



# FCC PART 15C TEST REPORT No.I20Z62335-IOT09

for

**TCL Communication Ltd.**

**5G NR/LTE/WCDMA/GSM mobile phone**

**T810S**

**With**

**FCC ID: 2ACCJN050**

**Hardware Version: 03**

**Software Version: v3.0.3CD0**

**Issued Date: 2021-01-29**

**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.

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I20Z62335-IOT09	Rev.0	1st edition	2021-01-29

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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 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

Location 1:CTTL(huayuan North Road)

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

Location 2: CTTL(huayuan North Road)

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

### 1.3. Testing Environment

Normal Temperature: 15-35°C

Relative Humidity: 20-75%

### 1.4. Project date

Testing Start Date: 2020-12-29

Testing End Date: 2021-01-29

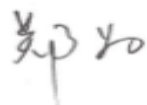
### 1.5. Signature



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Jiang Xue

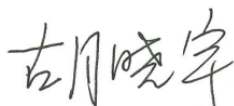
(Prepared this test report)



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Zheng Wei

(Reviewed this test report)



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Hu Xiaoyu  
(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: 0086-755-36611722  
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: 0086-755-36611722  
Fax: 0086-755-36612000-81722

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

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

Description	5G NR/LTE/WCDMA/GSM mobile phone
Model name	T810S
FCC ID	2ACCJN050
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>
UT48a	015820000201287	03	v3.0.3CD0
EUT2	015920000200818	03	v3.0.3CD0

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

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

<b>AE ID*</b>	<b>Description</b>	<b>Type</b>	<b>SN</b>
AE1	Battery	/	/
AE2	Charger	QC13US	P/N:CBA00648QTC1

AE1

Model	TLp043D7
Manufacturer	VEKEN
Capacitance	4360mAh

Nominal voltage	/
AE2	
Model	QC13US
Manufacturer	BYD
Length of cable	1 meter

\*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 5G NR/LTE/WCDMA/GSM 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 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	2018
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	2021-05-06
2	LISN	ENV216	101200	R&S	1 year	2021-05-19
3	Test Receiver	ESCI3	100344	R&S	1 year	2021-02-26
4	Shielding Room	S81	WL-SB-1005054	Beijing Lingkun Electromagnetic Technology Co. LTD	/	/
5	Attenuator	10dB/2W	/	Rosenberger	/	/

### Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Period	Calibration Due date
1	Test Receiver	ESU26	100376	Rohde & Schwarz	1 year	2021-03-03
2	BiLog Antenna	VULB9163	9163-514	Schwarzbeck	1 year	2021-02-24
3	Antenna	3115	00167250	ETS-Lindgren	1 year	2021-05-14

## 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	/
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.40

$1\text{GHz} \leq f \leq 18\text{GHz}$	4.32
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.26

## 8.6. AC Power-line Conducted Emission

Measurement Uncertainty : 3.10dB,k=2

### ANNEX A: EUT parameters

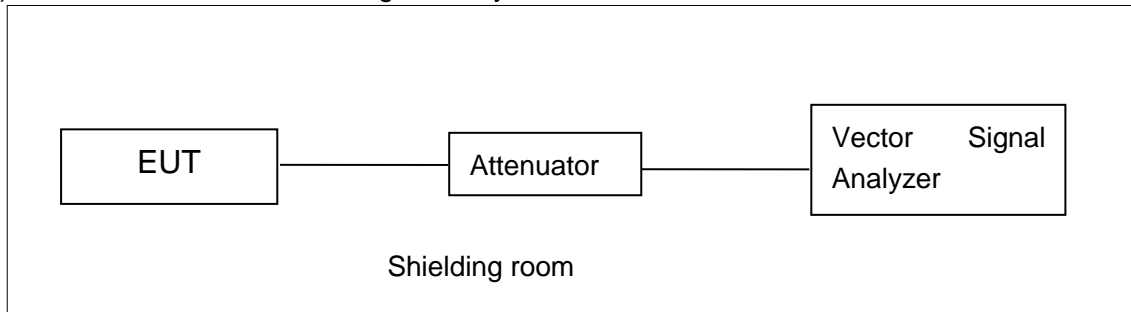
Disclaimer: the Antenna gain and power worse case provided by the client may affect the validity of the measurement results in this report, and the client shall bear the impact and consequences arising therefrom.

## ANNEX B: MEASUREMENT RESULTS

### B.1. Measurement Method

#### B.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

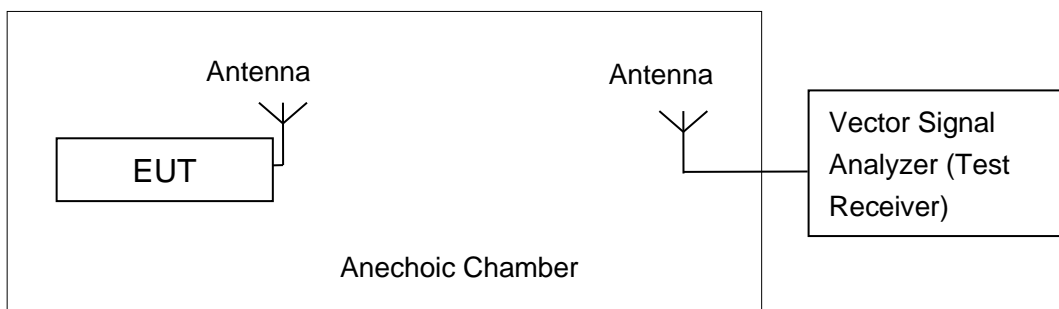


#### B.1.2. Radiated Emission Measurements

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.

## B.2. Maximum Peak Output Power

### Measurement Limit and Method:

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

### B.2.1 Antenna Gain

Antenna gain is -4.5dBi and the value is supplied by the applicant or manufacturer.

he following data rates are selected as the worst condition; as the maximum power is got with these data rate. The following cases are performed with this condition.

802.11a mode	802.11n-HT20 mode	802.11n-HT40 mode	802.11ac-HT20 mode	802.11ac-HT40 mode	802.11ac-HT80 mode
6Mbps	MCS0	MCS0	MCS0	MCS0	MCS0

### Duty Cycle

Mode	802.11a	802.11n-HT20	802.11ac-HT20	802.11n-HT40	802.11ac-HT40	802.11ac-HT80
Duty Cycle	99%	99%	99%	99%	99%	99%

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

Method of Measurement: See ANSI C63.10-clause 12.3.2.2 Method SA-1

### 802.11a mode

Mode	Test Result (dBm)		
	5745MHz (Ch149)	5785MHz (Ch157)	5825MHz (Ch165)
802.11a	16.71	17.26	17.16

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

### 802.11n-HT20 mode

Mode	Test Result (dBm)		
	5745MHz (Ch149)	5785MHz (Ch157)	5825MHz(Ch165)
802.11n(20MHz)	15.50	15.72	15.24

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

**802.11ac-HT20 mode**

Mode	Test Result (dBm)		
	5745MHz (Ch149)	5785MHz (Ch157)	5825MHz(Ch165)
802.11ac(20MHz)	15.47	15.71	15.24

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

**802.11n-HT40 mode**

Mode	Test Result (dBm)	
	5755MHz (Ch151)	5795MHz(Ch159)
802.11n(40MHz)	15.77	15.31

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

**802.11ac-HT40 mode**

Mode	Test Result (dBm)	
	5755MHz (Ch151)	5795MHz(Ch159)
802.11ac(40MHz)	15.37	15.29

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

**802.11ac-HT80 mode**

Mode	Test Result (dBm)
	5775MHz (Ch155)
802.11ac(80MHz)	15.41

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

**Conclusion: PASS**

### B.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
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#### Measurement Results:

Mode	Channel	Power Spectral Density ( dBm/500kHz )	Conclusion
802.11a	149	2.22	P
	157	2.53	P
	165	2.68	P
802.11n HT20	149	0.62	P
	157	1.07	P
	165	0.45	P
802.11n HT40	151	-2.57	P
	159	-2.19	P
802.11ac HT80	155	-6.04	P

**Conclusion: PASS**

#### B.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
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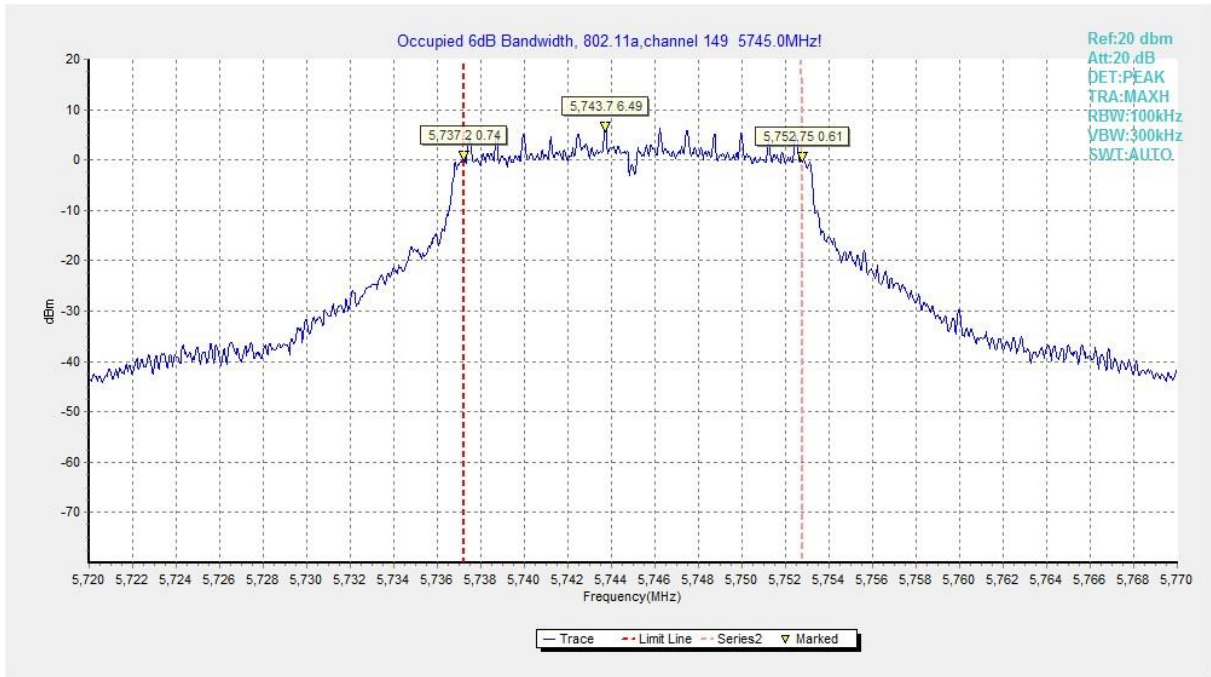
##### Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth ( MHz)		conclusion
		Fig.	Value	
802.11a	149	Fig.1	15.55	P
	157	Fig.2	15.55	P
	165	Fig.3	15.35	P
802.11n HT20	149	Fig.4	16.00	P
	157	Fig.5	16.00	P
	165	Fig.6	16.00	P
802.11n HT40	151	Fig.7	35.36	P
	159	Fig.8	35.36	P
802.11ac HT80	155	Fig.9	75.20	P

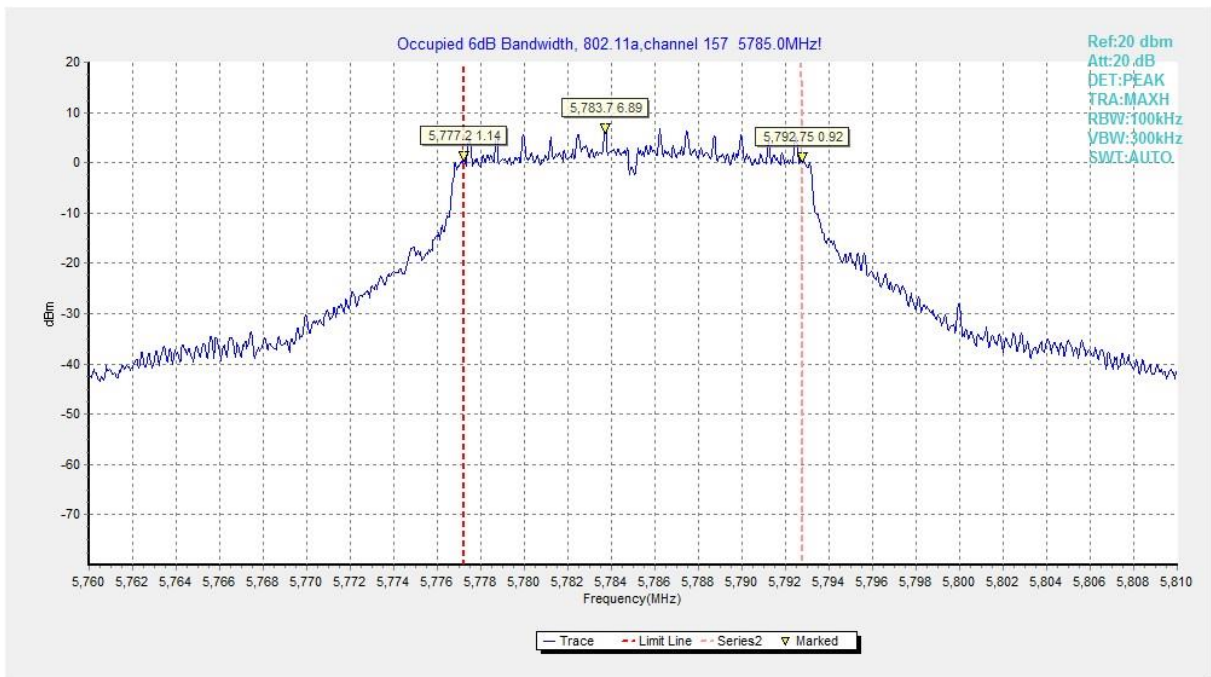
**Conclusion: PASS**

**Test graphs as below:**

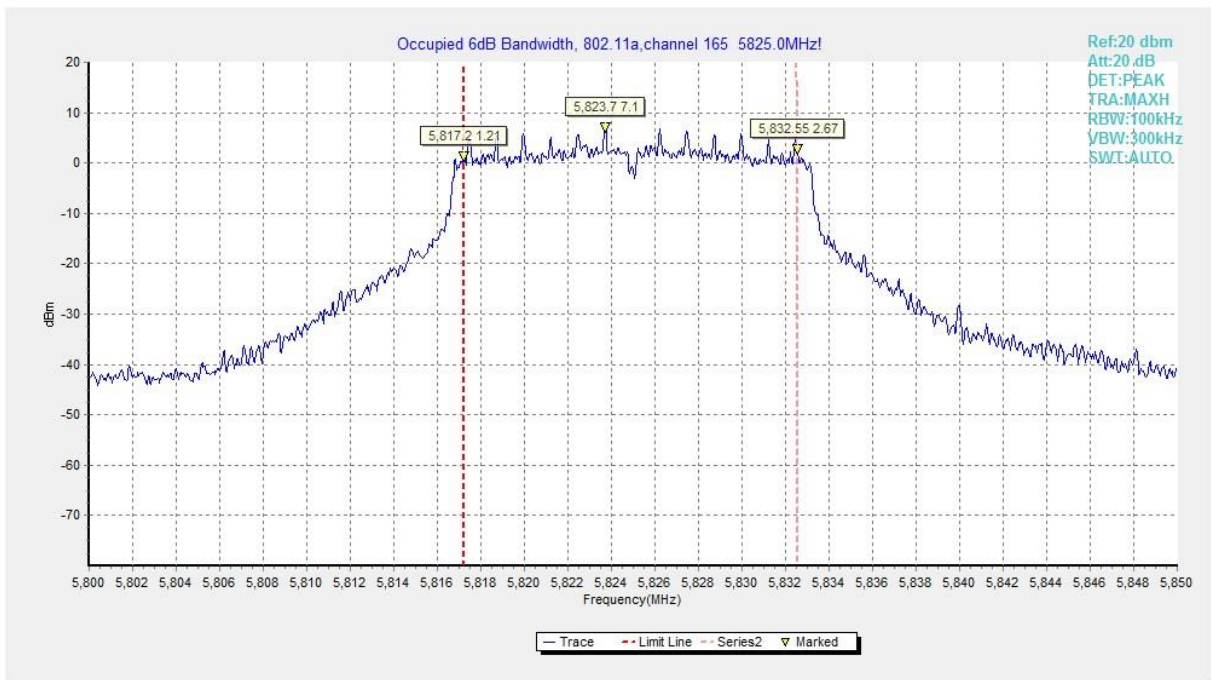




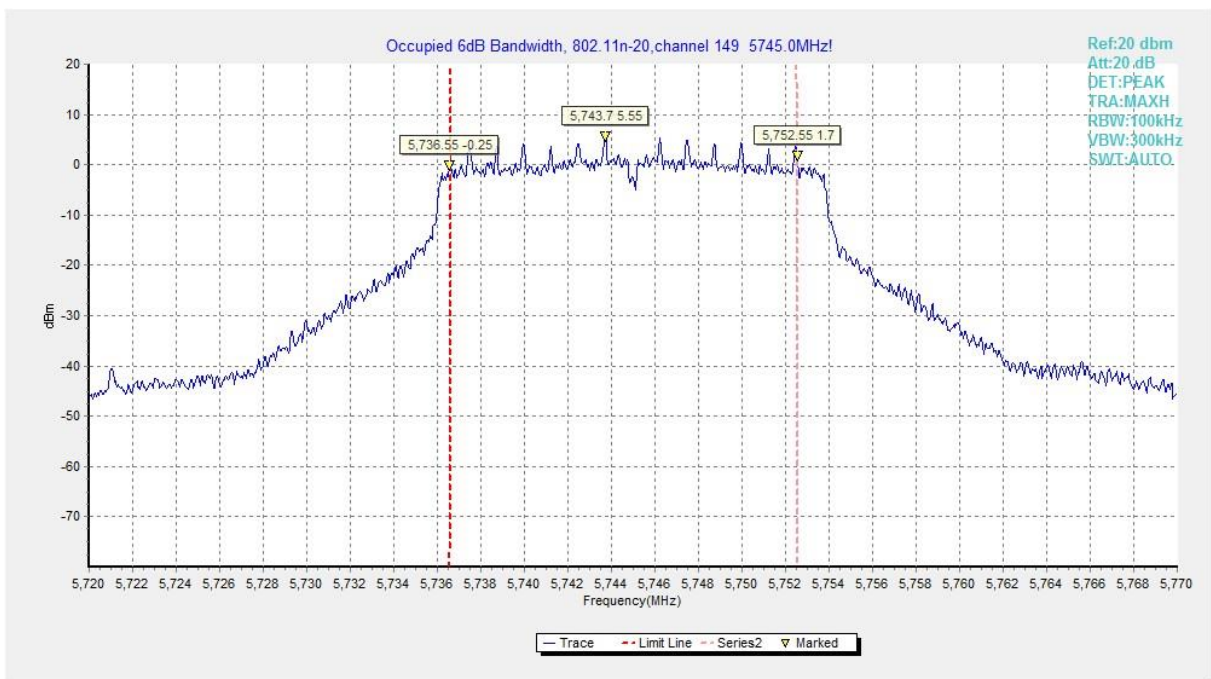
**Fig. 1 Occupied 6dB Bandwidth (802.11a, Ch 149)**



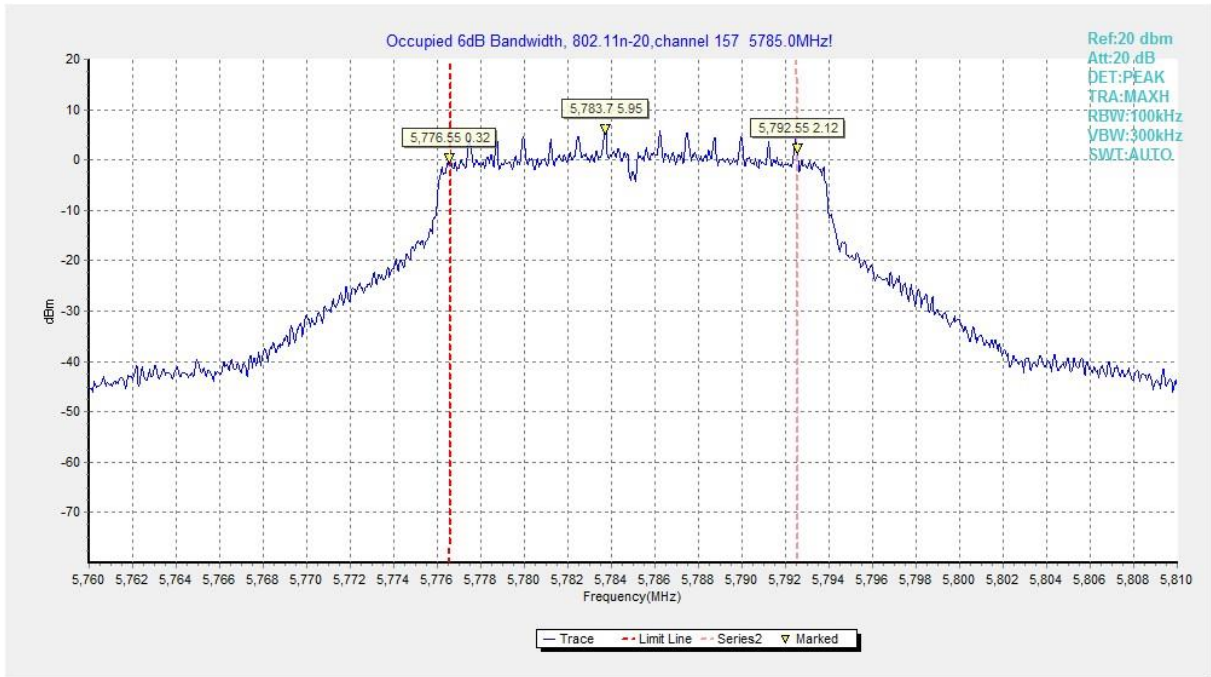
**Fig. 2 Occupied 6dB Bandwidth (802.11a, Ch 157)**



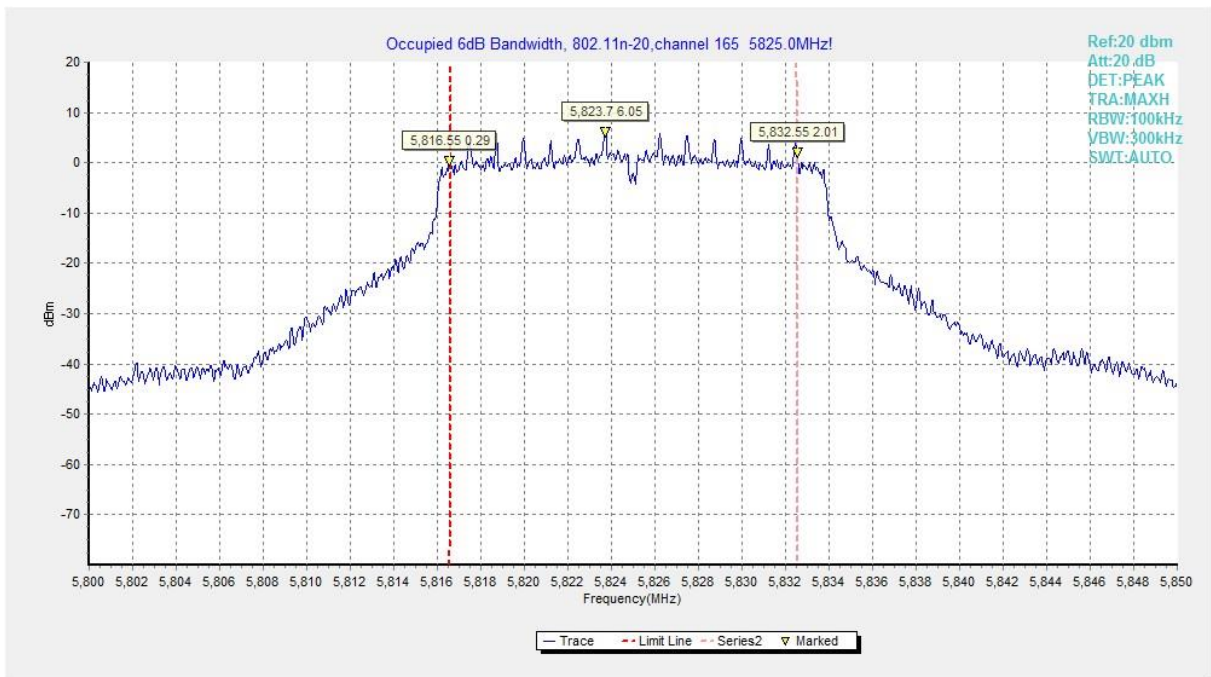
**Fig. 3 Occupied 6dB Bandwidth (802.11a, Ch 165)**



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



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



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



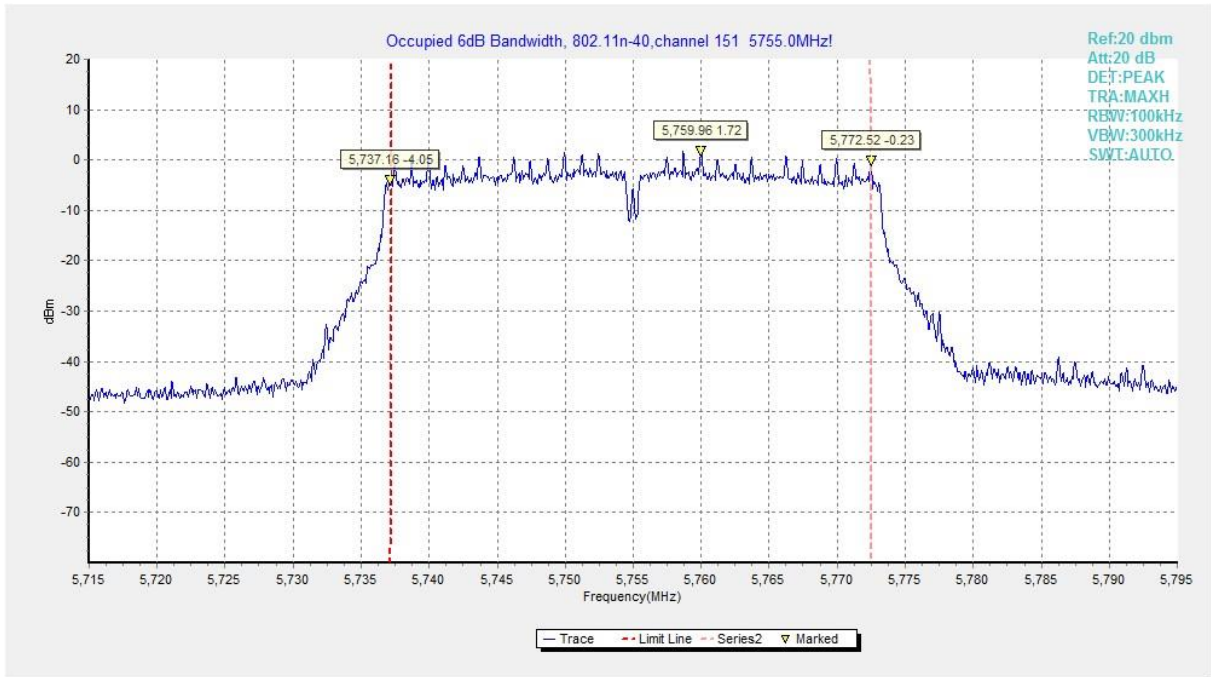
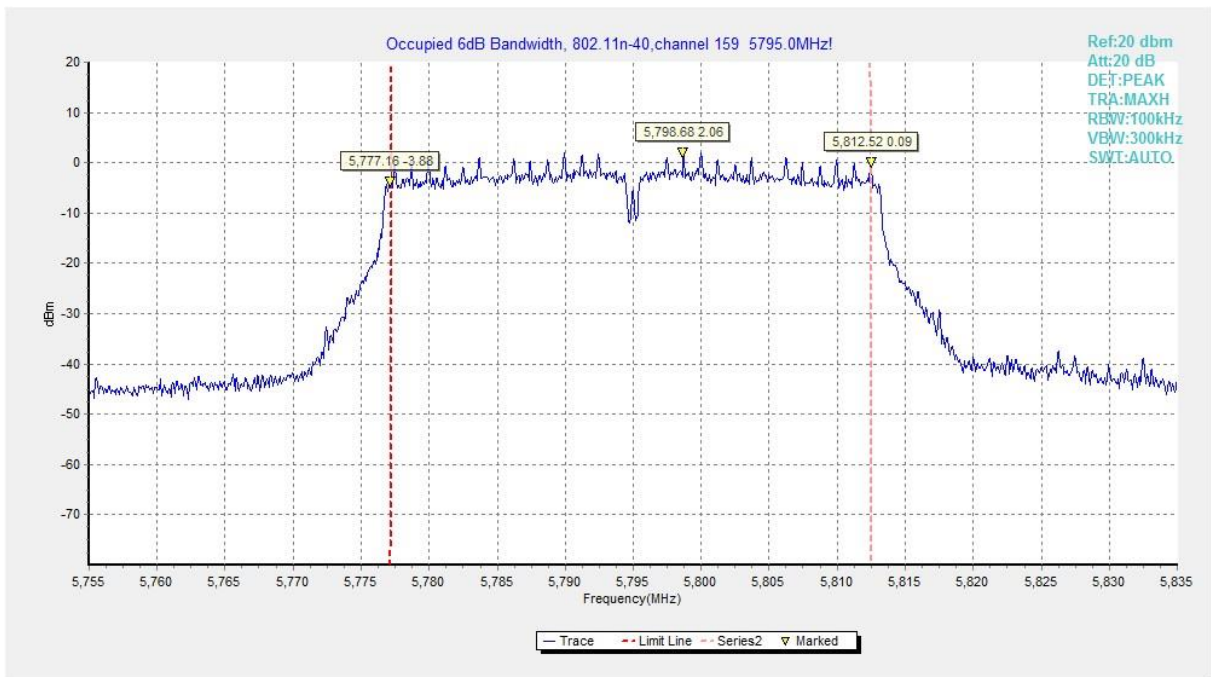
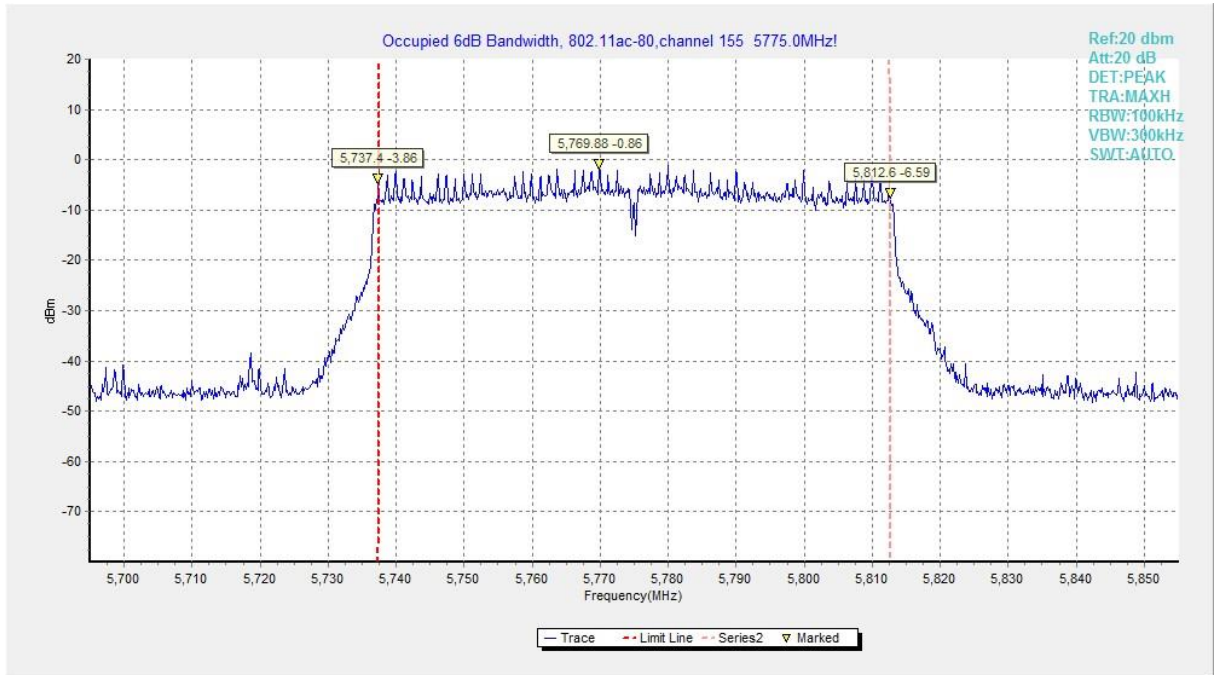


Fig. 7 Occupied 6dB Bandwidth (802.11n-HT40, Ch 151)



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



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

### B.5. Transmitter Spurious Emission

#### Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC 47 CFR Part 15.407	5725MHz~5850MHz	< -27

The measurement is made according to ANSI C63.10 .

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 of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

#### Measurement Uncertainty:

Frequency Range	Uncertainty(dB)
-----------------	-----------------

30MHz ≤ f ≤ 2GHz	0.63
2GHz ≤ f ≤ 3.6GHz	0.82
3.6GHz ≤ f ≤ 8GHz	1.55
8GHz ≤ f ≤ 20GHz	1.86
20GHz ≤ f ≤ 22GHz	1.90
22GHz ≤ f ≤ 26GHz	2.20

### B.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

Frequency Range	Uncertainty(dB)
30MHz ≤ f ≤ 1GHz	5.40
1GHz ≤ f ≤ 18GHz	4.32
18GHz ≤ f ≤ 40GHz	5.26

#### Measurement Results:

##### 802.11a mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	149	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	157	30 MHz ~ 1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
	165	26.5 GHz ~ 40 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

##### 802.11n-HT20 mode

Mode	Channel	Frequency Range	Test Results	Conclusion
------	---------	-----------------	--------------	------------

802.11n (HT20)	149	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	157	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P
	165	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

**802.11n-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (HT40)	151	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P
	159	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

**802.11ac-HT20 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac (HT20)	149	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	157	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P
		165	1 GHz ~ 3 GHz	---
	3 GHz ~ 7 GHz		---	P
	7 GHz ~ 18 GHz		---	P

**802.11ac-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac (HT40)	151	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P
	159	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

**802.11ac-HT80 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac (HT80)	155	30 MHz ~1 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
		18 GHz ~ 26.5 GHz	---	P
		26.5 GHz~ 40 GHz	---	P

**Conclusion: PASS**

**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.

**Average Results:**
**802.11a**

Ch149

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17986.8	46.8	-25.5	46.7	25.6	54	7.2	V
17990.1	46.8	-25.5	46.7	25.6	54	7.2	V
17998.3	46.8	-25.5	46.7	25.6	54	7.2	V
17989	46.7	-25.5	46.7	25.5	54	7.3	V
17973.6	46.6	-25.5	46.7	25.4	54	7.4	V
5724.9	49.1	-27.1	34.3	41.9	101	51.9	V

Ch157



Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17995.6	46.7	-25.5	46.7	25.5	54	7.3	V
17988.5	46.6	-25.5	46.7	25.4	54	7.4	V
17997.8	46.6	-25.5	46.7	25.4	54	7.4	V
17959.8	46.5	-25.5	46.7	25.3	54	7.5	V
17979.7	46.5	-25.5	46.7	25.3	54	7.5	V
17981.8	46.5	-25.5	46.7	25.3	54	7.5	V

**Ch165**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17987.9	47	-25.5	46.7	25.8	54	7.0	V
17994	47	-25.5	46.7	25.8	54	7.0	V
17997.2	46.9	-25.5	46.7	25.7	54	7.1	V
17985.2	46.8	-25.5	46.7	25.6	54	7.2	V
17989	46.8	-25.5	46.7	25.6	54	7.2	V
5850.4	42.7	-27.1	34.4	35.4	90	47.3	V

**802.11n-HT20**
**Ch149**

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5724.4	48.2	-27.1	34.3	41	100	51.8	V
17998.9	47	-25.5	46.7	25.8	54	7.0	V
17995.6	46.8	-25.5	46.7	25.6	54	7.2	V
17980.8	46.6	-25.5	46.7	25.4	54	7.4	V
17989.5	46.6	-25.5	46.7	25.4	54	7.4	V
17990.7	46.6	-25.5	46.7	25.4	54	7.4	V

## Ch157

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17997.2	46.9	-25.5	46.7	25.7	54	7.1	V
17995.6	46.7	-25.5	46.7	25.5	54	7.3	V
17997.8	46.7	-25.5	46.7	25.5	54	7.3	V
17975.2	46.6	-25.5	46.7	25.4	54	7.4	V
17983	46.6	-25.5	46.7	25.4	54	7.4	V
17984	46.6	-25.5	46.7	25.4	54	7.4	V

## Ch165

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.2	42.6	-27.1	34.4	35.3	90	47.4	V
17950	46.6	-25.5	46.7	25.4	54	7.4	V
17987.9	46.5	-25.5	46.7	25.3	54	7.5	V
17995.6	46.5	-25.5	46.7	25.3	54	7.5	V
17954.3	46.3	-25.5	46.7	25.1	54	7.7	V
17964.2	46.3	-25.5	46.7	25.1	54	7.7	V

**802.11n-HT40**

## Ch151

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5724.6	55.5	-27.1	34.3	48.3	101	45.5	V
17992.8	46.9	-25.5	46.7	25.7	54	7.1	V
17985.7	46.7	-25.5	46.7	25.5	54	7.3	V
17984	46.6	-25.5	46.7	25.4	54	7.4	V
17985.2	46.6	-25.5	46.7	25.4	54	7.4	V
17989	46.6	-25.5	46.7	25.4	54	7.4	V

## Ch159

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.3	44.5	-27.1	34.4	37.2	87	42.5	V
17990.7	46.3	-25.5	46.7	25.1	54	7.7	V
17994	46.3	-25.5	46.7	25.1	54	7.7	V
17963.2	46.2	-25.5	46.7	25	54	7.8	V
17958.2	46.1	-25.5	46.7	24.9	54	7.9	V
17971.4	46.1	-25.5	46.7	24.9	54	7.9	V

## 802.11ac-HT20

## Ch149

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5725	48.1	-27.1	34.3	40.9	101	52.9	V
17984.6	46.9	-25.5	46.7	25.7	54	7.1	V
17979.1	46.7	-25.5	46.7	25.5	54	7.3	V
17998.9	46.7	-25.5	46.7	25.5	54	7.3	V
17963.7	46.6	-25.5	46.7	25.4	54	7.4	V
17994	46.6	-25.5	46.7	25.4	54	7.4	V

## Ch157

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17993.4	47.1	-25.5	46.7	25.9	54	6.9	V
17997.2	46.9	-25.5	46.7	25.7	54	7.1	V
17979.1	46.8	-25.5	46.7	25.6	54	7.2	V
17994	46.8	-25.5	46.7	25.6	54	7.2	V
17981.8	46.6	-25.5	46.7	25.4	54	7.4	V
17996.2	46.6	-25.5	46.7	25.4	54	7.4	V

## Ch165

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.1	42.8	-27.1	34.4	35.5	90	47.2	V
17993.4	46.9	-25.5	46.7	25.7	54	7.1	V
17989	46.8	-25.5	46.7	25.6	54	7.2	V
17968.7	46.7	-25.5	46.7	25.5	54	7.3	V
17988.5	46.7	-25.5	46.7	25.5	54	7.3	V
17966.5	46.6	-25.5	46.7	25.4	54	7.4	V

**802.11ac-HT40**

## Ch151

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5725	52.9	-27.1	34.3	45.7	101	48.1	V
17973.6	46.2	-25.5	46.7	25	54	7.8	V
17981.8	46.2	-25.5	46.7	25	54	7.8	V
17983.5	46.2	-25.5	46.7	25	54	7.8	V
17978	46.1	-25.5	46.7	24.9	54	7.9	V
17967	46	-25.5	46.7	24.8	54	8.0	V

## Ch159

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.2	44.5	-27.1	34.4	37.2	101	56.5	V
17978.5	46.3	-25.5	46.7	25.1	54	7.7	V
17980.8	46.2	-25.5	46.7	25	54	7.8	V
17986.2	46.2	-25.5	46.7	25	54	7.8	V
17954.3	46.1	-25.5	46.7	24.9	54	7.9	V
17960.4	46.1	-25.5	46.7	24.9	54	7.9	V

**802.11ac-HT80**

Ch155

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17969.2	46.5	-25.5	46.7	25.3	54	7.5	V
17981.8	46.4	-25.5	46.7	25.2	54	7.6	V
17998.9	46.4	-25.5	46.7	25.2	54	7.6	V
17970.8	46.3	-25.5	46.7	25.1	54	7.7	V
17971.4	46.3	-25.5	46.7	25.1	54	7.7	V
17973.6	46.3	-25.5	46.7	25.1	54	7.7	V

**Peak Results:**
**802.11a**

Ch149

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5724.2	60.7	-27.1	34.3	53.5	118	57.3	V
17888.9	58.3	-25.5	46.7	37.1	74	15.7	V
17997.8	57.9	-25.5	46.7	36.7	74	16.1	V
17992.8	57.5	-25.5	46.7	36.3	74	16.5	V
17969.2	57.2	-25.5	46.7	36	74	16.8	V
17989.5	57	-25.5	46.7	35.8	74	17.0	V

## Ch157

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17997.8	57.7	-25.5	46.7	36.5	74	16.3	V
17985.2	57.6	-25.5	46.7	36.4	74	16.4	V
17881.8	57.5	-25.5	46.7	36.3	74	16.5	V
17896.6	57.4	-25.5	46.7	36.2	74	16.6	V
17939	56.9	-25.5	46.7	35.7	74	17.1	V
17984	56.9	-25.5	46.7	35.7	74	17.1	V

## Ch165

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.1	54.5	-27.1	34.4	47.2	121	65.5	V
17994	57.6	-25.5	46.7	36.4	74	16.4	V
17670.5	57.3	-25.7	46	37.1	74	16.7	V
17968.7	57.3	-25.5	46.7	36.1	74	16.7	V
17983.5	57.3	-25.5	46.7	36.1	74	16.7	V
17589.2	57.2	-25.7	46	37	74	16.8	V

**802.11n-HT20**
**Ch149**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5723	60.7	-27.1	34.3	53.5	116	55.3	V
17958.2	57.3	-25.5	46.7	36.1	74	16.7	V
17998.9	57.3	-25.5	46.7	36.1	74	16.7	V
17921.3	57.2	-25.5	46.7	36	74	16.8	V
17947.8	57.2	-25.5	46.7	36	74	16.8	V
17982.4	57.2	-25.5	46.7	36	74	16.8	V

**Ch157**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
17950.5	57.9	-25.5	46.7	36.7	74	16.1	V
17995.6	57.7	-25.5	46.7	36.5	74	16.3	V
17849.3	57.2	-25.5	46.7	36	74	16.8	V
17906	56.9	-25.5	46.7	35.7	74	17.1	V
17955.5	56.9	-25.5	46.7	35.7	74	17.1	V
17997.2	56.9	-25.5	46.7	35.7	74	17.1	V

**Ch165**

Frequency (MHz)	Measurement Result (dBμV/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBμV)	Limit (dBμV/m)	Margin (dB)	Antenna Pol. (H/V)
5850.1	55.6	-27.1	34.4	48.3	120	64.4	V
17952.7	57.9	-25.5	46.7	36.7	74	16.1	V
17979.1	57.9	-25.5	46.7	36.7	74	16.1	V
17958.8	57.5	-25.5	46.7	36.3	74	16.5	V
17990.1	57.3	-25.5	46.7	36.1	74	16.7	V
17907	56.9	-25.5	46.7	35.7	74	17.1	V

**802.11n-HT40**

## Ch151

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5723.2	66.3	-27.1	34.3	59.1	118	51.7	V
17980.8	57.6	-25.5	46.7	36.4	74	16.4	V
17871.3	57.5	-25.5	46.7	36.3	74	16.5	V
17935.1	57.2	-25.5	46.7	36	74	16.8	V
17976.9	57.2	-25.5	46.7	36	74	16.8	V
17995.6	57.2	-25.5	46.7	36	74	16.8	V

## Ch159

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.7	57.5	-27.1	34.4	50.2	120	62.5	V
17978	57.3	-25.5	46.7	36.1	74	16.7	V
17932.3	56.8	-25.5	46.7	35.6	74	17.2	V
17754.7	56.6	-25.5	46.7	35.4	74	17.4	V
17872.4	56.4	-25.5	46.7	35.2	74	17.6	V
17765.7	56.2	-25.5	46.7	35	74	17.8	V

**802.11ac-HT20**

## Ch149

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5722.9	60	-27.1	34.3	52.8	115	55	V
17990.1	57.7	-25.5	46.7	36.5	74	16.3	V
17910.3	57.6	-25.5	46.7	36.4	74	16.4	V
17910.9	57.5	-25.5	46.7	36.3	74	16.5	V
17973	57.3	-25.5	46.7	36.1	74	16.7	V
17987.3	57.1	-25.5	46.7	35.9	74	16.9	V



## Ch157

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17954.3	58.3	-25.5	46.7	37.1	74	15.7	V
17988.5	57.8	-25.5	46.7	36.6	74	16.2	V
17980.2	57.6	-25.5	46.7	36.4	74	16.4	V
17942.2	57.2	-25.5	46.7	36	74	16.8	V
17973	57.2	-25.5	46.7	36	74	16.8	V
17959.3	57.1	-25.5	46.7	35.9	74	16.9	V

## Ch165

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.3	54.7	-27.1	34.4	47.4	121	66.3	V
17987.9	57.6	-25.5	46.7	36.4	74	16.4	V
17907.6	57.1	-25.5	46.7	35.9	74	16.9	V
17932.3	57.1	-25.5	46.7	35.9	74	16.9	V
17997.8	56.8	-25.5	46.7	35.6	74	17.2	V
17892.8	56.6	-25.5	46.7	35.4	74	17.4	V

**802.11ac-HT40**

## Ch151

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17977.5	58.3	-25.5	46.7	37.1	74	15.7	V
17942.8	57.6	-25.5	46.7	36.4	74	16.4	V
17965.3	57.5	-25.5	46.7	36.3	74	16.5	V
17983.5	57.3	-25.5	46.7	36.1	74	16.7	V
17990.7	57.1	-25.5	46.7	35.9	74	16.9	V
5724.9	64.7	-27.1	34.3	57.5	120	55.3	V

## Ch159

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
5850.4	57.5	-27.1	34.4	50.2	122	64.5	V
17880.7	57.9	-25.5	46.7	36.7	74	16.1	V
17956	57.6	-25.5	46.7	36.4	74	16.4	V
17944.5	57.2	-25.5	46.7	36	74	16.8	V
17974.2	57	-25.5	46.7	35.8	74	17.0	V
17892.2	56.9	-25.5	46.7	35.7	74	17.1	V

**802.11ac-HT80**

## Ch155

Frequency (MHz)	Measurement Result (dB $\mu$ V/m)	Cable loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dB $\mu$ V)	Limit (dB $\mu$ V/m)	Margin (dB)	Antenna Pol. (H/V)
17973	57.8	-25.5	46.7	36.6	74	16.2	V
17858.7	57.4	-25.5	46.7	36.2	74	16.6	V
17998.3	57.4	-25.5	46.7	36.2	74	16.6	V
17896	57.3	-25.5	46.7	36.1	74	16.7	V
17957.7	57.1	-25.5	46.7	35.9	74	16.9	V
17977.5	57.1	-25.5	46.7	35.9	74	16.9	V

## B.6. Band Edges Compliance

### B.6.1 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.	

#### Measurement Uncertainty:

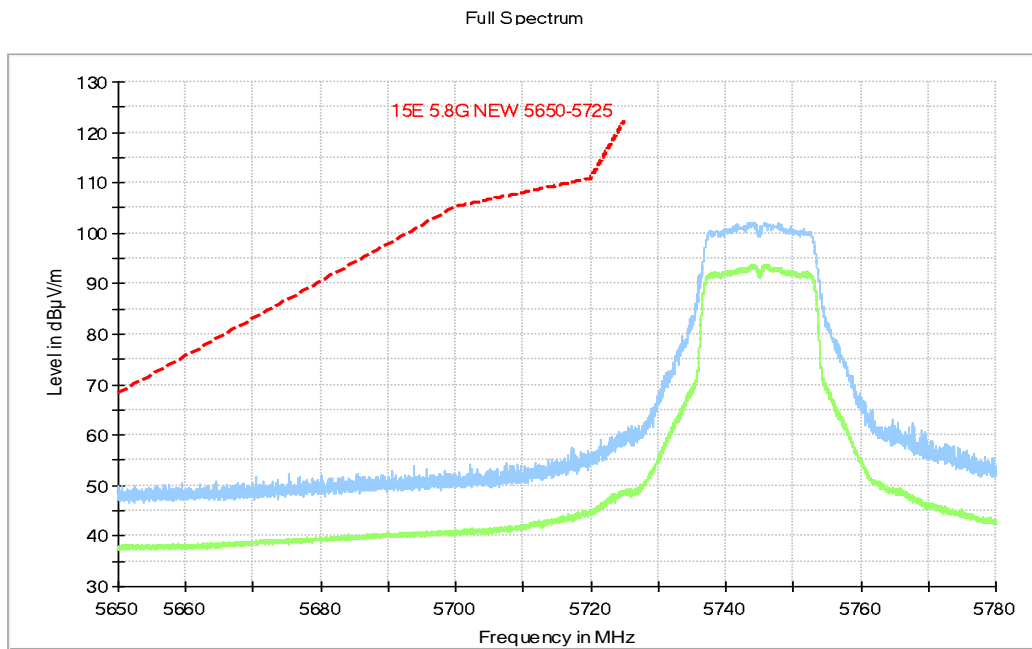
Measurement Uncertainty	0.75dB
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#### Measurement Result:

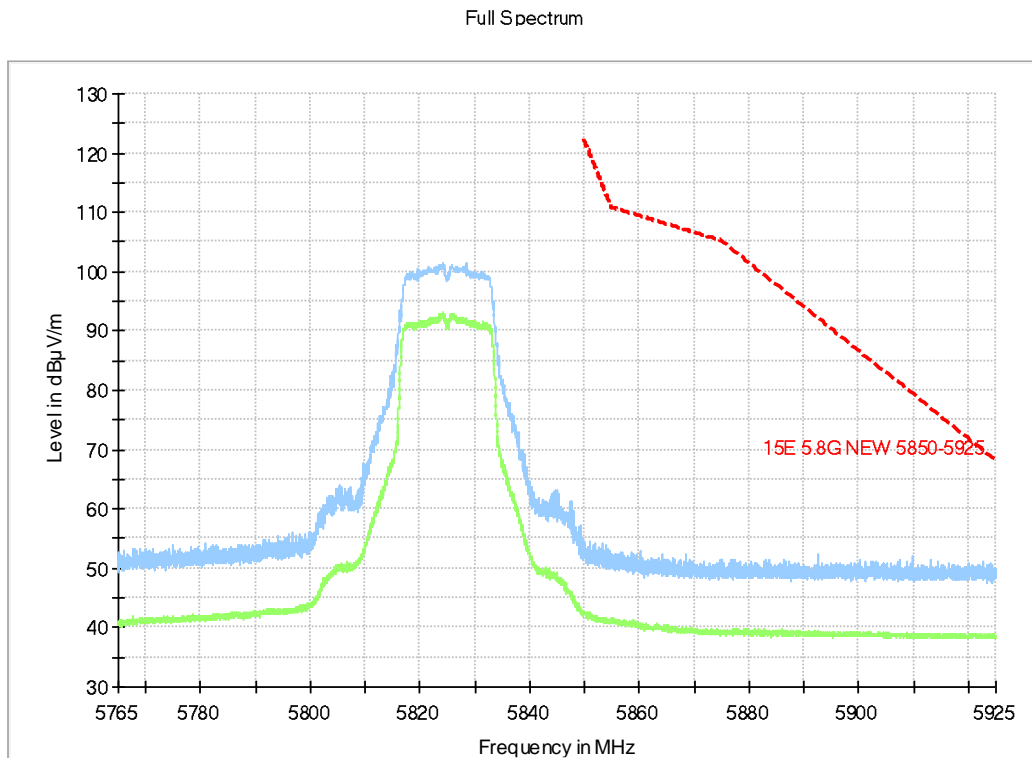
Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz	Fig.10	P
	5825 MHz	Fig.11	P
802.11n HT20	5745 MHz	Fig.12	P
	5825 MHz	Fig.13	P
802.11n HT40	5755 MHz	Fig.14	P
	5795 MHz	Fig.15	P
802.11ac HT20	5745 MHz	Fig.16	P
	5825 MHz	Fig.17	P
802.11ac HT40	5755 MHz	Fig.18	P
	5795 MHz	Fig.19	P
802.11ac HT80	5775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

**Conclusion: PASS**

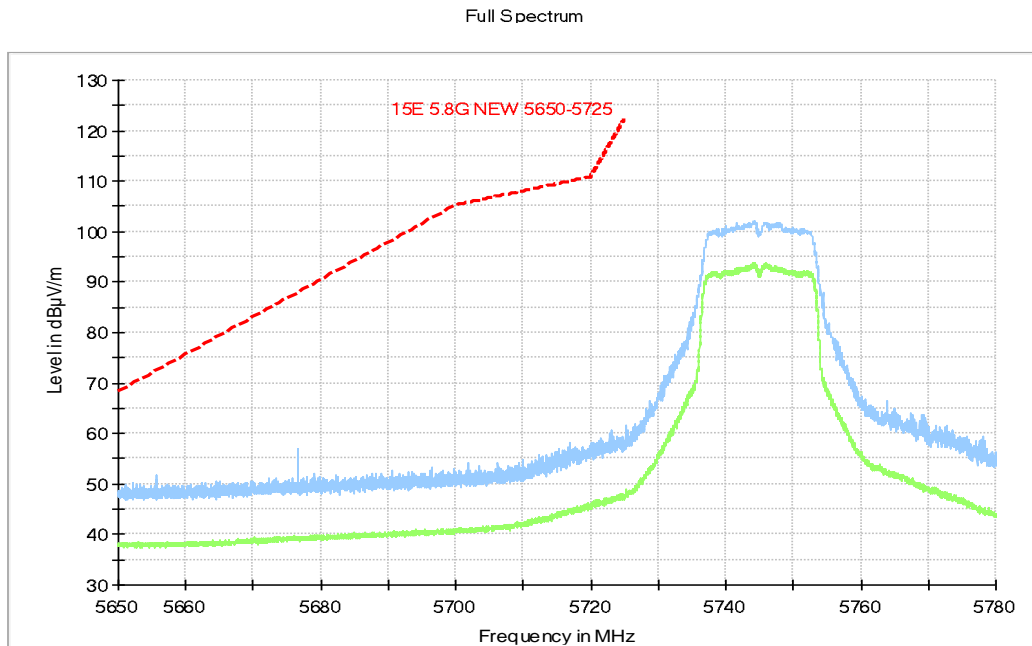
**Test graphs as below:**



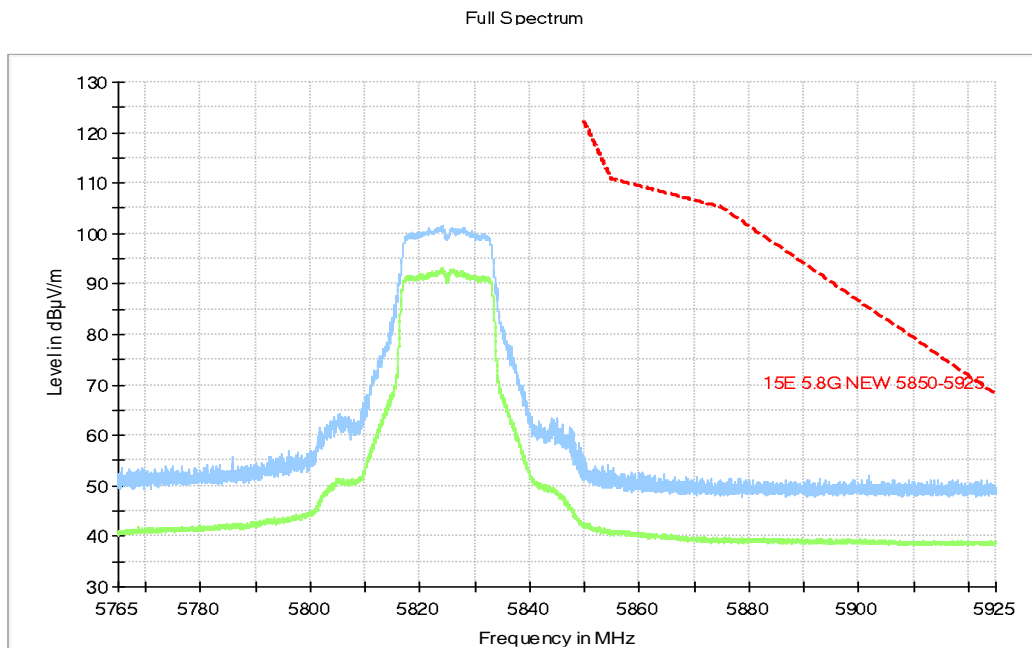
**Fig. 10 Band Edges (802.11a, 5745MHz)**



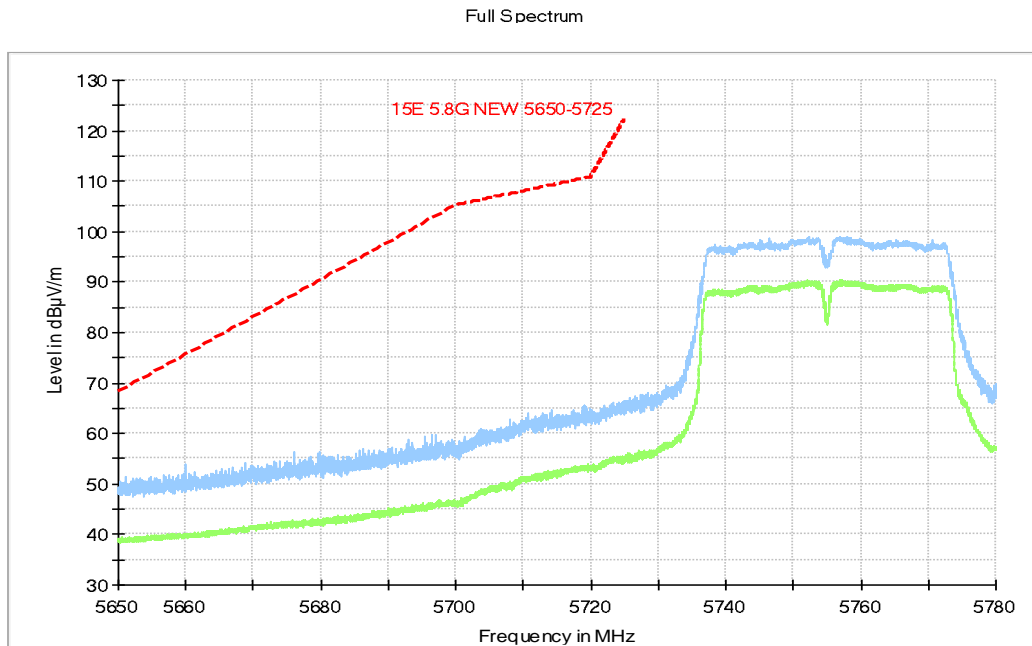
**Fig. 11 Band Edges (802.11a, 5825MHz)**



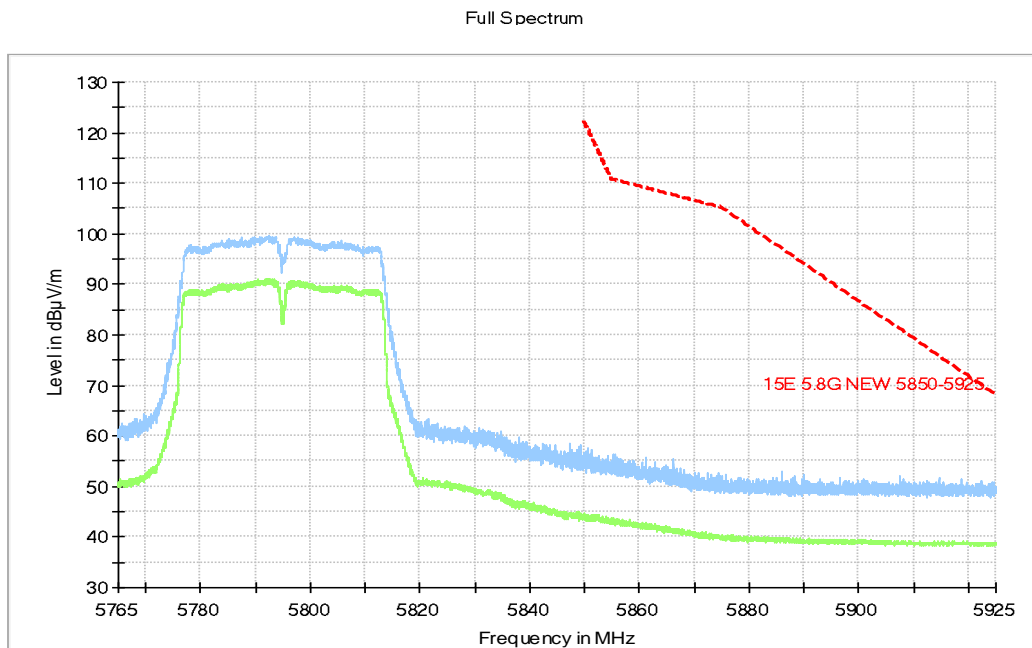
**Fig. 12 Band Edges (802.11n-HT20, 5745MHz)**



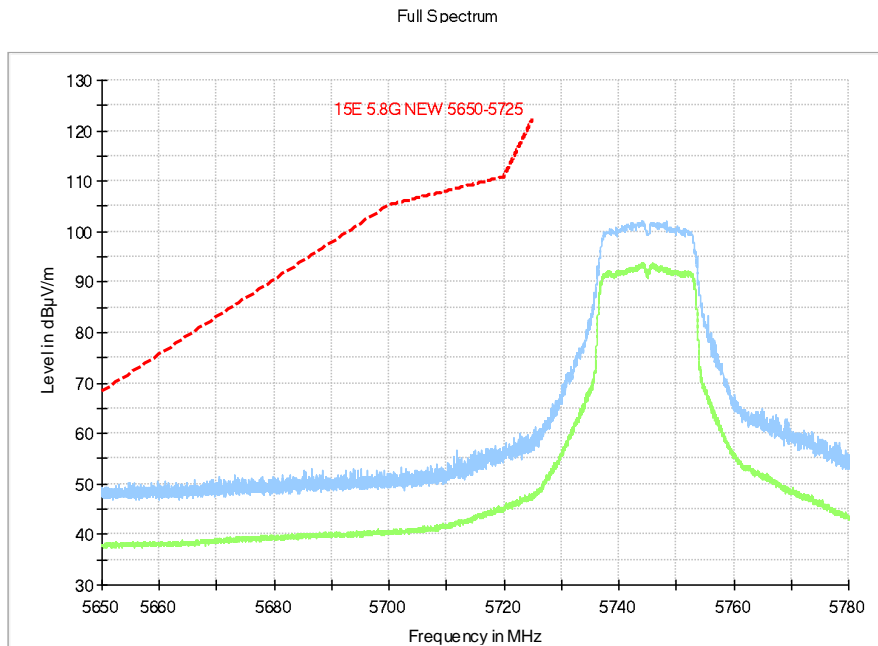
**Fig. 13 Band Edges (802.11n-HT20, 5825MHz)**



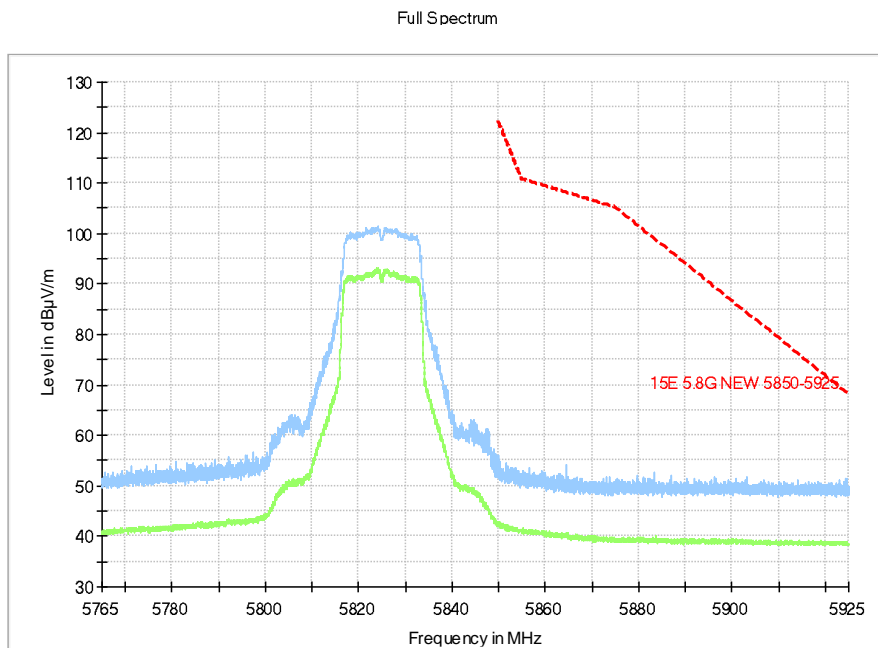
**Fig. 14 Band Edges (802.11n-HT40, 5755MHz)**



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

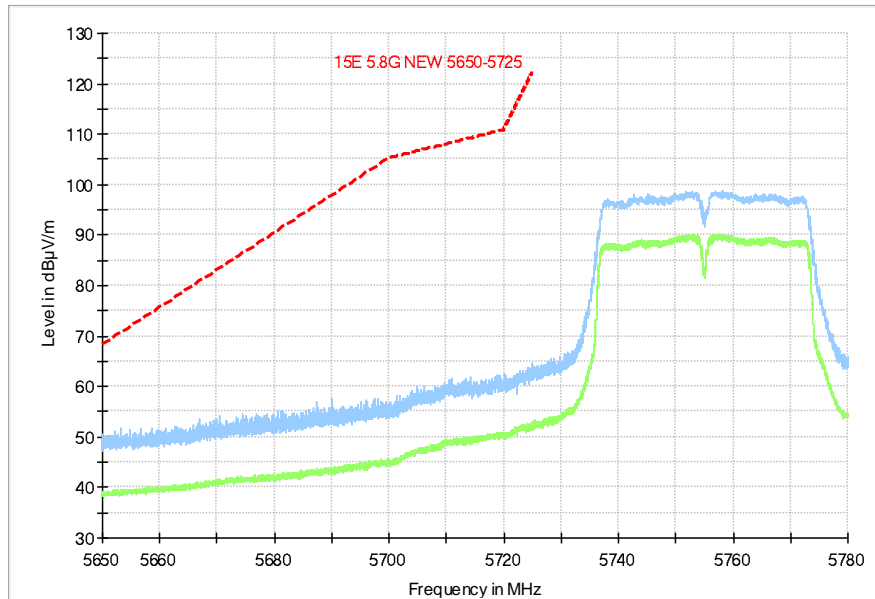


**Fig. 16 Band Edges (802.11ac-HT20, 5745MHz)**



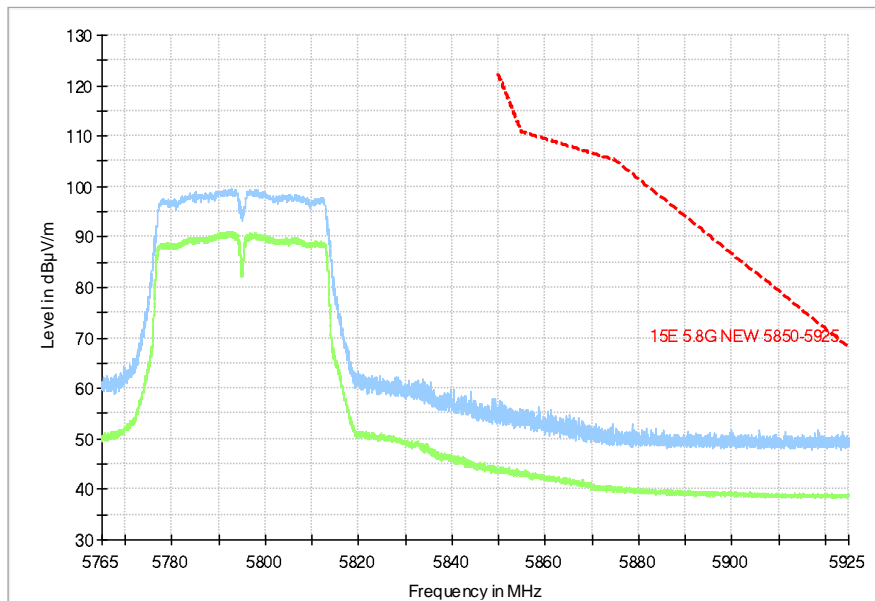
**Fig. 17 Band Edges (802.11ac-HT20, 5825MHz)**

Full Spectrum



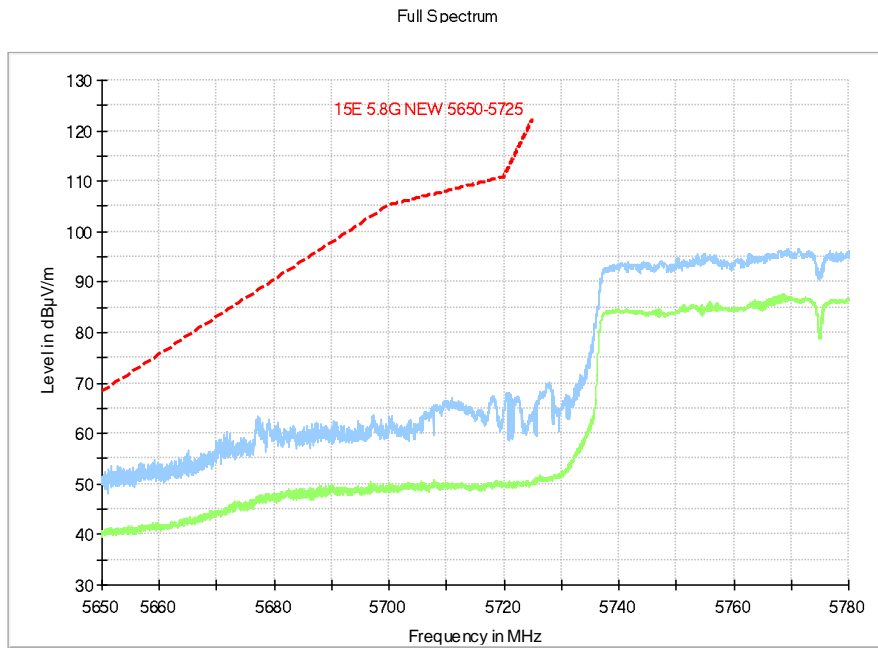
**Fig. 18 Band Edges (802.11ac-HT40, 5755MHz)**

Full Spectrum

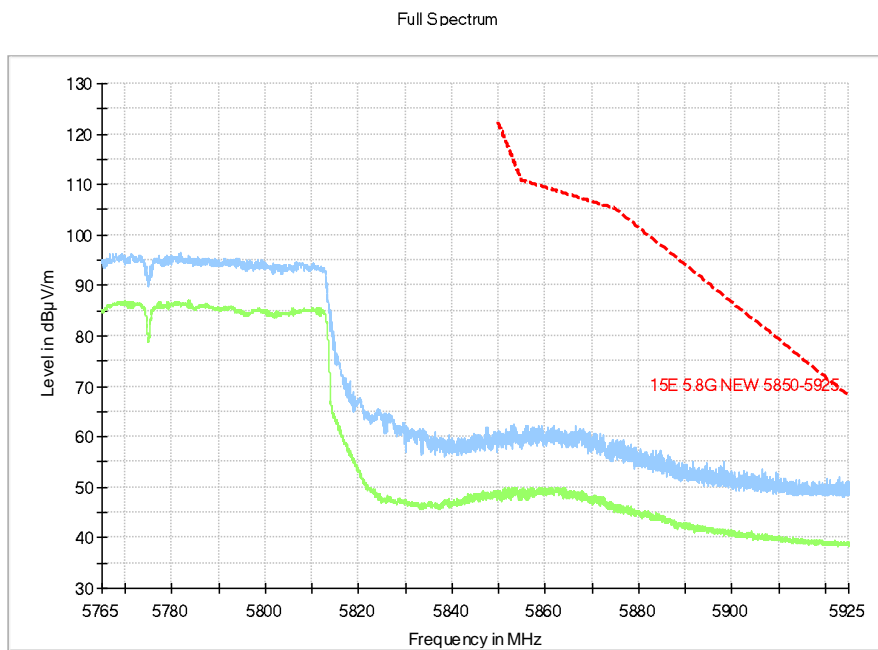


**Fig. 19 Band Edges (802.11ac-HT40, 5795MHz)**





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



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

## B.7. AC Powerline Conducted Emission

### Test Condition:

Voltage (V)	Frequency (Hz)
120	60

### Measurement uncertainty:

Expanded measurement uncertainty for this test item is  $U = 3.10\text{dB}$ ,  $k=2$ .

### 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.22	Fig.23	P
0.5 to 5	56			
5 to 30	60			

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	56 to 46	Fig.22	Fig.23	P
0.5 to 5	46			
5 to 30	50			

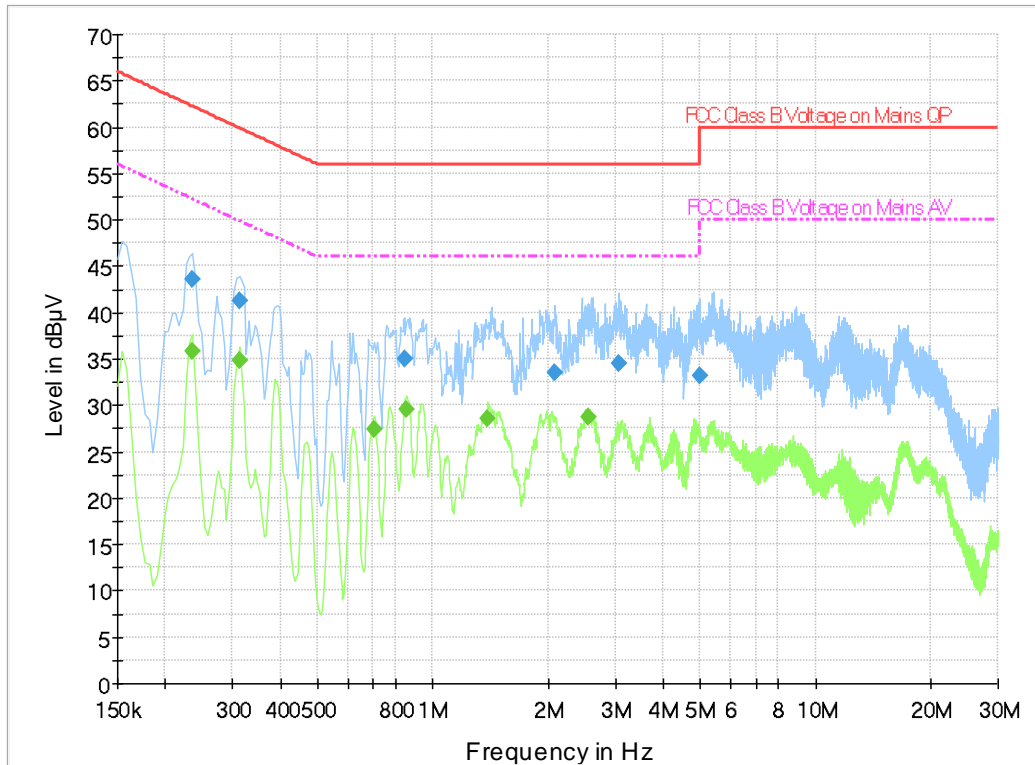
NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

The measurement is made according to ANSI C63.10 .

**Conclusion: PASS**

Test graphs as below:

Traffic:



**Fig. 22 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.

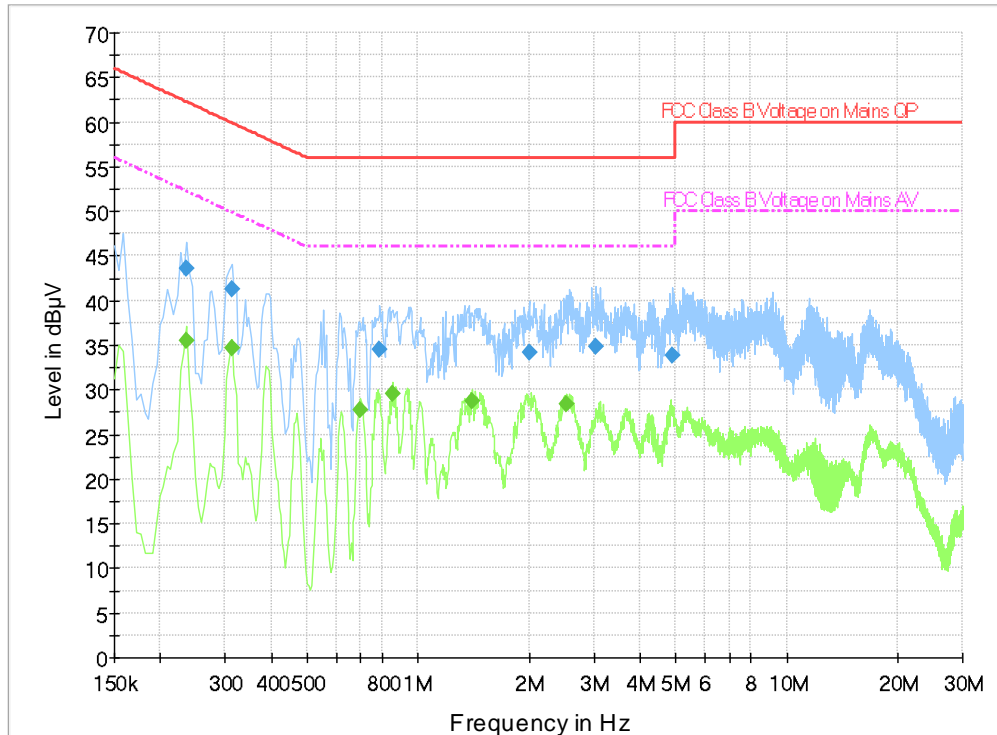
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.235500	43.6	1000.0	9.000	N	19.6	18.6	62.3
0.312000	41.2	1000.0	9.000	N	19.6	18.7	59.9
0.843000	35.0	1000.0	9.000	L1	19.6	21.0	56.0
2.085000	33.5	1000.0	9.000	L1	19.5	22.5	56.0
3.061500	34.5	1000.0	9.000	L1	19.6	21.5	56.0
4.987500	33.2	1000.0	9.000	L1	19.8	22.8	56.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.235500	35.9	1000.0	9.000	N	19.6	16.4	52.3
0.312000	34.8	1000.0	9.000	N	19.6	15.1	49.9
0.703500	27.4	1000.0	9.000	L1	19.6	18.6	46.0
0.856500	29.5	1000.0	9.000	N	19.5	16.5	46.0
1.392000	28.6	1000.0	9.000	N	19.6	17.4	46.0
2.553000	28.8	1000.0	9.000	L1	19.6	17.2	46.0

Idle:



**Fig. 23 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 (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.235500	43.5	1000.0	9.000	L1	19.6	18.7	62.3
0.312000	41.3	1000.0	9.000	N	19.6	18.7	59.9
0.789000	34.4	1000.0	9.000	L1	19.6	21.6	56.0
1.999500	34.2	1000.0	9.000	L1	19.5	21.8	56.0
3.025500	34.8	1000.0	9.000	L1	19.6	21.2	56.0
4.902000	33.8	1000.0	9.000	L1	19.8	22.2	56.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.235500	35.6	1000.0	9.000	N	19.6	16.7	52.3
0.312000	34.7	1000.0	9.000	N	19.6	15.2	49.9
0.699000	27.7	1000.0	9.000	N	19.4	18.3	46.0
0.856500	29.6	1000.0	9.000	N	19.5	16.4	46.0
1.405500	28.8	1000.0	9.000	N	19.6	17.2	46.0
2.535000	28.4	1000.0	9.000	L1	19.6	17.6	46.0

## ANNEX C: Accreditation Certificate

<p>United States Department of Commerce National Institute of Standards and Technology</p> <p><b>NVLAP</b>® </p> <hr/> <p><b>Certificate of Accreditation to ISO/IEC 17025:2017</b></p> <hr/> <p><b>NVLAP LAB CODE: 600118-0</b></p> <p><b>Telecommunication Technology Labs, CAICT</b> Beijing China</p> <p><i>is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:</i></p> <p><b>Electromagnetic Compatibility &amp; Telecommunications</b></p> <p><i>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).</i></p> <hr/> <p>2020-09-29 through 2021-09-30 <i>Effective Dates</i></p> <p style="text-align: center;"></p> <p style="text-align: right;"> <i>For the National Voluntary Laboratory Accreditation Program</i></p>	
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