



CFR 47 FCC PART 15 SUBPART C
CERTIFICATION TEST REPORT

For

Tablet

MODEL NUMBER: VT-TABLET-5082G

FCC ID: 2AAGE5081G6

REPORT NUMBER: 4789999654.1-10

ISSUE DATE: September 18, 2021

Prepared for

Chengdu Vantron Technology Co., Ltd.
No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China

Prepared by

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

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

Tel: +86 769 22038881

Fax: +86 769 33244054

Website: www.ul.com

Revision History

Rev.	Issue Date	Revisions	Revised By
V0	09/18/2021	Initial Issue	

Note: This is a spot check report base on 4789999654.1-3 which is issued by UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch on September 15, 2021. The old version EUT had already applied for FCC ID (2AAGE5081GB486), the new version and old version are the same except to except for one less the LTE module, so we only follow the KDB KDB484596 D01 to add the spot check in this report. For other data, please refer to the original report 4789999654.1-3.

Parent Serial Number SI07, FCC ID: 2AAGE5081GB486

Variant Serial Number SI07A, FCC ID: 2AAGE5081G6

Test Report	802.11 2.4GHz WIFI (DTS)	BLE (DTS)	Bluetooth DSS	802.11 5G WIFI UNII
old version	Report #4789999654.1- 3	Report #4789999654.1- 1	Report #4789999654.1- 2	Report #4789999654.1- 4
new version	Report #4789999654.1- 10	Report #4789999654.1- 9	Report 4789999654.1- 8	Report #4789999654.1- 11



Summary of Test Results			
Clause	Test Items	FCC Rules	Test Results
1	Conducted Output Power	FCC Part 15.247 (b) (3)	Pass
2	Radiated Bandedge and Spurious Emission Spot Check	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205	Pass
3	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.			

Test worst case of Conducted Output Power Spot Check				
Test Mode	Frequency (MHz)	Result[dBm]	original report Result[dBm]	Deviation(dB)
11B	2462	16.25	16.43	-0.18
11G	2412	16.71	16.94	-0.23
11N20	2412	19.63	19.70	-0.07

The worst case of Radiated Bandedge and Spurious Emission Spot Check					
Test Mode	Test Item	Frequency (MHz)	Result[dBuV/m]	original report Result[dBuV/m]	Deviation(dB)
11n 20	Band Edge	2483.7	68.39	69.91	-1.52
11b	RSE	4815	51.95	52.80	-0.85

Note: Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC Technical limits.

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Chengdu Vantron Technology Co., Ltd.
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China

Manufacturer Information

Company Name: Chengdu Vantron Technology Co., Ltd.
Address: No.5 GaoPeng Road, Hi-Tech Zone, Chengdu, SiChuan, P.R. China

EUT Information

EUT Name: Tablet
Model: VT-TABLET-5082G
Brand: VANTRON
Sample Received Date: June 23, 2021
Sample Status: Normal
Sample ID: 4030518
Date of Tested: June 23, 2021~ July 02, 2021

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

Prepared By:

Jacky Jiang
Engineer Project Associate

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager



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.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	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 Declaration of Conformity (DoC) and Certification rules ISED (Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320. 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
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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 (Included Fundamental Emission) (1 GHz to 26 GHz)	5.78 dB (1 GHz ~ 18 GHz)
	5.23 dB (18 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	Tablet
Model	VT-TABLET-5082G
Radio Technology	IEEE802.11b/g/n HT20
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
Rated Input	DC 5 V
Li-ion Battery	3.8 V, 8000 mAh, 30.4Wh

5.2. CHANNEL LIST

Channel List for 802.11b/g/n (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	/	/

5.3. THE WORSE CASE POWER SETTING PARAMETER

The Worst Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		RFTtesttool					
Modulation Mode	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	default	default	default	/		
802.11g	1	default	default	default			
802.11n HT20	1	default	default	default			



5.4. MAXIMUM OUTPUT POWER

IEEE Std. 802.11	Frequency (MHz)	Channel Number	Maximum Conducted AVG Output Power (dBm)
b	2412 ~ 2462	1-11[11]	16.25
g	2412 ~ 2462	1-11[11]	16.71
n HT20	2412 ~ 2462	1-11[11]	19.63

5.5. 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

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 5.2.

Maximum power setting referring to section 5.3.

Worst case Data Rates declared by the customer:

- IEEE 802.11b / SISO – DBPSK / 1 Mbps
- IEEE 802.11g / SISO – BPSK / 6 Mbps
- IEEE 802.11n HT20 / SISO – BPSK / MCS0

For Radiated test of 802.11b and g mode, the antenna with higher output power was selected to be test.

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



5.7. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2412-2462	Integral Antenna	3.4
2	2412-2462	Integral Antenna	2.2

Note: Note: Directional gain= $10 \log[(10^{G1/20} + 10^{G2/20})^2 / N_{ANT}]$ dBi=5.83 dBi.

N_{ANT} : Antenna numbers

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

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒ 2TX, 2RX	ANT 1 or ANT 2 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒ 2TX, 2RX	ANT 1 or 2 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒ 2TX, 2RX	ANT1&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	P/N
/	/	/	/	/

I/O CABLES

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

ACCESSORIES

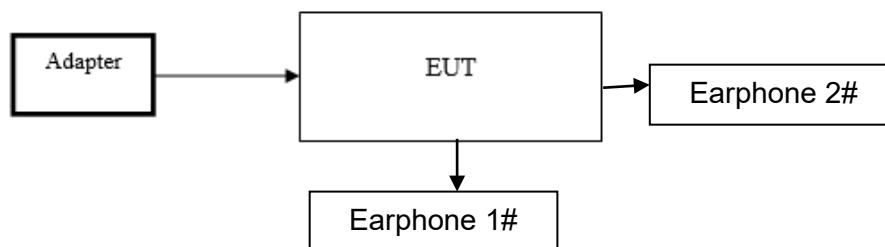
Item	Accessory	Brand Name	Model Name	Description
1	Power adapter	HUAWEI	HW-100225C00	5V2A
2	Earphone 1#	/	/	/
3	Earphone 2#	/	/	/
4	TF Card	/	/	/

TEST SETUP

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

SETUP DIAGRAM FOR TESTS

For Conducted Emission Test for AC Power Port test:





6. MEASURING INSTRUMENT AND SOFTWARE USED

Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Nov. 12, 2020	Nov. 11, 2021
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	Sept. 17, 2018	Sept. 17, 2021
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Aug. 11, 2018	Aug. 11, 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	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	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Nov. 12, 2020	Nov. 11, 2021
Software					
Description			Manufacturer	Name	Version
Test Software for Radiated Emissions			Farad	EZ-EMC	Ver. UL-3A1
Tonsend RF Test System					
Equipment	Manufacturer	Model 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	N9030A	MY55410512	Nov.20,2020	Nov.19,2021
MXG Vector Signal Generator	Keysight	N5182B	MY56200284	Nov.20,2020	Nov.19,2021
MXG Vector Signal Generator	Keysight	N5172B	MY56200301	Nov.20,2020	Nov.19,2021



DC power supply	Keysight	E3642A	MY55159130	Nov.24,2020	Nov.23,2021
Temperature & Humidity Chamber	SANMOOD	SG-80-CC-2	2088	Nov.20,2020	Nov.19,2021
Software					
Description	Manufacturer	Name		Version	
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



7. ANTENNA PORT TEST RESULTS

7.1. 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)	Conducted Output Power	1 watt or 30 dBm	2400-2483.5

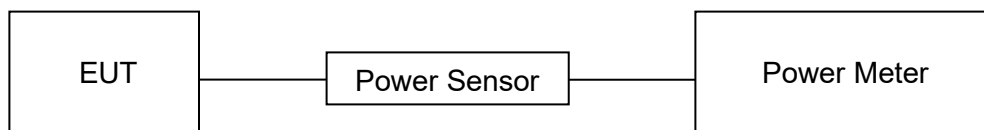
TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.9.

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	69.5 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS



Test Mode	Antenna	Channel	Result[dBm]	Limit[dBm]	Verdict
11B	Ant1	2412	15.68	<=30	PASS
	Ant2	2412	16.23	<=30	PASS
	Ant1	2437	16.02	<=30	PASS
	Ant2	2437	15.57	<=30	PASS
	Ant1	2462	16.25	<=30	PASS
	Ant2	2462	15.22	<=30	PASS
11G	Ant1	2412	16.65	<=30	PASS
	Ant2	2412	16.71	<=30	PASS
	Ant1	2437	16.24	<=30	PASS
	Ant2	2437	16.31	<=30	PASS
	Ant1	2462	16.19	<=30	PASS
	Ant2	2462	15.54	<=30	PASS
11N20MIMO	total	2412	19.63	<=30	PASS
	total	2437	19.10	<=30	PASS
	total	2462	19.37	<=30	PASS

Test worst case results of Spot Check					
Test Mode	Antenna	Channel	Result[dBm]	original report Result[dBm]	Deviation(dB)
11B	Ant1	2462	16.25	16.43	-0.18
11G	Ant2	2412	16.71	16.94	-0.23
11N20MIMO	total	2412	19.63	19.70	-0.07

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 (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) 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
		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):

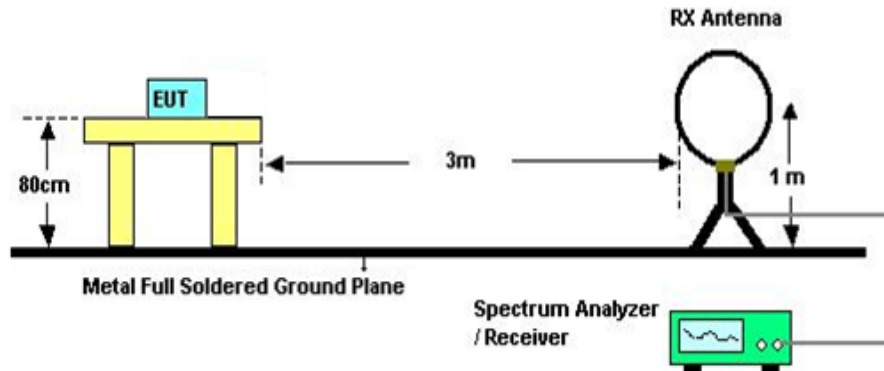
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	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: ¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

²Above 38.6c

TEST SETUP AND PROCEDURE

Below 30 MHz

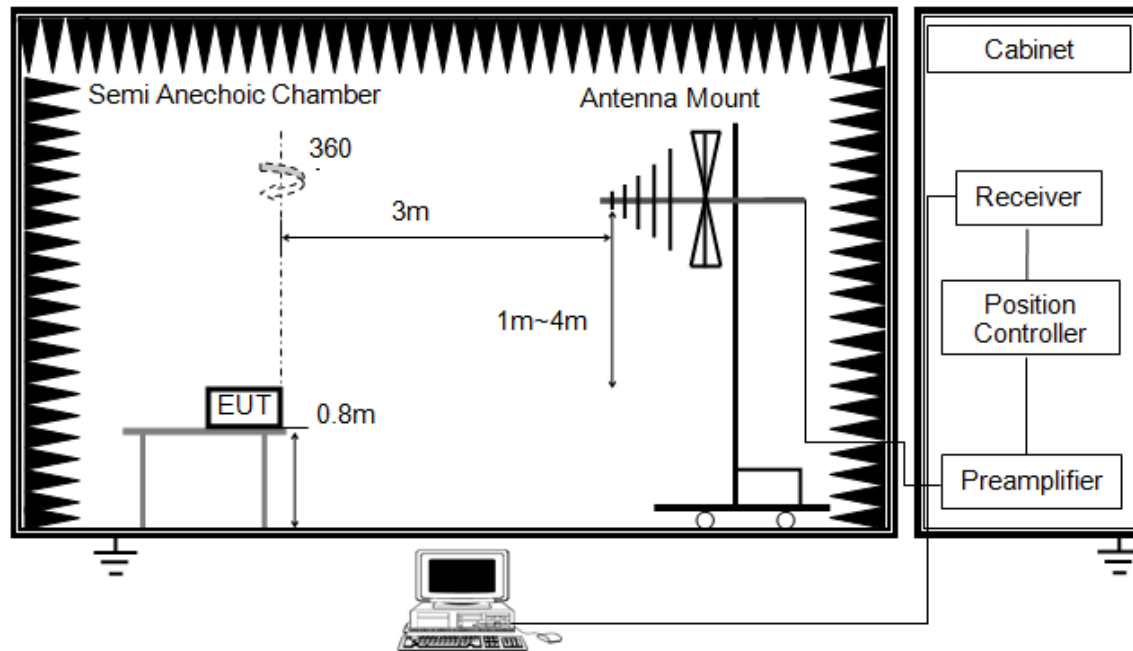


The setting of the spectrum analyzer

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

Below 1 GHz and above 30 MHz

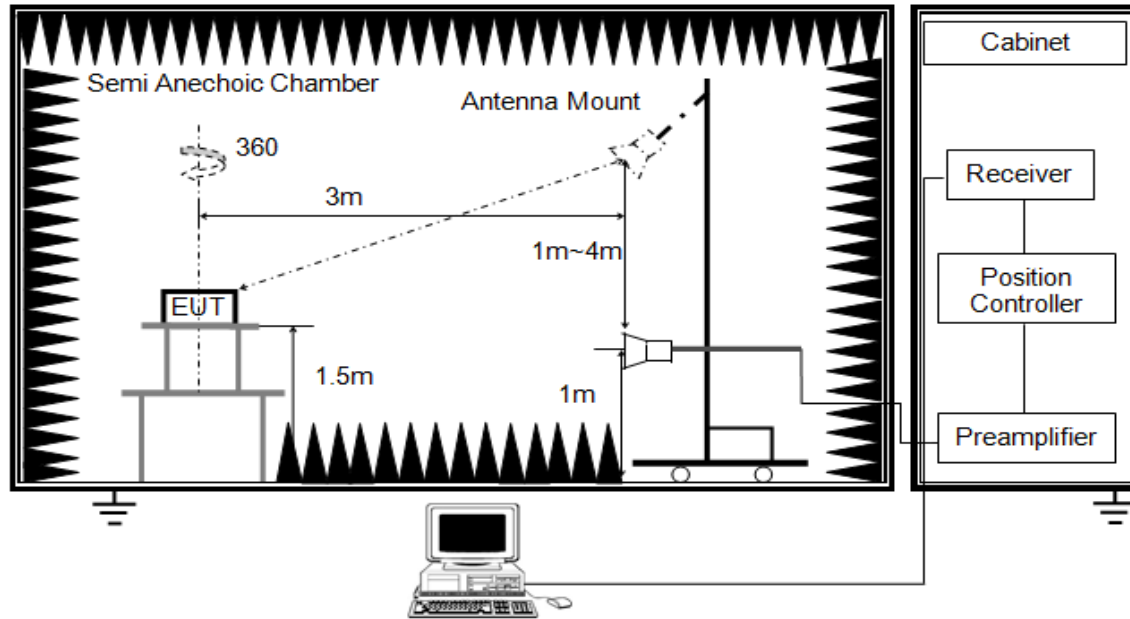


The setting of the spectrum analyzer

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

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

Above 1 GHz

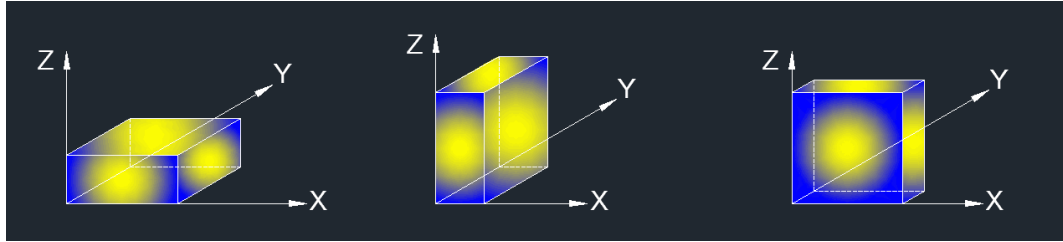


The setting of the spectrum analyzer

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

X axis, Y axis, Z axis positions:



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

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

TEST ENVIRONMENT

Temperature	26.1 °C	Relative Humidity	46 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 5 V

RESULTS

Test worst case results of Spot Check					
Test Mode	Test Item	Frequency (MHz)	Result[dBuV/m]	original report Result[dBuV/m]	Deviation(dB)
11n 20	Band Edge	2483.7	68.39	69.91	-1.52
11b	RSE	4815	51.95	52.80	-0.85

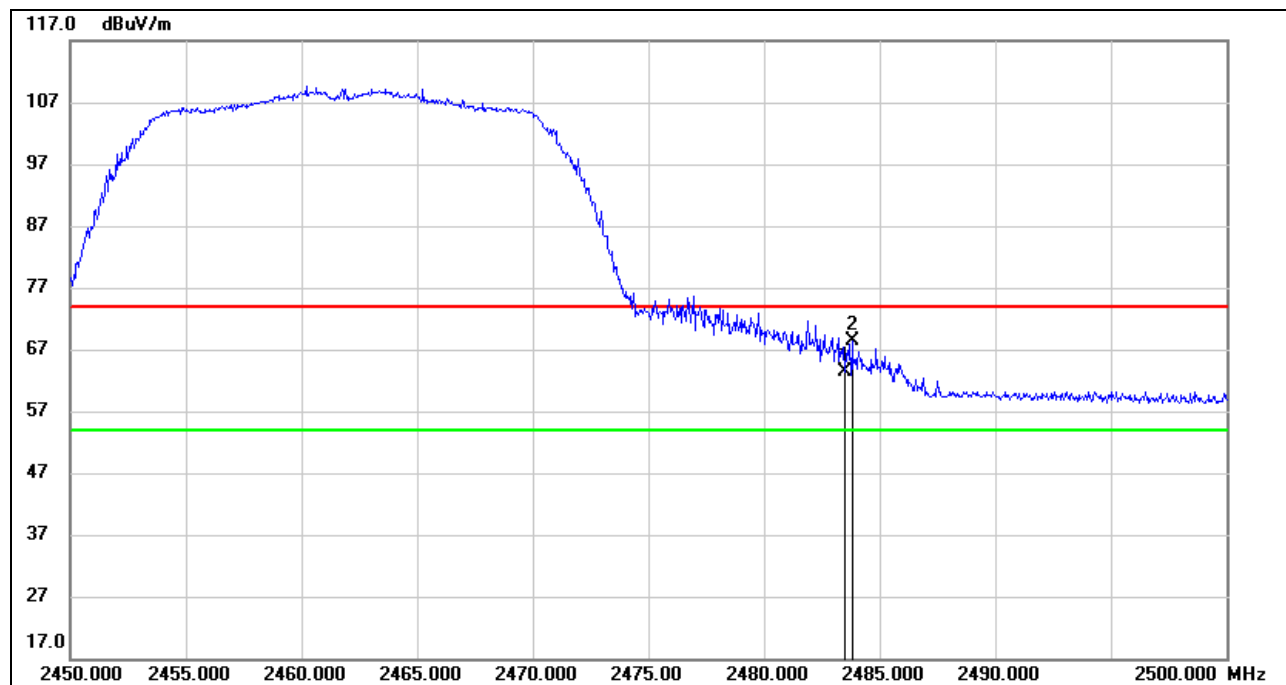
Note: Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC Technical limits.

8.1. RESTRICTED BANDEDGE

8.1.1. 802.11n HT20 MIMO MODE

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	29.68	33.71	63.39	74.00	-10.61	peak
2	2483.700	34.68	33.71	68.39	74.00	-5.61	peak

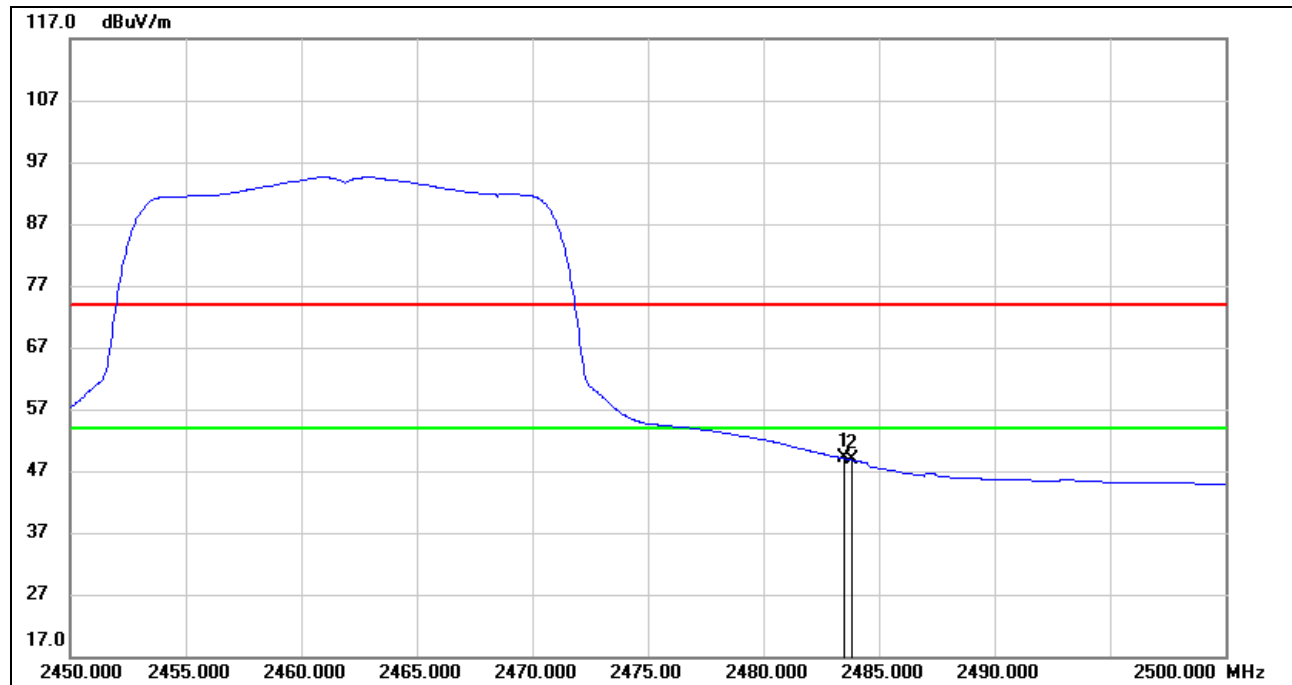
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector.

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 (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	15.52	33.71	49.23	74.00	-24.77	peak
2	2483.700	15.12	33.71	48.83	74.00	-25.17	peak

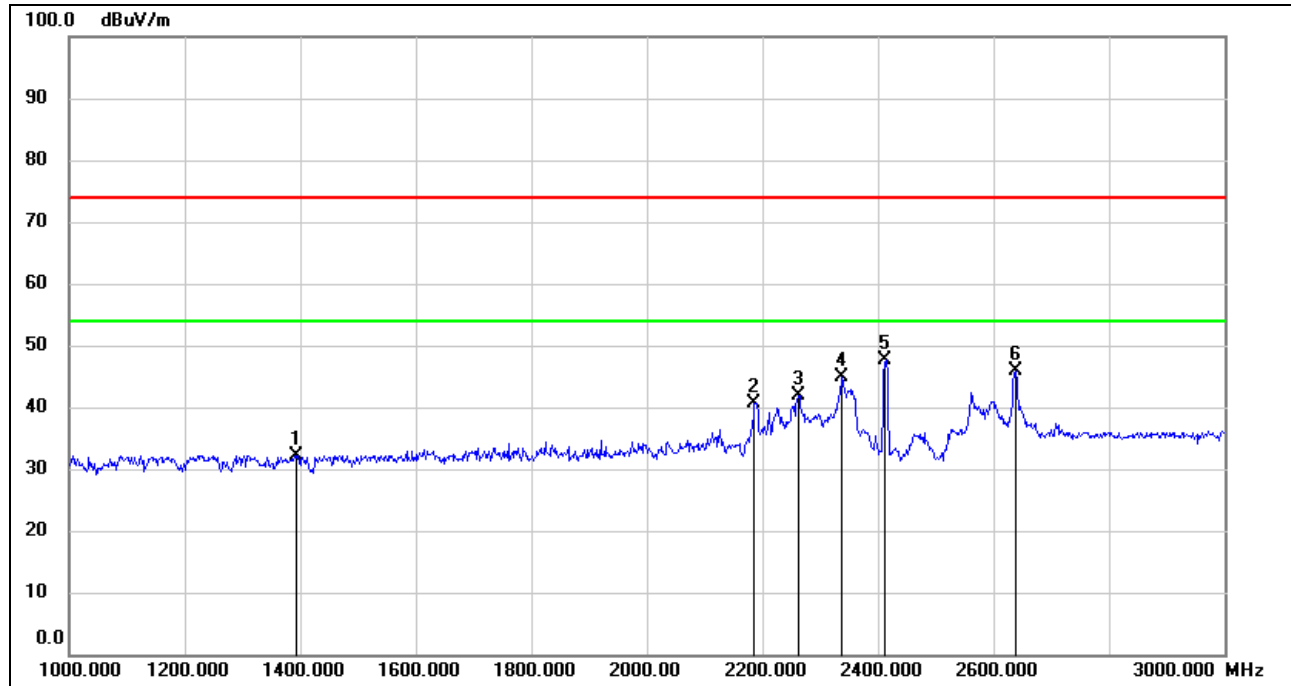
- Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. AVG: $VBW=1/Ton$, where: Ton is the transmitting duration.
4. For the transmitting duration, please refer to clause 7.1.
5. Only the worst data was recorded,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

Note: All the polarities (vertical and horizontal) 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 SISO MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1392.000	44.85	-12.71	32.14	74.00	-41.86	peak
2	2186.000	49.86	-9.13	40.73	74.00	-33.27	peak
3	2262.000	50.80	-8.85	41.95	74.00	-32.05	peak
4	2338.000	53.55	-8.60	44.95	74.00	-29.05	peak
5	2412.000	55.99	-8.37	47.62	/	/	fundamental
6	2638.000	53.56	-7.61	45.95	74.00	-28.05	peak

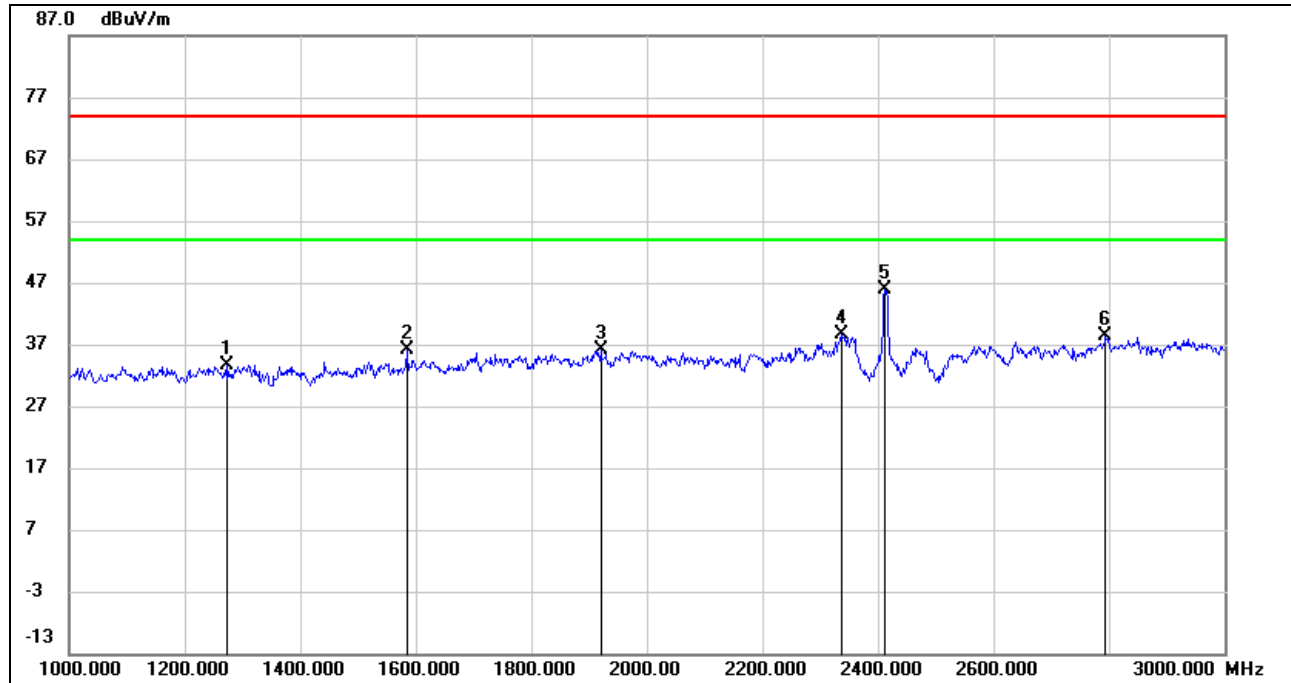
Note: 1. Measurement = Reading Level + Correct Factor.

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

3. Peak: Peak detector

4. The Band Reject filter loss factor already add into the correct factor.

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

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

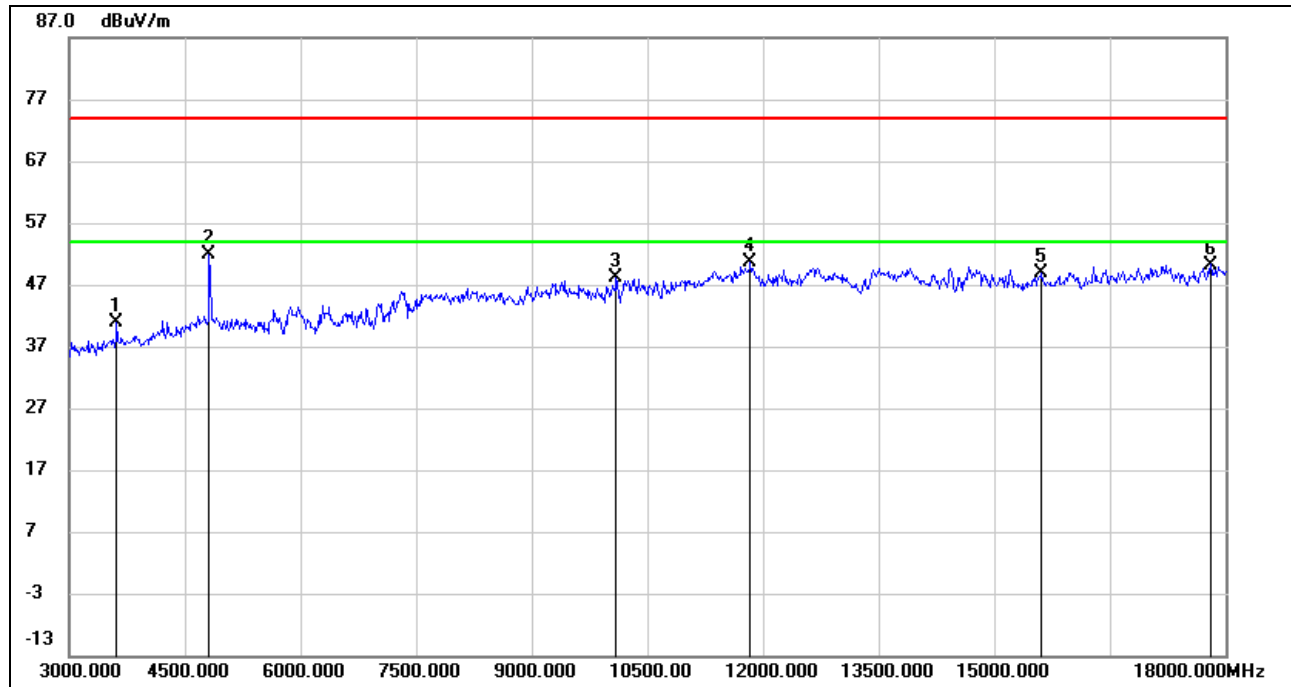
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1274.000	46.63	-12.89	33.74	74.00	-40.26	peak
2	1584.000	47.88	-11.66	36.22	74.00	-37.78	peak
3	1920.000	46.29	-10.13	36.16	74.00	-37.84	peak
4	2336.000	47.31	-8.61	38.70	74.00	-35.30	peak
5	2412.000	54.20	-8.37	45.83	/	/	fundamental
6	2794.000	44.94	-6.59	38.35	74.00	-35.65	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. The Band Reject filter loss factor already add into the correct factor.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

8.3. SPURIOUS EMISSIONS (3 GHz ~ 18 GHz)

8.3.1. 802.11b SISO MODE

HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3615.000	44.95	-4.12	40.83	74.00	-33.17	peak
2	4815.000	51.34	0.61	51.95	74.00	-22.05	peak
3	10095.000	37.65	10.47	48.12	74.00	-25.88	peak
4	11835.000	35.05	15.56	50.61	74.00	-23.39	peak
5	15615.000	32.14	16.71	48.85	74.00	-25.15	peak
6	17805.000	27.53	22.72	50.25	74.00	-23.75	peak

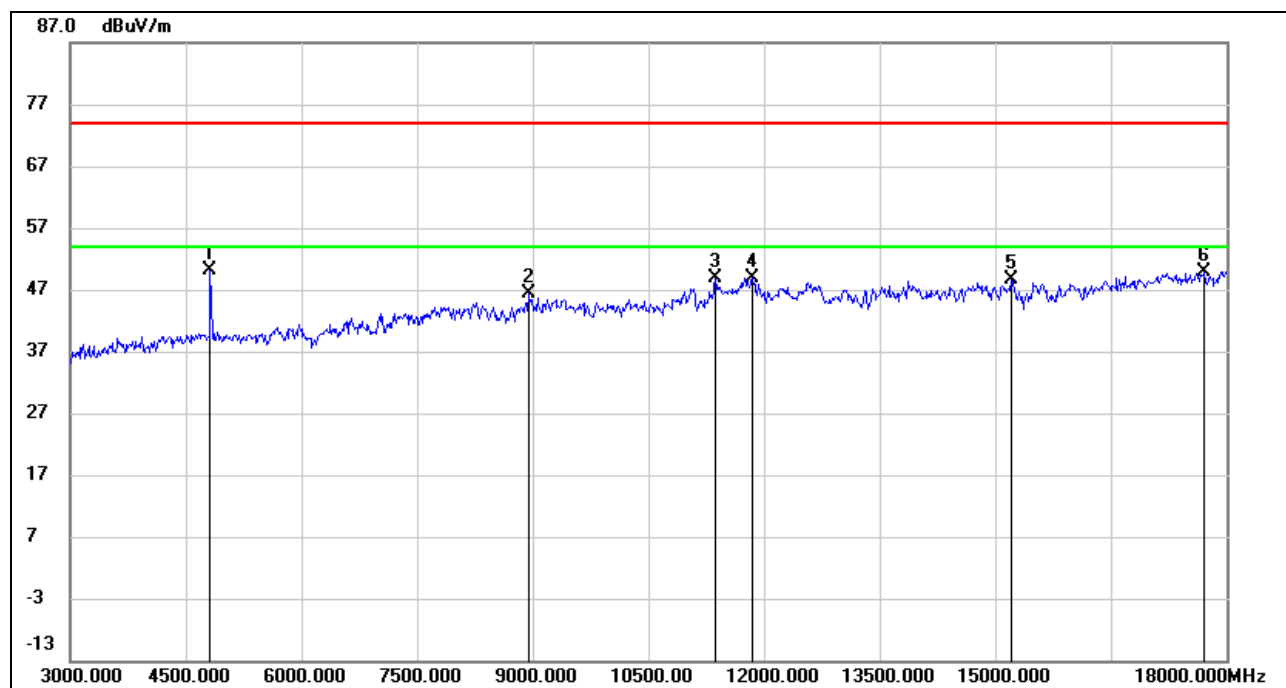
Note: 1. Peak Result = Reading Level + Correct Factor.

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.

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

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

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	49.45	0.61	50.06	74.00	-23.94	peak
2	8940.000	36.41	9.99	46.40	74.00	-27.60	peak
3	11370.000	34.76	14.14	48.90	74.00	-25.10	peak
4	11850.000	33.32	15.53	48.85	74.00	-25.15	peak
5	15210.000	32.38	16.19	48.57	74.00	-25.43	peak
6	17715.000	27.81	22.06	49.87	74.00	-24.13	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.

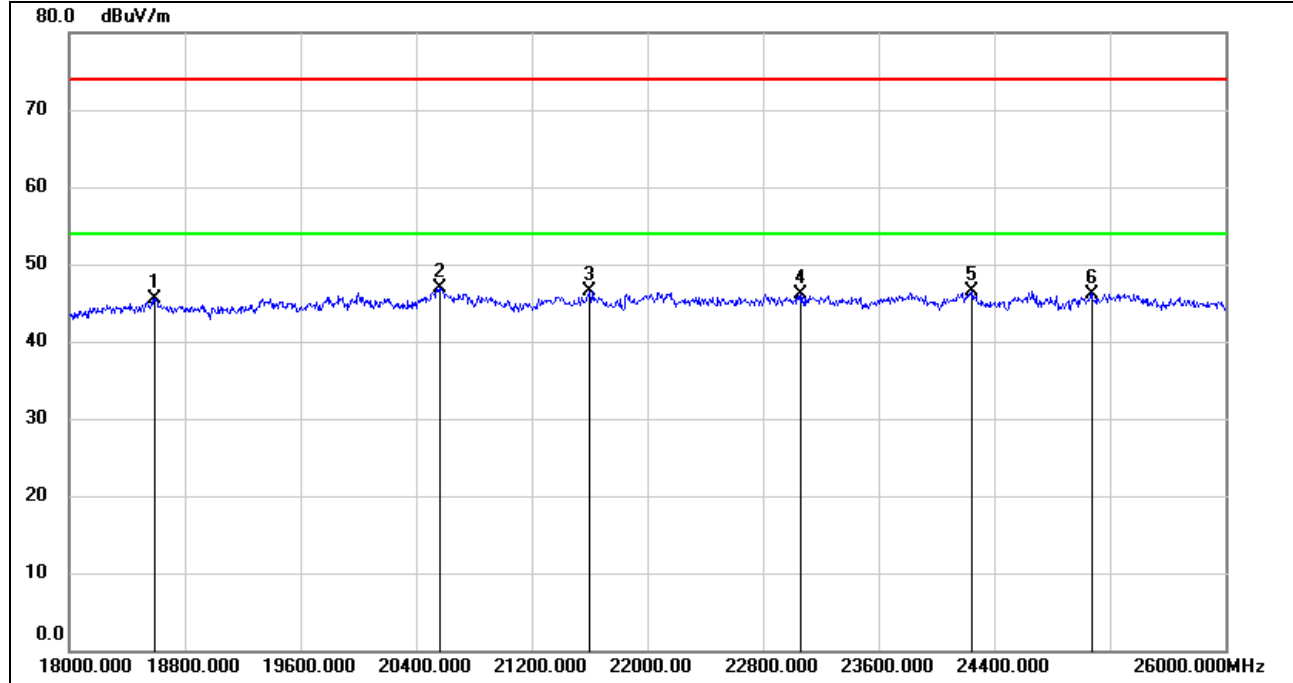
4. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.

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

8.4. SPURIOUS EMISSIONS (18 GHz ~ 26 GHz)

8.4.1. 802.11b SISO MODE

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



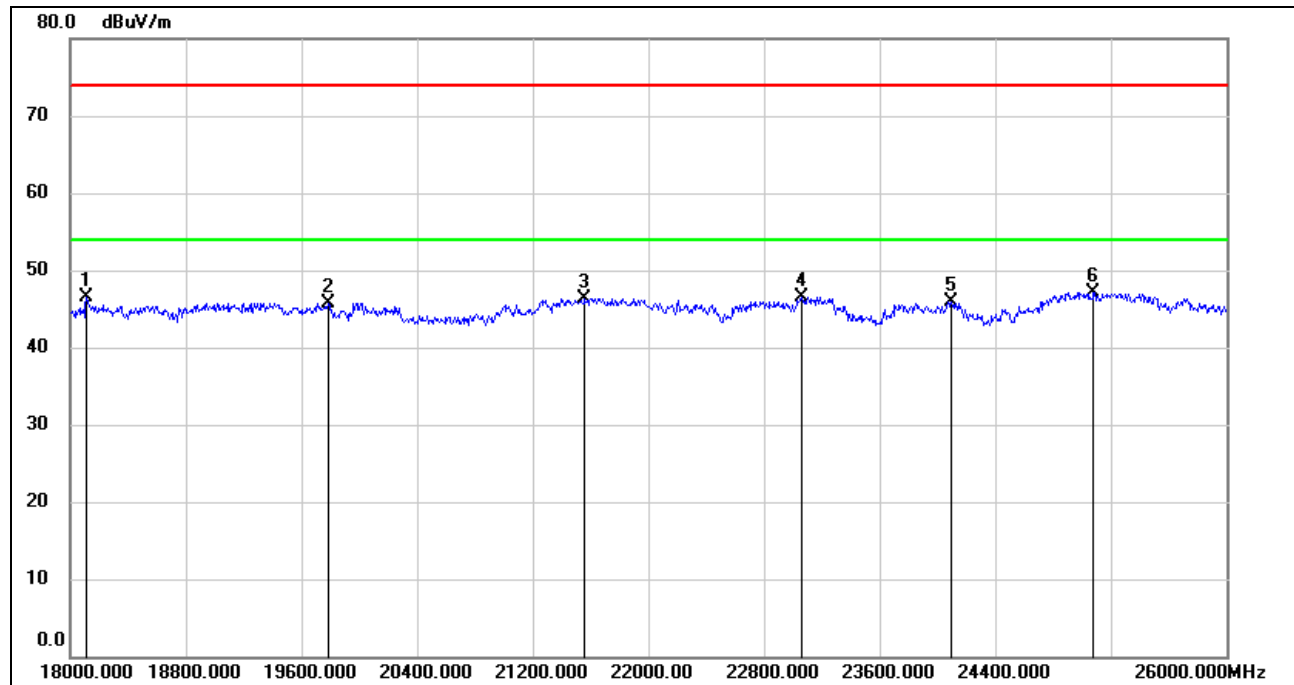
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18592.000	50.75	-5.31	45.44	74.00	-28.56	peak
2	20560.000	52.23	-5.30	46.93	74.00	-27.07	peak
3	21600.000	51.02	-4.54	46.48	74.00	-27.52	peak
4	23064.000	49.49	-3.42	46.07	74.00	-27.93	peak
5	24248.000	49.32	-2.83	46.49	74.00	-27.51	peak
6	25072.000	48.17	-1.97	46.20	74.00	-27.80	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 (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18112.000	51.96	-5.47	46.49	74.00	-27.51	peak
2	19784.000	51.07	-5.28	45.79	74.00	-28.21	peak
3	21560.000	50.99	-4.60	46.39	74.00	-27.61	peak
4	23056.000	49.95	-3.42	46.53	74.00	-27.47	peak
5	24096.000	48.61	-2.78	45.83	74.00	-28.17	peak
6	25080.000	49.10	-1.96	47.14	74.00	-26.86	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.

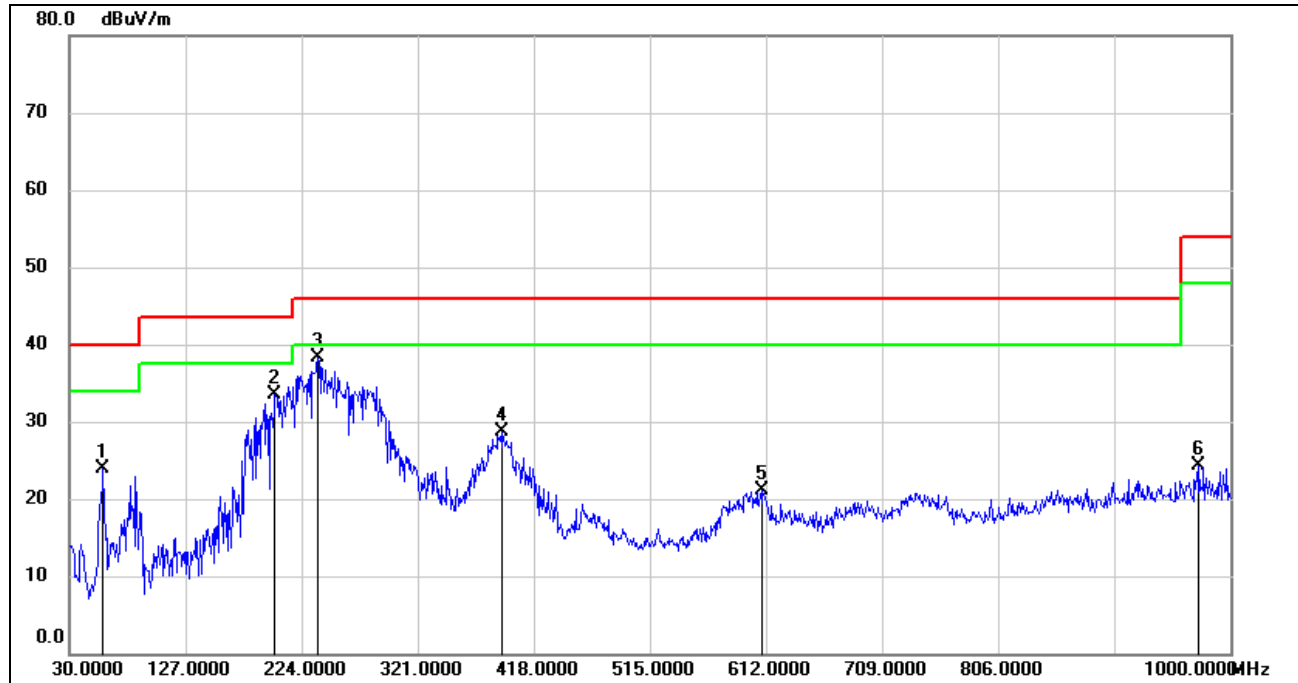
3. Peak: Peak detector.

Note: All the modes and channels had 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 SISO MODE

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



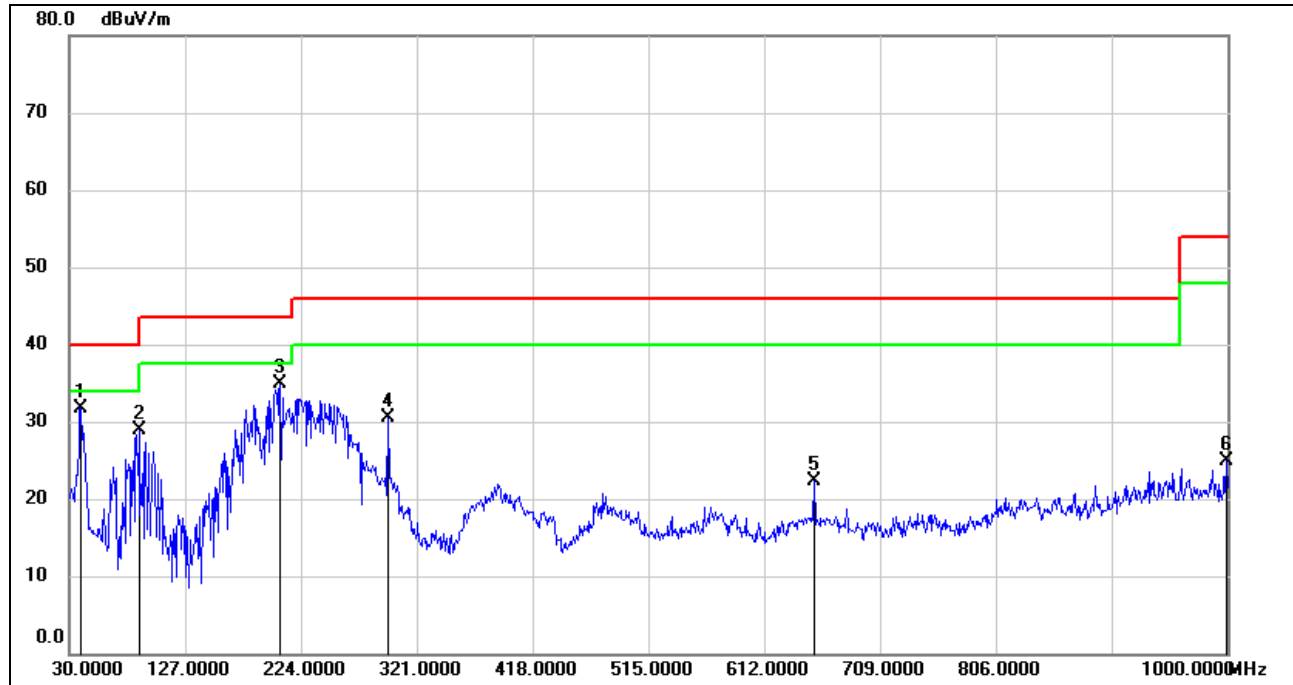
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	58.1300	44.45	-20.55	23.90	40.00	-16.10	QP
2	201.6900	50.00	-16.53	33.47	43.50	-10.03	QP
3	237.5800	57.37	-19.06	38.31	46.00	-7.69	QP
4	390.8400	42.12	-13.47	28.65	46.00	-17.35	QP
5	609.0900	30.49	-9.41	21.08	46.00	-24.92	QP
6	973.8100	28.75	-4.38	24.37	54.00	-29.63	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 (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	39.7000	51.74	-19.96	31.78	40.00	-8.22	QP
2	88.2000	50.73	-21.85	28.88	43.50	-14.62	QP
3	206.5399	51.89	-16.97	34.92	43.50	-8.58	QP
4	296.7500	45.98	-15.50	30.48	46.00	-15.52	QP
5	653.7100	31.22	-8.92	22.30	46.00	-23.70	QP
6	999.0300	29.10	-4.16	24.94	54.00	-29.06	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

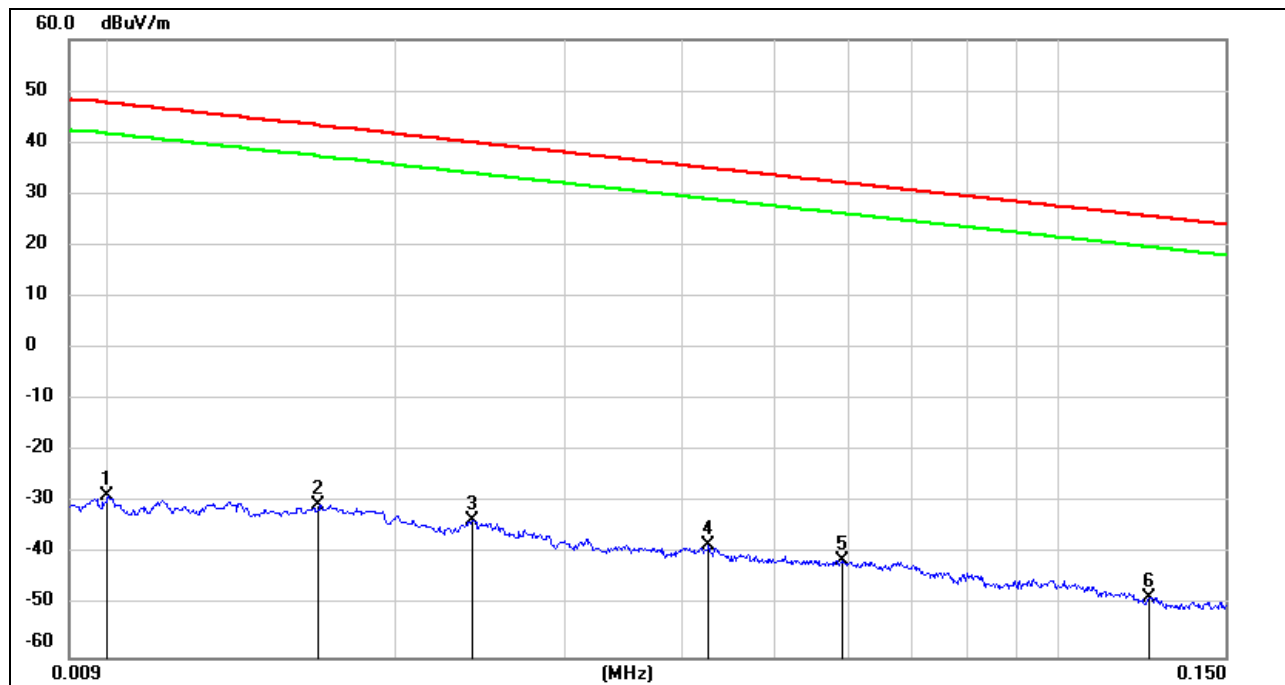
Note: All the modes and channels had been tested, but only the worst data was recorded in the report.

8.6. SPURIOUS EMISSIONS BELOW 30 MHz

8.6.1. 802.11b SISO MODE

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

9 kHz~ 150 kHz



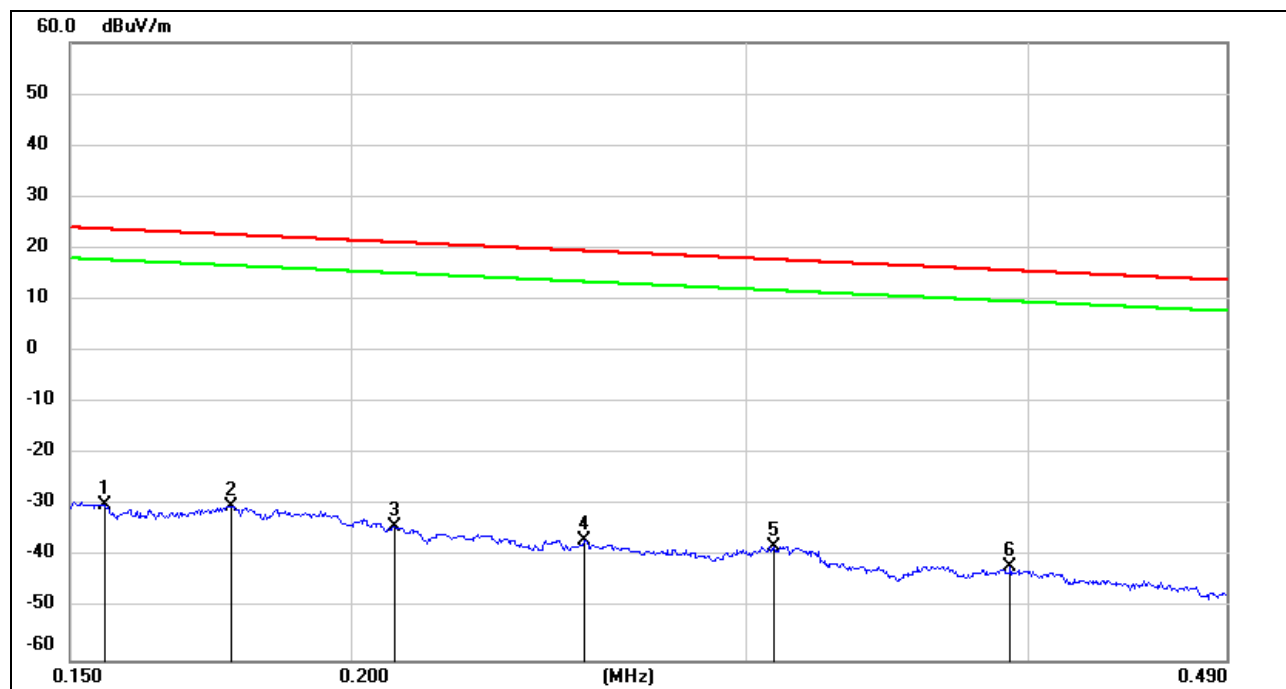
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	72.72	-101.40	-28.68	47.60	-76.28	peak
2	0.0165	70.84	-101.37	-30.53	43.25	-73.78	peak
3	0.0240	67.82	-101.36	-33.54	40.00	-73.54	peak
4	0.0427	63.14	-101.45	-38.31	34.99	-73.30	peak
5	0.0589	60.31	-101.52	-41.21	32.20	-73.41	peak
6	0.1246	53.39	-101.72	-48.33	25.70	-74.03	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



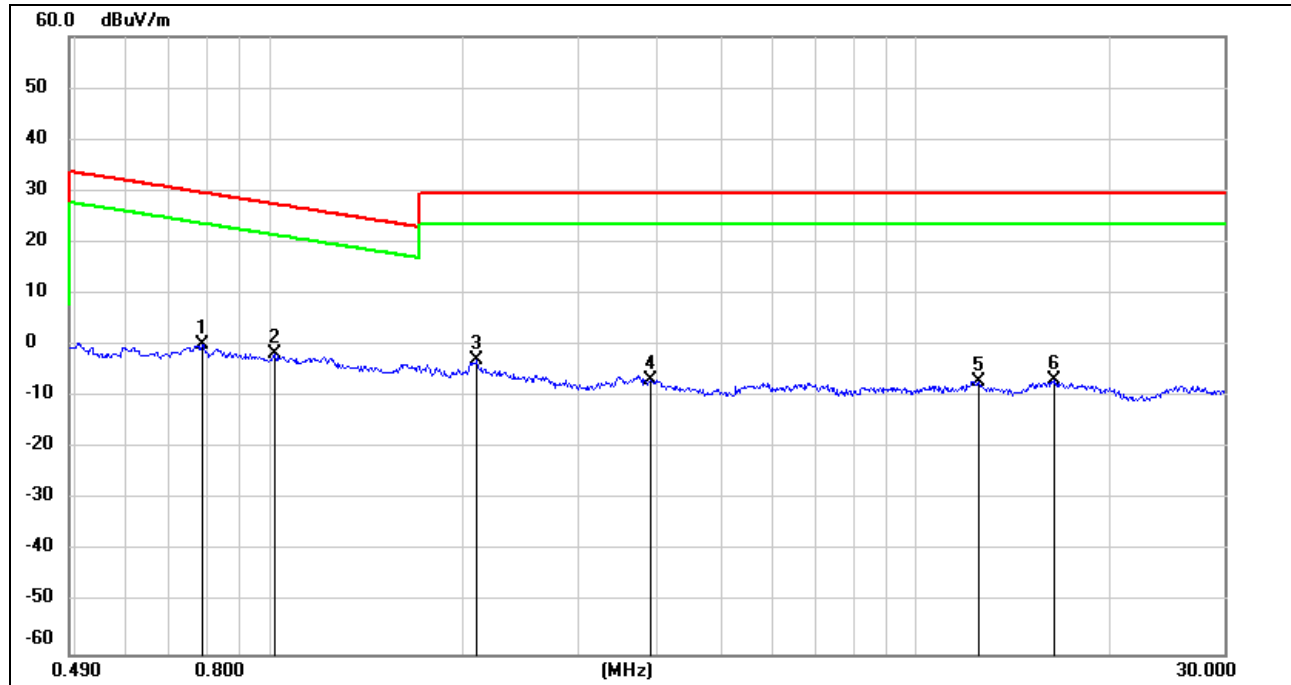
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1554	71.77	-101.65	-29.88	23.77	-53.65	peak
2	0.1768	71.49	-101.68	-30.19	22.66	-52.85	peak
3	0.2091	67.82	-101.73	-33.91	21.19	-55.10	peak
4	0.2540	65.10	-101.80	-36.70	19.50	-56.20	peak
5	0.3084	63.95	-101.86	-37.91	17.82	-55.73	peak
6	0.3930	60.05	-101.96	-41.91	15.71	-57.62	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 (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.7861	62.33	-62.14	0.19	29.69	-29.50	peak
2	1.0212	60.49	-62.25	-1.76	27.42	-29.18	peak
3	2.0939	58.89	-61.79	-2.90	29.54	-32.44	peak
4	3.8837	54.49	-61.36	-6.87	29.54	-36.41	peak
5	12.5006	53.82	-60.91	-7.09	29.54	-36.63	peak
6	16.3959	54.17	-60.96	-6.79	29.54	-36.33	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 had been tested, but only the worst data was recorded in the report.



9. 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

END OF REPORT