



FCC PART 15E TEST REPORT No.24T04Z103031-007

for

TCL Communication Ltd.

Tablet PC

9185W

FCC ID: 2ACCJB229

with

Hardware Version: 05

Software Version: 4J3M

Issued Date: 2025-03-06

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

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

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

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



REPORT HISTORY

Report Number	Revision	Description	Issue Date
24T04Z103031-007	Rev.0	1st edition	2025-03-06

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

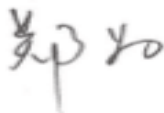
Testing Start Date: 2024-12-31

Testing End Date: 2025-03-06

1.5. Signature



Dong Jiaxuan
(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: TCL Communication Ltd.
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science
Park, Shatin, NT, Hong Kong
City: Hong Kong
Contact: Ting Wang
Email: ting.wang.hz@tcl.com
Telephone: +86 752 2639091
Fax: +86 755 3661 2000-81722

2.2 Manufacturer Information

Company Name: TCL Communication Ltd.
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science
Park, Shatin, NT, Hong Kong
City: Hong Kong
Contact: Ting Wang
Email: ting.wang.hz@tcl.com
Telephone: +86 752 2639091
Fax: +86 755 3661 2000-81722

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

3.1. About EUT

Description	Tablet PC
Model name	9185W
FCC ID	2ACCJB229
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz -5470MHz~5725MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Nominal Voltage	3.8V

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
UT89a	016645000023444 016645000023451	05	4J3M	2025-02-10
UT53a	016645000021653 016645000021703	05	4J3M	2025-02-10

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

UT53a is used for Conduction test, UT89a is used for Radiation test.

3.3. Internal Identification of AE used during the test

AE ID*	Name	Model	Manufacturer
AE1	Battery	TLp058C7	Veken
AE2*	Charger	/	/
AE3	USB cable	CDA0000296C8	PUAN
AE4*	Headset	/	/

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

*AE2 and AE4 are not the AE for EUT, provided by the lab for relevant tests.

3.4. General Description

The Equipment under Test (EUT) is a model of Tablet PC 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	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices	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

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 Part15E	Sub-clause of IC	Verdict
Maximum Output Power	15.407	/	P
Peak Power Spectral Density	15.407	/	P
Occupied 26dB Bandwidth	15.403	/	P
Radiated Unwanted Emission	15.407, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.107, 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	3.8V
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	2025-08-11
2	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2025-04-30
3	Test Receiver	ESCI	100344	R&S	1 year	2025-04-01
4	LISN	ENV216	101200	R&S	1 year	2025-05-16
5	Attenuator	10dB/2W	/	Rosenberger	/	/
6	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	2025-06-06
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	3115	00146404	ETS-Lindgren	1 year	2025-05-16
6	EMI Antenna	3117	00119021	ETS-Lindgren	1 year	2025-09-18
7	EMI Antenna	LB-180400 -25-C-KF	21100840000 06	A-INFO	1 year	2025-05-15

AC Power Line Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101459	R&S	1 year	2025-05-16
2	Test Receiver	ESCI	100766	R&S	1 year	2025-04-18

8. Measurement Uncertainty

8.1 Transmitter Output Power

Measurement Uncertainty: 0.387dB,k=1.96

8.2 Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

8.3 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

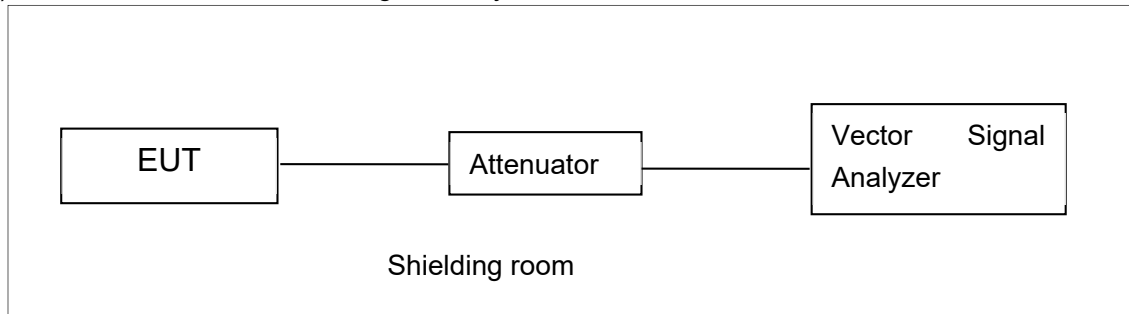
Measurement Uncertainty: 3.10dB, k=2

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 -2.7dBi and the value is supplied by the applicant or manufacturer.

A.2.2 Maximum output Power-Conducted

EUT ID: UT53a

Measurement Results:

802.11a mode

Mode	Frequency	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz	18.58	/	/	/	/	/	/	/
	5200MHz	18.74	/	/	/	/	/	/	/
	5240MHz	18.93	/	/	/	/	/	/	/
	5260MHz	18.60	/	/	/	/	/	/	/
	5280MHz	18.96	/	/	/	/	/	/	/
	5320MHz	18.56	/	/	/	/	/	/	/
	5500MHz	14.72	/	/	/	/	/	/	/
	5580MHz	18.20	/	/	/	/	/	/	/
	5700MHz	16.68	/	/	/	/	/	/	/
	5720MHz	18.28	/	/	/	/	/	/	/

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	17.68	/	/	/	/	/	/	/
	5200MHz	17.79	/	/	/	/	/	/	/
	5240MHz	18.08	/	/	/	/	/	/	/
	5260MHz	17.63	/	/	/	/	/	/	/
	5280MHz	18.07	/	/	/	/	/	/	/
	5320MHz	17.69	/	/	/	/	/	/	/

	5500MHz	14.58	/	/	/	/	/	/	/
	5580MHz	17.38	/	/	/	/	/	/	/
	5700MHz	16.46	/	/	/	/	/	/	/
	5720MHz	17.39	/	/	/	/	/	/	/

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	15.43	/	/	/	/	/	/	/	/
	5200MHz	15.58	/	/	/	/	/	/	/	/
	5240MHz	15.81	/	/	/	/	/	/	/	/
	5260MHz	15.45	/	/	/	/	/	/	/	/
	5280MHz	15.91	/	/	/	/	/	/	/	/
	5320MHz	15.56	/	/	/	/	/	/	/	/
	5500MHz	15.18	/	/	/	/	/	/	/	/
	5580MHz	15.39	/	/	/	/	/	/	/	/
	5700MHz	15.27	/	/	/	/	/	/	/	/
	5720MHz	15.33	/	/	/	/	/	/	/	/

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	15.52	/	/	/	/	/	/	/
	5230MHz	15.73	/	/	/	/	/	/	/
	5270MHz	16.18	/	/	/	/	/	/	/
	5310MHz	16.09	/	/	/	/	/	/	/
	5510MHz	14.06	/	/	/	/	/	/	/
	5550MHz	15.89	/	/	/	/	/	/	/
	5670MHz	15.85	/	/	/	/	/	/	/
	5710MHz	16.04	/	/	/	/	/	/	/

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	14.55	/	/	/	/	/	/	/	/	/
	5230MHz	14.73	/	/	/	/	/	/	/	/	/
	5270MHz	14.75	/	/	/	/	/	/	/	/	/
	5310MHz	14.63	/	/	/	/	/	/	/	/	/
	5510MHz	13.05	/	/	/	/	/	/	/	/	/
	5550MHz	14.50	/	/	/	/	/	/	/	/	/
	5670MHz	14.82	/	/	/	/	/	/	/	/	/
	5710MHz	15.03	/	/	/	/	/	/	/	/	/

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

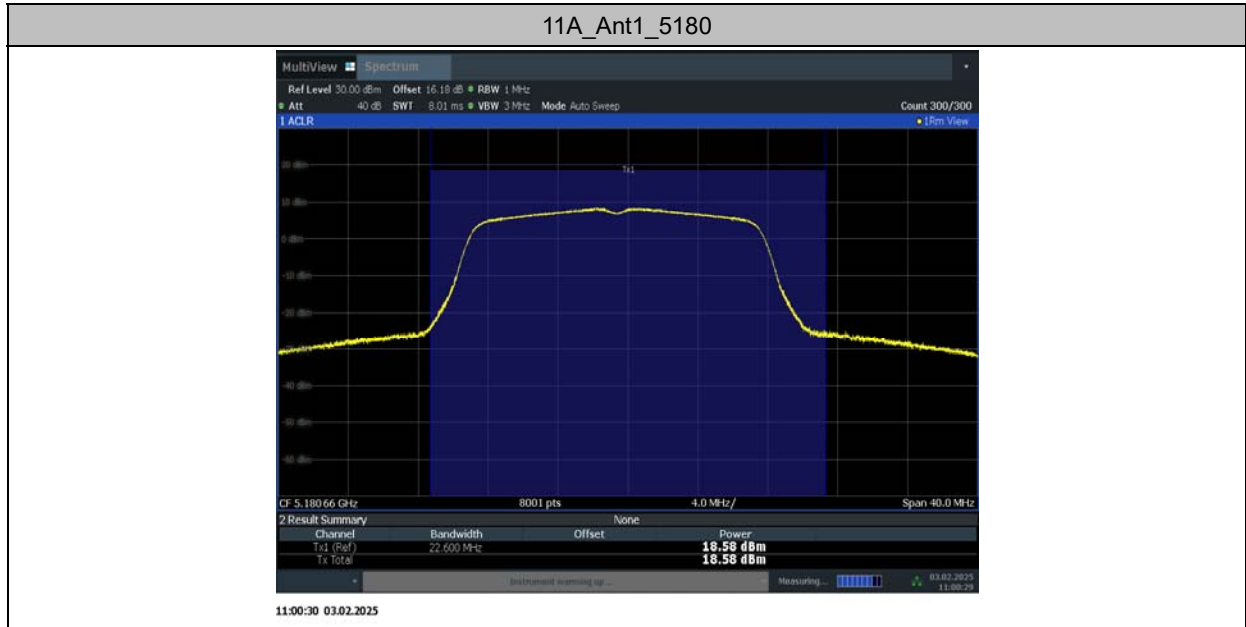
802.11ac-VHT80 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (VHT80)	5210MHz	13.41	/	/	/	/	/	/	/	/	/
	5290MHz	14.17	/	/	/	/	/	/	/	/	/
	5530MHz	14.26	/	/	/	/	/	/	/	/	/
	5610MHz	13.60	/	/	/	/	/	/	/	/	/
	5690MHz	14.34	/	/	/	/	/	/	/	/	/

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

The duty cycle

TestMode	Antenna	Duty Cycle [%]
11A	Ant1	97.90
11N20SISO	Ant1	96.99
11N40SISO	Ant1	95.59
11AC20SISO	Ant1	97.76
11AC40SISO	Ant1	95.65
11AC80SISO	Ant1	88.89



Maximum output Power

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: UT53a

Measurement Results:

TestMode	Antenna	Frequency[MHz]	Result [dBm/MHz]	Limit[dBm/MHz]	Verdict
11A	Ant1	5180	8.34	≤11.00	PASS
		5200	8.64	≤11.00	PASS
		5240	9.14	≤11.00	PASS
		5260	8.44	≤11.00	PASS
		5280	8.70	≤11.00	PASS
		5320	8.32	≤11.00	PASS
		5500	8.30	≤11.00	PASS
		5580	8.02	≤11.00	PASS
		5700	8.86	≤11.00	PASS
		5720	8.11	≤11.00	PASS
11N20SISO	Ant1	5180	7.12	≤11.00	PASS
		5200	7.33	≤11.00	PASS
		5240	7.85	≤11.00	PASS
		5260	7.27	≤11.00	PASS
		5280	7.79	≤11.00	PASS
		5320	7.23	≤11.00	PASS
		5500	7.39	≤11.00	PASS
		5580	7.14	≤11.00	PASS
		5700	7.80	≤11.00	PASS
		5720	7.67	≤11.00	PASS
11N40SISO	Ant1	5190	2.29	≤11.00	PASS
		5230	2.60	≤11.00	PASS
		5270	2.85	≤11.00	PASS
		5310	2.75	≤11.00	PASS
		5510	3.05	≤11.00	PASS
		5550	2.66	≤11.00	PASS
		5670	2.52	≤11.00	PASS
		5710	3.00	≤11.00	PASS
11AC80SISO	Ant1	5210	-3.13	≤11.00	PASS
		5290	-2.13	≤11.00	PASS

		5530	-2.05	≤ 11.00	PASS
		5610	-2.58	≤ 11.00	PASS
		5690	-1.75	≤ 11.00	PASS



Peak Power Spectral Density

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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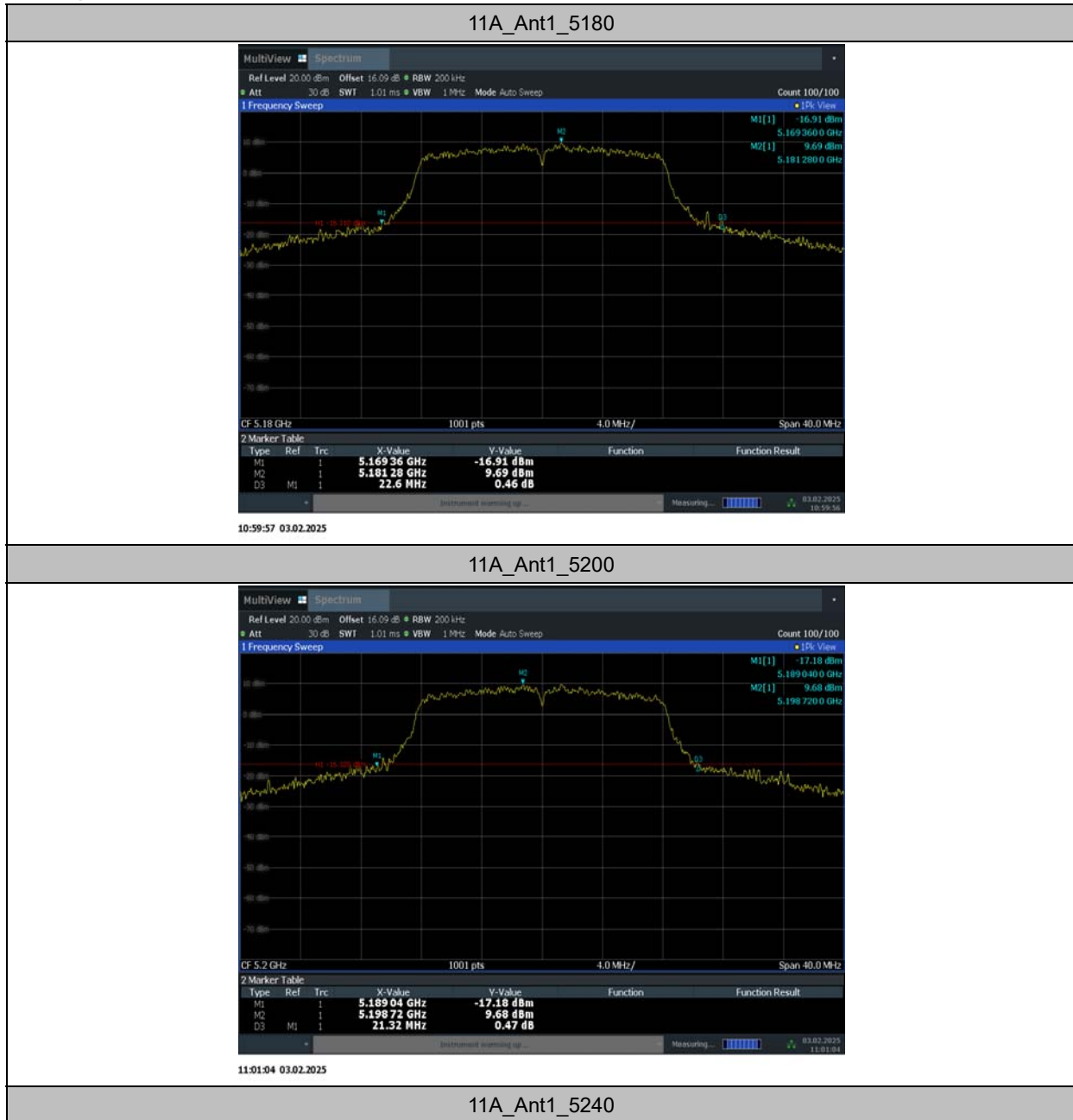
EUT ID: UT53a

Measurement Result:

TestMode	Antenna	Frequency[MHz]	26db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	22.60	5169.36	5191.96	---	---
		5200	21.32	5189.04	5210.36	---	---
		5240	22.00	5228.80	5250.80	---	---
		5260	27.48	5247.60	5275.08	---	---
		5280	23.32	5268.64	5291.96	---	---
		5320	22.60	5308.96	5331.56	---	---
		5500	26.16	5486.08	5512.24	---	---
		5580	25.92	5566.76	5592.68	---	---
		5700	26.16	5688.24	5714.40	---	---
		5720	28.92	5706.40	5735.32	---	---
11N20SISO	Ant1	5180	24.00	5168.24	5192.24	---	---
		5200	23.40	5188.24	5211.64	---	---
		5240	22.68	5228.04	5250.72	---	---
		5260	24.84	5248.28	5273.12	---	---
		5280	23.64	5268.24	5291.88	---	---
		5320	24.68	5308.32	5333.00	---	---
		5500	26.16	5486.12	5512.28	---	---
		5580	24.32	5567.24	5591.56	---	---
		5700	24.64	5688.16	5712.80	---	---
		5720	28.28	5705.84	5734.12	---	---
11N40SISO	Ant1	5190	41.04	5169.36	5210.40	---	---
		5230	41.44	5209.20	5250.64	---	---
		5270	45.20	5249.36	5294.56	---	---
		5310	41.84	5289.60	5331.44	---	---
		5510	42.24	5489.12	5531.36	---	---
		5550	42.08	5529.28	5571.36	---	---
		5670	53.84	5640.72	5694.56	---	---
		5710	45.36	5689.04	5734.40	---	---
11AC80SISO	Ant1	5210	81.44	5169.20	5250.64	---	---
		5290	81.44	5249.20	5330.64	---	---

		5530	81.92	5488.88	5570.80	---	---
		5610	81.44	5569.20	5650.64	---	---
		5690	81.92	5649.04	5730.96	---	---

Test graphs as below:





11:02:10 03.02.2025

11A_Ant1_5260



11:03:29 03.02.2025

11A_Ant1_5280



11:04:35 03.02.2025

11A_Ant1_5320



11:05:58 03.02.2025

11A_Ant1_5500



11:07:04 03.02.2025

11A_Ant1_5580



11:08:09 03.02.2025

11A_Ant1_5700



11A_Ant1_5720



11N20SISO_Ant1_5180



11:15:17 03.02.2025

11N20SISO_Ant1_5200



11:16:28 03.02.2025

11N20SISO_Ant1_5240



11:17:31 03.02.2025

11N20SISO_Ant1_5260



11:18:34 03.02.2025

11N20SISO_Ant1_5280



11N20SISO_Ant1_5320



11N20SISO_Ant1_5500



11N20SISO_Ant1_5580



11N20SISO_Ant1_5700



11:24:29 03.02.2025

11N20SISO_Ant1_5720



11:25:39 03.02.2025

11N40SISO_Ant1_5190



11:31:40 03.02.2025

11N40SISO_Ant1_5230



11:33:39 03.02.2025

11N40SISO_Ant1_5270



11N40SISO_Ant1_5310



11N40SISO_Ant1_5510



11N40SISO_Ant1_5550

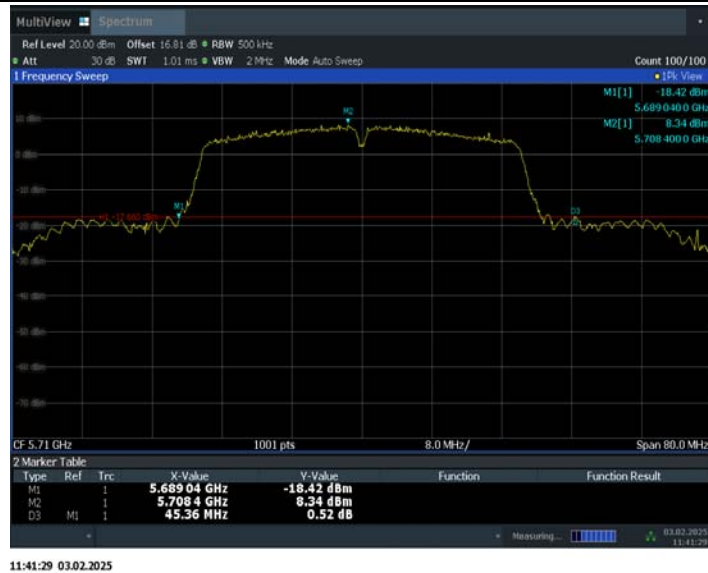


11N40SISO_Ant1_5670



11:39:57 03.02.2025

11N40SISO_Ant1_5710



11:41:29 03.02.2025

11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5290



11AC80SISO_Ant1_5530



12:41:11 03.02.2025

11AC80SISO_Ant1_5610



12:42:20 03.02.2025

11AC80SISO_Ant1_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

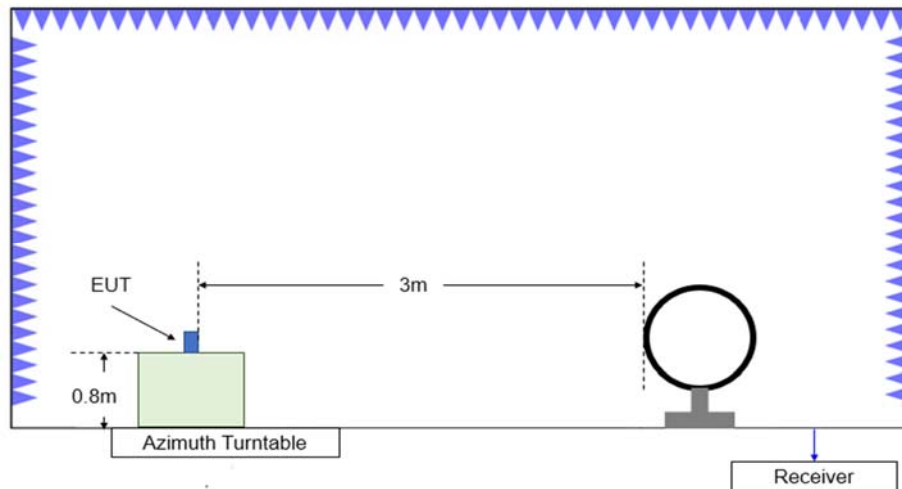


Figure A.5.1. Test Site Diagram (9kHz-30MHz)

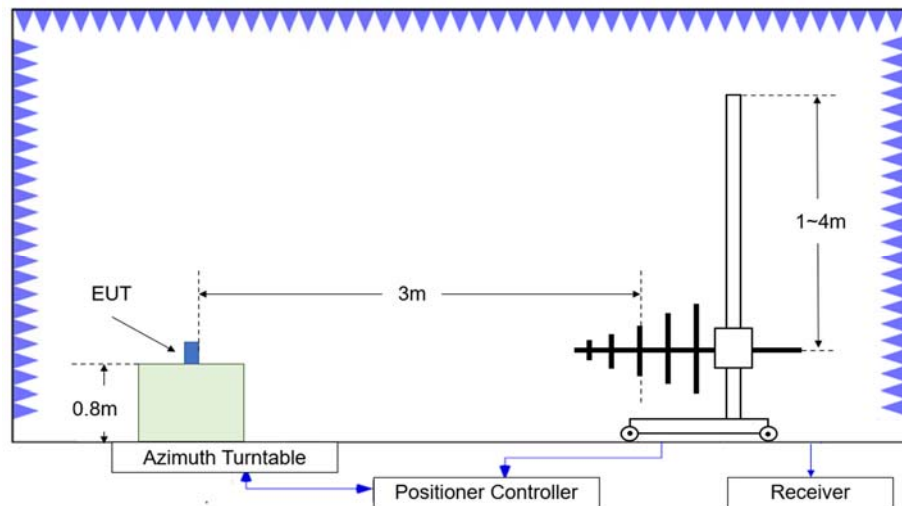


Figure A.5.2. Test Site Diagram (30MHz-1GHz)

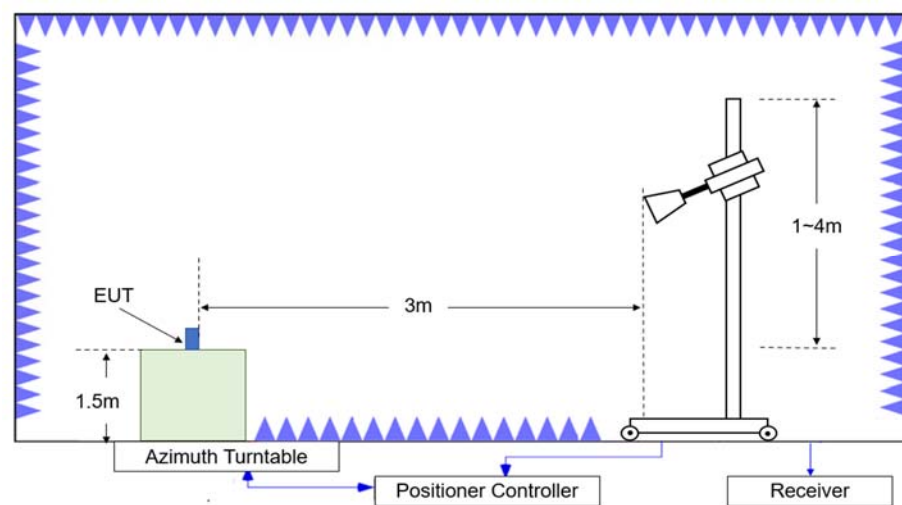


Figure A.5.3. Test Site Diagram (1GHz-40GHz)

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)
5147.800	47.1	-23.1	34.0	36.26	54.0	6.9	V
5149.900	47.7	-23.2	34.0	36.87	54.0	6.3	V
10785.600	34.9	-28.8	37.8	25.94	54.0	19.1	V
15540.000	38.2	-24.4	40.4	22.22	54.0	15.8	V
17891.600	40.3	-21.0	40.5	20.80	54.0	13.7	V
17950.000	40.3	-20.8	40.6	20.54	54.0	13.7	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)
5350.650	47.3	-23.1	34.1	36.27	54.0	6.7	V
5352.700	46.9	-23.0	34.1	35.78	54.0	7.1	V
10640.000	34.5	-29.1	37.6	26.02	54.0	19.5	V
15960.000	38.8	-23.4	40.8	21.41	54.0	15.2	V
17890.000	40.1	-21.0	40.5	20.60	54.0	13.9	H
17950.800	40.2	-20.8	40.6	20.52	54.0	13.8	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)
5439.300	45.3	-22.5	34.5	33.40	54.0	8.7	V
5492.500	45.6	-22.7	34.3	34.02	54.0	8.4	V
11000.000	35.4	-28.9	37.9	26.40	54.0	18.6	H
16102.400	39.2	-23.5	41.1	21.64	54.0	14.8	V
17891.200	40.1	-21.0	40.5	20.64	54.0	13.9	H
17951.200	40.2	-20.8	40.6	20.44	54.0	13.8	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)
5458.650	45.1	-22.5	34.5	33.16	54.0	8.9	V
5459.500	45.2	-22.5	34.5	33.18	54.0	8.8	V
11160.000	35.1	-28.6	37.9	25.81	54.0	18.9	H
16014.800	39.1	-23.5	40.8	21.74	54.0	14.9	H
17888.000	40.3	-21.0	40.5	20.77	54.0	13.7	H
17951.600	40.4	-20.8	40.6	20.69	54.0	13.6	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)
5422.950	45.1	-22.5	34.4	33.23	54.0	8.9	V
5459.750	45.1	-22.5	34.5	33.16	54.0	8.9	V
11400.000	35.2	-28.4	38.0	25.59	54.0	18.8	V
16102.400	39.2	-23.5	41.1	21.58	54.0	14.8	H
17888.400	40.2	-21.0	40.5	20.66	54.0	13.8	H
17950.800	40.2	-20.8	40.6	20.49	54.0	13.8	V

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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)
5149.950	47.7	-23.2	34.0	36.82	54.0	6.3	V
5149.900	47.7	-23.2	34.0	36.84	54.0	6.3	V
11961.600	36.6	-27.8	38.8	25.54	54.0	17.4	V
15540.000	38.2	-24.4	40.4	22.15	54.0	15.8	V
17794.000	38.8	-21.4	40.6	19.60	54.0	15.2	V
17881.200	38.9	-21.0	40.5	19.37	54.0	15.1	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)
5350.050	48.6	-23.1	34.1	37.58	54.0	5.4	V
5350.100	48.5	-23.1	34.1	37.52	54.0	5.5	V
10640.000	34.6	-29.1	37.6	26.10	54.0	19.4	V
15960.000	38.6	-23.4	40.8	21.18	54.0	15.4	V
17788.400	39.3	-21.3	40.6	20.05	54.0	14.7	V
17880.000	39.6	-21.0	40.5	20.01	54.0	14.4	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)
5459.000	45.4	-22.5	34.5	33.47	54.0	8.6	V
5459.600	45.5	-22.5	34.5	33.53	54.0	8.5	V
11000.000	35.3	-28.9	37.9	26.34	54.0	18.7	V
16004.000	38.8	-23.4	40.8	21.41	54.0	15.2	H
17787.200	39.4	-21.3	40.6	20.15	54.0	14.6	V
17880.000	39.6	-21.0	40.5	20.03	54.0	14.4	H

802.11n-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)
5147.350	45.4	-23.1	34.0	34.49	54.0	8.6	V
5149.750	45.7	-23.2	34.0	34.86	54.0	8.3	V
11959.600	36.7	-27.7	38.8	25.61	54.0	17.3	V
15570.000	38.3	-24.3	40.4	22.16	54.0	15.7	H
17867.600	39.2	-21.3	40.5	20.00	54.0	14.8	V
17947.200	39.5	-21.0	40.5	19.90	54.0	14.5	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)
5350.250	46.4	-23.1	34.1	35.41	54.0	7.6	V
5350.650	46.4	-23.1	34.1	35.41	54.0	7.6	V
10620.000	34.4	-29.2	37.6	26.02	54.0	19.6	H
15930.000	38.9	-23.9	40.9	21.94	54.0	15.1	H
17890.800	39.4	-21.0	40.5	19.91	54.0	14.6	V
17955.200	39.3	-20.9	40.6	19.62	54.0	14.7	H

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)
5459.800	45.5	-22.5	34.5	33.47	54.0	8.5	V
5459.900	45.5	-22.5	34.5	33.49	54.0	8.5	V
11020.000	35.3	-28.9	37.9	26.29	54.0	18.7	H
15999.600	39.5	-23.4	40.8	22.08	54.0	14.5	V
17788.800	39.3	-21.3	40.6	20.02	54.0	14.7	H
17886.000	39.5	-21.0	40.5	20.00	54.0	14.5	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)
5458.500	45.2	-22.5	34.5	33.18	54.0	8.8	V
5459.650	45.1	-22.5	34.5	33.15	54.0	8.9	V
11180.000	35.5	-28.7	38.0	26.24	54.0	18.5	H
16003.200	39.6	-23.4	40.8	22.24	54.0	14.4	V
17842.800	39.5	-21.3	40.6	20.25	54.0	14.5	H
17886.800	39.8	-21.0	40.5	20.23	54.0	14.2	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)
5142.700	44.9	-23.1	34.0	34.00	54.0	9.1	V
5149.700	45.1	-23.2	34.0	34.23	54.0	8.9	V
11962.000	36.6	-27.8	38.8	25.63	54.0	17.4	V
15540.000	38.5	-24.4	40.4	22.50	54.0	15.5	V
17894.000	39.8	-21.1	40.5	20.34	54.0	14.2	V
17954.000	39.8	-20.9	40.6	20.14	54.0	14.2	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)
5350.050	45.4	-23.1	34.1	34.36	54.0	8.6	V
5369.450	45.4	-22.5	34.2	33.73	54.0	8.6	V
10640.000	34.8	-29.1	37.6	26.31	54.0	19.2	H
15960.000	39.2	-23.4	40.8	21.80	54.0	14.8	V
17819.600	39.5	-21.5	40.6	20.45	54.0	14.5	H
17886.400	40.0	-21.0	40.5	20.49	54.0	14.0	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)
5450.150	45.6	-22.6	34.5	33.67	54.0	8.4	V
5459.500	45.7	-22.5	34.5	33.74	54.0	8.3	V
11000.000	34.7	-28.9	37.9	25.75	54.0	19.3	H
15871.200	38.4	-23.2	40.9	20.72	54.0	15.6	H
17848.000	38.6	-21.3	40.6	19.27	54.0	15.4	H
17880.400	38.7	-21.0	40.5	19.12	54.0	15.3	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)
5458.550	45.2	-22.5	34.5	33.18	54.0	8.8	V
5459.400	45.2	-22.5	34.5	33.19	54.0	8.8	V
11160.000	34.4	-28.6	37.9	25.12	54.0	19.6	H
15868.800	38.0	-23.1	40.9	20.24	54.0	16.0	H
17883.600	39.1	-21.0	40.5	19.51	54.0	14.9	H
17950.000	39.1	-20.8	40.6	19.33	54.0	14.9	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)
5430.450	45.1	-22.5	34.4	33.21	54.0	8.9	V
5459.550	45.1	-22.5	34.5	33.15	54.0	8.9	V
11400.000	34.5	-28.4	38.0	24.88	54.0	19.5	V
15860.000	37.8	-23.4	40.9	20.28	54.0	16.2	H
17883.600	39.0	-21.0	40.5	19.40	54.0	15.0	H
17948.000	38.9	-20.9	40.5	19.33	54.0	15.1	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)
5143.500	45.3	-23.1	34.0	34.41	54.0	8.7	V
5149.300	45.8	-23.2	34.0	34.93	54.0	8.2	V
11949.200	36.0	-27.6	38.8	24.78	54.0	18.0	V
15570.000	37.6	-24.3	40.4	21.45	54.0	16.4	V
17883.600	39.4	-21.0	40.5	19.84	54.0	14.6	V
17948.400	39.3	-20.9	40.5	19.69	54.0	14.7	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)
5351.300	45.4	-23.1	34.1	34.39	54.0	8.6	V
5369.650	45.3	-22.5	34.2	33.67	54.0	8.7	V
10620.000	33.9	-29.2	37.6	25.51	54.0	20.1	H
15930.000	38.2	-23.9	40.9	21.23	54.0	15.8	V
17883.600	39.4	-21.0	40.5	19.85	54.0	14.6	V
17946.800	39.4	-21.0	40.5	19.88	54.0	14.6	H

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)
5448.650	45.4	-22.6	34.5	33.52	54.0	8.6	V
5460.000	45.6	-22.5	34.5	33.58	54.0	8.4	V
11020.000	34.6	-28.9	37.9	25.66	54.0	19.4	V
15862.400	38.8	-23.3	40.9	21.26	54.0	15.2	V
17879.600	39.3	-21.0	40.5	19.75	54.0	14.7	H
17954.000	39.4	-20.9	40.6	19.74	54.0	14.6	H

802.11ac-HT80

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)
5145.800	45.8	-23.1	34.0	34.96	54.0	8.2	V
5149.750	46.2	-23.2	34.0	35.34	54.0	7.8	V
11960.400	36.2	-27.8	38.8	25.19	54.0	17.8	V
15630.000	37.8	-24.0	40.5	21.36	54.0	16.2	V
17859.600	39.4	-21.3	40.5	20.18	54.0	14.6	V
17948.000	39.7	-20.9	40.5	20.07	54.0	14.3	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)
5350.450	45.6	-23.1	34.1	34.57	54.0	8.4	V
5370.950	45.9	-22.5	34.2	34.24	54.0	8.1	V
11958.800	36.2	-27.7	38.8	25.11	54.0	17.8	H
15870.000	38.9	-23.1	40.9	21.12	54.0	15.1	H
17879.600	39.7	-21.0	40.5	20.18	54.0	14.3	H
17950.400	39.8	-20.8	40.6	20.08	54.0	14.2	V

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)
5453.500	45.5	-22.6	34.5	33.59	54.0	8.5	V
5457.600	45.6	-22.5	34.5	33.61	54.0	8.4	V
11060.000	34.9	-28.8	37.8	25.85	54.0	19.1	V
15991.200	39.0	-23.3	40.8	21.57	54.0	15.0	H
17882.000	39.8	-21.0	40.5	20.21	54.0	14.2	V
17954.000	39.8	-20.9	40.6	20.11	54.0	14.2	H

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)
5147.000	70.2	-23.1	34.0	59.30	74.0	3.8	V
5147.753	70.3	-23.1	34.0	59.44	74.0	3.7	V
10359.950	47.4	-29.1	37.4	39.15	68.2	20.8	V
15537.650	52.0	-24.4	40.4	36.03	74.0	22.0	H
17014.400	55.2	-22.1	41.1	36.26	68.2	13.0	V
17539.650	54.6	-20.7	40.8	34.46	68.2	13.6	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)
5353.377	71.1	-23.0	34.1	59.95	74.0	2.9	V
5362.922	70.9	-22.7	34.2	59.54	74.0	3.1	V
10639.350	48.3	-29.1	37.6	39.74	74.0	25.7	H
15960.050	52.1	-23.4	40.8	34.71	74.0	21.9	H
16650.300	53.6	-22.7	41.4	35.00	68.2	14.6	H
17633.150	53.7	-21.7	40.6	34.75	68.2	14.5	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)
5468.725	67.1	-22.2	34.4	54.87	68.2	1.1	V
5469.370	65.4	-22.2	34.4	53.22	68.2	2.8	H
10999.600	48.4	-28.9	37.9	39.43	74.0	25.6	H
16499.600	51.6	-22.7	41.1	33.25	68.2	16.6	V
16893.400	53.9	-22.4	41.4	34.90	68.2	14.3	V
17528.100	53.9	-21.6	40.8	34.81	68.2	14.3	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)
5491.200	56.9	-22.7	34.3	45.24	68.2	11.3	V
5669.400	56.9	-22.5	34.5	44.82	68.2	11.3	V
11160.750	48.2	-28.6	37.9	38.93	74.0	25.8	V
16740.500	51.4	-22.9	41.4	32.89	68.2	16.8	H
17543.500	54.3	-20.9	40.8	34.43	68.2	13.9	V
17654.050	54.2	-21.3	40.6	34.92	68.2	14.0	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)
5727.238	66.7	-22.1	34.3	54.50	68.2	1.5	H
5727.788	67.0	-22.2	34.3	54.85	68.2	1.2	H
11401.650	48.5	-28.4	38.0	38.86	74.0	25.5	H
17098.550	52.2	-22.3	41.0	33.53	68.2	16.0	V
17535.800	54.1	-21.0	40.8	34.40	68.2	14.1	V
17667.800	54.1	-21.3	40.6	34.78	68.2	14.1	V

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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)
5146.930	68.7	-23.1	34.0	57.79	74.0	5.3	V
5148.120	69.8	-23.1	34.0	58.92	74.0	4.2	H
10359.950	46.7	-29.1	37.4	38.45	68.2	21.5	V
15539.850	50.2	-24.4	40.4	34.21	74.0	23.8	V
17178.300	54.3	-22.3	40.9	35.65	68.2	13.9	H
17539.100	54.1	-20.7	40.8	34.03	68.2	14.1	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)
5351.366	71.7	-23.1	34.1	60.65	74.0	2.3	V
5351.676	72.1	-23.1	34.1	61.03	74.0	1.9	H
10639.900	46.6	-29.1	37.6	38.04	74.0	27.4	H
15960.050	51.1	-23.4	40.8	33.67	74.0	22.9	V
17428.000	53.7	-21.7	40.7	34.68	68.2	14.5	V
17539.650	53.9	-20.7	40.8	33.83	68.2	14.3	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)
5466.475	63.7	-22.3	34.4	51.54	68.2	4.5	H
5468.703	65.1	-22.2	34.4	52.91	68.2	3.1	V
11000.150	47.7	-28.9	37.9	38.77	74.0	26.3	V
16500.150	50.9	-22.7	41.1	32.52	68.2	17.3	V
16889.000	54.1	-22.3	41.4	34.93	68.2	14.1	V
17254.750	54.8	-22.2	40.8	36.19	68.2	13.4	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)
5725.525	67.2	-22.1	34.3	55.04	68.2	1.0	V
5726.113	66.9	-22.1	34.3	54.72	68.2	1.3	V
11400.000	46.6	-28.4	38.0	37.00	74.0	27.4	H
16597.500	53.5	-22.3	41.3	34.50	68.2	14.7	V
17096.900	53.8	-22.3	41.0	35.17	68.2	14.4	H
17540.200	53.5	-20.6	40.8	33.35	68.2	14.7	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)
5147.350	45.4	-23.1	34.0	34.49	54.0	8.6	V
5149.750	45.7	-23.2	34.0	34.86	54.0	8.3	V
11959.600	36.7	-27.7	38.8	25.61	54.0	17.3	V
15570.000	38.3	-24.3	40.4	22.16	54.0	15.7	H
17867.600	39.2	-21.3	40.5	20.00	54.0	14.8	V
17947.200	39.5	-21.0	40.5	19.90	54.0	14.5	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)
5350.250	46.4	-23.1	34.1	35.41	54.0	7.6	V
5350.650	46.4	-23.1	34.1	35.41	54.0	7.6	V
10620.000	34.4	-29.2	37.6	26.02	54.0	19.6	H
15930.000	38.9	-23.9	40.9	21.94	54.0	15.1	H
17890.800	39.4	-21.0	40.5	19.91	54.0	14.6	V
17955.200	39.3	-20.9	40.6	19.62	54.0	14.7	H

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)
5459.800	45.5	-22.5	34.5	33.47	54.0	8.5	V
5459.900	45.5	-22.5	34.5	33.49	54.0	8.5	V
11020.000	35.3	-28.9	37.9	26.29	54.0	18.7	H
15999.600	39.5	-23.4	40.8	22.08	54.0	14.5	V
17788.800	39.3	-21.3	40.6	20.02	54.0	14.7	H
17886.000	39.5	-21.0	40.5	20.00	54.0	14.5	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)
5458.500	45.2	-22.5	34.5	33.18	54.0	8.8	V
5459.650	45.1	-22.5	34.5	33.15	54.0	8.9	V
11180.000	35.5	-28.7	38.0	26.24	54.0	18.5	H
16003.200	39.6	-23.4	40.8	22.24	54.0	14.4	V
17842.800	39.5	-21.3	40.6	20.25	54.0	14.5	H
17886.800	39.8	-21.0	40.5	20.23	54.0	14.2	V

Channel 134

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)
5725.900	64.6	-22.1	34.3	52.40	68.2	3.6	H
5732.625	63.8	-22.2	34.3	51.70	68.2	4.4	V
11340.050	47.4	-28.1	37.9	37.64	74.0	26.6	V
16616.200	52.7	-22.4	41.3	33.85	68.2	15.5	V
17010.000	51.7	-22.2	41.1	32.75	68.2	16.5	H
17423.050	53.1	-21.8	40.7	34.14	68.2	15.1	V

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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)
5147.718	65.6	-23.1	34.0	54.71	74.0	8.4	H
5149.783	66.2	-23.2	34.0	55.32	74.0	7.8	H
10359.950	47.2	-29.1	37.4	38.90	68.2	21.0	V
15539.850	50.9	-24.4	40.4	34.87	74.0	23.1	V
16394.000	53.9	-22.7	40.9	35.70	68.2	14.3	H
16948.400	54.2	-22.2	41.3	35.17	68.2	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)
5350.002	68.3	-23.1	34.1	57.25	74.0	5.7	H
5351.649	68.3	-23.1	34.1	57.29	74.0	5.7	V
10639.900	46.5	-29.1	37.6	37.97	74.0	27.5	H
15960.050	51.0	-23.4	40.8	33.56	74.0	23.0	H
16671.200	54.1	-22.5	41.4	35.17	68.2	14.1	H
17540.750	54.9	-20.7	40.8	34.87	68.2	13.3	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)
5466.535	65.6	-22.3	34.4	53.42	68.2	2.6	V
5469.693	66.6	-22.2	34.4	54.33	68.2	1.7	V
11000.150	46.3	-28.9	37.9	37.32	74.0	27.7	H
16500.150	49.9	-22.7	41.1	31.47	68.2	18.3	V
16629.400	52.8	-22.6	41.3	34.04	68.2	15.4	V
17066.100	52.7	-22.2	41.0	33.86	68.2	15.5	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)
5507.400	57.3	-22.8	34.3	45.88	68.2	10.9	H
5629.000	57.4	-22.5	34.5	45.44	68.2	10.8	V
11160.200	46.2	-28.6	37.9	36.91	74.0	27.8	H
16739.950	50.5	-22.9	41.4	31.92	68.2	17.7	H
16862.050	52.8	-22.6	41.4	33.99	68.2	15.4	V
17465.950	52.7	-21.8	40.8	33.73	68.2	15.5	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)
5725.563	66.3	-22.1	34.3	54.11	68.2	1.9	V
5725.888	66.8	-22.1	34.3	54.55	68.2	1.4	H
11400.000	48.0	-28.4	38.0	38.39	74.0	26.0	H
16584.300	53.1	-22.3	41.3	34.15	68.2	15.1	H
16926.950	53.9	-22.5	41.3	35.03	68.2	14.3	H
17100.200	50.8	-22.3	41.0	32.13	68.2	17.4	H

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)
5147.175	66.7	-23.1	34.0	55.80	74.0	7.3	V
5149.538	67.2	-23.2	34.0	56.41	74.0	6.8	H
10379.750	47.2	-29.2	37.5	38.95	68.2	21.0	V
15570.100	50.3	-24.3	40.4	34.16	74.0	23.7	H
16655.800	53.5	-22.5	41.4	34.71	68.2	14.7	H
16909.900	54.0	-22.3	41.4	34.92	68.2	14.2	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)
5357.198	68.1	-22.9	34.1	56.90	74.0	5.9	H
5357.603	69.0	-22.9	34.1	57.72	74.0	5.1	V
10620.100	45.9	-29.2	37.6	37.57	74.0	28.1	H
15929.800	51.2	-23.9	40.9	34.21	74.0	22.8	H
16530.950	53.3	-22.6	41.2	34.72	68.2	14.9	H
16945.100	53.3	-22.3	41.3	34.30	68.2	14.9	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)
5468.815	67.1	-22.2	34.4	54.86	68.2	1.1	V
5469.415	66.7	-22.2	34.4	54.51	68.2	1.5	H
11019.950	46.6	-28.9	37.9	37.65	74.0	27.4	H
16529.850	51.1	-22.5	41.2	32.51	68.2	17.1	V
17022.650	53.8	-22.2	41.1	34.83	68.2	14.4	V
17525.350	54.4	-21.7	40.8	35.27	68.2	13.8	V

802.11ac-HT80
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)
5143.623	64.9	-23.1	34.0	54.03	74.0	9.1	H
5147.805	64.2	-23.1	34.0	53.35	74.0	9.8	H
10419.900	46.4	-29.4	37.5	38.25	68.2	21.8	V
15630.050	49.7	-24.0	40.5	33.21	74.0	24.3	H
16616.750	54.0	-22.4	41.3	35.11	68.2	14.2	H
17057.300	53.9	-22.4	41.0	35.32	68.2	14.3	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)
5350.353	66.7	-23.1	34.1	55.68	74.0	7.3	H
5367.674	67.4	-22.6	34.2	55.79	74.0	6.6	H
10579.950	47.3	-28.8	37.6	38.58	68.2	20.9	H
15869.850	51.5	-23.1	40.9	33.71	74.0	22.5	V
17127.150	53.4	-22.3	41.0	34.78	68.2	14.8	V
17530.300	54.3	-21.6	40.8	35.07	68.2	13.9	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)
5464.083	67.7	-22.3	34.4	55.60	68.2	0.5	V
5467.353	67.2	-22.2	34.4	54.98	68.2	1.0	V
11060.100	47.7	-28.8	37.8	38.70	74.0	26.3	V
16589.800	51.9	-22.3	41.3	32.93	68.2	16.3	H
16758.100	53.4	-22.8	41.4	34.82	68.2	14.8	H
17043.550	53.8	-22.7	41.1	35.35	68.2	14.4	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:

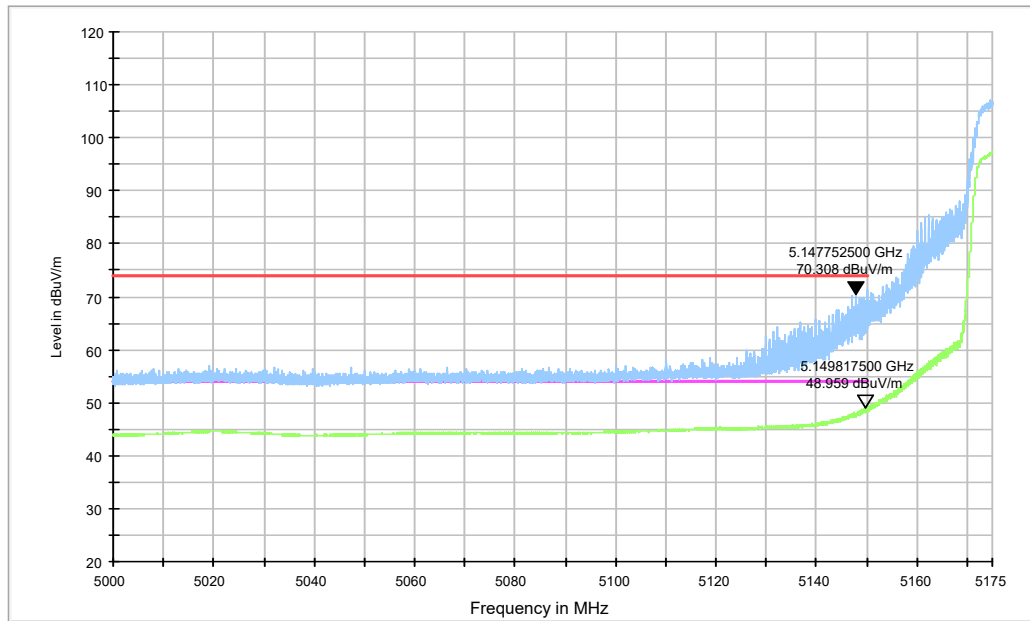


Fig. 1 Band Edges (802.11a Ch36, 5180MHz)

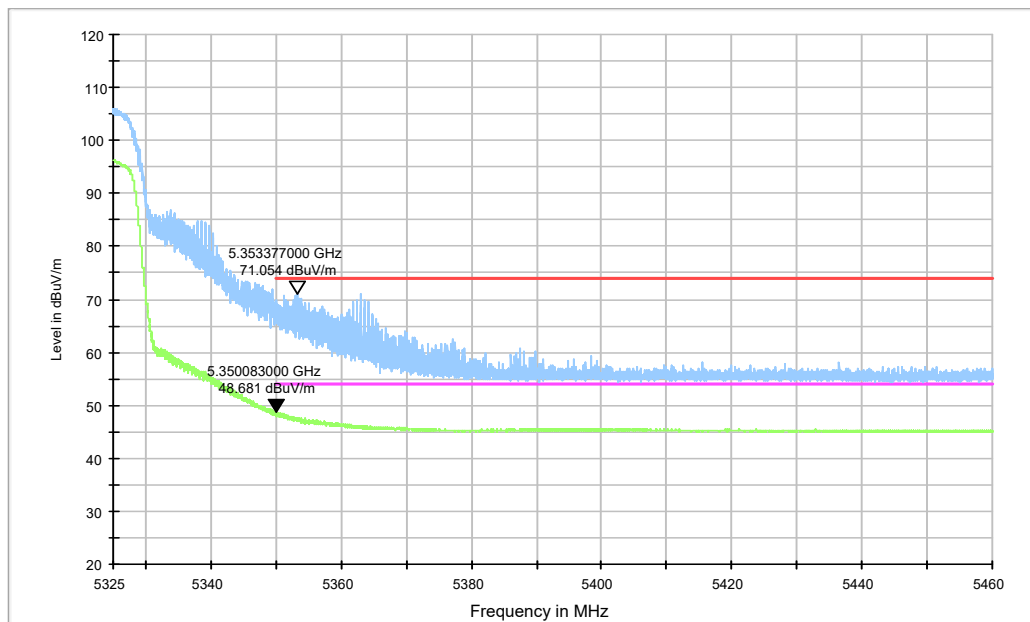


Fig. 2 Band Edges (802.11a Ch64, 5320MHz)

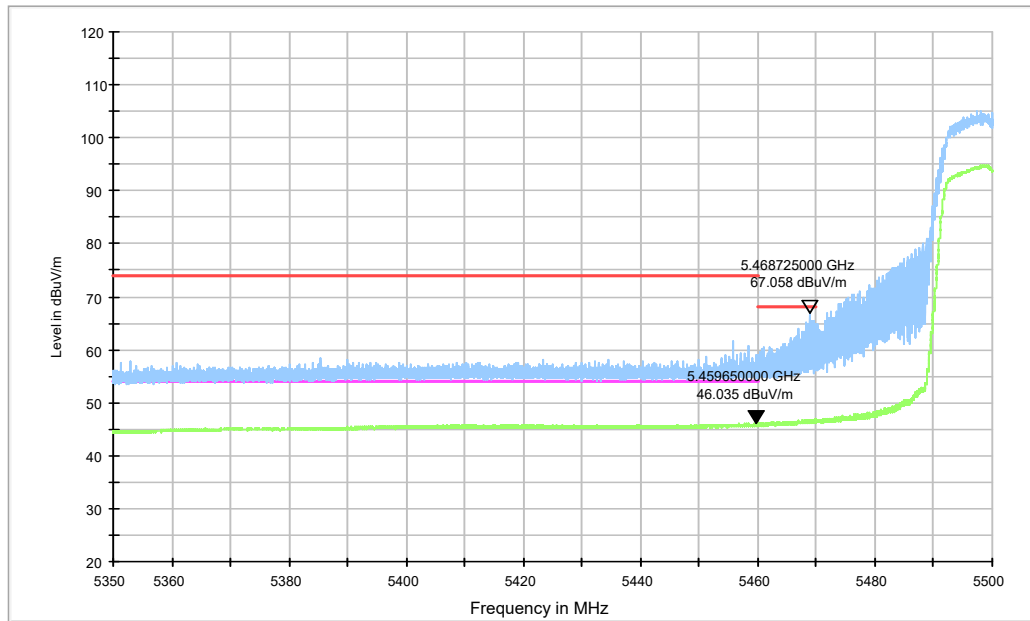


Fig. 3 Band Edges (802.11a Ch100, 5500MHz)

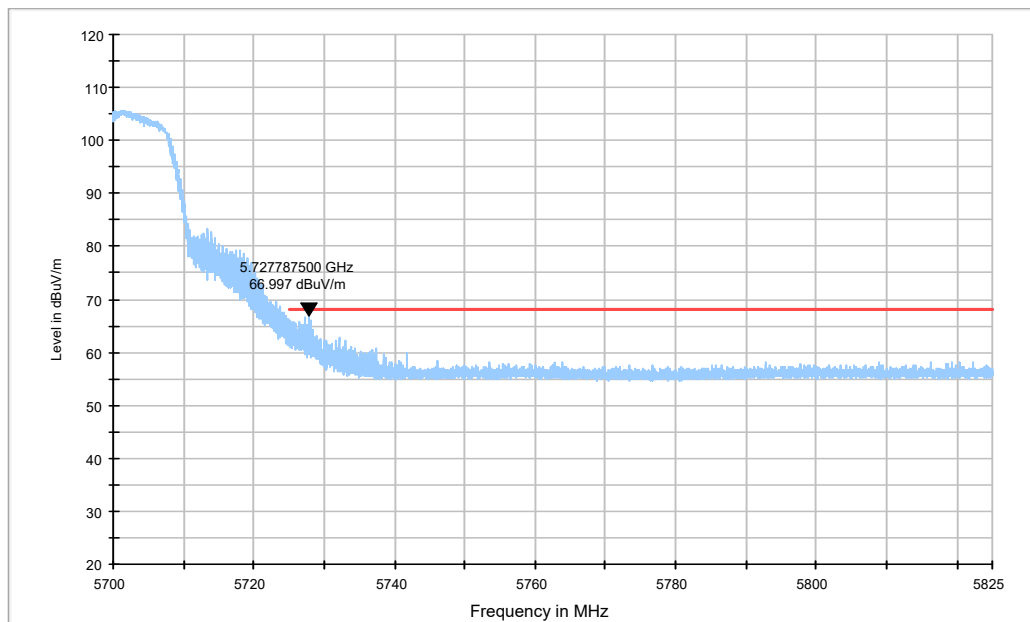


Fig. 4 Band Edges (802.11a Ch140, 5700MHz)

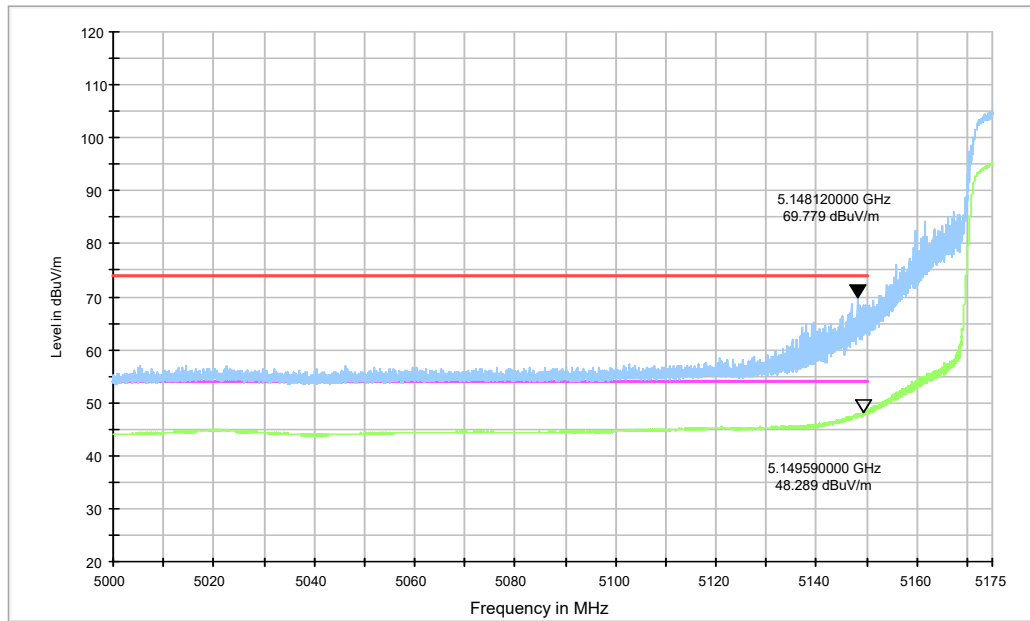


Fig. 5 Band Edges (802.11n-HT20 Ch36, 5180MHz)

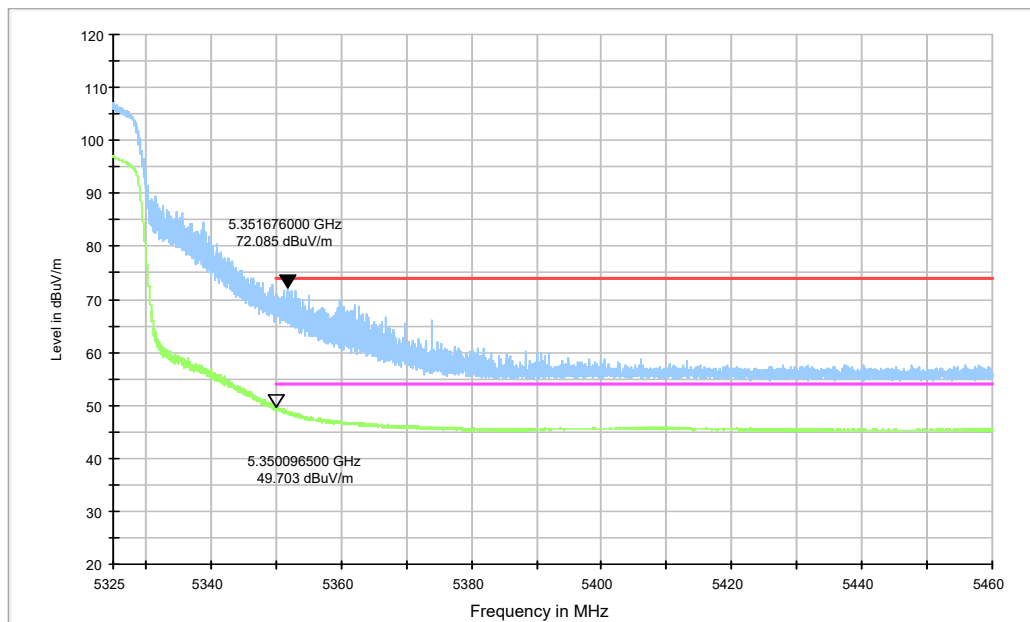


Fig. 6 Band Edges (802.11n-HT20 Ch64, 5320MHz)

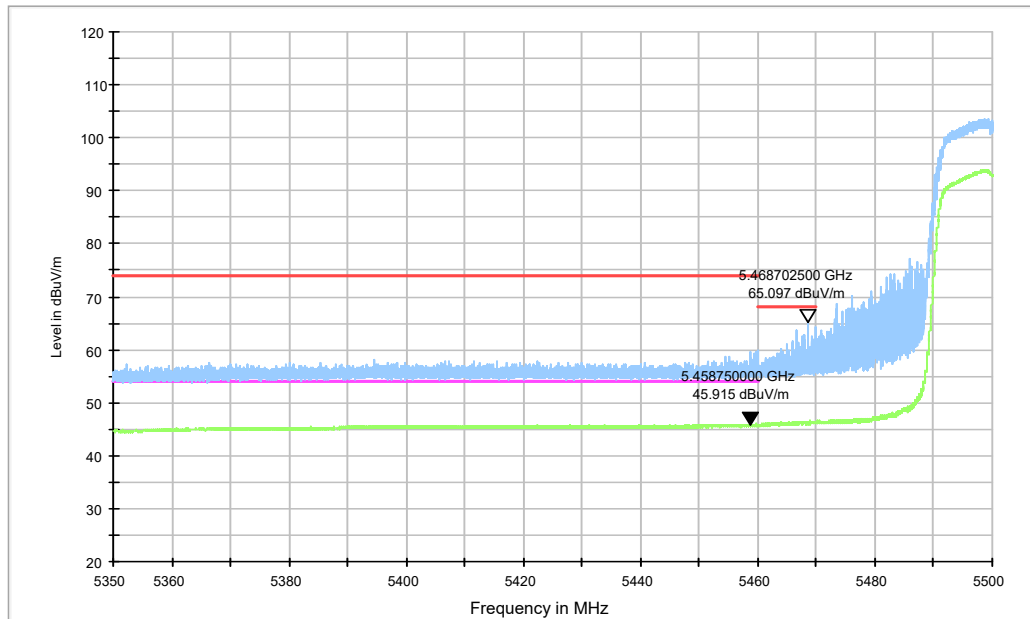


Fig. 7 Band Edges (802.11n-HT20 Ch100, 5500MHz)

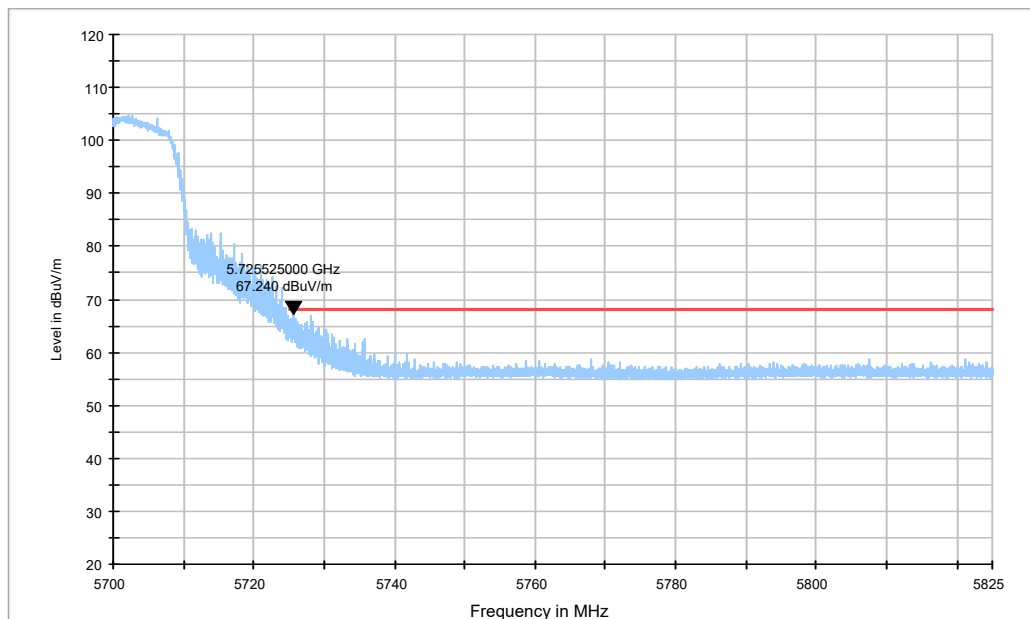


Fig. 8 Band Edges (802.11n-HT20 Ch140, 5700MHz)

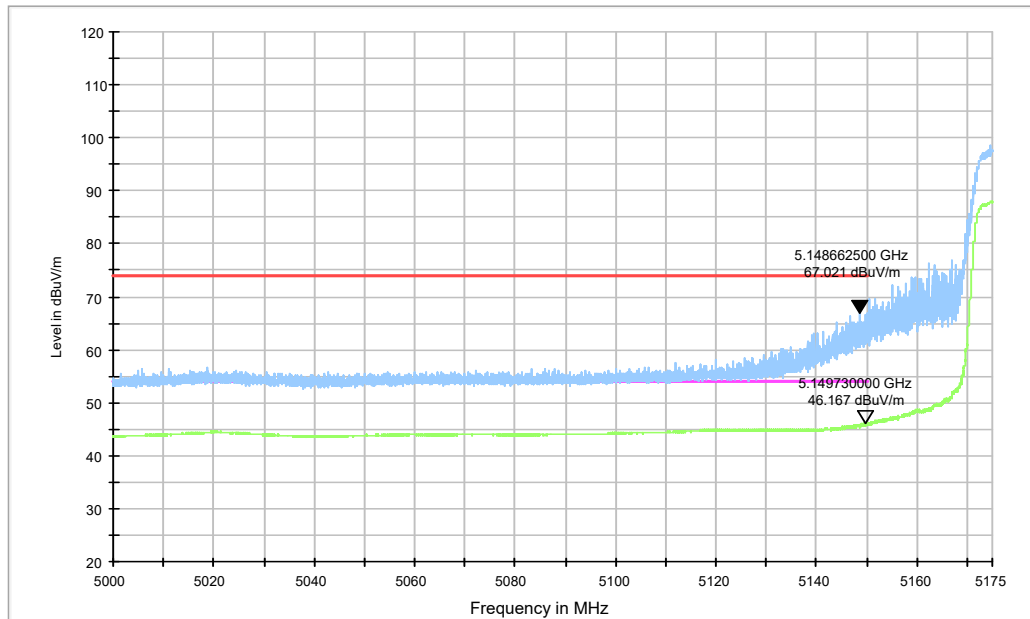


Fig. 9 Band Edges (802.11n-HT40 Ch38, 5190MHz)

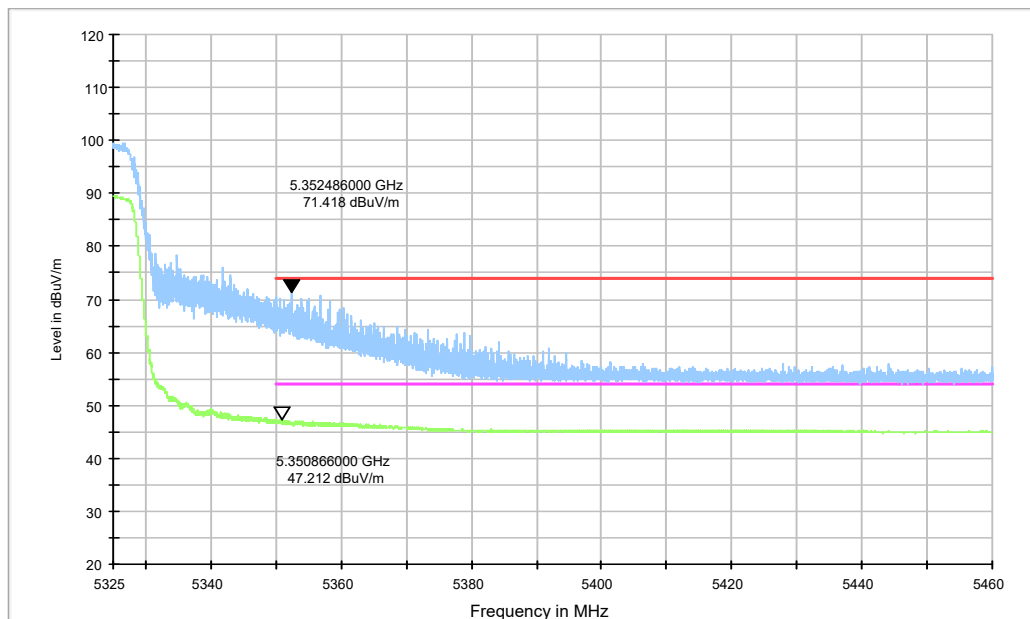


Fig. 10 Band Edges (802.11n-HT40 Ch62, 5310MHz)

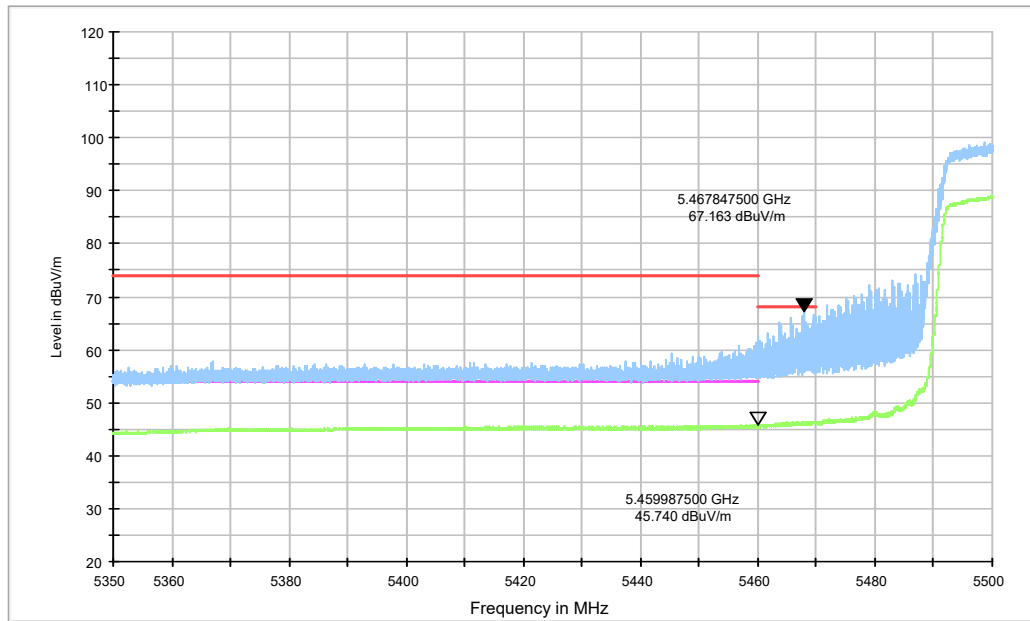


Fig. 11 Band Edges (802.11n-HT40 Ch102, 5510MHz)

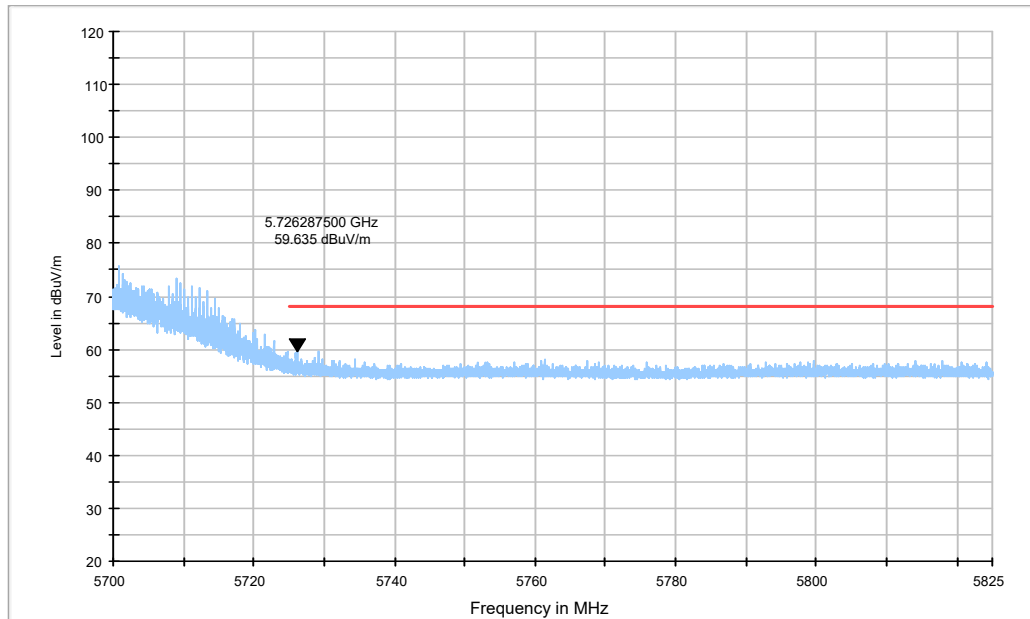


Fig. 12 Band Edges (802.11n-HT40 Ch134, 5670MHz)

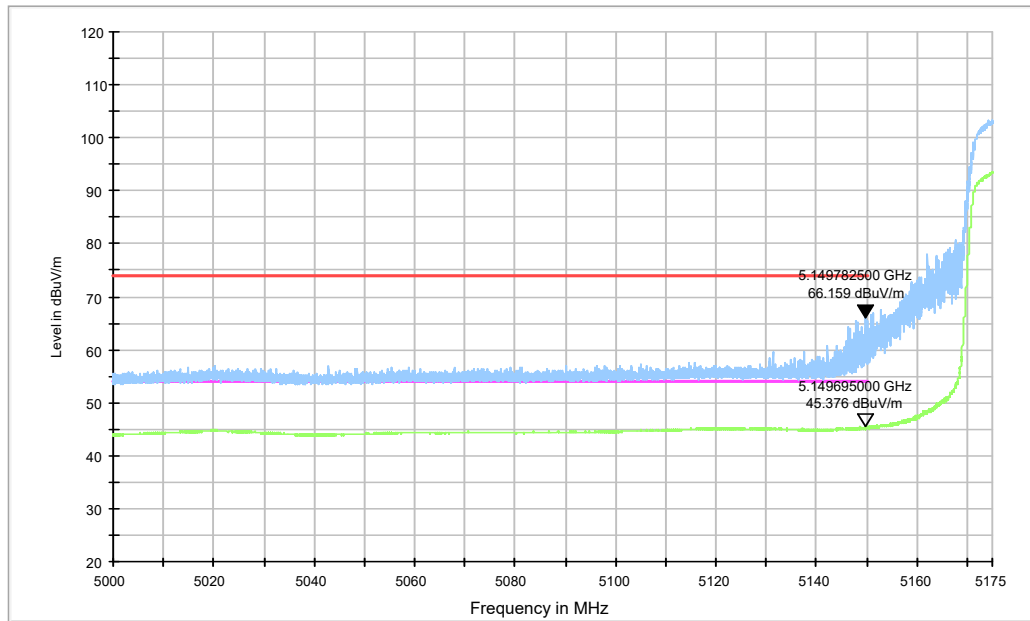


Fig. 13 Band Edges (802.11ac-HT20 Ch36, 5180MHz)

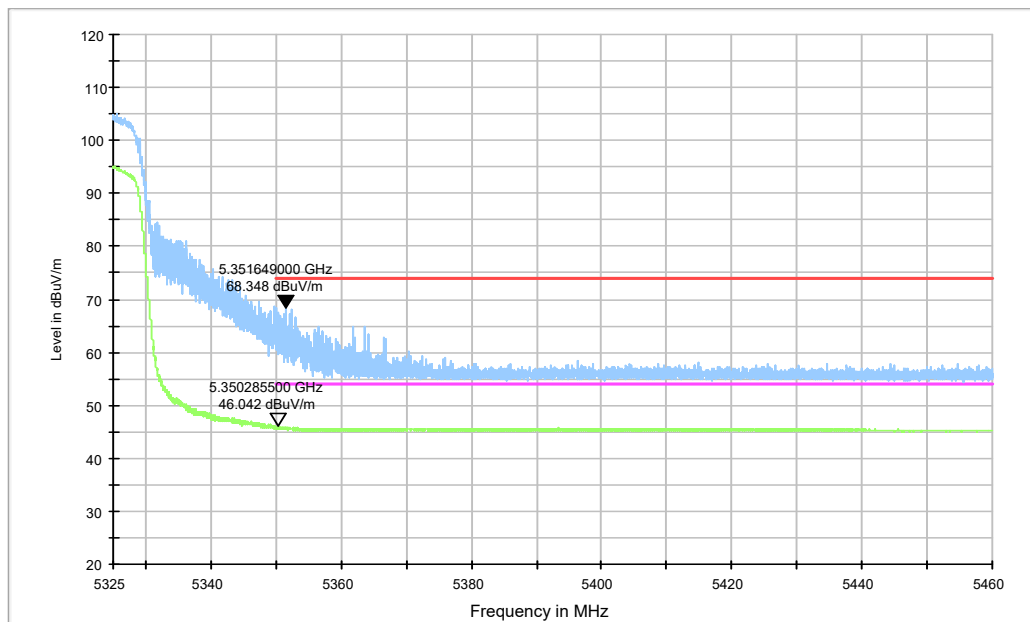


Fig. 14 Band Edges (802.11ac-HT20 Ch64, 5320MHz)

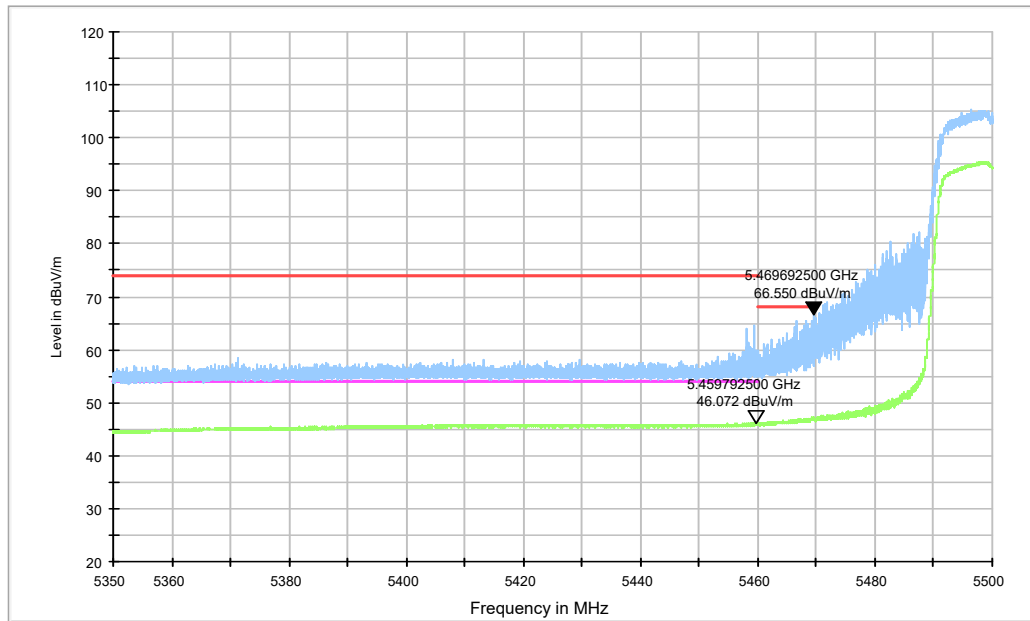


Fig. 15 Band Edges (802.11ac-HT20 Ch100, 5500MHz)

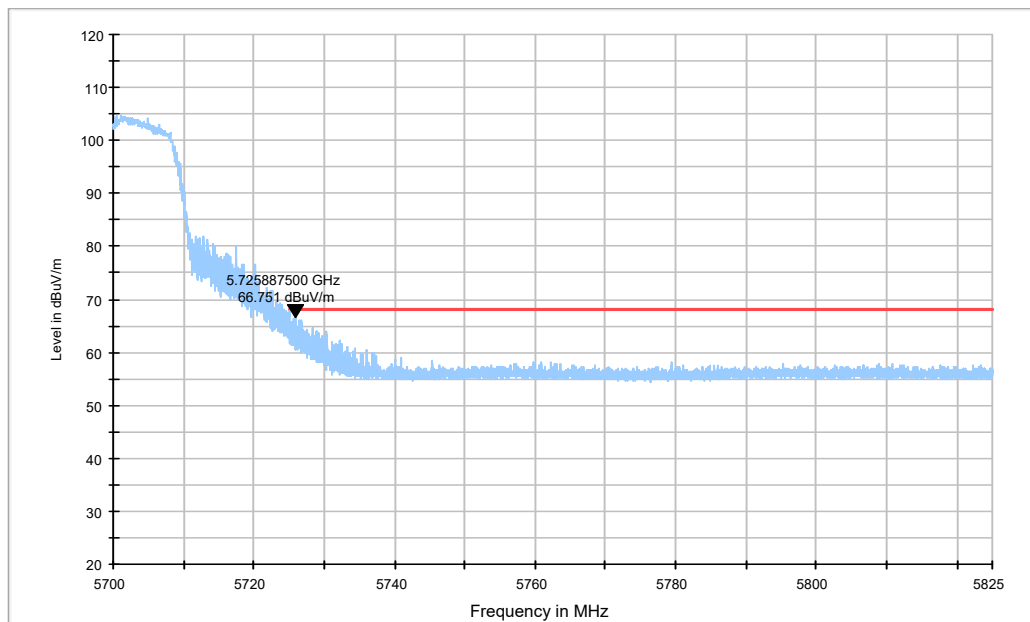


Fig. 16 Band Edges (802.11ac-HT20 Ch140, 5700MHz)

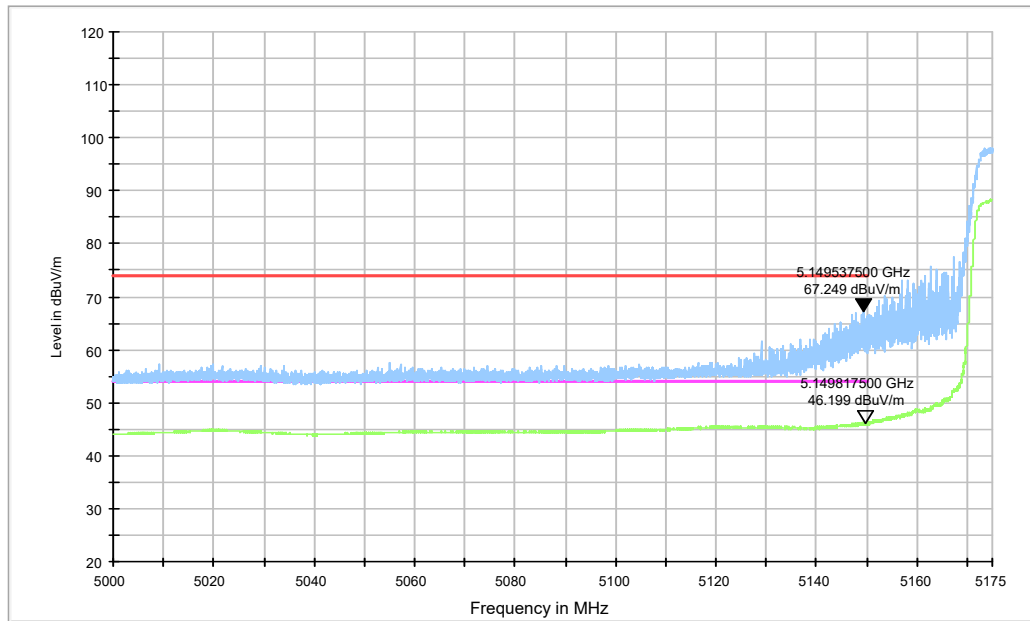


Fig. 17 Band Edges (802.11ac-HT40 Ch38, 5190MHz)

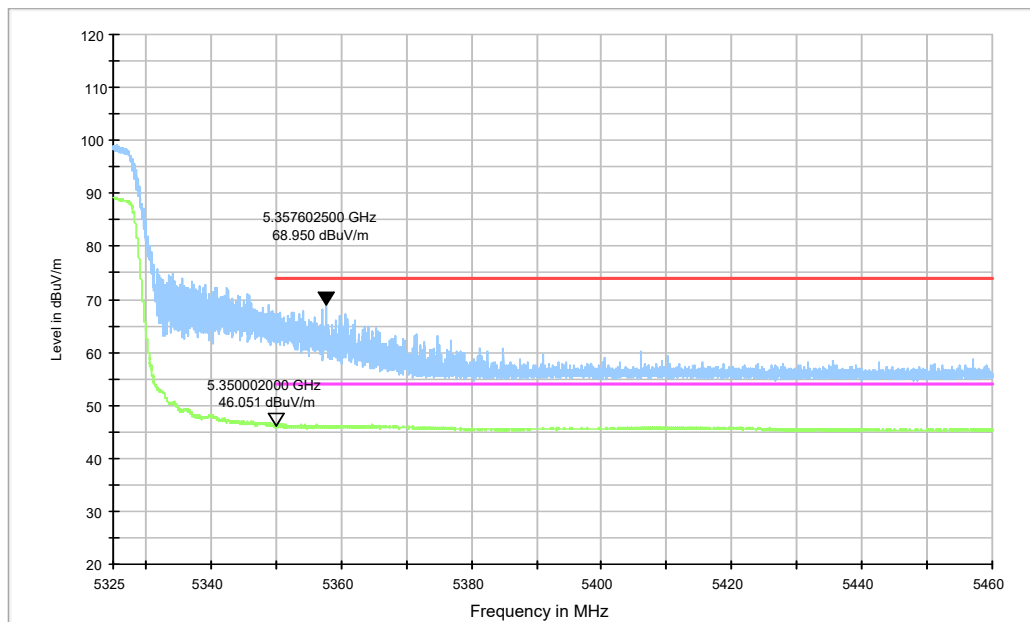


Fig. 18 Band Edges (802.11ac-HT40 Ch62, 5310MHz)

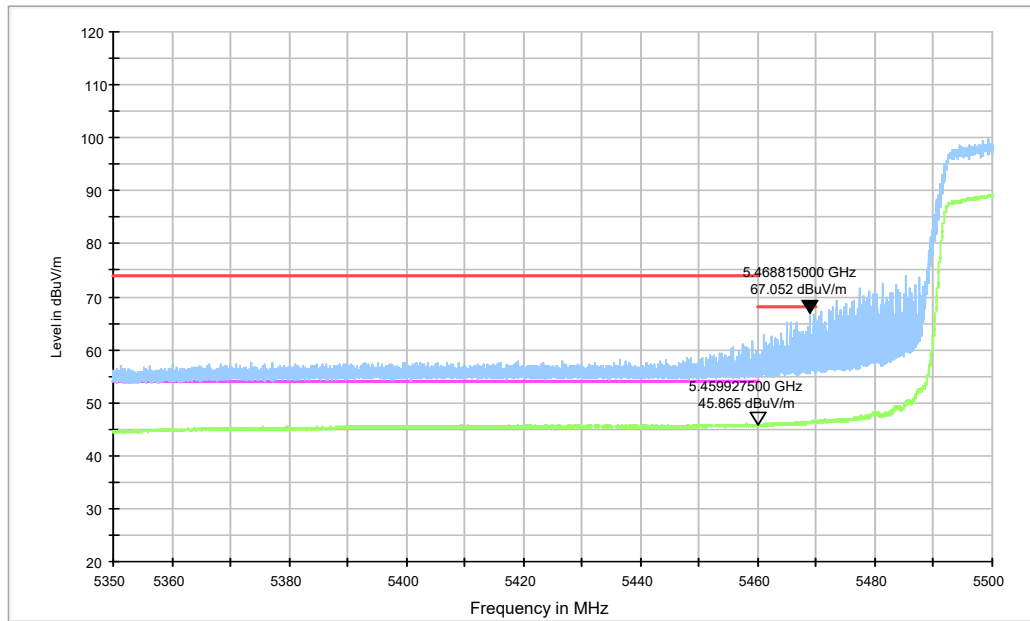


Fig. 19 Band Edges (802.11ac-HT40 Ch102, 5510MHz)

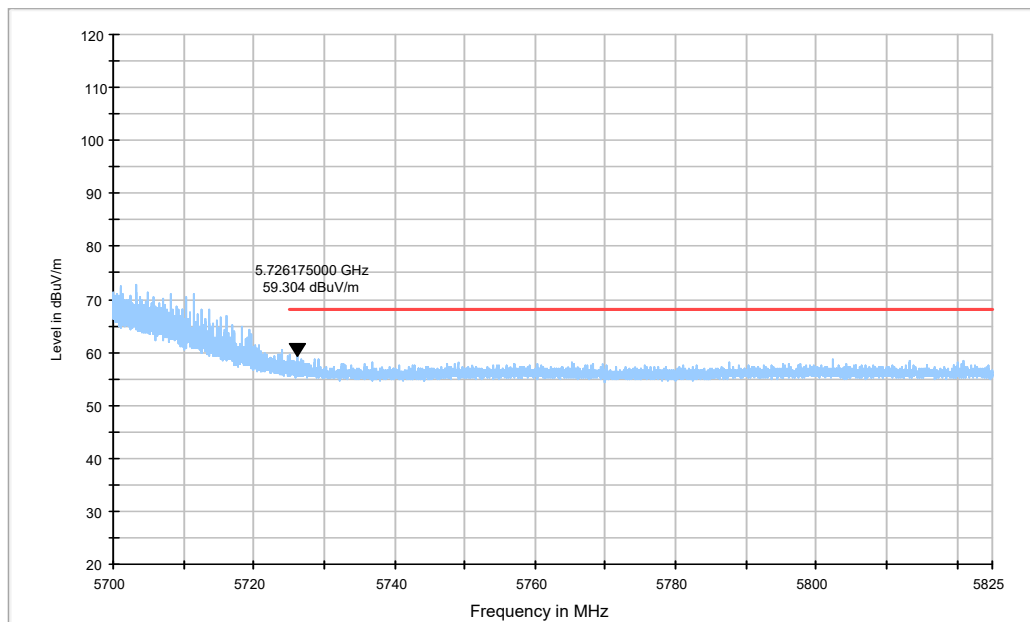


Fig. 20 Band Edges (802.11ac-HT40 Ch134, 5670MHz)

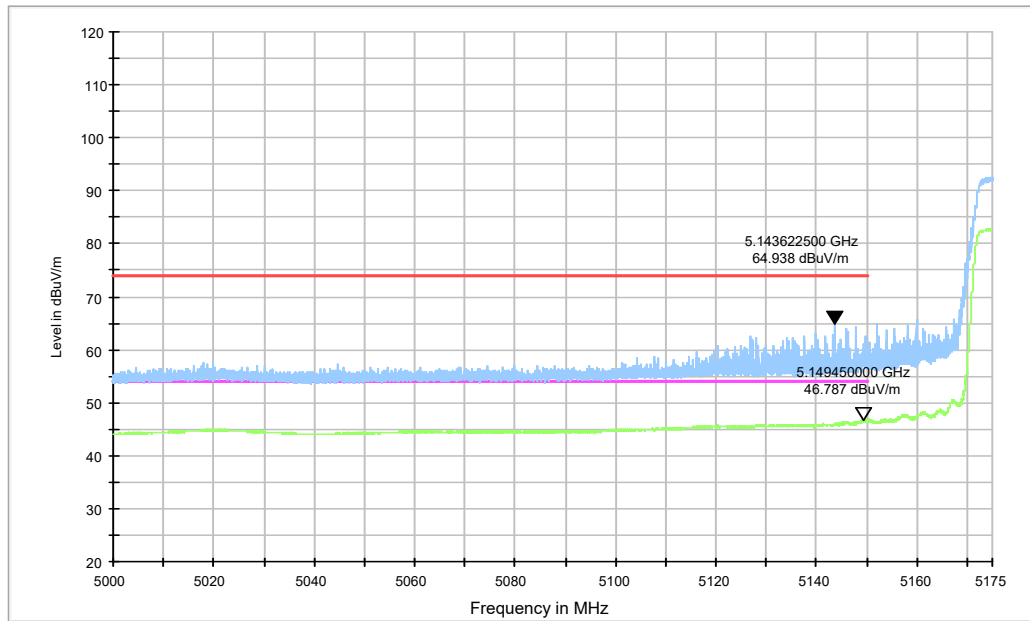


Fig. 21 Band Edges (802.11ac-HT80 Ch42 , 5210MHz)

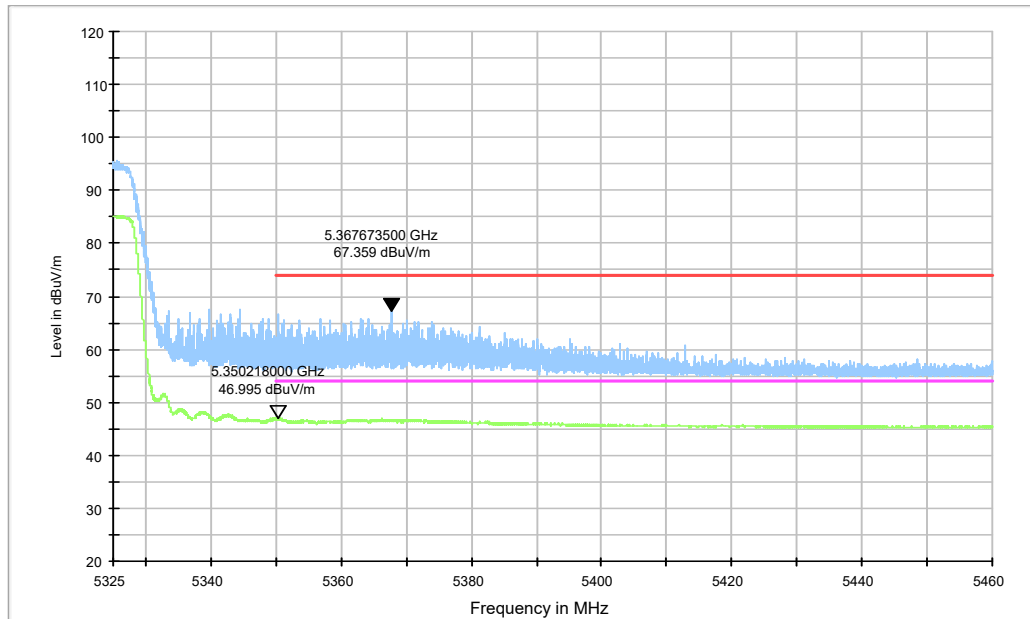


Fig. 22 Band Edges (802.11ac-HT80 Ch58, 5290MHz)

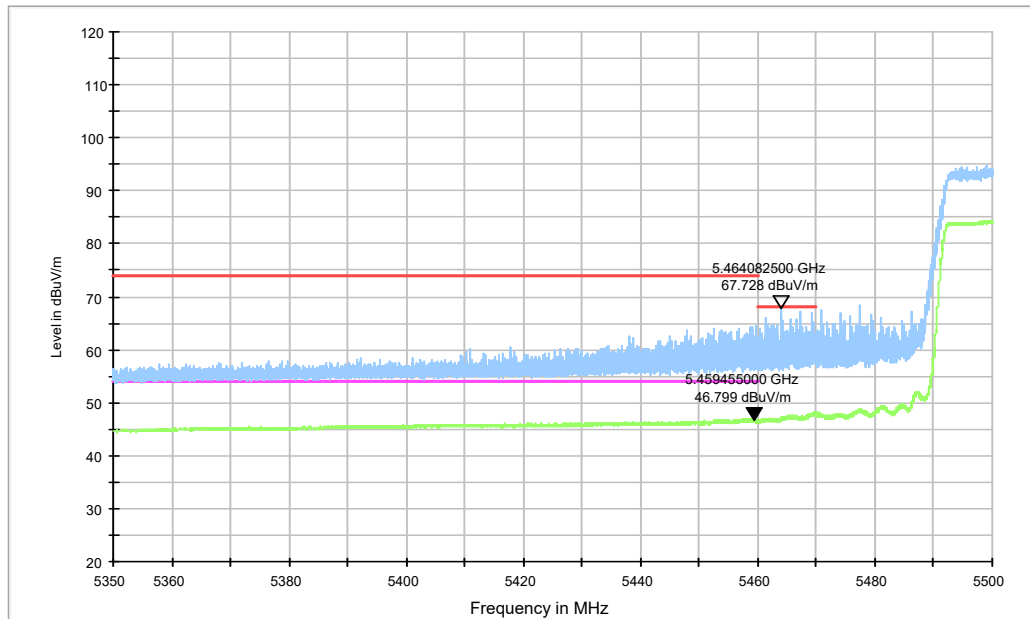


Fig. 23 Band Edges (802.11ac-HT80 Ch106, 5530MHz)

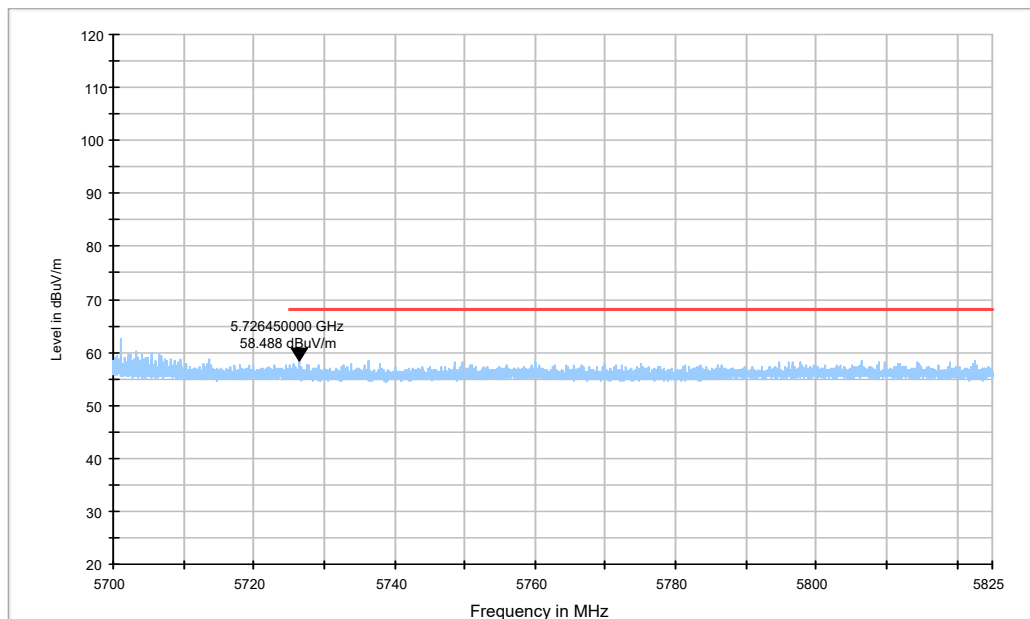


Fig. 24 Band Edges (802.11ac-HT80 Ch122, 5610MHz)

A.6. AC Powerline Conducted Emission (150kHz- 30MHz)

A.6.1 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

A.6.2 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.

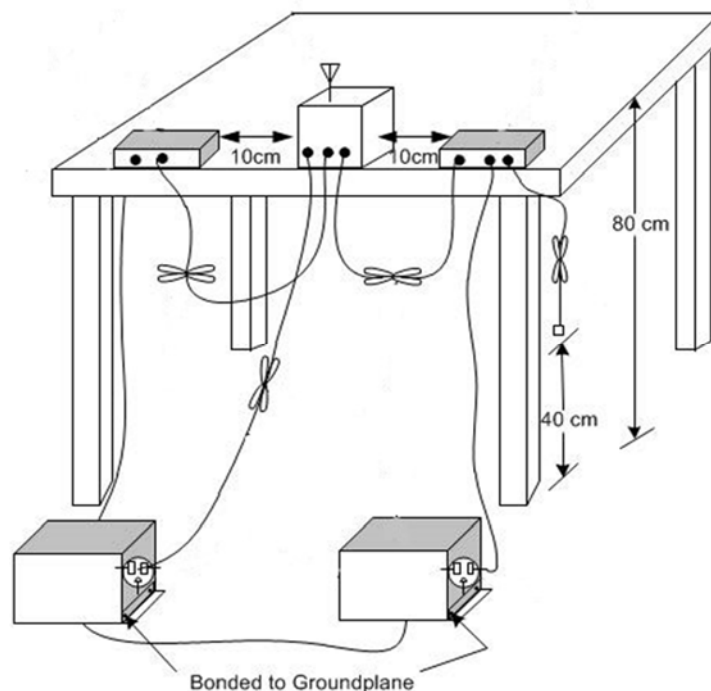
The measurement bandwidth is:

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

A.6.3 Test Condition

Voltage (V)	Frequency (Hz)
120	60

A.6.4 Test setup



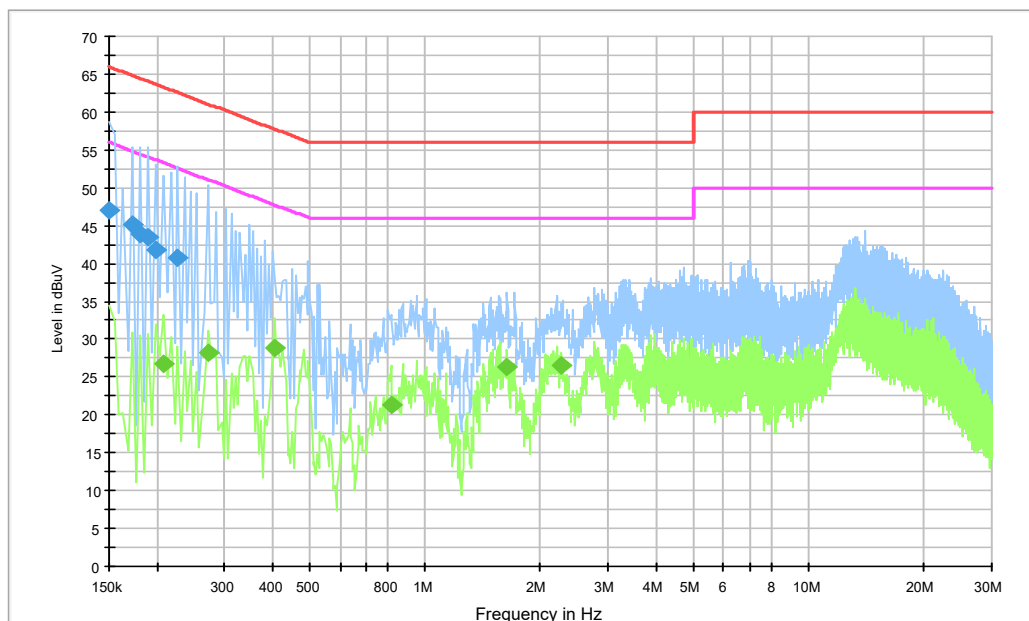
Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	66 to 56	Fig.25	Fig.26	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 (dBμV)	Result (dBμV)		Conclusion
		With charger		
		11a mode	Idle	
0.15 to 0.5	56 to 46	Fig.25	Fig.26	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.				

Conclusion: PASS
Test graphs as below:

Fig.25 Conducted Emission (802.11a, TX)

Measurement Result:

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.150000	47.0	2000.0	9.000	On	L1	20.2	19.0	66.0
0.172500	45.0	2000.0	9.000	On	N	20.0	19.8	64.8
0.181500	43.9	2000.0	9.000	On	N	20.0	20.5	64.4
0.190500	43.4	2000.0	9.000	On	N	20.0	20.6	64.0
0.199500	41.8	2000.0	9.000	On	N	20.0	21.8	63.6
0.226500	40.8	2000.0	9.000	On	N	20.0	21.8	62.6

Measurement Result:

Frequency (MHz)	Average (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.208500	26.8	2000.0	9.000	On	N	20.0	26.4	53.3
0.271500	28.1	2000.0	9.000	On	L1	20.0	23.0	51.1
0.406500	28.9	2000.0	9.000	On	L1	20.0	18.8	47.7
0.816000	21.4	2000.0	9.000	On	N	20.1	24.6	46.0
1.639500	26.3	2000.0	9.000	On	L1	19.8	19.7	46.0
2.274000	26.5	2000.0	9.000	On	L1	19.8	19.5	46.0

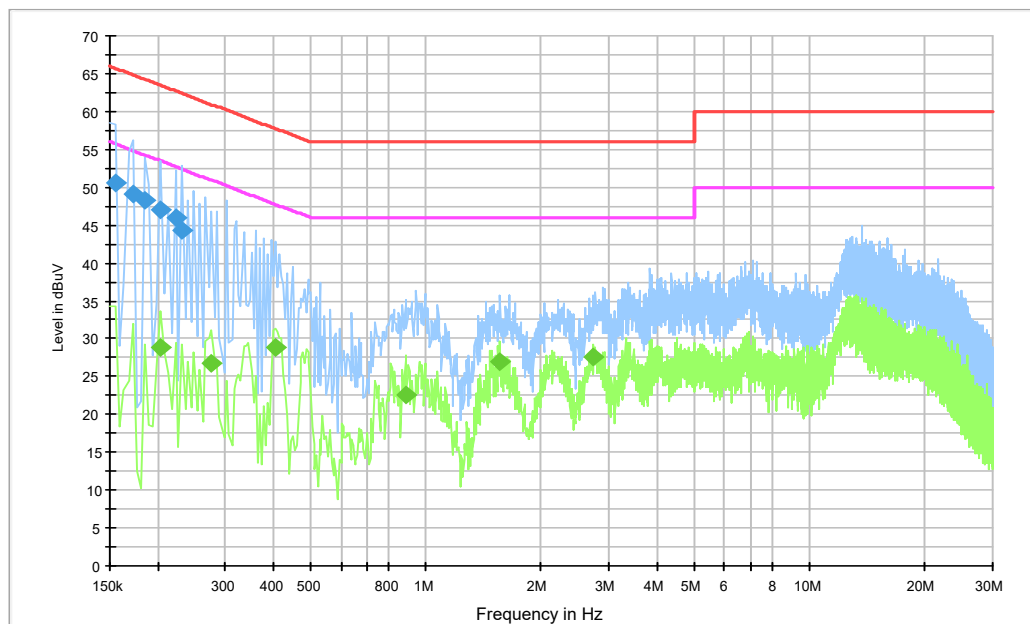


Fig.26 Conducted Emission (802.11a, IDLE)

Measurement Result:

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.154500	50.5	2000.0	9.000	On	L1	20.1	15.3	65.8
0.172500	49.1	2000.0	9.000	On	L1	20.0	15.8	64.8
0.186000	48.2	2000.0	9.000	On	N	20.0	16.0	64.2
0.204000	46.9	2000.0	9.000	On	N	20.0	16.5	63.4
0.222000	45.9	2000.0	9.000	On	N	20.0	16.9	62.7
0.231000	44.4	2000.0	9.000	On	L1	20.0	18.0	62.4

Measurement Result:

Frequency (MHz)	Average (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.204000	28.9	2000.0	9.000	On	N	20.0	24.6	53.4
0.276000	26.8	2000.0	9.000	On	N	20.1	24.2	50.9
0.406500	28.9	2000.0	9.000	On	N	20.1	18.8	47.7
0.888000	22.6	2000.0	9.000	On	N	20.1	23.4	46.0
1.563000	26.9	2000.0	9.000	On	L1	19.9	19.1	46.0
2.742000	27.6	2000.0	9.000	On	L1	19.9	18.4	46.0

A.8. 99% Occupied bandwidth

Method of Measurement: See ANSI C63.10-2013-clause 12.4.2.

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (OBW/RBW)]$ below the reference level. Specific guidance is given in 4.1.5.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
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EUT ID: UT53a

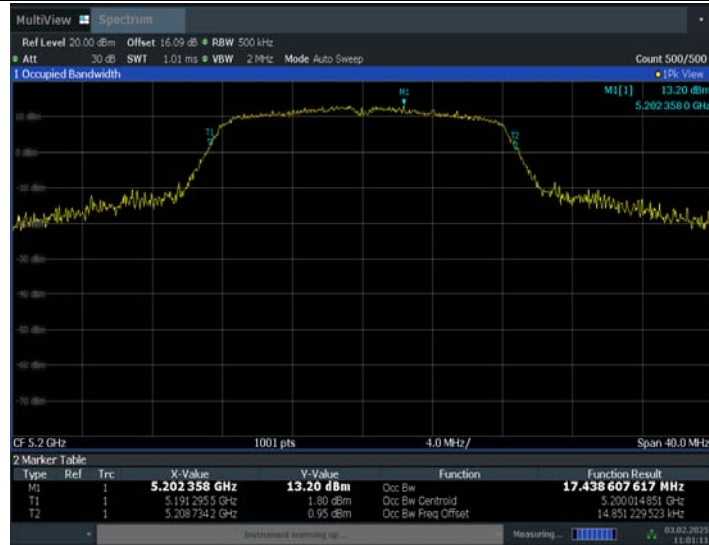
TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	Ant1	5180	17.518	5171.2712	5188.7896	---	---
		5200	17.439	5191.2955	5208.7342	---	---
		5240	17.558	5231.1797	5248.7375	---	---
		5260	17.707	5251.1780	5268.8853	---	---
		5280	17.49	5271.2679	5288.7575	---	---
		5320	17.611	5311.2631	5328.8743	---	---
		5500	17.692	5491.1526	5508.8449	---	---
		5580	17.755	5571.0974	5588.8526	---	---
		5700	17.696	5691.1311	5708.8274	---	---
		5720	17.872	5711.0609	5728.9328	---	---
11N20SISO	Ant1	5180	18.441	5170.7682	5189.2090	---	---
		5200	18.379	5190.7504	5209.1292	---	---
		5240	18.382	5230.7858	5249.1679	---	---

		5260	18.561	5250.7344	5269.2950	---	---
		5280	18.352	5270.7741	5289.1266	---	---
		5320	18.443	5310.7771	5329.2206	---	---
		5500	18.477	5490.7269	5509.2043	---	---
		5580	18.584	5570.6460	5589.2299	---	---
		5700	18.51	5690.6773	5709.1877	---	---
		5720	18.588	5710.6701	5729.2585	---	---
11N40SISO	Ant1	5190	36.909	5171.5505	5208.4595	---	---
		5230	36.704	5211.6818	5248.3861	---	---
		5270	36.827	5251.6611	5288.4886	---	---
		5310	36.871	5291.5868	5328.4582	---	---
		5510	36.84	5491.5500	5528.3904	---	---
		5550	36.812	5531.5930	5568.4052	---	---
		5670	36.988	5651.4622	5688.4501	---	---
11AC80SISO	Ant1	5210	75.141	5172.4183	5247.5595	---	---
		5290	75.271	5252.4786	5327.7492	---	---
		5530	75.386	5492.1495	5567.5353	---	---
		5610	75.535	5572.1821	5647.7168	---	---
		5690	75.402	5652.1619	5727.5636	---	---

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11A_Ant1_5200



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11A_Ant1_5240



11:02:17 03.02.2025

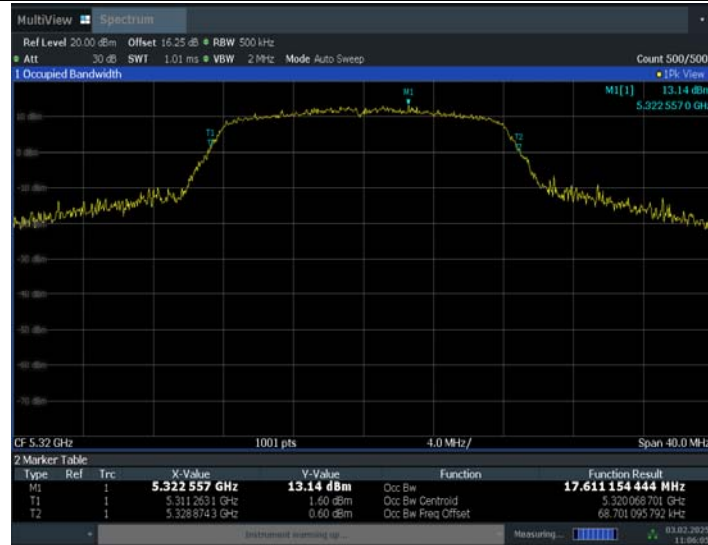
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11A_Ant1_5280



11A_Ant1_5320



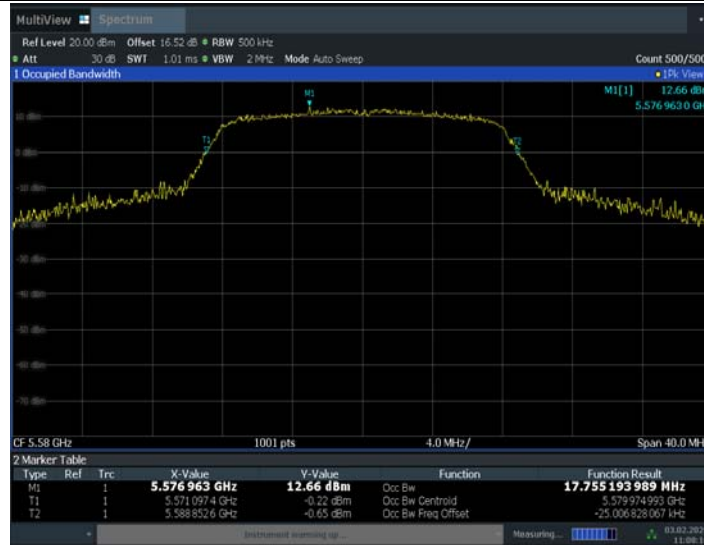
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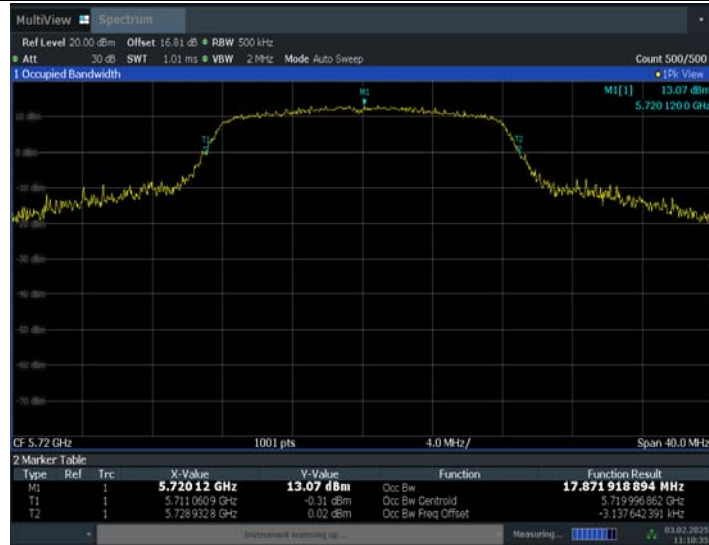
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11N40SISO_Ant1_5670



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11AC80SISO_Ant1_5210



11AC80SISO_Ant1_5290



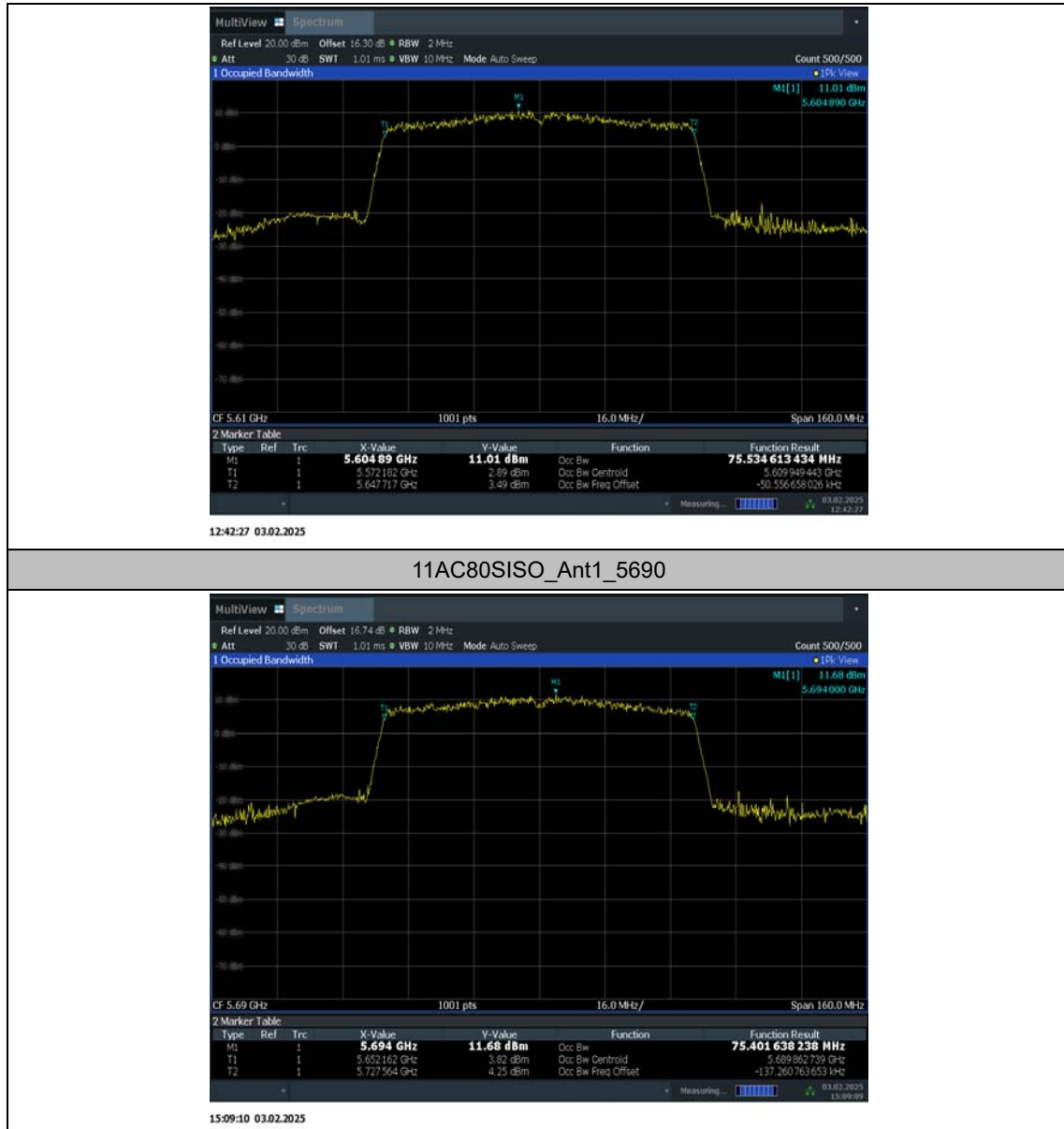
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12:41:18 03.02.2025

11AC80SISO_Ant1_5610



Conclusion: PASS

A.9. Power control

A Transmission Power Control mechanism is not required for systems with an e.i.r.p. of less than 27dBm (500 mW).

A.10. Antenna Requirement

The antenna of the device is permanently attached. There are no provisions for connection to an external antenna.

The unit complies with the requirement of FCC Part 15.203.

ANNEX B: EUT parameters

Disclaimer: The antenna gain and worse case 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



*** END OF REPORT BODY ***