



# CFR 47 FCC PART 15 SUBPART C ISED RSS-247 Issue 3

#### **TEST REPORT**

For

Motion Button Dimmer
MODEL NUMBER: CSWDMOCK3T1/MSWF

Series MODEL NAME: Button Dimmer Series MODEL NUMBER: CSWDMBLK3T1/MSWF

REPORT NUMBER: 4791699242-1-RF-1

**ISSUE DATE: April 7, 2025** 

FCC ID: PUU-CSWDMXXK3T1 IC: 10798A-CSWDMXXK3T1

Prepared for

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Prepared by

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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	April 7, 2025	Initial Issue	



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# **Summary of Test Results**

Test Item	Clause	Limit/Requirement	Result
Antenna Requirement	N/A	FCC Part 15.203/15.247 (c) RSS-GEN Clause 6.8	Pass
AC Power Line Conducted Emission	ANSI C63.10-2013, Clause 6.2	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
Conducted Output Power	ANSI C63.10-2013, Clause 11.9.2.3.1	FCC Part 15.247 (b)(3) RSS-247 Clause 5.4 (d)	Pass
6dB Bandwidth and 99% Occupied Bandwidth	ANSI C63.10-2013, Clause 11.8.1	FCC Part 15.247 (a)(2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
Power Spectral Density	ANSI C63.10-2013, Clause 11.10.5	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
Conducted Band edge and spurious emission	ANSI C63.10-2013, Clause 11.11	FCC Part 15.247(d) RSS-247 Clause 5.5	Pass
Radiated Band edge and Spurious Emission	ANSI C63.10-2013, Clause 11.12 & Clause 11.13	FCC Part 15.247 (d) FCC Part 15.205/15.209 RSS-247 Clause 5.5 RSS-GEN Clause 8.9	Pass
Duty Cycle	ANSI C63.10-2013, Clause 11.6	None; for reporting purposes only.	Pass

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

<sup>\*</sup>The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C

ISED RSS-247 Issue 3> when <Simple Acceptance> decision rule is applied.



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## 1. ATTESTATION OF TEST RESULTS

**Applicant Information** 

Company Name: Savant Technologies LLC, dba GE Lighting, a Savant Company

Address: 1975 Noble Road Cleveland OH 44112 USA

**Manufacturer Information** 

Company Name: Savant Technologies LLC, dba GE Lighting, a Savant Company

Address: 1975 Noble Road Cleveland OH 44112 USA

**EUT Information** 

**Operations Manager** 

EUT Name: Motion Button Dimmer

Model: CSWDMOCK3T1/MSWF

Series Model Name: Button Dimmer

Series Model: CSWDMBLK3T1/MSWF

Sample Received Date: March 6, 2025

Sample Status: Normal Sample ID: 8205281

Date of Tested: March 12, 2025 to April 7, 2025

APPLICABLE STANDARDS				
STANDARD TEST RESULTS				
CFR 47 FCC PART 15 SUBPART C	Dana			
ISED RSS-247 Issue 3	Pass			

Prepared By:	Checked By:
Jamson-Liu	kebo. Thurs
Johnson Liu	Kebo Zhang
Laboratory Engineer	Senior Project Engineer
Approved By:	
Stephen Emo	
Stephen Guo	



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### 2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C ISED RSS-247 Issue 3, KDB 558074 D01 15.247 Meas Guidance v05r02, KDB 414788 D01 Radiated Test Site v01r01, KDB 662911 D01 Multiple Transmitter Output v02r01, CFR 47 FCC Part 2, ANSI C63.10-2013 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)
Accreditation Certificate	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules.
	ISED (Company No.: 21320)  UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046.

#### Note 1:

All tests measurement facilities use to collect the measurement data are located at Room 101, Building 2, Zhihui City Phase I, No.4, Information Road, Songshan Lake, Dongguan, Guangdong, 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

### 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 recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty		
Conduction emission	3.62 dB		
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB		
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB		
Radiated Emission	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			

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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# 5. EQUIPMENT UNDER TEST

# 5.1. DESCRIPTION OF EUT

EUT Name:	Motion Button Dimmer	
Model:	CSWDMOCK3T1/MSWF	
Series Name:	Button Dimmer	
Series Model:	CSWDMBLK3T1/MSWF	
Model Difference: Please refer to the OD.		

Frequency Range:	2412 MHz to 2462 MHz
Type of Modulation:	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g/n: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
Radio Technology:	IEEE 802.11b/g/n-HT20
Normal Test Voltage:	AC 120 V, 60 Hz

## 5.2. CHANNEL LIST

	Channel List For Bandwidth=20 MHz						
Channel	Frequency (MHz)	Channel	II Channel I		Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

## 5.3. MAXIMUM POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	19.48
g	2412 ~ 2462	1-11[11]	14.28
n HT20	2412 ~ 2462	1-11[11]	13.81

## 5.4. TEST CHANNEL CONFIGURATION

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

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#### 5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band									
Test Softw	<i>r</i> are		MP Tool						
M LLC	Transmit		Test Channel						
Modulation Mode	Antenna	1	NCB: 20MF	łz	NCB: 40MHz				
Wode	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9		
802.11b	1	108	108	108					
802.11g	1	98 98 98 /							
802.11n HT20	1	96	96	96	1				

# WORST-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

802.11b/g/n only support SISO mode.

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

### 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	PCB antenna	2.81

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.			



5.7. SUPPORT UNITS FOR SYSTEM TEST

### **SUPPORT EQUIPMENT**

Item	Equipment	Brand Name	Model Name	Remark
1	PC	Lenovo	E14	/

### **I/O CABLES**

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

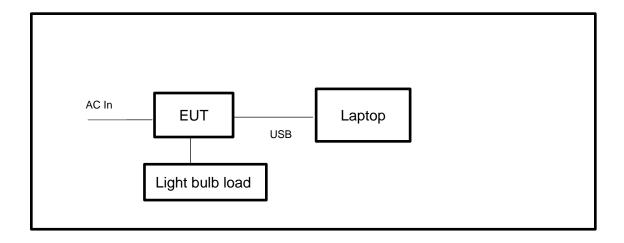
### **ACCESSORIES**

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

### **TEST SETUP**

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

### **SETUP DIAGRAM FOR TESTS**





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# 6. MEASURING EQUIPMENT AND SOFTWARE USED

R&S TS 8997 Test System										
Equipment		Ma	nufac	turer	Model	No.	Serial No.	Last C	Cal.	Due. Date
Power sensor, Power M	1eter		R&S	3	OSP1	20	100921	Dec.27,	2024	Dec.26,2025
Vector Signal Genera	tor		R&S	3	SMBV1	00A	261637	Sep.28,	2024	Sep.27, 2025
Signal Generator			R&S	6	SMB10	)0A	178553	Sep.28,	2024	Sep.27, 2025
Signal Analyzer			R&S	3	FSV4	10	101118	Sep.28,	2024	Sep.27, 2025
					Softwa	re				
Description			N	Manuf	acturer		Nam	е		Version
For R&S TS 8997 Test	Syste	em	Rol	hde &	Schwai	rz	EMC	32		10.60.10
Tonsend RF Test System										
Equipment	Man	ufa	cturer	Mod	del No.	Serial No.		Last Cal.		Due. Date
Wireless Connectivity Tester		R&	S	СМ	CMW270 120		1.0002N75- 102	Sep.13,	2024	Sep.12, 2025
PXA Signal Analyzer	K	eysi	ght	N9	9030A MY		/55410512	Sep.28,	2024	Sep.27, 2025
MXG Vector Signal Generator	K	eysi	ght	N5	N5182B		/56200284	Sep.28,	2024	Sep.27, 2025
MXG Vector Signal Generator	K	eysi	ght	N5	N5172B M		/56200301	Sep.28,	2024	Sep.27, 2025
DC power supply	K	eysi	ght	E3	642A	MY	/55159130	Sep.28,	2024	Sep.27, 2025
Temperature & Humidity Chamber	SAI	NM	DOD	SG-8	30-CC-2		2088	Sep.28,	2024	Sep.27, 2025
Attenuator	A	Aglie	glient 84		195B	28	14a12853	Sep.28,	2024	Sep.27, 2025
RF Control Unit	То	nsc	nscend JS0		806-2	238	380620666	Dec.27,	2024	Dec.26,2025
					Softwa	re				
Description		Ма	nufact	turer			Name			Version
Tonsend SRD Test Sys	tem	T	onser	nd	JS1120-3 RF Test System				V3.2.22	



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Conducted Emissions								
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date			
EMI Test Receiver	R&S	ESR3	101961	Sep.28, 2024	Sep.27, 2025			
Two-Line V- Network	R&S	ENV216	101983	Sep.28, 2024	Sep.27, 2025			
Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Sep.28, 2024	Sep.27, 2025			
		So	ftware					
	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	Sep.28, 2024	Sep.27, 2025			
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	June 28, 2024	June.27 2027			
Preamplifier	HP	8447D	2944A09099	Sep.28, 2024	Sep.27, 2025			
EMI Measurement Receiver	R&S	ESR26	101377	Sep.28, 2024	Sep.27, 2025			
Horn Antenna	TDK	HRN-0118	130939	Apr.29, 2022	Apr.28, 2025			
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Sep.28, 2024	Sep.27, 2025			
Horn Antenna	Schwarzbeck	BBHA9170	697	Jun 30, 2024	Jun 29, 2027			
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Sep.28, 2024	Sep.27, 2025			
Preamplifier	TDK	PA-02-3	TRS-308- 00002	Sep.28, 2024	Sep.27, 2025			
Loop antenna	Schwarzbeck	1519B	80000	Dec.09, 2024	Dec.08, 2027			
High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS	23	Sep.28, 2024	Sep.27, 2025			
Band Reject Filter	Wainwright	WRCJV8- 2350-2400- 2483.5- 2533.5-40SS	4	Sep.28, 2024	Sep.27, 2025			
		Sc	ftware					
1	Description		Manufacturer	Name	Version			
Test Software	for Radiated E	missions	Farad	EZ-EMC	Ver. UL-3A1			



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Other Instrument								
Equipment	Manufacturer	facturer Model No. Serial No.		Last Cal.	Due Date			
Temperature humidity probe	OMEGA	ITHX-SD-5	18470007	Oct.8, 2024	Oct.7, 2025			
Barometer	Yiyi	Baro	N/A	Oct.10, 2024	Oct.9, 2025			
Attenuator	Attenuator Agilent		2814a12853	Sep.28, 2024	Sep.27, 2025			



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## 7. ANTENNA PORT TEST RESULTS

## 7.1. CONDUCTED OUTPUT POWER

#### LIMITS

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

#### **TEST PROCEDURE**

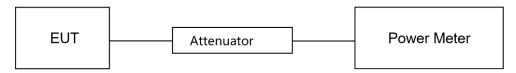
Refer to ANSI C63.10-2013 clause 11.9.2.3.1.

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.

The test result in dBm by adding [10 log (1 / D)], where D is the duty cycle.

#### **TEST SETUP**



#### **TEST ENVIRONMENT**

Temperature	25.1℃	Relative Humidity	55.3%
Atmosphere Pressure	101kPa	Test Voltage	AC120V 60Hz

#### **TEST DATE / ENGINEER**

Test Date	March 13, 2025	Test By	Walker Yuan

### **TEST RESULTS**

Please refer to section "Test Data" - Appendix C

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### 7.2. 6DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

### **LIMITS**

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
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**

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

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

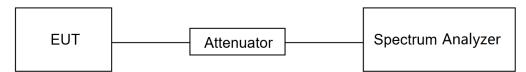
Center Frequency	The center frequency of the channel under test
Frequency Span	For 6 dB Bandwidth: Enough to capture all products of the modulation carrier emission For 99 % Occupied Bandwidth: Between 1.5 times and 5.0 times the OBW
Detector	Peak
RBW	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: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

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

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



### **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	25.1℃	Relative Humidity	55.3%
Atmosphere Pressure	101kPa	Test Voltage	AC120V 60Hz

# **TEST DATE / ENGINEER**

Test Date	March 13, 2025	Test By	Walker Yuan
	,	,	i

### **TEST RESULTS**

Please refer to section "Test Data" - Appendix A&B



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### 7.3. POWER SPECTRAL DENSITY

### **LIMITS**

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

### **TEST PROCEDURE**

Refer to ANSI C63.10-2013 clause 11.10.5.

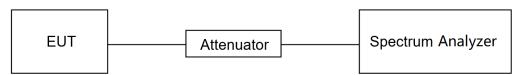
Connect the EUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	power averaging (rms)
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	1.5 x OBW bandwidth
Trace	Employ trace averaging(rms)mode over a minimum of 100 traces
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	<b>25.1</b> ℃	Relative Humidity	55.3%
Atmosphere Pressure	101kPa	Test Voltage	AC120V 60Hz

#### **TEST DATE / ENGINEER**

|--|

### **TEST RESULTS**

Please refer to section "Test Data" - Appendix D

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### 7.4. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

#### **LIMITS**

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
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 analyzer 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.

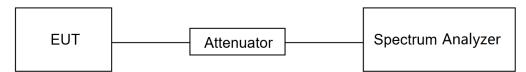
Change the settings for emission level measurement:

150an	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

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



### **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	25.1℃	Relative Humidity	55.3%
Atmosphere Pressure	101kPa	Test Voltage	AC120V 60Hz

### **TEST DATE / ENGINEER**

Test Date	March 13, 2025	Test By	Walker Yuan
	,	,	1

### **TEST RESULTS**

Please refer to section "Test Data" - Appendix E&F



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## 7.5. DUTY CYCLE

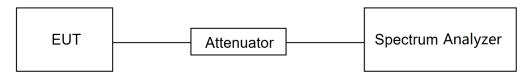
### **LIMITS**

None; for reporting purposes only.

### **TEST PROCEDURE**

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

## **TEST SETUP**



### **TEST ENVIRONMENT**

Temperature	25.1℃	Relative Humidity	55.3%
Atmosphere Pressure	101kPa	Test Voltage	AC120V 60Hz

## **TEST DATE / ENGINEER**

Test Date	March 13, 2025	Test By	Walker Yuan
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### **TEST RESULTS**

Please refer to section "Test Data" - Appendix G

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## 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	Field Strength Limit	Field Streng	
(MHz)	(uV/m) at 3 m	(dBuV/m)	at 3 m
		Quasi-P	eak
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
Above 1000	500	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
8.26775 - 6.26825	960 - 1427	31.2 - 31.8
8.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1845.5 - 1848.5	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	3260 - 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5480	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 - 8500	
108 – 138		

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

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

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



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#### **TEST PROCEDURE**

Below 30 MHz

The setting of the spectrum analyzer

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

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



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#### Below 1 GHz and above 30 MHz

The setting of the spectrum analyzer

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

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



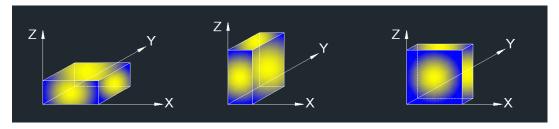
Above 1 GHz

The setting of the spectrum analyzer

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

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 1.5 m above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
- 6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.5. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



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

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



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### For Restricted Bandedge:

#### Note:

- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
- 3. PK=Peak: Peak detector.
- 4. AV=Average: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.5.
- 6. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
- 7. Both horizontal and vertical have been tested, only the worst data was recorded in the report.
- 8. All modes have been tested, but only the worst data was recorded in the report.

# For Radiate Spurious emission (9 kHz ~ 30 MHz):

#### Note:

- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP 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.
- 4. All modes have been tested, but only the worst data was recorded in the report.
- 5.  $dBuA/m = dBuV/m 20Log10[120\pi] = dBuV/m 51.5$

# For Radiate Spurious Emission (30 MHz ~ 1 GHz):

#### Note:

- 1. Result Level = Read Level + Correct Factor.
- 2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
- 3. All modes have been tested, but only the worst data was recorded in the report.

#### For Radiate Spurious Emission (1 GHz ~ 3 GHz):

#### Note:

- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average 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 7.5.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. All modes have been tested, but only the worst data was recorded in the report.

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For Radiate Spurious Emission (3 GHz ~ 18 GHz):

#### Note:

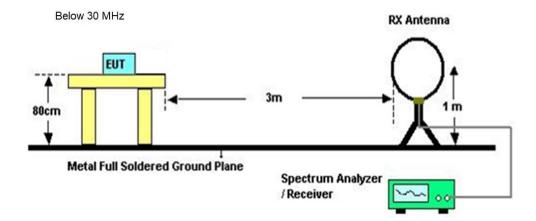
- 1. Peak Result = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.5.
- 6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
- 7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
- 8. All modes have been tested, but only the worst data was recorded in the report.

# For Radiate Spurious emission (18 GHz ~ 26 GHz):

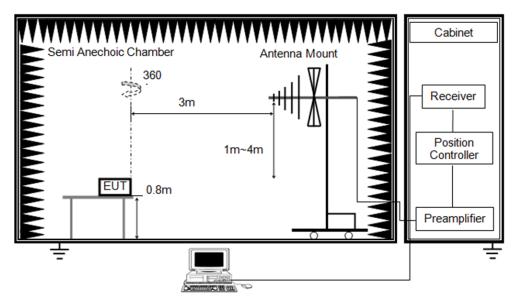
#### Note:

- 1. Measurement = Reading Level + Correct Factor.
- 2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
- 3. Peak: Peak detector.
- 4. All modes have been tested, but only the worst data was recorded in the report.

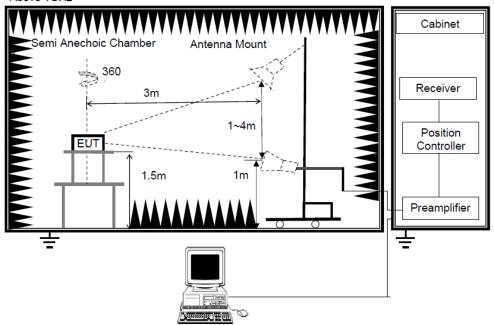
#### **TEST SETUP**



Below 1 GHz and above 30 MHz



#### Above 1GHz



#### **TEST ENVIRONMENT**

Temperature	20.6℃	Relative Humidity	60.3%
Atmosphere Pressure	101kPa	Test Voltage	

### **TEST DATE / ENGINEER**

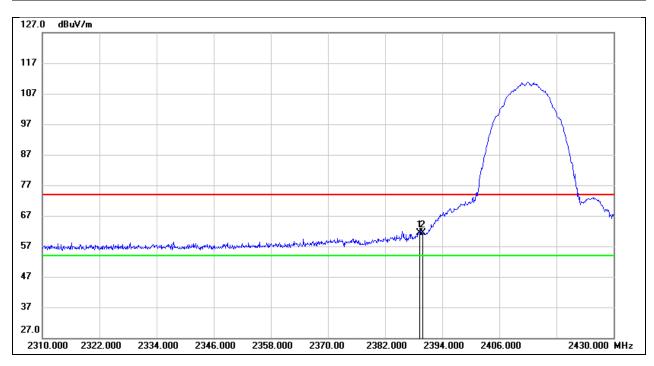
Test Date	March 25, 2025	Test By	Mason Wang



#### **TEST RESULTS**

## 8.1. RESTRICTED BANDEDGE

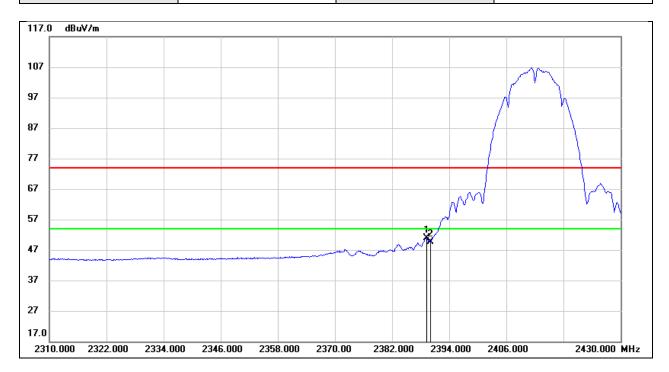
Test Mode:	802.11b PK	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.200	28.79	32.55	61.34	74.00	-12.66	peak
2	2390.000	28.81	32.55	61.36	74.00	-12.64	peak



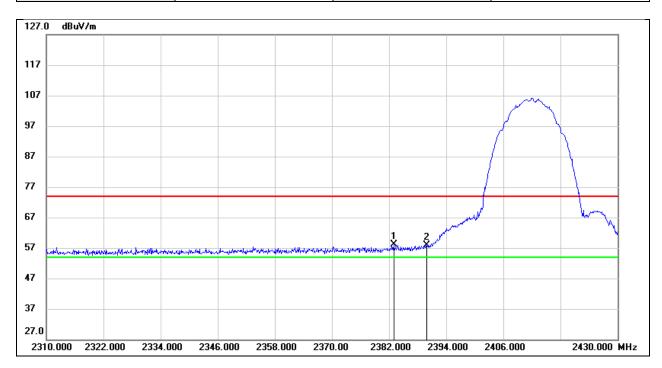
Test Mode:	802.11b AV	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2389.200	18.42	32.55	50.97	54.00	-3.03	AVG
2	2390.000	17.15	32.55	49.70	54.00	-4.30	AVG



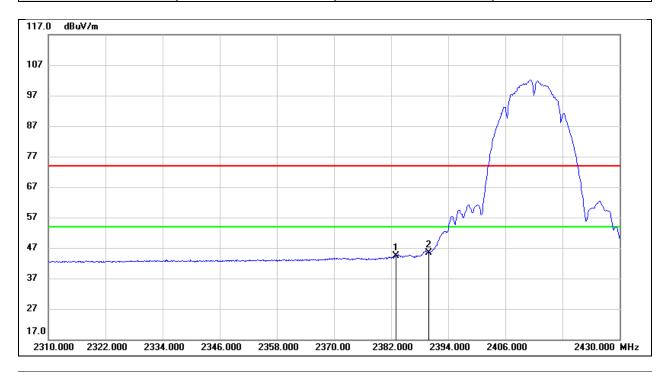
Test Mode:	802.11b PK	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2382.960	26.44	31.71	58.15	74.00	-15.85	peak
2	2390.000	26.15	31.73	57.88	74.00	-16.12	peak



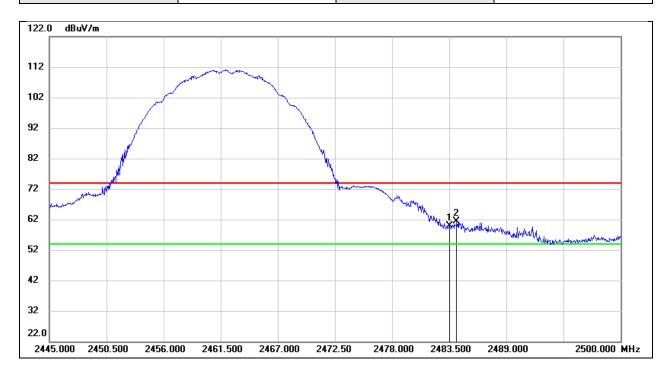
Test Mode:	802.11b AV	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2382.960	12.78	31.71	44.49	54.00	-9.51	AVG
2	2390.000	13.60	31.73	45.33	54.00	-8.67	AVG



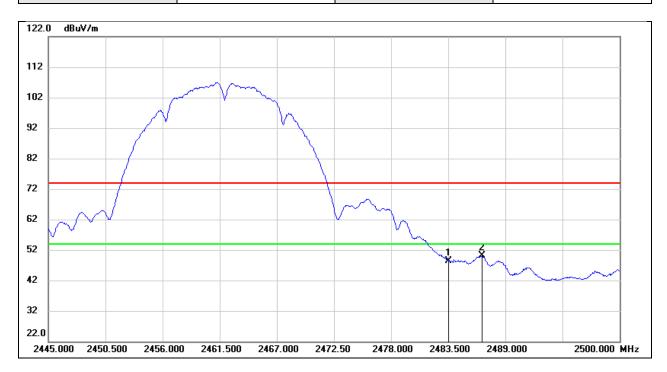
Test Mode:	802.11b PK	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	27.19	32.80	59.99	74.00	-14.01	peak
2	2484.215	28.51	32.80	61.31	74.00	-12.69	peak



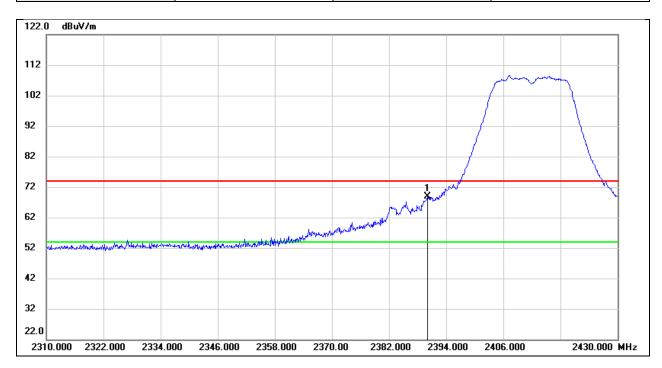
Test Mode:	802.11b AV	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	15.65	32.80	48.45	54.00	-5.55	AVG
2	2486.745	17.23	32.81	50.04	54.00	-3.96	AVG



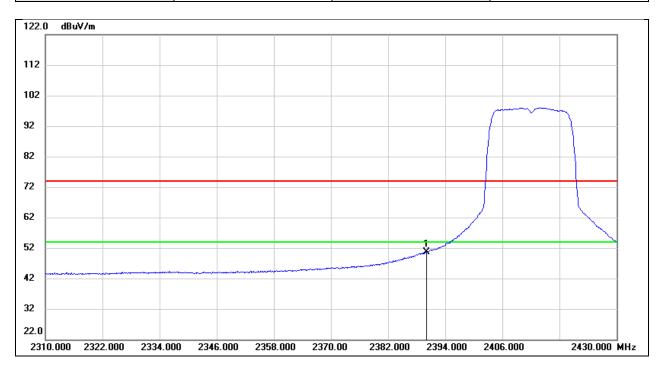
Test Mode:	802.11g PK	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	36.23	32.55	68.78	74.00	-5.22	peak



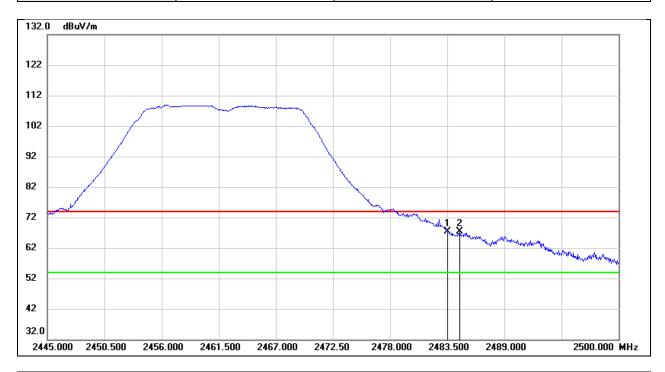
Test Mode:	802.11g AV	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	18.11	32.55	50.66	54.00	-3.34	AVG



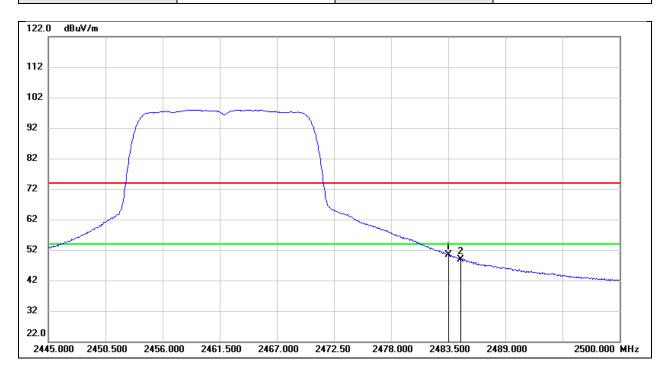
Test Mode:	802.11g PK	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	34.60	32.80	67.40	74.00	-6.60	peak
2	2484.710	34.69	32.80	67.49	74.00	-6.51	peak



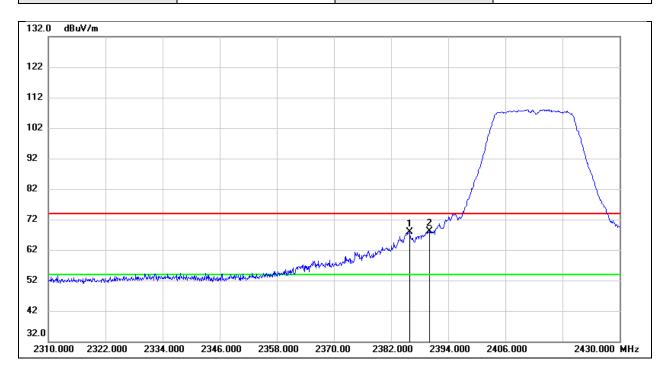
Test Mode:	802.11g AV	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.68	32.80	50.48	54.00	-3.52	AVG
2	2484.710	16.01	32.80	48.81	54.00	-5.19	AVG



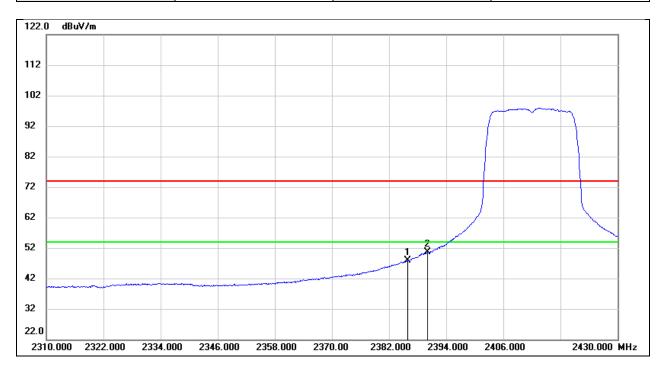
Test Mode:	802.11n HT20 PK	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2385.840	35.24	32.53	67.77	74.00	-6.23	peak
2	2390.000	35.64	32.55	68.19	74.00	-5.81	peak



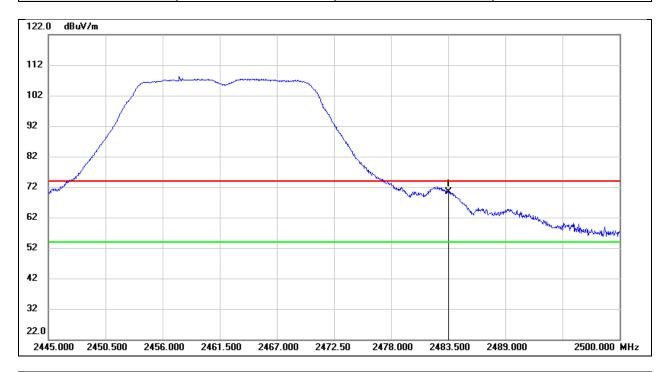
Test Mode:	802.11n HT20 AV	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2385.840	15.39	32.53	47.92	54.00	-6.08	AVG
2	2390.000	18.02	32.55	50.57	54.00	-3.43	AVG



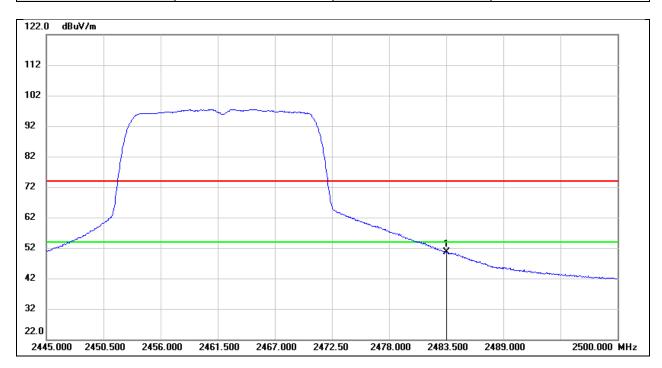
Test Mode:	802.11n HT20 PK	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	37.53	32.80	70.33	74.00	-3.67	peak



Test Mode:	802.11n HT20 AV	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz

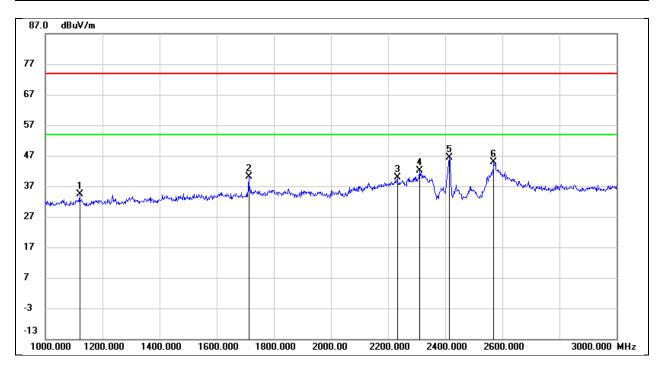


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.72	32.80	50.52	54.00	-3.48	AVG



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

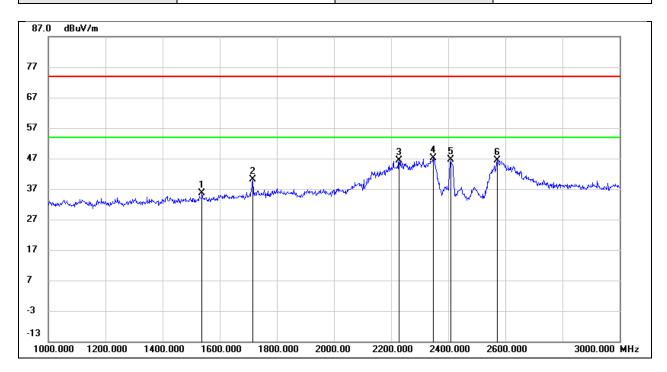
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1120.000	48.16	-13.86	34.30	74.00	-39.70	peak
2	1712.000	50.64	-10.58	40.06	74.00	-33.94	peak
3	2232.000	49.20	-9.22	39.98	74.00	-34.02	peak
4	2310.000	50.96	-8.92	42.04	74.00	-31.96	peak
5	2412.000	54.81	-8.53	46.28	/	/	Fundamental
6	2570.000	52.79	-7.90	44.89	74.00	-29.11	peak



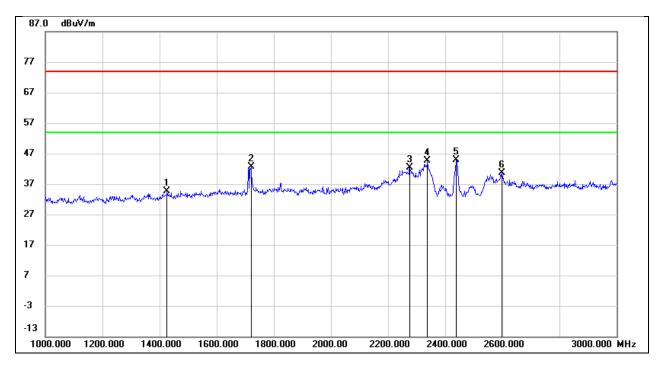
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1538.000	47.22	-11.53	35.69	74.00	-38.31	peak
2	1716.000	50.26	-10.11	40.15	74.00	-33.85	peak
3	2228.000	54.69	-8.38	46.31	74.00	-27.69	peak
4	2348.000	54.97	-7.95	47.02	74.00	-26.98	peak
5	2412.000	54.39	-7.75	46.64	1	/	Fundamental
6	2572.000	53.50	-7.02	46.48	74.00	-27.52	peak



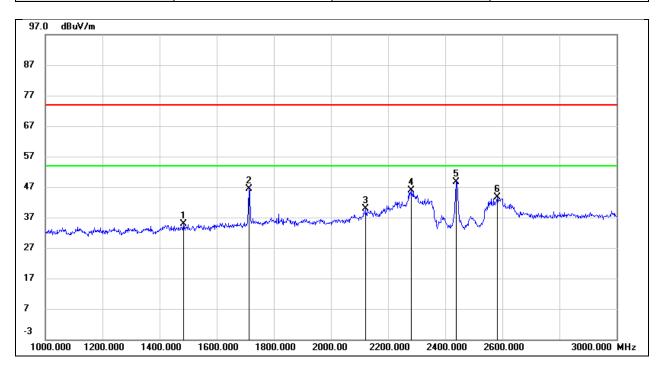
Test Mode:	802.11b	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1426.000	47.00	-12.30	34.70	74.00	-39.30	peak
2	1720.000	53.09	-10.54	42.55	74.00	-31.45	peak
3	2276.000	51.38	-9.05	42.33	74.00	-31.67	peak
4	2338.000	53.37	-8.82	44.55	74.00	-29.45	peak
5	2437.000	53.29	-8.44	44.85	1	/	Fundamental
6	2598.000	48.30	-7.77	40.53	74.00	-33.47	peak



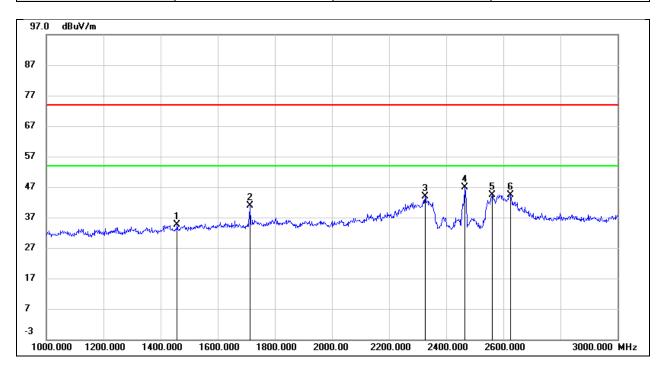
Test Mode:	802.11b	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1484.000	46.71	-11.85	34.86	74.00	-39.14	peak
2	1714.000	56.63	-10.13	46.50	74.00	-27.50	peak
3	2122.000	48.56	-8.76	39.80	74.00	-34.20	peak
4	2280.000	54.00	-8.20	45.80	74.00	-28.20	peak
5	2437.000	56.38	-7.63	48.75	1	/	Fundamental
6	2582.000	50.63	-6.95	43.68	74.00	-30.32	peak



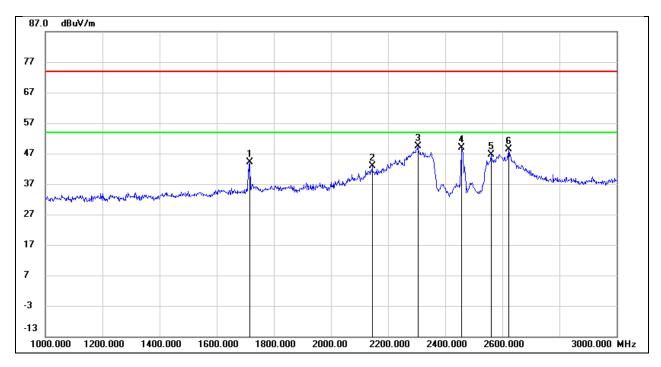
Test Mode:	802.11b	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1458.000	46.82	-12.13	34.69	74.00	-39.31	peak
2	1714.000	51.54	-10.57	40.97	74.00	-33.03	peak
3	2326.000	52.68	-8.87	43.81	74.00	-30.19	peak
4	2462.000	55.21	-8.34	46.87	/	/	Fundamental
5	2560.000	52.41	-7.93	44.48	74.00	-29.52	peak
6	2624.000	52.04	-7.67	44.37	74.00	-29.63	peak



Test Mode:	802.11b	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz

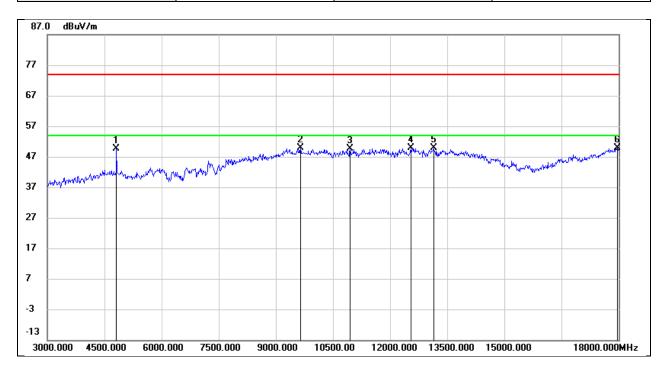


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1716.000	54.36	-10.11	44.25	74.00	-29.75	peak
2	2144.000	51.46	-8.68	42.78	74.00	-31.22	peak
3	2304.000	57.44	-8.11	49.33	74.00	-24.67	peak
4	2462.000	56.38	-7.57	48.81	/	/	Fundamental
5	2560.000	53.65	-7.07	46.58	74.00	-27.42	peak
6	2622.000	55.04	-6.75	48.29	74.00	-25.71	peak



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

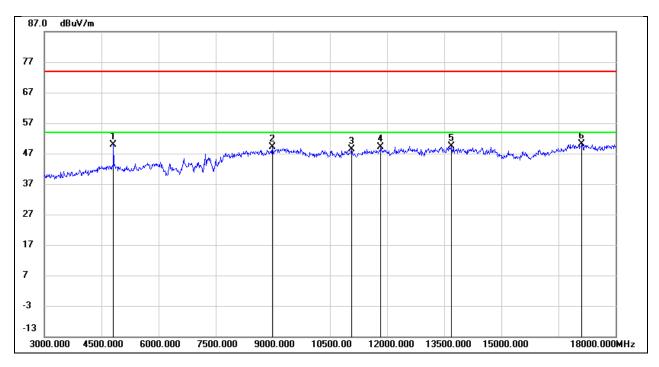
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4815.000	49.21	0.50	49.71	74.00	-24.29	peak
2	9645.000	37.03	12.94	49.97	74.00	-24.03	peak
3	10950.000	33.85	15.68	49.53	74.00	-24.47	peak
4	12540.000	30.89	18.93	49.82	74.00	-24.18	peak
5	13140.000	28.87	20.89	49.76	74.00	-24.24	peak
6	17970.000	20.66	29.33	49.99	74.00	-24.01	peak



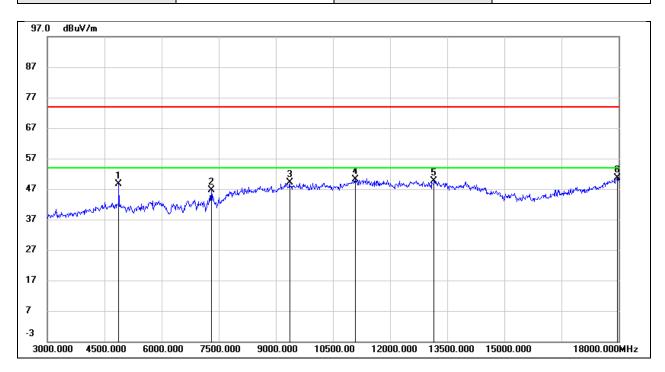
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4815.000	48.41	1.59	50.00	74.00	-24.00	peak
2	8985.000	38.52	10.53	49.05	74.00	-24.95	peak
3	11070.000	32.83	15.47	48.30	74.00	-25.70	peak
4	11835.000	31.84	17.31	49.15	74.00	-24.85	peak
5	13695.000	28.28	21.11	49.39	74.00	-24.61	peak
6	17115.000	24.84	25.26	50.10	74.00	-23.90	peak



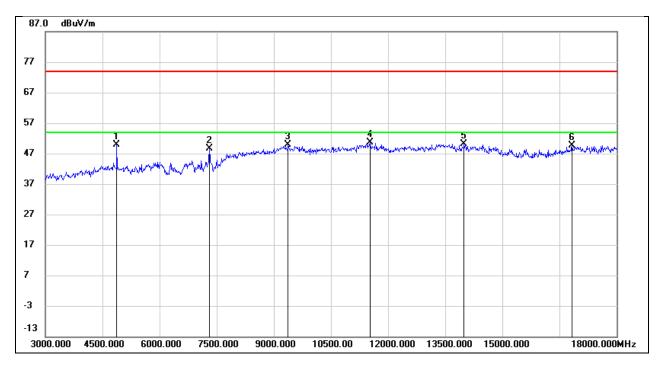
Test Mode:	802.11b	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	48.07	0.65	48.72	74.00	-25.28	peak
2	7305.000	39.53	7.03	46.56	74.00	-27.44	peak
3	9360.000	37.35	11.78	49.13	74.00	-24.87	peak
4	11085.000	33.60	16.46	50.06	74.00	-23.94	peak
5	13155.000	28.64	20.97	49.61	74.00	-24.39	peak
6	17970.000	21.41	29.33	50.74	74.00	-23.26	peak



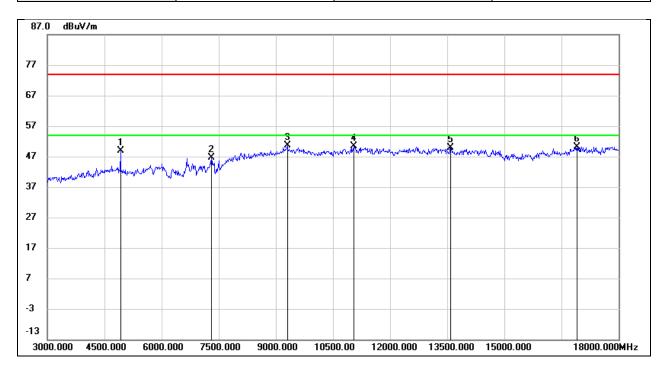
Test Mode:	802.11b	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	47.99	1.78	49.77	74.00	-24.23	peak
2	7305.000	40.94	7.68	48.62	74.00	-25.38	peak
3	9375.000	37.98	11.94	49.92	74.00	-24.08	peak
4	11520.000	34.18	16.53	50.71	74.00	-23.29	peak
5	13995.000	28.00	22.18	50.18	74.00	-23.82	peak
6	16830.000	24.67	24.97	49.64	74.00	-24.36	peak



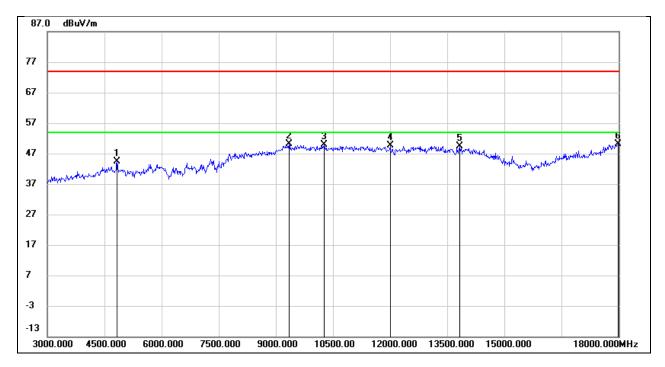
Test Mode:	802.11b	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	48.12	0.76	48.88	74.00	-25.12	peak
2	7305.000	39.65	7.03	46.68	74.00	-27.32	peak
3	9300.000	39.09	11.52	50.61	74.00	-23.39	peak
4	11040.000	34.19	16.19	50.38	74.00	-23.62	peak
5	13590.000	27.30	22.60	49.90	74.00	-24.10	peak
6	16905.000	26.78	23.36	50.14	74.00	-23.86	peak



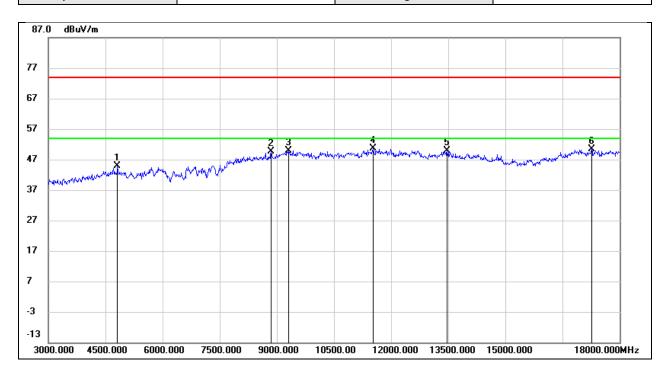
Test Mode:	802.11g	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4830.000	43.89	0.54	44.43	74.00	-29.57	peak
2	9345.000	38.41	11.71	50.12	74.00	-23.88	peak
3	10275.000	36.55	13.36	49.91	74.00	-24.09	peak
4	12000.000	30.99	18.72	49.71	74.00	-24.29	peak
5	13830.000	26.23	23.06	49.29	74.00	-24.71	peak
6	17985.000	20.75	29.49	50.24	74.00	-23.76	peak



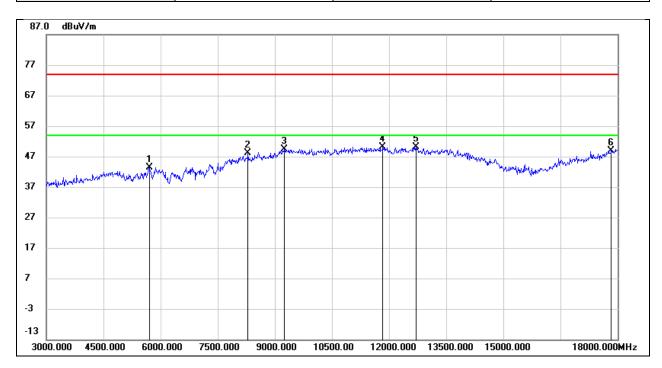
Test Mode:	802.11g	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4815.000	43.35	1.59	44.94	74.00	-29.06	peak
2	8850.000	39.45	10.18	49.63	74.00	-24.37	peak
3	9315.000	38.11	11.73	49.84	74.00	-24.16	peak
4	11520.000	34.16	16.53	50.69	74.00	-23.31	peak
5	13470.000	29.32	20.65	49.97	74.00	-24.03	peak
6	17265.000	25.10	25.34	50.44	74.00	-23.56	peak



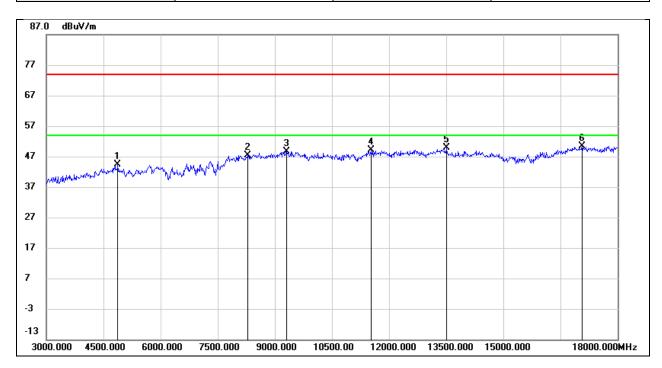
Test Mode:	802.11g	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5700.000	40.81	2.53	43.34	74.00	-30.66	peak
2	8295.000	39.42	8.70	48.12	74.00	-25.88	peak
3	9255.000	38.15	11.32	49.47	74.00	-24.53	peak
4	11835.000	31.67	18.54	50.21	74.00	-23.79	peak
5	12705.000	30.99	19.25	50.24	74.00	-23.76	peak
6	17835.000	21.02	27.96	48.98	74.00	-25.02	peak



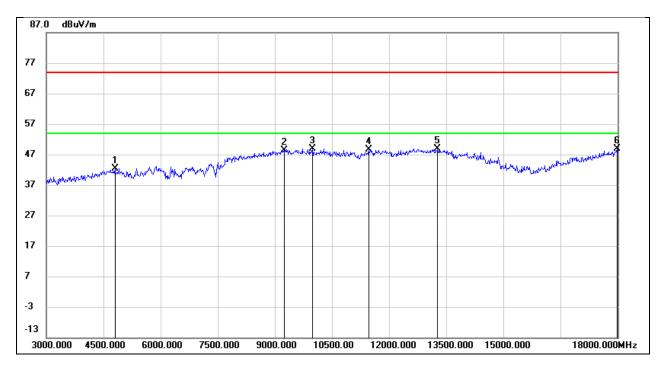
Test Mode:	802.11g	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	42.48	1.78	44.26	74.00	-29.74	peak
2	8295.000	38.23	9.26	47.49	74.00	-26.51	peak
3	9300.000	37.05	11.68	48.73	74.00	-25.27	peak
4	11520.000	32.59	16.53	49.12	74.00	-24.88	peak
5	13500.000	29.15	20.74	49.89	74.00	-24.11	peak
6	17070.000	25.05	25.23	50.28	74.00	-23.72	peak



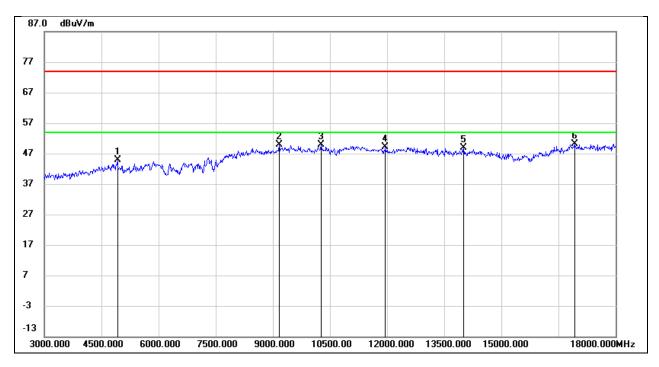
Test Mode:	802.11g	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4800.000	41.99	0.47	42.46	74.00	-31.54	peak
2	9240.000	37.20	11.25	48.45	74.00	-25.55	peak
3	9990.000	35.50	13.34	48.84	74.00	-25.16	peak
4	11460.000	30.68	17.83	48.51	74.00	-25.49	peak
5	13275.000	27.24	21.52	48.76	74.00	-25.24	peak
6	17985.000	19.28	29.49	48.77	74.00	-25.23	peak



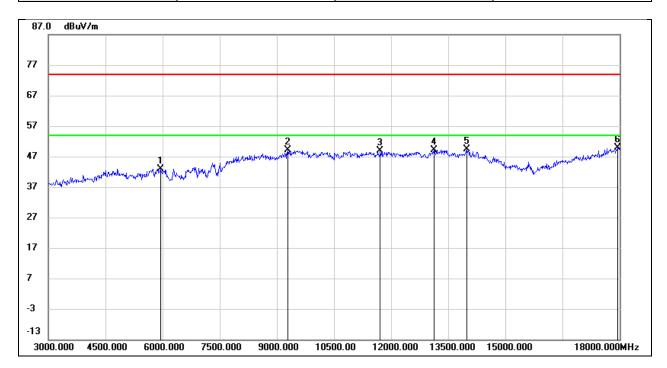
Test Mode:	802.11g	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	43.02	1.91	44.93	74.00	-29.07	peak
2	9165.000	38.74	11.19	49.93	74.00	-24.07	peak
3	10260.000	37.07	12.90	49.97	74.00	-24.03	peak
4	11955.000	31.50	17.53	49.03	74.00	-24.97	peak
5	14010.000	26.57	22.20	48.77	74.00	-25.23	peak
6	16920.000	25.08	25.08	50.16	74.00	-23.84	peak



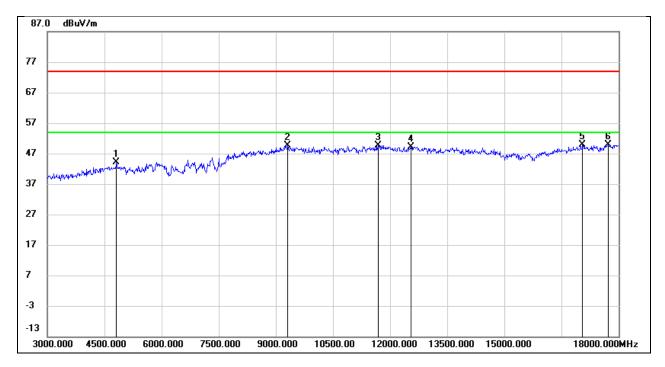
Test Mode:	802.11n HT20	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5940.000	39.98	3.01	42.99	74.00	-31.01	peak
2	9285.000	37.75	11.45	49.20	74.00	-24.80	peak
3	11715.000	30.55	18.35	48.90	74.00	-25.10	peak
4	13125.000	28.31	20.80	49.11	74.00	-24.89	peak
5	13980.000	25.66	23.71	49.37	74.00	-24.63	peak
6	17940.000	20.90	29.03	49.93	74.00	-24.07	peak



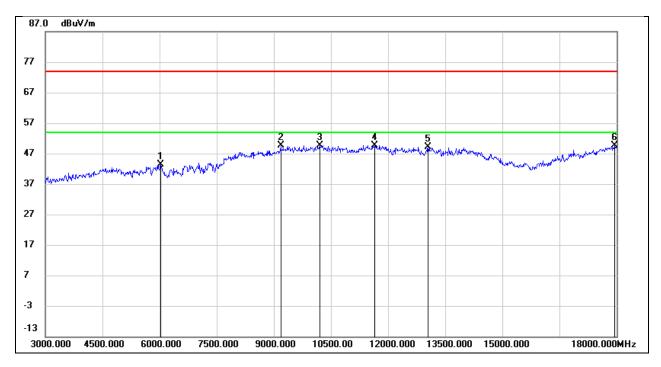
Test Mode:	802.11n HT20	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4815.000	42.51	1.59	44.10	74.00	-29.90	peak
2	9315.000	38.00	11.73	49.73	74.00	-24.27	peak
3	11685.000	32.78	16.96	49.74	74.00	-24.26	peak
4	12540.000	31.22	18.00	49.22	74.00	-24.78	peak
5	17055.000	24.70	25.21	49.91	74.00	-24.09	peak
6	17730.000	23.89	26.08	49.97	74.00	-24.03	peak



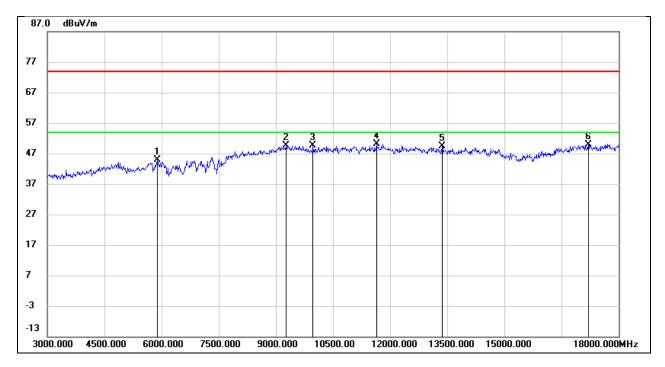
Test Mode:	802.11n HT20	Frequency(MHz):	2437
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	6030.000	40.11	3.26	43.37	74.00	-30.63	peak
2	9180.000	38.62	11.00	49.62	74.00	-24.38	peak
3	10200.000	36.37	13.27	49.64	74.00	-24.36	peak
4	11655.000	31.43	18.25	49.68	74.00	-24.32	peak
5	13050.000	28.80	20.40	49.20	74.00	-24.80	peak
6	17955.000	20.52	29.18	49.70	74.00	-24.30	peak



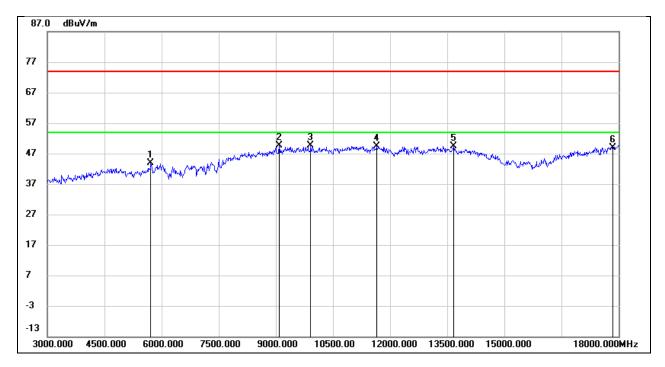
Test Mode:	802.11n HT20	Frequency(MHz):	2437
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5895.000	40.86	3.96	44.82	74.00	-29.18	peak
2	9270.000	38.12	11.57	49.69	74.00	-24.31	peak
3	9975.000	37.00	12.67	49.67	74.00	-24.33	peak
4	11640.000	33.34	16.84	50.18	74.00	-23.82	peak
5	13365.000	28.97	20.34	49.31	74.00	-24.69	peak
6	17205.000	24.68	25.32	50.00	74.00	-24.00	peak



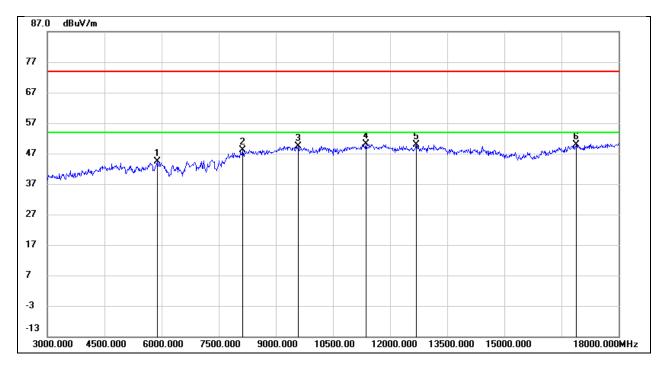
Test Mode:	802.11n HT20	Frequency(MHz):	2462
Polarity:	Horizontal	Test Voltage:	AC 120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5715.000	41.35	2.55	43.90	74.00	-30.10	peak
2	9090.000	39.08	10.58	49.66	74.00	-24.34	peak
3	9915.000	36.25	13.32	49.57	74.00	-24.43	peak
4	11655.000	31.08	18.25	49.33	74.00	-24.67	peak
5	13665.000	26.76	22.72	49.48	74.00	-24.52	peak
6	17850.000	20.80	28.11	48.91	74.00	-25.09	peak



Test Mode:	802.11n HT20	Frequency(MHz):	2462
Polarity:	Vertical	Test Voltage:	AC 120V_60Hz



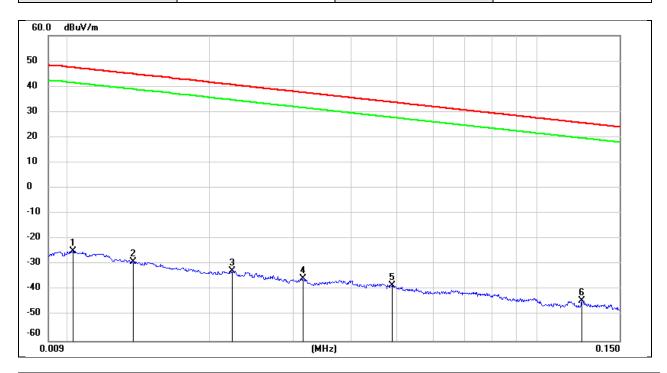
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5880.000	40.34	3.95	44.29	74.00	-29.71	peak
2	8130.000	39.21	8.88	48.09	74.00	-25.91	peak
3	9585.000	36.80	12.65	49.45	74.00	-24.55	peak
4	11370.000	33.99	16.22	50.21	74.00	-23.79	peak
5	12690.000	31.66	18.19	49.85	74.00	-24.15	peak
6	16890.000	24.83	25.05	49.88	74.00	-24.12	peak

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## 8.4. SPURIOUS EMISSIONS(9 KHZ~30 MHZ)

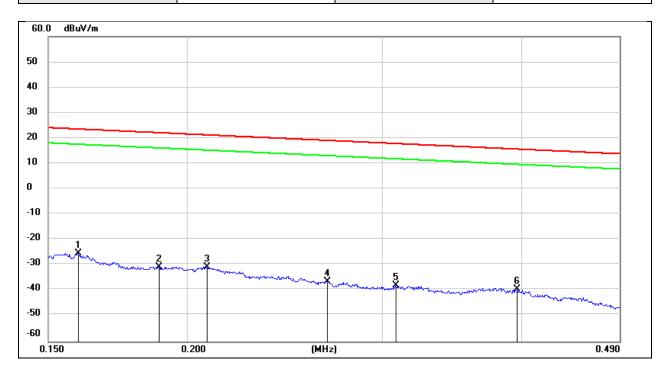
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V 60Hz



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0102	76.55	-101.40	-24.85	47.43	-76.35	-4.07	-72.28	peak
2	0.0137	72.36	-101.38	-29.02	44.87	-80.52	-6.63	-73.89	peak
3	0.0223	68.86	-101.35	-32.49	40.63	-83.99	-10.87	-73.12	peak
4	0.0316	65.74	-101.40	-35.66	37.61	-87.16	-13.89	-73.27	peak
5	0.0490	63.25	-101.47	-38.22	33.80	-89.72	-17.70	-72.02	peak
6	0.1246	57.39	-101.72	-44.33	25.70	-95.83	-25.80	-70.03	peak



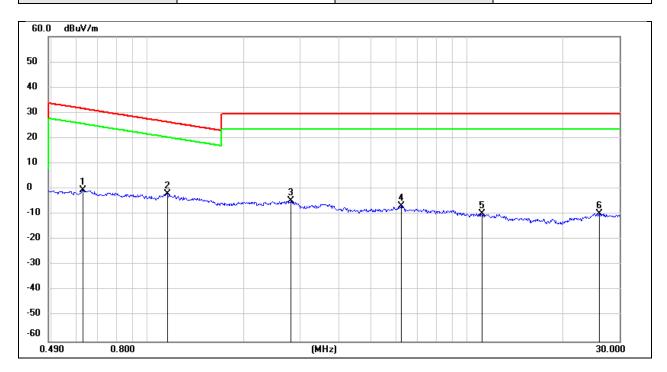
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V 60Hz



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1595	76.36	-101.65	-25.29	23.55	-76.79	-27.95	-48.84	peak
2	0.1887	70.99	-101.70	-30.71	22.09	-82.21	-29.41	-52.80	peak
3	0.2084	70.97	-101.73	-30.76	21.22	-82.26	-30.28	-51.98	peak
4	0.2676	65.51	-101.82	-36.31	19.05	-87.81	-32.45	-55.36	peak
5	0.3079	63.85	-101.86	-38.01	17.83	-89.51	-33.67	-55.84	peak
6	0.3961	62.41	-101.96	-39.55	15.65	-91.05	-35.85	-55.20	peak



Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V 60Hz

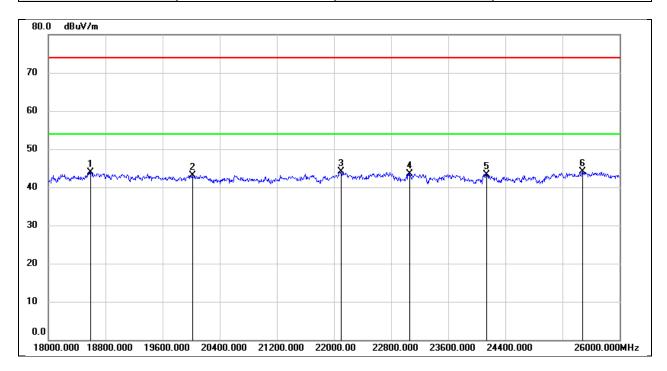


No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.6298	61.67	-62.09	-0.42	31.62	-51.92	-19.88	-32.04	peak
2	1.1531	60.25	-62.20	-1.95	26.37	-53.45	-25.13	-28.32	peak
3	2.8212	57.05	-61.62	-4.57	29.54	-56.07	-21.96	-34.11	peak
4	6.2445	54.63	-61.32	-6.69	29.54	-58.19	-21.96	-36.23	peak
5	11.1431	50.99	-60.85	-9.86	29.54	-61.36	-21.96	-39.40	peak
6	25.8978	50.76	-60.36	-9.60	29.54	-61.10	-21.96	-39.14	peak



8.5. SPURIOUS EMISSIONS(18 GHZ~26 GHZ)

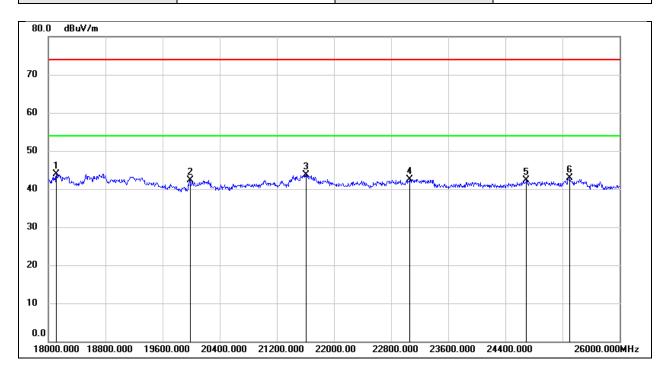
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC 120V 60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18592.000	49.25	-5.31	43.94	74.00	-30.06	peak
2	20016.000	48.56	-5.47	43.09	74.00	-30.91	peak
3	22096.000	48.54	-4.38	44.16	74.00	-29.84	peak
4	23064.000	46.99	-3.42	43.57	74.00	-30.43	peak
5	24136.000	46.08	-2.79	43.29	74.00	-30.71	peak
6	25480.000	45.82	-1.77	44.05	74.00	-29.95	peak



Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC 120V 60Hz

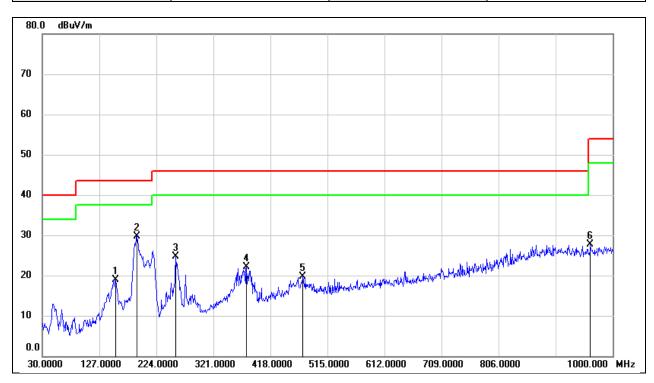


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18112.000	49.46	-5.47	43.99	74.00	-30.01	peak
2	19984.000	47.71	-5.44	42.27	74.00	-31.73	peak
3	21608.000	48.27	-4.53	43.74	74.00	-30.26	peak
4	23064.000	45.87	-3.42	42.45	74.00	-31.55	peak
5	24696.000	44.68	-2.32	42.36	74.00	-31.64	peak
6	25304.000	44.58	-1.70	42.88	74.00	-31.12	peak



## 8.6. SPURIOUS EMISSIONS(30 MHZ~1 GHZ)

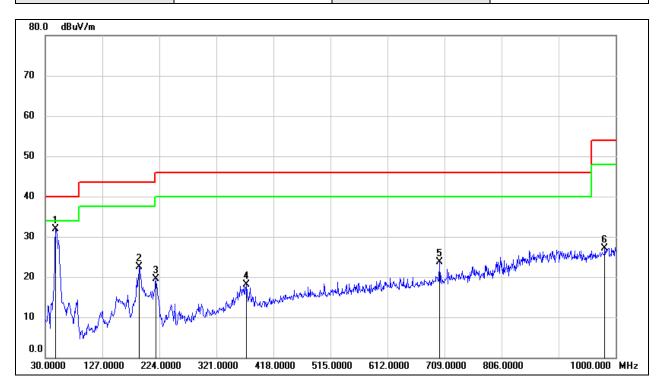
Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Horizontal	Test Voltage:	AC120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	155.1300	31.93	-13.11	18.82	43.50	-24.68	QP
2	191.0200	41.74	-11.97	29.77	43.50	-13.73	QP
3	256.9800	38.78	-14.16	24.62	46.00	-21.38	QP
4	377.2600	31.74	-9.62	22.12	46.00	-23.88	QP
5	473.2900	27.62	-7.94	19.68	46.00	-26.32	QP
6	962.1700	28.36	-0.63	27.73	54.00	-26.27	QP



Test Mode:	802.11b	Frequency(MHz):	2412
Polarity:	Vertical	Test Voltage:	AC120V_60Hz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	47.4600	46.93	-14.95	31.98	40.00	-8.02	QP
2	190.0500	34.36	-11.95	22.41	43.50	-21.09	QP
3	218.1800	32.55	-13.05	19.50	46.00	-26.50	QP
4	372.4100	27.66	-9.60	18.06	46.00	-27.94	QP
5	700.2700	27.97	-4.22	23.75	46.00	-22.25	QP
6	981.5700	27.40	-0.34	27.06	54.00	-26.94	QP



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### 9. ANTENNA REQUIREMENT

### **REQUIREMENT**

Please refer to FCC part 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 part 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.

#### **DESCRIPTION**

**Pass** 



### 10. AC POWER LINE CONDUCTED EMISSION

### **LIMITS**

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

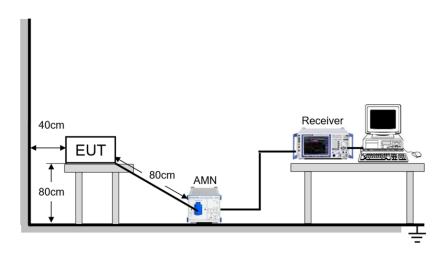
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

### **TEST PROCEDURE**

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

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

### **TEST SETUP**



#### **TEST ENVIRONMENT**

Temperature	21.2℃	Relative Humidity	53.4%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V 60Hz



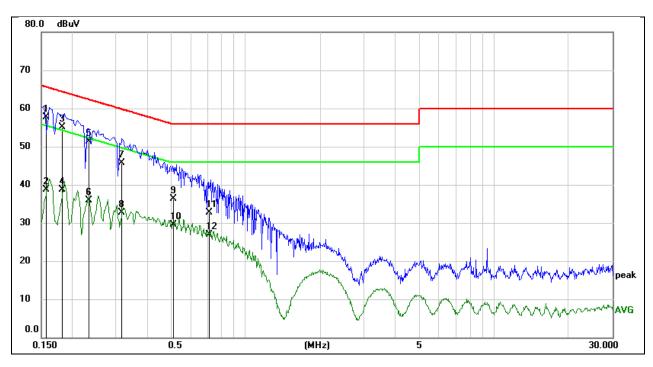
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### **TEST DATE / ENGINEER**

Test Date   April 7, 2025   Test By   Johnson Liu
---

#### **TEST RESULTS**

Test Mode:	802.11b	Frequency(MHz):	2412
Line:	Line		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1570	47.88	9.73	57.61	65.62	-8.01	QP
2	0.1570	28.98	9.73	38.71	55.62	-16.91	AVG
3	0.1823	45.50	9.68	55.18	64.38	-9.20	QP
4	0.1823	29.03	9.68	38.71	54.38	-15.67	AVG
5	0.2318	41.69	9.64	51.33	62.38	-11.05	QP
6	0.2318	26.17	9.64	35.81	52.38	-16.57	AVG
7	0.3166	36.01	9.64	45.65	59.80	-14.15	QP
8	0.3166	23.06	9.64	32.70	49.80	-17.10	AVG
9	0.5101	26.66	9.64	36.30	56.00	-19.70	QP
10	0.5101	19.93	9.64	29.57	46.00	-16.43	AVG
11	0.7118	23.05	9.63	32.68	56.00	-23.32	QP
12	0.7118	17.33	9.63	26.96	46.00	-19.04	AVG

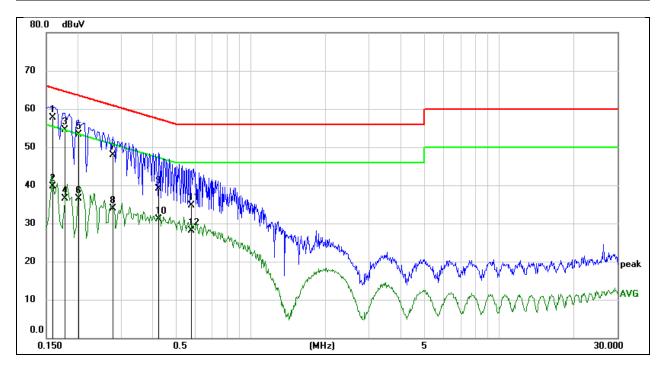
#### Note

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

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

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Test Mode:	802.11b	Frequency(MHz):	2412
Line:	Neutral		



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1585	47.97	9.72	57.69	65.54	-7.85	QP
2	0.1585	30.07	9.72	39.79	55.54	-15.75	AVG
3	0.1784	44.79	9.68	54.47	64.56	-10.09	QP
4	0.1784	26.80	9.68	36.48	54.56	-18.08	AVG
5	0.2017	43.70	9.64	53.34	63.54	-10.20	QP
6	0.2017	26.94	9.64	36.58	53.54	-16.96	AVG
7	0.2785	38.32	9.64	47.96	60.86	-12.90	QP
8	0.2785	24.24	9.64	33.88	50.86	-16.98	AVG
9	0.4252	29.54	9.64	39.18	57.35	-18.17	QP
10	0.4252	21.41	9.64	31.05	47.35	-16.30	AVG
11	0.5774	25.04	9.64	34.68	56.00	-21.32	QP
12	0.5774	18.56	9.64	28.20	46.00	-17.80	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  $\sim$  150 kHz), 9 kHz (150 kHz  $\sim$  30 MHz).
- 4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

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



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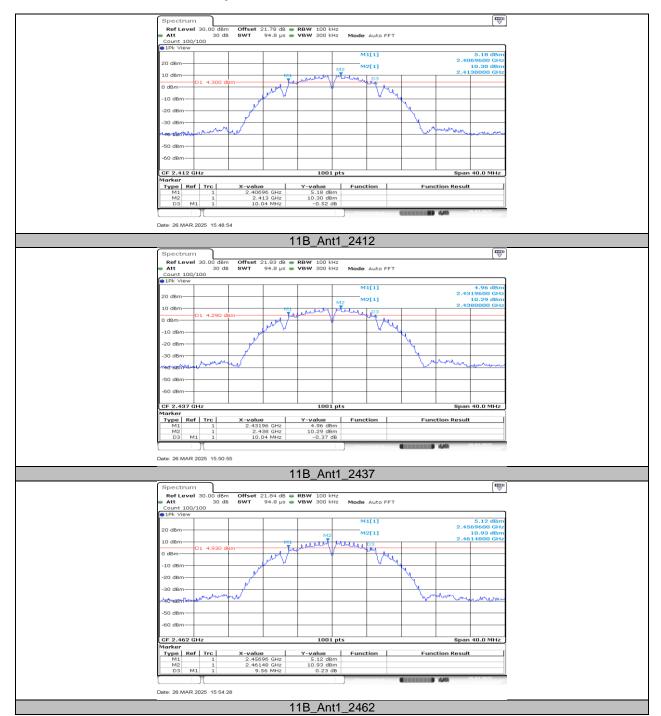
## 11. TEST DATA

## 11.1. APPENDIX A: DTS BANDWIDTH 11.1.1. Test Result

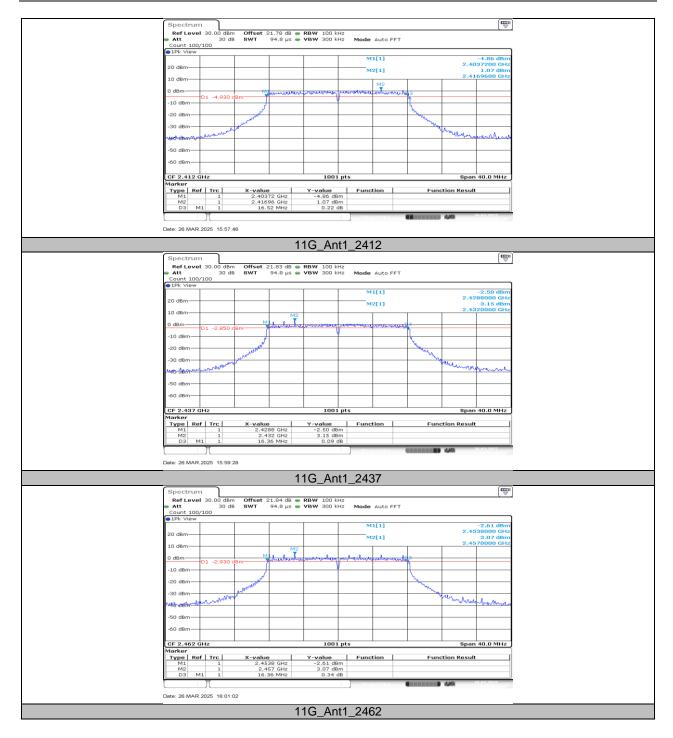
Test Mode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		2412	10.04	2406.96	2417.00	≥0.5	PASS
11B	Ant1	2437	10.04	2431.96	2442.00	≥0.5	PASS
		2462	9.56	2456.96	2466.52	≥0.5	PASS
		2412	16.52	2403.72	2420.24	≥0.5	PASS
11G		2437	16.36	2428.80	2445.16	≥0.5	PASS
		2462	16.36	2453.80	2470.16	≥0.5	PASS
		2412	17.56	2403.20	2420.76	≥0.5	PASS
11N20SISO	Ant1	2437	17.60	2428.20	2445.80	≥0.5	PASS
		2462	17.56	2453.20	2470.76	≥0.5	PASS



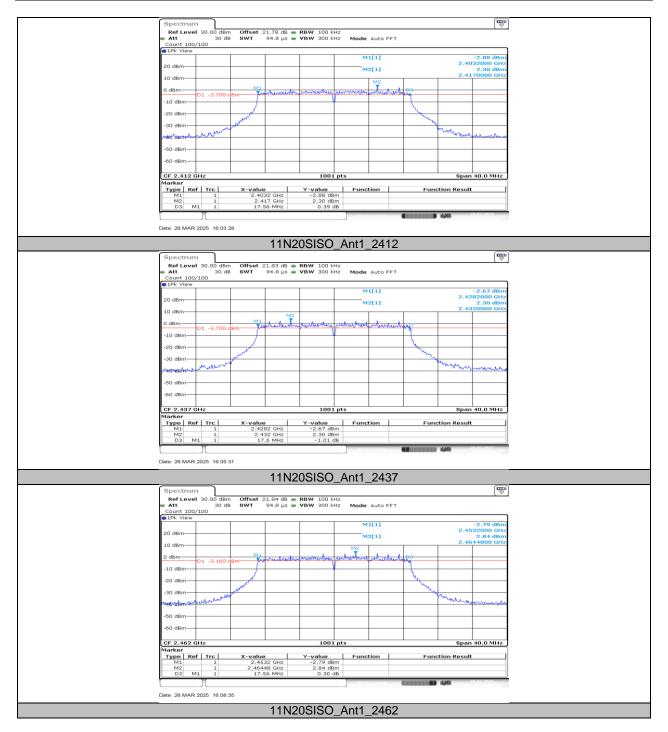
## 11.1.2. Test Graphs













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## 11.2. APPENDIX B: OCCUPIED CHANNEL BANDWIDTH 11.2.1. Test Result

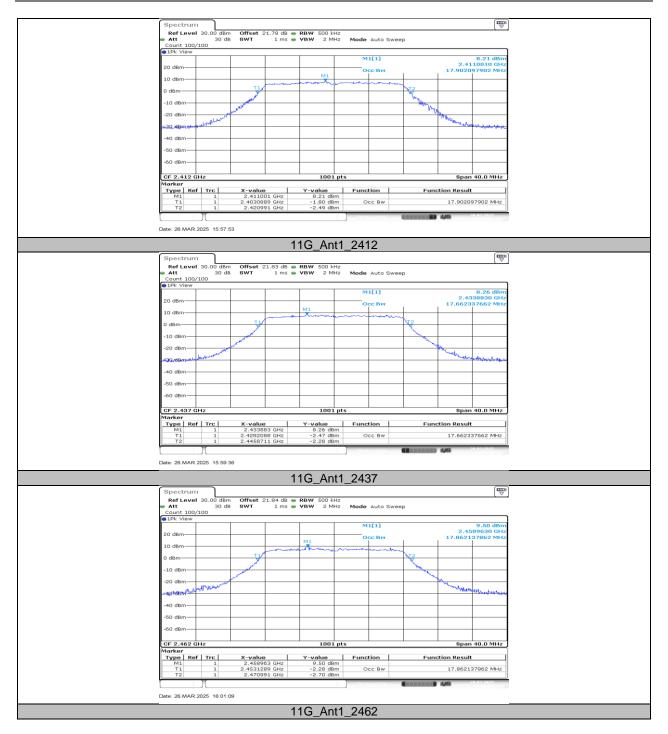
Test Mode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
		2412	14.226	2404.8472	2419.0729
11B	B Ant1	2437	14.266	2429.8072	2444.0729
		2462	14.266	2454.8072	2469.0729
11G An		2412	17.902	2403.0889	2420.9910
	Ant1	2437	17.662	2428.2088	2445.8711
		2462	17.862	2453.1289	2470.9910
		2412	18.861	2402.6893	2421.5504
11N20SISO	Ant1	2437	18.462	2427.7293	2446.1908
		2462	18.581	2452.7293	2471.3107



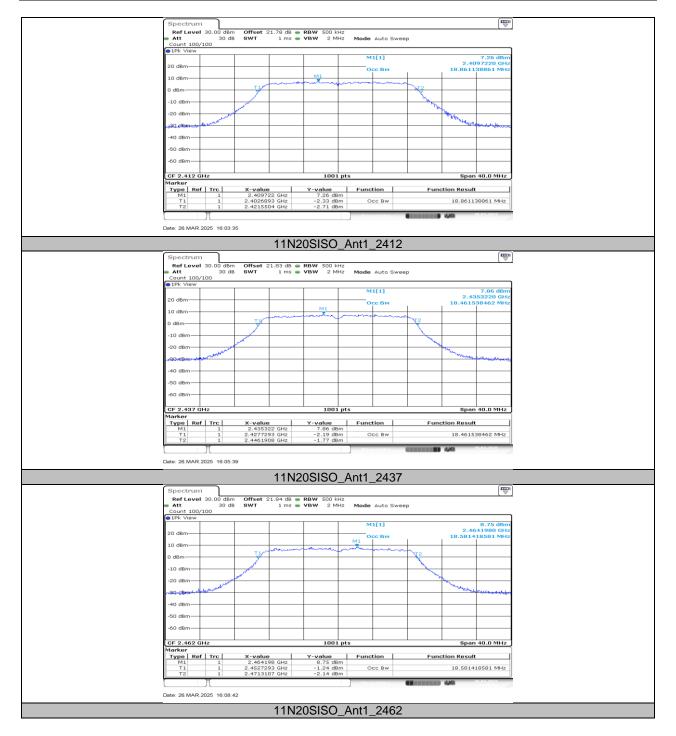
## 11.2.2. Test Graphs











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# 11.3. APPENDIX C: MAXIMUM CONDUCTED OUTPUT POWER 11.3.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm]	Limit[dBm]	Verdict
		2412	19.48	≤30.00	PASS
11B	Ant1	2437	19.36	≤30.00	PASS
		2462	19.21	≤30.00	PASS
11G	Ant1	2412	13.92	≤30.00	PASS
		2437	14.19	≤30.00	PASS
		2462	14.28	≤30.00	PASS
11N20SISO	Ant1	2412	13.48	≤30.00	PASS
		2437	13.70	≤30.00	PASS
		2462	13.81	≤30.00	PASS

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

<sup>2.</sup> The Duty Cycle Factor (refer to section 7.5) had already compensated to the test data.

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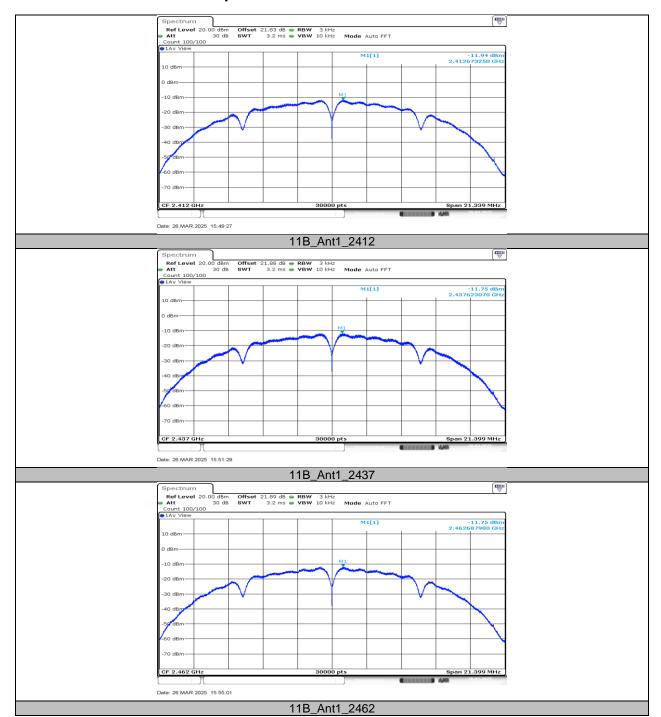
## 11.4. APPENDIX D: MAXIMUM POWER SPECTRAL DENSITY 11.4.1. Test Result

Test Mode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B		2412	-11.94	≤8.00	PASS
	Ant1	2437	-11.75	≤8.00	PASS
		2462	-11.75	≤8.00	PASS
11G		2412	-17.45	≤8.00	PASS
	Ant1	2437	-17.23	≤8.00 PASS	PASS
		2462	-16.30	≤8.00	PASS
11N20SISO		2412	-17.48	≤8.00	PASS
	Ant1	2437	-17.20	≤8.00	PASS
		2462	-17.64	≤8.00	PASS

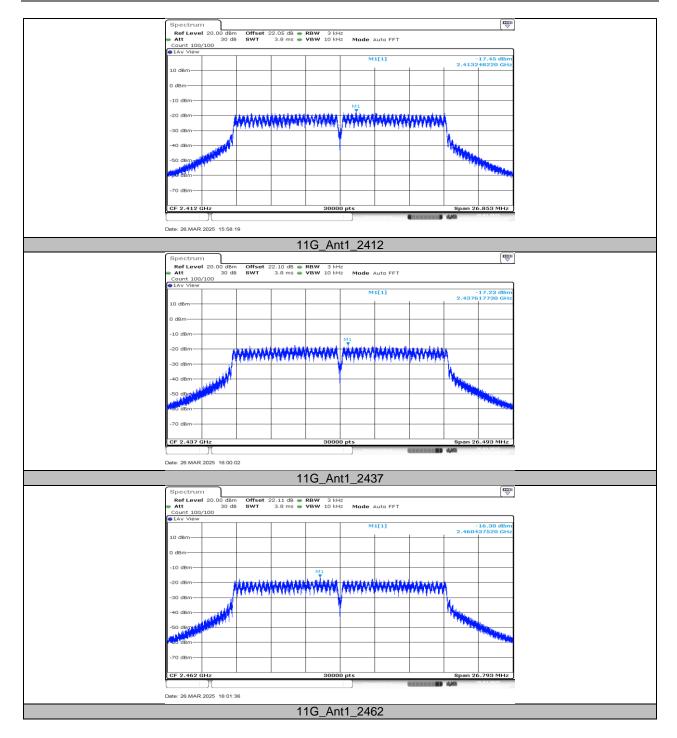
Note: 1. The Duty Cycle Factor (refer to section 7.5) had already compensated to the test data.



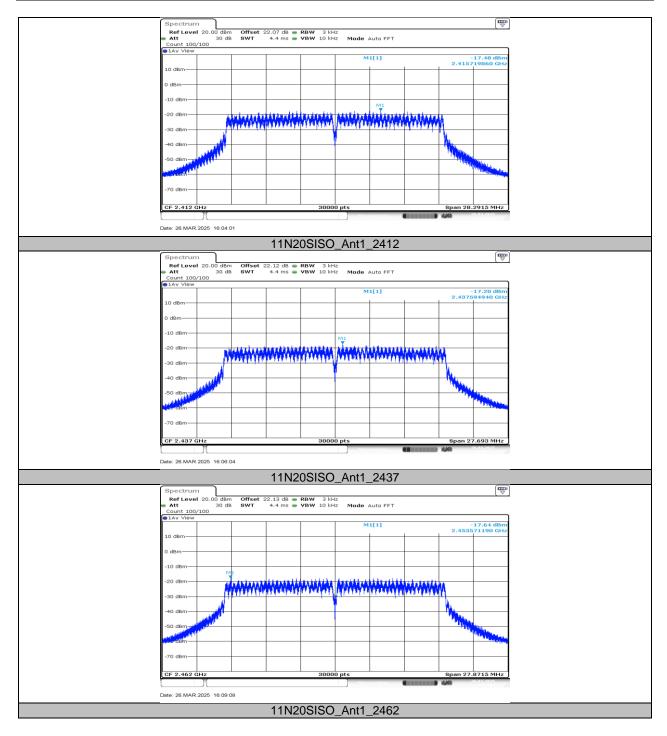
## 11.4.2. Test Graphs













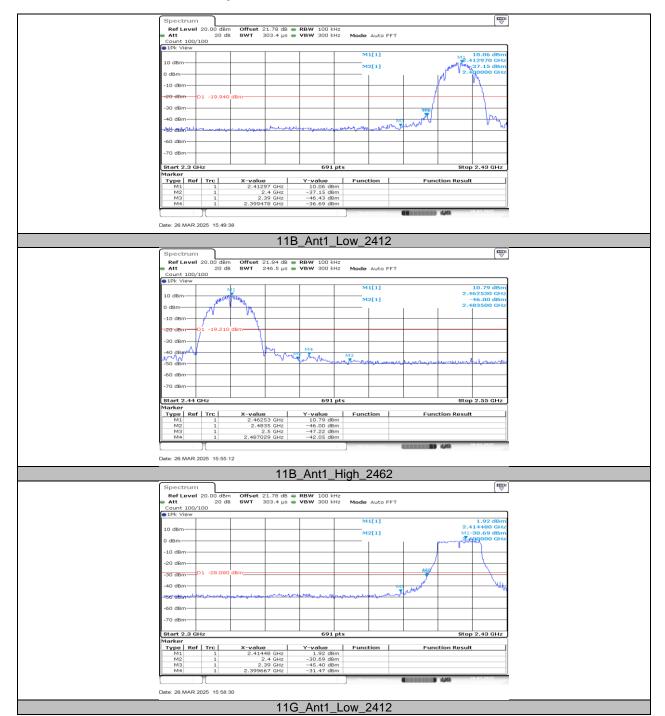
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## 11.5. APPENDIX E: BAND EDGE MEASUREMENTS 11.5.1. Test Result

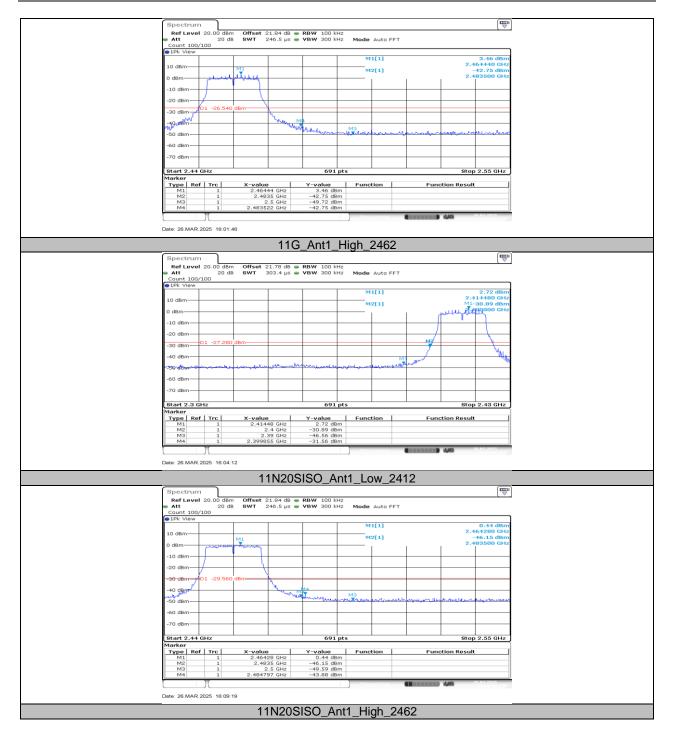
Test Mode	Antenna	ChName	Frequency [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
11B /	A n+1	Low	2412	10.06	-36.69	≤-19.94	PASS
	Ant1	High	2462	10.79	-42.05	≤-19.21	PASS
11G	Ant1	Low	2412	1.92	-31.47	≤-28.08	PASS
		High	2462	3.46	-42.75	≤-26.54	PASS
11N20SISO	Ant1	Low	2412	2.72	-31.56	≤-27.28	PASS
		High	2462	0.44	-43.88	≤-29.56	PASS



## 11.5.2. Test Graphs









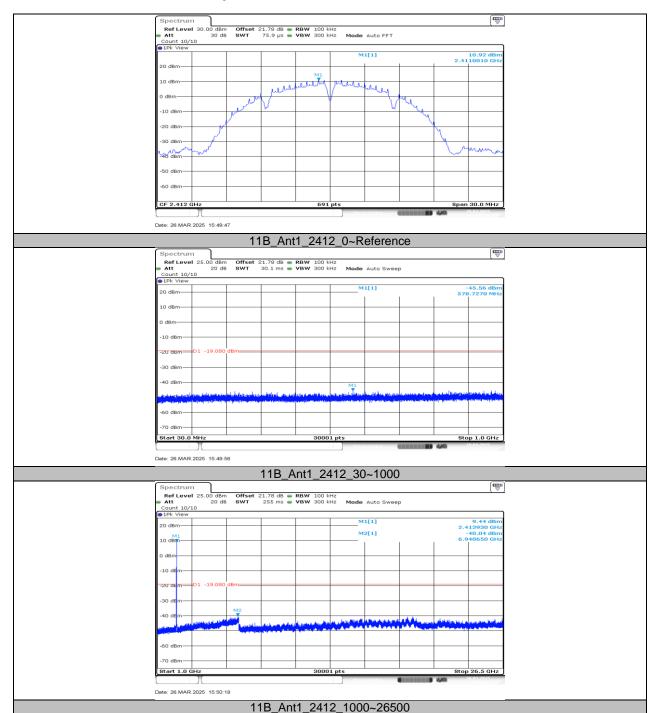
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## 11.6. APPENDIX F: CONDUCTED SPURIOUS EMISSION 11.6.1. Test Result

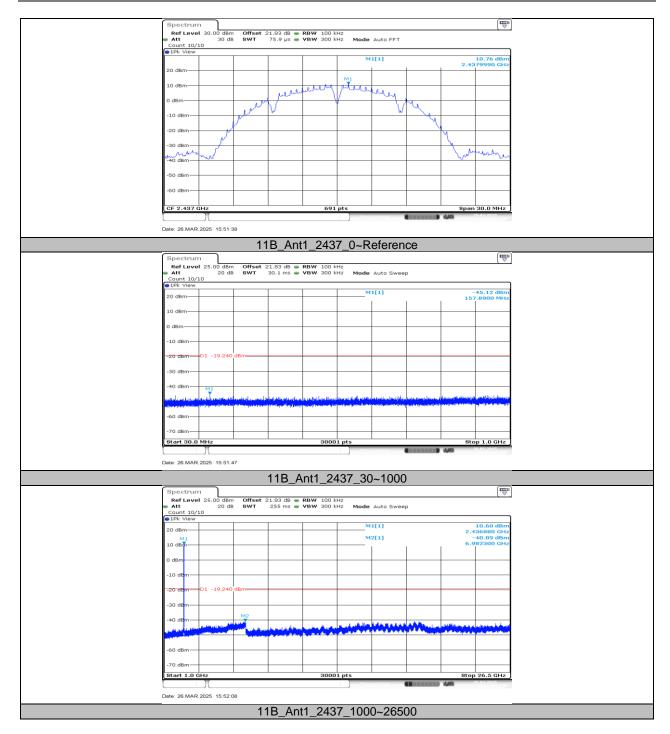
Test Mode	Antenna	Frequency[MHz]	FreqRange [Mhz]	Result [dBm]	Limit [dBm]	Verdict
11B			Reference	10.92		PASS
	Ant1	2412	30~1000	-45.56	≤-19.08	
			1000~26500	-40.04	≤-19.08	PASS
			Reference	10.76		PASS
		2437	30~1000	-45.12	≤-19.24	PASS
			1000~26500	-40.89	≤-19.24	PASS
			Reference	11.09		PASS
		2462	30~1000	-45.72	≤-18.91	PASS
			1000~26500	-40.45	≤-18.91	PASS
			Reference	3.13		
		2412	30~1000	-45.18	≤-26.87	PASS
	Ant1		1000~26500	-40.44	≤-26.87	PASS
		2437	Reference	0.51		PASS
11G			30~1000	-45.51	≤-29.49	PASS
			1000~26500	-39.47	≤-29.49	PASS
		2462	Reference	3.18		PASS
			30~1000	-45.65	≤-26.82	PASS
			1000~26500	-40.36	≤-26.82	PASS
11N20SISO		2412	Reference	2.55		PASS
			30~1000	-45.76	≤-27.45	PASS
			1000~26500	-40.57	≤-27.45	PASS
	Ant1	2437	Reference	2.80		PASS
			30~1000	-45.35	≤-27.2	PASS
			1000~26500	-41.09	≤-27.2	PASS
			Reference	2.11		PASS
		2462	30~1000	-45.74	≤-27.89	PASS
			1000~26500	-40.23	≤-27.89	PASS



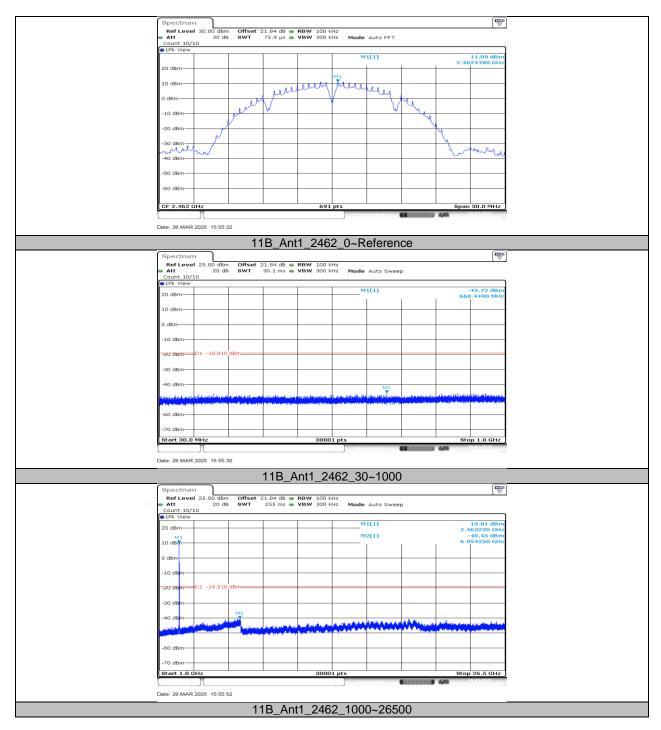
## 11.6.2. Test Graphs



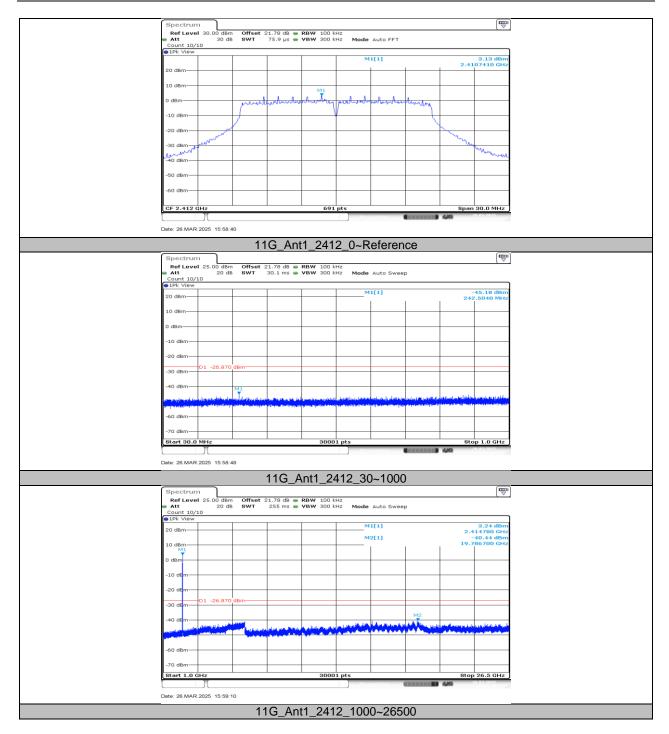




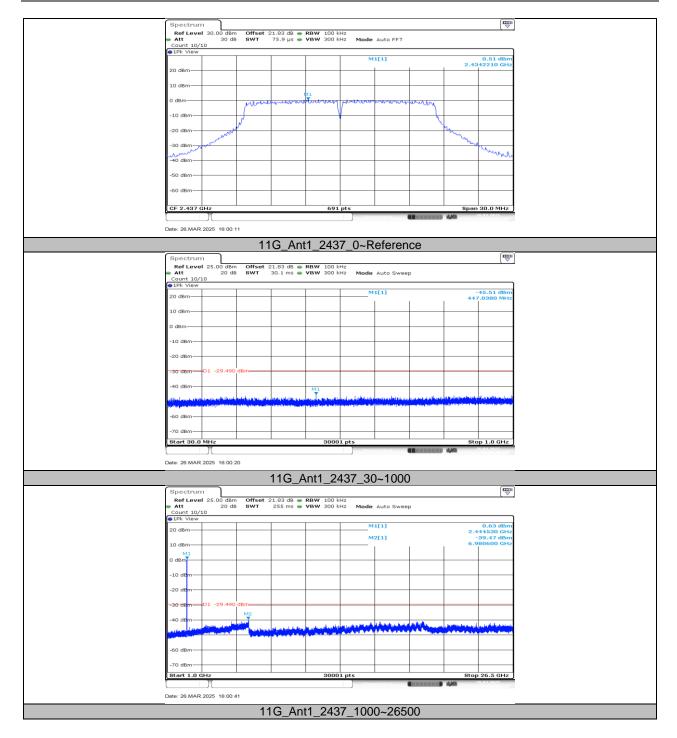




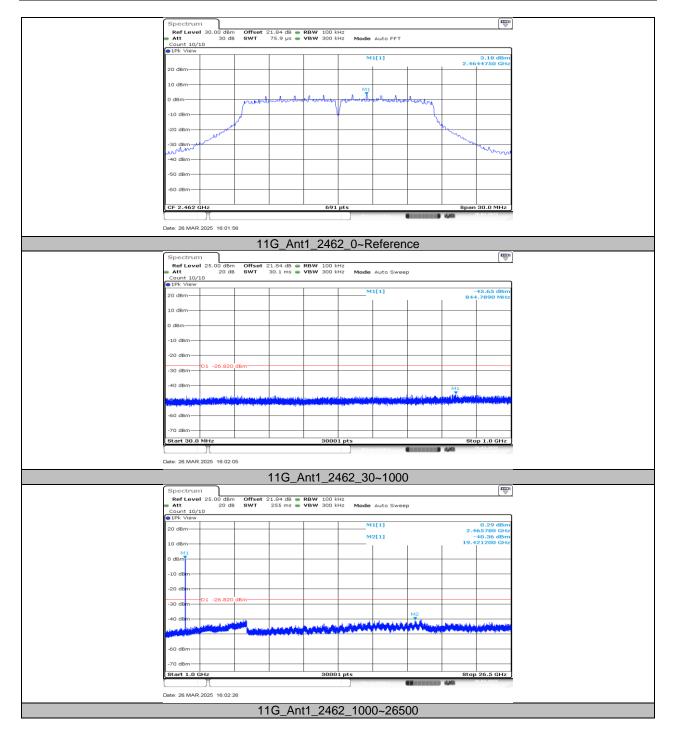




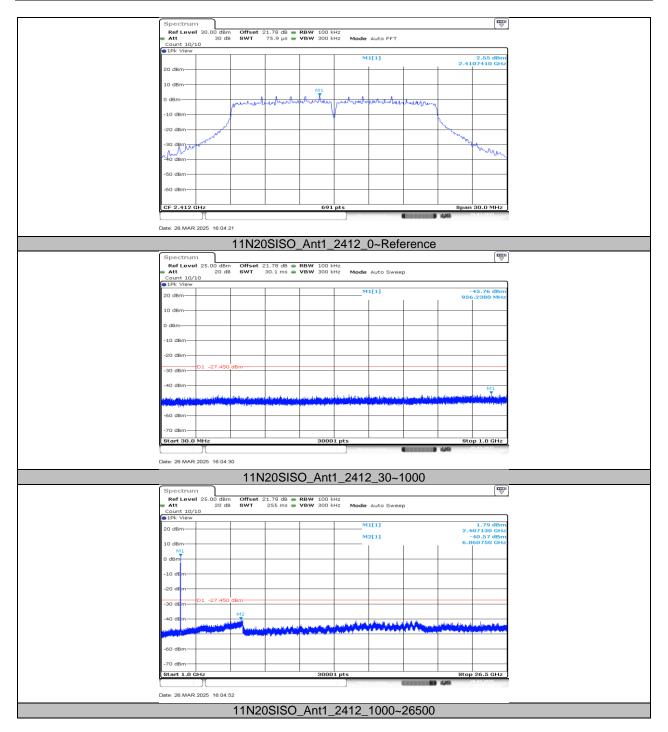




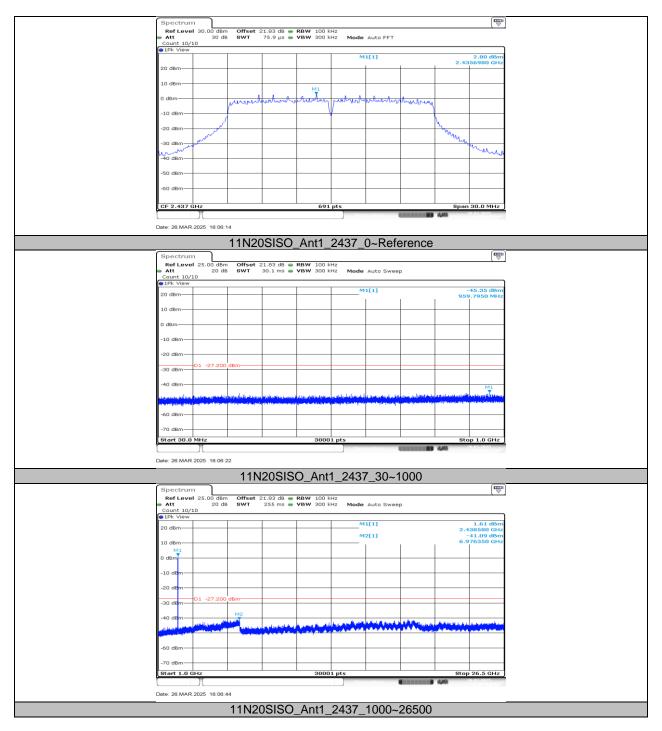




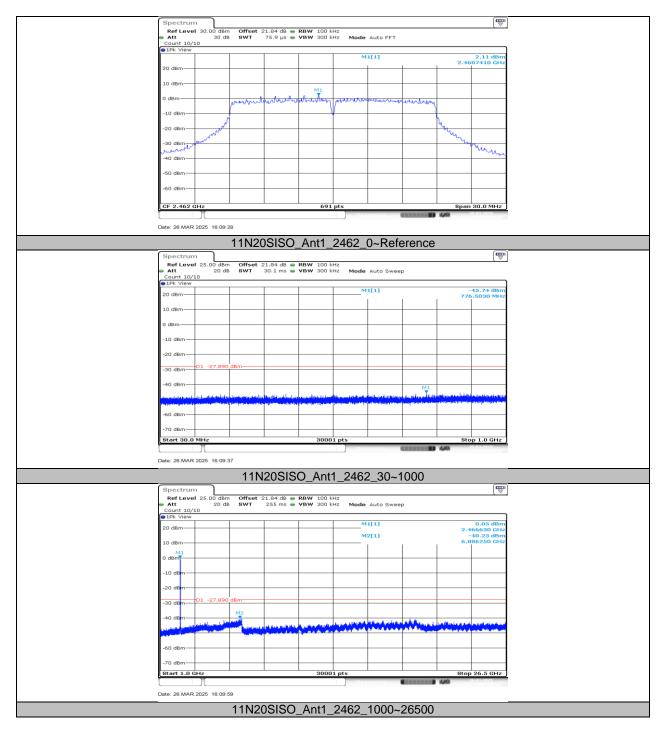














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## 11.7. APPENDIX G: DUTY CYCLE 11.7.1. Test Result

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	12.39	12.52	0.9896	98.96	0.05	0.08	0.01
11G	2.05	2.18	0.9404	94.04	0.27	0.49	1
11N20SISO	1.91	2.04	0.9363	93.63	0.29	0.52	1

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**