



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

CERTIFICATION TEST REPORT

For

Room Scheduling Panel

MODEL NUMBER: RoomPanel

FCC ID: T2C-ROOMPANEL

IC: 10741A-ROOMPANEL

REPORT NUMBER: 4789992710.1-4

ISSUE DATE: August 27, 2021

Prepared for

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	08/27/2021	Initial Issue	



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

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 >< ISED RSS-247 > when <Accuracy Method> decision rule is applied.



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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name:	Yealink (XIAMEN) Network Technology Co Ltd
Address:	Room 309, 3rd Floor, No.16, Yun Ding North Road, High Tech
	Park, Huli District, Xiamen, Fujian, China

Manufacturer Information

Company Name:	Yealink (XIAMEN) Network Technology Co Ltd
Address:	Room 309, 3rd Floor, No.16, Yun Ding North Road, High Tech
	Park, Huli District, Xiamen, Fujian, China

EUT Information

EUT Name:	Room Scheduling Panel
Model:	RoomPanel
Sample Received Date:	June 28, 2021
Sample Status:	Normal
Sample ID:	4026875
Date of Tested:	July 1, 2021 ~ August 27, 2021

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

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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, KDB 662911 D01 Multiple Transmitter Output v02r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

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

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

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

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



4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. MEASUREMENT UNCERTAINTY

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

Test Item	Uncertainty		
Conduction emission	3.62 dB		
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB		
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB		
Radiated Emission	5.78 dB (1 GHz ~ 18 GHz)		
(Included Fundamental Emission) (1 GHz to 26 GHz)	5.23 dB (18 GHz ~ 26 GHz)		
Duty Cycle	±0.028%		
DTS and 99% Occupied Bandwidth	±0.0196%		
Maximum Conducted Output Power	±0.686 dB		
Maximum Power Spectral Density Level	±0.743 dB		
Conducted Band-edge Compliance	±1.328 dB		
Conducted Unwanted Emissions In Non-restricted	±0.746 dB (9 kHz ~ 1 GHz)		
Frequency Bands	±1.328dB (1 GHz ~ 26 GHz)		
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.			

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Room Scheduling Panel
Model	RoomPanel
Radio Technology	WLAN (IEEE 802.11b/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, DQPSK, DBPSK) 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)
Power Supply	AC 120 V

5.2. CHANNEL LIST

		Chan	nel List for 80	2.11b/g/n (2	20 MHz)		
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	4	2427	7	2442	10	2457
2	2417	5	2432	8	2447	11	2462
3	2422	6	2437	9	2452	/	/

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

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]	14.08	17.08
g	2412 ~ 2462	1-11[11]	16.76	19.76
n HT20	2412 ~ 2462	1-11[11]	16.43	19.43
n HT40	2422 ~ 2452	3-9[7]	15.55	18.55

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5.4. TEST CHANNEL CONFIGURATION

IEEE Std. 802.11	Test Channel Number	Frequency		
b	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz		
g	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz		
n HT20	CH 1(Low Channel), CH 6(MID Channel), CH 11(High Channel)	2412 MHz, 2437 MHz, 2462 MHz		
n HT40	CH 3(Low Channel), CH 6(MID Channel), CH 9(High Channel)	2422 MHz, 2437 MHz, 2452 MHz		

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band									
Test Softv	vare		QRCT						
	Transmit		Test Channel						
Modulation Mode	Antenna	1	NCB: 20M⊦	lz	NCB: 40MHz				
Mode	Number	CH 1	CH 6	CH 11	CH 3	CH 6	CH 9		
802.11b	1	10	10	10					
002.110	2	10	10	10					
802.11g	1	13	13	13		/			
002.11g	2	13	13	13					
802.11n HT20	1	13	13	13					
002.1111H120	2	13	13	13					
902 11p UT 10	1		/		12	12	12		
802.11n HT40	2	/			12	12	12		



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

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

The EUT has 2 separate antennas which correspond to 2 separate antenna ports. Core 1 and Core 2 correspond to antenna 0 and antenna respectively.

Antenna 0 and Antenna 1 have the same power setting, but the power test data are different. (Declared by customer.)

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

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



5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	Maximum Antenna Gain (dBi)
1	2412 ~ 2462	PIFA Antenna	3
2	2412 ~ 2462	PIFA Antenna	3

IEEE Std. 802.11	Transmit and Receive Mode	Description
b	2TX, 2RX	Antenna 1, 2 can be used as transmitting/receiving antenna.
g	2TX, 2RX	Antenna 1, 2 can be used as transmitting/receiving antenna.
n HT20	2TX, 2RX	Antenna 1, 2 can be used as transmitting/receiving antenna.
n HT40	2TX, 2RX	Antenna 1, 2 can be used as transmitting/receiving antenna.

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



5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Remarks
1	PC	Lenovo	E480	/
2	Router	TP-LINK	TL-WDR5620	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Type Cable Length(m)	
1	DC	/	Unshielded	1.0	/
2	RJ45	/	Unshielded	1.0	/
3	USB	Туре С	Unshielded	1.0	/

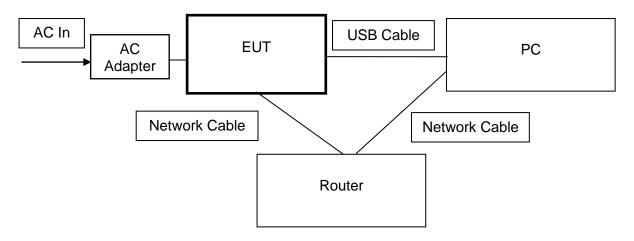
ACCESSORIES

Item	Accessory	Brand Name	Model Name	Description
1	AC Adapter	Yealink	YLPS121250C1-US	Input: AC 100-240 V, 50/60Hz, 0.5 A Output: DC 12 V, 1.5 A

TEST SETUP

The EUT can work in engineering mode with a software.

SETUP DIAGRAM FOR TESTS



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6. MEASURING INSTRUMENT AND SOFTWARE USED

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

Radiated Emissions							
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date		
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Nov. 12, 2020	Nov. 11, 2021		
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Aug. 2, 2021	Aug. 1, 2023		
Preamplifier	HP	8447D	2944A09099	Nov. 12, 2020	Nov. 11, 2021		
EMI Measurement Receiver	R&S	ESR26	101377	Nov. 12, 2020	Nov. 11, 2021		
Horn Antenna	TDK	HRN-0118	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	Jul. 20, 2021	Jul. 20, 2023		
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	00008	Jan.17, 2019	Jan.17,2022		
Preamplifier	TDK	PA-02-001- 3000	TRS-302- 00050	Nov. 12, 2020	Nov. 11, 2021		
High Pass Filter	Wi	WHKX10- 2700-3000- 18000-40SS	23	Nov. 12, 2020	Nov. 11, 2021		
Band Reject Filter	and Reject Wainwright 2350-2400-		4	Nov. 12, 2020	Nov. 11, 2021		
		So	ftware				
[Description		Manufacturer Name		Version		
Test Software	for Radiated E	missions	Farad	EZ-EMC	Ver. UL-3A1		

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Tonsend RF Test System								
Equipment	Manufacturer	Мо	odel No.	Serial No.	Last	Cal.	Due. Date	
Wideband Radio Communication Tester	R&S	CMW500		155523	Nov.20,2020		Nov.19,2021	
PXA Signal Analyzer	Keysight	N	9030A	MY55410512	Nov.2	0,2020	Nov.19,2021	
MXG Vector Signal Generator	Keysight	Keysight N5182B		MY56200284	Nov.20,2020		Nov.19,2021	
MXG Vector Signal Generator	Keysight	Ν	5172B	MY56200301	Nov.2	0,2020	Nov.19,2021	
DC power supply	Keysight	E	3642A	MY55159130	Nov.2	4,2020	Nov.23,2021	
Software								
Description Manufacture		rer Name		lame		Version		
Tonsend SRD Test Syste	m Tonsend	ł	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



7. ANTENNA PORT TEST RESULTS

7.1. ON TIME AND DUTY CYCLE

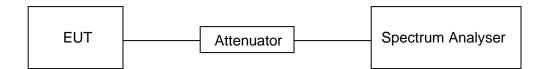
<u>LIMITS</u>

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	25.5 °C	Relative Humidity	57.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

Please refer to appendix G.



7.2. 6 dB DTS BANDWIDTH AND 99 % OCCUPIED BANDWIDTH

<u>LIMITS</u>

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

TEST PROCEDURE

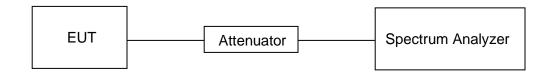
Center Frequency	The center frequency of the channel under test
Frequency Span	Between 1.5 times and 5.0 times the OBW
Detector	Peak
IBBW/	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
VBW	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW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

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

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

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

TEST SETUP



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TEST ENVIRONMENT

Temperature	25.5 °C	Relative Humidity	57.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

<u>RESULTS</u>

Please refer to appendix A & B.



7.3. CONDUCTED OUTPUT POWER

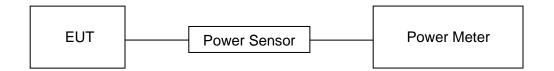
<u>LIMITS</u>

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

TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth). Measure peak emission level, the indicated level is the average output power, after any corrections for external attenuators and cables.

TEST SETUP



TEST ENVIRONMENT

Temperature	25.5 °C	Relative Humidity	57.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

Please refer to appendix C.



7.4. POWER SPECTRAL DENSITY

<u>LIMITS</u>

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

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.10.

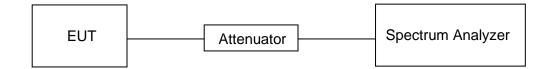
Connect the EUT to the spectrum analyser and use the following settings:

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

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

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

TEST SETUP



TEST ENVIRONMENT

Temperature	25.5 °C	Relative Humidity	57.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

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Please refer to appendix D.



7.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

<u>LIMITS</u>

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

TEST PROCEDURE

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

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

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

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

Change the settings for emission level measurement:

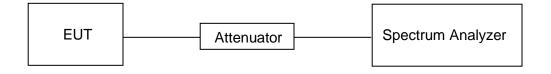
1.50/20	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

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.

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TEST SETUP



TEST ENVIRONMENT

Temperature	25.5 °C	Relative Humidity	57.2 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

RESULTS

Please refer to appendix E & F.



8. RADIATED TEST RESULTS

LIMITS

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

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

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

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

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

ISED General field strength limits at frequencies below 30 MHz

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

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



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

MHz	MHz	GHz		
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2		
0.495 - 0.505	158.52475 - 158.52525	9.3 - 9.5		
2.1735 - 2.1905	158.7 - 156.9	10.6 - 12.7		
3.020 - 3.028	162.0125 - 167.17	13.25 - 13.4		
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5		
4.17725 - 4.17775	240 - 285	15.35 - 16.2		
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4		
5.677 - 5.683	399.9 - 410	22.01 - 23.12		
6.215 - 6.218	608 - 614	23.6 - 24.0		
6.26775 - 6.26825	980 - 1427	31.2 - 31.8		
8.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5		
8.291 - 8.294	1845.5 - 1848.5	Above 38.6		
8.382 - 8.388	1660 - 1710			
8.37625 - 8.38675	1718.8 - 1722.2			
8.41425 - 8.41475	2200 - 2300			
12.29 - 12.293	2310 - 2390			
12.51975 - 12.52025	2483.5 - 2500			
12.57675 - 12.57725	2655 - 2900			
13.36 - 13.41	3260 - 3267			
18.42 - 18.423	3332 - 3339			
18.69475 - 16.69525	3345.8 - 3358			
16.80425 - 16.80475	3500 - 4400			
25.5 - 25.67	4500 - 5150			
37.5 - 38.25	5350 - 5460			
73 - 74.8	7250 - 7750			
74.8 - 75.2	8025 - 8500			
108 – 138				

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

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			

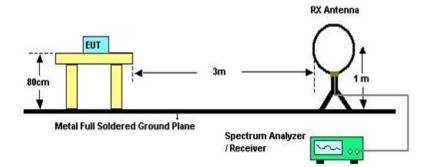
Note: ¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. ²Above 38.6c

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TEST SETUP AND PROCEDURE

Below 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode 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 and average detector and reported.

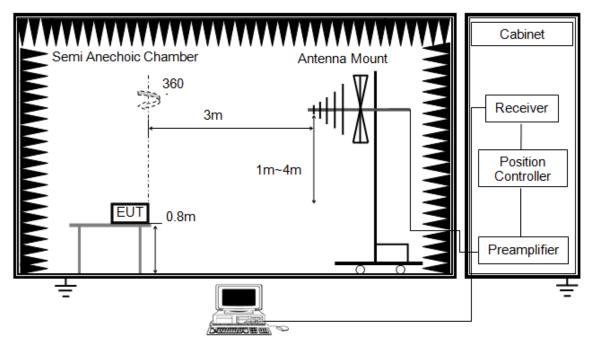
7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 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.

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Below 1 GHz and above 30 MHz



The setting of the spectrum analyser

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

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

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Above 1 GHz

The setting of the spectrum analyser

RBW	IHz			
IV B W	K: 3 MHz 5: see note 6			
Sweep	to			
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.

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Note 1: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

Note 2: Co-Location had been evaluated with the 5 GHz WLAN / 2.4 GHz WLAN and BT / BLE transmitter and has no additional or worse emissions found. Only the worst data was recorded in the test report.

Note 3: For Co-Location about NFC and other transmitting, pre-scan had been done and no additional or worse emissions found, do not report.

TEST ENVIRONMENT

Temperature	28.3 °C	Relative Humidity	47 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

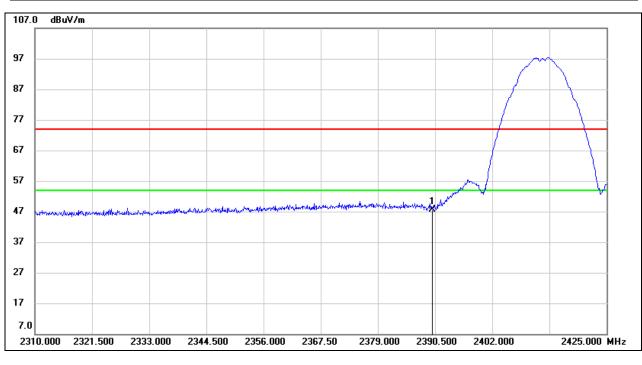
RESULTS

8.1. RESTRICTED BANDEDGE

8.1.1. 802.11b MIMO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

<u>PEAK</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	14.37	33.35	47.72	74.00	-26.28	peak

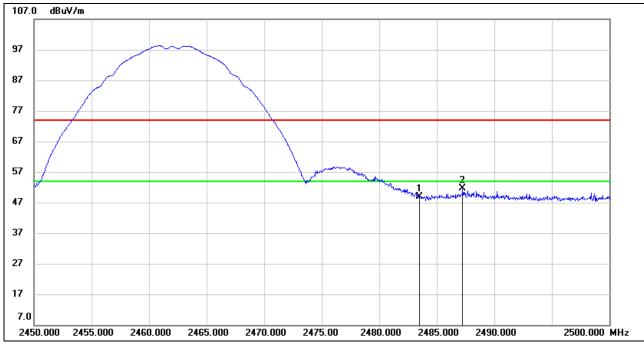
Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

<u>PEAK</u>



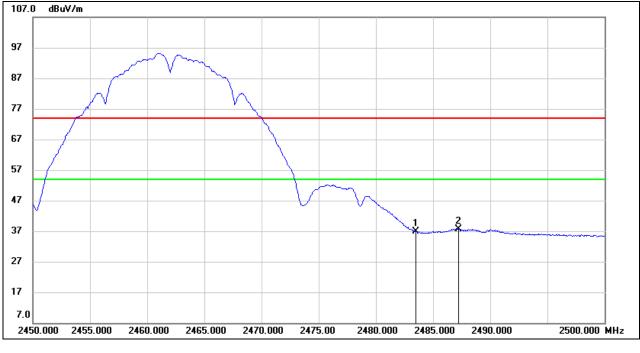
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	15.26	33.71	48.97	74.00	-25.03	peak
2	2487.250	17.83	33.72	51.55	74.00	-22.45	peak

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

2. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	3.09	33.71	36.80	54.00	-17.20	AVG
2	2487.250	3.92	33.72	37.64	54.00	-16.36	AVG

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

2. Peak: Peak detector.

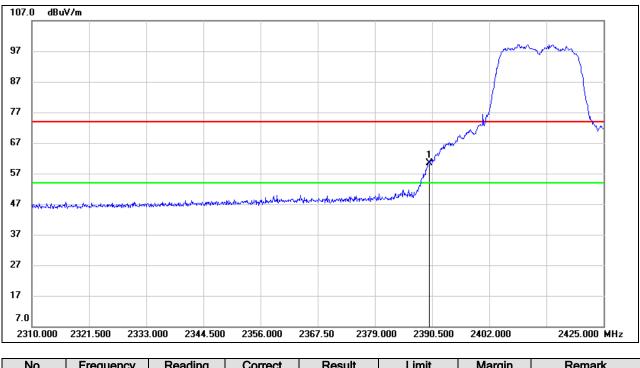
3. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

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



8.1.2. 802.11g MIMO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



<u>PEAK</u>

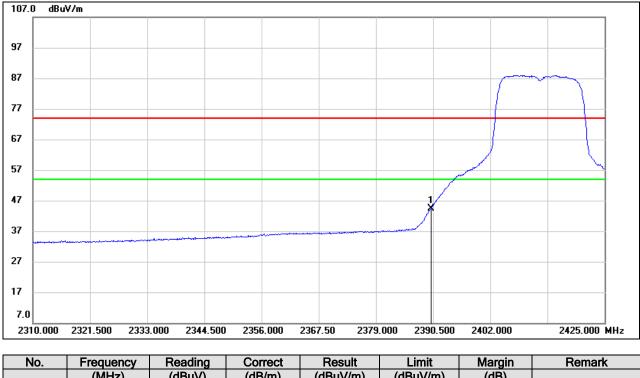
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	27.08	33.35	60.43	74.00	-13.57	peak

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

2. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	10.93	33.35	44.28	54.00	-9.72	AVG

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

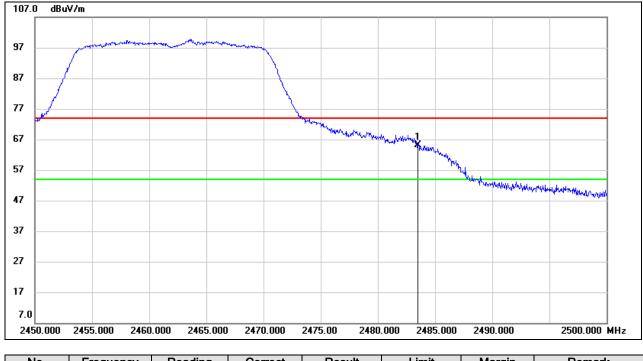
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

<u>PEAK</u>



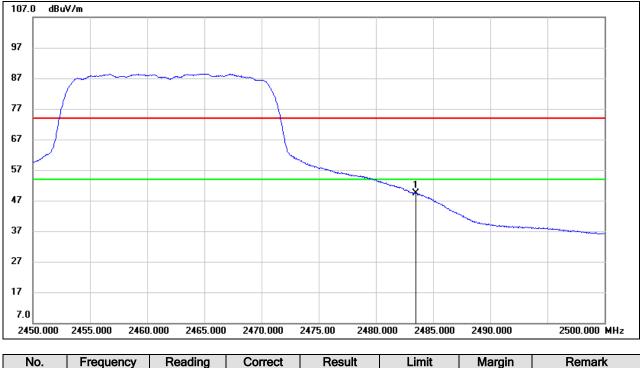
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	31.38	33.71	65.09	74.00	-8.91	peak

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

2. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	15.55	33.71	49.26	54.00	-4.74	AVG

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

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.

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

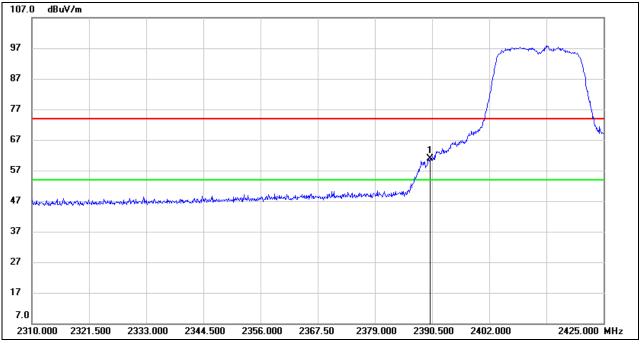
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



8.1.3. 802.11n HT20 MIMO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

<u>PEAK</u>



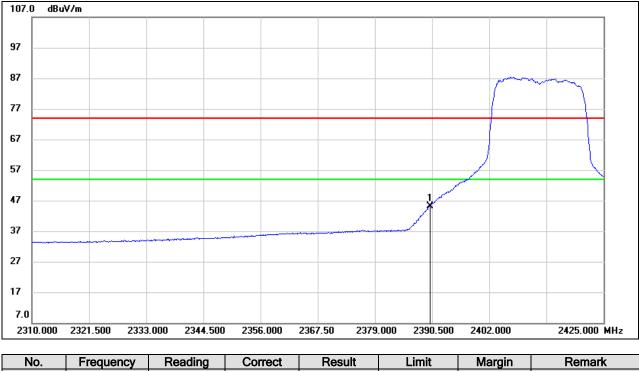
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	27.57	33.35	60.92	74.00	-13.08	peak

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

2. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	11.85	33.35	45.20	54.00	-8.80	AVG

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

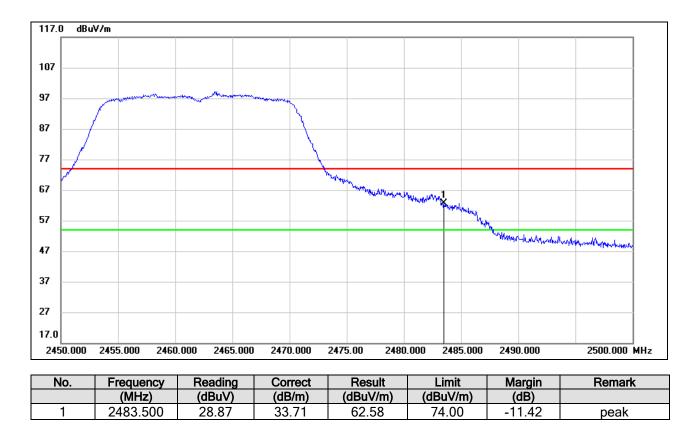
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

<u>PEAK</u>

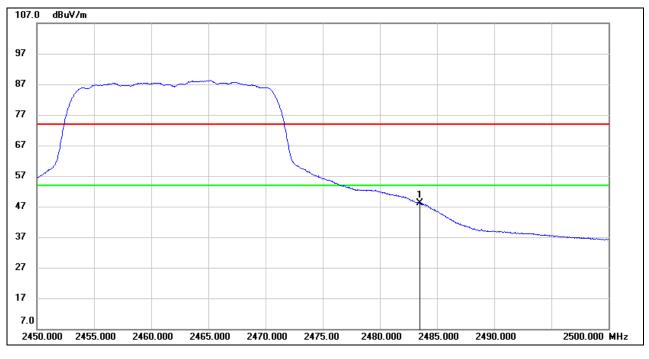


Note: 1. Measurement = Reading Level + Correct Factor.

2. Peak: Peak detector.



AVG



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	14.34	33.71	48.05	54.00	-5.95	AVG

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

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.

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

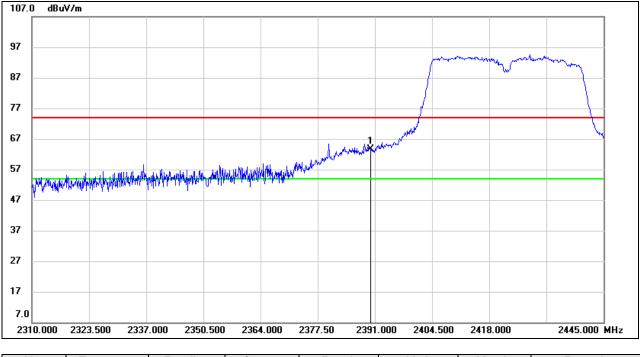
Note: Horizontal and Vertical have been tested, only the worst data was recorded in the report.



8.1.4. 802.11n HT40 MIMO MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

<u>PEAK</u>



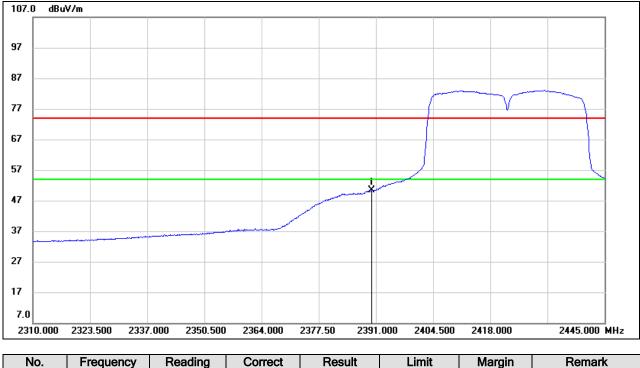
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	30.30	33.35	63.65	74.00	-10.35	peak

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

2. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	16.94	33.35	50.29	54.00	-3.71	AVG

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

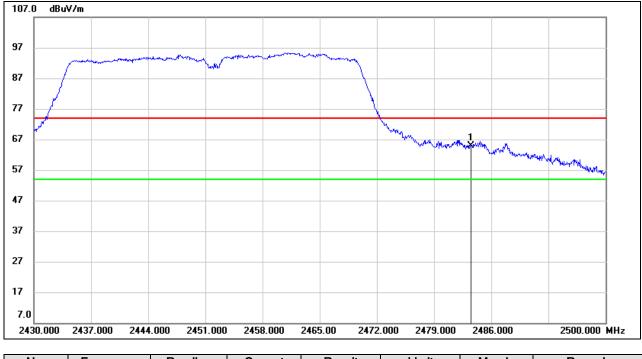
2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.



RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

<u>PEAK</u>



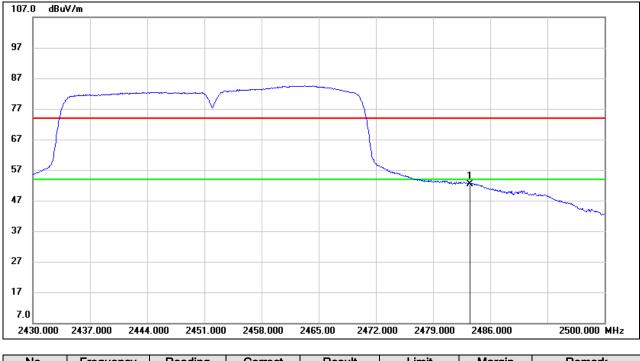
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	31.06	33.71	64.77	74.00	-9.23	peak

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

2. Peak: Peak detector.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	18.70	33.71	52.41	54.00	-1.59	AVG

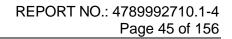
Note: 1. Measurement = Reading Level + Correct Factor.

2. AVG: VBW=1/Ton, where: Ton is the transmitting duration.

3. For the transmitting duration, please refer to clause 7.1.

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

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

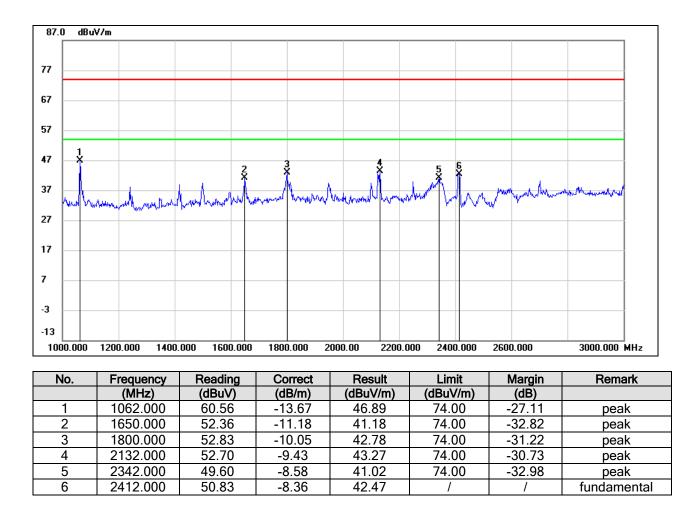




8.2. SPURIOUS EMISSIONS (1 GHz ~ 3 GHz)

8.2.1. 802.11n HT20 MIMO MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



Note: 1. Peak Result = Reading Level + Correct Factor.

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

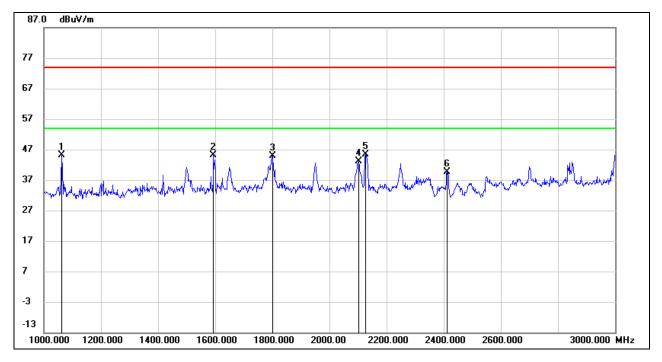
3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the

authorized band was not corrected for Band reject filter losses.



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	1062.000	58.76	-13.67	45.09	74.00	-28.91	peak
2	1594.000	56.65	-11.59	45.06	74.00	-28.94	peak
3	1800.000	55.02	-10.05	44.97	74.00	-29.03	peak
4	2102.000	52.83	-9.61	43.22	74.00	-30.78	peak
5	2126.000	54.95	-9.47	45.48	74.00	-28.52	peak
6	2412.000	48.12	-8.37	39.75	/	/	fundamental

Note: 1. Peak Result = Reading Level + Correct Factor.

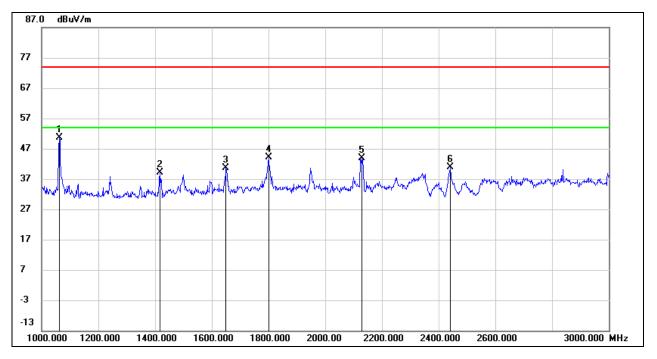
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



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	1062.000	64.41	-13.67	50.74	74.00	-23.26	peak
2	1416.000	51.77	-12.63	39.14	74.00	-34.86	peak
3	1650.000	51.84	-11.18	40.66	74.00	-33.34	peak
4	1800.000	54.30	-10.05	44.25	74.00	-29.75	peak
5	2130.000	53.22	-9.46	43.76	74.00	-30.24	peak
6	2437.000	49.12	-8.32	40.80	/	/	fundamental

Note: 1. Peak Result = Reading Level + Correct Factor.

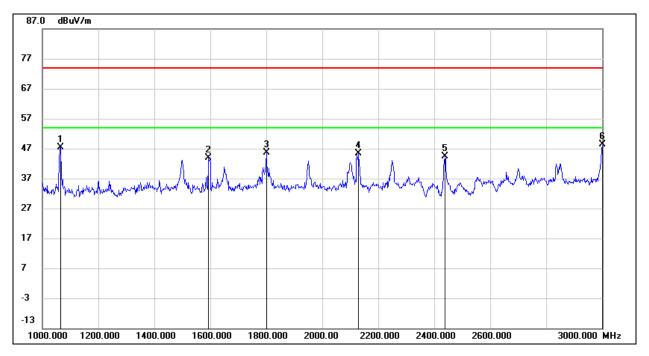
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for Band reject filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1066.000	61.09	-13.65	47.44	74.00	-26.56	peak
2	1594.000	55.38	-11.59	43.79	74.00	-30.21	peak
3	1800.000	55.69	-10.05	45.64	74.00	-28.36	peak
4	2130.000	54.82	-9.46	45.36	74.00	-28.64	peak
5	2437.000	52.59	-8.33	44.26	/	/	fundamental
6	3000.000	53.85	-5.59	48.26	74.00	-25.74	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

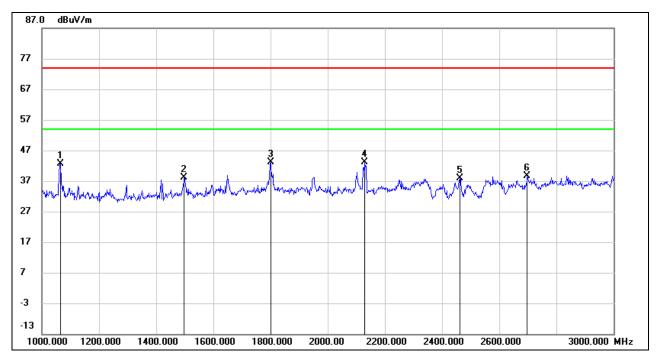
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



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	1066.000	56.39	-13.65	42.74	74.00	-31.26	peak
2	1498.000	50.26	-12.23	38.03	74.00	-35.97	peak
3	1800.000	53.06	-10.05	43.01	74.00	-30.99	peak
4	2130.000	52.69	-9.46	43.23	74.00	-30.77	peak
5	2462.000	46.20	-8.29	37.91	/	/	fundamental
6	2698.000	45.76	-7.22	38.54	74.00	-35.46	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

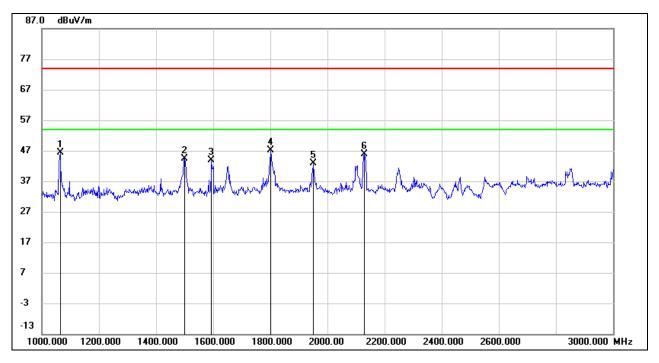
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



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	1064.000	60.11	-13.66	46.45	74.00	-27.55	peak
2	1500.000	56.60	-12.23	44.37	74.00	-29.63	peak
3	1594.000	55.41	-11.59	43.82	74.00	-30.18	peak
4	1802.000	57.29	-10.05	47.24	74.00	-26.76	peak
5	1950.000	52.94	-10.16	42.78	74.00	-31.22	peak
6	2130.000	55.43	-9.46	45.97	74.00	-28.03	peak

Note: 1. Peak Result = 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 then spurious frequency bands and the authorized band was not corrected for Band reject filter losses.

5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

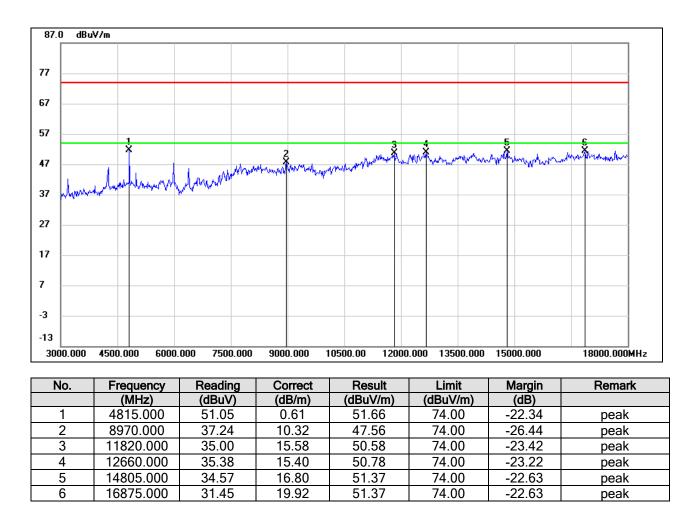
Note: All modes and channels have been tested, only the worst data was recorded in the report.



8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

8.3.1. 802.11b MIMO MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



Note: 1. Peak Result = Reading Level + Correct Factor.

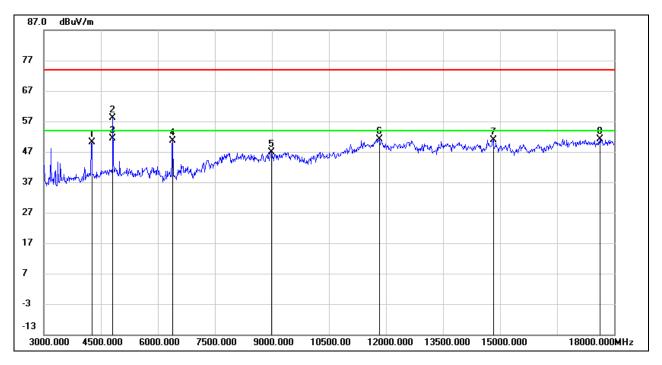
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	51.92	-1.73	50.19	74.00	-23.81	peak
2	4815.000	57.55	0.61	58.16	74.00	-15.84	peak
3	4815.000	50.87	0.61	51.48	54.00	-2.52	AVG
4	6390.000	46.34	4.32	50.66	74.00	-23.34	peak
5	8985.000	36.37	10.47	46.84	74.00	-27.16	peak
6	11820.000	35.65	15.58	51.23	74.00	-22.77	peak
7	14820.000	34.07	16.81	50.88	74.00	-23.12	peak
8	17625.000	29.77	21.36	51.13	74.00	-22.87	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

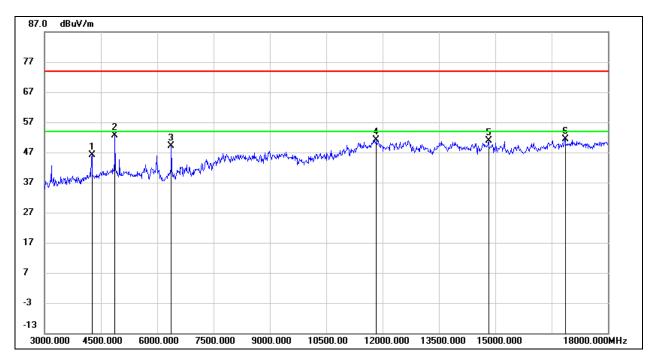
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	4260.000	47.89	-1.73	46.16	74.00	-27.84	peak
2	4875.000	51.99	0.71	52.70	74.00	-21.30	peak
3	6375.000	44.91	4.23	49.14	74.00	-24.86	peak
4	11835.000	35.52	15.56	51.08	74.00	-22.92	peak
5	14820.000	34.13	16.81	50.94	74.00	-23.06	peak
6	16860.000	31.41	19.88	51.29	74.00	-22.71	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

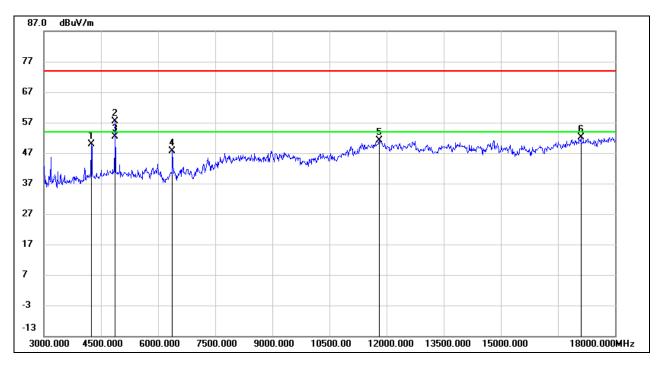
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	4245.000	51.62	-1.72	49.90	74.00	-24.10	peak
2	4875.000	56.61	0.71	57.32	74.00	-16.68	peak
3	4875.000	51.64	0.71	52.35	54.00	-1.65	AVG
4	6375.000	43.47	4.23	47.70	74.00	-26.30	peak
5	11805.000	35.63	15.60	51.23	74.00	-22.77	peak
6	17100.000	31.52	20.64	52.16	74.00	-21.84	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

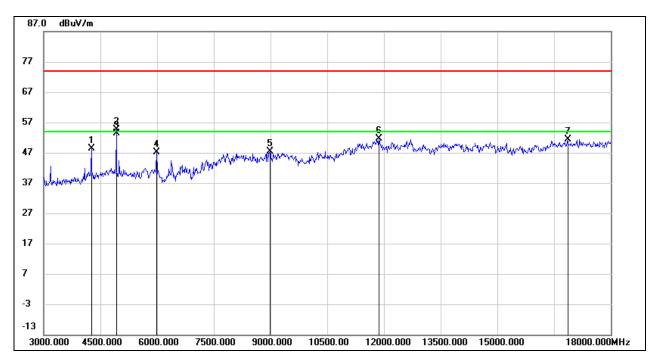
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	4260.000	50.21	-1.73	48.48	74.00	-25.52	peak
2	4920.000	53.94	0.77	54.71	74.00	-19.29	peak
3	4920.000	52.53	0.77	53.30	54.00	-0.70	AVG
4	5985.000	43.87	3.24	47.11	74.00	-26.89	peak
5	8985.000	36.80	10.47	47.27	74.00	-26.73	peak
6	11865.000	36.02	15.52	51.54	74.00	-22.46	peak
7	16860.000	31.43	19.88	51.31	74.00	-22.69	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

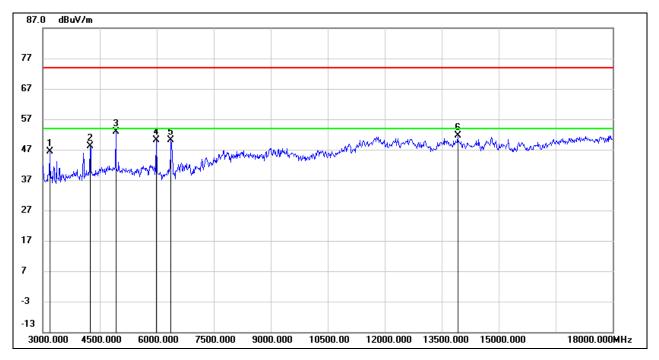
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	3180.000	51.60	-5.29	46.31	74.00	-27.69	peak
2	4245.000	49.94	-1.72	48.22	74.00	-25.78	peak
3	4920.000	52.13	0.77	52.90	74.00	-21.10	peak
4	5985.000	46.92	3.24	50.16	74.00	-23.84	peak
5	6375.000	45.88	4.23	50.11	74.00	-23.89	peak
6	13920.000	34.79	16.89	51.68	74.00	-22.32	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

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

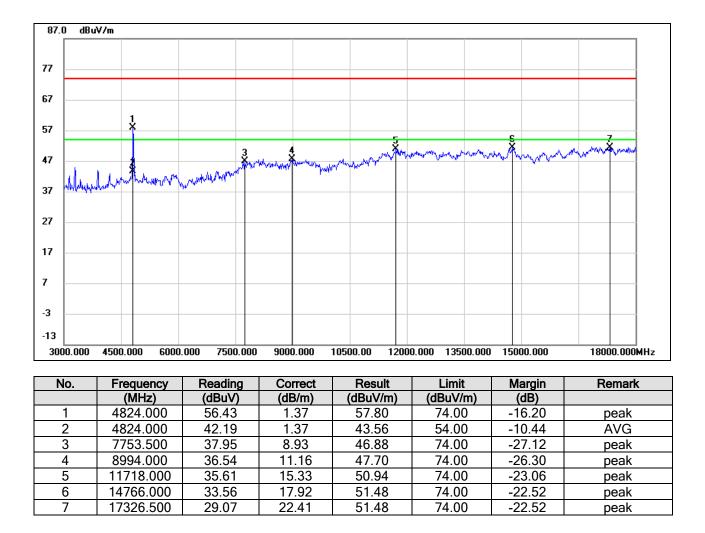
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.









Note: 1. Peak Result = Reading Level + Correct Factor.

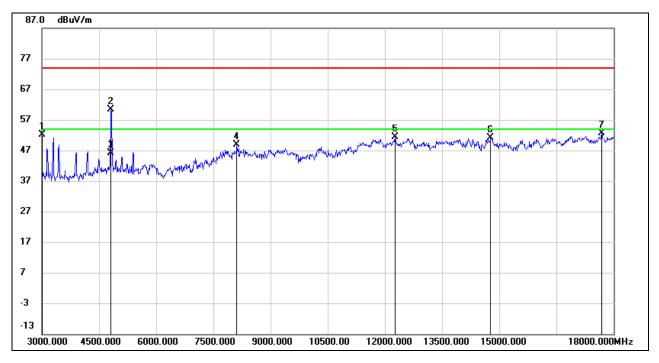
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	3000.000	55.82	-3.68	52.14	74.00	-21.86	peak
2	4824.000	59.01	1.37	60.38	74.00	-13.62	peak
3	4824.000	44.87	1.37	46.24	54.00	-7.76	AVG
4	8116.500	38.84	10.12	48.96	74.00	-25.04	peak
5	12279.000	35.31	16.07	51.38	74.00	-22.62	peak
6	14782.500	33.08	17.98	51.06	74.00	-22.94	peak
7	17695.500	29.14	23.44	52.58	74.00	-21.42	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

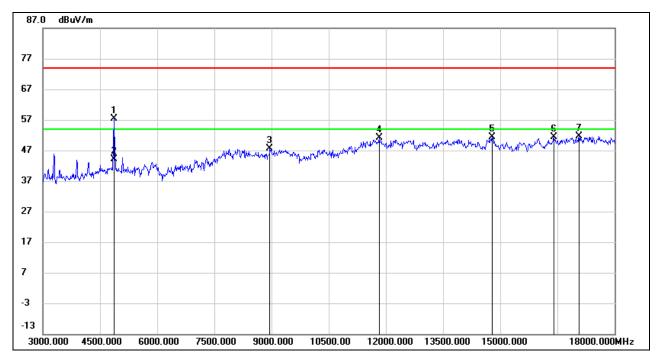
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	4872.000	56.13	1.32	57.45	74.00	-16.55	peak
2	4872.000	42.80	1.32	44.12	54.00	-9.88	AVG
3	8967.000	37.09	10.64	47.73	74.00	-26.27	peak
4	11823.000	35.79	15.31	51.10	74.00	-22.90	peak
5	14800.500	33.26	18.04	51.30	74.00	-22.70	peak
6	16414.500	31.75	19.68	51.43	74.00	-22.57	peak
7	17079.000	29.78	21.76	51.54	74.00	-22.46	peak

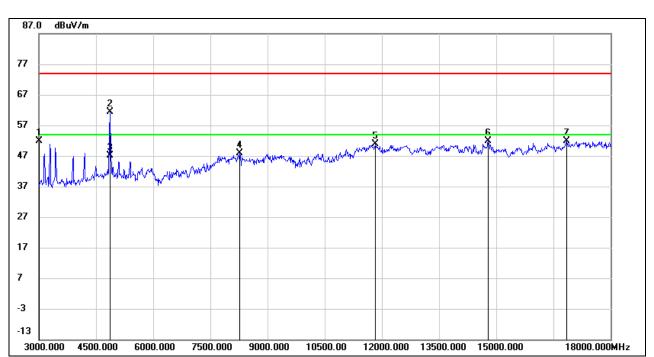
Note: 1. Peak Result = Reading Level + Correct Factor.

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 High Pass Filter losses.





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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3000.000	55.46	-3.68	51.78	74.00	-22.22	peak
2	4867.500	59.94	1.32	61.26	74.00	-12.74	peak
3	4867.500	45.89	1.32	47.21	54.00	-6.79	AVG
4	8269.500	38.03	9.73	47.76	74.00	-26.24	peak
5	11821.500	35.67	15.30	50.97	74.00	-23.03	peak
6	14799.000	33.76	18.04	51.80	74.00	-22.20	peak
7	16857.000	30.62	21.20	51.82	74.00	-22.18	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

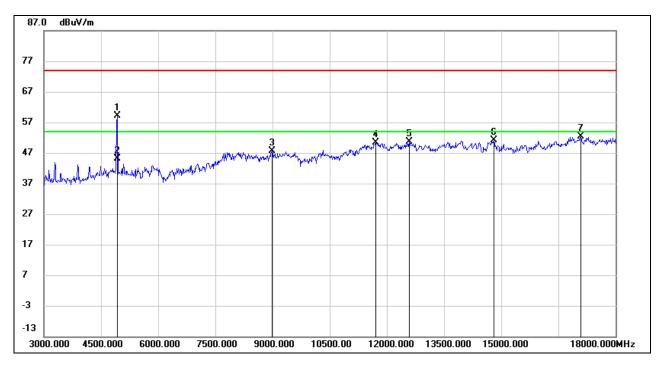
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.500	57.75	1.49	59.24	74.00	-14.76	peak
2	4924.500	43.65	1.49	45.14	54.00	-8.86	AVG
3	8985.000	36.62	10.99	47.61	74.00	-26.39	peak
4	11704.500	35.10	15.34	50.44	74.00	-23.56	peak
5	12598.500	34.88	15.78	50.66	74.00	-23.34	peak
6	14817.000	33.12	17.92	51.04	74.00	-22.96	peak
7	17095.500	30.52	21.87	52.39	74.00	-21.61	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

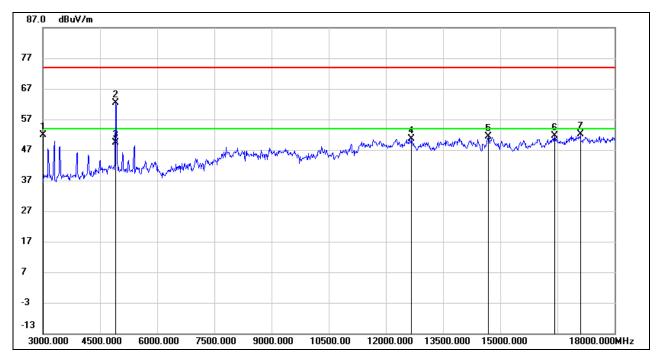
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	3000.000	55.62	-3.68	51.94	74.00	-22.06	peak
2	4912.500	61.03	1.39	62.42	74.00	-11.58	peak
3	4912.500	47.96	1.39	49.35	54.00	-4.65	AVG
4	12672.000	35.02	15.66	50.68	74.00	-23.32	peak
5	14694.000	33.72	17.67	51.39	74.00	-22.61	peak
6	16437.000	31.87	19.69	51.56	74.00	-22.44	peak
7	17113.500	30.29	21.91	52.20	74.00	-21.80	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

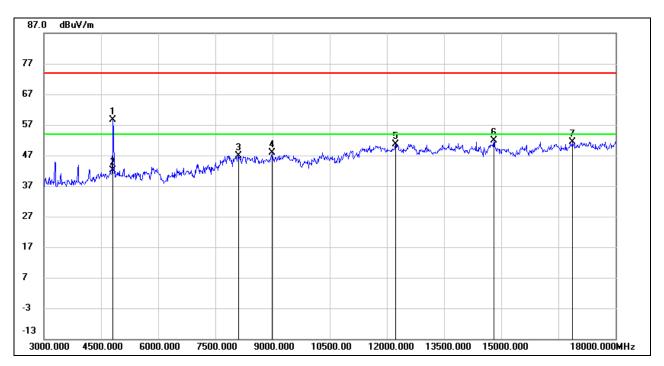
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







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	57.30	1.38	58.68	74.00	-15.32	peak
2	4815.000	40.76	1.38	42.14	54.00	-11.86	AVG
3	8115.000	36.75	10.13	46.88	74.00	-27.12	peak
4	8985.000	36.92	10.99	47.91	74.00	-26.09	peak
5	12225.000	34.63	15.99	50.62	74.00	-23.38	peak
6	14805.000	33.78	18.00	51.78	74.00	-22.22	peak
7	16860.000	30.12	21.22	51.34	74.00	-22.66	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

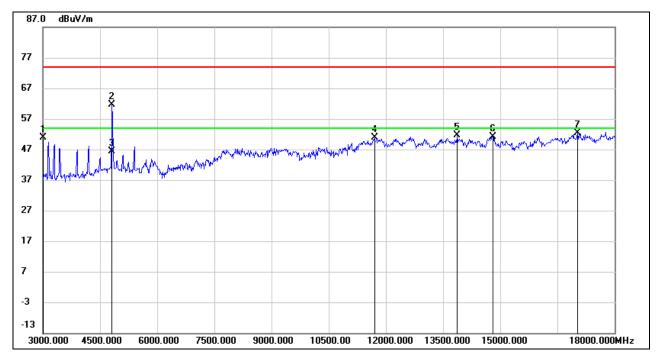
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	3000.000	54.53	-3.68	50.85	74.00	-23.15	peak
2	4815.000	60.33	1.38	61.71	74.00	-12.29	peak
3	4815.000	45.05	1.38	46.43	54.00	-7.57	AVG
4	11700.000	35.62	15.35	50.97	74.00	-23.03	peak
5	13875.000	34.16	17.55	51.71	74.00	-22.29	peak
6	14805.000	33.04	18.00	51.04	74.00	-22.96	peak
7	17025.000	30.88	21.40	52.28	74.00	-21.72	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

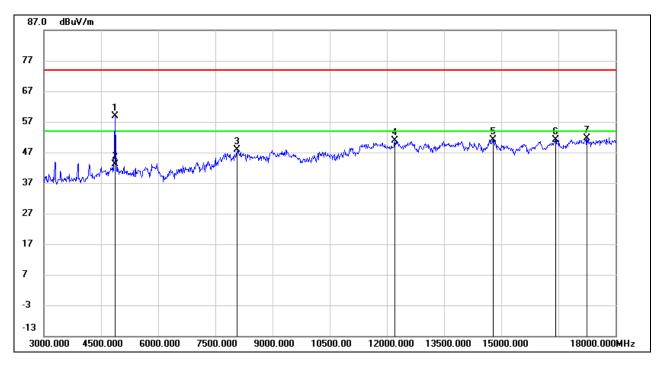
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	4870.500	57.57	1.32	58.89	74.00	-15.11	peak
2	4870.500	41.73	1.32	43.05	54.00	-10.95	AVG
3	8080.500	38.00	9.87	47.87	74.00	-26.13	peak
4	12223.500	34.81	15.99	50.80	74.00	-23.20	peak
5	14799.000	33.20	18.04	51.24	74.00	-22.76	peak
6	16435.500	31.54	19.68	51.22	74.00	-22.78	peak
7	17263.500	29.27	22.39	51.66	74.00	-22.34	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

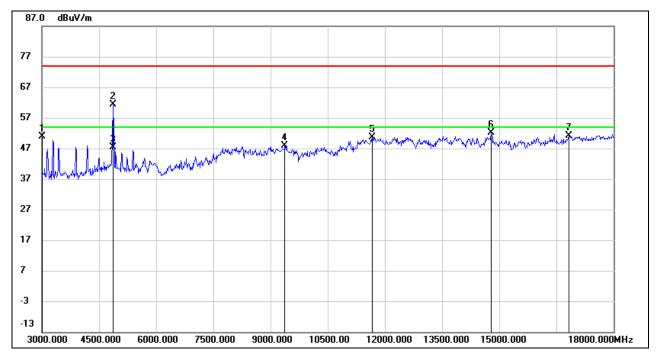
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.







No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3000.000	54.54	-3.68	50.86	74.00	-23.14	peak
2	4872.000	60.07	1.32	61.39	74.00	-12.61	peak
3	4872.000	46.10	1.32	47.42	54.00	-6.58	AVG
4	9379.500	37.15	10.85	48.00	74.00	-26.00	peak
5	11680.500	35.39	15.23	50.62	74.00	-23.38	peak
6	14800.500	34.12	18.04	52.16	74.00	-21.84	peak
7	16837.500	30.06	21.03	51.09	74.00	-22.91	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

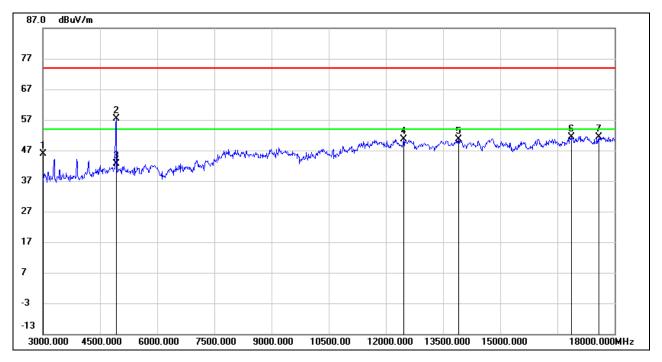
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	3000.000	49.62	-3.68	45.94	74.00	-28.06	peak
2	4923.000	55.95	1.49	57.44	74.00	-16.56	peak
3	4923.000	41.02	1.49	42.51	54.00	-11.49	AVG
4	12478.500	34.98	15.74	50.72	74.00	-23.28	peak
5	13914.000	32.97	17.54	50.51	74.00	-23.49	peak
6	16870.500	30.12	21.32	51.44	74.00	-22.56	peak
7	17586.000	28.79	22.64	51.43	74.00	-22.57	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

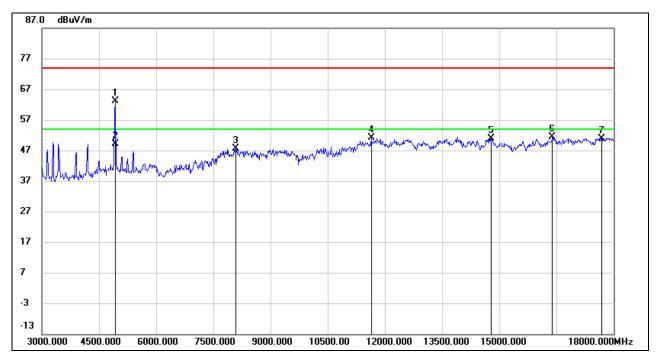
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	4921.500	61.60	1.47	63.07	74.00	-10.93	peak
2	4921.500	47.66	1.47	49.13	54.00	-4.87	AVG
3	8086.500	37.66	9.97	47.63	74.00	-26.37	peak
4	11653.500	35.98	15.06	51.04	74.00	-22.96	peak
5	14800.500	32.83	18.04	50.87	74.00	-23.13	peak
6	16404.000	31.75	19.68	51.43	74.00	-22.57	peak
7	17691.000	27.60	23.40	51.00	74.00	-23.00	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

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

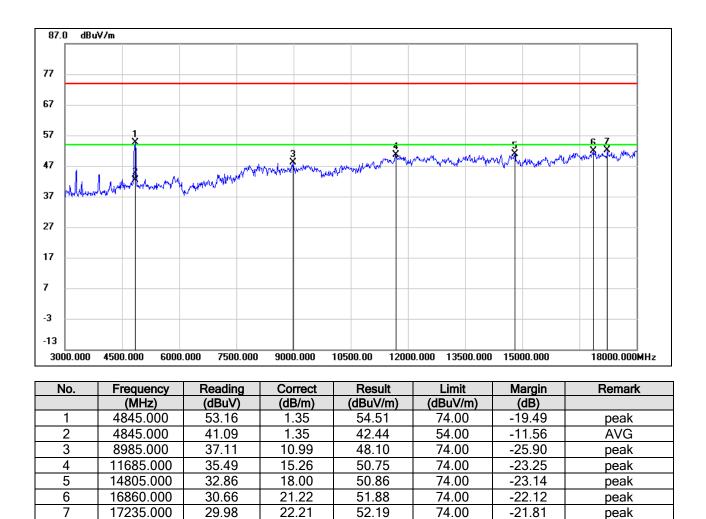
3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



8.3.4. 802.11n HT40 MIMO MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



Note: 1. Peak Result = Reading Level + Correct Factor.

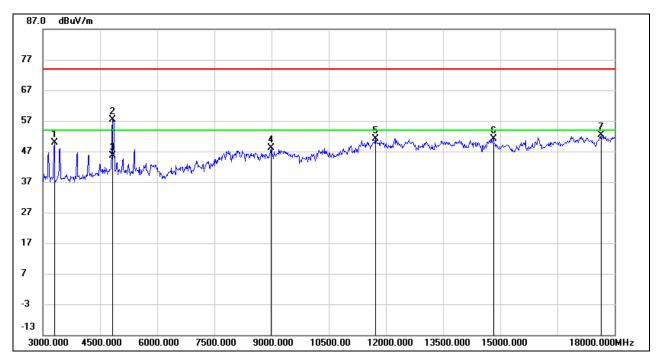
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	3300.000	53.44	-3.60	49.84	74.00	-24.16	peak
2	4830.000	56.07	1.37	57.44	74.00	-16.56	peak
3	4830.000	44.36	1.37	45.73	54.00	-8.27	AVG
4	8985.000	37.12	10.99	48.11	74.00	-25.89	peak
5	11730.000	35.80	15.32	51.12	74.00	-22.88	peak
6	14820.000	33.16	17.91	51.07	74.00	-22.93	peak
7	17640.000	29.23	23.03	52.26	74.00	-21.74	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

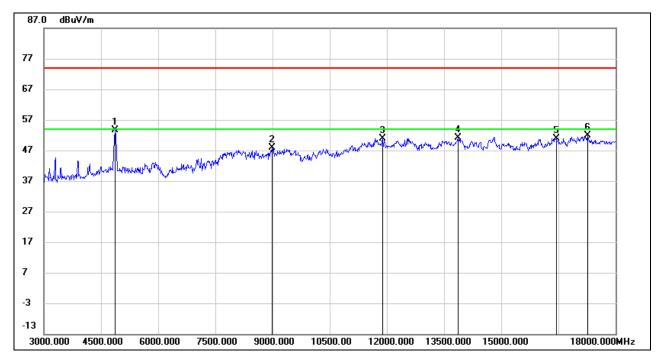
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	52.40	1.32	53.72	74.00	-20.28	peak
2	8985.000	36.98	10.99	47.97	74.00	-26.03	peak
3	11880.000	35.46	15.46	50.92	74.00	-23.08	peak
4	13860.000	33.59	17.55	51.14	74.00	-22.86	peak
5	16440.000	31.15	19.68	50.83	74.00	-23.17	peak
6	17265.000	29.42	22.39	51.81	74.00	-22.19	peak

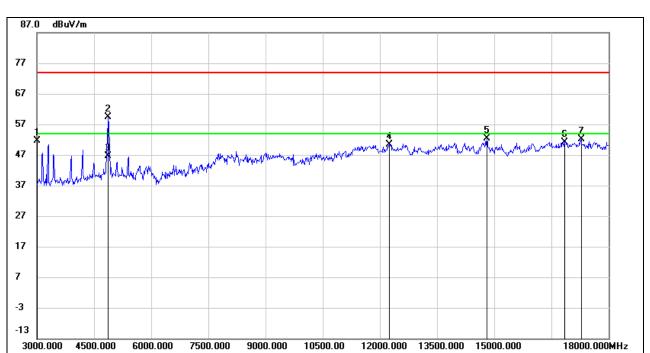
Note: 1. Peak Result = Reading Level + Correct Factor.

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 High Pass Filter losses.





No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	3000.000	55.38	-3.68	51.70	74.00	-22.30	peak
2	4875.000	58.00	1.32	59.32	74.00	-14.68	peak
3	4875.000	45.19	1.32	46.51	54.00	-7.49	AVG
4	12255.000	34.36	16.03	50.39	74.00	-23.61	peak
5	14805.000	34.46	18.00	52.46	74.00	-21.54	peak
6	16845.000	30.09	21.10	51.19	74.00	-22.81	peak
7	17280.000	29.61	22.48	52.09	74.00	-21.91	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

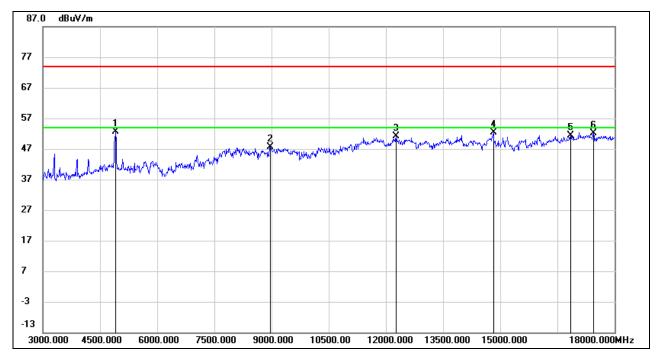
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	4905.000	51.27	1.33	52.60	74.00	-21.40	peak
2	8970.000	36.95	10.70	47.65	74.00	-26.35	peak
3	12270.000	34.98	16.04	51.02	74.00	-22.98	peak
4	14820.000	34.46	17.91	52.37	74.00	-21.63	peak
5	16845.000	30.17	21.10	51.27	74.00	-22.73	peak
6	17445.000	30.13	21.95	52.08	74.00	-21.92	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

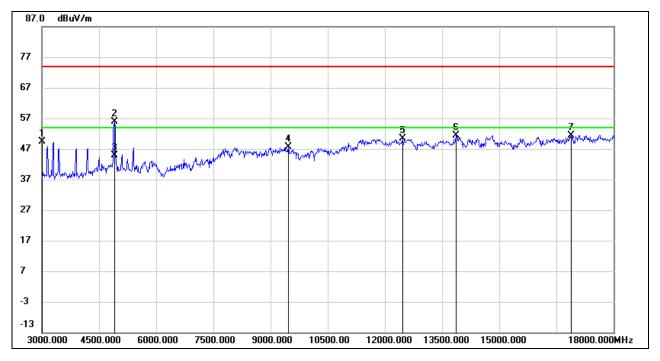
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



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	3000.000	52.97	-3.68	49.29	74.00	-24.71	peak
2	4905.000	54.65	1.33	55.98	74.00	-18.02	peak
3	4905.000	43.59	1.33	44.92	54.00	-9.08	AVG
4	9465.000	36.88	10.68	47.56	74.00	-26.44	peak
5	12465.000	34.51	15.77	50.28	74.00	-23.72	peak
6	13860.000	33.72	17.55	51.27	74.00	-22.73	peak
7	16890.000	30.00	21.49	51.49	74.00	-22.51	peak

Note: 1. Peak Result = 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.

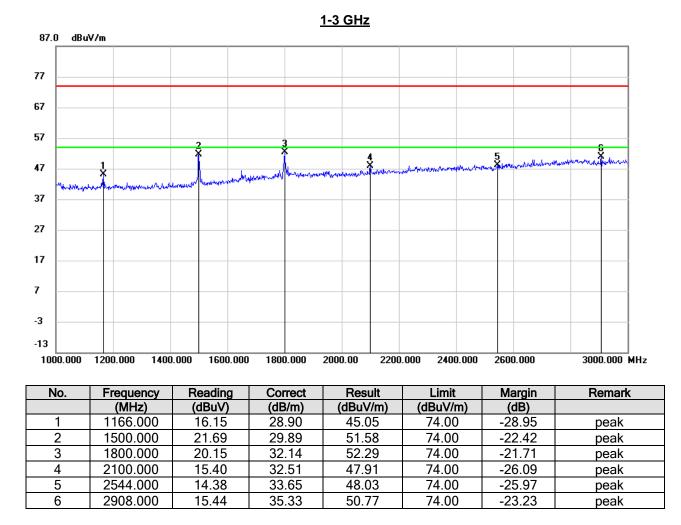
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.



8.1. SPURIOUS EMISSIONS FOR CO-LOCATION

8.1.1. BT 8DPSK MODE AND 802.11G MIMO MODE

SPURIOUS EMISSIONS (BT 8DPSK LOW CHANNEL, 802.11G LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



Note: 1. Peak Result = Reading Level + Correct Factor.

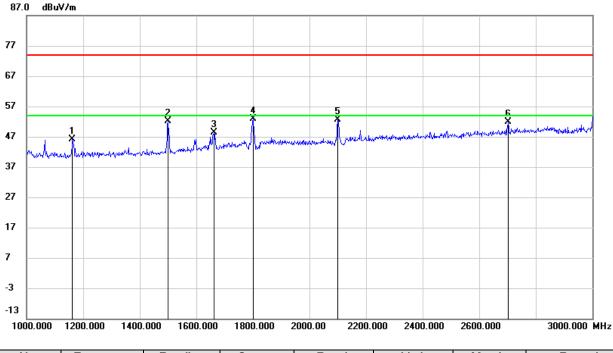
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



SPURIOUS EMISSIONS (BT 8DPSK LOW CHANNEL, 802.11G LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



<u>1-3 GHz</u>

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1162.000	17.24	28.87	46.11	74.00	-27.89	peak
2	1500.000	22.34	29.89	52.23	74.00	-21.77	peak
3	1662.000	17.36	31.07	48.43	74.00	-25.57	peak
4	1800.000	20.86	32.14	53.00	74.00	-21.00	peak
5	2100.000	20.16	32.51	52.67	74.00	-21.33	peak
6	2702.000	17.62	34.36	51.98	74.00	-22.02	peak

Note: 1. Peak Result = Reading Level + Correct Factor.

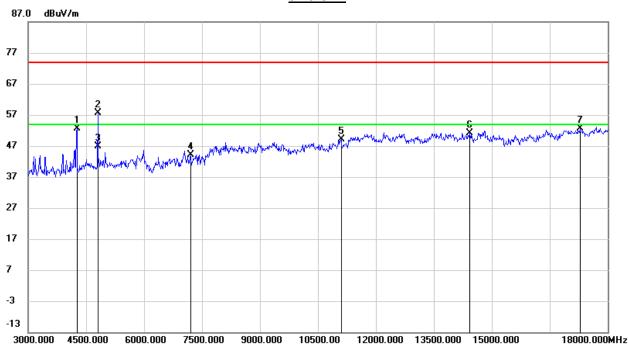
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Filter losses were only considered in then spurious frequency bands and the authorized band was not corrected for Band reject filter losses.



SPURIOUS EMISSIONS (BT 8DPSK LOW CHANNEL, 802.11G LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4260.000	53.89	-1.36	52.53	74.00	-21.47	peak
2	4800.000	56.34	1.40	57.74	74.00	-16.26	peak
3	4800.000	45.42	1.40	46.82	54.00	-7.18	AVG
4	7200.000	36.81	7.36	44.17	74.00	-29.83	peak
5	11100.000	35.36	13.79	49.15	74.00	-24.85	peak
6	14430.000	33.86	17.34	51.20	74.00	-22.80	peak
7	17280.000	30.09	22.48	52.57	74.00	-21.43	peak

Note: 1. Peak Result = 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. 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.

3-18 GHz



peak

peak

peak

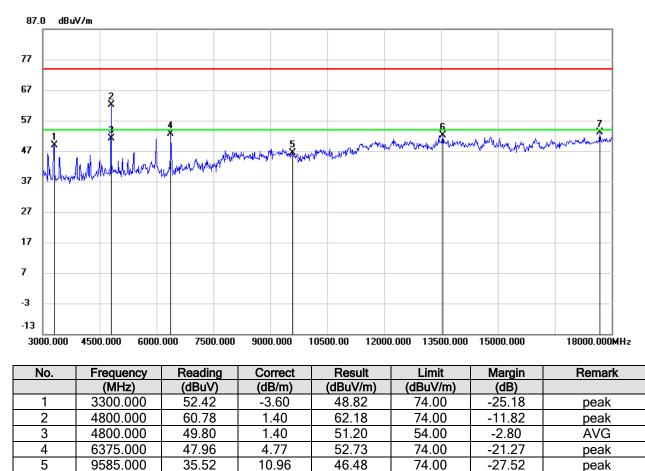
-21.98

-20.78

74.00

74.00

SPURIOUS EMISSIONS (BT 8DPSK LOW CHANNEL, 802.11G LOW CHANNEL, WORST-CASE **CONFIGURATION, VERTICAL)**



3-18 GHz

Note: 1. Peak Result = Reading Level + Correct Factor.

34.86

29.86

17.16

23.36

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

52.02

53.22

3. Peak: Peak detector.

13545.000

17685.000

6

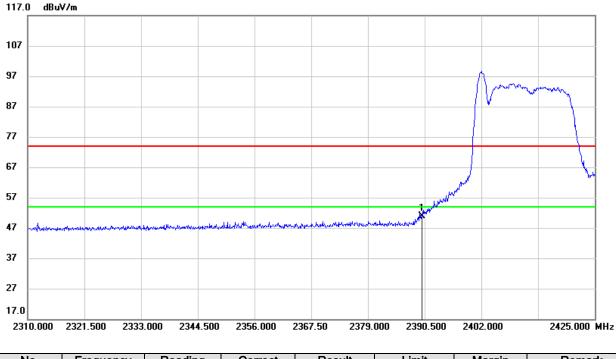
7

4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for HPF losses.



RESTRICTED BANDEDGE (BT 8DPSK LOW CHANNEL, 802.11G LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

PEAK



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	17.55	33.35	50.90	74.00	-23.10	peak

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

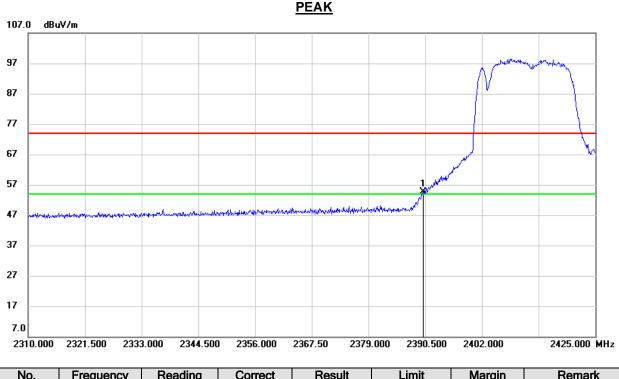
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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.



RESTRICTED BANDEDGE (BT 8DPSK LOW CHANNEL, 802.11G LOW CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	21.25	33.35	54.60	74.00	-19.40	peak

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

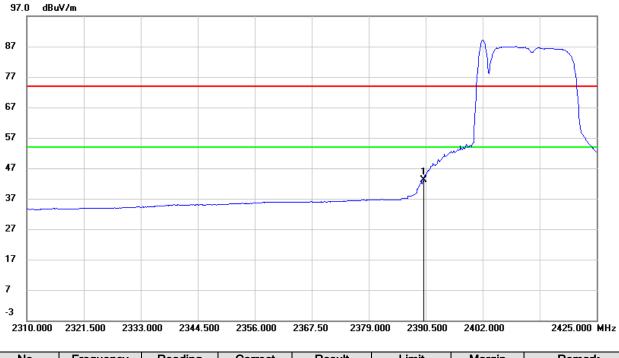
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

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.



<u>AVG</u>



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	9.79	33.35	43.14	54.00	-10.86	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.

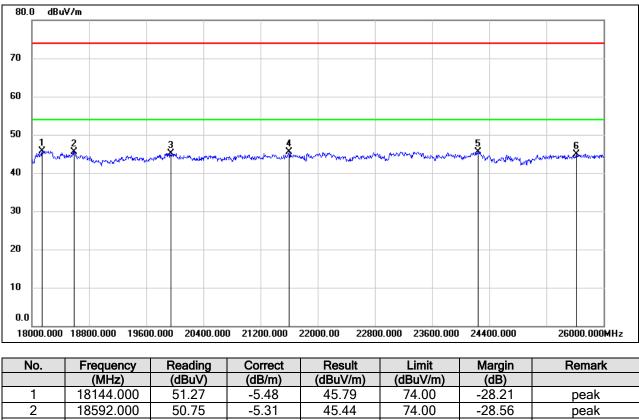
Note: All the modes had been tested, but only the worst data was recorded in the report.



8.2. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

8.2.1. 802.11g MIMO MODE

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



1	18144.000	51.27	-5.48	45.79	74.00	-28.21	peak	
2	18592.000	50.75	-5.31	45.44	74.00	-28.56	peak	
3	19944.000	50.59	-5.41	45.18	74.00	-28.82	peak	
4	21600.000	50.02	-4.54	45.48	74.00	-28.52	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	

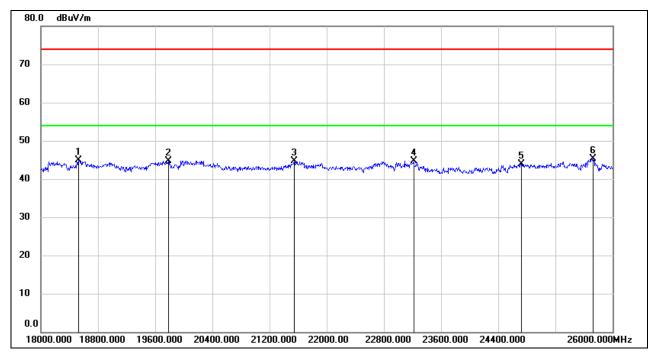
Note: 1. Measurement = Reading Level + Correct Factor.

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	19784.000	50.07	-5.28	44.79	74.00	-29.21	peak
3	21544.000	49.26	-4.63	44.63	74.00	-29.37	peak
4	23216.000	48.01	-3.38	44.63	74.00	-29.37	peak
5	24720.000	46.22	-2.33	43.89	74.00	-30.11	peak
6	25728.000	46.11	-0.72	45.39	74.00	-28.61	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.

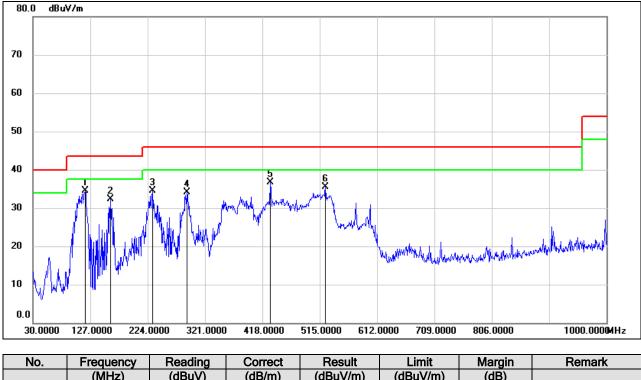
Note: All the modes had been tested, but only the worst data was recorded in the report.



8.3. SPURIOUS EMISSIONS (30 MHz ~ 1 GHz)

8.3.1. 802.11g MIMO 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	118.2700	54.47	-19.97	34.50	43.50	-9.00	QP
2	160.9500	50.03	-17.71	32.32	43.50	-11.18	QP
3	232.7300	53.29	-18.79	34.50	46.00	-11.50	QP
4	289.9600	50.04	-15.91	34.13	46.00	-11.87	QP
5	431.5800	49.35	-12.70	36.65	46.00	-9.35	QP
6	524.7000	46.38	-10.96	35.42	46.00	-10.58	QP

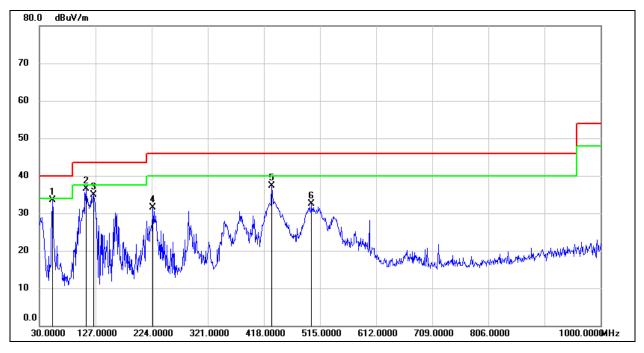
Note: 1. Result Level = Read Level + Correct Factor.

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	52.3100	54.25	-20.71	33.54	40.00	-6.46	QP
2	110.5100	57.02	-20.42	36.60	43.50	-6.90	QP
3	124.0900	54.58	-19.65	34.93	43.50	-8.57	QP
4	225.9400	49.96	-18.47	31.49	46.00	-14.51	QP
5	431.5800	50.09	-12.70	37.39	46.00	-8.61	QP
6	500.4500	44.03	-11.46	32.57	46.00	-13.43	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.

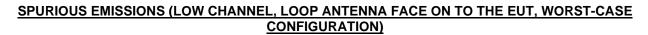
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

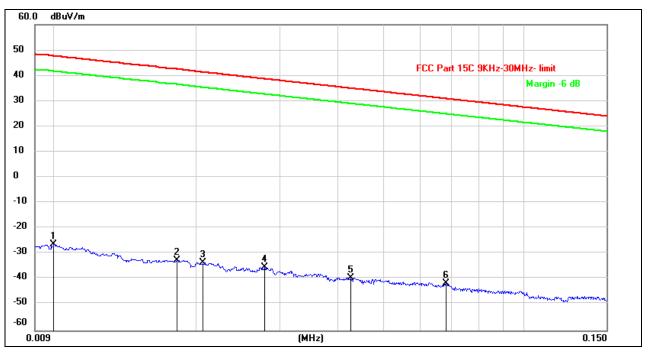
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.



8.4. SPURIOUS EMISSIONS BELOW 30 MHz

8.4.1. 802.11g MIMO MODE





<u>9 kHz ~ 150 kHz</u>

No.	Frequency	Reading	Correct	FCC Result	FCC Limit	ISED Result	ISED Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.0100	75.22	-101.40	-26.18	47.6	-77.68	-3.90	-73.78	peak
2	0.0181	68.85	-101.36	-32.51	42.45	-84.01	-9.05	-74.96	peak
3	0.0206	67.92	-101.35	-33.43	41.32	-84.93	-10.18	-74.75	peak
4	0.0279	66.17	-101.38	-35.21	38.69	-86.71	-12.81	-73.90	peak
5	0.0427	62.14	-101.45	-39.31	34.99	-90.81	-16.51	-74.30	peak
6	0.0680	60.04	-101.56	-41.52	30.95	-93.02	-20.55	-72.47	peak

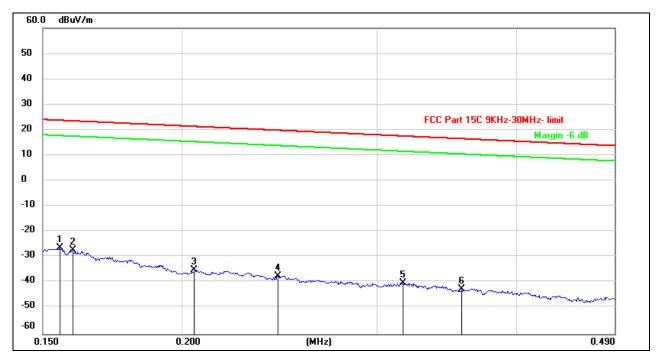
Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120 π] = dBuV/m- 51.5).

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

U

<u>150 kHz ~ 490 kHz</u>



No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.1554	75.27	-101.65	-26.38	23.77	-77.88	-27.73	-50.15	peak
2	0.1595	74.36	-101.65	-27.29	23.55	-78.79	-27.95	-50.84	peak
3	0.2053	66.79	-101.73	-34.94	21.35	-86.44	-30.15	-56.29	peak
4	0.2442	64.53	-101.79	-37.26	19.85	-88.76	-31.65	-57.11	peak
5	0.3163	61.70	-101.87	-40.17	17.6	-91.67	-33.90	-57.77	peak
6	0.3573	59.58	-101.91	-42.33	16.54	-93.83	-34.96	-58.87	peak

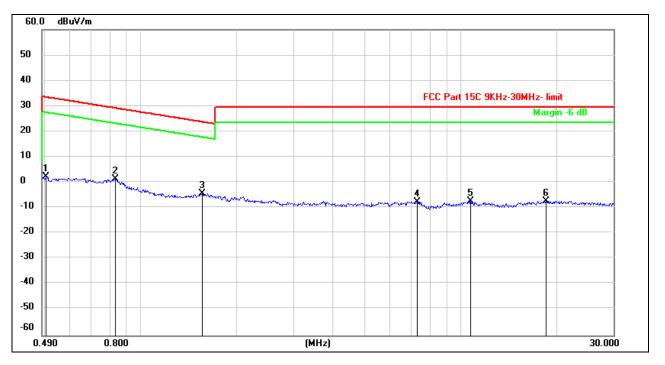
Note: 1. Measurement = Reading Level + Correct Factor (dBuA/m= dBuV/m- 20Log10[120 π] = dBuV/m- 51.5).

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.



<u>490 kHz ~ 30 MHz</u>



No.	Frequency	Reading	Correct	FCC	FCC	ISED	ISED	Margin	Remark
				Result	Limit	Result	Limit		
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dBuA/m)	(dBuA/m)	(dB)	
1	0.5039	64.44	-62.07	2.37	33.56	-49.13	-17.94	-31.19	peak
2	0.8296	63.44	-62.17	1.27	29.23	-50.23	-22.27	-27.96	peak
3	1.5564	57.68	-62.02	-4.34	23.76	-55.84	-27.74	-28.10	peak
4	7.3361	53.58	-61.17	-7.59	29.54	-59.09	-21.96	-37.13	peak
5	10.7299	53.48	-60.83	-7.35	29.54	-58.85	-21.96	-36.89	peak
6	18.4908	53.56	-60.89	-7.33	29.54	-58.83	-21.96	-36.87	peak

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

2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.

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



9. AC POWER LINE CONDUCTED EMISSIONS

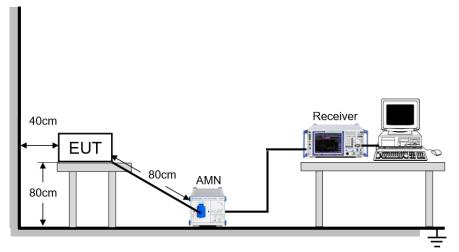
LIMITS

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

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

TEST SETUP AND PROCEDURE

Refer to ANSI C63.10-2013 clause 6.2.



The EUT is put on a table of non-conducting material that is 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.

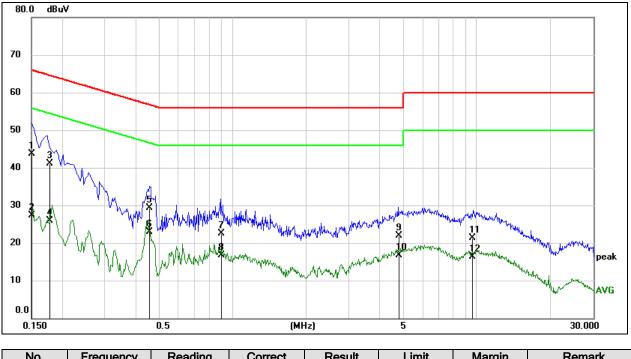
TEST ENVIRONMENT

Temperature	25 °C	Relative Humidity	50 %
Atmosphere Pressure	101 kPa	Test Voltage	AC 120 V/60 Hz

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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1505	34.13	9.59	43.72	65.97	-22.25	QP
2	0.1505	17.64	9.59	27.23	55.97	-28.74	AVG
3	0.1789	31.49	9.59	41.08	64.54	-23.46	QP
4	0.1789	16.29	9.59	25.88	54.54	-28.66	AVG
5	0.4560	19.70	9.60	29.30	56.77	-27.47	QP
6	0.4560	13.35	9.60	22.95	46.77	-23.82	AVG
7	0.8997	12.94	9.60	22.54	56.00	-33.46	QP
8	0.8997	7.14	9.60	16.74	46.00	-29.26	AVG
9	4.7798	12.37	9.61	21.98	56.00	-34.02	QP
10	4.7798	7.17	9.61	16.78	46.00	-29.22	AVG
11	9.5832	11.68	9.62	21.30	60.00	-38.70	QP
12	9.5832	6.78	9.62	16.40	50.00	-33.60	AVG

Note: 1. Result = Reading +Correct Factor.

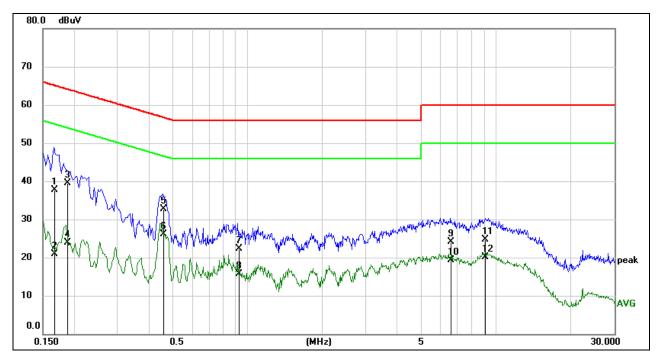
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.



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



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1683	28.05	9.59	37.64	65.04	-27.40	QP
2	0.1683	11.33	9.59	20.92	55.04	-34.12	AVG
3	0.1888	29.95	9.59	39.54	64.09	-24.55	QP
4	0.1888	14.29	9.59	23.88	54.09	-30.21	AVG
5	0.4586	23.10	9.60	32.70	56.72	-24.02	QP
6	0.4586	16.43	9.60	26.03	46.72	-20.69	AVG
7	0.9228	12.74	9.61	22.35	56.00	-33.65	QP
8	0.9228	6.14	9.61	15.75	46.00	-30.25	AVG
9	6.6142	14.54	9.63	24.17	60.00	-35.83	QP
10	6.6142	9.64	9.63	19.27	50.00	-30.73	AVG
11	9.1192	15.03	9.61	24.64	60.00	-35.36	QP
12	9.1192	10.44	9.61	20.05	50.00	-29.95	AVG

Note: 1. Result = Reading +Correct Factor.

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

3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).

4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes and channels had 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

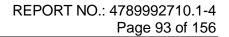
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply 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





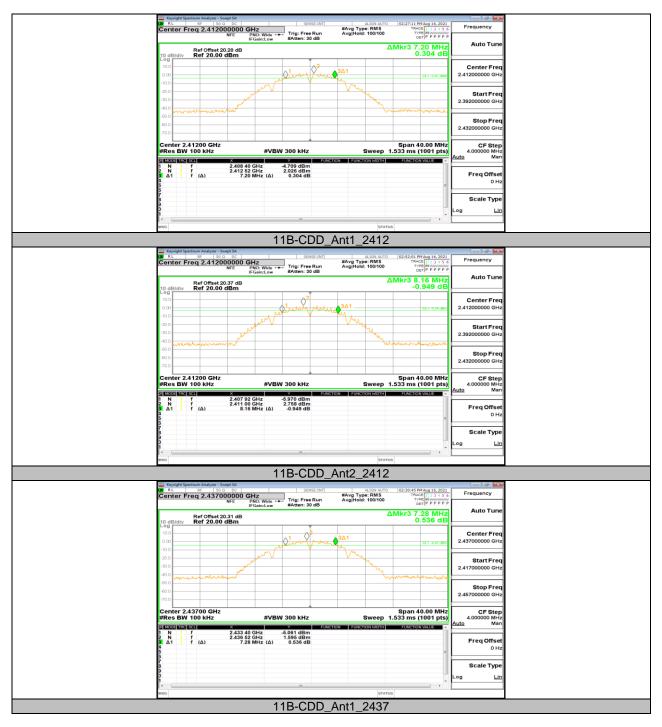
11. Appendix

11.1. Appendix A: DTS Bandwidth 11.1.1. Test Result

Test Mode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
	Ant1	2412	7.200	2408.400	2415.600	0.5	PASS
	Ant2	2412	8.160	2407.920	2416.080	0.5	PASS
	Ant1	2437	7.280	2433.400	2440.680	0.5	PASS
11B-CDD	Ant2	2437	7.200	2433.400	2440.600	0.5	PASS
	Ant1	2462	8.160	2457.920	2466.080	0.5	PASS
	Ant2	2462	7.200	2458.400	2465.600	0.5	PASS
	Ant1	2412	16.400	2403.800	2420.200	0.5	PASS
	Ant2	2412	16.400	2403.800	2420.200	0.5	PASS
11G-CDD	Ant1	2437	16.360	2428.840	2445.200	0.5	PASS
HG-CDD	Ant2	2437	16.160	2428.800	2444.960	0.5	PASS
	Ant1	2462	16.360	2453.800	2470.160	0.5	PASS
	Ant2	2462	16.120	2453.840	2469.960	0.5	PASS
	Ant1	2412	17.240	2403.200	2420.440	0.5	PASS
	Ant2	2412	17.000	2403.200	2420.200	0.5	PASS
11N20MIMO	Ant1	2437	16.880	2428.560	2445.440	0.5	PASS
	Ant2	2437	16.800	2428.600	2445.400	0.5	PASS
	Ant1	2462	16.880	2453.560	2470.440	0.5	PASS
	Ant2	2462	16.840	2453.600	2470.440	0.5	PASS
	Ant1	2422	35.840	2404.400	2440.240	0.5	PASS
	Ant2	2422	35.840	2403.760	2439.600	0.5	PASS
11N40MIMO	Ant1	2437	35.440	2419.240	2454.680	0.5	PASS
	Ant2	2437	35.520	2419.160	2454.680	0.5	PASS
	Ant1	2452	35.440	2434.160	2469.600	0.5	PASS
	Ant2	2452	35.840	2433.840	2469.680	0.5	PASS

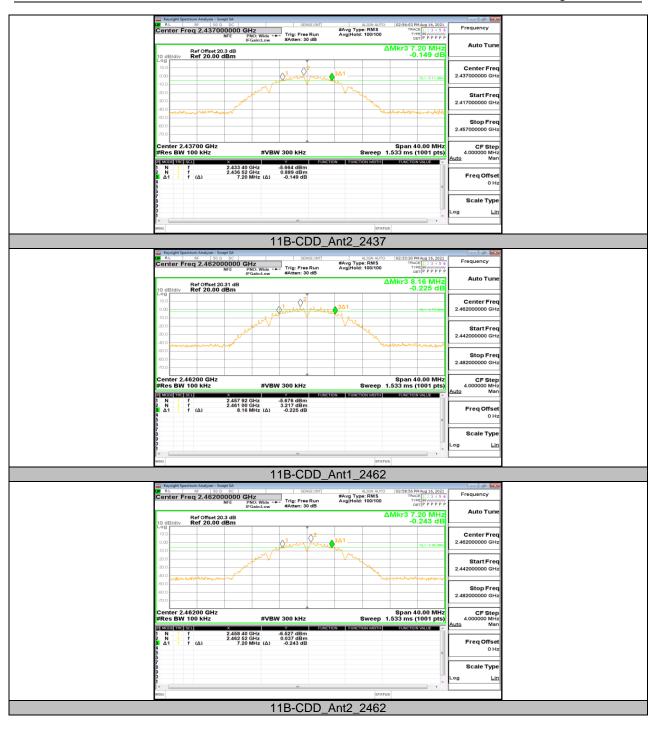


11.1.2. Test Graphs





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