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

CERTIFICATION TEST REPORT

For

USB Dongle

MODEL NUMBER: EWN-8822BUN2AA

FCC ID: 2AMM6-8822BU

IC: 26313-8822BU

REPORT NUMBER: 4789730758-11

ISSUE DATE: December 23, 2020

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	12/23/2020	Initial Issue	

Summary of Test Results			
Clause	**Test Items**	**FCC/ISED Rules**	**Test Results**
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
2	Conducted Output Power	FCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (d)	Pass
3	Power Spectral Density	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d) RSS-247 Clause 5.5	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
6	Conducted Emission Test for AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 6.8	Pass

Note:
1.This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
2. The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >< ISED RSS-247 > when <Accuracy Method> decision rule is applied.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Earda Technologies Co.,Ltd
Address:	Block A, LianFeng Creative Industry Park,2 JiSheng Road., HuangGe Town, NanSha District, Guangzhou China

Manufacturer Information

Company Name:	Earda Technologies Co.,Ltd
Address:	Block A, LianFeng Creative Industry Park,2 JiSheng Road., HuangGe Town, NanSha District, Guangzhou China

EUT Information

EUT Name:	USB Dongle
Model:	EWN-8822BUN2AA
Sample Received Date:	November 25, 2020
Sample Status:	Normal
Sample ID:	3480130
Date of Tested:	November 25~December 8, 2020

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

Prepared By:

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Project Engineer

Check By:

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Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **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 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

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

Note 3: For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz 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	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 26 GHz)	5.78 dB (1 GHz ~ 18 GHz)
	5.23 dB (18 GHz ~ 26 GHz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	USB Dongle		
Model	EWN-8822BUN2AA		
Radio Technology	WLAN (IEEE 802.11b/g/n HT20/n HT40)		
Operation frequency	IEEE 802.11b: 2412MHz ~ 2462MHz IEEE 802.11g: 2412MHz ~ 2462MHz IEEE 802.11n HT20: 2412MHz ~ 2462MHz IEEE 802.11n HT40: 2422MHz ~ 2452MHz		
Modulation	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)		
Power Supply	DC State	Rate Input:	DC 5 V

5.2. CHANNEL LIST

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

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

5.3. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	14.17
g	2412 ~ 2462	1-11[11]	11.42
n HT20	2412 ~ 2462	1-11[11]	12.79
n HT40	2422 ~ 2452	3-9[7]	13.66

5.4. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11	Test Channel Number	Frequency
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz
n HT40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		MPTool					
Modulation Mode	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	48	48	48	/		
	2	48	48	48			
802.11g	1	47	49	50			
	2	47	49	50			
802.11n HT20	1	45	47	46			
	2	45	47	46			
802.11n HT40	1	/			44	46	45
	2	/			44	46	45

5.6. THE WORSE CASE CONFIGURATIONS

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

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

Test channels referring to section 5.4.

Maximum power setting referring to section 5.5.

Worst case Data Rates declared by the customer:

IEEE 802.11b / 1 Mbps
IEEE 802.11g / 6 Mbps
IEEE 802.11n HT20 / MCS0
IEEE 802.11n HT40 / MCS0

The EUT has 2 separate antennas which correspond to 2 separate antenna ports. Core 0 and Core 1 correspond to antenna 0 and antenna 1 respectively.

The measured additional path loss was included in any path loss calculations for all RF cable used during tested.

Duty cycle and occupied channel bandwidth tests, only SISO mode and one chain were tested since the duty cycle and bandwidth does not change depending on chains used.

Conducted unwanted emissions tests and out of band conducted unwanted emissions tests were performed with SISO mode, as this port was found to have the worst case in terms of power settings amongst all supported possible SISO & MIMO port combinations.

Radiated unwanted emissions tests were performed with the MIMO modes if supported. These were found to be the worst modulation scheme with regards to emissions after preliminary investigations and, as this mode emits the highest conducted output power level, it was deemed to be the worst case.

The EUT support rotating antennas, we have done pre-tests under different angle combinations. so only the worst measurement position (X axis) was recorded in the report only the worst as shown in the setup photo.

5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
0	2412-2462	PCB	2.4
1	2412-2462	PCB	2.4

Note: Directional gain= G_{ANT} + 10 log [N_{ANT}] = 5.41 dBi
G_{ANT}: Average of the Antenna Gain
N_{ANT}: Antenna numbers
Note: The value of the antenna gain was declared by customer.

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒2TX, 2RX	ANT 0,1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒2TX, 2RX	ANT 0,1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒2TX, 2RX	ANT 0,1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	☒2TX, 2RX	ANT 0,1 can be used as transmitting/receiving antenna.
Note: Only 802.11n HT20/HT40 support MIMO mode.		

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	Lenovo	TP00094A	/
2	UART	/	/	/
3	AC adapter	Lenovo	ADLX65CLGC2A	/

I/O CABLES

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

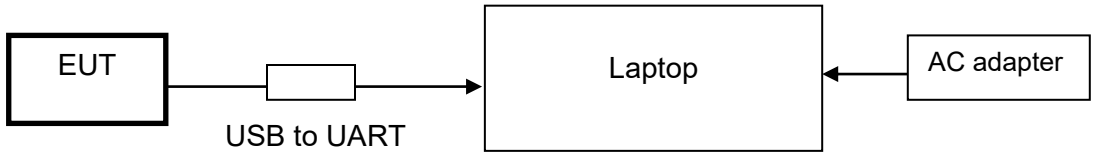
ACCESSORIES

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

TEST SETUP

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

SETUP DIAGRAM FOR TESTS



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Nov. 12, 2020	Nov. 11, 2021
☑	Two-Line V-Network	R&S	ENV216	101983	Nov. 12, 2020	Nov. 11, 2021
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Radiated Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Nov. 12, 2020	Nov. 11, 2021
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Aug. 11, 2018	Aug. 10, 2021
☑	Preamplifier	HP	8447D	2944A09099	Nov. 12, 2020	Nov. 11, 2021
☑	EMI Measurement Receiver	R&S	ESR26	101377	Nov. 12, 2020	Nov. 11, 2021
☑	Horn Antenna	TDK	HRN-0118	130939	Sept. 17, 2018	Sept. 17, 2021
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00067	Nov. 20, 2020	Nov. 19, 2021
☑	Horn Antenna	Schwarzbeck	BBHA9170	#691	Aug. 11, 2018	Aug. 11, 2021
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Nov. 12, 2020	Nov. 11, 2021
☑	Loop antenna	Schwarzbeck	1519B	00008	Jan.17, 2019	Jan.17,2022
☑	Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	Nov. 12, 2020	Nov. 11, 2021
☑	Preamplifier	Mini-Circuits	ZX60-83LN-S+	SUP01201941	Nov. 20, 2020	Nov. 19, 2021
☑	High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Nov. 12, 2020	Nov. 11, 2021
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Radiated disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Nov. 20, 2020	Nov. 19, 2021

☑	Dual Channel Power Meter	Keysight	N1912A	MY55416024	Nov. 20, 2020	Nov. 19, 2021
☑	Power Sensor	Keysight	USB Wideband Power Sensor	MY5100022	Nov. 20, 2020	Nov. 19, 2021

7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

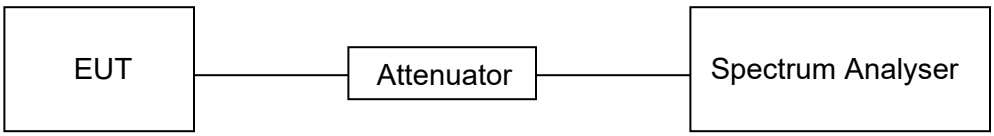
LIMITS

None; for reporting purposes only

PROCEDURE

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

TEST SETUP



TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	49.6 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix G.

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	≥ 500 kHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

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

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

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

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

TEST SETUP

EUT → Attenuator → Spectrum Analyzer

TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	49.6 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix A & B.

7.3. CONDUCTED OUTPUT POWER

LIMITS

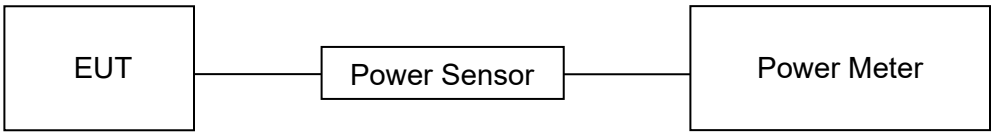
CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	AVG Output Power	1 watt or 30 dBm	2400-2483.5

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause in 11.9.2.

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

TEST SETUP



TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	49.6 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix C.

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

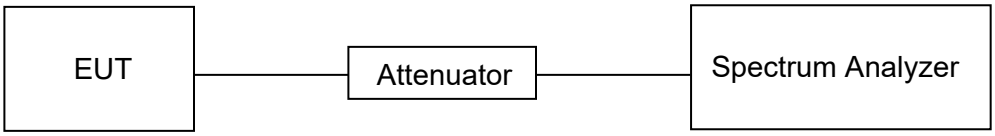
Refer to ANSI C63.10-2013 clause 11.10.

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

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

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	49.6 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix D.

7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

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

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

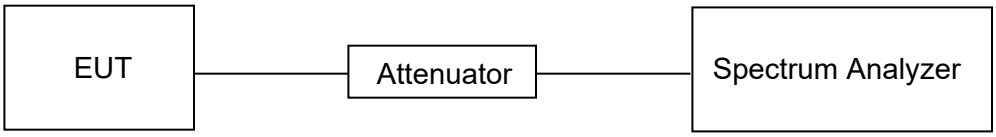
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

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

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

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

TEST SETUP



TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	49.6 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Please refer to appendix E & F.

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 and Clause 8.10.

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

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

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

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands[Note 1]		
MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

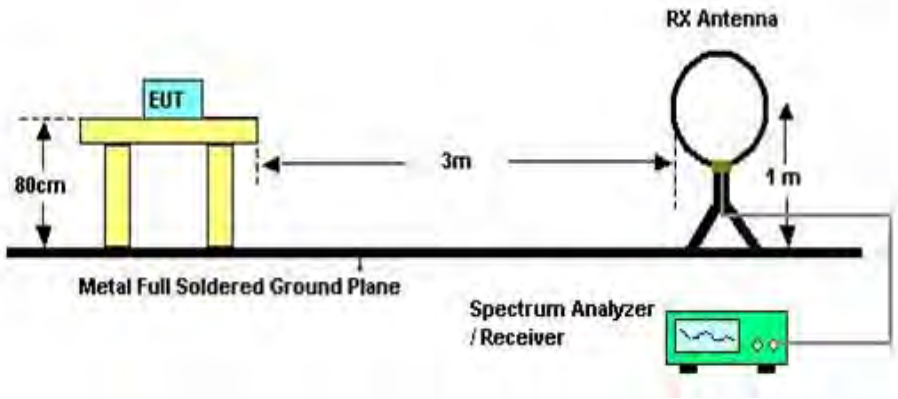
FCC Restricted bands of operation refer to FCC §15.205 (a):

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

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

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

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

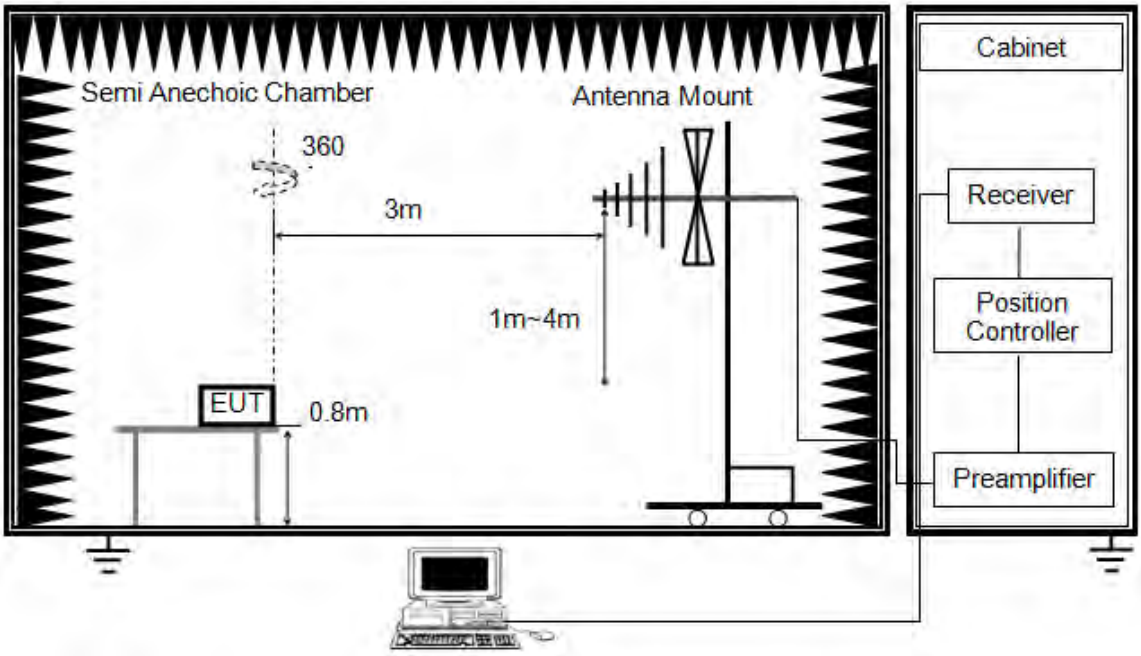
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

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

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

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30 m 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 1 GHz and above 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

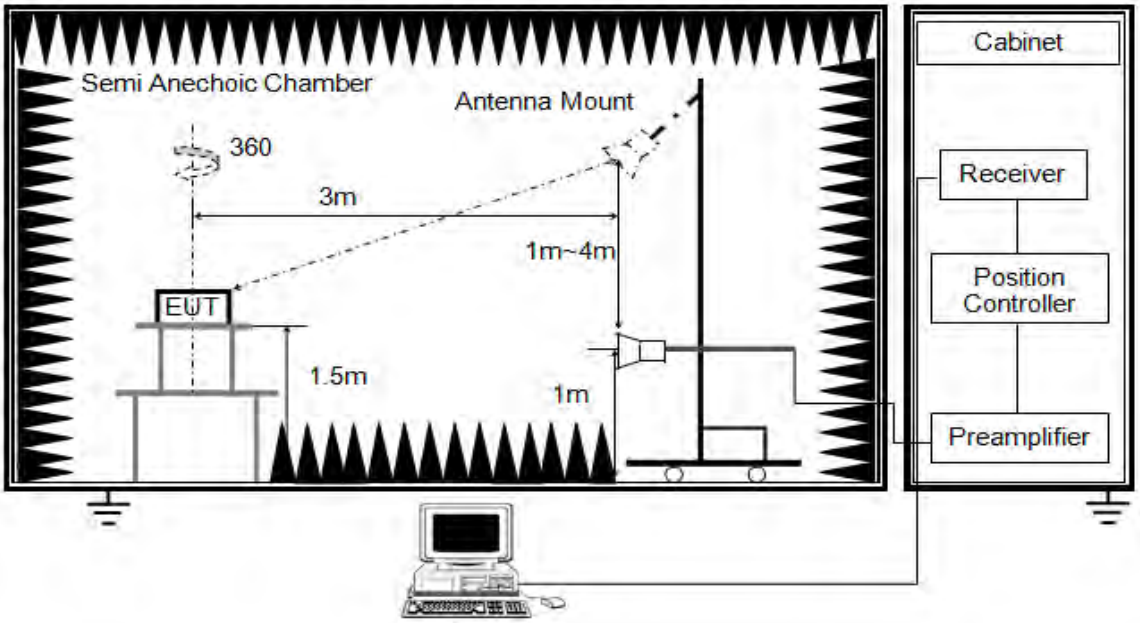
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations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

3. The EUT was placed on a turntable with 80 cm 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 1 GHz, 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 1 GHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

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.

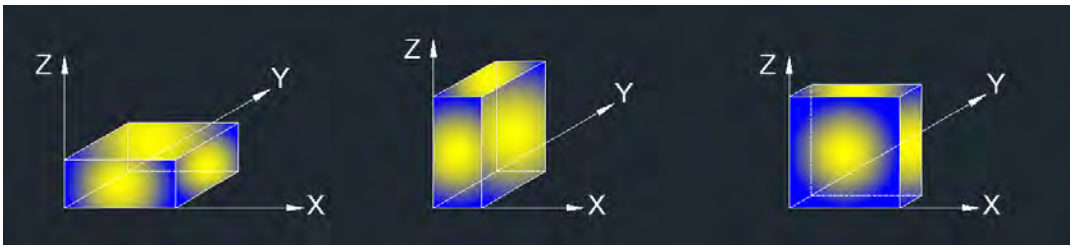
3. The EUT was placed on a turntable with 1.5 m above ground.

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 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



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

TEST ENVIRONMENT

Temperature	25.6 °C	Relative Humidity	49.6 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

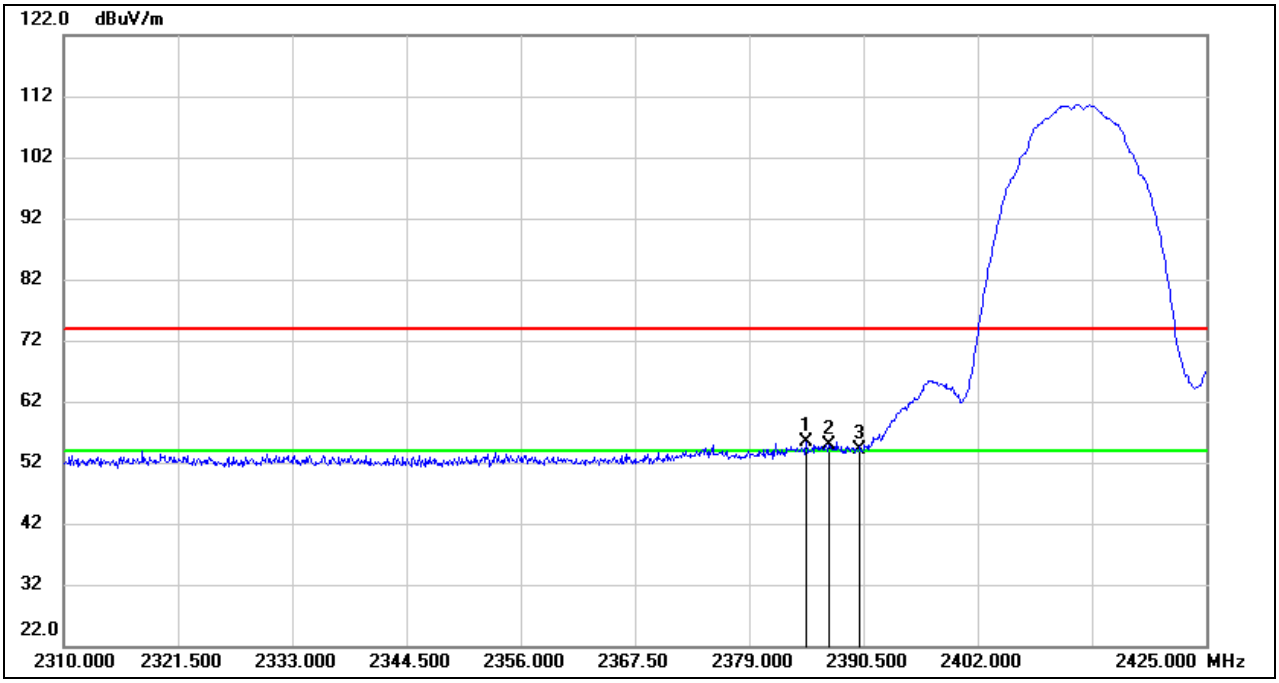
RESULTS

8.1. RESTRICTED BANDEDGE

8.1.1. 802.11b SISO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

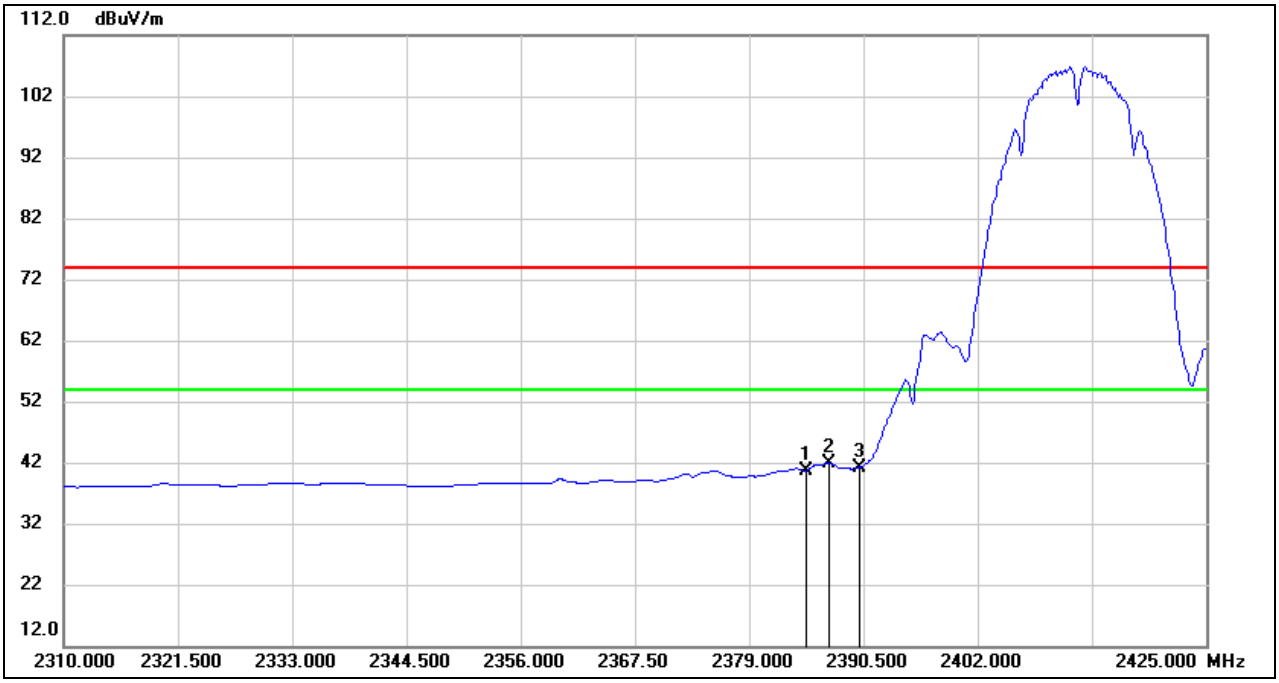
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.750	43.82	11.56	55.38	74.00	-18.62	peak
2	2387.050	43.20	11.58	54.78	74.00	-19.22	peak
3	2390.000	42.56	11.59	54.15	74.00	-19.85	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

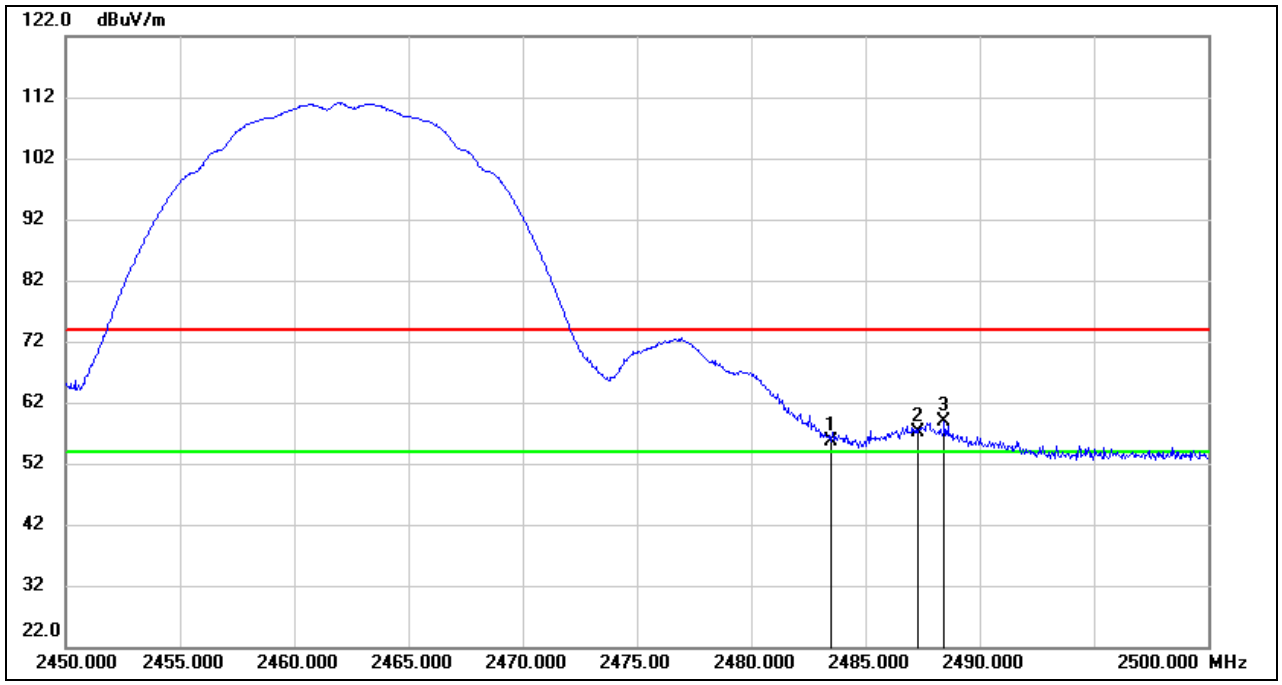


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.750	29.18	11.56	40.74	54.00	-13.26	AVG
2	2387.050	30.30	11.58	41.88	54.00	-12.12	AVG
3	2390.000	29.64	11.59	41.23	54.00	-12.77	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

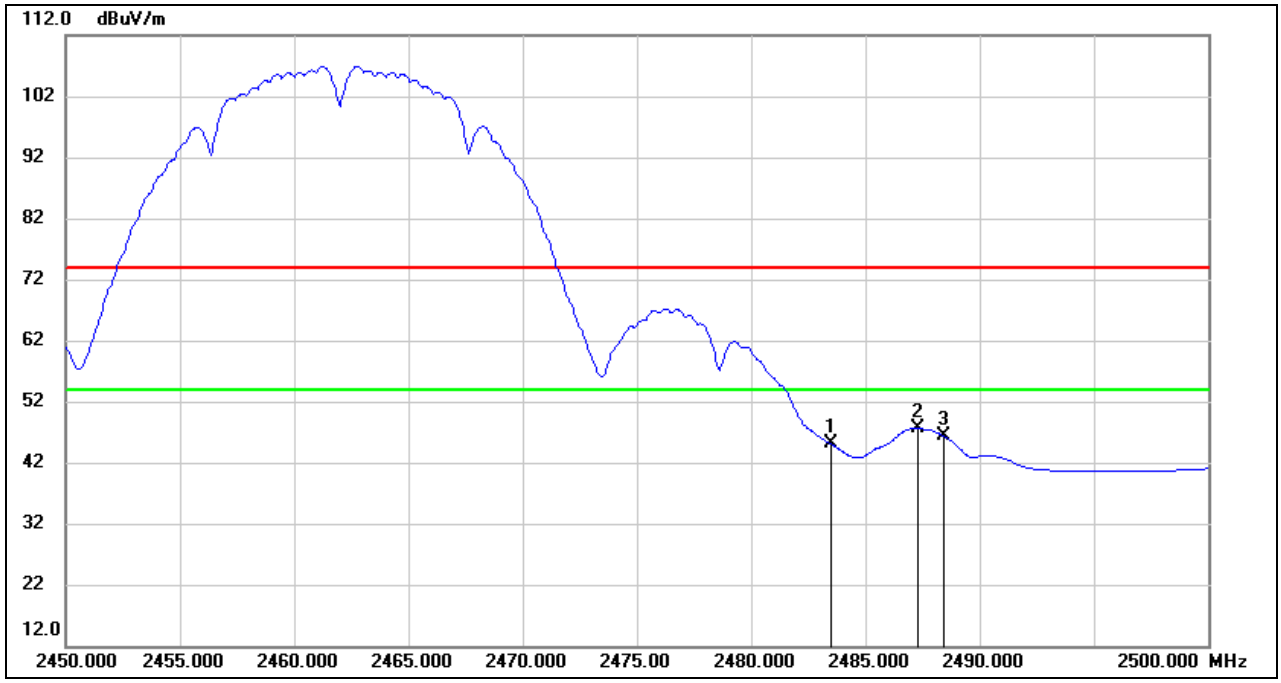
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	43.75	11.97	55.72	74.00	-18.28	peak
2	2487.300	45.23	11.99	57.22	74.00	-16.78	peak
3	2488.450	46.78	11.99	58.77	74.00	-15.23	peak

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

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	33.07	11.97	45.04	54.00	-8.96	AVG
2	2487.300	35.73	11.99	47.72	54.00	-6.28	AVG
3	2488.450	34.32	11.99	46.31	54.00	-7.69	AVG

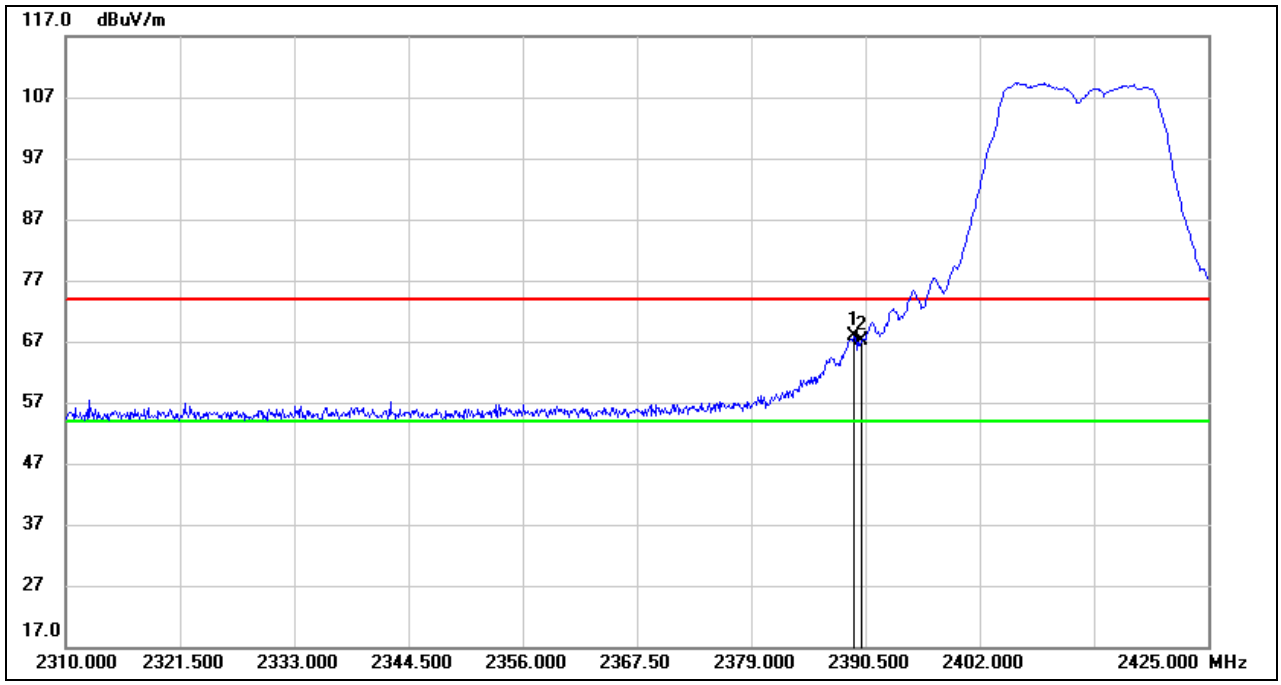
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

8.1.2. 802.11g SISO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

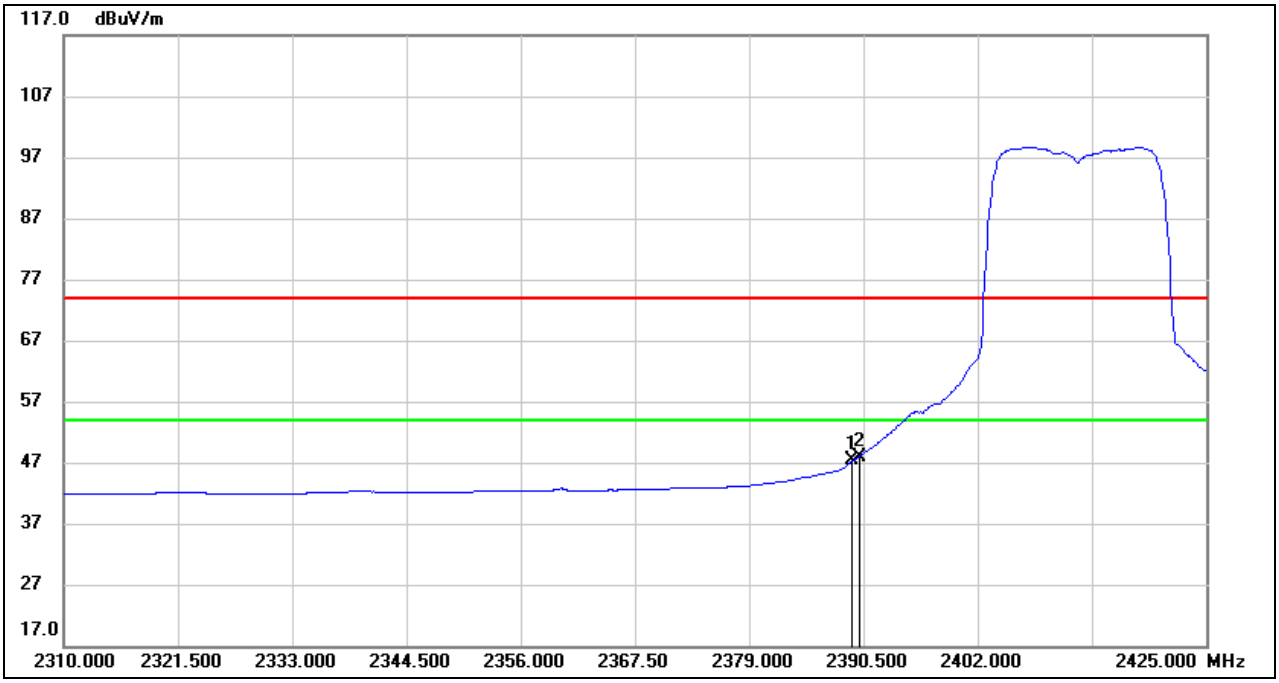
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.350	56.20	11.59	67.79	74.00	-6.21	peak
2	2390.000	55.60	11.59	67.19	74.00	-6.81	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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

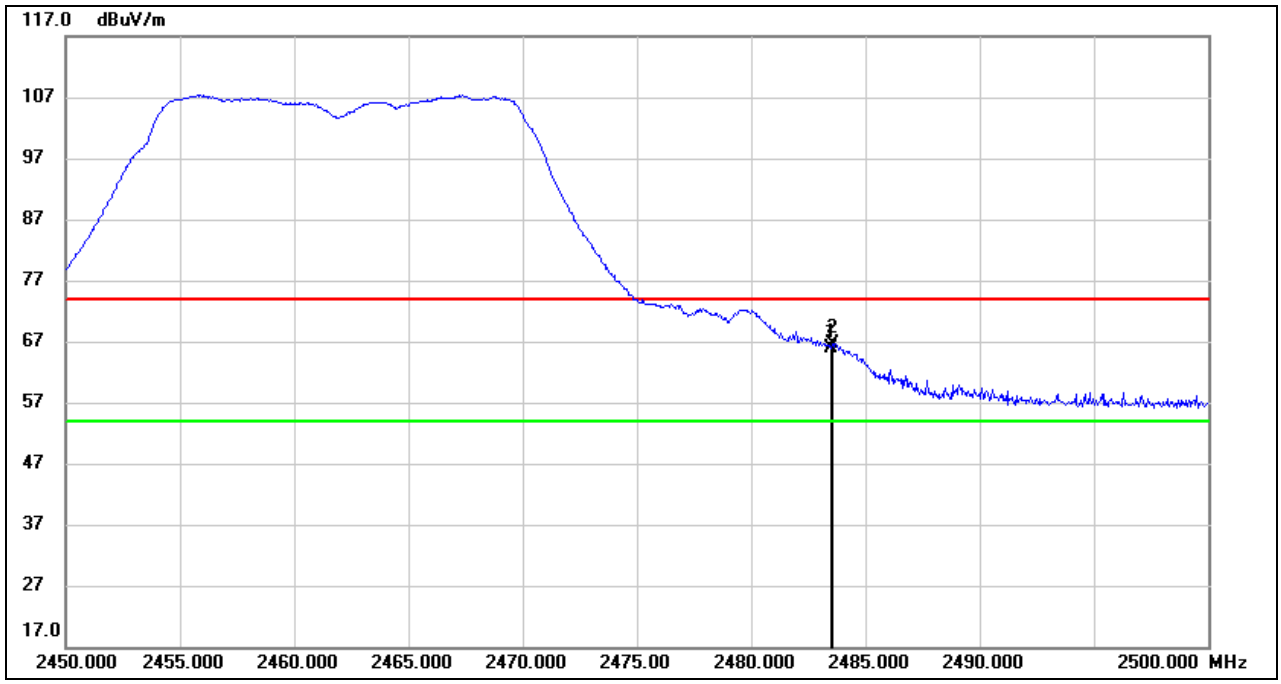


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.350	35.68	11.59	47.27	54.00	-6.73	AVG
2	2390.000	36.38	11.59	47.97	54.00	-6.03	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

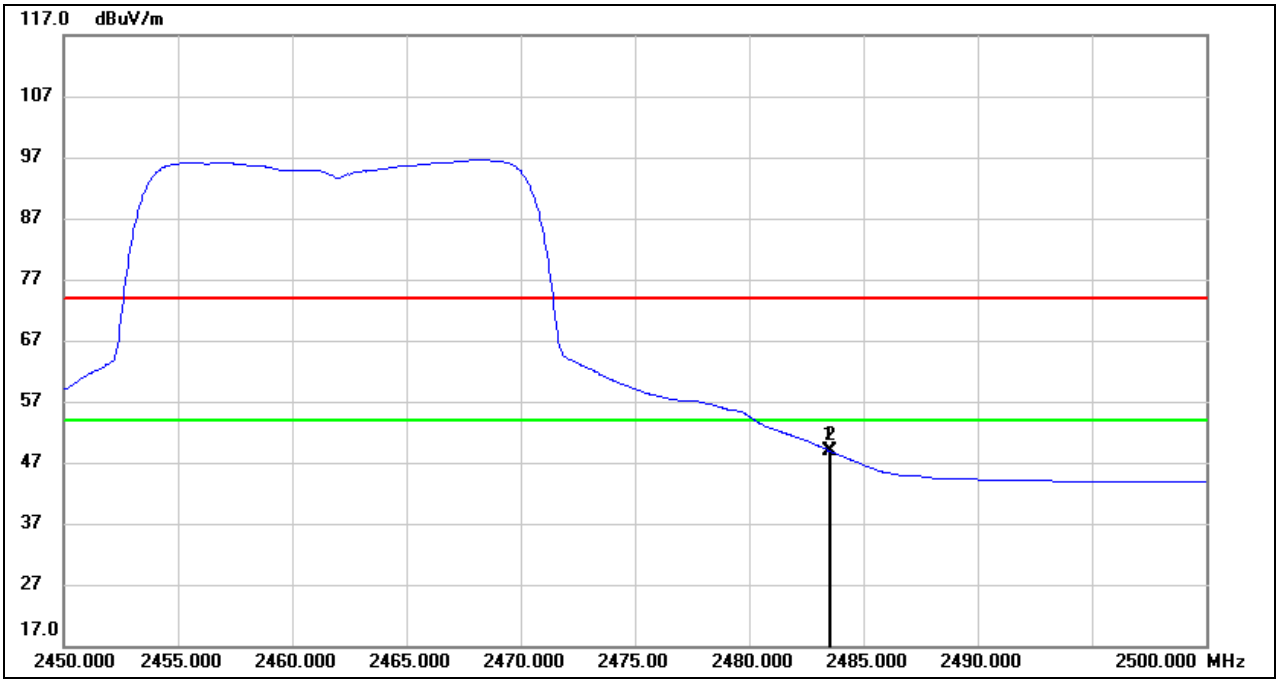
PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	53.81	11.97	65.78	74.00	-8.22	peak
2	2483.550	54.60	11.97	66.57	74.00	-7.43	peak

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

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	37.03	11.97	49.00	54.00	-5.00	AVG
2	2483.550	36.93	11.97	48.90	54.00	-5.10	AVG

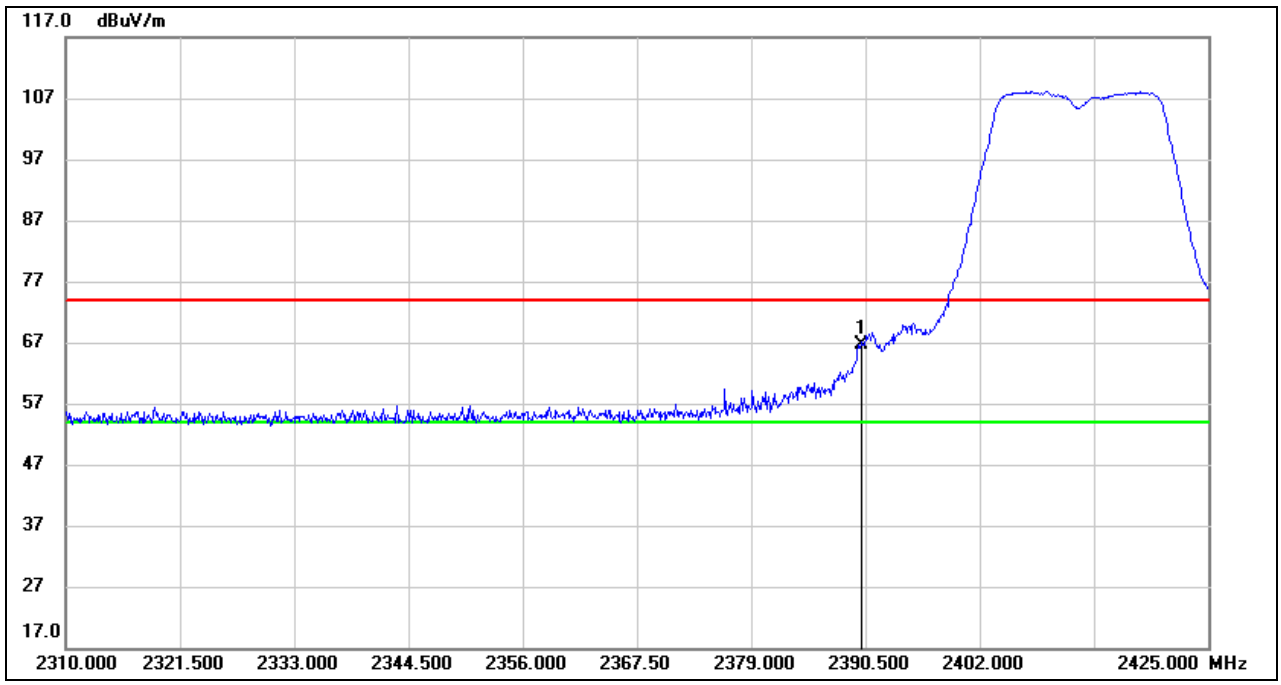
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

8.1.3. 802.11n HT20 MIMO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

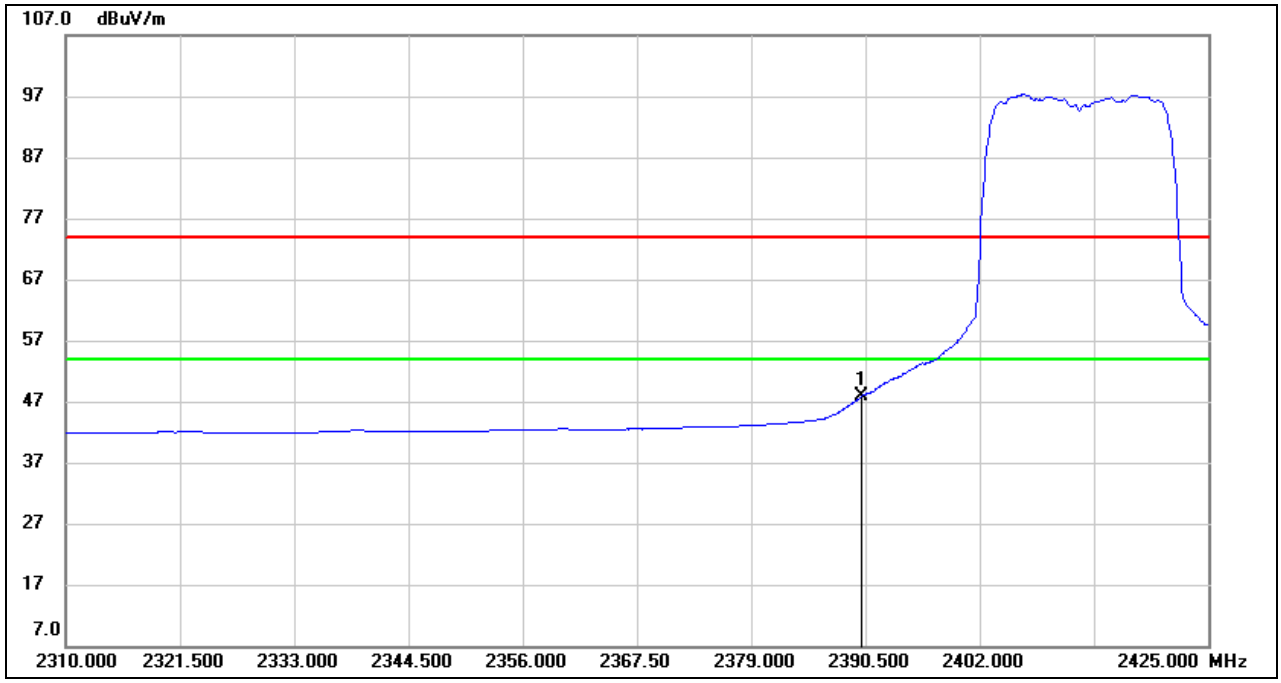
PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	55.01	11.59	66.60	74.00	-7.40	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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

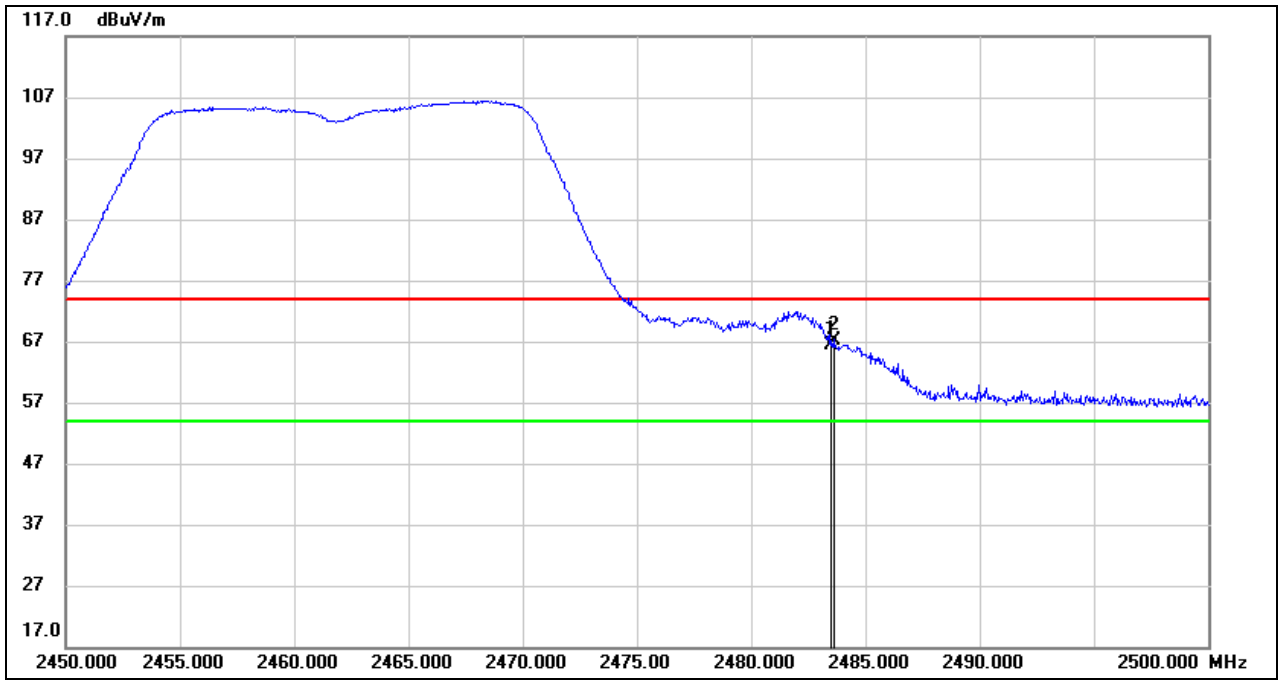


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	36.18	11.59	47.77	54.00	-6.23	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

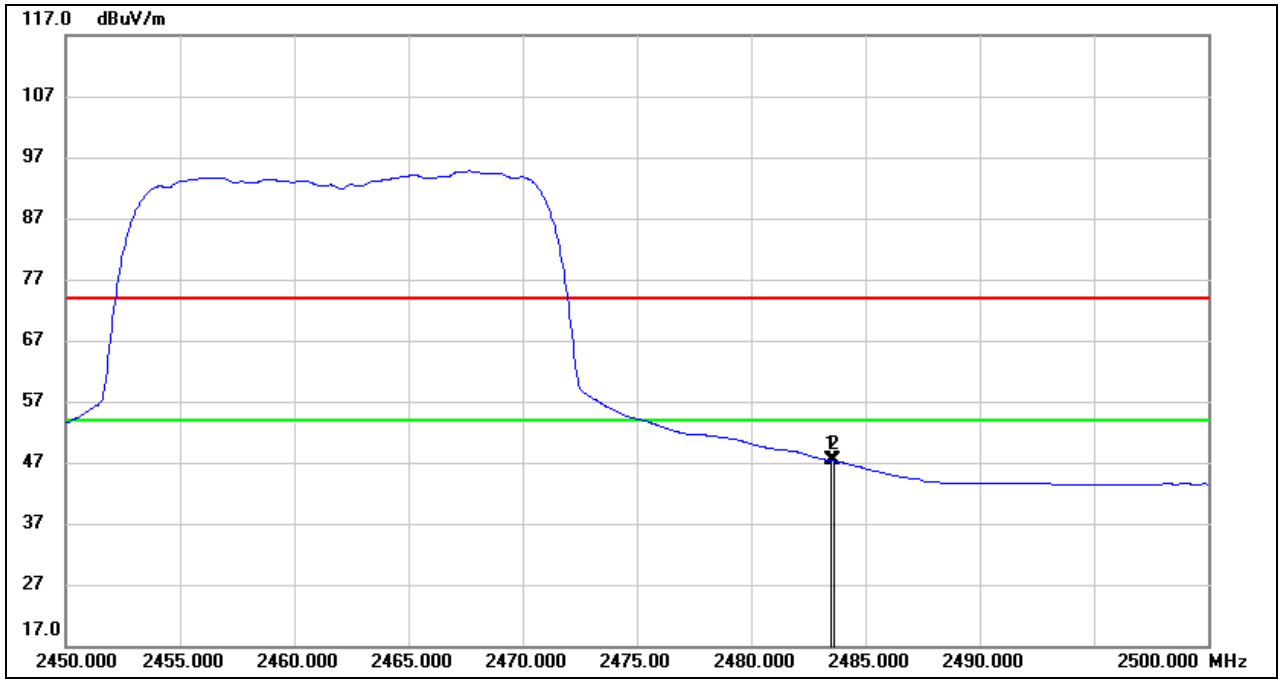
PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	54.44	11.97	66.41	74.00	-7.59	peak
2	2483.600	55.28	11.97	67.25	74.00	-6.75	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. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	35.36	11.97	47.33	54.00	-6.67	AVG
2	2483.600	35.33	11.97	47.30	54.00	-6.70	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

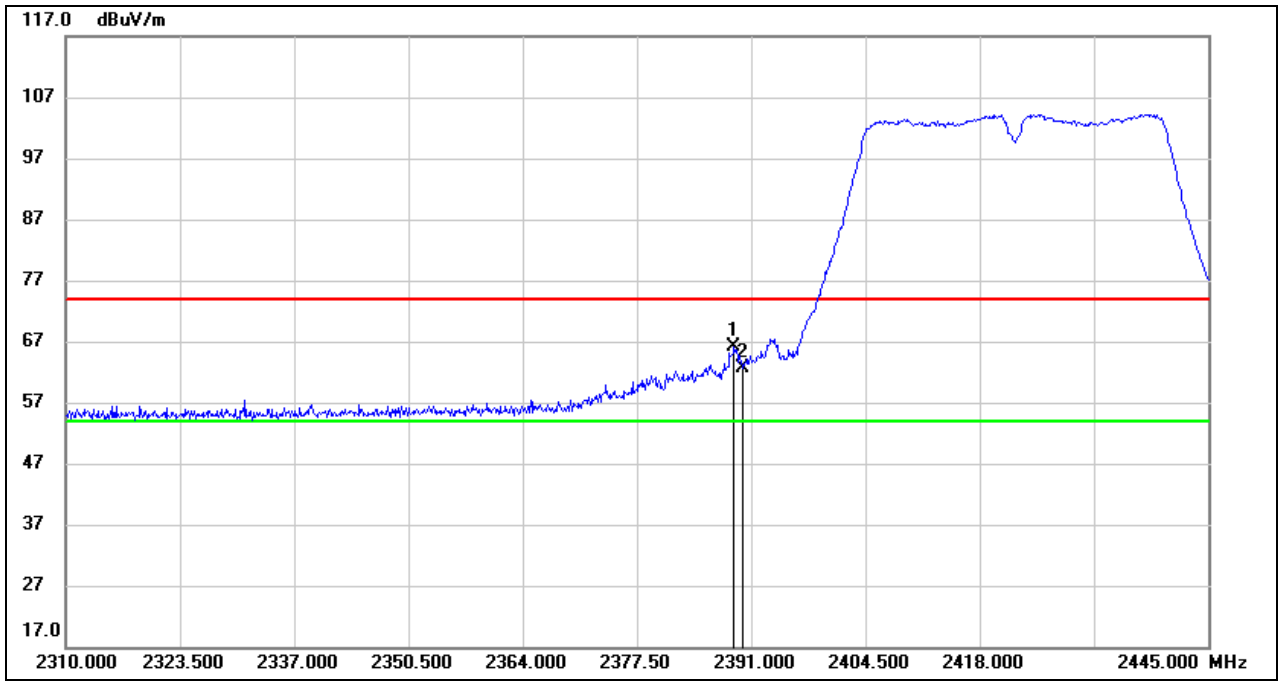
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

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

8.1.4. 802.11n HT40 MIMO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

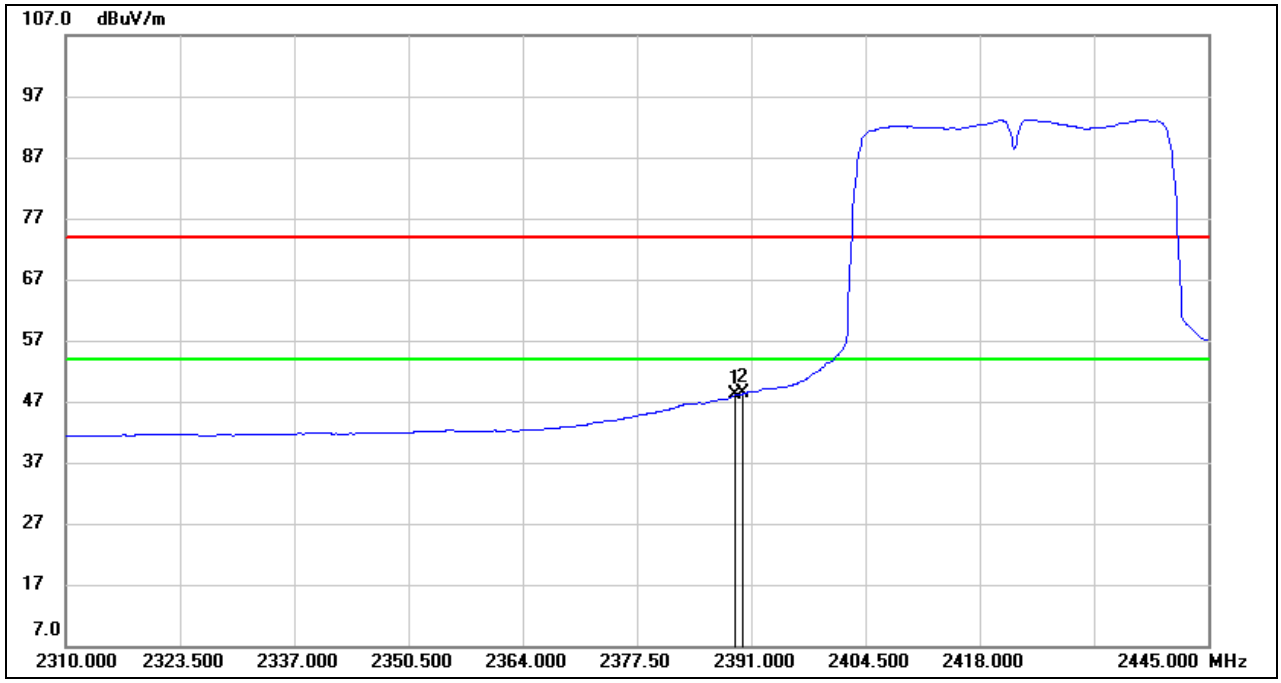
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.975	54.47	11.58	66.05	74.00	-7.95	peak
2	2390.000	51.12	11.59	62.71	74.00	-11.29	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

AVG

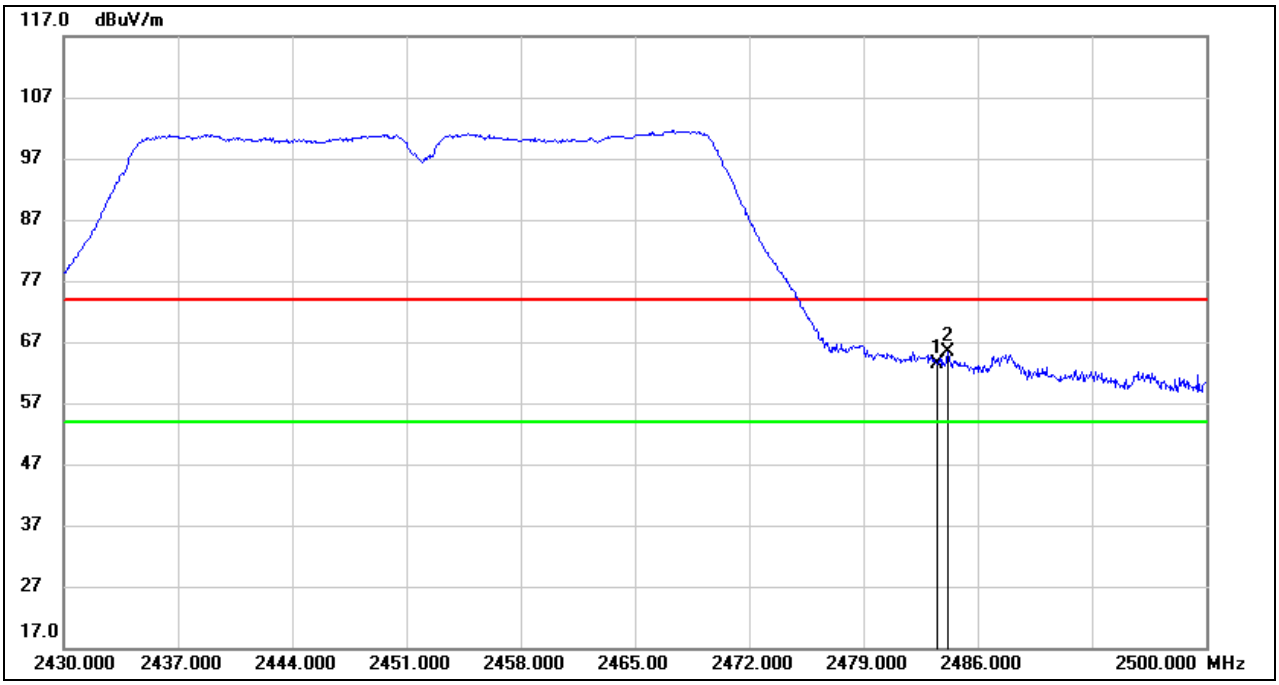


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.975	36.43	11.58	48.01	54.00	-5.99	AVG
2	2390.000	36.69	11.59	48.28	54.00	-5.72	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

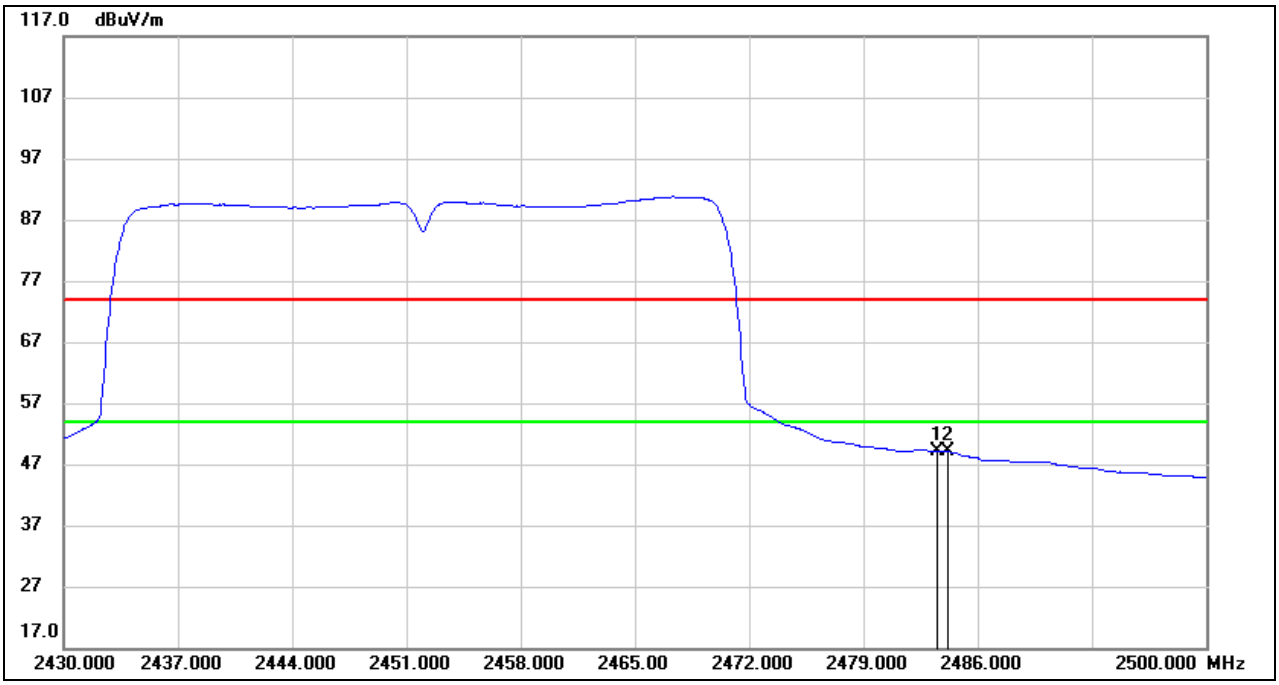
PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	51.46	11.97	63.43	74.00	-10.57	peak
2	2484.180	53.44	11.97	65.41	74.00	-8.59	peak

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

AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	37.11	11.97	49.08	54.00	-4.92	AVG
2	2484.180	37.05	11.97	49.02	54.00	-4.98	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

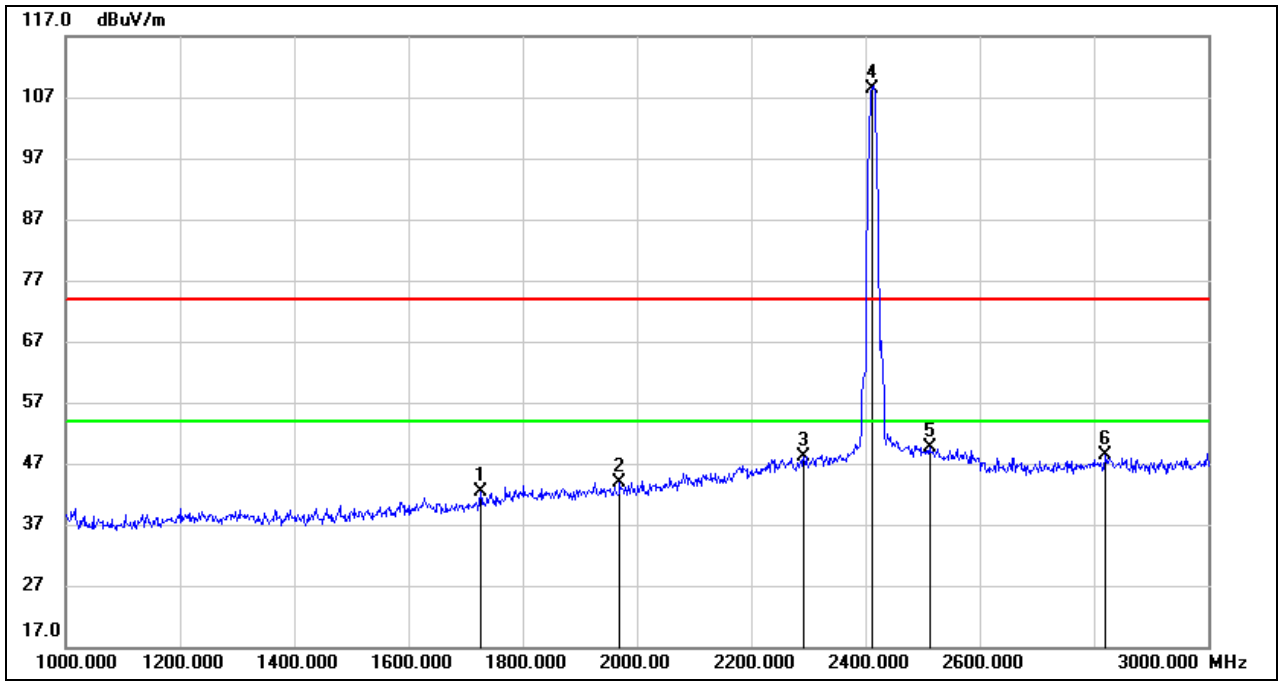
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

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

8.2. SPURIOUS EMISSIONS (1 GHz ~ 3 GHz)

8.2.1. 802.11b SISO MODE

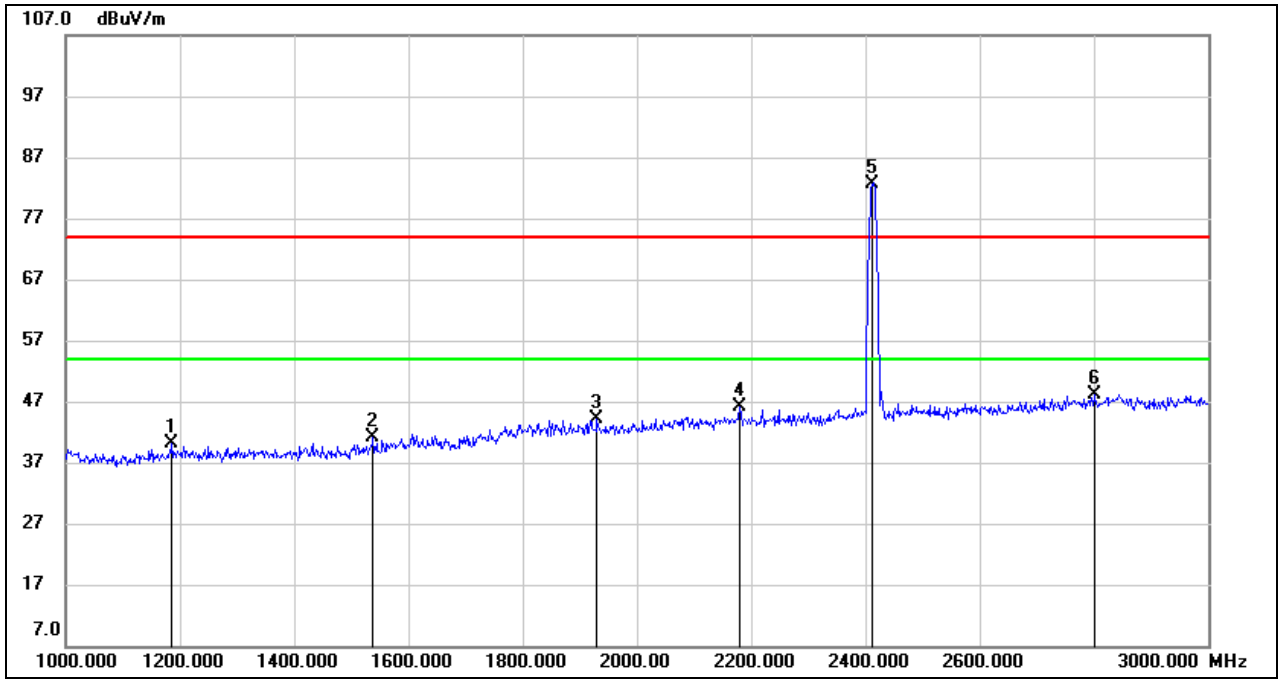
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1726.000	33.86	8.50	42.36	74.00	-31.64	peak
2	1970.000	33.94	9.96	43.90	74.00	-30.10	peak
3	2292.000	37.15	11.00	48.15	74.00	-25.85	peak
4	2412.000	96.62	11.71	108.33	/	/	fundamental
5	2512.000	37.72	12.02	49.74	74.00	-24.26	peak
6	2820.000	35.03	13.28	48.31	74.00	-25.69	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.

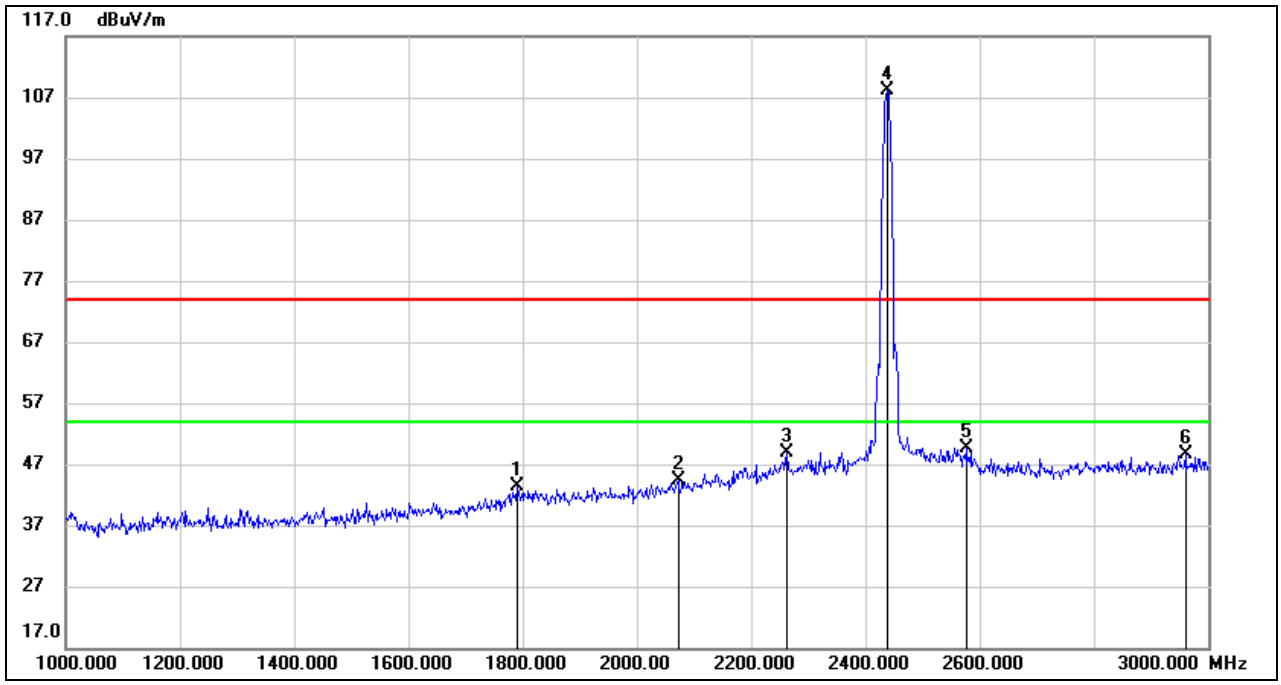
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1186.000	33.70	6.34	40.04	74.00	-33.96	peak
2	1538.000	33.74	7.31	41.05	74.00	-32.95	peak
3	1930.000	34.16	9.86	44.02	74.00	-29.98	peak
4	2180.000	35.05	10.97	46.02	74.00	-27.98	peak
5	2412.000	70.90	11.71	82.61	/	/	fundamental
6	2800.000	34.89	13.24	48.13	74.00	-25.87	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.

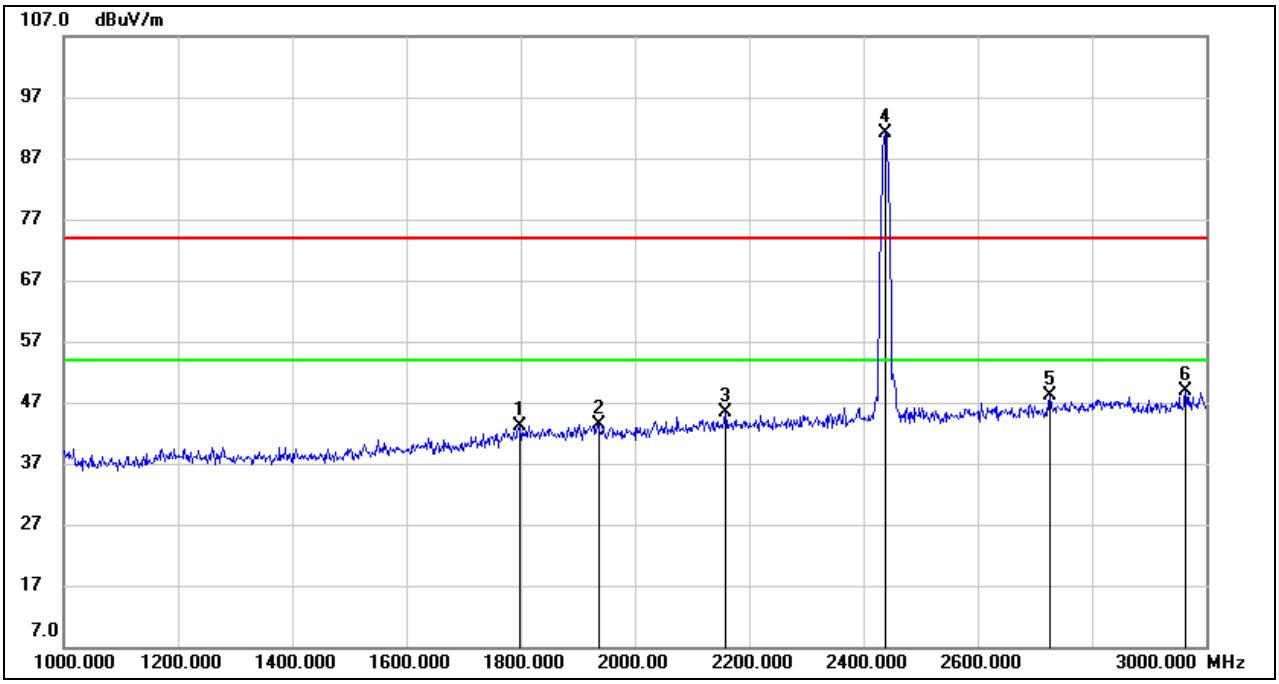
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1790.000	33.88	9.49	43.37	74.00	-30.63	peak
2	2072.000	33.87	10.57	44.44	74.00	-29.56	peak
3	2262.000	37.89	11.01	48.90	74.00	-25.10	peak
4	2437.000	96.22	11.80	108.02	/	/	fundamental
5	2576.000	37.71	11.98	49.69	74.00	-24.31	peak
6	2960.000	34.91	13.84	48.75	74.00	-25.25	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.

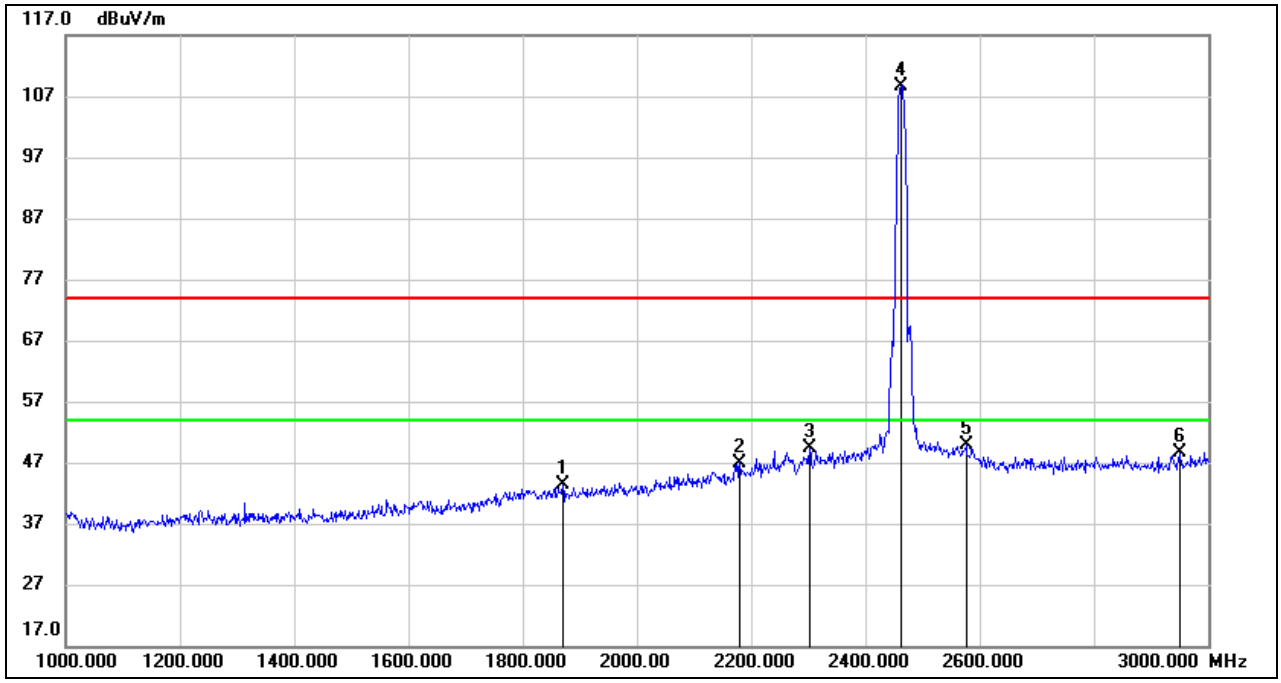
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1798.000	33.41	9.62	43.03	74.00	-30.97	peak
2	1936.000	33.52	9.88	43.40	74.00	-30.60	peak
3	2158.000	34.49	10.92	45.41	74.00	-28.59	peak
4	2437.000	79.43	11.80	91.23	/	/	fundamental
5	2726.000	35.54	12.70	48.24	74.00	-25.76	peak
6	2964.000	35.05	13.87	48.92	74.00	-25.08	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.

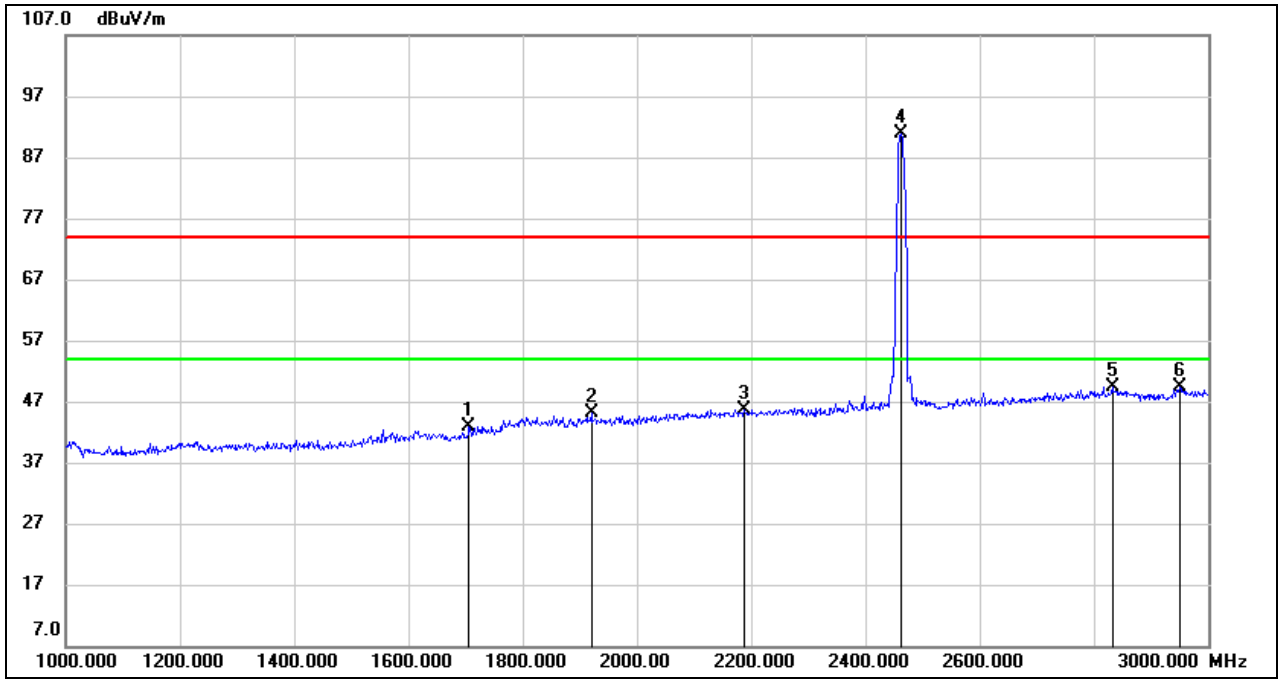
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1870.000	33.73	9.75	43.48	74.00	-30.52	peak
2	2180.000	36.03	10.97	47.00	74.00	-27.00	peak
3	2302.000	38.34	11.00	49.34	74.00	-24.66	peak
4	2462.000	96.64	11.89	108.53	/	/	fundamental
5	2576.000	37.93	11.98	49.91	74.00	-24.09	peak
6	2950.000	34.91	13.78	48.69	74.00	-25.31	peak

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

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	1706.000	34.75	8.20	42.95	74.00	-31.05	peak
2	1920.000	35.31	9.84	45.15	74.00	-28.85	peak
3	2188.000	34.68	11.00	45.68	74.00	-28.32	peak
4	2462.000	78.92	11.89	90.81	/	/	fundamental
5	2832.000	36.15	13.31	49.46	74.00	-24.54	peak
6	2950.000	35.52	13.78	49.30	74.00	-24.70	peak

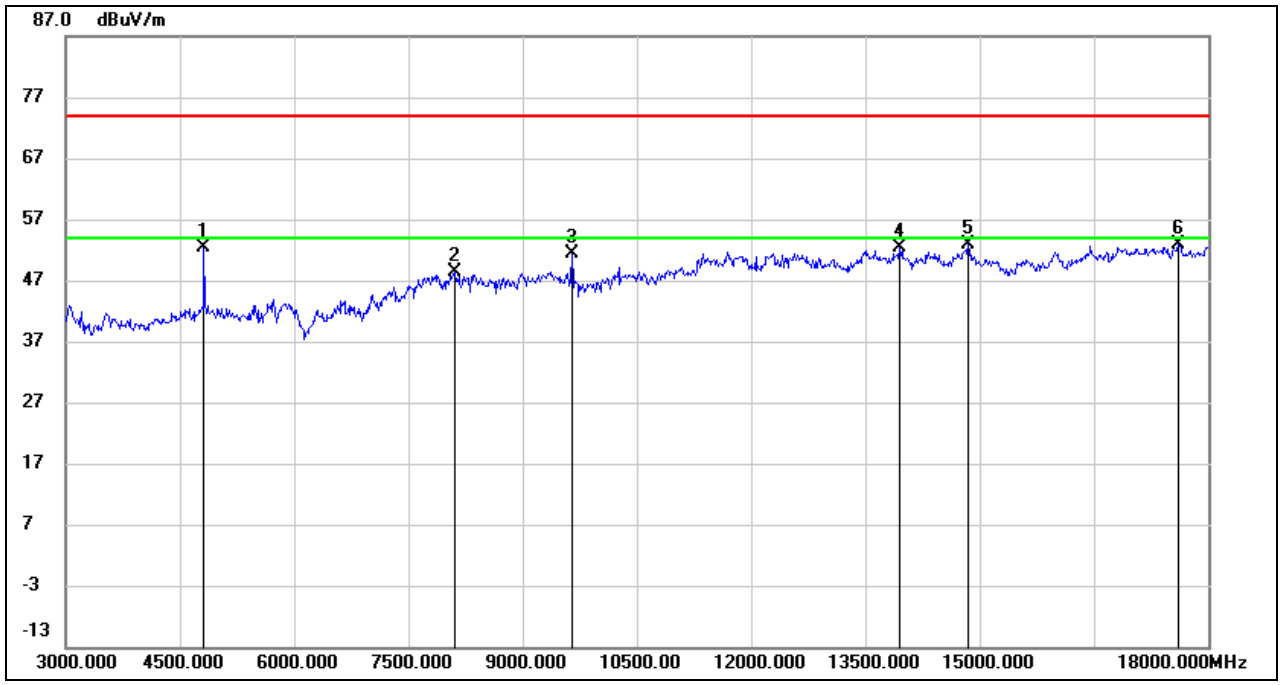
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

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

8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

8.3.1. 802.11b SISO MODE

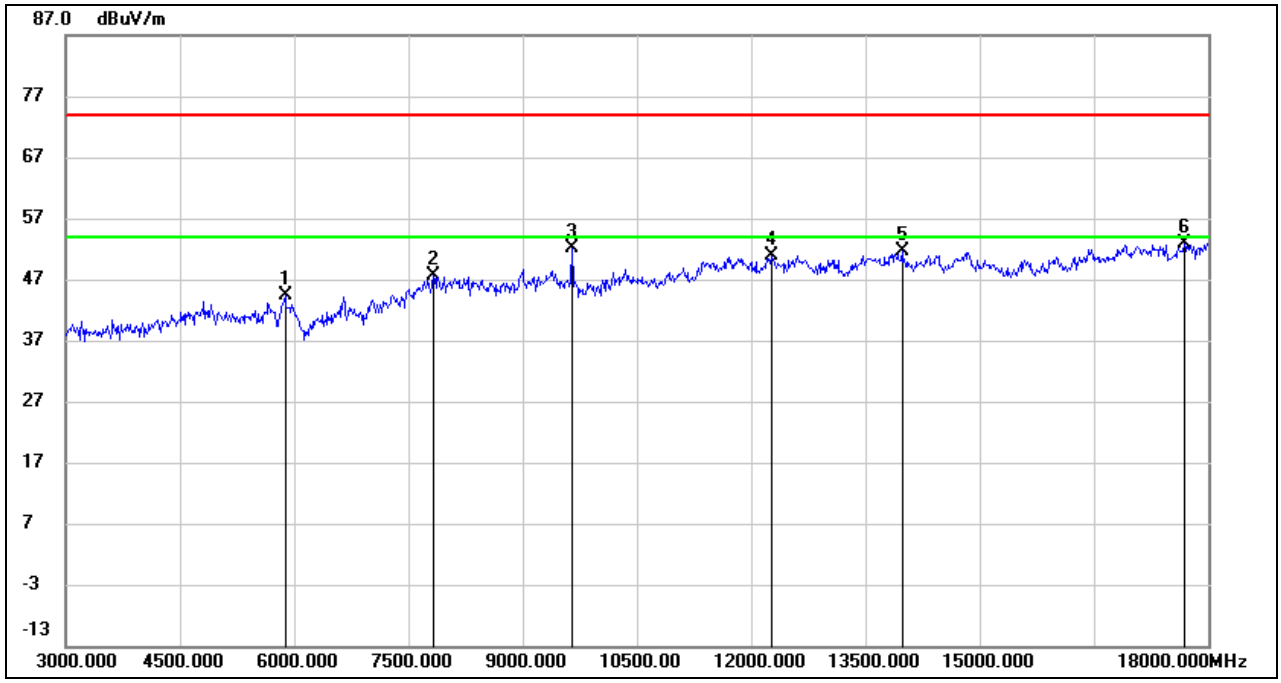
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	51.11	1.38	52.49	74.00	-21.51	peak
2	8115.000	38.25	10.13	48.38	74.00	-25.62	peak
3	9645.000	40.52	10.81	51.33	74.00	-22.67	peak
4	13950.000	34.69	17.60	52.29	74.00	-21.71	peak
5	14850.000	35.06	17.71	52.77	74.00	-21.23	peak
6	17610.000	30.05	22.80	52.85	74.00	-21.15	peak

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

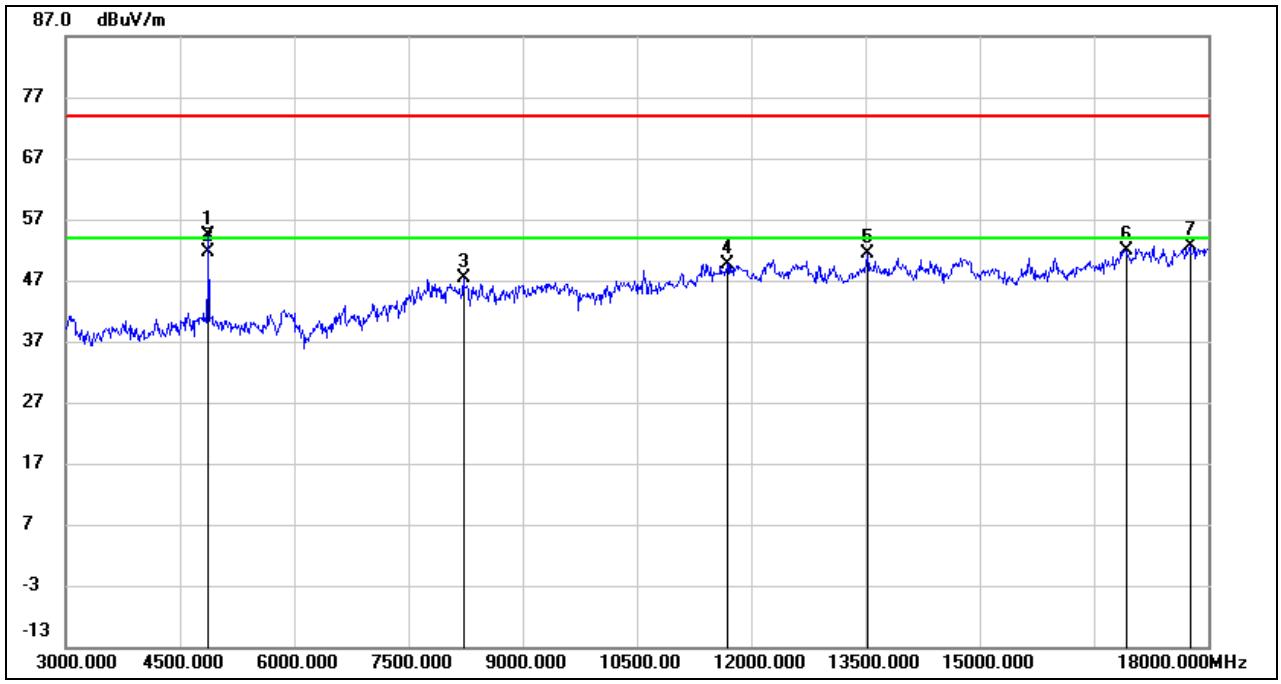
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5880.000	39.96	4.31	44.27	74.00	-29.73	peak
2	7830.000	38.38	9.20	47.58	74.00	-26.42	peak
3	9645.000	41.21	10.81	52.02	74.00	-21.98	peak
4	12270.000	34.74	16.04	50.78	74.00	-23.22	peak
5	13980.000	34.07	17.64	51.71	74.00	-22.29	peak
6	17685.000	29.57	23.36	52.93	74.00	-21.07	peak

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

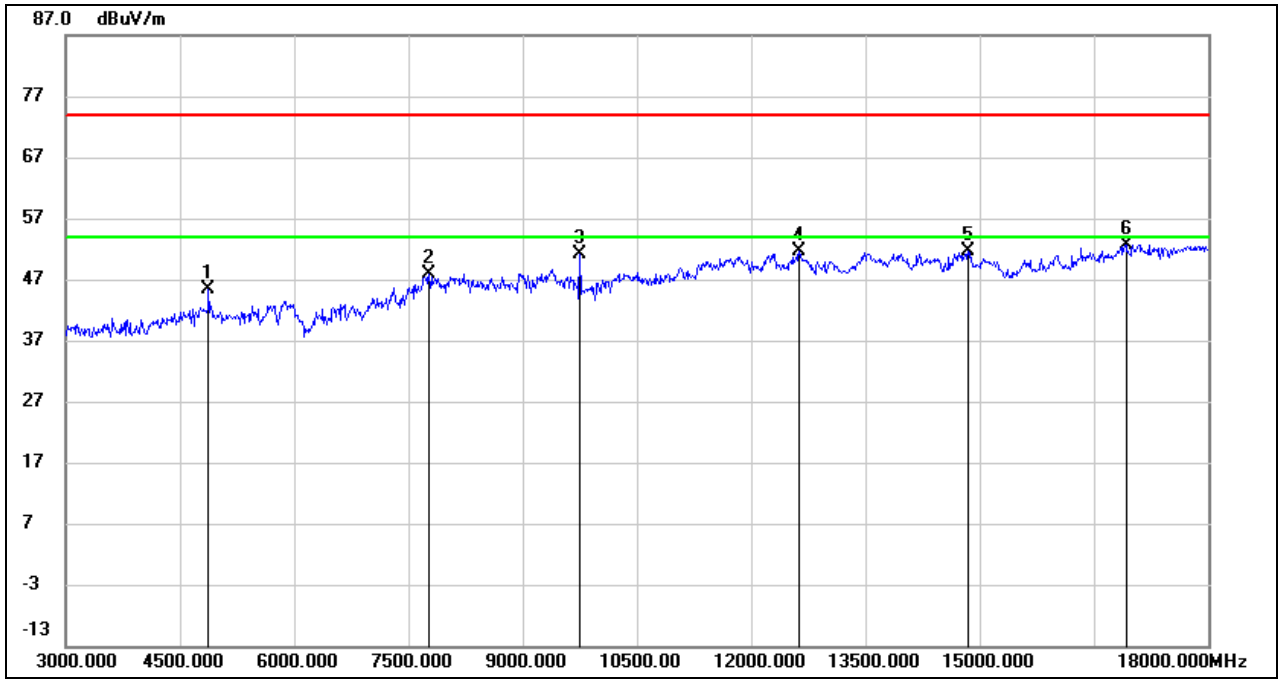
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	53.16	1.32	54.48	74.00	-19.52	peak
2	4875.000	50.41	1.32	51.73	54.00	-2.27	AVG
3	8220.000	37.47	9.79	47.26	74.00	-26.74	peak
4	11685.000	34.47	15.26	49.73	74.00	-24.27	peak
5	13530.000	34.26	17.19	51.45	74.00	-22.55	peak
6	16920.000	30.42	21.51	51.93	74.00	-22.07	peak
7	17760.000	28.89	23.82	52.71	74.00	-21.29	peak

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

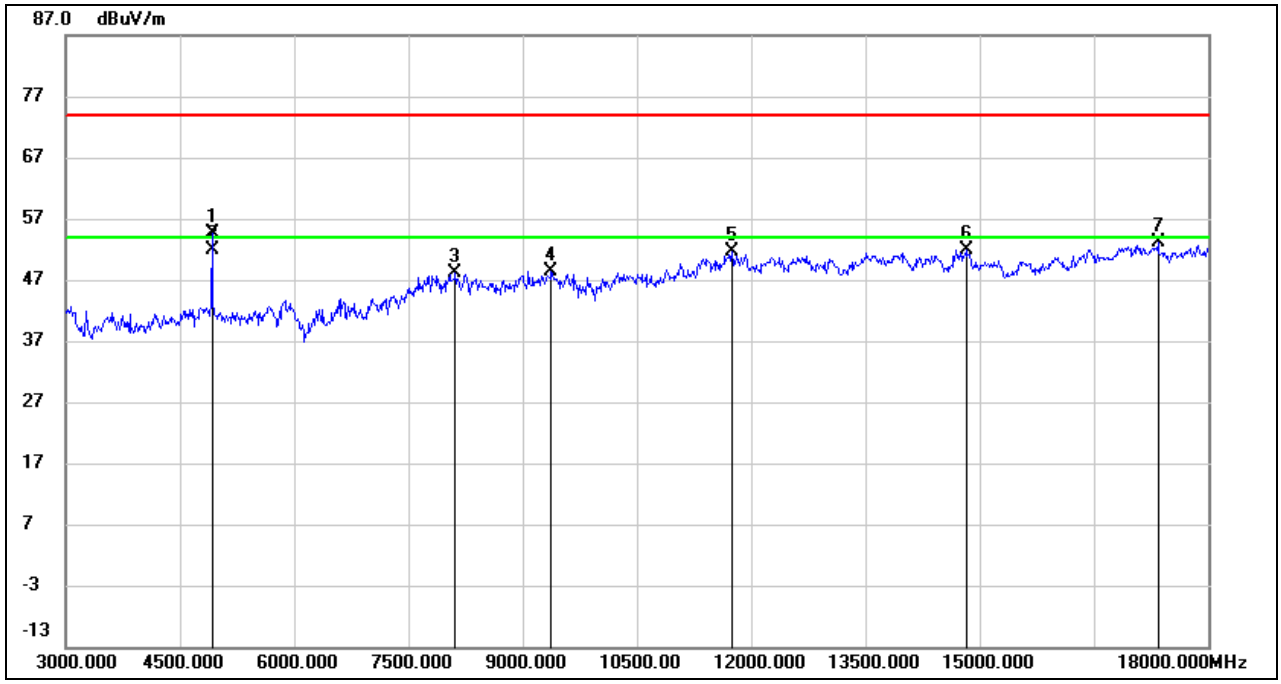
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	44.09	1.32	45.41	74.00	-28.59	peak
2	7770.000	38.70	9.09	47.79	74.00	-26.21	peak
3	9750.000	40.80	10.29	51.09	74.00	-22.91	peak
4	12630.000	35.96	15.72	51.68	74.00	-22.32	peak
5	14850.000	33.93	17.71	51.64	74.00	-22.36	peak
6	16920.000	31.22	21.51	52.73	74.00	-21.27	peak

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

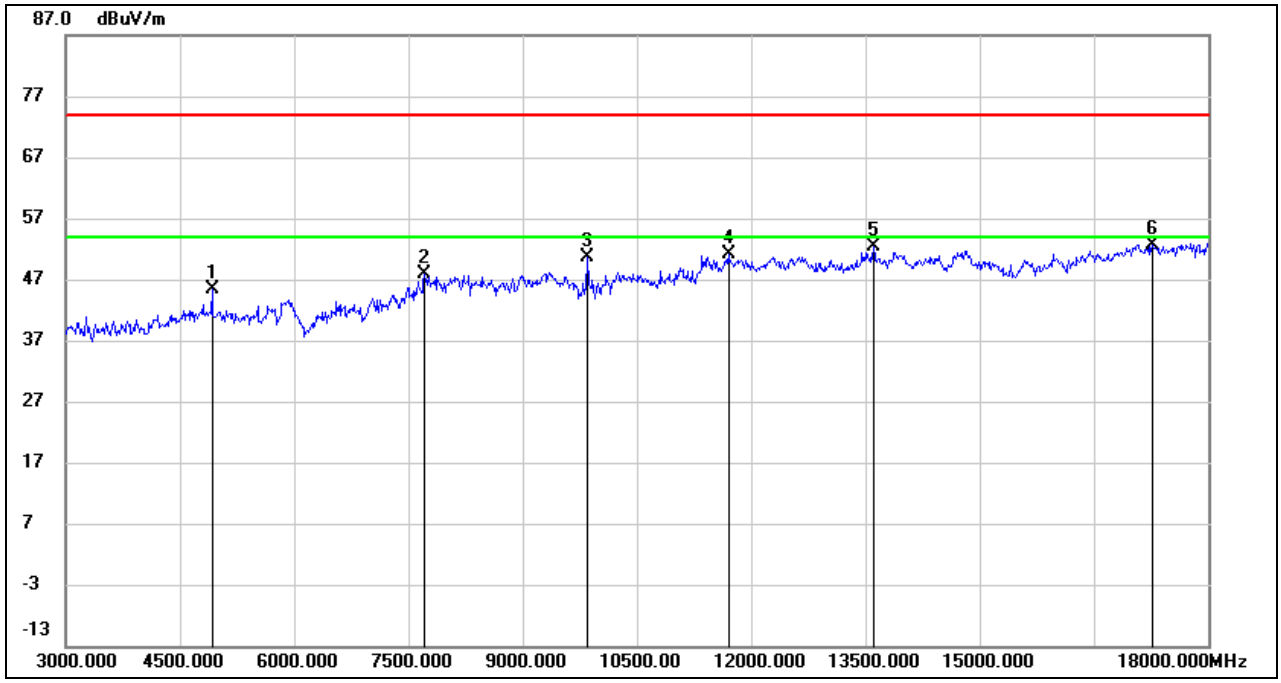
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	53.14	1.45	54.59	74.00	-19.41	peak
2	4920.000	50.52	1.45	51.97	54.00	-2.03	AVG
3	8115.000	37.90	10.13	48.03	74.00	-25.97	peak
4	9375.000	37.56	10.83	48.39	74.00	-25.61	peak
5	11745.000	36.25	15.30	51.55	74.00	-22.45	peak
6	14820.000	34.00	17.91	51.91	74.00	-22.09	peak
7	17340.000	30.71	22.31	53.02	74.00	-20.98	peak

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

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

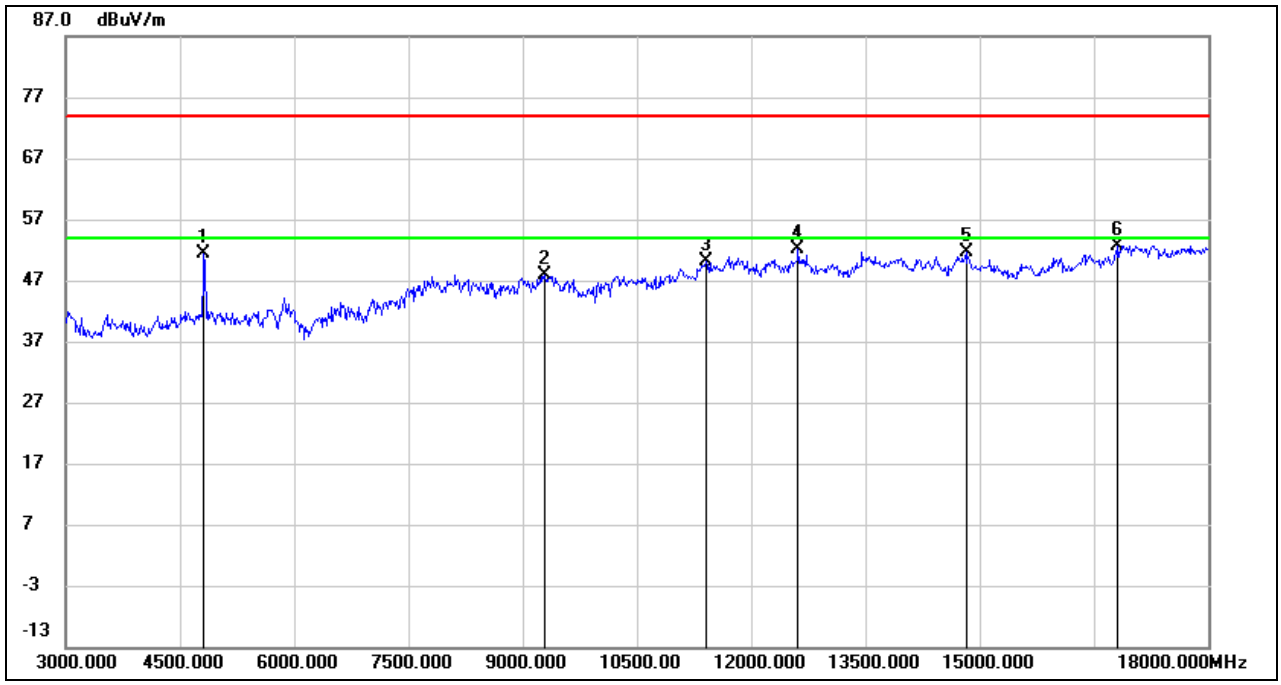


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	43.96	1.45	45.41	74.00	-28.59	peak
2	7710.000	39.30	8.54	47.84	74.00	-26.16	peak
3	9855.000	40.05	10.64	50.69	74.00	-23.31	peak
4	11700.000	35.71	15.35	51.06	74.00	-22.94	peak
5	13605.000	35.33	17.12	52.45	74.00	-21.55	peak
6	17265.000	30.29	22.39	52.68	74.00	-21.32	peak

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

8.3.2. 802.11g SISO MODE

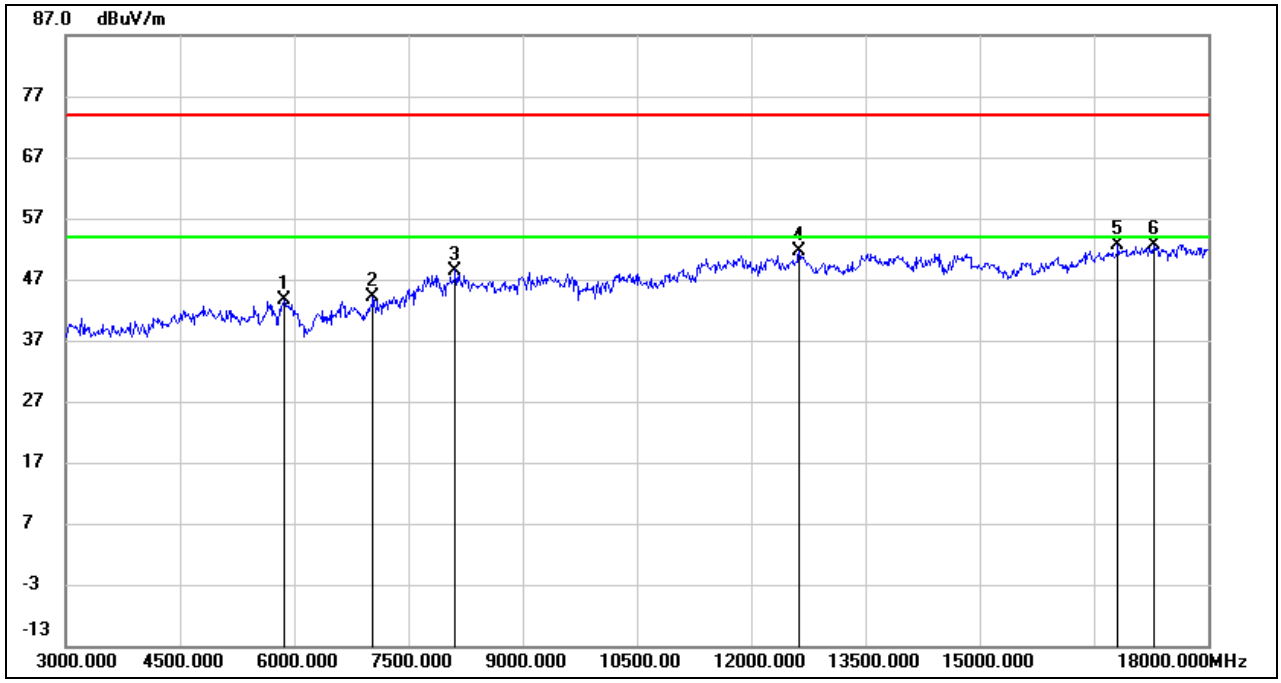
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	50.01	1.38	51.39	74.00	-22.61	peak
2	9285.000	37.66	10.33	47.99	74.00	-26.01	peak
3	11415.000	35.33	14.74	50.07	74.00	-23.93	peak
4	12615.000	36.35	15.75	52.10	74.00	-21.90	peak
5	14820.000	33.83	17.91	51.74	74.00	-22.26	peak
6	16815.000	31.85	20.84	52.69	74.00	-21.31	peak

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

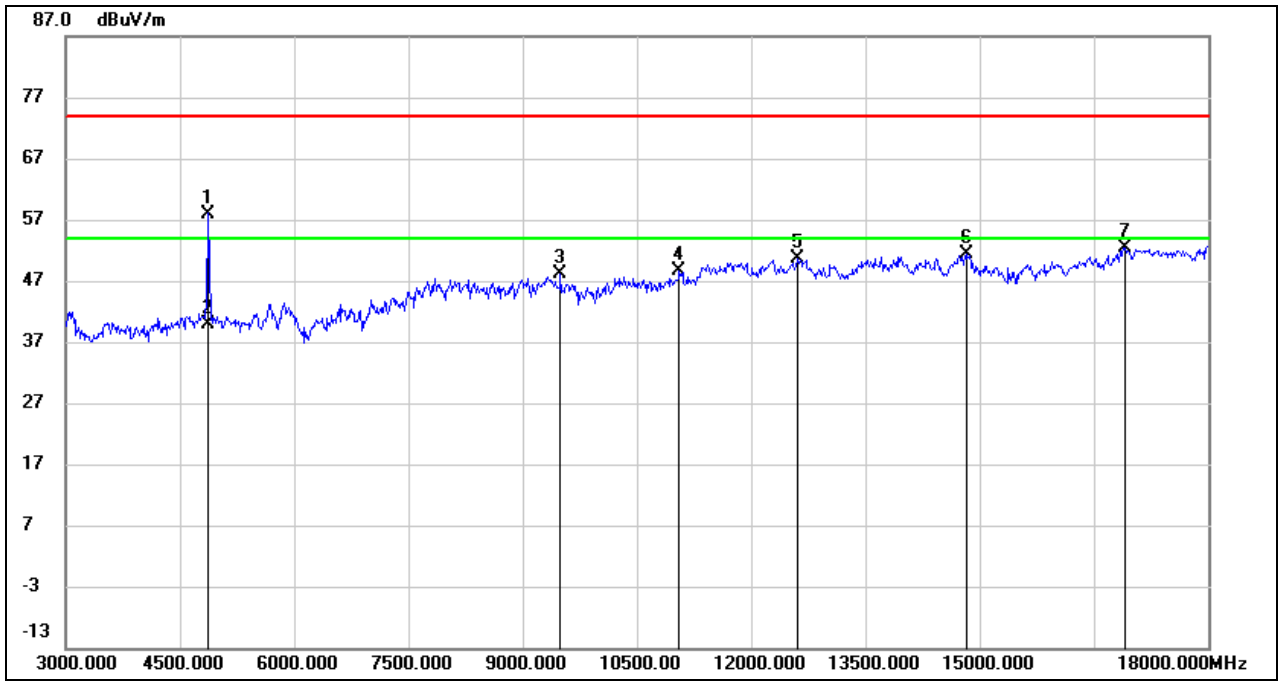
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5865.000	39.47	4.16	43.63	74.00	-30.37	peak
2	7035.000	36.47	7.62	44.09	74.00	-29.91	peak
3	8115.000	38.37	10.13	48.50	74.00	-25.50	peak
4	12630.000	35.81	15.72	51.53	74.00	-22.47	peak
5	16815.000	31.81	20.84	52.65	74.00	-21.35	peak
6	17295.000	30.16	22.58	52.74	74.00	-21.26	peak

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

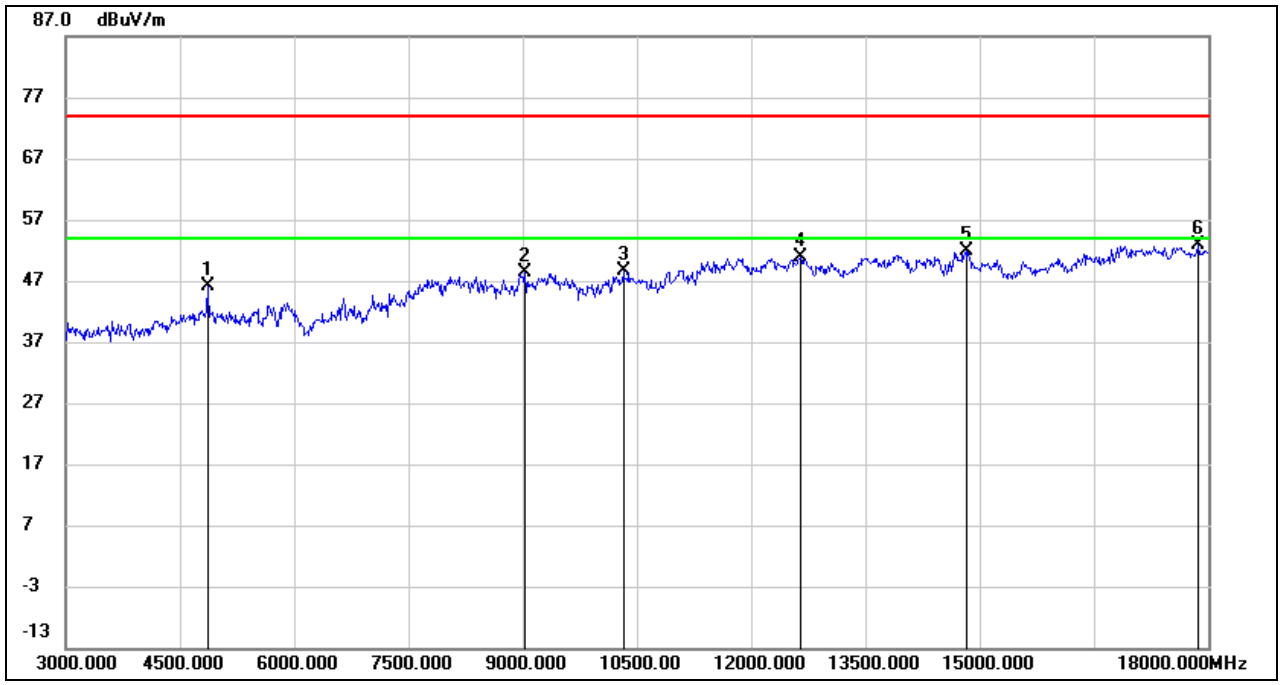
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	56.68	1.32	58.00	74.00	-16.00	peak
2	4875.000	38.58	1.32	39.90	54.00	-14.10	AVG
3	9495.000	37.47	10.55	48.02	74.00	-25.98	peak
4	11055.000	35.00	13.58	48.58	74.00	-25.42	peak
5	12600.000	34.86	15.78	50.64	74.00	-23.36	peak
6	14835.000	33.62	17.80	51.42	74.00	-22.58	peak
7	16905.000	30.72	21.55	52.27	74.00	-21.73	peak

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

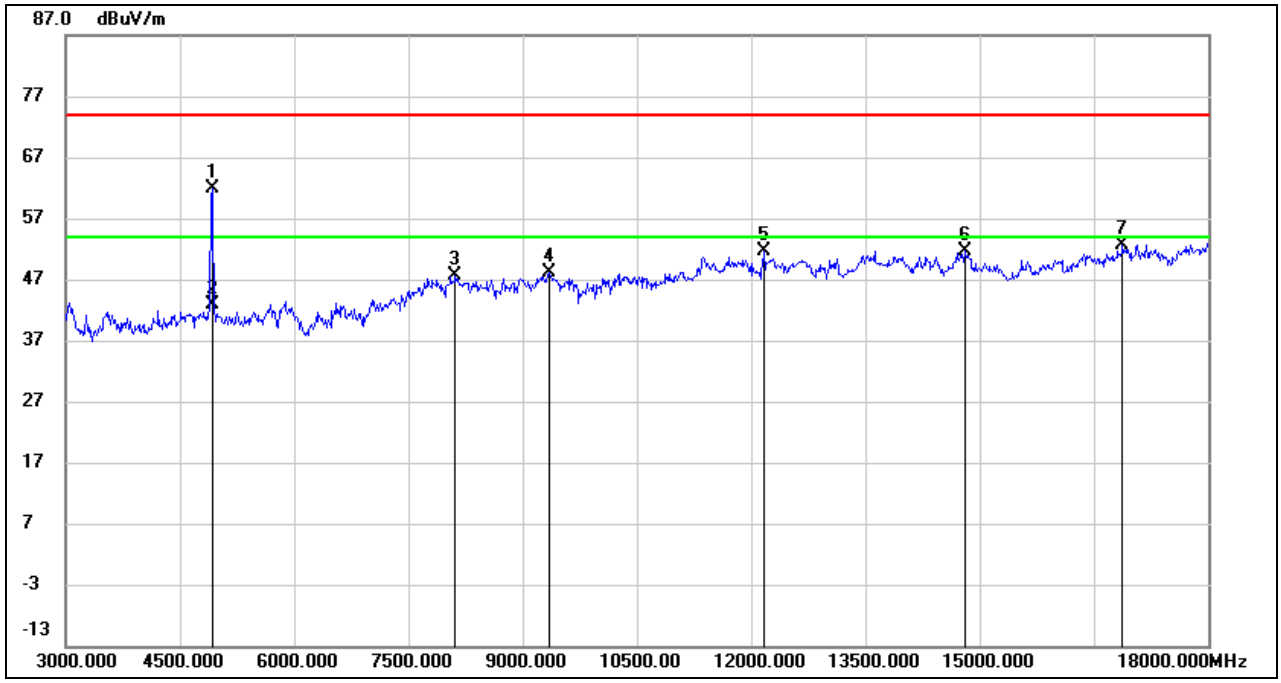
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	44.83	1.33	46.16	74.00	-27.84	peak
2	9030.000	37.34	10.93	48.27	74.00	-25.73	peak
3	10320.000	36.73	11.89	48.62	74.00	-25.38	peak
4	12645.000	35.23	15.71	50.94	74.00	-23.06	peak
5	14820.000	33.88	17.91	51.79	74.00	-22.21	peak
6	17865.000	28.81	23.95	52.76	74.00	-21.24	peak

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

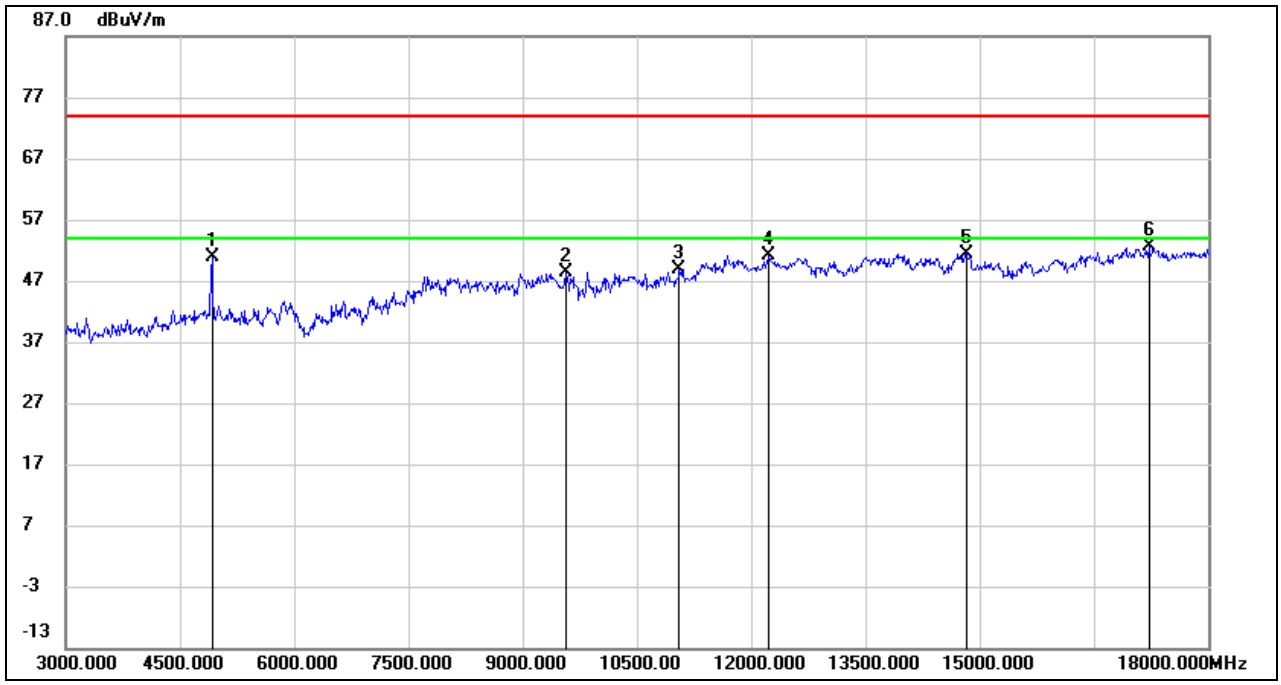
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	60.41	1.45	61.86	74.00	-12.14	peak
2	4920.000	41.32	1.45	42.77	54.00	-11.23	AVG
3	8115.000	37.53	10.13	47.66	74.00	-26.34	peak
4	9345.000	37.47	10.66	48.13	74.00	-25.87	peak
5	12165.000	35.97	15.74	51.71	74.00	-22.29	peak
6	14805.000	33.60	18.00	51.60	74.00	-22.40	peak
7	16875.000	31.27	21.35	52.62	74.00	-21.38	peak

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

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

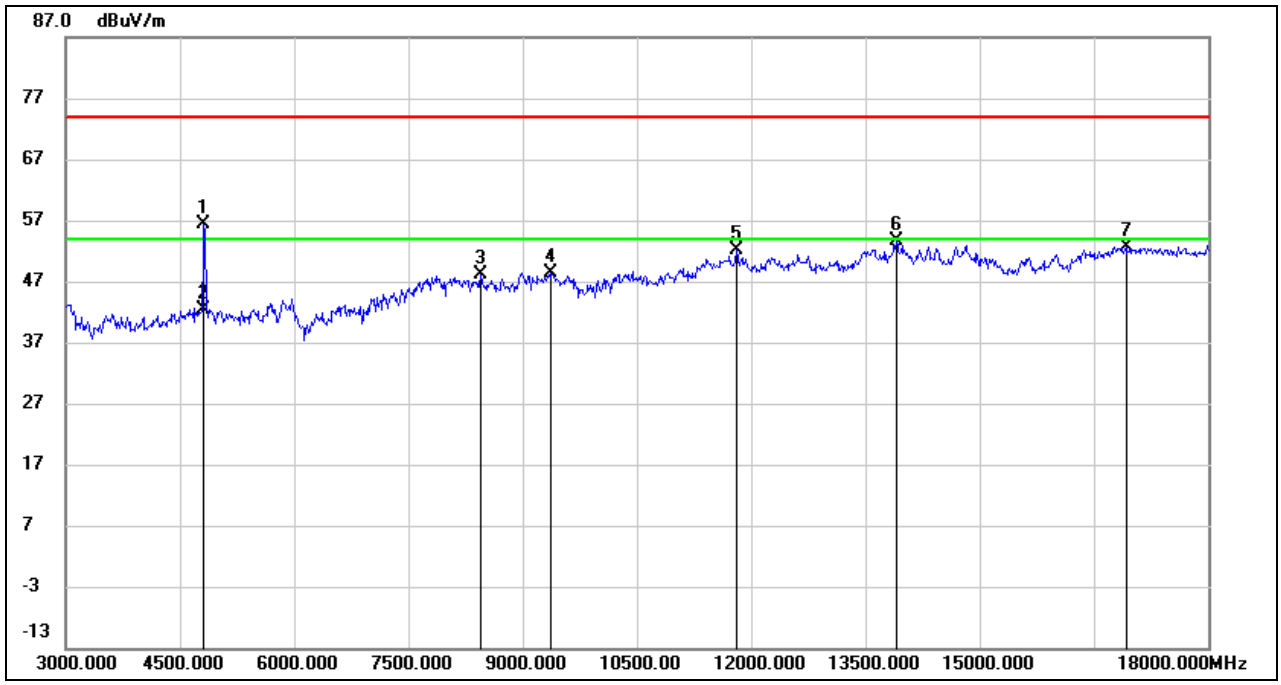


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	49.37	1.45	50.82	74.00	-23.18	peak
2	9570.000	37.47	10.88	48.35	74.00	-25.65	peak
3	11055.000	35.24	13.58	48.82	74.00	-25.18	peak
4	12225.000	35.16	15.99	51.15	74.00	-22.85	peak
5	14820.000	33.59	17.91	51.50	74.00	-22.50	peak
6	17220.000	30.58	22.12	52.70	74.00	-21.30	peak

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

8.3.3. 802.11n HT20 MIMO MODE

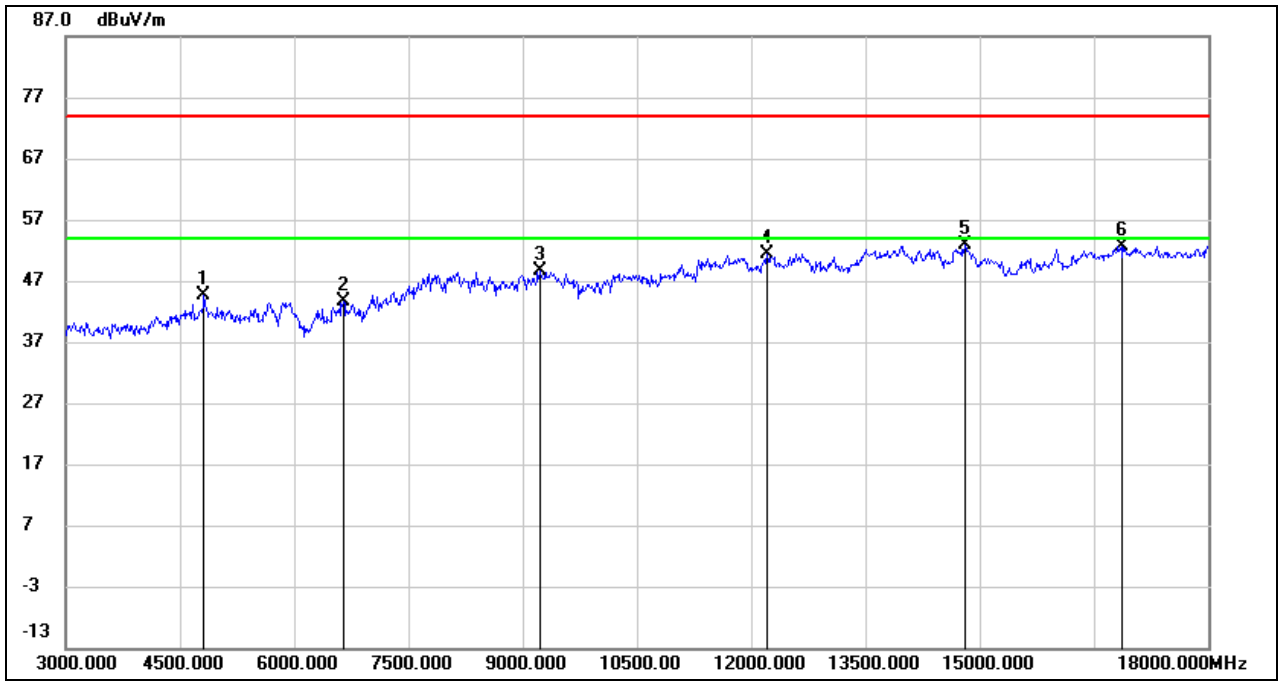
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	54.94	1.38	56.32	74.00	-17.68	peak
2	4815.000	40.93	1.38	42.31	54.00	-11.69	AVG
3	8445.000	38.82	9.24	48.06	74.00	-25.94	peak
4	9360.000	37.74	10.75	48.49	74.00	-25.51	peak
5	11805.000	36.85	15.26	52.11	74.00	-21.89	peak
6	13905.000	35.05	18.51	53.56	74.00	-20.44	peak
7	16920.000	30.65	21.96	52.61	74.00	-21.39	peak

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

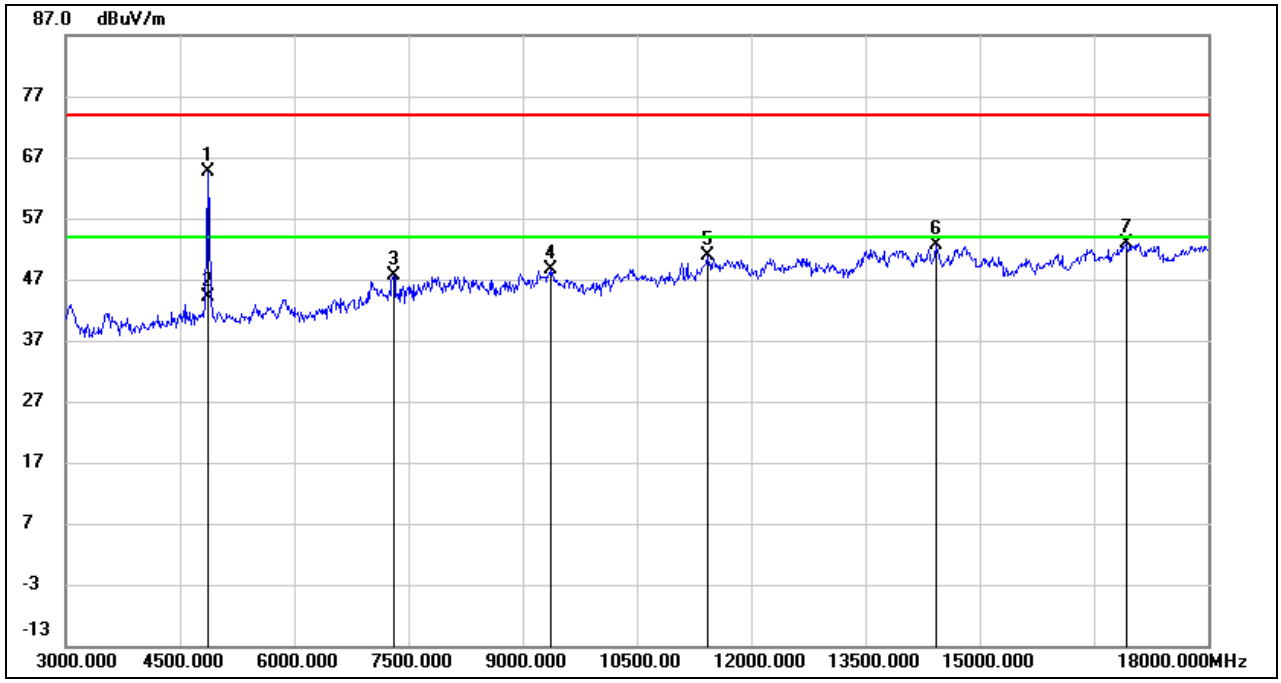
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	43.14	1.38	44.52	74.00	-29.48	peak
2	6645.000	37.58	5.95	43.53	74.00	-30.47	peak
3	9225.000	38.53	10.03	48.56	74.00	-25.44	peak
4	12210.000	35.49	15.97	51.46	74.00	-22.54	peak
5	14805.000	34.15	18.63	52.78	74.00	-21.22	peak
6	16860.000	30.97	21.66	52.63	74.00	-21.37	peak

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

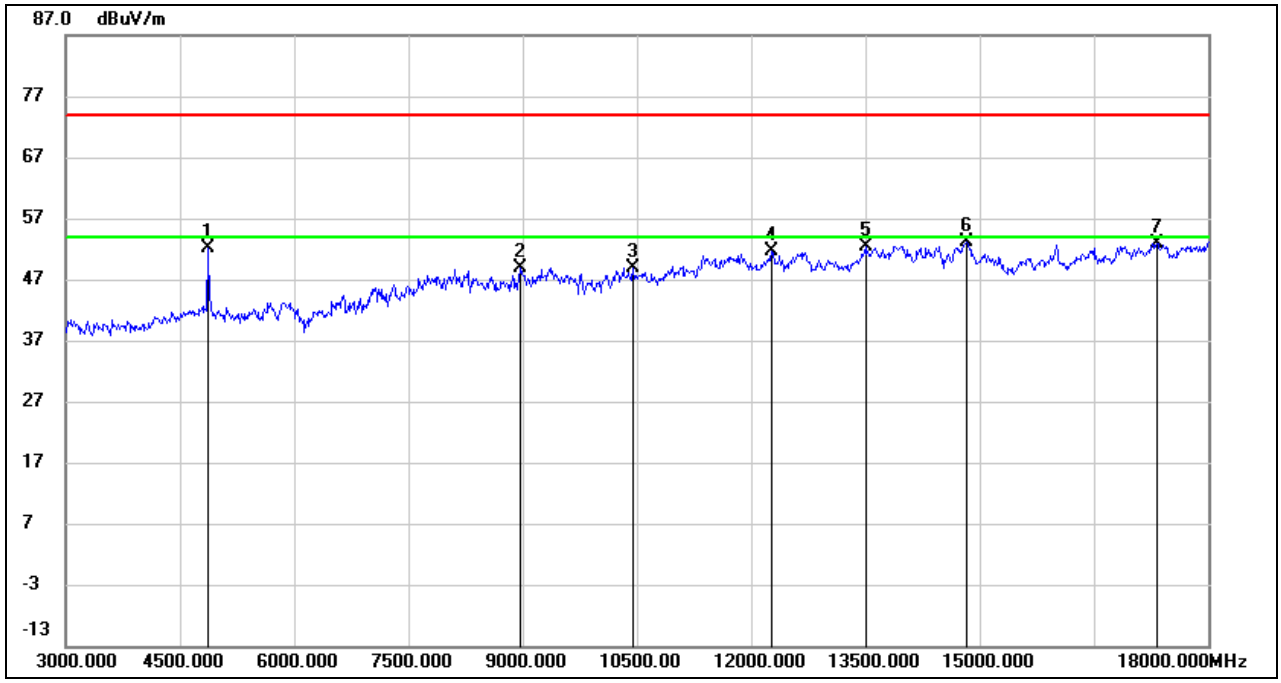
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	63.27	1.32	64.59	74.00	-9.41	peak
2	4875.000	42.70	1.32	44.02	54.00	-9.98	AVG
3	7305.000	40.58	7.14	47.72	74.00	-26.28	peak
4	9360.000	37.98	10.75	48.73	74.00	-25.27	peak
5	11430.000	36.18	14.72	50.90	74.00	-23.10	peak
6	14430.000	34.55	18.18	52.73	74.00	-21.27	peak
7	16920.000	30.98	21.96	52.94	74.00	-21.06	peak

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

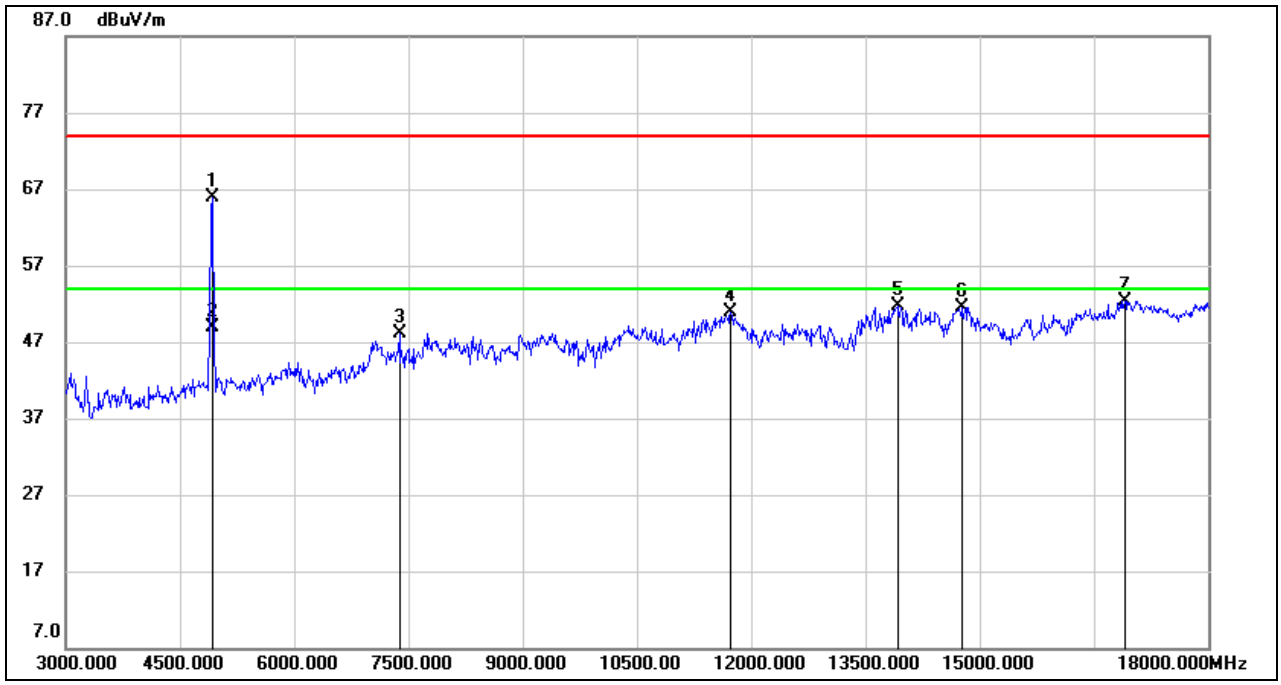
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4860.000	50.70	1.33	52.03	74.00	-21.97	peak
2	8970.000	38.12	10.70	48.82	74.00	-25.18	peak
3	10440.000	36.64	12.28	48.92	74.00	-25.08	peak
4	12270.000	35.53	16.04	51.57	74.00	-22.43	peak
5	13500.000	34.65	17.76	52.41	74.00	-21.59	peak
6	14820.000	34.55	18.53	53.08	74.00	-20.92	peak
7	17325.000	29.75	23.21	52.96	74.00	-21.04	peak

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

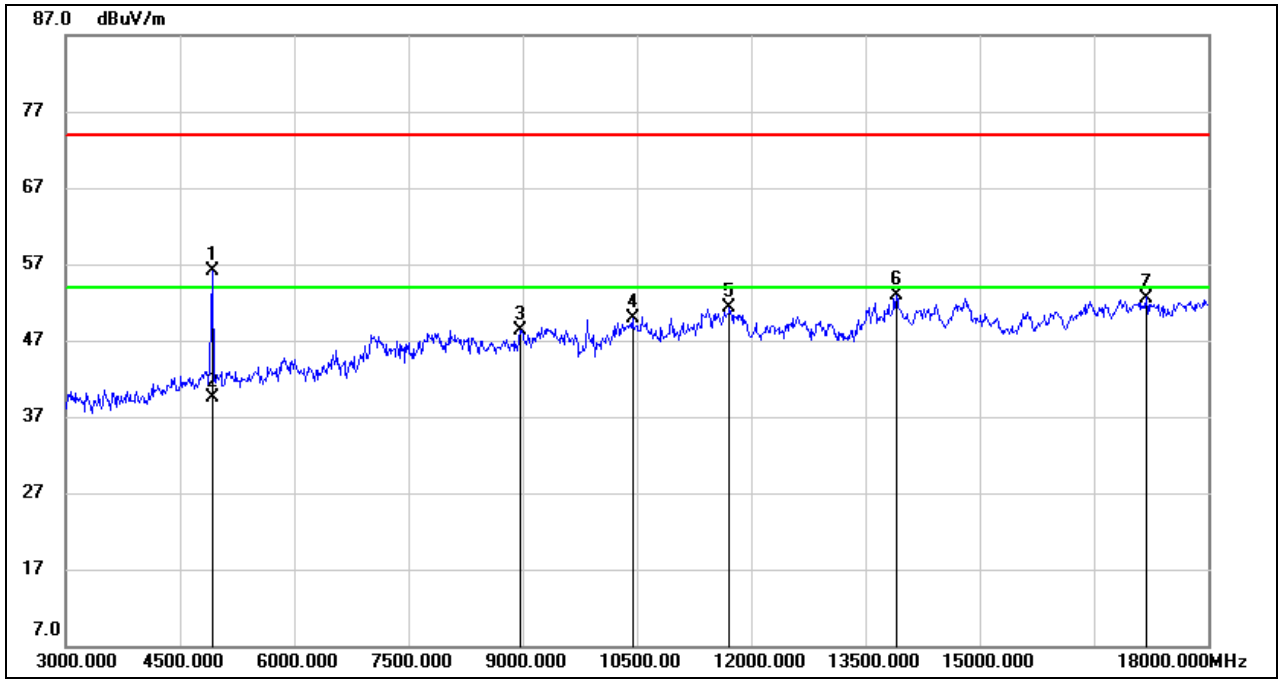
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	64.53	1.45	65.98	74.00	-8.02	peak
2	4920.000	47.44	1.45	48.89	54.00	-5.11	AVG
3	7380.000	40.37	7.79	48.16	74.00	-25.84	peak
4	11730.000	35.58	15.32	50.90	74.00	-23.10	peak
5	13920.000	33.07	18.54	51.61	74.00	-22.39	peak
6	14775.000	32.92	18.59	51.51	74.00	-22.49	peak
7	16905.000	30.39	22.00	52.39	74.00	-21.61	peak

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



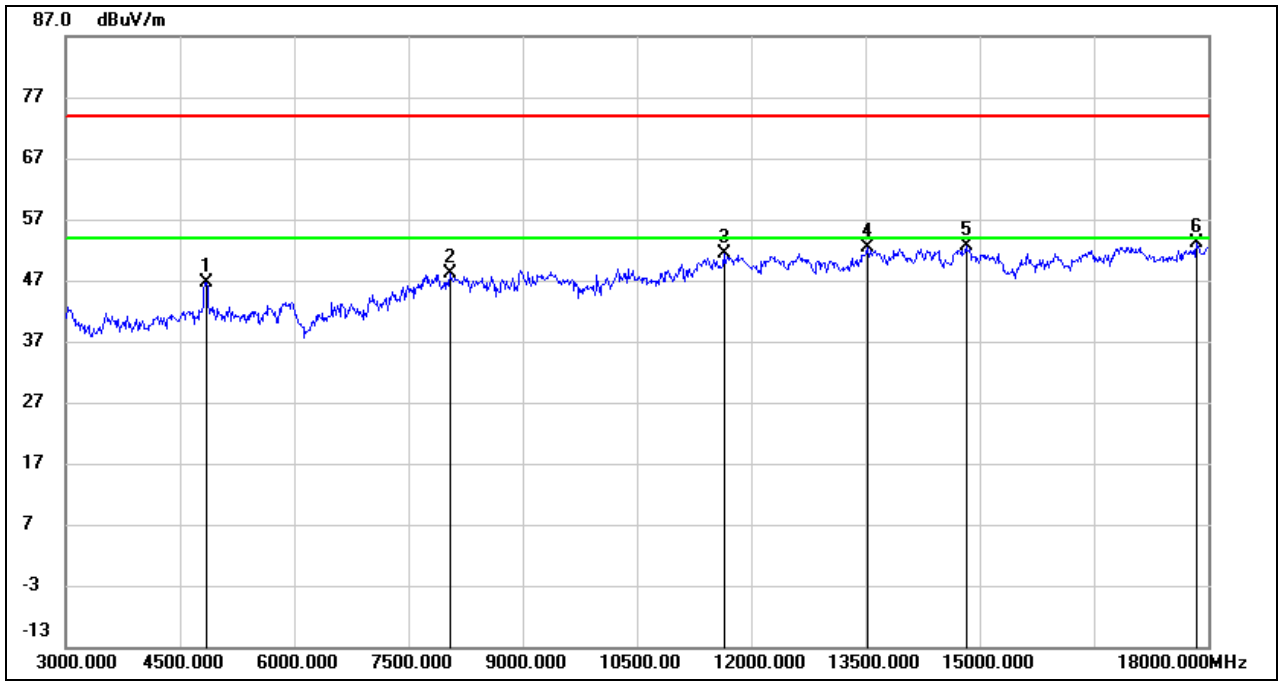
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4920.000	54.56	1.45	56.01	74.00	-17.99	peak
2	4920.000	37.97	1.45	39.42	54.00	-14.58	AVG
3	8970.000	37.60	10.70	48.30	74.00	-25.70	peak
4	10440.000	37.64	12.28	49.92	74.00	-24.08	peak
5	11715.000	35.99	15.34	51.33	74.00	-22.67	peak
6	13905.000	34.46	18.51	52.97	74.00	-21.03	peak
7	17190.000	29.96	22.64	52.60	74.00	-21.40	peak

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

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

8.3.4. 802.11n HT40 MIMO MODE

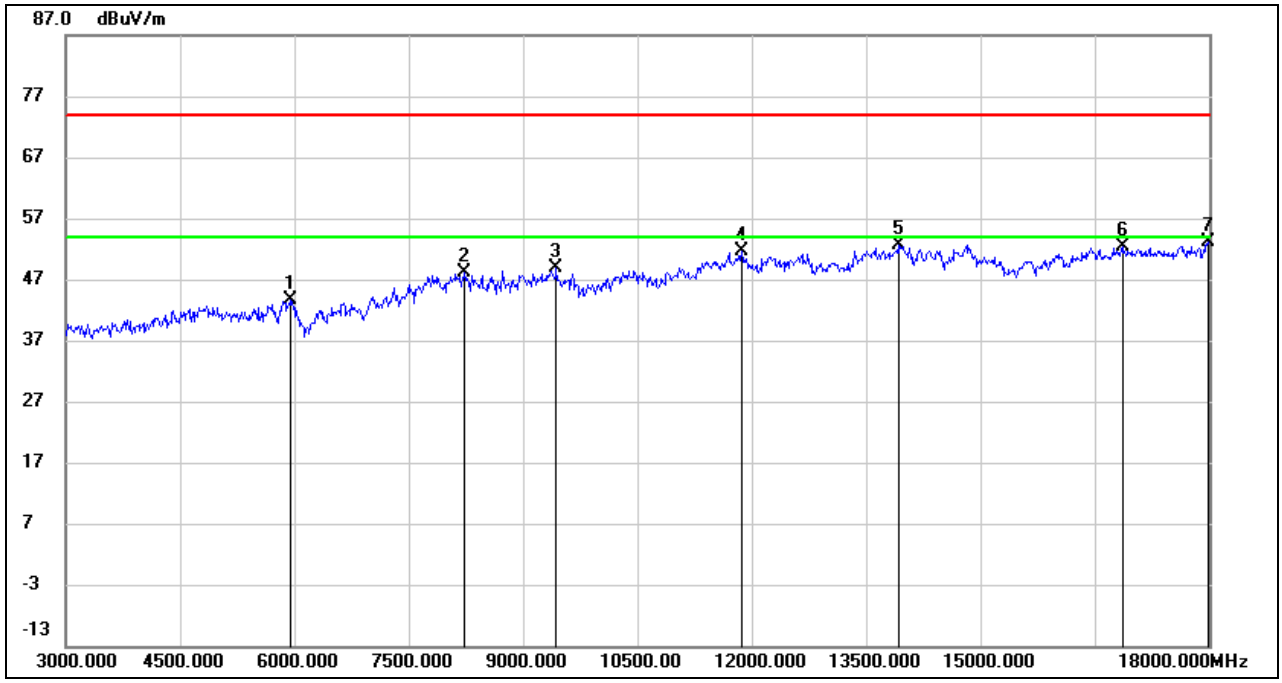
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4845.000	45.24	1.35	46.59	74.00	-27.41	peak
2	8040.000	38.93	9.25	48.18	74.00	-25.82	peak
3	11640.000	36.37	14.97	51.34	74.00	-22.66	peak
4	13530.000	34.59	17.76	52.35	74.00	-21.65	peak
5	14820.000	34.08	18.53	52.61	74.00	-21.39	peak
6	17850.000	27.93	25.29	53.22	74.00	-20.78	peak

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

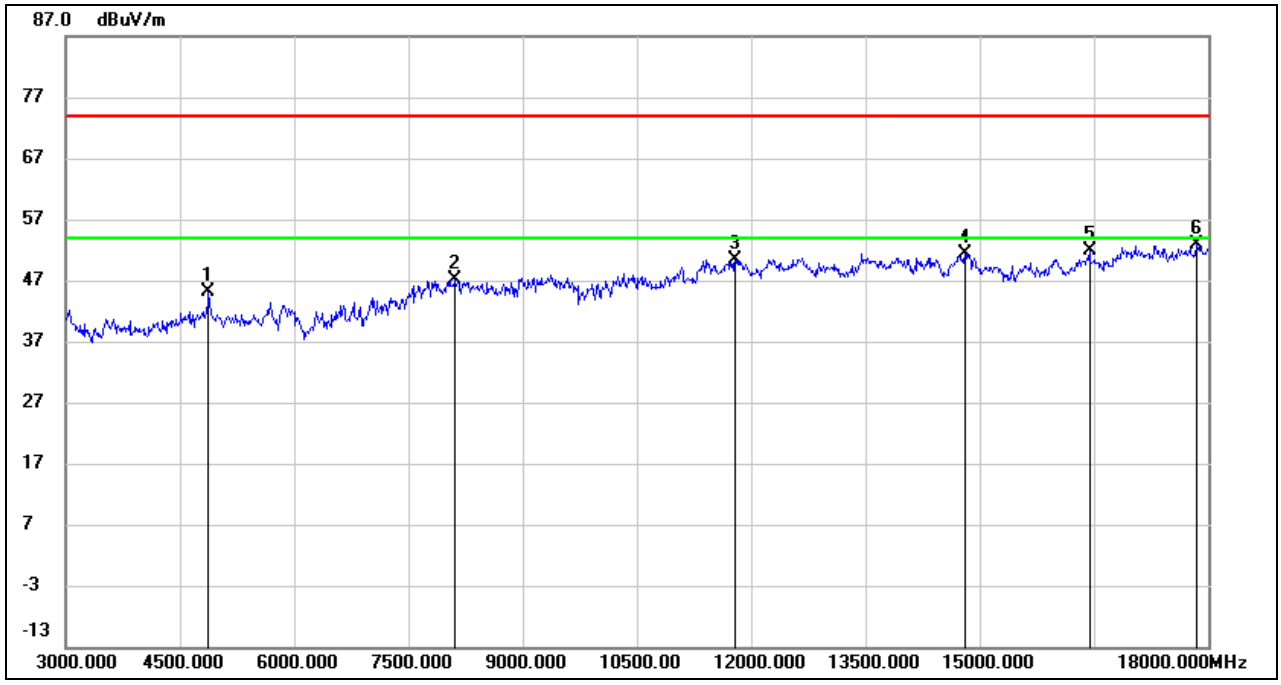
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5955.000	39.29	4.24	43.53	74.00	-30.47	peak
2	8235.000	38.35	9.76	48.11	74.00	-25.89	peak
3	9435.000	37.95	10.81	48.76	74.00	-25.24	peak
4	11865.000	36.21	15.42	51.63	74.00	-22.37	peak
5	13920.000	34.06	18.54	52.60	74.00	-21.40	peak
6	16860.000	30.65	21.66	52.31	74.00	-21.69	peak
7	17985.000	27.48	25.66	53.14	74.00	-20.86	peak

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

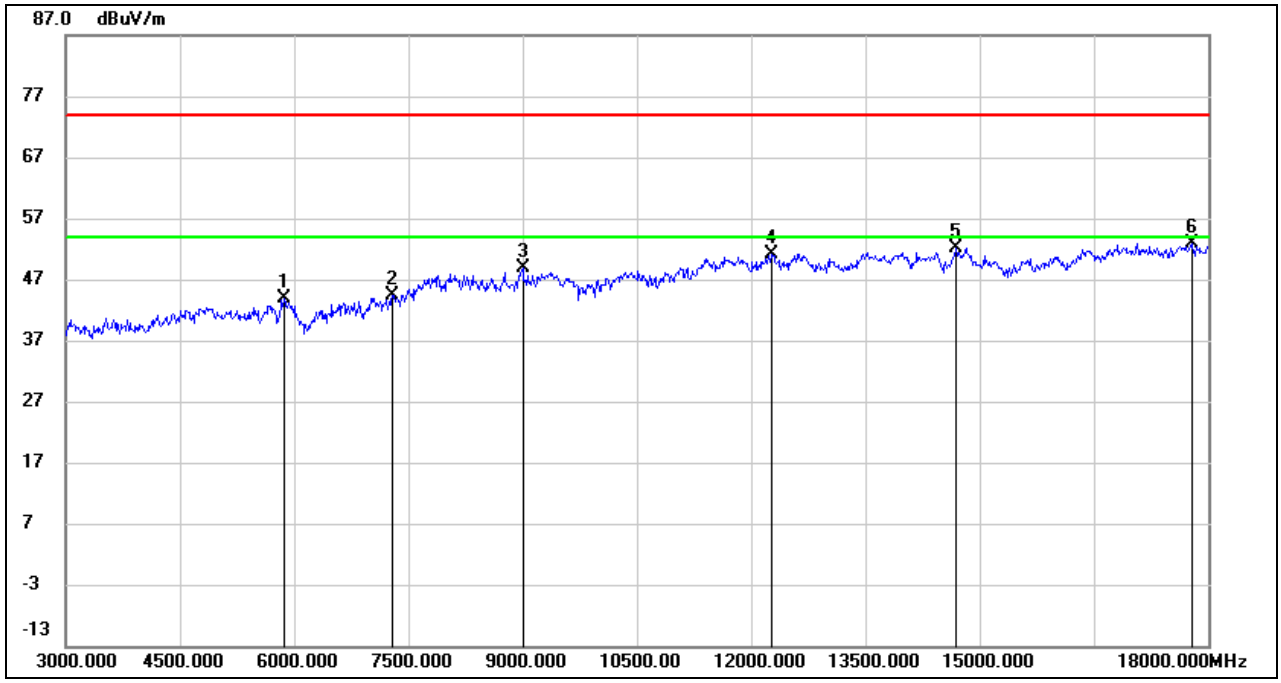
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	43.90	1.32	45.22	74.00	-28.78	peak
2	8115.000	37.11	10.13	47.24	74.00	-26.76	peak
3	11790.000	35.12	15.26	50.38	74.00	-23.62	peak
4	14805.000	33.45	18.00	51.45	74.00	-22.55	peak
5	16440.000	32.16	19.68	51.84	74.00	-22.16	peak
6	17850.000	28.85	23.97	52.82	74.00	-21.18	peak

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

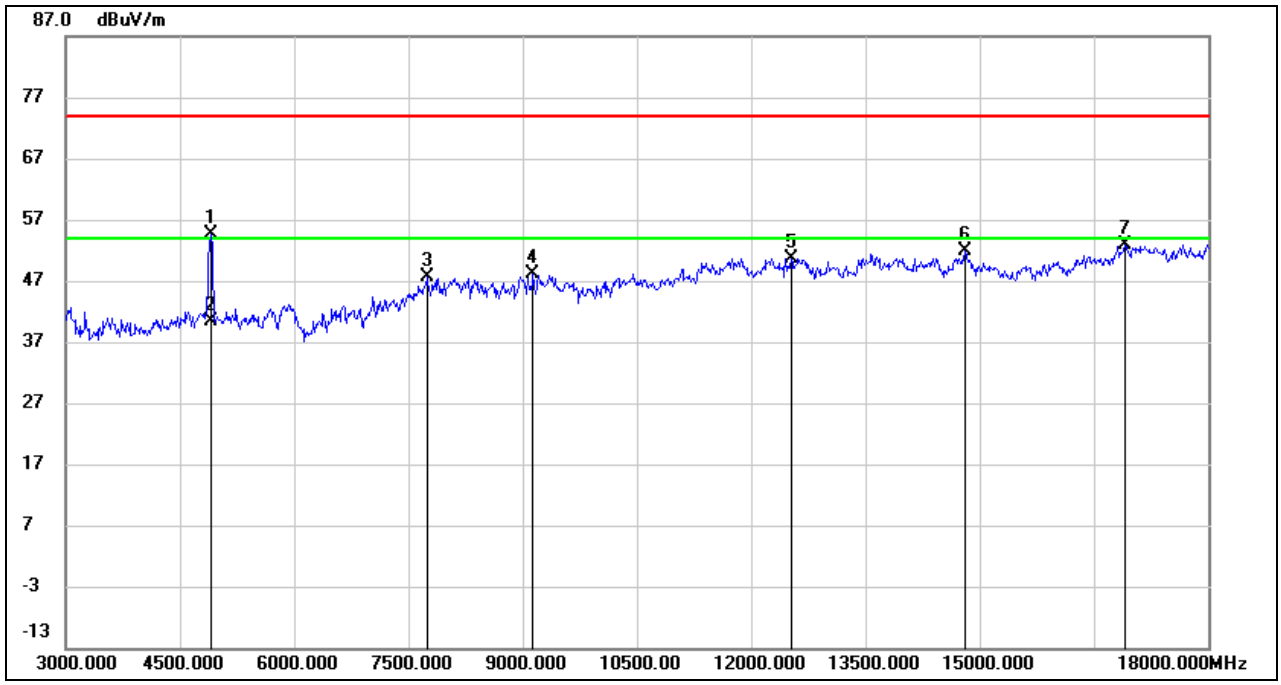
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5865.000	39.66	4.16	43.82	74.00	-30.18	peak
2	7290.000	37.24	7.12	44.36	74.00	-29.64	peak
3	9000.000	37.49	11.27	48.76	74.00	-25.24	peak
4	12270.000	35.00	16.04	51.04	74.00	-22.96	peak
5	14685.000	34.59	17.64	52.23	74.00	-21.77	peak
6	17790.000	28.78	23.99	52.77	74.00	-21.23	peak

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

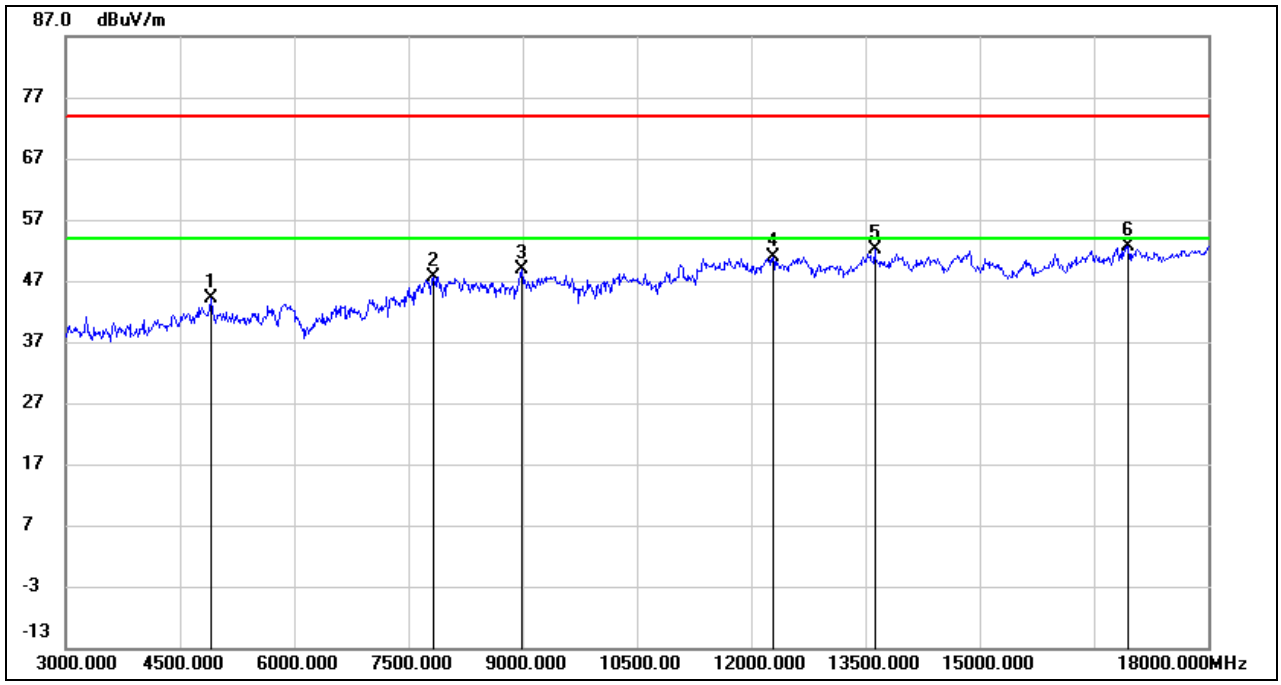
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4905.000	53.29	1.33	54.62	74.00	-19.38	peak
2	4905.000	39.03	1.33	40.36	54.00	-13.64	AVG
3	7740.000	38.73	8.81	47.54	74.00	-26.46	peak
4	9135.000	37.94	10.07	48.01	74.00	-25.99	peak
5	12525.000	34.95	15.70	50.65	74.00	-23.35	peak
6	14805.000	33.80	18.00	51.80	74.00	-22.20	peak
7	16905.000	31.25	21.55	52.80	74.00	-21.20	peak

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

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4905.000	42.85	1.33	44.18	74.00	-29.82	peak
2	7830.000	38.42	9.20	47.62	74.00	-26.38	peak
3	8985.000	37.88	10.99	48.87	74.00	-25.13	peak
4	12285.000	34.86	16.08	50.94	74.00	-23.06	peak
5	13620.000	34.86	17.19	52.05	74.00	-21.95	peak
6	16950.000	31.13	21.41	52.54	74.00	-21.46	peak

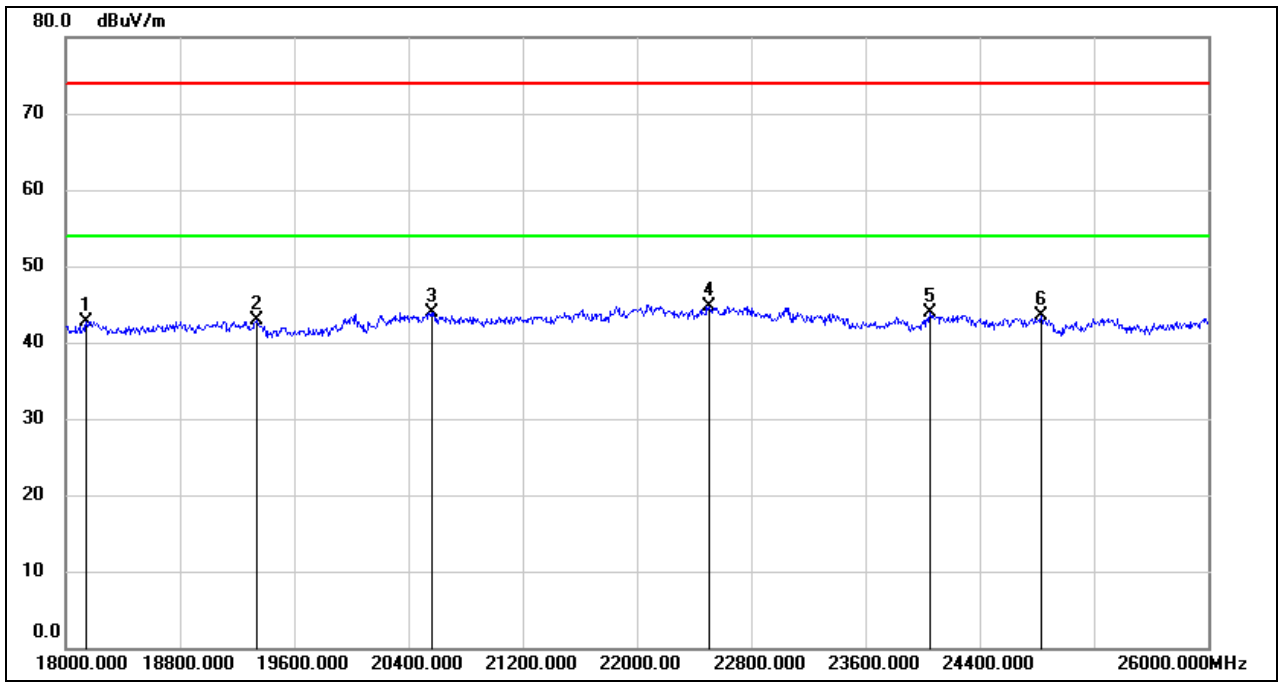
Note: 1. Peak Result = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.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

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

8.5. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

8.5.1. 802.11b SISO MODE

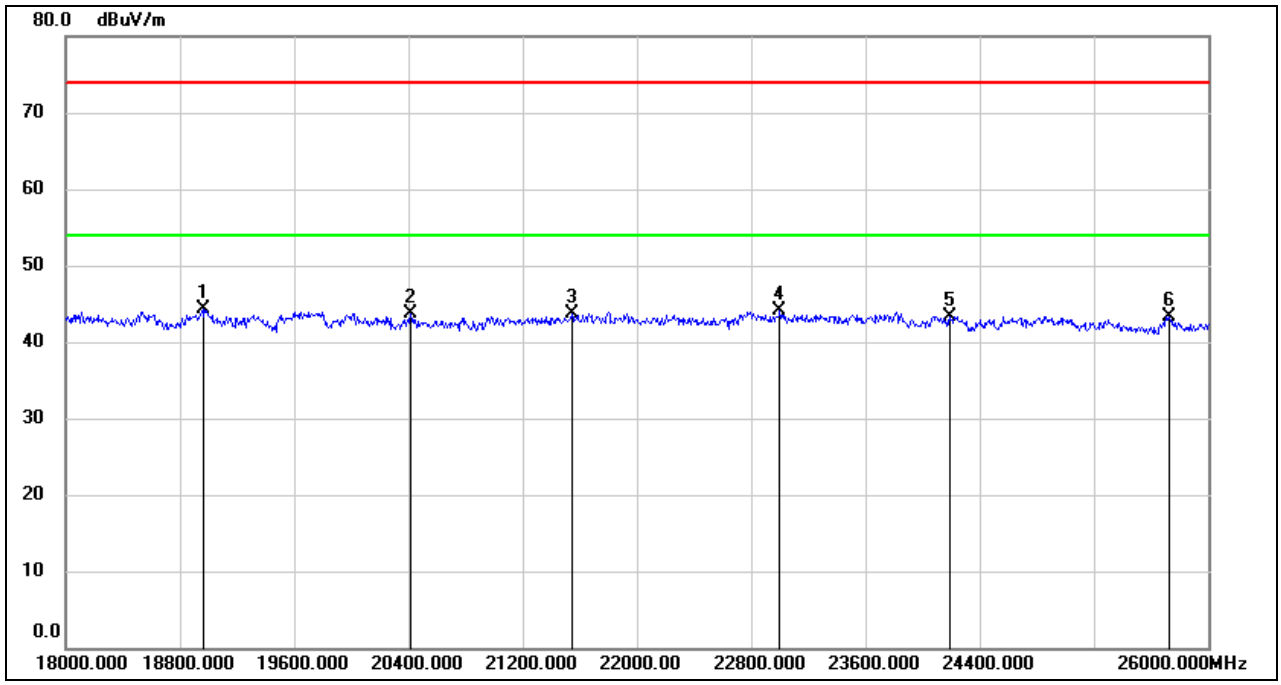
SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18144.000	48.27	-5.48	42.79	74.00	-31.21	peak
2	19336.000	48.54	-5.58	42.96	74.00	-31.04	peak
3	20560.000	49.23	-5.30	43.93	74.00	-30.07	peak
4	22504.000	48.65	-3.88	44.77	74.00	-29.23	peak
5	24048.000	46.72	-2.76	43.96	74.00	-30.04	peak
6	24832.000	45.70	-2.24	43.46	74.00	-30.54	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	18960.000	49.51	-5.25	44.26	74.00	-29.74	peak
2	20416.000	49.13	-5.45	43.68	74.00	-30.32	peak
3	21544.000	48.26	-4.63	43.63	74.00	-30.37	peak
4	23000.000	47.49	-3.44	44.05	74.00	-29.95	peak
5	24192.000	46.21	-2.81	43.40	74.00	-30.60	peak
6	25728.000	44.11	-0.72	43.39	74.00	-30.61	peak

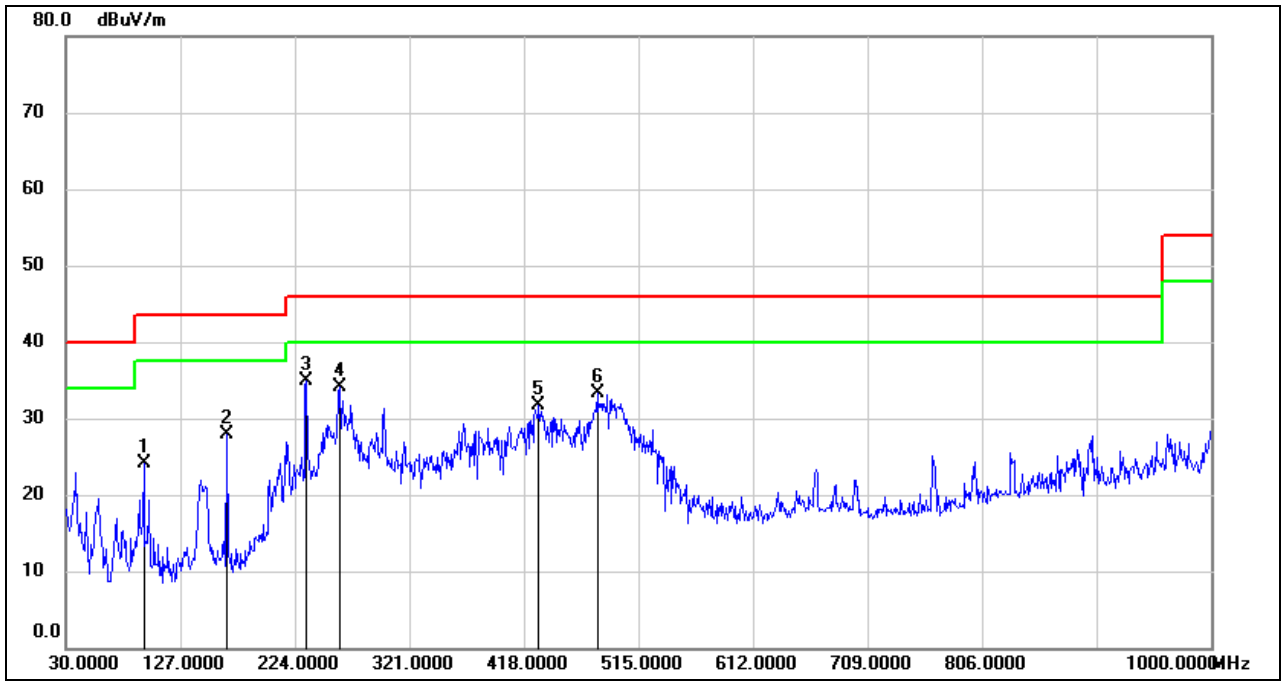
Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

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

8.6. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

8.6.1. 802.11b SISO MODE

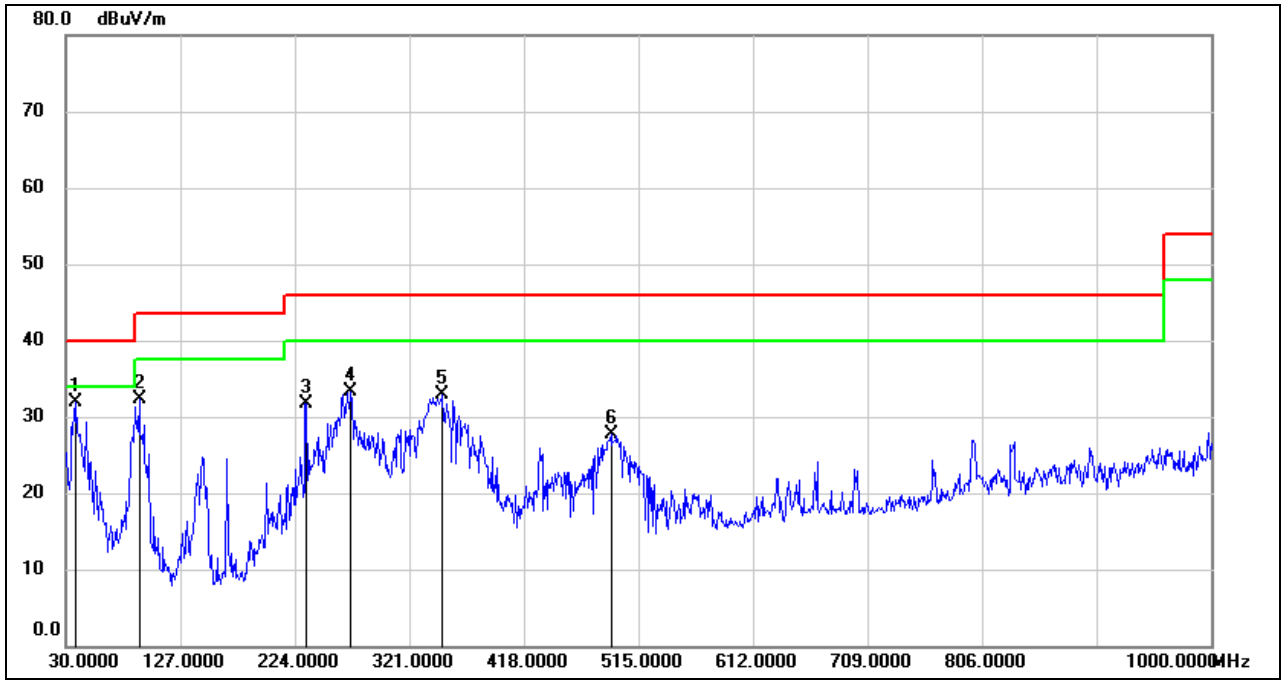
SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	45.47	-21.34	24.13	43.50	-19.37	QP
2	166.7700	45.04	-17.22	27.82	43.50	-15.68	QP
3	233.7000	52.65	-17.66	34.99	46.00	-11.01	QP
4	261.8299	50.06	-15.90	34.16	46.00	-11.84	QP
5	430.6100	43.76	-12.13	31.63	46.00	-14.37	QP
6	480.0800	44.64	-11.26	33.38	46.00	-12.62	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	38.7300	49.62	-17.80	31.82	40.00	-8.18	QP
2	92.0800	53.32	-21.09	32.23	43.50	-11.27	QP
3	233.7000	49.44	-17.66	31.78	46.00	-14.22	QP
4	271.5300	48.93	-15.55	33.38	46.00	-12.62	QP
5	349.1300	46.47	-13.53	32.94	46.00	-13.06	QP
6	491.7200	38.74	-10.96	27.78	46.00	-18.22	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

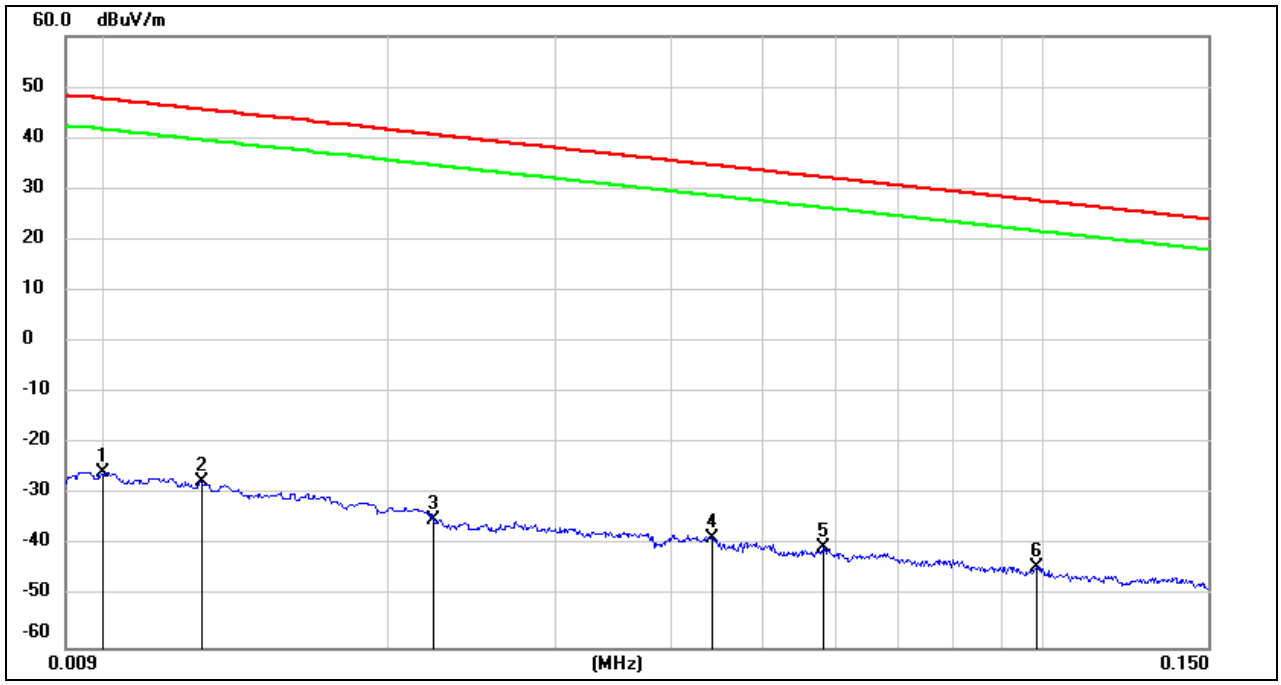
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

8.7. SPURIOUS EMISSIONS BELOW 30 MHz

8.7.1. 802.11b SISO MODE

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

9 kHz~ 150 kHz



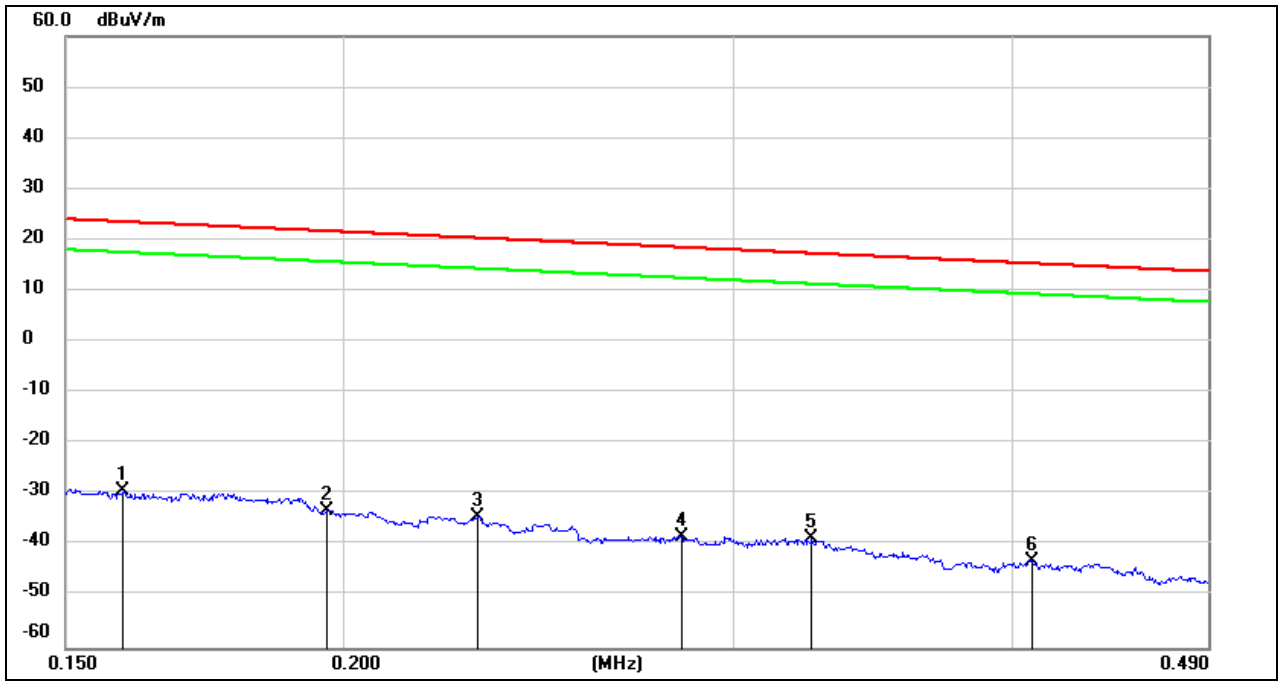
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0100	75.72	-101.40	-25.68	47.6	-77.18	-3.90	-73.28	peak
2	0.0126	73.93	-101.38	-27.45	45.59	-78.95	-5.91	-73.04	peak
3	0.0223	66.29	-101.35	-35.06	40.63	-86.56	-10.87	-75.69	peak
4	0.0442	62.87	-101.45	-38.58	34.69	-90.08	-16.81	-73.27	peak
5	0.0582	61.26	-101.51	-40.25	32.3	-91.75	-19.20	-72.55	peak
6	0.0985	57.55	-101.78	-44.23	27.73	-95.73	-23.77	-71.96	peak

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

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.

150 kHz ~ 490 kHz



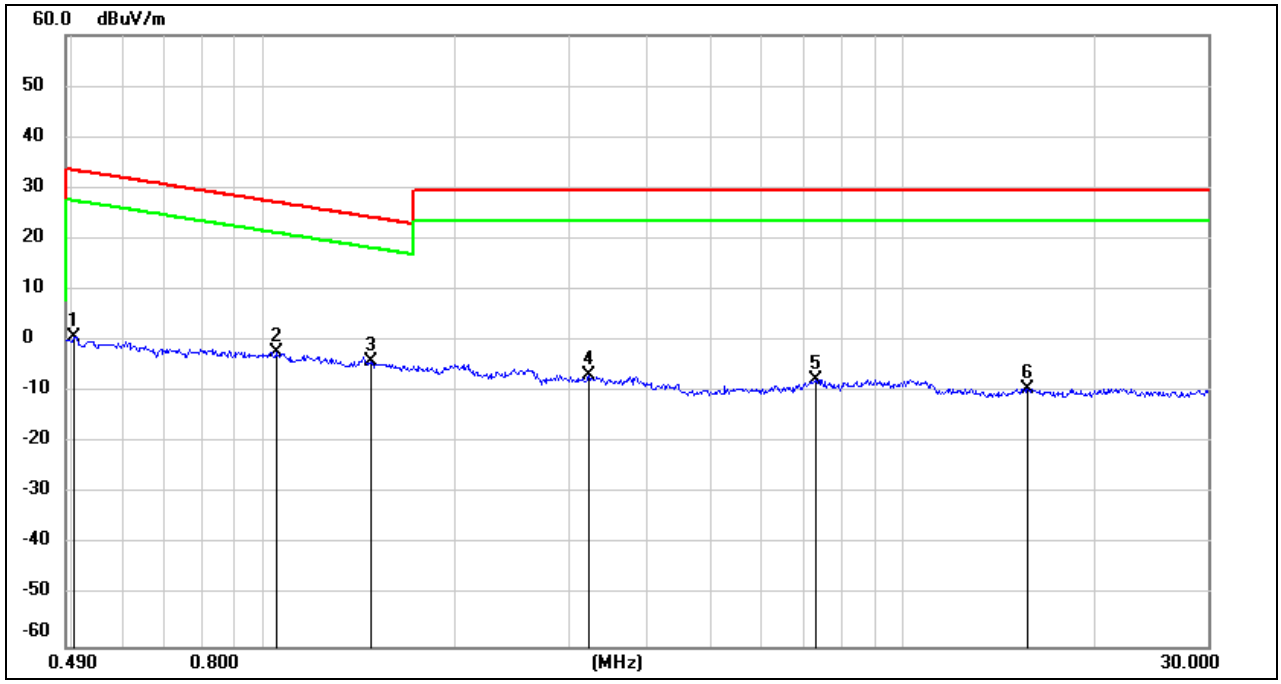
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1592	72.35	-101.65	-29.3	23.56	-80.80	-27.94	-52.86	peak
2	0.1966	68.68	-101.71	-33.03	21.73	-84.53	-29.77	-54.76	peak
3	0.2300	67.53	-101.77	-34.24	20.37	-85.74	-31.13	-54.61	peak
4	0.2837	63.72	-101.83	-38.11	18.54	-89.61	-32.96	-56.65	peak
5	0.3251	63.21	-101.88	-38.67	17.36	-90.17	-34.14	-56.03	peak
6	0.4087	58.84	-101.97	-43.13	15.37	-94.63	-36.13	-58.50	peak

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

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.

490 kHz ~ 30 MHz



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.5039	62.93	-62.07	0.86	33.56	-50.64	-17.94	-32.70	peak
2	1.0443	60.03	-62.25	-2.22	27.23	-53.72	-24.27	-29.45	peak
3	1.4700	57.89	-62.05	-4.16	24.26	-55.66	-27.24	-28.42	peak
4	3.2343	54.79	-61.53	-6.74	29.54	-58.24	-21.96	-36.28	peak
5	7.3361	53.58	-61.17	-7.59	29.54	-59.09	-21.96	-37.13	peak
6	15.7172	51.66	-60.99	-9.33	29.54	-60.83	-21.96	-38.87	peak

Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120π] = dBuV/m- 51.5).

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

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

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

9. AC POWER LINE CONDUCTED EMISSIONS

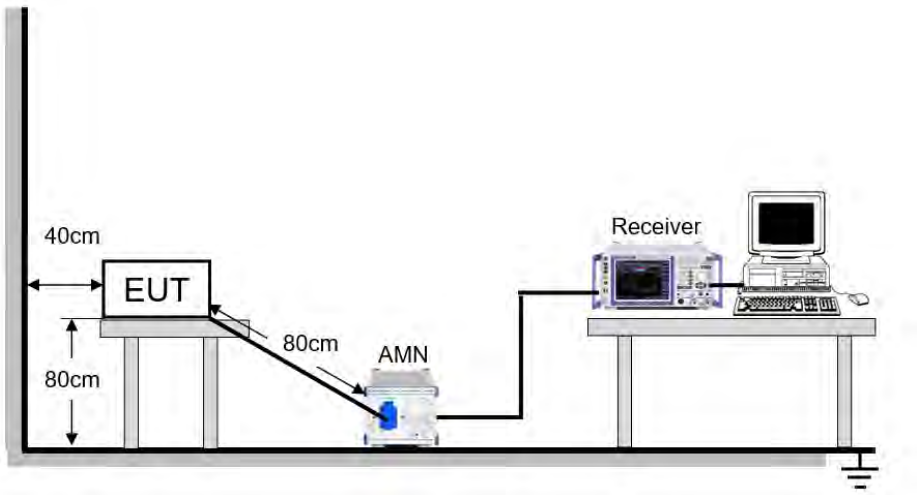
LIMITS

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

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

TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.



The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm 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 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

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.

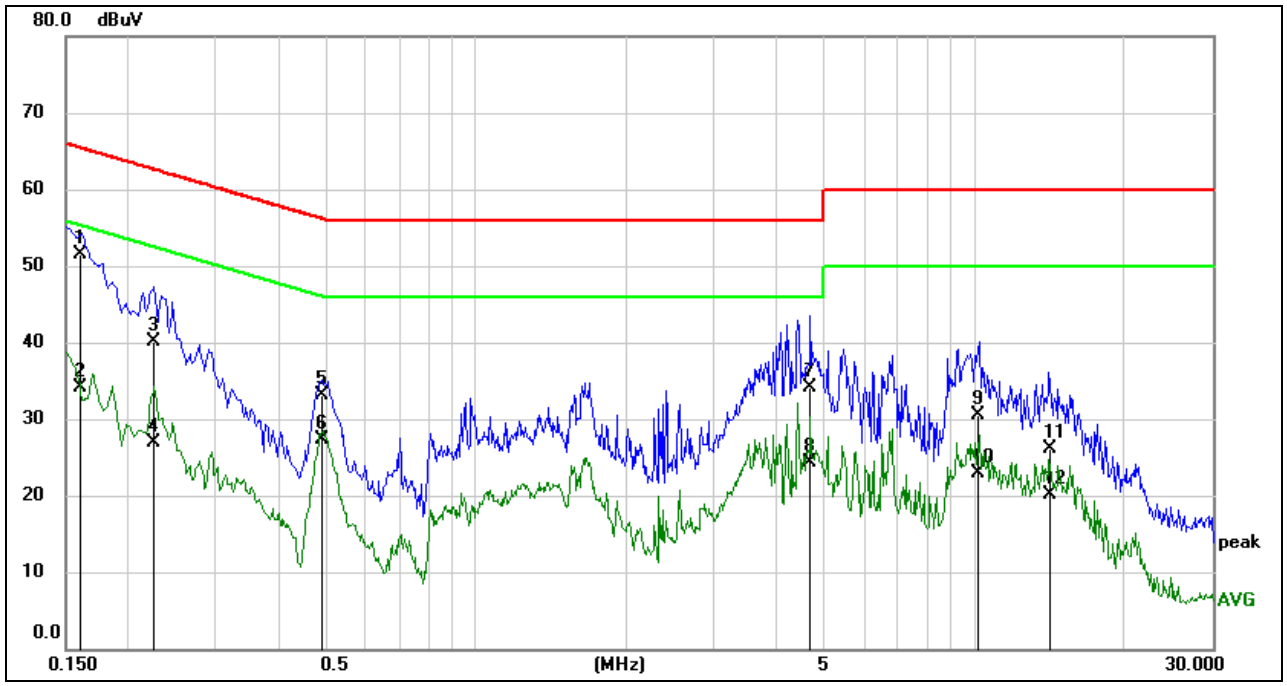
TEST ENVIRONMENT

Temperature	23.6 °C	Relative Humidity	59.1 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

9.1. 802.11b SISO MODE

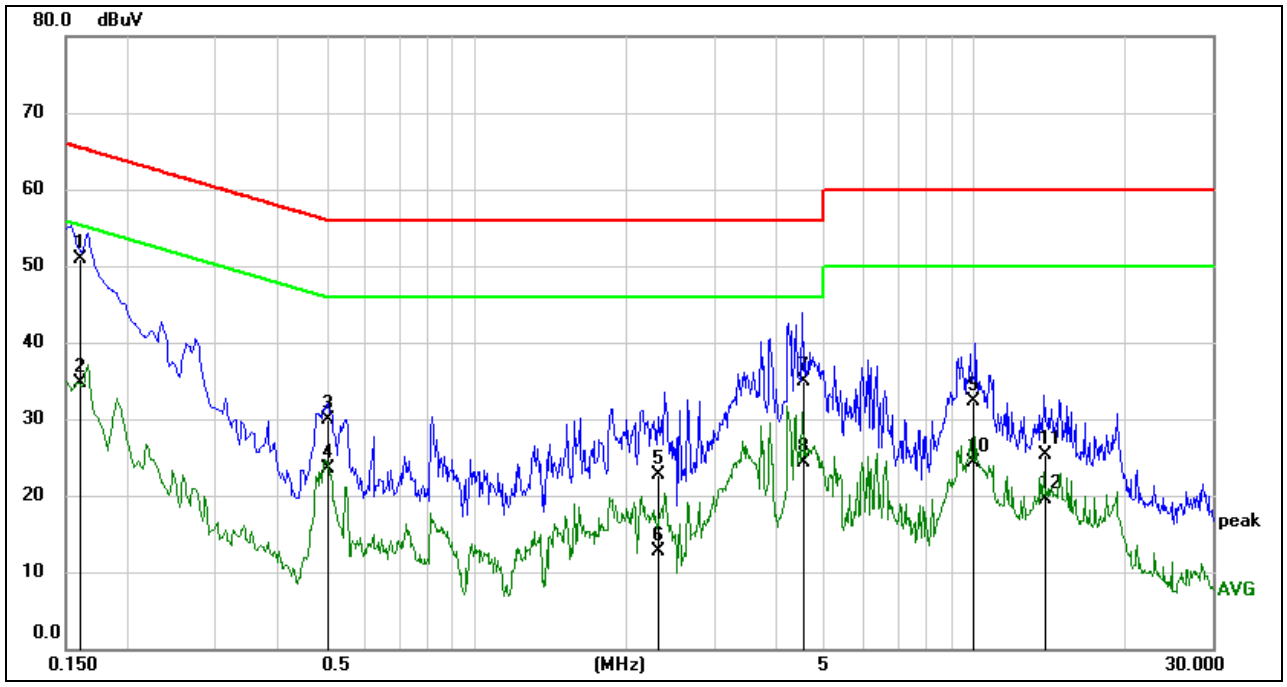
LINE N RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1592	41.87	9.59	51.46	65.51	-14.05	QP
2	0.1592	24.43	9.59	34.02	55.51	-21.49	AVG
3	0.2241	30.57	9.59	40.16	62.67	-22.51	QP
4	0.2241	17.41	9.59	27.00	52.67	-25.67	AVG
5	0.4916	23.50	9.60	33.10	56.14	-23.04	QP
6	0.4916	17.70	9.60	27.30	46.14	-18.84	AVG
7	4.6674	24.59	9.61	34.20	56.00	-21.80	QP
8	4.6674	14.78	9.61	24.39	46.00	-21.61	AVG
9	10.1465	20.98	9.62	30.60	60.00	-29.40	QP
10	10.1465	13.27	9.62	22.89	50.00	-27.11	AVG
11	14.1557	16.50	9.66	26.16	60.00	-33.84	QP
12	14.1557	10.37	9.66	20.03	50.00	-29.97	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: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), 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	0.1614	41.30	9.59	50.89	65.39	-14.50	QP
2	0.1614	25.21	9.59	34.80	55.39	-20.59	AVG
3	0.5010	20.27	9.60	29.87	56.00	-26.13	QP
4	0.5010	13.99	9.60	23.59	46.00	-22.41	AVG
5	2.3121	13.02	9.63	22.65	56.00	-33.35	QP
6	2.3121	3.12	9.63	12.75	46.00	-33.25	AVG
7	4.5450	25.21	9.61	34.82	56.00	-21.18	QP
8	4.5450	14.78	9.61	24.39	46.00	-21.61	AVG
9	10.0161	22.73	9.62	32.35	60.00	-27.65	QP
10	10.0161	14.64	9.62	24.26	50.00	-25.74	AVG
11	13.8630	15.72	9.66	25.38	60.00	-34.62	QP
12	13.8630	9.86	9.66	19.52	50.00	-30.48	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: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

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

10. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

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

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

RESULTS

Complies

11. Appendix

11.1. Appendix A: DTS Bandwidth

11.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant0	2412	9.600	2407.000	2416.600	0.5	PASS
	Ant1	2412	8.680	2407.960	2416.640	0.5	PASS
	Ant0	2437	8.160	2432.960	2441.120	0.5	PASS
	Ant1	2437	9.160	2432.480	2441.640	0.5	PASS
	Ant0	2462	8.640	2457.480	2466.120	0.5	PASS
	Ant1	2462	8.640	2457.440	2466.080	0.5	PASS
11G	Ant0	2412	16.400	2403.840	2420.240	0.5	PASS
	Ant1	2412	16.360	2403.880	2420.240	0.5	PASS
	Ant0	2437	16.400	2428.840	2445.240	0.5	PASS
	Ant1	2437	16.400	2428.840	2445.240	0.5	PASS
	Ant0	2462	16.200	2454.000	2470.200	0.5	PASS
	Ant1	2462	16.400	2453.840	2470.240	0.5	PASS
11N20MIMO	Ant0	2412	17.000	2403.680	2420.680	0.5	PASS
	Ant1	2412	17.000	2403.640	2420.640	0.5	PASS
	Ant0	2437	17.000	2428.680	2445.680	0.5	PASS
	Ant1	2437	16.240	2429.440	2445.680	0.5	PASS
	Ant0	2462	17.120	2453.560	2470.680	0.5	PASS
	Ant1	2462	17.000	2453.680	2470.680	0.5	PASS
11N40MIMO	Ant0	2422	36.240	2403.840	2440.080	0.5	PASS
	Ant1	2422	36.480	2403.840	2440.320	0.5	PASS
	Ant0	2437	35.680	2419.240	2454.920	0.5	PASS
	Ant1	2437	35.920	2419.160	2455.080	0.5	PASS
	Ant0	2452	36.160	2433.920	2470.080	0.5	PASS
	Ant1	2452	35.920	2434.160	2470.080	0.5	PASS

11.1.2. Test Graphs

11B_Ant0_2412

11B_Ant1_2412

11B_Ant0_2437

11B_Ant1_2437

11B_Ant0_2462

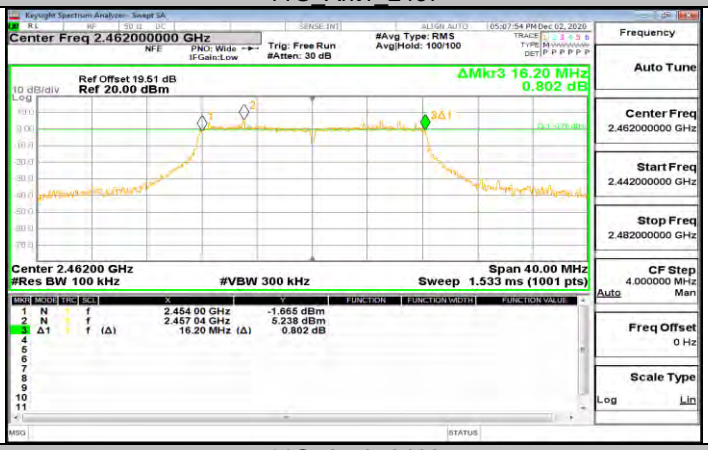
11B_Ant1_2462

11G_Ant0_2412

11G_Ant1_2412

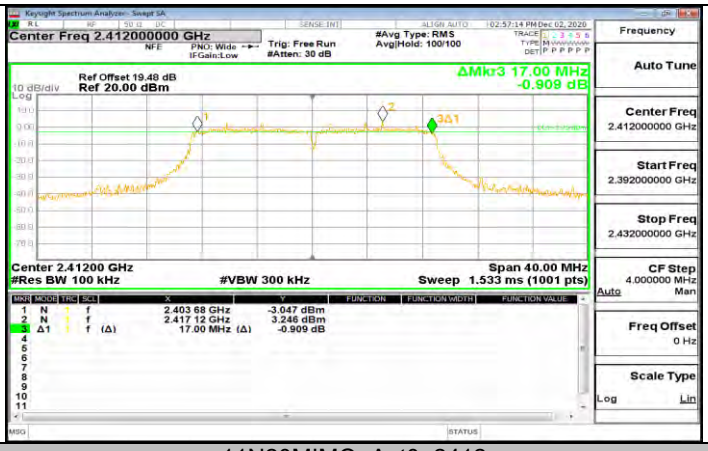
11G_Ant0_2437

11G_Ant1_2437



11G_Ant0_2462

11G_Ant1_2462

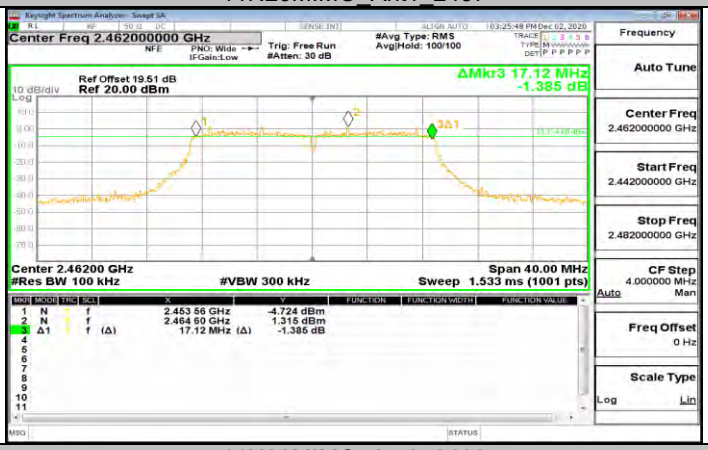


11N20MIMO_Ant0_2412

11N20MIMO_Ant1_2412

11N20MIMO_Ant0_2437

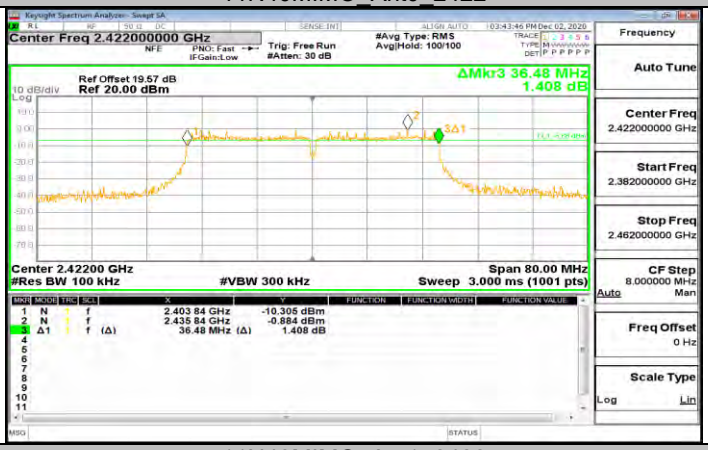
11N20MIMO_Ant1_2437



11N20MIMO_Ant0_2462

11N20MIMO_Ant1_2462

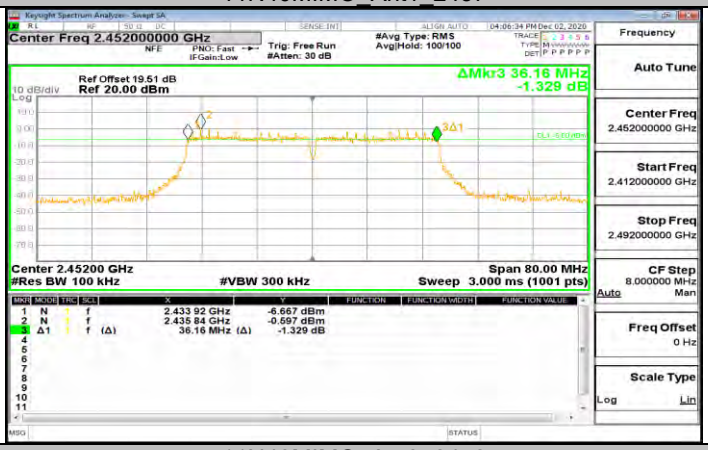
11N40MIMO_Ant0_2422



11N40MIMO_Ant1_2422

11N40MIMO_Ant0_2437

11N40MIMO_Ant1_2437



11N40MIMO_Ant0_2452

11N40MIMO_Ant1_2452

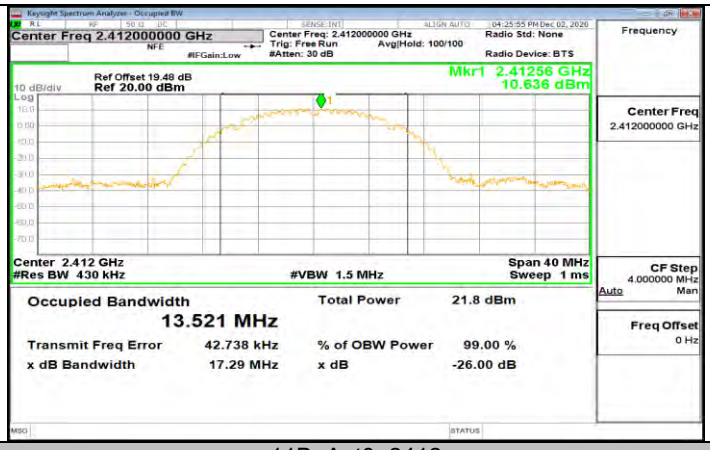
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

11.2. Appendix B: Occupied Channel Bandwidth

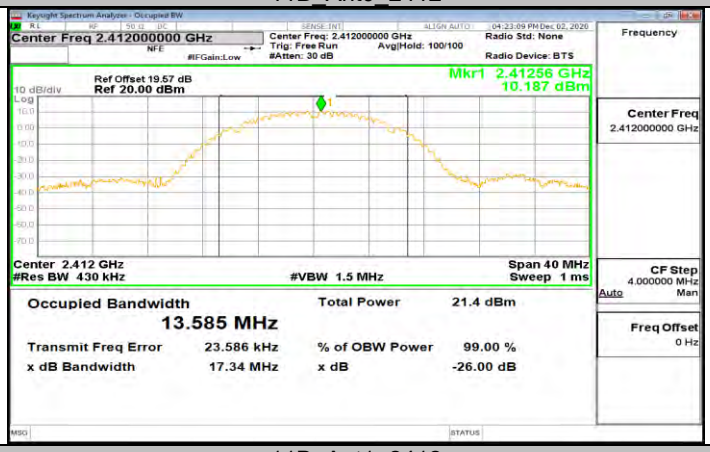
11.2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
11B	Ant0	2412	13.521	2405.282	2418.803	PASS
	Ant1	2412	13.585	2405.231	2418.816	PASS
	Ant0	2437	13.507	2430.278	2443.785	PASS
	Ant1	2437	13.515	2430.270	2443.785	PASS
	Ant0	2462	13.531	2455.241	2468.772	PASS
	Ant1	2462	13.539	2455.243	2468.782	PASS
11G	Ant0	2412	16.854	2403.630	2420.484	PASS
	Ant1	2412	16.906	2403.617	2420.523	PASS
	Ant0	2437	16.882	2428.621	2445.503	PASS
	Ant1	2437	16.882	2428.617	2445.499	PASS
	Ant0	2462	16.858	2453.597	2470.455	PASS
	Ant1	2462	16.873	2453.657	2470.530	PASS
11N20MIMO	Ant0	2412	17.887	2403.177	2421.064	PASS
	Ant1	2412	17.867	2403.182	2421.049	PASS
	Ant0	2437	17.842	2428.180	2446.022	PASS
	Ant1	2437	17.905	2428.177	2446.082	PASS
	Ant0	2462	17.917	2453.139	2471.056	PASS
	Ant1	2462	17.857	2453.182	2471.039	PASS
11N40MIMO	Ant0	2422	36.853	2403.792	2440.645	PASS
	Ant1	2422	36.794	2403.794	2440.588	PASS
	Ant0	2437	36.724	2418.805	2455.529	PASS
	Ant1	2437	36.800	2418.742	2455.542	PASS
	Ant0	2452	36.864	2433.756	2470.620	PASS
	Ant1	2452	36.835	2433.777	2470.612	PASS

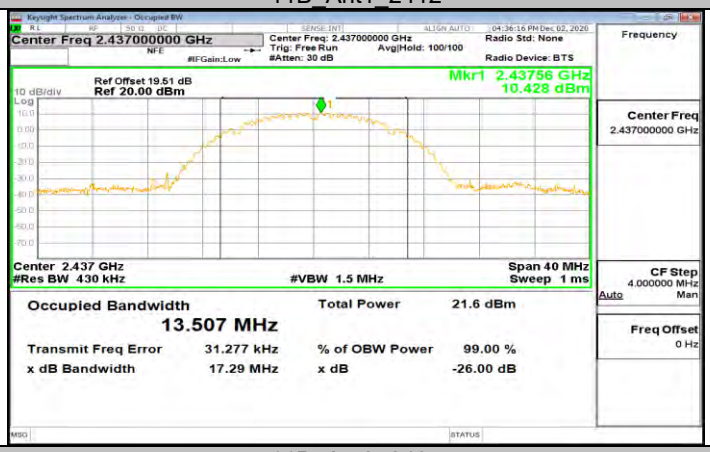
11.2.2. Test Graphs



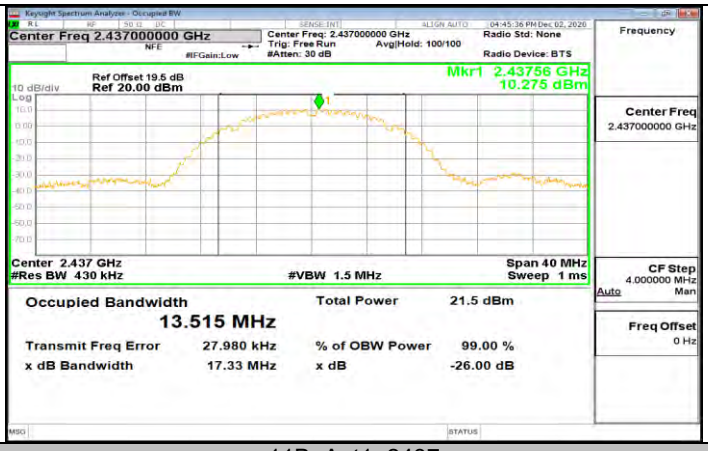
11B_Ant0_2412



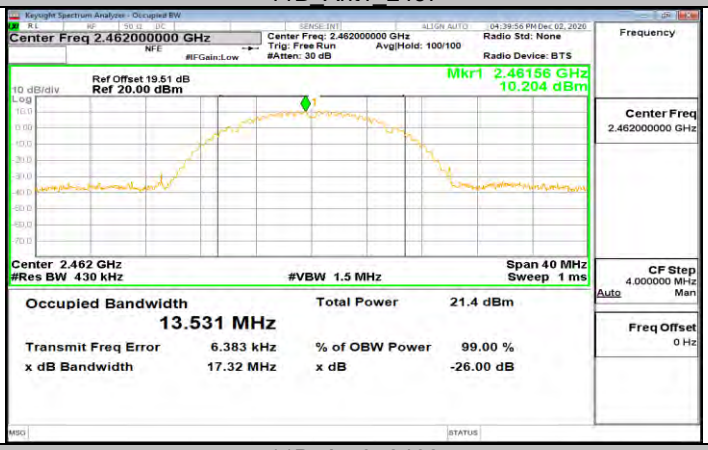
11B_Ant1_2412



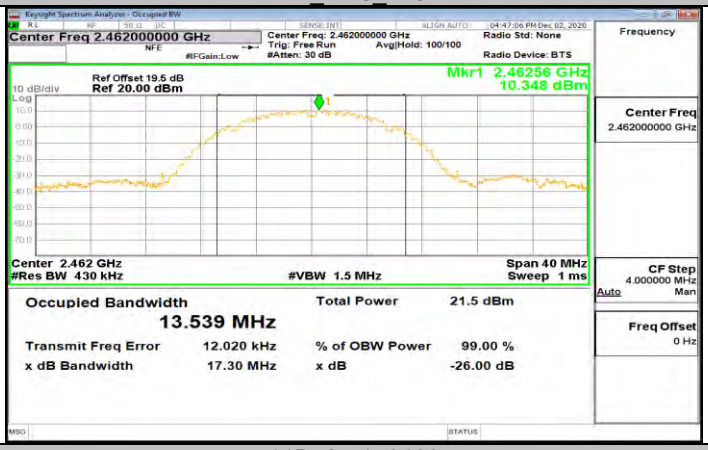
11B_Ant0_2437



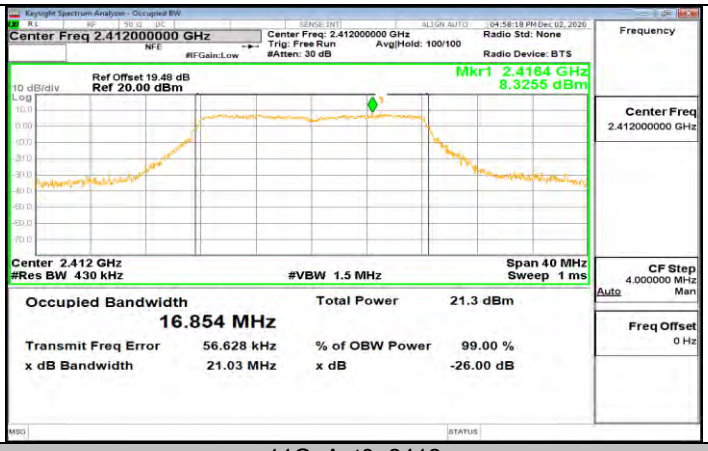
11B_Ant1_2437



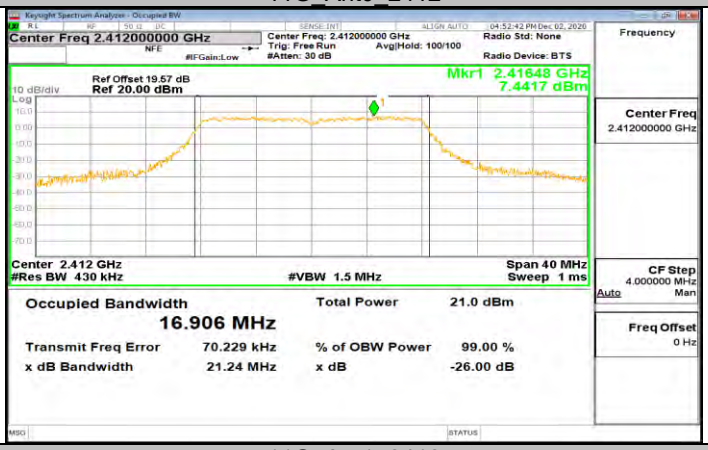
11B_Ant0_2462



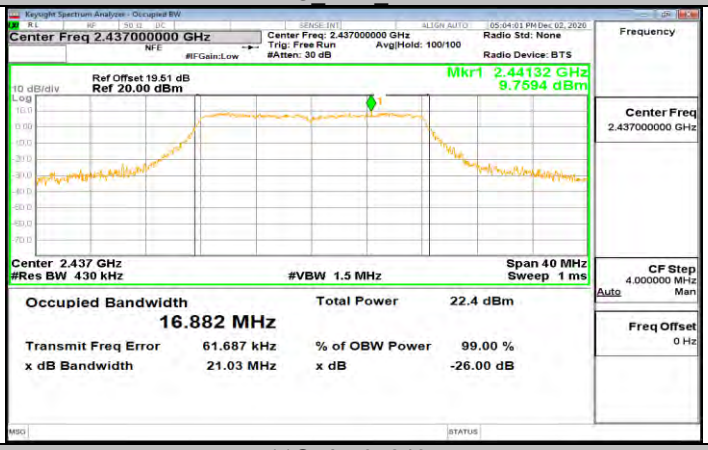
11B_Ant1_2462



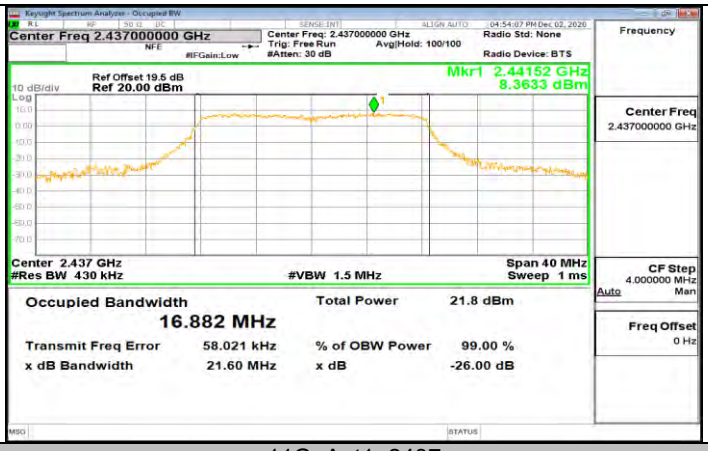
11G_Ant0_2412



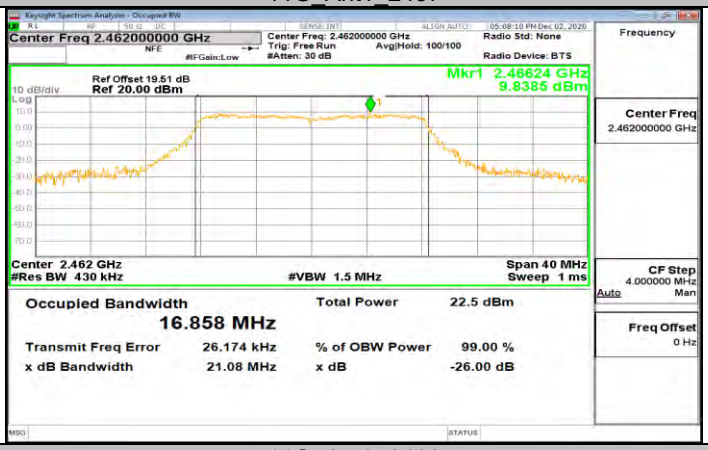
11G_Ant1_2412



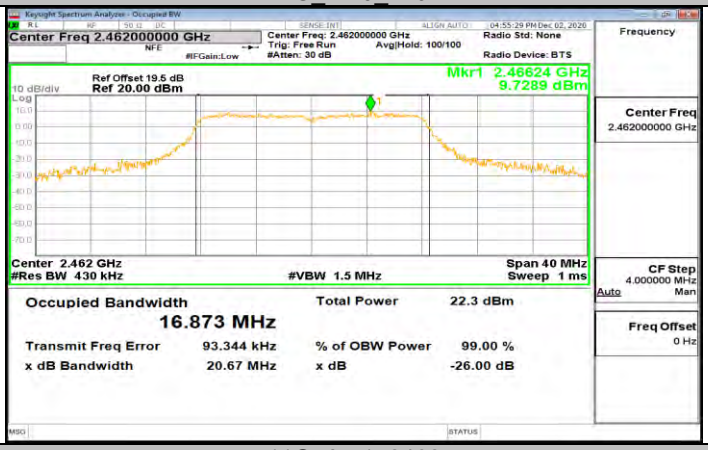
11G_Ant0_2437



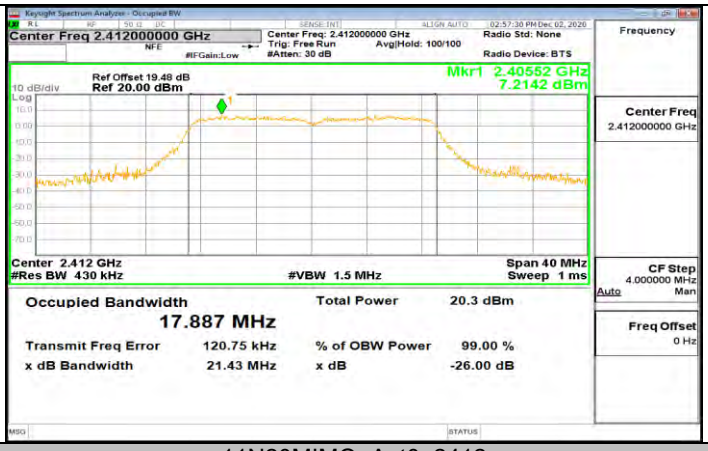
11G_Ant1_2437



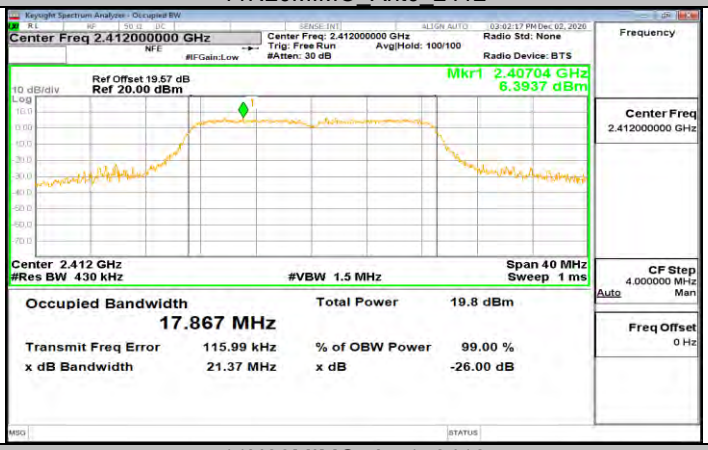
11G_Ant0_2462



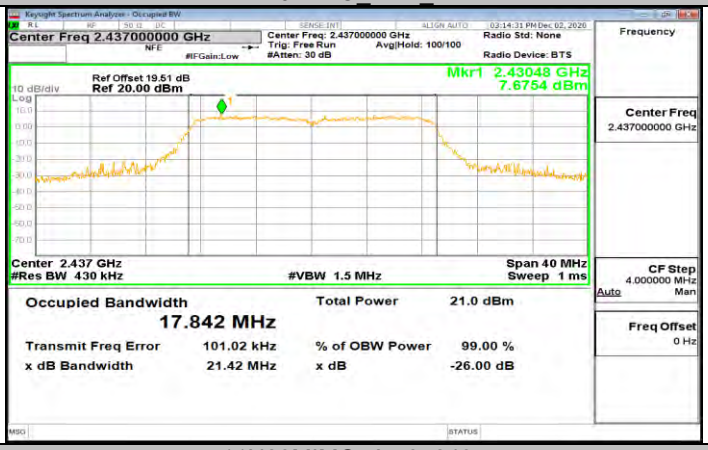
11G_Ant1_2462



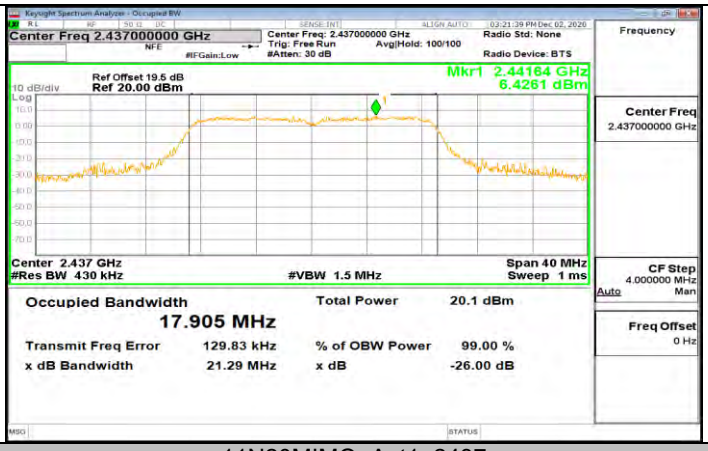
11N20MIMO_Ant0_2412



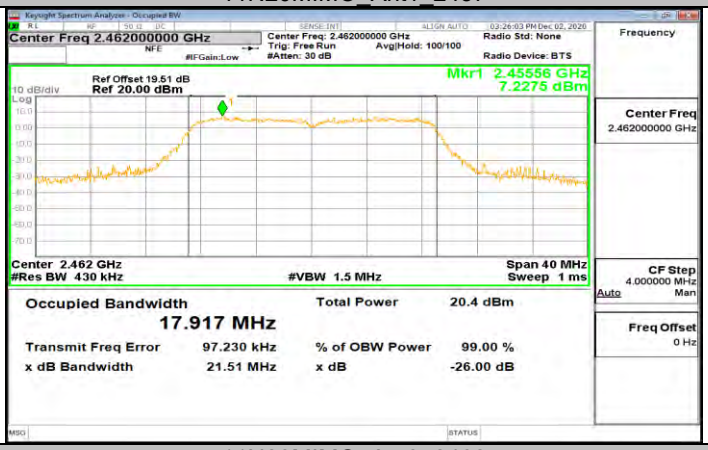
11N20MIMO_Ant1_2412



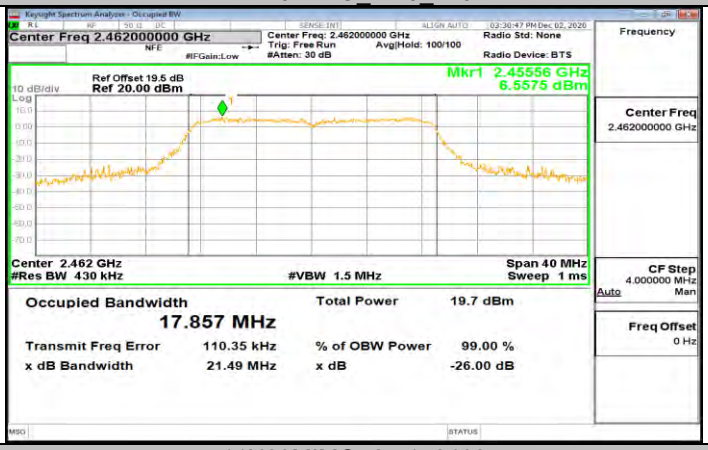
11N20MIMO_Ant0_2437



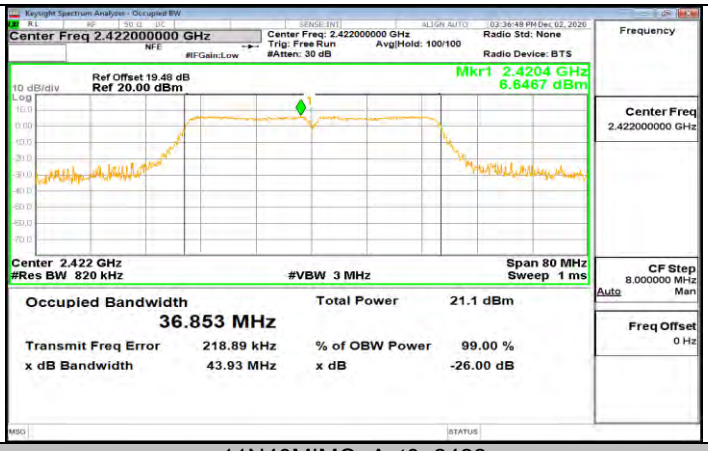
11N20MIMO_Ant1_2437



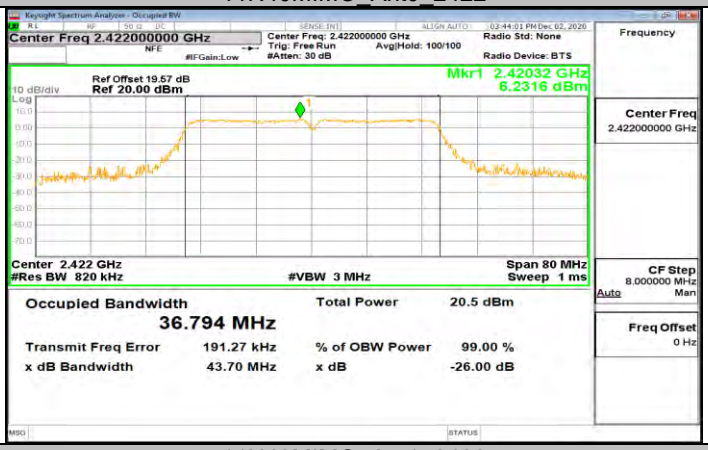
11N20MIMO_Ant0_2462



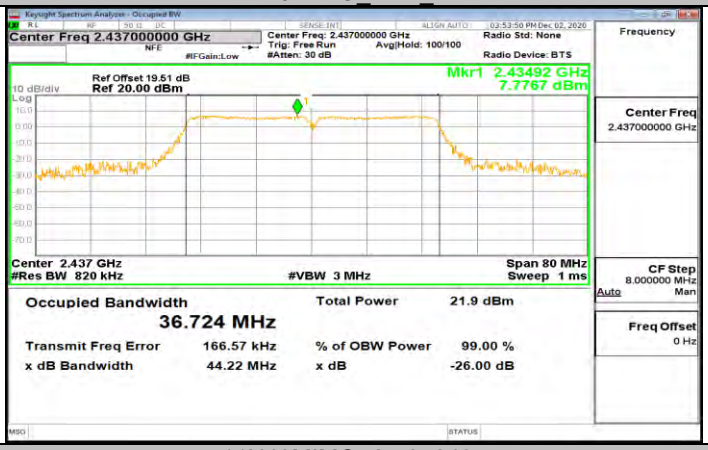
11N20MIMO_Ant1_2462



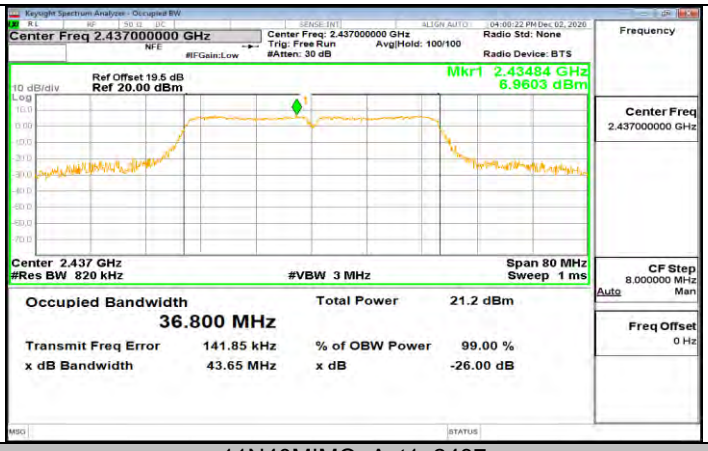
11N40MIMO_Ant0_2422



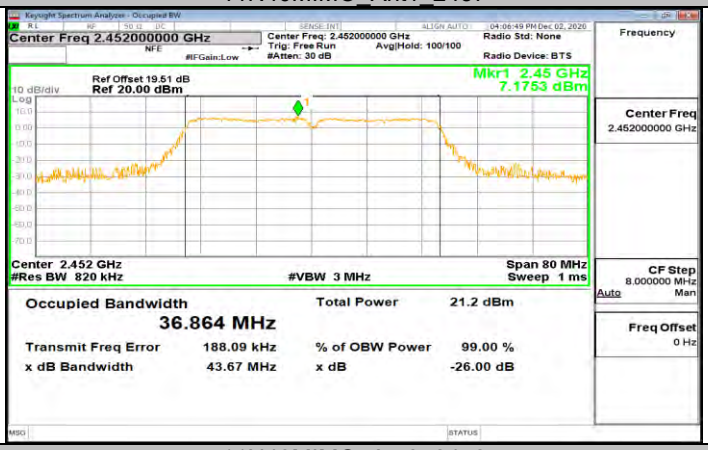
11N40MIMO_Ant1_2422



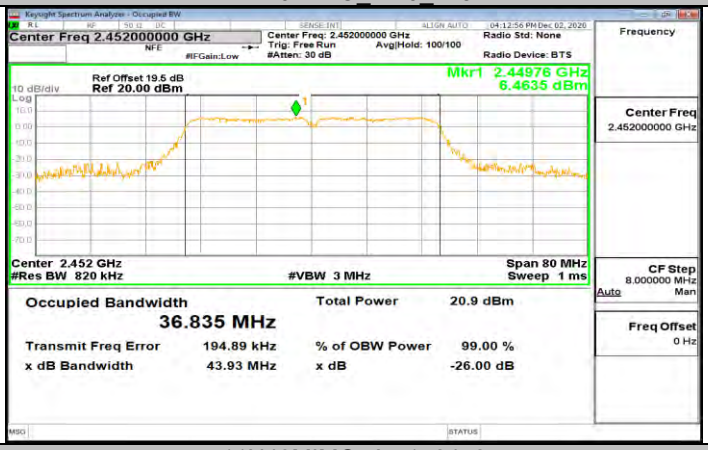
11N40MIMO_Ant0_2437



11N40MIMO_Ant1_2437



11N40MIMO_Ant0_2452



11N40MIMO_Ant1_2452

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

11.3. Appendix C: Maximum AVG conducted output power

11.3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant0	2412	14.05	<=30	PASS
	Ant1	2412	14.17	<=30	PASS
	Ant0	2437	12.56	<=30	PASS
	Ant1	2437	13.85	<=30	PASS
	Ant0	2462	13.21	<=30	PASS
	Ant1	2462	13.62	<=30	PASS
11G	Ant0	2412	10.15	<=30	PASS
	Ant1	2412	9.91	<=30	PASS
	Ant0	2437	10.98	<=30	PASS
	Ant1	2437	11.05	<=30	PASS
	Ant0	2462	10.79	<=30	PASS
	Ant1	2462	11.42	<=30	PASS
11N20MIMO	Ant0	2412	7.20	<=30	PASS
	Ant1	2412	9.86	<=30	PASS
	total	2412	11.74	<=30	PASS
	Ant0	2437	8.55	<=30	PASS
	Ant1	2437	10.50	<=30	PASS
	total	2437	12.64	<=30	PASS
	Ant0	2462	9.70	<=30	PASS
	Ant1	2462	9.85	<=30	PASS
	total	2462	12.79	<=30	PASS
11N40MIMO	Ant0	2422	8.71	<=30	PASS
	Ant1	2422	9.54	<=30	PASS
	total	2422	12.16	<=30	PASS
	Ant0	2437	10.50	<=30	PASS
	Ant1	2437	10.71	<=30	PASS
	total	2437	13.66	<=30	PASS
	Ant0	2452	9.06	<=30	PASS
	Ant1	2452	10.04	<=30	PASS
	total	2452	12.59	<=30	PASS

Note: 1. Conducted Power=Meas. Level+ Correction Factor
2. The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.

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

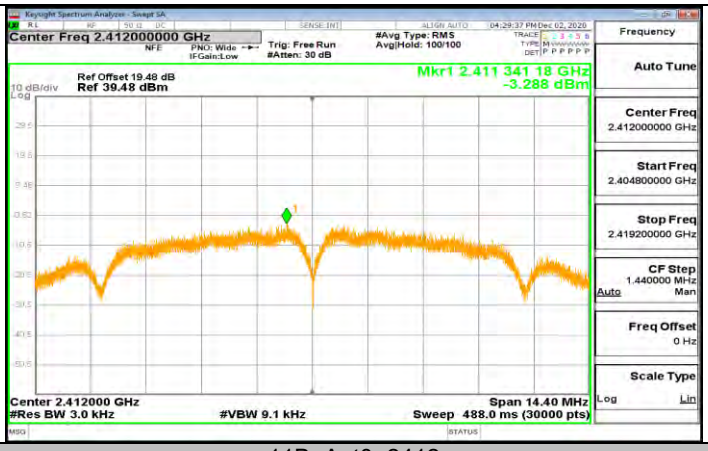
11.4. Appendix D: Maximum power spectral density

11.4.1. Test Result

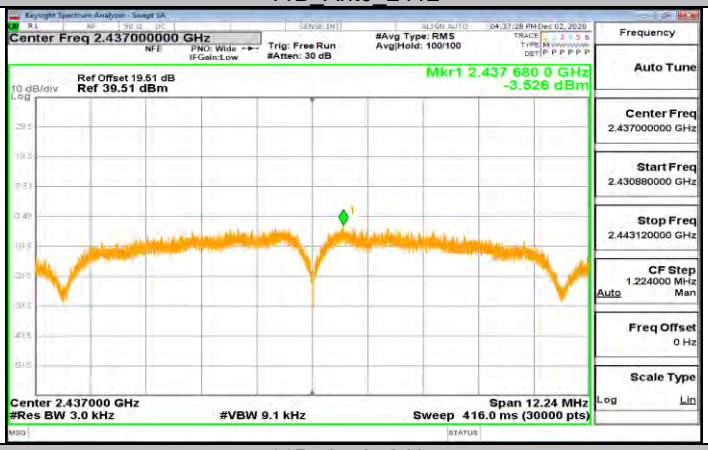
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant0	2412	-3.29	<=8	PASS
		2437	-3.53	<=8	PASS
		2462	-4.29	<=8	PASS
11G	Ant0	2412	-9.69	<=8	PASS
		2437	-8.82	<=8	PASS
		2462	-8.67	<=8	PASS
11N20MIMO	Ant0	2412	-10.39	<=8	PASS
	Ant1	2412	-11.18	<=8	PASS
	total	2412	-7.76	<=8	PASS
	Ant0	2437	-9.61	<=8	PASS
	Ant1	2437	-10.85	<=8	PASS
	total	2437	-7.18	<=8	PASS
	Ant0	2462	-9.96	<=8	PASS
	Ant1	2462	-10.93	<=8	PASS
	total	2462	-7.41	<=8	PASS
11N40MIMO	Ant0	2422	-14.39	<=8	PASS
	Ant1	2422	-15.04	<=8	PASS
	total	2422	-11.69	<=8	PASS
	Ant0	2437	-13.77	<=8	PASS
	Ant1	2437	-14.32	<=8	PASS
	total	2437	-11.03	<=8	PASS
	Ant0	2452	-14.32	<=8	PASS
	Ant1	2452	-14.74	<=8	PASS
	total	2452	-11.51	<=8	PASS

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

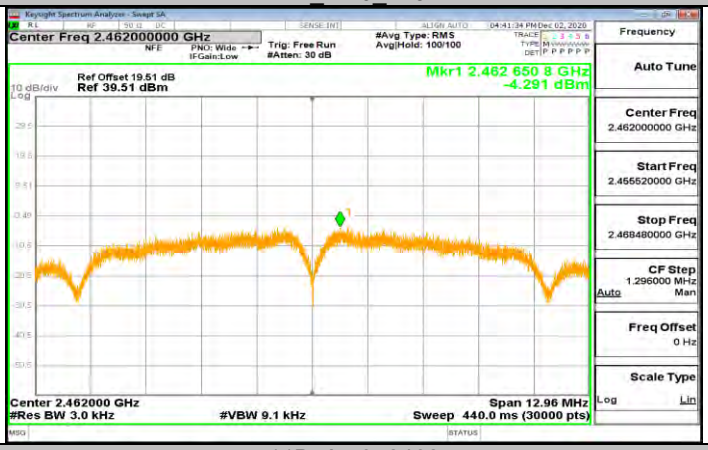
11.4.2. Test Graphs



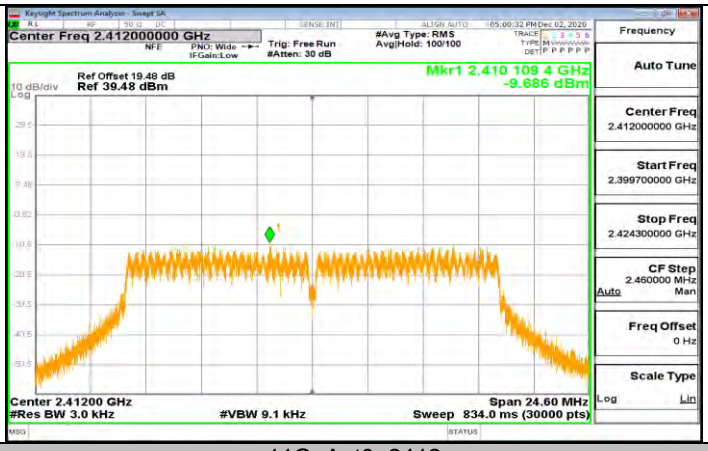
11B_Ant0_2412



11B_Ant0_2437

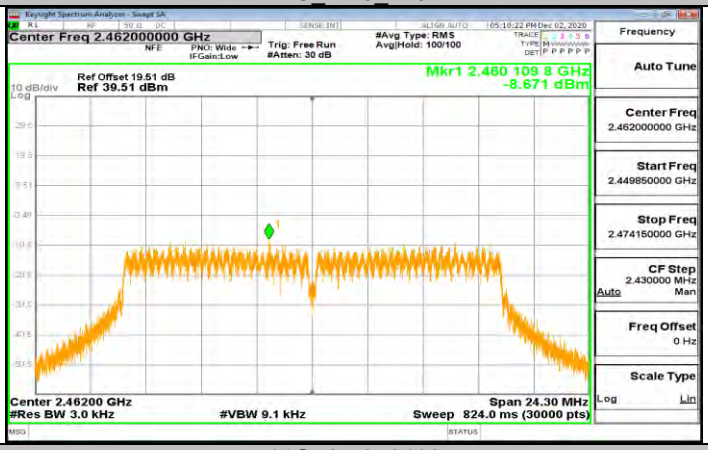


11B_Ant0_2462

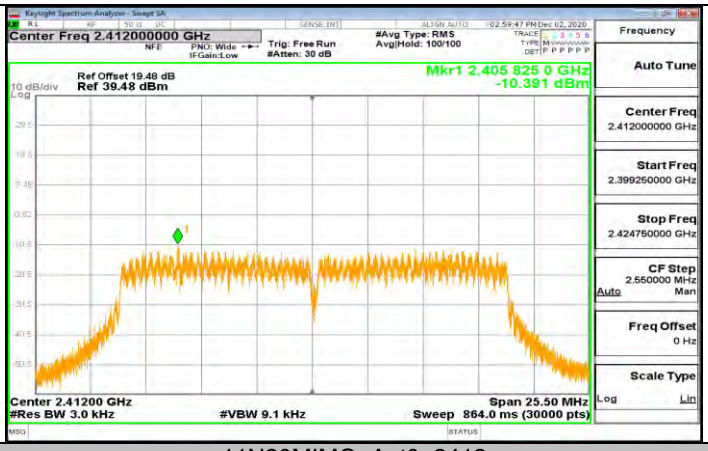


11G_Ant0_2412

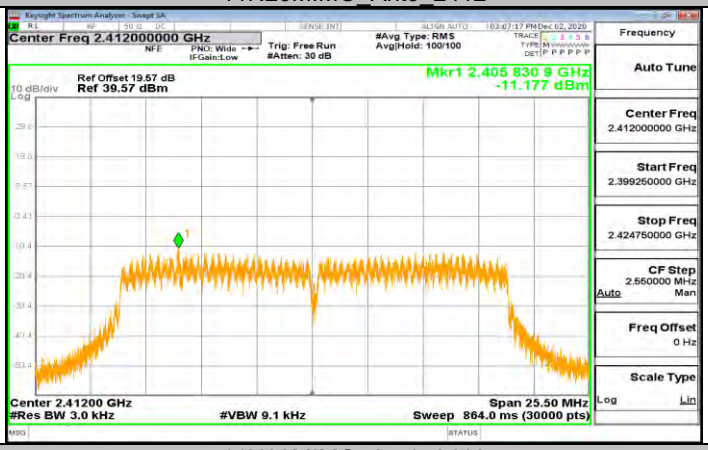
11G_Ant0_2437



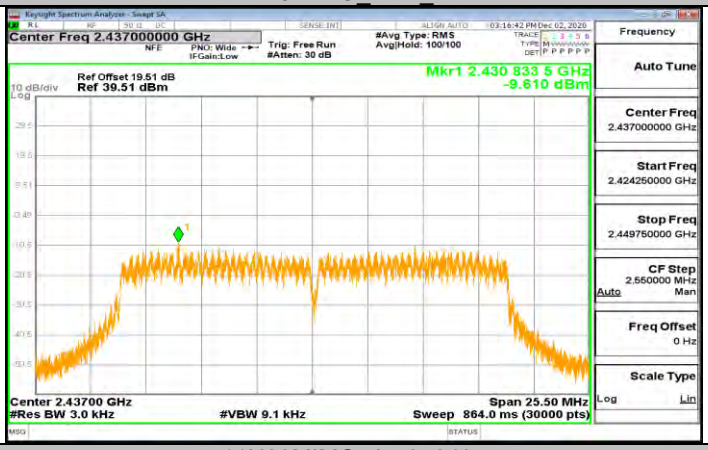
11G_Ant0_2462



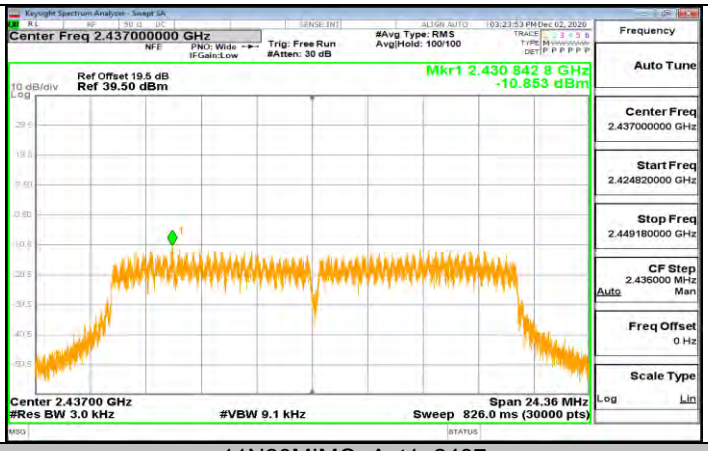
11N20MIMO_Ant0_2412



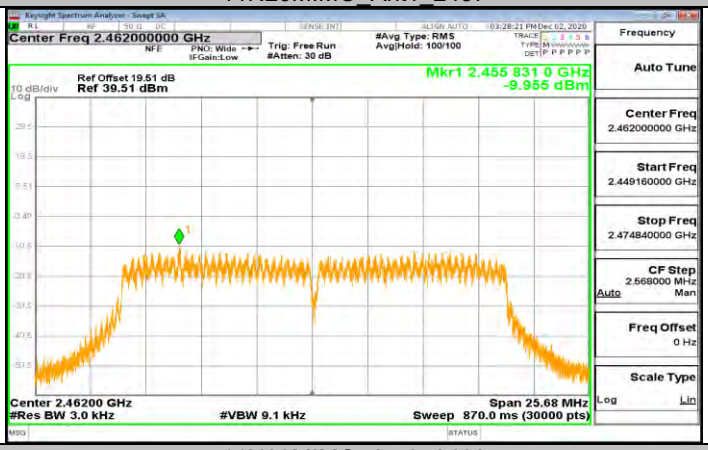
11N20MIMO_Ant1_2412



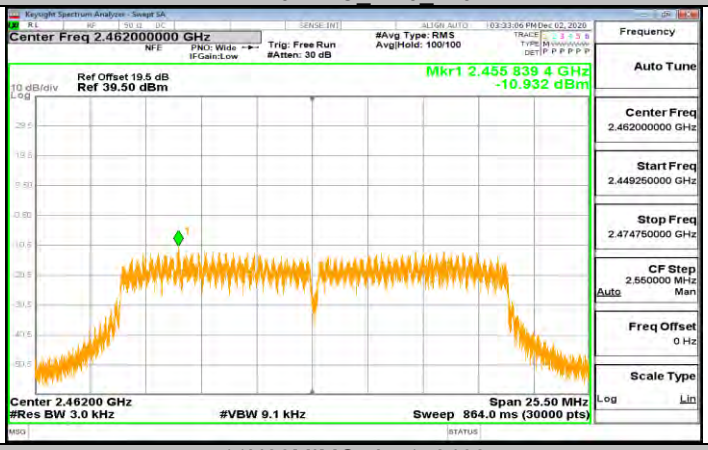
11N20MIMO_Ant0_2437



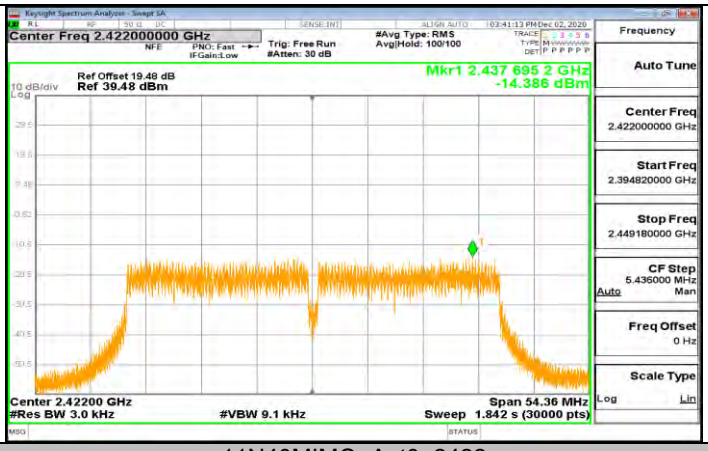
11N20MIMO_Ant1_2437



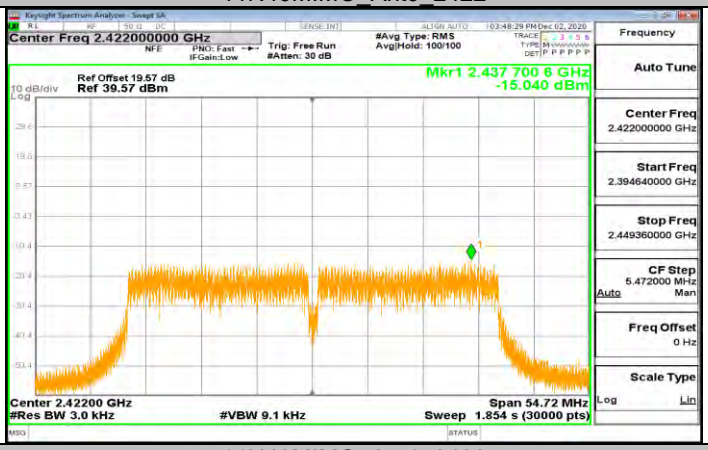
11N20MIMO_Ant0_2462



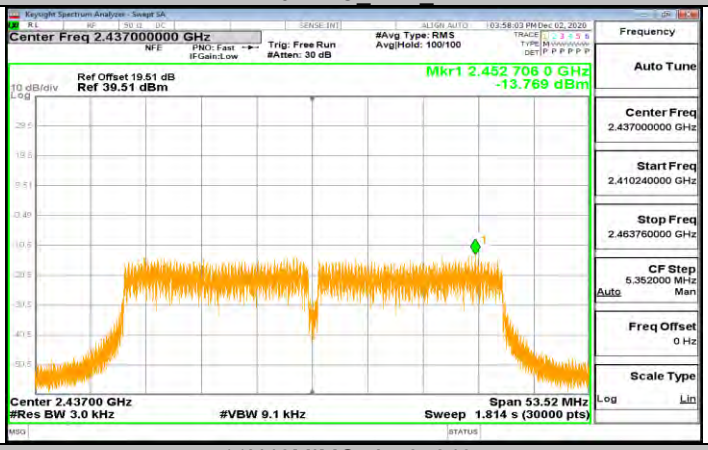
11N20MIMO_Ant1_2462



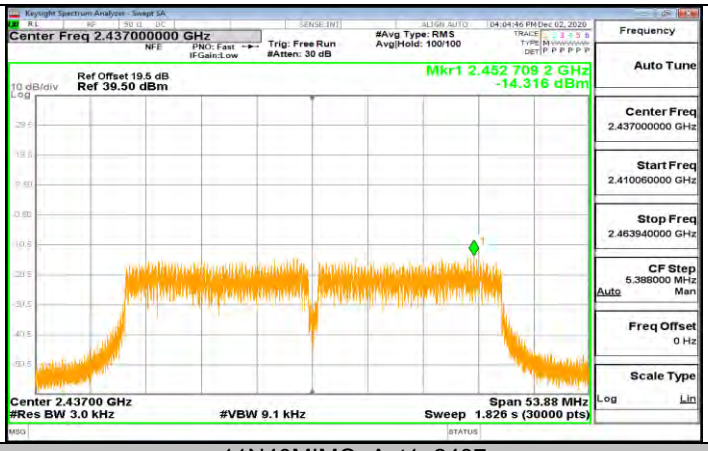
11N40MIMO_Ant0_2422



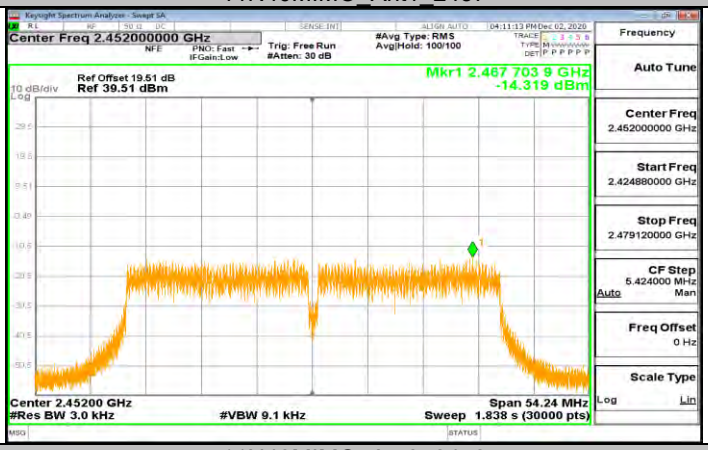
11N40MIMO_Ant1_2422



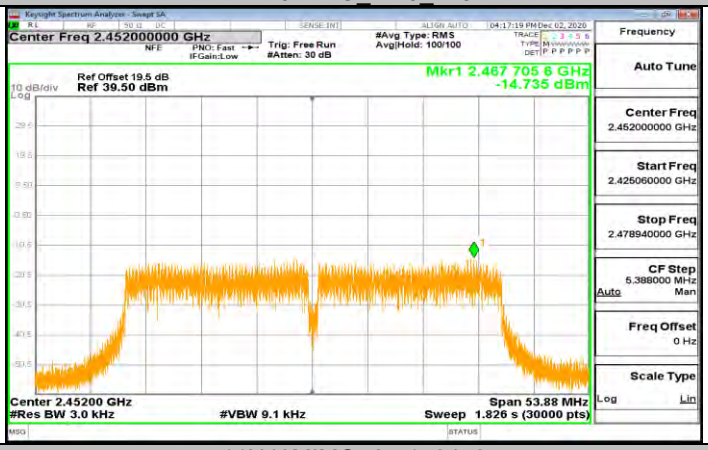
11N40MIMO_Ant0_2437



11N40MIMO_Ant1_2437



11N40MIMO_Ant0_2452



11N40MIMO_Ant1_2452

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

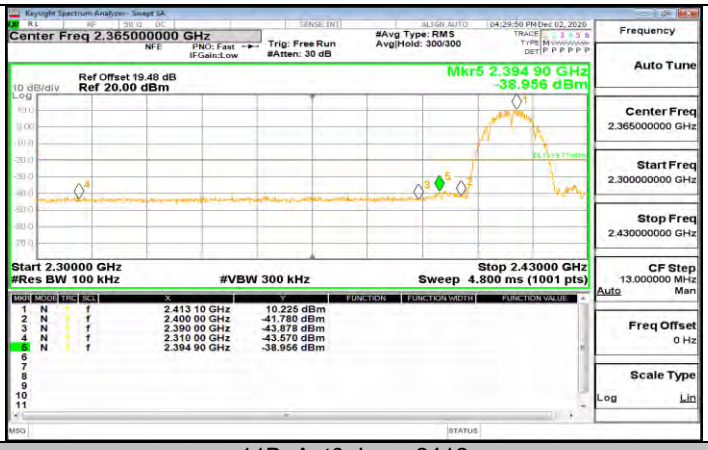
11.5. Appendix E: Band edge measurements

11.5.1. Test Result

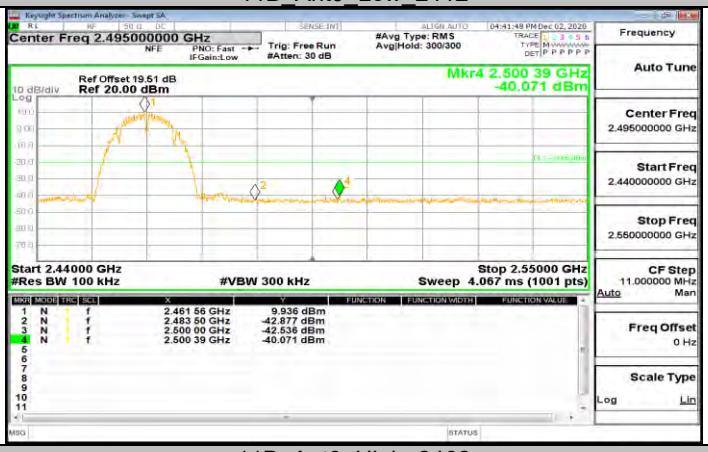
Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B	Ant0	Low	2412	10.23	-38.96	<=-19.77	PASS
		High	2462	9.94	-40.07	<=-20.06	PASS
11G	Ant0	Low	2412	4.51	-34.95	<=-25.49	PASS
		High	2462	5.56	-38.91	<=-24.45	PASS
11N20MIMO	Ant0	Low	2412	3.43	-32.5	<=-26.57	PASS
	Ant1	Low	2412	2.59	-32.83	<=-27.41	PASS
	Ant0	High	2462	3.27	-40.69	<=-26.73	PASS
	Ant1	High	2462	3.04	-39.85	<=-26.96	PASS
11N40MIMO	Ant0	Low	2422	0.27	-34.52	<=-29.73	PASS
	Ant1	Low	2422	-0.06	-33.12	<=-30.06	PASS
	Ant0	High	2452	0.68	-33.7	<=-29.32	PASS
	Ant1	High	2452	-0.21	-33.07	<=-30.21	PASS

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

11.5.2. Test Graphs



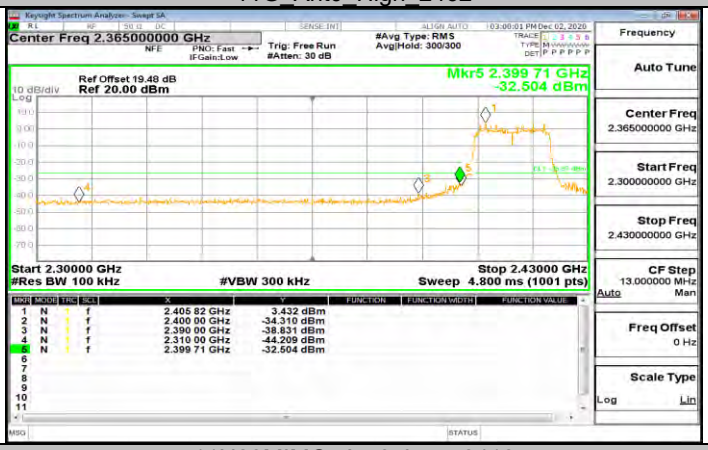
11B_Ant0_Low_2412



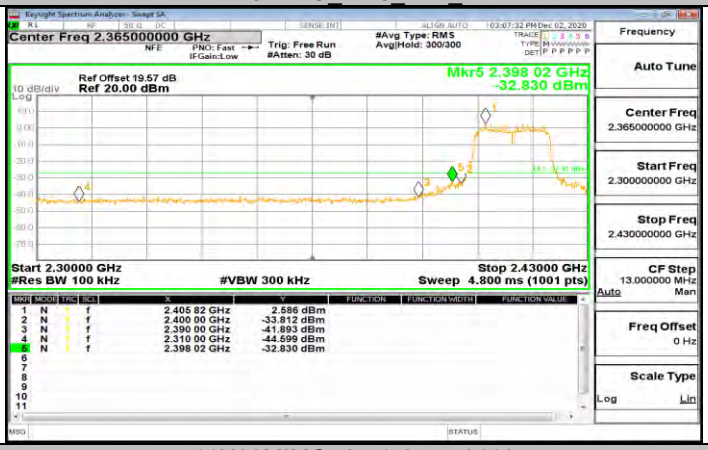
11B_Ant0_High_2462

11G_Ant0_Low_2412

11G_Ant0_High_2462



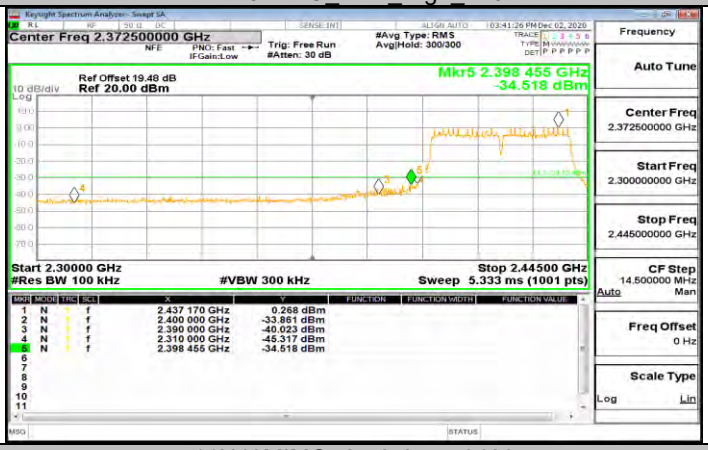
11N20MIMO_Ant0_Low_2412



11N20MIMO_Ant1_Low_2412

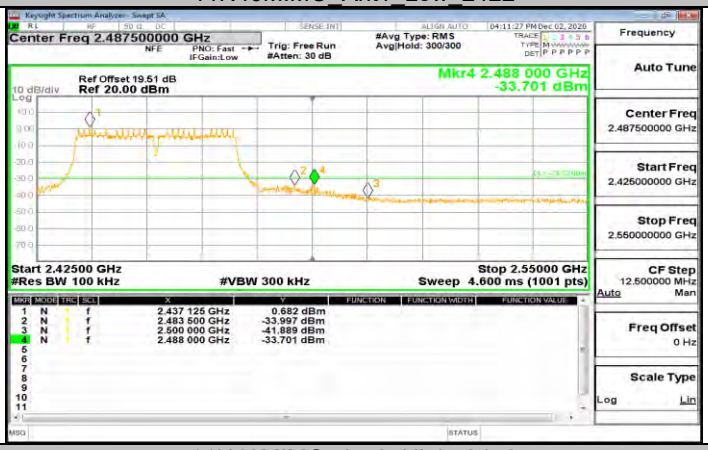
11N20MIMO_Ant0_High_2462

11N20MIMO_Ant1_High_2462

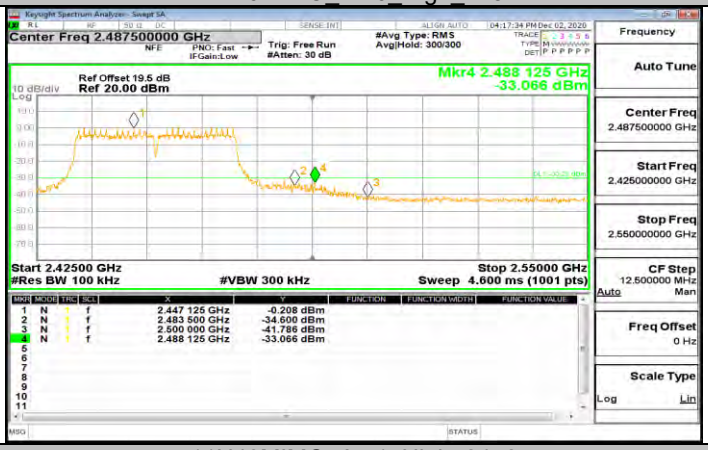


11N40MIMO_Ant0_Low_2422

11N40MIMO_Ant1_Low_2422



11N40MIMO_Ant0_High_2452



11N40MIMO_Ant1_High_2452

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

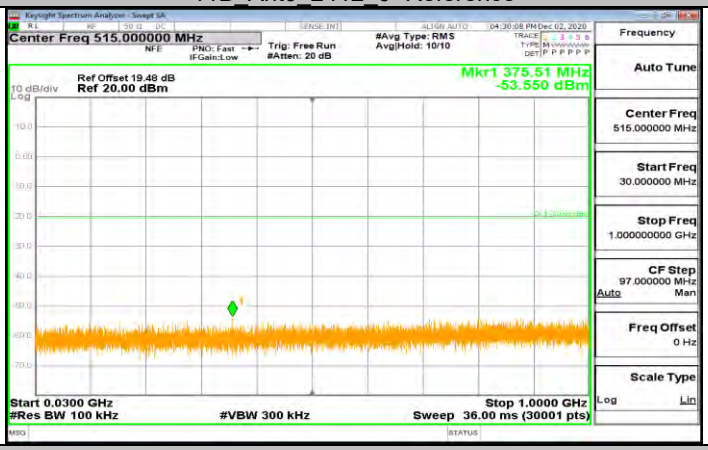
11.6. Appendix F: Conducted Spurious Emission

11.6.1. Test Result

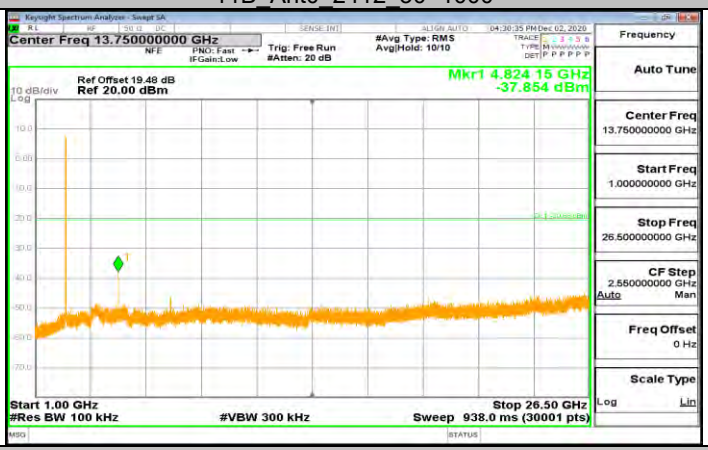
Test Mode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant0	2412	Reference	9.34	9.34	---	PASS
			30~1000	---	-53.55	<=-20.66	PASS
			1000~26500	---	-37.85	<=-20.66	PASS
		2437	Reference	10.13	10.13	---	PASS
			30~1000	---	-53.56	<=-19.87	PASS
			1000~26500	---	-37	<=-19.87	PASS
		2462	Reference	9.09	9.09	---	PASS
			30~1000	---	-52.2	<=-20.91	PASS
			1000~26500	---	-35.58	<=-20.91	PASS
11G	Ant0	2412	Reference	4.44	4.44	---	PASS
			30~1000	---	-53.29	<=-25.56	PASS
			1000~26500	---	-34.81	<=-25.56	PASS
		2437	Reference	4.65	4.65	---	PASS
			30~1000	---	-53.32	<=-25.35	PASS
			1000~26500	---	-36.37	<=-25.35	PASS
		2462	Reference	5.66	5.66	---	PASS
			30~1000	---	-53.26	<=-24.34	PASS
			1000~26500	---	-35.72	<=-24.34	PASS
11N20MIMO	Ant0	2412	Reference	2.98	2.98	---	PASS
			30~1000	---	-53.25	<=-27.02	PASS
			1000~26500	---	-37.37	<=-27.02	PASS
	Ant1	2412	Reference	2.56	2.56	---	PASS
			30~1000	---	-52.84	<=-27.44	PASS
			1000~26500	---	-44.86	<=-27.44	PASS
	Ant0	2437	Reference	3.54	3.54	---	PASS
			30~1000	---	-53.51	<=-26.47	PASS
			1000~26500	---	-38.76	<=-26.47	PASS
	Ant1	2437	Reference	2.15	2.15	---	PASS
			30~1000	---	-53.67	<=-27.85	PASS
			1000~26500	---	-44.45	<=-27.85	PASS
	Ant0	2462	Reference	3.20	3.20	---	PASS
			30~1000	---	-53.93	<=-26.8	PASS
			1000~26500	---	-39.1	<=-26.8	PASS
	Ant1	2462	Reference	2.63	2.63	---	PASS
			30~1000	---	-53.78	<=-27.37	PASS
			1000~26500	---	-43.92	<=-27.37	PASS
11N40MIMO	Ant0	2422	Reference	-0.27	-0.27	---	PASS
			30~1000	---	-53.57	<=-30.27	PASS
			1000~26500	---	-37.23	<=-30.27	PASS
	Ant1	2422	Reference	-0.56	-0.56	---	PASS
			30~1000	---	-52.82	<=-30.56	PASS
			1000~26500	---	-44.94	<=-30.56	PASS
	Ant0	2437	Reference	0.81	0.81	---	PASS
			30~1000	---	-52.07	<=-29.19	PASS
			1000~26500	---	-38.32	<=-29.19	PASS
	Ant1	2437	Reference	-0.05	-0.05	---	PASS
			30~1000	---	-52.73	<=-30.05	PASS
			1000~26500	---	-44.53	<=-30.05	PASS
	Ant0	2452	Reference	0.59	0.59	---	PASS
			30~1000	---	-53.32	<=-29.41	PASS
			1000~26500	---	-38.43	<=-29.41	PASS
	Ant1	2452	Reference	-0.58	-0.58	---	PASS
			30~1000	---	-53.62	<=-30.58	PASS
			1000~26500	---	-44.62	<=-30.58	PASS

11.6.2. Test Graphs

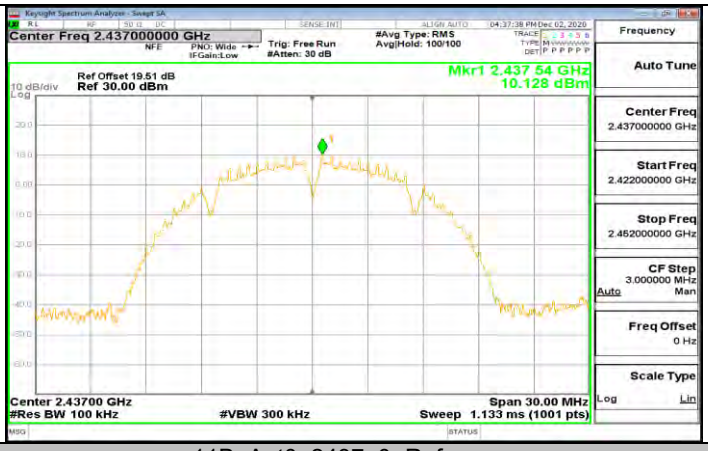
11B_Ant0_2412_0~Reference



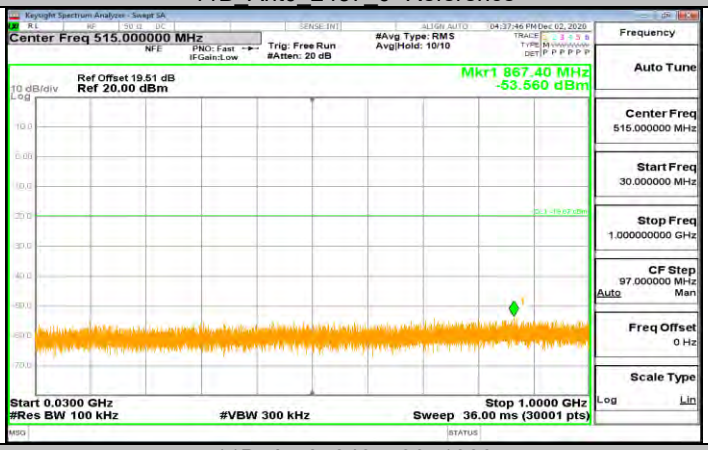
11B_Ant0_2412_30~1000



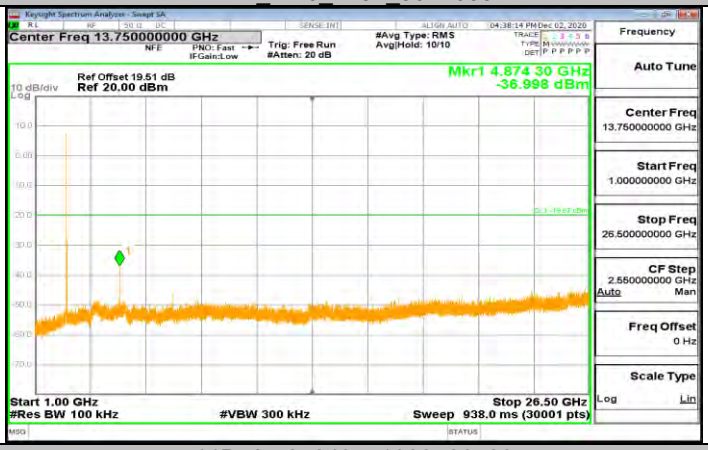
11B_Ant0_2412_1000~26500



11B_Ant0_2437_0~Reference

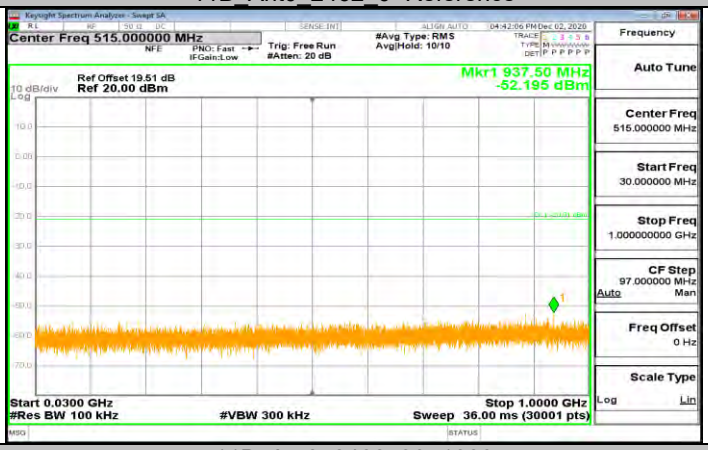


11B_Ant0_2437_30~1000



11B_Ant0_2437_1000~26500

11B_Ant0_2462_0~Reference



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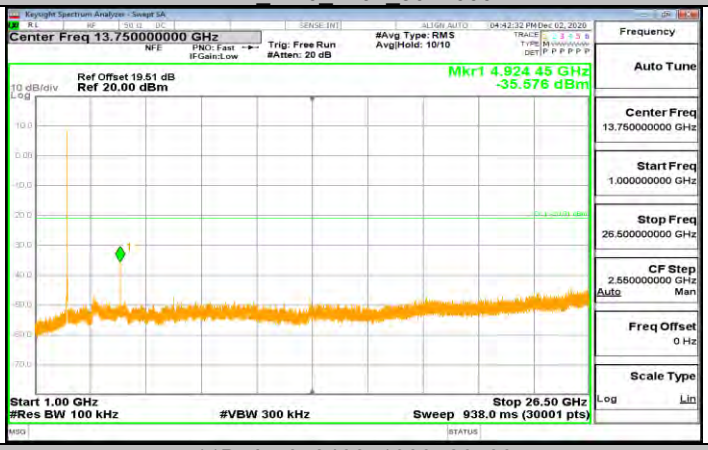
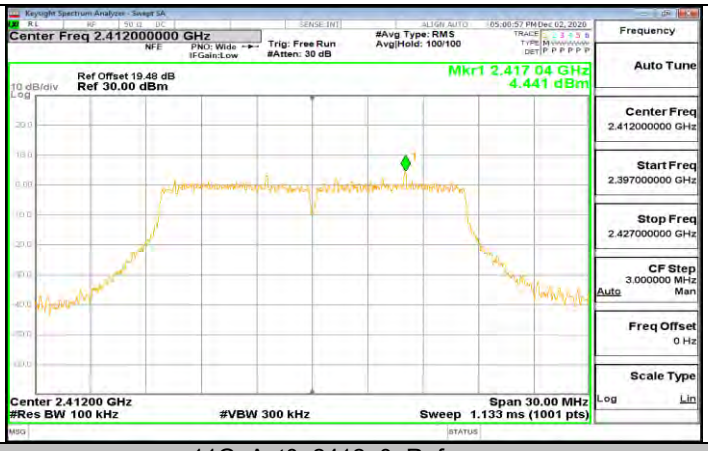
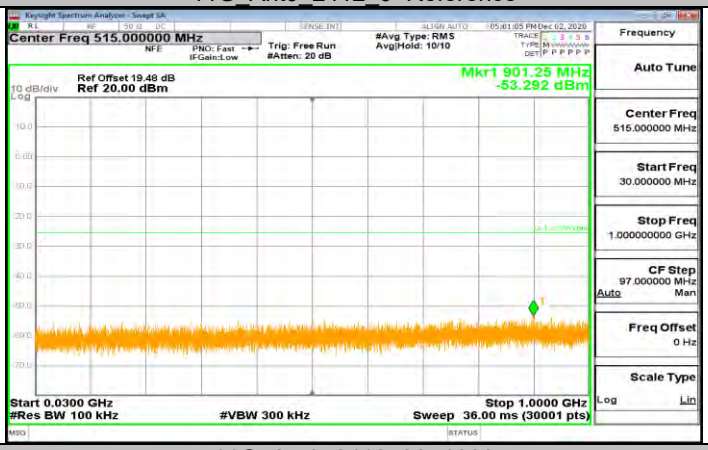


11B_Ant0_2462_1000~26500



11G_Ant0_2412_0~Reference



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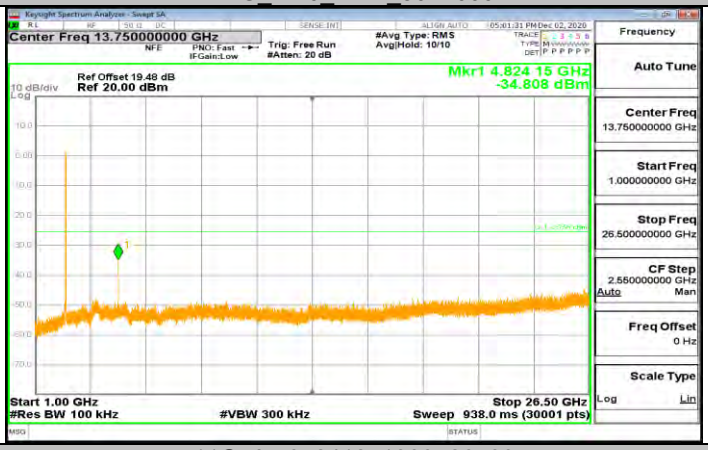
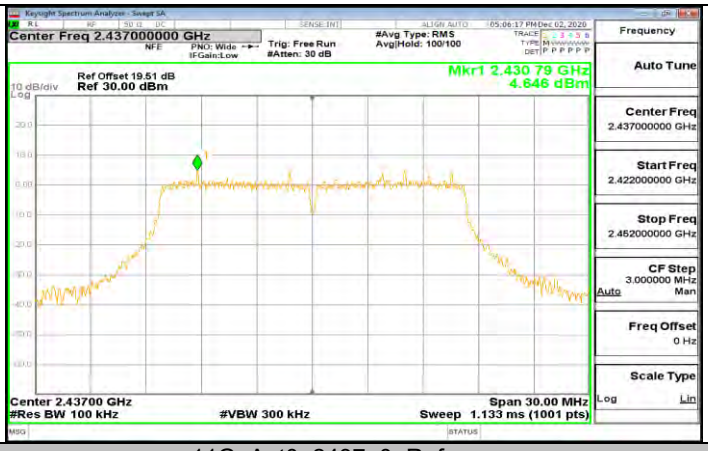
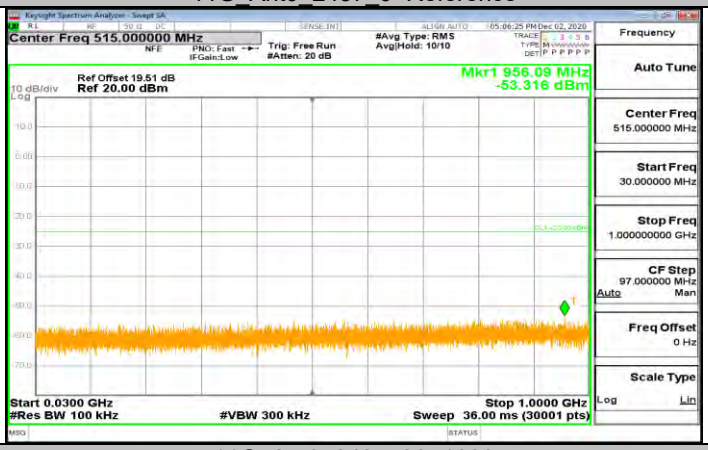


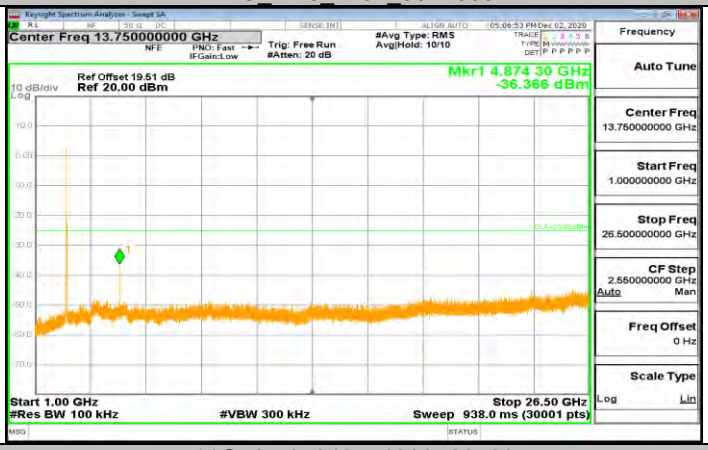
11G_Ant0_2412_1000~26500



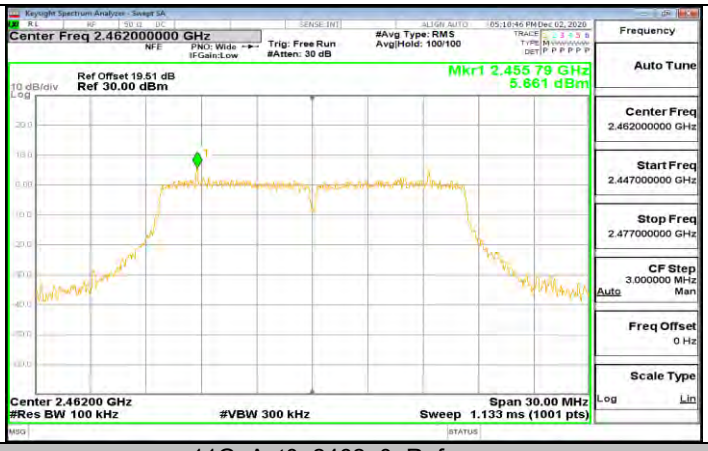
11G_Ant0_2437_0~Reference



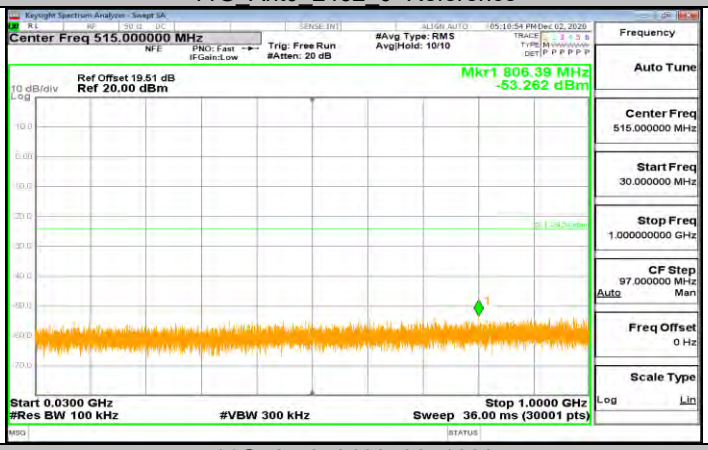
11G_Ant0_2437_30~1000



11G_Ant0_2437_1000~26500



11G_Ant0_2462_0~Reference



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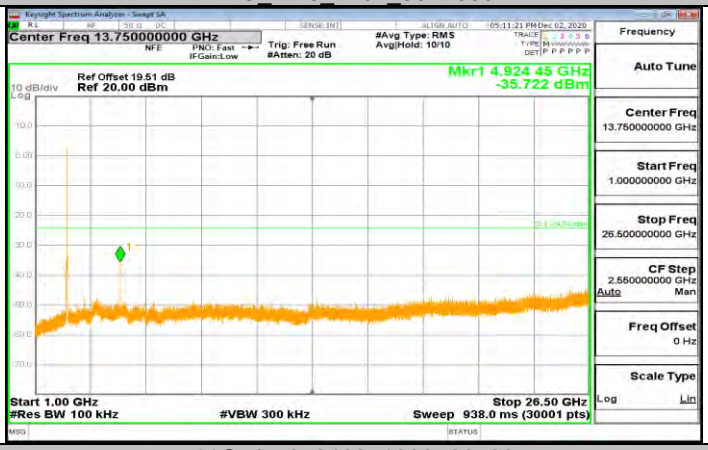
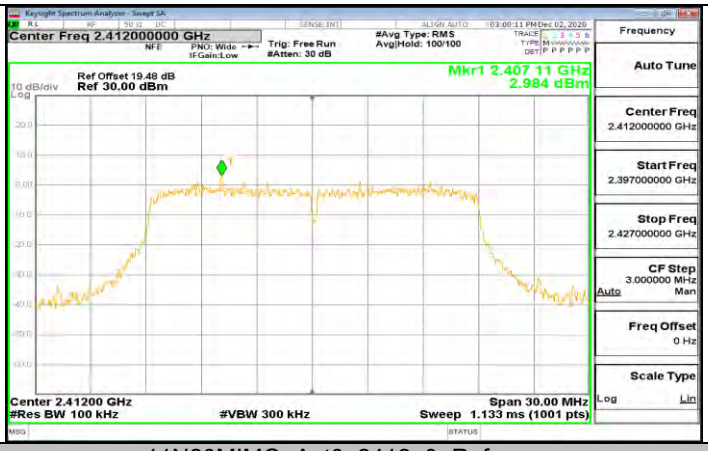
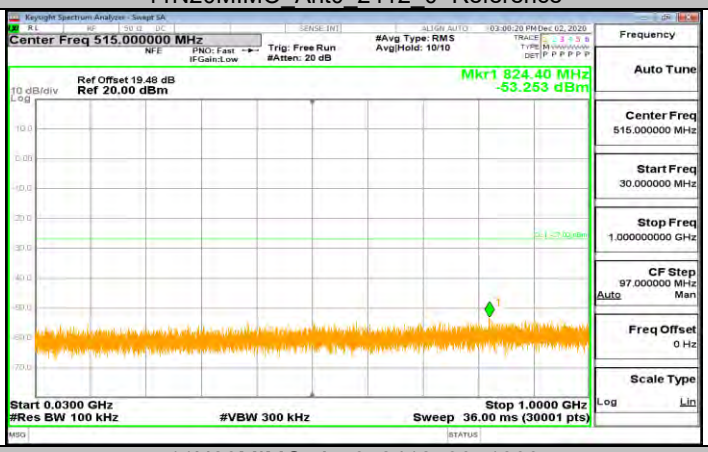


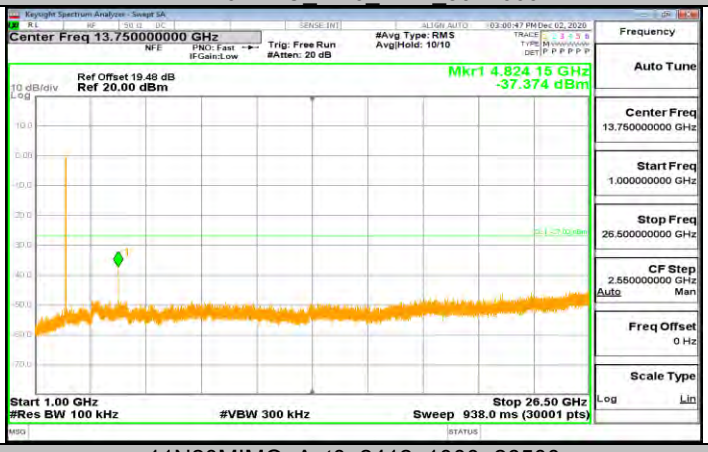
11G_Ant0_2462_1000~26500



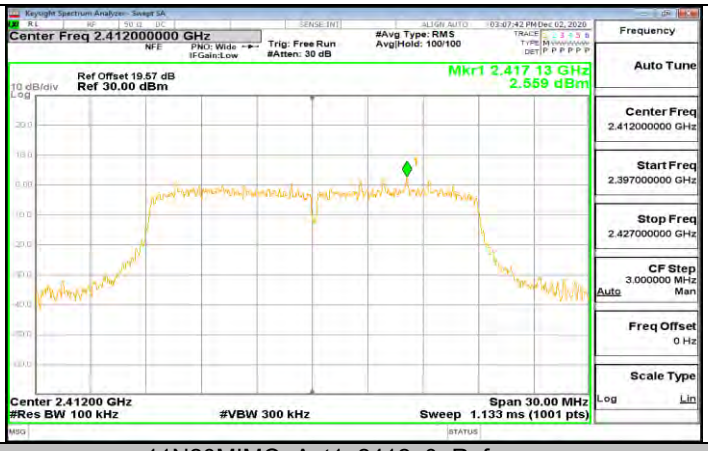
11N20MIMO_Ant0_2412_0~Reference



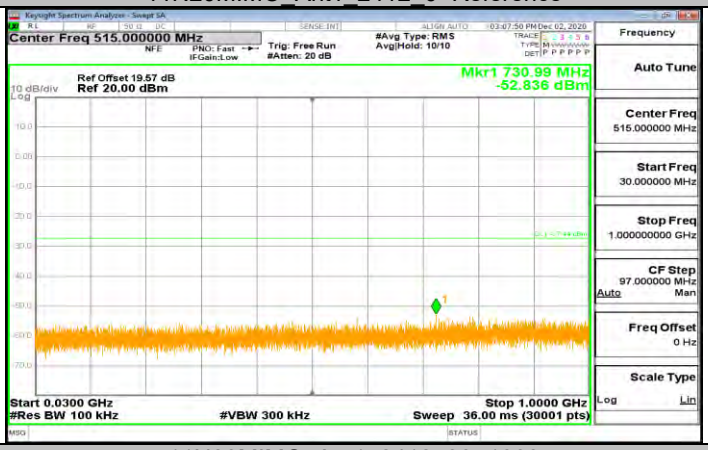
11N20MIMO_Ant0_2412_30~1000



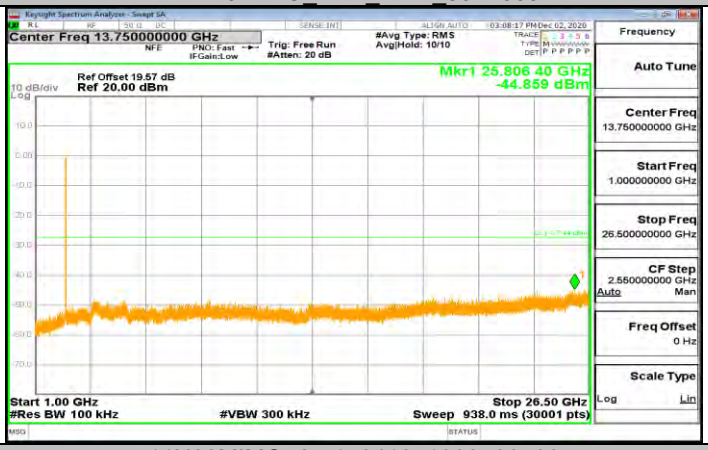
11N20MIMO_Ant0_2412_1000~26500



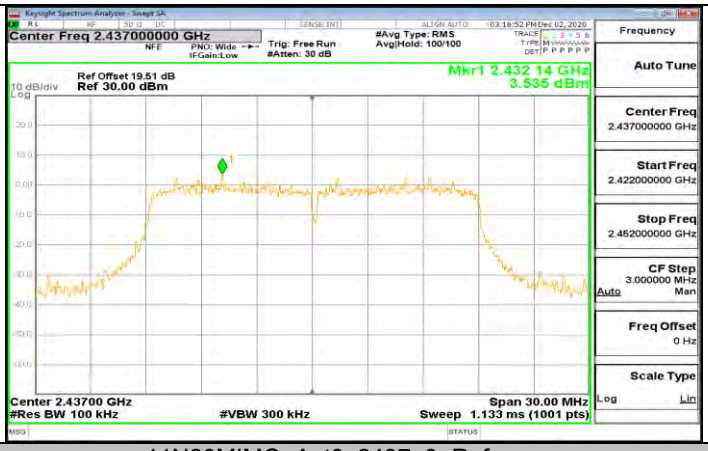
11N20MIMO_Ant1_2412_0~Reference



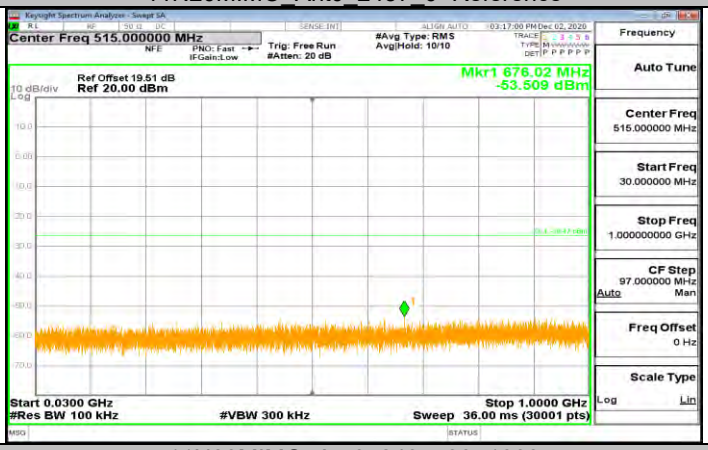
11N20MIMO_Ant1_2412_30~1000



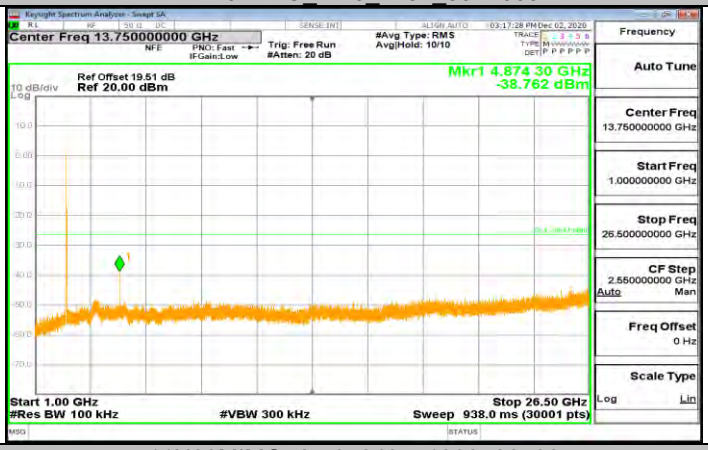
11N20MIMO_Ant1_2412_1000~26500



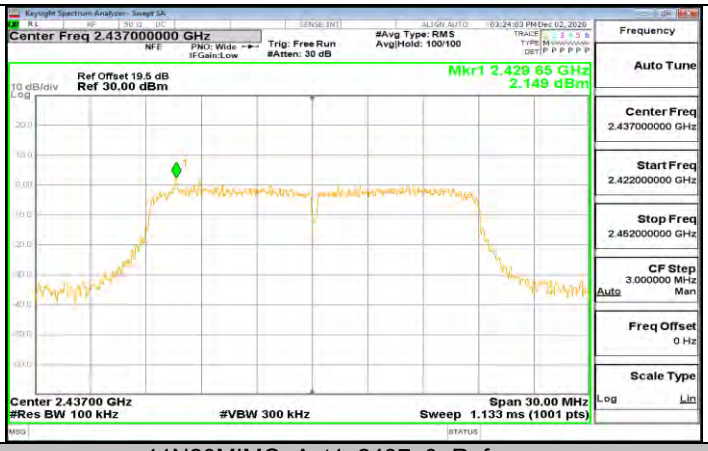
11N20MIMO_Ant0_2437_0~Reference



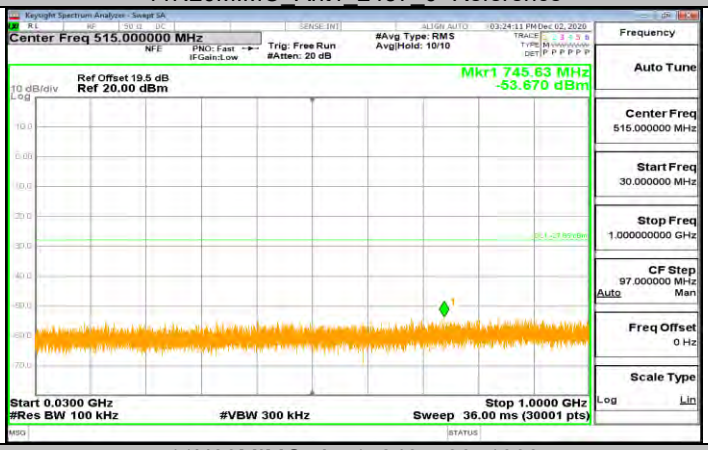
11N20MIMO_Ant0_2437_30~1000



11N20MIMO_Ant0_2437_1000~26500



11N20MIMO_Ant1_2437_0~Reference



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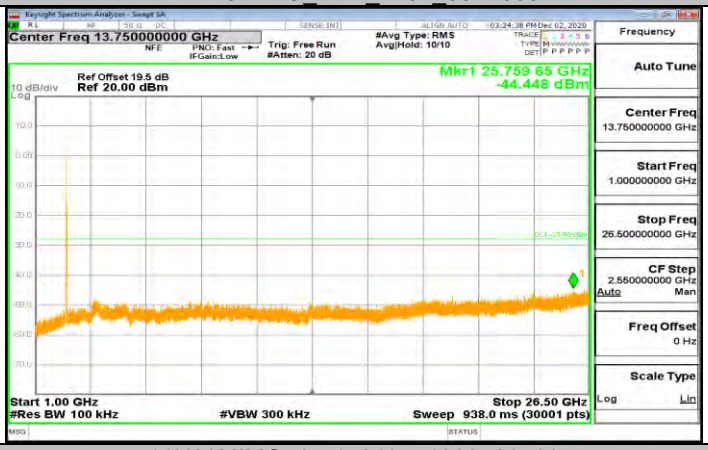
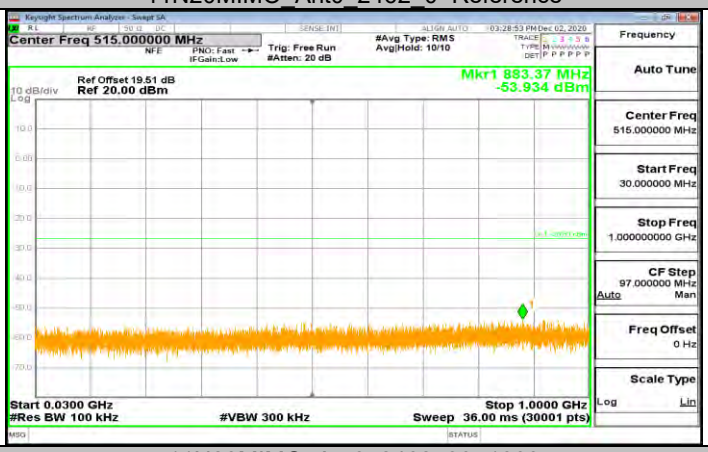


11N20MIMO_Ant1_2437_1000~26500

11N20MIMO_Ant0_2462_0~Reference



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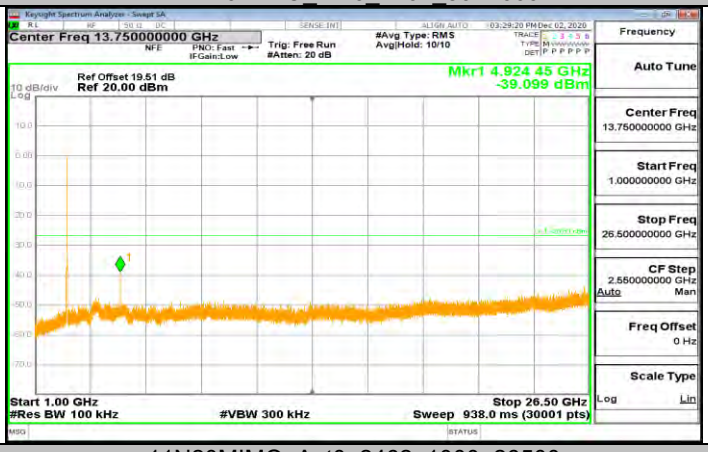
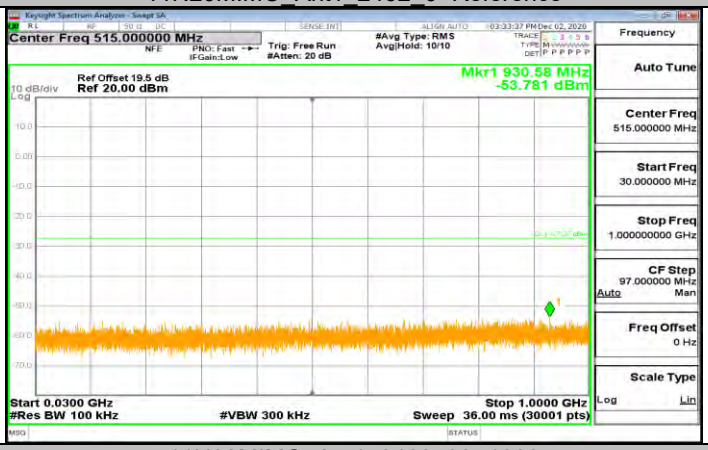


11N20MIMO_Ant0_2462_1000~26500

11N20MIMO_Ant1_2462_0~Reference



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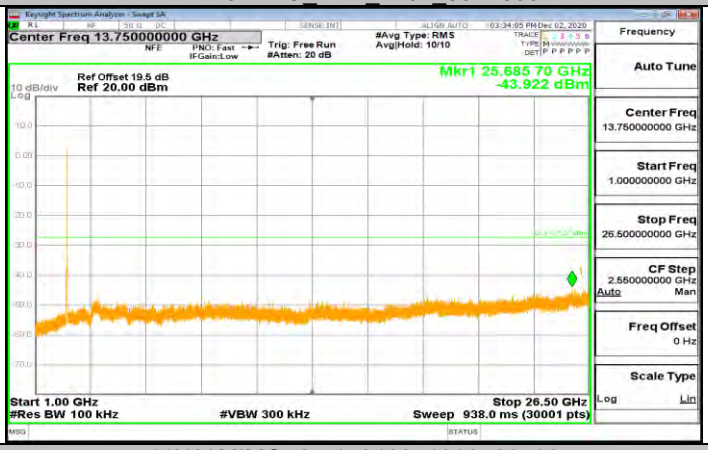

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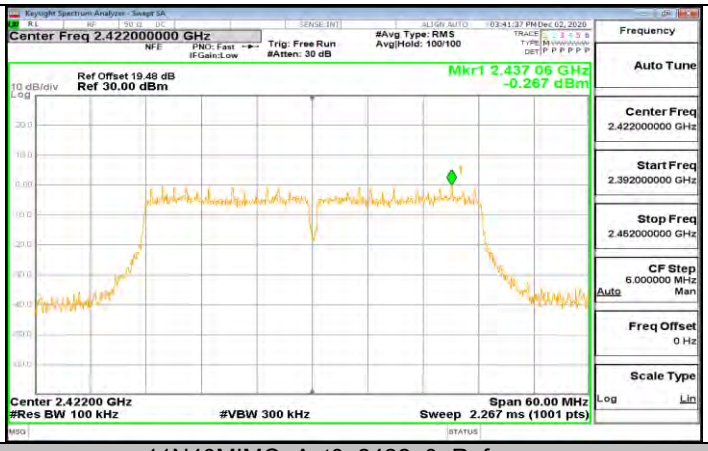
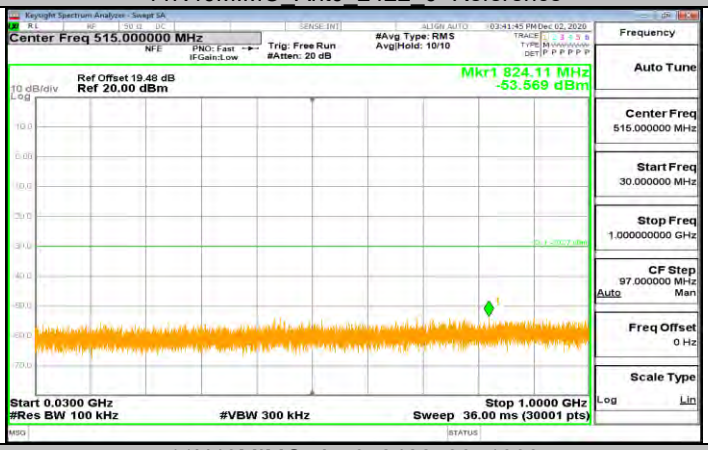


11N40MIMO_Ant0_2422_0~Reference



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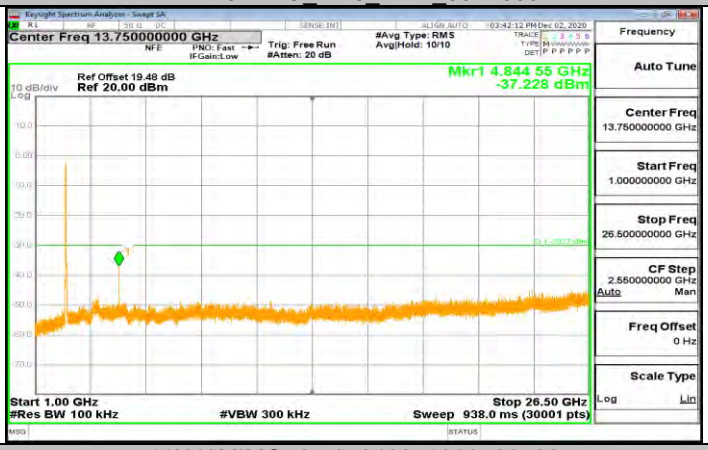

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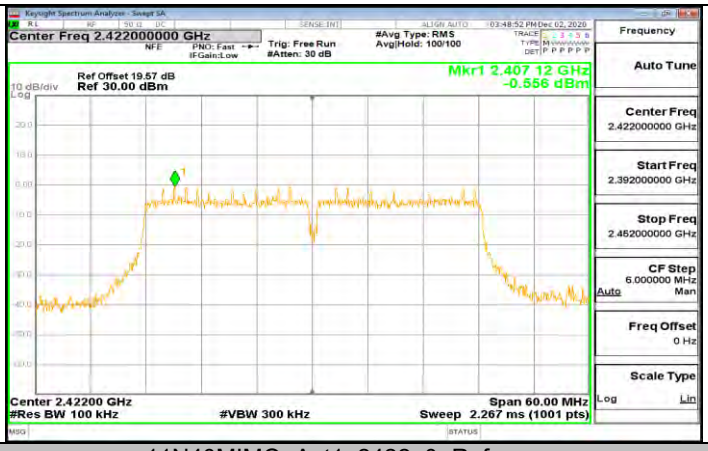

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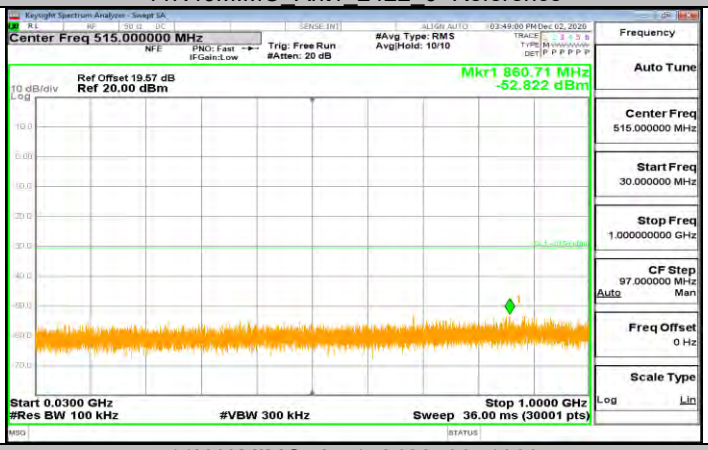

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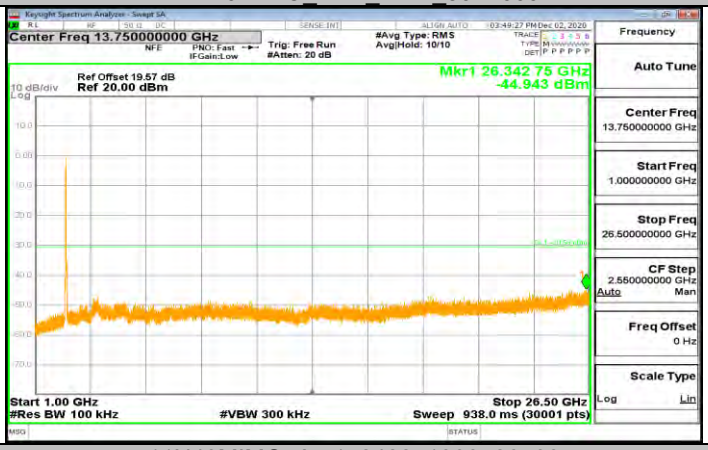
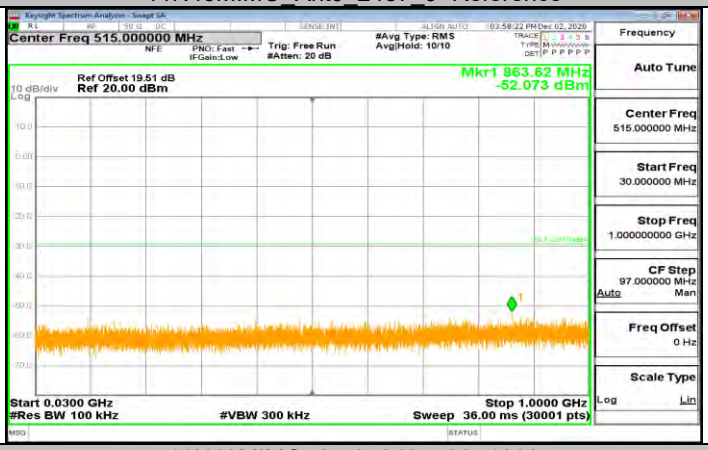


11N40MIMO_Ant1_2422_1000~26500

11N40MIMO_Ant0_2437_0~Reference



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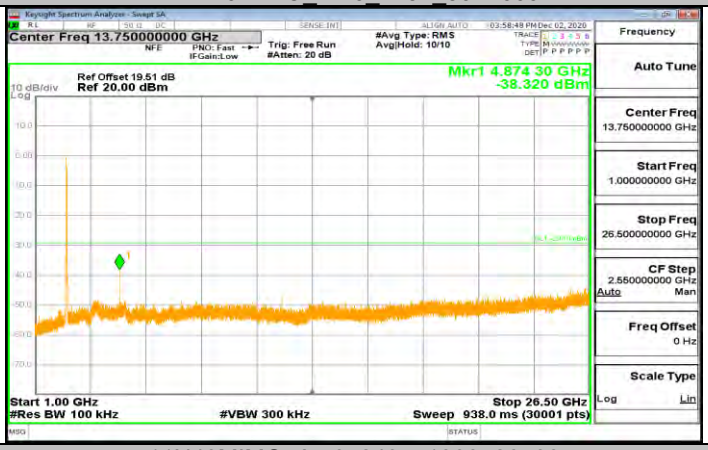
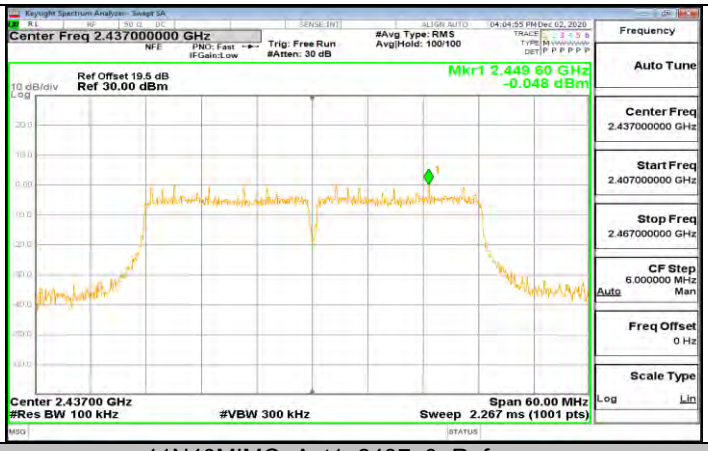


11N40MIMO_Ant0_2437_1000~26500



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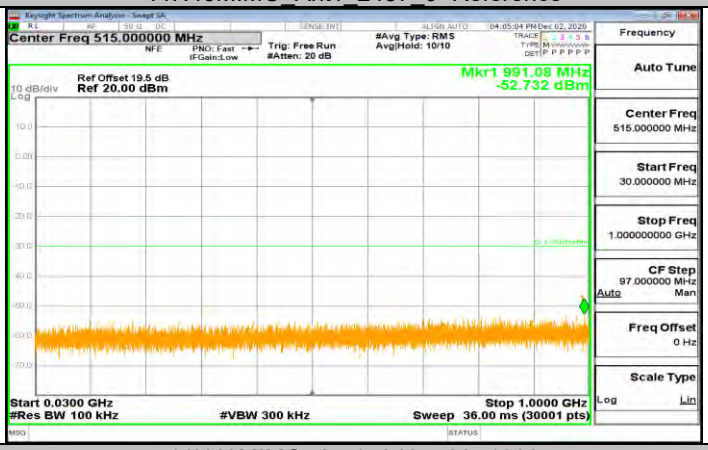

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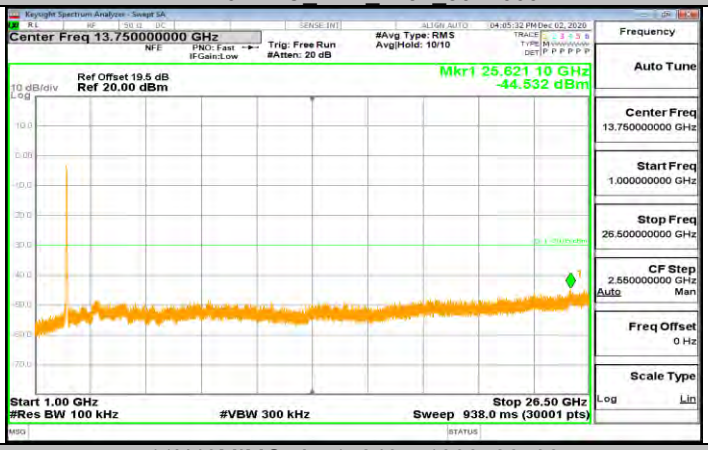
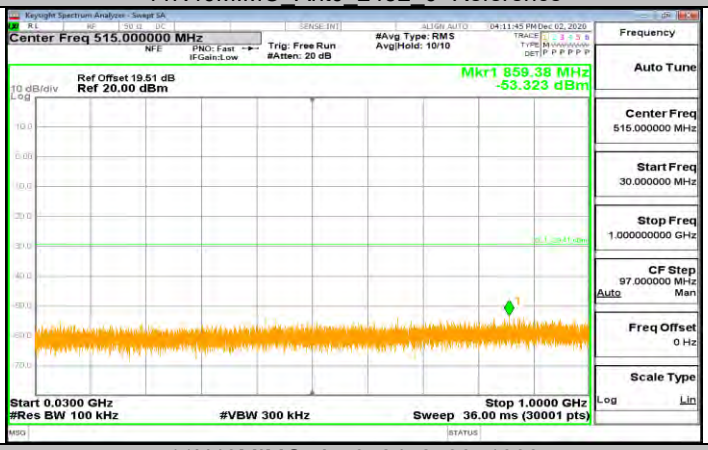


11N40MIMO_Ant1_2437_1000~26500

11N40MIMO_Ant0_2452_0~Reference



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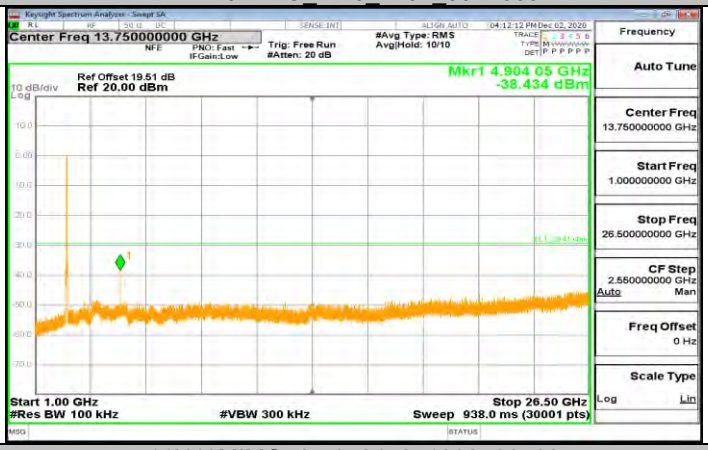
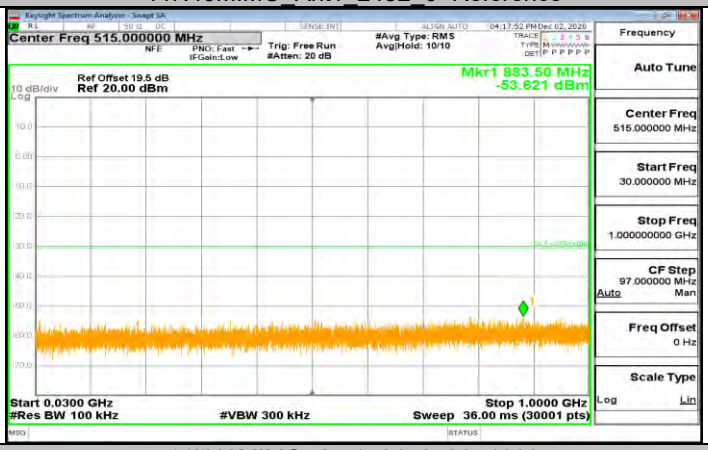


11N40MIMO_Ant0_2452_1000~26500

11N40MIMO_Ant1_2452_0~Reference



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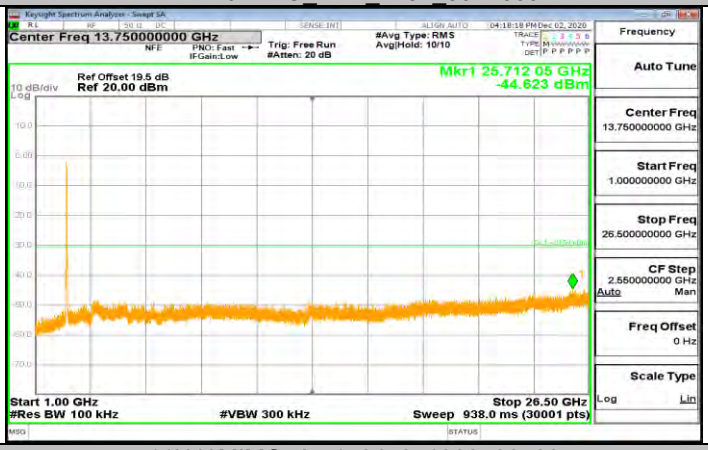


11N40MIMO_Ant1_2452_1000~26500

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

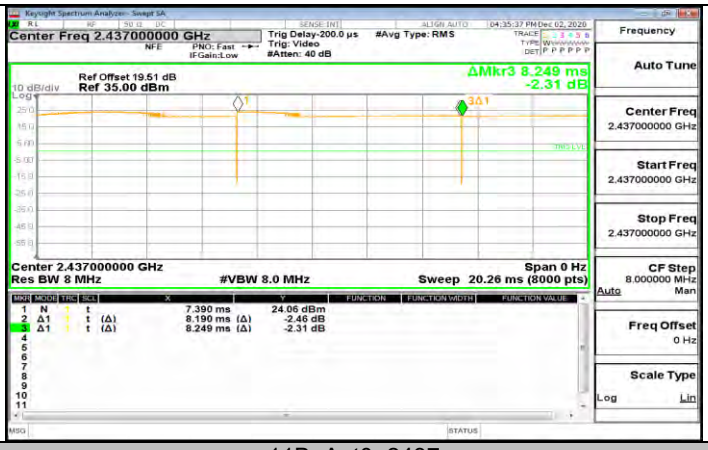
11.7. Appendix G: Duty Cycle

11.7.1. Test Result

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	8.19	8.25	0.9927	99.27	0.03	0.12	0.01
11G	1.36	1.41	0.9645	96.45	0.16	0.74	1
11N20MIMO	1.27	1.33	0.9549	95.49%	0.20	0.79	1
11N40MIMO	0.63	0.68	0.9265	92.65	0.33	1.59	2

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

11.7.2. Test Graphs



11B_Ant0_2437

11G_Ant0_2437

11N20MIMO_Ant0_2437

11N40MIMO_Ant0_2437

END OF REPORT