

# CFR 47 FCC PART 15 SUBPART C TEST REPORT

For

**Tablet** 

**MODEL NUMBER: CP3667AT** 

FCC ID: R38YLCP3667AT

REPORT NUMBER: 4789517523-3

ISSUE DATE: June 29, 2020

Prepared for

Yulong Computer Telecommunication Scientific (Shenzhen) Co., Ltd Building B, Boton Science Park, Chaguang Road, Xili Town, Nanshan District, Shenzhen

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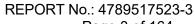


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Revision History
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Rev.	Issue Date	Revisions	Revised By
V0	06/29/2020	Initial Issue	





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

#### Note:

<sup>1.</sup> This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

<sup>2.</sup> The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >when <Accuracy Method> decision rule is applied.

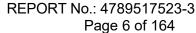


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# 1. ATTESTATION OF TEST RESULTS

Дp	plica	ınt I	nfor	mation

Company Name: Yulong Computer Telecommunication Scientific (Shenzhen) Co.,

Building B, Boton Science Park, Chaguang Road, Xili Town, Address:

Nanshan District, Shenzhen

#### **Manufacturer Information**

Company Name: Yulong Computer Telecommunication Scientific (Shenzhen) Co.,

Ltd

Building B, Boton Science Park, Chaguang Road, Xili Town, Address:

Nanshan District, Shenzhen

## **EUT Information**

Laboratory Manager

**EUT Name: Tablet** Model: **CP3667AT** Sample Received Date: June 12, 2020

Sample Status: Normal Sample ID: 3120775

Date of Tested: June 12, 2020 ~ June 29, 2020

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

Prepared By:	Checked By:
Kebo Zhang Project Engineer	Shawn Wen Laboratory Leader
Approved By:	
Stephen Guo	



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## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 15.247 Meas Guidance v05r02, 414788 D01 Radiated Test Site v01r01, KDB 662911 D01 Multiple Transmitter Output v02r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15 and ANSI C63.10-2013.

## 3. FACILITIES AND ACCREDITATION

	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
Accreditation	ISED(Company No.: 21320)
Certificate	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Certificate	has been registered and fully described in a report filed with ISED.
	The Company Number is 21320.
	VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
	has been assessed and proved to be in compliance with VCCI, the
	Membership No. is 3793.
	Facility Name:
	Chamber D, the VCCI registration No. is G-20019 and R-20004
	Shielding Room B , the VCCI registration No. is C-20012 and T-20011

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

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

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



## 4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

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

## 4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty	
Conduction emission	3.62dB	
Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	2.2dB	
Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB	
Radiation Emission test (1GHz to 26GHz)( include Fundamental emission)	5.78dB (1GHz-18GHz)	
(1.6.12 to 2001.12)( misiado i diridamental emission)	5.23dB (18GHz-26GHz)	

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



# 5. EQUIPMENT UNDER TEST

# **5.1. DESCRIPTION OF EUT**

Equipment Tablet				
Model Name	CP3667AT			
Radio Technology	IEEE802.11b/g/n HT20/n HT40			
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2422MHz—2452MHz			
Modulation	IEEE 802.11n HT2	SS(CCK) DM(64QAM, 16QAM, QPSK, BPSK) 0: OFDM (64QAM, 16QAM, QPSK,BPSK) 0: OFDM (64QAM, 16QAM, QPSK,BPSK)		
Power Supply	Power Adapter	AC100-240V, 50/60Hz, 0.5A Max 5Vdc===3A, 9Vdc===2A, 12Vdc===1.5A		
	Battery	3.82Vdc		

# **5.2. MAXIMUM OUTPUT POWER**

Number of Transmit Chains (NTX)	IEE Std. 802.11	Frequency (MHz)	Channel Number	Max AV Conducted Power (dBm)
1	IEEE 802.11b	2412-2462	1-11[11]	18.33
1	IEEE 802.11g	2412-2462	1-11[11]	16.31
1	IEEE 802.11nHT20	2412-2462	1-11[11]	16.50
1	IEEE 802.11nHT40	2422-2452	3-9[7]	16.45

## 5.3. CHANNEL LIST

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

Channel List for 802.11n (40 MHz)									
Channel						Frequency (MHz)			
3	2422	5	2432	7	2442	9	2452		
4	2427	6	2437	8	2447	1	/		



5.4. TEST CHANNEL CONFIGURATION

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

## 5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band								
Test Softw	/are		QRCT					
NA 1 1 C	Transmit		Test Software setting value					
Modulation Mode	Antenna	1	NCB: 20MHz			NCB: 40MHz		
Wiode	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9	
802.11b	1	16	16	16				
802.11g	1	14	14	14	/			
802.11n HT20	1	14	14	14				
802.11n HT40	1	/ 13 13 13						

## **5.6. THE WORSE CASE CONFIGURATIONS**

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

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



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## 5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	PIFA	0.8

Test Mode	Transmit and Receive Mode	Description				
IEEE 802.11b	⊠1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.				
IEEE 802.11g	⊠1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.				
IEEE 802.11n HT20	⊠1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.				
IEEE 802.11n HT40						
Note: 1. BT&WLAN 2.4G & WLAN 5G cannot transmit simultaneously. (declared by client)						

#### Note:

- 1. The value of the antenna gain was declared by customer.
- 2. The EUT have two antenna, antenna 1 only support BT and WIFI2.4G, antenna 2 only support WIFI5G.

## **5.8. TEST ENVIRONMENT**

Environment Parameter	Selected Values During Tests					
Relative Humidity	45 ~ 70%					
Atmospheric Pressure:	1025Pa					
Temperature	TN	22 ~ 28°C				
	VL	N/A				
Voltage :	VN	DC 3.82V				
	VH	N/A				

Note: VL= Lower Extreme Test Voltage

VN= Nominal Voltage

VH= Upper Extreme Test Voltage

TN= Normal Temperature



5.9. DESCRIPTION OF TEST SETUP

## **SUPPORT EQUIPMENT**

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	ThinkPad	E42-80	/

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#### **I/O CABLES**

Item	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB	Type-C	NA	0.6	/

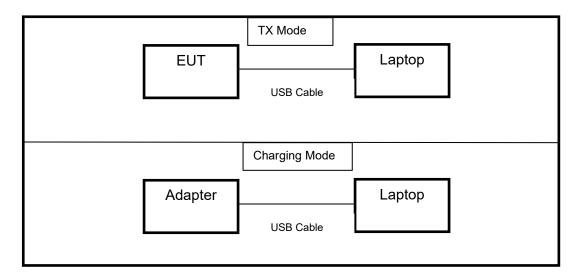
## **ACCESSORIES**

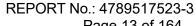
Item	Accessory	Brand Name	Model Name	Description
1	TRAVEL CHARGER	N/A	Q3W18-1U-A	Input: AC 100~240V, 50/60Hz, 0.5A Max Output: 5Vdc=== 3A, 9Vdc=== 2A, 12Vdc=== 1.5A,

#### **TEST SETUP**

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

#### **SETUP DIAGRAM FOR TESTS**







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# 6. MEASURING INSTRUMENT AND SOFTWARE USED

	Conducted Emissions									
	Instrument									
Used	Equipment	Manufacturer		Mode	el No.		Seria	l No.	Last Cal.	Next Cal.
V	EMI Test Receiver	R&S		ES	SR3		101	961	Dec.05,2019	Dec.05,2020
<b>V</b>	Two-Line V- Network	R&S		EΝ\	/216		101	983	Dec.05,2019	Dec.05,2020
V	Artificial Mains Networks	Schwarzbeck		NSLK	( 8126		8126	3465	Dec.05,2019	Dec.05,2020
				Sof	ftware					
Used		Description	1				Manufa	acturer	Name	Version
V	Test Softwa	are for Conduc	ted dis	turba	nce		Fai	ad	EZ-EMC	Ver. UL-3A1
			Rad	iated	Emiss	ions				
				Insti	rument					
Used	Equipment	Manufacturer		Mode	el No.		Seria	l No.	Last Cal.	Next Cal.
$\overline{\checkmark}$	MXE EMI Receiver	KESIGHT		N90	)38A		MY564	00036	Dec.06,2019	Dec.05,2020
<b>V</b>	Hybrid Log Periodic Antenna	TDK	ı	HLP-	3003C		130960		Sep.17,2018	Sep.17,2021
V	Preamplifier	HP	8447D			2944A09099		Dec.05,2019	Dec.05,2020	
<b>V</b>	EMI Measurement Receiver	R&S		ES	R26		101377		Dec.05,2019	Dec.05,2020
$\checkmark$	Horn Antenna	TDK		HRN-0118			130	939	Sep.17,2018	Sep.17,2021
<b>V</b>	High Gain Horn Antenna	Schwarzbeck	ſ	BBHA	A-9170		69		Aug.11,2018	Aug.11,2021
V	Preamplifier	TDK	Ī	PA-02	2-0118		TRS-	)67	Dec.05,2019	Dec.05,2020
V	Preamplifier	TDK		PA-	02-2		TRS-		Dec.05,2019	Dec.05,2020
V	Loop antenna	Schwarzbeck			19B		000	800	Jan.07,2019	Jan.07,2022
V	Band Reject Filter	Wainwright	2483	.5-25	2350-24 33.5-40	SS	2	ļ.	Dec.05,2019	Dec.05,2020
V	High Pass Filter	Wi			2700-30 )-40SS	000-	2	3	Dec.05,2019	Dec.05,2020
				Sof	ftware					
Used	Description Manufact				turer		Name	Version		
V	Test Software for Radiated disturbance Farac				t		EZ-EMC	Ver. UL-3A1		
			Oth	ner in	strume	ents				
Used	Equipment	Manufac	cturer Model No. So			erial No	). <u> </u>	Last Cal.	Next Cal.	
<b>V</b>	Spectrum Analyz	zer Keysiç	ght	N9	030A	MY	554105	12 C	ec.06,2019	Dec.05,2020
V	Power sensor, Po	wer R&S	3	os	P120		100921		Dec.06,2019	Dec.06,2020



7. ANTENNA PORT TEST RESULTS

# 7.1. ON TIME AND DUTY CYCLE

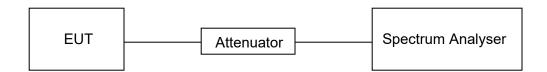
#### **LIMITS**

None; for reporting purposes only

## **PROCEDURE**

KDB 558074 Zero-Span Spectrum Analyzer Method

## **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	25.5°C	Relative Humidity	61.2%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.82V

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

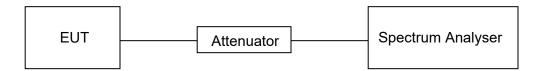
## **TEST PROCEDURE**

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

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

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

## **TEST SETUP**





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## **TEST ENVIRONMENT**

Temperature	25.5°C	Relative Humidity	61.2%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.82V

## **RESULTS**

Please refer to appendix A and B.



# 7.3. CONDUCTED OUTPUT POWER

## **LIMITS**

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

## **TEST PROCEDURE**

Place the EUT on the table and set it in the transmitting mode.

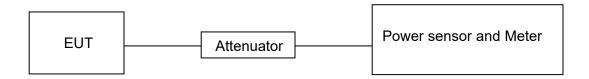
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.

Measure peak power each channel.

Peak Detector use for Peak result.

AVG Detector use for AVG result.

#### **TEST SETUP**



#### **TEST ENVIRONMENT**

Temperature	25.5°C	Relative Humidity	61.2%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.82V



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## **RESULTS**

Please refer to appendix C.



## 7.4. POWER SPECTRAL DENSITY

## **LIMITS**

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

## **TEST PROCEDURE**

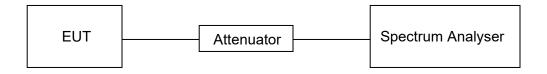
Connect the UUT to the spectrum analyser and use the following settings:

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

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

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

## **TEST SETUP**



#### **TEST ENVIRONMENT**

Temperature	25.5°C	Relative Humidity	61.2%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.82V

## **RESULTS**



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Please refer to appendix D.



# 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

## **LIMITS**

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

## **TEST PROCEDURE**

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

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

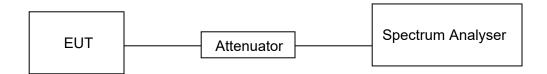
Use the peak marker function to determine the maximum PSD level.

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

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



## **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	25.5°C	Relative Humidity	61.2%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.82V

# **RESULTS**

Please refer to appendix E and F.



# 8. RADIATED TEST RESULTS

## **LIMITS**

Please refer to CFR 47 FCC §15.205 and §15.209

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

Emissions radiated outside of the specified frequency bands above 30MHz						
Frequency Range	Field Strength Limit	Field Strength Limit				
(MHz)	(uV/m) at 3 m	(dBuV/m) at 3 m				
		Quasi-Peak				
30 - 88	100	40				
88 - 216	150	43.5				
216 - 960	200	46				
Above 960	500	54				
Abovo 1000	500	Peak	Average			
Above 1000	300	74	54			

FCC Emissions radiated outside of the specified frequency bands below 30MHz							
Frequency (MHz) Field strength (microvolts/meter) Measurement distance (meters)							
0.009-0.490	2400/F(kHz)	300					
0.490-1.705	24000/F(kHz)	30					
1.705-30.0	30	30					



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

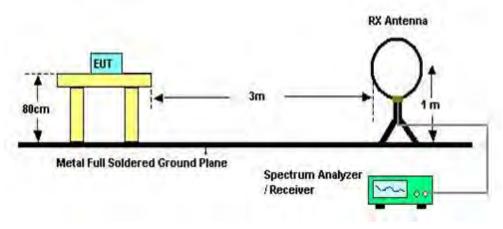
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
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	( <sup>2</sup> )
13.36-13.41			

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



#### **TEST SETUP AND PROCEDURE**

#### Below 30MHz



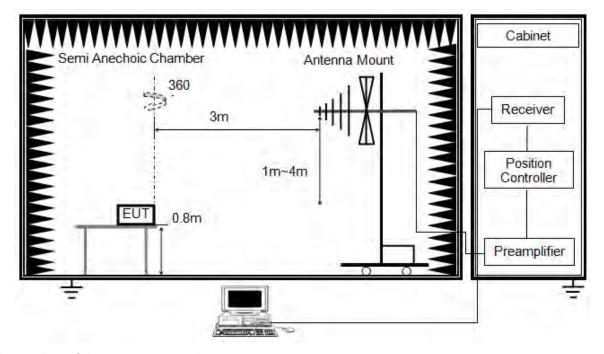
## The setting of the spectrum analyser

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

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



Below 1G



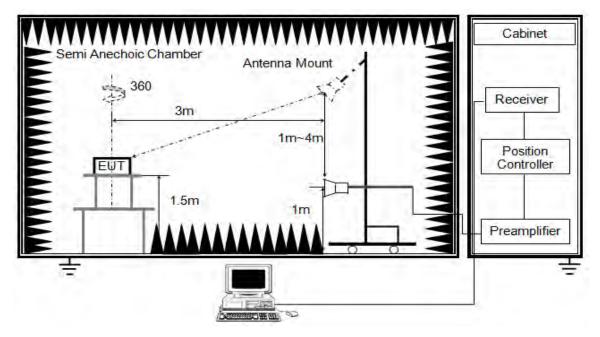
The setting of the spectrum analyser

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

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



#### **ABOVE 1G**



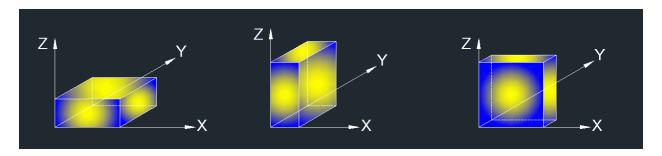
## The setting of the spectrum analyser

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

- 1. The testing follows the guidelines in ANSI C63.10-2013.
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 1.5m above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
- 6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.



X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

## **TEST ENVIRONMENT**

Temperature	23.2°C	Relative Humidity	58%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.82V

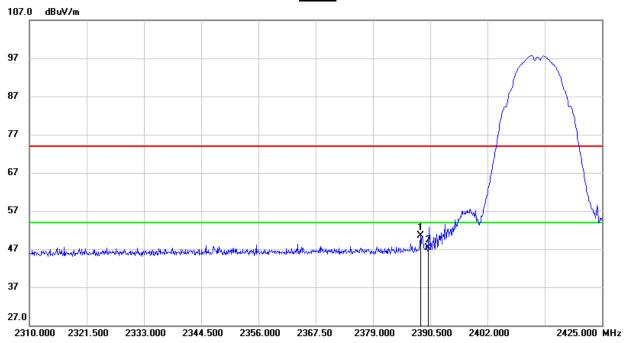


## 8.1. RESTRICTED BANDEDGE

#### 8.1.1. 802.11b MODE

## RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

#### **PEAK**



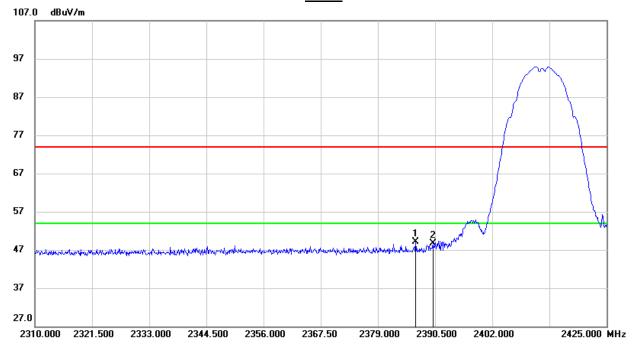
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.545	17.52	32.94	50.46	74.00	-23.54	peak
2	2390.000	14.31	32.94	47.25	74.00	-26.75	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

## **PEAK**



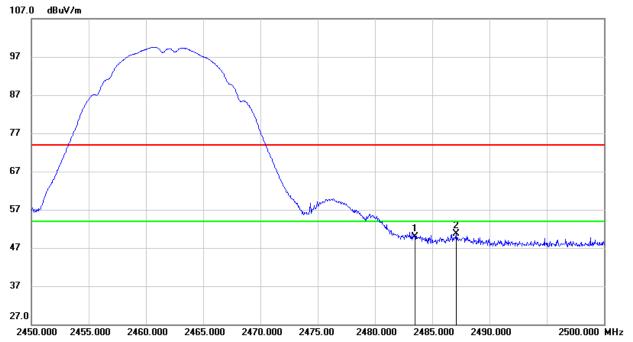
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.590	16.08	32.94	49.02	74.00	-24.98	peak
2	2390.000	15.81	32.94	48.75	74.00	-25.25	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



## RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

## **PEAK**



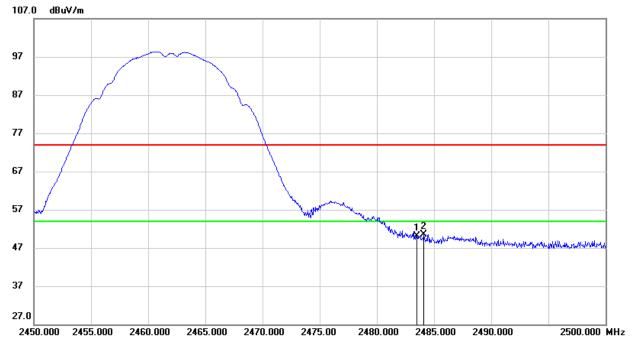
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.30	33.58	49.88	74.00	-24.12	peak
2	2487.100	17.05	33.61	50.66	74.00	-23.34	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



## **RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)**

## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.54	33.58	50.12	74.00	-23.88	peak
2	2484.100	16.94	33.58	50.52	74.00	-23.48	peak

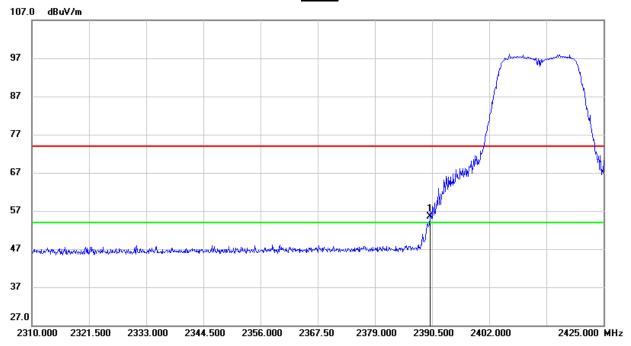
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



## 8.1.2. 802.11g MODE

## RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

#### **PEAK**

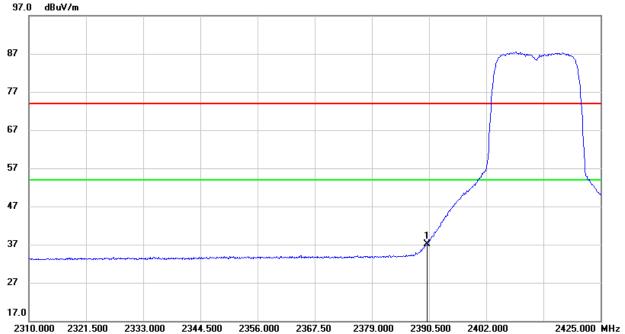


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	22.66	32.94	55.60	74.00	-18.40	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







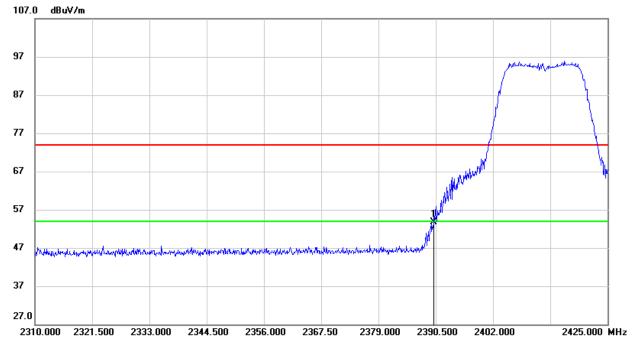
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	4.15	32.94	37.09	54.00	-16.91	AVG

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



#### RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

## **PEAK**

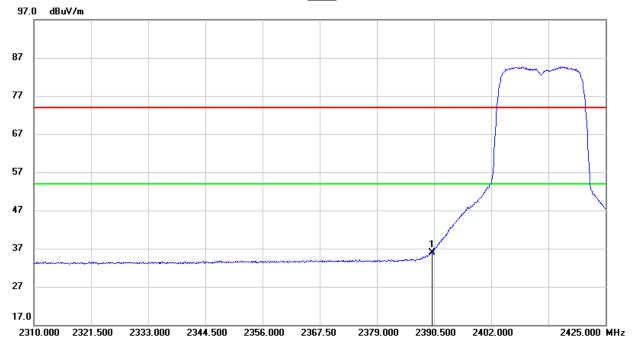


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	20.81	32.94	53.75	74.00	-20.25	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







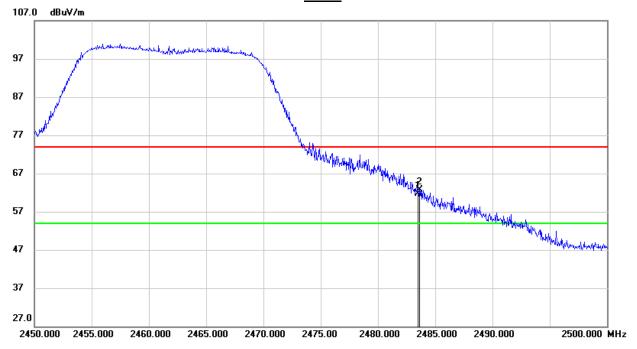
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	3.02	32.94	35.96	54.00	-18.04	AVG

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



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

## <u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	28.15	33.58	61.73	74.00	-12.27	peak
2	2483.650	29.05	33.58	62.63	74.00	-11.37	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.





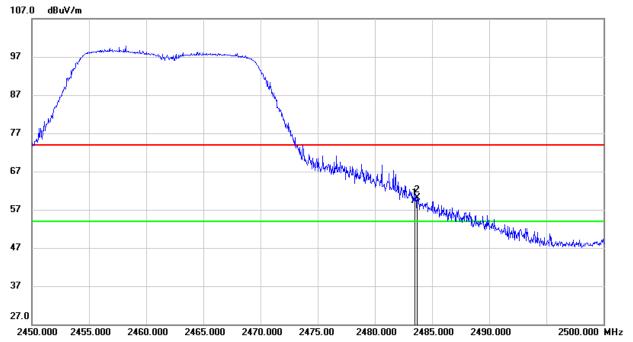
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	11.17	33.58	44.75	54.00	-9.25	AVG
2	2483.650	11.01	33.58	44.59	54.00	-9.41	AVG

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



#### RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

# **PEAK**

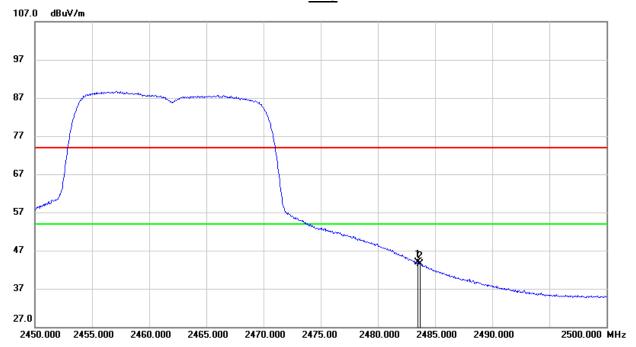


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	25.64	33.58	59.22	74.00	-14.78	peak
2	2483.700	26.57	33.58	60.15	74.00	-13.85	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	10.41	33.58	43.99	54.00	-10.01	AVG
2	2483.700	9.89	33.58	43.47	54.00	-10.53	AVG

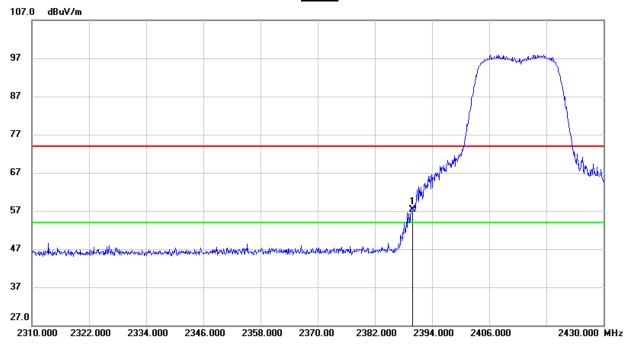
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



# 8.1.3. 802.11n HT20 MODE

#### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

#### **PEAK**

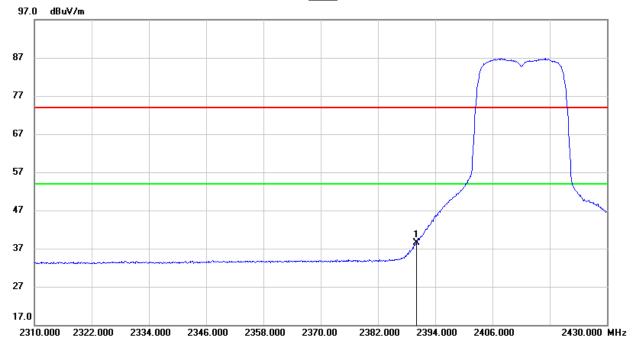


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	24.42	32.94	57.36	74.00	-16.64	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







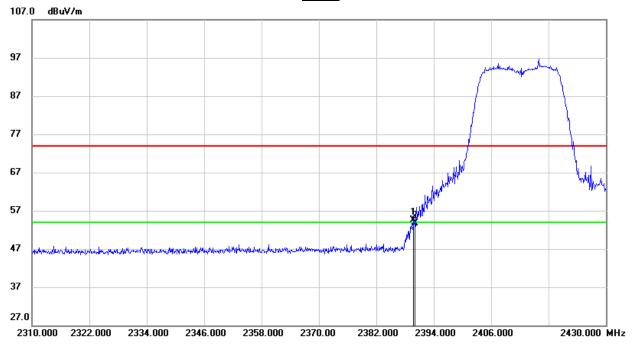
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	5.53	32.94	38.47	54.00	-15.53	AVG

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



#### **RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)**

## **PEAK**

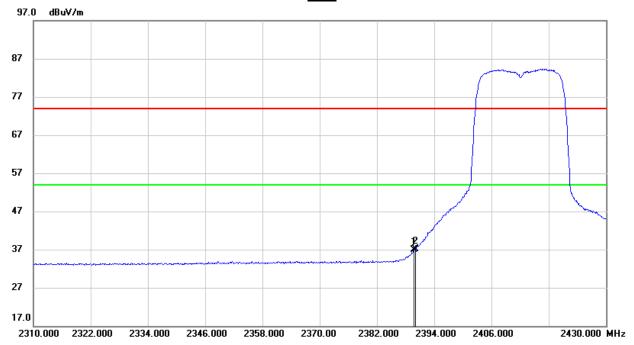


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.800	21.61	32.94	54.55	74.00	-19.45	peak
2	2390.000	20.75	32.94	53.69	74.00	-20.31	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







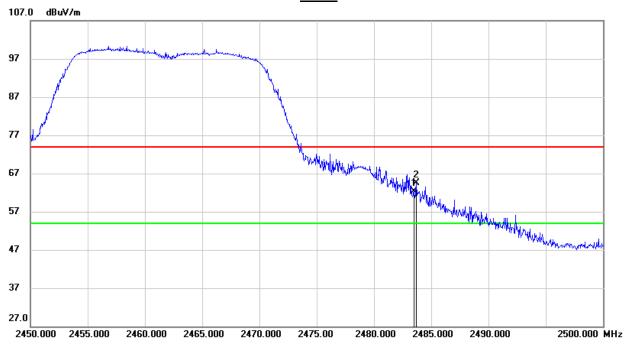
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.800	3.90	32.94	36.84	54.00	-17.16	AVG
2	2390.000	4.12	32.94	37.06	54.00	-16.94	AVG

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



#### RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

## **PEAK**

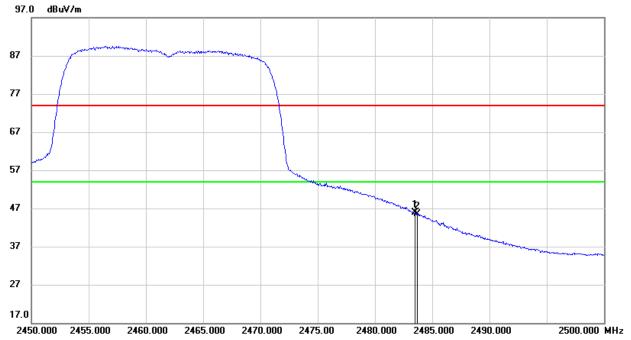


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	28.75	33.58	62.33	74.00	-11.67	peak
2	2483.700	30.83	33.58	64.41	74.00	-9.59	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







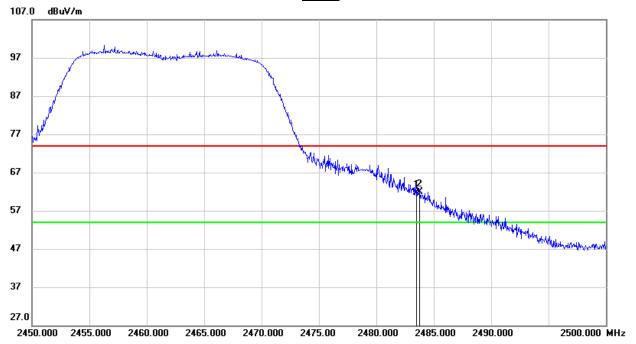
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	12.32	33.58	45.90	54.00	-8.10	AVG
2	2483.700	11.88	33.58	45.46	54.00	-8.54	AVG

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



#### RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

## **PEAK**

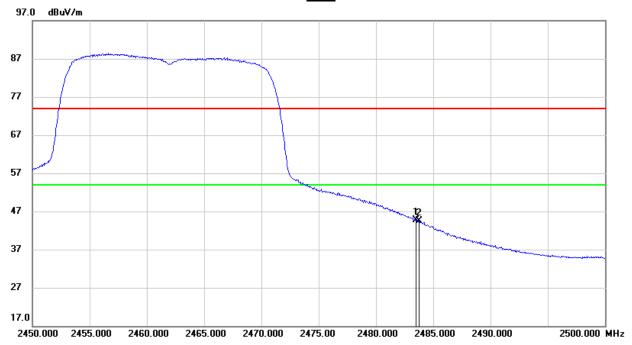


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	28.22	33.58	61.80	74.00	-12.20	peak
2	2483.750	28.42	33.58	62.00	74.00	-12.00	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	11.08	33.58	44.66	54.00	-9.34	AVG
2	2483.750	10.92	33.58	44.50	54.00	-9.50	AVG

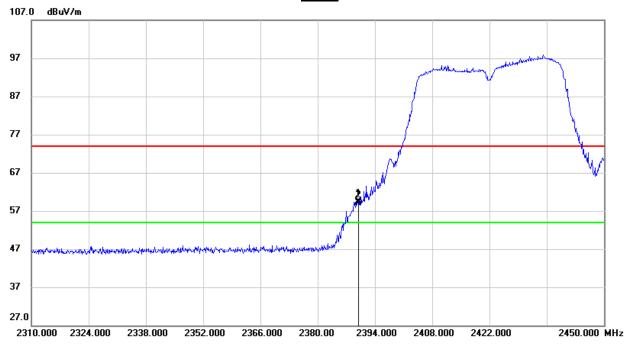
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



## 8.1.4. 802.11n HT40 MODE

#### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

#### **PEAK**

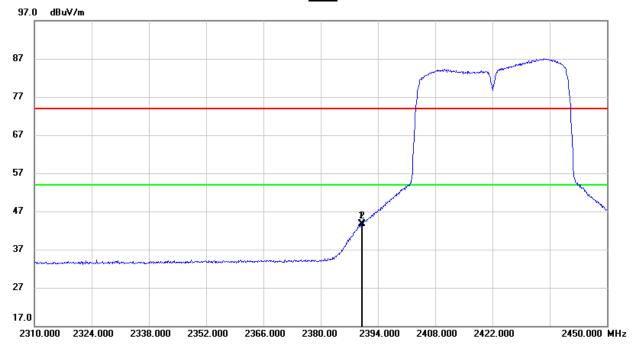


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.940	26.54	32.94	59.48	74.00	-14.52	peak
2	2390.000	26.08	32.94	59.02	74.00	-14.98	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







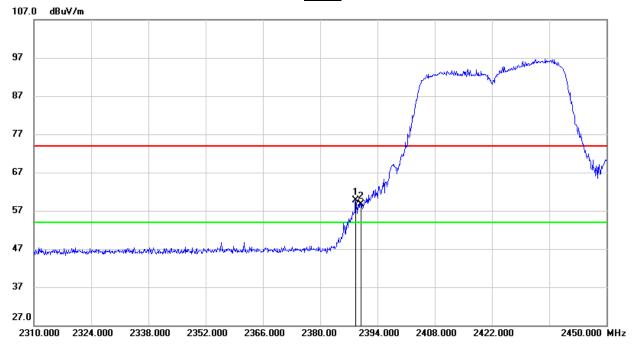
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.940	10.81	32.94	43.75	54.00	-10.25	AVG
2	2390.000	10.85	32.94	43.79	54.00	-10.21	AVG

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



#### RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

## **PEAK**

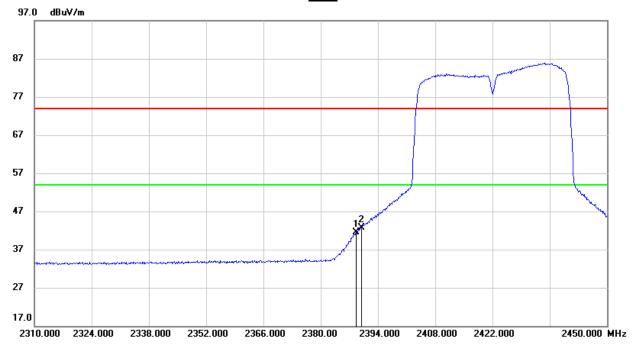


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.680	26.84	32.94	59.78	74.00	-14.22	peak
2	2390.000	25.75	32.94	58.69	74.00	-15.31	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







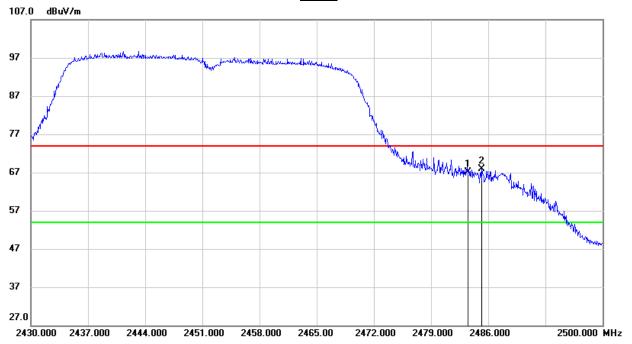
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.680	8.63	32.94	41.57	54.00	-12.43	AVG
2	2390.000	9.68	32.94	42.62	54.00	-11.38	AVG

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



## RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

# **PEAK**

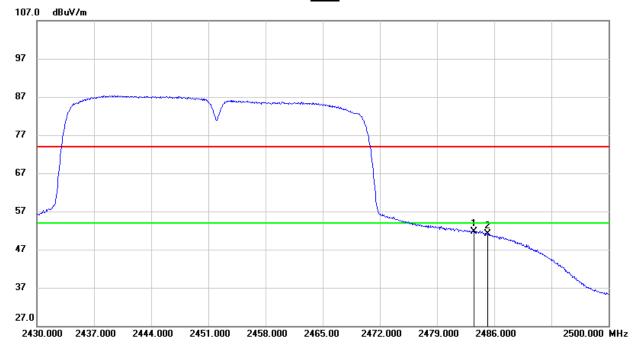


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	33.46	33.58	67.04	74.00	-6.96	peak
2	2485.230	34.31	33.59	67.90	74.00	-6.10	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







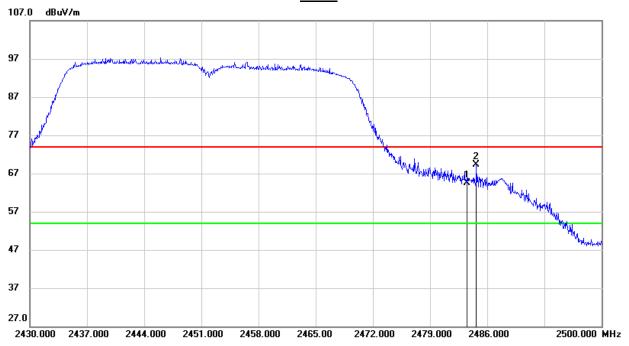
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	18.17	33.58	51.75	54.00	-2.25	AVG
2	2485.230	17.54	33.59	51.13	54.00	-2.87	AVG

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



#### RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

## **PEAK**

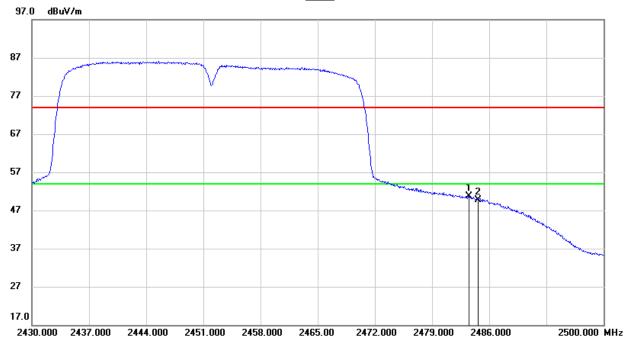


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	30.92	33.58	64.50	74.00	-9.50	peak
2	2484.670	35.70	33.59	69.29	74.00	-4.71	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.03	33.58	50.61	54.00	-3.39	AVG
2	2484.670	16.15	33.59	49.74	54.00	-4.26	AVG

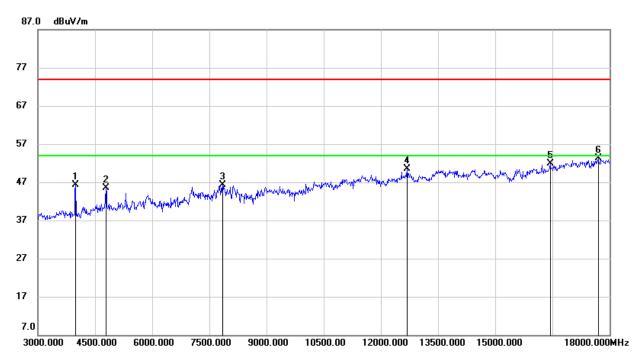
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



# 8.2. SPURIOUS EMISSIONS (3~18GHz)

#### 8.2.1. 802.11b MODE

#### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

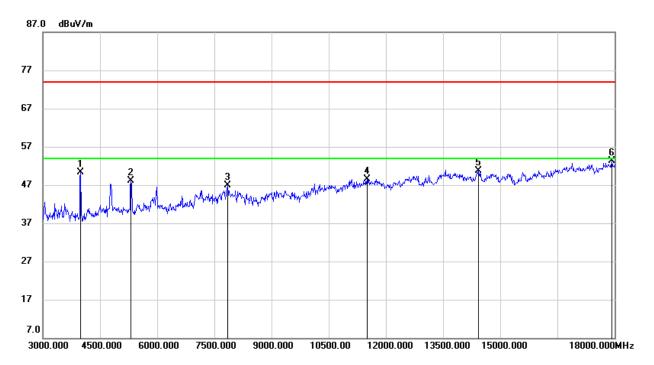


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	49.29	-2.89	46.40	74.00	-27.60	peak
2	4785.000	45.18	0.42	45.60	74.00	-28.40	peak
3	7845.000	38.64	7.62	46.26	74.00	-27.74	peak
4	12690.000	36.19	14.25	50.44	74.00	-23.56	peak
5	16440.000	32.89	18.94	51.83	74.00	-22.17	peak
6	17700.000	30.91	22.43	53.34	74.00	-20.66	peak

- 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)

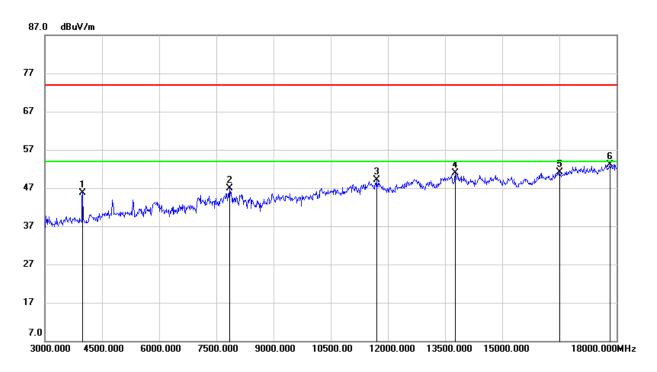


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	53.25	-2.89	50.36	74.00	-23.64	peak
2	5310.000	46.07	2.02	48.09	74.00	-25.91	peak
3	7845.000	39.24	7.62	46.86	74.00	-27.14	peak
4	11505.000	35.14	13.42	48.56	74.00	-25.44	peak
5	14430.000	34.31	16.35	50.66	74.00	-23.34	peak
6	17925.000	29.91	23.37	53.28	74.00	-20.72	peak

- 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)

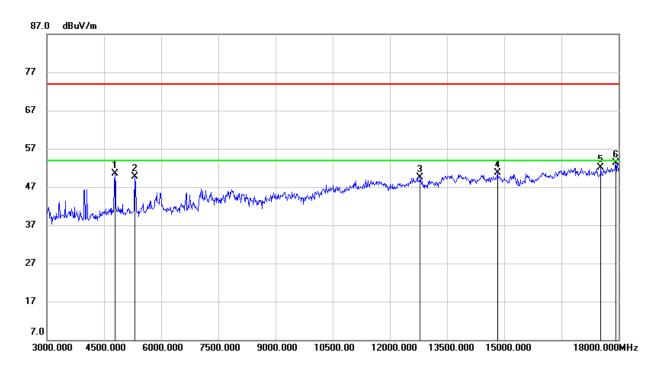


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	48.51	-2.89	45.62	74.00	-28.38	peak
2	7845.000	39.26	7.62	46.88	74.00	-27.12	peak
3	11700.000	36.13	12.95	49.08	74.00	-24.92	peak
4	13770.000	34.13	16.72	50.85	74.00	-23.15	peak
5	16500.000	31.90	19.19	51.09	74.00	-22.91	peak
6	17835.000	29.81	23.31	53.12	74.00	-20.88	peak

- 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)**

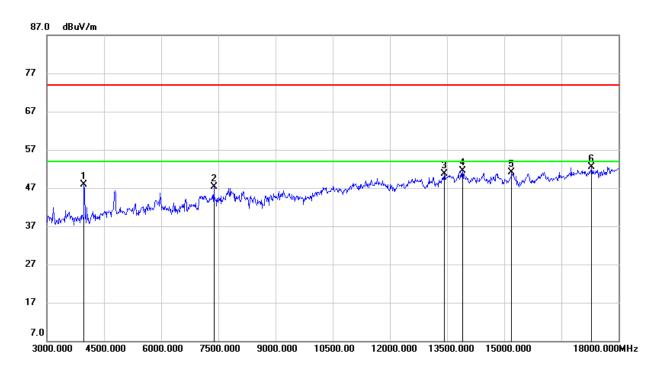


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	50.16	0.42	50.58	74.00	-23.42	peak
2	5310.000	47.62	2.02	49.64	74.00	-24.36	peak
3	12795.000	33.99	15.60	49.59	74.00	-24.41	peak
4	14820.000	34.86	15.94	50.80	74.00	-23.20	peak
5	17535.000	30.65	21.51	52.16	74.00	-21.84	peak
6	17925.000	29.88	23.37	53.25	74.00	-20.75	peak

- 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)

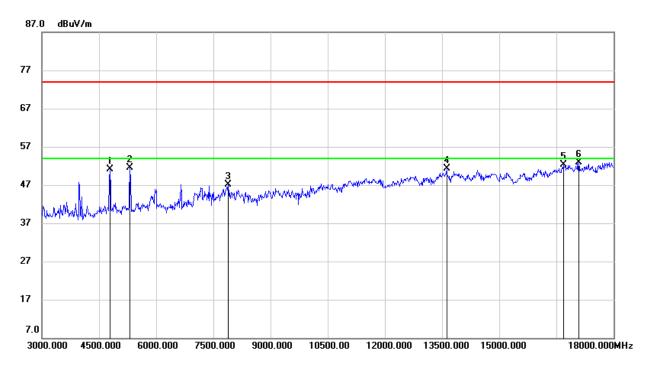


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3975.000	50.78	-2.90	47.88	74.00	-26.12	peak
2	7380.000	40.80	6.41	47.21	74.00	-26.79	peak
3	13425.000	34.74	16.02	50.76	74.00	-23.24	peak
4	13905.000	35.40	16.20	51.60	74.00	-22.40	peak
5	15195.000	35.10	16.09	51.19	74.00	-22.81	peak
6	17295.000	30.86	21.71	52.57	74.00	-21.43	peak

- 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)



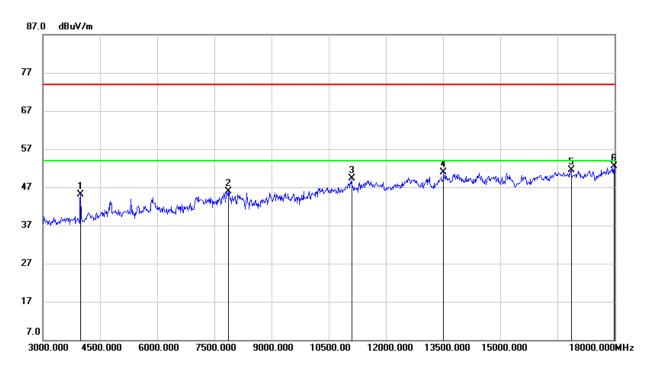
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	50.63	0.42	51.05	74.00	-22.95	peak
2	5310.000	49.50	2.02	51.52	74.00	-22.48	peak
3	7890.000	39.81	7.30	47.11	74.00	-26.89	peak
4	13620.000	35.39	15.99	51.38	74.00	-22.62	peak
5	16680.000	32.40	19.84	52.24	74.00	-21.76	peak
6	17085.000	32.25	20.60	52.85	74.00	-21.15	peak

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



# 8.2.2. 802.11g MODE

# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

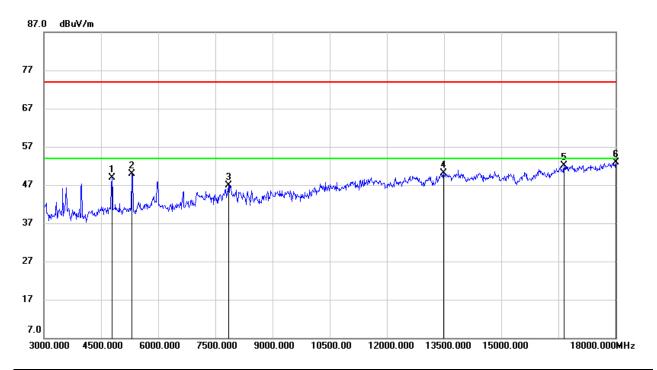


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	48.09	-2.89	45.20	74.00	-28.80	peak
2	7875.000	38.60	7.40	46.00	74.00	-28.00	peak
3	11100.000	36.66	12.56	49.22	74.00	-24.78	peak
4	13515.000	35.04	15.81	50.85	74.00	-23.15	peak
5	16860.000	31.65	19.95	51.60	74.00	-22.40	peak
6	17985.000	29.16	23.44	52.60	74.00	-21.40	peak

- 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)

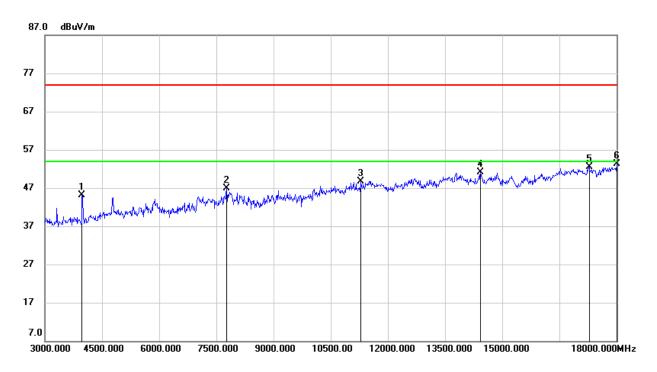


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	48.39	0.42	48.81	74.00	-25.19	peak
2	5310.000	47.89	2.02	49.91	74.00	-24.09	peak
3	7845.000	39.28	7.62	46.90	74.00	-27.10	peak
4	13485.000	34.22	15.82	50.04	74.00	-23.96	peak
5	16650.000	32.34	19.70	52.04	74.00	-21.96	peak
6	18000.000	29.44	23.46	52.90	74.00	-21.10	peak

- 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)

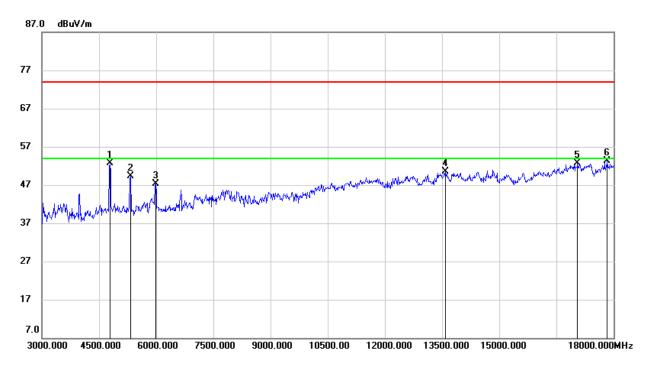


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3975.000	48.04	-2.90	45.14	74.00	-28.86	peak
2	7770.000	39.38	7.50	46.88	74.00	-27.12	peak
3	11295.000	36.39	12.34	48.73	74.00	-25.27	peak
4	14430.000	34.70	16.35	51.05	74.00	-22.95	peak
5	17280.000	30.88	21.59	52.47	74.00	-21.53	peak
6	18000.000	29.80	23.46	53.26	74.00	-20.74	peak

- 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)**

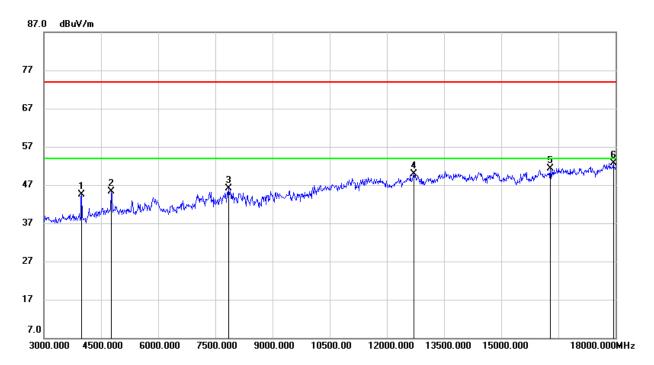


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	52.37	0.42	52.79	74.00	-21.21	peak
2	5325.000	47.28	1.99	49.27	74.00	-24.73	peak
3	5985.000	43.70	3.54	47.24	74.00	-26.76	peak
4	13590.000	34.43	16.00	50.43	74.00	-23.57	peak
5	17055.000	32.10	20.53	52.63	74.00	-21.37	peak
6	17835.000	30.03	23.31	53.34	74.00	-20.66	peak

- 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)

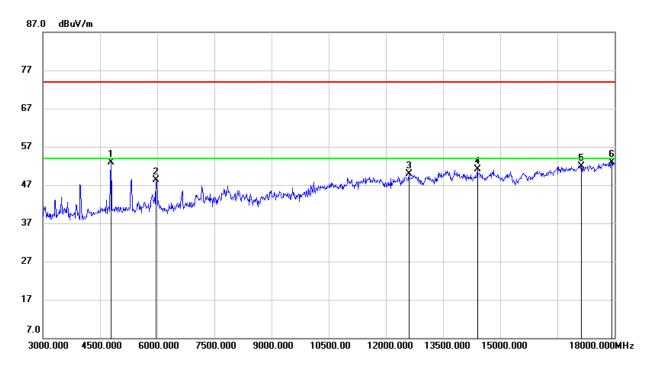


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	47.36	-2.89	44.47	74.00	-29.53	peak
2	4770.000	45.03	0.37	45.40	74.00	-28.60	peak
3	7845.000	38.56	7.62	46.18	74.00	-27.82	peak
4	12705.000	35.52	14.35	49.87	74.00	-24.13	peak
5	16290.000	32.94	18.36	51.30	74.00	-22.70	peak
6	17940.000	29.35	23.39	52.74	74.00	-21.26	peak

- 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)**



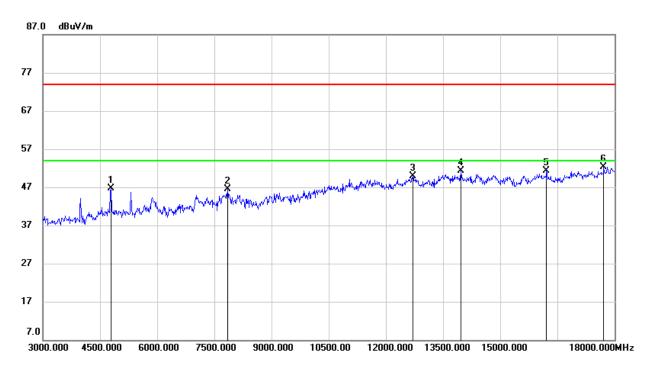
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	52.42	0.42	52.84	74.00	-21.16	peak
2	5970.000	44.50	3.79	48.29	74.00	-25.71	peak
3	12600.000	35.87	13.99	49.86	74.00	-24.14	peak
4	14400.000	34.73	16.35	51.08	74.00	-22.92	peak
5	17130.000	31.25	20.72	51.97	74.00	-22.03	peak
6	17925.000	29.59	23.37	52.96	74.00	-21.04	peak

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



#### 8.2.3. 802.11n HT20 MODE

# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

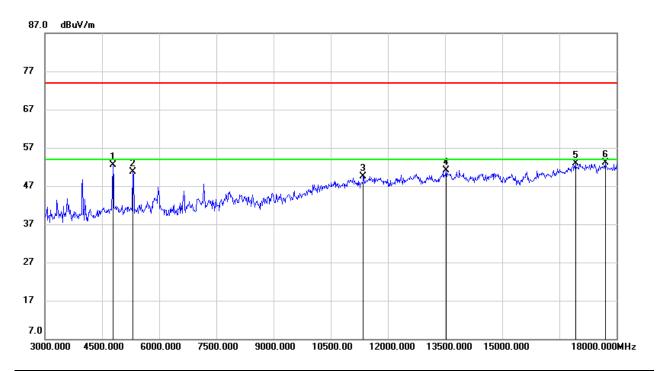


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	46.37	0.42	46.79	74.00	-27.21	peak
2	7845.000	38.82	7.62	46.44	74.00	-27.56	peak
3	12705.000	35.46	14.35	49.81	74.00	-24.19	peak
4	13965.000	35.18	16.09	51.27	74.00	-22.73	peak
5	16215.000	32.73	18.48	51.21	74.00	-22.79	peak
6	17715.000	29.72	22.56	52.28	74.00	-21.72	peak

- 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)

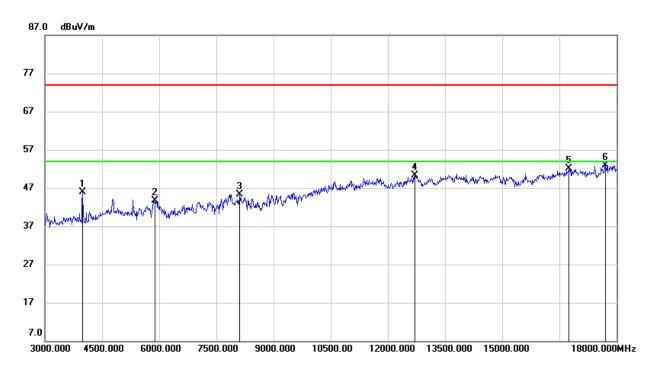


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	52.02	0.42	52.44	74.00	-21.56	peak
2	5310.000	48.71	2.02	50.73	74.00	-23.27	peak
3	11355.000	36.94	12.48	49.42	74.00	-24.58	peak
4	13530.000	35.30	15.86	51.16	74.00	-22.84	peak
5	16920.000	32.81	20.06	52.87	74.00	-21.13	peak
6	17700.000	30.59	22.43	53.02	74.00	-20.98	peak

- 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)

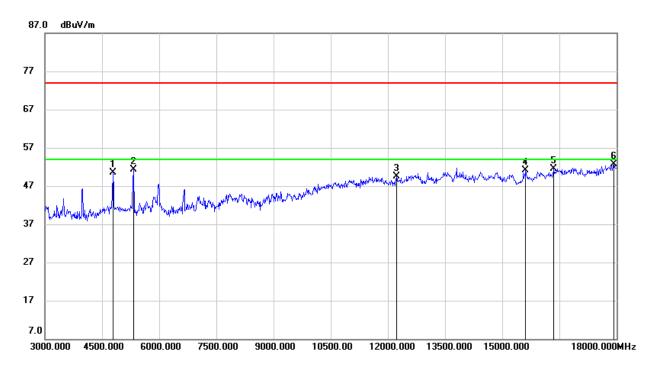


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	48.73	-2.89	45.84	74.00	-28.16	peak
2	5880.000	39.07	4.59	43.66	74.00	-30.34	peak
3	8115.000	37.50	7.90	45.40	74.00	-28.60	peak
4	12705.000	36.00	14.35	50.35	74.00	-23.65	peak
5	16755.000	32.13	19.94	52.07	74.00	-21.93	peak
6	17715.000	30.38	22.56	52.94	74.00	-21.06	peak

- 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)**

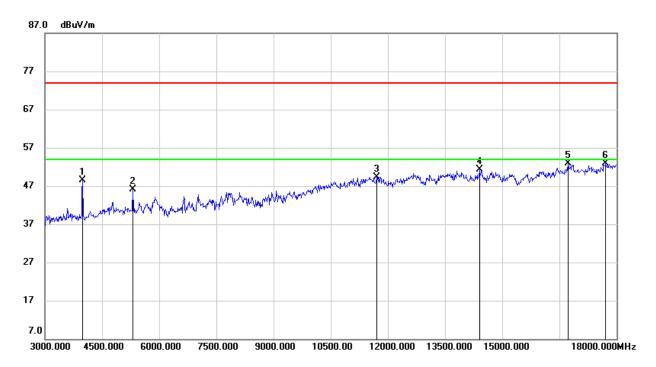


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	50.18	0.42	50.60	74.00	-23.40	peak
2	5325.000	49.31	1.99	51.30	74.00	-22.70	peak
3	12225.000	35.67	13.81	49.48	74.00	-24.52	peak
4	15615.000	34.16	16.94	51.10	74.00	-22.90	peak
5	16350.000	32.97	18.57	51.54	74.00	-22.46	peak
6	17925.000	29.28	23.37	52.65	74.00	-21.35	peak

- 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)

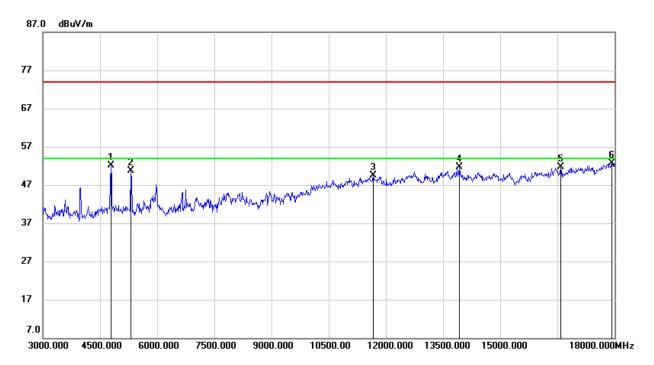


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	51.37	-2.89	48.48	74.00	-25.52	peak
2	5310.000	44.11	2.02	46.13	74.00	-27.87	peak
3	11715.000	36.41	12.99	49.40	74.00	-24.60	peak
4	14400.000	34.95	16.35	51.30	74.00	-22.70	peak
5	16725.000	33.05	19.93	52.98	74.00	-21.02	peak
6	17715.000	30.44	22.56	53.00	74.00	-21.00	peak

- 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)**



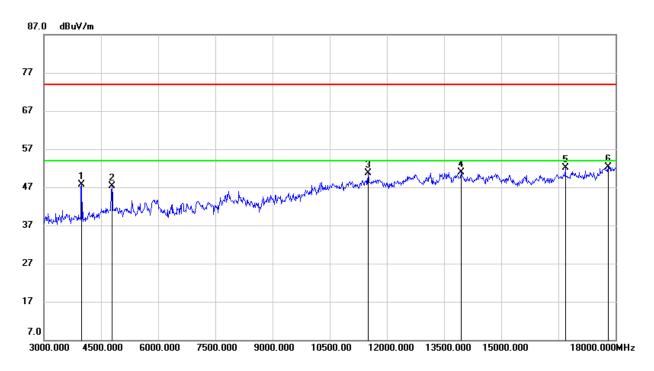
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	51.68	0.42	52.10	74.00	-21.90	peak
2	5310.000	48.72	2.02	50.74	74.00	-23.26	peak
3	11670.000	36.45	13.01	49.46	74.00	-24.54	peak
4	13920.000	35.46	16.17	51.63	74.00	-22.37	peak
5	16590.000	32.22	19.44	51.66	74.00	-22.34	peak
6	17925.000	29.39	23.37	52.76	74.00	-21.24	peak

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



### 8.2.4. 802.11n HT40 MODE

### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

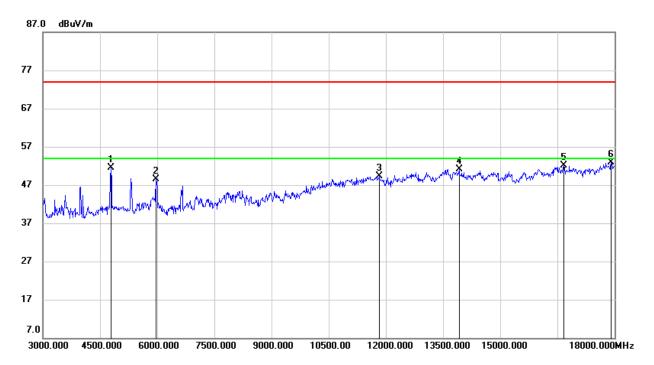


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	50.65	-2.89	47.76	74.00	-26.24	peak
2	4785.000	46.87	0.42	47.29	74.00	-26.71	peak
3	11505.000	37.24	13.42	50.66	74.00	-23.34	peak
4	13950.000	34.88	16.11	50.99	74.00	-23.01	peak
5	16680.000	32.24	19.84	52.08	74.00	-21.92	peak
6	17805.000	29.08	23.31	52.39	74.00	-21.61	peak

- 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)

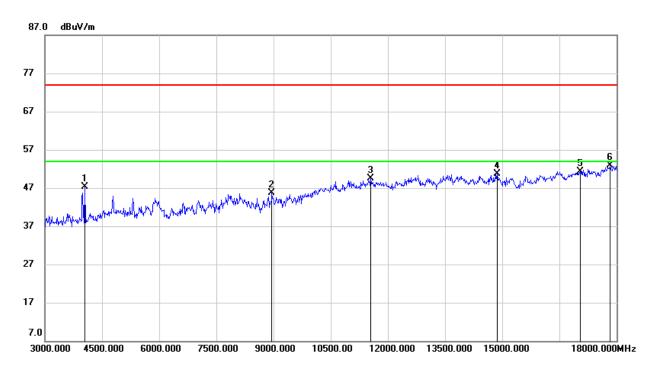


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	51.09	0.42	51.51	74.00	-22.49	peak
2	5970.000	44.81	3.79	48.60	74.00	-25.40	peak
3	11820.000	36.04	13.19	49.23	74.00	-24.77	peak
4	13920.000	35.03	16.17	51.20	74.00	-22.80	peak
5	16665.000	32.23	19.78	52.01	74.00	-21.99	peak
6	17910.000	29.60	23.35	52.95	74.00	-21.05	peak

- 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)

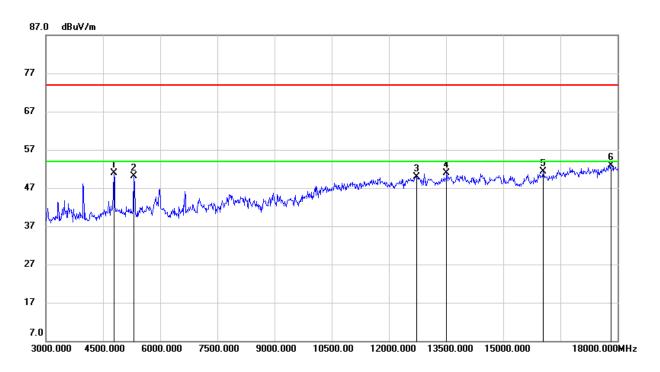


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4050.000	50.28	-2.89	47.39	74.00	-26.61	peak
2	8955.000	36.78	8.84	45.62	74.00	-28.38	peak
3	11550.000	36.26	13.30	49.56	74.00	-24.44	peak
4	14865.000	34.82	15.98	50.80	74.00	-23.20	peak
5	17040.000	30.91	20.49	51.40	74.00	-22.60	peak
6	17835.000	29.52	23.31	52.83	74.00	-21.17	peak

- 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)**

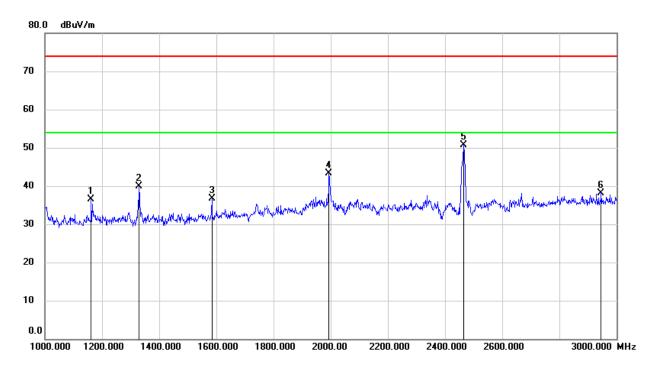


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4785.000	50.42	0.42	50.84	74.00	-23.16	peak
2	5310.000	48.08	2.02	50.10	74.00	-23.90	peak
3	12720.000	35.38	14.57	49.95	74.00	-24.05	peak
4	13515.000	35.09	15.81	50.90	74.00	-23.10	peak
5	16050.000	33.43	17.91	51.34	74.00	-22.66	peak
6	17820.000	29.70	23.30	53.00	74.00	-21.00	peak

- 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)

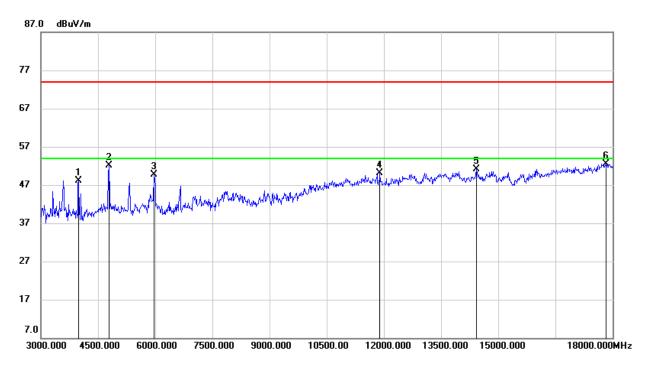


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	49.54	-13.00	36.54	74.00	-37.46	peak
2	1330.000	52.26	-12.36	39.90	74.00	-34.10	peak
3	1584.000	48.29	-11.53	36.76	74.00	-37.24	peak
4	1994.000	53.16	-9.83	43.33	74.00	-30.67	peak
5	2466.000	58.16	-7.40	50.76	74.00	-23.24	peak
6	2946.000	43.62	-5.42	38.20	74.00	-35.80	peak

- 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	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3990.000	51.03	-2.89	48.14	74.00	-25.86	peak
2	4785.000	51.70	0.42	52.12	74.00	-21.88	peak
3	5970.000	45.97	3.79	49.76	74.00	-24.24	peak
4	11895.000	36.90	13.21	50.11	74.00	-23.89	peak
5	14430.000	34.78	16.35	51.13	74.00	-22.87	peak
6	17820.000	29.27	23.30	52.57	74.00	-21.43	peak

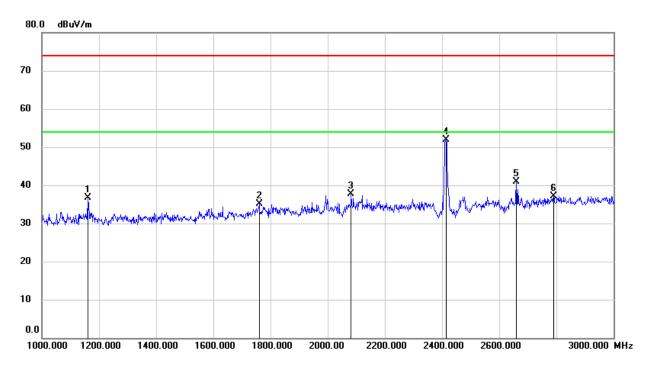
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 5. Proper operation of the transmitter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



## 8.3. SPURIOUS EMISSIONS (1~3GHz)

### 8.3.1. 802.11b MODE

### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

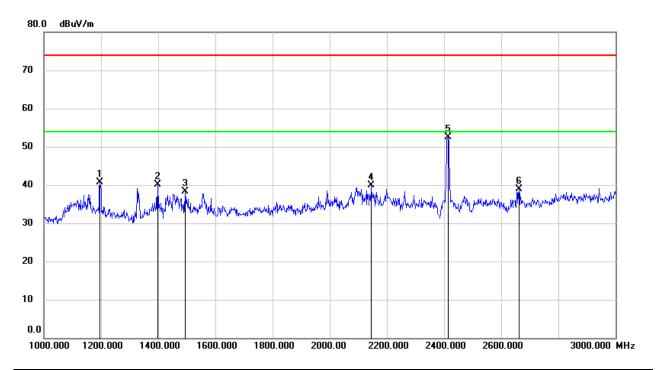


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1160.000	49.69	-13.01	36.68	74.00	-37.32	peak
2	1760.000	45.39	-10.31	35.08	74.00	-38.92	peak
3	2082.000	46.90	-9.28	37.62	74.00	-36.38	peak
4	2412.000	59.65	-7.76	51.89	/	/	fundamental
5	2660.000	48.32	-7.35	40.97	74.00	-33.03	peak
6	2790.000	43.37	-6.17	37.20	74.00	-36.80	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

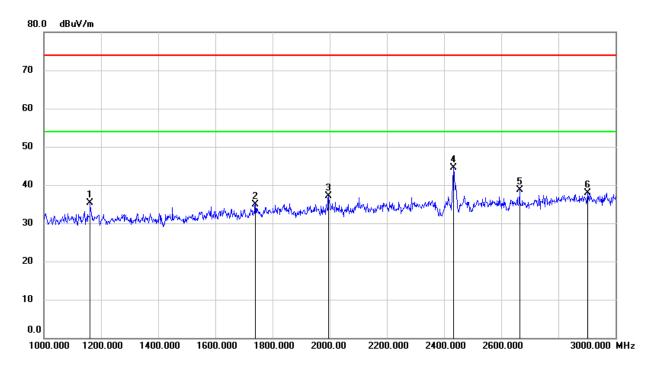


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1196.000	53.38	-12.72	40.66	74.00	-33.34	peak
2	1398.000	52.51	-12.38	40.13	74.00	-33.87	peak
3	1494.000	50.48	-12.22	38.26	74.00	-35.74	peak
4	2146.000	48.90	-8.93	39.97	74.00	-34.03	peak
5	2412.000	60.21	-7.76	52.45	/	/	fundamental
6	2662.000	46.18	-7.35	38.83	74.00	-35.17	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

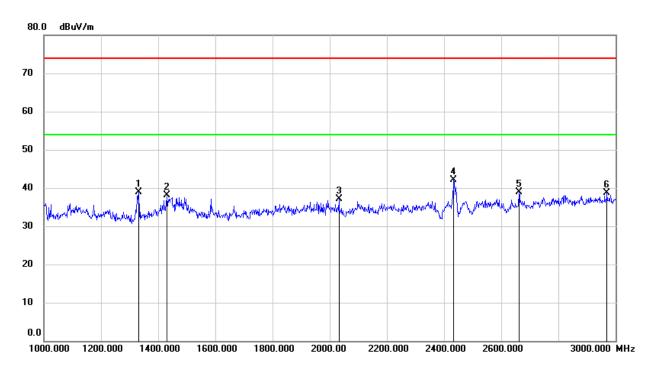


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	48.37	-13.00	35.37	74.00	-38.63	peak
2	1740.000	45.51	-10.51	35.00	74.00	-39.00	peak
3	1996.000	46.98	-9.83	37.15	74.00	-36.85	peak
4	2437.000	52.19	-7.62	44.57	/	/	fundamental
5	2664.000	46.11	-7.34	38.77	74.00	-35.23	peak
6	2902.000	43.49	-5.51	37.98	74.00	-36.02	peak

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



### **HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)**

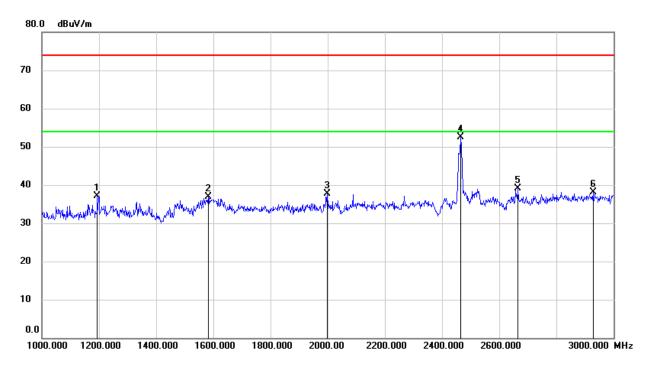


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1332.000	51.28	-12.35	38.93	74.00	-35.07	peak
2	1430.000	50.46	-12.34	38.12	74.00	-35.88	peak
3	2032.000	46.77	-9.60	37.17	74.00	-36.83	peak
4	2437.000	49.80	-7.62	42.18	/	/	fundamental
5	2662.000	46.30	-7.35	38.95	74.00	-35.05	peak
6	2970.000	44.00	-5.37	38.63	74.00	-35.37	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

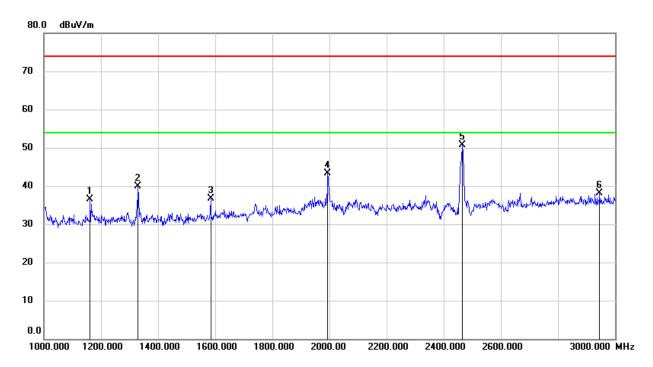


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1194.000	49.92	-12.72	37.20	74.00	-36.80	peak
2	1582.000	48.46	-11.54	36.92	74.00	-37.08	peak
3	1998.000	47.59	-9.83	37.76	74.00	-36.24	peak
4	2462.000	59.90	-7.40	52.50	/	/	fundamental
5	2666.000	46.50	-7.32	39.18	74.00	-34.82	peak
6	2928.000	43.53	-5.46	38.07	74.00	-35.93	peak

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



### **HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)**



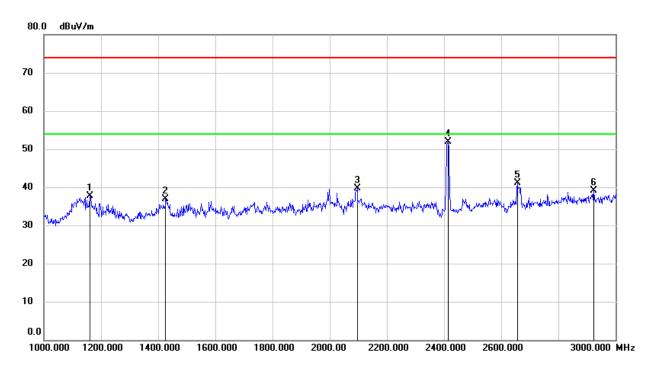
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	49.54	-13.00	36.54	74.00	-37.46	peak
2	1330.000	52.26	-12.36	39.90	74.00	-34.10	peak
3	1584.000	48.29	-11.53	36.76	74.00	-37.24	peak
4	1994.000	53.16	-9.83	43.33	74.00	-30.67	peak
5	2462.000	58.16	-7.40	50.76	/	/	fundamental
6	2946.000	43.62	-5.42	38.20	74.00	-35.80	peak

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



### 8.3.2. 802.11g MODE

### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

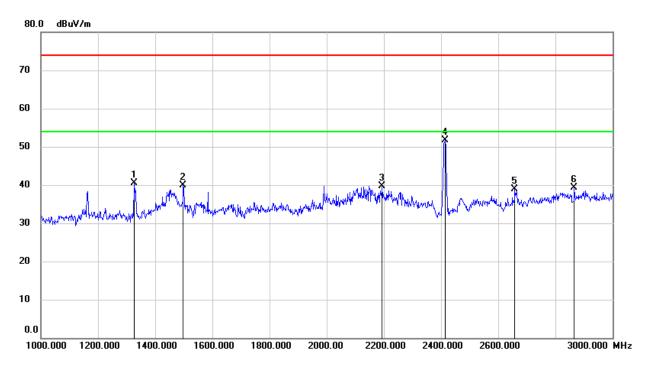


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1160.000	50.79	-13.01	37.78	74.00	-36.22	peak
2	1426.000	49.26	-12.34	36.92	74.00	-37.08	peak
3	2096.000	48.81	-9.19	39.62	74.00	-34.38	peak
4	2412.000	59.58	-7.76	51.82	/	/	fundamental
5	2656.000	48.55	-7.38	41.17	74.00	-32.83	peak
6	2924.000	44.55	-5.47	39.08	74.00	-34.92	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

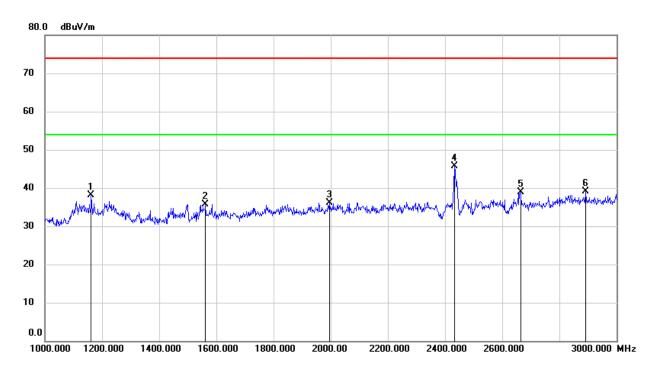


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1326.000	52.84	-12.35	40.49	74.00	-33.51	peak
2	1498.000	52.20	-12.21	39.99	74.00	-34.01	peak
3	2194.000	48.35	-8.70	39.65	74.00	-34.35	peak
4	2412.000	59.40	-7.76	51.64	/	/	fundamental
5	2658.000	46.21	-7.37	38.84	74.00	-35.16	peak
6	2866.000	44.91	-5.70	39.21	74.00	-34.79	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

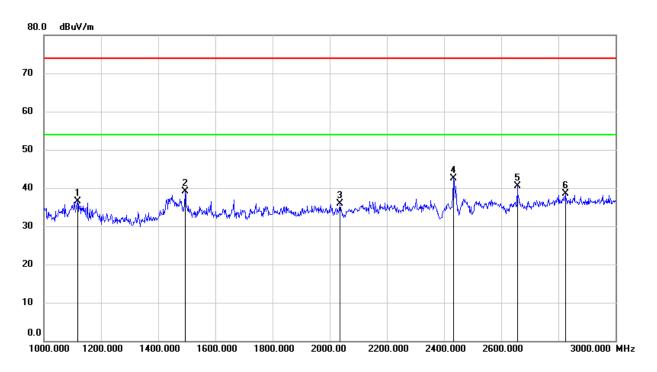


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	51.19	-13.00	38.19	74.00	-35.81	peak
2	1562.000	47.34	-11.70	35.64	74.00	-38.36	peak
3	1996.000	45.95	-9.83	36.12	74.00	-37.88	peak
4	2437.000	53.29	-7.62	45.67	/	/	fundamental
5	2664.000	46.15	-7.34	38.81	74.00	-35.19	peak
6	2892.000	44.71	-5.57	39.14	74.00	-34.86	peak

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



### **HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)**

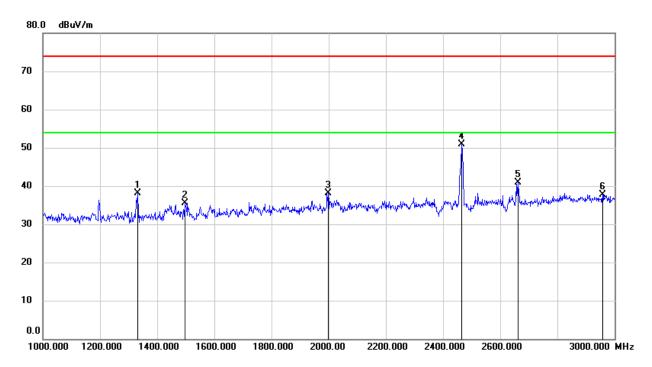


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1118.000	49.83	-13.37	36.46	74.00	-37.54	peak
2	1494.000	51.36	-12.22	39.14	74.00	-34.86	peak
3	2036.000	45.40	-9.59	35.81	74.00	-38.19	peak
4	2437.000	50.15	-7.62	42.53	/	/	fundamental
5	2656.000	47.86	-7.38	40.48	74.00	-33.52	peak
6	2824.000	44.36	-5.92	38.44	74.00	-35.56	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

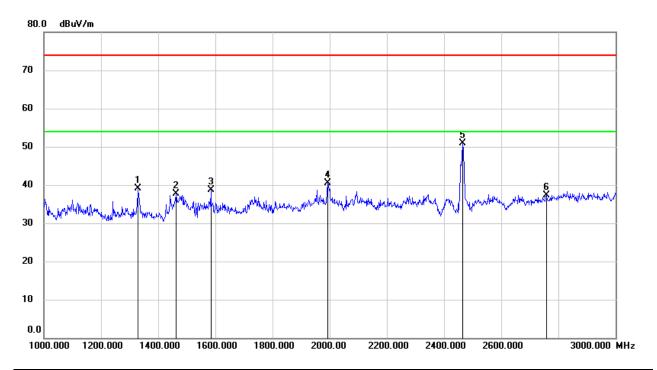


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1332.000	50.55	-12.35	38.20	74.00	-35.80	peak
2	1496.000	47.72	-12.22	35.50	74.00	-38.50	peak
3	1998.000	47.91	-9.83	38.08	74.00	-35.92	peak
4	2462.000	58.28	-7.40	50.88	/	/	fundamental
5	2662.000	48.17	-7.35	40.82	74.00	-33.18	peak
6	2958.000	43.07	-5.39	37.68	74.00	-36.32	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



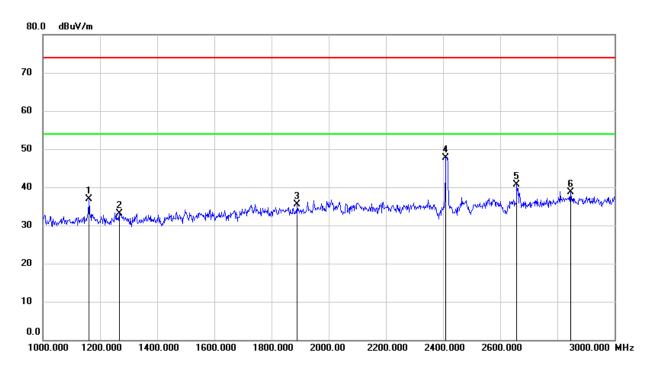
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1330.000	51.47	-12.36	39.11	74.00	-34.89	peak
2	1462.000	49.99	-12.27	37.72	74.00	-36.28	peak
3	1584.000	50.21	-11.53	38.68	74.00	-35.32	peak
4	1992.000	50.31	-9.83	40.48	74.00	-33.52	peak
5	2462.000	58.35	-7.40	50.95	/	/	fundamental
6	2758.000	43.86	-6.51	37.35	74.00	-36.65	peak

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



### 8.3.3. 802.11n HT20 MODE

### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

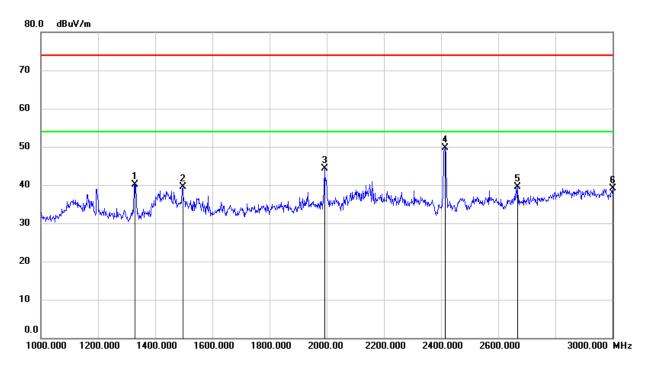


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	49.95	-13.00	36.95	74.00	-37.05	peak
2	1268.000	45.65	-12.45	33.20	74.00	-40.80	peak
3	1890.000	45.47	-9.95	35.52	74.00	-38.48	peak
4	2412.000	55.44	-7.78	47.66	/	/	fundamental
5	2658.000	48.11	-7.37	40.74	74.00	-33.26	peak
6	2846.000	44.57	-5.80	38.77	74.00	-35.23	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

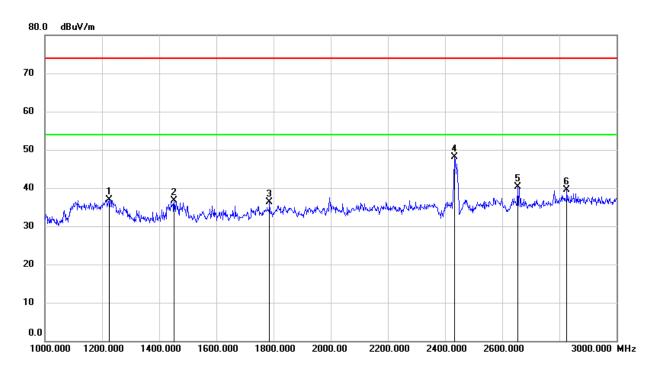


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1330.000	52.47	-12.36	40.11	74.00	-33.89	peak
2	1496.000	51.66	-12.22	39.44	74.00	-34.56	peak
3	1992.000	54.14	-9.83	44.31	74.00	-29.69	peak
4	2412.000	57.45	-7.76	49.69	/	/	fundamental
5	2668.000	46.81	-7.32	39.49	74.00	-34.51	peak
6	3000.000	44.38	-5.30	39.08	74.00	-34.92	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

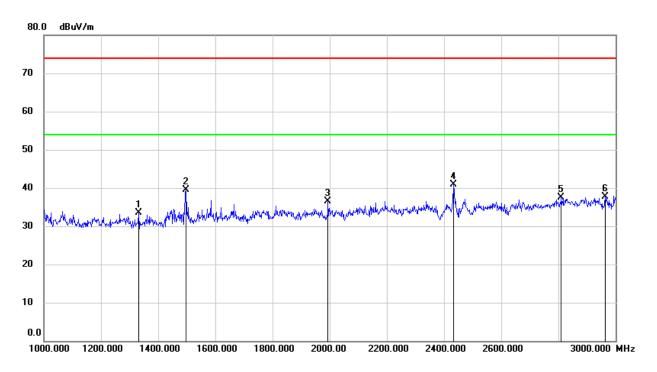


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1226.000	49.59	-12.59	37.00	74.00	-37.00	peak
2	1452.000	49.02	-12.29	36.73	74.00	-37.27	peak
3	1786.000	46.38	-10.05	36.33	74.00	-37.67	peak
4	2437.000	55.74	-7.62	48.12	/	/	fundamental
5	2654.000	47.60	-7.39	40.21	74.00	-33.79	peak
6	2826.000	45.36	-5.92	39.44	74.00	-34.56	peak

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



### **HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)**

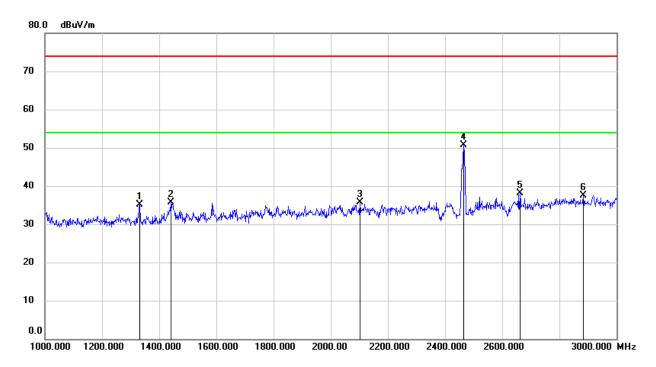


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1332.000	45.91	-12.35	33.56	74.00	-40.44	peak
2	1498.000	51.69	-12.21	39.48	74.00	-34.52	peak
3	1994.000	46.35	-9.83	36.52	74.00	-37.48	peak
4	2437.000	48.46	-7.62	40.84	/	/	fundamental
5	2810.000	43.53	-6.00	37.53	74.00	-36.47	peak
6	2964.000	43.08	-5.38	37.70	74.00	-36.30	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

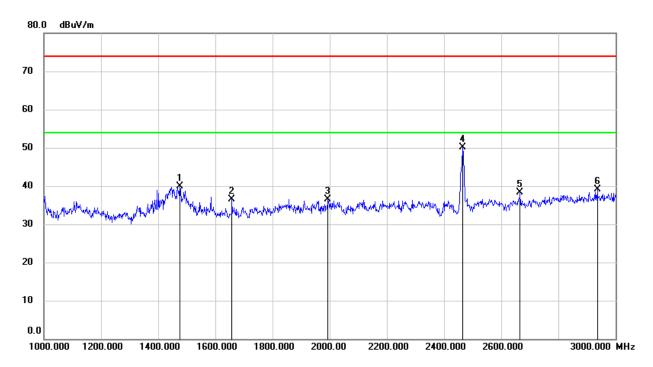


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1332.000	47.49	-12.35	35.14	74.00	-38.86	peak
2	1440.000	48.00	-12.32	35.68	74.00	-38.32	peak
3	2102.000	44.81	-9.15	35.66	74.00	-38.34	peak
4	2462.000	58.18	-7.40	50.78	/	/	fundamental
5	2662.000	45.44	-7.35	38.09	74.00	-35.91	peak
6	2884.000	43.20	-5.61	37.59	74.00	-36.41	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



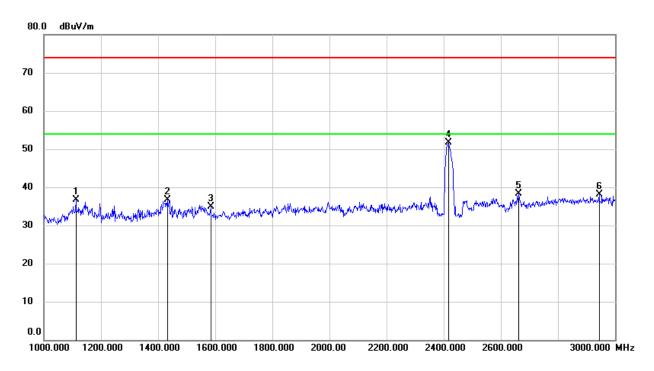
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1476.000	52.08	-12.25	39.83	74.00	-34.17	peak
2	1658.000	47.53	-11.11	36.42	74.00	-37.58	peak
3	1994.000	46.35	-9.83	36.52	74.00	-37.48	peak
4	2462.000	57.46	-7.40	50.06	/	/	fundamental
5	2666.000	45.69	-7.32	38.37	74.00	-35.63	peak
6	2936.000	44.54	-5.44	39.10	74.00	-34.90	peak

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



### 8.3.4. 802.11n HT40 MODE

### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

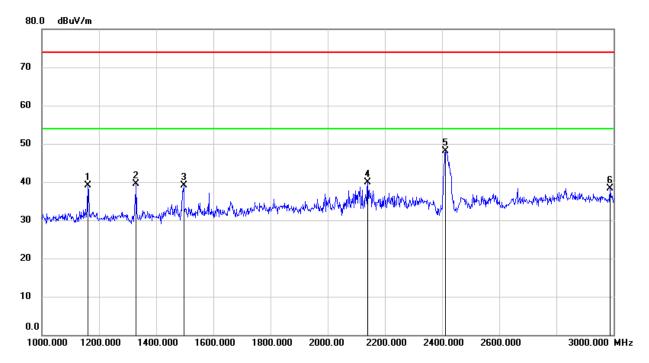


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1112.000	50.10	-13.42	36.68	74.00	-37.32	peak
2	1432.000	49.07	-12.33	36.74	74.00	-37.26	peak
3	1584.000	46.44	-11.53	34.91	74.00	-39.09	peak
4	2412.000	59.42	-7.75	51.67	/	/	fundamental
5	2662.000	45.67	-7.35	38.32	74.00	-35.68	peak
6	2944.000	43.47	-5.42	38.05	74.00	-35.95	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

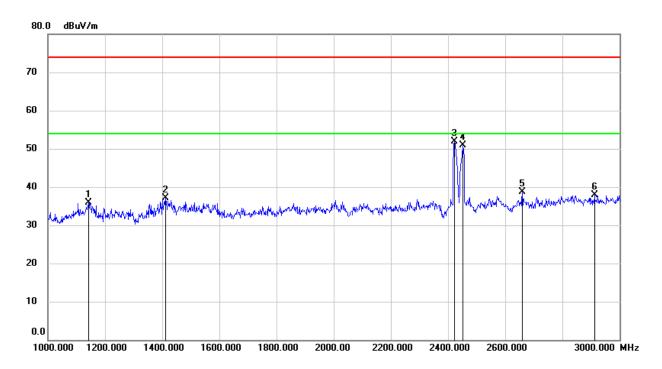


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1160.000	52.18	-13.01	39.17	74.00	-34.83	peak
2	1330.000	51.93	-12.36	39.57	74.00	-34.43	peak
3	1496.000	51.37	-12.22	39.15	74.00	-34.85	peak
4	2140.000	48.92	-8.97	39.95	74.00	-34.05	peak
5	2412.000	55.96	-7.77	48.19	/	/	fundamental
6	2988.000	43.63	-5.33	38.30	74.00	-35.70	peak

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



### HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

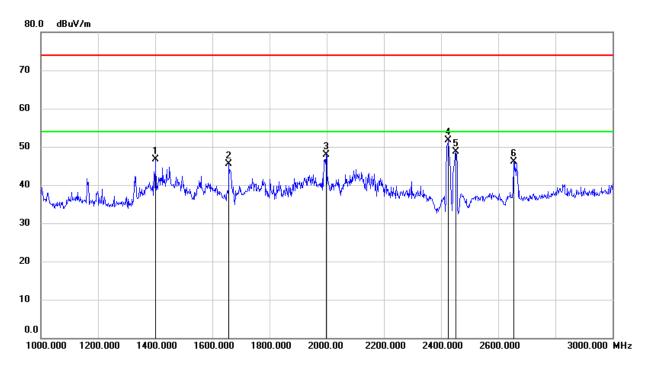


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1142.000	49.04	-13.16	35.88	74.00	-38.12	peak
2	1412.000	49.43	-12.36	37.07	74.00	-36.93	peak
3	2422.000	59.52	-7.71	51.81	/	/	fundamental
4	2452.000	58.39	-7.50	50.89	/	/	fundamental
5	2660.000	46.06	-7.35	38.71	74.00	-35.29	peak
6	2912.000	43.49	-5.50	37.99	74.00	-36.01	peak

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



### **HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)**

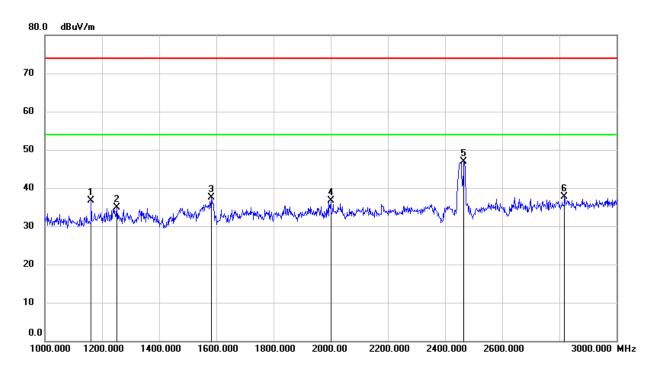


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1400.000	59.12	-12.38	46.74	74.00	-27.26	peak
2	1658.000	56.52	-11.11	45.41	74.00	-28.59	peak
3	1998.000	57.66	-9.83	47.83	74.00	-26.17	peak
4	2422.000	59.39	-7.67	51.72	/	/	fundamental
5	2452.000	56.16	-7.50	48.66	1	/	fundamental
6	2654.000	53.41	-7.39	46.02	74.00	-27.98	peak

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



### **HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)**

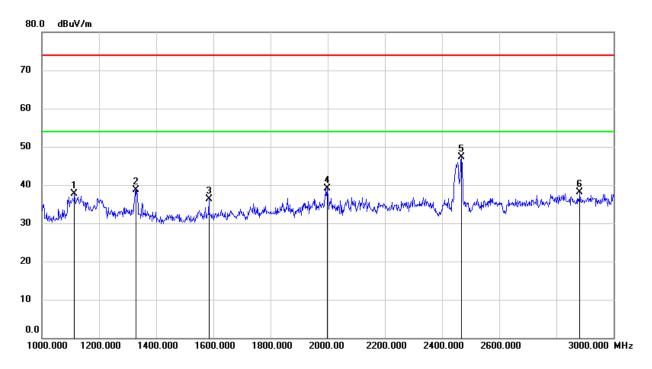


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	49.61	-13.00	36.61	74.00	-37.39	peak
2	1252.000	47.48	-12.51	34.97	74.00	-39.03	peak
3	1582.000	48.95	-11.54	37.41	74.00	-36.59	peak
4	2000.000	46.50	-9.82	36.68	74.00	-37.32	peak
5	2462.000	54.34	-7.40	46.94	/	/	fundamental
6	2818.000	43.58	-5.97	37.61	74.00	-36.39	peak

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



### **HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1114.000	51.00	-13.39	37.61	74.00	-36.39	peak
2	1328.000	51.15	-12.36	38.79	74.00	-35.21	peak
3	1584.000	47.80	-11.53	36.27	74.00	-37.73	peak
4	1998.000	48.95	-9.83	39.12	74.00	-34.88	peak
5	2462.000	54.62	-7.39	47.23	/	/	fundamental
6	2882.000	43.75	-5.61	38.14	74.00	-35.86	peak

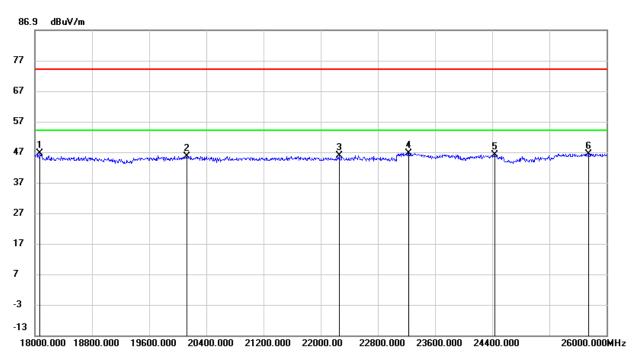
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band Reject Filter losses.
  - 5. Proper operation of the transmitter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



## 8.4. SPURIOUS EMISSIONS (18~26GHz)

### 8.4.1. 802.11b MODE

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

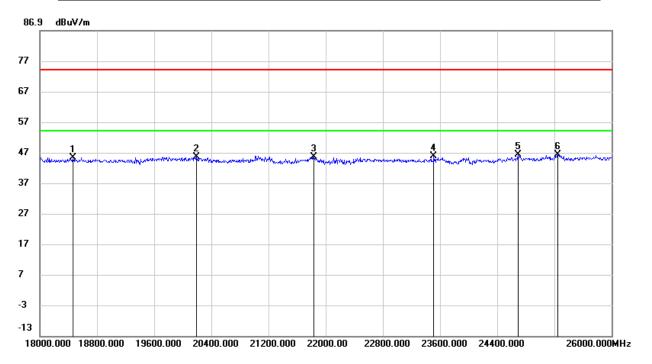


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18072.000	50.55	-4.02	46.53	74.00	-27.47	peak
2	20128.000	50.26	-4.64	45.62	74.00	-28.38	peak
3	22256.000	51.95	-6.06	45.89	74.00	-28.11	peak
4	23232.000	51.88	-5.28	46.60	74.00	-27.40	peak
5	24432.000	48.97	-2.86	46.11	74.00	-27.89	peak
6	25744.000	47.68	-1.34	46.34	74.00	-27.66	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18464.000	49.70	-4.39	45.31	74.00	-28.69	peak
2	20192.000	50.37	-4.76	45.61	74.00	-28.39	peak
3	21832.000	51.53	-5.92	45.61	74.00	-28.39	peak
4	23512.000	50.51	-4.76	45.75	74.00	-28.25	peak
5	24688.000	48.39	-2.11	46.28	74.00	-27.72	peak
6	25248.000	47.55	-1.17	46.38	74.00	-27.62	peak

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

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. The preamplifier only effect to the above 18GHz signal and no filter added to the measurement chain.

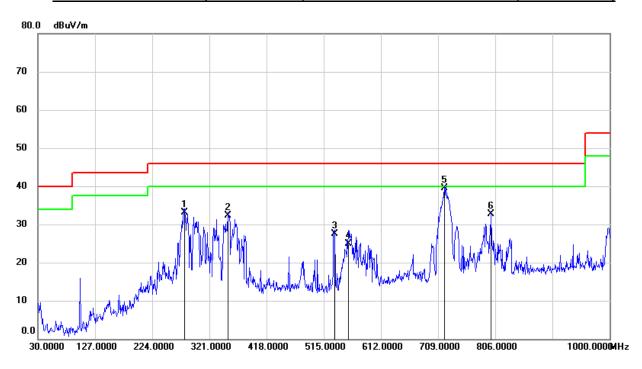
Note: All the test modes have been tested, only the worst data record in the report.



# 8.5. SPURIOUS EMISSIONS (0.03 ~ 1 GHz)

### 8.5.1. 802.11b MODE

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



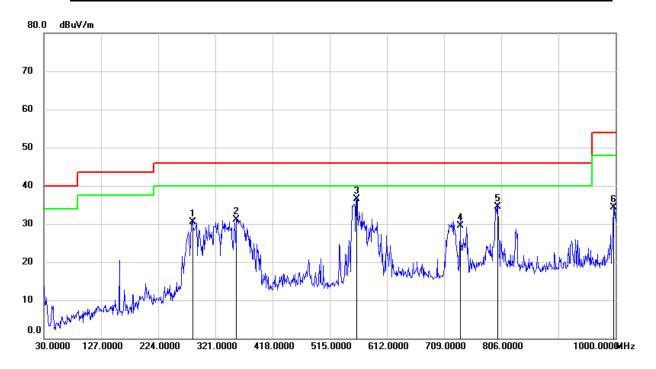
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	278.3200	50.37	-17.28	33.09	46.00	-12.91	QP
2	352.0400	46.74	-14.51	32.23	46.00	-13.77	QP
3	533.4300	38.60	-11.06	27.54	46.00	-18.46	QP
4	556.7100	35.65	-10.69	24.96	46.00	-21.04	QP
5	719.6700	48.01	-8.52	39.49	46.00	-6.51	QP
6	799.2100	40.52	-7.73	32.79	46.00	-13.21	QP

Note: 1. Result Level = Read Level + Correct Factor.

2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	282.2000	47.55	-16.96	30.59	46.00	-15.41	QP
2	356.8900	45.51	-14.40	31.11	46.00	-14.89	QP
3	560.5900	47.19	-10.63	36.56	46.00	-9.44	QP
4	736.1599	37.95	-8.49	29.46	46.00	-16.54	QP
5	800.1800	42.17	-7.71	34.46	46.00	-11.54	QP
6	996.1200	38.99	-4.77	34.22	54.00	-19.78	QP

Note: 1. Result Level = Read Level + Correct Factor.

2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

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

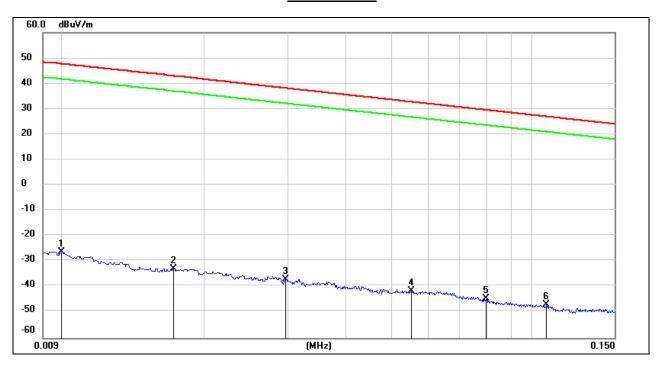


## 8.6. SPURIOUS EMISSIONS BELOW 30M

## 8.6.1. 802.11b MODE

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

#### 9kHz~ 150kHz

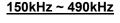


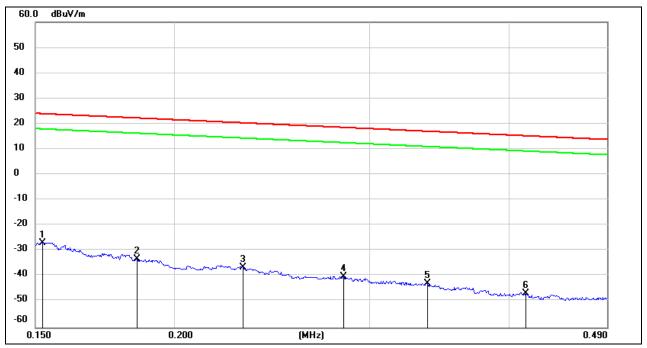
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0100	75.22	-101.40	-26.18	47.60	-73.78	peak
2	0.0171	68.38	-101.36	-32.98	42.94	-75.92	peak
3	0.0298	64.24	-101.39	-37.15	38.12	-75.27	peak
4	0.0551	59.95	-101.50	-41.55	32.78	-74.33	peak
5	0.0796	57.03	-101.63	-44.60	29.58	-74.18	peak
6	0.1073	54.80	-101.77	-46.97	26.99	-73.96	peak

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

- 2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
- 3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.





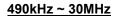


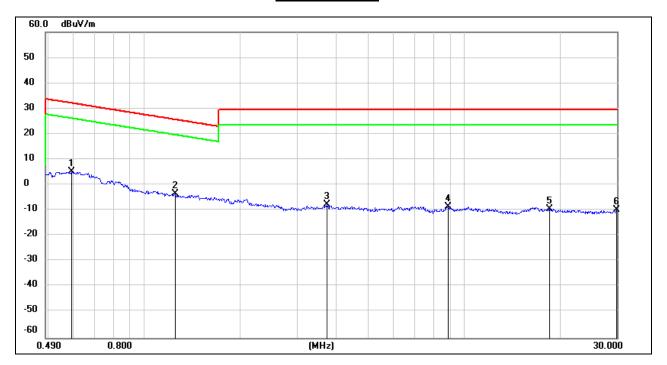
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1524	74.80	-101.63	-26.83	23.94	-50.77	peak
2	0.1852	68.47	-101.70	-33.23	22.25	-55.48	peak
3	0.2305	65.44	-101.77	-36.33	20.35	-56.68	peak
4	0.2837	61.72	-101.83	-40.11	18.54	-58.65	peak
5	0.3379	59.19	-101.90	-42.71	17.03	-59.74	peak
6	0.4142	55.23	-101.98	-46.75	15.26	-62.01	peak

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

- 2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
- 3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.







No.	Frequency	Reading	Correct	FCC Result	FCC Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.5917	67.24	-62.08	5.16	32.16	-27.00	peak
2	1.2460	58.75	-62.16	-3.41	25.70	-29.11	peak
3	3.7100	53.70	-61.41	-7.71	29.54	-37.25	peak
4	8.9001	52.41	-60.95	-8.54	29.54	-38.08	peak
5	18.4908	51.55	-60.89	-9.34	29.54	-38.88	peak
6	29.9115	50.13	-59.98	-9.85	29.54	-39.39	peak

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

- 2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
- 3. All 3 polarizations(Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

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



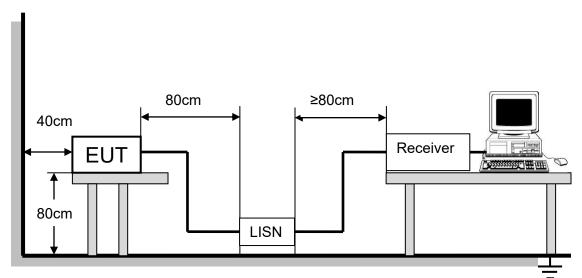
# 9. AC POWER LINE CONDUCTED EMISSIONS

#### **LIMITS**

Please refer to CFR 47 FCC §15.207 (a).

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

#### **TEST SETUP AND PROCEDURE**



The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

# TEST ENVIRONMENT

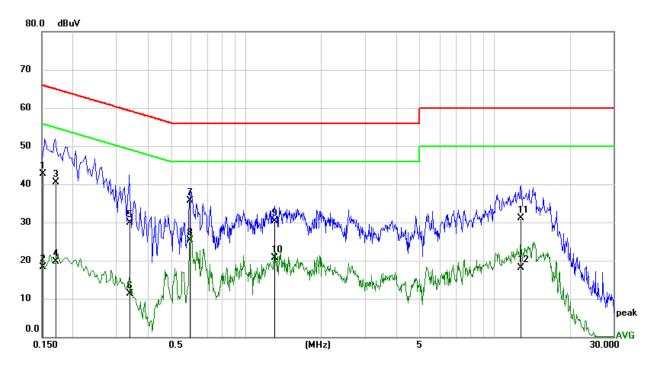
Temperature	23.5°C	Relative Humidity	65.7%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.82V



#### **TEST RESULTS**

## 9.1. 802.11b MODE

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



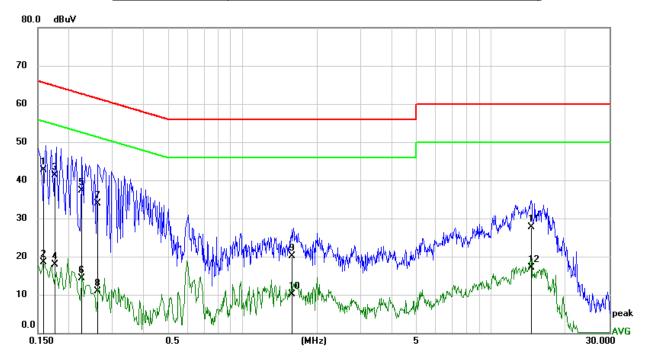
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1514	42.77	0.01	42.78	65.92	-23.14	QP
2	0.1514	18.29	0.01	18.30	55.92	-37.62	AVG
3	0.1709	40.56	0.01	40.57	64.92	-24.35	QP
4	0.1709	19.67	0.01	19.68	54.92	-35.24	AVG
5	0.3412	29.93	0.01	29.94	59.17	-29.23	QP
6	0.3412	11.25	0.01	11.26	49.17	-37.91	AVG
7	0.5923	35.60	0.01	35.61	56.00	-20.39	QP
8	0.5923	25.23	0.01	25.24	46.00	-20.76	AVG
9	1.3037	30.39	0.01	30.40	56.00	-25.60	QP
10	1.3037	20.65	0.01	20.66	46.00	-25.34	AVG
11	12.6840	31.10	0.05	31.15	60.00	-28.85	QP
12	12.6840	18.02	0.05	18.07	50.00	-31.93	AVG

Note: 1. Result = Reading +Correct Factor.

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



#### LINE L RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1582	42.61	0.01	42.62	65.56	-22.94	QP
2	0.1582	18.44	0.01	18.45	55.56	-37.11	AVG
3	0.1758	41.39	0.01	41.40	64.68	-23.28	QP
4	0.1758	17.90	0.01	17.91	54.68	-36.77	AVG
5	0.2256	37.25	0.01	37.26	62.61	-25.35	QP
6	0.2256	14.21	0.01	14.22	52.61	-38.39	AVG
7	0.2590	33.95	0.01	33.96	61.46	-27.50	QP
8	0.2590	10.93	0.01	10.94	51.46	-40.52	AVG
9	1.5940	20.17	0.02	20.19	56.00	-35.81	QP
10	1.5940	10.17	0.02	10.19	46.00	-35.81	AVG
11	14.4841	27.70	0.06	27.76	60.00	-32.24	QP
12	14.4841	17.02	0.06	17.08	50.00	-32.92	AVG

Note: 1. Result = Reading +Correct Factor.

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

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



# 10. ANTENNA REQUIREMENTS

#### **APPLICABLE REQUIREMENTS**

Please refer to FCC §15.203

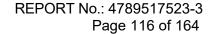
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply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

# Please refer to FCC §15.247(b)(4)

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

#### **RESULTS**

Complies



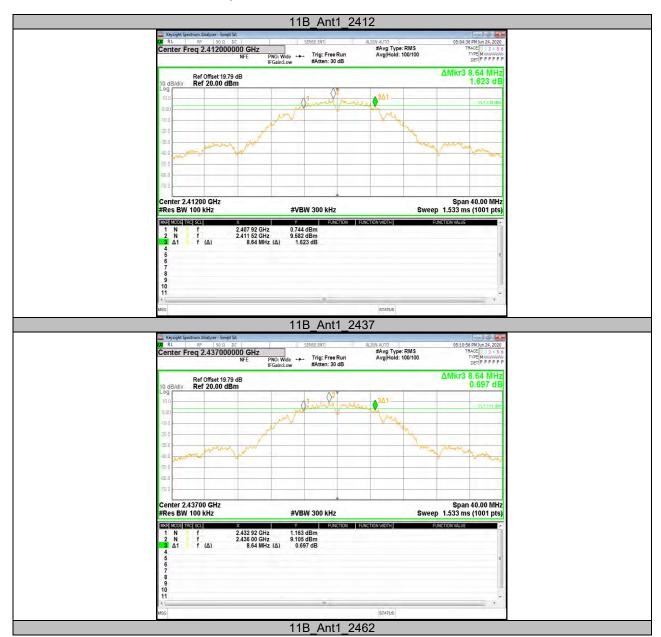


10.1. Appendix A: DTS Bandwidth 10.1.1. Test Result

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		2412	8.640	2407.920	2416.560	0.5	PASS
11B	Ant1	2437	8.640	2432.920	2441.560	0.5	PASS
		2462	7.680	2457.960	2465.640	0.5	PASS
		2412	16.400	2403.840	2420.240	0.5	PASS
11G	Ant1	2437	16.400	2428.840	2445.240	0.5	PASS
		2462	16.360	2453.840	2470.200	0.5	PASS
		2412	17.640	2403.240	2420.880	0.5	PASS
11N20SISO	Ant1	2437	17.680	2428.200	2445.880	0.5	PASS
		2462	16.960	2453.240	2470.200	0.5	PASS
		2422	35.280	2404.400	2439.680	0.5	PASS
11N40SISO	Ant1	2437	35.280	2419.400	2454.680	0.5	PASS
		2452	35.200	2434.400	2469.600	0.5	PASS



# 10.1.2. Test Graphs



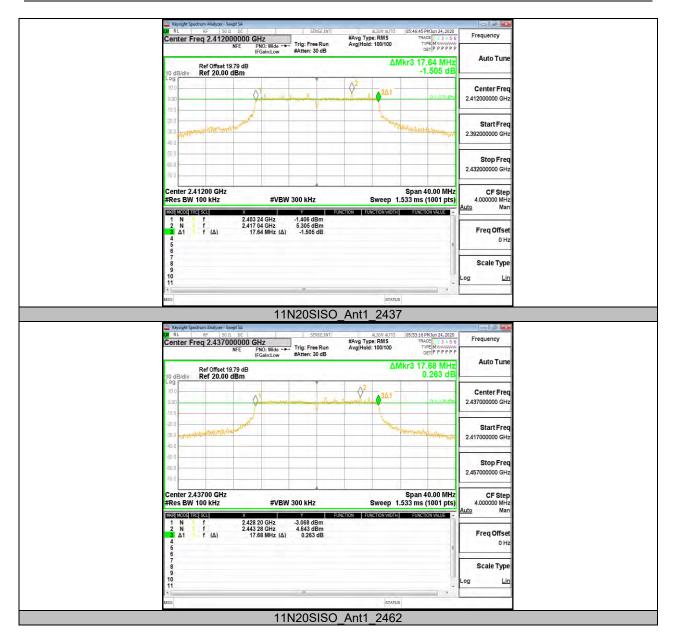




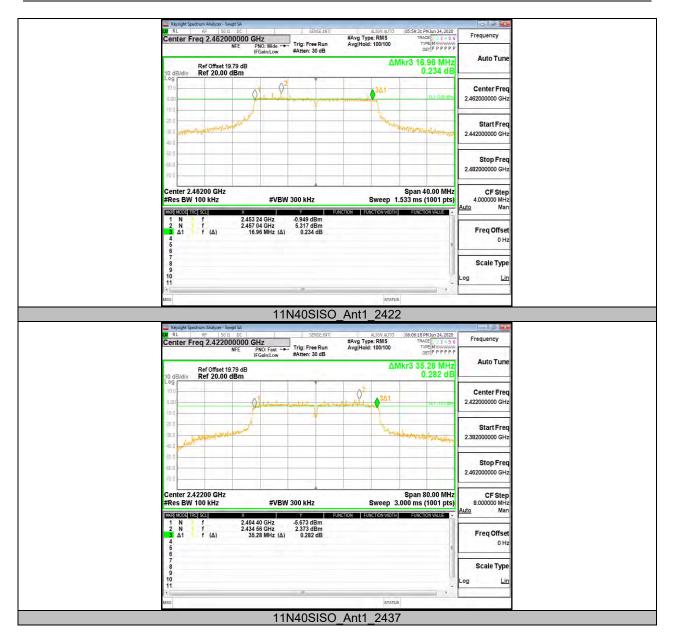


















10.2. Appendix B: Occupied Channel Bandwidth 10.2.1. Test Result

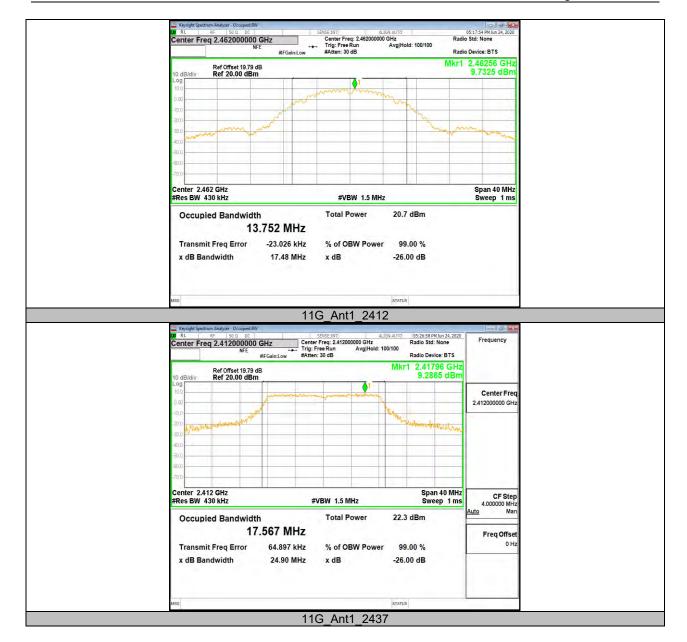
TestMode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		2412	13.629	2405.212	2418.841		PASS
11B	Ant1	2437	13.614	2430.246	2443.860		PASS
		2462	13.752	2455.101	2468.853		PASS
		2412	17.567	2403.281	2420.848		PASS
11G	Ant1	2437	17.586	2428.249	2445.835		PASS
		2462	17.594	2453.188	2470.782		PASS
		2412	18.382	2402.906	2421.288		PASS
11N20SISO	Ant1	2437	18.495	2427.806	2446.301		PASS
		2462	18.505	2452.737	2471.242		PASS
		2422	36.479	2403.856	2440.335		PASS
11N40SISO	Ant1	2437	36.613	2418.819	2455.432		PASS
		2452	36.429	2433.769	2470.198		PASS



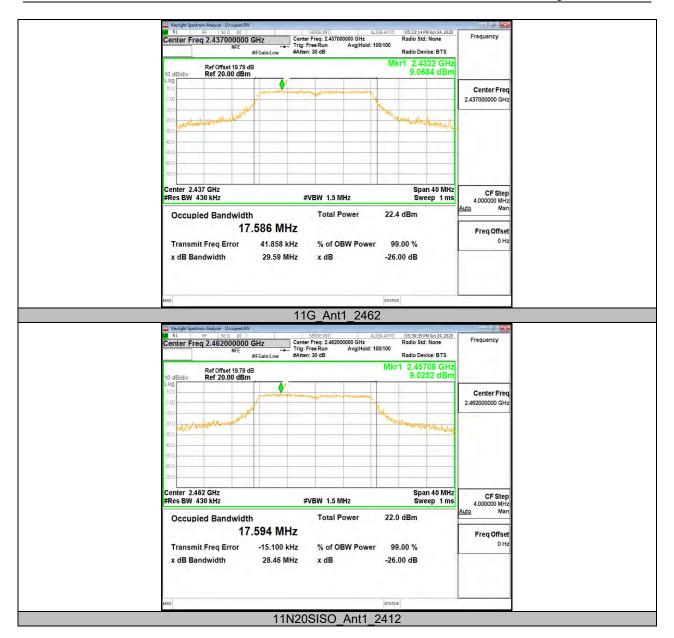
# 10.2.2. Test Graphs



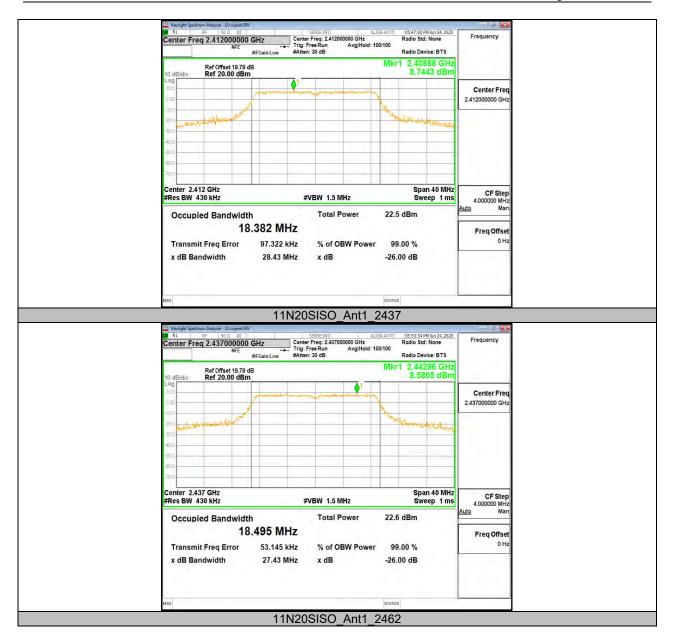
















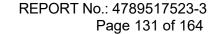






10.3. Appendix C: Maximum conducted output power 10.3.1. Test Result

TestMode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
		2412	18.18	<=30	PASS
11B	Ant1	2437	18.33	<=30	PASS
		2462	17.78	<=30	PASS
	Ant1	2412	16.28	<=30	PASS
11G		2437	16.31	<=30	PASS
		2462	16.06	<=30	PASS
		2412	16.43	<=30	PASS
11N20SISO	Ant1	2437	16.50	<=30	PASS
		2462	16.05	<=30	PASS
		2422	16.33	<=30	PASS
11N40SISO	Ant1	2437	16.45	<=30	PASS
		2452	16.15	<=30	PASS



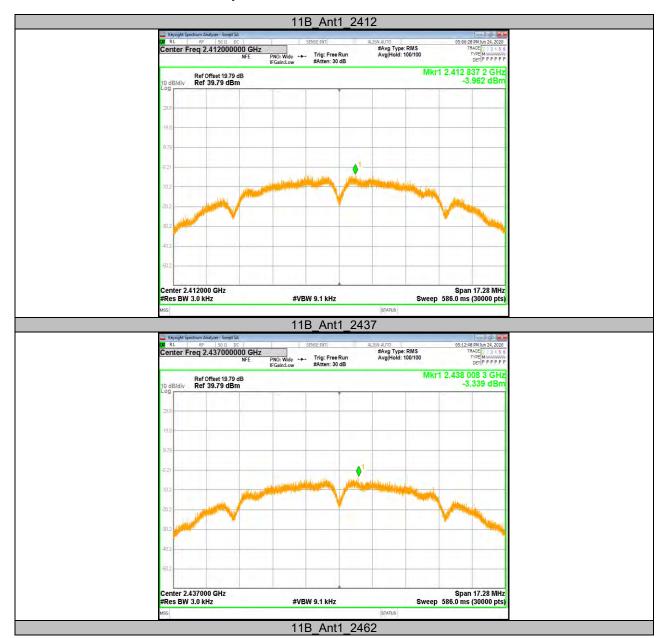


10.4. Appendix D: Maximum power spectral density 10.4.1. Test Result

TestMode	Antenna	Channel	Result[dBm/3-100kHz]	Limit[dBm/3kHz]	Verdict
		2412	-3.96	<=8	PASS
11B	Ant1	2437	-3.34	<=8	PASS
		2462	-3.5	<=8	PASS
		2412	-7.69	<=8	PASS
11G	Ant1	2437	-8.63	<=8	PASS
		2462	-8.89	<=8	PASS
		2412	-8.68	<=8	PASS
11N20SISO	Ant1	2437	-8.42	<=8	PASS
		2462	-8.44	<=8	PASS
		2422	-11.02	<=8	PASS
11N40SISO	Ant1	2437	-11.21	<=8	PASS
		2452	-11.81	<=8	PASS



# 10.4.2. Test Graphs





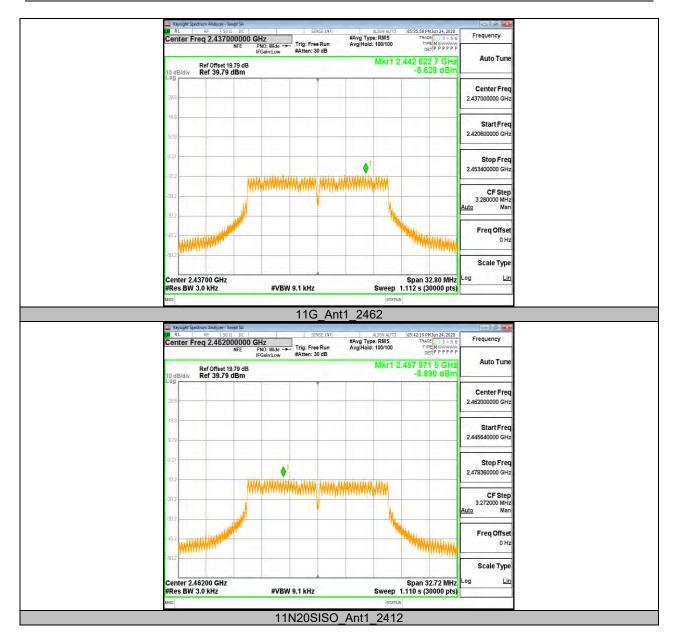
RE | RF | 50 \( \Omega\) DC |

Center Freq 2.462000000 GHz

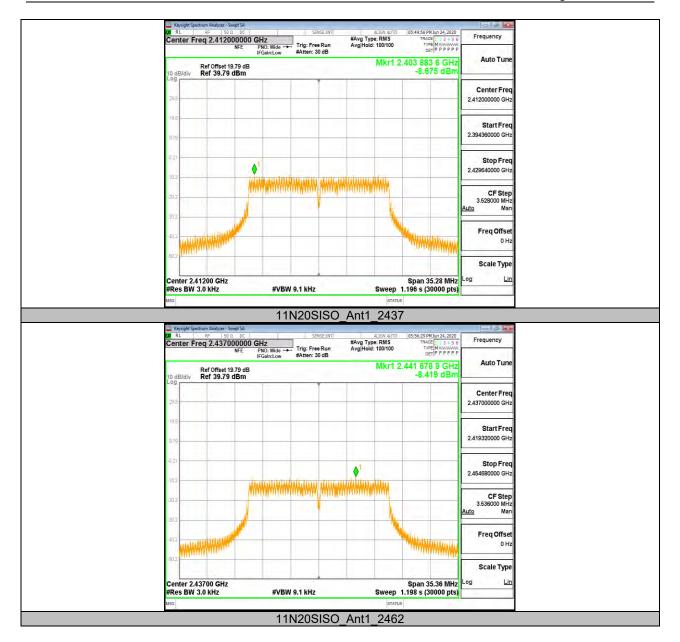
NFE #Avg Type: RMS Avg|Hold: 100/100 Mkr1 2.462 737 0 GHz -3.503 dBn Span 15.36 MHz Sweep 522.0 ms (30000 pts) Center 2.462000 GHz #Res BW 3.0 kHz #VBW 9.1 kHz 11G\_Ant1 2412 29:43 PM Jun 24, 2020
TRACE 2 2 3 + 5 6
TYPE M V V V V V DET P P P P P P #Avg Type: RMS Avg|Hold: 100/100 Mkr1 2.410 134 2 GHz -7.691 dBm Auto Tun Center Freq 2.412000000 GH Start Freq Stop Freq 2.428400000 GH CF Step 3.280000 MHz Mar Freq Offset Scale Type Span 32.80 MHz Sweep 1.112 s (30000 pts) Center 2.41200 GHz #Res BW 3.0 kHz **#VBW 9.1 kHz** 

11G\_Ant1\_2437

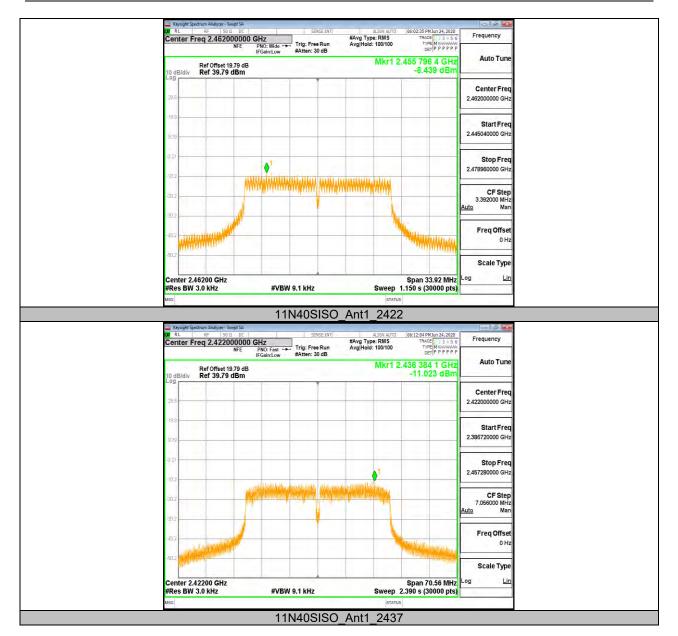




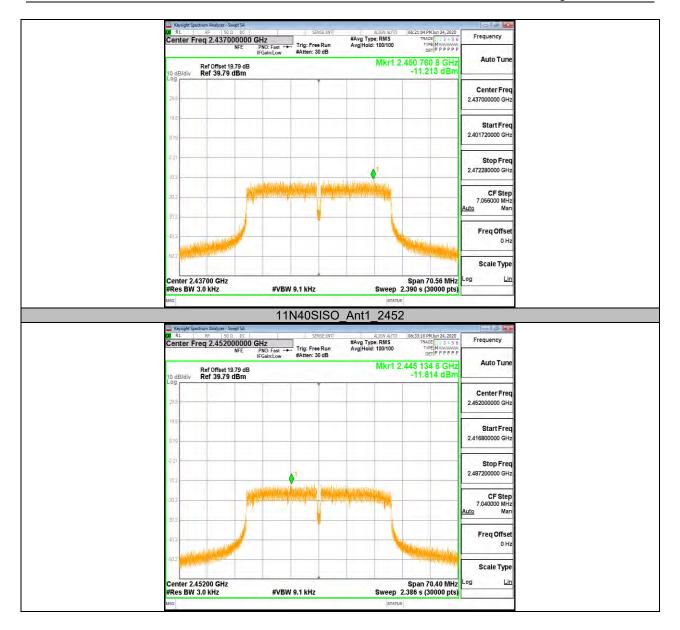












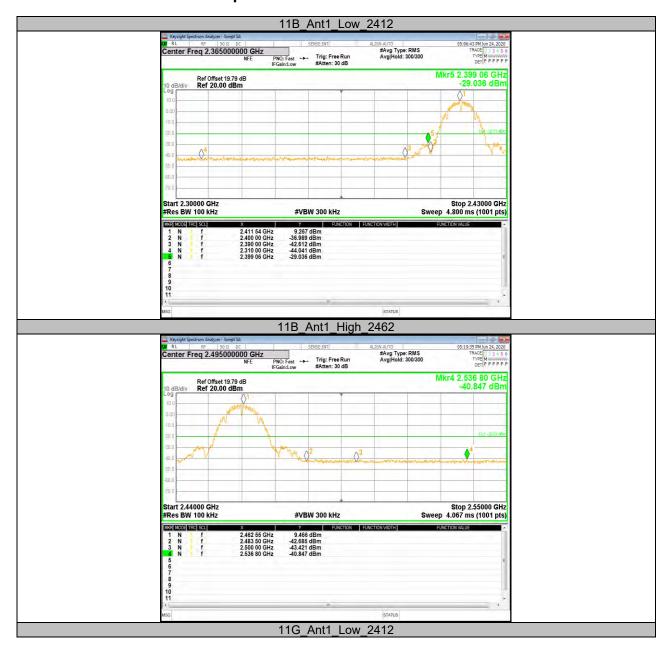


10.5. Appendix E: Band edge measurements 10.5.1. Test Result

TestMode	Antenna	ChName	Channel	Verdict
11B	Ant1	Low	2412	PASS
IID	Ant1	High	2462	PASS
11G	Ant1	Low	2412	PASS
IIG		High	2462	PASS
11N20SISO	A m+1	Low	2412	PASS
1111/205150	Ant1	High	2462	PASS
1411405150	A n+1	Low	2422	PASS
11N40SISO	Ant1	High	2452	PASS



# 10.5.2. Test Graphs















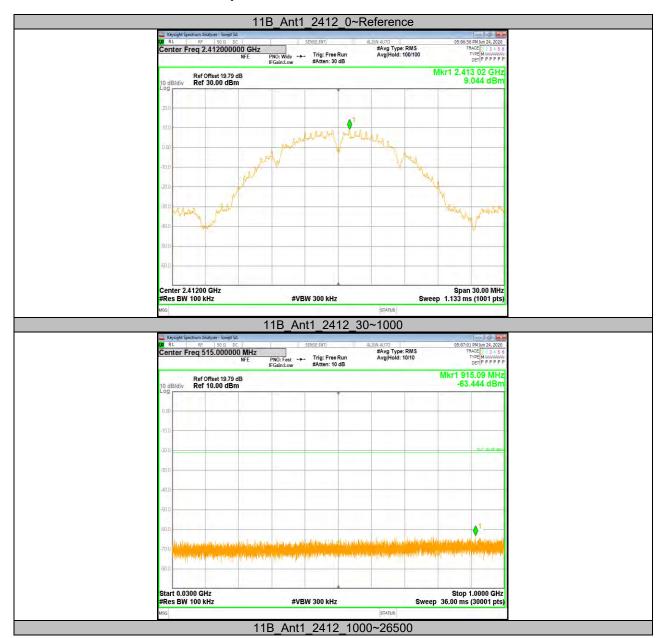


# 10.6. Appendix F: Conducted Spurious Emission 10.6.1. Test Result

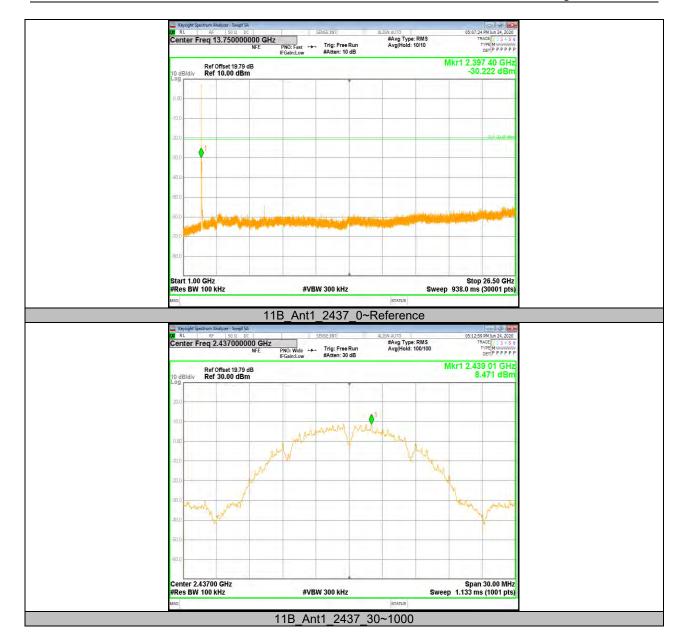
TestMode	Antenna	Channel	FreqRange [Mhz]	Verdict
11B	Ant1	2412	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2437	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2462	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
11 <b>G</b>	Ant1	2412	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2437	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2462	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
11N20SISO	Ant1	2412	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2437	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2462	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
11N40SISO	Ant1	2422	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2437	Reference	PASS
			30~1000	PASS
			1000~26500	PASS
		2452	Reference	PASS
			30~1000	PASS
			1000~26500	PASS



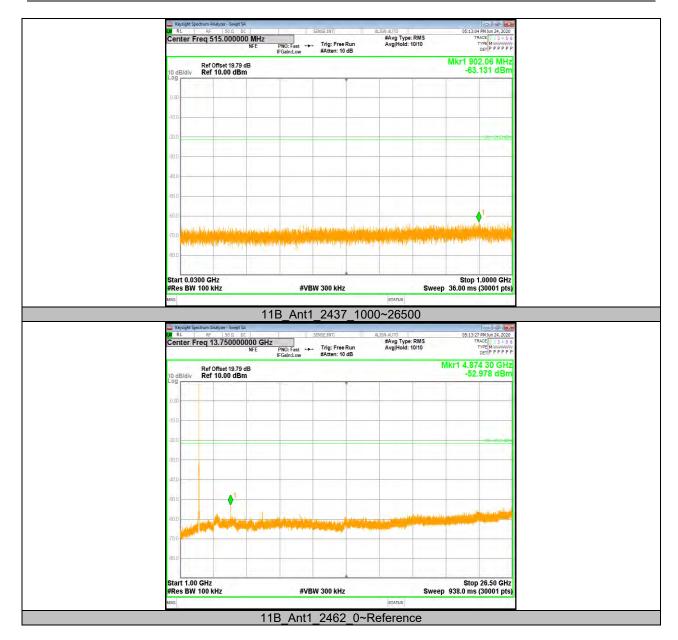
# 10.6.2. Test Graphs



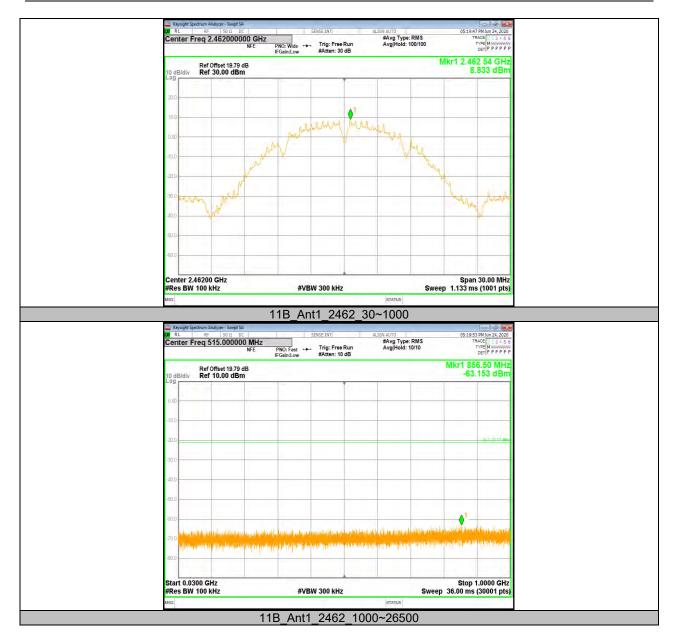




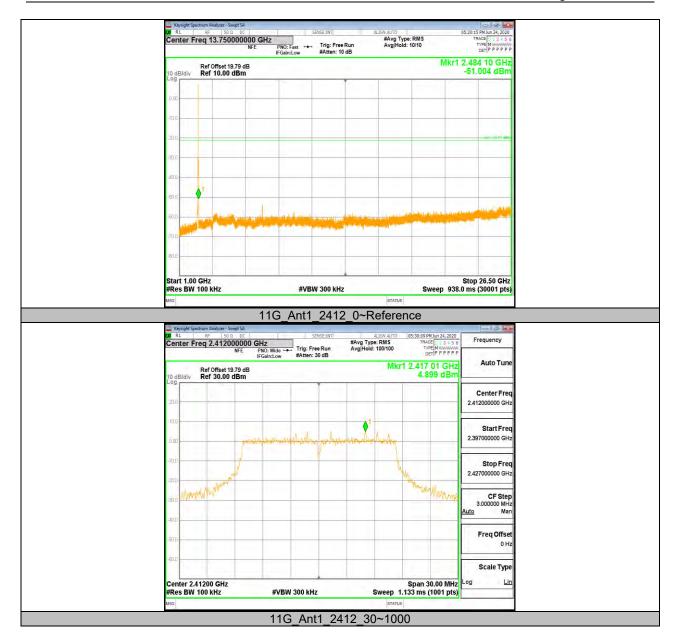




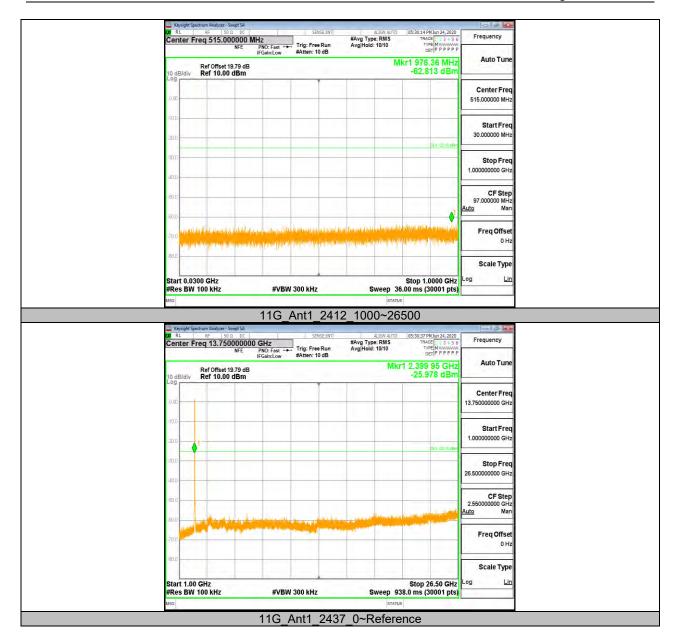




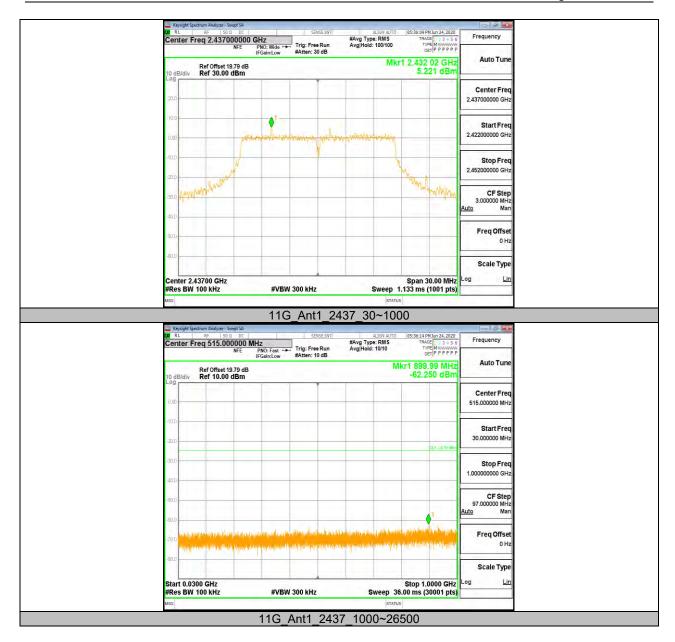




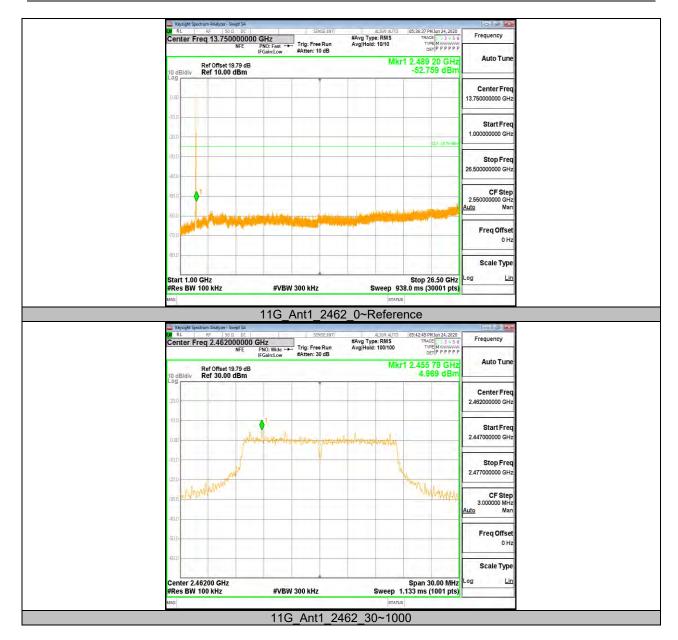




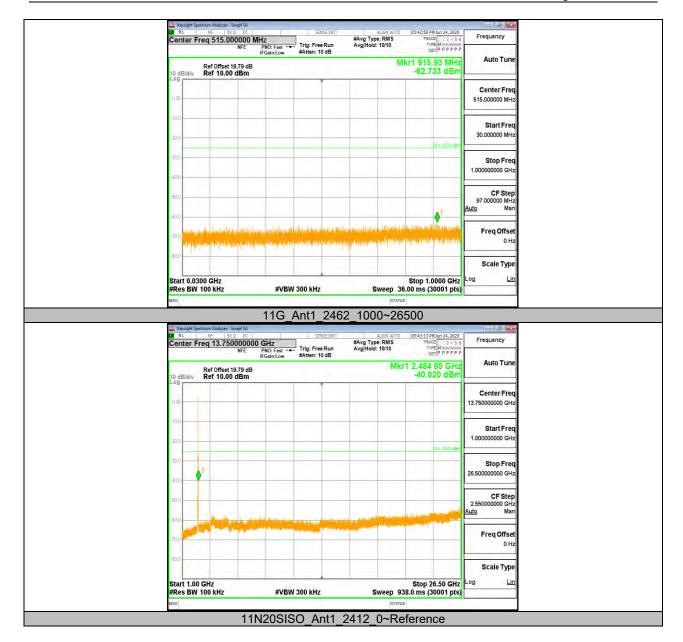




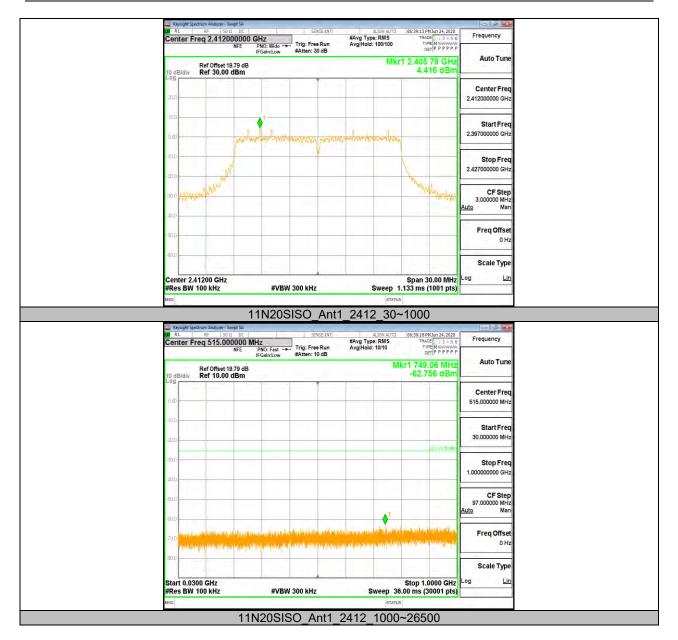




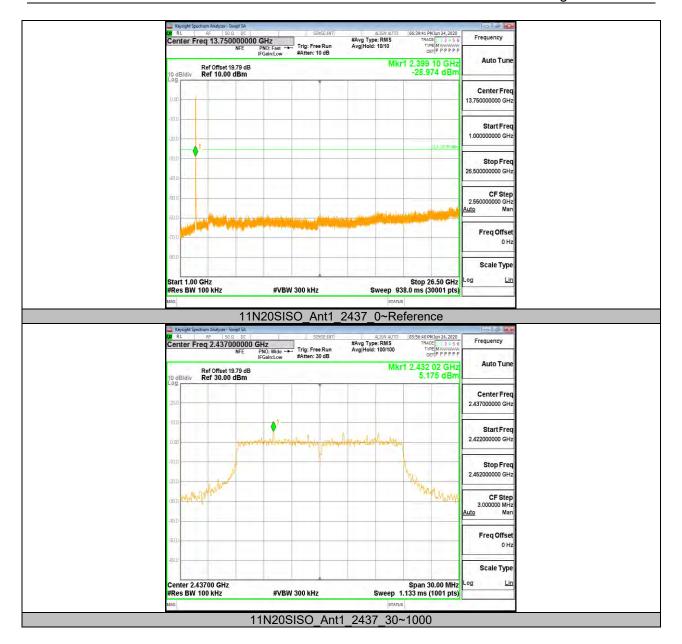




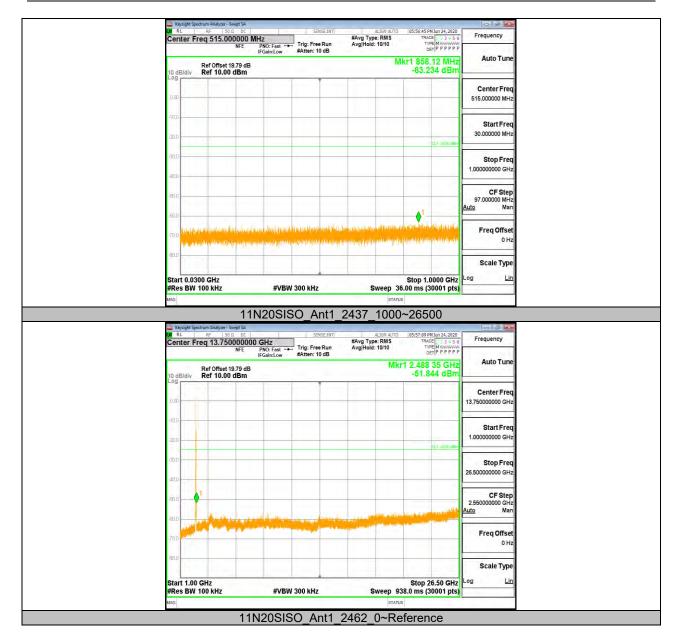




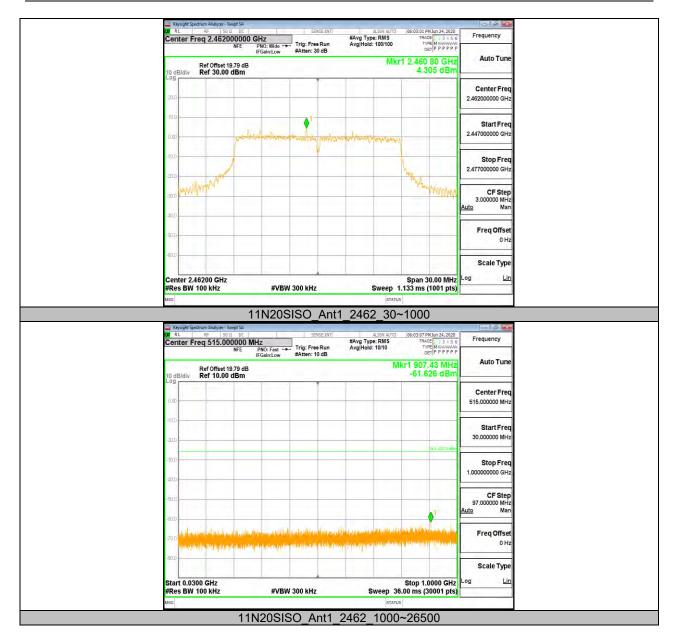




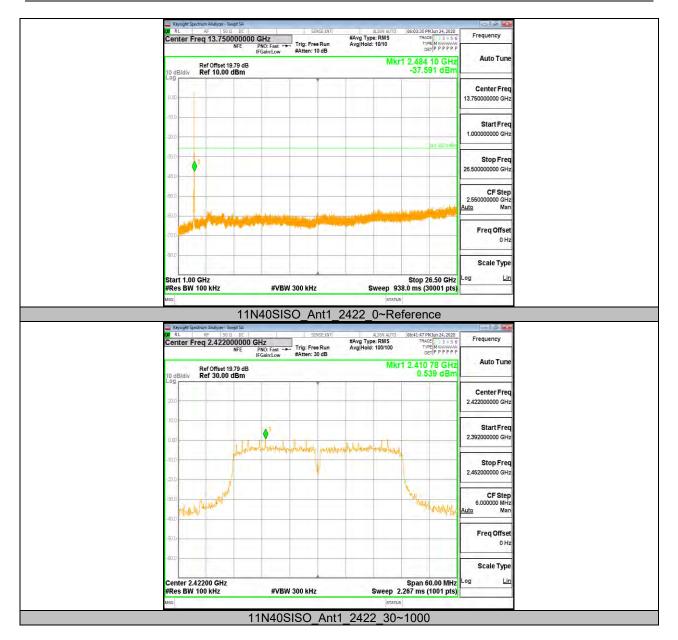




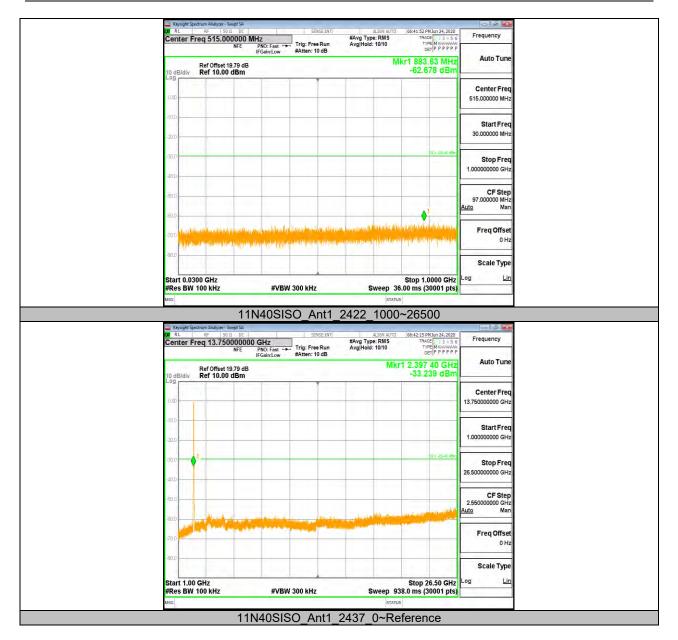




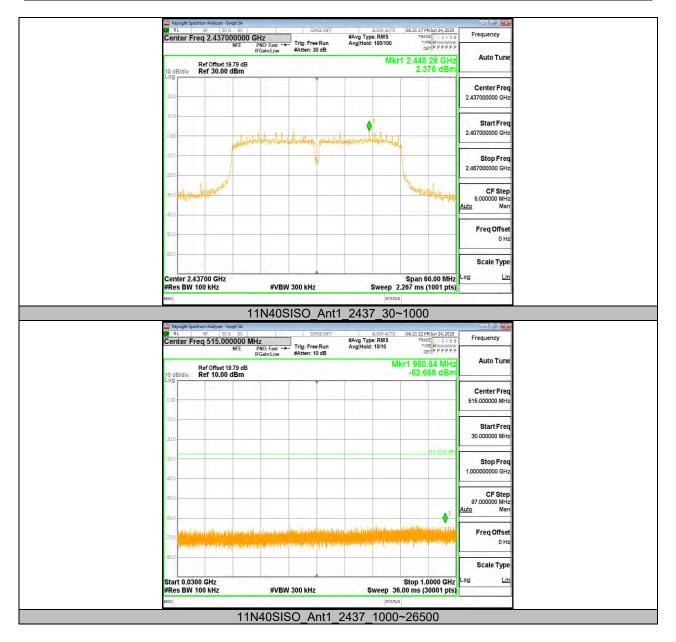




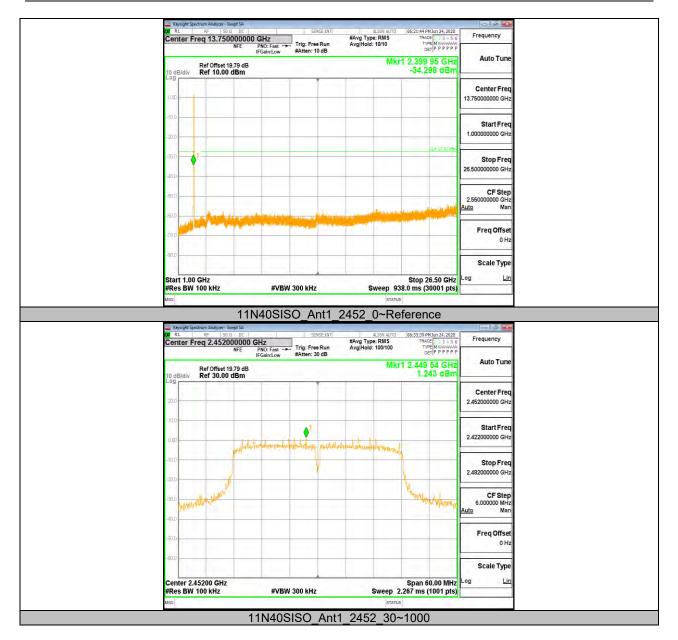




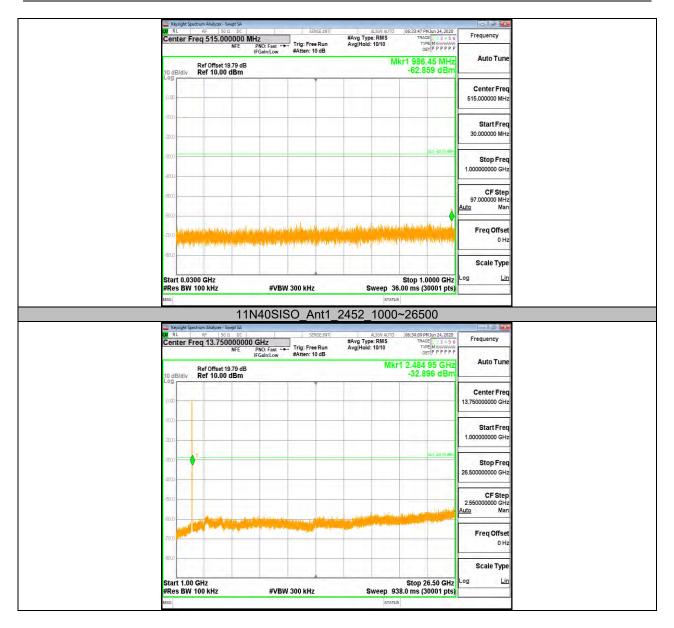


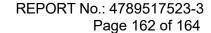














10.7. Appendix G: Duty Cycle 10.7.1. Test Result

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	8.218	8.421	0.976	97.6	0.11	0.12	0.5
11g	1.362	1.562	0.872	87.2	0.27	0.59	1
11n HT20	1.273	1.473	0.864	86.4	0.63	0.79	1
11n HT40	0.633	0.835	0.758	75.8	1.20	1.58	2

Note:

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

Where: x is Duty Cycle (Linear)

Where: T is On Time (transmit duration)

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



## 10.7.2. Test Graphs







## **END OF REPORT**