



CFR 47 FCC PART 15 SUBPART C

TEST REPORT

For

Smart Attic Fan Control

MODEL NUMBER: IT-AF-SMT

FCC ID: 2APQIIT-AF-SMT

REPORT NUMBER: 4789100933.1-4

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Prepared for

**QC Manufacturing Inc.
26040 Ynez Rd. Temecula , CA 92591,USA**

Prepared by

**UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch
Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake
Hi-Tech Development Zone Dongguan, People's Republic of China
Tel: +86 769 22038881
Fax: +86 769 33244054
Website: www.ul.com**



Revision History

Rev.	Issue Date	Revisions	Revised By
V0	12/06/2019	Initial Issue	



Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	6dB Bandwidth and 99%	FCC Part 15.247 (a) (2)	Pass
2	Peak Conducted Output Power	FCC Part 15.247 (b) (3)	Pass
3	Power Spectral Density	FCC Part 15.247 (e)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d)	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205	Pass
6	Conducted Emission Test For AC Power Port	FCC Part 15.207	Pass
7	Antenna Requirement	FCC Part 15.203	Pass
Note: This test report is only published to and used by the applicant, and it is not for evidence purpose in China.			



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: QC Manufacturing Inc.
Address: 26040 Ynez Rd. Temecula , CA 92591,USA

Manufacturer Information

Company Name: Shenzhen Asia Bright Industry Co.,Ltd.
Address: Building 10, Asia Industrial Park, Gangtou, Bantian,Shenzhen, China

EUT Description

Product Name Smart Attic Fan Control
Model Name IT-AF-SMT
Sample Status Normal
Sample ID 2571291
Sample Received date September 25, 2019
Date Tested November 22 ~ December 05, 2019

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

Prepared By:

Kebo Zhang
Engineer Project Associate

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager



2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance 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	<p>A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p>FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p>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.</p> <p>VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B, the VCCI registration No. is C-20012 and T-20011</p>
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Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

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



4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty
Conduction emission	3.62dB
Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	2.2dB
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB
Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.78dB (1GHz-18Gz)
	5.23dB (18GHz-26Gz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	



5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Equipment	Smart Attic Fan Control
Model Name	IT-AF-SMT
Radio Technology	IEEE802.11b/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) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Rated Input	AC 120V, 60Hz

5.2. MAXIMUM OUTPUT POWER

Number of Transmit Chains (NTX)	IEE Std. 802.11	Frequency (MHz)	Channel Number	Max PK Conducted Power (dBm)
1	IEEE 802.11b	2412-2462	1-11[11]	12.37
1	IEEE 802.11g	2412-2462	1-11[11]	11.39
1	IEEE 802.11nHT20	2412-2462	1-11[11]	11.34
1	IEEE 802.11nHT40	2422-2452	3-9[7]	11.61

5.3. CHANNEL LIST

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

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	/	/



5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel Number	Test Channel
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		SecureCRT					
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	28	28	28	/		
802.11g	1	28	28	28			
802.11n HT20	1	28	28	28			
802.11n HT40	1	/			28	28	28

5.6. THE WORSE CASE CONFIGURATIONS

Worst-case data rates as provided by the client were:

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	2

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	<input checked="" type="checkbox"/> 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	<input checked="" type="checkbox"/> 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	<input checked="" type="checkbox"/> 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	<input checked="" type="checkbox"/> 1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.

5.8. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	45 ~ 70%	
Atmospheric Pressure:	1025Pa	
Temperature	TN	22 ~ 28°C
Voltage :	VL	N/A
	VN	AC 120V, 60Hz
	VH	N/A

Note: VL= Lower Extreme Test Voltage

VN= Nominal Voltage

VH= Upper Extreme Test Voltage

TN= Normal Temperature



5.9. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	PC	Dell	Vostro 3902	8KNDDDB2
2	USB TO UART	/	/	/
3	Switch control panel	/	/	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	/	/	1.0	/

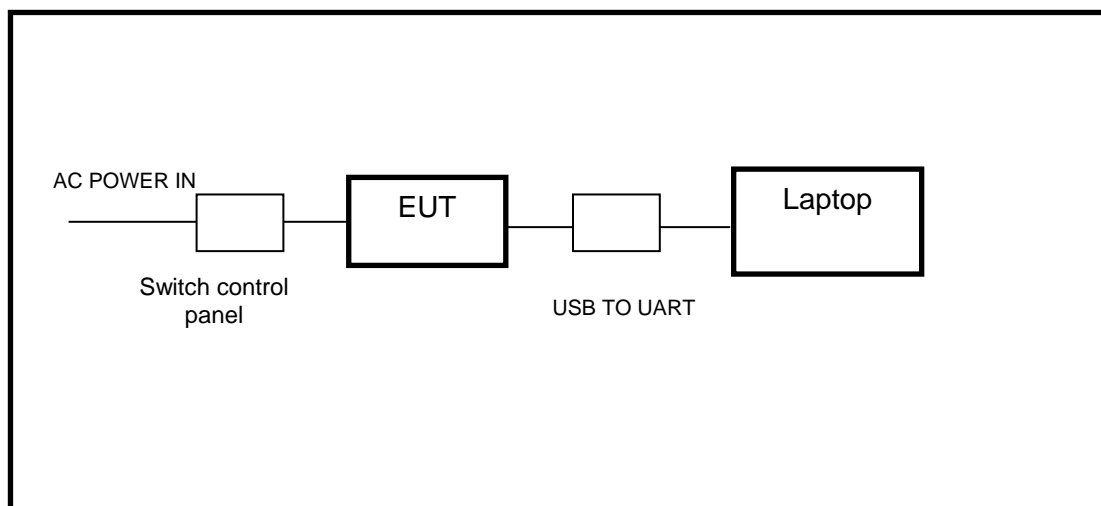
ACCESSORIES

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

TEST SETUP

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

SETUP DIAGRAM FOR TESTS





6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ESR3	101961	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Two-Line V-Network	R&S	ENV216	101983	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.10,2018	Dec.10,2019
Software						
Used	Description		Manufacturer	Name		Version
<input checked="" type="checkbox"/>	Test Software for Conducted disturbance		Farad	EZ-EMC		Ver. UL-3A1
Radiated Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Sep.17, 2018	Sep.17, 2021
<input checked="" type="checkbox"/>	Preamplifier	HP	8447D	2944A09099	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	EMI Measurement Receiver	R&S	ESR26	101377	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Horn Antenna	TDK	HRN-0118	130939	Sep.17, 2018	Sep.17, 2021
<input checked="" type="checkbox"/>	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Aug.11, 2018	Aug.11, 2021
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Loop antenna	Schwarzbeck	1519B	00008	Jan.07,2019	Jan.07, 2022
<input checked="" type="checkbox"/>	Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Dec.10,2018	Dec.10,2019
Software						
Used	Description		Manufacturer	Name		Version
<input checked="" type="checkbox"/>	Test Software for Radiated disturbance		Farad	EZ-EMC		Ver. UL-3A1



Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
<input checked="" type="checkbox"/>	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Power Meter	Keysight	N1911A	MY55416024	Dec.10,2018	Dec.10,2019
<input checked="" type="checkbox"/>	Power Sensor	Keysight	U2021XA	MY5100022	Dec.10,2018	Dec.10,2019



7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

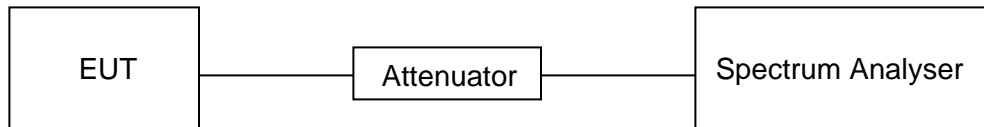
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



TEST ENVIRONMENT

Temperature	25.9°C	Relative Humidity	54%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (KHz)	Final setting For VBW (KHz)
11b	100.1	100.1	1.0	100	0.00	0.01	0.01
11g	100.1	100.1	1.0	100	0.00	0.01	0.01
11n HT20	100.1	100.1	1.0	100	0.00	0.01	0.01
11n HT40	100.1	100.1	1.0	100	0.00	0.01	0.01

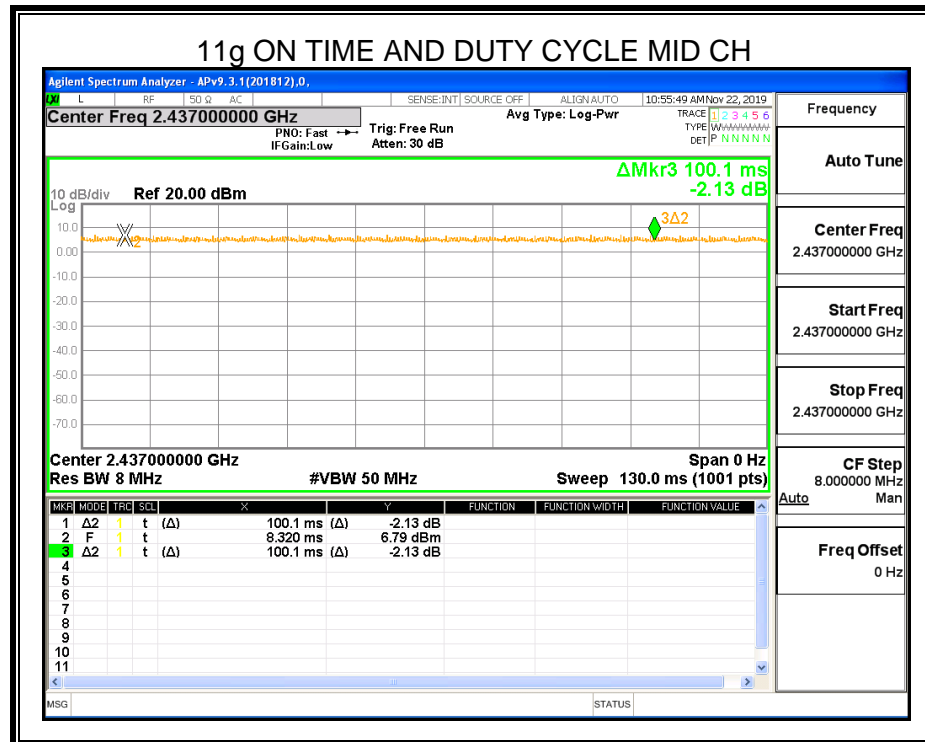
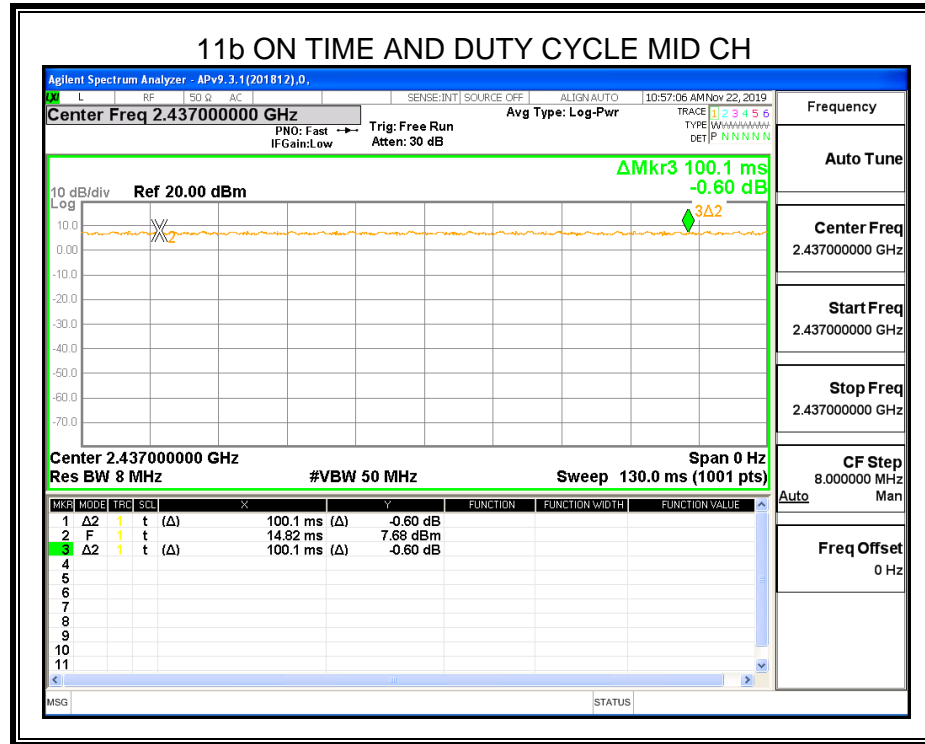
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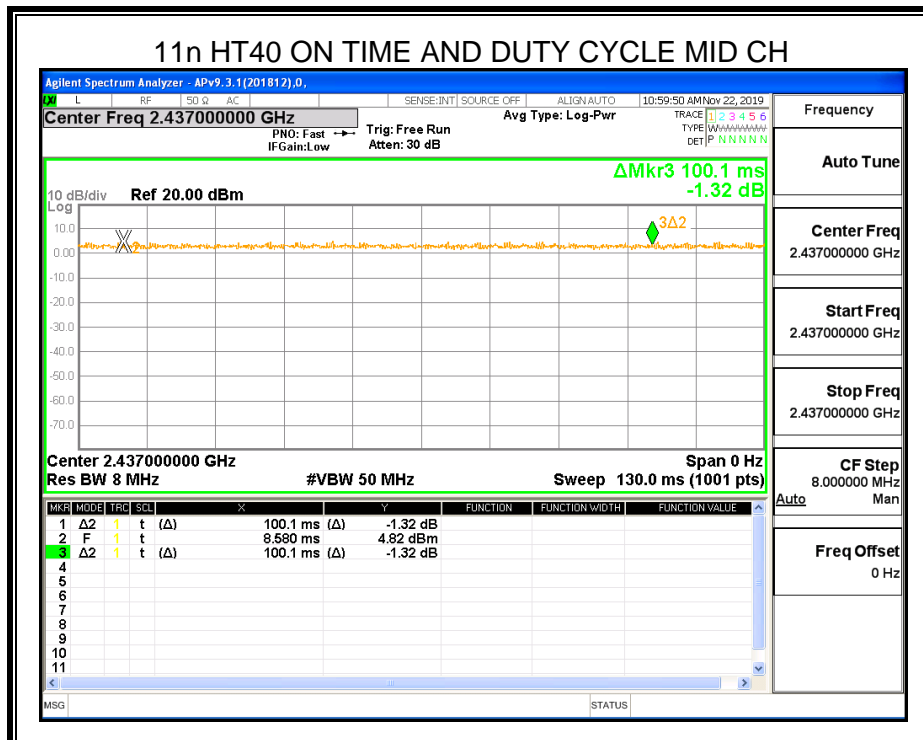
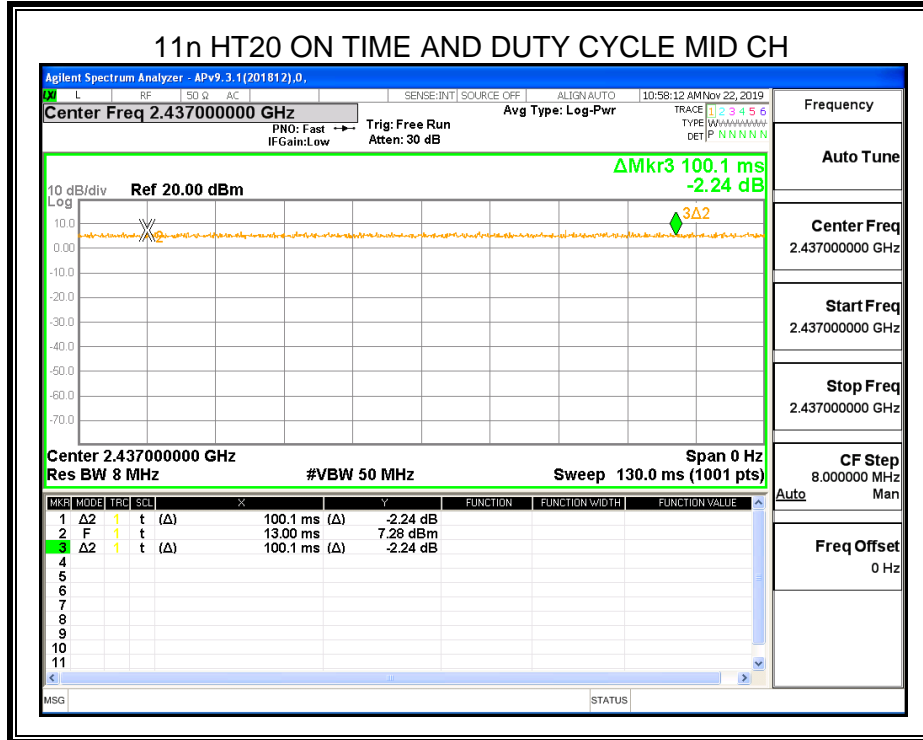
Duty Cycle Correction Factor=10log (1/x).

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.







7.2. 6 dB DTS BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

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

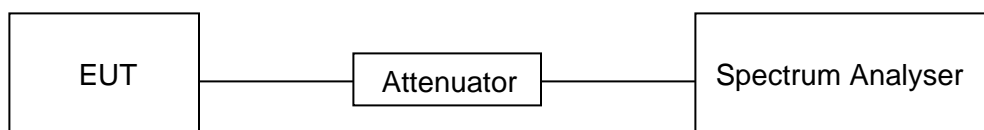
TEST PROCEDURE

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

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

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

TEST SETUP





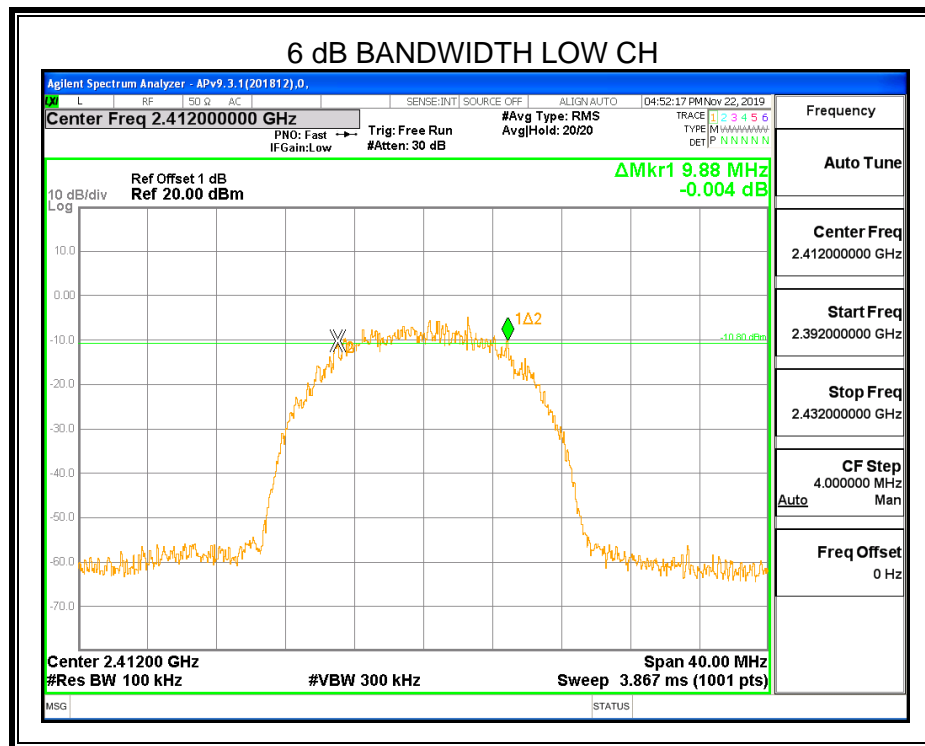
TEST ENVIRONMENT

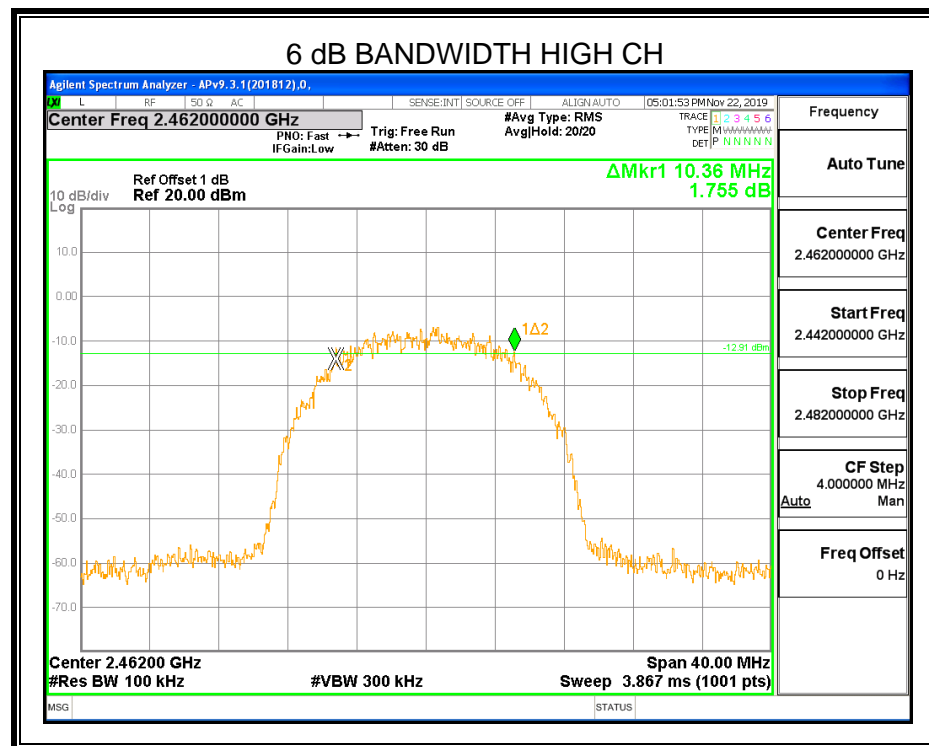
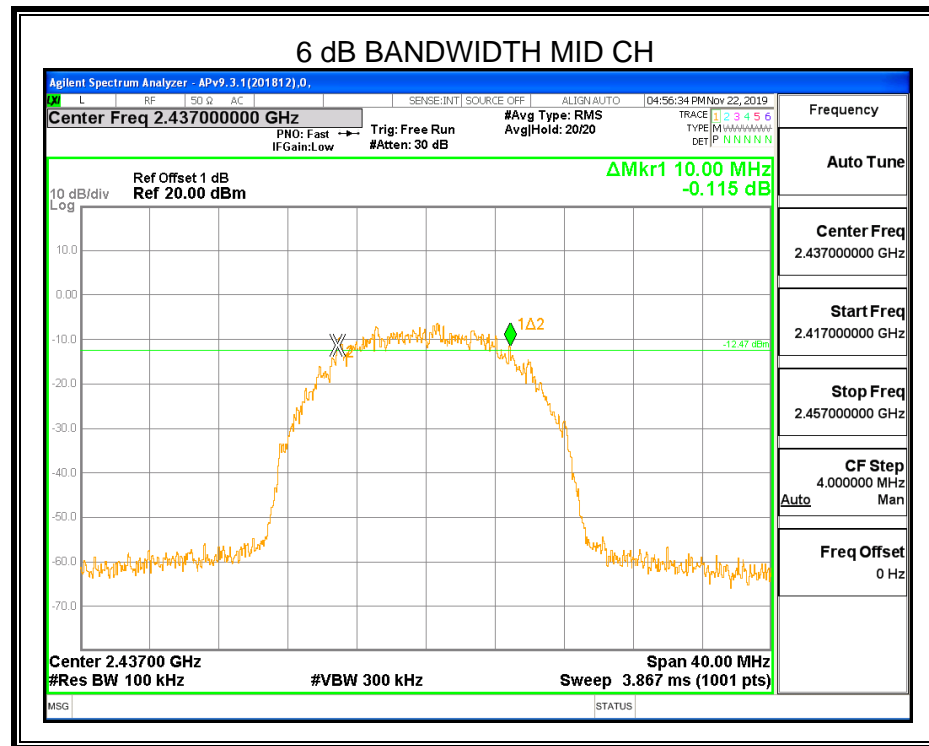
Temperature	24.6°C	Relative Humidity	49%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

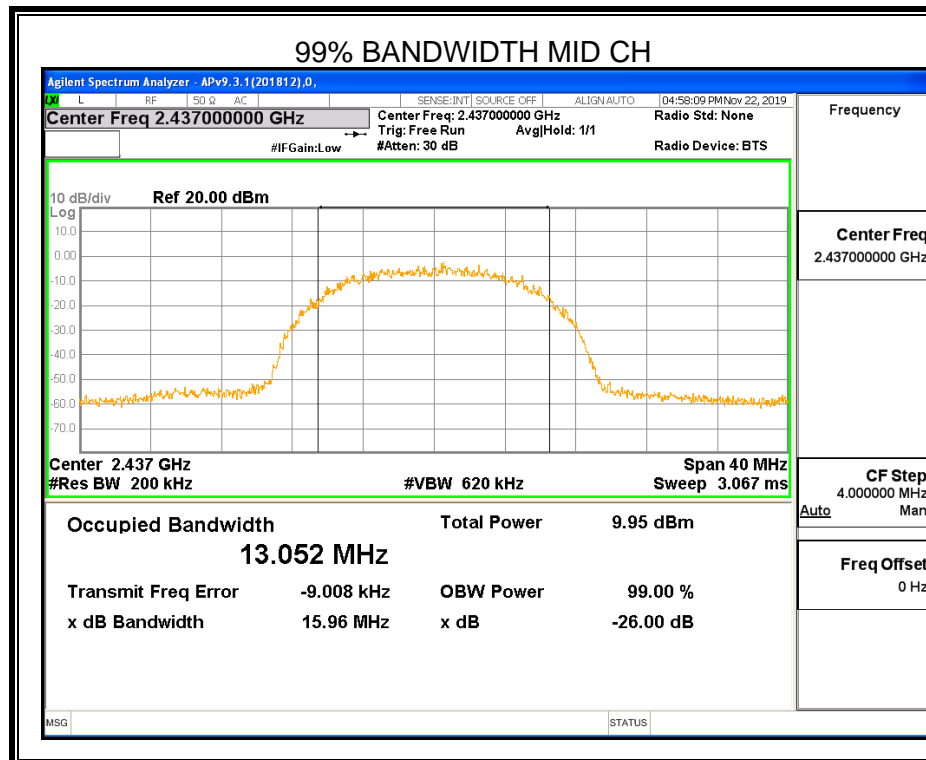
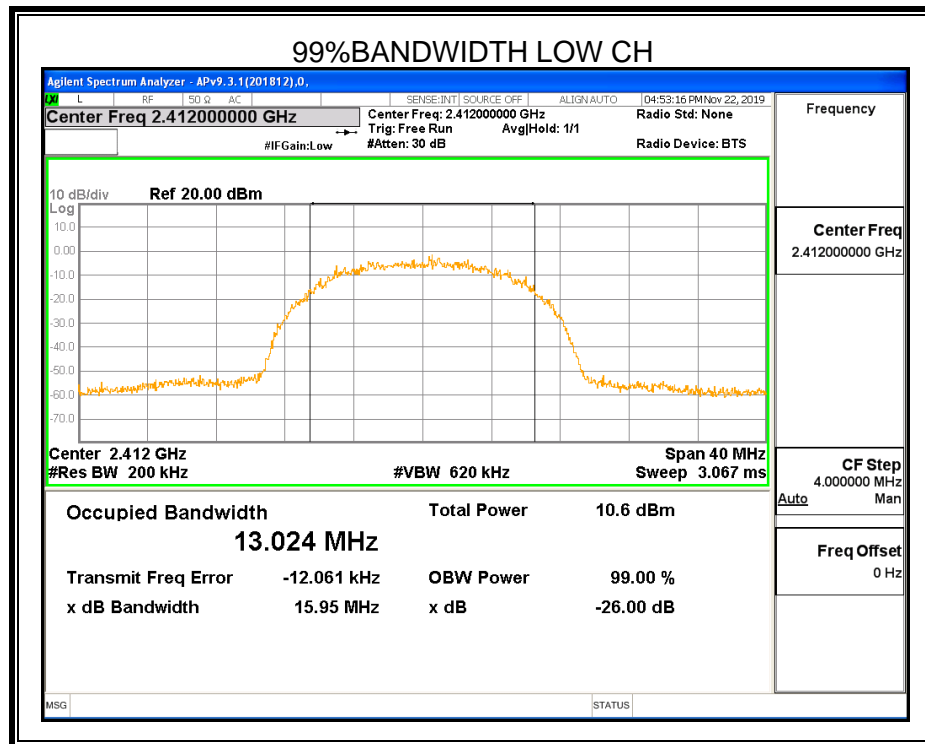
RESULTS

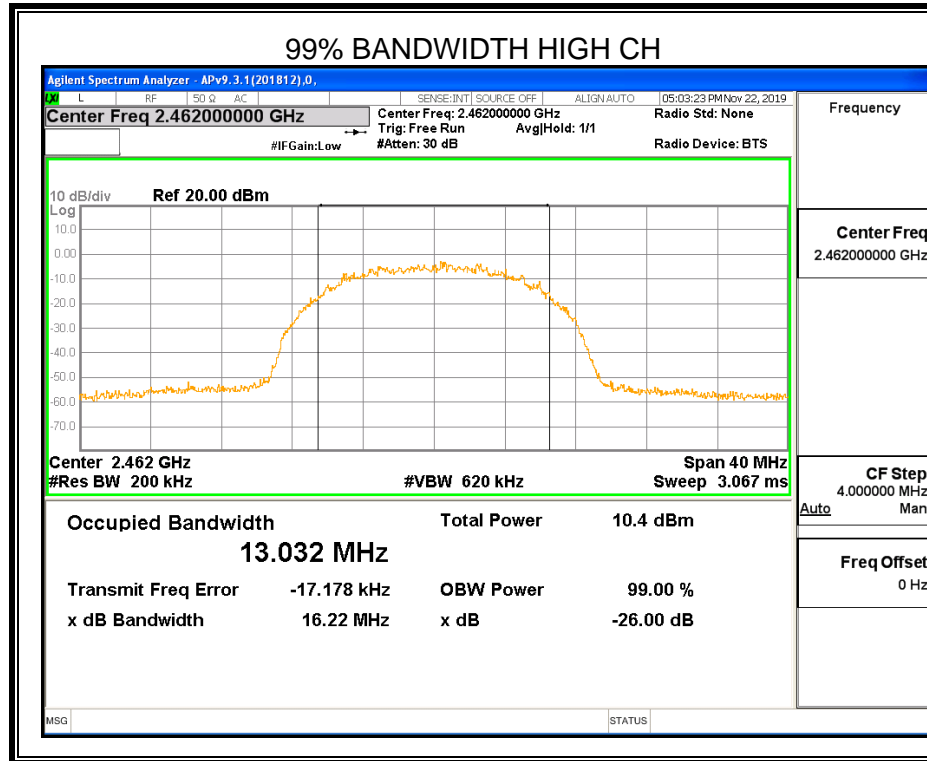
7.2.1. 802.11b MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	9.88	13.024	≥500	Pass
Middle	10.00	13.052	≥500	Pass
High	10.36	13.032	≥500	Pass





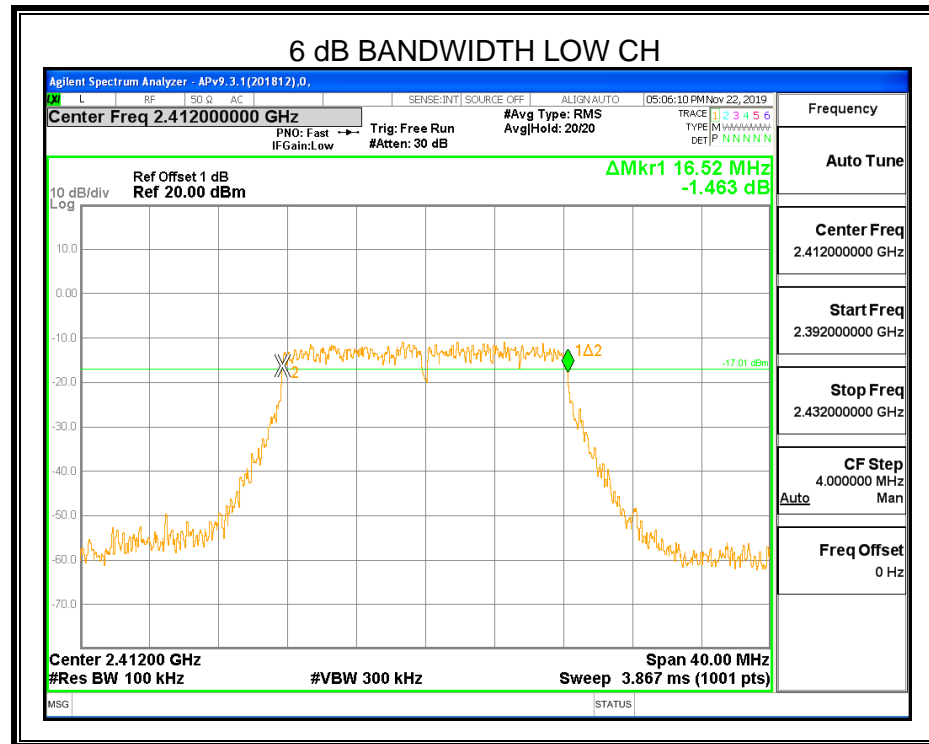


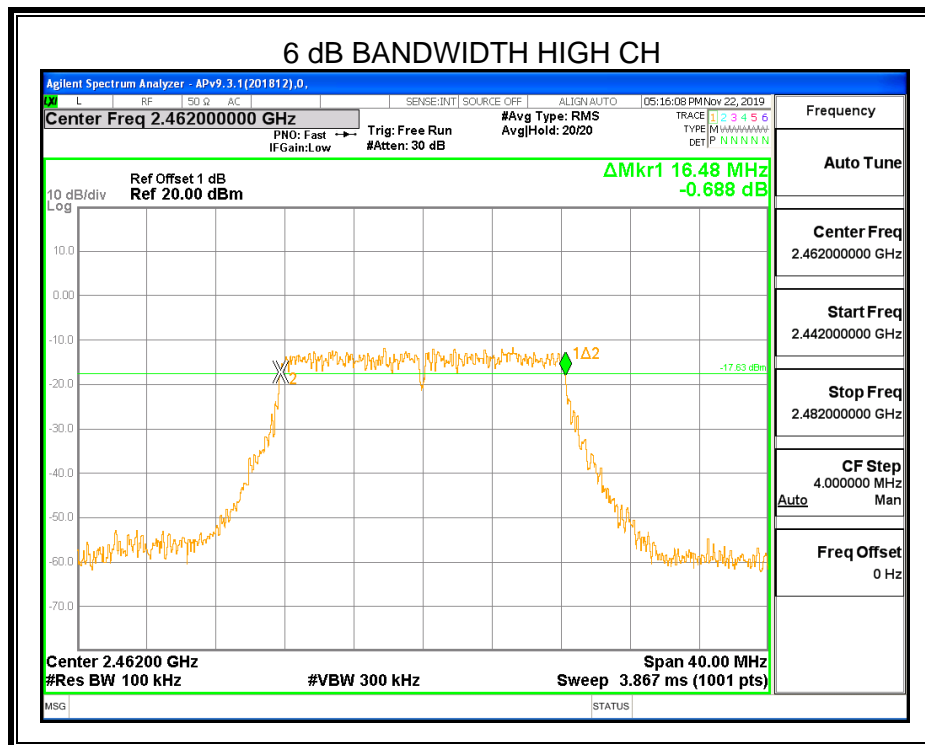
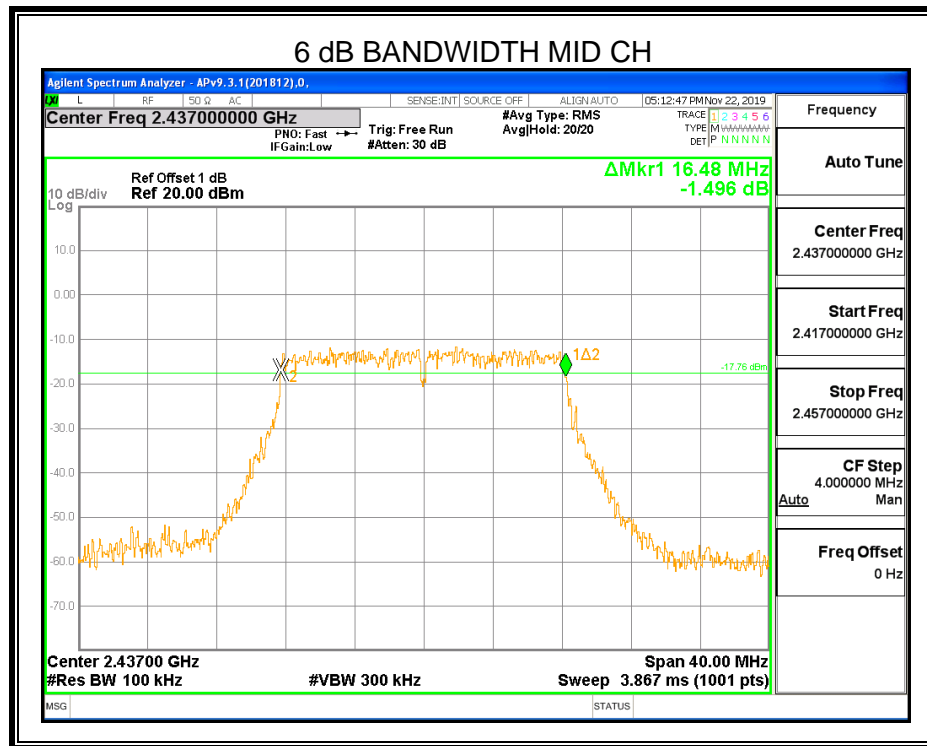


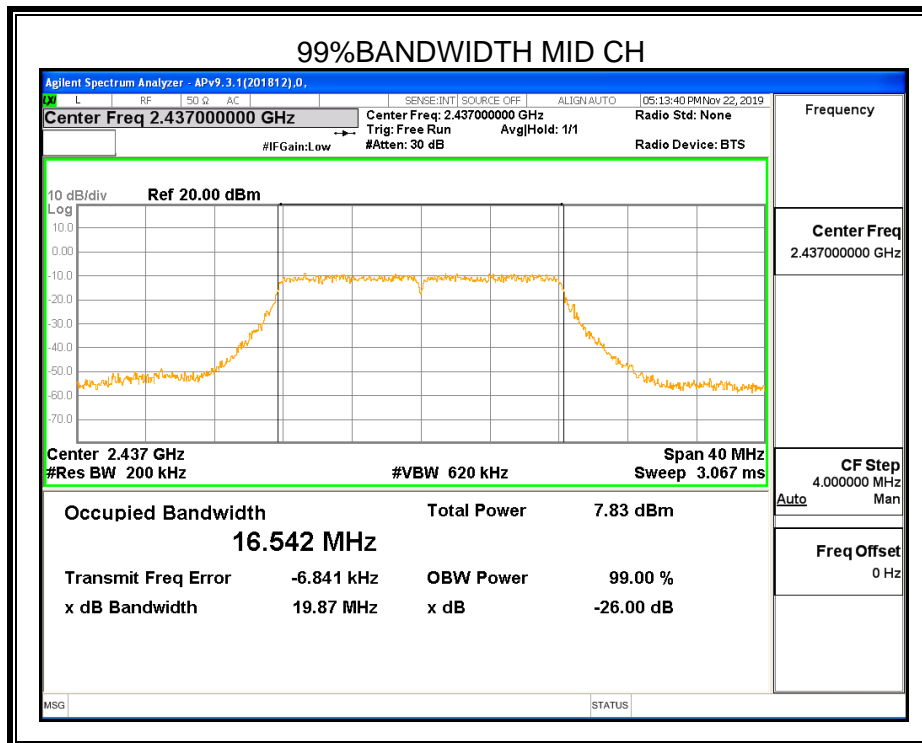
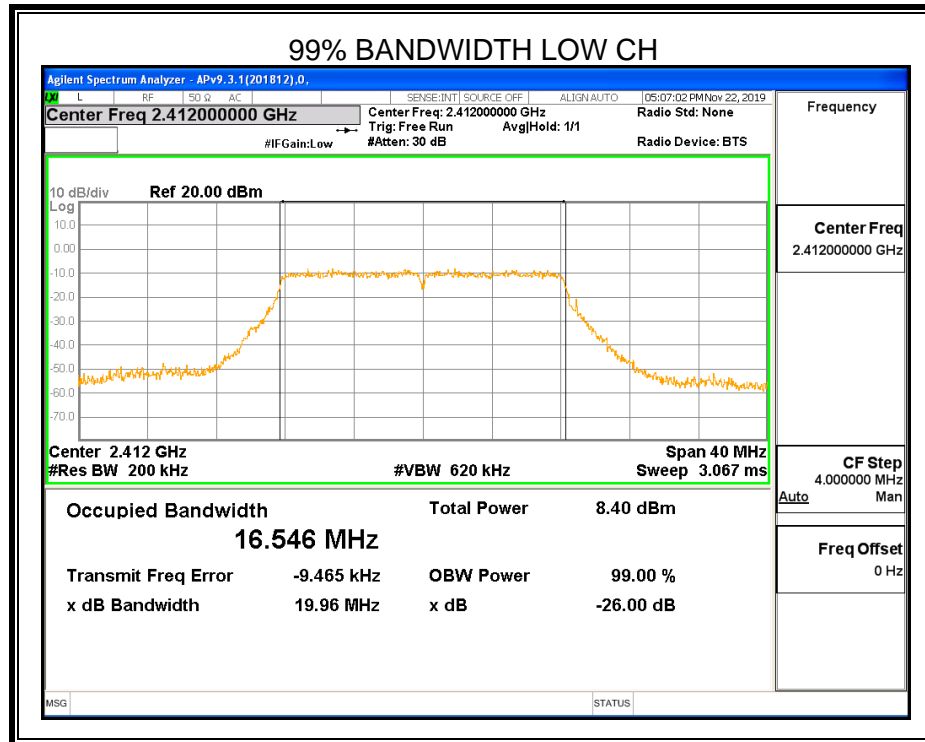


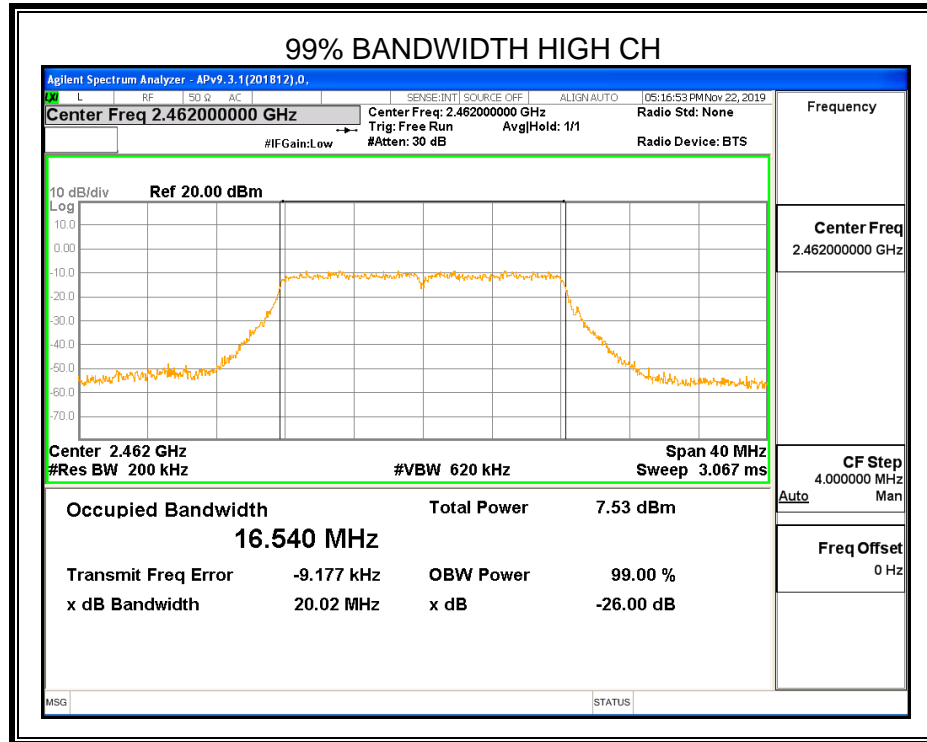
7.2.2. 802.11g MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	16.52	16.546	≥500	Pass
Middle	16.48	16.542	≥500	Pass
High	16.48	16.540	≥500	Pass





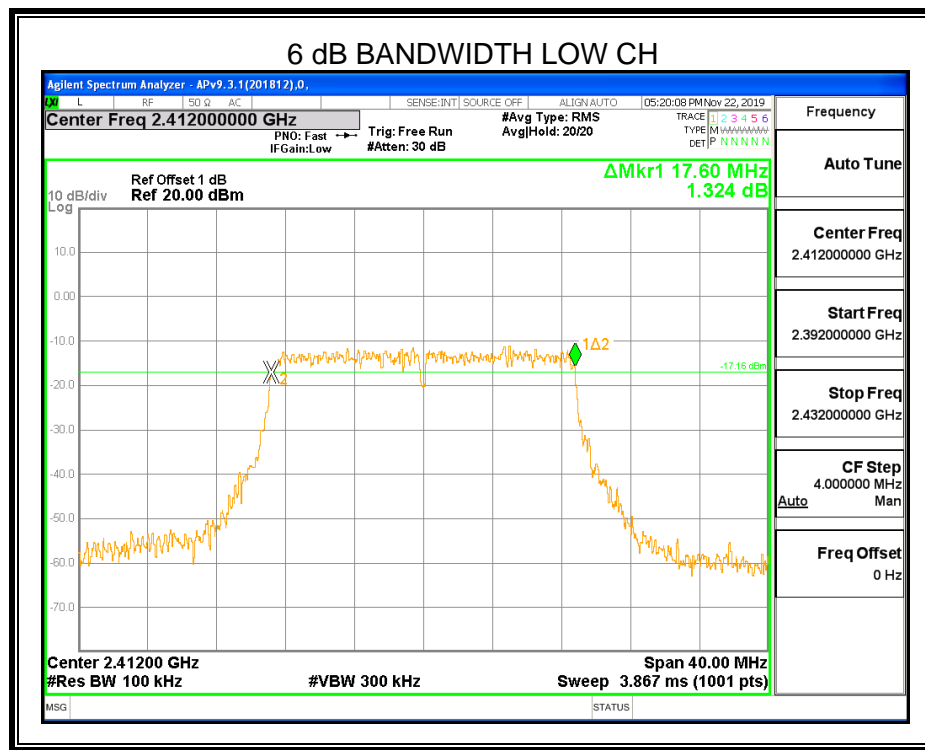


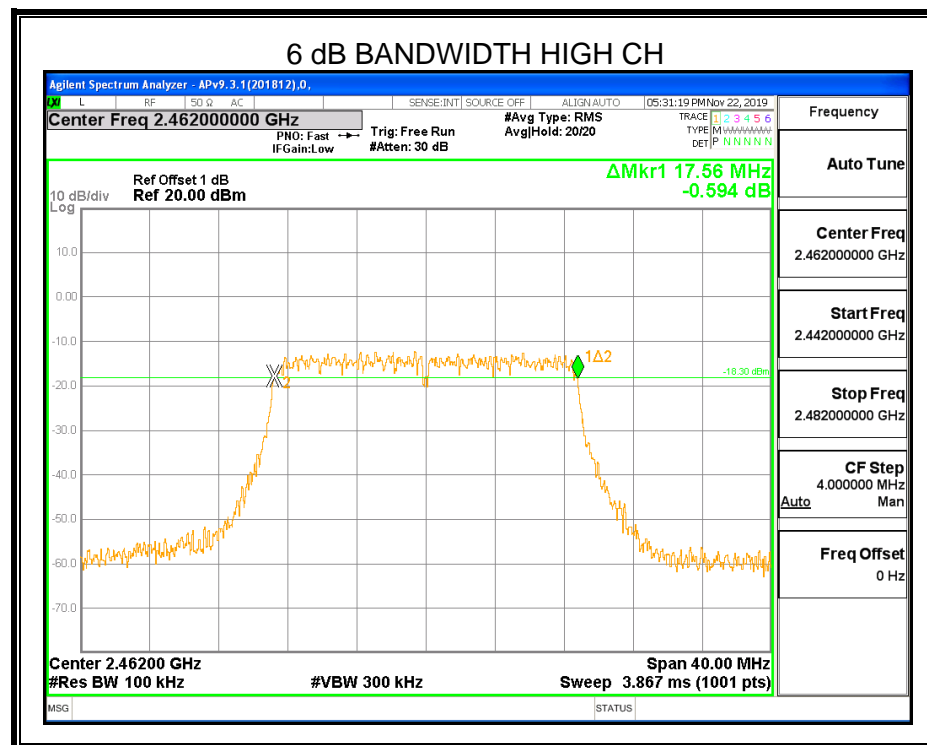
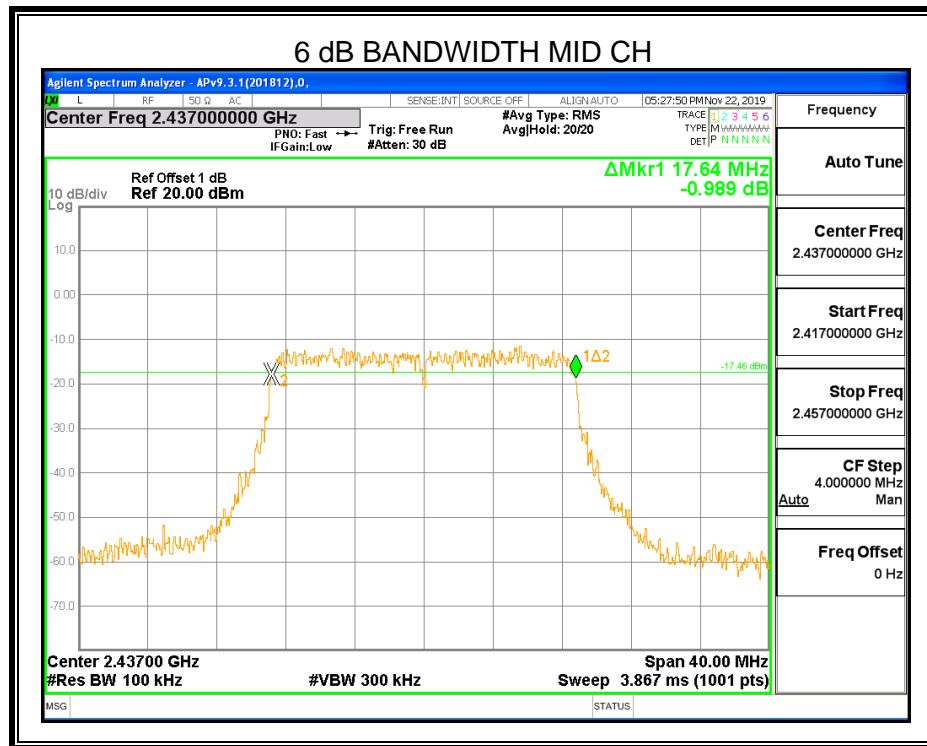


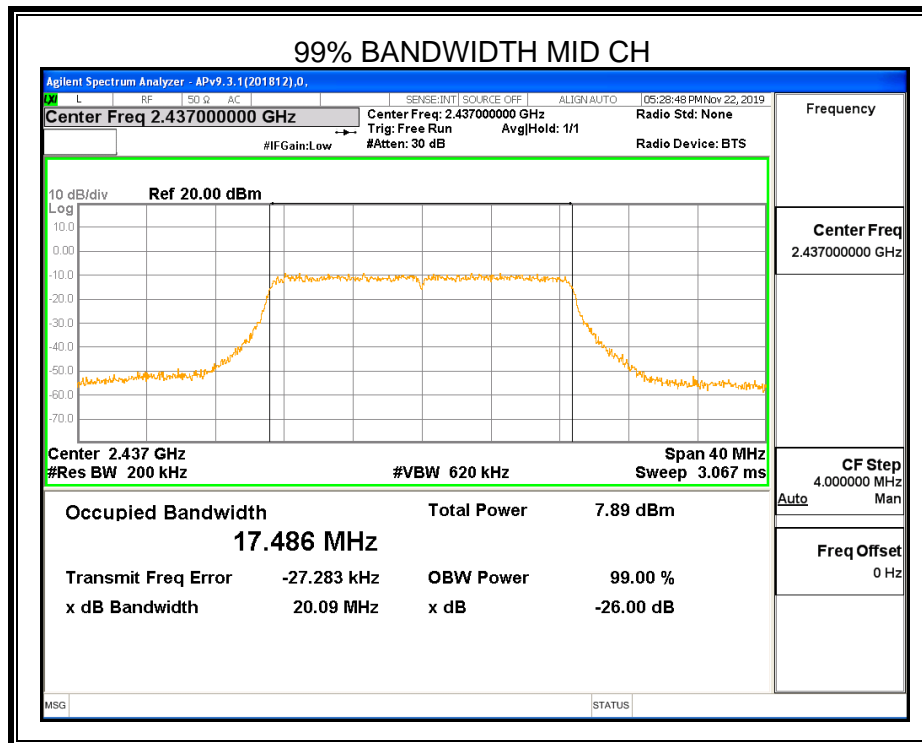
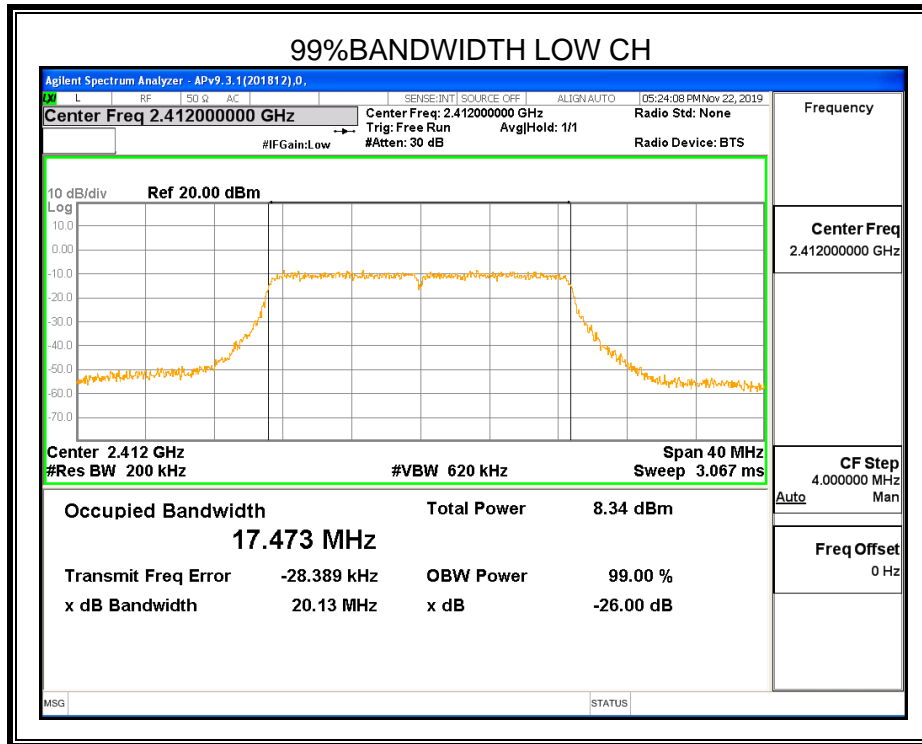


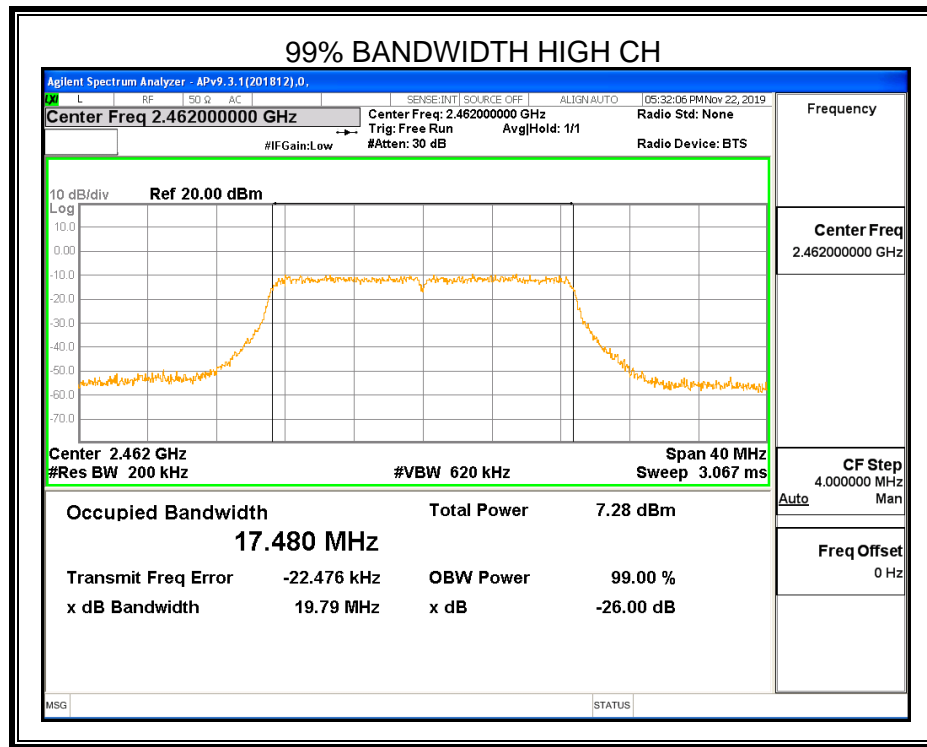
7.2.3. 802.11n HT20 MODE

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	17.60	17.473	≥500	Pass
Middle	17.64	17.486	≥500	Pass
High	17.56	17.480	≥500	Pass





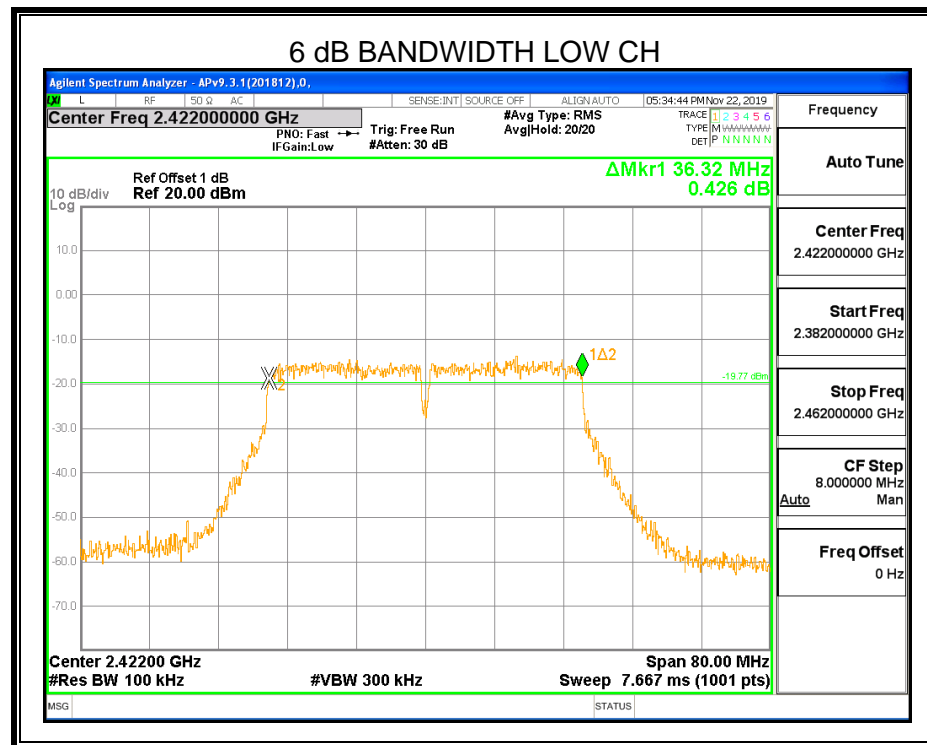


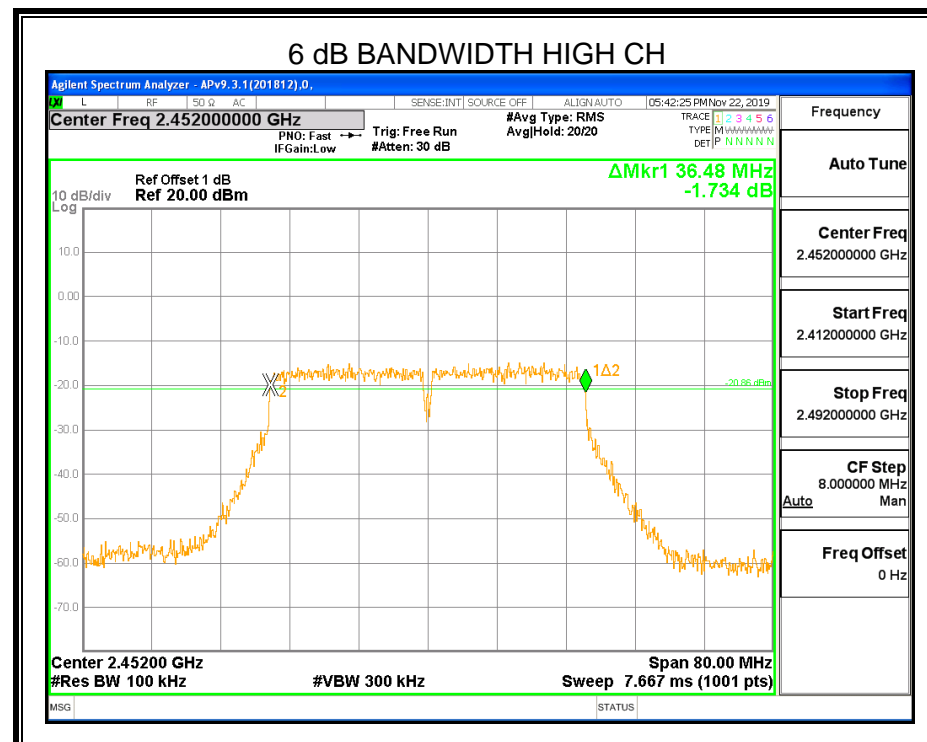
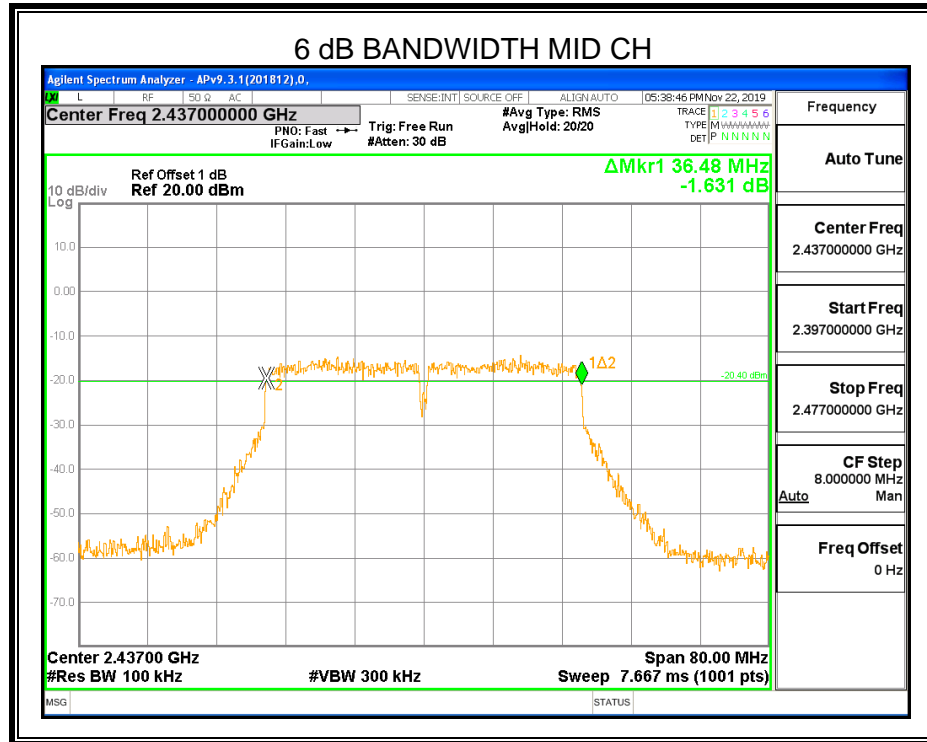


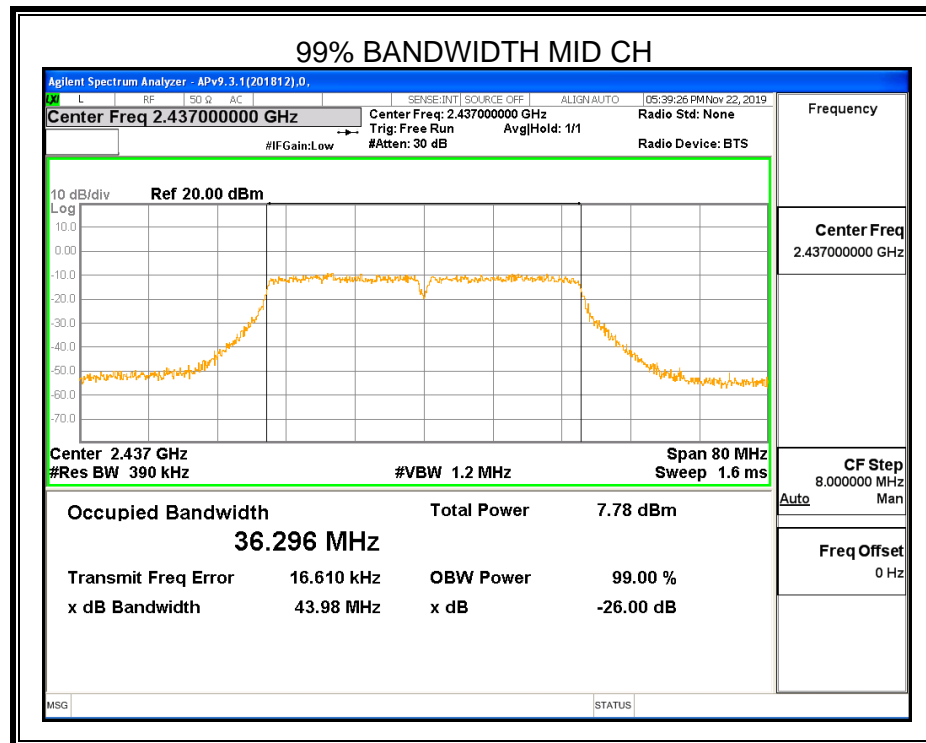
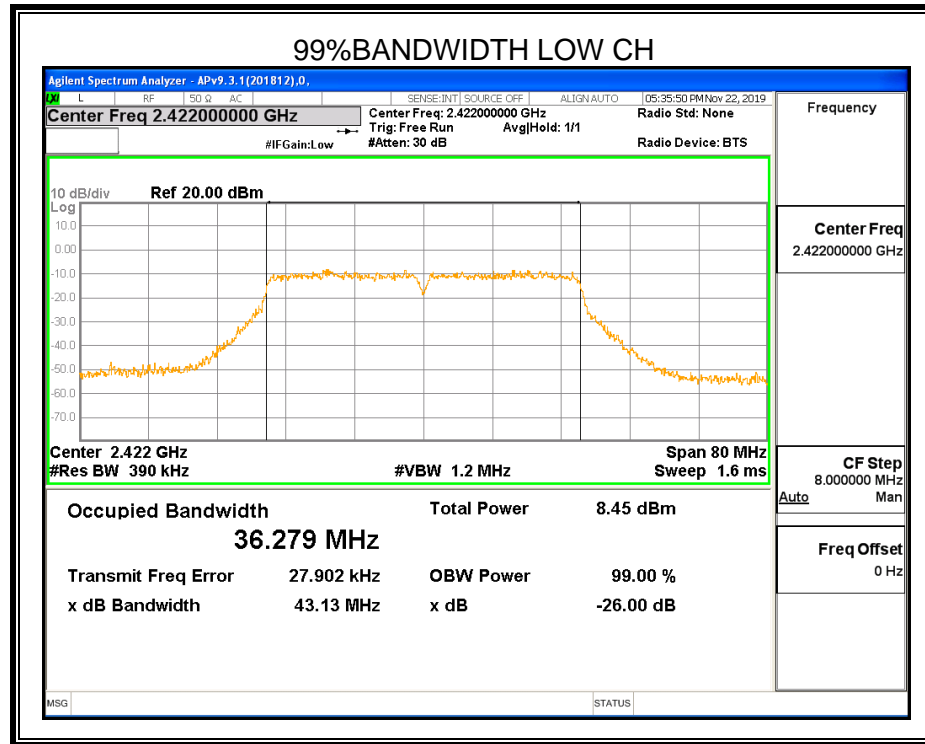


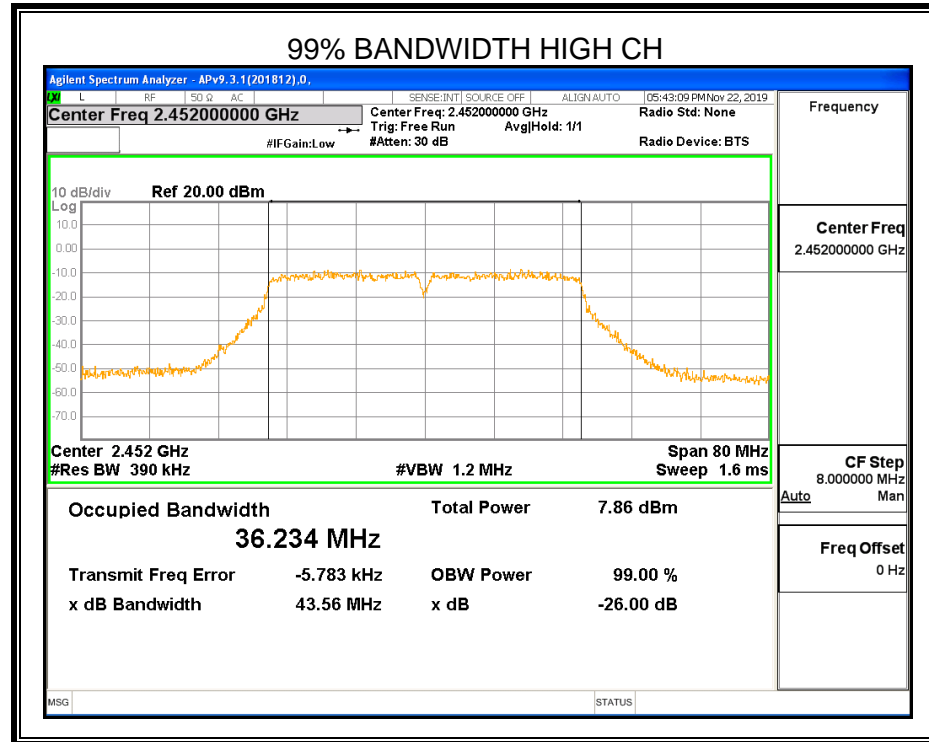
7.2.4. 802.11n HT40 MODE

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.32	36.279	≥500	Pass
Middle	2437	36.48	36.296	≥500	Pass
High	2452	36.48	36.234	≥500	Pass











7.3. PEAK CONDUCTED OUTPUT POWER

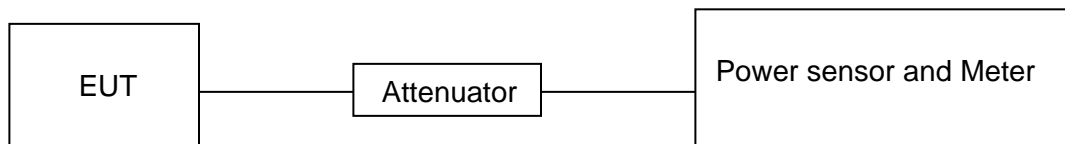
LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Output Power	1 watt or 30dBm	2400-2483.5

TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.
Measure peak power each channel.
Peak Detector use for Peak result.
AVG Detector use for AVG result.

TEST SETUP



TEST ENVIRONMENT

Temperature	24.6°C	Relative Humidity	49%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz



RESULTS

7.3.1. 802.11b MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	12.37	4.97	30
Middle	11.47	4.12	30
High	11.13	3.84	30

7.3.2. 802.11g MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	11.39	3.62	30
Middle	10.70	2.95	30
High	10.40	2.62	30

7.3.3. 802.11n HT20 MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	11.34	3.26	30
Middle	10.64	2.62	30
High	10.37	2.35	30

7.3.4. 802.11 n HT40 MODE

Test Channel	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AV)	LIMIT
	(dBm)	(dBm)	dBm
Low	11.61	3.45	30
Middle	11.17	2.91	30
High	10.79	2.47	30



7.4. POWER SPECTRAL DENSITY

LIMITS

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

TEST PROCEDURE

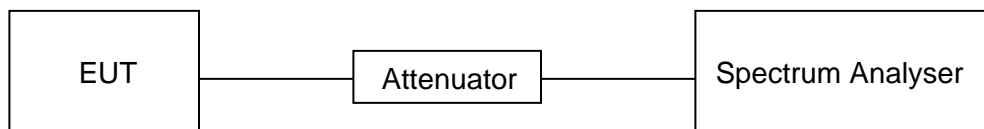
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
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

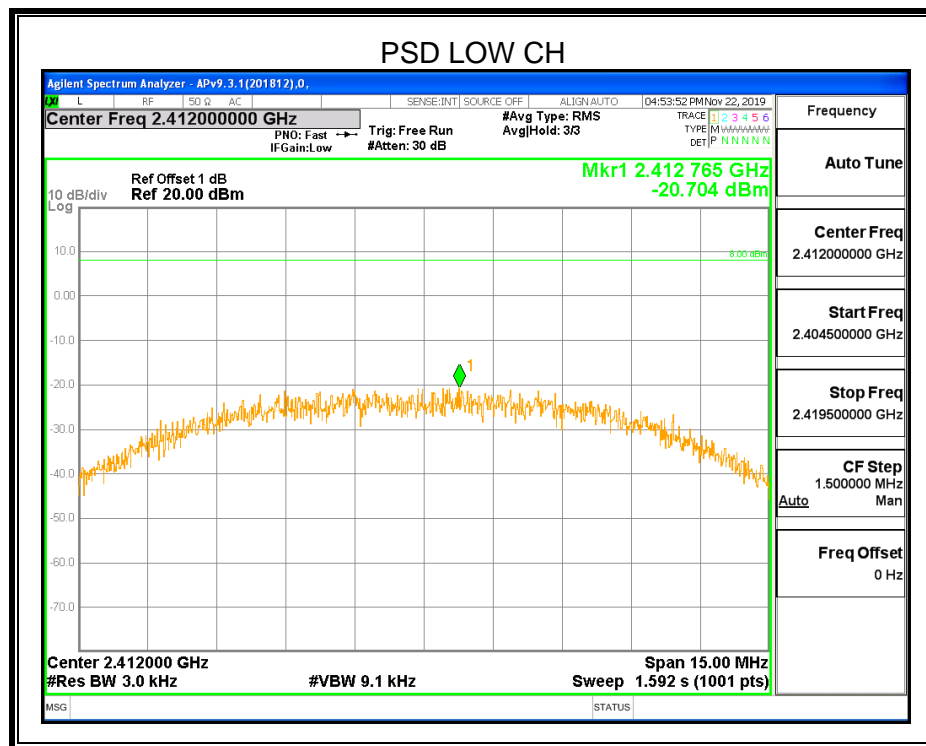
Temperature	24.6°C	Relative Humidity	49%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

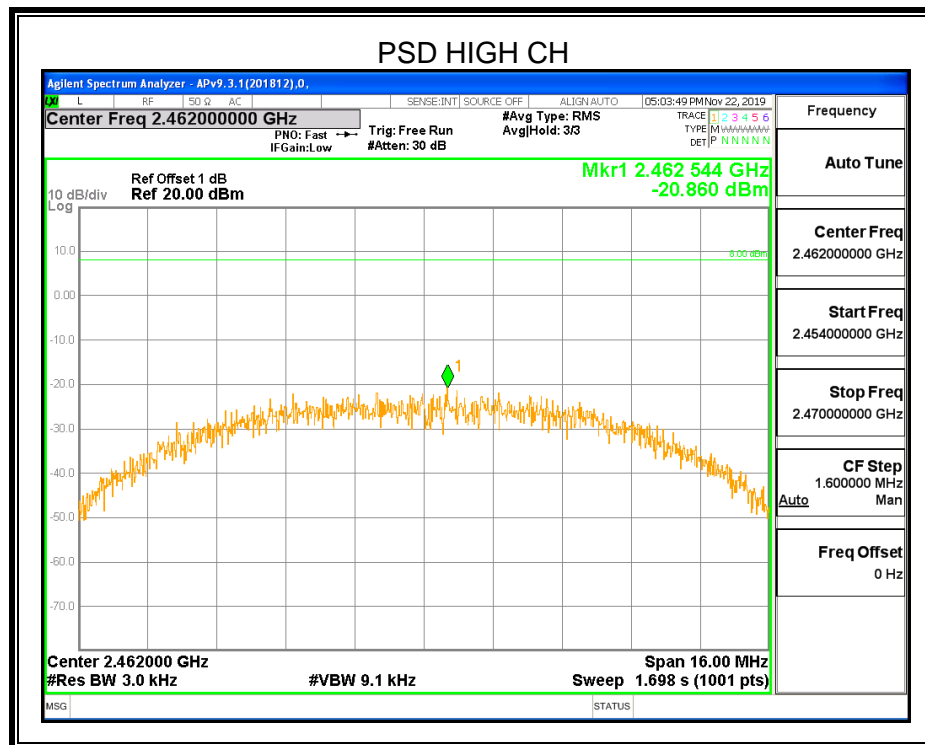
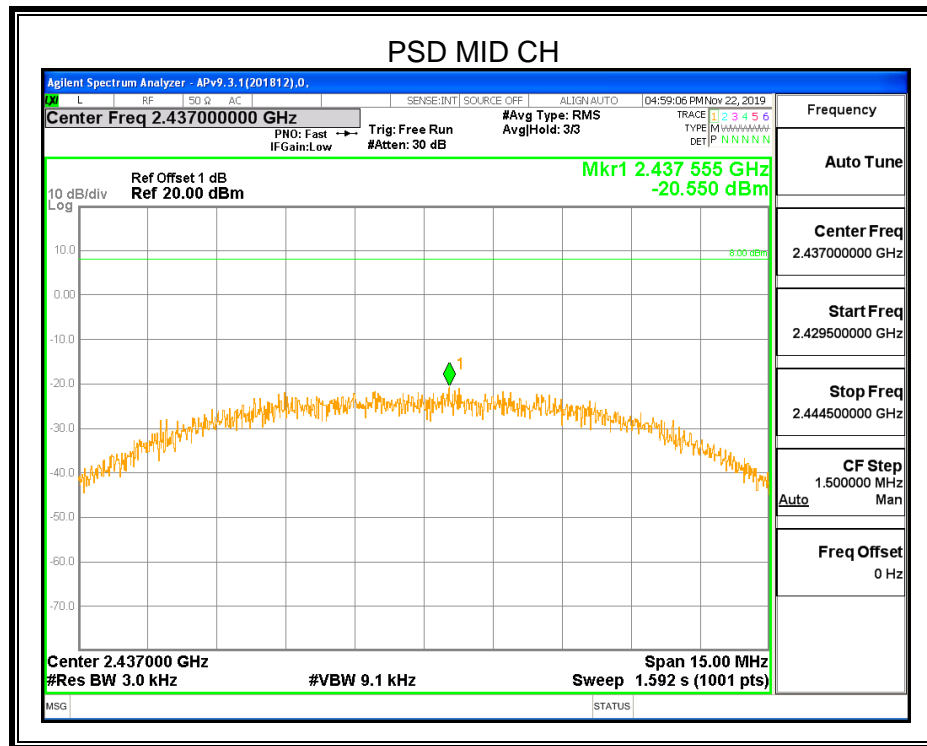
RESULTS



7.4.1. 802.11b MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-20.704	8	PASS
Middle	-20.550	8	PASS
High	-20.860	8	PASS

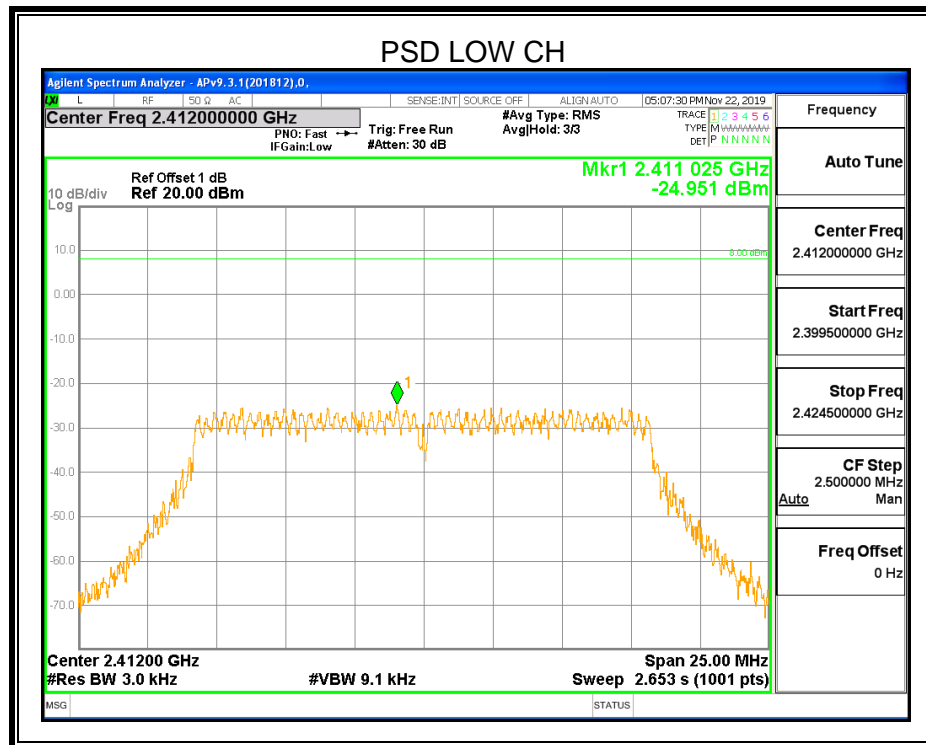


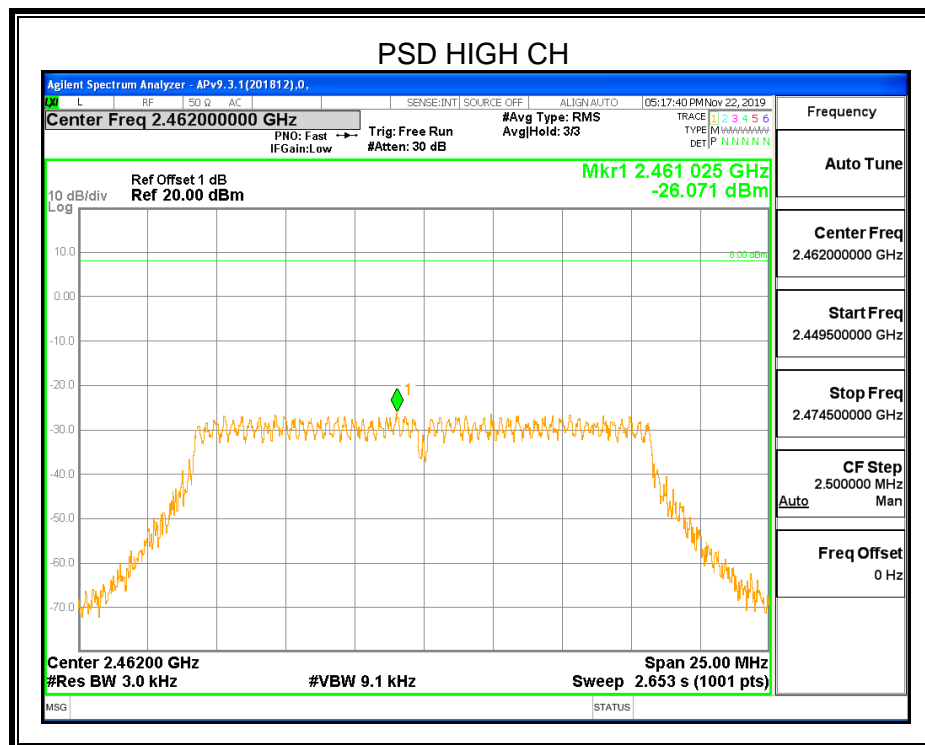
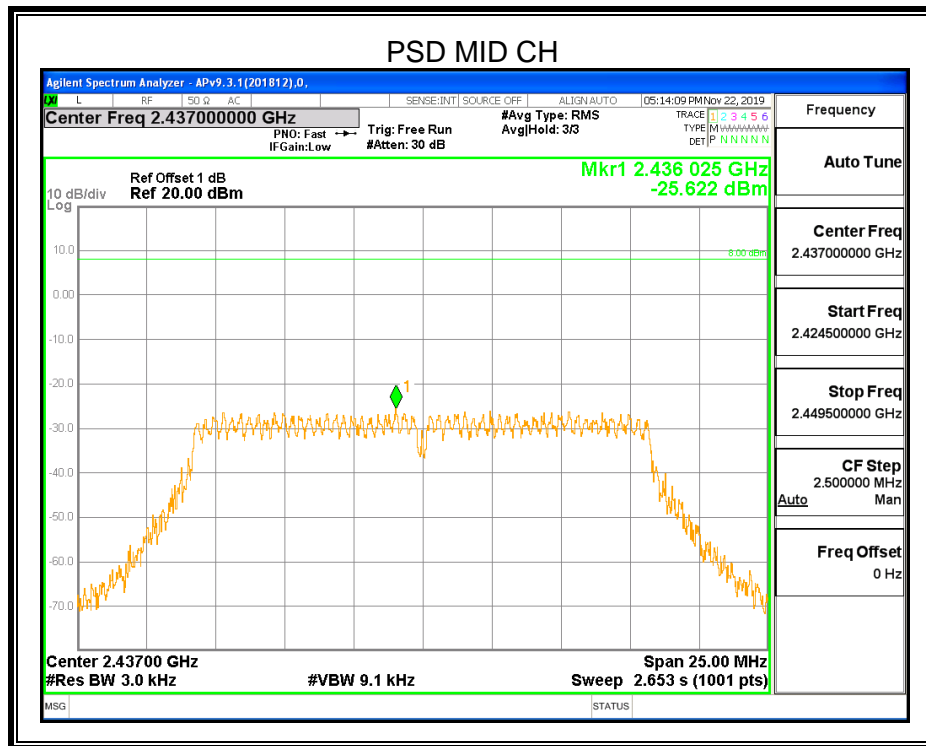




7.4.2. 802.11g MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-24.951	8	PASS
Middle	-25.622	8	PASS
High	-26.071	8	PASS

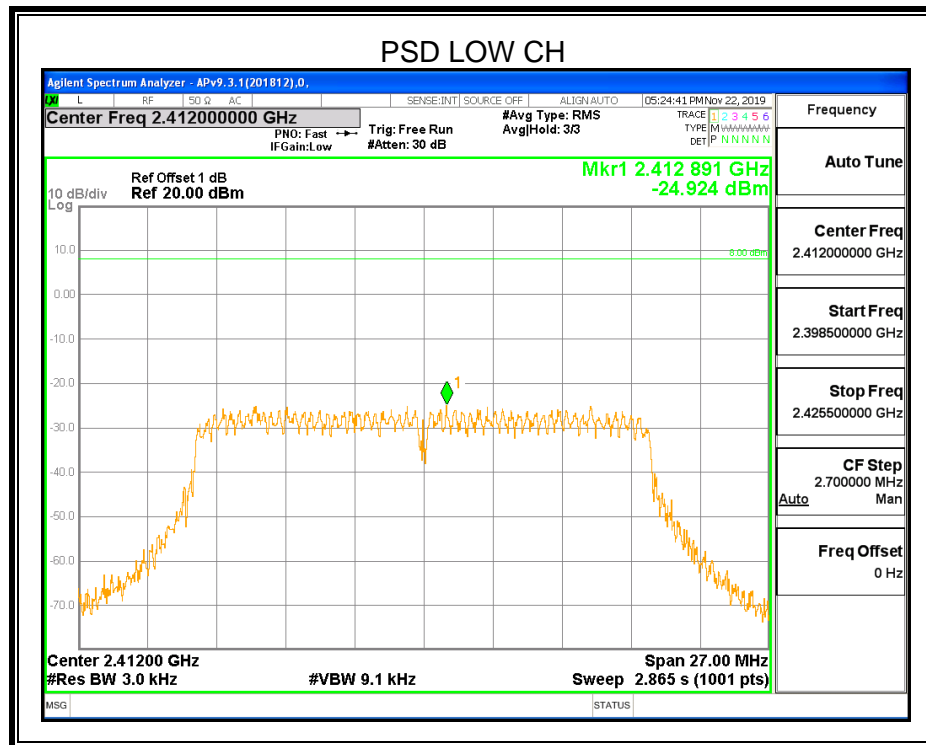


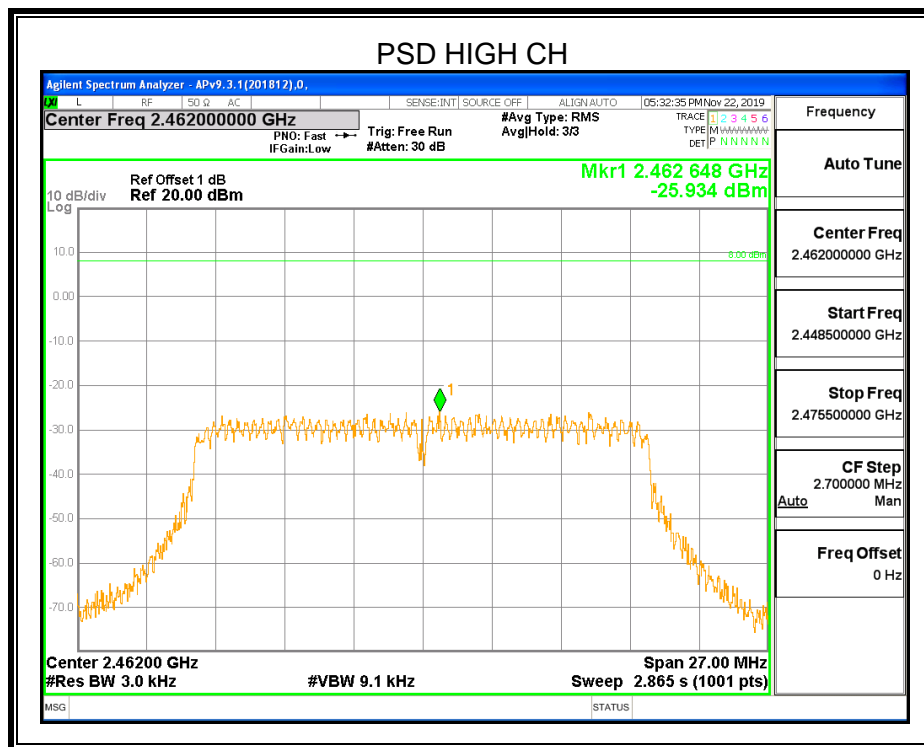
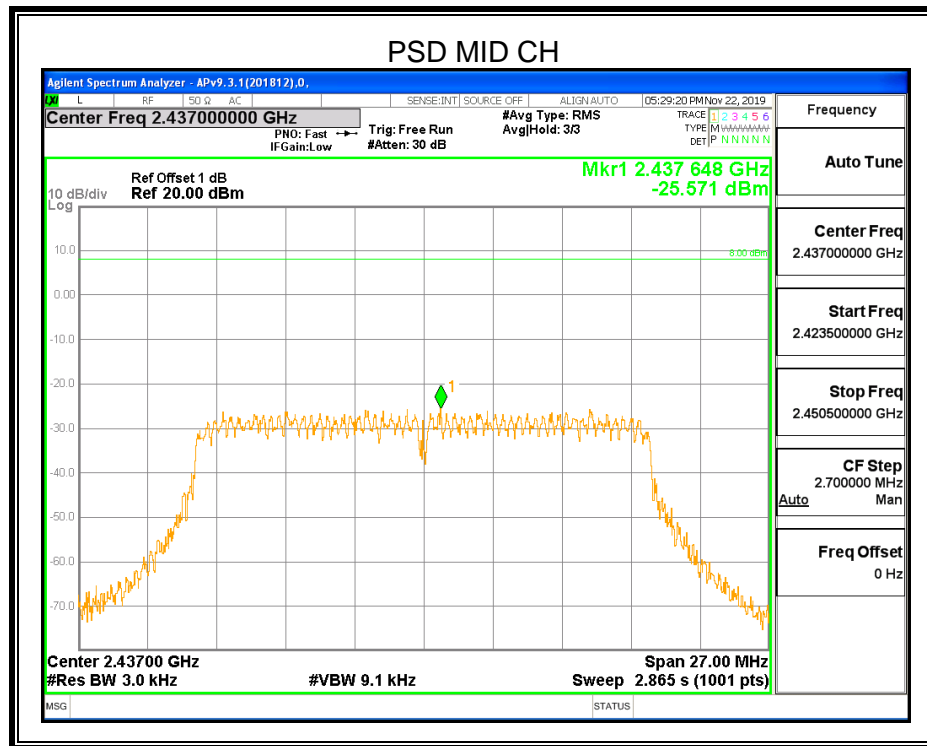




7.4.3. 802.11n HT20 MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-24.924	8	PASS
Middle	-25.571	8	PASS
High	-25.934	8	PASS

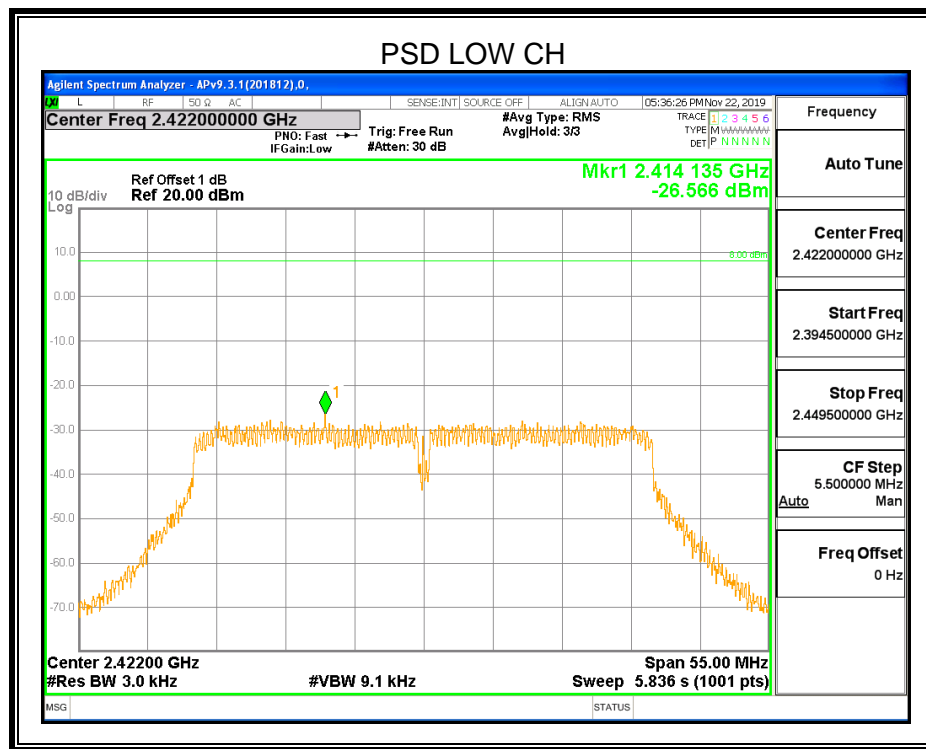


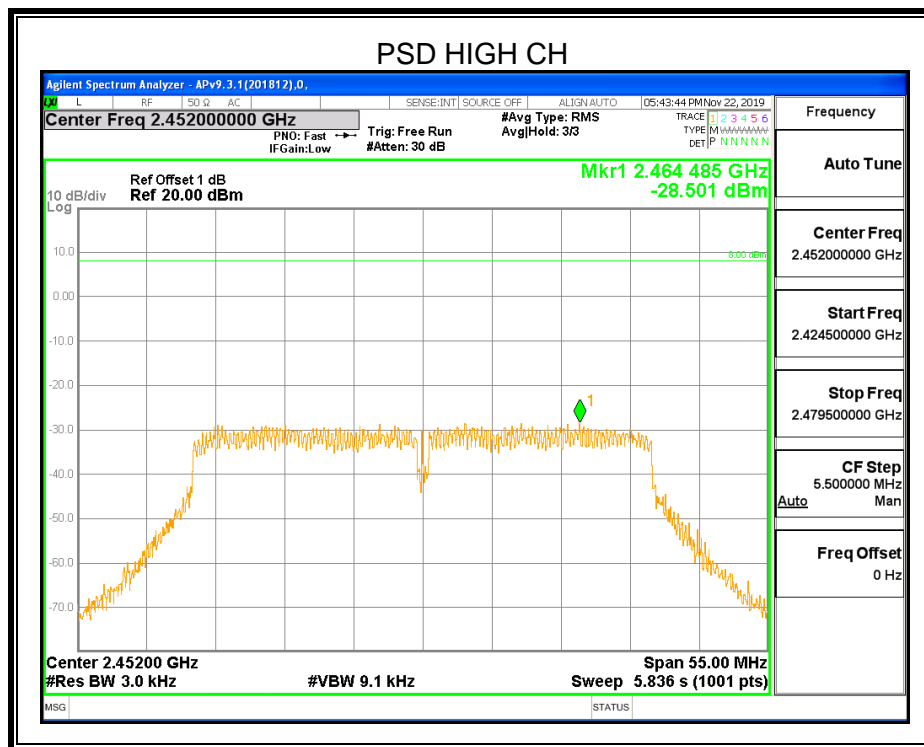
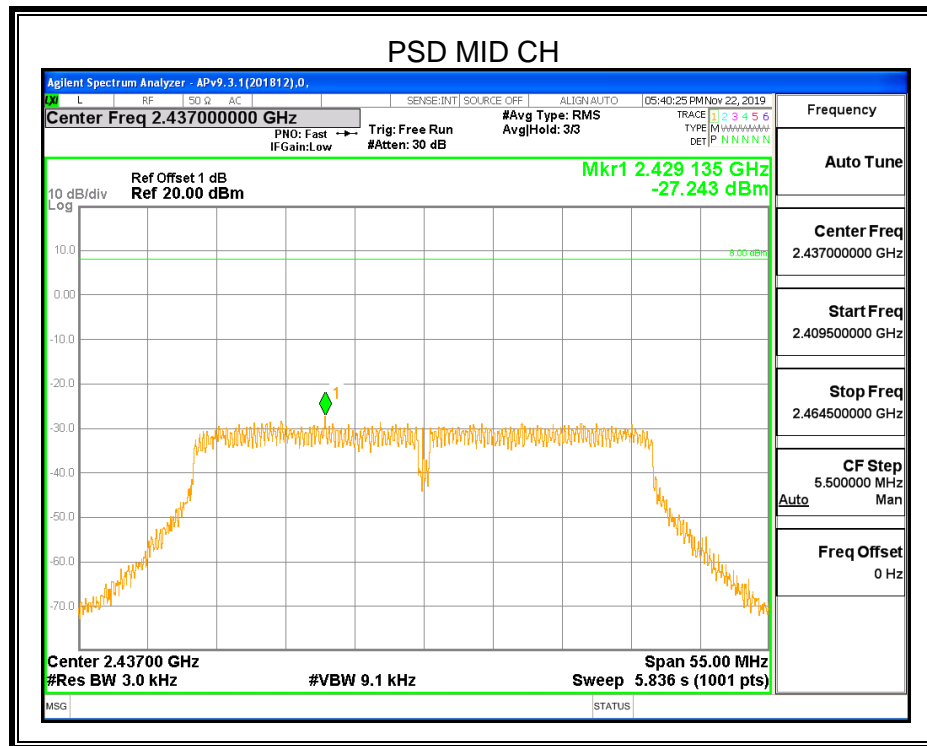




7.4.1. 802.11n HT40 MODE

Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	-26.566	8	PASS
Middle	-27.243	8	PASS
High	-28.501	8	PASS







7.5. CONDUCTED BANDEGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

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

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100kHz
VBW	$\geq 3 \times \text{RBW}$
Span	Set the span to enough frequency range to be measured
Trace	Max hold
Sweep time	Auto couple.

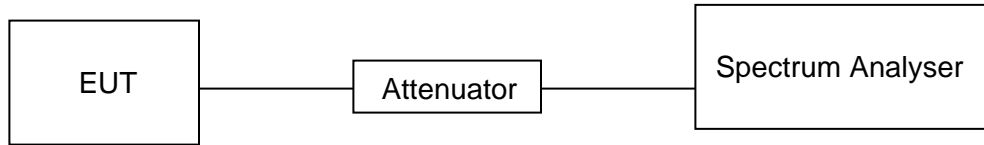
Use the peak marker function to determine the maximum PSD level.

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

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



TEST SETUP



TEST ENVIRONMENT

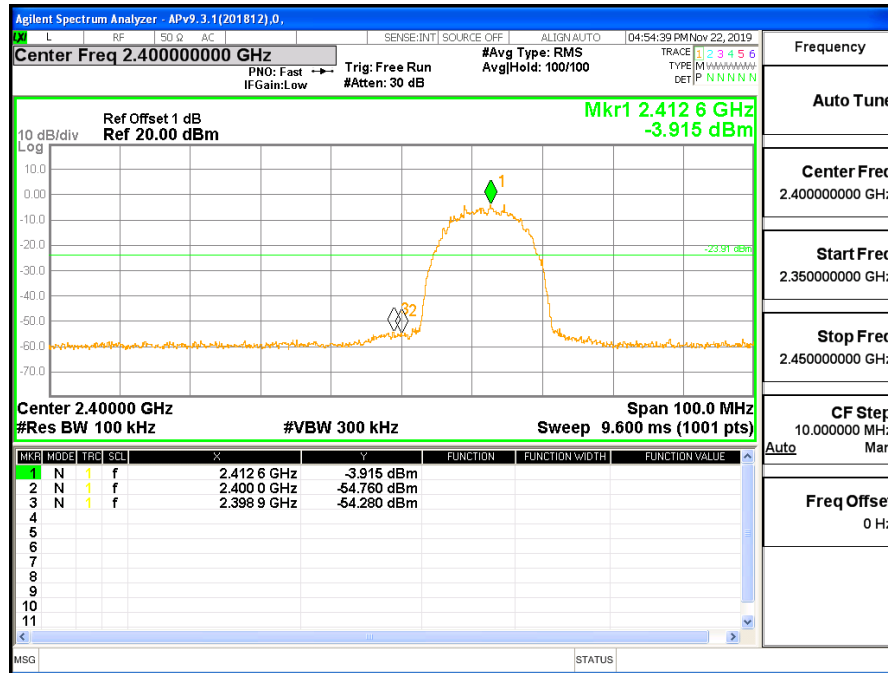
Temperature	24.6°C	Relative Humidity	49%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

RESULTS

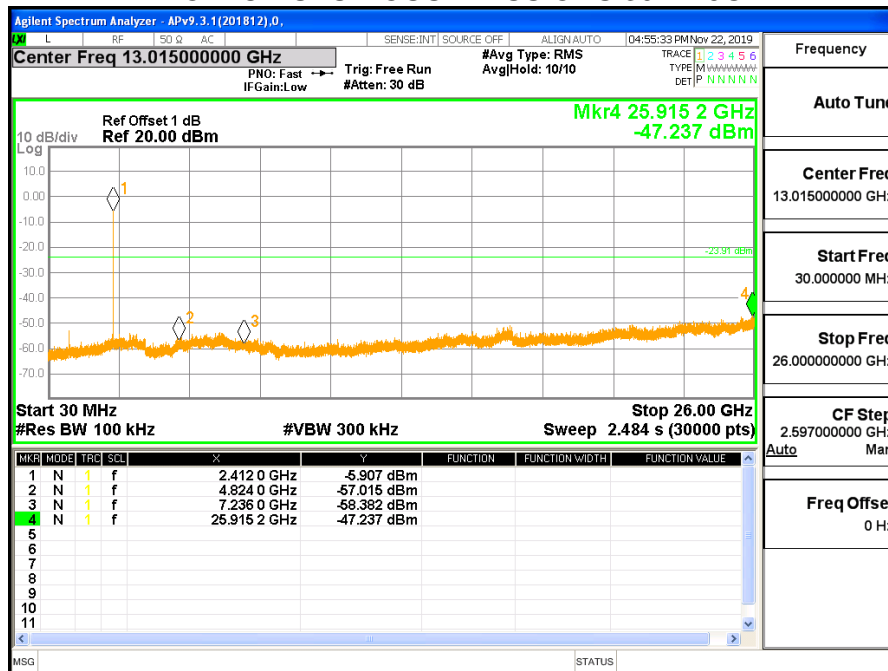


7.5.1. 802.11b MODE

LOW CH BANDEDGE

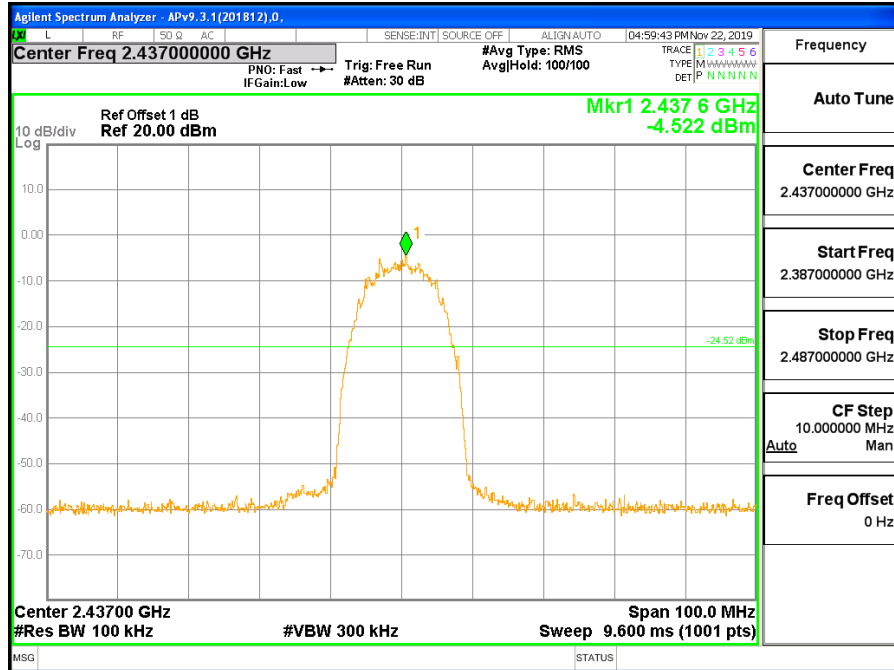


LOW CH SPURIOUS EMISSIONS 30M-26G

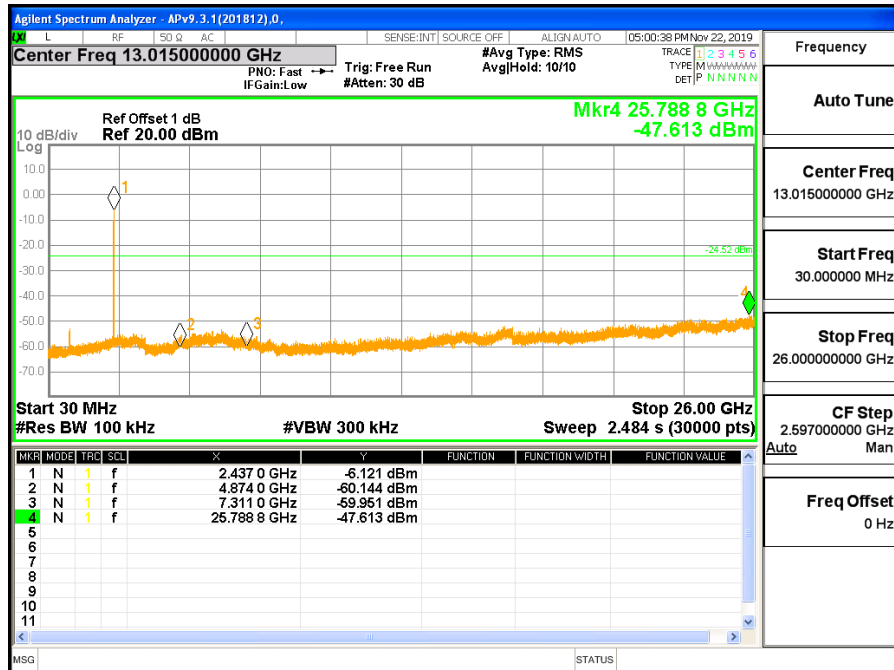


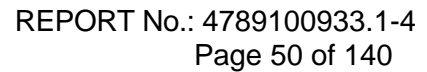


MID CH SPURIOUS EMISSIONS REFERENCE



MID CH SPURIOUS EMISSIONS 30M-26G





Agilent Spectrum Analyzer - Apv9.3.1(201812).0

Center Freq 2.483500000 GHz

Ref Offset 1 dB
Ref 20.00 dBm

Span 100.0 MHz

Res BW 100 kHz

VBW 300 kHz

Sweep 9.600 ms (1001 pts)

Mkr1 2.464 6 GHz
-4.994 dBm

Mkrf	Mode	TRC	SCL	X	Y	Function	Function Width	Function Value
1	N	1	f	2.464 6 GHz	-4.994 dBm			
2	N	1	f	2.493 9 GHz	-56.220 dBm			
3	N	1	f	2.483 5 GHz	-58.824 dBm			

Agilent Spectrum Analyzer - APv9.3.1(201812).0

Center Freq 13.01500000 GHz

Ref Offset 1 dB
Ref 20.00 dBm

Mkr4 25.925 6 GHz
-47.487 dBm

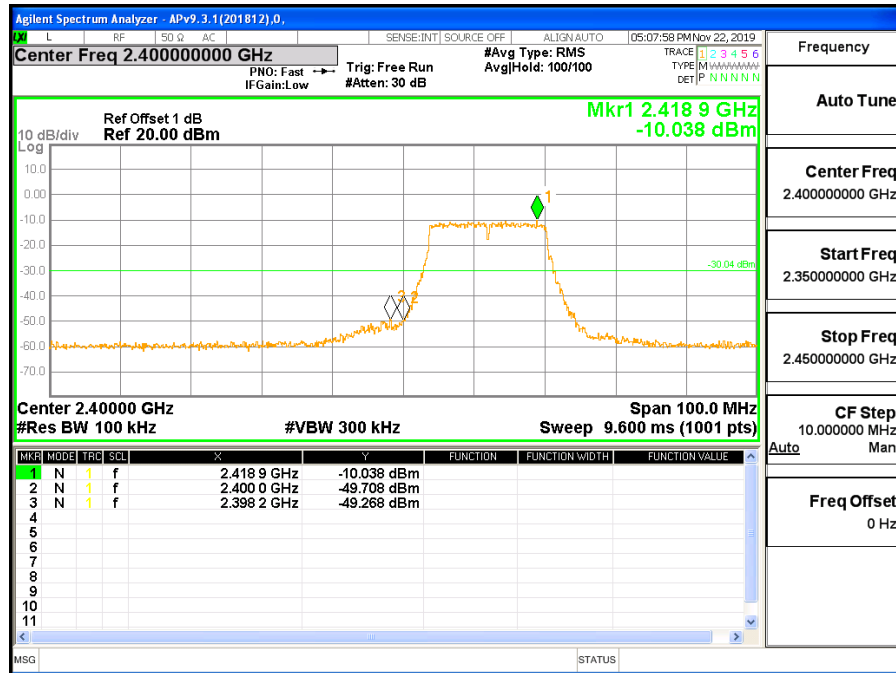
Start 30 MHz Stop 26.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.484 s (30000 pts)

MKR	MODE	TRG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	f	f	2.462 0 GHz	-8.718 dBm			
2	N	f	f	4.924 0 GHz	-59.767 dBm			
3	N	f	f	7.386 0 GHz	-60.363 dBm			
4	N	f	f	25.925 6 GHz	-47.487 dBm			

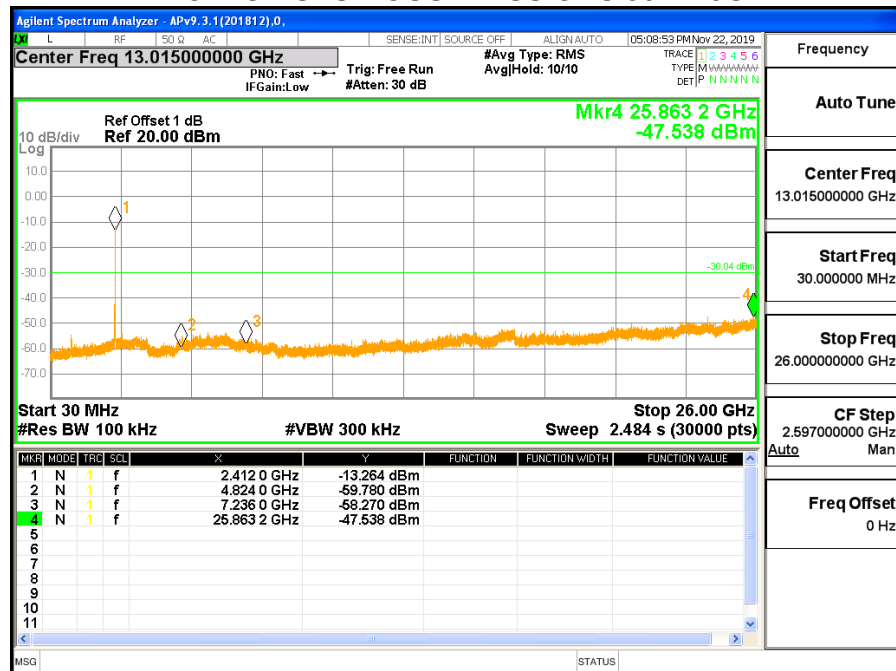


7.5.2. 802.11g MODE

LOW CH BANDEDGE

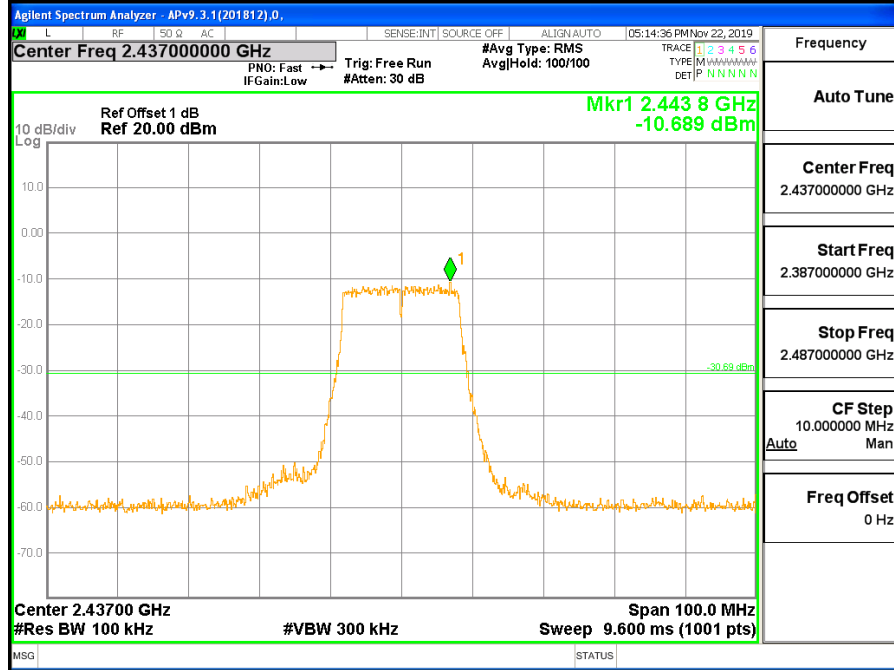


LOW CH SPURIOUS EMISSIONS 30M-26G

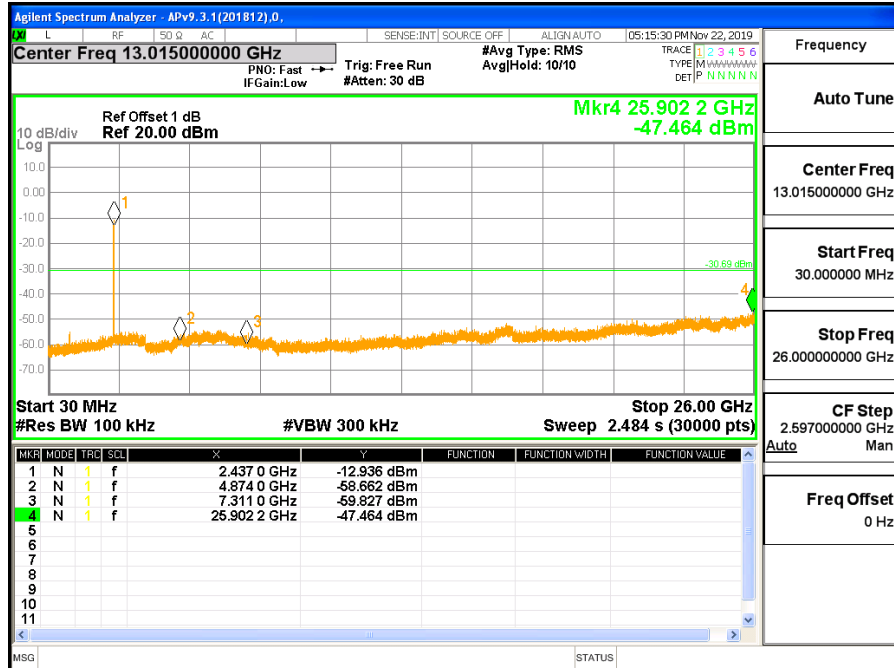




MID CH SPURIOUS EMISSIONS REFERENCE

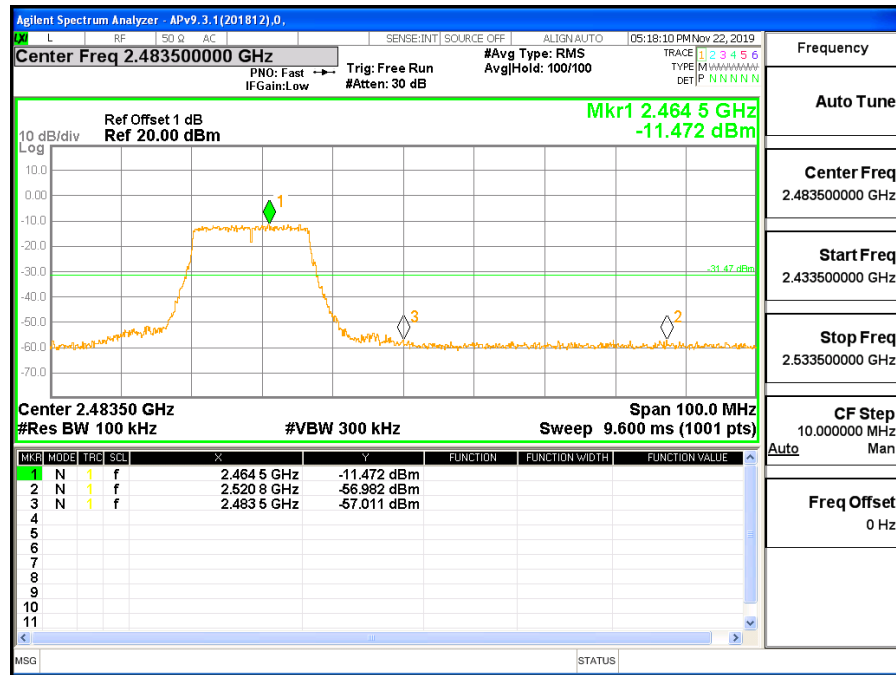


MID CH SPURIOUS EMISSIONS 30M-26G

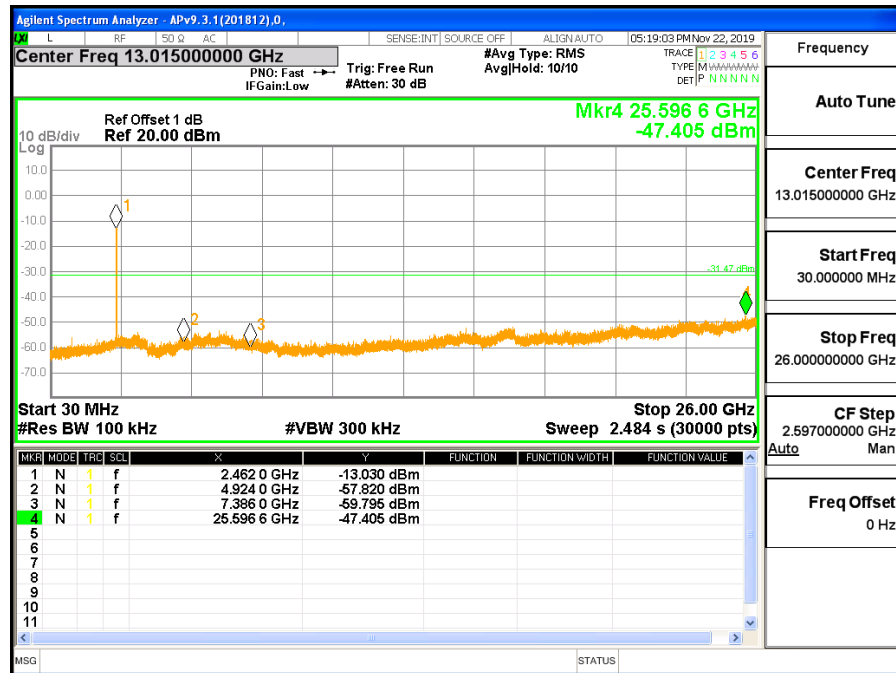




HIGH CH BANDEDGE

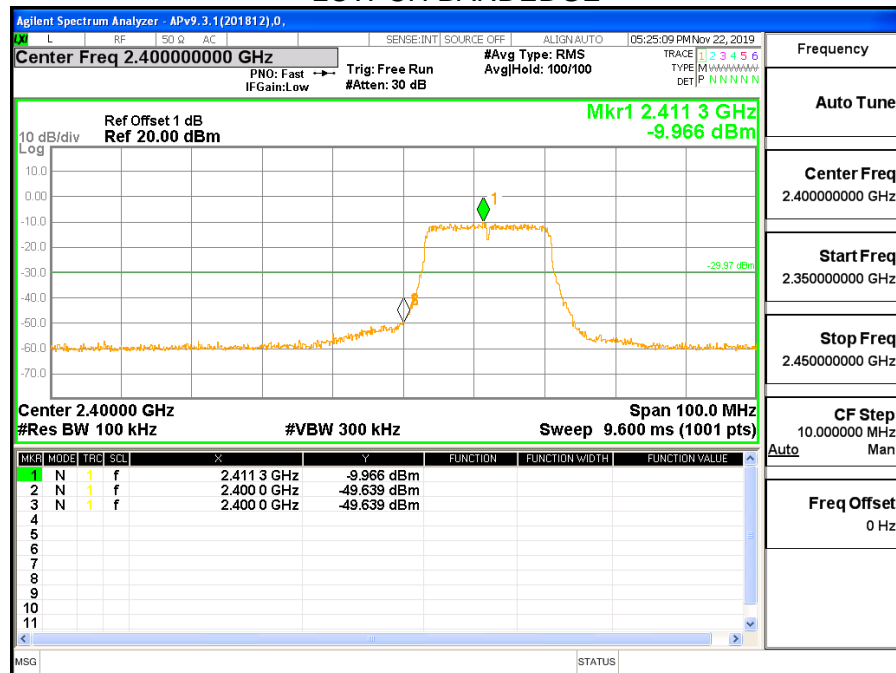


HIGH CH SPURIOUS EMISSIONS 30M-26G

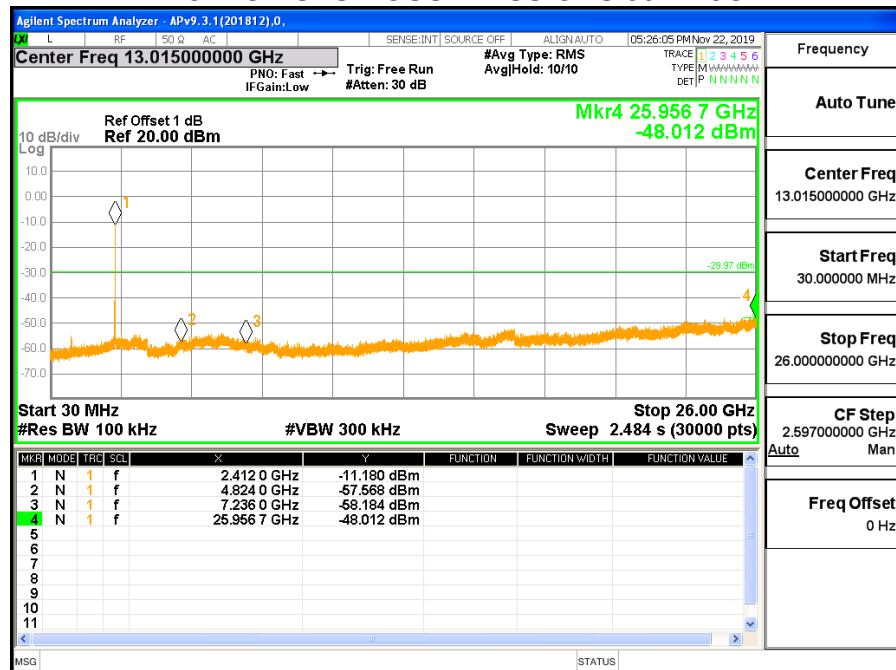


7.5.3. 802.11n HT20 MODE

LOW CH BANDEDGE

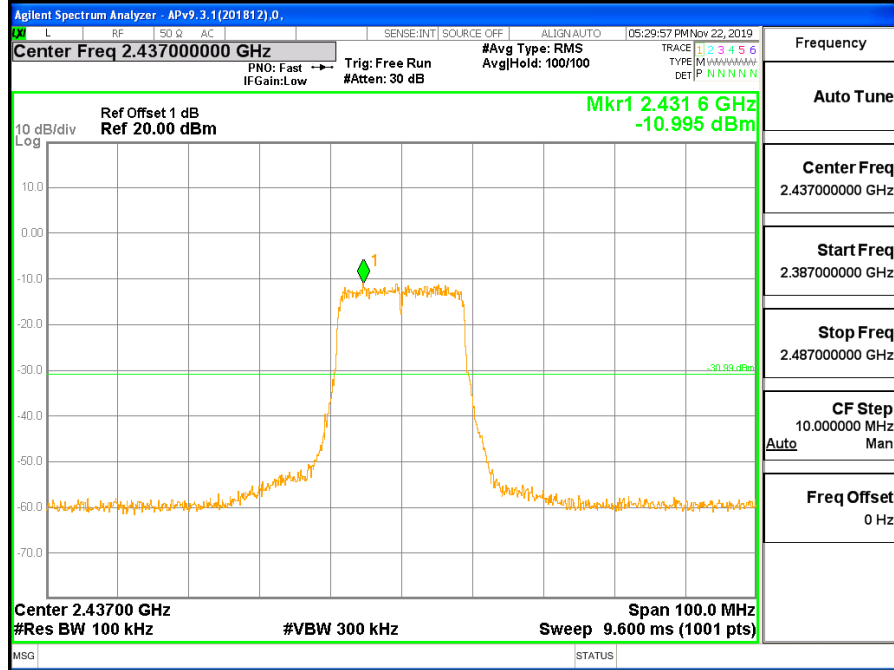


LOW CH SPURIOUS EMISSIONS 30M-26G

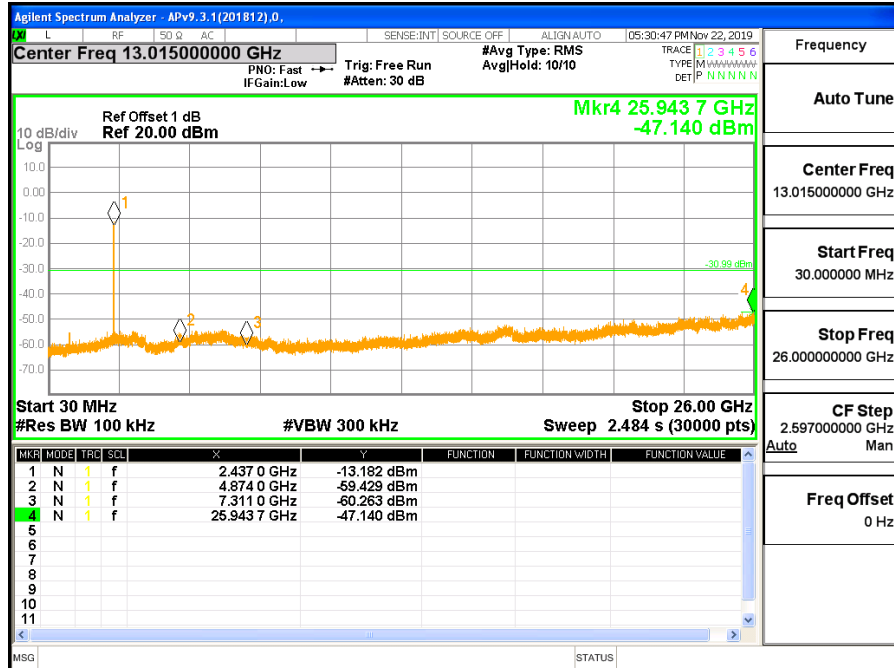




MID CH SPURIOUS EMISSIONS REFERENCE

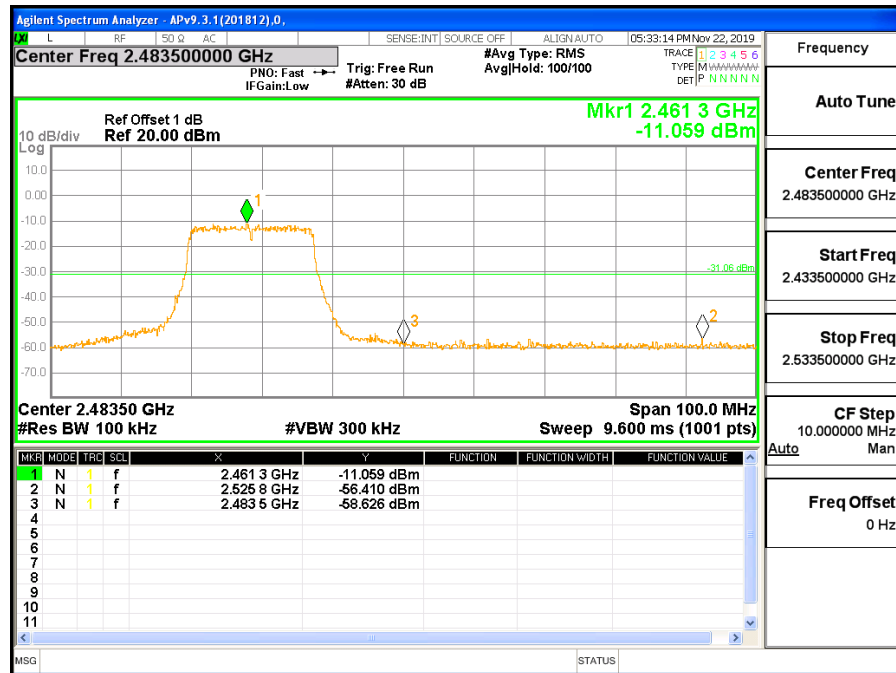


MID CH SPURIOUS EMISSIONS 30M-26G

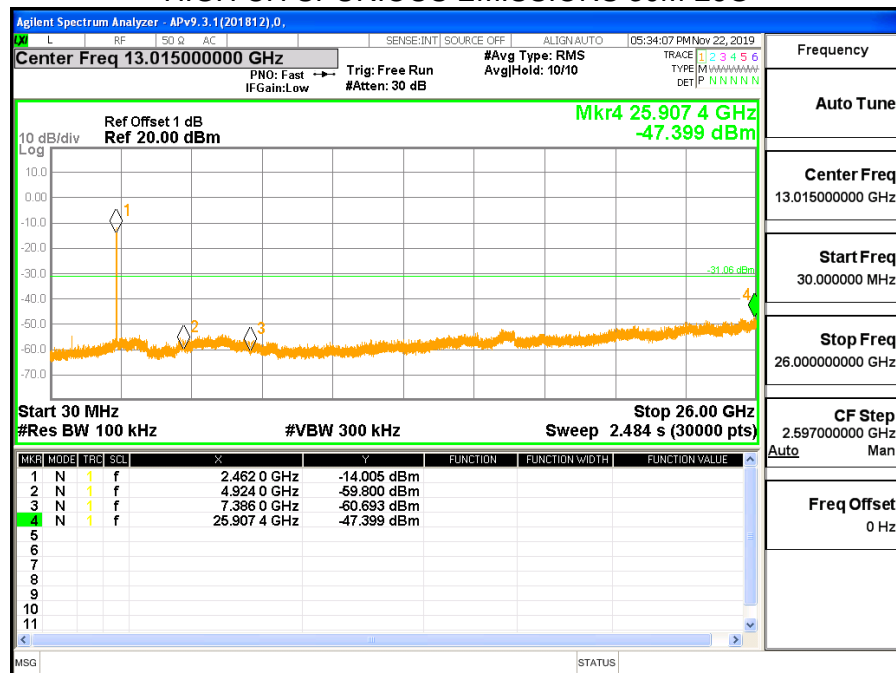




HIGH CH BANDEDGE



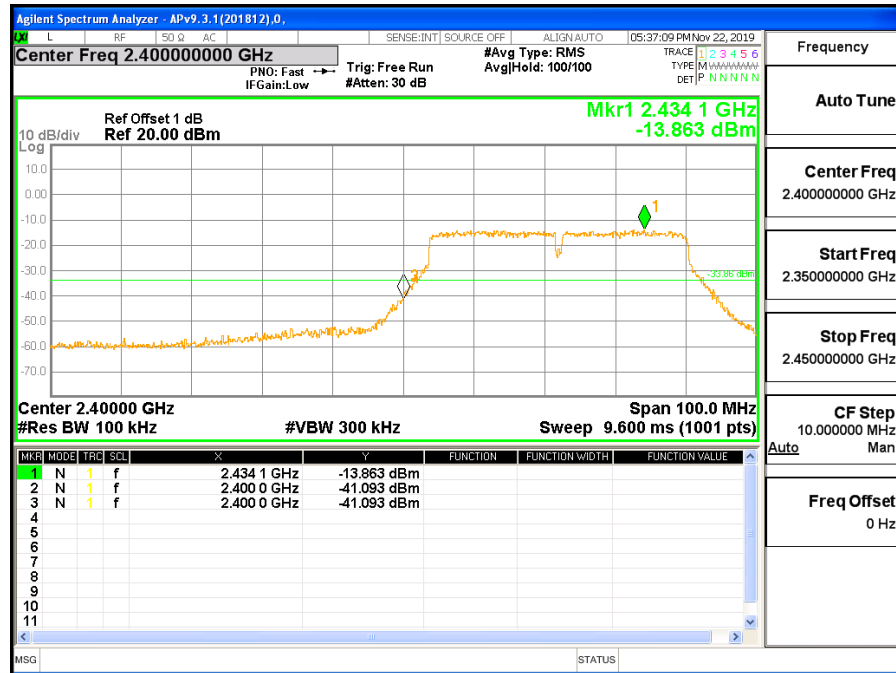
HIGH CH SPURIOUS EMISSIONS 30M-26G



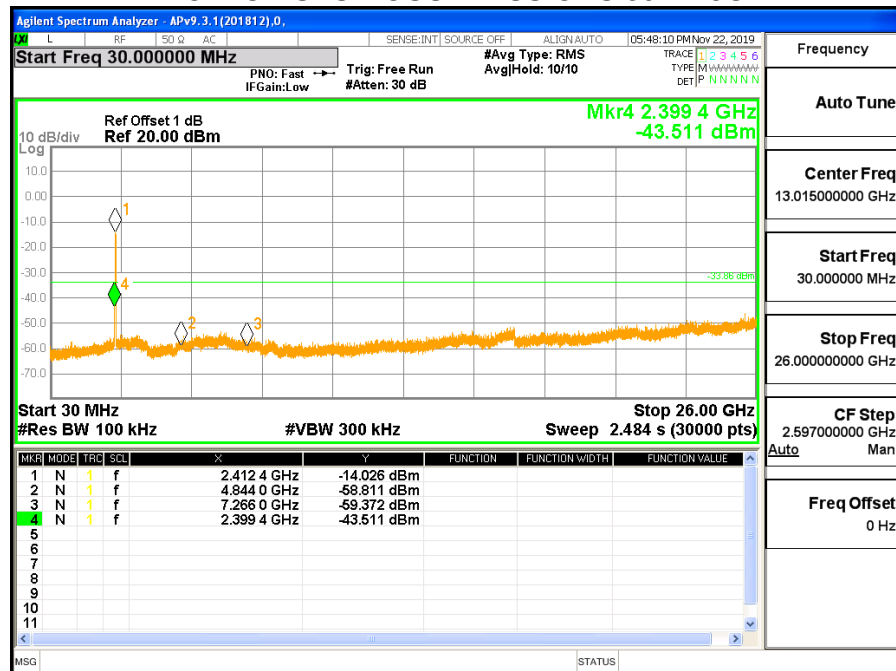


7.5.4. 802.11n HT40 MODE

LOW CH BANDEDGE

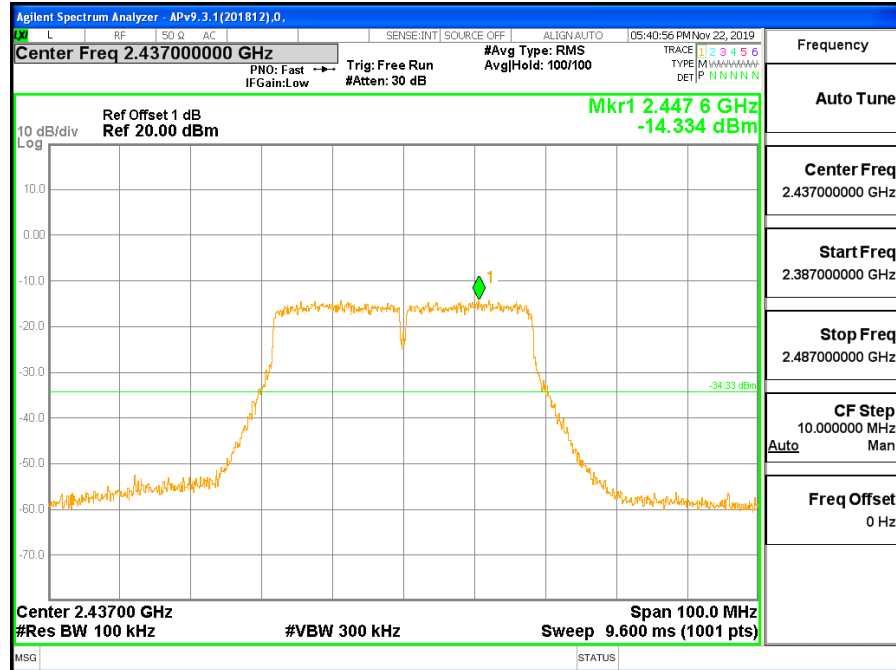


LOW CH SPURIOUS EMISSIONS 30M-26G

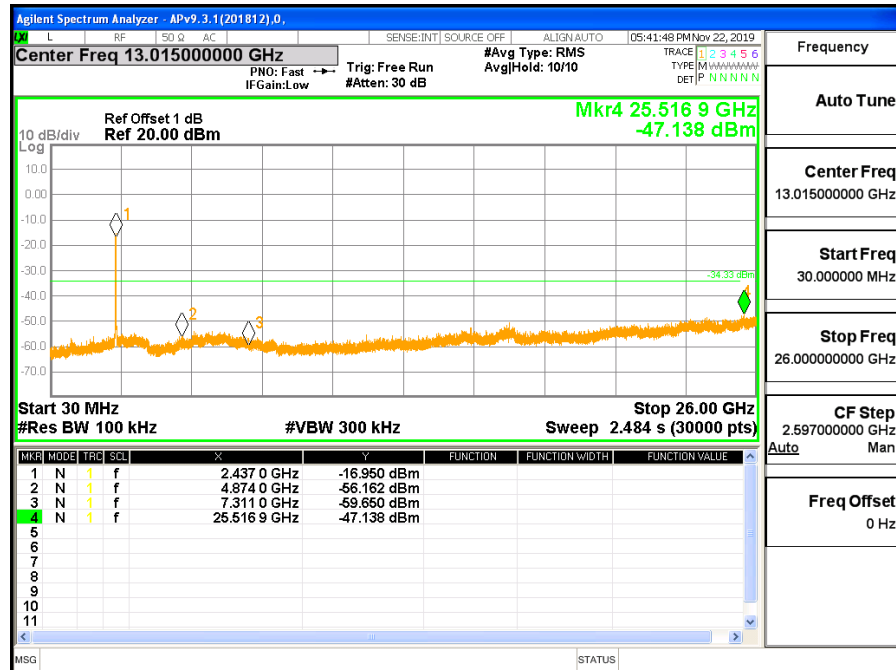




MID CH SPURIOUS EMISSIONS REFERENCE

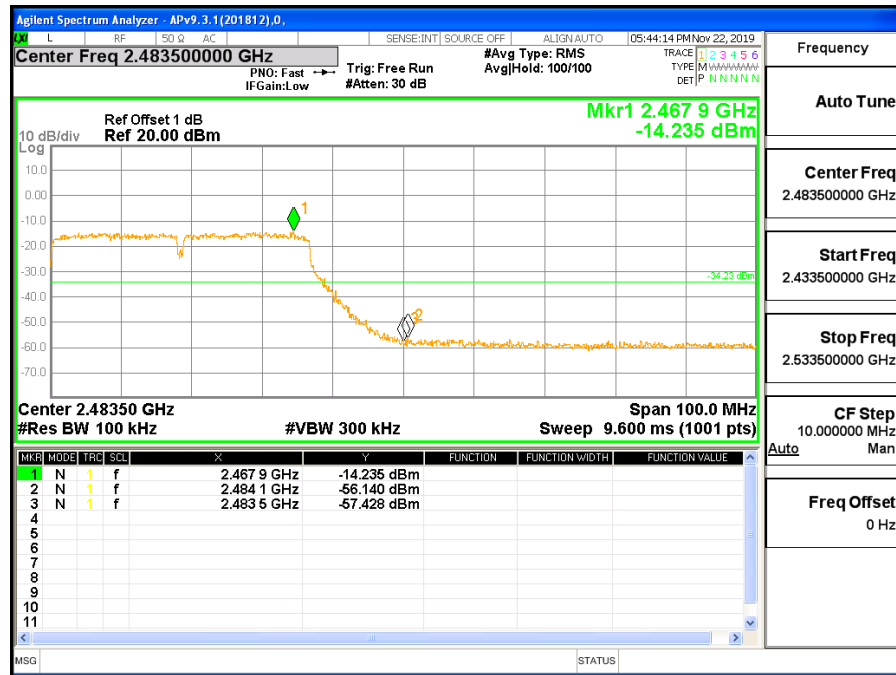


MID CH SPURIOUS EMISSIONS 30M-26G

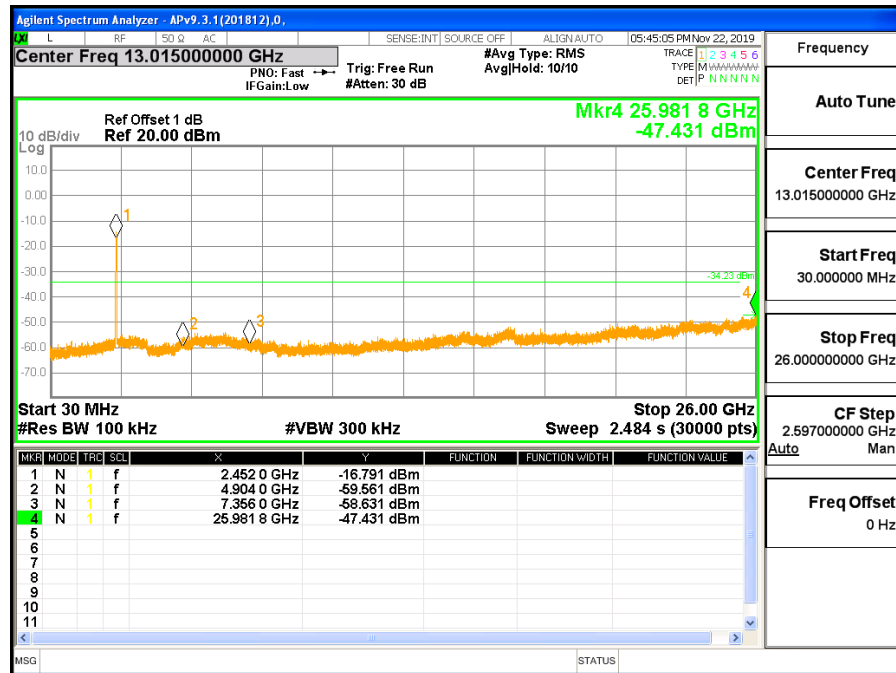




HIGH CH BANDEDGE



HIGH CH SPURIOUS EMISSIONS 30M-26G





8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209

Please refer to ISED RSS-GEN Clause 8.9 (Transmitter)

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

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

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

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



Radiation Disturbance Test Limit for FCC (Above 1GHz)

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

IC Restricted bands please refer to ISSED RSS-GEN Clause 8.10

FCC Restricted bands of operation:

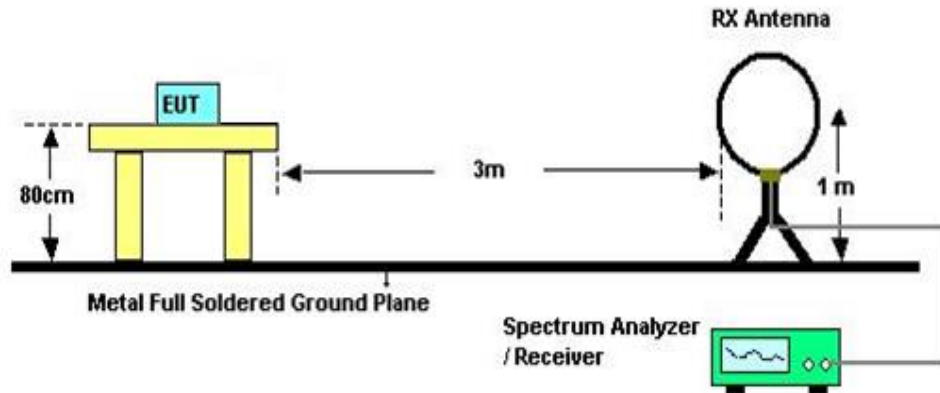
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

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

²Above 38.6c

TEST SETUP AND PROCEDURE

Below 30MHz

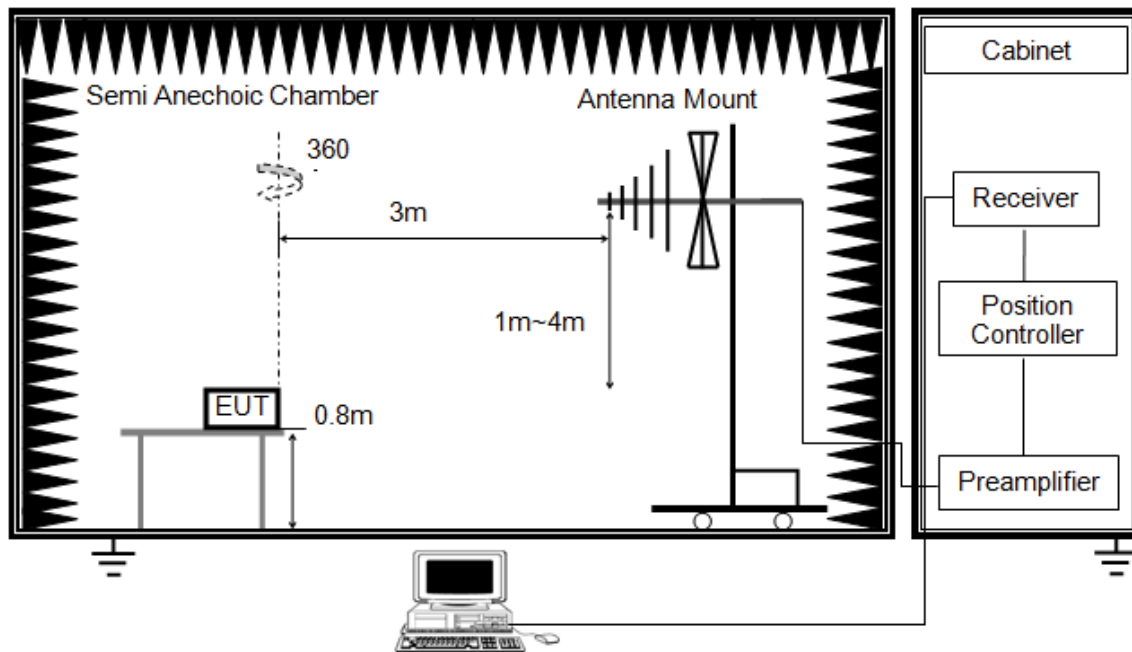


The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9kHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of 1 meter height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)
7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

Below 1G

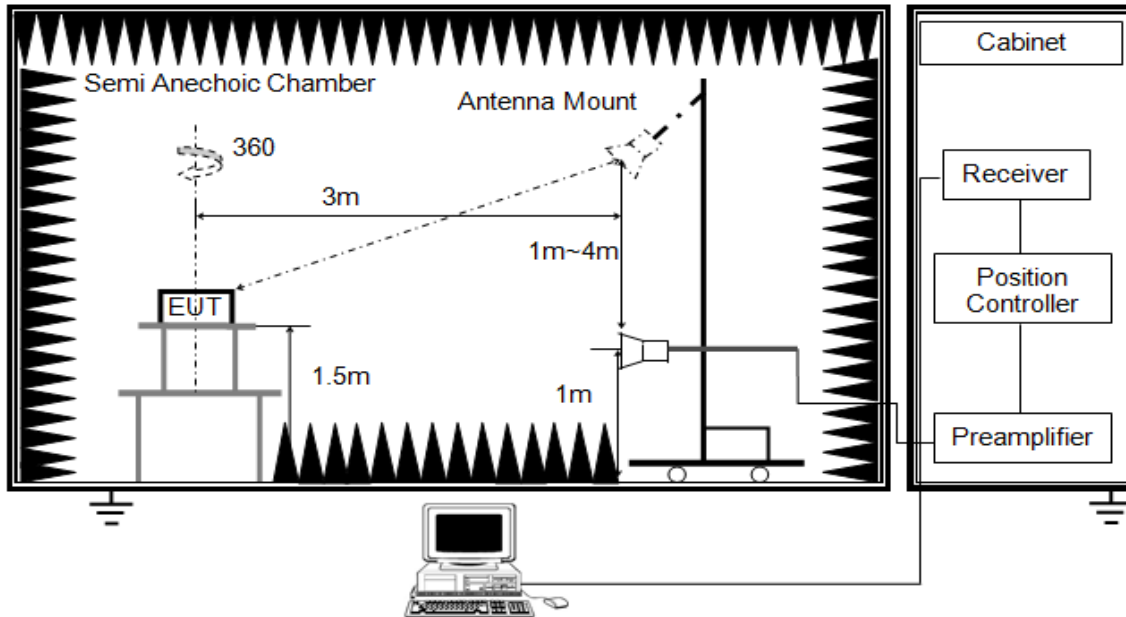


The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

ABOVE 1G

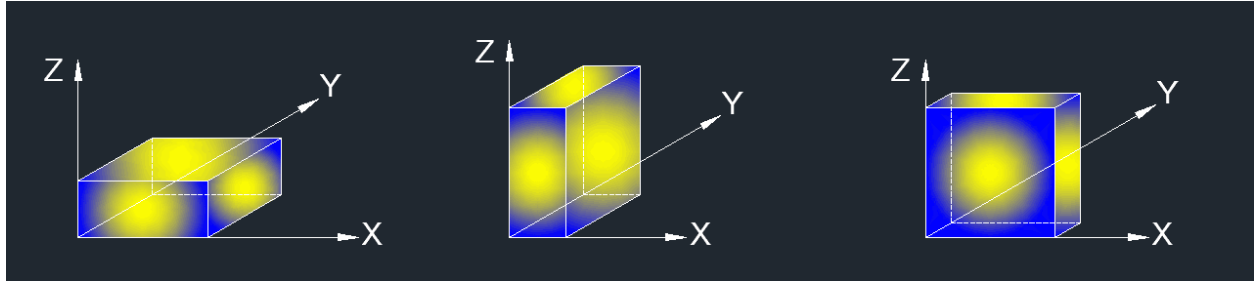


The setting of the spectrum analyser

RBW	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.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: 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.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

TEST ENVIRONMENT

Temperature	24.7°C	Relative Humidity	58%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz

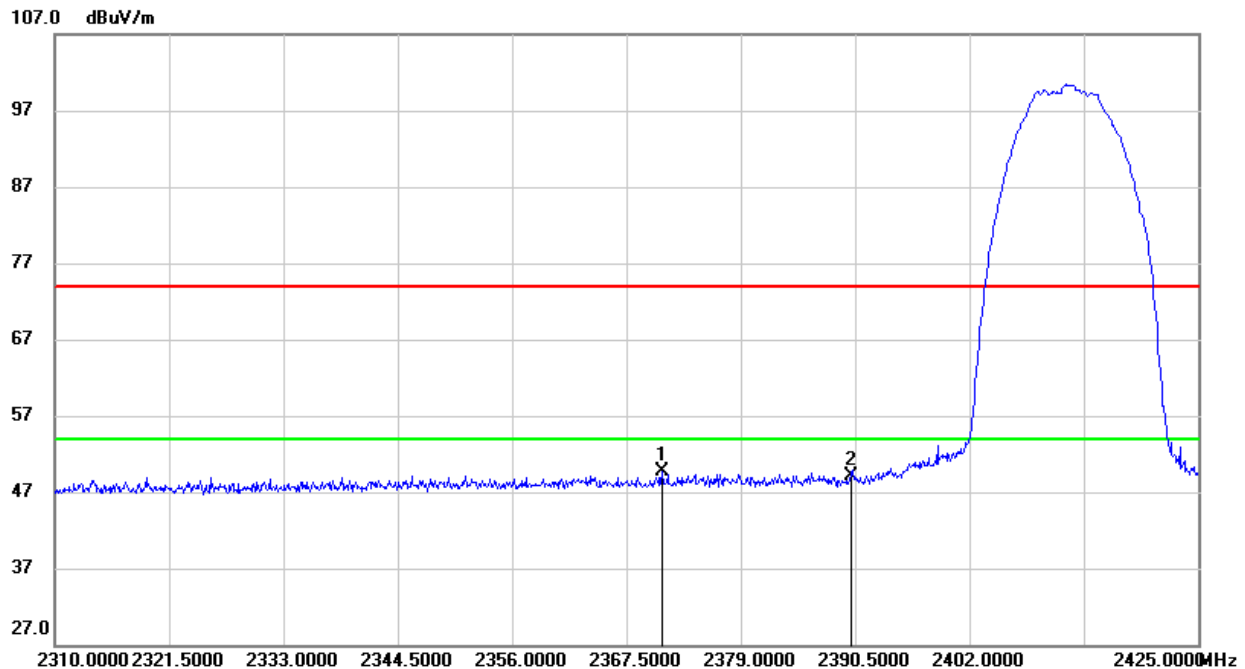


8.1. RESTRICTED BANDEDGE

8.1.1. 802.11b MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK



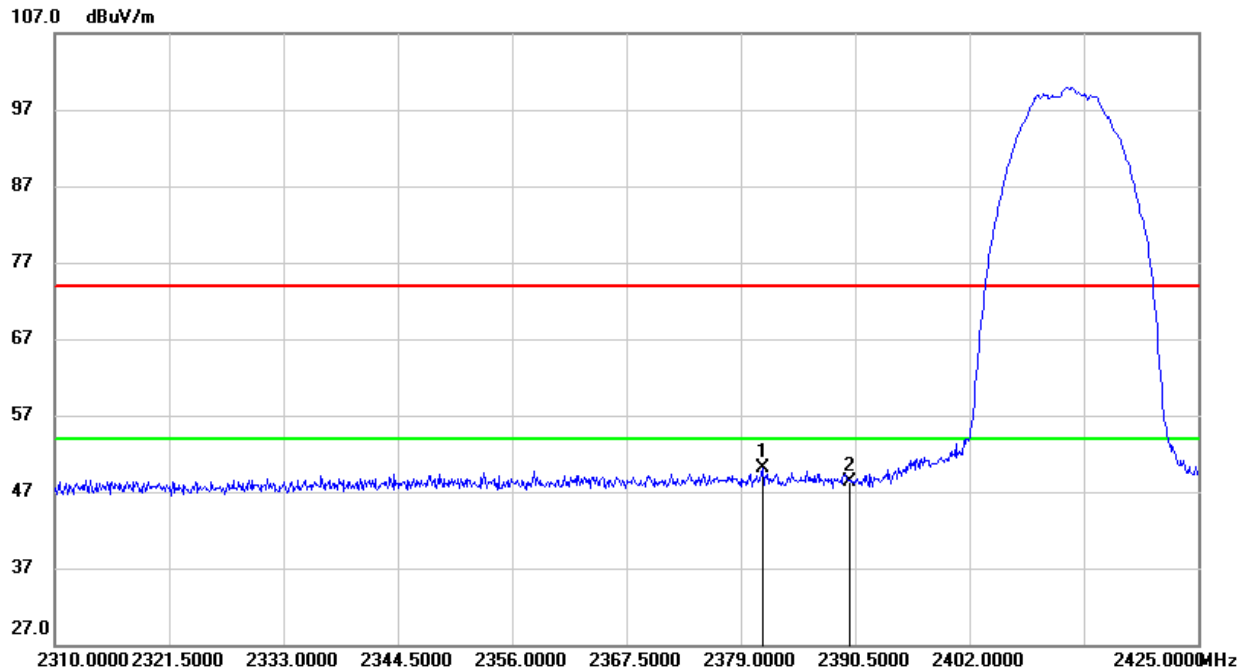
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2371.065	16.80	32.88	49.68	74.00	-24.32	peak
2	2390.000	16.21	32.94	49.15	74.00	-24.85	peak

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



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK



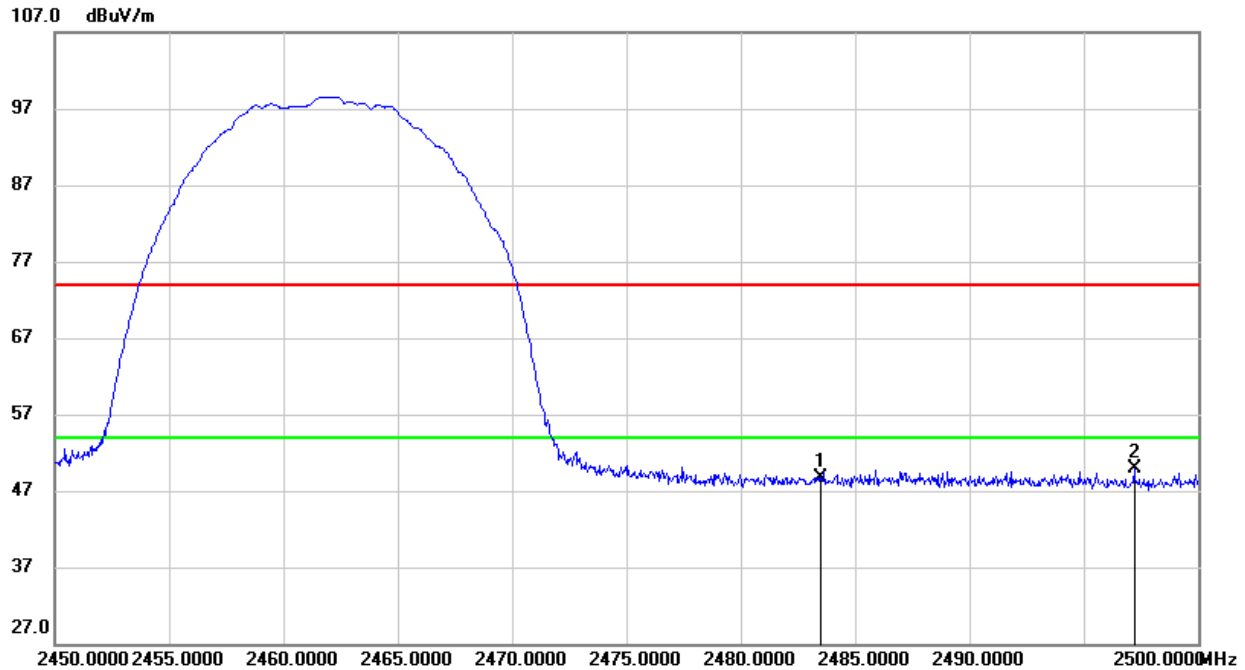
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2381.185	17.14	32.92	50.06	74.00	-23.94	peak
2	2390.000	15.32	32.94	48.26	74.00	-25.74	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



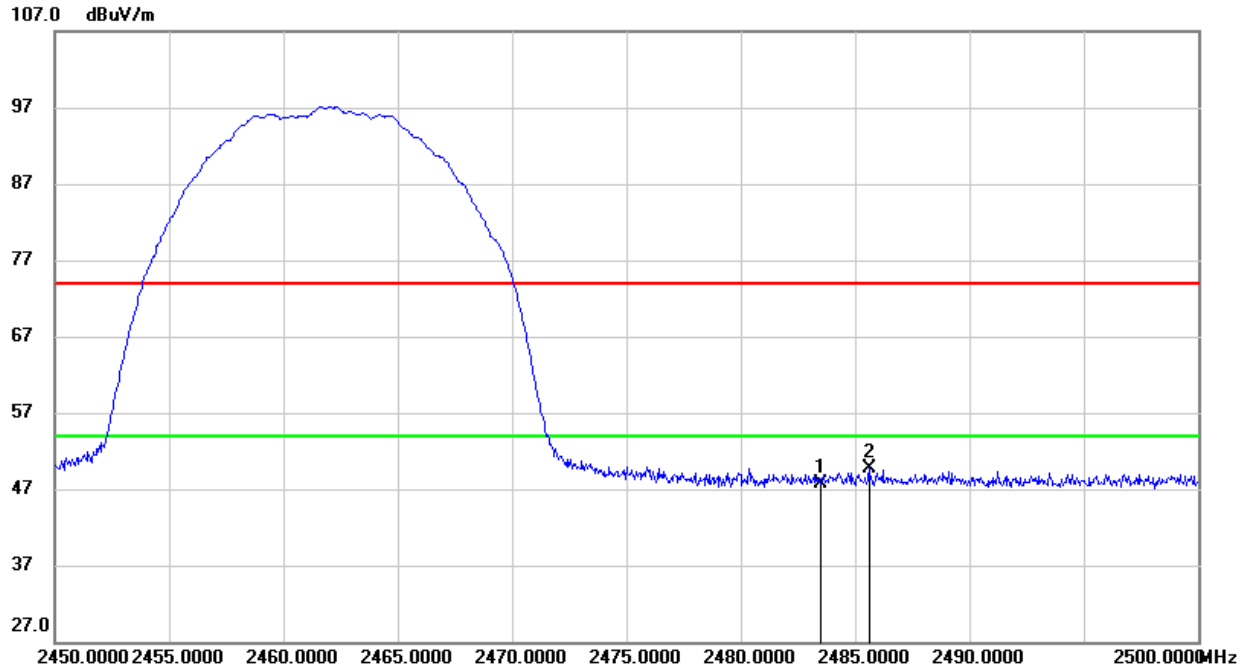
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	15.03	33.58	48.61	74.00	-25.39	peak
2	2497.200	16.21	33.67	49.88	74.00	-24.12	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	14.12	33.58	47.70	74.00	-26.30	peak
2	2485.600	16.21	33.59	49.80	74.00	-24.20	peak

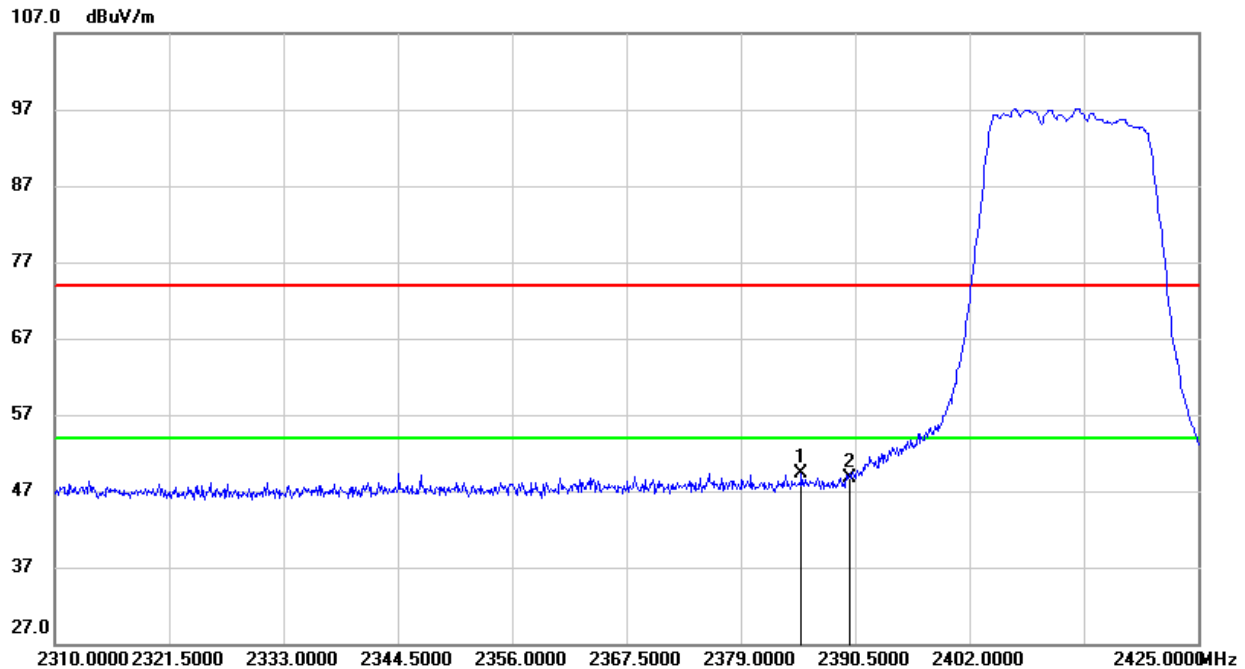
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



8.1.2. 802.11g MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK



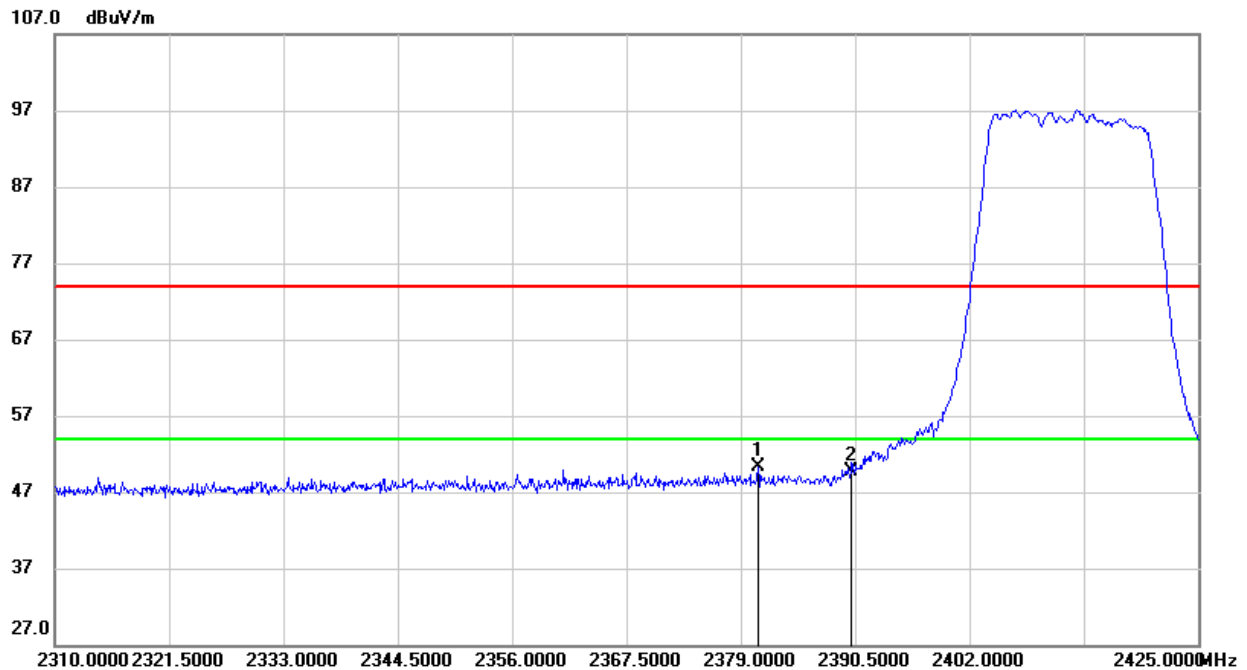
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.095	16.42	32.93	49.35	74.00	-24.65	peak
2	2390.000	15.73	32.94	48.67	74.00	-25.33	peak

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



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK



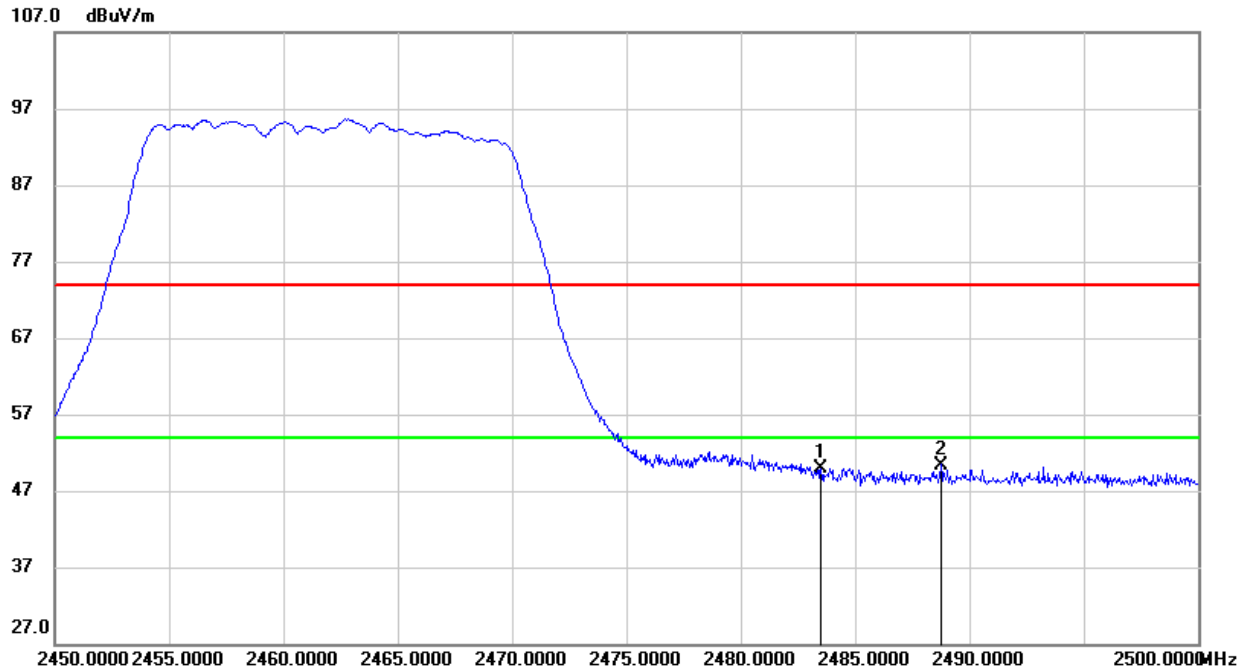
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2380.725	17.38	32.92	50.30	74.00	-23.70	peak
2	2390.000	16.68	32.94	49.62	74.00	-24.38	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



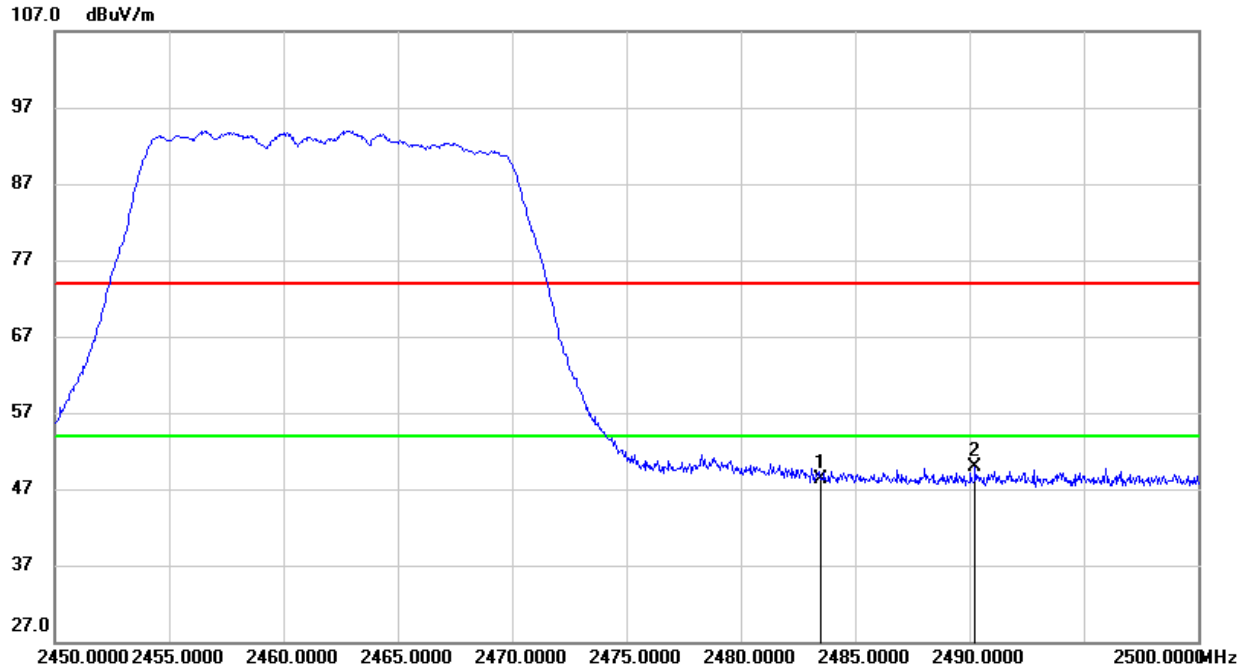
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	16.25	33.58	49.83	74.00	-24.17	peak
2	2488.750	16.78	33.62	50.40	74.00	-23.60	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	14.64	33.58	48.22	74.00	-25.78	peak
2	2490.250	16.36	33.63	49.99	74.00	-24.01	peak

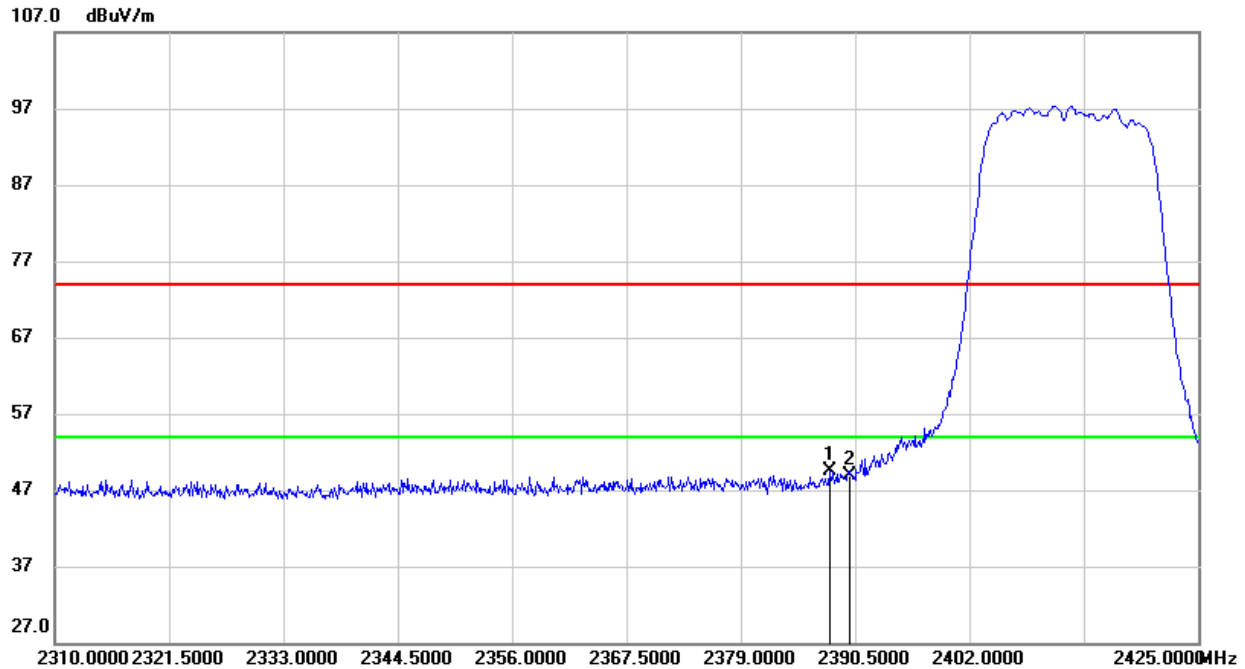
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



8.1.3. 802.11n HT20 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK



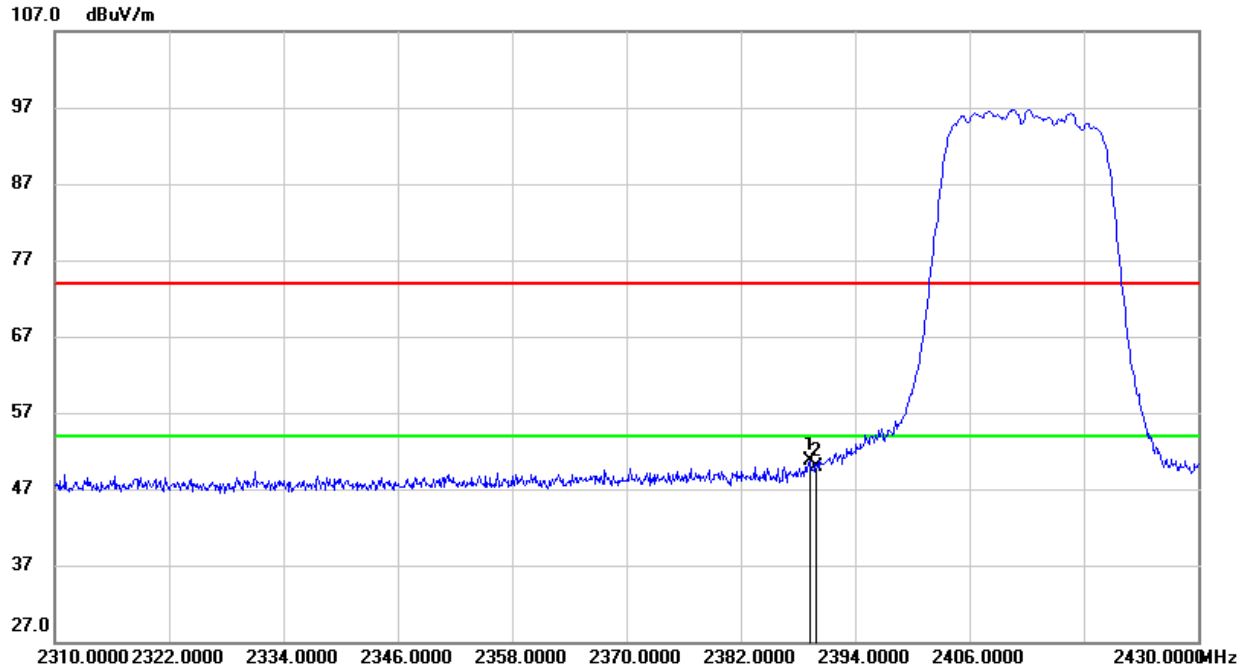
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.970	16.62	32.94	49.56	74.00	-24.44	peak
2	2390.000	15.91	32.94	48.85	74.00	-25.15	peak

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



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK



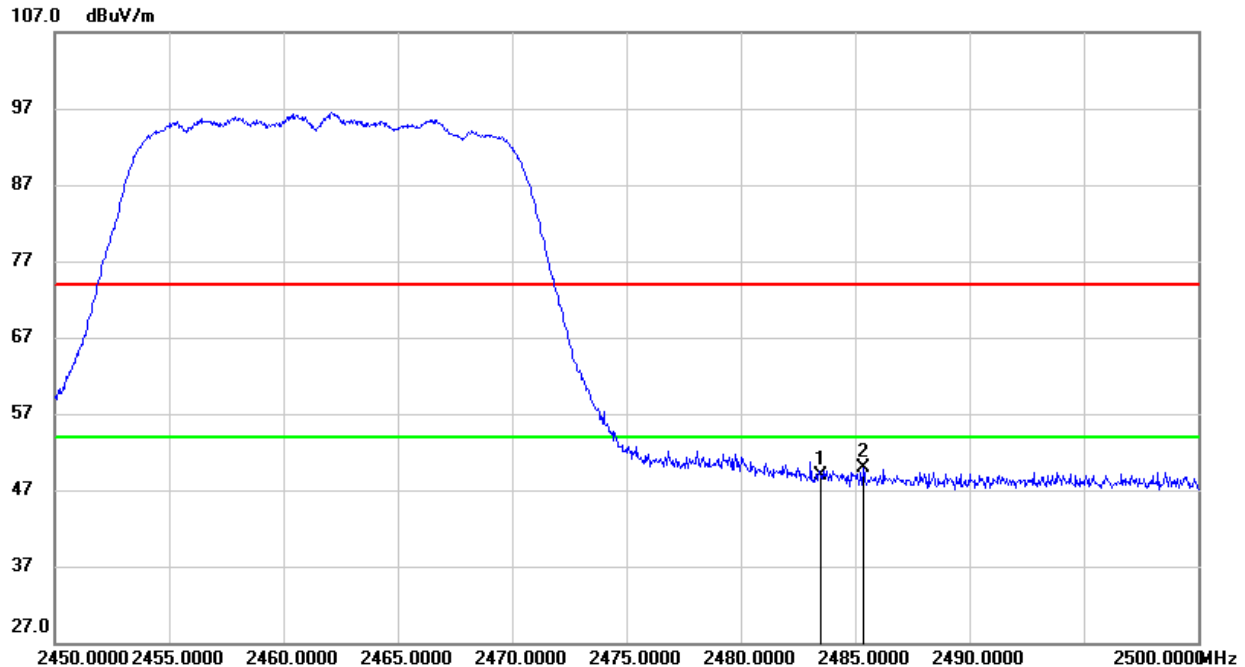
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.200	17.73	32.94	50.67	74.00	-23.33	peak
2	2390.000	16.99	32.94	49.93	74.00	-24.07	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



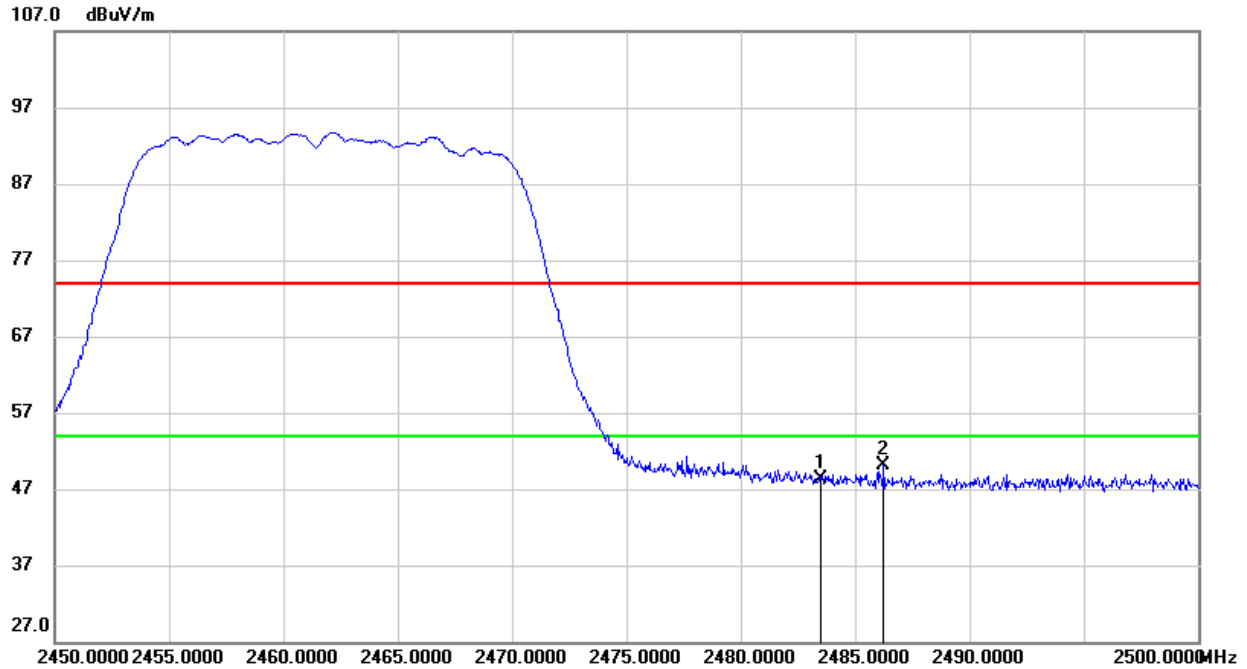
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	15.32	33.58	48.90	74.00	-25.10	peak
2	2485.350	16.29	33.59	49.88	74.00	-24.12	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	14.65	33.58	48.23	74.00	-25.77	peak
2	2486.250	16.40	33.61	50.01	74.00	-23.99	peak

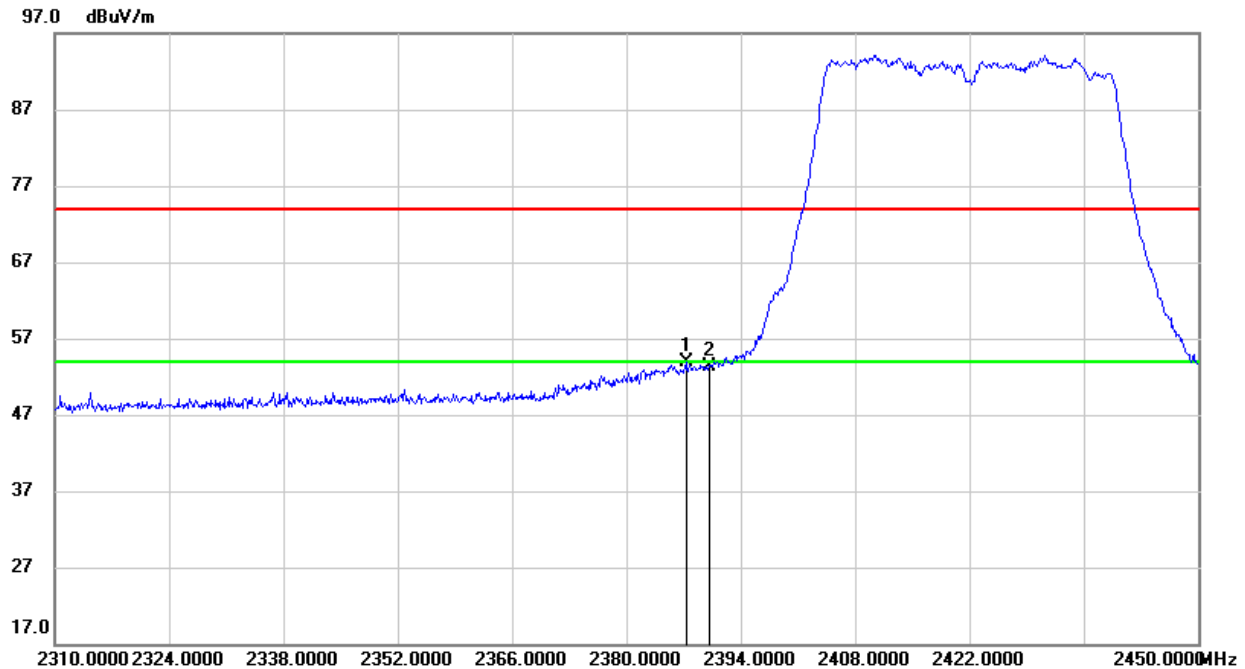
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



8.1.4. 802.11n HT40 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK



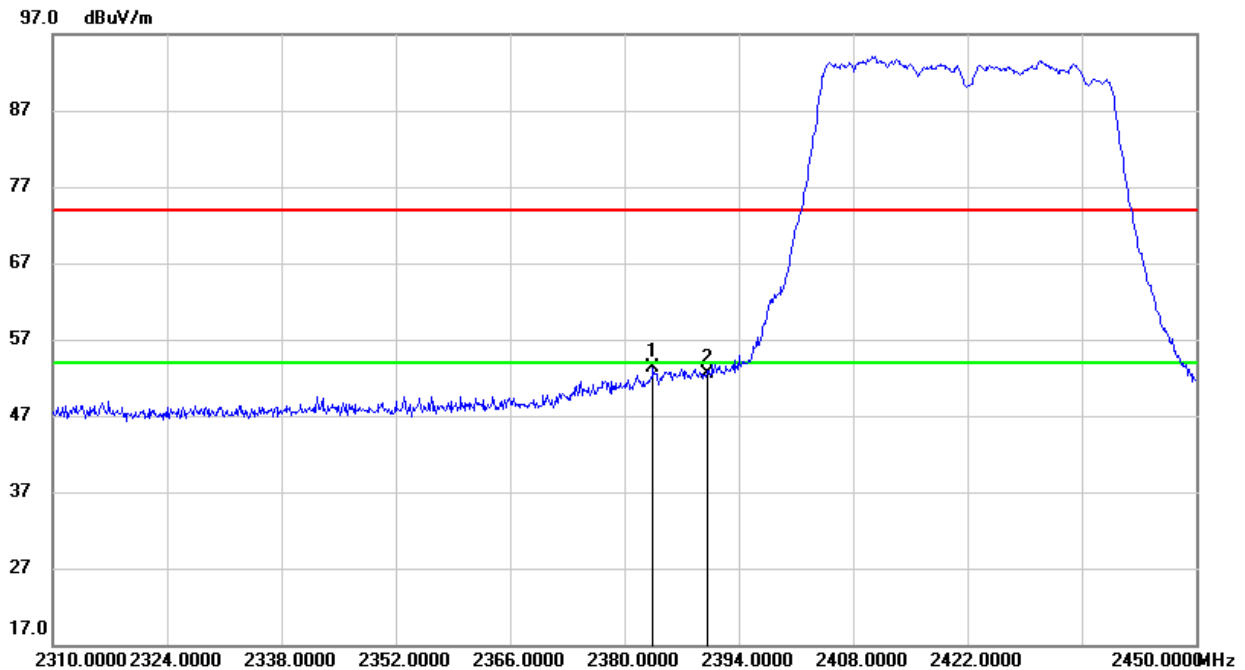
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.280	20.98	32.94	53.92	74.00	-20.08	peak
2	2390.000	20.40	32.94	53.34	74.00	-20.66	peak

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



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK



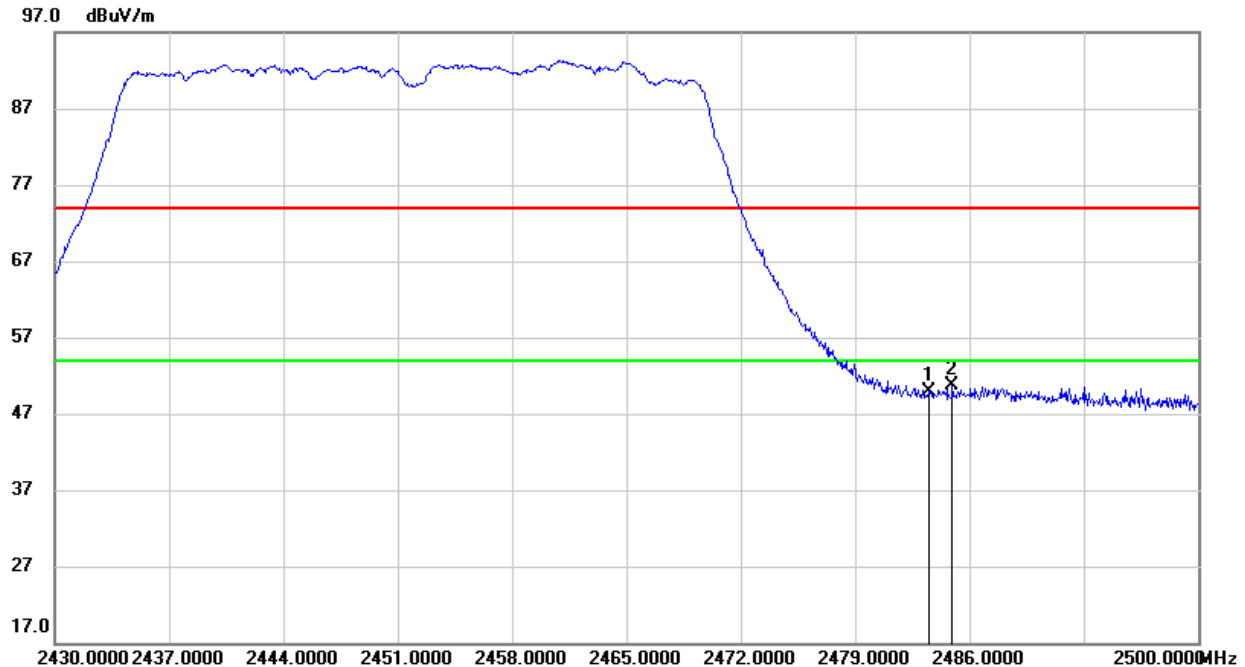
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.500	20.30	32.92	53.22	74.00	-20.78	peak
2	2390.000	19.50	32.94	52.44	74.00	-21.56	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK



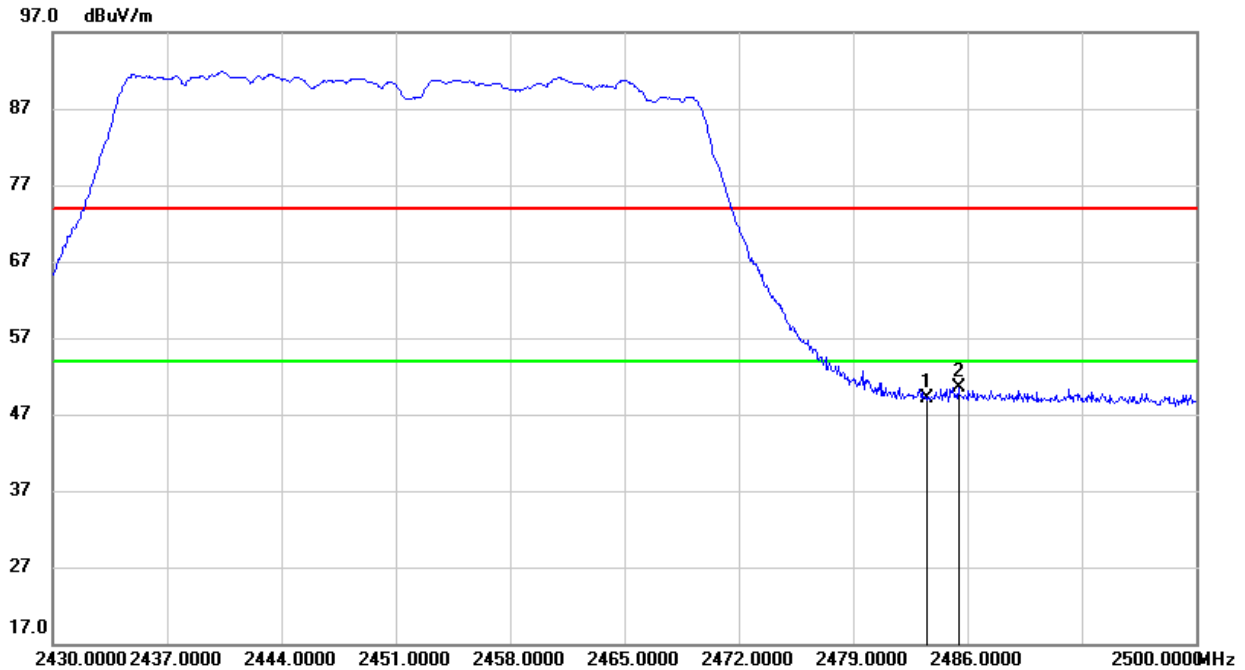
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	16.41	33.58	49.99	74.00	-24.01	peak
2	2484.950	17.17	33.59	50.76	74.00	-23.24	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	15.58	33.58	49.16	74.00	-24.84	peak
2	2485.440	16.95	33.59	50.54	74.00	-23.46	peak

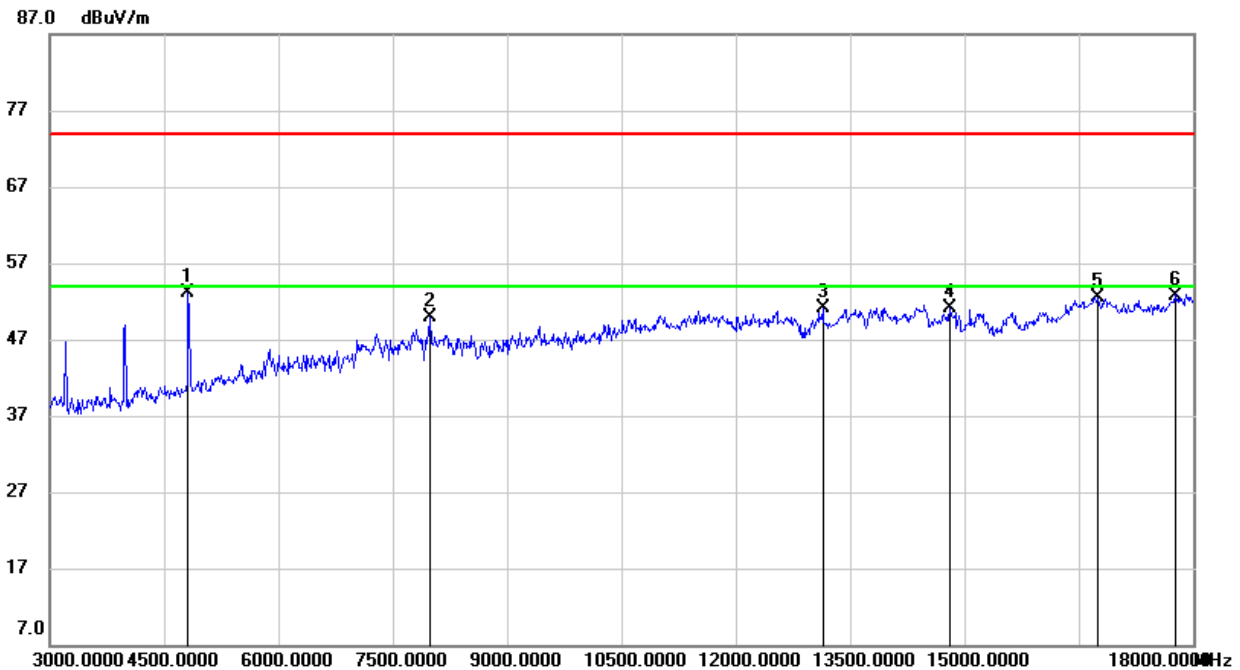
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



8.2. SPURIOUS EMISSIONS (3~18GHz)

8.2.1. 802.11b MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	53.27	-0.10	53.17	74.00	-20.83	peak
2	7995.000	41.52	8.45	49.97	74.00	-24.03	peak
3	13140.000	35.90	15.26	51.16	74.00	-22.84	peak
4	14805.000	35.17	15.97	51.14	74.00	-22.86	peak
5	16755.000	32.22	20.26	52.48	74.00	-21.52	peak
6	17760.000	29.79	23.01	52.80	74.00	-21.20	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.

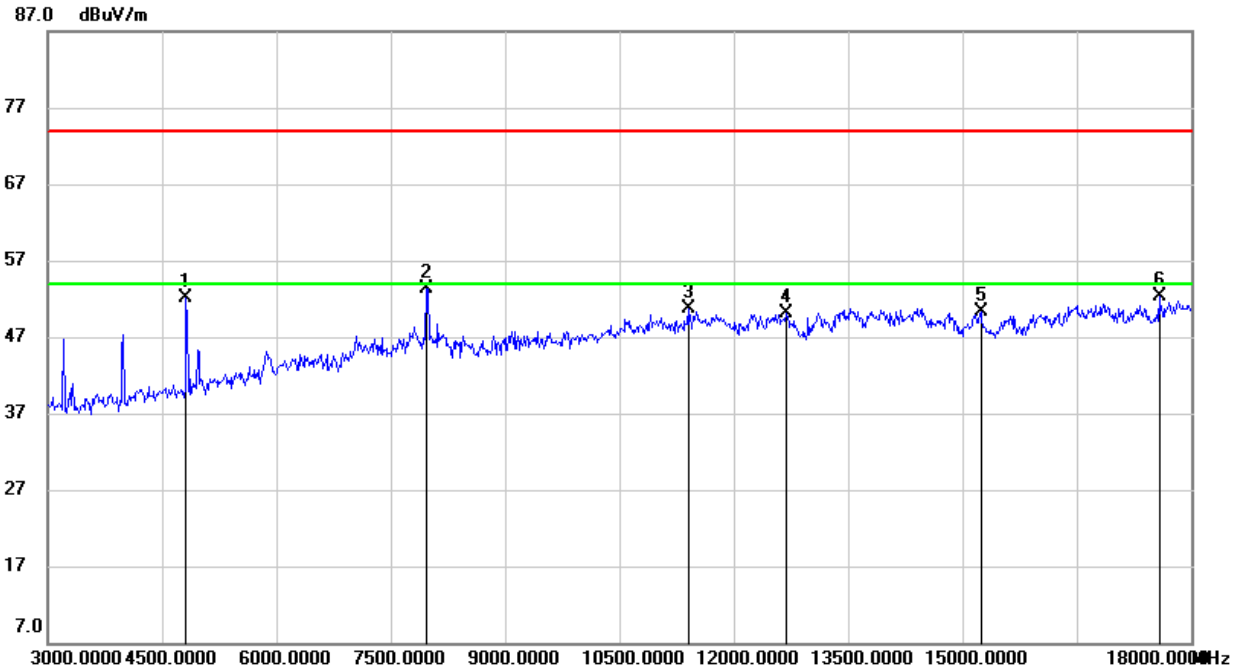
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for 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)

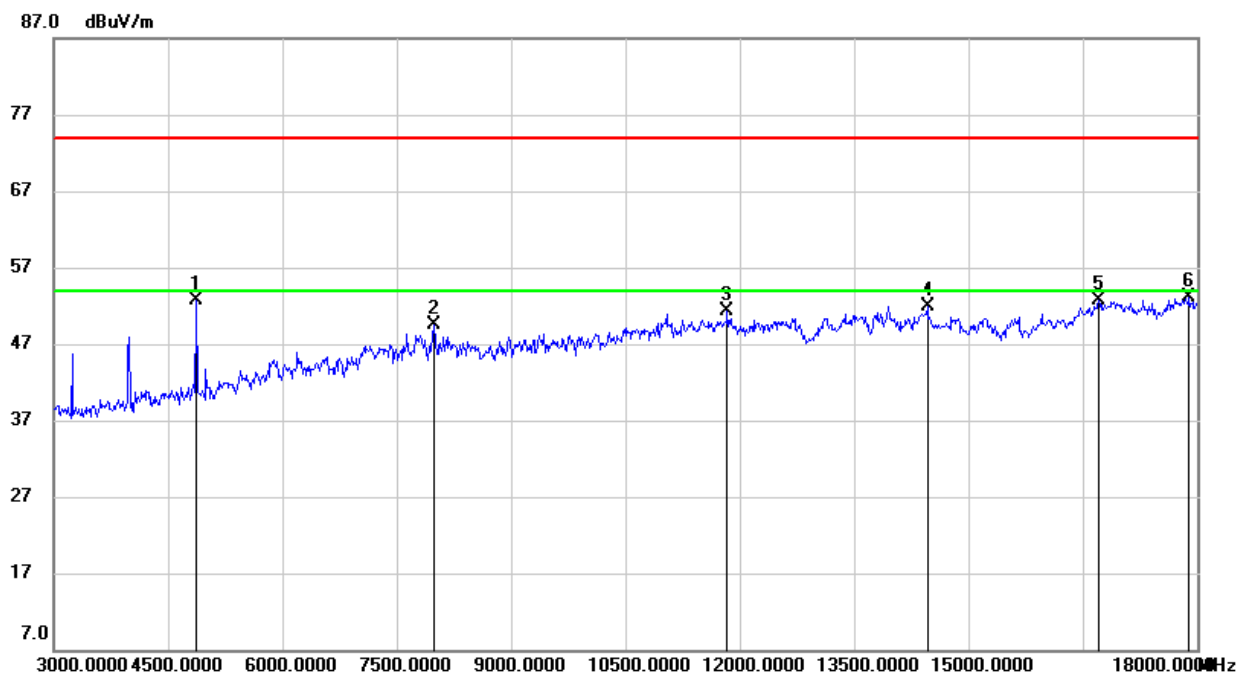


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	52.20	-0.10	52.10	74.00	-21.90	peak
2	7965.000	44.76	8.55	53.31	74.00	-20.69	peak
3	11400.000	37.07	13.69	50.76	74.00	-23.24	peak
4	12690.000	35.47	14.63	50.10	74.00	-23.90	peak
5	15240.000	34.25	16.09	50.34	74.00	-23.66	peak
6	17580.000	30.36	21.87	52.23	74.00	-21.77	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

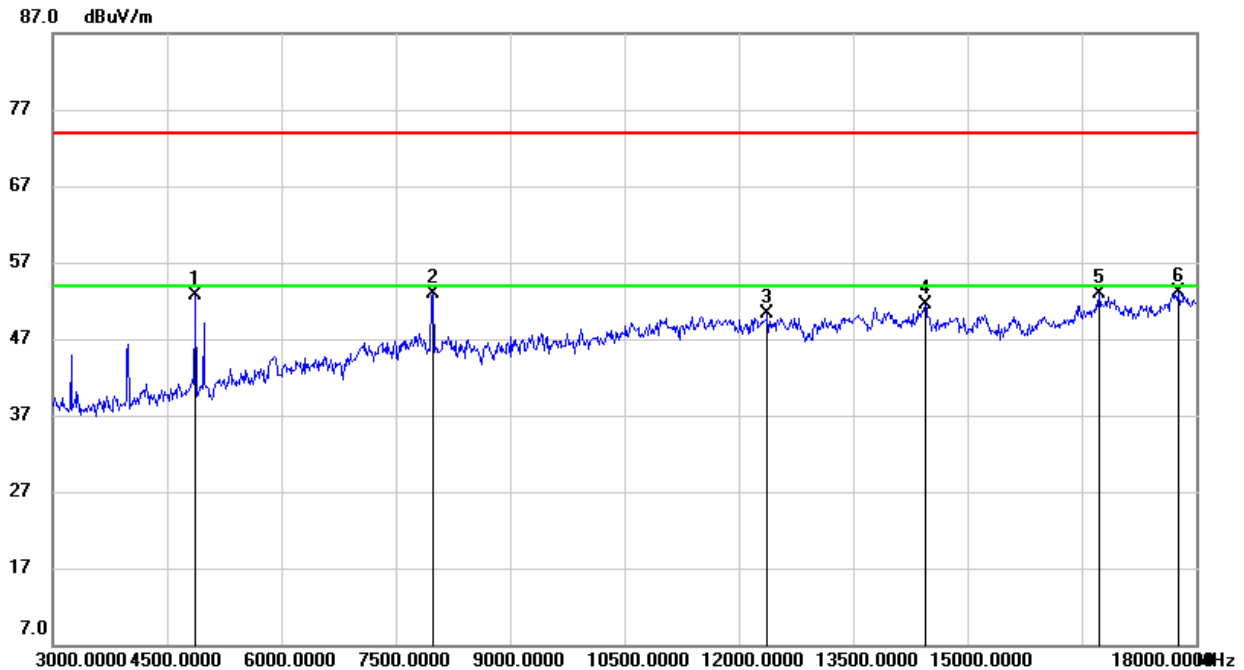


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	52.68	0.10	52.78	74.00	-21.22	peak
2	7995.000	40.96	8.45	49.41	74.00	-24.59	peak
3	11835.000	36.89	14.33	51.22	74.00	-22.78	peak
4	14460.000	35.35	16.65	52.00	74.00	-22.00	peak
5	16710.000	32.50	20.23	52.73	74.00	-21.27	peak
6	17895.000	29.74	23.33	53.07	74.00	-20.93	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

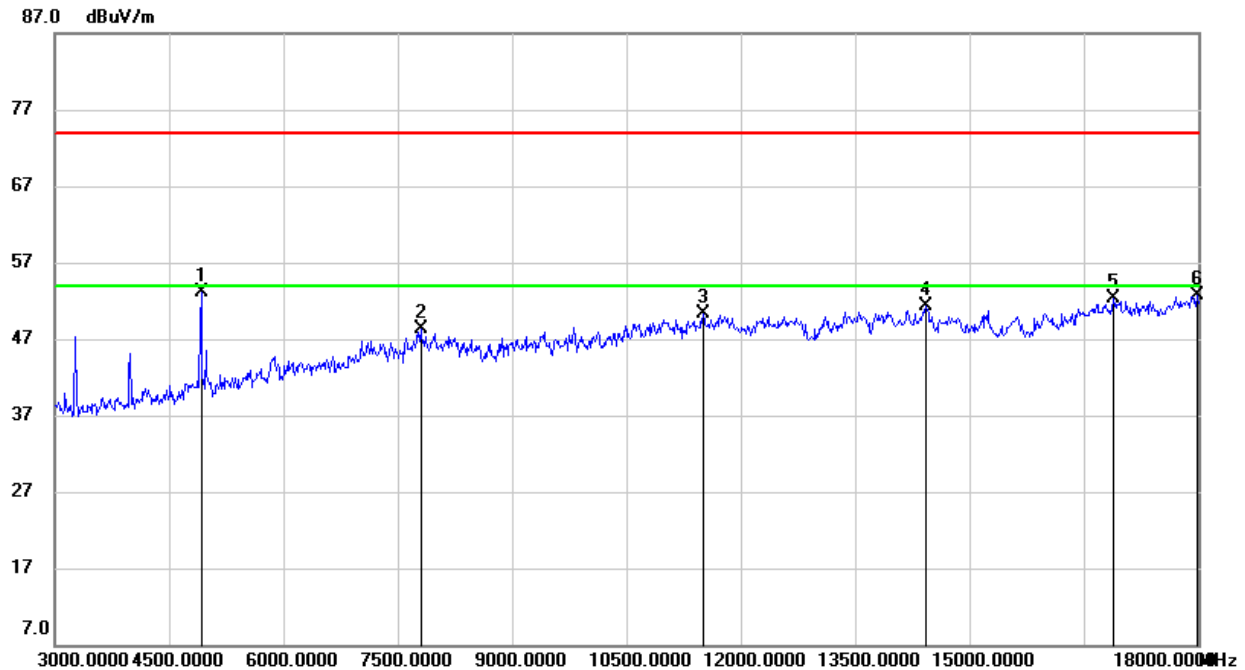


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	52.56	0.10	52.66	74.00	-21.34	peak
2	7980.000	44.41	8.49	52.90	74.00	-21.10	peak
3	12375.000	35.48	14.76	50.24	74.00	-23.76	peak
4	14445.000	34.82	16.66	51.48	74.00	-22.52	peak
5	16725.000	32.59	20.24	52.83	74.00	-21.17	peak
6	17760.000	30.02	23.01	53.03	74.00	-20.97	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in 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)

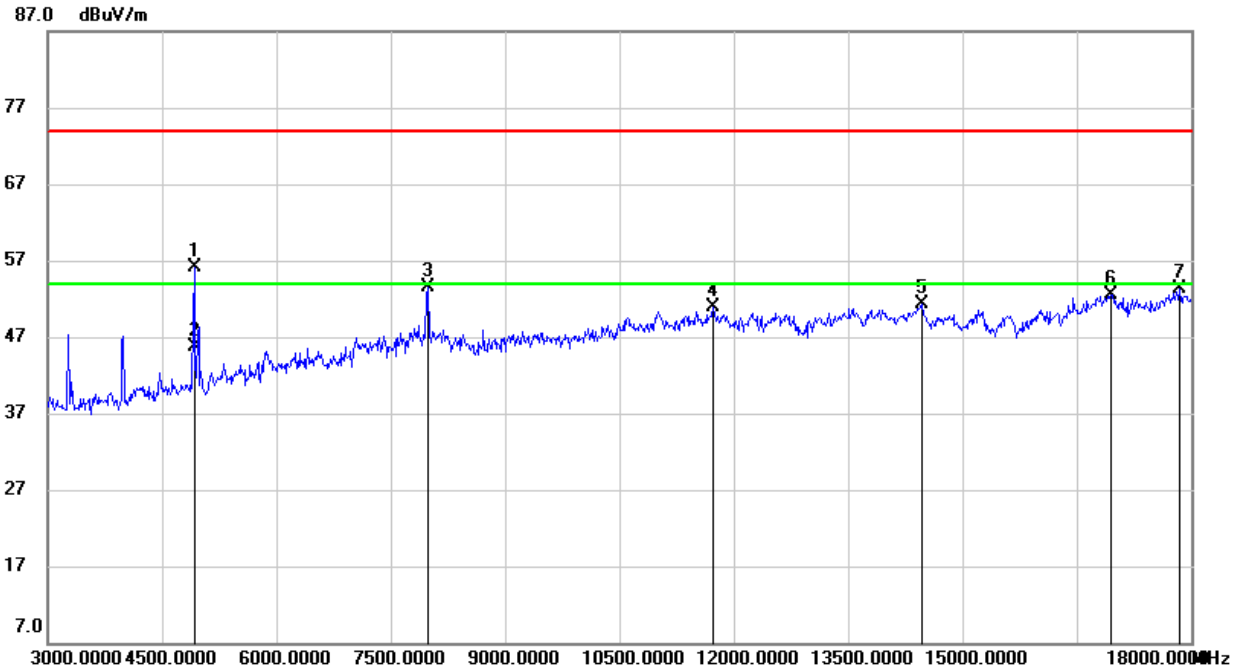


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	52.85	0.26	53.11	74.00	-20.89	peak
2	7800.000	38.91	9.41	48.32	74.00	-25.68	peak
3	11505.000	35.83	14.50	50.33	74.00	-23.67	peak
4	14430.000	34.60	16.66	51.26	74.00	-22.74	peak
5	16890.000	31.97	20.36	52.33	74.00	-21.67	peak
6	17985.000	29.34	23.39	52.73	74.00	-21.27	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 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)



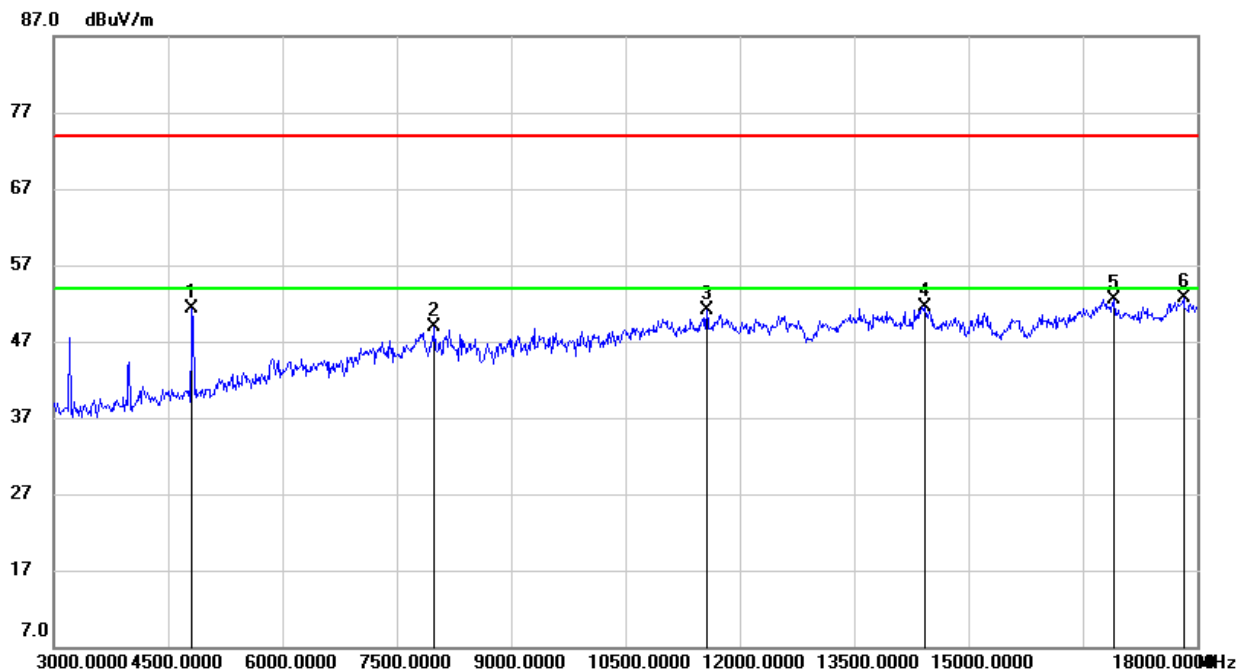
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4923.217	55.73	0.28	56.01	74.00	-17.99	peak
2	4923.217	45.44	0.28	45.72	54.00	-8.28	AVG
3	7995.000	44.98	8.45	53.43	74.00	-20.57	peak
4	11730.000	36.74	14.13	50.87	74.00	-23.13	peak
5	14460.000	34.70	16.65	51.35	74.00	-22.65	peak
6	16950.000	31.83	20.61	52.44	74.00	-21.56	peak
7	17850.000	29.93	23.34	53.27	74.00	-20.73	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. 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.



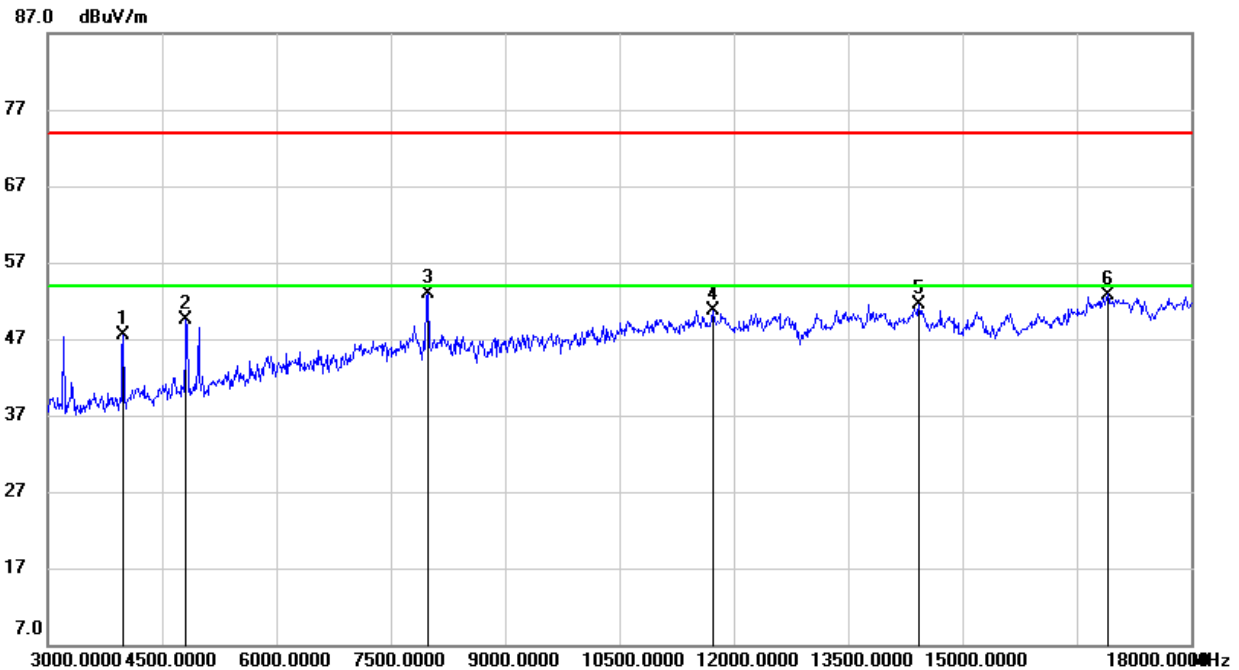
8.2.2. 802.11g MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	51.41	-0.10	51.31	74.00	-22.69	peak
2	7995.000	40.53	8.45	48.98	74.00	-25.02	peak
3	11565.000	36.78	14.35	51.13	74.00	-22.87	peak
4	14430.000	34.84	16.66	51.50	74.00	-22.50	peak
5	16905.000	32.11	20.39	52.50	74.00	-21.50	peak
6	17820.000	29.33	23.34	52.67	74.00	-21.33	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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	3990.000	50.30	-2.80	47.50	74.00	-26.50	peak
2	4815.000	49.58	-0.10	49.48	74.00	-24.52	peak
3	7980.000	44.42	8.49	52.91	74.00	-21.09	peak
4	11730.000	36.65	14.13	50.78	74.00	-23.22	peak
5	14430.000	34.89	16.66	51.55	74.00	-22.45	peak
6	16905.000	32.41	20.39	52.80	74.00	-21.20	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.

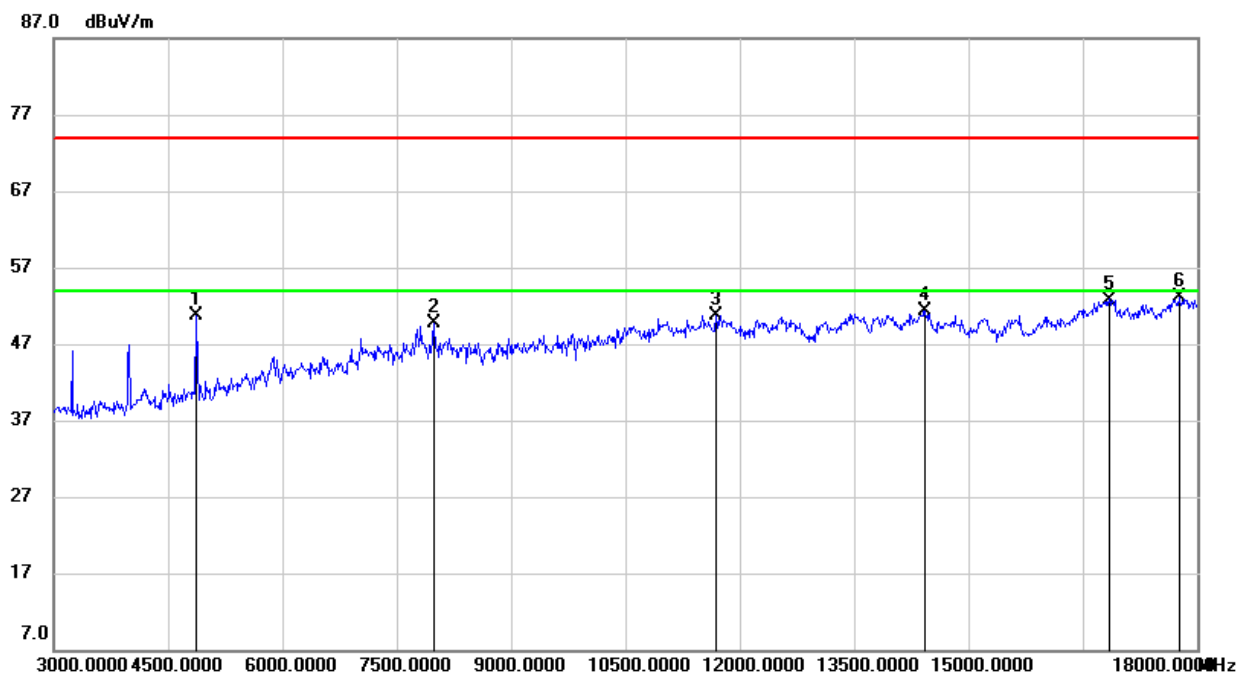
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for 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)

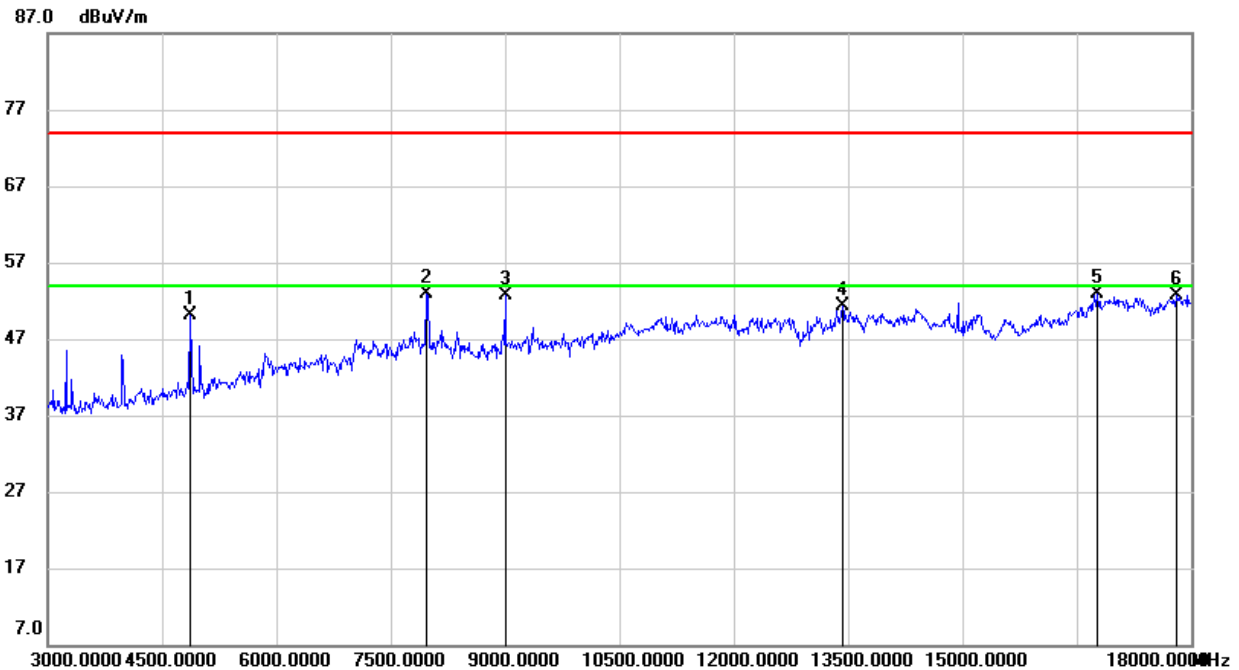


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	50.56	0.10	50.66	74.00	-23.34	peak
2	7980.000	41.16	8.49	49.65	74.00	-24.35	peak
3	11685.000	36.70	14.09	50.79	74.00	-23.21	peak
4	14430.000	34.72	16.66	51.38	74.00	-22.62	peak
5	16845.000	32.47	20.33	52.80	74.00	-21.20	peak
6	17760.000	30.12	23.01	53.13	74.00	-20.87	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 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)

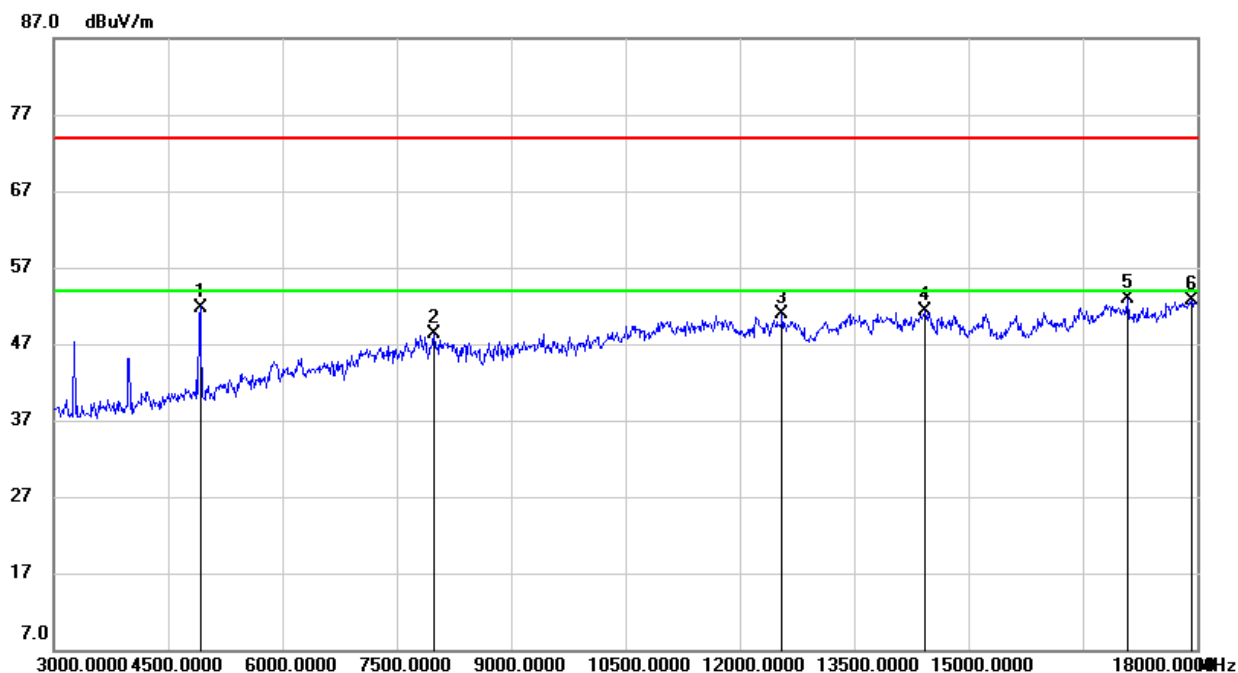


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	50.13	0.05	50.18	74.00	-23.82	peak
2	7965.000	44.41	8.55	52.96	74.00	-21.04	peak
3	9000.000	42.25	10.44	52.69	74.00	-21.31	peak
4	13425.000	34.92	16.31	51.23	74.00	-22.77	peak
5	16770.000	32.54	20.28	52.82	74.00	-21.18	peak
6	17805.000	29.30	23.34	52.64	74.00	-21.36	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

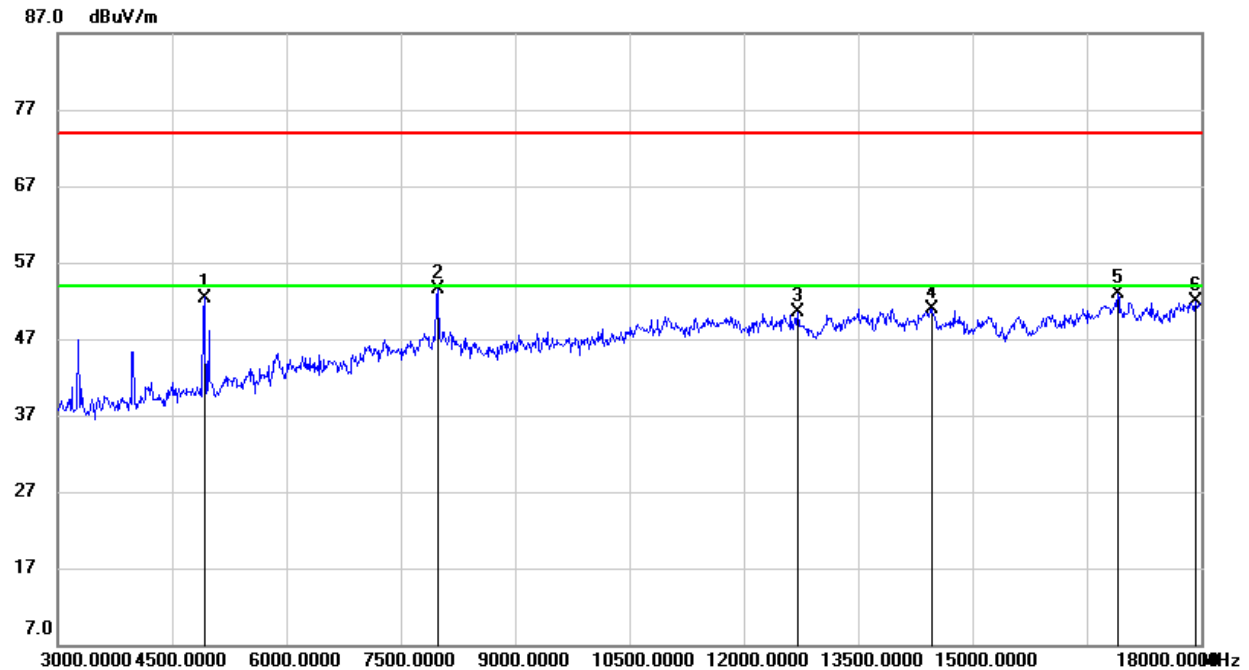


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	51.54	0.26	51.80	74.00	-22.20	peak
2	7980.000	39.91	8.49	48.40	74.00	-25.60	peak
3	12555.000	36.18	14.77	50.95	74.00	-23.05	peak
4	14430.000	34.59	16.66	51.25	74.00	-22.75	peak
5	17085.000	31.90	21.01	52.91	74.00	-21.09	peak
6	17925.000	29.27	23.34	52.61	74.00	-21.39	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 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)



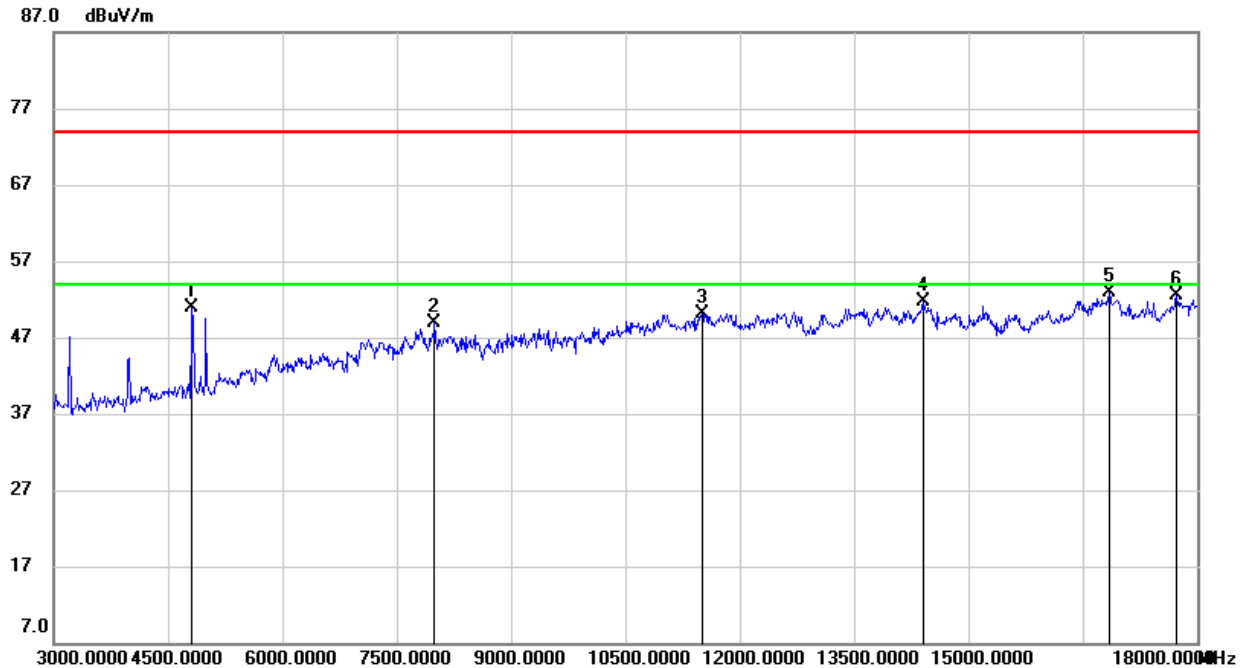
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	52.14	0.26	52.40	74.00	-21.60	peak
2	7980.000	45.01	8.49	53.50	74.00	-20.50	peak
3	12705.000	35.69	14.72	50.41	74.00	-23.59	peak
4	14460.000	34.31	16.65	50.96	74.00	-23.04	peak
5	16905.000	32.57	20.39	52.96	74.00	-21.04	peak
6	17925.000	28.55	23.34	51.89	74.00	-22.11	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 High Pass Filter losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



8.2.3. 802.11n HT20 MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

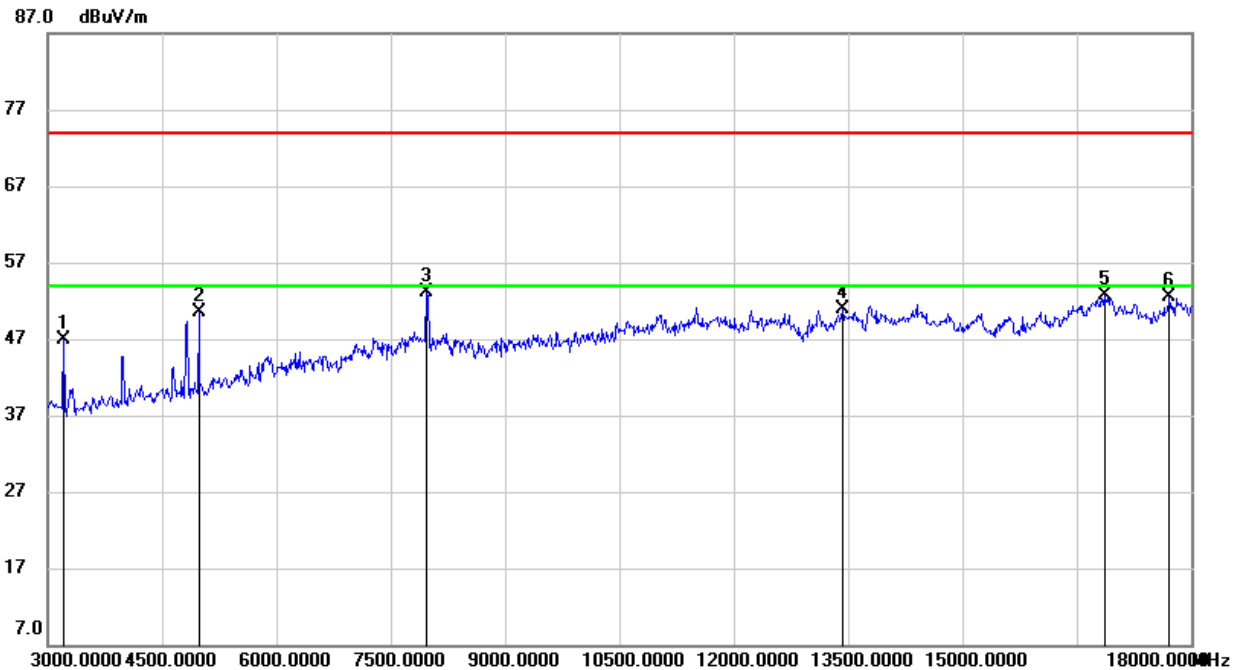


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	50.92	-0.10	50.82	74.00	-23.18	peak
2	7995.000	40.39	8.45	48.84	74.00	-25.16	peak
3	11505.000	35.65	14.50	50.15	74.00	-23.85	peak
4	14400.000	34.99	16.68	51.67	74.00	-22.33	peak
5	16845.000	32.50	20.33	52.83	74.00	-21.17	peak
6	17730.000	29.78	22.78	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. 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)

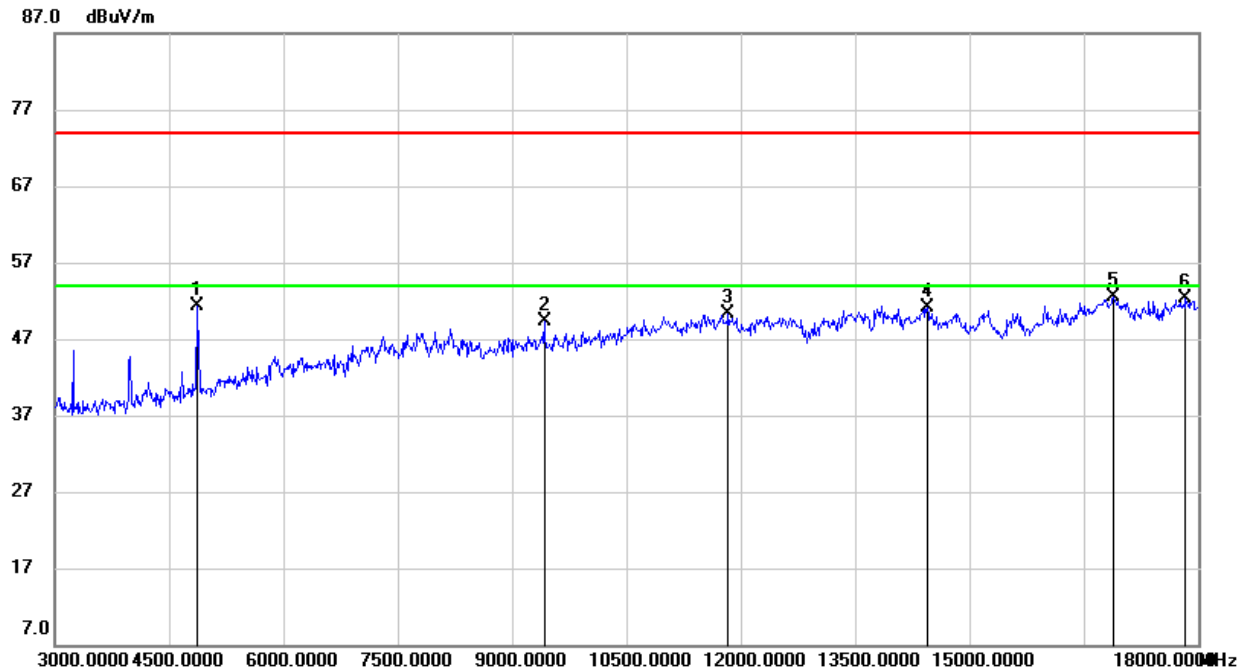


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3210.000	51.31	-4.40	46.91	74.00	-27.09	peak
2	4980.000	49.91	0.54	50.45	74.00	-23.55	peak
3	7965.000	44.62	8.55	53.17	74.00	-20.83	peak
4	13425.000	34.64	16.31	50.95	74.00	-23.05	peak
5	16860.000	32.30	20.33	52.63	74.00	-21.37	peak
6	17715.000	29.82	22.65	52.47	74.00	-21.53	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

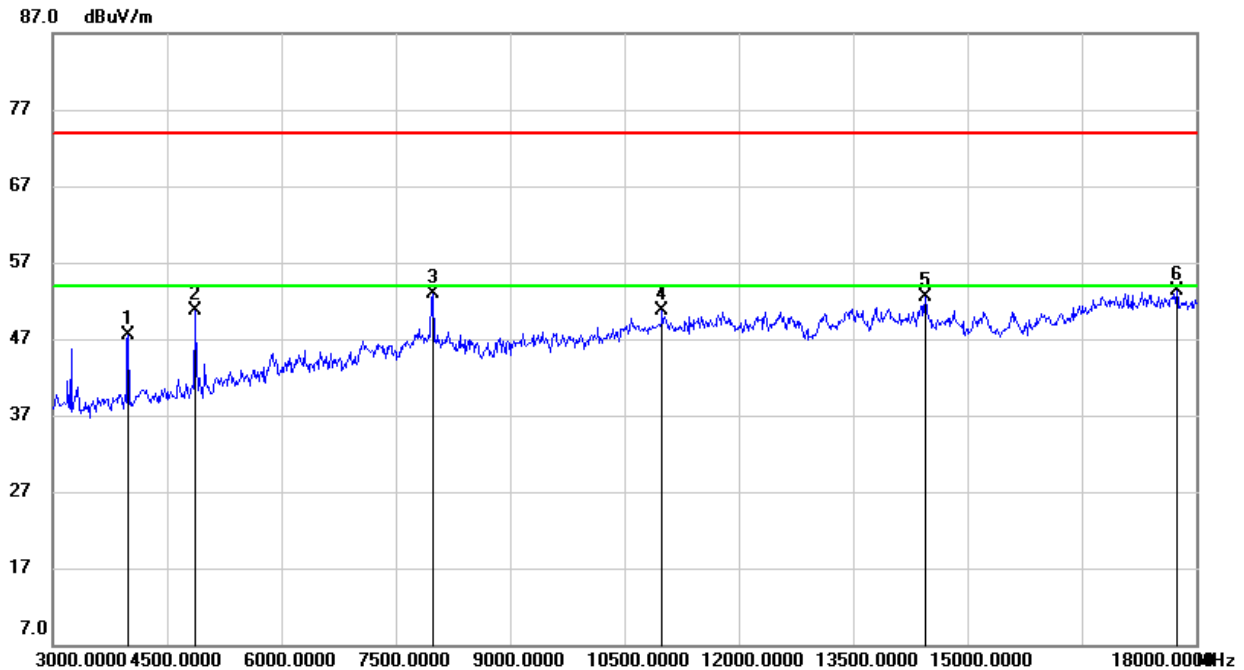


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	51.33	0.05	51.38	74.00	-22.62	peak
2	9420.000	38.74	10.61	49.35	74.00	-24.65	peak
3	11835.000	35.96	14.33	50.29	74.00	-23.71	peak
4	14445.000	34.36	16.66	51.02	74.00	-22.98	peak
5	16890.000	32.13	20.36	52.49	74.00	-21.51	peak
6	17835.000	28.97	23.34	52.31	74.00	-21.69	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. 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)

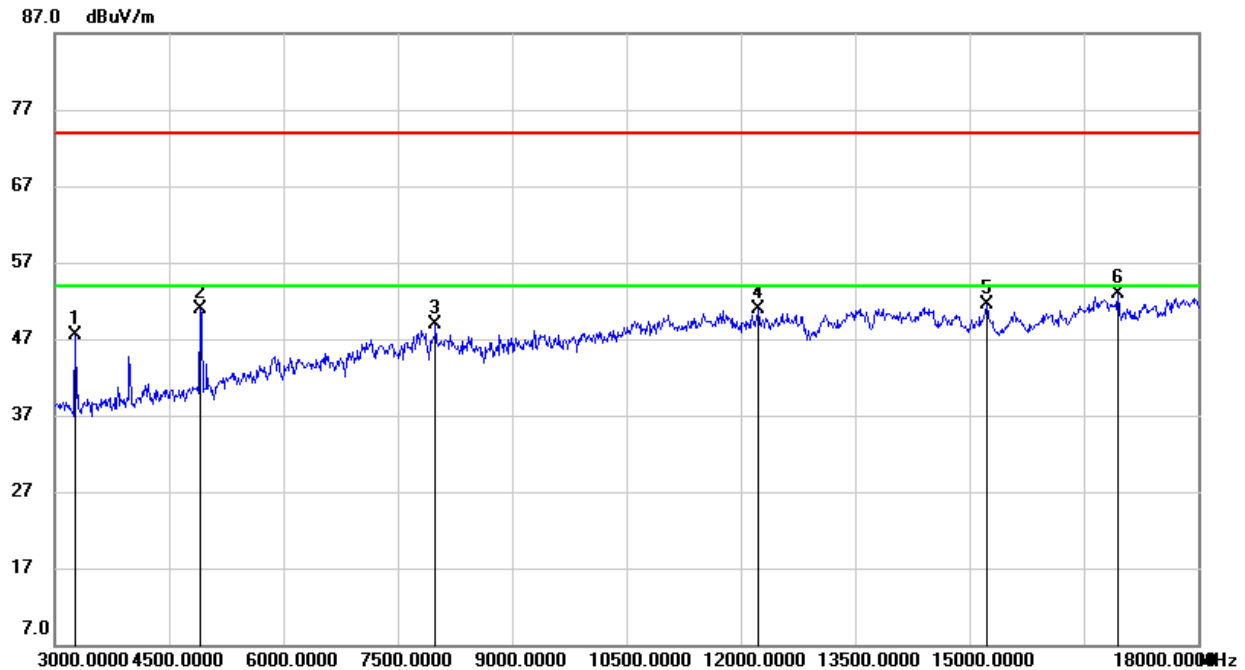


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3990.000	50.31	-2.80	47.51	74.00	-26.49	peak
2	4860.000	50.58	0.05	50.63	74.00	-23.37	peak
3	7995.000	44.50	8.45	52.95	74.00	-21.05	peak
4	10995.000	37.12	13.62	50.74	74.00	-23.26	peak
5	14445.000	35.84	16.66	52.50	74.00	-21.50	peak
6	17745.000	30.44	22.89	53.33	74.00	-20.67	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 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)

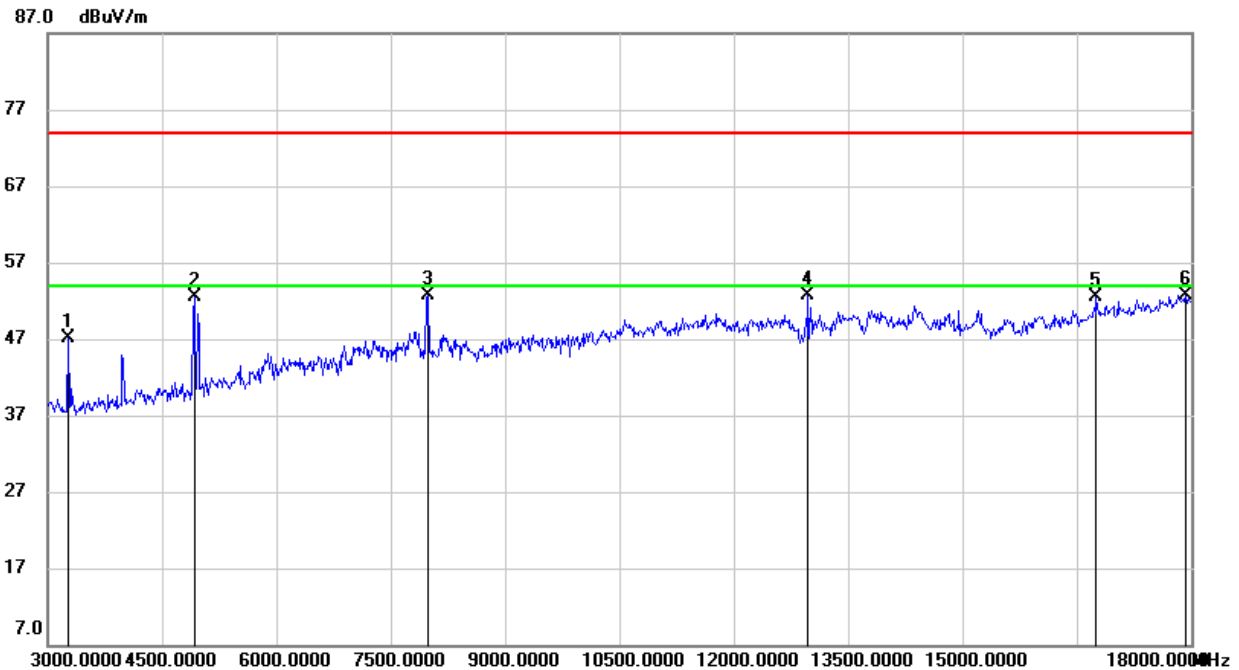


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3270.000	51.80	-4.26	47.54	74.00	-26.46	peak
2	4905.000	50.74	0.19	50.93	74.00	-23.07	peak
3	7995.000	40.38	8.45	48.83	74.00	-25.17	peak
4	12225.000	36.12	14.70	50.82	74.00	-23.18	peak
5	15225.000	35.52	16.06	51.58	74.00	-22.42	peak
6	16950.000	32.29	20.61	52.90	74.00	-21.10	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in 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)



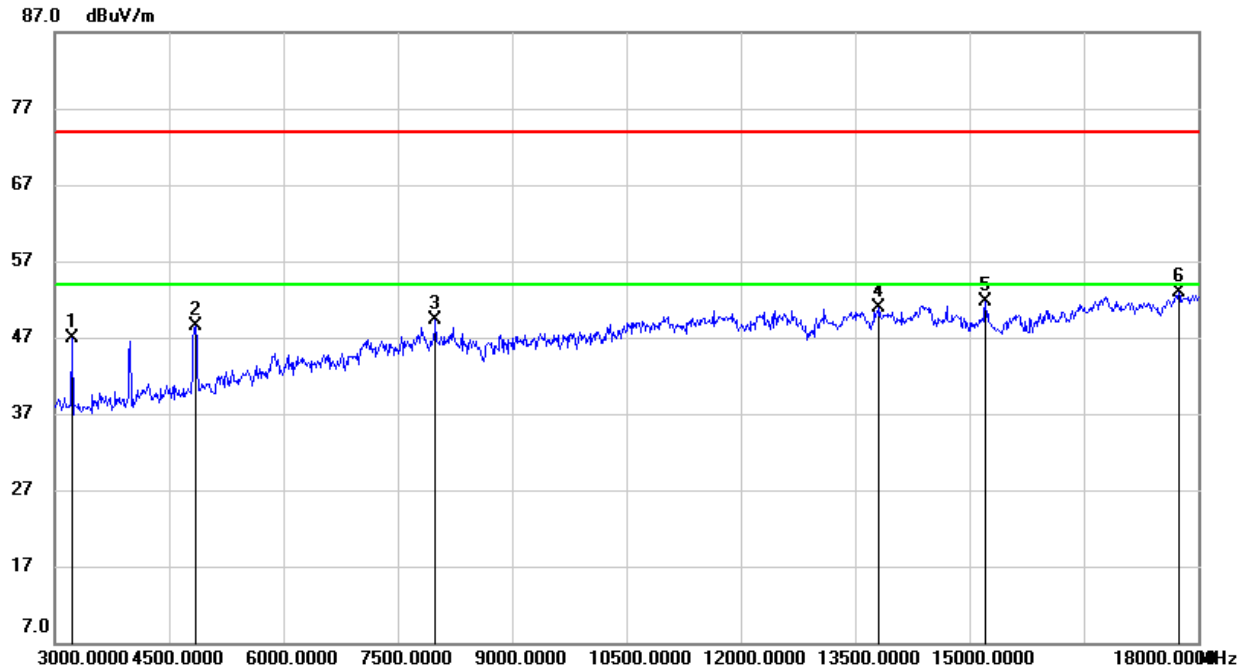
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3270.000	51.36	-4.26	47.10	74.00	-26.90	peak
2	4920.000	52.21	0.26	52.47	74.00	-21.53	peak
3	7980.000	44.26	8.49	52.75	74.00	-21.25	peak
4	12975.000	37.62	14.99	52.61	74.00	-21.39	peak
5	16755.000	32.19	20.26	52.45	74.00	-21.55	peak
6	17925.000	29.37	23.34	52.71	74.00	-21.29	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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.



8.2.4. 802.11n HT40 MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

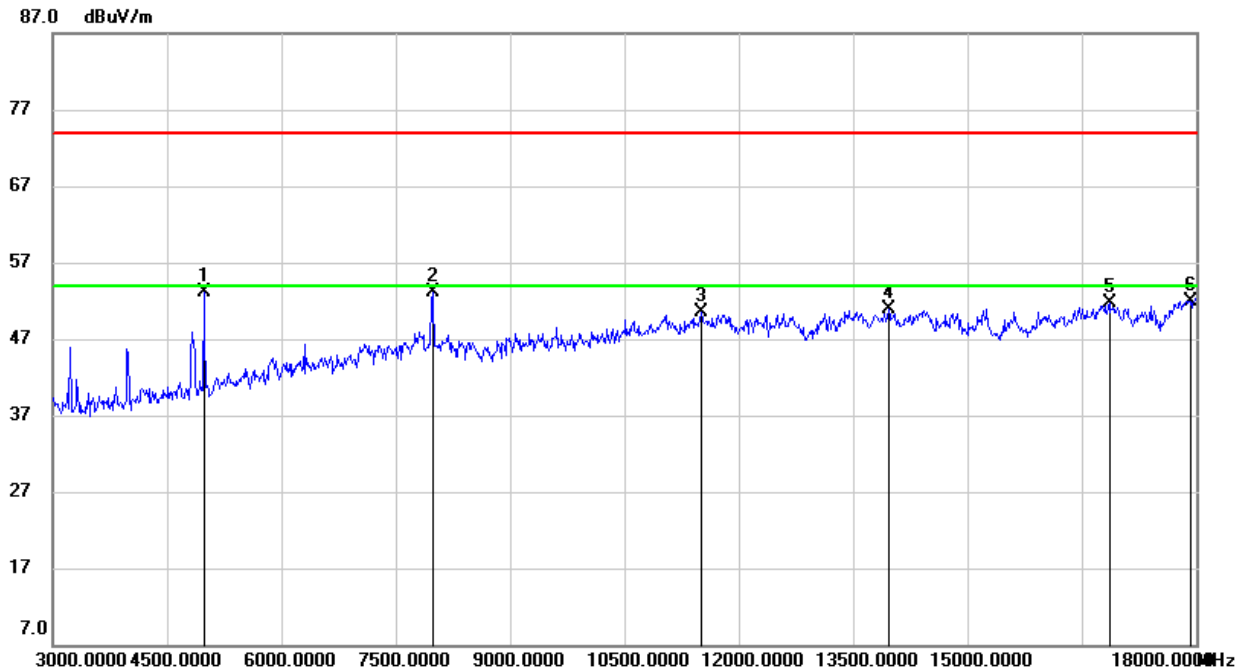


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3225.000	51.17	-4.36	46.81	74.00	-27.19	peak
2	4845.000	48.48	0.00	48.48	74.00	-25.52	peak
3	7995.000	40.85	8.45	49.30	74.00	-24.70	peak
4	13815.000	33.35	17.47	50.82	74.00	-23.18	peak
5	15210.000	35.73	16.03	51.76	74.00	-22.24	peak
6	17745.000	29.98	22.89	52.87	74.00	-21.13	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 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)

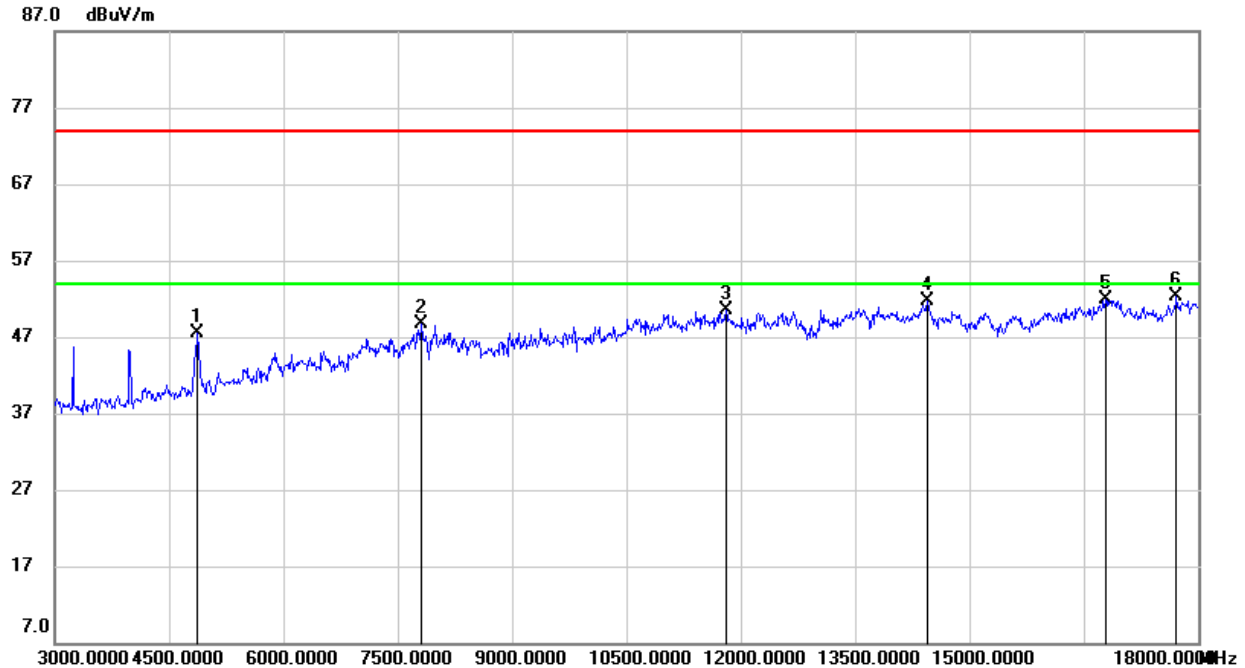


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4980.000	52.64	0.54	53.18	74.00	-20.82	peak
2	7980.000	44.53	8.49	53.02	74.00	-20.98	peak
3	11505.000	35.96	14.50	50.46	74.00	-23.54	peak
4	13965.000	34.19	16.68	50.87	74.00	-23.13	peak
5	16860.000	31.31	20.33	51.64	74.00	-22.36	peak
6	17925.000	28.62	23.34	51.96	74.00	-22.04	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 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	47.40	0.10	47.50	74.00	-26.50	peak
2	7815.000	39.37	9.31	48.68	74.00	-25.32	peak
3	11805.000	36.14	14.31	50.45	74.00	-23.55	peak
4	14445.000	35.13	16.66	51.79	74.00	-22.21	peak
5	16785.000	31.64	20.28	51.92	74.00	-22.08	peak
6	17715.000	29.60	22.65	52.25	74.00	-21.75	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.

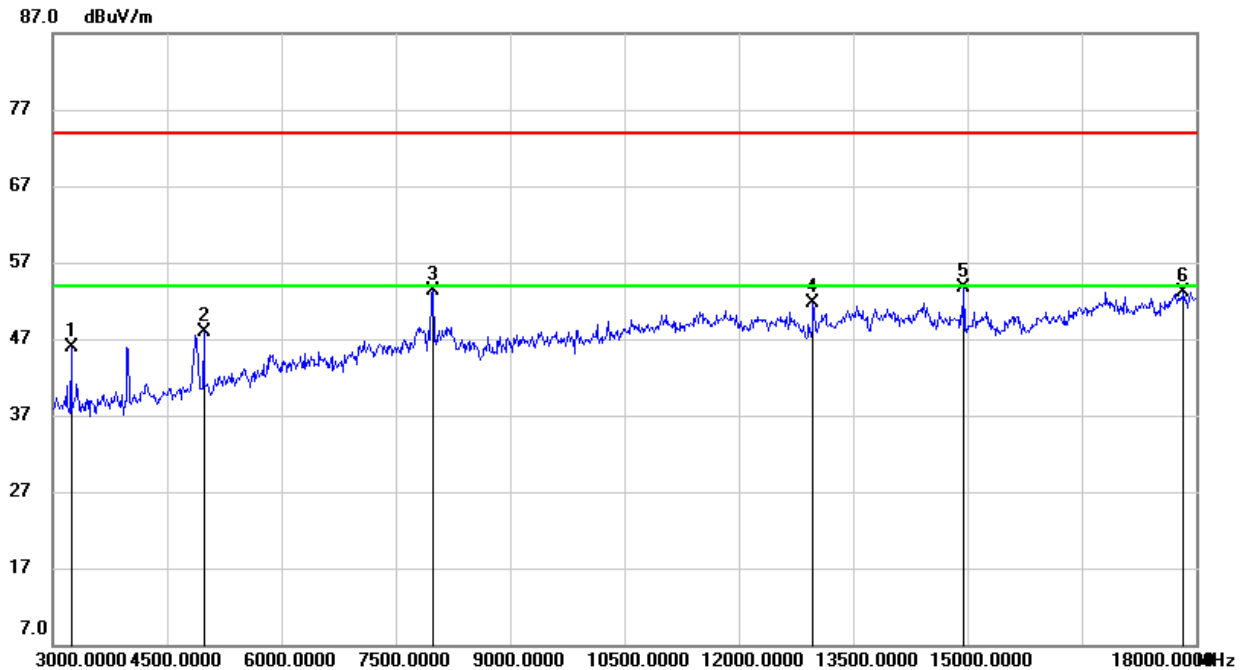
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for 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)

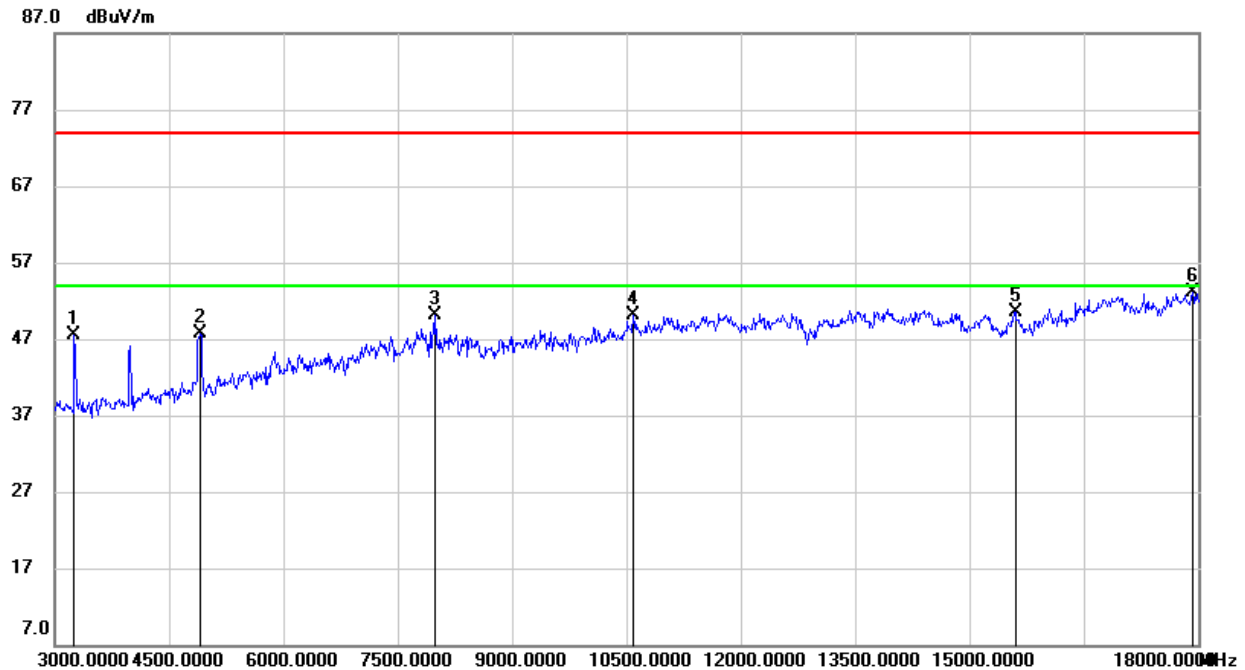


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3240.000	50.29	-4.34	45.95	74.00	-28.05	peak
2	4980.000	47.37	0.54	47.91	74.00	-26.09	peak
3	7995.000	44.93	8.45	53.38	74.00	-20.62	peak
4	12975.000	36.67	14.99	51.66	74.00	-22.34	peak
5	14955.000	37.77	15.94	53.71	74.00	-20.29	peak
6	17835.000	29.81	23.34	53.15	74.00	-20.85	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in 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)

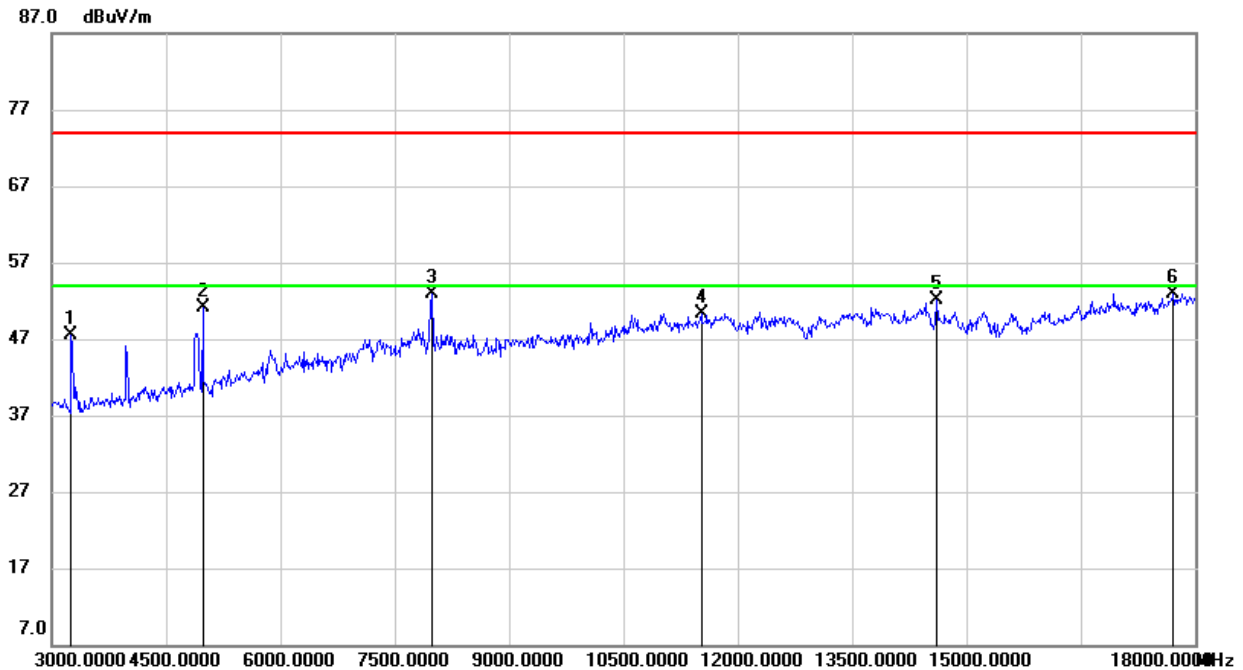


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3255.000	51.81	-4.30	47.51	74.00	-26.49	peak
2	4905.000	47.45	0.19	47.64	74.00	-26.36	peak
3	7995.000	41.57	8.45	50.02	74.00	-23.98	peak
4	10590.000	37.18	12.83	50.01	74.00	-23.99	peak
5	15600.000	33.58	16.90	50.48	74.00	-23.52	peak
6	17925.000	29.83	23.34	53.17	74.00	-20.83	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in 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	3255.000	51.82	-4.30	47.52	74.00	-26.48	peak
2	4980.000	50.53	0.54	51.07	74.00	-22.93	peak
3	7995.000	44.39	8.45	52.84	74.00	-21.16	peak
4	11520.000	35.91	14.46	50.37	74.00	-23.63	peak
5	14610.000	36.04	16.11	52.15	74.00	-21.85	peak
6	17715.000	30.26	22.65	52.91	74.00	-21.09	peak

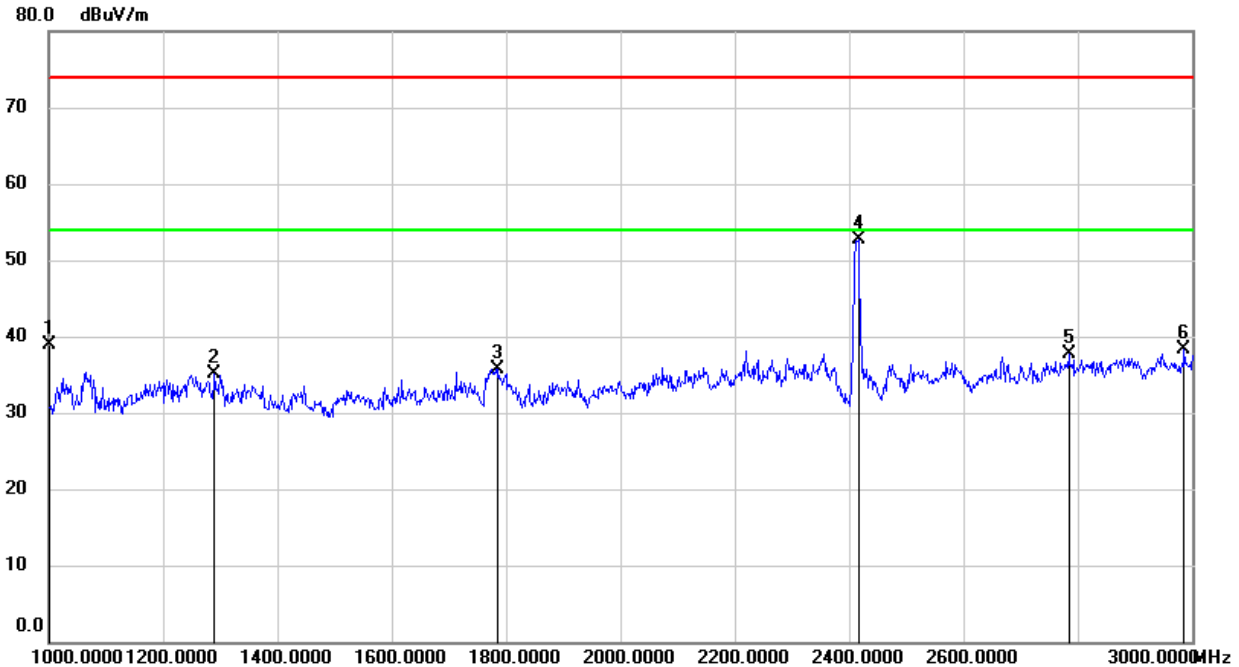
- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter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



8.3. SPURIOUS EMISSIONS (1~3GHz)

8.3.1. 802.11b MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

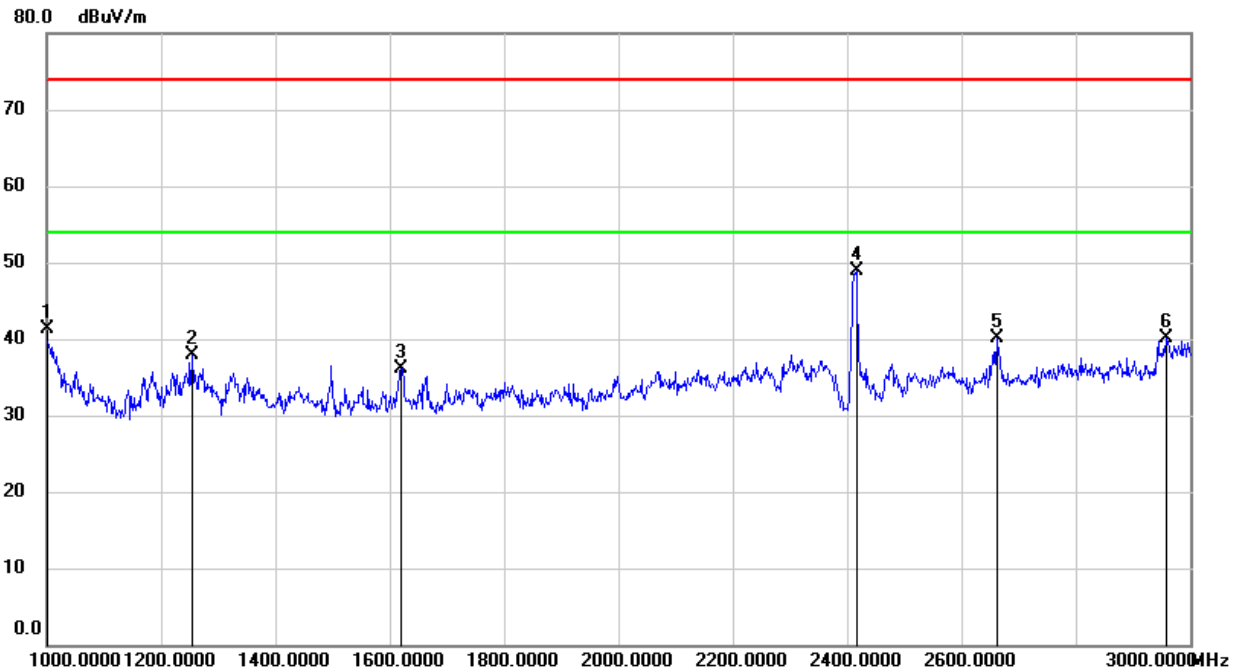


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1000.0000	52.83	-13.85	38.98	74.00	-35.02	peak
2	1290.000	47.79	-12.62	35.17	74.00	-38.83	peak
3	1786.000	45.96	-10.25	35.71	74.00	-38.29	peak
4	2412.000	60.64	-7.85	52.79	/	/	fundamental
5	2784.000	43.93	-6.26	37.67	74.00	-36.33	peak
6	2986.000	43.66	-5.31	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.

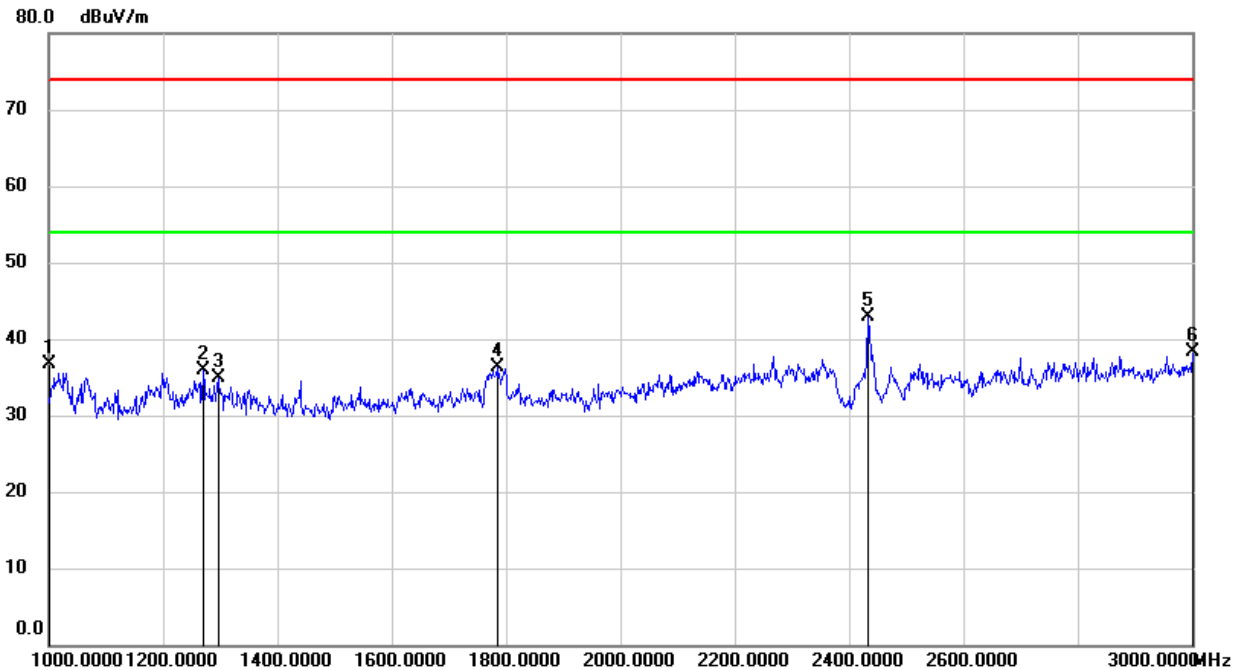


HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1000.0000	55.21	-13.85	41.36	74.00	-32.64	peak
2	1254.000	50.66	-12.74	37.92	74.00	-36.08	peak
3	1620.000	47.54	-11.50	36.04	74.00	-37.96	peak
4	2412.000	56.80	-7.85	48.95	/	/	fundamental
5	2662.000	47.55	-7.40	40.15	74.00	-33.85	peak
6	2958.000	45.57	-5.38	40.19	74.00	-33.81	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 (MID CHANNEL, HORIZONTAL)**

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1000.0000	50.57	-13.85	36.72	74.00	-37.28	peak
2	1270.000	48.58	-12.68	35.90	74.00	-38.10	peak
3	1296.000	47.49	-12.60	34.89	74.00	-39.11	peak
4	1784.000	46.64	-10.27	36.37	74.00	-37.63	peak
5	2437.000	50.63	-7.72	42.91	/	/	fundamental
6	3000.000	43.62	-5.28	38.34	74.00	-35.66	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.

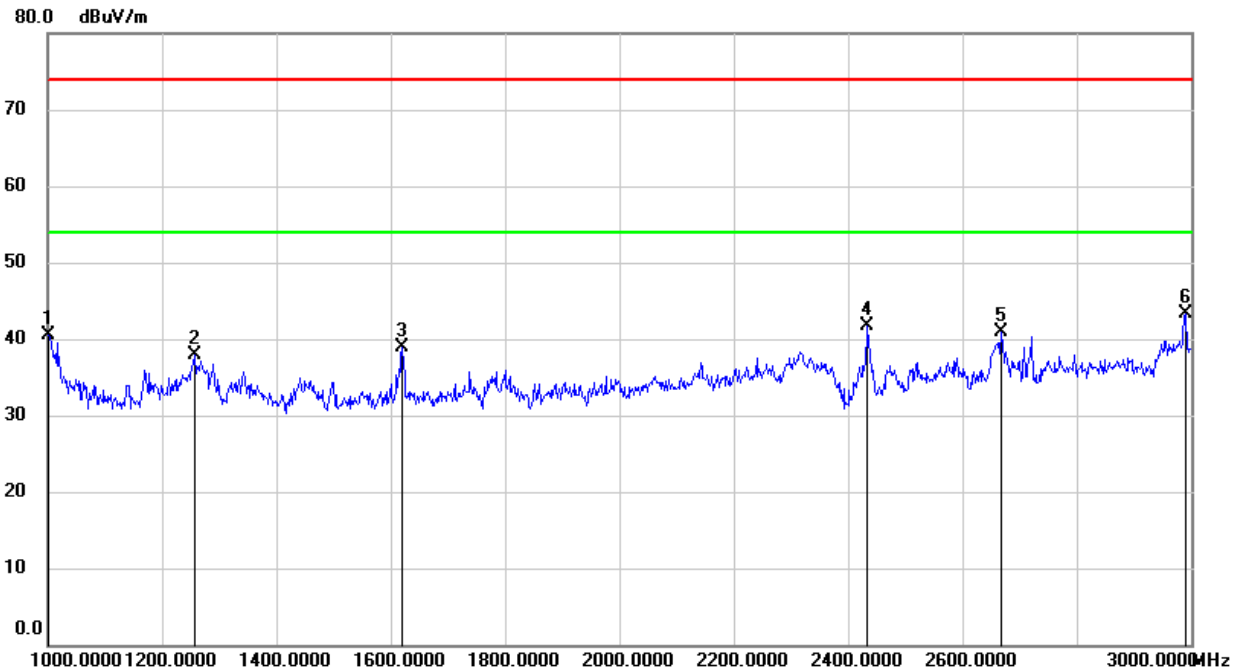
3. Peak: Peak detector.

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)

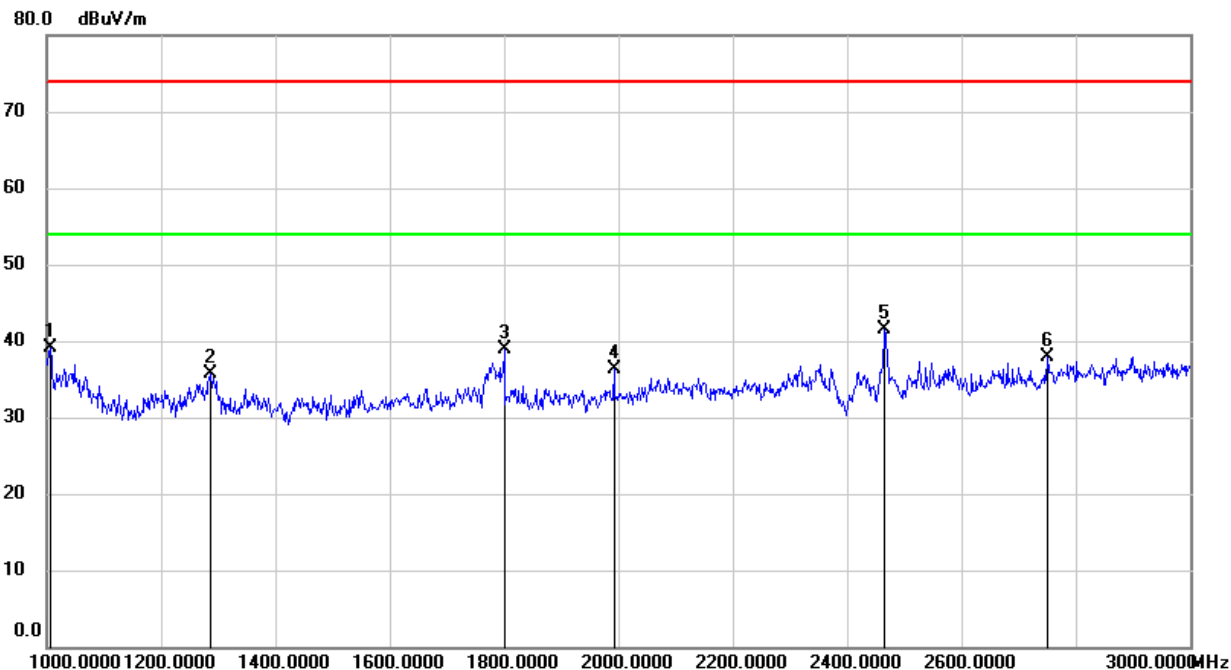


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1002.000	54.32	-13.85	40.47	74.00	-33.53	peak
2	1258.000	50.57	-12.73	37.84	74.00	-36.16	peak
3	1620.000	50.37	-11.50	38.87	74.00	-35.13	peak
4	2437.000	49.38	-7.71	41.67	/	/	fundamental
5	2668.000	48.33	-7.36	40.97	74.00	-33.03	peak
6	2990.000	48.53	-5.31	43.22	74.00	-30.78	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)

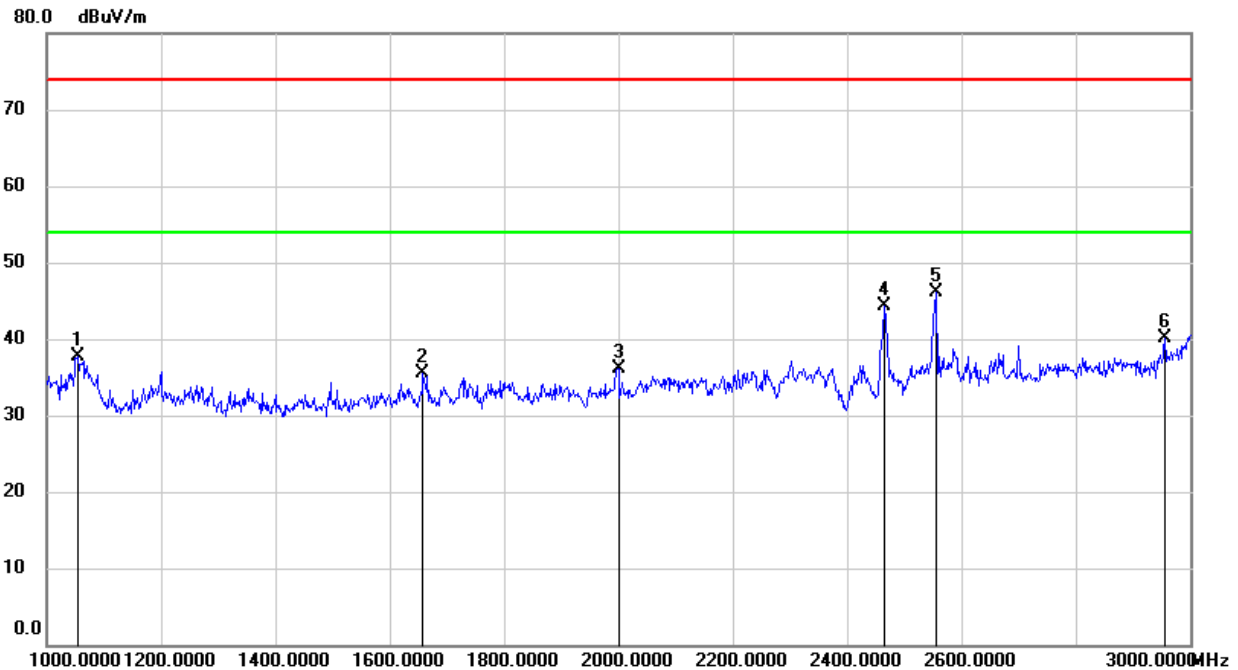


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1006.000	52.92	-13.85	39.07	74.00	-34.93	peak
2	1286.000	48.29	-12.63	35.66	74.00	-38.34	peak
3	1800.000	48.98	-10.11	38.87	74.00	-35.13	peak
4	1992.000	46.39	-10.01	36.38	74.00	-37.62	peak
5	2462.000	49.03	-7.49	41.54	/	/	fundamental
6	2750.000	44.46	-6.62	37.84	74.00	-36.16	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in 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)



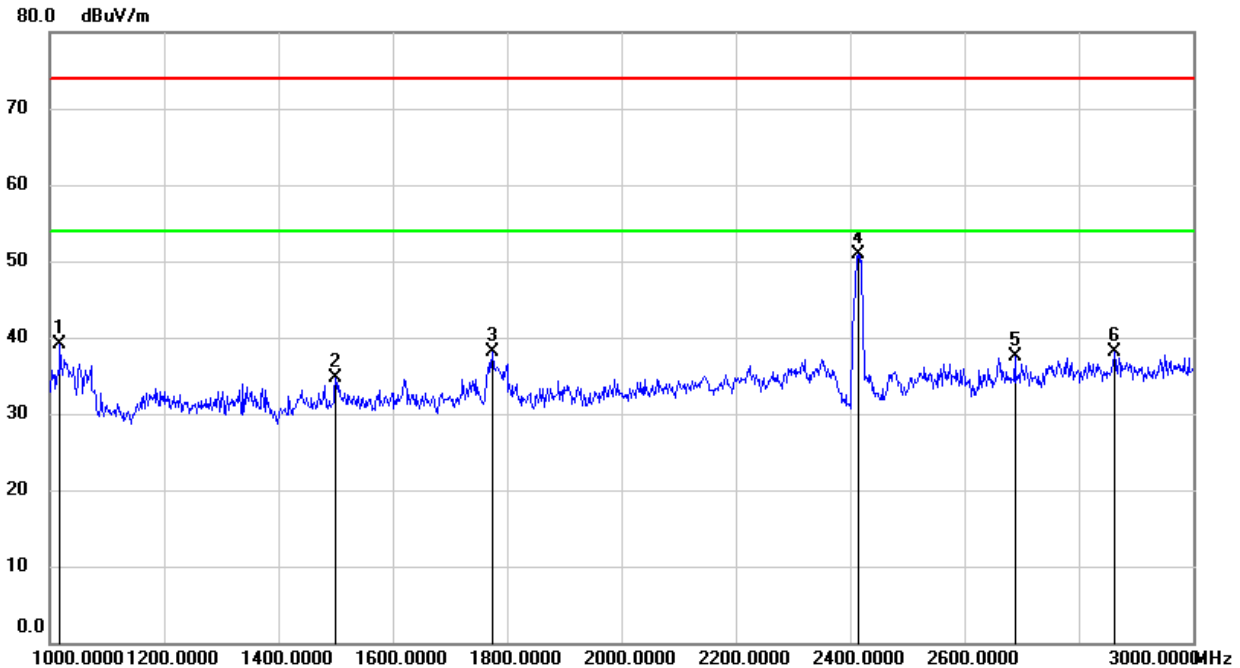
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1054.000	51.42	-13.81	37.61	74.00	-36.39	peak
2	1658.000	46.82	-11.32	35.50	74.00	-38.50	peak
3	2000.000	46.19	-10.00	36.19	74.00	-37.81	peak
4	2462.000	51.88	-7.49	44.39	/	/	fundamental
5	2556.000	53.60	-7.53	46.07	74.00	-27.93	peak
6	2956.000	45.41	-5.39	40.02	74.00	-33.98	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.



8.3.2. 802.11g MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

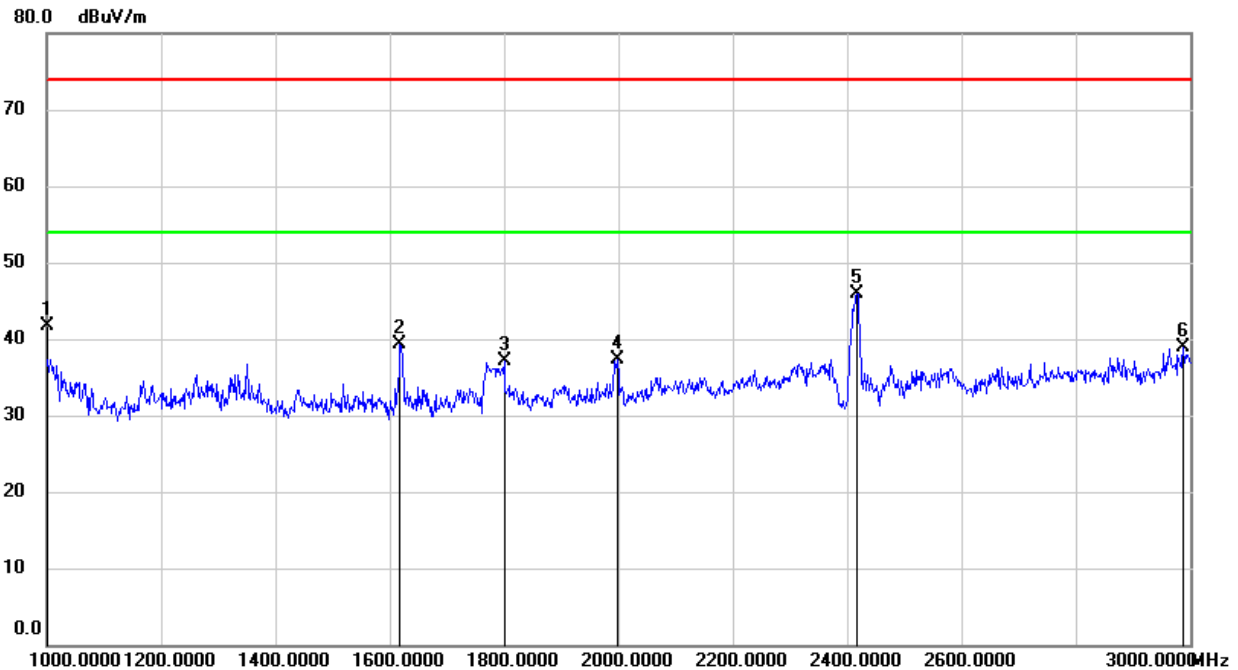


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1018.000	52.92	-13.84	39.08	74.00	-34.92	peak
2	1500.000	47.21	-12.43	34.78	74.00	-39.22	peak
3	1774.000	48.48	-10.37	38.11	74.00	-35.89	peak
4	2412.000	58.77	-7.86	50.91	/	/	fundamental
5	2688.000	44.69	-7.24	37.45	74.00	-36.55	peak
6	2862.000	43.78	-5.74	38.04	74.00	-35.96	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

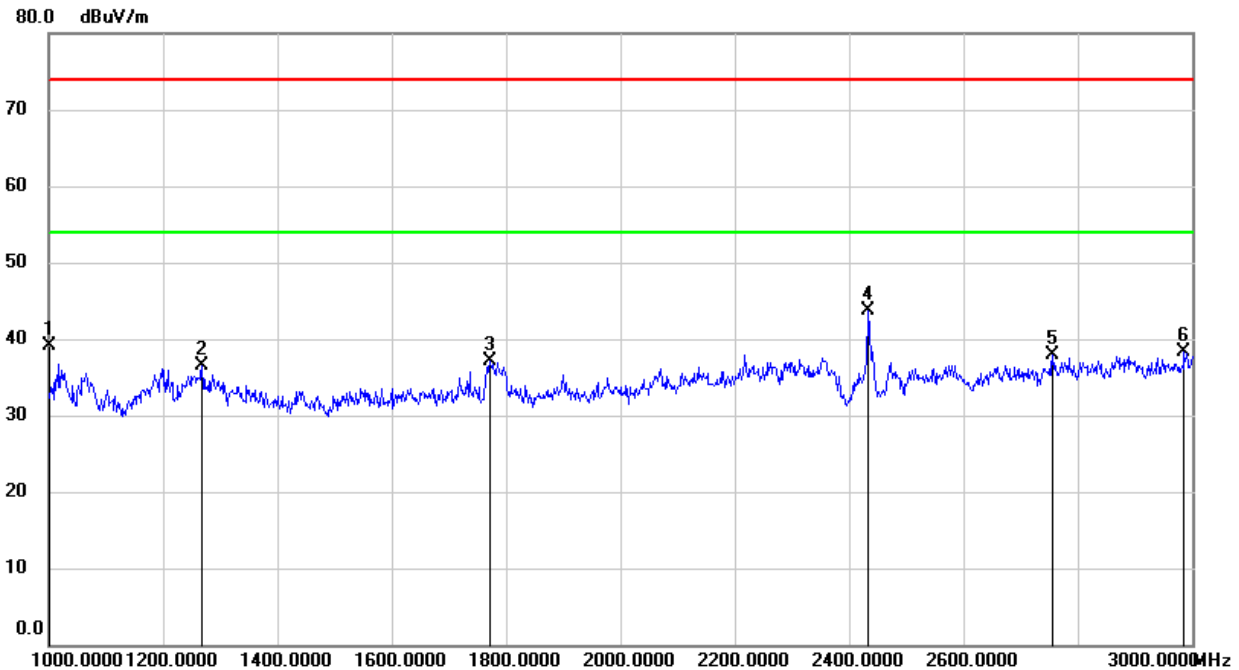


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1000.0000	55.64	-13.85	41.79	74.00	-32.21	peak
2	1618.000	50.78	-11.52	39.26	74.00	-34.74	peak
3	1800.000	47.19	-10.11	37.08	74.00	-36.92	peak
4	1998.000	47.27	-10.01	37.26	74.00	-36.74	peak
5	2412.000	53.71	-7.83	45.88	/	/	fundamental
6	2988.000	44.19	-5.31	38.88	74.00	-35.12	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

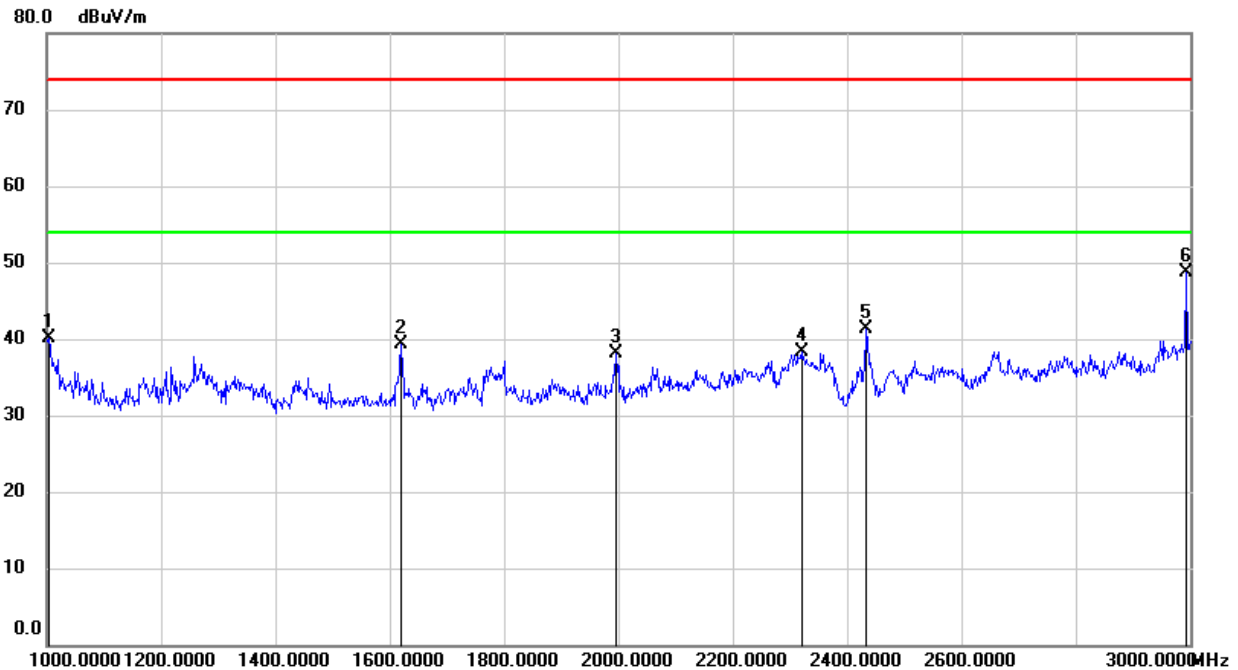


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1000.0000	52.86	-13.85	39.01	74.00	-34.99	peak
2	1268.000	49.12	-12.69	36.43	74.00	-37.57	peak
3	1772.000	47.44	-10.40	37.04	74.00	-36.96	peak
4	2437.000	51.49	-7.71	43.78	/	/	fundamental
5	2756.000	44.51	-6.56	37.95	74.00	-36.05	peak
6	2986.000	43.58	-5.31	38.27	74.00	-35.73	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, VERTICAL)

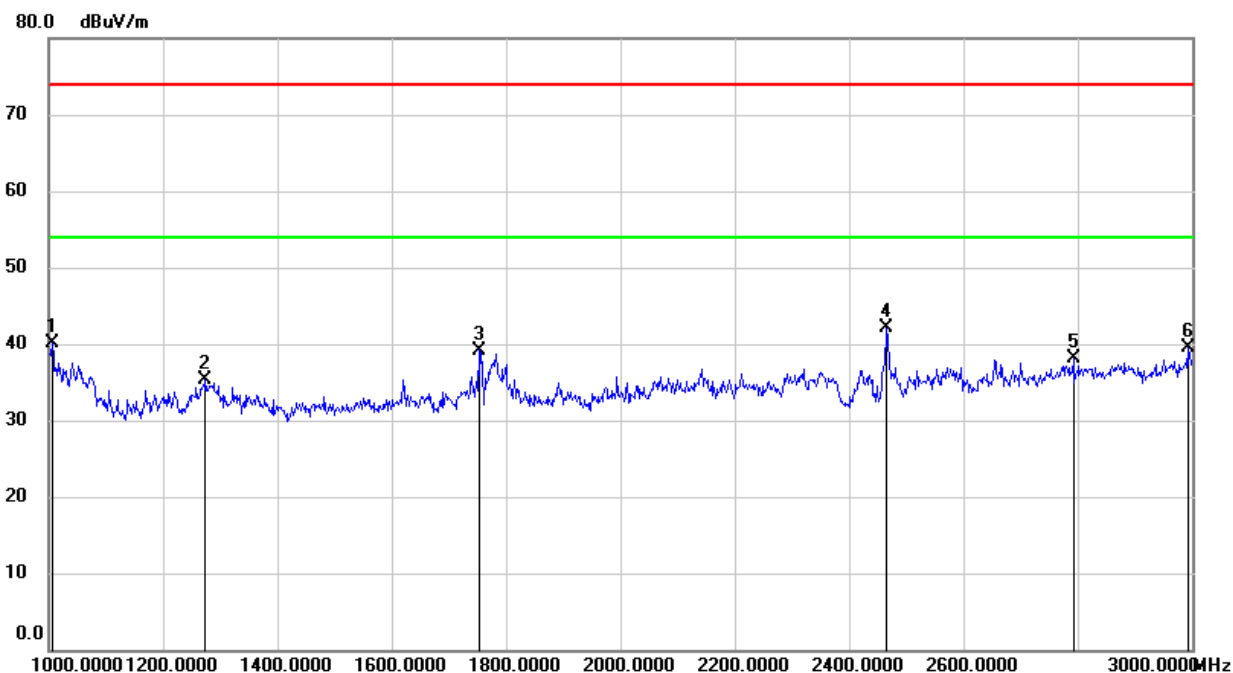


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	53.90	-13.84	40.06	74.00	-33.94	peak
2	1620.000	50.84	-11.50	39.34	74.00	-34.66	peak
3	1996.000	48.11	-10.01	38.10	74.00	-35.90	peak
4	2320.000	46.52	-8.24	38.28	74.00	-35.72	peak
5	2437.000	48.92	-7.71	41.21	/	/	fundamental
6	2994.000	54.00	-5.29	48.71	74.00	-25.29	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

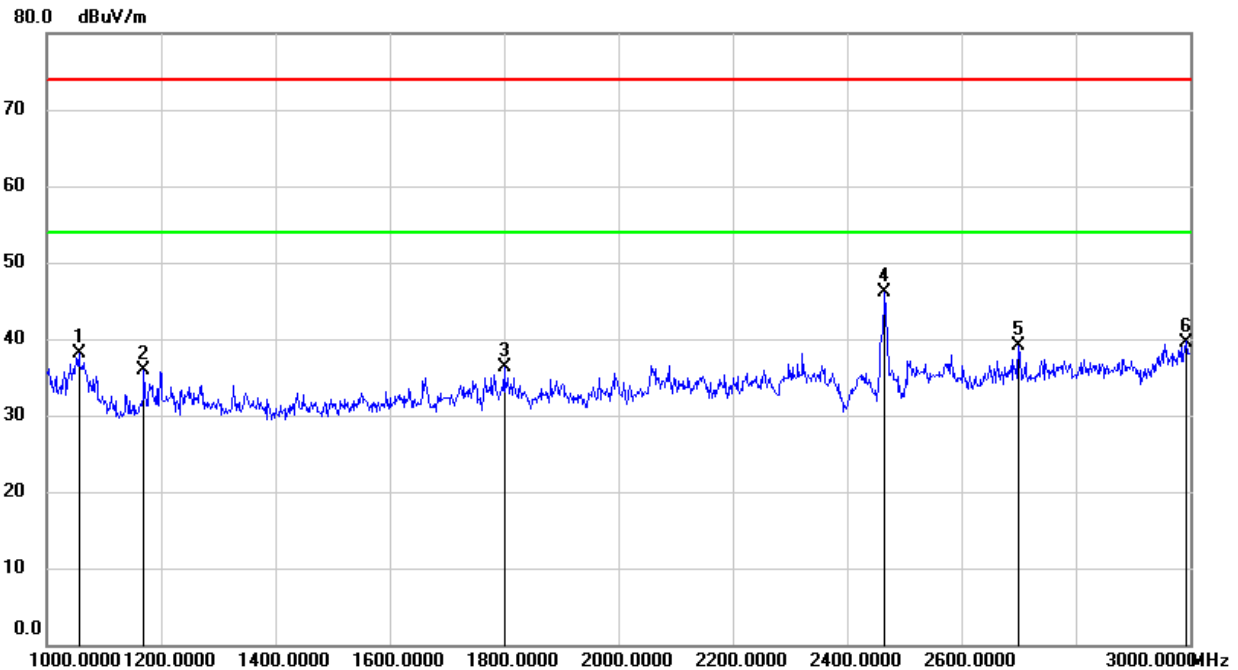


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1006.000	53.87	-13.85	40.02	74.00	-33.98	peak
2	1274.000	47.90	-12.67	35.23	74.00	-38.77	peak
3	1752.000	49.79	-10.59	39.20	74.00	-34.80	peak
4	2462.000	49.63	-7.49	42.14	/	/	fundamental
5	2792.000	44.35	-6.16	38.19	74.00	-35.81	peak
6	2992.000	44.88	-5.30	39.58	74.00	-34.42	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)



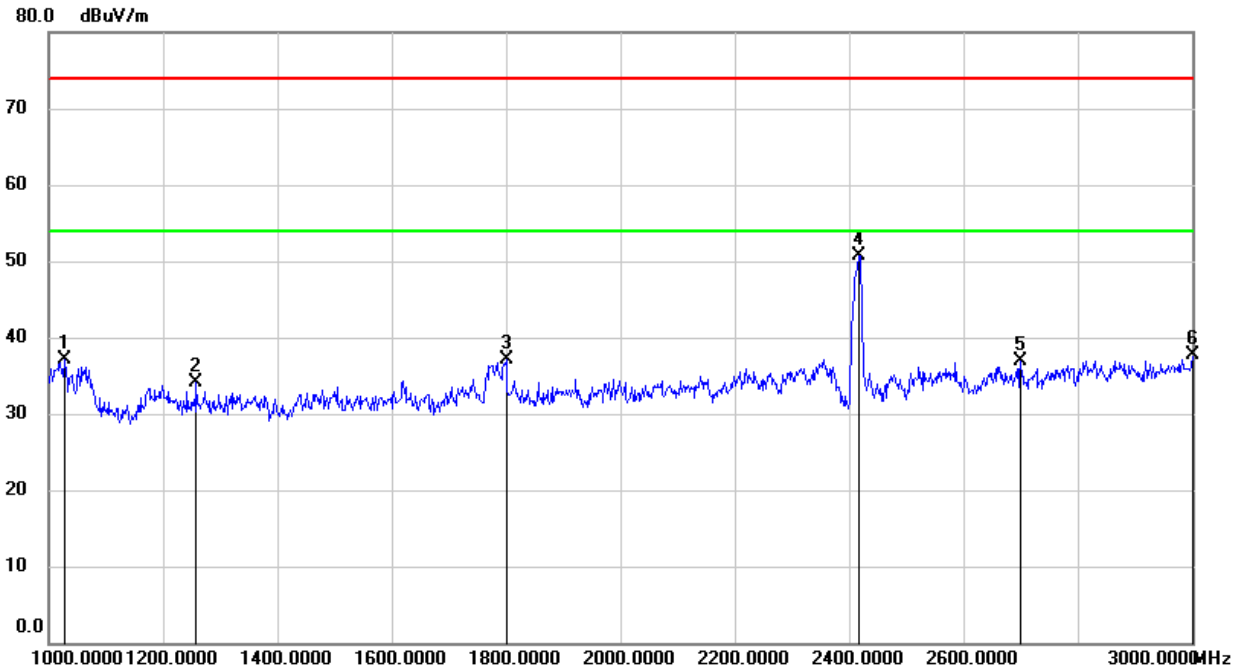
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1056.000	51.94	-13.81	38.13	74.00	-35.87	peak
2	1170.000	49.09	-13.17	35.92	74.00	-38.08	peak
3	1800.000	46.35	-10.11	36.24	74.00	-37.76	peak
4	2462.000	53.52	-7.49	46.03	/	/	fundamental
5	2700.000	46.30	-7.17	39.13	74.00	-34.87	peak
6	2994.000	44.89	-5.29	39.60	74.00	-34.40	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.
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.



8.3.3. 802.11n HT20 MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

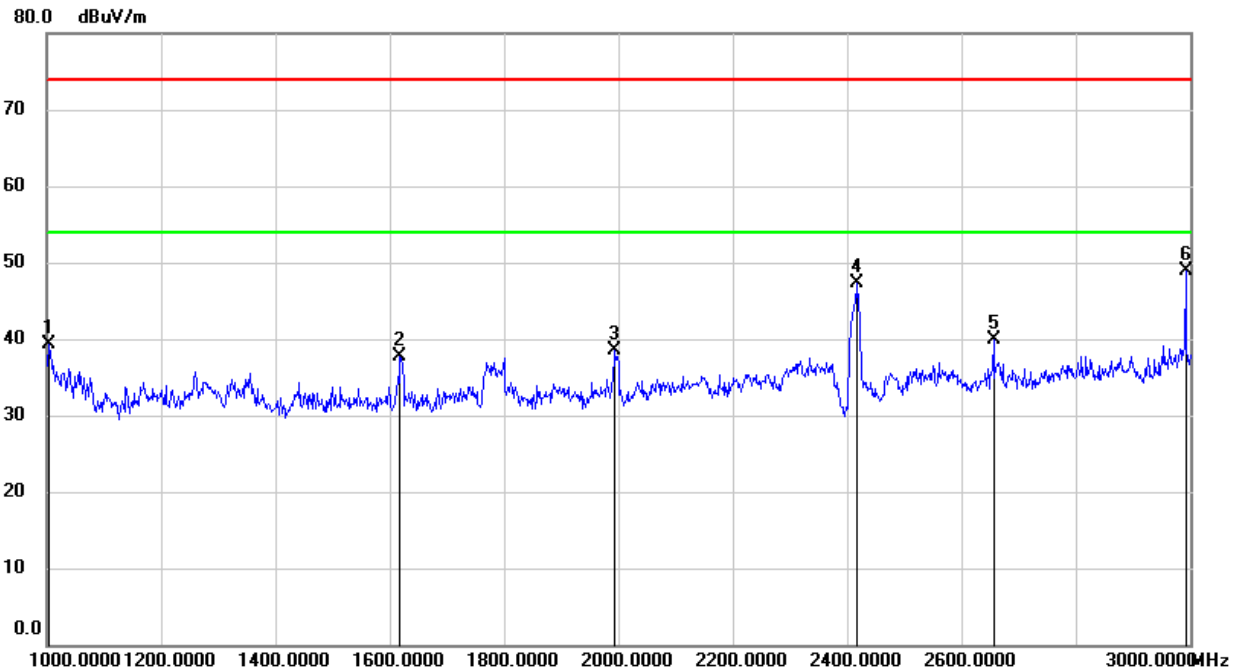


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1028.000	50.92	-13.83	37.09	74.00	-36.91	peak
2	1258.000	46.92	-12.73	34.19	74.00	-39.81	peak
3	1800.000	47.25	-10.11	37.14	74.00	-36.86	peak
4	2412.000	58.60	-7.83	50.77	/	/	fundamental
5	2700.000	44.00	-7.17	36.83	74.00	-37.17	peak
6	3000.000	42.91	-5.28	37.63	74.00	-36.37	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)

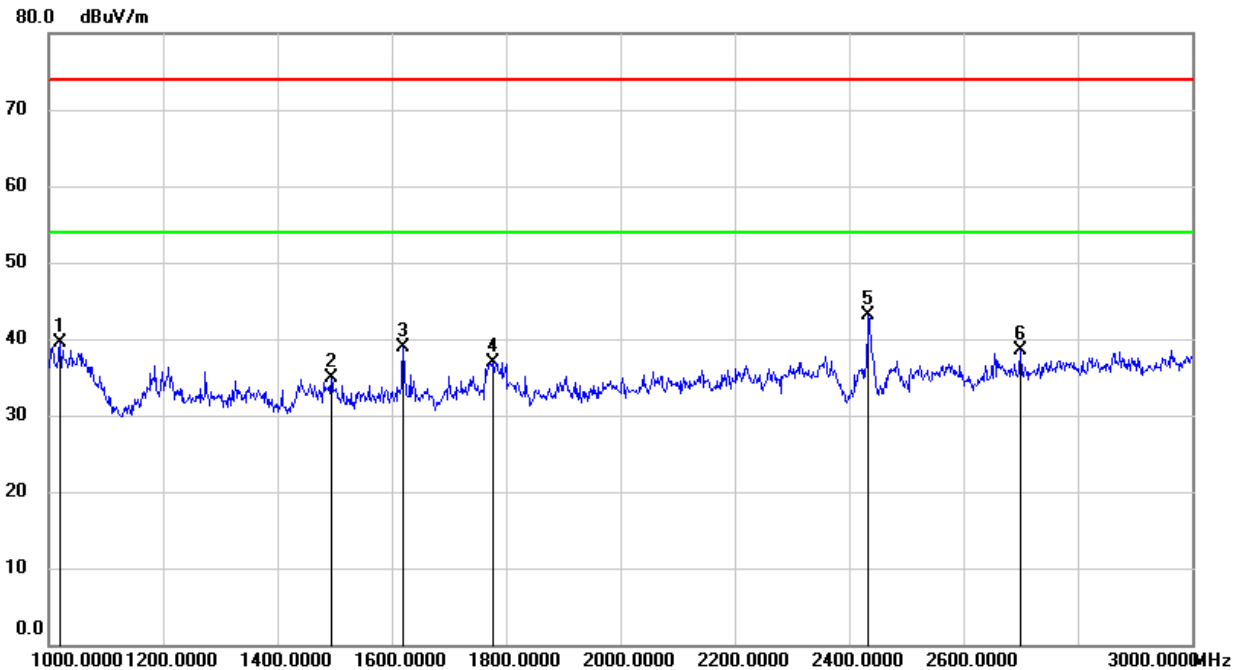


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	53.22	-13.84	39.38	74.00	-34.62	peak
2	1618.000	49.15	-11.52	37.63	74.00	-36.37	peak
3	1994.000	48.49	-10.01	38.48	74.00	-35.52	peak
4	2412.000	55.14	-7.85	47.29	/	/	fundamental
5	2656.000	47.38	-7.43	39.95	74.00	-34.05	peak
6	2992.000	54.26	-5.30	48.96	74.00	-25.04	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)

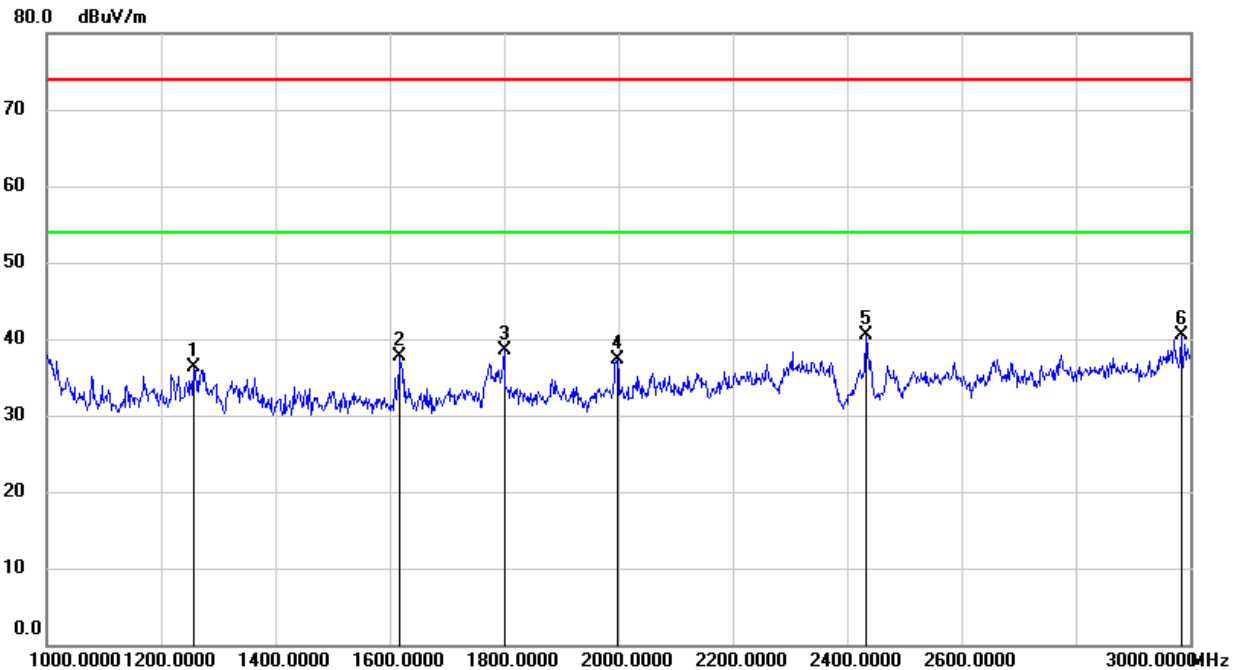


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1020.000	53.36	-13.83	39.53	74.00	-34.47	peak
2	1494.000	47.28	-12.44	34.84	74.00	-39.16	peak
3	1620.000	50.32	-11.50	38.82	74.00	-35.18	peak
4	1776.000	47.34	-10.35	36.99	74.00	-37.01	peak
5	2437.000	50.78	-7.71	43.07	/	/	fundamental
6	2700.000	45.70	-7.17	38.53	74.00	-35.47	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. 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)

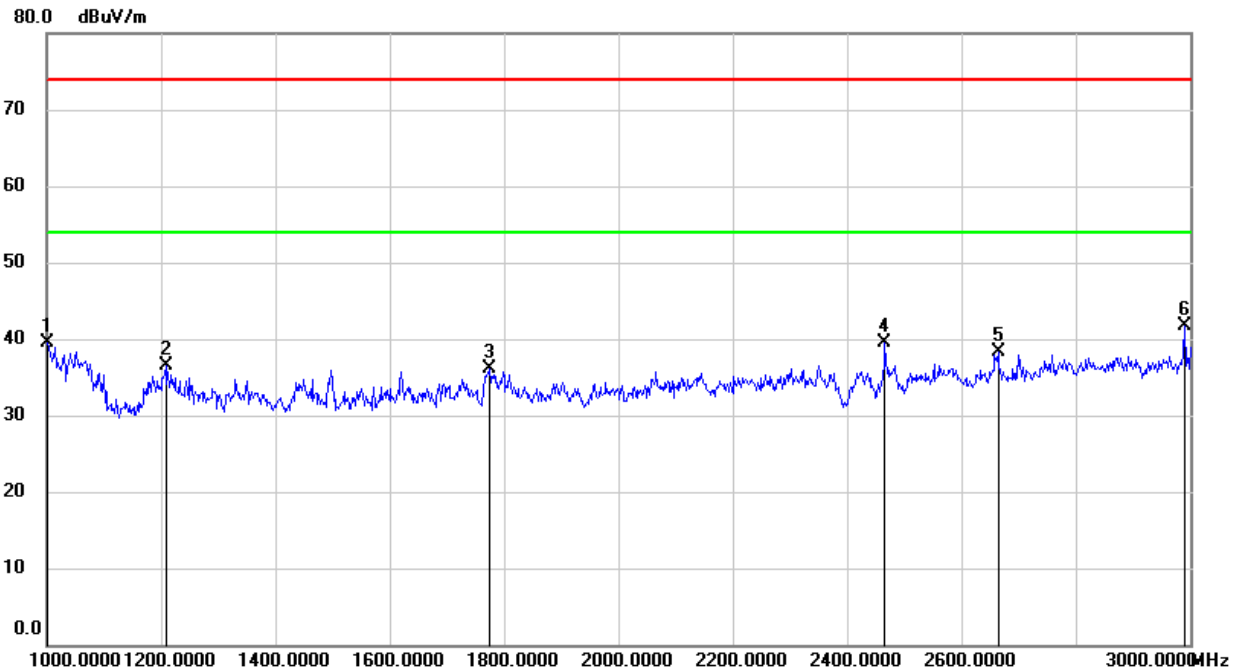


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1256.000	48.95	-12.73	36.22	74.00	-37.78	peak
2	1618.000	49.31	-11.52	37.79	74.00	-36.21	peak
3	1800.000	48.66	-10.11	38.55	74.00	-35.45	peak
4	1998.000	47.37	-10.01	37.36	74.00	-36.64	peak
5	2437.000	48.31	-7.72	40.59	/	/	fundamental
6	2984.000	45.87	-5.32	40.55	74.00	-33.45	peak

- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in 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)

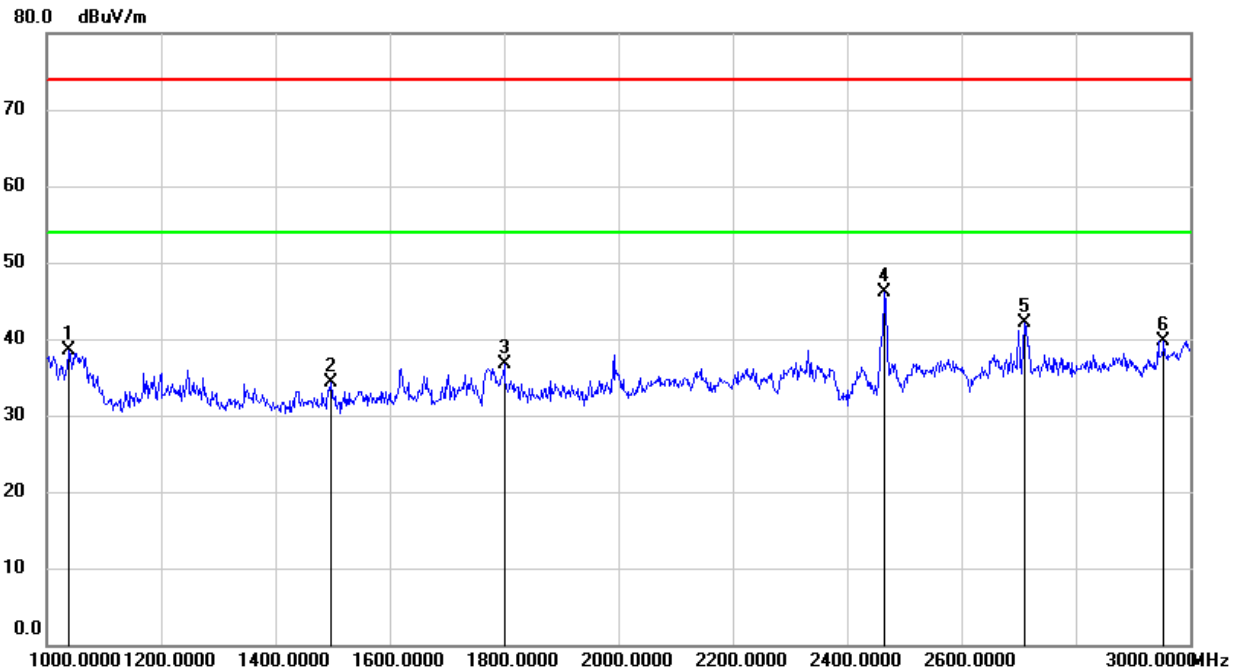


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1002.000	53.45	-13.85	39.60	74.00	-34.40	peak
2	1208.000	49.49	-12.90	36.59	74.00	-37.41	peak
3	1774.000	46.39	-10.37	36.02	74.00	-37.98	peak
4	2462.000	46.97	-7.49	39.48	/	/	fundamental
5	2664.000	45.67	-7.39	38.28	74.00	-35.72	peak
6	2990.000	47.11	-5.31	41.80	74.00	-32.20	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 (HIGH CHANNEL, VERTICAL)



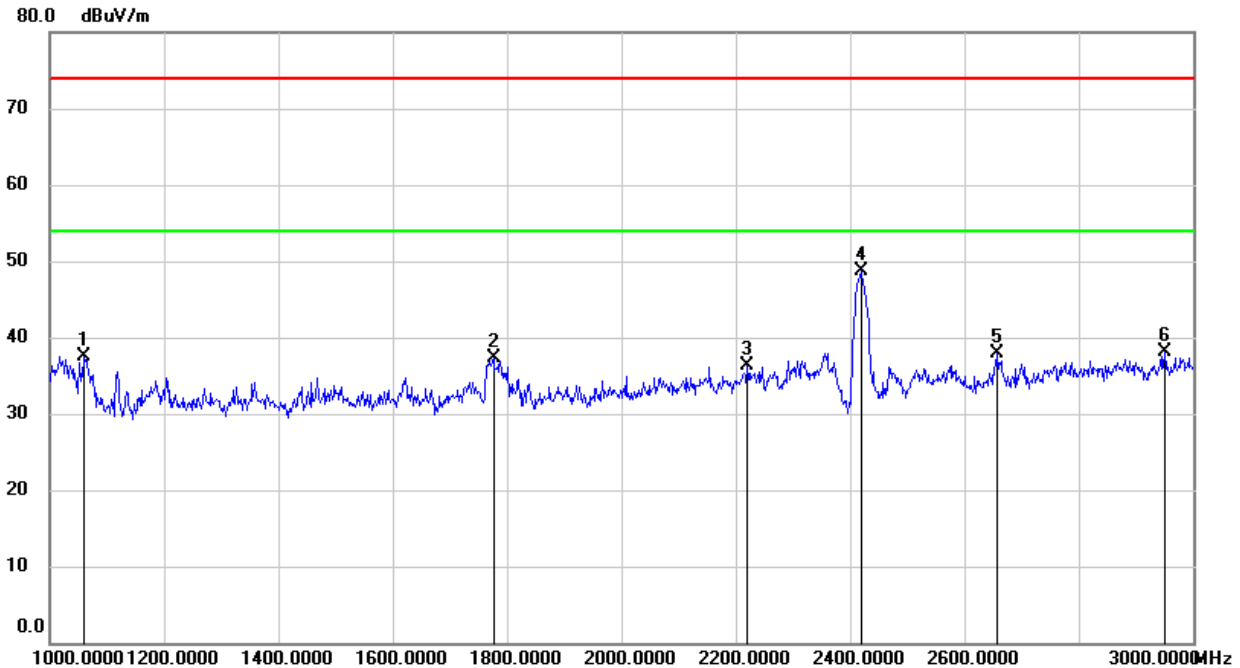
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1038.000	52.39	-13.81	38.58	74.00	-35.42	peak
2	1496.000	46.82	-12.44	34.38	74.00	-39.62	peak
3	1800.000	46.73	-10.11	36.62	74.00	-37.38	peak
4	2462.000	53.56	-7.49	46.07	/	/	fundamental
5	2710.000	49.06	-7.05	42.01	74.00	-31.99	peak
6	2954.000	45.13	-5.39	39.74	74.00	-34.26	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.



8.3.4. 802.11n HT40 MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

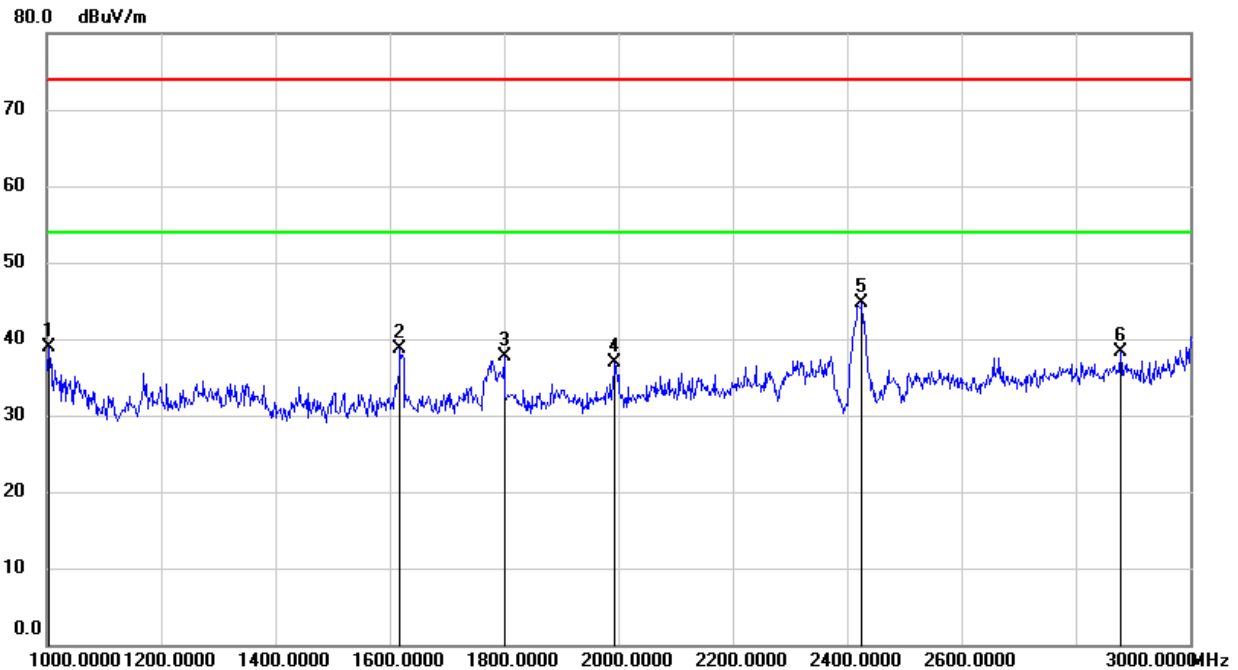


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1060.000	51.33	-13.80	37.53	74.00	-36.47	peak
2	1776.000	47.71	-10.35	37.36	74.00	-36.64	peak
3	2220.000	45.05	-8.70	36.35	74.00	-37.65	peak
4	2422.000	56.44	-7.81	48.63	/	/	fundamental
5	2658.000	45.26	-7.42	37.84	74.00	-36.16	peak
6	2950.000	43.41	-5.40	38.01	74.00	-35.99	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. 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)

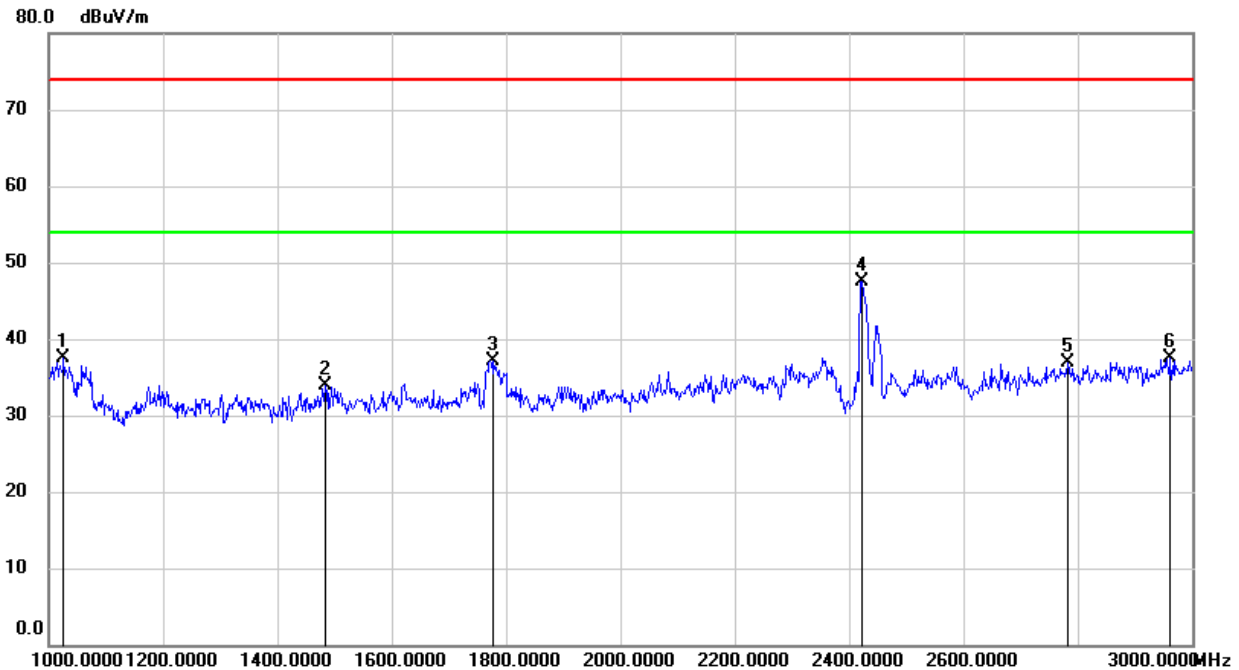


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1004.000	52.70	-13.84	38.86	74.00	-35.14	peak
2	1618.000	50.18	-11.52	38.66	74.00	-35.34	peak
3	1800.000	47.77	-10.11	37.66	74.00	-36.34	peak
4	1994.000	46.92	-10.01	36.91	74.00	-37.09	peak
5	2422.000	52.43	-7.77	44.66	/	/	fundamental
6	2878.000	43.99	-5.65	38.34	74.00	-35.66	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)

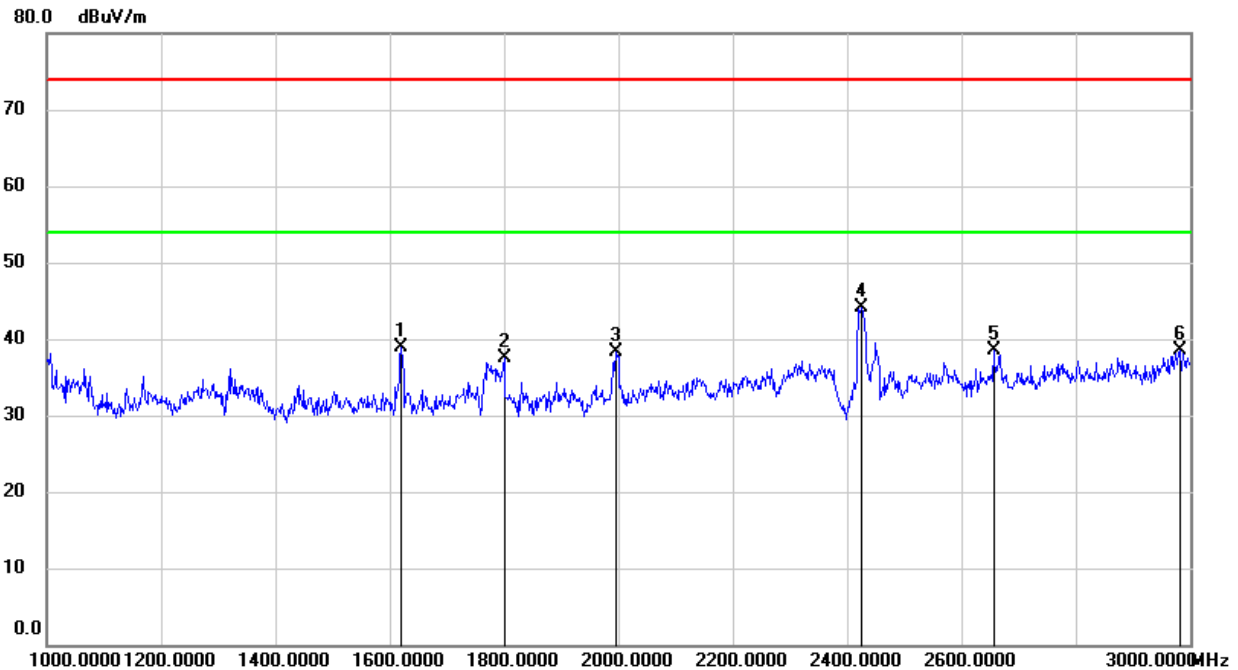


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1026.000	51.28	-13.82	37.46	74.00	-36.54	peak
2	1484.000	46.40	-12.46	33.94	74.00	-40.06	peak
3	1778.000	47.50	-10.33	37.17	74.00	-36.83	peak
4	2437.000	55.32	-7.80	47.52	/	/	fundamental
5	2782.000	43.10	-6.27	36.83	74.00	-37.17	peak
6	2962.000	42.90	-5.38	37.52	74.00	-36.48	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, VERTICAL)

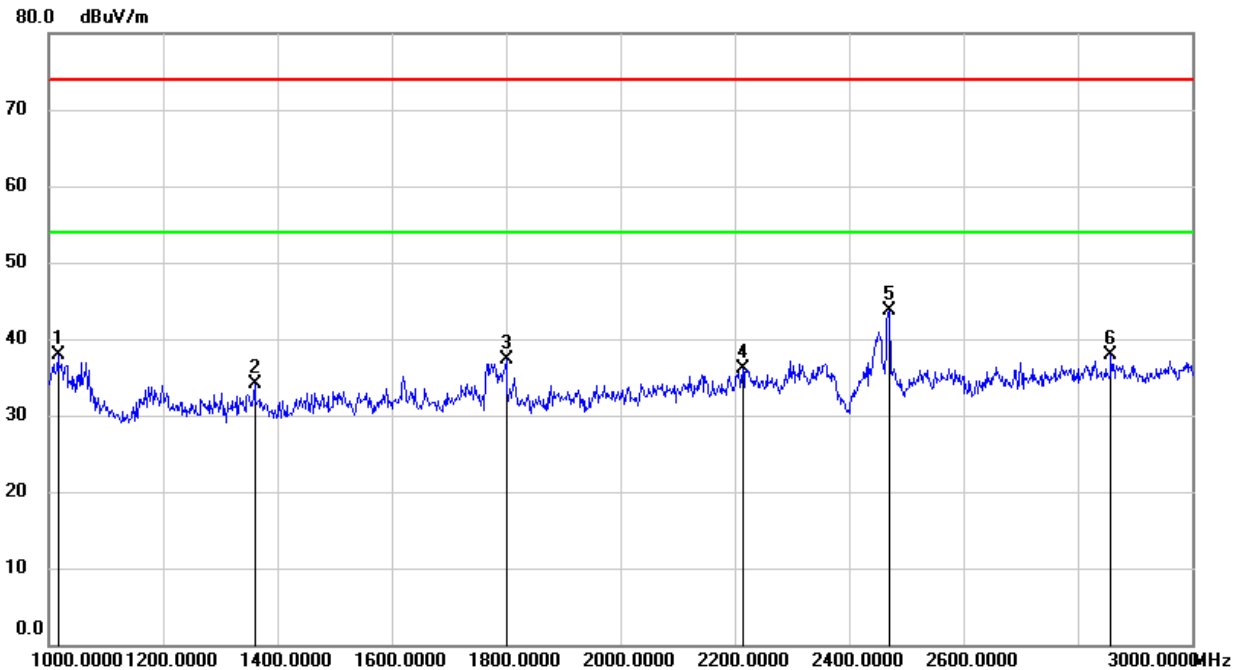


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1620.000	50.49	-11.50	38.99	74.00	-35.01	peak
2	1800.000	47.63	-10.11	37.52	74.00	-36.48	peak
3	1996.000	48.36	-10.01	38.35	74.00	-35.65	peak
4	2437.000	51.91	-7.77	44.14	/	/	fundamental
5	2656.000	45.94	-7.43	38.51	74.00	-35.49	peak
6	2982.000	43.76	-5.32	38.44	74.00	-35.56	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.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

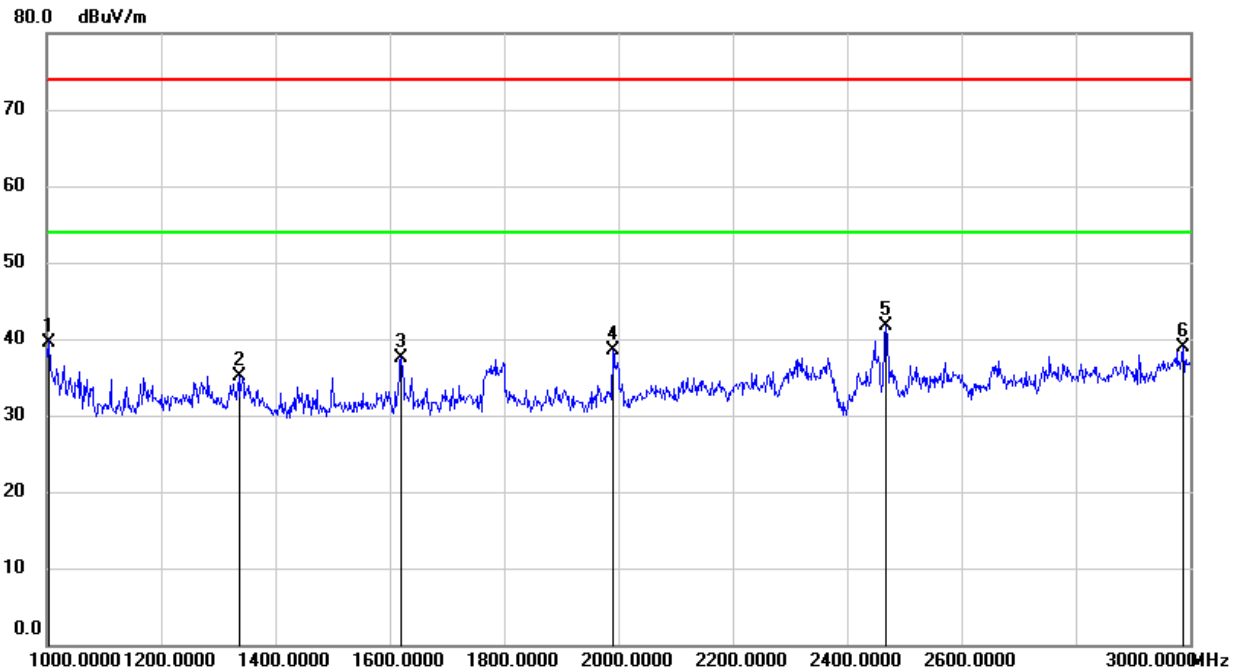


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1016.000	51.70	-13.83	37.87	74.00	-36.13	peak
2	1360.000	46.61	-12.60	34.01	74.00	-39.99	peak
3	1800.000	47.38	-10.11	37.27	74.00	-36.73	peak
4	2214.000	44.86	-8.73	36.13	74.00	-37.87	peak
5	2452.000	51.21	-7.46	43.75	/	/	fundamental
6	2858.000	43.67	-5.75	37.92	74.00	-36.08	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	1004.000	53.44	-13.84	39.60	74.00	-34.40	peak
2	1338.000	47.67	-12.59	35.08	74.00	-38.92	peak
3	1620.000	48.91	-11.50	37.41	74.00	-36.59	peak
4	1990.000	48.56	-10.02	38.54	74.00	-35.46	peak
5	2452.000	49.11	-7.48	41.63	/	/	fundamental
6	2988.000	44.12	-5.31	38.81	74.00	-35.19	peak

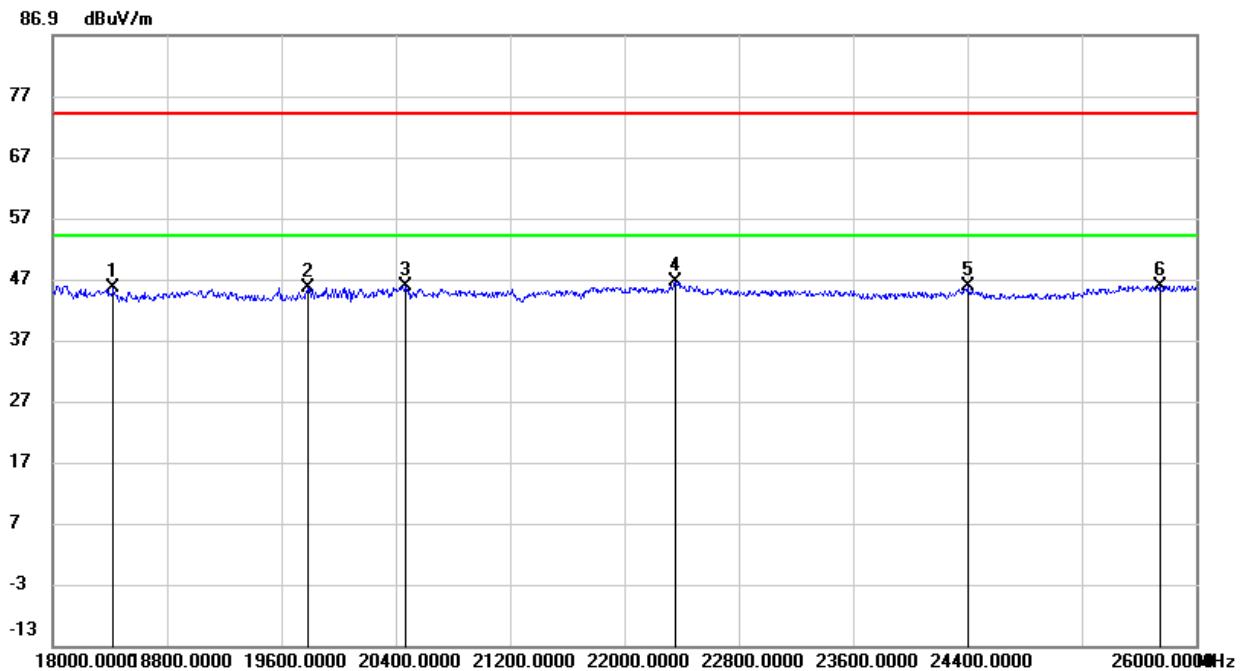
- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band Reject Filter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



8.4. SPURIOUS EMISSIONS (18~26GHz)

8.4.1. 802.11b MODE

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

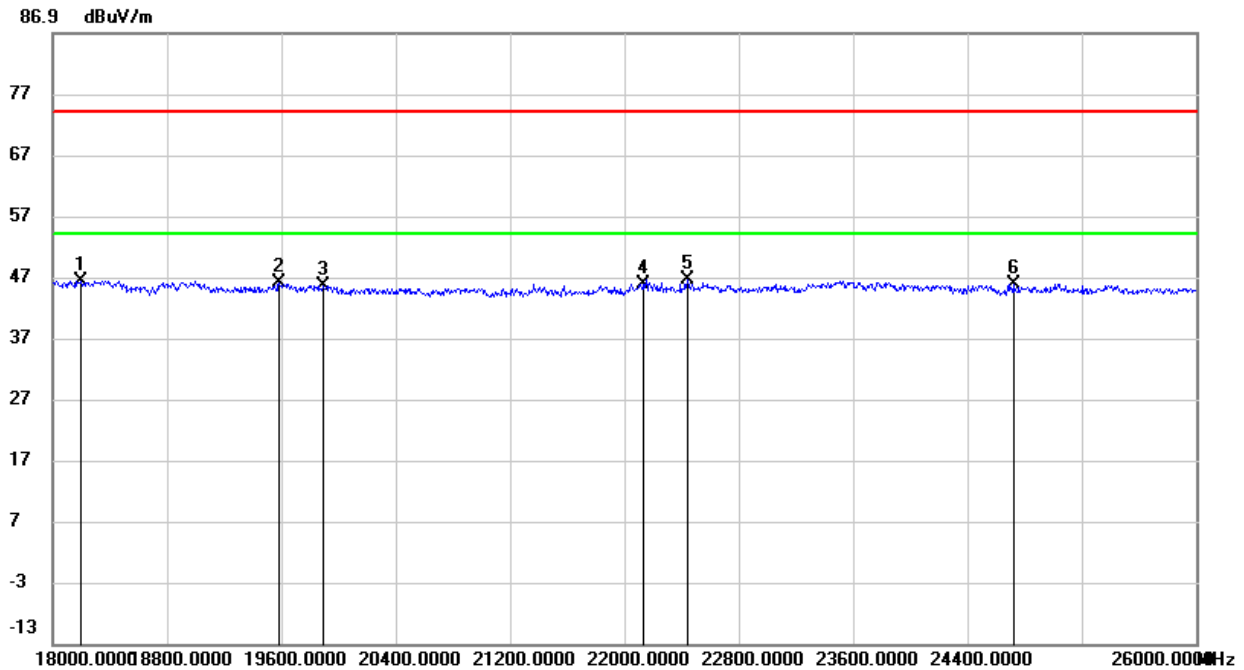


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18424.000	49.91	-4.38	45.53	74.00	-28.47	peak
2	19784.000	49.90	-4.34	45.56	74.00	-28.44	peak
3	20472.000	50.79	-4.95	45.84	74.00	-28.16	peak
4	22360.000	52.58	-5.95	46.63	74.00	-27.37	peak
5	24400.000	48.71	-2.99	45.72	74.00	-28.28	peak
6	25744.000	47.18	-1.34	45.84	74.00	-28.16	peak

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



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	18200.000	50.65	-4.27	46.38	74.00	-27.62	peak
2	19584.000	50.76	-4.64	46.12	74.00	-27.88	peak
3	19896.000	49.94	-4.36	45.58	74.00	-28.42	peak
4	22136.000	51.99	-6.15	45.84	74.00	-28.16	peak
5	22440.000	52.29	-5.86	46.43	74.00	-27.57	peak
6	24720.000	47.87	-2.02	45.85	74.00	-28.15	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.

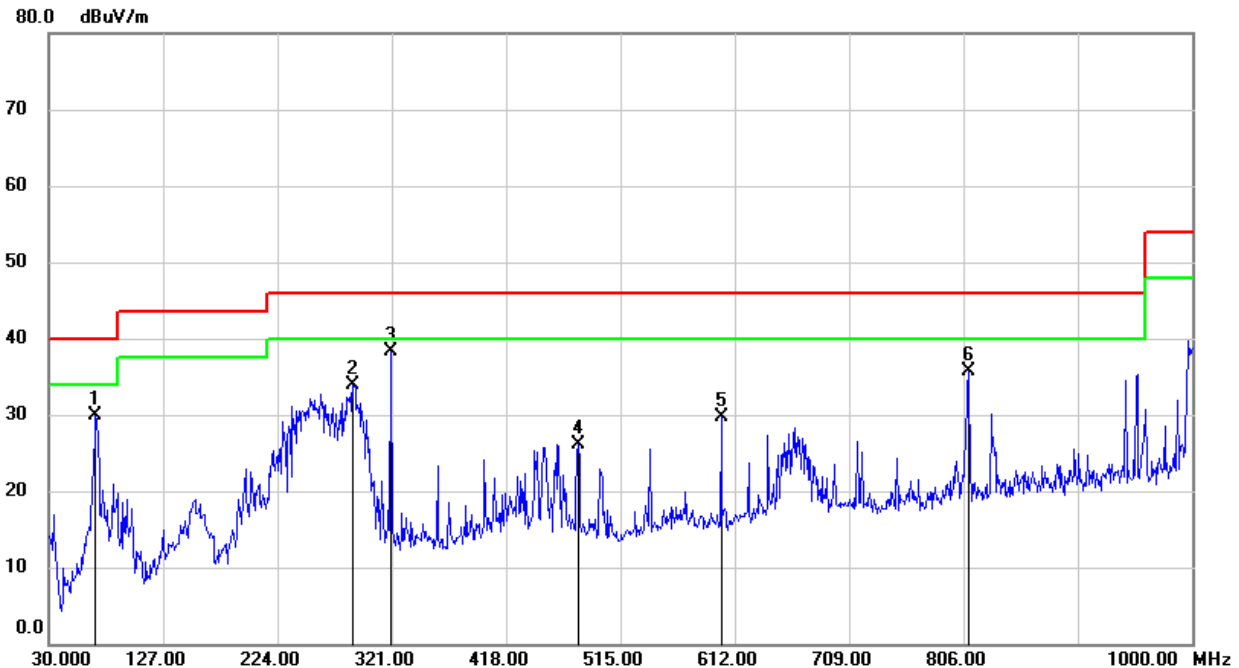
Note: All the test modes have been tested, only the worst data record in the report.



8.5. SPURIOUS EMISSIONS (0.03 ~ 1 GHz)

8.5.1. 802.11b MODE

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

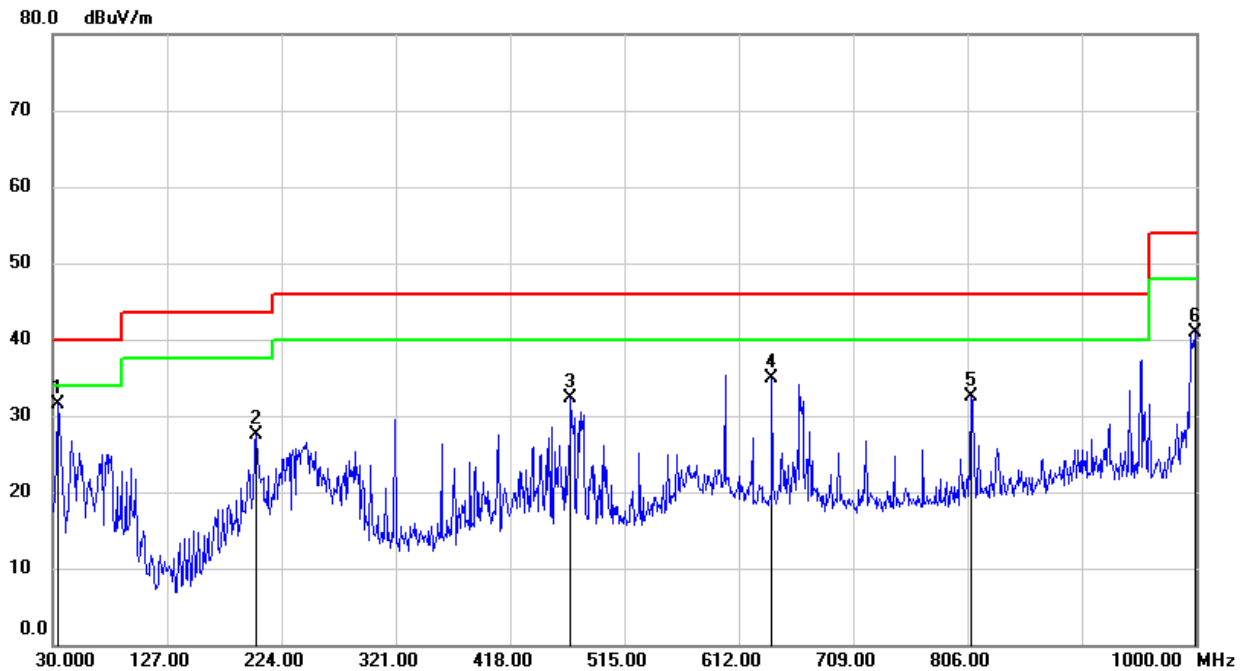


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	69.7699	50.06	-20.18	29.88	40.00	-10.12	QP
2	288.0200	48.38	-14.50	33.88	46.00	-12.12	QP
3	320.0300	51.89	-13.63	38.26	46.00	-7.74	QP
4	479.1100	36.99	-10.86	26.13	46.00	-19.87	QP
5	600.3600	38.18	-8.42	29.76	46.00	-16.24	QP
6	809.8800	40.92	-5.27	35.65	46.00	-10.35	QP

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



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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	33.8800	48.92	-17.49	31.43	40.00	-8.57	QP
2	202.6600	43.46	-16.05	27.41	43.50	-16.09	QP
3	469.4100	43.25	-11.01	32.24	46.00	-13.76	QP
4	640.1300	42.54	-7.68	34.86	46.00	-11.14	QP
5	808.9099	37.71	-5.27	32.44	46.00	-13.56	QP
6	999.0300	43.76	-2.86	40.90	54.00	-13.10	QP

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

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

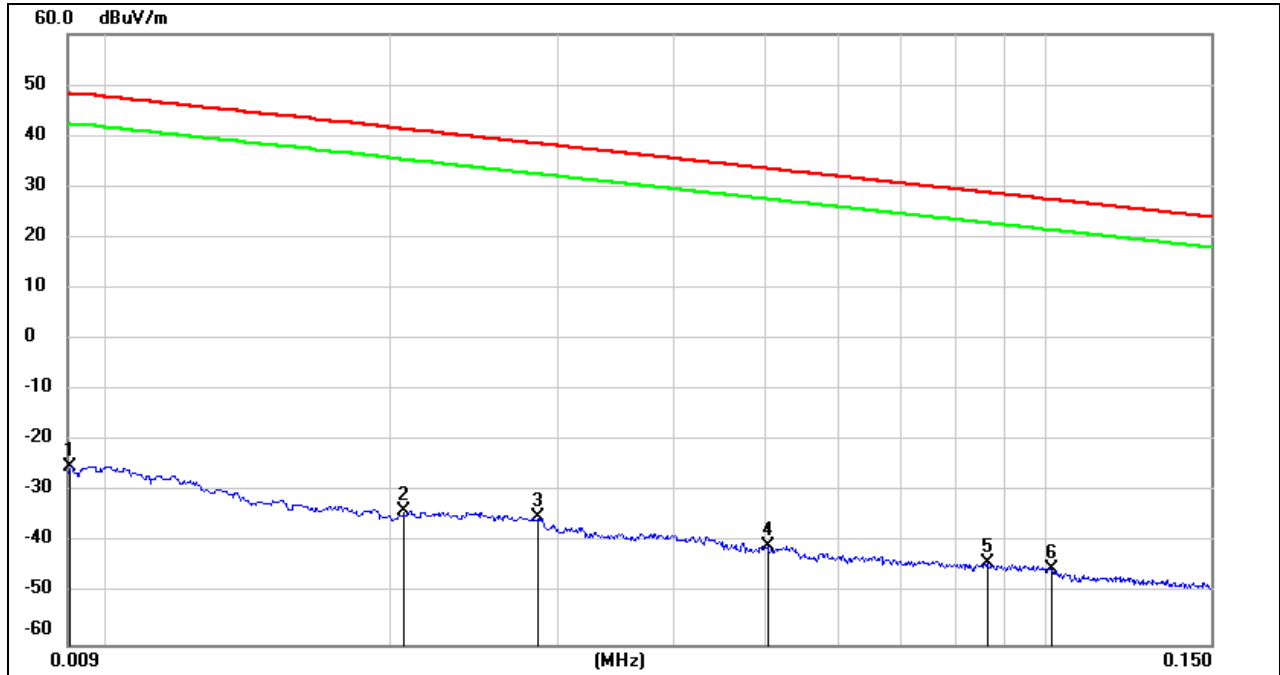


8.6. SPURIOUS EMISSIONS BELOW 30M

8.6.1. 802.11b MODE

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

0.09kHz~ 150kHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0091	76.29	-101.33	-25.04	48.28	-73.32	peak
2	0.0206	67.57	-101.35	-33.78	41.32	-75.10	peak
3	0.0286	66.46	-101.38	-34.92	38.47	-73.39	peak
4	0.0504	60.88	-101.48	-40.60	33.55	-74.15	peak
5	0.0864	57.69	-101.69	-44.00	28.87	-72.87	peak
6	0.1015	56.75	-101.79	-45.04	27.47	-72.51	peak

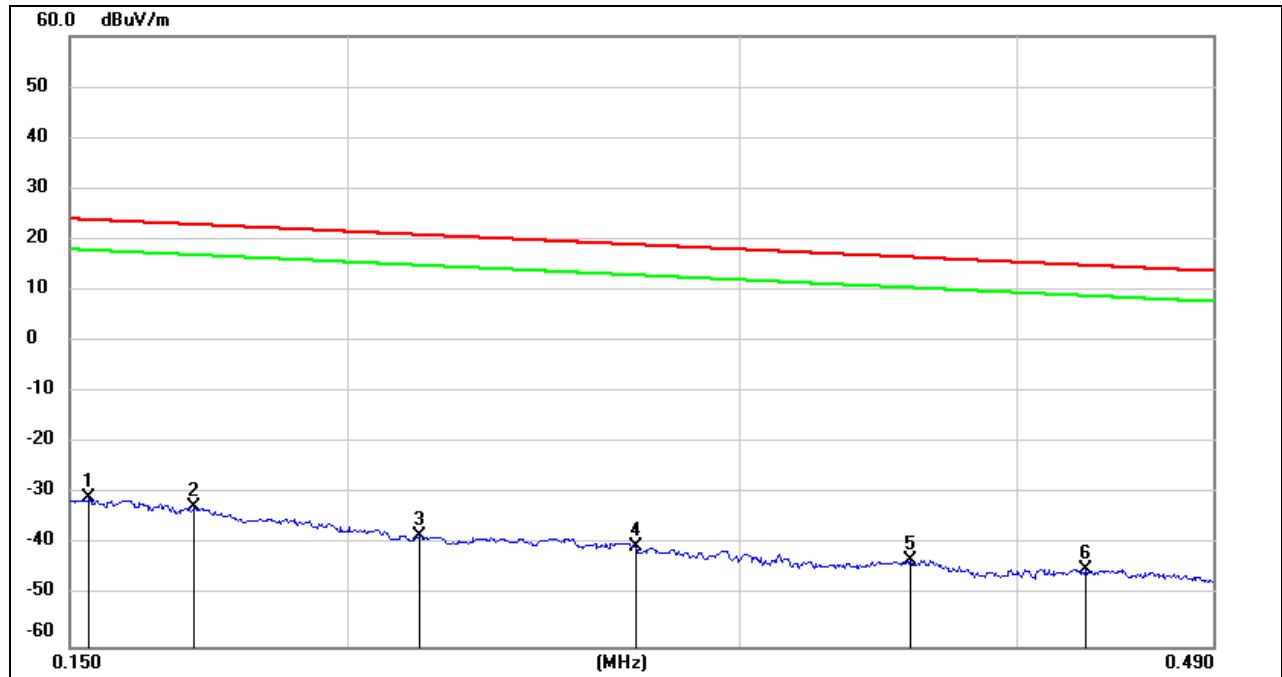
Note: 1. Measurement = Reading Level + Correct Factor.

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 (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1531	70.76	-101.64	-30.88	23.90	-54.78	peak
2	0.1706	69.01	-101.67	-32.66	22.97	-55.63	peak
3	0.2156	63.65	-101.75	-38.10	20.93	-59.03	peak
4	0.2696	61.39	-101.82	-40.43	18.99	-59.42	peak
5	0.3583	58.80	-101.91	-43.11	16.52	-59.63	peak
6	0.4298	57.09	-101.99	-44.90	14.94	-59.84	peak

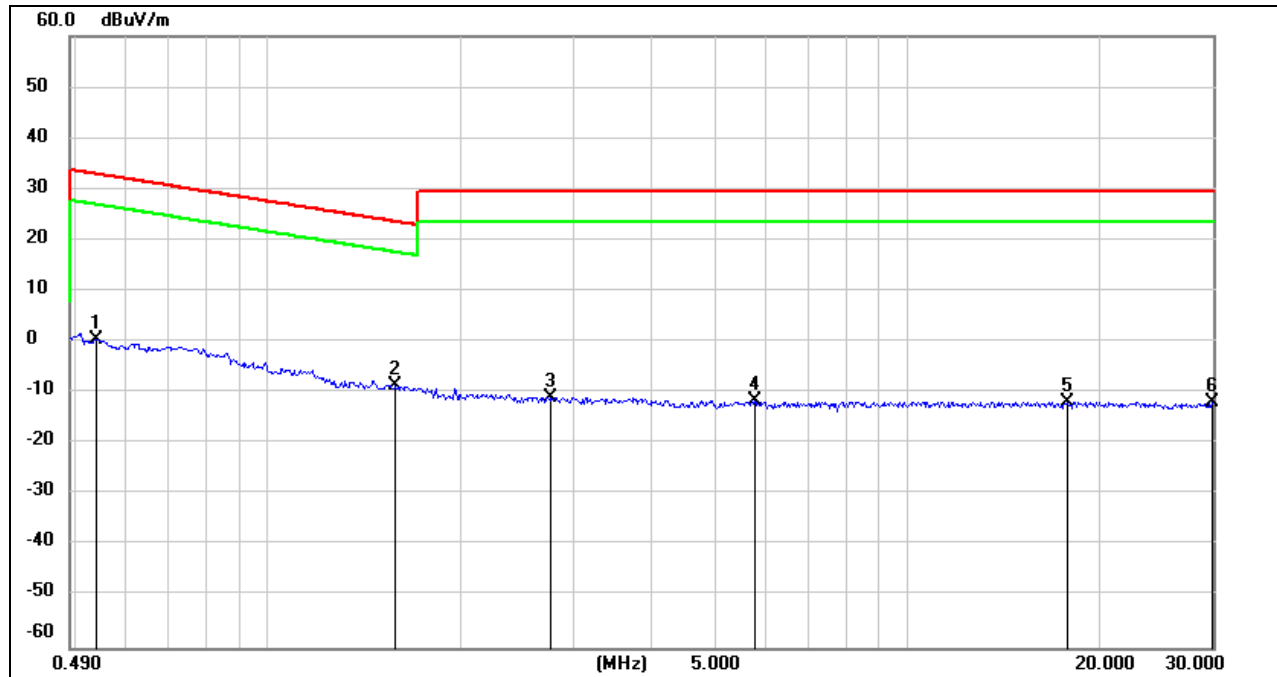
Note: 1. Measurement = Reading Level + Correct Factor.

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)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.5383	62.44	-62.08	0.36	32.98	-32.62	peak
2	1.5826	53.38	-62.01	-8.63	23.61	-32.24	peak
3	2.7700	50.69	-61.63	-10.94	29.54	-40.48	peak
4	5.7723	49.73	-61.38	-11.65	29.54	-41.19	peak
5	17.8124	49.12	-60.92	-11.80	29.54	-41.34	peak
6	29.9115	48.13	-59.98	-11.85	29.54	-41.39	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 test modes have been tested, only the worst data record in the report.

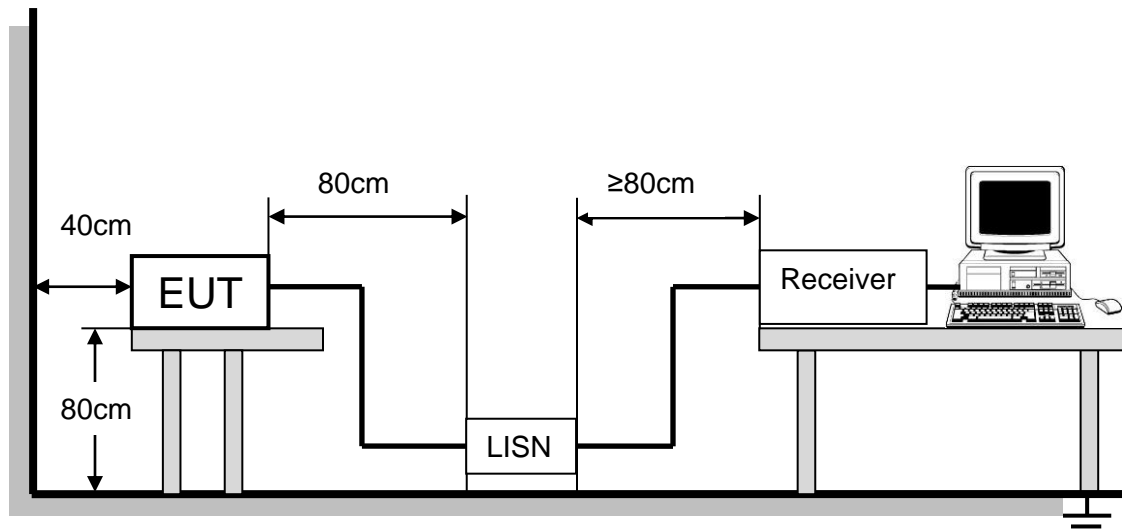
9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

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

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

TEST SETUP AND PROCEDURE



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

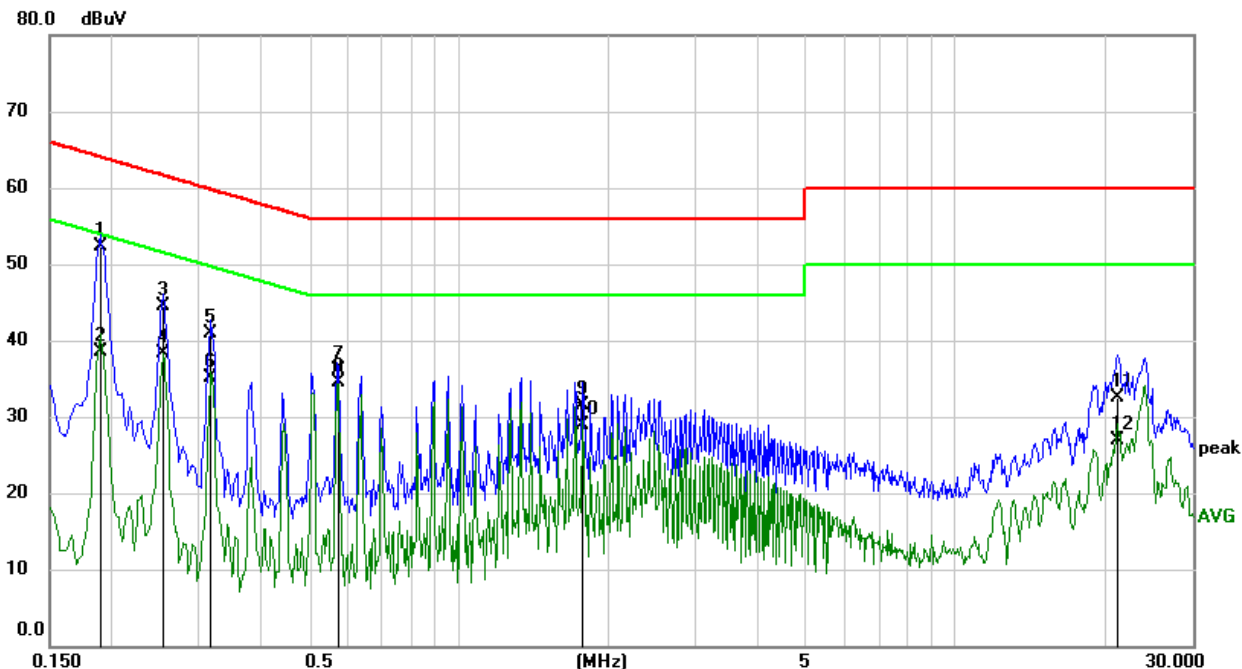
Temperature	25°C	Relative Humidity	50%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V, 60Hz



TEST RESULTS

9.1. 802.11b MODE

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



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1899	42.78	9.60	52.38	64.04	-11.66	QP
2	0.1899	28.99	9.60	38.59	54.04	-15.45	AVG
3	0.2539	34.93	9.60	44.53	61.63	-17.10	QP
4	0.2539	28.73	9.60	38.33	51.63	-13.30	AVG
5	0.3172	31.29	9.60	40.89	59.78	-18.89	QP
6	0.3172	25.56	9.60	35.16	49.78	-14.62	AVG
7	0.5715	26.53	9.60	36.13	56.00	-19.87	QP
8	0.5715	25.00	9.60	34.60	46.00	-11.40	AVG
9	1.7764	21.85	9.63	31.48	56.00	-24.52	QP
10	1.7764	19.21	9.63	28.84	46.00	-17.16	AVG
11	21.2413	22.34	10.20	32.54	60.00	-27.46	QP
12	21.2413	16.75	10.20	26.95	50.00	-23.05	AVG

Note: 1. Result = Reading +Correct Factor.

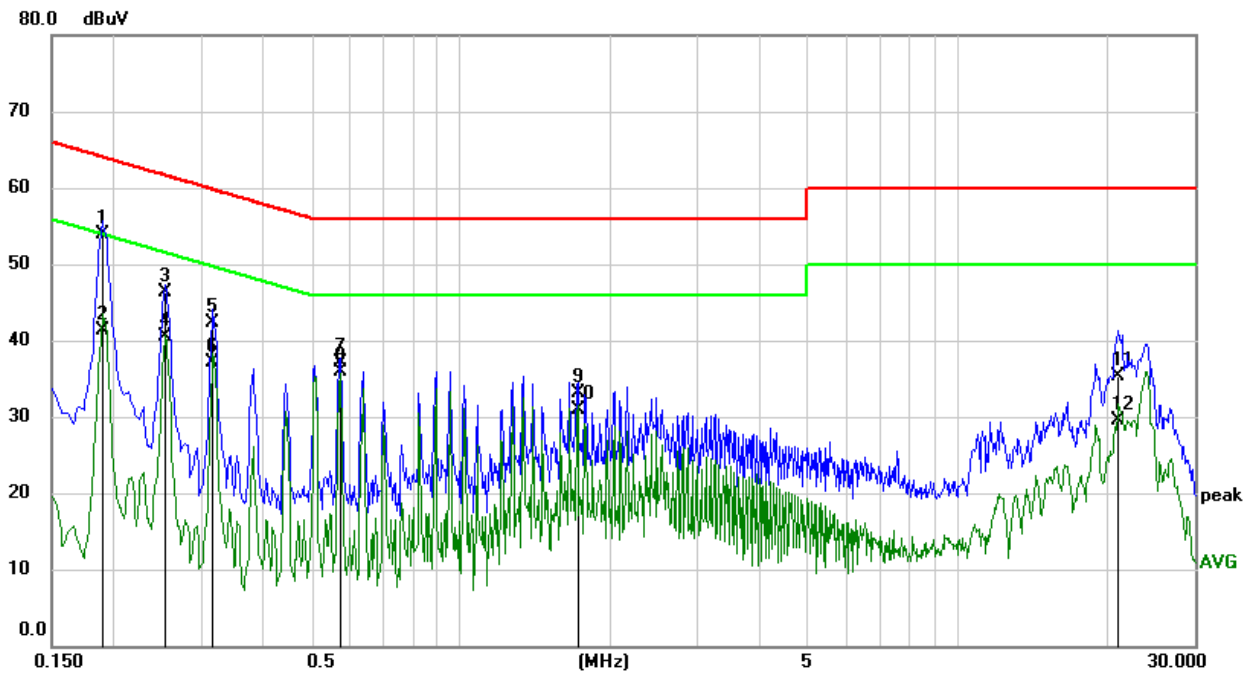
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

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 (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1909	44.23	9.60	53.83	64.00	-10.17	QP
2	0.1909	31.62	9.60	41.22	54.00	-12.78	AVG
3	0.2541	36.71	9.60	46.31	61.62	-15.31	QP
4	0.2541	30.95	9.60	40.55	51.62	-11.07	AVG
5	0.3175	32.77	9.60	42.37	59.77	-17.40	QP
6	0.3175	27.54	9.60	37.14	49.77	-12.63	AVG
7	0.5718	27.46	9.60	37.06	56.00	-18.94	QP
8	0.5718	26.27	9.60	35.87	46.00	-10.13	AVG
9	1.7152	23.48	9.62	33.10	56.00	-22.90	QP
10	1.7152	21.34	9.62	30.96	46.00	-15.04	AVG
11	21.0451	25.23	10.08	35.31	60.00	-24.69	QP
12	21.0451	19.45	10.08	29.53	50.00	-20.47	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 test modes have been tested, only the worst data record in the report.



10. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203

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

Please refer to FCC §15.247(b)(4)

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

RESULTS

Complies

END OF REPORT