



FCC PART 15E TEST REPORT No.24T04Z101045-018

for

TCL Communication Ltd.

Tablet PC

9491G

FCC ID: 2ACCJB221

with

Hardware Version: 05

Software Version: 1AS0

Issued Date: 2024-06-01

Note:

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

Test Laboratory:

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No. 24T04Z101045-018

REPORT HISTORY

Report Number	Revision	Description	Issue Date
24T04Z101045-018	Rev.0	1st edition	2024-06-01

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

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1. Test Laboratory

1.1. Introduction & Accreditation

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

1.2. Testing Location

Conducted testing Location: CTTL(huayuan North Road)

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

Radiated testing Location: CTTL(huayuan North Road)

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

1.3. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

1.4. Project date

Testing Start Date: 2024-05-10

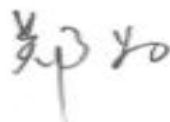
Testing End Date: 2024-05-30

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: TCL Communication Ltd.
Address/Post: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
City: Hong Kong
Postal Code: /
Country: China
Contact Person: Ting Wang
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Fax: 0086-755-36612000-81722

2.2. Manufacturer Information

Company Name: TCL Communication Ltd.
Address/Post: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong
City: Hong Kong
Postal Code: /
Country: China
Contact Person: Ting Wang
Contact Email: ting.wang.hz@tcl.com
Telephone: +86 755 3661 1621
Fax: 0086-755-36612000-81722

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

3.1. About EUT

Description	Tablet PC
Model name	9491G
FCC ID	2ACCJB221
WLAN Frequency Band	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Nominal Voltage	3.9V
Extreme High Voltage	4.45V
Extreme Low Voltage	3.45V

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version	Date of receipt
UT02a	USQC6DAMYXFA79CU	05	1AS0	2024-05-11
UT04a	VKBYLJGYIBLFYPV4	05	1AS0	2024-05-10

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

UT02a 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	Battery	TLp100A7	Dongguan Veken Battery CO., LTD.
AE2	Charger	QC16US	SHENZHEN BAIJUNDA ELECTRONICS CO., LTD.
AE3	Charger	QC16UK	SHENZHEN BAIJUNDA ELECTRONICS CO., LTD.
AE4	Charger	QC16EU	SHENZHEN BAIJUNDA ELECTRONICS CO., LTD.
AE5	Charger	QC16AU	SHENZHEN BAIJUNDA ELECTRONICS CO., LTD.
AE6	Date Cable	CDA0000205C1	Huizhou Juwei Electronics Co., Ltd.

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

3.4. General Description

Equipment Under Test (EUT) is a model of Tablet PC with integrated antenna. It consists of normal options: Battery and Charger.

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

Samples undergoing test were selected by the Client.

4. Reference Documents

4.1. Documents supplied by applicant

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

4.2. Reference Documents for testing

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

	FCC CFR 47, Part 15, Subpart C and E:	
FCC Part15	15.205 Restricted bands of operation;	2021
	15.209 Radiated emission limits, general requirements;	
	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

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 Peak Output Power	15.407 (a)	/	P
Peak Power Spectral Density	15.407 (a)	/	P
Occupied 6dB Bandwidth	15.407 (e)	/	P
Radiated Unwanted Emission	15.407, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.107, 15.207	/	P

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

Terms used in Verdict column

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

6.2. Statements

CTTL has evaluated the test cases as listed in section 6.1 of this report for the EUT specified in section 3 according to the standards or reference documents listed in section 4.

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

6.3. Test Conditions

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

Temperature	26°C
Voltage	3.9V
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	2025-04-01
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	ESW44	103015	R&S	1 year	2025-01-18
2	Test Receiver	ESW44	103023	R&S	1 year	2024-06-08
3	Loop Antenna	HFH2-Z2	829324/007	R&S	1 year	2025-01-04
4	EMI Antenna	VULB9163	01223	Schwarzbeck	1 year	2024-07-18
5	EMI Antenna	3115	6914	ETS-Lindgren	1 year	2024-06-07
6	EMI Antenna	3116	2663	ETS-Lindgren	1 year	2025-02-21

AC Power Line Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101200	R&S	1 year	2025-05-16
2	Test Receiver	ESCI	100344	R&S	1 year	2025-04-01

8. Measurement Uncertainty

8.1. Transmitter Output Power

Measurement Uncertainty: 0.387dB,k=1.96

8.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

8.3. 6dB Emission Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

8.4. Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

8.5. Spurious Emissions

Conducted (k=1.96)

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 2GHz	1.22
2GHz ≤ f ≤ 3.6GHz	1.22
3.6GHz ≤ f ≤ 8GHz	1.22
8GHz ≤ f ≤ 12.75GHz	1.51
12.75GHz ≤ f ≤ 26GHz	1.51
26GHz ≤ f ≤ 40GHz	1.59

Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	4.92
30MHz ≤ f ≤ 1GHz	4.72
1GHz ≤ f ≤ 18GHz	4.84
18GHz ≤ f ≤ 40GHz	5.12

8.6. AC Power-line Conducted Emission

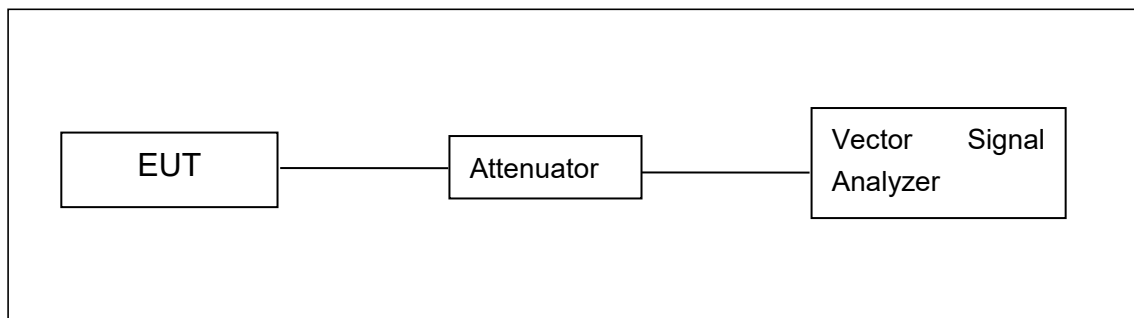
Measurement Uncertainty : 3.08dB,k=2

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

A.1.1. Conducted Measurements

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



A.1.2. Radiated Emission Measurements

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

The radiated emission test is performed in semi-anechoic chamber. The EUT was placed on a non-conductive table with 80cm above the ground plane for measurement below 1GHz and 1.5m above the ground plane for measurement above 1GHz. The measurement antenna was placed at a distance of 3 meters from the EUT. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept. During the test, the turntable is rotated from 0° to 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. The maximization process was repeated with the EUT positioned in each of its three orthogonal orientations

A.2. Maximum Peak Output Power

Measurement Limit and Method:

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

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

Set RBW = 1 MHz.

Set VBW \geq 3 MHz.

Number of points in sweep $\geq 2 \times$ span / RBW.

Sweep time = auto.

Detector = power averaging (rms)

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

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

A.2.1 Antenna Gain

Antenna gain is 0.8dBi and the value is supplied by the applicant or manufacturer.

A.2.2. Maximum Average Output Power-Conducted

EUT ID: UT02a

Measurement Results:

802.11a mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11a	6	16.83	16.27	16.34
	9	/	/	/
	12	/	/	/
	18	/	/	/
	24	/	/	/
	36	/	/	/
	48	/	/	/
	54	/	/	/

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

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11n (20MHz)	MCS0	16.67	16.30	16.41
	MCS1	/	/	/
	MCS2	/	/	/
	MCS3	/	/	/
	MCS4	/	/	/
	MCS5	/	/	/
	MCS6	/	/	/
	MCS7	/	/	/

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

802.11ac-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11ac (20MHz)	MCS0	16.99	16.74	16.52
	MCS1	/	/	/
	MCS2	/	/	/
	MCS3	/	/	/
	MCS4	/	/	/
	MCS5	/	/	/
	MCS6	/	/	/
	MCS7	/	/	/
	MCS8	/	/	/

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

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)	
		5755MHz (Ch151)	5795MHz (Ch159)
802.11n (40MHz)	MCS0	16.98	16.57
	MCS1	/	/
	MCS2	/	/
	MCS3	/	/
	MCS4	/	/
	MCS5	/	/
	MCS6	/	/
	MCS7	/	/

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

802.11ac-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)	
		5755MHz (Ch151)	5795MHz (Ch159)
802.11ac (40MHz)	MCS0	16.83	16.57
	MCS1	/	/
	MCS2	/	/
	MCS3	/	/
	MCS4	/	/
	MCS5	/	/
	MCS6	/	/
	MCS7	/	/
	MCS8	/	/
	MCS9	/	/

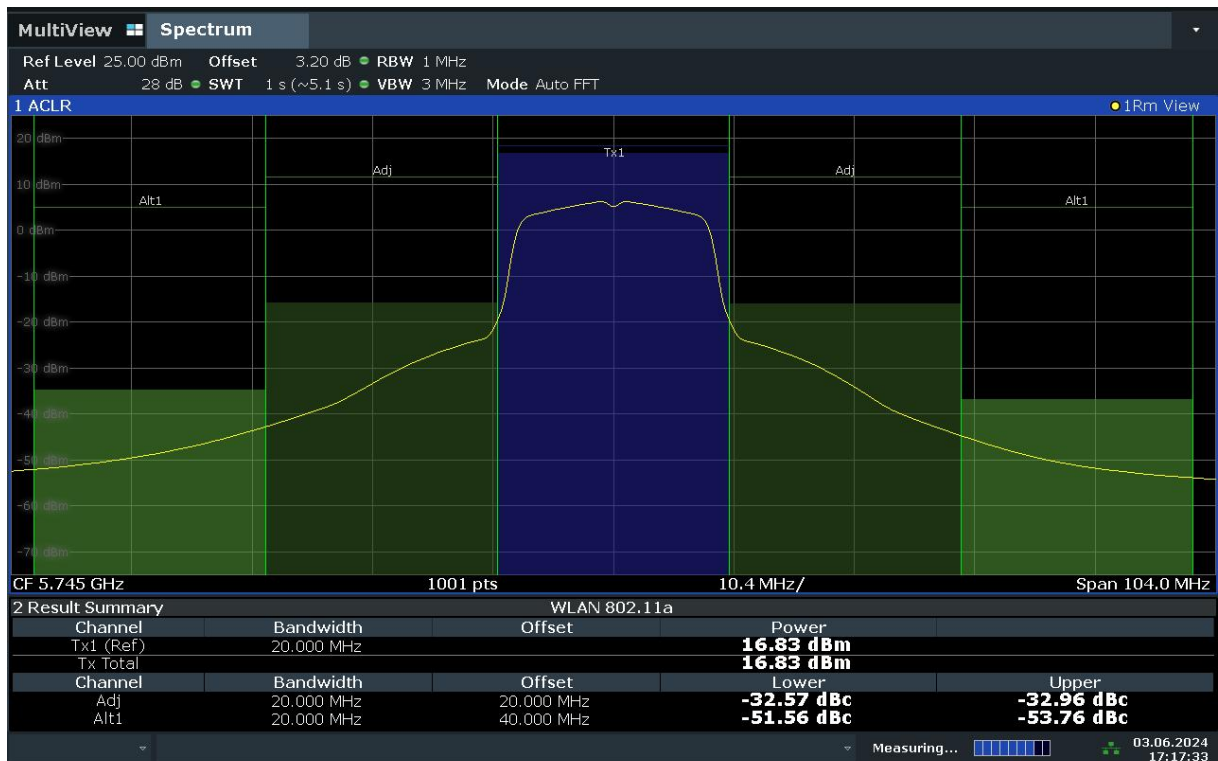
The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

802.11ac-HT80 mode

Mode	Data Rate (Index)	Test Result (dBm)
		5775MHz (Ch155)
802.11ac (80MHz)	MCS0	16.46
	MCS1	/
	MCS2	/
	MCS3	/
	MCS4	/
	MCS5	/
	MCS6	/
	MCS7	/
	MCS8	/
	MCS9	/

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%.



17:17:33 03.06.2024

Maximum output Power: 11a CH149

Conclusion: PASS

A.3. Peak Power Spectral Density

Measurement Limit:

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

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

Set RBW = 500 kHz.

Set VBW \geq 3 MHz.

Number of points in sweep $\geq 2 \times$ span / RBW.

Sweep time = auto.

Detector = power averaging (rms)

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

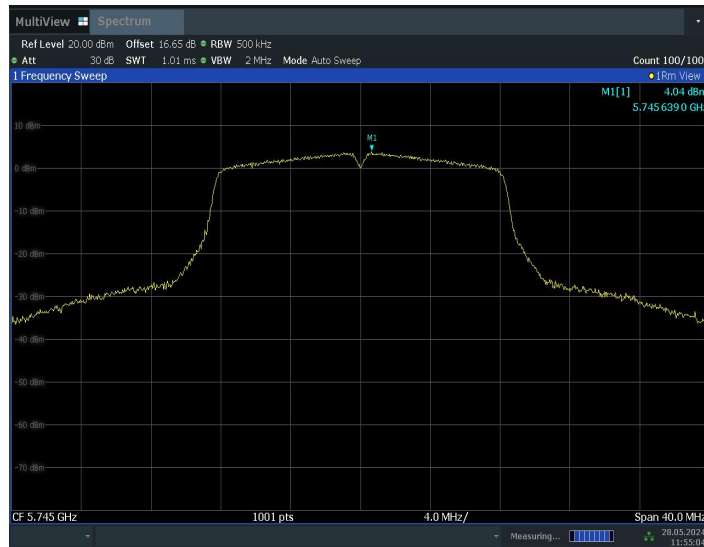
Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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EUT ID: UT02a

Measurement Results:

Mode	Channel	Power Spectral Density (dBm/500kHz)	Conclusion
802.11a	149	4.04	P
	157	3.30	P
	165	3.42	P
802.11ac HT20	149	3.70	P
	157	3.48	P
	165	3.39	P
802.11n HT40	151	0.90	P
	159	0.46	P
802.11ac HT80	155	-3.22	P



11:55:05 28.05.2024

Peak Power Spectral Density: 11a CH149

Conclusion: PASS

A.4. 6dB Emission Bandwidth

Measurement Limit:

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

Set RBW = 100 kHz.

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

Detector = Peak.

Trace mode = max hold.

Sweep = auto couple.

Allow the trace to stabilize.

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

Measurement Uncertainty:

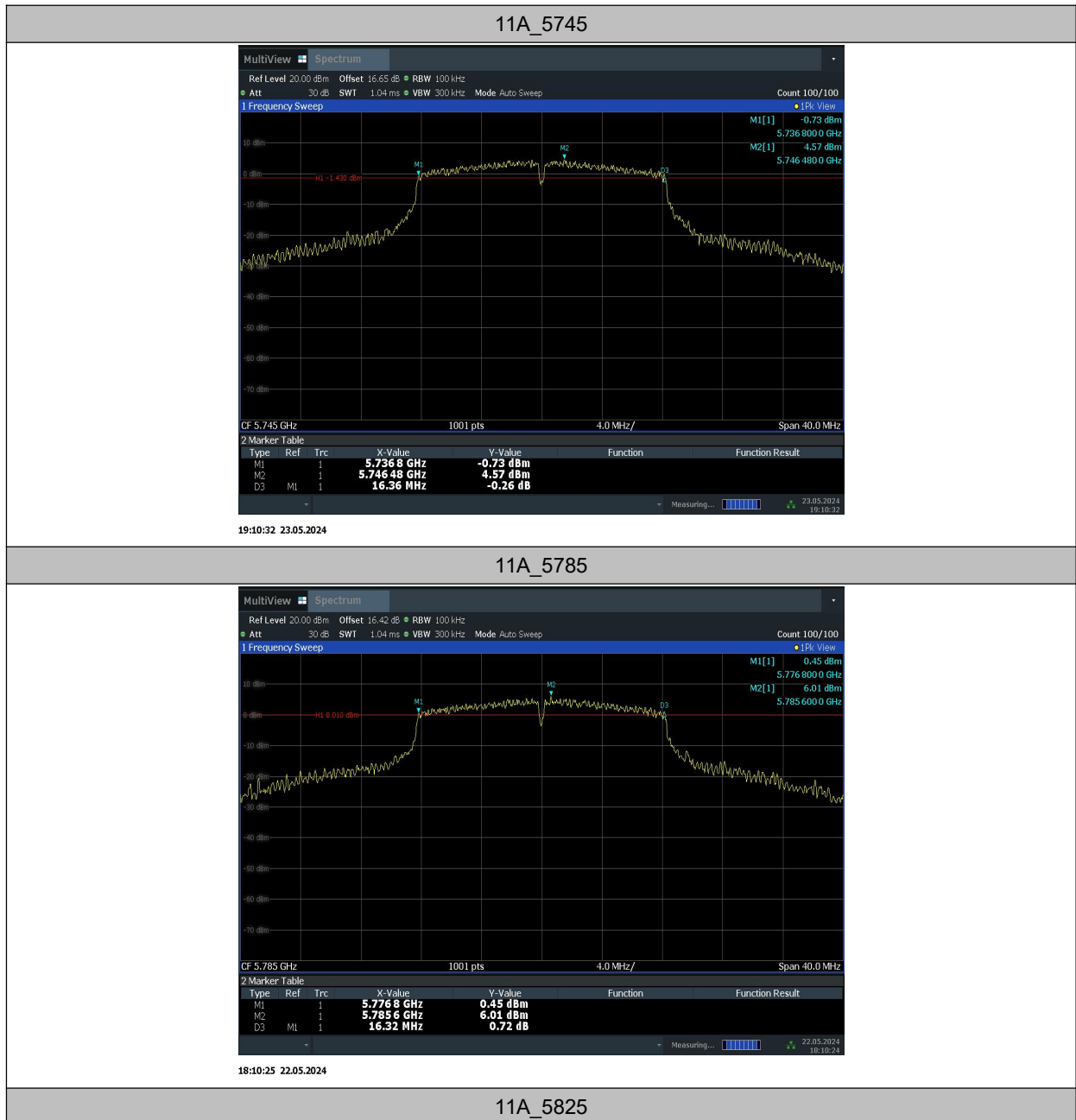
Measurement Uncertainty	60.80Hz
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EUT ID: UT02a

Measurement Result:

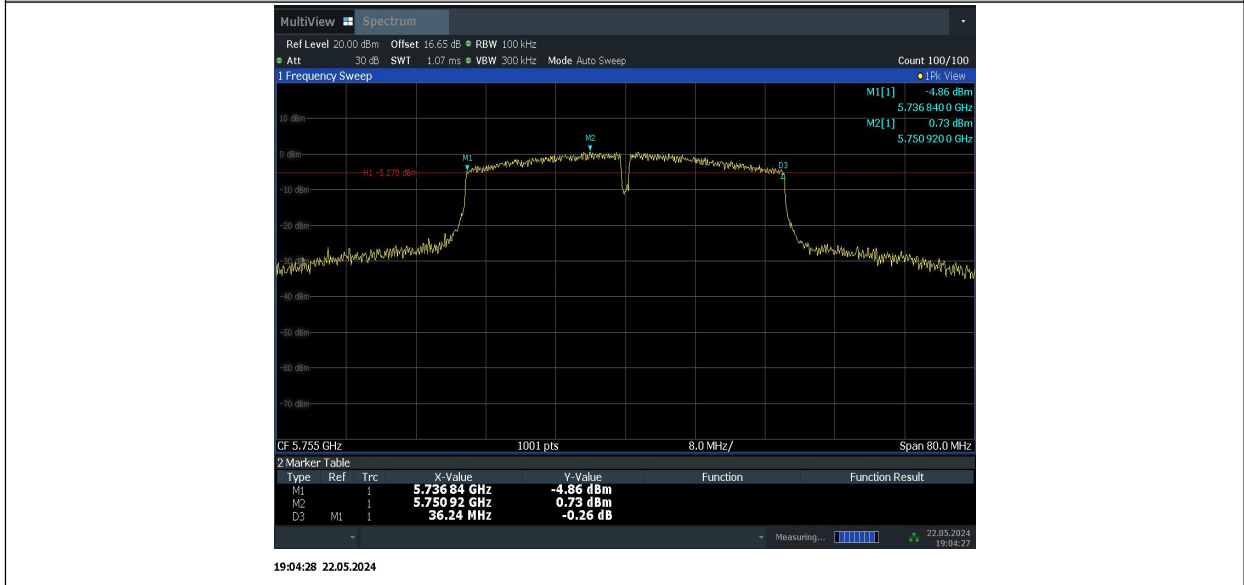
TestMode	Frequency[MHz]	6db EBW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11A	5745	16.36	5736.80	5753.16	0.5	PASS
	5785	16.32	5776.80	5793.12	0.5	PASS
	5825	16.32	5816.80	5833.12	0.5	PASS
11N40	5755	36.24	5736.84	5773.08	0.5	PASS
	5795	36.40	5776.76	5813.16	0.5	PASS
11AC20	5745	17.56	5736.20	5753.76	0.5	PASS
	5785	17.56	5776.20	5793.76	0.5	PASS
	5825	17.56	5816.20	5833.76	0.5	PASS
11AC80	5775	76.32	5736.76	5813.08	0.5	PASS

Test Graphs

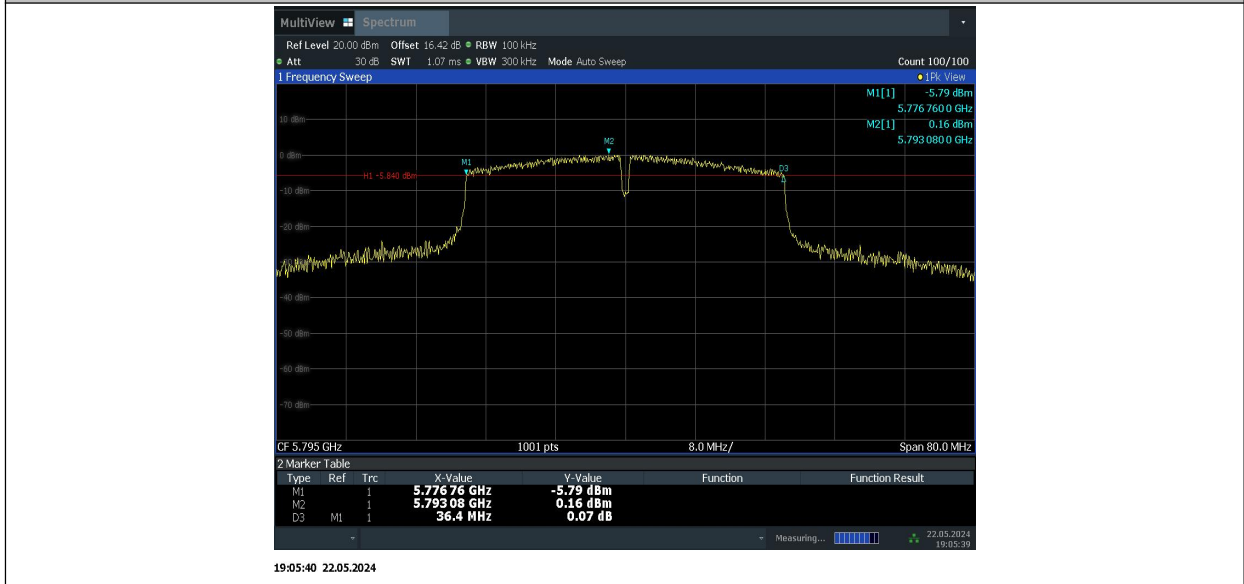




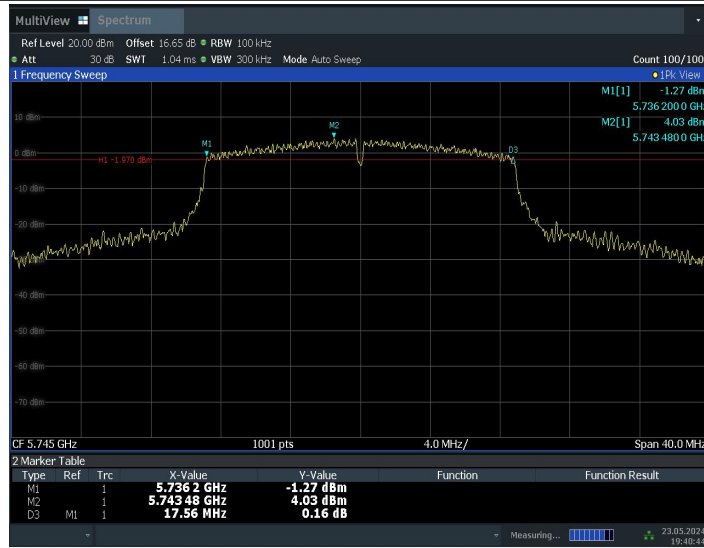
11N40_5755



11N40_5795

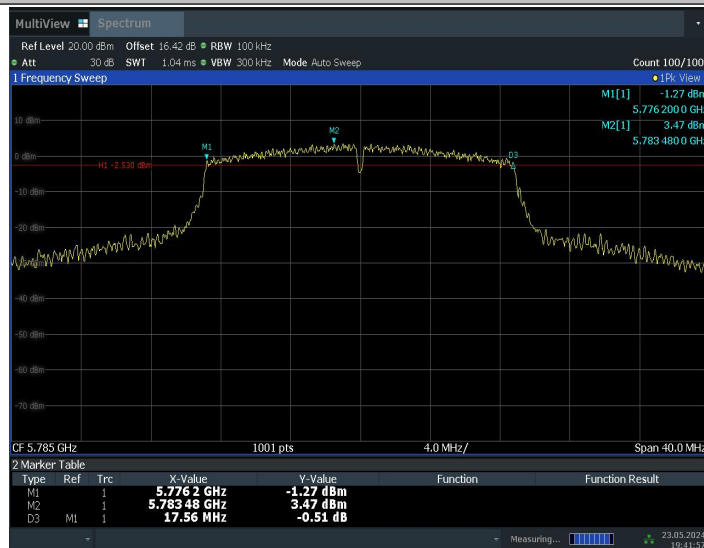


11AC20_5745



19:40:44 23.05.2024

11AC20_5785



19:41:57 23.05.2024

11AC20_5825



11AC80_5775



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

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

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

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

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

A.5.2 Test setup

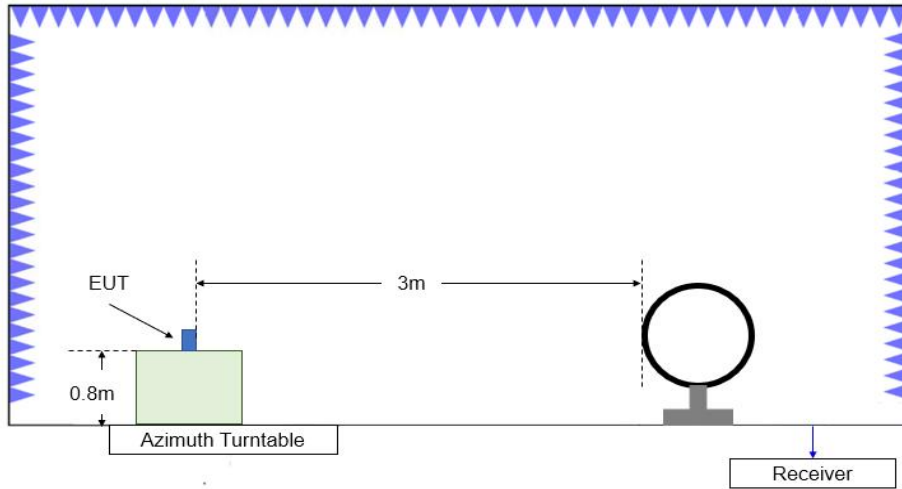


Figure 1 Test Site Diagram (9kHz-30MHz)

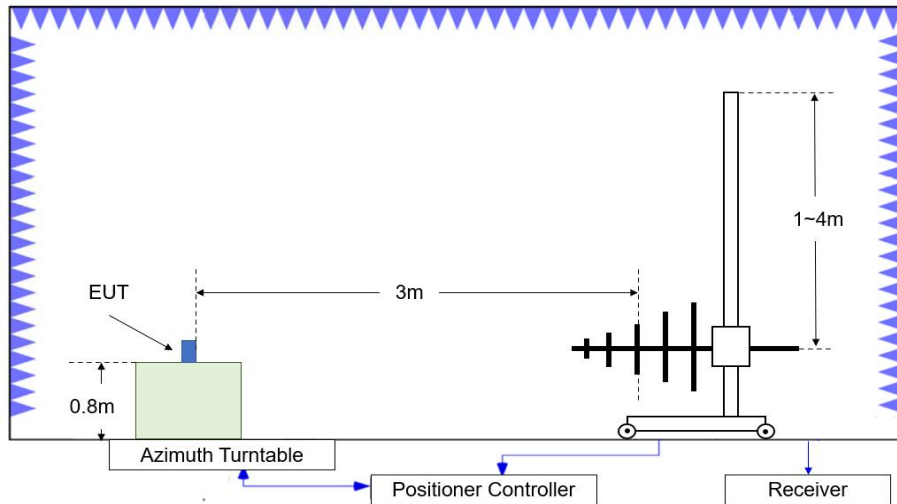


Figure 2 Test Site Diagram (30MHz-1GHz)

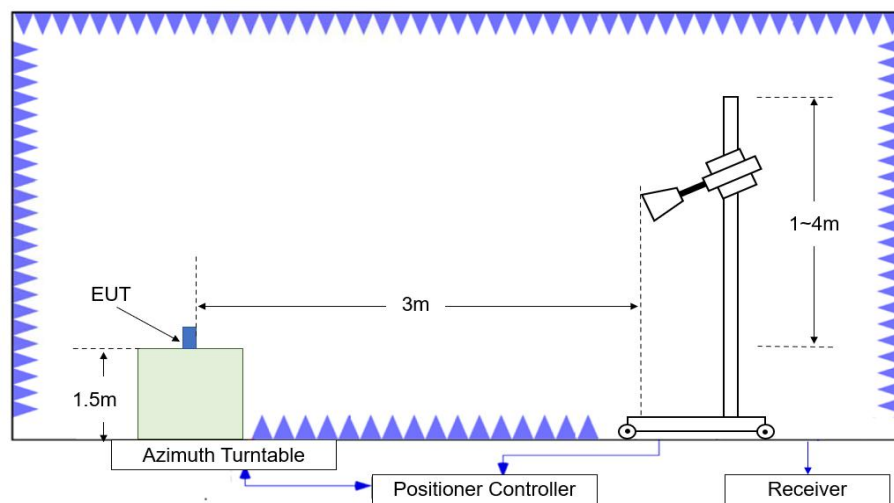


Figure 3 Test Site Diagram (1GHz-40GHz)

A.5.3 Test Procedures

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

Test setting

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

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.5.4 Average Results:
802.11a

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17951.600	41.05	-29.59	45.95	24.69	54.00	12.95	H
17993.400	41.00	-29.59	45.95	24.64	54.00	13.00	H
16053.000	37.16	-29.92	38.10	28.98	54.00	16.84	H
16157.500	36.76	-30.14	38.20	28.70	54.00	17.24	H
10868.100	35.50	-33.07	38.50	30.07	54.00	18.50	H
10856.000	35.48	-33.07	38.50	30.05	54.00	18.52	H

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17985.700	40.44	-29.59	45.95	24.08	54.00	13.56	V
17965.900	40.39	-29.59	45.95	24.03	54.00	13.61	V
15943.000	36.13	-29.36	38.30	27.19	54.00	17.87	V
16050.200	35.91	-29.92	38.10	27.73	54.00	18.09	V
11399.500	34.04	-32.58	39.00	27.62	54.00	19.96	H
10743.900	34.03	-32.42	38.45	28.00	54.00	19.97	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17991.200	40.51	-29.59	45.95	24.15	54.00	13.49	V
17980.200	40.46	-29.59	45.95	24.10	54.00	13.54	V
16151.500	36.27	-30.14	38.20	28.21	54.00	17.73	V
16139.400	36.12	-30.14	38.20	28.06	54.00	17.88	H
11911.500	34.16	-32.53	39.10	27.59	54.00	19.84	V
11905.500	34.13	-32.53	39.10	27.56	54.00	19.87	V

802.11n-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17989.000	40.48	-29.59	45.95	24.12	54.00	13.52	V
17997.200	40.43	-29.59	45.95	24.07	54.00	13.57	H
16142.100	36.00	-30.14	38.20	27.94	54.00	18.00	V
16074.500	35.98	-29.92	38.10	27.80	54.00	18.02	V
10855.000	34.65	-33.07	38.50	29.22	54.00	19.35	H
11909.900	34.44	-32.53	39.10	27.87	54.00	19.56	V

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.600	40.41	-29.59	45.95	24.05	54.00	13.59	V
17997.800	40.38	-29.59	45.95	24.02	54.00	13.62	H
14489.900	36.06	-29.56	41.90	23.72	54.00	17.94	V
16059.000	36.03	-29.92	38.10	27.85	54.00	17.97	V
11912.000	34.31	-32.53	39.10	27.74	54.00	19.69	H
11901.600	33.95	-32.53	39.10	27.38	54.00	20.05	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17996.200	40.95	-29.59	45.95	24.59	54.00	13.05	V
17988.500	40.69	-29.59	45.95	24.33	54.00	13.31	V
16141.500	36.11	-30.14	38.20	28.05	54.00	17.89	V
16135.500	36.05	-28.75	38.15	26.65	54.00	17.95	V
11849.400	34.27	-32.73	39.15	27.85	54.00	19.73	H
10745.500	34.13	-32.42	38.45	28.10	54.00	19.87	V

802.11n-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.600	40.40	-29.59	45.95	24.04	54.00	13.60	V
17997.800	40.24	-29.59	45.95	23.88	54.00	13.76	H
16064.000	35.95	-29.92	38.10	27.77	54.00	18.05	V
16139.400	35.87	-30.14	38.20	27.81	54.00	18.13	V
10872.000	34.41	-33.07	38.50	28.98	54.00	19.59	V
11858.700	34.14	-32.73	39.15	27.72	54.00	19.86	V

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.000	40.35	-29.59	45.95	23.99	54.00	13.65	V
17998.300	40.31	-29.59	45.95	23.95	54.00	13.69	V
16040.900	36.10	-29.92	38.10	27.92	54.00	17.90	V
16142.600	35.98	-30.14	38.20	27.92	54.00	18.02	H
10851.100	34.49	-33.07	38.50	29.06	54.00	19.51	H
11398.900	34.06	-32.58	39.00	27.64	54.00	19.94	V

802.11ac-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17990.700	40.40	-29.59	45.95	24.04	54.00	13.60	H
17986.800	40.33	-29.59	45.95	23.97	54.00	13.67	H
16142.600	36.20	-30.14	38.20	28.14	54.00	17.80	V
14475.600	35.95	-29.56	41.90	23.61	54.00	18.05	V
11829.000	34.52	-32.09	39.20	27.41	54.00	19.48	V
11864.800	34.12	-32.73	39.15	27.70	54.00	19.88	V

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.000	40.43	-29.59	45.95	24.07	54.00	13.57	H
17973.000	40.34	-29.59	45.95	23.98	54.00	13.66	H
16138.800	36.58	-30.14	38.20	28.52	54.00	17.42	H
15951.200	35.99	-29.36	38.30	27.05	54.00	18.01	V
11889.500	34.38	-32.53	39.10	27.81	54.00	19.62	V
11854.900	34.14	-32.73	39.15	27.72	54.00	19.86	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17964.200	40.31	-29.59	45.95	23.95	54.00	13.69	H
17990.700	40.26	-29.59	45.95	23.90	54.00	13.74	V
16137.700	36.07	-28.75	38.15	26.67	54.00	17.93	V
16047.000	36.04	-29.92	38.10	27.86	54.00	17.96	V
11856.500	34.18	-32.73	39.15	27.76	54.00	19.82	V
10750.500	34.17	-32.42	38.45	28.14	54.00	19.83	V

802.11ac-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.200	40.74	-29.59	45.95	24.38	54.00	13.26	V
17970.300	40.45	-29.59	45.95	24.09	54.00	13.55	H
16149.200	36.07	-30.14	38.20	28.01	54.00	17.93	H
16140.500	36.02	-30.14	38.20	27.96	54.00	17.98	H
11829.500	34.46	-32.09	39.20	27.35	54.00	19.54	H
10749.400	34.25	-32.42	38.45	28.22	54.00	19.75	V

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17992.800	40.45	-29.59	45.95	24.09	54.00	13.55	V
17984.000	40.37	-29.59	45.95	24.01	54.00	13.63	H
16055.800	36.11	-29.92	38.10	27.93	54.00	17.89	H
16145.400	36.05	-30.14	38.20	27.99	54.00	17.95	V
11839.500	34.17	-32.73	39.15	27.75	54.00	19.83	V
10858.200	34.12	-33.07	38.50	28.69	54.00	19.88	H

802.11ac-HT80

Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17974.700	40.69	-29.59	45.95	24.33	54.00	13.31	V
17968.100	40.40	-29.59	45.95	24.04	54.00	13.60	H
14487.700	36.15	-29.56	41.90	23.81	54.00	17.85	H
16151.500	36.04	-30.14	38.20	27.98	54.00	17.96	H
10860.500	34.42	-33.07	38.50	28.99	54.00	19.58	V
11906.500	34.17	-32.53	39.10	27.60	54.00	19.83	V

Peak Results:
802.11a

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17629.300	51.65	-29.60	45.40	35.85	68.30	16.65	H
17876.200	51.57	-29.59	45.95	35.21	74.00	22.43	H
16746.000	49.70	-29.73	39.70	39.73	68.30	18.60	H
16988.000	49.54	-29.38	40.85	38.07	68.30	18.76	V
11907.100	47.01	-32.53	39.10	40.44	74.00	26.99	H
10889.000	46.36	-33.07	38.50	40.93	74.00	27.64	H

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17981.300	51.43	-29.59	45.95	35.07	74.00	22.57	V
17931.200	51.26	-29.59	45.95	34.90	74.00	22.74	H
17000.100	49.24	-29.38	40.85	37.77	68.30	19.06	H
16997.900	48.92	-29.38	40.85	37.45	68.30	19.38	V
11001.800	45.77	-33.10	38.60	40.27	74.00	28.23	V
9408.500	45.10	-33.60	37.90	40.80	74.00	28.90	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17596.800	51.38	-29.60	45.15	35.83	68.30	16.92	H
17935.700	51.38	-29.59	45.95	35.02	74.00	22.62	H
16726.800	49.33	-29.14	39.65	38.82	68.30	18.97	H
16958.800	49.29	-29.68	40.60	38.37	68.30	19.01	V
11377.500	45.07	-33.31	38.85	39.53	74.00	28.93	V
11311.500	45.06	-32.41	38.70	38.77	74.00	28.94	V

802.11n-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17968.700	51.99	-29.59	45.95	35.63	74.00	22.01	V
17592.500	51.44	-29.60	45.15	35.89	68.30	16.86	V
16993.500	50.31	-29.38	40.85	38.84	68.30	17.99	H
16430.800	49.46	-30.02	38.70	40.78	68.30	18.84	H
10857.100	45.81	-33.07	38.50	40.38	74.00	28.19	V
11372.500	45.55	-33.31	38.85	40.01	74.00	28.45	V

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17516.000	52.47	-29.07	44.55	36.99	68.30	15.83	V
17942.800	51.26	-29.59	45.95	34.90	74.00	22.74	V
16958.800	49.11	-29.68	40.60	38.19	68.30	19.19	H
16809.200	48.92	-29.24	39.85	38.31	68.30	19.38	V
11405.500	45.77	-32.58	39.00	39.35	74.00	28.23	V
10853.900	45.66	-33.07	38.50	40.23	74.00	28.34	V

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17605.100	52.06	-29.60	45.15	36.51	68.30	16.24	H
17597.400	51.70	-29.60	45.15	36.15	68.30	16.60	H
16526.500	49.34	-29.90	39.00	40.24	68.30	18.96	H
16842.800	49.20	-29.50	40.00	38.70	68.30	19.10	V
11892.800	45.86	-32.53	39.10	39.29	74.00	28.14	H
11895.000	45.83	-32.53	39.10	39.26	74.00	28.17	V

802.11n-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17986.200	52.33	-29.59	45.95	35.97	74.00	21.67	H
17612.200	51.51	-29.60	45.15	35.96	68.30	16.79	V
16864.200	49.56	-29.50	40.00	39.06	68.30	18.74	V
16484.200	49.46	-30.22	38.80	40.88	68.30	18.84	V
11852.600	45.82	-32.73	39.15	39.40	74.00	28.18	V
10866.500	45.05	-33.07	38.50	39.62	74.00	28.95	V

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17990.700	51.60	-29.59	45.95	35.24	74.00	22.40	H
17955.500	51.52	-29.59	45.95	35.16	74.00	22.48	H
16677.800	49.16	-29.84	39.60	39.40	68.30	19.14	H
16930.200	49.16	-29.28	40.30	38.14	68.30	19.14	V
11331.800	45.67	-32.41	38.70	39.38	74.00	28.33	V
11940.600	45.56	-32.42	39.05	38.93	74.00	28.44	V

802.11ac-HT20

Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17981.300	52.44	-29.59	45.95	36.08	74.00	21.56	V
17951.000	51.67	-29.59	45.95	35.31	74.00	22.33	V
16633.800	49.42	-29.84	39.60	39.66	68.30	18.88	H
16724.500	49.33	-29.14	39.65	38.82	68.30	18.97	H
11828.500	46.20	-32.09	39.20	39.09	74.00	27.80	H
11840.500	45.33	-32.73	39.15	38.91	74.00	28.67	V

Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17491.800	52.06	-29.07	44.55	36.58	68.30	16.24	V
17992.300	51.59	-29.59	45.95	35.23	74.00	22.41	H
16726.800	49.29	-29.14	39.65	38.78	68.30	19.01	H
16847.800	49.20	-29.50	40.00	38.70	68.30	19.10	V
11853.200	46.09	-32.73	39.15	39.67	74.00	27.91	H
11820.800	45.32	-32.09	39.20	38.21	74.00	28.68	H

Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17625.500	52.39	-29.60	45.40	36.59	68.30	15.91	V
17958.200	52.17	-29.59	45.95	35.81	74.00	21.83	H
16735.000	48.75	-29.73	39.70	38.78	68.30	19.55	V
16957.200	48.60	-29.68	40.60	37.68	68.30	19.70	V
11382.400	45.46	-33.31	38.85	39.92	74.00	28.54	H
11841.600	45.25	-32.73	39.15	38.83	74.00	28.75	H

802.11ac-HT40

Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17959.300	51.80	-29.59	45.95	35.44	74.00	22.20	H
17600.200	51.63	-29.60	45.15	36.08	68.30	16.67	H
16939.000	49.13	-29.68	40.60	38.21	68.30	19.17	H
16906.600	49.08	-29.28	40.30	38.06	68.30	19.22	V
11705.200	45.95	-32.70	39.20	39.45	74.00	28.05	V
9407.400	45.39	-33.60	37.90	41.09	74.00	28.61	V

Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17590.800	51.69	-29.60	45.15	36.14	68.30	16.61	V
17990.100	51.53	-29.59	45.95	35.17	74.00	22.47	H
16525.500	49.46	-29.90	39.00	40.36	68.30	18.84	V
17000.100	49.12	-29.38	40.85	37.65	68.30	19.18	H
10779.000	45.66	-32.42	38.45	39.63	74.00	28.34	V
10741.100	45.38	-33.62	38.40	40.60	74.00	28.62	H

802.11ac-HT80

Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17965.900	51.57	-29.59	45.95	35.21	74.00	22.43	H
17943.300	51.53	-29.59	45.95	35.17	74.00	22.47	V
16962.700	49.08	-29.68	40.60	38.16	68.30	19.22	V
16248.200	49.07	-29.53	38.40	40.20	68.30	19.23	V
11297.100	45.79	-32.41	38.70	39.50	74.00	28.21	V
11787.800	45.48	-32.09	39.20	38.37	74.00	28.52	V

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	5745 MHz	Fig.4	P
	5825 MHz	Fig.5	P
802.11n HT20	5745 MHz	Fig.6	P
	5825 MHz	Fig.7	P
802.11n HT40	5755 MHz	Fig.8	P
	5795 MHz	Fig.9	P
802.11ac HT20	5745 MHz	Fig.10	P
	5825 MHz	Fig.11	P
802.11ac HT40	5755 MHz	Fig.12	P
	5795 MHz	Fig.13	P
802.11ac HT80	5775 MHz	Fig.14 Fig.15	P

Conclusion: PASS

Test graphs as below:

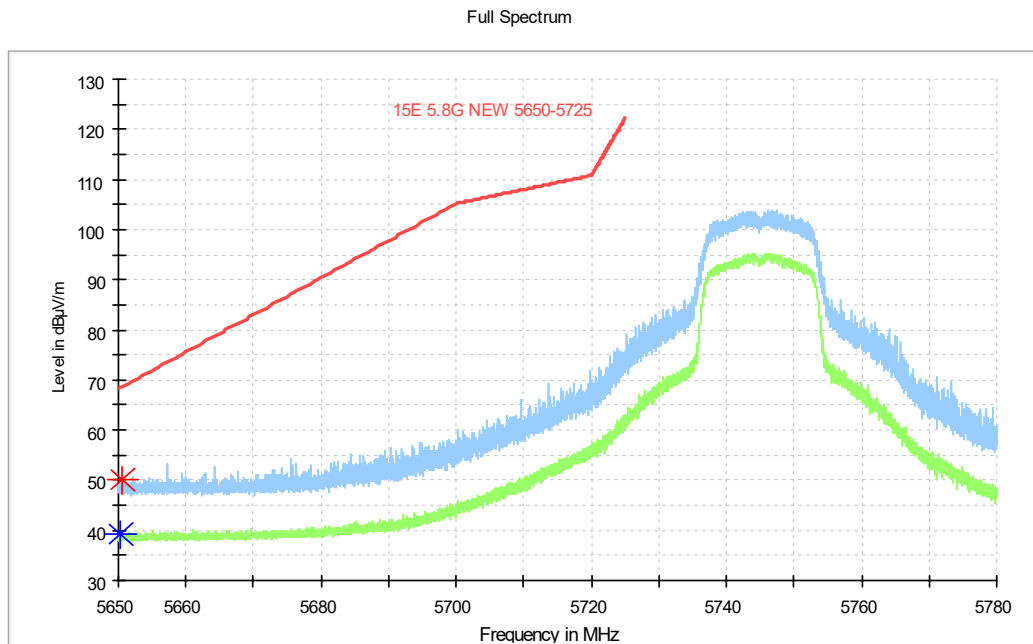


Fig. 4 Band Edges (802.11a Ch149, 5745MHz)

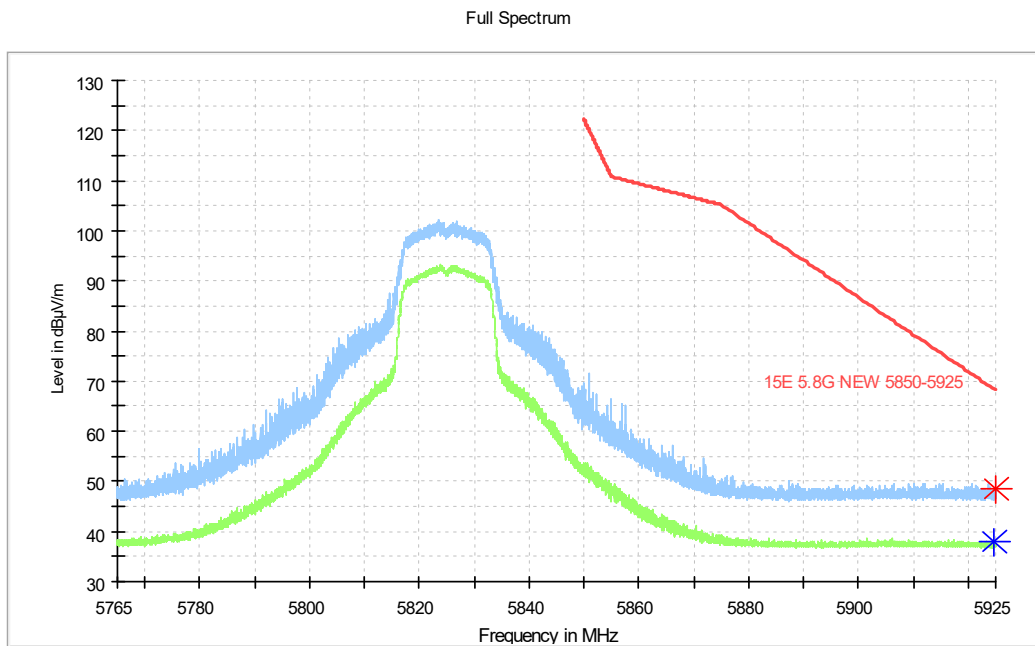


Fig. 5 Band Edges (802.11a Ch165, 5825MHz)

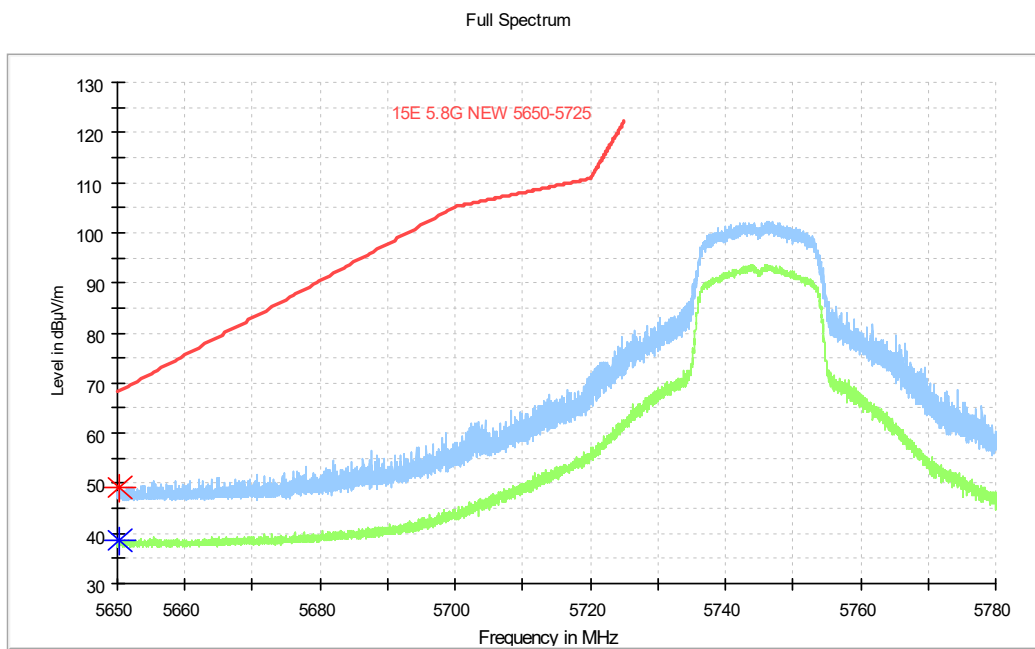


Fig. 6 Band Edges (802.11n-HT20 Ch149, 5745MHz)

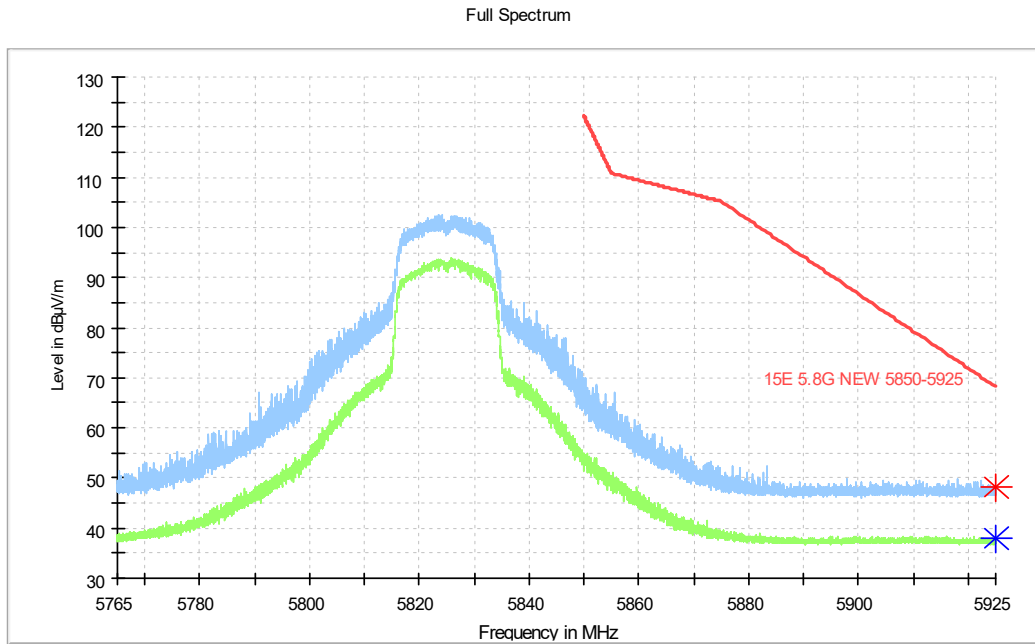


Fig. 7 Band Edges (802.11n-HT20 Ch165, 5825MHz)

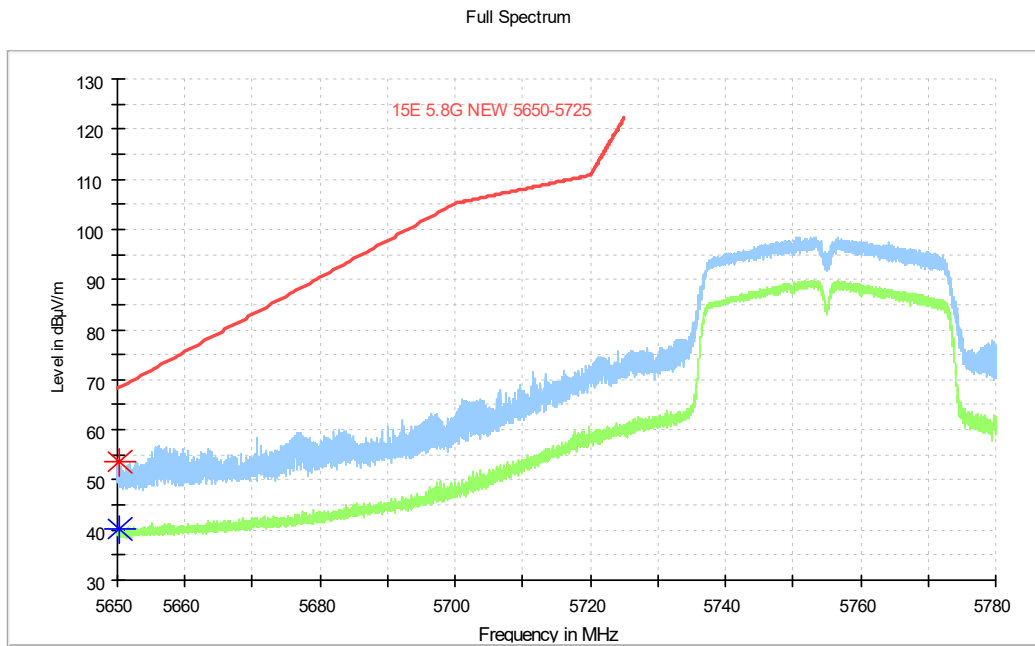


Fig. 8 Band Edges (802.11n-HT40 Ch151, 5755MHz)

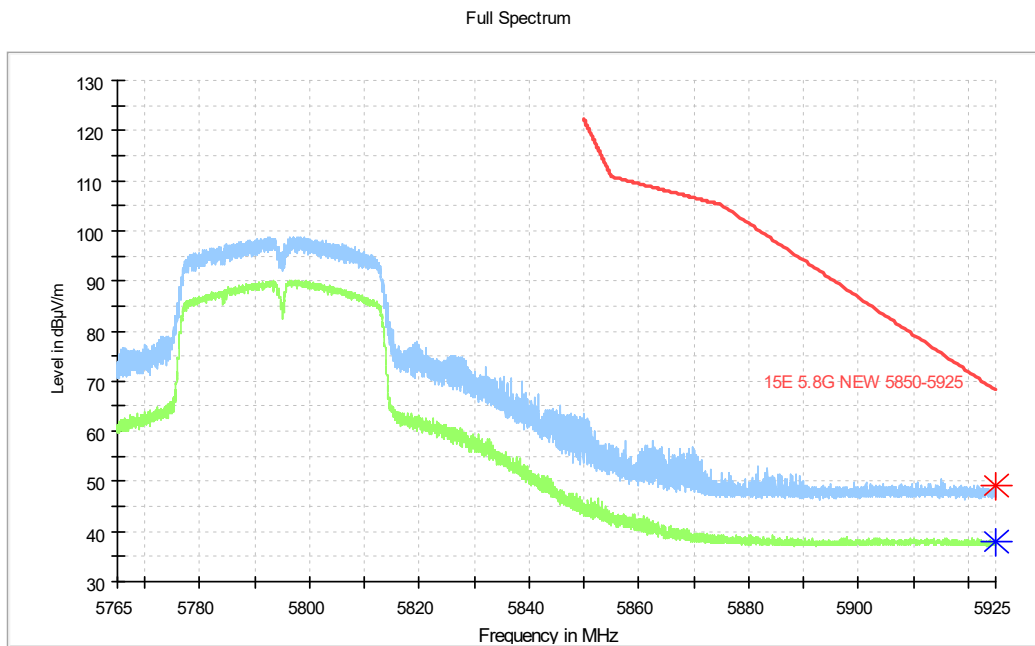


Fig. 9 Band Edges (802.11n-HT40 Ch159, 5795MHz)

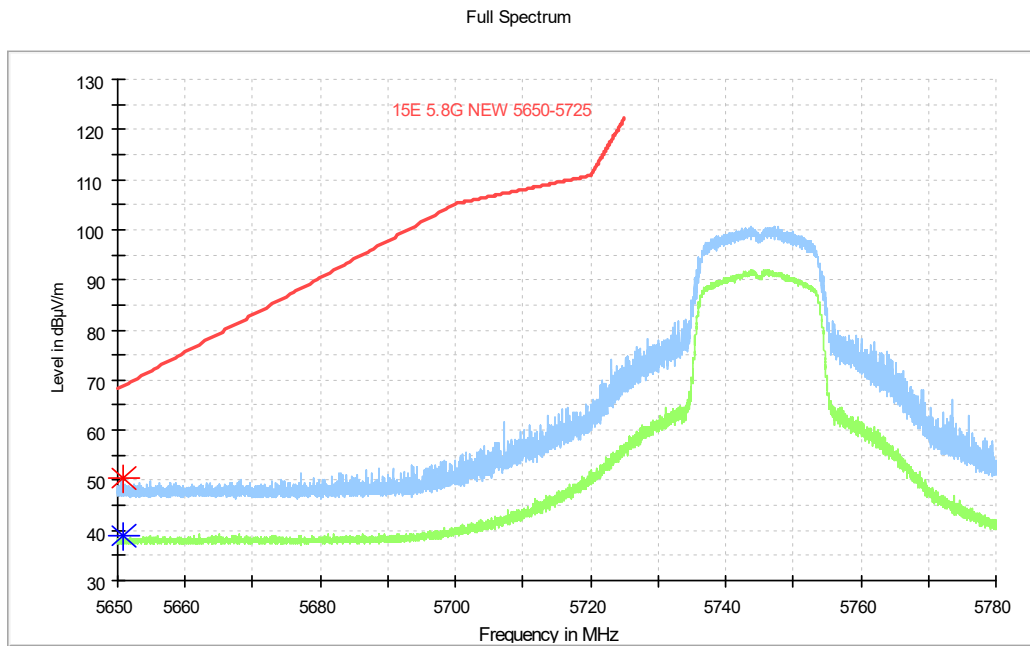


Fig. 10 Band Edges (802.11ac-HT20 Ch149, 5745MHz)

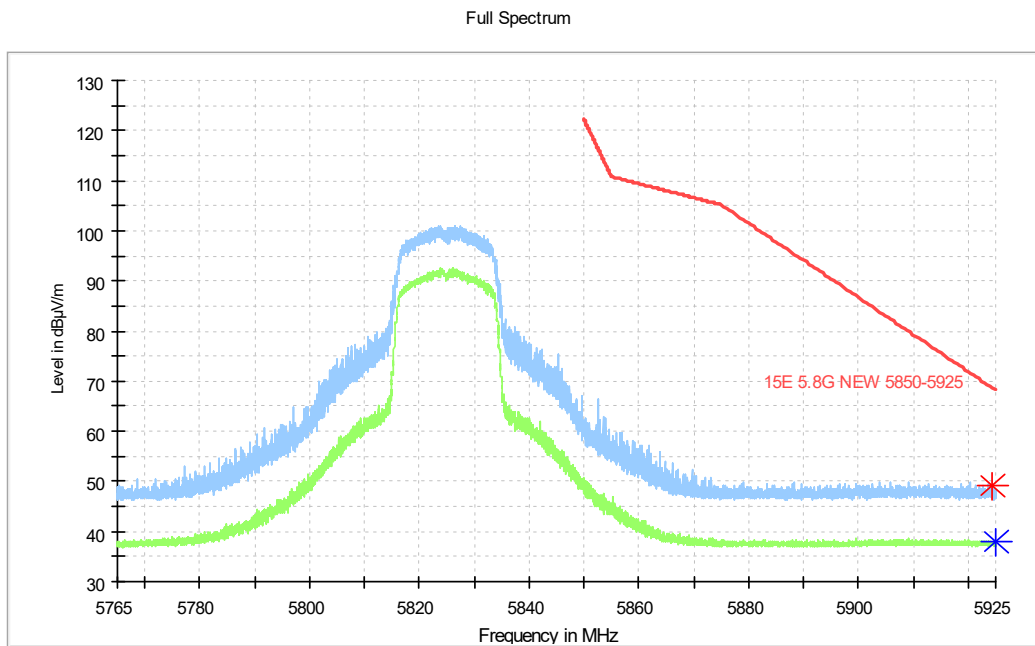


Fig. 11 Band Edges (802.11ac-HT20 Ch165, 5825MHz)

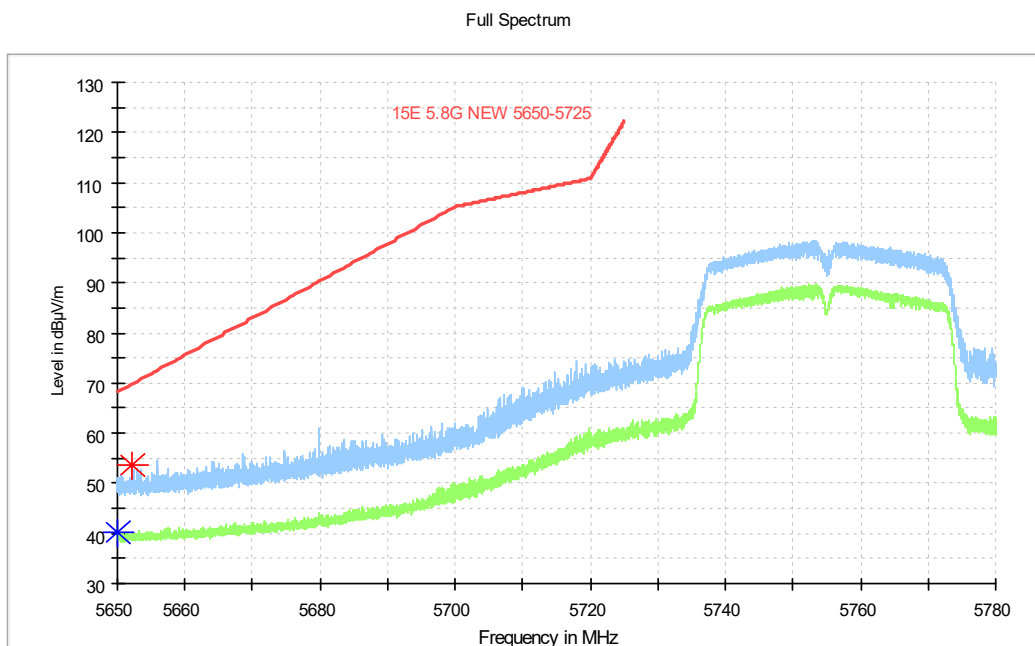


Fig. 12 Band Edges (802.11ac-HT40 Ch151, 5755MHz)

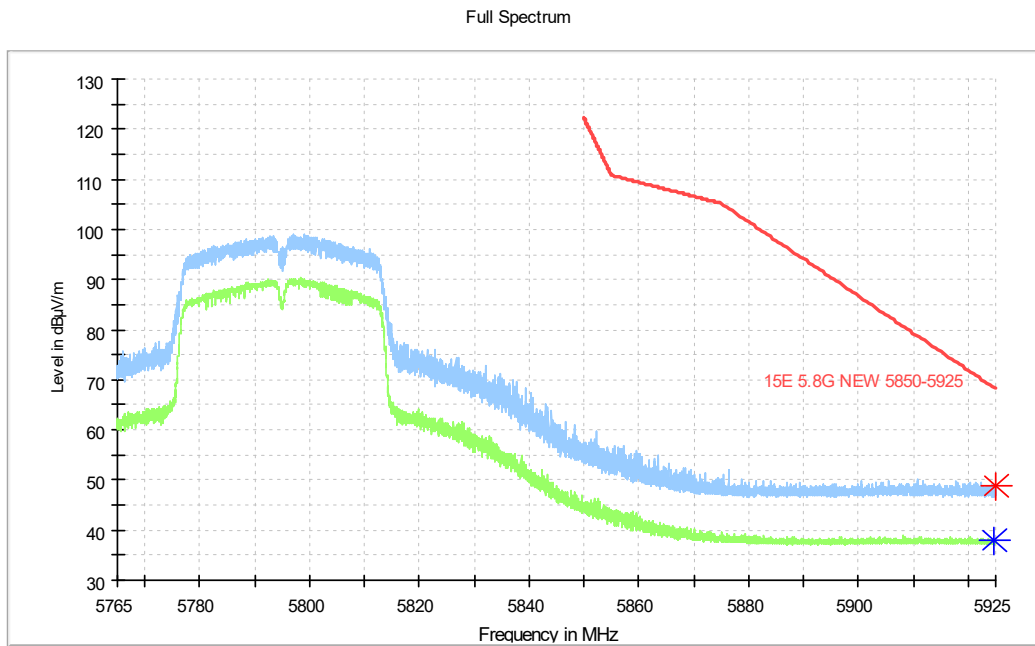


Fig. 13 Band Edges (802.11ac-HT40 Ch159, 5795MHz)

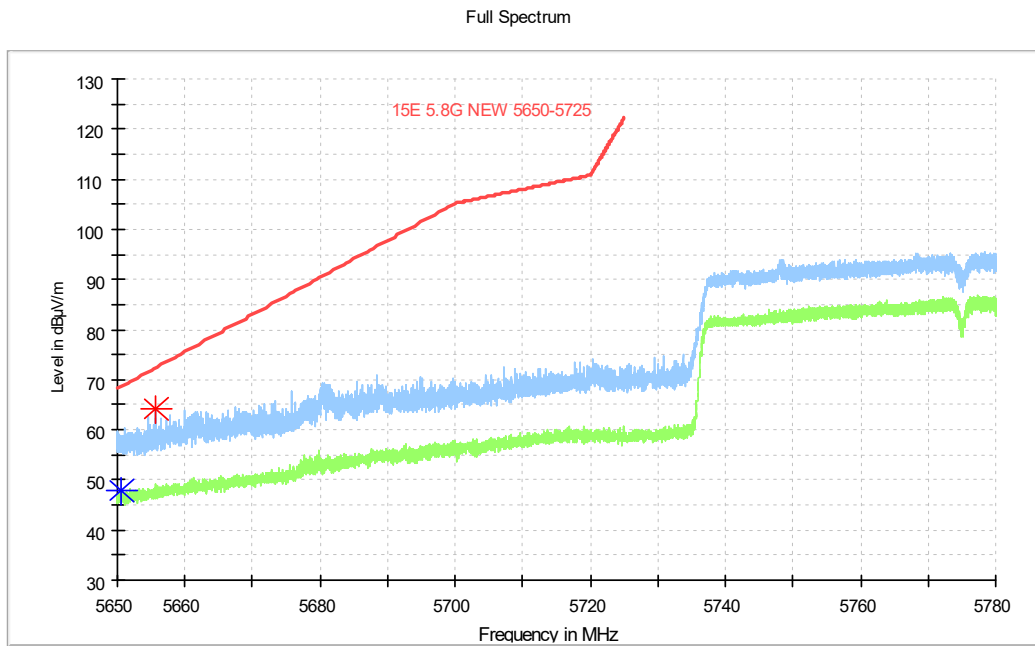
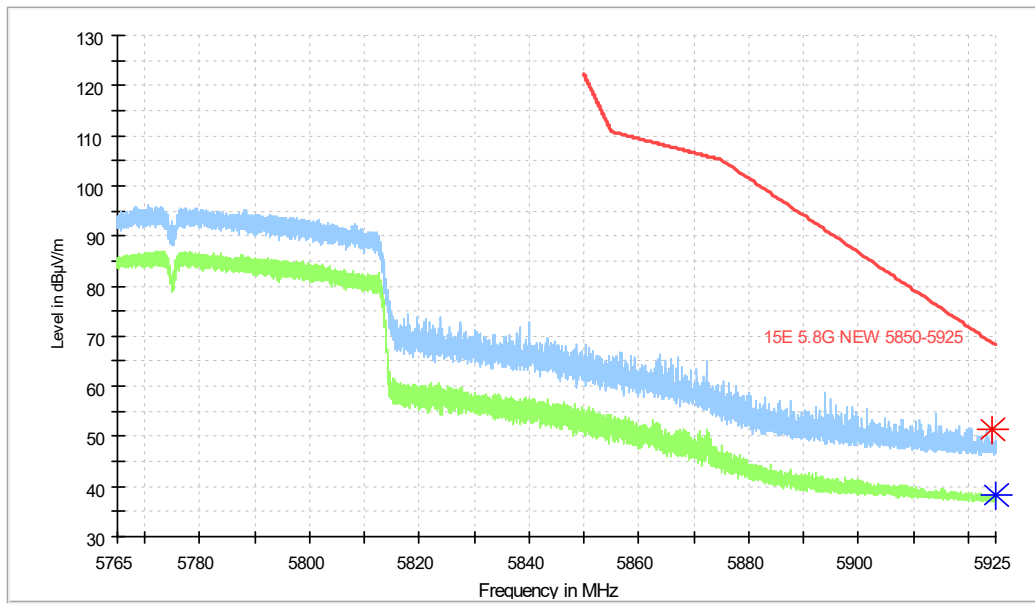


Fig. 14 Band Edges (802.11ac-HT80 Ch155, 5775MHz)

Full Spectrum

**Fig. 15 Band Edges (802.11ac-HT80, 5775MHz)**

A.6. AC Powerline Conducted Emission

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.

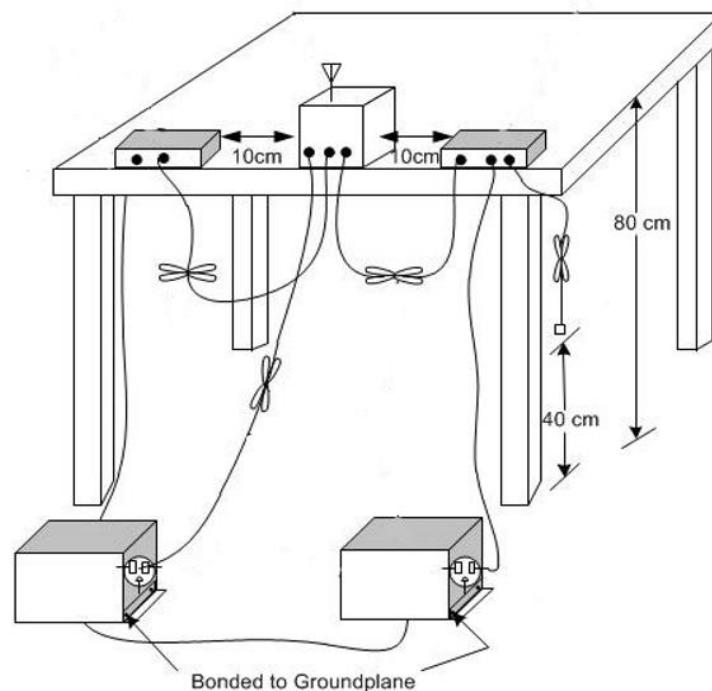
The measurement bandwidth is:

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



A.6.5 Measurement Result and limit
Wi-Fi (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		Wi-Fi	Idle	
0.15 to 0.5	66 to 56	Fig 16	Fig 17	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.

Wi-Fi (Average Limit)

Frequency range (MHz)	Average Limit (dB μ V)	Result (dB μ V)		Conclusion
		With charger		
		Wi-Fi	Idle	
0.15 to 0.5	56 to 46	Fig 16	Fig 17	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:

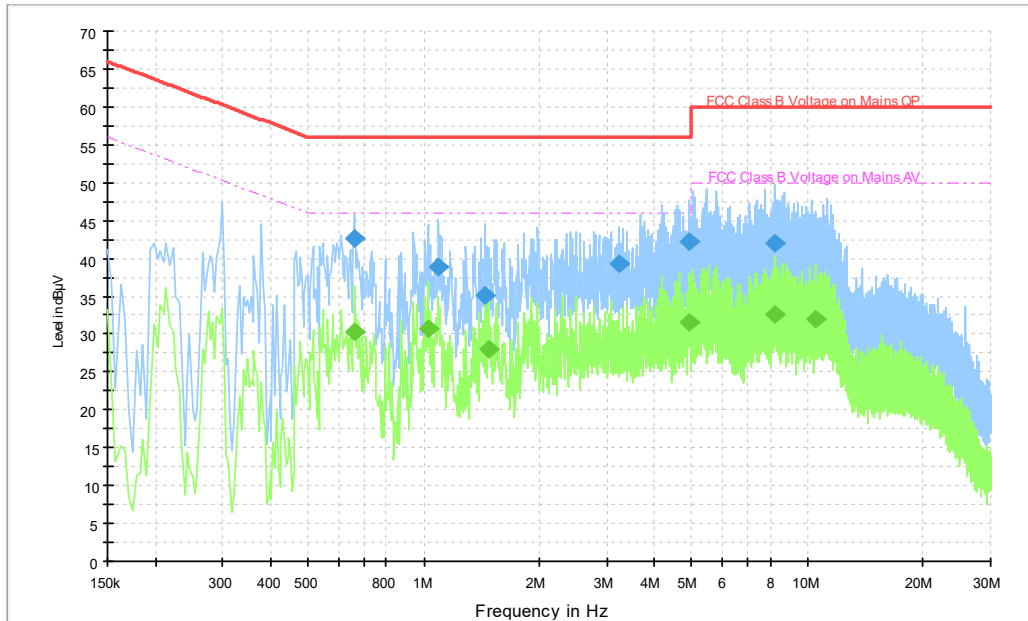


Fig. 16 AC Powerline Conducted Emission-Idle

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.658000	42.6	2000.0	9.000	On	L1	20.0	13.4	56.0
1.094000	38.8	2000.0	9.000	On	L1	19.9	17.2	56.0
1.446000	35.0	2000.0	9.000	On	L1	19.9	21.0	56.0
3.226000	39.4	2000.0	9.000	On	L1	19.8	16.6	56.0
4.910000	42.2	2000.0	9.000	On	L1	19.8	13.8	56.0
8.210000	41.9	2000.0	9.000	On	L1	19.9	18.1	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.662000	30.3	2000.0	9.000	On	L1	20.0	15.7	46.0
1.026000	30.7	2000.0	9.000	On	L1	19.9	15.3	46.0
1.470000	27.9	2000.0	9.000	On	N	19.7	18.1	46.0
4.910000	31.5	2000.0	9.000	On	L1	19.8	14.5	46.0
8.210000	32.7	2000.0	9.000	On	L1	19.9	17.3	50.0
10.518000	32.1	2000.0	9.000	On	L1	19.9	17.9	50.0

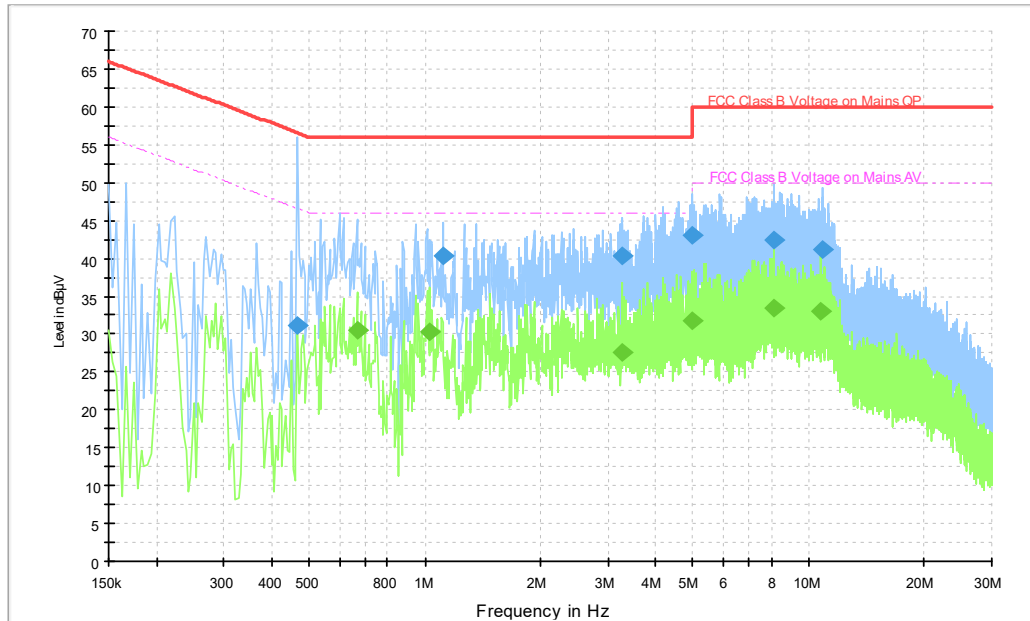


Fig. 17 AC Powerline Conducted Emission-Idle

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.466000	31.1	2000.0	9.000	On	N	19.9	25.5	56.6
1.114000	40.2	2000.0	9.000	On	L1	19.9	15.8	56.0
3.266000	40.4	2000.0	9.000	On	L1	19.8	15.6	56.0
4.982000	43.0	2000.0	9.000	On	L1	19.8	13.0	56.0
8.126000	42.4	2000.0	9.000	On	L1	19.9	17.6	60.0
10.870000	41.1	2000.0	9.000	On	L1	19.9	18.9	60.0

Final Result 2

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.666000	30.5	2000.0	9.000	On	L1	20.0	15.5	46.0
1.030000	30.3	2000.0	9.000	On	L1	19.9	15.7	46.0
3.254000	27.6	2000.0	9.000	On	L1	19.8	18.4	46.0
4.954000	31.8	2000.0	9.000	On	L1	19.8	14.2	46.0
8.126000	33.4	2000.0	9.000	On	L1	19.9	16.6	50.0
10.758000	33.1	2000.0	9.000	On	L1	19.9	16.9	50.0

A.7. 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



The image shows an accreditation certificate from A2LA for TELECOMMUNICATION TECHNOLOGY LABS, CAICT. The certificate is framed by a decorative orange and blue border on the left and right sides. At the top center, there are logos for ILAC-MRA and A2LA. Below the logos, the text reads "Accredited Laboratory" in a large, bold, blue font. Underneath, it states "A2LA has accredited" in a smaller font, followed by "TELECOMMUNICATION TECHNOLOGY LABS, CAICT" in a large, bold, blue font. Below this, it says "Beijing, People's Republic of China" in a smaller font. Further down, it specifies "for technical competence in the field of Electrical Testing" in a medium-sized font. A paragraph of text follows, stating that the laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017). To the left of the text is a gold-colored circular seal with the text "CORPORATE SEAL 1978" and "A2LA" at the bottom. To the right of the seal, there is a signature in blue ink, followed by the text "Presented this 26th day of June 2023." Below the signature, it reads "Mr. Trace McInturff, Vice President, Accreditation Services For the Accreditation Council Certificate Number 7049.01 Valid to July 31, 2024". At the bottom of the certificate, there is a line of text: "For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation."

*** END OF REPORT BODY ***