CFR 47 FCC PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

Wi-Fi Smart Plug

MODEL NUMBER: HPPA11SWB

FCC ID: 2AB2QHPPA11SWB

REPORT NUMBER: 4789546352-2

ISSUE DATE: July 14, 2020

Prepared for

LEEDARSON LIGHTING CO.,Ltd.
XINGDA RD, XINGTAI INDUSTRIAL ZONE, CHANGTAI COUNTY, ZHANGZHOU, FUJIAN, 363900, CHINA

Prepared by

UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	07/14/2020	Initial Issue	

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

Note:
1.This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C > when <Accuracy Method> decision rule is applied.

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	LEEDARSON LIGHTING CO.,Ltd.
Address:	XINGDA RD, XINGTAI INDUSTRIAL ZONE, CHANGTAI COUNTY, ZHANGZHOU, FUJIAN, 363900, CHINA

Manufacturer Information

Company Name:	LEEDARSON LIGHTING CO.,Ltd.
Address:	XINGDA RD, XINGTAI INDUSTRIAL ZONE, CHANGTAI COUNTY, ZHANGZHOU, FUJIAN, 363900, CHINA

EUT Information

EUT Name:	Wi-Fi Smart Plug
Model:	HPPA11SWB
Sample Received Date:	July 6, 2020
Sample Status:	Normal
Sample ID:	3172174
Date of Tested:	July 6~14, 2020

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

Prepared By:

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Checked By:

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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 v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**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 **ISED (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
Radiated Emission (Included Fundamental Emission) (9kHz ~ 30MHz)	2.2dB
Radiated Emission (Included Fundamental Emission) (30MHz ~ 1GHz)	4.00dB
Radiated Emission (Included Fundamental Emission) (1GHz to 26GHz)	5.78dB (1GHz ~ 18GHz)
	5.23dB (18GHz ~ 26GHz)
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	Wi-Fi Smart Plug
Model	HPPA11SWB
Radio Technology	WLAN (IEEE 802.11b/g/n HT20/n HT40)
Operation frequency	IEEE 802.11b: 2412MHz ~ 2462MHz IEEE 802.11g: 2412MHz ~ 2462MHz IEEE 802.11n HT20: 2412MHz ~ 2462MHz IEEE 802.11n HT40: 2422MHz ~ 2452MHz
Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Rated Input	AC120 V,60 Hz

5.2. 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	/	/

Channel List for 802.11n (40 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	5	2432	7	2442	9	2452
4	2427	6	2437	8	2447	/	/

5.3. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	17.74
g	2412 ~ 2462	1-11[11]	16.40
n HT20	2412 ~ 2462	1-11[11]	16.27
n HT40	2422 ~ 2452	3-9[7]	13.25

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
WiFi TX(802.11b)	CH 1, CH 6, CH 11/ Low, Middle, High	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11g)	CH 1, CH 6, CH 11/ Low, Middle, High	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11n HT20)	CH 1, CH 6, CH 11/ Low, Middle, High	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11n HT40)	CH 3, CH 6, CH 9/ Low, Middle, High	2422MHz, 2437MHz, 2452MHz

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		UI _mptool					
Modulation Mode	Transmit Antenna Number	Test Software setting value					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	default	default	default	/		
802.11g	1	default	default	default			
802.11n HT20	1	default	default	default			
802.11n HT40	1	/			default	default	default

5.6. THE WORSE CASE CONFIGURATIONS

The EUT was tested in the following configuration(s):

Controlled in test mode using a software application on the EUT supplied by customer. The application was used to enable a continuous transmission and to select the mode, test channels, bandwidth, data rates as required.

Test channels referring to section 5.4.

Maximum power setting referring to section 5.5.

Worst case Data Rates declared by the customer:

802.11b mode: 1 Mbps
802.11b mode: 6 Mbps
802.11n HT20 mode: MCS0
802.11n HT40 mode: MCS0

5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	PCB antenna	-3.9

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	☒1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.

Note: The value of the antenna gain was declared by customer.

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	ThinkPad	X230i	/
2	USB TO UART	/	/	/

I/O CABLES

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

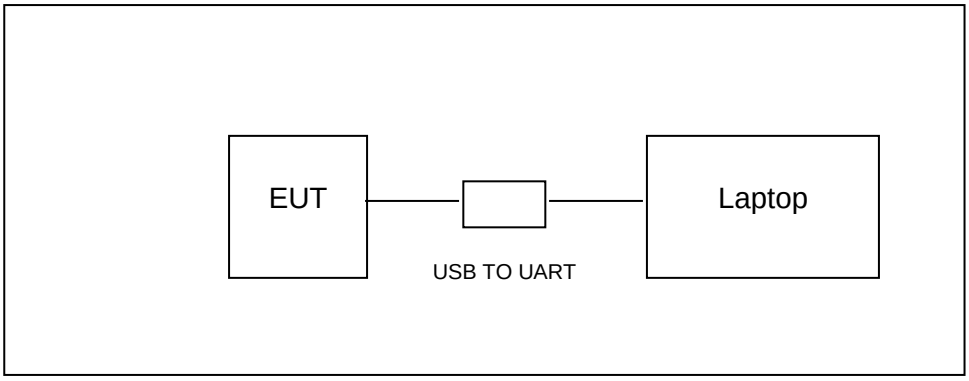
ACCESSORIES

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

TEST SETUP

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

SETUP DIAGRAM FOR TEST



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.05,2019	Dec.05,2020
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.05,2019	Dec.05,2020
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.06,2019	Dec.05,2020
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sep.17,2018	Sep.17,2021
☑	Preamplifier	HP	8447D	2944A09099	Dec.05,2019	Dec.05,2020
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.05,2019	Dec.05,2020
☑	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-305-00067	Dec.05,2019	Dec.05,2020
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.05,2019	Dec.05,2020
☑	Loop antenna	Schwarzbeck	1519B	00008	Jan.07,2019	Jan.07,2022
☑	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Dec.05,2019	Dec.05,2020
☑	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Dec.05,2019	Dec.05,2020
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.06,2019	Dec.05,2020
☑	Power sensor, Power Meter	R&S	OSP120	100921	Dec.06,2019	Dec.06,2020

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

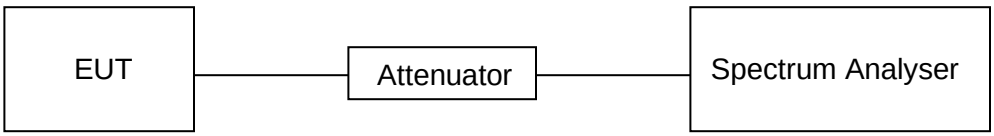
LIMITS

None; for reporting purposes only

PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.1 °C	Relative Humidity	60 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix A.

7.2. 6 dB DTS BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2)	6 dB Bandwidth	≥ 500KHz	2400-2483.5
C63.10 section 6.9.3	99% Occupied Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

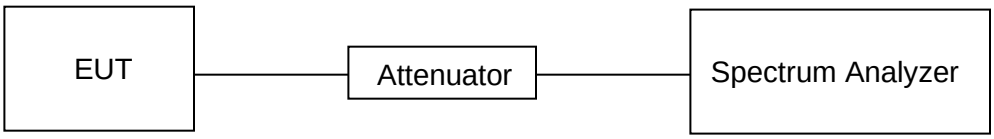
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Frequency Span	Between 1.5 times and 5.0 times the OBW
Detector	Peak
RBW	For 6 dB Bandwidth: 100kHz For 99% Occupied Bandwidth: 1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth: ≥3 × RBW For 99% Occupied Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

a) Use the 99% power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) 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 relative to the maximum level measured in the fundamental emission.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.1 °C	Relative Humidity	60 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix B & C.

7.3. CONDUCTED OUTPUT POWER

LIMITS

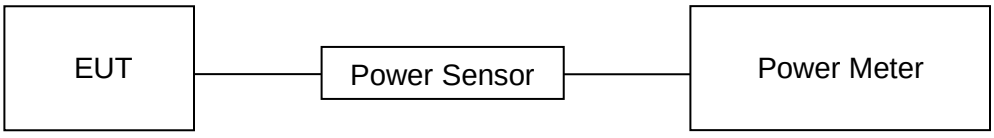
CFR 47 FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3)	Peak Output Power	1 watt or 30dBm	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.9.

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).
Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.1 °C	Relative Humidity	60 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix D.

7.4. POWER SPECTRAL DENSITY

LIMITS

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

TEST PROCEDURE

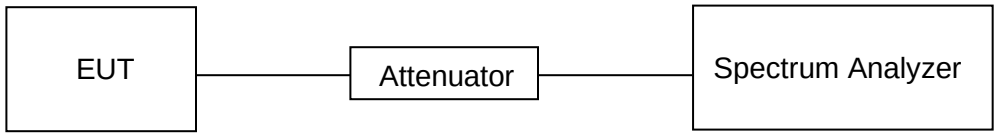
Refer to ANSI C63.10-2013 clause 11.10.

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

Center Frequency	The center 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	25.1 °C	Relative Humidity	60 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix E.

7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d)	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyser and use the following settings for reference level measurement:

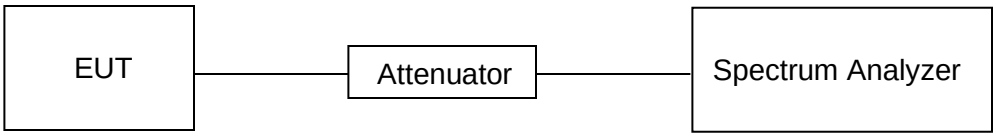
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.
Change the settings for emission level measurement:

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.1 °C	Relative Humidity	60 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix F & G.

8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209.

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

Emissions radiated outside of the specified frequency bands above 30MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

FCC Emissions radiated outside of the specified frequency bands below 30MHz		
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

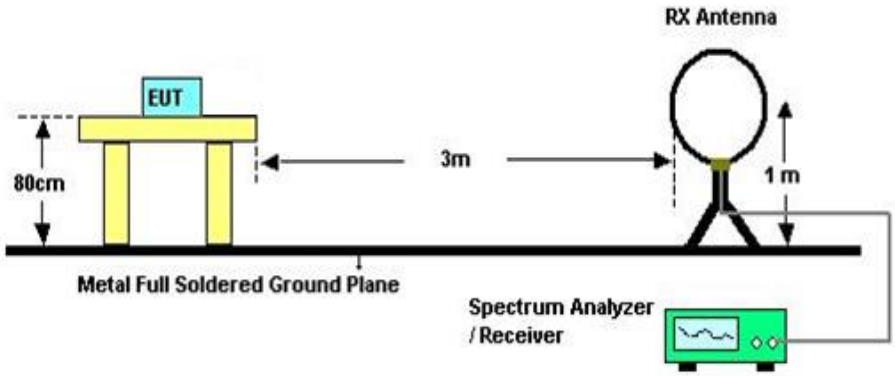
FCC Restricted bands of operation refer to FCC §15.205 (a):

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
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11.

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, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

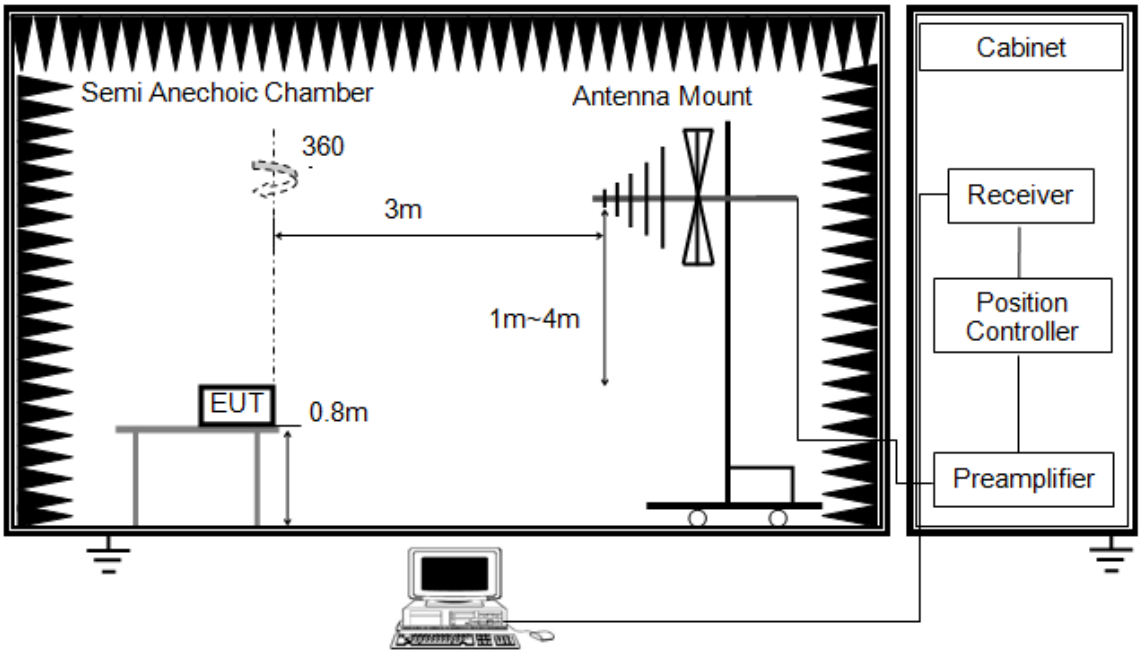
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open 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 1GHz and above 30MHz



The setting of the spectrum analyser

RBW	120kHz
VBW	300kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11.

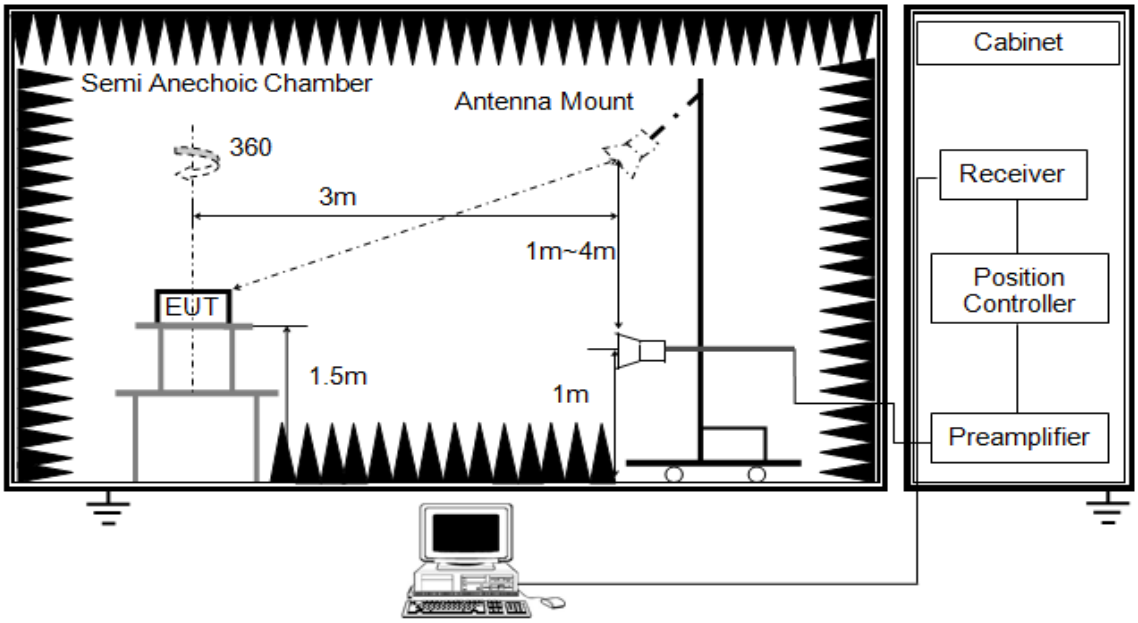
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations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

3. The EUT was placed on a turntable with 80cm above ground.

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

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1GHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 11.11 and 11.12.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

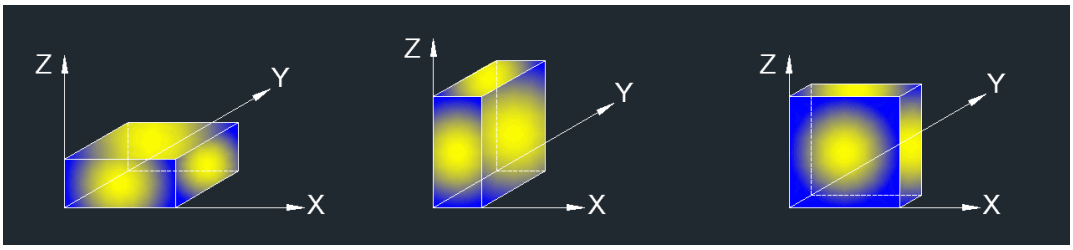
3. The EUT was placed on a turntable with 1.5m above ground.

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 7.1.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	23.6 °C	Relative Humidity	57 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

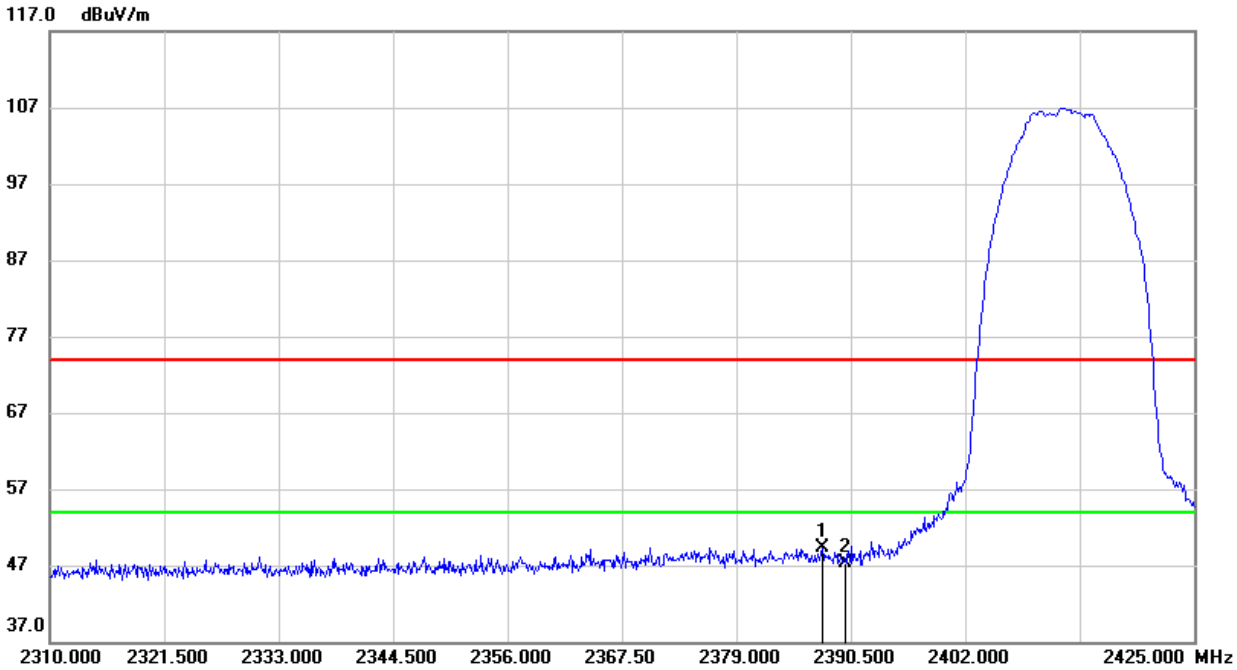
RESULTS

8.1. RESTRICTED BANDEDGE

8.1.1. 802.11b SISO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

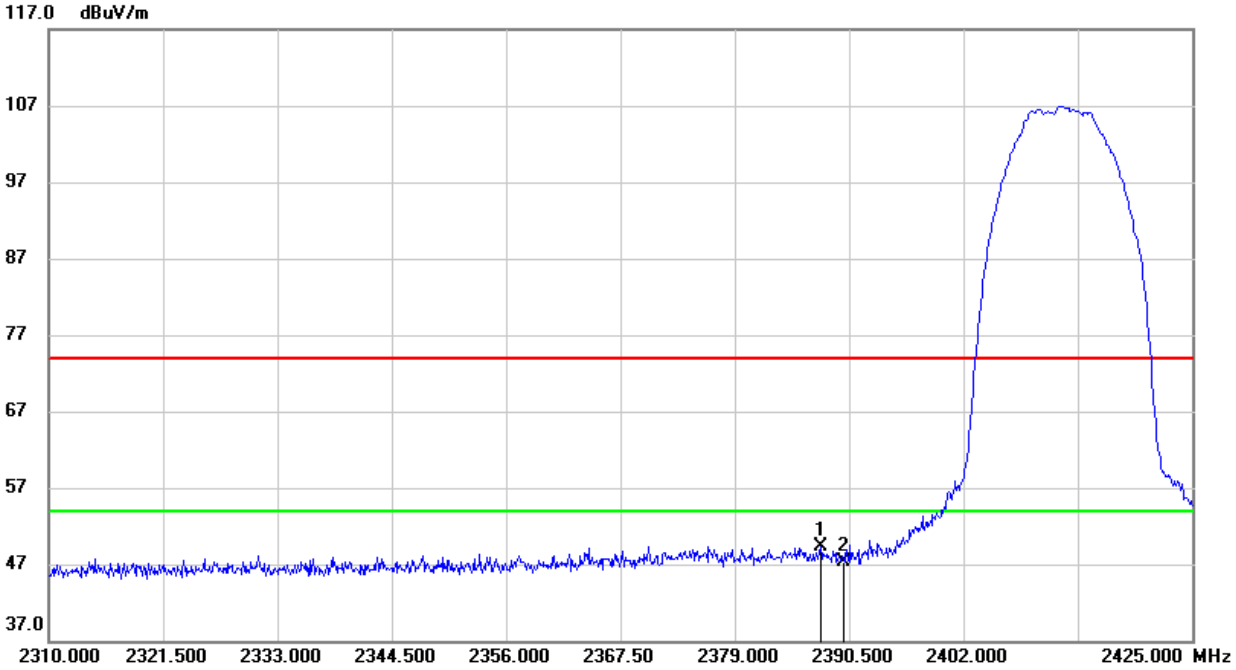


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.625	16.45	32.94	49.39	74.00	-24.61	peak
2	2390.000	14.39	32.94	47.33	74.00	-26.67	peak

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

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

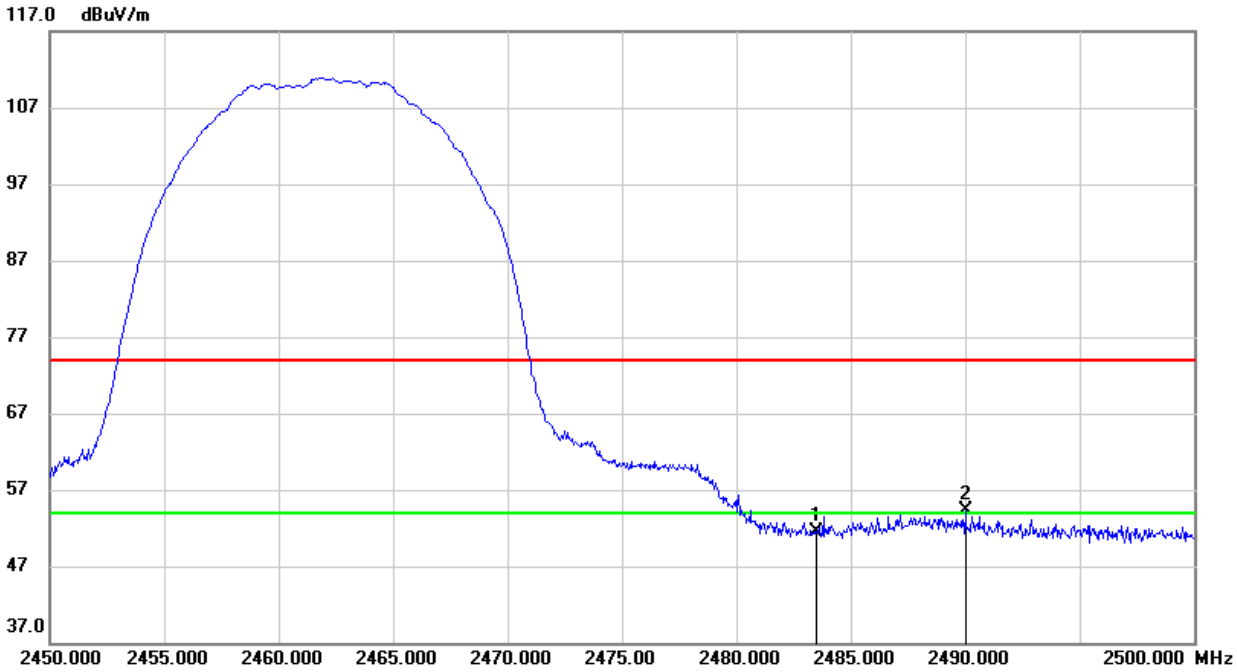


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.625	16.45	32.94	49.39	74.00	-24.61	peak
2	2390.000	14.39	32.94	47.33	74.00	-26.67	peak

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

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

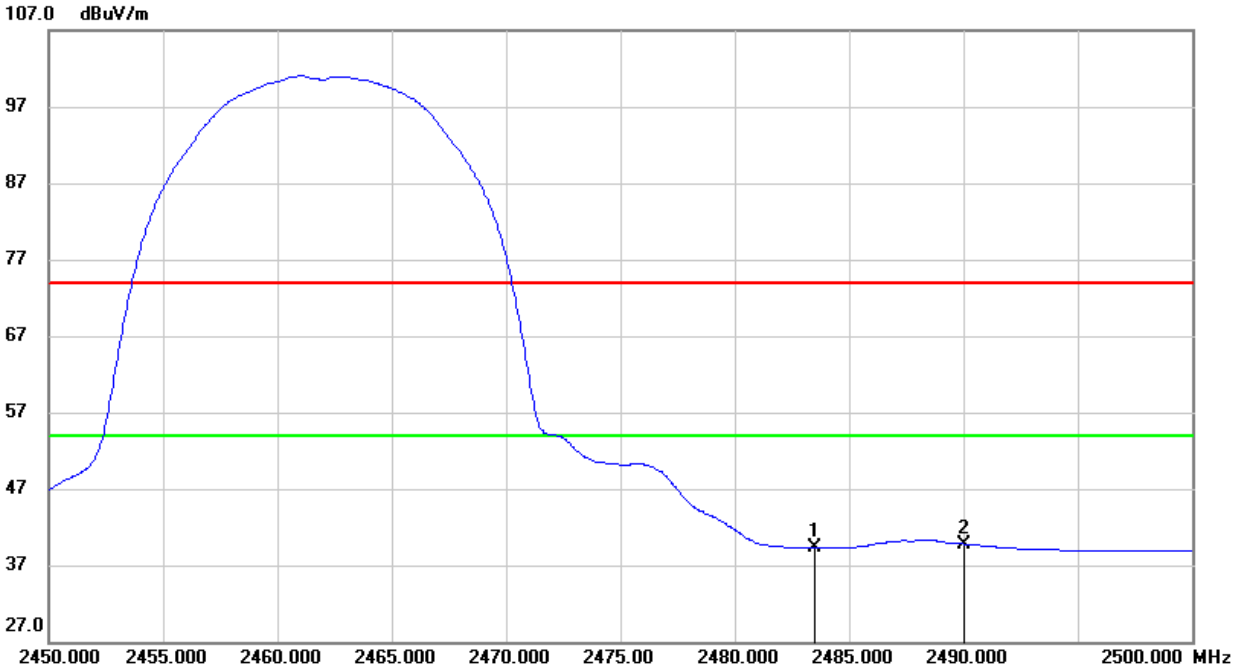
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	17.96	33.58	51.54	74.00	-22.46	peak
2	2490.000	20.70	33.63	54.33	74.00	-19.67	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

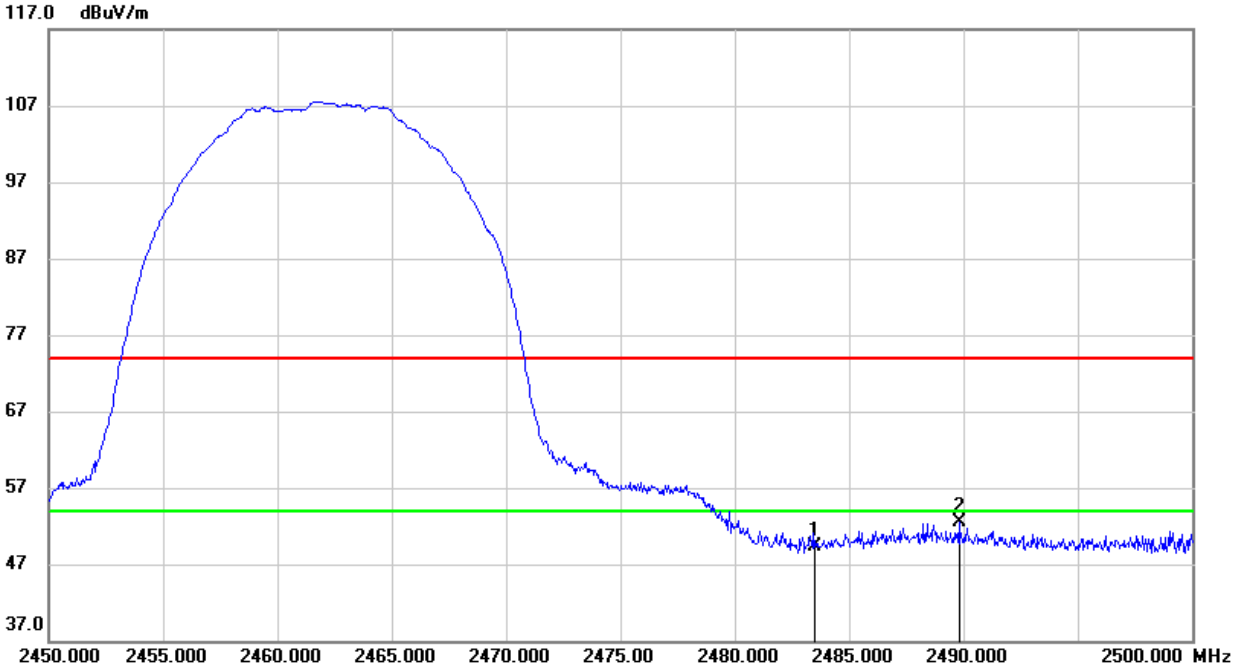


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	5.64	33.58	39.22	54.00	-14.78	AVG
2	2490.000	6.17	33.63	39.80	54.00	-14.20	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



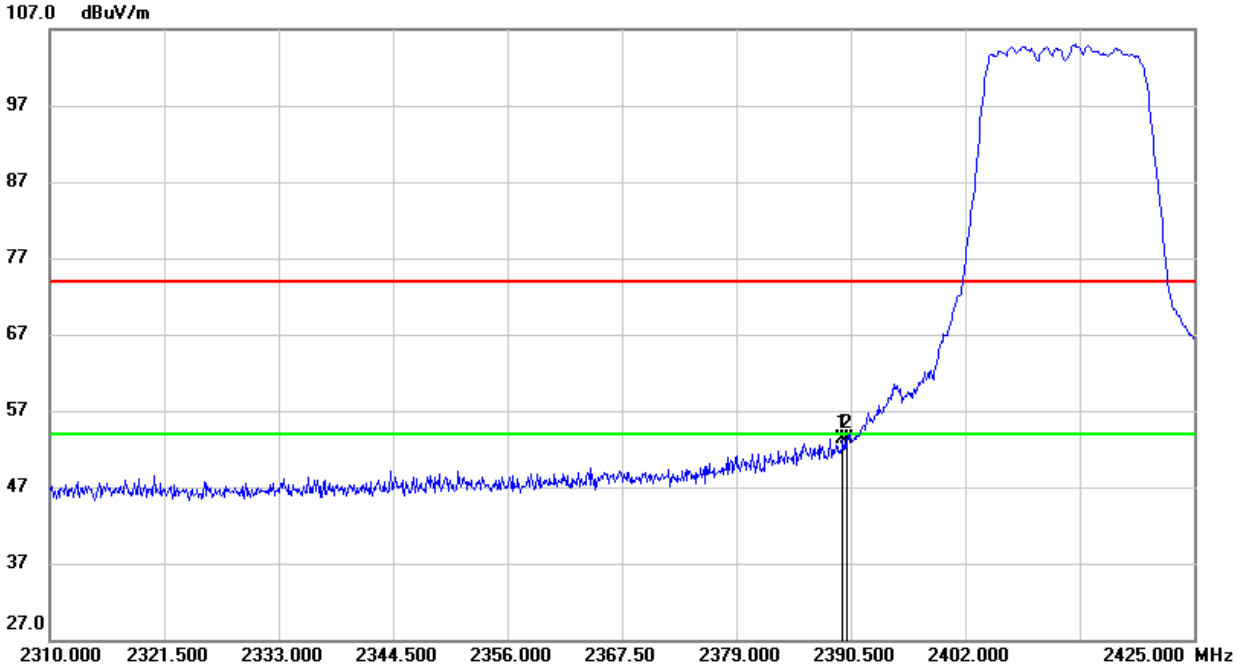
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	15.70	33.58	49.28	74.00	-24.72	peak
2	2489.800	18.94	33.62	52.56	74.00	-21.44	peak

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

8.1.2. 802.11g SISO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

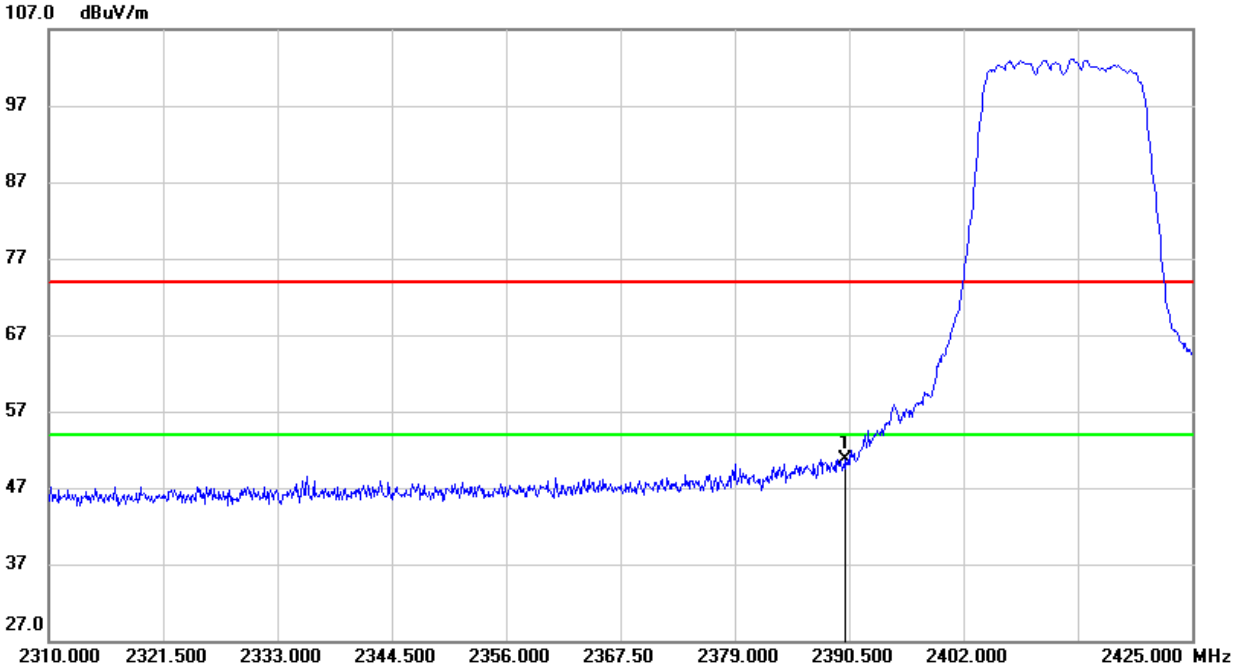


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.695	20.44	32.94	53.38	74.00	-20.62	peak
2	2390.000	20.37	32.94	53.31	74.00	-20.69	peak

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

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

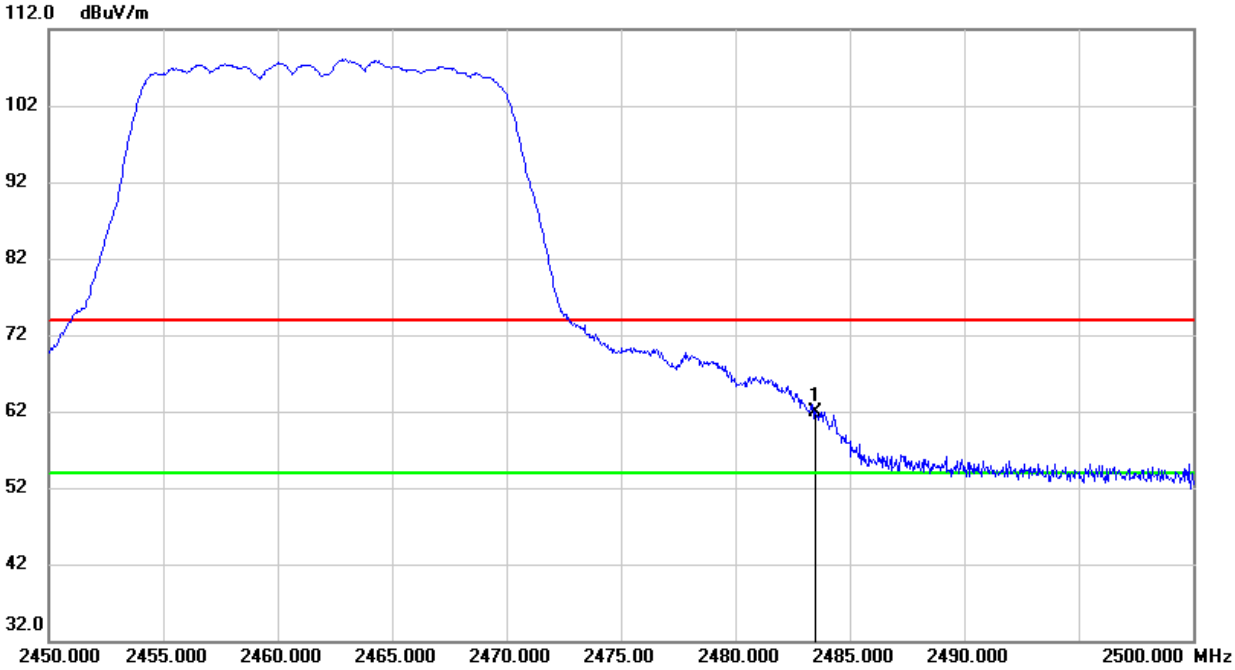


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	17.75	32.94	50.69	74.00	-23.31	peak

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

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

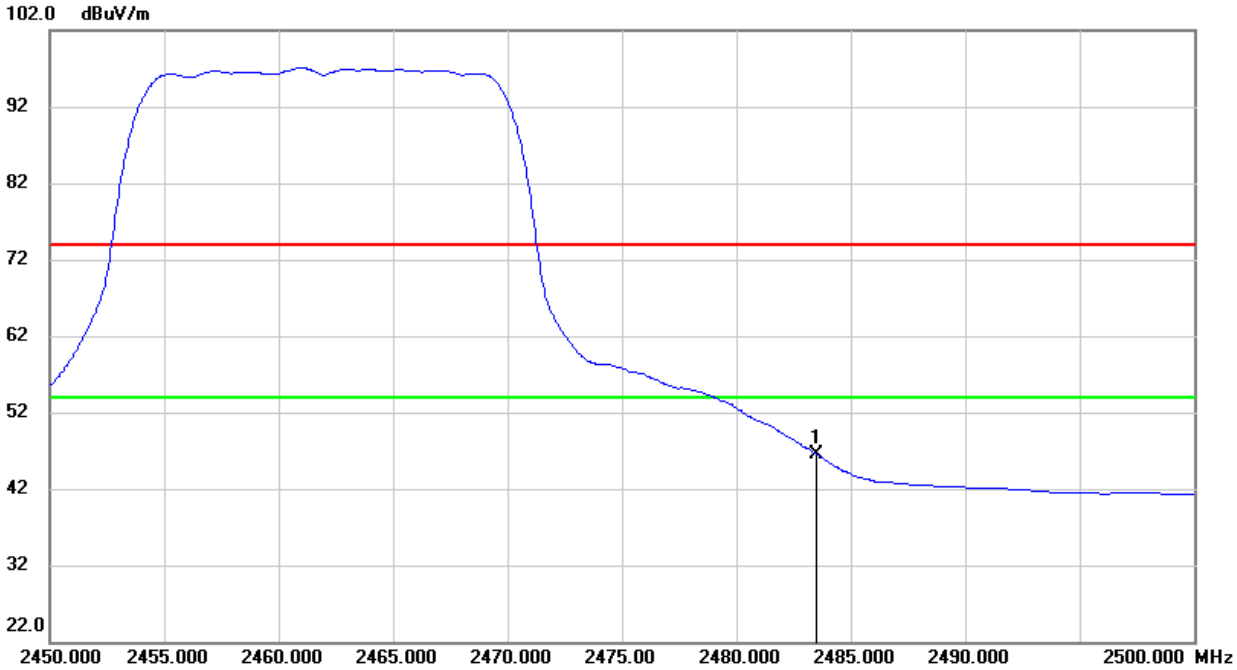
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	28.35	33.58	61.93	74.00	-12.07	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

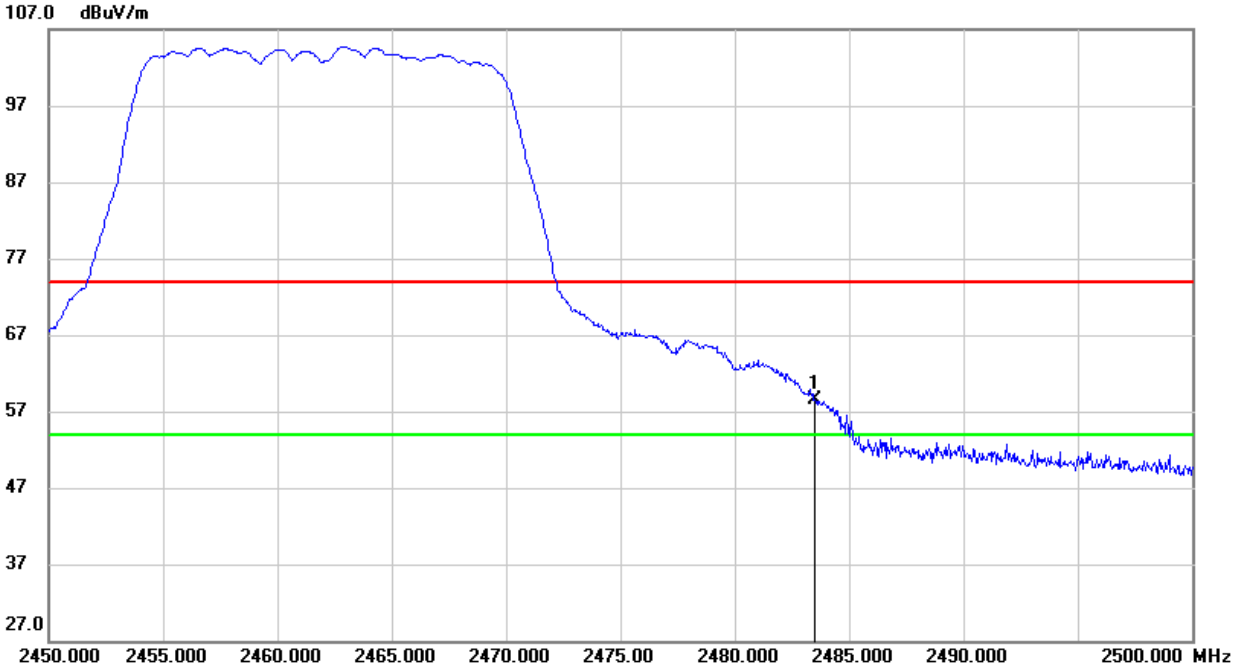


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	12.93	33.58	46.51	54.00	-7.49	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

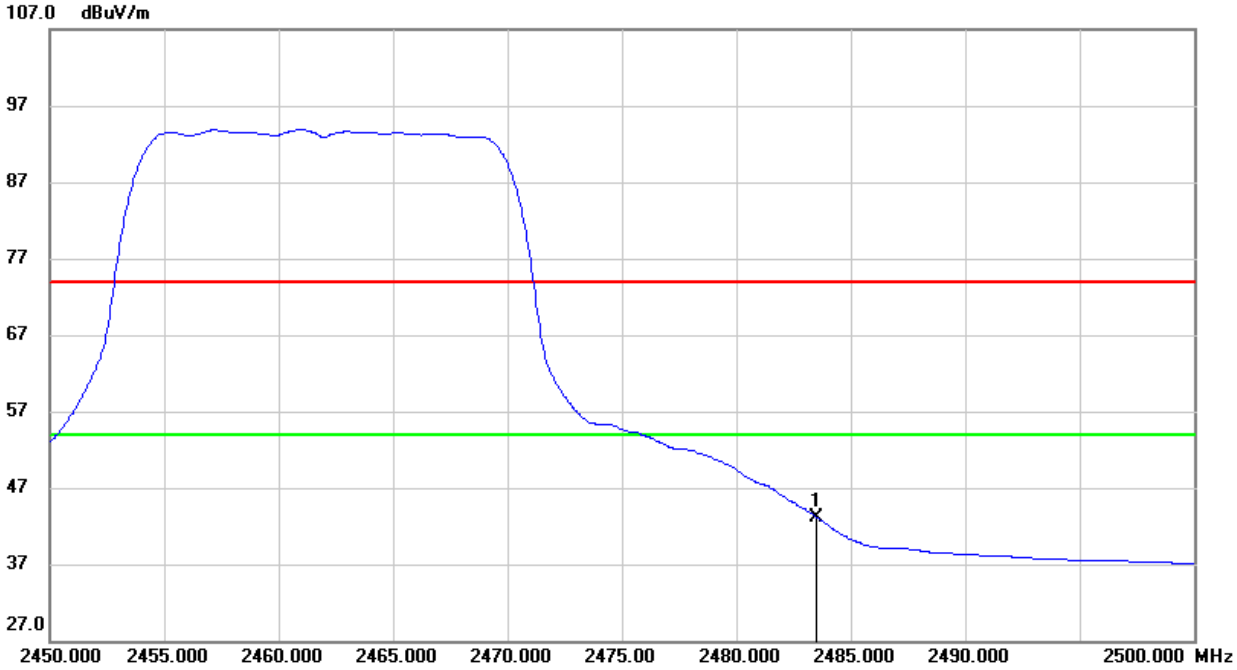
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	24.93	33.58	58.51	74.00	-15.49	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



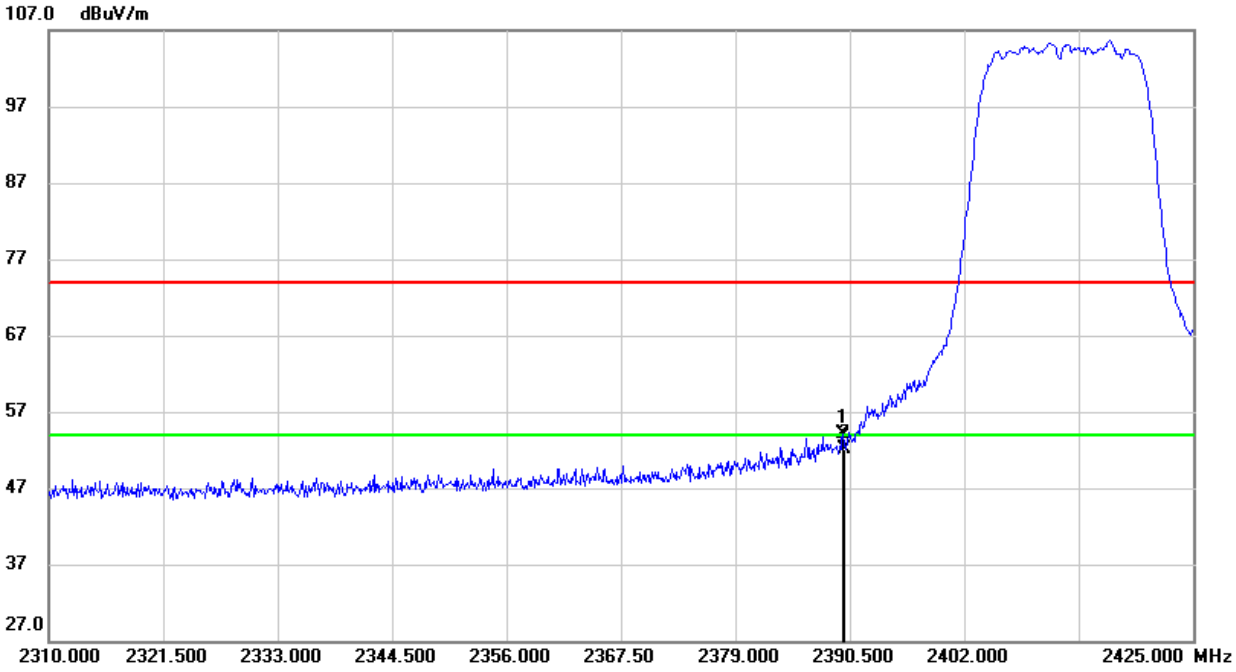
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	9.56	33.58	43.14	54.00	-10.86	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

8.1.3. 802.11n HT20 SISO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

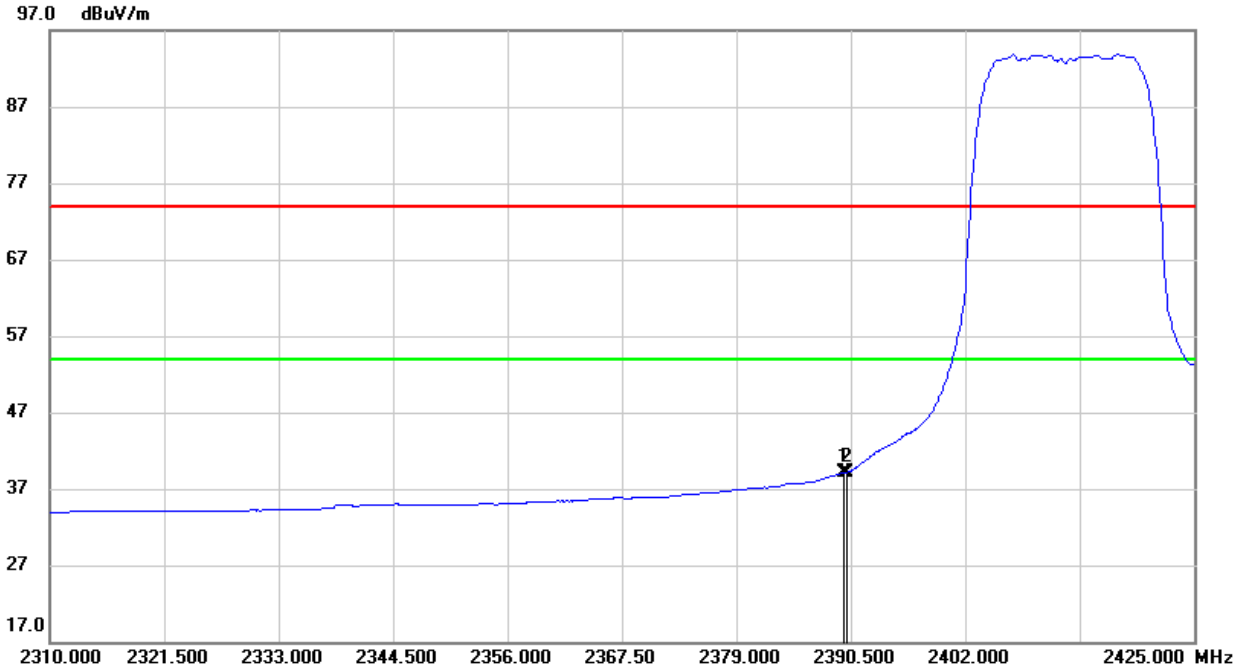
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.810	21.18	32.94	54.12	74.00	-19.88	peak
2	2390.000	19.07	32.94	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

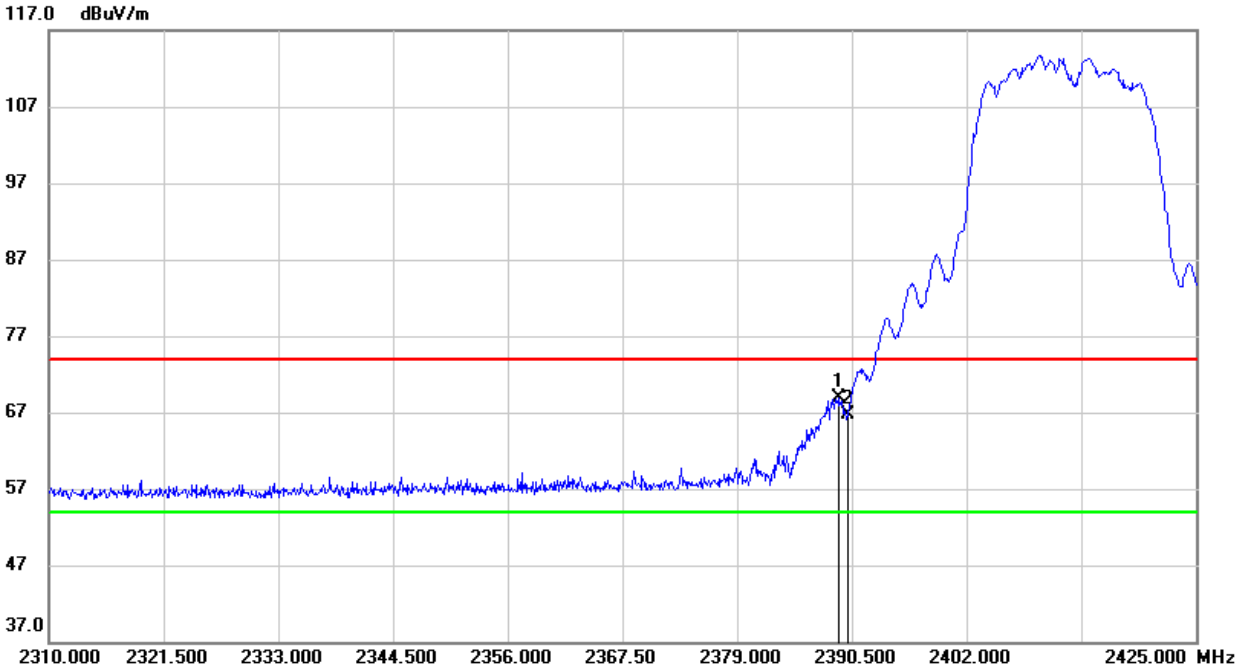


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.810	6.15	32.94	39.09	54.00	-14.91	AVG
2	2390.000	6.18	32.94	39.12	54.00	-14.88	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

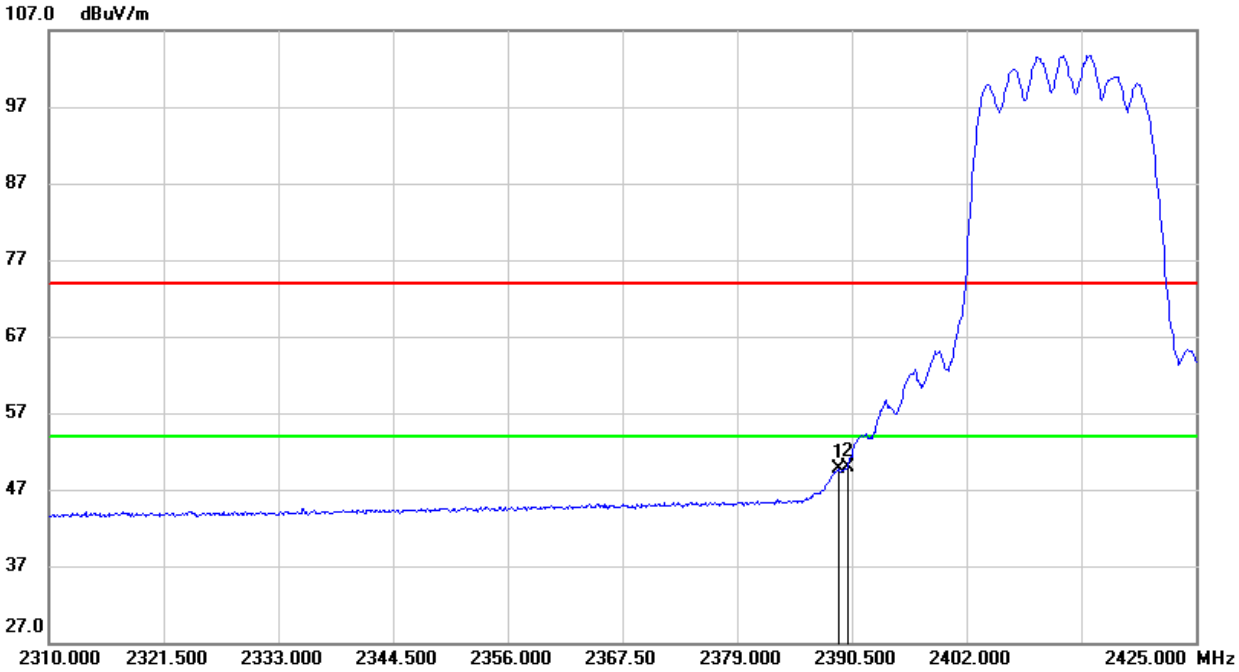
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.120	35.97	32.94	68.91	74.00	-5.09	peak
2	2390.000	33.75	32.94	66.69	74.00	-7.31	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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

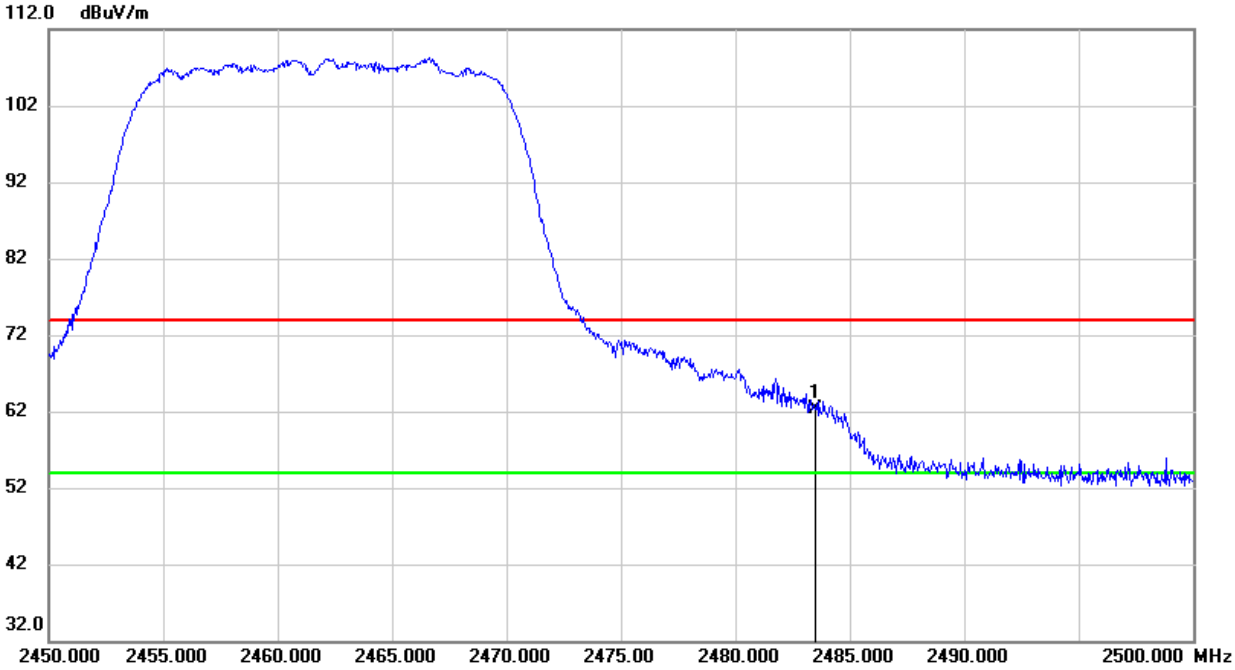


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.120	16.74	32.94	49.68	54.00	-4.32	AVG
2	2390.000	16.96	32.94	49.90	54.00	-4.10	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

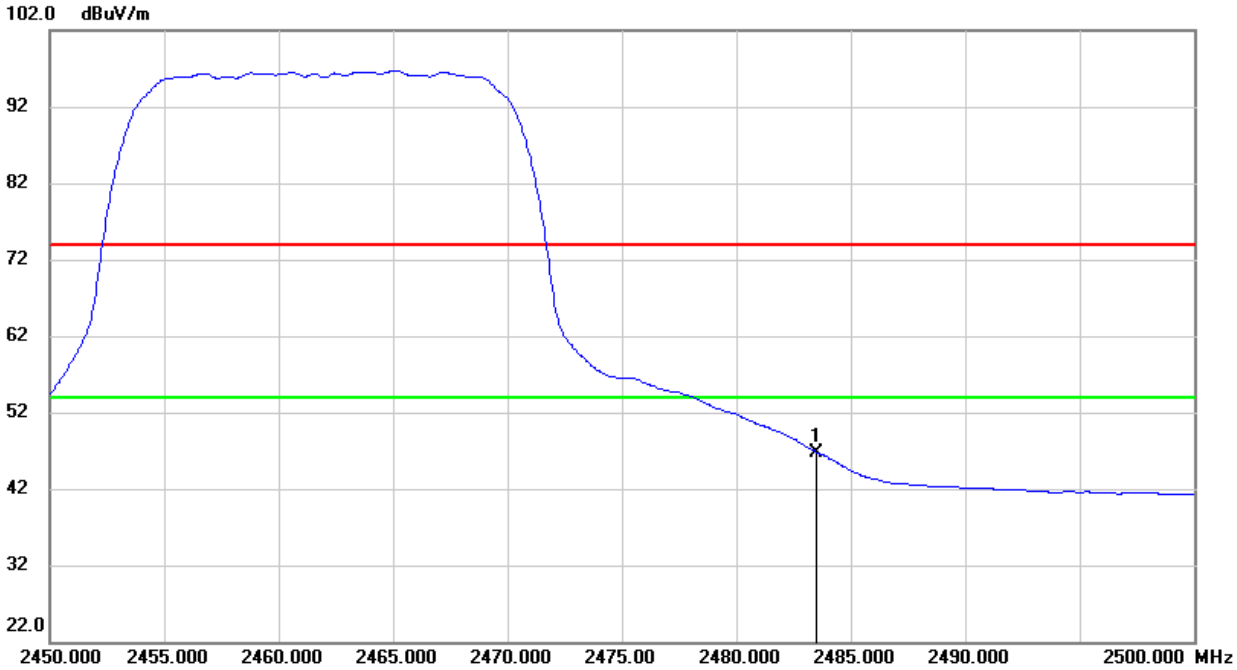
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	28.79	33.58	62.37	74.00	-11.63	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

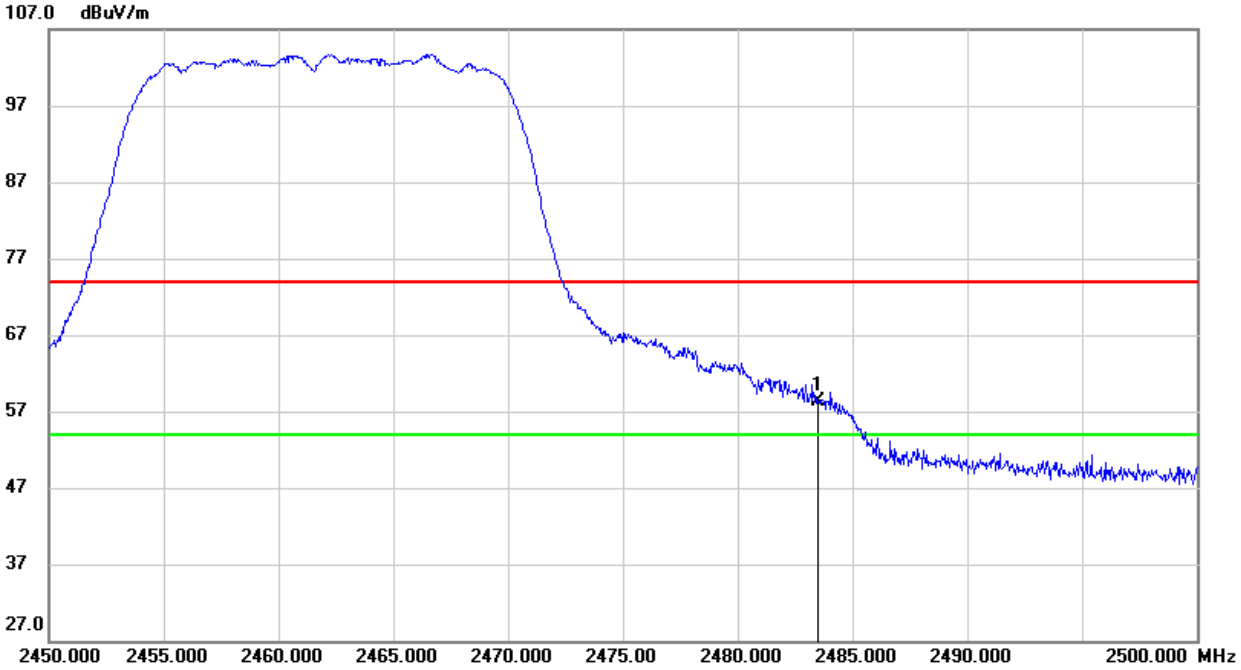


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	13.20	33.58	46.78	54.00	-7.22	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

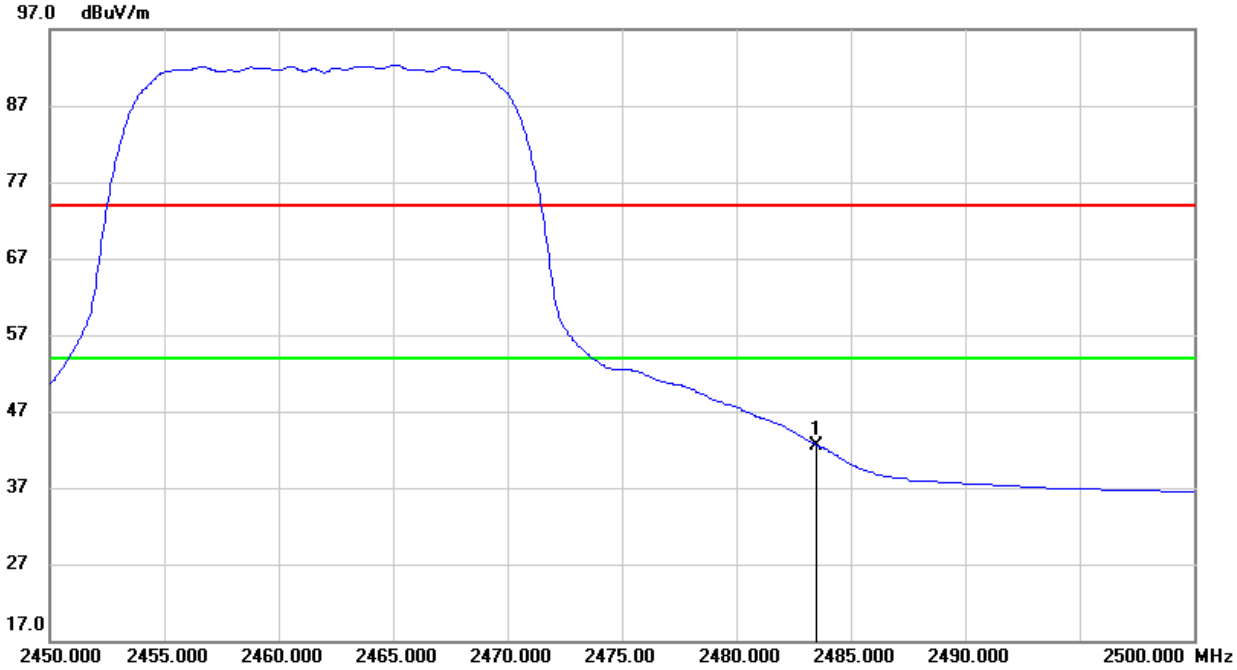
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	24.75	33.58	58.33	74.00	-15.67	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



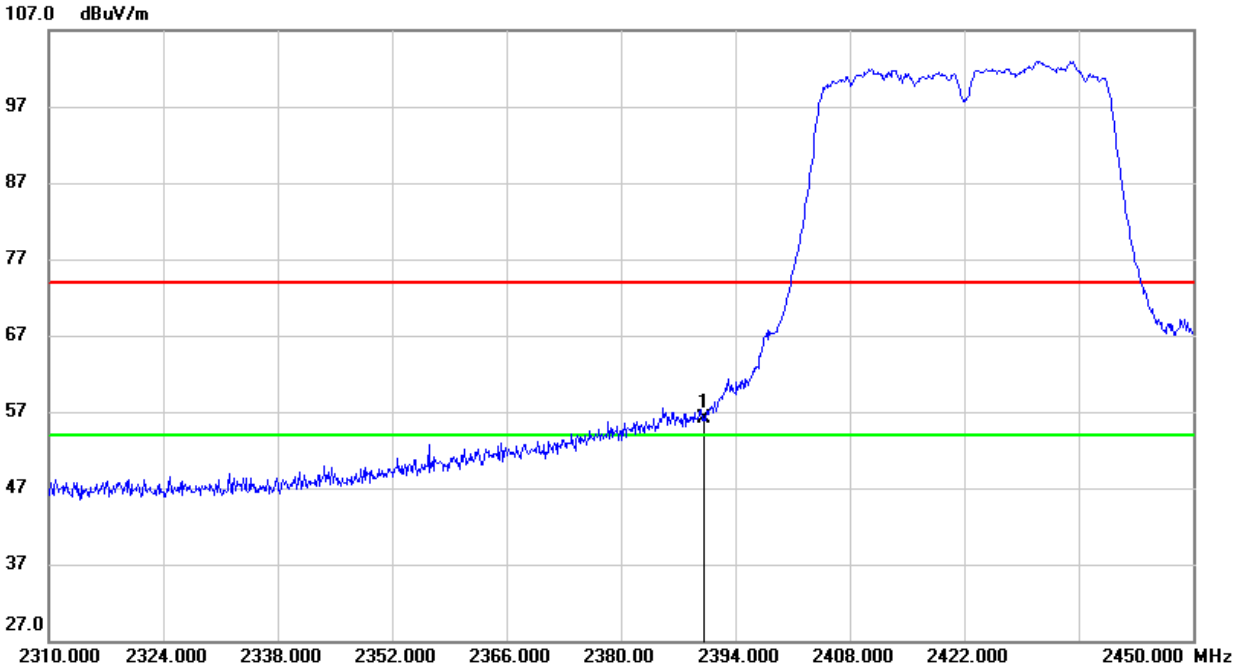
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	9.02	33.58	42.60	54.00	-11.40	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

8.1.4. 802.11n HT40 SISO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

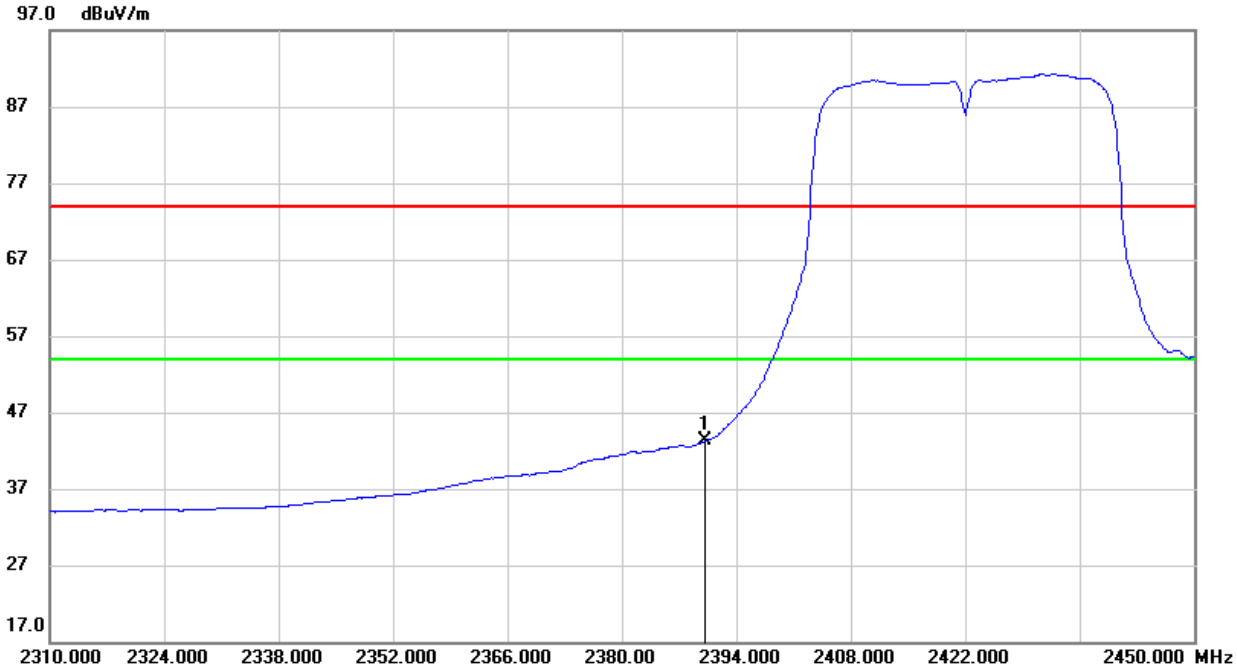
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	23.11	32.94	56.05	74.00	-17.95	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

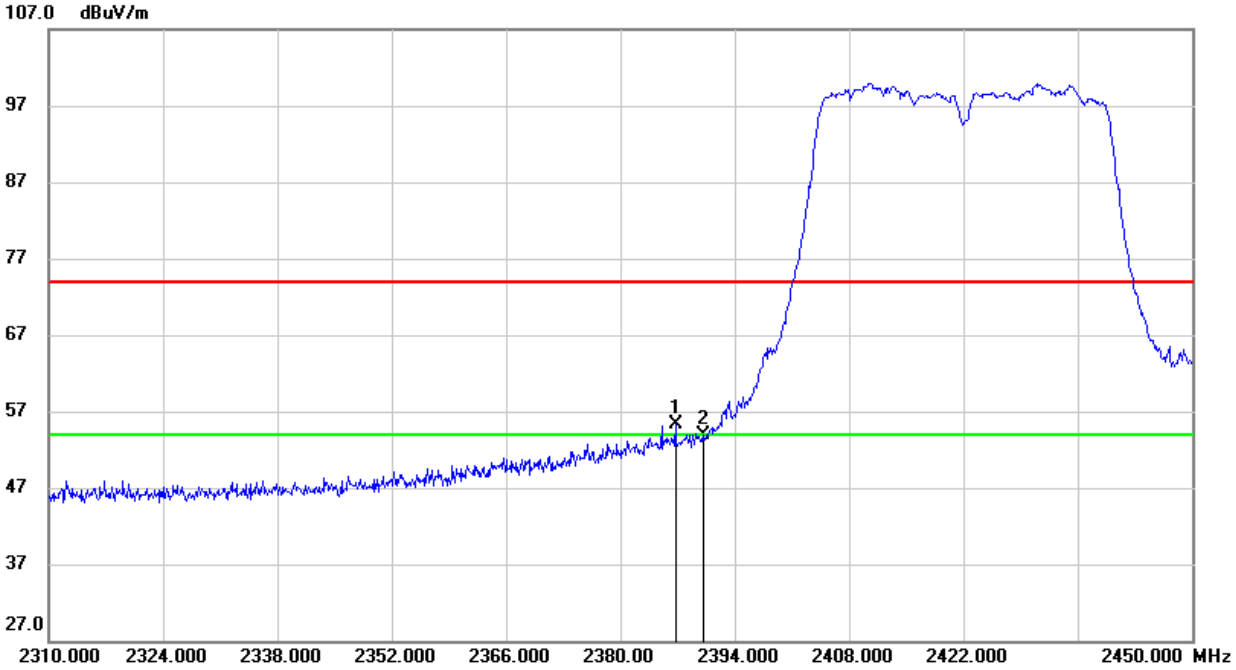


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	10.28	32.94	43.22	54.00	-10.78	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

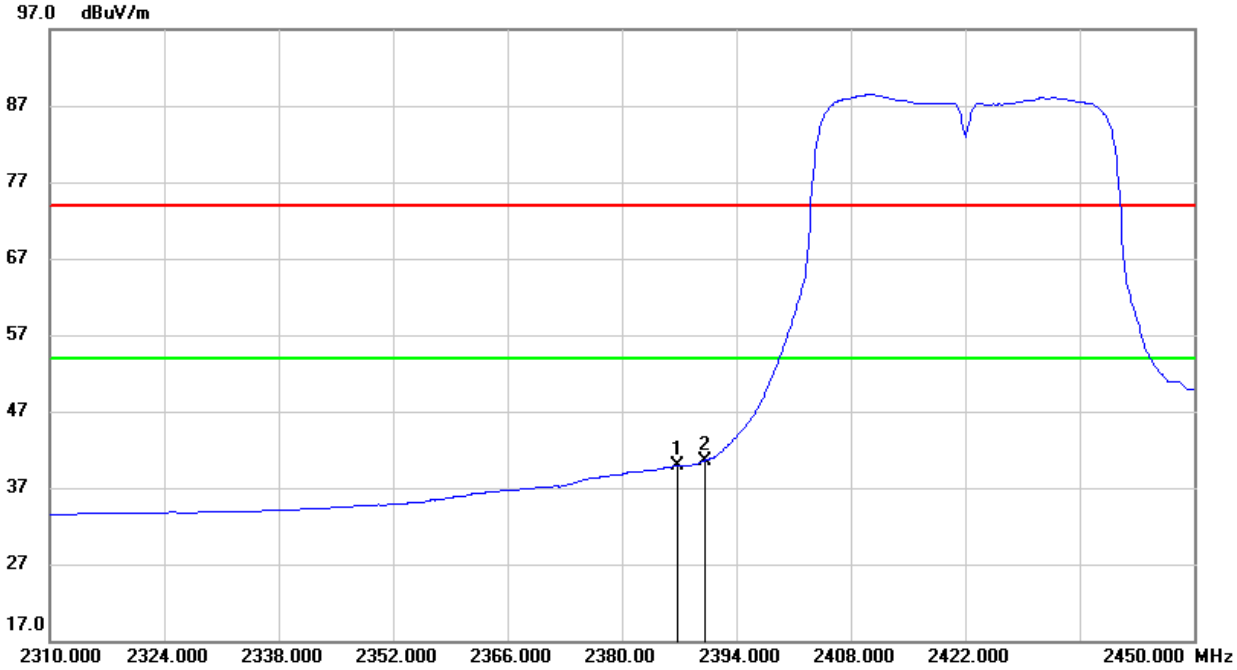
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.720	22.36	32.94	55.30	74.00	-18.70	peak
2	2390.000	21.00	32.94	53.94	74.00	-20.06	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

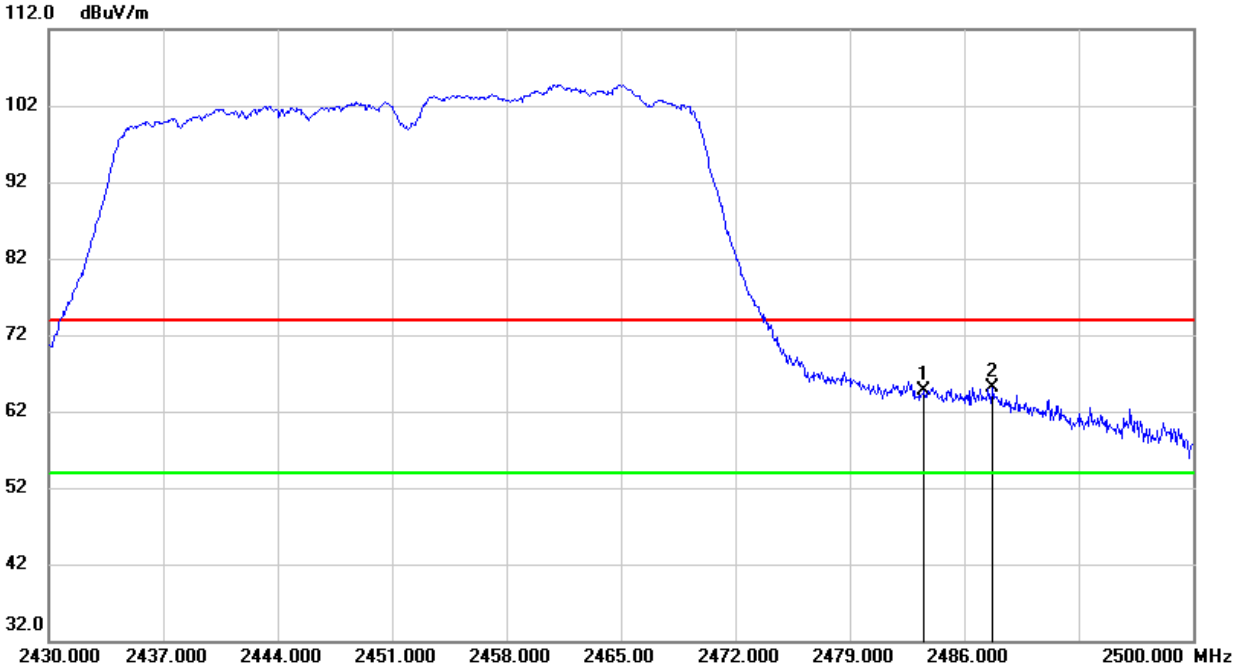


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.720	6.97	32.94	39.91	54.00	-14.09	AVG
2	2390.000	7.63	32.94	40.57	54.00	-13.43	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

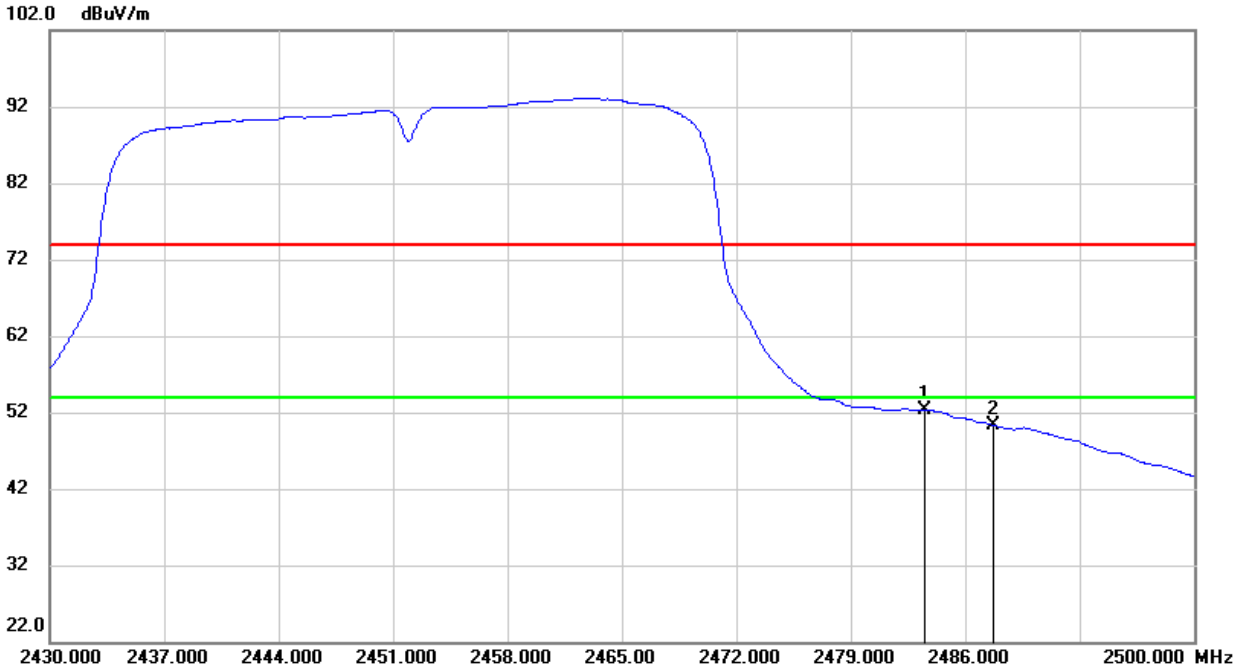
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	31.14	33.58	64.72	74.00	-9.28	peak
2	2487.750	31.48	33.61	65.09	74.00	-8.91	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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

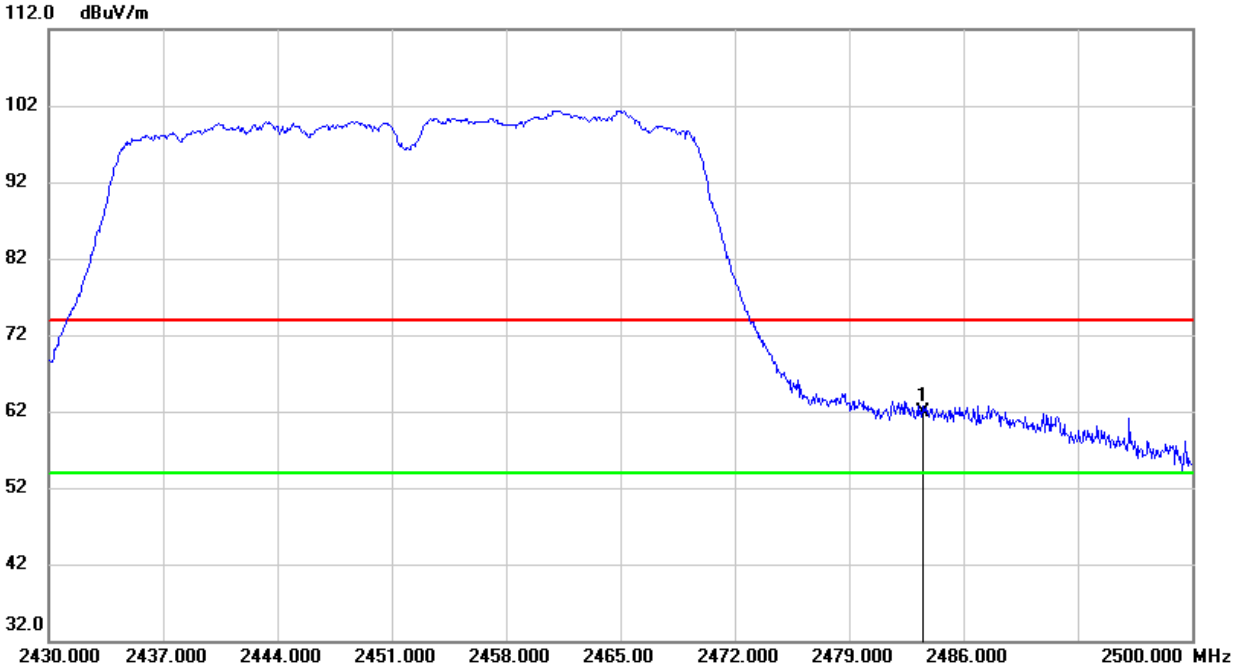


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	18.67	33.58	52.25	54.00	-1.75	AVG
2	2487.750	16.65	33.61	50.26	54.00	-3.74	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

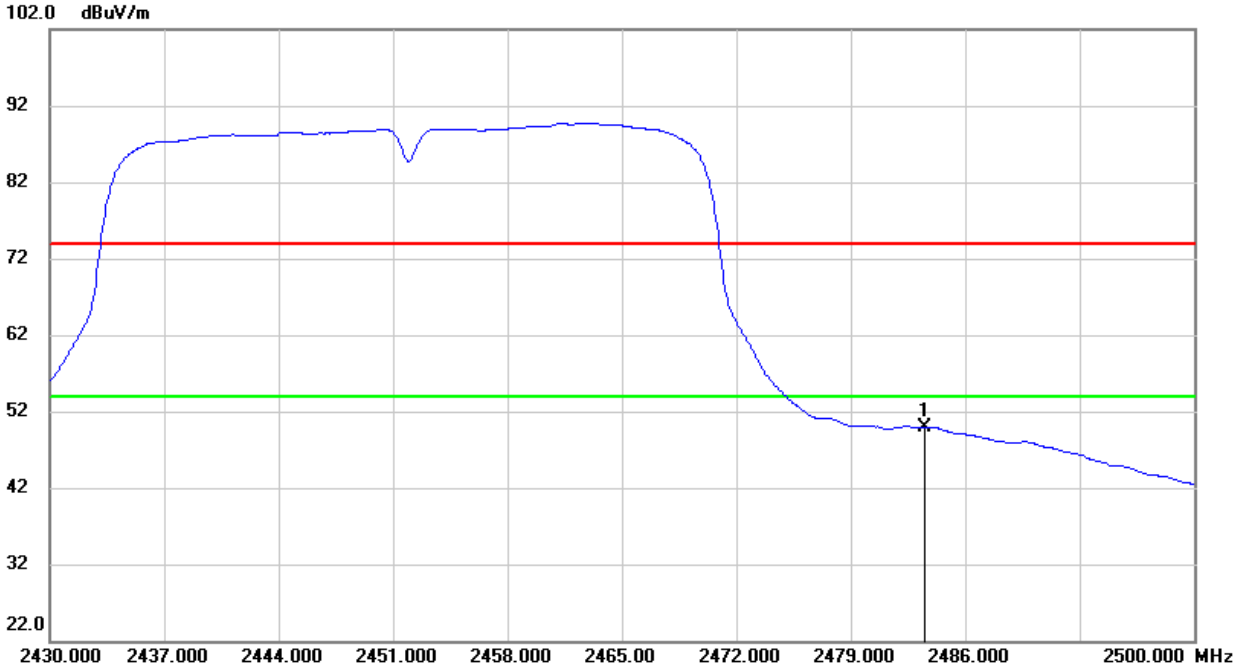
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	28.41	33.58	61.99	74.00	-12.01	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



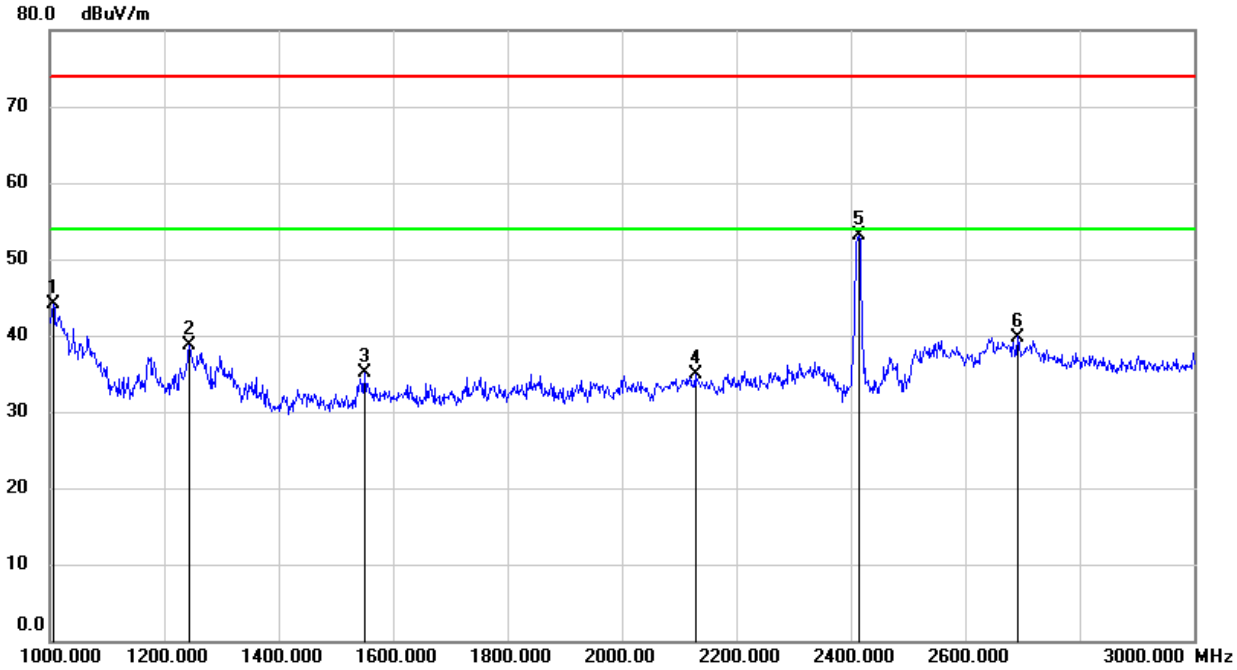
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.27	33.58	49.85	54.00	-4.15	AVG

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 the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

8.2. SPURIOUS EMISSIONS (1GHz ~ 3GHz)

8.2.1. 802.11b SISO MODE

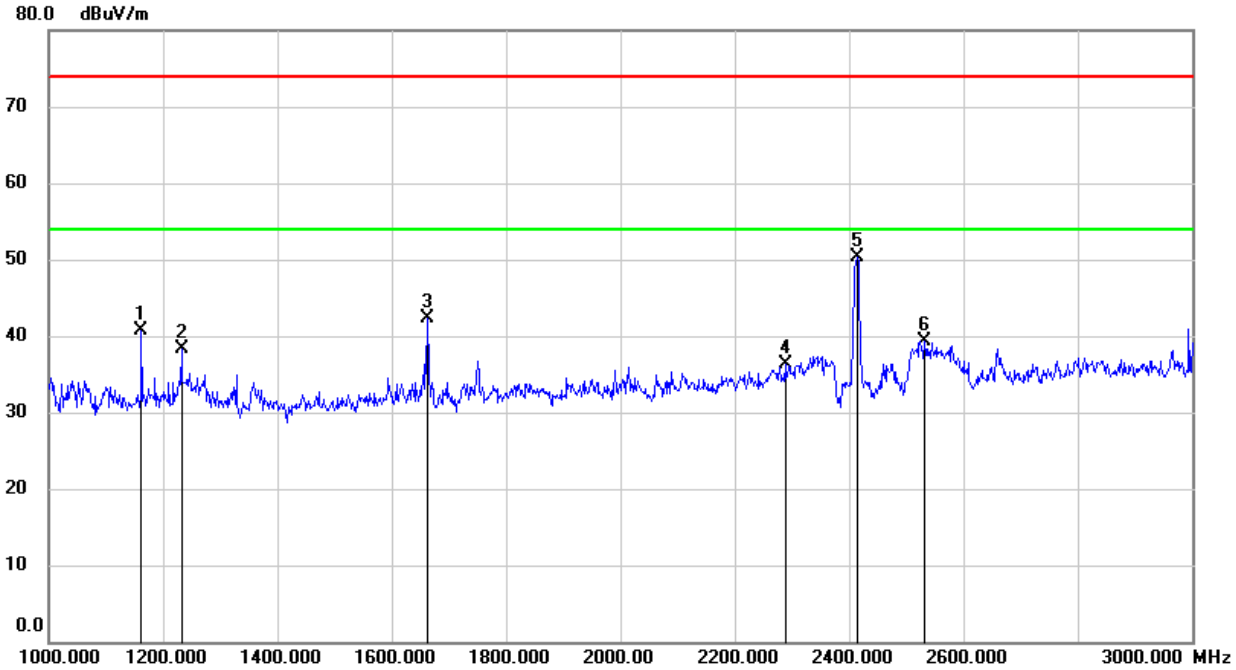
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1006.000	57.72	-13.59	44.13	74.00	-29.87	peak
2	1244.000	51.26	-12.53	38.73	74.00	-35.27	peak
3	1550.000	46.92	-11.81	35.11	74.00	-38.89	peak
4	2128.000	43.96	-9.02	34.94	74.00	-39.06	peak
5	2412.000	60.77	-7.76	53.01	/	/	fundamental
6	2692.000	46.97	-7.17	39.80	74.00	-34.20	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

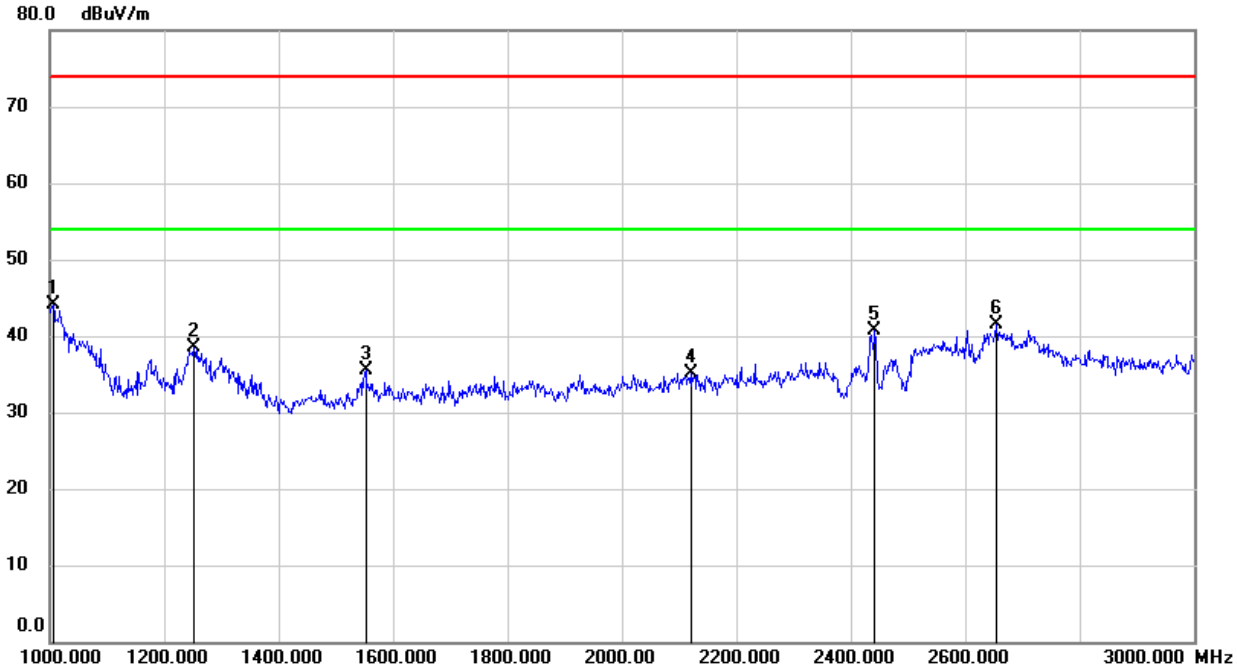
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1162.000	53.74	-13.00	40.74	74.00	-33.26	peak
2	1232.000	50.86	-12.57	38.29	74.00	-35.71	peak
3	1662.000	53.37	-11.09	42.28	74.00	-31.72	peak
4	2288.000	44.56	-8.25	36.31	74.00	-37.69	peak
5	2412.000	58.01	-7.76	50.25	/	/	fundamental
6	2532.000	46.60	-7.33	39.27	74.00	-34.73	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

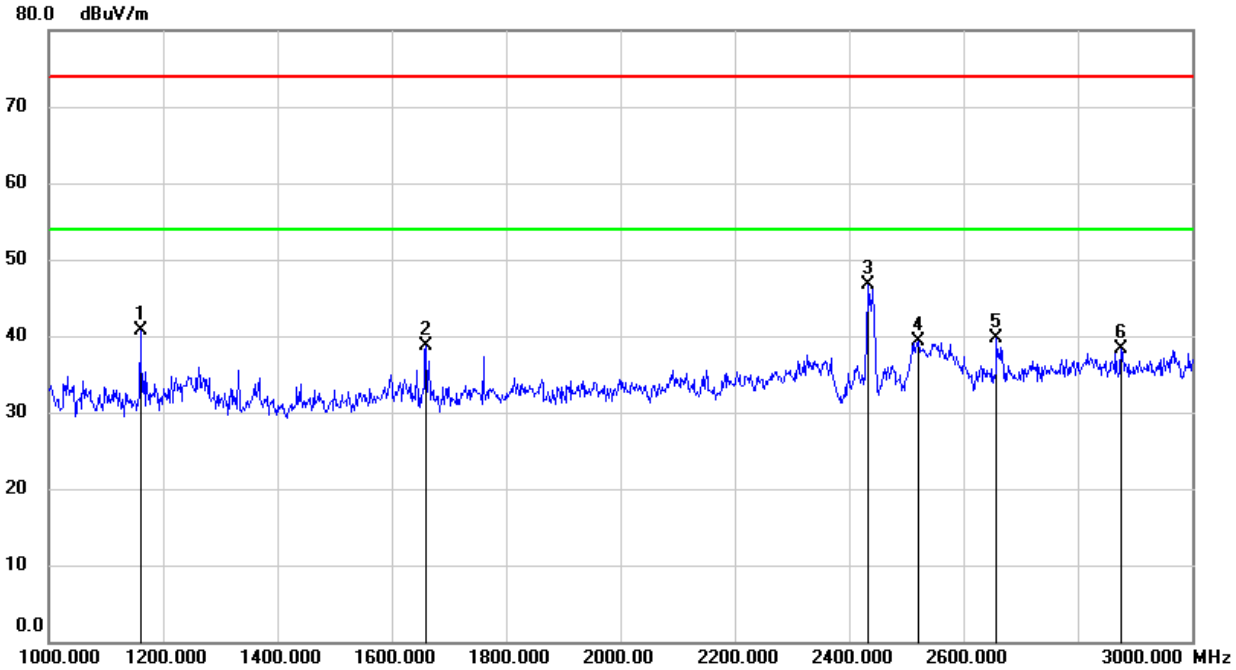
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1006.000	57.65	-13.59	44.06	74.00	-29.94	peak
2	1252.000	50.97	-12.51	38.46	74.00	-35.54	peak
3	1552.000	47.39	-11.79	35.60	74.00	-38.40	peak
4	2120.000	44.08	-9.06	35.02	74.00	-38.98	peak
5	2437.000	48.34	-7.57	40.77	/	/	fundamental
6	2654.000	48.82	-7.39	41.43	74.00	-32.57	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

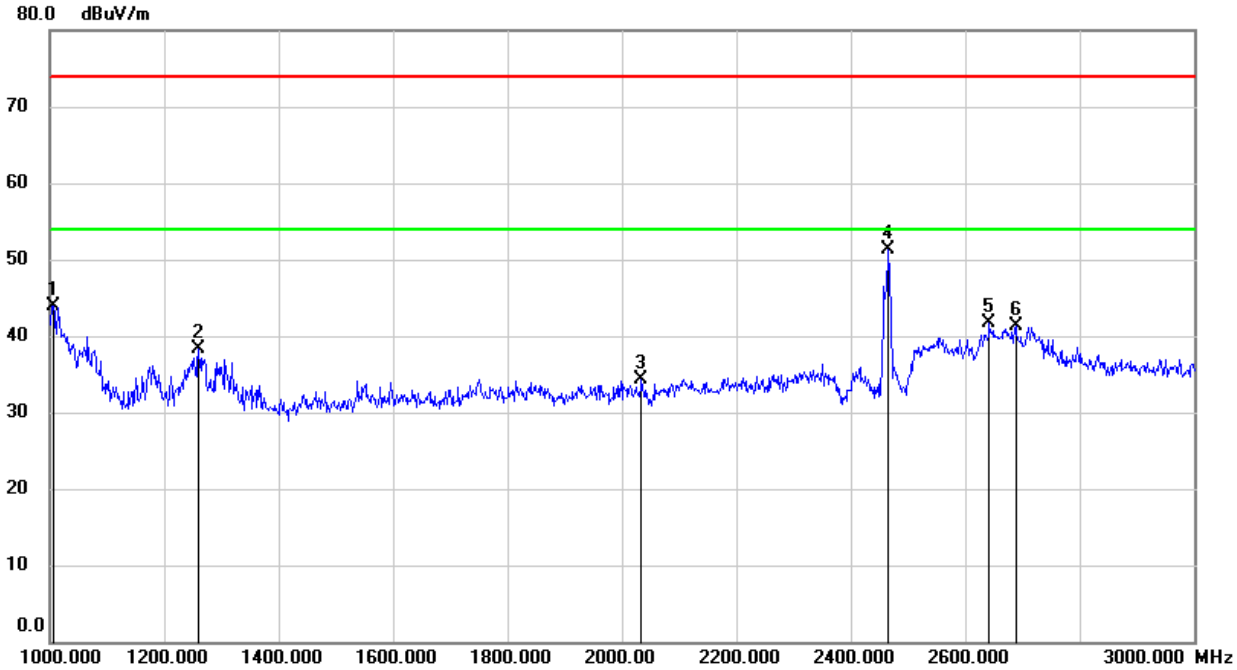
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1160.000	53.81	-13.01	40.80	74.00	-33.20	peak
2	1660.000	49.88	-11.10	38.78	74.00	-35.22	peak
3	2437.000	54.30	-7.62	46.68	/	/	fundamental
4	2522.000	46.61	-7.28	39.33	74.00	-34.67	peak
5	2658.000	47.14	-7.37	39.77	74.00	-34.23	peak
6	2876.000	44.01	-5.66	38.35	74.00	-35.65	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

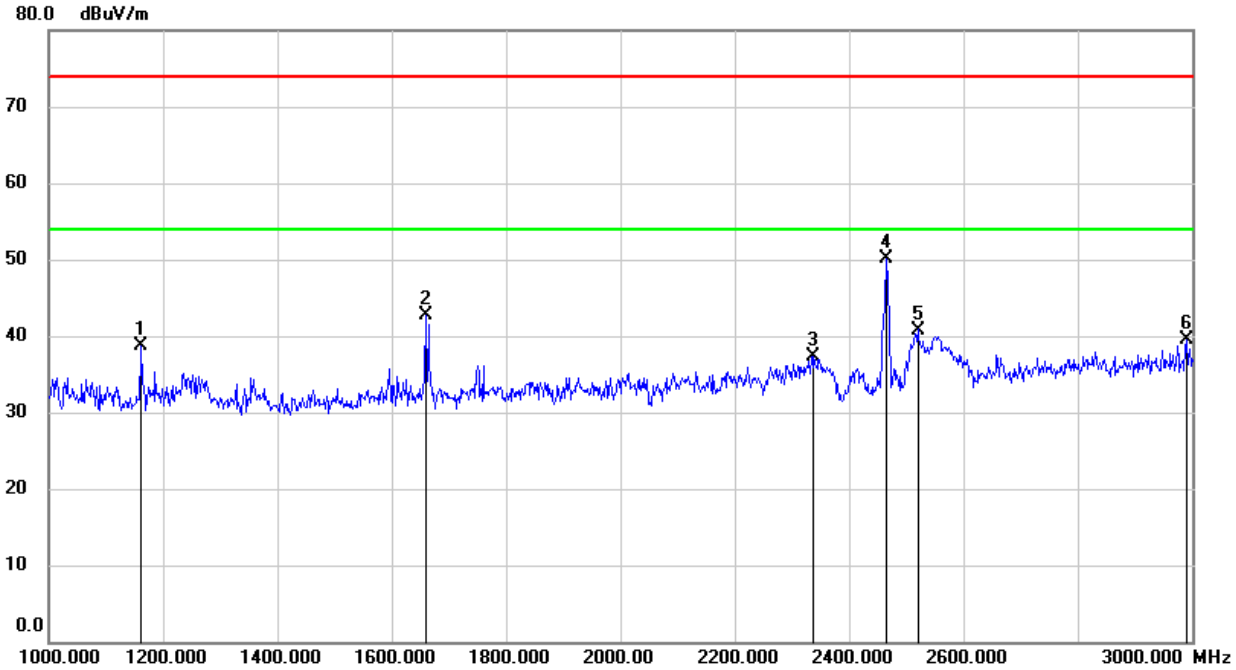
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1006.000	57.58	-13.59	43.99	74.00	-30.01	peak
2	1260.000	50.80	-12.48	38.32	74.00	-35.68	peak
3	2034.000	43.84	-9.59	34.25	74.00	-39.75	peak
4	2462.000	58.69	-7.40	51.29	/	/	fundamental
5	2642.000	49.23	-7.46	41.77	74.00	-32.23	peak
6	2688.000	48.41	-7.20	41.21	74.00	-32.79	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

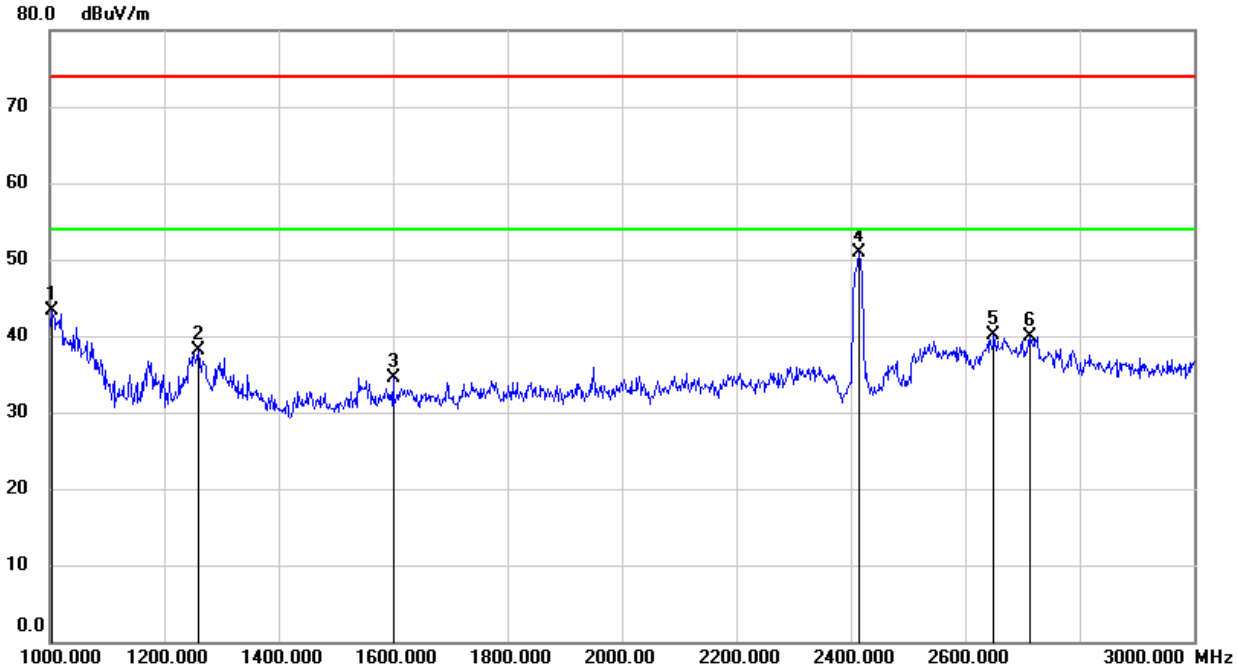


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1162.000	51.66	-13.00	38.66	74.00	-35.34	peak
2	1660.000	53.86	-11.10	42.76	74.00	-31.24	peak
3	2338.000	45.33	-8.06	37.27	74.00	-36.73	peak
4	2462.000	57.48	-7.40	50.08	/	/	fundamental
5	2520.000	48.07	-7.27	40.80	74.00	-33.20	peak
6	2990.000	44.77	-5.33	39.44	74.00	-34.56	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.2.2. 802.11g SISO MODE

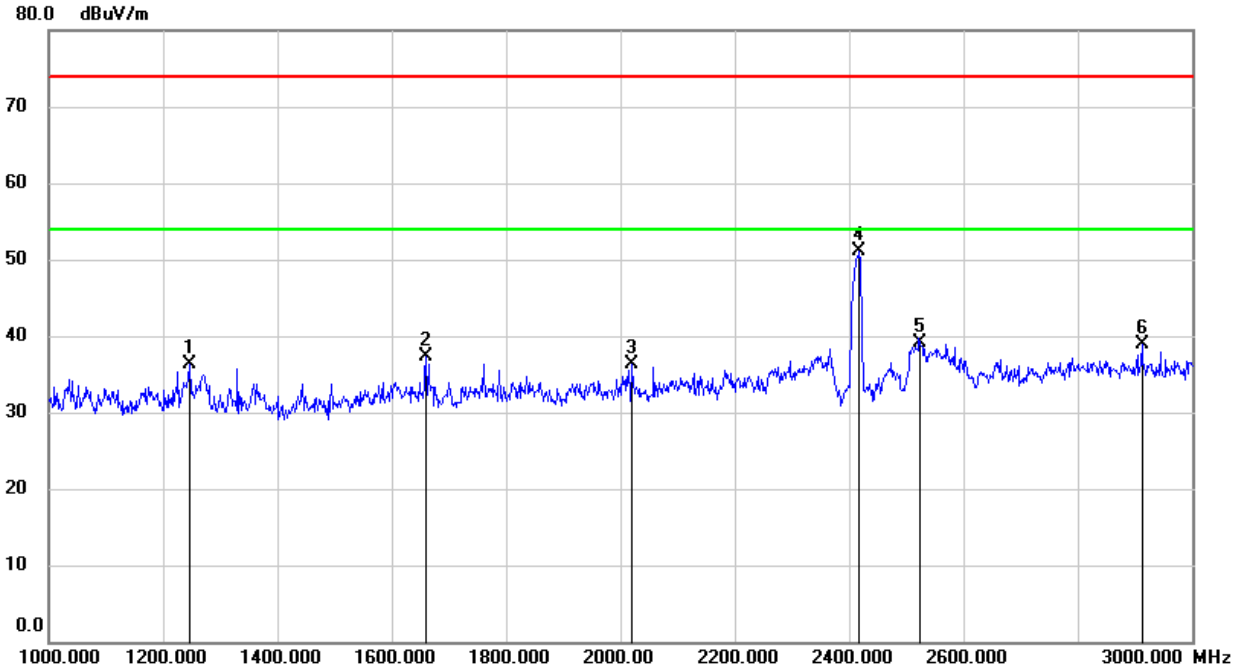
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	56.93	-13.58	43.35	74.00	-30.65	peak
2	1260.000	50.53	-12.48	38.05	74.00	-35.95	peak
3	1600.000	45.86	-11.40	34.46	74.00	-39.54	peak
4	2412.000	58.71	-7.76	50.95	/	/	fundamental
5	2650.000	47.52	-7.42	40.10	74.00	-33.90	peak
6	2712.000	46.89	-7.00	39.89	74.00	-34.11	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

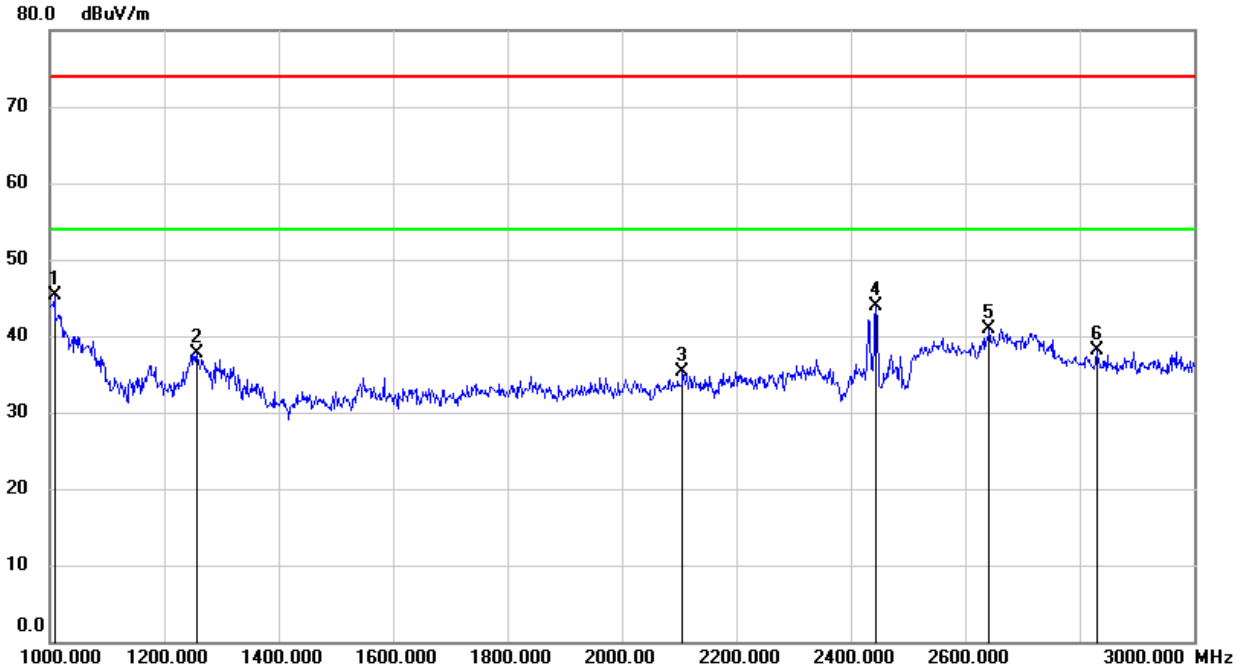
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1246.000	48.81	-12.52	36.29	74.00	-37.71	peak
2	1660.000	48.46	-11.10	37.36	74.00	-36.64	peak
3	2020.000	45.97	-9.68	36.29	74.00	-37.71	peak
4	2412.000	58.86	-7.74	51.12	/	/	fundamental
5	2524.000	46.31	-7.29	39.02	74.00	-34.98	peak
6	2912.000	44.50	-5.50	39.00	74.00	-35.00	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

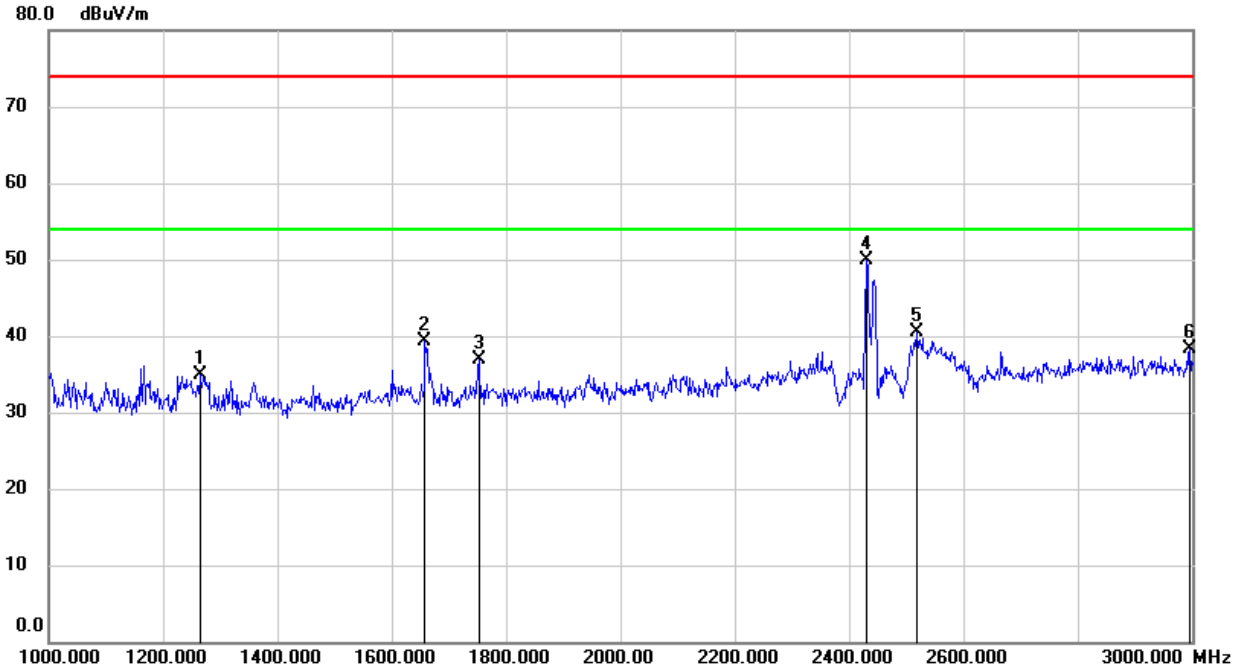
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1008.000	58.91	-13.59	45.32	74.00	-28.68	peak
2	1256.000	50.29	-12.49	37.80	74.00	-36.20	peak
3	2106.000	44.40	-9.12	35.28	74.00	-38.72	peak
4	2437.000	51.50	-7.55	43.95	/	/	fundamental
5	2642.000	48.39	-7.46	40.93	74.00	-33.07	peak
6	2830.000	44.05	-5.89	38.16	74.00	-35.84	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

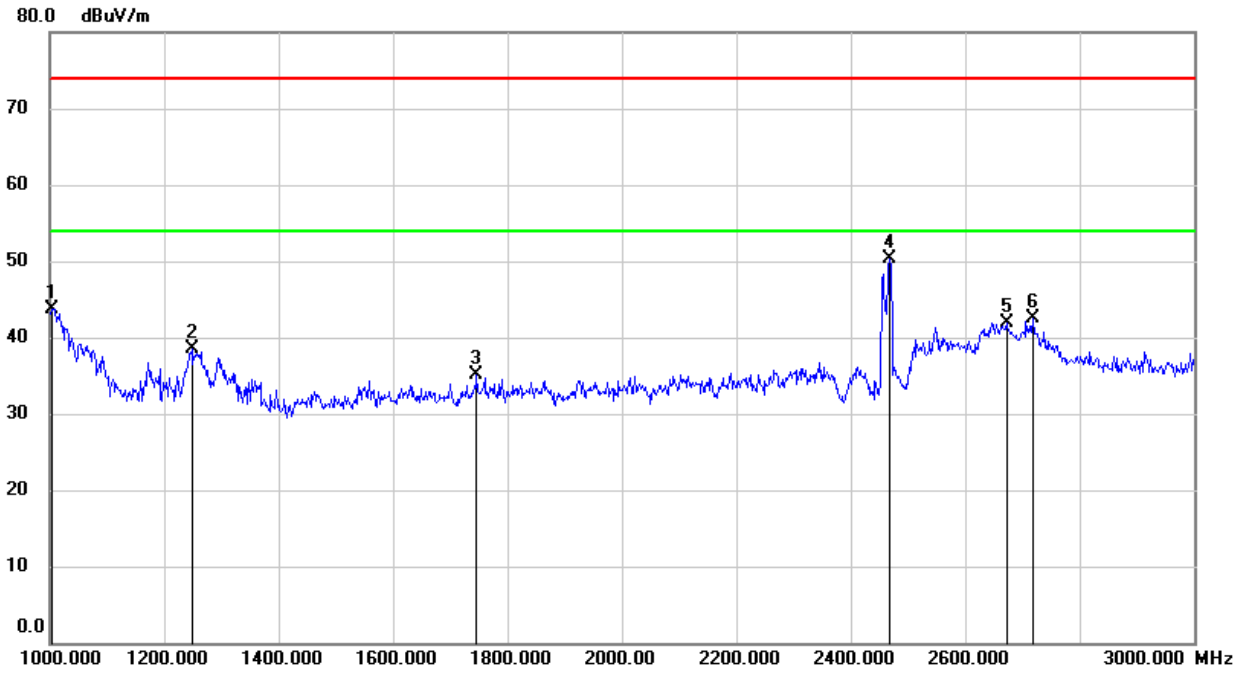
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1266.000	47.29	-12.46	34.83	74.00	-39.17	peak
2	1658.000	50.32	-11.11	39.21	74.00	-34.79	peak
3	1752.000	47.23	-10.39	36.84	74.00	-37.16	peak
4	2437.000	57.62	-7.65	49.97	/	/	fundamental
5	2518.000	47.87	-7.27	40.60	74.00	-33.40	peak
6	2996.000	43.52	-5.30	38.22	74.00	-35.78	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

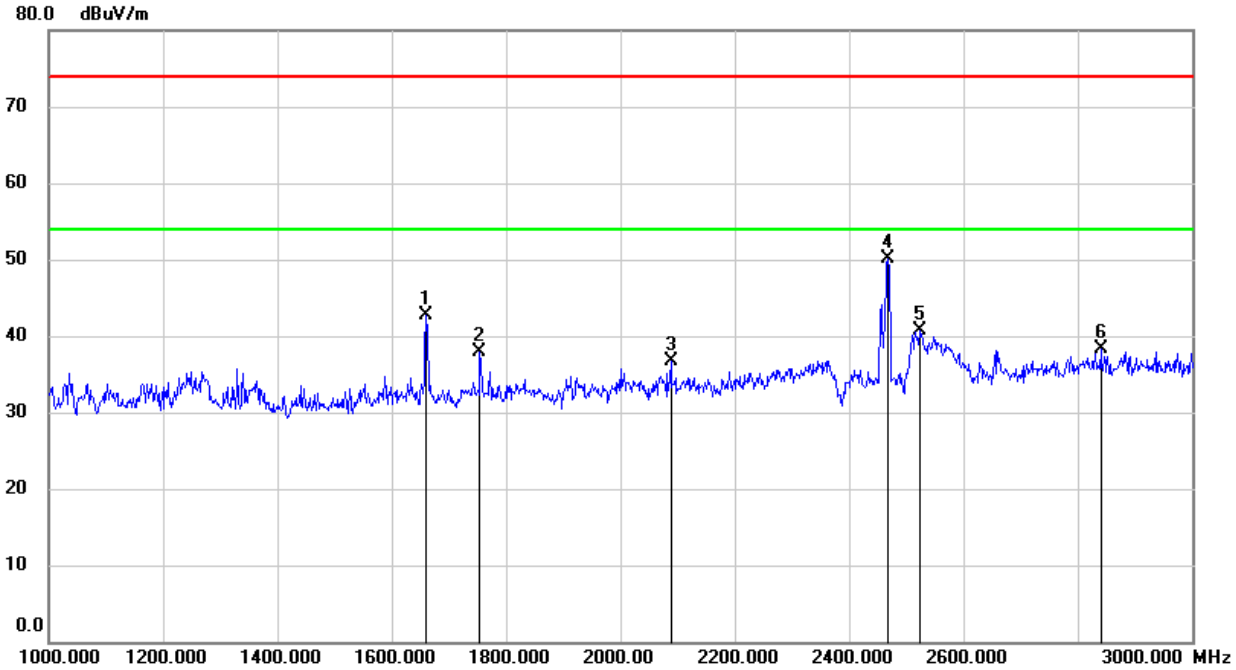
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	57.31	-13.58	43.73	74.00	-30.27	peak
2	1248.000	50.92	-12.51	38.41	74.00	-35.59	peak
3	1746.000	45.48	-10.45	35.03	74.00	-38.97	peak
4	2462.000	57.78	-7.39	50.39	/	/	fundamental
5	2672.000	49.21	-7.28	41.93	74.00	-32.07	peak
6	2718.000	49.52	-6.94	42.58	74.00	-31.42	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

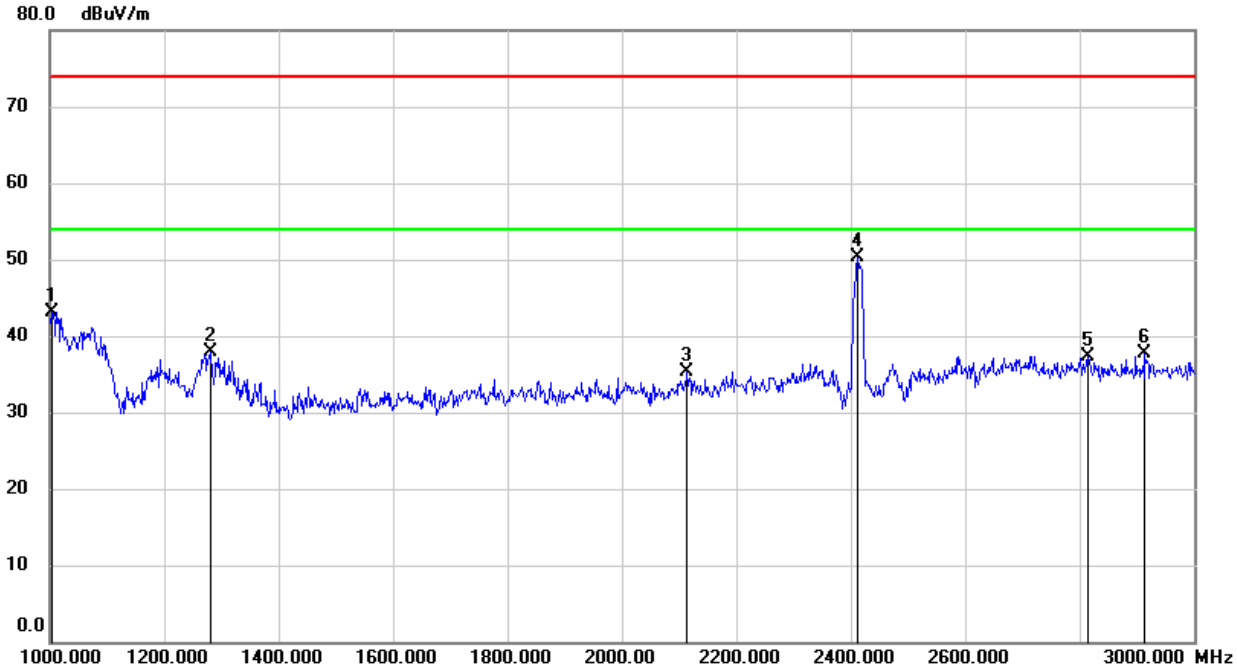


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1660.000	53.81	-11.10	42.71	74.00	-31.29	peak
2	1754.000	48.27	-10.37	37.90	74.00	-36.10	peak
3	2088.000	45.95	-9.23	36.72	74.00	-37.28	peak
4	2462.000	57.51	-7.39	50.12	/	/	fundamental
5	2524.000	48.05	-7.29	40.76	74.00	-33.24	peak
6	2840.000	44.24	-5.84	38.40	74.00	-35.60	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.2.3. 802.11n HT20 SISO MODE

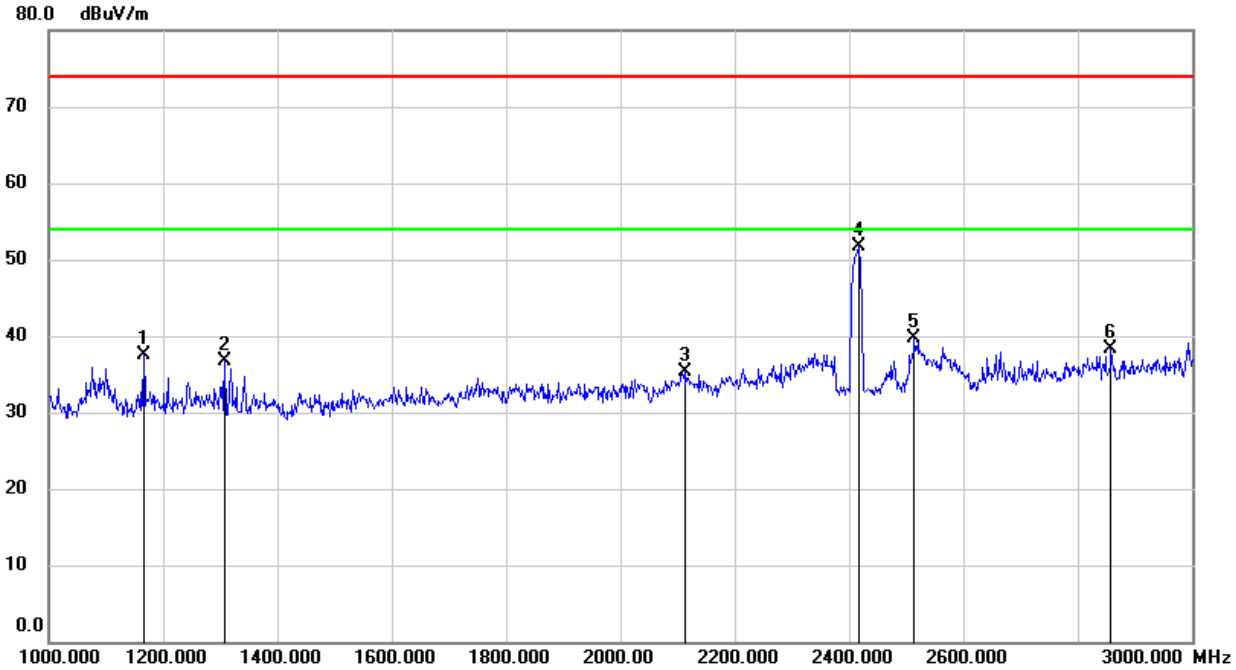
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	56.63	-13.58	43.05	74.00	-30.95	peak
2	1280.000	50.27	-12.41	37.86	74.00	-36.14	peak
3	2114.000	44.47	-9.08	35.39	74.00	-38.61	peak
4	2412.000	58.14	-7.77	50.37	/	/	fundamental
5	2814.000	43.33	-5.98	37.35	74.00	-36.65	peak
6	2914.000	43.16	-5.50	37.66	74.00	-36.34	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

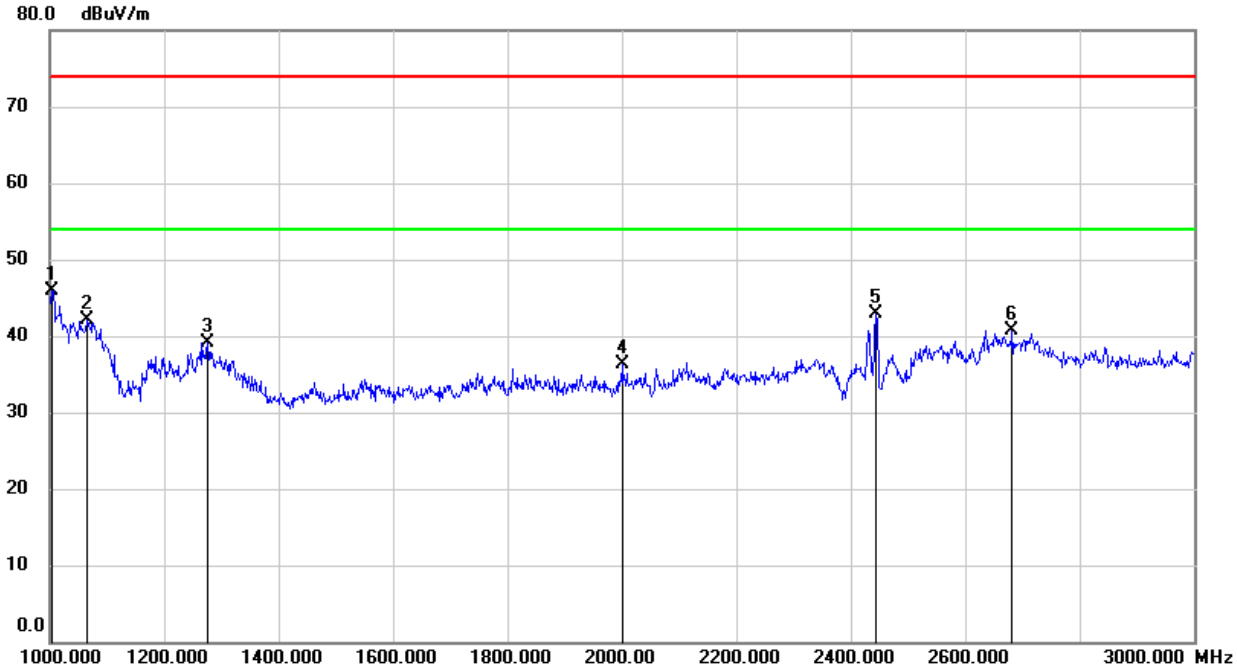
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1166.000	50.50	-12.96	37.54	74.00	-36.46	peak
2	1308.000	49.05	-12.36	36.69	74.00	-37.31	peak
3	2112.000	44.41	-9.10	35.31	74.00	-38.69	peak
4	2412.000	59.43	-7.75	51.68	/	/	fundamental
5	2514.000	46.86	-7.24	39.62	74.00	-34.38	peak
6	2858.000	44.08	-5.75	38.33	74.00	-35.67	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

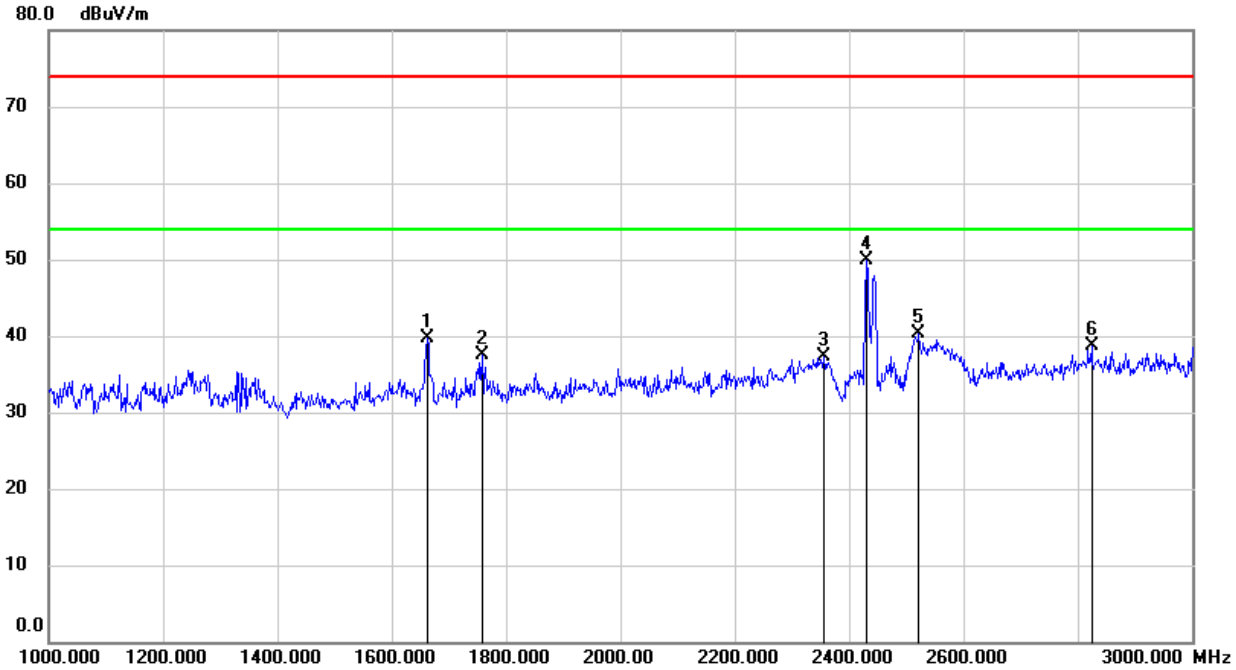
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1004.000	59.54	-13.58	45.96	74.00	-28.04	peak
2	1064.000	55.56	-13.54	42.02	74.00	-31.98	peak
3	1276.000	51.56	-12.42	39.14	74.00	-34.86	peak
4	2000.000	46.15	-9.82	36.33	74.00	-37.67	peak
5	2437.000	50.55	-7.55	43.00	/	/	fundamental
6	2682.000	48.02	-7.23	40.79	74.00	-33.21	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

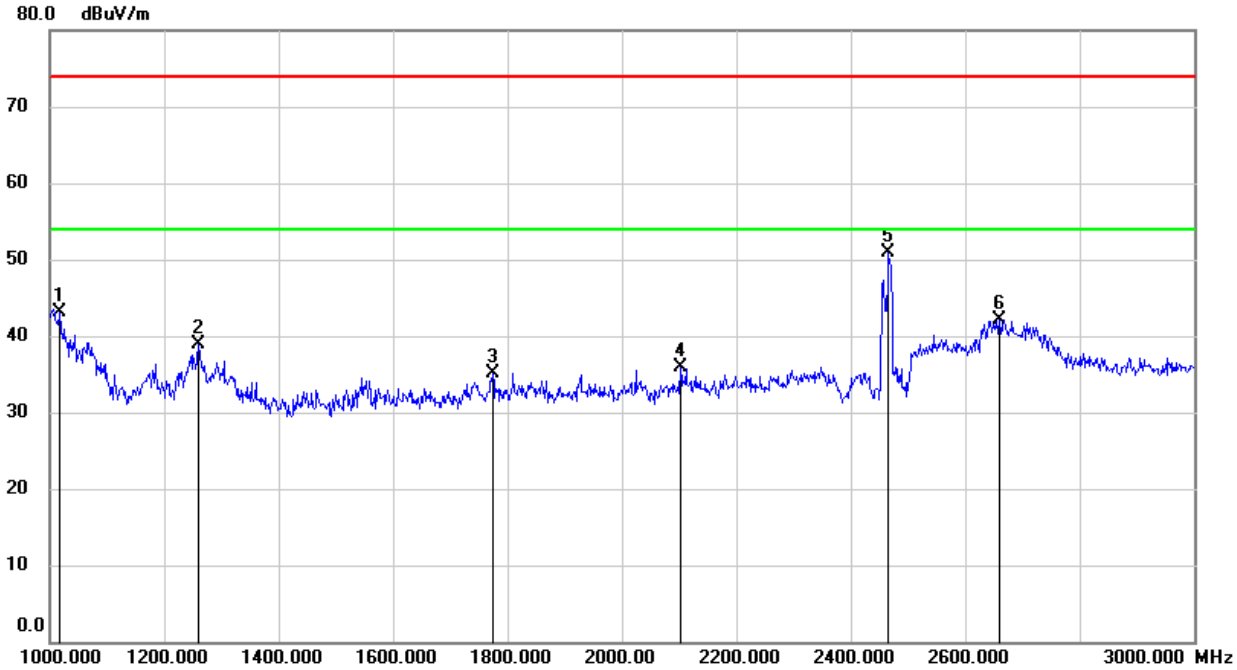
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1662.000	50.74	-11.09	39.65	74.00	-34.35	peak
2	1758.000	47.81	-10.33	37.48	74.00	-36.52	peak
3	2356.000	45.40	-8.00	37.40	74.00	-36.60	peak
4	2437.000	57.60	-7.65	49.95	/	/	fundamental
5	2522.000	47.60	-7.28	40.32	74.00	-33.68	peak
6	2824.000	44.58	-5.92	38.66	74.00	-35.34	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

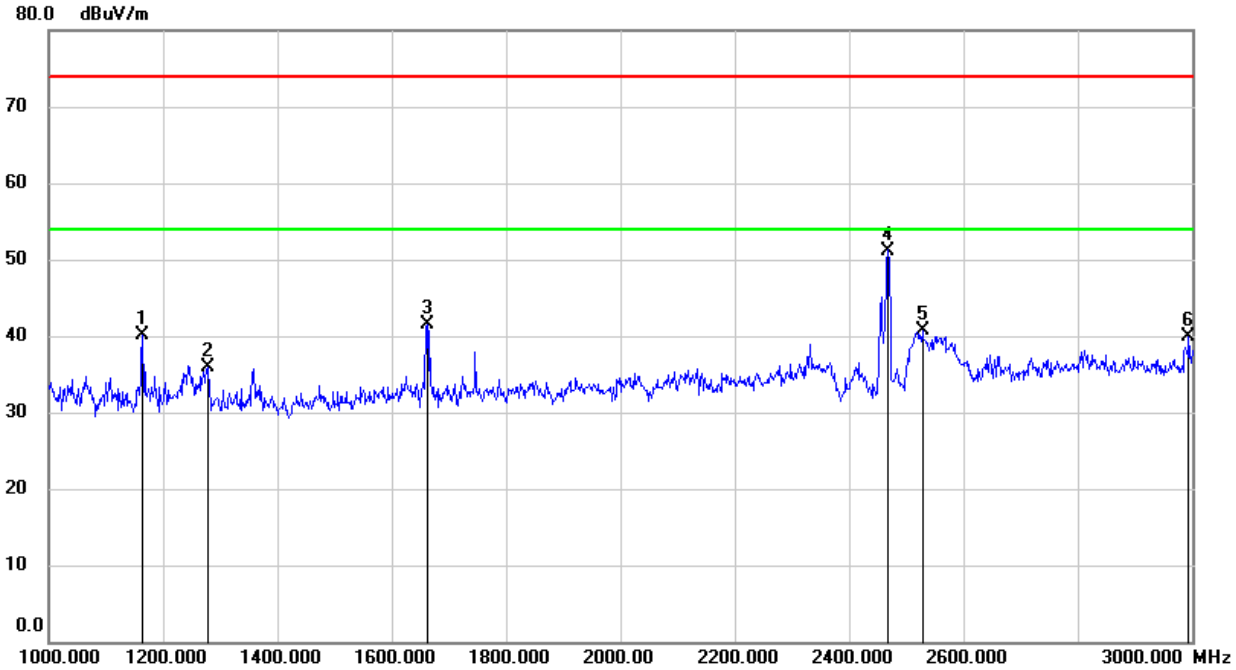
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1018.000	56.61	-13.58	43.03	74.00	-30.97	peak
2	1260.000	51.45	-12.48	38.97	74.00	-35.03	peak
3	1774.000	45.19	-10.17	35.02	74.00	-38.98	peak
4	2102.000	45.06	-9.15	35.91	74.00	-38.09	peak
5	2462.000	58.27	-7.40	50.87	/	/	fundamental
6	2660.000	49.54	-7.35	42.19	74.00	-31.81	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

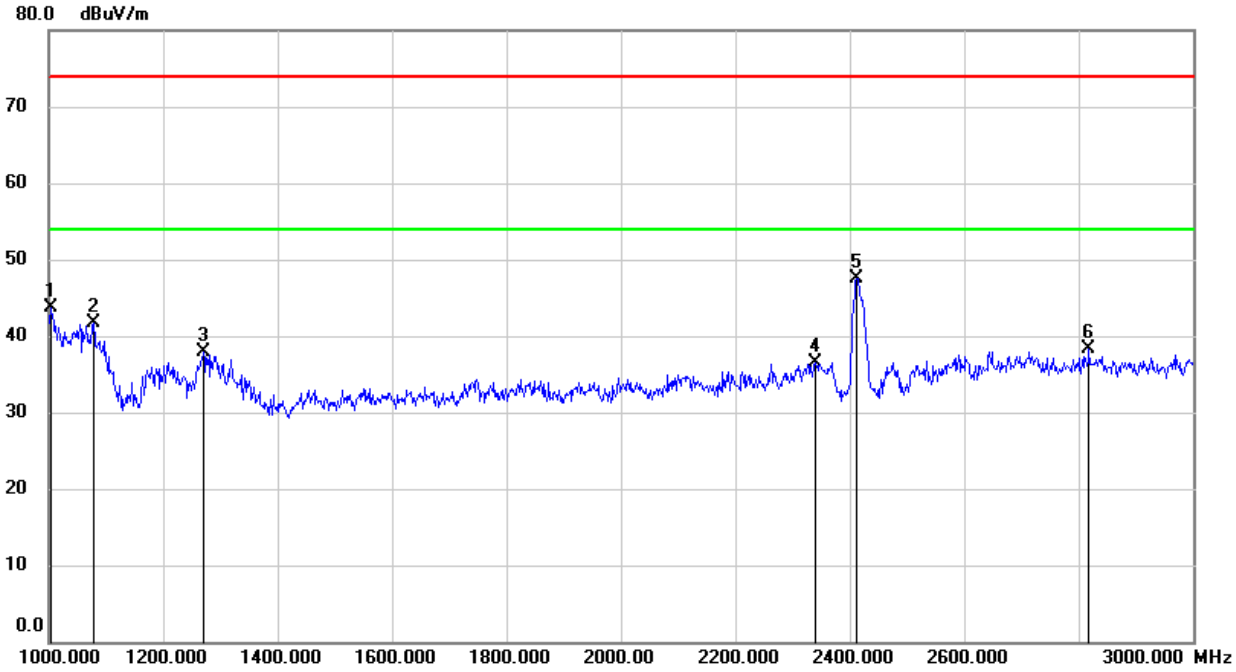


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1164.000	53.01	-12.97	40.04	74.00	-33.96	peak
2	1278.000	48.30	-12.42	35.88	74.00	-38.12	peak
3	1662.000	52.64	-11.09	41.55	74.00	-32.45	peak
4	2462.000	58.59	-7.39	51.20	/	/	fundamental
5	2528.000	47.93	-7.32	40.61	74.00	-33.39	peak
6	2994.000	45.14	-5.31	39.83	74.00	-34.17	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.2.4. 802.11n HT40 SISO MODE

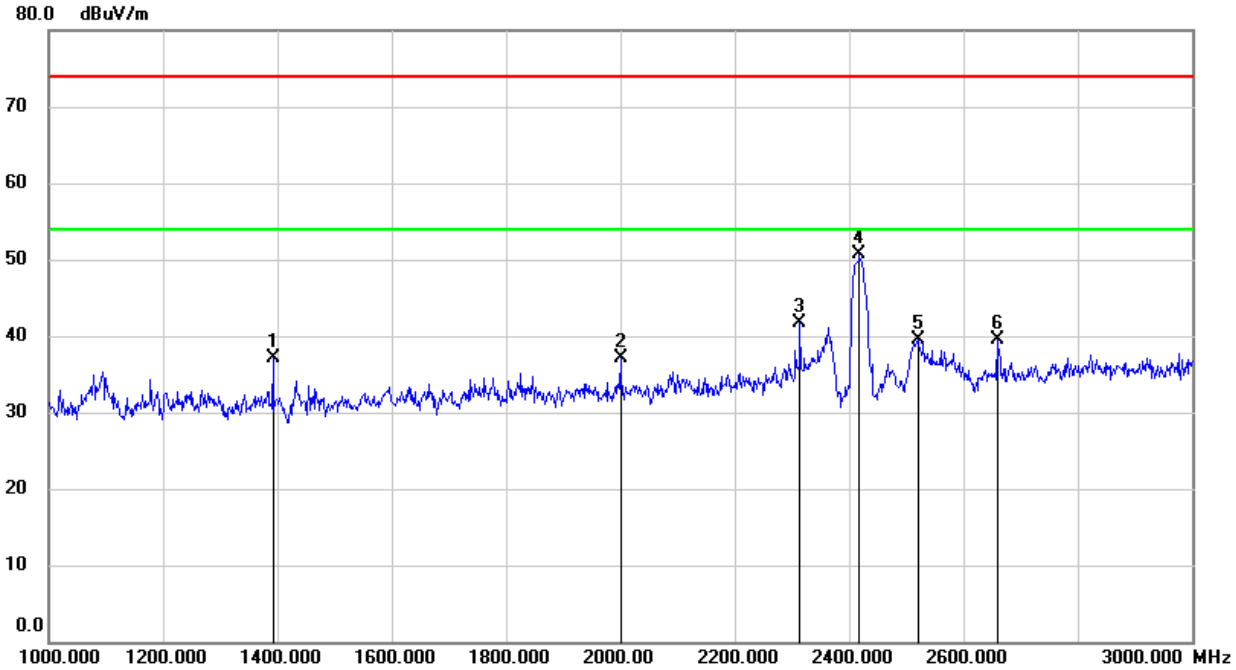
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	57.19	-13.58	43.61	74.00	-30.39	peak
2	1078.000	55.23	-13.53	41.70	74.00	-32.30	peak
3	1270.000	50.28	-12.44	37.84	74.00	-36.16	peak
4	2340.000	44.50	-8.06	36.44	74.00	-37.56	peak
5	2422.000	55.24	-7.77	47.47	/	/	fundamental
6	2818.000	44.19	-5.97	38.22	74.00	-35.78	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

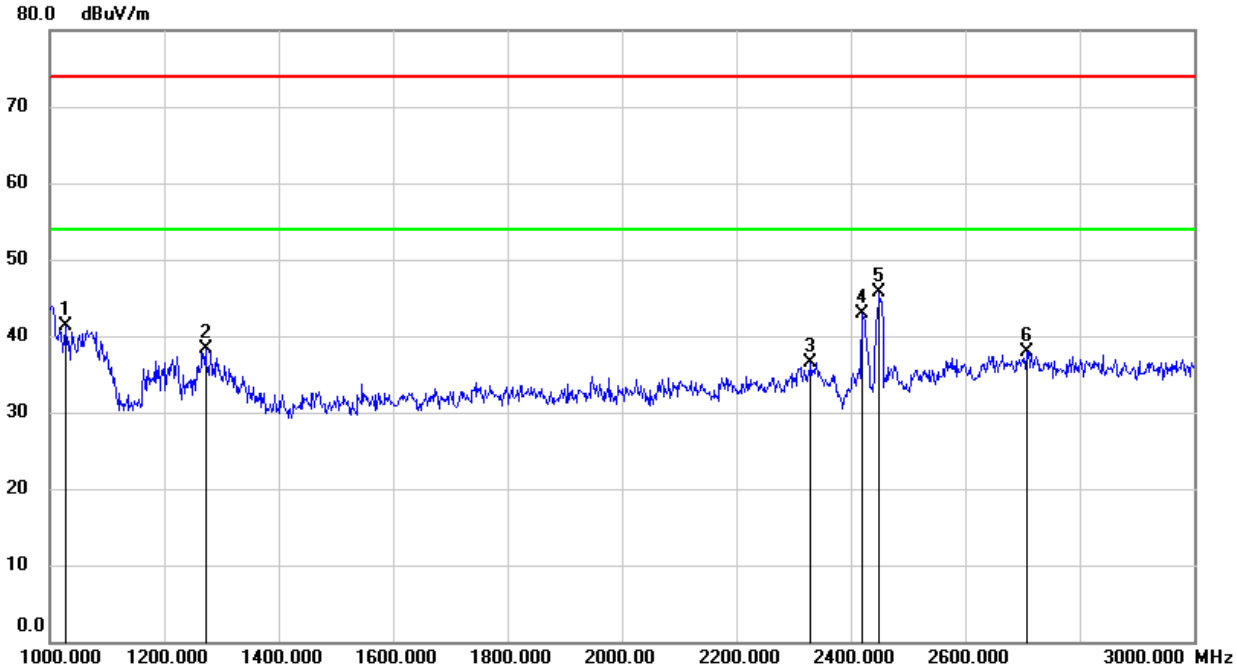
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1392.000	49.56	-12.37	37.19	74.00	-36.81	peak
2	2000.000	46.90	-9.82	37.08	74.00	-36.92	peak
3	2314.000	49.82	-8.14	41.68	74.00	-32.32	peak
4	2422.000	58.51	-7.74	50.77	/	/	fundamental
5	2520.000	46.87	-7.27	39.60	74.00	-34.40	peak
6	2660.000	46.87	-7.35	39.52	74.00	-34.48	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

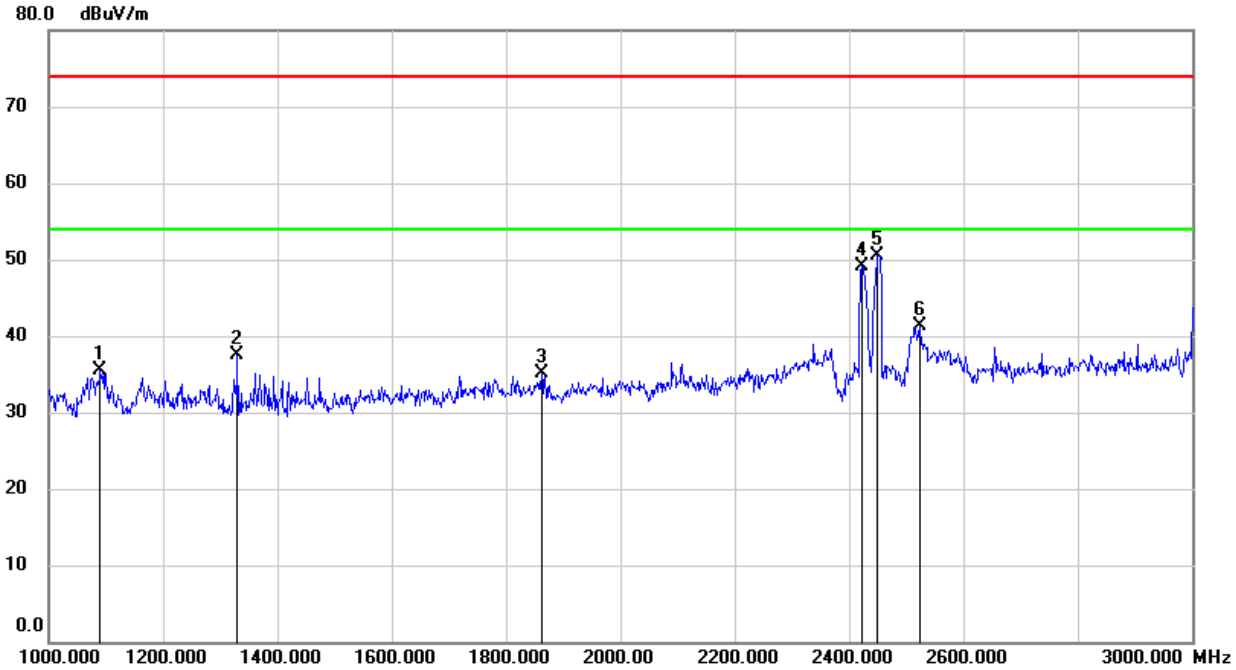
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1028.000	54.97	-13.58	41.39	74.00	-32.61	peak
2	1272.000	50.81	-12.44	38.37	74.00	-35.63	peak
3	2330.000	44.60	-8.10	36.50	74.00	-37.50	peak
4	2427.000	50.55	-7.72	42.83	74.00	-31.17	peak
5	2437.000	53.24	-7.51	45.73	/	/	fundamental
6	2708.000	44.98	-7.04	37.94	74.00	-36.06	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

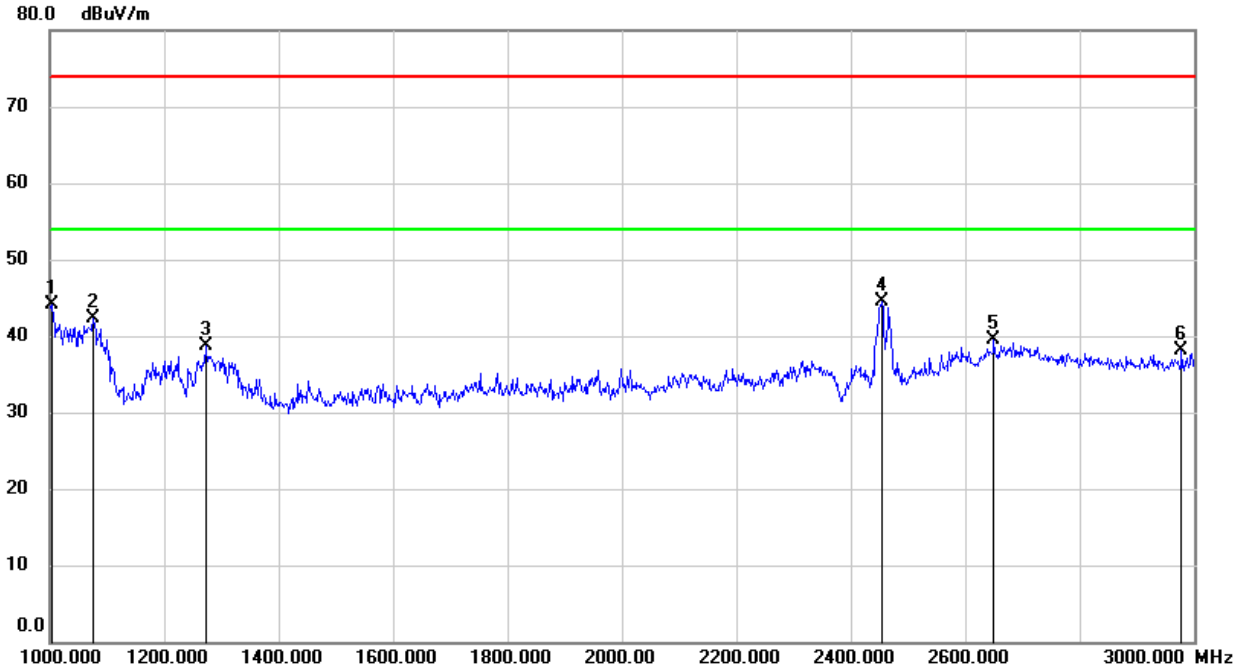
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1090.000	48.97	-13.53	35.44	74.00	-38.56	peak
2	1330.000	49.80	-12.36	37.44	74.00	-36.56	peak
3	1862.000	44.99	-9.94	35.05	74.00	-38.95	peak
4	2429.000	56.90	-7.71	49.19	74.00	-24.81	peak
5	2437.000	58.02	-7.51	50.51	/	/	fundamental
6	2524.000	48.53	-7.29	41.24	74.00	-32.76	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

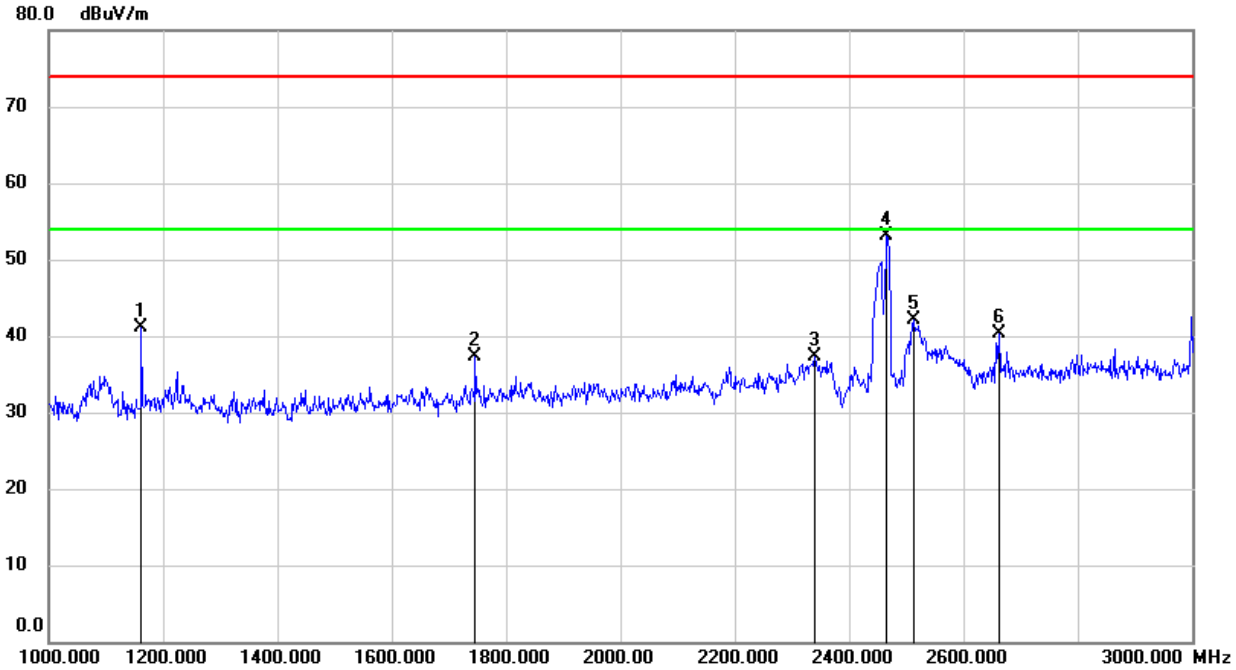
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	57.65	-13.58	44.07	74.00	-29.93	peak
2	1076.000	55.74	-13.53	42.21	74.00	-31.79	peak
3	1272.000	51.21	-12.44	38.77	74.00	-35.23	peak
4	2452.000	52.07	-7.48	44.59	/	/	fundamental
5	2650.000	46.89	-7.42	39.47	74.00	-34.53	peak
6	2978.000	43.37	-5.35	38.02	74.00	-35.98	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



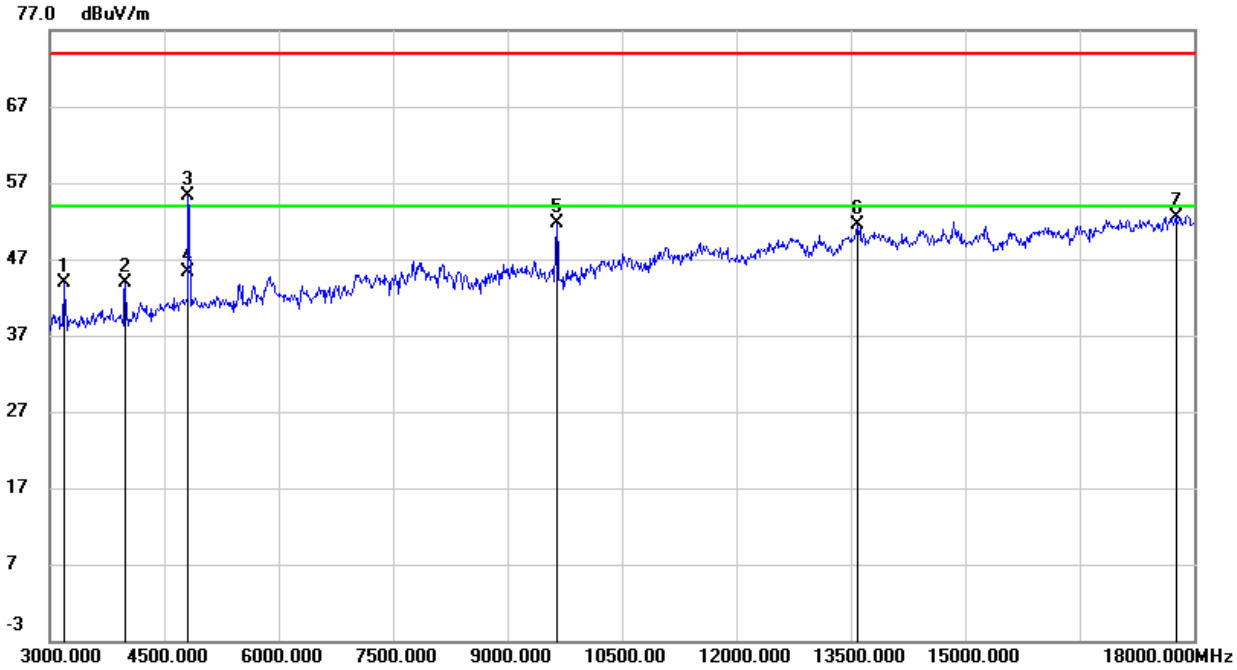
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1162.000	54.19	-13.00	41.19	74.00	-32.81	peak
2	1746.000	47.69	-10.45	37.24	74.00	-36.76	peak
3	2340.000	45.27	-8.06	37.21	74.00	-36.79	peak
4	2452.000	60.48	-7.40	53.08	/	/	fundamental
5	2512.000	49.31	-7.23	42.08	74.00	-31.92	peak
6	2662.000	47.71	-7.35	40.36	74.00	-33.64	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 the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.3. SPURIOUS EMISSIONS (3GHz ~ 18GHz)

8.3.1. 802.11b SISO MODE

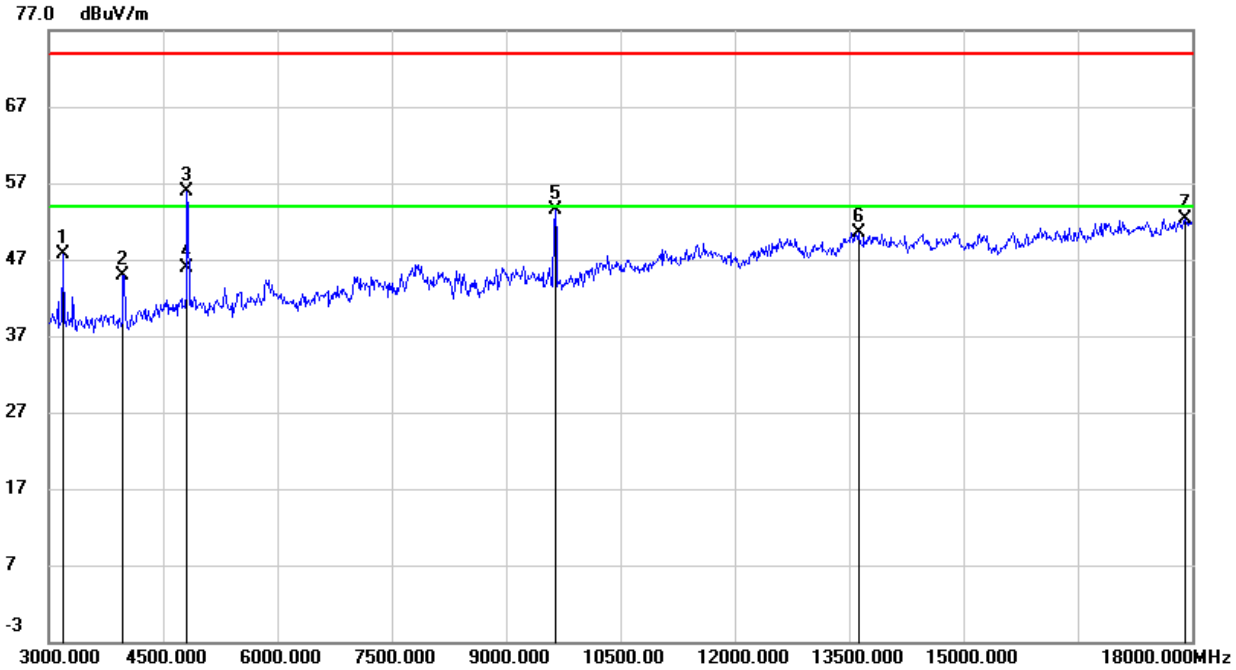
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3180.000	48.16	-4.33	43.83	74.00	-30.17	peak
2	3990.000	46.88	-2.89	43.99	74.00	-30.01	peak
3	4823.292	54.74	0.56	55.30	74.00	-18.70	peak
4	4823.292	44.71	0.56	45.27	54.00	-8.73	AVG
5	9645.000	41.96	9.66	51.62	74.00	-22.38	peak
6	13590.000	35.48	16.00	51.48	74.00	-22.52	peak
7	17760.000	29.65	22.95	52.60	74.00	-21.40	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

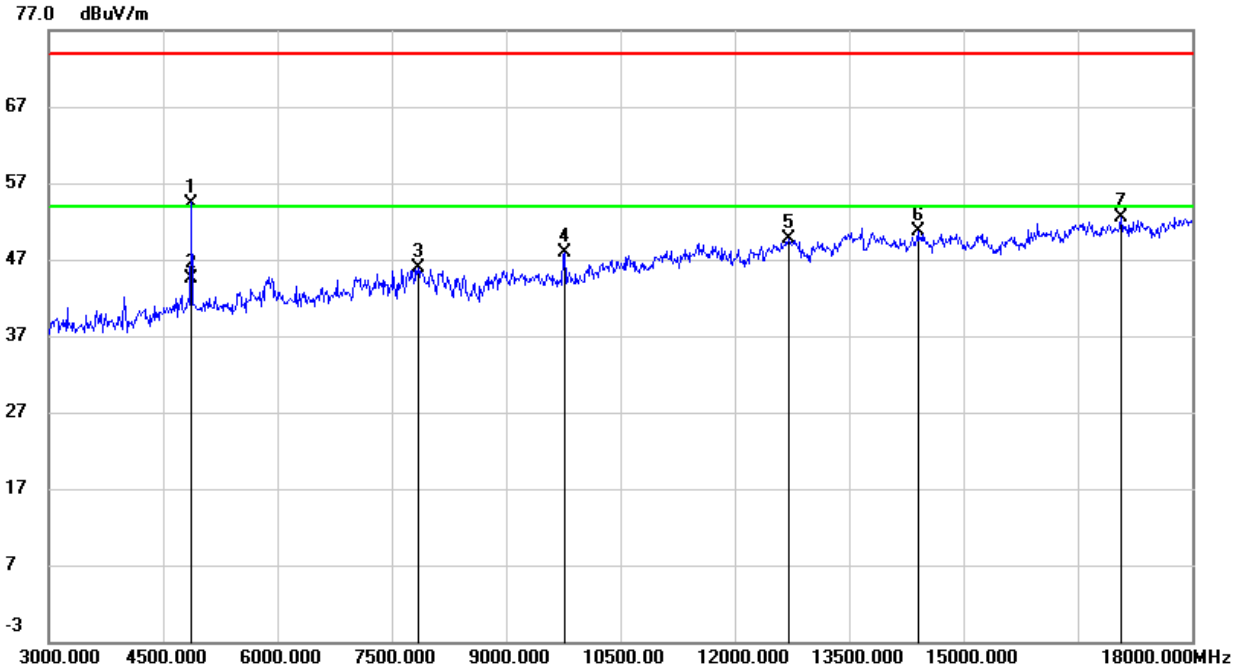
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3180.000	51.96	-4.33	47.63	74.00	-26.37	peak
2	3975.000	47.83	-2.90	44.93	74.00	-29.07	peak
3	4823.270	55.43	0.56	55.99	74.00	-18.01	peak
4	4823.270	45.25	0.56	45.81	54.00	-8.19	AVG
5	9645.000	43.83	9.66	53.49	74.00	-20.51	peak
6	13620.000	34.55	15.99	50.54	74.00	-23.46	peak
7	17910.000	29.01	23.35	52.36	74.00	-21.64	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

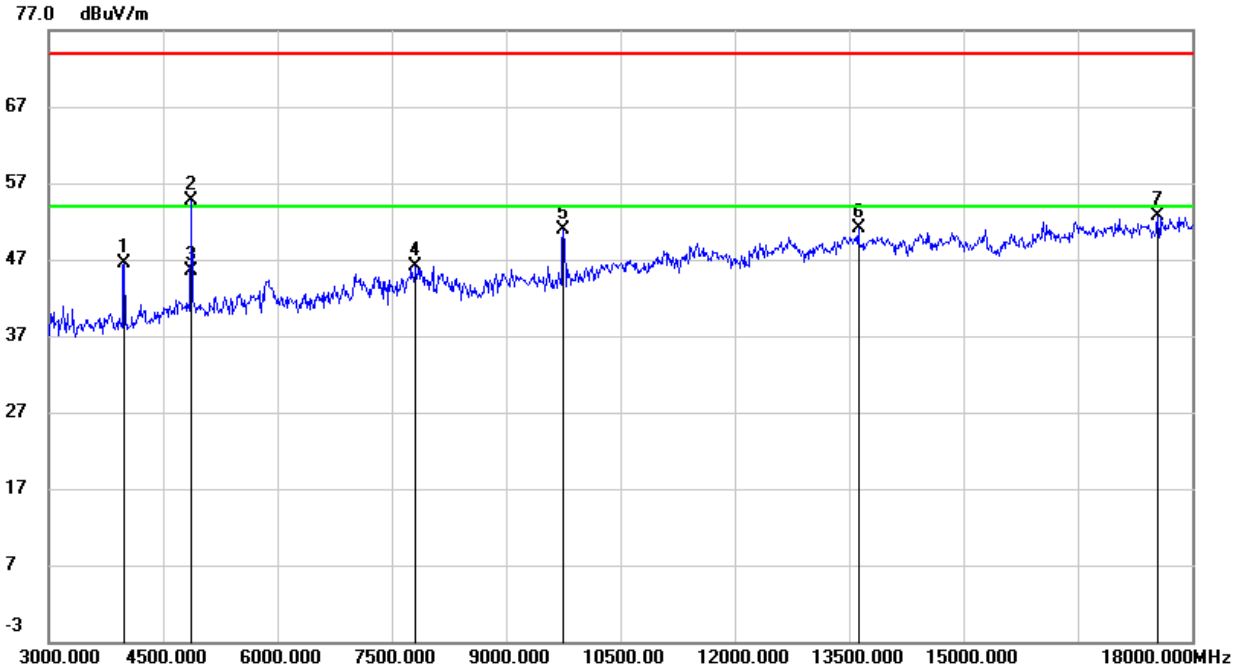
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4873.300	53.65	0.75	54.40	74.00	-19.60	peak
2	4873.300	43.68	0.75	44.43	54.00	-9.57	AVG
3	7845.000	38.36	7.62	45.98	74.00	-28.02	peak
4	9765.000	38.21	9.69	47.90	74.00	-26.10	peak
5	12705.000	35.31	14.35	49.66	74.00	-24.34	peak
6	14400.000	34.26	16.35	50.61	74.00	-23.39	peak
7	17070.000	31.86	20.57	52.43	74.00	-21.57	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

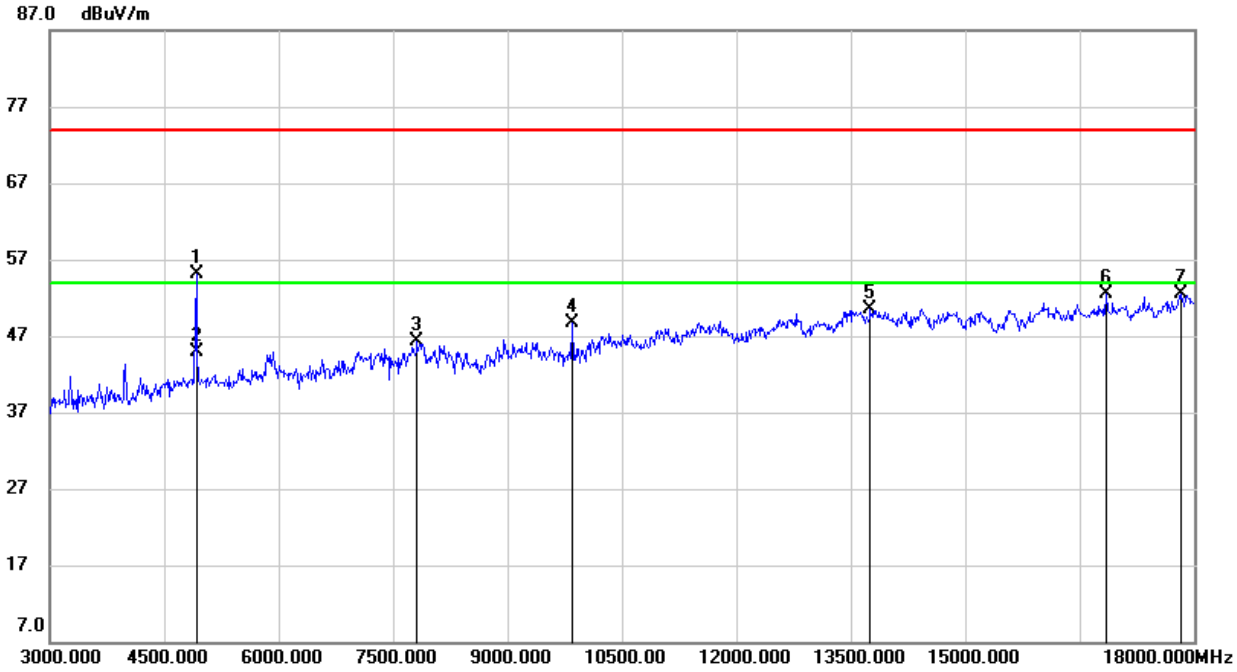
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3990.000	49.44	-2.89	46.55	74.00	-27.45	peak
2	4873.320	54.01	0.75	54.76	74.00	-19.24	peak
3	4873.320	44.74	0.75	45.49	54.00	-8.51	AVG
4	7815.000	38.22	7.83	46.05	74.00	-27.95	peak
5	9750.000	41.15	9.68	50.83	74.00	-23.17	peak
6	13620.000	35.15	15.99	51.14	74.00	-22.86	peak
7	17550.000	31.08	21.57	52.65	74.00	-21.35	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

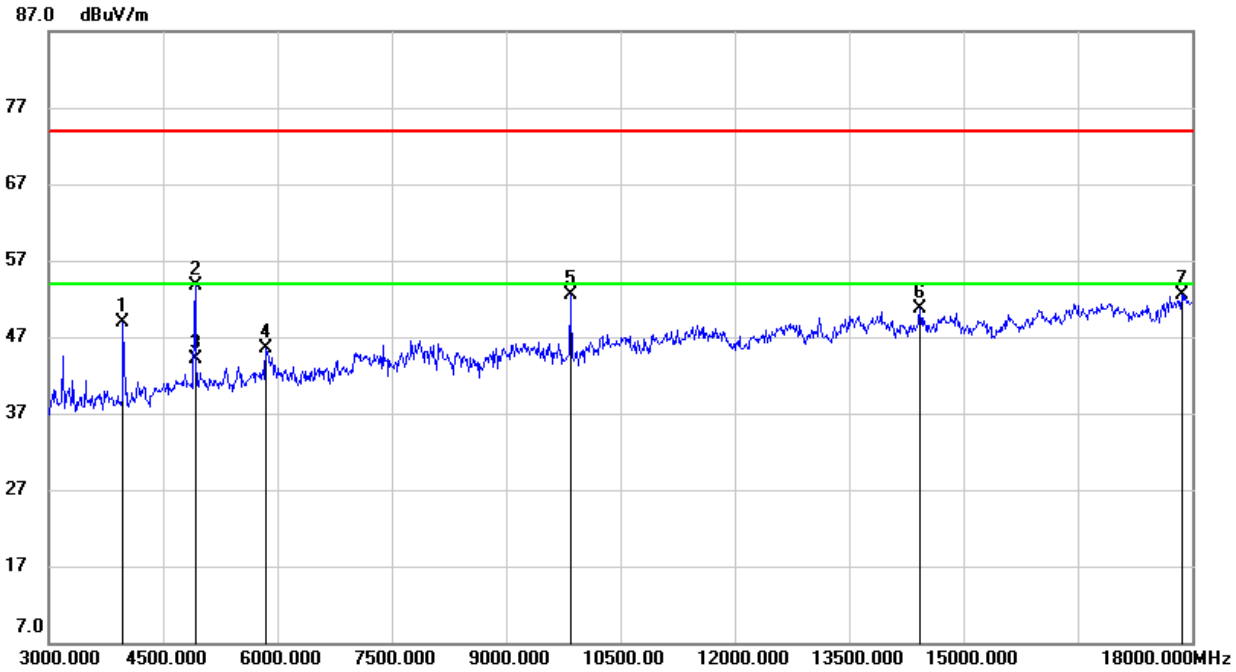
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4924.116	54.05	0.98	55.03	74.00	-18.97	peak
2	4924.116	43.97	0.98	44.95	54.00	-9.05	AVG
3	7815.000	38.53	7.83	46.36	74.00	-27.64	peak
4	9855.000	38.69	9.92	48.61	74.00	-25.39	peak
5	13755.000	33.93	16.54	50.47	74.00	-23.53	peak
6	16845.000	32.45	19.96	52.41	74.00	-21.59	peak
7	17820.000	29.20	23.30	52.50	74.00	-21.50	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

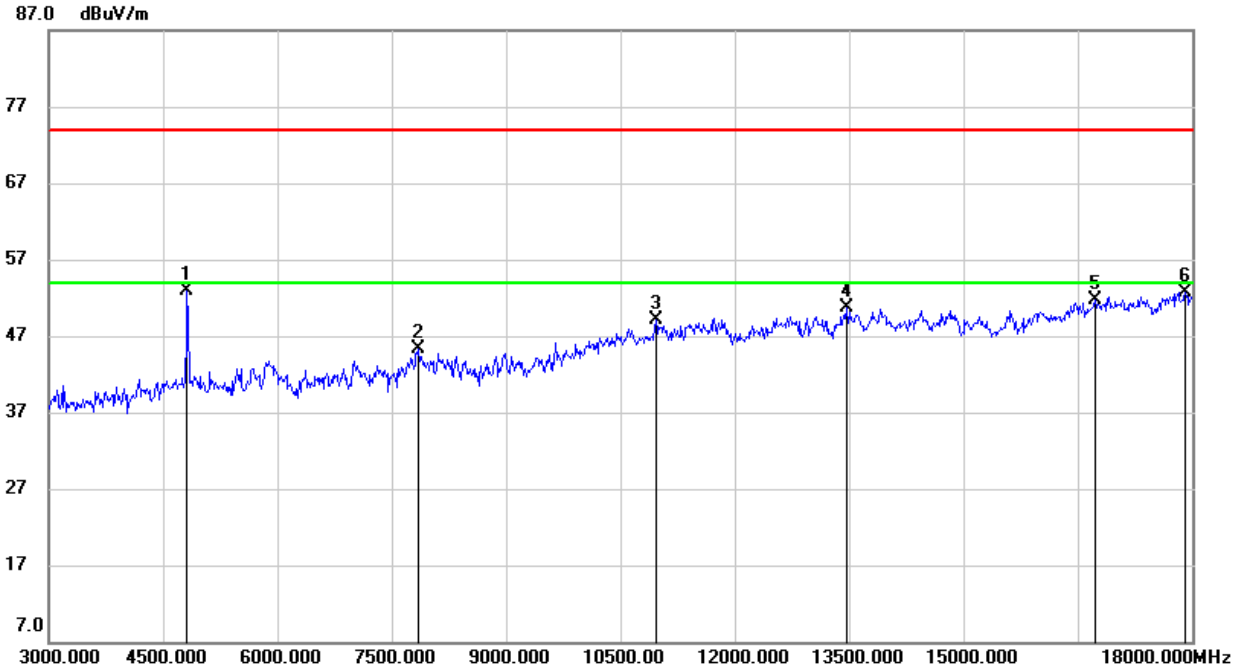


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3975.000	51.75	-2.90	48.85	74.00	-25.15	peak
2	4923.277	52.80	0.98	53.78	74.00	-20.22	peak
3	4923.277	43.14	0.98	44.12	54.00	-9.88	AVG
4	5850.000	41.40	4.02	45.42	74.00	-28.58	peak
5	9840.000	42.61	9.86	52.47	74.00	-21.53	peak
6	14430.000	34.39	16.35	50.74	74.00	-23.26	peak
7	17865.000	29.23	23.33	52.56	74.00	-21.44	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.3.2. 802.11g SISO MODE

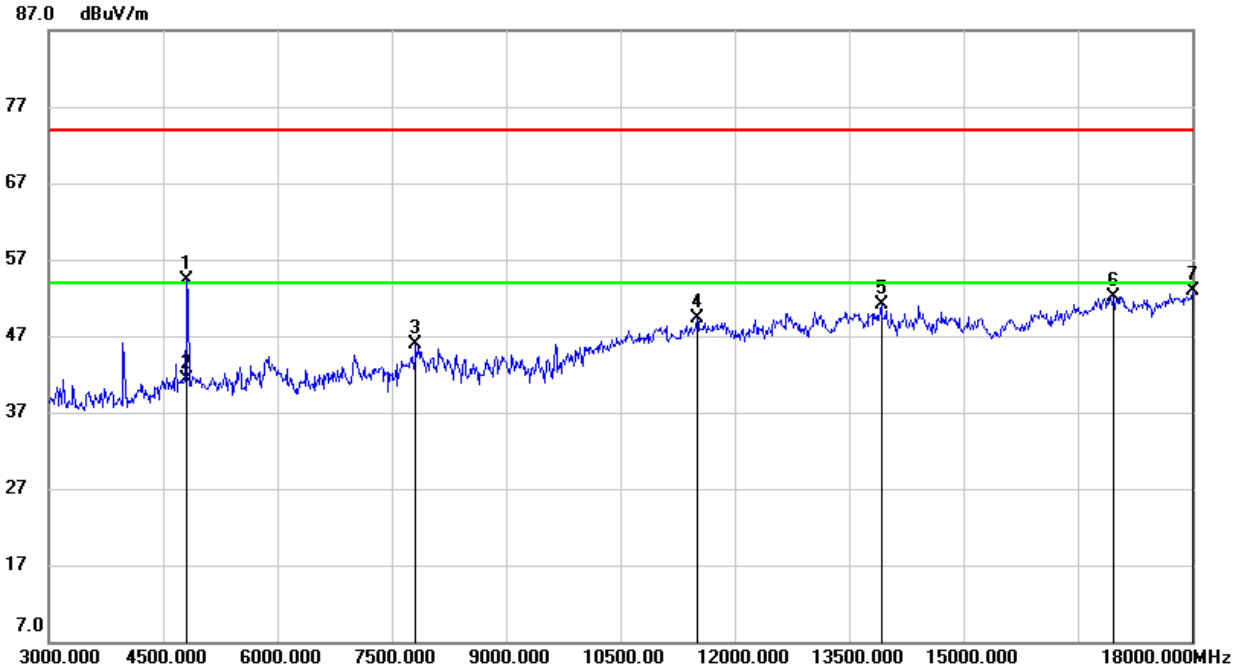
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	52.42	0.51	52.93	74.00	-21.07	peak
2	7845.000	37.63	7.62	45.25	74.00	-28.75	peak
3	10965.000	36.79	12.32	49.11	74.00	-24.89	peak
4	13470.000	34.90	15.87	50.77	74.00	-23.23	peak
5	16725.000	31.72	19.93	51.65	74.00	-22.35	peak
6	17910.000	29.38	23.35	52.73	74.00	-21.27	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

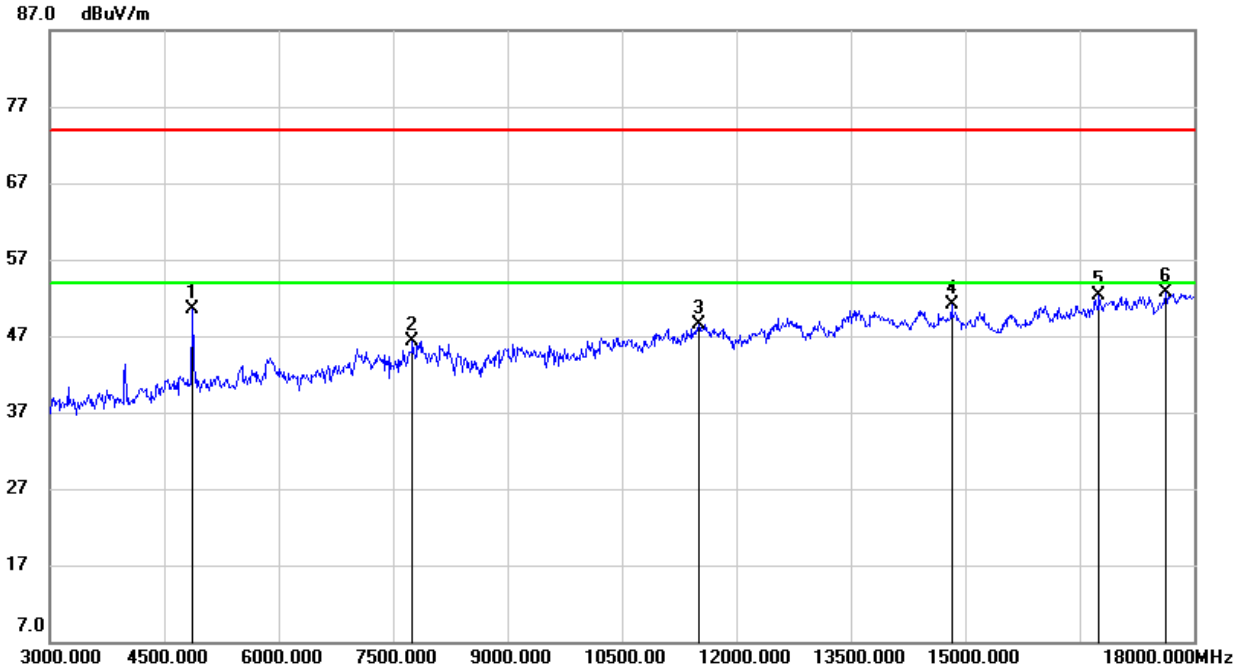
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4824.840	53.83	0.56	54.39	74.00	-19.61	peak
2	4824.840	40.68	0.56	41.24	54.00	-12.76	AVG
3	7815.000	38.09	7.83	45.92	74.00	-28.08	peak
4	11505.000	35.93	13.42	49.35	74.00	-24.65	peak
5	13920.000	34.96	16.17	51.13	74.00	-22.87	peak
6	16965.000	31.88	20.25	52.13	74.00	-21.87	peak
7	18000.000	29.49	23.46	52.95	74.00	-21.05	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
5. For the transmitting duration, please refer to clause 7.1.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.

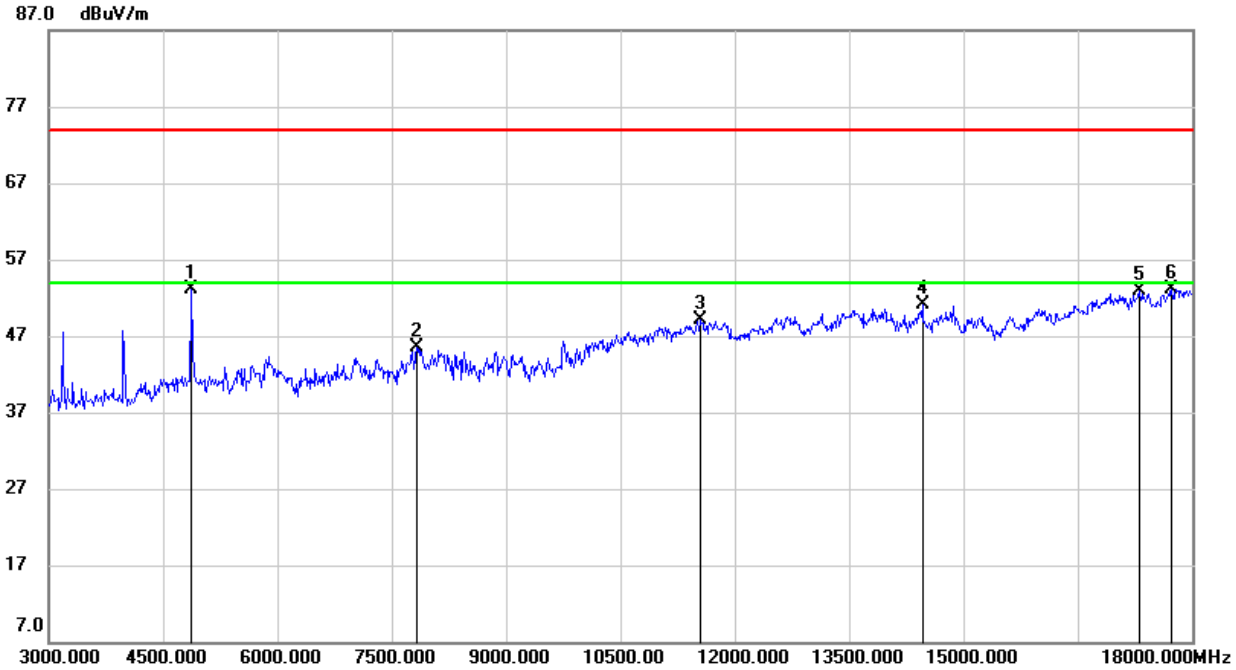
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	49.70	0.76	50.46	74.00	-23.54	peak
2	7755.000	39.02	7.29	46.31	74.00	-27.69	peak
3	11505.000	35.12	13.42	48.54	74.00	-25.46	peak
4	14820.000	35.13	15.94	51.07	74.00	-22.93	peak
5	16755.000	32.34	19.94	52.28	74.00	-21.72	peak
6	17625.000	30.69	21.95	52.64	74.00	-21.36	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

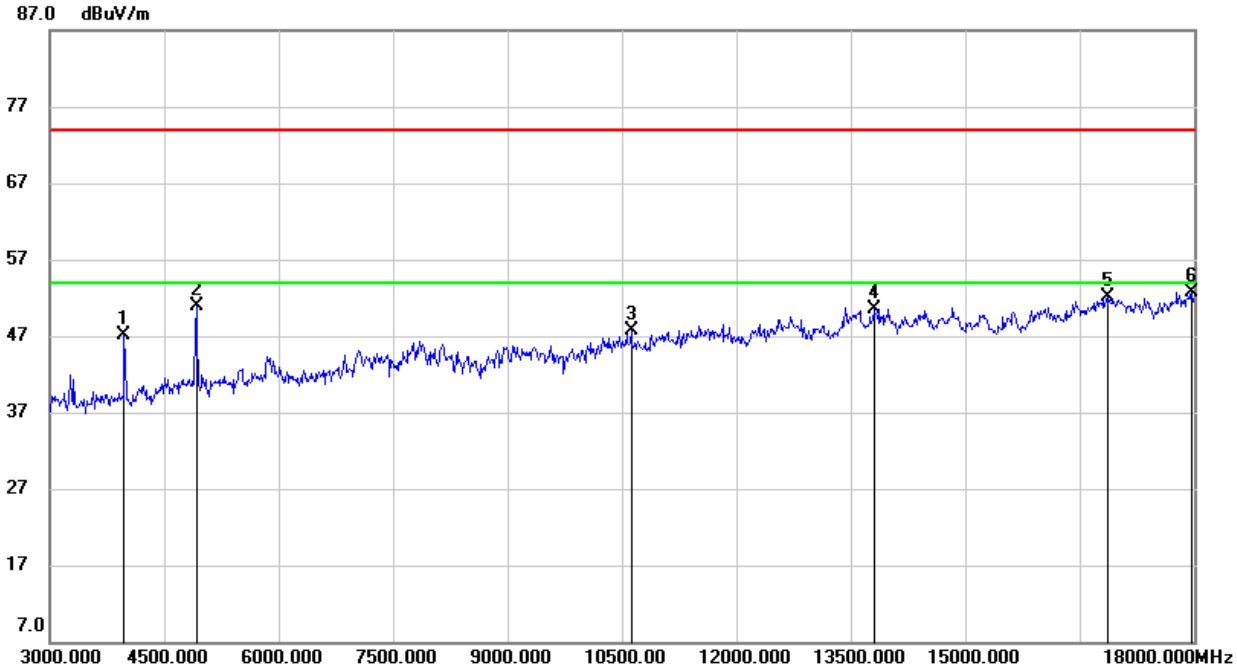
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	52.25	0.76	53.01	74.00	-20.99	peak
2	7830.000	37.83	7.72	45.55	74.00	-28.45	peak
3	11550.000	35.75	13.30	49.05	74.00	-24.95	peak
4	14460.000	34.66	16.36	51.02	74.00	-22.98	peak
5	17310.000	31.20	21.72	52.92	74.00	-21.08	peak
6	17730.000	30.49	22.70	53.19	74.00	-20.81	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

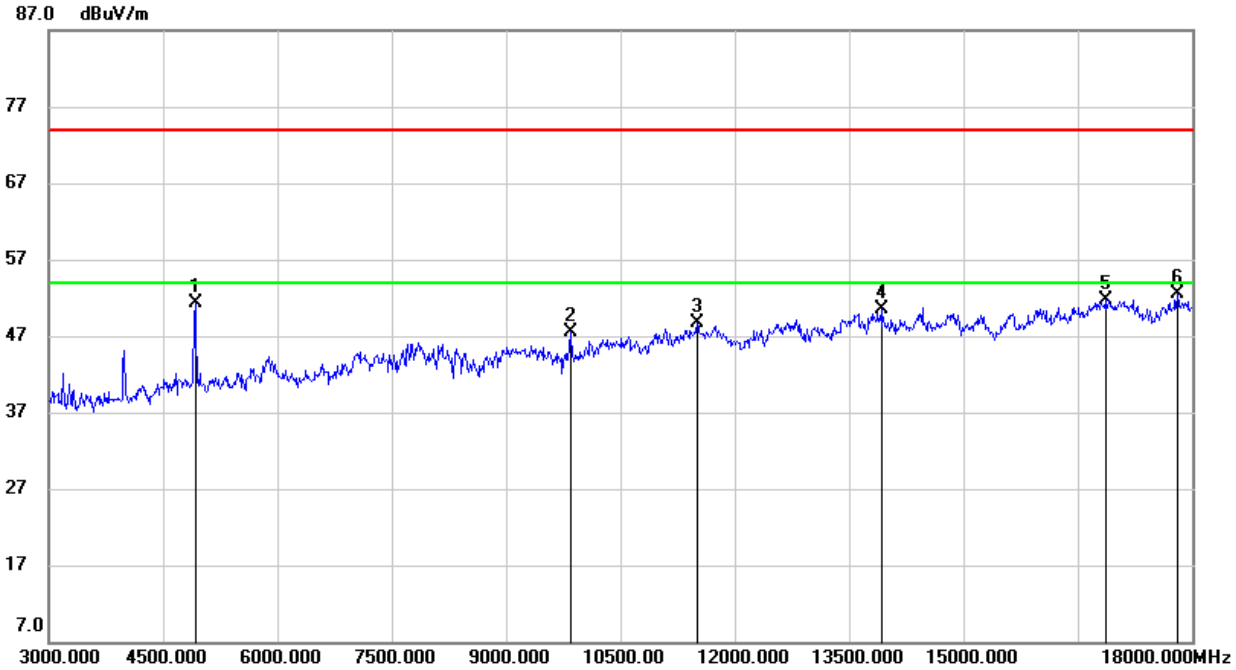
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3975.000	50.04	-2.90	47.14	74.00	-26.86	peak
2	4920.000	49.85	0.96	50.81	74.00	-23.19	peak
3	10620.000	35.86	11.88	47.74	74.00	-26.26	peak
4	13800.000	33.46	17.10	50.56	74.00	-23.44	peak
5	16860.000	32.25	19.95	52.20	74.00	-21.80	peak
6	17970.000	29.25	23.42	52.67	74.00	-21.33	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

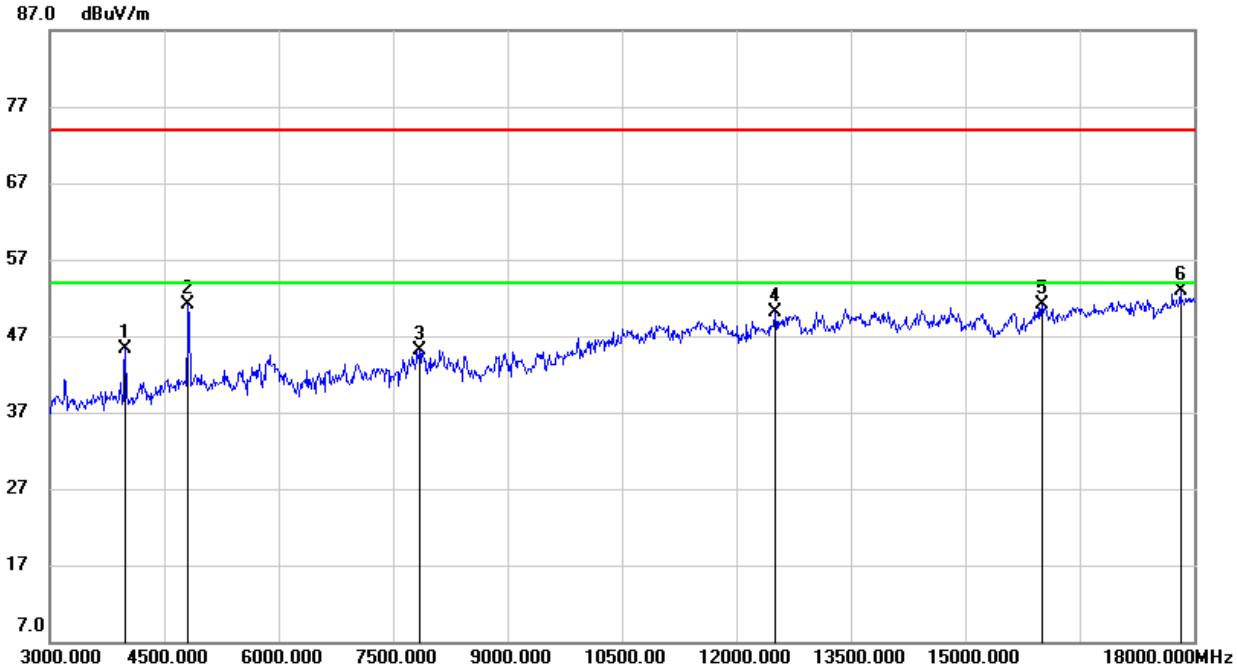


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	50.31	0.96	51.27	74.00	-22.73	peak
2	9840.000	37.56	9.86	47.42	74.00	-26.58	peak
3	11505.000	35.32	13.42	48.74	74.00	-25.26	peak
4	13920.000	34.27	16.17	50.44	74.00	-23.56	peak
5	16860.000	31.81	19.95	51.76	74.00	-22.24	peak
6	17805.000	29.21	23.31	52.52	74.00	-21.48	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

8.3.3. 802.11n HT20 SISO MODE

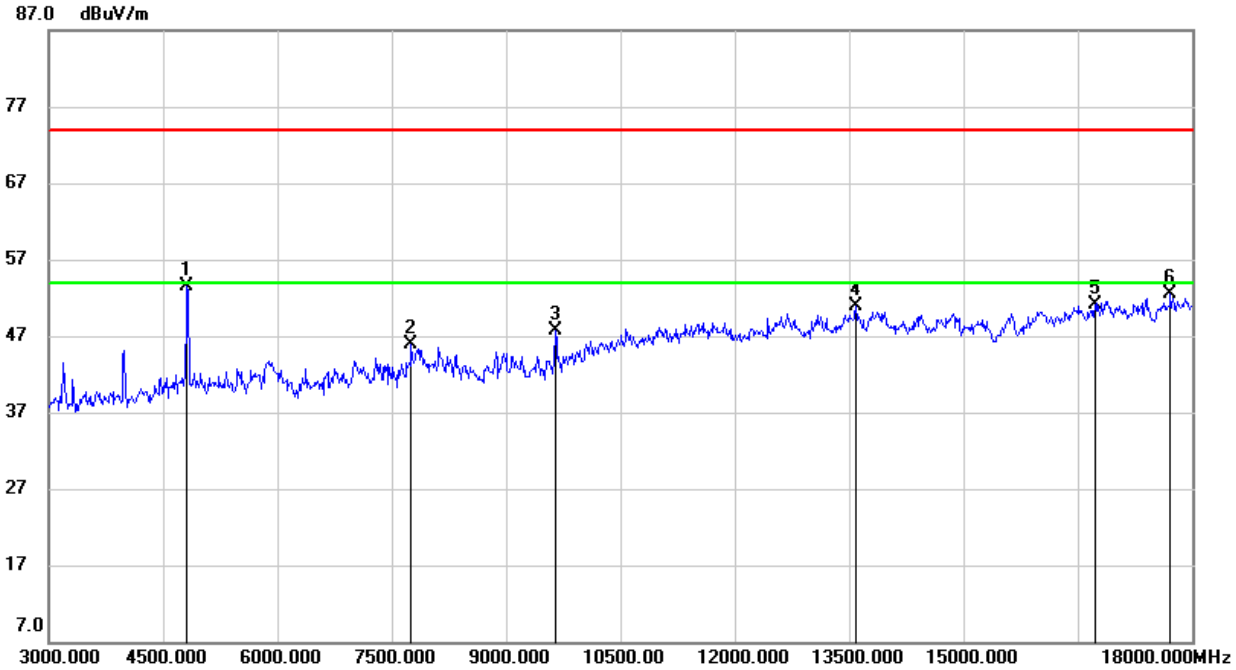
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3990.000	48.15	-2.89	45.26	74.00	-28.74	peak
2	4815.000	50.58	0.51	51.09	74.00	-22.91	peak
3	7845.000	37.52	7.62	45.14	74.00	-28.86	peak
4	12510.000	35.50	14.51	50.01	74.00	-23.99	peak
5	16005.000	33.43	17.71	51.14	74.00	-22.86	peak
6	17820.000	29.62	23.30	52.92	74.00	-21.08	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

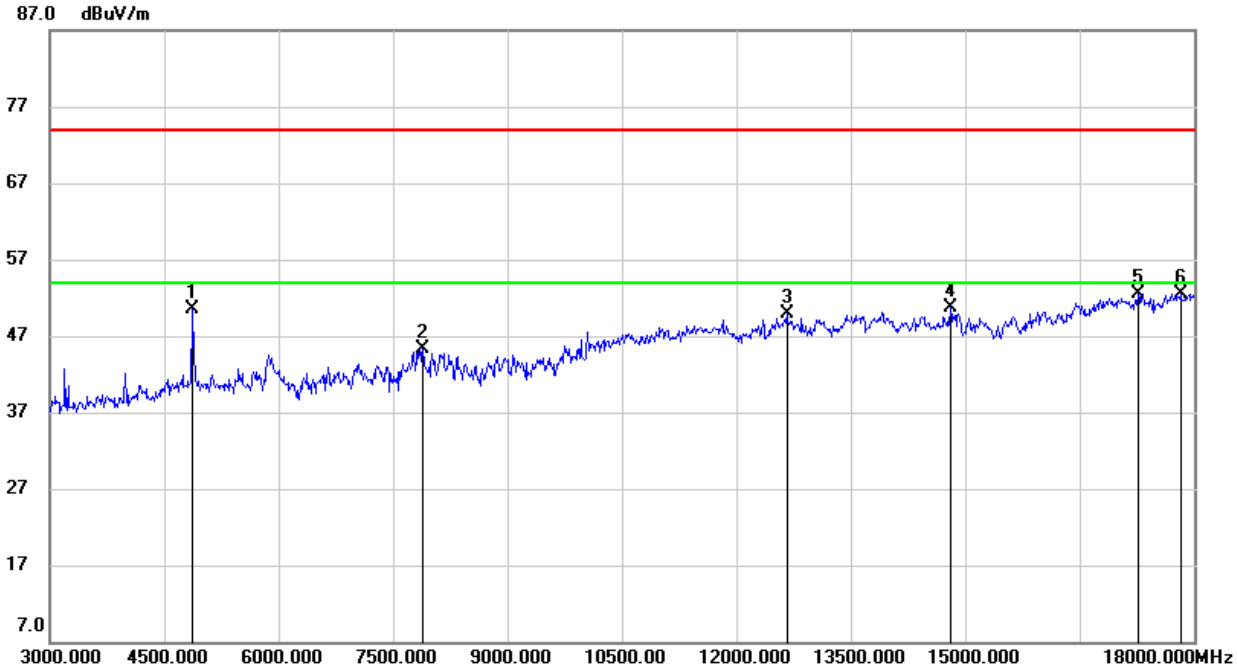
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	52.91	0.51	53.42	74.00	-20.58	peak
2	7755.000	38.58	7.29	45.87	74.00	-28.13	peak
3	9645.000	38.05	9.66	47.71	74.00	-26.29	peak
4	13590.000	34.82	16.00	50.82	74.00	-23.18	peak
5	16725.000	31.10	19.93	51.03	74.00	-22.97	peak
6	17715.000	29.86	22.56	52.42	74.00	-21.58	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

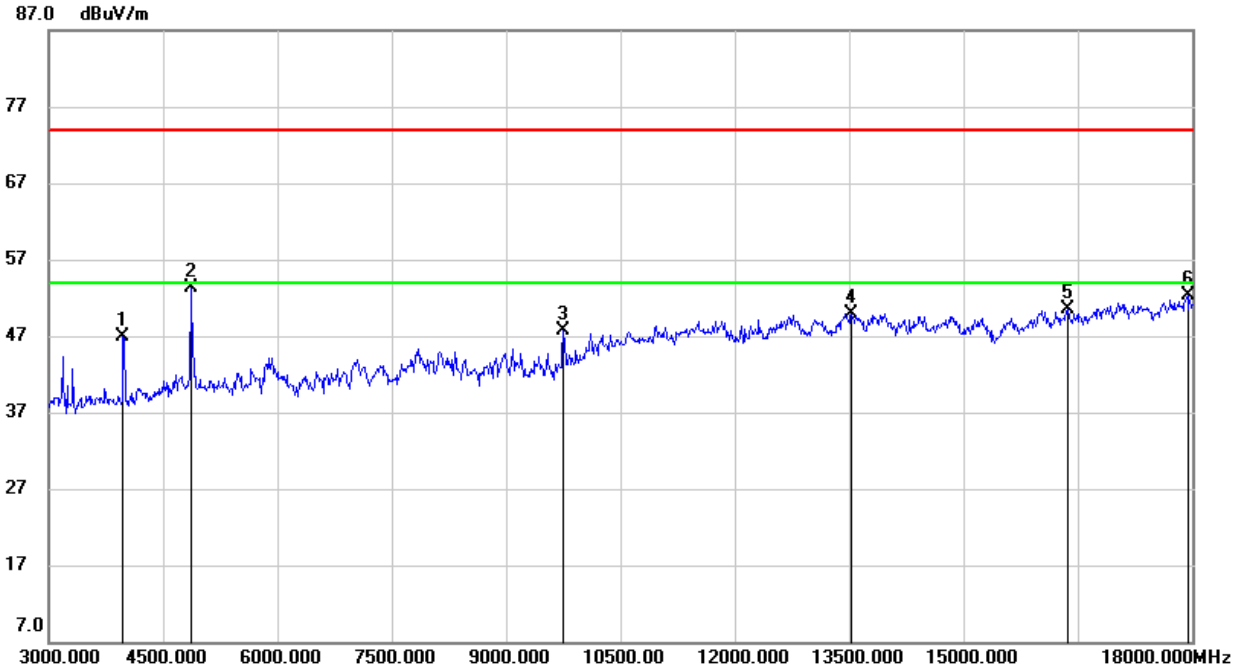
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	49.65	0.76	50.41	74.00	-23.59	peak
2	7890.000	38.10	7.30	45.40	74.00	-28.60	peak
3	12660.000	35.73	14.18	49.91	74.00	-24.09	peak
4	14805.000	34.78	15.92	50.70	74.00	-23.30	peak
5	17265.000	31.13	21.46	52.59	74.00	-21.41	peak
6	17820.000	29.18	23.30	52.48	74.00	-21.52	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

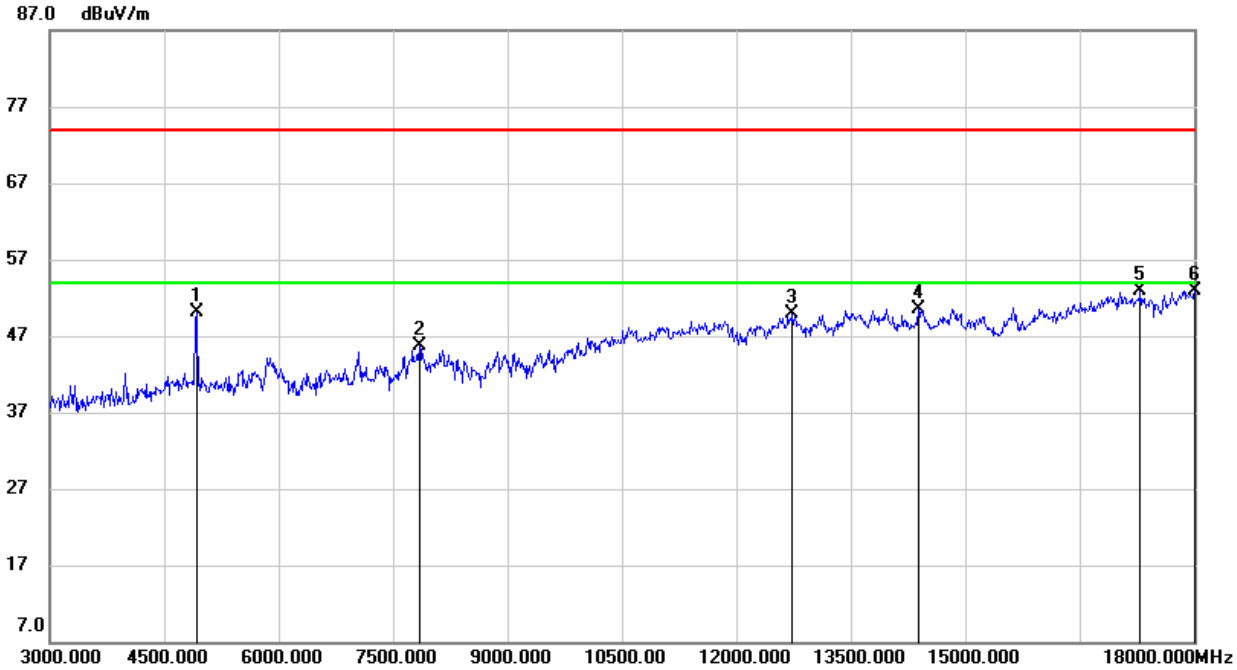
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3975.000	49.80	-2.90	46.90	74.00	-27.10	peak
2	4860.000	52.70	0.70	53.40	74.00	-20.60	peak
3	9750.000	38.07	9.68	47.75	74.00	-26.25	peak
4	13530.000	34.09	15.86	49.95	74.00	-24.05	peak
5	16365.000	31.91	18.64	50.55	74.00	-23.45	peak
6	17940.000	28.91	23.39	52.30	74.00	-21.70	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

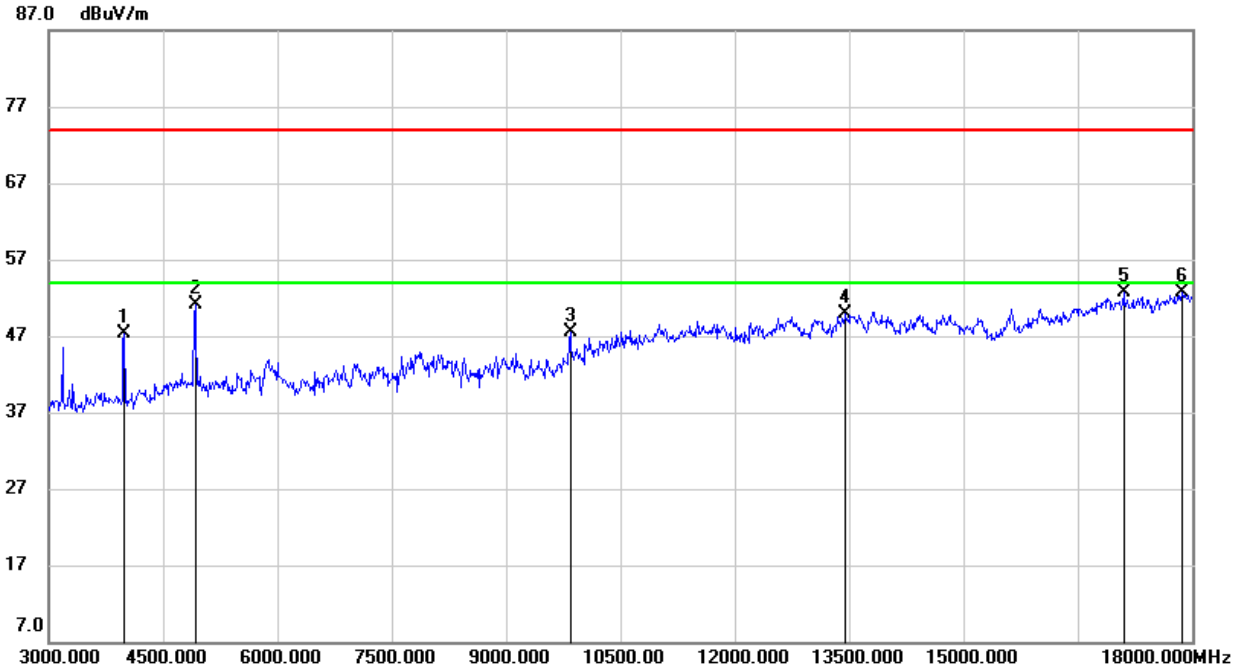
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	49.14	0.96	50.10	74.00	-23.90	peak
2	7845.000	38.15	7.62	45.77	74.00	-28.23	peak
3	12735.000	35.12	14.77	49.89	74.00	-24.11	peak
4	14385.000	34.26	16.33	50.59	74.00	-23.41	peak
5	17295.000	31.23	21.71	52.94	74.00	-21.06	peak
6	18000.000	29.54	23.46	53.00	74.00	-21.00	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

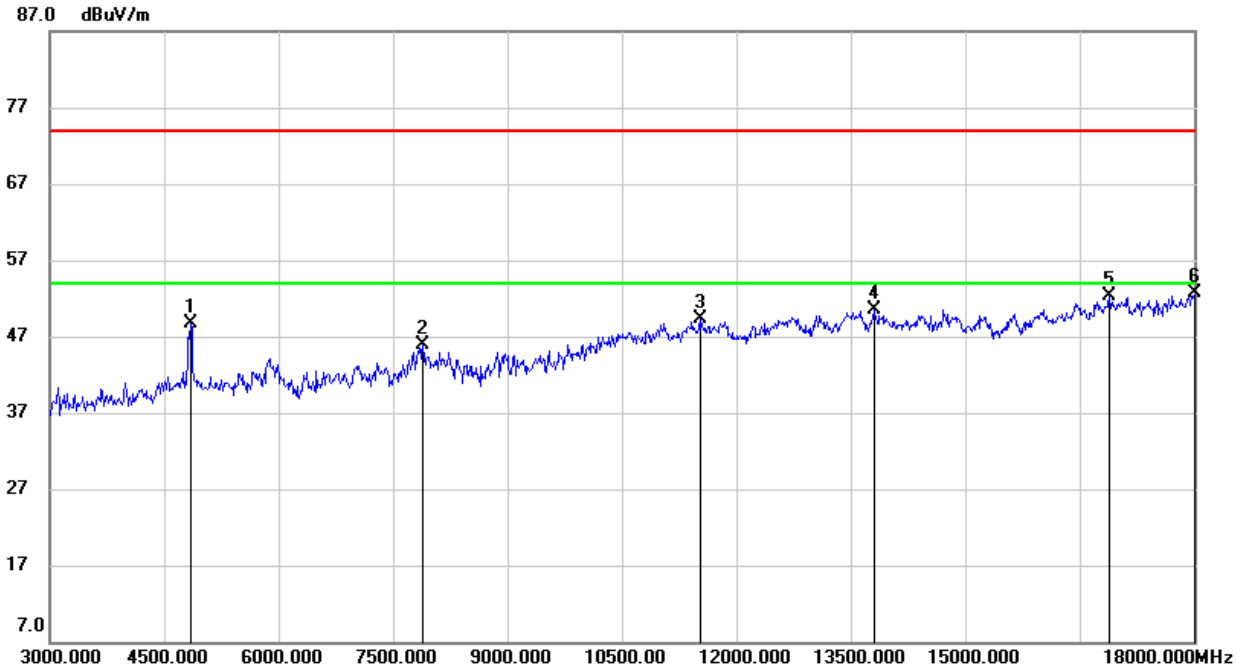


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3990.000	50.27	-2.89	47.38	74.00	-26.62	peak
2	4920.000	50.09	0.96	51.05	74.00	-22.95	peak
3	9840.000	37.74	9.86	47.60	74.00	-26.40	peak
4	13455.000	33.90	15.93	49.83	74.00	-24.17	peak
5	17100.000	31.99	20.64	52.63	74.00	-21.37	peak
6	17865.000	29.32	23.33	52.65	74.00	-21.35	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

8.3.4. 802.11n HT40 SISO MODE

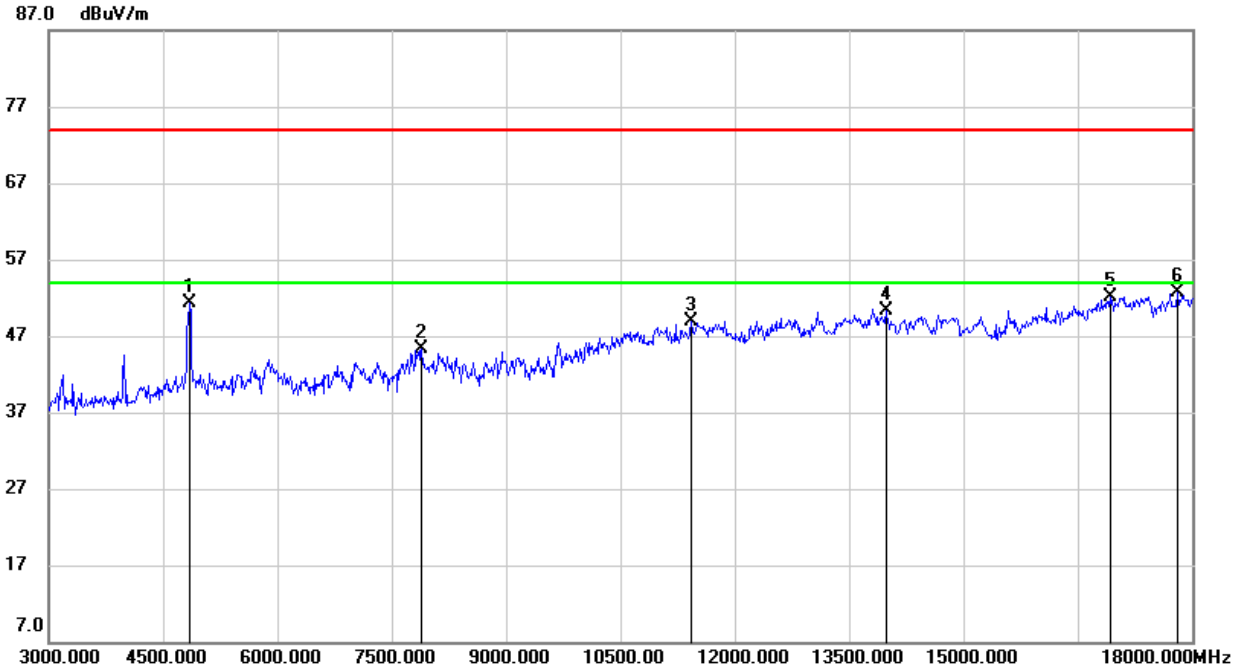
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4845.000	47.99	0.64	48.63	74.00	-25.37	peak
2	7890.000	38.67	7.30	45.97	74.00	-28.03	peak
3	11520.000	35.94	13.38	49.32	74.00	-24.68	peak
4	13800.000	33.46	17.10	50.56	74.00	-23.44	peak
5	16890.000	32.31	19.97	52.28	74.00	-21.72	peak
6	18000.000	29.30	23.46	52.76	74.00	-21.24	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

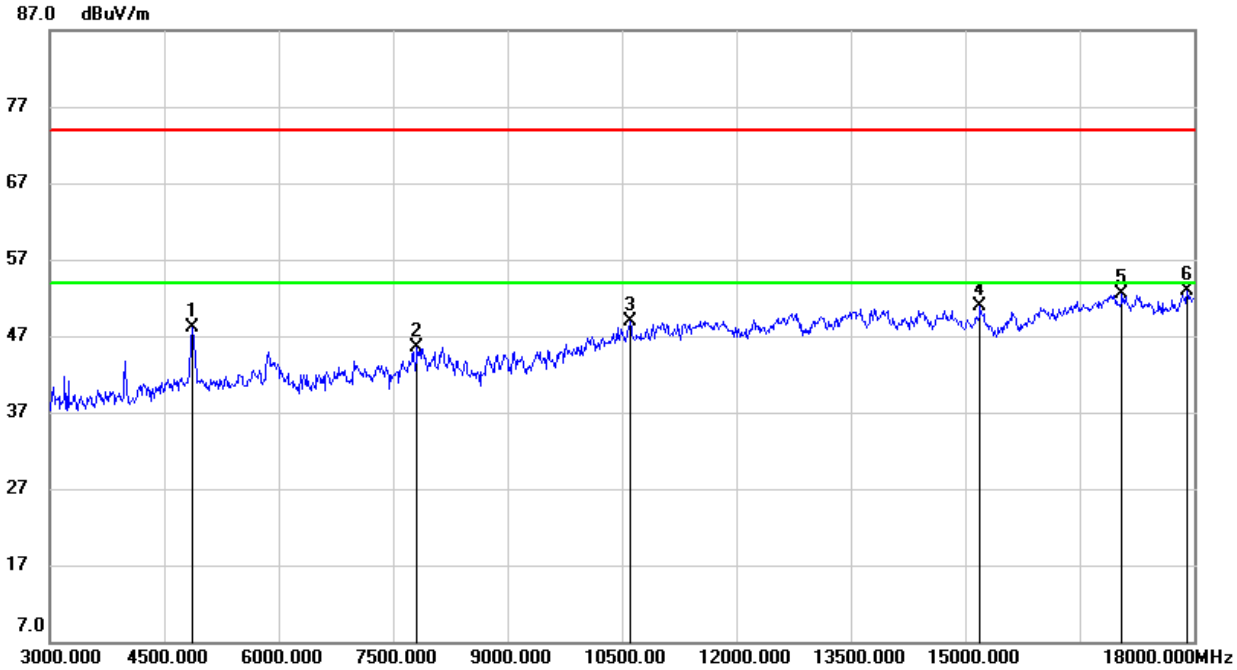
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4845.000	50.74	0.64	51.38	74.00	-22.62	peak
2	7890.000	37.92	7.30	45.22	74.00	-28.78	peak
3	11430.000	35.97	12.85	48.82	74.00	-25.18	peak
4	13980.000	34.20	16.07	50.27	74.00	-23.73	peak
5	16920.000	32.10	20.06	52.16	74.00	-21.84	peak
6	17805.000	29.34	23.31	52.65	74.00	-21.35	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

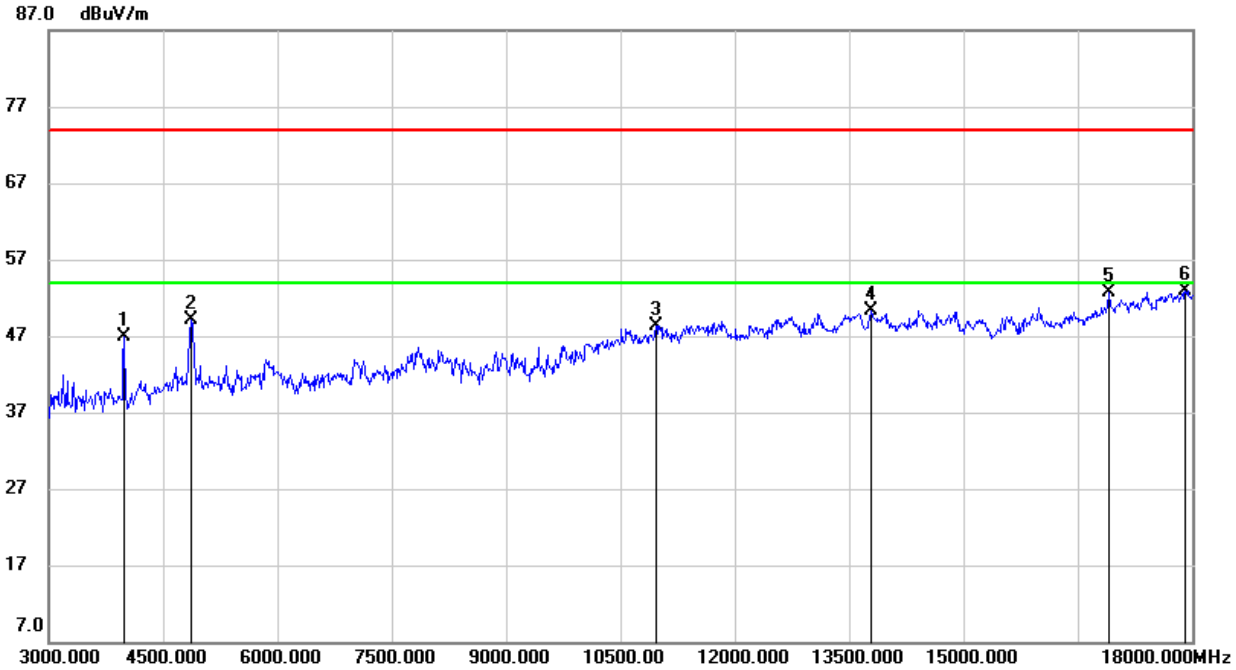
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	47.31	0.70	48.01	74.00	-25.99	peak
2	7815.000	37.76	7.83	45.59	74.00	-28.41	peak
3	10605.000	37.01	11.93	48.94	74.00	-25.06	peak
4	15195.000	34.78	16.09	50.87	74.00	-23.13	peak
5	17055.000	32.02	20.53	52.55	74.00	-21.45	peak
6	17910.000	29.51	23.35	52.86	74.00	-21.14	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

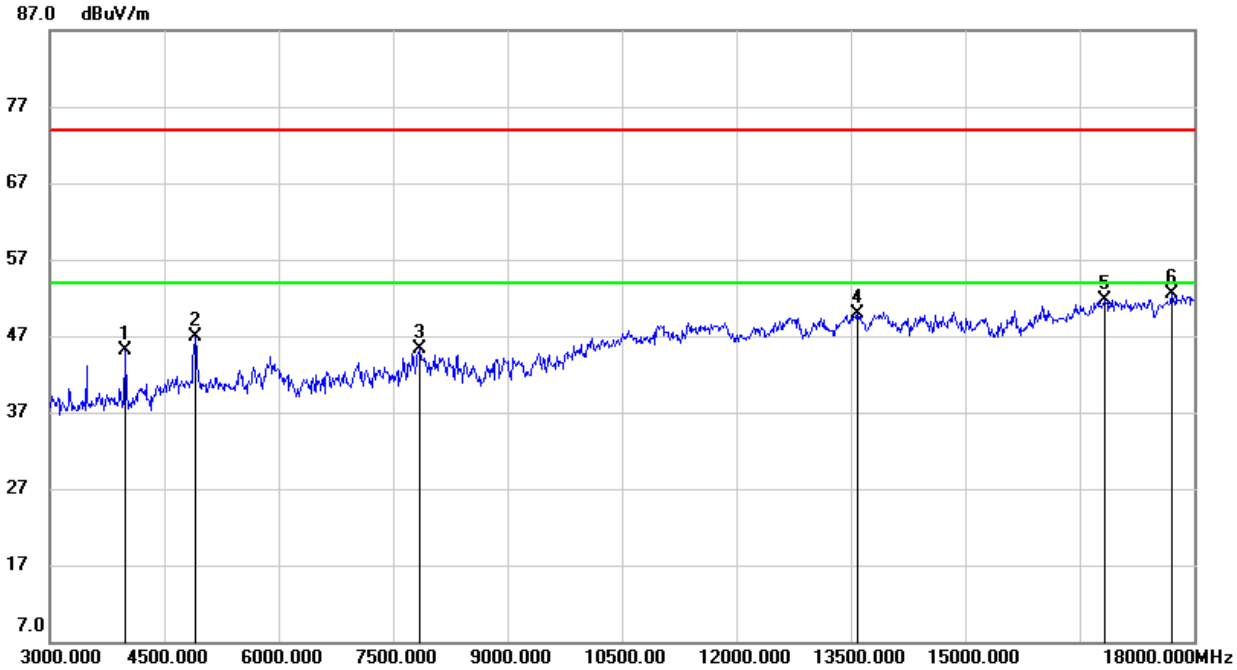
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3990.000	49.78	-2.89	46.89	74.00	-27.11	peak
2	4875.000	48.30	0.76	49.06	74.00	-24.94	peak
3	10965.000	36.08	12.32	48.40	74.00	-25.60	peak
4	13785.000	33.38	16.91	50.29	74.00	-23.71	peak
5	16905.000	32.65	19.99	52.64	74.00	-21.36	peak
6	17910.000	29.62	23.35	52.97	74.00	-21.03	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

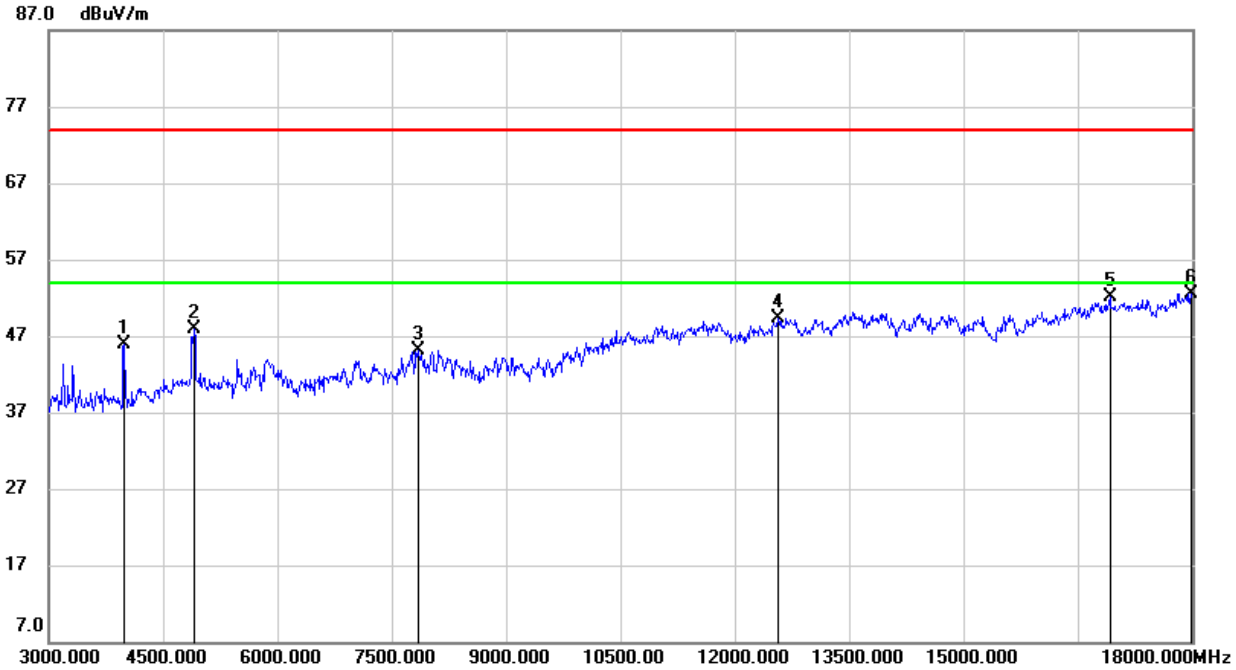
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3990.000	47.92	-2.89	45.03	74.00	-28.97	peak
2	4905.000	46.08	0.88	46.96	74.00	-27.04	peak
3	7845.000	37.62	7.62	45.24	74.00	-28.76	peak
4	13590.000	33.83	16.00	49.83	74.00	-24.17	peak
5	16830.000	31.71	19.96	51.67	74.00	-22.33	peak
6	17700.000	30.11	22.43	52.54	74.00	-21.46	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



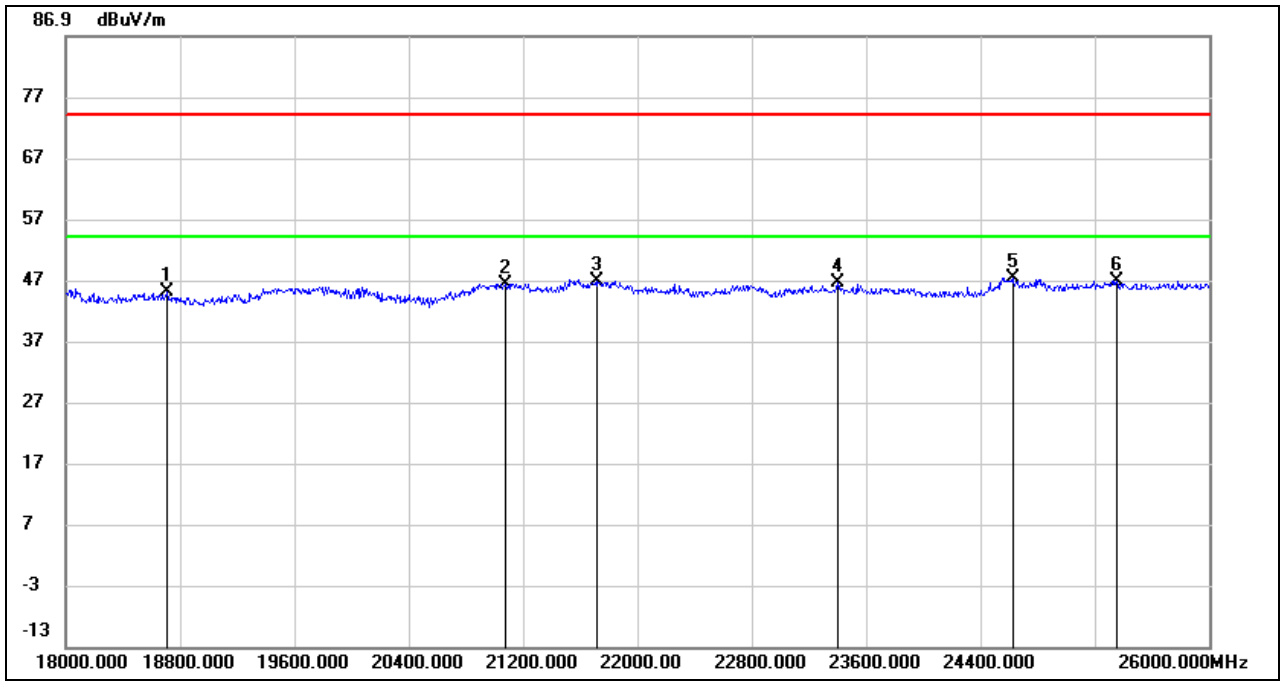
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3990.000	48.81	-2.89	45.92	74.00	-28.08	peak
2	4905.000	46.99	0.88	47.87	74.00	-26.13	peak
3	7845.000	37.52	7.62	45.14	74.00	-28.86	peak
4	12570.000	35.17	14.17	49.34	74.00	-24.66	peak
5	16920.000	31.96	20.06	52.02	74.00	-21.98	peak
6	17985.000	29.15	23.44	52.59	74.00	-21.41	peak

Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain

8.5. SPURIOUS EMISSIONS (18GHz ~ 26GHz)

8.5.1. 802.11b SISO MODE

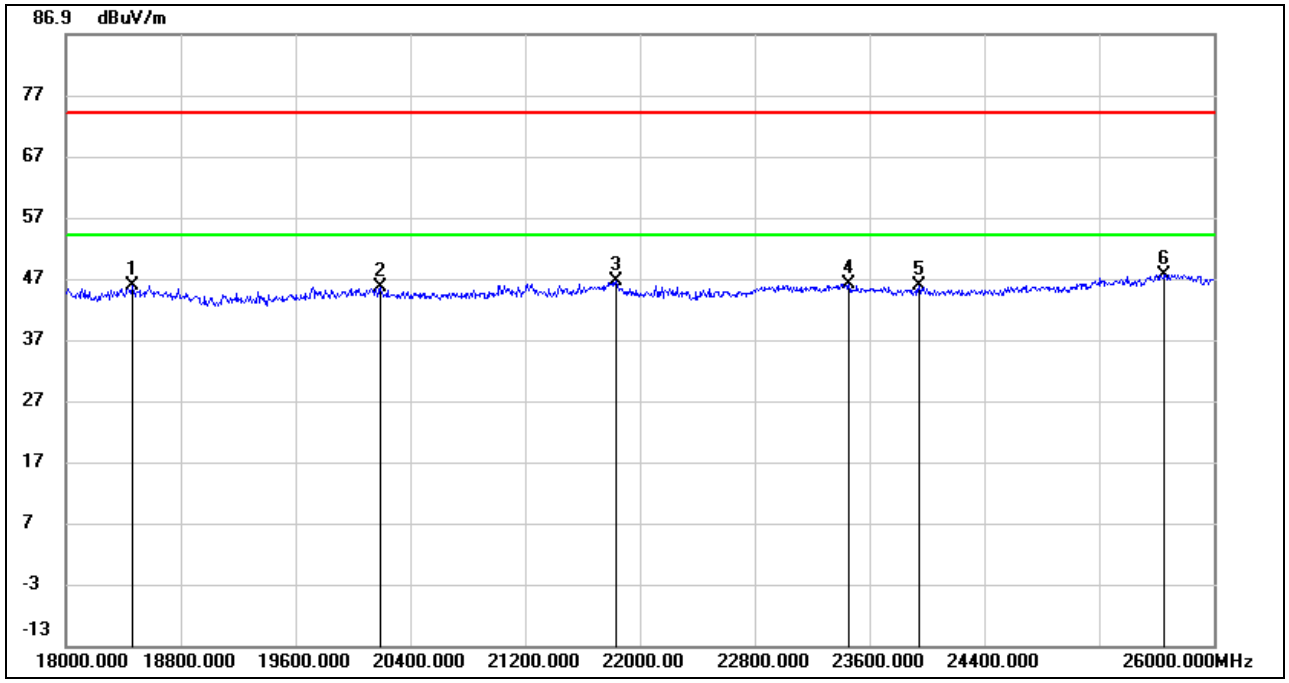
SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18712.000	49.73	-4.76	44.97	74.00	-29.03	peak
2	21072.000	51.72	-5.34	46.38	74.00	-27.62	peak
3	21712.000	52.60	-5.75	46.85	74.00	-27.15	peak
4	23400.000	51.42	-4.96	46.46	74.00	-27.54	peak
5	24624.000	49.65	-2.27	47.38	74.00	-26.62	peak
6	25352.000	48.24	-1.45	46.79	74.00	-27.21	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.

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18464.000	50.20	-4.39	45.81	74.00	-28.19	peak
2	20192.000	50.37	-4.76	45.61	74.00	-28.39	peak
3	21832.000	52.53	-5.92	46.61	74.00	-27.39	peak
4	23456.000	50.98	-4.84	46.14	74.00	-27.86	peak
5	23944.000	49.95	-4.14	45.81	74.00	-28.19	peak
6	25656.000	49.12	-1.52	47.60	74.00	-26.40	peak

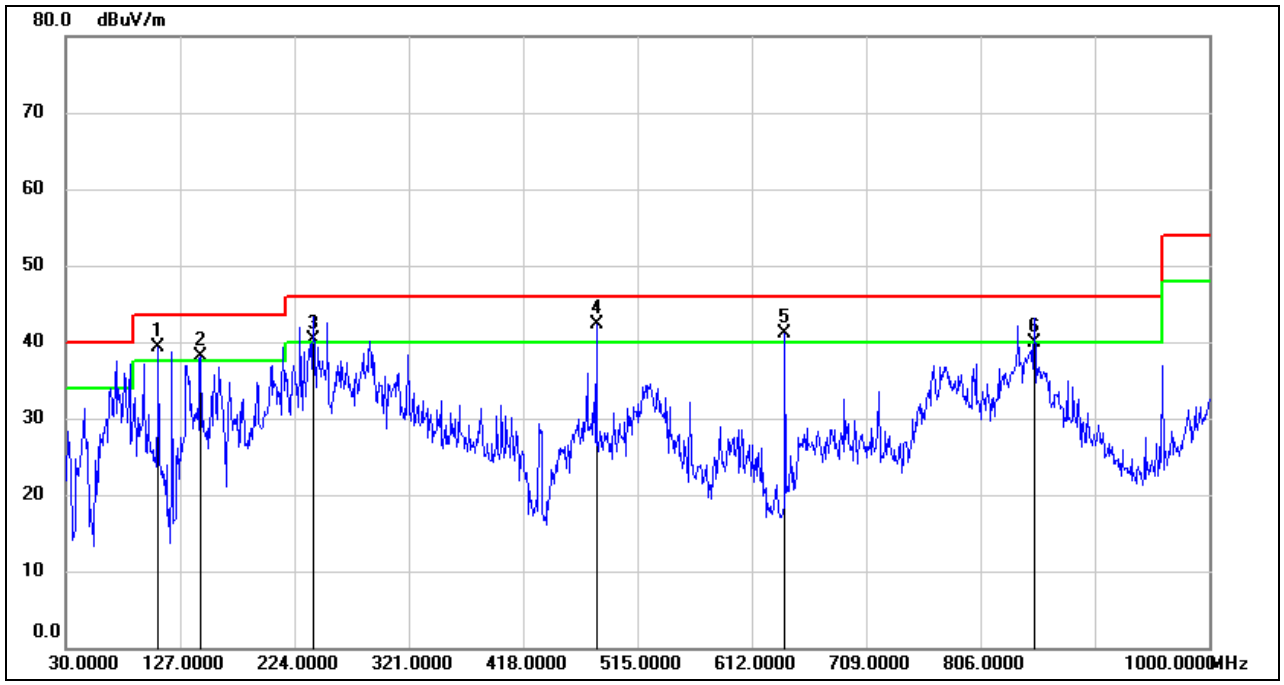
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

Note: All the modes and channels have been tested, only the worst data was recorded in the report.

8.6. SPURIOUS EMISSIONS (30MHz ~ 1 GHz)

8.6.1. 802.11b SISO MODE

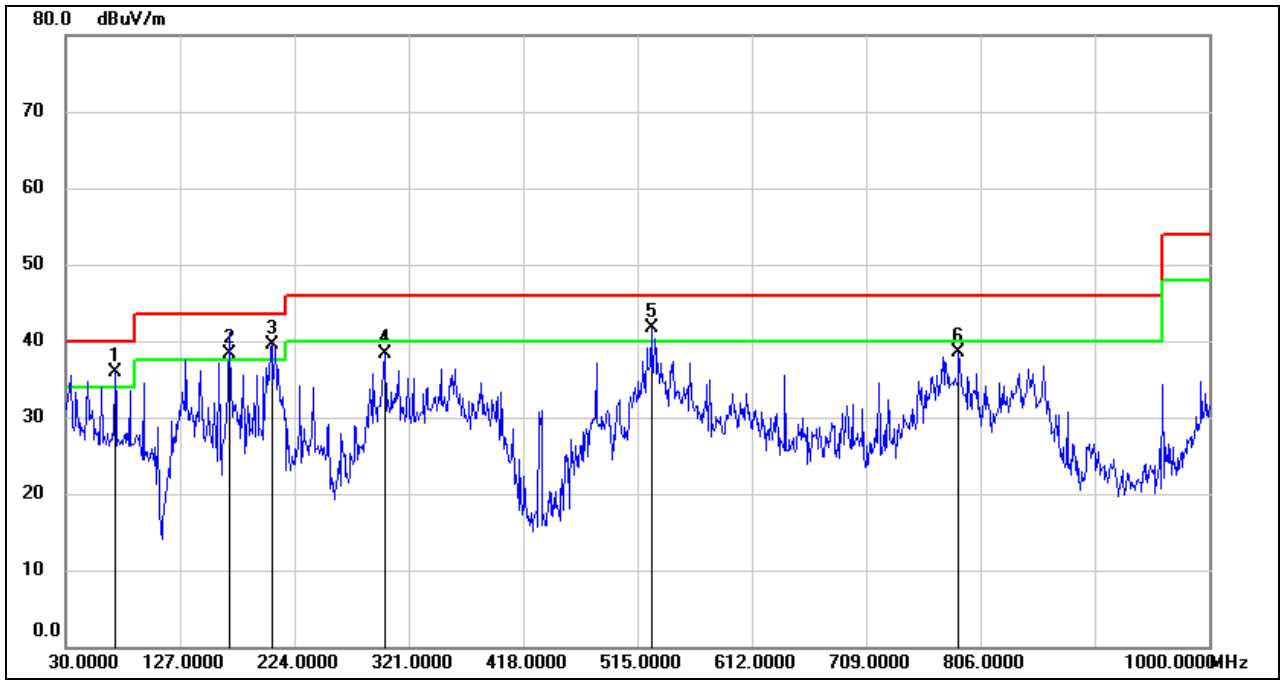
SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	108.5700	60.03	-20.72	39.31	43.50	-4.19	QP
2	144.4600	56.93	-18.82	38.11	43.50	-5.39	QP
3	240.4900	59.67	-19.41	40.26	46.00	-5.74	QP
4	480.0800	54.21	-11.98	42.23	46.00	-3.77	QP
5	640.1300	50.49	-9.46	41.03	46.00	-4.97	QP
6	851.5900	46.57	-6.72	39.85	46.00	-6.15	QP

Note: 1. Result Level = Read Level + Correct Factor.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	71.7100	56.73	-20.78	35.95	40.00	-4.05	QP
2	168.7100	55.58	-17.32	38.26	43.50	-5.24	QP
3	204.6000	56.42	-16.89	39.53	43.50	-3.97	QP
4	300.6300	53.85	-15.57	38.28	46.00	-7.72	QP
5	526.6400	52.90	-11.14	41.76	46.00	-4.24	QP
6	787.5700	46.53	-7.99	38.54	46.00	-7.46	QP

Note: 1. Result Level = Read Level + Correct Factor.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

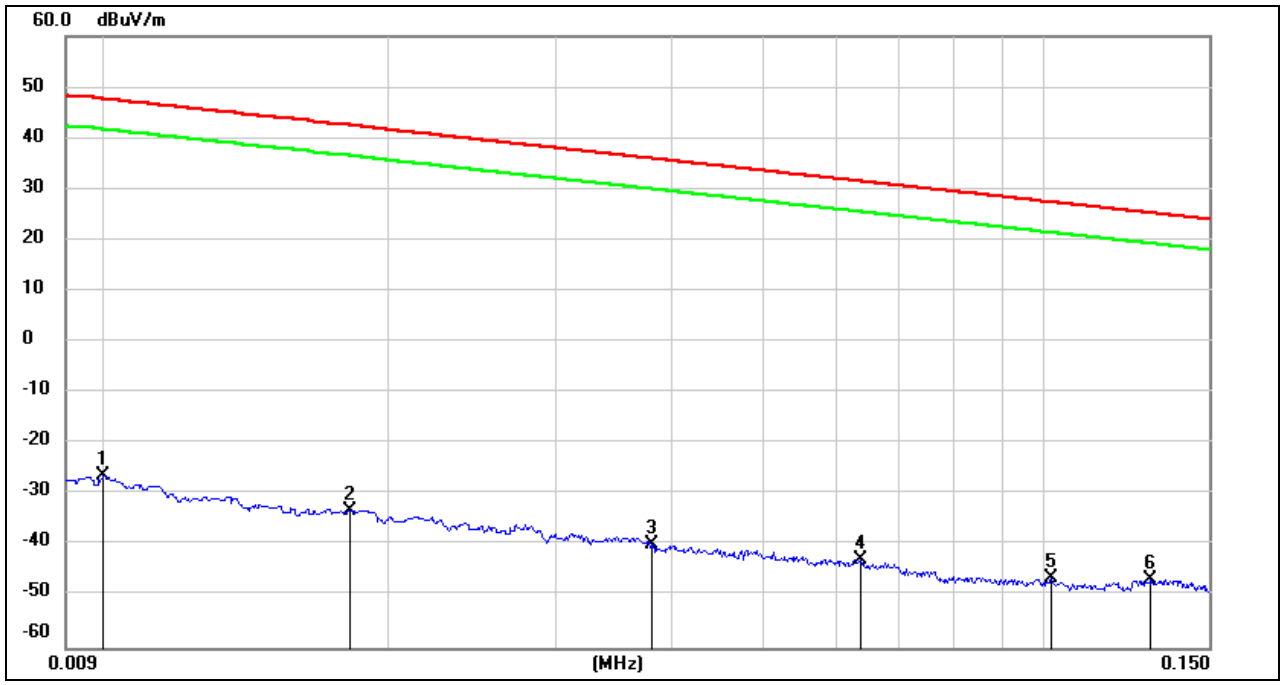
Note: All the modes and channels have been tested, only the worst data was recorded in the report.

8.7. SPURIOUS EMISSIONS BELOW 30MHz

8.7.1. 802.11b SISO MODE

SPURIOUS EMISSIONS (LOW CHANNEL, LOOP ANTENNA FACE ON TO THE EUT, WORST-CASE CONFIGURATION)

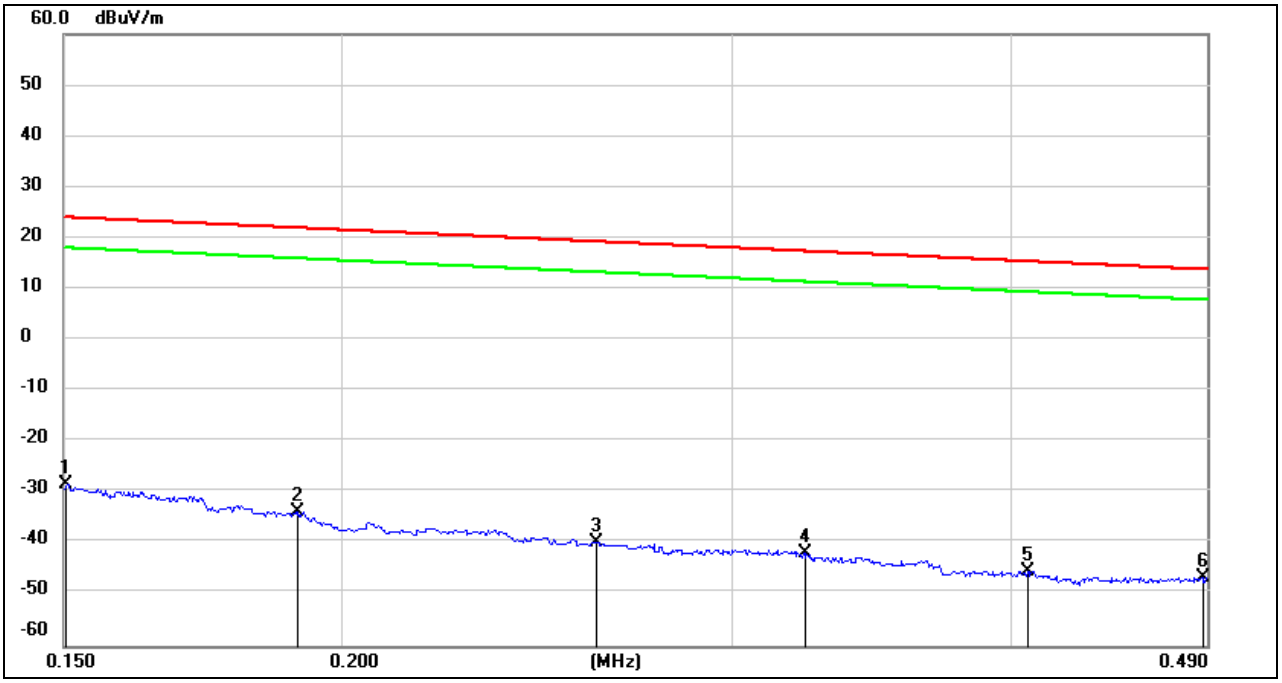
9kHz~ 150kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	75.22	-101.40	-26.18	47.60	-73.78	peak
2	0.0181	68.35	-101.36	-33.01	42.45	-75.46	peak
3	0.0381	61.53	-101.42	-39.89	35.98	-75.87	peak
4	0.0636	58.81	-101.54	-42.73	31.53	-74.26	peak
5	0.1019	55.35	-101.79	-46.44	27.44	-73.88	peak
6	0.1300	54.93	-101.70	-46.77	25.33	-72.10	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.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

150kHz ~ 490kHz



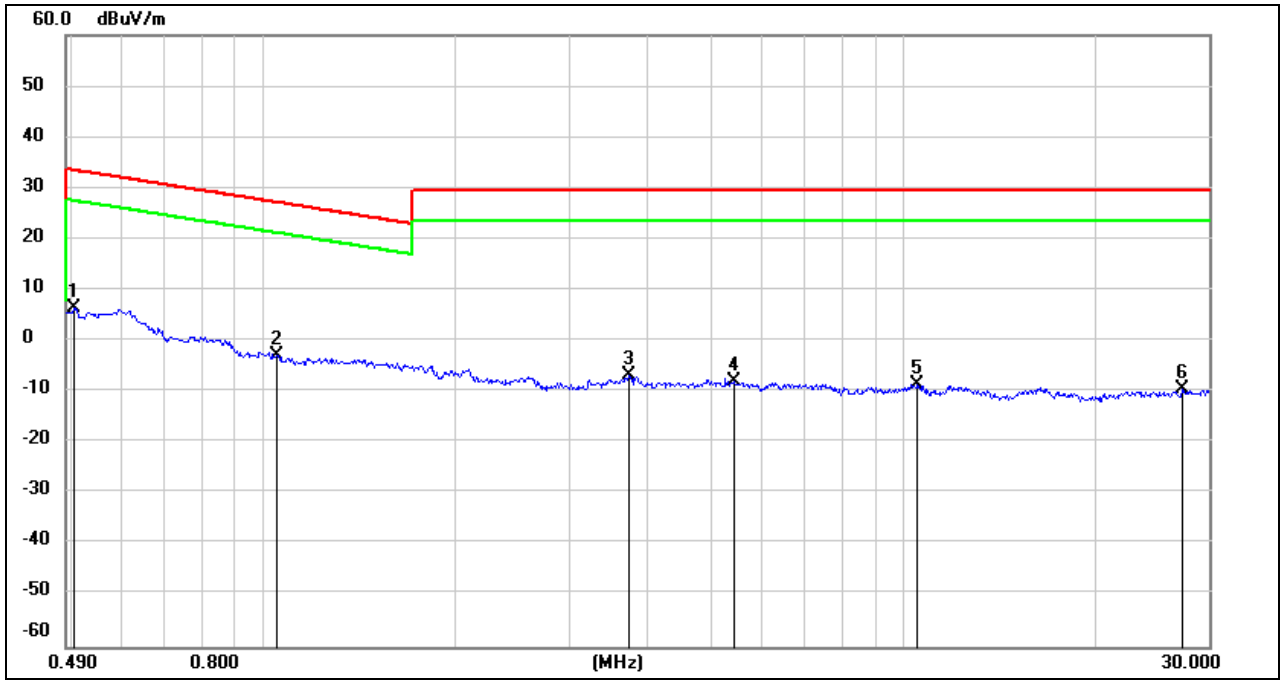
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1504	73.25	-101.63	-28.38	24.06	-52.44	peak
2	0.1912	67.97	-101.70	-33.73	21.97	-55.70	peak
3	0.2605	62.14	-101.81	-39.67	19.29	-58.96	peak
4	0.3234	59.98	-101.88	-41.90	17.41	-59.31	peak
5	0.4066	56.52	-101.96	-45.44	15.42	-60.86	peak
6	0.4879	55.46	-102.06	-46.60	13.84	-60.44	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.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

490kHz ~ 30MHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	FCC Result (dBuV/m)	FCC Limit (dBuV/m)	Margin (dB)	Remark
1	0.5039	68.44	-62.07	6.37	33.56	-27.19	peak
2	1.0443	59.53	-62.25	-2.72	27.23	-29.95	peak
3	3.7100	54.70	-61.41	-6.71	29.54	-36.25	peak
4	5.4477	53.40	-61.42	-8.02	29.54	-37.56	peak
5	10.5234	52.30	-60.82	-8.52	29.54	-38.06	peak
6	27.1966	50.81	-60.24	-9.43	29.54	-38.97	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.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

Note: All the modes and channels have been tested, only the worst data was recorded in the report.

9. AC POWER LINE CONDUCTED EMISSIONS

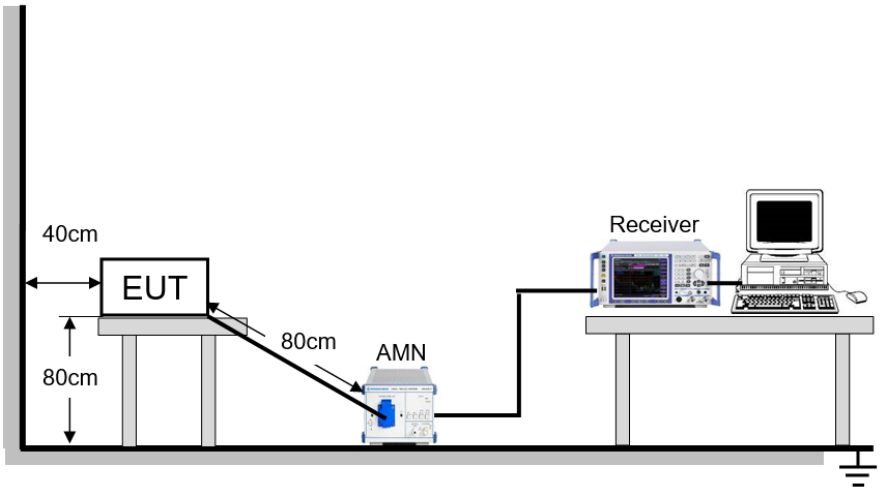
LIMITS

Please refer to CFR 47 FCC §15.207 (a)

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

Refer to ANSI C63.10-2013 clause 6.2.



The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.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.

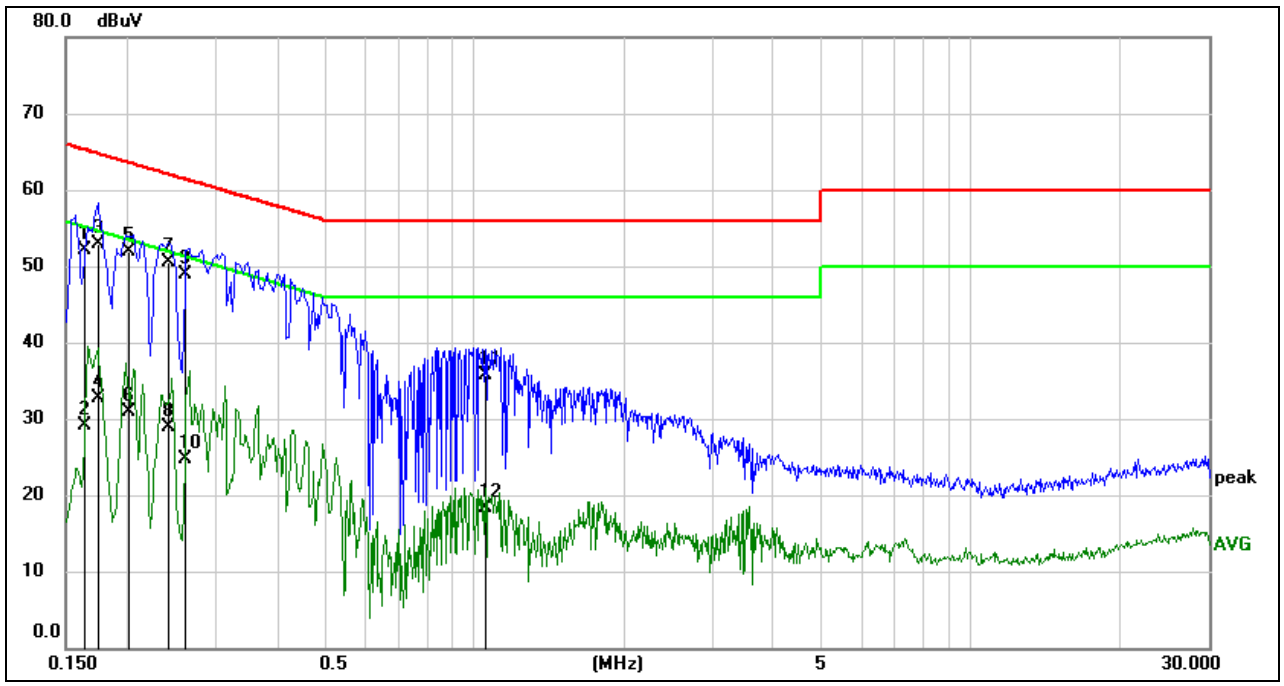
TEST ENVIRONMENT

Temperature	24.6°C	Relative Humidity	59.5.9%
Atmosphere Pressure	101kPa	Test Voltage	AC120V,60Hz

RESULTS

9.1. 802.11n HT20 SISO MODE

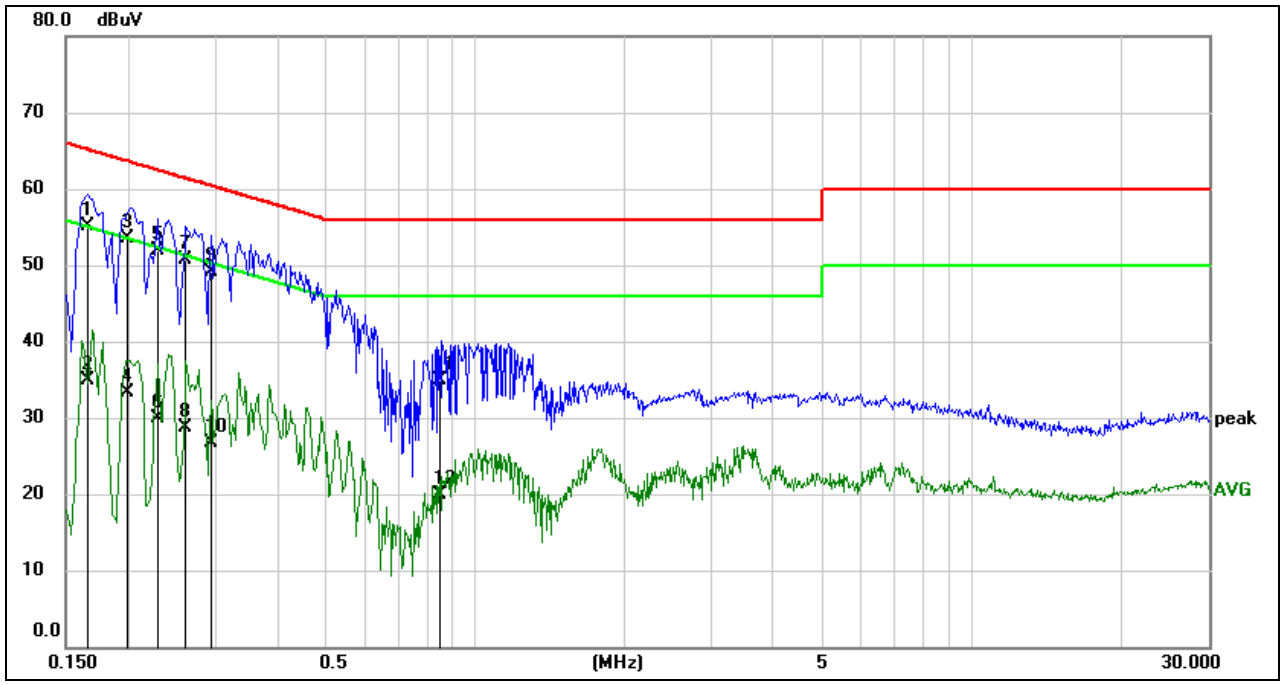
LINE N RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1630	42.59	9.60	52.19	65.31	-13.12	QP
2	0.1630	19.55	9.60	29.15	55.31	-26.16	AVG
3	0.1732	43.36	9.60	52.96	64.81	-11.85	QP
4	0.1732	23.16	9.60	32.76	54.81	-22.05	AVG
5	0.2017	42.22	9.60	51.82	63.54	-11.72	QP
6	0.2017	21.37	9.60	30.97	53.54	-22.57	AVG
7	0.2428	40.89	9.60	50.49	62.00	-11.51	QP
8	0.2428	19.33	9.60	28.93	52.00	-23.07	AVG
9	0.2618	39.31	9.60	48.91	61.37	-12.46	QP
10	0.2618	15.14	9.60	24.74	51.37	-26.63	AVG
11	1.0498	26.18	9.61	35.79	56.00	-20.21	QP
12	1.0498	8.73	9.61	18.34	46.00	-27.66	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 (LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1662	45.53	9.61	55.14	65.15	-10.01	QP
2	0.1662	25.20	9.61	34.81	55.15	-20.34	AVG
3	0.1996	43.84	9.60	53.44	63.63	-10.19	QP
4	0.1996	23.66	9.60	33.26	53.63	-20.37	AVG
5	0.2300	42.29	9.60	51.89	62.45	-10.56	QP
6	0.2300	20.37	9.60	29.97	52.45	-22.48	AVG
7	0.2627	41.06	9.60	50.66	61.35	-10.69	QP
8	0.2627	19.18	9.60	28.78	51.35	-22.57	AVG
9	0.2948	39.52	9.60	49.12	60.39	-11.27	QP
10	0.2948	17.19	9.60	26.79	50.39	-23.60	AVG
11	0.8514	25.24	9.60	34.84	56.00	-21.16	QP
12	0.8514	10.25	9.60	19.85	46.00	-26.15	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 the modes and channels have been tested, only the worst data was recorded in the report.

10. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

11. APPENDIX

11.1. APPENDIX A: DUTY CYCLE

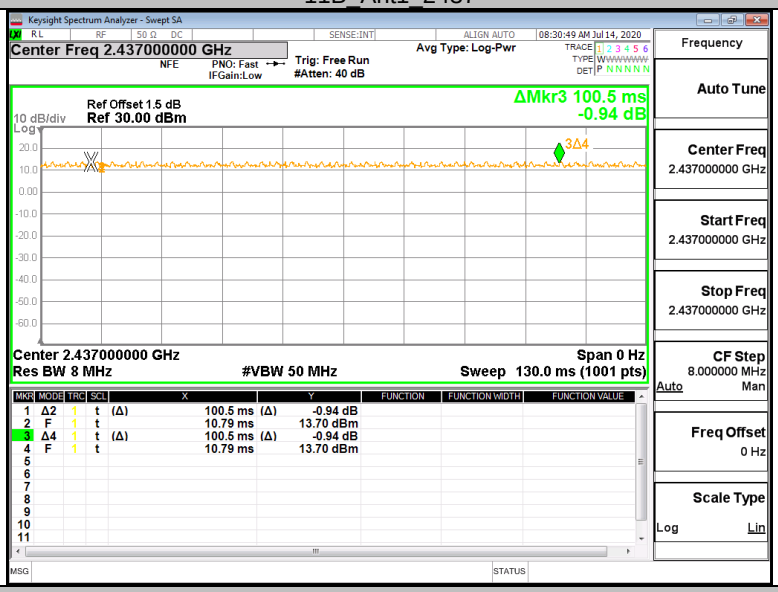
11.1.1. Test Result

Test 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	100.5	100.5	1.0	100%	0	0.01	0.01
11g	100.5	100.5	1.0	100%	0	0.01	0.01
11n HT20	100.5	100.5	1.0	100%	0	0.01	0.01
11n HT40	100.5	100.5	1.0	100%	0	0.01	0.01

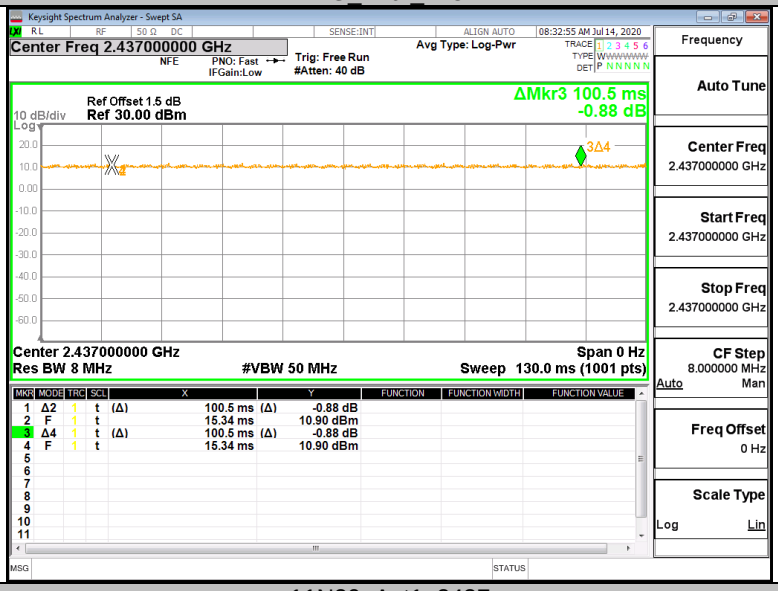
Note:
Duty Cycle Correction Factor=10log (1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time
If that calculated VBW is not available on the analyzer then the next higher value should be used.

11.1.2. Test Graphs

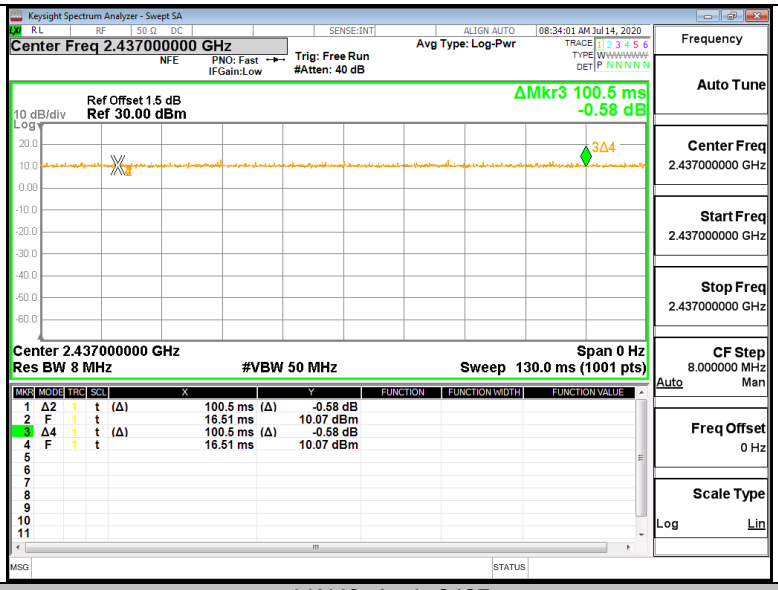
11B_Ant1_2437



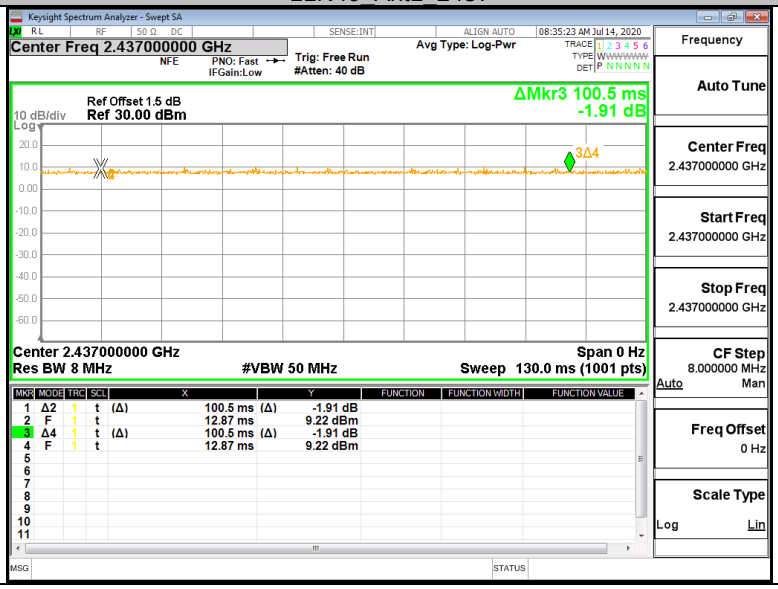
11G_Ant1_2437



11N20_Ant1_2437



11N40_Ant1_2437



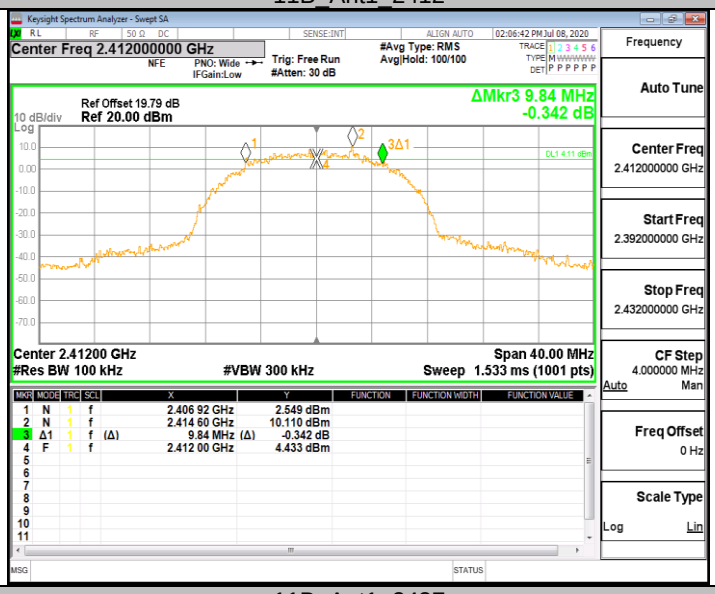
11.2. Appendix B: DTS Bandwidth

11.2.1. Test Result

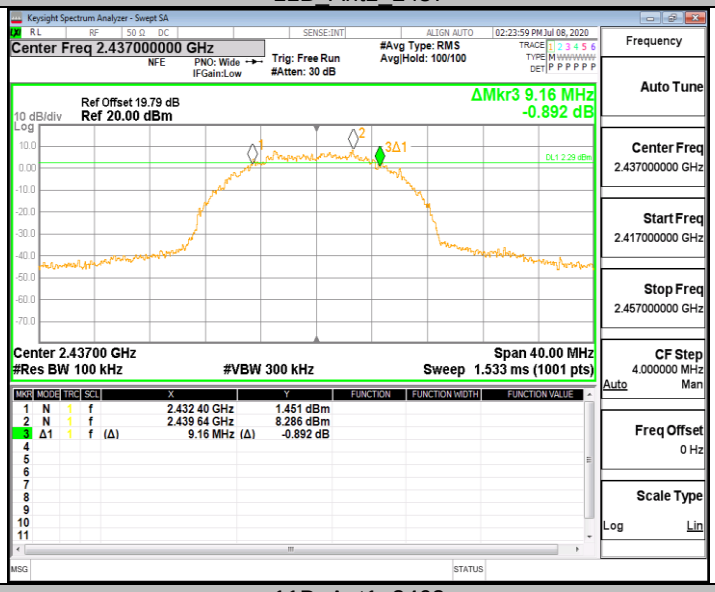
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	9.840	2406.920	2416.760	0.5	PASS
		2437	9.160	2432.400	2441.560	0.5	PASS
		2462	10.080	2456.960	2467.040	0.5	PASS
11G	Ant1	2412	16.480	2403.760	2420.240	0.5	PASS
		2437	16.440	2428.800	2445.240	0.5	PASS
		2462	16.480	2453.760	2470.240	0.5	PASS
11N20SISO	Ant1	2412	17.360	2403.440	2420.800	0.5	PASS
		2437	17.640	2428.200	2445.840	0.5	PASS
		2462	17.400	2453.440	2470.840	0.5	PASS
11N40SISO	Ant1	2422	36.480	2403.760	2440.240	0.5	PASS
		2437	36.480	2418.760	2455.240	0.5	PASS
		2452	36.560	2433.760	2470.320	0.5	PASS

11.2.2. Test Graphs

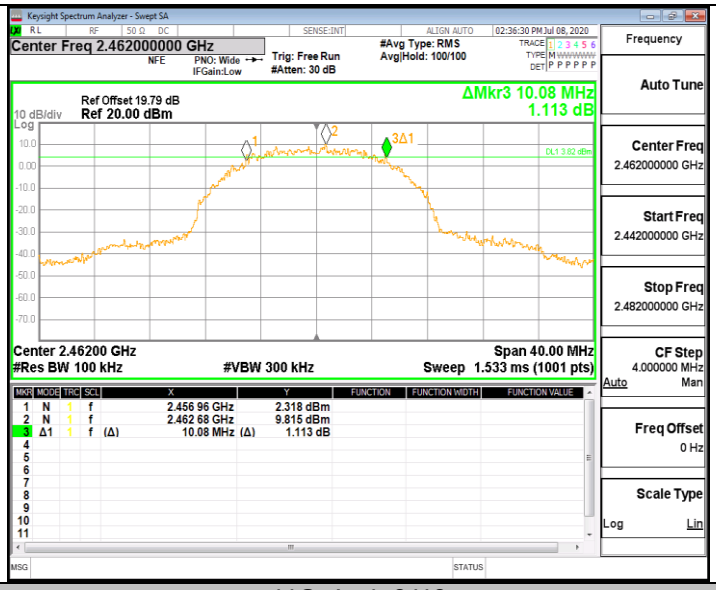
11B_Ant1_2412



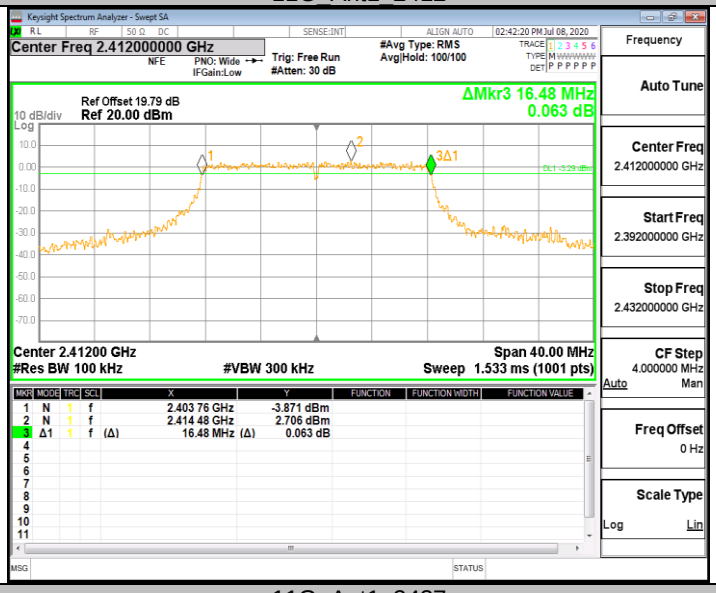
11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



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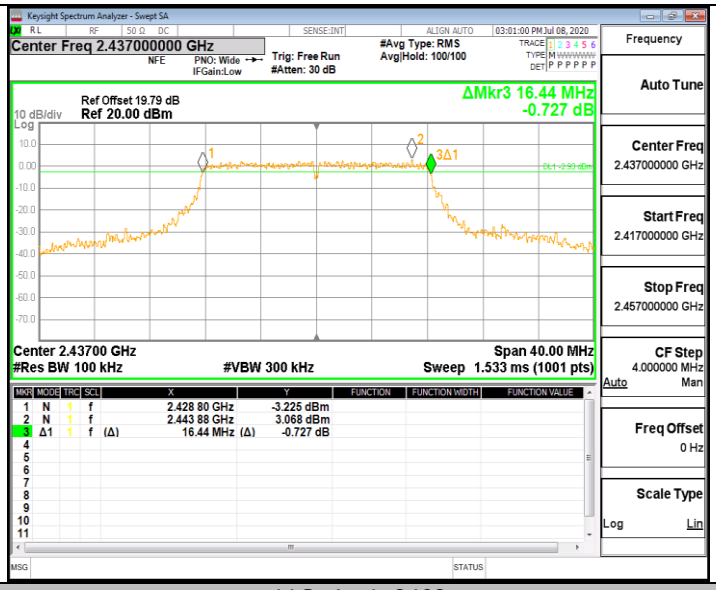
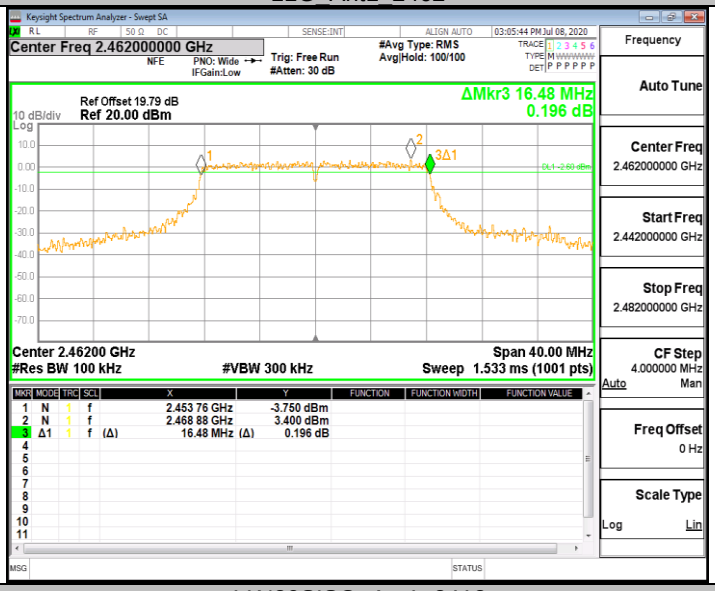
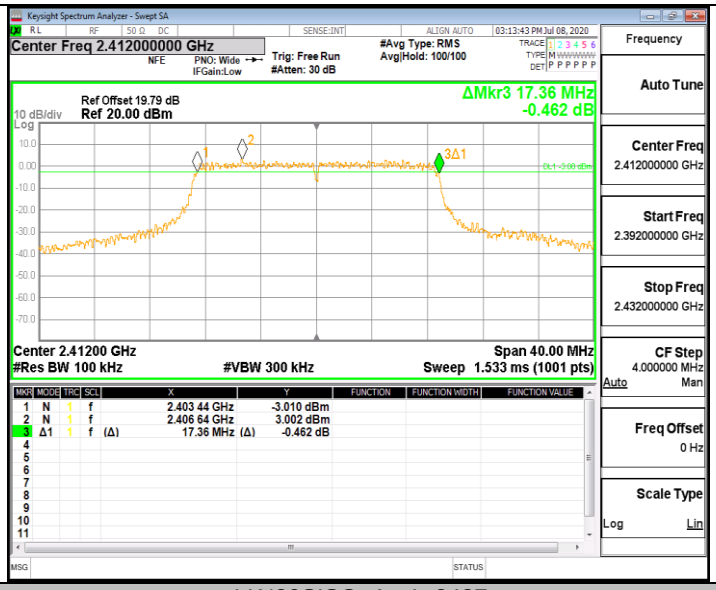


11G_Ant1_2462



11N20SISO_Ant1_2412



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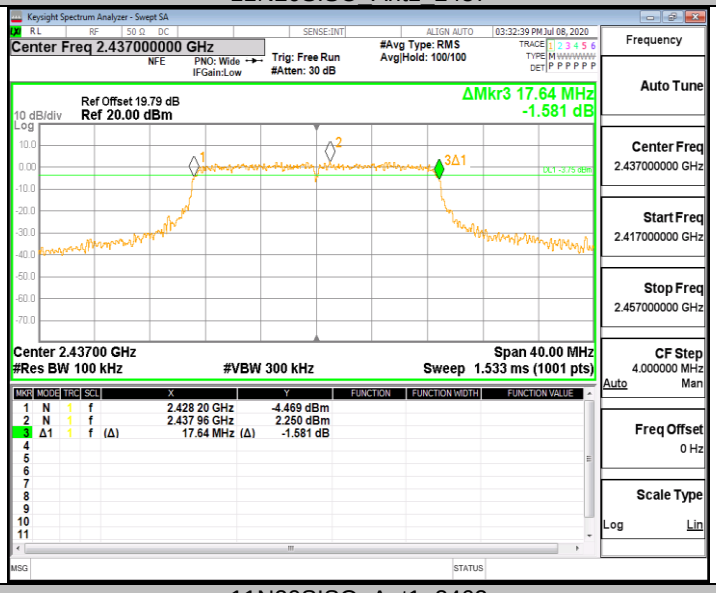
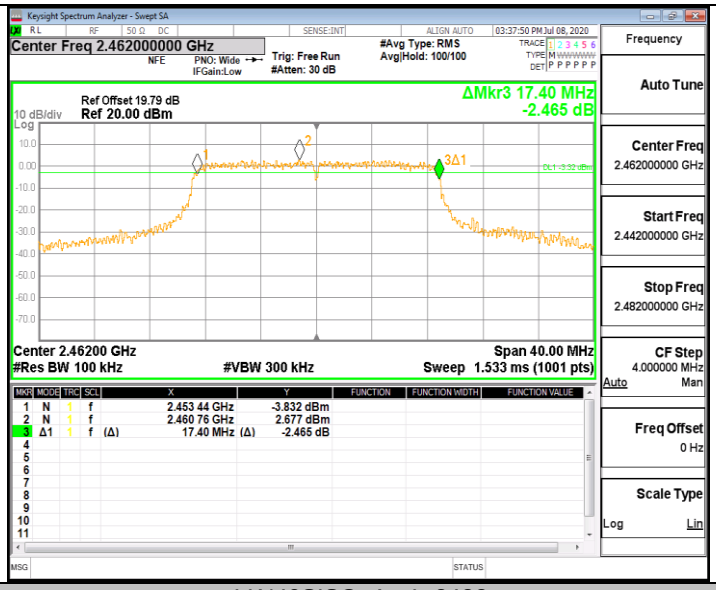
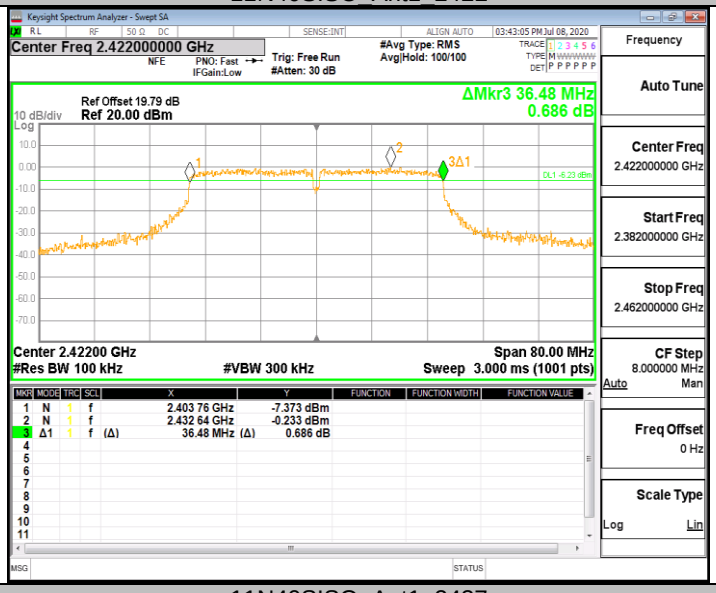


11N20SISO_Ant1_2462



11N40SISO_Ant1_2422



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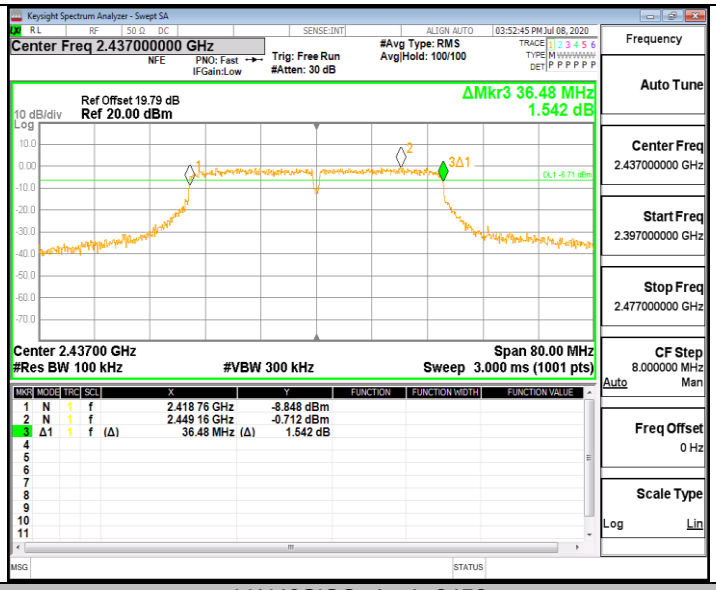

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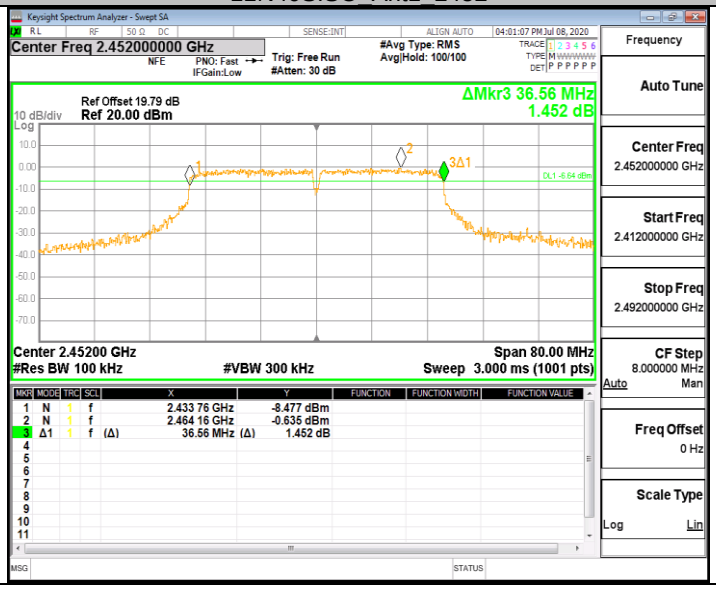


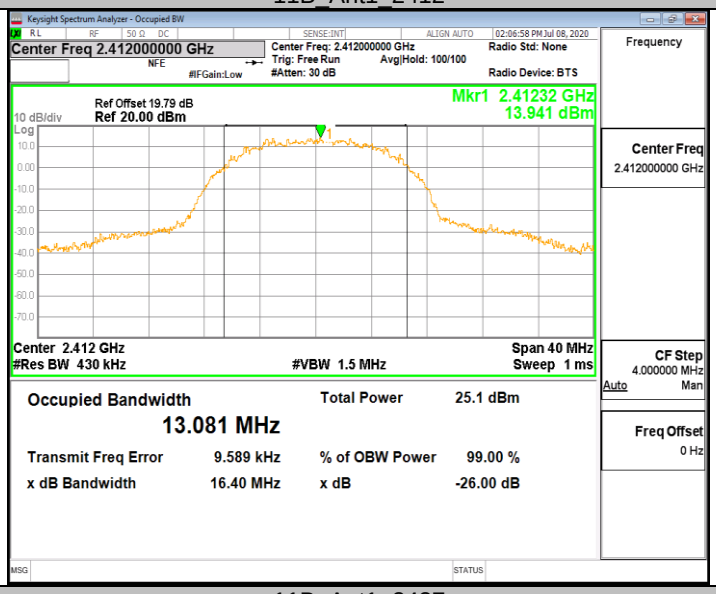
11.3. Appendix C: Occupied Channel Bandwidth

11.3.1. Test Result

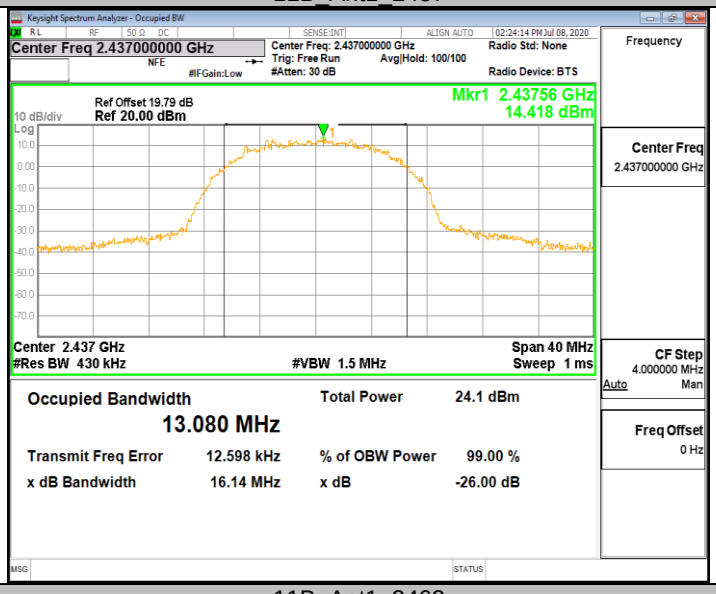
Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	13.081	2405.469	2418.550	---	PASS
		2437	13.080	2430.473	2443.553	---	PASS
		2462	13.165	2455.425	2468.590	---	PASS
11G	Ant1	2412	16.717	2403.689	2420.406	---	PASS
		2437	16.708	2428.705	2445.413	---	PASS
		2462	16.684	2453.707	2470.391	---	PASS
11N20SISO	Ant1	2412	17.502	2403.262	2420.764	---	PASS
		2437	17.475	2428.280	2445.755	---	PASS
		2462	17.494	2453.260	2470.754	---	PASS
11N40SISO	Ant1	2422	36.462	2403.844	2440.306	---	PASS
		2437	36.473	2418.897	2455.370	---	PASS
		2452	36.480	2433.861	2470.341	---	PASS

11.3.2. Test Graphs

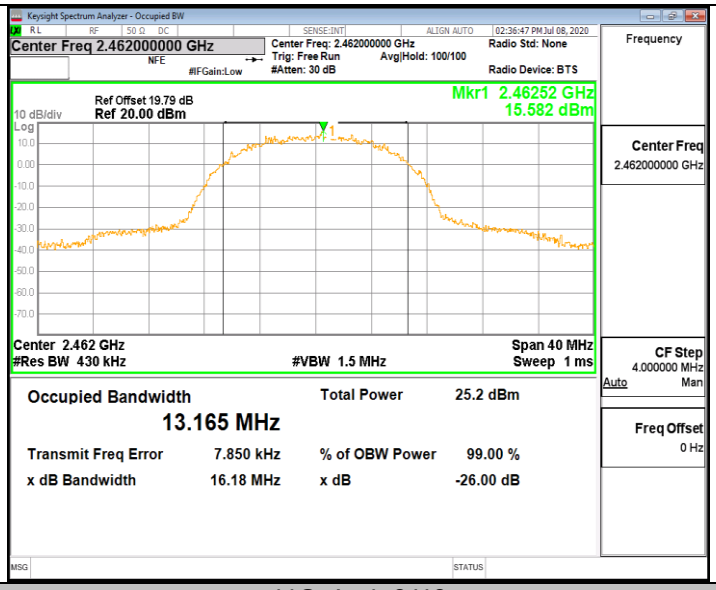
11B_Ant1_2412



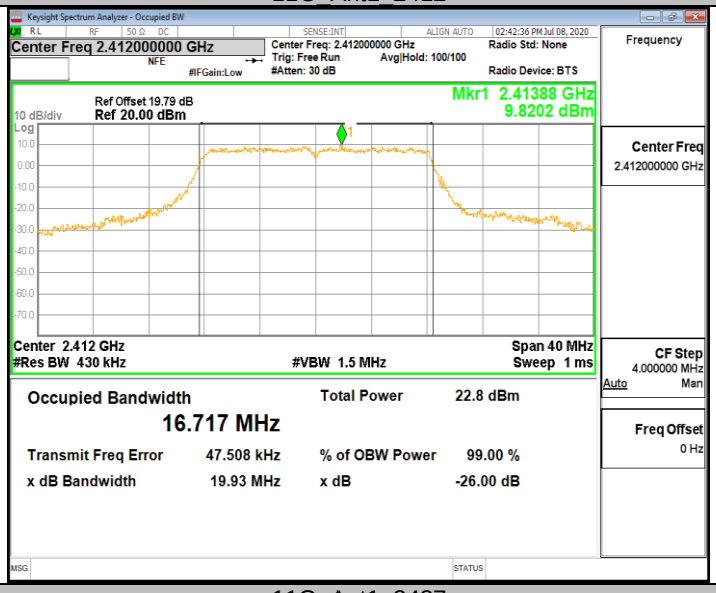
11B_Ant1_2437



11B_Ant1_2462



11G_Ant1_2412



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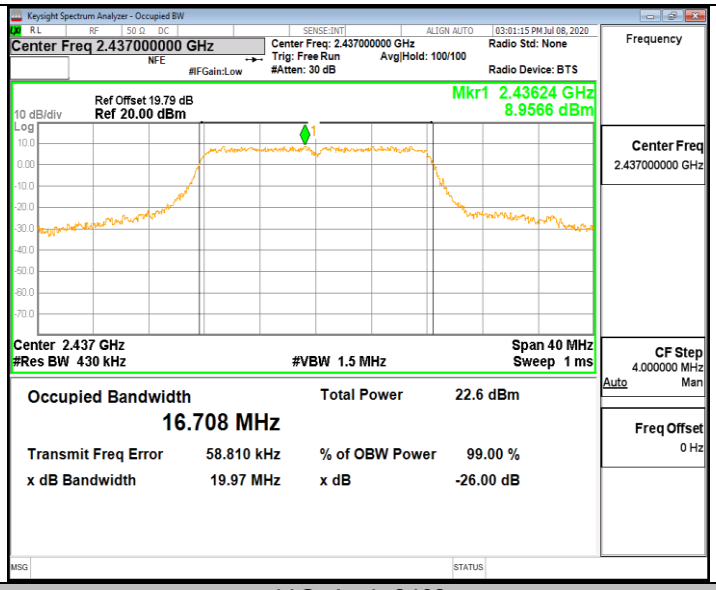

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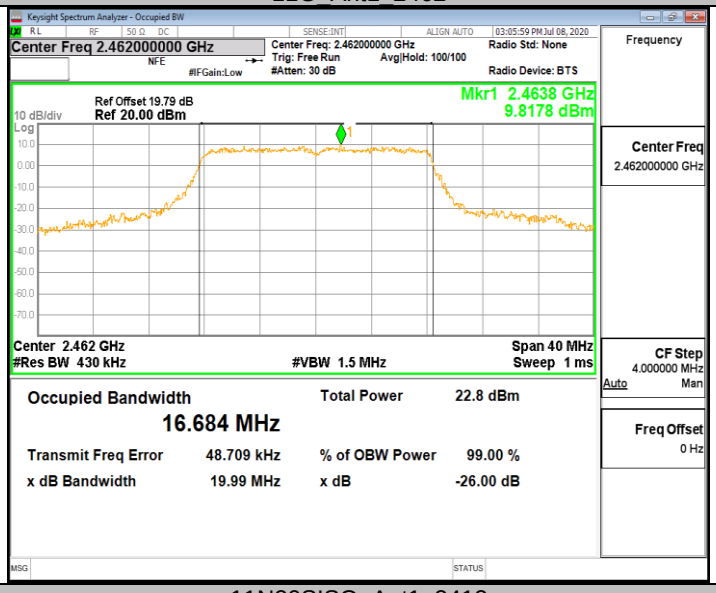

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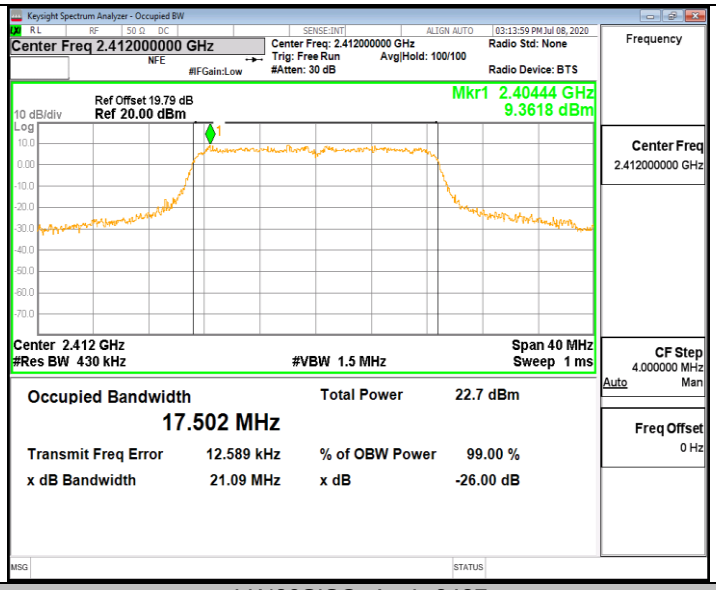

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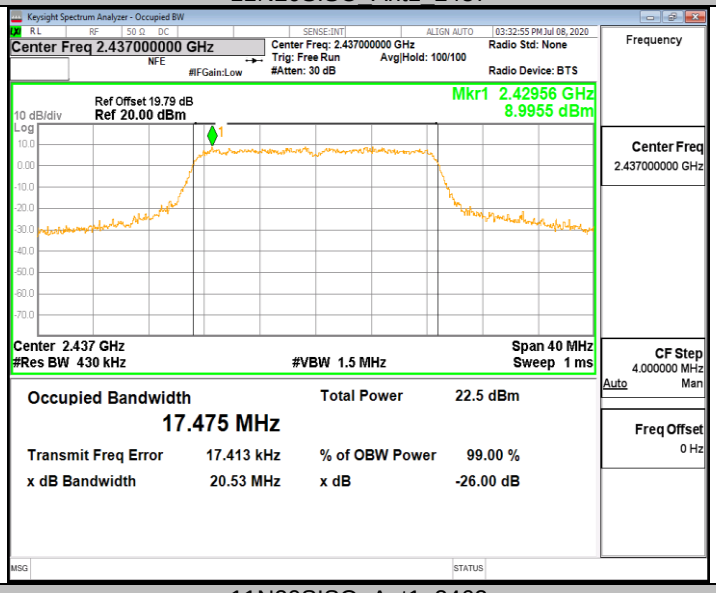

11N20SISO_Ant1_2462