CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 ISSUE 2

TEST REPORT

For

Smart Plug

MODEL NUMBER: 7A-PL-W-A1

FCC ID: 2AB2Q-7APLWA1
IC: 10256A-7APLWA1

REPORT NUMBER: 4788899177.1-6

ISSUE DATE: March 25, 2019

Prepared for

LEEDARSON LIGHTING CO., LTD.
Xingtai Industrial Zone, Economic Development Zone, Changtai County, Zhangzhou City, Fujian Province, P.R.China

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	3/25/2019	Initial Issue	

Summary of Test Results			
Clause	**Test Items**	**FCC/IC Rules**	**Test Results**
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
2	Peak Conducted Output Power	FCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (e)	Pass
3	Power Spectral Density	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d) RSS-247 Clause 5.5	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
6	Conducted Emission Test For AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 8.3	Pass

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: LEEDARSON LIGHTING CO., LTD.
Address: Xingtai Industrial Zone, Economic Development Zone, Changtai County, Zhangzhou City, Fujian Province, P.R.China

Manufacturer Information

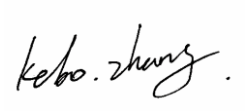
Company Name: LEEDARSON LIGHTING CO., LTD.
Address: Xingtai Industrial Zone, Economic Development Zone, Changtai County, Zhangzhou City, Fujian Province, P.R.China

EUT Description

EUT Name: Smart Plug
Model: 7A-PL-W-A1
Brand Name: LEEDARSON
Sample Status: Normal
Sample Received Date: March 11, 2019
Date of Tested: March 11~ 21, 2019

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-GEN Issue 5	PASS

Prepared By:



Kebo Zhang
Engineer Project Associate

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r01, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**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. **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 Delcaration of Conformity (DoC) and Certification rules **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. **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. 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

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: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.

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	Smart Plug
Model	7A-PL-W-A1
Radio Technology	IEEE802.11b/g/n HT20
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
Rated Input	AC 120V, 60Hz
Remark	1. There are four different choices for the end product and They have the same RF circuit and the performance , same technical construction including drive circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction. The difference lies only have different brands of relay and with or without the power analyzer chip. 2. The end product will have two kinds of appearance, but the change of appearance is very small and the material is the same, the two kinds of appearance has been considered, so the test will show the worst case.

Test Construction	Description
Construction 1	AZ9481 Relay with power analyzer chip
Construction 2	AZ9481 Relay without power analyzer chip
Construction 3	HF7520 Relay with power analyzer chip
Construction 4	HF7520 Relay without power analyzer chip

Appearance 1(Test Construction)	Appearance 2
	

5.2. MAXIMUM OUTPUT POWER

Number of Transmit Chains (NTX)	IEE Std. 802.11	Frequency (MHz)	Channel Number	Max PK Conducted Power (dBm)
1	IEEE 802.11b	2412-2462	1-11[11]	17.94
1	IEEE 802.11g	2412-2462	1-11[11]	20.04
1	IEEE 802.11nHT20	2412-2462	1-11[11]	19.62

5.3. CHANNEL LIST

Channel List for 802.11b/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
WiFi TX(802.11b)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11g)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11n HT20)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz

5.5. THE WORSE CASE CONFIGURATIONS

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software		UI_mptool		
Modulation Mode	Transmit Antenna Number	Test Channel		
		NCB: 20MHz		
		CH 1	CH 6	CH 11
802.11b	1	42	41	42
802.11g	1	47	46	47
802.11n HT20	1	45	44	45

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2412-2462	Integral Antenna	0.88

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	Laptop	ThinkPad	T460S	SL10K24796 JS
2	USB TO UART	/	/	/

I/O CABLES

Item	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	NA	NA	1	/

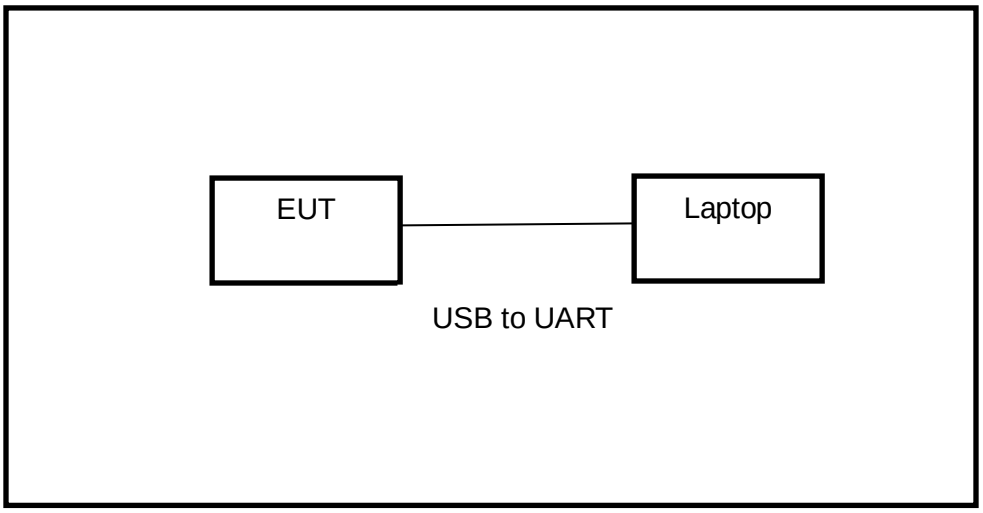
ACCESSORIES

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

TEST SETUP

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

SETUP DIAGRAM FOR TESTS



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Dec.10,2018	Dec.10,2019
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.10,2018	Dec.10,2019
☑	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.10,2018	Dec.10,2019
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Radiated Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec.10,2018	Dec.10,2019
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sep.17, 2018	Sep.17, 2021
☑	Preamplifier	HP	8447D	2944A09099	Dec.10,2018	Dec.10,2019
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.10,2018	Dec.10,2019
☑	Horn Antenna	TDK	HRN-0118	130939	Sep.17, 2018	Sep.17, 2021
☑	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Aug.11, 2018	Aug.11, 2021
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.10,2018	Dec.10,2019
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.10,2018	Dec.10,2019
☑	Loop antenna	Schwarzbeck	1519B	00008	Mar.26,2016	Mar.25, 2019
☑	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Dec.10,2018	Dec.10,2019
☑	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Dec.10,2018	Dec.10,2019
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Radiated disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Other instruments						

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.10,2018	Dec.10,2019
☑	Power Meter	Keysight	N1911A	MY55416024	Dec.10,2018	Dec.10,2019
☑	Power Sensor	Keysight	U2021XA	MY5100022	Dec.10,2018	Dec.10,2019

7. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6dB Bandwidth	KDB 558074 D01 15.247 Meas Guidance v05r01	8.2
2	Peak Output Power	KDB 558074 D01 15.247 Meas Guidance v05r01	8.3.1.3/8.3.2.3
3	Power Spectral Density	KDB 558074 D01 15.247 Meas Guidance v05r01	8.4
4	Out-of-band emissions in non-restricted bands	KDB 558074 D01 15.247 Meas Guidance v05r01	8.5
5	Out-of-band emissions in restricted bands	KDB 558074 D01 15.247 Meas Guidance v05r01	8.6
6	Band-edge	KDB 558074 D01 15.247 Meas Guidance v05r01	8.7
7	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	6.2
8	99% Bandwidth	ANSI C63.10-2013	6.9.3

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

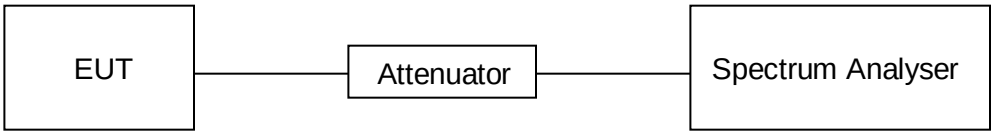
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



TEST ENVIRONMENT

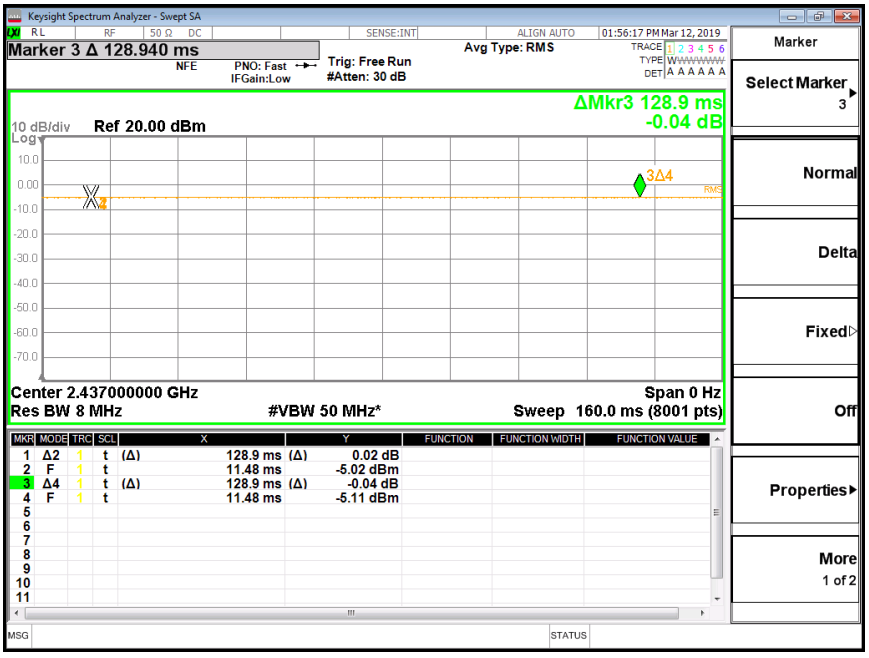
Temperature	22.8°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V,60Hz

RESULTS

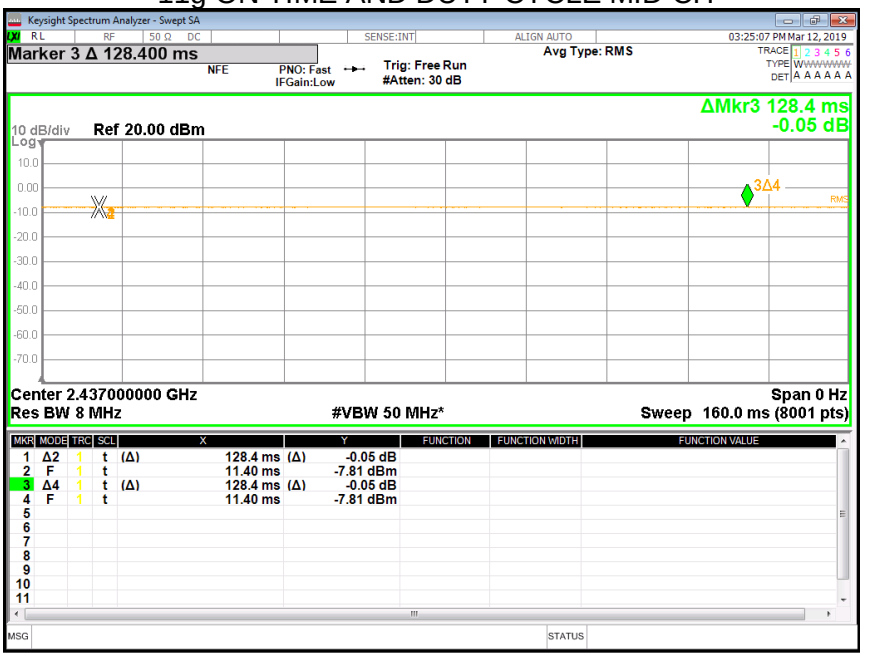
Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (KHz)	Final setting For VBW (KHz)
11b	128.9	128.9	1	100	0	0.008	0.01
11g	128.4	128.4	1	100	0	0.008	0.01
11n20	128.2	128.2	1	100	0	0.008	0.01

Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer then the next higher value should be used.

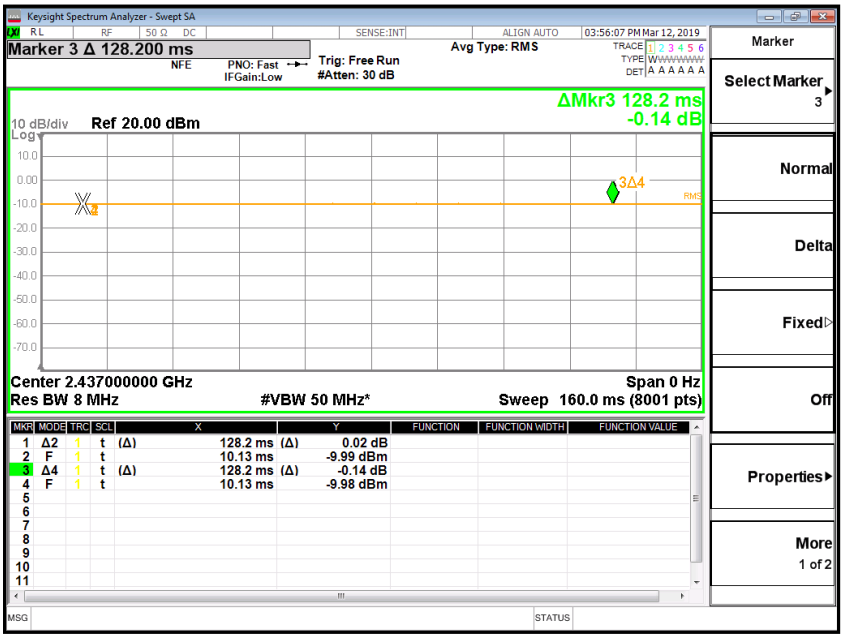
11b ON TIME AND DUTY CYCLE MID CH



11g ON TIME AND DUTY CYCLE MID CH



11n HT20 ON TIME AND DUTY CYCLE MID CH



8.2. 6 dB DTS BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500KHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99% Occupied Bandwidth	For reporting purposes only.	2400-2483.5

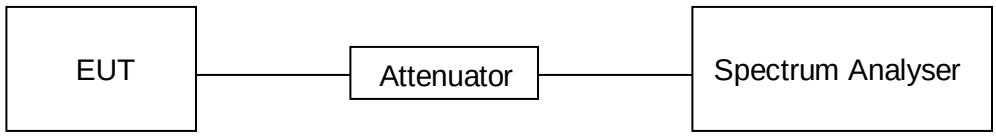
TEST PROCEDURE

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 6dB Bandwidth :100K For 99% Occupied Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Occupied Bandwidth : approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

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

TEST SETUP



TEST ENVIRONMENT

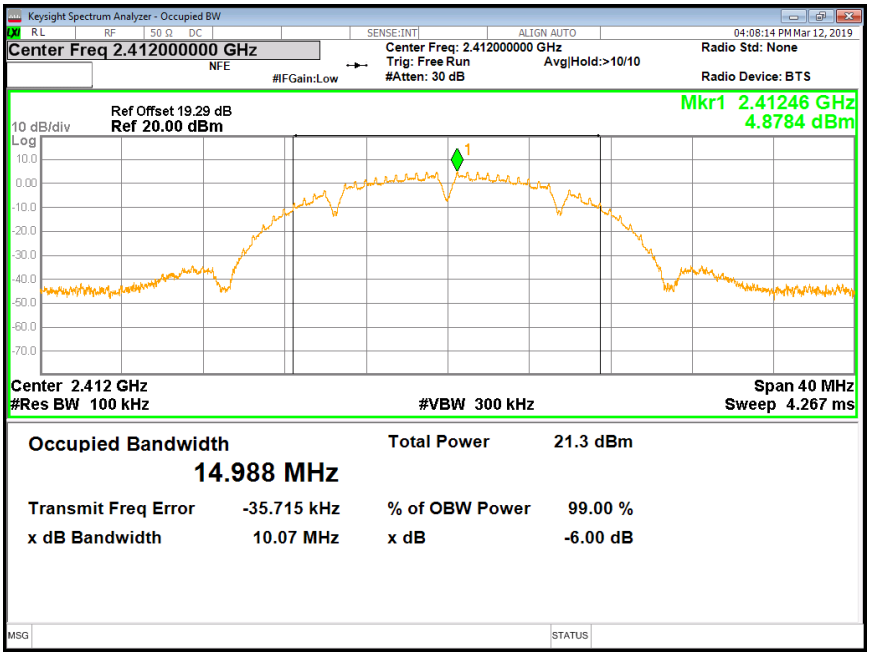
Temperature	22.8°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V,60Hz

RESULTS

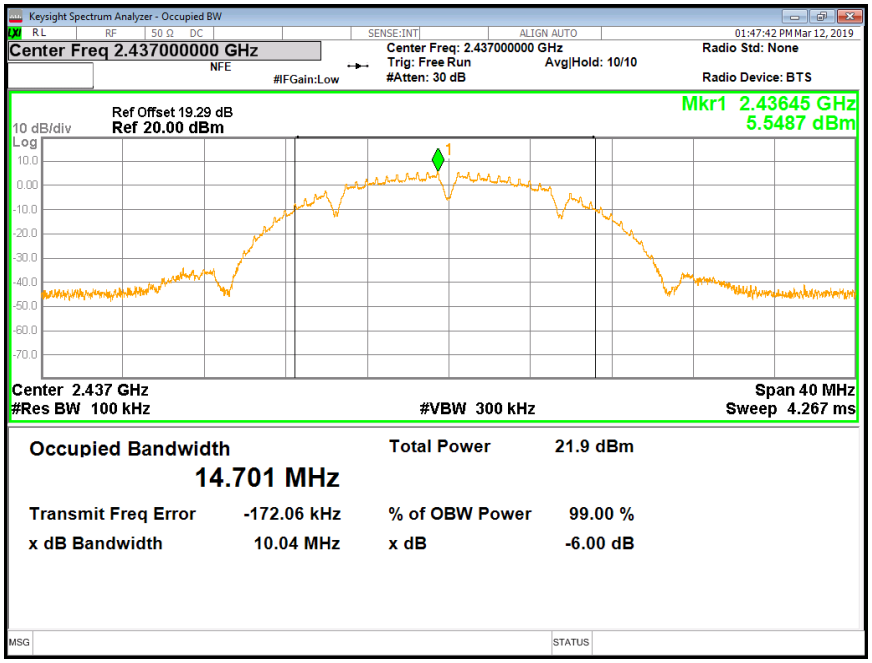
8.2.1. 802.11b MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	10.07	15.016	≥500	Pass
Middle	10.04	14.724	≥500	Pass
High	10.06	14.854	≥500	Pass

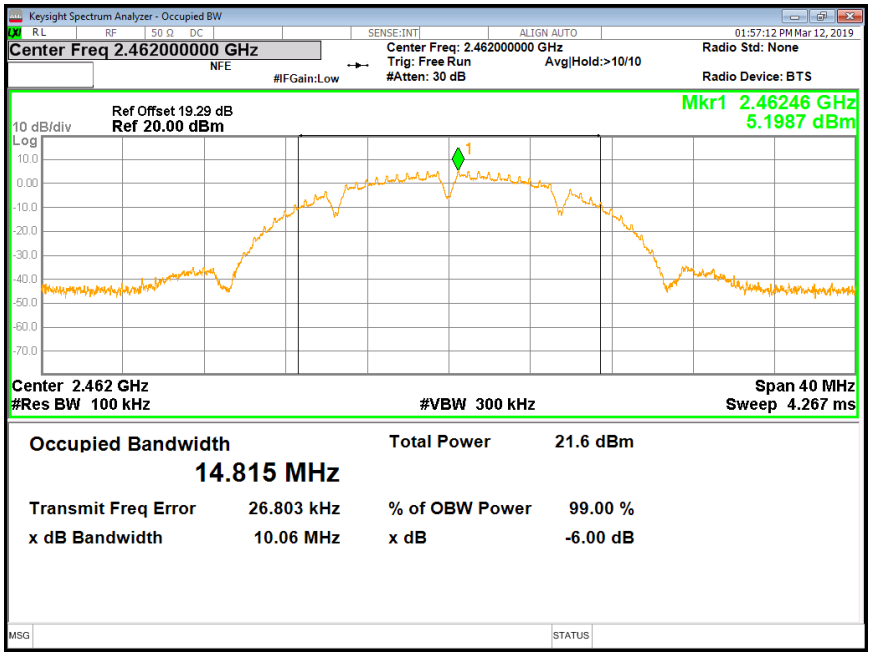
6 dB BANDWIDTH LOW CH



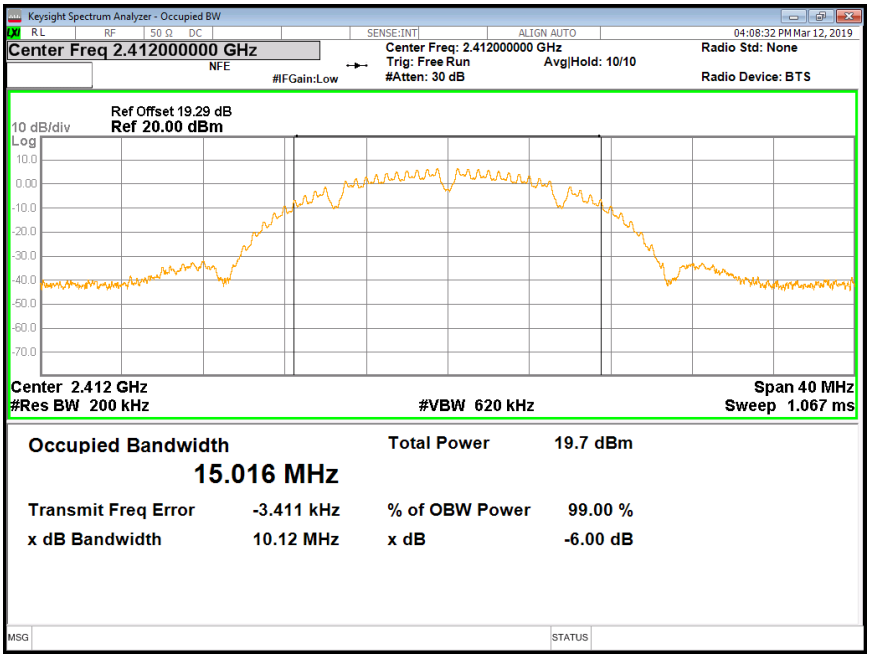
6 dB BANDWIDTH MID CH



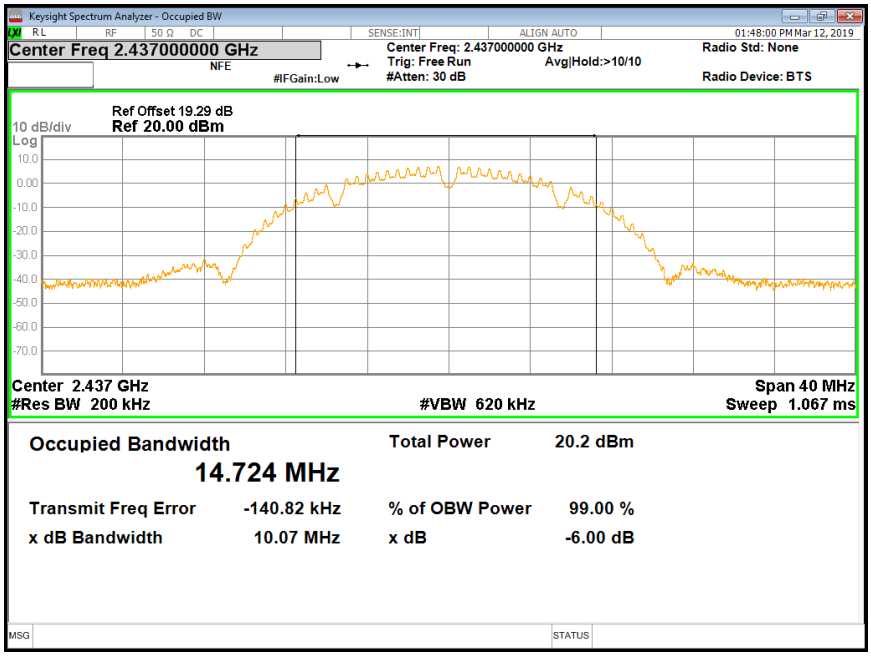
6 dB BANDWIDTH HIGH CH



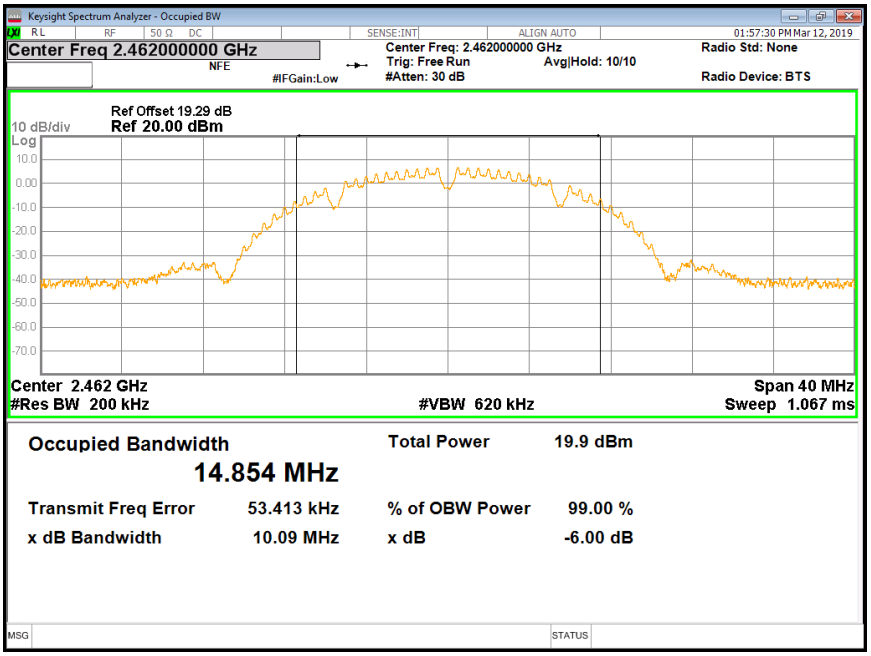
99%BANDWIDTH LOW CH



99% BANDWIDTH MID CH



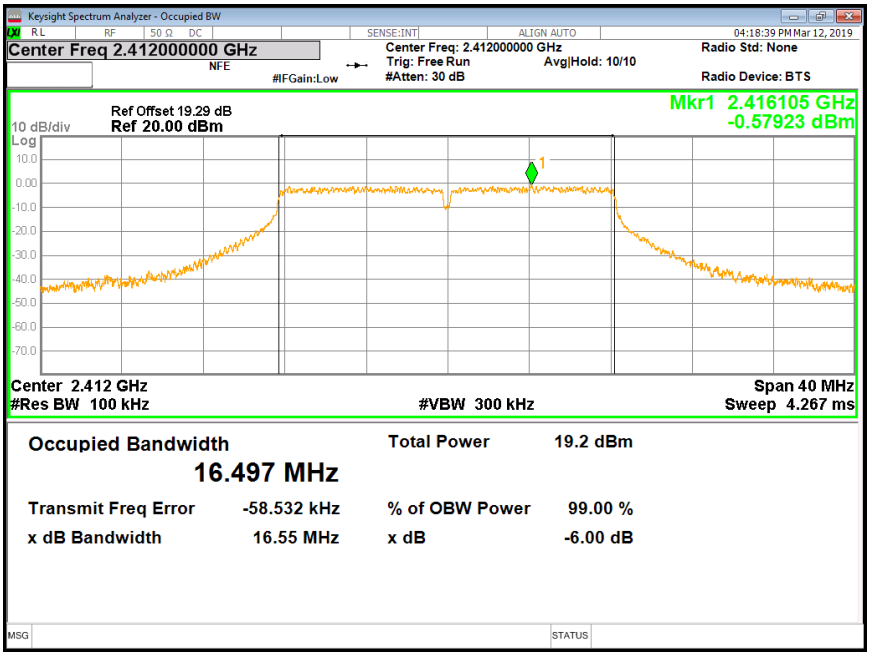
99% BANDWIDTH HIGH CH



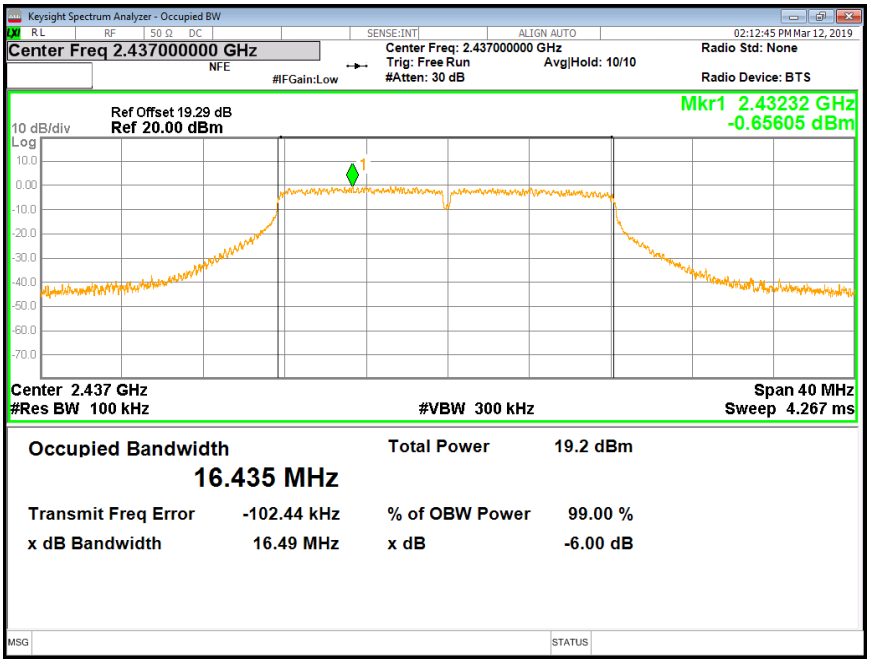
8.2.2. 802.11g MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	16.55	16.671	≥500	Pass
Middle	16.49	16.589	≥500	Pass
High	16.47	16.582	≥500	Pass

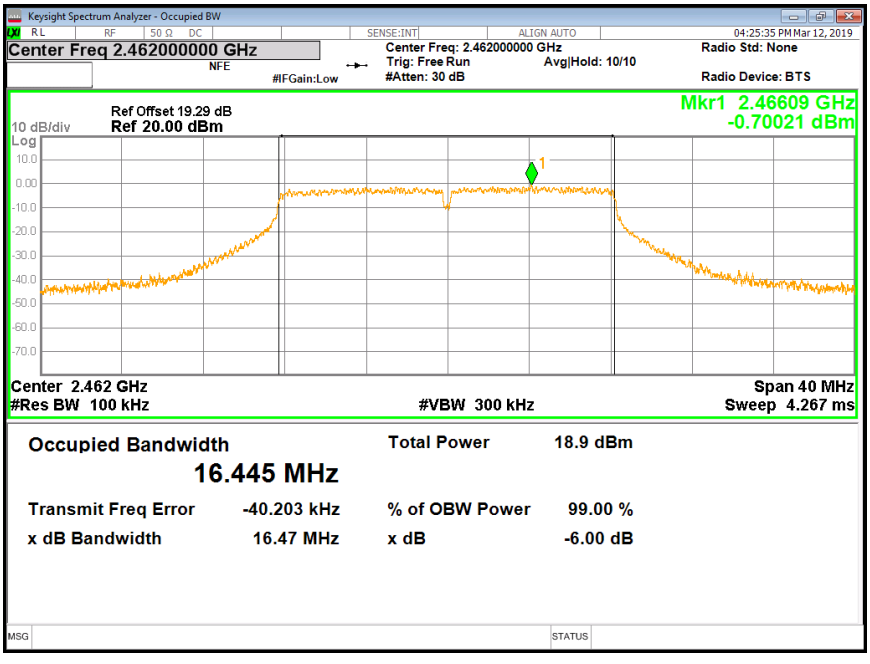
6 dB BANDWIDTH LOW CH



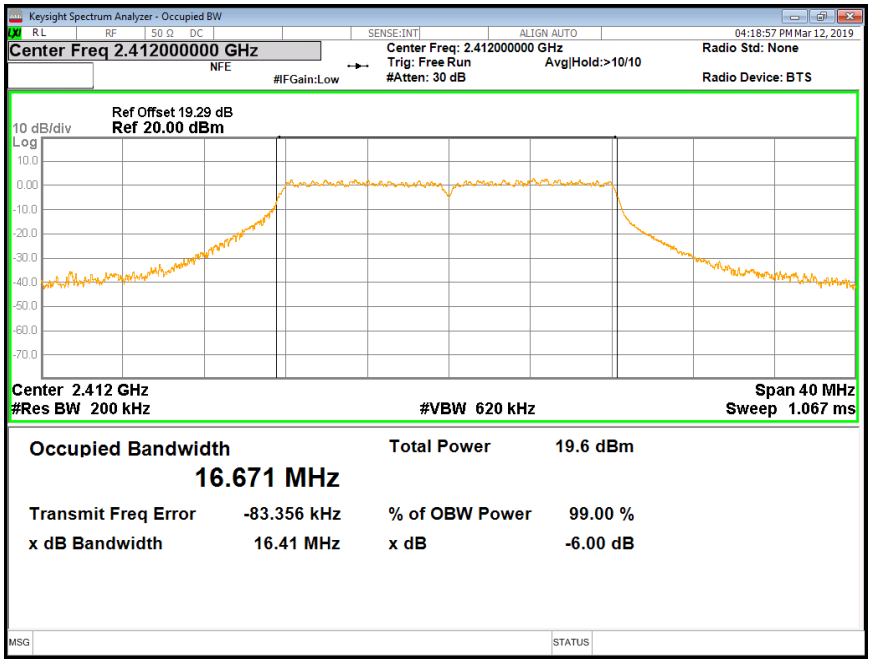
6 dB BANDWIDTH MID CH



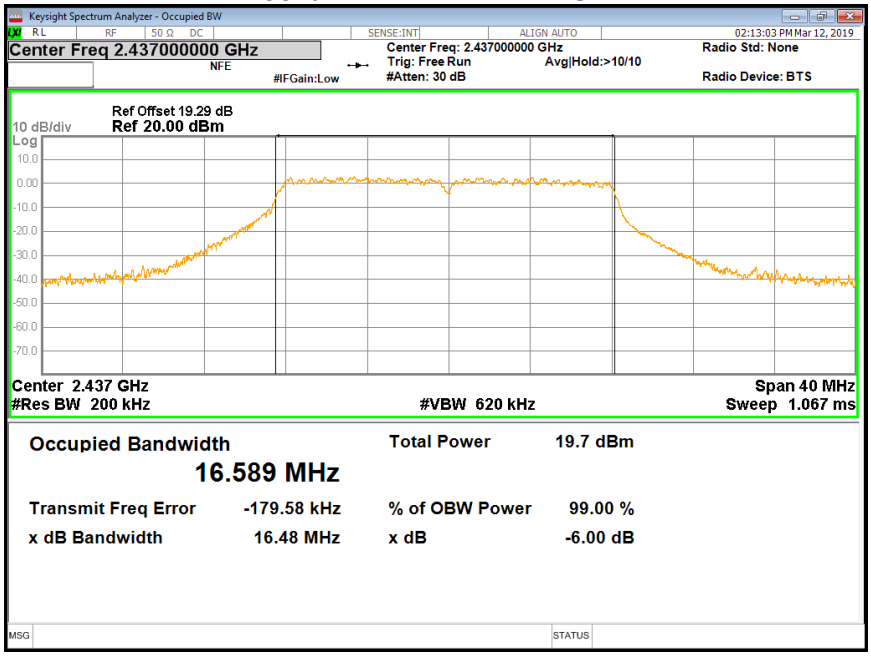
6 dB BANDWIDTH HIGH CH



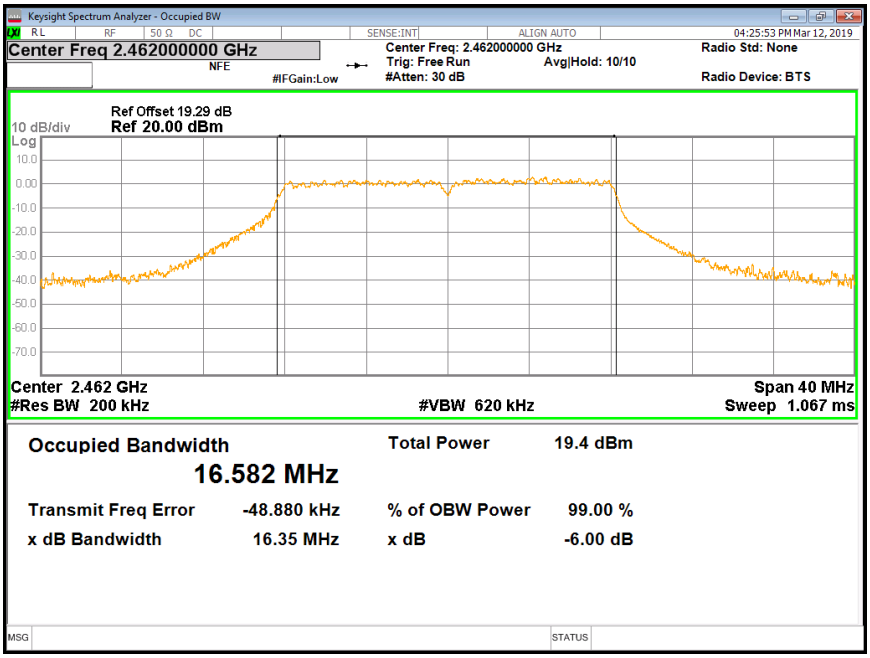
99% BANDWIDTH LOW CH



99%BANDWIDTH MID CH



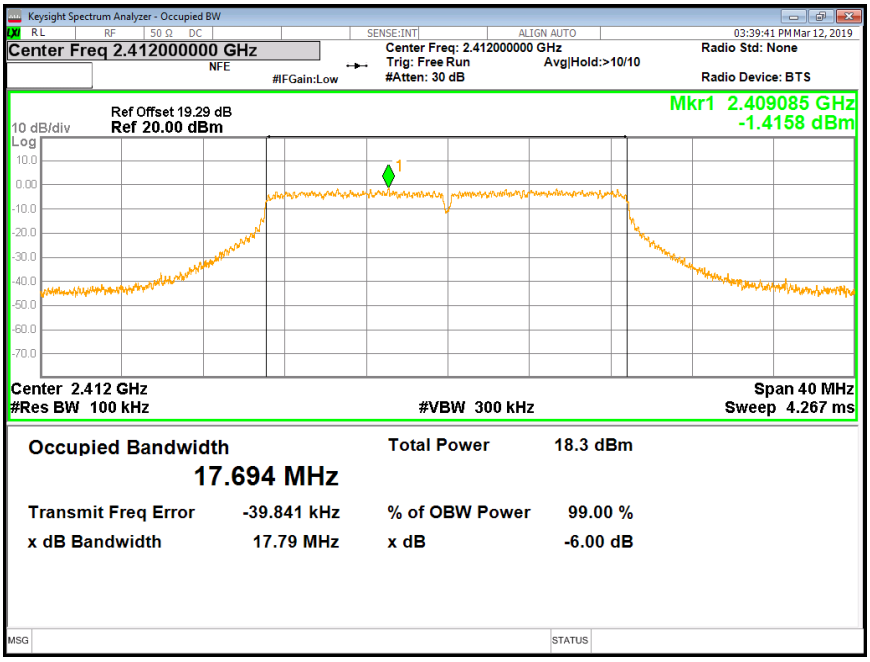
99% BANDWIDTH HIGH CH



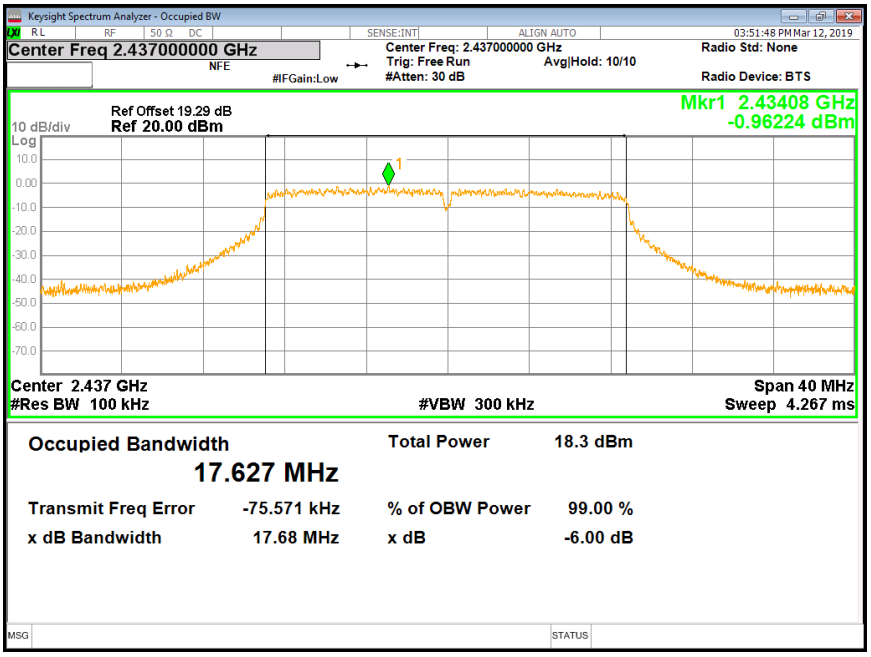
8.2.3. 802.11n HT20 MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	17.79	17.816	≥500	Pass
Middle	17.68	17.715	≥500	Pass
High	17.71	17.736	≥500	Pass

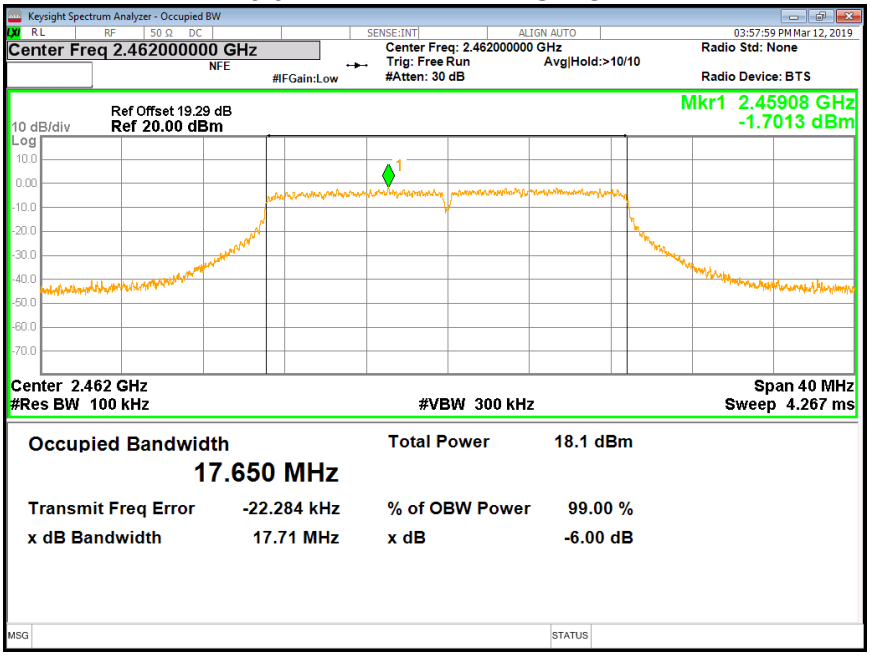
6 dB BANDWIDTH LOW CH



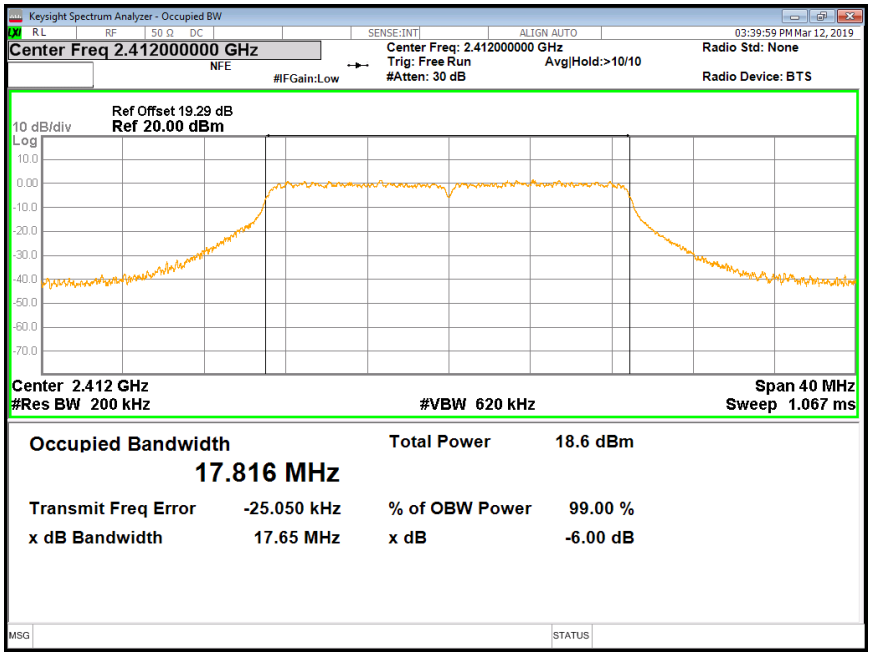
6 dB BANDWIDTH MID CH



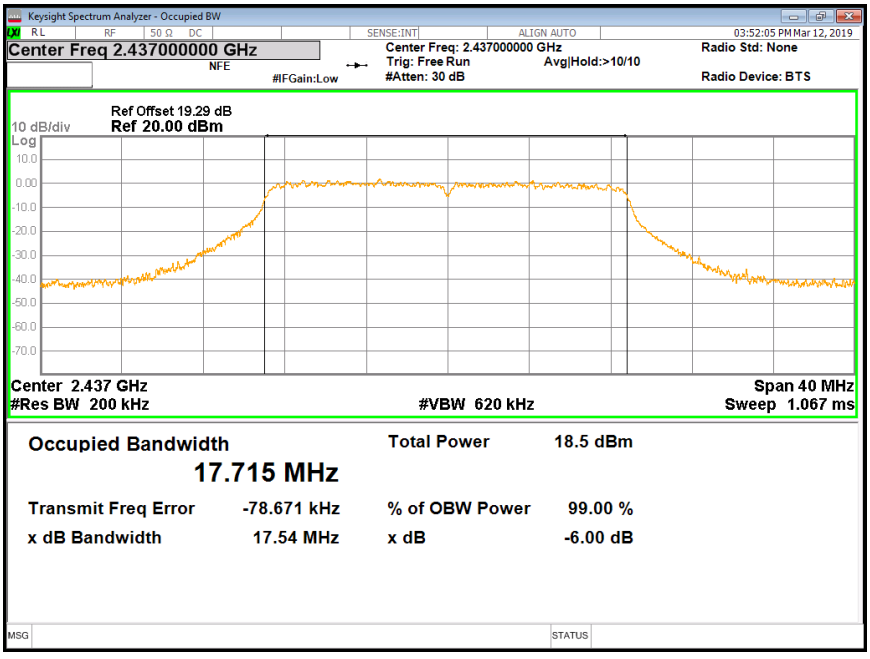
6 dB BANDWIDTH HIGH CH



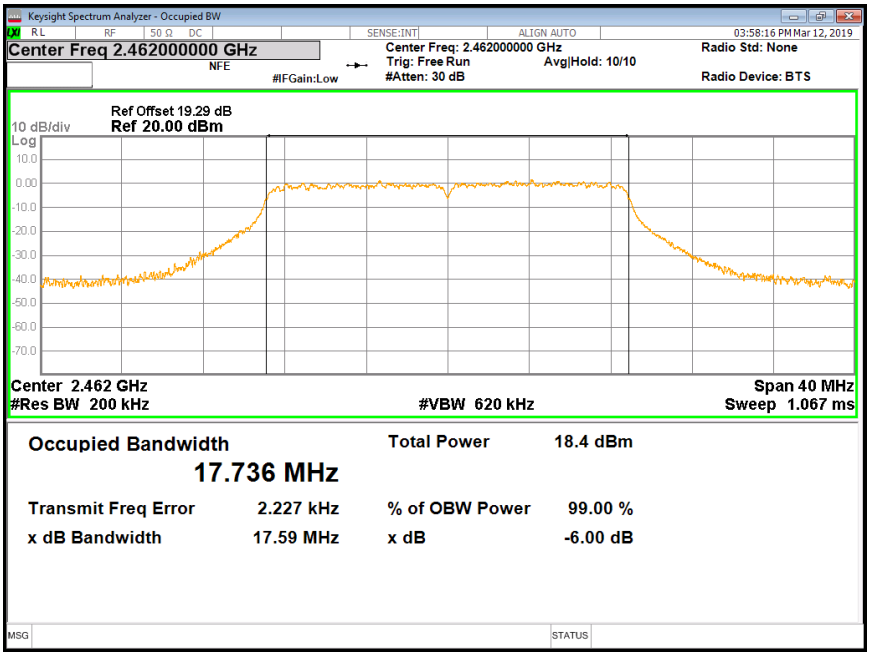
99%BANDWIDTH LOW CH



99% BANDWIDTH MID CH



99% BANDWIDTH HIGH CH



8.3. PEAK CONDUCTED OUTPUT POWER

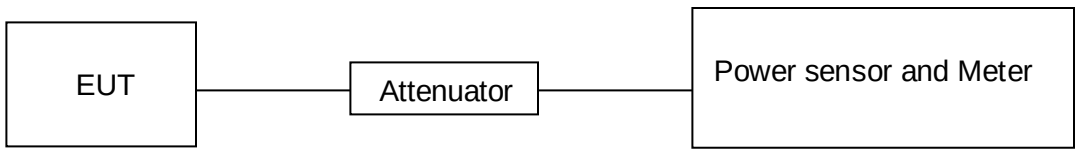
LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (e)	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 the power of each channel.
Peak Detector use for Peak result.
AVG Detector use for AVG result.

TEST SETUP



TEST ENVIRONMENT

Temperature	22.8°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V,60Hz

RESULTS

8.3.1. 802.11b MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	17.83	15.38	30
Middle	17.92	15.39	30
High	17.94	15.48	30

8.3.2. 802.11g MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	19.89	13.56	30
Middle	20.04	13.37	30
High	20.03	13.44	30

8.3.3. 802.11n HT20 MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	19.51	12.53	30
Middle	19.55	12.47	30
High	19.62	12.52	30

8.4. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

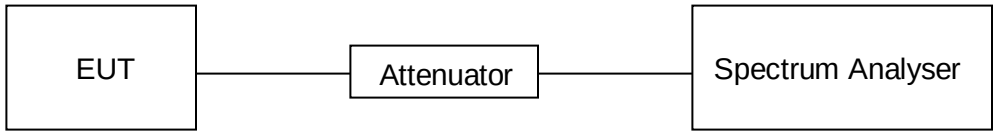
TEST PROCEDURE

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 kHz ≤ RBW ≤100 kHz
VBW	≥3 × RBW
Span	1.5 x 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

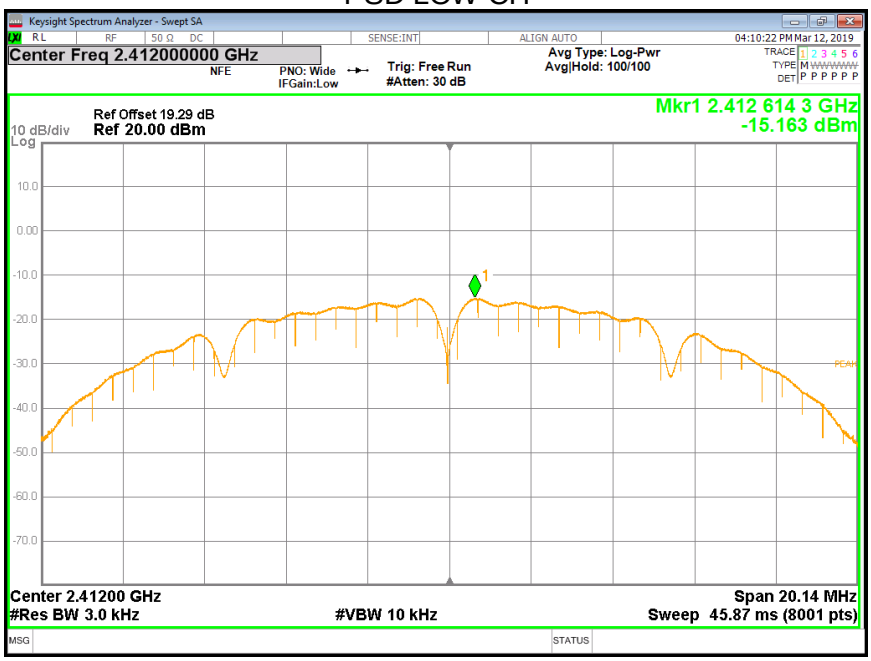
Temperature	22.8°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V,60Hz

RESULTS

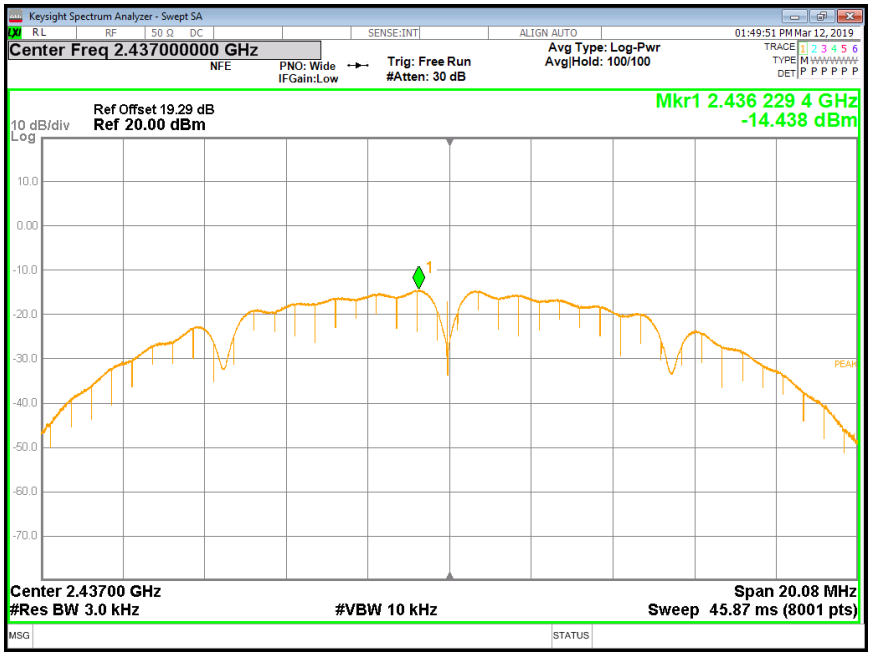
8.4.1. 802.11b MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-15.163	8	PASS
Middle	-14.438	8	PASS
High	-14.934	8	PASS

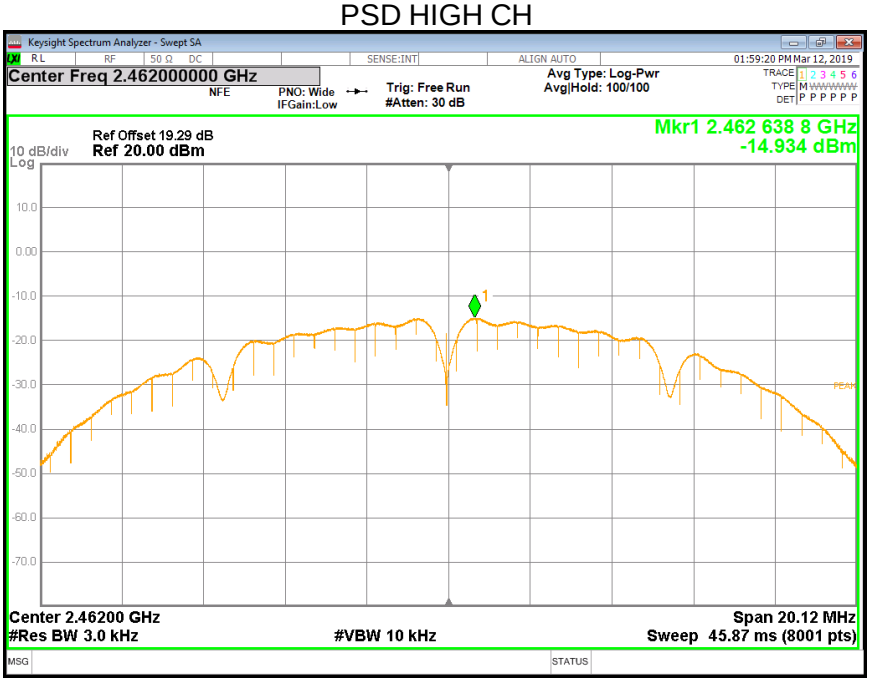
PSD LOW CH



PSD MID CH



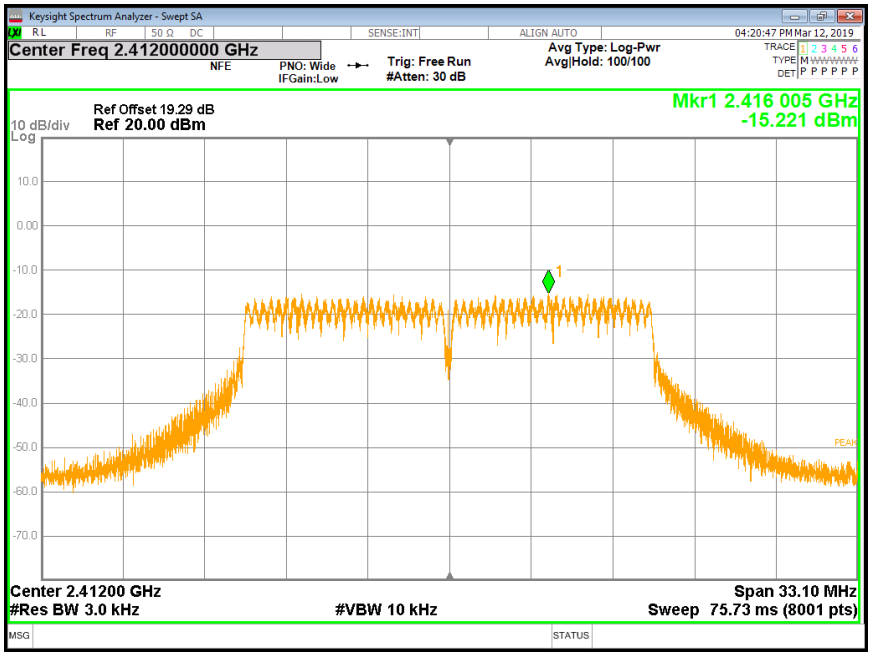
PSD HIGH CH



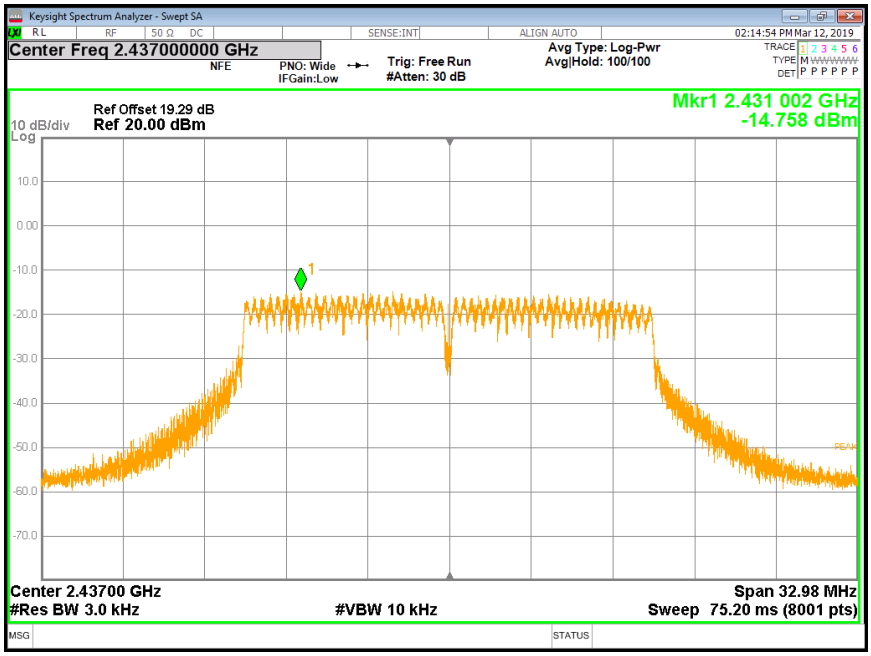
8.4.2. 802.11g MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-15.221	8	PASS
Middle	-14.758	8	PASS
High	-14.248	8	PASS

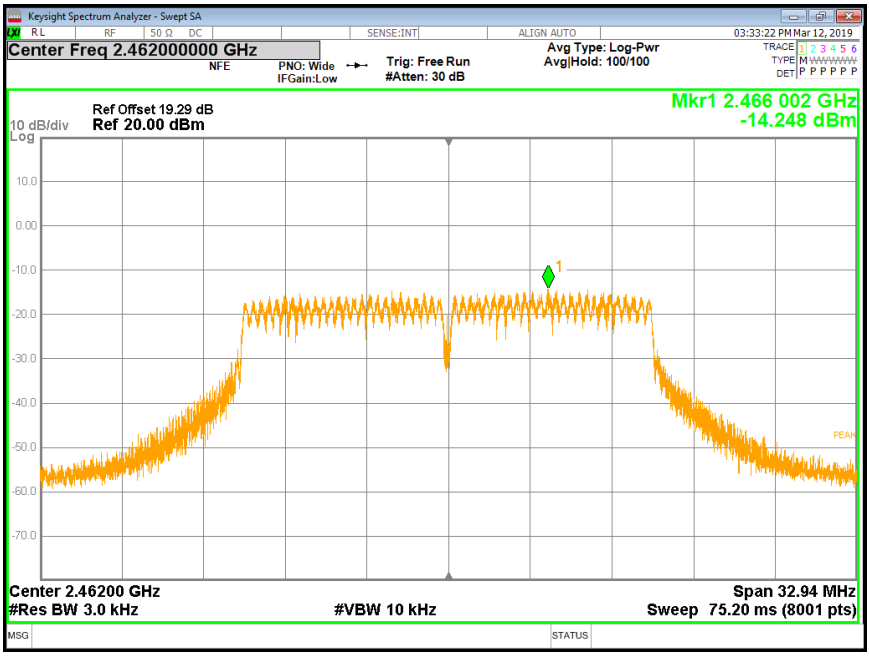
PSD LOW CH



PSD MID CH



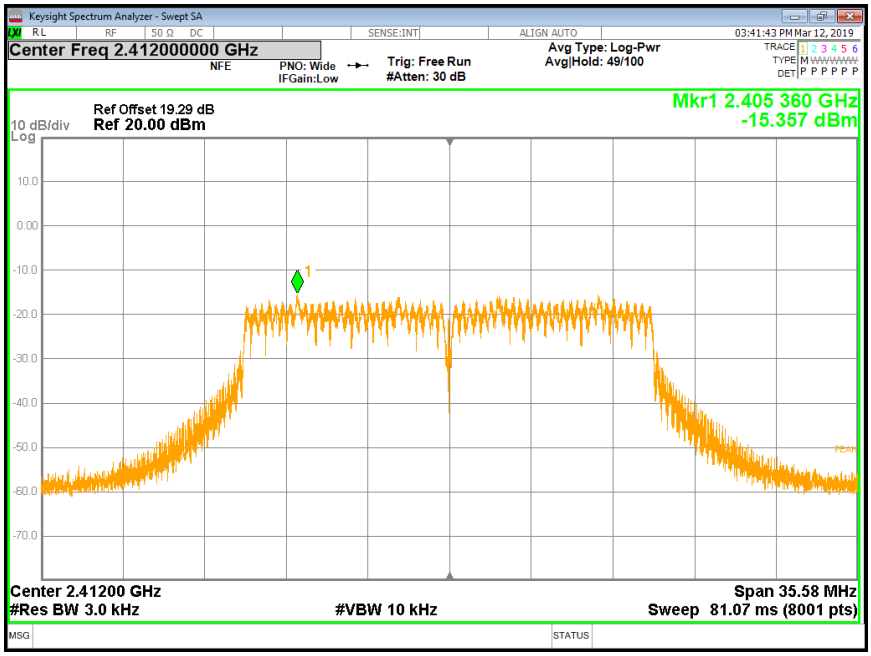
PSD HIGH CH



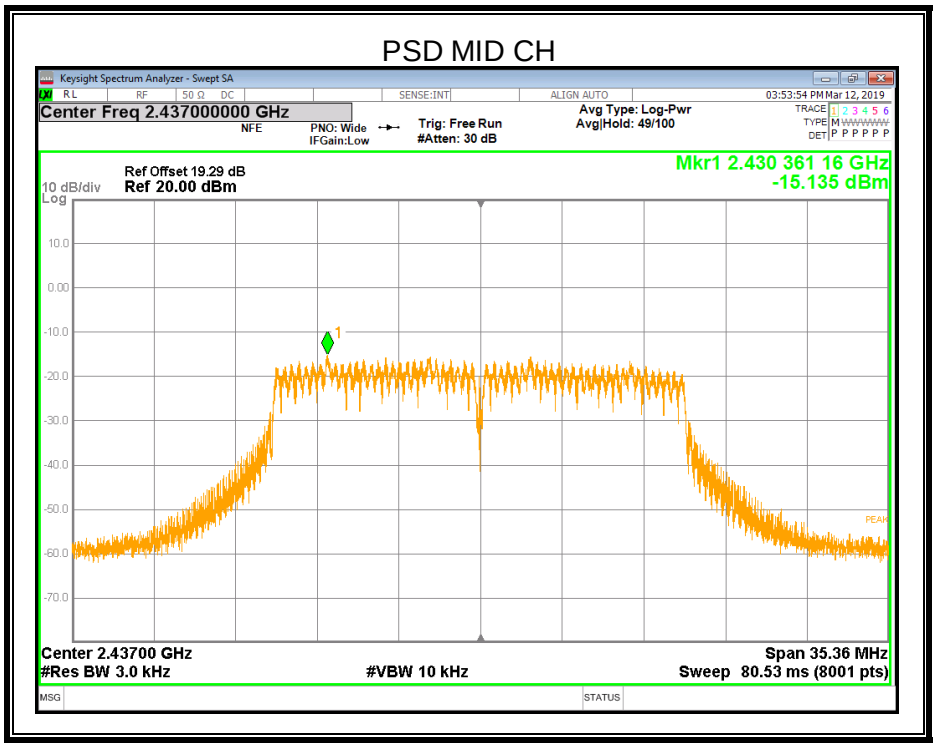
8.4.3. 802.11n HT20 MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-15.357	8	PASS
Middle	-15.135	8	PASS
High	-15.556	8	PASS

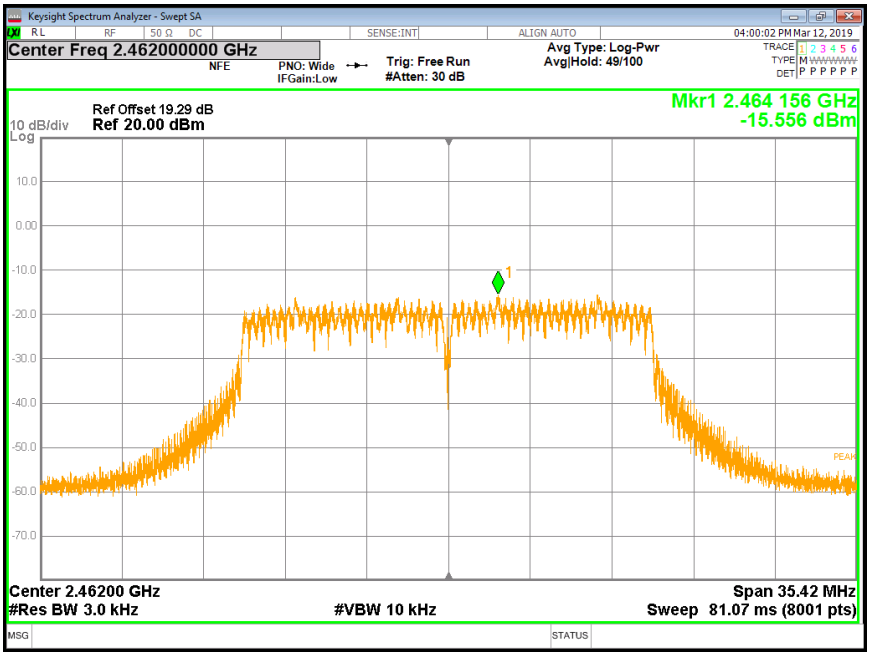
PSD LOW CH



PSD MID CH



PSD HIGH CH



8.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d) ISED 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:

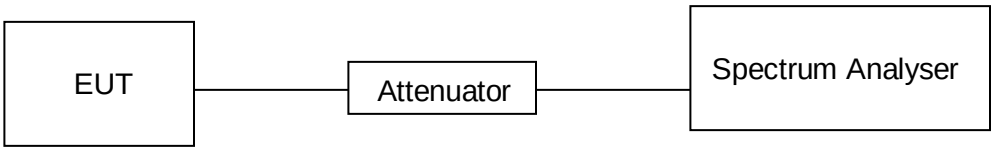
Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

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	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

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

TEST SETUP



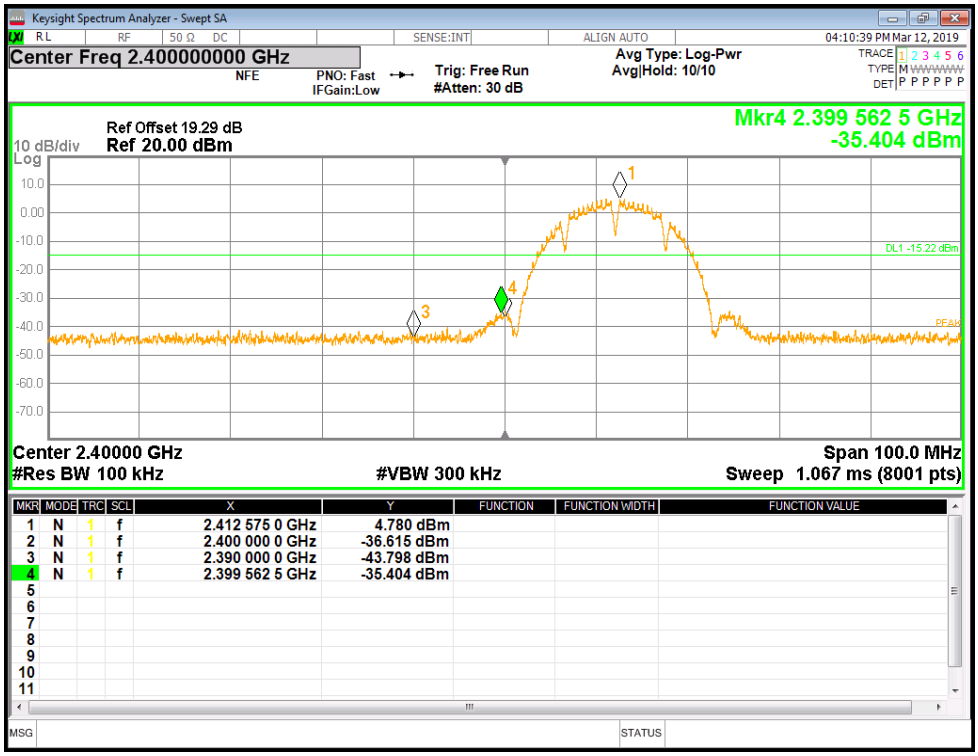
TEST ENVIRONMENT

Temperature	22.8°C	Relative Humidity	56%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V,60Hz

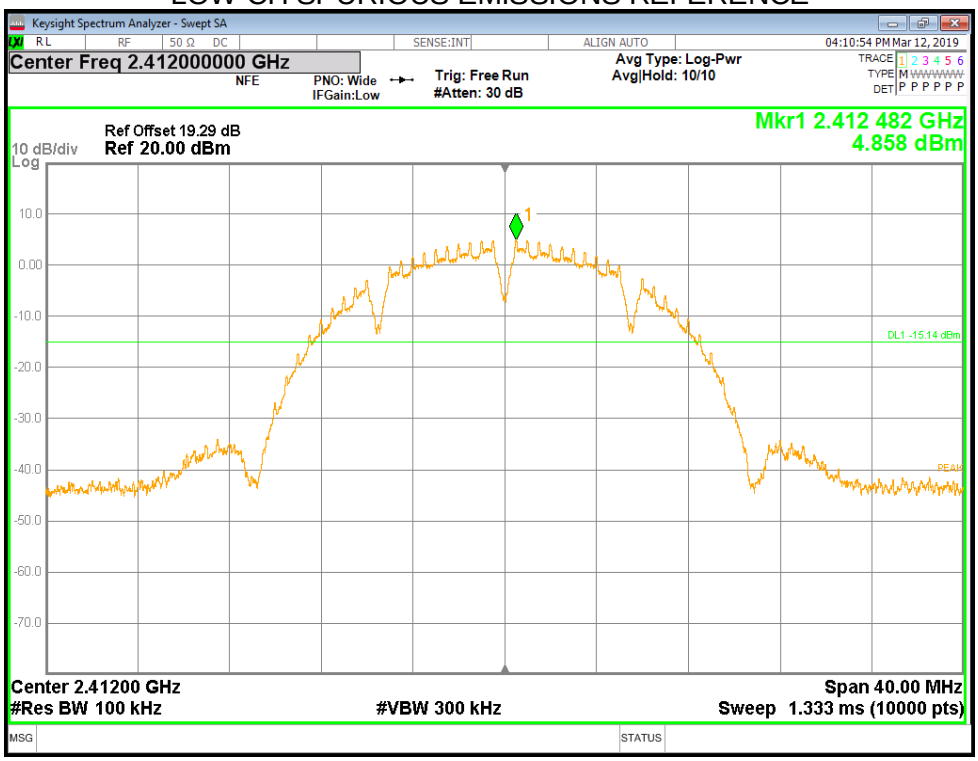
RESULTS

8.5.1. 802.11b MODE

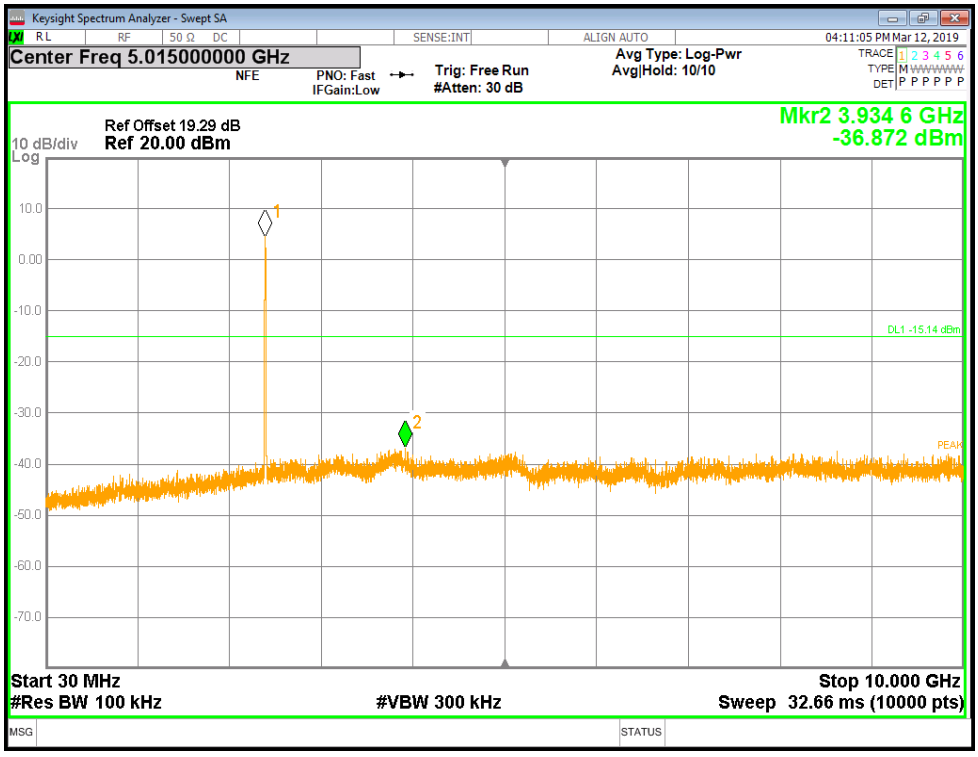
LOW CH BANDEDGE



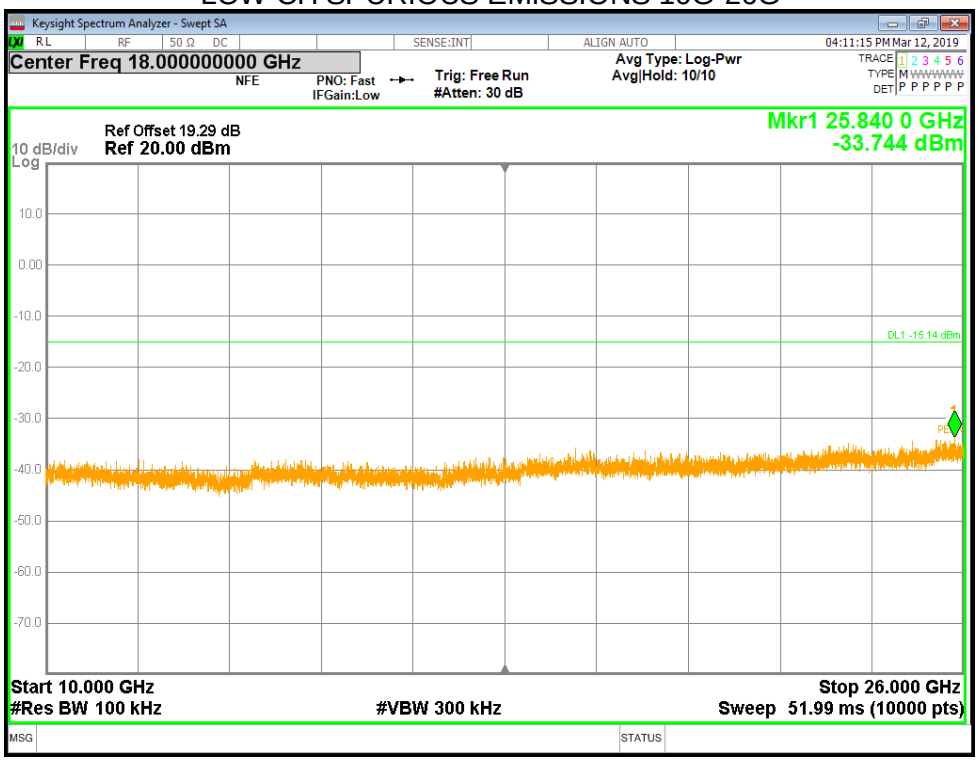
LOW CH SPURIOUS EMISSIONS REFERENCE



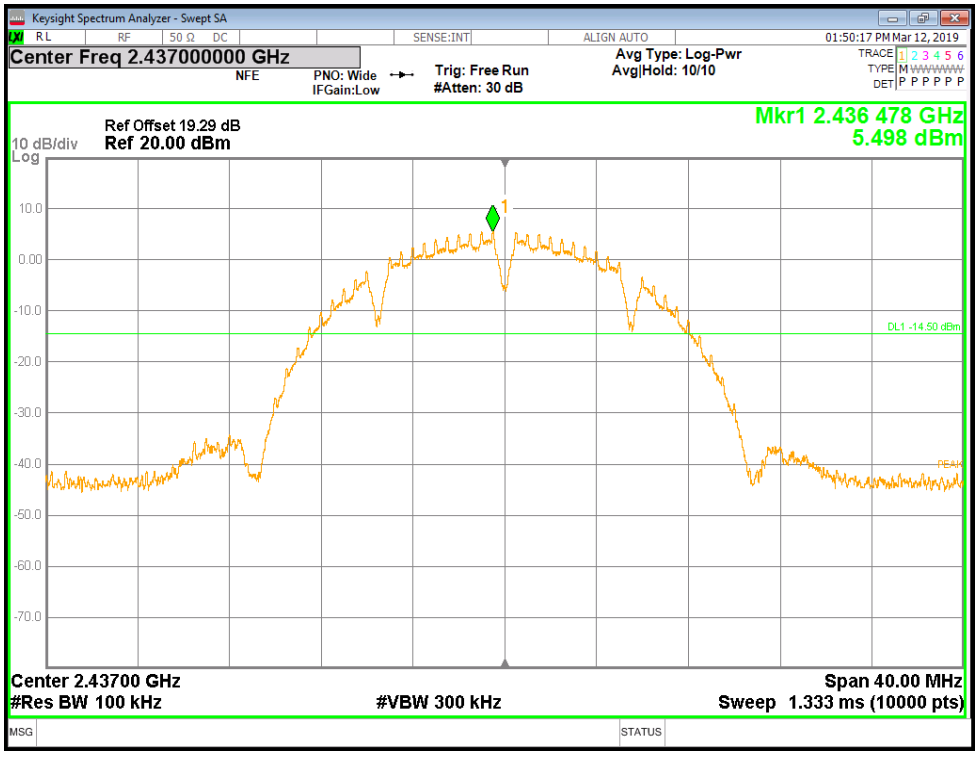
LOW CH SPURIOUS EMISSIONS 30M-10G



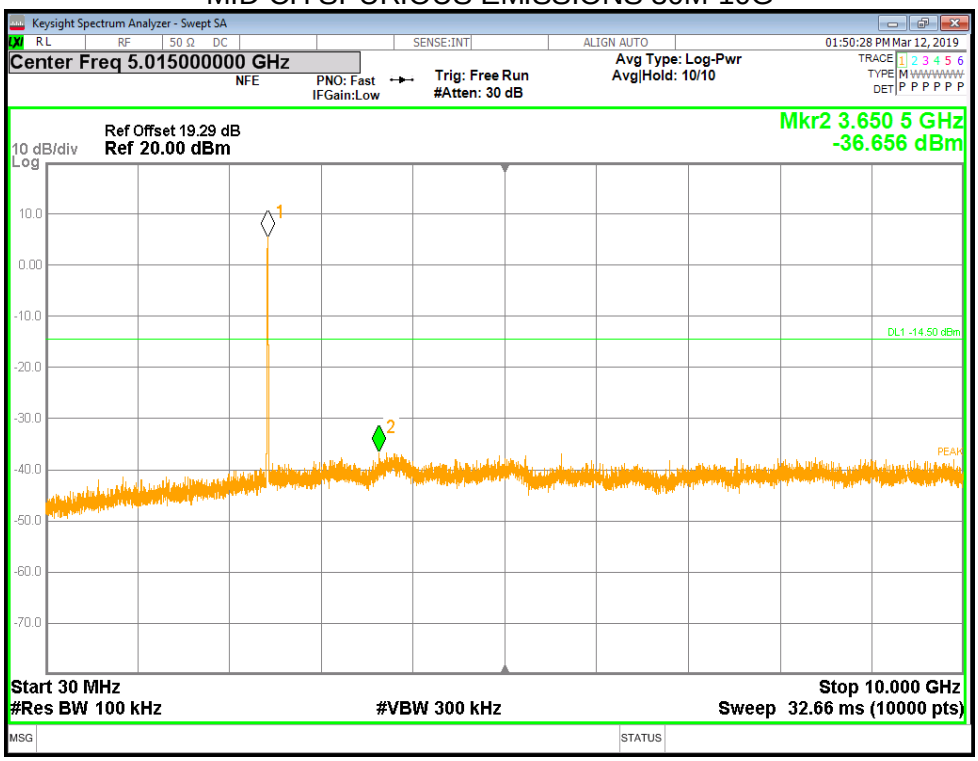
LOW CH SPURIOUS EMISSIONS 10G-26G



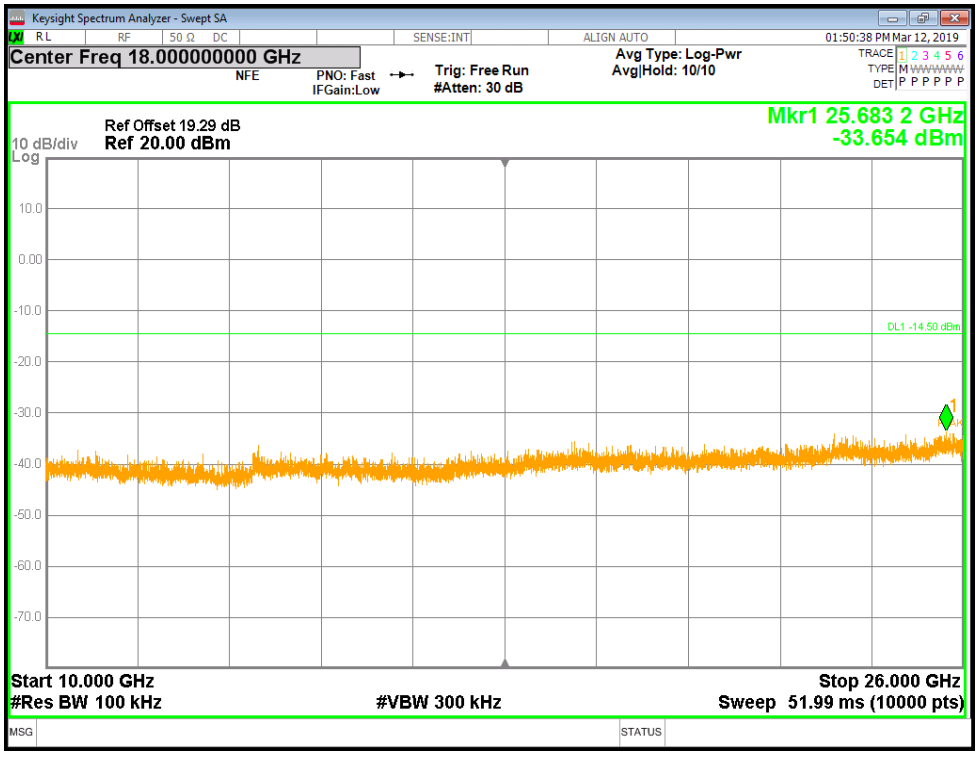
MID CH SPURIOUS EMISSIONS REFERENCE



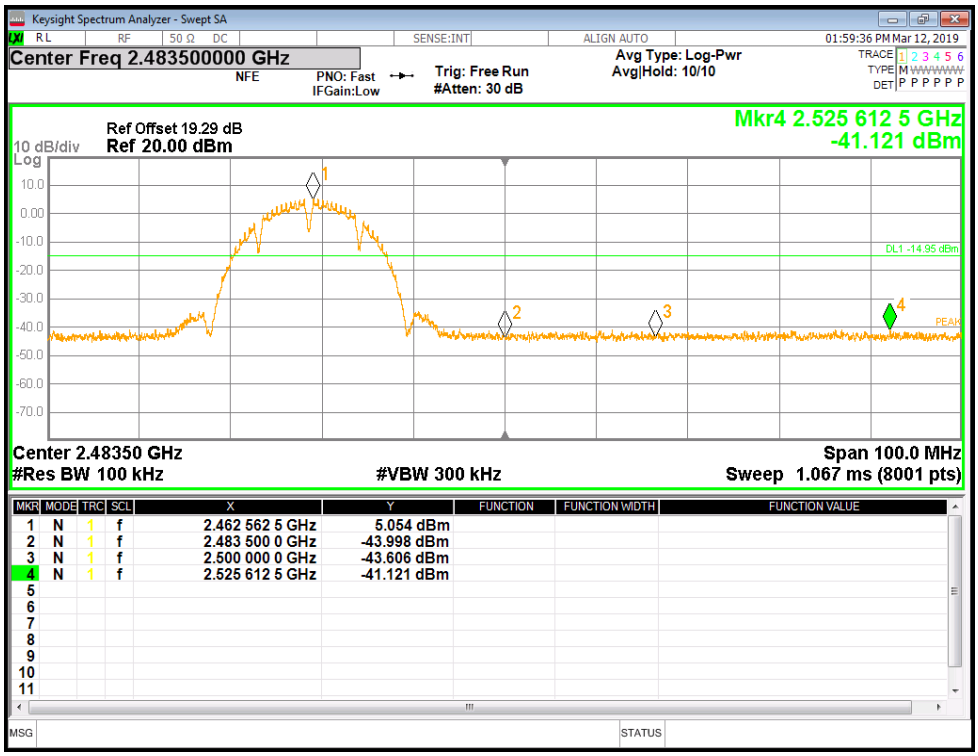
MID CH SPURIOUS EMISSIONS 30M-10G



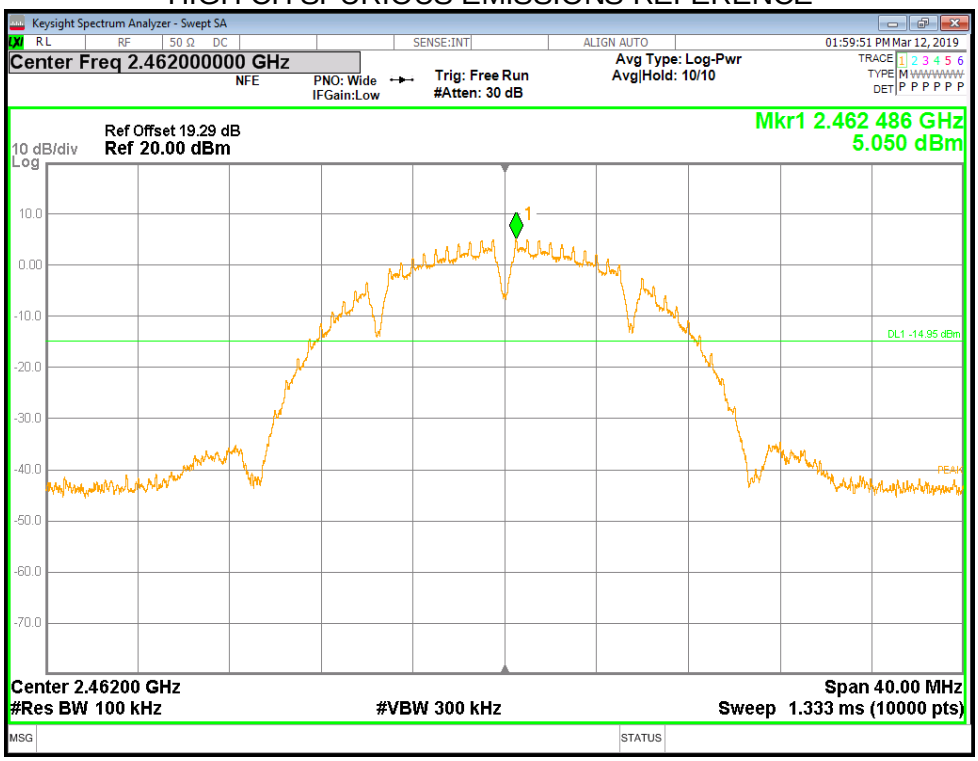
MID CH SPURIOUS EMISSIONS 10G-26G



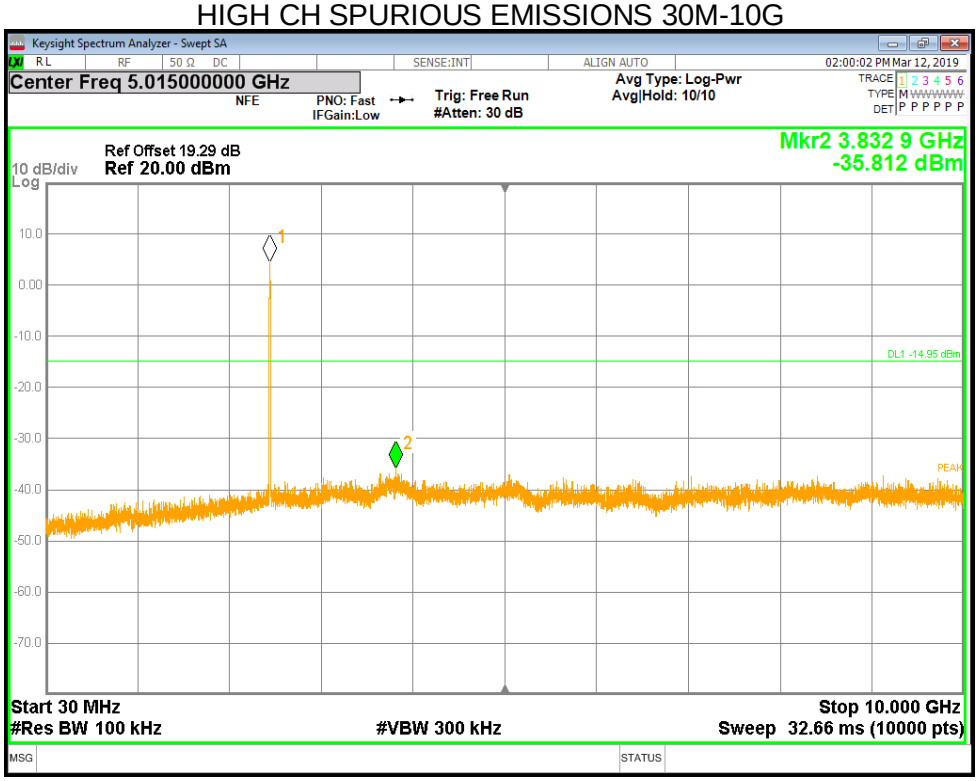
HIGH CH BANDEDGE



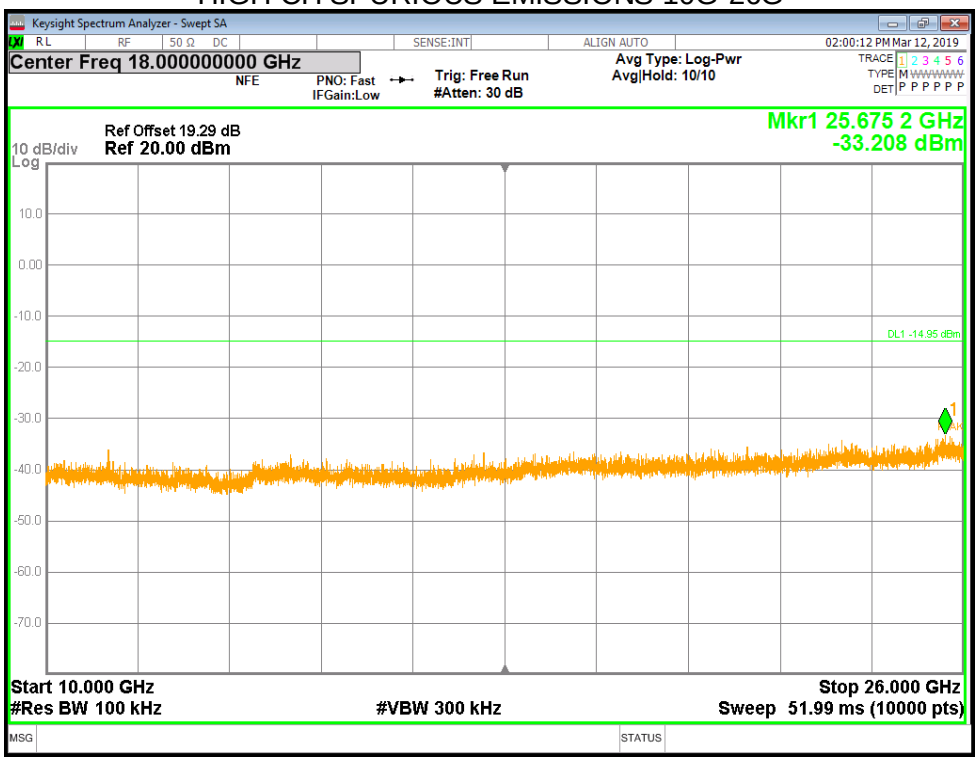
HIGH CH SPURIOUS EMISSIONS REFERENCE



HIGH CH SPURIOUS EMISSIONS 30M-10G

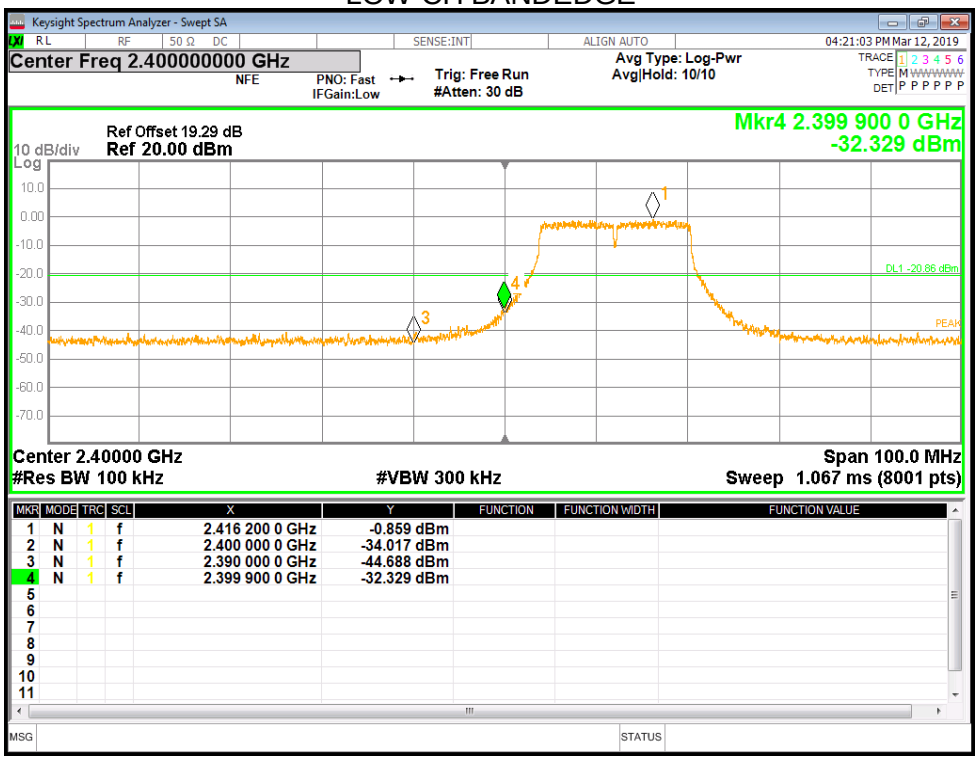


HIGH CH SPURIOUS EMISSIONS 10G-26G

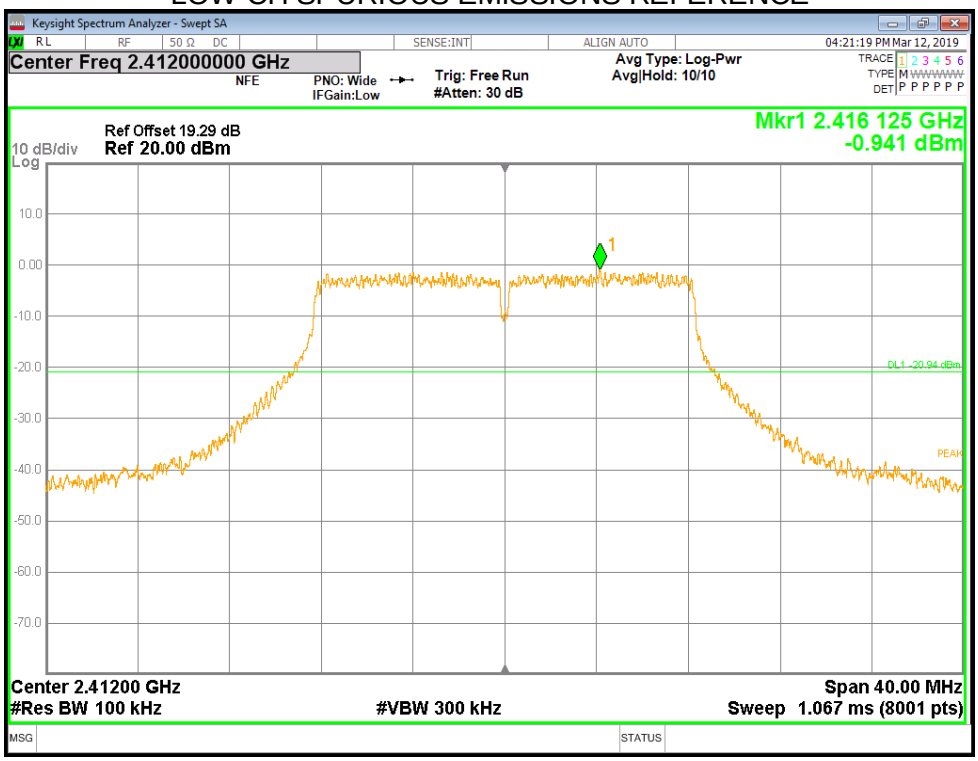


8.5.1. 802.11g MODE

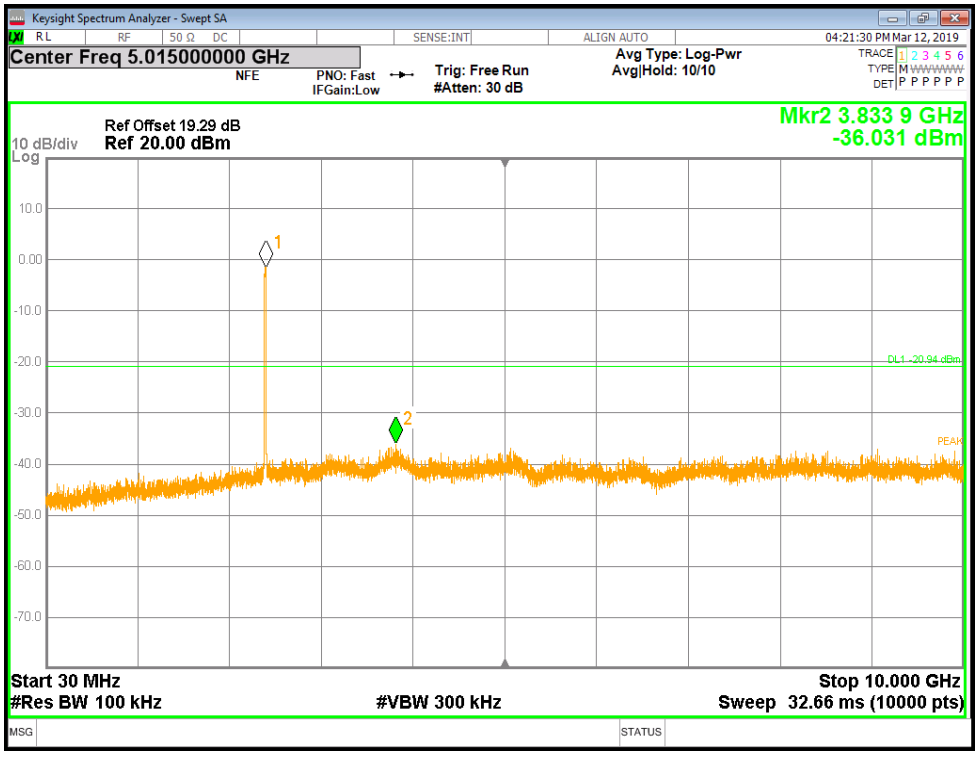
LOW CH BANDEDGE



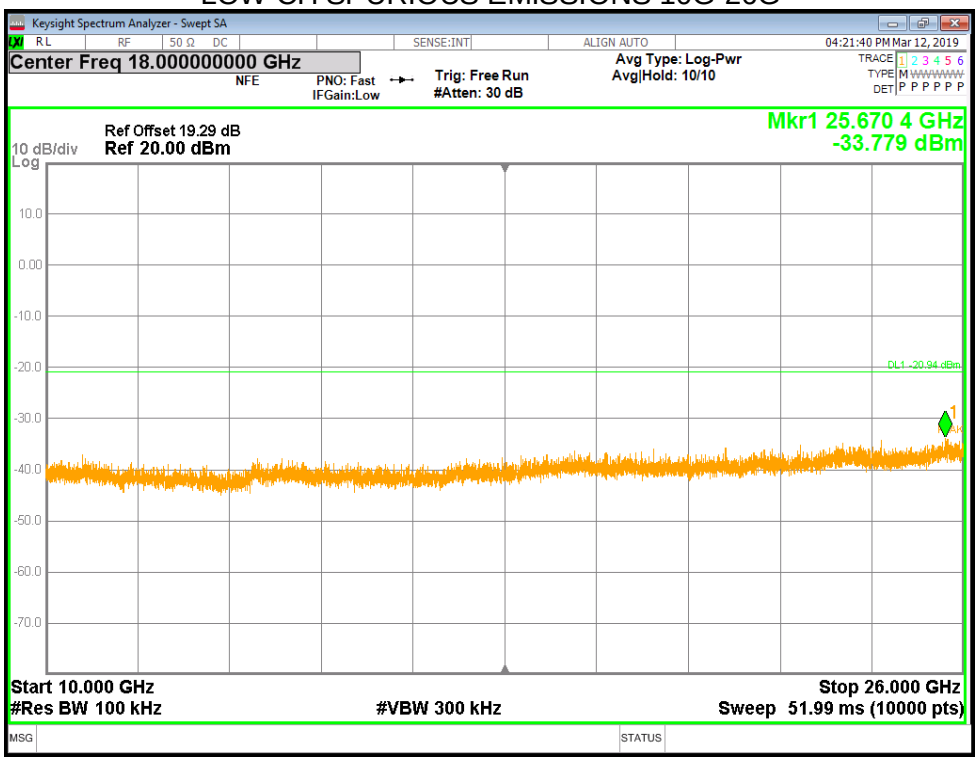
LOW CH SPURIOUS EMISSIONS REFERENCE



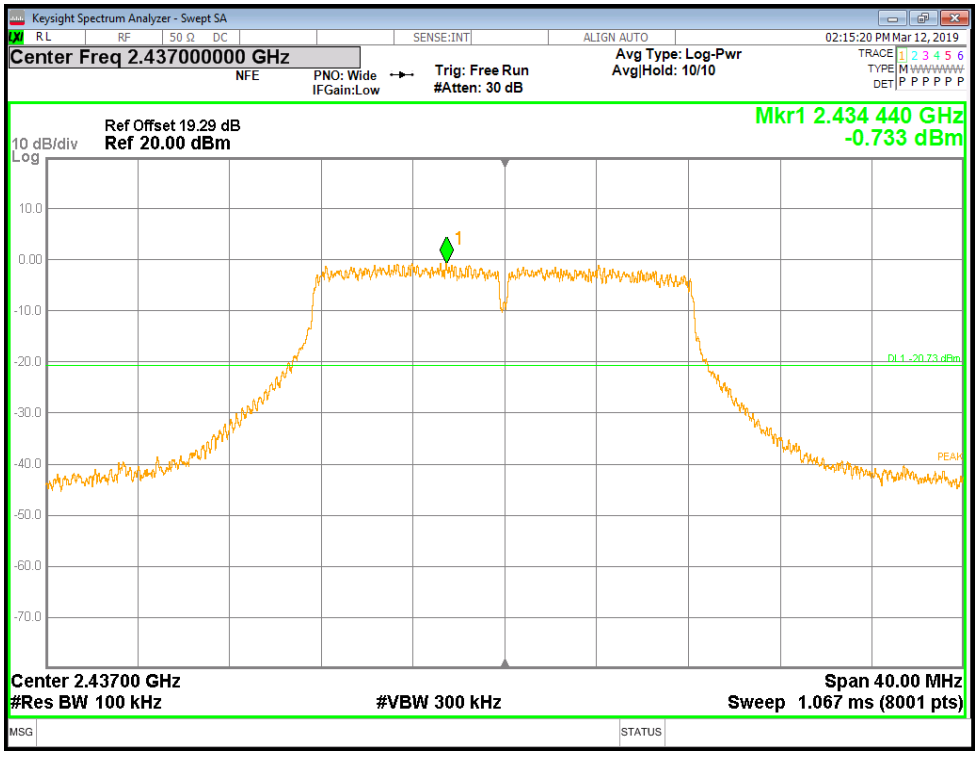
LOW CH SPURIOUS EMISSIONS 30M-10G



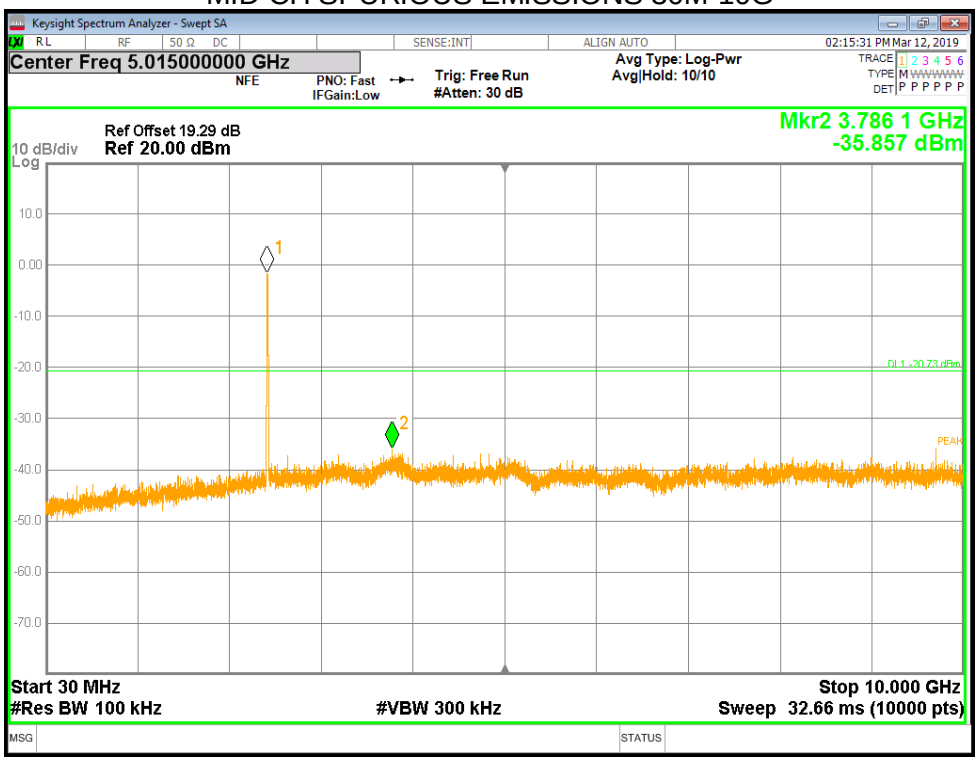
LOW CH SPURIOUS EMISSIONS 10G-26G



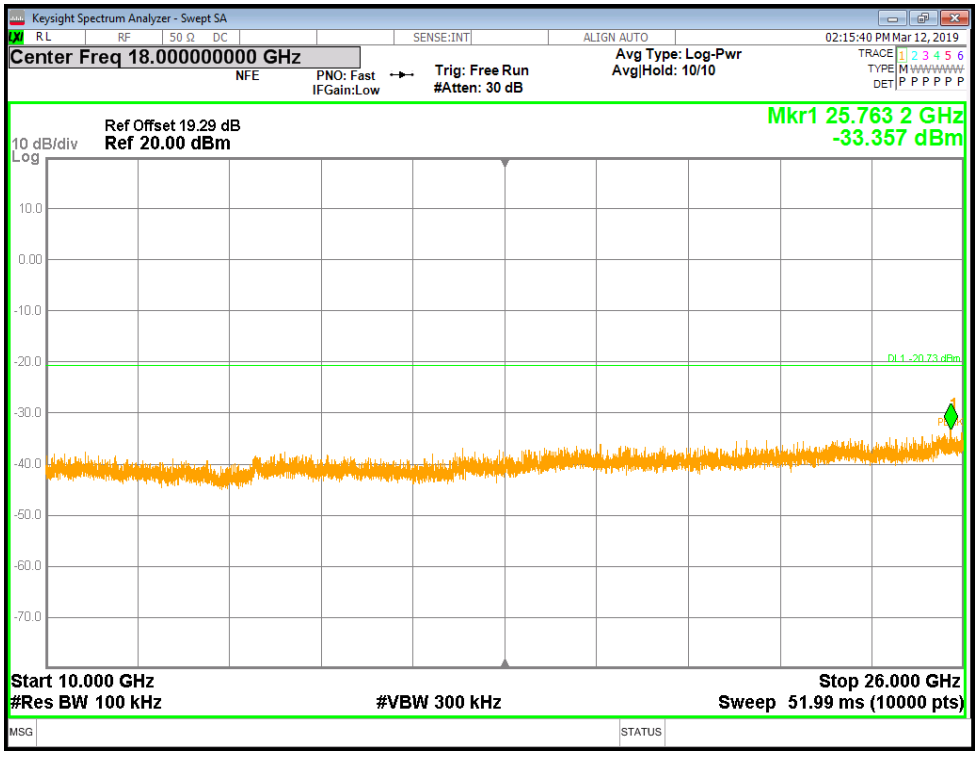
MID CH SPURIOUS EMISSIONS REFERENCE



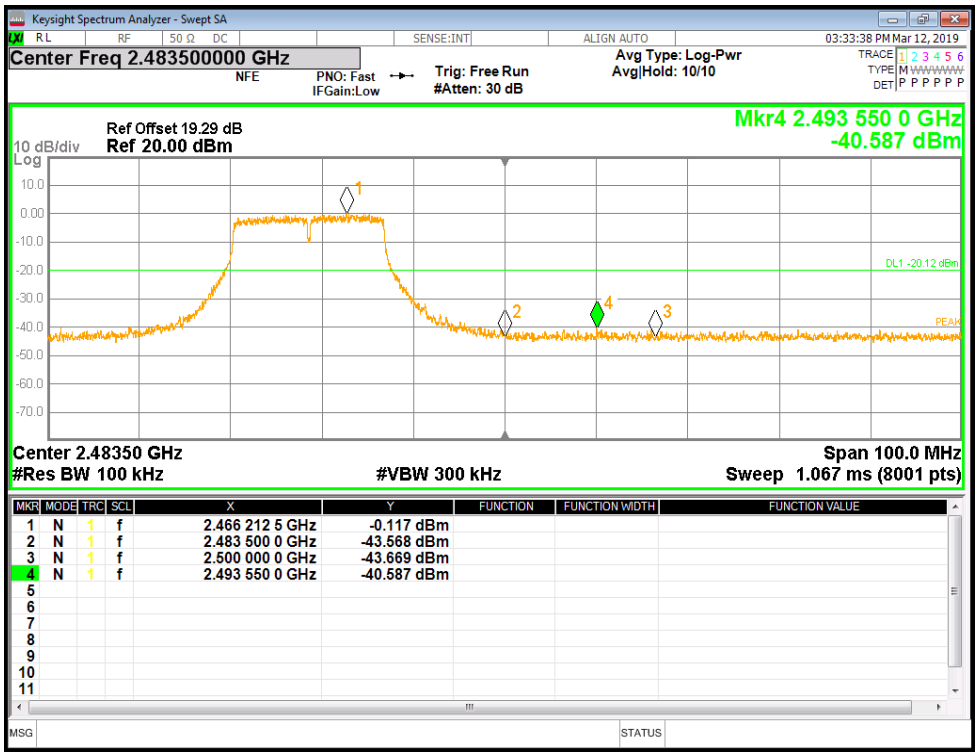
MID CH SPURIOUS EMISSIONS 30M-10G



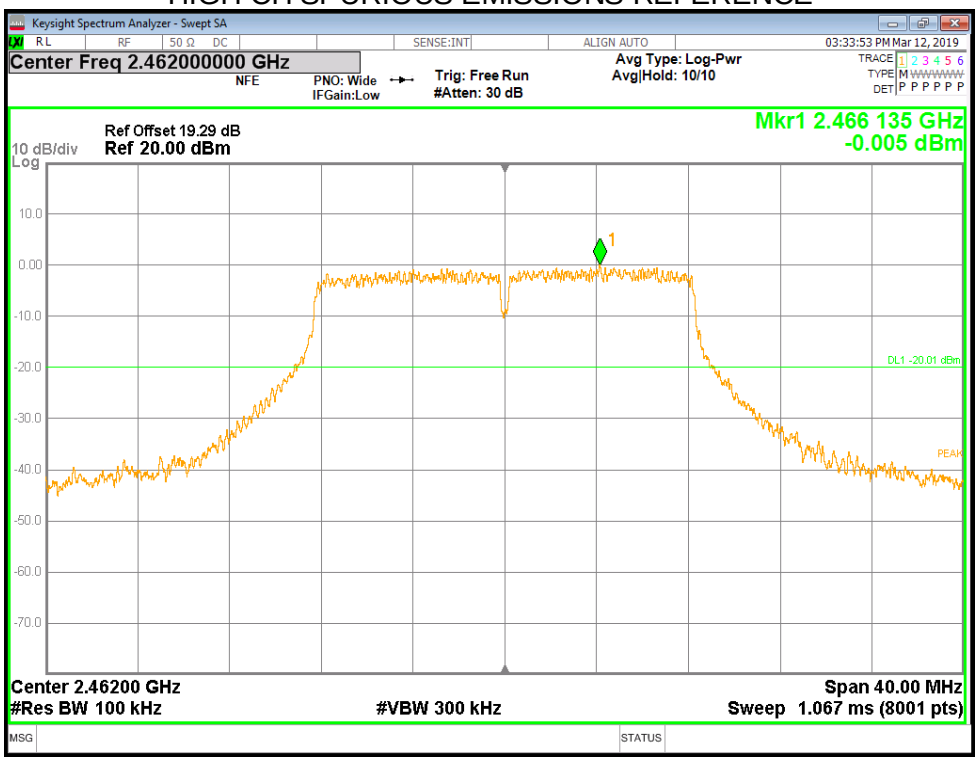
MID CH SPURIOUS EMISSIONS 10G-26G



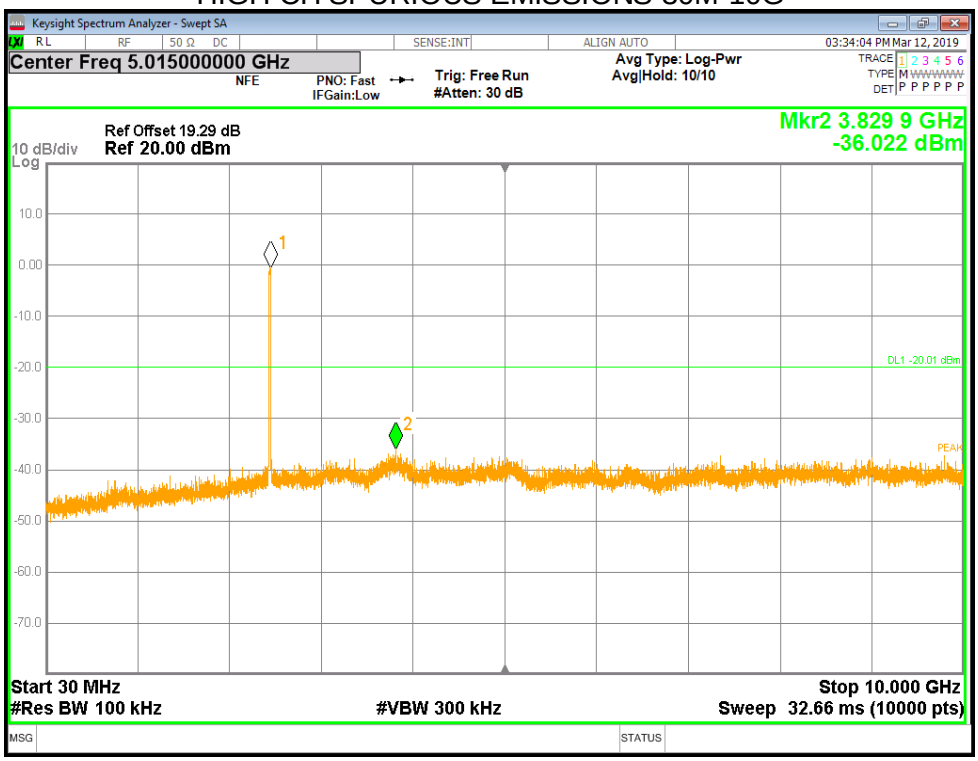
HIGH CH BANDEDGE



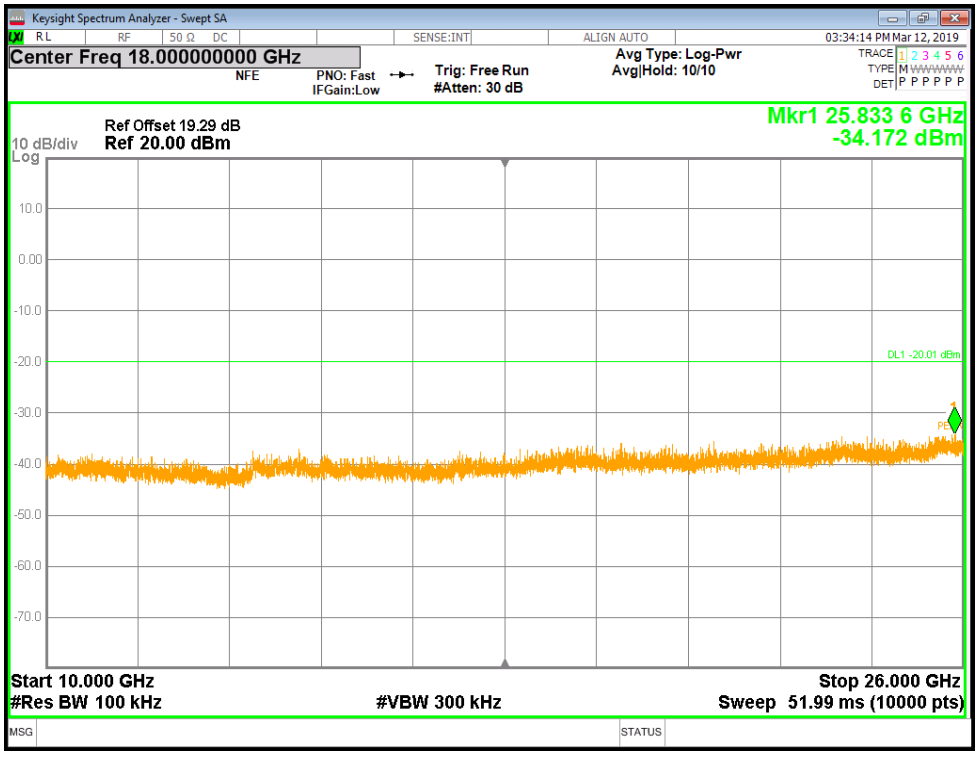
HIGH CH SPURIOUS EMISSIONS REFERENCE



HIGH CH SPURIOUS EMISSIONS 30M-10G

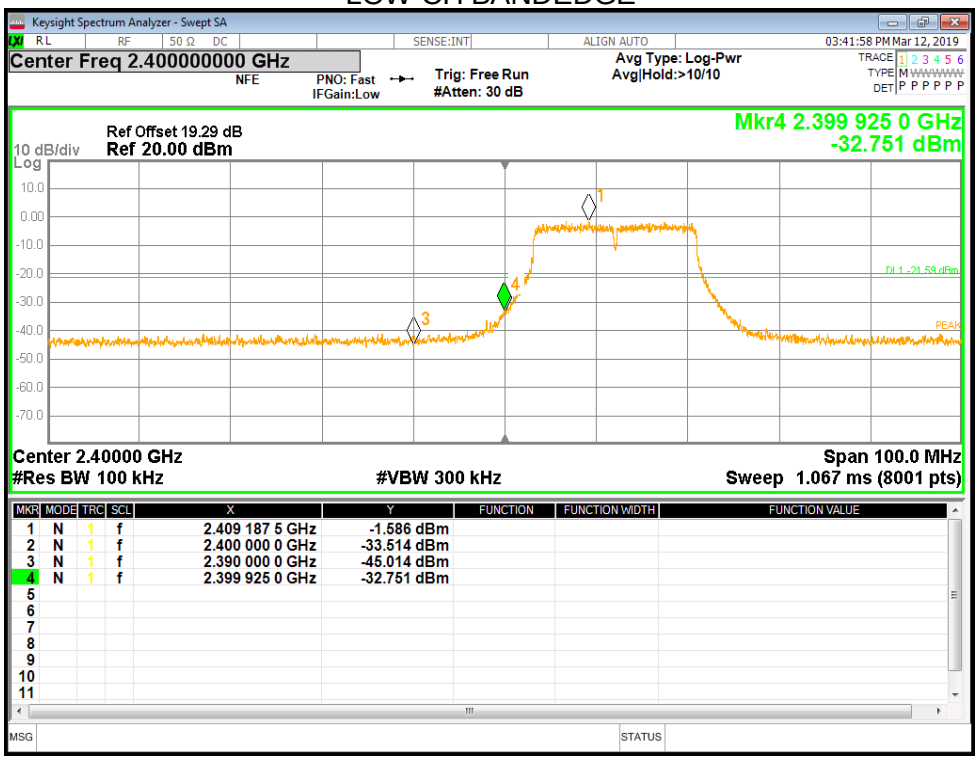


HIGH CH SPURIOUS EMISSIONS 10G-26G

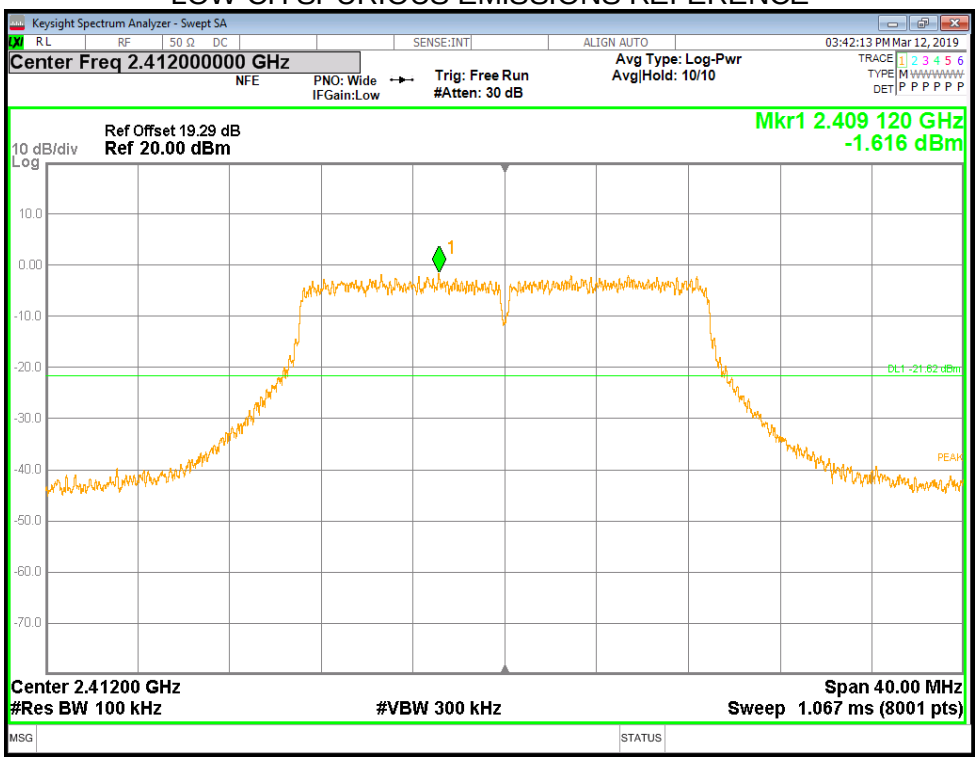


8.5.1. 802.11m HT20 MODE

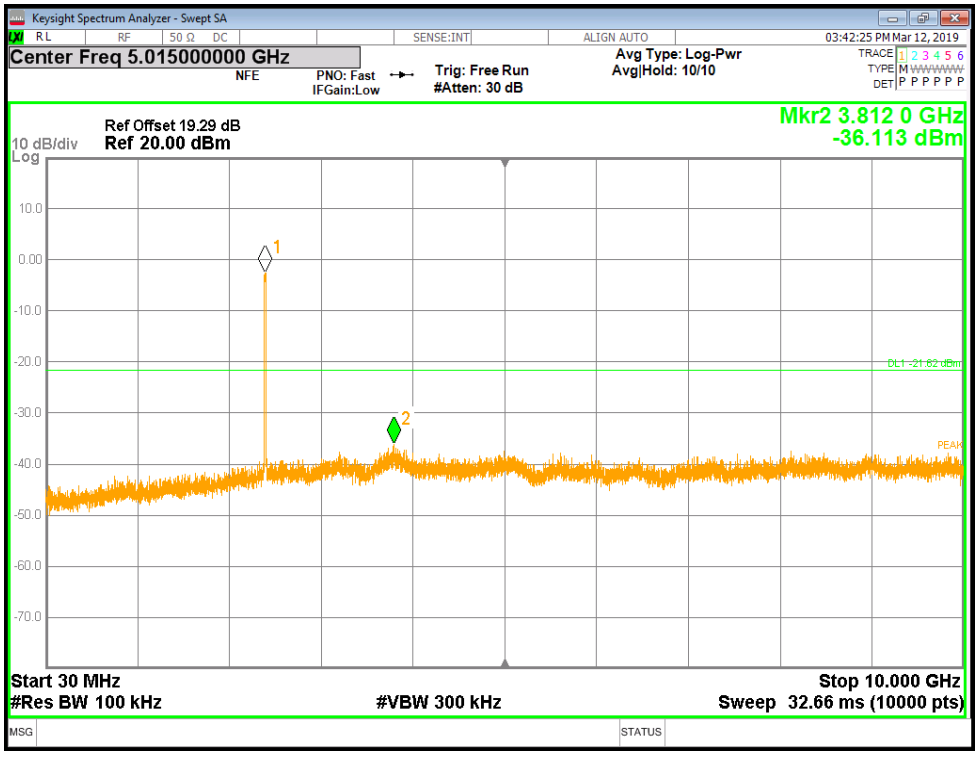
LOW CH BANDEDGE



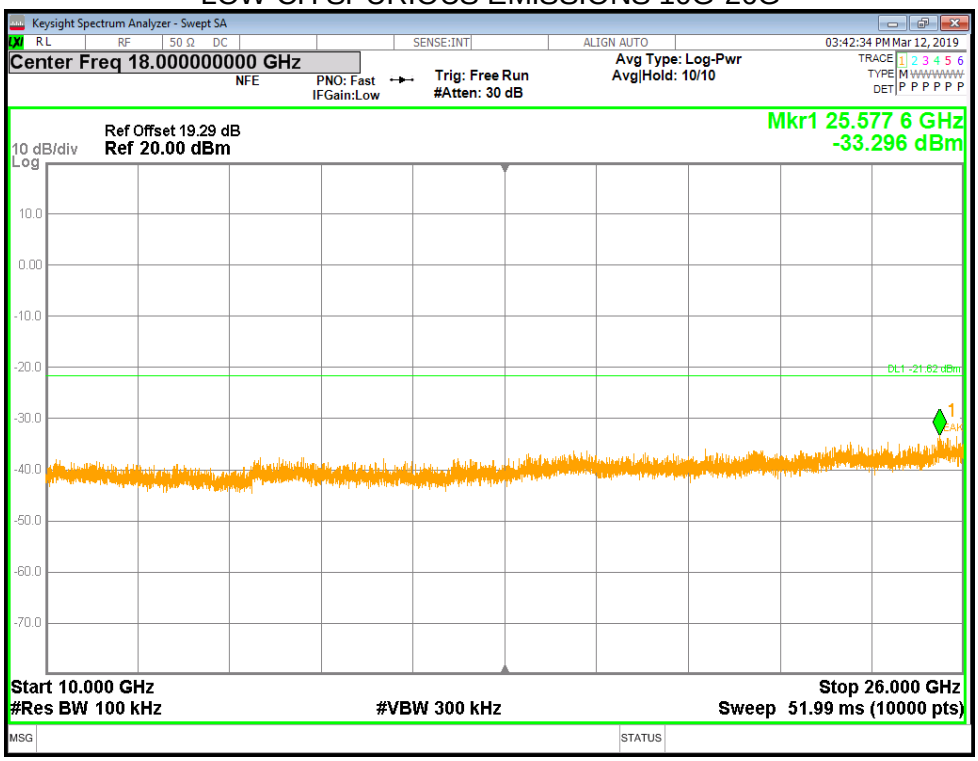
LOW CH SPURIOUS EMISSIONS REFERENCE



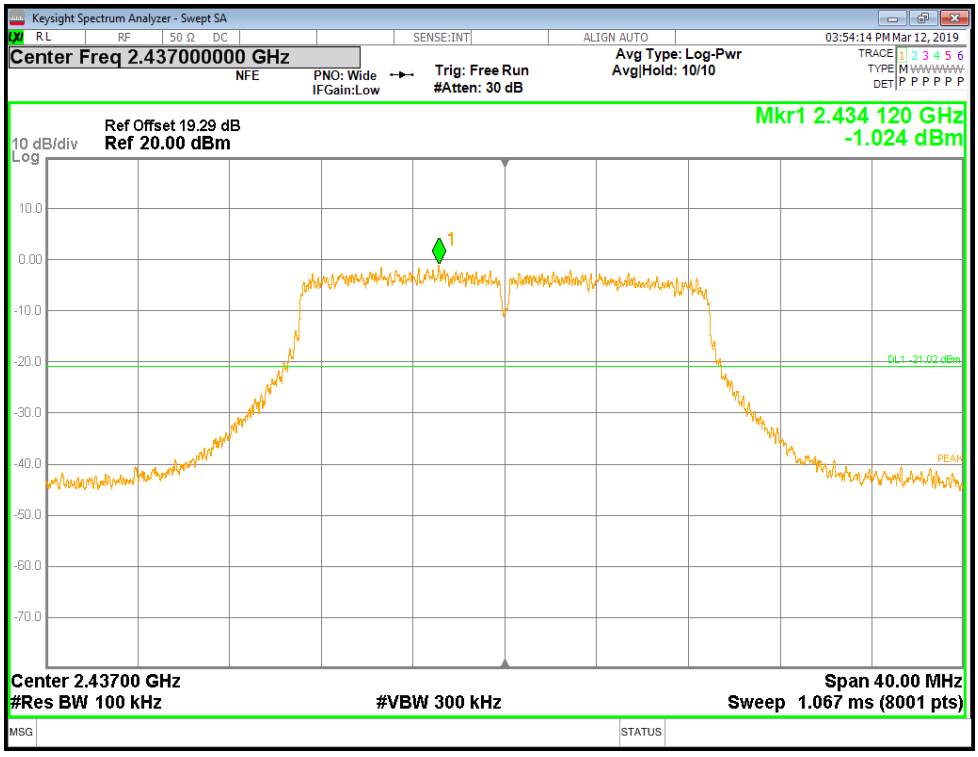
LOW CH SPURIOUS EMISSIONS 30M-10G



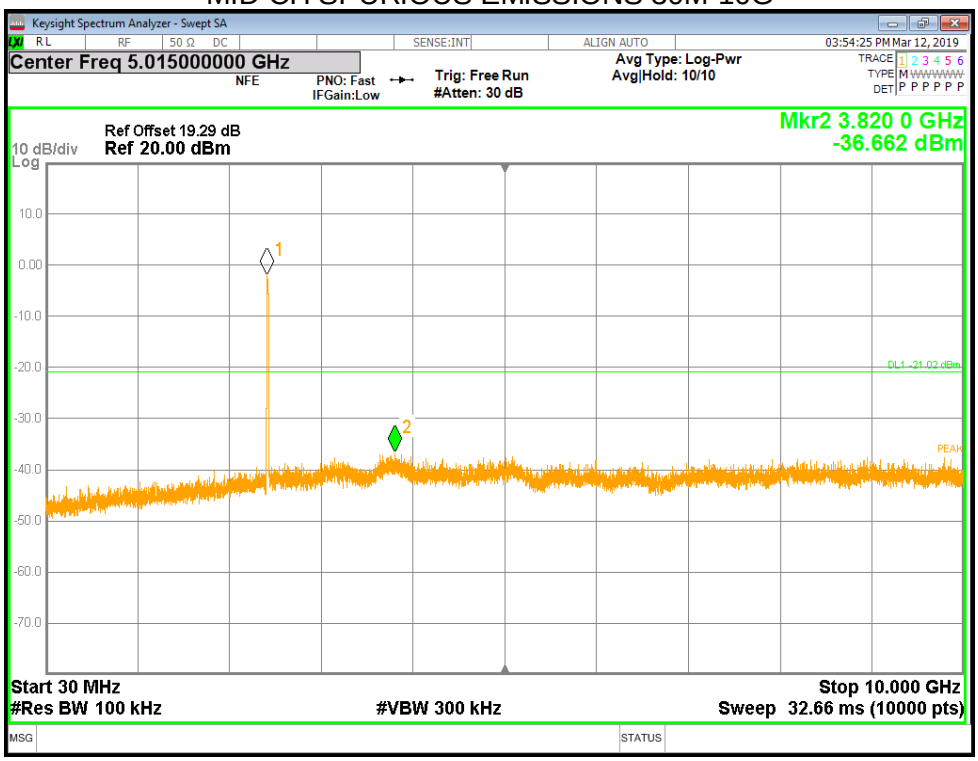
LOW CH SPURIOUS EMISSIONS 10G-26G



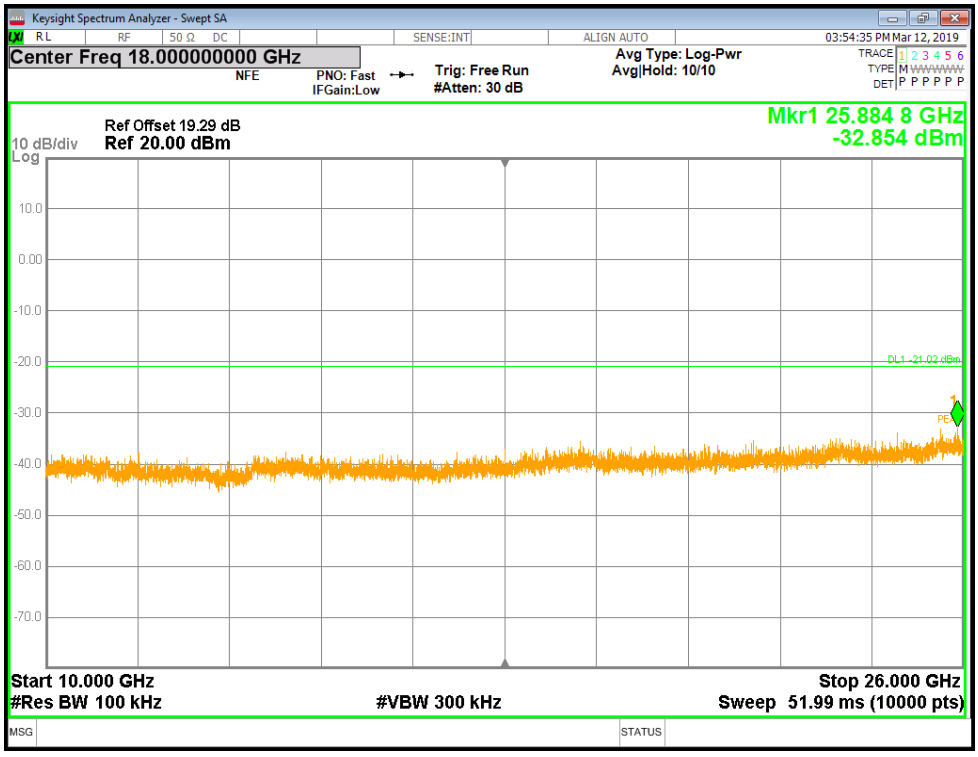
MID CH SPURIOUS EMISSIONS REFERENCE



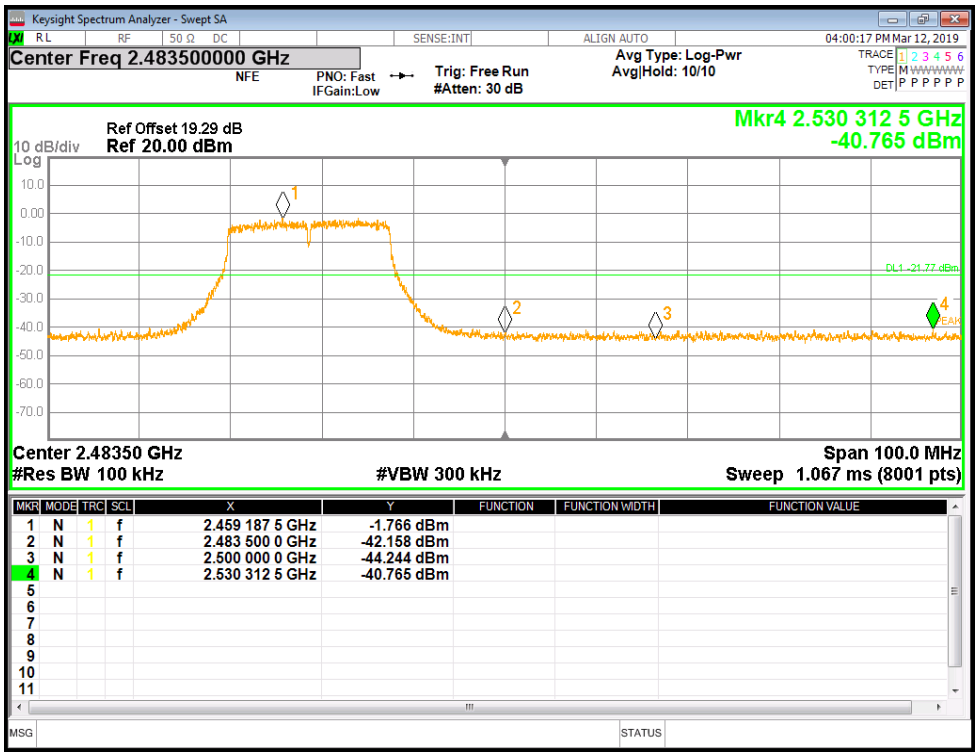
MID CH SPURIOUS EMISSIONS 30M-10G



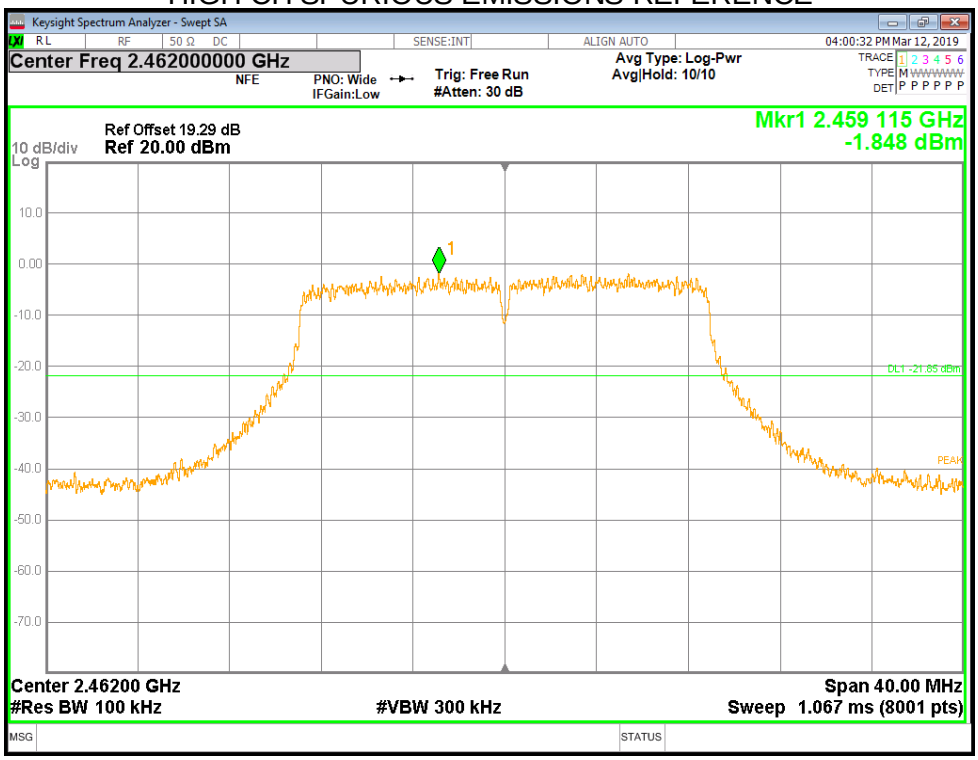
MID CH SPURIOUS EMISSIONS 10G-26G



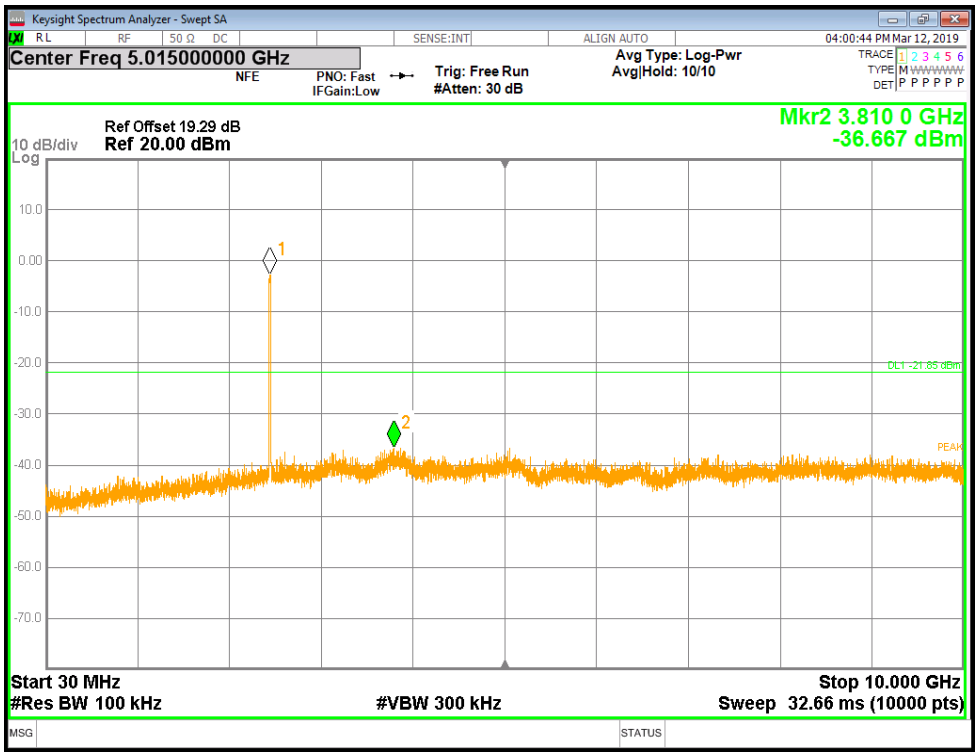
HIGH CH BANDEDGE



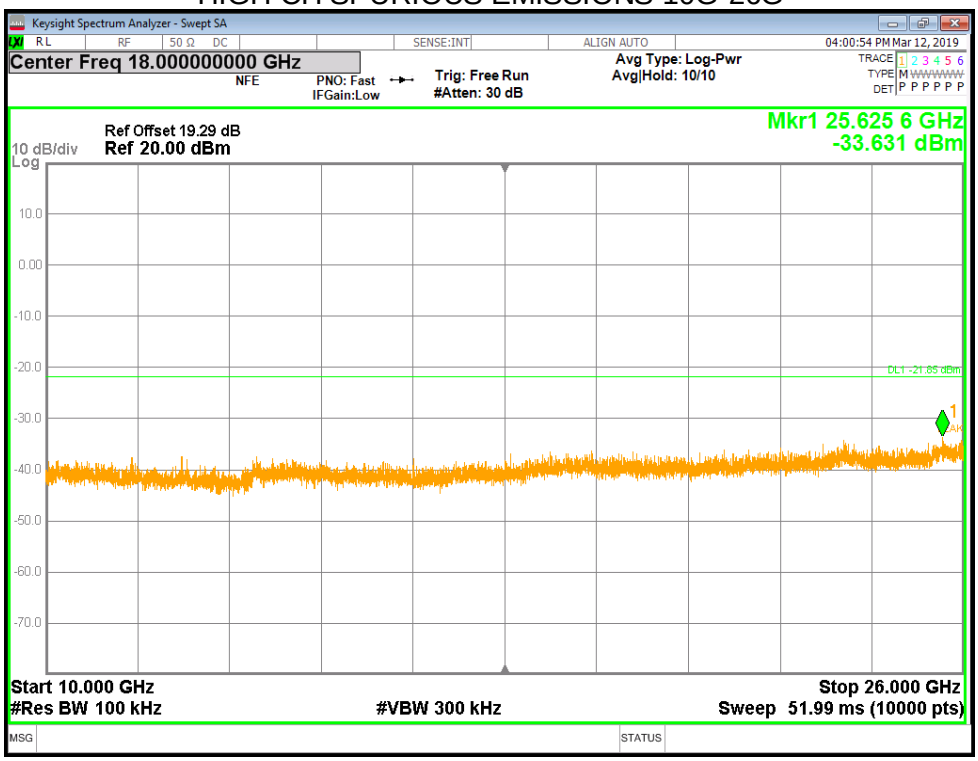
HIGH CH SPURIOUS EMISSIONS REFERENCE



HIGH CH SPURIOUS EMISSIONS 30M-10G



HIGH CH SPURIOUS EMISSIONS 10G-26G



9. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209

Please refer to ISED 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

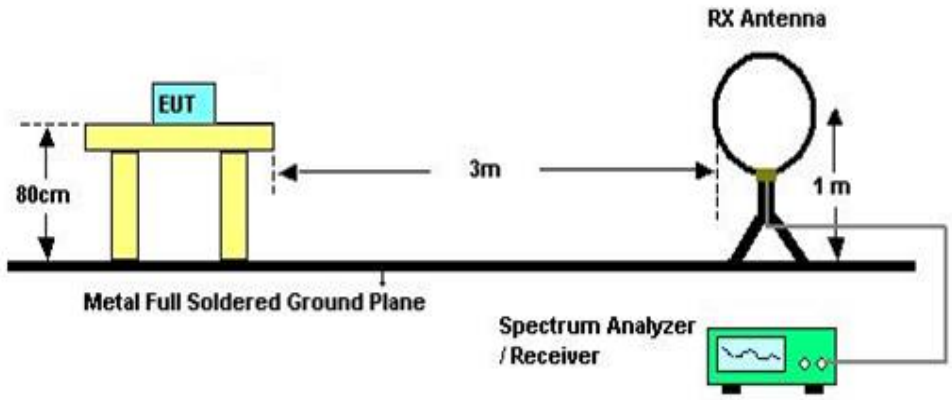
IC Restricted bands please refer to ISED RSS-GEN Clause 8.10
FCC Restricted bands of operation:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]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	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]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.

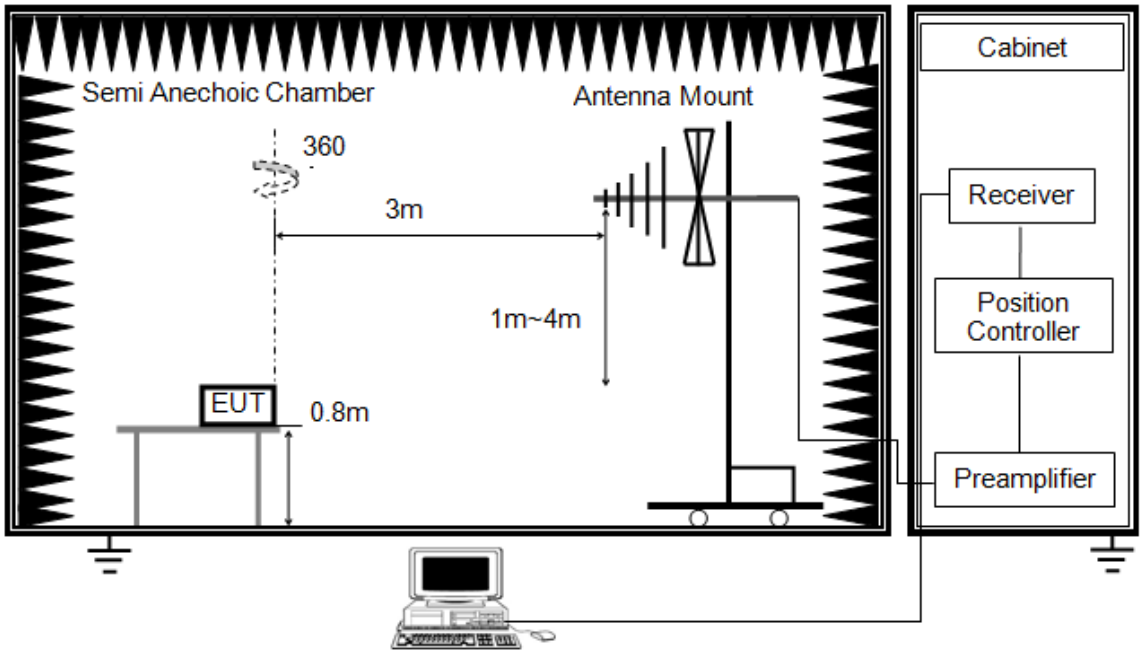
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

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)

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field 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 site 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.

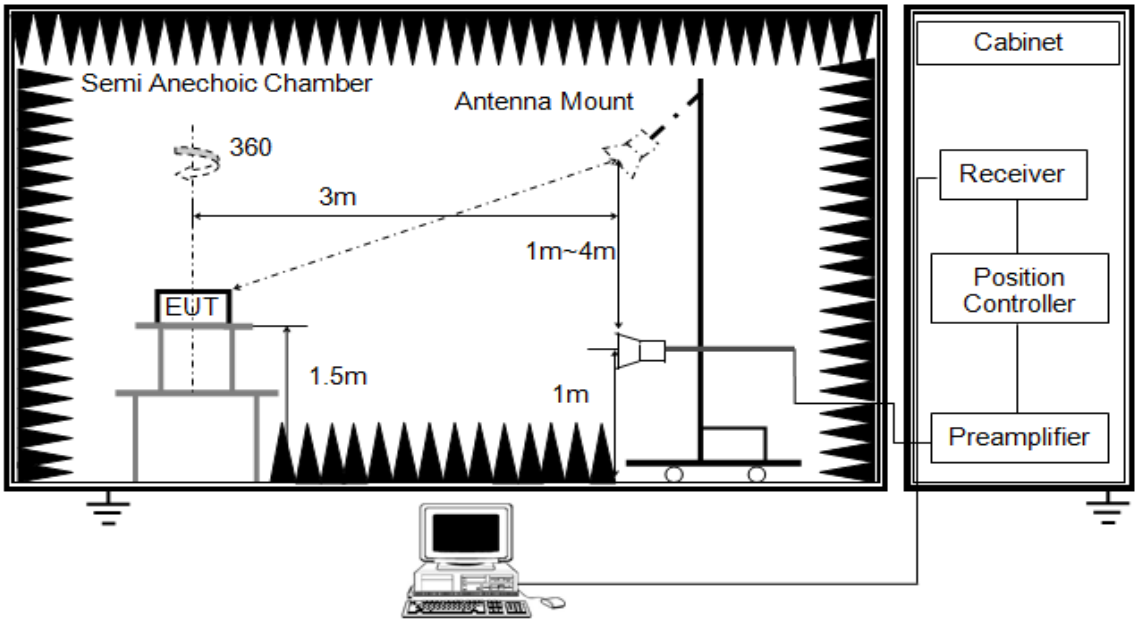
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations 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.

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.

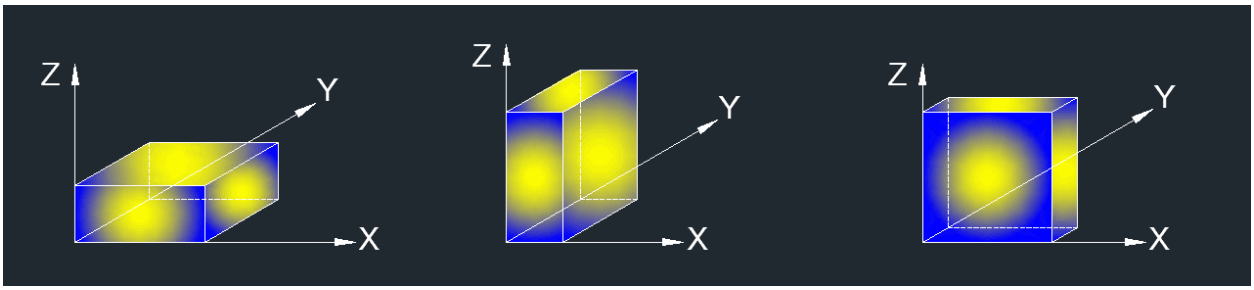
3. The EUT was placed on a turntable with 1.5m above ground.

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. For the Duty Cycle please refer to clause 8.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note : For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

TEST ENVIRONMENT

Temperature	22.8°C	Relative Humidity	55%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V,60Hz

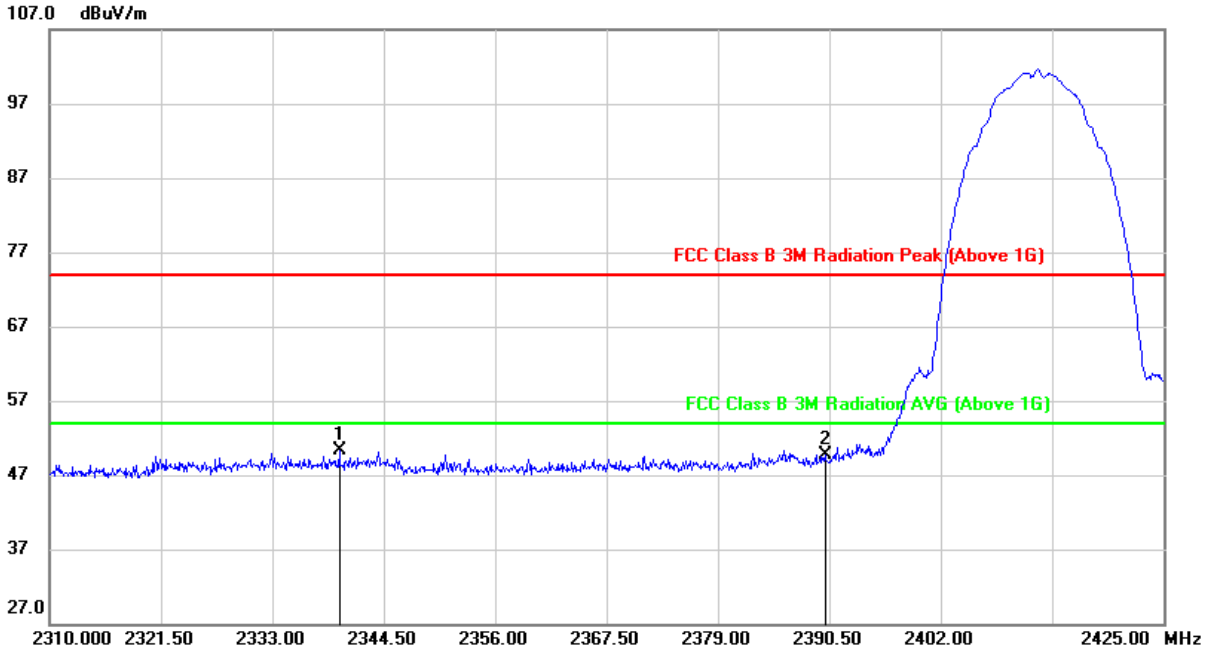
9.1. RESTRICTED BANDEDGE

TEST CONSTRUCTION 1

9.1.1. 802.11b MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

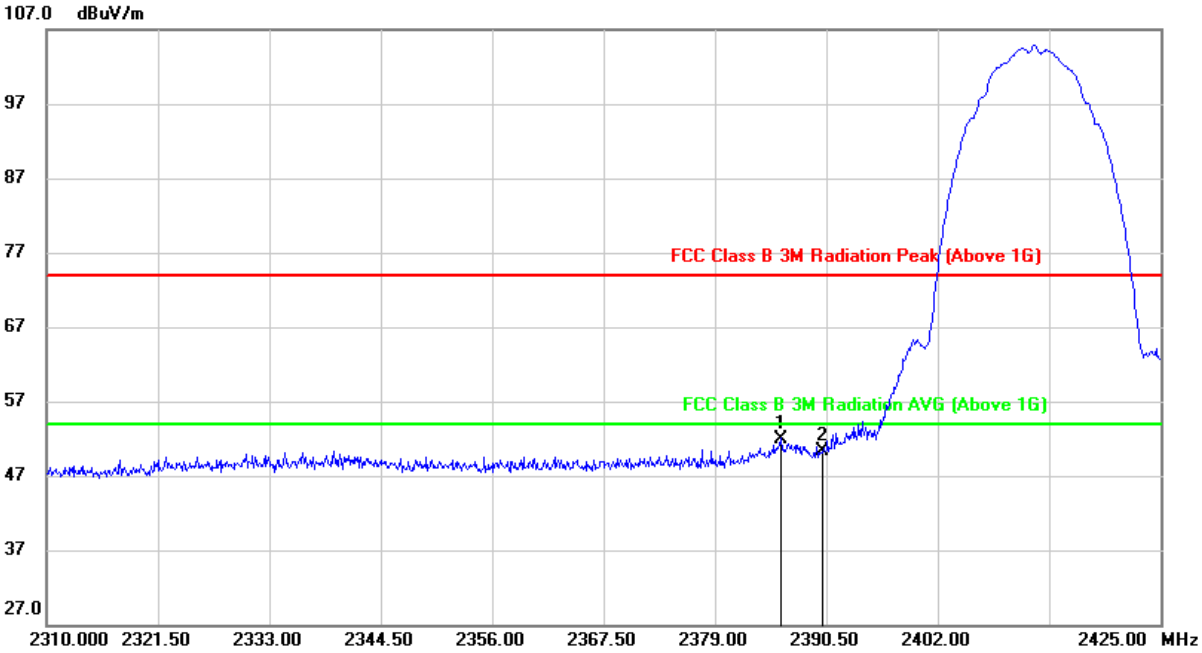


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2339.900	17.49	32.77	50.26	74.00	-23.74	peak
2	2390.000	16.70	32.94	49.64	74.00	-24.36	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

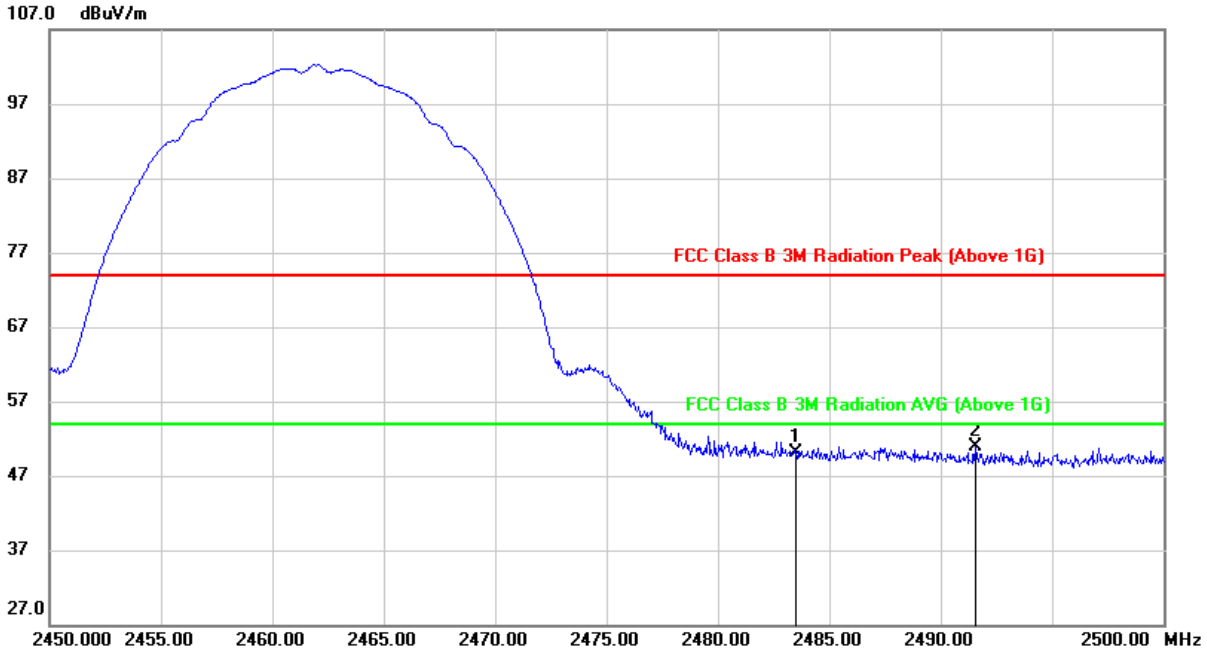


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.785	19.07	32.93	52.00	74.00	-22.00	peak
2	2390.000	17.29	32.94	50.23	74.00	-23.77	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK

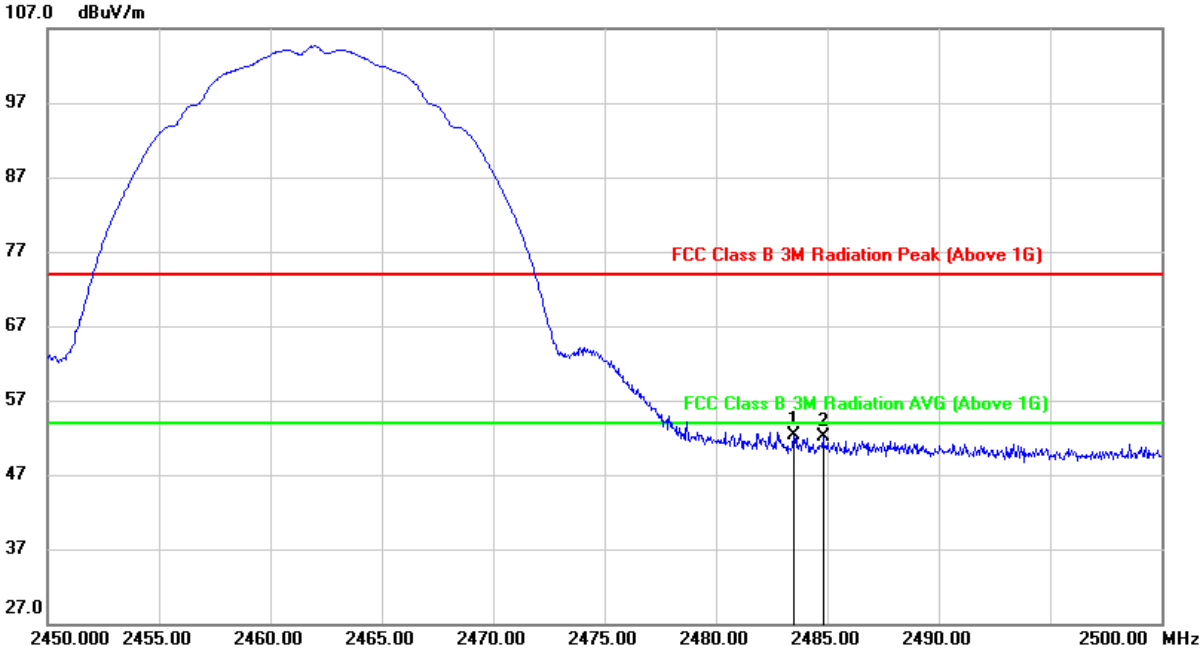


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	16.52	33.58	50.10	74.00	-23.90	peak
2	2491.550	17.34	33.63	50.97	74.00	-23.03	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



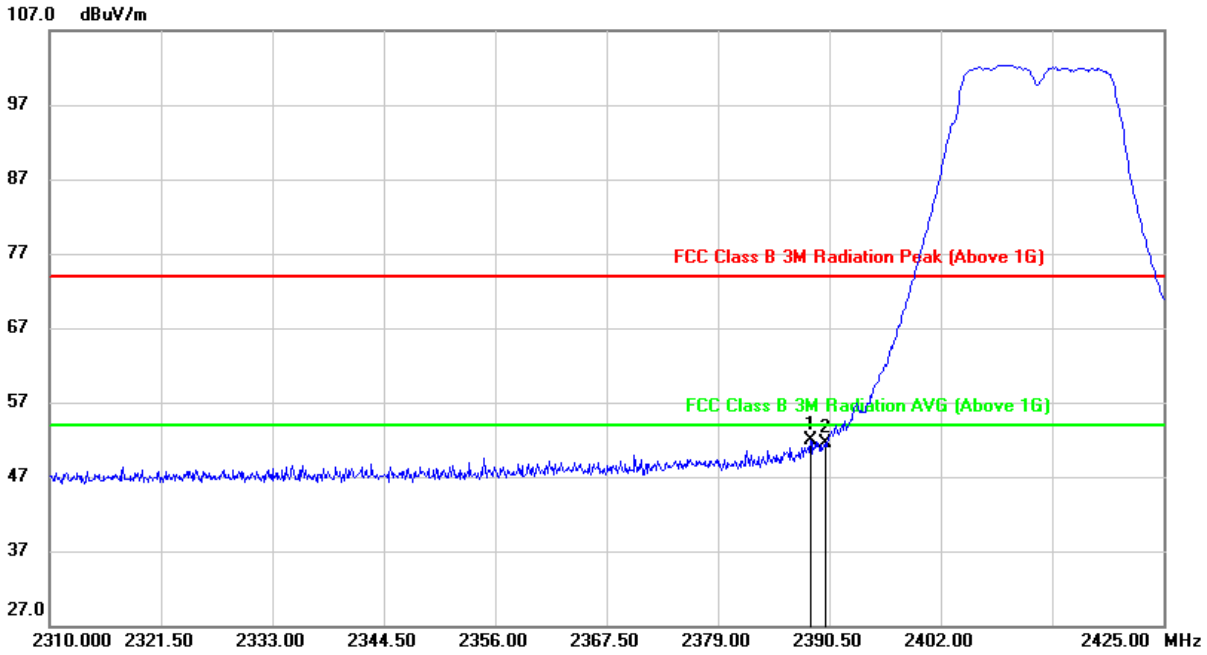
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	18.82	33.58	52.40	74.00	-21.60	peak
2	2484.800	18.42	33.59	52.01	74.00	-21.99	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

9.1.2. 802.11g MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

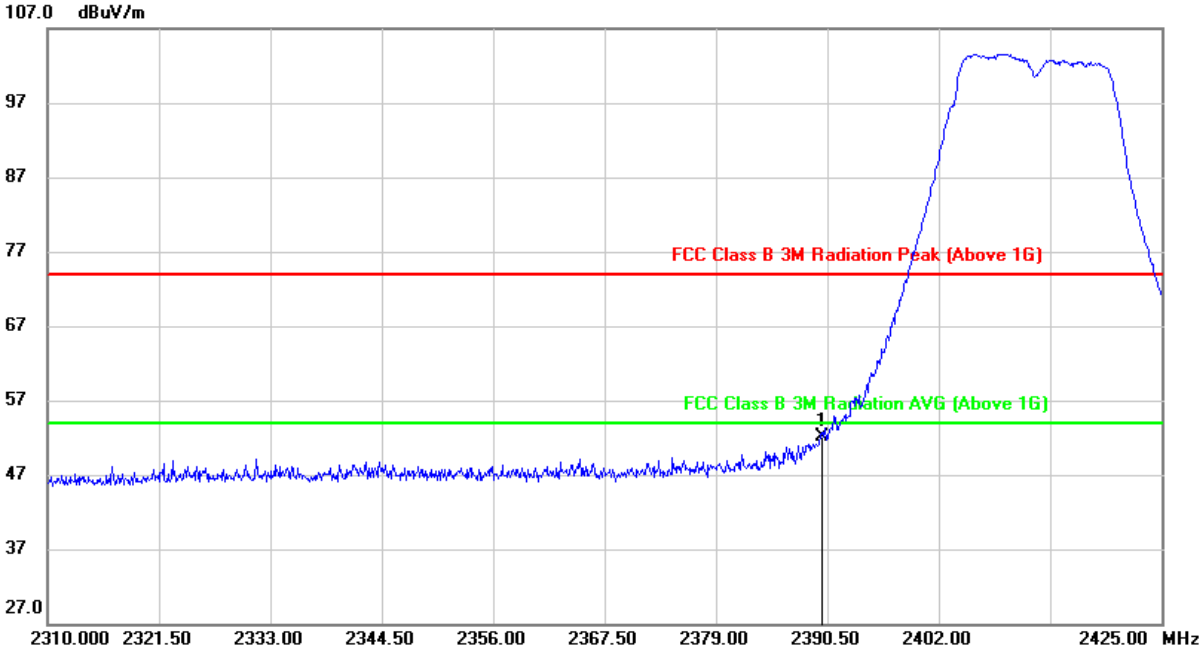


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.545	18.88	32.94	51.82	74.00	-22.18	peak
2	2390.000	18.59	32.94	51.53	74.00	-22.47	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

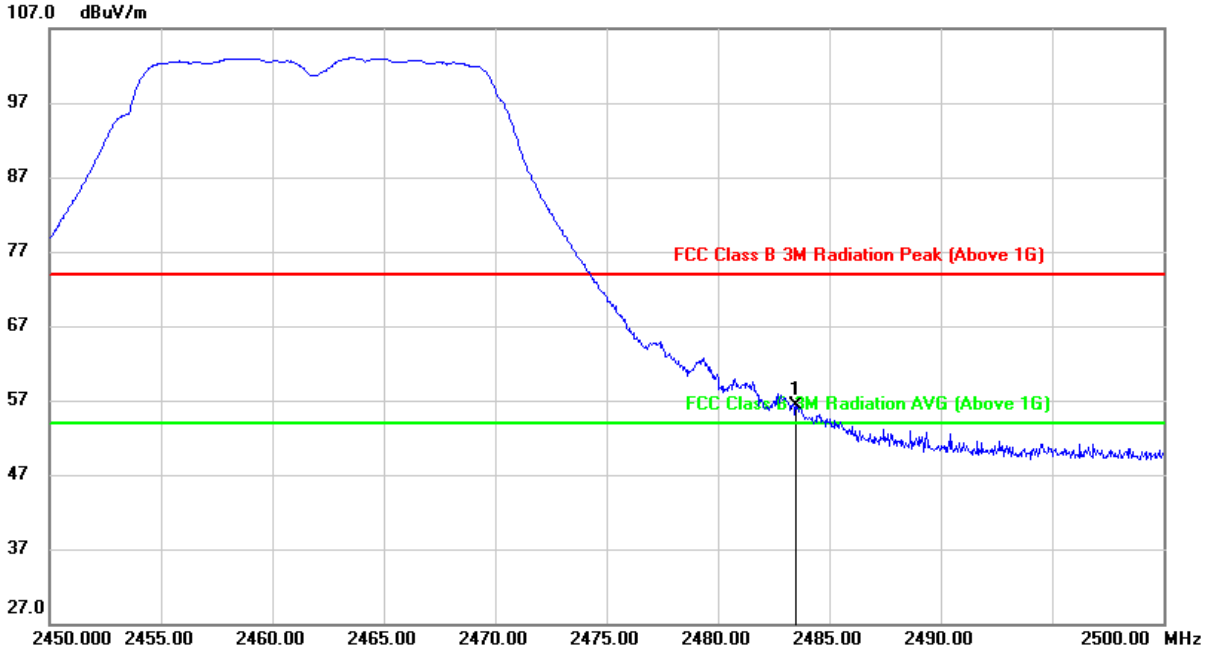


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	19.10	32.94	52.04	74.00	-21.96	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

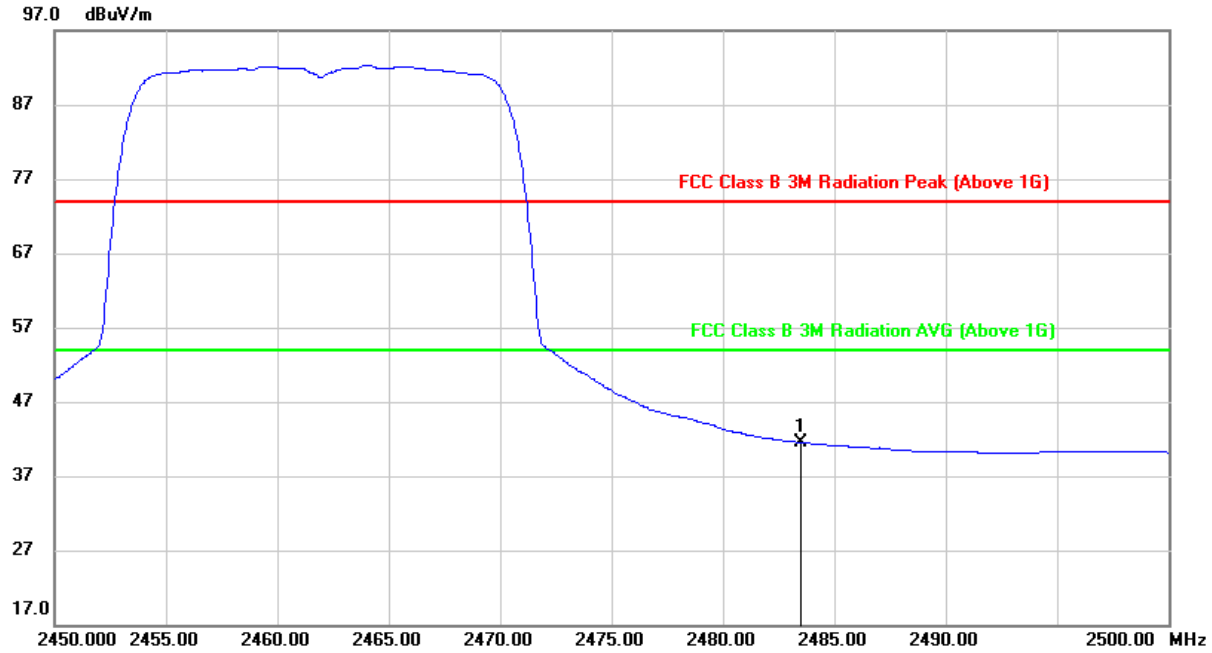
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	22.79	33.58	56.37	74.00	-17.63	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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

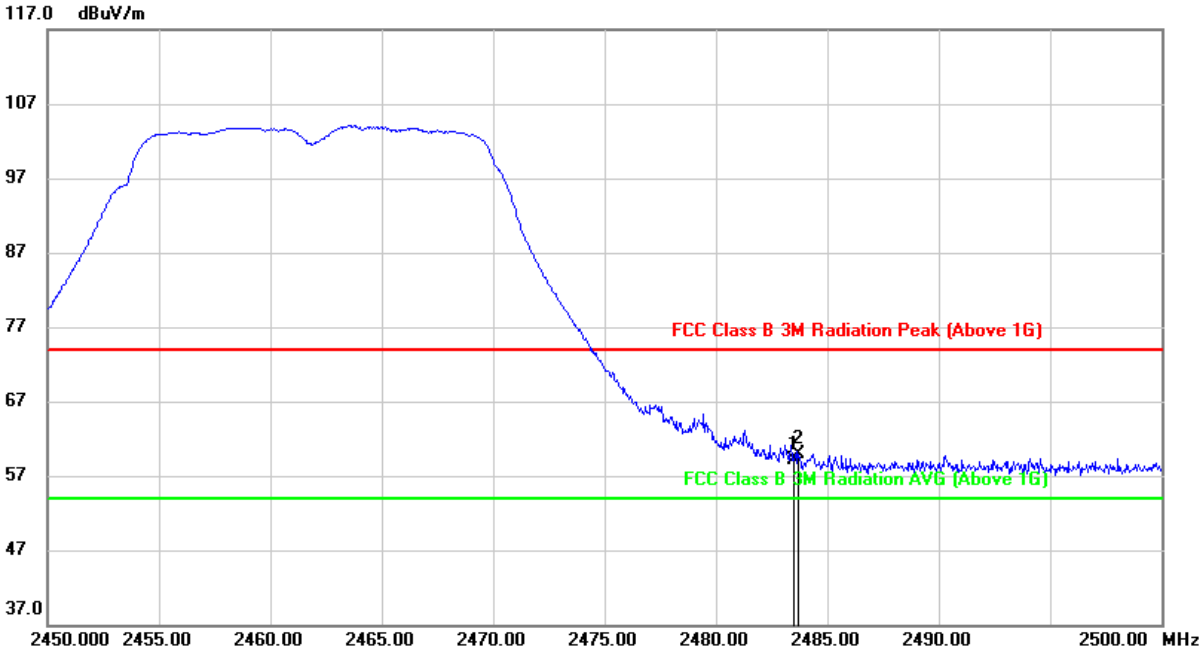


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	7.93	33.58	41.51	54.00	-12.49	AVG

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. AVG: VBW=1/Ton where: ton is transmit duration.
4. For transmit duration, please refer to clause 8.1.
5. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

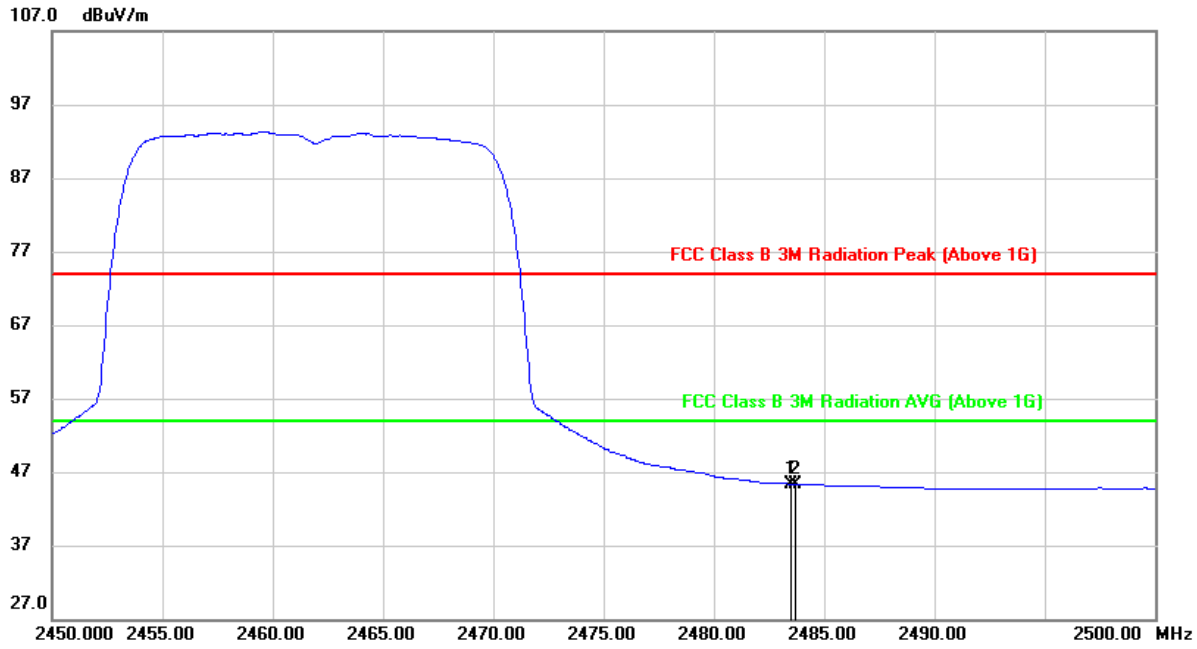
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	25.50	33.58	59.08	74.00	-14.92	peak
2	2483.700	26.41	33.58	59.99	74.00	-14.01	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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



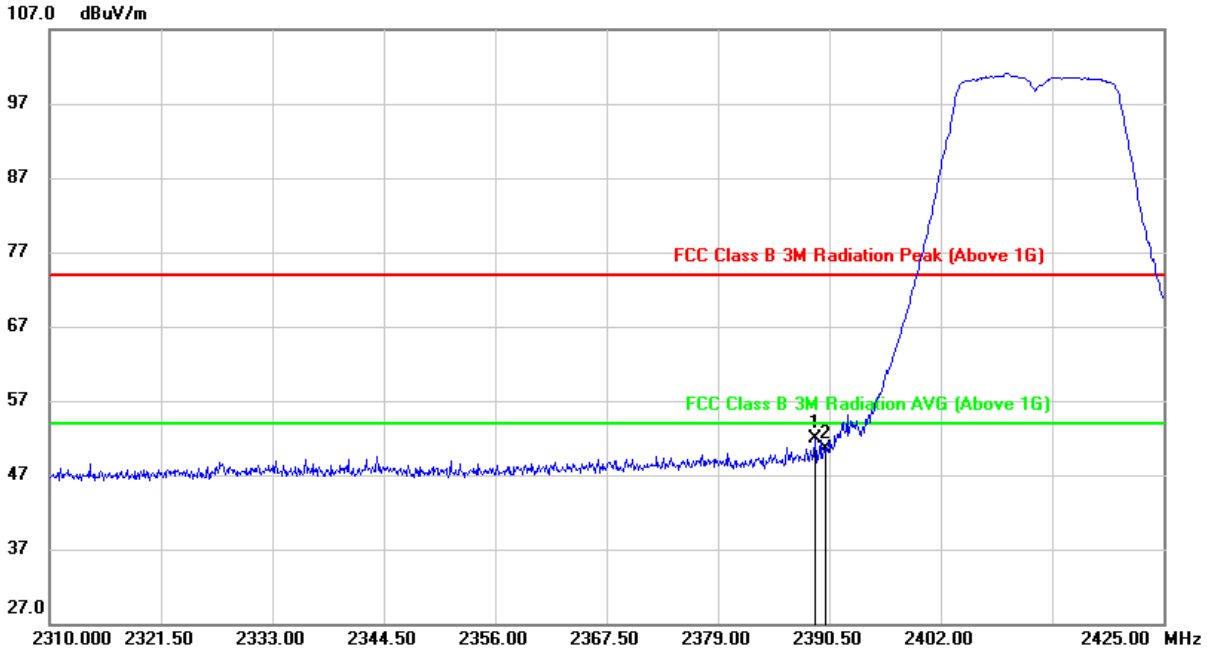
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	11.79	33.58	45.37	54.00	-8.63	AVG
2	2483.700	11.74	33.58	45.32	54.00	-8.68	AVG

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. AVG: VBW=1/Ton where: ton is transmit duration.
4. For transmit duration, please refer to clause 8.1.
5. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

9.1.3. 802.11n HT20 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

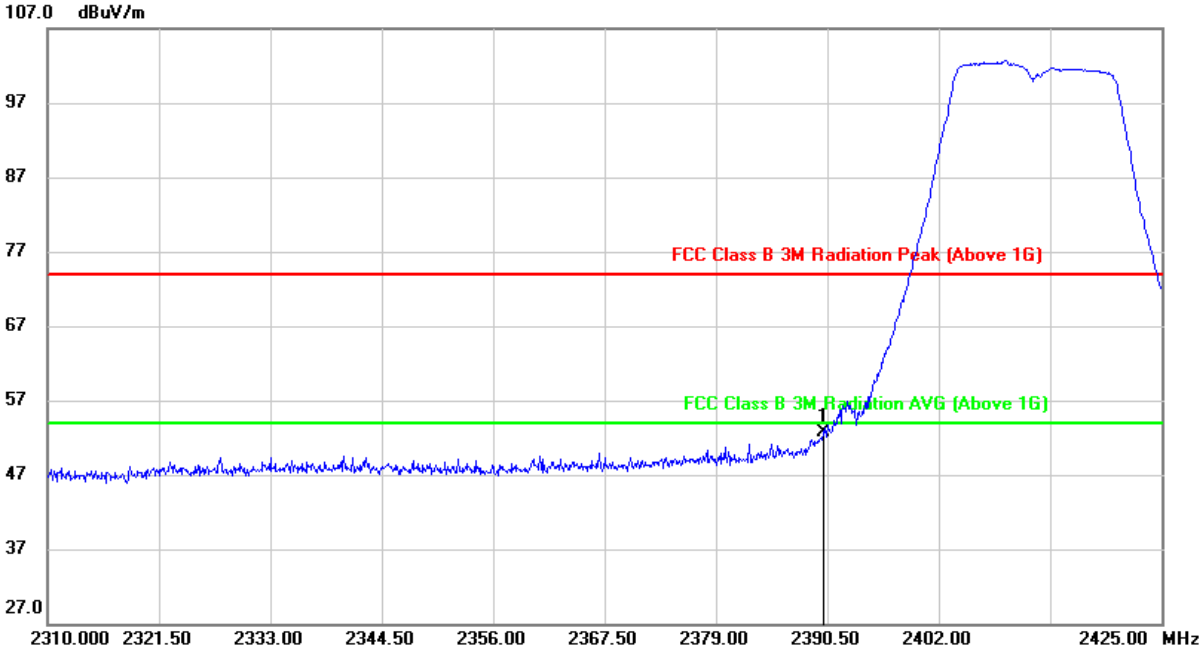


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.005	18.95	32.94	51.89	74.00	-22.11	peak
2	2390.000	17.62	32.94	50.56	74.00	-23.44	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

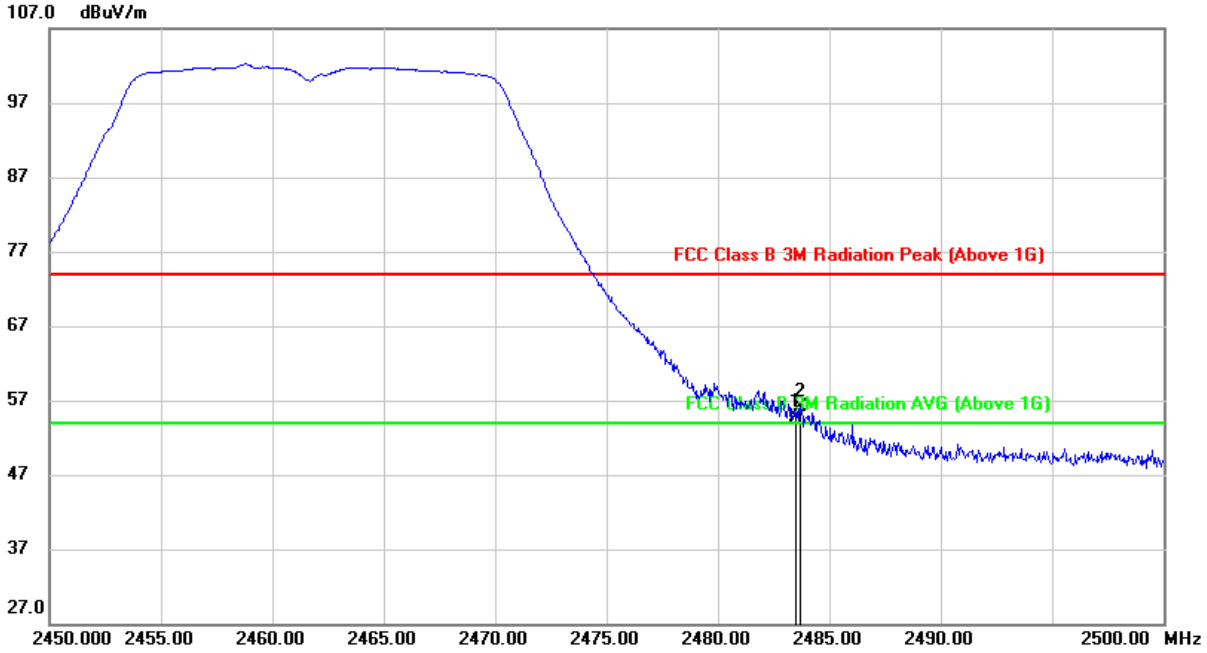


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	19.71	32.94	52.65	74.00	-21.35	peak

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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

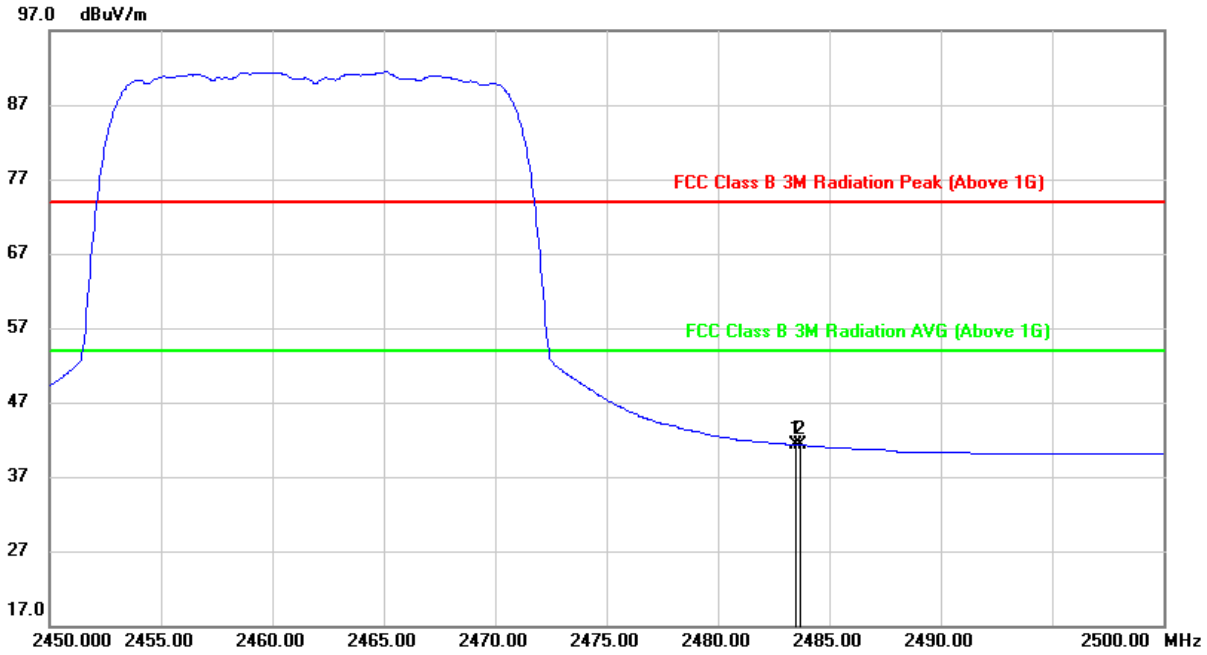
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	21.15	33.58	54.73	74.00	-19.27	peak
2	2483.700	22.45	33.58	56.03	74.00	-17.97	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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

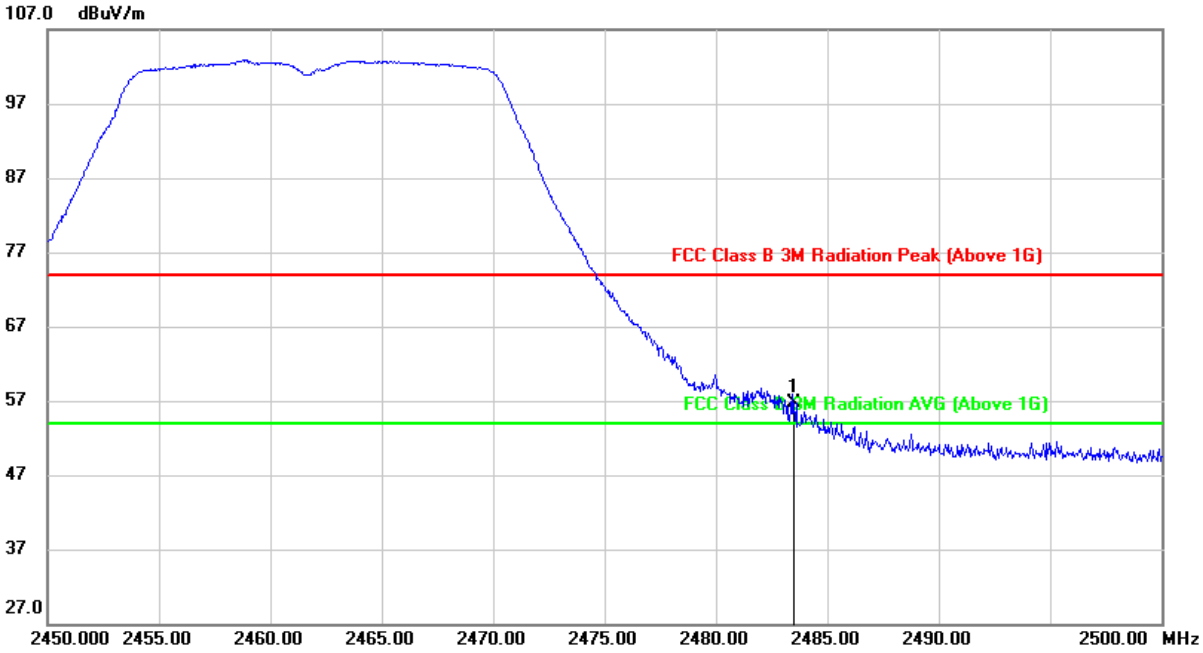


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	7.65	33.58	41.23	54.00	-12.77	AVG
2	2483.700	7.65	33.58	41.23	54.00	-12.77	AVG

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. AVG: VBW=1/Ton where: ton is transmit duration.
4. For transmit duration, please refer to clause 8.1.
5. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

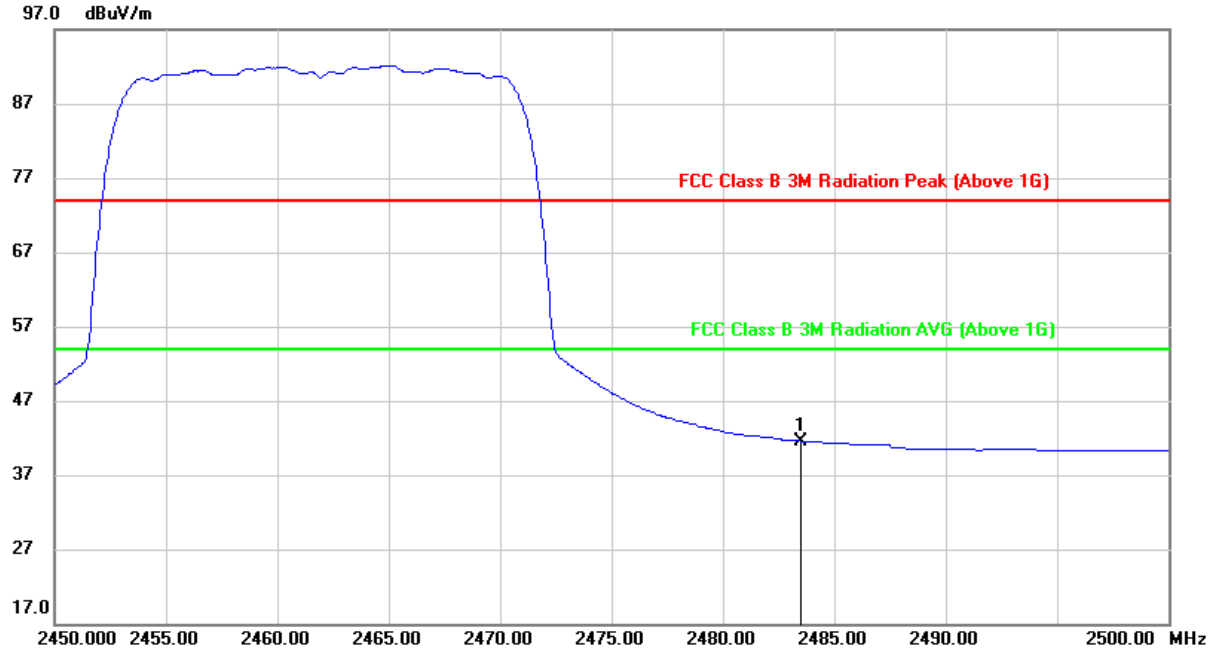
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	23.13	33.58	56.71	74.00	-17.29	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 was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	8.01	33.58	41.59	54.00	-12.41	AVG

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. AVG: VBW=1/Ton where: ton is transmit duration.
4. For transmit duration, please refer to clause 8.1.
5. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

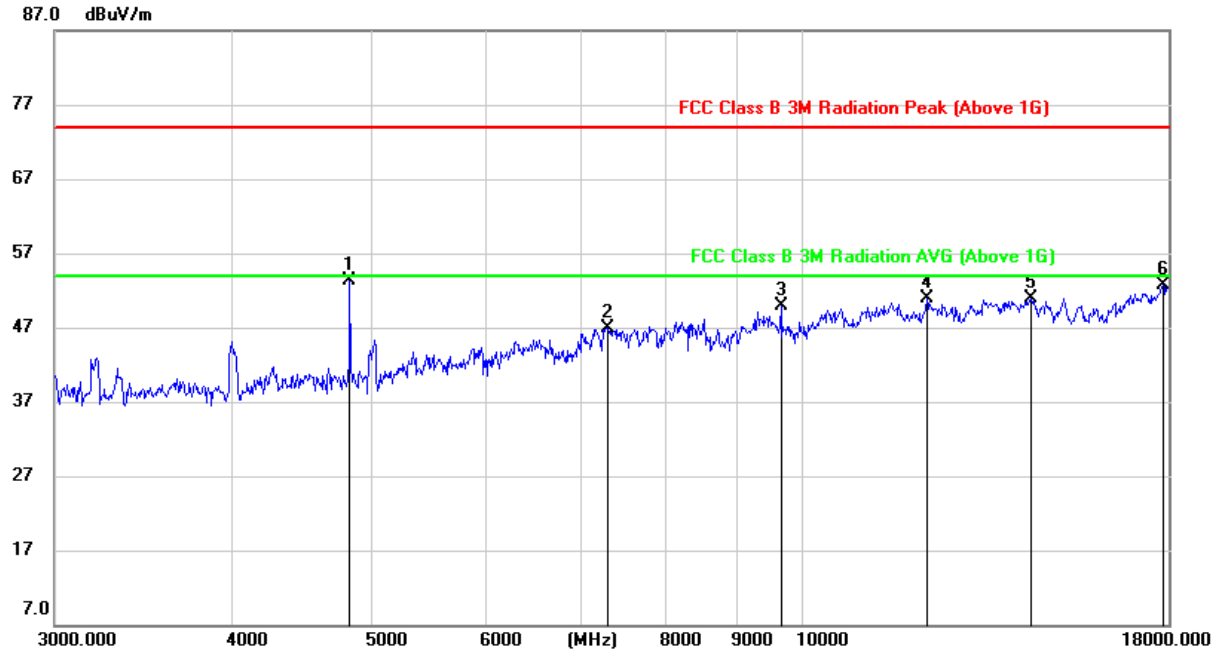
Note: All constructions have been tested, only the worst data record in the report

9.2. SPURIOUS EMISSIONS (3~18GHz)

TEST CONSTRUCTION 1

9.2.1. 802.11b MODE

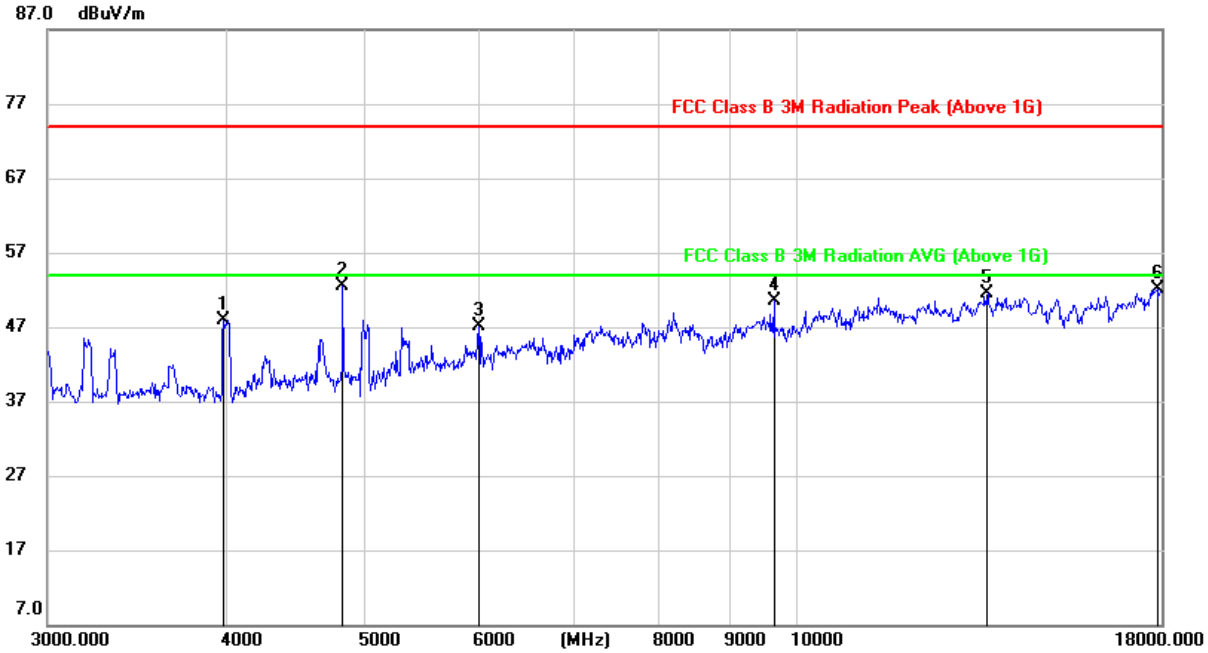
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4823.156	53.54	-0.21	53.33	74.00	-20.67	peak
2	7309.075	39.71	7.17	46.88	74.00	-27.12	peak
3	9648.857	39.79	10.04	49.83	74.00	-24.17	peak
4	12201.513	36.61	14.24	50.85	74.00	-23.15	peak
5	14439.758	34.52	16.39	50.91	74.00	-23.09	peak
6	17839.462	29.48	23.21	52.69	74.00	-21.31	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

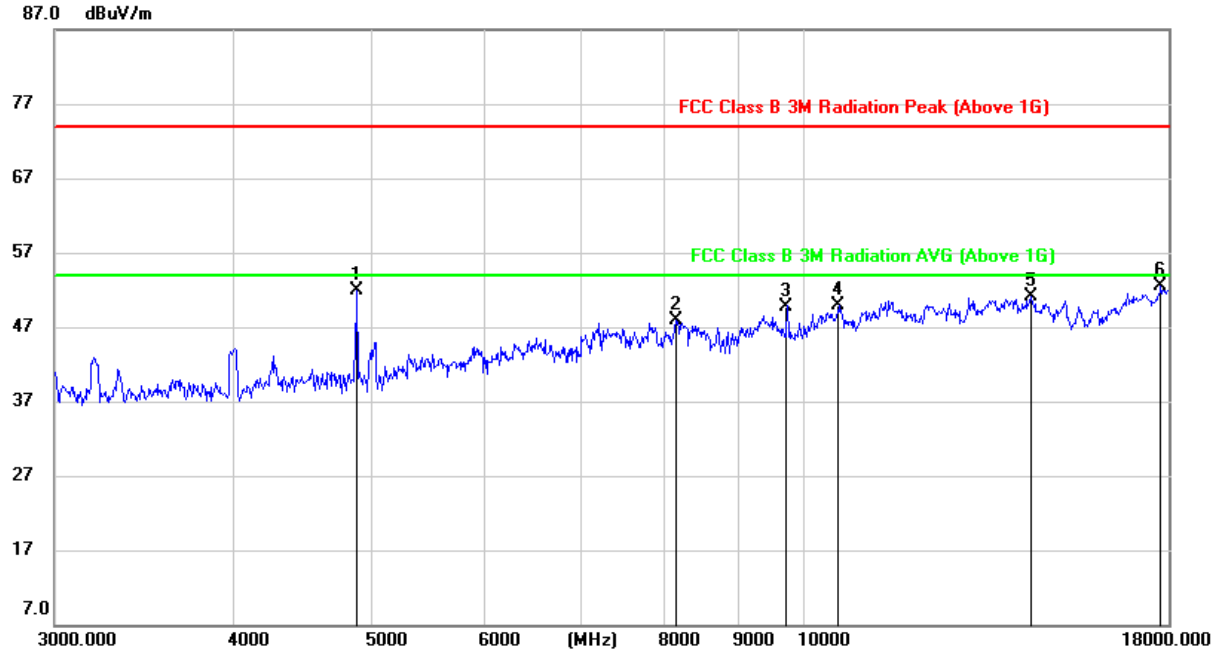
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3981.706	50.95	-2.98	47.97	74.00	-26.03	peak
2	4823.156	52.73	-0.21	52.52	74.00	-21.48	peak
3	6001.583	43.30	3.76	47.06	74.00	-26.94	peak
4	9648.857	40.42	10.04	50.46	74.00	-23.54	peak
5	13610.714	35.49	16.06	51.55	74.00	-22.45	peak
6	17871.455	28.98	23.18	52.16	74.00	-21.84	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

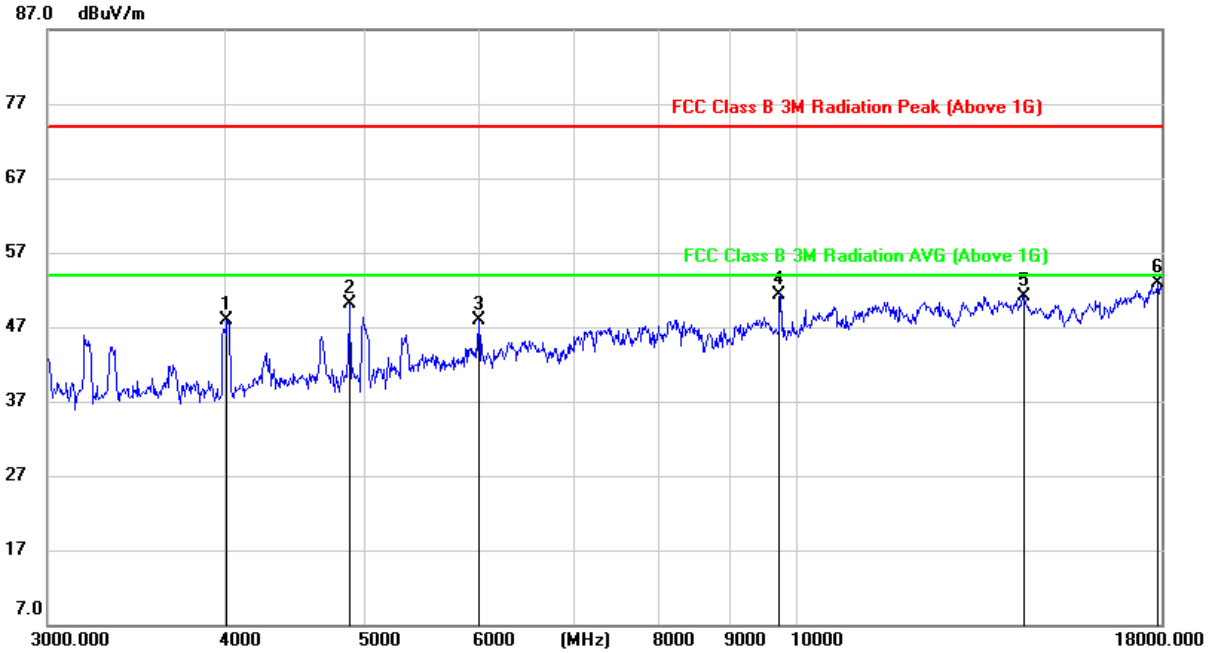
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.288	52.08	-0.12	51.96	74.00	-22.04	peak
2	8153.229	38.63	9.35	47.98	74.00	-26.02	peak
3	9753.147	39.66	10.14	49.80	74.00	-24.20	peak
4	10591.067	37.18	12.69	49.87	74.00	-24.13	peak
5	14413.908	34.67	16.41	51.08	74.00	-22.92	peak
6	17775.648	29.47	22.98	52.45	74.00	-21.55	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

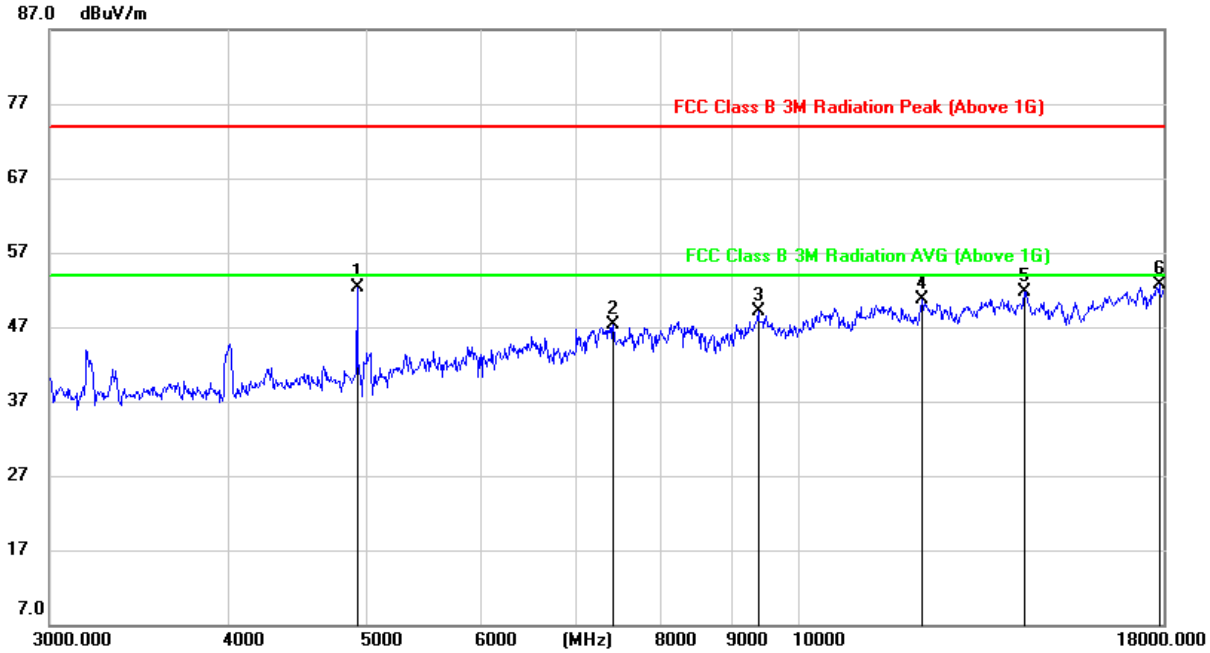
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4003.166	50.83	-2.94	47.89	74.00	-26.11	peak
2	4875.288	50.27	-0.12	50.15	74.00	-23.85	peak
3	6001.583	44.22	3.76	47.98	74.00	-26.02	peak
4	9753.147	41.15	10.14	51.29	74.00	-22.71	peak
5	14439.758	34.76	16.39	51.15	74.00	-22.85	peak
6	17935.612	29.62	23.19	52.81	74.00	-21.19	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

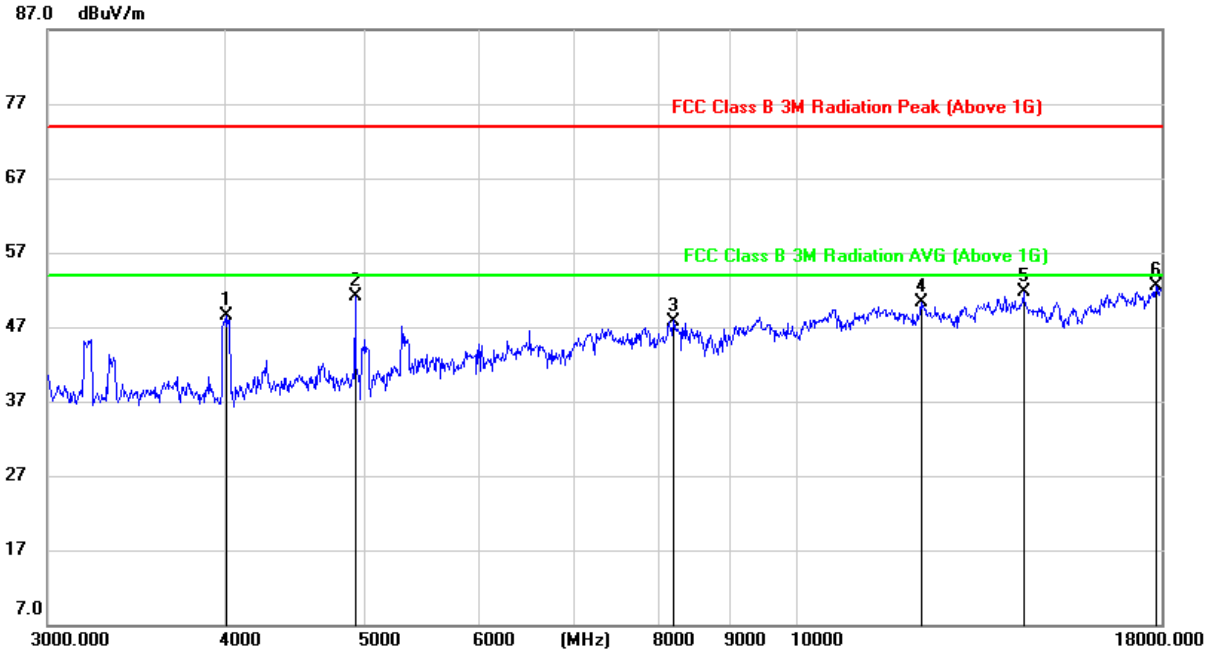
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4919.161	52.23	0.02	52.25	74.00	-21.75	peak
2	7427.896	39.83	7.43	47.26	74.00	-26.74	peak
3	9376.170	38.91	10.15	49.06	74.00	-24.94	peak
4	12201.513	36.52	14.24	50.76	74.00	-23.24	peak
5	14388.105	35.33	16.42	51.75	74.00	-22.25	peak
6	17871.455	29.49	23.18	52.67	74.00	-21.33	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

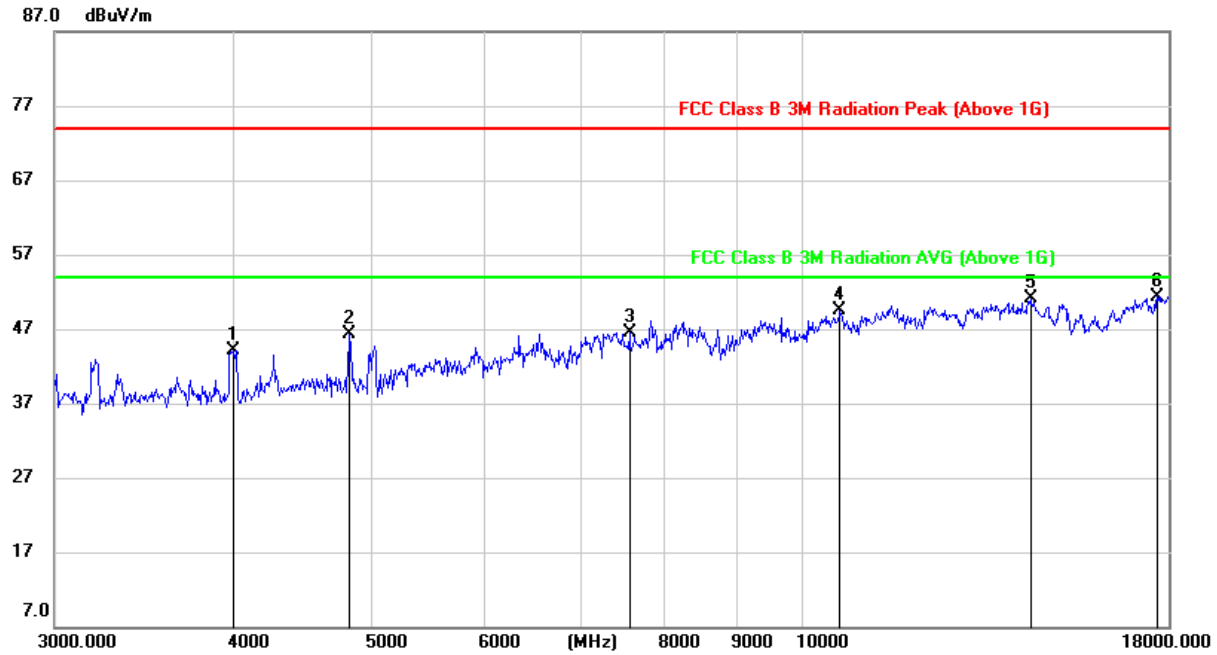


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4003.166	51.51	-2.94	48.57	74.00	-25.43	peak
2	4919.161	50.99	0.02	51.01	74.00	-22.99	peak
3	8211.874	38.30	9.50	47.80	74.00	-26.20	peak
4	12223.395	36.11	14.26	50.37	74.00	-23.63	peak
5	14413.908	35.36	16.41	51.77	74.00	-22.23	peak
6	17839.462	29.20	23.21	52.41	74.00	-21.59	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

9.2.2. 802.11g MODE

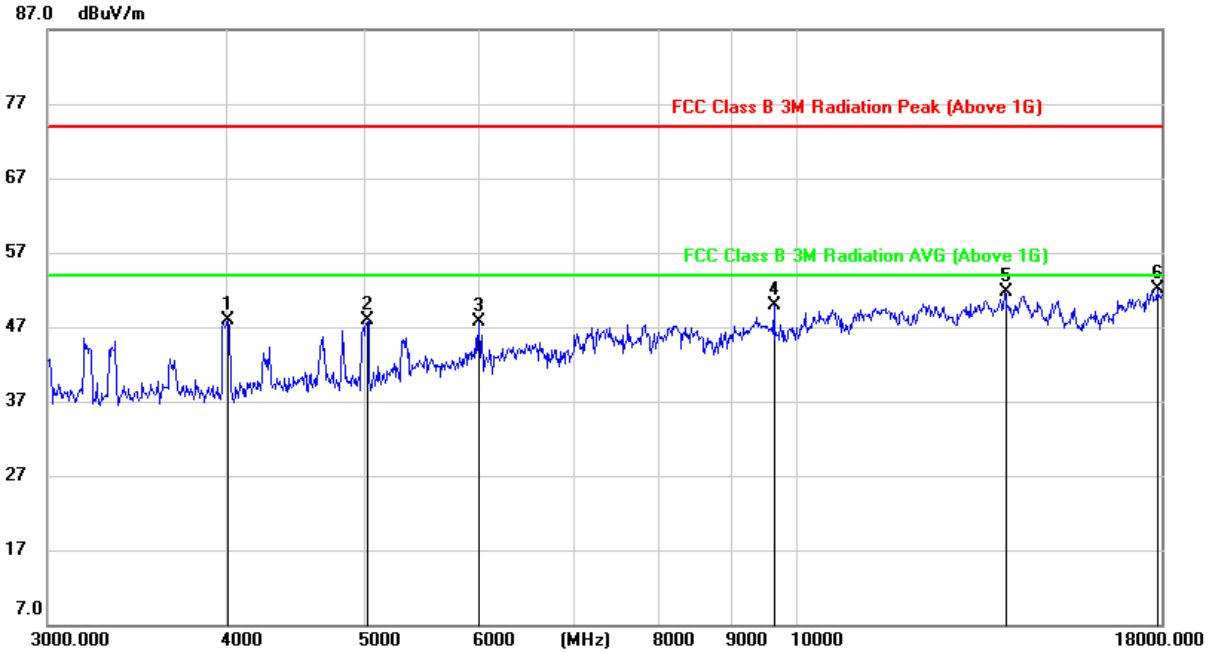
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4003.166	47.01	-2.94	44.07	74.00	-29.93	peak
2	4823.156	46.54	-0.21	46.33	74.00	-27.67	peak
3	7562.185	38.98	7.49	46.47	74.00	-27.53	peak
4	10610.061	36.78	12.74	49.52	74.00	-24.48	peak
5	14413.908	34.68	16.41	51.09	74.00	-22.91	peak
6	17680.356	29.33	22.07	51.40	74.00	-22.60	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

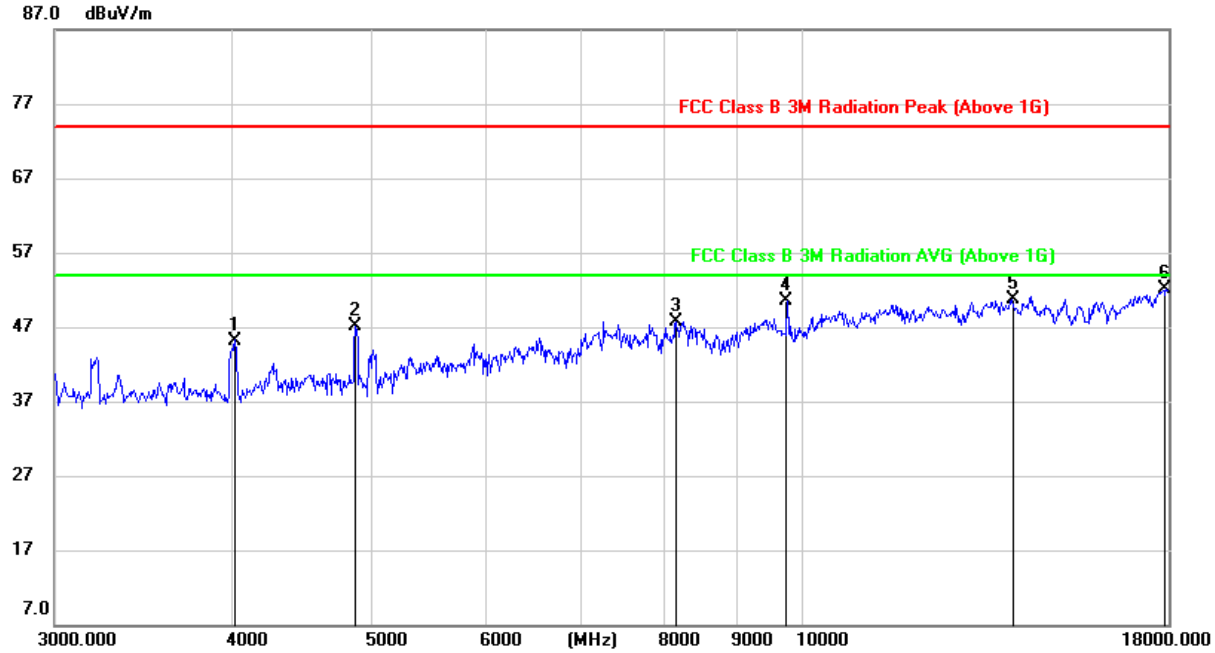
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4010.345	50.77	-2.93	47.84	74.00	-26.16	peak
2	5026.073	47.28	0.55	47.83	74.00	-26.17	peak
3	6001.583	43.93	3.76	47.69	74.00	-26.31	peak
4	9648.857	39.91	10.04	49.95	74.00	-24.05	peak
5	14006.555	35.30	16.36	51.66	74.00	-22.34	peak
6	17871.455	28.89	23.18	52.07	74.00	-21.93	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

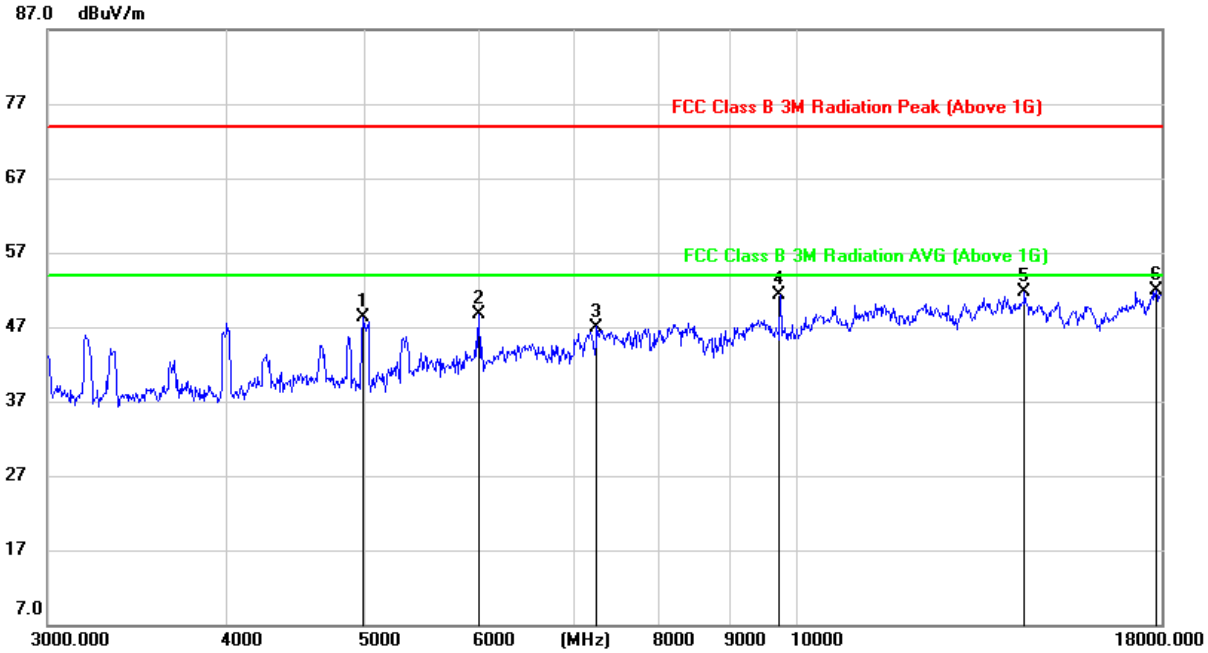
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4010.345	48.13	-2.93	45.20	74.00	-28.80	peak
2	4866.560	47.27	-0.14	47.13	74.00	-26.87	peak
3	8153.229	38.41	9.35	47.76	74.00	-26.24	peak
4	9753.147	40.32	10.14	50.46	74.00	-23.54	peak
5	14006.555	34.40	16.36	50.76	74.00	-23.24	peak
6	17935.612	28.86	23.19	52.05	74.00	-21.95	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

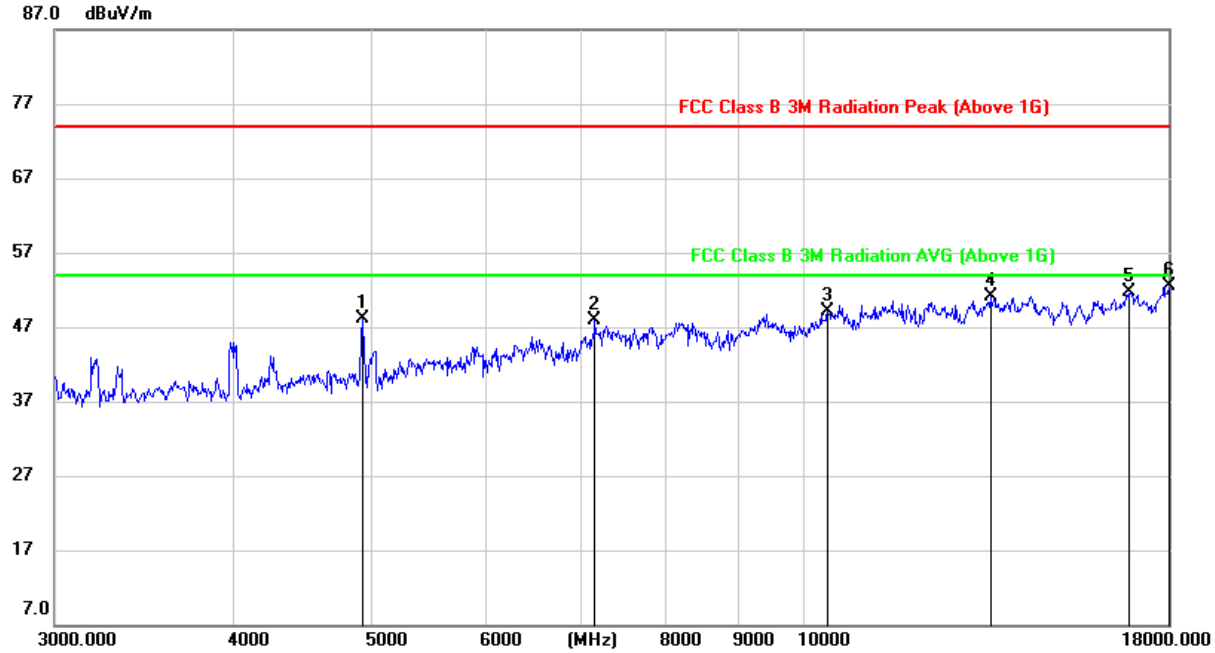
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4990.180	47.85	0.42	48.27	74.00	-25.73	peak
2	6001.583	44.96	3.76	48.72	74.00	-25.28	peak
3	7256.878	39.97	7.03	47.00	74.00	-27.00	peak
4	9753.147	41.24	10.14	51.38	74.00	-22.62	peak
5	14439.758	35.23	16.39	51.62	74.00	-22.38	peak
6	17839.462	28.67	23.21	51.88	74.00	-22.12	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

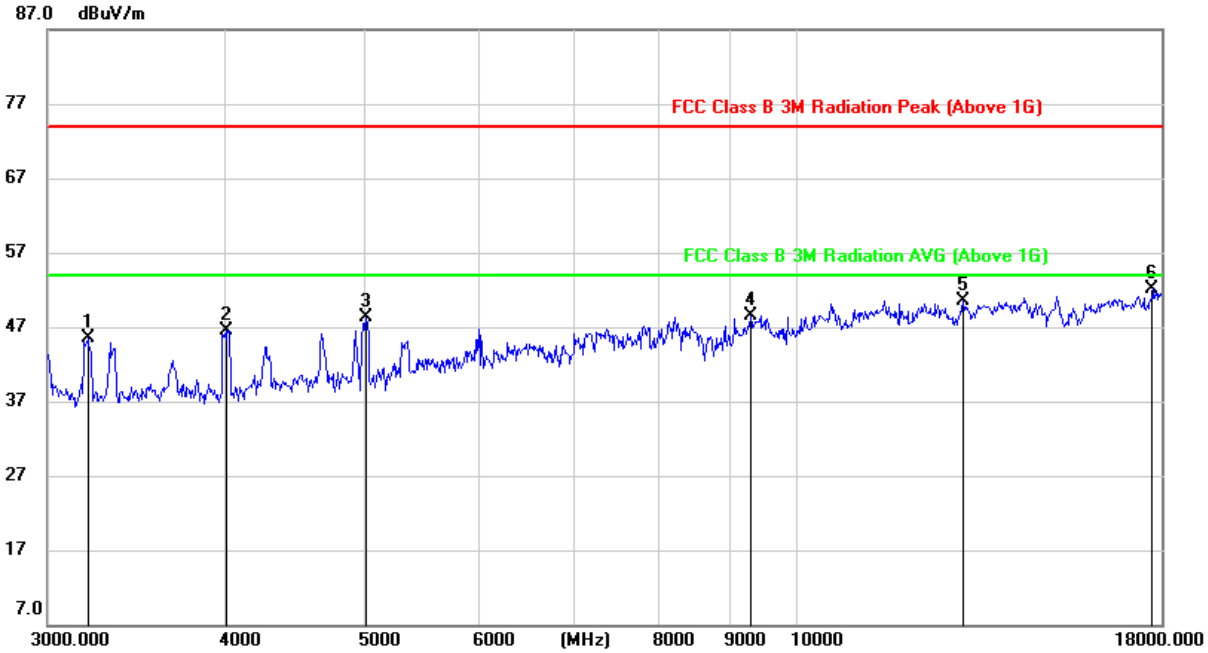
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4919.161	48.08	0.02	48.10	74.00	-25.90	peak
2	7153.599	41.10	6.88	47.98	74.00	-26.02	peak
3	10421.647	37.57	11.57	49.14	74.00	-24.86	peak
4	13537.749	35.32	15.82	51.14	74.00	-22.86	peak
5	16936.176	31.71	20.08	51.79	74.00	-22.21	peak
6	18000.000	29.22	23.27	52.49	74.00	-21.51	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

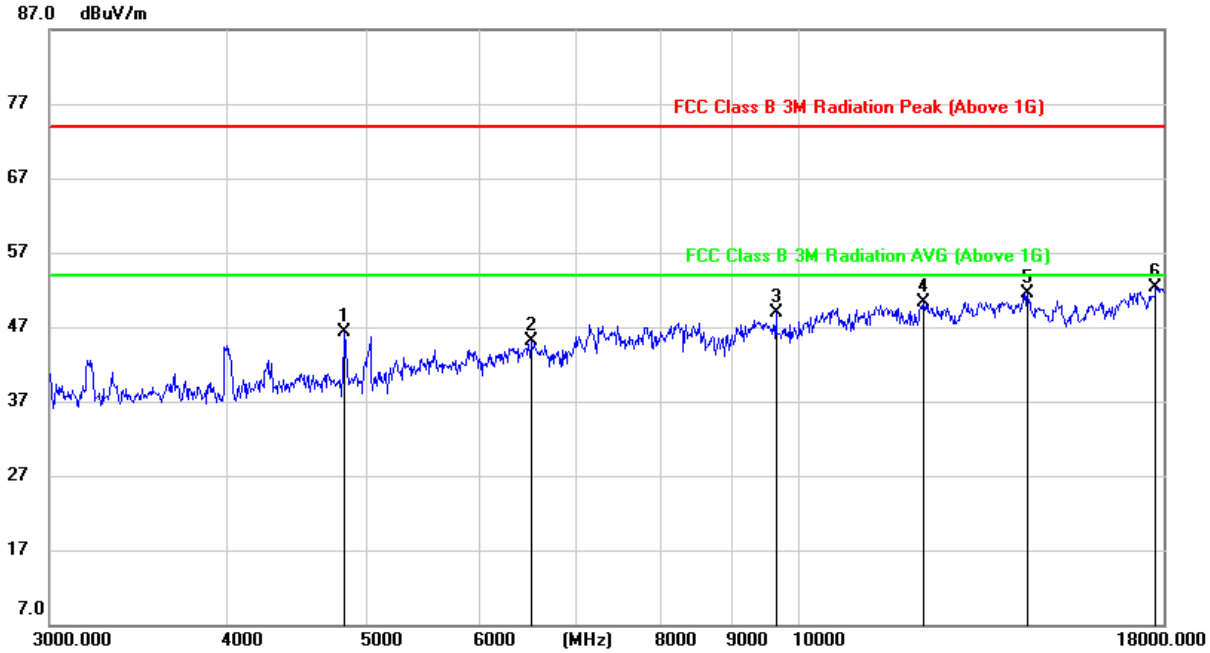


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3199.887	50.00	-4.54	45.46	74.00	-28.54	peak
2	4003.166	49.44	-2.94	46.50	74.00	-27.50	peak
3	5008.095	47.81	0.50	48.31	74.00	-25.69	peak
4	9292.545	38.93	9.64	48.57	74.00	-25.43	peak
5	13084.634	35.59	14.95	50.54	74.00	-23.46	peak
6	17775.648	29.08	22.98	52.06	74.00	-21.94	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

9.2.3. 802.11n HT20 MODE

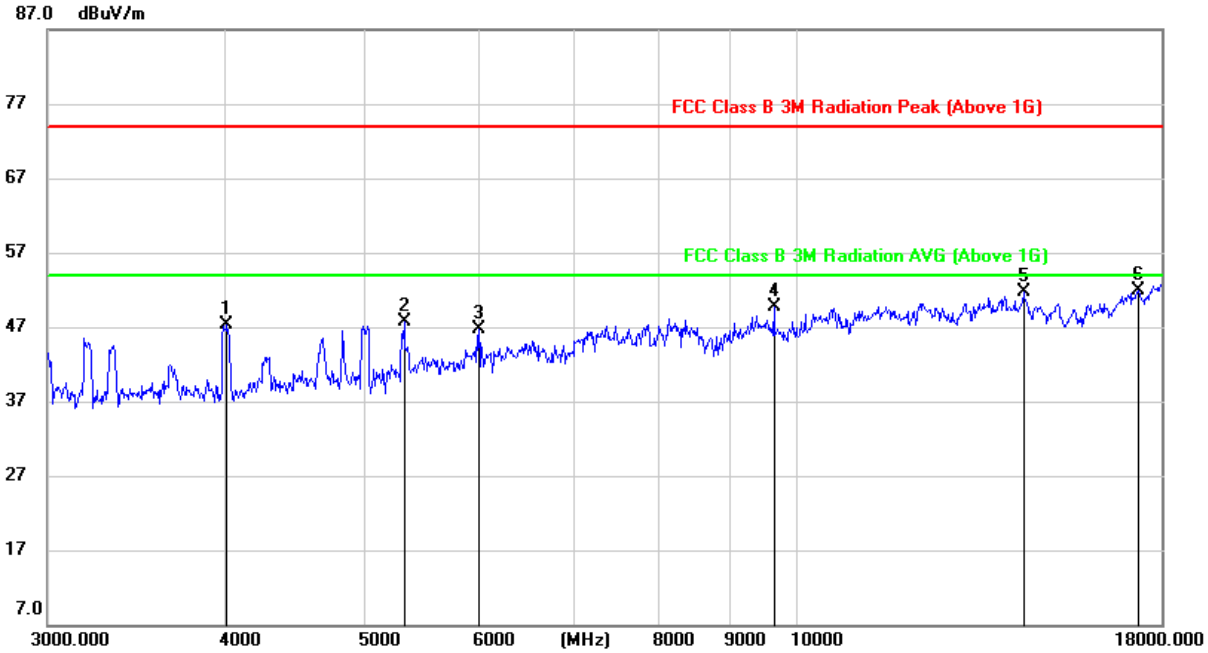
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4823.156	46.59	-0.21	46.38	74.00	-27.62	peak
2	6517.195	38.76	6.25	45.01	74.00	-28.99	peak
3	9648.857	38.92	10.04	48.96	74.00	-25.04	peak
4	12245.316	36.06	14.31	50.37	74.00	-23.63	peak
5	14465.653	35.08	16.35	51.43	74.00	-22.57	peak
6	17775.648	29.32	22.98	52.30	74.00	-21.70	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

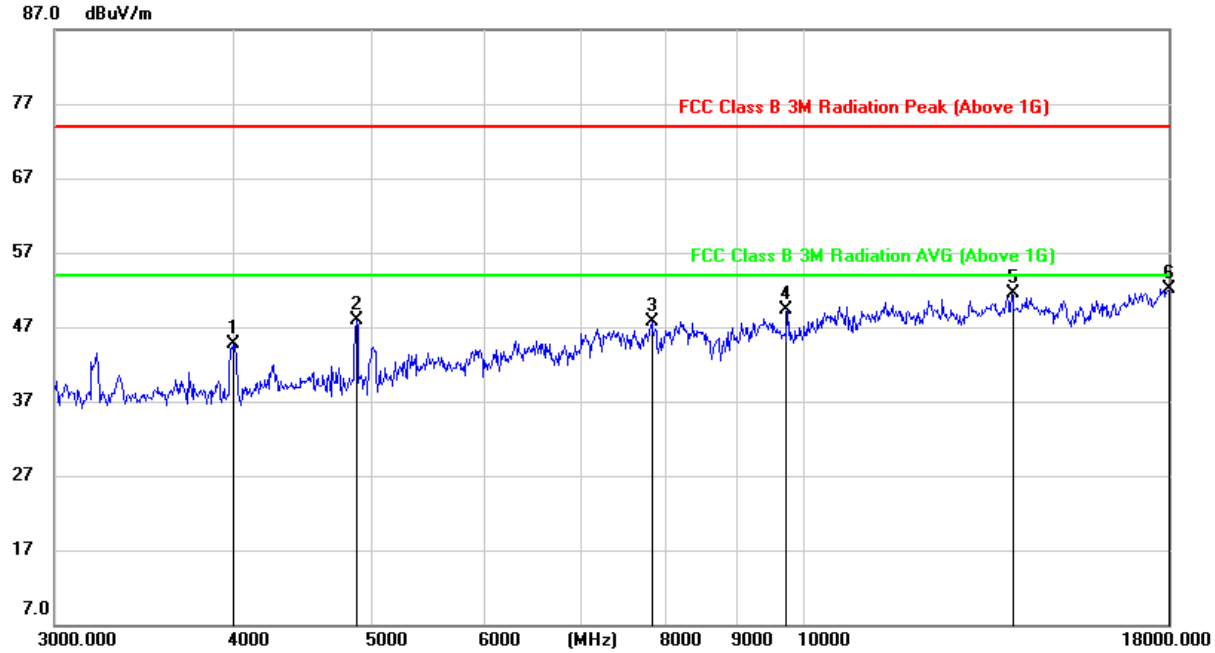
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4003.166	50.27	-2.94	47.33	74.00	-26.67	peak
2	5332.217	46.10	1.56	47.66	74.00	-26.34	peak
3	6001.583	42.98	3.76	46.74	74.00	-27.26	peak
4	9648.857	39.63	10.04	49.67	74.00	-24.33	peak
5	14413.908	35.23	16.41	51.64	74.00	-22.36	peak
6	17335.299	30.09	21.75	51.84	74.00	-22.16	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

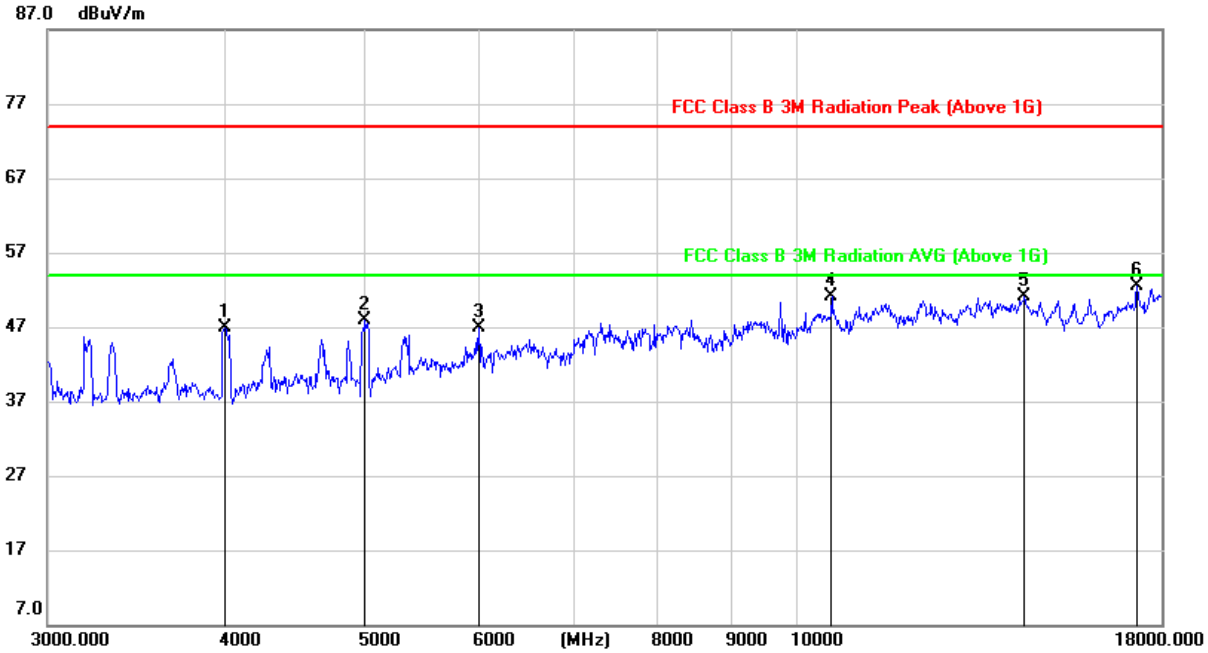
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4003.166	47.69	-2.94	44.75	74.00	-29.25	peak
2	4875.288	47.99	-0.12	47.87	74.00	-26.13	peak
3	7838.091	39.00	8.72	47.72	74.00	-26.28	peak
4	9753.147	39.16	10.14	49.30	74.00	-24.70	peak
5	14006.555	35.10	16.36	51.46	74.00	-22.54	peak
6	18000.000	28.76	23.27	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

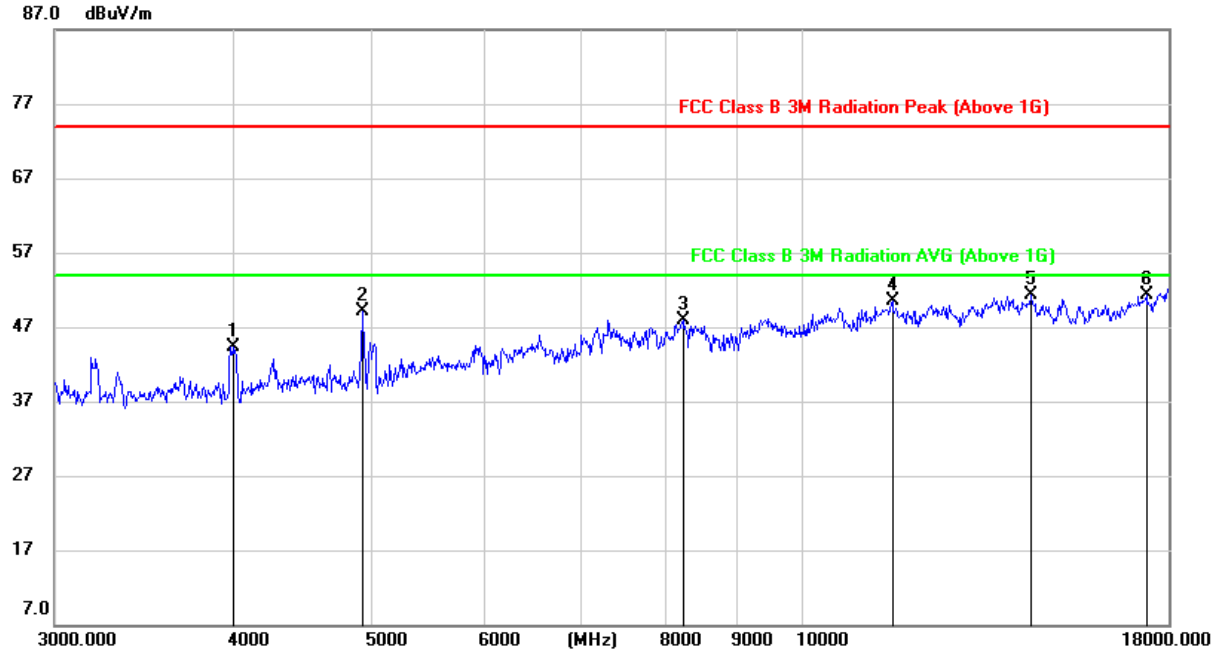
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3988.846	49.92	-2.95	46.97	74.00	-27.03	peak
2	4999.129	47.42	0.48	47.90	74.00	-26.10	peak
3	6001.583	43.06	3.76	46.82	74.00	-27.18	peak
4	10591.067	38.32	12.69	51.01	74.00	-22.99	peak
5	14439.758	34.64	16.39	51.03	74.00	-22.97	peak
6	17304.266	30.56	21.88	52.44	74.00	-21.56	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

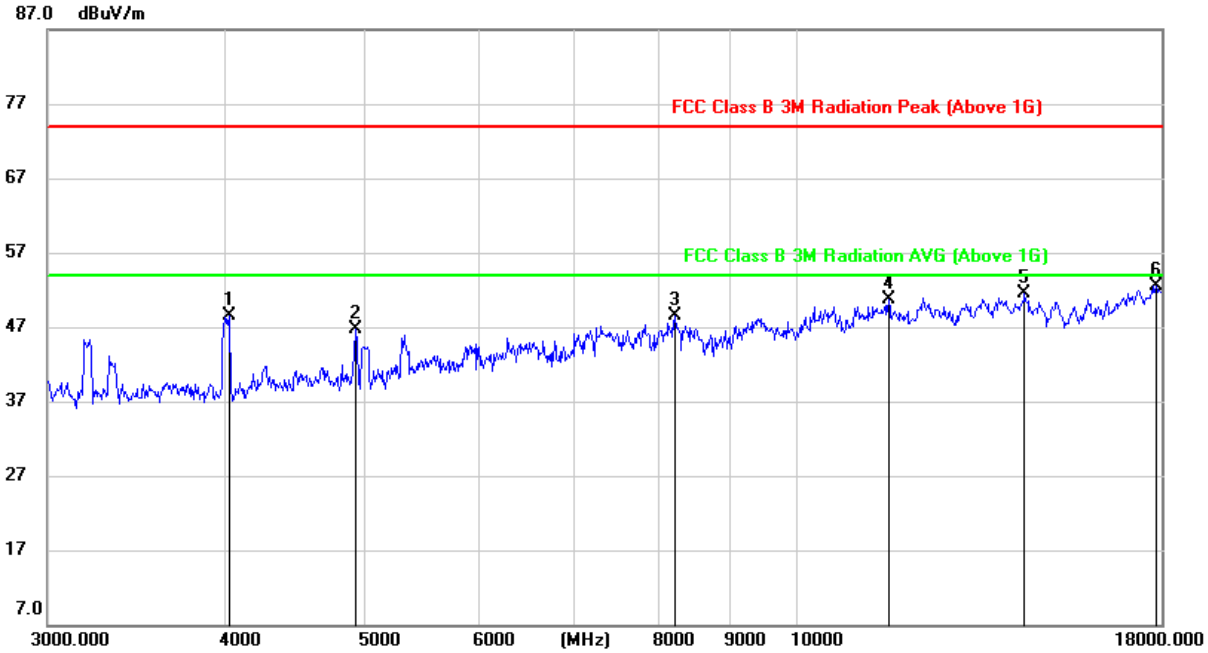
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4003.166	47.25	-2.94	44.31	74.00	-29.69	peak
2	4919.161	49.13	0.02	49.15	74.00	-24.85	peak
3	8241.354	38.74	9.16	47.90	74.00	-26.10	peak
4	11562.963	36.28	14.14	50.42	74.00	-23.58	peak
5	14439.758	34.94	16.39	51.33	74.00	-22.67	peak
6	17366.387	29.69	21.61	51.30	74.00	-22.70	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

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	4017.537	51.47	-2.94	48.53	74.00	-25.47	peak
2	4927.982	46.69	0.07	46.76	74.00	-27.24	peak
3	8226.601	39.11	9.33	48.44	74.00	-25.56	peak
4	11604.474	36.47	14.15	50.62	74.00	-23.38	peak
5	14439.758	35.13	16.39	51.52	74.00	-22.48	peak
6	17839.462	29.26	23.21	52.47	74.00	-21.53	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. The High Pass filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

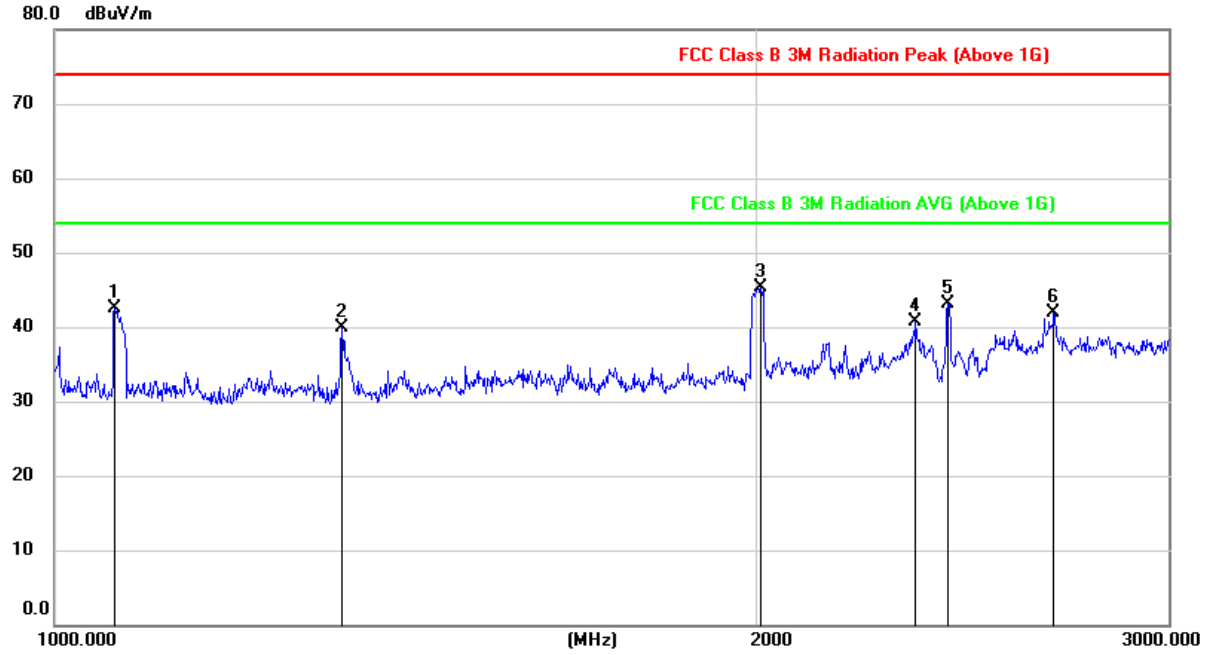
Note: All constructions have been tested, only the worst data record in the report

9.3. SPURIOUS EMISSIONS (1~3GHz)

TEST CONSTRUCTION 1

9.3.1. 802.11b MODE

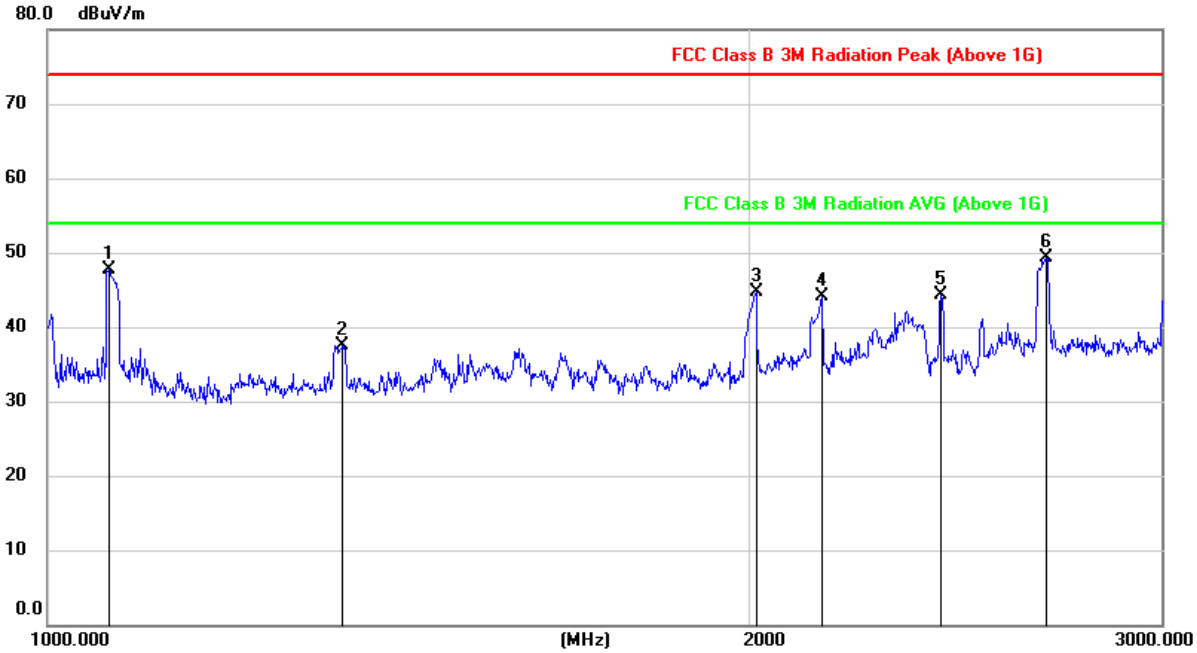
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	55.33	-12.80	42.53	74.00	-31.47	peak
2	1327.692	51.26	-11.40	39.86	74.00	-34.14	peak
3	2006.757	54.98	-9.69	45.29	74.00	-28.71	peak
4	2337.840	48.05	-7.34	40.71	74.00	-33.29	peak
5	2413.522	50.18	-7.01	43.17	74.00	-30.83	peak
6	2681.976	49.20	-7.30	41.90	74.00	-32.10	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

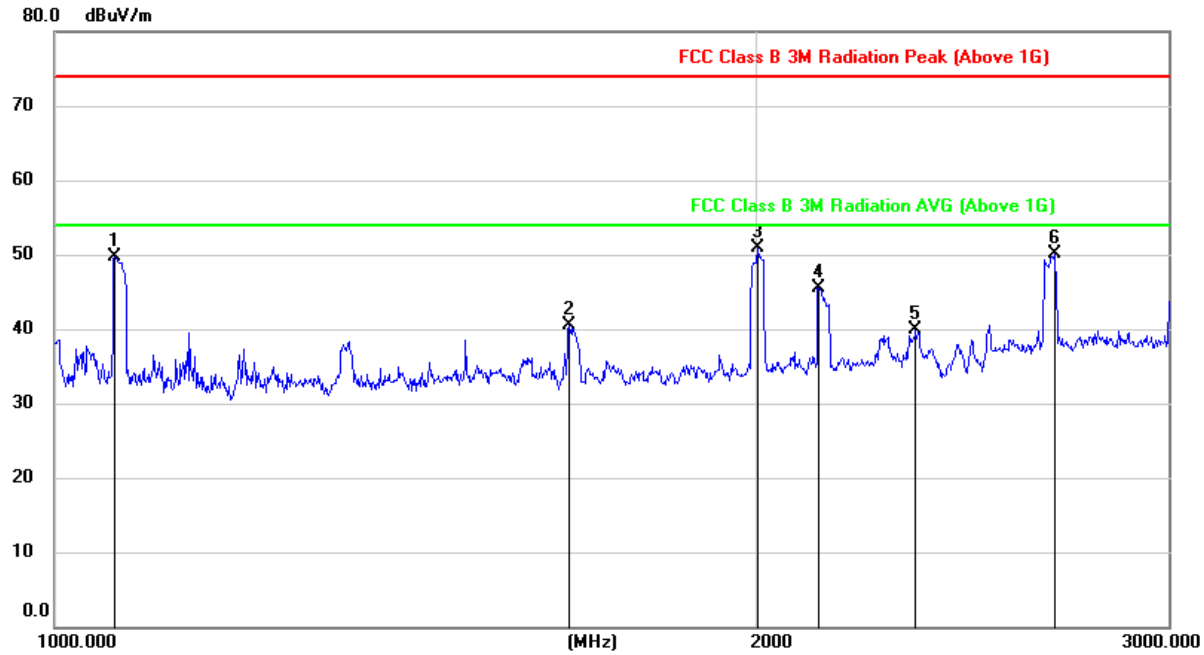
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1062.287	60.41	-12.80	47.61	74.00	-26.39	peak
2	1337.942	48.94	-11.47	37.47	74.00	-36.53	peak
3	2013.382	54.25	-9.59	44.66	74.00	-29.34	peak
4	2145.850	52.43	-8.37	44.06	74.00	-29.94	peak
5	2413.522	51.40	-7.01	44.39	74.00	-29.61	peak
6	2679.031	56.58	-7.29	49.29	74.00	-24.71	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

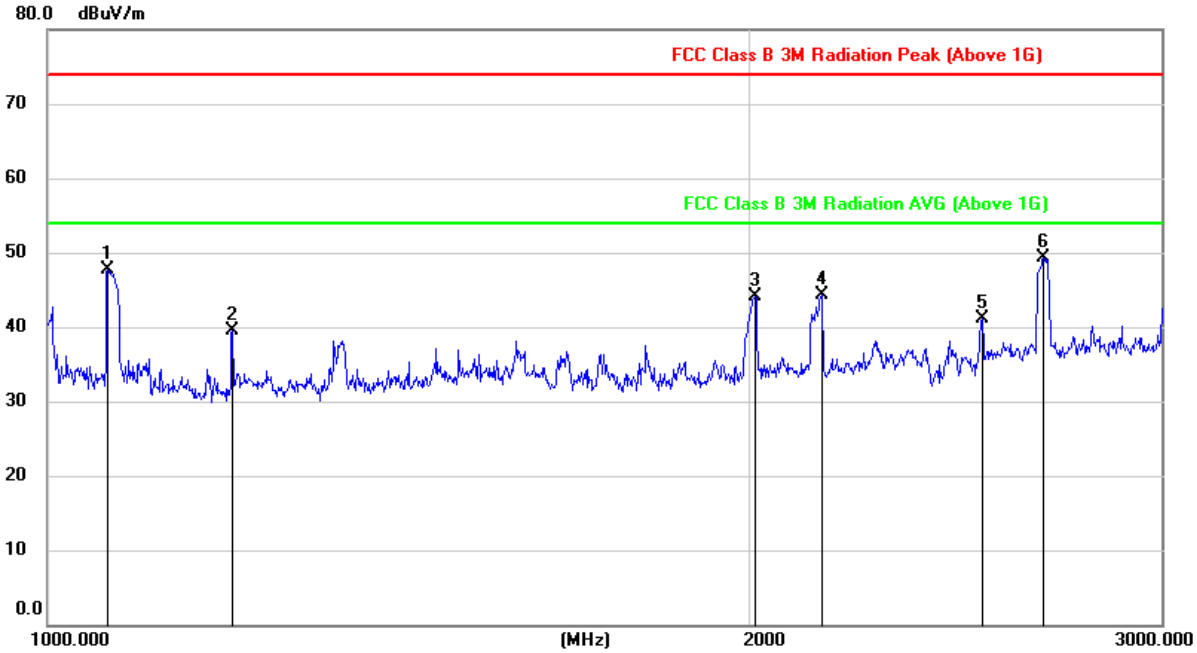
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	62.47	-12.80	49.67	74.00	-24.33	peak
2	1661.231	51.12	-10.68	40.44	74.00	-33.56	peak
3	2002.353	60.74	-9.75	50.99	74.00	-23.01	peak
4	2124.737	53.94	-8.35	45.59	74.00	-28.41	peak
5	2337.840	47.24	-7.34	39.90	74.00	-34.10	peak
6	2684.924	57.35	-7.32	50.03	74.00	-23.97	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

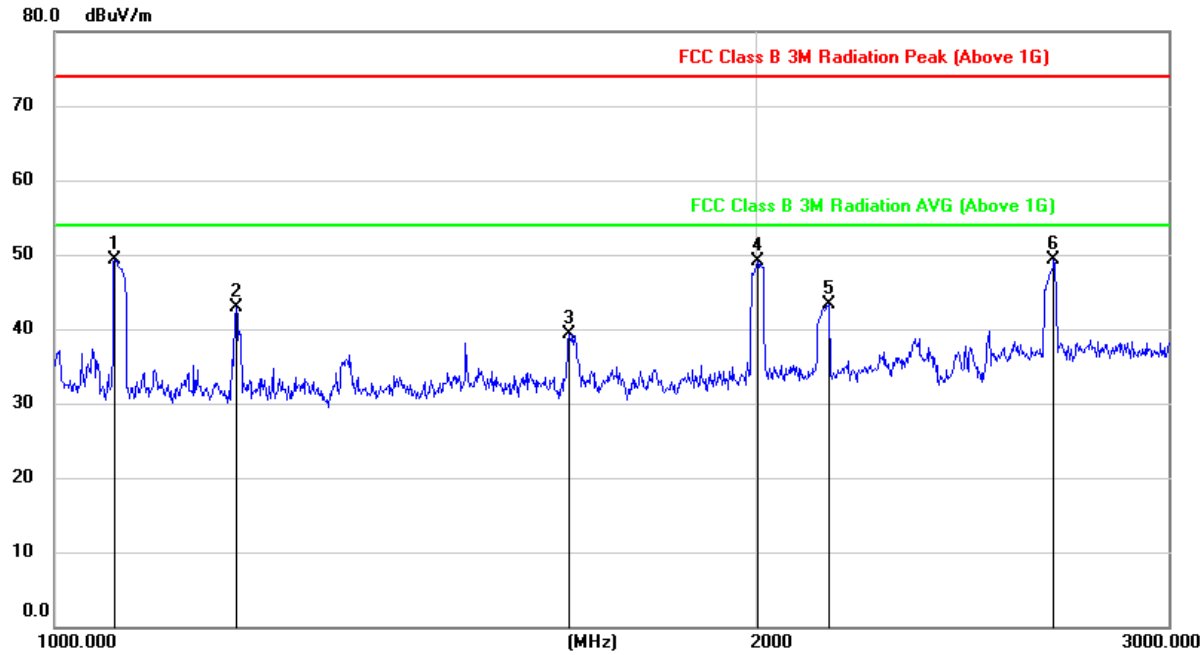
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	60.49	-12.80	47.69	74.00	-26.31	peak
2	1200.058	52.00	-12.44	39.56	74.00	-34.44	peak
3	2011.172	53.79	-9.61	44.18	74.00	-29.82	peak
4	2145.850	52.68	-8.37	44.31	74.00	-29.69	peak
5	2513.650	47.49	-6.39	41.10	74.00	-32.90	peak
6	2670.216	56.45	-7.24	49.21	74.00	-24.79	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

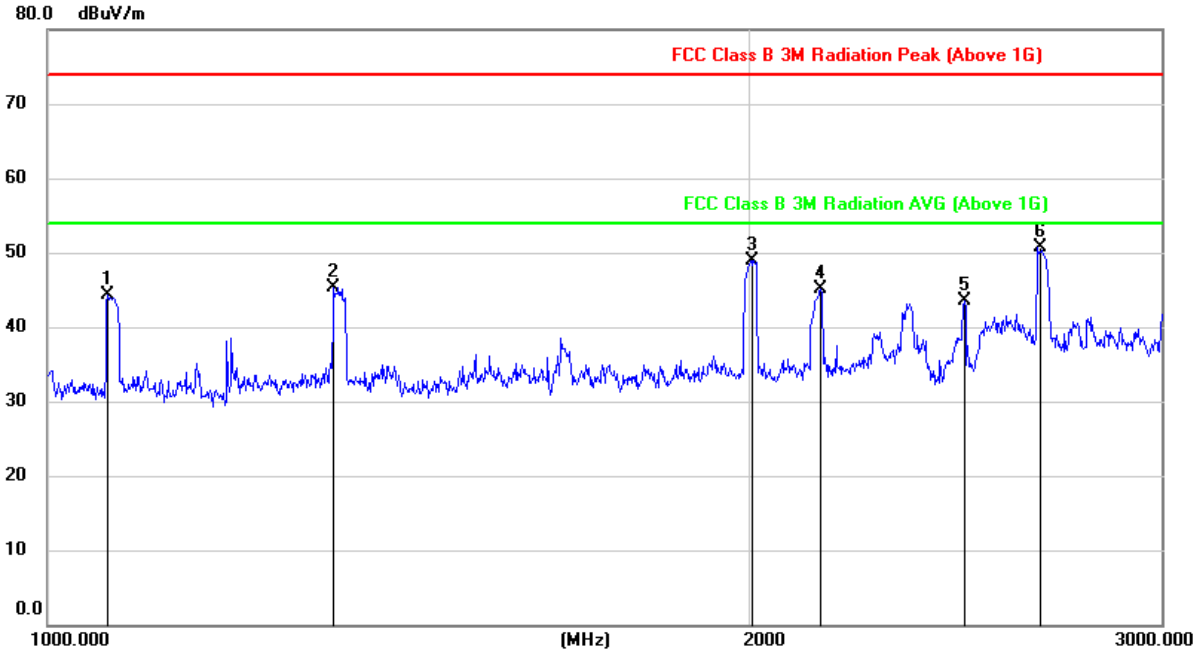
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	62.18	-12.80	49.38	74.00	-24.62	peak
2	1196.109	55.28	-12.45	42.83	74.00	-31.17	peak
3	1661.231	50.04	-10.68	39.36	74.00	-34.64	peak
4	2002.353	58.81	-9.75	49.06	74.00	-24.94	peak
5	2145.850	51.58	-8.37	43.21	74.00	-30.79	peak
6	2681.976	56.57	-7.30	49.27	74.00	-24.73	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

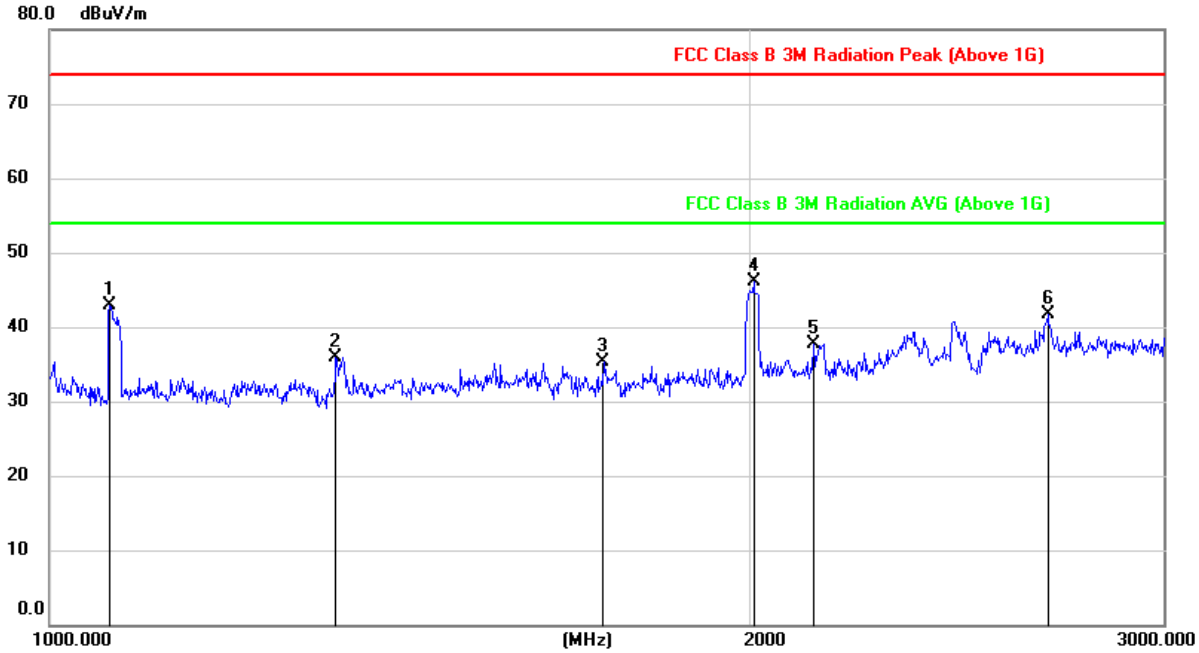


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	57.14	-12.80	44.34	74.00	-29.66	peak
2	1326.234	56.79	-11.39	45.40	74.00	-28.60	peak
3	2004.554	58.63	-9.71	48.92	74.00	-25.08	peak
4	2143.493	53.42	-8.38	45.04	74.00	-28.96	peak
5	2469.851	50.02	-6.57	43.45	74.00	-30.55	peak
6	2658.508	57.83	-7.16	50.67	74.00	-23.33	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

9.3.2. 802.11g MODE

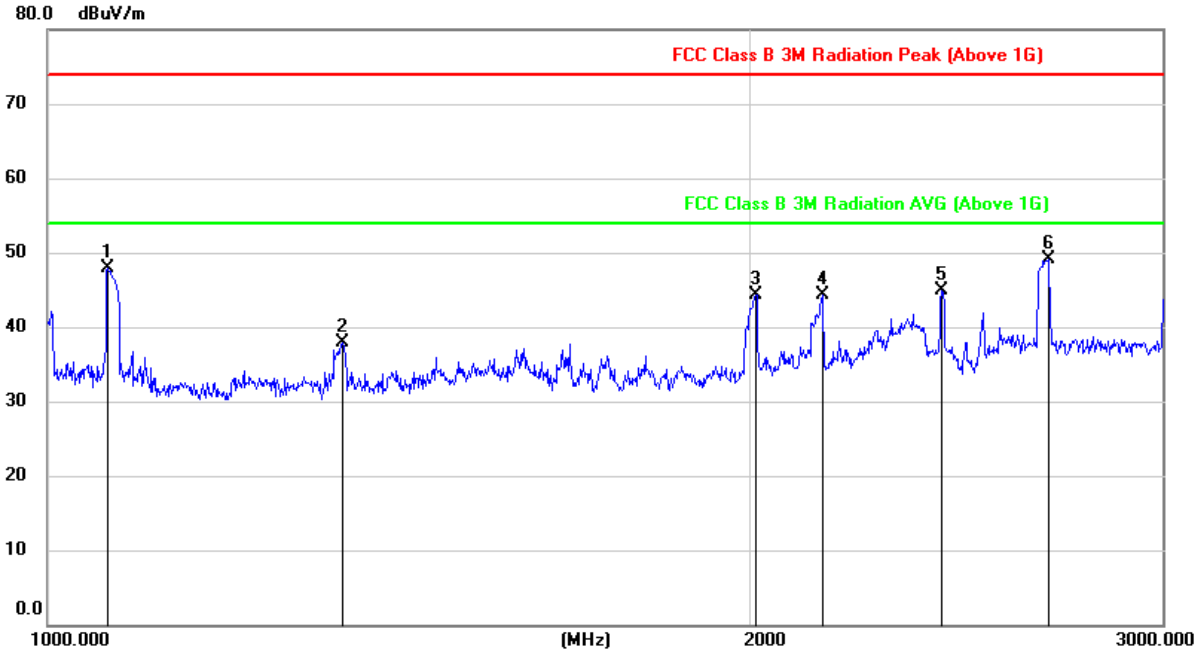
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	55.66	-12.80	42.86	74.00	-31.14	peak
2	1326.234	47.32	-11.39	35.93	74.00	-38.07	peak
3	1728.249	45.68	-10.34	35.34	74.00	-38.66	peak
4	2004.554	55.73	-9.71	46.02	74.00	-27.98	peak
5	2124.737	46.06	-8.35	37.71	74.00	-36.29	peak
6	2679.031	48.97	-7.29	41.68	74.00	-32.32	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

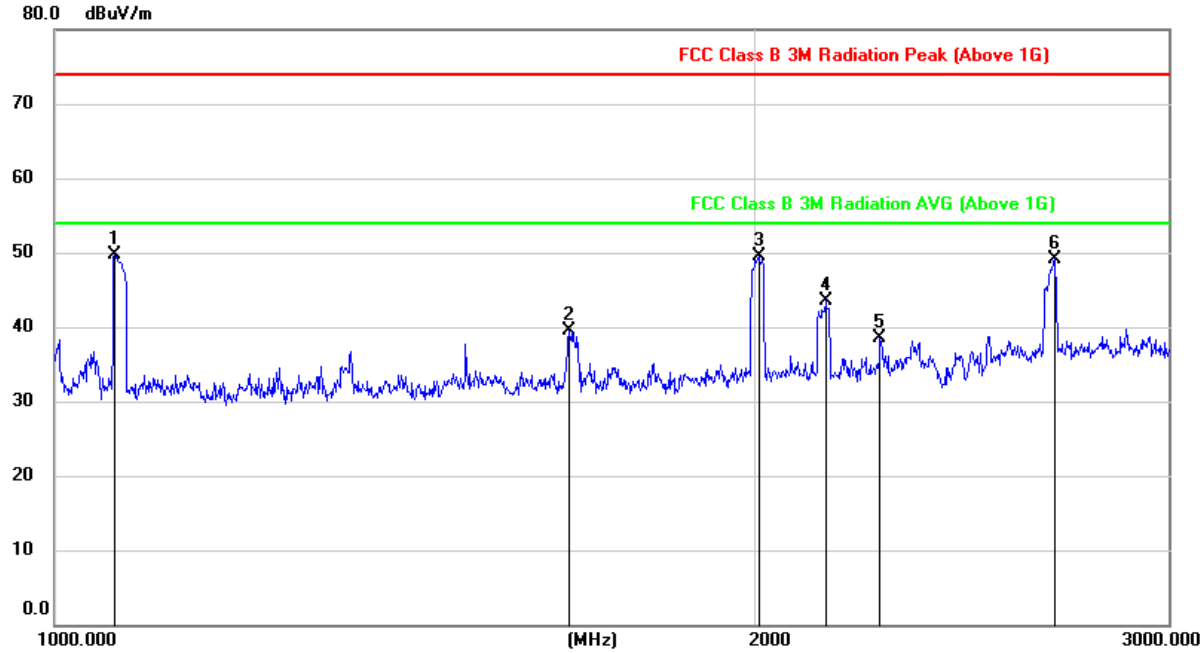
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	60.76	-12.80	47.96	74.00	-26.04	peak
2	1337.942	49.41	-11.47	37.94	74.00	-36.06	peak
3	2011.172	53.89	-9.61	44.28	74.00	-29.72	peak
4	2145.850	52.58	-8.37	44.21	74.00	-29.79	peak
5	2413.522	51.92	-7.01	44.91	74.00	-29.09	peak
6	2684.924	56.41	-7.32	49.09	74.00	-24.91	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

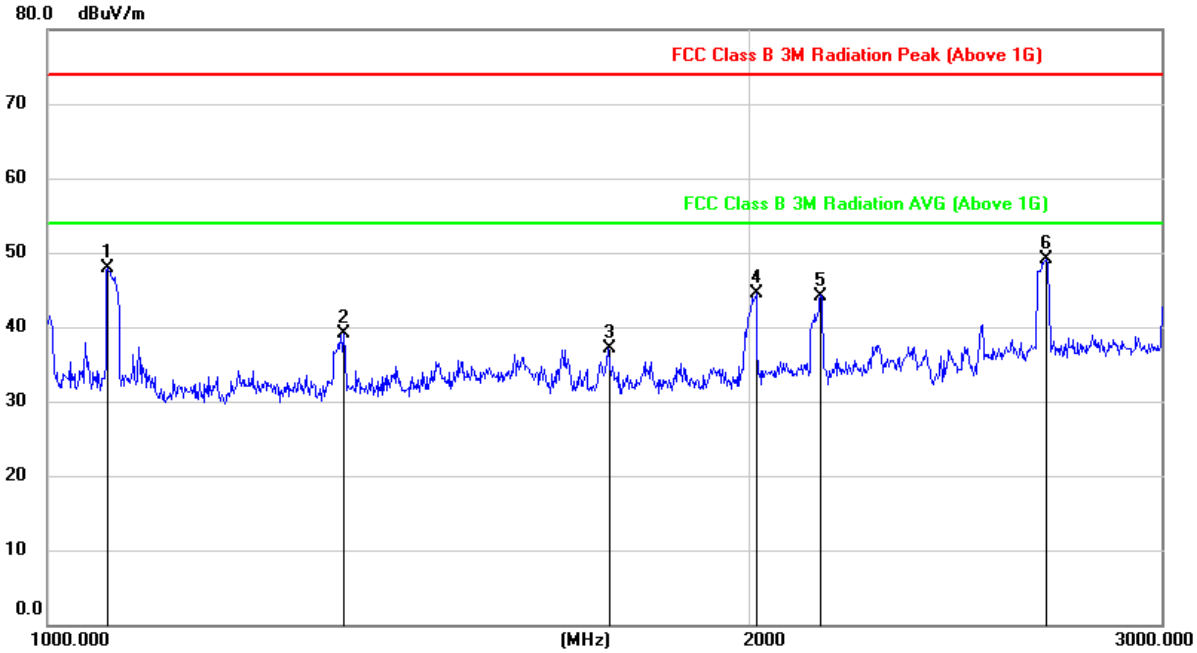
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1061.120	62.46	-12.80	49.66	74.00	-24.34	peak
2	1661.231	50.26	-10.68	39.58	74.00	-34.42	peak
3	2004.554	59.16	-9.71	49.45	74.00	-24.55	peak
4	2138.789	51.92	-8.37	43.55	74.00	-30.45	peak
5	2259.560	46.42	-7.87	38.55	74.00	-35.45	peak
6	2684.924	56.52	-7.32	49.20	74.00	-24.80	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

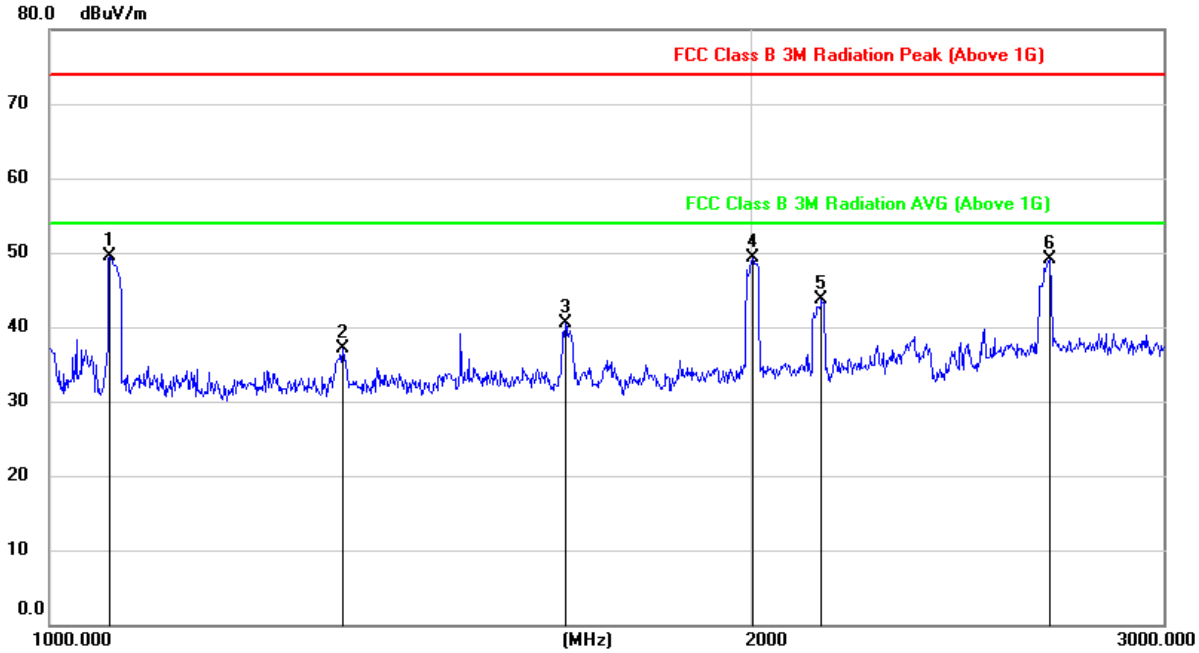
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	60.61	-12.80	47.81	74.00	-26.19	peak
2	1339.412	50.67	-11.49	39.18	74.00	-34.82	peak
3	1739.679	47.31	-10.19	37.12	74.00	-36.88	peak
4	2013.382	54.16	-9.59	44.57	74.00	-29.43	peak
5	2143.493	52.58	-8.38	44.20	74.00	-29.80	peak
6	2681.976	56.44	-7.30	49.14	74.00	-24.86	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

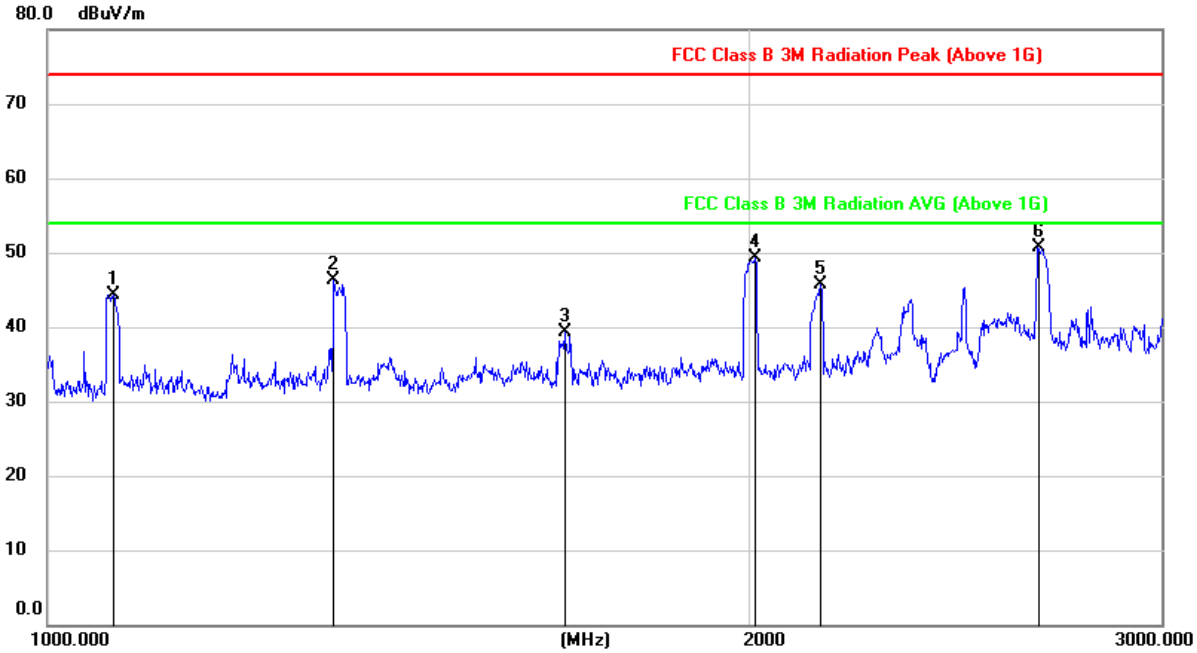
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	62.22	-12.80	49.42	74.00	-24.58	peak
2	1336.472	48.50	-11.46	37.04	74.00	-36.96	peak
3	1663.057	51.10	-10.68	40.42	74.00	-33.58	peak
4	2002.353	58.98	-9.75	49.23	74.00	-24.77	peak
5	2141.140	51.99	-8.38	43.61	74.00	-30.39	peak
6	2684.924	56.49	-7.32	49.17	74.00	-24.83	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

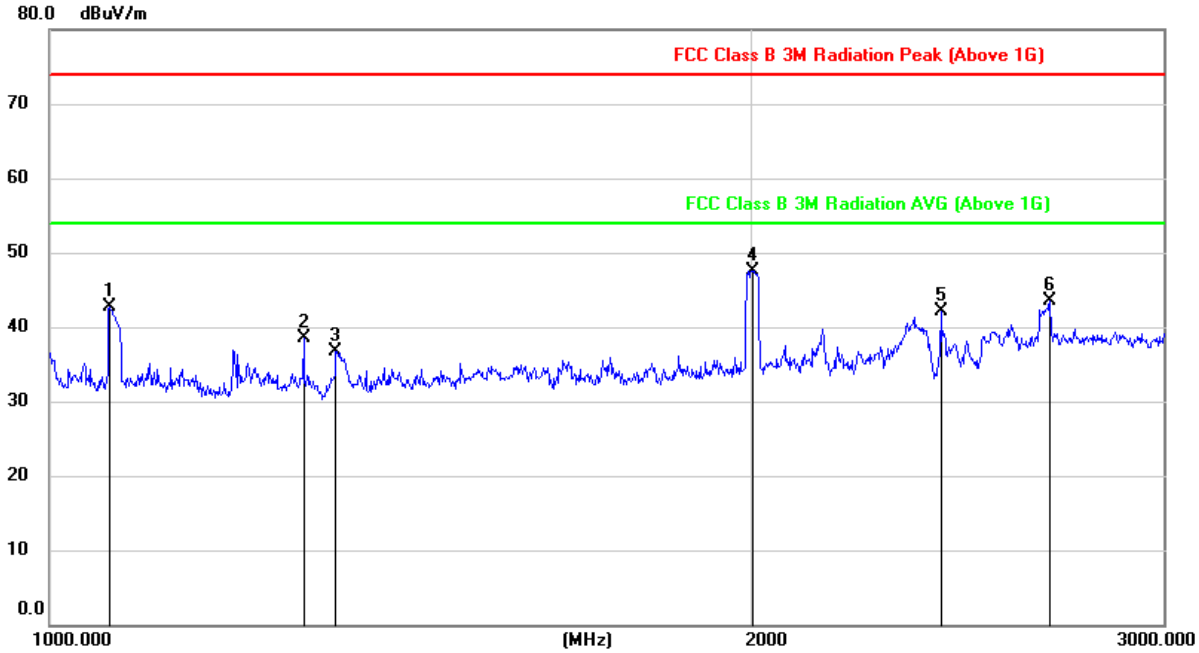


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1068.138	57.13	-12.77	44.36	74.00	-29.64	peak
2	1326.234	57.75	-11.39	46.36	74.00	-27.64	peak
3	1666.715	50.05	-10.68	39.37	74.00	-34.63	peak
4	2011.172	58.89	-9.61	49.28	74.00	-24.72	peak
5	2143.493	54.08	-8.38	45.70	74.00	-28.30	peak
6	2658.508	57.85	-7.16	50.69	74.00	-23.31	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

9.3.3. 802.11n HT20 MODE

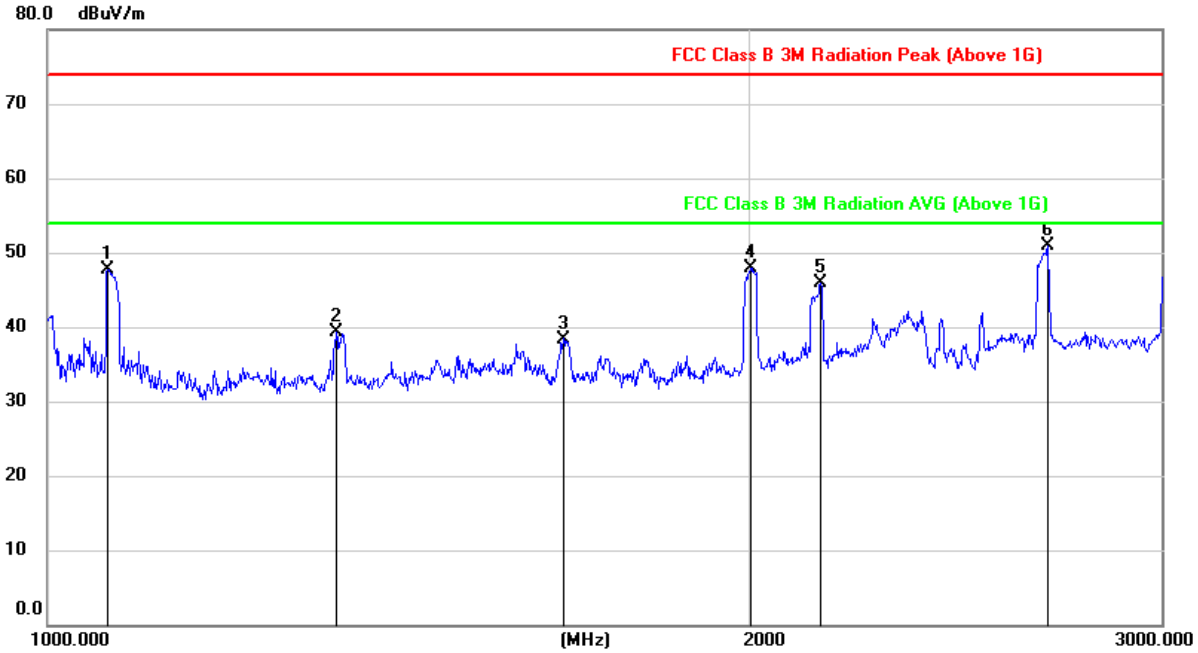
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	55.57	-12.80	42.77	74.00	-31.23	peak
2	1284.647	49.95	-11.40	38.55	74.00	-35.45	peak
3	1326.234	48.03	-11.39	36.64	74.00	-37.36	peak
4	2002.353	57.32	-9.75	47.57	74.00	-26.43	peak
5	2408.225	49.18	-7.05	42.13	74.00	-31.87	peak
6	2684.924	50.88	-7.32	43.56	74.00	-30.44	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

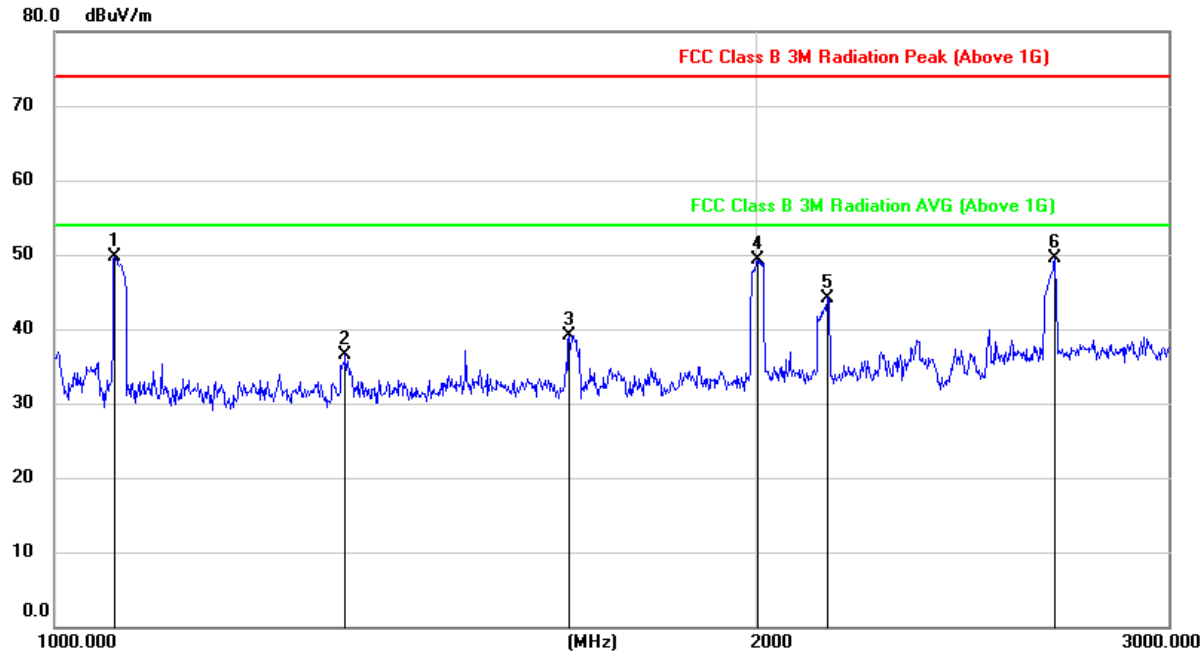
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	60.60	-12.80	47.80	74.00	-26.20	peak
2	1330.612	50.75	-11.42	39.33	74.00	-34.67	peak
3	1663.057	49.08	-10.68	38.40	74.00	-35.60	peak
4	2002.353	57.71	-9.75	47.96	74.00	-26.04	peak
5	2143.493	54.23	-8.38	45.85	74.00	-28.15	peak
6	2684.924	58.16	-7.32	50.84	74.00	-23.16	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

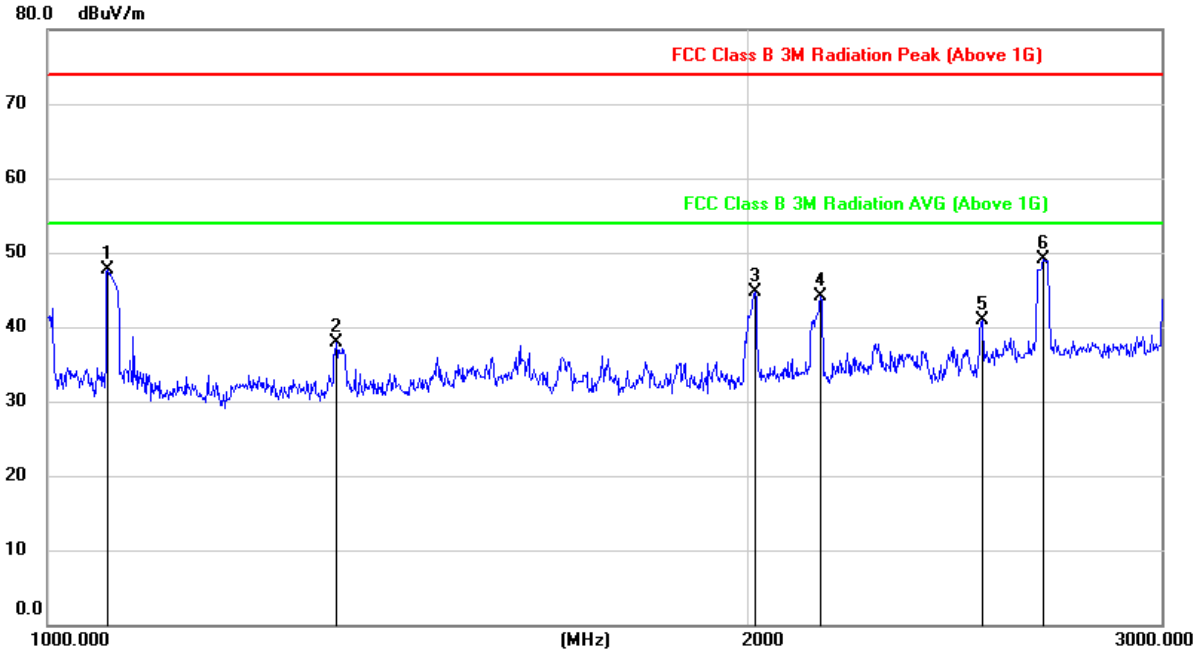
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	62.56	-12.80	49.76	74.00	-24.24	peak
2	1332.075	47.87	-11.43	36.44	74.00	-37.56	peak
3	1661.231	49.80	-10.68	39.12	74.00	-34.88	peak
4	2002.353	58.97	-9.75	49.22	74.00	-24.78	peak
5	2143.493	52.58	-8.38	44.20	74.00	-29.80	peak
6	2684.924	56.87	-7.32	49.55	74.00	-24.45	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

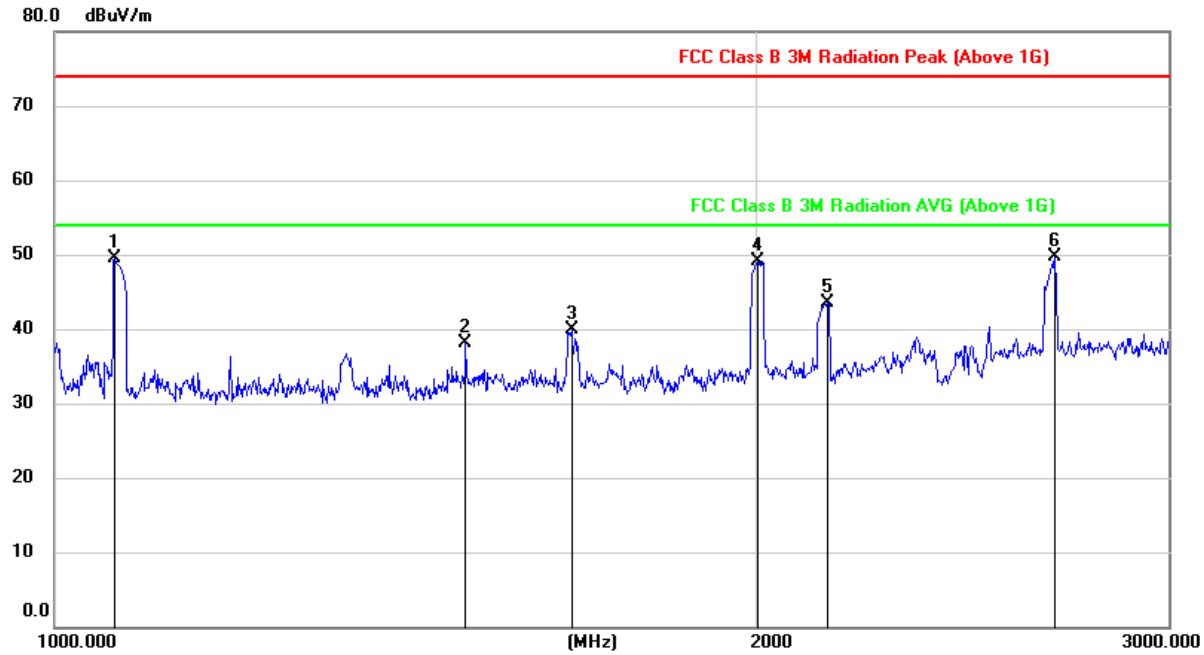
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	60.49	-12.80	47.69	74.00	-26.31	peak
2	1330.612	49.40	-11.42	37.98	74.00	-36.02	peak
3	2011.172	54.24	-9.61	44.63	74.00	-29.37	peak
4	2143.493	52.43	-8.38	44.05	74.00	-29.95	peak
5	2513.650	47.37	-6.39	40.98	74.00	-33.02	peak
6	2670.216	56.39	-7.24	49.15	74.00	-24.85	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

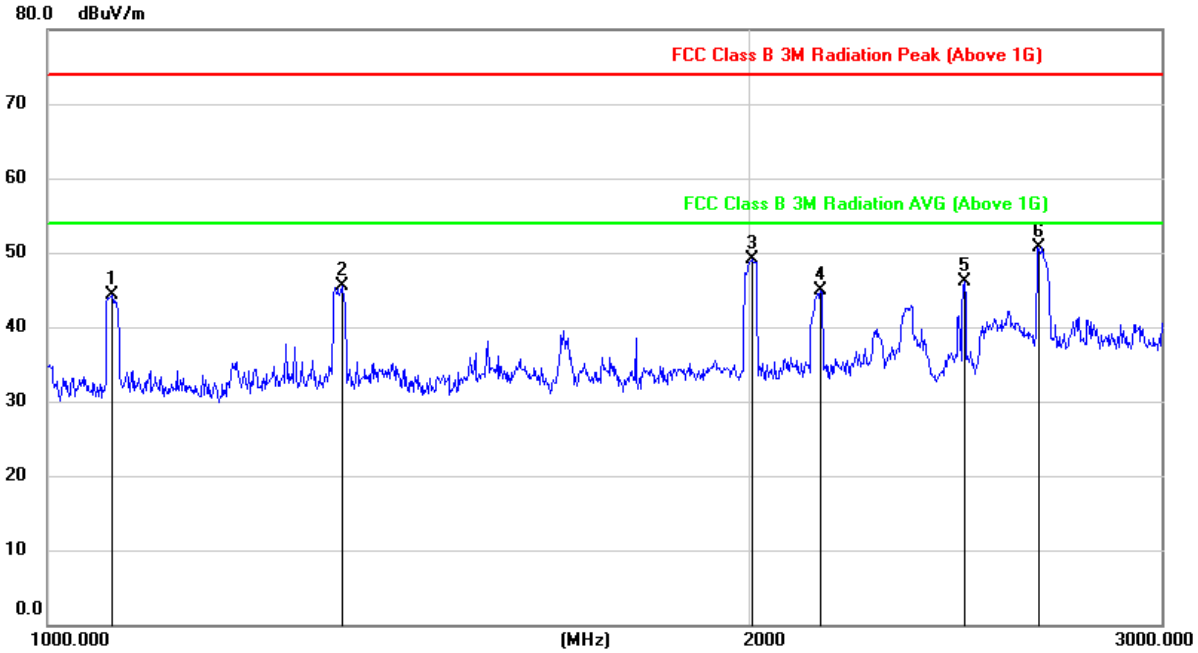
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1061.120	62.26	-12.80	49.46	74.00	-24.54	peak
2	1499.884	49.79	-11.60	38.19	74.00	-35.81	peak
3	1666.715	50.64	-10.68	39.96	74.00	-34.04	peak
4	2002.353	58.95	-9.75	49.20	74.00	-24.80	peak
5	2143.493	51.95	-8.38	43.57	74.00	-30.43	peak
6	2684.924	57.09	-7.32	49.77	74.00	-24.23	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

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	1065.793	57.13	-12.78	44.35	74.00	-29.65	peak
2	1336.473	57.03	-11.46	45.57	74.00	-28.43	peak
3	2004.554	58.80	-9.71	49.09	74.00	-24.91	peak
4	2143.493	53.22	-8.38	44.84	74.00	-29.16	peak
5	2469.851	52.62	-6.57	46.05	74.00	-27.95	peak
6	2658.508	57.94	-7.16	50.78	74.00	-23.22	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. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

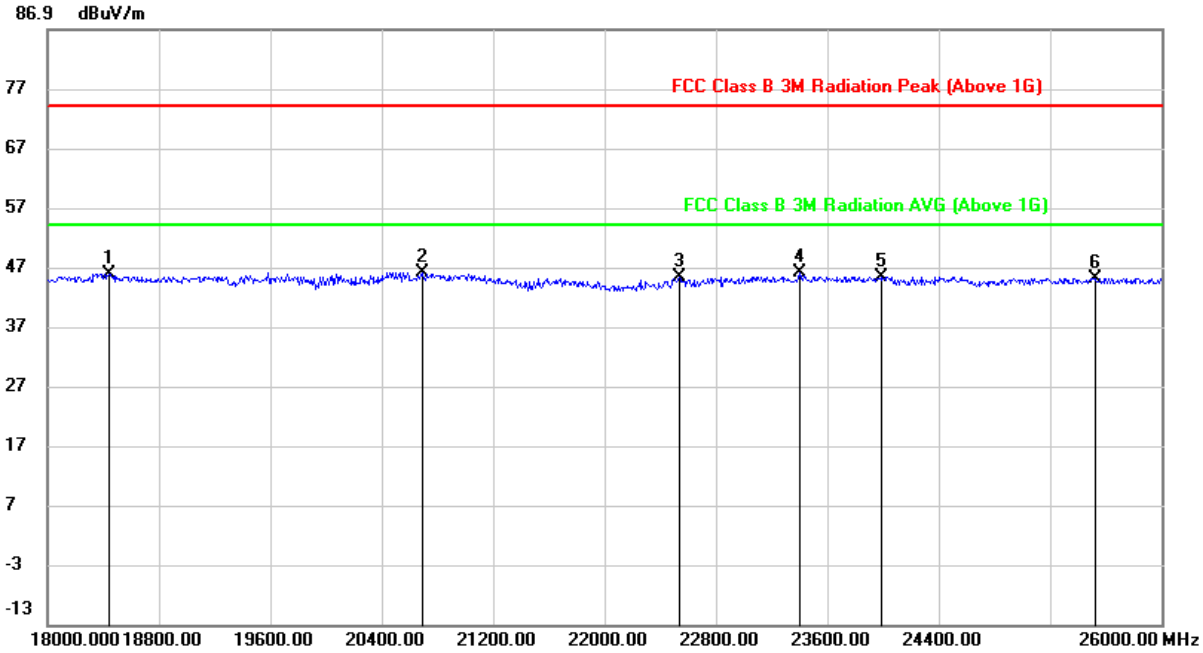
Note: All constructions have been tested, only the worst data record in the report

9.4. SPURIOUS EMISSIONS (18~26GHz)

TEST CONSTRUCTION 1

9.4.1. 802.11b MODE

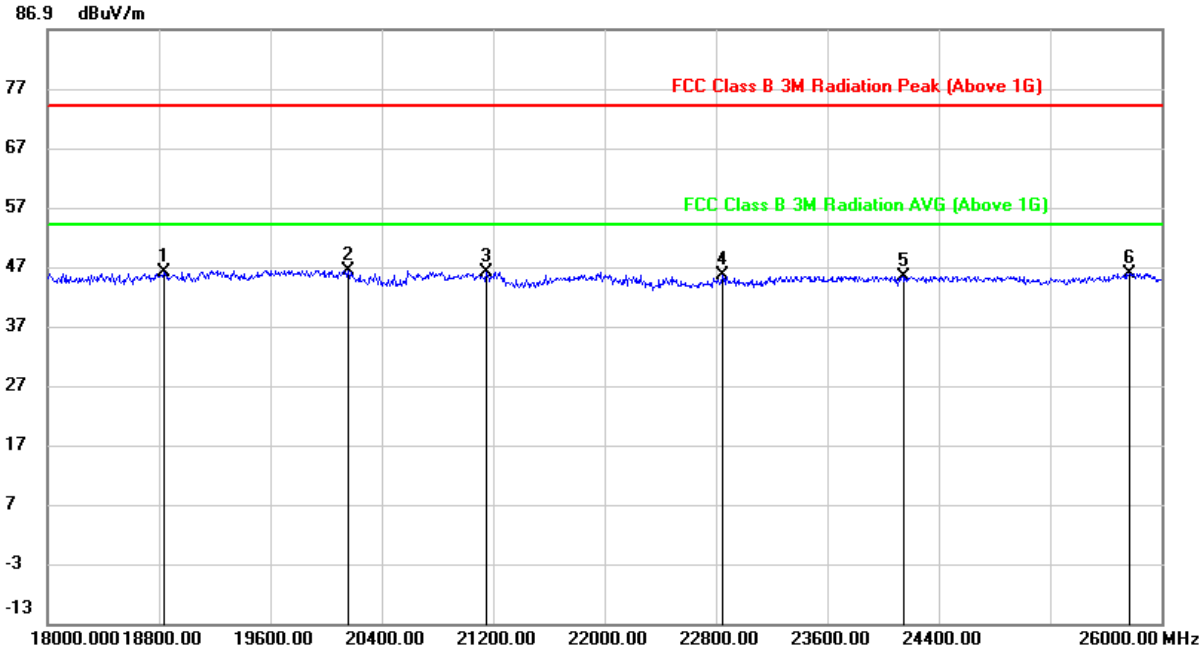
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18440.000	50.26	-4.38	45.88	74.00	-28.12	peak
2	20696.000	51.14	-5.08	46.06	74.00	-27.94	peak
3	22536.000	51.02	-5.79	45.23	74.00	-28.77	peak
4	23400.000	50.92	-4.96	45.96	74.00	-28.04	peak
5	23984.000	49.42	-4.05	45.37	74.00	-28.63	peak
6	25520.000	46.93	-1.78	45.15	74.00	-28.85	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. Proper operation of the transmitter prior to adding the filter to the measurement chain.

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18832.000	50.91	-4.85	46.06	74.00	-27.94	peak
2	20160.000	51.07	-4.70	46.37	74.00	-27.63	peak
3	21152.000	51.56	-5.42	46.14	74.00	-27.86	peak
4	22848.000	51.10	-5.69	45.41	74.00	-28.59	peak
5	24144.000	49.17	-3.77	45.40	74.00	-28.60	peak
6	25768.000	47.19	-1.41	45.78	74.00	-28.22	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. Proper operation of the transmitter prior to adding the filter to the measurement chain.

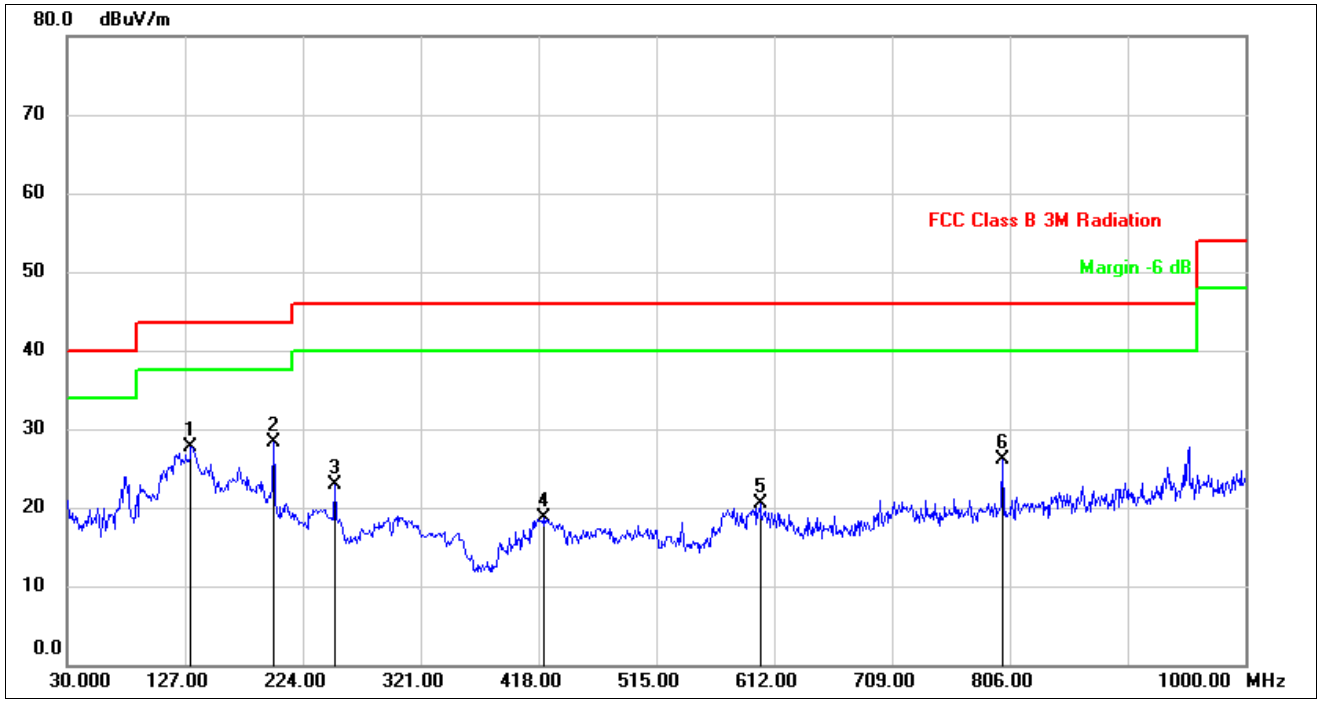
Note: All constructions and test modes have been tested, only the worst data record in the report.

9.5. SPURIOUS EMISSIONS (0.03 ~ 1 GHz)

9.5.1. 802.11b MODE

TEST CONSTRUCTION 1

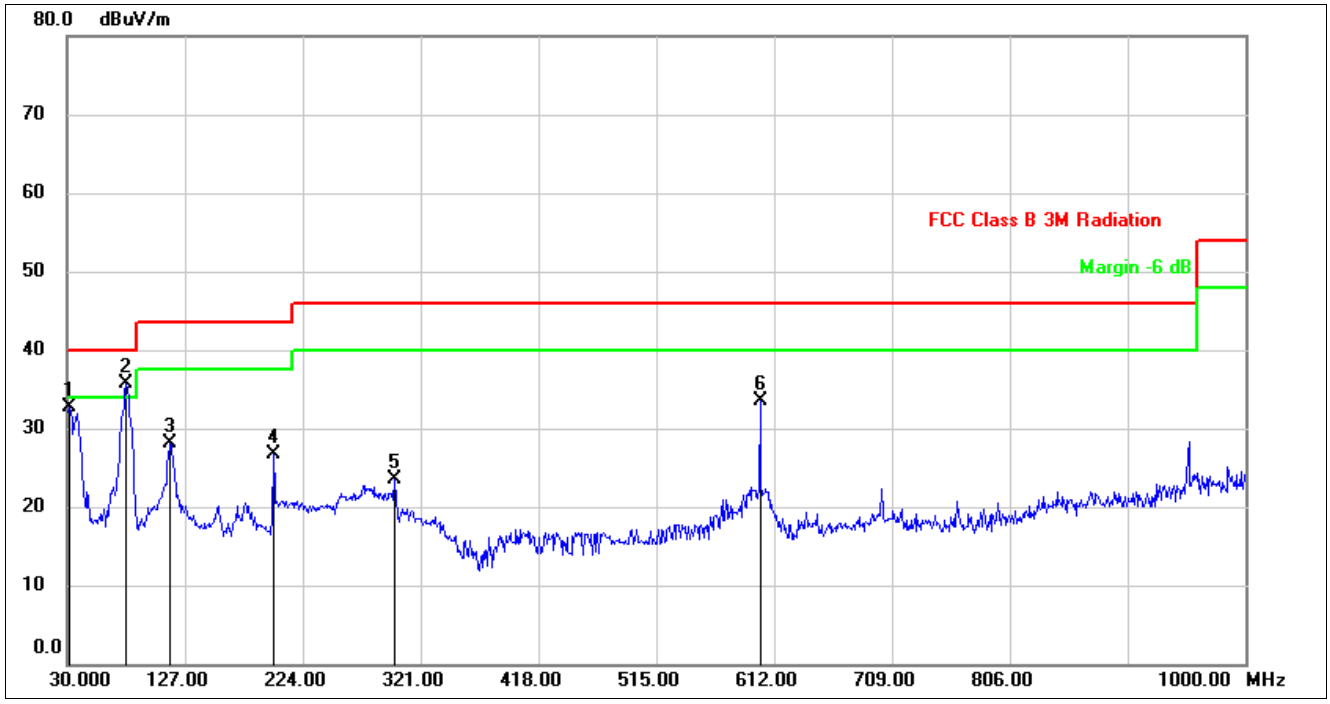
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	131.8500	47.01	-19.27	27.74	43.50	-15.76	QP
2	199.7500	44.13	-15.89	28.24	43.50	-15.26	QP
3	250.1900	38.66	-15.76	22.90	46.00	-23.10	QP
4	422.8500	30.27	-11.54	18.73	46.00	-27.27	QP
5	600.3600	28.55	-8.06	20.49	46.00	-25.51	QP
6	800.1800	31.06	-4.87	26.19	46.00	-19.81	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 (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

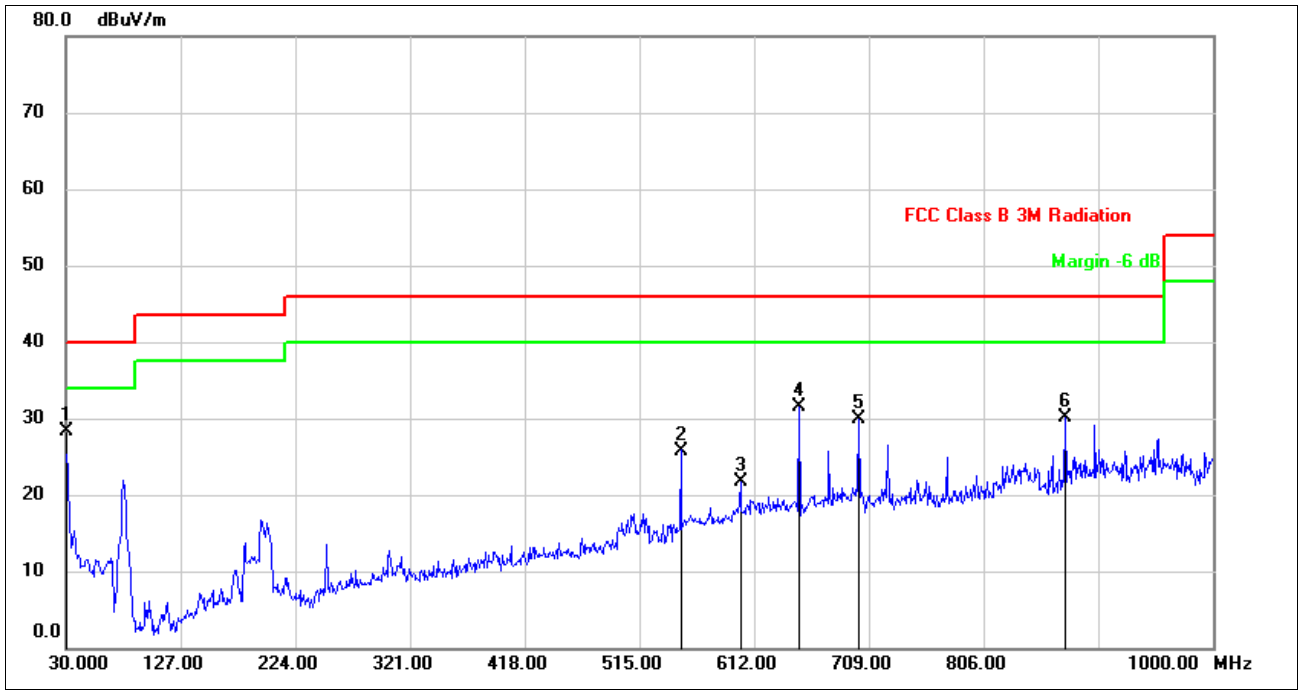


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	49.82	-17.09	32.73	40.00	-7.27	QP
2	78.5000	55.94	-20.27	35.67	40.00	-4.33	QP
3	114.3900	49.08	-21.01	28.07	43.50	-15.43	QP
4	199.7500	42.57	-15.89	26.68	43.50	-16.82	QP
5	299.6600	37.11	-13.51	23.60	46.00	-22.40	QP
6	600.3600	41.47	-8.06	33.41	46.00	-12.59	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

TEST CONSTRUCTION 2

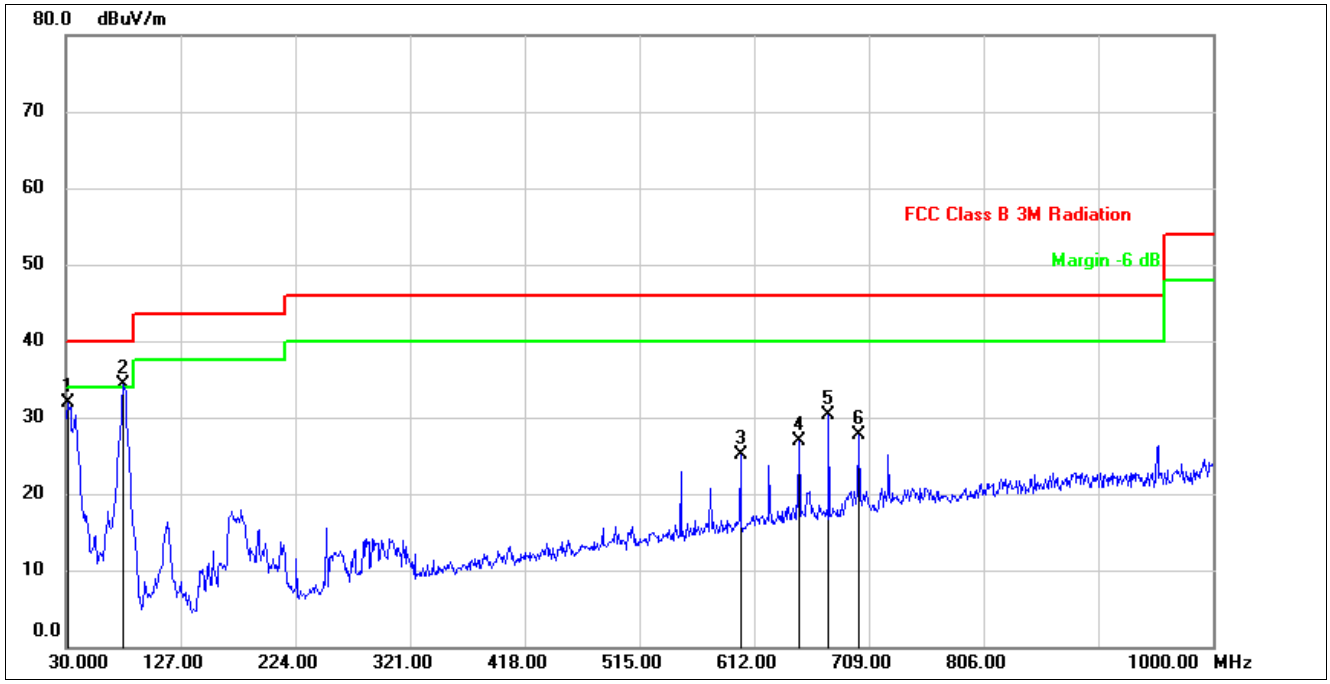
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	45.07	-16.80	28.27	40.00	-11.73	QP
2	549.9200	34.89	-9.09	25.80	46.00	-20.20	QP
3	600.3600	29.76	-8.06	21.70	46.00	-24.30	QP
4	649.8300	38.70	-7.25	31.45	46.00	-14.55	QP
5	700.2700	36.12	-6.16	29.96	46.00	-16.04	QP
6	874.8700	34.00	-3.98	30.02	46.00	-15.98	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 (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

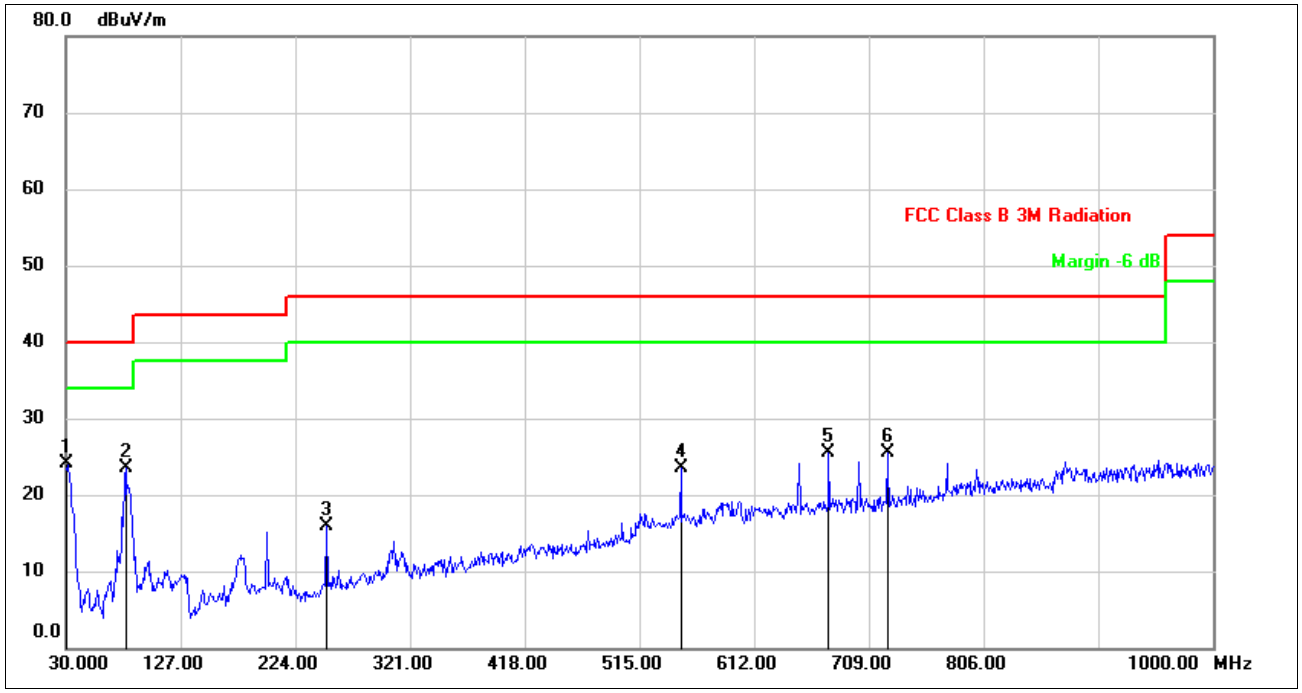


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	49.00	-17.09	31.91	40.00	-8.09	QP
2	78.5000	54.62	-20.27	34.35	40.00	-5.65	QP
3	600.3600	33.07	-8.06	25.01	46.00	-20.99	QP
4	649.8300	34.07	-7.25	26.82	46.00	-19.18	QP
5	675.0500	36.93	-6.71	30.22	46.00	-15.78	QP
6	700.2700	33.93	-6.16	27.77	46.00	-18.23	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

TEST CONSTRUCTION 3

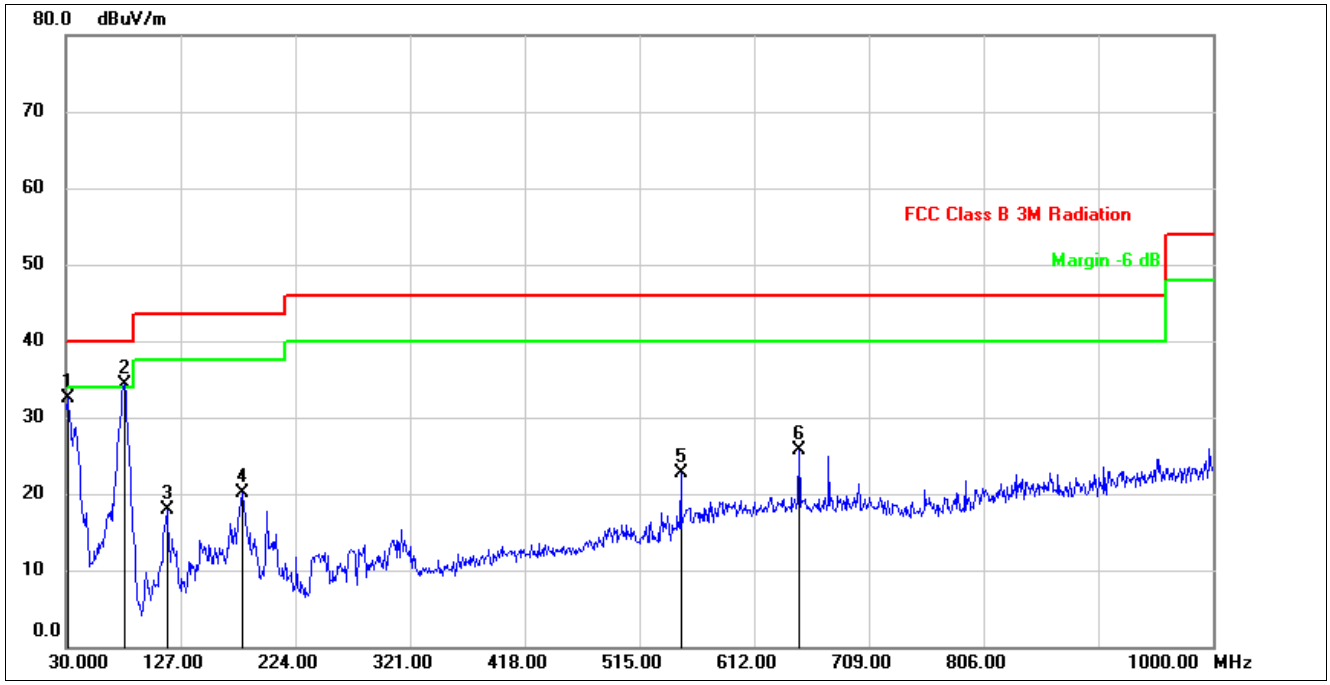
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	40.88	-16.80	24.08	40.00	-15.92	peak
2	80.4400	43.75	-20.32	23.43	40.00	-16.57	peak
3	250.1900	31.62	-15.76	15.86	46.00	-30.14	peak
4	549.9200	32.61	-9.09	23.52	46.00	-22.48	peak
5	675.0500	32.13	-6.71	25.42	46.00	-20.58	peak
6	724.5200	31.26	-5.81	25.45	46.00	-20.55	peak

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 (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

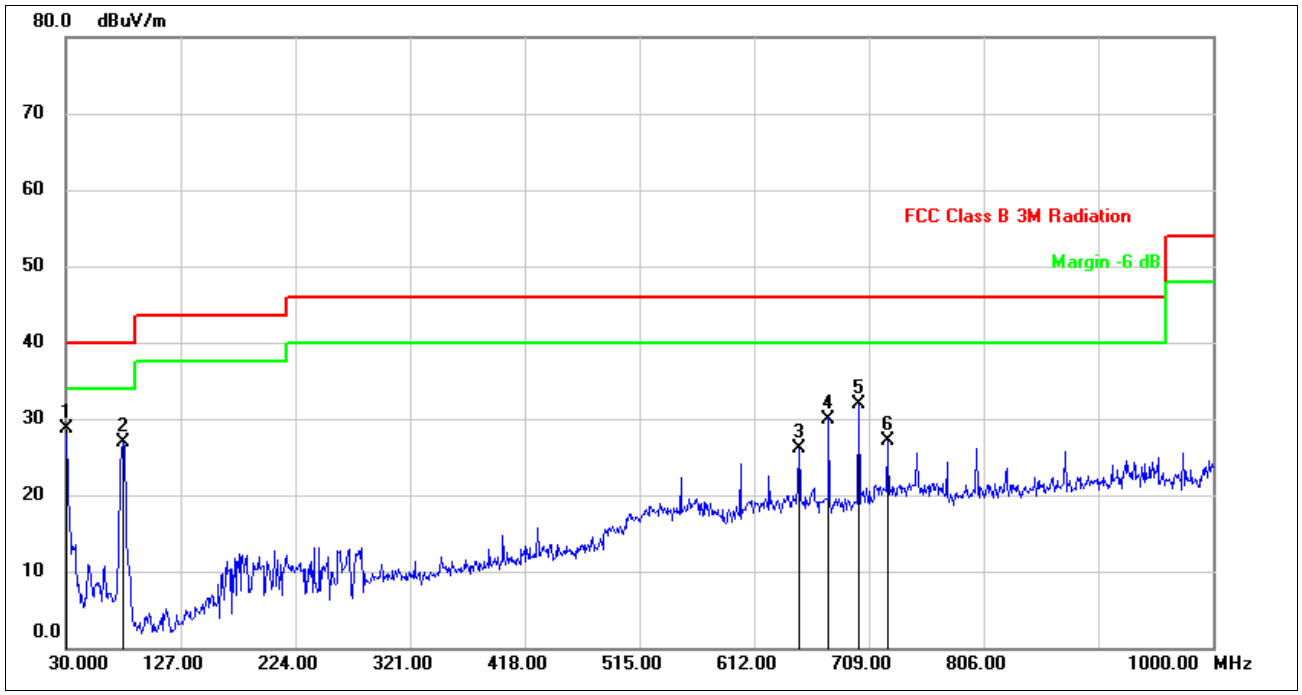


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	49.51	-17.09	32.42	40.00	-7.58	QP
2	79.4700	54.56	-20.28	34.28	40.00	-5.72	QP
3	115.3600	38.75	-20.93	17.82	43.50	-25.68	QP
4	179.3800	36.71	-16.55	20.16	43.50	-23.34	QP
5	549.9200	31.71	-9.09	22.62	46.00	-23.38	QP
6	649.8300	33.00	-7.25	25.75	46.00	-20.25	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

TEST CONSTRUCTION 4

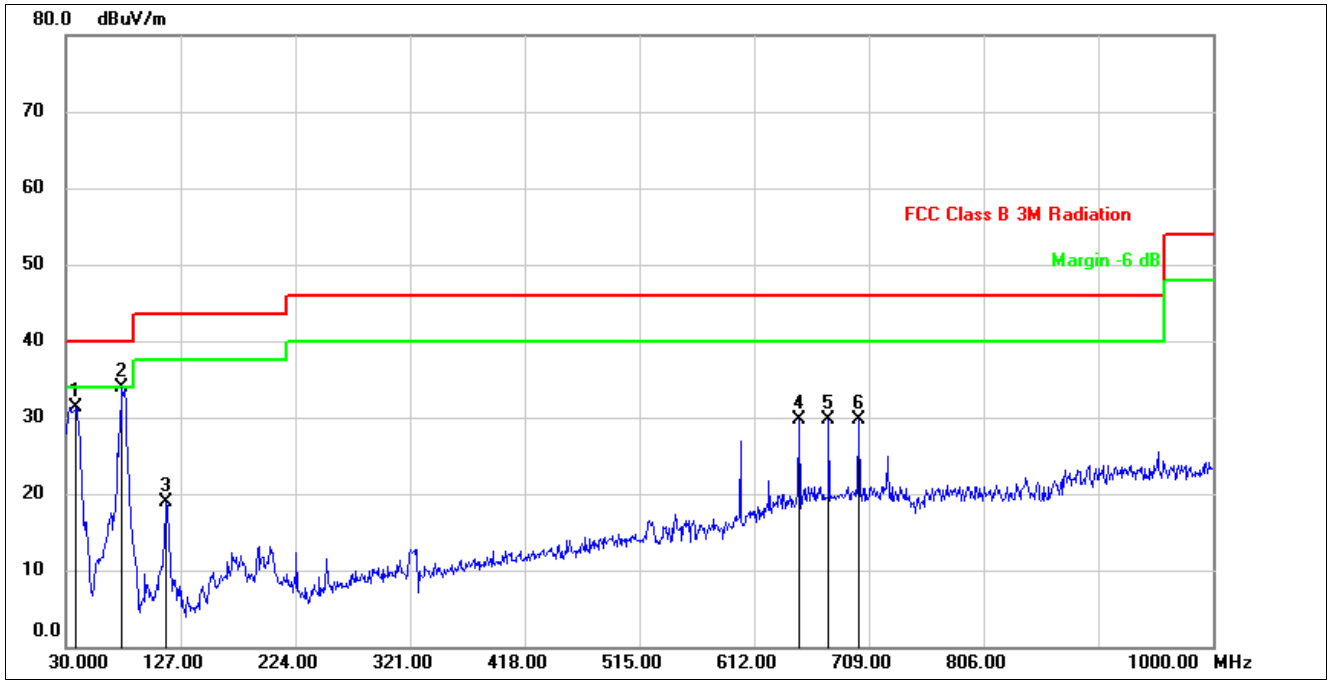
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.0000	45.59	-16.80	28.79	40.00	-11.21	QP
2	78.5000	47.08	-20.27	26.81	40.00	-13.19	QP
3	649.8300	33.34	-7.25	26.09	46.00	-19.91	QP
4	675.0500	36.71	-6.71	30.00	46.00	-16.00	QP
5	700.2700	37.99	-6.16	31.83	46.00	-14.17	QP
6	724.5200	32.83	-5.81	27.02	46.00	-18.98	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 (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	38.7300	49.03	-17.67	31.36	40.00	-8.64	QP
2	77.5300	54.17	-20.25	33.92	40.00	-6.08	QP
3	114.3900	39.98	-21.01	18.97	43.50	-24.53	QP
4	649.8300	36.88	-7.25	29.63	46.00	-16.37	QP
5	675.0500	36.36	-6.71	29.65	46.00	-16.35	QP
6	700.2700	35.95	-6.16	29.79	46.00	-16.21	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 modes have been tested, only the worst data record in the report.

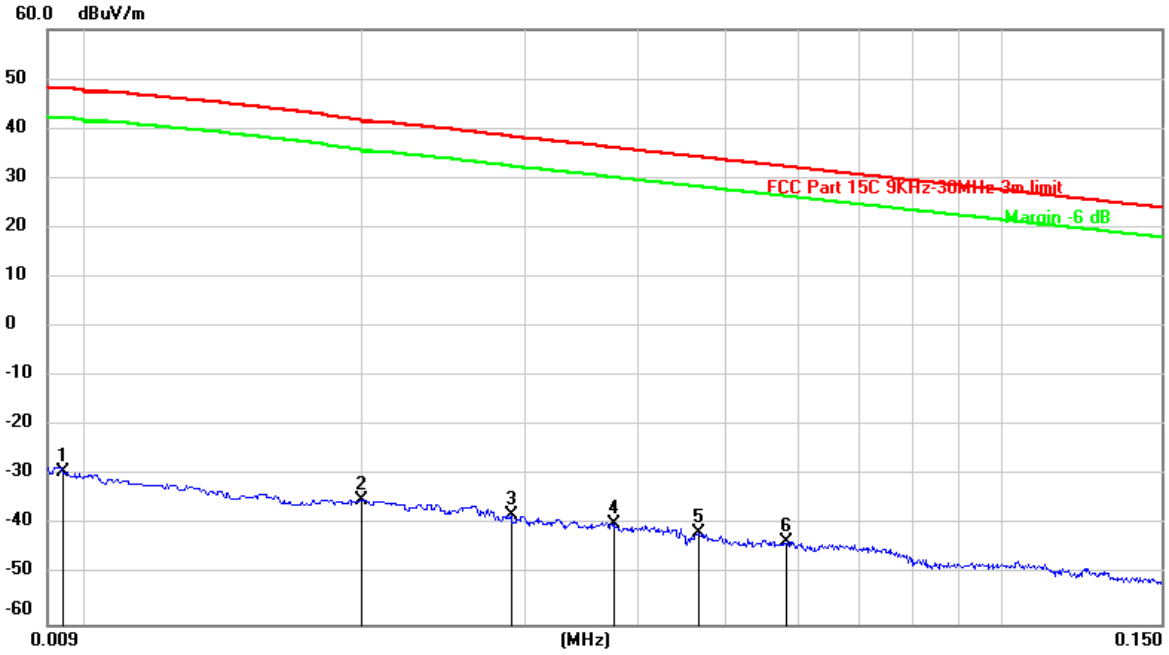
9.6. SPURIOUS EMISSIONS BELOW 30M

TEST CONSTRUCTION 1

9.6.1. 802.11b MODE

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

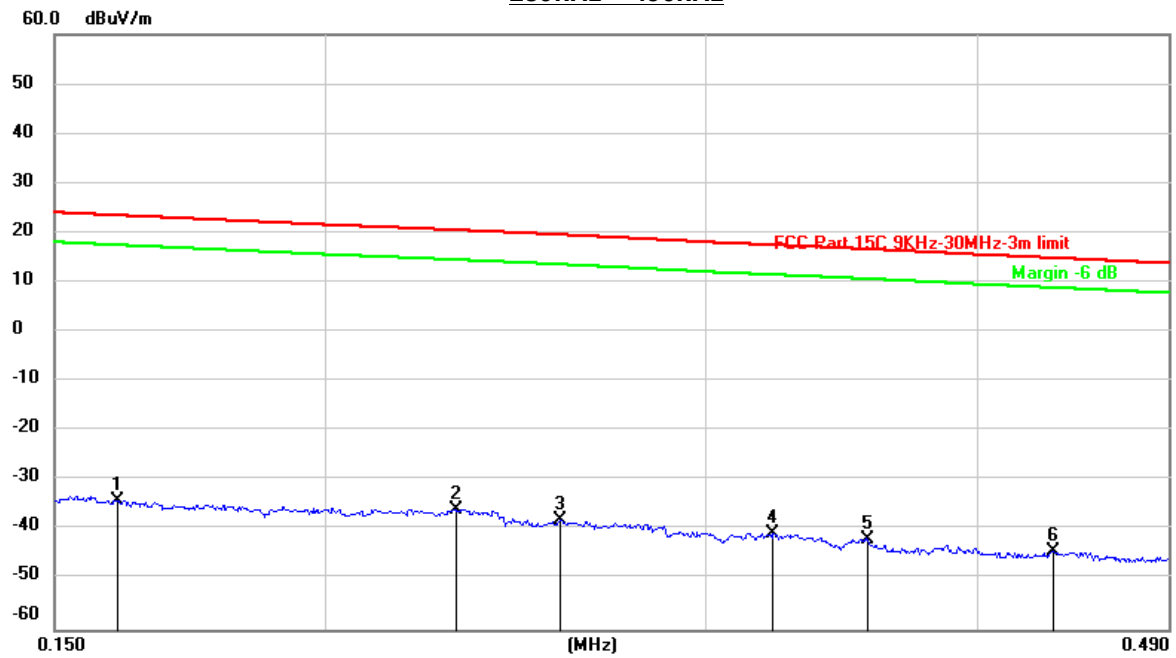
0.09kHz~ 150kHz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0094	72.14	-101.35	-29.21	48.06	-77.27	peak
2	0.0200	66.44	-101.34	-34.90	41.58	-76.48	peak
3	0.0290	63.36	-101.38	-38.02	38.41	-76.43	peak
4	0.0376	61.63	-101.42	-39.79	36.16	-75.95	peak
5	0.0466	59.80	-101.46	-41.66	34.28	-75.94	peak
6	0.0582	58.08	-101.51	-43.43	32.32	-75.75	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

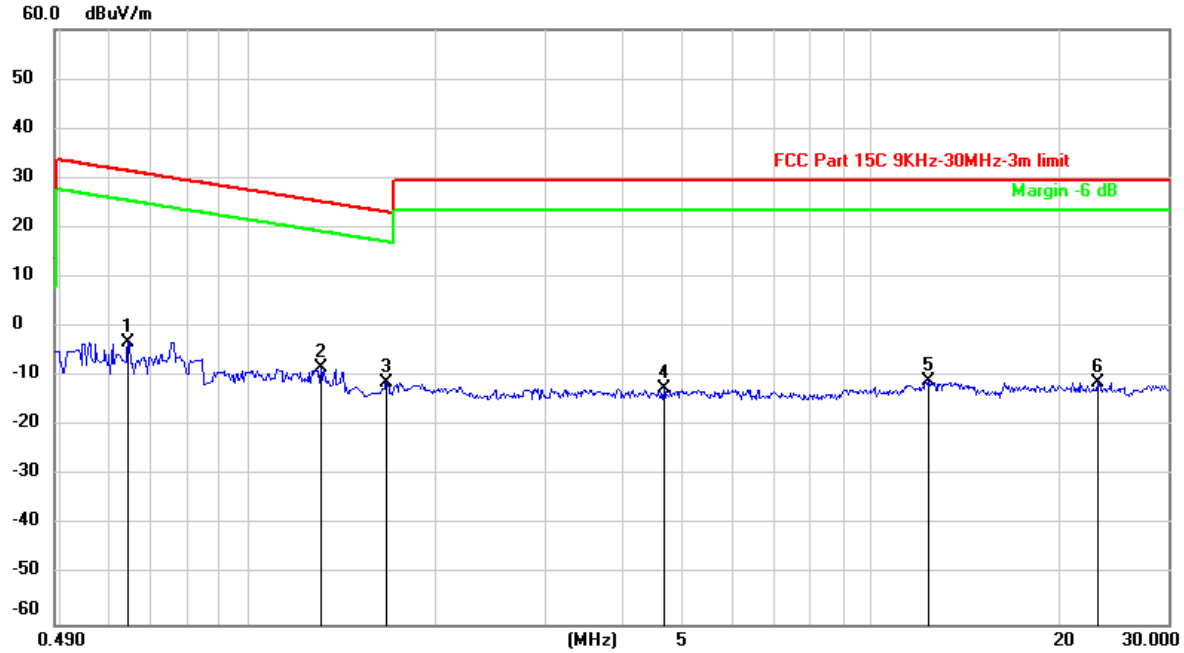
150kHz ~ 490kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1604	67.64	-101.65	-34.01	23.50	-57.51	peak
2	0.2298	66.00	-101.77	-35.77	20.53	-56.30	peak
3	0.2565	63.89	-101.80	-37.91	19.59	-57.50	peak
4	0.3220	61.28	-101.88	-40.60	17.51	-58.11	peak
5	0.3558	60.04	-101.91	-41.87	16.66	-58.53	peak
6	0.4334	57.67	-101.99	-44.32	14.91	-59.23	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

490kHz ~ 30MHz

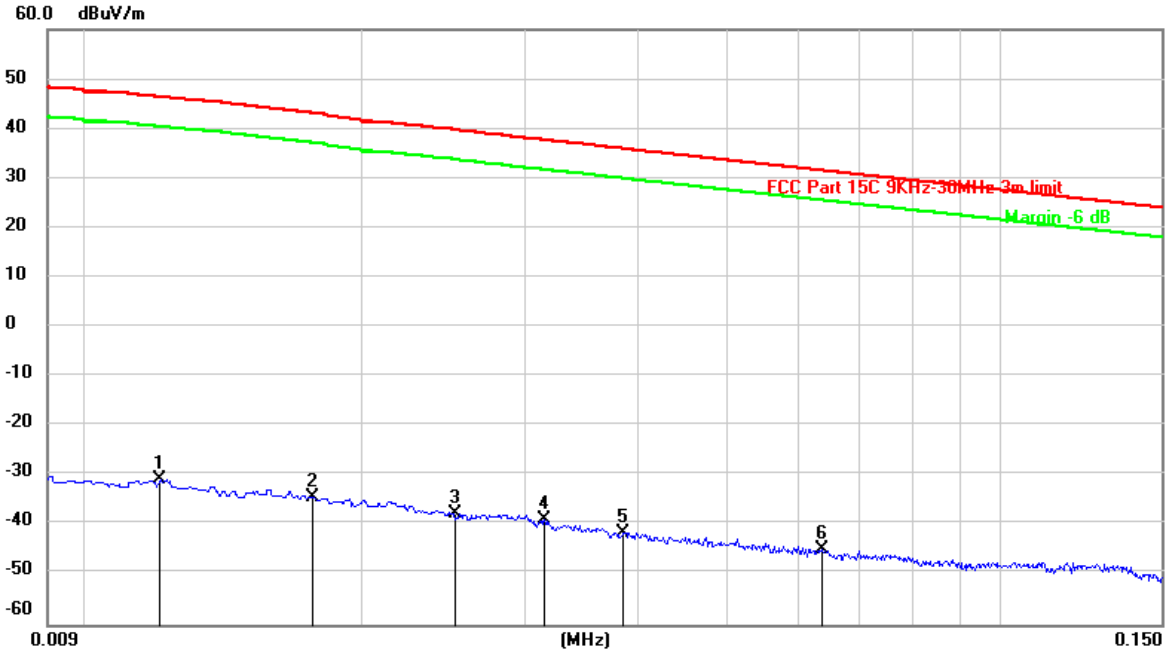


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.6429	58.96	-62.09	-3.13	31.46	-34.59	peak
2	1.3099	53.84	-62.14	-8.30	25.27	-33.57	peak
3	1.6704	50.72	-61.97	-11.25	23.15	-34.40	peak
4	4.6520	48.92	-61.44	-12.52	29.54	-42.06	peak
5	12.4120	49.92	-60.91	-10.99	29.54	-40.53	peak
6	23.2422	49.35	-60.58	-11.23	29.54	-40.77	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

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

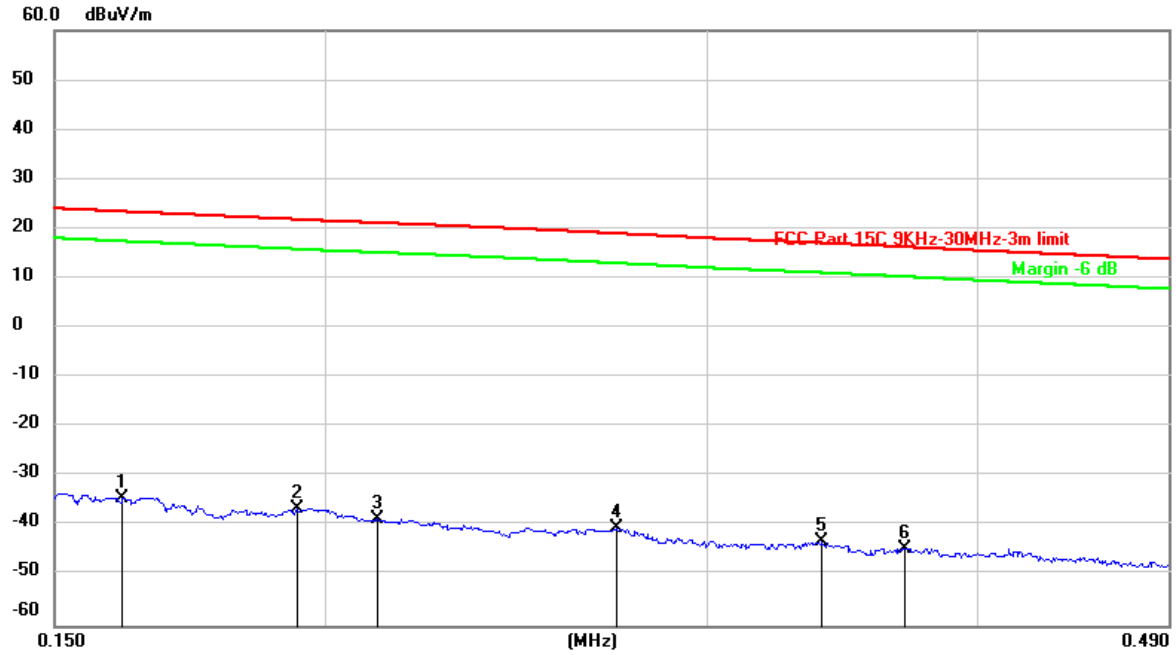
0.09~ 150kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0120	70.66	-101.39	-30.73	46.40	-77.13	peak
2	0.0176	66.95	-101.35	-34.40	43.02	-77.42	peak
3	0.0252	63.82	-101.37	-37.55	39.75	-77.30	peak
4	0.0316	62.60	-101.40	-38.80	37.66	-76.46	peak
5	0.0386	59.96	-101.43	-41.47	35.91	-77.38	peak
6	0.0636	56.81	-101.54	-44.73	31.56	-76.29	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

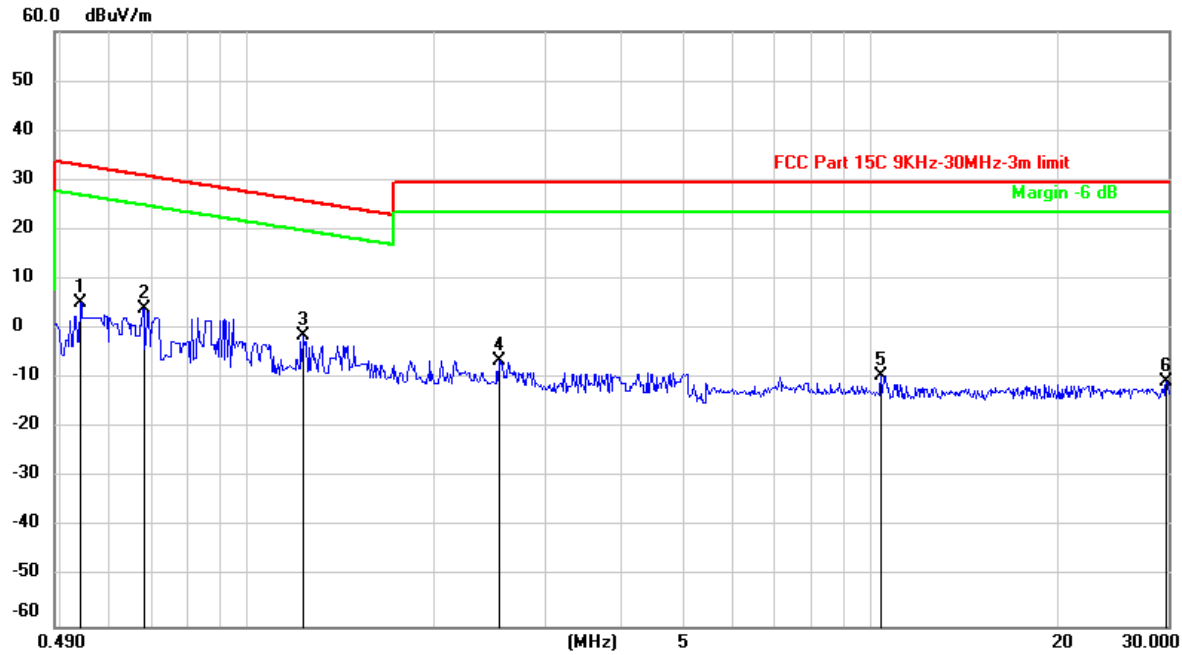
150kHz ~ 490kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1612	67.37	-101.65	-34.28	23.46	-57.74	peak
2	0.1942	65.31	-101.70	-36.39	21.84	-58.23	peak
3	0.2114	63.06	-101.73	-38.67	21.18	-59.85	peak
4	0.2726	61.40	-101.83	-40.43	19.02	-59.45	peak
5	0.3392	58.90	-101.90	-43.00	17.08	-60.08	peak
6	0.3703	57.41	-101.93	-44.52	16.30	-60.82	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

490kHz ~ 30MHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.5383	67.44	-62.08	5.36	33.03	-27.67	peak
2	0.6809	66.13	-62.11	4.02	30.96	-26.94	peak
3	1.2278	60.82	-62.16	-1.34	25.83	-27.17	peak
4	2.5301	55.32	-61.69	-6.37	29.54	-35.91	peak
5	10.4054	51.34	-60.82	-9.48	29.54	-39.02	peak
6	29.7637	49.25	-59.99	-10.74	29.54	-40.28	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

Note: All constructions and test modes have been tested, only the worst data record in the report.

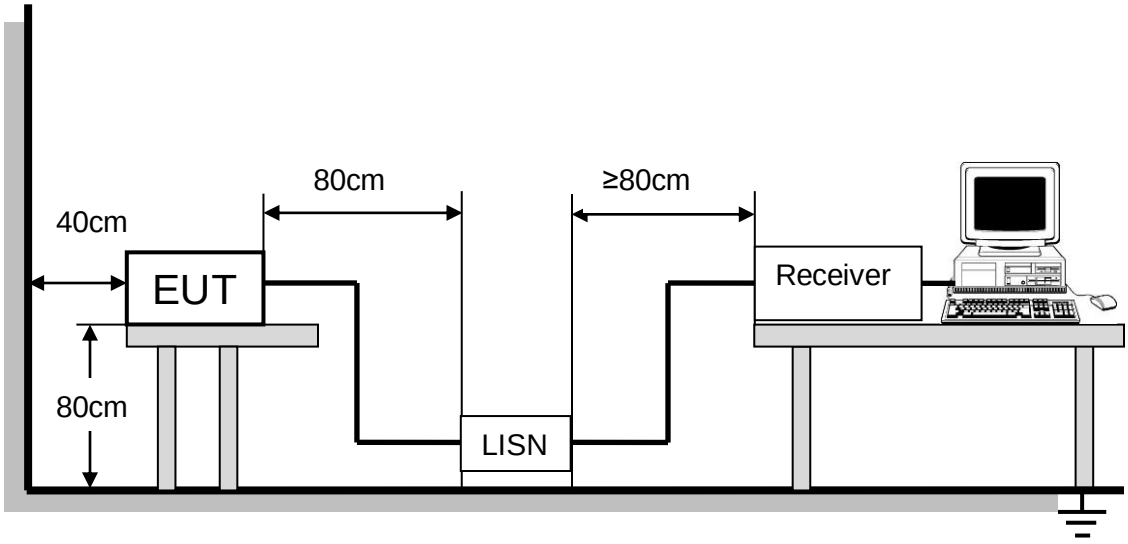
10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

FREQUENCY (MHz)	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 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

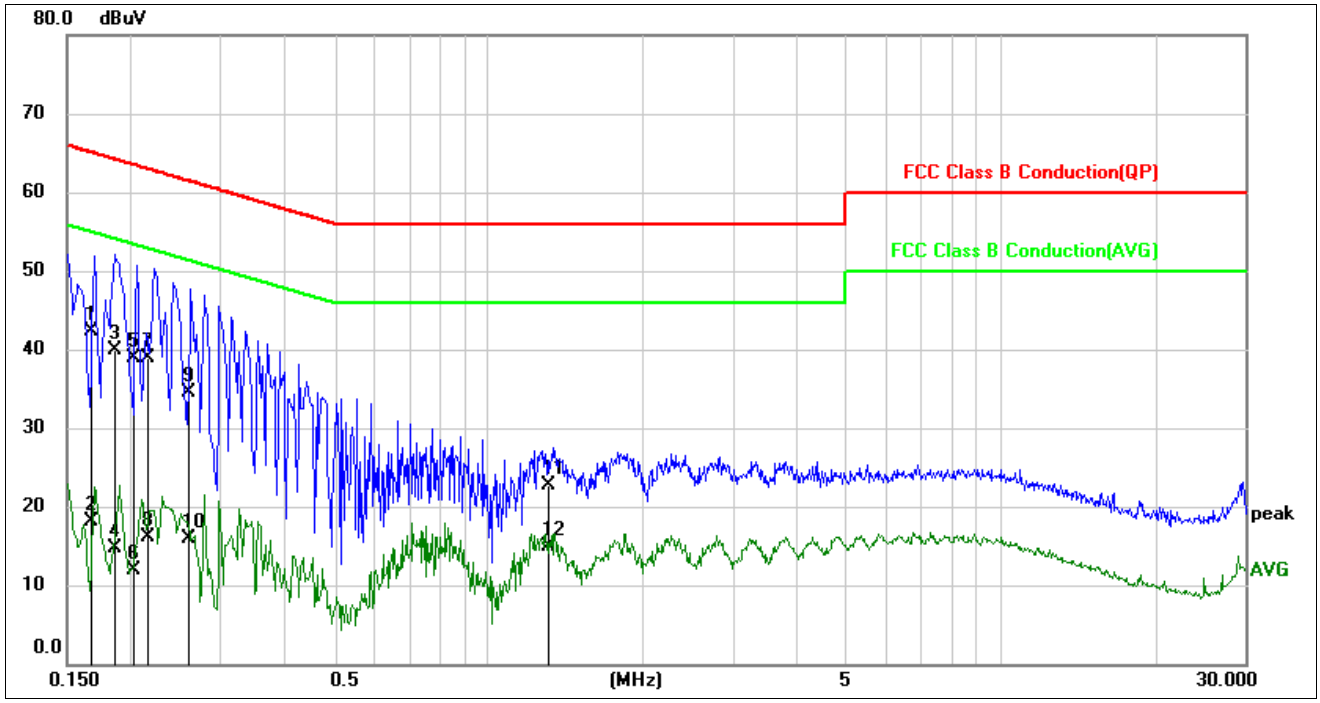
Temperature	22.5°C	Relative Humidity	53%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V,60Hz

TEST RESULTS

10.1. 802.11b MODE

TEST CONSTRUCTION 1

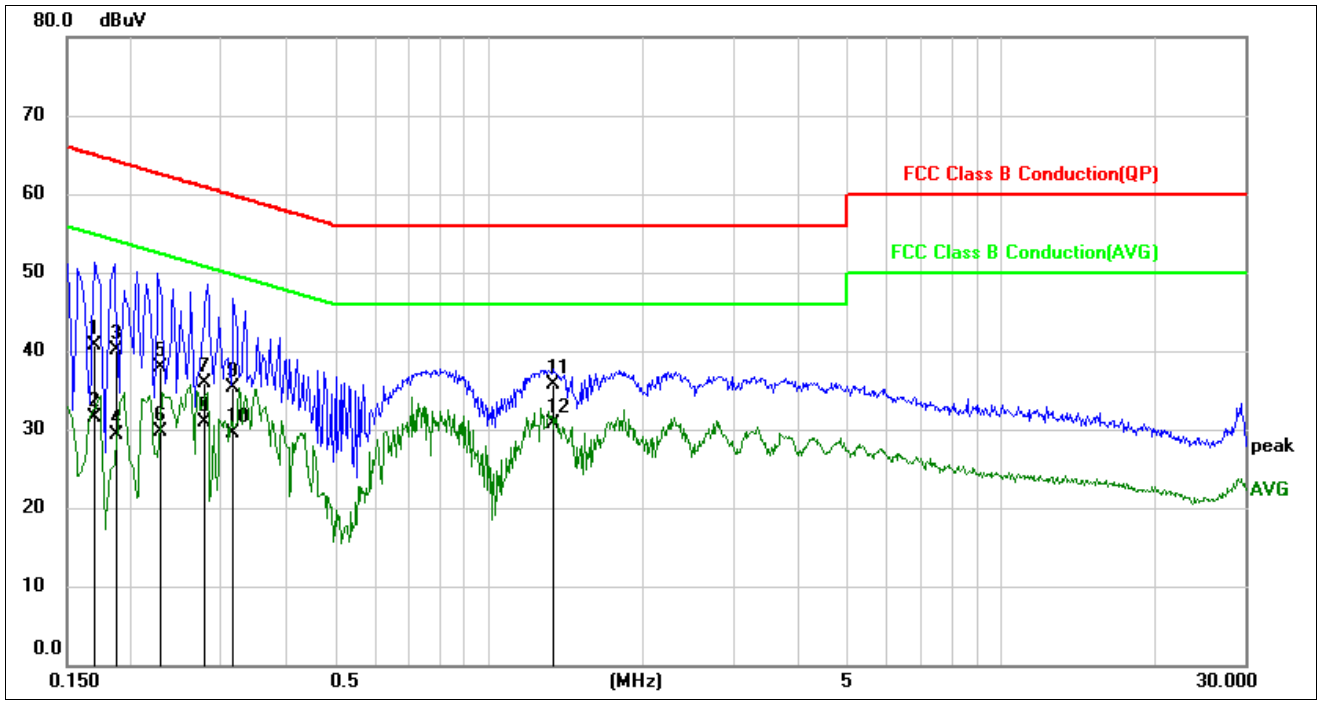
LINE N RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1672	32.66	9.60	42.26	65.10	-22.84	QP
2	0.1672	8.42	9.60	18.02	55.10	-37.08	AVG
3	0.1847	30.38	9.60	39.98	64.27	-24.29	QP
4	0.1847	5.19	9.60	14.79	54.27	-39.48	AVG
5	0.2021	29.27	9.60	38.87	63.52	-24.65	QP
6	0.2021	2.25	9.60	11.85	53.52	-41.67	AVG
7	0.2176	29.26	9.60	38.86	62.91	-24.05	QP
8	0.2176	6.48	9.60	16.08	52.91	-36.83	AVG
9	0.2584	24.91	9.60	34.51	61.48	-26.97	QP
10	0.2584	6.38	9.60	15.98	51.48	-35.50	AVG
11	1.3101	13.14	9.61	22.75	56.00	-33.25	QP
12	1.3101	5.33	9.61	14.94	46.00	-31.06	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)

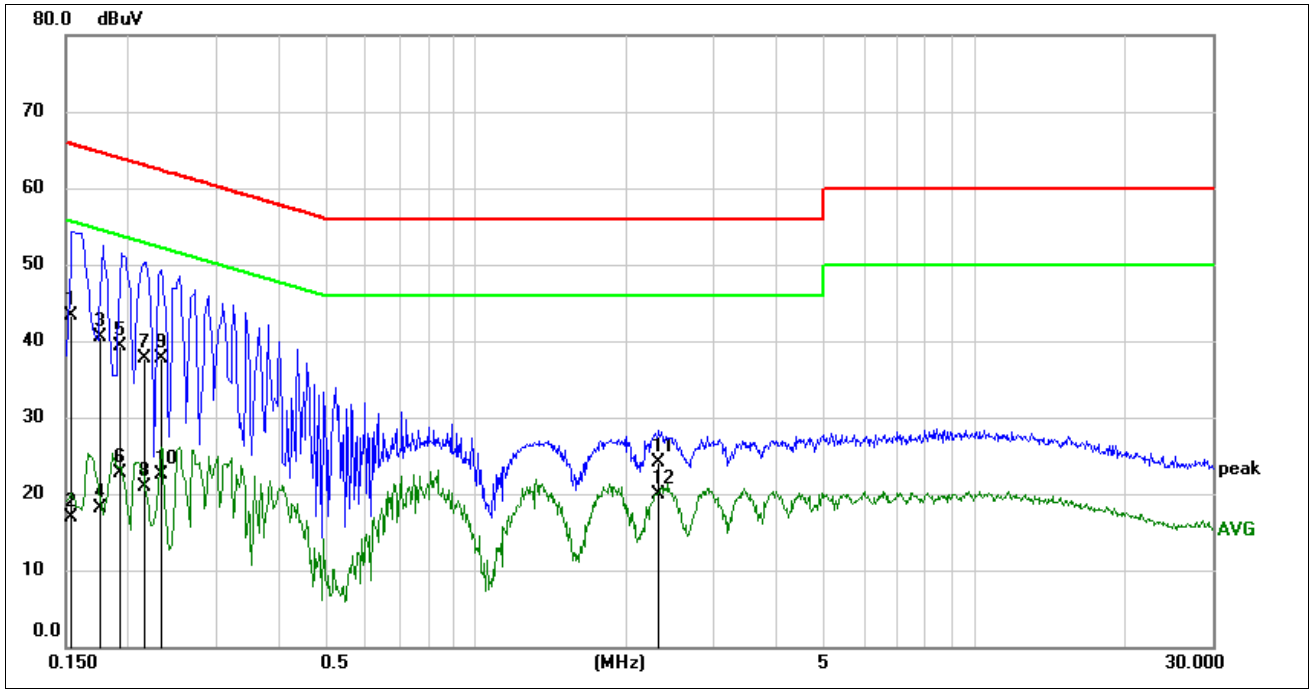


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1695	31.00	9.61	40.61	64.98	-24.37	QP
2	0.1695	21.87	9.61	31.48	54.98	-23.50	AVG
3	0.1874	30.59	9.60	40.19	64.15	-23.96	QP
4	0.1874	19.72	9.60	29.32	54.15	-24.83	AVG
5	0.2295	28.30	9.60	37.90	62.47	-24.57	QP
6	0.2295	20.06	9.60	29.66	52.47	-22.81	AVG
7	0.2782	26.28	9.60	35.88	60.87	-24.99	QP
8	0.2782	21.34	9.60	30.94	50.87	-19.93	AVG
9	0.3153	25.75	9.60	35.35	59.83	-24.48	QP
10	0.3153	19.96	9.60	29.56	49.83	-20.27	AVG
11	1.3313	26.01	9.61	35.62	56.00	-20.38	QP
12	1.3313	21.06	9.61	30.67	46.00	-15.33	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.

TEST CONSTRUCTION 2

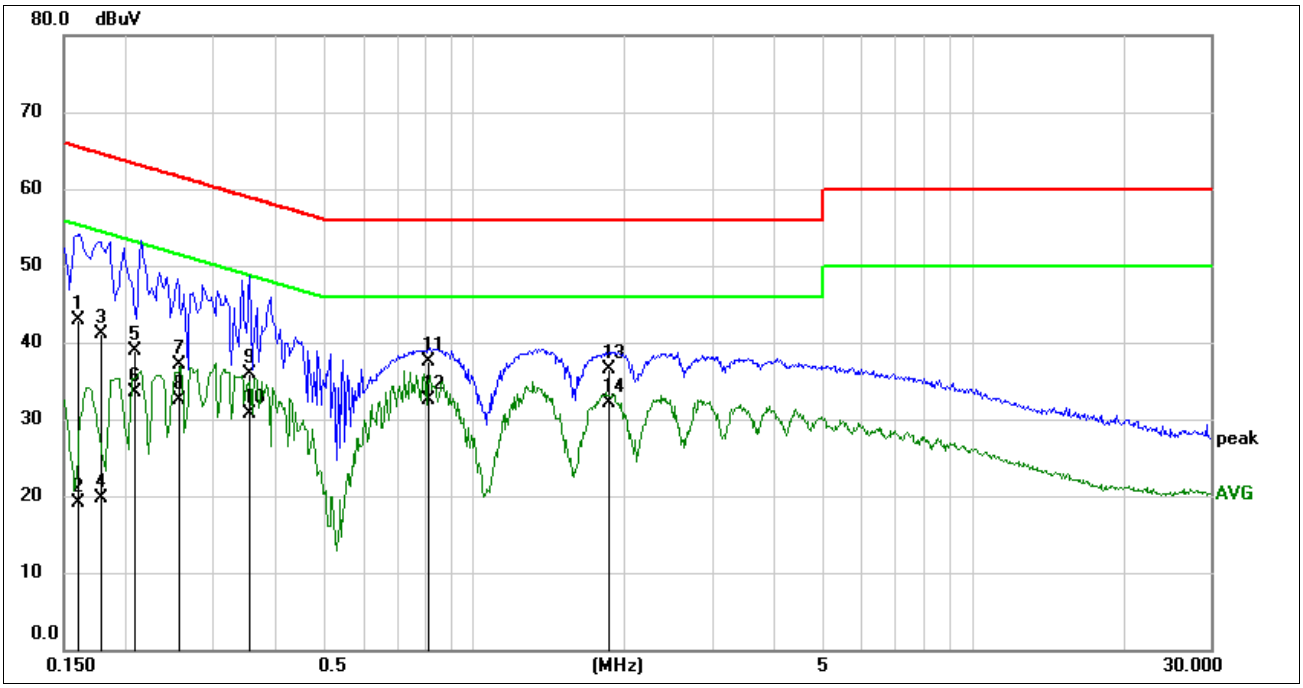
LINE N RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1542	33.66	9.60	43.26	65.77	-22.51	QP
2	0.1542	7.34	9.60	16.94	55.77	-38.83	AVG
3	0.1750	31.00	9.60	40.60	64.72	-24.12	QP
4	0.1750	8.42	9.60	18.02	54.72	-36.70	AVG
5	0.1918	29.70	9.60	39.30	63.96	-24.66	QP
6	0.1918	13.02	9.60	22.62	53.96	-31.34	AVG
7	0.2149	28.18	9.60	37.78	63.01	-25.23	QP
8	0.2149	11.34	9.60	20.94	53.01	-32.07	AVG
9	0.2319	28.11	9.60	37.71	62.38	-24.67	QP
10	0.2319	12.92	9.60	22.52	52.38	-29.86	AVG
11	2.3377	14.51	9.63	24.14	56.00	-31.86	QP
12	2.3377	10.29	9.63	19.92	46.00	-26.08	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)

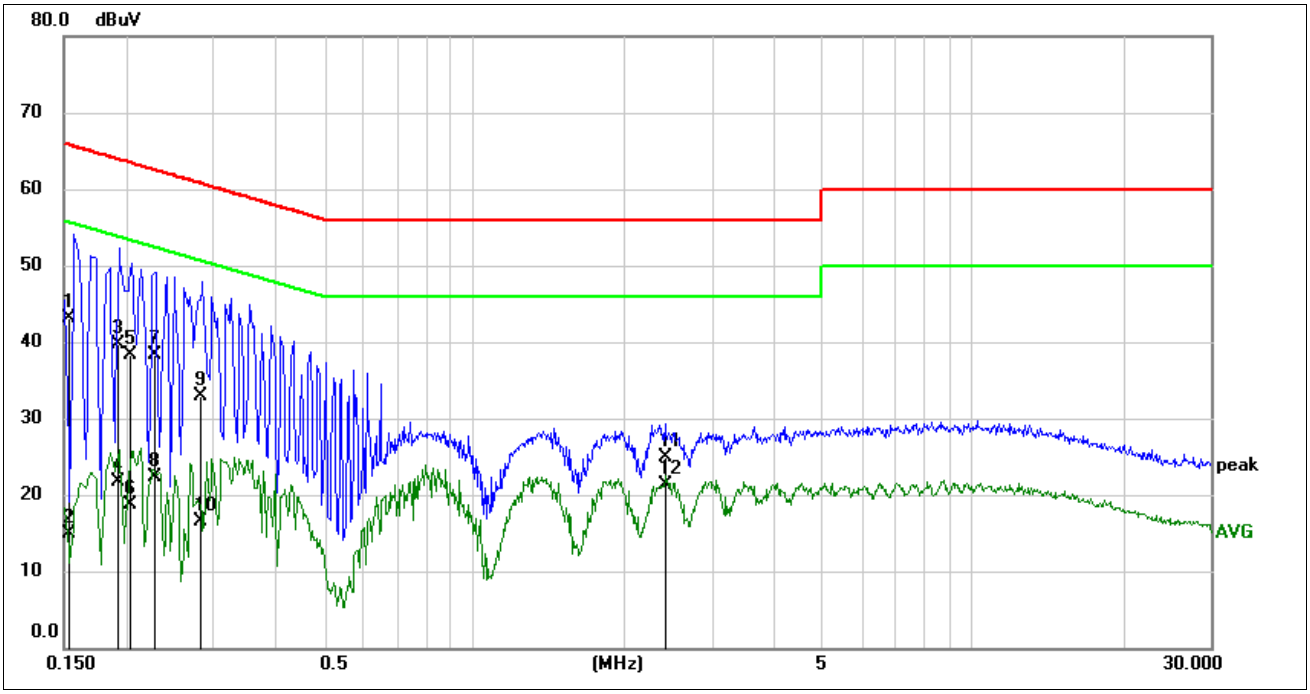


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1597	33.36	9.61	42.97	65.48	-22.51	QP
2	0.1597	9.51	9.61	19.12	55.48	-36.36	AVG
3	0.1778	31.58	9.61	41.19	64.59	-23.40	QP
4	0.1778	10.05	9.61	19.66	54.59	-34.93	AVG
5	0.2095	29.31	9.60	38.91	63.23	-24.32	QP
6	0.2095	23.87	9.60	33.47	53.23	-19.76	AVG
7	0.2566	27.59	9.60	37.19	61.54	-24.35	QP
8	0.2566	22.96	9.60	32.56	51.54	-18.98	AVG
9	0.3548	26.27	9.60	35.87	58.85	-22.98	QP
10	0.3548	21.07	9.60	30.67	48.85	-18.18	AVG
11	0.8094	27.92	9.61	37.53	56.00	-18.47	QP
12	0.8094	22.96	9.61	32.57	46.00	-13.43	AVG
13	1.8608	26.98	9.62	36.60	56.00	-19.40	QP
14	1.8608	22.42	9.62	32.04	46.00	-13.96	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.

TEST CONSTRUCTION 3

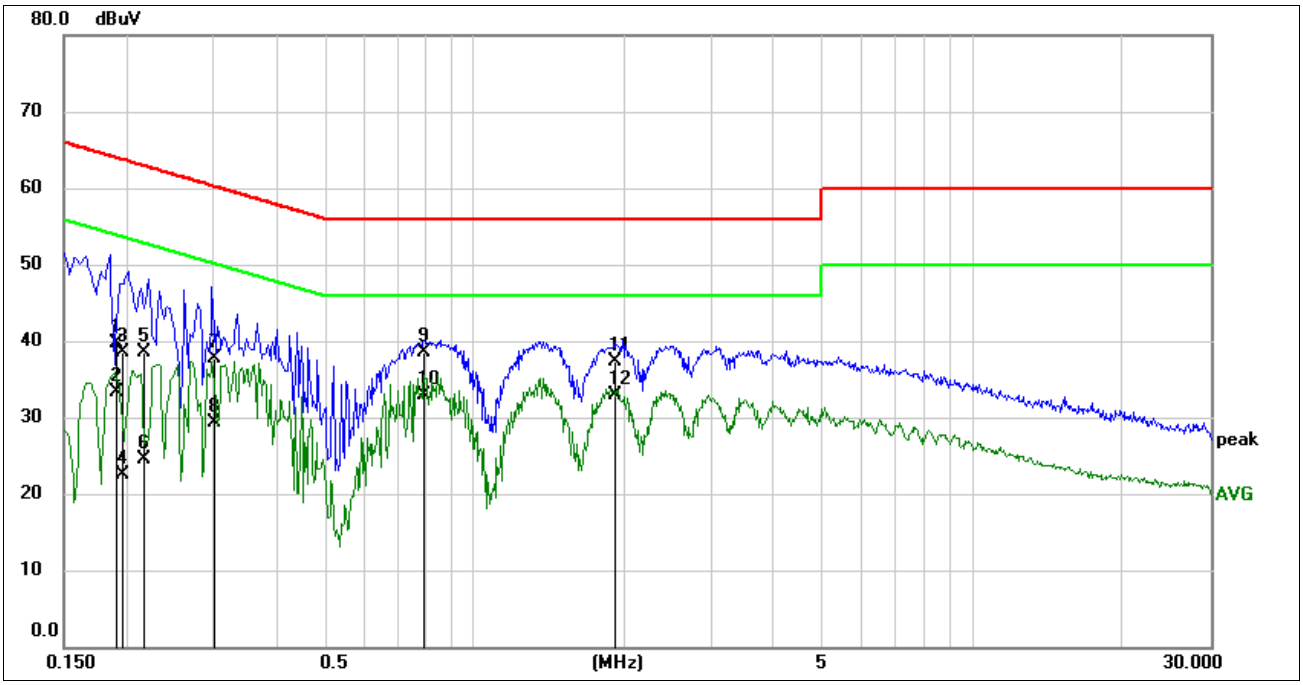
LINE N RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1539	33.50	9.60	43.10	65.79	-22.69	QP
2	0.1539	5.24	9.60	14.84	55.79	-40.95	AVG
3	0.1915	30.13	9.60	39.73	63.97	-24.24	QP
4	0.1915	12.04	9.60	21.64	53.97	-32.33	AVG
5	0.2031	28.64	9.60	38.24	63.48	-25.24	QP
6	0.2031	9.06	9.60	18.66	53.48	-34.82	AVG
7	0.2279	28.63	9.60	38.23	62.53	-24.30	QP
8	0.2279	12.73	9.60	22.33	52.53	-30.20	AVG
9	0.2811	23.27	9.60	32.87	60.78	-27.91	QP
10	0.2811	6.98	9.60	16.58	50.78	-34.20	AVG
11	2.4094	15.24	9.63	24.87	56.00	-31.13	QP
12	2.4094	11.64	9.63	21.27	46.00	-24.73	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)

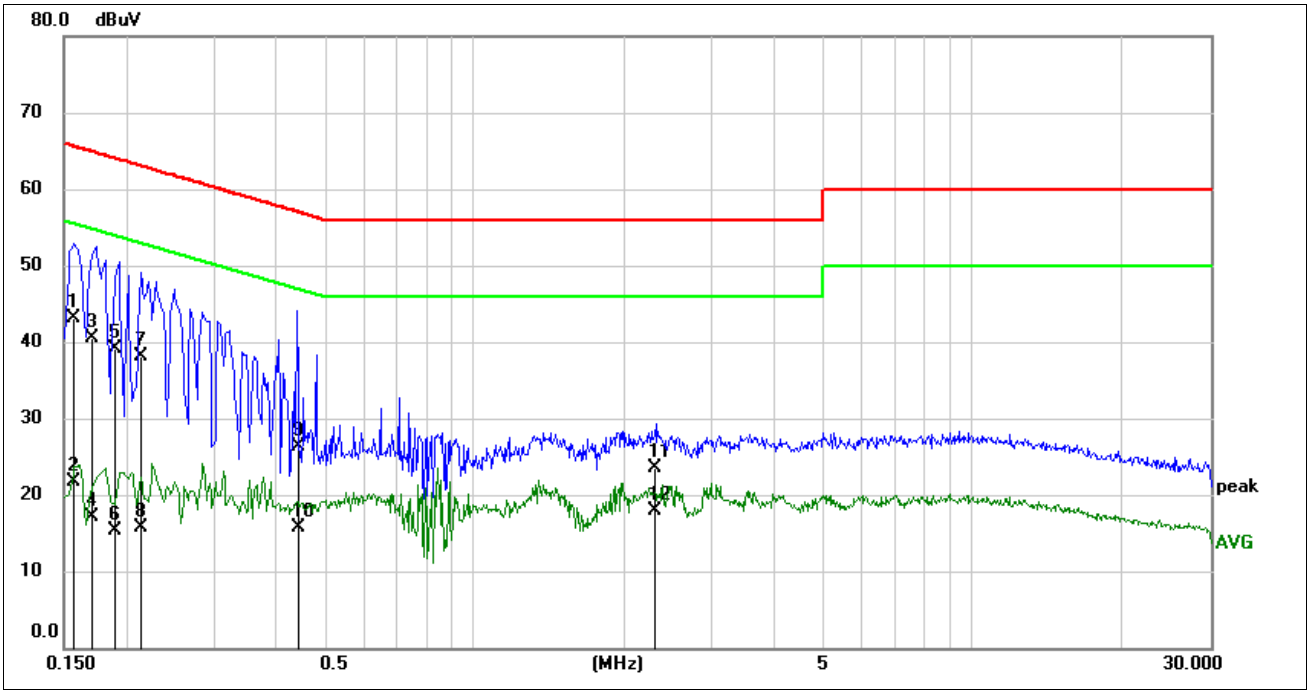


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1910	30.17	9.60	39.77	63.99	-24.22	QP
2	0.1910	23.63	9.60	33.23	53.99	-20.76	AVG
3	0.1975	28.94	9.60	38.54	63.72	-25.18	QP
4	0.1975	12.92	9.60	22.52	53.72	-31.20	AVG
5	0.2180	28.81	9.60	38.41	62.89	-24.48	QP
6	0.2180	15.00	9.60	24.60	52.89	-28.29	AVG
7	0.3016	28.04	9.60	37.64	60.20	-22.56	QP
8	0.3016	19.67	9.60	29.27	50.20	-20.93	AVG
9	0.7960	28.91	9.61	38.52	56.00	-17.48	QP
10	0.7960	23.28	9.61	32.89	46.00	-13.11	AVG
11	1.9138	27.75	9.62	37.37	56.00	-18.63	QP
12	1.9138	23.35	9.62	32.97	46.00	-13.03	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.

TEST CONSTRUCTION 4

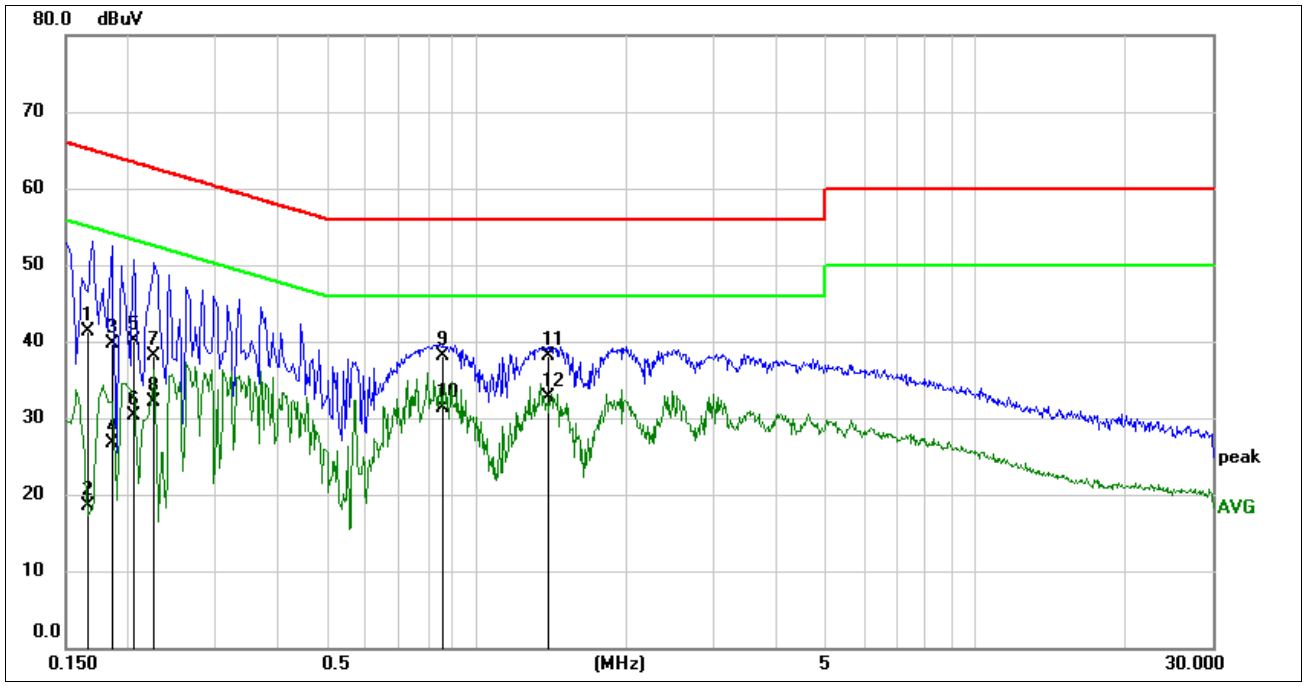
LINE N RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1570	33.48	9.60	43.08	65.62	-22.54	QP
2	0.1570	12.12	9.60	21.72	55.62	-33.90	AVG
3	0.1706	30.95	9.60	40.55	64.93	-24.38	QP
4	0.1706	7.54	9.60	17.14	54.93	-37.79	AVG
5	0.1899	29.60	9.60	39.20	64.04	-24.84	QP
6	0.1899	5.78	9.60	15.38	54.04	-38.66	AVG
7	0.2129	28.57	9.60	38.17	63.09	-24.92	QP
8	0.2129	6.07	9.60	15.67	53.09	-37.42	AVG
9	0.4421	16.70	9.60	26.30	57.02	-30.72	QP
10	0.4421	6.06	9.60	15.66	47.02	-31.36	AVG
11	2.3034	13.83	9.63	23.46	56.00	-32.54	QP
12	2.3034	8.33	9.63	17.96	46.00	-28.04	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	0.1660	31.71	9.61	41.32	65.16	-23.84	QP
2	0.1660	8.96	9.61	18.57	55.16	-36.59	AVG
3	0.1850	30.07	9.60	39.67	64.26	-24.59	QP
4	0.1850	17.02	9.60	26.62	54.26	-27.64	AVG
5	0.2057	30.57	9.60	40.17	63.38	-23.21	QP
6	0.2057	20.70	9.60	30.30	53.38	-23.08	AVG
7	0.2266	28.44	9.60	38.04	62.57	-24.53	QP
8	0.2266	22.55	9.60	32.15	52.57	-20.42	AVG
9	0.8622	28.45	9.60	38.05	56.00	-17.95	QP
10	0.8622	21.71	9.60	31.31	46.00	-14.69	AVG
11	1.3901	28.56	9.61	38.17	56.00	-17.83	QP
12	1.3901	23.18	9.61	32.79	46.00	-13.21	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 modes have been tested, only the worst data record in the report.

11. 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