



# FCC PART 15C TEST REPORT No.I23Z60663-IOT09

for

**TCL Communication Ltd.**

**Tablet PC**

**8496G**

With

**FCC ID: 2ACCJB200**

**Hardware Version: PIO**

**Software Version: v3ST5**

**Issued Date: 2023-06-01**

**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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

**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>
I23Z60663-IOT09	Rev.0	1st edition	2023-06-01

## **CONTENTS**

<b>CONTENTS</b> .....	<b>3</b>
<b>1. TEST LABORATORY</b> .....	<b>5</b>
1.1. INTRODUCTION & ACCREDITATION .....	5
1.2. TESTING LOCATION .....	5
1.3. TESTING ENVIRONMENT .....	5
1.4. PROJECT DATE .....	5
1.5. SIGNATURE .....	6
<b>2. CLIENT INFORMATION</b> .....	<b>7</b>
2.1. APPLICANT INFORMATION .....	7
2.2. MANUFACTURER INFORMATION .....	7
<b>3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT(AE)</b> .....	<b>8</b>
3.1. ABOUT EUT .....	8
3.2. INTERNAL IDENTIFICATION OF EUT USED DURING THE TEST .....	8
3.3. INTERNAL IDENTIFICATION OF AE USED DURING THE TEST .....	8
3.4. GENERAL DESCRIPTION .....	8
<b>4. REFERENCE DOCUMENTS</b> .....	<b>9</b>
4.1. DOCUMENTS SUPPLIED BY APPLICANT .....	9
4.2. REFERENCE DOCUMENTS FOR TESTING .....	9
<b>5. LABORATORY ENVIRONMENT</b> .....	<b>9</b>
<b>6. SUMMARY OF TEST RESULTS</b> .....	<b>10</b>
6.1. SUMMARY OF TEST RESULTS .....	10
6.2. STATEMENTS .....	10
6.3. TEST CONDITIONS .....	10
<b>7. TEST EQUIPMENTS UTILIZED</b> .....	<b>11</b>
<b>8. MEASUREMENT UNCERTAINTY</b> .....	<b>12</b>
8.1. TRANSMITTER OUTPUT POWER .....	12
8.2. PEAK POWER SPECTRAL DENSITY .....	12
8.3. OCCUPIED 6DB BANDWIDTH .....	12
8.4. BAND EDGES COMPLIANCE .....	12
8.5. SPURIOUS EMISSIONS .....	12
<b>8.6. AC POWER-LINE CONDUCTED EMISSION</b> .....	<b>12</b>
<b>ANNEX A: MEASUREMENT RESULTS</b> .....	<b>13</b>
A.1. MEASUREMENT METHOD .....	13
A.2. MAXIMUM PEAK OUTPUT POWER .....	14
A.2.1 ANTENNA GAIN .....	14

A.2.2. MAXIMUM AVERAGE OUTPUT POWER-CONDUCTED .....	14
A.3. PEAK POWER SPECTRAL DENSITY .....	17
A.4. OCCUPIED 6DB BANDWIDTH .....	18
A.5. TRANSMITTER SPURIOUS EMISSION .....	23
A.5.1 TRANSMITTER SPURIOUS EMISSION - RADIATED.....	23
A.6. BAND EDGES COMPLIANCE .....	35
A6.1 BAND EDGES - RADIATED.....	35
FIG. 1 BAND EDGES (802.11A CH149,5745MHZ).....	37
FIG. 2 BAND EDGES (802.11A CH165, 5825MHZ).....	37
FIG. 3 BAND EDGES (802.11N-HT20 CH149, 5745MHZ).....	38
FIG. 4 BAND EDGES (802.11N-HT20 CH165, 5825MHZ).....	38
FIG. 5 BAND EDGES (802.11N-HT40 CH151, 5755MHZ).....	39
FIG. 6 BAND EDGES (802.11N-HT40 CH159, 5795MHZ).....	39
FIG. 7 BAND EDGES (802.11AC-HT20 CH149, 5745MHZ).....	40
FIG. 8 BAND EDGES (802.11AC-HT20 CH165, 5825MHZ).....	40
FIG. 9 BAND EDGES (802.11AC-HT40 CH151, 5755MHZ).....	41
FIG. 10 BAND EDGES (802.11AC-HT40 CH159, 5795MHZ).....	41
FIG. 11 BAND EDGES (802.11AC-HT80 CH155, 5775MHZ).....	42
FIG. 12 BAND EDGES (802.11AC-HT80 CH155, 5775MHZ).....	42
A.7. AC POWERLINE CONDUCTED EMISSION.....	43
FIG.A7.1 AC POWER LINE CONDUCTED EMISSION-802.11A.....	45
FIG.A7.2 AC POWER LINE CONDUCTED EMISSION-IDLE .....	46
<b>ANNEX B: EUT PARAMETERS.....</b>	<b>47</b>
<b>ANNEX C: ACCREDITATION CERTIFICATE .....</b>	<b>47</b>



## **1. TEST LATORATORY**

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

**Telecommunication Technology Labs, CAICT** is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0, and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (ISED#: 24849). The detail accreditation scope can be found on NVLAP 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, 100176, P.R. China

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

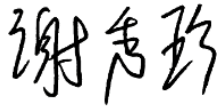
Relative Humidity: 20-75%

### **1.4. Project date**

Testing Start Date: 2023-04-18

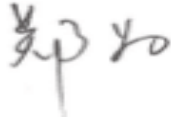
Testing End Date: 2023-06-01

## 1.5. Signature



---

Xie Xiuzhen  
( Prepared this test report )



---

Zheng Wei  
(Reviewed this test report)



---

Pang Shuai  
(Approved this test report)



## **2. CLIENT INFORMATION**

### **2.1. Applicant Information**

Company Name: TCL Communication Ltd.  
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong  
City: Hong Kong  
Postal Code: /  
Country: China  
Telephone: +86 755 3661 1621  
Fax: +86 755 3661 2000-81722

### **2.2. Manufacturer Information**

Company Name: TCL Communication Ltd.  
Address: 5/F, Building 22E, 22 Science Park East Avenue, Hong Kong Science Park, Shatin, NT, Hong Kong  
City: Hong Kong  
Postal Code: /  
Country: China  
Telephone: +86 755 3661 1621  
Fax: +86 755 3661 2000-81722

### **3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY**

#### **EQUIPMENT(AE)**

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

Description	Tablet PC
Model name	8496G
FCC ID	2ACCJB200
WLAN Frequency Band	ISM Band: 5725MHz~5850MHz
Type of modulation	OFDM
Voltage	3.85V

##### **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>
UT09a	B4695F5381182C6	PIO	v3ST5
UT18a	B4695F53811822F	PIO	v3ST5

\*EUT ID: is used to identify the test sample in the lab internally.  
 UT09a is used for Conduction test, UT18a is used for Radiation test.

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

<b>AE ID*</b>	<b>Name</b>	<b>Model</b>	<b>Manufacturer</b>
AE1	Battery	TLp058C8	Huizhou Ganfeng Lienergy Battery Technology Co.,Ltd.
AE2-1	Adapter(US)	CG10A0502000UU	Huizhou Juwei Electronics Co.,LTD.
AE2-2	Adapter(EU)	CG10A0502000EU	Huizhou Juwei Electronics Co.,LTD.
AE2-3	Adapter(US)	UC13US	HUIZHOU PUAN ELECTRONICS CO., LTD
AE2-4	Adapter(UK)	UC13UK	HUIZHOU PUAN ELECTRONICS CO., LTD
AE2-5	Adapter(EU)	UC13EU	HUIZHOU PUAN ELECTRONICS CO., LTD
AE3	Date Cable	JWUB1581-Y50R	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 Part15	FCC CFR 47, Part 15, Subpart C and E: 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
KDB 558074 D01	Federal Communications Commission Office of Engineering and Technology Laboratory Division GUIDANCE FOR COMPLIANCE MEASUREMENTS ON DIGITAL TRANSMISSION SYSTEM, FREQUENCY HOPPING SPREAD SPECTRUM SYSTEM, AND HYBRID SYSTEM DEVICES OPERATING UNDER SECTION 15.247 OF THE FCC RULES	2019

## **5. LABORATORY ENVIRONMENT**

Conducted RF performance testing is performed in shielding room.

EMC performance testing is performed in Semi-anechoic chamber.

## 6. SUMMARY OF TEST RESULTS

### 6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	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>
Band Edges Compliance - Conducted& Radiated	15.407 (b)	/	<b>P</b>
Transmitter Spurious Emission - Conducted	15.407	/	<b>P</b>
Transmitter Spurious Emission - Radiated	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 requested by the client/matrix manufacturer 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 4.1.

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	3.85V
Humidity	44%

## 7. TEST EQUIPMENTS 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	2023-06-15
2	LISN	ENV216	101200	Rohde & Schwarz	1 year	2023-06-29
3	Test Receiver	ESCI	100344	Rohde & Schwarz	1 year	2024-02-21
4	Shielding Room	S81	/	ETS-Lindgren	/	/

### Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	R&S	1 year	2023-09-22
2	Test Receiver	ESW44	103015	R&S	1 year	2024-01-14
3	Test Receiver	ESW44	103144	R&S	1 year	2023-10-25
4	Loop Antenna	HFH2-Z2	829324/007	R&S	1 year	2023-12-22
5	EMI Antenna	VULB9163	01177	Schwarzbeck	1 year	2023-08-03
6	EMI Antenna	3117	00119024	ETS-Lindgren	1 year	2023-06-07
7	EMI Antenna	LB-180400 -25-C-KF	21100840000 06	A-INFO	1 year	2024-03-02

### AC Power Line Conducted Emission

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	LISN	ENV216	101459	R&S	1 year	2024-02-29
2	Test Receiver	ESCI	100766	R&S	1 year	2024-03-30

## 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. Occupied 6dB 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

#### Radiated (k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	4.92
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.29
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.62
$18\text{GHz} \leq f \leq 40\text{GHz}$	3.52

### 8.6. AC Power-line Conducted Emission

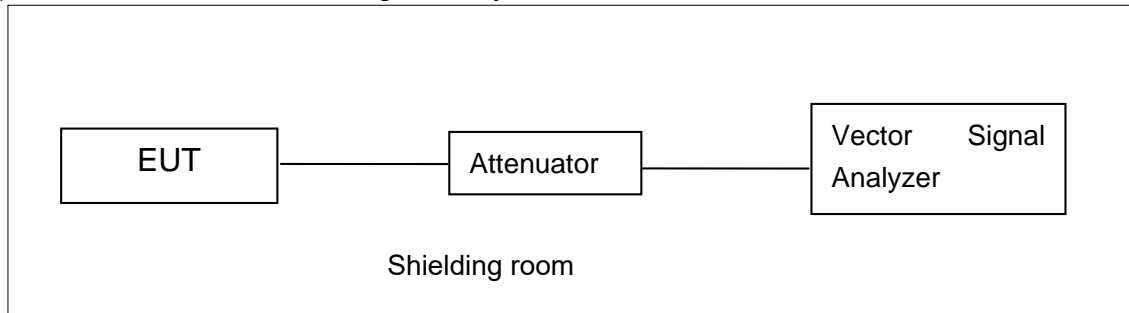
Measurement Uncertainty: 3.10dB, k=2

## 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

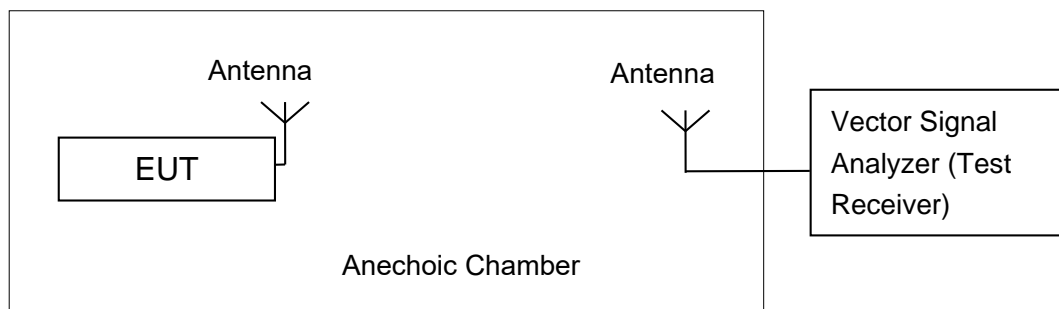


#### A.1.2. Radiated Emission Measurements

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 = 10Hz;



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:

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

### A.2.1 Antenna Gain

Antenna gain is 0.37dBi and the value is supplied by the applicant or manufacturer.

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

#### Measurement Results:

#### 802.11a mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11a	6	13.36	13.36	13.36
	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	12.27	12.43	12.44
	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	12.46	12.58	13.11
	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	12.21	12.36
	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	12.67	12.83
	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	12.63
	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%

**Conclusion: PASS**



### A.3. Peak Power Spectral Density

#### Measurement Limit:

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

The measurement is made according to ANSI C63.10 and KDB789033 D02

#### Measurement Uncertainty:

Measurement Uncertainty	0.75dB
-------------------------	--------

#### Measurement Results:

Mode	Channel	Power Spectral Density ( dBm/500kHz )	Conclusion
802.11a	149	-0.20	P
	157	-0.23	P
	165	-0.23	P
802.11ac HT20	149	-0.09	P
	157	-0.04	P
	165	-0.08	P
802.11ac HT40	151	-2.99	P
	159	-2.89	P
802.11ac HT80	155	-6.43	P

**Conclusion: PASS**

### A.4. Occupied 6dB Bandwidth

#### Measurement Limit:

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

The measurement is made according to KDB789033 D02 .

#### Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
-------------------------	---------

#### Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth ( MHz)		conclusion
		Fig.	Value	
802.11a	149	Fig.1	16.35	P
	157	Fig.2	16.30	P
	165	Fig.3	16.30	P
802.11ac HT20	149	Fig.4	17.60	P
	157	Fig.5	17.55	P
	165	Fig.6	17.55	P
802.11ac HT40	151	Fig.7	35.76	P
	159	Fig.8	35.84	P
802.11ac HT80	155	Fig.9	76.16	P

#### Conclusion: PASS

Test graphs as below:

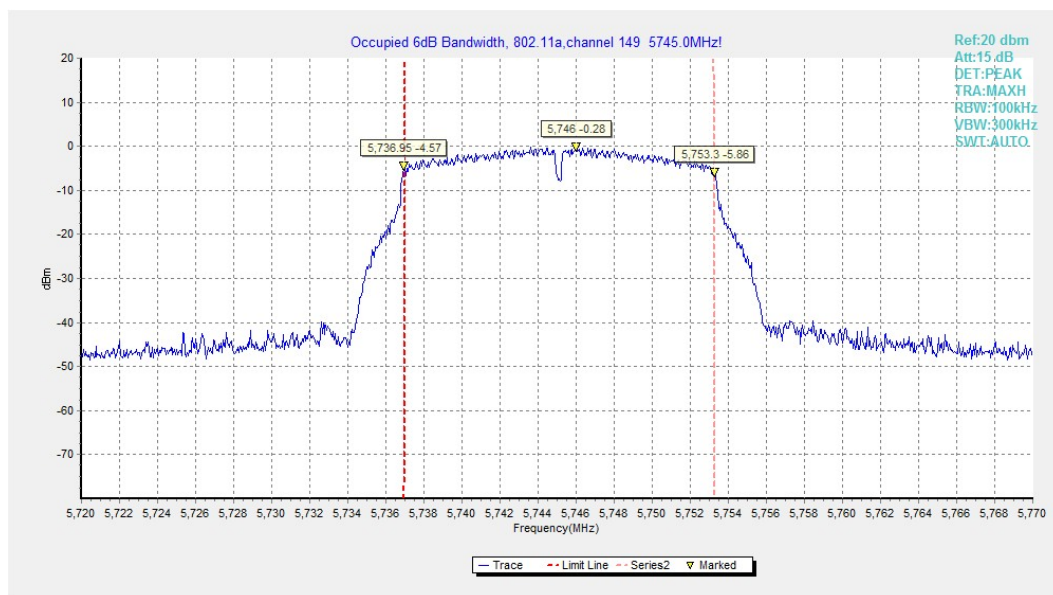
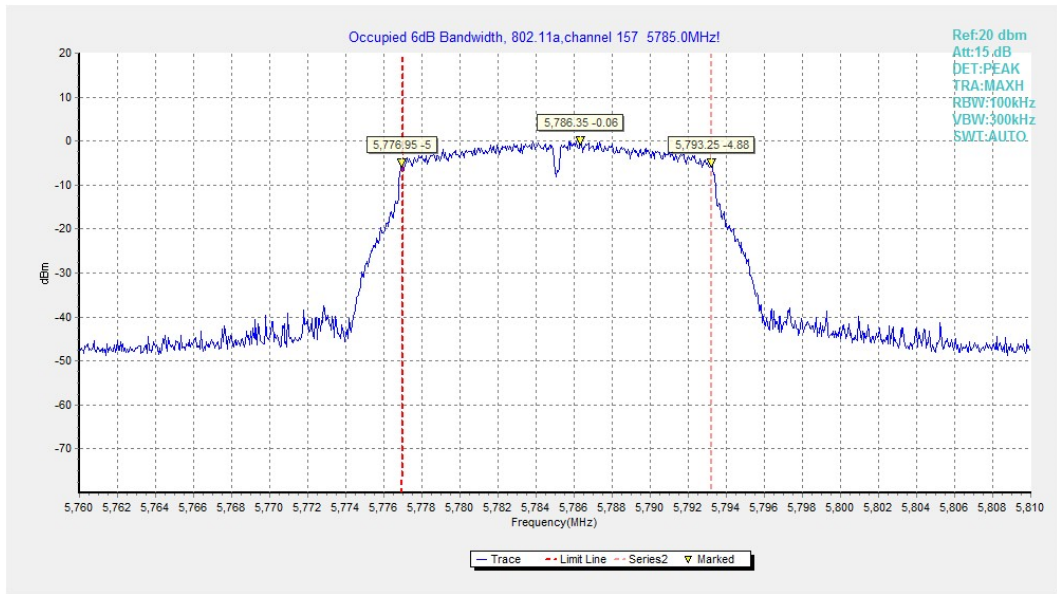
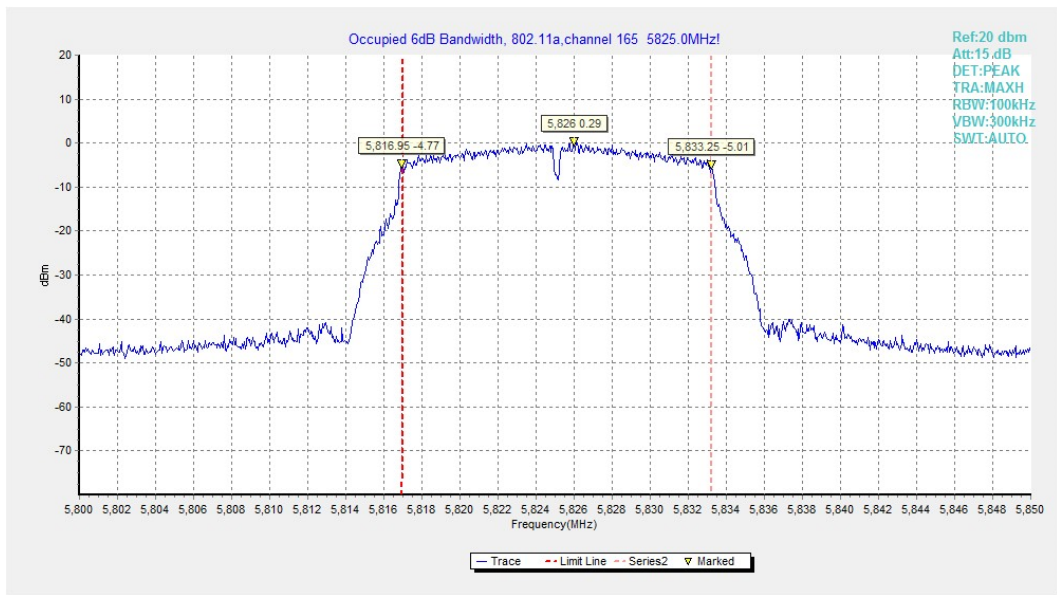


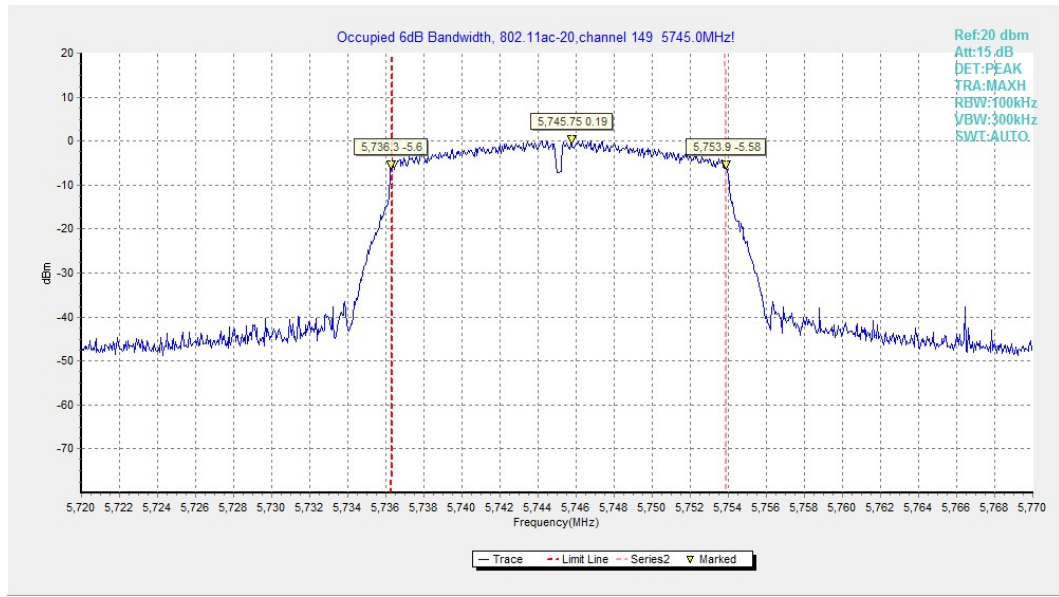
Fig. 1 Occupied 6dB Bandwidth (802.11a, Ch 149)



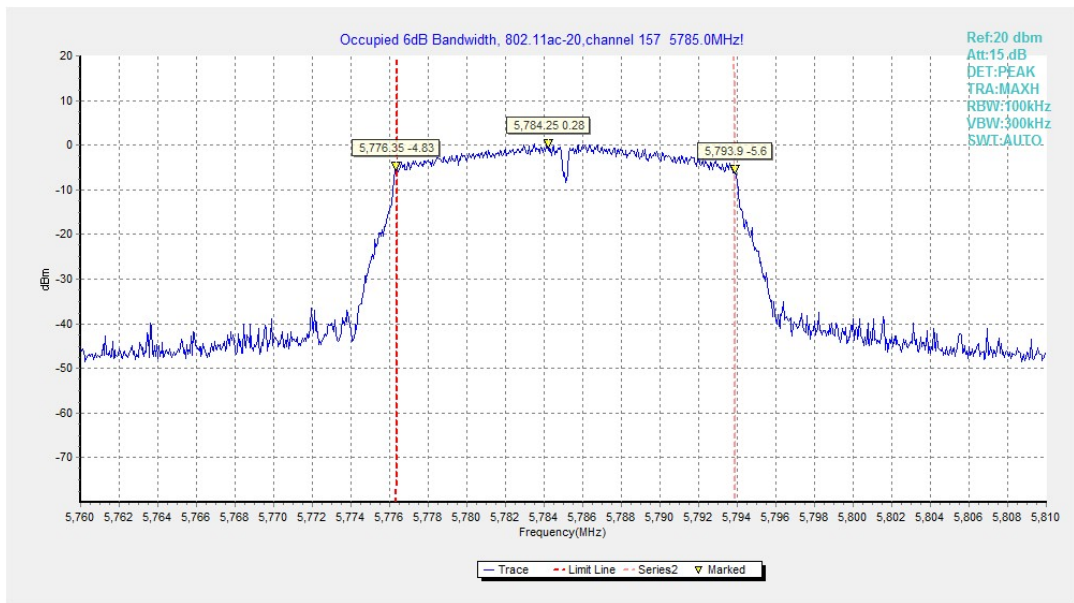
**Fig. 2 Occupied 6dB Bandwidth (802.11a, Ch 157)**



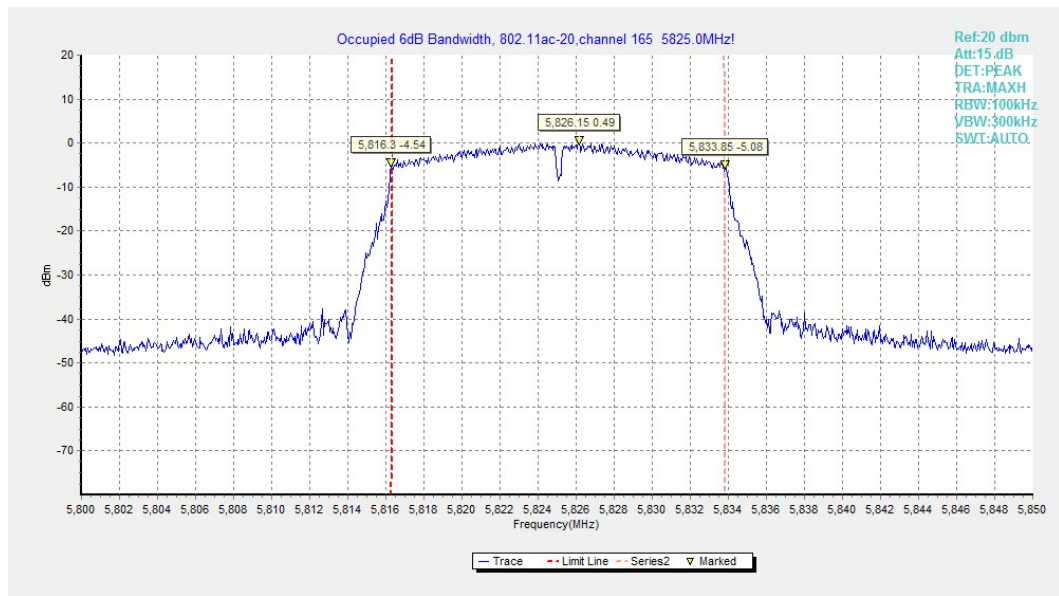
**Fig. 3 Occupied 6dB Bandwidth (802.11a, Ch 165)**



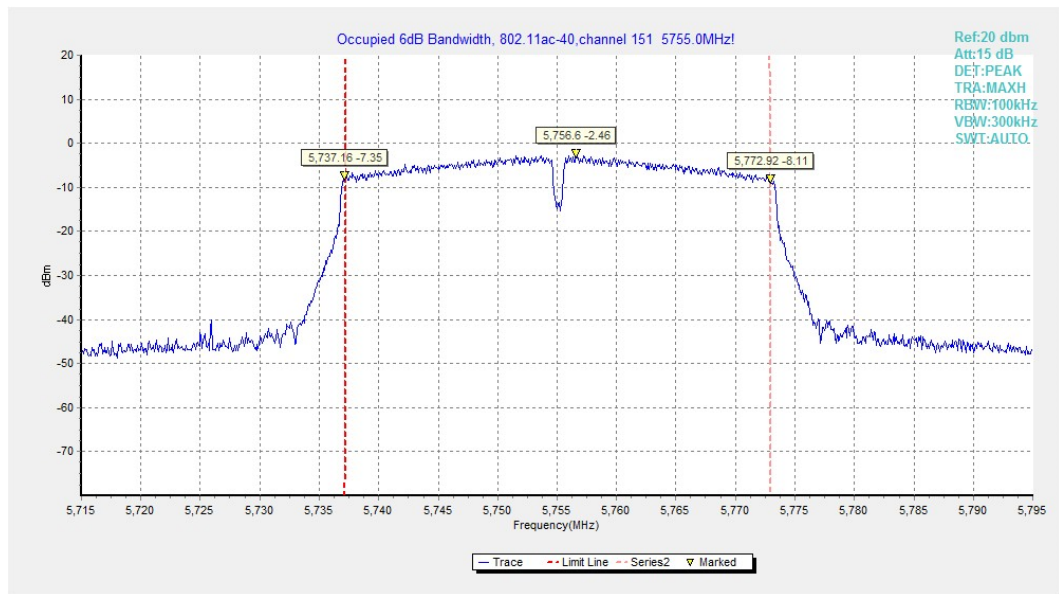
**Fig. 4 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 149)**



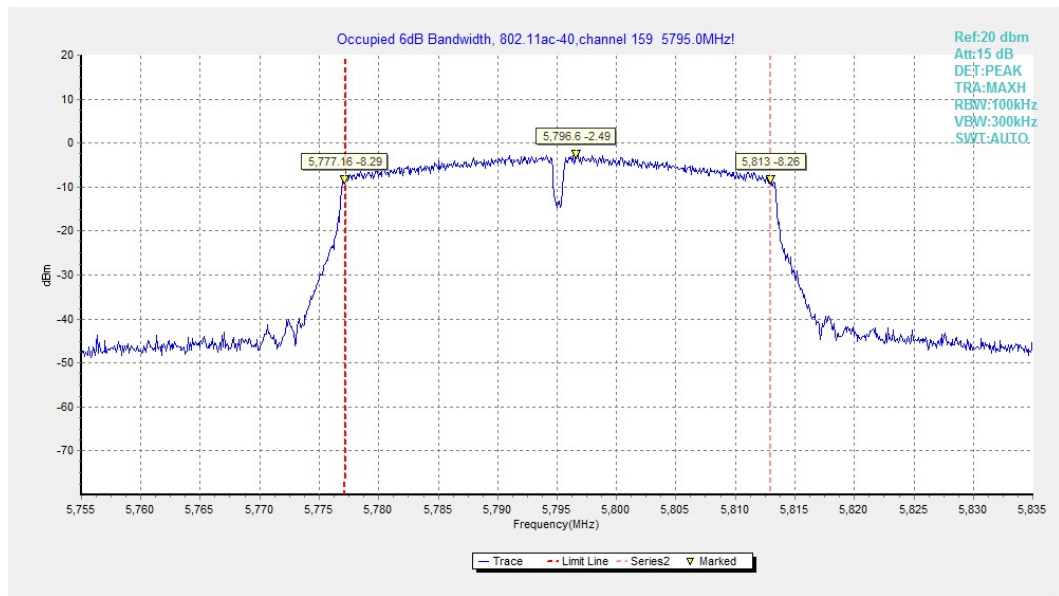
**Fig. 5 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 157)**



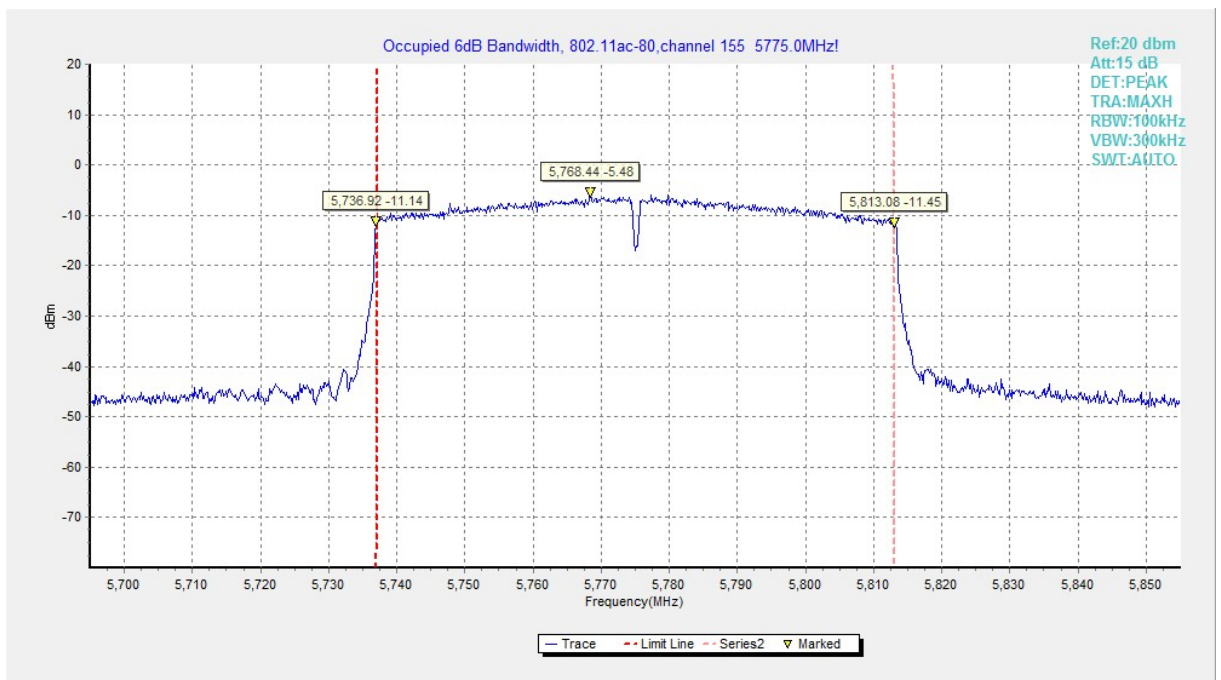
**Fig. 6 Occupied 6dB Bandwidth (802.11ac-HT20, Ch 165)**



**Fig. 7 Occupied 6dB Bandwidth (802.11ac-HT40, Ch 151)**



**Fig. 8 Occupied 6dB Bandwidth (802.11ac-HT40, Ch 159)**



**Fig. 9 Occupied 6dB Bandwidth (802.11ac-HT80, Ch 155)**

## A.5. Transmitter Spurious Emission

### A.5.1 Transmitter Spurious Emission - Radiated

#### Measurement Limit:

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.	

The measurement is made according to KDB 789033

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)).

#### Limit in restricted band:

Frequency (MHz)	Field strength(μV/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 (uV/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

#### Set up:

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m. For emissions testing at or below 1 GHz, the table height shall be 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m

The EUT and transmitting antenna shall be centered on the turntable.

#### Test Procedure

The EUT was placed on a non-conductive table. 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 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

#### The receiver references:

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100kHz/300kHz	5
1000-7000	1MHz/3MHz	15
7000-18000	1MHz/3MHz	40
18000-26500	1MHz/3MHz	20

### Sample Calculations

1. 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

2. The measurement results are obtained as described below:

$$\text{Result} = P_{\text{Mea}} + A_{\text{Rpl}} = P_{\text{Mea}} + \text{Cable Loss} + \text{Antenna Factor}$$

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

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

### Note:

The range of evaluated frequency is from 9 kHz to 26GHz. Measurement value showed here only up to 6 maximum emissions noted.



**Measurement Results:**
**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)
5350.800	43.26	-23.92	34.34	32.83	54.00	10.74	V
5373.200	43.29	-23.82	34.35	32.76	54.00	10.71	V
9191.500	33.90	-31.96	36.38	29.48	54.00	20.10	H
11489.500	34.16	-31.73	38.20	27.70	54.00	19.84	V
15931.000	38.05	-26.26	40.62	23.70	54.00	15.95	V
17232.500	38.76	-25.83	41.92	22.68	54.00	15.24	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)
5359.000	43.18	-23.88	34.35	32.72	54.00	10.82	V
5371.000	43.30	-23.83	34.35	32.77	54.00	10.70	V
11569.500	33.39	-32.05	38.27	27.17	54.00	20.61	H
15902.000	38.01	-26.29	40.58	23.72	54.00	15.99	V
17963.000	38.77	-25.82	41.51	23.08	54.00	15.23	V
17990.500	38.95	-25.85	41.50	23.30	54.00	15.05	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)
5361.600	43.22	-23.87	34.35	32.74	54.00	10.78	V
5376.000	43.31	-23.83	34.35	32.79	54.00	10.69	V
9320.000	34.51	-32.13	36.43	30.22	54.00	19.49	H
11650.000	33.47	-31.42	38.35	26.53	54.00	20.53	H
15937.000	37.99	-26.26	40.63	23.62	54.00	16.01	H
17991.000	39.01	-25.85	41.50	23.35	54.00	14.99	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)
5358.400	43.25	-23.89	34.35	32.79	54.00	10.75	V
5371.800	43.35	-23.82	34.35	32.82	54.00	10.65	V
9191.500	33.78	-31.96	36.38	29.37	54.00	20.22	V
11487.500	34.24	-31.72	38.20	27.77	54.00	19.76	H
15900.500	37.96	-26.29	40.58	23.67	54.00	16.04	H
17996.000	38.97	-25.85	41.50	23.33	54.00	15.03	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)
5369.600	43.33	-23.83	34.35	32.81	54.00	10.67	V
5373.800	43.31	-23.81	34.35	32.78	54.00	10.69	V
11570.000	33.35	-32.04	38.27	27.13	54.00	20.65	H
15913.500	38.02	-26.28	40.60	23.70	54.00	15.98	H
17837.000	38.27	-25.74	41.53	22.48	54.00	15.73	H
17991.000	39.01	-25.85	41.50	23.36	54.00	14.99	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)
5362.000	43.23	-23.87	34.35	32.75	54.00	10.77	V
5372.200	43.38	-23.82	34.35	32.85	54.00	10.62	V
9320.000	34.38	-32.13	36.43	30.09	54.00	19.62	H
11650.000	33.49	-31.42	38.35	26.55	54.00	20.51	H
15899.500	38.01	-26.29	40.58	23.72	54.00	15.99	H
17981.000	38.98	-25.84	41.50	23.31	54.00	15.02	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)
5366.800	43.35	-23.85	34.35	32.84	54.00	10.65	V
5372.200	43.38	-23.82	34.35	32.85	54.00	10.62	V
11510.000	32.89	-31.83	38.21	26.51	54.00	21.11	V
15894.000	37.92	-26.29	40.57	23.64	54.00	16.08	V
17967.500	38.88	-25.83	41.51	23.20	54.00	15.12	V
17991.000	38.99	-25.85	41.50	23.33	54.00	15.01	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)
5370.000	43.34	-23.83	34.35	32.83	54.00	10.66	V
5374.400	43.38	-23.81	34.35	32.85	54.00	10.62	V
11590.000	32.78	-31.89	38.29	26.37	54.00	21.22	H
15903.000	37.98	-26.29	40.59	23.69	54.00	16.02	V
17898.000	38.30	-25.78	41.52	22.55	54.00	15.70	H
17984.500	38.96	-25.84	41.50	23.30	54.00	15.04	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)
5361.200	43.30	-23.87	34.35	32.83	54.00	10.70	V
5372.000	43.37	-23.82	34.35	32.84	54.00	10.63	V
9191.500	33.74	-31.96	36.38	29.32	54.00	20.26	V
11490.000	34.31	-31.73	38.20	27.84	54.00	19.69	H
15899.000	38.05	-26.29	40.58	23.76	54.00	15.95	H
17971.000	38.88	-25.83	41.51	23.21	54.00	15.12	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)
5361.000	43.35	-23.87	34.35	32.88	54.00	10.65	V
5373.800	43.33	-23.81	34.35	32.79	54.00	10.67	V
11570.000	32.78	-32.04	38.27	26.56	54.00	21.22	V
15865.500	37.83	-26.30	40.54	23.59	54.00	16.17	H
17963.000	38.78	-25.82	41.51	23.10	54.00	15.22	H
17986.000	38.98	-25.84	41.50	23.32	54.00	15.02	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)
5353.400	43.26	-23.91	34.34	32.82	54.00	10.74	V
5374.000	43.32	-23.81	34.35	32.78	54.00	10.68	V
9320.000	33.87	-32.13	36.43	29.58	54.00	20.13	V
11650.000	33.42	-31.42	38.35	26.48	54.00	20.58	V
15921.500	37.86	-26.27	40.61	23.52	54.00	16.14	V
17964.500	38.75	-25.83	41.51	23.07	54.00	15.25	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)
5363.800	43.31	-23.86	34.35	32.82	54.00	10.69	V
5374.000	43.41	-23.81	34.35	32.87	54.00	10.59	V
11550.000	32.38	-32.04	38.25	26.17	54.00	21.62	V
15912.500	37.92	-26.28	40.60	23.60	54.00	16.08	V
17969.000	38.83	-25.83	41.51	23.15	54.00	15.17	V
17990.500	39.12	-25.85	41.50	23.46	54.00	14.88	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)
5361.000	43.30	-23.87	34.35	32.82	54.00	10.70	V
5374.400	43.40	-23.81	34.35	32.86	54.00	10.60	V
11590.000	32.91	-31.89	38.29	26.50	54.00	21.09	H
15899.000	37.92	-26.29	40.58	23.63	54.00	16.08	H
17965.000	38.88	-25.83	41.51	23.20	54.00	15.12	H
17982.500	38.93	-25.84	41.50	23.27	54.00	15.07	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)
5360.200	43.19	-23.88	34.35	32.72	54.00	10.81	V
5370.000	43.34	-23.83	34.35	32.82	54.00	10.66	V
11550.000	32.38	-32.04	38.25	26.17	54.00	21.62	V
15933.000	37.86	-26.26	40.62	23.50	54.00	16.14	H
17935.500	38.35	-25.80	41.51	22.64	54.00	15.65	H
17986.500	39.00	-25.84	41.50	23.34	54.00	15.00	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)
5650.927	57.42	-23.80	34.68	46.55	68.89	11.46	H
5652.465	57.31	-23.80	34.68	46.42	70.02	12.71	V
11490.500	46.68	-31.73	38.20	40.21	74.00	27.32	H
17235.000	51.47	-25.83	41.92	35.39	68.30	16.83	V
17409.500	51.98	-25.87	41.71	36.15	68.30	16.32	V
17568.000	52.38	-25.68	41.59	36.47	68.30	15.92	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)
5760.200	58.92	-23.25	34.88	47.29	68.30	9.38	V
5810.800	58.17	-22.84	34.97	46.04	68.30	10.13	H
11571.500	46.35	-32.03	38.27	40.11	74.00	27.65	H
17355.000	51.21	-25.89	41.77	35.33	68.30	17.09	V
17514.000	51.96	-25.74	41.60	36.10	68.30	16.34	V
17654.500	51.53	-25.68	41.57	35.64	68.30	16.77	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)
5924.425	57.52	-23.35	35.17	45.70	68.63	11.11	H
5924.892	57.61	-23.35	35.17	45.79	68.28	10.67	V
11650.000	45.89	-31.42	38.35	38.96	74.00	28.11	V
17475.500	52.95	-25.79	41.63	37.10	68.30	15.35	V
17551.000	52.32	-25.69	41.59	36.42	68.30	15.98	V
17681.500	51.04	-25.68	41.56	35.15	68.30	17.26	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)
5650.022	57.20	-23.81	34.68	46.33	68.22	11.01	V
5650.129	56.85	-23.81	34.68	45.98	68.30	11.44	H
11487.000	47.24	-31.71	38.19	40.76	74.00	26.76	V
17235.000	52.12	-25.83	41.92	36.04	68.30	16.18	H
17482.000	51.64	-25.78	41.62	35.80	68.30	16.66	H
17677.000	51.62	-25.68	41.56	35.73	68.30	16.68	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)
5762.800	61.80	-23.23	34.88	50.15	68.30	6.50	H
5806.200	61.37	-22.87	34.96	49.28	68.30	6.93	V
11570.000	44.16	-32.04	38.27	37.93	74.00	29.84	H
17355.000	49.55	-25.89	41.77	33.67	68.30	18.75	V
17535.500	51.23	-25.71	41.59	35.34	68.30	17.07	H
17672.500	51.84	-25.68	41.57	35.96	68.30	16.46	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)
5924.540	57.64	-23.35	35.17	45.82	68.54	10.90	H
5924.748	57.94	-23.35	35.17	46.12	68.39	10.45	H
11650.000	45.61	-31.42	38.35	38.67	74.00	28.39	V
17475.000	50.89	-25.79	41.63	35.05	68.30	17.41	H
17527.500	52.52	-25.72	41.59	36.64	68.30	15.78	H
17624.000	53.60	-25.68	41.57	37.70	68.30	14.70	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)
5650.388	56.44	-23.81	34.68	45.56	68.49	12.05	V
5650.532	56.28	-23.80	34.68	45.41	68.59	12.31	H
11510.000	44.46	-31.83	38.21	38.08	74.00	29.54	V
17265.000	50.70	-25.85	41.88	34.67	68.30	17.59	V
17431.000	51.43	-25.84	41.68	35.59	68.30	16.87	H
17596.500	52.55	-25.68	41.58	36.65	68.30	15.74	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)
5924.619	57.37	-23.35	35.17	45.55	68.48	11.11	H
5924.950	57.58	-23.35	35.17	45.76	68.24	10.66	V
11590.000	46.06	-31.89	38.29	39.66	74.00	27.94	V
17385.000	49.48	-25.90	41.74	33.64	68.30	18.82	V
17552.500	50.63	-25.69	41.59	34.73	68.30	17.67	H
17678.500	51.27	-25.68	41.56	35.38	68.30	17.03	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)
5650.516	56.66	-23.80	34.68	45.79	68.58	11.92	V
5650.798	56.66	-23.80	34.68	45.78	68.79	12.14	V
11489.000	47.28	-31.73	38.20	40.81	74.00	26.72	V
17235.000	50.13	-25.83	41.92	34.05	68.30	18.17	V
17373.500	51.75	-25.89	41.75	35.89	68.30	16.55	V
17552.500	52.12	-25.69	41.59	36.22	68.30	16.17	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)
5756.600	58.47	-23.27	34.87	46.87	68.30	9.83	H
5812.800	58.04	-22.82	34.97	45.89	68.30	10.26	V
11570.000	44.95	-32.04	38.27	38.72	74.00	29.05	V
17355.000	49.59	-25.89	41.77	33.71	68.30	18.71	V
17483.000	52.08	-25.78	41.62	36.24	68.30	16.22	H
17579.500	52.83	-25.68	41.58	36.92	68.30	15.47	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)
5924.173	57.02	-23.35	35.17	45.20	68.81	11.80	V
5924.461	58.08	-23.35	35.17	46.26	68.60	10.52	V
11650.000	44.52	-31.42	38.35	37.58	74.00	29.48	V
17475.000	50.93	-25.79	41.63	35.08	68.30	17.37	V
17554.000	52.74	-25.69	41.59	36.84	68.30	15.56	V
17666.500	51.72	-25.68	41.57	35.83	68.30	16.58	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)
5650.381	57.44	-23.81	34.68	46.57	68.48	11.04	V
5650.870	56.91	-23.80	34.68	46.03	68.84	11.94	H
11510.000	45.20	-31.83	38.21	38.83	74.00	28.80	V
17265.000	50.11	-25.85	41.88	34.08	68.30	18.19	H
17469.500	52.50	-25.79	41.64	36.66	68.30	15.80	H
17606.000	51.22	-25.68	41.58	35.32	68.30	17.08	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)
5924.332	57.05	-23.35	35.17	45.23	68.69	11.64	H
5924.806	57.36	-23.35	35.17	45.55	68.34	10.98	V
11590.000	44.79	-31.89	38.29	38.39	74.00	29.21	V
17385.000	50.00	-25.90	41.74	34.16	68.30	18.30	H
17504.000	51.99	-25.75	41.60	36.15	68.30	16.30	V
17616.000	52.65	-25.68	41.58	36.75	68.30	15.65	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)
5650.561	56.97	-23.80	34.68	46.10	68.30	11.33	V
5650.891	56.64	-23.80	34.68	45.76	68.30	11.66	H
5923.067	57.30	-23.35	35.17	45.48	68.30	11.00	V
5923.785	57.77	-23.35	35.17	45.95	68.30	10.53	V
17493.000	52.33	-25.76	41.61	36.49	68.30	15.97	V
17645.500	51.39	-25.68	41.57	35.49	68.30	16.91	H

**Conclusion: PASS**

**Note:**

1. The spurious emission above 18G is noise only.
2. All emissions below 30MHz are more than 20 dB below the limit

## A.6. Band Edges Compliance

### A6.1 Band Edges - Radiated

#### Measurement Limit:

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.		

#### Set up:

Tabletop devices shall be placed on a nonconducting platform with nominal top surface dimensions 1 m by 1.5 m and the table height shall be 1.5 m.

The EUT and transmitting antenna shall be centered on the turntable.

#### Test Procedure

The EUT was placed on a non-conductive table. 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 360° and the measurement antenna is moved from 1m to 4m to get the maximization result. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

#### The receiver references:

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

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

#### Sample Calculations

Convert the resultant EIRP level to an equivalent electric field strength using the following relationship:

$$E = \sqrt{EIRP - 20 \log(D) + 104.77} \quad \text{Where:}$$

$E$  is the field strength in dB $\mu$ V/m

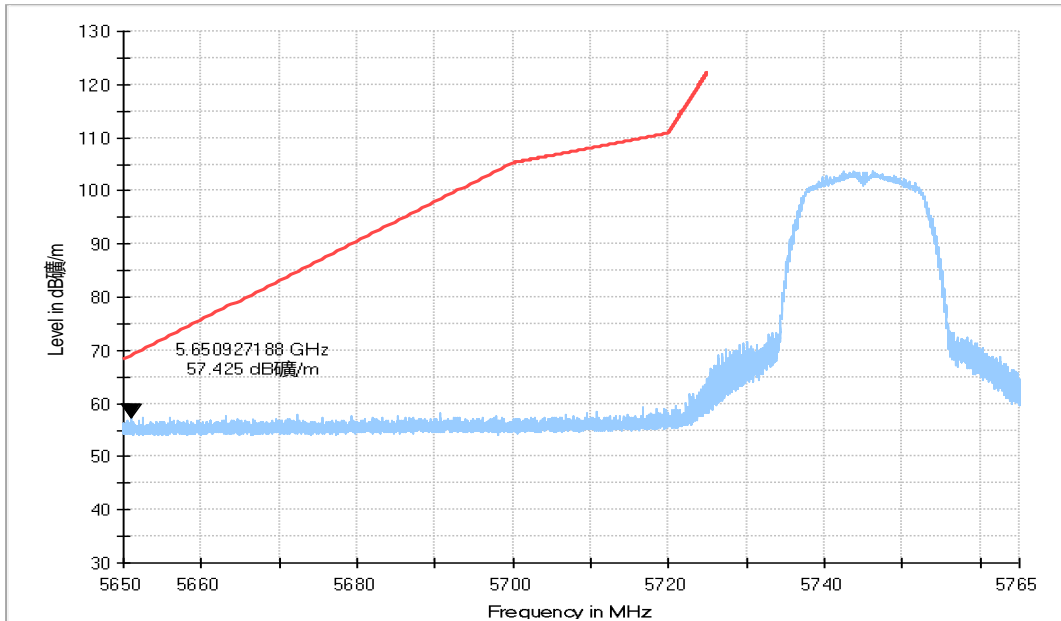
$D$  is the measurement distance in meters

EIRP is the equivalent isotropically radiated power in dbm

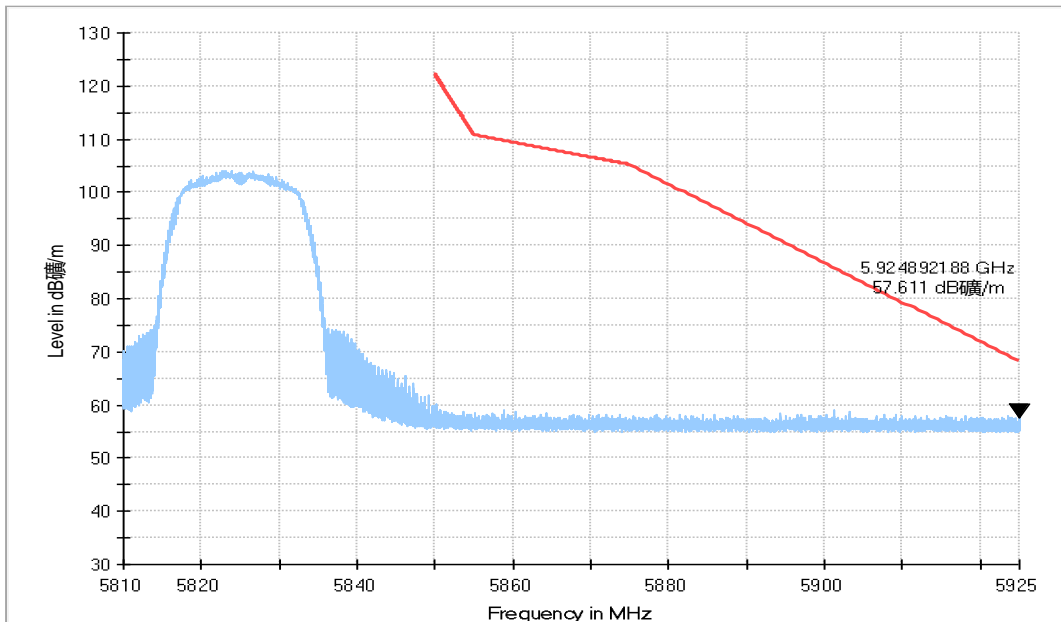
**Measurement Result:**

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

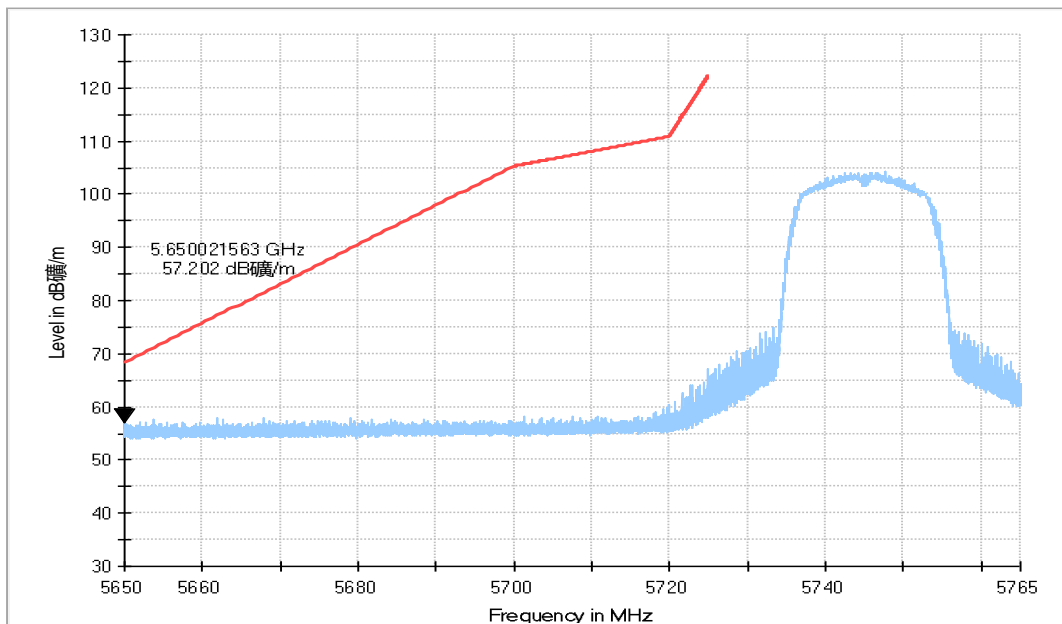
**Conclusion: PASS****Test graphs as below:**



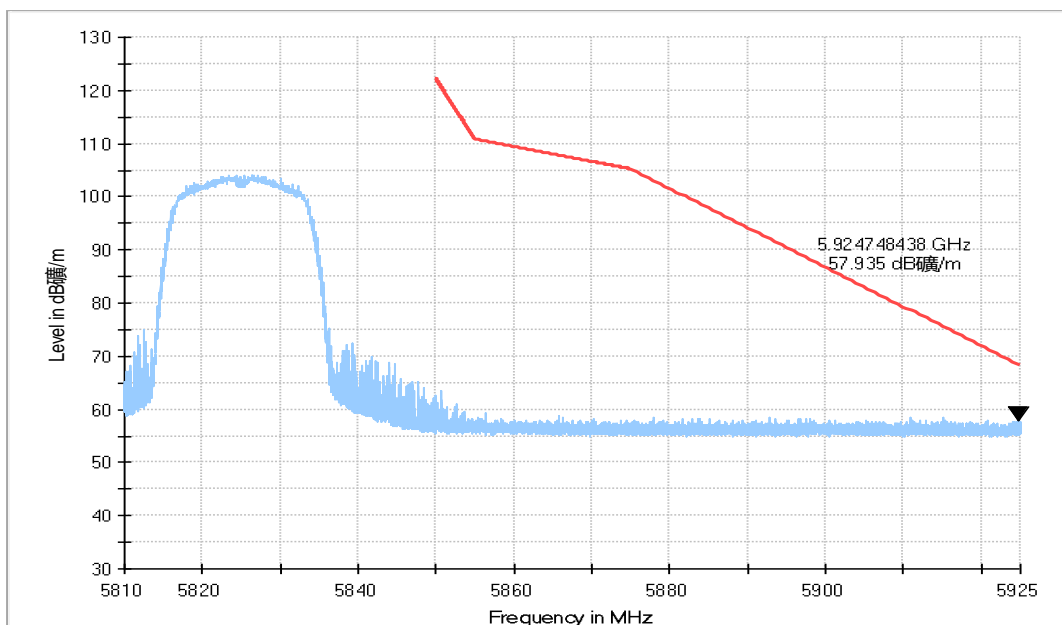
**Fig. 10 Band Edges (802.11a Ch149,5745MHz)**



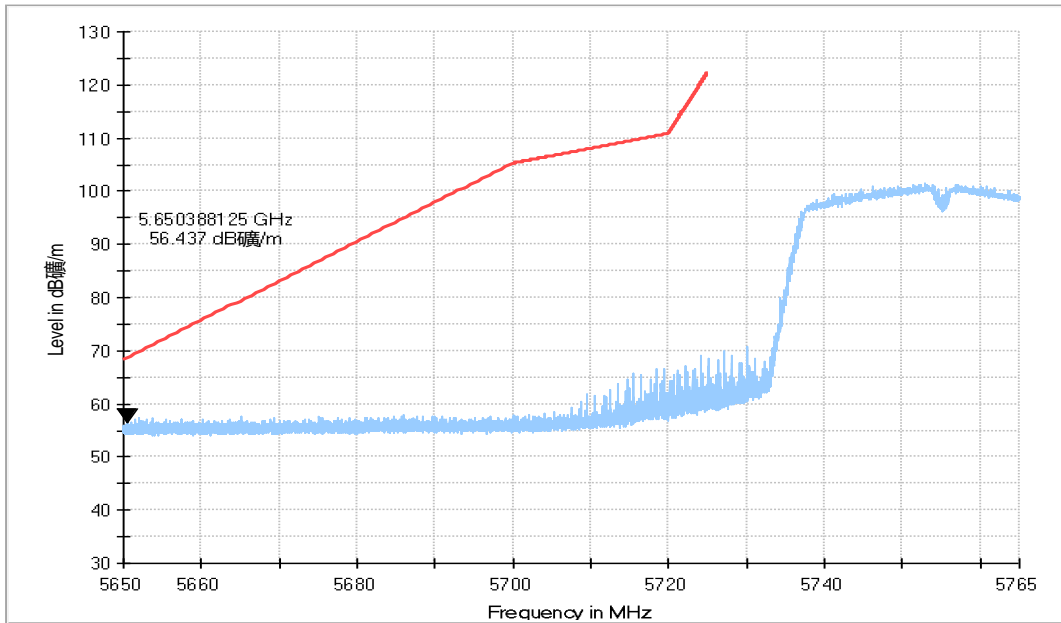
**Fig. 11 Band Edges (802.11a Ch165, 5825MHz)**



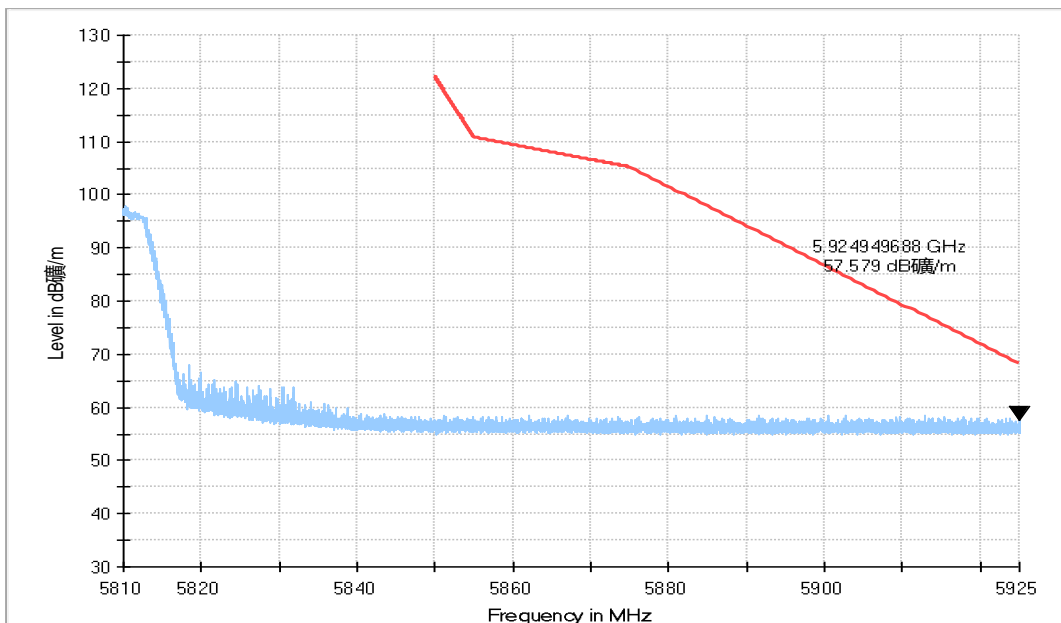
**Fig. 12 Band Edges (802.11n-HT20 Ch149, 5745MHz)**



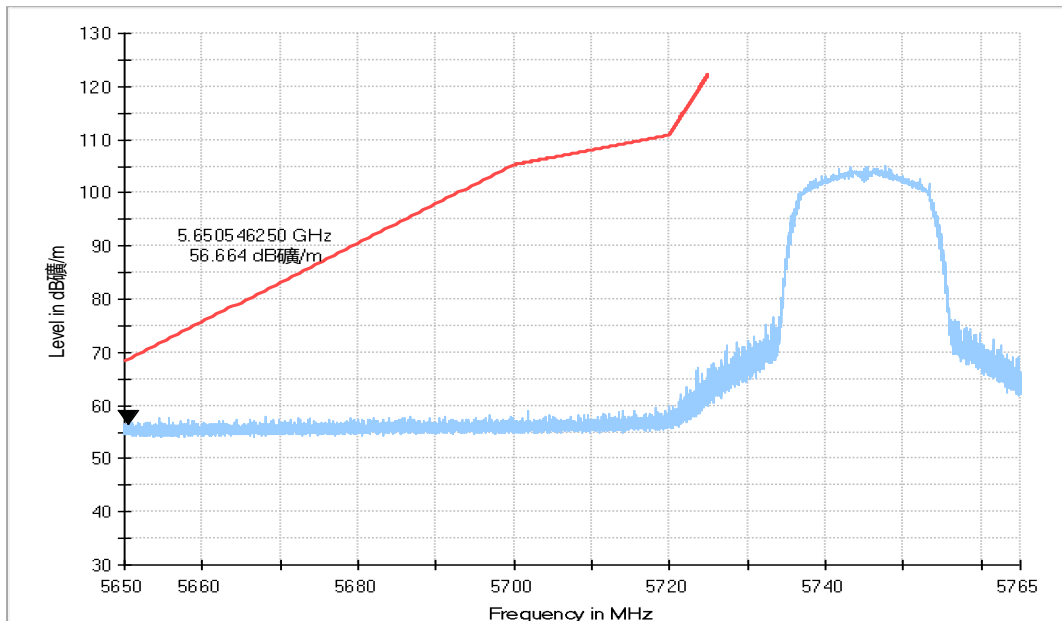
**Fig. 13 Band Edges (802.11n-HT20 Ch165, 5825MHz)**



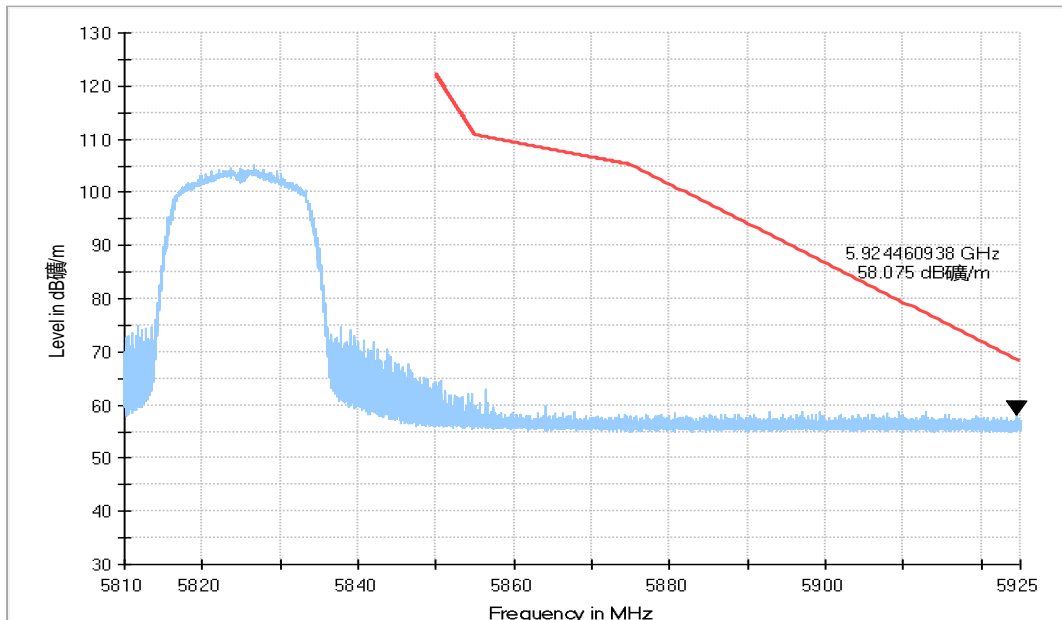
**Fig. 14 Band Edges (802.11n-HT40 Ch151, 5755MHz)**



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

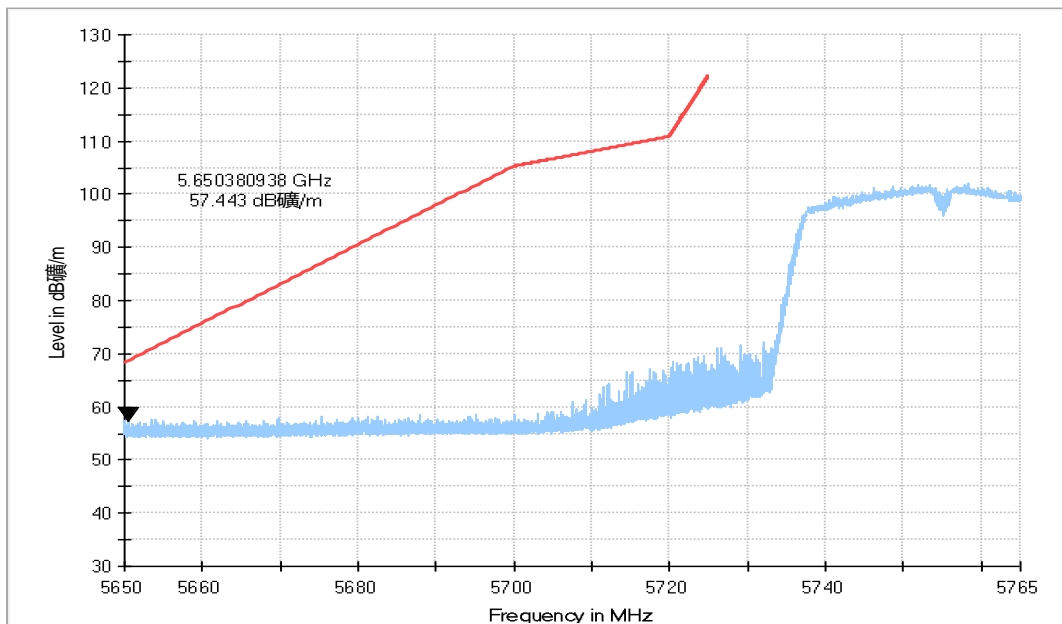


**Fig. 16 Band Edges (802.11ac-HT20 Ch149, 5745MHz)**

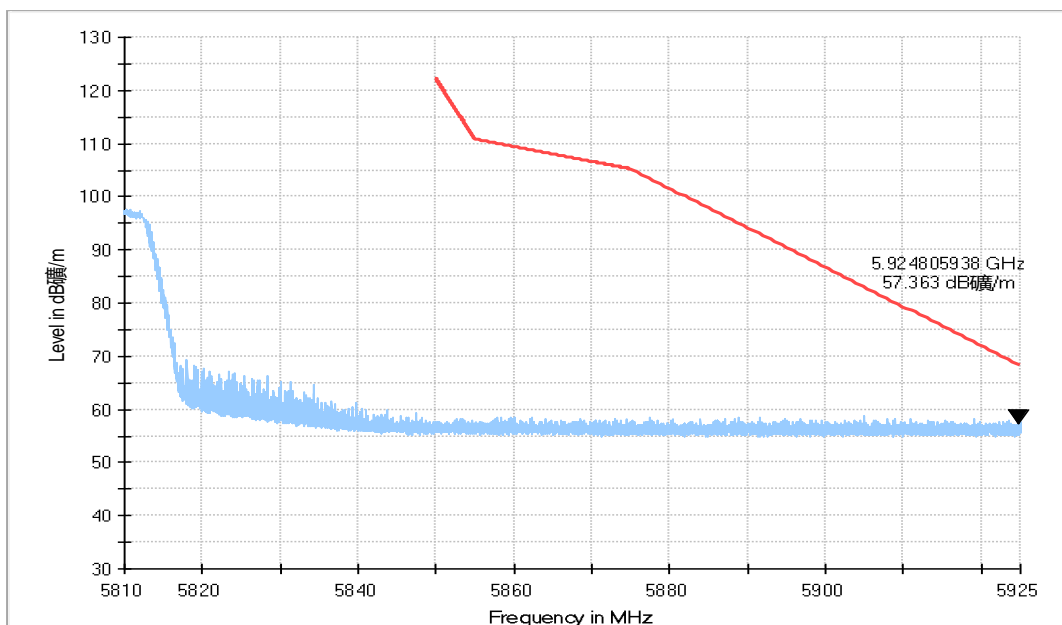


**Fig. 17 Band Edges (802.11ac-HT20 Ch165, 5825MHz)**

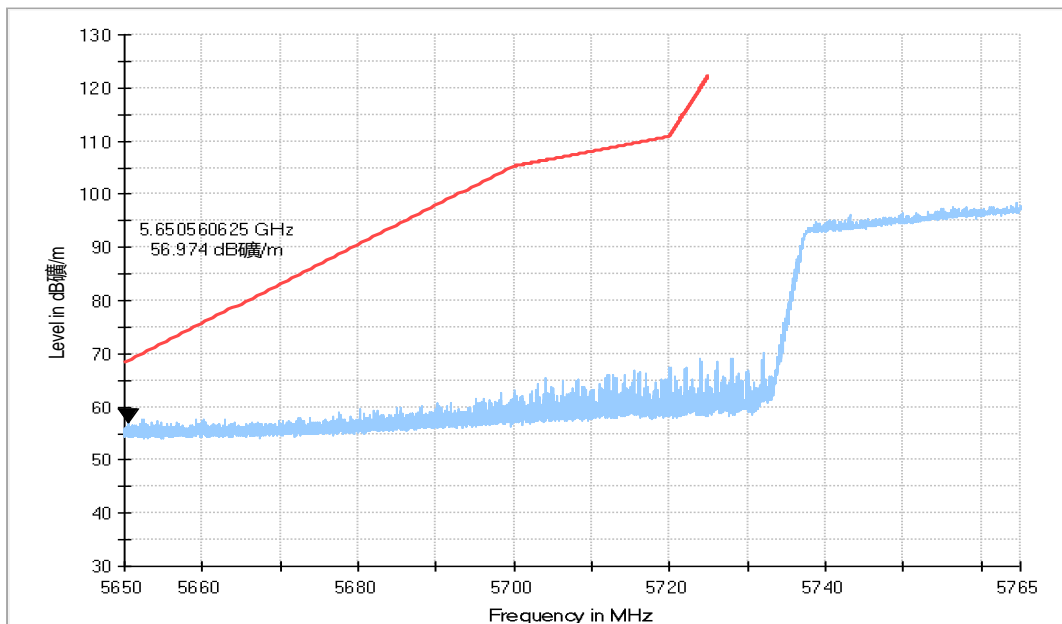




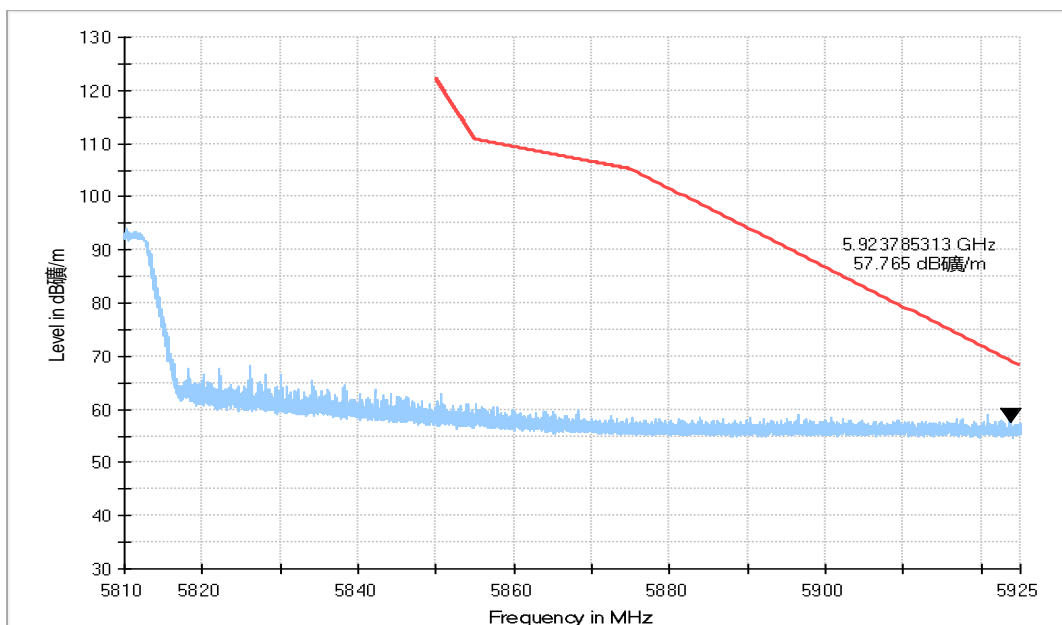
**Fig. 18 Band Edges (802.11ac-HT40 Ch151, 5755MHz)**



**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 Ch155, 5775MHz)**

## A.7. AC Powerline Conducted Emission

### Method of Measurement:

See Clause 6.2 of ANSI C63.10-2013 specifically.

See Clause 4 and Clause 5 of ANSI C63.10-2013 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.

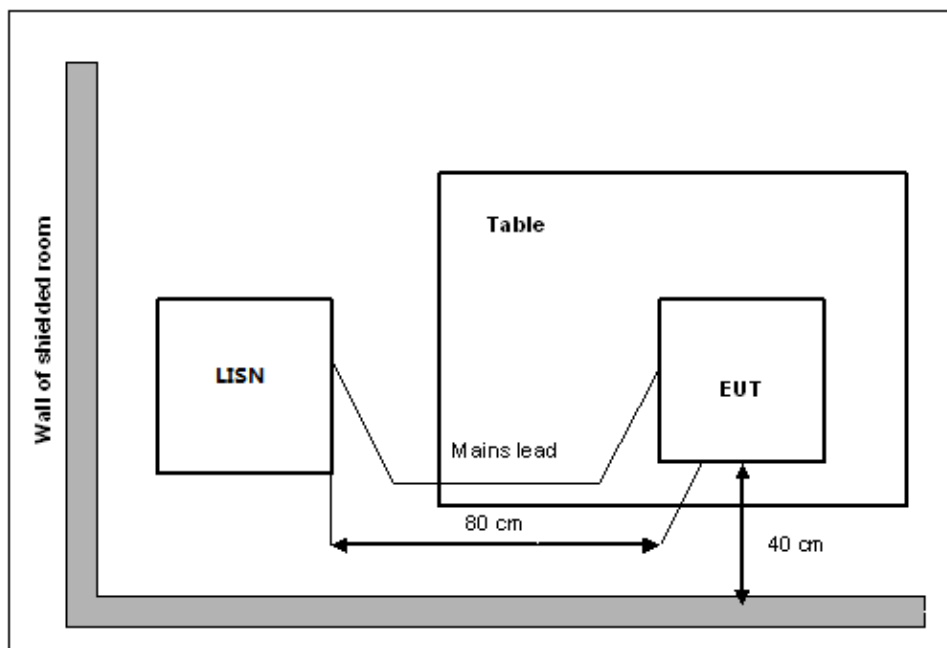
The measurement bandwidth is:

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

### Test Condition:

Voltage (V)	Frequency (Hz)
120	60

### Measurement Setup



### Measurement Result and limit:

## WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	66 to 56	Fig.A7.1	Fig.A7.2	<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.

## WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	56 to 46	Fig.A7.1	Fig.A7.2	<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.

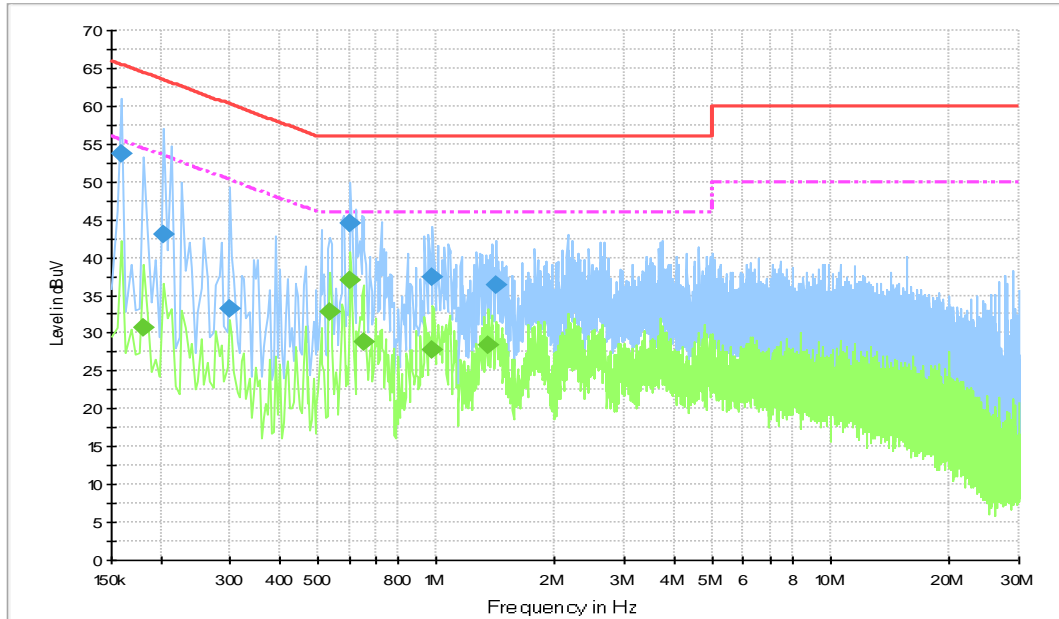
The measurement is made according to ANSI C63.10 .

**Conclusion: PASS**

**Test graphs as below:**

Note: The measurement results showed here are worst cases.

**Traffic:**



**Fig.A7.1 AC Power line Conducted Emission-802.11a**

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

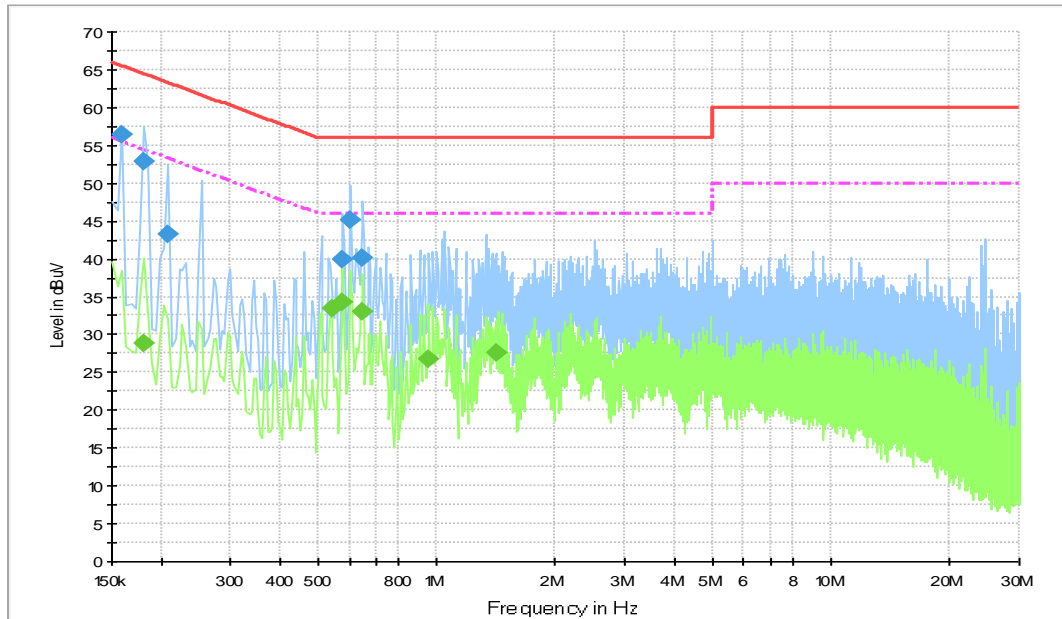
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.159000	53.8	1000	9.000	On	N	26.8	11.7	65.5
0.204000	43.0	1000	9.000	On	L1	19.7	20.5	63.4
0.298500	33.1	1000	9.000	On	L1	19.7	27.1	60.3
0.604500	44.5	1000	9.000	On	N	19.7	11.5	56.0
0.978000	37.5	1000	9.000	On	N	19.6	18.5	56.0
1.419000	36.4	1000	9.000	On	L1	19.6	19.6	56.0

**Final Result 2**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.181500	30.7	1000	9.000	On	N	22.7	23.8	54.4
0.537000	32.8	1000	9.000	On	L1	19.8	13.2	46.0
0.604500	36.9	1000	9.000	On	N	19.7	9.1	46.0
0.654000	28.8	1000	9.000	On	L1	19.7	17.2	46.0
0.978000	27.8	1000	9.000	On	L1	19.6	18.2	46.0
1.356000	28.4	1000	9.000	On	N	19.6	17.6	46.0

Idle:



**Fig.A7.2 AC Power line Conducted Emission-Idle**

Note1: The graphic result above is the maximum of the measurements for both phase line and neutral line.

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.159000	56.4	1000	9.000	On	L1	26.8	9.1	65.5
0.181500	53.0	1000	9.000	On	N	22.7	11.5	64.4
0.208500	43.2	1000	9.000	On	L1	19.7	20.1	63.3
0.577500	39.8	1000	9.000	On	L1	19.7	16.2	56.0
0.604500	45.1	1000	9.000	On	L1	19.7	10.9	56.0
0.649500	40.2	1000	9.000	On	L1	19.7	15.8	56.0

**Final Result 2**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.181500	28.9	1000.0	9.000	On	L1	22.7	25.5	54.4
0.541500	33.4	1000.0	9.000	On	L1	19.8	12.6	46.0
0.577500	34.4	1000.0	9.000	On	N	19.7	11.6	46.0
0.649500	33.0	1000.0	9.000	On	N	19.7	13.0	46.0
0.951000	26.7	1000.0	9.000	On	L1	19.7	19.3	46.0
1.410000	27.5	1000.0	9.000	On	L1	19.6	18.5	46.0

## 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

**United States Department of Commerce  
National Institute of Standards and Technology**



---

**Certificate of Accreditation to ISO/IEC 17025:2017**

---

NVLAP LAB CODE: 600118-0

**Telecommunication Technology Labs, CAICT**  
Beijing  
China

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

**Electromagnetic Compatibility & Telecommunications**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2022-10-01 through 2023-09-30  
*Effective Dates*



  
*For the National Voluntary Laboratory Accreditation Program*

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