



# FCC PART 15E TEST REPORT No.23T04Z80619-09

for

**TCL Communication Ltd.**

**GSM/UMTS/LTE mobile phone**

**T509A**

**FCC ID: 2ACCJB216**

with

**Hardware Version: 05**

**Software Version: BL3F**

**Issued Date: 2024-01-02**

**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: [ctl\\_terminals@caict.ac.cn](mailto:ctl_terminals@caict.ac.cn), website: [www.caict.ac.cn](http://www.caict.ac.cn)



## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
23T04Z80619-09	Rev.0	1st edition	2024-01-02

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

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## **1. Test Laboratory**

### **1.1. Introduction & Accreditation**

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

### **1.2. Testing Location**

Conducted testing Location: CTTL(huayuan North Road)

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

Radiated testing Location: CTTL(huayuan North Road)

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

### **1.3. TestingEnvironment**

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

### **1.4. Project date**

Testing Start Date: 2023-11-28


Testing End Date: 2024-01-02

### **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: TCL Communication Ltd.  
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science  
Park, Shatin, NT, Hong Kong  
City: Hong Kong  
Postal Code: /  
Country: China  
Telephone: 0086-755-3661 1621  
Fax: 0086-755-36612000-81722

### **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  
Postal Code: /  
Country: China  
Telephone: 0086-755-3661 1621  
Fax: 0086-755-36612000-81722

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

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

Description	GSM/UMTS/LTE mobile phone
Model name	T509A
FCC ID	2ACCJB216
WLAN Frequency Band	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Nominal Voltage	3.87V
Extreme High Voltage	4.45V
Extreme Low Voltage	3.6V

#### **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>
UT06a	359735330000819/ 359735330000934	05	BL3F	2023-11-28
UT13a	359735330001056/ 359735330001239	05	BL3F	2023-12-19

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

UT06a is used for Conduction test, UT13a 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>Manufacture</b>
AE1	Battery	TLp049B8	HuiZhou GanFeng LiEnergy Battery Technology Co., Ltd.
AE2	Charger	CG10A0502000UU	Huizhou Juwei Electronics Co.,Ltd
AE3	USB Cable1	JWUB1686-M01R	Huizhou Juwei Electronics Co.,Ltd
AE4	USB Cable2	FKY-23-367	Qiyang Fukangyuan Electronic Technology 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 GSM/UMTS/LTE mobile 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;	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)	/	<b>P</b>
Peak Power Spectral Density	15.407 (a)	/	<b>P</b>
Occupied 6dB 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

### 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	3.87V
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	Test Receiver	ESCI	100344	R&S	13 Months	2024-02-21
3	LISN	ENV216	101200	R&S	13 Months	2024-06-05
4	Attenuator	10dB/2W	/	Rosenberger	/	/
5	Shielding Room	S81	/	ETS-Lindgren	/	/

### Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESW44	103023	R&S	13 Months	2024-07-08
2	EMI Antenna	VULB 9163	01222	SCHWARZBECK	13 Months	2024-02-28
3	EMI Antenna	3115	6914	ETS-Lindgren	13 Months	2024-04-25
4	EMI Antenna	HF-H2-22	829324/007	Rohde & Schwarz	13 Months	2024-01-22
5	EMI Antenna	3116	2661	ETS-Lindgren	13 Months	2024-02-28

### Test Software

Test Item	Test Software and Version	Software Vendor
Radiated Continuous Emission	EMC32 V10.60.20	R&S
Conducted Emission	EMC32 V8.53.0	R&S

## 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	4.92
$30\text{MHz} \leq f \leq 1\text{GHz}$	4.72
$1\text{GHz} \leq f \leq 18\text{GHz}$	4.84
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.12

### 8.7. AC Power-line Conducted Emission

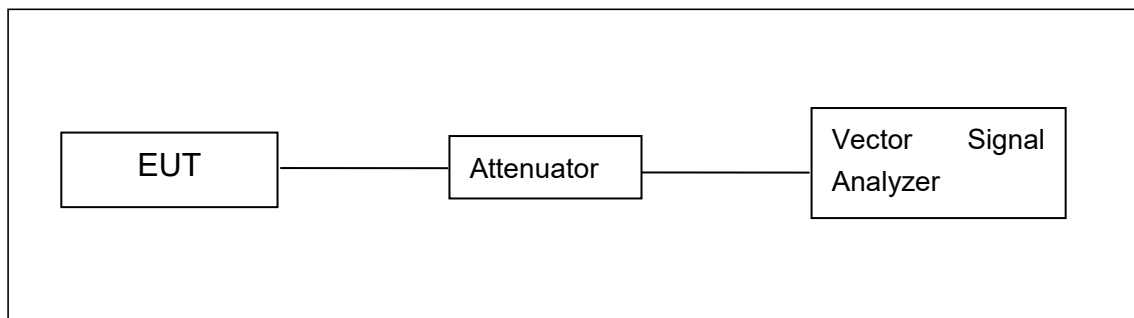
Measurement Uncertainty : 3.08dB,k=2

## **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

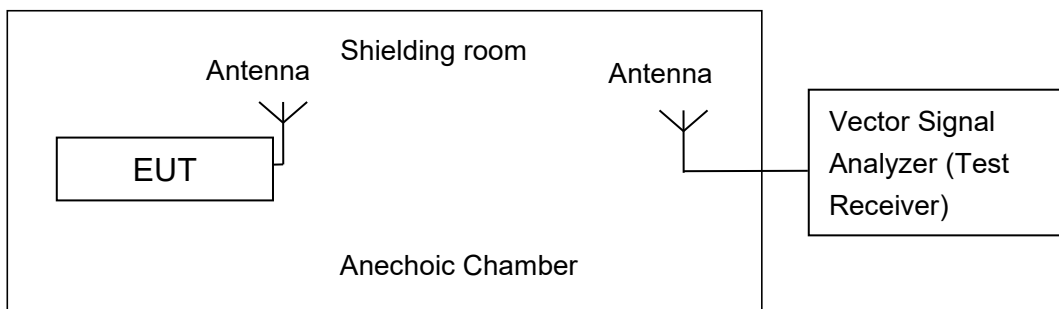


#### **A.1.2. Radiated Emission Measurements**

In the case of radiated emission, the used settings are as follows,

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

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



The measurement is made according to ANSI C63.10.

The radiated emission test is performed in semi-anechoic chamber. The distance from the EUT to the reference point of measurement antenna is 3m. 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 360° and the measurement antenna is moved from 1m to 4m to get the maximization result.

## **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 1.5dBi and the value is supplied by the applicant or manufacturer.

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

**EUT ID: UT06a**

#### **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	15.26	15.07	15.01

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	15.16	15.23	15.26

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	15.05	15.07	14.93

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	14.66	14.87

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	14.69	14.54

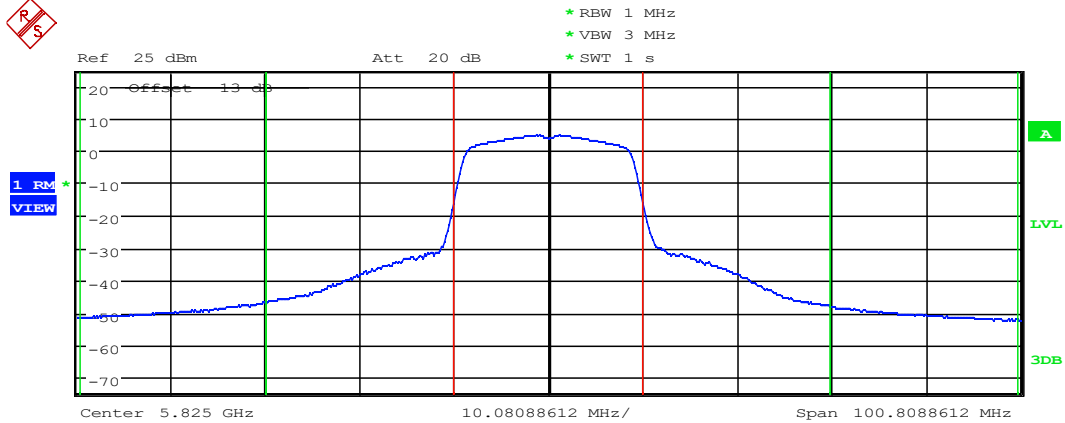
The data rate MCS0 is selected as worst condition, and the following cases are performed with this condition.

#### 802.11ac-HT80 mode

Mode	Data Rate (Index)	Test Result (dBm)
		5775MHz (Ch155)
802.11ac (80MHz)	MCS0	14.60

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%



Tx Channel		WLAN 802.11A	
Bandwidth	20 MHz	Power	15.26 dBm
<b>Adjacent Channel</b>		Lower	-34.50 dB
Bandwidth	20 MHz	Upper	-34.32 dB
Spacing	20 MHz		
<b>Alternate Channel</b>		Lower	-52.63 dB
Bandwidth	20 MHz	Upper	-53.62 dB
Spacing	40 MHz		

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**Maximum output Power: 11n20 CH165**

**Conclusion: PASS**

### A.3. Peak Power Spectral Density

#### Measurement Limit:

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

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

Set RBW = 500 kHz.

Set VBW ≥ 3 MHz.

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

Sweep time = auto.

Detector = power averaging (rms)

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

#### Measurement Uncertainty:

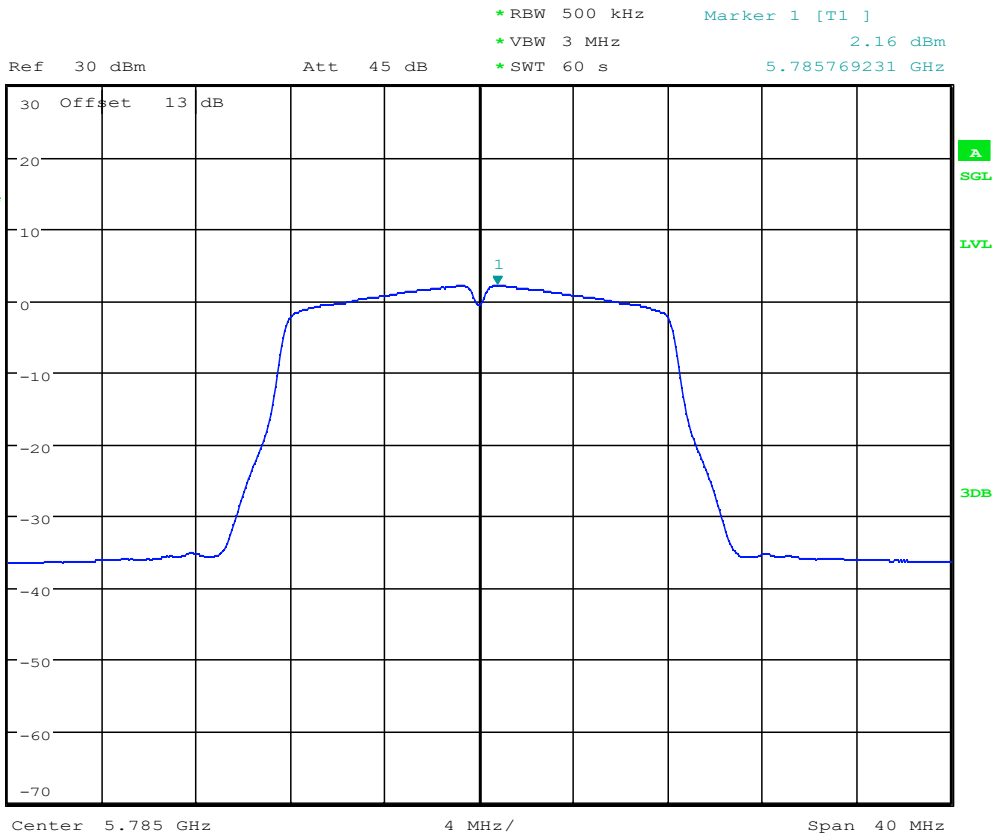
Measurement Uncertainty	0.75dB
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EUT ID: UT06a

#### Measurement Results:

Mode	Channel	Power Spectral Density ( dBm/500kHz )	Conclusion
802.11a	149	1.89	P
	157	2.16	P
	165	1.92	P
802.11n HT20	149	1.23	P
	157	1.62	P
	165	1.39	P
802.11n HT40	151	-1.60	P
	159	-1.21	P
802.11ac HT80	155	-5.14	P





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**Peak Power Spectral Density:11a CH157**

**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:**

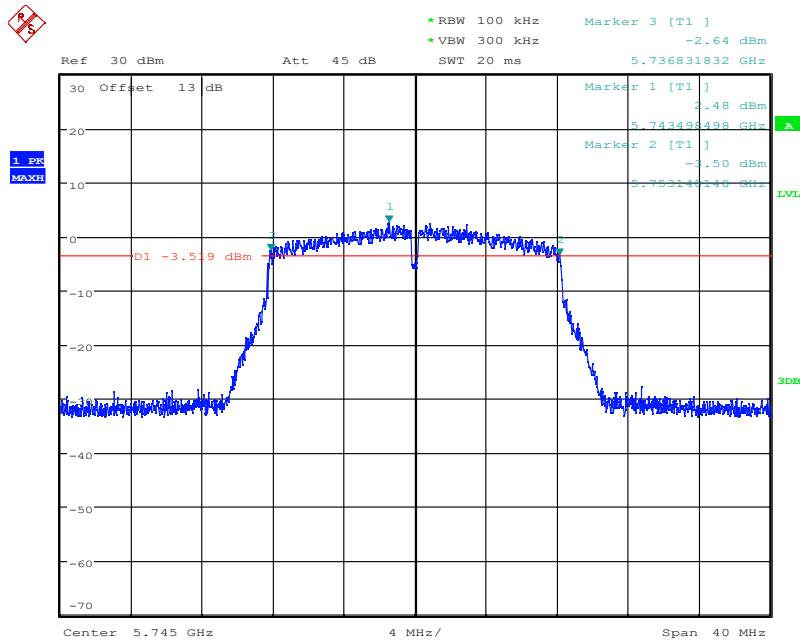
Measurement Uncertainty	60.80Hz
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**EUT ID: UT06a**

**Measurement Result:**

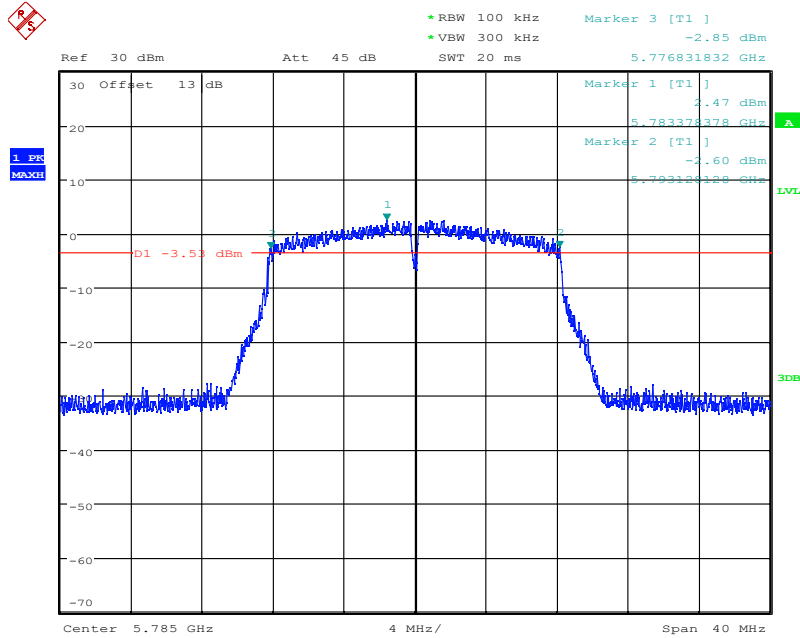
Mode	Channel	6dB Emission Bandwidth ( MHz)		conclusion
		Fig.	Value	
802.11a	149	Fig.1	16.32	P
	157	Fig.2	16.30	P
	165	Fig.3	16.32	P
802.11n HT20	149	Fig.4	17.56	P
	157	Fig.5	17.58	P
	165	Fig.6	17.60	P
802.11n HT40	151	Fig.7	36.32	P
	159	Fig.8	36.04	P
802.11ac (VHT80)	155	Fig.9	76.40	P

**Test graphs as below:**



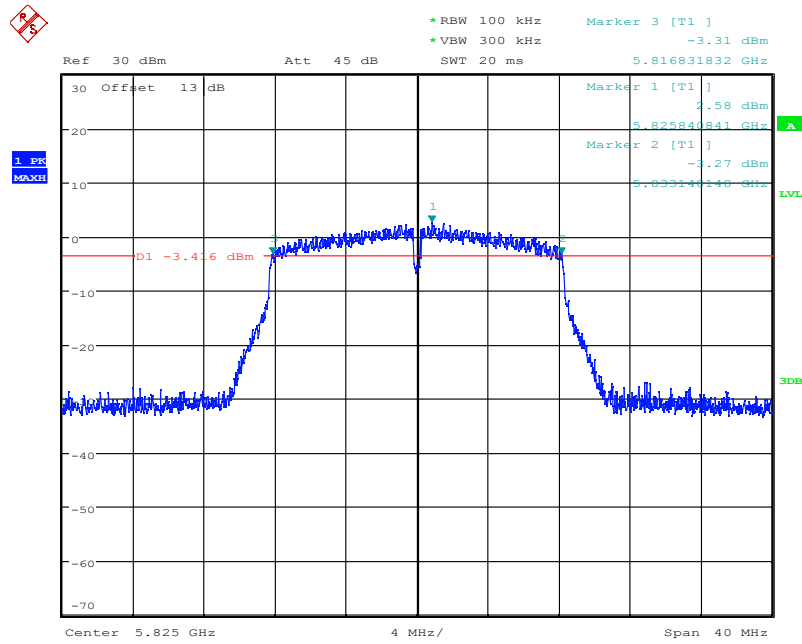
Date: 25.DEC.2023 14:21:57

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



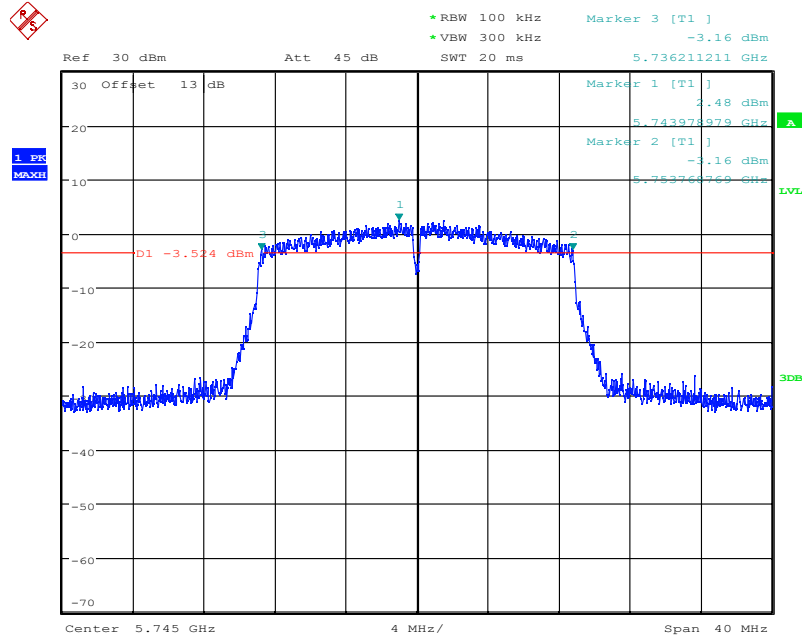
Date: 25.DEC.2023 14:25:31

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



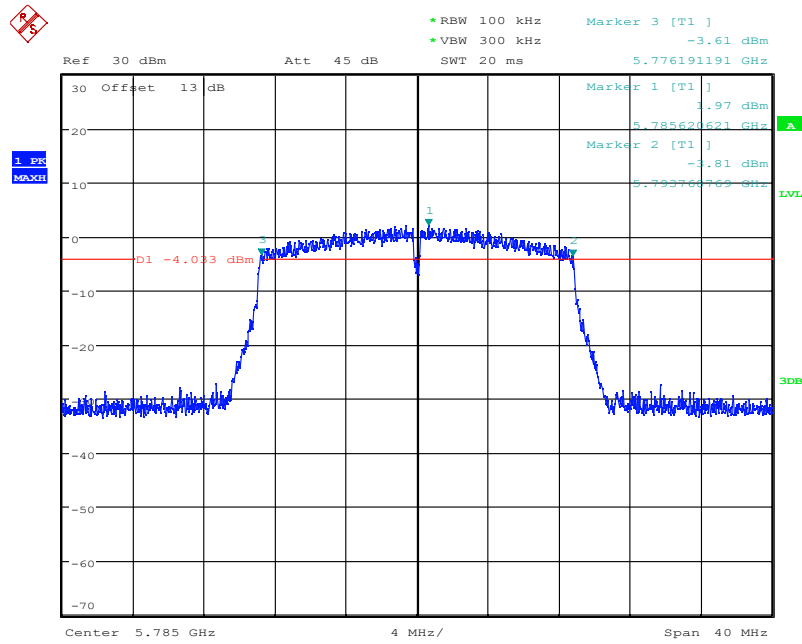
Date: 25.DEC.2023 14:26:03

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



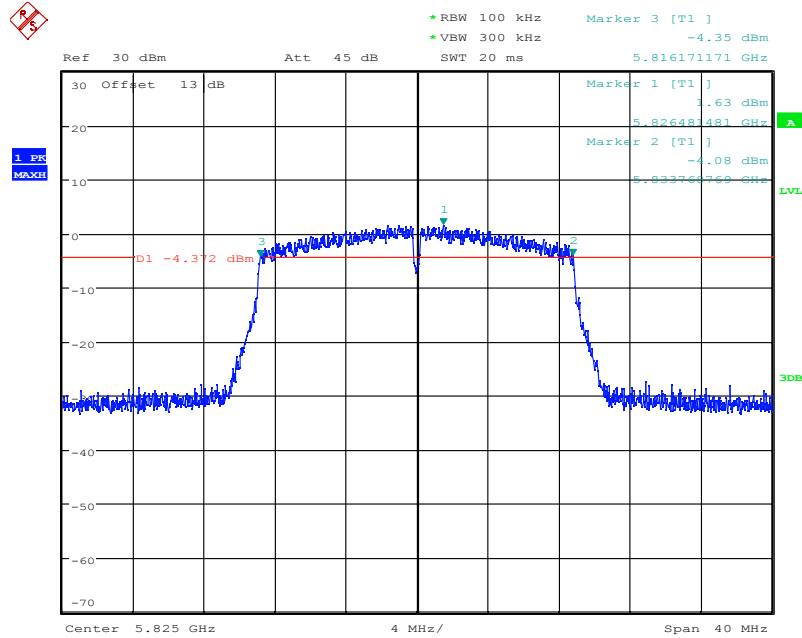
Date: 25.DEC.2023 14:30:32

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



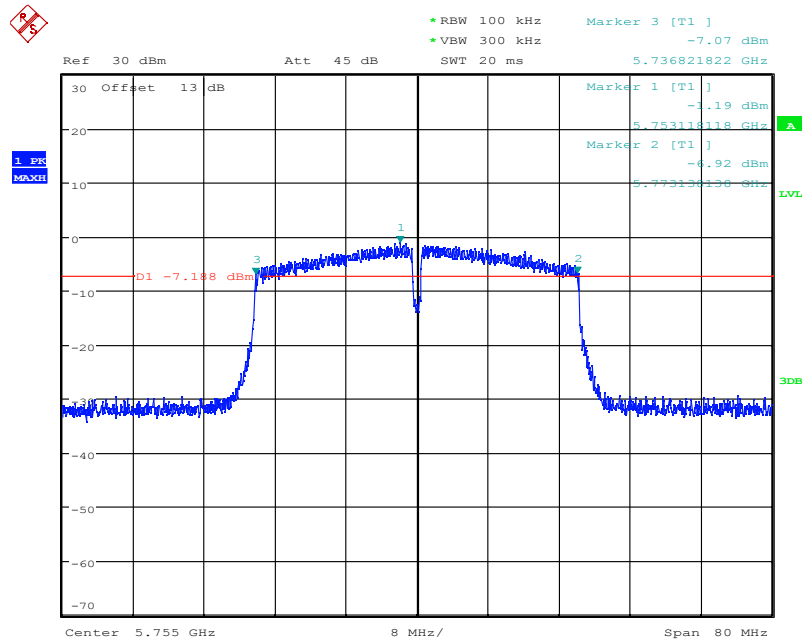
Date: 25.DEC.2023 14:31:04

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



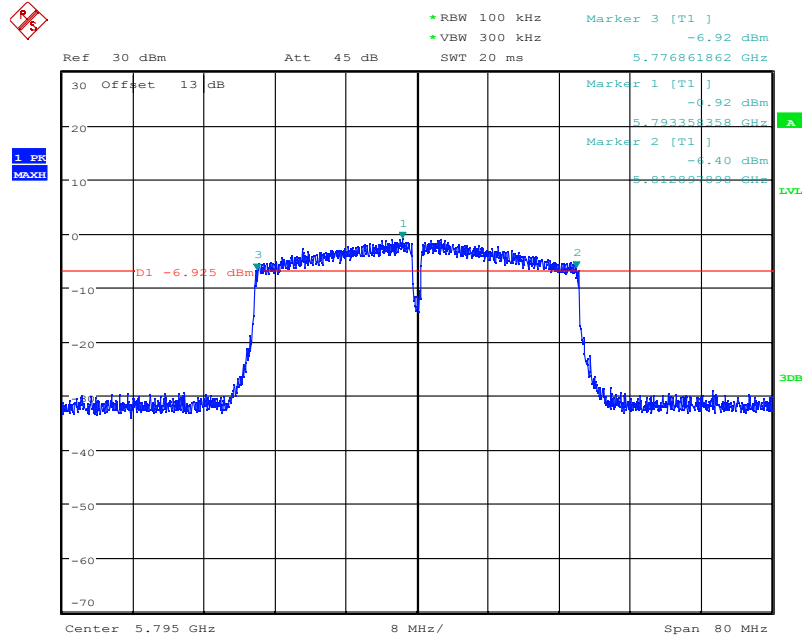
Date: 25.DEC.2023 14:35:45

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



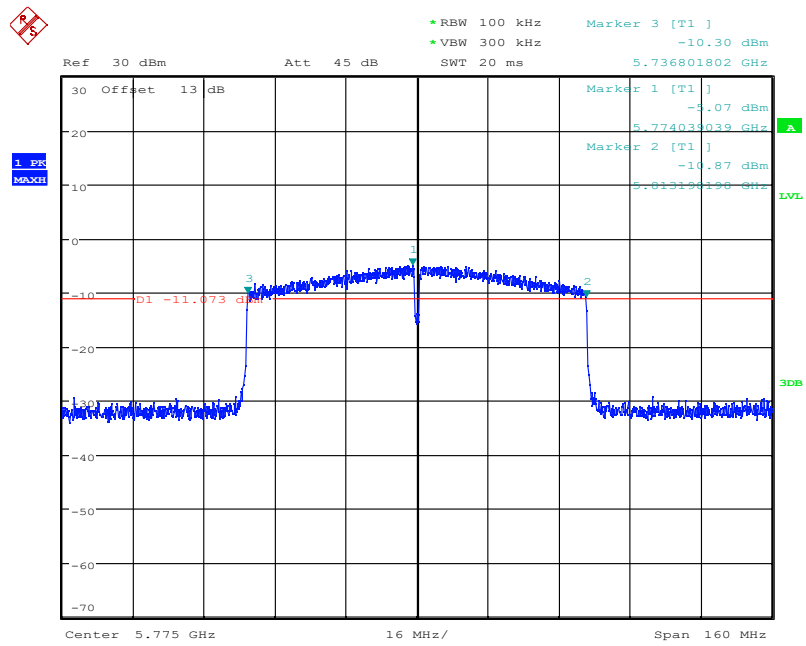
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**Fig. 7 6dB Emission Bandwidth (802.11n-HT40, Ch 151)**



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



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

**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))

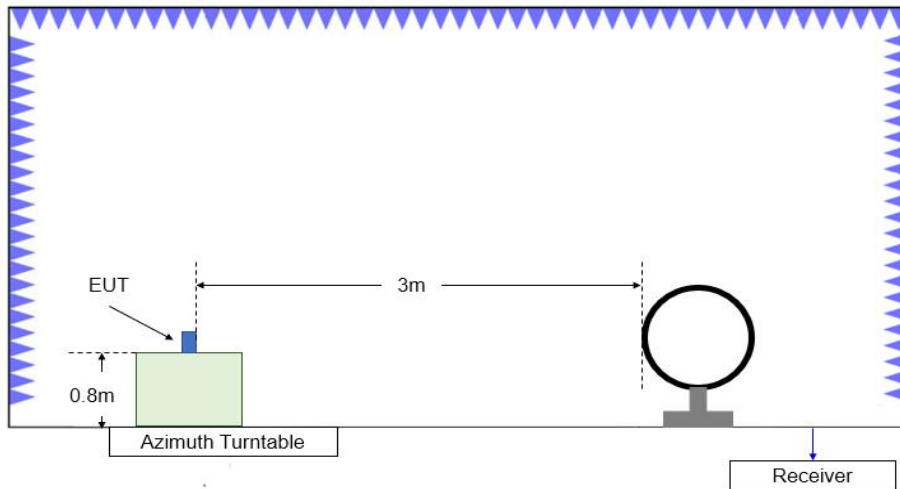
Frequency (MHz)	Field strength( $\mu$ V/m)	Measurement distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30

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

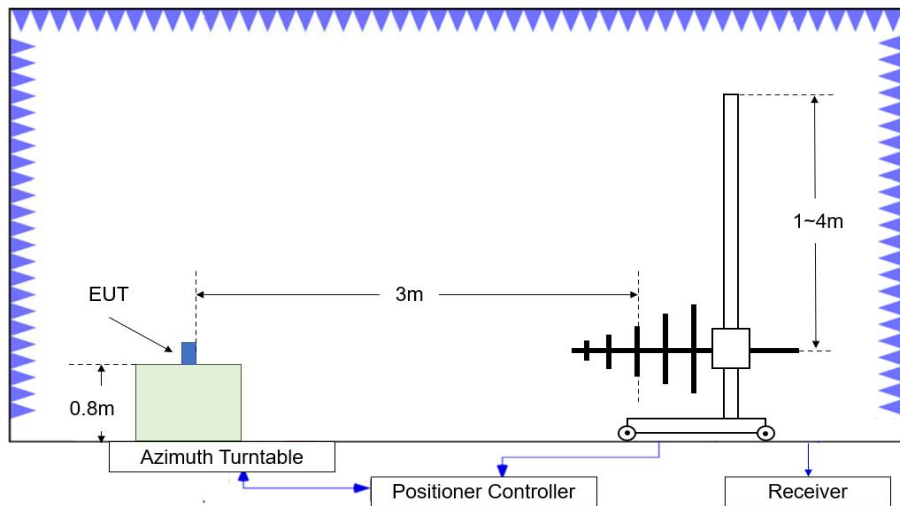
Note: When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor (as defined in KDB 789033 II.G.2.d).



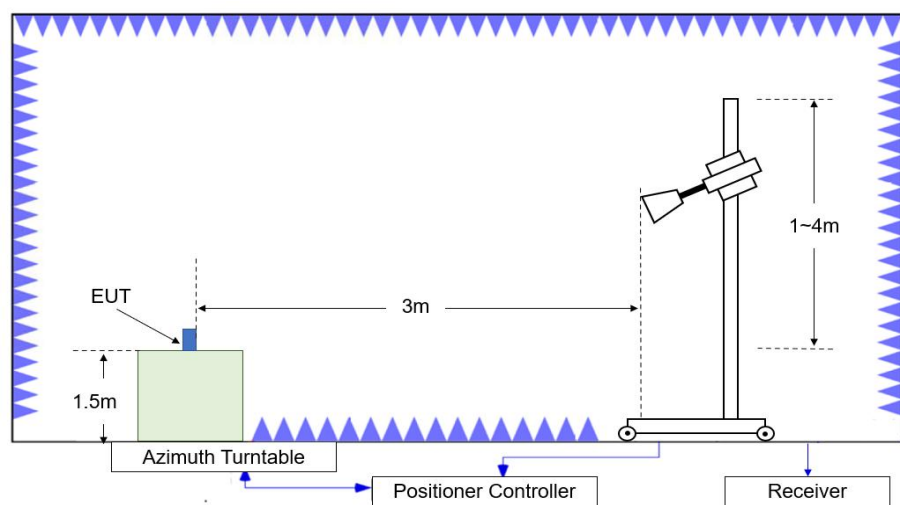
### A.5.2 Test setup



**Test Site Diagram (9kHz-30MHz)**



**Test Site Diagram (30MHz-1GHz)**



**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)
17958.200	41.73	-29.59	45.95	25.37	54.00	12.27	V
17978.733	41.52	-29.59	45.95	25.16	54.00	12.48	H
12307.867	37.62	-32.12	39.00	30.74	54.00	16.38	H
12310.800	37.59	-32.12	39.00	30.71	54.00	16.41	H
9137.300	33.79	-34.20	37.70	30.29	54.00	20.21	H
9106.133	33.31	-34.52	37.70	30.13	54.00	20.69	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)
17979.467	41.14	-29.59	45.95	24.78	54.00	12.86	H
17978.367	41.08	-29.59	45.95	24.72	54.00	12.92	H
12313.367	38.06	-32.12	39.00	31.18	54.00	15.94	H
12332.433	37.78	-32.39	38.95	31.22	54.00	16.22	V
8497.467	33.54	-34.28	37.30	30.52	54.00	20.46	H
9157.467	33.40	-34.20	37.70	29.90	54.00	20.60	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)
17949.400	41.23	-29.59	45.95	24.87	54.00	12.77	V
17955.633	41.14	-29.59	45.95	24.78	54.00	12.86	H
12333.167	37.68	-32.39	38.95	31.12	54.00	16.32	V
12332.067	37.59	-32.39	38.95	31.03	54.00	16.41	H
9059.200	33.62	-34.00	37.80	29.82	54.00	20.38	H
9067.633	33.47	-34.52	37.70	30.29	54.00	20.53	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)
17949.033	41.30	-29.59	45.95	24.94	54.00	12.70	V
17999.267	41.20	-29.59	45.95	24.84	54.00	12.80	H
12311.533	37.30	-32.12	39.00	30.42	54.00	16.70	V
12310.433	37.23	-32.12	39.00	30.35	54.00	16.77	V
9132.167	33.10	-34.20	37.70	29.60	54.00	20.90	V
9137.300	33.09	-34.20	37.70	29.59	54.00	20.91	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)
17948.300	41.25	-29.59	45.95	24.89	54.00	12.75	V
17946.100	40.99	-29.59	45.95	24.63	54.00	13.01	H
12310.433	37.86	-32.12	39.00	30.98	54.00	16.14	V
12332.433	37.37	-32.39	38.95	30.81	54.00	16.63	H
9133.267	33.79	-34.20	37.70	30.29	54.00	20.21	V
9136.933	33.52	-34.20	37.70	30.02	54.00	20.48	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)
17982.767	41.38	-29.59	45.95	25.02	54.00	12.62	H
17945.000	41.25	-29.59	45.95	24.89	54.00	12.75	V
12310.800	37.84	-32.12	39.00	30.96	54.00	16.16	V
12308.233	37.82	-32.12	39.00	30.94	54.00	16.18	V
8445.400	33.36	-34.69	37.40	30.65	54.00	20.64	V
9133.267	33.35	-34.20	37.70	29.85	54.00	20.65	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)
17948.667	41.44	-29.59	45.95	25.08	54.00	12.56	H
17979.100	41.14	-29.59	45.95	24.78	54.00	12.86	V
12307.867	37.56	-32.12	39.00	30.68	54.00	16.44	H
12267.900	37.29	-32.37	38.95	30.71	54.00	16.71	V
9137.667	33.43	-34.20	37.70	29.93	54.00	20.57	V
9193.767	33.43	-34.47	37.70	30.20	54.00	20.57	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)
17946.100	41.08	-29.59	45.95	24.72	54.00	12.92	H
17979.833	40.85	-29.59	45.95	24.49	54.00	13.15	V
12332.433	38.07	-32.39	38.95	31.51	54.00	15.93	V
12287.700	37.71	-32.12	39.00	30.83	54.00	16.29	H
9175.067	33.09	-34.47	37.70	29.86	54.00	20.91	V
9138.767	33.05	-34.20	37.70	29.55	54.00	20.95	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)
17949.033	41.20	-29.59	45.95	24.84	54.00	12.80	V
17978.000	41.04	-29.59	45.95	24.68	54.00	12.96	V
12333.167	37.52	-32.39	38.95	30.96	54.00	16.48	V
12330.600	37.51	-32.39	38.95	30.95	54.00	16.49	V
9137.300	33.48	-34.20	37.70	29.98	54.00	20.52	V
9143.900	33.40	-34.20	37.70	29.90	54.00	20.60	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)
17949.400	41.33	-29.59	45.95	24.97	54.00	12.67	H
17955.267	41.02	-29.59	45.95	24.66	54.00	12.98	H
12332.433	38.14	-32.39	38.95	31.58	54.00	15.86	H
12330.967	37.58	-32.39	38.95	31.02	54.00	16.42	H
9059.567	33.60	-34.52	37.70	30.42	54.00	20.40	H
9134.000	33.43	-34.20	37.70	29.93	54.00	20.57	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)
17978.367	41.50	-29.59	45.95	25.14	54.00	12.50	H
17973.600	41.37	-29.59	45.95	25.01	54.00	12.63	V
12310.800	37.82	-32.12	39.00	30.94	54.00	16.18	V
12307.133	37.79	-32.12	39.00	30.91	54.00	16.21	V
9136.933	33.65	-34.20	37.70	30.15	54.00	20.35	V
9102.833	33.64	-34.52	37.70	30.46	54.00	20.36	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)
17956.000	41.17	-29.59	45.95	24.81	54.00	12.83	H
17951.233	41.05	-29.59	45.95	24.69	54.00	12.95	V
12332.433	37.53	-32.39	38.95	30.97	54.00	16.47	V
12310.433	37.14	-32.12	39.00	30.26	54.00	16.86	H
9150.133	33.21	-34.20	37.70	29.71	54.00	20.79	V
9164.433	33.16	-34.47	37.70	29.93	54.00	20.84	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)
17977.267	41.16	-29.59	45.95	24.80	54.00	12.84	V
17978.367	40.99	-29.59	45.95	24.63	54.00	13.01	V
12262.400	37.86	-32.37	38.95	31.28	54.00	16.14	V
12315.200	37.30	-32.12	39.00	30.42	54.00	16.70	V
9143.533	33.12	-34.20	37.70	29.62	54.00	20.88	H
8447.967	32.99	-34.69	37.40	30.28	54.00	21.01	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)
17947.933	40.79	-29.59	45.95	24.43	54.00	13.21	H
17982.767	40.76	-29.59	45.95	24.40	54.00	13.24	H
12307.867	37.93	-32.12	39.00	31.05	54.00	16.07	V
12331.700	37.22	-32.39	38.95	30.66	54.00	16.78	V
9146.100	34.18	-34.20	37.70	30.68	54.00	19.82	H
9026.567	33.57	-34.00	37.80	29.77	54.00	20.43	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)
17976.900	49.90	-29.59	45.95	33.54	74.00	24.10	H
17944.633	49.62	-29.59	45.95	33.26	74.00	24.38	H
12323.267	46.41	-32.12	39.00	39.53	74.00	27.59	V
12291.733	46.31	-32.12	39.00	39.43	74.00	27.69	H
10171.300	42.36	-33.67	38.05	37.98	68.20	25.84	V
10118.133	42.15	-34.28	38.10	38.33	68.20	26.05	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)
17975.433	49.30	-29.59	45.95	32.94	74.00	24.70	H
17977.267	49.16	-29.59	45.95	32.80	74.00	24.84	H
12222.067	46.79	-32.12	38.90	40.01	74.00	27.21	V
11956.233	45.88	-32.42	39.05	39.25	74.00	28.12	H
9595.633	42.18	-34.13	37.50	38.81	68.20	26.02	H
9578.767	42.13	-34.13	37.50	38.76	68.20	26.07	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)
17975.800	49.53	-29.59	45.95	33.17	74.00	24.47	H
16536.633	49.27	-29.97	39.20	40.04	68.20	18.93	H
12332.067	46.82	-32.39	38.95	40.26	74.00	27.18	H
12304.200	46.09	-32.12	39.00	39.21	74.00	27.91	H
9111.633	42.68	-34.20	37.70	39.18	74.00	31.32	H
10286.067	42.60	-33.82	38.00	38.42	68.20	25.60	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)
17946.833	50.11	-29.59	45.95	33.75	74.00	23.89	V
17934.000	49.31	-29.59	45.95	32.95	74.00	24.69	V
12313.367	45.40	-32.12	39.00	38.52	74.00	28.60	V
12330.233	45.37	-32.39	38.95	38.81	74.00	28.63	V
10119.600	42.55	-34.28	38.10	38.73	68.20	25.65	H
9119.700	42.36	-34.20	37.70	38.86	74.00	31.64	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)
17979.833	49.47	-29.59	45.95	33.11	74.00	24.53	H
17907.600	49.29	-29.59	45.95	32.93	74.00	24.71	V
12302.367	47.45	-32.12	39.00	40.57	74.00	26.55	V
12304.567	46.47	-32.12	39.00	39.59	74.00	27.53	V
9136.933	42.54	-34.20	37.70	39.04	74.00	31.46	V
9641.467	42.30	-34.18	37.60	38.88	68.20	25.90	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)
17450.733	50.23	-28.70	44.20	34.73	68.20	17.97	V
17996.700	49.65	-29.59	45.95	33.29	74.00	24.35	H
12308.233	46.02	-32.12	39.00	39.14	74.00	27.98	V
12313.000	45.98	-32.12	39.00	39.10	74.00	28.02	V
10020.967	42.70	-34.07	38.00	38.77	68.20	25.50	V
10224.100	42.50	-34.09	38.00	38.59	68.20	25.70	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)
17976.533	49.81	-29.59	45.95	33.45	74.00	24.19	V
17103.133	49.38	-29.25	41.40	37.23	68.20	18.82	V
12307.133	46.26	-32.12	39.00	39.38	74.00	27.74	V
12328.400	45.97	-32.39	38.95	39.41	74.00	28.03	V
10108.967	42.53	-34.28	38.10	38.71	68.20	25.67	H
10179.367	42.38	-33.67	38.05	38.00	68.20	25.82	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)
17939.867	49.08	-29.59	45.95	32.72	74.00	24.92	H
17907.600	49.00	-29.59	45.95	32.64	74.00	25.00	V
12304.200	45.44	-32.12	39.00	38.56	74.00	28.56	V
12262.033	45.37	-32.37	38.95	38.79	74.00	28.63	H
10331.900	42.44	-33.88	38.00	38.32	68.20	25.76	H
10294.867	42.29	-33.82	38.00	38.11	68.20	25.91	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)
17948.300	49.75	-29.59	45.95	33.39	74.00	24.25	V
17953.800	49.43	-29.59	45.95	33.07	74.00	24.57	V
12310.067	46.21	-32.12	39.00	39.33	74.00	27.79	H
12295.033	45.49	-32.12	39.00	38.61	74.00	28.51	V
10230.333	42.85	-34.09	38.00	38.94	68.20	25.35	H
10221.900	42.81	-34.09	38.00	38.90	68.20	25.39	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)
17963.700	50.07	-29.59	45.95	33.71	74.00	23.93	H
17976.533	49.76	-29.59	45.95	33.40	74.00	24.24	H
12331.333	46.07	-32.39	38.95	39.51	74.00	27.93	H
12329.133	45.78	-32.39	38.95	39.22	74.00	28.22	H
8882.833	42.69	-34.69	37.80	39.58	68.20	25.51	V
10245.000	42.57	-34.09	38.00	38.66	68.20	25.63	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)
17975.800	49.73	-29.59	45.95	33.37	74.00	24.27	V
17968.467	49.68	-29.59	45.95	33.32	74.00	24.32	V
12307.133	46.12	-32.12	39.00	39.24	74.00	27.88	H
12328.767	45.97	-32.39	38.95	39.41	74.00	28.03	V
10287.900	43.03	-33.82	38.00	38.85	68.20	25.17	V
10289.367	42.86	-33.82	38.00	38.68	68.20	25.34	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)
17980.200	49.98	-29.59	45.95	33.62	74.00	24.02	V
17952.700	49.02	-29.59	45.95	32.66	74.00	24.98	V
12311.533	46.60	-32.12	39.00	39.72	74.00	27.40	H
12311.900	45.77	-32.12	39.00	38.89	74.00	28.23	V
10325.667	43.97	-33.88	38.00	39.85	68.20	24.23	H
10147.100	42.74	-34.28	38.10	38.92	68.20	25.46	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)
17969.567	49.58	-29.59	45.95	33.22	74.00	24.42	V
17973.233	49.27	-29.59	45.95	32.91	74.00	24.73	H
12314.467	45.83	-32.12	39.00	38.95	74.00	28.17	H
12310.800	45.51	-32.12	39.00	38.63	74.00	28.49	V
10092.467	42.29	-33.75	38.05	37.99	68.20	25.91	V
10265.167	42.24	-33.82	38.00	38.06	68.20	25.96	H

**802.11ac-HT80**

## Channel 155

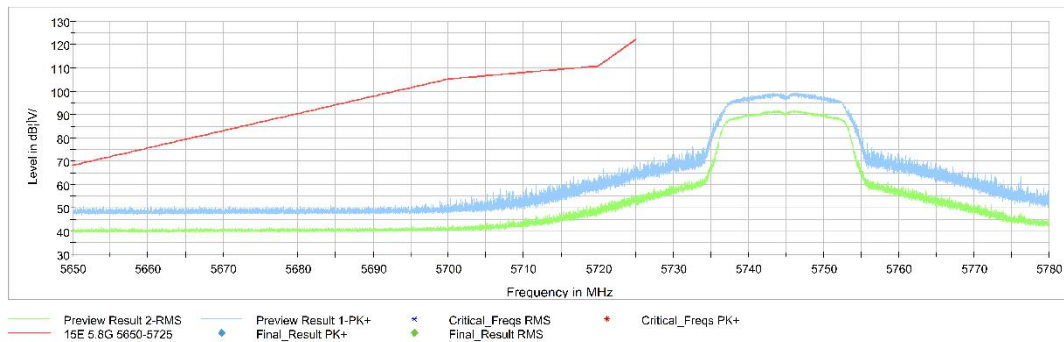
Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
16953.167	49.33	-29.68	40.60	38.41	68.20	18.87	H
17986.800	48.85	-29.59	45.95	32.49	74.00	25.15	V
12331.700	45.90	-32.39	38.95	39.34	74.00	28.10	H
12285.867	45.66	-32.12	39.00	38.78	74.00	28.34	H
9609.567	42.65	-34.18	37.60	39.23	68.20	25.55	H
10331.533	42.27	-33.88	38.00	38.15	68.20	25.93	V

### Band edge compliance

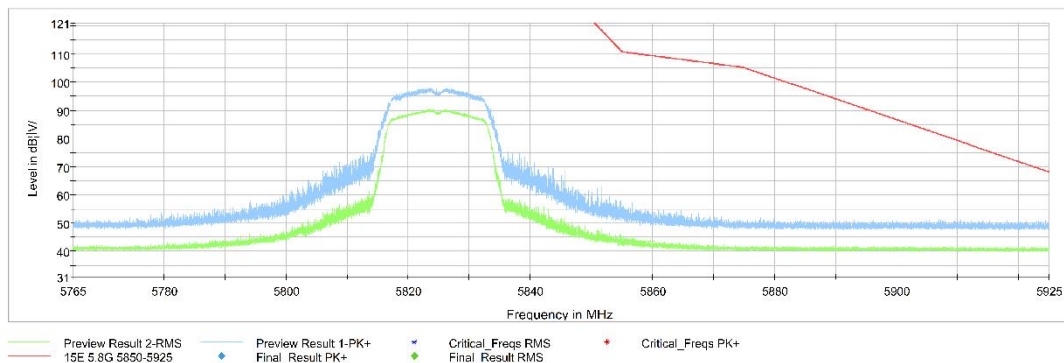
Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz	Fig.10	P
	5825 MHz	Fig.11	P
802.11n HT20	5745 MHz	Fig.12	P
	5825 MHz	Fig.13	P
802.11n HT40	5755 MHz	Fig.14	P
	5795 MHz	Fig.15	P
802.11ac HT20	5745 MHz	Fig.16	P
	5825 MHz	Fig.17	P
802.11ac HT40	5755 MHz	Fig.18	P
	5795 MHz	Fig.19	P
802.11ac HT80	5775 MHz	Fig.20 Fig.21	P

**Conclusion: PASS**

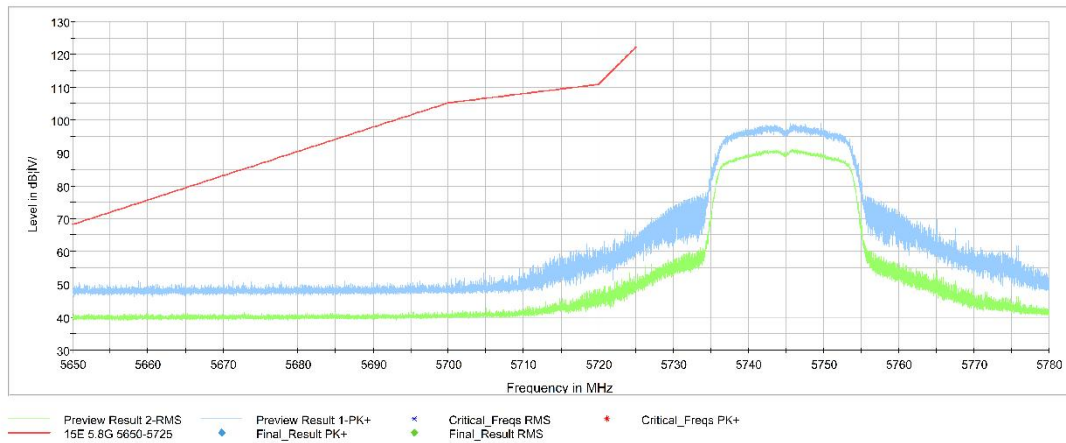
Test graphs as below:



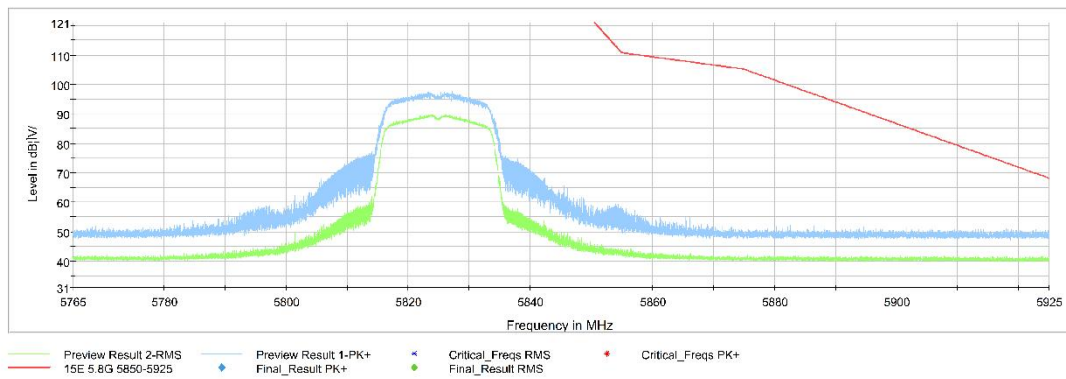
**Fig. 10 Band Edges (802.11a Ch149,5745MHz)**



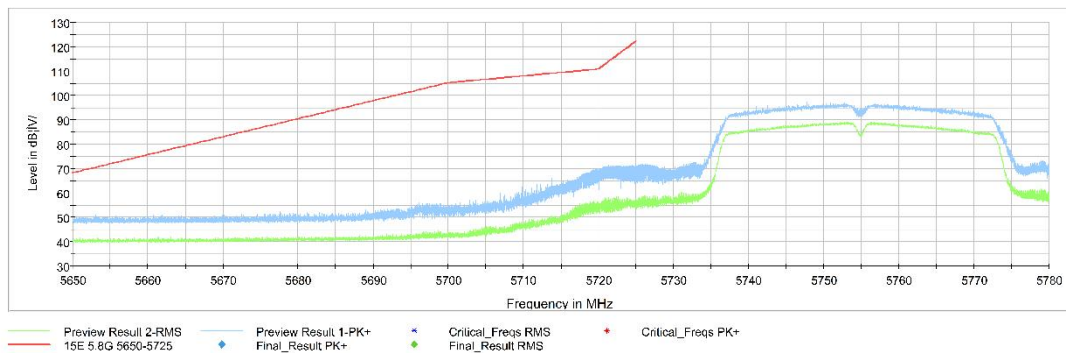
**Fig. 11 Band Edges (802.11a Ch165, 5825MHz)**



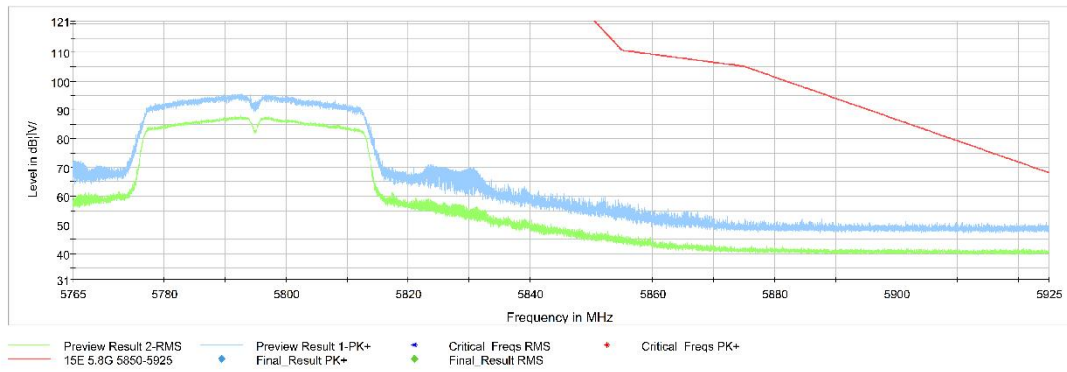
**Fig. 12 Band Edges (802.11n-HT20 Ch149, 5745MHz)**



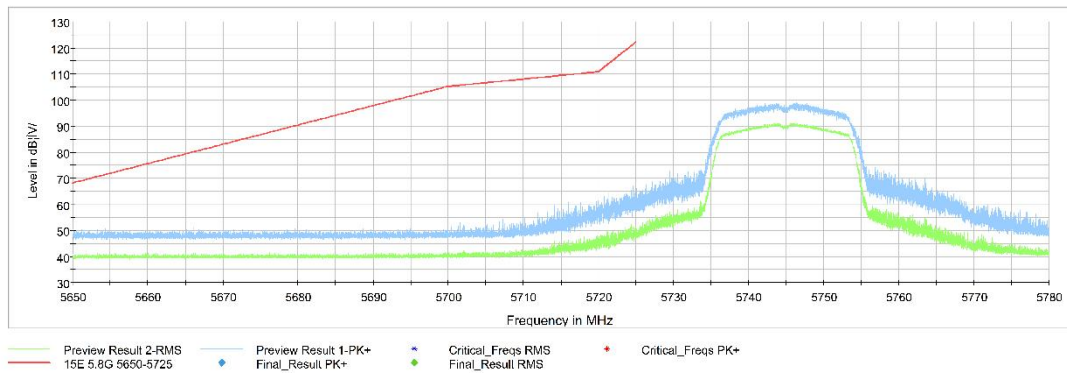
**Fig. 13 Band Edges (802.11n-HT20 Ch165, 5825MHz)**



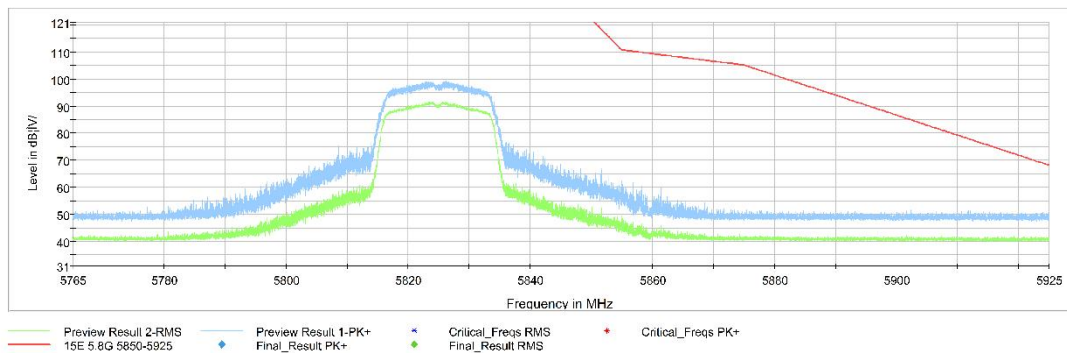
**Fig. 14 Band Edges (802.11n-HT40 Ch151, 5755MHz)**



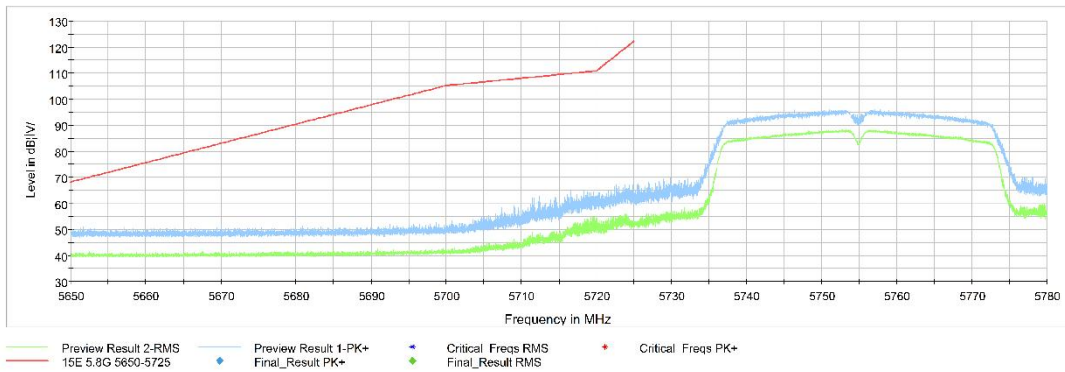
**Fig. 15 Band Edges (802.11n-HT40 Ch159, 5795MHz)**



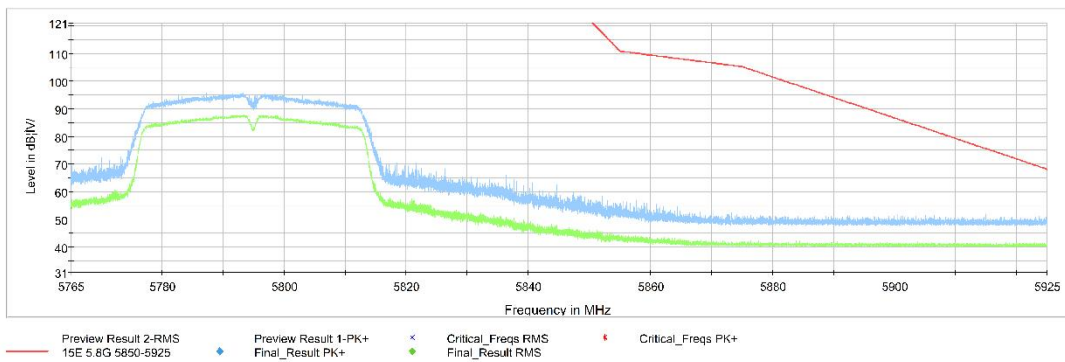
**Fig. 16 Band Edges (802.11ac-HT20 Ch149, 5745MHz)**



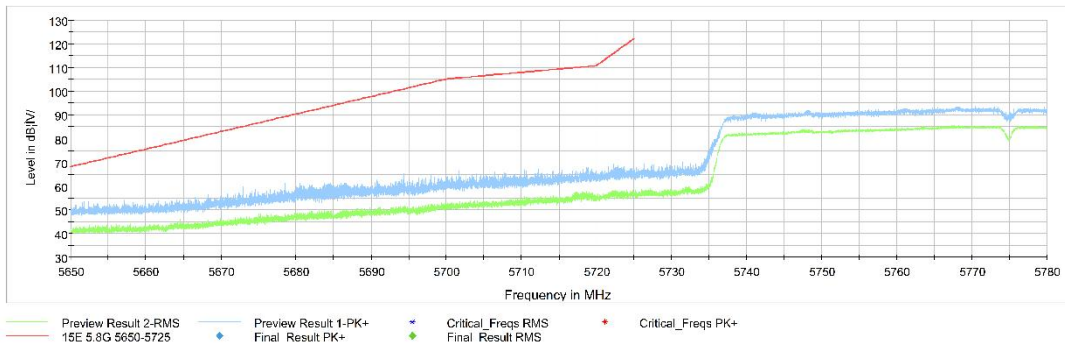
**Fig. 17 Band Edges (802.11ac-HT20 Ch165, 5825MHz)**



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

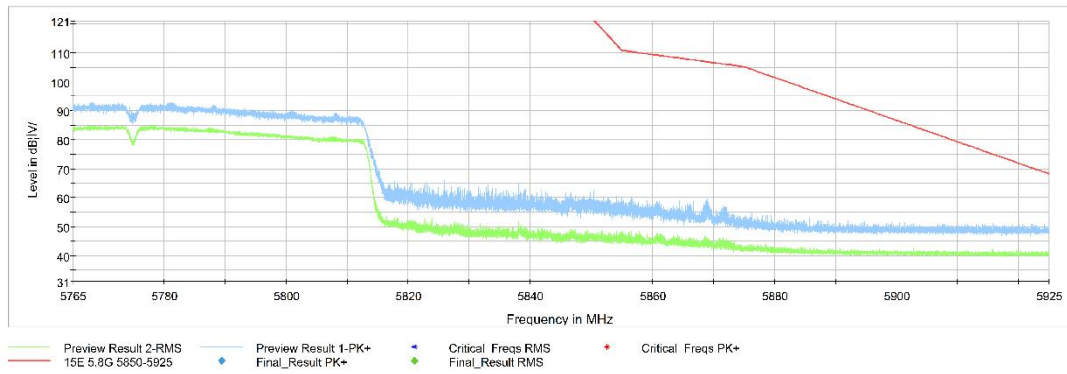


**Fig. 19 Band Edges (802.11ac-HT40 Ch159, 5795MHz)**



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





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

## **A.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.

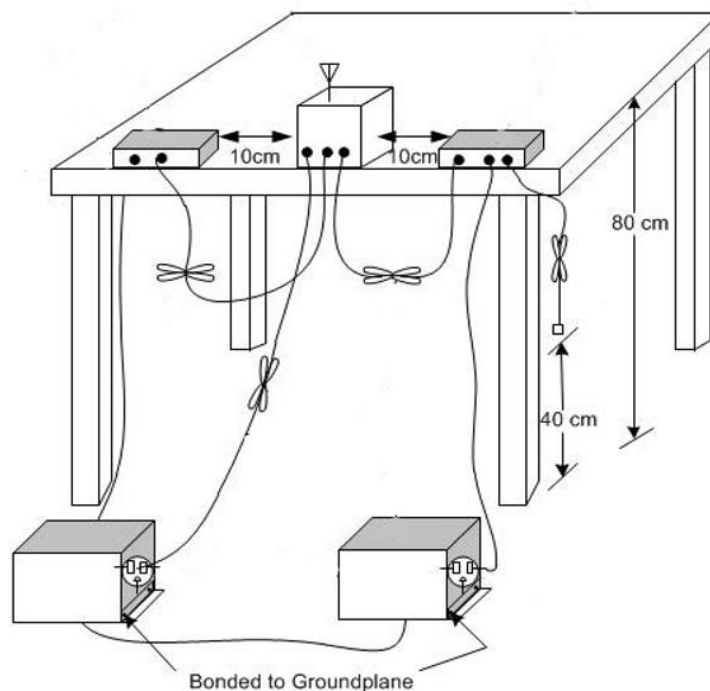
The measurement bandwidth is:

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.

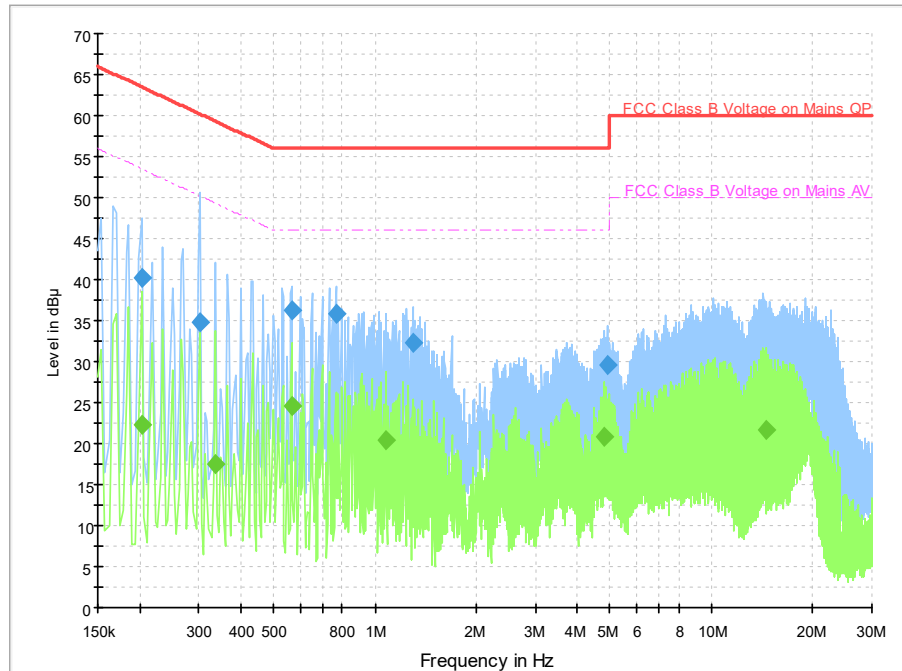
#### Wi-Fi (Average Limit)

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:**



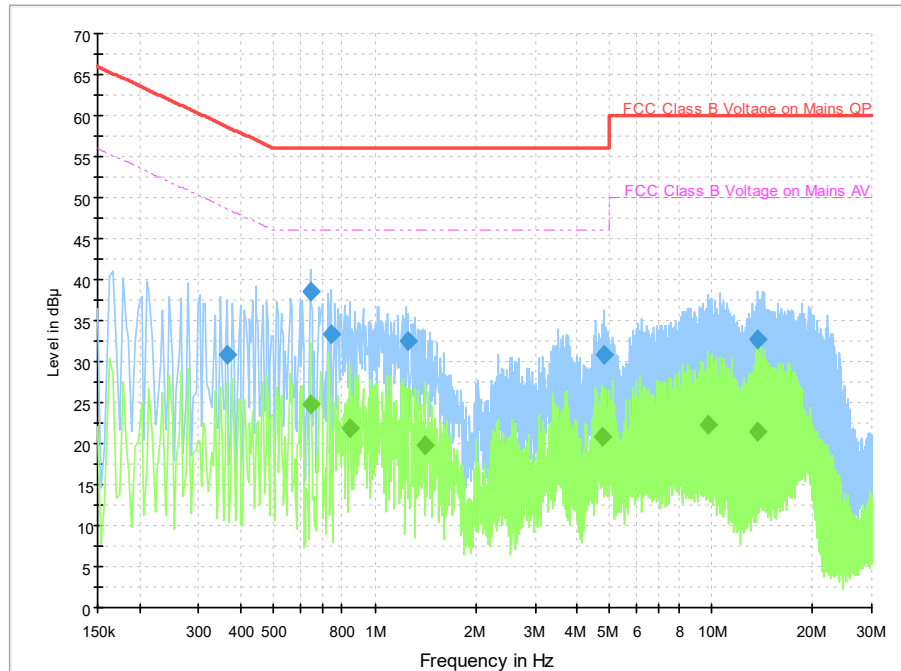
**Fig.A.6.1. AC Powerline Conducted Emission-Idle**

**Final Result 1**

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.202000	40.3	2000.0	9.000	On	L1	19.7	23.2	63.5	
0.302000	34.8	2000.0	9.000	On	N	19.7	25.4	60.2	
0.566000	36.2	2000.0	9.000	On	L1	19.7	19.8	56.0	
0.766000	35.9	2000.0	9.000	On	L1	19.7	20.1	56.0	
1.294000	32.3	2000.0	9.000	On	L1	19.7	23.7	56.0	
4.890000	29.6	2000.0	9.000	On	L1	19.6	26.4	56.0	

**Final Result 2**

Frequency (MHz)	CAverage (dB $\mu$ V)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)	Comment
0.202000	22.2	2000.0	9.000	On	L1	19.7	31.3	53.5	
0.334000	17.5	2000.0	9.000	On	L1	19.7	31.8	49.4	
0.566000	24.5	2000.0	9.000	On	L1	19.7	21.5	46.0	
1.078000	20.5	2000.0	9.000	On	L1	19.7	25.5	46.0	
4.818000	20.8	2000.0	9.000	On	L1	19.6	25.2	46.0	
14.494000	21.6	2000.0	9.000	On	L1	19.7	28.4	50.0	



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

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.366000	30.7	2000.0	9.000	On	N	19.7	27.8	58.6	
0.642000	38.6	2000.0	9.000	On	L1	19.7	17.4	56.0	
0.742000	33.3	2000.0	9.000	On	L1	19.7	22.7	56.0	
1.254000	32.5	2000.0	9.000	On	L1	19.6	23.5	56.0	
4.814000	30.8	2000.0	9.000	On	L1	19.6	25.2	56.0	
13.690000	32.8	2000.0	9.000	On	L1	19.7	27.2	60.0	

**Final Result 2**

Frequency (MHz)	CAverage (dBµV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.642000	24.9	2000.0	9.000	On	L1	19.7	21.1	46.0	
0.842000	21.9	2000.0	9.000	On	L1	19.7	24.1	46.0	
1.410000	19.7	2000.0	9.000	On	L1	19.7	26.3	46.0	
4.758000	20.9	2000.0	9.000	On	L1	19.6	25.1	46.0	
9.790000	22.2	2000.0	9.000	On	L1	19.7	27.8	50.0	
13.658000	21.5	2000.0	9.000	On	L1	19.7	28.5	50.0	

## **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 McInturff, 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 \*\*\***