



# FCC PART 15E TEST REPORT No.24T04Z100676-027

for

**COOSEA GROUP (HK) COMPANY LIMITED**

**Smart Phone**

**SN509A/SN509C**

**FCC ID: 2A28USN509**

with

**Hardware Version: 1.0**

**Software Version: SN509A:SN509AA10017 /**

**SN509C:SN509CC10017**

**Issued Date: 2024-06-28**

**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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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
24T04Z100676-027	Rev.0	1st edition	2024-06-28

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(BDA)

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

### 1.3. TestingEnvironment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

### 1.4. Project date

Testing Start Date: 2024-05-09

Testing End Date: 2024-06-27

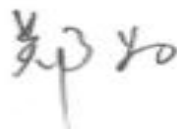
### 1.5. Signature



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Yao Xingyu

(Prepared this test report)



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Zheng Wei

(Reviewed this test report)



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Pang Shuai

(Approved this test report)



## **2. Client Information**

### **2.1. Applicant Information**

Company Name: COOSEA GROUP (HK) COMPANY LIMITED  
Address: UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL  
Contact: Zhao jiandong  
Postal Code: /  
Email: zhaojiandong@cooseagroup.com  
Telephone: 137-5984-9661  
Fax: /

### **2.2. Manufacturer Information**

Company Name: COOSEA GROUP (HK) COMPANY LIMITED  
Address: UNIT 5-6 16/F MULTIFIELD PLAZA 3-7A PRAT AVENUE TSIMSHATSUI KL  
Contact: Zhao jiandong  
Postal Code: /  
Email: zhaojiandong@cooseagroup.com  
Telephone: 137-5984-9661  
Fax: /

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

#### **3.1. About EUT**

Description	Smart Phone
Model name	SN509A/SN509C
FCC ID	2A28USN509
WLAN Frequency Band	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Nominal Voltage	3.8V
Extreme High Voltage	4.4V
Extreme Low Voltage	3.6V

Note: The difference between SN509A and SN509C is that the back cover color and logo are different.

#### **3.2. Internal Identification of EUT used during the test**

<b>EUT ID*</b>	<b>IMEI</b>	<b>HW Version</b>	<b>SW Version</b>	<b>Date of receipt</b>
UT25a	352095330005327	1.0	SN509AA10017	2024-04-29
UT42a	352095330006499	1.0	SN509AA10017	2024-05-07

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

UT25a is used for Conduction test, UT42a is used for Radiation test.

#### **3.3. Internal Identification of AE used during the test**

<b>AE ID*</b>	<b>Description</b>	<b>Model</b>	<b>Manufacturer</b>
AE1	Battery1	BL-A67CT	Huizhou Highpower Technology Co., Ltd.
AE2	Charger1	HJ-0503000-US	SHENZHEN HUAJIN ELECTRON CO.,LTD.
AE3	USB Cable1	FKY-24-050	ShenZhen FKY-QY Hardware&Electronics.,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 Smart Phone with integrated antenna. It consists of normal options: Battery and Charger.

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

Samples undergoing test were selected by the Client.

## **4. Reference Documents**

### **4.1. Documents supplied by applicant**

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

### **4.2. Reference Documents for testing**

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

	FCC CFR 47, Part 15, Subpart C and E:	
FCC Part15	15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.407 General technical requirements	2021
ANSI C63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2013
UNII: KDB 789033 D02	General U-NII Test Procedures New Rules v02r01	2017-12

## **5. Laboratory Environment**

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.



## 6. Test Results

### 6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15E	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.407 (a)	/	<b>P</b>
Peak Power Spectral Density	15.407 (a)	/	<b>P</b>
6dB Emission Bandwidth	15.407 (e)	/	<b>P</b>
Radiated Unwanted Emission	15.407, 15.205, 15.209	/	<b>P</b>
AC Powerline Conducted Emission	15.107, 15.207	/	<b>P</b>

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

#### **Note:**

All test results are derived from the DUT with model SN509A.

### 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	2024-07-04
2	Vector Signal Analyzer	FSW67	104051	Rohde & Schwarz	1 year	2025-04-01
3	Test Receiver	ESCI 3	100766	R&S	1 year	2025-05-18
4	LISN	ENV216	101459	R&S	1 year	2025-06-16
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	ESW44	103015	R&S	1 year	2025-02-17
2	EMI Antenna	VULB 9163	482	SCHWARZBECK	1 year	2025-06-19
3	EMI Antenna	3117	00139065	ETS-Lindgren	1 year	2024-11-22
4	EMI Antenna	LB-180400-25-C-KF	2110084000006	A-INFO	1 year	2024-07-11

## 8. Measurement Uncertainty

### 8.1. Transmitter Output Power

Measurement Uncertainty: 0.387dB,k=1.96

### 8.2. Peak Power Spectral Density

Measurement Uncertainty: 0.705dB,k=1.96

### 8.3. 6dB Emission Bandwidth

Measurement Uncertainty: 60.80Hz,k=1.96

### 8.4. Band Edges Compliance

Measurement Uncertainty : 0.62dB,k=1.96

### 8.5. Spurious Emissions

Conducted (k=1.96)

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

### 8.6. Radiated Unwanted Emission

Frequency Range	Uncertainty(dB)
9kHz-30MHz	3.96
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.29
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.62
$18\text{GHz} \leq f \leq 40\text{GHz}$	3.52

### 8.7. AC Power-line Conducted Emission

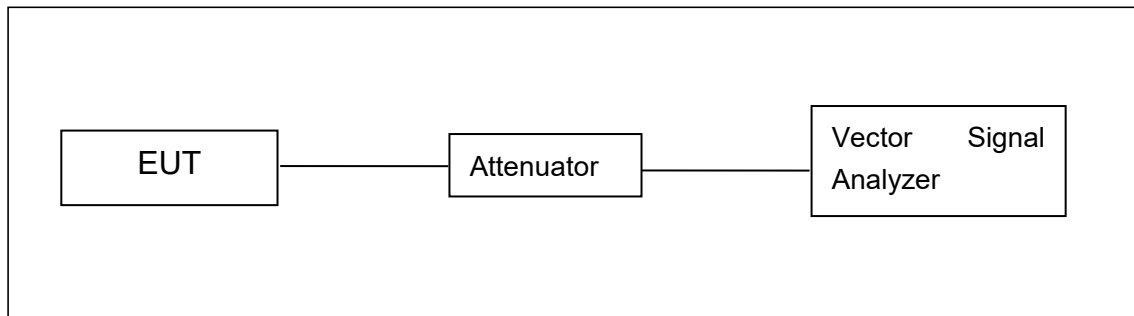
Measurement Uncertainty : 3.10dB,k=2

## **ANNEX A: MEASUREMENT RESULTS**

### **A.1. Measurement Method**

#### **A.1.1. Conducted Measurements**

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



#### **A.1.2. Radiated Emission Measurements**

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

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

## **A.2. Maximum Peak Output Power**

### **Measurement Limit and Method:**

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

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

Set RBW = 1 MHz.

Set VBW ≥ 3 MHz.

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

Sweep time = auto.

Detector = power averaging (rms)

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

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

### **A.2.1 Antenna Gain**

Antenna gain is 1.8dBi and the value is supplied by the applicant or manufacturer.

### **A.2.2. Maximum Average Output Power-Conducted**

**EUT ID: UT25a**

#### **Measurement Results:**

##### **802.11a mode**

<b>Mode</b>	<b>Data Rate (Mbps)</b>	<b>Test Result (dBm)</b>		
		<b>5745MHz (Ch149)</b>	<b>5785MHz (Ch157)</b>	<b>5825MHz (Ch165)</b>
802.11a	6	17.82	17.72	17.59

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

##### **802.11n-HT20 mode**

<b>Mode</b>	<b>Data Rate (Index)</b>	<b>Test Result (dBm)</b>		
		<b>5745MHz (Ch149)</b>	<b>5785MHz (Ch157)</b>	<b>5825MHz (Ch165)</b>
802.11n (20MHz)	MCS0	16.68	16.63	16.57

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	15.76	15.74	15.56

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	16.74	16.63

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	14.72	14.62

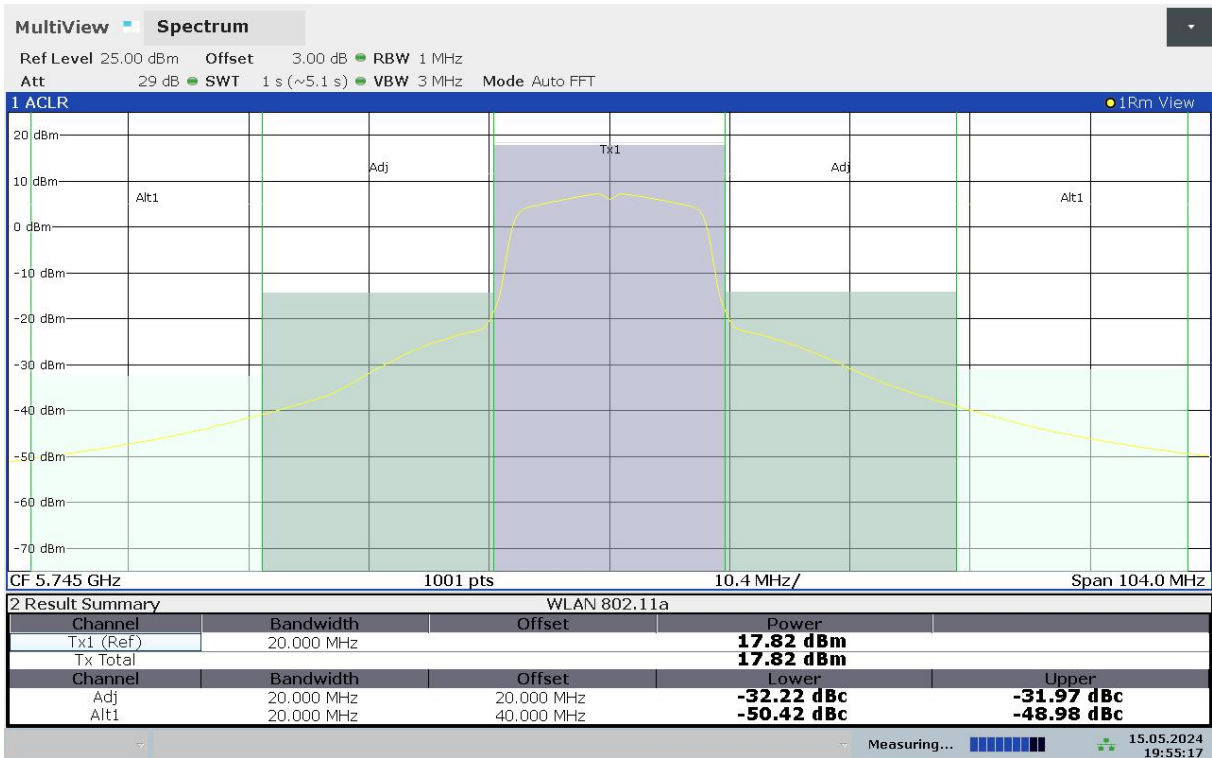
The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

#### 802.11ac-HT80 mode

Mode	Data Rate (Index)	Test Result (dBm)
		5775MHz (Ch155)
802.11ac (80MHz)	MCS0	14.35

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%



Date: 15 MAY 2024 19:55:17

**Maximum output Power: 11a CH149**

**Conclusion: PASS**

### **A.3. Peak Power Spectral Density**

#### **Measurement Limit:**

<b>Standard</b>	<b>Limit</b>
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:**

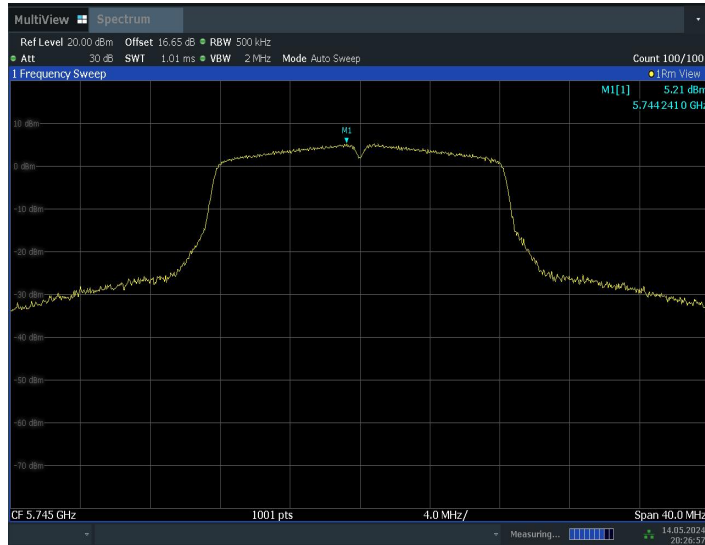
Measurement Uncertainty	0.75dB
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**EUT ID: UT25a**

#### **Measurement Results:**

<b>Mode</b>	<b>Channel</b>	<b>Power Spectral Density ( dBm/500kHz )</b>	<b>Conclusion</b>
802.11a	149	5.21	P
	157	5.15	P
	165	4.77	P
802.11n HT20	149	3.72	P
	157	3.35	P
	165	3.58	P
802.11n HT40	151	0.91	P
	159	0.74	P
802.11ac HT80	155	-5.03	P





20:26:58 14.05.2024

**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:**

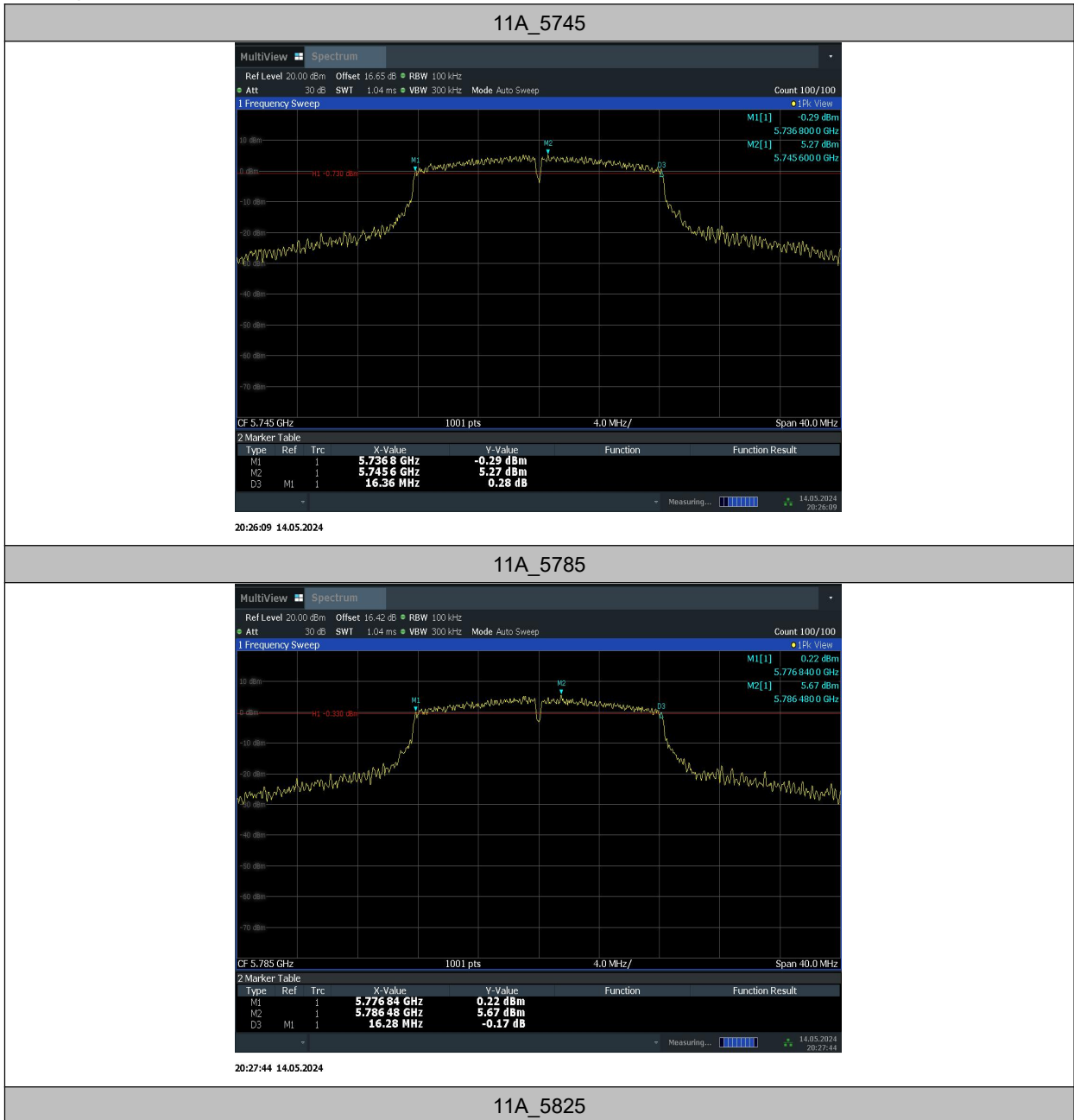
Measurement Uncertainty	60.80Hz
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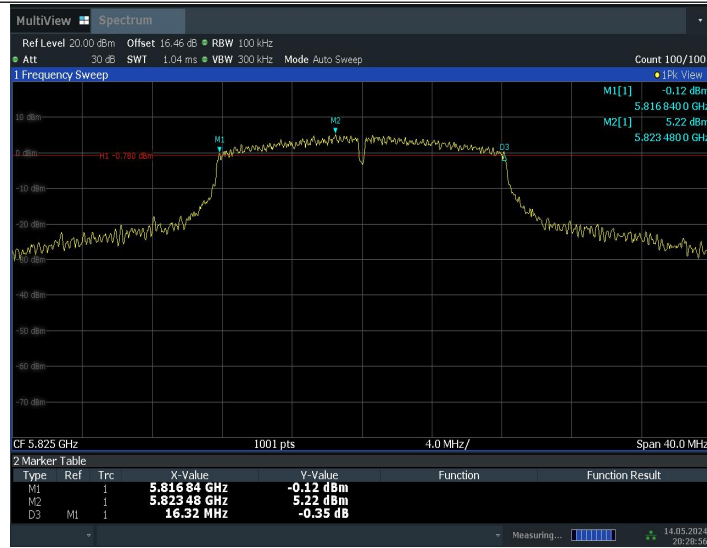
**EUT ID: UT25a**

##### **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	16.28	5776.84	5793.12	0.5	PASS
	5825	16.32	5816.84	5833.16	0.5	PASS
11N20SISO	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
11N40SISO	5755	36.16	5737.00	5773.16	0.5	PASS
	5795	36.08	5777.08	5813.16	0.5	PASS
	5795	36.08	5777.08	5813.16	0.5	PASS
11AC80SISO	5775	76.32	5736.76	5813.08	0.5	PASS

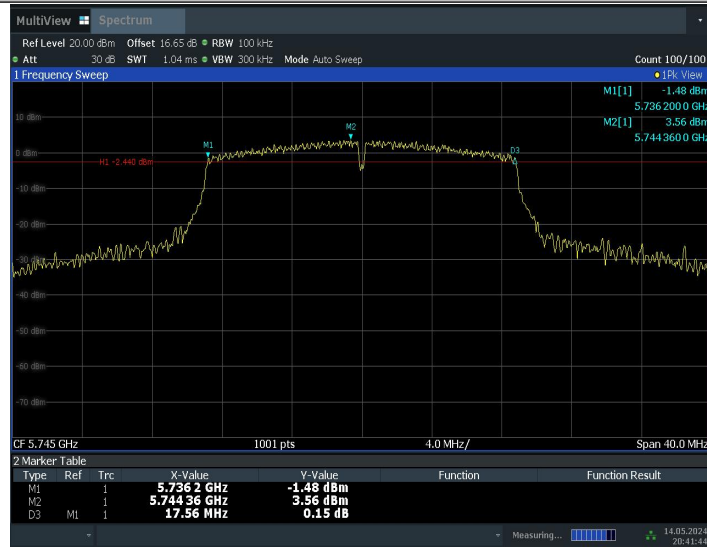
Test graphs as below:





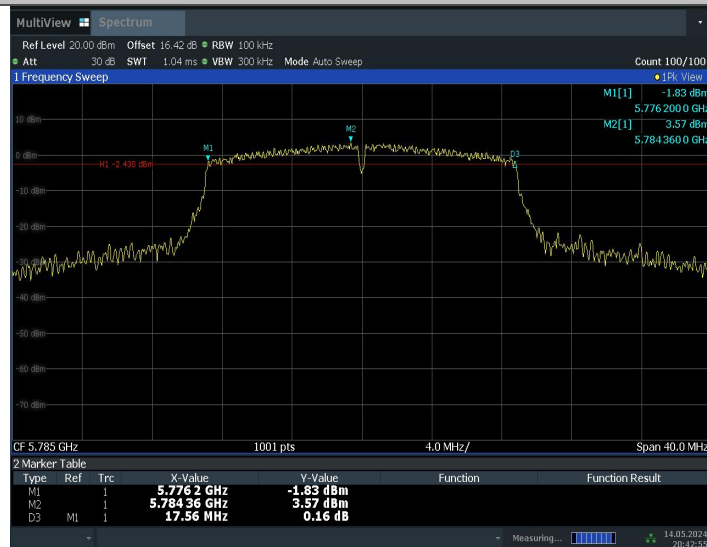
20:28:56 14.05.2024

## 11N20SISO\_5745



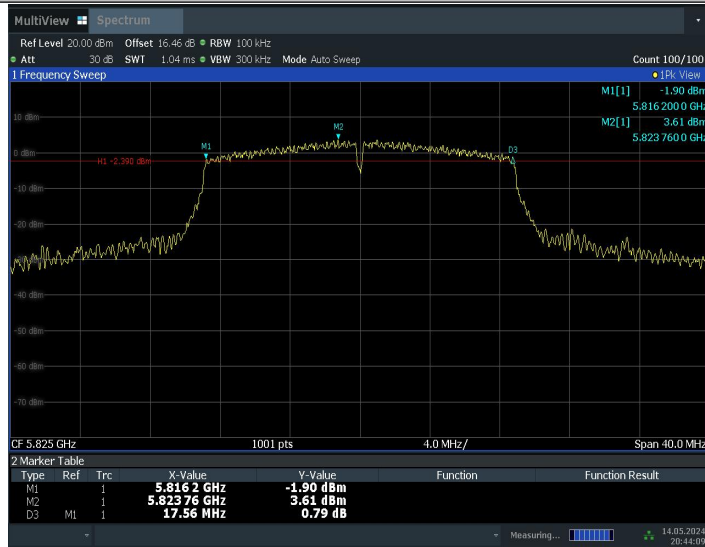
20:41:45 14.05.2024

## 11N20SISO\_5785



20:42:56 14.05.2024

11N20SISO\_5825



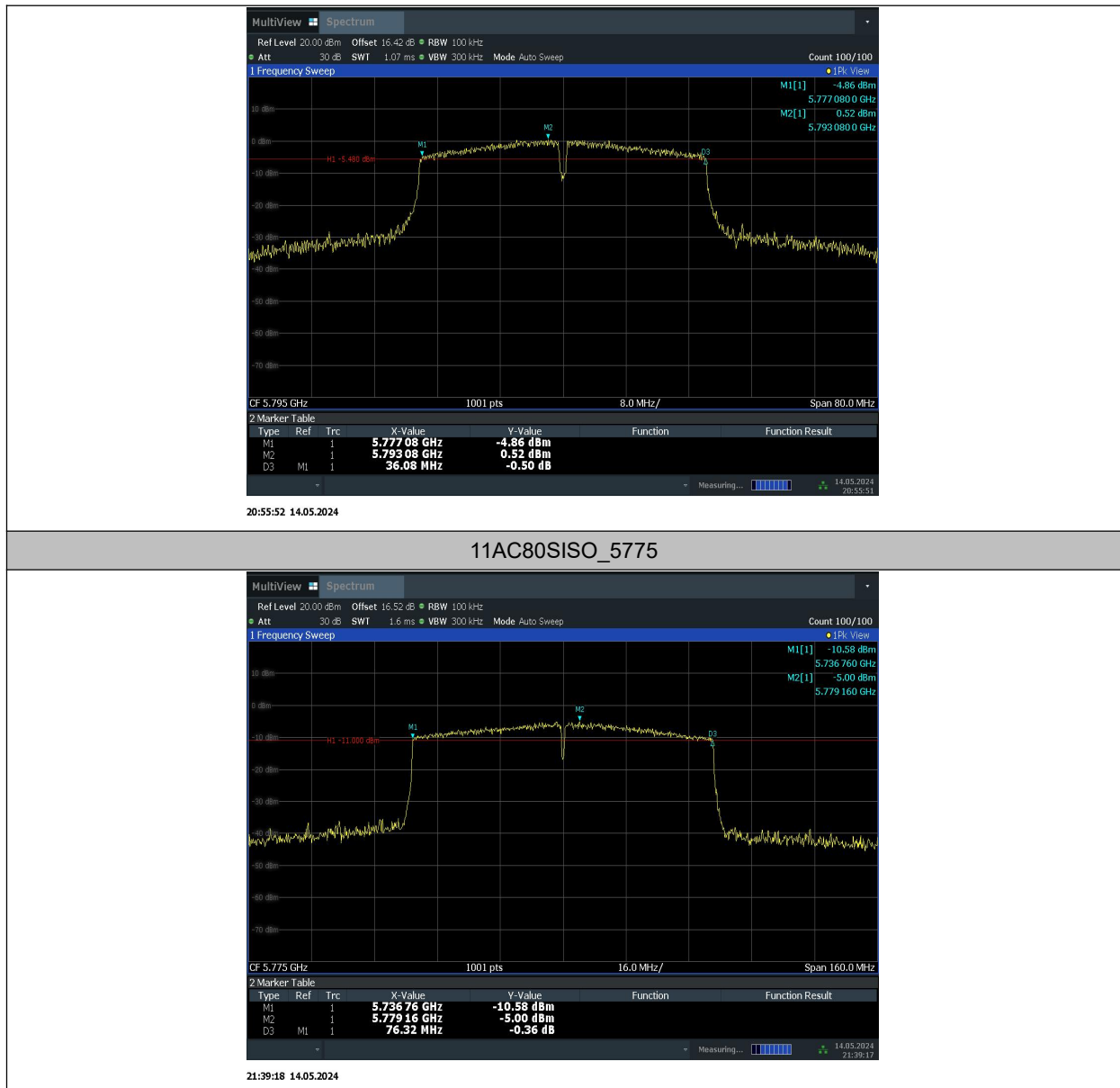
20:44:10 14.05.2024

11N40SISO\_5755



20:54:40 14.05.2024

11N40SISO\_5795



**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:

<b>Standard</b>	<b>Limit (dBm/MHz)</b>	
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.	

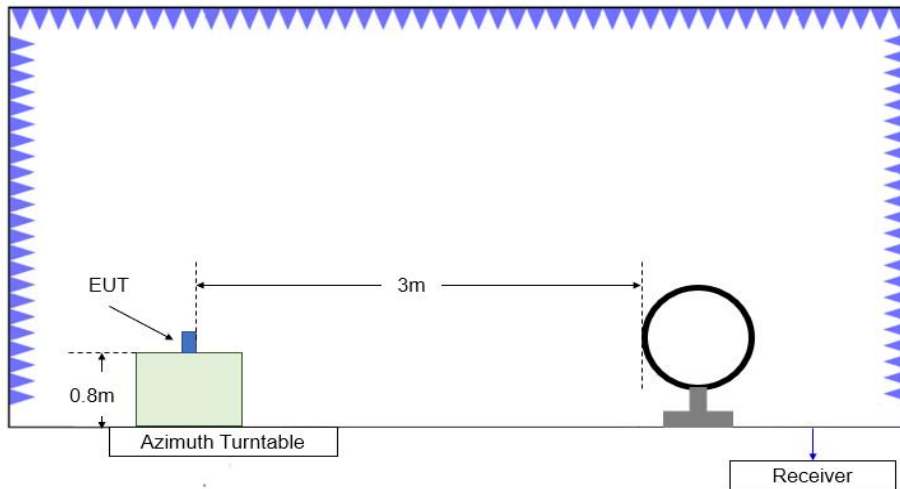
In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c))

Frequency (MHz)	Field strength( $\mu$ 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

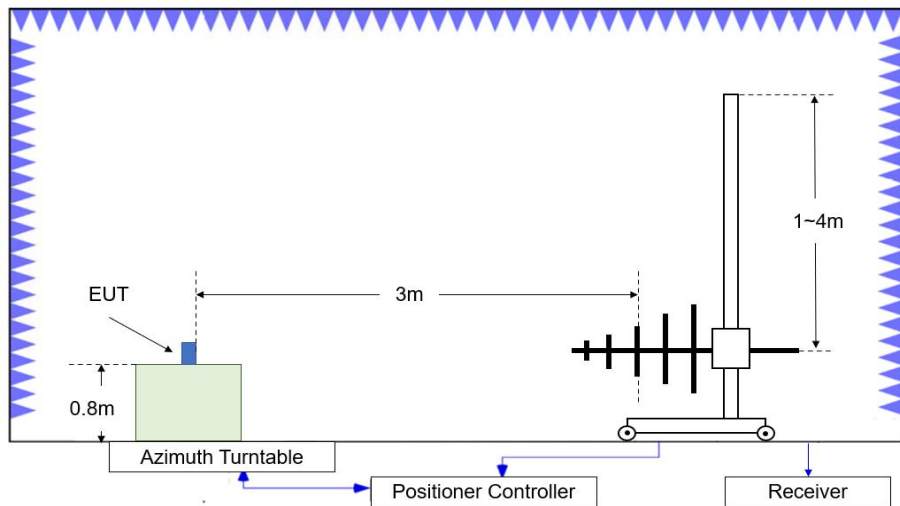
Frequency of emission (MHz)	Field strength ( $\mu$ V/m)	Field strength (dBuV/m)	Measurement distance (m)
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

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).

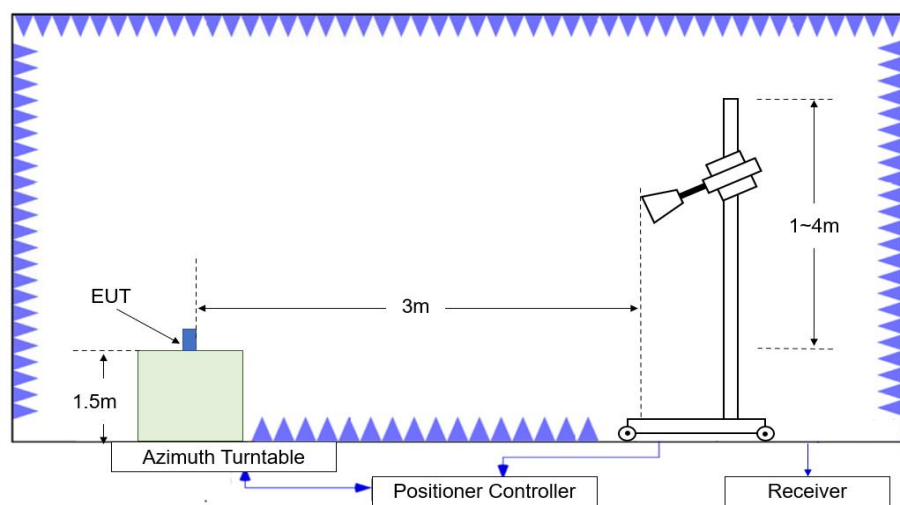
### A.5.2 Test setup



**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 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 $\mu$ V/m) = P<sub>measurement</sub> (dB $\mu$ V) + Cable Loss(dB) + Antenna Factor (dB/m)

Where: P<sub>measurement</sub> 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 $\mu$ 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. The test is carried out on both vertical and horizontal polarization and only maximization result of both polarizations is kept.
5. EUT in each of three orthogonal axis emissions had been tested out only the worst case (axis data) recorded in the report.
6. Measurement frequencies were performed from 9 kHz to the 10<sup>th</sup> harmonic of highest fundamental frequency or 40GHz, whichever is lower.
7. No spurious emissions were detected within 20dB of the limit below 30MHz. OFS and semi-chamber comparison testing had been performed and the result came out very similar. (KDB 414788)



**Note:**

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

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

**Conclusion: PASS**

**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)
5410.250	44.74	-22.39	34.84	32.29	54.00	9.26	V
5412.500	44.75	-22.44	34.82	32.36	54.00	9.25	V
11490.000	39.65	-29.46	38.28	30.83	54.00	14.35	H
15876.000	38.89	-23.78	40.65	22.02	54.00	15.11	H
17908.500	39.79	-23.08	41.20	21.66	54.00	14.22	H
17967.000	39.91	-23.12	41.20	21.82	54.00	14.09	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)
5409.625	44.76	-22.39	34.84	32.31	54.00	9.24	V
5413.125	44.63	-22.45	34.82	32.26	54.00	9.37	V
11570.000	37.79	-29.58	38.30	29.07	54.00	16.21	H
15878.500	38.94	-23.71	40.66	22.00	54.00	15.06	V
17906.000	39.76	-23.07	41.20	21.63	54.00	14.24	V
17997.500	40.08	-22.83	41.20	21.71	54.00	13.92	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)
5407.375	44.49	-22.44	34.86	32.07	54.00	9.51	V
5410.750	44.56	-22.40	34.84	32.13	54.00	9.44	V
11650.000	39.33	-29.25	38.40	30.19	54.00	14.67	V
17709.500	39.61	-22.96	41.20	21.37	54.00	14.40	V
17761.500	39.72	-23.09	41.20	21.61	54.00	14.28	V
17805.500	39.72	-23.03	41.20	21.55	54.00	14.28	H

**802.11n-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5410.125	44.58	-22.39	34.84	32.13	54.00	9.42	V
5411.375	44.56	-22.41	34.83	32.14	54.00	9.44	V
11490.000	40.12	-29.46	38.28	31.30	54.00	13.88	V
17762.500	39.72	-23.09	41.20	21.61	54.00	14.28	H
17715.500	39.62	-23.10	41.20	21.52	54.00	14.38	H
17809.000	39.74	-23.03	41.20	21.57	54.00	14.26	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)
5409.375	44.65	-22.40	34.84	32.20	54.00	9.35	V
5412.750	44.63	-22.45	34.82	32.25	54.00	9.37	V
11570.000	39.91	-29.58	38.30	31.19	54.00	14.09	H
17712.500	39.59	-23.02	41.20	21.42	54.00	14.41	V
17759.500	39.76	-23.10	41.20	21.67	54.00	14.24	V
17809.500	39.82	-23.03	41.20	21.65	54.00	14.18	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)
5409.000	44.62	-22.40	34.85	32.17	54.00	9.38	V
5410.375	44.67	-22.39	34.84	32.23	54.00	9.33	V
11650.000	38.54	-29.25	38.40	29.39	54.00	15.46	V
17712.000	39.58	-23.01	41.20	21.39	54.00	14.42	H
17741.500	39.54	-23.37	41.20	21.71	54.00	14.46	H
17766.500	39.81	-23.09	41.20	21.69	54.00	14.19	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)
5410.250	44.57	-22.39	34.84	32.12	54.00	9.43	V
5416.875	44.48	-22.54	34.80	32.22	54.00	9.52	V
11510.000	37.72	-29.64	38.30	29.05	54.00	16.28	V
17940.500	40.11	-23.02	41.20	21.93	54.00	13.89	V
17983.000	40.15	-23.12	41.20	22.07	54.00	13.85	H
17996.500	40.16	-22.86	41.20	21.82	54.00	13.84	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5390.000	44.49	-22.84	34.92	32.41	54.00	9.52	V
5412.500	44.64	-22.44	34.82	32.26	54.00	9.36	V
11590.000	37.16	-29.29	38.30	28.15	54.00	16.84	V
17954.500	40.05	-23.16	41.20	22.01	54.00	13.95	H
17985.500	40.04	-23.10	41.20	21.94	54.00	13.96	H
17994.000	40.19	-22.94	41.20	21.92	54.00	13.81	H

**802.11ac-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5408.875	44.72	-22.41	34.85	32.28	54.00	9.28	V
5412.250	44.71	-22.43	34.83	32.32	54.00	9.29	V
11490.000	38.57	-29.46	38.28	29.75	54.00	15.43	H
17712.000	39.50	-23.01	41.20	21.31	54.00	14.50	H
17761.000	39.70	-23.09	41.20	21.59	54.00	14.31	H
17739.500	39.38	-23.38	41.20	21.57	54.00	14.62	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)
5409.875	44.72	-22.39	34.84	32.27	54.00	9.28	V
5409.500	44.71	-22.39	34.84	32.26	54.00	9.29	V
11570.000	39.78	-29.58	38.30	31.05	54.00	14.22	H
17706.500	39.57	-22.97	41.20	21.34	54.00	14.43	H
17764.500	39.78	-23.09	41.20	21.67	54.00	14.22	V
17804.500	39.74	-23.03	41.20	21.57	54.00	14.26	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)
5407.500	44.77	-22.43	34.85	32.35	54.00	9.23	V
5410.500	44.79	-22.39	34.84	32.34	54.00	9.21	V
11650.000	38.88	-29.25	38.40	29.73	54.00	15.12	H
17716.500	39.65	-23.13	41.20	21.58	54.00	14.35	V
17728.500	39.49	-23.37	41.20	21.66	54.00	14.52	V
17761.000	39.86	-23.09	41.20	21.76	54.00	14.14	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)
5410.375	44.58	-22.39	34.84	32.13	54.00	9.42	V
5414.125	44.54	-22.48	34.81	32.20	54.00	9.46	V
11510.000	36.75	-29.64	38.30	28.09	54.00	17.25	V
17859.000	39.53	-23.26	41.20	21.59	54.00	14.47	H
17900.000	39.75	-23.04	41.20	21.59	54.00	14.25	H
17952.500	39.95	-23.15	41.20	21.91	54.00	14.05	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)
5410.375	44.66	-22.39	34.84	32.22	54.00	9.34	V
5411.750	44.65	-22.42	34.83	32.24	54.00	9.35	V
11590.000	36.93	-29.29	38.30	27.91	54.00	17.08	V
17910.500	39.76	-23.10	41.20	21.66	54.00	14.24	H
17986.500	40.02	-23.09	41.20	21.91	54.00	13.98	H
17994.500	40.09	-22.92	41.20	21.81	54.00	13.91	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)
5377.125	44.6	-22.8	34.9	32.47	54.0	9.4	V
5397.875	44.5	-22.6	34.9	32.26	54.0	9.5	V
11550.000	35.5	-29.3	38.3	26.55	54.0	18.5	H
17945.000	39.8	-23.1	41.2	21.71	54.0	14.2	H
17972.500	39.7	-23.1	41.2	21.64	54.0	14.3	H
17999.500	40.0	-22.8	41.2	21.62	54.0	14.0	H

**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)
5652.128	58.42	-22.30	34.70	46.01	69.77	11.36	H
5651.035	58.34	-22.32	34.70	45.96	68.97	10.63	V
11491.000	51.92	-29.46	38.28	43.09	74.00	22.08	H
17235.000	51.11	-23.23	40.96	33.38	68.30	17.19	V
17269.000	53.31	-23.13	40.93	35.51	68.30	14.99	H
17325.500	53.05	-23.36	40.90	35.52	68.30	15.25	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)
5730.000	60.82	-22.27	34.76	48.32	68.30	7.48	H
5852.000	60.73	-22.38	35.00	48.11	68.30	7.57	V
11566.000	53.08	-29.52	38.30	44.30	74.00	20.92	H
17355.000	50.61	-23.36	40.90	33.06	68.30	17.69	V
17447.500	53.01	-23.21	40.95	35.28	68.30	15.29	H
17541.500	52.96	-23.39	41.00	35.35	68.30	15.34	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)
5922.470	58.61	-22.19	35.10	45.70	70.07	11.47	V
5923.448	58.81	-22.22	35.10	45.94	69.35	10.53	V
11650.000	50.32	-29.25	38.40	41.17	74.00	23.68	V
17475.000	52.83	-23.22	40.98	35.08	68.30	15.47	H
17490.000	52.64	-23.36	40.99	35.01	68.30	15.66	V
17527.500	52.28	-23.43	41.00	34.71	68.30	16.02	H



**802.11n-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5650.230	57.59	-22.34	34.70	45.23	68.37	10.78	V
5650.633	57.45	-22.33	34.70	45.09	68.67	11.22	V
11490.000	50.13	-29.46	38.28	41.30	74.00	23.87	H
17235.000	51.88	-23.23	40.96	34.15	68.30	16.42	V
17381.000	52.99	-23.40	40.90	35.49	68.30	15.31	V
17449.000	52.69	-23.23	40.95	34.97	68.30	15.61	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)
5734.500	59.81	-22.37	34.77	47.42	68.30	8.49	H
5832.500	61.23	-22.43	34.97	48.70	68.30	7.07	H
11570.000	49.70	-29.58	38.30	40.97	74.00	24.31	V
17355.000	51.28	-23.36	40.90	33.74	68.30	17.02	V
17376.500	52.46	-23.37	40.90	34.93	68.30	15.84	V
17392.500	52.58	-23.33	40.90	35.00	68.30	15.72	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5923.850	58.78	-22.24	35.10	45.91	69.05	10.28	H
5924.540	59.29	-22.26	35.10	46.45	68.54	9.25	H
11650.000	50.65	-29.25	38.40	41.50	74.00	23.35	H
17475.000	51.36	-23.22	40.98	33.60	68.30	16.94	V
17544.000	52.96	-23.37	41.00	35.32	68.30	15.34	V
17624.000	53.96	-23.12	41.05	36.03	68.30	14.34	H

**802.11n-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5650.460	57.73	-22.34	34.70	45.37	68.54	10.81	V
5650.978	56.82	-22.33	34.70	44.45	68.92	12.10	V
11510.000	49.83	-29.64	38.30	41.17	74.00	24.17	H
17265.000	51.71	-23.21	40.93	33.98	68.30	16.59	V
17302.000	53.65	-23.32	40.90	36.07	68.30	14.65	V
17339.500	53.57	-23.24	40.90	35.91	68.30	14.74	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5924.023	59.08	-22.24	35.10	46.22	68.92	9.84	H
5924.713	59.64	-22.26	35.10	46.80	68.41	8.77	H
11590.000	47.57	-29.29	38.30	38.56	74.00	26.43	V
17385.000	50.63	-23.39	40.90	33.12	68.30	17.67	V
17516.000	53.10	-23.47	41.00	35.57	68.30	15.20	V
17649.500	53.20	-23.31	41.10	35.41	68.30	15.10	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)
5650.805	58.99	-22.33	34.70	46.62	68.80	9.81	H
5651.323	57.89	-22.32	34.70	45.51	69.18	11.29	H
11490.000	51.14	-29.46	38.28	42.32	74.00	22.86	H
17235.000	51.43	-23.23	40.96	33.70	68.30	16.87	V
17304.000	53.65	-23.33	40.90	36.08	68.30	14.65	V
17449.000	52.25	-23.23	40.95	34.53	68.30	16.06	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)
5724.000	58.65	-21.88	34.75	45.78	68.30	9.65	H
5855.000	59.27	-22.34	35.01	46.60	68.30	9.04	V
11570.000	50.58	-29.58	38.30	41.86	74.00	23.42	V
17355.000	51.56	-23.36	40.90	34.02	68.30	16.74	H
17393.500	52.73	-23.31	40.90	35.13	68.30	15.57	H
17412.000	52.84	-23.35	40.91	35.29	68.30	15.46	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)
5921.723	59.33	-22.17	35.10	46.40	70.63	11.30	V
5923.305	58.86	-22.22	35.10	45.98	69.45	10.60	V
11650.000	49.58	-29.25	38.40	40.43	74.00	24.42	H
17475.000	51.16	-23.22	40.98	33.40	68.30	17.14	H
17504.500	52.05	-23.37	41.00	34.42	68.30	16.25	V
17543.500	52.07	-23.37	41.00	34.44	68.30	16.23	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)
5651.438	58.46	-22.31	34.70	46.07	69.26	10.81	V
5651.898	58.36	-22.30	34.70	45.96	69.60	11.25	H
11510.000	48.71	-29.64	38.30	40.04	68.30	19.59	H
17265.000	51.09	-23.21	40.93	33.36	74.00	22.91	V
17367.500	53.68	-23.30	40.90	36.08	68.30	14.62	V
17659.500	53.68	-23.23	41.12	35.79	68.30	14.62	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)
5922.815	58.56	-22.20	35.10	45.67	69.82	11.26	H
5923.620	58.31	-22.23	35.10	45.44	69.22	10.91	H
11590.000	47.07	-29.29	38.30	38.06	74.00	26.93	V
17385.000	52.20	-23.39	40.90	34.68	68.30	16.10	V
17463.000	54.43	-23.18	40.96	36.65	68.30	13.87	V
17630.000	52.84	-23.21	41.06	34.98	68.30	15.47	V

**802.11ac-HT80**

## Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
5653.738	59.7	-22.3	34.7	47.27	71.0	11.3	V
5652.013	60.4	-22.3	34.7	48.03	69.7	9.3	H
11550.000	46.2	-29.3	38.3	37.21	74.0	27.8	H
17325.000	51.3	-23.4	40.9	33.77	68.3	17.0	H
17397.000	53.0	-23.2	40.9	35.37	68.3	15.3	H
17481.000	52.3	-23.3	41.0	34.63	68.3	16.0	V

**Band edge compliance**

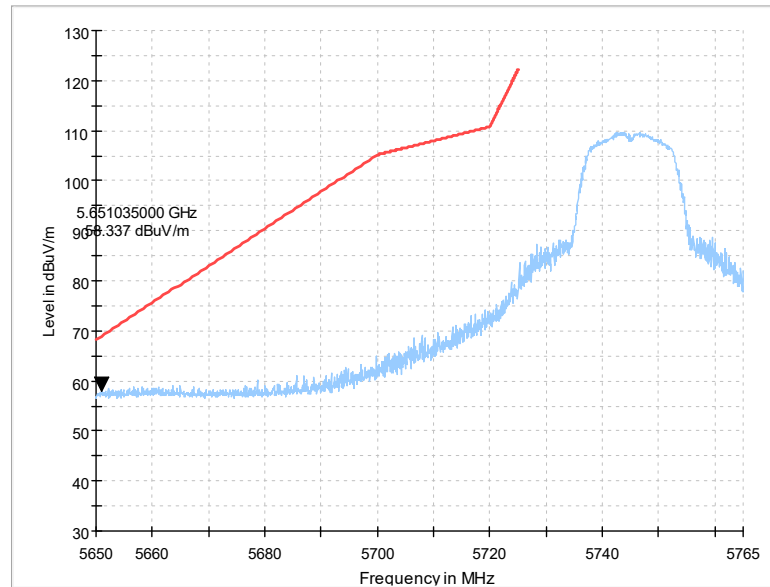
Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz	Fig.1	P
	5825 MHz	Fig.2	P
802.11n HT20	5745 MHz	Fig.3	P
	5825 MHz	Fig.4	P
802.11n HT40	5755 MHz	Fig.5	P
	5795 MHz	Fig.6	P
802.11ac HT20	5745 MHz	Fig.7	P
	5825 MHz	Fig.8	P
802.11ac HT40	5755 MHz	Fig.9	P
	5795 MHz	Fig.10	P
802.11ac HT80	5775 MHz	Fig.11 Fig.12	P

**Conclusion: PASS**

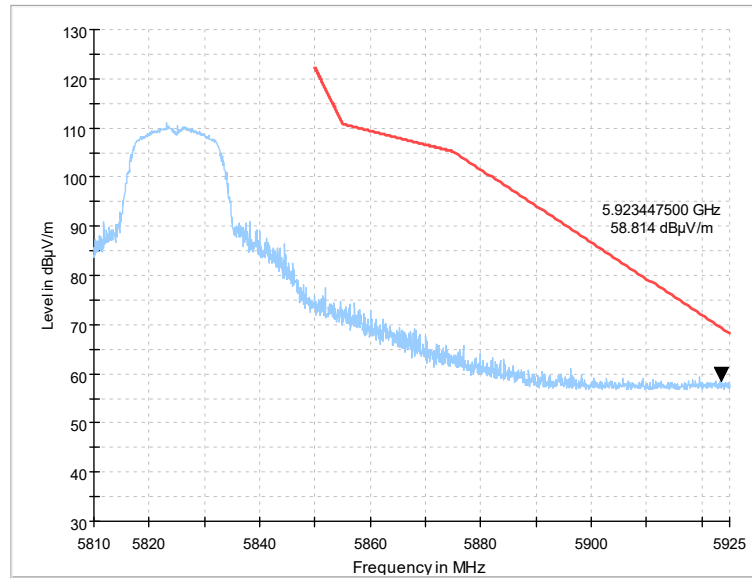
**Test graphs as below:**

**Conclusion: PASS**

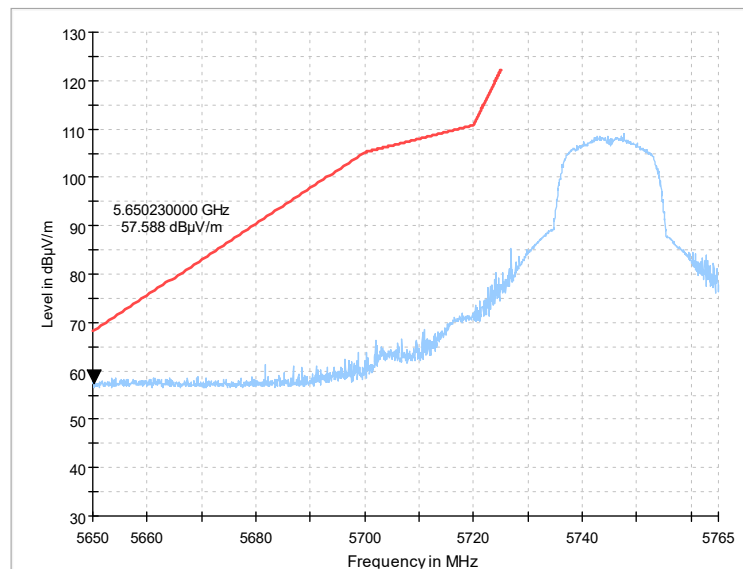
**Test graphs as below:**



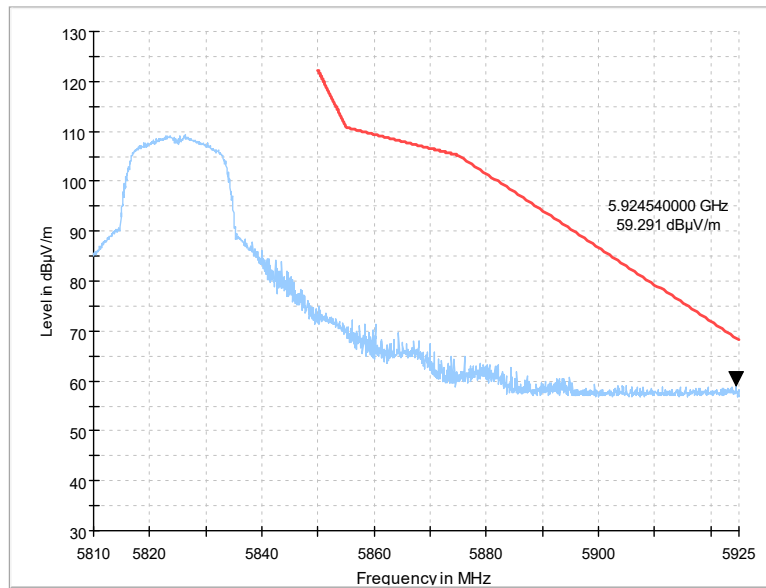
**Fig. 1 Band Edges (802.11a Ch149,5745MHz)**



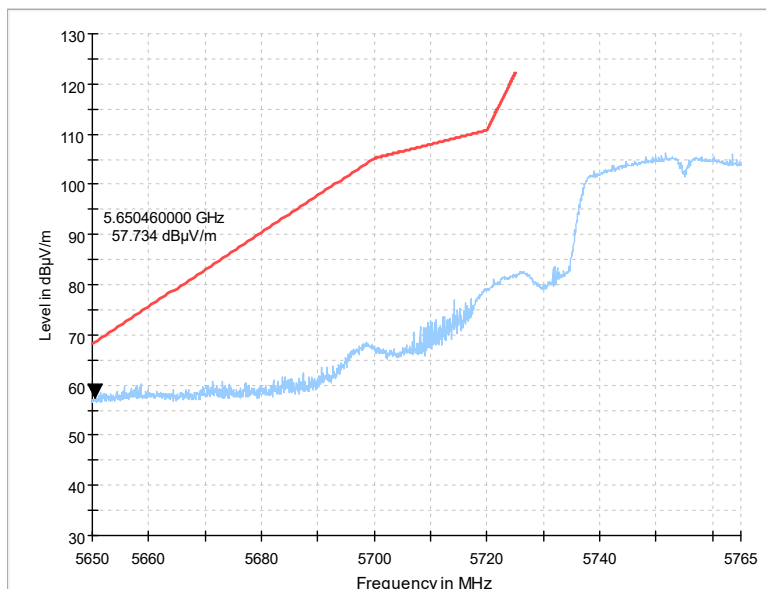
**Fig. 2 Band Edges (802.11a Ch165, 5825MHz)**



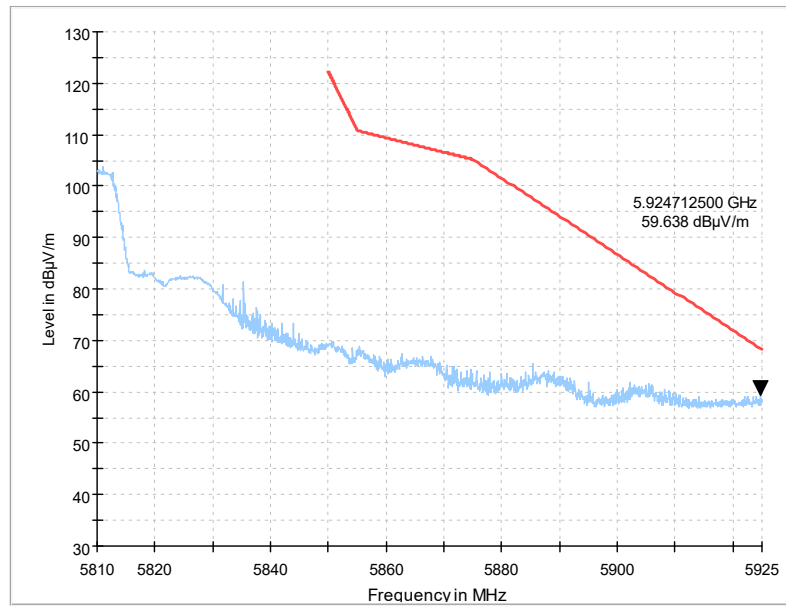
**Fig. 3 Band Edges (802.11n-HT20 Ch149, 5745MHz)**



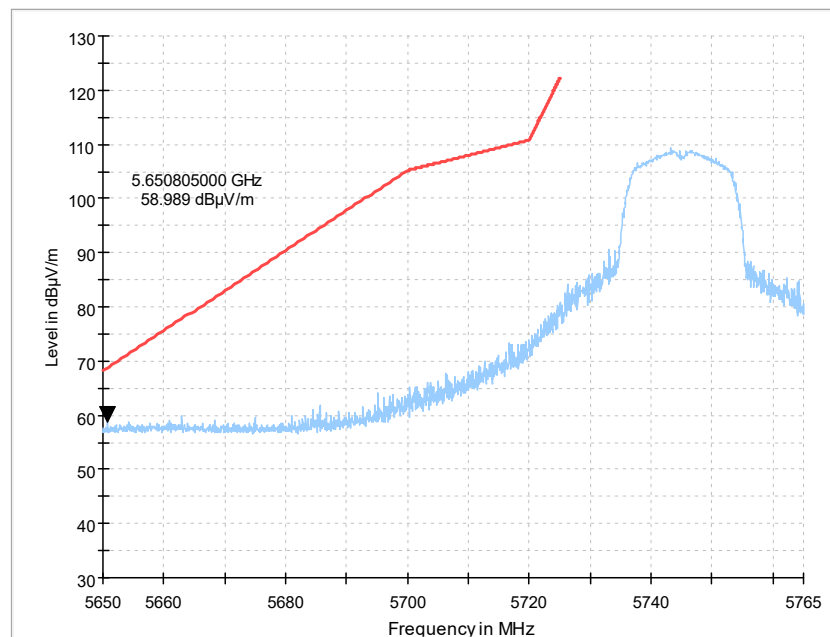
**Fig. 4 Band Edges (802.11n-HT20 Ch165, 5825MHz)**



**Fig. 5 Band Edges (802.11n-HT40 Ch151, 5755MHz)**

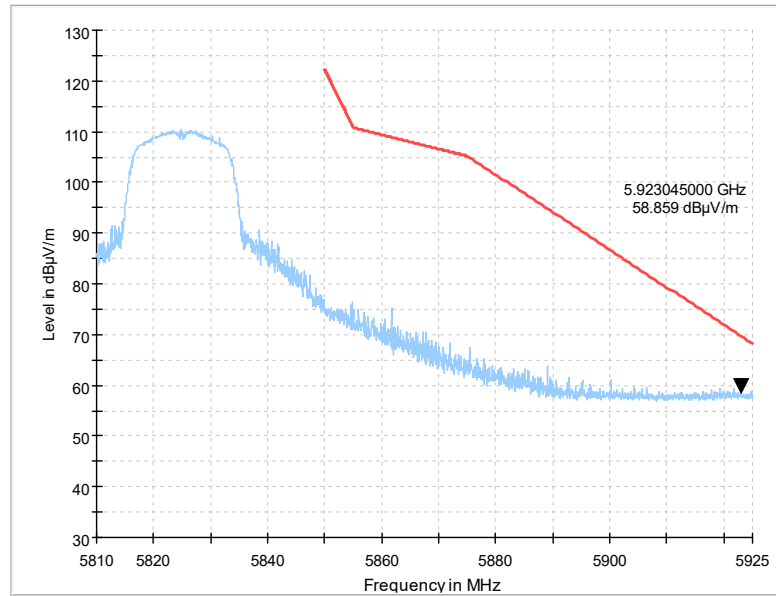


**Fig. 6 Band Edges (802.11n-HT40 Ch159, 5795MHz)**

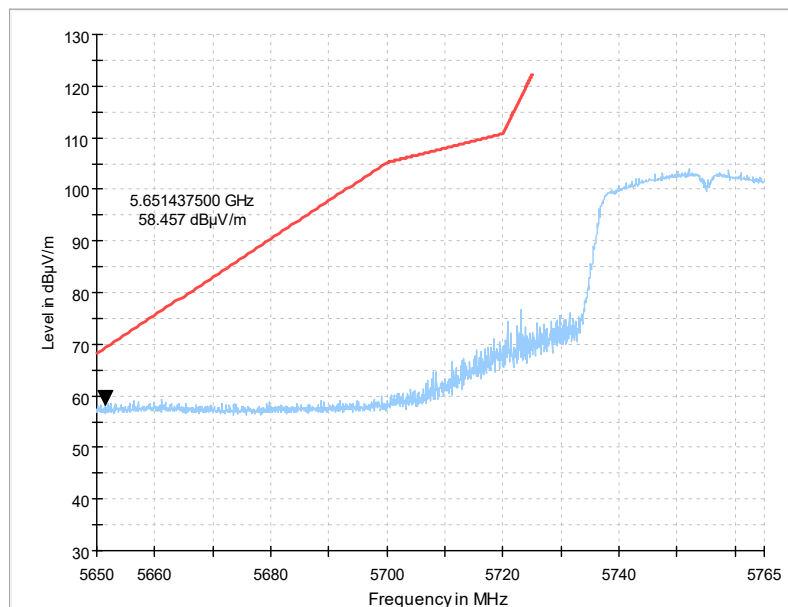


**Fig. 7 Band Edges (802.11ac-HT20 Ch149, 5745MHz)**

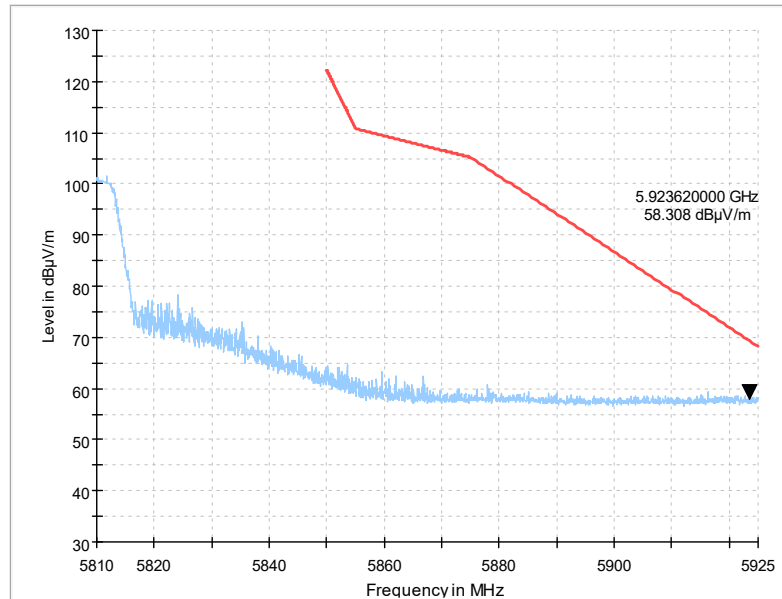




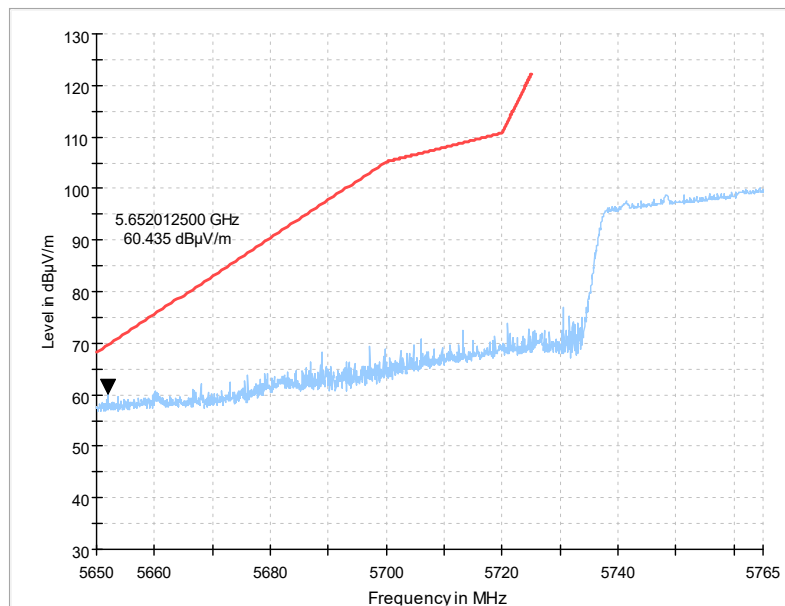
**Fig. 8 Band Edges (802.11ac-HT20 Ch165, 5825MHz)**



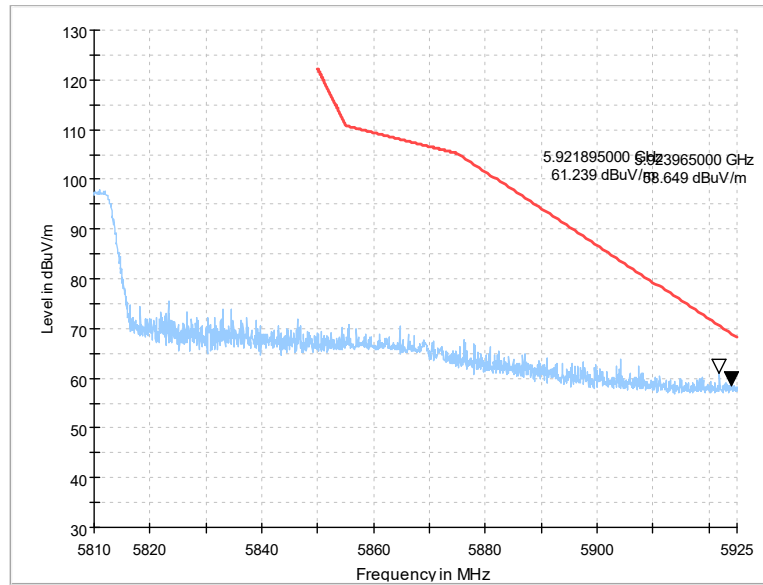
**Fig. 9 Band Edges (802.11ac-HT40 Ch151, 5755MHz)**



**Fig. 10 Band Edges (802.11ac-HT40 Ch159, 5795MHz)**



**Fig. 11 Band Edges (802.11ac-HT80 Ch155, 5775MHz)**



**Fig. 12 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.

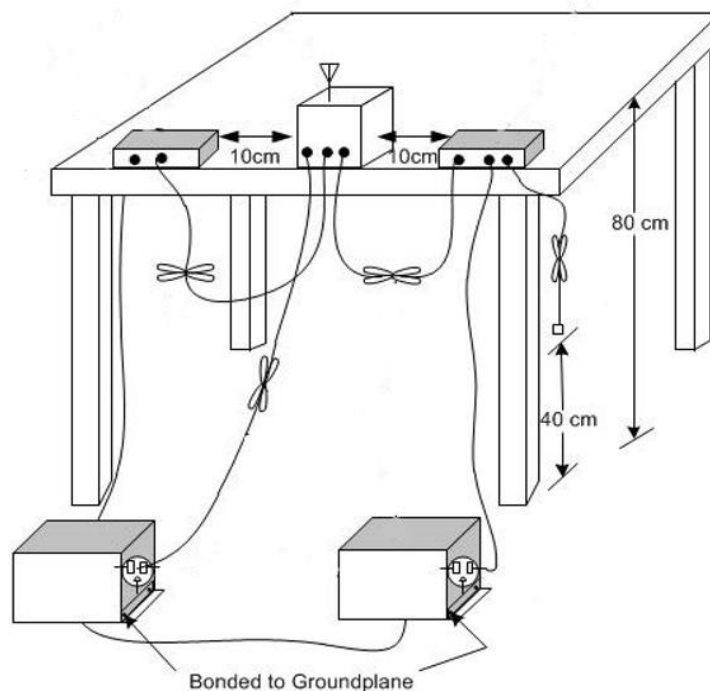
The measurement bandwidth is:

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 $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		Wi-Fi	Idle	
0.15 to 0.5	66 to 56	Fig.A.6.1	Fig. A.6.2	<b>P</b>
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.

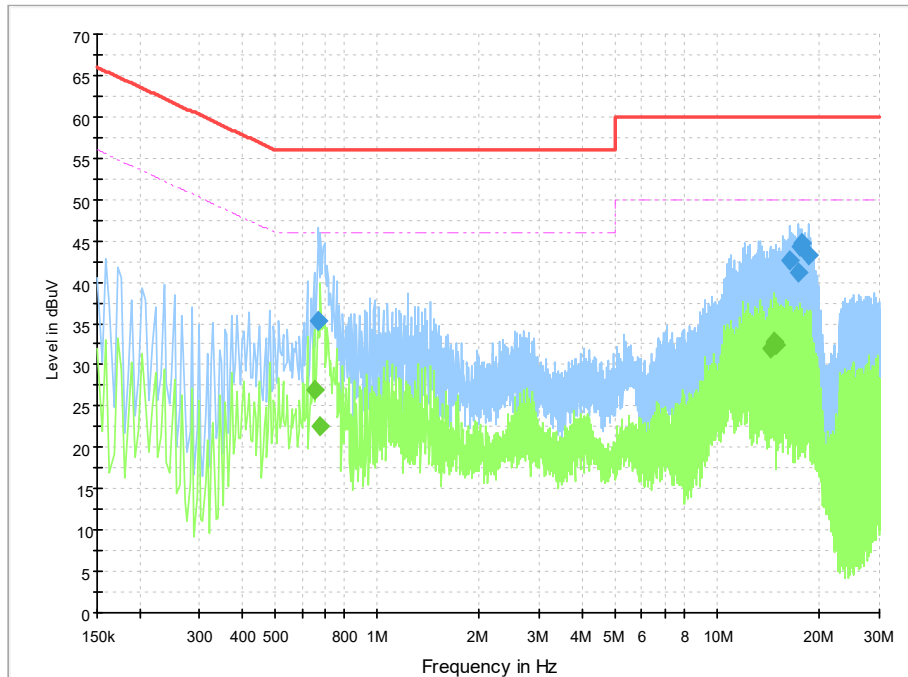
#### Wi-Fi (Average Limit)

Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		Wi-Fi	Idle	
0.15 to 0.5	56 to 46	Fig.A.6.1	Fig. A.6.2	<b>P</b>
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:**



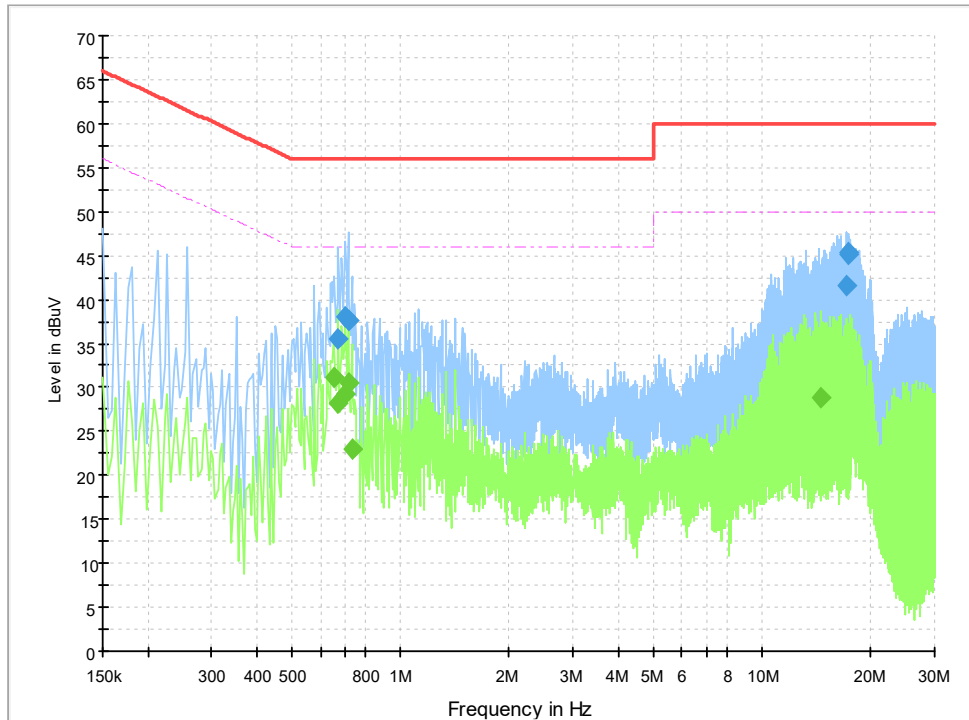
**Fig.A.6.1. AC Powerline Conducted Emission-Idle**

**Final Result 1**

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.672000	35.3	2000.0	9.000	On	N	20.1	20.7	56.0	
16.404000	42.7	2000.0	9.000	On	N	20.2	17.3	60.0	
17.340000	41.3	2000.0	9.000	On	L1	20.1	18.7	60.0	
17.583000	44.4	2000.0	9.000	On	N	20.2	15.6	60.0	
17.727000	44.7	2000.0	9.000	On	N	20.2	15.3	60.0	
18.492000	43.3	2000.0	9.000	On	N	20.2	16.7	60.0	

**Final Result 2**

Frequency (MHz)	CAverage (dB $\mu$ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.654000	26.9	2000.0	9.000	On	L1	20.0	19.1	46.0	
0.681000	22.5	2000.0	9.000	On	N	20.1	23.5	46.0	
14.361000	31.9	2000.0	9.000	On	L1	20.0	18.1	50.0	
14.689500	32.6	2000.0	9.000	On	L1	20.0	17.4	50.0	
14.721000	32.7	2000.0	9.000	On	L1	20.0	17.3	50.0	
14.874000	32.4	2000.0	9.000	On	L1	20.0	17.6	50.0	



**Fig.A.6.2. AC Powerline Conducted Emission-Idle**

**Final Result 1**

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.672000	35.5	2000.0	9.000	On	N	20.1	20.5	56.0	
0.703500	38.1	2000.0	9.000	On	N	20.1	17.9	56.0	
0.717000	37.6	2000.0	9.000	On	N	20.2	18.4	56.0	
17.169000	41.5	2000.0	9.000	On	L1	20.1	18.5	60.0	
17.259000	45.3	2000.0	9.000	On	N	20.2	14.7	60.0	
17.335500	45.0	2000.0	9.000	On	N	20.2	15.0	60.0	

**Final Result 2**

Frequency (MHz)	CAverage (dB $\mu$ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.654000	31.2	2000.0	9.000	On	N	20.1	14.8	46.0	
0.672000	28.3	2000.0	9.000	On	N	20.1	17.7	46.0	
0.703500	29.3	2000.0	9.000	On	N	20.1	16.7	46.0	
0.717000	30.6	2000.0	9.000	On	N	20.2	15.4	46.0	
0.735000	23.0	2000.0	9.000	On	N	20.1	23.0	46.0	
14.496000	28.8	2000.0	9.000	On	N	20.2	21.2	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**



**Accredited Laboratory**

A2LA has accredited

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

for technical competence in the field of  
**Electrical Testing**

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



Presented this 26<sup>th</sup> day of June 2023.



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

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

\*\*\* END OF REPORT BODY \*\*\*