



FCC PART 15C TEST REPORT No. 23T04Z70506-09

for

Samsung Electronics Co., Ltd.

Multi-band WCDMA/LTE/5GNR Tablet with Bluetooth, WLAN

SM-X218U

FCC ID: ZCASM218U

with

Hardware Version: REV1.0

Software Version: X218U.001

Issued Date: 2023-11-01

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.

Test Laboratory:

CTTL-Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
23T04Z70506-09	Rev.0	1st edition	2023-11-01

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under American Association for Laboratory Accreditation (A2LA) with lab code 7049.01, and is also an FCC accredited test laboratory (CN1349), and ISED accredited test laboratory (CAB identifier:CN0066). The detail accreditation scope can be found on A2LA 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(huayuan North Road)

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

1.3. TestingEnvironment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.4. Project date

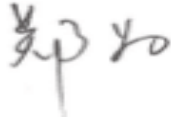
Testing Start Date: 2023-09-11

Testing End Date: 2023-11-01

1.5. Signature



(Prepared this test report)



Zheng Wei

(Reviewed this test report)



Pang Shuai

(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name: Samsung Electronics Co., Ltd.
Address: 19 Chapin Rd., Building D Pine Brook, NJ 07058
City: New Jersey
Postal Code: /
Country: US
Telephone: +1-201-937-4203
Fax: /

2.2. Manufacturer Information

Company Name: Samsung Electronics Co., Ltd.
Address: Samsung R5, Maetan dong 129, Samsung ro
Youngtong gu, Suwon city 443 742, Korea
City: Suwon
Postal Code: /
Country: Korea
Telephone: +82-10-2722-4159
Fax: /

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Multi-band WCDMA/LTE/5G NR Tablet with Bluetooth, WLAN
Model name	SM-X218U
FCC ID	ZCASM218U
WLAN Frequency Band	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Nominal Voltage	3.85V
Extreme High Voltage	4.40V
Extreme Low Voltage	3.55V

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version	Date of receipt
UT12a	2370506UT12a	REV1.0	X218U.001	2023-09-24
UT28a	2370506UT28a	REV1.0	X218U.001	2023-09-24

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

UT28a is used for Conduction test, UT12a is used for Radiation test.

3.3. Internal Identification of AE used during the test

AE ID*	Name	Model	Manufacturer
AE1	Battery	WT-S-W11	SCUD (Fujian) Electronics Co., Ltd.
AE2*	Adapter	EP-T1510	DONGGUAN DONGWON ELECTRONICS CO.,LTD.
AE3-1	Date Cable1 C-C	EP-DN980BWE	Guangxi Broad Telecommunication Co.,Ltd.
AE3-2	Date Cable2 C-C	EP-DN980BWE	RFTECH Co., Ltd.
AE3-3	Date Cable3 C-C	EP-DN980BWE	CRESYN HANOI Co., Ltd
AE5*	Headset	ESH61ASFWE	/

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

*AE2 and A5 are not the AE for EUT, provided by the client for relevant tests.

3.4. General Description

Equipment Under Test (EUT) is a model of Multi-band WCDMA/LTE/5G NR Tablet with Bluetooth, WLAN 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	2021
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

5. Laboratory Environment

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

6. 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 - 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 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.

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	3.85V
Humidity	44%

7. Test Facilities 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	2024-07-04
2	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2024-03-06
3	Attenuator	10dB/2W	/	Rosenberger	/	/
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	R&S	1 year	2024-06-29
2	Test Receiver	ESW44	103015	R&S	1 year	2024-01-14
3	Loop Antenna	HFH2-Z2	829324/007	R&S	1 year	2023-12-22
4	EMI Antenna	VULB9163	9163-235	Schwarzbeck	1 year	2024-06-10
5	EMI Antenna	3117	00119021	ETS-Lindgren	1 year	2024-06-24
6	EMI Antenna	LB-180400 -25-C-KF	21100840000 06	A-INFO	1 year	2024-03-02

AC Power Line Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101459	R&S	1 year	2024-02-29
2	Test Receiver	ESCI	100766	R&S	1 year	2024-03-30

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. 6dB Emission 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	4.92
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.73
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.62
$18\text{GHz} \leq f \leq 40\text{GHz}$	3.37

8.6. AC Power-line Conducted Emission

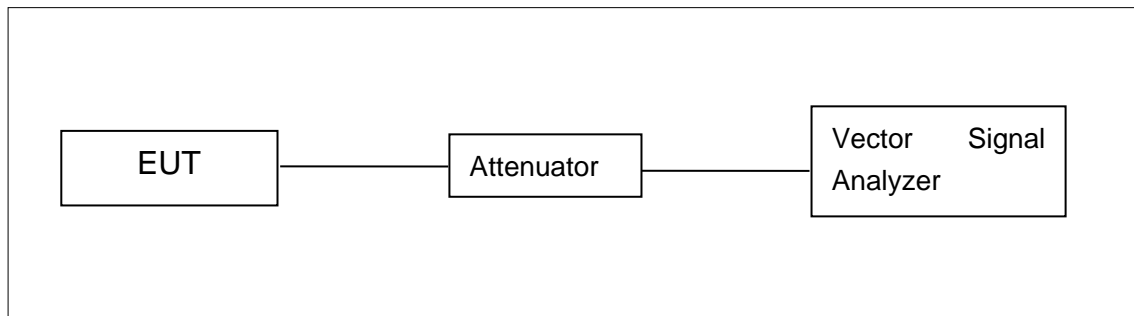
Measurement Uncertainty: 3.10dB,k=2

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

Measurement performed according to Clause 6.4, 6.5, 6.6 in ANSI C63.10-2013 and II.G.4, II.G.5, II.G.6 in KDB 789033.

The radiated emission test is performed in semi-anechoic chamber. The EUT was placed on a non-conductive table with 80cm above the ground plane for measurement below 1GHz and 1.5m above the ground plane for measurement above 1GHz. 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 from 0° to 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. The maximization process was repeated with the EUT positioned in each of its three orthogonal orientations

A.2. Maximum Peak Output Power

Measurement Limit and Method:

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

Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.

Set RBW = 1 MHz.

Set VBW ≥ 3 MHz.

Number of points in sweep ≥ 2 × span / RBW.

Sweep time = auto.

Detector = power averaging (rms)

Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter.

Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at 1 MHz intervals extending across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal. Add 10 log (1/x), where x is the duty cycle

A.2.1 Antenna Gain

Antenna gain is -1.75dBi and the value is supplied by the applicant or manufacturer.

A.2.2. Maximum Average Output Power-Conducted

EUT ID: UT28a

Measurement Results:

802.11a mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11a	6	19.83	19.24	19.35
	9	18.71	/	/
	12	18.61	/	/
	18	18.99	/	/
	24	18.33	/	/
	36	17.78	/	/
	48	17.85	/	/
	54	16.59	/	/

The data rate 6Mbps is selected as worst 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	19.65	19.07	19.17
	MCS1	18.35	/	/
	MCS2	19.25	/	/
	MCS3	18.32	/	/
	MCS4	18.11	/	/
	MCS5	17.84	/	/
	MCS6	17.86	/	/
	MCS7	16.80	/	/

The data rate MCS0 is selected as worst 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	19.17	18.63	18.57
	MCS1	18.35	/	/
	MCS2	19.02	/	/
	MCS3	18.28	/	/
	MCS4	18.02	/	/
	MCS5	17.73	/	/
	MCS6	17.74	/	/
	MCS7	16.79	/	/
	MCS8	16.64	/	/

The data rate MCS0 is selected as worst 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	18.19	18.08
	MCS1	17.04	/
	MCS2	16.94	/
	MCS3	17.36	/
	MCS4	16.27	/
	MCS5	16.49	/
	MCS6	16.50	/
	MCS7	15.11	/

The data rate MCS0 is selected as worst 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	18.14	18.03
	MCS1	17.04	/
	MCS2	17.06	/
	MCS3	17.32	/
	MCS4	16.44	/
	MCS5	16.27	/
	MCS6	16.24	/
	MCS7	15.39	/
	MCS8	15.14	/
	MCS9	14.18	/

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

802.11ac-HT80 mode

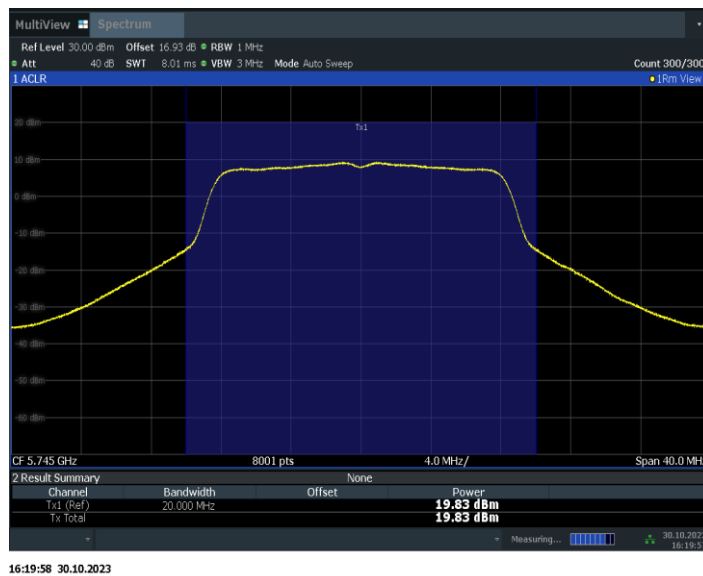
Mode	Data Rate (Index)	Test Result (dBm)
		5775MHz (Ch155)
802.11ac (80MHz)	MCS0	16.71
	MCS1	16.38
	MCS2	16.64
	MCS3	16.09
	MCS4	16.41
	MCS5	16.19
	MCS6	16.16
	MCS7	14.78
	MCS8	14.71
	MCS9	13.72

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

The duty cycle of all mode are 99%

Maximum output Power:

802.11a, Ch 149



Conclusion: PASS

A.3. Peak Power Spectral Density

Measurement Limit:

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

Set span to encompass the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal.

Set RBW = 500 kHz.

Set VBW ≥ 3 MHz.

Number of points in sweep ≥ 2 × span / RBW.

Sweep time = auto.

Detector = power averaging (rms)

Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed to ensure that the average accurately represents the true average over the on and off periods of the transmitter. Use the peak search function on the instrument to find the peak of the spectrum and record its value. Add 10 log (1/x), where x is the duty cycle.

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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EUT ID: UT28a

Measurement Results:

Mode	Channel	Power Spectral Density (dBm/500kHz)	Conclusion
802.11a	149	6.43	P
	157	6.13	P
	165	5.98	P
802.11n HT20	149	5.84	P
	157	5.62	P
	165	5.54	P
802.11n HT40	151	1.42	P
	159	1.33	P
802.11ac HT80	155	-3.40	P

Peak Power Spectral Density:
802.11a, Ch 149



Conclusion: PASS

A.4. 6dB Emission Bandwidth

Measurement Limit:

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

Set RBW = 100 kHz.

Set the video bandwidth (VBW) ≥ 3 × RBW.

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

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

Measurement Uncertainty:

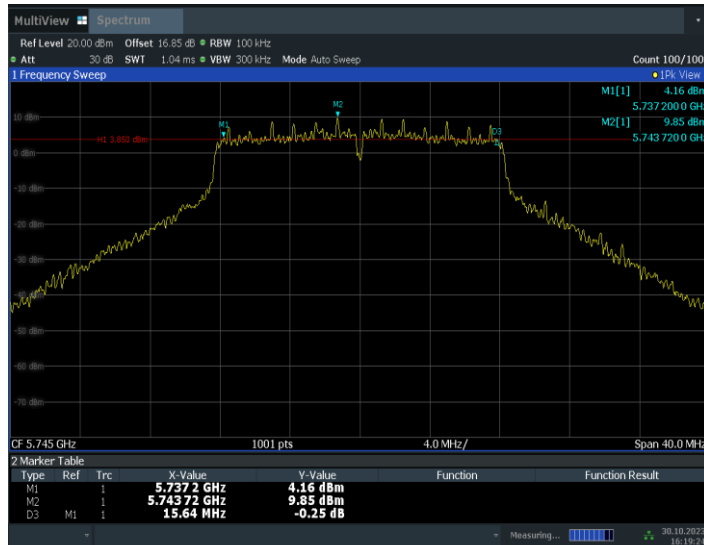
Measurement Uncertainty	60.80Hz
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EUT ID: UT28a

Measurement Result:

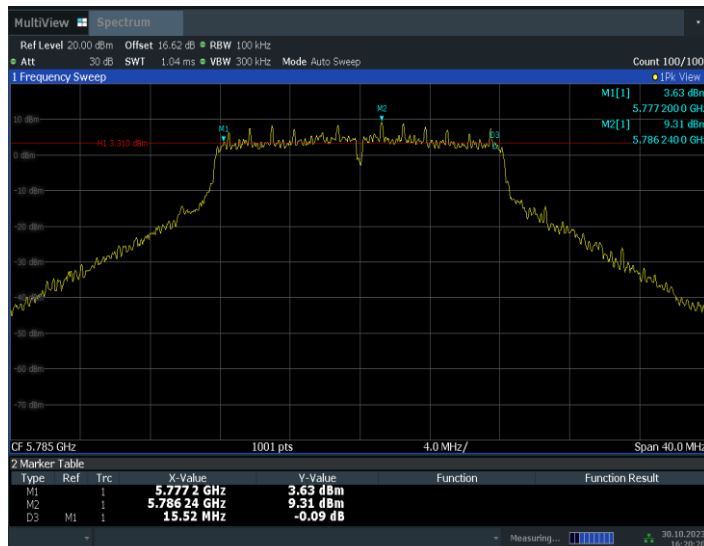
Mode	Channel	6dB Emission Bandwidth (MHz)		conclusion
802.11a	149	Fig.1	15.64	P
	157	Fig.2	15.52	P
	165	Fig.3	15.32	P
802.11n HT20	149	Fig.4	16.56	P
	157	Fig.5	15.88	P
	165	Fig.6	16.00	P
802.11n HT40	151	Fig.7	35.36	P
	159	Fig.8	35.36	P
802.11ac (VHT80)	155	Fig.9	75.20	P

Test graphs as below:



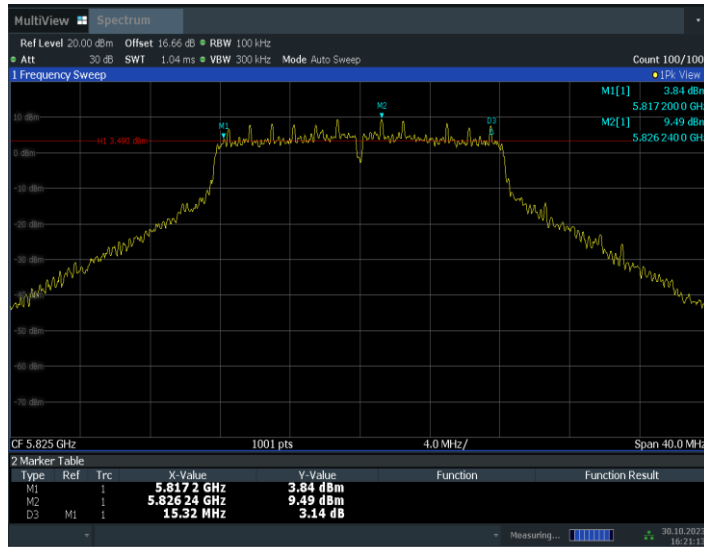
16:19:24 30.10.2023

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



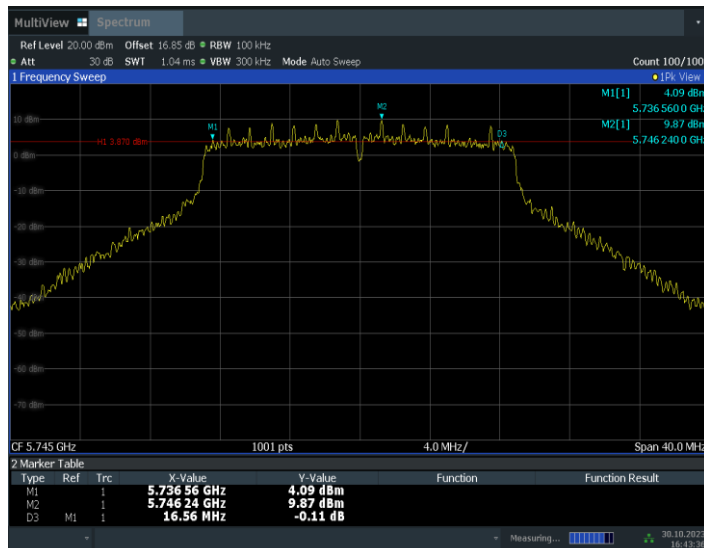
16:20:20 30.10.2023

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



16:21:14 30.10.2023

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



16:43:36 30.10.2023

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

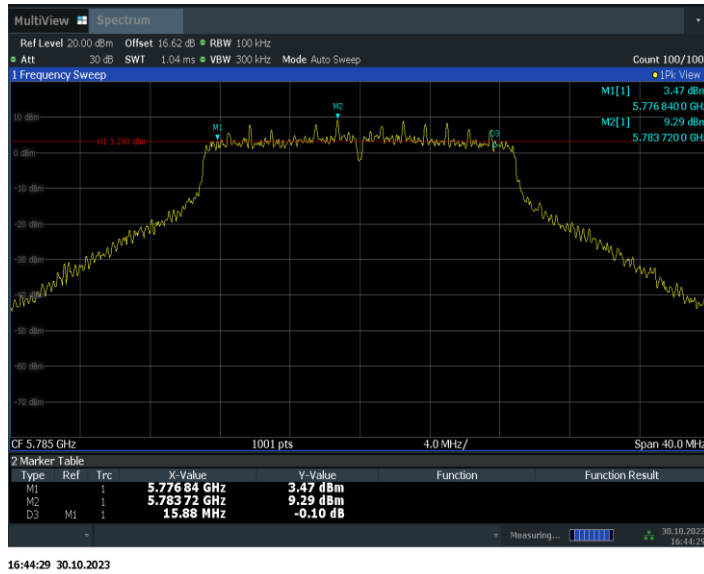


Fig. 5 6dB Emission Bandwidth (802.11n-HT20, Ch 157)

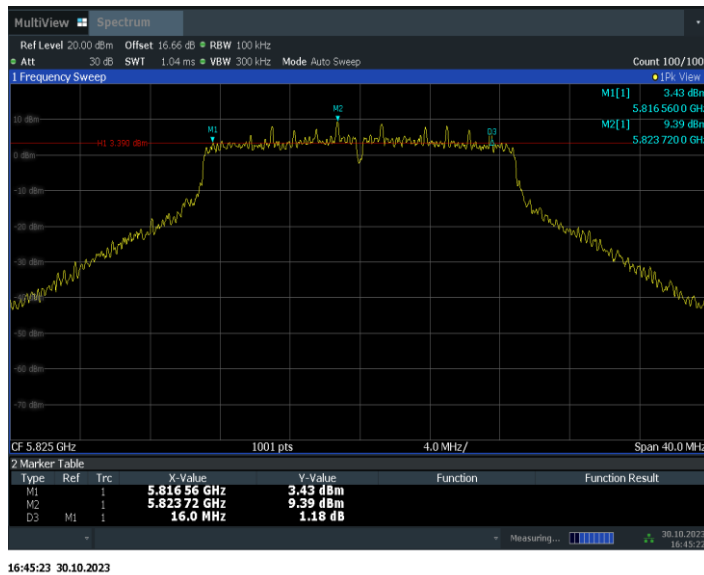


Fig. 6 6dB Emission Bandwidth (802.11n-HT20, Ch 165)

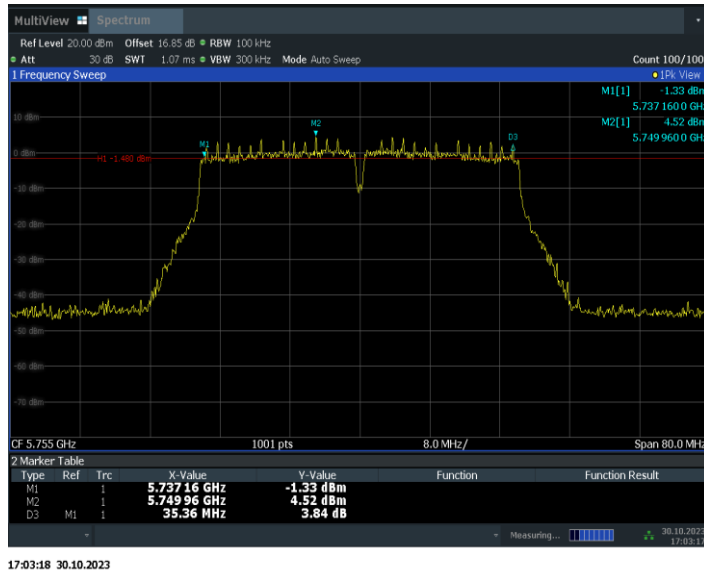


Fig. 7 6dB Emission Bandwidth (802.11n-HT40, Ch 151)

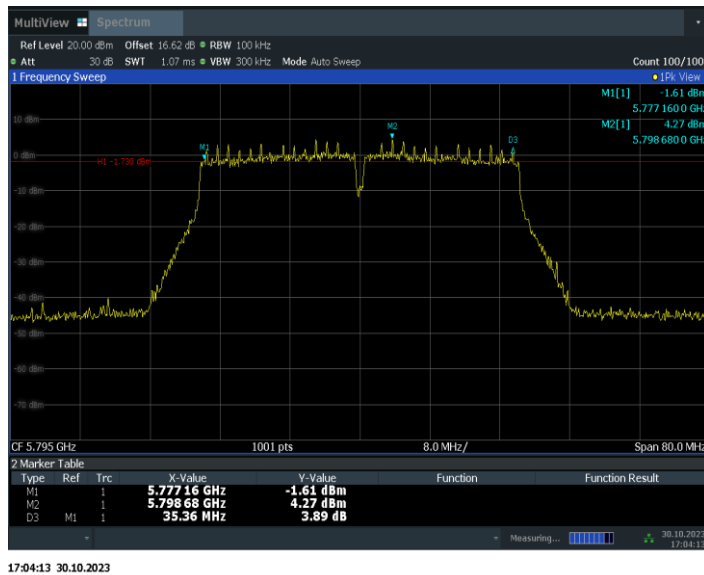


Fig. 8 6dB Emission Bandwidth (802.11n-HT40, Ch 159)

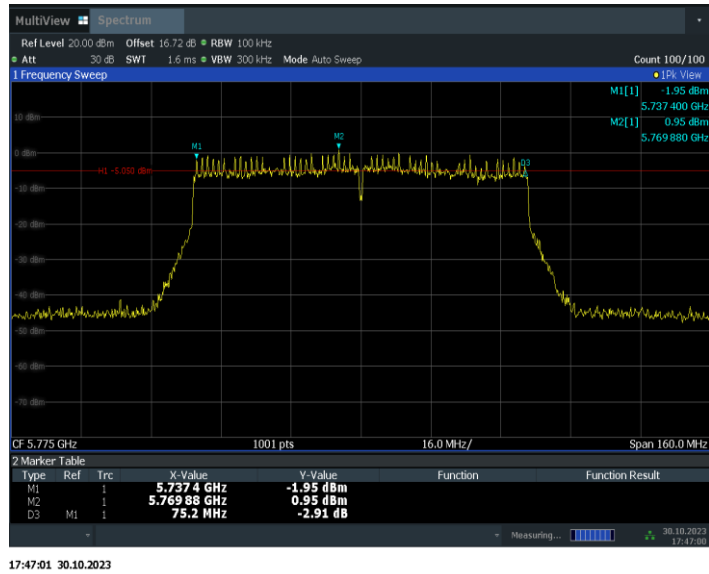


Fig. 9 6dB Emission Bandwidth (802.11ac-VHT80, Ch 155)

Conclusion: PASS

A.5. Transmitter Spurious Emission

A.5.1 Transmitter Spurious Emission - Radiated

Limit:

Unwanted Emissions in the unrestricted bands shall not exceed the limits that shown in 15.407:

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.	

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 (MHz)	Field strength(μ V/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 (μ V/m)	Field strength (dBuV/m)	Measurement distance (m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Note: When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor (as defined in KDB 789033 II.G.2.d).

Test setup:

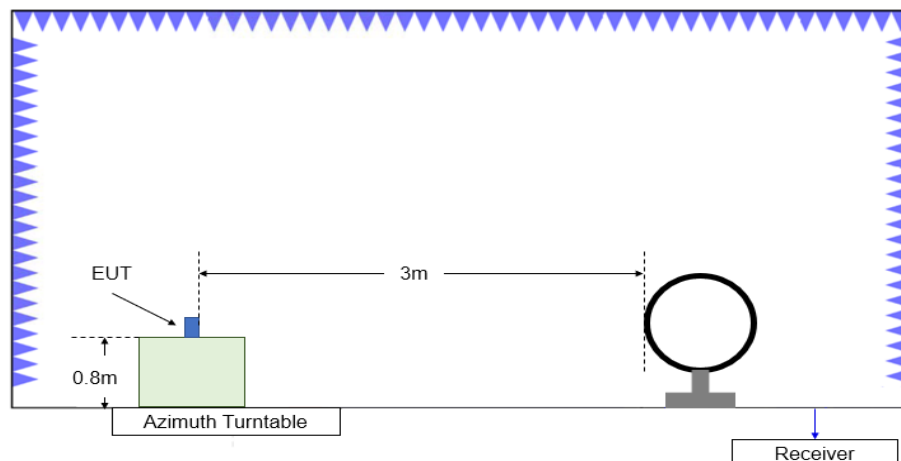


Figure A.5.1. Test Site Diagram (9kHz-30MHz)

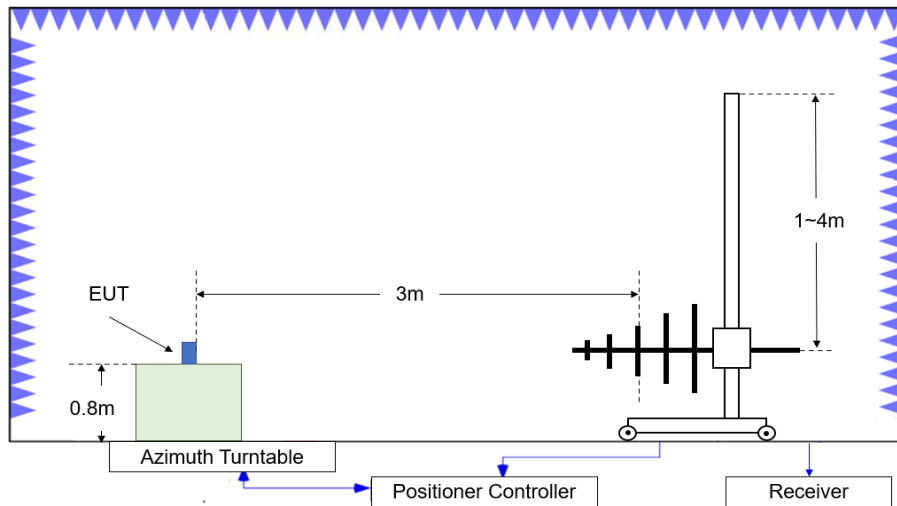


Figure A.5.2. Test Site Diagram (30MHz-1GHz)

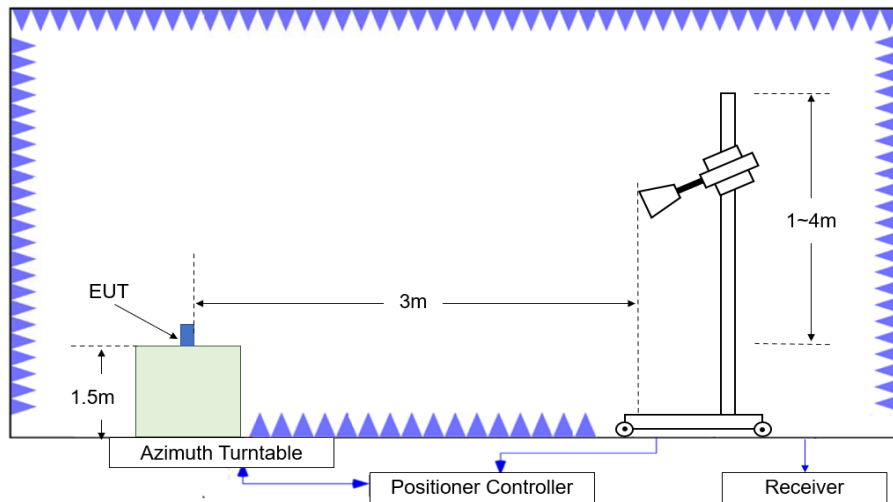


Figure A.5.3. Test Site Diagram (1GHz-40GHz)

Test Procedure;

Radiated unwanted emissions from the EUT were measured according to ANSI C63.10 and KDB 789033 D02 v02r01.

Test setting

Frequency of emission (MHz)	RBW/VBW
30-1000	100kHz/300kHz
1000-4000	1MHz/3MHz
4000-18000	1MHz/3MHz
18000-26500	1MHz/3MHz
26500-40000	1MHz/3MHz

Calculation:

1. The measurement results reported below is calculated by:

$$\text{Measurement Results (dB}\mu\text{V/m)} = P_{\text{measurement}} \text{ (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$$

Where: $P_{\text{measurement}}$ is the field strength recorded from the instrument

2. Convert the resultant EIRP level to an equivalent electric field strength using the following



relationship:

$$E = \text{EIRP} - 20 \log(D) + 104.77$$

Where:

E is the field strength in dB μ V/m

D is the measurement distance in meters

EIRP is the equivalent isotropically radiated power in dBm

Test note:

1. The EUT is operating at its maximum duty cycle and its maximum power control level.
2. Investigation has been done on all modes and modulations/data rates. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.
3. Spurious emissions for all channels were investigated and almost the same below 1GHz. According to FCC 47 CFR §15.31, emission levels are not report much lower than the limit by over 20dB
4. Measurement frequencies were performed from 9 kHz to 40GHz.

Measurement Result:
EUT ID: UT12a
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)
5453.000	42.65	-23.04	33.61	32.09	48.30	5.65	H
5458.600	42.86	-22.95	33.62	32.19	48.30	5.44	H
11490.000	34.70	-29.75	38.98	25.46	48.30	13.60	V
15862.000	36.23	-24.92	38.66	22.48	48.30	12.07	V
17926.500	39.67	-24.05	41.75	21.97	48.30	8.63	H
17992.500	39.94	-24.05	41.89	22.10	48.30	8.36	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)
5456.600	42.76	-22.98	33.61	32.12	48.30	5.54	V
5459.200	42.80	-22.94	33.62	32.12	48.30	5.50	V
11570.000	35.06	-29.33	38.93	25.46	48.30	13.24	H
15851.000	36.26	-24.82	38.65	22.43	48.30	12.04	V
17937.000	39.64	-24.04	41.77	21.91	48.30	8.66	V
17984.500	39.88	-24.04	41.87	22.06	48.30	8.42	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)
5456.600	42.72	-22.98	33.61	32.09	48.30	5.58	H
5459.600	42.68	-22.93	33.62	31.99	48.30	5.62	V
11650.000	34.66	-29.27	38.85	25.08	48.30	13.64	H
15883.500	35.88	-25.10	38.68	22.30	48.30	12.42	H
17958.500	40.07	-24.04	41.82	22.28	48.30	8.23	H
17990.500	39.97	-24.05	41.88	22.13	48.30	8.33	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)
5451.600	42.67	-23.06	33.60	32.14	48.30	5.62	V
5457.200	42.73	-22.97	33.61	32.08	48.30	5.57	V
11490.000	34.75	-29.75	38.98	25.52	48.30	13.55	V
15841.500	35.98	-24.88	38.64	22.22	48.30	12.32	V
17959.000	39.88	-24.04	41.82	22.10	48.30	8.42	V
17988.000	40.01	-24.04	41.88	22.18	48.30	8.29	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)
5451.000	42.54	-23.07	33.60	32.01	48.30	5.76	H
5458.400	42.72	-22.95	33.62	32.06	48.30	5.58	H
11570.000	35.07	-29.33	38.93	25.47	48.30	13.23	H
15869.500	36.18	-24.98	38.67	22.49	48.30	12.12	V
17953.000	39.73	-24.03	41.81	21.96	48.30	8.57	H
17985.000	39.83	-24.04	41.87	22.01	48.30	8.47	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)
5457.200	42.58	-22.97	33.61	31.94	48.30	5.72	H
5459.400	42.70	-22.94	33.62	32.02	48.30	5.60	H
11650.000	34.75	-29.27	38.85	25.17	48.30	13.55	V
15845.000	36.17	-24.85	38.65	22.38	48.30	12.13	H
17955.000	39.97	-24.03	41.81	22.19	48.30	8.33	V
17987.500	40.02	-24.04	41.88	22.19	48.30	8.28	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)
5413.200	42.49	-23.09	33.38	32.20	48.30	5.81	H
5450.000	42.74	-23.09	33.60	32.23	48.30	5.56	V
11510.000	34.95	-29.73	38.99	25.68	48.30	13.35	V
15920.000	36.17	-25.10	38.74	22.53	48.30	12.13	V
17873.500	39.08	-24.18	41.70	21.57	48.30	9.22	V
17979.000	40.05	-24.04	41.86	22.23	48.30	8.25	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)
5450.800	42.61	-23.08	33.60	32.08	48.30	5.69	V
5458.600	42.72	-22.95	33.62	32.05	48.30	5.58	V
11590.000	35.32	-29.08	38.91	25.48	48.30	12.98	H
15845.000	36.18	-24.85	38.65	22.39	48.30	12.12	H
17951.000	39.71	-24.03	41.80	21.94	48.30	8.59	H
17987.500	39.97	-24.04	41.88	22.13	48.30	8.33	V

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)
5454.000	42.73	-23.02	33.61	32.15	48.30	5.57	H
5459.800	42.75	-22.93	33.62	32.06	48.30	5.55	H
11490.000	34.68	-29.75	38.98	25.44	48.30	13.62	V
15848.500	36.63	-24.82	38.65	22.80	48.30	11.67	V
17927.000	39.99	-24.05	41.75	22.29	48.30	8.31	H
17990.500	40.49	-24.05	41.88	22.65	48.30	7.81	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)
5397.200	42.54	-23.09	33.29	32.34	48.30	5.76	V
5455.600	42.67	-23.00	33.61	32.06	48.30	5.63	H
11570.000	35.09	-29.33	38.93	25.50	48.30	13.21	V
15840.500	36.15	-24.89	38.64	22.40	48.30	12.15	H
17961.000	40.03	-24.04	41.82	22.24	48.30	8.27	V
17986.500	40.13	-24.04	41.87	22.30	48.30	8.17	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)
5452.800	42.67	-23.04	33.61	32.11	48.30	5.63	H
5456.400	42.68	-22.99	33.61	32.06	48.30	5.62	H
11650.000	34.57	-29.27	38.85	25.00	48.30	13.73	V
15870.000	36.30	-24.99	38.67	22.62	48.30	11.99	V
17956.000	40.09	-24.03	41.81	22.32	48.30	8.21	H
17981.500	40.78	-24.04	41.86	22.96	48.30	7.52	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)
5453.600	42.63	-23.03	33.61	32.06	48.30	5.66	H
5459.800	42.80	-22.93	33.62	32.11	48.30	5.50	V
11510.000	34.87	-29.73	38.99	25.61	48.30	13.43	H
15832.000	36.19	-24.96	38.63	22.52	48.30	12.11	V
17959.500	40.06	-24.04	41.82	22.28	48.30	8.24	V
17991.500	40.23	-24.05	41.88	22.40	48.30	8.07	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)
5453.800	42.62	-23.03	33.61	32.04	48.30	5.68	H
5459.400	42.71	-22.94	33.62	32.03	48.30	5.59	H
11590.000	35.28	-29.08	38.91	25.44	48.30	13.02	H
15860.000	36.41	-24.90	38.66	22.65	48.30	11.89	H
17948.000	39.81	-24.03	41.80	22.05	48.30	8.49	V
17987.500	40.24	-24.04	41.88	22.41	48.30	8.06	H

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)
5453.200	42.66	-23.04	33.61	32.09	48.30	5.64	H
5457.400	42.72	-22.97	33.61	32.08	48.30	5.58	H
11550.000	34.57	-29.59	38.95	25.21	48.30	13.73	V
15861.000	36.60	-24.91	38.66	22.85	48.30	11.70	V
17931.000	39.91	-24.05	41.76	22.19	48.30	8.39	H
17987.500	40.31	-24.04	41.88	22.48	48.30	7.99	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)
5650.970	57.50	-22.70	33.90	46.30	68.92	11.42	V
5651.150	56.85	-22.70	33.90	45.65	69.05	12.20	V
11490.000	46.85	-29.75	38.98	37.62	74.00	27.15	V
17235.000	51.29	-24.03	41.57	33.75	68.30	17.01	V
17391.000	53.95	-24.14	41.97	36.11	68.30	14.35	H
17582.500	53.23	-24.19	41.92	35.50	68.30	15.07	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)
5733.400	58.86	-22.63	34.07	47.43	68.30	9.44	H
5827.800	59.10	-23.06	34.50	47.66	68.30	9.20	H
11570.000	48.10	-29.33	38.93	38.50	74.00	25.90	H
17355.000	51.20	-24.13	41.87	33.46	68.30	17.10	V
17480.500	53.43	-24.23	42.00	35.66	68.30	14.87	V
17616.500	53.11	-24.11	41.88	35.34	68.30	15.19	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)
5923.412	57.91	-22.86	34.89	45.87	69.38	11.47	V
5923.570	57.94	-22.86	34.89	45.90	69.26	11.32	H
11650.000	47.84	-29.27	38.85	38.26	74.00	26.16	H
17475.000	52.00	-24.25	42.00	34.25	68.30	16.30	H
17552.000	53.09	-24.29	41.95	35.44	68.30	15.21	V
17641.000	53.08	-24.06	41.86	35.28	68.30	15.22	V

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)
5651.380	56.91	-22.70	33.90	45.70	69.22	12.32	H
5651.711	56.47	-22.69	33.90	45.26	69.47	12.99	H
11490.000	46.97	-29.75	38.98	37.73	74.00	27.03	H
17235.000	53.07	-24.03	41.57	35.53	68.30	15.23	V
17447.500	53.25	-24.30	42.00	35.55	68.30	15.05	H
17606.000	53.48	-24.12	41.89	35.71	68.30	14.82	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)
5752.000	57.66	-22.74	34.12	46.28	68.30	10.64	V
5815.200	59.68	-22.81	34.50	47.98	68.30	8.62	H
11570.000	46.93	-29.33	38.93	37.33	74.00	27.07	H
17355.000	51.24	-24.13	41.87	33.50	68.30	17.06	H
17505.000	53.36	-24.20	41.99	35.56	68.30	14.94	H
17648.500	53.25	-24.05	41.85	35.45	68.30	15.05	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)
5923.994	57.44	-22.85	34.90	45.39	68.94	11.51	V
5924.317	57.69	-22.84	34.90	45.63	68.71	11.02	H
11650.000	46.23	-29.27	38.85	36.66	74.00	27.77	H
17475.000	50.85	-24.25	42.00	33.10	68.30	17.45	H
17557.000	52.24	-24.27	41.94	34.57	68.30	16.06	H
17674.500	52.55	-24.17	41.83	34.89	68.30	15.75	V

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)
5650.489	57.25	-22.71	33.90	46.06	68.56	11.31	H
5651.445	57.02	-22.69	33.90	45.81	69.27	12.25	V
11510.000	46.91	-29.73	38.99	37.64	74.00	27.09	H
17265.000	51.70	-24.02	41.63	34.09	68.30	16.60	H
17358.500	53.92	-24.13	41.88	36.18	68.30	14.38	H
17662.500	52.88	-24.11	41.84	35.15	68.30	15.42	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)
5923.843	56.98	-22.85	34.90	44.94	69.06	12.08	V
5924.324	57.78	-22.84	34.90	45.72	68.70	10.92	V
11590.000	46.48	-29.08	38.91	36.65	74.00	27.52	V
17385.000	52.49	-24.14	41.96	34.67	68.30	15.81	V
17551.000	53.82	-24.29	41.95	36.17	68.30	14.48	H
17667.500	52.69	-24.13	41.83	34.99	68.30	15.61	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)
5650.582	56.84	-22.71	33.90	45.65	68.63	11.79	V
5651.071	56.62	-22.70	33.90	45.42	68.99	12.37	H
11490.000	46.73	-29.75	38.98	37.50	74.00	27.27	V
17235.000	51.49	-24.03	41.57	33.95	68.30	16.81	H
17462.000	53.73	-24.28	42.00	36.01	68.30	14.57	H
17672.500	53.91	-24.16	41.83	36.24	68.30	14.38	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)
5754.800	58.96	-22.80	34.14	47.63	68.30	9.34	V
5824.000	59.80	-22.99	34.50	48.30	68.30	8.49	H
11570.000	47.73	-29.33	38.93	38.14	74.00	26.27	H
17355.000	52.11	-24.13	41.87	34.37	68.30	16.19	V
17470.000	54.10	-24.26	42.00	36.37	68.30	14.20	H
17616.500	52.40	-24.11	41.88	34.62	68.30	15.90	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)
5924.770	57.23	-22.83	34.90	45.16	68.37	11.14	H
5924.950	57.79	-22.82	34.90	45.71	68.24	10.45	H
11650.000	46.58	-29.27	38.85	37.00	74.00	27.42	H
17475.000	51.61	-24.25	42.00	33.86	68.30	16.69	V
17545.000	52.42	-24.29	41.95	34.75	68.30	15.88	V
17628.000	53.09	-24.09	41.87	35.30	68.30	15.21	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)
5651.172	57.28	-22.70	33.90	46.08	69.07	11.79	H
5651.409	56.91	-22.70	33.90	45.71	69.24	12.33	V
11510.000	46.83	-29.73	38.99	37.57	74.00	27.17	H
17265.000	51.63	-24.02	41.63	34.02	68.30	16.67	V
17430.500	54.07	-24.24	42.00	36.31	68.30	14.23	H
17593.000	53.64	-24.16	41.91	35.89	68.30	14.66	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)
5924.023	57.43	-22.85	34.90	45.38	68.92	11.49	V
5924.245	57.60	-22.84	34.90	45.54	68.76	11.16	V
11590.000	48.40	-29.08	38.91	38.56	74.00	25.60	H
17385.000	51.70	-24.14	41.96	33.89	68.30	16.59	H
17563.500	53.28	-24.25	41.94	35.60	68.30	15.02	H
17670.000	52.43	-24.14	41.83	34.75	68.30	15.87	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)
5651.179	56.60	-22.70	33.90	45.40	68.30	11.70	H
5651.524	56.43	-22.69	33.90	45.22	68.30	11.87	V
11550.000	46.86	-29.59	38.95	37.50	74.00	27.14	H
17325.000	51.77	-24.08	41.78	34.07	68.30	16.53	H
5924.015	56.76	-22.85	34.90	44.71	68.30	11.54	V
5924.324	57.38	-22.84	34.90	45.32	68.30	10.92	H

Conclusion: PASS

Note:

1. The spurious emission above 18G is noise only.
2. All emissions below 30MHz are more than 20 dB below the limit

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.	

Test setting:

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

Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 3MHz

Calculation

Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$E = \text{EIRP} - 20 \log(D) + 104.77$ Where:

E is the field strength in dB μ V/m

D is the measurement distance in meters

EIRP is the equivalent isotropically radiated power in dbm

Measurement Result:

EUT ID: UT12a

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:

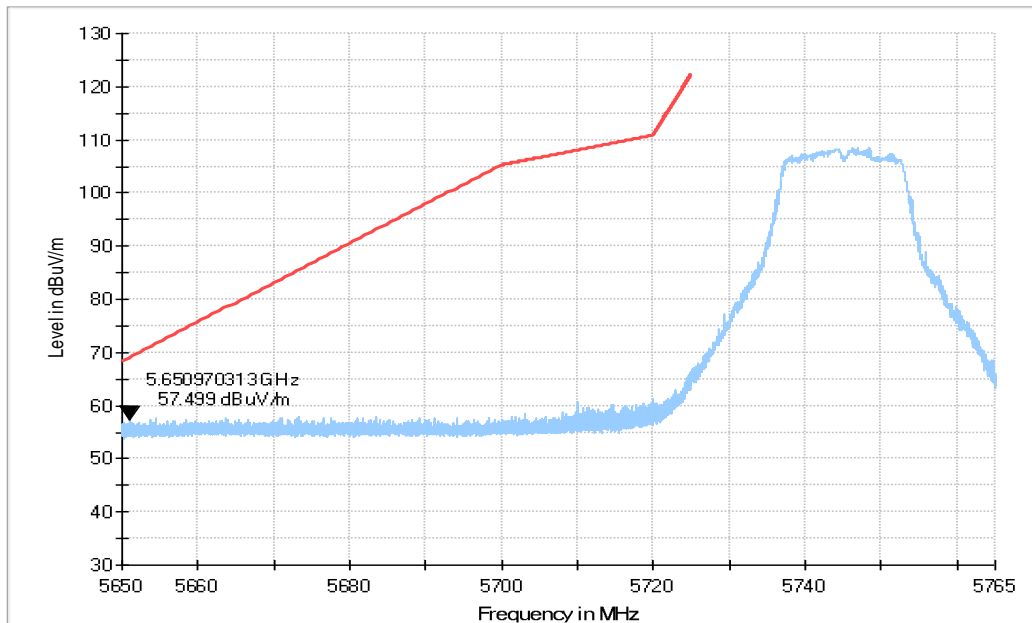


Fig. 10 Band Edges (802.11a Ch149,5745MHz)

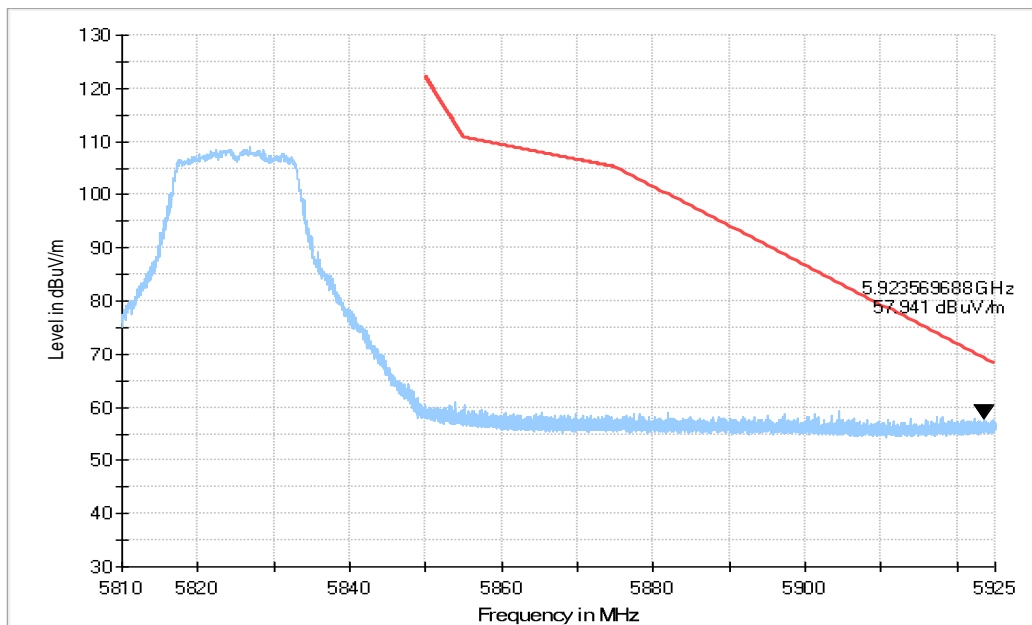


Fig. 11 Band Edges (802.11a Ch165, 5825MHz)

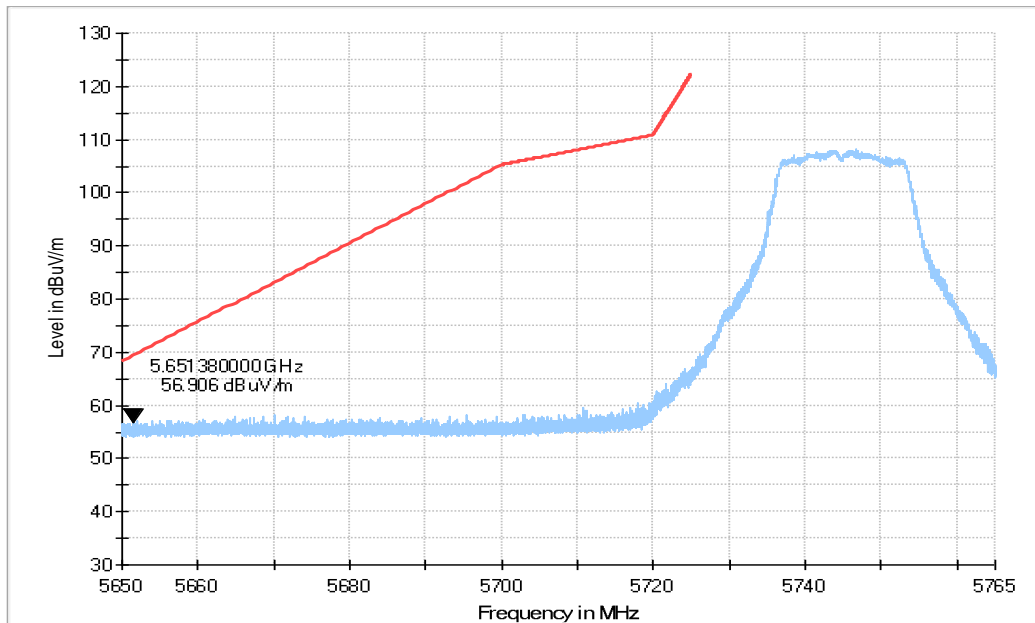


Fig. 12 Band Edges (802.11n-HT20 Ch149, 5745MHz)

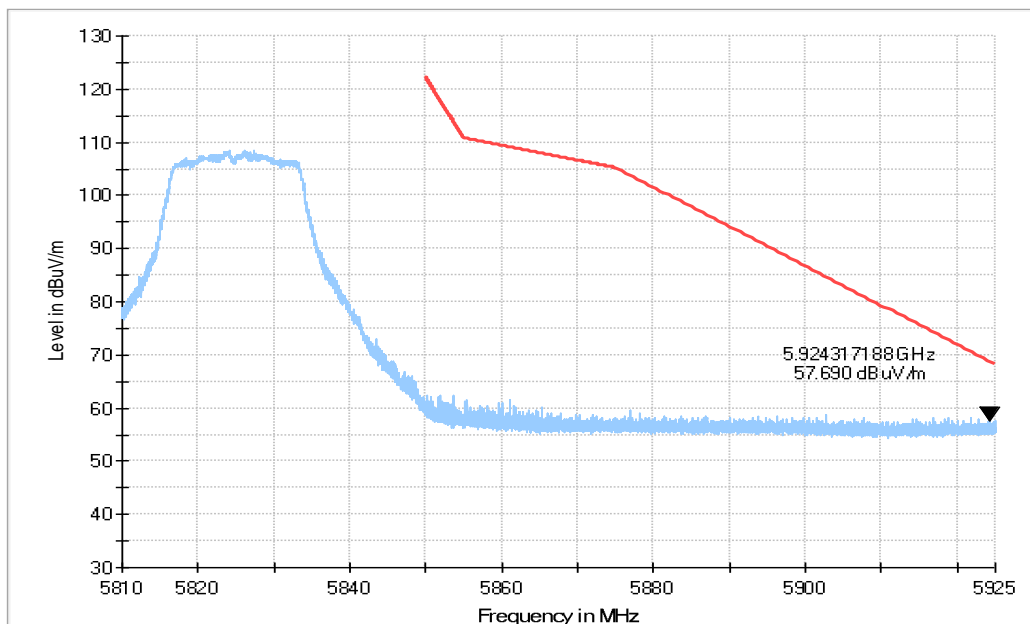


Fig. 13 Band Edges (802.11n-HT20 Ch165, 5825MHz)

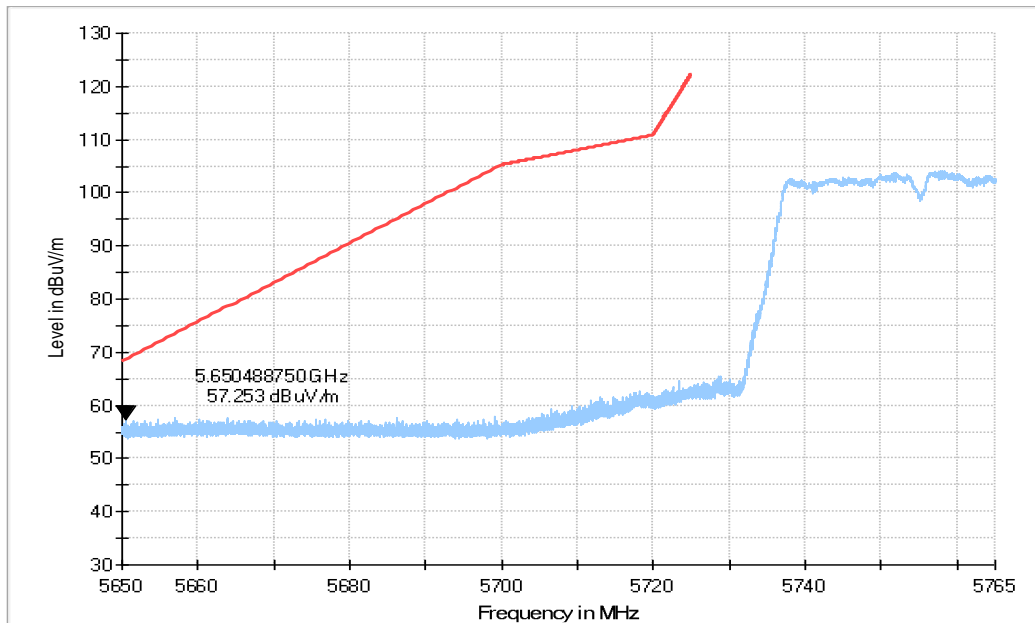


Fig. 14 Band Edges (802.11n-HT40 Ch151, 5755MHz)

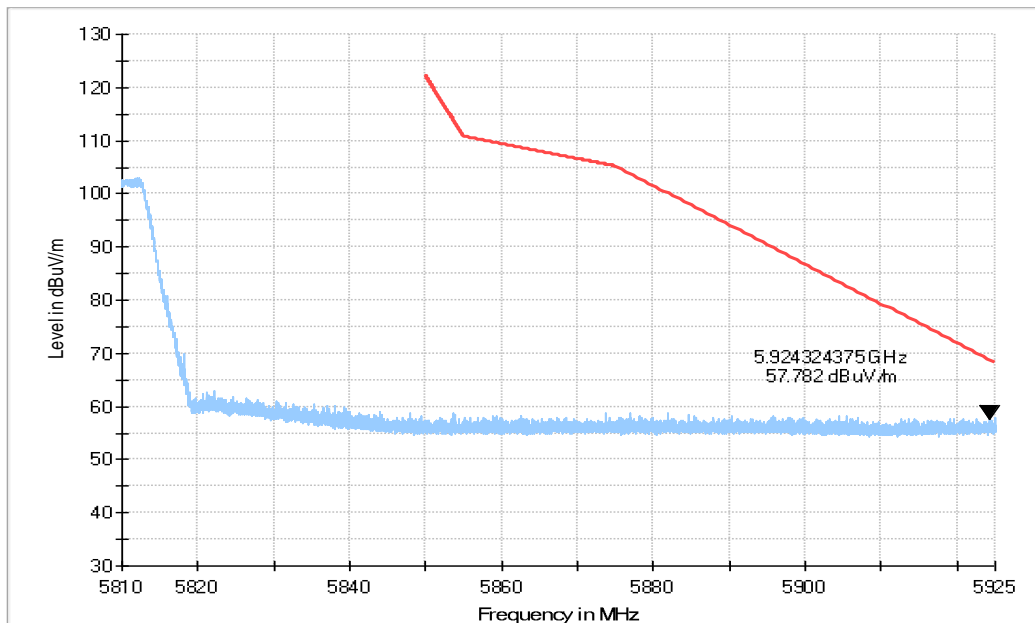


Fig. 15 Band Edges (802.11n-HT40 Ch159, 5795MHz)

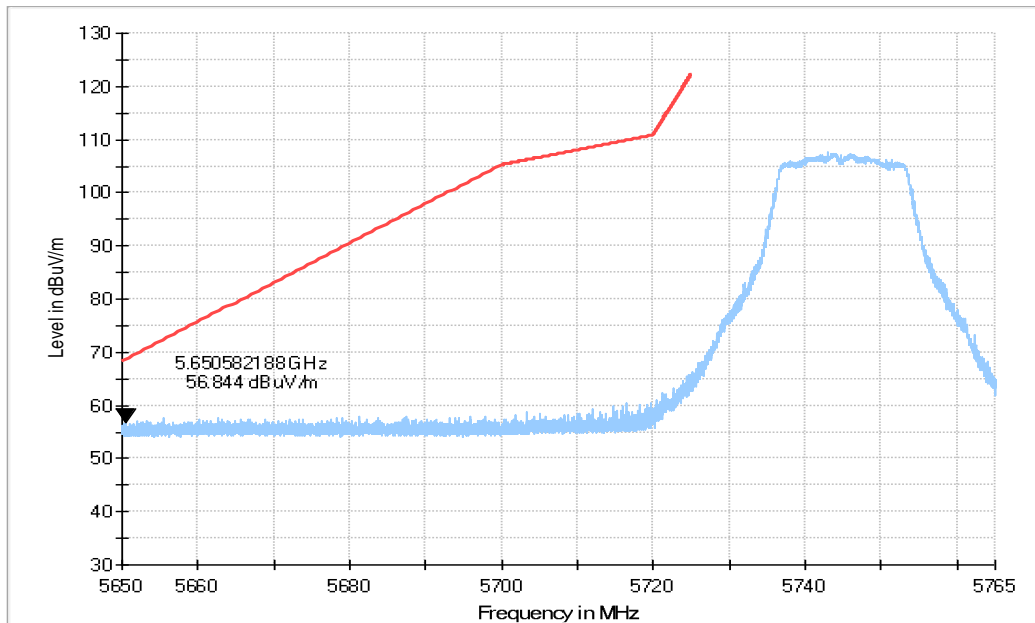


Fig. 16 Band Edges (802.11ac-HT20 Ch149, 5745MHz)

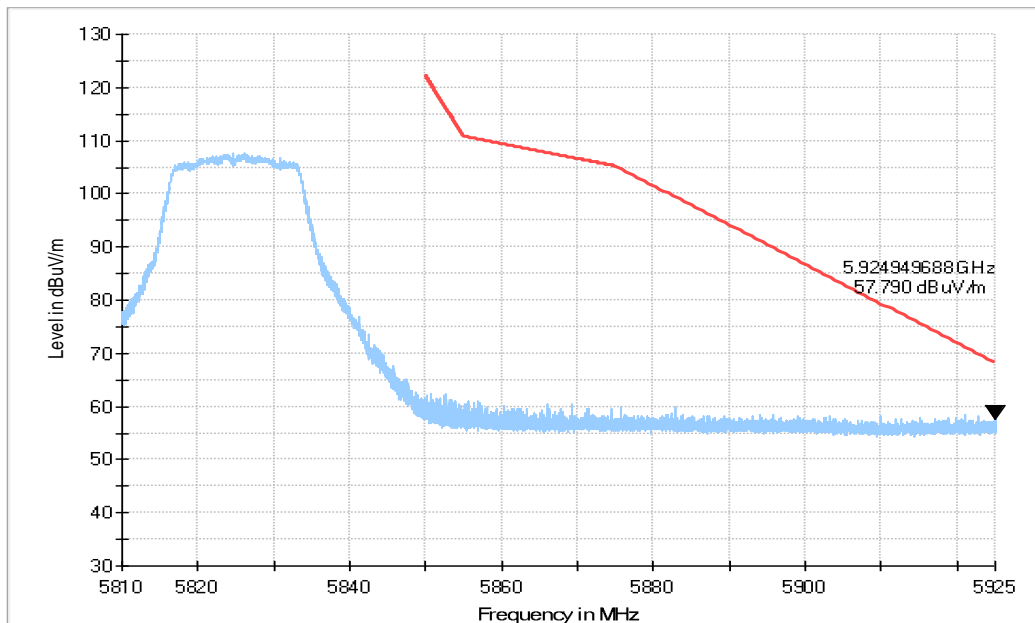


Fig. 17 Band Edges (802.11ac-HT20 Ch165, 5825MHz)

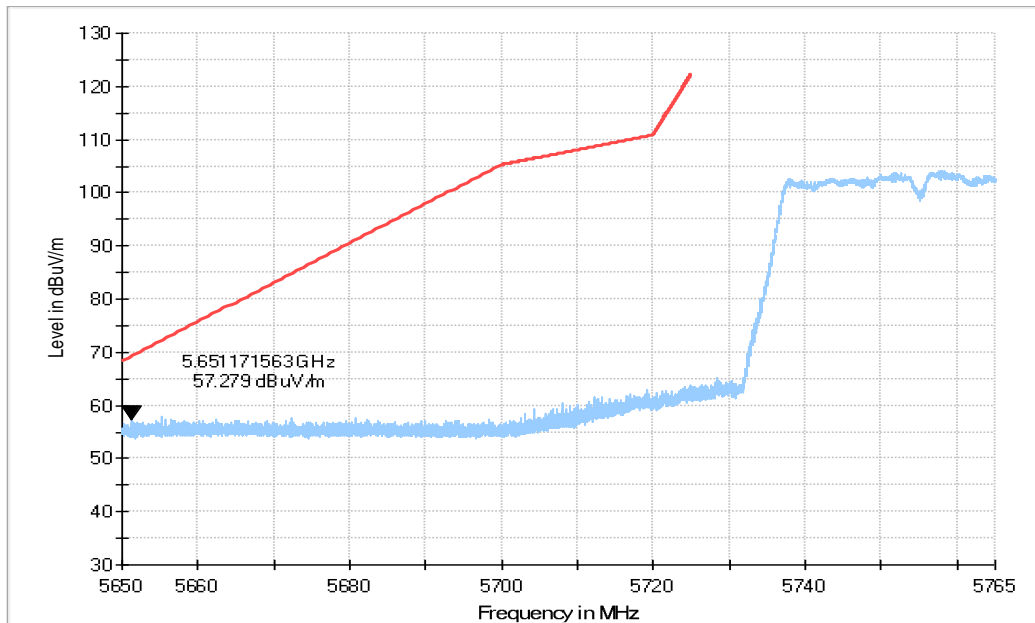


Fig. 18 Band Edges (802.11ac-HT40 Ch151, 5755MHz)

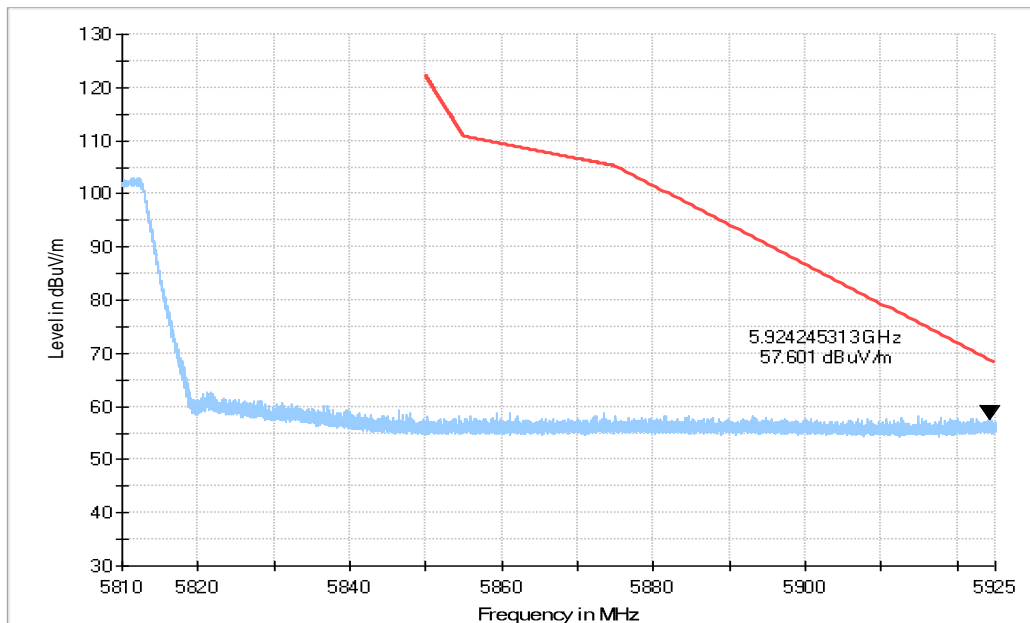


Fig. 19 Band Edges (802.11ac-HT40 Ch159, 5795MHz)

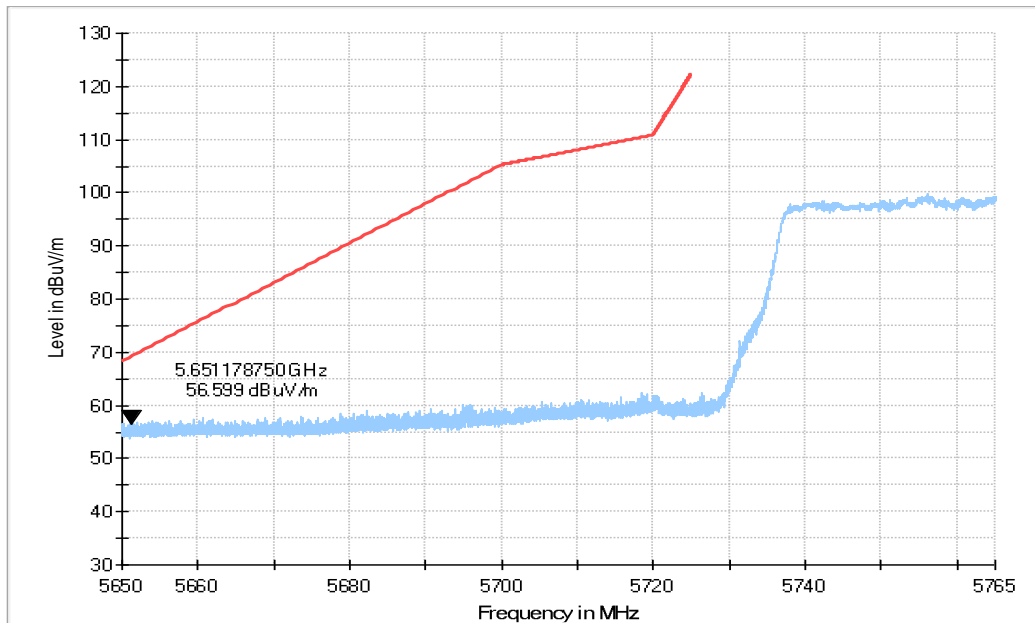


Fig. 20 Band Edges (802.11ac-HT80 Ch155, 5775MHz)

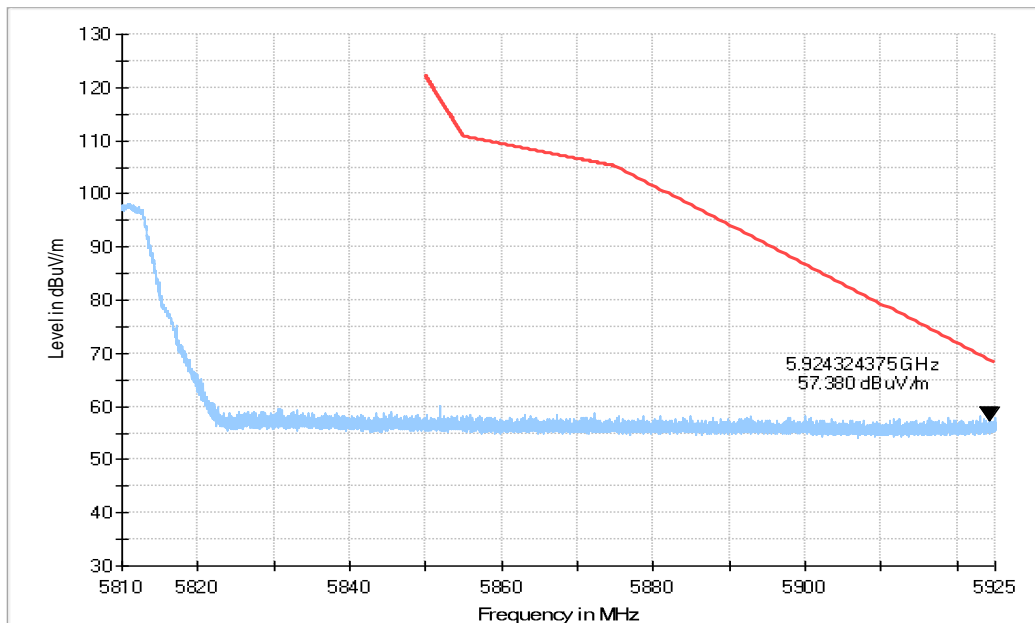


Fig. 21 Band Edges (802.11ac-HT80, 5775MHz)

A.7. AC Powerline Conducted Emission

Summary:

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

Method of Measurement:

See Clause 6.2 of ANSI C63.10 specifically.

See Clause 4 and Clause 5 of ANSI C63.10 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.

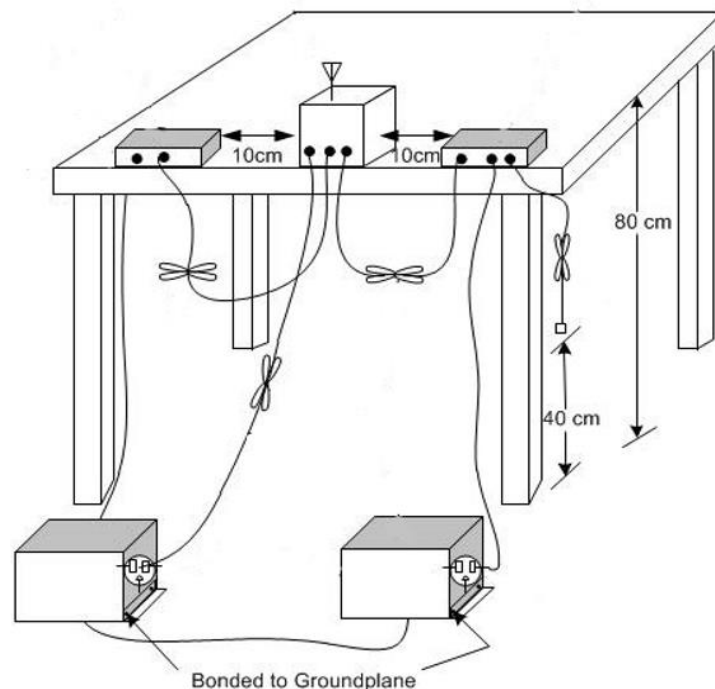
The measurement bandwidth is:

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

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Test 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:

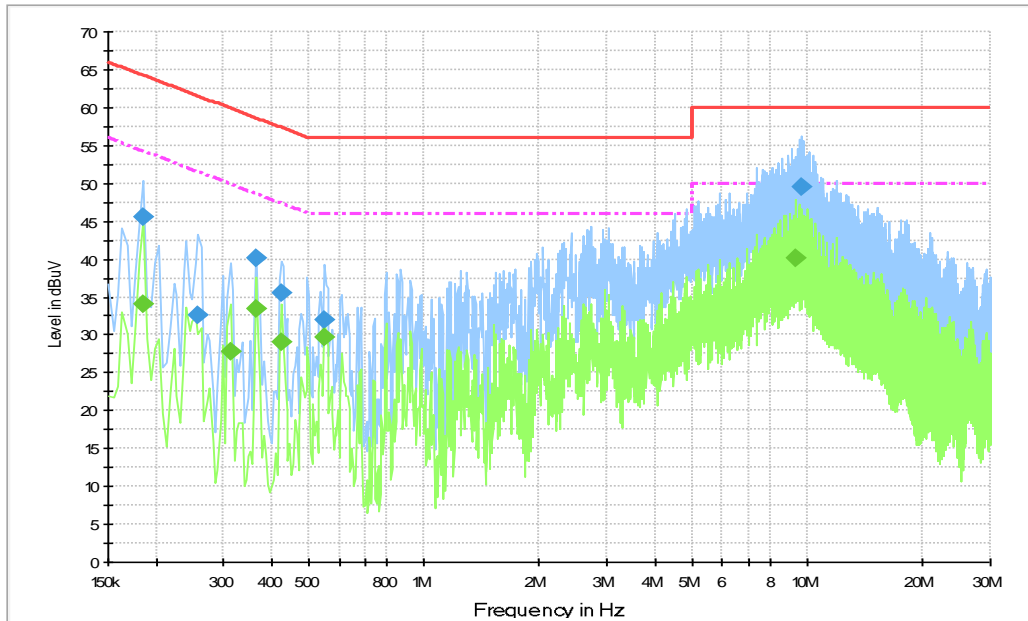


Fig. 22 AC Powerline Conducted Emission-802.11a

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.186000	45.5	2000.0	9.000	Off	N	19.5	18.7	64.2
0.258000	32.6	2000.0	9.000	Off	L1	19.4	28.9	61.5
0.366000	40.2	2000.0	9.000	Off	L1	19.4	18.4	58.6
0.424500	35.6	2000.0	9.000	Off	N	19.5	21.8	57.4
0.550500	32.0	2000.0	9.000	Off	N	19.5	24.0	56.0
9.600000	49.5	2000.0	9.000	Off	L1	19.7	10.5	60.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.186000	34.0	2000.0	9.000	Off	N	19.5	20.2	54.2
0.312000	27.8	2000.0	9.000	Off	L1	19.5	22.1	49.9
0.366000	33.4	2000.0	9.000	Off	L1	19.4	15.2	48.6
0.424500	29.0	2000.0	9.000	Off	L1	19.5	18.3	47.4
0.550500	29.6	2000.0	9.000	Off	L1	19.5	16.4	46.0
9.271500	40.1	2000.0	9.000	Off	L1	19.7	9.9	50.0

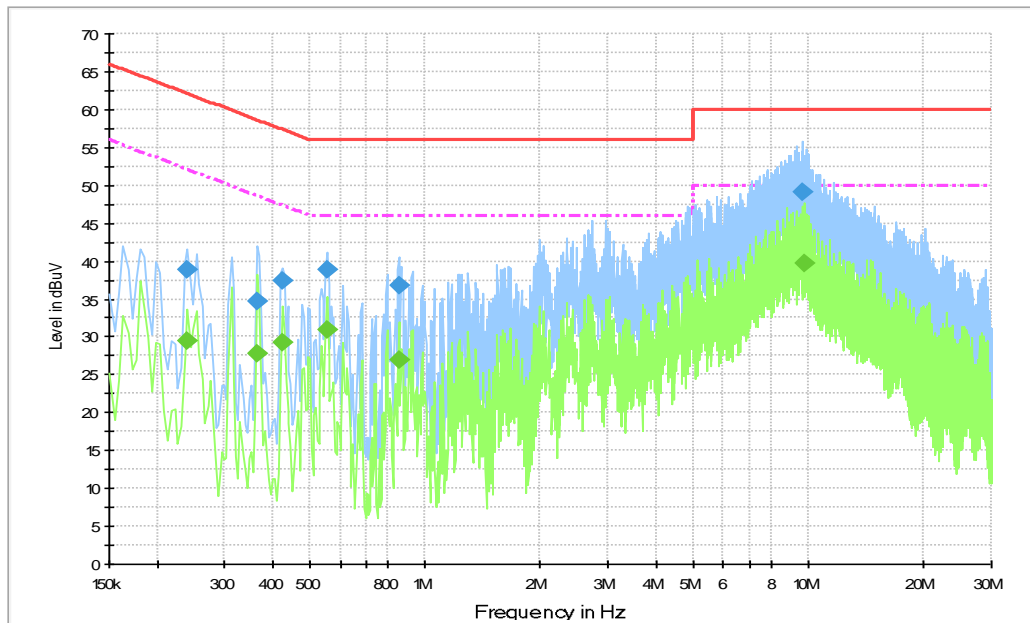


Fig. 23 AC Powerline Conducted Emission-Idle

Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.240000	38.9	2000.0	9.000	Off	N	19.5	23.2	62.1
0.366000	34.6	2000.0	9.000	Off	N	19.4	24.0	58.6
0.424500	37.5	2000.0	9.000	Off	L1	19.5	19.9	57.4
0.555000	38.9	2000.0	9.000	Off	L1	19.5	17.1	56.0
0.852000	36.8	2000.0	9.000	Off	L1	19.5	19.2	56.0
9.699000	49.2	2000.0	9.000	Off	L1	19.7	10.8	60.0

Final Result 2

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.240000	29.5	2000.0	9.000	Off	L1	19.5	22.6	52.1
0.366000	27.7	2000.0	9.000	Off	N	19.4	20.9	48.6
0.424500	29.3	2000.0	9.000	Off	L1	19.5	18.1	47.4
0.555000	30.8	2000.0	9.000	Off	L1	19.5	15.2	46.0
0.852000	26.9	2000.0	9.000	Off	L1	19.5	19.1	46.0
9.775500	39.8	2000.0	9.000	Off	L1	19.7	10.2	50.0

ANNEX B: EUT parameters

Disclaimer: The antenna gain provided 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



Accredited Laboratory

A2LA has accredited

TELECOMMUNICATION TECHNOLOGY LABS, CAICT
Beijing, People's Republic of China

for technical competence in the field of
Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 26th day of June 2023.



Mr. Trace McInturf, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7049.01
Valid to July 31, 2024

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

*** END OF REPORT BODY ***