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Snap Inc.

RF TEST REPORT

Report Type:
FCC Part 15.247 & 15.407 RF report (Class II Permissive Change)

Model:
002

REPORT NUMBER:
180800607SHA-001

ISSUE DATE:
August 20, 2018

DOCUMENT CONTROL NUMBER:
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TEST REPORT

Report no.: 180800607SHA-001

Applicant:	Snap Inc.
	63 Market Street, Venice, CA 90291, USA
Manufacturer:	Snap Inc.
	63 Market Street, Venice, CA 90291, USA
Product Name:	Wearable video camera
Type/Model:	002
FCC ID:	2AIRN-002

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:
47CFR Part 15 (2017): Radio Frequency Devices (Subpart C) **ANSI C63.10 (2013):** American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

PREPARED BY:	**REVIEWED BY:**
Wade zhang	
Project Engineer	Reviewer
Wade Zhang	Daniel Zhao

Content

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Revision History

Report No.	Version	Description	Issued Date
180800607SHA-001	Rev. 01	Initial issue of report	August 20, 2018

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Measurement result summary

TEST ITEM	FCC REFERANCE	RESULT
Radiated Emissions	15.247(d),15.407(b) 15.205&15.209	Pass
Power line conducted emission	15.207(a)	Pass
Antenna requirement	15.203	Pass

Notes: As this is a report for Class II permissive change request, and no conducted RF test required refer the applicant declaration.

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Wearable video camera
Type/Model:	002
Description of EUT:	The EUT is a wearable video camera which support WIFI and Bluetooth 4.2 technology, and there have add two styles “Nico” and “Veronica” with antenna element and layout changed, software version update and changed the Man-machine Interface.
Rating:	DC 5V
Category of EUT:	Class B
EUT type:	☒ Table top ☐ Floor standing
Software Version:	/
Hardware Version:	/
Sample received date:	August 6, 2018
Date of test:	August 6, 2018 ~ August 17, 2018

1.2 Technical Specification

Operation Frequency Band:	Bluetooth: 2402MHz ~ 2480MHz WIFI 2.4GHz band: 2412MHz ~ 2462MHz WIFI 5GHz band: 5150 ~ 5250MHz, 5250 ~ 5350MHz,5470 ~ 5725MHz, 5725 ~ 5850MHz
Support Standards:	Bluetooth 4.2 (BR+EDR+LE), 802.11b, 802.11g, 802.11n(HT20), 802.11n(HT40), 802.11a, 802.11n/ac(HT20), 802.11n/ac(HT40), 802.11ac(VHT80)
Type of Modulation:	GFSK, π/4 DQPSK, 8DPSK, DBPSK, DQPSK, CCK, BPSK, QPSK, 16-QAM, 64-QAM, 256QAM
Channel Number:	40 channels for BLE, 79 channels for BT(BR+EDR), 11 Channels for 802.11b, 802.11g and 802.11n(HT20) 9 Channels for 802.11n(HT40) For 5150 ~ 5250MHz band: Channel 36 - 48 For 5250 ~ 5350MHz Band: Channel 52 - 64 For 5470 ~ 5725MHz Band: Channel 100 - 140 For 5725 ~ 5850MHz band: Channel 149 - 165
Antenna:	1TX,1RX 2.4GHz Band: Internal Monopole antenna, 4.0dBi Peak gain (Nico) Internal Monopole antenna, 3.9dBi Peak gain (Veronica) 5GHz Band: Internal Monopole antenna, 4.5dBi Peak gain (Nico) Internal Monopole antenna, 4.3dBi Peak gain (Veronica)

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L0139
	FCC Accredited Lab Designation Number: CN1175
	IC Registration Lab Registration code No.: 2042B-1
	VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252
	NVLAP Accreditation Lab NVLAP LAB CODE: 200849-0
	A2LA Accreditation Lab Certificate Number: 3309.02

2 TEST SPECIFICATIONS

2.1 Standards or specification

47CFR Part 15 (2017)
ANSI C63.10 (2013)
RSS-247 Issue 2 (February 2017)
RSS-Gen Issue 5 (April 2018)
KDB 558074 (v04)

2.2 Mode of operation during the test

While testing transmitting mode of EUT, the internal modulation and continuously transmission was applied. The pre-scan for the conducted power with all rates in each modulation and bands was used, and the worst mode was found and used in all test cases.

Test mode description:

Mode 1: “Nico” transmitted signal with internal antenna directly;
Mode 2: “Veronica” transmitted signal with internal antenna directly;
Mode 3: “Nico” charging with AC/DC adaptor;
Mode 4: “Veronica” charging with AC/DC adaptor.

2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	ESxS-K1	R&S	V2.1.0
Radiated emission	ES-K1	R&S	V1.71

2.4 Test peripherals list

Item No.	Name	Band and Model	Description
1	Laptop computer	HP ProBook 6470b	100-240V AC, 50/60Hz FCC DOC
2	AC/DC adaptor	KA25	100-240VAC, DC5V1A FCC VOC

2.5 Test environment condition:

Test items	Temperature	Humidity
Power line conducted emission	22°C	53% RH
Radiated Emissions in restricted frequency bands	22°C	55% RH

2.6 Instrument list

Conducted Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Test Receiver	R&S	ESCS 30	EC 2107	2018-09-12
☑	A.M.N.	R&S	ESH2-Z5	EC 3119	2018-12-07
☑	Shielded room	Zhongyu	-	EC 2838	2019-01-07
Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Test Receiver	R&S	ESIB 26	EC 3045	2018-09-12
☑	Bilog Antenna	TESEQ	CBL 6112D	EC 4206	2019-05-30
☑	Horn antenna	R&S	HF 906	EC 3049	2018-11-17
☑	Horn antenna	ETS	3117	EC 4792-1	2019-01-09
☑	Horn antenna	TOYO	HAP18-26W	EC 4792-3	2020-07-09
☑	Pre-amplifier	R&S	Pre-amp 18	EC5881	2018-06-20
☑	Semi-anechoic chamber	Albatross project	-	EC 3048	2018-09-15
RF test					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	PXA Signal Analyzer	Keysight	N9030A	EC 5338	2019-03-05
☑	Power sensor	Agilent	U2021XA	EC 5338-1	2019-03-05
☑	Vector Signal Generator	Agilent	N5182B	EC 5175	2019-03-05
☑	MXG Analog Signal Generator	Agilent	N5181A	EC 5338-2	2019-03-05
☑	Test Receiver	R&S	ESCI 7	EC 4501	2018-09-12
Additional instrument					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☑	Therom-Hygrograph	ZJ1-2A	S.M.I.F.	EC 3323	2019-06-14
☑	Pressure meter	YM3	Shanghai Mengde	EC 3320	2019-06-28

2.7 Measurement uncertainty

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

Test item	Measurement uncertainty
Maximum peak output power	± 0.74dB
Radiated Emissions in restricted frequency bands below 1GHz	± 4.90dB
Radiated Emissions in restricted frequency bands above 1GHz	± 5.02dB
Emission outside the frequency band	± 2.89dB
Power line conducted emission	± 3.19dB

3 Radiated Emissions in restricted frequency bands

Test result: **Pass**

3.1 Limit

The radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified showed as below:

Frequencies (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
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

The radiated emissions which fall outside the restrict bands, should comply with the EIRP limit as below:
For transmitters operating in the 5.15 - 5.25 / 5.25 - 5.35 / 5.47 - 5.725GHz band:

Frequency (MHz)	EIRP Limit (dBm)	Equivalent Field Strength (3m) (dBµV/m)
<5150	-27	68.20
>5350		
<5470		
>5725		

For transmitters operating in the 5.725 - 5.85GHz band:

Frequency (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength (3m) (dBµV/m)
<5650	-27	68.20
5650 ~ 5700	-27 ~ 10	68.20 ~ 105.20
5700 ~ 5720	10 ~ 15.6	105.20 ~ 110.80
5720 ~ 5725	15.6 ~ 27	110.80 ~ 122.20
5850 ~ 5855	27 ~ 15.6	122.20 ~ 110.80
5855 ~ 5875	15.6 ~ 10	110.80 ~ 105.20
5875 ~ 5925	10 ~ -27	105.20 ~ 68.20
>5925	-27	68.20

3.2 Measurement Procedure

For Radiated emission below 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c) Both X and Y axes of the antenna are set to make the measurement.

d) For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e) The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz:

a) The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.

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

c) The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e) The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.

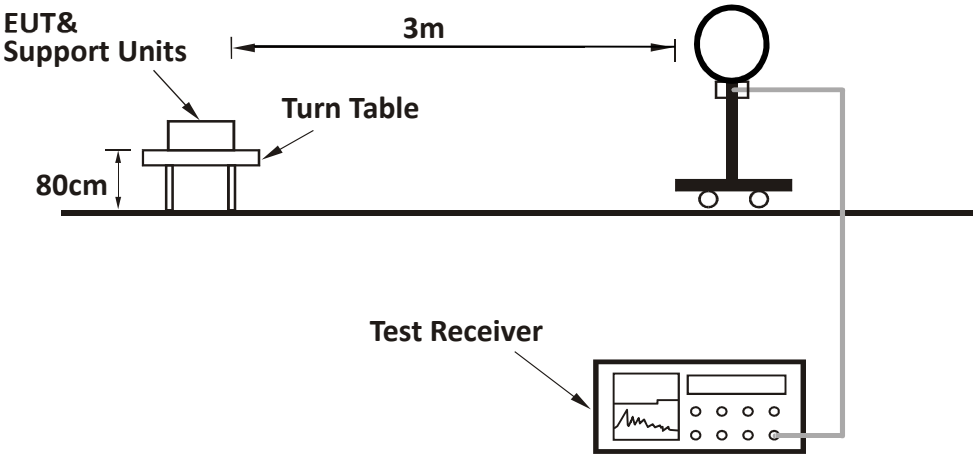
f) The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

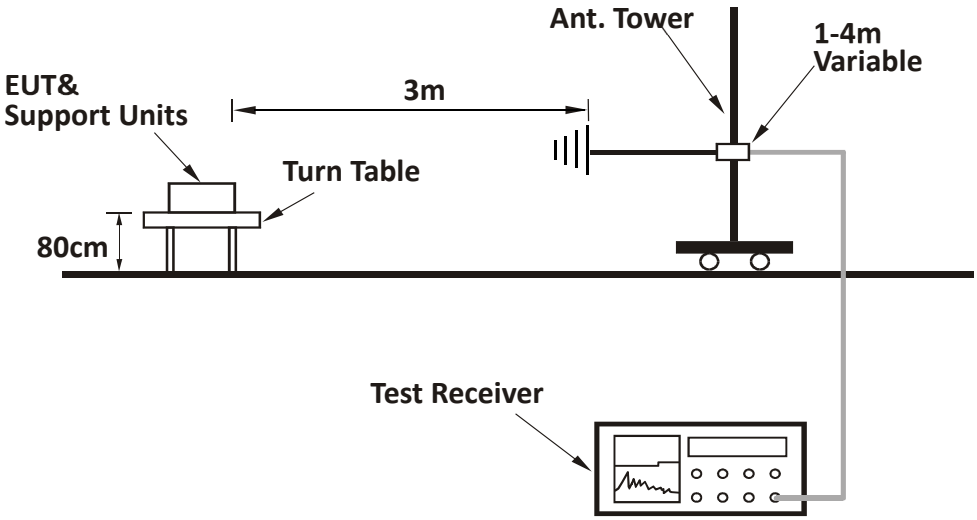
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is ≥ 1/T (Duty cycle < 98%) or 3 x RBW (Duty cycle ≥ 98%) for Average detection (AV) at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported

3.3 Test Configuration

For Radiated emission below 30MHz:



For Radiated emission 30MHz to 1GHz:



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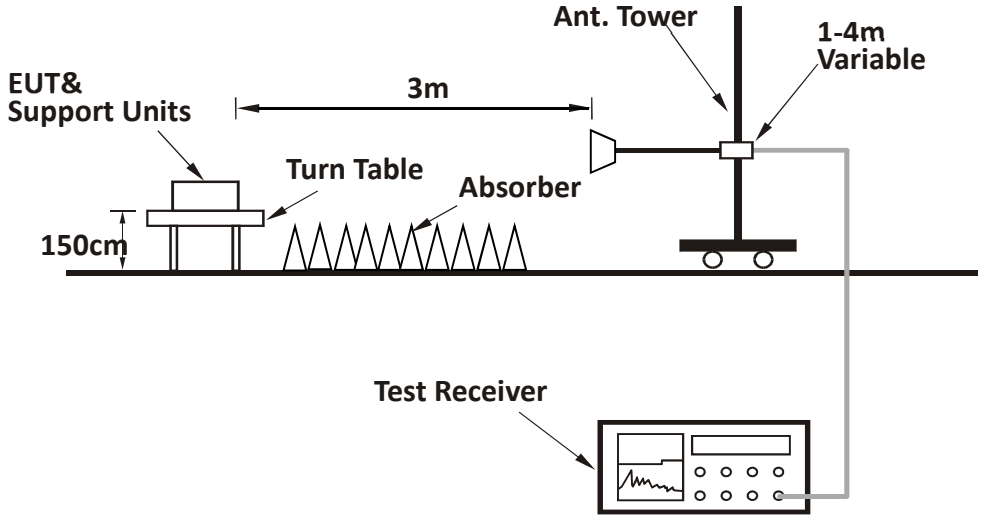
For Radiated emission above 1GHz:



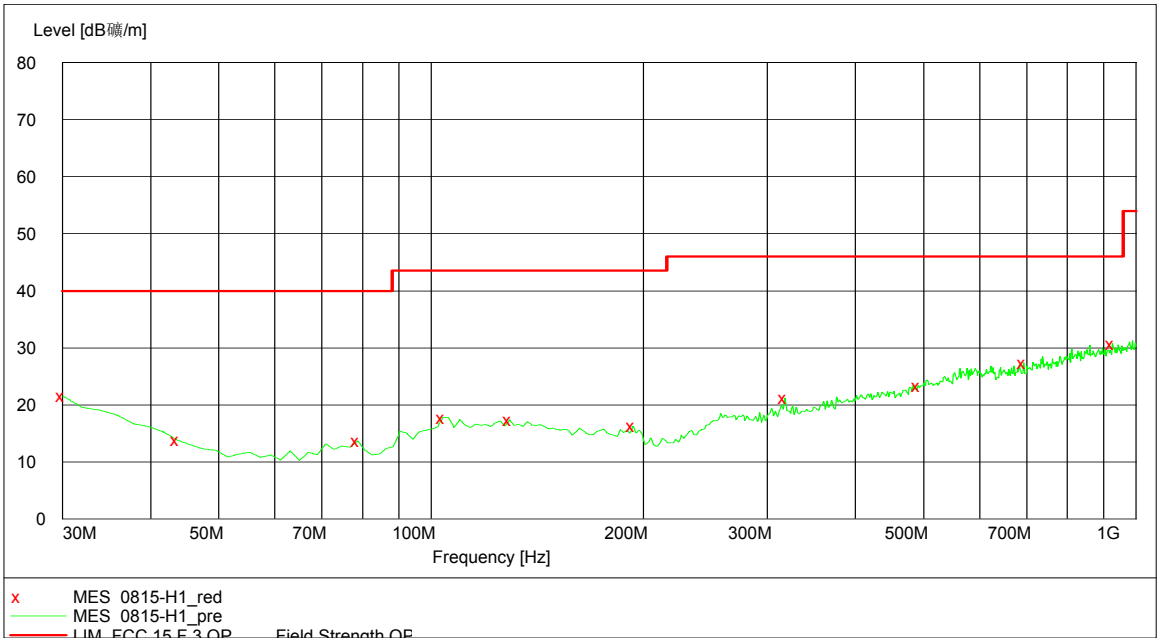
3.4 Test Results of Radiated Emissions

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

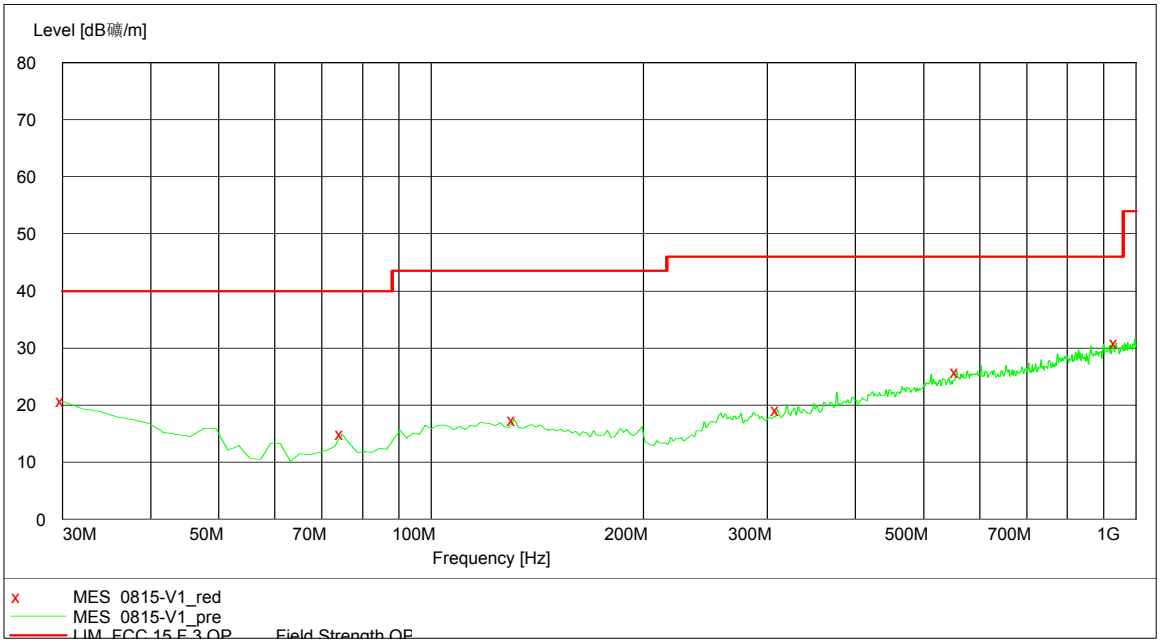
The worst waveform from 30MHz to 1000MHz is listed as below:

Mode 1:

Horizontal



Vertical



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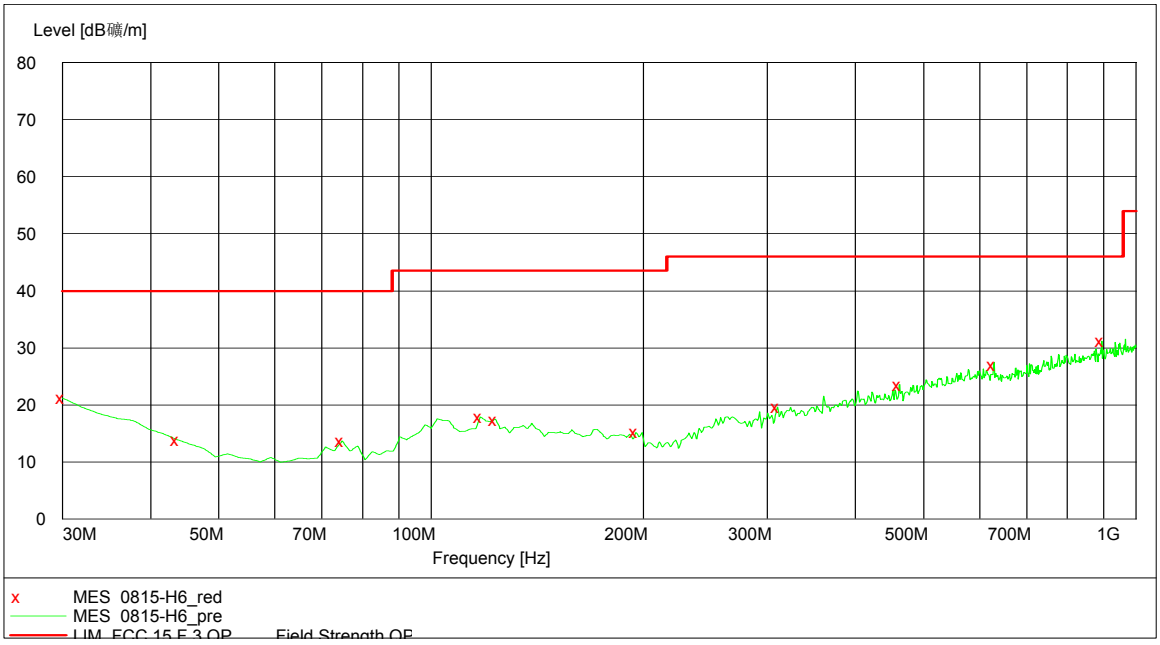
Test data:

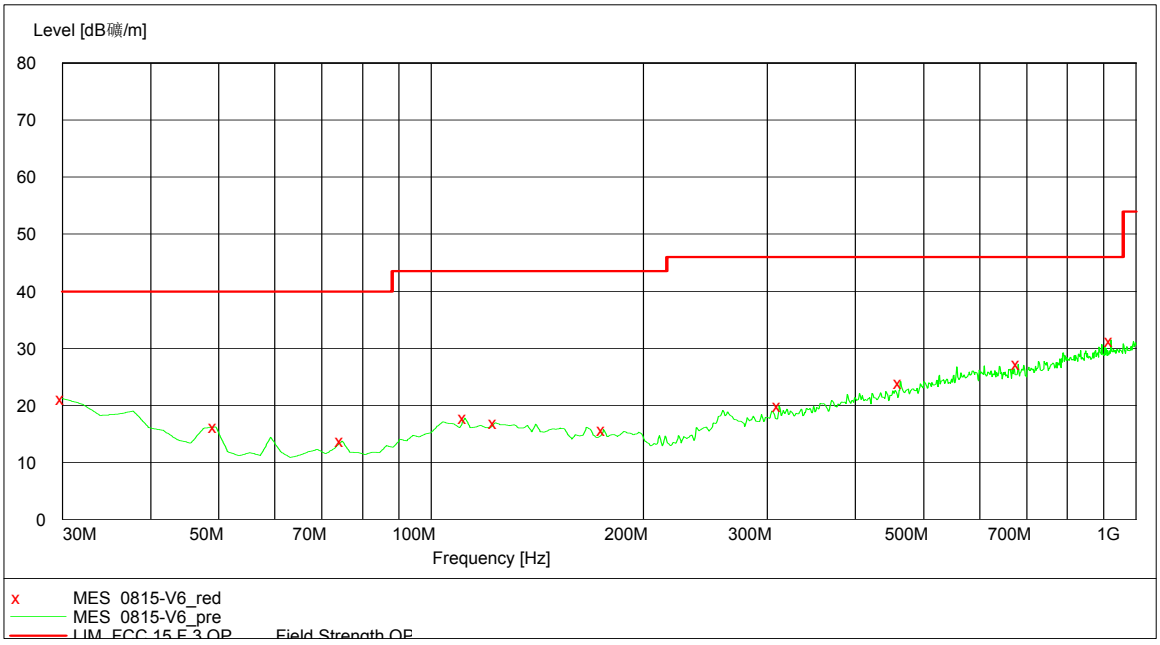
Polarization	Frequency (MHz)	Measured level (dBμV/m)	Correct Factor (dB/m)	Limits (dBμV/m)	Margin (dB)	Detector
H	30.00	21.60	18.60	40.00	18.40	PK
	43.61	13.80	11.50	40.00	26.20	PK
	78.60	13.70	7.60	40.00	26.30	PK
	103.87	17.80	12.20	43.50	25.70	PK
	129.14	17.40	12.90	43.50	26.10	PK
	193.29	16.30	10.80	43.50	27.20	PK
	317.70	21.20	15.30	46.00	24.80	PK
	490.70	23.40	19.30	46.00	22.60	PK
	692.87	27.40	21.30	46.00	18.60	PK
	926.13	30.80	23.70	46.00	15.20	PK
V	30.00	20.70	18.60	40.00	19.30	PK
	74.71	14.90	7.50	40.00	25.10	PK
	131.08	17.50	12.80	43.50	26.00	PK
	309.92	19.20	15.00	46.00	26.80	PK
	556.79	25.90	20.20	46.00	20.10	PK
	937.80	30.90	23.90	46.00	15.10	PK

Mode 2:

Horizontal



Vertical



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Test data:

Polarization	Frequency (MHz)	Measured level (dBμV/m)	Correct Factor (dB/m)	Limits (dBμV/m)	Margin (dB)	Detector
H	30.00	21.20	18.60	40.00	18.80	PK
	43.61	13.90	11.50	40.00	26.10	PK
	74.71	13.70	7.50	40.00	26.30	PK
	117.47	17.90	13.10	43.50	25.60	PK
	123.31	17.50	13.10	43.50	26.00	PK
	195.23	15.20	10.90	43.50	28.30	PK
	309.92	19.70	15.00	46.00	26.30	PK
	461.54	23.50	18.80	46.00	22.50	PK
	628.72	27.00	20.90	46.00	19.00	PK
	895.03	31.20	23.40	46.00	14.80	PK
V	30.00	21.20	18.60	40.00	18.80	PK
	49.44	16.20	8.80	40.00	23.80	PK
	74.71	13.80	7.50	40.00	26.20	PK
	111.64	17.80	12.70	43.50	25.70	PK
	123.31	17.00	13.10	43.50	26.50	PK
	175.79	15.70	10.60	43.50	27.80	PK
	311.86	19.90	15.10	46.00	26.10	PK
	463.49	24.00	18.80	46.00	22.00	PK
	681.20	27.20	21.20	46.00	18.80	PK
	922.24	31.40	23.70	46.00	14.60	PK

Test result above 1GHz:

The emission was conducted from 1GHz to 25GHz for WIFI 2.4GHz band and Bluetooth.

Mode 1: (Bluetooth BR+EDR)

GFSK (DH5) Modulation:

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	98.70	Fundamental	/	PK
	H	2390.00	30.20	48.40	74.00	25.60	PK
	H	2390.00	30.20	39.20	54.00	14.80	AV
	H	4804.00	-1.50	44.10	74.00	29.90	PK
M	V	2441.00	30.70	99.20	Fundamental	/	PK
	V	4882.00	-1.10	43.20	74.00	30.80	PK
H	H	2480.00	30.70	99.40	Fundamental	/	PK
	V	2483.50	31.52	47.10	74.00	26.90	PK
	V	2483.50	31.52	40.20	54.00	13.80	AV
	V	4960.00	-0.80	44.20	74.00	29.80	PK

π/4DQPSK (2DH5) Modulation:

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	98.30	Fundamental	/	PK
	H	2390.00	30.20	47.30	74.00	26.70	PK
	H	2390.00	30.20	39.40	54.00	14.60	AV
	H	4804.00	-1.50	44.50	74.00	29.50	PK
M	V	2441.00	30.70	98.30	Fundamental	/	PK
	V	4882.00	-1.10	43.20	74.00	30.80	PK
H	H	2480.00	30.70	97.30	Fundamental	/	PK
	V	2483.50	31.52	46.50	74.00	27.50	PK
	V	2483.50	31.52	38.80	54.00	15.20	AV
	V	4960.00	-0.80	43.50	74.00	30.50	PK

8DPSK (3DH5) Modulation:

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	97.70	Fundamental	/	PK
	H	2390.00	30.20	46.50	74.00	27.50	PK

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	H	2390.00	30.20	40.30	54.00	13.70	AV
	H	4804.00	-1.50	45.10	74.00	28.90	PK
M	V	2441.00	30.70	96.80	Fundamental	/	PK
	V	4882.00	-1.10	43.70	74.00	30.30	PK
H	H	2480.00	30.70	96.40	Fundamental	/	PK
	V	2483.50	31.52	46.20	74.00	27.80	PK
	V	2483.50	31.52	40.30	54.00	13.70	AV
	V	4960.00	-0.80	43.20	74.00	30.80	PK

Mode 1: (Bluetooth LE)

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	94.30	Fundamental	/	PK
	V	2402.00	30.70	90.20	Fundamental	/	PK
	H	2390.00	30.30	49.20	74.00	24.80	PK
	H	2390.00	30.30	43.90	54.00	10.10	AV
	H	4804.00	-1.50	45.10	74.00	28.90	PK
	H	7206.00	3.50	44.20	74.00	29.80	PK
	V	2390.00	30.30	47.40	74.00	26.60	PK
	V	2390.00	30.30	38.90	54.00	15.10	AV
	V	4804.00	-1.50	43.00	74.00	31.00	PK
	V	7206.00	3.50	42.20	74.00	31.80	PK
M	H	2440.00	30.70	94.40	Fundamental	/	PK
	V	2440.00	30.70	90.60	Fundamental	/	PK
	H	4880.00	-1.10	44.90	74.00	29.10	PK
	H	7320.00	3.60	38.80	74.00	35.20	PK
	V	4880.00	-1.10	43.90	74.00	30.10	PK
	V	7320.00	3.60	39.00	74.00	35.00	PK
H	H	2480.00	30.70	94.10	Fundamental	/	PK
	V	2480.00	30.70	90.00	Fundamental	/	PK
	H	2483.50	30.80	47.90	74.00	26.10	PK
	H	2483.50	30.80	44.20	54.00	9.80	AV
	V	2483.50	30.80	45.80	74.00	28.20	PK
	V	2483.50	30.80	40.00	54.00	14.00	AV
	H	4960.00	-0.80	44.10	74.00	29.90	PK
	H	7440.00	3.80	42.20	74.00	31.80	PK

	V	4960.00	-0.80	43.80	74.00	30.20	PK
	V	7440.00	3.80	42.30	74.00	31.70	PK

Mode 1: (WIFI 2.4GHz)

802.11b

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2412.00	109.60	34.10	Fundamental	/	PK
	H	2390.00	56.77	34.20	74.00	17.23	PK
	H	2390.00	50.20	34.20	54.00	3.80	AV
	V	2390.00	54.56	34.20	74.00	19.44	PK
	V	2390.00	49.50	34.20	54.00	4.50	AV
	H	4824.00	45.50	-3.60	74.00	28.50	PK
M	H	2437.00	108.60	34.20	Fundamental	/	PK
	H	4874.00	45.50	-3.50	74.00	28.50	PK
H	H	2462.00	108.40	34.40	Fundamental	/	PK
	H	2483.50	55.67	34.80	74.00	18.33	PK
	H	2483.50	50.36	34.80	54.00	3.64	AV
	V	2483.50	53.67	34.80	74.00	20.33	PK
	V	2483.50	48.30	34.80	54.00	5.70	AV
	H	4924.00	45.20	-3.30	74.00	28.80	PK

802.11g

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2412.00	107.60	34.10	Fundamental	/	PK
	H	2390.00	58.67	34.20	74.00	15.33	PK
	H	2390.00	51.10	34.20	54.00	2.90	AV
	V	2390.00	55.44	34.20	74.00	18.56	PK
	V	2390.00	50.30	34.20	54.00	3.70	AV
	H	4824.00	45.40	-3.60	74.00	28.60	PK
M	H	2437.00	108.80	34.20	Fundamental	/	PK
	H	4874.00	45.20	-3.50	74.00	28.80	PK
H	H	2462.00	107.80	34.40	Fundamental	/	PK
	H	2483.50	59.56	34.80	74.00	14.44	PK

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	H	2483.50	50.70	34.80	54.00	3.30	AV
	V	2483.50	55.56	34.80	74.00	18.44	PK
	V	2483.50	49.70	34.80	54.00	4.30	AV
	H	4924.00	44.70	-3.30	74.00	29.30	PK

802.11n(HT20)

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2412.00	108.00	34.10	Fundamental	/	PK
	H	2390.00	57.77	34.20	74.00	16.23	PK
	H	2390.00	50.40	34.20	54.00	3.60	AV
	V	2390.00	53.36	34.20	74.00	20.64	PK
	V	2390.00	48.50	34.20	54.00	5.50	AV
	H	4824.00	45.10	-3.60	74.00	28.90	PK
M	H	2437.00	108.70	34.20	Fundamental	/	PK
	H	4874.00	45.40	-3.50	74.00	28.60	PK
H	H	2462.00	108.90	34.40	Fundamental	/	PK
	H	2483.50	55.87	34.80	74.00	18.13	PK
	H	2483.50	48.50	34.80	54.00	5.50	AV
	V	2483.50	53.84	34.80	74.00	20.16	PK
	V	2483.50	47.50	34.80	54.00	6.50	AV
	H	4924.00	44.90	-3.30	74.00	29.10	PK

802.11n(HT40)

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2422.00	106.50	34.10	Fundamental	/	PK
	H	2390.00	66.36	34.20	74.00	7.64	PK
	H	2390.00	52.70	34.20	54.00	1.30	AV
	V	2390.00	67.46	34.20	74.00	6.54	PK
	V	2390.00	52.89	34.20	54.00	1.11	AV
	H	4844.00	45.50	-3.60	74.00	28.50	PK
M	H	2437.00	106.90	34.20	Fundamental	/	PK
	H	4874.00	45.30	-3.60	74.00	28.70	PK
H	H	2452.00	107.20	34.40	Fundamental	/	PK

	H	2483.50	65.35	34.80	74.00	8.65	PK
	H	2483.50	51.70	34.80	54.00	2.30	AV
	V	2483.50	64.70	34.80	74.00	9.30	PK
	V	2483.50	50.65	34.80	54.00	3.35	AV
	H	4904.00	45.80	2.65	74.00	28.20	PK

Mode 1: (WIFI 5GHz)

The emission was conducted from 1GHz to 40GHz.

U-NII-1 Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5180.00	40.80	102.90	Fundamental	/	PK
	H	5150.00	40.70	61.30	74.00	12.70	PK
	H	5150.00	40.70	52.10	54.00	1.90	AV
	H	10360.00	14.50	45.20	74.00	28.80	PK
	V	10360.00	14.50	43.30	74.00	30.70	PK
M	H	5200.00	40.90	102.20	Fundamental	/	PK
	H	5150.00	40.70	51.10	74.00	22.90	PK
	H	10400.00	14.50	45.50	74.00	28.50	PK
	V	10400.00	14.50	43.60	74.00	30.40	PK
H	H	5240.00	41.00	102.30	Fundamental	/	PK
	H	5150.00	40.70	51.40	74.00	22.60	PK
	H	10480.00	14.50	44.40	74.00	29.60	PK
	V	10480.00	14.50	43.30	74.00	30.70	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5180.00	40.80	102.40	Fundamental	/	PK
	H	5150.00	40.70	62.20	74.00	11.80	PK
	H	5150.00	40.70	51.40	54.00	2.60	AV
	H	10360.00	14.50	47.40	74.00	26.60	PK
	V	10360.00	14.50	44.10	74.00	29.90	PK
M	H	5200.00	40.90	102.20	Fundamental	/	PK
	H	5150.00	40.70	51.30	74.00	22.70	PK

	H	10400.00	14.50	47.20	74.00	26.80	PK
	V	10400.00	14.50	43.30	74.00	30.70	PK
H	H	5240.00	41.00	102.30	Fundamental	/	PK
	H	5150.00	40.70	50.50	74.00	23.50	PK
	H	10480.00	14.50	48.40	74.00	25.60	PK
	V	10480.00	14.50	42.20	74.00	31.80	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5190.00	40.80	101.30	Fundamental	/	PK
	H	5150.00	40.70	66.10	74.00	7.90	PK
	H	5150.00	40.70	51.60	54.00	2.40	AV
	H	10380.00	14.50	46.30	74.00	27.70	PK
	V	10380.00	14.50	44.20	74.00	29.80	PK
H	H	5230.00	41.00	101.10	Fundamental	/	PK
	H	5150.00	40.70	50.30	74.00	23.70	PK
	H	10460.00	14.50	46.30	74.00	27.70	PK
	V	10460.00	14.50	43.10	74.00	30.90	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
M	H	5210.00	40.90	100.30	Fundamental	/	PK
	H	5150.00	40.70	60.10	74.00	13.90	PK
	H	5150.00	40.70	49.30	54.00	4.70	AV
	H	10420.00	14.50	46.20	74.00	27.80	PK
	V	10420.00	14.50	44.60	74.00	29.40	PK

U-NII-2A Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5260.00	40.80	102.20	Fundamental	/	PK
	H	5350.00	40.80	51.30	74.00	22.70	PK

	H	10520.00	14.40	47.20	74.00	26.80	PK
	V	10520.00	14.40	44.50	74.00	29.50	PK
M	H	5300.00	40.80	102.30	Fundamental	/	PK
	H	5350.00	40.80	52.20	74.00	21.80	PK
	H	10600.00	14.40	46.10	74.00	27.90	PK
	V	10600.00	14.40	44.20	74.00	29.80	PK
H	H	5320.00	40.80	102.50	Fundamental	/	PK
	H	5350.00	40.80	61.30	74.00	12.70	PK
	H	5350.00	40.80	51.60	54.00	2.40	AV
	H	10640.00	14.40	47.20	74.00	26.80	PK
	V	10640.00	14.40	43.50	74.00	30.50	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5260.00	40.80	102.50	Fundamental	/	PK
	H	5350.00	40.80	52.30	74.00	21.70	PK
	H	10520.00	14.40	47.70	74.00	26.30	PK
	V	10520.00	14.40	44.00	74.00	30.00	PK
M	H	5300.00	40.80	102.20	Fundamental	/	PK
	H	5350.00	40.80	52.10	74.00	21.90	PK
	H	10600.00	14.40	48.30	74.00	25.70	PK
	V	10600.00	14.40	43.40	74.00	30.60	PK
H	H	5320.00	40.80	102.30	Fundamental	/	PK
	H	5350.00	40.80	62.60	74.00	11.40	PK
	H	5350.00	40.80	52.10	54.00	1.90	AV
	H	10640.00	14.40	48.10	74.00	25.90	PK
	V	10640.00	14.40	44.10	74.00	29.90	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5270.00	40.80	101.30	Fundamental	/	PK
	H	5350.00	40.80	52.30	74.00	21.70	PK
	H	10540.00	14.40	46.30	74.00	27.70	PK
	V	10540.00	14.40	44.50	74.00	29.50	PK

H	H	5310.00	40.80	101.20	Fundamental	/	PK
	H	5350.00	40.80	65.20	74.00	8.80	PK
	H	5350.00	40.80	50.10	54.00	3.90	AV
	H	10620.00	14.40	47.30	74.00	26.70	PK
	V	10620.00	14.40	44.50	74.00	29.50	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5290.00	40.80	100.40	Fundamental	/	PK
	H	5350.00	40.70	62.30	74.00	11.70	PK
	H	5350.00	40.70	49.20	54.00	4.80	AV
	H	10580.00	14.40	47.30	74.00	26.70	PK
	V	10580.00	14.40	45.40	74.00	28.60	PK

U-NII-2C Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5500.00	40.50	102.40	Fundamental	/	PK
	H	5470.00	40.60	60.20	68.20	8.00	PK
	H	11000.00	14.20	47.10	74.00	26.90	PK
	V	11000.00	14.20	45.20	74.00	28.80	PK
M	H	5600.00	40.50	101.30	Fundamental	/	PK
	H	11200.00	14.10	47.50	74.00	26.50	PK
	V	11200.00	14.10	43.40	74.00	30.60	PK
H	H	5700.00	40.50	102.50	Fundamental	/	PK
	H	5725.00	40.60	62.30	68.20	5.90	PK
	H	11400.00	14.00	47.50	74.00	26.50	PK
	V	11400.00	14.00	44.50	74.00	29.50	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5500.00	40.50	101.10	Fundamental	/	PK
	H	5470.00	40.60	62.30	68.20	5.90	PK

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	H	11000.00	14.20	48.30	74.00	25.70	PK
	V	11000.00	14.20	44.70	74.00	29.30	PK
M	H	5600.00	40.50	101.90	Fundamental	/	PK
	H	11200.00	14.10	47.30	74.00	26.70	PK
	V	11200.00	14.10	44.10	74.00	29.90	PK
H	H	5700.00	40.50	101.50	Fundamental	/	PK
	H	5725.00	40.60	63.20	68.20	5.00	PK
	H	11400.00	14.00	47.40	74.00	26.60	PK
	V	11400.00	14.00	43.70	74.00	30.30	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5510.00	40.50	102.40	Fundamental	/	PK
	H	5470.00	40.50	62.30	68.20	5.90	PK
	H	11020.00	14.20	47.30	74.00	26.70	PK
	V	11020.00	14.20	44.10	74.00	29.90	PK
M	H	5590.00	40.50	101.50	Fundamental	/	PK
	H	11180.00	14.10	48.10	74.00	25.90	PK
	V	11180.00	14.10	45.50	74.00	28.50	PK
H	H	5670.00	40.50	101.20	Fundamental	/	PK
	H	5725.00	40.20	62.10	68.20	6.10	PK
	H	11340.00	14.00	46.30	74.00	27.70	PK
	V	11340.00	14.00	42.10	74.00	31.90	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5530.00	40.50	100.40	Fundamental	/	PK
	H	5470.00	40.60	63.40	68.20	4.80	PK
	H	11060.00	14.10	46.30	74.00	27.70	PK
	V	11060.00	14.10	42.40	74.00	31.60	PK
H	H	5610.00	40.50	100.10	Fundamental	/	PK
	H	5725.00	40.30	61.20	68.20	7.00	PK
	H	11200.00	14.00	46.30	74.00	27.70	PK
	V	11200.00	14.00	43.30	74.00	30.70	PK

U-NII-3 Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5745.00	40.80	102.40	Fundamental	/	PK
	H	5720.00	40.50	66.30	110.80	44.50	PK
	H	11490.00	13.80	48.30	74.00	25.70	PK
	V	11490.00	13.80	44.50	74.00	29.50	PK
M	H	5785.00	40.80	101.20	Fundamental	/	PK
	H	11570.00	13.70	48.60	74.00	25.40	PK
	V	11570.00	13.70	48.10	74.00	25.90	PK
H	H	5825.00	40.90	102.40	Fundamental	/	PK
	H	5855.00	40.90	63.30	110.80	47.50	PK
	H	11650.00	13.70	48.30	74.00	25.70	PK
	V	11650.00	13.70	45.40	74.00	28.60	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5745.00	40.80	103.30	Fundamental	/	PK
	H	5720.00	40.50	64.10	110.80	46.70	PK
	H	11490.00	13.80	46.40	74.00	27.60	PK
	V	11490.00	13.80	44.70	74.00	29.30	PK
M	H	5785.00	40.80	103.30	Fundamental	/	PK
	H	11570.00	13.70	48.60	74.00	25.40	PK
	V	11570.00	13.70	44.10	74.00	29.90	PK
H	H	5825.00	40.90	102.30	Fundamental	/	PK
	H	5855.00	40.90	64.80	110.80	46.00	PK
	H	11650.00	13.70	47.40	74.00	26.60	PK
	V	11650.00	13.70	44.30	74.00	29.70	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5755.00	40.80	103.20	Fundamental	/	PK
	H	5720.00	40.50	69.30	110.80	41.50	PK

TEST REPORT

	H	11510.00	13.70	47.20	74.00	26.80	PK
	V	11510.00	13.70	44.10	74.00	29.90	PK
H	H	5795.00	40.80	102.30	Fundamental	/	PK
	H	5855.00	40.90	61.30	110.80	49.50	PK
	H	11590.00	13.70	47.30	74.00	26.70	PK
	V	11590.00	13.70	44.20	74.00	29.80	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5775.00	40.80	101.30	Fundamental	/	PK
	H	5720.00	40.50	68.20	110.30	42.10	PK
	H	11550.00	13.70	47.00	74.00	27.00	PK
	V	11550.00	13.70	44.30	74.00	29.70	PK

Mode 2: (Bluetooth BR+EDR)

GFSK (DH5) Modulation:

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	98.90	Fundamental	/	PK
	H	2390.00	30.20	48.30	74.00	25.70	PK
	H	2390.00	30.20	41.60	54.00	12.40	AV
	H	4804.00	-1.50	44.30	74.00	29.70	PK
M	V	2441.00	30.70	98.70	Fundamental	/	PK
	V	4882.00	-1.10	43.30	74.00	30.70	PK
H	H	2480.00	30.70	99.10	Fundamental	/	PK
	V	2483.50	31.52	45.80	74.00	28.20	PK
	V	2483.50	31.52	39.60	54.00	14.40	AV
	V	4960.00	-0.80	44.40	74.00	29.60	PK

π/4DQPSK (2DH5) Modulation:

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	98.40	Fundamental	/	PK
	H	2390.00	30.20	47.10	74.00	26.90	PK
	H	2390.00	30.20	39.80	54.00	14.20	AV
	H	4804.00	-1.50	44.30	74.00	29.70	PK
M	V	2441.00	30.70	98.50	Fundamental	/	PK
	V	4882.00	-1.10	43.30	74.00	30.70	PK
H	H	2480.00	30.70	98.70	Fundamental	/	PK
	V	2483.50	31.52	46.70	74.00	27.30	PK
	V	2483.50	31.52	40.40	54.00	13.60	AV
	V	4960.00	-0.80	43.10	74.00	30.90	PK

8DPSK (3DH5) Modulation:

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	97.50	Fundamental	/	PK
	H	2390.00	30.20	46.50	74.00	27.50	PK
	H	2390.00	30.20	41.20	54.00	12.80	AV
	H	4804.00	-1.50	45.50	74.00	28.50	PK
M	V	2441.00	30.70	96.50	Fundamental	/	PK

	V	4882.00	-1.10	43.30	74.00	30.70	PK
H	H	2480.00	30.70	96.40	Fundamental	/	PK
	V	2483.50	31.52	46.40	74.00	27.60	PK
	V	2483.50	31.52	40.50	54.00	13.50	AV
	V	4960.00	-0.80	43.40	74.00	30.60	PK

Mode 2: (Bluetooth LE)

CH	Antenna	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2402.00	30.70	94.00	Fundamental	/	PK
	V	2402.00	30.70	90.30	Fundamental	/	PK
	H	2390.00	30.30	49.30	74.00	24.70	PK
	H	2390.00	30.30	44.00	54.00	10.00	AV
	H	4804.00	-1.50	45.20	74.00	28.80	PK
	H	7206.00	3.50	44.30	74.00	29.70	PK
	V	2390.00	30.30	47.50	74.00	26.50	PK
	V	2390.00	30.30	39.00	54.00	15.00	AV
	V	4804.00	-1.50	43.10	74.00	30.90	PK
	V	7206.00	3.50	42.30	74.00	31.70	PK
M	H	2440.00	30.70	94.50	Fundamental	/	PK
	V	2440.00	30.70	90.70	Fundamental	/	PK
	H	4880.00	-1.10	44.60	74.00	29.40	PK
	H	7320.00	3.60	38.50	74.00	35.50	PK
	V	4880.00	-1.10	43.60	74.00	30.40	PK
	V	7320.00	3.60	39.10	74.00	34.90	PK
H	H	2480.00	30.70	93.80	Fundamental	/	PK
	V	2480.00	30.70	89.70	Fundamental	/	PK
	H	2483.50	30.80	47.60	74.00	26.40	PK
	H	2483.50	30.80	44.30	54.00	9.70	AV
	V	2483.50	30.80	45.90	74.00	28.10	PK
	V	2483.50	30.80	40.10	54.00	13.90	AV
	H	4960.00	-0.80	44.20	74.00	29.80	PK
	H	7440.00	3.80	42.30	74.00	31.70	PK
	V	4960.00	-0.80	43.90	74.00	30.10	PK
	V	7440.00	3.80	42.40	74.00	31.60	PK

Mode 2: (WIFI 2.4GHz)

802.11b

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2412.00	109.20	34.10	Fundamental	/	PK
	H	2390.00	56.42	34.20	74.00	17.58	PK
	H	2390.00	49.66	34.20	54.00	4.34	AV
	V	2390.00	54.53	34.20	74.00	19.47	PK
	V	2390.00	49.22	34.20	54.00	4.78	AV
	H	4824.00	45.30	-3.60	74.00	28.70	PK
M	H	2437.00	108.20	34.20	Fundamental	/	PK
	H	4874.00	45.20	-3.50	74.00	28.80	PK
H	H	2462.00	108.40	34.40	Fundamental	/	PK
	H	2483.50	55.37	34.80	74.00	18.63	PK
	H	2483.50	50.35	34.80	54.00	3.65	AV
	V	2483.50	53.62	34.80	74.00	20.38	PK
	V	2483.50	48.10	34.80	54.00	5.90	AV
	H	4924.00	44.90	-3.30	74.00	29.10	PK

802.11g

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2412.00	108.20	34.10	Fundamental	/	PK
	H	2390.00	58.44	34.20	74.00	15.56	PK
	H	2390.00	51.65	34.20	54.00	2.35	AV
	V	2390.00	55.24	34.20	74.00	18.76	PK
	V	2390.00	50.10	34.20	54.00	3.90	AV
	H	4824.00	45.40	-3.60	74.00	28.60	PK
M	H	2437.00	108.10	34.20	Fundamental	/	PK
	H	4874.00	45.40	-3.50	74.00	28.60	PK
H	H	2462.00	108.60	34.40	Fundamental	/	PK
	H	2483.50	60.48	34.80	74.00	13.52	PK
	H	2483.50	51.40	34.80	54.00	2.60	AV
	V	2483.50	56.45	34.80	74.00	17.55	PK
	V	2483.50	49.10	34.80	54.00	4.90	AV
	H	4924.00	44.30	-3.30	74.00	29.70	PK

802.11n(HT20)

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2412.00	108.20	34.10	Fundamental	/	PK
	H	2390.00	59.52	34.20	74.00	14.48	PK
	H	2390.00	51.50	34.20	54.00	2.50	AV
	V	2390.00	55.67	34.20	74.00	18.33	PK
	V	2390.00	48.57	34.20	54.00	5.43	AV
	H	4824.00	45.40	-3.60	74.00	28.60	PK
M	H	2437.00	108.40	34.20	Fundamental	/	PK
	H	4874.00	45.20	-3.50	74.00	28.80	PK
H	H	2462.00	108.20	34.40	Fundamental	/	PK
	H	2483.50	59.80	34.80	74.00	14.20	PK
	H	2483.50	48.82	34.80	54.00	5.18	AV
	V	2483.50	53.37	34.80	74.00	20.63	PK
	V	2483.50	47.60	34.80	54.00	6.40	AV
	H	4924.00	44.20	-3.30	74.00	29.80	PK

802.11n(HT40)

CH	Antenna	Frequency (MHz)	Corrected Reading (dBuV/m)	Correct Factor (dB/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	2422.00	105.20	34.10	Fundamental	/	PK
	H	2390.00	65.42	34.20	74.00	8.58	PK
	H	2390.00	52.70	34.20	54.00	1.30	AV
	V	2390.00	63.32	34.20	74.00	10.68	PK
	V	2390.00	51.58	34.20	54.00	2.42	AV
	H	4844.00	45.50	-3.60	74.00	28.50	PK
M	H	2437.00	106.30	34.20	Fundamental	/	PK
	H	4874.00	45.30	-3.60	74.00	28.70	PK
H	H	2452.00	106.30	34.40	Fundamental	/	PK
	H	2483.50	64.25	34.80	74.00	9.75	PK
	H	2483.50	51.55	34.80	54.00	2.45	AV
	V	2483.50	62.40	34.80	74.00	11.60	PK
	V	2483.50	49.40	34.80	54.00	4.60	AV
	H	4904.00	45.20	2.65	74.00	28.80	PK

Mode 2: (WIFI 5GHz)

The emission was conducted from 1GHz to 40GHz.

U-NII-1 Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5180.00	40.80	102.90	Fundamental	/	PK
	H	5150.00	40.70	62.30	74.00	11.70	PK
	H	5150.00	40.70	52.20	54.00	1.80	AV
	H	10360.00	14.50	45.20	74.00	28.80	PK
	V	10360.00	14.50	43.30	74.00	30.70	PK
M	H	5200.00	40.90	102.10	Fundamental	/	PK
	H	5150.00	40.70	51.20	74.00	22.80	PK
	H	10400.00	14.50	45.20	74.00	28.80	PK
	V	10400.00	14.50	43.40	74.00	30.60	PK
H	H	5240.00	41.00	102.30	Fundamental	/	PK
	H	5150.00	40.70	51.60	74.00	22.40	PK
	H	10480.00	14.50	44.40	74.00	29.60	PK
	V	10480.00	14.50	43.20	74.00	30.80	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5180.00	40.80	102.50	Fundamental	/	PK
	H	5150.00	40.70	63.40	74.00	10.60	PK
	H	5150.00	40.70	52.20	54.00	1.80	AV
	H	10360.00	14.50	47.30	74.00	26.70	PK
	V	10360.00	14.50	44.10	74.00	29.90	PK
M	H	5200.00	40.90	102.40	Fundamental	/	PK
	H	5150.00	40.70	51.40	74.00	22.60	PK
	H	10400.00	14.50	47.40	74.00	26.60	PK
	V	10400.00	14.50	43.50	74.00	30.50	PK
H	H	5240.00	41.00	102.20	Fundamental	/	PK
	H	5150.00	40.70	50.50	74.00	23.50	PK
	H	10480.00	14.50	46.10	74.00	27.90	PK
	V	10480.00	14.50	42.30	74.00	31.70	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5190.00	40.80	101.70	Fundamental	/	PK
	H	5150.00	40.70	66.50	74.00	7.50	PK
	H	5150.00	40.70	51.70	54.00	2.30	AV
	H	10380.00	14.50	46.20	74.00	27.80	PK
	V	10380.00	14.50	44.10	74.00	29.90	PK
H	H	5230.00	41.00	101.80	Fundamental	/	PK
	H	5150.00	40.70	50.10	74.00	23.90	PK
	H	10460.00	14.50	46.40	74.00	27.60	PK
	V	10460.00	14.50	43.10	74.00	30.90	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
M	H	5210.00	40.90	100.20	Fundamental	/	PK
	H	5150.00	40.70	58.40	74.00	15.60	PK
	H	5150.00	40.70	49.20	54.00	4.80	AV
	H	10420.00	14.50	45.60	74.00	28.40	PK
	V	10420.00	14.50	44.20	74.00	29.80	PK

U-NII-2A Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5260.00	40.80	102.50	Fundamental	/	PK
	H	5350.00	40.80	51.50	74.00	22.50	PK
	H	10520.00	14.40	47.10	74.00	26.90	PK
	V	10520.00	14.40	44.60	74.00	29.40	PK
M	H	5300.00	40.80	102.60	Fundamental	/	PK
	H	5350.00	40.80	52.30	74.00	21.70	PK
	H	10600.00	14.40	46.60	74.00	27.40	PK
	V	10600.00	14.40	44.10	74.00	29.90	PK

H	H	5320.00	40.80	102.40	Fundamental	/	PK
	H	5350.00	40.80	62.50	74.00	11.50	PK
	H	5350.00	40.80	52.10	54.00	1.90	AV
	H	10640.00	14.40	46.80	74.00	27.20	PK
	V	10640.00	14.40	43.50	74.00	30.50	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5260.00	40.80	103.40	Fundamental	/	PK
	H	5350.00	40.80	52.30	74.00	21.70	PK
	H	10520.00	14.40	47.70	74.00	26.30	PK
	V	10520.00	14.40	44.00	74.00	30.00	PK
M	H	5300.00	40.80	102.20	Fundamental	/	PK
	H	5350.00	40.80	52.10	74.00	21.90	PK
	H	10600.00	14.40	48.30	74.00	25.70	PK
	V	10600.00	14.40	43.40	74.00	30.60	PK
H	H	5320.00	40.80	102.30	Fundamental	/	PK
	H	5350.00	40.80	62.60	74.00	11.40	PK
	H	5350.00	40.80	52.10	54.00	1.90	AV
	H	10640.00	14.40	48.10	74.00	25.90	PK
	V	10640.00	14.40	44.10	74.00	29.90	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5270.00	40.80	101.30	Fundamental	/	PK
	H	5350.00	40.80	52.30	74.00	21.70	PK
	H	10540.00	14.40	46.30	74.00	27.70	PK
	V	10540.00	14.40	44.50	74.00	29.50	PK
H	H	5310.00	40.80	101.20	Fundamental	/	PK
	H	5350.00	40.80	65.40	74.00	8.60	PK
	H	5350.00	40.80	50.50	54.00	3.50	AV
	H	10620.00	14.40	47.20	74.00	26.80	PK
	V	10620.00	14.40	43.50	74.00	30.50	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5290.00	40.80	101.30	Fundamental	/	PK
	H	5350.00	40.70	62.40	74.00	11.60	PK
	H	5350.00	40.70	50.40	54.00	3.60	AV
	H	10580.00	14.40	47.50	74.00	26.50	PK
	V	10580.00	14.40	45.10	74.00	28.90	PK

U-NII-2C Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5500.00	40.50	102.50	Fundamental	/	PK
	H	5470.00	40.60	60.10	68.20	8.10	PK
	H	11000.00	14.20	47.70	74.00	26.30	PK
	V	11000.00	14.20	45.40	74.00	28.60	PK
M	H	5600.00	40.50	101.50	Fundamental	/	PK
	H	11200.00	14.10	47.30	74.00	26.70	PK
	V	11200.00	14.10	43.10	74.00	30.90	PK
H	H	5700.00	40.50	102.10	Fundamental	/	PK
	H	5725.00	40.60	62.60	68.20	5.60	PK
	H	11400.00	14.00	47.10	74.00	26.90	PK
	V	11400.00	14.00	44.30	74.00	29.70	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5500.00	40.50	101.70	Fundamental	/	PK
	H	5470.00	40.60	62.10	68.20	6.10	PK
	H	11000.00	14.20	46.30	74.00	27.70	PK
	V	11000.00	14.20	44.60	74.00	29.40	PK
M	H	5600.00	40.50	101.50	Fundamental	/	PK
	H	11200.00	14.10	47.20	74.00	26.80	PK
	V	11200.00	14.10	44.30	74.00	29.70	PK

H	H	5700.00	40.50	101.70	Fundamental	/	PK
	H	5725.00	40.60	63.10	68.20	5.10	PK
	H	11400.00	14.00	47.30	74.00	26.70	PK
	V	11400.00	14.00	43.10	74.00	30.90	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5510.00	40.50	102.70	Fundamental	/	PK
	H	5470.00	40.50	62.30	68.20	5.90	PK
	H	11020.00	14.20	47.30	74.00	26.70	PK
	V	11020.00	14.20	44.10	74.00	29.90	PK
M	H	5590.00	40.50	101.60	Fundamental	/	PK
	H	11180.00	14.10	48.10	74.00	25.90	PK
	V	11180.00	14.10	45.30	74.00	28.70	PK
H	H	5670.00	40.50	102.10	Fundamental	/	PK
	H	5725.00	40.20	62.80	68.20	5.40	PK
	H	11340.00	14.00	45.30	74.00	28.70	PK
	V	11340.00	14.00	43.10	74.00	30.90	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5530.00	40.50	101.70	Fundamental	/	PK
	H	5470.00	40.60	63.70	68.20	4.50	PK
	H	11060.00	14.10	46.50	74.00	27.50	PK
	V	11060.00	14.10	42.20	74.00	31.80	PK
H	H	5610.00	40.50	100.30	Fundamental	/	PK
	H	5725.00	40.30	63.10	68.20	5.10	PK
	H	11200.00	14.00	46.40	74.00	27.60	PK
	V	11200.00	14.00	43.60	74.00	30.40	PK

U-NII-3 Band:

802.11a

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5745.00	40.80	102.70	Fundamental	/	PK
	H	5720.00	40.50	68.50	110.80	42.30	PK
	H	11490.00	13.80	46.30	74.00	27.70	PK
	V	11490.00	13.80	44.20	74.00	29.80	PK
M	H	5785.00	40.80	101.70	Fundamental	/	PK
	H	11570.00	13.70	48.30	74.00	25.70	PK
	V	11570.00	13.70	44.70	74.00	29.30	PK
H	H	5825.00	40.90	102.10	Fundamental	/	PK
	H	5855.00	40.90	63.70	110.80	47.10	PK
	H	11650.00	13.70	48.10	74.00	25.90	PK
	V	11650.00	13.70	45.20	74.00	28.80	PK

802.11n20

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5745.00	40.80	103.40	Fundamental	/	PK
	H	5720.00	40.50	69.70	110.80	41.10	PK
	H	11490.00	13.80	46.70	74.00	27.30	PK
	V	11490.00	13.80	44.20	74.00	29.80	PK
M	H	5785.00	40.80	103.10	Fundamental	/	PK
	H	11570.00	13.70	48.40	74.00	25.60	PK
	V	11570.00	13.70	44.70	74.00	29.30	PK
H	H	5825.00	40.90	102.80	Fundamental	/	PK
	H	5855.00	40.90	67.20	110.80	43.60	PK
	H	11650.00	13.70	47.50	74.00	26.50	PK
	V	11650.00	13.70	44.60	74.00	29.40	PK

802.11n40

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5755.00	40.80	103.30	Fundamental	/	PK
	H	5720.00	40.50	69.20	110.80	41.60	PK

TEST REPORT

	H	11510.00	13.70	47.10	74.00	26.90	PK
	V	11510.00	13.70	44.30	74.00	29.70	PK
H	H	5795.00	40.80	102.60	Fundamental	/	PK
	H	5855.00	40.90	63.70	110.80	47.10	PK
	H	11590.00	13.70	47.50	74.00	26.50	PK
	V	11590.00	13.70	44.80	74.00	29.20	PK

802.11ac80

Channel	Polarity	Frequency (MHz)	Correct Factor (dB/m)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
L	H	5775.00	40.80	102.40	Fundamental	/	PK
	H	5720.00	40.50	68.90	110.30	41.40	PK
	H	11550.00	13.70	47.30	74.00	26.70	PK
	V	11550.00	13.70	44.70	74.00	29.30	PK

Remark: 1. Correct Factor = Antenna Factor + Cable Loss (+ Amplifier, for higher than 1GHz), the value was added to Original Receiver Reading by the software automatically.
2. Corrected Reading = Original Receiver Reading + Correct Factor
3. Margin = Limit - Corrected Reading
4. If the PK Corrected Reading is lower than AV limit, the AV test can be elided.

Example: Assuming Antenna Factor = 30.20dB/m, Cable Loss = 2.00dB,
Gain of Preamplifier = 32.00dB, Original Receiver Reading = 10.00dBuV,
Limit = 40.00dBuV/m.
Then Correct Factor = 30.20 + 2.00 – 32.00 = 0.20dB/m;
Corrected Reading = 10dBuV + 0.20dB/m = 10.20dBuV/m;
Margin = 40.00dBuV/m - 10.20dBuV/m = 29.80dB.

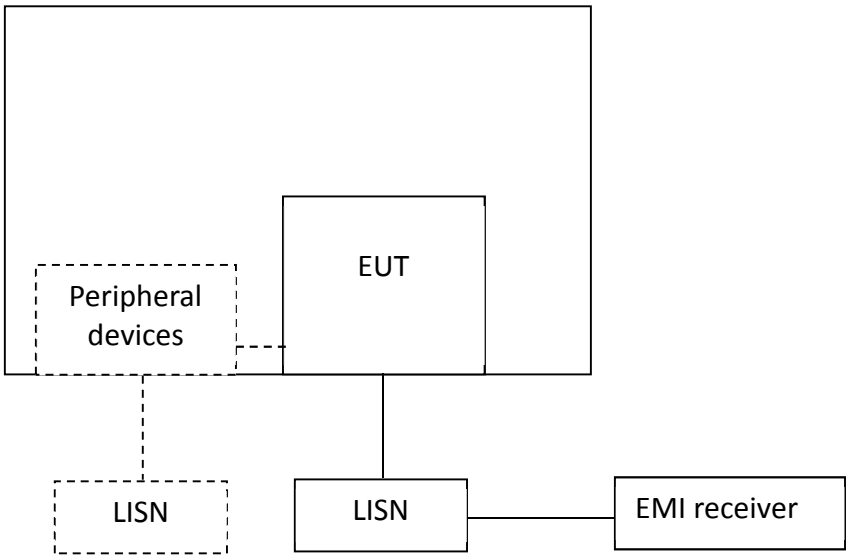
4 Power line conducted emission

Test result: **Pass**

4.1 Limit

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	QP	AV
0.15-0.5	66 to 56*	56 to 46 *
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

4.2 Test Configuration



4.3 Measurement Procedure

Measured levels of ac power-line conducted emission shall be the emission voltages from the voltage probe, where permitted, or across the 50 Ω LISN port (to which the EUT is connected), where permitted, terminated into a 50 Ω measuring instrument. All emission voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord by the use of mating plugs and receptacles on the LISN, if used. Equipment shall be tested with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended by the manufacturer. For those measurements using a LISN, the 50 Ω measuring port is terminated by a measuring instrument having 50 Ω input impedance. All other ports are terminated in 50 Ω loads.

Tabletop devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of tabletop or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

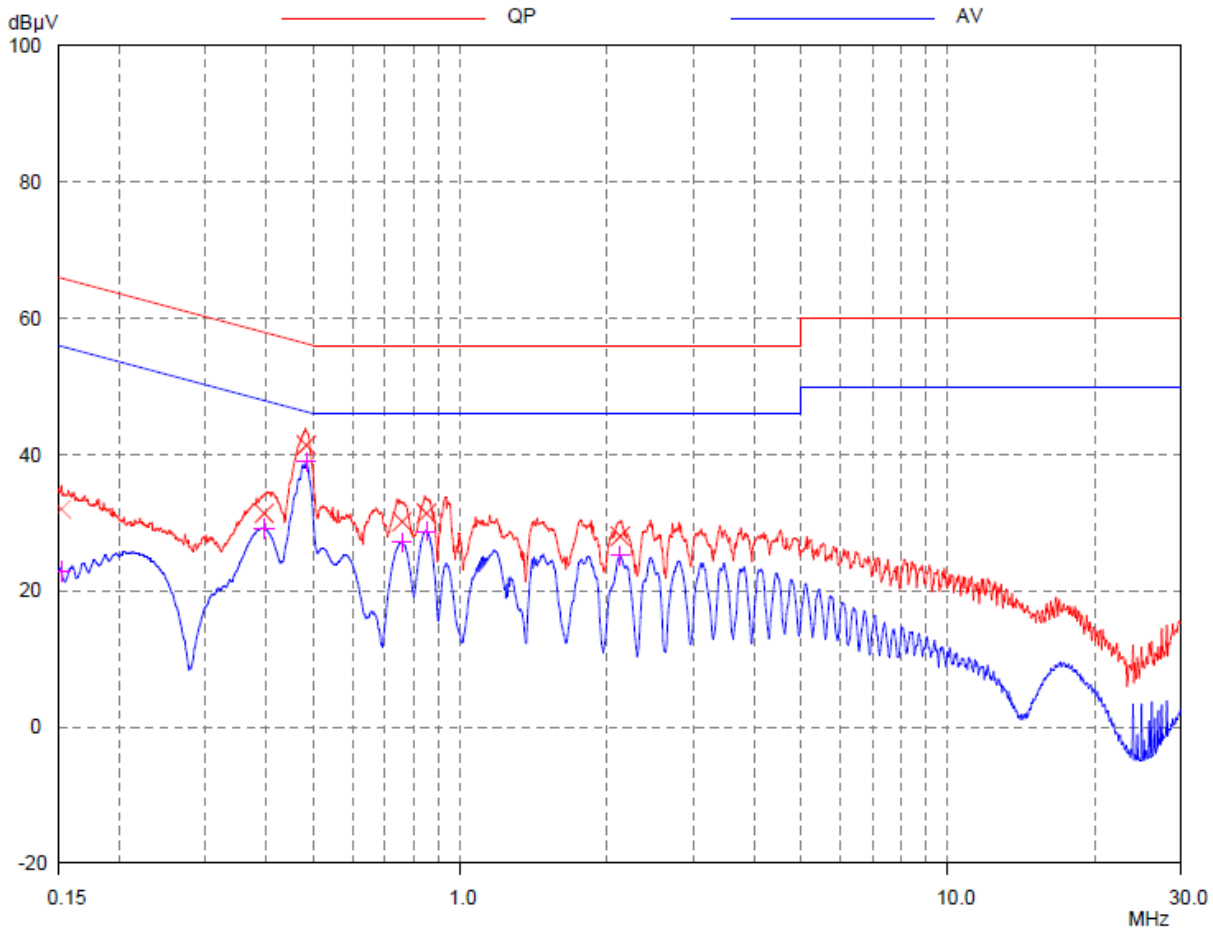
The bandwidth of the test receiver is set at 9 kHz.

4.4 Test Results of Power line conducted emission

Mode 3:

Test Curve:

L line

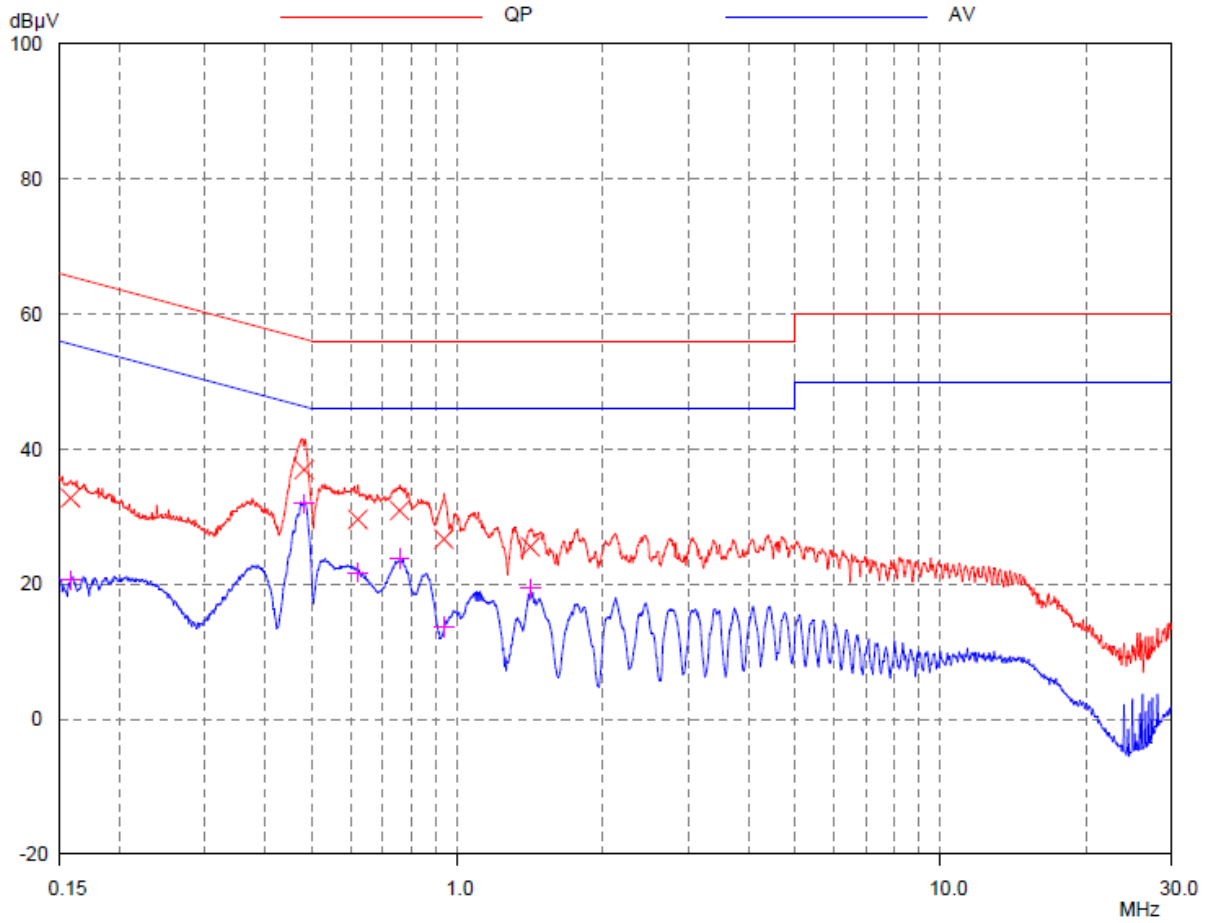


Test Data:

Frequency (MHz)	Quasi-peak			Average		
	level dB(µV)	Limit dB(µV)	Margin (dB)	level dB(µV)	limit dB(µV)	Margin (dB)
0.152	31.95	65.90	33.95	22.79	55.90	33.11
0.396	31.37	57.94	26.57	29.12	47.94	18.82
0.483	41.37	56.29	14.92	38.93	46.29	7.36
0.759	30.15	56.00	25.85	27.14	46.00	18.86
0.852	31.37	56.00	24.63	28.71	46.00	17.29
2.125	28.00	56.00	28.00	25.13	46.00	20.87

TEST REPORT

N line



Test Data:

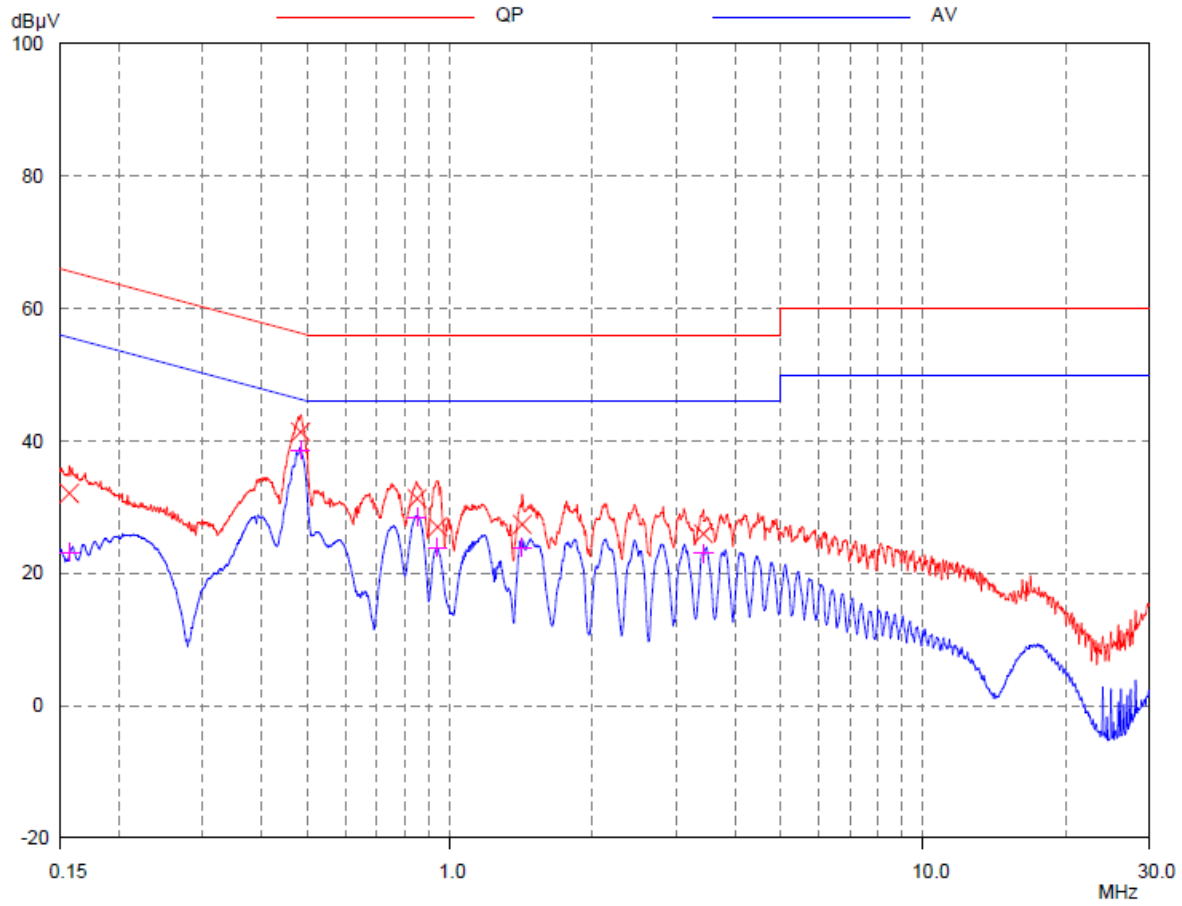
Frequency (MHz)	Quasi-peak			Average		
	level dB(µV)	Limit dB(µV)	Margin (dB)	level dB(µV)	limit dB(µV)	Margin (dB)
0.158	32.77	65.57	32.80	20.60	55.57	34.97
0.481	36.97	56.32	19.35	31.94	46.32	14.38
0.621	29.59	56.00	26.41	21.74	46.00	24.26
0.759	30.91	56.00	25.09	23.83	46.00	22.17
0.937	26.67	56.00	29.33	13.66	46.00	32.34
1.414	25.51	56.00	30.49	19.39	46.00	26.61

TEST REPORT

Mode 4:

Test Curve:

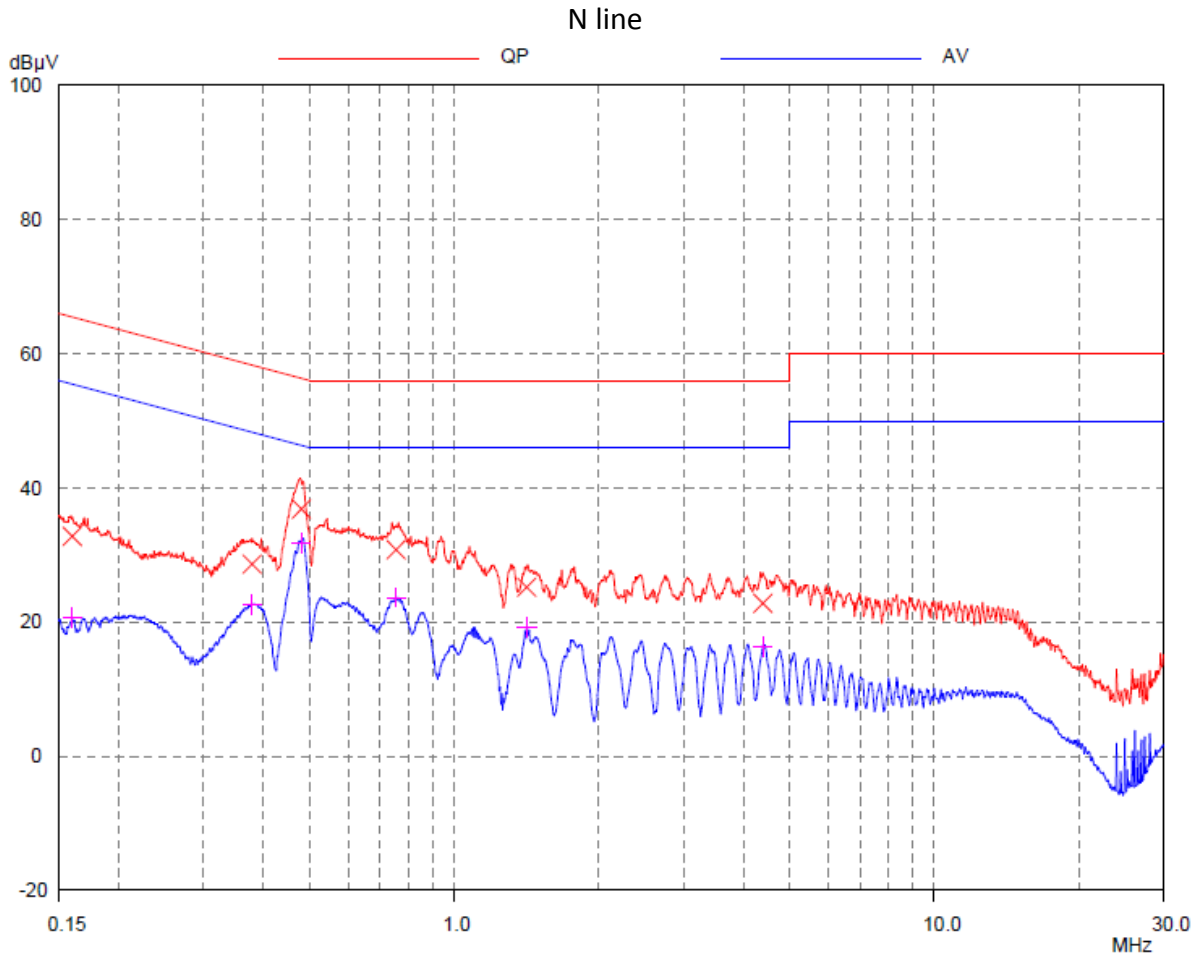
L line



Test Data:

Frequency (MHz)	Quasi-peak			Average		
	level dB(µV)	Limit dB(µV)	Margin (dB)	level dB(µV)	limit dB(µV)	Margin (dB)
0.157	32.09	65.64	33.55	23.15	55.64	32.49
0.483	41.35	56.29	14.94	38.66	46.29	7.63
0.852	31.27	56.00	24.73	28.49	46.00	17.51
0.941	26.97	56.00	29.03	23.87	46.00	22.13
1.420	27.38	56.00	28.62	23.90	46.00	22.10
3.430	25.96	56.00	30.04	23.02	46.00	22.98

TEST REPORT



Test Data:

Frequency (MHz)	Quasi-peak			Average		
	level dB(µV)	Limit dB(µV)	Margin (dB)	level dB(µV)	limit dB(µV)	Margin (dB)
0.160	32.79	65.47	32.68	20.67	55.47	34.80
0.379	28.63	58.31	29.68	22.63	48.31	25.68
0.479	36.87	56.35	19.48	31.72	46.35	14.63
0.756	30.79	56.00	25.21	23.69	46.00	22.31
1.414	25.19	56.00	30.81	19.24	46.00	26.76
4.394	22.80	56.00	33.20	16.32	46.00	29.68

Remark: 1. Correct Factor = LISN Factor + Cable Loss, the value was added to Original Receiver Reading by the software automatically.

2. Corrected Reading = Original Receiver Reading + Correct Factor

3. Margin = Limit - Corrected Reading

5 Antenna requirement

Requirement:

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.

Result:

The EUT used an internal monopole antenna and used a no-standard electrical connector, so fulfill these requirements.

********** END **********