



FCC PART 15E TEST REPORT No.25T04Z200152-005

for

Samsung Electronics Co., Ltd.

Tablet with Bluetooth, WLAN

SM-X133

FCC ID: ZCASM133

with

Hardware Version: REV1.0

Software Version: X133.001

Issued Date: 2025-07-21

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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REPORT HISTORY

Report Number	Revision	Description	Issue Date
25T04Z200152-005	Rev.0	1st edition	2025-07-21

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(Gaolizhang Road)

Address: Cuihu Cloud Center, No.1, Gaolizhang Road, Wenquan,
Haidian District, Beijing, China

Radiated testing Location: CTTL (BDA)

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

1.3. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.4. Project date

Testing Start Date: 2025-06-06

Testing End Date: 2025-07-21

1.5. Signature



Yao Xingyu

(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.
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Contact: Jenni Chun
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Telephone: +1-201-937-4203
Fax: /

2.2. Manufacturer Information

Company Name: Samsung Electronics Co., Ltd.
Address: 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Republic of Korea
Contact: Kobe Cho
Email: ggobi.cho@samsung.com
Telephone: +82 - 10 - 2722 - 4159
Fax: /

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

3.1. About EUT

Description	Tablet with Bluetooth, WLAN
Model name	SM-X133
FCC ID	ZCASM133
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz -5470MHz~5725MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Normal Voltage	3.82V
Extreme High Voltage	4.4V
Extreme Low Voltage	3.45V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
UT08a	2504200152UT08a	REV1.0	X133.001	2025-06-20
UT04a	2504200152UT04a	REV1.0	X133.001	2025-06-06

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

UT08a is used for Conduction test, UT04a is used for Radiation test.

3.3. Internal Identification of AE used during the test

AE ID*	Name	Model	Manufacturer
AE1-1	Battery	HQ-3565S	SCUD(Fujian) Electronics Co., Ltd.
AE1-2	Battery	HQ-6739SDS	SCUD(Fujian) Electronics Co., Ltd.
AE2*	Adapter	EP-T1510	DongYang
AE3-1	Date Cable C-C	EP-DN980BWE	Cresyn
AE3-2	Date Cable C-C	EP-DN980BWE	Luxshare

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

*AE2 is not the AE for EUT, provided by the client for relevant tests.

3.4. General Description

The Equipment under Test (EUT) is a model of Tablet with Bluetooth, WLAN with integrated antenna and inbuilt battery.

It consists of normal options: travel charger, USB cable.

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

Samples undergoing test were selected by the client.

3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor $k=2$.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

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;	
	15.207 Conducted limits;	2021
	15.209 Radiated emission limits, general requirements;	
	15.403 Definitions;	
	15.407 General technical requirements.	
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

Note:UNII: KDB 789033 D02 is not in the scope of ISO/IEC 17025 accreditation by A2LA.

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/E	Sub-clause of IC	Verdict
Maximum Output Power	15.407	/	P
Peak Power Spectral Density	15.407	/	P
26dB Emission Bandwidth	15.403	/	P
Radiated Unwanted Emission	15.407, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.207	/	P
99% Occupied bandwidth	/	/	P
Transmit Power Control	15.407	/	NA

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	3.82V
Humidity	44%

7. Test Facilities Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2026-06-09
2	Attenuator	10dB/2W	/	Rosenberger	/	/
3	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	2026-06-20
2	Test Receiver	FSV40	101047	R&S	1 year	2025-07-28
3	Loop Antenna	HFH2-Z2	829324/007	R&S	2 years	2026-01-04
4	EMI Antenna	VULB9163	01177	Schwarzbeck	1 year	2025-11-19
5	EMI Antenna	3117	00119021	ETS-Lindgren	1 year	2025-09-18
6	EMI Antenna	LB-180400 -25-C-KF	J211060826	A-INFO	1 year	2025-08-29

AC Power Line Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101459	R&S	1 year	2026-05-07
2	Test Receiver	ESCI7	100948	R&S	1 year	2025-12-10

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 26dB 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

8.6 Radiated Unwanted Emission

Frequency Range	Uncertainty(dB) (k=2)
9kHz-30MHz	3.96
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.73
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.58
$18\text{GHz} \leq f \leq 40\text{GHz}$	3.37

8.7 AC Power-line Conducted Emission

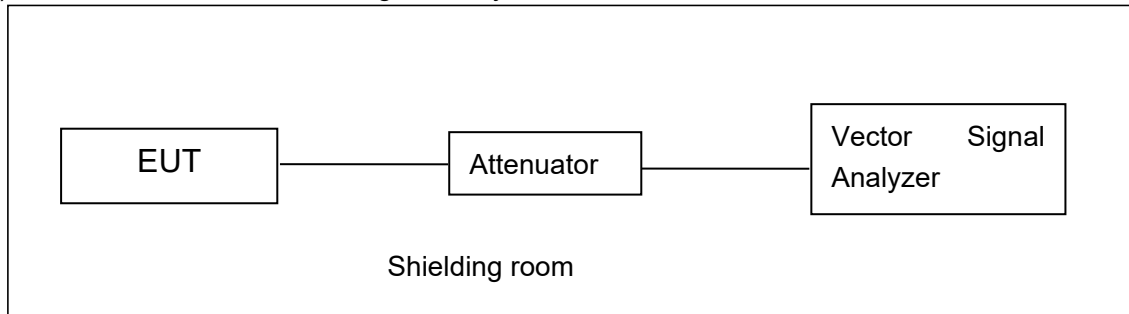
Measurement Uncertainty: 3.10dB, k=2

ANNEX A: Detailed Test 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 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 output Power

Measurement Limit and Method:

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	24dBm
	5250MHz~5350MHz	24dBm or 11+10logB
	5470MHz~5725MHz	24dBm or 11+10logB

Limit use the less value, and B is the 26dB bandwidth.

The measurement method SA-2 is made according to KDB 789033

A.2.1 Antenna Gain

Antenna gain is -1.1dBi and the value is supplied by the applicant or manufacturer.

A.2.2 Maximum output Power-Conducted

EUT ID: UT08a

Measurement Results:

802.11a mode

Mode	Frequency	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz	14.76	14.65	14.73	14.59	14.13	14.05	13.56	13.50
	5200MHz	14.66	/	/	/	/	/	/	/
	5240MHz	14.63	/	/	/	/	/	/	/
	5260MHz	14.68	/	/	/	/	/	/	/
	5280MHz	15.16	/	/	/	/	/	/	/
	5320MHz	15.15	/	/	/	/	/	/	/
	5500MHz	12.32	/	/	/	/	/	/	/
	5580MHz	12.08	/	/	/	/	/	/	/
	5700MHz	12.50	/	/	/	/	/	/	/
	5720MHz	12.42	/	/	/	/	/	/	/

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

802.11n-HT20 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT20)	5180MHz	14.67	14.61	14.50	14.51	14.01	14.00	13.51	13.50
	5200MHz	14.66	/	/	/	/	/	/	/
	5240MHz	14.51	/	/	/	/	/	/	/
	5260MHz	14.53	/	/	/	/	/	/	/
	5280MHz	15.00	/	/	/	/	/	/	/
	5320MHz	14.59	/	/	/	/	/	/	/

	5500MHz	12.26	/	/	/	/	/	/	/
	5580MHz	11.88	/	/	/	/	/	/	/
	5700MHz	12.64	/	/	/	/	/	/	/
	5720MHz	12.36	/	/	/	/	/	/	/

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

802.11ac-VHT20 mode

Mode	Frequency	Test Result (dBm)								
		Data Rate								
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
802.11ac (VHT20)	5180MHz	14.64	14.63	14.52	14.52	14.02	14.01	13.51	13.50	13.01
	5200MHz	14.82	/	/	/	/	/	/	/	/
	5240MHz	14.80	/	/	/	/	/	/	/	/
	5260MHz	14.53	/	/	/	/	/	/	/	/
	5280MHz	15.06	/	/	/	/	/	/	/	/
	5320MHz	15.03	/	/	/	/	/	/	/	/
	5500MHz	11.90	/	/	/	/	/	/	/	/
	5580MHz	11.71	/	/	/	/	/	/	/	/
	5700MHz	12.61	/	/	/	/	/	/	/	/
	5720MHz	12.28	/	/	/	/	/	/	/	/

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

802.11n-HT40 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT40)	5190MHz	14.30	14.19	14.08	14.01	14.03	14.00	13.06	13.02
	5230MHz	14.07	/	/	/	/	/	/	/
	5270MHz	14.57	/	/	/	/	/	/	/
	5310MHz	14.57	/	/	/	/	/	/	/
	5510MHz	12.24	/	/	/	/	/	/	/
	5550MHz	12.01	/	/	/	/	/	/	/
	5670MHz	11.77	/	/	/	/	/	/	/
	5710MHz	12.23	/	/	/	/	/	/	/

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

802.11ac-VHT40 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (VHT40)	5190MHz	14.30	14.28	14.07	14.09	14.02	14.00	13.02	13.01	12.03	12.01
	5230MHz	14.51	/	/	/	/	/	/	/	/	/
	5270MHz	14.52	/	/	/	/	/	/	/	/	/
	5310MHz	14.39	/	/	/	/	/	/	/	/	/
	5510MHz	12.25	/	/	/	/	/	/	/	/	/
	5550MHz	11.98	/	/	/	/	/	/	/	/	/
	5670MHz	12.35	/	/	/	/	/	/	/	/	/
	5710MHz	12.45	/	/	/	/	/	/	/	/	/

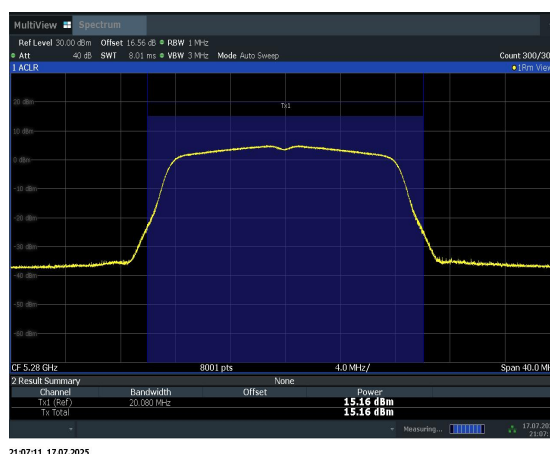
The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

802.11ac-VHT80 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (VHT80)	5210MHz	13.55	13.50	13.02	13.03	13.01	13.00	12.02	12.01	11.02	11.00
	5290MHz	13.91	/	/	/	/	/	/	/	/	/
	5530MHz	11.62	/	/	/	/	/	/	/	/	/
	5610MHz	11.07	/	/	/	/	/	/	/	/	/
	5690MHz	11.86	/	/	/	/	/	/	/	/	/

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 100%



Maximum output Power: 11a CH56

Conclusion: PASS

A.3. Peak Power Spectral Density (conducted)

Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	11
	5250MHz~5350MHz	11
	5470MHz~5725MHz	11

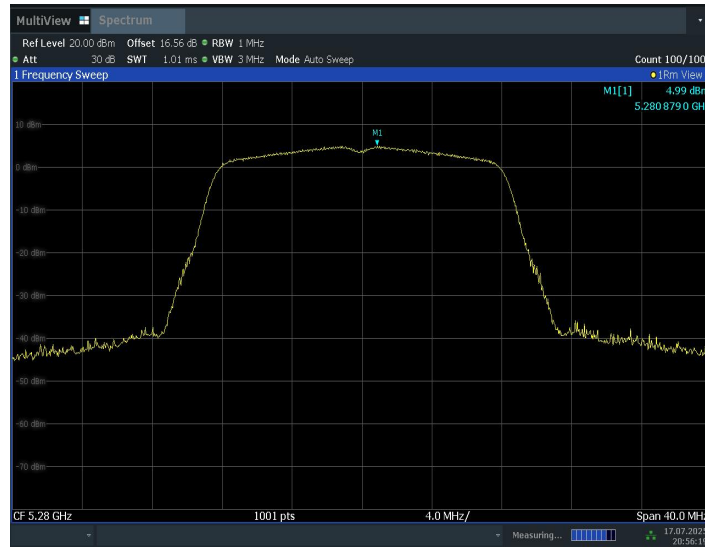
The output power measurement method Section F is made according to KDB 789033

EUT ID: UT08a

Measurement Results:

TestMode	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	5180	4.28	≤11.00	PASS
	5200	4.42	≤11.00	PASS
	5240	4.36	≤11.00	PASS
	5260	4.39	≤11.00	PASS
	5280	4.99	≤11.00	PASS
	5320	4.92	≤11.00	PASS
	5500	2.34	≤11.00	PASS
	5580	2.18	≤11.00	PASS
	5700	2.75	≤11.00	PASS
	5720	2.66	≤11.00	PASS
11N40SISO	5190	1.09	≤11.00	PASS
	5230	0.71	≤11.00	PASS
	5270	1.25	≤11.00	PASS
	5310	1.17	≤11.00	PASS
	5510	-0.89	≤11.00	PASS
	5550	-1.18	≤11.00	PASS
	5670	-1.34	≤11.00	PASS
	5710	-0.60	≤11.00	PASS
11AC20SISO	5180	4.17	≤11.00	PASS
	5200	4.30	≤11.00	PASS
	5240	4.44	≤11.00	PASS
	5260	4.03	≤11.00	PASS
	5280	4.66	≤11.00	PASS
	5320	4.77	≤11.00	PASS
	5500	1.52	≤11.00	PASS
	5580	1.31	≤11.00	PASS
	5700	2.17	≤11.00	PASS
	5720	1.77	≤11.00	PASS
11AC80SISO	5210	-2.99	≤11.00	PASS
	5290	-2.40	≤11.00	PASS

	5530	-4.98	≤ 11.00	PASS
	5610	-5.28	≤ 11.00	PASS
	5690	-4.72	≤ 11.00	PASS



Peak Power Spectral Density:11a CH56

Conclusion: PASS

A.4. 26dB Emission Bandwidth (conducted)

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.403 (i)	/

The measurement is made according to KDB 789033

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
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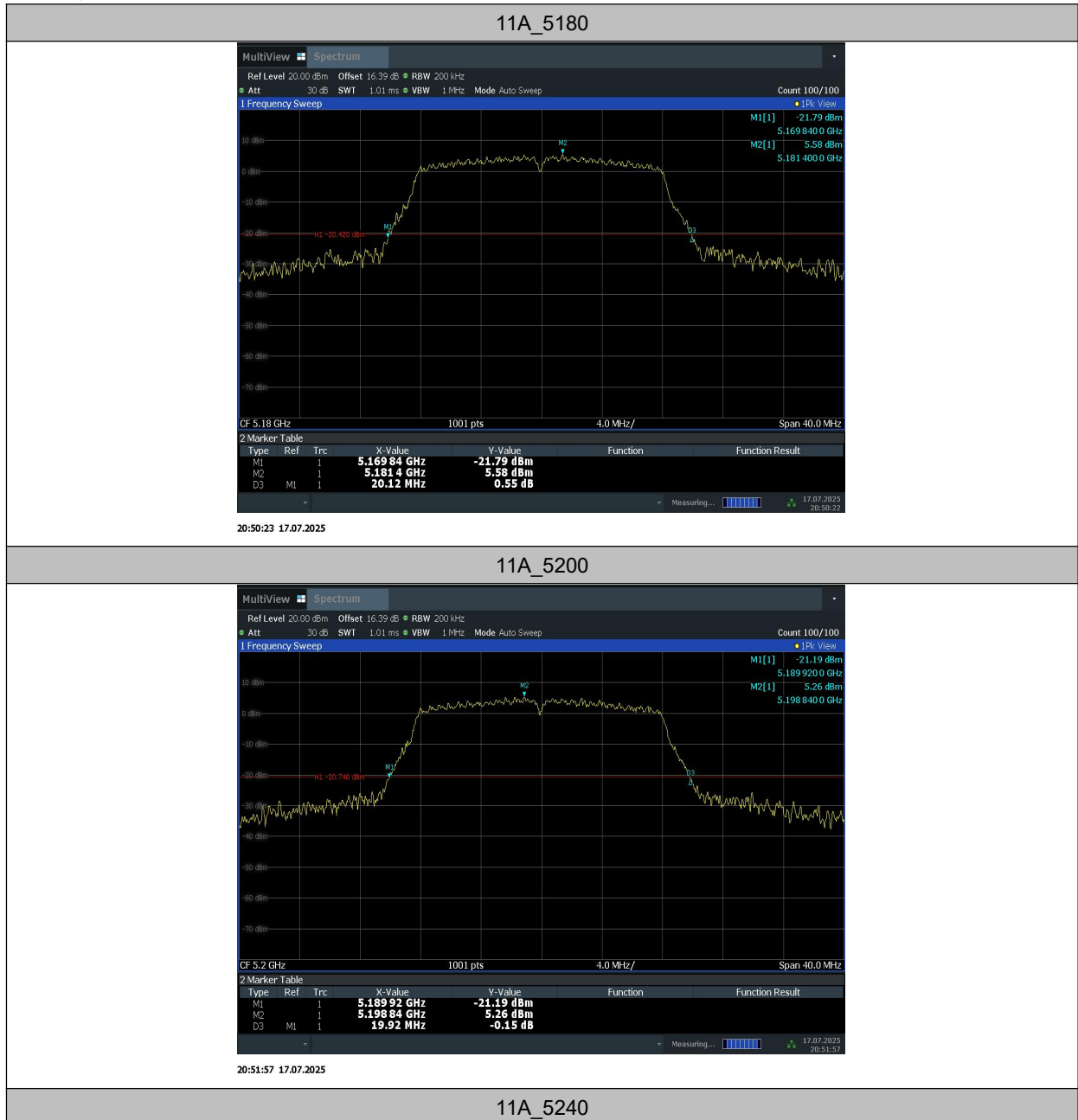
EUT ID: UT08a

Measurement Result:

TestMode	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	5180	20.12	5169.84	5189.96	---	---
	5200	19.92	5189.92	5209.84	---	---
	5240	20.20	5229.76	5249.96	---	---
	5260	19.96	5249.92	5269.88	---	---
	5280	20.08	5269.76	5289.84	---	---
	5320	20.24	5309.80	5330.04	---	---
	5500	20.08	5489.76	5509.84	---	---
	5580	20.00	5569.88	5589.88	---	---
	5700	20.24	5689.92	5710.16	---	---
	5720	19.92	5709.92	5729.84	---	---
11N40SISO	5190	40.96	5169.52	5210.48	---	---
	5230	41.28	5209.20	5250.48	---	---
	5270	41.28	5249.28	5290.56	---	---
	5310	41.12	5289.28	5330.40	---	---
	5510	41.04	5489.44	5530.48	---	---
	5550	40.88	5529.52	5570.40	---	---
	5670	40.88	5649.44	5690.32	---	---
	5710	41.04	5689.28	5730.32	---	---
11AC20SISO	5180	20.36	5169.76	5190.12	---	---
	5200	20.20	5189.80	5210.00	---	---
	5240	20.44	5229.72	5250.16	---	---
	5260	20.44	5249.80	5270.24	---	---
	5280	20.80	5269.76	5290.56	---	---
	5320	20.32	5309.76	5330.08	---	---
	5500	20.40	5489.64	5510.04	---	---
	5580	20.32	5569.72	5590.04	---	---
	5700	20.32	5689.72	5710.04	---	---
	5720	20.48	5709.64	5730.12	---	---
11AC80SISO	5210	81.44	5169.20	5250.64	---	---
	5290	81.12	5249.36	5330.48	---	---

	5530	81.60	5489.04	5570.64	---	---
	5610	81.44	5569.04	5650.48	---	---
	5690	81.60	5649.04	5730.64	---	---

Test graphs as below:





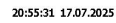
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11A_5260

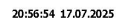


20:54:20 17.07.2025

11A_5280



11A_5320



11A_5500



20:58:08 17.07.2025

11A_5580



20:59:20 17.07.2025

11A_5700



21:00:32 17.07.2025

11A_5720



21:01:45 17.07.2025

11N40SISO_5190



21:26:44 17.07.2025

11N40ISO_5230



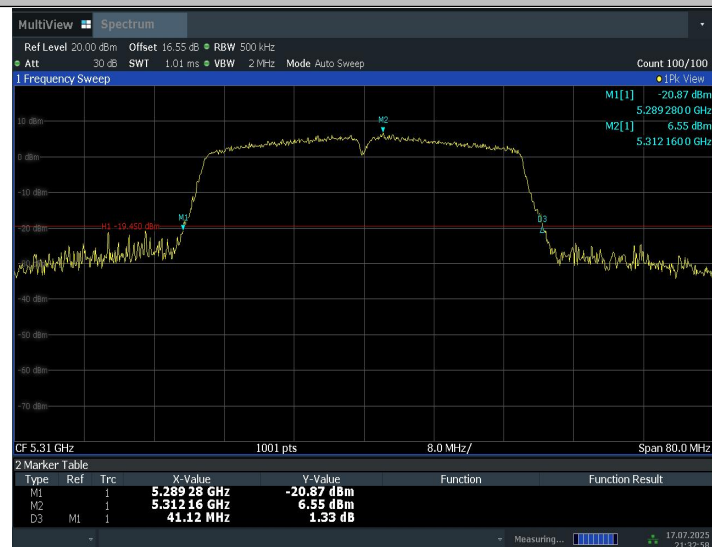
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11N40ISO_5270



21:31:48 17.07.2025

11N40ISO_5310



21:32:59 17.07.2025

11N40ISO_5510



21:34:16 17.07.2025

11N40ISO_5550



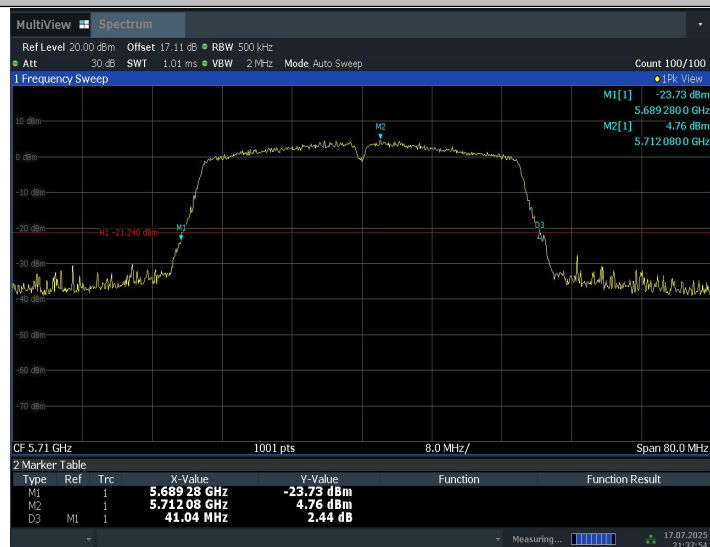
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11N40ISO_5670



21:36:44 17.07.2025

11N40SISO_5710



21:37:54 17.07.2025

11AC20SISO_5180



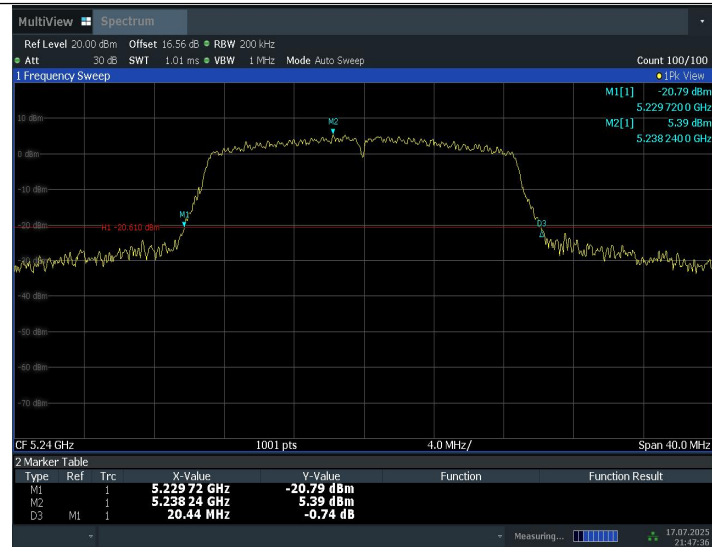
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11AC20SISO_5200



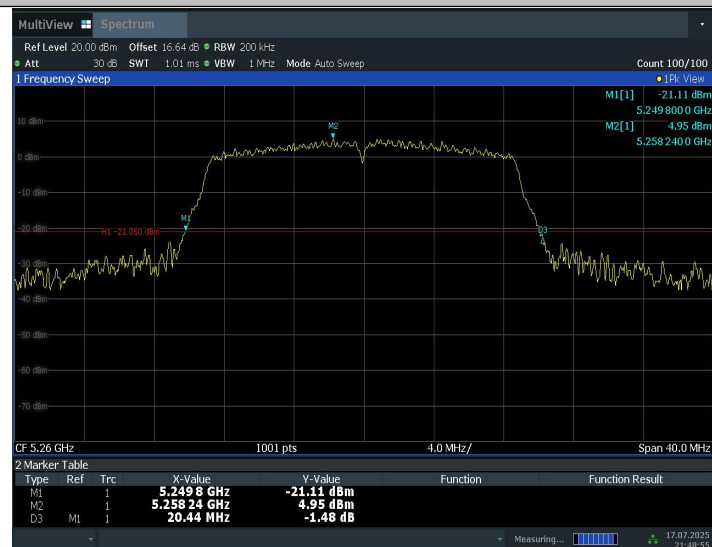
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11AC20SISO_5240



21:47:37 17.07.2025

11AC20SISO_5260



21:48:55 17.07.2025

11AC20SISO_5280



21:50:07 17.07.2025

11AC20SISO_5320



21:51:18 17.07.2025

11AC20SISO_5500



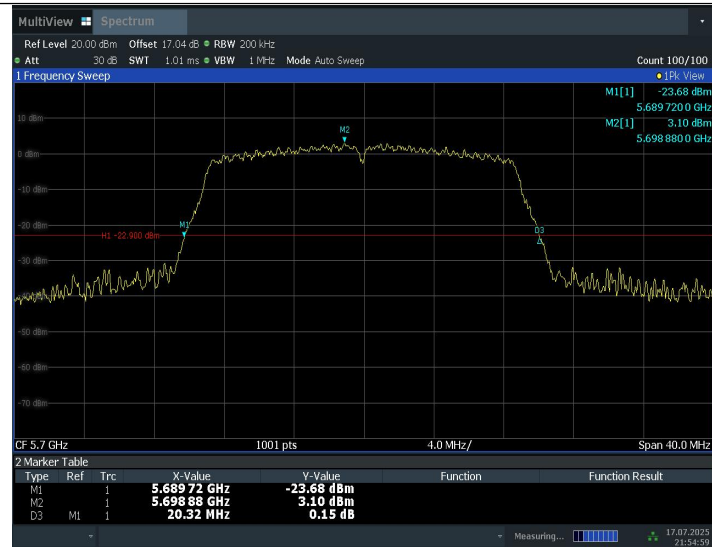
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21:53:49 17.07.2025

11AC20SISO_5700



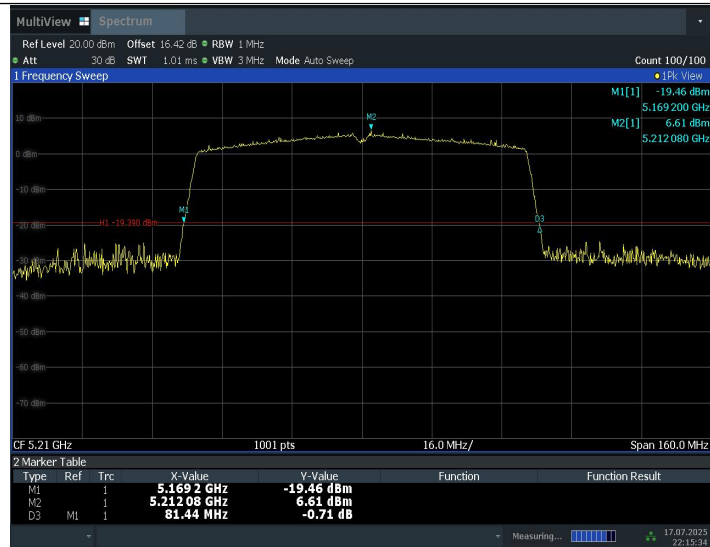
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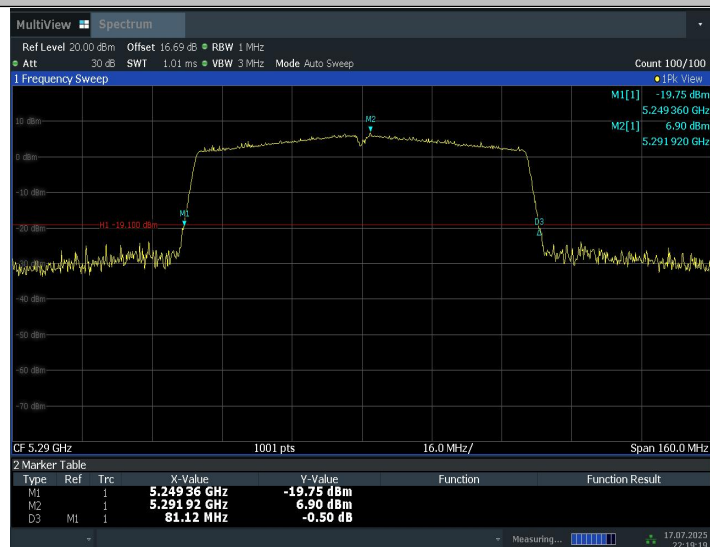
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11AC80SISO_5210



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11AC80SISO_5290



22:19:20 17.07.2025

11AC80SISO_5530



22:20:32 17.07.2025

11AC80SISO_5610



22:21:43 17.07.2025

11AC80SISO_5690



Conclusion: PASS

A.5. Radiated Unwanted Emission

A.5.1 Limits

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

Standard	Limit
FCC 47 CFR Part 15.407	(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz. (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

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).

A.5.2 Test setup

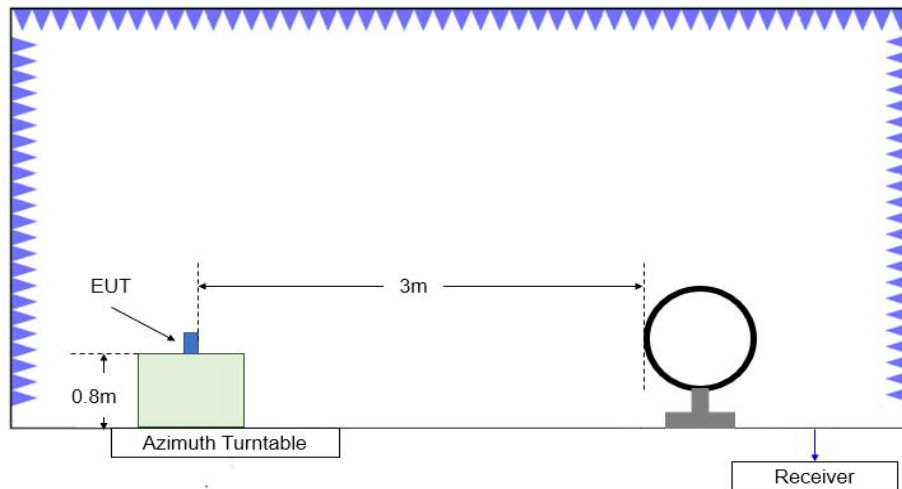


Figure A.5.1. Test Site Diagram (9kHz-30MHz)

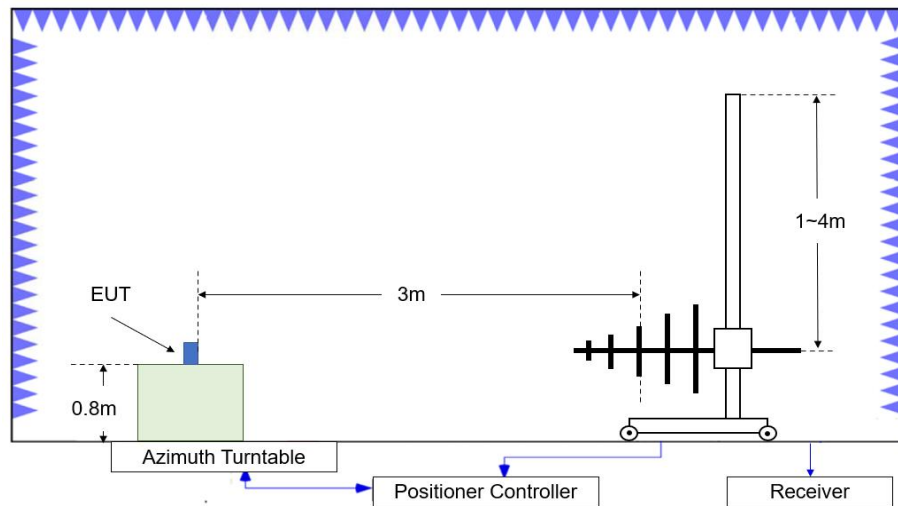


Figure A.5.2. Test Site Diagram (30MHz-1GHz)

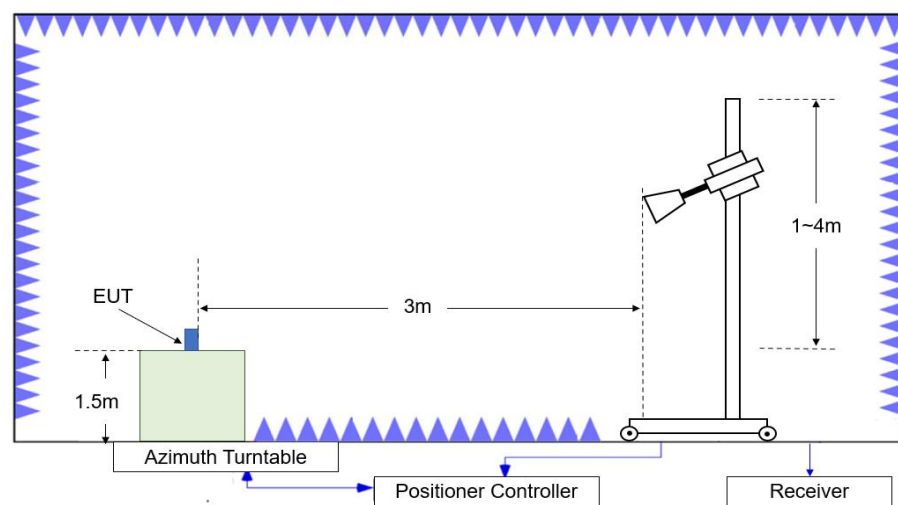


Figure A.5.3. Test Site Diagram (1GHz-40GHz)

A.5.3 Test Procedures

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

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

A.5.4 Calculation

1. The measurement results reported below is calculated by:

Measurement Results (dB μ V/m) = $P_{\text{measurement}}$ (dB μ V) + Cable Loss(dB) + 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.

A.5.5 Measurement Results:

Average Results:

802.11a

Channel 36

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)
5148.050	45.8	-23.1	34.0	34.90	54.0	8.2	H
5150.000	45.9	-23.2	34.0	35.06	54.0	8.1	H
10724.600	35.0	-28.5	37.7	25.83	54.0	19.0	H
15539.850	38.6	-24.4	40.4	22.61	54.0	15.4	H
17854.800	40.0	-21.3	40.5	20.70	54.0	14.0	H
17882.850	40.1	-21.0	40.5	20.59	54.0	13.9	H

Channel 64

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)
5350.100	45.1	-23.1	34.1	34.11	54.0	8.9	H
5350.550	45.1	-23.1	34.1	34.06	54.0	8.9	H
10639.900	34.8	-29.1	37.6	26.27	54.0	19.2	H
15960.050	39.1	-23.4	40.8	21.67	54.0	14.9	V
17885.050	40.2	-21.0	40.5	20.63	54.0	13.8	V
17951.050	40.1	-20.8	40.6	20.40	54.0	13.9	H

Channel 100

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)
5459.600	46.8	-22.5	34.5	34.78	54.0	7.2	H
5459.900	46.8	-22.5	34.5	34.83	54.0	7.2	H
11000.150	35.3	-28.9	37.9	26.37	54.0	18.7	H
16166.300	39.9	-22.6	41.0	21.52	54.0	14.1	V
17896.600	39.8	-21.1	40.5	20.40	54.0	14.2	V
17951.050	40.1	-20.8	40.6	20.40	54.0	13.9	V

Channel 116

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	45.8	-22.5	34.5	33.86	54.0	8.2	H
5459.450	45.9	-22.5	34.5	33.91	54.0	8.1	H
11160.200	35.0	-28.6	37.9	25.75	54.0	19.0	H
16158.600	39.7	-22.8	41.0	21.50	54.0	14.3	V
17753.050	39.7	-21.7	40.6	20.87	54.0	14.3	V
17787.700	39.9	-21.3	40.6	20.66	54.0	14.1	V

Channel 140

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)
5458.250	45.4	-22.5	34.5	33.46	54.0	8.6	H
5459.150	45.5	-22.5	34.5	33.51	54.0	8.5	H
11400.000	36.2	-28.4	38.0	26.59	54.0	17.8	H
16162.450	41.0	-22.7	41.0	22.77	54.0	13.0	V
17875.150	41.4	-21.1	40.5	21.99	54.0	12.6	V
17890.000	41.3	-21.0	40.5	21.76	54.0	12.7	V

Channel 144

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	45.3	-22.5	34.5	33.33	54.0	8.7	H
5458.850	45.3	-22.5	34.5	33.35	54.0	8.7	H
11440.150	34.9	-27.9	38.0	24.76	54.0	19.1	V
15960.600	39.4	-23.4	40.8	21.99	54.0	14.6	V
17882.850	40.3	-21.0	40.5	20.71	54.0	13.7	H
17949.950	40.2	-20.8	40.6	20.46	54.0	13.8	H

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Channel 36

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)
5149.550	45.4	-23.2	34.0	34.52	54.0	8.6	H
5149.850	45.3	-23.2	34.0	34.48	54.0	8.7	H
10746.050	34.4	-28.3	37.7	24.97	54.0	19.6	V
15539.850	38.5	-24.4	40.4	22.45	54.0	15.5	H
17888.350	40.5	-21.0	40.5	20.98	54.0	13.5	V
17949.950	40.4	-20.8	40.6	20.64	54.0	13.6	H

Channel 64

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)
5350.250	46.2	-23.1	34.1	35.21	54.0	7.8	V
5350.550	46.2	-23.1	34.1	35.17	54.0	7.8	V
10639.900	34.1	-29.1	37.6	25.56	54.0	19.9	H
15960.050	39.4	-23.4	40.8	21.97	54.0	14.6	V
17780.000	40.2	-21.3	40.6	20.96	54.0	13.8	H
17875.150	40.4	-21.1	40.5	21.04	54.0	13.6	V

Channel 100

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)
5459.000	46.4	-22.5	34.5	34.46	54.0	7.6	H
5459.750	46.4	-22.5	34.5	34.44	54.0	7.6	H
11000.150	35.9	-28.9	37.9	26.90	54.0	18.1	H
16165.200	40.9	-22.6	41.0	22.55	54.0	13.1	H
17788.800	40.8	-21.3	40.6	21.58	54.0	13.2	V
17887.800	41.1	-21.0	40.5	21.56	54.0	12.9	V

Channel 144

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)
5446.700	45.3	-22.6	34.5	33.38	54.0	8.7	H
5449.850	45.3	-22.6	34.5	33.44	54.0	8.7	H
11440.150	35.0	-27.9	38.0	24.83	54.0	19.0	H
15865.450	39.5	-23.2	40.9	21.84	54.0	14.5	V
17874.600	40.3	-21.2	40.5	20.88	54.0	13.7	V
17962.050	40.0	-21.0	40.6	20.43	54.0	14.0	H

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Channel 38

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)
5149.250	45.4	-23.2	34.0	34.51	54.0	8.6	H
5149.400	45.4	-23.2	34.0	34.52	54.0	8.6	H
11213.000	34.4	-28.2	38.0	24.58	54.0	19.6	H
15570.100	36.9	-24.3	40.4	20.82	54.0	17.1	V
17787.700	39.7	-21.3	40.6	20.44	54.0	14.3	H
17879.550	40.0	-21.0	40.5	20.46	54.0	14.0	H

Channel 62

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)
5350.100	47.2	-23.1	34.1	36.23	54.0	6.8	H
5350.250	47.3	-23.1	34.1	36.25	54.0	6.7	H
10620.100	32.7	-29.2	37.6	24.31	54.0	21.3	V
15929.800	38.0	-23.9	40.9	20.95	54.0	16.0	V
17888.350	40.0	-21.0	40.5	20.42	54.0	14.0	H
17952.150	39.9	-20.9	40.6	20.20	54.0	14.1	V

Channel 102

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)
5459.750	46.3	-22.5	34.5	34.32	54.0	7.7	H
5459.900	46.3	-22.5	34.5	34.31	54.0	7.7	H
11019.950	33.3	-28.9	37.9	24.29	54.0	20.7	H
16163.550	39.2	-22.7	41.0	20.95	54.0	14.8	V
17777.250	39.6	-21.5	40.6	20.49	54.0	14.4	H
17848.200	39.7	-21.3	40.6	20.41	54.0	14.3	V

Channel 118

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)
5459.150	45.7	-22.5	34.5	33.68	54.0	8.3	H
5459.750	45.7	-22.5	34.5	33.67	54.0	8.3	H
11180.000	34.0	-28.7	38.0	24.74	54.0	20.0	H
16147.600	38.8	-23.1	41.0	20.93	54.0	15.2	V
17786.050	39.7	-21.3	40.6	20.44	54.0	14.3	V
17881.200	40.0	-21.0	40.5	20.43	54.0	14.0	H

Channel 142

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)
5444.450	45.2	-22.6	34.5	33.31	54.0	8.8	H
5450.150	45.3	-22.6	34.5	33.39	54.0	8.7	H
11419.800	35.1	-28.5	38.0	25.60	54.0	18.9	V
16165.750	39.7	-22.6	41.0	21.31	54.0	14.4	V
17886.700	40.2	-21.0	40.5	20.65	54.0	13.8	H
17950.500	40.0	-20.8	40.6	20.32	54.0	14.0	V

802.11ac-HT20

Channel 36

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)
5149.250	46.4	-23.2	34.0	35.55	54.0	7.6	H
5149.850	46.5	-23.2	34.0	35.66	54.0	7.5	H
12332.250	36.7	-27.3	38.9	25.01	54.0	17.3	H
15539.850	38.2	-24.4	40.4	22.18	54.0	15.8	H
17890.000	40.0	-21.0	40.5	20.52	54.0	14.0	V
17948.300	40.0	-20.9	40.5	20.33	54.0	14.0	V

Channel 64

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)
5350.250	46.3	-23.1	34.1	35.28	54.0	7.7	H
5350.400	46.2	-23.1	34.1	35.21	54.0	7.8	H
10639.900	34.4	-29.1	37.6	25.85	54.0	19.6	H
15960.050	38.9	-23.4	40.8	21.50	54.0	15.1	V
17880.100	40.0	-21.0	40.5	20.46	54.0	14.0	H
17954.350	39.9	-20.9	40.6	20.24	54.0	14.1	V

Channel 100

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)
5458.700	46.2	-22.5	34.5	34.19	54.0	7.8	H
5459.750	46.2	-22.5	34.5	34.23	54.0	7.8	H
11000.150	34.9	-28.9	37.9	25.99	54.0	19.1	V
16162.450	39.5	-22.7	41.0	21.21	54.0	14.5	V
17876.250	40.1	-21.1	40.5	20.64	54.0	13.9	H
17948.850	40.0	-20.9	40.5	20.30	54.0	14.0	H

Channel 116

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)
5457.350	45.6	-22.5	34.5	33.67	54.0	8.4	H
5459.150	45.6	-22.5	34.5	33.63	54.0	8.4	H
11160.200	34.6	-28.6	37.9	25.30	54.0	19.4	V
15863.250	39.2	-23.3	40.9	21.60	54.0	14.8	H
17886.150	40.1	-21.0	40.5	20.52	54.0	13.9	H
17948.300	39.9	-20.9	40.5	20.29	54.0	14.1	H

Channel 140

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)
5459.300	45.5	-22.5	34.5	33.48	54.0	8.5	H
5459.750	45.5	-22.5	34.5	33.49	54.0	8.5	H
11400.000	35.1	-28.4	38.0	25.53	54.0	18.9	V
16164.100	39.4	-22.7	41.0	21.10	54.0	14.6	H
17880.100	40.0	-21.0	40.5	20.46	54.0	14.0	H
17950.500	40.0	-20.8	40.6	20.32	54.0	14.0	V

Channel 144

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)
5454.200	45.3	-22.6	34.5	33.35	54.0	8.7	H
5457.500	45.3	-22.5	34.5	33.33	54.0	8.7	H
11440.150	34.6	-27.9	38.0	24.43	54.0	19.4	V
16166.850	39.3	-22.6	41.0	20.96	54.0	14.7	H
17886.150	40.0	-21.0	40.5	20.46	54.0	14.0	V
17949.400	39.9	-20.9	40.5	20.20	54.0	14.1	V

802.11ac-HT40
Channel 38

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)
5149.250	45.9	-23.2	34.0	35.07	54.0	8.1	H
5149.700	45.9	-23.2	34.0	35.01	54.0	8.2	H
12331.700	36.9	-27.3	38.9	25.24	54.0	17.1	H
15570.100	38.3	-24.3	40.4	22.20	54.0	15.7	V
17875.150	40.3	-21.1	40.5	20.88	54.0	13.7	H
17948.850	40.1	-20.9	40.5	20.48	54.0	13.9	H

Channel 62

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)
5350.250	48.3	-23.1	34.1	37.26	54.0	5.7	H
5350.550	48.2	-23.1	34.1	37.19	54.0	5.8	H
10620.100	34.5	-29.2	37.6	26.10	54.0	19.5	V
15929.800	38.5	-23.9	40.9	21.46	54.0	15.5	V
17886.150	40.2	-21.0	40.5	20.67	54.0	13.8	H
17949.400	40.2	-20.9	40.5	20.47	54.0	13.8	V

Channel 102

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)
5459.300	46.1	-22.5	34.5	34.12	54.0	7.9	H
5459.900	46.1	-22.5	34.5	34.15	54.0	7.9	H
11019.950	34.9	-28.9	37.9	25.91	54.0	19.1	H
15862.150	39.4	-23.3	40.9	21.85	54.0	14.6	V
17879.550	40.4	-21.0	40.5	20.82	54.0	13.6	H
17948.300	40.1	-20.9	40.5	20.52	54.0	13.9	H

Channel 142

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)
5453.300	45.3	-22.6	34.5	33.36	54.0	8.7	H
5457.950	45.4	-22.5	34.5	33.39	54.0	8.7	H
11419.800	35.2	-28.5	38.0	25.75	54.0	18.8	V
15861.600	39.4	-23.3	40.9	21.87	54.0	14.6	V
17889.450	40.3	-21.0	40.5	20.73	54.0	13.7	V
17949.950	40.1	-20.8	40.6	20.41	54.0	13.9	H

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Channel 42

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)
5149.100	45.7	-22.6	34.0	34.28	54.0	8.3	H
5149.700	45.8	-22.3	34.0	34.10	54.0	8.2	H
12119.400	36.9	-27.6	39.0	25.60	54.0	17.1	H
15630.050	38.1	-24.0	40.5	21.68	54.0	15.9	V
17886.150	40.4	-21.3	40.5	21.21	54.0	13.6	H
17954.350	40.2	-20.9	40.5	20.59	54.0	13.8	V

Channel 58

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)
5350.100	48.0	-22.4	34.3	36.04	54.0	6.0	H
5350.250	47.9	-22.5	34.4	35.98	54.0	6.1	H
12343.250	36.8	-29.6	37.6	28.81	54.0	17.2	V
15869.850	39.3	-23.1	40.9	21.55	54.0	14.7	H
17880.100	40.4	-21.0	40.5	20.86	54.0	13.6	V
5350.100	48.0	-22.4	34.3	36.04	54.0	6.0	H

Channel 106

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)
5459.750	46.7	-22.5	34.4	34.81	54.0	7.3	V
5459.900	46.7	-22.5	34.5	34.76	54.0	7.3	V
11060.100	34.7	-28.8	37.8	25.66	54.0	19.3	H
15977.100	39.4	-23.3	40.9	21.86	54.0	14.6	V
17887.800	40.4	-21.0	40.5	20.82	54.0	13.6	H
17947.750	40.3	-20.9	40.6	20.62	54.0	13.7	V

Channel 138

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)
5452.550	45.3	-22.5	34.5	33.35	54.0	8.7	H
5457.950	45.3	-22.5	34.5	33.36	54.0	8.7	H
11380.200	35.4	-28.2	38.3	25.33	54.0	18.6	H
15862.150	39.5	-21.3	40.6	20.22	54.0	14.5	V
17877.350	40.3	-21.0	40.5	20.74	54.0	13.7	H
17950.500	40.4	-20.8	40.6	20.65	54.0	13.6	V

PEAK Results:
802.11a
Channel 36

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)
5149.503	69.1	-23.2	34.0	58.23	74.0	4.9	H
5149.153	68.7	-23.2	34.0	57.86	74.0	5.3	H
10359.400	48.1	-29.1	37.4	39.81	68.2	20.1	H
15539.850	52.4	-24.4	40.4	36.42	74.0	21.6	V
16658.550	54.7	-22.4	41.4	35.80	68.2	13.5	H
17541.850	55.1	-20.8	40.8	35.14	68.2	13.1	H

Channel 64

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)
5350.799	69.3	-23.1	34.1	58.25	74.0	4.7	V
5351.393	69.6	-23.1	34.1	58.52	74.0	4.4	V
10641.000	46.7	-29.1	37.6	38.20	74.0	27.3	H
15961.150	52.3	-23.4	40.8	34.84	74.0	21.7	H
16959.400	53.4	-22.2	41.2	34.42	68.2	14.8	V
17479.700	53.5	-21.9	40.8	34.56	68.2	14.7	V

Channel 100

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)
5468.470	63.9	-22.2	34.4	51.71	68.2	4.3	H
5469.213	63.1	-22.2	34.4	50.89	68.2	5.1	H
11000.125	48.0	-28.9	37.9	39.04	74.0	26.0	V
16500.150	52.4	-22.7	41.1	34.04	68.2	15.8	V
16972.600	54.7	-22.2	41.2	35.69	68.2	13.5	H
17476.400	54.5	-21.9	40.8	35.55	68.2	13.7	V

Channel 116

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)
5513.400	56.6	-22.9	34.2	45.22	68.2	11.6	H
5641.800	57.9	-22.7	34.6	46.00	68.2	10.3	H
11160.750	48.1	-28.6	37.9	38.83	74.0	25.9	V
16688.250	54.6	-22.6	41.4	35.76	68.2	13.6	V
16741.050	52.5	-22.9	41.4	33.93	68.2	15.7	H
16975.350	54.6	-22.2	41.2	35.54	68.2	13.7	V

Channel 140

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)
5725.438	60.9	-22.1	34.3	48.70	68.2	7.3	H
5725.500	60.5	-22.1	34.3	48.27	68.2	7.7	H
11399.450	48.4	-28.4	38.0	38.88	74.0	25.6	H
16742.700	54.2	-22.9	41.4	35.64	68.2	14.0	H
17099.650	52.9	-22.3	41.0	34.21	68.2	15.3	H
17539.100	54.2	-20.7	40.8	34.12	68.2	14.0	V

Channel 144

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)
5655.800	57.1	-22.5	34.7	45.01	68.2	11.1	H
5767.200	57.6	-22.0	34.4	45.18	68.2	10.6	H
11440.150	47.0	-27.9	38.0	36.84	74.0	27.0	V
16502.900	53.3	-22.8	41.1	34.90	68.2	14.9	V
17160.150	50.5	-22.4	40.9	31.92	68.2	17.7	H
17535.800	53.3	-21.0	40.8	33.60	68.2	14.9	H

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Channel 36

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)
5149.293	67.9	-23.2	34.0	57.06	74.0	6.1	H
5149.730	68.1	-23.2	34.0	57.22	74.0	5.9	H
10359.400	47.4	-29.1	37.4	39.08	68.2	20.8	H
15539.300	51.4	-24.4	40.4	35.41	74.0	22.6	H
17443.950	54.5	-21.7	40.7	35.46	68.2	13.7	V
17562.200	54.4	-21.9	40.7	35.56	68.2	13.8	H

Channel 64

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)
5350.097	69.0	-23.1	34.1	58.01	74.0	5.0	H
5352.365	68.9	-23.0	34.1	57.83	74.0	5.1	H
10642.100	47.6	-29.1	37.6	39.11	74.0	26.4	H
15958.950	52.0	-23.5	40.8	34.59	74.0	22.0	V
16994.600	54.3	-22.2	41.1	35.36	68.2	13.9	V
17398.850	54.2	-21.8	40.7	35.28	68.2	14.0	H

Channel 100

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)
5469.063	61.4	-22.2	34.4	49.24	68.2	6.8	H
5469.520	62.2	-22.2	34.4	49.99	68.2	6.0	V
11000.700	48.9	-28.9	37.9	39.91	74.0	25.1	H
16501.250	52.2	-22.7	41.1	33.84	68.2	16.0	H
17061.700	54.1	-22.4	41.0	35.44	68.2	14.1	V
17479.150	55.1	-21.9	40.8	36.22	68.2	13.1	H

Channel 144

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)
5638.600	57.6	-22.7	34.6	45.72	68.2	10.6	H
5806.200	57.3	-21.8	34.6	44.51	68.2	10.9	H
11440.150	46.4	-27.9	38.0	36.26	74.0	27.6	V
16608.500	52.9	-22.4	41.3	33.92	68.2	15.3	V
17160.150	50.2	-22.4	40.9	31.67	68.2	18.0	H
17547.350	52.9	-21.2	40.8	33.41	68.2	15.3	H

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Channel 38

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)
5146.300	68.9	-23.1	34.0	58.06	74.0	5.1	H
5149.345	68.6	-23.2	34.0	57.74	74.0	5.4	H
10381.950	47.3	-29.2	37.5	39.07	68.2	20.9	H
15570.100	51.2	-24.3	40.4	35.06	74.0	22.8	H
16671.200	54.4	-22.5	41.4	35.48	68.2	13.8	V
17657.350	54.8	-21.3	40.6	35.44	68.2	13.4	V

Channel 62

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)
5350.016	69.1	-23.1	34.1	58.13	74.0	4.9	H
5350.583	69.8	-23.1	34.1	58.78	74.0	4.2	H
10619.000	46.6	-29.3	37.6	38.29	74.0	27.4	H
15929.250	52.3	-23.9	40.9	35.27	74.0	21.7	V
16678.350	54.4	-22.5	41.4	35.59	68.2	13.8	H
16989.650	54.7	-22.3	41.1	35.86	68.2	13.5	V

Channel 102

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)
5464.068	59.2	-22.4	34.4	47.08	68.2	9.0	H
5469.753	59.3	-22.2	34.4	47.06	68.2	8.9	H
11016.100	48.5	-29.0	37.9	39.56	74.0	25.5	V
16528.200	52.5	-22.6	41.2	33.94	68.2	15.7	V
17066.650	54.4	-22.2	41.0	35.48	68.2	13.8	H
17550.100	54.2	-21.5	40.7	34.96	68.2	14.0	H

Channel 118

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)
5500.000	57.1	-22.9	34.3	45.75	68.2	11.1	H
5690.000	57.9	-22.3	34.4	45.80	68.2	10.3	H
10797.200	48.5	-29.2	37.8	39.91	74.0	25.5	V
16770.200	52.4	-22.7	41.4	33.74	68.2	15.8	H
17071.050	53.9	-22.1	41.0	34.93	68.2	14.3	H
17352.650	54.2	-21.9	40.7	35.37	68.2	14.0	V

Channel 142

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)
5619.400	58.0	-22.6	34.5	46.12	68.2	10.2	H
5809.400	57.5	-21.9	34.7	44.74	68.2	10.7	H
11419.800	46.6	-28.5	38.0	37.11	74.0	27.4	V
17129.900	49.8	-22.3	41.0	31.06	68.2	18.4	H
17481.900	53.3	-21.9	40.8	34.51	68.2	14.9	V
17544.600	53.5	-21.0	40.8	33.75	68.2	14.7	H

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Channel 36

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)
5144.060	68.6	-23.1	34.0	57.70	74.0	5.4	H
5149.573	68.8	-23.2	34.0	57.95	74.0	5.2	H
10359.950	45.3	-29.1	37.4	37.03	68.2	22.9	H
15539.850	50.1	-24.4	40.4	34.04	74.0	23.9	H
16668.450	53.3	-22.4	41.4	34.37	68.2	14.9	H
17094.150	52.8	-22.3	41.0	34.13	68.2	15.4	V

Channel 64

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)
5350.367	68.7	-23.1	34.1	57.67	74.0	5.3	H
5351.015	69.0	-23.1	34.1	57.99	74.0	5.0	H
10639.900	44.3	-29.1	37.6	35.80	74.0	29.7	V
15960.050	50.3	-23.4	40.8	32.85	74.0	23.7	H
16657.450	52.1	-22.5	41.4	33.19	68.2	16.1	H
17534.150	52.2	-21.2	40.8	32.67	68.2	16.0	H

Channel 100

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)
5468.500	61.0	-22.2	34.4	48.83	68.2	7.2	H
5469.745	61.9	-22.2	34.4	49.66	68.2	6.3	H
11000.150	44.9	-28.9	37.9	35.97	74.0	29.1	V
16500.150	50.0	-22.7	41.1	31.61	68.2	18.2	V
16706.950	52.9	-22.4	41.4	33.83	68.2	15.3	V
17075.450	52.3	-22.2	41.0	33.50	68.2	15.9	H

Channel 116

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)
5493.000	57.2	-22.7	34.3	45.59	68.2	11.0	H
5669.200	58.0	-22.5	34.5	45.95	68.2	10.2	H
11160.200	44.9	-28.6	37.9	35.60	74.0	29.1	V
16331.300	52.8	-23.0	40.9	34.87	68.2	15.4	V
16739.950	49.4	-22.9	41.4	30.83	68.2	18.8	H
17545.700	52.8	-21.1	40.8	33.19	68.2	15.4	H

Channel 140

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)
5725.250	64.2	-22.1	34.3	51.94	68.2	4.0	H
5725.675	63.1	-22.1	34.3	50.91	68.2	5.1	H
11400.000	45.9	-28.4	38.0	36.30	74.0	28.1	V
16970.400	52.5	-22.2	41.2	33.43	68.2	15.7	H
17100.200	49.5	-22.3	41.0	30.82	68.2	18.7	H
17544.050	52.3	-21.0	40.8	32.47	68.2	15.9	V

Channel 144

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)
5659.800	57.2	-22.6	34.6	45.12	68.2	11.0	H
5776.400	57.4	-22.1	34.5	45.03	68.2	10.8	H
11440.150	45.3	-27.9	38.0	35.20	74.0	28.7	V
17160.150	51.4	-22.4	40.9	32.82	68.2	16.8	V
17538.550	53.5	-20.8	40.8	33.49	68.2	14.7	H
17627.100	53.5	-21.8	40.6	34.65	68.2	14.8	V

802.11ac-HT40
Channel 38

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)
5145.600	69.1	-23.1	34.0	58.23	74.0	4.9	H
5148.628	69.5	-23.1	34.0	58.65	74.0	4.5	H
10379.750	45.1	-29.2	37.5	36.81	68.2	23.1	H
15570.100	51.0	-24.3	40.4	34.87	74.0	23.0	H
16783.950	52.8	-22.9	41.4	34.31	68.2	15.4	V
17541.300	53.1	-20.7	40.8	33.05	68.2	15.1	H

Channel 62

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)
5350.448	70.0	-23.1	34.1	59.00	74.0	4.0	H
5352.695	69.1	-23.0	34.1	58.06	74.0	4.9	H
10620.100	45.6	-29.2	37.6	37.18	74.0	28.4	H
15929.800	49.8	-23.9	40.9	32.83	74.0	24.2	H
17107.900	53.2	-22.3	41.0	34.49	68.2	15.0	V
17541.300	53.5	-20.7	40.8	33.46	68.2	14.7	V

Channel 102

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)
5466.408	62.0	-22.3	34.4	49.82	68.2	6.2	H
5468.065	63.5	-22.3	34.4	51.27	68.2	4.7	H
11019.950	46.5	-28.9	37.9	37.48	74.0	27.5	V
16482.000	52.6	-22.6	41.1	34.23	68.2	15.6	V
16529.850	50.6	-22.5	41.2	32.01	68.2	17.6	V
17055.100	53.6	-22.4	41.0	34.99	68.2	14.6	H

Channel 142

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)
5617.000	57.1	-22.6	34.4	45.34	68.2	11.1	H
5806.600	56.7	-21.9	34.6	43.91	68.2	11.5	H
11419.800	46.0	-28.5	38.0	36.51	74.0	28.0	V
16662.950	52.8	-22.4	41.4	33.84	68.2	15.4	V
16955.000	52.4	-22.2	41.2	33.39	68.2	15.8	H
17129.900	51.1	-22.3	41.0	32.38	68.2	17.1	H

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Channel 42

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)
5141.085	64.8	-22.3	33.9	53.19	74.0	9.2	H
5147.070	66.4	-22.3	34.0	54.75	74.0	7.6	H
10419.900	45.6	-29.4	37.5	37.51	68.2	22.6	V
15630.050	50.0	-24.0	40.5	33.51	74.0	24.0	V
16561.200	53.4	-22.4	40.9	34.85	68.2	14.8	H
16966.550	53.5	-21.5	40.8	34.22	68.2	14.7	H

Channel 58

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)
5353.215	68.2	-22.7	34.2	56.76	74.0	5.8	H
5357.778	68.4	-22.5	34.4	56.45	74.0	5.6	H
10579.950	46.2	-28.9	37.6	37.51	68.2	22.0	H
15869.850	50.3	-23.1	40.9	32.54	74.0	23.7	V
16724.000	53.5	-22.8	41.4	34.91	68.2	14.7	V
17654.050	53.4	-21.5	40.6	34.23	68.2	14.8	H

Channel 106

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)
5463.993	62.0	-22.5	34.5	50.05	68.2	6.2	H
5469.198	62.1	-22.2	34.4	49.86	68.2	6.1	V
11060.100	45.3	-29.0	37.9	36.40	74.0	28.7	V
16589.800	50.4	-22.3	41.3	31.40	68.2	17.8	H
17460.450	54.4	-22.4	41.3	35.49	68.2	13.8	V
17663.950	53.6	-20.7	40.8	33.54	68.2	14.6	H

Channel 138

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)
5535.200	57.6	-22.2	34.8	45.05	68.2	10.6	H
5858.200	57.5	-22.1	34.8	44.74	68.2	10.7	H
11380.200	46.1	-28.2	38.3	36.05	74.0	27.9	V
16469.900	53.4	-22.3	40.9	34.80	68.2	14.8	H
17069.950	51.9	-22.1	40.8	33.18	68.2	16.3	V
17682.650	53.5	-21.8	40.6	34.64	68.2	14.7	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

Band edge compliance

Mode	Channel	Test Results	Conclusion
802.11a	5180 MHz	Fig.1	P
	5320 MHz	Fig.2	P
	5500 MHz	Fig.3	P
	5700 MHz	Fig.4	P
802.11n HT20	5180 MHz	Fig.5	P
	5320 MHz	Fig.6	P
	5500 MHz	Fig.7	P
	5700 MHz	Fig.8	P
802.11n HT40	5190 MHz	Fig.9	P
	5310 MHz	Fig.10	P
	5510 MHz	Fig.11	P
	5670 MHz	Fig.12	P
802.11ac HT20	5180 MHz	Fig.13	P
	5320 MHz	Fig.14	P
	5500 MHz	Fig.15	P
	5700 MHz	Fig.16	P
802.11ac HT40	5190 MHz	Fig.17	P
	5310 MHz	Fig.18	P
	5510 MHz	Fig.19	P
	5670 MHz	Fig.20	P
802.11ac HT80	5210MHz	Fig.21	P
	5290MHz	Fig.22	P
	5530MHz	Fig.23	P
	5610MHz	Fig.24	P

Conclusion: PASS

Test graphs as below:

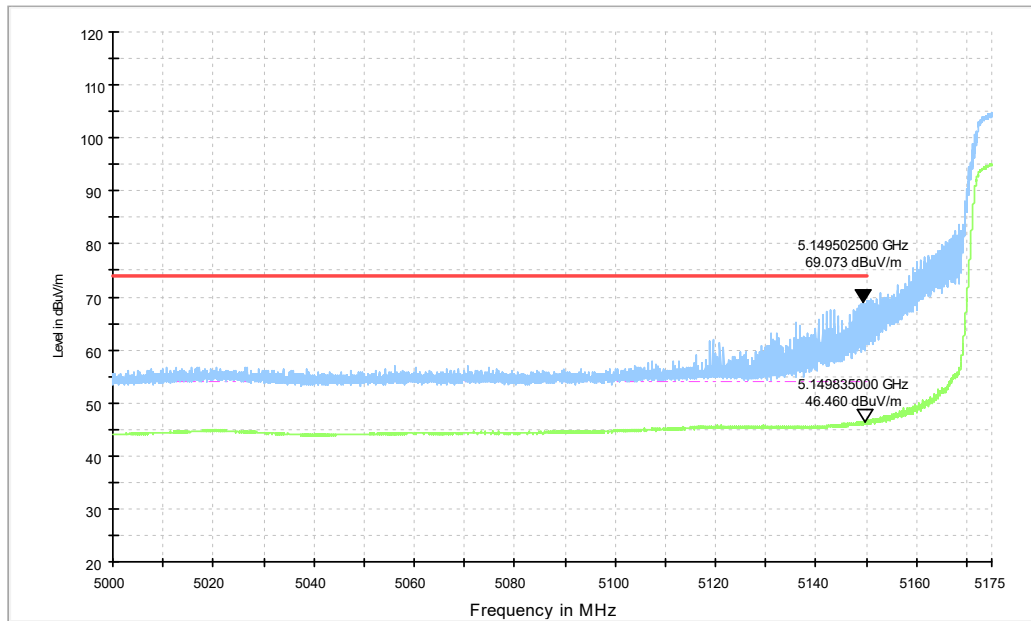


Fig. 1 Band Edges (802.11a Ch36, 5180MHz)

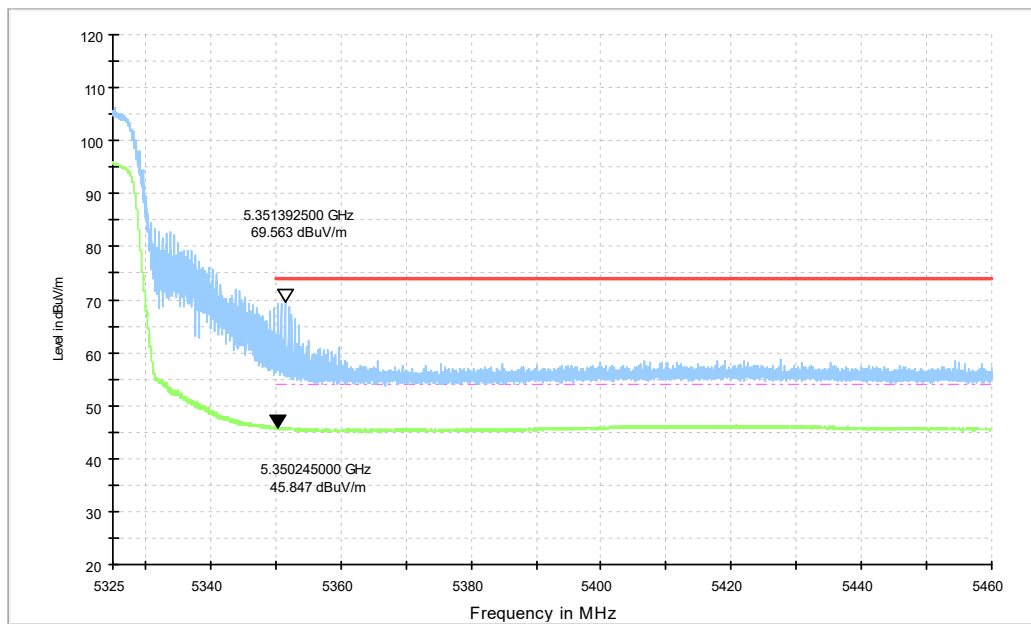


Fig. 2 Band Edges (802.11a Ch64, 5320MHz)

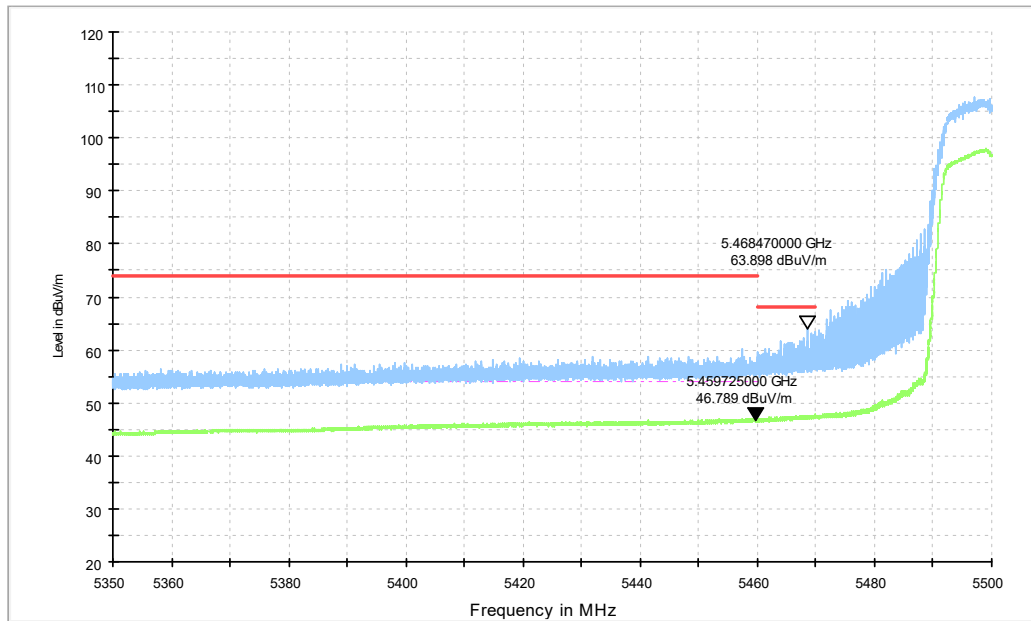


Fig. 3 Band Edges (802.11a Ch100, 5500MHz)

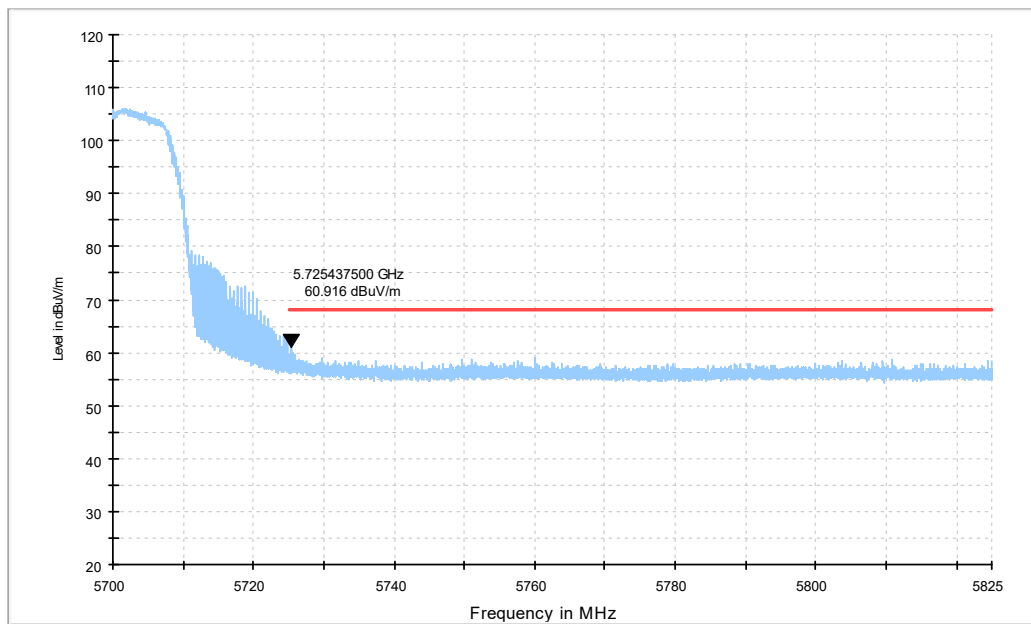


Fig. 4 Band Edges (802.11a Ch140, 5700MHz)