	23.25	56.39	79.64	106.16	-26.52	AVG

Note: Measurement = Reading Level + Correction Factor.

150KHz ~ 30MHz

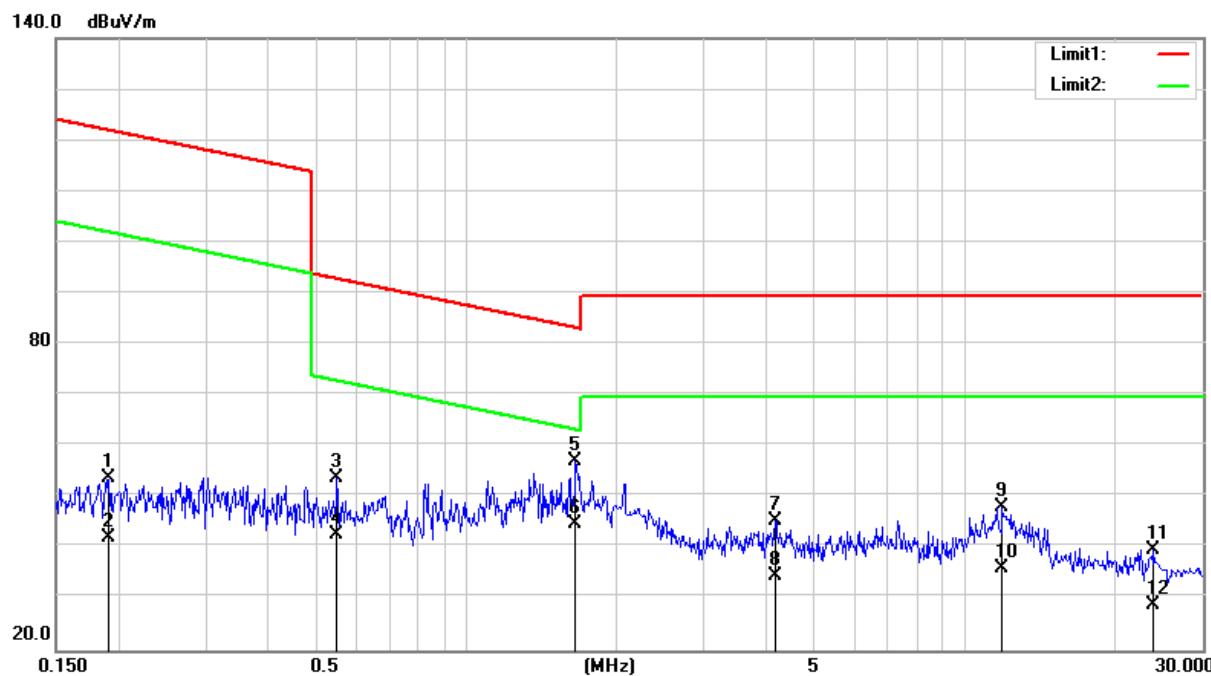
No.	Frequency (MHz)	Reading level (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.3577	31.66	22.61	54.27	116.53	-62.26	QP
2	0.3577	20.84	22.61	43.45	96.53	-53.08	AVG
3	0.8570	37.29	21.86	59.15	88.94	-29.79	QP
4	0.8570	26.81	21.86	48.67	68.94	-20.27	AVG
5	1.6532	36.94	21.50	58.44	83.24	-24.80	QP
6	1.6532	25.09	21.50	46.59	63.24	-16.65	AVG
7	4.0274	25.31	20.55	45.86	89.54	-43.68	QP
8	4.0274	13.61	20.55	34.16	69.54	-35.38	AVG
9	12.2530	29.76	17.23	46.99	89.54	-42.55	QP
10	12.2530	17.75	17.23	34.98	69.54	-34.56	AVG
11	23.2633	25.55	18.12	43.67	89.54	-45.87	QP
12	23.2633	13.34	18.12	31.46	69.54	-38.08	AVG

Note: Measurement = Reading Level + Correction Factor.

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)9KHz~ 150KHz

No.	Frequency (MHz)	Reading level (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	51.87	75.31	127.18	147.60	-20.42	QP
2	0.0100	41.58	75.31	116.89	127.60	-10.71	AVG
3	0.0218	20.60	71.30	91.90	140.83	-48.93	QP
4	0.0218	9.39	71.30	80.69	120.83	-40.14	AVG
5	0.0330	26.40	69.40	95.80	137.23	-41.43	QP
6	0.0330	14.35	69.40	83.75	117.23	-33.48	AVG
7	0.0581	26.48	64.85	91.33	132.32	-40.99	QP
8	0.0581	15.50	64.85	80.35	112.32	-31.97	AVG
9	0.0781	27.95	60.71	88.66	129.75	-41.09	QP
10	0.0781	16.26	60.71	76.97	109.75	-32.78	AVG
11	0.1181	33.08	56.39	89.47	126.16	-36.69	QP
12	0.1181	22.23	56.39	78.62	106.16	-27.54	AVG

Note: Measurement = Reading Level + Correction Factor.

150KHz ~ 30MHz

No.	Frequency (MHz)	Reading level (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1912	31.32	22.28	53.60	121.97	-68.37	QP
2	0.1912	19.67	22.28	41.95	101.97	-60.02	AVG
3	0.5493	31.84	21.82	53.66	92.81	-39.15	QP
4	0.5493	20.87	21.82	42.69	72.81	-30.12	AVG
5	1.6532	35.49	21.50	56.99	83.24	-26.25	QP
6	1.6532	23.21	21.50	44.71	63.24	-18.53	AVG
7	4.1573	24.92	20.46	45.38	89.54	-44.16	QP
8	4.1573	14.22	20.46	34.68	69.54	-34.86	AVG
9	11.8696	30.89	17.11	48.00	89.54	-41.54	QP
10	11.8696	19.05	17.11	36.16	69.54	-33.38	AVG
11	23.8872	21.92	17.84	39.76	89.54	-49.78	QP
12	23.8872	11.09	17.84	28.93	69.54	-40.61	AVG

Note: Measurement = Reading Level + Correction Factor.

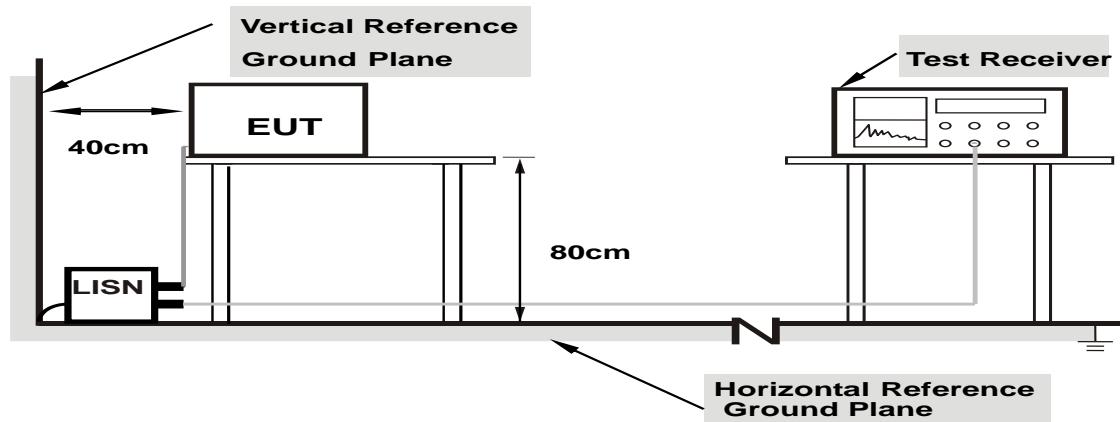
## 10. AC POWER LINE CONDUCTED EMISSIONS

### 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



**Note:**

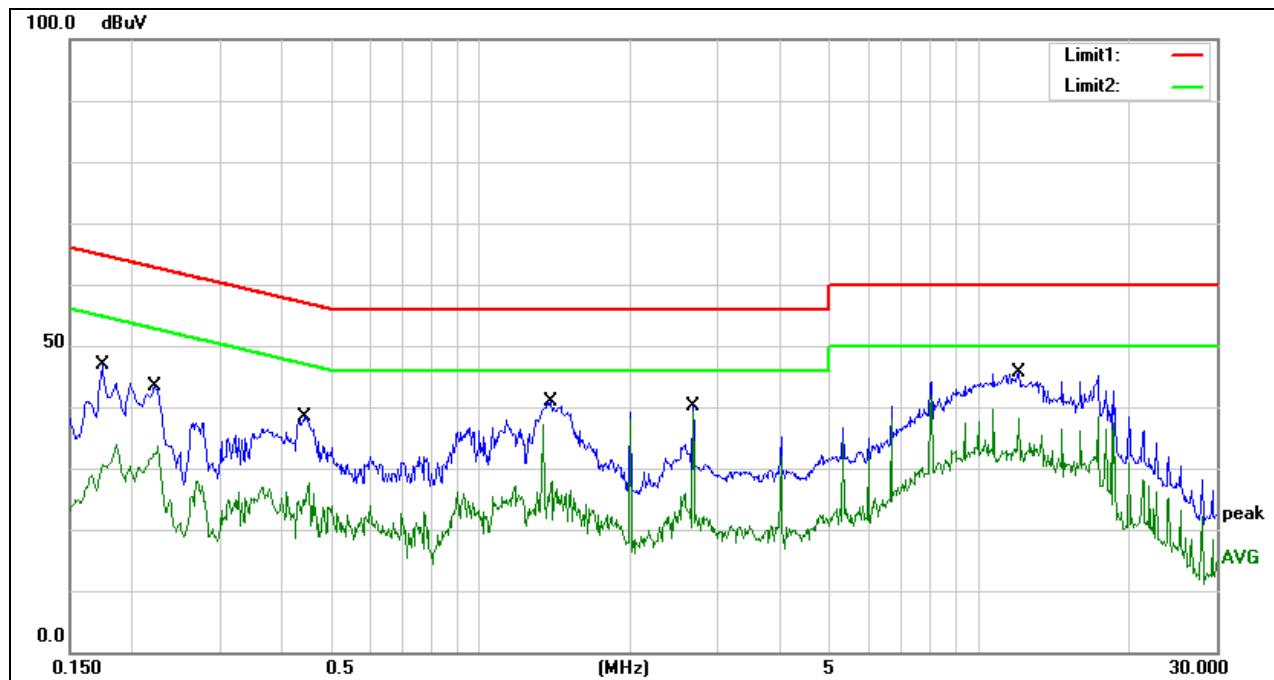
1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

The EUT is put on a table of non-conducting material that is 80cm 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 a Artificial Mains Network (A.M.N.). A 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 7 and 13 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.

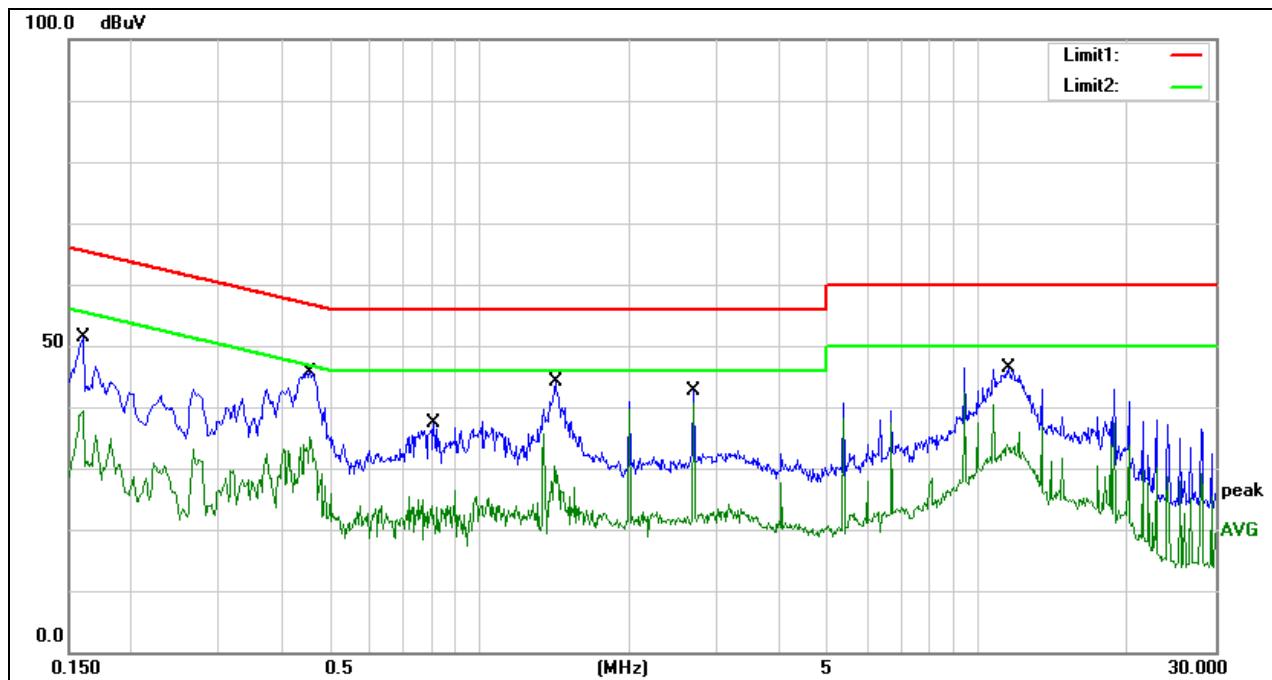
### TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz
Test mode	BLE channel 00 (worst mode)		

LINE N RESULTS

No.	Frequency (MHz)	Reading level (dBuV)	Correcti on dB	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1740	37.06	9.81	46.87	64.77	-17.90	QP
2	0.1740	20.64	9.81	30.45	54.77	-24.32	AVG
3	0.2220	33.50	9.96	43.46	62.74	-19.28	QP
4	0.2220	22.54	9.96	32.50	52.74	-20.24	AVG
5	0.4460	28.42	10.02	38.44	56.95	-18.51	QP
6	0.4460	17.01	10.02	27.03	46.95	-19.92	AVG
7	1.3820	31.08	9.83	40.91	56.00	-15.09	QP
8	1.3820	11.71	9.83	21.54	46.00	-24.46	AVG
9	2.6740	30.33	9.90	40.23	56.00	-15.77	QP
10	2.6740	11.14	9.90	21.04	46.00	-24.96	AVG
11	12.0300	35.75	9.98	45.73	60.00	-14.27	QP
12	12.0300	28.03	9.98	38.01	50.00	-11.99	AVG

Note: 1. Result = Reading Level + Correction 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.

LINE L RESULTS

No.	Frequency (MHz)	Reading level (dBuV)	Correcti on dB	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1607	41.62	9.79	51.41	65.43	-14.02	QP
2	0.1607	21.42	9.79	31.21	55.43	-24.22	AVG
3	0.4580	35.67	10.03	45.70	56.73	-11.03	QP
4	0.4580	24.32	10.03	34.35	46.73	-12.38	AVG
5	0.8100	27.64	9.83	37.47	56.00	-18.53	QP
6	0.8100	9.54	9.83	19.37	46.00	-26.63	AVG
7	1.4220	34.28	9.79	44.07	56.00	-11.93	QP
8	1.4220	19.72	9.79	29.51	46.00	-16.49	AVG
9	2.6900	32.72	9.80	42.52	56.00	-13.48	QP
10	2.6900	12.59	9.80	22.39	46.00	-23.61	AVG
11	11.5340	36.08	10.22	46.30	60.00	-13.70	QP
12	11.5340	22.52	10.22	32.74	50.00	-17.26	AVG

Note: 1. Result = Reading Level + Correction 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.

## 11. ANTENNA REQUIREMENTS

### APPLICABLE REQUIREMENTS

Please refer to FCC §15.203

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

### ANTENNA CONNECTOR

EUT has a PIFA Antenna without antenna connector.

### ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.



## Test photos

**Radiated Test Setup**  
/  
**Conducted Test Setup**  
/

Refer to Appendix to Report No. 4788499014-3-A1

**END OF REPORT**