



CFR 47 FCC PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

Personal Computer

MODEL NUMBER: Tiburn NCC-1701-A

FCC ID: 2AR77TIBURNNCC1701A

REPORT NUMBER:4788636465-8

ISSUE DATE: December 21, 2018

Prepared for

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606, 6 / f, Building 10, No. 44, Beisanhuan middle road, Haidian district, Beijing**

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	12/21/2018	Initial Issue	

Summary of Test Results			
Clause	Test Items	IC Rules	Test Results
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2)	Pass
2	Peak Conducted Output Power	FCC Part 15.247 (b) (3)	Pass
3	Power Spectral Density	FCC Part 15.247 (e)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d)	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205	Pass
6	Conducted Emission Test For AC Power Port	FCC Part 15.207	Pass
7	Antenna Requirement	FCC Part 15.203	Pass

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Tiburn Technology Co., Ltd.
Address: 606, 6 / f, Building 10, No. 44, Beisanhuan middle road, Haidian district, Beijing

Manufacturer Information

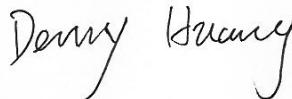
Company Name: Tiburn Technology Co., Ltd.
Address: 606, 6 / f, Building 10, No. 44, Beisanhuan middle road, Haidian district, Beijing

EUT Description

EUT Name: Personal Computer
Model: Tiburn NCC-1701-A
Brand Name: Tiburn
Series Model: Please refer to clause 5.1 the description of EUT
Sample Received Date: December 2, 2018
Sample ID: 12467549
Sample Status: Normal
Date of Tested: December 10, 2018 ~ December 20, 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 FCC PART 15 SUBPART C	PASS

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 DTS Meas Guidance v05, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p>A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p>IC(Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320.</p> <p>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.</p> <p>Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011</p>
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Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2 : For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. These measurements below 30MHz had been correlated to measurements performed on an OATS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty
Conduction emission	3.62dB
Radiation Emission test(include Fundamental emission) (9kHz-30MHz)	2.2dB
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.78dB (1GHz-18Gz) 5.23dB (18GHz-26Gz)

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Personal Computer		
Model	Tiburn NCC-1701-A		
Series Model	Tiburn NCC-1701-A*, 1000* (Where * maybe any alphanumeric character, symbol or blank of 0~7 digits, for marketing purpose.)		
Model Difference	All the same except for the model name.		
Product Description	Operation Frequency	2402 MHz ~ 2480 MHz	
	Modulation Type	Data Rate	
	GFSK	1Mbps	
Rated Input	AC 100~240V, 50~60Hz		

5.2. MAXIMUM OUTPUT POWER

Bluetooth Mode	Frequency (MHz)	Channel Number	Max Output Power (dBm)	EIRP (dBm)
BLE	2402-2480	0-39[40]	0.37	2.47

5.3. CHANNEL LIST

Channel	Frequency (MHz)						
0	2402	11	2424	22	2446	33	2468
1	2404	12	2426	23	2448	34	2470
2	2406	13	2428	24	2450	35	2472
3	2408	14	2430	25	2452	36	2474
4	2410	15	2432	26	2454	37	2476
5	2412	16	2434	27	2456	38	2478
6	2414	17	2436	28	2458	39	2480
7	2416	18	2438	29	2460		
8	2418	19	2440	30	2462		
9	2420	20	2442	31	2464		
10	2422	21	2444	32	2468		

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	CH 0, 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				
Test Software		FCCAssist		
Modulation Type	Transmit Antenna Number	Test Channel		
		CH 00	CH 39	CH 78
GFSK	1	Default	Default	Default

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2402-2480	PCB Antenna	2.10

Test Mode	Transmit and Receive Mode	Description
GFSK	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. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	50 ~ 60%	
Atmospheric Pressure:	1025Pa	
Temperature	TN	23 ~ 28 °C
Voltage :	VL	/
	VN	AC 120V 60Hz
	VH	/

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperature

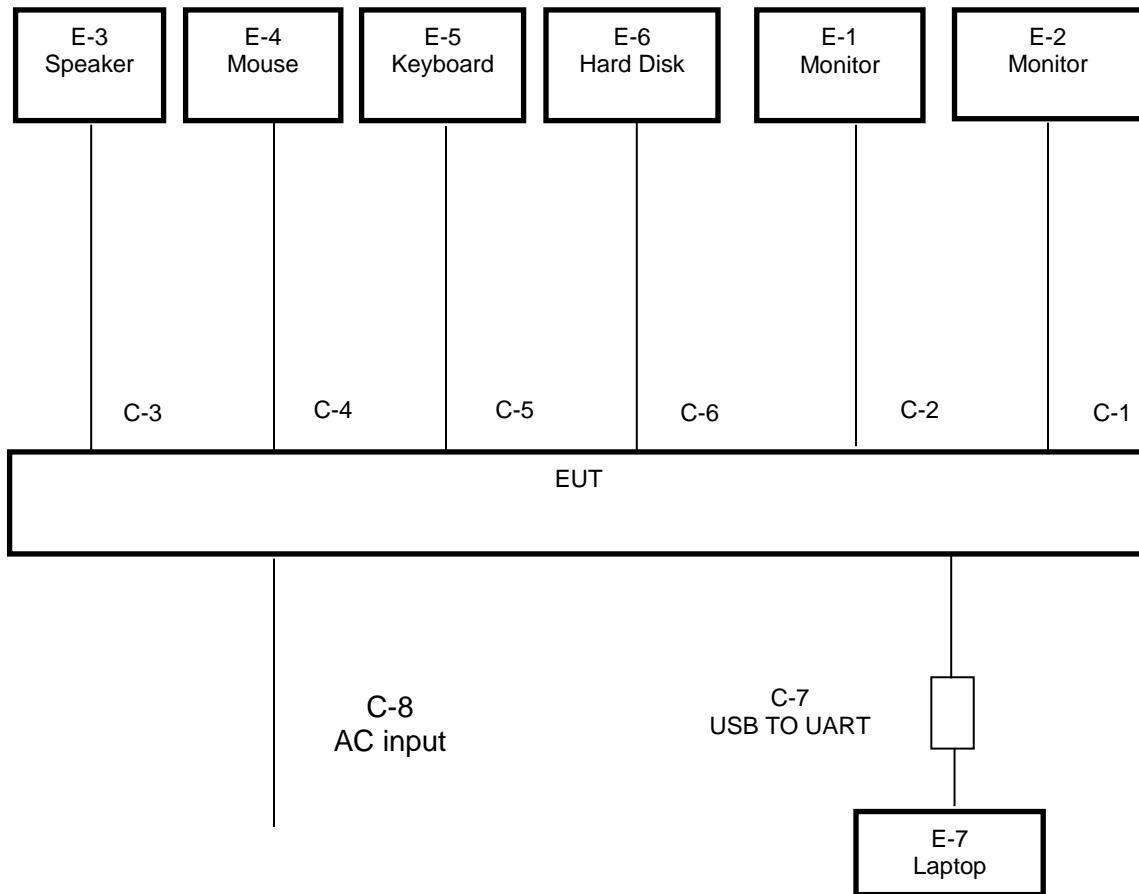
5.9. DESCRIPTION OF TEST SETUP

ACCESSORY

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

TEST SETUP

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



SUPPORT EQUIPMENT

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Specification	Series No.
E-1	Monitor	Dell	P2715Q	27 inch	CN-040FHF-WS200-79C-390L
E-2	Monitor	LENOVO	T2324pA	23 inch	V1A28857
E-3	Speaker	behringer	MS20	/	S1600511274
E-4	Mouse	Lenovo	MO28UOB	USB port	8SSM50G45918FCCC1545
E-5	Keyboard	Lenovo	LXH-JME2209U	USB port	60804634
E-6	Hard Disk	G DRIVE	GDMUC10001BHB	1TB	D322AXXM
E-7	Laptop	ThinkPad	T460S	/	SL10K24796 JS

I/O CABLES

The following cables were used to form a representative test configuration during the tests.

Item	Type of cable	Shielded Type	Ferrite Core	Specification
C-1	HDMI cable	YES	NO	1.5m
C-2	DP cable	YES	NO	1.5m
C-3	Optical Cable	YES	NO	1.2m
C-4	USB cable	YES	NO	0.5m
C-5	USB cable	YES	NO	1.5m
C-6	Type-C cable	YES	NO	0.5m
C-7	USB TO UART cable	NO	NO	0.5m
C-8	AC Input cable	YES	YES	1.5m



5.10. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions													
Instrument													
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.						
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR3	101961	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Two-Line V-Network	R&S	ENV216	101983	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
Software													
Used	Description		Manufacturer	Name		Version							
<input checked="" type="checkbox"/>	Test Software for Conducted disturbance		Farad	EZ-EMC		Ver. UL-3A1							
Radiated Emissions													
Instrument													
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.						
<input checked="" type="checkbox"/>	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	/	Jan.09, 2016	Jan.09, 2019						
<input checked="" type="checkbox"/>	Preamplifier	HP	8447D	2944A09099	Feb. 13, 2017	Dec.12, 2017	Dec.11, 2018						
<input checked="" type="checkbox"/>	EMI Measurement Receiver	R&S	ESR26	101377	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Horn Antenna	TDK	HRN-0118	130939	Jan. 09, 2016	Jan. 09, 2016	Jan. 09, 2019						
<input checked="" type="checkbox"/>	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Jan.06, 2016	Jan.06, 2016	Jan.06, 2019						
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Loop antenna	Schwarzbeck	1519B	00008	/	Mar. 26, 2016	Mar. 26, 2019						
Software													
Used	Description		Manufacturer	Name		Version							
<input checked="" type="checkbox"/>	Test Software for Radiated disturbance		Farad	EZ-EMC		Ver. UL-3A1							
Other instruments													
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Last Cal.	Last Cal.	Next Cal.						
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Power Meter	Keysight	N9031A	MY55416024	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Power Sensor	Keysight	N9323A	MY55440013	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						
<input checked="" type="checkbox"/>	High Pass Filter	Wi	WHXK10-2700-3000-18000-40SS	23	Dec.12, 2017	Dec.10, 2018	Dec.10, 2019						

6. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6 dB Bandwidth	KDB 558074 D01 DTS Meas Guidance v05	8.2
2	Peak Output Power	KDB 558074 D01 DTS Meas Guidance v05	8.3.1.3
3	Power Spectral Density	KDB 558074 D01 DTS Meas Guidance v05	8.4
4	Out-of-band emissions in non-restricted bands	KDB 558074 D01 DTS Meas Guidance v05	8.5
5	Out-of-band emissions in restricted bands	KDB 558074 D01 DTS Meas Guidance v05	8.6
6	Band-edge	KDB 558074 D01 DTS Meas Guidance v05	8.7
7	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	6.2

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

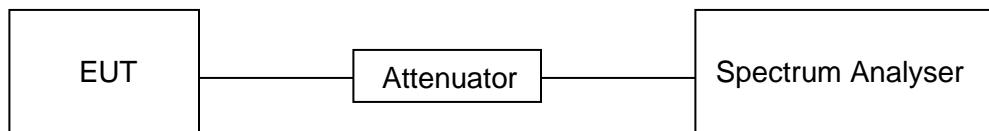
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (KHz)	Final setting For VBW (KHz)
BLE	2.162	2.501	0.864	86.4	0.63	0.46	0.5

Note:

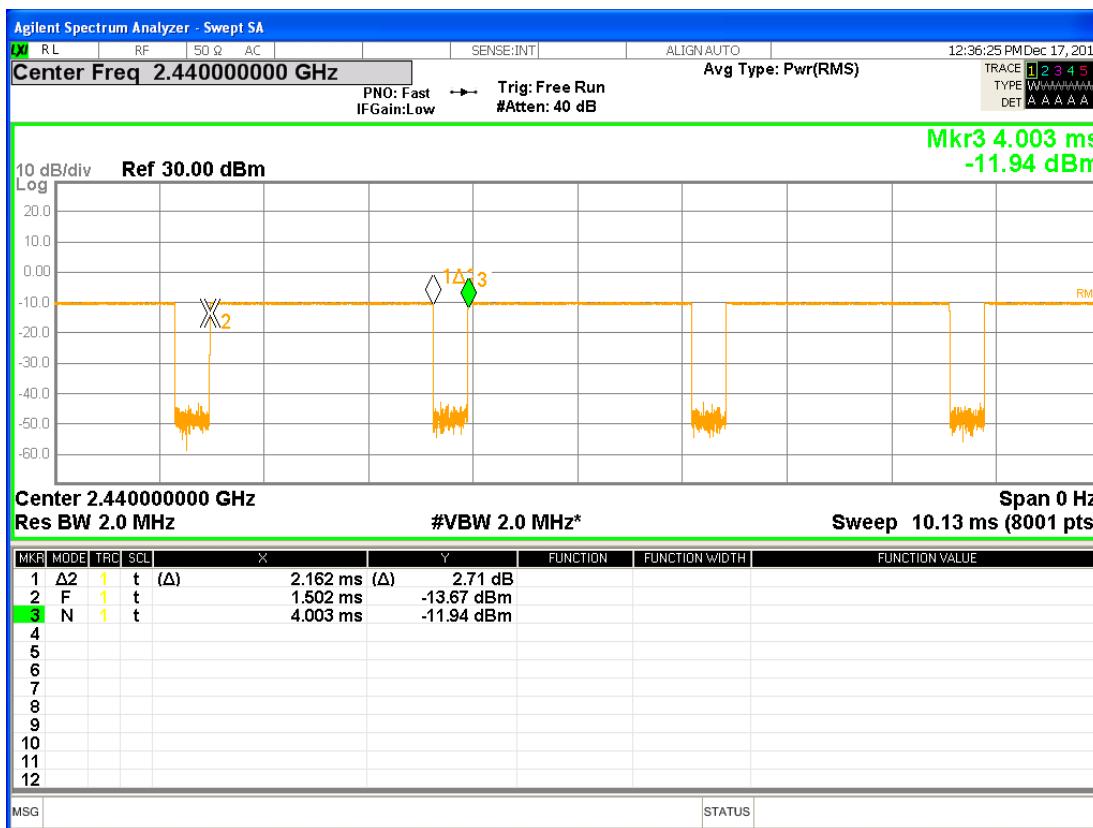
Duty Cycle Correction Factor=10log(1/x).

Where: x is Duty Cycle(Linear)

Where: T is On Time (transmit duration)

If that calculated VBW is not available on the analyzer then the next higher value should be used.

ON TIME AND DUTY CYCLE MID CH



7.2. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH

LIMITS

CFR 47FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2)	6dB Bandwidth	$\geq 500\text{KHz}$	2400-2483.5

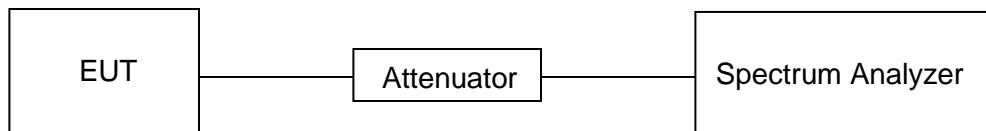
TEST PROCEDURE

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

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth :100K For 99% Occupied Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : $\geq 3 \times \text{RBW}$ For 99% Occupied Bandwidth : approximately $3 \times \text{RBW}$
Trace	Max hold
Sweep	Auto couple

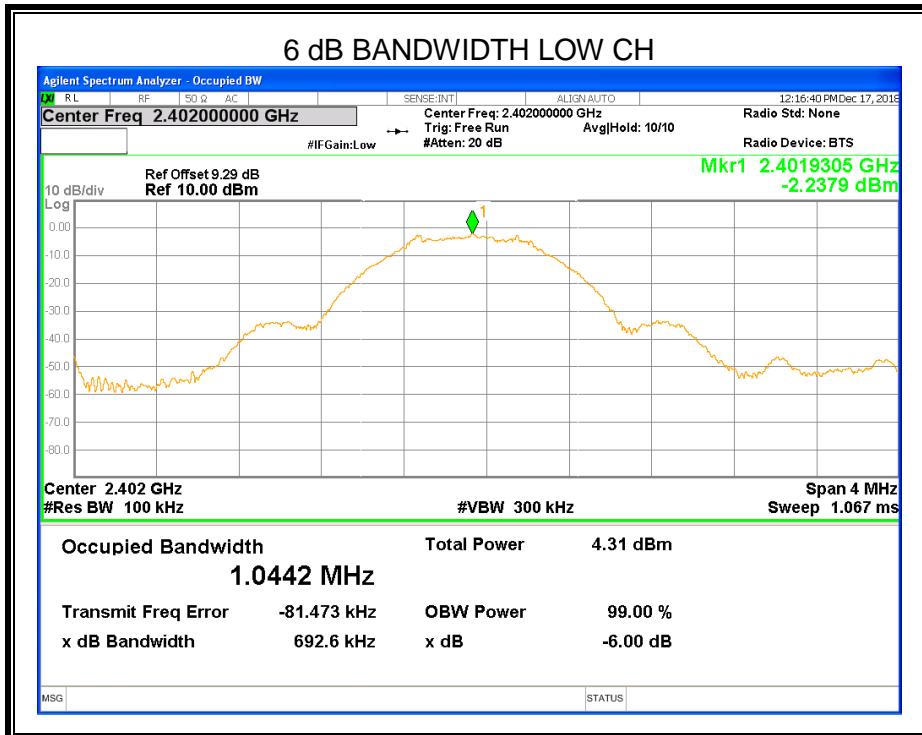
Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB/99% relative to the maximum level measured in the fundamental emission.

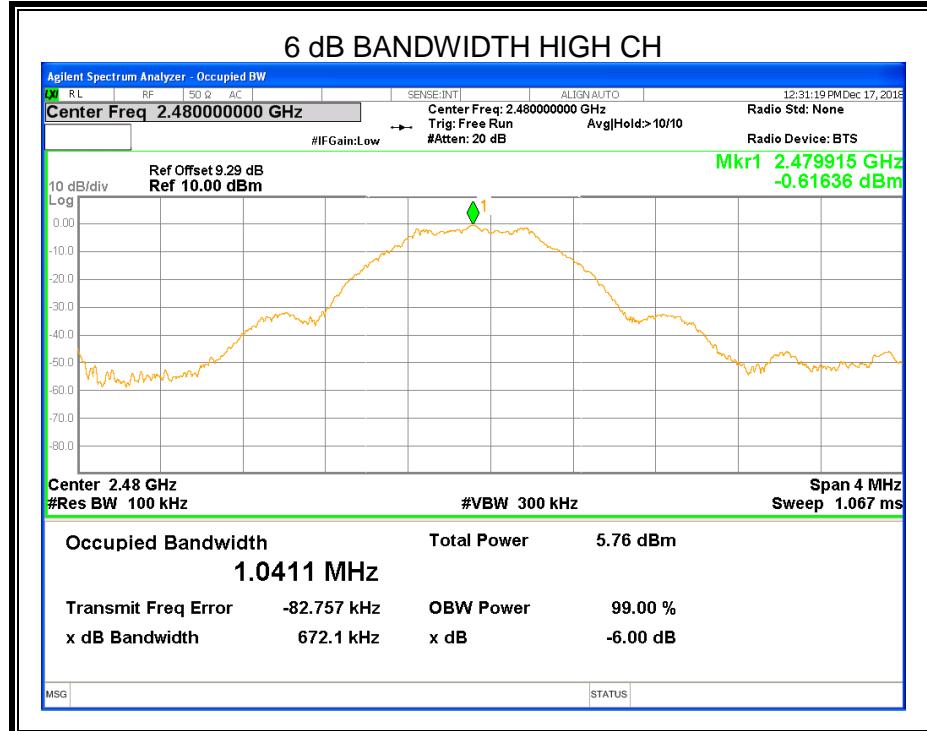
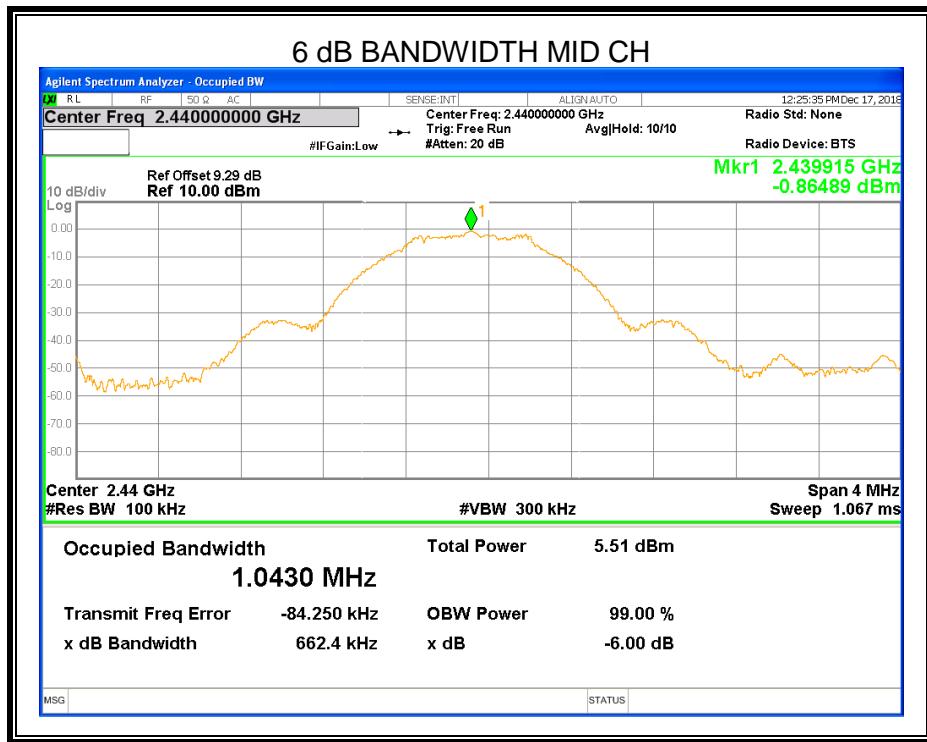
TEST SETUP

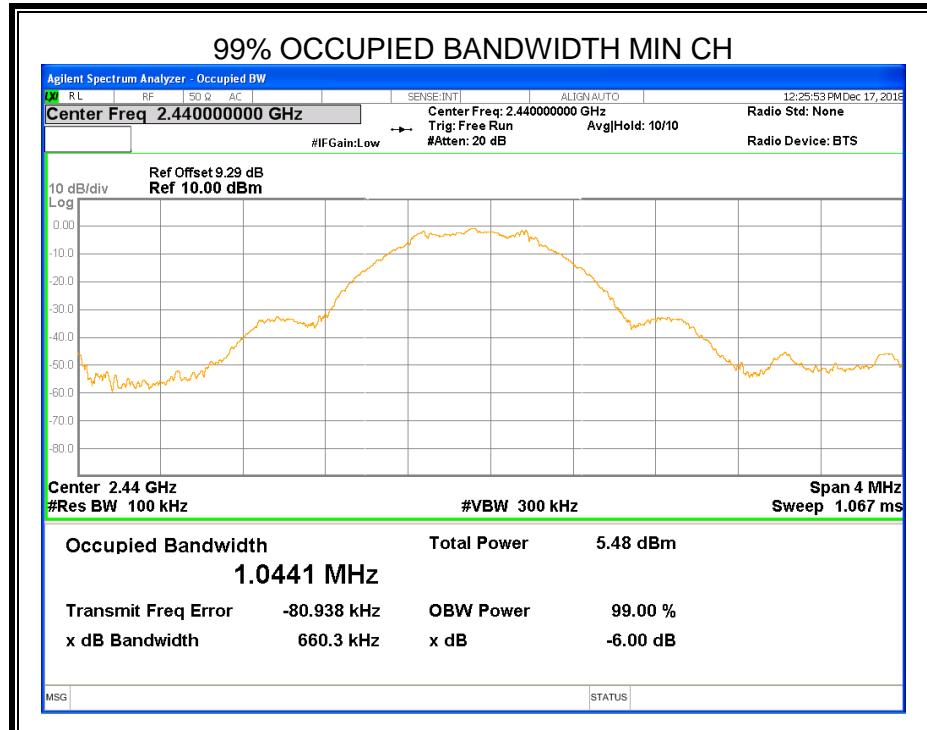
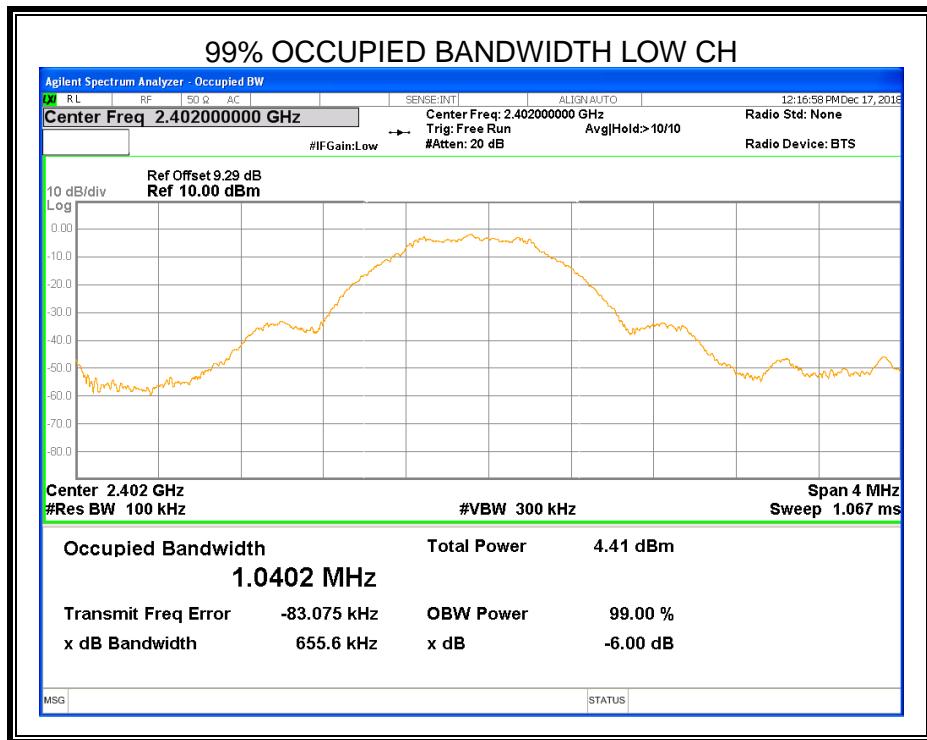


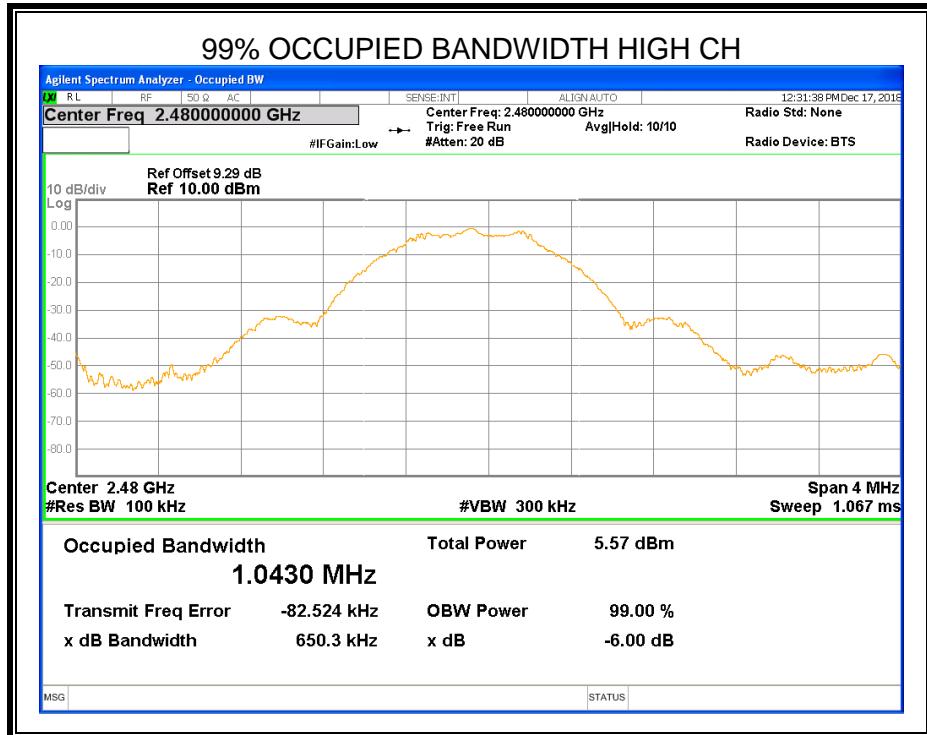
RESULTS

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	0.693	1.0402	500	Pass
Middle	0.662	1.0441	500	Pass
High	0.672	1.0430	500	Pass









7.3. PEAK CONDUCTED OUTPUT POWER

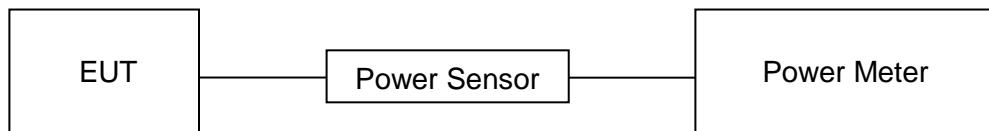
LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3)	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



RESULTS

Test Channel	Maximum Conducted Output Power(PK)	EIRP	LIMIT
	(dBm)	(dBm)	dBm
Low	-0.90	1.20	30
Middle	0.17	2.27	30
High	0.37	2.47	30

7.4. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

TEST PROCEDURE

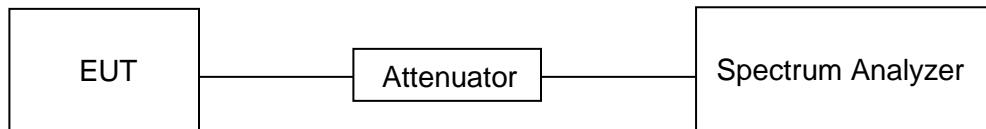
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center 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.

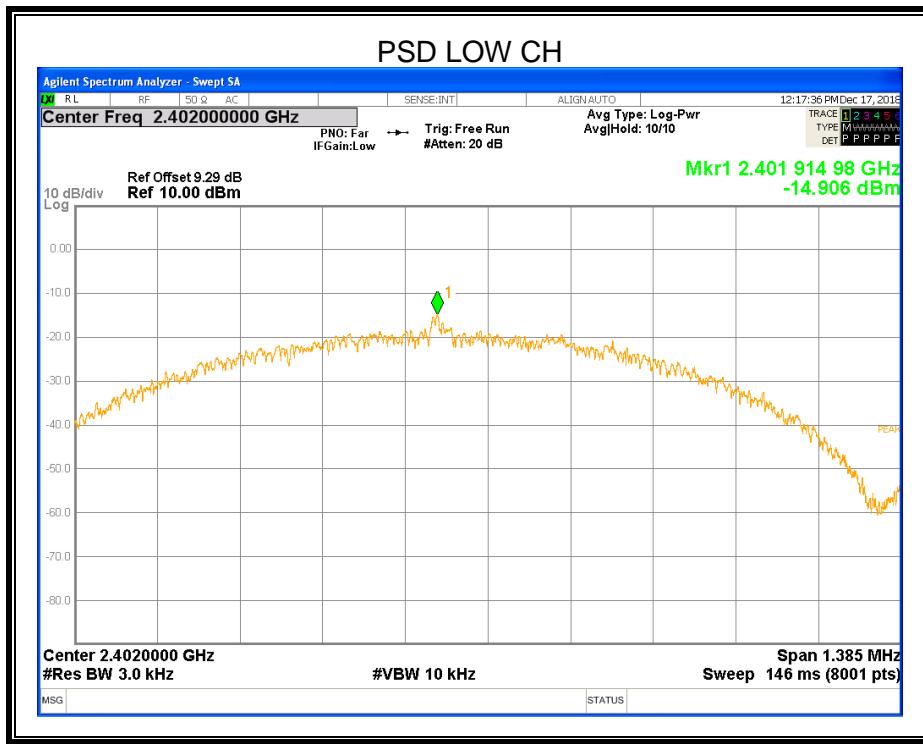
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

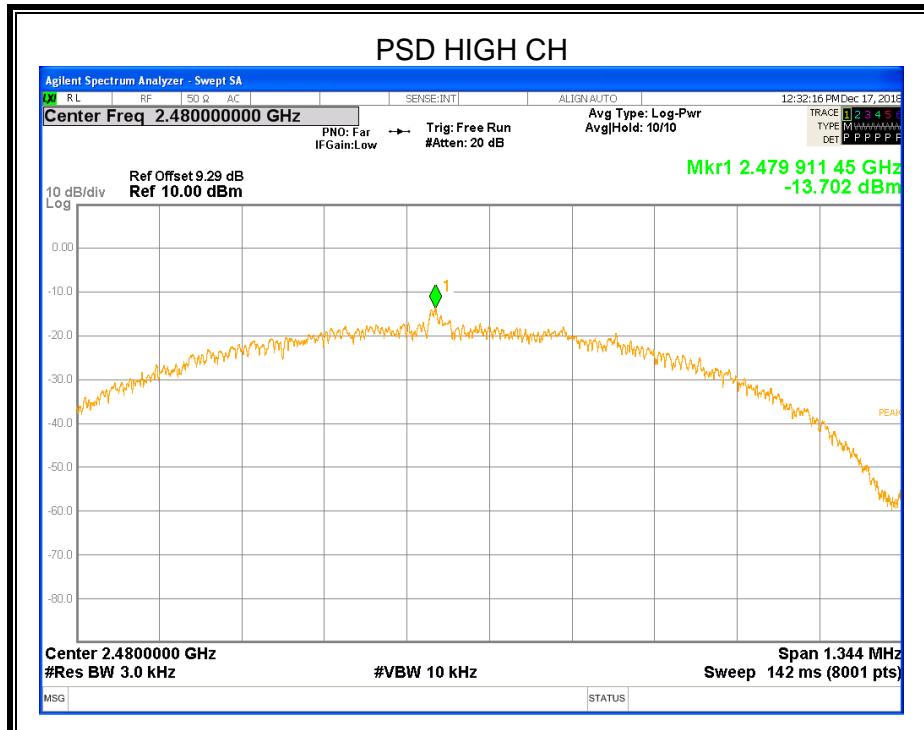
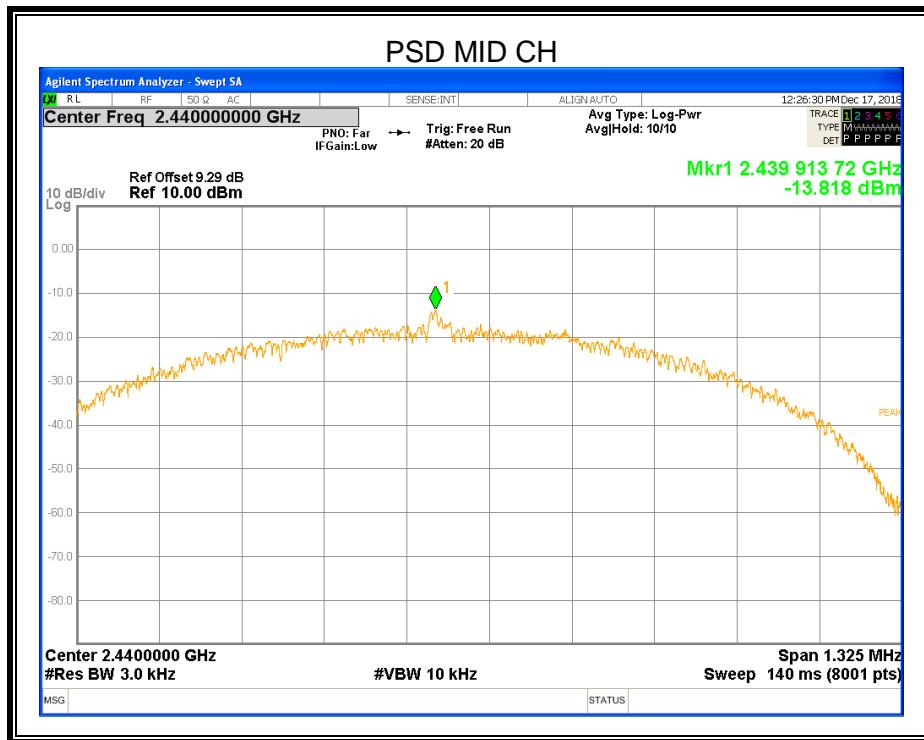
TEST SETUP



RESULTS

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-14.906	8	PASS
Middle	-13.818	8	PASS
High	-13.702	8	PASS





7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d)	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

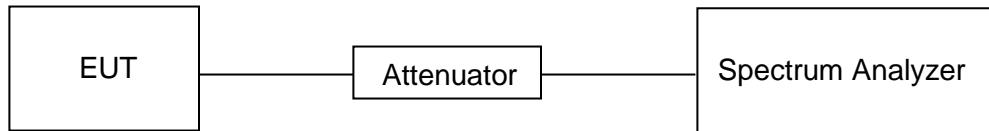
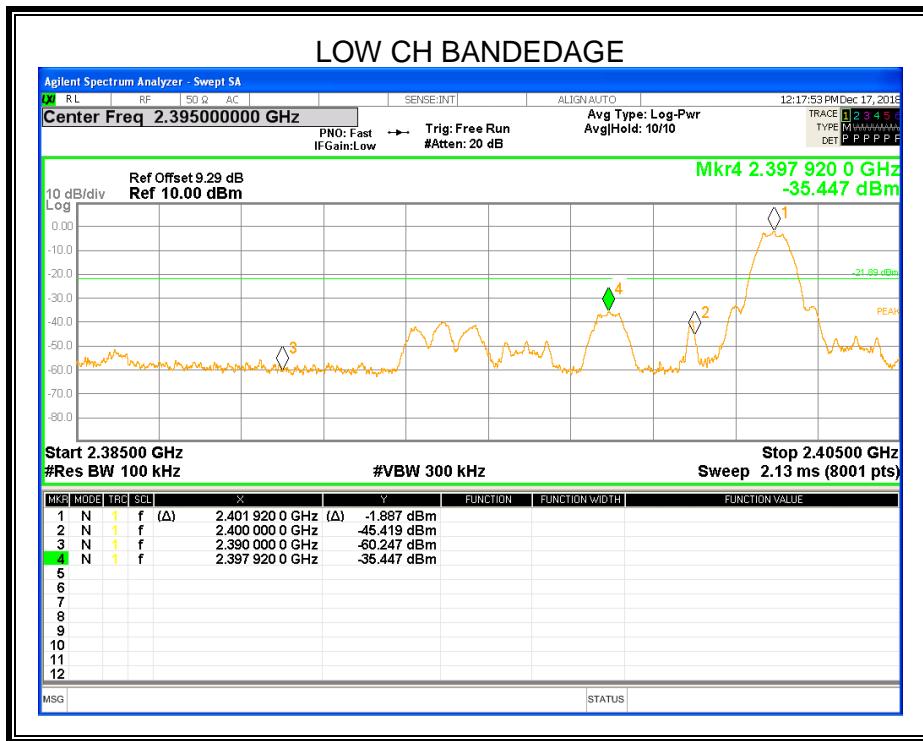
Connect the UUT to the spectrum analyser and use the following settings:

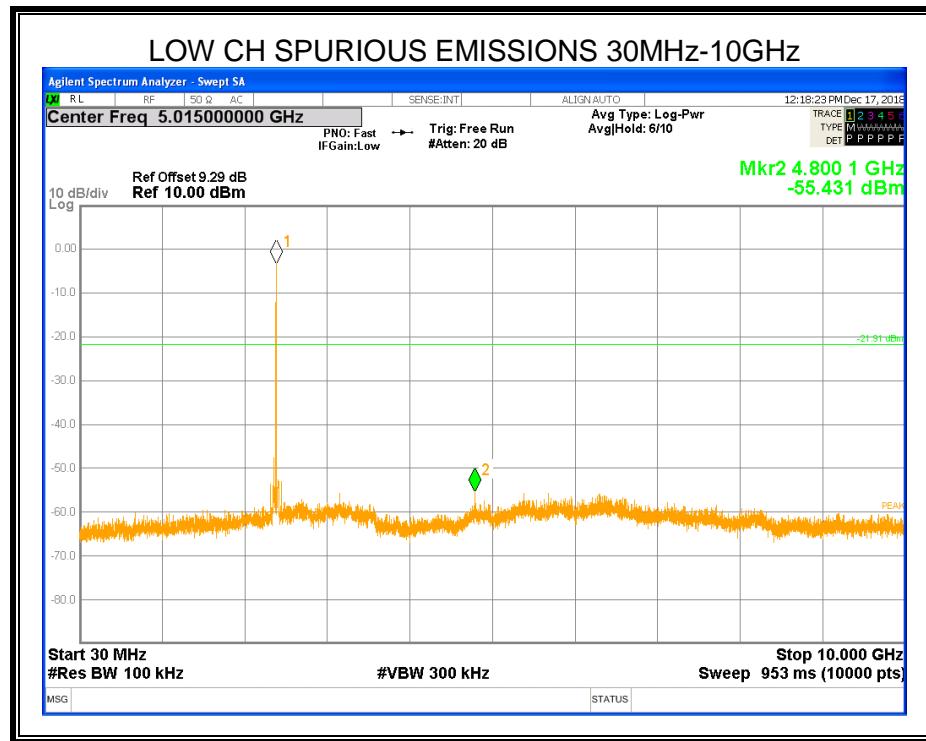
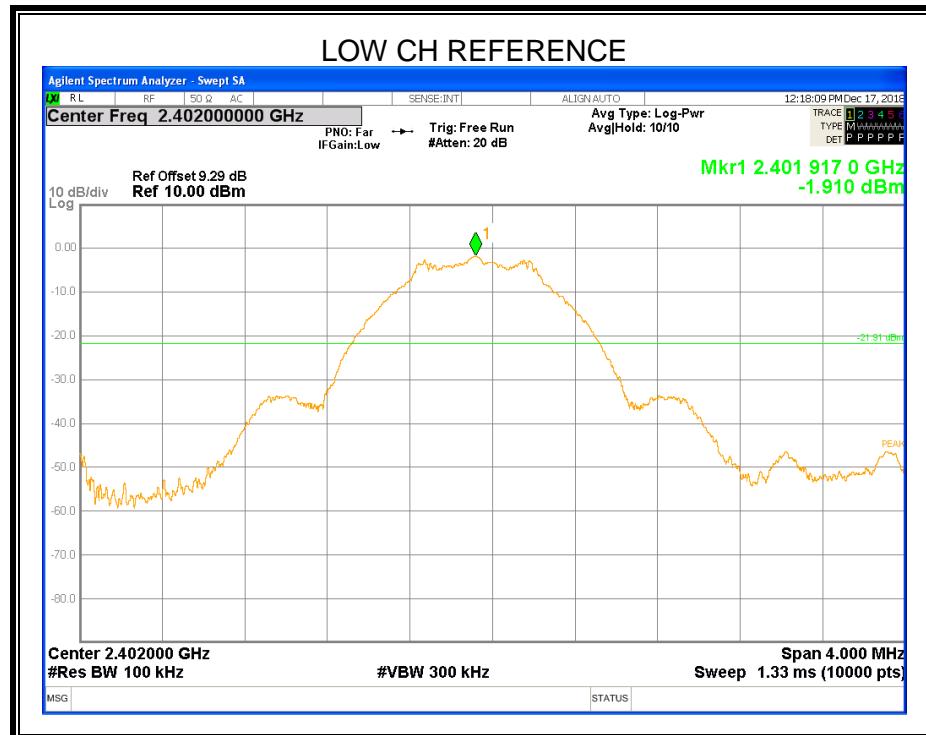
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100KHz
VBW	$\geq 3 \times$ RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

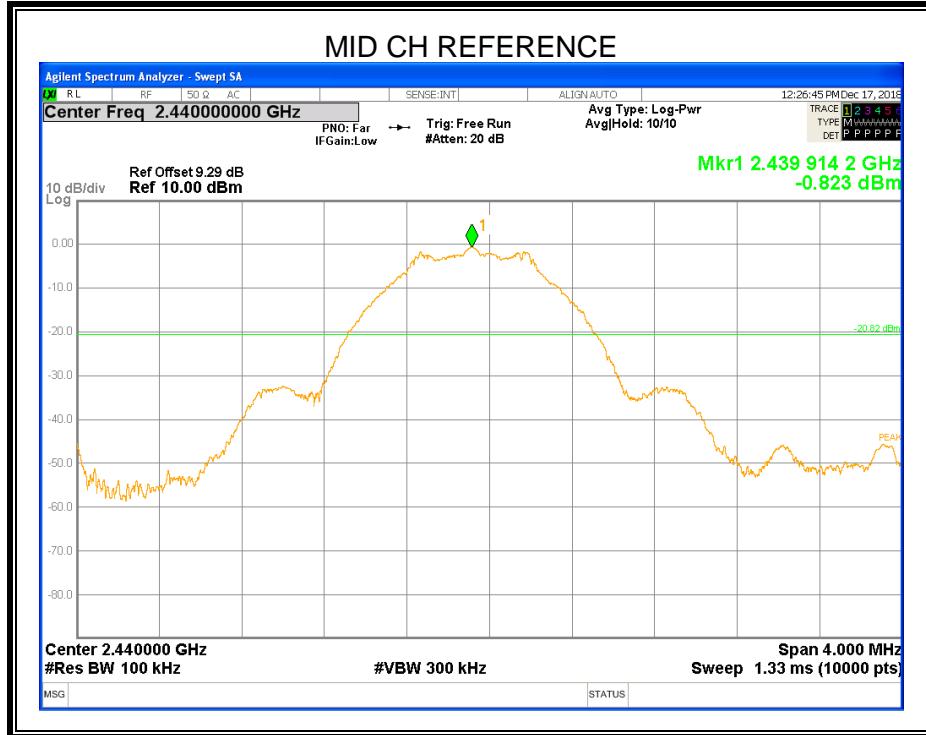
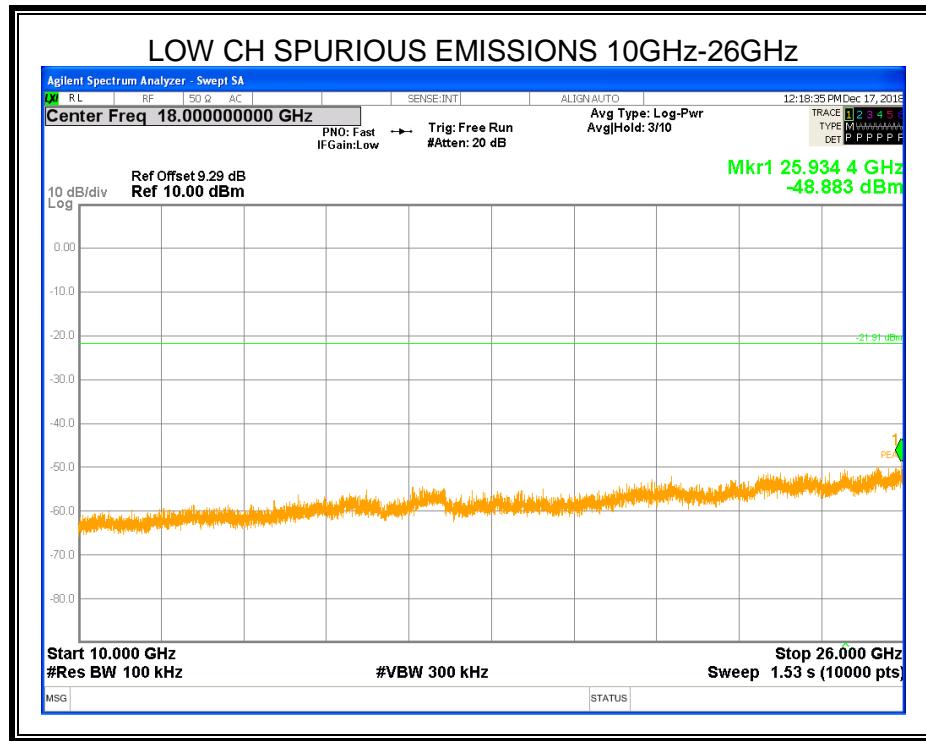
Use the peak marker function to determine the maximum PSD level.

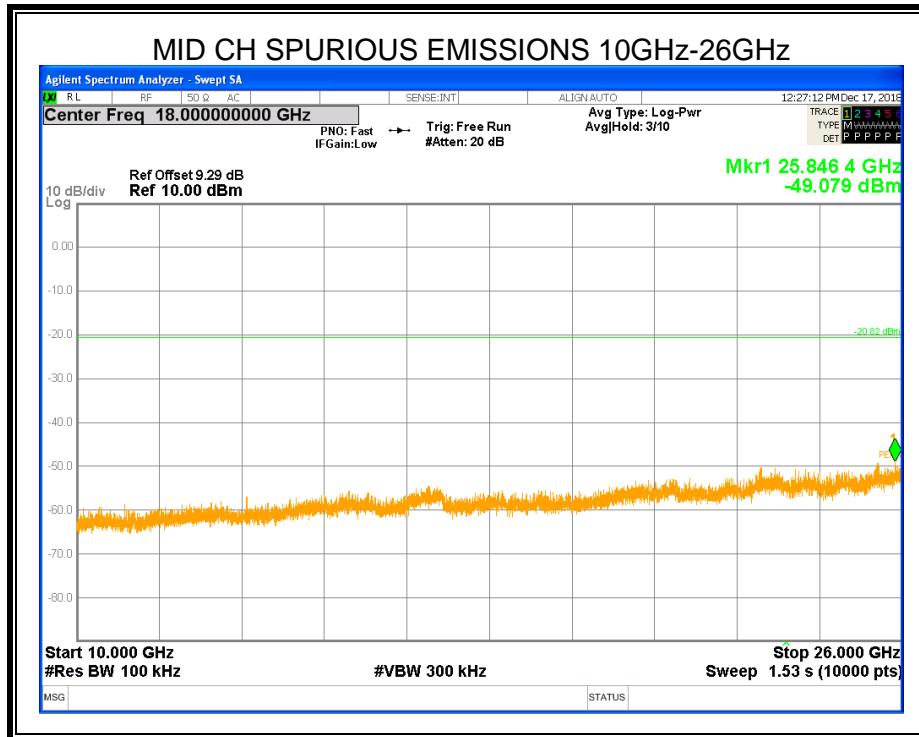
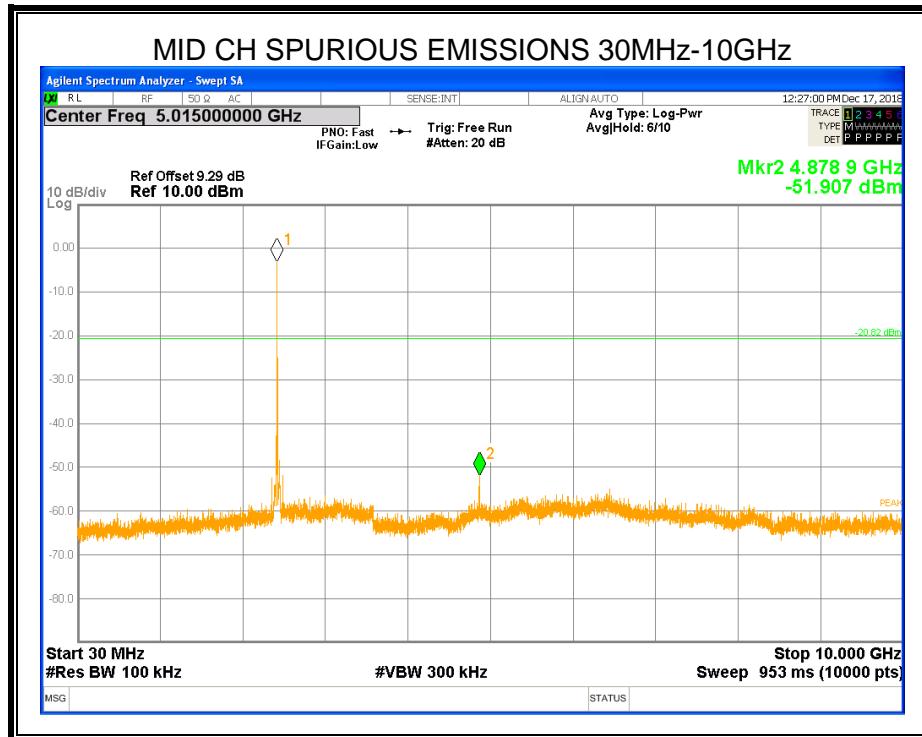
Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100KHz
VBW	$\geq 3 \times$ RBW
measurement points	\geq span/RBW
Trace	Max hold
Sweep time	Auto couple.

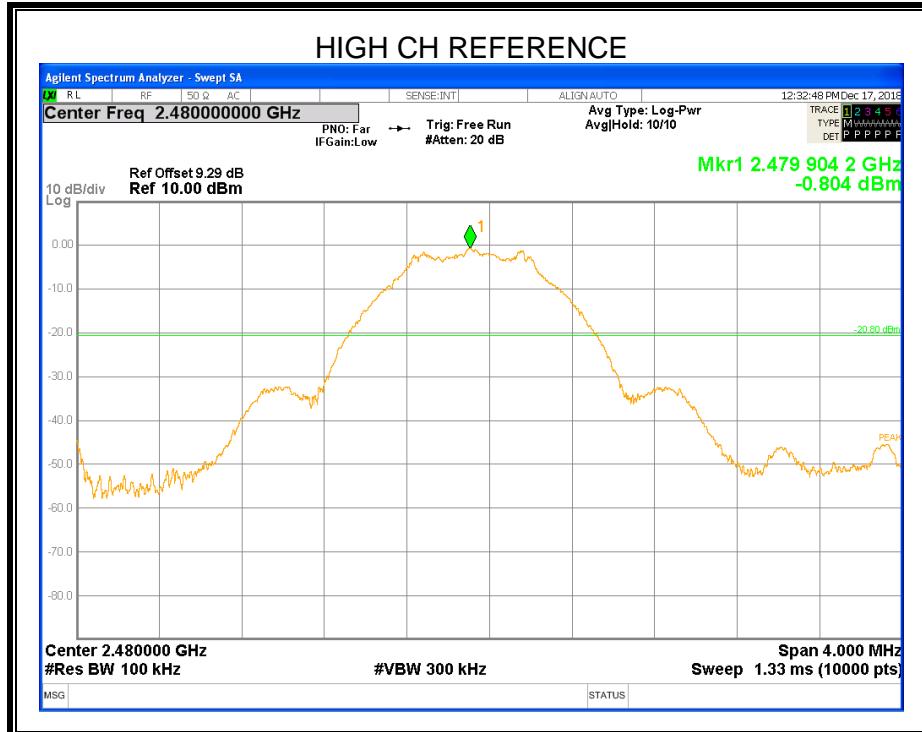
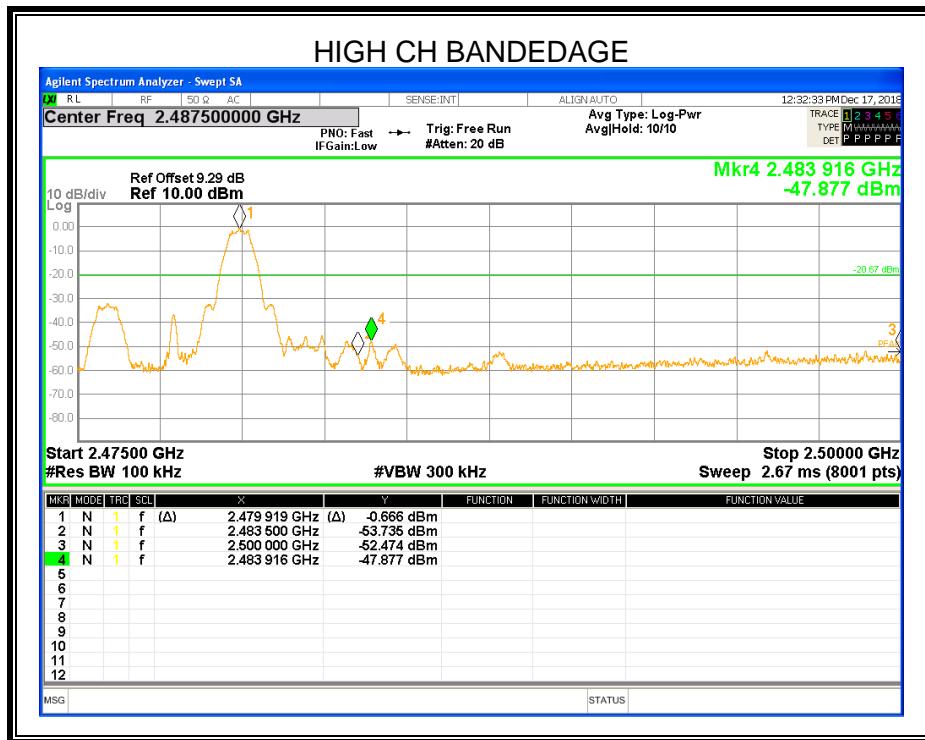
Use the peak marker function to determine the maximum amplitude level.

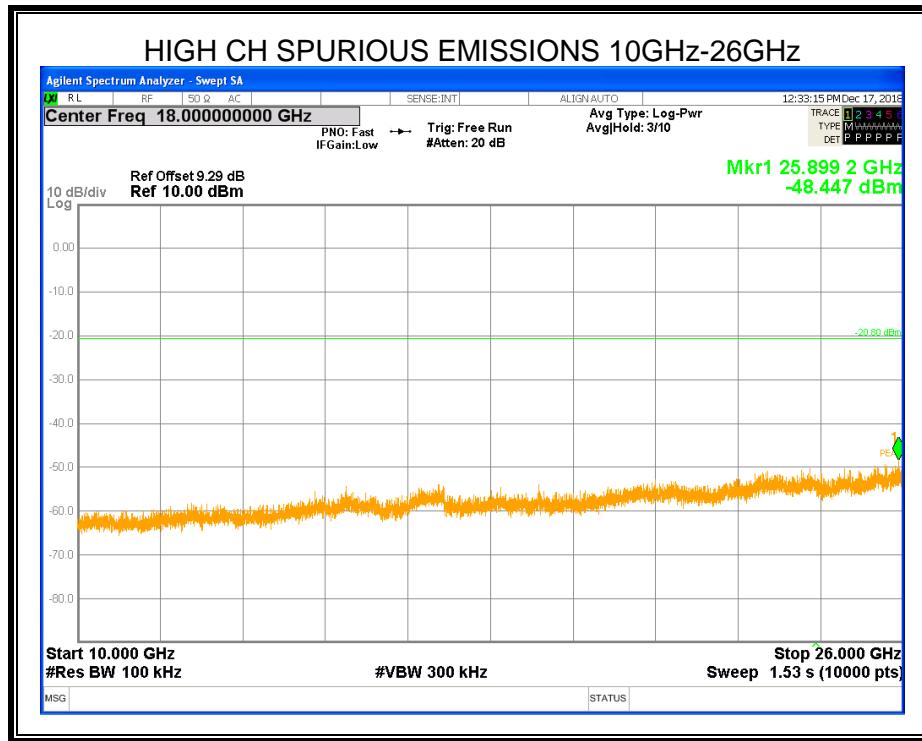
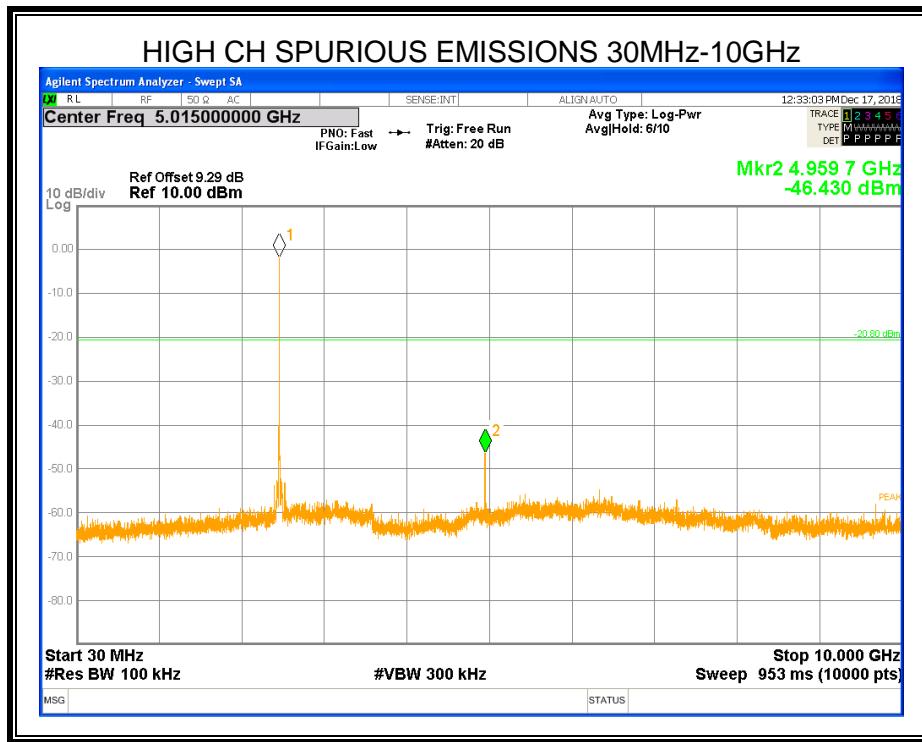
TEST SETUP**RESULTS**











8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209

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

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

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

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

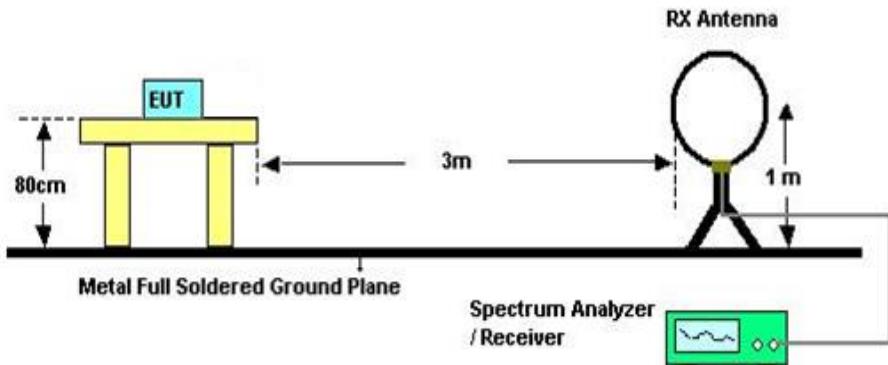
Radiation Disturbance Test Limit for FCC (Above 1G)

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

About Restricted bands of operation please refer to FCC §15.205 (a)

TEST SETUP AND PROCEDURE

Below 30MHz

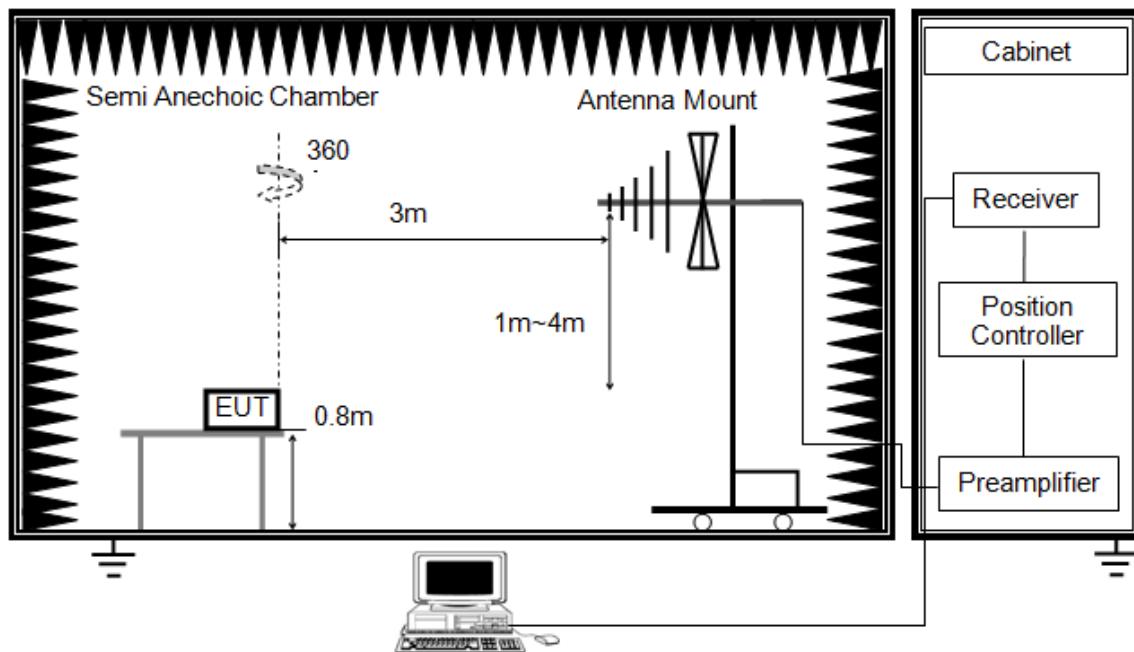


The setting of the spectrum analyser

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
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 80cm above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average 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 and average detector and reported.
7. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G and above 30MHz

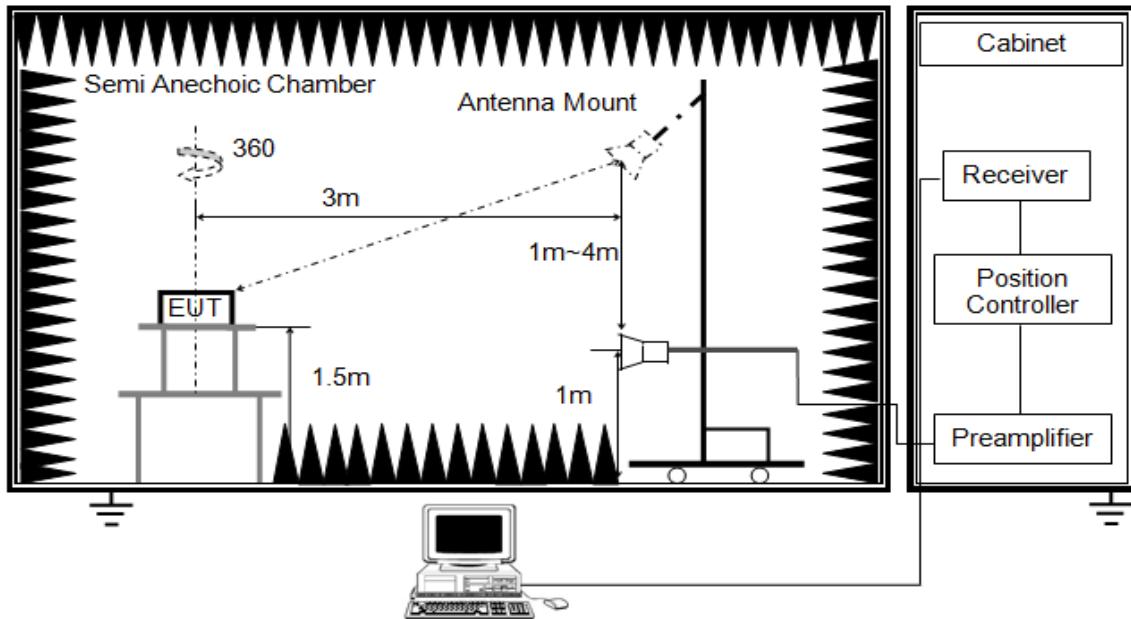


The setting of the spectrum analyser

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 80cm 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.

Above 1G



The setting of the spectrum analyser

RBW	1M
VBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

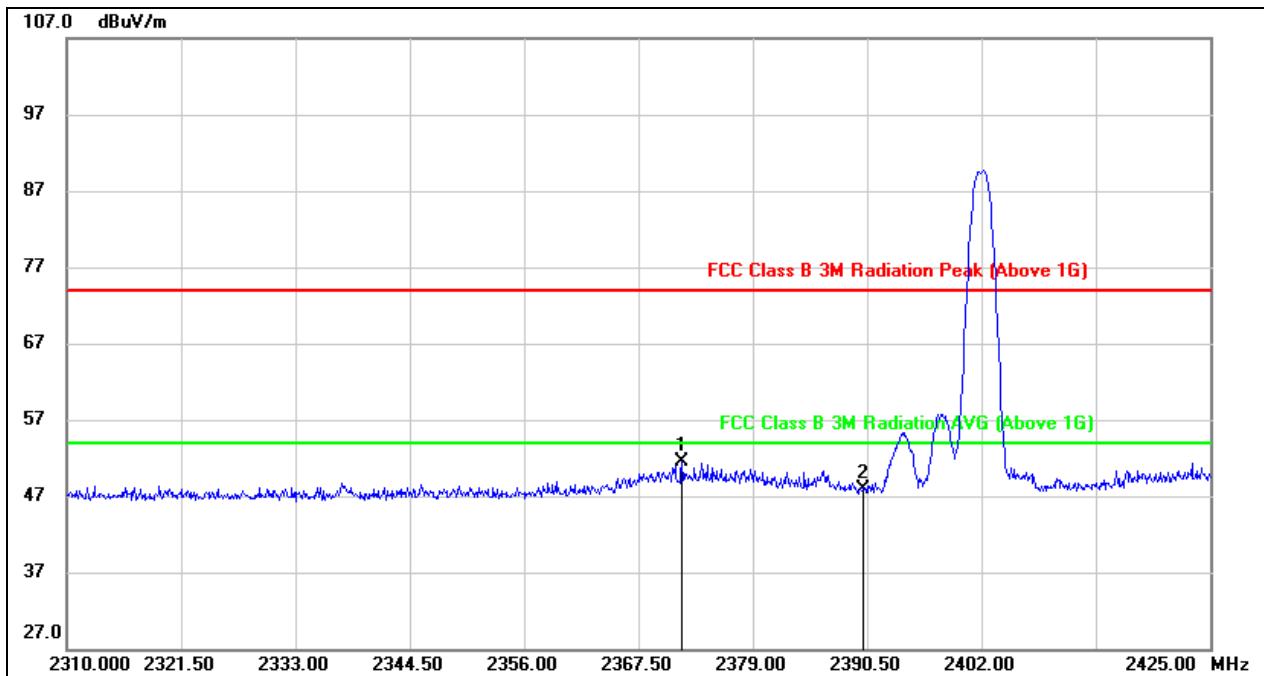
1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 80cm 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 the Duty Cycle and Correction Factor please refer to clause 7.1.ON TIME AND DUTY CYCLE.

Note : The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

RESULTS

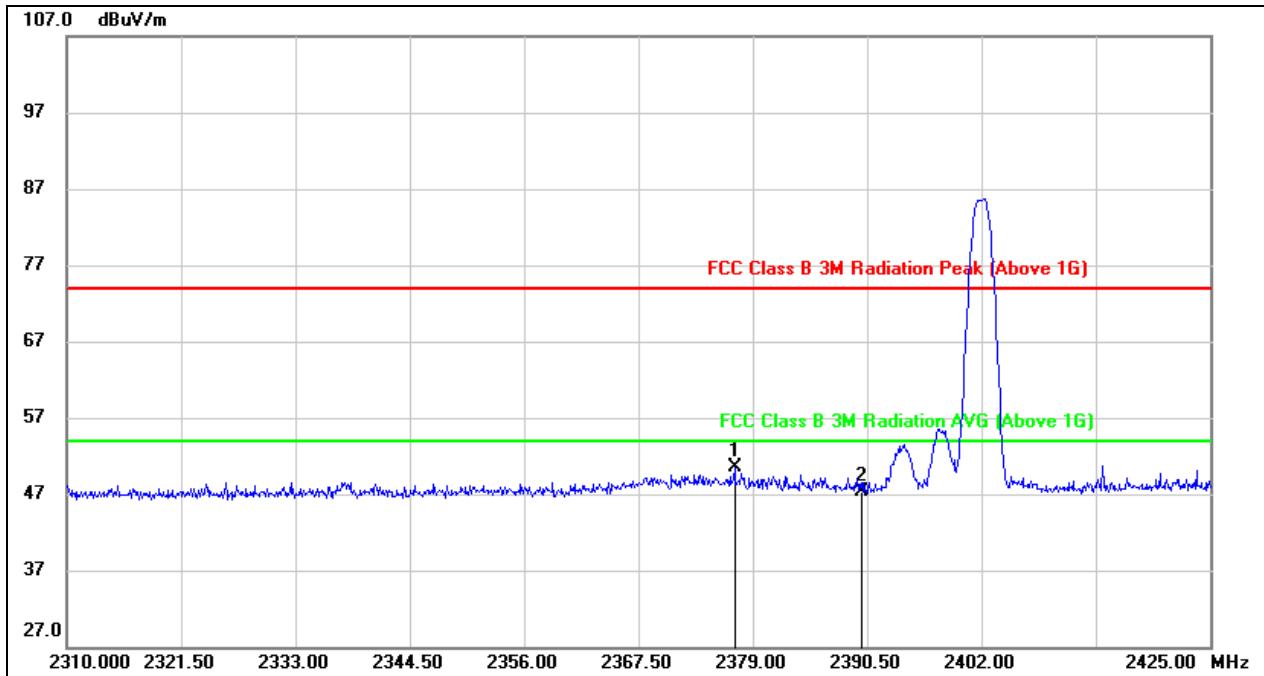
8.1. RESTRICTED BANDEDGE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



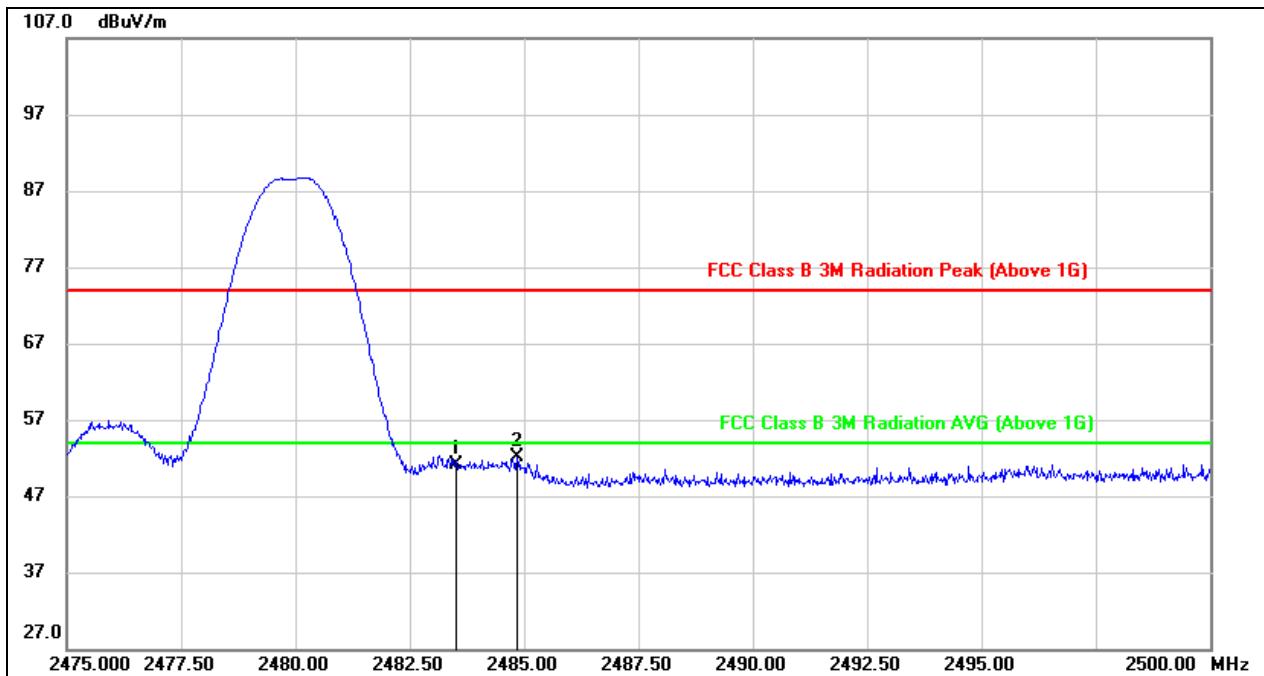
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2371.870	18.53	32.88	51.41	74.00	-22.59	peak
2	2390.000	15.04	32.94	47.98	74.00	-26.02	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

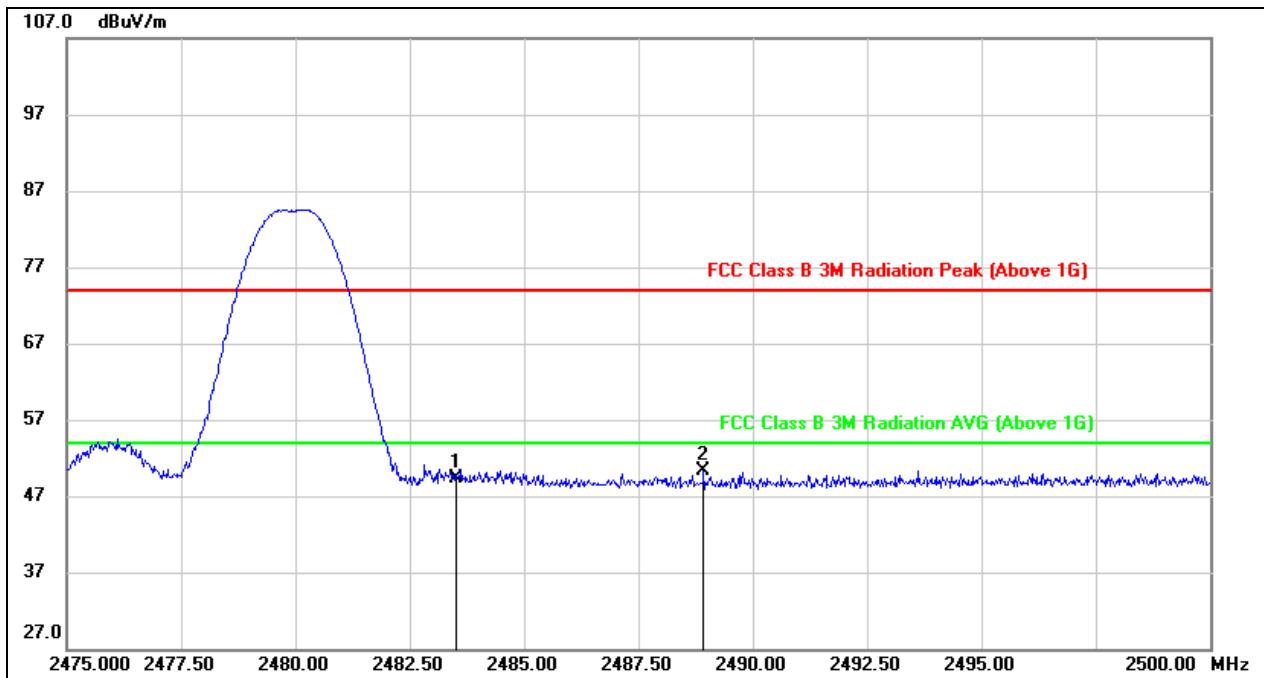
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2377.160	17.56	32.90	50.46	74.00	-23.54	peak
2	2390.000	14.33	32.94	47.27	74.00	-26.73	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	17.45	33.58	51.03	74.00	-22.97	peak
2	2484.850	18.44	33.59	52.03	74.00	-21.97	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

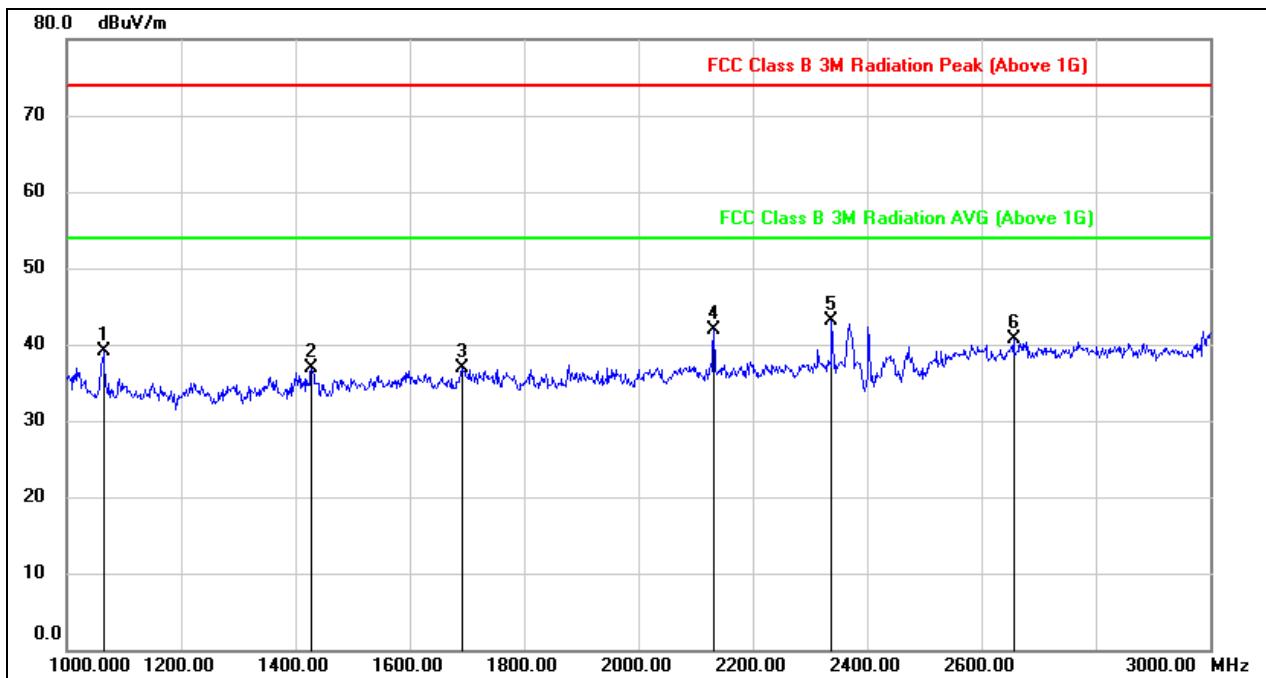
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	15.71	33.58	49.29	74.00	-24.71	peak
2	2488.925	16.64	33.62	50.26	74.00	-23.74	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission will be recorder, if it complies with the limit, the other emissions deemed to comply with the limit.

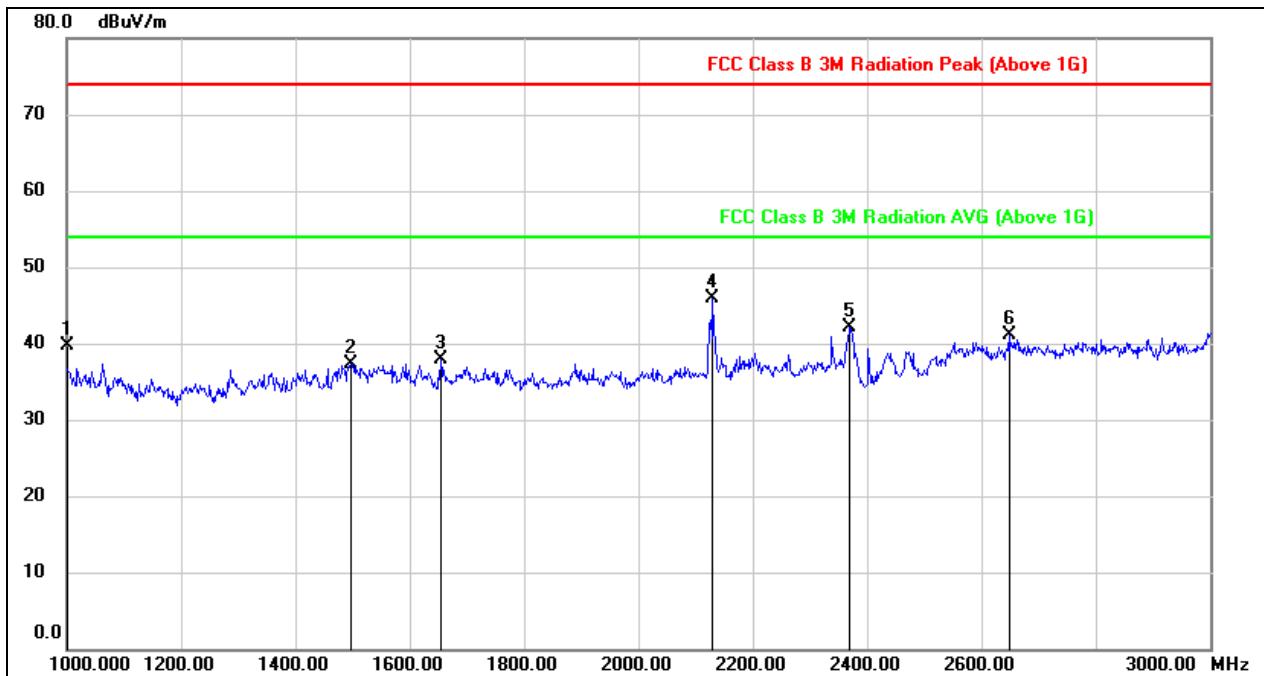
8.2. SPURIOUS EMISSIONS (1~3GHz)

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



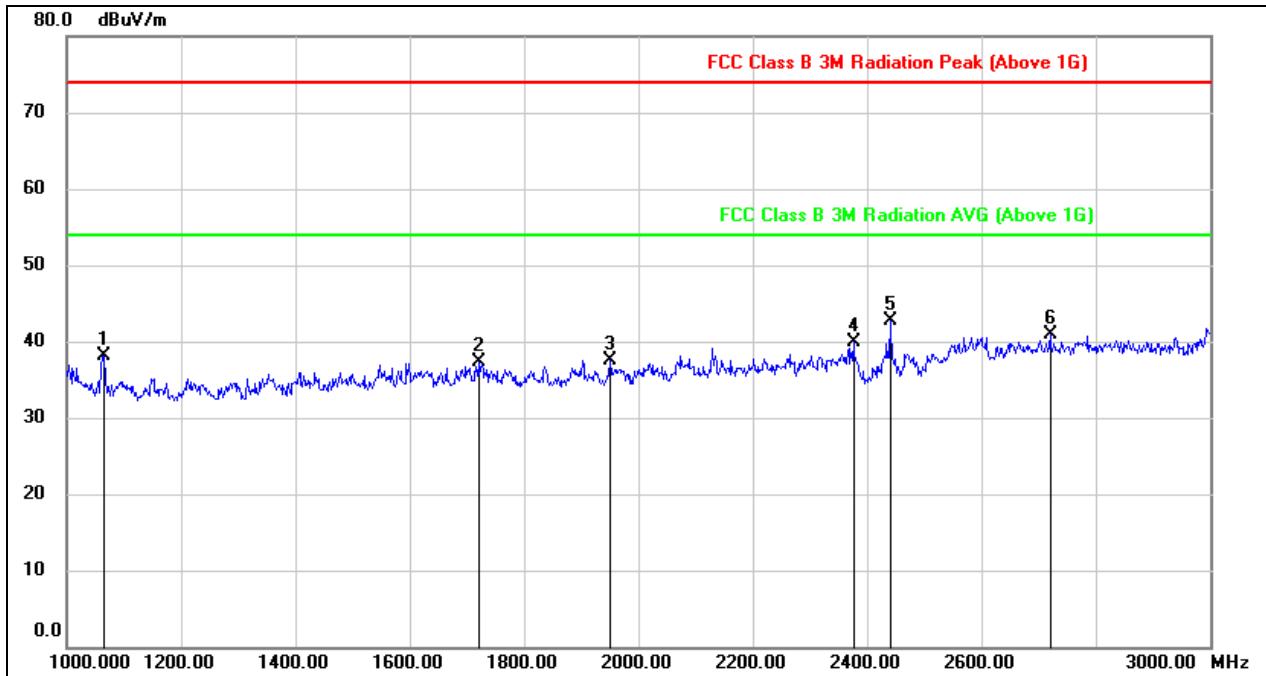
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1064.000	51.68	-12.62	39.06	74.00	-34.94	peak
2	1428.000	48.55	-11.67	36.88	74.00	-37.12	peak
3	1692.000	47.39	-10.54	36.85	74.00	-37.15	peak
4	2132.000	50.21	-8.22	41.99	74.00	-32.01	peak
5	2338.000	50.39	-7.26	43.13	74.00	-30.87	peak
6	2656.000	47.76	-7.14	40.62	74.00	-33.38	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Band Reject Filter losses in all these band except 2400~2483.5MHz had already added into the correct factor, the authorized band 2400~2483.5MHz was not corrected for BRF losses.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

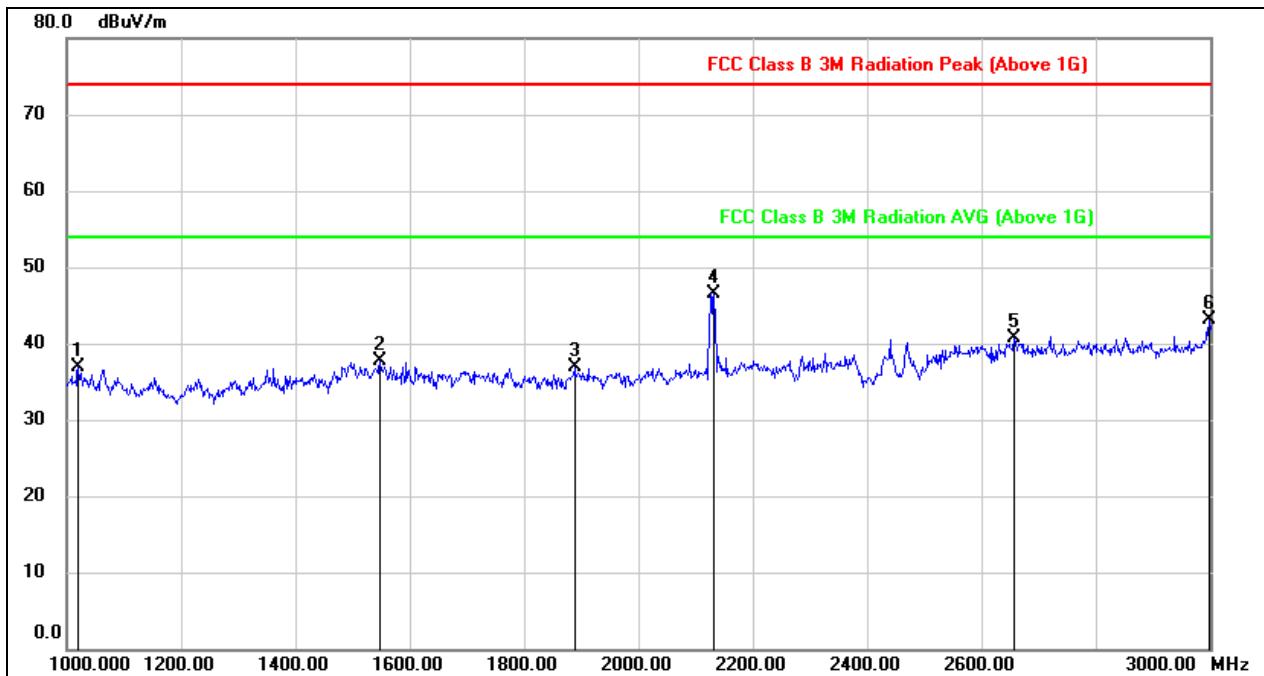
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1000.000	52.68	-12.95	39.73	74.00	-34.27	peak
2	1496.000	48.67	-11.46	37.21	74.00	-36.79	peak
3	1654.000	48.37	-10.50	37.87	74.00	-36.13	peak
4	2130.000	54.03	-8.22	45.81	74.00	-28.19	peak
5	2370.000	49.25	-7.14	42.11	74.00	-31.89	peak
6	2648.000	48.15	-7.09	41.06	74.00	-32.94	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Band Reject Filter losses in all these band except 2400~2483.5MHz had already added into the correct factor, the authorized band 2400~2483.5MHz was not corrected for BRF losses.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

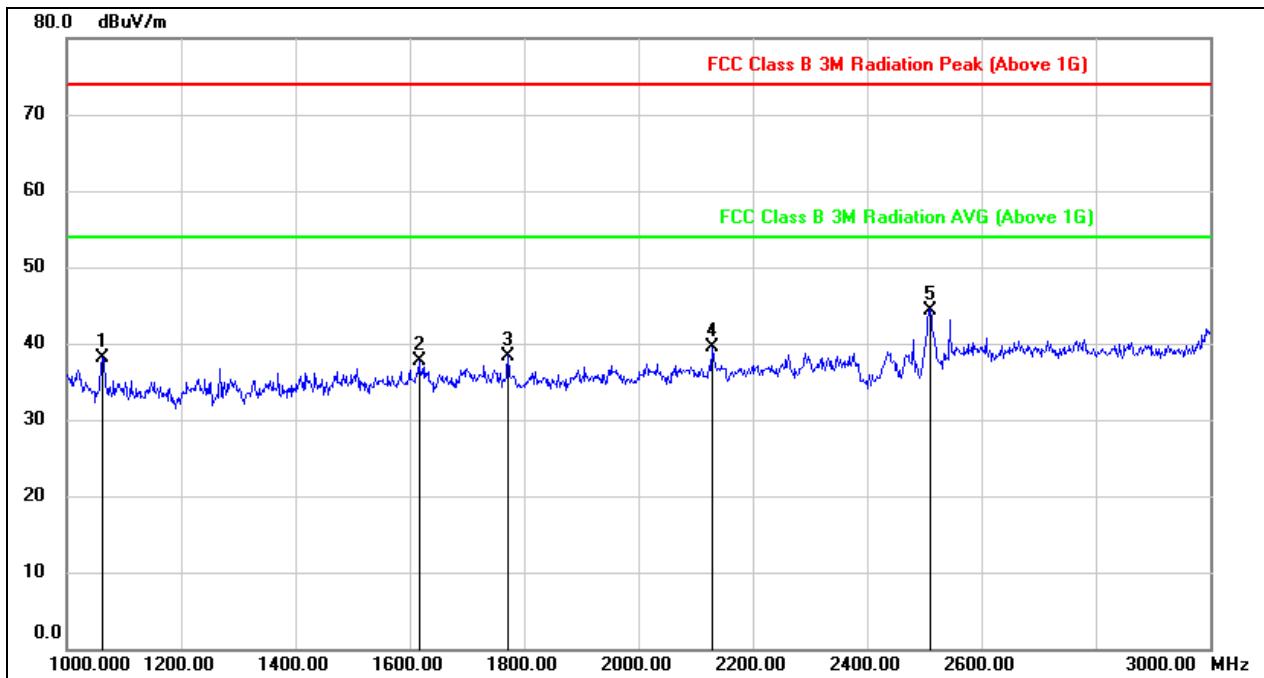
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1064.000	50.81	-12.62	38.19	74.00	-35.81	peak
2	1720.000	47.50	-10.29	37.21	74.00	-36.79	peak
3	1950.000	46.92	-9.38	37.54	74.00	-36.46	peak
4	2376.000	47.03	-7.12	39.91	74.00	-34.09	peak
5	2440.000	49.36	-6.74	42.62	74.00	-31.38	peak
6	2720.000	47.82	-6.98	40.84	74.00	-33.16	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Band Reject Filter losses in all these band except 2400~2483.5MHz had already added into the correct factor, the authorized band 2400~2483.5MHz was not corrected for BRF losses.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

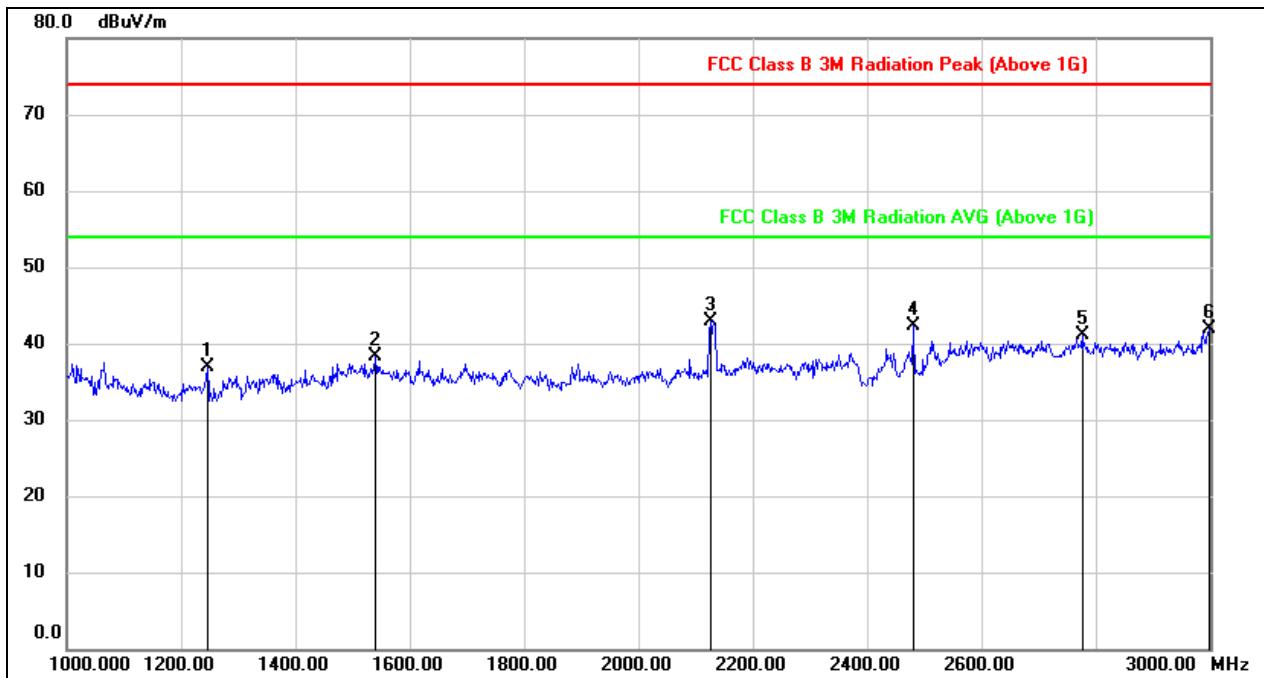
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1020.000	49.66	-12.84	36.82	74.00	-37.18	peak
2	1548.000	48.63	-10.96	37.67	74.00	-36.33	peak
3	1888.000	46.01	-9.16	36.85	74.00	-37.15	peak
4	2132.000	54.80	-8.22	46.58	74.00	-27.42	peak
5	2656.000	47.82	-7.14	40.68	74.00	-33.32	peak
6	2998.000	47.72	-4.67	43.05	74.00	-30.95	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Band Reject Filter losses in all these band except 2400~2483.5MHz had already added into the correct factor, the authorized band 2400~2483.5MHz was not corrected for BRF losses.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1062.000	50.73	-12.64	38.09	74.00	-35.91	peak
2	1616.000	48.11	-10.47	37.64	74.00	-36.36	peak
3	1772.000	48.03	-9.63	38.40	74.00	-35.60	peak
4	2130.000	47.69	-8.22	39.47	74.00	-34.53	peak
5	2510.000	50.73	-6.33	44.40	74.00	-29.60	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Band Reject Filter losses in all these band except 2400~2483.5MHz had already added into the correct factor, the authorized band 2400~2483.5MHz was not corrected for BRF losses.

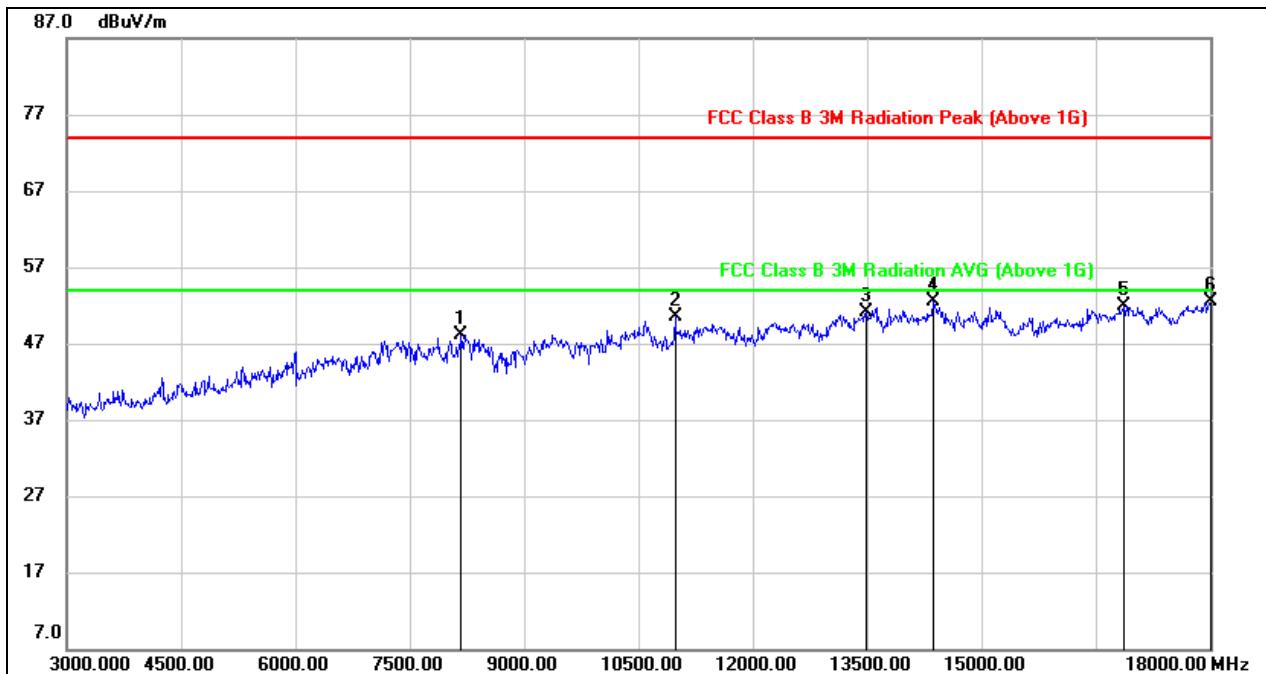
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1246.000	48.64	-11.71	36.93	74.00	-37.07	peak
2	1540.000	49.25	-11.04	38.21	74.00	-35.79	peak
3	2126.000	51.19	-8.22	42.97	74.00	-31.03	peak
4	2480.000	48.73	-6.44	42.29	74.00	-31.71	peak
5	2776.000	46.80	-5.75	41.05	74.00	-32.95	peak
6	2998.000	46.48	-4.67	41.81	74.00	-32.19	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Band Reject Filter losses in all these band except 2400~2483.5MHz had already added into the correct factor, the authorized band 2400~2483.5MHz was not corrected for BRF losses.

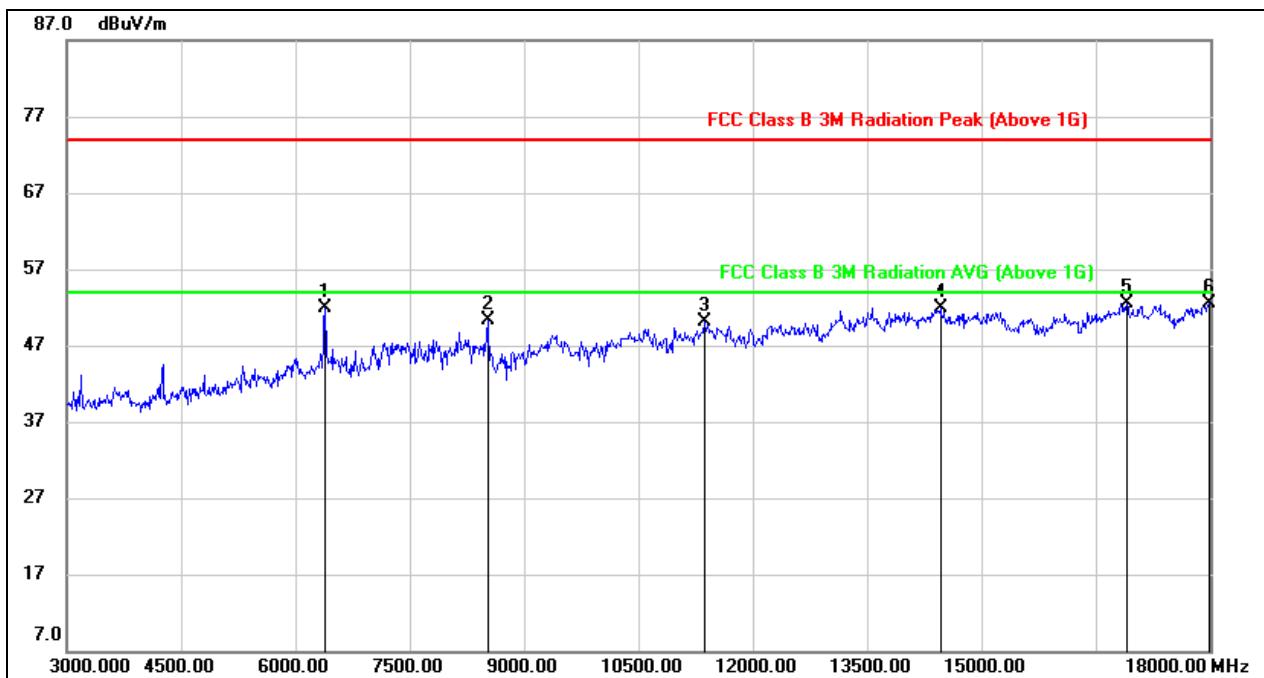
8.3. SPURIOUS EMISSIONS (3~18GHz)

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



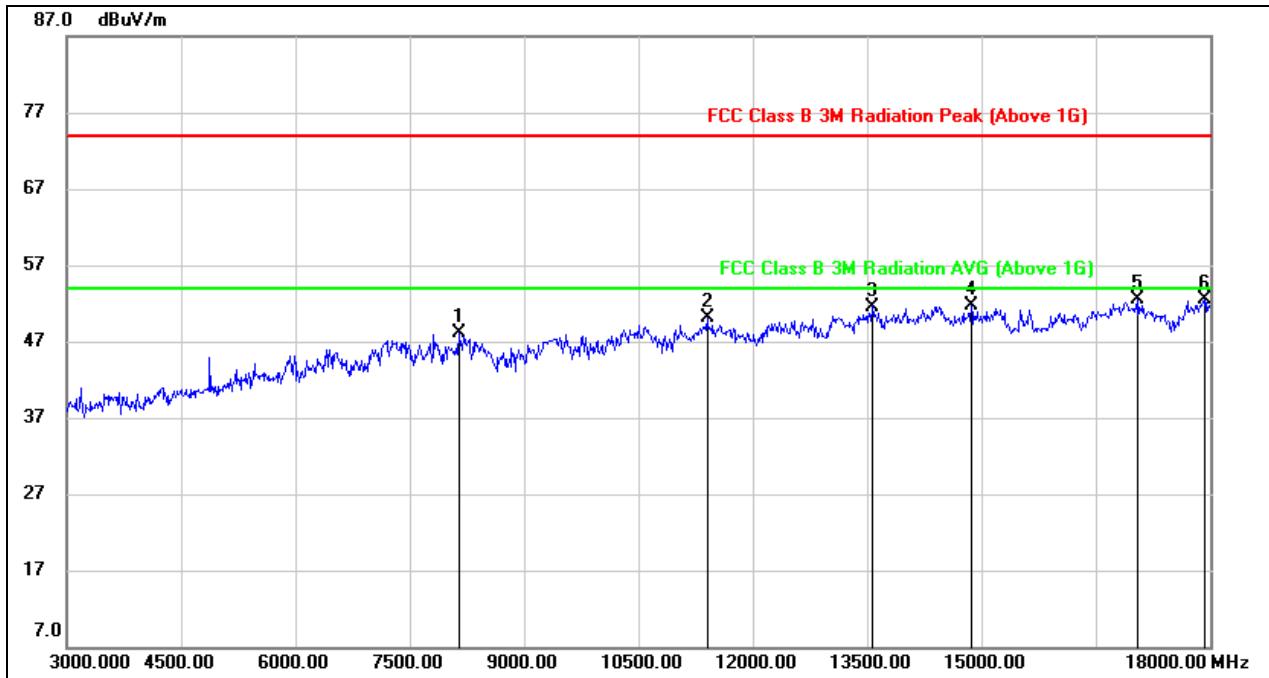
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8175.000	39.12	8.99	48.11	74.00	-25.89	peak
2	10980.000	38.25	12.16	50.41	74.00	-23.59	peak
3	13485.000	35.77	15.36	51.13	74.00	-22.87	peak
4	14370.000	36.04	16.37	52.41	74.00	-21.59	peak
5	16875.000	32.64	19.25	51.89	74.00	-22.11	peak
6	18000.000	29.95	22.47	52.42	74.00	-21.58	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

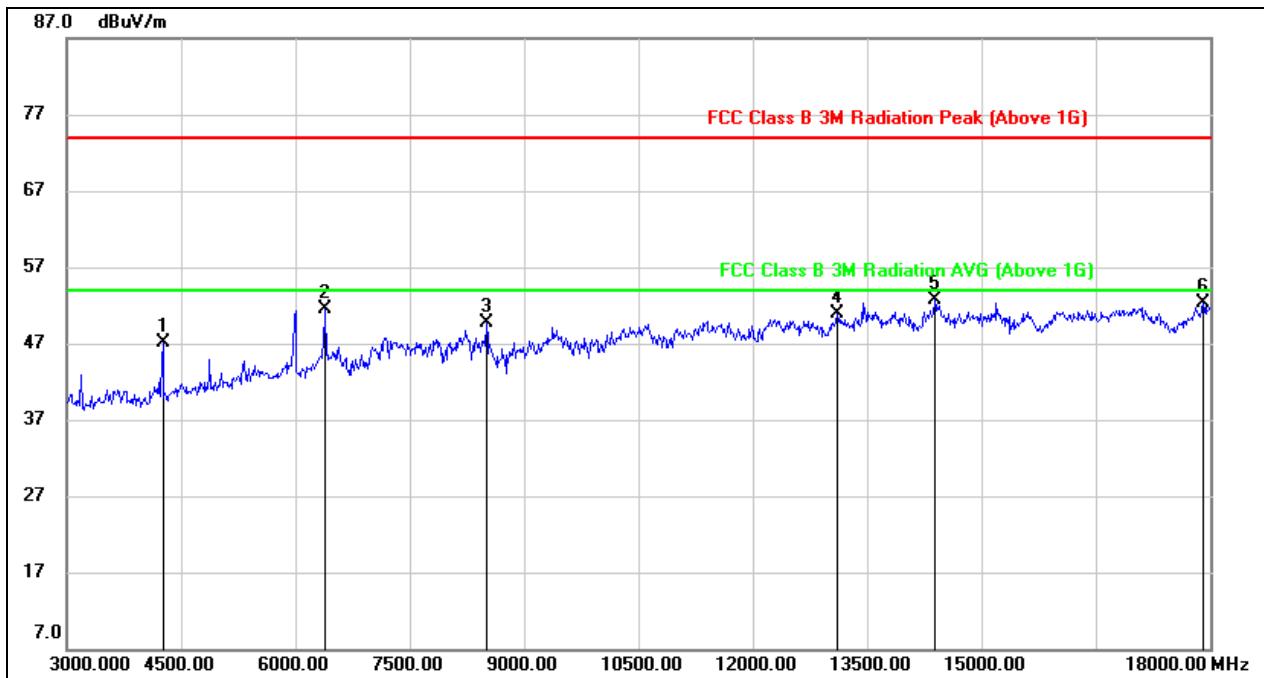
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6390.000	47.45	4.54	51.99	74.00	-22.01	peak
2	8520.000	42.41	7.97	50.38	74.00	-23.62	peak
3	11370.000	37.83	12.20	50.03	74.00	-23.97	peak
4	14460.000	35.43	16.41	51.84	74.00	-22.16	peak
5	16905.000	33.24	19.26	52.50	74.00	-21.50	peak
6	17985.000	29.96	22.45	52.41	74.00	-21.59	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

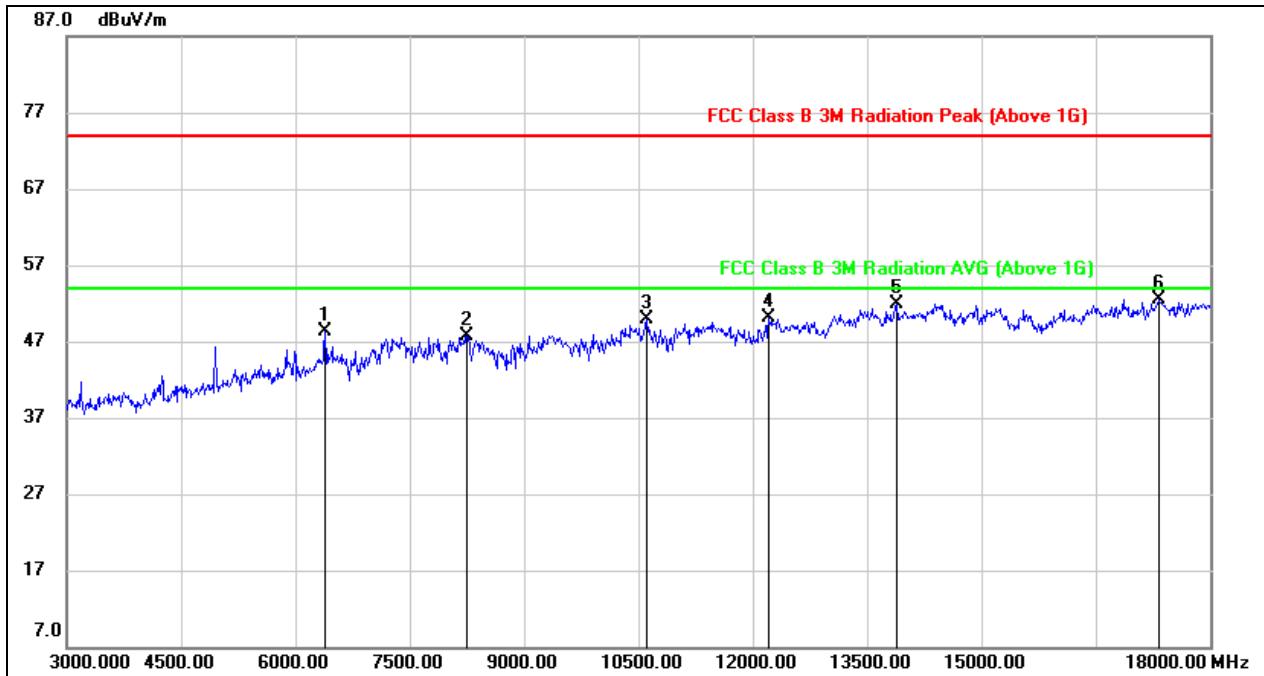
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8145.000	39.38	8.81	48.19	74.00	-25.81	peak
2	11400.000	37.68	12.33	50.01	74.00	-23.99	peak
3	13575.000	35.96	15.64	51.60	74.00	-22.40	peak
4	14865.000	35.73	15.98	51.71	74.00	-22.29	peak
5	17055.000	32.71	19.85	52.56	74.00	-21.44	peak
6	17925.000	30.02	22.39	52.41	74.00	-21.59	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

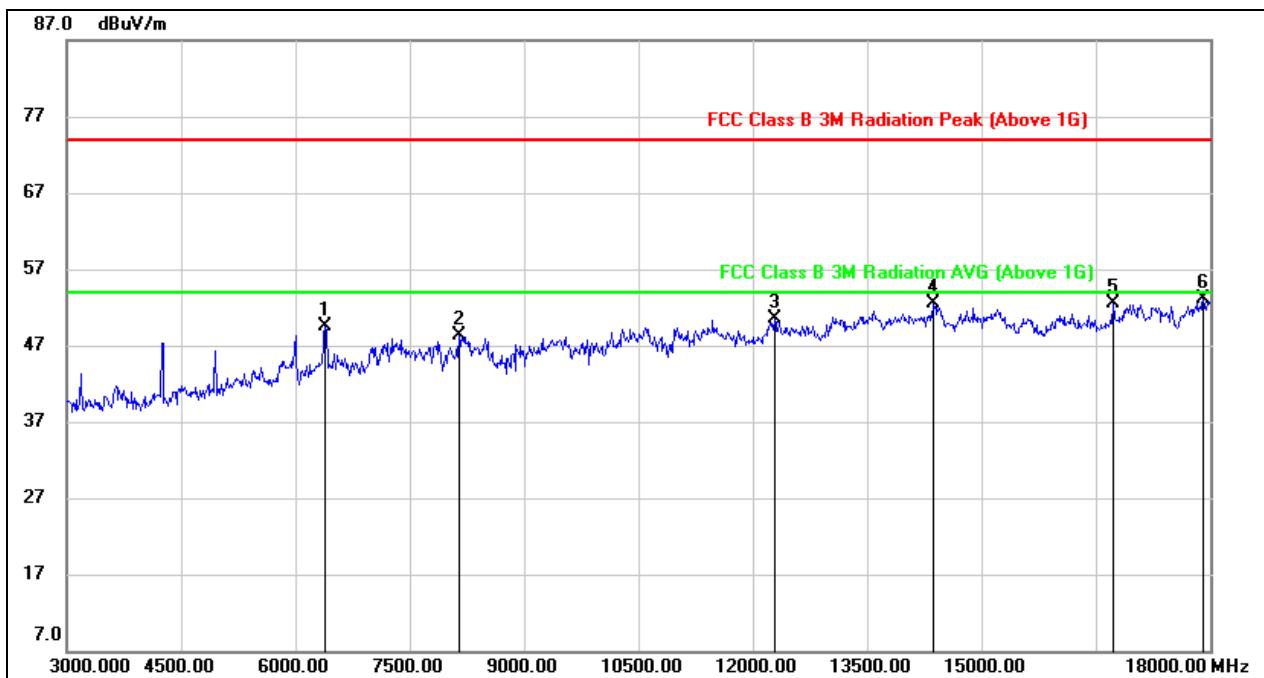
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4260.000	49.39	-2.30	47.09	74.00	-26.91	peak
2	6390.000	46.89	4.54	51.43	74.00	-22.57	peak
3	8505.000	41.77	8.00	49.77	74.00	-24.23	peak
4	13110.000	36.35	14.65	51.00	74.00	-23.00	peak
5	14385.000	36.21	16.41	52.62	74.00	-21.38	peak
6	17910.000	29.92	22.38	52.30	74.00	-21.70	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6390.000	43.67	4.54	48.21	74.00	-25.79	peak
2	8250.000	39.20	8.57	47.77	74.00	-26.23	peak
3	10605.000	37.77	12.10	49.87	74.00	-24.13	peak
4	12210.000	36.82	13.24	50.06	74.00	-23.94	peak
5	13890.000	36.08	15.89	51.97	74.00	-22.03	peak
6	17325.000	31.36	21.05	52.41	74.00	-21.59	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

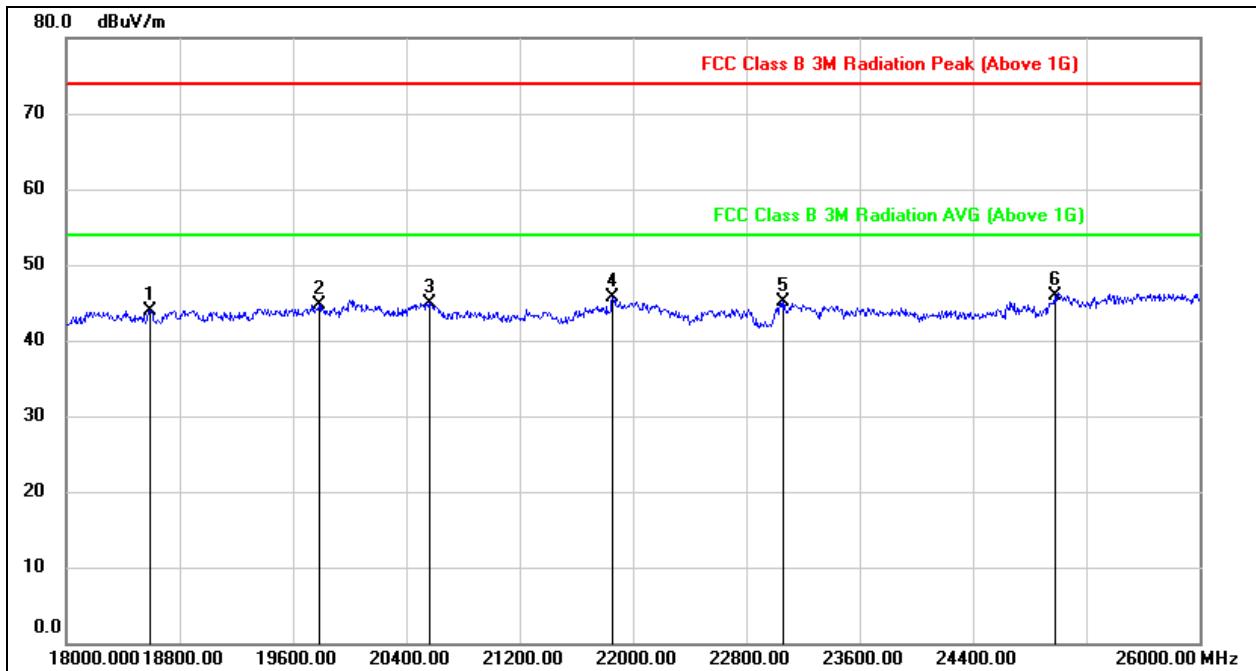
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6390.000	44.94	4.54	49.48	74.00	-24.52	peak
2	8145.000	39.49	8.81	48.30	74.00	-25.70	peak
3	12285.000	37.06	13.43	50.49	74.00	-23.51	peak
4	14370.000	36.16	16.37	52.53	74.00	-21.47	peak
5	16725.000	33.19	19.22	52.41	74.00	-21.59	peak
6	17910.000	30.65	22.38	53.03	74.00	-20.97	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

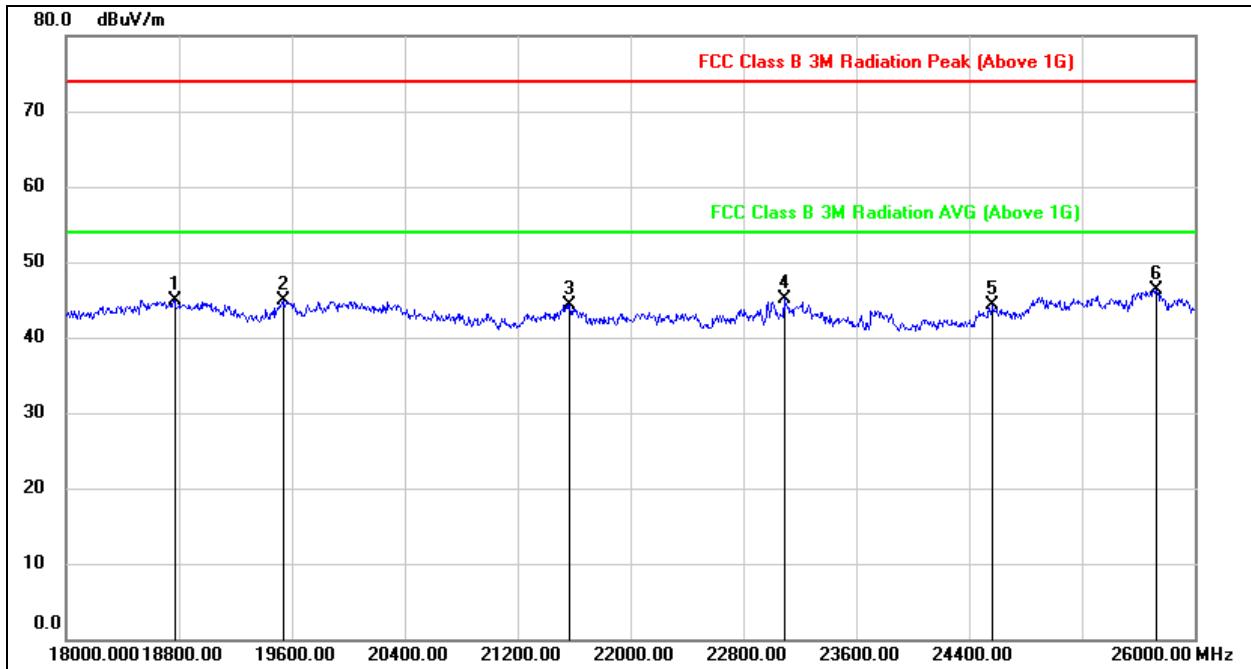
8.4. SPURIOUS EMISSIONS 18G ~ 26GHz

SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18592.000	49.25	-5.31	43.94	74.00	-30.06	peak
2	19784.000	50.08	-5.28	44.80	74.00	-29.20	peak
3	20560.000	50.23	-5.30	44.93	74.00	-29.07	peak
4	21856.000	50.02	-4.39	45.63	74.00	-28.37	peak
5	23064.000	48.49	-3.42	45.07	74.00	-28.93	peak
6	24976.000	47.99	-2.11	45.88	74.00	-28.12	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

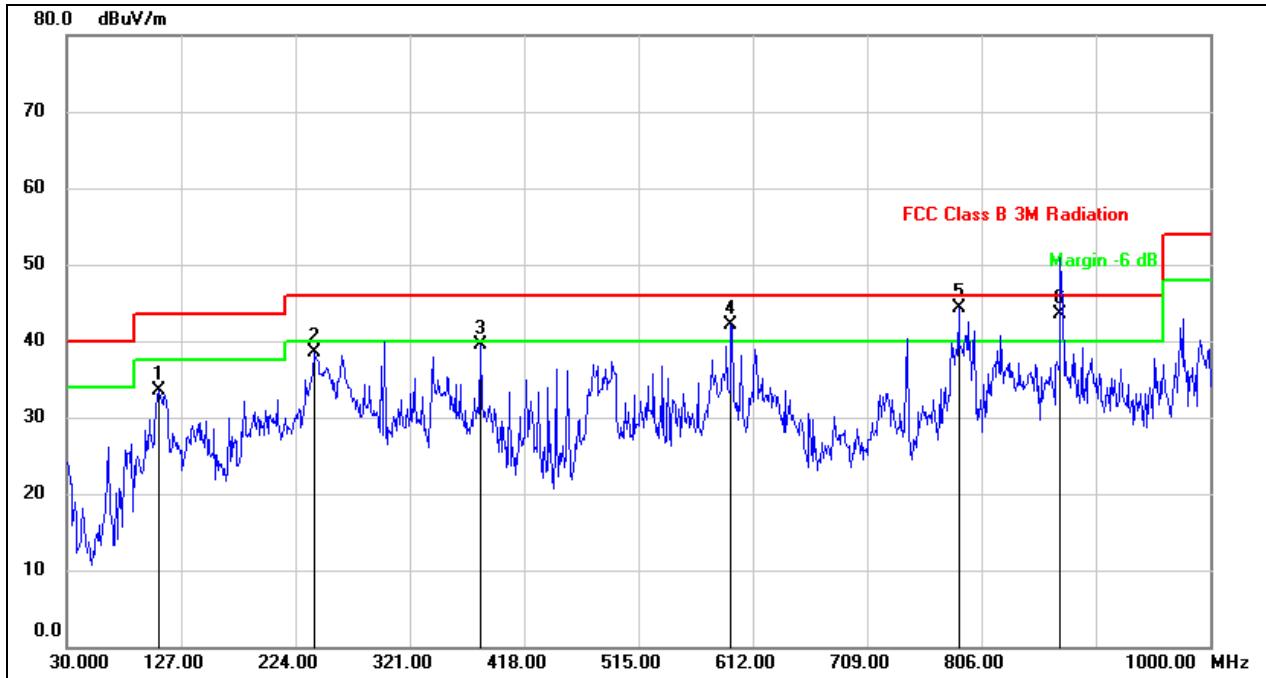
SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18768.000	50.31	-5.41	44.90	74.00	-29.10	peak
2	19536.000	50.42	-5.51	44.91	74.00	-29.09	peak
3	21568.000	48.94	-4.59	44.35	74.00	-29.65	peak
4	23088.000	48.52	-3.41	45.11	74.00	-28.89	peak
5	24568.000	46.60	-2.33	44.27	74.00	-29.73	peak
6	25728.000	47.11	-0.72	46.39	74.00	-27.61	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. High pass filter losses had already added into the correct factor.

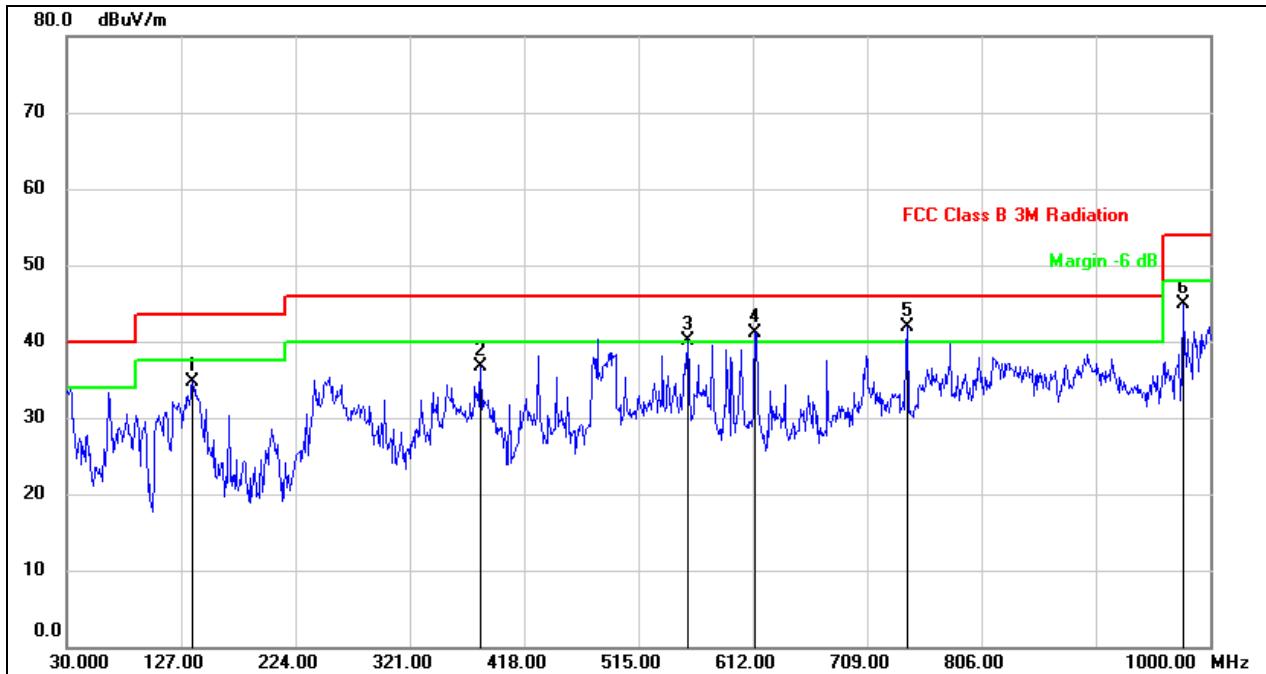
Note: All test mode has been tested, only the worst data record in the report

8.5. SPURIOUS EMISSIONS 30M ~ 1 GHz

SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	107.6000	55.30	-21.82	33.48	43.50	-10.02	QP
2	239.5200	56.13	-17.59	38.54	46.00	-7.46	QP
3	381.1400	52.89	-13.32	39.57	46.00	-6.43	QP
4	593.5700	51.39	-9.35	42.04	46.00	-3.96	QP
5	786.6000	50.54	-6.18	44.36	46.00	-1.64	QP
6	872.9300	48.38	-4.89	43.49	46.00	-2.51	QP

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

SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	136.7000	54.32	-19.71	34.61	43.50	-8.89	QP
2	381.1400	50.03	-13.32	36.71	46.00	-9.29	QP
3	556.7100	50.23	-10.12	40.11	46.00	-5.89	QP
4	613.9400	50.11	-8.92	41.19	46.00	-4.81	QP
5	742.9500	48.68	-6.74	41.94	46.00	-4.06	QP
6	976.7200	48.68	-3.73	44.95	54.00	-9.05	QP

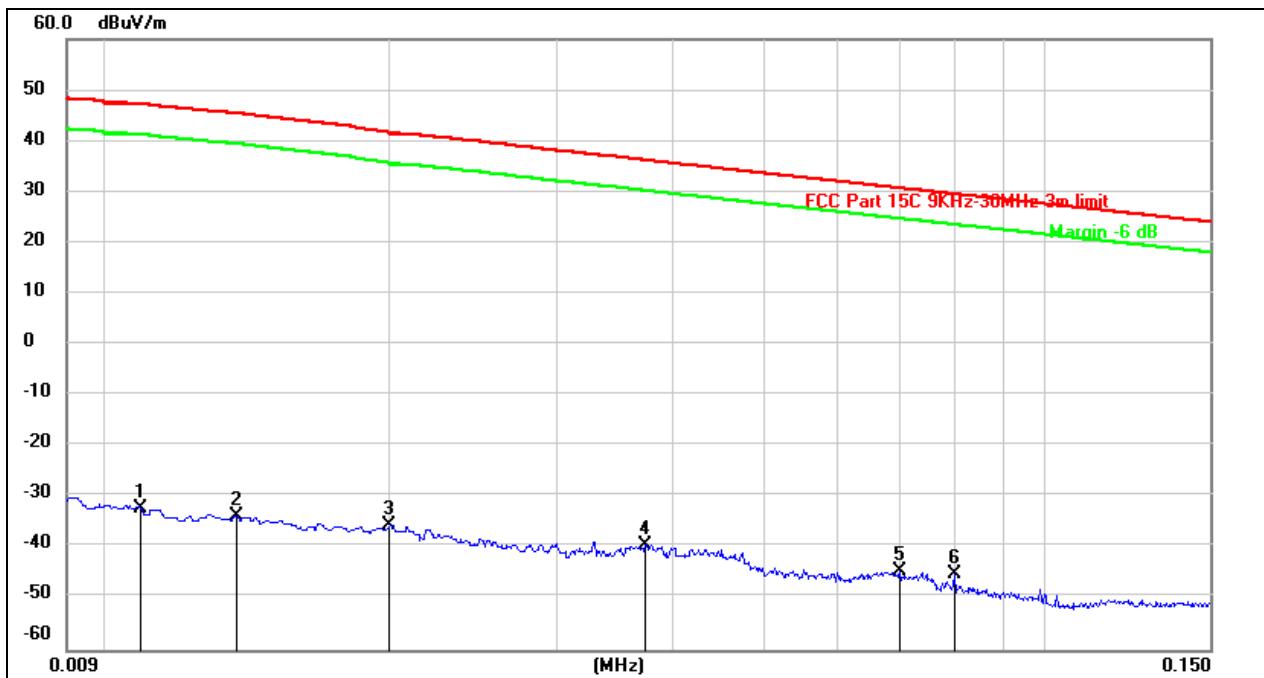
Note: 1. Result Level = Read Level + Correct Factor.
 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

Note: All test mode has been tested, only the worst data record in the report

8.6. SPURIOUS EMISSIONS BELOW 30M

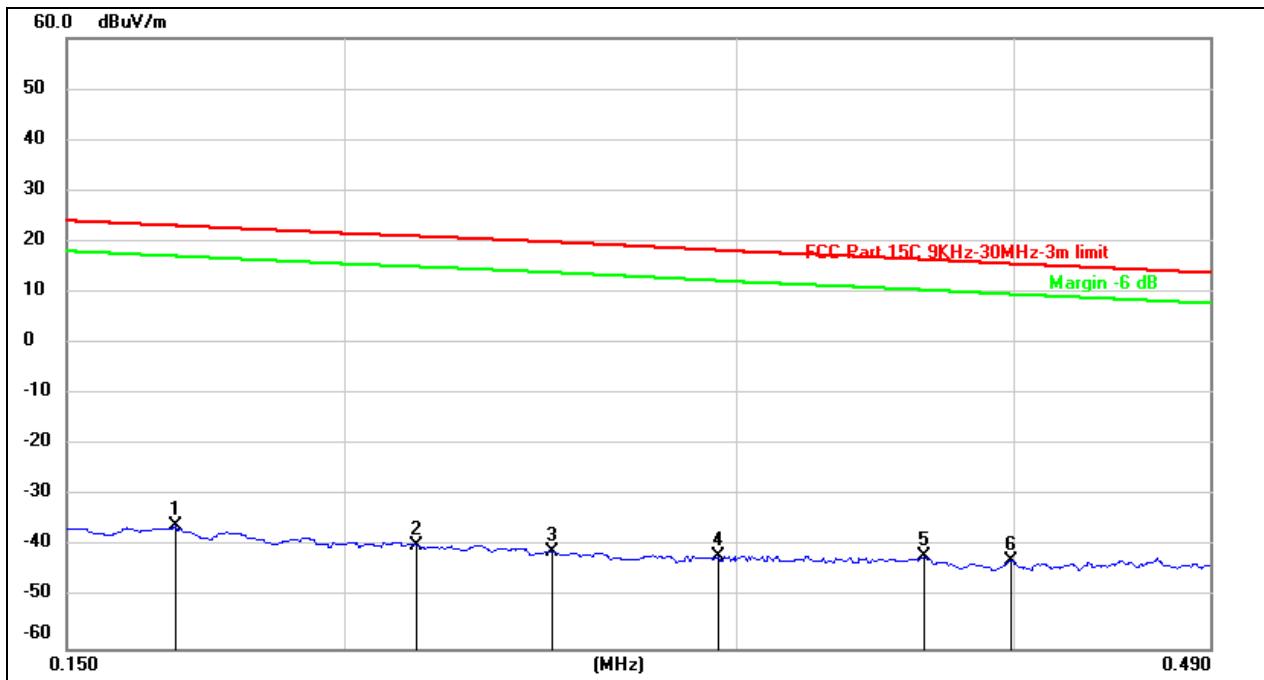
SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

9KHz~ 150KHz



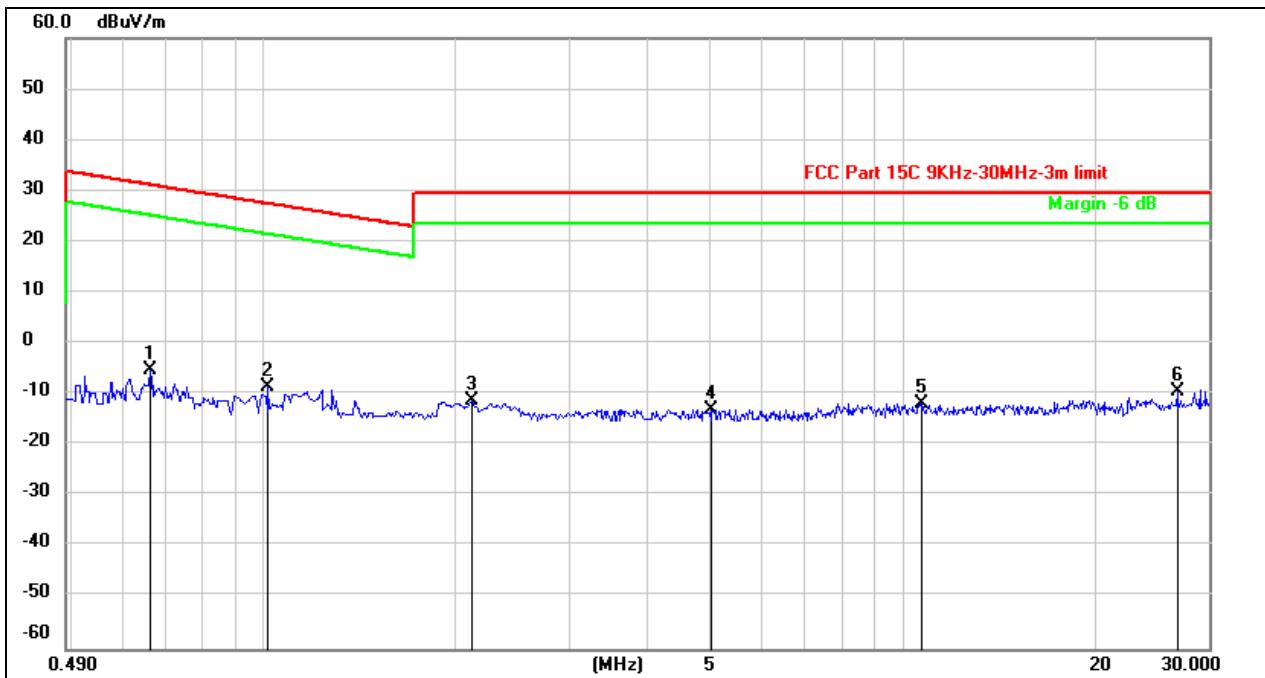
No.	Frequency (KHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0108	69.28	-101.39	-32.11	47.12	-79.23	peak
2	0.0137	67.72	-101.38	-33.66	45.37	-79.03	peak
3	0.0200	65.86	-101.34	-35.48	41.58	-77.06	peak
4	0.0374	62.02	-101.42	-39.40	36.21	-75.61	peak
5	0.0700	56.91	-101.57	-44.66	30.70	-75.36	peak
6	0.0797	56.53	-101.63	-45.10	29.57	-74.67	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. All the modes had been tested, but only the worst data were recorded in the report.
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

150KHz ~ 49 KHz

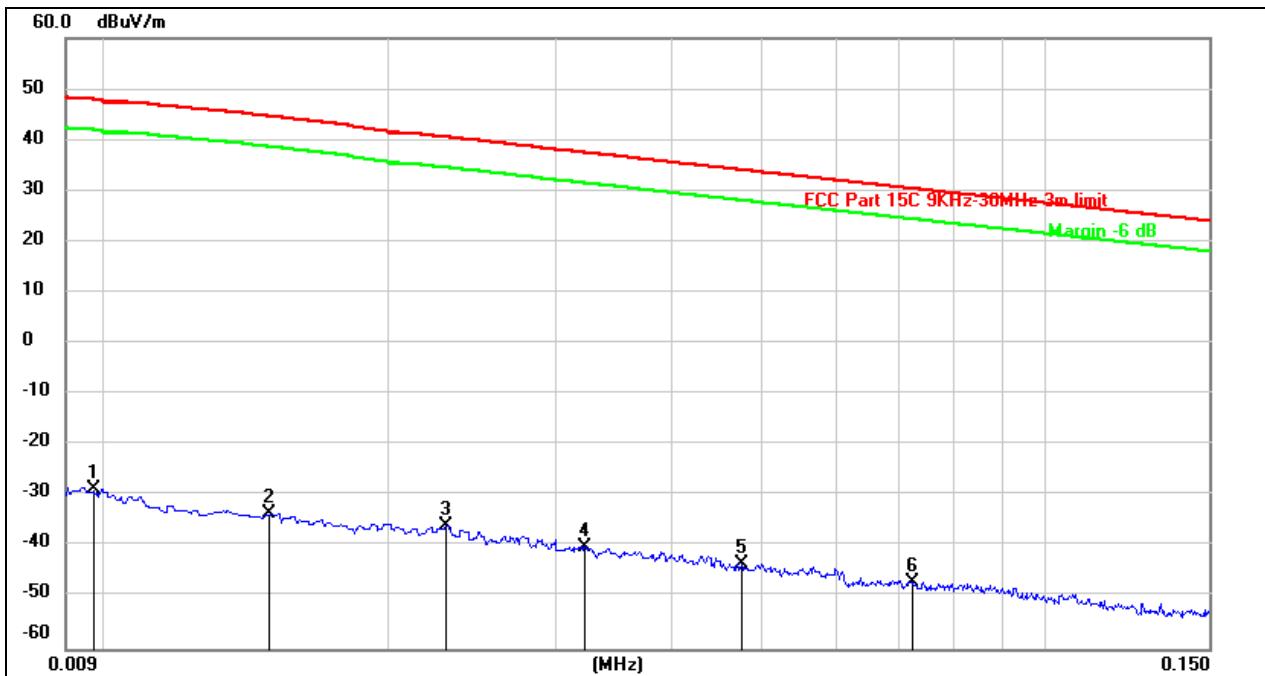
No.	Frequency (KHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1680	65.78	-101.67	-35.89	23.10	-58.99	peak
2	0.2156	62.15	-101.75	-39.60	21.03	-60.63	peak
3	0.2482	60.85	-101.80	-40.95	19.88	-60.83	peak
4	0.2948	60.05	-101.85	-41.80	18.24	-60.04	peak
5	0.3644	59.94	-101.93	-41.99	16.45	-58.44	peak
6	0.3988	59.25	-101.96	-42.71	15.59	-58.30	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. All the modes had been tested, but only the worst data were recorded in the report.
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

49KHz ~ 30MHz

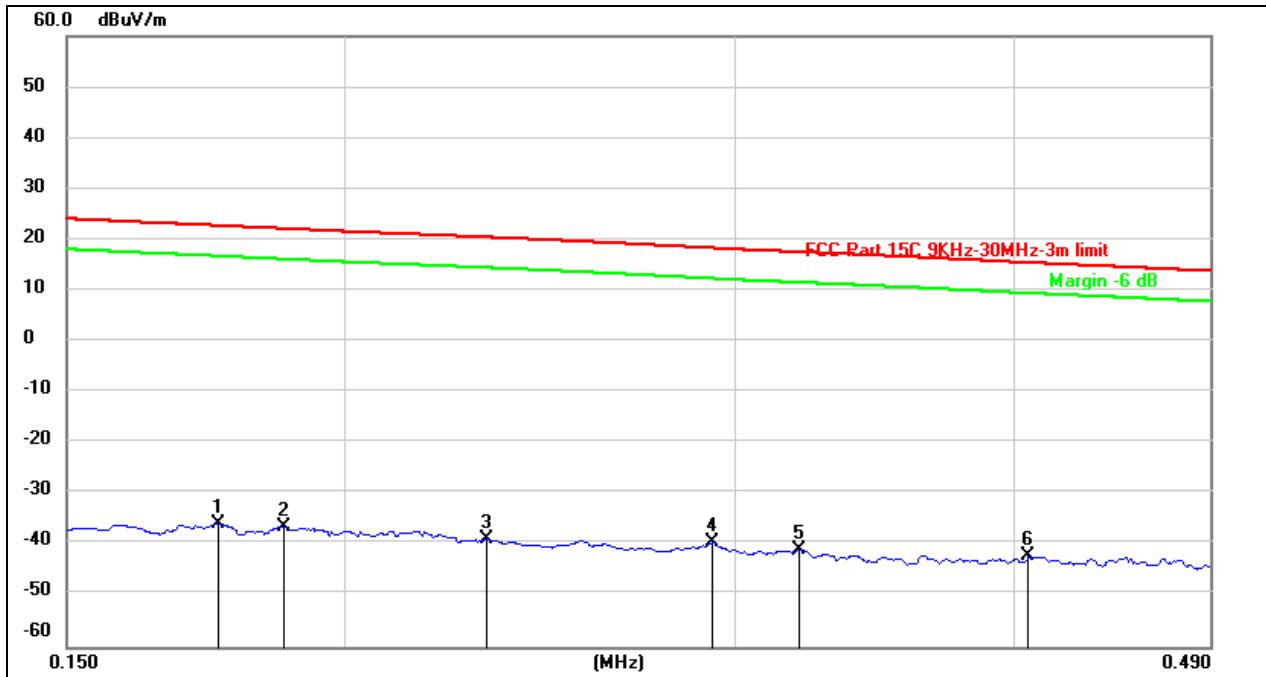
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.6643	56.79	-62.10	-5.31	31.18	-36.49	peak
2	1.0149	53.68	-62.27	-8.59	27.48	-36.07	peak
3	2.1131	50.61	-61.79	-11.18	29.54	-40.72	peak
4	5.0096	48.39	-61.49	-13.10	29.54	-42.64	peak
5	10.7004	48.86	-60.83	-11.97	29.54	-41.51	peak
6	26.8424	50.72	-60.27	-9.55	29.54	-39.09	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. All the modes had been tested, but only the worst data were recorded in the report.
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

SPURIOUS EMISSIONS (HIGH CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)9KHz~ 150KHz

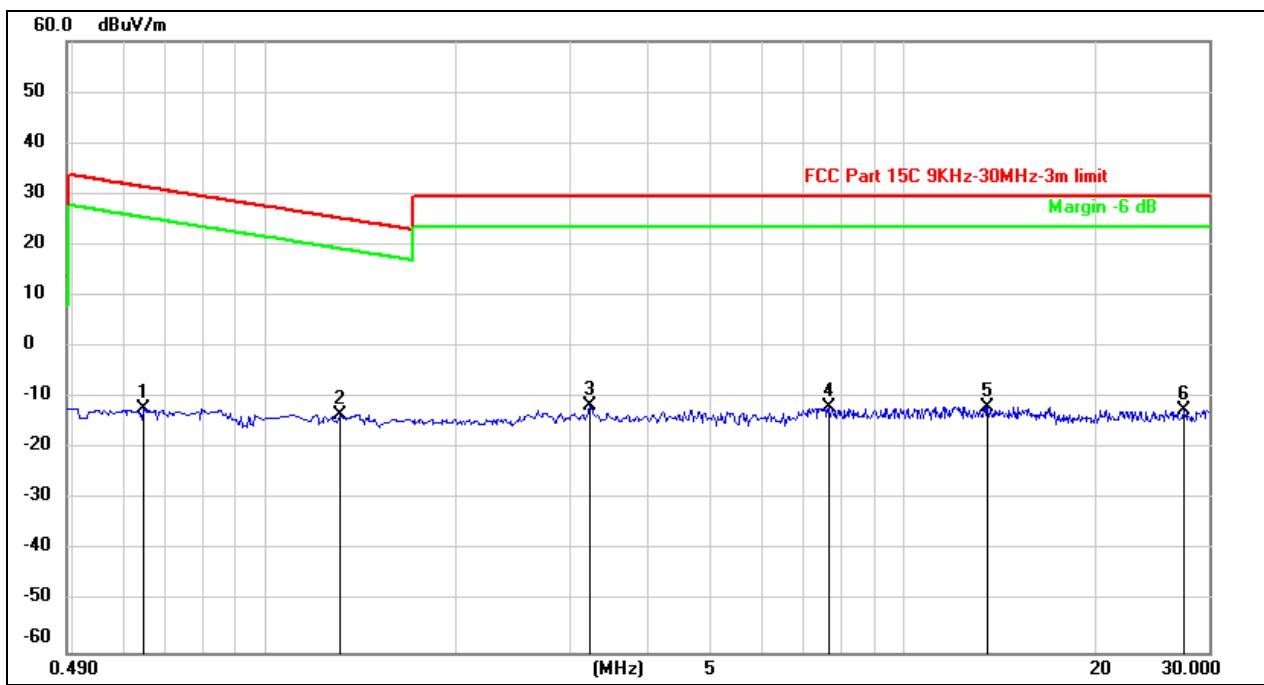
No.	Frequency (KHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0097	72.83	-101.38	-28.55	47.83	-76.38	peak
2	0.0149	68.05	-101.37	-33.32	44.65	-77.97	peak
3	0.0229	65.48	-101.36	-35.88	40.56	-76.44	peak
4	0.0323	61.35	-101.40	-40.05	37.48	-77.53	peak
5	0.0475	58.18	-101.47	-43.29	34.10	-77.39	peak
6	0.0723	54.75	-101.58	-46.83	30.43	-77.26	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. All the modes had been tested, but only the worst data were recorded in the report.
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

150KHz ~ 49KHz


No.	Frequency (KHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1754	65.75	-101.68	-35.93	22.73	-58.66	peak
2	0.1880	65.38	-101.70	-36.32	22.12	-58.44	peak
3	0.2316	62.81	-101.77	-38.96	20.47	-59.43	peak
4	0.2928	62.29	-101.85	-39.56	18.31	-57.87	peak
5	0.3205	60.94	-101.88	-40.94	17.55	-58.49	peak
6	0.4062	59.67	-101.96	-42.29	15.44	-57.73	peak

Note: 1. Measurement = Reading Level + Correct Factor.
 2. All the modes had been tested, but only the worst data were recorded in the report.
 3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

49KHz ~ 30MHz

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.6453	49.89	-62.09	-12.20	31.43	-43.63	peak
2	1.3099	48.84	-62.14	-13.30	25.27	-38.57	peak
3	3.2343	49.91	-61.53	-11.62	29.54	-41.16	peak
4	7.6314	49.16	-61.12	-11.96	29.54	-41.50	peak
5	13.5038	49.23	-60.95	-11.72	29.54	-41.26	peak
6	27.4619	47.66	-60.21	-12.55	29.54	-42.09	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. All the modes had been tested, but only the worst data were recorded in the report.
3. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

Note: All test mode has been tested, only the worst data record in the report

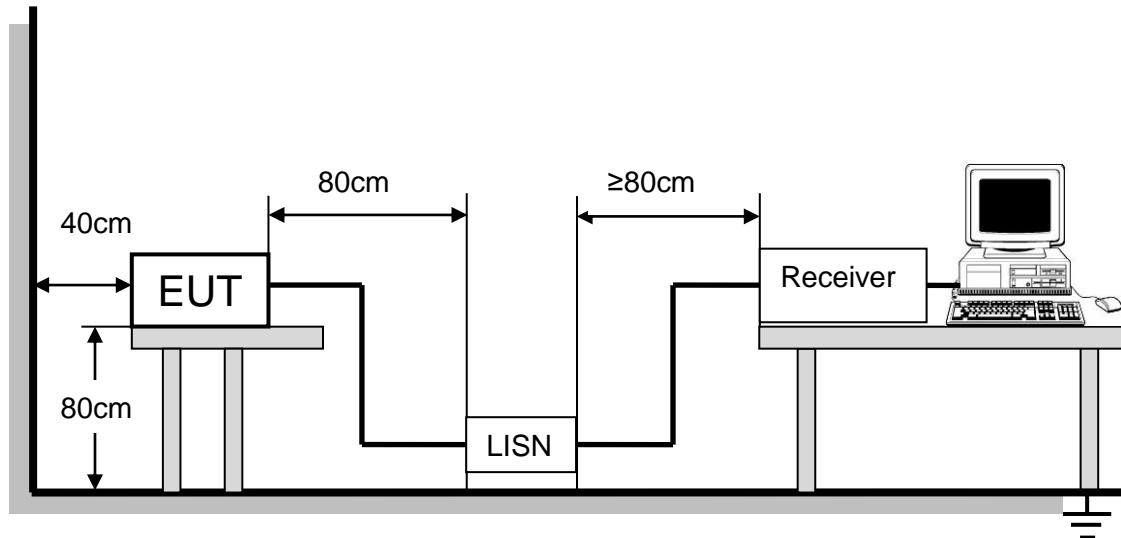
9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a)

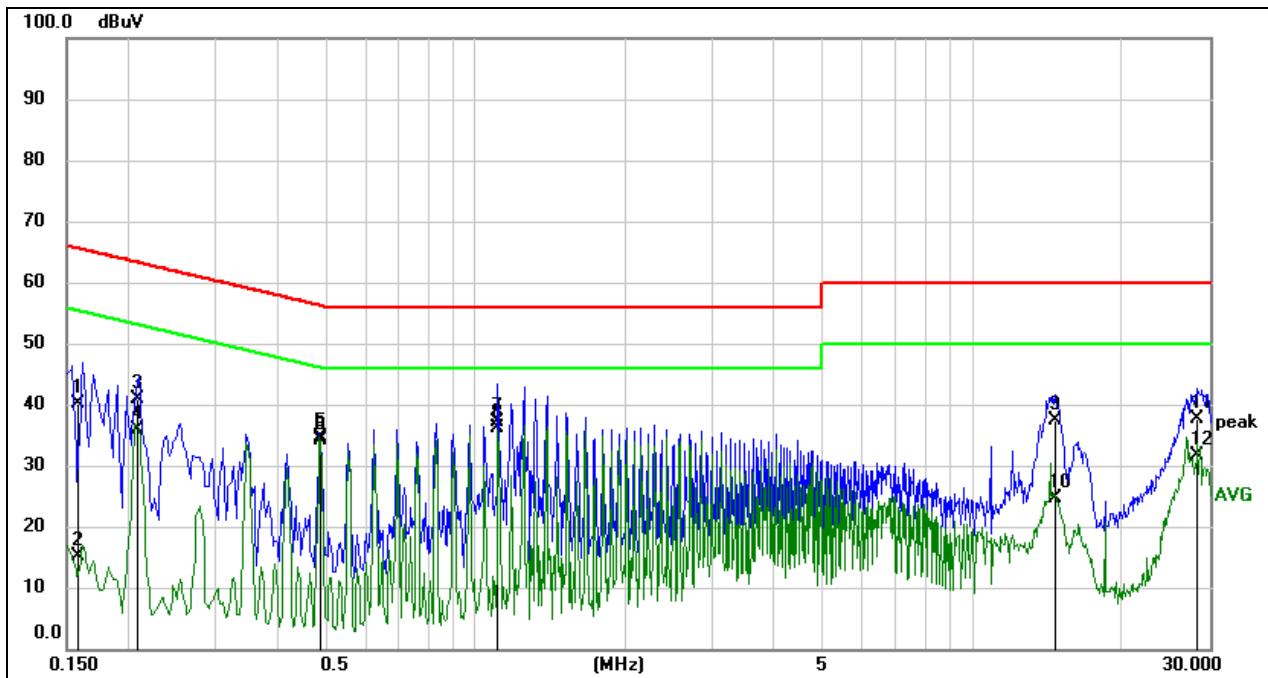
FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

TEST SETUP AND PROCEDURE



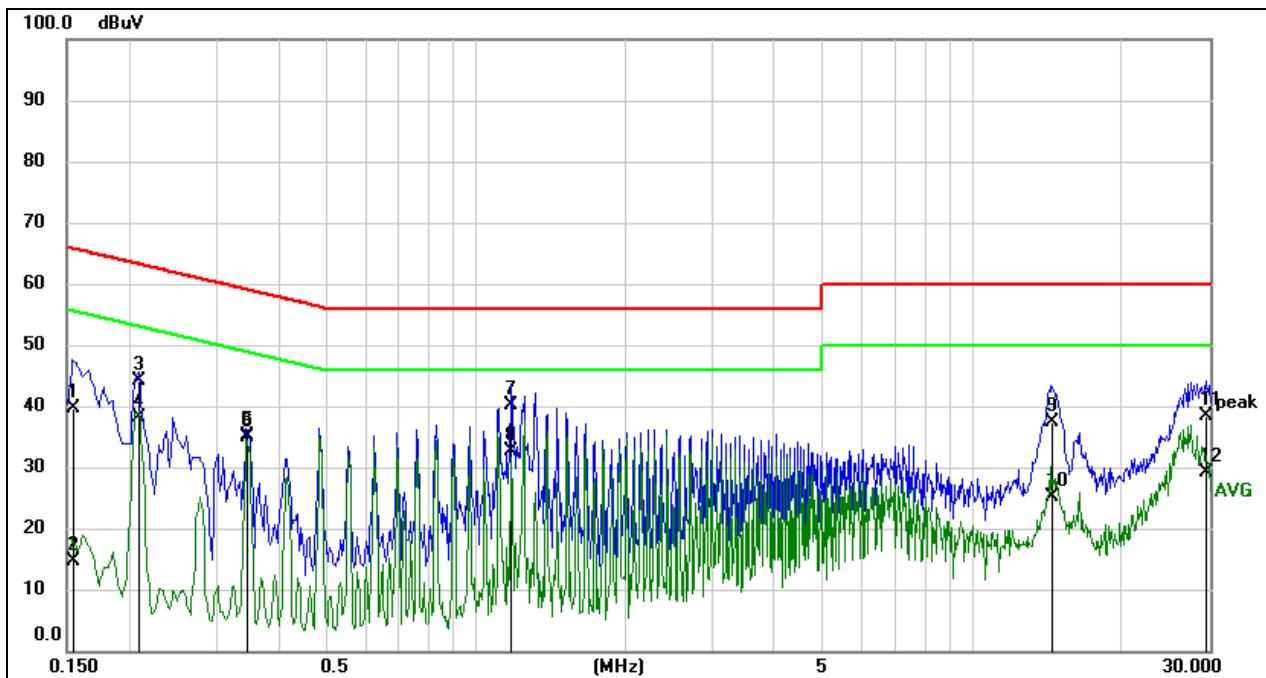
The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2003. 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.

LINE N RESULTS (HIGH CHANNEL, WORST-CASE CONFIGURATION)

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1581	30.44	9.62	40.06	65.56	-25.50	QP
2	0.1581	5.58	9.62	15.20	55.56	-40.36	AVG
3	0.2083	31.34	9.62	40.96	63.27	-22.31	QP
4	0.2083	26.19	9.62	35.81	53.27	-17.46	AVG
5	0.4870	25.05	9.63	34.68	56.22	-21.54	QP
6	0.4870	24.56	9.63	34.19	46.22	-12.03	AVG
7	1.1110	27.48	9.64	37.12	56.00	-18.88	QP
8	1.1110	26.46	9.64	36.10	46.00	-9.90	AVG
9	14.6531	27.55	9.84	37.39	60.00	-22.61	QP
10	14.6531	14.80	9.84	24.64	50.00	-25.36	AVG
11	28.3308	27.65	10.01	37.66	60.00	-22.34	QP
12	28.3308	21.69	10.01	31.70	50.00	-18.30	AVG

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

LINE L RESULTS (HIGH CHANNEL, WORST-CASE CONFIGURATION)


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1555	30.03	9.64	39.67	65.70	-26.03	QP
2	0.1555	4.87	9.64	14.51	55.70	-41.19	AVG
3	0.2087	34.39	9.63	44.02	63.26	-19.24	QP
4	0.2087	28.54	9.63	38.17	53.26	-15.09	AVG
5	0.3480	25.51	9.63	35.14	59.01	-23.87	QP
6	0.3480	25.21	9.63	34.84	49.01	-14.17	AVG
7	1.1808	30.55	9.64	40.19	56.00	-15.81	QP
8	1.1808	22.97	9.64	32.61	46.00	-13.39	AVG
9	14.4477	27.48	9.85	37.33	60.00	-22.67	QP
10	14.4477	15.16	9.85	25.01	50.00	-24.99	AVG
11	29.5208	28.52	9.96	38.48	60.00	-21.52	QP
12	29.5208	19.06	9.96	29.02	50.00	-20.98	AVG

Note: 1. Result = Reading +Correct Factor.
 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
 3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
 4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

Note: All test mode has been tested, only the worst data record in the report

10. ANTENNA REQUIREMENTS

Applicable requirements

Please refer to FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)

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

RESULTS

Complies

END OF REPORT