



FCC PART 15C TEST REPORT No.I21Z60426-IOT24

for

Wingtech Group (Hong Kong) Limited

5G Mobile Phone

WTRVL5G

With

FCC ID: 2APXW-WTRVL5G

Hardware Version: V1.3

Software Version: WTRVL5G_0.01.10

Issued Date: 2021-04-30

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of CTTL.

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Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

Tel:+86(0)10-62304633-2512, Fax:+86(0)10-62304633-2504

Email: ctl_terminals@caict.ac.cn, website: www.caict.ac.cn



REPORT HISTORY

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1. TEST LATORATORY

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Conducted testing Location: CTTL(huayuan North Road)

Address: No. 52, Huayuan North Road, Haidian District, Beijing,
P. R. China100191

Radiated testing Location: CTTL(BDA)

Address: No.18A, Kangding Street, Beijing Economic-Technology
Development Area, Beijing, P. R. China 100176

1.3. TestingEnvironment

Normal Temperature: 15-35°C

Extreme Temperature: -20/+55°C

Relative Humidity: 20-75%

1.4. Project date

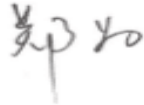
Testing Start Date: 2021-03-09

Testing End Date: 2021-04-30

1.5. Signature

谢秀珍

Xie Xiuzhen
(Prepared this test report)



Zheng Wei
(Reviewed this test report)

胡晓宇

Hu Xiaoyu
(Approved this test report)



2. CLIENT INFORMATION

2.1. Applicant Information

Company Name: Wingtech Group (Hong Kong) Limited
Address: Flat/RM 1903, 19/F, Podium Plaza 5 Hanoi Road, Tsim Sha Tsui
Kowloon, Hong Kong
City: Hong Kong
Postal Code: /
Country: China
Telephone: /
Fax: /

2.2. Manufacturer Information

Company Name: Wingtech Group (Hong Kong) Limited
Address: Flat/RM 1903, 19/F, Podium Plaza 5 Hanoi Road, Tsim Sha Tsui
Kowloon, Hong Kong
City: Hong Kong
Postal Code: /
Country: China
Telephone: /
Fax: /

3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY

EQUIPMENT(AE)

3.1. About EUT

Description	5G Mobile Phone
Model name	WTRVL5G
FCC ID	2APXW-WTRVL5G
WLAN Frequency Band	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Voltage	3.87V

Note: Photographs of EUT are shown in ANNEX C of this test report. Components list, please refer to documents of the manufacturer; it is also included in the original test record of Telecommunication Metrology Center of MIIT of People's Republic of China.

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version
EUT1	357492490017314	V1.3	WTRVL5G_0.01.10
EUT2	357492490010145	V1.3	WTRVL5G_0.01.10

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

*AE ID: is used to identify the test sample in the lab internally.

3.4. General Description

Equipment Under Test (EUT) is a model of 5G Mobile Phone with integrated antenna. It consists of normal options: Battery and Charger.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the Client.

4. REFERENCE DOCUMENTS

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

FCC Part15	FCC CFR 47, Part 15, Subpart C and E: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.407 General technical requirements	2018
ANSI C63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2013
UNII: KDB 789033 D02	General U-NII Test Procedures New Rules v02r01	2017-12
KDB 558074 D01	Federal Communications Commission Office of Engineering and Technology Laboratory Division GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES	2019

5. LABORATORY ENVIRONMENT

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

6. SUMMARY OF TEST RESULTS

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.407 (a)	/	P
Peak Power Spectral Density	15.407 (a)	/	P
Occupied 6dB Bandwidth	15.407 (e)	/	P
Band Edges Compliance - Conducted& Radiated	15.407 (b)	/	P
Transmitter Spurious Emission - Conducted	15.407	/	P
Transmitter Spurious Emission - Radiated	15.407, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.107, 15.207	/	P

Please refer to **ANNEX A** for detail.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NM	Not measured, The test was not measured by CTTL
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Statements

CTTL has evaluated the test cases requested by the client/matrix as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.1.

This report only deals with the WLAN function among the features described in section 3.

6.3. Test Conditions

For this report, all the test cases are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	26°C
Voltage	3.87V
Humidity	44%

7. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	1 year	2021-05-06
2	LISN	ENV216	101459	R&S	1 year	2022-03-16
3	Test Receiver	ESCI	100766	R&S	1 year	2022-03-09
4	Shielding Room	S81	/	ETS-Lindgren	/	/

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	Rohde & Schwarz	1 year	2021-09-04
2	BiLog Antenna	VULB9163	9163-482	Schwarzbeck	1 year	2021-11-04
3	Dual-Ridge Waveguide Horn Antenna	3117	00139065	ETS-Lindgren	1 year	2021-10-11
4	Dual-Ridge Waveguide Horn Antenna	3116	2663	ETS-Lindgren	1 year	2021-08-05
5	Vector Signal Analyzer	FSV40	101047	Rohde & Schwarz	1 year	2021-05-18

8. Measurement Uncertainty

8.1. Transmitter Output Power

Measurement Uncertainty: 0.387dB,k=1.96

8.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

8.3. Occupied 6dB Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

8.4. Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

8.5. Spurious Emissions

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
$30\text{MHz} \leq f \leq 2\text{GHz}$	1.22
$2\text{GHz} \leq f \leq 3.6\text{GHz}$	1.22
$3.6\text{GHz} \leq f \leq 8\text{GHz}$	1.22
$8\text{GHz} \leq f \leq 12.75\text{GHz}$	1.51
$12.75\text{GHz} \leq f \leq 26\text{GHz}$	1.51
$26\text{GHz} \leq f \leq 40\text{GHz}$	1.59

Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.40
$1\text{GHz} \leq f \leq 18\text{GHz}$	4.32
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.26

8.6. AC Power-line Conducted Emission

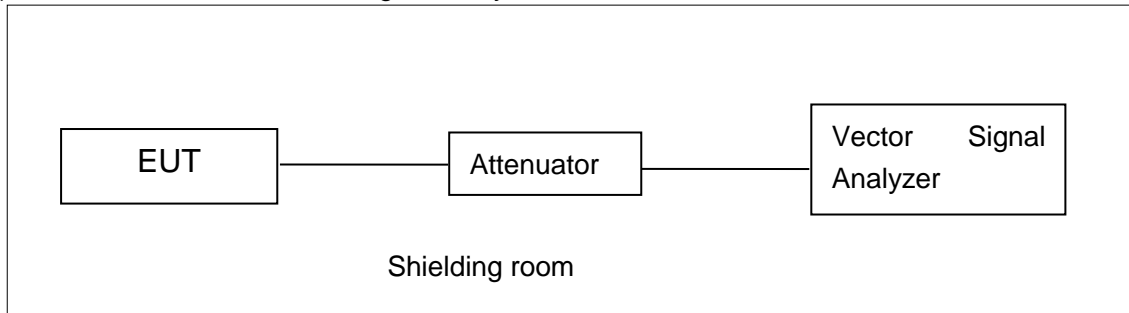
Measurement Uncertainty : 3.10dB,k=2

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

A.1.1. Conducted Measurements

- 1). Connect the EUT to the test system correctly.
- 2). Set the EUT to the required work mode.
- 3). Set the EUT to the required channel.
- 4). Set the spectrum analyzer to start measurement.
- 5). Record the values. Vector Signal Analyzer

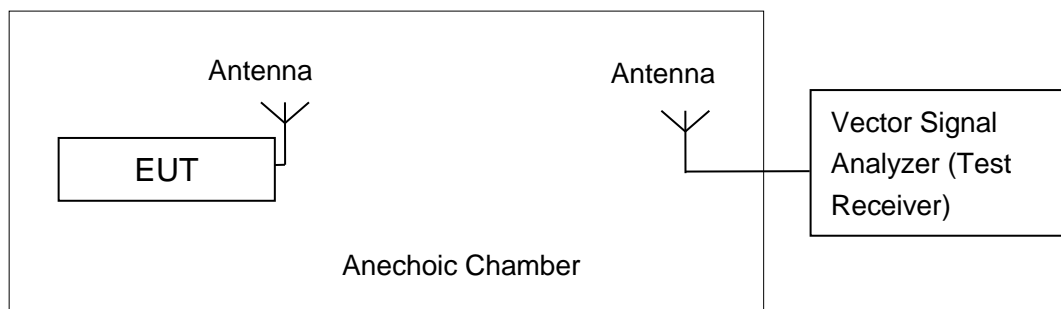


A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,

Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;

Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;



The measurement is made according to ANSI C63.10.

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

A.2. Maximum Peak Output Power

Measurement Limit and Method:

Standard	Limit (dBm)
FCC CRF Part 15.407(a)	< 30

A.2.1 Antenna Gain

Antenna gain is -1.5dBi and the value is supplied by the applicant or manufacturer.

A.2.2. Maximum Average Output Power-Conducted

Measurement Results:

802.11a mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11a	6	19.97	20.42	20.74

The data rate 6Mbps is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11n(20MHz)	MCS0	19.61	19.66	19.43

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ac-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11ac(20MHz)	MCS0	18.68	18.72	18.53

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)	
		5755MHz (Ch151)	5795MHz (Ch159)
802.11n(40MHz)	MCS0	18.60	18.72

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ac-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)	
		5755MHz (Ch151)	5795MHz (Ch159)
802.11ac(40MHz)	MCS0	18.63	18.72

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

802.11ac-HT80 mode

Mode	Data Rate (Index)	Test Result (dBm)
		5775MHz (Ch155)
802.11ac(80MHz)	MCS0	18.30

The data rate MCS0 is selected as worse condition, and the following cases are performed with this condition.

Conclusion: PASS

A.3. Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407(a)	< 30 dBm/500 kHz

The measurement is made according to ANSI C63.10 and KDB789033 D02

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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Measurement Results:

Mode	Channel	Power Spectral Density (dBm/500kHz)	Conclusion
802.11a	149	3.64	P
	157	3.69	P
	165	3.63	P
802.11n HT20	149	3.42	P
	157	3.45	P
	165	3.21	P
802.11ac HT40	151	-0.49	P
	159	-0.31	P
802.11ac HT80	155	-4.46	P

Conclusion: PASS

A.4. Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.407 (e)	≥ 500

The measurement is made according to KDB789033 D02 .

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
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Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth (MHz)		conclusion
802.11a	149	Fig.1	16.35	P
	157	Fig.2	16.35	P
	165	Fig.3	16.35	P
802.11n HT20	149	Fig.4	17.60	P
	157	Fig.5	17.55	P
	165	Fig.6	17.60	P
802.11ac HT40	151	Fig.7	36.24	P
	159	Fig.8	36.32	P
802.11ac HT80	155	Fig.9	76.32	P

Conclusion: PASS

Test graphs as below:

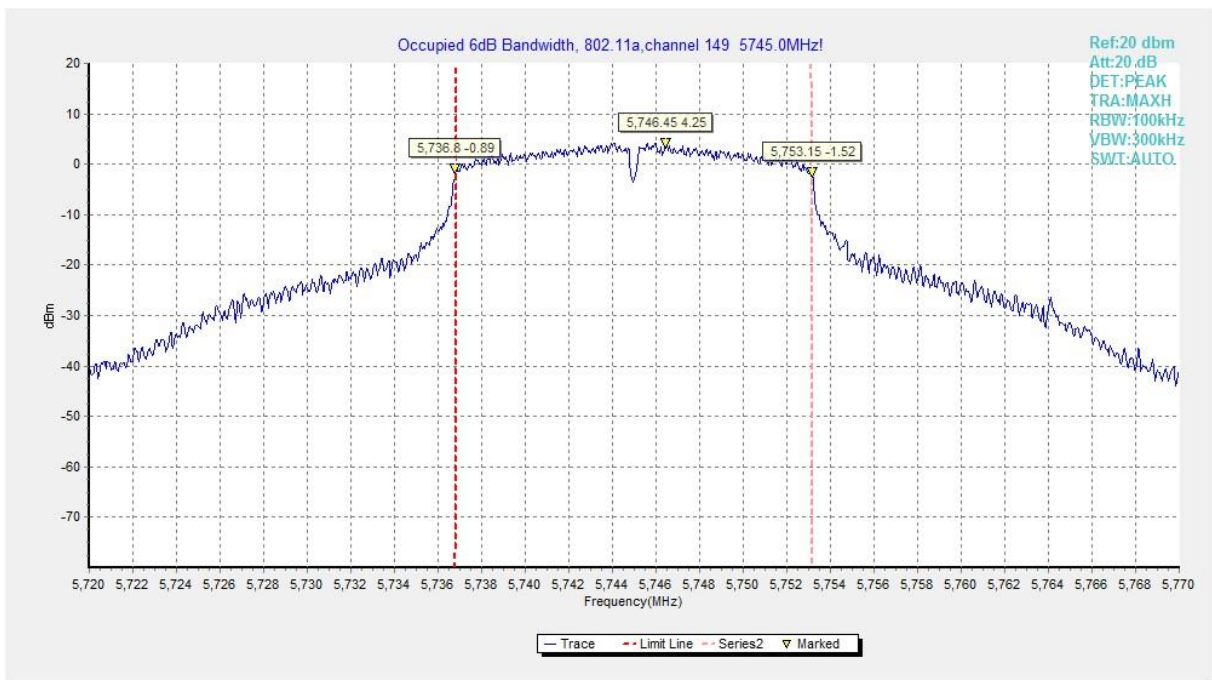


Fig. 1 Occupied 6dB Bandwidth (802.11a, Ch 149)

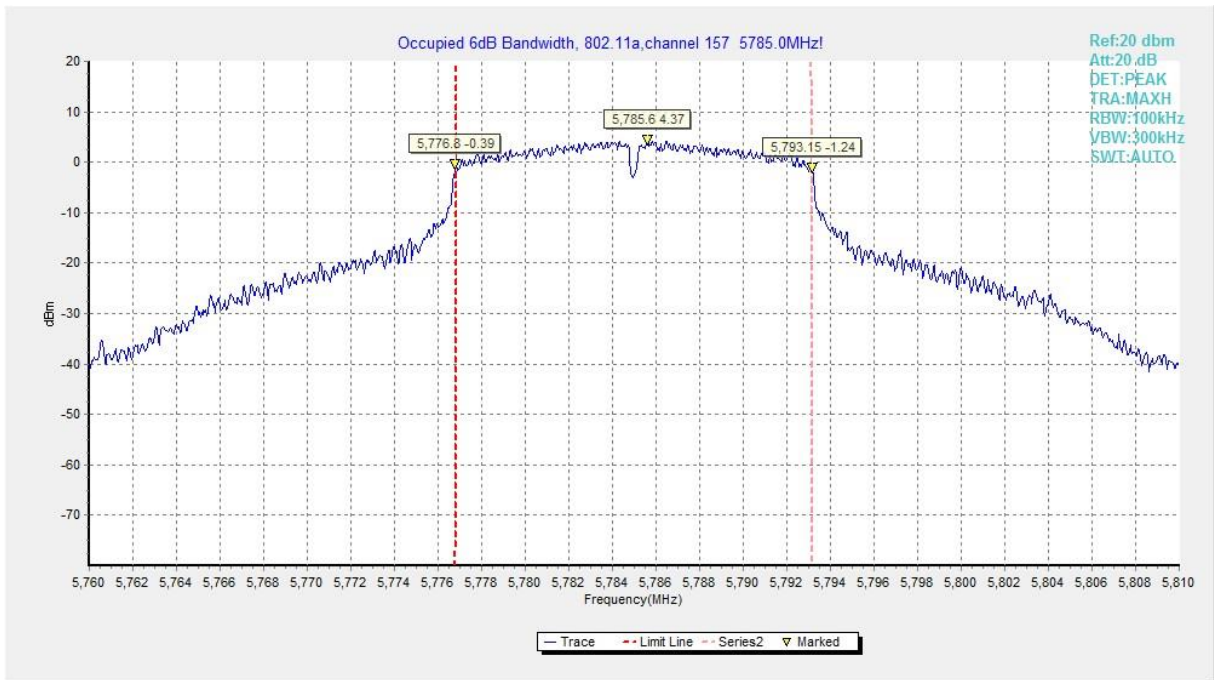


Fig. 2 Occupied 6dB Bandwidth (802.11a, Ch 157)

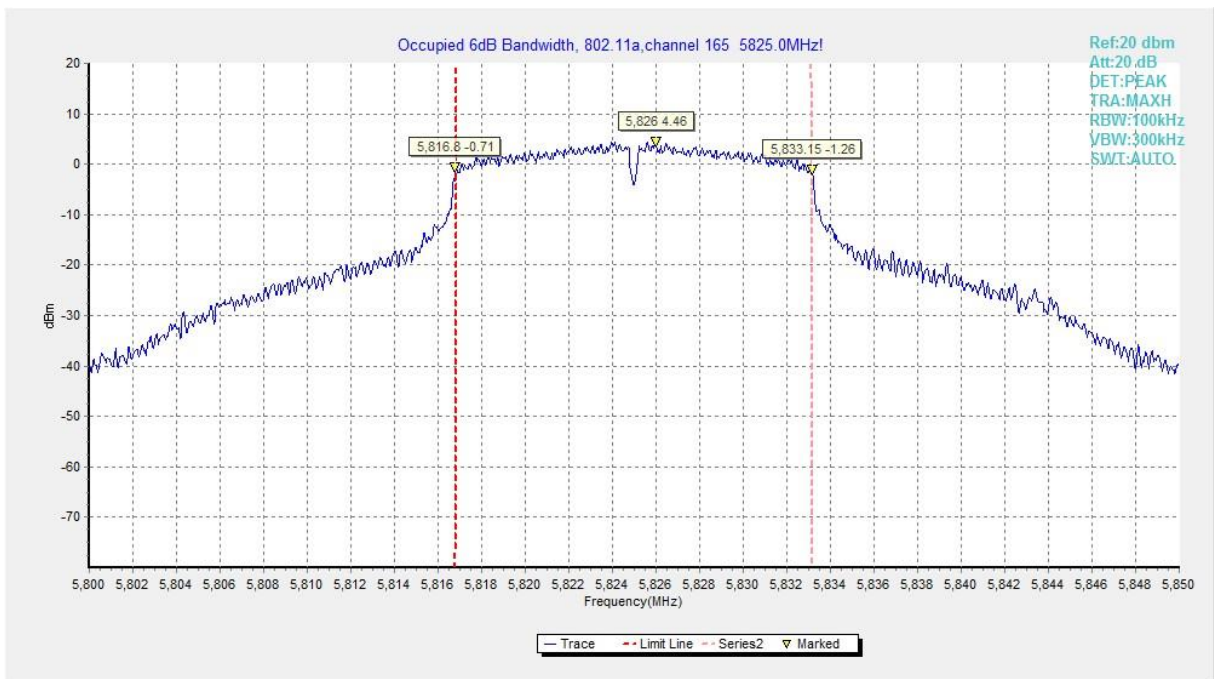


Fig. 3 Occupied 6dB Bandwidth (802.11a, Ch 165)

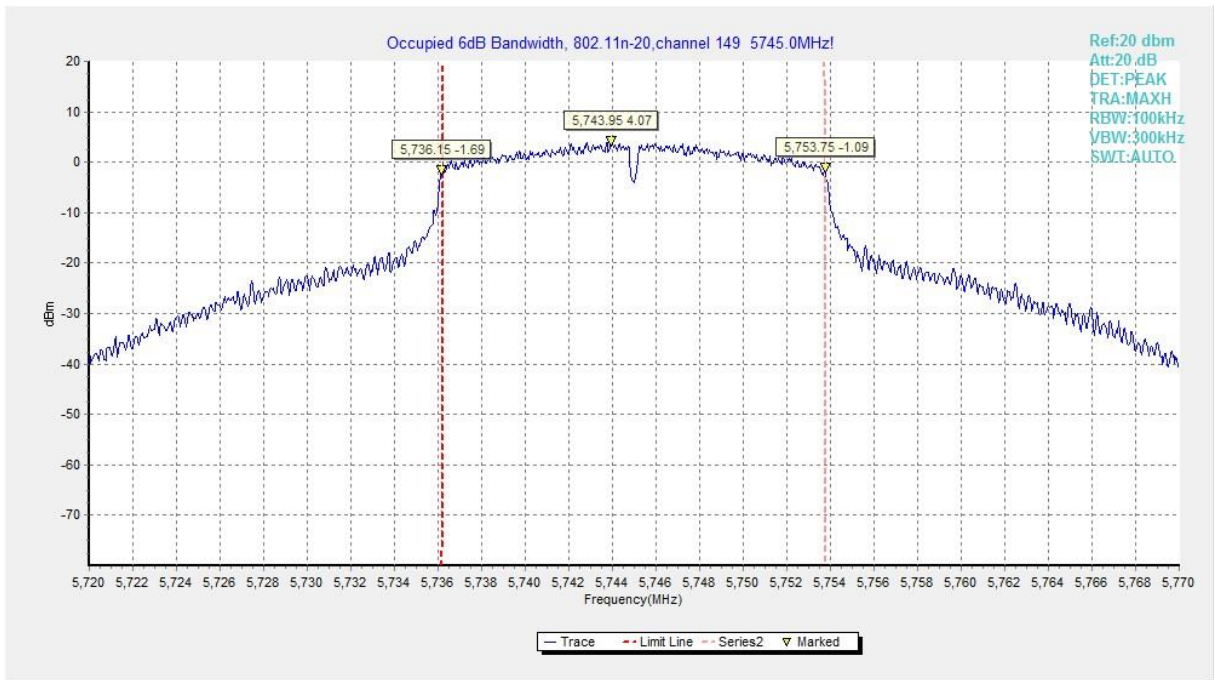


Fig. 4 Occupied 6dB Bandwidth (802.11n-HT20, Ch 149)

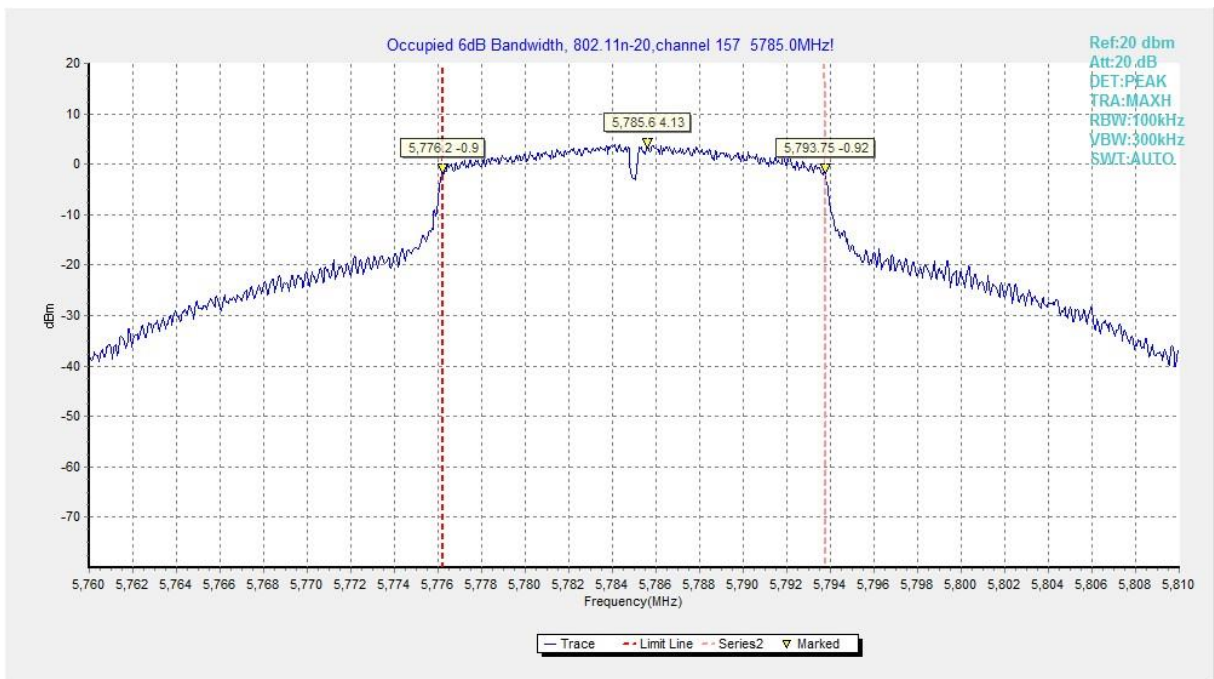


Fig. 5 Occupied 6dB Bandwidth (802.11n-HT20, Ch 157)

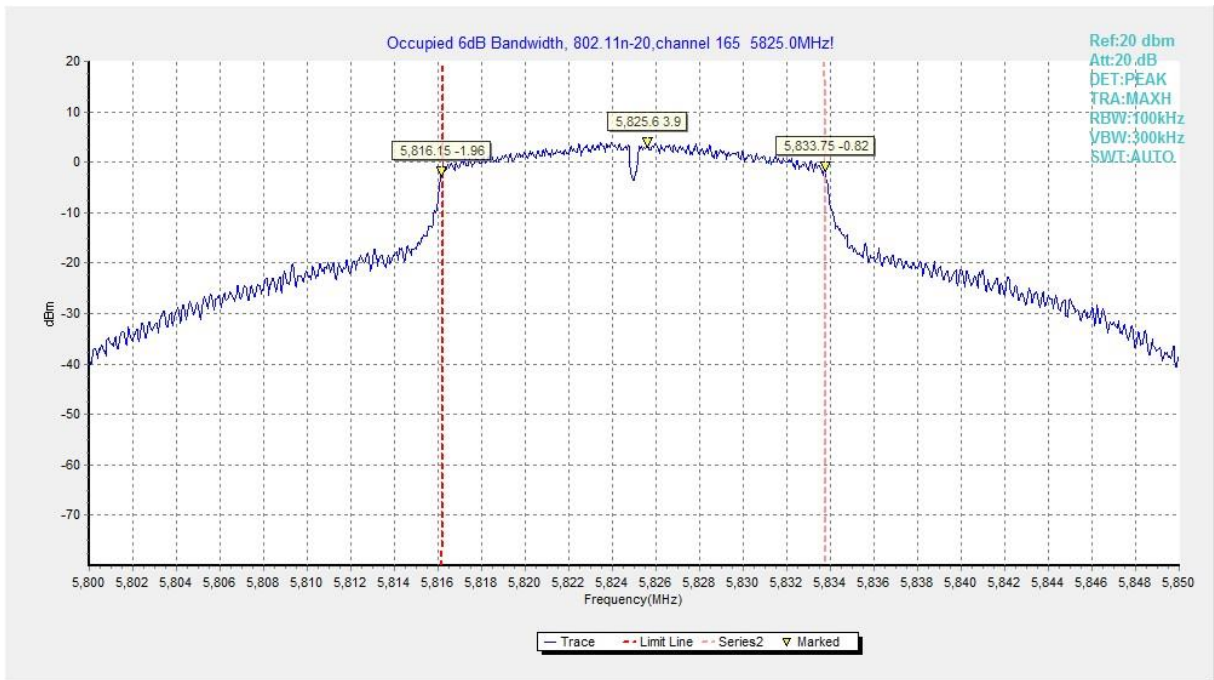


Fig. 6 Occupied 6dB Bandwidth (802.11n-HT20, Ch 165)

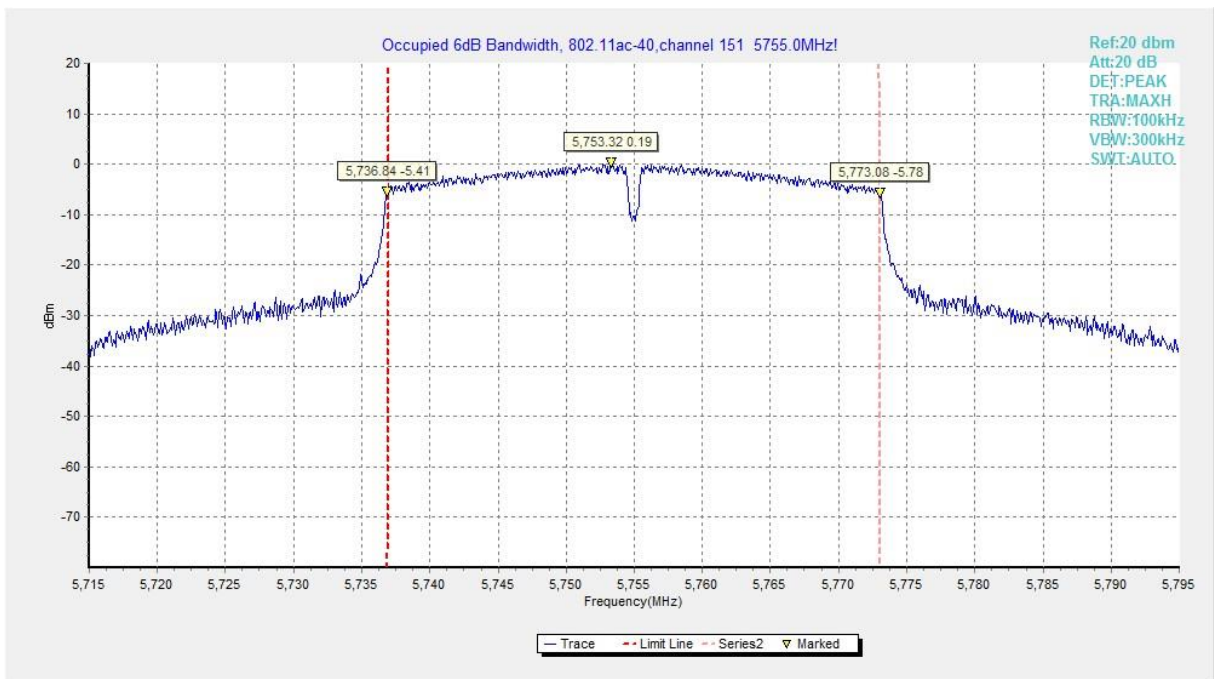


Fig. 7 Occupied 6dB Bandwidth (802.11ac-HT40, Ch 151)

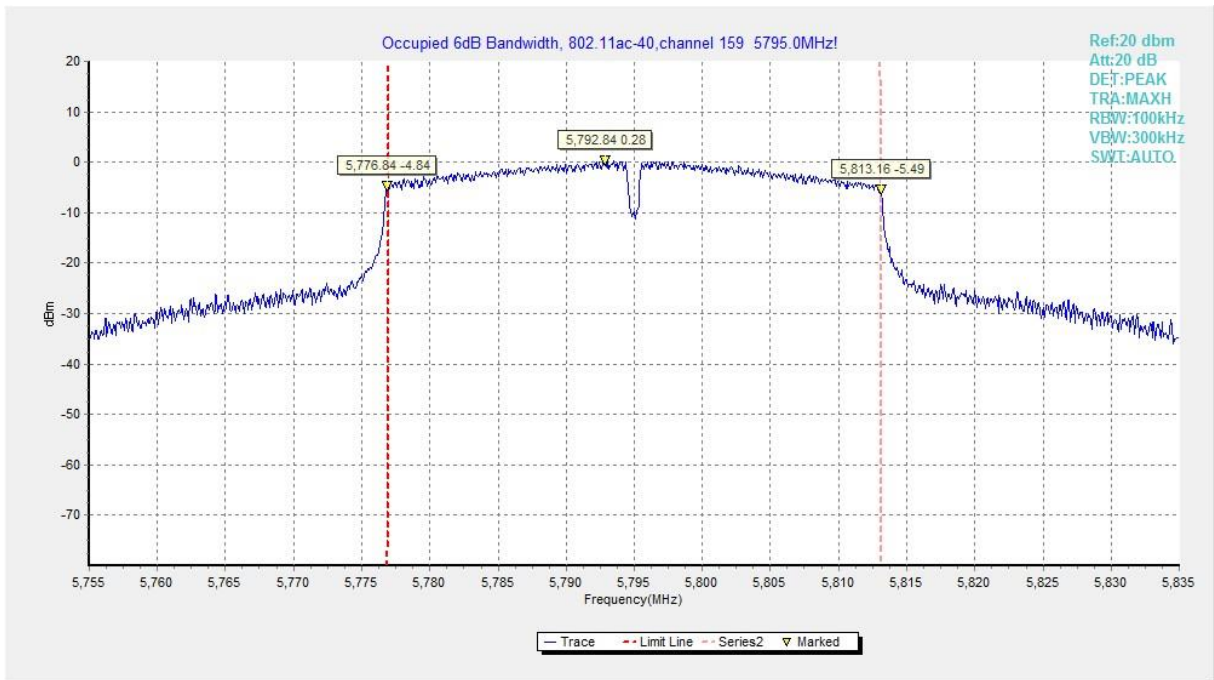


Fig. 8 Occupied 6dB Bandwidth (802.11ac-HT40, Ch 159)

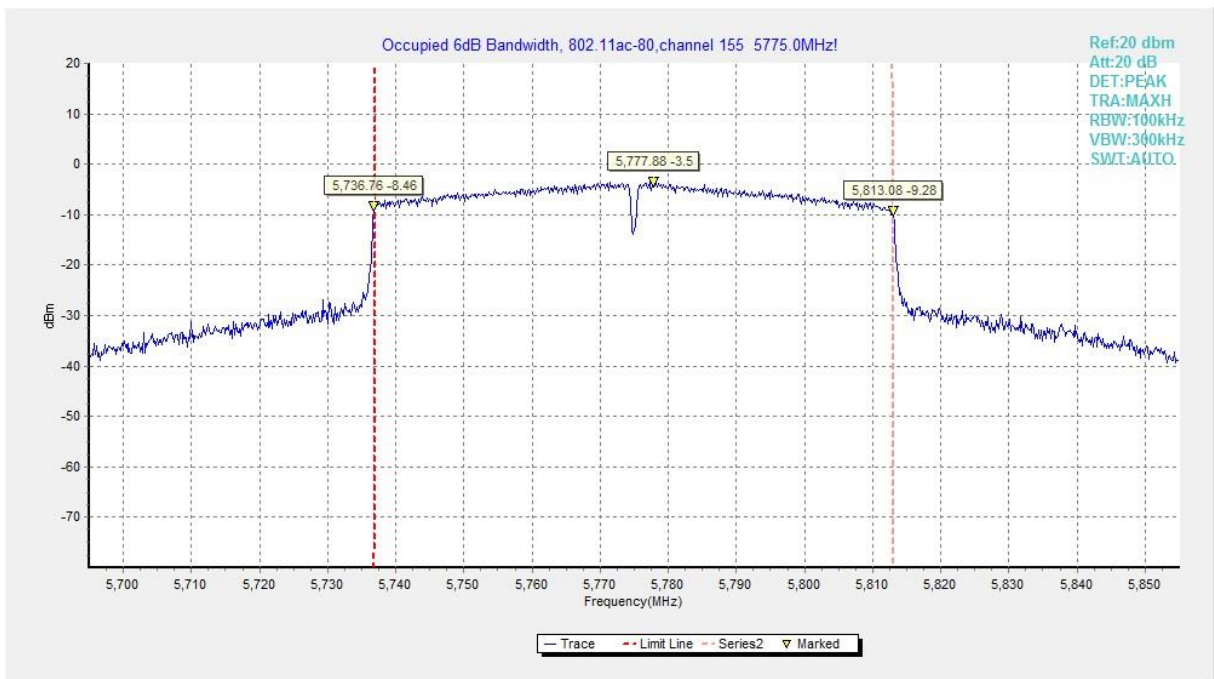


Fig. 9 Occupied 6dB Bandwidth (802.11ac-HT80, Ch 155)

A.5. Transmitter Spurious Emission

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC 47 CFR Part 15.407	5725MHz~5850MHz	< -27

The measurement is made according to ANSI C63.10 .

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Measurement Uncertainty:

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	0.63
2GHz ≤ f ≤ 3.6GHz	0.82
3.6GHz ≤ f ≤ 8GHz	1.55
8GHz ≤ f ≤ 20GHz	1.86
20GHz ≤ f ≤ 22GHz	1.90
22GHz ≤ f ≤ 26GHz	2.20

A.5.1 Transmitter Spurious Emission - Radiated

Measurement Limit:

Standard	Limit (dBm/MHz)	
FCC 47 CFR Part 15.407	at the band edge	27
	at 5 MHz above or below the band edge	15.6
	at 25 MHz above or below the band edge	10
	at 75 MHz or more above or below the band edge	-27
	Note: Increasing linearly from point to point.	

The measurement is made according to KDB 789033

Radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency (MHz)	Field strength(μV/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Set up:

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m. For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m

The EUT and transmitting antenna shall be centered on the turntable.

Test Procedure

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The receiver references:

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Measurement Results:

802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion	
802.11a	149	1 GHz ~ 3 GHz	---	P	
		3 GHz ~ 7 GHz	---	P	
		7 GHz ~ 18 GHz	---	P	
	157	157	9kHz ~30 MHz	---	P
			30 MHz ~1 GHz	---	P
			1 GHz ~ 3 GHz	---	P
			3 GHz ~ 7 GHz	---	P
			7 GHz ~ 18 GHz	---	P
			18 GHz ~ 26.5 GHz	---	P
			26.5 GHz~ 40 GHz	---	P

	165	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT20)	149	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	157	9kHz ~30 MHz	---	P
		30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P
	165	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11n-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	151	9kHz ~30 MHz	---	P
		30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P
	159	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11ac-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac (HT20)	149	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	157	9kHz ~30 MHz	---	P
		30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P

		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P
	165	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

802.11ac-HT40 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac (HT40)	151	9kHz ~30 MHz	---	P
		30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
	159	26.5 GHz~ 40 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
			7 GHz ~ 18 GHz	---

802.11ac-HT80 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac (HT80)	155	9kHz ~30 MHz	---	P
		30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

$$\text{Result} = P_{Mea} + A_{Rpl} = P_{Mea} + \text{Cable Loss} + \text{Antenna Factor}$$

Average Results:
802.11a

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5411.600	39.73	-22.41	34.37	27.77	54.00	14.27	V
5459.600	39.36	-22.69	34.38	27.66	54.00	14.64	V
11490.200	32.26	-29.15	38.20	23.22	54.00	21.74	V
17835.000	37.87	-22.48	41.53	18.82	54.00	16.13	H
17919.700	38.07	-22.66	41.52	19.21	54.00	15.93	H
17986.800	38.23	-22.80	41.50	19.52	54.00	15.77	V

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5388.800	39.34	-22.29	34.36	27.27	54.00	14.66	V
5434.800	39.10	-22.59	34.37	27.31	54.00	14.90	V
11570.500	32.08	-29.25	38.27	23.06	54.00	21.92	V
17885.600	38.15	-22.59	41.52	19.21	54.00	15.85	V
17912.000	38.22	-22.64	41.52	19.34	54.00	15.78	H
17971.400	37.96	-22.76	41.51	19.22	54.00	16.04	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5382.400	39.81	-22.29	34.35	27.75	54.00	14.19	V
5413.200	39.65	-22.42	34.37	27.70	54.00	14.35	V
11649.700	31.98	-29.41	38.35	23.04	54.00	22.02	V
17802.000	37.59	-22.42	41.54	18.47	54.00	16.41	H
17898.800	38.23	-22.62	41.52	19.32	54.00	15.77	H
17974.700	37.96	-22.77	41.50	19.23	54.00	16.04	H

802.11n-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5385.200	40.09	-22.29	34.36	28.03	54.00	13.91	V
5395.600	39.95	-22.29	34.36	27.88	54.00	14.05	V
11490.200	32.24	-29.15	38.20	23.19	54.00	21.76	V
17783.300	37.88	-22.37	41.54	18.71	54.00	16.12	V
17894.400	38.12	-22.61	41.52	19.21	54.00	15.88	H
17941.700	38.01	-22.70	41.51	19.20	54.00	15.99	H

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5390.800	39.61	-22.29	34.36	27.54	54.00	14.39	V
5437.600	39.40	-22.61	34.38	27.63	54.00	14.60	V
11570.500	32.04	-29.25	38.27	23.02	54.00	21.96	V
17776.700	37.94	-22.36	41.54	18.75	54.00	16.06	H
17891.100	38.28	-22.60	41.52	19.36	54.00	15.72	H
17920.800	38.14	-22.66	41.52	19.29	54.00	15.86	H

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5389.200	39.66	-22.29	34.36	27.59	48.30	8.64	V
5437.600	39.49	-22.61	34.38	27.72	48.30	8.81	V
11649.700	32.09	-29.41	38.35	23.14	48.30	16.21	H
17769.000	37.96	-22.34	41.55	18.75	48.30	10.34	H
17888.900	38.13	-22.60	41.52	19.20	48.30	10.17	V
17945.000	37.94	-22.71	41.51	19.14	48.30	10.36	H

802.11n-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5388.400	39.84	-22.29	34.36	27.77	54.00	14.16	V
5425.600	39.41	-22.52	34.37	27.55	54.00	14.59	V
11510.000	32.15	-29.14	38.21	23.08	54.00	21.85	V
17882.300	38.08	-22.58	41.52	19.14	54.00	15.92	V
17928.500	38.09	-22.68	41.51	19.25	54.00	15.91	V
17964.800	37.99	-22.75	41.51	19.24	54.00	16.01	V

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5390.000	39.79	-22.29	34.36	27.72	54.00	14.21	V
5407.600	39.61	-22.37	34.36	27.62	54.00	14.39	V
11590.300	32.17	-29.28	38.29	23.15	54.00	21.83	H
17826.200	37.89	-22.47	41.53	18.82	54.00	16.11	V
17891.100	38.22	-22.60	41.52	19.30	54.00	15.78	V
17945.000	38.00	-22.71	41.51	19.20	54.00	16.00	H

802.11ac-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5383.600	40.35	-22.29	34.36	28.28	54.00	13.65	V
5434.400	40.05	-22.58	34.37	28.26	54.00	13.95	V
11490.200	32.29	-29.15	38.20	23.24	54.00	21.71	H
17772.300	37.97	-22.35	41.55	18.77	54.00	16.03	H
17899.900	38.18	-22.62	41.52	19.28	54.00	15.82	V
17964.800	37.93	-22.75	41.51	19.17	54.00	16.07	H

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5385.200	39.87	-22.29	34.36	27.80	54.00	14.13	V
5405.600	39.62	-22.36	34.36	27.62	54.00	14.38	V
11570.500	31.96	-29.25	38.27	22.94	54.00	22.04	V
17797.600	37.79	-22.40	41.54	18.66	54.00	16.21	V
17907.600	38.34	-22.63	41.52	19.46	54.00	15.66	V
17970.300	38.09	-22.76	41.51	19.35	54.00	15.91	H

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5386.000	39.74	-22.29	34.36	27.67	48.30	8.56	V
5424.400	39.52	-22.51	34.37	27.65	48.30	8.78	V
11649.700	32.06	-29.41	38.35	23.12	48.30	16.24	H
17835.000	37.88	-22.48	41.53	18.83	48.30	10.42	V
17875.700	37.98	-22.57	41.52	19.02	48.30	10.32	V
17903.200	38.31	-22.63	41.52	19.42	48.30	9.99	V

802.11ac-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5396.400	40.25	-22.29	34.36	28.18	54.00	13.75	V
5432.000	40.06	-22.57	34.37	28.25	54.00	13.94	V
11510.000	32.08	-29.14	38.21	23.01	54.00	21.92	H
17752.500	37.92	-22.30	41.55	18.67	54.00	16.08	H
17792.100	37.97	-22.39	41.54	18.82	54.00	16.03	V
17912.000	38.26	-22.64	41.52	19.38	54.00	15.74	V

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5396.400	40.12	-22.29	34.36	28.05	54.00	13.88	V
5428.800	40.03	-22.54	34.37	28.20	54.00	13.97	V
11590.300	32.17	-29.28	38.29	23.16	54.00	21.83	V
17775.600	38.03	-22.35	41.54	18.84	54.00	15.97	H
17902.100	38.37	-22.62	41.52	19.48	54.00	15.63	H
17953.800	37.98	-22.73	41.51	19.20	54.00	16.02	V

802.11ac-HT80

Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5384.000	39.2	-22.3	34.5	26.93	54.0	14.8	V
5397.200	39.1	-22.3	34.5	26.87	54.0	14.9	V
11380.200	32.7	-29.8	38.4	24.20	54.0	21.3	H
17070.500	37.7	-23.0	41.6	19.08	54.0	16.3	V
17769.000	38.0	-22.3	41.3	19.11	54.0	16.0	V
17915.300	38.5	-22.6	41.3	19.89	54.0	15.5	V

Peak Results:
802.11a

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5651.484	53.90	-22.84	34.68	42.06	69.30	15.39	H
5656.877	54.77	-22.84	34.69	42.92	73.29	18.52	V
11490.200	46.13	-29.15	38.20	37.08	68.30	22.17	V
17234.950	56.67	-22.85	41.92	37.60	68.30	11.63	V
17362.550	56.01	-22.95	41.76	37.20	68.30	12.29	H
17610.600	56.62	-22.17	41.58	37.21	68.30	11.68	V

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5741.200	55.95	-22.96	34.84	44.07	68.30	12.34	H
5833.200	56.42	-22.52	35.01	43.93	68.30	11.88	V
11569.950	46.97	-29.24	38.27	37.95	68.30	21.33	V
17354.850	53.65	-22.93	41.77	34.81	68.30	14.65	H
17540.200	56.10	-22.64	41.59	37.14	68.30	12.20	V
17627.100	56.72	-22.06	41.57	37.21	68.30	11.58	H

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5920.297	54.42	-22.24	35.16	41.50	71.68	17.26	H
5922.401	54.89	-22.23	35.17	41.95	70.12	15.24	H
11650.250	46.10	-29.41	38.35	37.16	68.30	22.20	H
17474.750	54.72	-23.07	41.63	36.16	68.30	13.58	V
17530.850	57.39	-22.70	41.59	38.50	68.30	10.91	H
17634.250	56.88	-22.03	41.57	37.33	68.30	11.42	H

802.11n-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5650.460	54.43	-22.84	34.68	42.59	68.54	14.11	H
5654.991	54.79	-22.84	34.69	42.94	71.89	17.11	V
11490.200	46.34	-29.15	38.20	37.29	68.30	21.96	V
17234.950	54.40	-22.85	41.92	35.33	68.30	13.90	V
17489.050	56.47	-22.97	41.61	37.83	68.30	11.83	V
17596.300	56.39	-22.26	41.58	37.08	68.30	11.91	H

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5735.200	56.02	-22.97	34.83	44.15	68.30	12.28	H
5865.400	57.10	-22.41	35.07	44.45	68.30	11.20	V
11570.500	46.37	-29.25	38.27	37.34	68.30	21.93	V
17776.700	54.64	-22.36	41.54	35.45	68.30	13.66	H
17891.100	55.48	-22.60	41.52	36.56	68.30	12.82	V
17920.800	57.36	-22.66	41.52	38.50	68.30	10.94	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5917.502	56.49	-22.26	35.16	43.59	73.75	17.26	H
5924.908	56.14	-22.21	35.17	43.18	68.27	12.13	V
11650.250	45.49	-29.41	38.35	36.54	74.00	28.51	H
17474.750	54.06	-23.07	41.63	35.50	68.30	14.24	H
17564.950	57.15	-22.47	41.59	38.04	68.30	11.15	H
17668.900	56.19	-22.11	41.57	36.73	68.30	12.11	H

802.11n-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5652.680	54.74	-22.84	34.68	42.90	70.18	15.44	H
5656.774	56.59	-22.84	34.69	44.74	73.21	16.62	V
11510.000	45.69	-29.14	38.21	36.63	68.30	22.61	V
17265.200	54.55	-22.80	41.88	35.47	74.00	19.45	H
17382.350	55.71	-23.00	41.74	36.97	68.30	12.59	V
17495.650	56.70	-22.93	41.61	38.02	68.30	11.60	H

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5917.766	55.27	-22.25	35.16	42.37	73.55	18.28	V
5923.068	55.21	-22.22	35.17	42.26	69.63	14.42	V
11589.750	46.41	-29.28	38.29	37.40	74.00	27.59	H
17385.100	54.74	-23.01	41.74	36.01	68.30	13.56	V
17515.450	56.28	-22.80	41.60	37.48	68.30	12.02	V
17604.000	56.58	-22.21	41.58	37.21	68.30	11.72	H

802.11ac-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5650.655	55.37	-22.84	34.68	43.53	68.69	13.31	V
5653.922	55.31	-22.84	34.69	43.46	71.10	15.79	H
11490.200	45.83	-29.15	38.20	36.78	74.00	28.17	H
17234.950	54.70	-22.85	41.92	35.63	68.30	13.60	V
17722.250	57.55	-22.23	41.56	38.22	68.30	10.75	H
17945.550	57.65	-22.71	41.51	38.85	68.30	10.65	H

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5744.000	57.70	-22.95	34.85	45.80	68.30	10.60	H
5833.400	56.68	-22.52	35.01	44.19	68.30	11.62	H
11569.950	46.61	-29.24	38.27	37.58	74.00	27.39	H
17354.800	54.69	-22.93	41.77	35.85	68.30	13.61	H
17487.950	57.00	-22.98	41.61	38.37	68.30	11.30	H
17591.350	56.39	-22.30	41.58	37.11	68.30	11.91	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5920.158	55.20	-22.24	35.16	42.27	71.78	16.59	V
5924.551	55.80	-22.21	35.17	42.84	68.53	12.73	V
11650.250	45.72	-29.41	38.35	36.77	68.30	22.58	H
17474.750	55.80	-23.07	41.63	37.24	68.30	12.50	V
17621.600	56.43	-22.10	41.58	36.95	68.30	11.87	V
17704.100	56.98	-22.19	41.56	37.61	68.30	11.32	H

802.11ac-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5652.392	55.25	-22.84	34.68	43.41	69.97	14.72	V
5656.877	54.63	-22.84	34.69	42.77	73.29	18.66	V
11510.000	46.06	-29.14	38.21	36.99	74.00	27.94	V
17265.200	55.20	-22.80	41.88	36.12	68.30	13.10	V
17398.850	56.22	-23.04	41.72	37.54	68.30	12.08	H
17546.800	57.18	-22.59	41.59	38.19	68.30	11.12	V

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5920.342	55.21	-22.24	35.16	42.28	71.65	16.44	H
5923.413	55.68	-22.22	35.17	42.73	69.37	13.70	V
11589.750	45.72	-29.28	38.29	36.70	74.00	28.28	H
17385.100	55.78	-23.01	41.74	37.04	68.30	12.52	V
17457.150	56.75	-23.18	41.65	38.27	68.30	11.55	V
17602.350	56.96	-22.22	41.58	37.60	68.30	11.34	V

802.11ac-HT80

Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5650.851	59.4	-22.8	34.8	47.47	68.3	8.9	H
5654.267	58.0	-22.8	34.8	46.00	68.3	10.3	V
11550.150	46.9	-29.2	38.5	37.58	74.0	27.1	H
17325.150	54.0	-22.9	41.4	35.47	68.3	14.3	H
17457.700	55.7	-23.2	41.2	37.63	68.3	12.6	H
17590.250	57.0	-22.3	41.2	38.13	68.3	11.3	V

A.6. Band Edges Compliance

A6.1 Band Edges - Radiated

Measurement Limit:

Standard	Limit (dBm/MHz)	
FCC 47 CFR Part 15.407	at the band edge	27
	at 5 MHz above or below the band edge	15.6
	at 25 MHz above or below the band edge	10
	at 75 MHz or more above or below the band edge	-27
	Note: increasing linearly from point to point.	

Set up:

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m and the table height shall be 1.5 m.

The EUT and transmitting antenna shall be centered on the turntable.

Test Procedure

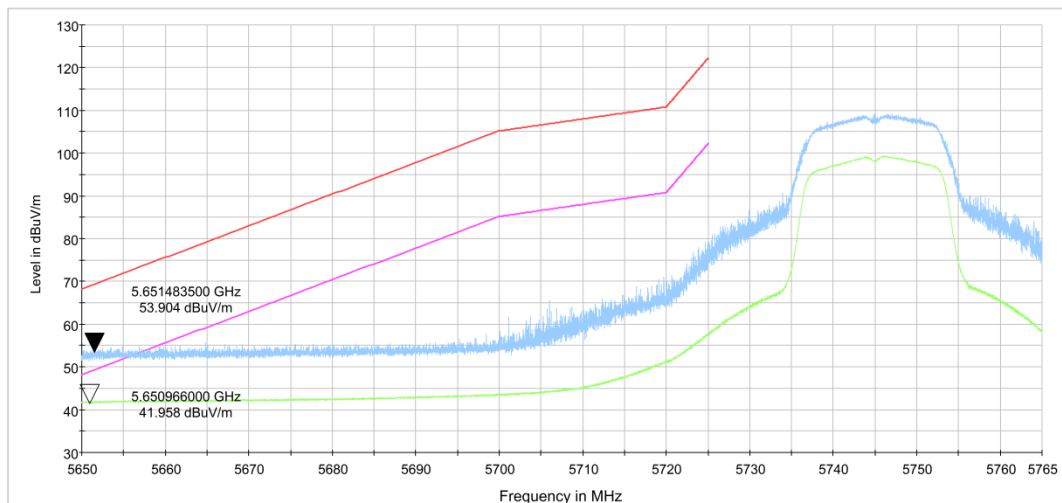
The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The receiver references:

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/3MHz	15
4000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz	Fig.10	P
	5825 MHz	Fig.11	P
802.11n HT20	5745 MHz	Fig.12	P
	5825 MHz	Fig.13	P
802.11n HT40	5755 MHz	Fig.14	P
	5795 MHz	Fig.15	P
802.11ac HT20	5745 MHz	Fig.16	P
	5825 MHz	Fig.17	P
802.11ac HT40	5755 MHz	Fig.18	P
	5795 MHz	Fig.19	P
802.11ac HT80	5775 MHz	Fig.20 Fig.21	P

Conclusion: PASS
Test graphs as below:

Fig. 10 Band Edges (802.11a Ch149,5745MHz)

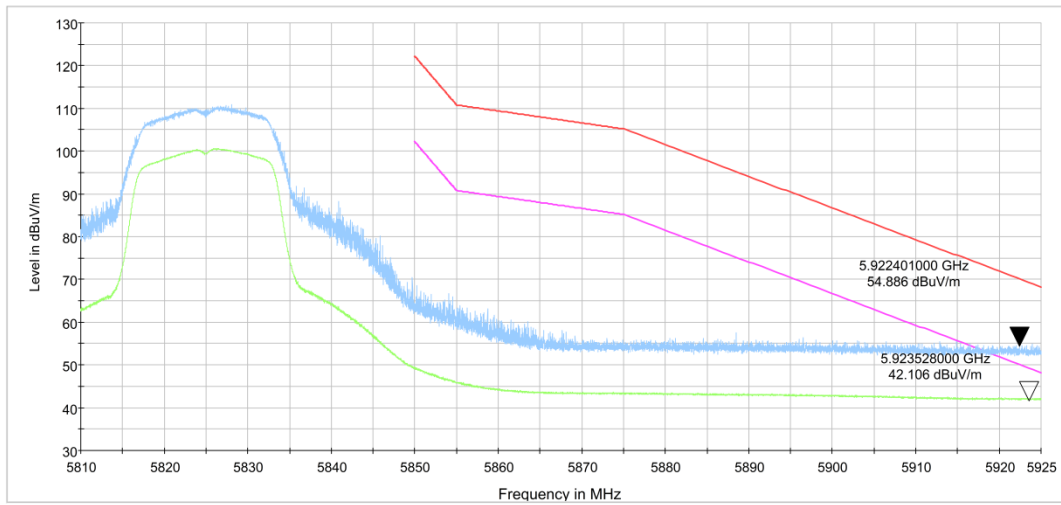


Fig. 11 Band Edges (802.11a Ch165, 5825MHz)

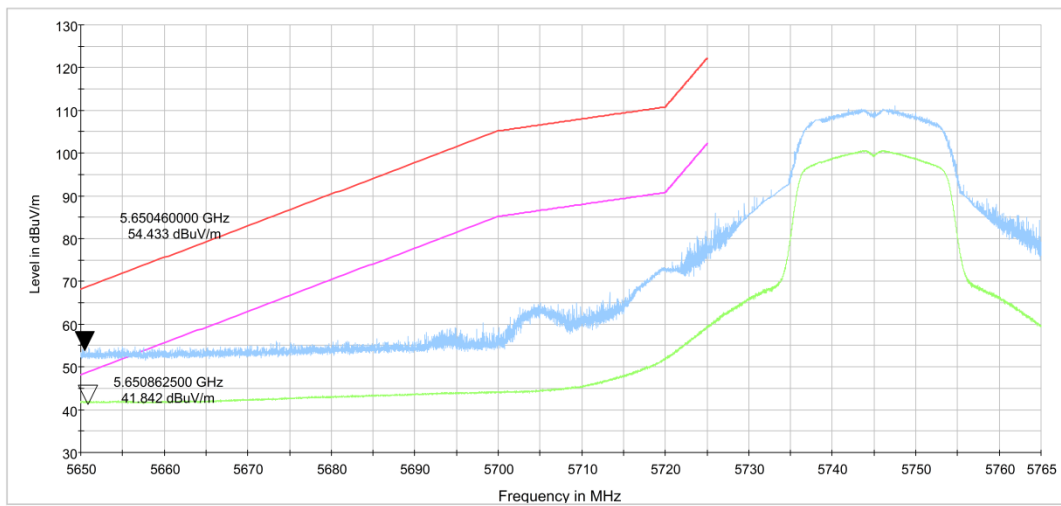


Fig. 12 Band Edges (802.11n-HT20 Ch149, 5745MHz)

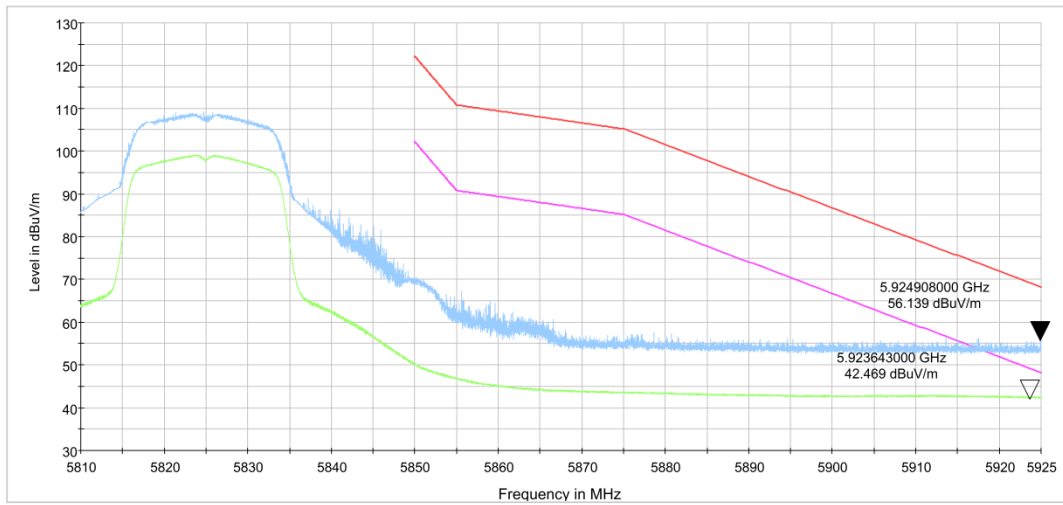


Fig. 13 Band Edges (802.11n-HT20 Ch165, 5825MHz)

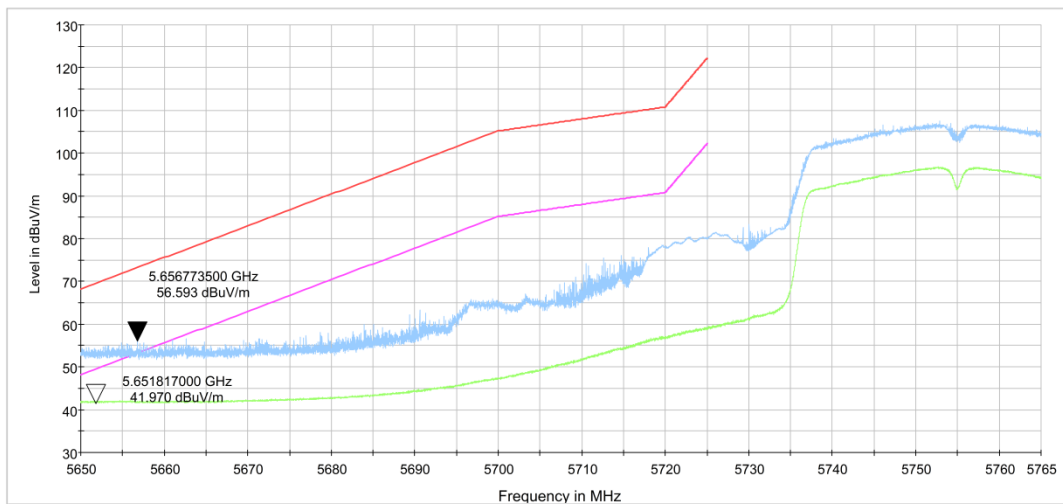


Fig. 14 Band Edges (802.11n-HT40 Ch151, 5755MHz)

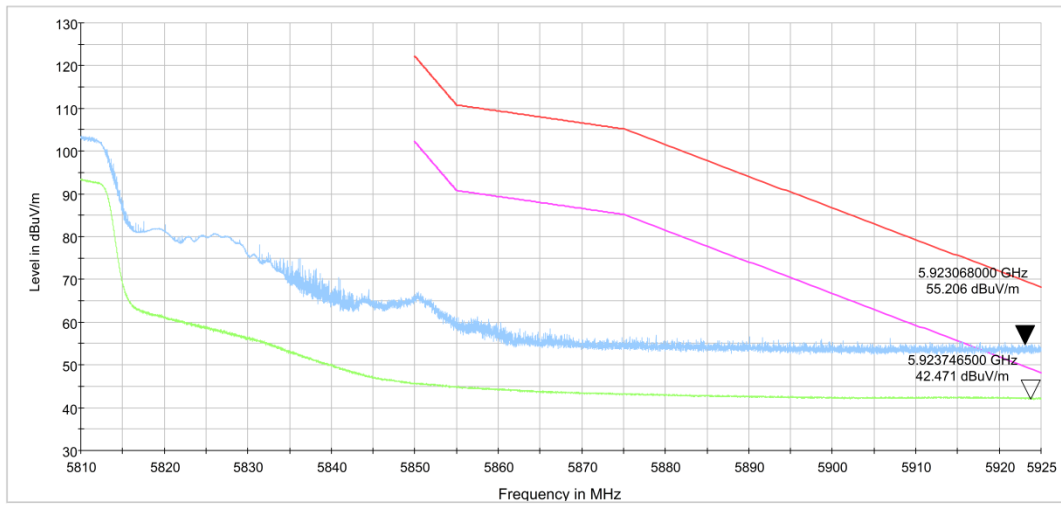


Fig. 15 Band Edges (802.11n-HT40 Ch159, 5795MHz)

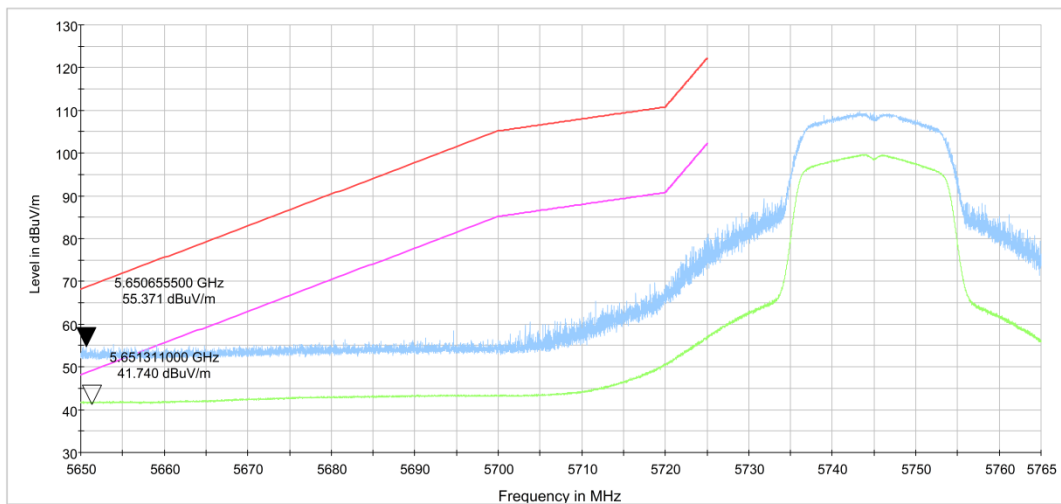


Fig. 16 Band Edges (802.11ac-HT20 Ch149, 5745MHz)

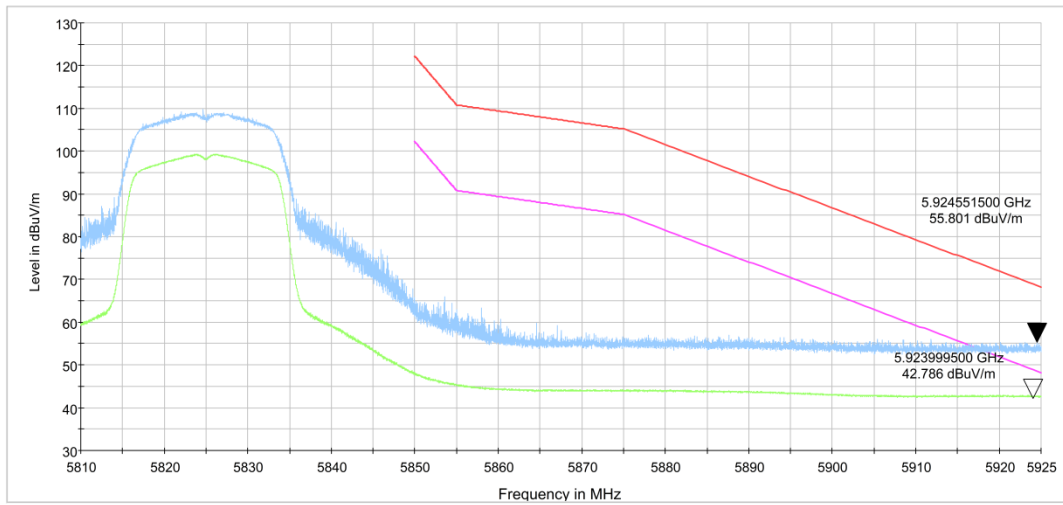


Fig. 17 Band Edges (802.11ac-HT20 Ch165, 5825MHz)

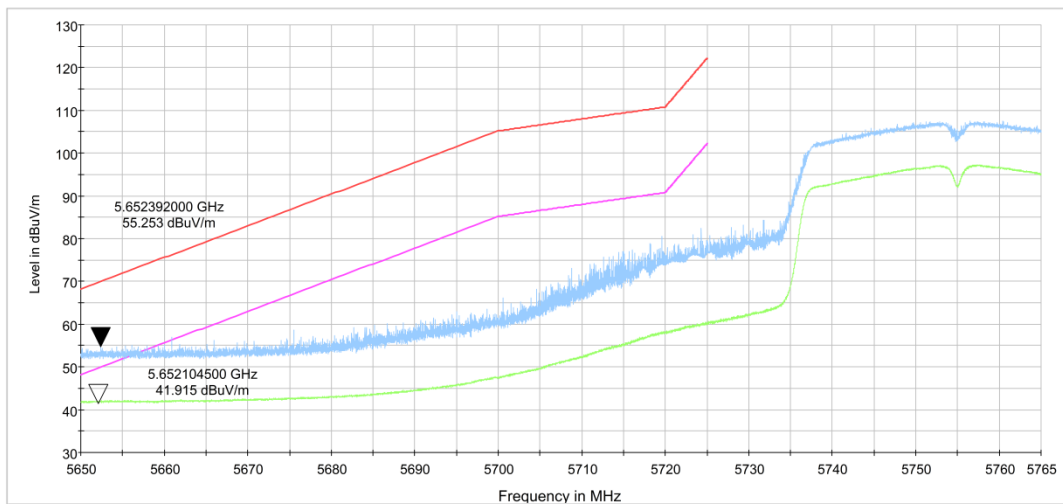


Fig. 18 Band Edges (802.11ac-HT40 Ch151, 5755MHz)

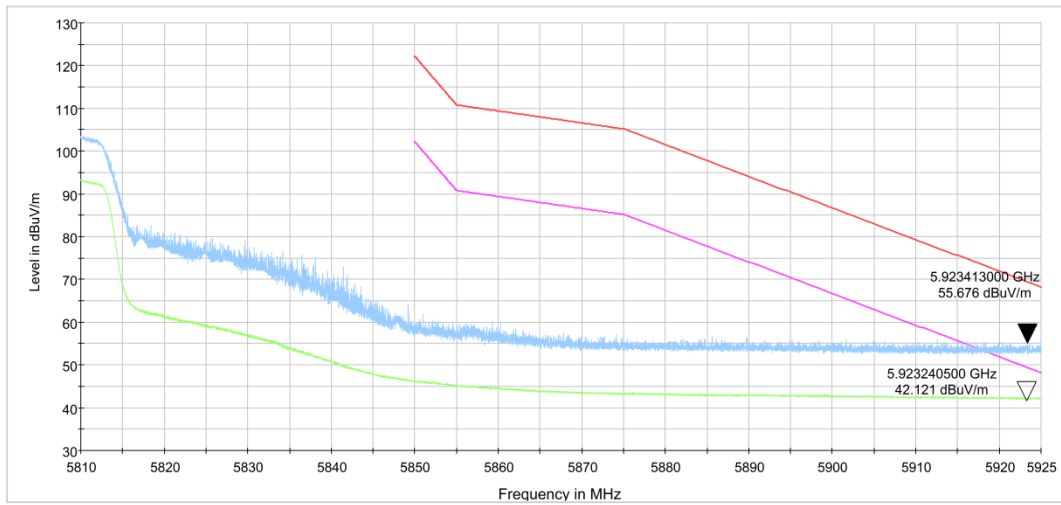


Fig. 19 Band Edges (802.11ac-HT40 Ch159, 5795MHz)

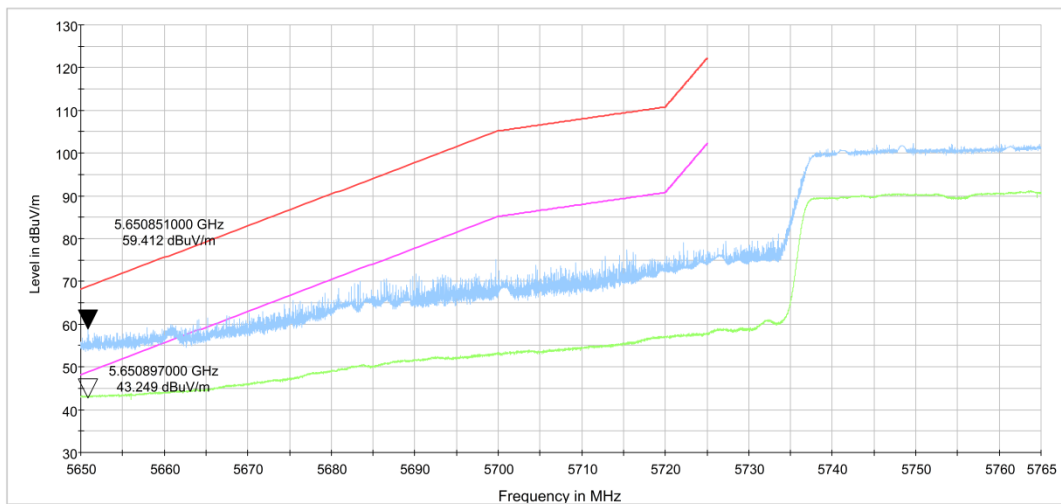


Fig. 20 Band Edges (802.11ac-HT80 Ch155, 5775MHz)

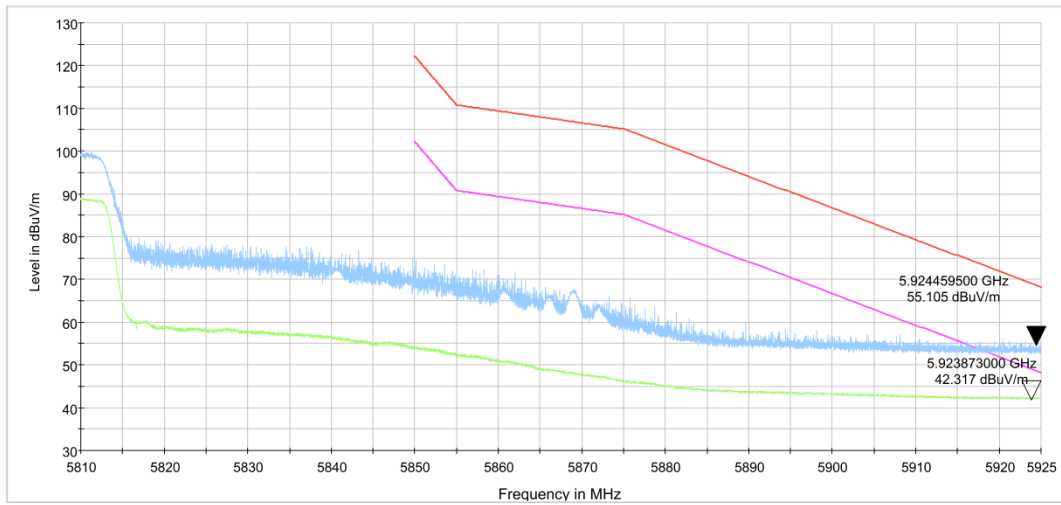


Fig. 21 Band Edges (802.11ac-HT80, 5775MHz)

A.7. AC Powerline Conducted Emission

Method of Measurement:

See Clause 6.2 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 generally.

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

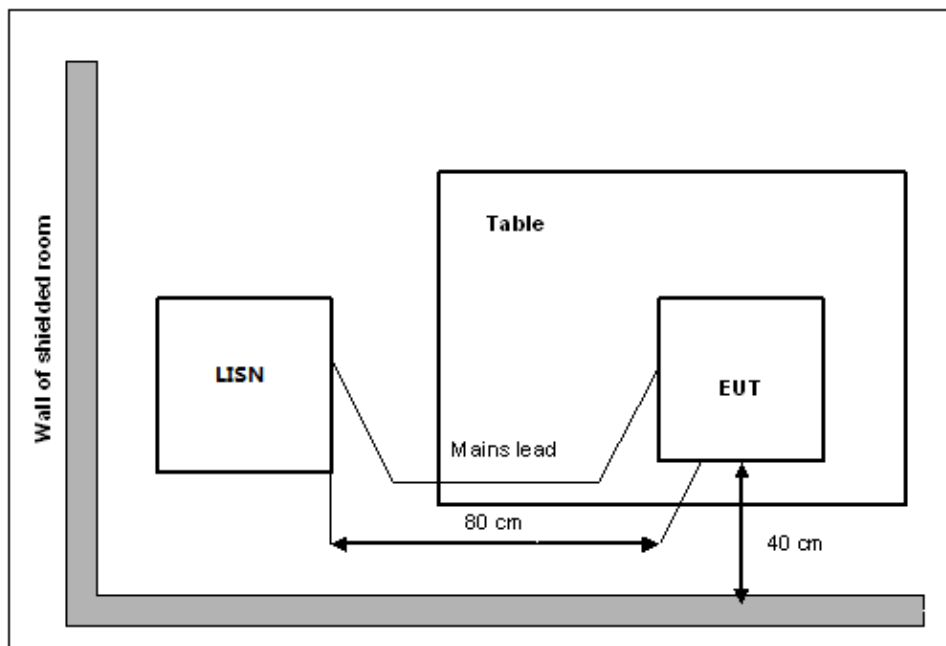
The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/VBW
0.15-30	9kHz

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Setup



Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	66 to 56	Fig.22	Fig.23	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	56 to 46	Fig.22	Fig.23	P
0.5 to 5	46			
5 to 30	50			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to ANSI C63.10 .

Conclusion: PASS
Test graphs as below:

Traffic:

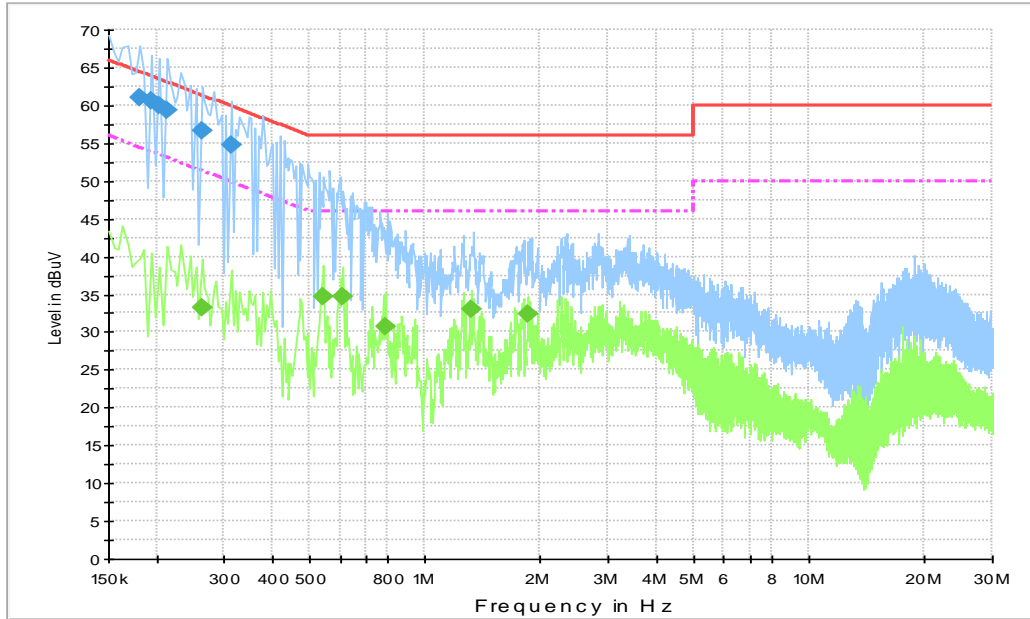


Fig. 22 AC Power line Conducted Emission-802.11a

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.181500	60.9	1000.	9.000	N	19.7	3.5	64.4
0.195000	60.6	1000.	9.000	N	19.6	3.2	63.8
0.204000	59.9	1000.	9.000	N	19.7	3.5	63.4
0.213000	59.2	1000.	9.000	N	19.7	3.8	63.1
0.262500	56.6	1000.	9.000	N	19.7	4.8	61.4
0.312000	54.7	1000.	9.000	L1	19.7	5.2	59.9

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.262500	33.2	1000.0	9.000	L1	19.7	18.1	51.4
.546000	34.7	1000.0	9.000	L1	19.8	11.3	46.0
0.613500	34.6	1000.0	9.000	L1	19.7	11.4	46.0
0.789000	30.6	1000.0	9.000	L1	19.7	15.4	46.0
1.320000	32.9	1000.0	9.000	L1	19.7	13.1	46.0
1.860000	32.3	1000.0	9.000	L1	19.7	13.7	46.0

Idle:

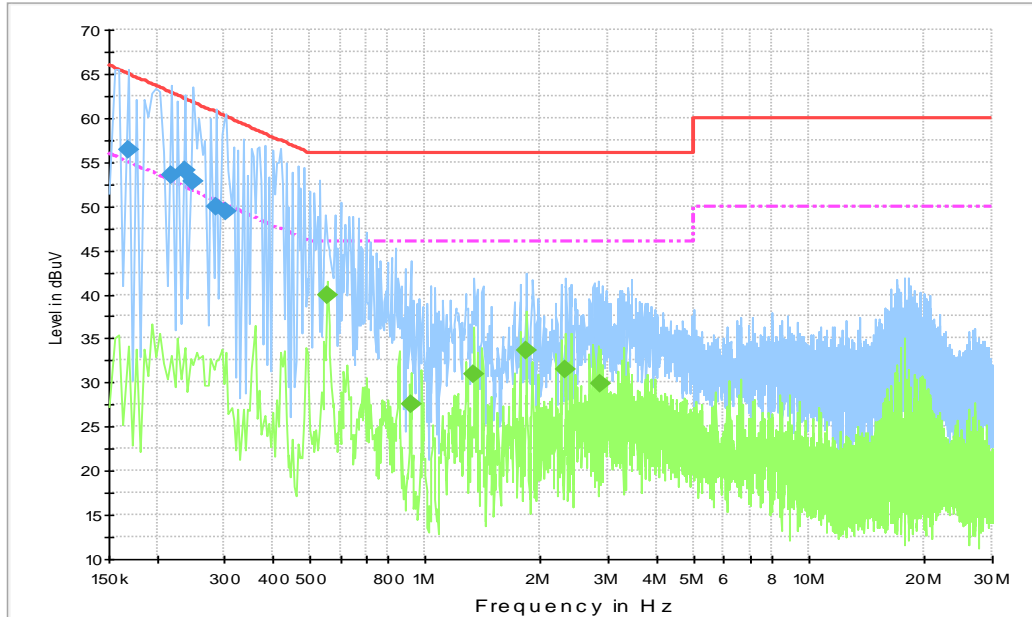


Fig. 23 AC Power line Conducted Emission-Idle

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.168000	56.3	1000.	9.000	L1	19.7	8.7	65.1
0.217500	53.5	1000.	9.000	L1	19.7	9.5	62.9
0.235500	54.0	1000.	9.000	L1	19.7	8.2	62.3
0.249000	52.7	1000.	9.000	L1	19.7	9.1	61.8
0.285000	50.0	1000.	9.000	L1	19.7	10.7	60.7
0.303000	49.3	1000.	9.000	L1	19.7	10.8	60.2




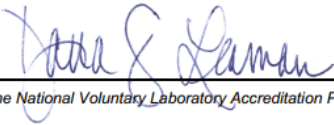
Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.555000	39.9	1000.0	9.000	L1	19.8	6.1	46.0
0.919500	27.6	1000.0	9.000	L1	19.7	18.4	46.0
1.342500	30.9	1000.0	9.000	L1	19.7	15.1	46.0
1.833000	33.6	1000.0	9.000	L1	19.7	12.4	46.0
2.328000	31.4	1000.0	9.000	L1	19.6	14.6	46.0
2.872500	29.9	1000.0	9.000	L1	19.7	16.1	46.0

ANNEX B: EUT parameters

Disclaimer: the worse case provided and antenna gain by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

ANNEX C: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p>  	
<hr/> Certificate of Accreditation to ISO/IEC 17025:2017 <hr/>	
NVLAP LAB CODE: 600118-0	
Telecommunication Technology Labs, CAICT Beijing China	
<i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i>	
Electromagnetic Compatibility & Telecommunications	
<i>This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).</i>	
2020-09-29 through 2021-09-30 <i>Effective Dates</i>	  <i>For the National Voluntary Laboratory Accreditation Program</i>

*** END OF REPORT BODY ***