



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

#### **CERTIFICATION TEST REPORT**

For

IEEE 802.11b/g/n/a/ac 2T2R USB Wifi module Integrated BT 2.1+EDR/4.2/5.1

MODEL NUMBER: EL.MT7663BUN-WF

FCC ID: 2AWY6-ELMT7663BUN

IC: 26332-ELMT7663BUN

REPORT NUMBER: 4790147134.1-4

ISSUE DATE: November 13, 2021

## **Prepared for**

EXPRESS LUCK INDUSTRIAL (SHENZHEN) LIMITED Floor1, Workshop1, NO.88, SOUTH BAOTONG ROAD, XIKENG COMMUNITY, YUANSHAN STREET, LONGGANG DISTRICT, Shenzhen, China

#### Prepared by

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

Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China

> Tel: +86 769 22038881 Fax: +86 769 33244054 Website: www.ul.com



Page 2 of 337

# **Revision History**

Rev.	Issue Date	Revisions	Revised By
V0	11/09/2021	Initial Issue	_



Summary of Test Results				
Clause	Test Items	FCC/IC Rules	Test Results	
1	6dB/26dB Bandwidth	FCC 15.407 (a)&(e) RSS-247 Clause 6.2	PASS	
2	99% Occupied Bandwidth	RSS-Gen Clause 6.7	PASS	
3	Conducted Output Power	FCC 15.407 (a) RSS-247 Clause 6.2	PASS	
4	Power Spectral Density	FCC 15.407 (a) RSS-247 Clause 6.2	PASS	
5	Radiated Bandedge and Spurious Emission	FCC 15.407 (b) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9	PASS	
6	Conducted Emission Test for AC Power Port	FCC 15.207 RSS-GEN Clause 8.8	PASS	
7	Frequency Stability	FCC 15.407 (g)	PASS	
8	Dynamic Frequency Selection	FCC 15.407 (h) RSS-247 Clause 6.3	PASS	
9	Antenna Requirement	FCC 15.203 RSS-GEN Clause 6.8	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 E >< ISED RSS-247 > when <Accuracy Method> decision rule is applied.



# **TABLE OF CONTENTS**

1.	AT	TESTATION OF TEST RESULTS	7
2.	TES	ST METHODOLOGY	8
3.	FA	CILITIES AND ACCREDITATION	8
4.	CA	LIBRATION AND UNCERTAINTY	9
	4.1.	MEASURING INSTRUMENT CALIBRATION	9
	4.2.	MEASUREMENT UNCERTAINTY	9
5.	EQ	UIPMENT UNDER TEST	10
	5.1.	DESCRIPTION OF EUT	10
	5.2.	MAXIMUM OUTPUT POWER	11
	5.3.	CHANNEL LIST	12
	5.4.	TEST CHANNEL CONFIGURATION	13
	5.5.	DESCRIPTION OF AVAILABLE ANTENNAS	15
	5.6.	THE WORSE CASE POWER SETTING PARAMETER	16
	5.7.	THE WORSE CASE CONFIGURATIONS	18
	5.8.	DESCRIPTION OF TEST SETUP	19
6.	ME	ASURING INSTRUMENT AND SOFTWARE USED	20
7.	AN	TENNA PORT TEST RESULTS	22
	7.1.	ON TIME AND DUTY CYCLE	22
	7.2.	6/26 dB EMISSION BANDWIDTH AND 99 % OCCUPIED BANDWIDTH	23
	7.3.	CONDUCTED OUTPUT POWER	25
	7.4.	POWER SPECTRAL DENSITY	28
8.	RA	DIATED TEST RESULTS	30
	8.1.	RESTRICTED BANDEDGE	
	8.1.	1. 802.11a20 SISO MODE	
		I-2A BAND	
	UN	I-2C BAND	45
		I-3 BAND	
		2. 802.11n HT20 MIMO MODEI-1 BAND	
		I-2A BAND	
	_	I-2C BAND	
		I-3 BAND	
	Ω 1		
	8.1. UN	3. 802.11h H140 MIMO MODE	
	UN		63



	UNII-2C BAND	
	UNII-3 BAND	
	8.1.4. 802.11ac VHT80 MIMO MODE	_
	UNII-1 BAND	
	UNII-2A BAND	
	UNII-2C BAND	
	UNII-3 BAND	85
8	.2. SPURIOUS EMISSIONS (1 GHz ~ 7 GHz)	86
	8.2.1. 802.11n HT20 MIMO MODE	86
	UNII-1 BAND	
	UNII-2A BAND	
	UNII-2C BAND	
	STRADDLE CHANNEL 144	104
	UNII-3 BAND	106
0	.3. SPURIOUS EMISSIONS (7 GHz ~ 18 GHz)	111
O.	8.3.1. 802.11a SISO MODE	112
	UNII-1 BAND	
	UNII-2A BAND	
	UNII-2C BAND	
	STRADDLE CHANNEL 144	
	UNII-3 BAND	
	8.3.2. 802.11n HT20 MIMO MODE	
	UNII-1 BAND	
	UNII-2A BAND	
	UNII-2C BAND	
	STRADDLE CHANNEL 144	
	UNII-3 BAND	158
	8.3.3. 802.11n HT40 MIMO MODE	164
	UNII-1 BAND	164
	UNII-2A BAND	168
	UNII-2C BAND	
	STRADDLE CHANNEL 142	
	UNII-3 BAND	
	8.3.4. 802.11ac VHT80 MIMO MODE	
	UNII-1 BAND	
	UNII-2A BAND	
	UNII-2C BAND	
	STRADDLE CHANNEL 138	
	UNII-3 BAND	194
8	.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)	196
	8.4.1. 802.11ac VHT80 MODE	
0	.5. SPURIOUS EMISSIONS (26 GHz ~ 40 GHz)	100
0.	.5. SPURIOUS EMISSIONS (26 GHz ~ 40 GHz)	190
8	.6. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)	
	8.6.1. 802.11ac VHT80 MODE	200
Я	.7. SPURIOUS EMISSIONS BELOW 30 MHz	200
J	8.7.1. 802.11ac VHT80 MODE	
9.	AC POWER LINE CONDUCTED EMISSIONS	205



9.1.1. 802.11ac VHT80 MODE	206
10. FREQUENCY STABILITY	208
11. DYNAMIC FREQUENCY SELECTION	210
12. ANTENNA REQUIREMENTS	214
12.1. Appendix A1: Emission Bandwidth	215
12.1.1. Test Result	
12.1.2. Test Graphs	217
12.2. Appendix A2: Occupied channel bandwidth	245
12.2.1. Test Result	
12.2.2. Test Graphs	
12.3. Appendix A3: Min emission bandwidth	276
12.3.1. Test Result	
12.3.2. Test Graphs	
12.4. Appendix B: Maximum conducted output power	286
12.4.1. Test Result	
12.4.2. Test Graphs	
12.5. Appendix C: Maximum power spectral density	
12.5.1. Test Result	
12.5.2. Test Graphs	
12.6. Appendix D: Duty Cycle	
12.6.2. Test Graphs	
12.7. Appendix E: Channel Move Time and Channel Closing Transmiss	
12.7.1. Test Result	
- 1	
12.8. Appendix F: Non-Occupancy Period	
12.8.1. Test Graphs	335
12.9. Appendix G: Frequency Stability	
12.9.1. Test Result	336



Page 7 of 337

# 1. ATTESTATION OF TEST RESULTS

**Applicant Information** 

Company Name: EXPRESS LUCK INDUSTRIAL (SHENZHEN) LIMITED

Address: Floor1, Workshop1, NO.88, SOUTH BAOTONG ROAD, XIKENG

COMMUNITY, YUANSHAN STREET, LONGGANG DISTRICT,

Shenzhen, China

**Manufacturer Information** 

Company Name: EXPRESS LUCK INDUSTRIAL (SHENZHEN) LIMITED

Address: Floor1, Workshop1, NO.88, SOUTH BAOTONG ROAD, XIKENG

COMMUNITY, YUANSHAN STREET, LONGGANG DISTRICT,

5 hemy lier

Shenzhen, China

**EUT Information** 

EUT Name: IEEE 802.11b/g/n/a/ac 2T2R USB Wifi module Integrated BT 2.1

+EDR/4.2/5.1

Model: EL.MT7663BUN-WF Sample Received Date: October 18, 2021

Sample Status: Normal Sample ID: 4295515

Date of Tested: October 18, 2021~ October 30, 2021

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

Prepared By: Checked By:

\_\_\_\_

Kebo Zhang Shawn Wen Project Engineer Laboratory Leader

Approved By:

(Sephenbus



Stephen Guo Laboratory Manager

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, CFR 47 FCC Part 2, CFR 47 FCC Part 15, KDB 789033 D02 v02r01, RSS-GEN Issue 5, RSS-247 Issue 2, KDB414788 D01 Radiated Test Site v01r01, KDB 662911 D01 Multiple Transmitter Output v02r01, KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02, KDB 905462 D03 UNII clients without radar detection New Rules v01r02, KDB 905462 D04 Operational Modes for DFS Testing New Rules v01 and KDB 905462 D06 802 11 Channel Plans New Rules v02.

## 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
	ISED (Company No.: 21320)
Accreditation	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 and the test lab Conformity Assessment
	Body Identifier (CABID) is CN0046.
	VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
	has been assessed and proved to be in compliance with VCCI, the
	Membership No. is 3793.
	Facility Name:
	Chamber D, the VCCI registration No. is G-20019 and R-20004
	Shielding Room B , the VCCI registration No. is C-20012 and T-20011

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

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

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



4. CALIBRATION AND UNCERTAINTY

## 4.1. MEASURING INSTRUMENT CALIBRATION

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

#### 4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
D # 4 15	5.78 dB (1 GHz-18 GHz)
Radiated Emission (Included Fundamental Emission) (1 GHz to 40 GHz)	5.23dB (18 GHz-26 GHz)
Note: This was adviced as seen as deduced as	5.64 dB (26 GHz-40 GHz)

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



5. EQUIPMENT UNDER TEST

# 5.1. DESCRIPTION OF EUT

EUT Name	IEEE 802.11b/g/n/a/ac 2T2R USB Wifi module Integrated BT 2.1+EDR/4.2/5.1	
Model	EL.MT7663BUN-WF	
Radio Technology	IEEE802.11a 20 IEEE802.11n HT20/n HT40 IEEE802.11ac VHT20/VHT40/VHT80	
Operation frequency	UNII-1/ UNII-2A/ UNII-2C/ UNII-3	
Modulation	IEEE 802.11a 20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT20: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT40: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT80: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)	
Power Supply	DC 3.3 V	



5.2. MAXIMUM OUTPUT POWER

## UNII-1 BAND(FCC&ISED)

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)	Max Average EIRP (dBm)
a 20	5180 ~ 5240	13.07	16.54
n HT20	5180 ~ 5240	13.46	16.93
n HT40	5190 ~ 5230	14.40	17.87
ac VHT20	5180 ~ 5240	Covered by 802.11n H	T20
ac VHT40	5190 ~ 5230	Covered by 802.11n H	T40
ac VHT80	5210	16.02	19.49

## UNII-2A BAND(FCC&ISED)

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)
a 20	5260 ~ 5320	13.71
n HT20	5260 ~ 5320	16.34
n HT40	5270 ~ 5310	15.08
ac VHT20	5260 ~ 5320	Covered by 802.11n HT20
ac VHT40	5270 ~ 5310	Covered by 802.11n HT40
ac VHT80	5290	18.20

## **UNII-2C BAND(FCC&ISED)**

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)
a 20	5500 ~ 5720	13.96
n HT20	5500 ~ 5720	16.92
n HT40	5510 ~ 5710	16.16
ac VHT20	5500 ~ 5720	Covered by 802.11n HT20
ac VHT40	5510 ~ 5710	Covered by 802.11n HT40
ac VHT80	5530 ~ 5690	16.14

## UNII-3 BAND(FCC&ISED)

IEEE Std. 802.11	Frequency (MHz)	Maximum Average Conducted Power (dBm)
a 20	5745 ~ 5825	13.75
n HT20	5745 ~ 5825	16.85
n HT40	5755 ~ 5795	14.58
ac VHT20	5745 ~ 5825	Covered by 802.11n HT20
ac VHT40	5755 ~ 5795	Covered by 802.11n HT40
ac VHT80	5775	17.21



5.3. CHANNEL LIST

UNII-1		UNII-1		UNII-1	
(For Bandwid	dth=20MHz)	(For Bandwidth=40MHz)		(For Bandwidth=80MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230		
44	5220				
48	5240				

UNII-2A		UNII-2A		UNII-2A	
(For Bandwidth=20MHz)		(For Bandwidth=40MHz)		(For Bandwidth=80MHz)	
Channel	Frequency (MHz)	Channel Frequency (MHz)		Channel	Frequency (MHz)
52	5260	54	5270	58	5290
56	5280	62	5310		
60	5300				
64	5320				

UNII-2C (For Bandwidth=20MHz)		UNII-2C (For Bandwidth=40MHz)		UNII-2C (For Bandwidth=80MHz)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	102	5510	106	5530
104	5520	110	5550	122	5610
108	5540	118	5590	138	5690
112	5560	126	5630		
116	5580	134	5670		
120	5600	142	5710		
124	5620				
128	5640				
132	5660				
136	5680				
140	5700				
144	5720				

UNII-3		UNII-3		UNII-3	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795		
157	5785				
161	5805				
165	5825				

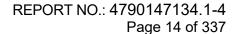


5.4. TEST CHANNEL CONFIGURATION

UNII-1 Test Channel Configuration				
IEEE Std.	Test Channel Number	Frequency		
802.11a	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz		
802.11n HT20	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz		
802.11n HT40	CH 38(Low Channel), CH 46(High Channel)	5190 MHz, 5230 MHz		
802.11ac VHT20	CH 36(Low Channel), CH 40(MID Channel), CH 48(High Channel)	5180 MHz, 5200 MHz, 5240 MHz		
802.11ac VHT40	CH 38(Low Channel), CH 46(High Channel)	5190 MHz, 5230 MHz		
802.11ac VHT80	CH 42(Low Channel)	5210 MHz		

UNII-2A Test Channel Configuration				
IEEE Std.	Test Channel Number	Frequency		
802.11a	CH 52(Low Channel), CH 56(MID Channel), CH 64(High Channel)	5260 MHz, 5280 MHz, 5320 MHz		
802.11n HT20	CH 52(Low Channel), CH 56(MID Channel), CH 64(High Channel)	5260 MHz, 5280 MHz, 5320 MHz		
802.11n HT40	CH 54(Low Channel), CH 62(High Channel)	5270 MHz, 5310 MHz		
802.11ac VHT20	CH 52(Low Channel), CH 56(MID Channel), CH 64(High Channel)	5260 MHz, 5280 MHz, 5320 MHz		
802.11ac VHT40	CH 54(Low Channel), CH 62(High Channel)	5270 MHz, 5310 MHz		
802.11ac VHT80	CH 58(Low Channel)	5290 MHz		

	UNII-2C Test Channel Configuration				
IEEE Std.	Test Channel Number	Frequency			
802.11a	CH 100(Low Channel), CH 120(MID Channel), CH 140(High Channel)	5500 MHz, 5600 MHz, 5700 MHz			
802.11n HT20	CH 100(Low Channel), CH 120(MID Channel), CH 140(High Channel)	5500 MHz, 5600 MHz, 5700 MHz			
802.11n HT40	CH 102(Low Channel), CH 118(MID Channel), CH 134(High Channel)	5510 MHz, 5590 MHz, 5670 MHz			
802.11ac VHT20	CH 100(Low Channel), CH 120(MID Channel), CH 140(High Channel)	5500MHz, 5600 MHz, 5700MHz			
802.11ac VHT40	CH 102(Low Channel), CH 118(MID Channel), CH 134(High Channel)	5510 MHz, 5590 MHz, 5670 MHz			
802.11ac VHT80	CH 102(Low Channel), CH 122(High Channel)	5530 MHz, 5610 MHz			





**UNII-3 Test Channel Configuration** IEEE Std. **Test Channel Number** Frequency CH 149(Low Channel), CH 157(MID Channel), 802.11a 5745 MHz, 5785 MHz, 5825 MHz CH 165(High Channel) CH 149(Low Channel), CH 157(MID Channel). 802.11n HT20 5745 MHz, 5785 MHz, 5825 MHz CH 165(High Channel) 802.11n HT40 CH 151(Low Channel), CH 159(High Channel) 5755MHz, 5795MHz CH 149(Low Channel), CH 157(MID Channel), 802.11ac 5745 MHz, 5785 MHz, 5825 MHz VHT20 CH 165(High Channel) 802.11ac CH 151(Low Channel), CH 159(High Channel) 5755 MHz, 5795 MHz VHT40 802.11ac CH 155(Low Channel) 5775 MHz VHT80



Page 15 of 337

## 5.5. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
1	5150-5850	PCB	3.47
2	5150-5850	PCB	3.47

The EUT support Cyclic Shift Diversity(CDD) mode.

MIMO output power port and MIMO PSD port summing was performed in accordance with KDB 662911 D01. For the CDD results the Directional Gain was calculated in accordance with the following mothed.

For output power measurements:

Directional gain= GANT + Array Gain = 3.47 dBi

G<sub>ANT</sub>: equal to the gain of the antenna having the highest gain

Array Gain = 0 dB (i.e., no array gain) for  $N_{ANT} \le 4$ 

For power spectral density (PSD) measurements:

Directional gain= GANT + Array Gain = 6.47 dBi

Array Gain = 10 log(Nant/Nss) dB. Nant : number of transmit antennas

Nss: number of spatial streams, The worst case directional gain will occur when Nss = 1

IEE Std. 802.11	Transmit and Receive Mode	Description
802.11a20	⊠2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
802.11n HT20	⊠2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
802.11n HT40	⊠2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
802.11ac VHT20	⊠2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
802.11ac VHT40	⊠2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.
802.11ac VHT80	⊠2TX, 2RX	ANT 1 and ANT 2 can be used as transmitting/receiving antenna.

#### Note:

- 1. BT&WLAN 2.4G, BT & WLAN 5G can transmit simultaneously. (declared by client)
- 2. WLAN 2.4G & WLAN 5G can't transmit simultaneously. (declared by client)



5.6. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter		
Test Software	QA tool	

## UNII-1

Mode	Rate	Channel	Soft set value	
Wode	Nate	Chambi	ANT 1	ANT 2
		36	20	20
11a 20	6M	40	20	20
		48	20	20
	MCS0	36	23	23
11ac VHT20		40	23	23
		48	23	23
1100 V/HT40	MCCO	38	23	23
11ac VHT40	MCS0	46	23	23
11ac VHT80	MCS0	42	20	20

## UNII-2A

Mada	Data	Channal	Soft set value		
Mode	Rate	Channel	ANT 1	ANT 2	
		52	20	20	
11a 20	6M	56	20	20	
		64	20	20	
		52	23	23	
11ac VHT20	MCS0	56	23	23	
		64	23	23	
11ac VHT40	MCS0	54	21	21	
TIAC VHT40	IVICSU	62	21	21	
11ac VHT80	MCS0	58	23	23	



REPORT NO.: 4790147134.1-4 Page 17 of 337

# UNII-2C

Mode	Rate	Channel	Soft set value		
Wiode	Wode		ANT 1	ANT 2	
		100	20	20	
11a 20	6M	116	20	20	
11a 20	Olvi	140	20	20	
		144	20	20	
		100	21	21	
11ac VHT20	MCS0	116	21	21	
Trac virizo		140	21	21	
		144	21	21	
		102	21	21	
11ac VHT40		118	21	21	
Tiac viii+0		134	21	21	
		142	21	21	
		106	1F	1F	
11ac VHT80	MCS0	122	1F	1F	
		138	1F	1F	

## UNII-3

Mada	Data	Channal	Soft set value		
Mode	Rate	Channel	ANT1	ANT 2	
		149	20	20	
11a 20	6M	157	20	20	
		165	20	20	
		149	22	22	
11ac VHT20	MCS0	157	22	22	
		165	22	22	
11ac VHT40	MCSO	151	22	22	
TIAC VHT40	MCS0	159	22	22	
11ac VHT80	MCS0	155	22	22	



5.7. THE WORSE CASE CONFIGURATIONS

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

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

Test channels referring to section 5.4.

Maximum power setting referring to section 5.6.

Worst case Data Rates declared by the customer:

802.11a 20 mode: 6 Mbps 802.11n HT20 mode: MCS0 802.11n HT40 mode: MCS0 802.11ac VHT20 mode: MCS0 802.11ac VHT40 mode: MCS0 802.11ac VHT80 mode: MCS0

802.11ac VHT20 and VHT40 mode are different from 802.11nHT20 and HT40 only in control messages, so for these 4 modes, only 802.11n HT20 and 802.11n HT40 worst case power modes radiated emission test data are recorded in the report.

802.11ac&n SISO mode and MIMO mode have the same power setting, so only the worst case power mode (MIMO) will be record in the report.

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

Antenna 1 and Antenna 2 have the same power setting, but the power test data are different. (Declared by customer.)

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

Conducted output power, power spectral density tests separately on each port with all supported SISO & MIMO port combinations.

The EUT support Cyclic Shift Diversity(CDD), Space Time Coding(STBC), Spartial Division Multiplexing(SDM) modes. They use the same conducted power per chain in any given mode, CDD mode have the maximum power setting, so we only chose the worst case mode CDD for final testing.



Page 19 of 337

#### 5.8. **DESCRIPTION OF TEST SETUP**

## **SUPPORT EQUIPMENT**

Item	Equipment	Brand Name	Model Name	Remarks
1	Laptop	Lenovo	XIAOXIN 5000	1
2	UART	1	1	1
3	AC Adapter	Lenovo	ADLX65YCC3D	Input: 100-240 Vac, 50/60 Hz Output: 20 Vdc, 3.25A

#### I/O CABLES

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

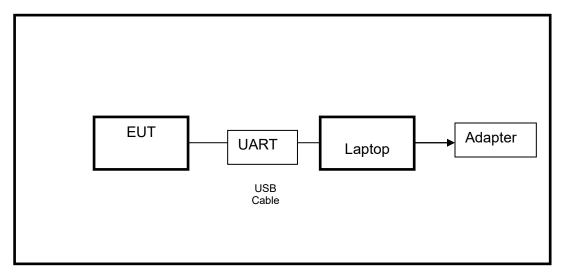
#### **ACCESSORIES**

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

## **TEST SETUP**

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

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



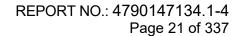
Note: AC adapter only use for AC POWER LINE CONDUCTED EMISSIONS testing.



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
EMI Test Receiver	R&S	ESR3	101961	Nov. 12, 2020	Nov. 11, 2021
Two-Line V- Network	R&S	ENV216	101983	Nov. 12, 2020	Nov. 11, 2021
	Software				
Description			Manufacturer	Name	Version
Test Software for Conducted Emissions			Farad	EZ-EMC	Ver. UL-3A1

	Radiated Emissions				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Nov. 12, 2020	Nov. 11, 2021
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	April 24, 2020	April 23, 2023
Preamplifier	HP	8447D	2944A09099	Nov. 12, 2020	Nov. 11, 2021
EMI Measurement Receiver	R&S	ESR26	101377	Nov. 12, 2020	Nov. 11, 2021
Horn Antenna	TDK	HRN-0118	130940	Jul. 20, 2021	Jul. 19, 2024
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Nov. 20, 2020	Nov. 19, 2021
Horn Antenna	Schwarzbeck	BBHA9170	#697	July 20, 2021	July 19, 2024
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Nov. 12, 2020	Nov. 11, 2021
Preamplifier	TDK	PA-02-3	TRS-308- 00002	Nov. 12, 2020	Nov. 11, 2021
Loop antenna	Schwarzbeck	1519B	80000	Jan.17, 2019	Jan.17,2022
Preamplifier	TDK	PA-02-001- 3000	TRS-302- 00050	Nov. 12, 2020	Nov. 11, 2021
Preamplifier	Mini-Circuits	ZX60-83LN- S+	SUP01201941	Nov. 20, 2020	Nov. 19, 2021
Highpass Filter	Wainwright	WHKX10- 5850-6500- 1800-40SS	4	Nov. 12, 2020	Nov. 11, 2021
Band Reject Filter	Wainwright	WRCJV12- 5695-5725- 5850-5880- 40SS	4	Nov. 12, 2020	Nov. 11, 2021
Band Reject Filter	Wainwright	WRCJV20- 5120-5150- 5350-5380-	2	Nov. 12, 2020	Nov. 11, 2021





60SS WRCJV20-**Band Reject** 5440-5470-Wainwright 1 Nov. 12, 2020 Nov. 11, 2021 Filter 5725-5755-60SS Software Manufacturer Description Name Version Test Software for Radiated Emissions Farad **EZ-EMC** Ver. UL-3A1

R&S TS 8997 Test System						
Equipment	Manufacturer	Model No.	Serial No.	Last	Cal.	Due. Date
Power sensor, Power Meter	R&S	OSP120	100921	Mar.23	3,2021	Mar.24,202
Vector Signal Generator	R&S	SMBV100A	261637	Nov.20	0,2020	Nov.19,202
Signal Generator	R&S	SMB100A	178553	Nov.20	0,2020	Nov.19,202
Signal Analyzer	R&S	FSV40	101118	Nov.20	0,2020	Nov.19,202
Software						
Description	Manufacturer		Name	Э	\	/ersion
For R&S TS 8997 Test Syste	em Rohde &	Schwarz	EMC 3	32	1	0.60.10

Page 22 of 337

## 7. ANTENNA PORT TEST RESULTS

## 7.1. ON TIME AND DUTY CYCLE

#### **LIMITS**

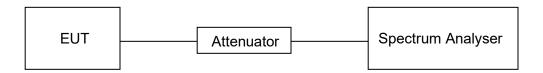
None; for reporting purposes only.

#### **PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.B.

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW  $\geq$  EBW if possible; otherwise, set RBW to the largest available value. Set VBW  $\geq$  RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in II.B.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T  $\leq$  16.7 microseconds.)

## **TEST SETUP**



#### **TEST ENVIRONMENT**

Temperature	26.6 °C	Relative Humidity	55.2 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.3 V

#### **RESULTS**

Please refer to appendix D.



7.2. 6/26 dB EMISSION BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

## **LIMITS**

CFR 47 FCC Part15, Subpart E ISED RSS-247 ISSUE 2				
Test Item	Limit	Frequency Range (MHz)		
26 dB Emission Bandwidth	For reporting purposes only.	5150 ~ 5250		
26 dB Emission Bandwidth	For reporting purposes only.	5250 ~ 5350		
26 dB Emission Bandwidth	For reporting purposes only.	5470 ~ 5725 (For FCC) 5470 ~ 5600 (For ISED) 5650 ~ 5725 (For ISED)		
6 dB Emission Bandwidth	The minimum 6 dB emission bandwidth shall be 500 kHz.	5725 ~ 5850		
99 % Occupied Bandwidth	For reporting purposes only.	5150 ~ 5825 (For ISED)		

#### **TEST PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.C1. for 26 dB Emission Bandwidth; section II.C2. for 6 dB Emission Bandwidth; section II.D. for 99 % Occupied Bandwidth.

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

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Emission Bandwidth: RBW=100 kHz For 26 dB Emission bandwidth: approximately 1 % of the EBW. For 99 % Occupied Bandwidth: approximately 1 % ~ 5 % of the OBW.
VBW	For 6 dB Bandwidth: ≥ 3*RBW For 26 dB Bandwidth: >3*RBW For 99 % Bandwidth: >3*RBW
Trace	Max hold
Sweep	Auto couple

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

## Calculation for 99 % Bandwidth of UNII-2C and UNII-3 Straddle Channel:

For Example: Fundamental Frequency: 5720 MHz

99 % OBW: 21.00 MHz

b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6/26 dB relative to the maximum level measured in the fundamental emission.

REPORT NO.: 4790147134.1-4 Page 24 of 337

Turning Frequency: 5725 MHz

99 % Bandwidth of UNII-2C Band Portion = (5725-(5720-(21.00/2)) = 15.50 MHz

99 % Bandwidth of UNII-3 Band Portion = (5720+(21.00/2)-5725) = 5.50 MHz

#### **Calculation for 26 dB Bandwidth of UNII-2C Straddle Channel:**

For Example: Fundamental frequency: 5720 MHz

26 dB BW: 20.00 MHz

FL: 5710.16 MHz FH: 5730.16 MHz

Turning Frequency: 5725 MHz

26 dB Bandwidth of UNII-2C Band Portion = 5725-5710.16=14.84 MHz

#### Calculation for 6dB Bandwidth of UNII-3 Straddle Channel:

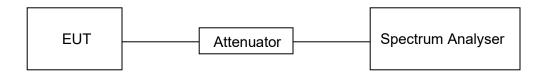
For Example: Fundamental frequency: 5720 MHz

6 dB BW: 16.44 MHz FL: 5711.76 MHz FH: 5728.2 MHz

Turning Frequency: 5725 MHz

6 dB Bandwidth of UNII-3 band Portion = 5728.2-5725=3.2 MHz

#### **TEST SETUP**



#### **TEST ENVIRONMENT**

Temperature	26.6 °C	Relative Humidity	55.2 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.3 V

#### **RESULTS**

Please refer to Appendix A1&A2&A3.

Page 25 of 337

## 7.3. CONDUCTED OUTPUT POWER

#### **LIMITS**

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Conducted	☐ Outdoor Access Point: 1 W (30 dBm) ☐ Indoor Access Point: 1 W (30 dBm) ☐ Fixed Point-To-Point Access Points: 1 W (30 dBm) ☐ Client Devices: 250 mW (24 dBm)	5150 ~ 5250
Output Power	Shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz.	5250 ~ 5350 5470 ~ 5725
	Shall not exceed 1 Watt (30 dBm).	5725 ~ 5850

	ISED RSS-247 ISSUE 2		
Test Item	Limit	Frequency Range (MHz)	
	The maximum e.i.r.p. shall not exceed 200 mW (23 dBm) or 10 + 10 log <sub>10</sub> B, dBm, whichever power is less. B is the 99 % emission bandwidth in megahertz.	5150 ~ 5250	
Conducted Output Power or e.i.r.p.	a. The maximum conducted output power shall not exceed 250 mW (24 dBm) or 11 + 10 log <sub>10</sub> B dBm, whichever is less.  b. The maximum e.i.r.p. shall not exceed 1.0 W (30 dBm) or 17 + 10 log <sub>10</sub> B dBm, whichever is less. B is the 99 % emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.	5250 ~ 5350 5470 ~ 5600 5650 ~ 5725	
	Shall not exceed 1 Watt (30 dBm). The e.i.r.p. shall not exceed 4 W	5725 ~ 5850	

#### Note:

The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Page 26 of 337

#### **TEST PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.E.

# Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep):

- (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
- (ii) Set RBW = 1 MHz.
- (iii) Set VBW ≥ 3 MHz.
- (iv) Number of points in sweep  $\geq$  2 × span / RBW. (This ensures that bin-to-bin spacing is  $\leq$  RBW/2, so that narrowband signals are not lost between frequency bins.)
- (v) Sweep time = auto.
- (vi) Detector = power averaging (rms), if available. Otherwise, use sample detector mode.
- (vii) If transmit duty cycle < 98 %, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 %, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to "free run."
- (viii) Trace average at least 100 traces in power averaging (rms) mode.
- (ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the spectrum.

#### Method PM (Measurement using an RF average power meter):

- (i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
- a. The EUT is configured to transmit continuously or to transmit with a constant duty cycle.
- b. At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.
- c. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- (ii) If the transmitter does not transmit continuously, measure the duty cycle, x, of the transmitter output signal as described in II.B.
- (iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
- (iv) Adjust the measurement in dBm by adding 10 log (1/x) where x is the duty cycle (e.g., 10 log (1/0.25) if the duty cycle is 25 %).

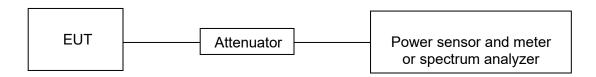
## Method PM-G (Measurement using a gated RF average power meter):

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Straddle channel power was measured using spectrum analyzer.



**TEST SETUP** 



## **TEST ENVIRONMENT**

Temperature	26.6 °C	Relative Humidity	55.2 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.3 V

## **RESULTS**

Please refer to Appendix B.

Page 28 of 337

## 7.4. POWER SPECTRAL DENSITY

## **LIMITS**

CFR 47 FCC Part15, Subpart E		
Test Item	Limit	Frequency Range (MHz)
Power Spectral Density	☐ Outdoor Access Point: 17 dBm/MHz ☐ Indoor Access Point: 17 dBm/MHz ☐ Fixed Point-To-Point Access Points: 17 dBm/MHz ☐ Client Devices: 11 dBm/MHz	5150 ~ 5250
Donoity	11 dBm/MHz	5250 ~ 5350 5470 ~ 5725
	30 dBm/500kHz	5725 ~ 5850

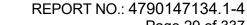
ISED RSS-247 ISSUE 2		
Test Item	Limit	Frequency Range (MHz)
	The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.	5150 ~ 5250
Power Spectral Density	The power spectral density shall not exceed 11 dBm inany 1.0 MHz band.	5250 ~ 5350 5470 ~ 5600 5650 ~ 5725
	30 dBm / 500 kHz	5725 ~ 5850

#### Note:

The above limits are based upon the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **TEST PROCEDURE**

Refer to KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.F.





Page 29 of 337

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

## For U-NII-1, U-NII-2A and U-NII-2C band:

,		
Center Frequency	The center frequency of the channel under test	
Detector	RMS	
RBW	1 MHz	
VBW	≥3 × RBW	
Span	Encompass the entire emissions bandwidth (EBW) of the signal	
Trace	Max hold	
Sweep time	Auto	

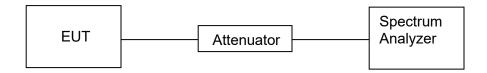
## For U-NII-3:

Center Frequency	The center frequency of the channel under test
Detector	RMS
RBW	500 kHz
VBW	≥3 × RBW
Span	Encompass the entire emissions bandwidth (EBW) of the signal
Trace	Max hold
Sweep time	Auto

Allow trace to fully stabilize and Use the peak search function on the instrument to find the peak of the spectrum and record its value.

Add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum, the result is the Maximum PSD over 1 MHz / 500 kHz reference bandwidth.

## **TEST SETUP**



## **TEST ENVIRONMENT**

Temperature	26.6 °C	Relative Humidity	55.2 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.3 V

#### **RESULTS**

Please refer to Appendix C.



8. RADIATED TEST RESULTS

## **LIMITS**

Refer to CFR 47 FCC §15.205, §15.209 and §15.407 (b).

Refer to ISED RSS-GEN Clause 8.9, Clause 8.10 and ISED RSS-247 6.2.

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

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

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

## ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz		
Frequency	Magnetic field strength (H-Field) (μA/m)	Measurement distance (m)
9 - 490 kHz <sup>Note 1</sup>	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

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



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

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.028	162.0125 - 167.17	13.25 - 13.4
1.125 - 4.128	167.72 - 173.2	14.47 - 14.5
1.17725 - 4.17775	240 – 285	15.35 - 16.2
1.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
3.215 - 6.218	608 - 614	23.6 - 24.0
3.26775 - 6.26825	980 - 1427	31.2 - 31.8
3.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
3.291 - 8.294	1845.5 - 1848.5	Above 38.6
3.362 - 8.366	1660 - 1710	
3.37625 - 8.38675	1718.8 - 1722.2	
3.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3280 - 3287	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5480	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

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: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. <sup>2</sup>Above 38.6c



Page 32 of 337

Limits of unwanted/undesirable emission out of the restricted bands refer to CFR 47 FCC §15.407 (b) and ISED RSS-247 6.2.

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1GHz)			
Frequency Range	EIRP Limit	Field Strength Limit	
(MHz)		(dBuV/m) at 3 m	
5150~5250 MHz			
5250~5350 MHz	PK: -27 (dBm/MHz)	PK:68.2(dBµV/m)	
5470~5725 MHz			
5725~5850 MHz	PK: -27 (dBm/MHz) *1	PK: 68.2(dBµV/m) *1	
	PK: 10 (dBm/MHz) *2	PK: 105.2 (dBµV/m) *2	
	PK: 15.6 (dBm/MHz) *3	PK: 110.8(dBµV/m) *3	
	PK: 27 (dBm/MHz) *4	PK: 122.2 (dBµV/m) *4	

#### Note:

<sup>\*1</sup> beyond 75 MHz or more above of the band edge.

<sup>\*2</sup> below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.

<sup>\*3</sup> below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.

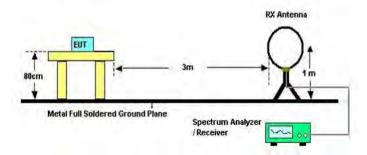
<sup>\*4</sup> from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.



Page 33 of 337

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

Below 30 MHz



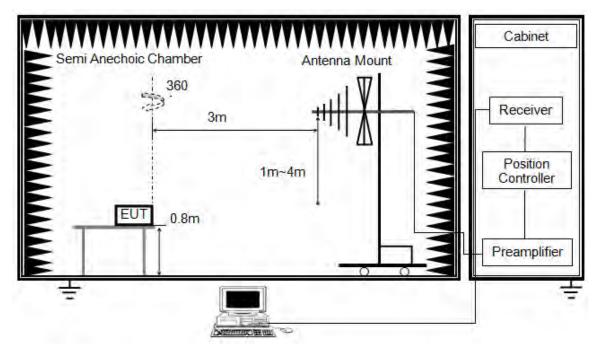
#### The setting of the spectrum analyser

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

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
- 2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80 cm above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.
- 5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector
- 6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode remeasured. 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 guasi-peak and average detector and reported.
- 7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.
- 8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.



Below 1 GHz and above 30 MHz



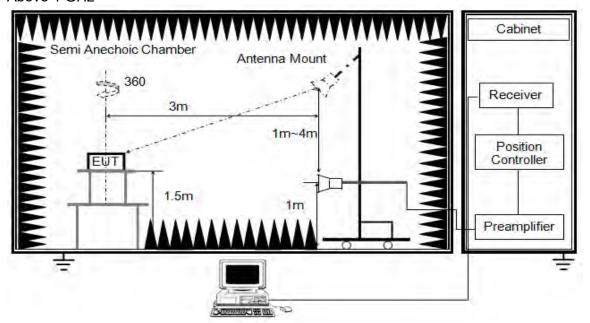
The setting of the spectrum analyser

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

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80 cm above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.



Above 1 GHz



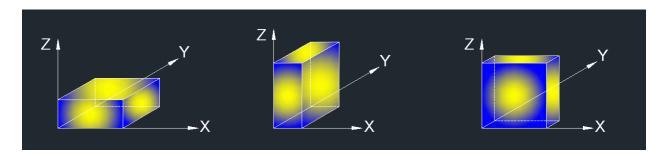
The setting of the spectrum analyser

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

- 1. The testing follows the guidelines in KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 section II.G.3 ~ II.G.6.
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 1.5 m above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
- 6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.



X axis, Y axis, Z axis positions:



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

Note 2: Simultaneous transmission had been evaluated with the 5 GHz WLAN / 2.4 GHz WLAN and BT / BLE transmitter and has no additional or worse emissions found.

#### **TEST ENVIRONMENT**

Temperature	26.2 °C	Relative Humidity	50 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.3 V

## **RESULTS**



8.1. RESTRICTED BANDEDGE

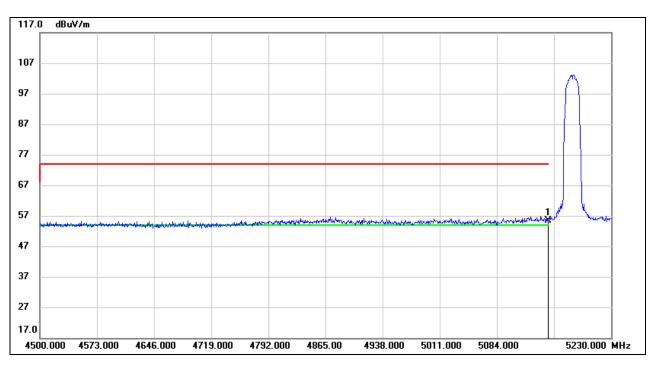
#### 8.1.1. 802.11a 20 SISO MODE

#### **UNII-1 BAND**

# **ANTENNA 2 TEST RESULTS (WORST CASE)**

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

#### **PEAK**

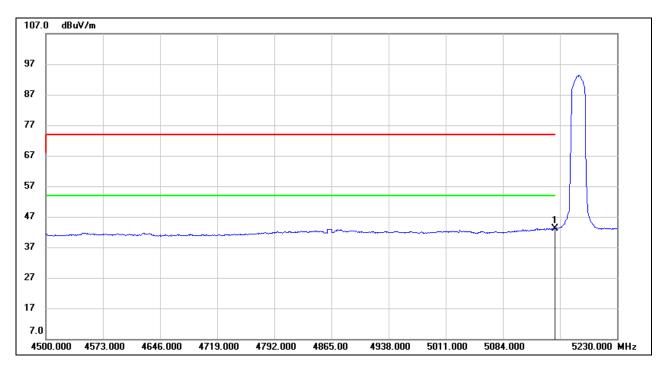


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	15.37	39.91	55.28	74.00	-18.72	peak

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



## <u>AVG</u>

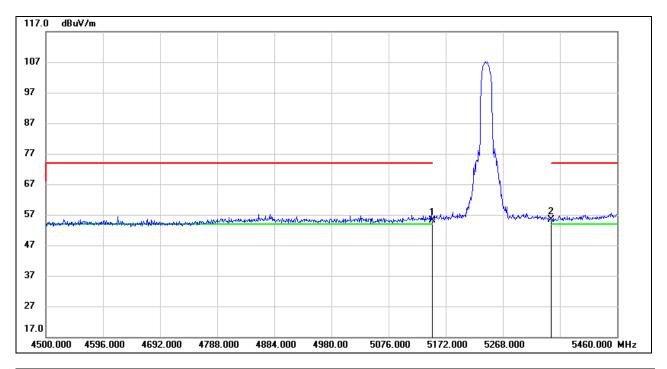


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	3.29	39.91	43.20	54.00	-10.80	AVG

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



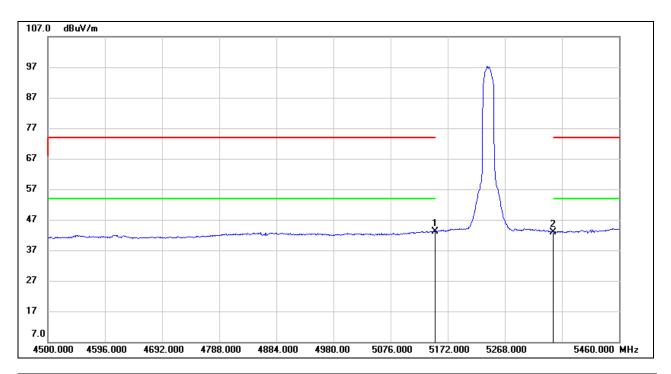
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	15.19	39.91	55.10	74.00	-18.90	peak
2	5350.000	15.23	40.08	55.31	74.00	-18.69	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 data 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	5150.000	3.28	39.91	43.19	54.00	-10.81	AVG
2	5350.000	2.88	40.08	42.96	54.00	-11.04	AVG

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

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 4. For the transmitting duration, please refer to clause 7.1.
- 5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
- 6. For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. The worst setting has been used for investigation during the measurement.

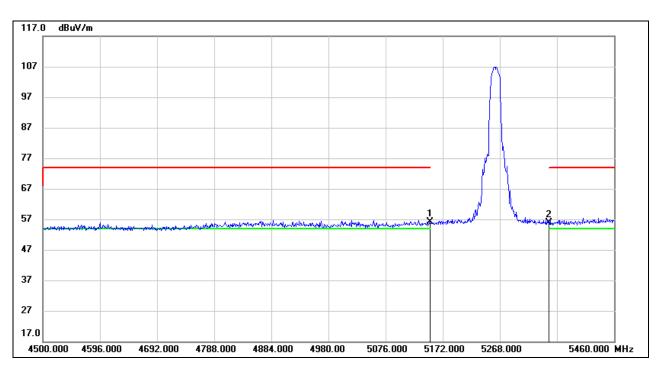


#### **UNII-2A BAND**

# **ANTENNA 2 TEST RESULTS (WORST CASE)**

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

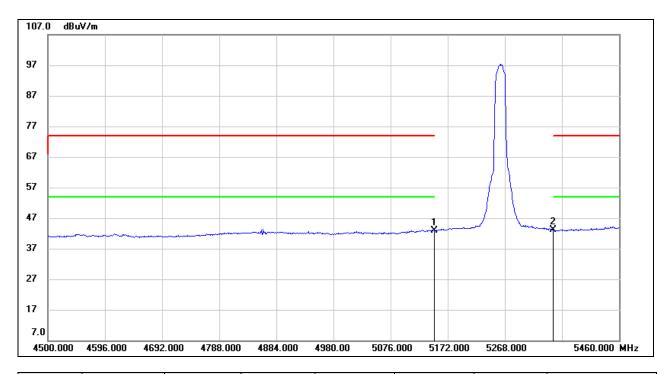
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	16.33	39.91	56.24	74.00	-17.76	peak
2	5350.000	15.72	40.08	55.80	74.00	-18.20	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



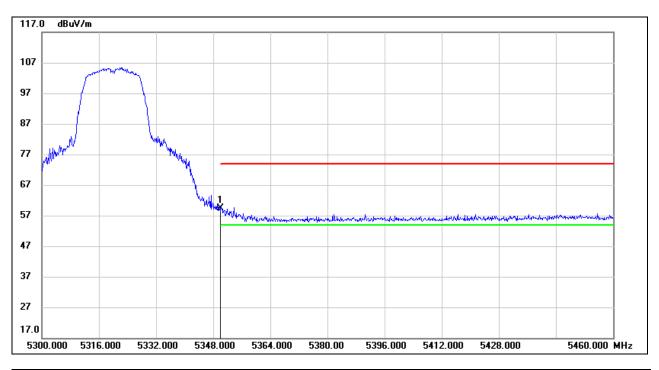


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	2.99	39.91	42.90	54.00	-11.10	AVG
2	5350.000	3.04	40.08	43.12	54.00	-10.88	AVG

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



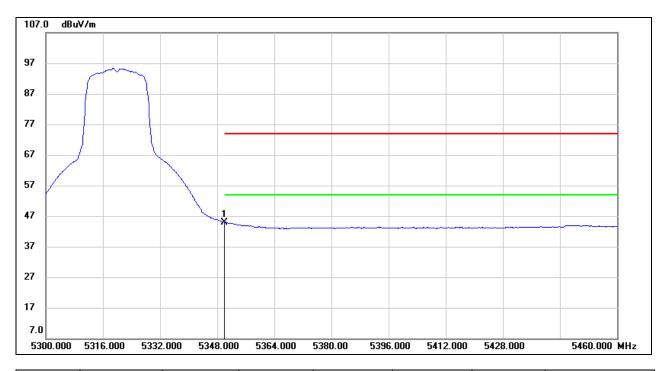
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	19.18	40.08	59.26	74.00	-14.74	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 data 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	5350.000	4.85	40.08	44.93	54.00	-9.07	AVG

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

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

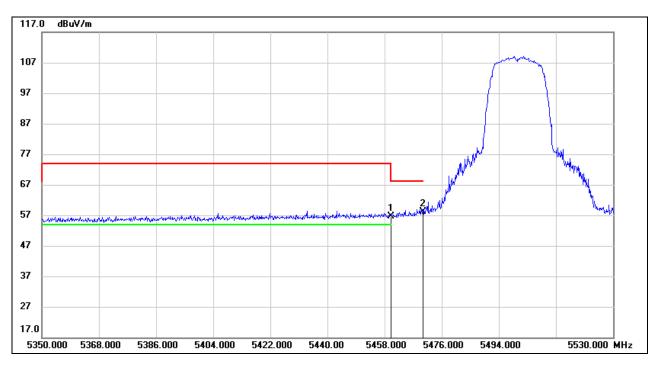


### **UNII-2C BAND**

# **ANTENNA 2 TEST RESULTS (WORST CASE)**

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

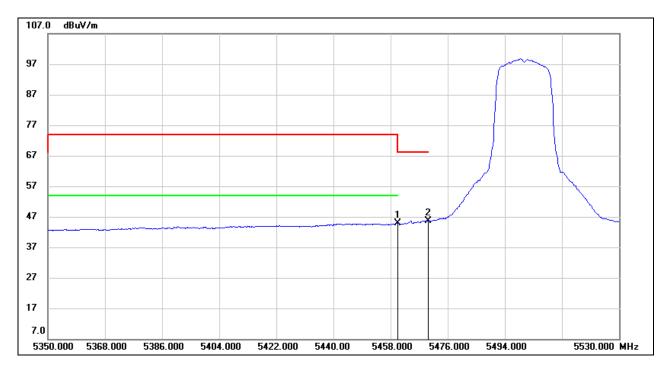
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	15.73	40.79	56.52	68.20	-11.68	peak
2	5470.000	17.38	40.85	58.23	68.20	-9.97	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



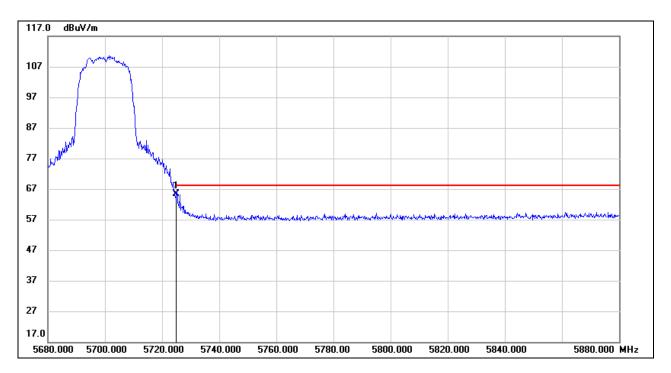


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	4.06	40.79	44.85	54.00	-9.15	AVG
2	5470.000	4.80	40.85	45.65	/	/	AVG

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



#### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5725.000	24.63	40.63	65.26	68.20	-2.94	peak

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

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

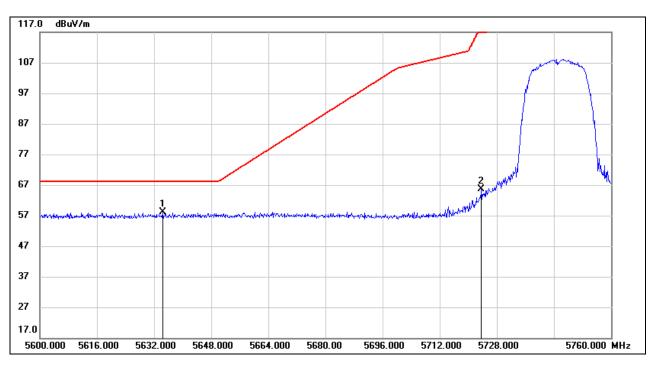


**UNII-3 BAND** 

# **ANTENNA 2 TEST RESULTS (WORST CASE)**

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

## **PEAK**

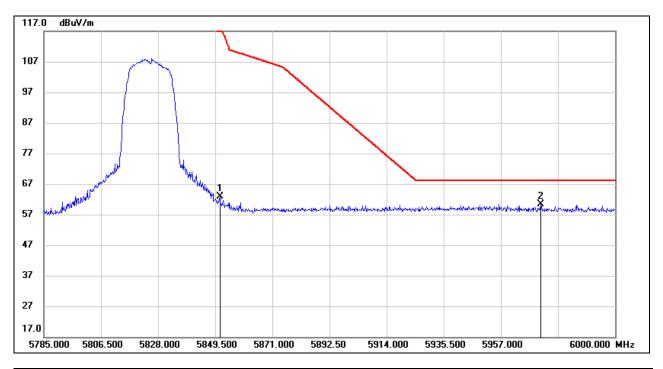


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5634.400	17.58	40.64	58.22	68.20	-9.98	peak
2	5723.680	24.92	40.61	65.53	119.19	-53.66	peak

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



## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5851.220	21.51	41.47	62.98	119.42	-56.44	peak
2	5972.050	18.84	41.59	60.43	68.20	-7.77	peak

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

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

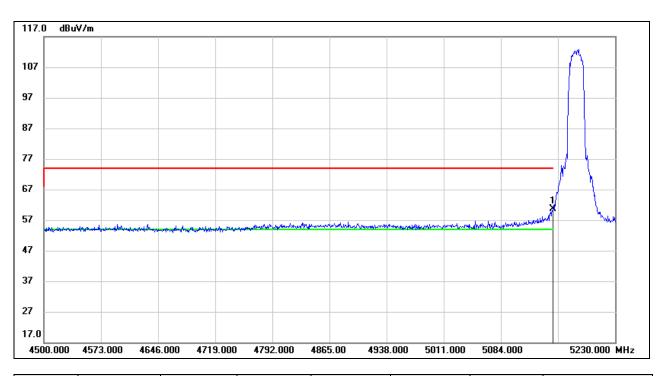


8.1.2. 802.11n HT20 MIMO MODE

## **UNII-1 BAND**

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

## **PEAK**

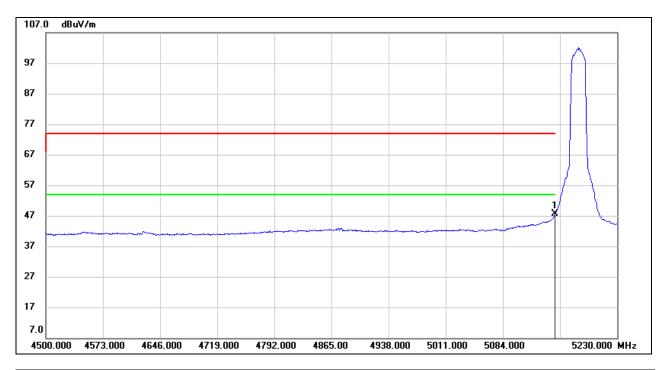


N	0.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1	5150.000	20.73	39.91	60.64	74.00	-13.36	peak

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



## <u>AVG</u>

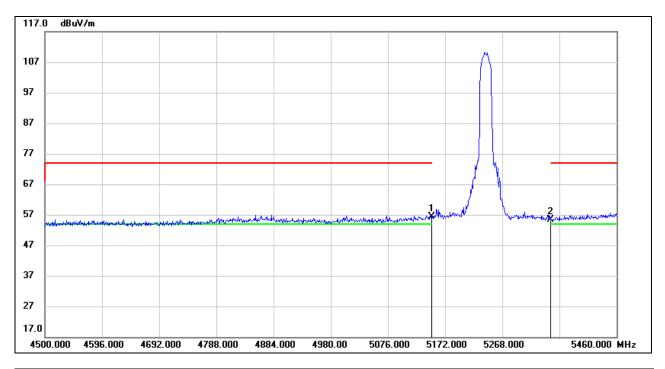


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	7.73	39.91	47.64	54.00	-6.36	AVG

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



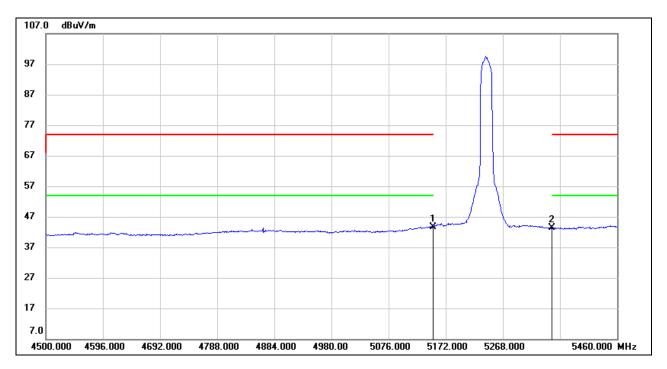
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	16.39	39.91	56.30	74.00	-17.70	peak
2	5350.000	15.29	40.08	55.37	74.00	-18.63	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 data 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	5150.000	3.68	39.91	43.59	54.00	-10.41	AVG
2	5350.000	3.24	40.08	43.32	54.00	-10.68	AVG

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

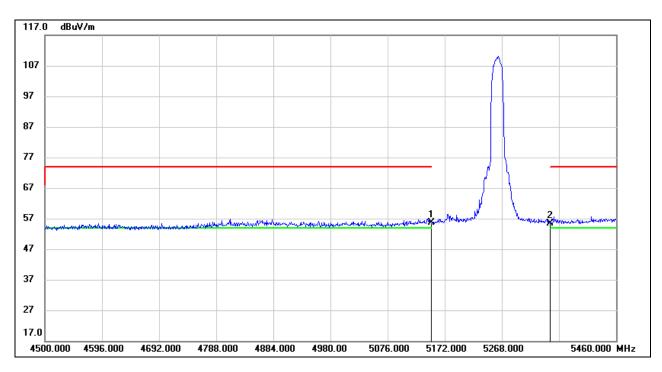
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 4. For the transmitting duration, please refer to clause 7.1.
- 5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
- 6. For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. The worst setting has been used for investigation during the measurement.



**UNII-2A BAND** 

# RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

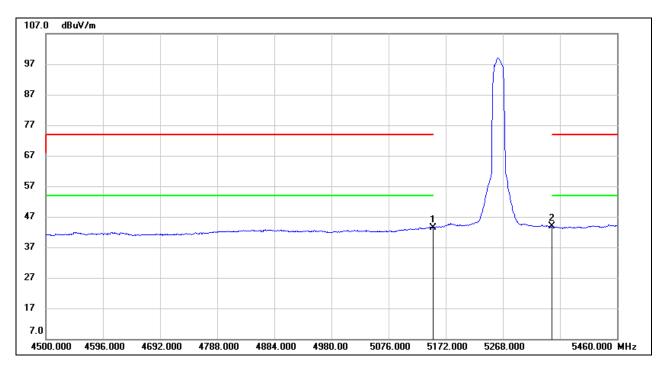
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	15.63	39.91	55.54	74.00	-18.46	peak
2	5350.000	15.39	40.08	55.47	74.00	-18.53	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



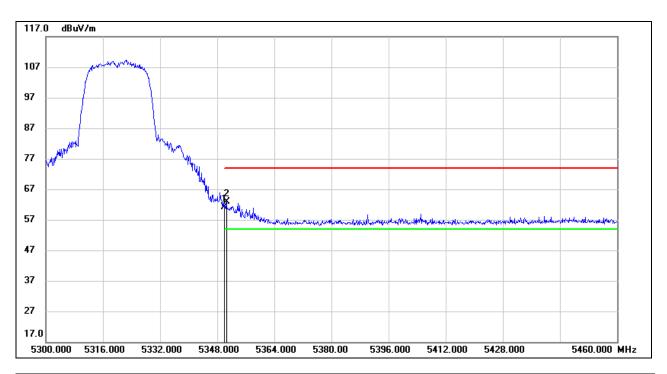


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	3.50	39.91	43.41	54.00	-10.59	AVG
2	5350.000	3.74	40.08	43.82	54.00	-10.18	AVG

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



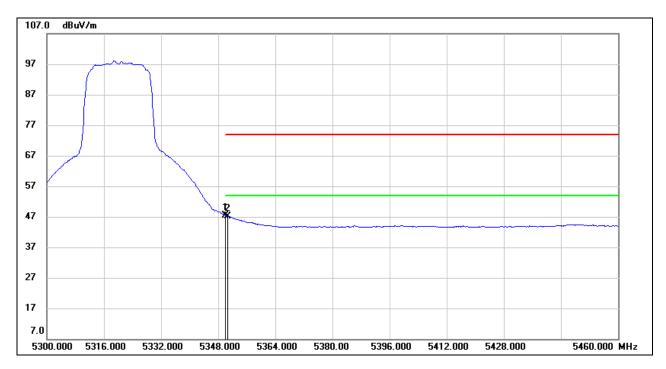
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	21.00	40.08	61.08	74.00	-12.92	peak
2	5350.560	22.86	40.09	62.95	74.00	-11.05	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 data 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	5350.000	7.35	40.08	47.43	54.00	-6.57	AVG
2	5350.560	7.14	40.09	47.23	54.00	-6.77	AVG

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

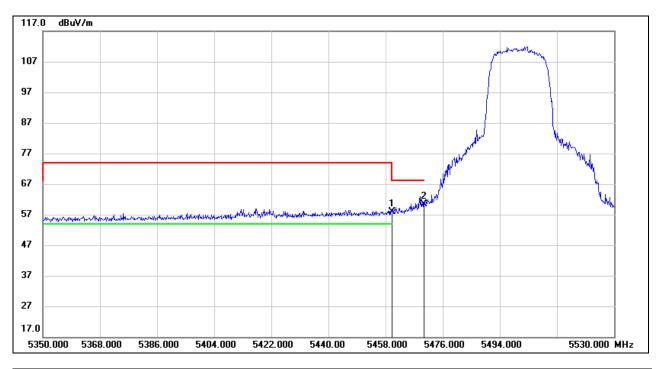
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 4. For the transmitting duration, please refer to clause 7.1.
- 5. Only the worst data was recorded, if it complies with the limit, the other emissions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



### **UNII-2C BAND**

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

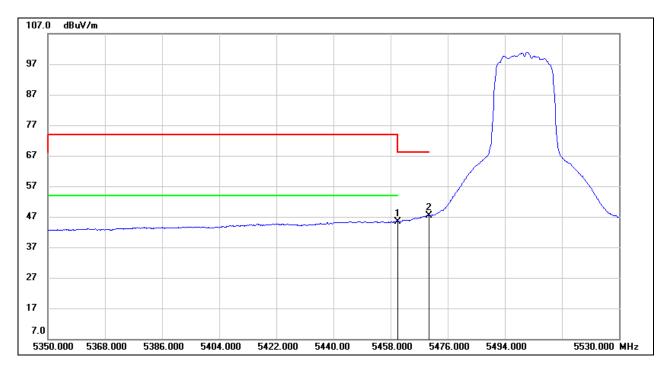
# **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	17.00	40.79	57.79	68.20	-10.41	peak
2	5470.000	19.65	40.85	60.50	68.20	-7.70	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



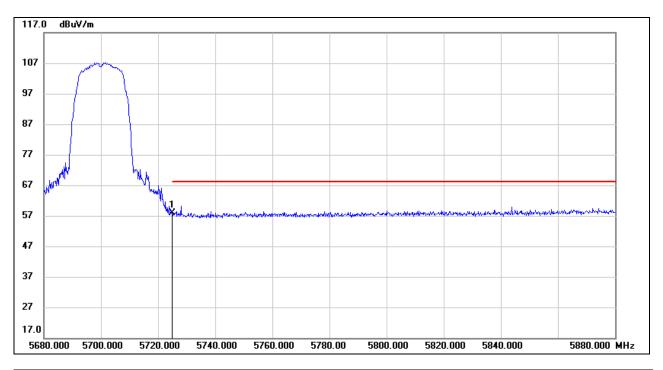


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	4.63	40.79	45.42	54.00	-8.58	AVG
2	5470.000	6.62	40.85	47.47	1	/	AVG

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



#### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5725.000	17.16	40.63	57.79	68.20	-10.41	peak

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

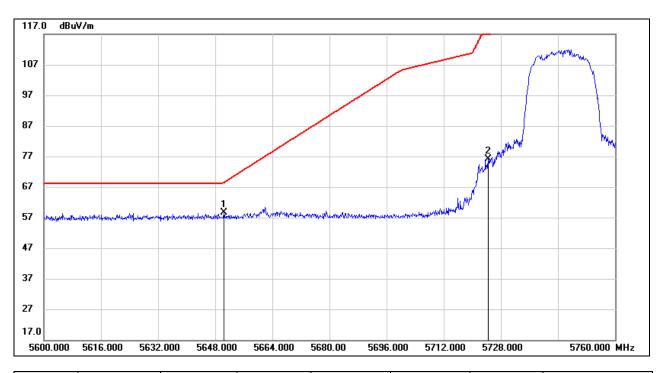
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



### **UNII-3 BAND**

# RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

## **PEAK**

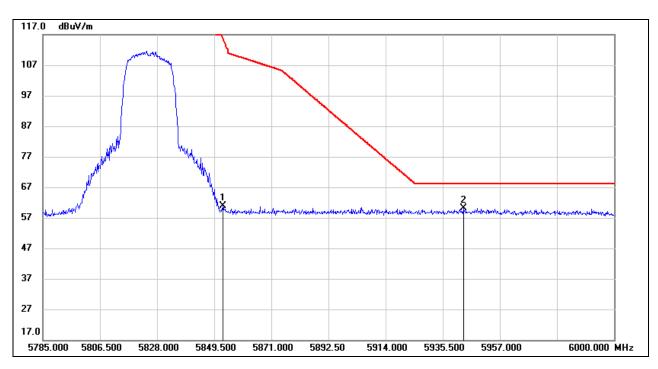


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5650.400	17.99	40.61	58.60	68.50	-9.90	peak
2	5724.480	35.60	40.62	76.22	121.01	-44.79	peak

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



#### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5852.725	19.38	41.48	60.86	115.99	-55.13	peak
2	5943.240	18.38	41.73	60.11	68.20	-8.09	peak

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

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

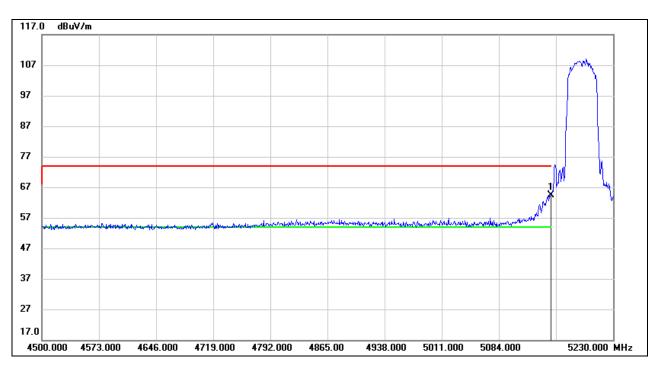


8.1.3. 802.11n HT40 MIMO MODE

## **UNII-1 BAND**

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

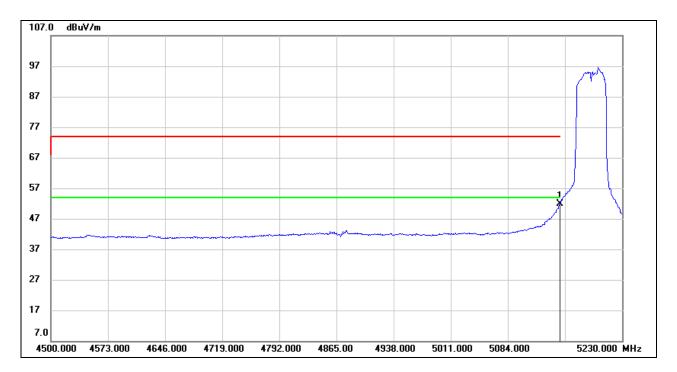
#### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	24.40	39.91	64.31	74.00	-9.69	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



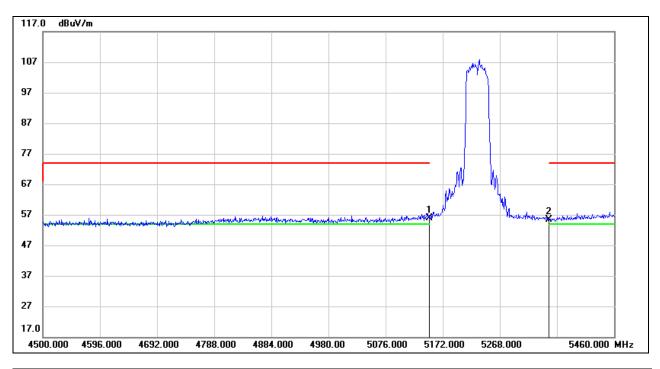


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	11.97	39.91	51.88	54.00	-2.12	AVG

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



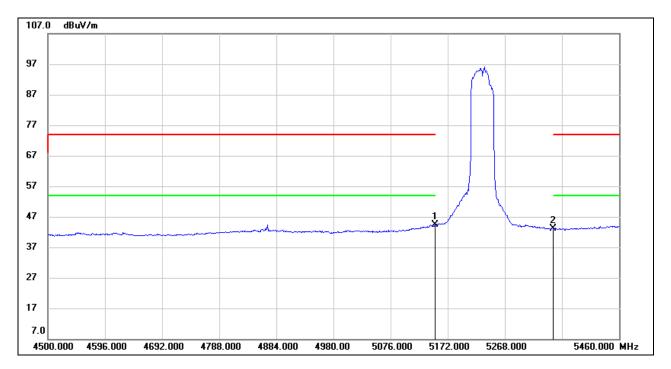
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	15.94	39.91	55.85	74.00	-18.15	peak
2	5350.000	15.32	40.08	55.40	74.00	-18.60	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 data 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	5150.000	4.40	39.91	44.31	54.00	-9.69	AVG
2	5350.000	3.11	40.08	43.19	54.00	-10.81	AVG

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

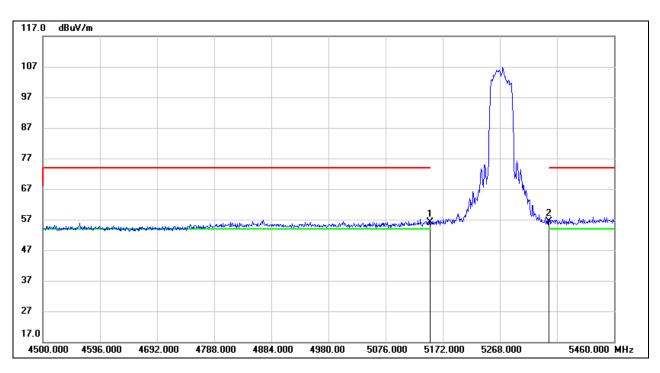
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 4. For the transmitting duration, please refer to clause 7.1.
- 5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
- 6. For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. The worst setting has been used for investigation during the measurement.



**UNII-2A BAND** 

# RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

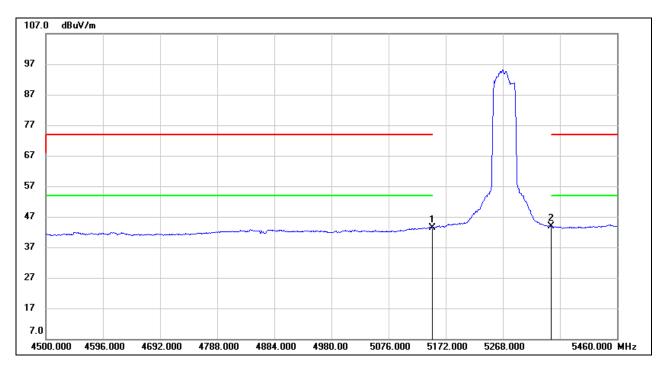
# **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	16.24	39.91	56.15	74.00	-17.85	peak
2	5350.000	16.27	40.08	56.35	74.00	-17.65	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



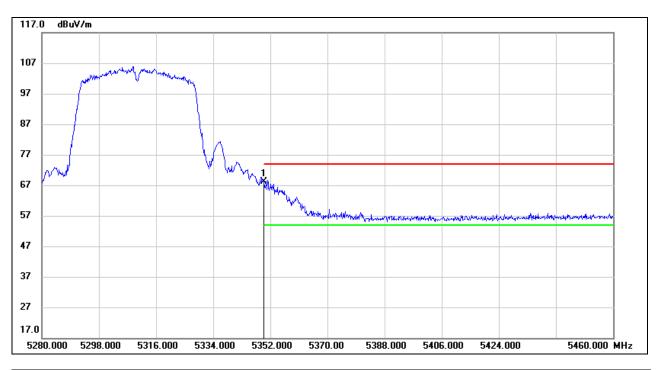


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	3.45	39.91	43.36	54.00	-10.64	AVG
2	5350.000	3.74	40.08	43.82	54.00	-10.18	AVG

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



## **PEAK**

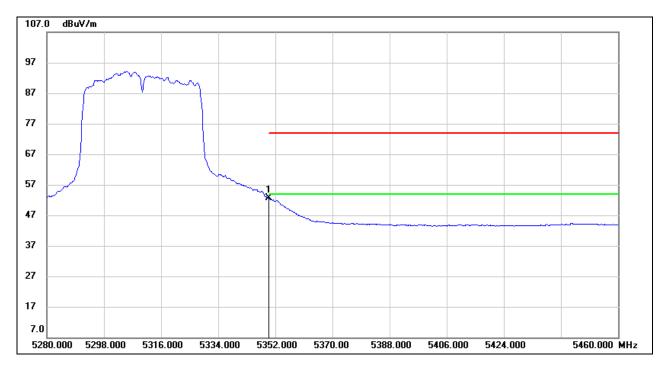


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	28.09	40.08	68.17	74.00	-5.83	peak

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



## <u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	12.43	40.08	52.51	54.00	-1.49	AVG

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

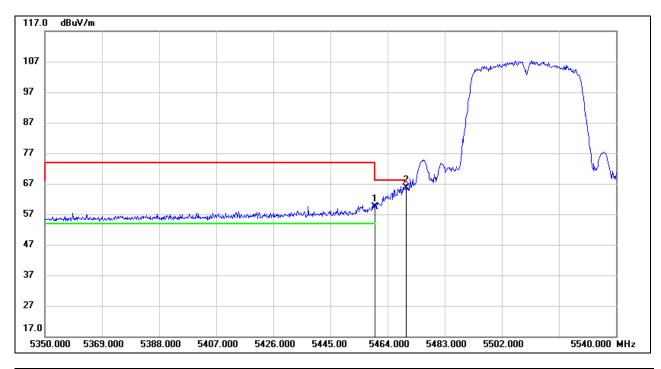
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 4. For the transmitting duration, please refer to clause 7.1.
- 5. Only the worst data was recorded, if it complies with the limit, the other emissions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



### **UNII-2C BAND**

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

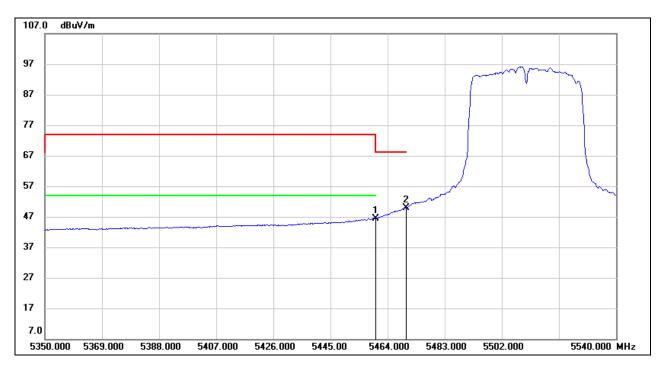
# **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	18.68	40.79	59.47	68.20	-8.73	peak
2	5470.000	24.66	40.85	65.51	68.20	-2.69	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 data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.





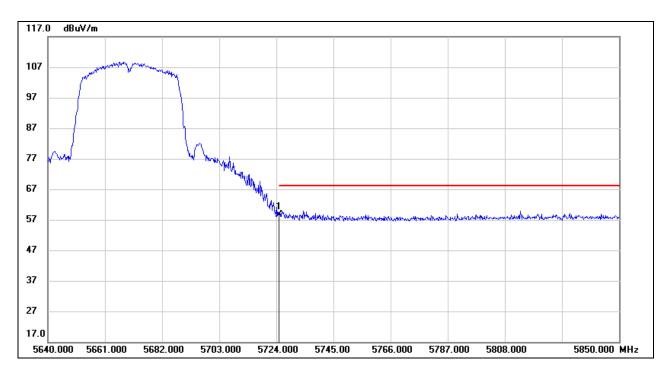
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	5.57	40.79	46.36	54.00	-7.64	AVG
2	5470.000	9.11	40.85	49.96	1	/	AVG

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



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5725.000	17.88	40.63	58.51	68.20	-9.69	peak

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

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

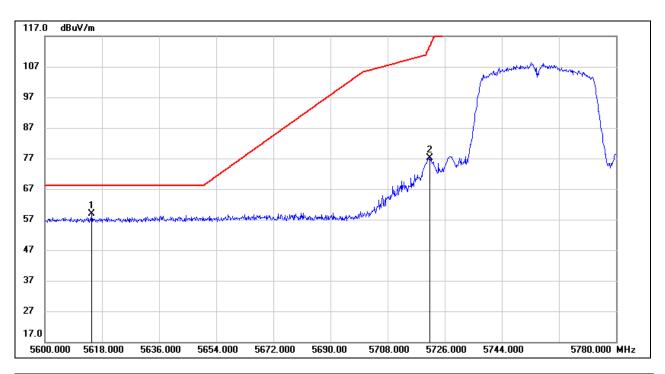
Note: All the polarities (Vertical & Horizontal) and Antennas had been tested, only the worst data was recorded in the report.



### **UNII-3 BAND**

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

## **PEAK**



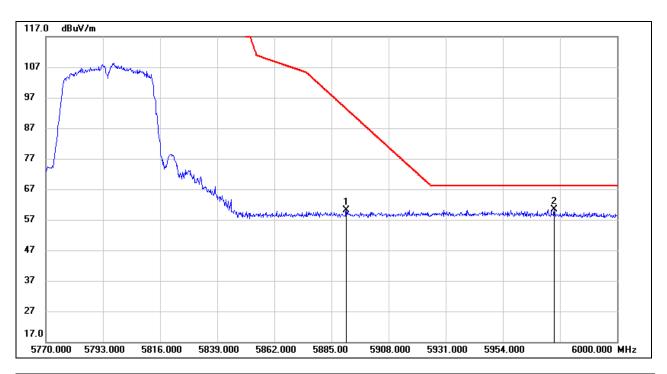
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5614.760	18.24	40.68	58.92	68.20	-9.28	peak
2	5721.320	36.48	40.60	77.08	113.81	-36.73	peak

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



## RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5890.980	18.20	41.86	60.06	93.34	-33.28	peak
2	5974.700	18.77	41.58	60.35	68.20	-7.85	peak

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

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

Note: All the polarities (Vertical & Horizontal) had been tested, only the worst data was recorded in the report.

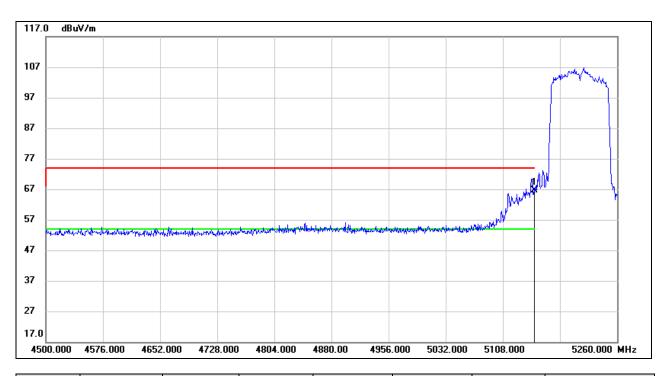


### 8.1.4. 802.11ac VHT80 MIMO MODE

### **UNII-1 BAND**

### RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

### **PEAK**

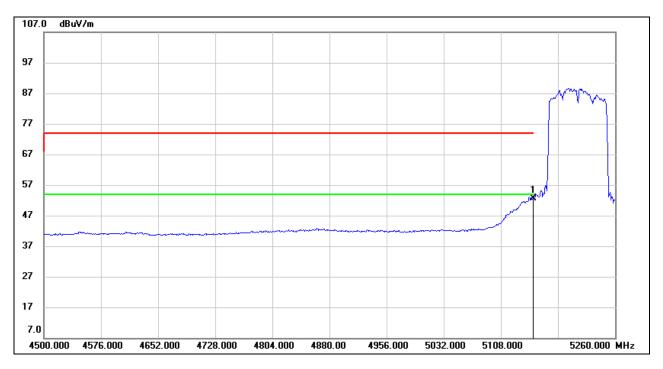


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	26.66	39.91	66.57	74.00	-7.43	peak

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



### <u>AVG</u>



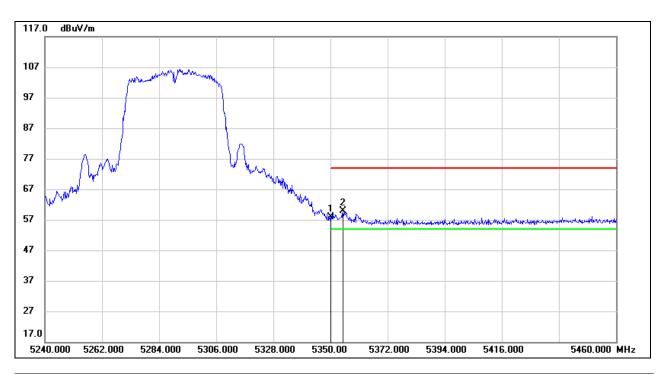
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5150.000	12.69	39.91	52.60	54.00	-1.40	AVG

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



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

#### **PEAK**

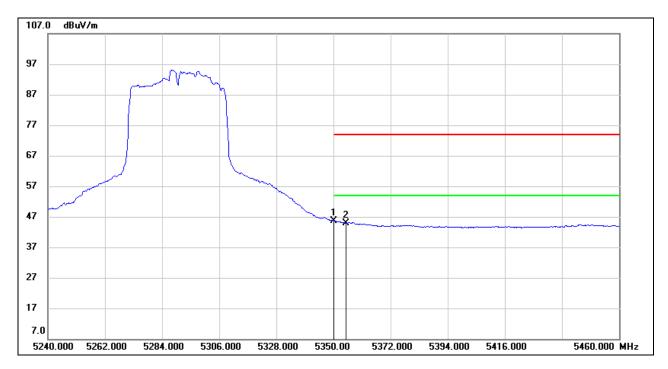


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	17.85	40.08	57.93	74.00	-16.07	peak
2	5354.840	19.87	40.12	59.99	74.00	-14.01	peak

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



#### AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	5.60	40.08	45.68	54.00	-8.32	AVG
2	5354.840	4.73	40.12	44.85	54.00	-9.15	AVG

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

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 4. For the transmitting duration, please refer to clause 7.1.
- 5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
- 6. For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. The worst setting has been used for investigation during the measurement.

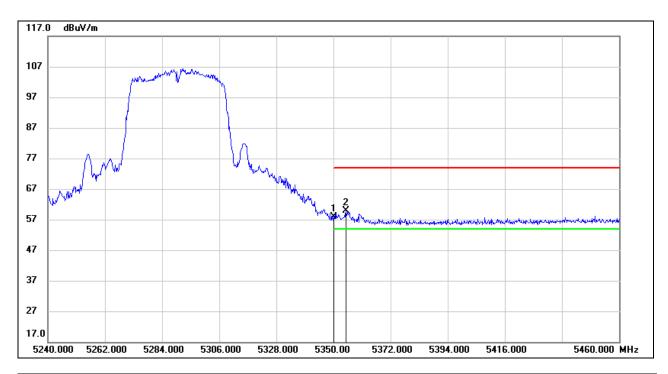
Note: All the polarities (Vertical & Horizontal) and Antennas had been tested, only the worst data was recorded in the report.



**UNII-2A BAND** 

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

## **PEAK**

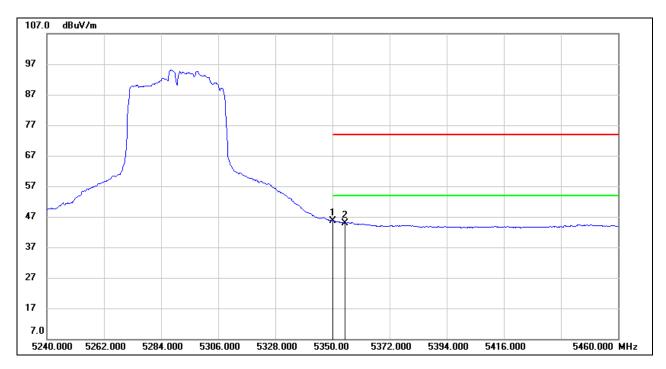


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	17.85	40.08	57.93	74.00	-16.07	peak
2	5354.840	19.87	40.12	59.99	74.00	-14.01	peak

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



#### AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5350.000	5.60	40.08	45.68	54.00	-8.32	AVG
2	5354.840	4.73	40.12	44.85	54.00	-9.15	AVG

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

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 4. For the transmitting duration, please refer to clause 7.1.
- 5. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
- 6. For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. The worst setting has been used for investigation during the measurement.

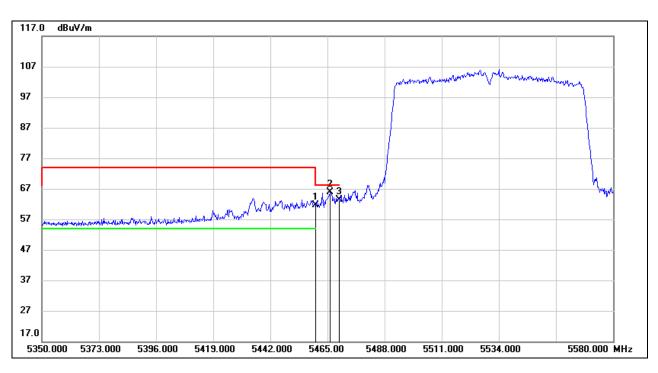
Note: All the polarities (Vertical & Horizontal) and Antennas had been tested, only the worst data was recorded in the report.



#### **UNII-2C BAND**

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

### **PEAK**

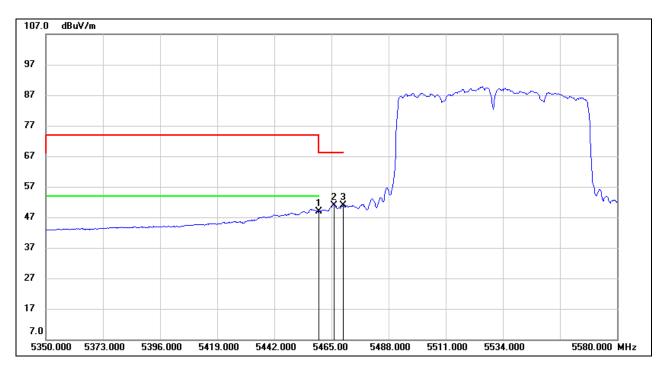


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	20.83	40.79	61.62	68.20	-6.58	peak
2	5466.150	25.11	40.83	65.94	68.20	-2.26	peak
3	5470.000	22.65	40.85	63.50	68.20	-4.70	peak

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



#### AVG



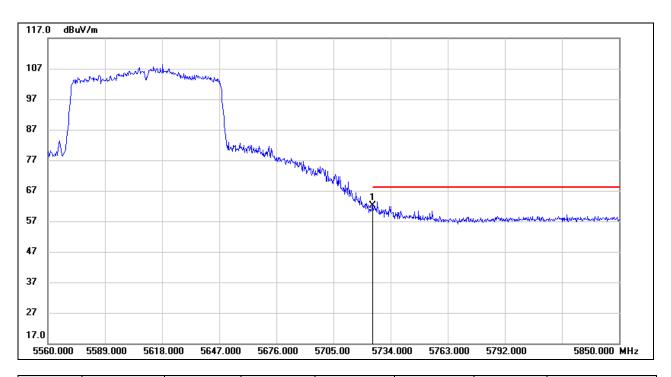
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5460.000	8.03	40.79	48.82	54.00	-5.18	AVG
2	5466.150	10.09	40.83	50.92	1	/	AVG
3	5470.000	10.03	40.85	50.88	1	/	AVG

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



### RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

#### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5725.000	21.40	40.63	62.03	68.20	-6.17	peak

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

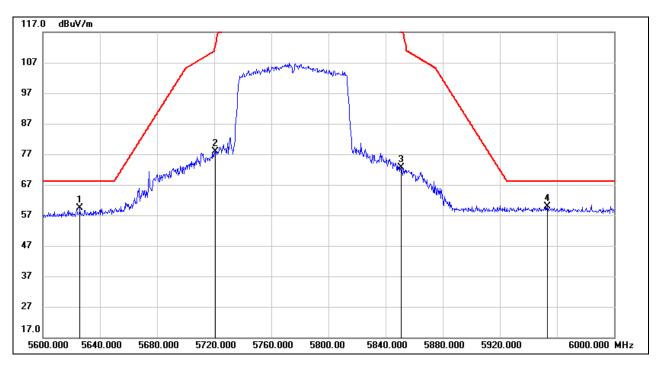
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Note: All the polarities (Vertical & Horizontal) and Antennas had been tested, only the worst data was recorded in the report.



**UNII-3 BAND** 

## RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5626.000	18.80	40.66	59.46	68.20	-8.74	peak
2	5720.800	37.22	40.60	77.82	112.62	-34.80	peak
3	5850.800	31.24	41.46	72.70	120.38	-47.68	peak
4	5953.200	18.12	41.69	59.81	68.20	-8.39	peak

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

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

Note: All the polarities (Vertical & Horizontal) and Antennas had been tested, only the worst data was recorded in the report.



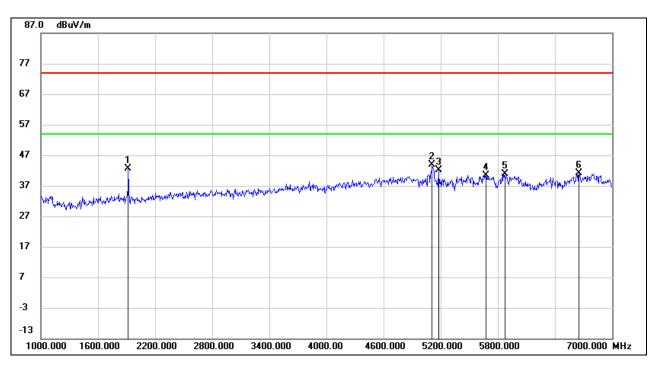
# 8.2. SPURIOUS EMISSIONS (1 GHz ~ 7 GHz)

### 8.2.1. 802.11n HT20 MIMO MODE

### **UNII-1 BAND**

### MIMO MODE TEST RESULTS (WORST CASE)

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

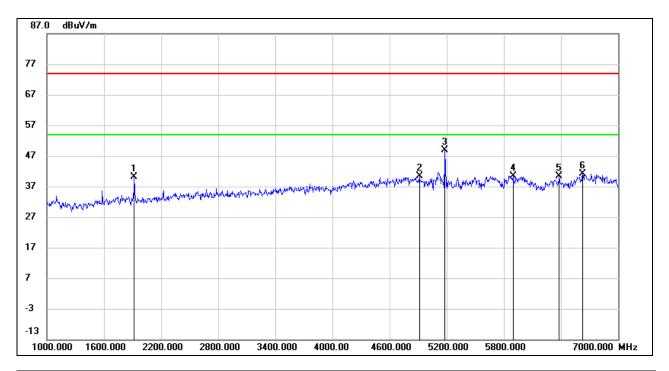


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.54	-11.02	42.52	74.00	-31.48	peak
2	5110.000	43.60	0.24	43.84	74.00	-30.16	peak
3	5176.000	41.43	0.69	42.12	74.00	-31.88	peak
4	5674.000	39.03	1.44	40.47	74.00	-33.53	peak
5	5872.000	39.25	1.72	40.97	74.00	-33.03	peak
6	6652.000	36.55	4.52	41.07	74.00	-32.93	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

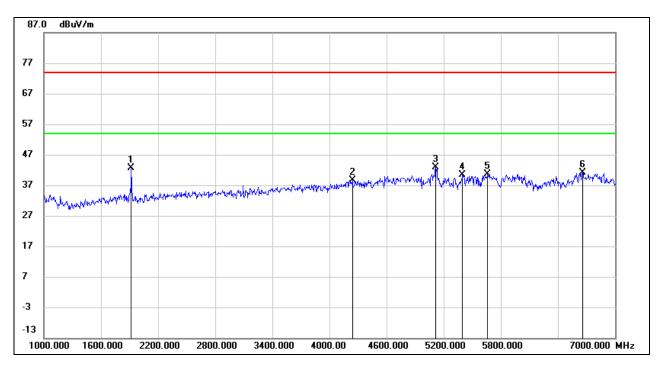


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	51.11	-11.02	40.09	74.00	-33.91	peak
2	4912.000	41.06	-0.56	40.50	74.00	-33.50	peak
3	5182.000	48.13	0.74	48.87	74.00	-25.13	peak
4	5896.000	38.65	1.82	40.47	74.00	-33.53	peak
5	6382.000	37.10	3.25	40.35	74.00	-33.65	peak
6	6628.000	36.73	4.50	41.23	74.00	-32.77	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

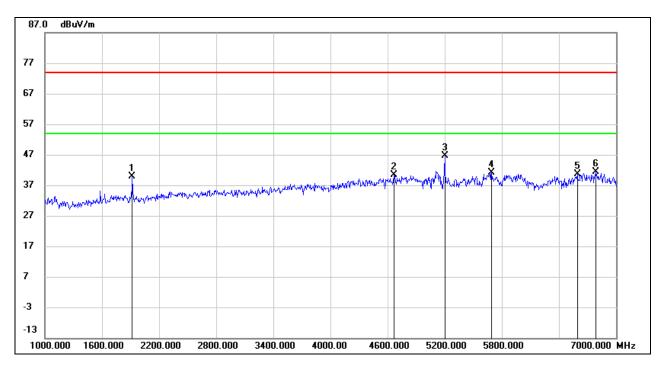


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.64	-11.02	42.62	74.00	-31.38	peak
2	4240.000	41.45	-2.76	38.69	74.00	-35.31	peak
3	5116.000	42.61	0.29	42.90	74.00	-31.10	peak
4	5398.000	39.66	0.80	40.46	74.00	-33.54	peak
5	5662.000	39.11	1.44	40.55	74.00	-33.45	peak
6	6658.000	36.60	4.51	41.11	74.00	-32.89	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

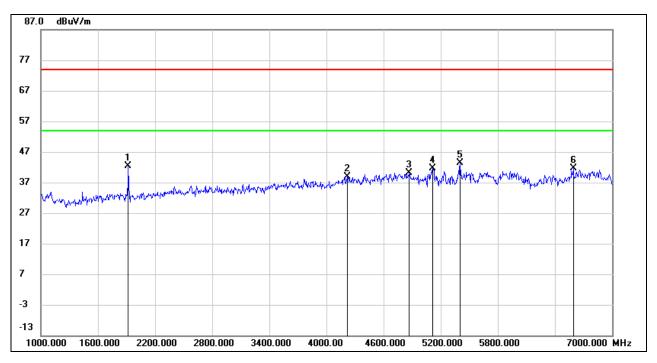


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	50.93	-11.02	39.91	74.00	-34.09	peak
2	4666.000	41.64	-1.31	40.33	74.00	-33.67	peak
3	5200.000	45.81	0.86	46.67	74.00	-27.33	peak
4	5692.000	39.71	1.43	41.14	74.00	-32.86	peak
5	6592.000	36.23	4.45	40.68	74.00	-33.32	peak
6	6784.000	36.87	4.56	41.43	74.00	-32.57	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

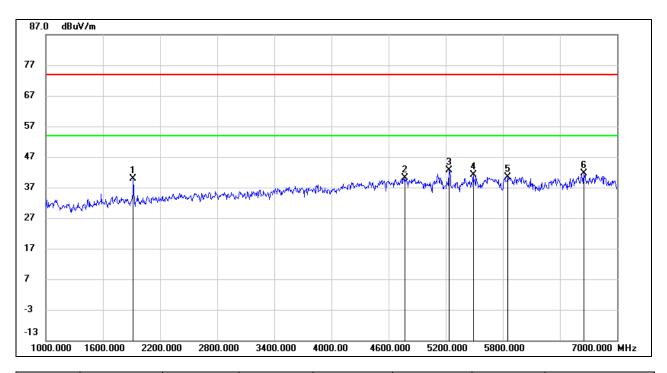


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.49	-11.02	42.47	74.00	-31.53	peak
2	4216.000	41.59	-2.75	38.84	74.00	-35.16	peak
3	4870.000	40.65	-0.60	40.05	74.00	-33.95	peak
4	5116.000	41.23	0.29	41.52	74.00	-32.48	peak
5	5404.000	42.53	0.82	43.35	74.00	-30.65	peak
6	6592.000	37.11	4.45	41.56	74.00	-32.44	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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	1918.000	50.92	-11.02	39.90	74.00	-34.10	peak
2	4774.000	40.93	-0.79	40.14	74.00	-33.86	peak
3	5236.000	41.75	0.84	42.59	74.00	-31.41	peak
4	5488.000	39.96	1.12	41.08	74.00	-32.92	peak
5	5854.000	38.79	1.64	40.43	74.00	-33.57	peak
6	6652.000	37.00	4.52	41.52	74.00	-32.48	peak

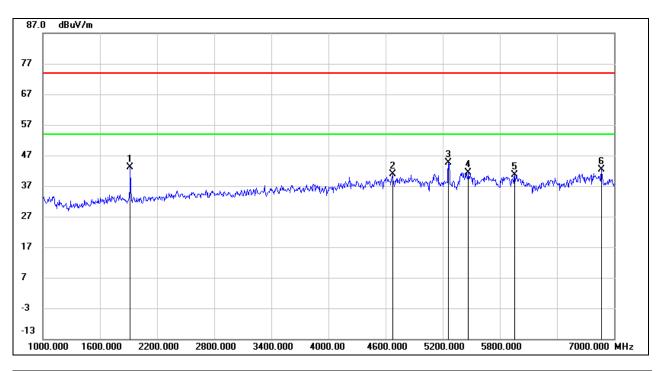
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



**UNII-2A BAND** 

## MIMO MODE TEST RESULTS (WORST CASE)

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

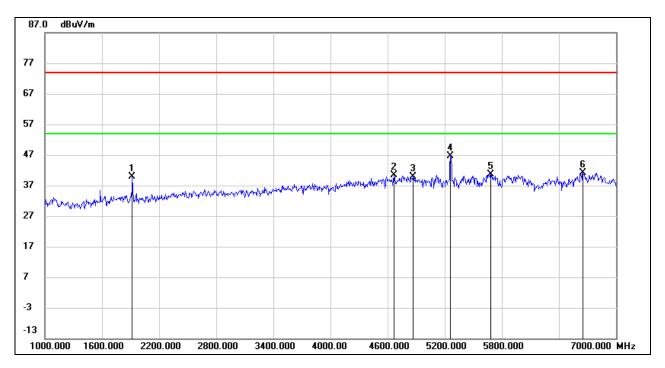


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	54.10	-11.02	43.08	74.00	-30.92	peak
2	4672.000	42.21	-1.29	40.92	74.00	-33.08	peak
3	5260.000	43.72	0.84	44.56	74.00	-29.44	peak
4	5470.000	40.44	1.06	41.50	74.00	-32.50	peak
5	5956.000	38.60	2.04	40.64	74.00	-33.36	peak
6	6868.000	37.50	4.76	42.26	74.00	-31.74	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 Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

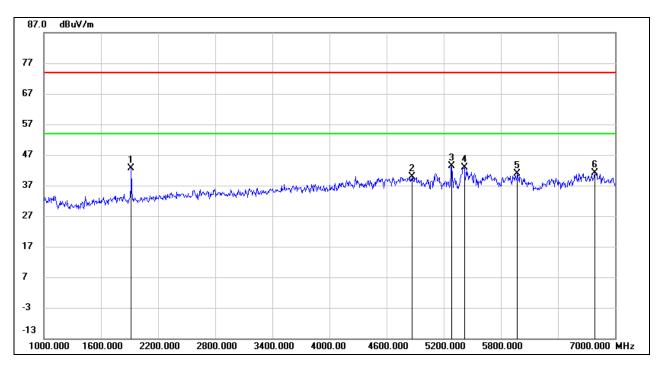


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	51.01	-11.02	39.99	74.00	-34.01	peak
2	4666.000	41.66	-1.31	40.35	74.00	-33.65	peak
3	4870.000	40.60	-0.60	40.00	74.00	-34.00	peak
4	5260.000	45.78	0.84	46.62	74.00	-27.38	peak
5	5686.000	39.29	1.44	40.73	74.00	-33.27	peak
6	6652.000	36.65	4.52	41.17	74.00	-32.83	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

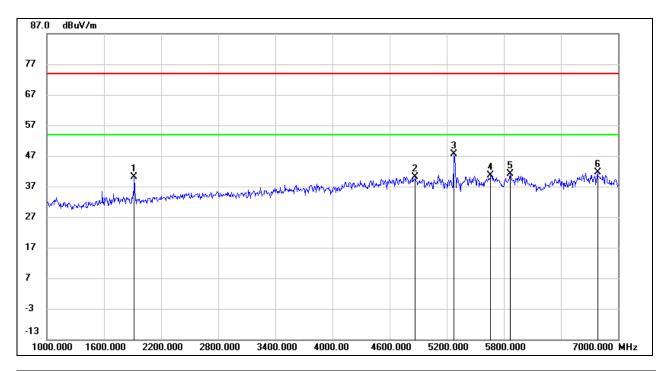


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.60	-11.02	42.58	74.00	-31.42	peak
2	4864.000	40.58	-0.60	39.98	74.00	-34.02	peak
3	5280.000	42.57	0.84	43.41	74.00	-30.59	peak
4	5416.000	41.97	0.85	42.82	74.00	-31.18	peak
5	5974.000	38.74	2.10	40.84	74.00	-33.16	peak
6	6784.000	36.59	4.56	41.15	74.00	-32.85	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

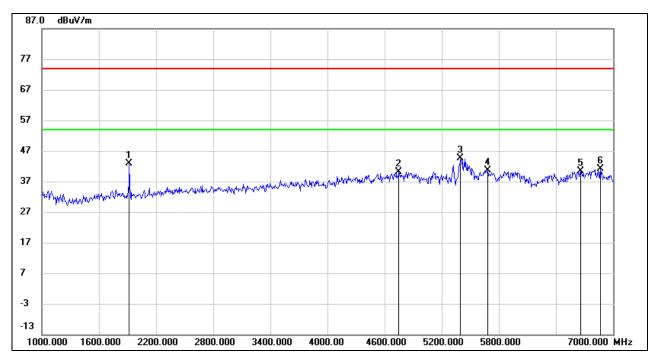


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	51.24	-11.02	40.22	74.00	-33.78	peak
2	4870.000	40.76	-0.60	40.16	74.00	-33.84	peak
3	5280.000	46.78	0.84	47.62	74.00	-26.38	peak
4	5662.000	39.25	1.44	40.69	74.00	-33.31	peak
5	5866.000	39.47	1.70	41.17	74.00	-32.83	peak
6	6784.000	37.01	4.56	41.57	74.00	-32.43	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 Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

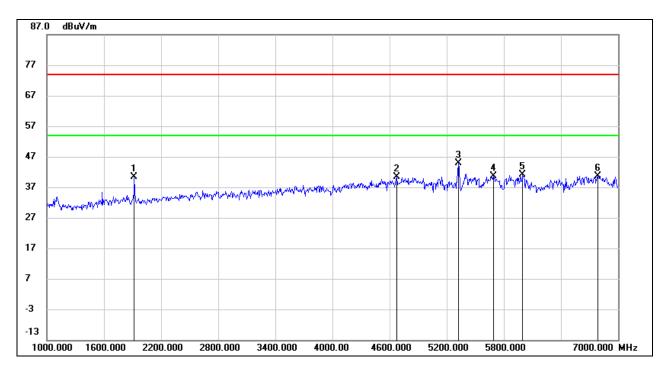


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.82	-11.02	42.80	74.00	-31.20	peak
2	4750.000	40.96	-0.90	40.06	74.00	-33.94	peak
3	5398.000	43.76	0.80	44.56	74.00	-29.44	peak
4	5686.000	39.29	1.44	40.73	74.00	-33.27	peak
5	6658.000	35.91	4.51	40.42	74.00	-33.58	peak
6	6868.000	36.39	4.76	41.15	74.00	-32.85	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### 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	1918.000	51.36	-11.02	40.34	74.00	-33.66	peak
2	4678.000	41.56	-1.26	40.30	74.00	-33.70	peak
3	5326.000	43.96	0.82	44.78	74.00	-29.22	peak
4	5692.000	39.09	1.43	40.52	74.00	-33.48	peak
5	5998.000	38.95	2.20	41.15	74.00	-32.85	peak
6	6790.000	36.06	4.57	40.63	74.00	-33.37	peak

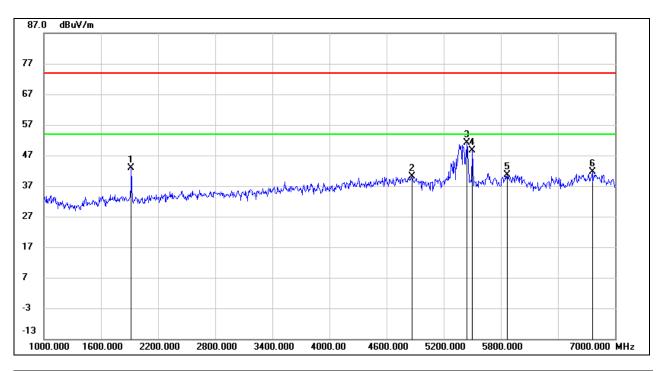
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### **UNII-2C BAND**

### MIMO MODE TEST RESULTS (WORST CASE)

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

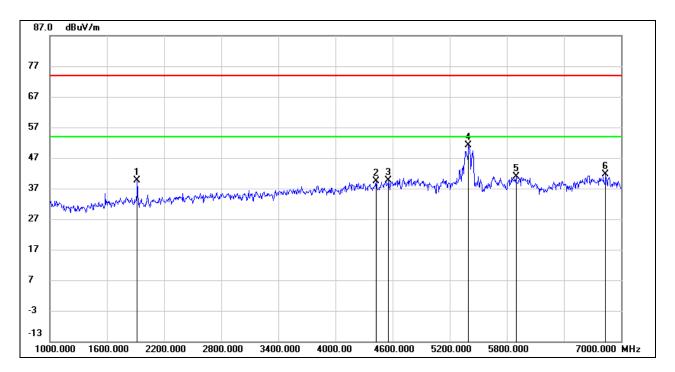


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.92	-11.02	42.90	74.00	-31.10	peak
2	4864.000	40.77	-0.60	40.17	74.00	-33.83	peak
3	5446.000	50.19	0.96	51.15	74.00	-22.85	peak
4	5500.000	47.38	1.17	48.55	74.00	-25.45	peak
5	5866.000	39.03	1.70	40.73	74.00	-33.27	peak
6	6760.000	37.13	4.56	41.69	74.00	-32.31	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

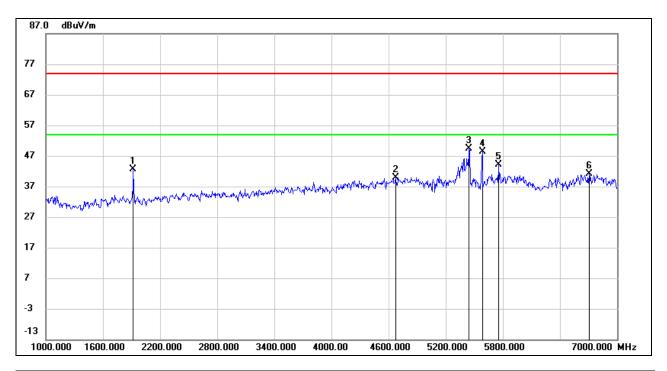


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	50.61	-11.02	39.59	74.00	-34.41	peak
2	4426.000	41.98	-2.72	39.26	74.00	-34.74	peak
3	4558.000	41.42	-1.89	39.53	74.00	-34.47	peak
4	5398.000	50.36	0.80	51.16	74.00	-22.84	peak
5	5896.000	39.09	1.82	40.91	74.00	-33.09	peak
6	6838.000	36.91	4.69	41.60	74.00	-32.40	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 Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

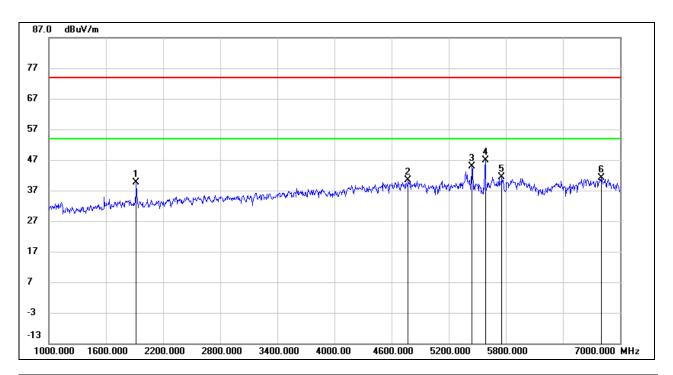


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.61	-11.02	42.59	74.00	-31.41	peak
2	4672.000	41.28	-1.29	39.99	74.00	-34.01	peak
3	5446.000	48.52	0.96	49.48	74.00	-24.52	peak
4	5584.000	46.89	1.39	48.28	74.00	-25.72	peak
5	5758.000	42.63	1.45	44.08	74.00	-29.92	peak
6	6706.000	36.63	4.54	41.17	74.00	-32.83	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

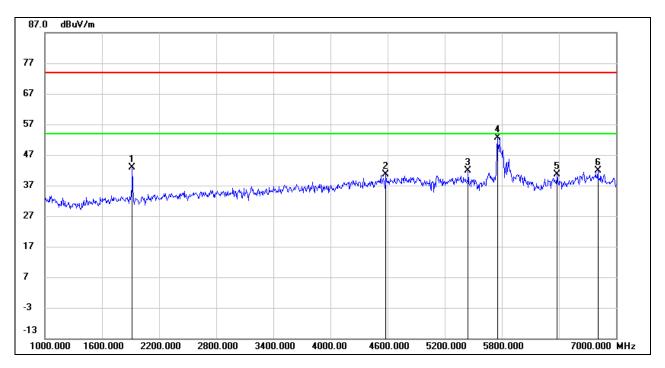


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	50.75	-11.02	39.73	74.00	-34.27	peak
2	4774.000	41.22	-0.79	40.43	74.00	-33.57	peak
3	5446.000	43.99	0.96	44.95	74.00	-29.05	peak
4	5584.000	45.59	1.39	46.98	74.00	-27.02	peak
5	5758.000	39.89	1.45	41.34	74.00	-32.66	peak
6	6802.000	36.49	4.58	41.07	74.00	-32.93	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

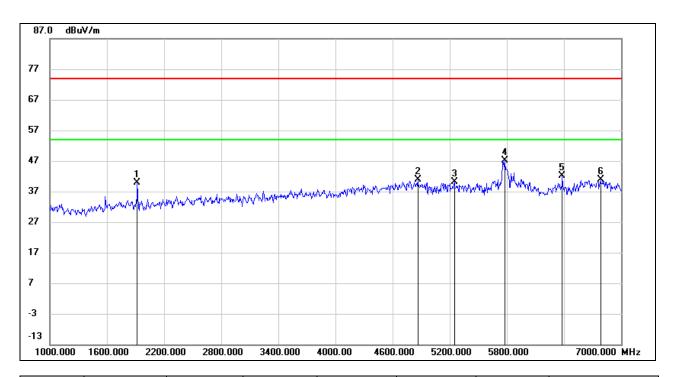


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.95	-11.02	42.93	74.00	-31.07	peak
2	4582.000	42.28	-1.76	40.52	74.00	-33.48	peak
3	5446.000	40.90	0.96	41.86	74.00	-32.14	peak
4	5752.000	51.27	1.44	52.71	74.00	-21.29	peak
5	6382.000	37.46	3.25	40.71	74.00	-33.29	peak
6	6808.000	37.32	4.59	41.91	74.00	-32.09	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### 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	1918.000	51.01	-11.02	39.99	74.00	-34.01	peak
2	4864.000	41.43	-0.60	40.83	74.00	-33.17	peak
3	5248.000	39.34	0.85	40.19	74.00	-33.81	peak
4	5776.000	45.79	1.45	47.24	74.00	-26.76	peak
5	6382.000	38.83	3.25	42.08	74.00	-31.92	peak
6	6784.000	36.21	4.56	40.77	74.00	-33.23	peak

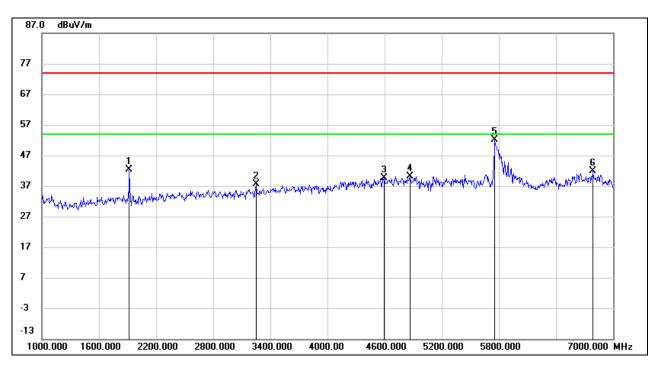
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



## **STRADDLE CHANNEL 144**

### MIMO MODE TEST RESULTS (WORST CASE)

## HARMONICS AND SPURIOUS EMISSIONS (HORIZONTAL)

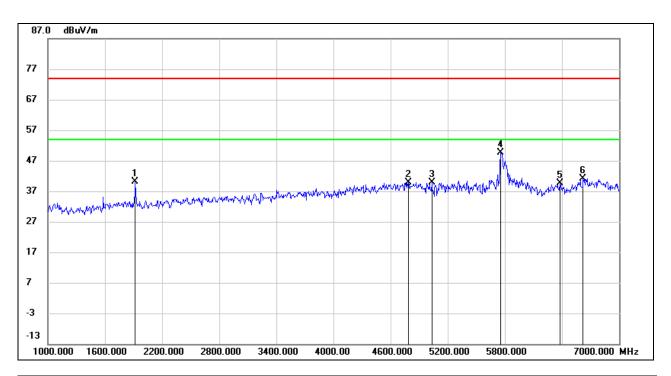


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	53.38	-11.02	42.36	74.00	-31.64	peak
2	3250.000	44.11	-6.52	37.59	74.00	-36.41	peak
3	4594.000	41.21	-1.68	39.53	74.00	-34.47	peak
4	4864.000	40.75	-0.60	40.15	74.00	-33.85	peak
5	5758.000	50.57	1.45	52.02	74.00	-21.98	peak
6	6790.000	37.25	4.57	41.82	74.00	-32.18	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



## **HARMONICS AND SPURIOUS EMISSIONS (VERTICAL)**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	51.07	-11.02	40.05	74.00	-33.95	peak
2	4786.000	40.62	-0.72	39.90	74.00	-34.10	peak
3	5032.000	40.25	-0.29	39.96	74.00	-34.04	peak
4	5752.000	48.29	1.44	49.73	74.00	-24.27	peak
5	6382.000	36.41	3.25	39.66	74.00	-34.34	peak
6	6622.000	36.52	4.51	41.03	74.00	-32.97	peak

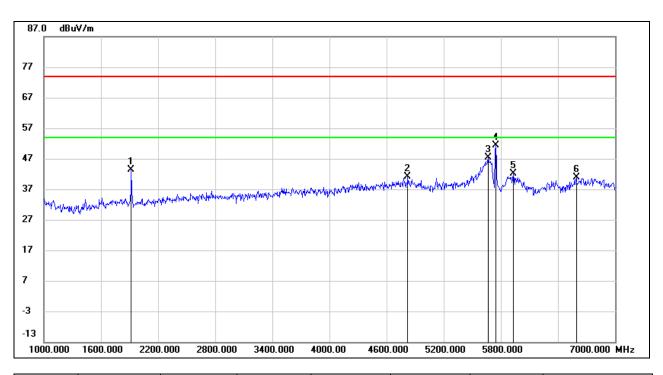
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### **UNII-3 BAND**

### MIMO MODE TEST RESULTS (WORST CASE)

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

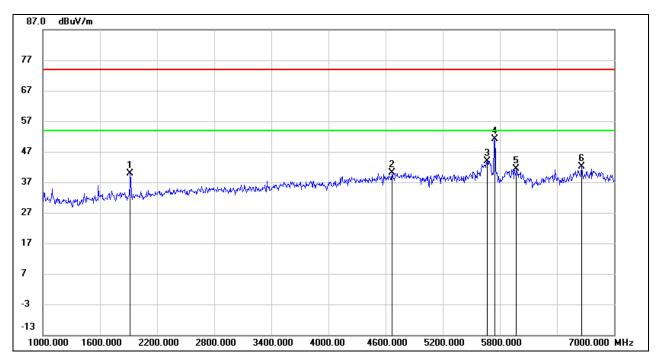


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	54.34	-11.02	43.32	74.00	-30.68	peak
2	4822.000	41.79	-0.63	41.16	74.00	-32.84	peak
3	5668.000	45.92	1.44	47.36	74.00	-26.64	peak
4	5746.000	49.94	1.45	51.39	74.00	-22.61	peak
5	5932.000	40.12	1.94	42.06	74.00	-31.94	peak
6	6592.000	36.34	4.45	40.79	74.00	-33.21	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

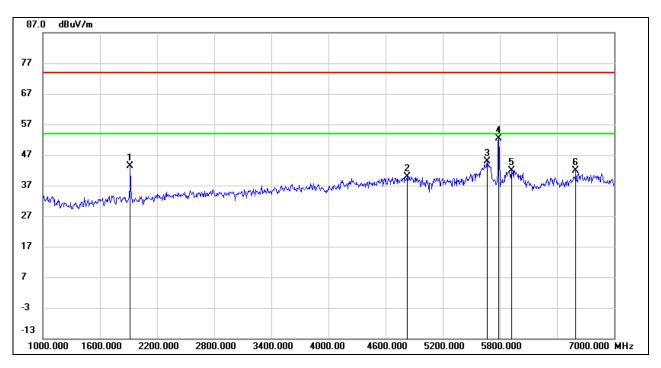


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	50.89	-11.02	39.87	74.00	-34.13	peak
2	4666.000	41.52	-1.31	40.21	74.00	-33.79	peak
3	5668.000	42.53	1.44	43.97	74.00	-30.03	peak
4	5746.000	49.73	1.45	51.18	74.00	-22.82	peak
5	5974.000	39.31	2.10	41.41	74.00	-32.59	peak
6	6658.000	37.65	4.51	42.16	74.00	-31.84	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

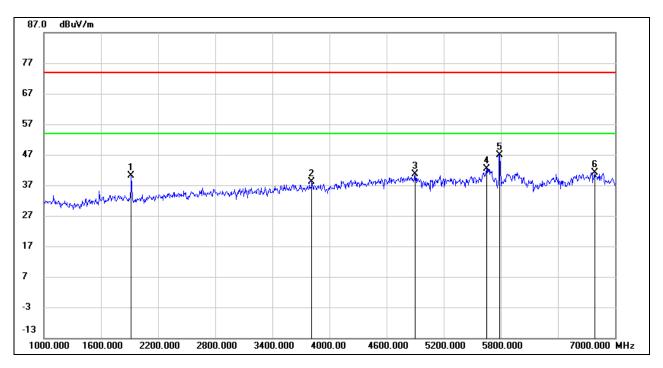


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	54.38	-11.02	43.36	74.00	-30.64	peak
2	4828.000	40.58	-0.63	39.95	74.00	-34.05	peak
3	5668.000	43.36	1.44	44.80	74.00	-29.20	peak
4	5788.000	50.90	1.44	52.34	74.00	-21.66	peak
5	5920.000	39.96	1.90	41.86	74.00	-32.14	peak
6	6598.000	37.46	4.49	41.95	74.00	-32.05	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 Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

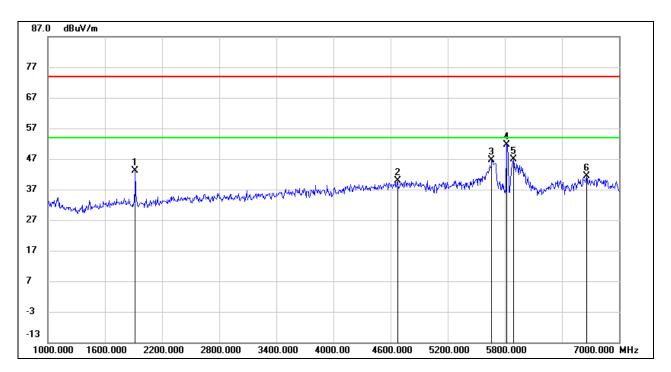


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	51.19	-11.02	40.17	74.00	-33.83	peak
2	3814.000	42.63	-4.38	38.25	74.00	-35.75	peak
3	4900.000	41.11	-0.58	40.53	74.00	-33.47	peak
4	5650.000	40.83	1.44	42.27	74.00	-31.73	peak
5	5788.000	45.45	1.44	46.89	74.00	-27.11	peak
6	6784.000	36.66	4.56	41.22	74.00	-32.78	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

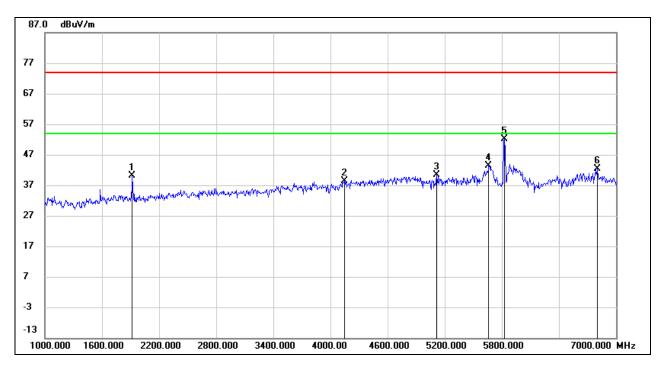


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1918.000	54.04	-11.02	43.02	74.00	-30.98	peak
2	4672.000	41.24	-1.29	39.95	74.00	-34.05	peak
3	5662.000	45.19	1.44	46.63	74.00	-27.37	peak
4	5818.000	50.18	1.51	51.69	74.00	-22.31	peak
5	5890.000	44.97	1.79	46.76	74.00	-27.24	peak
6	6658.000	36.76	4.51	41.27	74.00	-32.73	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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	1918.000	51.15	-11.02	40.13	74.00	-33.87	peak
2	4144.000	41.66	-3.28	38.38	74.00	-35.62	peak
3	5116.000	40.07	0.29	40.36	74.00	-33.64	peak
4	5662.000	41.95	1.44	43.39	74.00	-30.61	peak
5	5830.000	50.67	1.56	52.23	74.00	-21.77	peak
6	6802.000	37.72	4.58	42.30	74.00	-31.70	peak

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

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. 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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.

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



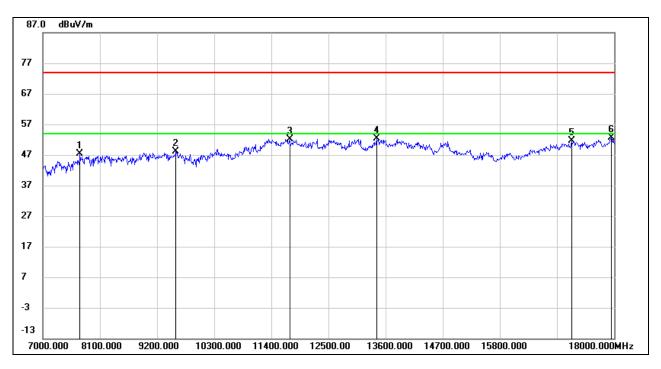
# 8.3. SPURIOUS EMISSIONS (7 GHz ~ 18 GHz)

#### 8.3.1. 802.11a 20 SISO MODE

#### **UNII-1 BAND**

### ANTENNA 2 TEST RESULTS (WORST CASE)

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

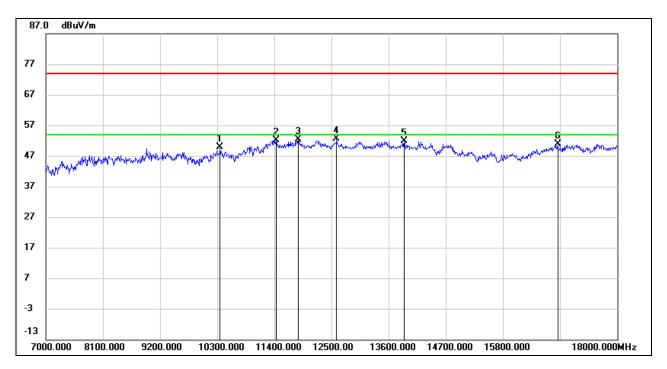


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7715.000	38.82	8.51	47.33	74.00	-26.67	peak
2	9563.000	36.28	11.86	48.14	74.00	-25.86	peak
3	11757.500	33.89	18.26	52.15	74.00	-21.85	peak
4	13424.000	33.10	19.35	52.45	74.00	-21.55	peak
5	17191.500	30.59	21.11	51.70	74.00	-22.30	peak
6	17950.500	27.99	24.56	52.55	74.00	-21.45	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

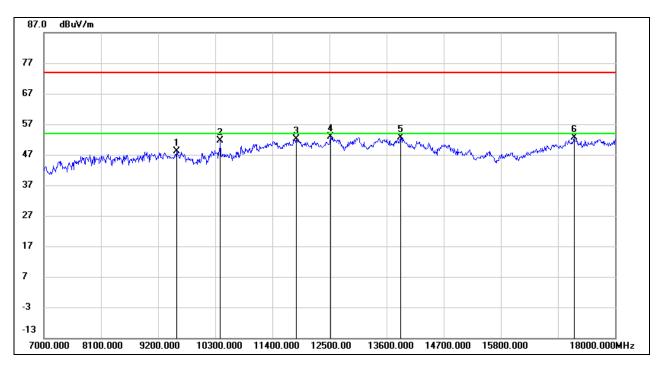


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	10360.500	36.90	12.98	49.88	74.00	-24.12	peak
2	11433.000	34.87	17.17	52.04	74.00	-21.96	peak
3	11867.500	33.96	18.36	52.32	74.00	-21.68	peak
4	12599.000	34.51	18.17	52.68	74.00	-21.32	peak
5	13897.000	32.17	19.76	51.93	74.00	-22.07	peak
6	16856.000	31.67	19.20	50.87	74.00	-23.13	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

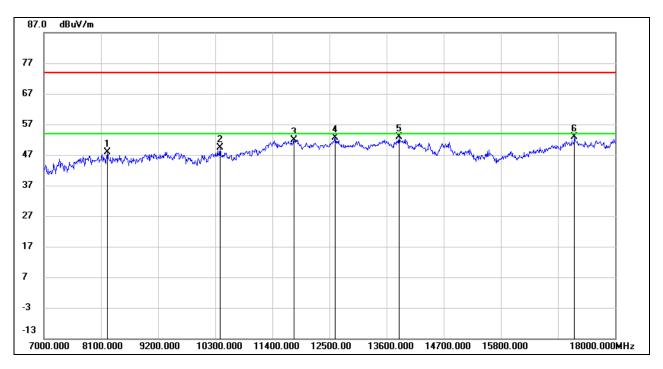


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9568.500	36.16	11.89	48.05	74.00	-25.95	peak
2	10399.000	38.51	13.14	51.65	74.00	-22.35	peak
3	11867.500	33.76	18.36	52.12	74.00	-21.88	peak
4	12522.000	34.85	18.06	52.91	74.00	-21.09	peak
5	13864.000	32.74	19.81	52.55	74.00	-21.45	peak
6	17208.000	31.50	21.16	52.66	74.00	-21.34	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

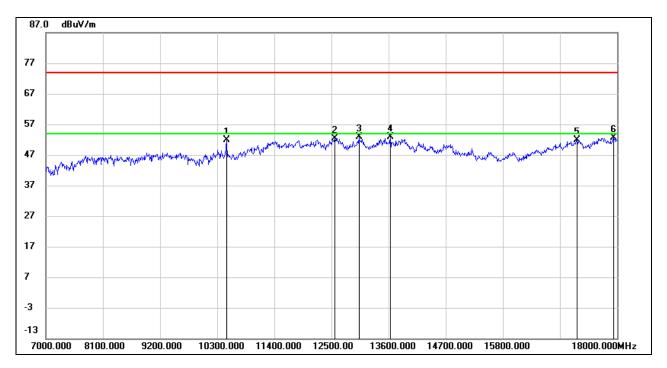


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8226.500	38.13	9.79	47.92	74.00	-26.08	peak
2	10399.000	36.12	13.14	49.26	74.00	-24.74	peak
3	11818.000	33.58	18.41	51.99	74.00	-22.01	peak
4	12610.000	34.57	18.16	52.73	74.00	-21.27	peak
5	13842.000	33.02	19.86	52.88	74.00	-21.12	peak
6	17224.500	31.78	21.14	52.92	74.00	-21.08	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

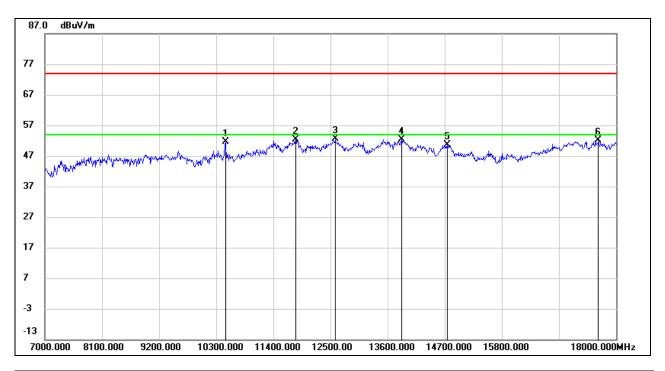


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	10476.000	38.41	13.49	51.90	74.00	-22.10	peak
2	12566.000	34.30	18.12	52.42	74.00	-21.58	peak
3	13033.500	34.54	18.38	52.92	74.00	-21.08	peak
4	13633.000	33.32	19.46	52.78	74.00	-21.22	peak
5	17230.000	30.86	21.13	51.99	74.00	-22.01	peak
6	17939.500	28.14	24.53	52.67	74.00	-21.33	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



#### <u>HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	10481.500	38.11	13.51	51.62	74.00	-22.38	peak
2	11834.500	34.00	18.40	52.40	74.00	-21.60	peak
3	12593.500	34.49	18.16	52.65	74.00	-21.35	peak
4	13869.500	32.55	19.82	52.37	74.00	-21.63	peak
5	14749.500	33.13	17.41	50.54	74.00	-23.46	peak
6	17664.500	29.30	22.77	52.07	74.00	-21.93	peak

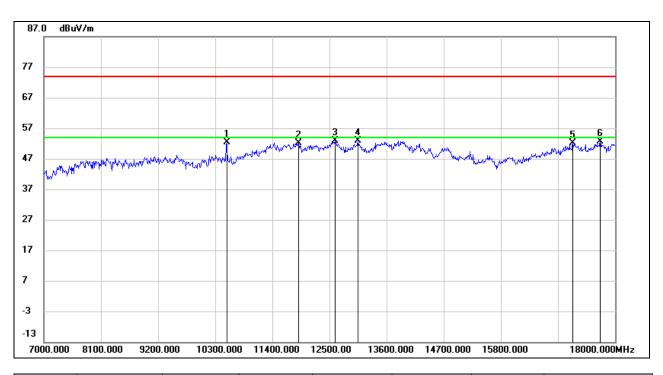
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### **UNII-2A BAND**

### **ANTENNA 1 TEST RESULTS (WORST CASE)**

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

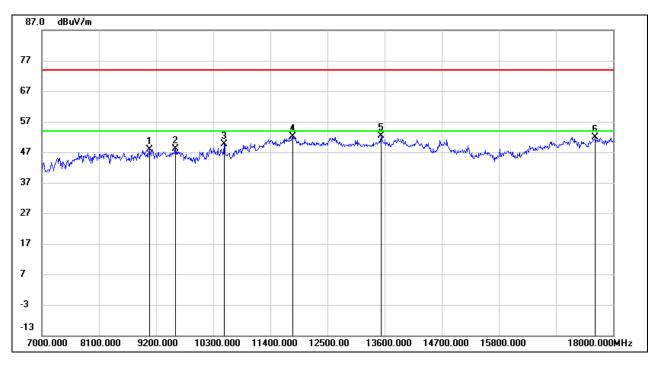


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	10525.500	38.74	13.71	52.45	74.00	-21.55	peak
2	11911.500	33.78	18.30	52.08	74.00	-21.92	peak
3	12615.500	34.59	18.17	52.76	74.00	-21.24	peak
4	13055.500	34.47	18.37	52.84	74.00	-21.16	peak
5	17191.500	31.04	21.11	52.15	74.00	-21.85	peak
6	17714.000	29.50	23.24	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

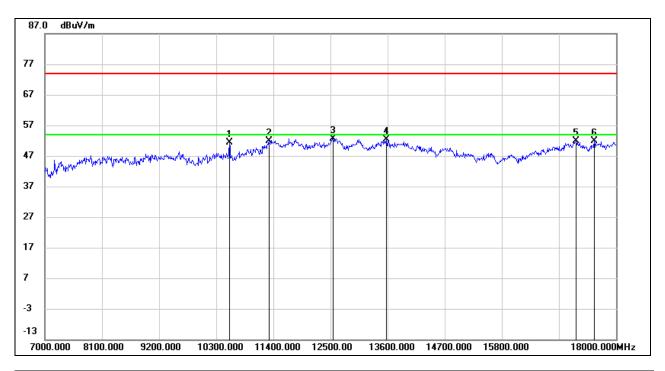


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9068.000	37.07	10.88	47.95	74.00	-26.05	peak
2	9579.500	36.22	11.93	48.15	74.00	-25.85	peak
3	10514.500	35.91	13.65	49.56	74.00	-24.44	peak
4	11834.500	33.79	18.40	52.19	74.00	-21.81	peak
5	13539.500	32.99	19.42	52.41	74.00	-21.59	peak
6	17664.500	29.13	22.77	51.90	74.00	-22.10	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

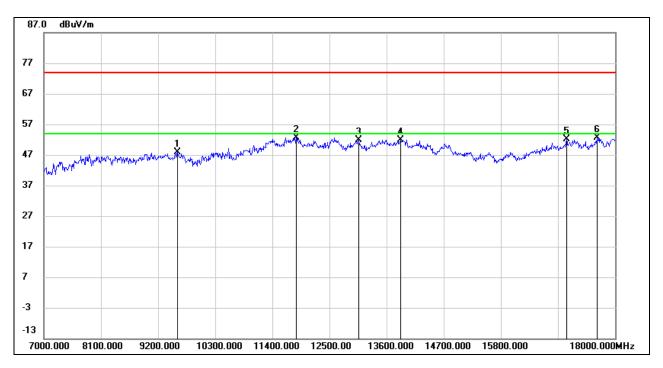


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	10553.000	37.61	13.82	51.43	74.00	-22.57	peak
2	11312.000	35.31	16.66	51.97	74.00	-22.03	peak
3	12555.000	34.60	18.11	52.71	74.00	-21.29	peak
4	13583.500	32.96	19.38	52.34	74.00	-21.66	peak
5	17230.000	30.65	21.13	51.78	74.00	-22.22	peak
6	17587.500	29.95	22.05	52.00	74.00	-22.00	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

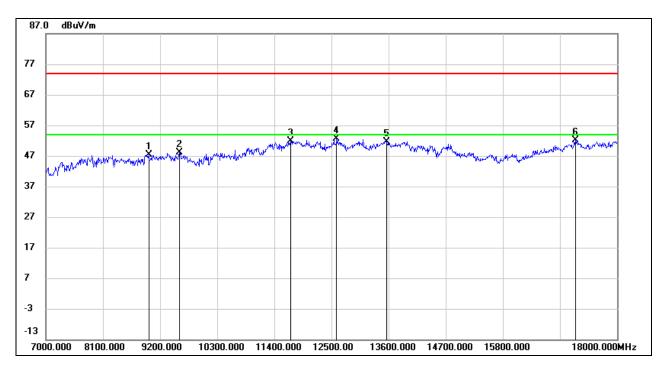


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9574.000	35.88	11.90	47.78	74.00	-26.22	peak
2	11862.000	34.29	18.37	52.66	74.00	-21.34	peak
3	13066.500	33.61	18.39	52.00	74.00	-22.00	peak
4	13880.500	32.19	19.80	51.99	74.00	-22.01	peak
5	17065.000	31.93	20.16	52.09	74.00	-21.91	peak
6	17653.500	29.97	22.66	52.63	74.00	-21.37	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

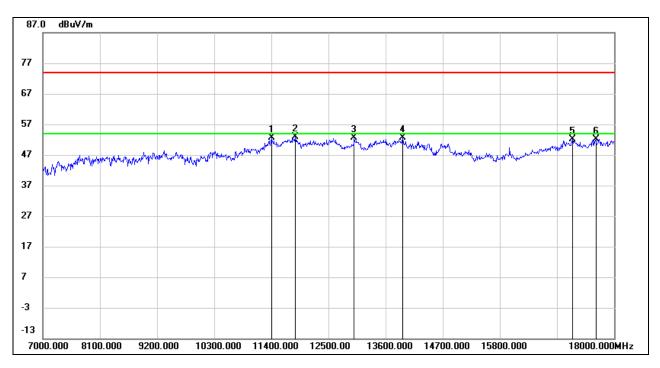


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8985.500	36.33	11.07	47.40	74.00	-26.60	peak
2	9574.000	36.15	11.90	48.05	74.00	-25.95	peak
3	11708.000	33.75	18.04	51.79	74.00	-22.21	peak
4	12599.000	34.34	18.17	52.51	74.00	-21.49	peak
5	13556.000	32.21	19.41	51.62	74.00	-22.38	peak
6	17197.000	31.06	21.15	52.21	74.00	-21.79	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### 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	11405.500	35.54	17.06	52.60	74.00	-21.40	peak
2	11862.000	34.56	18.37	52.93	74.00	-21.07	peak
3	13000.500	34.36	18.38	52.74	74.00	-21.26	peak
4	13935.500	32.90	19.70	52.60	74.00	-21.40	peak
5	17197.000	30.92	21.15	52.07	74.00	-21.93	peak
6	17648.000	29.52	22.61	52.13	74.00	-21.87	peak

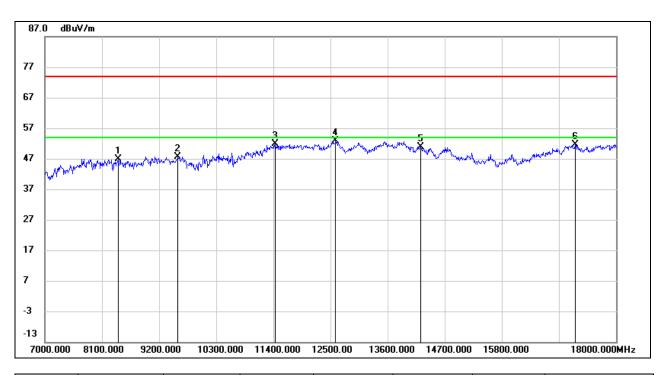
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



**UNII-2C BAND** 

## **ANTENNA 1 TEST RESULTS (WORST CASE)**

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

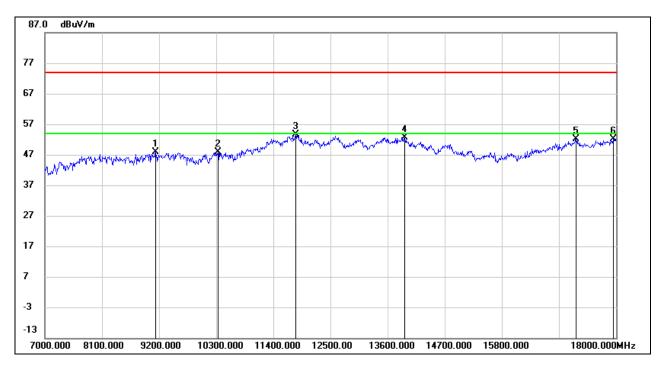


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8413.500	37.72	9.11	46.83	74.00	-27.17	peak
2	9568.500	35.78	11.89	47.67	74.00	-26.33	peak
3	11433.000	34.66	17.17	51.83	74.00	-22.17	peak
4	12599.000	34.77	18.17	52.94	74.00	-21.06	peak
5	14243.500	32.02	18.93	50.95	74.00	-23.05	peak
6	17213.500	30.58	21.16	51.74	74.00	-22.26	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

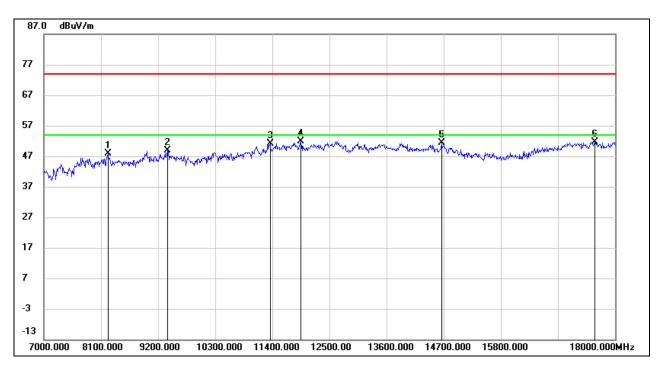


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9139.500	37.28	10.53	47.81	74.00	-26.19	peak
2	10338.500	35.03	12.89	47.92	74.00	-26.08	peak
3	11829.000	35.30	18.40	53.70	74.00	-20.30	peak
4	13935.500	32.90	19.70	52.60	74.00	-21.40	peak
5	17230.000	31.00	21.13	52.13	74.00	-21.87	peak
6	17950.500	27.58	24.56	52.14	74.00	-21.86	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

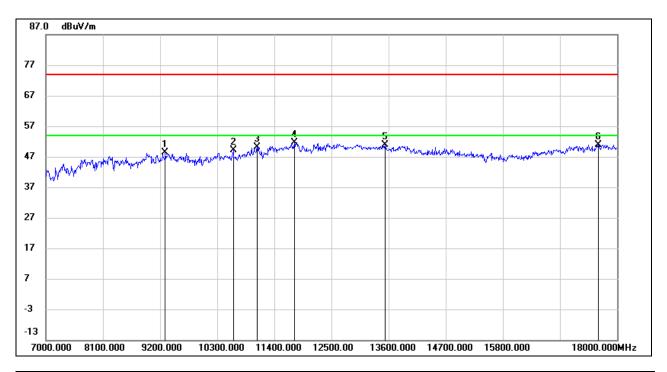


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8237.500	38.07	9.74	47.81	74.00	-26.19	peak
2	9376.000	37.63	11.14	48.77	74.00	-25.23	peak
3	11361.500	34.30	16.88	51.18	74.00	-22.82	peak
4	11950.000	33.68	18.26	51.94	74.00	-22.06	peak
5	14661.500	33.73	17.54	51.27	74.00	-22.73	peak
6	17604.000	29.40	22.18	51.58	74.00	-22.42	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

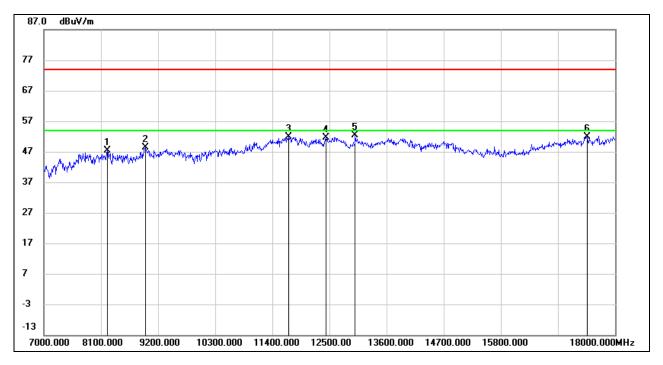


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9299.000	37.72	10.74	48.46	74.00	-25.54	peak
2	10613.500	34.99	14.07	49.06	74.00	-24.94	peak
3	11070.000	34.55	15.61	50.16	74.00	-23.84	peak
4	11790.500	33.14	18.40	51.54	74.00	-22.46	peak
5	13534.000	31.42	19.44	50.86	74.00	-23.14	peak
6	17637.000	28.43	22.50	50.93	74.00	-23.07	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

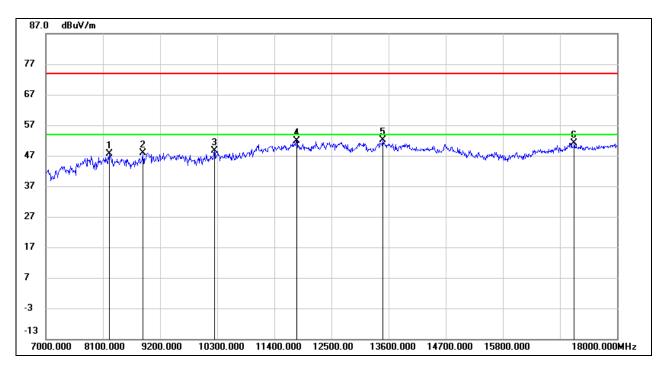


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8221.000	37.68	9.81	47.49	74.00	-26.51	peak
2	8963.500	37.63	10.85	48.48	74.00	-25.52	peak
3	11724.500	33.80	18.11	51.91	74.00	-22.09	peak
4	12434.000	33.60	18.05	51.65	74.00	-22.35	peak
5	13000.500	34.07	18.38	52.45	74.00	-21.55	peak
6	17461.000	30.58	21.21	51.79	74.00	-22.21	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### 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	8221.000	37.71	9.81	47.52	74.00	-26.48	peak
2	8870.000	37.98	9.90	47.88	74.00	-26.12	peak
3	10250.500	36.10	12.53	48.63	74.00	-25.37	peak
4	11834.500	33.60	18.40	52.00	74.00	-22.00	peak
5	13490.000	32.63	19.46	52.09	74.00	-21.91	peak
6	17175.000	30.27	20.98	51.25	74.00	-22.75	peak

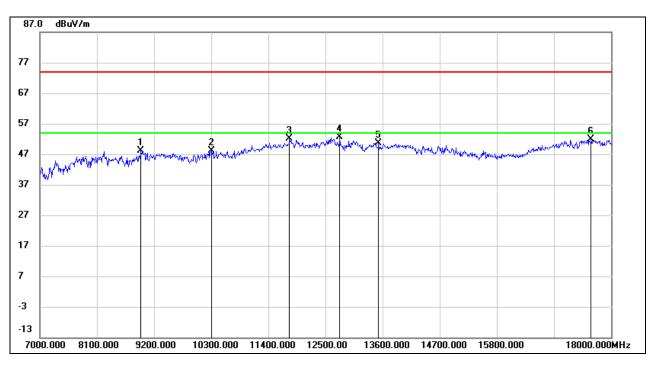
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



## **STRADDLE CHANNEL 144**

## ANTENNA 2 TEST RESULTS (WORST CASE)

### HARMONICS AND SPURIOUS EMISSIONS (HORIZONTAL)

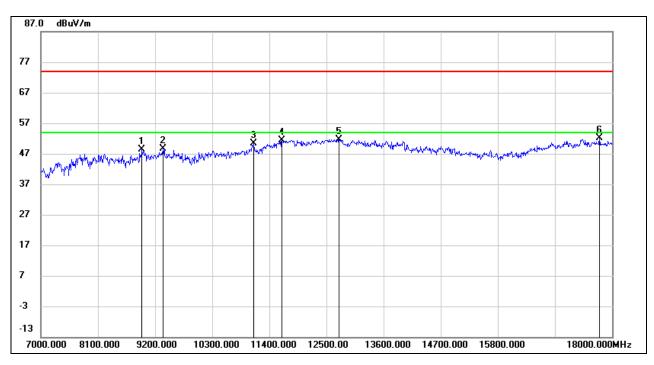


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8947.000	37.51	10.69	48.20	74.00	-25.80	peak
2	10316.500	35.25	12.80	48.05	74.00	-25.95	peak
3	11807.000	33.70	18.44	52.14	74.00	-21.86	peak
4	12775.000	34.32	18.21	52.53	74.00	-21.47	peak
5	13528.500	31.29	19.44	50.73	74.00	-23.27	peak
6	17620.500	29.47	22.34	51.81	74.00	-22.19	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



## **HARMONICS AND SPURIOUS EMISSIONS (VERTICAL)**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8947.000	37.75	10.69	48.44	74.00	-25.56	peak
2	9359.500	37.66	11.06	48.72	74.00	-25.28	peak
3	11103.000	34.56	15.76	50.32	74.00	-23.68	peak
4	11642.000	33.67	17.75	51.42	74.00	-22.58	peak
5	12747.500	33.53	18.21	51.74	74.00	-22.26	peak
6	17763.500	28.50	23.73	52.23	74.00	-21.77	peak

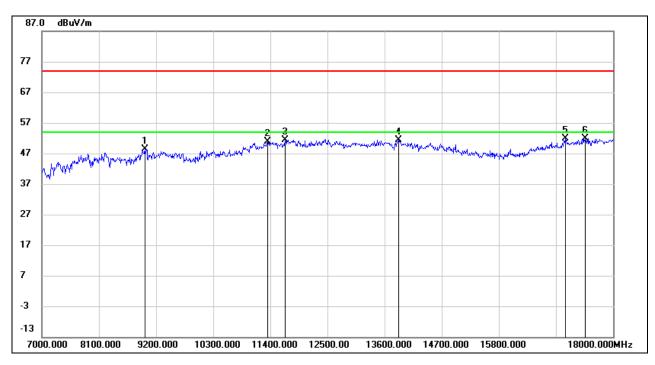
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### **UNII-3 BAND**

# **ANTENNA 1 TEST RESULTS (WORST CASE)**

# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

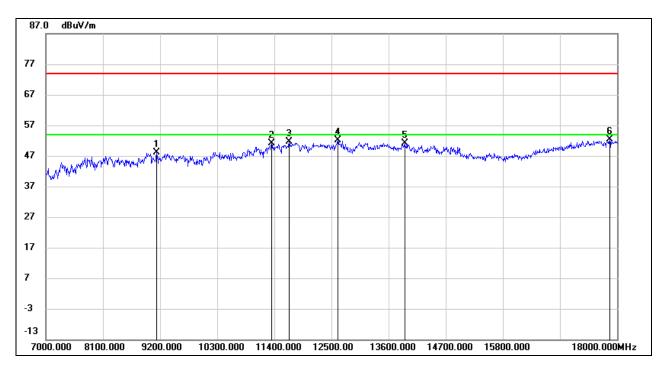


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8985.500	37.42	11.07	48.49	74.00	-25.51	peak
2	11345.000	34.15	16.81	50.96	74.00	-23.04	peak
3	11686.000	33.50	17.95	51.45	74.00	-22.55	peak
4	13869.500	31.67	19.82	51.49	74.00	-22.51	peak
5	17081.500	31.71	20.28	51.99	74.00	-22.01	peak
6	17466.500	30.70	21.24	51.94	74.00	-22.06	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

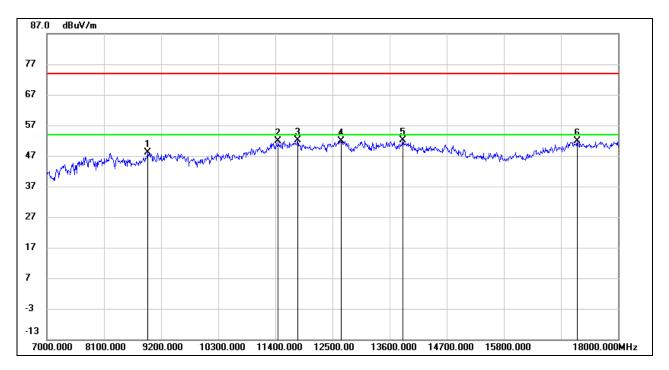


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9139.500	37.57	10.53	48.10	74.00	-25.90	peak
2	11345.000	34.27	16.81	51.08	74.00	-22.92	peak
3	11691.500	33.56	17.97	51.53	74.00	-22.47	peak
4	12626.500	33.83	18.18	52.01	74.00	-21.99	peak
5	13908.000	31.45	19.75	51.20	74.00	-22.80	peak
6	17862.500	28.04	24.27	52.31	74.00	-21.69	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

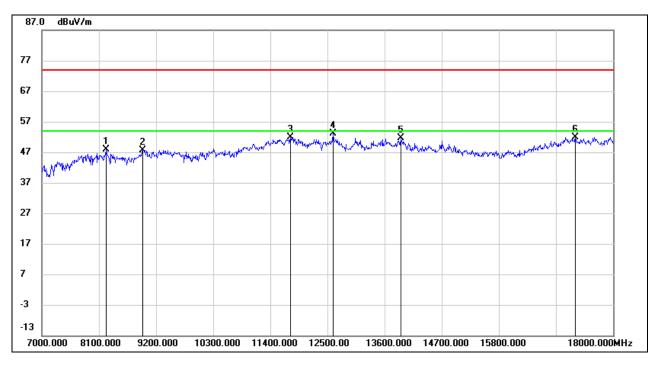


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8952.500	37.43	10.73	48.16	74.00	-25.84	peak
2	11455.000	34.61	17.24	51.85	74.00	-22.15	peak
3	11829.000	33.63	18.40	52.03	74.00	-21.97	peak
4	12670.500	33.69	18.17	51.86	74.00	-22.14	peak
5	13858.500	32.18	19.83	52.01	74.00	-21.99	peak
6	17208.000	30.82	21.16	51.98	74.00	-22.02	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 High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

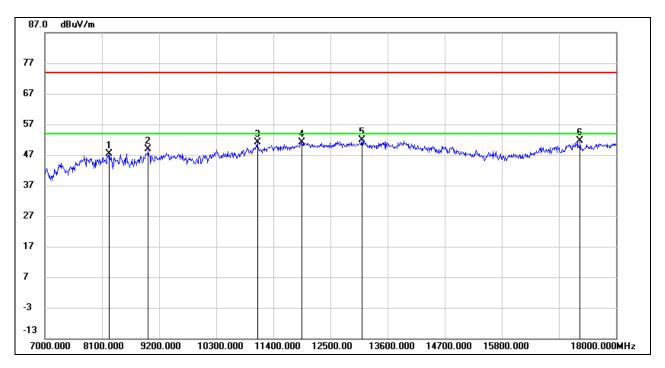


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8237.500	38.16	9.74	47.90	74.00	-26.10	peak
2	8941.500	37.12	10.63	47.75	74.00	-26.25	peak
3	11790.500	33.38	18.40	51.78	74.00	-22.22	peak
4	12610.000	34.94	18.16	53.10	74.00	-20.90	peak
5	13913.500	32.00	19.73	51.73	74.00	-22.27	peak
6	17274.000	30.82	21.09	51.91	74.00	-22.09	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27 dBm/MHz (68.2dBuV/m) limit.



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

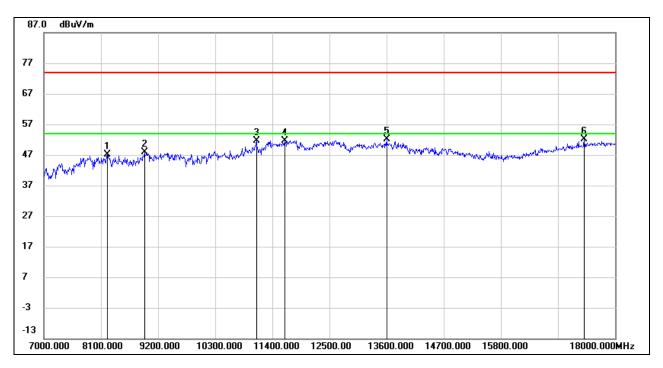


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8248.500	37.68	9.71	47.39	74.00	-26.61	peak
2	8991.000	37.68	11.13	48.81	74.00	-25.19	peak
3	11097.500	35.39	15.73	51.12	74.00	-22.88	peak
4	11950.000	32.91	18.26	51.17	74.00	-22.83	peak
5	13110.500	33.40	18.38	51.78	74.00	-22.22	peak
6	17312.500	30.55	21.05	51.60	74.00	-22.40	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



#### <u>HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8221.000	37.31	9.81	47.12	74.00	-26.88	peak
2	8941.500	37.20	10.63	47.83	74.00	-26.17	peak
3	11097.500	35.81	15.73	51.54	74.00	-22.46	peak
4	11642.000	33.99	17.75	51.74	74.00	-22.26	peak
5	13605.500	32.65	19.39	52.04	74.00	-21.96	peak
6	17411.500	31.12	20.99	52.11	74.00	-21.89	peak

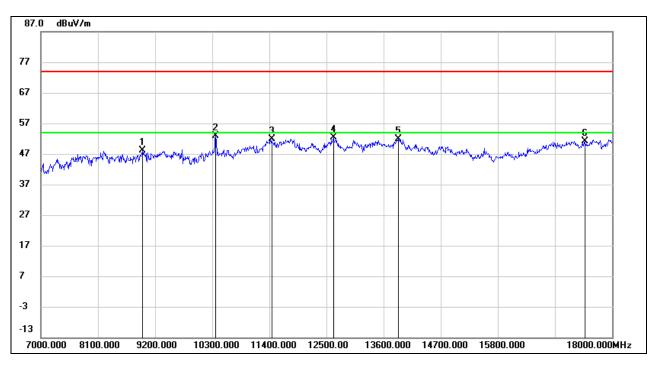
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



#### 8.3.2. 802.11n HT20 MIMO MODE

#### **UNII-1 BAND**

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

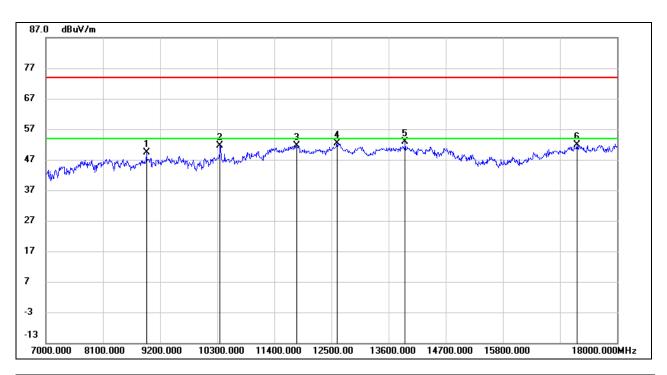


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8958.000	37.40	10.79	48.19	74.00	-25.81	peak
2	10366.000	39.76	13.00	52.76	74.00	-21.24	peak
3	11444.000	34.76	17.19	51.95	74.00	-22.05	peak
4	12632.000	34.21	18.17	52.38	74.00	-21.62	peak
5	13886.000	32.08	19.79	51.87	74.00	-22.13	peak
6	17472.000	29.97	21.26	51.23	74.00	-22.77	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

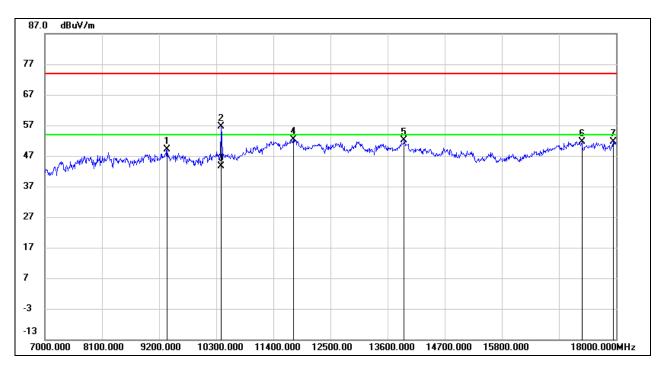


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8936.000	38.90	10.57	49.47	74.00	-24.53	peak
2	10355.000	38.78	12.96	51.74	74.00	-22.26	peak
3	11829.000	33.30	18.40	51.70	74.00	-22.30	peak
4	12610.000	34.30	18.16	52.46	74.00	-21.54	peak
5	13919.000	33.04	19.72	52.76	74.00	-21.24	peak
6	17230.000	30.71	21.13	51.84	74.00	-22.16	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

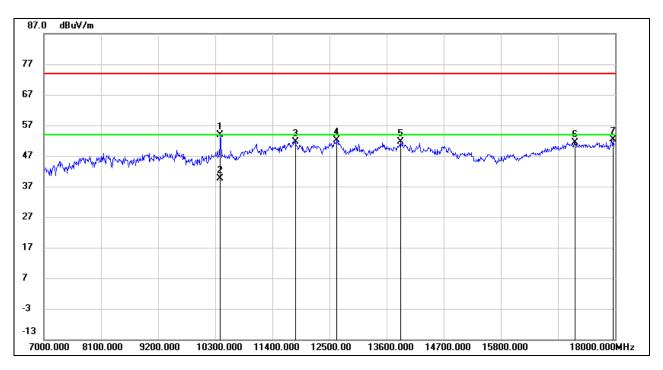


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9354.000	38.05	11.02	49.07	74.00	-24.93	peak
2	10388.000	43.45	13.09	56.54	74.00	-17.46	peak
3	10388.000	30.43	13.09	43.52	54.00	-10.48	AVG
4	11785.000	34.08	18.38	52.46	74.00	-21.54	peak
5	13919.000	32.36	19.72	52.08	74.00	-21.92	peak
6	17340.000	30.62	21.01	51.63	74.00	-22.37	peak
7	17945.000	27.02	24.54	51.56	74.00	-22.44	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.
- 6. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

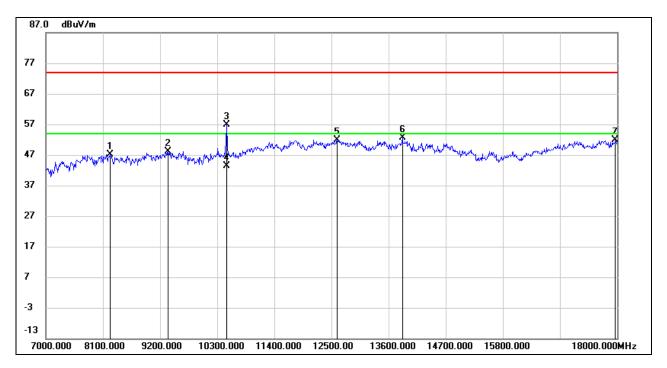


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	10399.000	40.69	13.14	53.83	74.00	-20.17	peak
2	10399.000	26.42	13.14	39.56	54.00	-14.44	AVG
3	11840.000	33.21	18.39	51.60	74.00	-22.40	peak
4	12643.000	34.01	18.18	52.19	74.00	-21.81	peak
5	13864.000	31.85	19.81	51.66	74.00	-22.34	peak
6	17230.000	30.30	21.13	51.43	74.00	-22.57	peak
7	17956.000	27.70	24.58	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



# HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

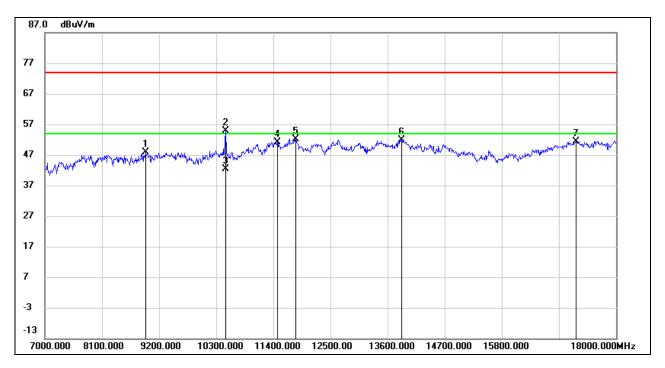


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8232.000	37.36	9.77	47.13	74.00	-26.87	peak
2	9354.000	37.13	11.02	48.15	74.00	-25.85	peak
3	10487.000	43.29	13.53	56.82	74.00	-17.18	peak
4	10487.000	29.73	13.53	43.26	54.00	-10.74	AVG
5	12610.000	33.81	18.16	51.97	74.00	-22.03	peak
6	13864.000	32.88	19.81	52.69	74.00	-21.31	peak
7	17967.000	27.22	24.61	51.83	74.00	-22.17	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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



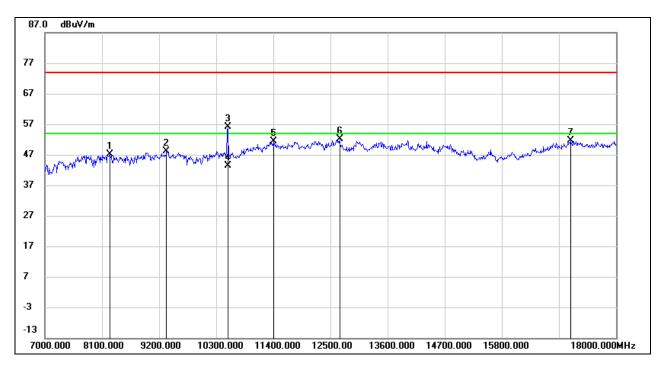
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8936.000	37.31	10.57	47.88	74.00	-26.12	peak
2	10487.000	41.47	13.53	55.00	74.00	-19.00	peak
3	10487.000	28.88	13.53	42.41	54.00	-11.59	AVG
4	11477.000	33.82	17.32	51.14	74.00	-22.86	peak
5	11829.000	33.69	18.40	52.09	74.00	-21.91	peak
6	13864.000	32.00	19.81	51.81	74.00	-22.19	peak
7	17230.000	30.29	21.13	51.42	74.00	-22.58	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



### **UNII-2A BAND**

# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

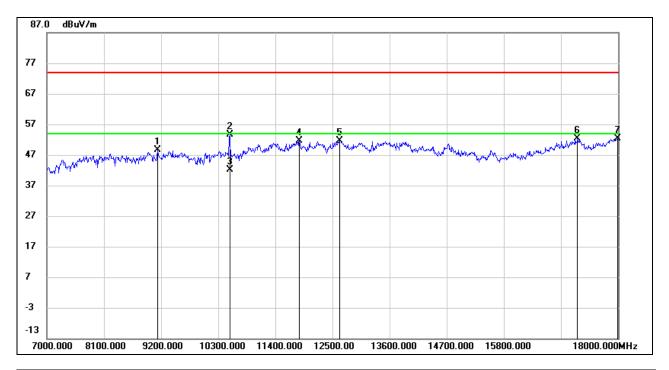


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8254.000	37.39	9.69	47.08	74.00	-26.92	peak
2	9343.000	37.17	10.97	48.14	74.00	-25.86	peak
3	10520.000	42.49	13.69	56.18	74.00	-17.82	peak
4	10520.000	29.76	13.69	43.45	54.00	-10.55	AVG
5	11400.000	34.25	17.05	51.30	74.00	-22.70	peak
6	12676.000	33.97	18.18	52.15	74.00	-21.85	peak
7	17120.000	30.96	20.57	51.53	74.00	-22.47	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

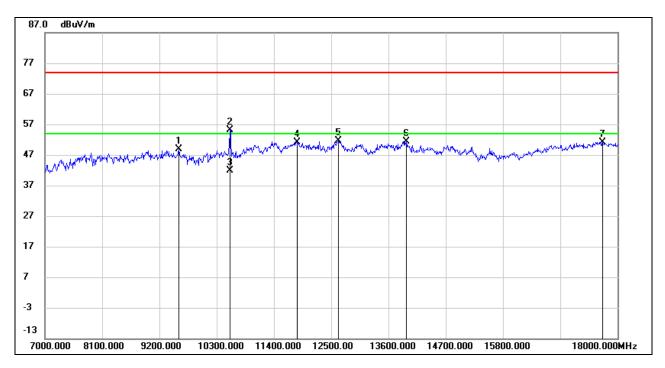


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9134.000	38.01	10.55	48.56	74.00	-25.44	peak
2	10520.000	39.94	13.69	53.63	74.00	-20.37	peak
3	10520.000	28.44	13.69	42.13	54.00	-11.87	AVG
4	11862.000	33.23	18.37	51.60	74.00	-22.40	peak
5	12632.000	33.44	18.17	51.61	74.00	-22.39	peak
6	17219.000	31.19	21.14	52.33	74.00	-21.67	peak
7	17989.000	27.81	24.68	52.49	74.00	-21.51	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



#### <u>HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)</u>

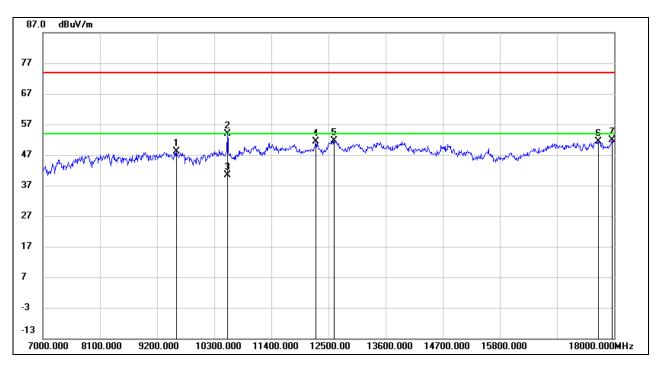


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9574.000	36.91	11.90	48.81	74.00	-25.19	peak
2	10553.000	41.40	13.82	55.22	74.00	-18.78	peak
3	10553.000	28.00	13.82	41.82	54.00	-12.18	AVG
4	11840.000	32.67	18.39	51.06	74.00	-22.94	peak
5	12632.000	33.35	18.17	51.52	74.00	-22.48	peak
6	13941.000	31.61	19.68	51.29	74.00	-22.71	peak
7	17714.000	27.98	23.24	51.22	74.00	-22.78	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

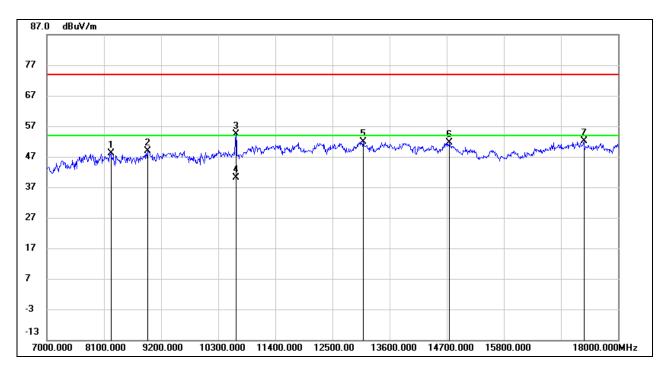


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9574.000	36.32	11.90	48.22	74.00	-25.78	peak
2	10553.000	40.18	13.82	54.00	74.00	-20.00	peak
3	10553.000	26.66	13.82	40.48	54.00	-13.52	AVG
4	12258.000	33.42	17.96	51.38	74.00	-22.62	peak
5	12610.000	33.39	18.16	51.55	74.00	-22.45	peak
6	17703.000	28.31	23.14	51.45	74.00	-22.55	peak
7	17956.000	27.37	24.58	51.95	74.00	-22.05	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

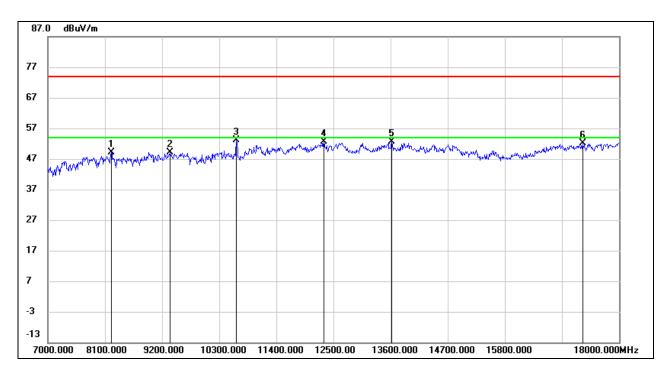


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8232.000	38.43	9.77	48.20	74.00	-25.80	peak
2	8936.000	38.32	10.57	48.89	74.00	-25.11	peak
3	10641.000	40.21	14.15	54.36	74.00	-19.64	peak
4	10641.000	25.98	14.15	40.13	54.00	-13.87	AVG
5	13094.000	33.53	18.38	51.91	74.00	-22.09	peak
6	14755.000	34.25	17.41	51.66	74.00	-22.34	peak
7	17340.000	31.14	21.01	52.15	74.00	-21.85	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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



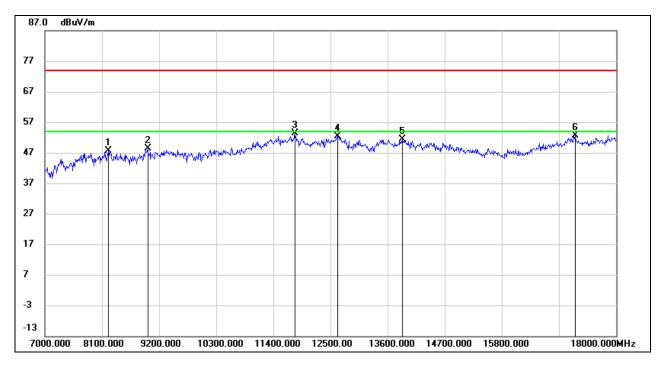
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8221.000	39.22	9.81	49.03	74.00	-24.97	peak
2	9354.000	38.03	11.02	49.05	74.00	-24.95	peak
3	10630.000	39.09	14.12	53.21	74.00	-20.79	peak
4	12313.000	34.61	17.99	52.60	74.00	-21.40	peak
5	13622.000	33.13	19.43	52.56	74.00	-21.44	peak
6	17296.000	31.12	21.07	52.19	74.00	-21.81	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



## **UNII-2C BAND**

# HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

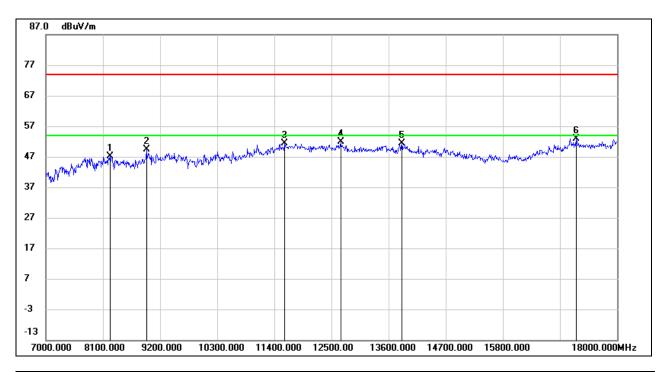


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8226.500	37.91	9.79	47.70	74.00	-26.30	peak
2	8980.000	37.24	11.02	48.26	74.00	-25.74	peak
3	11818.000	34.94	18.41	53.35	74.00	-20.65	peak
4	12637.500	34.25	18.17	52.42	74.00	-21.58	peak
5	13891.500	31.65	19.77	51.42	74.00	-22.58	peak
6	17213.500	31.37	21.16	52.53	74.00	-21.47	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

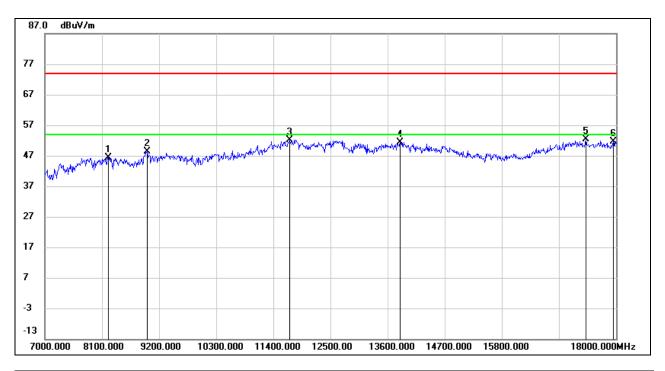


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8232.000	37.47	9.77	47.24	74.00	-26.76	peak
2	8941.500	38.78	10.63	49.41	74.00	-24.59	peak
3	11603.500	33.74	17.59	51.33	74.00	-22.67	peak
4	12676.000	33.66	18.18	51.84	74.00	-22.16	peak
5	13858.500	31.52	19.83	51.35	74.00	-22.65	peak
6	17213.500	31.80	21.16	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

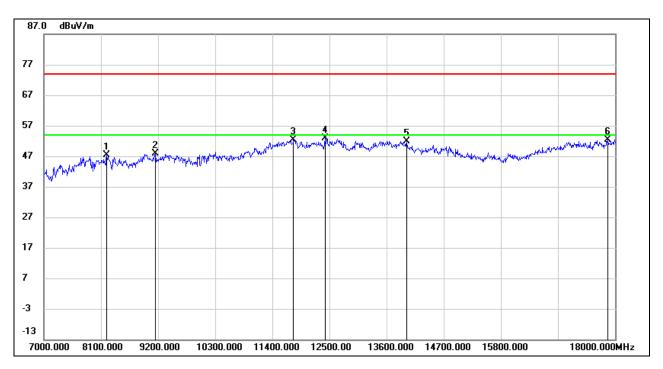


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8226.500	36.69	9.79	46.48	74.00	-27.52	peak
2	8969.000	37.44	10.90	48.34	74.00	-25.66	peak
3	11719.000	34.14	18.10	52.24	74.00	-21.76	peak
4	13842.000	31.62	19.86	51.48	74.00	-22.52	peak
5	17422.500	31.33	21.04	52.37	74.00	-21.63	peak
6	17950.500	27.11	24.56	51.67	74.00	-22.33	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

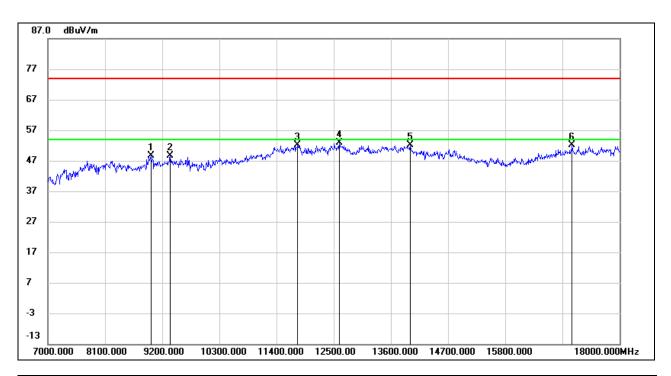


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8215.500	37.61	9.83	47.44	74.00	-26.56	peak
2	9150.500	37.37	10.47	47.84	74.00	-26.16	peak
3	11812.500	34.07	18.43	52.50	74.00	-21.50	peak
4	12412.000	34.94	18.06	53.00	74.00	-21.00	peak
5	13990.500	32.26	19.60	51.86	74.00	-22.14	peak
6	17857.000	28.08	24.26	52.34	74.00	-21.66	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



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

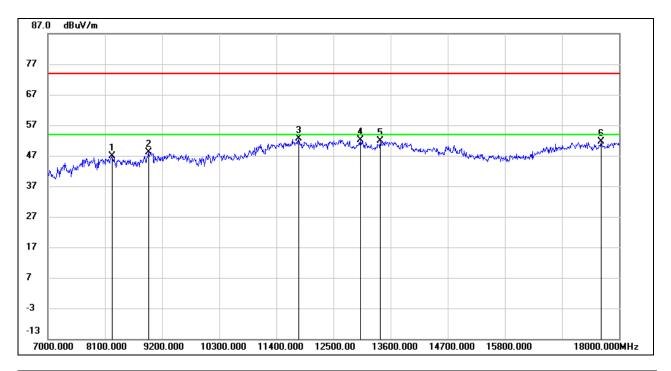


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8980.000	37.56	11.02	48.58	74.00	-25.42	peak
2	9354.000	37.53	11.02	48.55	74.00	-25.45	peak
3	11812.500	33.79	18.43	52.22	74.00	-21.78	peak
4	12615.500	34.65	18.17	52.82	74.00	-21.18	peak
5	13979.500	32.56	19.61	52.17	74.00	-21.83	peak
6	17092.500	31.66	20.36	52.02	74.00	-21.98	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.



## 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	8232.000	37.12	9.77	46.89	74.00	-27.11	peak
2	8941.500	37.48	10.63	48.11	74.00	-25.89	peak
3	11834.500	34.29	18.40	52.69	74.00	-21.31	peak
4	13017.000	33.81	18.38	52.19	74.00	-21.81	peak
5	13407.500	32.48	19.33	51.81	74.00	-22.19	peak
6	17653.500	29.01	22.66	51.67	74.00	-22.33	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. Since non-restricted band peak emissions are less than the average limit, they also comply with the -27dBm/MHz (68.2dBuV/m) limit.