



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

### **CERTIFICATION TEST REPORT**

For

### **GOLDEN TEE® LEGACY 3D EDITION ARCADE1UP**

GLD-A-200911

**FCC ID: 2APXHGOLDEN** 

IC: 24128-GOLDEN

REPORT NUMBER: 4790163953.2-4

ISSUE DATE: December 03, 2021

# **Prepared for**

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The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products.



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# **Revision History**

Rev.	Issue Date	Revisions	Revised By
V0	12/03/2021	Initial Issue	





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

### Note:

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

<sup>2.</sup> The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C >< ISED RSS-247 > when <Accuracy Method> decision rule is applied.



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## 1. ATTESTATION OF TEST RESULTS

**FCC** 

**Applicant Information** 

Company Name: WF TASTEMAKERS TRADING LIMITED

**Address:** Unit 05 and unit 06, 6th Floor, Greenfield Tower Concordia Plaza,

1 Science Museum Road, TST East

**ISED** 

**Applicant Information** 

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**Manufacturer Information** 

Company Name: WF TASTEMAKERS TRADING LIMITED

**Address:** Unit 05 and unit 06, 6th Floor, Greenfield Tower Concordia Plaza,

1 Science Museum Road, TST East

**ISED** 

**Manufacturer Information** 

Company Name: WF Tastemakers Trading Limited (ISED)

**Address:** 980 Avenue of the Americas, 3rd Floor New York NY 10018

**United States Of America** 

**EUT Information** 

EUT Name: GOLDEN TEE® LEGACY 3D EDITION ARCADE1UP

Model: GLD-A-200911
Brand: ARCADE 1 UP
Sample Received Date: November 1, 2021

Sample Status: Normal Sample ID: 4357714

Date of Tested: November 1, 2021~ December 3, 2021



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

Pr	ера	are	aв	y:

Kebo Zhang Project Engineer Checked By:

Shawn Wen

Laboratory Leader

Approved By:

Stephen Guo

Laboratory Manager

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### 2. TEST METHODOLOGY

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

## 3. FACILITIES AND ACCREDITATION

	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.

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# 4. CALIBRATION AND UNCERTAINTY

#### **MEASUREMENT UNCERTAINTY** 4.1.

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

Test Item	Uncertainty
Conduction emission	3.62 dB
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission	5.78 dB (1 GHz ~ 18 GHz)
(Included Fundamental Emission) (1 GHz to 26 GHz)	5.23 dB (18 GHz ~ 26 GHz)
Duty Cycle	±0.028%
DTS and 99% Occupied Bandwidth	±0.0196%
Maximum Conducted Output Power	±0.686 dB
Maximum Power Spectral Density Level	±0.743 dB
Conducted Band-edge Compliance	±1.328 dB
Conducted Unwanted Emissions In Non-restricted	±0.746 dB (9 kHz ~ 1 GHz)
Frequency Bands	±1.328dB (1 GHz ~ 26 GHz)

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

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### 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.

## 5. EQUIPMENT UNDER TEST

## 5.1. DESCRIPTION OF EUT

EUT Name	GOLDEN TEE® LEGACY 3D EDITION ARCADE1UP	
Model GLD-A-200911		
Radio Technology	IEEE802.11b/g/n HT20	
Operation frequency	IEEE 802.11b: 2412MHz ~ 2472MHz IEEE 802.11g: 2412MHz ~ 2472MHz IEEE 802.11n HT20: 2412MHz ~ 2472MHz	
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)	
Rating	DC 12 V via Adapter	

## 5.2. CHANNEL LIST

	Channel List for IEEE 802.11b/g/n (20 MHz)						
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452	13	2472
2	2417	6	2437	10	2457	1	/
3	2422	7	2442	11	2462	1	/
4	2427	8	2447	12	2467	1	1

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# 5.3. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)	Maximum AVG EIRP (dBm)
b	2412 ~ 2472	1-13[13]	15.63	21.63
g	2412 ~ 2472	1-13[13]	10.80	16.80
n HT20	2412 ~ 2472	1-13[13]	10.23	16.23

## 5.4. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11 Test Channel Number		Frequency
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel), CH 12, CH 13	2412 MHz, 2437 MHz, 2462 MHz, 2467 MHz, 2472 MHz
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel), CH 12, CH 13	2412 MHz, 2437 MHz, 2462 MHz, 2467 MHz, 2472 MHz
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel), CH 12, CH 13	2412 MHz, 2437 MHz, 2462 MHz, 2467 MHz, 2472 MHz

## 5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band											
Test Software			UART								
			Test Channel								
Modulation	Transmit Antenna		NCB: 20MHz				NCB: 40MHz				
Mode	Number	CH 1	CH 6	CH 11	CH 12	CH 13	CH 3	CH 6	CH 9	CH 10	CH 11
802.11b	1	Default	Default	Default	14	80					
802.11g	1	48	48	48	2A	26	/				
802.11n HT20	1	42	42	42	3A	2D					

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### 5.6. THE WORSE CASE CONFIGURATIONS

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

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

Test channels referring to section 5.4.

Maximum power setting referring to section 5.5.

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

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

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



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# 5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2472	Monopole	6

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

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

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## 5.8. DESCRIPTION OF TEST SETUP

### **SUPPORT EQUIPMENT**

Item	Equipment	Brand Name	Model Name	Remarks
1	Earphone	ELIFE	1	1

## **I/O CABLES**

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

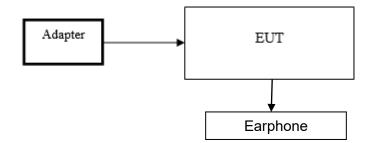
### **ACCESSORIES**

Item	Accessory	Brand Name	Model Name	Description
1	Switching Power Supply	Royal	BI36-120300-U2	Input: 100-240 V~ 50/60 Hz 1.2 A Output: 12.0 V === 3.0 A 36.0 W

### **TEST SETUP**

The EUT can work in engineering mode with a software inside.

## **SETUP DIAGRAM FOR TESTS**





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				
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Nov. 12, 2020	Nov. 11, 2021				
	Software								
1	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	130960	Aug. 02, 2021	Aug. 01, 2024				
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	July 20, 2021	July 19, 2024				
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Nov. 20, 2020	Nov. 19, 2021				
Horn Antenna	Schwarzbeck	BBHA9170	#691	Aug. 11, 2018	Aug. 11, 2021				
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Nov. 12, 2020	Nov. 11, 2021				
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				
High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS	23	Nov. 12, 2020	Nov. 11, 2021				
Band Reject Filter	Wainwright	WRCJV8- 2350-2400- 2483.5- 2533.5-40SS	4	Nov. 12, 2020	Nov. 11, 2021				
		Sof	tware						



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Description	Manufacturer	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.2	3,2021	Mar.22,2022		
Vector Signal Generator	R&S	SMBV100A	261637	Nov.2	0,2020	Nov.19,2021		
Signal Generator	R&S	SMB100A	178553	Nov.2	0,2020	Nov.19,2021		
Signal Analyzer	R&S	FSV40	101118	Nov.2	0,2020	Nov.19,2021		
Software								
Description Manufa		acturer	Name	9	\	Version		
For R&S TS 8997 Test Syste	m Rohde &	Schwarz	EMC 3	32	1	0.60.10		

Latest Calibration version of equipment list

Conducted Emissions									
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date				
EMI Test Receiver	R&S	ESR3	101961	Oct.30, 2021	Oct.29, 2022				
Two-Line V- Network	R&S	ENV216	101983	Oct.30, 2021	Oct.29, 2022				
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Oct.30, 2021	Oct.29, 2022				
	Software								
	Description		Manufacturer	Name	Version				
Test Software	for Conducted	Emissions	Farad	EZ-EMC	Ver. UL-3A1				

Radiated Emissions								
	Г		1					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date			
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Oct.30, 2021	Oct.29, 2022			
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Aug.02, 2021	Aug.01, 2024			
Preamplifier	HP	8447D	2944A09099	Oct.30, 2021	Oct.29, 2022			
EMI Measurement Receiver	R&S	ESR26	101377	Oct.30, 2021	Oct.29, 2022			
Horn Antenna	TDK	HRN-0118	130940	July 20, 2021	July 19, 2024			
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Oct.30, 2021	Oct.29, 2022			
Horn Antenna	Schwarzbeck	BBHA9170	697	July 20, 2021	July 19, 2024			
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Oct.31, 2021	Oct.30, 2022			
Preamplifier	TDK	PA-02-3	TRS-308- 00002	Oct.31, 2021	Oct.30, 2022			
Loop antenna	Schwarzbeck	1519B	80000	Jan.17, 2019	Jan.17,2022			
Preamplifier	TDK	PA-02-001- 3000	TRS-302- 00050	Oct.31, 2021	Oct.30, 2022			
Preamplifier	Mini-Circuits	ZX60-83LN- S+	SUP01201941	Oct.31, 2021	Oct.30, 2022			
High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS	23	Oct.31, 2021	Oct.30, 2022			
Band Reject Filter	Wainwright	WRCJV8- 2350-2400- 2483.5- 2533.5-40SS	4	Oct.31, 2021	Oct.30, 2022			
	Software							
1	Description		Manufacturer	Name	Version			



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Test Software for Radiated Emissions Farad EZ-EMC Ver. UL-3A1
---

R&S TS 8997 Test System						
Equipment	Manufacturer	Model No.	Serial No.	Last C	Cal.	Due. Date
Power sensor, Power Meter	R&S	OSP120	100921	Mar.23,	2021	Mar.22,2022
Vector Signal Generator	R&S	SMBV100A	261637	Oct.30,	2021	Oct.29, 2022
Signal Generator	R&S	SMB100A	178553	Oct.30,	2021	Oct.29, 2022
Signal Analyzer	R&S	FSV40	101118	Oct.30,	2021	Oct.29, 2022
Software						
Description Manufacturer Nar			Nam	ne		Version
For R&S TS 8997 Test System Rohde & Sch		Schwarz	EMC	32		10.60.10



7. ANTENNA PORT TEST RESULTS

## 7.1. ON TIME AND DUTY CYCLE

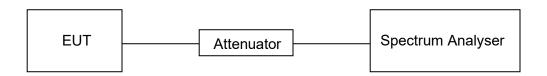
### **LIMITS**

None; for reporting purposes only

### **PROCEDURE**

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

### **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	59.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz

### **RESULTS**

Please refer to appendix G.



# .2. 6 dB DTS BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

### **LIMITS**

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

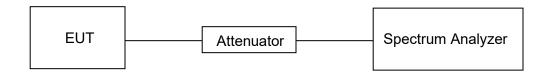
### **TEST PROCEDURE**

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

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

- a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.
- b) Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

### **TEST SETUP**





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## **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	59.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz

# **RESULTS**

Please refer to appendix A & B.

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# 7.3. CONDUCTED OUTPUT POWER

### **LIMITS**

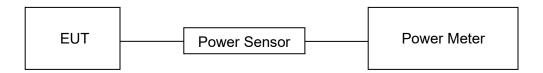
CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section Test Item Limit Frequency Range (MHz)			
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	AVG Output Power	1 watt or 30 dBm	2400-2483.5

### **TEST PROCEDURE**

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).

Measure peak emission level, the indicated level is the average output power, after any corrections for external attenuators and cables.

### **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	59.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz

### **RESULTS**

Please refer to appendix C.



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### 7.4. POWER SPECTRAL DENSITY

### **LIMITS**

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

### **TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.10.

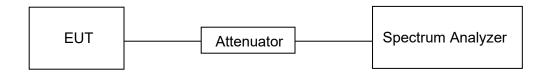
Connect the EUT to the spectrum analyser and use the following settings:

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

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

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

### **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	59.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz

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Please refer to appendix D.

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### 7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

### **LIMITS**

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

### **TEST PROCEDURE**

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

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

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

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level

Change the settings for emission level measurement:

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

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

### **TEST SETUP**



EUT Attenuator Spectrum Analyzer

### **TEST ENVIRONMENT**

Temperature	26.1 °C	Relative Humidity	59.1 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz

## **RESULTS**

Please refer to appendix E & F.



8. RADIATED TEST RESULTS

### **LIMITS**

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

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

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

Emissions radiated outside of the specified frequency bands above 30 MHz					
Frequency Range (MHz)	Field Strength Limit		(JD: ) (/or) -4-0 m		
		Quasi-Peak			
30 - 88	100	40			
88 - 216	150	43.5			
216 - 960	200	46			
Above 960	500	54			
Above 1000	500	Peak	Average		
		74	54		

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

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

Table 6 – General field strength limits at frequencies below 30 MHz			
Frequency	Magnetic field strength (H-Field) (μA/m)	Measurement distance (m)	
9 - 490 kHz <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 please 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	158.52475 - 158.52525	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
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
8.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
8.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1680 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3280 - 3287	
18.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 – 138		

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

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

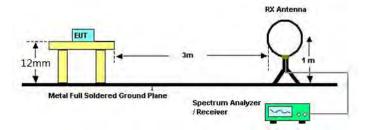
Note:  $^1$ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.  $^2$ Above 38.6c



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### **TEST SETUP AND PROCEDURE**

### Below 30 MHz



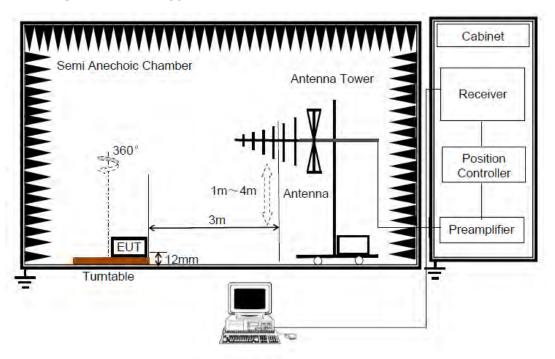
### The setting of the spectrum analyser

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

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
- 2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 12 mm 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 guasi-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 quasi-peak and average detector and reported.
- 7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30 m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.
- 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 377  $\Omega$ . 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

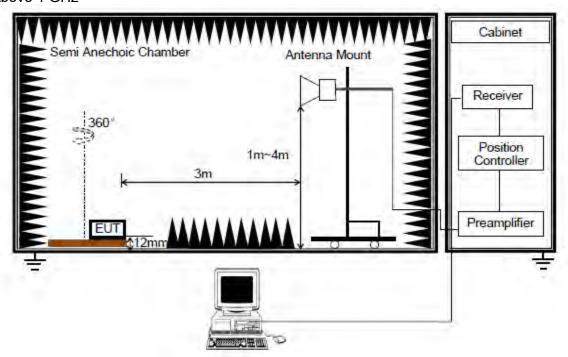


The setting of the spectrum analyser

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

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 12 mm 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.



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

### **TEST ENVIRONMENT**

Temperature	25.4 °C	Relative Humidity	62.3 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz

## **RESULTS**

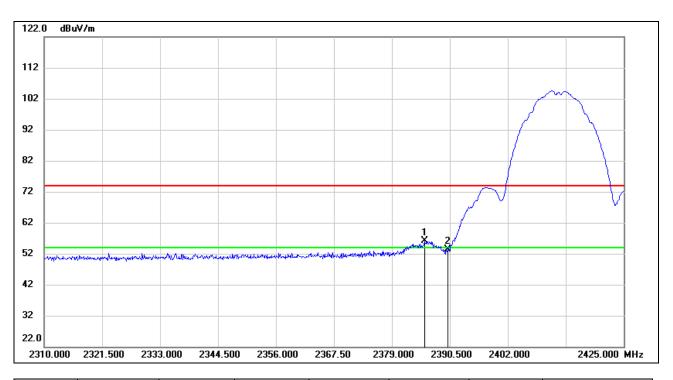


## 8.1. RESTRICTED BANDEDGE

### 8.1.1. 802.11b SISO MODE

### RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

### **PEAK**

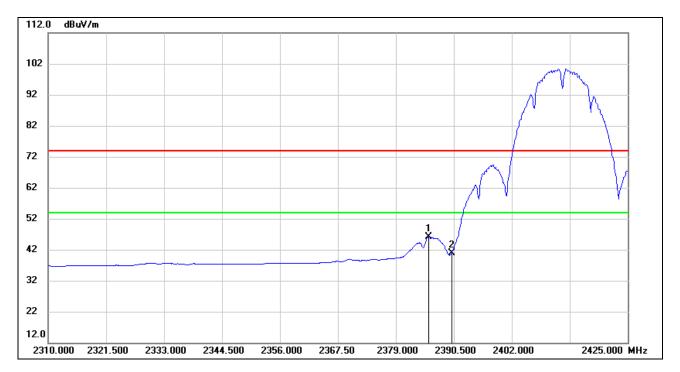


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2385.440	23.49	32.62	56.11	74.00	-17.89	peak
2	2390.000	20.74	32.66	53.40	74.00	-20.60	peak

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



### AVG



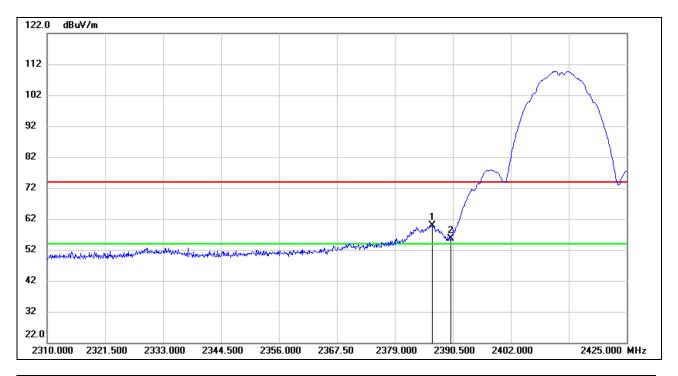
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2385.440	13.40	32.62	46.02	54.00	-7.98	AVG
2	2390.000	8.16	32.66	40.82	54.00	-13.18	AVG

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



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

### **PEAK**

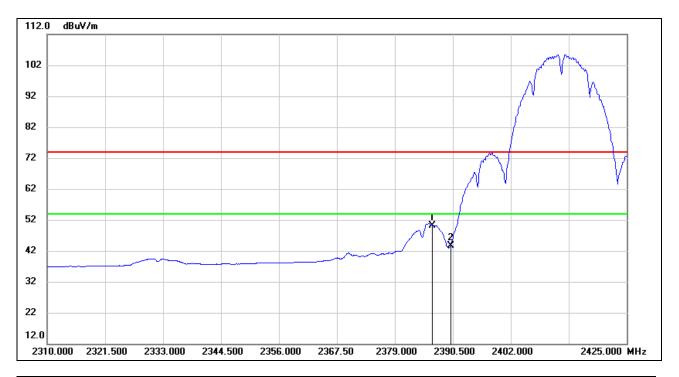


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.475	27.15	32.63	59.78	74.00	-14.22	peak
2	2390.000	22.88	32.66	55.54	74.00	-18.46	peak

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



### AVG



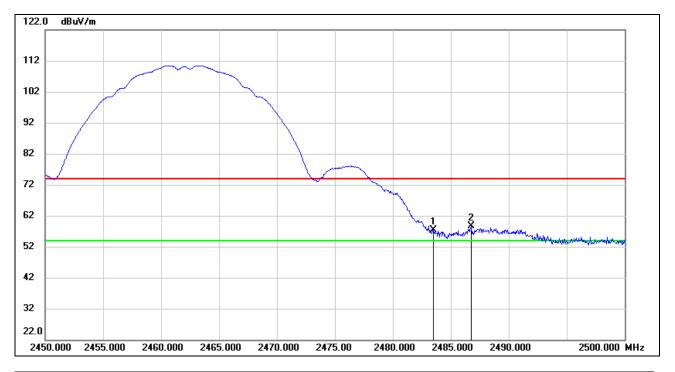
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.475	17.40	32.63	50.03	54.00	-3.97	AVG
2	2390.000	11.09	32.66	43.75	54.00	-10.25	AVG

- 2. Peak: Peak detector.
- 3. 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)

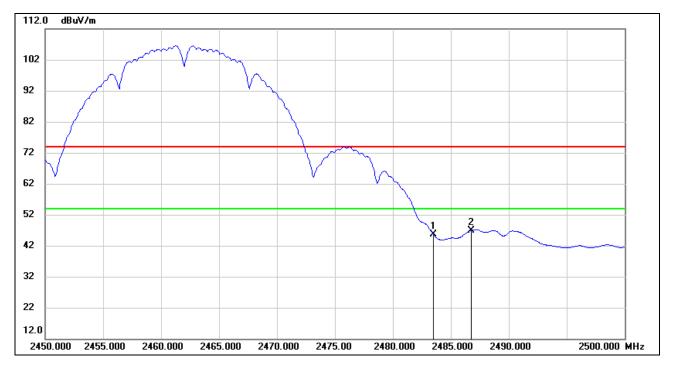
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	24.26	33.10	57.36	74.00	-16.64	peak
2	2486.750	25.56	33.11	58.67	74.00	-15.33	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	12.43	33.10	45.53	54.00	-8.47	AVG
2	2486.750	13.89	33.11	47.00	54.00	-7.00	AVG

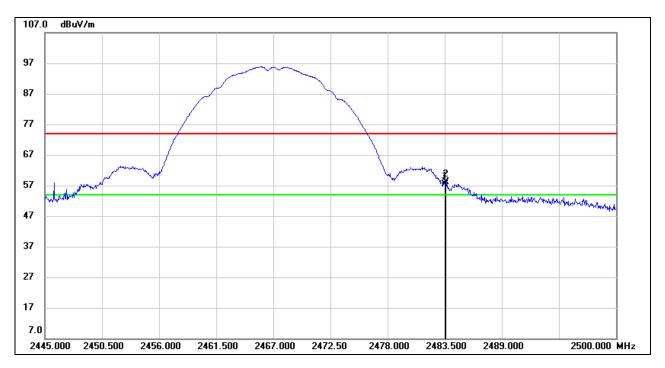
- 2. Peak: Peak detector.
- 3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



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# **RESTRICTED BANDEDGE (CHANNEL 12, VERTICAL)**

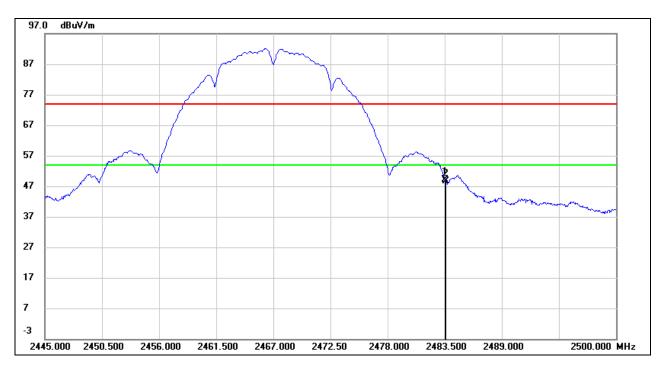
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	24.35	33.10	57.45	74.00	-16.55	peak
2	2483.610	25.10	33.10	58.20	74.00	-15.80	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	16.06	33.10	49.16	54.00	-4.84	AVG
2	2483.610	15.42	33.10	48.52	54.00	-5.48	AVG

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

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

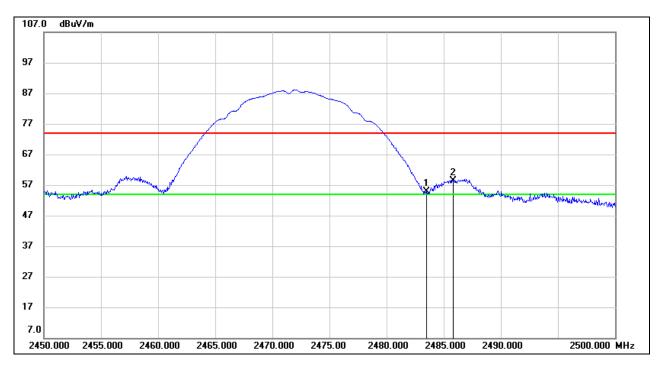
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



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# **RESTRICTED BANDEDGE (CHANNEL 13, VERTICAL)**

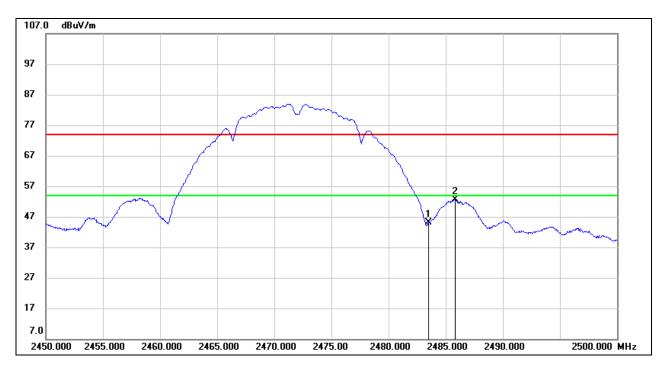
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	21.81	33.10	54.91	74.00	-19.09	peak
2	2485.850	25.30	33.10	58.40	74.00	-15.60	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	11.98	33.10	45.08	54.00	-8.92	AVG
2	2485.850	19.44	33.10	52.54	54.00	-1.46	AVG

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

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

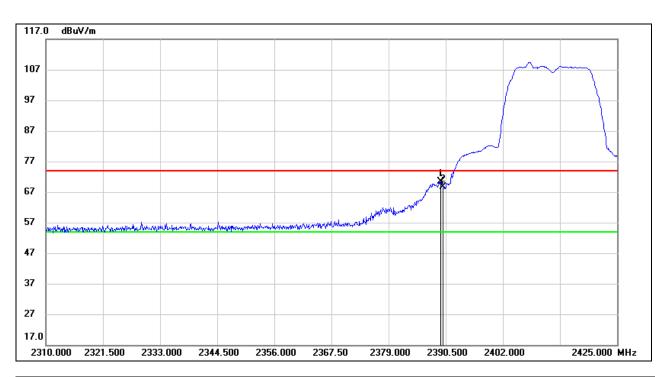
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



8.1.2. 802.11g SISO MODE

# RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

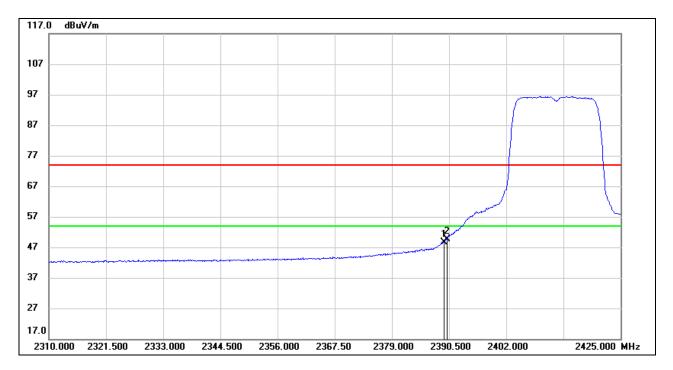
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.465	37.64	32.66	70.30	74.00	-3.70	peak
2	2390.000	35.87	32.66	68.53	74.00	-5.47	peak

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





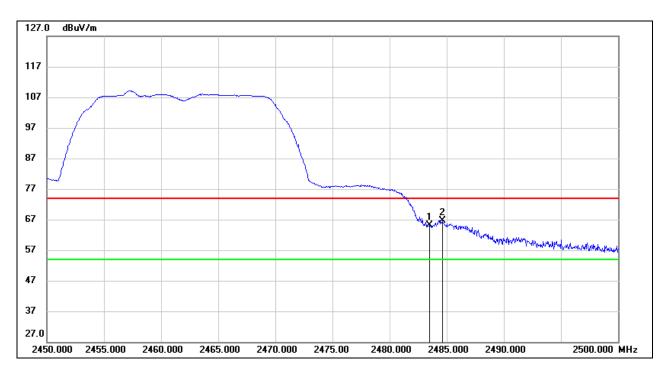
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.465	16.09	32.66	48.75	54.00	-5.25	AVG
2	2390.000	17.07	32.66	49.73	54.00	-4.27	AVG

- 2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 3. For the transmitting duration, please refer to clause 7.1.
- 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)

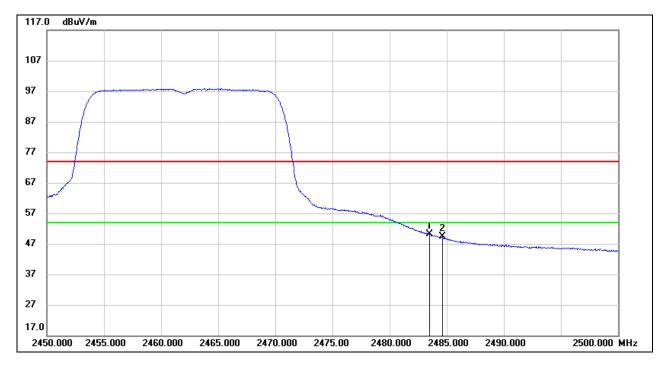
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	32.07	33.10	65.17	74.00	-8.83	peak
2	2484.600	33.63	33.10	66.73	74.00	-7.27	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	17.02	33.10	50.12	54.00	-3.88	AVG
2	2484.600	16.24	33.10	49.34	54.00	-4.66	AVG

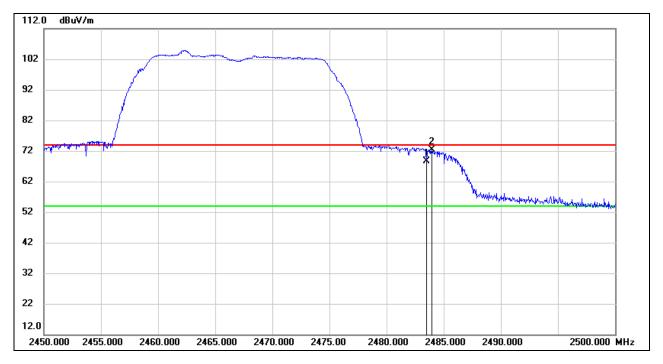
- 2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 3. For the transmitting duration, please refer to clause 7.1.
- 4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



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# **RESTRICTED BANDEDGE (CHANNEL 12, VERTICAL)**

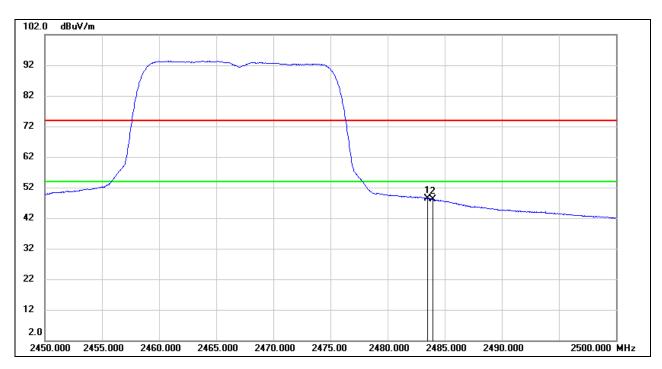
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	35.45	33.10	68.55	74.00	-5.45	peak
2	2483.950	39.20	33.10	72.30	74.00	-1.70	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	15.32	33.10	48.42	54.00	-5.58	AVG
2.	2483.950	15.15	33.10	48.25	54.00	-5.75	AVG

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

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

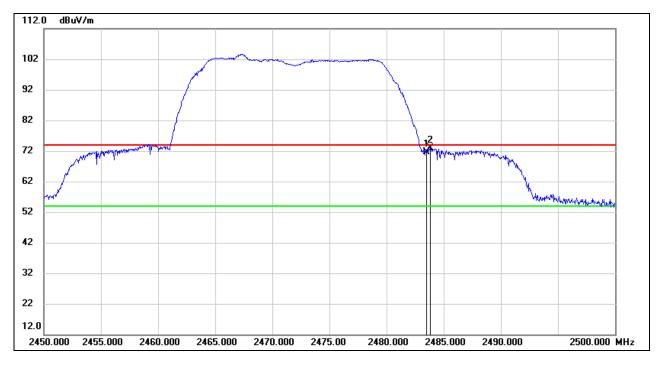
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



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# **RESTRICTED BANDEDGE (CHANNEL 13, VERTICAL)**

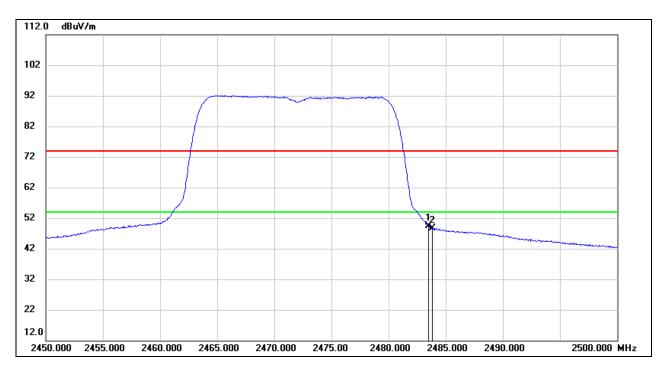
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	38.53	33.10	71.63	74.00	-2.37	peak
2	2483.850	39.67	33.10	72.77	74.00	-1.23	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	16.30	33.10	49.40	54.00	-4.60	AVG
2.	2483.850	15.61	33.10	48.71	54.00	-5.29	AVG

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

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

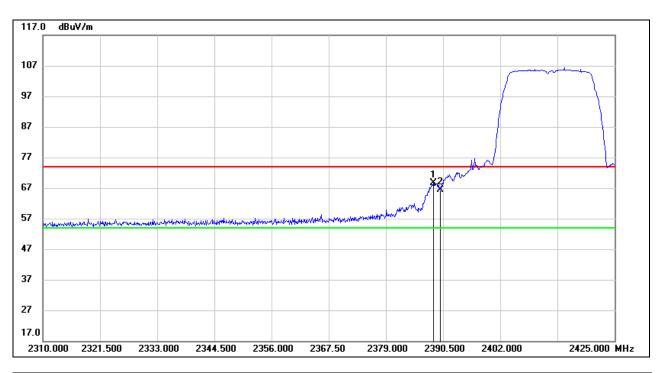
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.

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# 8.1.3. 802.11n HT20 SISO MODE

# RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

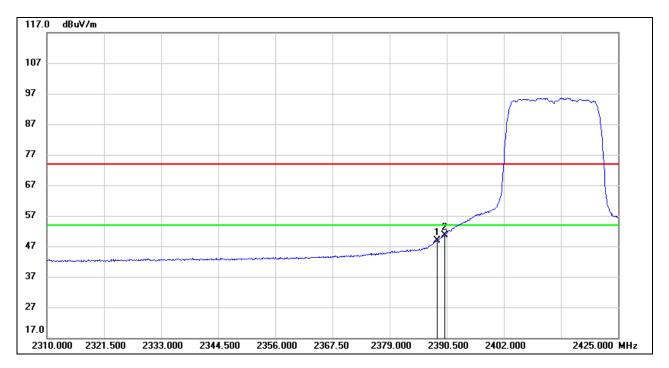
#### **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.545	35.88	32.65	68.53	74.00	-5.47	peak
2	2390.000	33.81	32.66	66.47	74.00	-7.53	peak

- 2. Peak: Peak detector.
- 3. 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	2388.545	16.20	32.65	48.85	54.00	-5.15	AVG
2	2390.000	17.91	32.66	50.57	54.00	-3.43	AVG

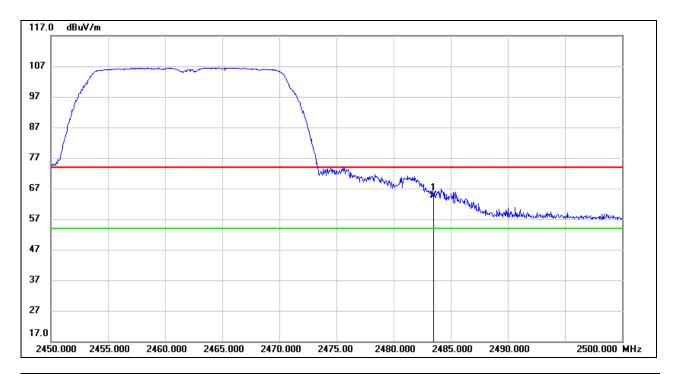
- 2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 3. For the transmitting duration, please refer to clause 7.1.
- 4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



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# RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

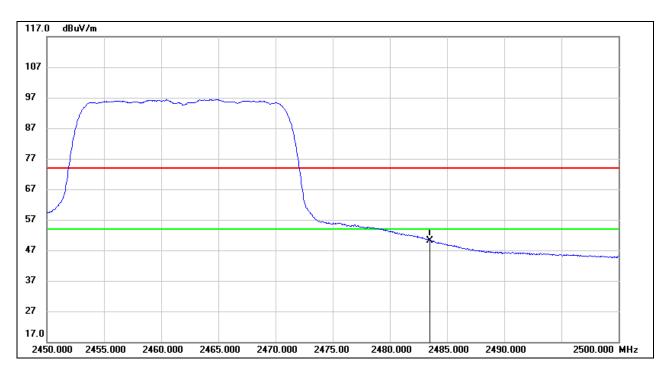
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	31.54	33.10	64.64	74.00	-9.36	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	17.04	33.10	50.14	54.00	-3.86	AVG

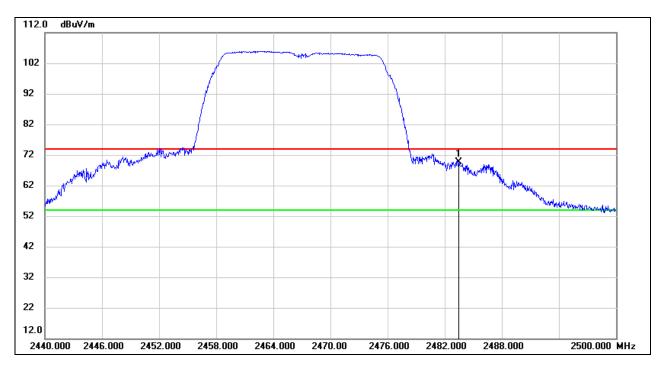
- 2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 3. For the transmitting duration, please refer to clause 7.1.
- 4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.



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# **RESTRICTED BANDEDGE (CHANNEL 12, VERTICAL)**

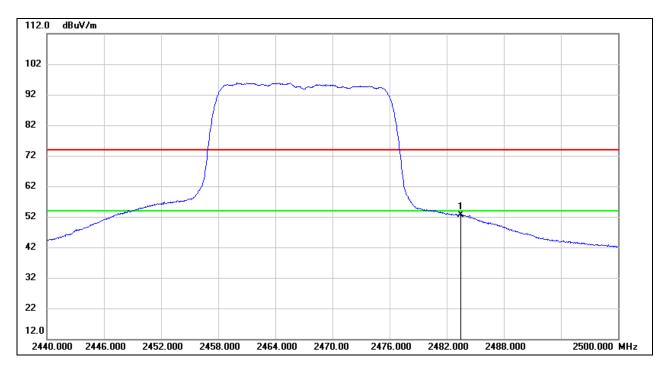
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	36.48	33.10	69.58	74.00	-4.42	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	19.61	33.10	52.71	54.00	-1.29	AVG

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

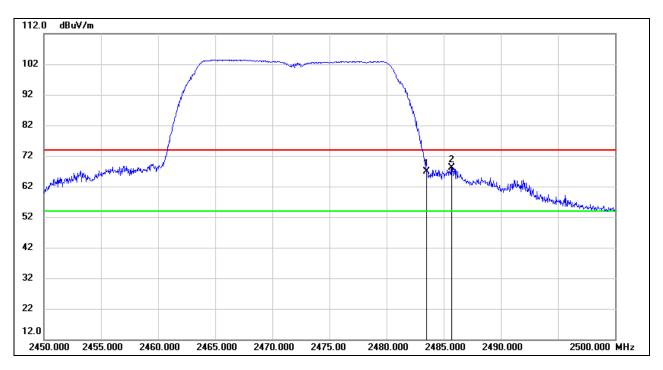
- 2. Peak: Peak detector.
- 3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

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



**RESTRICTED BANDEDGE (CHANNEL 13, VERTICAL)** 

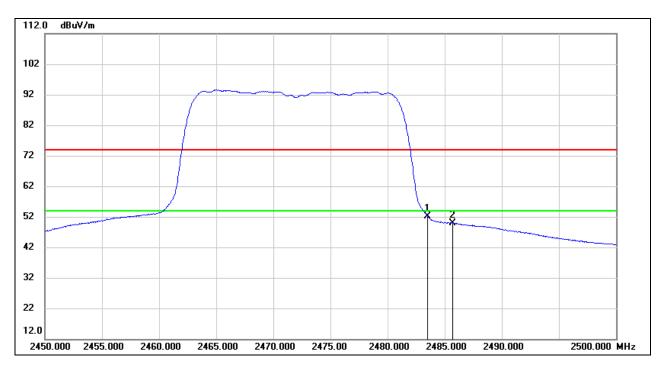
## **PEAK**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	33.81	33.10	66.91	74.00	-7.09	peak
2	2485.700	35.07	33.10	68.17	74.00	-5.83	peak

- 2. Peak: Peak detector.
- 3. 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	2483.500	19.00	33.10	52.10	54.00	-1.90	AVG
2	2485.700	16.70	33.10	49.80	54.00	-4.20	AVG

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

2. Peak: Peak detector.

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

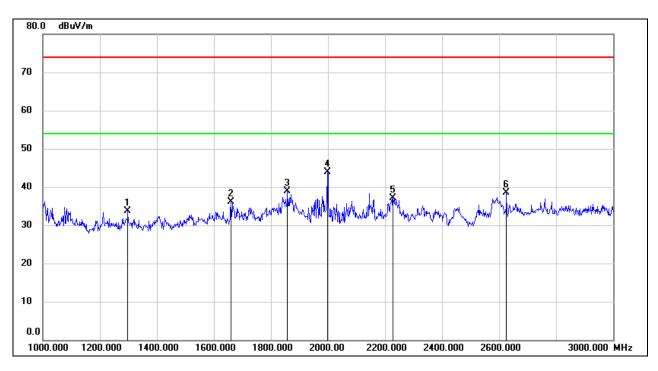
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report. Note: All modes have been tested, only the worst data was recorded in the report.



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

# 8.2.1. 802.11b SISO MODE

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

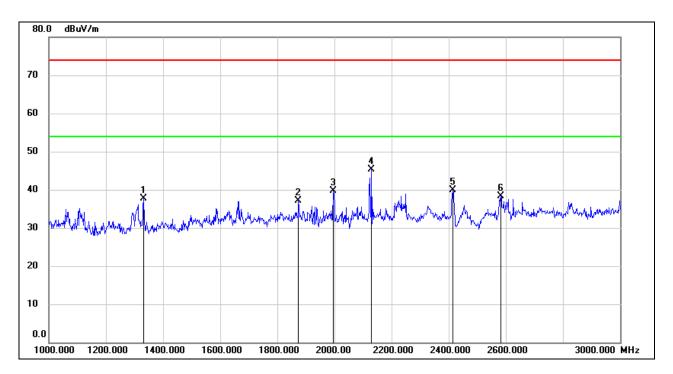


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1298.000	47.13	-13.47	33.66	74.00	-40.34	peak
2	1660.000	47.79	-11.63	36.16	74.00	-37.84	peak
3	1858.000	49.79	-10.89	38.90	74.00	-35.10	peak
4	1998.000	55.12	-11.18	43.94	74.00	-30.06	peak
5	2228.000	46.94	-9.78	37.16	74.00	-36.84	peak
6	2626.000	47.05	-8.52	38.53	74.00	-35.47	peak

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



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

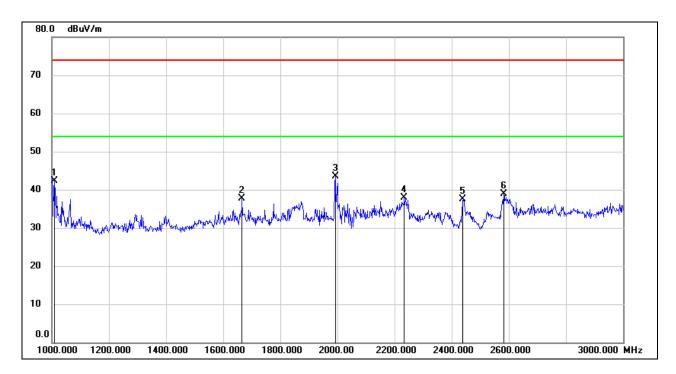


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1332.000	51.05	-13.37	37.68	74.00	-36.32	peak
2	1874.000	48.08	-10.92	37.16	74.00	-36.84	peak
3	1996.000	50.90	-11.18	39.72	74.00	-34.28	peak
4	2130.000	55.68	-10.35	45.33	74.00	-28.67	peak
5	2414.000	48.87	-9.03	39.84	74.00	-34.16	peak
6	2582.000	46.98	-8.67	38.31	74.00	-35.69	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 Band reject filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



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

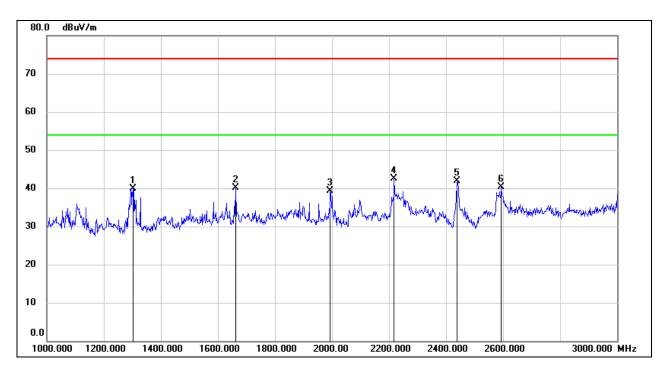


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1010.000	57.30	-15.02	42.28	74.00	-31.72	peak
2	1666.000	49.21	-11.59	37.62	74.00	-36.38	peak
3	1992.000	54.68	-11.18	43.50	74.00	-30.50	peak
4	2234.000	47.58	-9.75	37.83	74.00	-36.17	peak
5	2437.000	46.41	-8.98	37.43	74.00	-36.57	peak
6	2582.000	47.55	-8.67	38.88	74.00	-35.12	peak

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



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

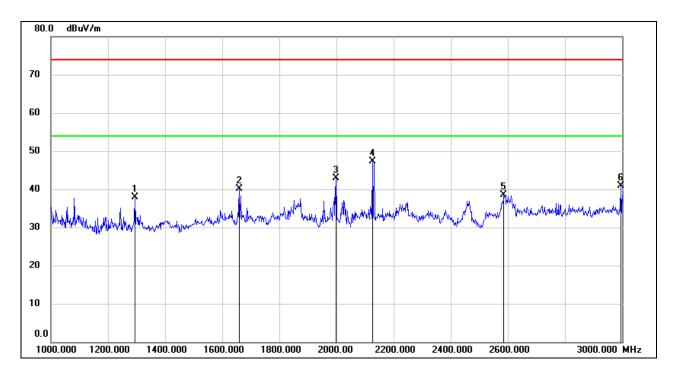


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1302.000	53.28	-13.46	39.82	74.00	-34.18	peak
2	1662.000	51.74	-11.62	40.12	74.00	-33.88	peak
3	1994.000	50.49	-11.17	39.32	74.00	-34.68	peak
4	2218.000	52.33	-9.81	42.52	74.00	-31.48	peak
5	2437.000	50.83	-8.98	41.85	74.00	-32.15	peak
6	2594.000	49.03	-8.65	40.38	74.00	-33.62	peak

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



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

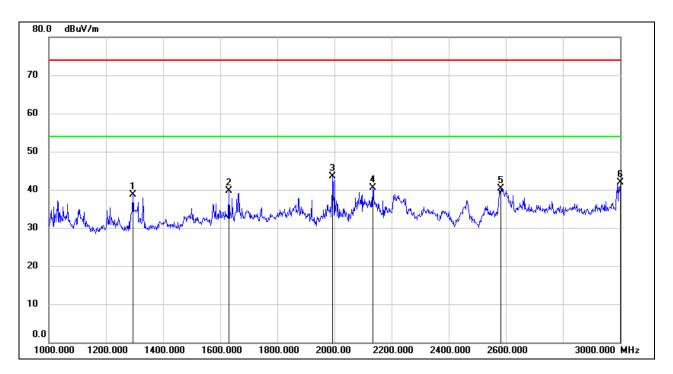


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1294.000	51.32	-13.48	37.84	74.00	-36.16	peak
2	1660.000	51.68	-11.63	40.05	74.00	-33.95	peak
3	1998.000	54.09	-11.18	42.91	74.00	-31.09	peak
4	2126.000	57.71	-10.37	47.34	74.00	-26.66	peak
5	2586.000	47.13	-8.68	38.45	74.00	-35.55	peak
6	2996.000	47.93	-7.10	40.83	74.00	-33.17	peak

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



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

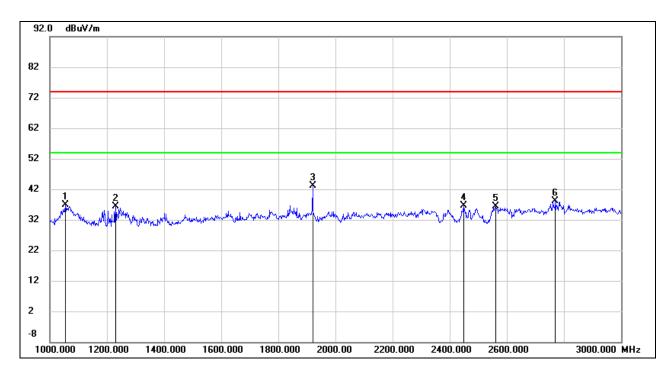


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1294.000	52.11	-13.48	38.63	74.00	-35.37	peak
2	1630.000	51.52	-11.81	39.71	74.00	-34.29	peak
3	1994.000	54.62	-11.17	43.45	74.00	-30.55	peak
4	2134.000	50.90	-10.31	40.59	74.00	-33.41	peak
5	2582.000	48.88	-8.67	40.21	74.00	-33.79	peak
6	3000.000	48.98	-7.09	41.89	74.00	-32.11	peak

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



## HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, HORIZONTAL)

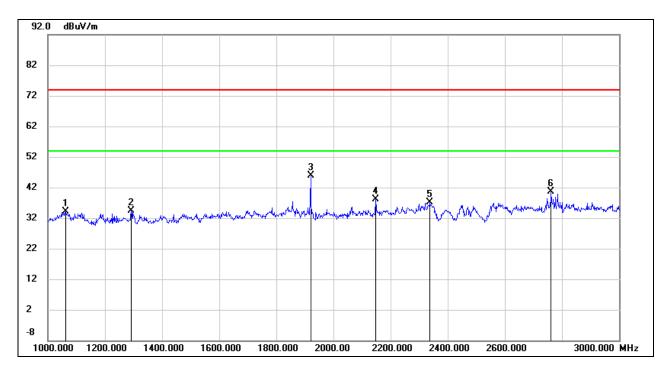


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1054.000	51.59	-14.73	36.86	74.00	-37.14	peak
2	1230.000	50.05	-13.68	36.37	74.00	-37.63	peak
3	1920.000	54.21	-11.02	43.19	74.00	-30.81	peak
4	2448.000	45.49	-8.96	36.53	74.00	-37.47	peak
5	2562.000	45.15	-8.71	36.44	74.00	-37.56	peak
6	2770.000	45.97	-7.83	38.14	74.00	-35.86	peak

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



## HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, VERTICAL)

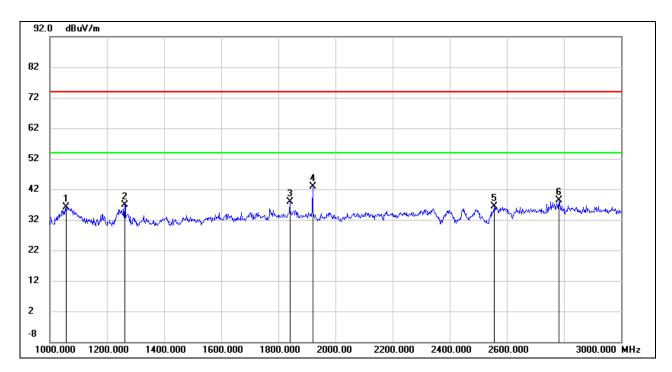


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1062.000	48.75	-14.67	34.08	74.00	-39.92	peak
2	1292.000	47.81	-13.49	34.32	74.00	-39.68	peak
3	1920.000	57.00	-11.02	45.98	74.00	-28.02	peak
4	2148.000	48.36	-10.23	38.13	74.00	-35.87	peak
5	2338.000	46.35	-9.33	37.02	74.00	-36.98	peak
6	2762.000	48.40	-7.88	40.52	74.00	-33.48	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.



## HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, HORIZONTAL)

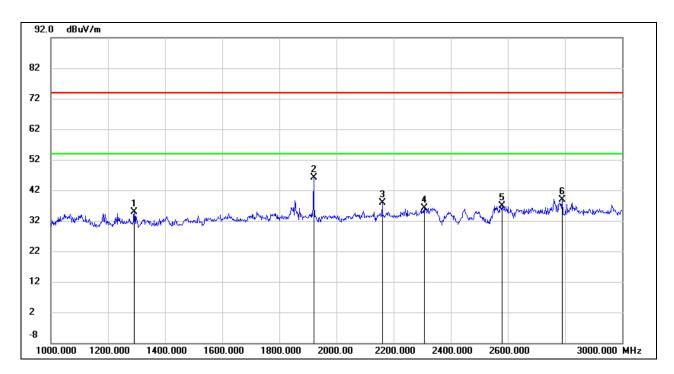


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1056.000	50.86	-14.71	36.15	74.00	-37.85	peak
2	1262.000	50.42	-13.58	36.84	74.00	-37.16	peak
3	1840.000	48.79	-10.85	37.94	74.00	-36.06	peak
4	1920.000	53.98	-11.02	42.96	74.00	-31.04	peak
5	2556.000	45.05	-8.73	36.32	74.00	-37.68	peak
6	2782.000	46.24	-7.78	38.46	74.00	-35.54	peak

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



## HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1292.000	48.37	-13.49	34.88	74.00	-39.12	peak
2	1920.000	57.06	-11.02	46.04	74.00	-27.96	peak
3	2160.000	48.09	-10.15	37.94	74.00	-36.06	peak
4	2308.000	45.65	-9.45	36.20	74.00	-37.80	peak
5	2580.000	45.65	-8.68	36.97	74.00	-37.03	peak
6	2790.000	46.65	-7.74	38.91	74.00	-35.09	peak

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

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

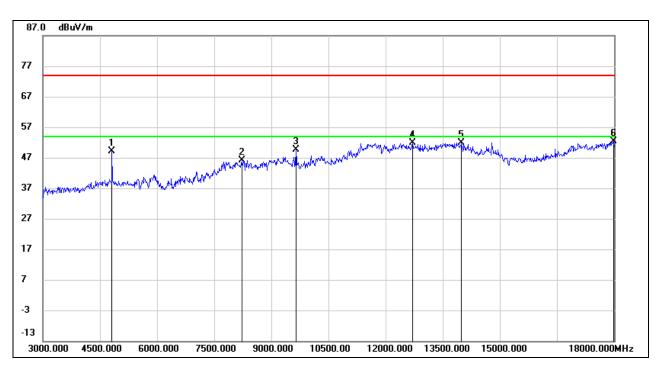
Note: All modes and channels have been tested, only the worst data was recorded in the report.



# 8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

## 8.3.1. 802.11b SISO MODE

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

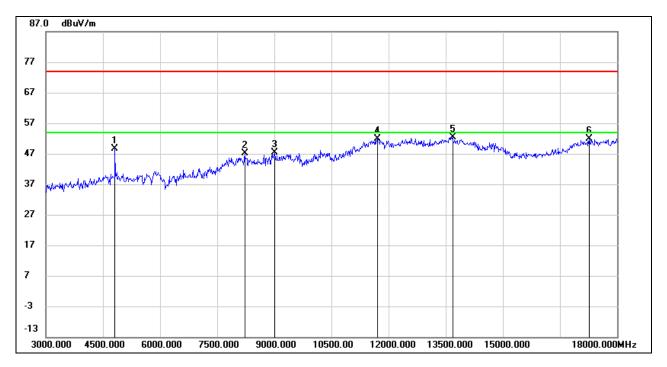


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4824.000	48.97	0.11	49.08	74.00	-24.92	peak
2	8229.500	36.92	9.13	46.05	74.00	-27.95	peak
3	9648.500	38.69	10.90	49.59	74.00	-24.41	peak
4	12709.500	34.91	17.04	51.95	74.00	-22.05	peak
5	13995.500	32.46	19.37	51.83	74.00	-22.17	peak
6	17987.000	27.55	24.88	52.43	74.00	-21.57	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.



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

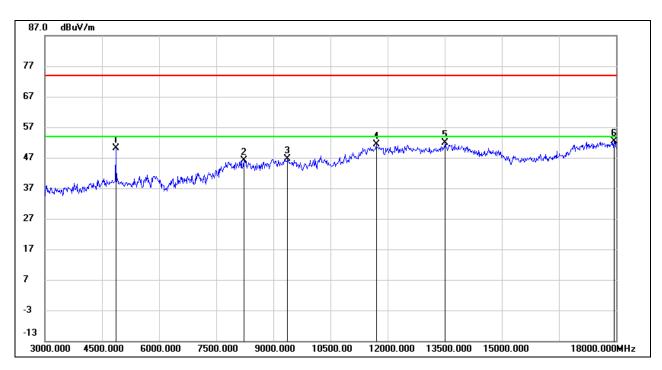


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4824.000	48.50	0.11	48.61	74.00	-25.39	peak
2	8225.000	38.07	9.13	47.20	74.00	-26.80	peak
3	9029.500	36.92	10.47	47.39	74.00	-26.61	peak
4	11713.500	34.73	17.09	51.82	74.00	-22.18	peak
5	13693.000	32.83	19.46	52.29	74.00	-21.71	peak
6	17266.500	30.65	21.24	51.89	74.00	-22.11	peak

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



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

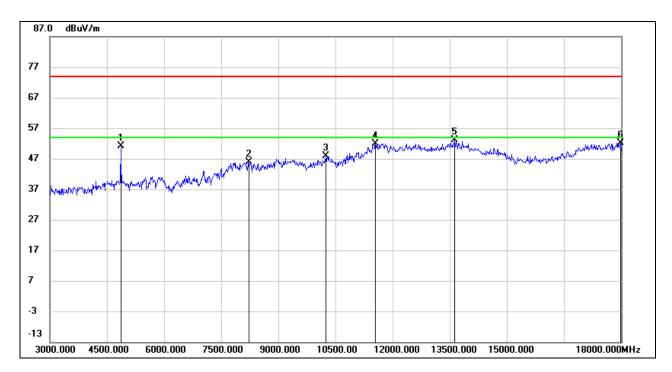


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4874.000	50.13	0.01	50.14	74.00	-23.86	peak
2	8233.000	36.93	9.13	46.06	74.00	-27.94	peak
3	9381.000	35.95	10.67	46.62	74.00	-27.38	peak
4	11711.000	34.19	17.10	51.29	74.00	-22.71	peak
5	13529.500	32.75	19.17	51.92	74.00	-22.08	peak
6	17952.500	27.77	24.66	52.43	74.00	-21.57	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 High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



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

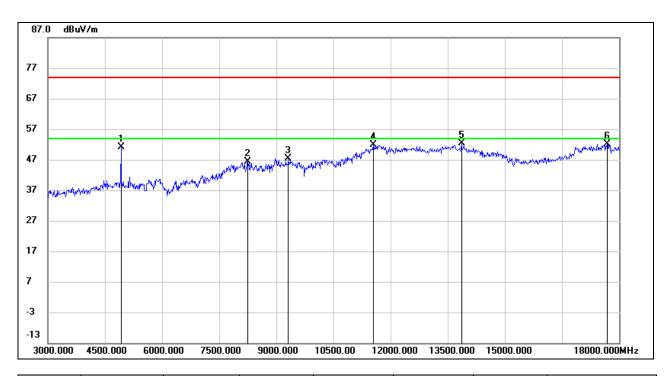


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4874.000	51.04	0.01	51.05	74.00	-22.95	peak
2	8231.500	36.82	9.13	45.95	74.00	-28.05	peak
3	10255.000	35.73	12.22	47.95	74.00	-26.05	peak
4	11560.500	35.49	16.49	51.98	74.00	-22.02	peak
5	13635.500	33.93	19.21	53.14	74.00	-20.86	peak
6	17989.000	27.24	24.89	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

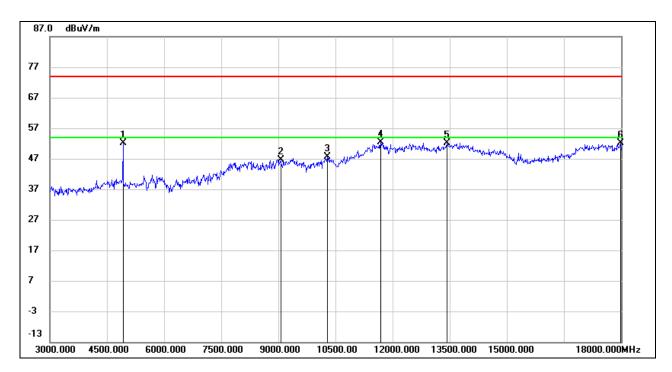


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	51.09	0.15	51.24	74.00	-22.76	peak
2	8263.000	37.18	9.08	46.26	74.00	-27.74	peak
3	9322.000	37.07	10.28	47.35	74.00	-26.65	peak
4	11559.000	35.44	16.49	51.93	74.00	-22.07	peak
5	13864.000	33.10	19.33	52.43	74.00	-21.57	peak
6	17697.000	28.92	23.30	52.22	74.00	-21.78	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 High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



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

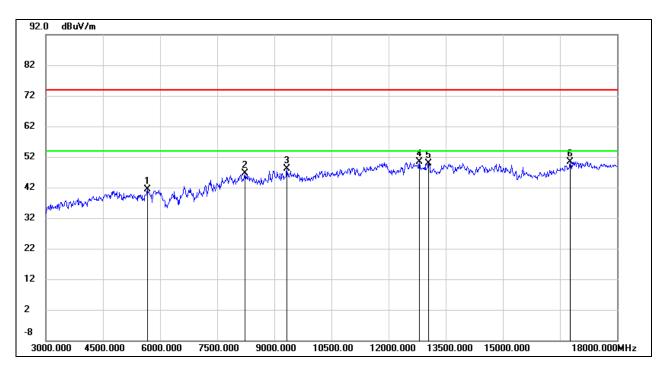


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.500	52.01	0.15	52.16	74.00	-21.84	peak
2	9064.000	36.56	10.10	46.66	74.00	-27.34	peak
3	10304.000	35.35	12.37	47.72	74.00	-26.28	peak
4	11697.500	35.34	17.10	52.44	74.00	-21.56	peak
5	13432.500	33.14	19.02	52.16	74.00	-21.84	peak
6	17985.000	27.16	24.87	52.03	74.00	-21.97	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 High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5670.000	40.01	1.44	41.45	74.00	-32.55	peak
2	8235.000	38.16	8.58	46.74	74.00	-27.26	peak
3	9330.000	38.45	9.72	48.17	74.00	-25.83	peak
4	12810.000	33.23	17.06	50.29	74.00	-23.71	peak
5	13050.000	32.80	17.00	49.80	74.00	-24.20	peak
6	16770.000	32.80	17.69	50.49	74.00	-23.51	peak

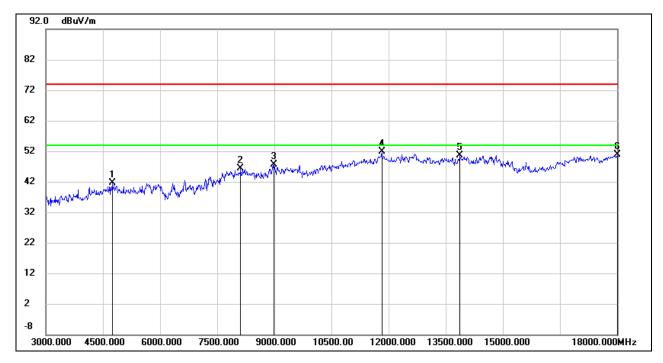
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4740.000	42.46	-0.94	41.52	74.00	-32.48	peak
2	8115.000	38.41	8.01	46.42	74.00	-27.58	peak
3	8985.000	37.66	9.96	47.62	74.00	-26.38	peak
4	11820.000	34.67	17.32	51.99	74.00	-22.01	peak
5	13875.000	32.05	18.69	50.74	74.00	-23.26	peak
6	18000.000	27.61	23.37	50.98	74.00	-23.02	peak

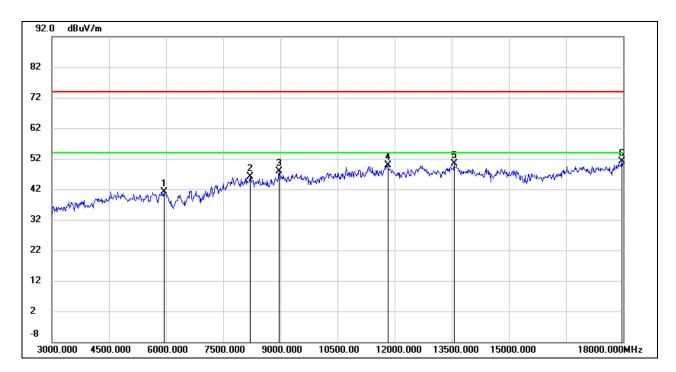
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, HORIZONTAL)



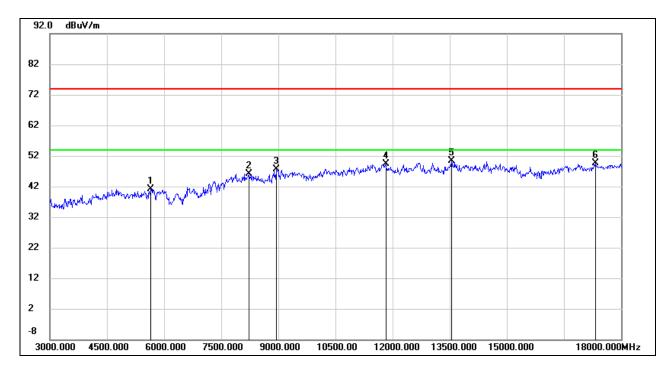
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5940.000	39.20	1.97	41.17	74.00	-32.83	peak
2	8205.000	37.41	8.70	46.11	74.00	-27.89	peak
3	8970.000	38.20	9.80	48.00	74.00	-26.00	peak
4	11820.000	32.50	17.32	49.82	74.00	-24.18	peak
5	13560.000	31.89	18.39	50.28	74.00	-23.72	peak
6	17970.000	27.86	23.29	51.15	74.00	-22.85	neak

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

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.



#### **HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, VERTICAL)**



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5655.000	39.64	1.44	41.08	74.00	-32.92	peak
2	8235.000	37.49	8.58	46.07	74.00	-27.93	peak
3	8940.000	38.23	9.47	47.70	74.00	-26.30	peak
4	11820.000	32.13	17.32	49.45	74.00	-24.55	peak
5	13545.000	32.08	18.39	50.47	74.00	-23.53	peak
6	17325.000	29.74	19.80	49.54	74.00	-24.46	peak

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

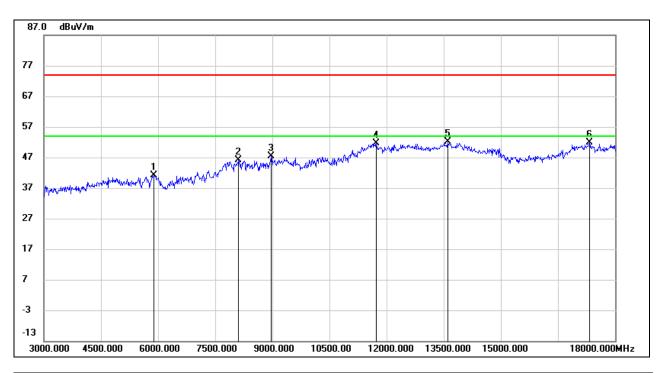
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.



8.3.2. 802.11g SISO MODE

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

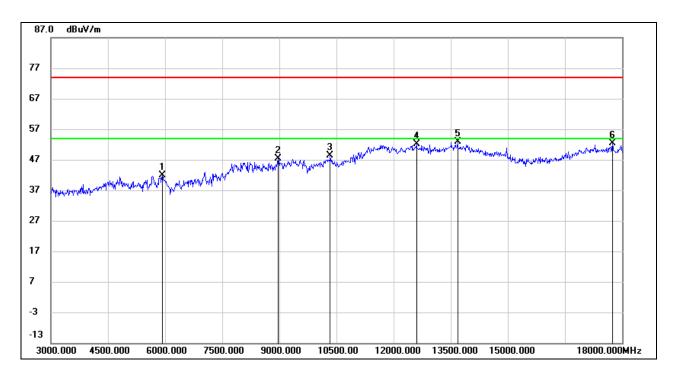


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5901.000	37.59	3.42	41.01	74.00	-32.99	peak
2	8119.500	36.77	9.48	46.25	74.00	-27.75	peak
3	8974.000	37.01	10.27	47.28	74.00	-26.72	peak
4	11732.500	34.51	17.07	51.58	74.00	-22.42	peak
5	13618.500	33.06	19.12	52.18	74.00	-21.82	peak
6	17339.500	30.49	21.30	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. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.



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

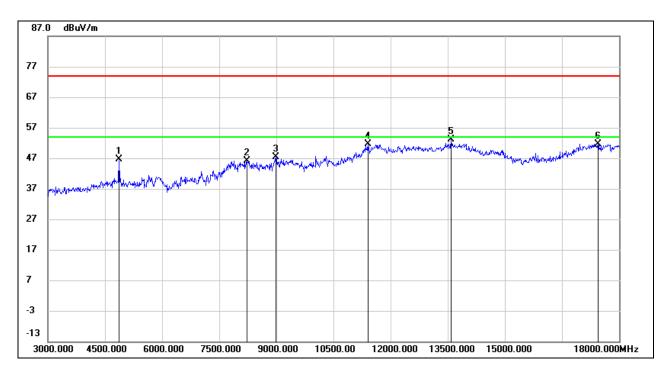


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5926.000	38.53	3.30	41.83	74.00	-32.17	peak
2	8970.000	37.09	10.18	47.27	74.00	-26.73	peak
3	10348.500	35.78	12.55	48.33	74.00	-25.67	peak
4	12604.000	34.95	17.11	52.06	74.00	-21.94	peak
5	13685.000	33.51	19.43	52.94	74.00	-21.06	peak
6	17755.000	28.59	23.81	52.40	74.00	-21.60	neak

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



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

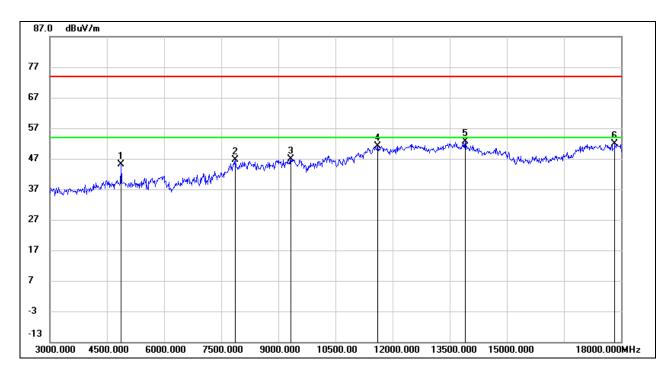


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4876.000	46.53	0.01	46.54	74.00	-27.46	peak
2	8232.500	36.96	9.13	46.09	74.00	-27.91	peak
3	8991.500	36.73	10.61	47.34	74.00	-26.66	peak
4	11408.000	35.19	16.38	51.57	74.00	-22.43	peak
5	13592.500	34.17	19.04	53.21	74.00	-20.79	peak
6	17458.500	30.52	21.18	51.70	74.00	-22.30	peak

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



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

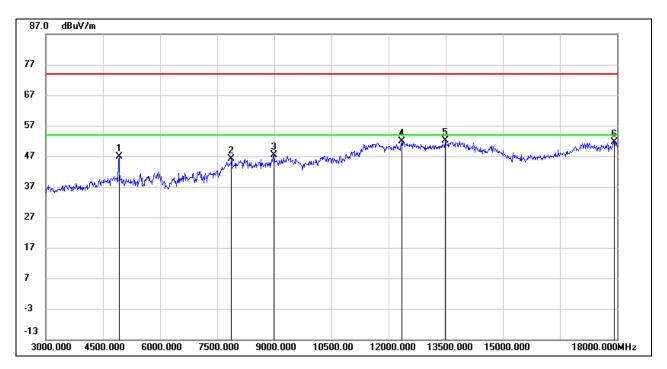


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.500	45.23	0.02	45.25	74.00	-28.75	peak
2	7888.500	38.39	8.29	46.68	74.00	-27.32	peak
3	9340.000	36.48	10.39	46.87	74.00	-27.13	peak
4	11615.500	34.52	16.59	51.11	74.00	-22.89	peak
5	13916.500	33.32	19.30	52.62	74.00	-21.38	peak
6	17846.500	27.58	24.25	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



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

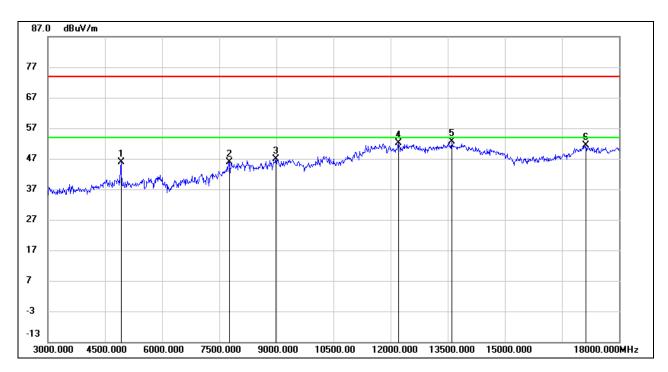


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4922.500	46.66	0.13	46.79	74.00	-27.21	peak
2	7887.500	37.82	8.30	46.12	74.00	-27.88	peak
3	8989.000	36.82	10.56	47.38	74.00	-26.62	peak
4	12353.500	34.48	17.43	51.91	74.00	-22.09	peak
5	13494.500	33.01	19.21	52.22	74.00	-21.78	peak
6	17925.500	27.18	24.48	51.66	74.00	-22.34	peak

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



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

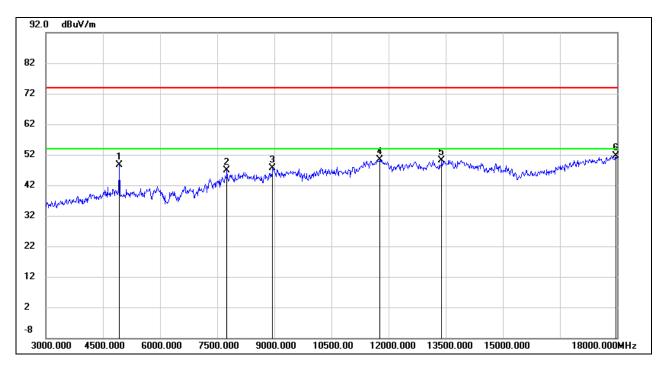


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4925.000	45.60	0.16	45.76	74.00	-28.24	peak
2	7772.500	37.52	8.46	45.98	74.00	-28.02	peak
3	8985.500	36.46	10.49	46.95	74.00	-27.05	peak
4	12219.000	34.51	17.51	52.02	74.00	-21.98	peak
5	13614.500	33.54	19.10	52.64	74.00	-21.36	peak
6	17130.000	30.83	20.48	51.31	74.00	-22.69	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.



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, HORIZONTAL)

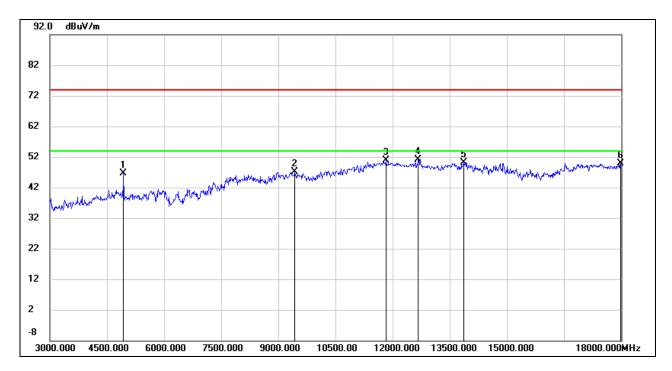


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4935.000	49.25	-0.55	48.70	74.00	-25.30	peak
2	7755.000	39.45	7.42	46.87	74.00	-27.13	peak
3	8955.000	38.05	9.64	47.69	74.00	-26.31	peak
4	11775.000	33.04	17.22	50.26	74.00	-23.74	peak
5	13395.000	32.02	18.18	50.20	74.00	-23.80	peak
6	17970.000	28.29	23.29	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.



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, VERTICAL)

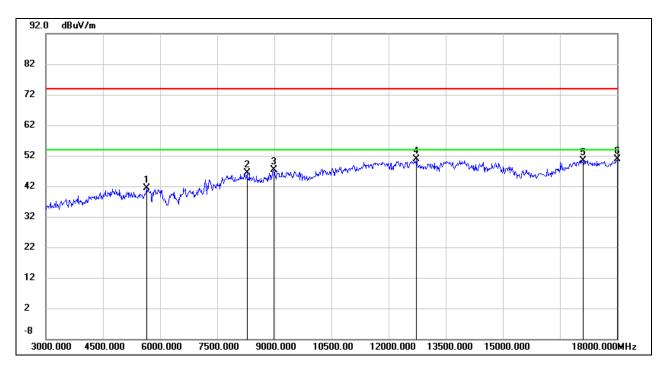


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4935.000	47.17	-0.55	46.62	74.00	-27.38	peak
2	9435.000	36.81	10.21	47.02	74.00	-26.98	peak
3	11820.000	33.66	17.32	50.98	74.00	-23.02	peak
4	12675.000	34.32	16.79	51.11	74.00	-22.89	peak
5	13860.000	31.32	18.71	50.03	74.00	-23.97	peak
6	17985.000	26.67	23.33	50.00	74.00	-24.00	peak

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



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, HORIZONTAL)

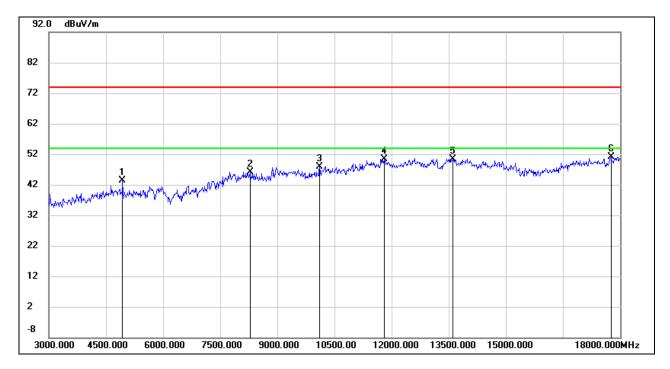


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5655.000	39.92	1.44	41.36	74.00	-32.64	peak
2	8280.000	37.94	8.40	46.34	74.00	-27.66	peak
3	8985.000	37.44	9.96	47.40	74.00	-26.60	peak
4	12735.000	34.06	16.92	50.98	74.00	-23.02	peak
5	17115.000	31.11	19.22	50.33	74.00	-23.67	peak
6	18000.000	27.57	23.37	50.94	74.00	-23.06	peak

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



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, VERTICAL)



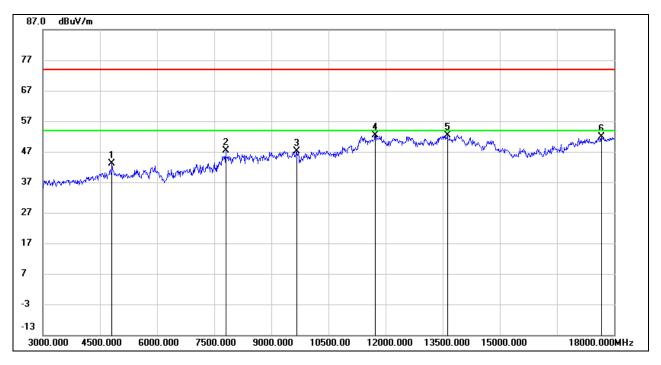
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4935.000	43.83	-0.55	43.28	74.00	-30.72	peak
2	8280.000	37.76	8.40	46.16	74.00	-27.84	peak
3	10110.000	36.73	11.09	47.82	74.00	-26.18	peak
4	11805.000	32.97	17.34	50.31	74.00	-23.69	peak
5	13605.000	32.06	18.38	50.44	74.00	-23.56	peak
6	17760.000	28.70	22.44	51.14	74.00	-22.86	peak

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

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#### 8.3.3. 802.11n HT20 SISO MODE

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

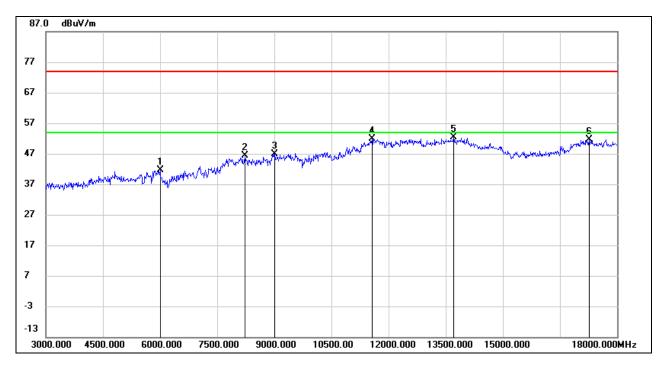


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4815.000	42.93	0.13	43.06	74.00	-30.94	peak
2	7800.000	38.64	8.71	47.35	74.00	-26.65	peak
3	9660.000	36.37	10.86	47.23	74.00	-26.77	peak
4	11730.000	35.21	17.07	52.28	74.00	-21.72	peak
5	13620.000	33.36	19.12	52.48	74.00	-21.52	peak
6	17670.000	28.93	23.02	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.



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

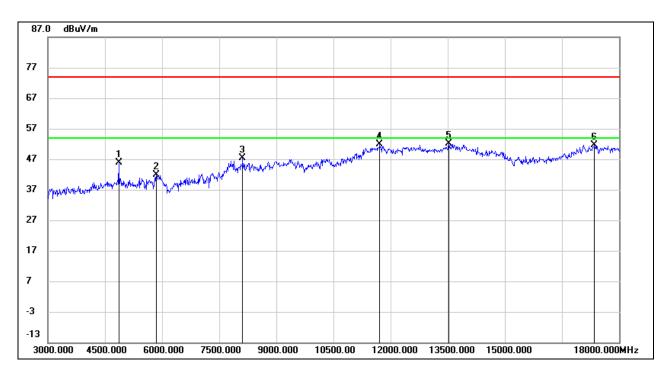


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	6013.000	38.74	2.88	41.62	74.00	-32.38	peak
2	8246.000	37.27	9.10	46.37	74.00	-27.63	peak
3	9020.500	36.43	10.55	46.98	74.00	-27.02	peak
4	11575.000	35.38	16.49	51.87	74.00	-22.13	peak
5	13710.500	32.84	19.48	52.32	74.00	-21.68	peak
6	17272.500	30.41	21.28	51.69	74.00	-22.31	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.



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

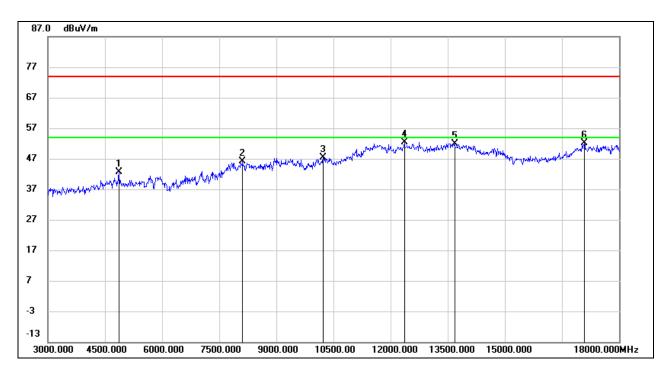


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4869.500	45.84	0.02	45.86	74.00	-28.14	peak
2	5864.000	38.76	3.07	41.83	74.00	-32.17	peak
3	8127.000	37.89	9.46	47.35	74.00	-26.65	peak
4	11724.000	34.71	17.08	51.79	74.00	-22.21	peak
5	13533.000	32.95	19.16	52.11	74.00	-21.89	peak
6	17366.000	30.58	21.15	51.73	74.00	-22.27	peak

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



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

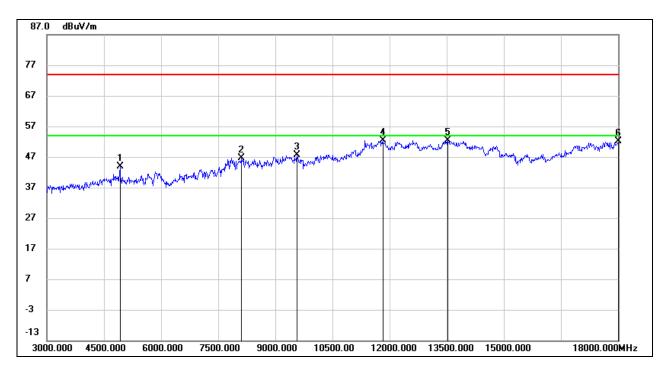


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4873.500	42.53	0.01	42.54	74.00	-31.46	peak
2	8115.000	36.65	9.50	46.15	74.00	-27.85	peak
3	10242.000	35.13	12.17	47.30	74.00	-26.70	peak
4	12361.500	35.04	17.41	52.45	74.00	-21.55	peak
5	13691.000	32.46	19.45	51.91	74.00	-22.09	peak
6	17089.500	31.78	20.31	52.09	74.00	-21.91	peak

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



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

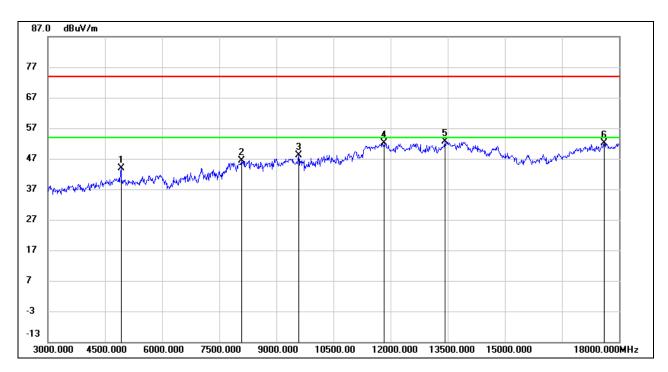


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	43.76	0.12	43.88	74.00	-30.12	peak
2	8115.000	37.14	9.50	46.64	74.00	-27.36	peak
3	9570.000	36.80	10.88	47.68	74.00	-26.32	peak
4	11820.000	35.28	17.03	52.31	74.00	-21.69	peak
5	13530.000	33.17	19.17	52.34	74.00	-21.66	peak
6	18000.000	27.25	24.97	52.22	74.00	-21.78	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 High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

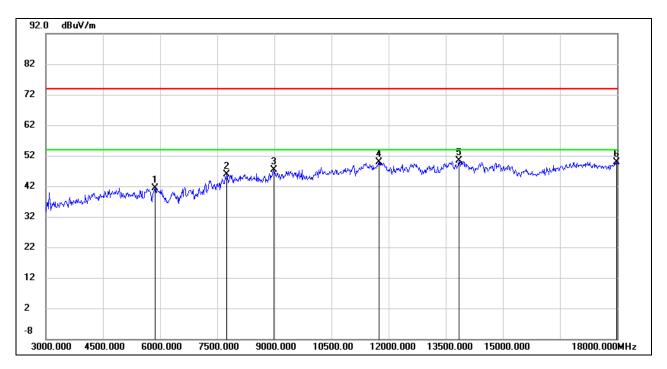


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	43.69	0.12	43.81	74.00	-30.19	peak
2	8085.000	36.99	9.33	46.32	74.00	-27.68	peak
3	9585.000	37.13	10.98	48.11	74.00	-25.89	peak
4	11835.000	34.94	17.07	52.01	74.00	-21.99	peak
5	13425.000	33.66	19.00	52.66	74.00	-21.34	peak
6	17610.000	29.84	22.41	52.25	74.00	-21.75	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.



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, HORIZONTAL)

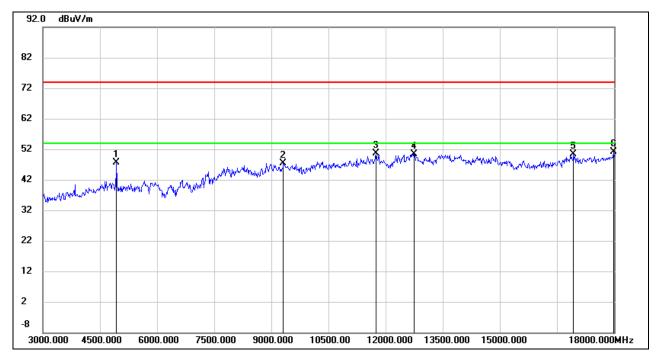


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5865.000	39.78	1.70	41.48	74.00	-32.52	peak
2	7755.000	38.56	7.42	45.98	74.00	-28.02	peak
3	8985.000	37.49	9.96	47.45	74.00	-26.55	peak
4	11745.000	32.70	17.07	49.77	74.00	-24.23	peak
5	13845.000	31.73	18.72	50.45	74.00	-23.55	peak
6	17985.000	26.67	23.33	50.00	74.00	-24.00	peak

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



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 12, VERTICAL)

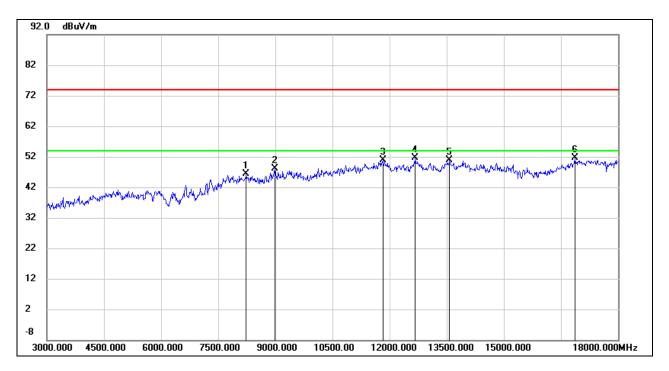


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4935.000	48.30	-0.55	47.75	74.00	-26.25	peak
2	9315.000	37.85	9.63	47.48	74.00	-26.52	peak
3	11745.000	33.48	17.07	50.55	74.00	-23.45	peak
4	12750.000	33.51	16.96	50.47	74.00	-23.53	peak
5	16935.000	32.08	18.28	50.36	74.00	-23.64	peak
6	17985.000	27.82	23.33	51.15	74.00	-22.85	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 High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, HORIZONTAL)

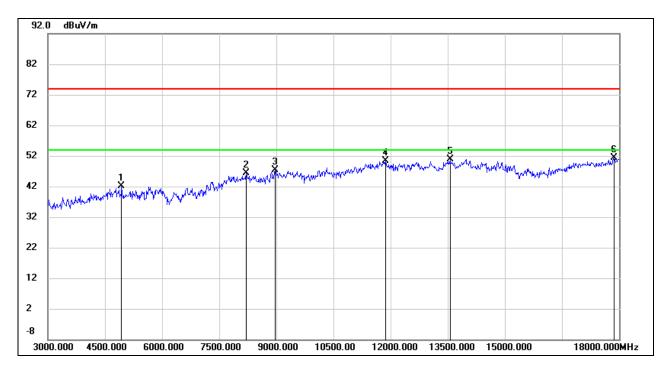


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8235.000	37.77	8.58	46.35	74.00	-27.65	peak
2	8985.000	38.06	9.96	48.02	74.00	-25.98	peak
3	11820.000	33.44	17.32	50.76	74.00	-23.24	peak
4	12675.000	34.81	16.79	51.60	74.00	-22.40	peak
5	13575.000	32.55	18.38	50.93	74.00	-23.07	peak
6	16860.000	33.61	17.99	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



#### HARMONICS AND SPURIOUS EMISSIONS (CHANNEL 13, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4935.000	42.71	-0.55	42.16	74.00	-31.84	peak
2	8205.000	37.65	8.70	46.35	74.00	-27.65	peak
3	8970.000	37.53	9.80	47.33	74.00	-26.67	peak
4	11865.000	33.11	17.24	50.35	74.00	-23.65	peak
5	13560.000	32.60	18.39	50.99	74.00	-23.01	peak
6	17865.000	28.42	23.03	51.45	74.00	-22.55	peak

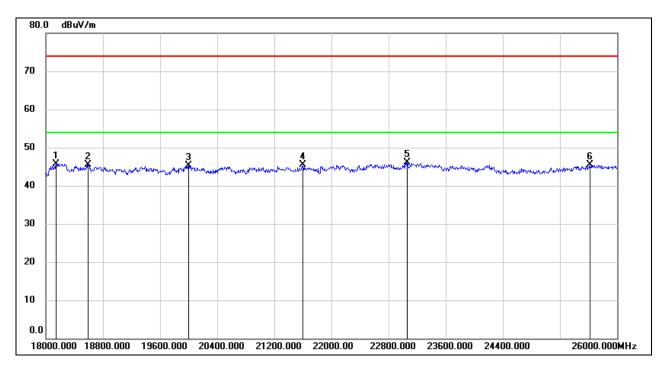
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
  - 5. Proper operation of the transmitter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



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

#### 8.4.1. 802.11b MODE

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18144.000	51.27	-5.48	45.79	74.00	-28.21	peak
2	18592.000	50.75	-5.31	45.44	74.00	-28.56	peak
3	20000.000	50.81	-5.45	45.36	74.00	-28.64	peak
4	21600.000	50.02	-4.54	45.48	74.00	-28.52	peak
5	23064.000	49.49	-3.42	46.07	74.00	-27.93	peak
6	25616.000	46.68	-1.24	45.44	74.00	-28.56	peak

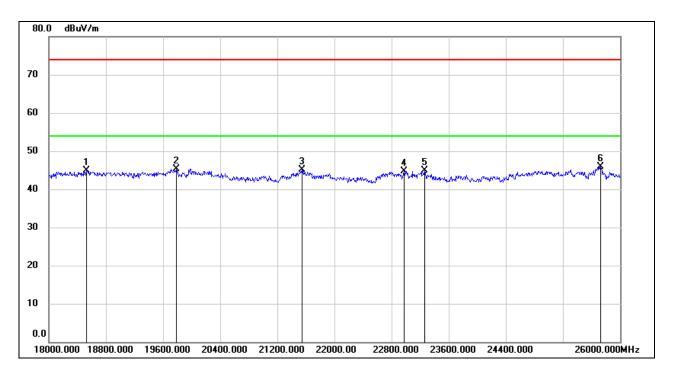
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18528.000	50.11	-5.26	44.85	74.00	-29.15	peak
2	19784.000	50.57	-5.28	45.29	74.00	-28.71	peak
3	21544.000	49.76	-4.63	45.13	74.00	-28.87	peak
4	22976.000	48.26	-3.46	44.80	74.00	-29.20	peak
5	23264.000	48.26	-3.36	44.90	74.00	-29.10	peak
6	25728.000	46.61	-0.72	45.89	74.00	-28.11	peak

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

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

3. Peak: Peak detector.

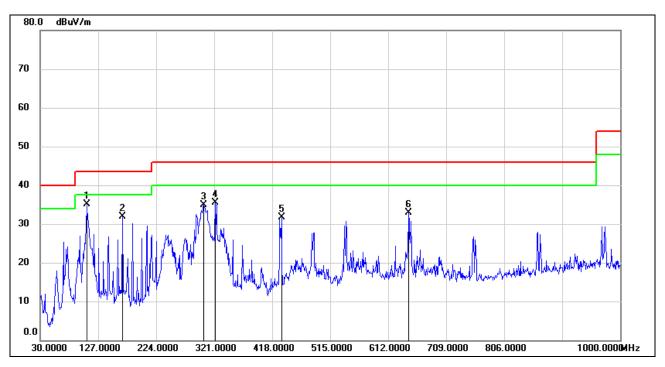
Note: All modes and channels have been tested, only the worst data was recorded in the report.



### 8.5. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

#### 8.5.1. 802.11b MODE

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	107.6000	55.72	-20.58	35.14	43.50	-8.36	QP
2	167.7400	49.38	-17.41	31.97	43.50	-11.53	QP
3	303.5400	50.20	-15.22	34.98	46.00	-11.02	QP
4	322.9400	50.25	-14.75	35.50	46.00	-10.50	QP
5	433.5200	44.38	-12.67	31.71	46.00	-14.29	QP
6	645.9500	42.05	-9.05	33.00	46.00	-13.00	QP

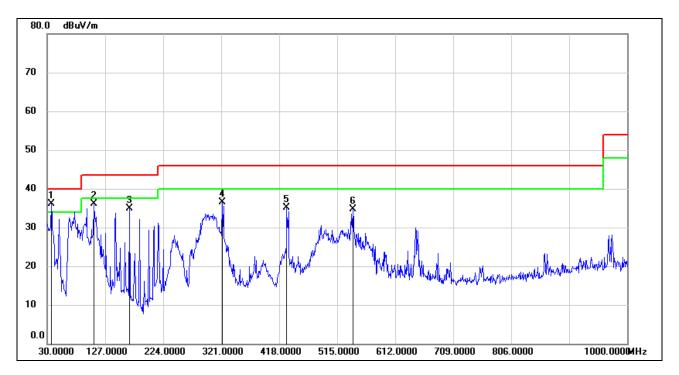
Note: 1. Result Level = Read Level + Correct Factor.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	36.7900	55.75	-19.60	36.15	40.00	-3.85	QP
2	108.5700	56.66	-20.53	36.13	43.50	-7.37	QP
3	167.7400	52.26	-17.41	34.85	43.50	-8.65	QP
4	322.9400	51.20	-14.75	36.45	46.00	-9.55	QP
5	430.6100	47.79	-12.71	35.08	46.00	-10.92	QP
6	541.1900	45.14	-10.49	34.65	46.00	-11.35	QP

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

- 2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
- 3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

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

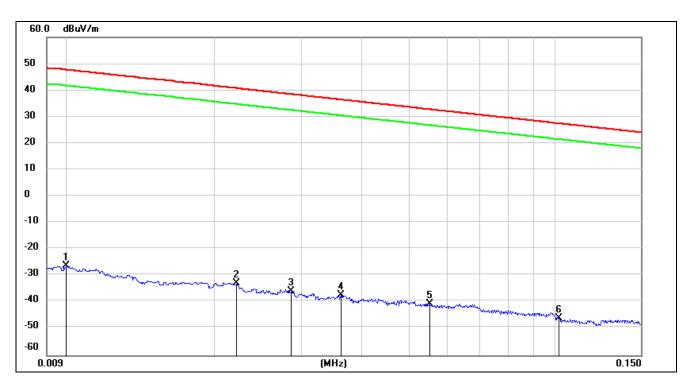


#### 8.6. SPURIOUS EMISSIONS BELOW 30 MHz

#### 8.6.1. 802.11b MODE

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

#### 9 kHz~ 150 kHz



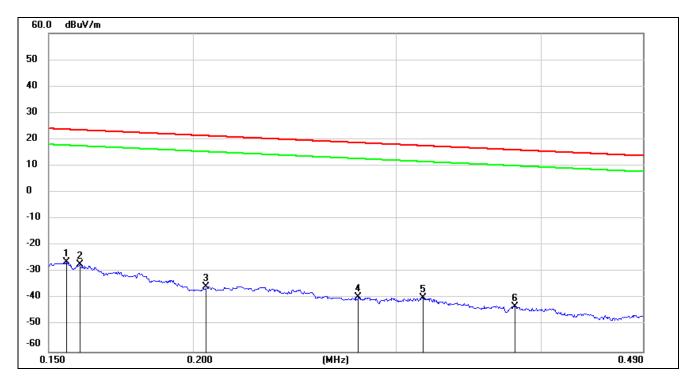
No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0100	75.22	-101.40	-26.18	47.6	-77.68	-3.90	-73.78	peak
2	0.0221	68.63	-101.35	-32.72	40.71	-84.22	-10.79	-73.43	peak
3	0.0286	65.46	-101.38	-35.92	38.47	-87.42	-13.03	-74.39	peak
4	0.0362	64.01	-101.42	-37.41	36.43	-88.91	-15.07	-73.84	peak
5	0.0551	60.95	-101.50	-40.55	32.78	-92.05	-18.72	-73.33	peak
6	0.1019	55.85	-101.79	-45.94	27.44	-97.44	-24.06	-73.38	peak

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

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



#### 150 kHz ~ 490 kHz



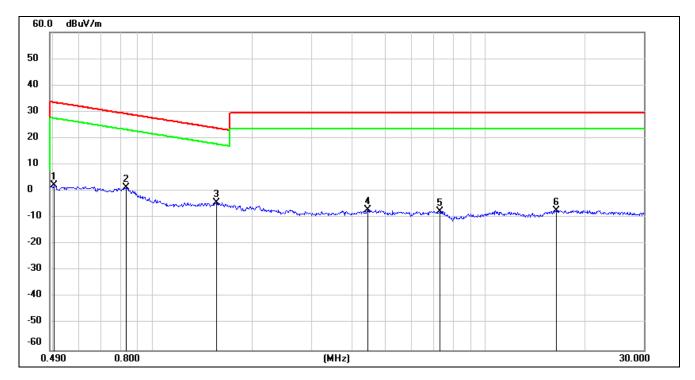
No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1554	75.27	-101.65	-26.38	23.77	-77.88	-27.73	-50.15	peak
2	0.1595	74.36	-101.65	-27.29	23.55	-78.79	-27.95	-50.84	peak
3	0.2053	66.29	-101.73	-35.44	21.35	-86.94	-30.15	-56.79	peak
4	0.2782	62.29	-101.83	-39.54	18.71	-91.04	-32.79	-58.25	peak
5	0.3163	62.20	-101.87	-39.67	17.6	-91.17	-33.90	-57.27	peak
6	0.3800	59.02	-101.94	-42.92	16.01	-94.42	-35.49	-58.93	peak

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

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



#### 490 kHz ~ 30 MHz



No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.5040	64.44	-62.07	2.37	33.56	-49.13	-17.94	-31.19	peak
2	0.8296	63.44	-62.17	1.27	29.23	-50.23	-22.27	-27.96	peak
3	1.5564	57.68	-62.02	-4.34	23.76	-55.84	-27.74	-28.10	peak
4	4.4443	54.29	-61.40	-7.11	29.54	-58.61	-21.96	-36.65	peak
5	7.3361	53.58	-61.17	-7.59	29.54	-59.09	-21.96	-37.13	peak
6	16.3959	53.67	-60.96	-7.29	29.54	-58.79	-21.96	-36.83	peak

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

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

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



9. AC POWER LINE CONDUCTED EMISSIONS

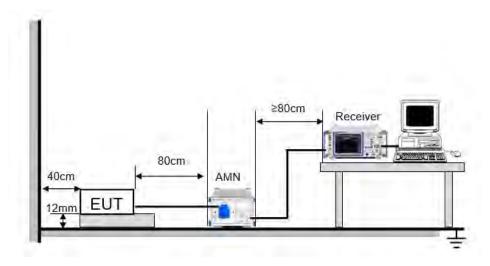
#### **LIMITS**

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

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

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

Refer to ANSI C63.10-2013 clause 6.2.



The EUT is put on a table of non-conducting material that is 12 mm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

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

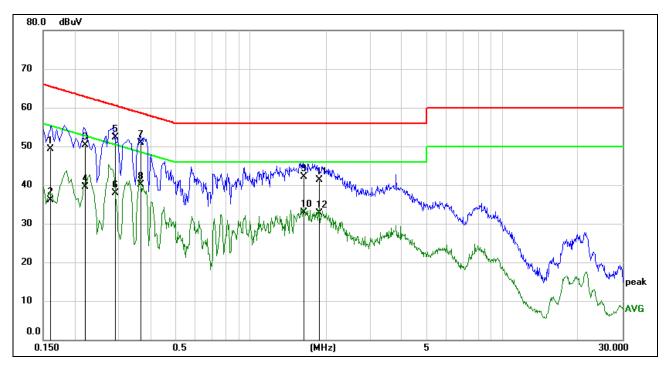
#### **TEST ENVIRONMENT**

Temperature	27.6 °C	Relative Humidity	64.8 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V, 60 Hz



#### 9.1.1. 802.11b MODE

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



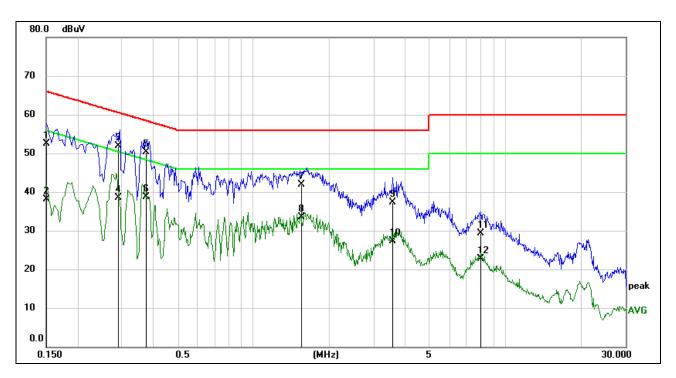
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1601	39.77	9.59	49.36	65.46	-16.10	QP
2	0.1601	26.54	9.59	36.13	55.46	-19.33	AVG
3	0.2198	40.78	9.59	50.37	62.83	-12.46	QP
4	0.2198	29.92	9.59	39.51	52.83	-13.32	AVG
5	0.2907	42.75	9.59	52.34	60.50	-8.16	QP
6	0.2907	28.27	9.59	37.86	50.50	-12.64	AVG
7	0.3669	41.40	9.59	50.99	58.57	-7.58	QP
8	0.3669	30.44	9.59	40.03	48.57	-8.54	AVG
9	1.6350	32.55	9.62	42.17	56.00	-13.83	QP
10	1.6350	23.38	9.62	33.00	46.00	-13.00	AVG
11	1.8795	31.77	9.62	41.39	56.00	-14.61	QP
12	1.8795	23.07	9.62	32.69	46.00	-13.31	AVG

Note: 1. Result = Reading +Correct Factor.

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1501	43.00	9.59	52.59	65.99	-13.40	QP
2	0.1501	28.57	9.59	38.16	55.99	-17.83	AVG
3	0.2903	42.40	9.59	51.99	60.52	-8.53	QP
4	0.2903	28.91	9.59	38.50	50.52	-12.02	AVG
5	0.3738	40.63	9.59	50.22	58.42	-8.20	QP
6	0.3738	29.15	9.59	38.74	48.42	-9.68	AVG
7	1.5502	32.38	9.62	42.00	56.00	-14.00	QP
8	1.5502	23.97	9.62	33.59	46.00	-12.41	AVG
9	3.5695	27.63	9.61	37.24	56.00	-18.76	QP
10	3.5695	17.63	9.61	27.24	46.00	-18.76	AVG
11	8.0171	19.67	9.61	29.28	60.00	-30.72	QP
12	8.0171	13.05	9.61	22.66	50.00	-27.34	AVG

Note: 1. Result = Reading +Correct Factor.

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

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



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### 10. ANTENNA REQUIREMENTS

### APPLICABLE REQUIREMENTS

### Please refer to FCC §15.203

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

#### Please refer to FCC §15.247(b)(4)

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

#### **RESULTS**

Complies

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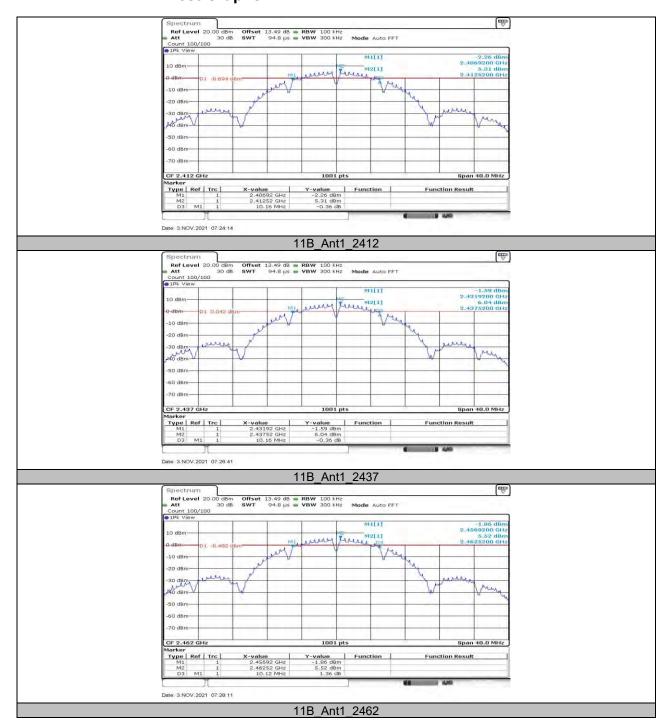
# 11. Appendix

# 11.1. Appendix A: DTS Bandwidth 11.1.1. Test Result

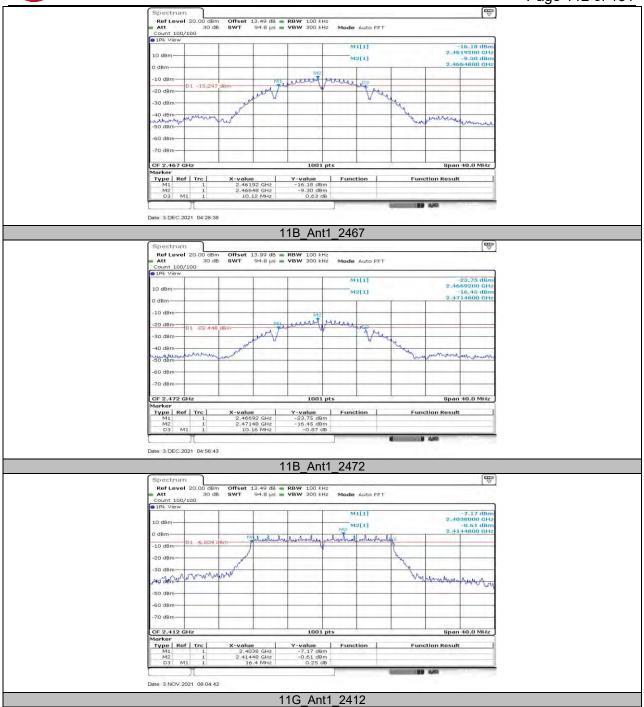
Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		2412	10.160	2406.920	2417.080	0.5	PASS
		2437	10.160	2431.920	2442.080	0.5	PASS
11B	Ant1	2462	10.120	2456.920	2467.040	0.5	PASS
		2467	10.120	2461.920	2472.040	0.5	PASS
		2472	10.160	2466.920	2477.080	0.5	PASS
	Ant1	2412	16.400	2403.800	2420.200	0.5	PASS
		2437	16.400	2428.800	2445.200	0.5	PASS
11G		2462	16.400	2453.800	2470.200	0.5	PASS
		2467	16.400	2458.800	2475.200	0.5	PASS
		2472	16.400	2463.800	2480.200	0.5	PASS
		2412	17.680	2403.160	2420.840	0.5	PASS
11N20SISO		2437	17.680	2428.160	2445.840	0.5	PASS
	Ant1	2462	17.800	2453.080	2470.880	0.5	PASS
		2467	17.760	2458.080	2475.840	0.5	PASS
		2472	17.680	2463.160	2480.840	0.5	PASS



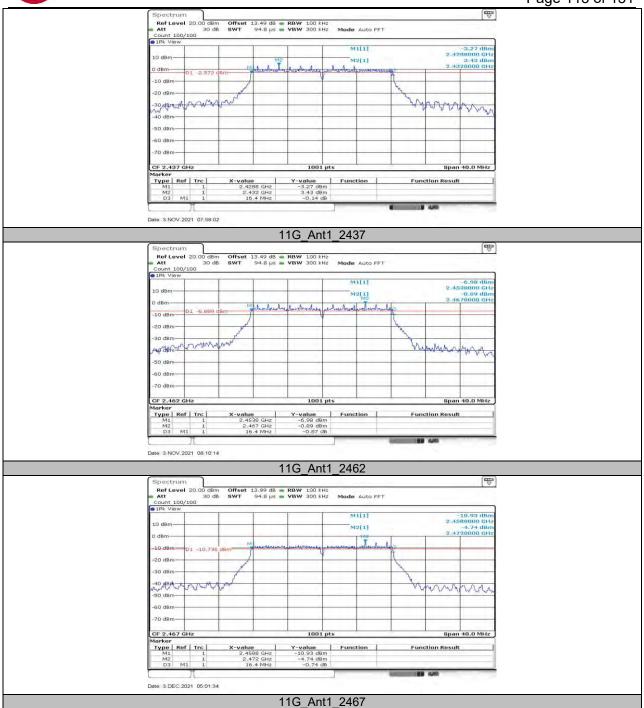
## 11.1.2. Test Graphs



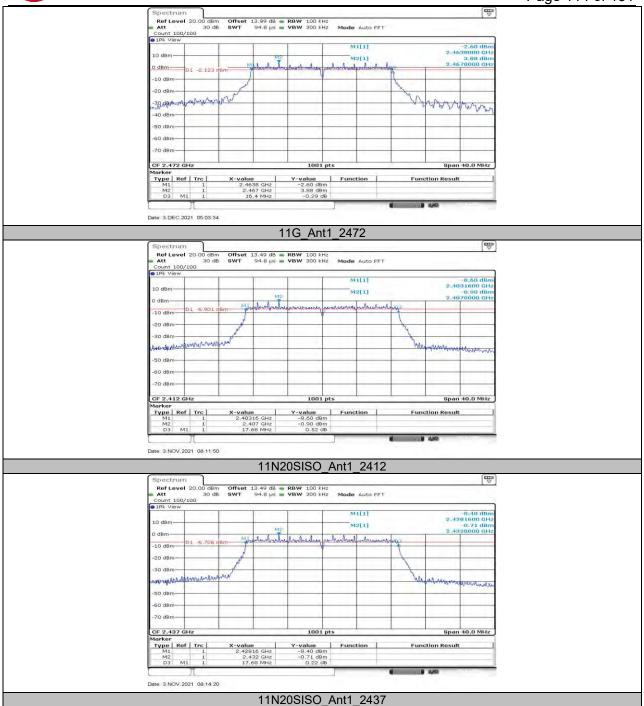




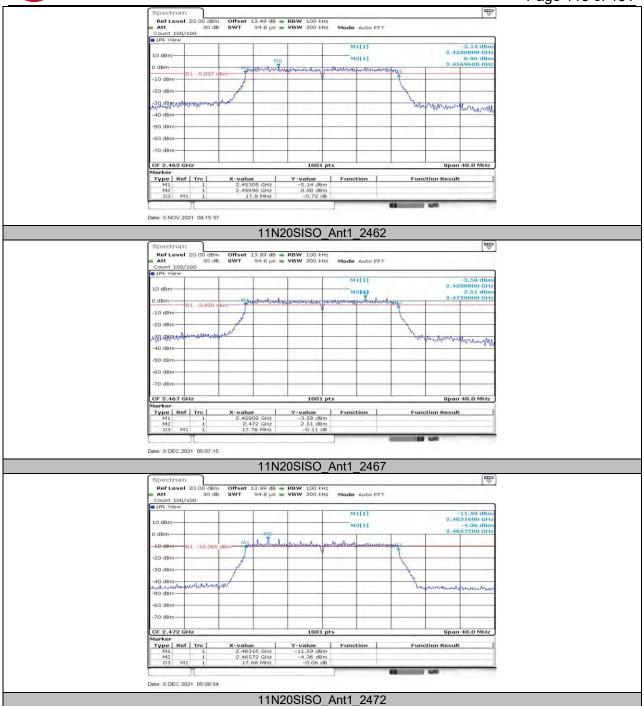












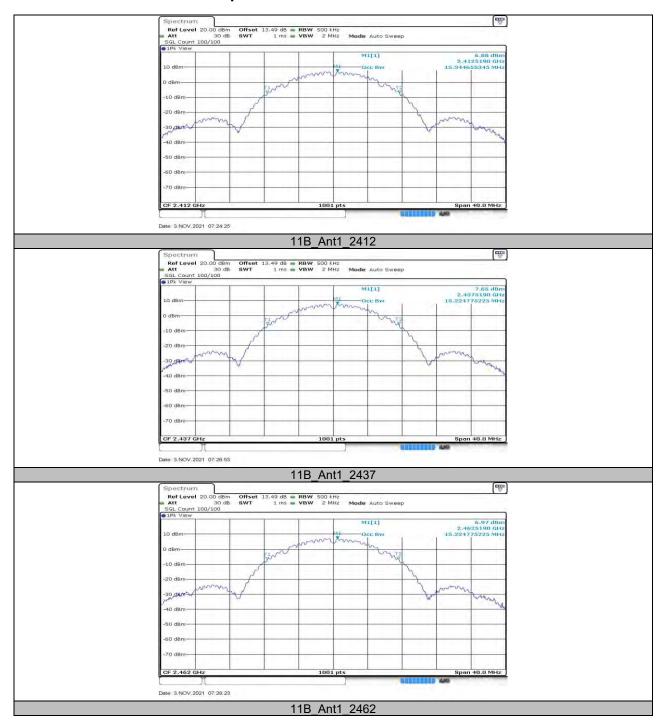


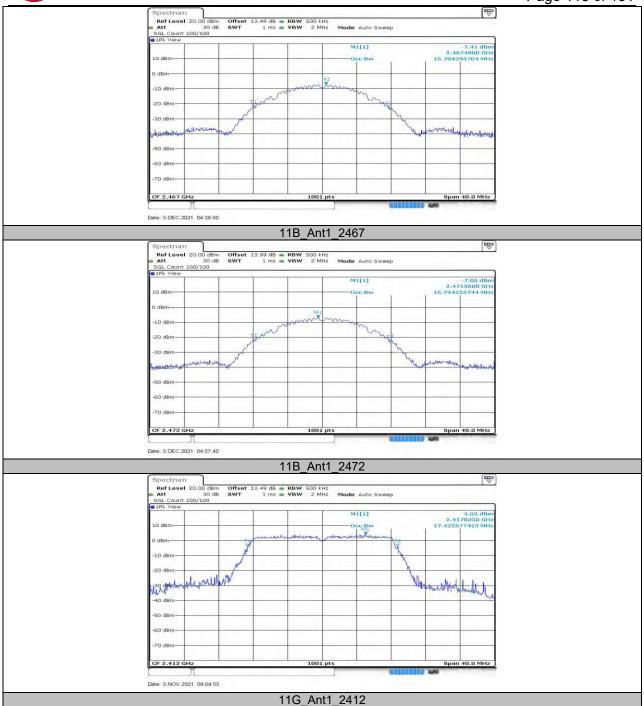
11.2. Appendix B: Occupied Channel Bandwidth 11.2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
		2412	15.345	2404.368	2419.712	PASS
		2437	15.225	2429.408	2444.632	PASS
11B	Ant1	2462	15.225	2454.368	2469.592	PASS
		2467	15.704	2459.048	2474.752	PASS
		2472	15.744	2464.128	2479.872	PASS
		2412	17.423	2403.329	2420.751	PASS
		2437	17.463	2428.249	2445.711	PASS PASS PASS PASS PASS PASS PASS PASS
11G	Ant1	2462	17.423	2453.249	2470.671	
		2467	17.423	2458.249	2475.671	PASS
		2472	17.542	2463.209	2480.751	PASS
		2412	18.302	2402.889	2421.191	PASS
		2437	18.342	2427.849	2446.191	PASS
11N20SISO	Ant1	2462	18.382	2452.809	2471.191	PASS PASS PASS PASS PASS PASS PASS PASS
		2467	18.462	2457.769	2476.231	PASS
		2472	18.222	2462.889	2481.111	PASS

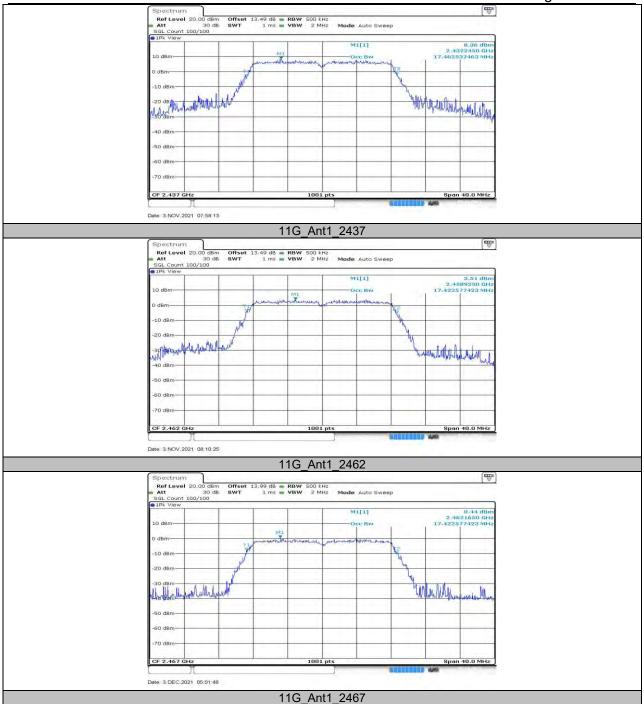


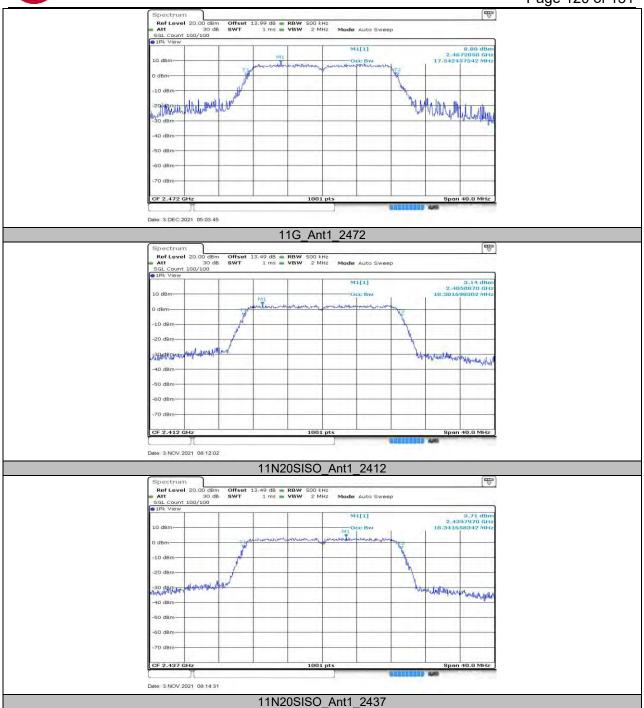
## 11.2.2. Test Graphs



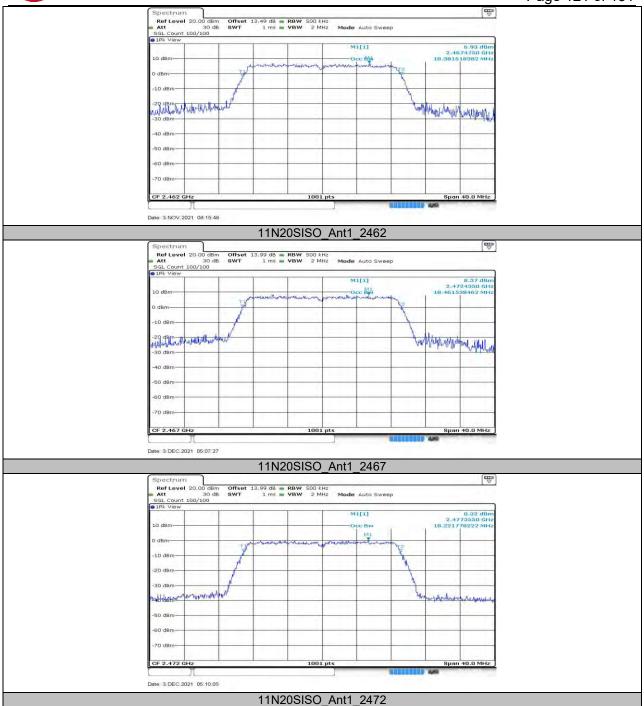














# 11.3. Appendix C: Maximum conducted output power 11.3.1. Test Result

Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict	
		2412	14.95	≤30	PASS	
		2437	15.63	≤30	PASS	
11B	Ant1	2462	14.94	≤30	PASS	
		2467	0.70	≤30	PASS	
		2472	-6.96	≤30	PASS	
		2412	10.48	≤30	PASS	
		2437	10.80	≤30	PASS PASS PASS	
11G	Ant1	2462	10.10	≤30	PASS	
		2467	6.26	≤30	PASS PASS	
		2472	5.32	≤30	PASS	
		2412	9.94	≤30	PASS	
		2437	10.23	≤30	PASS	
11N20SISO	Ant1	2462	9.57	≤30	PASS	
		2467	9.02	≤30	PASS	
		2472	6.75	≤30	PASS	

Note: 1. Conducted Power=Meas. Level+ Correction Factor

<sup>2.</sup> The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.

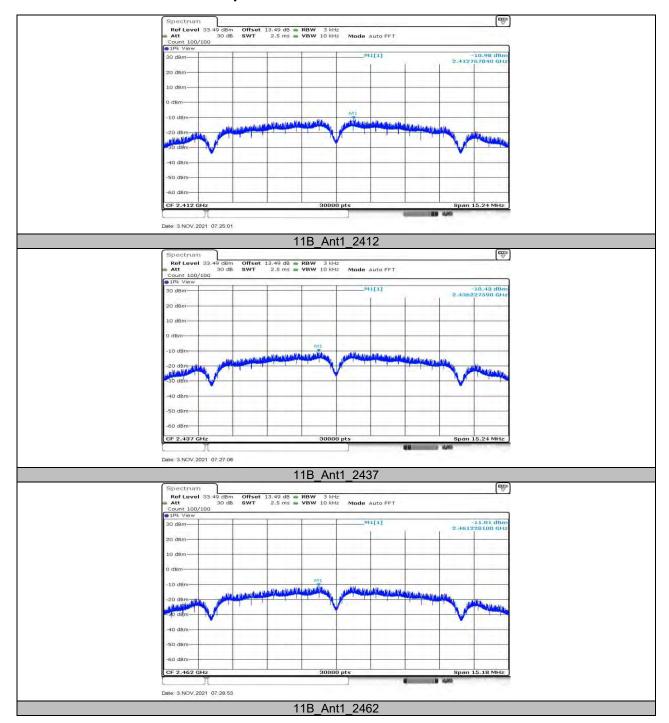


11.4. Appendix D: Maximum power spectral density 11.4.1. Test Result

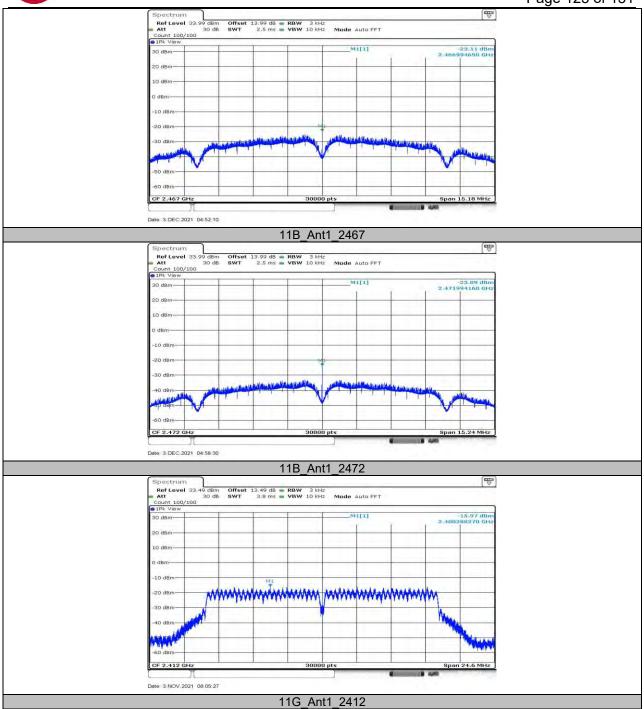
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict	
		2412	-10.98	≤8	PASS	
		2437	-10.43	≤8	PASS	
11B	Ant1	2462	-11.01	≤8	PASS PASS	
		2467	-23.11			
		2472	-23.89	≤8	PASS	
		2412	-15.97	≤8	PASS	
		2437	-16.11	≤8	PASS	
11G	Ant1	2462	-16.65	≤8	PASS	
		2467	-20.87	≤8	PASS PASS	
		2472	-21.63	≤8	PASS	
11N20SISO		2412	-16.5	≤8	PASS	
		2437	-17.01	≤8	PASS	
	Ant1	2462	-17.73	≤8	PASS	
		2467	-17.16	≤8	PASS	
		2472	-20.41	≤8	PASS	



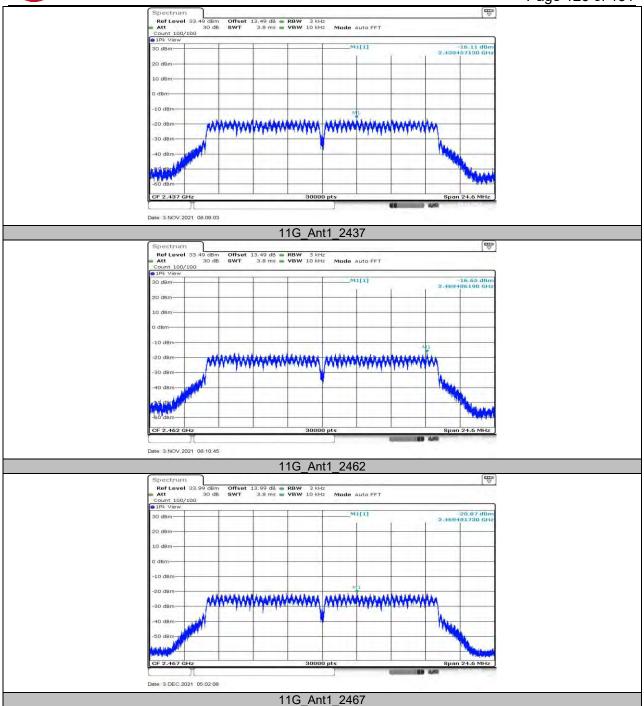
## 11.4.2. Test Graphs

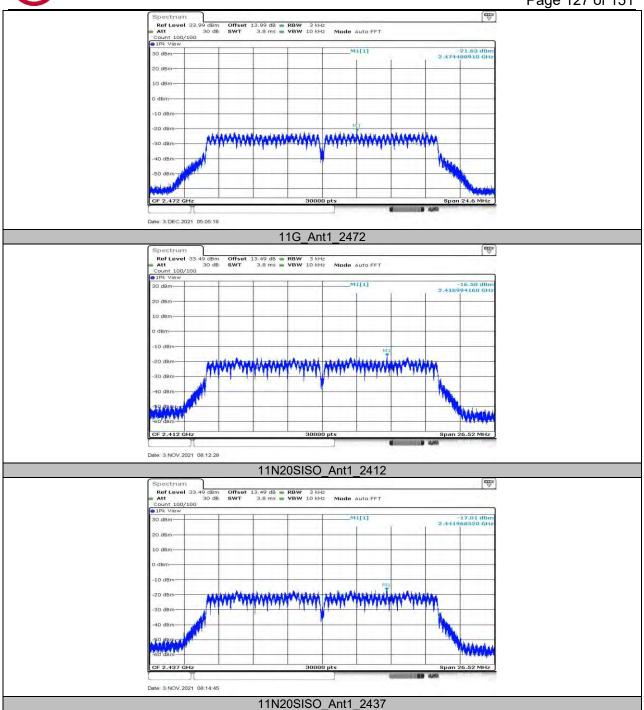




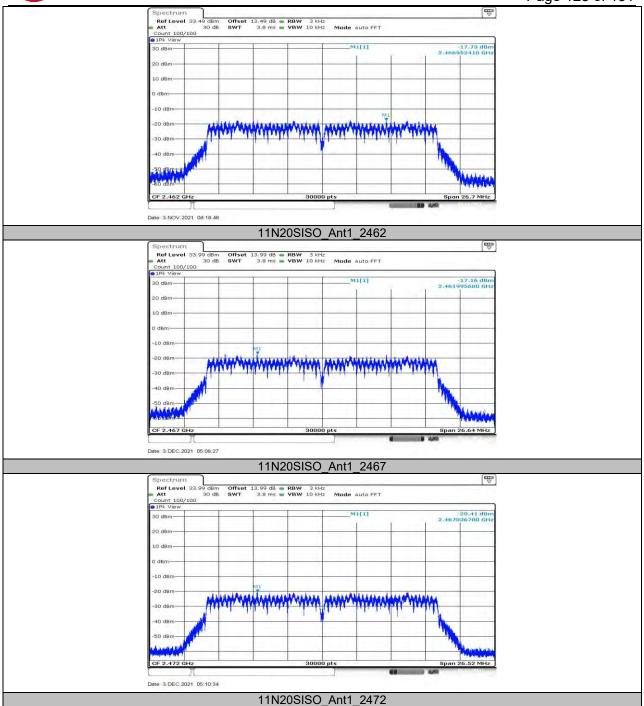












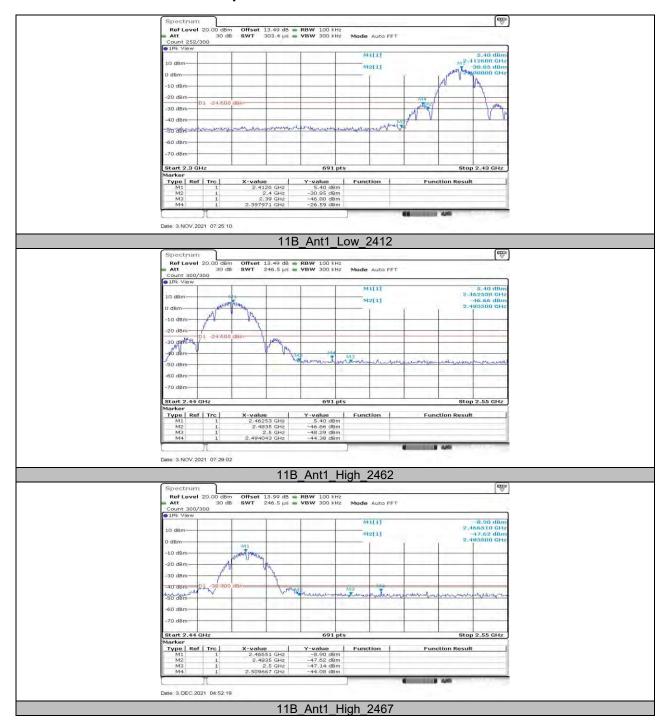


11.5. Appendix E: Band edge measurements 11.5.1. Test Result

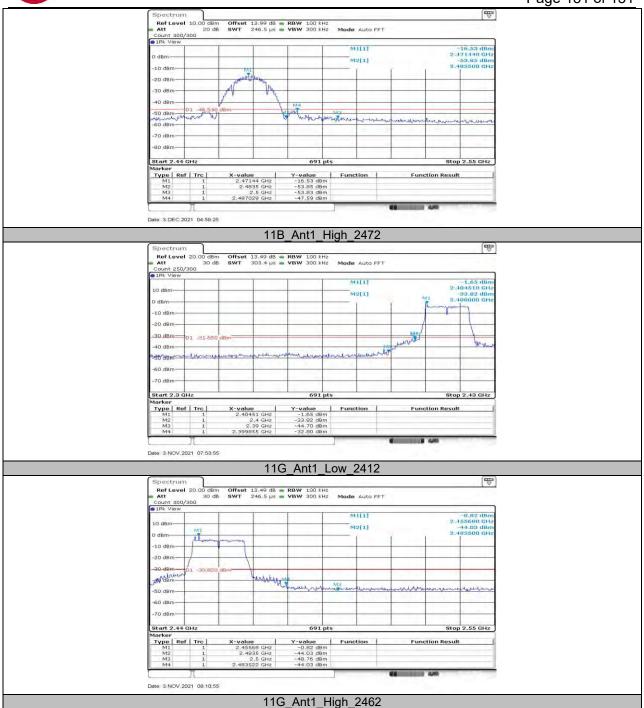
Test Mode	Antenna	ChName	Channel	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict		
		Low	2412	5.40	-26.59	≤-24.6	PASS		
110	A m+1	High	2462	5.40	-44.38	≤-24.6	PASS		
11B	Ant1		2467	-8.90	-44.08	≤-38.9	PASS		
				2472	-16.53	-47.59	≤-46.53	PASS	
11G	Ant1	Low	2412	-1.65	-32.8	≤-31.65	PASS		
		nt1 High	2462	-0.82	-44.03	≤-30.82	PASS		
			2467	-5.89	-41.94	≤-35.89	PASS		
				2472	-5.79	-41.23	≤-35.79	PASS	
11N20SISO				Low	2412	-2.32	-33.79	≤-32.32	PASS
	Ant1	Ant1 High	2462	-0.73	-37.32	≤-30.73	PASS		
	AIILI		2467	-2.09	-42.23	≤-32.09	PASS		
				2472	-5.64	-43.05	≤-35.64	PASS	



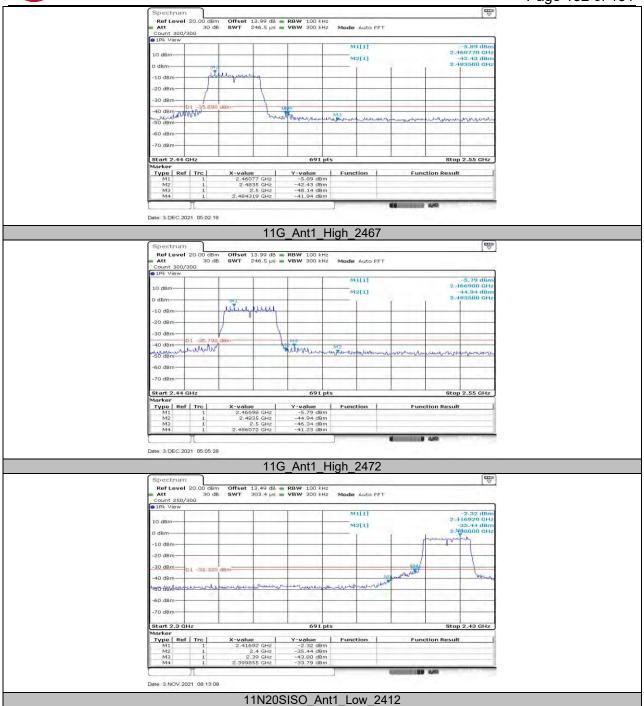
## 11.5.2. Test Graphs

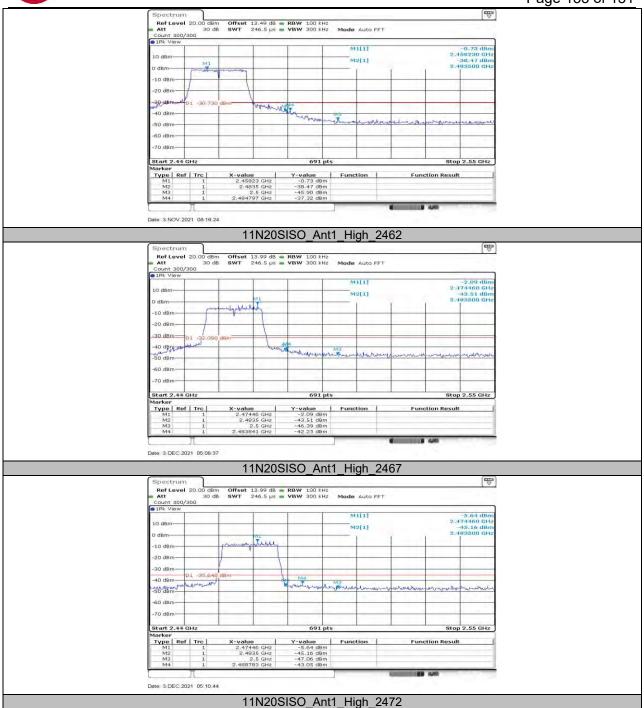












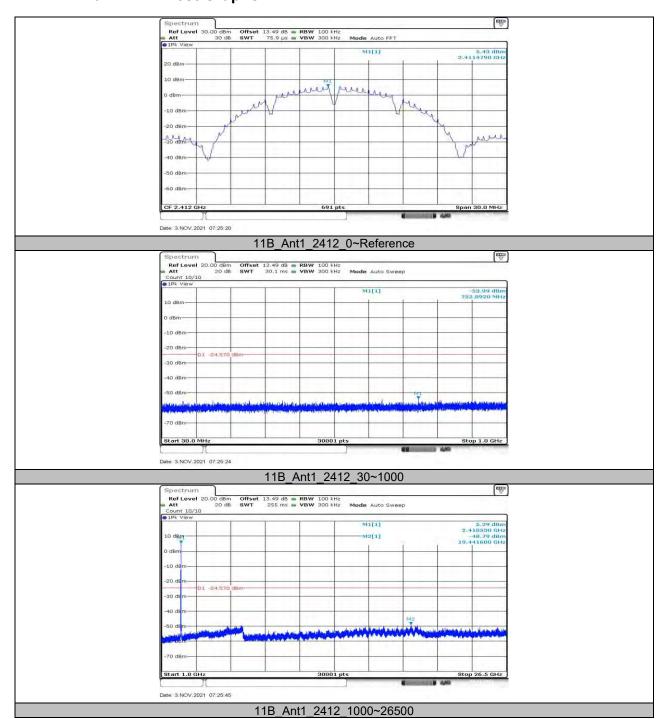


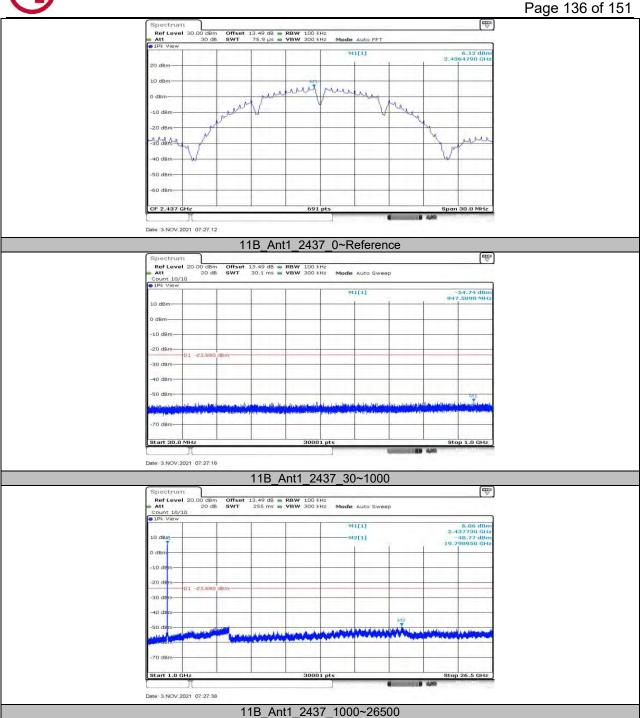
# 11.6. Appendix F: Conducted Spurious Emission 11.6.1. Test Result

Test Mode	Antenna	Channel	FreqRange [Mhz]	Result [dBm]	Limit [dBm]	Verdict			
			Reference	5.43		PASS			
		2412	30~1000	-53.99	≤-24.57	PASS			
			1000~26500	-48.79	≤-24.57	PASS			
			Reference	6.12		PASS			
		2437	30~1000	-54.74	≤-23.88	PASS			
			1000~26500	-48.77	≤-23.88	PASS			
			Reference	5.47		PASS			
11B	Ant1	2462	30~1000	-54.72	≤-24.53	PASS			
			1000~26500	-49.42	≤-24.53	PASS			
			Reference	-8.88		PASS			
		2467	30~1000	-53.69	≤-38.88	PASS			
			1000~26500	-48.47	≤-38.88	PASS			
			Reference	-16.48		PASS			
		2472	30~1000	-53.46	≤-46.48	PASS			
			1000~26500	-48.93	≤-46.48				
			Reference	-1.53					
		2412	30~1000	-54.68	≤-31.53				
		1000~26500 -49.44	≤-31.53						
			Reference	-1.79					
		2437	30~1000	-54.23	≤-31.79				
			1000~26500	-49.08	≤-31.79				
			Reference	-0.67		PASS PASS			
11G	Ant1	2462	30~1000	-54.91	≤-30.67				
110	7 4161	2 102	1000~26500	-49.06	≤-30.67	PASS PASS			
			Reference	-4.74					
		2467	30~1000	-54.01	≤-34.74				
		2401	1000~26500	-48.34	≤-34.74				
			Reference	-6.03	=-04.14				
		2472	30~1000	-54.15	≤-36.03				
		2412	1000~26500	-48.87	≤-36.03				
			Reference	-3.06	<u></u>				
		2412	30~1000	-55.16	≤-33.06				
		2712	1000~26500	-48.86	≤-33.06	PASS   PASS			
			Reference	-1.96	<u> </u>				
		2437	30~1000	-54.5	 ≤-31.96				
		2437	1000~26500	-48.81	≤-31.96 ≤-31.96	PASS PASS PASS PASS PASS PASS PASS PASS			
11N20SISO				2.72	2-31.80				
	Ant1	2462	Reference		 < 27 20				
	AIILI	2402	30~1000 1000~26500	-54.14	≤-27.28 ≤-27.28				
				-49.58					
		0407	Reference	-2.18					
		2467	30~1000	-52.92	≤-32.18				
			1000~26500	-47.9	≤-32.18				
		0.470	Reference	-5.15					
		2472	30~1000	-53.34	≤-35.15				
					1000~26500	-48.52	≤-35.15	PASS	

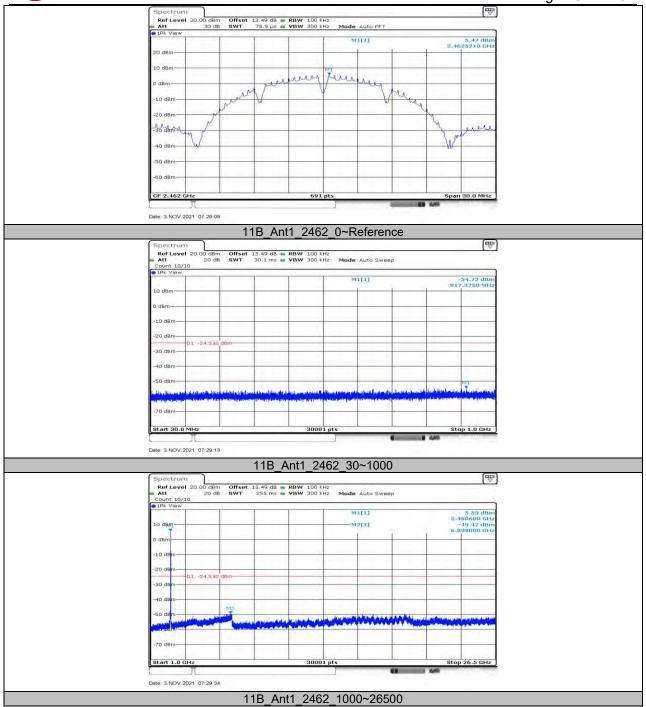


## 11.6.2. Test Graphs

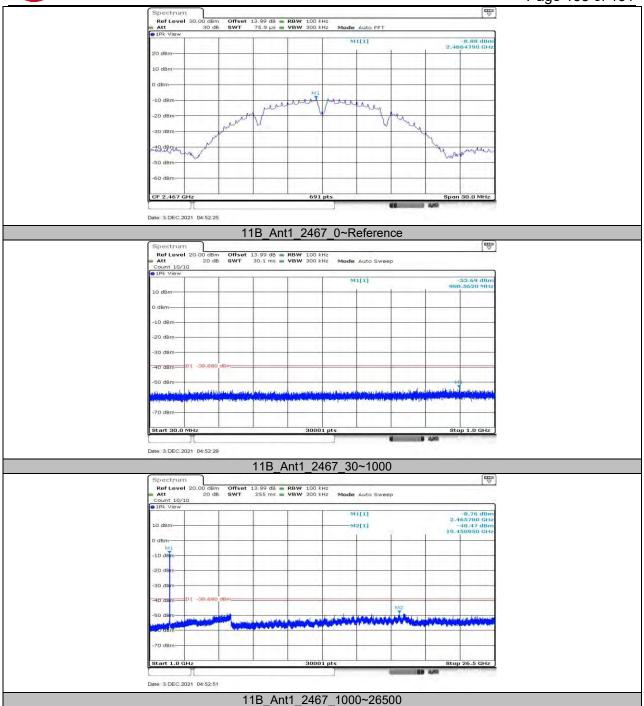


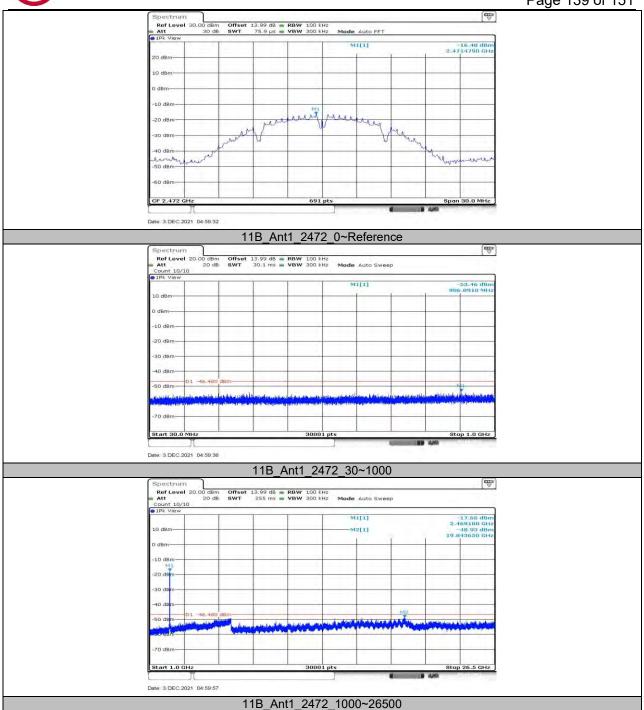


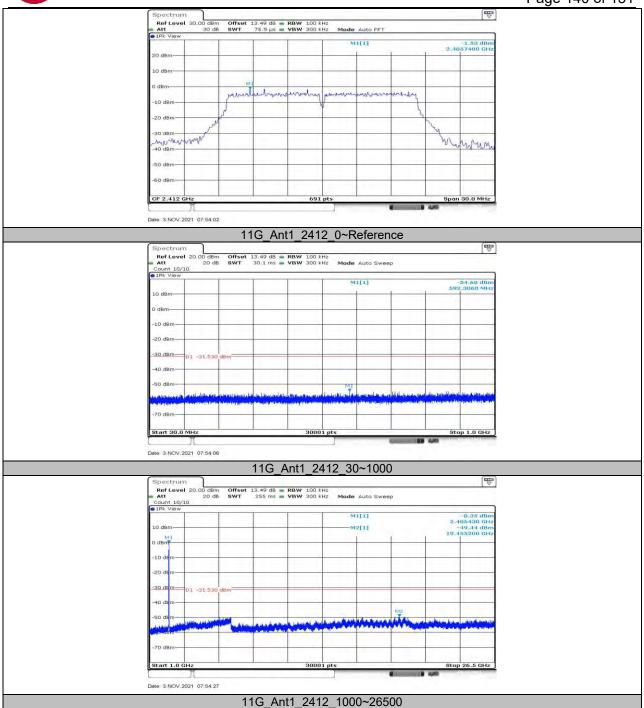
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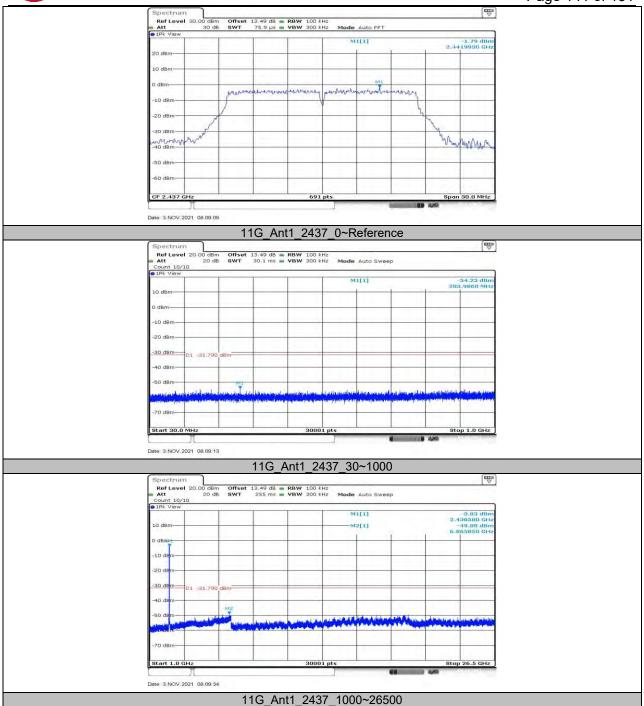




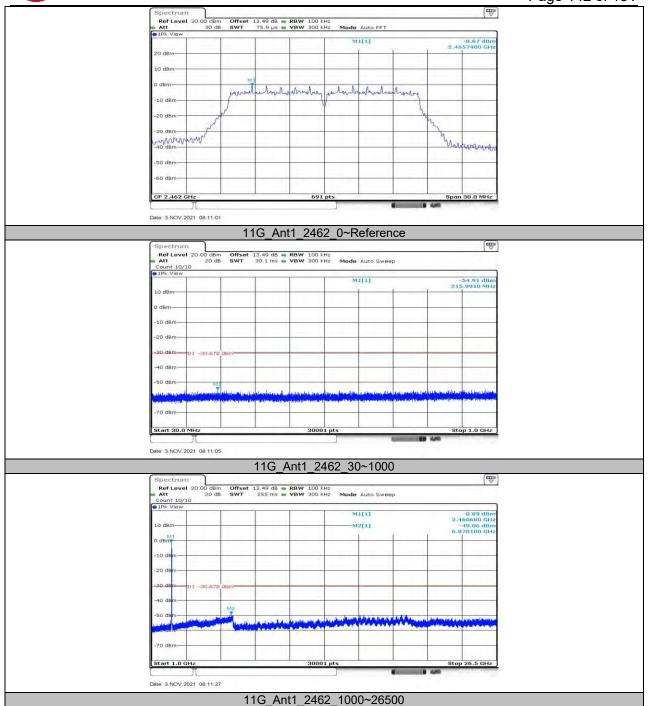


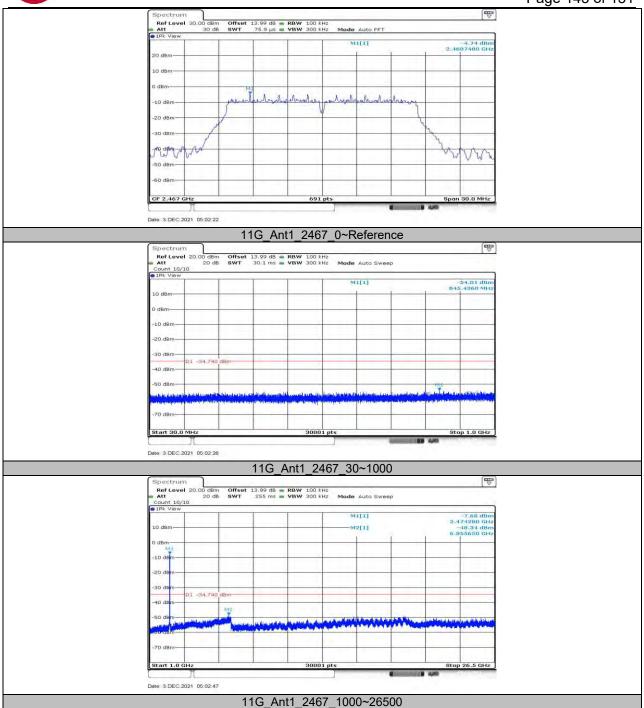


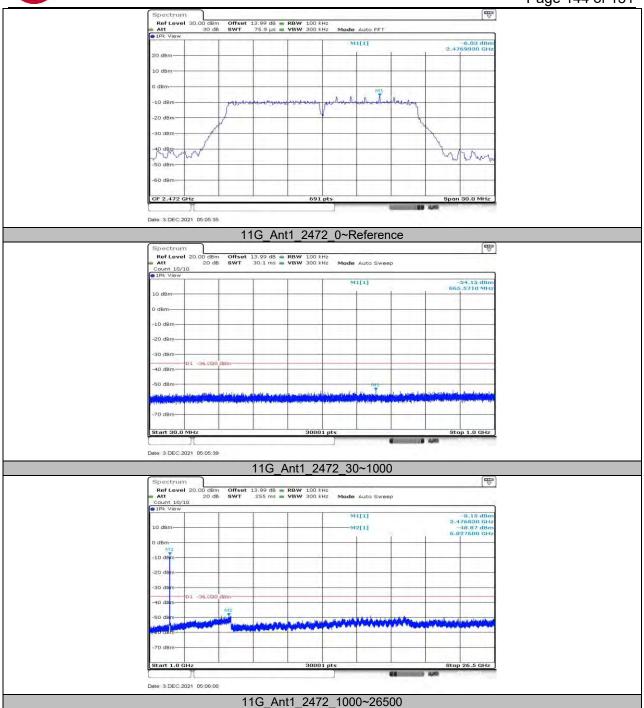




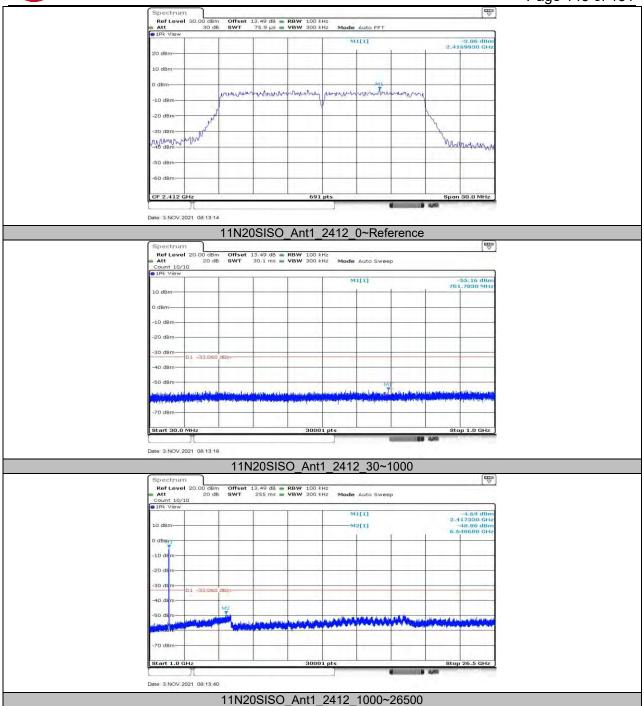




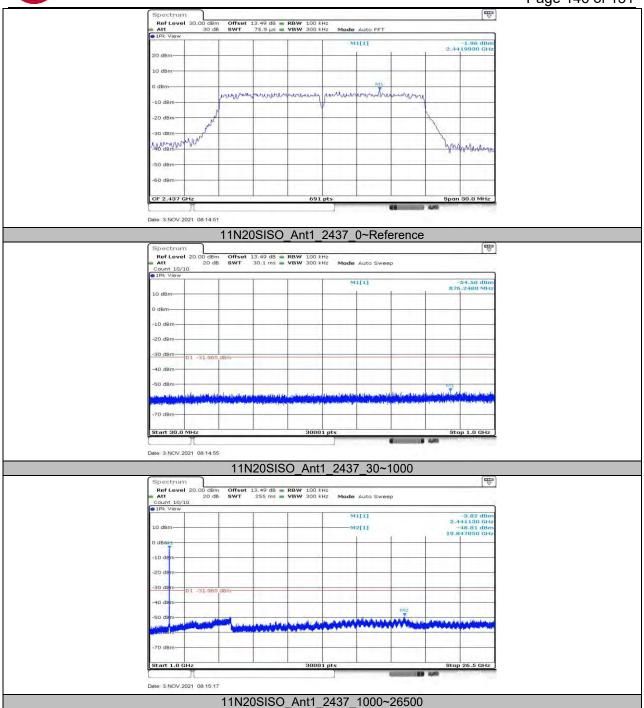




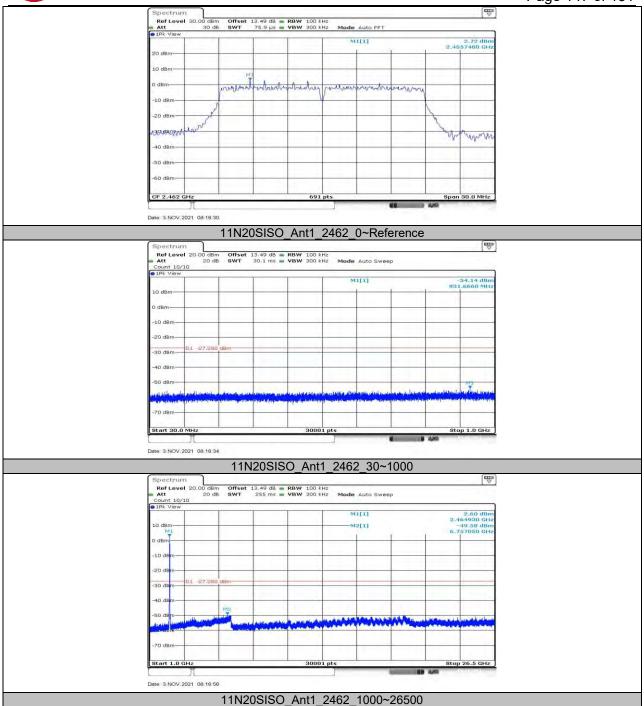




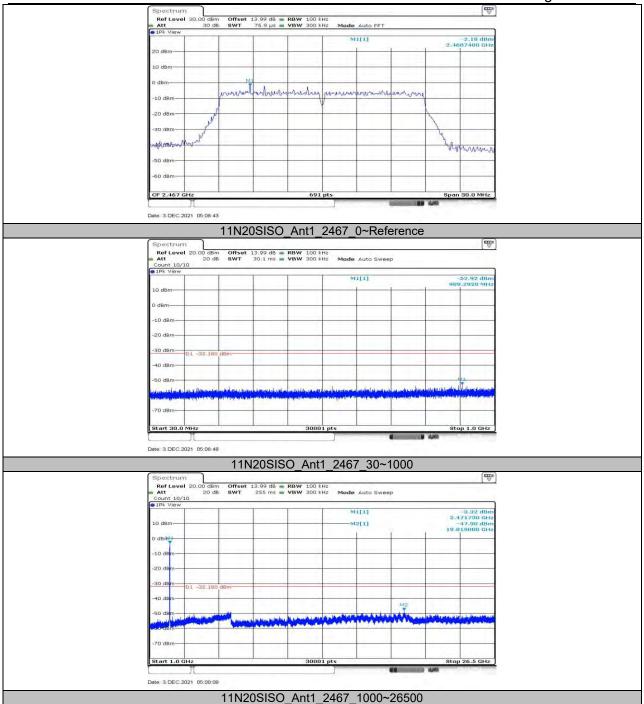




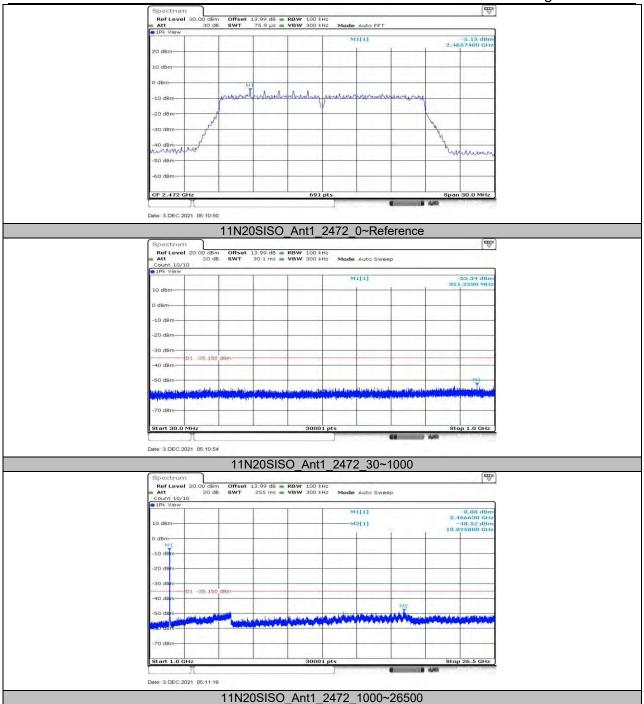














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# 11.7. Appendix G: Duty Cycle 11.7.1. Test Result

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/T Minimum VBW (kHz)	Final setting For VBW (kHz)
11B	8.36	8.43	0.9917	99.17	0.04	0.12	0.5
11G	1.38	1.45	0.9517	95.17	0.21	0.72	1
11N20SISO	5.07	5.13	0.9883	98.83	0.05	0.20	0.5

Note:

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

Where: x is Duty Cycle (Linear)

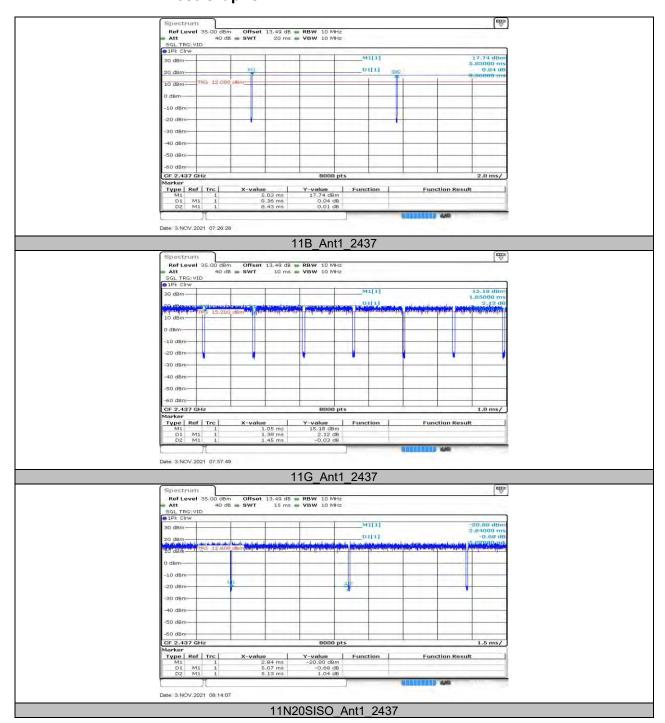
Where: T is On Time

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

used.



## 11.7.2. Test Graphs



## **END OF REPORT**