



CFR 47 FCC PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

Indoor Camera

MODEL NUMBER: WP01002

FCC ID: 2AYZ8WP01002

REPORT NUMBER: 4789945487-1

ISSUE DATE: July 20, 2021

Prepared for

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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	07/20/2021	Initial Issue	



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

Note:

^{1.} This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

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



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Linkzone Technology Co., Limited

Address: Room 510, 5/F, Wayson Commercial Building, 28 Connaught

Road West, Sheung Wan, Hong Kong

Manufacturer Information

Company Name: Linkzone Technology Co., Limited

Address: Room 510, 5/F, Wayson Commercial Building, 28 Connaught

Road West, Sheung Wan, Hong Kong

EUT Information

Laboratory Manager

EUT Name: Indoor Camera
Model Name: WP01002
Brand: UINCCS
Sample Received Date: May 19, 2021
Sample Status: Normal

Sample Status: Normal Sample ID: 3917221

Date of Tested: May 19, 2021~ July 13, 2021

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

Prepared By:	Checked By:
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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 and ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

	A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.
	FCC (FCC Designation No.: CN1187)
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules
	ISED (Company No.: 21320)
Accreditation Certificate	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED.
	Body Identifier (CABID) is CN0046.
	VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)
	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name:
	Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B, the VCCI registration No. is C-20012 and T-20011

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

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

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



4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. MEASUREMENT UNCERTAINTY

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

Uncertainty	
3.62 dB	
2.2 dB	
4.00 dB	
5.78 dB (1 GHz ~ 18 GHz)	
5.23 dB (18 GHz ~ 26 GHz)	
±0.028%	
±0.0196%	
±0.686 dB	
±0.743 dB	
±1.328 dB	
±0.746 dB (9 kHz ~ 1 GHz)	
±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.



5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name:	Indoor Camera
Model Name:	WP01002
Radio Technology	IEEE802.11b/g/n HT20/ n HT40
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2422MHz—2452MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Rated Input	DC 5V via Adapter

5.2. CHANNEL LIST

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

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

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 ~ 2462	1-11[11]	15.15	17.65
g	2412 ~ 2462	1-11[11]	13.15	15.65
n HT20	2412 ~ 2462	1-11[11]	12.15	14.65
n HT40	2422 ~ 2452	3-9[7]	12.84	15.34



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5.4. TEST CHANNEL CONFIGURATION

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

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Softw	/are	Secure CRT					
NA 1 1 C	Transmit		T	est Software	e setting valu	ue	
Modulation Mode	Antenna	1	NCB: 20MF	lz	NCB: 40MHz		
Wode	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	44	44	44			
802.11g	1	54	54	51	/		
802.11n HT20	1	52	52	49			
802.11n HT40	1		1		52	51	48

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 802.11b mode: 6 Mbps 802.11n HT20 mode: MCS0 802.11n HT40 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	2412-2462	built in welding antenna	2.5

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	⊠1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	⊠1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	⊠1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	⊠1TX, 1RX	ANT 1 can be used as transmitting/receiving antenna.

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5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	laptop	Lenovo	TP00094A	1
2	UART	1	1	1

I/O CABLES

_	able No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
	1	USB cable	Unshielded	NO	1.5 m	USB cable

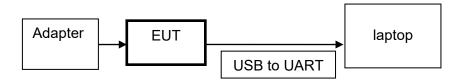
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
1	Adapter	1	KA06E-0501000US	INPUT: 100-240 V~50/60 Hz OUTPUT: 5 Vdc, 1 A, 5 W

TEST SETUP

The EUT can work in engineering mode with a software.

SETUP DIAGRAM FOR TESTS

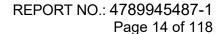




6. MEASURING INSTRUMENT AND SOFTWARE USED

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					
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. 11, 2018	Aug. 10, 2021		
Preamplifier	HP	8447D	2944A09099	Nov. 12, 2020	Nov. 11, 2021		
EMI Measurement Receiver	R&S	ESR26	101377	Nov. 12, 2020	Nov. 11, 2021		
Horn Antenna	TDK	HRN-0118	130939	Sept. 17, 2018	Sept. 17, 2021		
Preamplifier	TDK	PA-02-0118	TRS-305- 00067	Nov. 20, 2020	Nov. 19, 2021		
Horn Antenna	Schwarzbeck	BBHA9170	#691	Aug. 11, 2018	Aug. 11, 2021		
Preamplifier	TDK	PA-02-2	TRS-307- 00003	Nov. 12, 2020	Nov. 11, 2021		
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		
Software							
	Description		Manufacturer	Name	Version		
Test Software	for Radiated E	missions	Farad	EZ-EMC	Ver. UL-3A1		





Tonsend RF Test System Manufacturer Model No. Serial No. Last Cal. Due. Date Equipment Wideband Radio R&S 155523 Nov.20,2020 Nov.19,2021 CMW500 **Communication Tester PXA Signal Analyzer** N9030A MY55410512 Nov.20,2020 Nov.19,2021 Keysight MXG Vector Signal MY56200284 Nov.20,2020 Nov.19,2021 Keysight N5182B Generator MXG Vector Signal Keysight N5172B MY56200301 Nov.20,2020 Nov.19,2021 Generator DC power supply Keysight MY55159130 Nov.24,2020 Nov.23,2021 E3642A Software Description Manufacturer Version Name Tonsend SRD Test System **Tonsend** JS1120-3 RF Test System 2.6.77.0518

Other Instruments					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Dual Channel Power Meter	Keysight	N1912A	MY55416024	Nov. 20, 2020	Nov. 19, 2021
Power Sensor	Keysight	USB Wideband Power Sensor	MY5100022	Nov. 20, 2020	Nov. 19, 2021

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7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

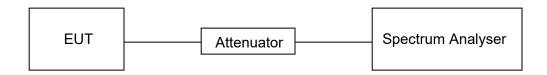
LIMITS

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	24.5 °C	Relative Humidity	58.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix G.

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7.2. 6 dB DTS BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)		
CFR 47 FCC 15.247(a)(2) 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		

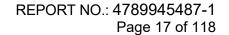
TEST PROCEDURE

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 analyser and use the following settings:

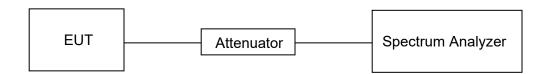
Center Frequency	The center frequency of the channel under test
Frequency Span	Between 1.5 times and 5.0 times the OBW
Detector	Peak
RBW	For 6 dB Bandwidth: 100 kHz
VBW	For 6 dB Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

- 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	24.5 °C	Relative Humidity	58.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix A & B.

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7.3. CONDUCTED OUTPUT POWER

LIMITS

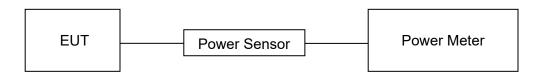
CFR 47 FCC Part15 (15.247) Subpart C				
Section Test Item Limit Frequency Range (MHz)				
CFR 47 FCC 15.247(b)(3)	Peak Output Power	1 watt or 30 dBm	2400-2483.5	

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	24.5 °C	Relative Humidity	58.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 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			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e)	Power Spectral Density	8 dBm/3 kHz	2400-2483.5

TEST PROCEDURE

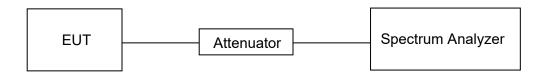
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	RMS
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	24.5 °C	Relative Humidity	58.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

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				
Section Test Item Limit				
Conducted at least 30 dB below that in the 100 kHz Bandedge and Spurious Emissions 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:

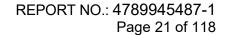
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

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

Change the settings for emission level measurement:

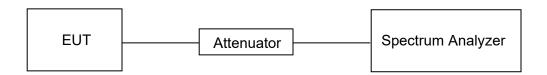
Change the settings for emission level measurement.			
Span	Set the center frequency and span to encompass frequency range to be measured		
Detector	Peak		
RBW	100 kHz		
VBW	≥3 × RBW		
measurement points	≥span/RBW		
Trace	Max hold		
Sweep time	Auto couple.		

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





TEST SETUP



TEST ENVIRONMENT

Temperature	24.5 °C	Relative Humidity	58.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

Please refer to appendix E & F.

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8. RADIATED TEST RESULTS

LIMITS

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

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	(AD-A //ss)		gth Limit	
(MHz)) at 3 m	
		Quasi-Peak		
30 - 88	100	40		
88 - 216	150	43.5		
216 - 960	200	46		
Above 960	500	54		
Above 1000	500	Peak	Average	
Above 1000	300	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					

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

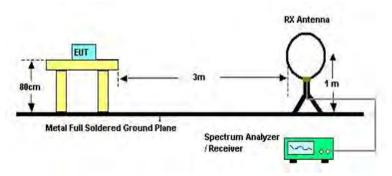
MHz	MHz	MHz	GHz	
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15	
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46	
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75	
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5	
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2	
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5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

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



TEST SETUP AND PROCEDURE

Below 30 MHz



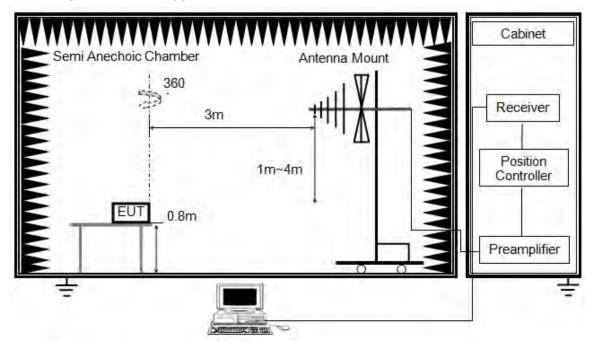
The setting of the spectrum analyser

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

- 1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.
- 2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.
- 3. The EUT was placed on a turntable with 80cm above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.
- 5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
- 6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode 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 Ω . 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



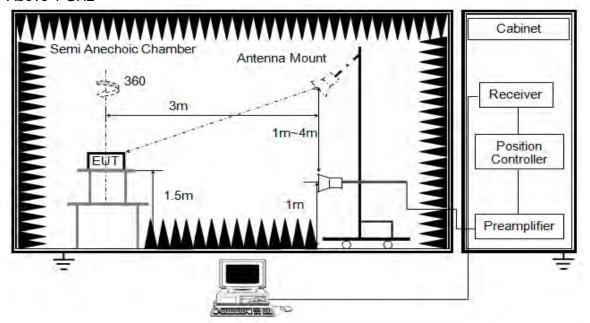
The setting of the spectrum analyser

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 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



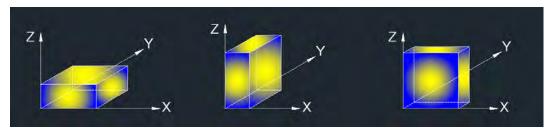
The setting of the spectrum analyser

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 1.5 m above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
- 6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.



X axis, Y axis, Z axis positions:



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

TEST ENVIRONMENT

Temperature	26.2 °C	Relative Humidity	47 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

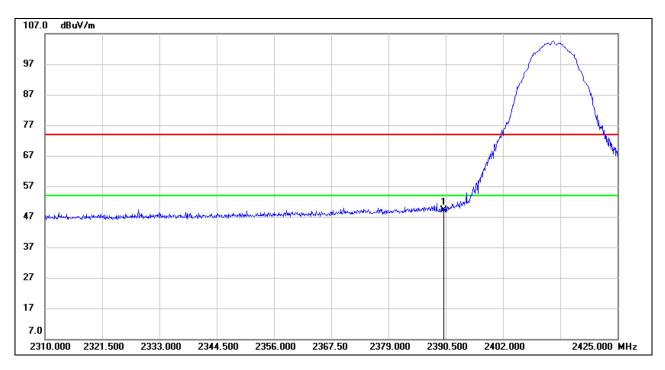


8.1. RESTRICTED BANDEDGE

8.1.1. 802.11b MODE

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

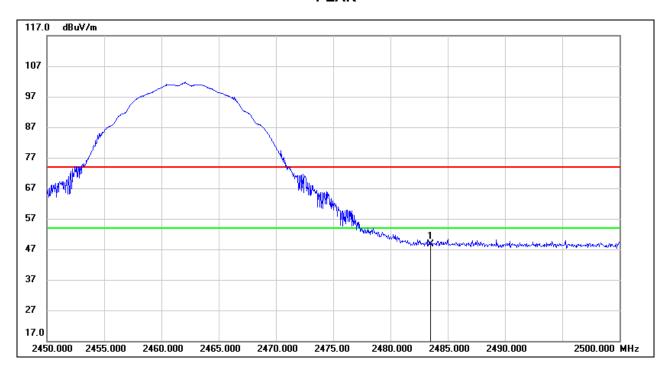


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	15.88	33.35	49.23	74.00	-24.77	peak

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



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL) PEAK



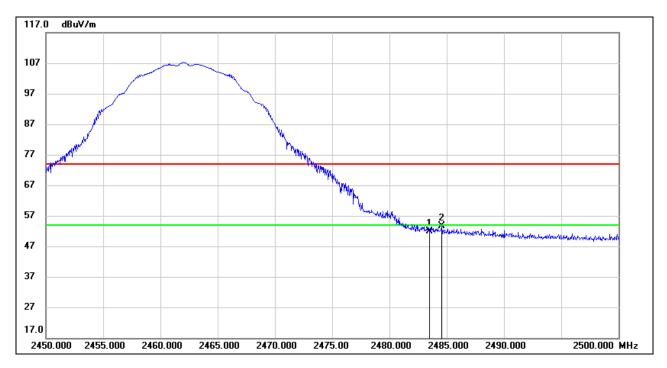
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	14.93	33.71	48.64	74.00	-25.36	peak

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



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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	18.16	33.71	51.87	74.00	-22.13	peak
2	2484.550	19.90	33.71	53.61	74.00	-20.39	peak

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

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

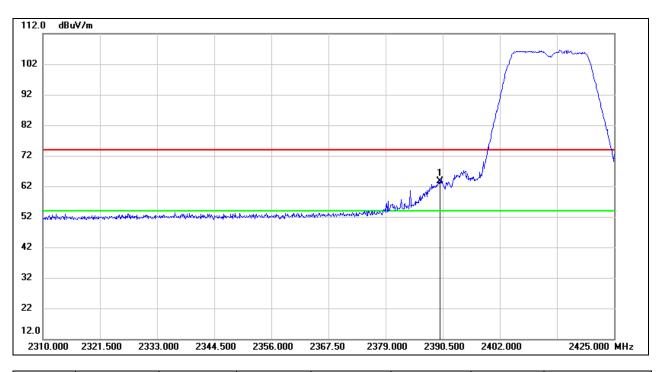
Note: Both horizontal and vertical had been tested, only the worst data was recorded in the report.



8.1.2. 802.11g MODE

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

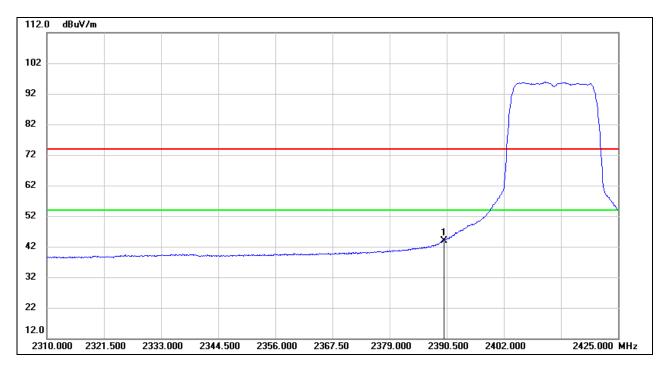


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	30.29	33.35	63.64	74.00	-10.36	peak

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



AVG

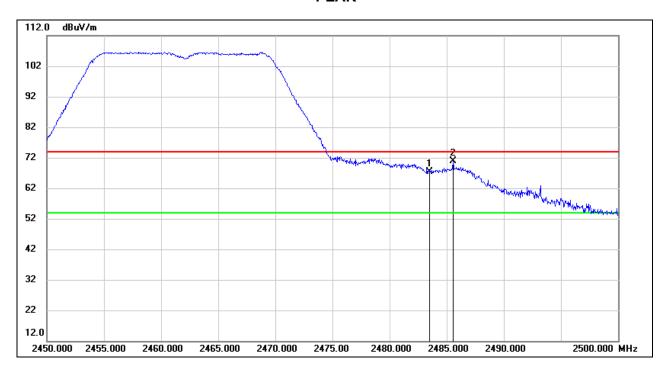


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	10.51	33.35	43.86	54.00	-10.14	AVG

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



RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL) PEAK

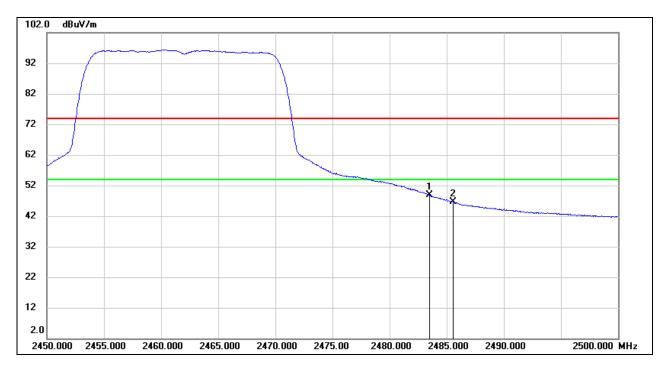


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	33.73	33.71	67.44	74.00	-6.56	peak
2	2485.550	37.25	33.71	70.96	74.00	-3.04	peak

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



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	15.19	33.71	48.90	54.00	-5.10	AVG
2	2485.550	12.90	33.71	46.61	54.00	-7.39	AVG

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

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

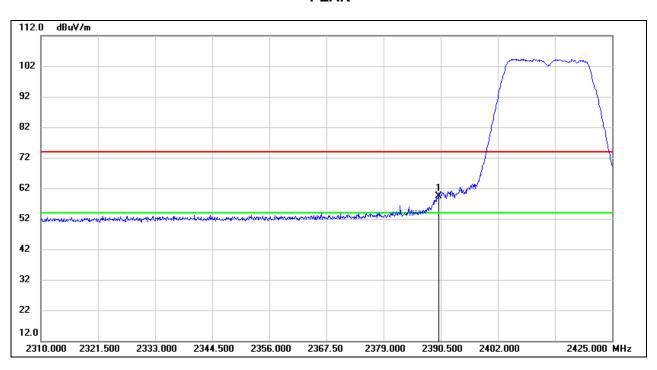
Note: Both horizontal and vertical had been tested, only the worst data was recorded in the report.



8.1.3. 802.11n HT20 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

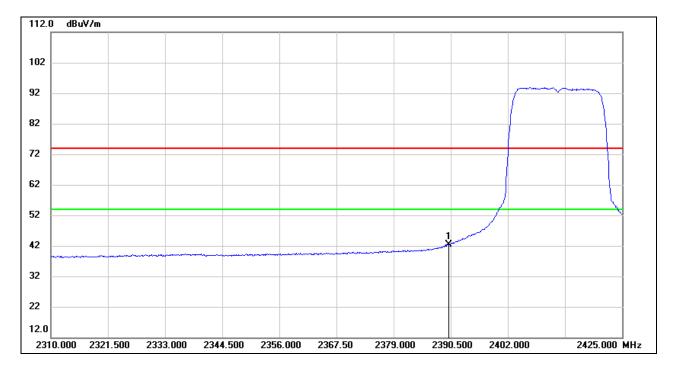


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	26.07	33.35	59.42	74.00	-14.58	peak

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



AVG

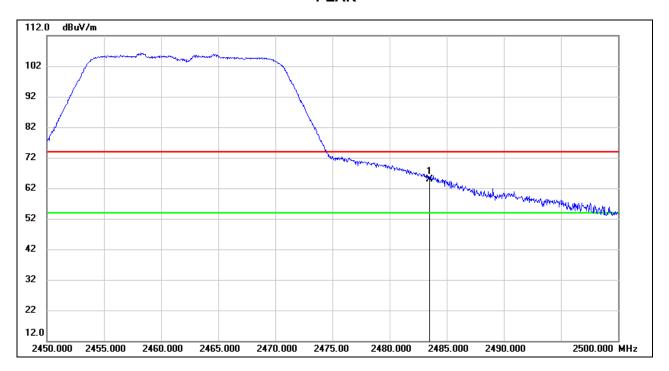


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	9.11	33.35	42.46	74.00	-31.54	peak

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

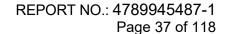


RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL) PEAK



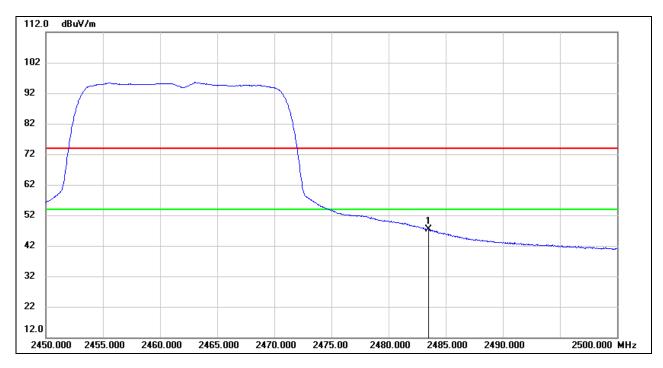
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	31.23	33.71	64.94	74.00	-9.06	peak

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





AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	13.79	33.71	47.50	54.00	-6.50	AVG

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

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

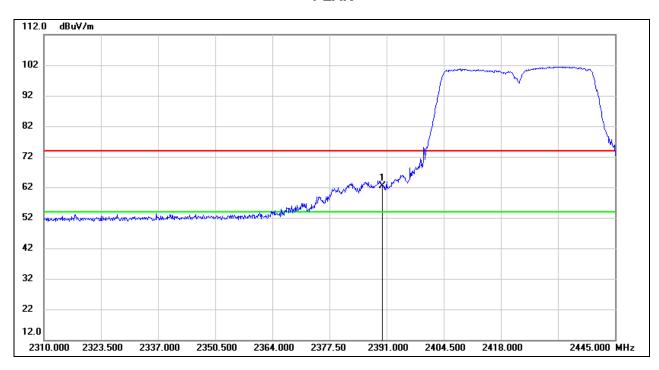
Note: Both horizontal and vertical had been tested, only the worst data was recorded in the report.



8.1.4. 802.11n HT40 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK



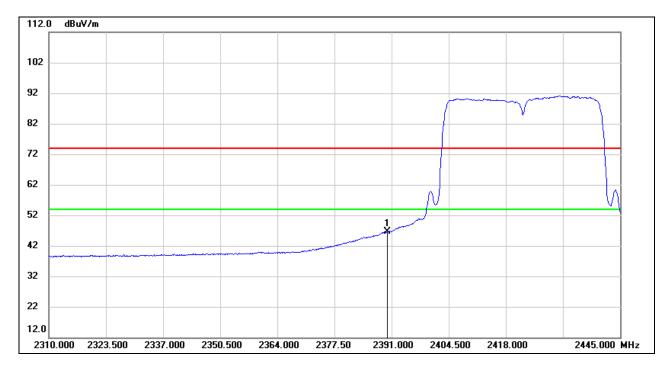
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	29.03	33.35	62.38	74.00	-11.62	peak

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





AVG



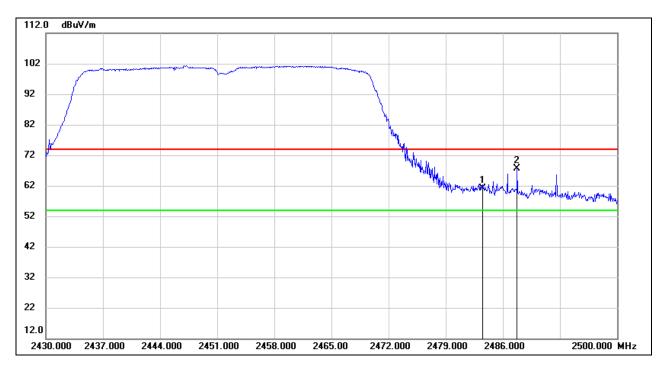
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	13.26	33.35	46.61	74.00	-27.39	peak

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



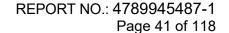
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



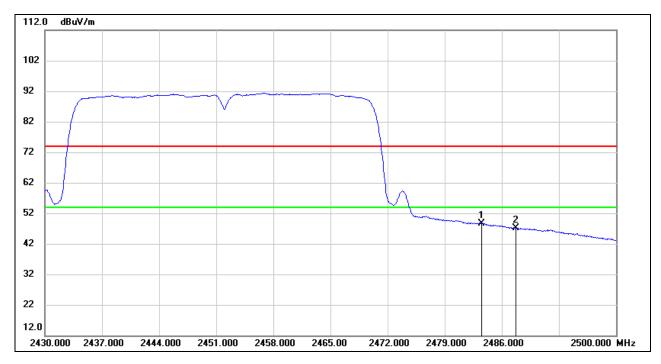
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	27.51	33.71	61.22	74.00	-12.78	peak
2	2487.750	33.80	33.72	67.52	74.00	-6.48	peak

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





AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	14.83	33.71	48.54	54.00	-5.46	AVG
2	2487.750	13.31	33.72	47.03	54.00	-6.97	AVG

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

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

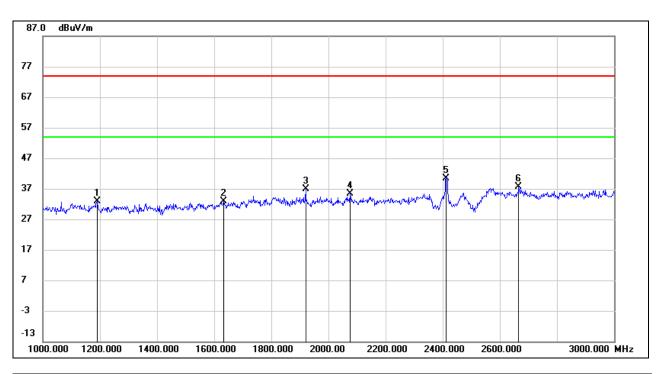
Note: Both horizontal and vertical had been tested, only the worst data was recorded in the report.



8.2. SPURIOUS EMISSIONS (1 GHz ~ 3 GHz)

8.2.1. 802.11b MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

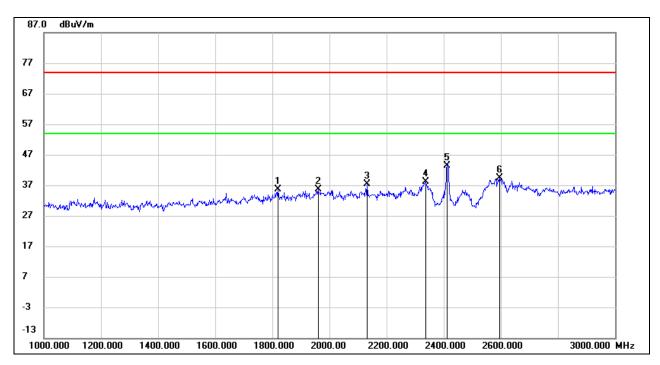


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1190.000	45.88	-13.04	32.84	74.00	-41.16	peak
2	1634.000	44.22	-11.30	32.92	74.00	-41.08	peak
3	1920.000	46.92	-10.13	36.79	74.00	-37.21	peak
4	2076.000	45.11	-9.76	35.35	74.00	-38.65	peak
5	2412.000	48.70	-8.37	40.33	/	/	fundamental
6	2666.000	45.02	-7.43	37.59	74.00	-36.41	peak

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



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

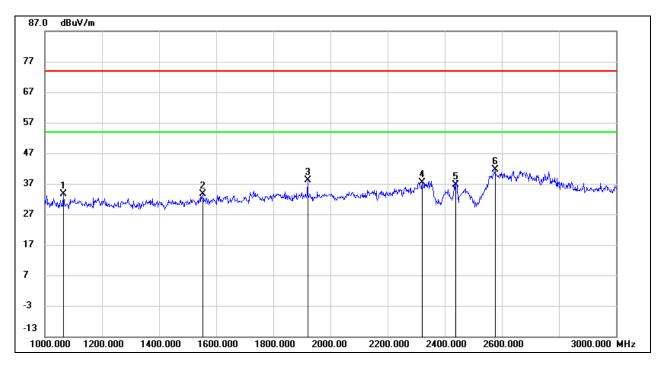


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1820.000	45.64	-10.06	35.58	74.00	-38.42	peak
2	1960.000	45.73	-10.16	35.57	74.00	-38.43	peak
3	2132.000	46.69	-9.43	37.26	74.00	-36.74	peak
4	2336.000	46.65	-8.61	38.04	74.00	-35.96	peak
5	2412.000	51.73	-8.37	43.36	/	/	fundamental
6	2596.000	47.22	-7.88	39.34	74.00	-34.66	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for 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)

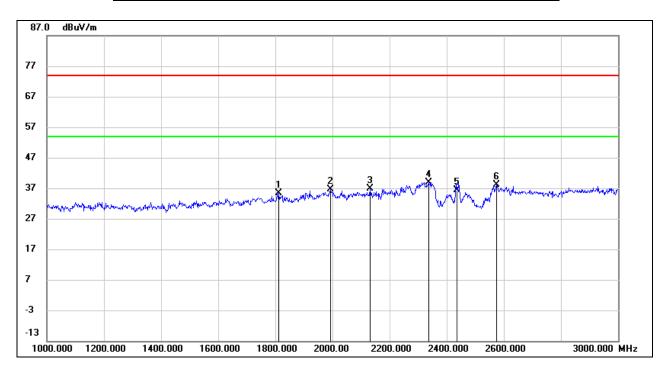


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1064.000	47.41	-13.66	33.75	74.00	-40.25	peak
2	1554.000	45.59	-11.86	33.73	74.00	-40.27	peak
3	1920.000	48.30	-10.13	38.17	74.00	-35.83	peak
4	2320.000	46.05	-8.65	37.40	74.00	-36.60	peak
5	2437.000	45.03	-8.33	36.70	1	/	fundamental
6	2576.000	49.53	-7.96	41.57	74.00	-32.43	peak

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



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)

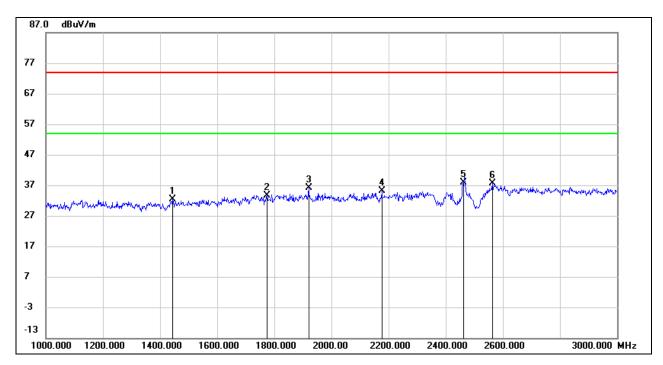


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1812.000	45.39	-10.05	35.34	74.00	-38.66	peak
2	1992.000	46.83	-10.19	36.64	74.00	-37.36	peak
3	2132.000	46.41	-9.43	36.98	74.00	-37.02	peak
4	2336.000	47.59	-8.61	38.98	74.00	-35.02	peak
5	2437.000	44.70	-8.33	36.37	/	/	fundamental
6	2574.000	46.08	-7.95	38.13	74.00	-35.87	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 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)

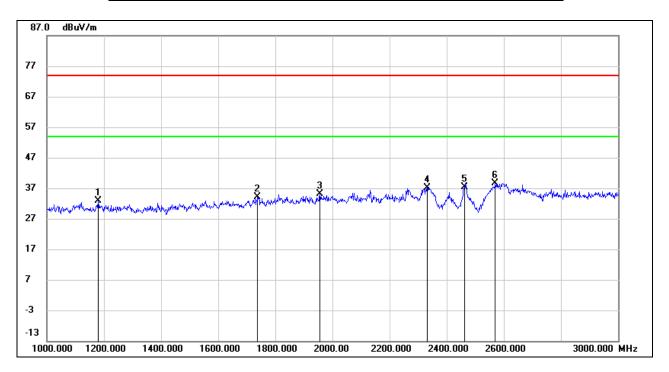


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1444.000	44.79	-12.49	32.30	74.00	-41.70	peak
2	1774.000	43.96	-10.24	33.72	74.00	-40.28	peak
3	1920.000	46.29	-10.13	36.16	74.00	-37.84	peak
4	2176.000	44.33	-9.18	35.15	74.00	-38.85	peak
5	2462.000	46.20	-8.29	37.91	/	/	fundamental
6	2564.000	45.51	-7.99	37.52	74.00	-36.48	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 (HIGH CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1180.000	46.05	-13.10	32.95	74.00	-41.05	peak
2	1738.000	44.73	-10.51	34.22	74.00	-39.78	peak
3	1956.000	45.25	-10.16	35.09	74.00	-38.91	peak
4	2332.000	45.71	-8.61	37.10	74.00	-36.90	peak
5	2462.000	45.67	-8.29	37.38	/	/	fundamental
6	2570.000	46.66	-7.97	38.69	74.00	-35.31	peak

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

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

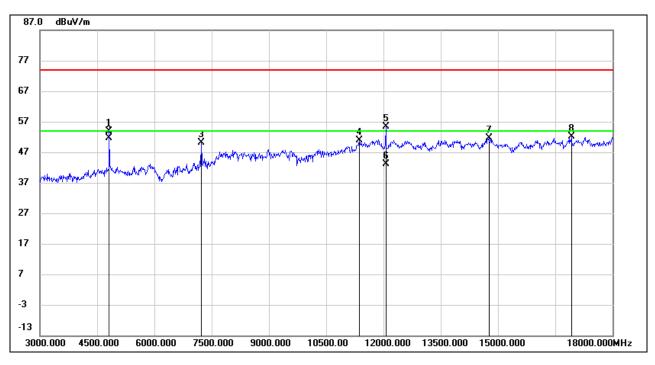
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.



8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

8.3.1. 802.11b MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

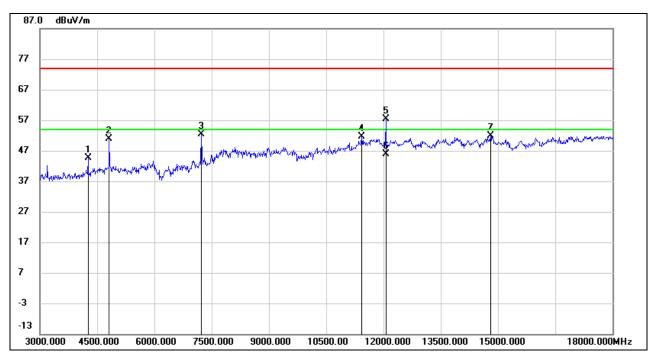


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4815.000	52.44	1.38	53.82	74.00	-20.18	peak
2	4815.000	50.33	1.38	51.71	54.00	-2.29	AVG
3	7230.000	42.92	7.28	50.20	74.00	-23.80	peak
4	11370.000	36.37	14.49	50.86	74.00	-23.14	peak
5	12060.000	40.05	15.44	55.49	74.00	-18.51	peak
6	12060.000	27.63	15.44	43.07	54.00	-10.93	AVG
7	14760.000	33.62	17.90	51.52	74.00	-22.48	peak
8	16920.000	30.53	21.51	52.04	74.00	-21.96	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)



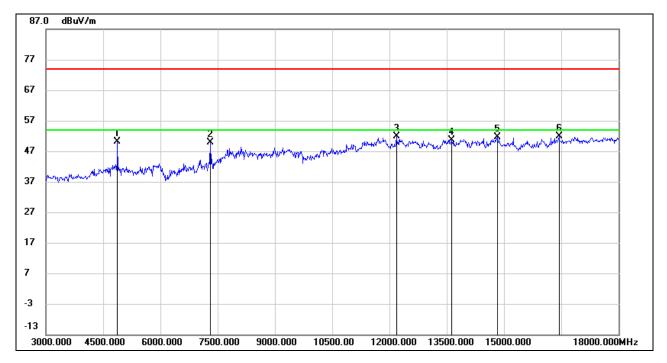
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4260.000	46.06	-1.36	44.70	74.00	-29.30	peak
2	4815.000	49.57	1.38	50.95	74.00	-23.05	peak
3	7230.000	45.08	7.28	52.36	74.00	-21.64	peak
4	11430.000	36.93	14.72	51.65	74.00	-22.35	peak
5	12060.000	41.82	15.44	57.26	74.00	-16.74	peak
6	12060.000	30.48	15.44	45.92	54.00	-8.08	AVG
7	14805.000	33.88	18.00	51.88	74.00	-22.12	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.



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HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

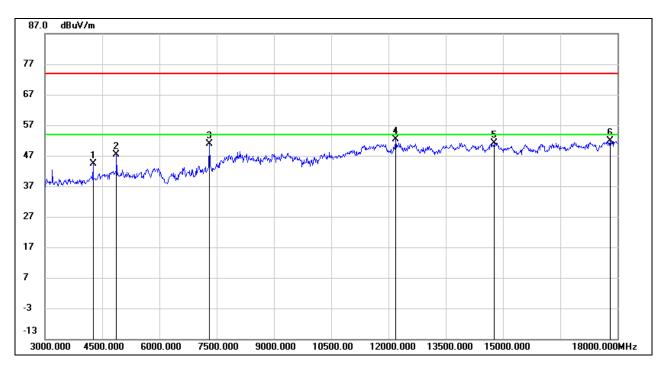


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	48.72	1.32	50.04	74.00	-23.96	peak
2	7305.000	42.83	7.14	49.97	74.00	-24.03	peak
3	12180.000	36.14	15.84	51.98	74.00	-22.02	peak
4	13620.000	33.44	17.19	50.63	74.00	-23.37	peak
5	14820.000	33.64	17.91	51.55	74.00	-22.45	peak
6	16440.000	32.29	19.68	51.97	74.00	-22.03	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)

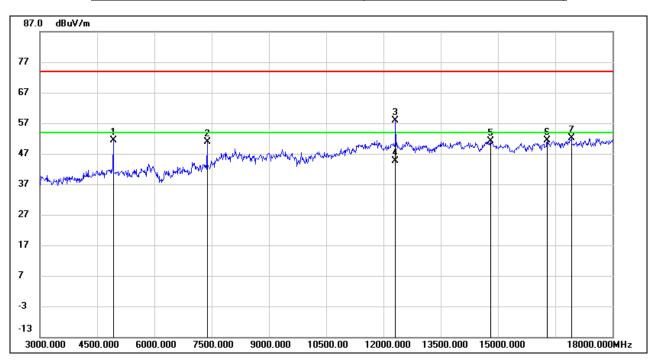


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4260.000	45.71	-1.36	44.35	74.00	-29.65	peak
2	4875.000	45.98	1.32	47.30	74.00	-26.70	peak
3	7305.000	43.71	7.14	50.85	74.00	-23.15	peak
4	12195.000	36.50	15.93	52.43	74.00	-21.57	peak
5	14775.000	33.16	17.95	51.11	74.00	-22.89	peak
6	17805.000	27.93	24.05	51.98	74.00	-22.02	peak

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



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

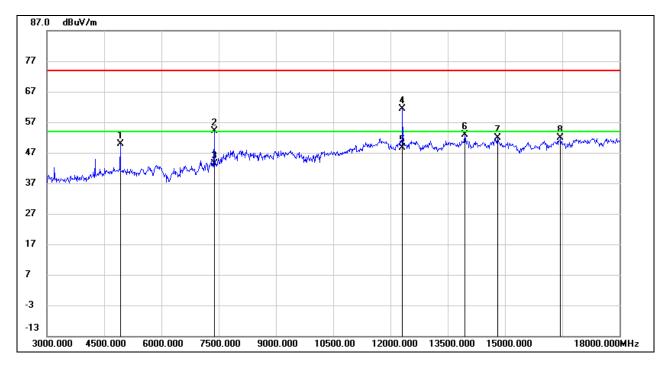


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	49.96	1.45	51.41	74.00	-22.59	peak
2	7380.000	43.05	7.79	50.84	74.00	-23.16	peak
3	12315.000	41.75	16.06	57.81	74.00	-16.19	peak
4	12315.000	28.65	16.06	44.71	54.00	-9.29	AVG
5	14805.000	33.11	18.00	51.11	74.00	-22.89	peak
6	16290.000	31.80	19.52	51.32	74.00	-22.68	peak
7	16920.000	30.57	21.51	52.08	74.00	-21.92	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.

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HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



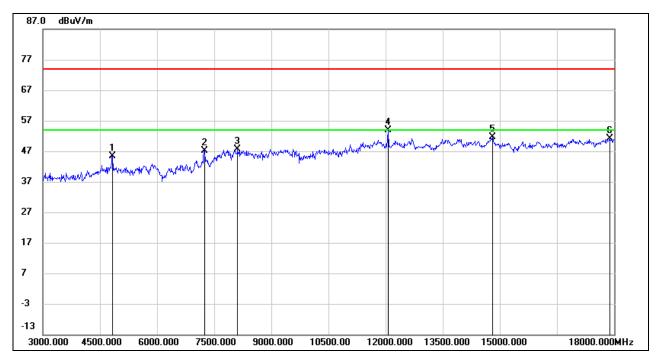
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	48.39	1.45	49.84	74.00	-24.16	peak
2	7380.000	46.37	7.79	54.16	74.00	-19.84	peak
3	7380.000	35.47	7.79	43.26	54.00	-10.74	AVG
4	12315.000	45.33	16.06	61.39	74.00	-12.61	peak
5	12315.000	32.63	16.06	48.69	54.00	-5.31	AVG
6	13950.000	35.19	17.60	52.79	74.00	-21.21	peak
7	14805.000	33.80	18.00	51.80	74.00	-22.20	peak
8	16455.000	32.11	19.68	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.



8.3.2. 802.11g MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

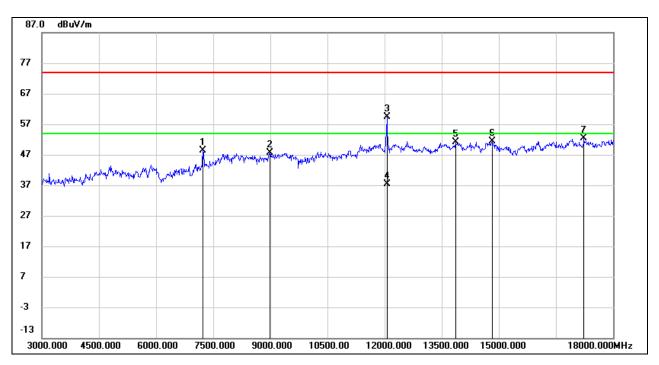


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4830.000	44.11	1.37	45.48	74.00	-28.52	peak
2	7245.000	39.84	7.25	47.09	74.00	-26.91	peak
3	8115.000	37.54	10.13	47.67	74.00	-26.33	peak
4	12060.000	38.52	15.44	53.96	74.00	-20.04	peak
5	14805.000	33.55	18.00	51.55	74.00	-22.45	peak
6	17880.000	27.28	23.93	51.21	74.00	-22.79	peak

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



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

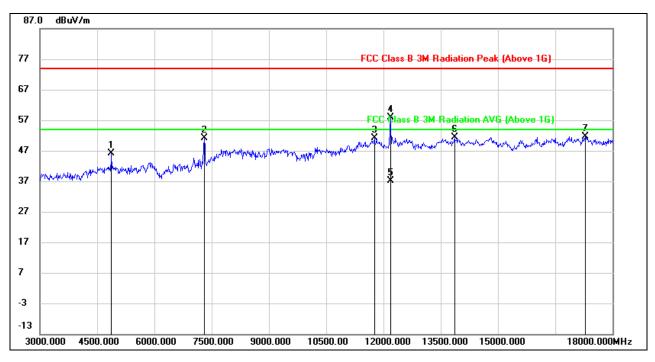


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7230.000	40.98	7.28	48.26	74.00	-25.74	peak
2	8985.000	36.75	10.99	47.74	74.00	-26.26	peak
3	12060.000	43.82	15.44	59.26	74.00	-14.74	peak
4	12060.000	21.92	15.44	37.36	54.00	-16.64	AVG
5	13860.000	33.59	17.55	51.14	74.00	-22.86	peak
6	14820.000	33.47	17.91	51.38	74.00	-22.62	peak
7	17235.000	30.17	22.21	52.38	74.00	-21.62	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)

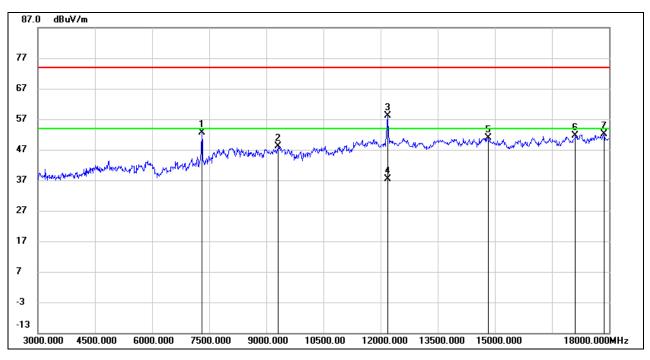


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	44.78	1.32	46.10	74.00	-27.90	peak
2	7305.000	43.98	7.14	51.12	74.00	-22.88	peak
3	11760.000	35.95	15.29	51.24	74.00	-22.76	peak
4	12180.000	41.94	15.84	57.78	74.00	-16.22	peak
5	12180.000	21.18	15.84	37.02	54.00	-16.98	AVG
6	13860.000	33.95	17.55	51.50	74.00	-22.50	peak
7	17280.000	29.21	22.48	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, VERTICAL)

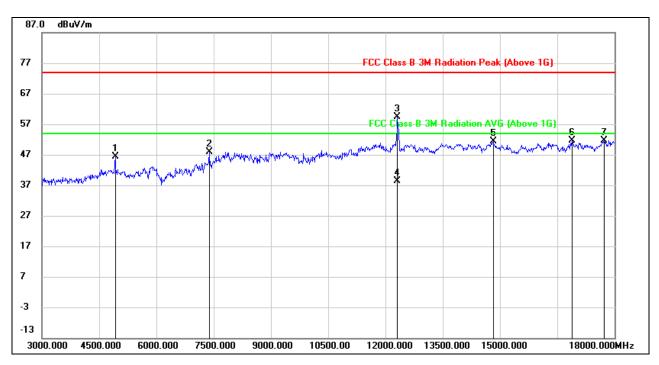


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7305.000	45.60	7.14	52.74	74.00	-21.26	peak
2	9315.000	37.69	10.48	48.17	74.00	-25.83	peak
3	12180.000	42.26	15.84	58.10	74.00	-15.90	peak
4	12180.000	21.52	15.84	37.36	54.00	-16.64	AVG
5	14820.000	33.03	17.91	50.94	74.00	-23.06	peak
6	17115.000	29.71	21.91	51.62	74.00	-22.38	peak
7	17865.000	28.22	23.95	52.17	74.00	-21.83	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 (HIGH CHANNEL, HORIZONTAL)

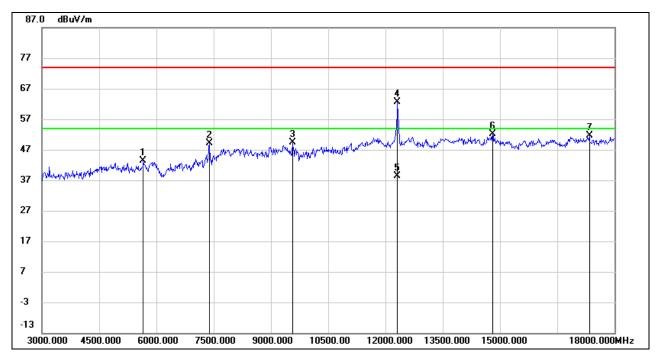


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4920.000	44.98	1.45	46.43	74.00	-27.57	peak
2	7380.000	40.14	7.79	47.93	74.00	-26.07	peak
3	12315.000	43.22	16.06	59.28	74.00	-14.72	peak
4	12315.000	22.21	16.06	38.27	54.00	-15.73	AVG
5	14820.000	33.49	17.91	51.40	74.00	-22.60	peak
6	16890.000	30.18	21.49	51.67	74.00	-22.33	peak
7	17730.000	28.11	23.64	51.75	74.00	-22.25	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)



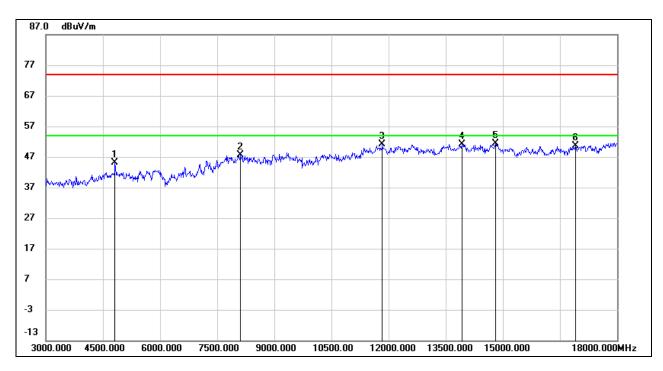
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	5655.000	40.36	3.04	43.40	74.00	-30.60	peak
2	7380.000	41.42	7.79	49.21	74.00	-24.79	peak
3	9570.000	38.40	10.88	49.28	74.00	-24.72	peak
4	12315.000	46.52	16.06	62.58	74.00	-11.42	peak
5	12315.000	22.23	16.06	38.29	54.00	-15.71	AVG
6	14805.000	34.25	18.00	52.25	74.00	-21.75	peak
7	17340.000	29.38	22.31	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. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
 - 5. Proper operation of the transmitter prior to adding the filter to the measurement chain.



8.3.3. 802.11n HT20 MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

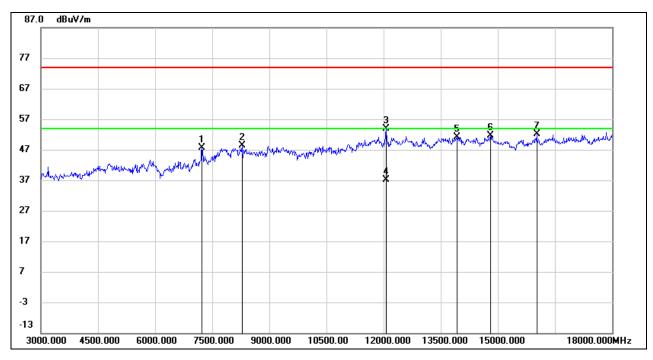


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4815.000	43.64	1.38	45.02	74.00	-28.98	peak
2	8115.000	37.48	10.13	47.61	74.00	-26.39	peak
3	11835.000	35.73	15.34	51.07	74.00	-22.93	peak
4	13920.000	33.63	17.55	51.18	74.00	-22.82	peak
5	14805.000	33.29	18.00	51.29	74.00	-22.71	peak
6	16905.000	29.20	21.55	50.75	74.00	-23.25	peak

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



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

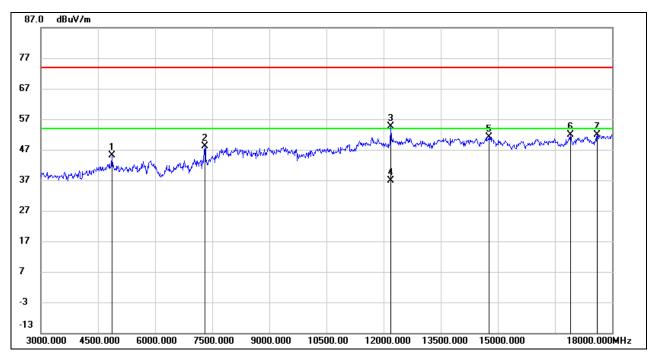


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7230.000	40.47	7.28	47.75	74.00	-26.25	peak
2	8280.000	38.78	9.71	48.49	74.00	-25.51	peak
3	12060.000	38.32	15.44	53.76	74.00	-20.24	peak
4	12060.000	21.74	15.44	37.18	54.00	-16.82	AVG
5	13920.000	33.69	17.55	51.24	74.00	-22.76	peak
6	14805.000	33.51	18.00	51.51	74.00	-22.49	peak
7	16020.000	33.73	18.41	52.14	74.00	-21.86	peak

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



HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)

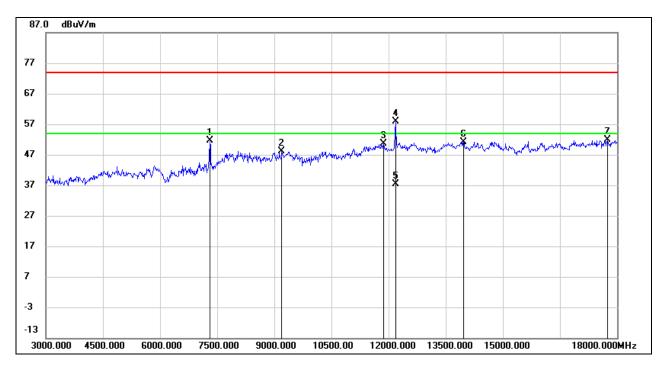


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4860.000	43.69	1.33	45.02	74.00	-28.98	peak
2	7305.000	40.91	7.14	48.05	74.00	-25.95	peak
3	12180.000	38.78	15.84	54.62	74.00	-19.38	peak
4	12180.000	21.10	15.84	36.94	54.00	-17.06	AVG
5	14760.000	33.27	17.90	51.17	74.00	-22.83	peak
6	16905.000	30.23	21.55	51.78	74.00	-22.22	peak
7	17610.000	28.99	22.80	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 (MID CHANNEL, VERTICAL)

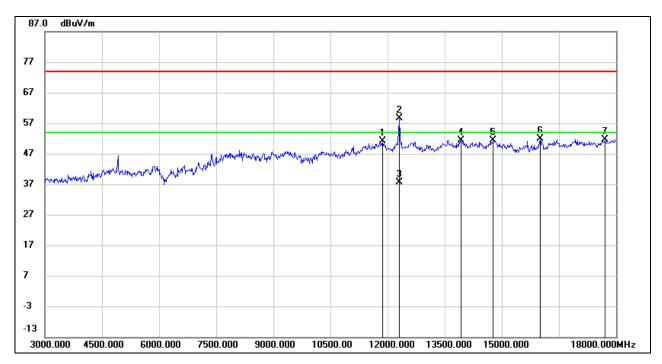


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7305.000	44.48	7.14	51.62	74.00	-22.38	peak
2	9195.000	38.19	9.92	48.11	74.00	-25.89	peak
3	11865.000	35.27	15.42	50.69	74.00	-23.31	peak
4	12180.000	41.94	15.84	57.78	74.00	-16.22	peak
5	12180.000	21.42	15.84	37.26	54.00	-16.74	AVG
6	13965.000	33.54	17.62	51.16	74.00	-22.84	peak
7	17745.000	28.22	23.72	51.94	74.00	-22.06	peak

- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. 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 (HIGH CHANNEL, HORIZONTAL)

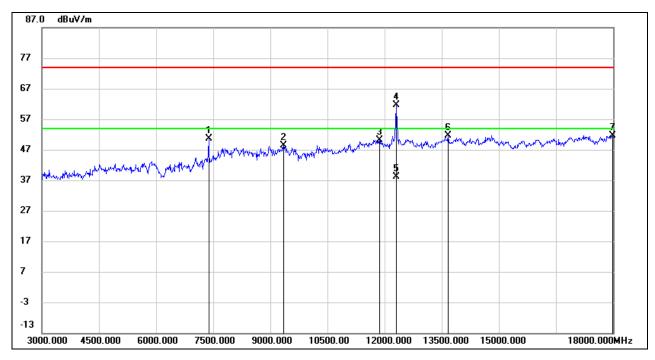


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	11865.000	35.67	15.42	51.09	74.00	-22.91	peak
2	12315.000	42.68	16.06	58.74	74.00	-15.26	peak
3	12315.000	21.62	16.06	37.68	54.00	-16.32	AVG
4	13920.000	33.95	17.55	51.50	74.00	-22.50	peak
5	14775.000	33.47	17.95	51.42	74.00	-22.58	peak
6	16005.000	33.38	18.42	51.80	74.00	-22.20	peak
7	17700.000	28.19	23.47	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. 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 (HIGH CHANNEL, VERTICAL)



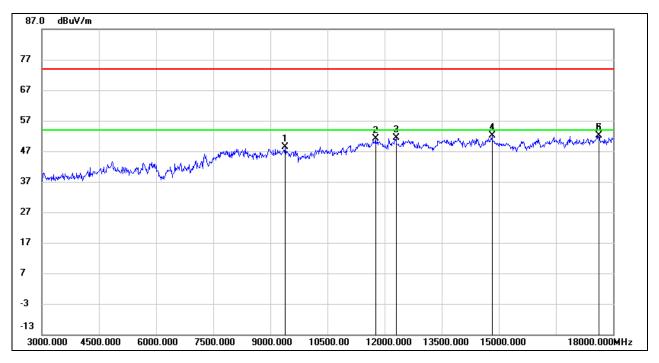
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7380.000	42.78	7.79	50.57	74.00	-23.43	peak
2	9345.000	37.75	10.66	48.41	74.00	-25.59	peak
3	11865.000	34.78	15.42	50.20	74.00	-23.80	peak
4	12300.000	45.47	16.09	61.56	74.00	-12.44	peak
5	12300.000	22.08	16.09	38.17	54.00	-15.83	AVG
6	13665.000	34.11	17.43	51.54	74.00	-22.46	peak
7	17985.000	27.54	24.21	51.75	74.00	-22.25	peak

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



8.3.4. 802.11n HT40 MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)

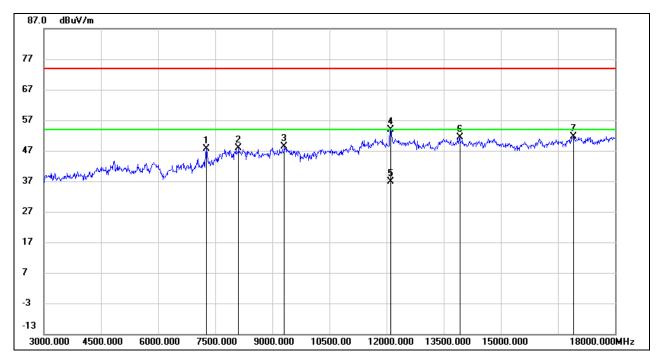


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	9390.000	37.50	10.92	48.42	74.00	-25.58	peak
2	11760.000	35.73	15.29	51.02	74.00	-22.98	peak
3	12300.000	35.37	16.09	51.46	74.00	-22.54	peak
4	14820.000	34.31	17.91	52.22	74.00	-21.78	peak
5	17625.000	29.22	22.92	52.14	74.00	-21.86	peak
6	17625.000	29.22	22.92	52.14	74.00	-21.86	peak

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



HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)

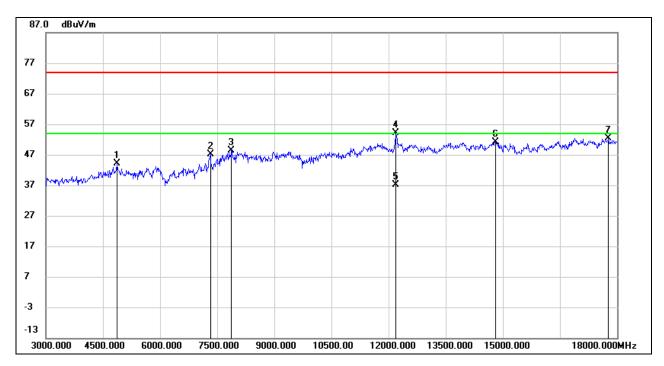


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7275.000	40.44	7.16	47.60	74.00	-26.40	peak
2	8115.000	37.82	10.13	47.95	74.00	-26.05	peak
3	9315.000	37.94	10.48	48.42	74.00	-25.58	peak
4	12105.000	38.53	15.38	53.91	74.00	-20.09	peak
5	12105.000	21.56	15.38	36.94	54.00	-17.06	AVG
6	13920.000	33.76	17.55	51.31	74.00	-22.69	peak
7	16905.000	29.99	21.55	51.54	74.00	-22.46	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)

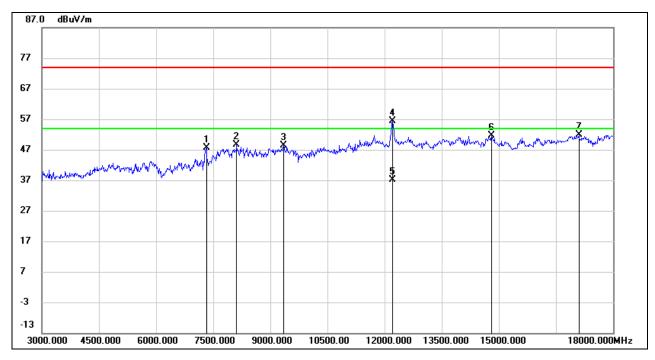


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4875.000	42.83	1.32	44.15	74.00	-29.85	peak
2	7320.000	39.84	7.28	47.12	74.00	-26.88	peak
3	7875.000	39.45	8.98	48.43	74.00	-25.57	peak
4	12195.000	38.16	15.93	54.09	74.00	-19.91	peak
5	12195.000	21.20	15.93	37.13	54.00	-16.87	AVG
6	14805.000	33.15	18.00	51.15	74.00	-22.85	peak
7	17775.000	28.45	23.91	52.36	74.00	-21.64	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, VERTICAL)

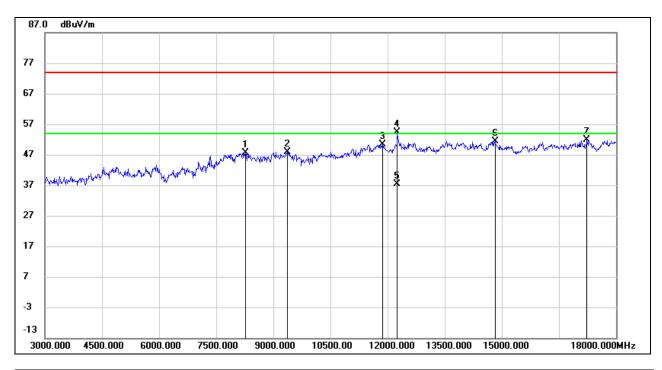


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7320.000	40.26	7.28	47.54	74.00	-26.46	peak
2	8115.000	38.61	10.13	48.74	74.00	-25.26	peak
3	9345.000	37.67	10.66	48.33	74.00	-25.67	peak
4	12210.000	40.35	15.97	56.32	74.00	-17.68	peak
5	12210.000	21.17	15.97	37.14	54.00	-16.86	AVG
6	14805.000	33.51	18.00	51.51	74.00	-22.49	peak
7	17100.000	30.03	21.90	51.93	74.00	-22.07	peak

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



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)

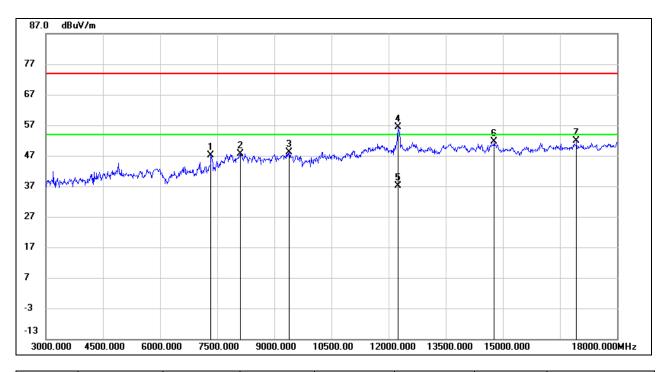


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	8265.000	38.00	9.73	47.73	74.00	-26.27	peak
2	9375.000	37.05	10.83	47.88	74.00	-26.12	peak
3	11865.000	34.84	15.42	50.26	74.00	-23.74	peak
4	12255.000	38.24	16.03	54.27	74.00	-19.73	peak
5	12255.000	21.32	16.03	37.35	54.00	-16.65	AVG
6	14820.000	33.46	17.91	51.37	74.00	-22.63	peak
7	17235.000	29.61	22.21	51.82	74.00	-22.18	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 (HIGH CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	7335.000	39.63	7.41	47.04	74.00	-26.96	peak
2	8100.000	37.52	10.18	47.70	74.00	-26.30	peak
3	9390.000	37.28	10.92	48.20	74.00	-25.80	peak
4	12240.000	40.27	16.01	56.28	74.00	-17.72	peak
5	12240.000	21.19	16.01	37.20	54.00	-16.80	AVG
6	14775.000	33.58	17.95	51.53	74.00	-22.47	peak
7	16935.000	30.38	21.45	51.83	74.00	-22.17	peak

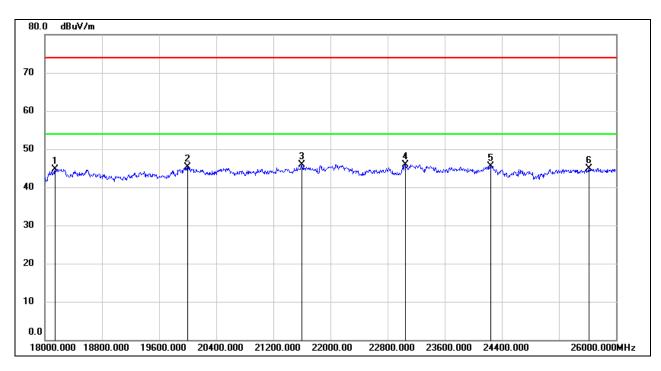
- 2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Peak: Peak detector.
- 4. AVG: VBW=1/Ton, where: Ton is the transmitting duration.
- 5. For the transmitting duration, please refer to clause 7.1.
- 6. Filter losses were only considered in the spurious frequency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



8.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

8.4.1. 802.11b MODE

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18144.000	50.27	-5.48	44.79	74.00	-29.21	peak
2	20000.000	50.81	-5.45	45.36	74.00	-28.64	peak
3	21600.000	50.52	-4.54	45.98	74.00	-28.02	peak
4	23048.000	49.43	-3.43	46.00	74.00	-28.00	peak
5	24248.000	48.32	-2.83	45.49	74.00	-28.51	peak
6	25616.000	46.18	-1.24	44.94	74.00	-29.06	peak

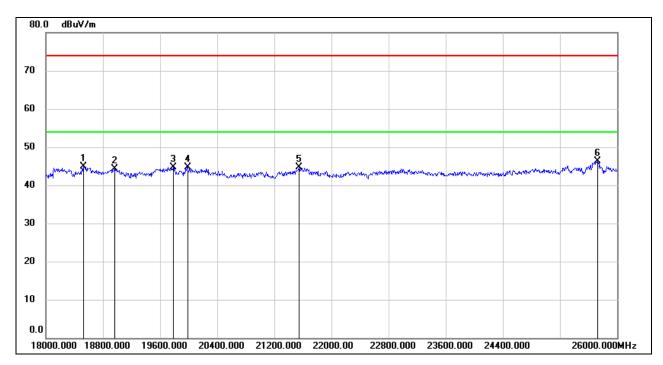
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.



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

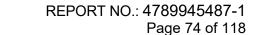


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	18528.000	50.11	-5.26	44.85	74.00	-29.15	peak
2	18960.000	49.51	-5.25	44.26	74.00	-29.74	peak
3	19784.000	50.07	-5.28	44.79	74.00	-29.21	peak
4	19984.000	50.21	-5.44	44.77	74.00	-29.23	peak
5	21544.000	49.26	-4.63	44.63	74.00	-29.37	peak
6	25728.000	47.11	-0.72	46.39	74.00	-27.61	peak

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

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

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

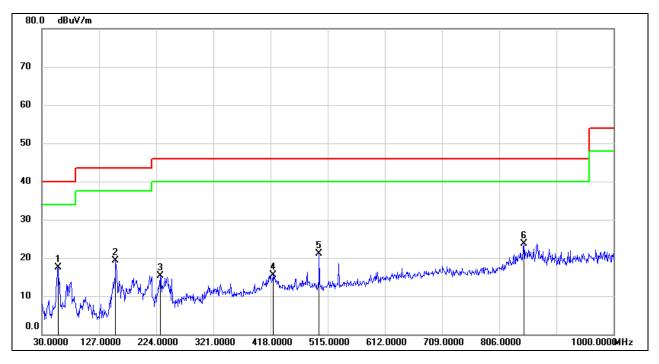




8.5. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

8.5.1. 802.11b MODE

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	57.1600	38.13	-20.58	17.55	40.00	-22.45	QP
2	155.1300	37.32	-18.01	19.31	43.50	-24.19	QP
3	230.7900	34.02	-18.71	15.31	46.00	-30.69	QP
4	421.8800	28.36	-12.94	15.42	46.00	-30.58	QP
5	500.4500	32.47	-11.46	21.01	46.00	-24.99	QP
6	847.7100	30.11	-6.31	23.80	46.00	-22.20	QP

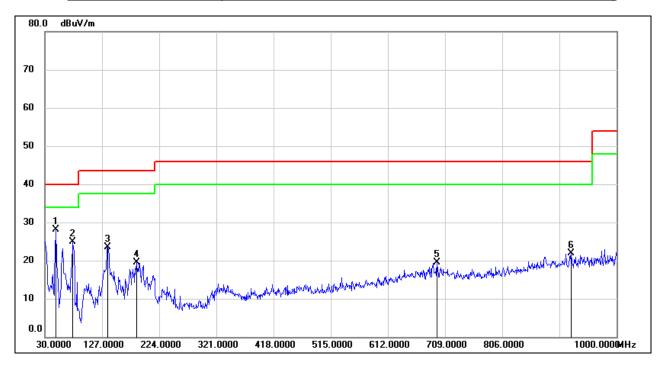
Note: 1. Result Level = Read Level + Correct Factor.

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

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



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	48.4300	48.70	-20.63	28.07	40.00	-11.93	QP
2	77.5300	45.96	-21.14	24.82	40.00	-15.18	QP
3	136.7000	42.58	-19.02	23.56	43.50	-19.94	QP
4	185.2000	36.27	-16.75	19.52	43.50	-23.98	QP
5	695.4200	27.83	-8.32	19.51	46.00	-26.49	QP
6	923.3700	26.72	-4.76	21.96	46.00	-24.04	QP

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

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

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

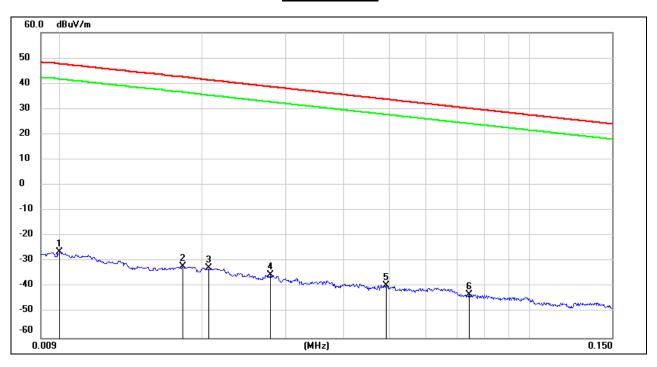
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8.6. SPURIOUS EMISSIONS BELOW 30 MHz

8.6.1. 802.11b MODE

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

9 kHz~ 150 kHz



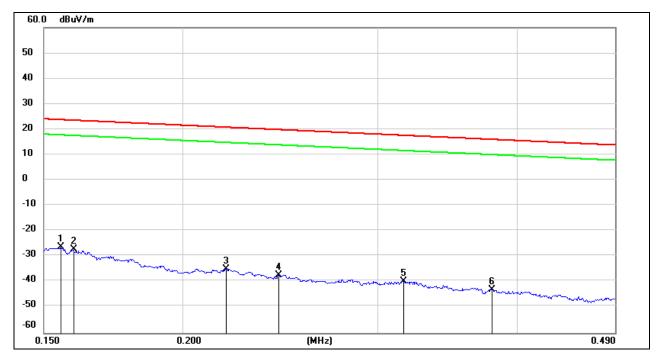
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0100	75.22	-101.40	-26.18	47.6	-73.78	peak
2	0.0181	69.35	-101.36	-32.01	42.45	-74.46	peak
3	0.0206	68.92	-101.35	-32.43	41.32	-73.75	peak
4	0.0279	66.17	-101.38	-35.21	38.69	-73.90	peak
5	0.0492	62.05	-101.47	-39.42	33.76	-73.18	peak
6	0.0743	58.58	-101.59	-43.01	30.18	-73.19	peak

Note: 1. Measurement = Reading Level + Correct Factor

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



150 kHz ~ 490 kHz



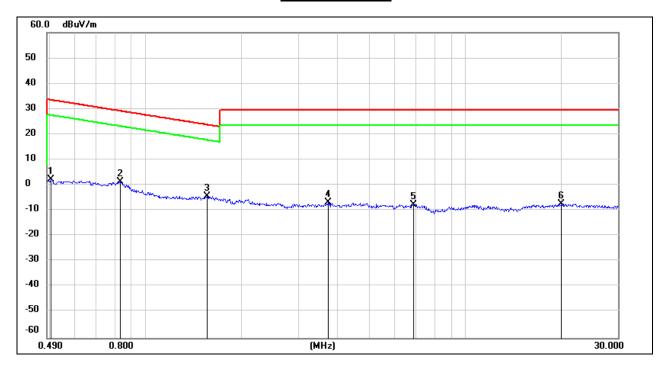
No.	Frequency	Reading	Correct	FCC Result	FCC Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1554	75.27	-101.65	-26.38	23.77	-50.15	peak
2	0.1595	74.36	-101.65	-27.29	23.55	-50.84	peak
3	0.2190	66.77	-101.75	-34.98	20.79	-55.77	peak
4	0.2442	64.53	-101.79	-37.26	19.85	-57.11	peak
5	0.3163	62.20	-101.87	-39.67	17.6	-57.27	peak
6	0.3800	59.02	-101.94	-42.92	16.01	-58.93	peak

Note: 1. Measurement = Reading Level + Correct Factor

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



490 kHz ~ 30 MHz



No.	Frequency	Reading	Correct	FCC Result	FCC Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.5039	64.44	-62.07	2.37	33.56	-31.19	peak
2	0.8296	63.44	-62.17	1.27	29.23	-27.96	peak
3	1.5564	57.68	-62.02	-4.34	23.76	-28.10	peak
4	3.7100	54.70	-61.41	-6.71	29.54	-36.25	peak
5	6.8936	53.59	-61.22	-7.63	29.54	-37.17	peak
6	19.9954	53.44	-60.83	-7.39	29.54	-36.93	peak

Note: 1. Measurement = Reading Level + Correct Factor

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

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



9. AC POWER LINE CONDUCTED EMISSIONS

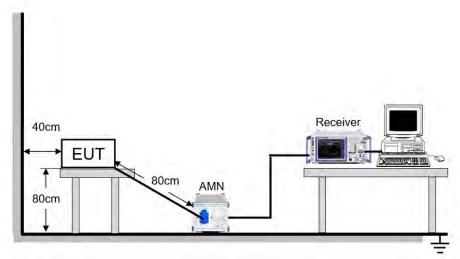
LIMITS

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

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

TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.



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

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



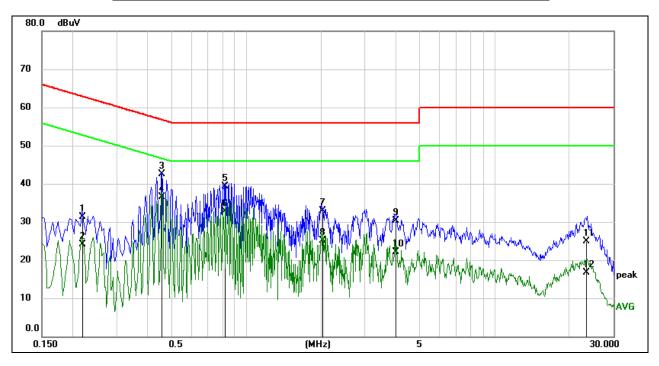
TEST ENVIRONMENT

Temperature	24.6 °C	Relative Humidity	67.6 %
Atmosphere Pressure	101 kPa	Test Voltage	AC120 V,60 Hz

RESULTS

9.1. 802.11b SISO MODE

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



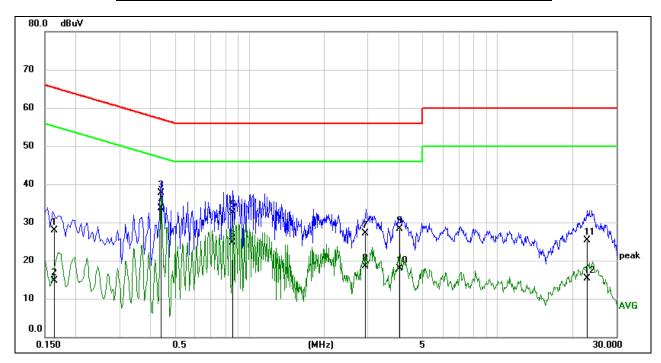
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.2186	21.64	9.59	31.23	62.87	-31.64	QP
2	0.2186	14.55	9.59	24.14	52.87	-28.73	AVG
3	0.4572	32.97	9.60	42.57	56.74	-14.17	QP
4	0.4572	26.85	9.60	36.45	46.74	-10.29	AVG
5	0.8282	29.72	9.60	39.32	56.00	-16.68	QP
6	0.8282	23.04	9.60	32.64	46.00	-13.36	AVG
7	2.0260	23.24	9.63	32.87	56.00	-23.13	QP
8	2.0260	15.56	9.63	25.19	46.00	-20.81	AVG
9	3.9887	20.69	9.60	30.29	56.00	-25.71	QP
10	3.9887	12.48	9.60	22.08	46.00	-23.92	AVG
11	23.4790	15.10	9.75	24.85	60.00	-35.15	QP
12	23.4790	6.92	9.75	16.67	50.00	-33.33	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.

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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1643	18.25	9.59	27.84	65.24	-37.40	QP
2	0.1643	5.10	9.59	14.69	55.24	-40.55	AVG
3	0.4418	28.15	9.60	37.75	57.03	-19.28	QP
4	0.4418	24.19	9.60	33.79	47.03	-13.24	AVG
5	0.8616	23.00	9.60	32.60	56.00	-23.40	QP
6	0.8616	15.01	9.60	24.61	46.00	-21.39	AVG
7	2.9172	17.44	9.62	27.06	56.00	-28.94	QP
8	2.9172	8.84	9.62	18.46	46.00	-27.54	AVG
9	4.0263	18.79	9.60	28.39	56.00	-27.61	QP
10	4.0263	8.21	9.60	17.81	46.00	-28.19	AVG
11	22.9338	15.37	9.86	25.23	60.00	-34.77	QP
12	22.9338	5.42	9.86	15.28	50.00	-34.72	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 the modes and channels have been tested, but 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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10.1. Appendix A: DTS Bandwidth 10.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
		2412	8.160	2407.920	2416.080	0.5	PASS
11B	Ant1	2437	8.640	2432.920	2441.560	0.5	PASS
		2462	8.600	2457.440	2466.040	0.5	PASS
		2412	16.440	2403.800	2420.240	0.5	PASS
11G	Ant1	2437	16.400	2428.800	2445.200	0.5	PASS
		2462	16.440	2453.800	2470.240	0.5	PASS
		2412	17.640	2403.200	2420.840	0.5	PASS
11N20SISO	Ant1	2437	17.440	2428.400	2445.840	0.5	PASS
		2462	17.640	2453.160	2470.800	0.5	PASS
		2422	36.240	2404.000	2440.240	0.5	PASS
11N40SISO	Ant1	2437	36.160	2419.000	2455.160	0.5	PASS
		2452	36.480	2433.760	2470.240	0.5	PASS



10.1.2. Test Graphs





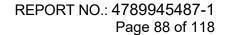












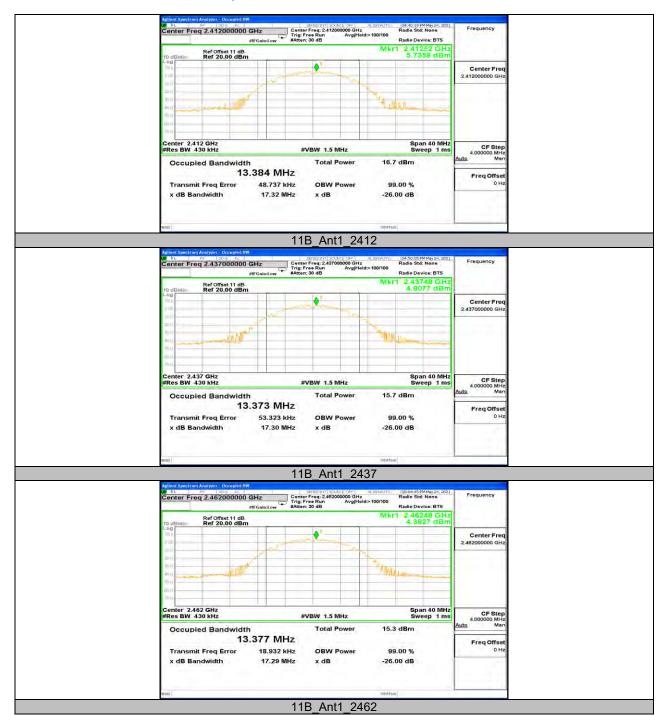


10.2. Appendix B: Occupied Channel Bandwidth 10.2.1. Test Result

Test Mode	Antenna	Channel	OCB [MHz]	FL[MHz]	FH[MHz]	Verdict
		2412	13.382	2405.358	2418.740	PASS
11B	Ant1	2437	13.371	2430.368	2443.739	PASS
		2462	13.373	2455.334	2468.707	PASS
11G		2412	17.184	2403.403	2420.587	PASS
	Ant1	2437	17.159	2428.434	2445.593	PASS
		2462	17.243	2453.377	2470.620	PASS
		2412	18.262	2402.825	2421.087	PASS
11N20SISO	Ant1	2437	18.258	2427.913	2446.171	PASS
		2462	18.171	2452.895	2471.066	PASS
		2422	36.830	2403.761	2440.591	PASS
11N40SISO	Ant1	2437	36.608	2418.716	2455.324	PASS
		2452	36.715	2433.603	2470.318	PASS



10.2.2. Test Graphs

















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

Test Mode	Antenna	Channel	Result[dBm]	EIRP[dBm]	Limit[dBm]	Verdict
	Ant1	2412	14.91	16.91	<=30	PASS
11B		2437	15.15	17.15	<=30	PASS
		2462	14.85	16.85	<=30	PASS
	Ant1	2412	12.68	14.68	<=30	PASS
11G		2437	13.15	15.15	<=30	PASS
		2462	12.51	14.51	<=30	PASS
11N20SISO	Ant1	2412	11.42	13.42	<=30	PASS
		2437	12.15	14.15	<=30	PASS
		2462	11.57	13.57	<=30	PASS
11N40SISO	Ant1	2422	12.18	14.18	<=30	PASS
		2437	12.84	14.84	<=30	PASS
		2452	11.18	13.18	<=30	PASS

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

^{2.} The Duty Cycle Factor (refer to section 7.1) had already compensated to the test data.

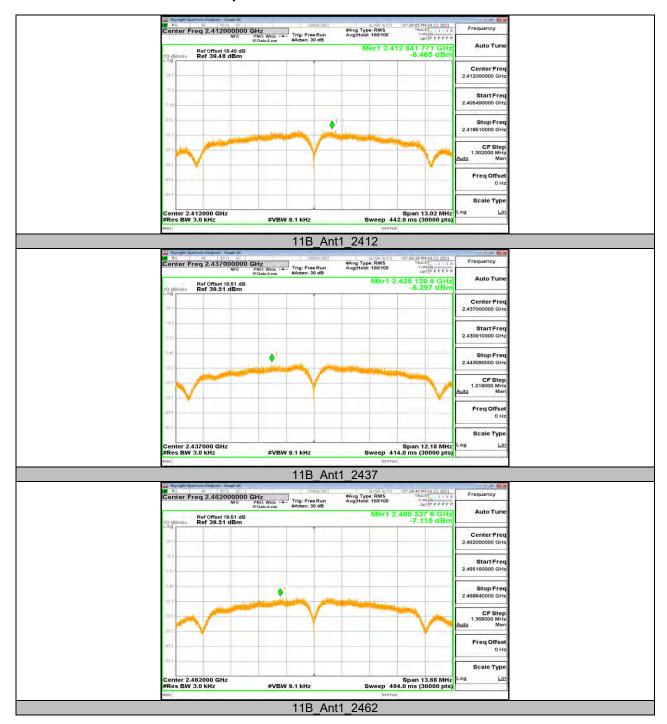


10.4. Appendix D: Maximum power spectral density 10.4.1. Test Result

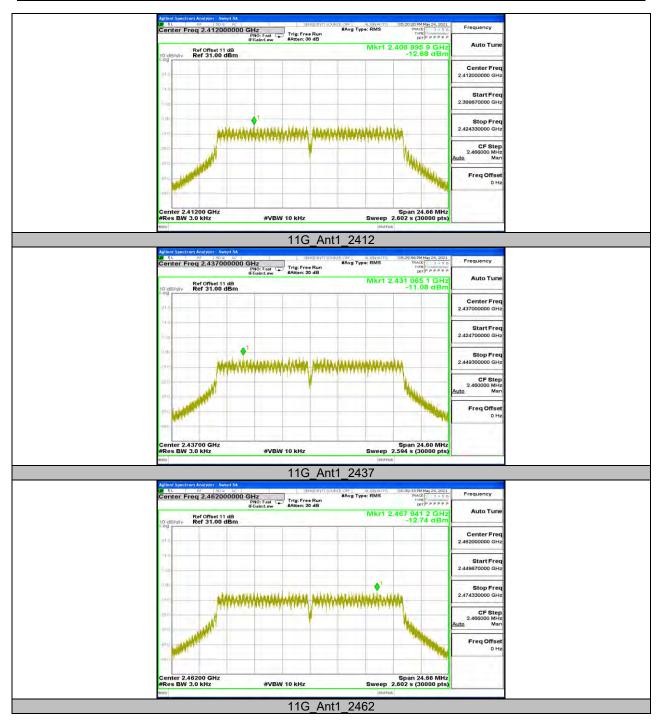
Test Mode	Antenna	Channel	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
	Ant1	2412	-6.47	<=8	PASS
11B		2437	-6.30	<=8	PASS
		2462	-7.12	<=8	PASS
	Ant1	2412	-12.68	<=8	PASS
11G		2437	-11.08	<=8	PASS
		2462	-12.74	<=8	PASS
11N20SISO	Ant1	2412	-12.53	<=8	PASS
		2437	-12.66	<=8	PASS
		2462	-13.77	<=8	PASS
11N40SISO	Ant1	2422	-16.11	<=8	PASS
		2437	-15.64	<=8	PASS
		2452	-16.44	<=8	PASS



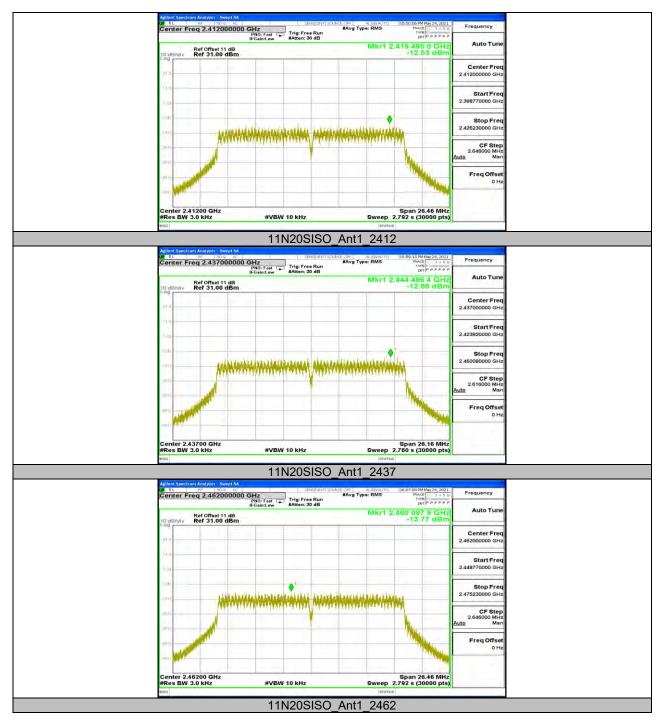
10.4.2. Test Graphs



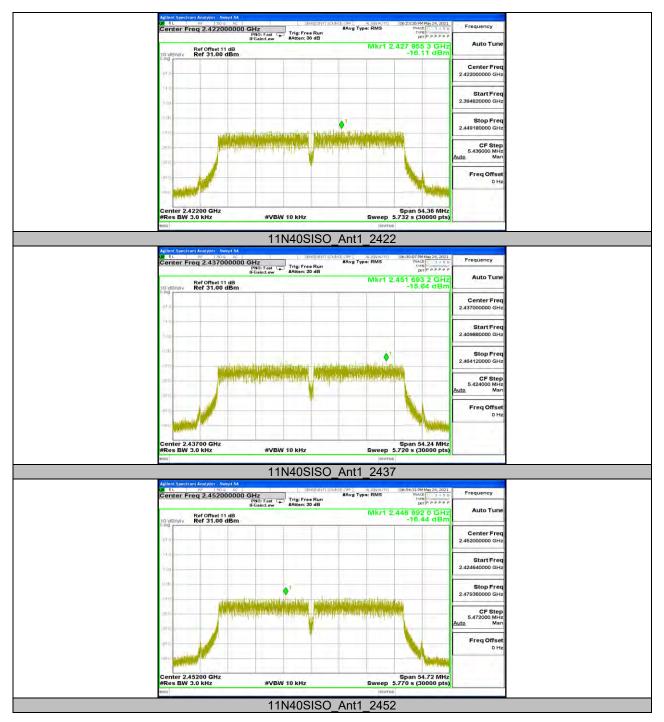


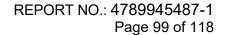














10.5. Appendix E: Band edge measurements 10.5.1. Test Result

Test Mode	Antenna	Ch Name	Channel	Ref Level[dBm]	Result[dBm]	Limit[dBm]	Verdict
11B Ant1	Ant1	Low	2412	5.19	-45.36	<=-24.82	PASS
	AIILI	High	2462	3.83	-46.33	<=-26.17	PASS
11G Ant1	Ant1	Low	2412	0.99	-36.21	<=-29.01	PASS
	Anti	High	2462	1.03	-43.4	<=-28.97	PASS
11N20SISO Ant	Ant1	Low	2412	0.23	-36.22	<=-29.78	PASS
		High	2462	0.22	-44.5	<=-29.78	PASS
11N40SISO	Ant1	Low	2422	-1.66	-36.54	<=-31.66	PASS
		High	2452	-2.82	-42.22	<=-32.82	PASS



10.5.2. Test Graphs













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

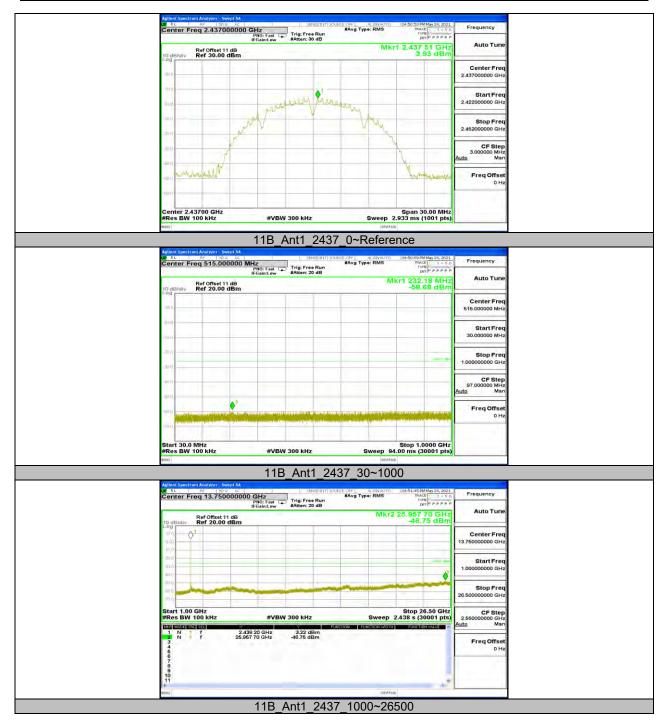
Test Mode	Antenna	Channel	Freq Range [Mhz]	Result [dBm]	Limit [dBm]	Verdict
			Reference	5.28		PASS
		2412	30~1000	-58.14	<=-24.72	PASS
			1000~26500	-47.33	<=-24.72	PASS
		2437	Reference	3.93		PASS
11B	Ant1		30~1000	-58.68	<=-26.07	PASS
			1000~26500	-46.75	<=-26.07	PASS
		2462	Reference	3.89		PASS
			30~1000	-58.34	<=-26.11	PASS
			1000~26500	-47.37	<=-26.11	PASS
			Reference	0.90		PASS
		2412	30~1000	-58.77	<=-29.1	PASS
			1000~26500	-47.08	<=-29.1	PASS
		2437	Reference	1.29		PASS
11G	Ant1		30~1000	-58.11	<=-28.71	PASS
			1000~26500	-46.43	<=-28.71	PASS
		2462	Reference	0.76		PASS
			30~1000	-58.27	<=-29.24	PASS
			1000~26500	-47.2	<=-29.24	PASS
	Ant1	2412 2437 2462	Reference	-0.12		PASS
			30~1000	-57.61	<=-30.12	PASS
			1000~26500	-46.98	<=-30.12	PASS
			Reference	0.76		PASS
11N20SISO			30~1000	-58.18	<=-29.24	PASS
			1000~26500	-47.03	<=-29.24	PASS
			Reference	-0.02		PASS
			30~1000	-58.33	<=-30.02	PASS
			1000~26500	-46.83	<=-30.02	PASS
		2422	Reference	-1.65		PASS
			30~1000	-53.31	<=-31.65	PASS
			1000~26500	-46.48	<=-31.65	PASS
11N40SISO	Ant1	2437	Reference	-1.83		PASS
			30~1000	-55.22	<=-31.83	PASS
			1000~26500	-46.57	<=-31.83	PASS
		2452	Reference	-2.99		PASS
			30~1000	-55.92	<=-32.99	PASS
			1000~26500	-47.09	<=-32.99	PASS



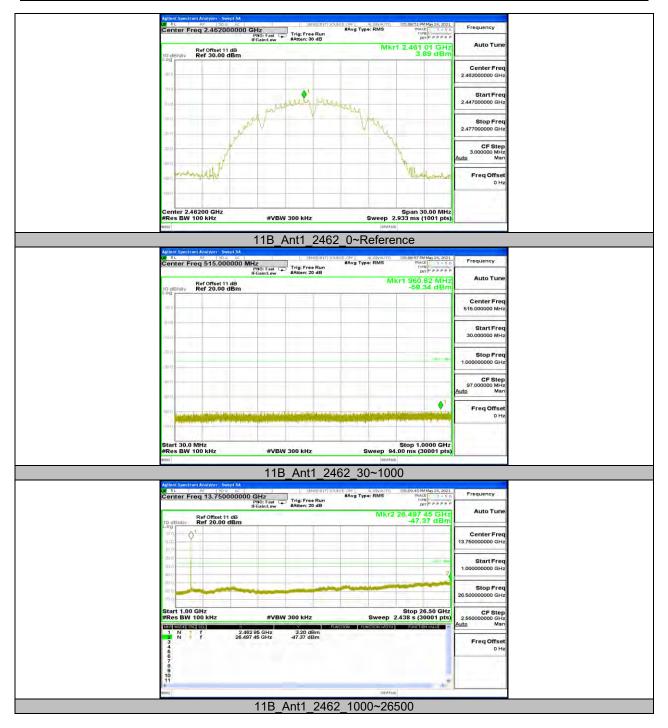
10.6.2. Test Graphs



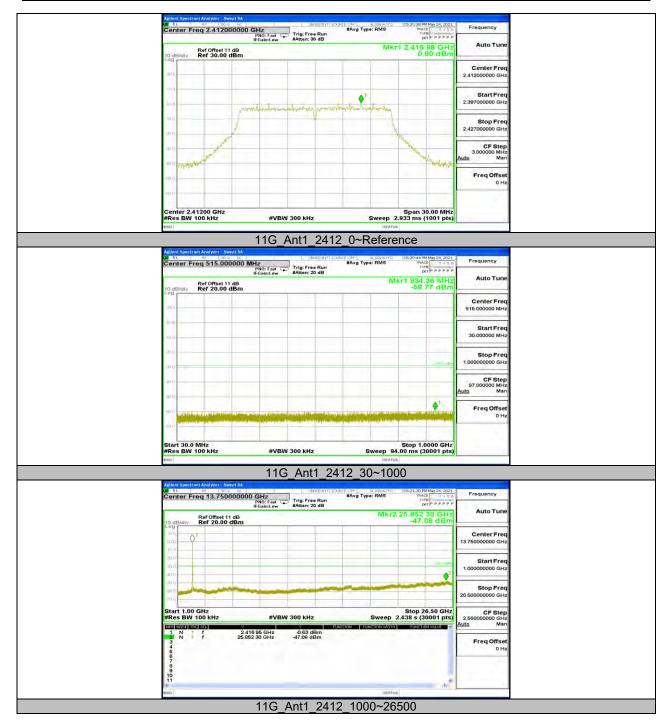




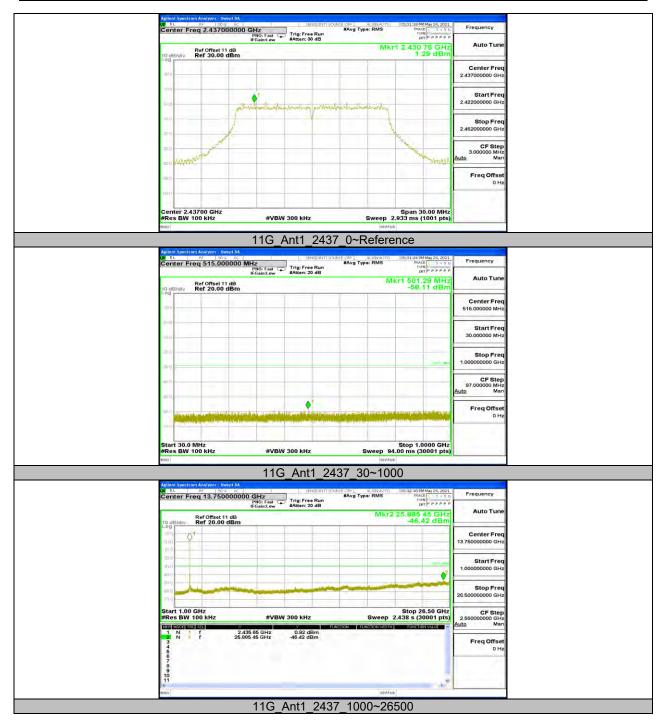




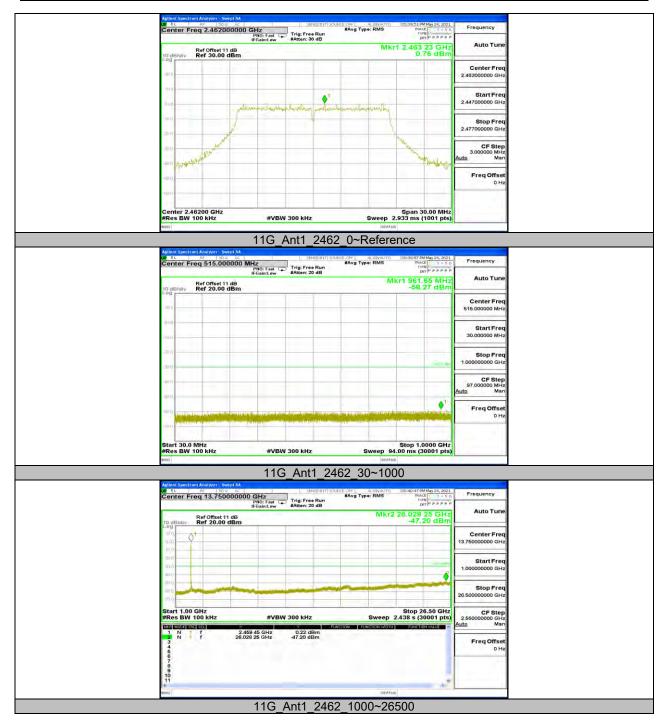




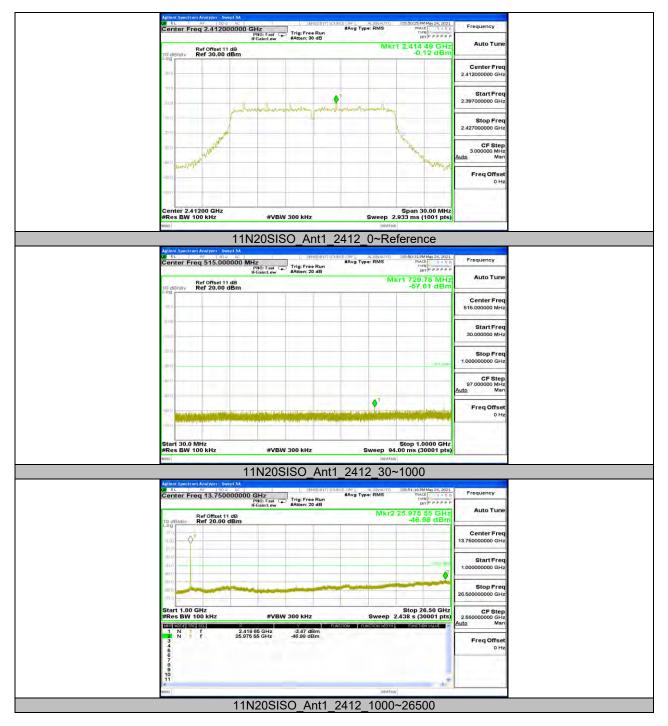




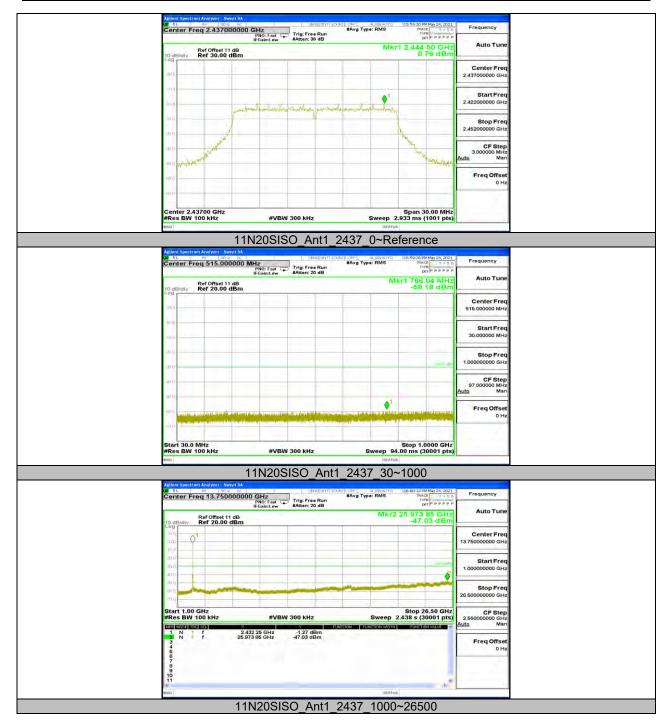




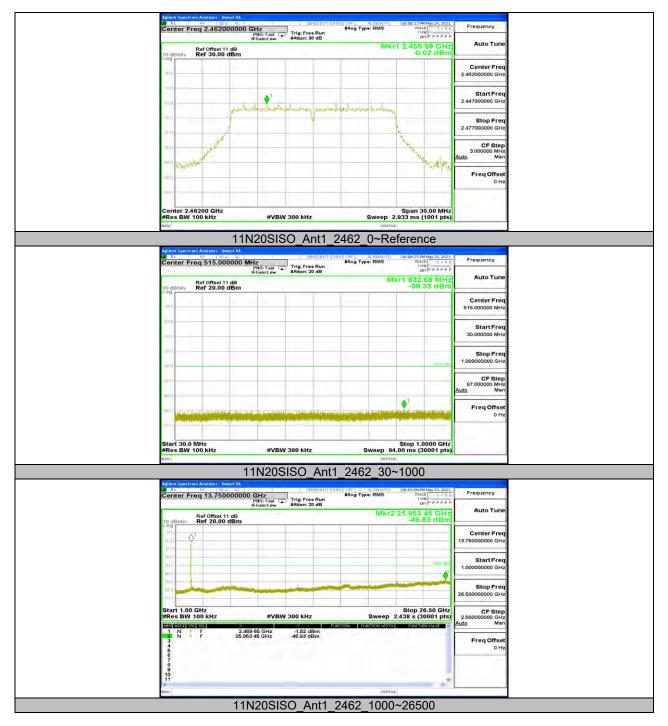




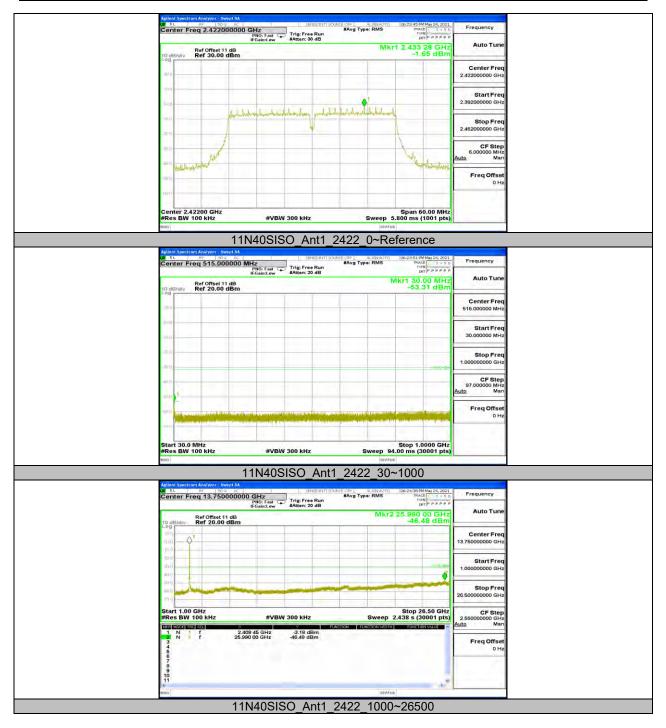




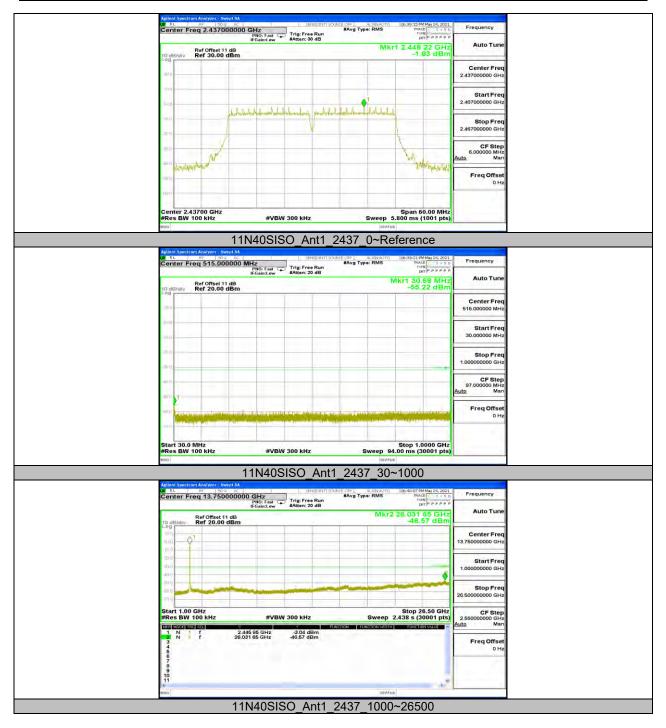




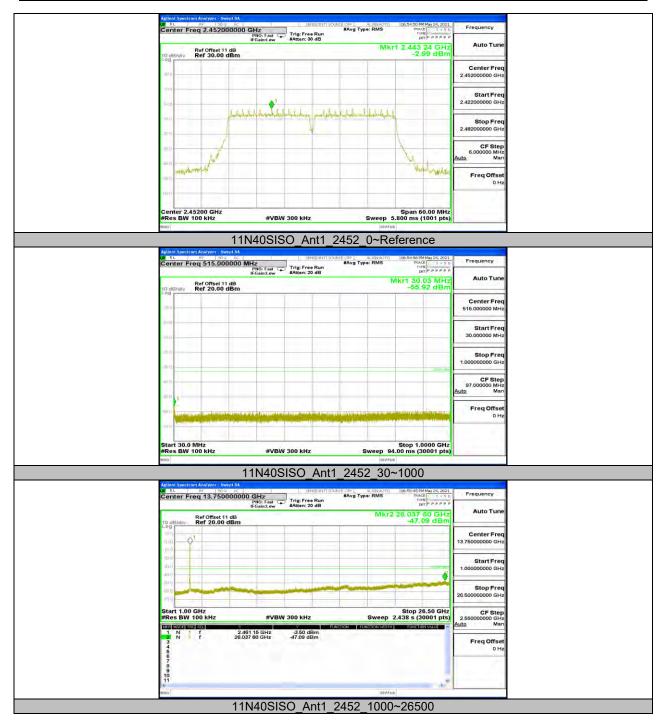


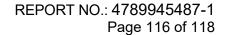














10.7. Appendix G: Duty Cycle 10.7.1. Test Result

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	12.41	12.47	0.9952	99.52	0.02	0.08	0.01
11G	2.06	2.20	0.9364	93.64	0.29	0.49	0.5
11N20SISO	1.91	1.99	0.9598	95.98	0.18	0.52	1
11N40SISO	0.94	1.08	0.8704	87.04	0.60	1.06	2

Note:

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

Where: x is Duty Cycle (Linear)

Where: T is On Time

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

used.



10.7.2. Test Graphs







END OF REPORT