



# FCC PART 15 TEST REPORT No.I22Z61533-IOT02

for

**Wingtech Group (Hong Kong) Limited**

**5G Mobile Phone**

**Celero5G+**

**With**

**FCC ID: 2APXW-CELERO5GPLUS**

**Hardware Version: V1.0**

**Software Version: Celero5GPlus\_0.01.03**

**Issued Date: 2022-11-04**

**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>
I22Z61533-IOT02	Rev.0	1st edition	2022-10-20
I22Z61533-IOT02	Rev.1	Remove KDB 558074 on page 9.	2022-11-04

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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**

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. Testing Environment**

Normal Temperature: 15-35°C

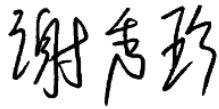
Relative Humidity: 20-75%

### **1.4. Project date**

Testing Start Date: 2022-08-15

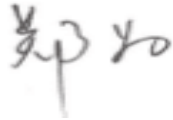
Testing End Date: 2022-10-20

### 1.5. Signature



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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: Wingtech Group (Hong Kong) Limited  
Address: Flat/RM 1802 18/F, Podium Plaza, 5 Hanoi Road, Tsim Sha Tsui, KL,  
HK  
City: Hong Kong  
Postal Code: /  
Country: China  
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Telephone: +86-21-53529900  
Fax: /

### **2.2 Manufacturer Information**

Company Name: Wingtech Group (Hong Kong) Limited  
Address: Flat/RM 1802 18/F, Podium Plaza, 5 Hanoi Road, Tsim Sha Tsui, KL,  
HK  
City: Hong Kong  
Postal Code: /  
Country: China  
Contact: sharui  
Telephone: +86-21-53529900  
Fax: /

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

#### ANCILLARY EQUIPMENT(AE)

##### 3.1. About EUT

Description	5G Mobile Phone
Model name	Celero5G+
FCC ID	2APXW-CELERO5GPLUS
WLAN Frequency Band	ISM Bands: -5150MHz~5250MHz -5250MHz~5350MHz -5470MHz~5725MHz
Type of modulation	OFDM
Antenna	Integral Antenna
Voltage	3.85V

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

EUT ID*	SN or IMEI	HW Version	SW Version
UT110a	869183060029802	V1.0	Celero5GPlus_0.01.03
UT07a	869183060003369	V1.0	Celero5GPlus_0.01.03

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

UT07a is used for Conduction test, UT110a is used for Radiation test.

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

AE ID*	Description	SN
AE1	Battery	/
AE2	Charger	/
AE3	USB Cable	/
AE1		
Model	TM001	
Manufacturer	Dongguan Veken Battery Co., Ltd.	
Capacity	min4900,typ5000	
Nominal Voltage	3.87V	
AE2		
Model	BLJ15W050300U-U	
Manufacturer	Zhongshan Baolijin Electronic Co., Ltd.	
Length of cable	/	
AE3		
Model	USB AM TO TYPE-C2.0	
Manufacturer	Huizhou Washin Electronics Co., LTD	
Length of cable	/	

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



### 3.4. General Description

The Equipment under Test (EUT) is a model of 5G Mobile Phone with integrated antenna and inbuilt battery.

It has Bluetooth (EDR)function.

It consists of normal options: travel charger, USB cable.

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

Samples undergoing test were selected by the client.

### 3.5. Interpretation of the Test Environment

For the test methods, the test environment uncertainty figures correspond to an expansion factor k=2.

Measurement Uncertainty

Parameter	Uncertainty
temperature	0.48°C
humidity	2 %
DC voltages	0.003V

## 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	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices	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

## 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 Part15E	Sub-clause of IC	Verdict
Maximum Output Power	15.407	/	P
Peak Power Spectral Density	15.407	/	P
Occupied 26dB Bandwidth	15.403	/	P
Band edge compliance (Radiated)	15.209	/	P
Transmitter spurious emissions (Radiated)	15.407	/	P
AC Powerline Conducted Emission (150kHz- 30MHz)	15.407	/	P
Frequency Stability	15.407	/	P
99% Occupied bandwidth	/	/	P
Transmit Power Control	15.407	/	NA

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	2023-05-15
2	Test Receiver	ESCI	100344	R&S	1 year	2023-03-21
3	LISN	ENV216	101200	R&S	1 year	2023-06-29
4	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	1 year	2022-10-28
2	EMI Antenna	VULB 9163	302	SCHWARZBE CK	1 year	2022-12-28
3	EMI Antenna	3115	00167250	ETS-Lindgren	1 year	2022-12-23

## 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 Channel 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	/
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.15
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.54
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.26

### 8.6 AC Power-line Conducted Emission

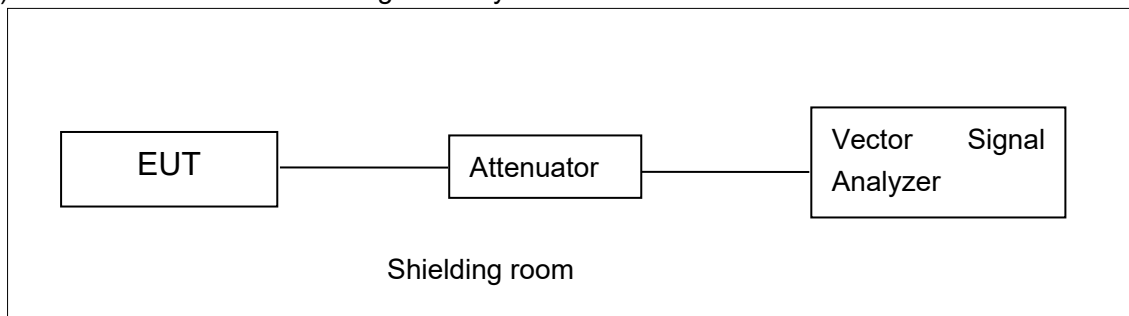
Measurement Uncertainty : 3.08,k=2

## 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

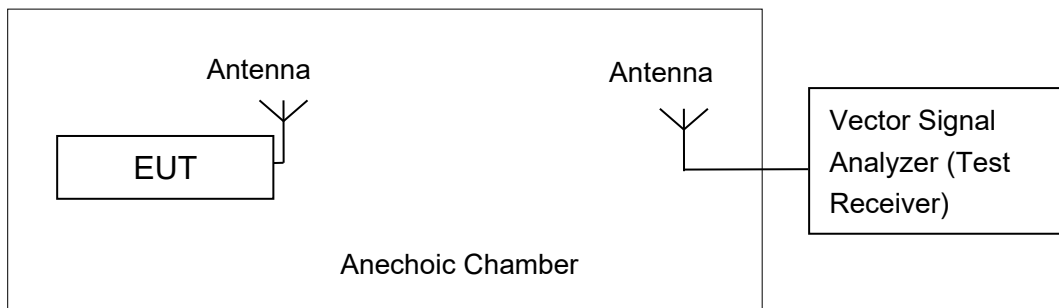


#### A.1.2. Radiated Emission Measurements

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 KDB 789033

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 output Power

### Measurement Limit and Method:

Standard	Frequency (MHz)	Limit (dBm)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	24dBm
	5250MHz~5350MHz	24dBm or 11+10logB
	5470MHz~5725MHz	24dBm or 11+10logB

Limit use the less value, and B is the 26dB bandwidth.

The measurement method SA-2 is made according to KDB 789033

### Measurement Results:

#### 802.11a mode

Mode	Frequency	Test Result (dBm)							
		Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
802.11a	5180MHz	18.52	/	/	/	/	/	/	/
	5200MHz	18.48	/	/	/	/	/	/	/
	5240MHz	18.22	/	/	/	/	/	/	/
	5260MHz	18.27	/	/	/	/	/	/	/
	5280MHz	18.51	/	/	/	/	/	/	/
	5320MHz	19.05	/	/	/	/	/	/	/
	5500MHz	17.59	/	/	/	/	/	/	/
	5580MHz	18.99	/	/	/	/	/	/	/
	5700MHz	16.67	/	/	/	/	/	/	/
	5720MHz	18.79	/	/	/	/	/	/	/

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

#### 802.11n-HT20 mode

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT20)	5180MHz	17.66	/	/	/	/	/	/	/
	5200MHz	18.92	/	/	/	/	/	/	/
	5240MHz	18.94	/	/	/	/	/	/	/
	5260MHz	19.04	/	/	/	/	/	/	/
	5280MHz	19.15	/	/	/	/	/	/	/
	5320MHz	19.37	/	/	/	/	/	/	/
	5500MHz	16.31	/	/	/	/	/	/	/
	5580MHz	18.92	/	/	/	/	/	/	/
	5700MHz	13.75	/	/	/	/	/	/	/
	5720MHz	18.65	/	/	/	/	/	/	/

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

**802.11ac-HT20 mode**

Mode	Frequency	Test Result (dBm)								
		Data Rate								
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
802.11ac (HT20)	5180MHz	17.63	/	/	/	/	/	/	/	/
	5200MHz	18.93	/	/	/	/	/	/	/	/
	5240MHz	18.96	/	/	/	/	/	/	/	/
	5260MHz	19.04	/	/	/	/	/	/	/	/
	5280MHz	19.05	/	/	/	/	/	/	/	/
	5320MHz	19.42	/	/	/	/	/	/	/	/
	5500MHz	16.32	/	/	/	/	/	/	/	/
	5580MHz	18.91	/	/	/	/	/	/	/	/
	5700MHz	13.78	/	/	/	/	/	/	/	/
	5720MHz	18.62	/	/	/	/	/	/	/	/

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

**802.11n-HT40 mode**

Mode	Frequency	Test Result (dBm)							
		Data Rate							
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
802.11n (HT40)	5190MHz	12.77	/	/	/	/	/	/	/
	5230MHz	18.13	/	/	/	/	/	/	/
	5270MHz	18.25	/	/	/	/	/	/	/
	5310MHz	14.05	/	/	/	/	/	/	/
	5510MHz	16.22	/	/	/	/	/	/	/
	5550MHz	18.01	/	/	/	/	/	/	/
	5670MHz	17.87	/	/	/	/	/	/	/
	5710MHz	17.66	/	/	/	/	/	/	/

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

**802.11ac-HT40 mode**

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (HT40)	5190MHz	12.80	/	/	/	/	/	/	/	/	/
	5230MHz	18.14	/	/	/	/	/	/	/	/	/
	5270MHz	18.25	/	/	/	/	/	/	/	/	/
	5310MHz	13.47	/	/	/	/	/	/	/	/	/
	5510MHz	16.32	/	/	/	/	/	/	/	/	/

	5550MHz	17.96	/	/	/	/	/	/	/	/	/
	5670MHz	17.83	/	/	/	/	/	/	/	/	/
	5710MHz	17.64	/	/	/	/	/	/	/	/	/

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

#### 802.11ac-HT80 mode

Mode	Frequency	Test Result (dBm)									
		Data Rate									
		MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
802.11ac (HT80)	5210MHz	12.28	/	/	/	/	/	/	/	/	/
	5290MHz	13.05	/	/	/	/	/	/	/	/	/
	5530MHz	12.36	/	/	/	/	/	/	/	/	/
	5610MHz	16.94	/	/	/	/	/	/	/	/	/
	5690MHz	16.60	/	/	/	/	/	/	/	/	/

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

The duty cycle

Mode	11a	11n20	11ac20	11n40	11ac40	11ac80
Duty Cycle	98%	98%	98%	98%	98%	98%

**Conclusion: PASS**



### A.3. Peak Power Spectral Density (conducted)

#### Measurement Limit:

Standard	Frequency (MHz)	Limit (dBm/MHz)
FCC CRF Part 15.407(a)	5150MHz~5250MHz	11
	5250MHz~5350MHz	11
	5470MHz~5725MHz	11

The output power measurement method Section F is made according to KDB 789033

#### Measurement Results:

Mode	Frequency	Power Spectral Density (dBm/MHz)	Conclusion
802.11a	5180 MHz	8.03	P
	5200 MHz	7.96	P
	5240 MHz	7.91	P
	5260 MHz	7.78	P
	5280 MHz	7.77	P
	5320 MHz	7.93	P
	5500 MHz	5.69	P
	5580 MHz	7.18	P
	5700 MHz	5.27	P
802.11ac HT20	5180 MHz	5.42	P
	5200 MHz	7.42	P
	5240 MHz	7.41	P
	5260 MHz	7.27	P
	5280 MHz	7.28	P
	5320 MHz	7.43	P
	5500 MHz	4.66	P
	5580 MHz	6.67	P
	5700 MHz	3.23	P
	5720 MHz	8.32	P
802.11ac HT40	5190 MHz	-2.49	P
	5230 MHz	4.91	P
	5270 MHz	4.98	P
	5310 MHz	-0.04	P
	5510 MHz	1.99	P
	5550 MHz	4.92	P
	5670 MHz	4.55	P
	5710 MHz	4.28	P
802.11ac HT80	5210MHz	-5.80	P
	5290MHz	-3.55	P
	5530MHz	-4.41	P

	5610MHz	0.79	P
	5690MHz	0.41	P

**Conclusion: PASS**

#### A.4. Occupied 26dB Bandwidth(conducted)

**Measurement Limit:**

Standard	Limit (kHz)
FCC 47 CFR Part 15.403 (i)	/

The measurement is made according to KDB 789033

**Measurement Uncertainty:**

Measurement Uncertainty	60.80Hz
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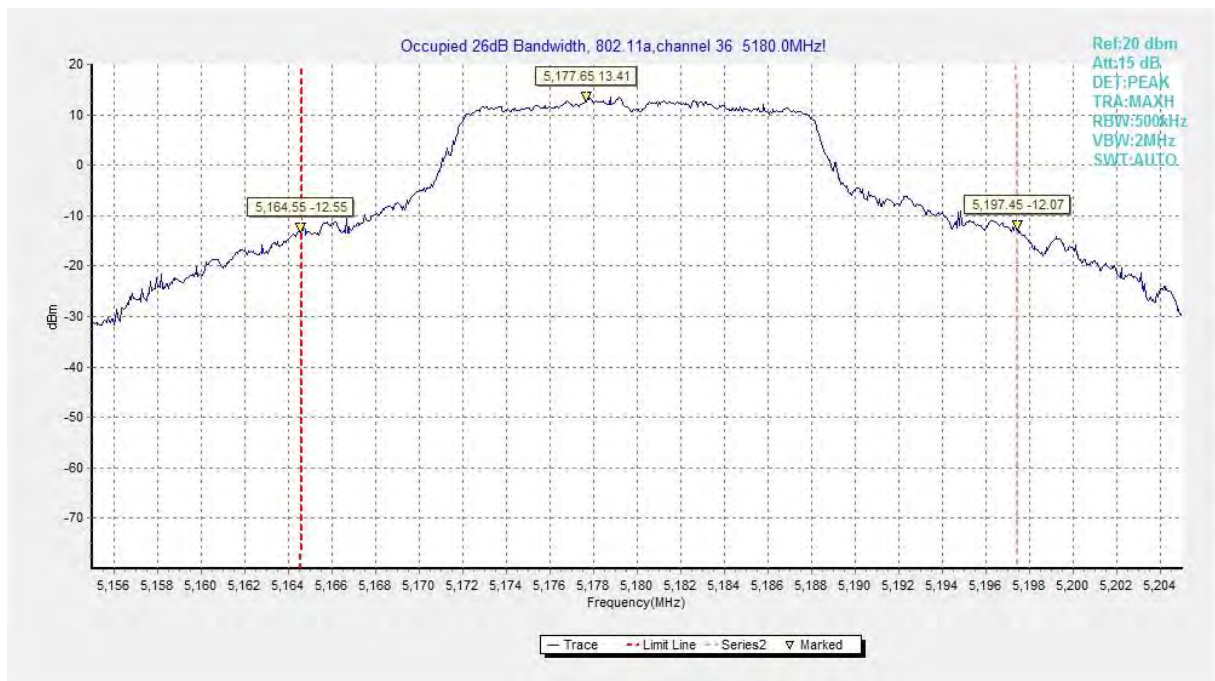
**Measurement Result:**

Mode	Frequency	Occupied 26dB Bandwidth ( MHz)		conclusion
802.11a	5180 MHz	Fig.1	32.90	P
	5200 MHz	Fig.2	33.00	P
	5240 MHz	Fig.3	31.90	P
	5260 MHz	Fig.4	32.78	P
	5280 MHz	Fig.5	31.85	P
	5320 MHz	Fig.6	33.20	P
	5500 MHz	Fig.7	33.25	P
	5580 MHz	Fig.8	31.85	P
	5700 MHz	Fig.9	33.40	P
	5720 MHz	Fig.10	32.75	P
802.11ac HT20	5180 MHz	Fig.11	31.25	P
	5200 MHz	Fig.12	32.20	P
	5240 MHz	Fig.13	31.10	P
	5260 MHz	Fig.14	30.45	P
	5280 MHz	Fig.15	31.50	P
	5320 MHz	Fig.16	33.85	P
	5500 MHz	Fig.17	32.75	P
	5580 MHz	Fig.18	30.25	P
	5700 MHz	Fig.19	34.54	P
	5720 MHz	Fig.20	32.80	P
802.11ac HT40	5190 MHz	Fig.21	49.52	P
	5230 MHz	Fig.22	54.40	P
	5270 MHz	Fig.23	51.52	P
	5310 MHz	Fig.24	54.40	P
	5510 MHz	Fig.25	57.68	P
	5550 MHz	Fig.26	51.28	P

	5670 MHz	Fig.27	49.92	P
	5710 MHz	Fig.28	47.44	P
802.11ac HT80	5210MHz	Fig.29	84.00	P
	5290MHz	Fig.30	98.72	P
	5530MHz	Fig.31	98.72	P
	5610MHz	Fig.32	98.88	P
	5690MHz	Fig.33	85.60	P

**Conclusion: PASS**

**Test graphs as below:**



**Fig.1 Occupied 26dB Bandwidth (802.11a, 5180MHz)**

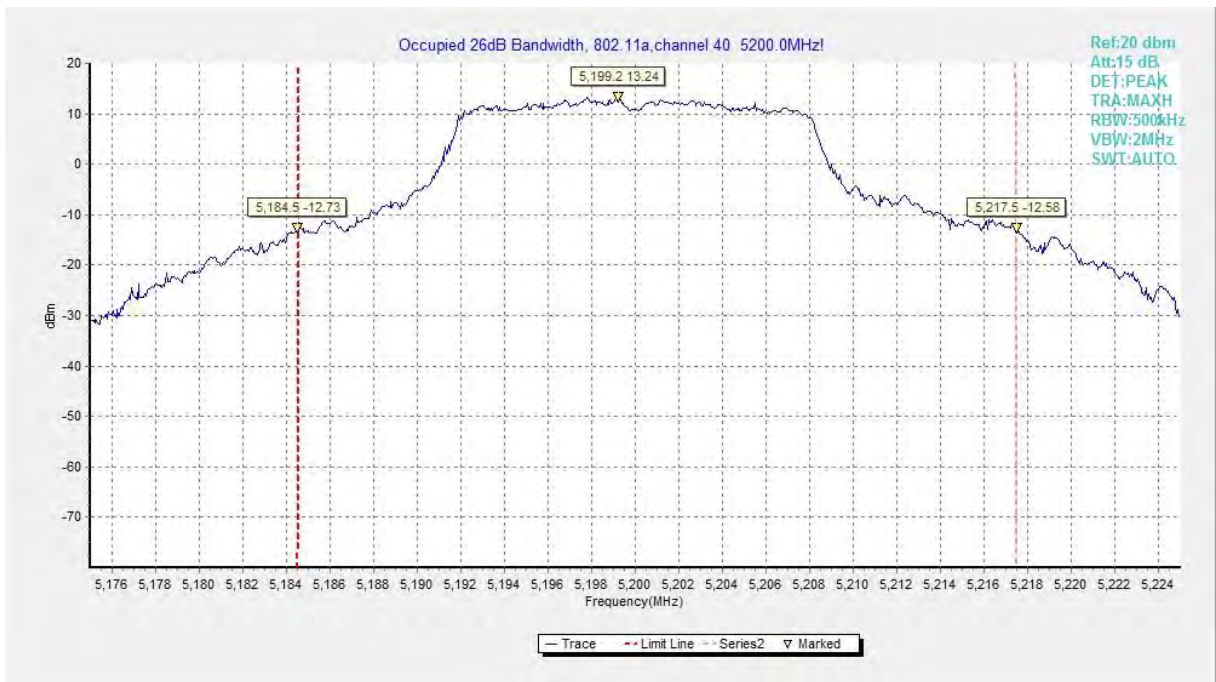


Fig.2 Occupied 26dB Bandwidth (802.11a, 5200MHz)

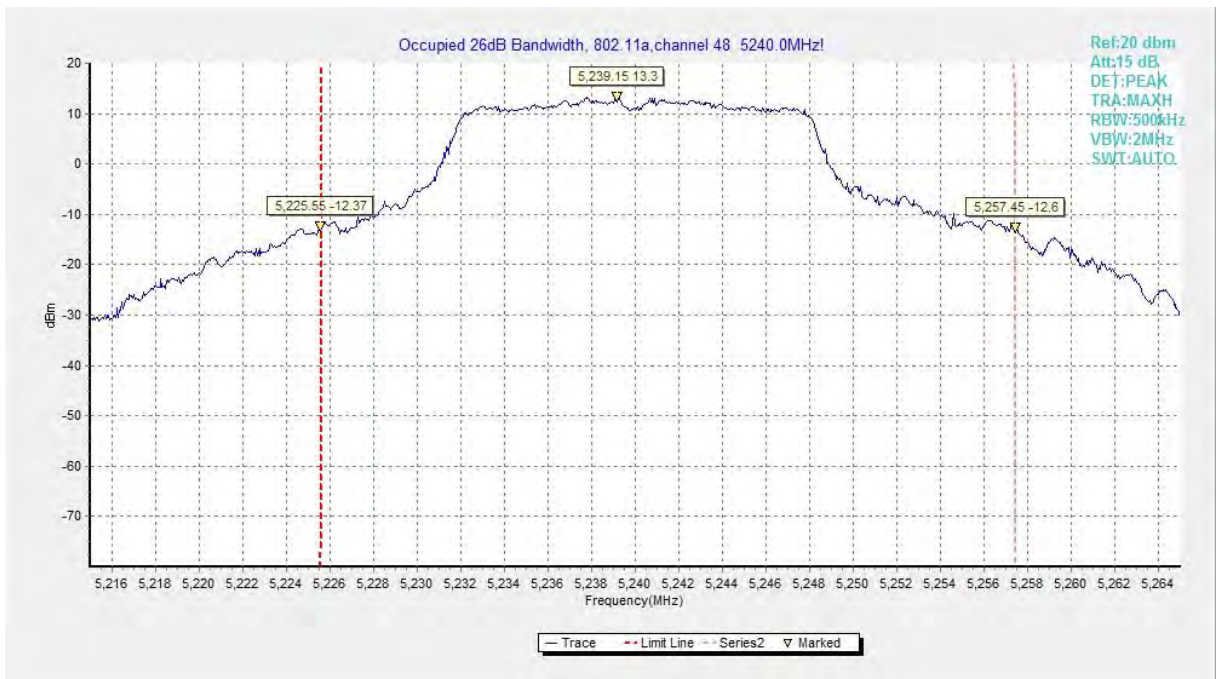


Fig.3 Occupied 26dB Bandwidth (802.11a, 5240MHz)





Fig.4 Occupied 26dB Bandwidth (802.11a, 5260MHz)

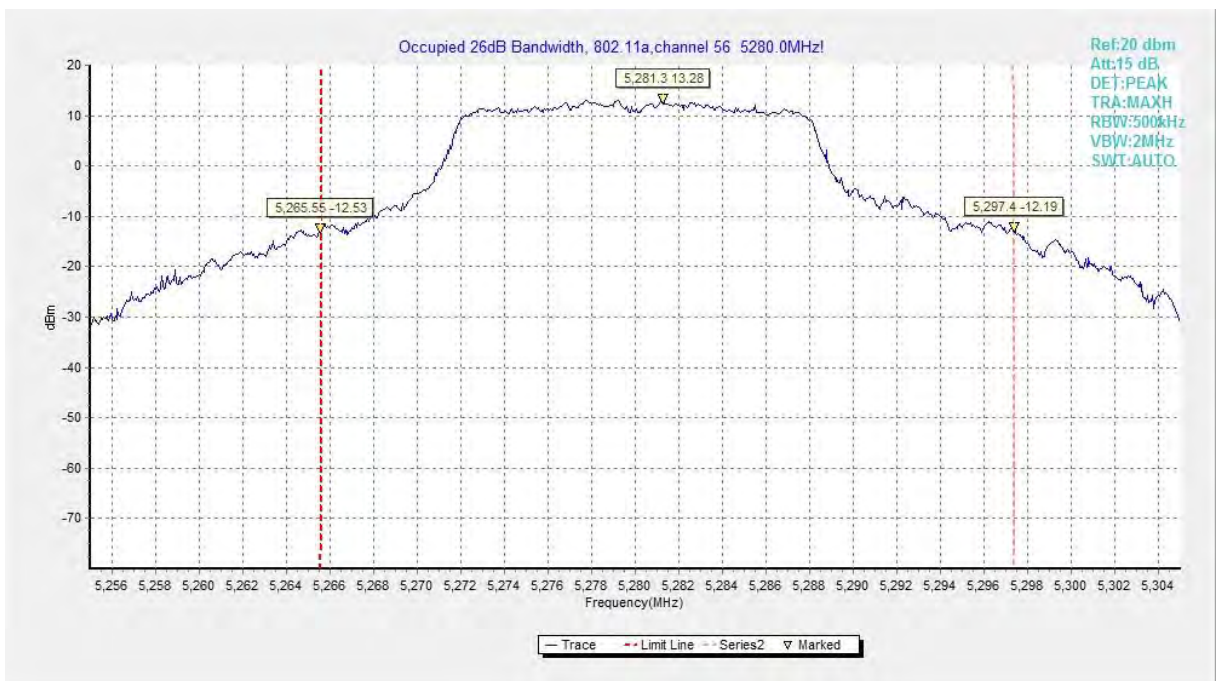
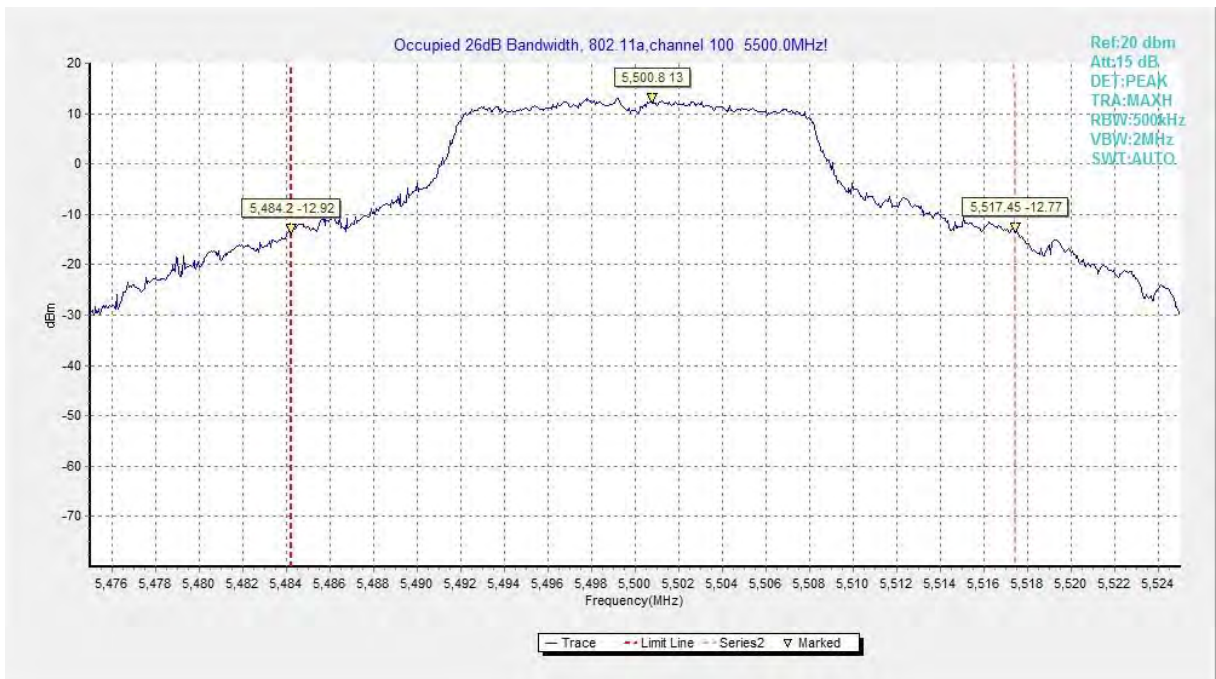


Fig.5 Occupied 26dB Bandwidth (802.11a, 5280MHz)

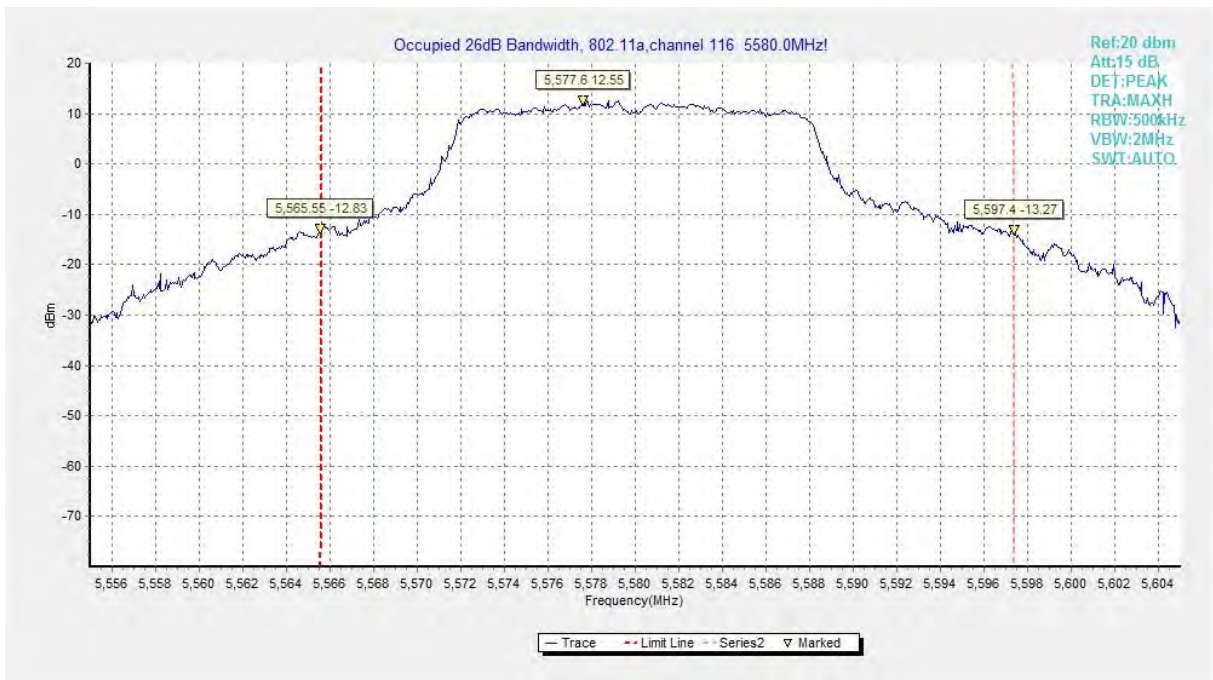


**Fig.6 Occupied 26dB Bandwidth (802.11a, 5320MHz)**



**Fig.7 Occupied 26dB Bandwidth (802.11a, 5500MHz)**

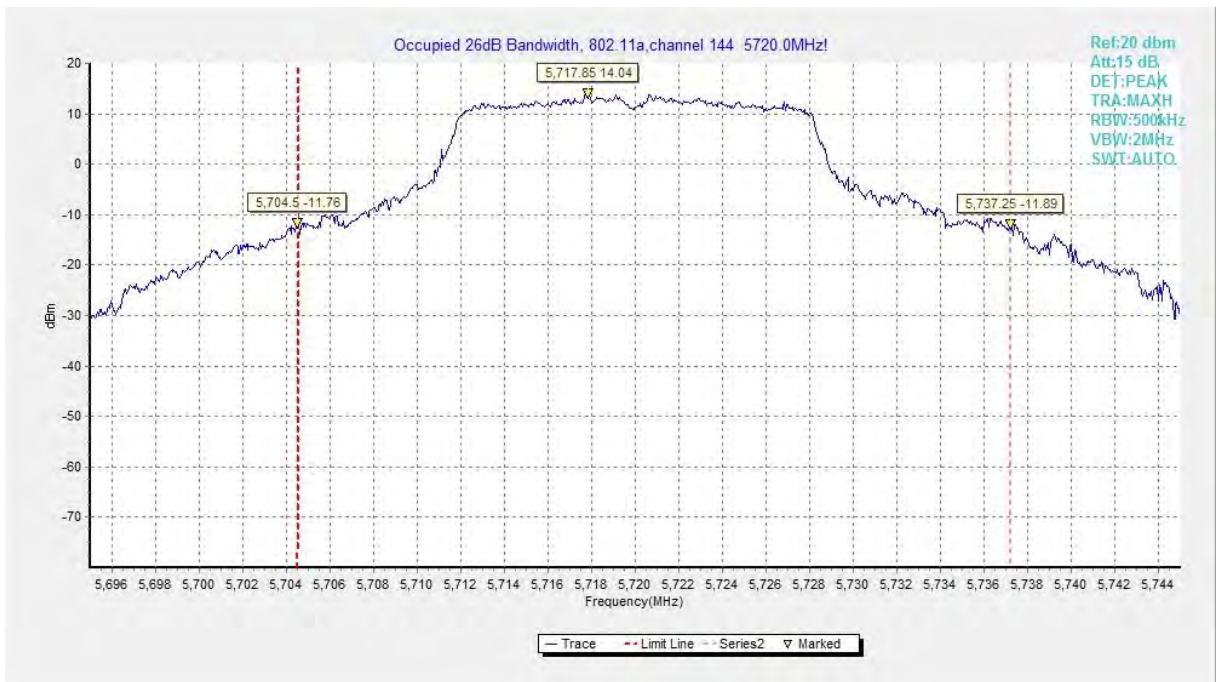




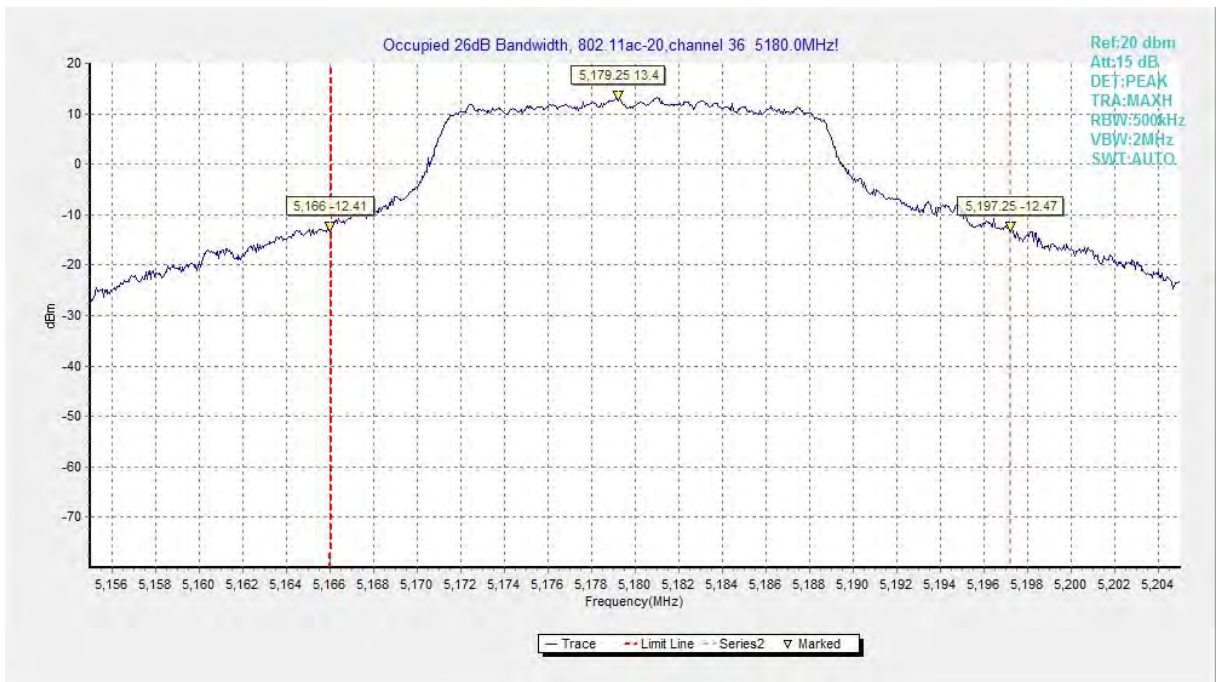
**Fig.8 Occupied 26dB Bandwidth (802.11a, 5580MHz)**



**Fig.9 Occupied 26dB Bandwidth (802.11a, 5700MHz)**



**Fig.10 Occupied 26dB Bandwidth (802.11a, 5720MHz)**



**Fig.11 Occupied 26dB Bandwidth (802.11ac-HT20, 5180MHz)**



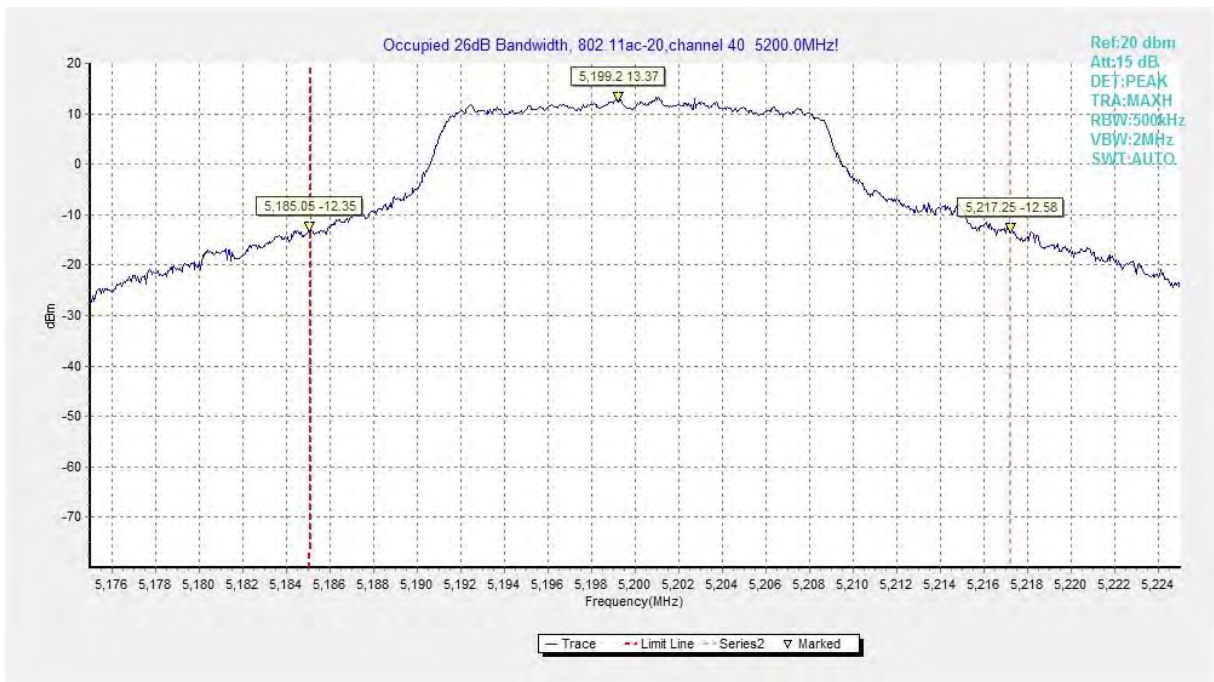


Fig.12 Occupied 26dB Bandwidth (802.11ac-HT20, 5200MHz)

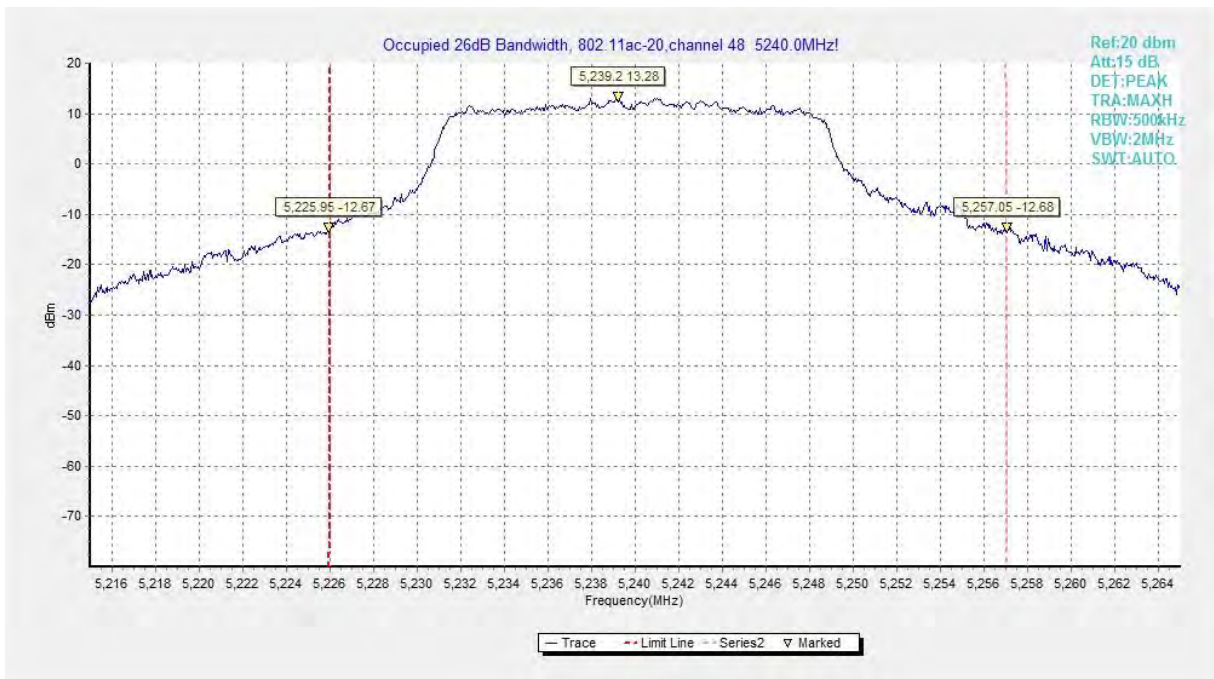


Fig.13 Occupied 26dB Bandwidth (802.11ac-HT20, 5240MHz)



Fig.14 Occupied 26dB Bandwidth (802.11ac-HT20, 5260MHz)



Fig.15 Occupied 26dB Bandwidth (802.11ac-HT20, 5280MHz)



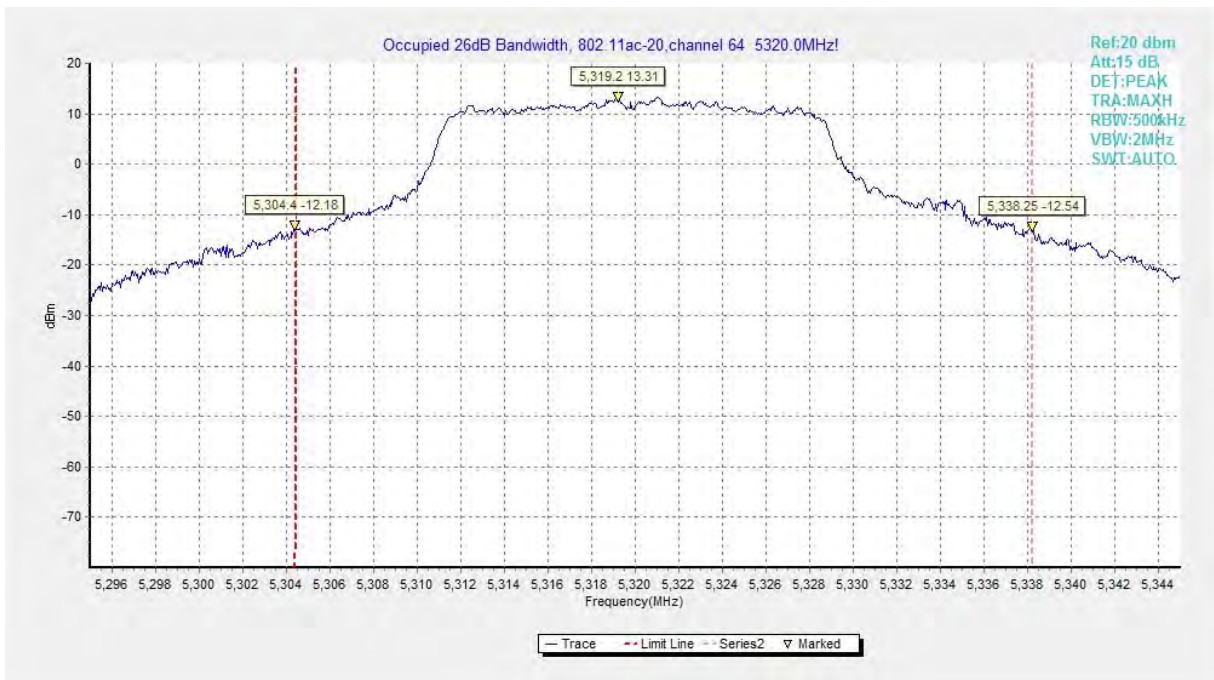


Fig.16 Occupied 26dB Bandwidth (802.11ac-HT20, 5320MHz)

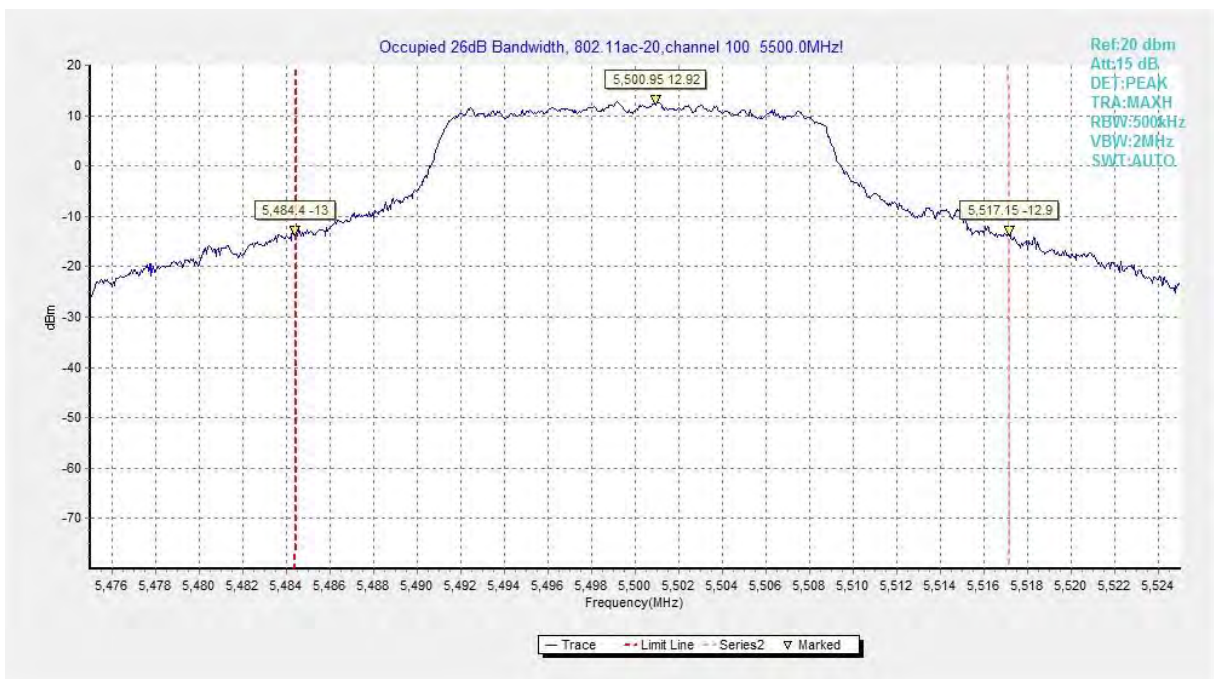


Fig.17 Occupied 26dB Bandwidth (802.11ac-HT20, 5500MHz)



Fig.18 Occupied 26dB Bandwidth (802.11ac-HT20, 5580MHz)



Fig.19 Occupied 26dB Bandwidth (802.11ac-HT20, 5700MHz)



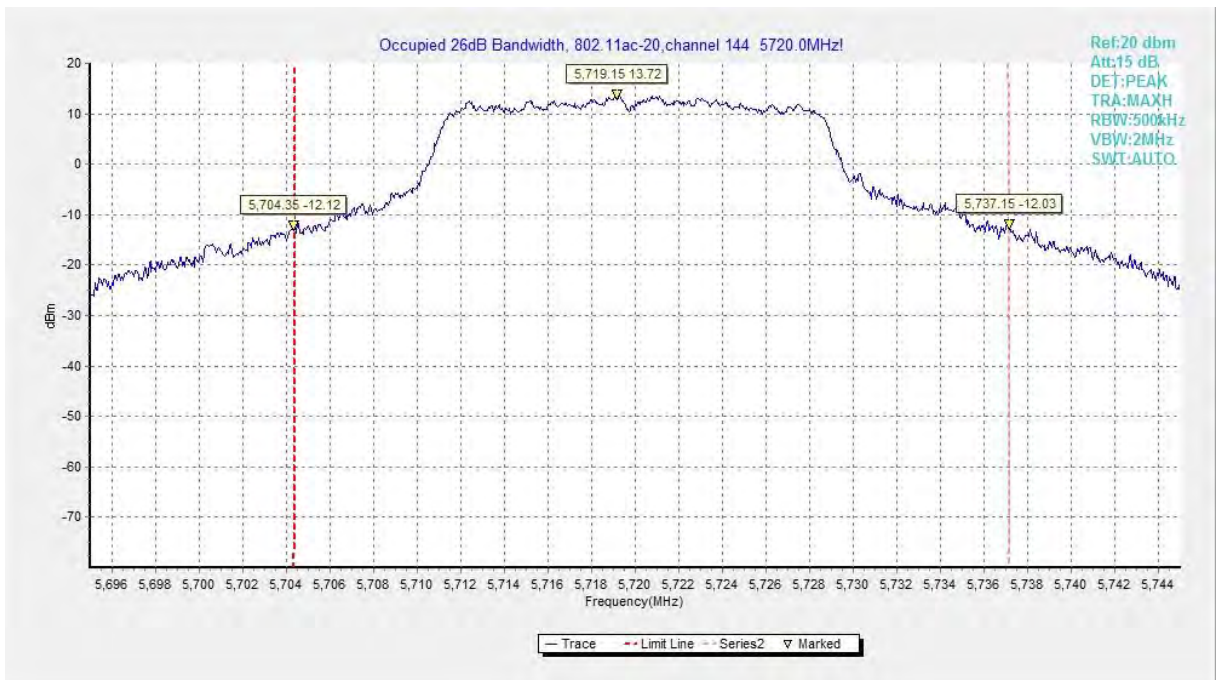


Fig.20 Occupied 26dB Bandwidth (802.11ac-HT20, 5720MHz)



Fig.21 Occupied 26dB Bandwidth (802.11ac-HT40, 5190MHz)

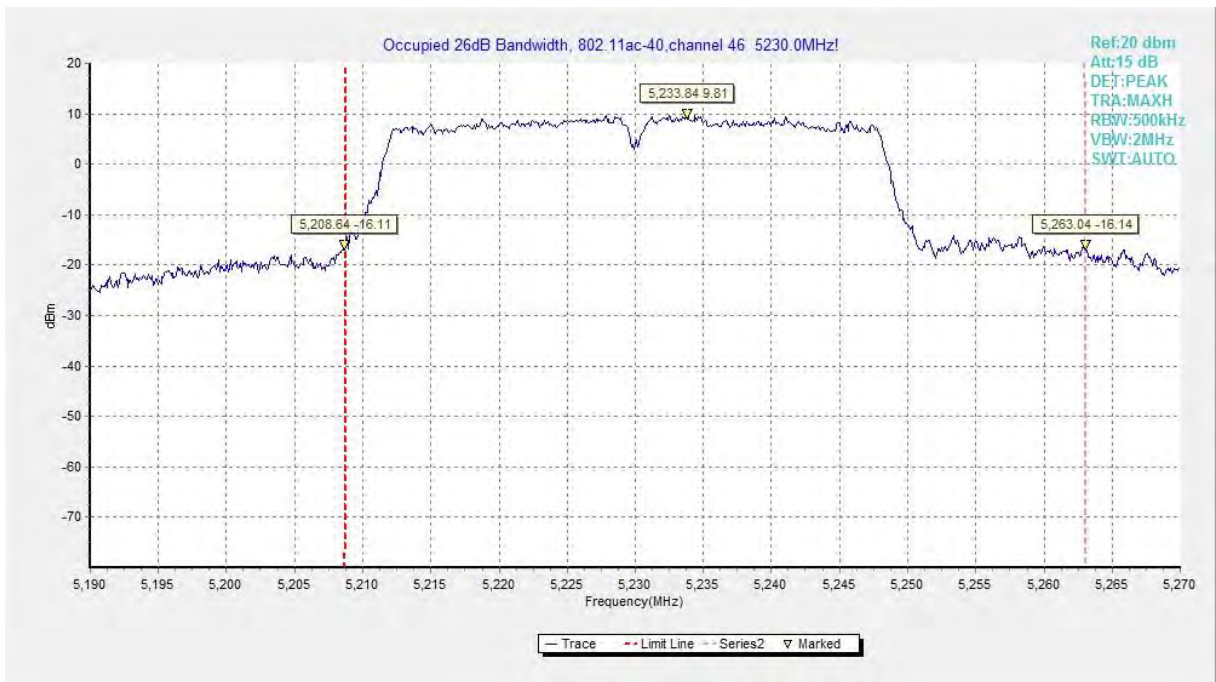


Fig.22 Occupied 26dB Bandwidth (802.11ac-HT40, 5230MHz)

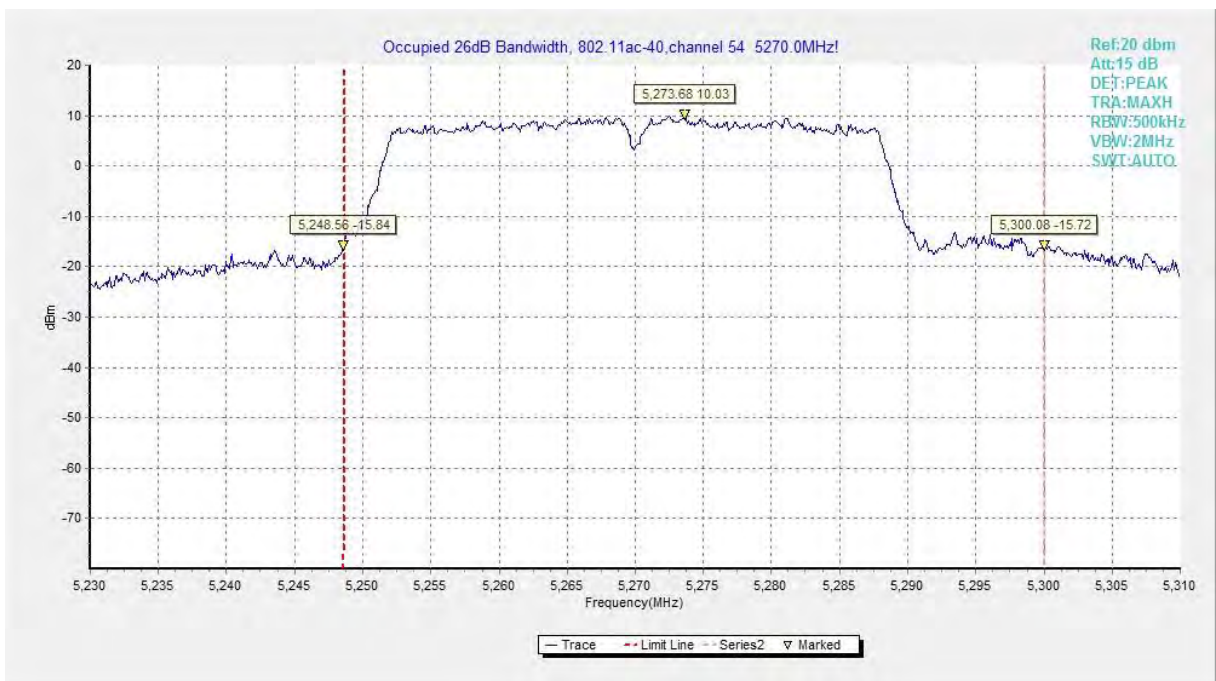


Fig.23 Occupied 26dB Bandwidth (802.11ac-HT40, 5270MHz)

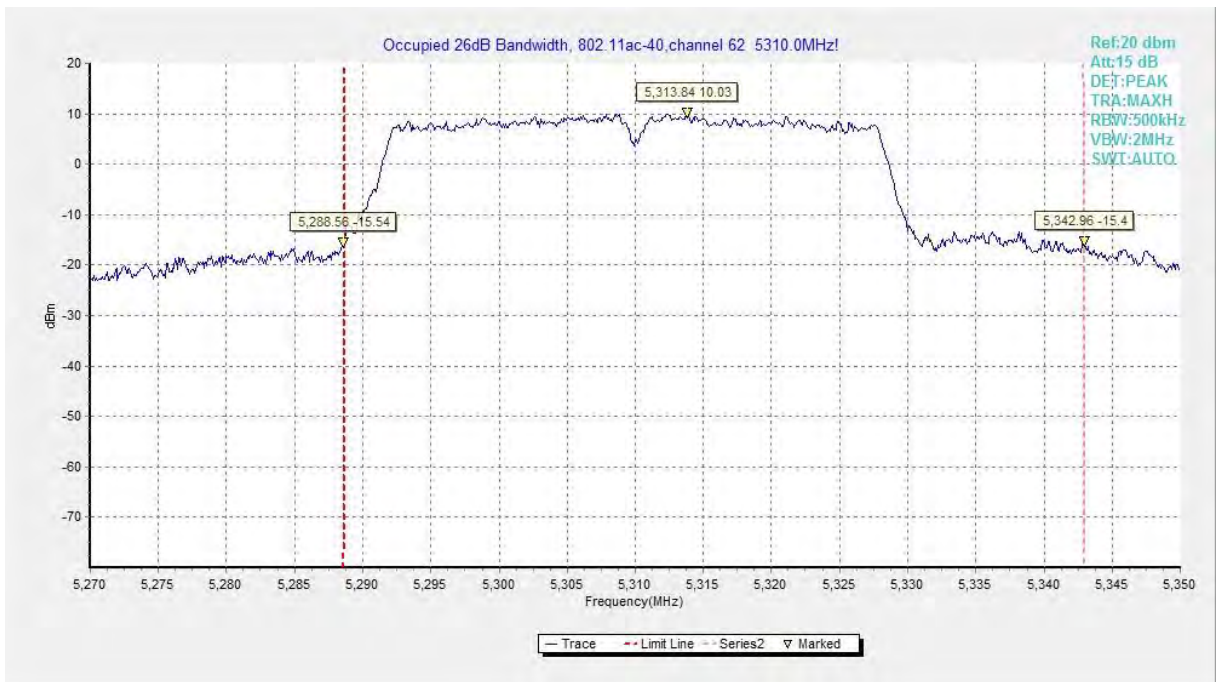


Fig.24 Occupied 26dB Bandwidth (802.11ac-HT40, 5310MHz)

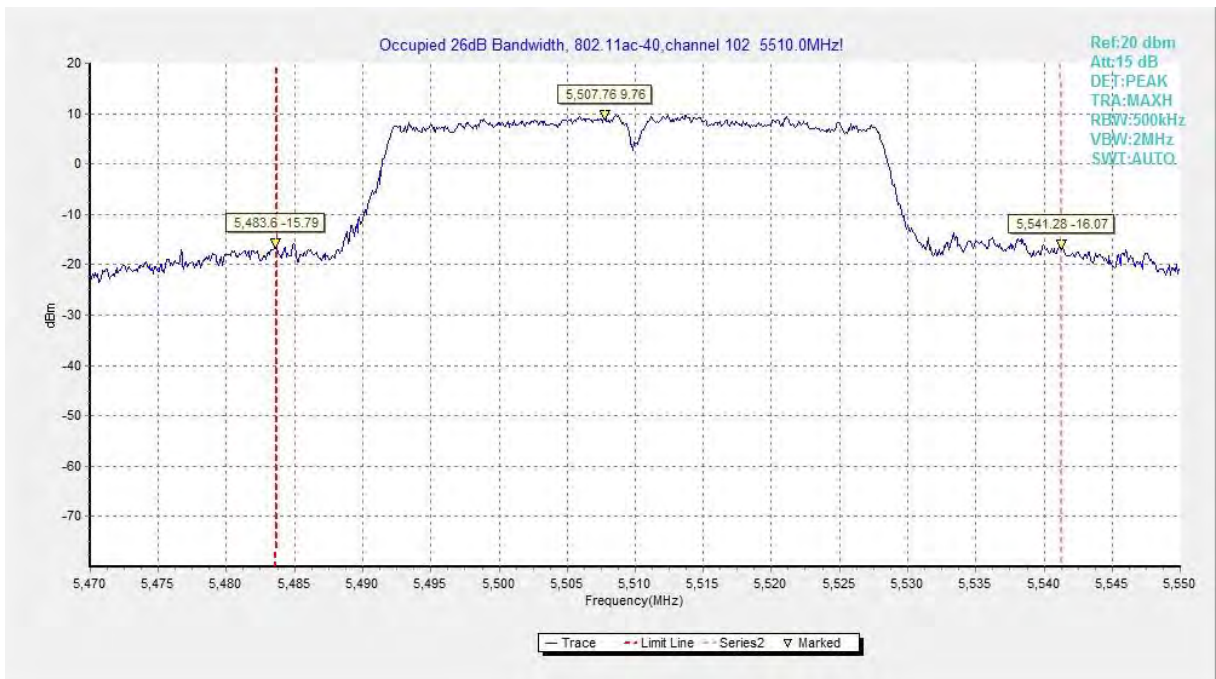
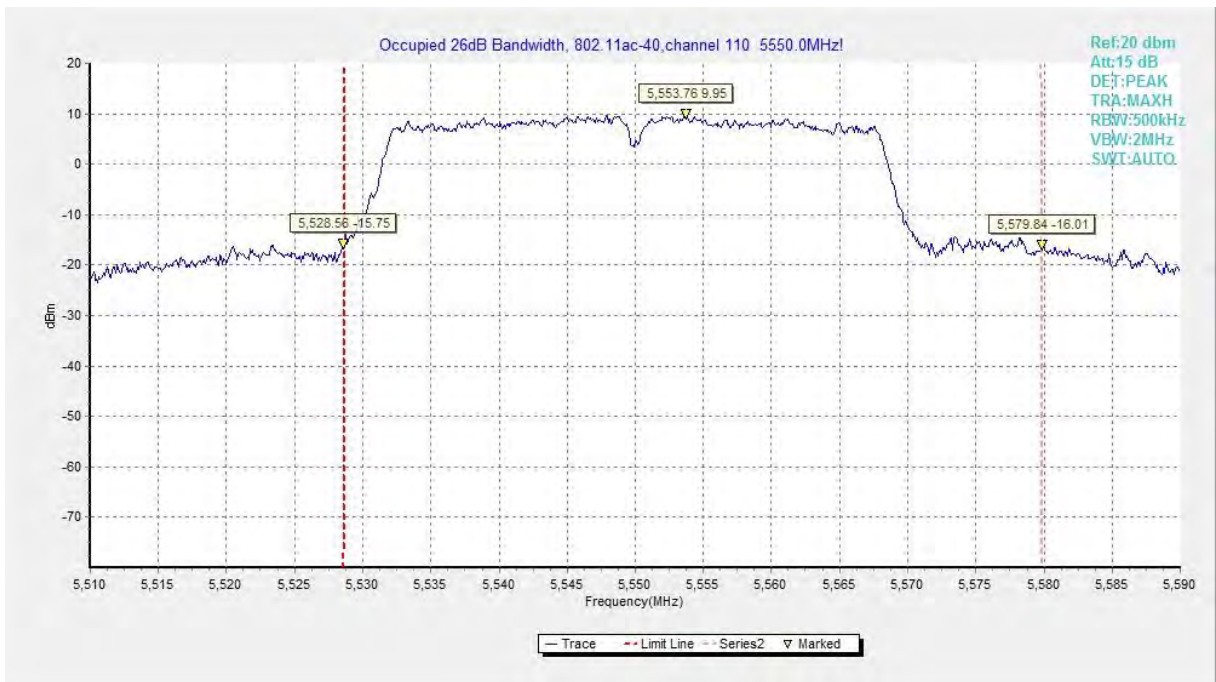
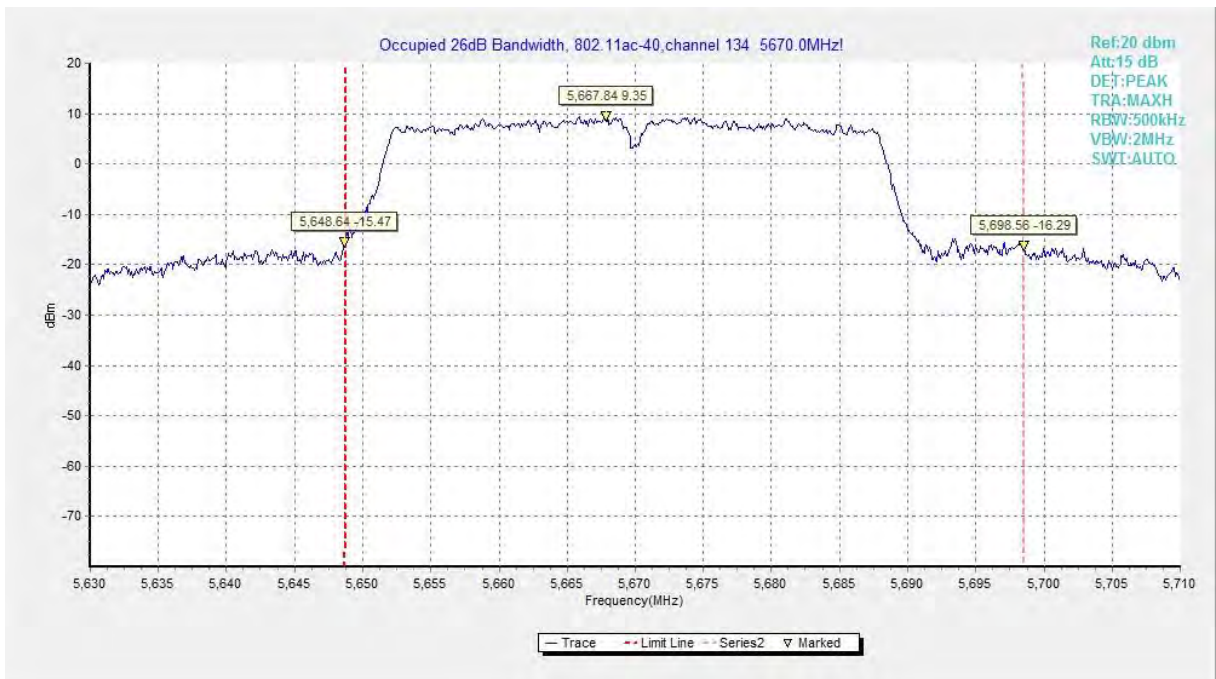


Fig.25 Occupied 26dB Bandwidth (802.11ac-HT40, 5510MHz)



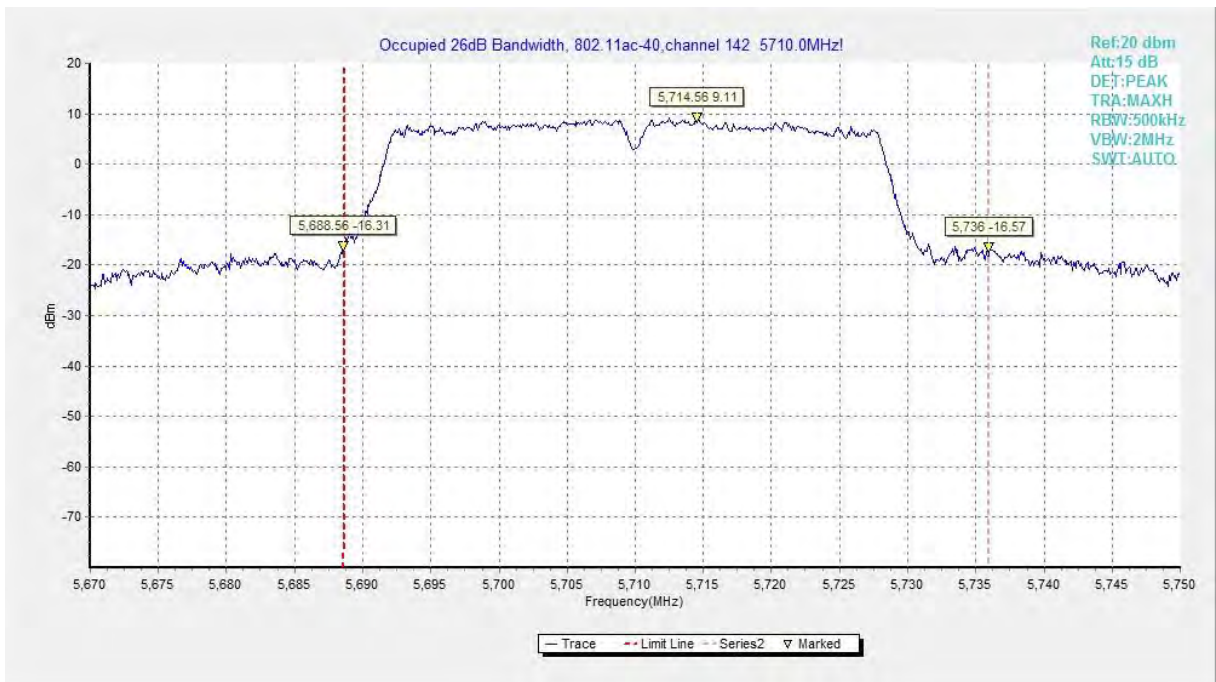


**Fig.26 Occupied 26dB Bandwidth (802.11ac-HT40, 5550MHz)**

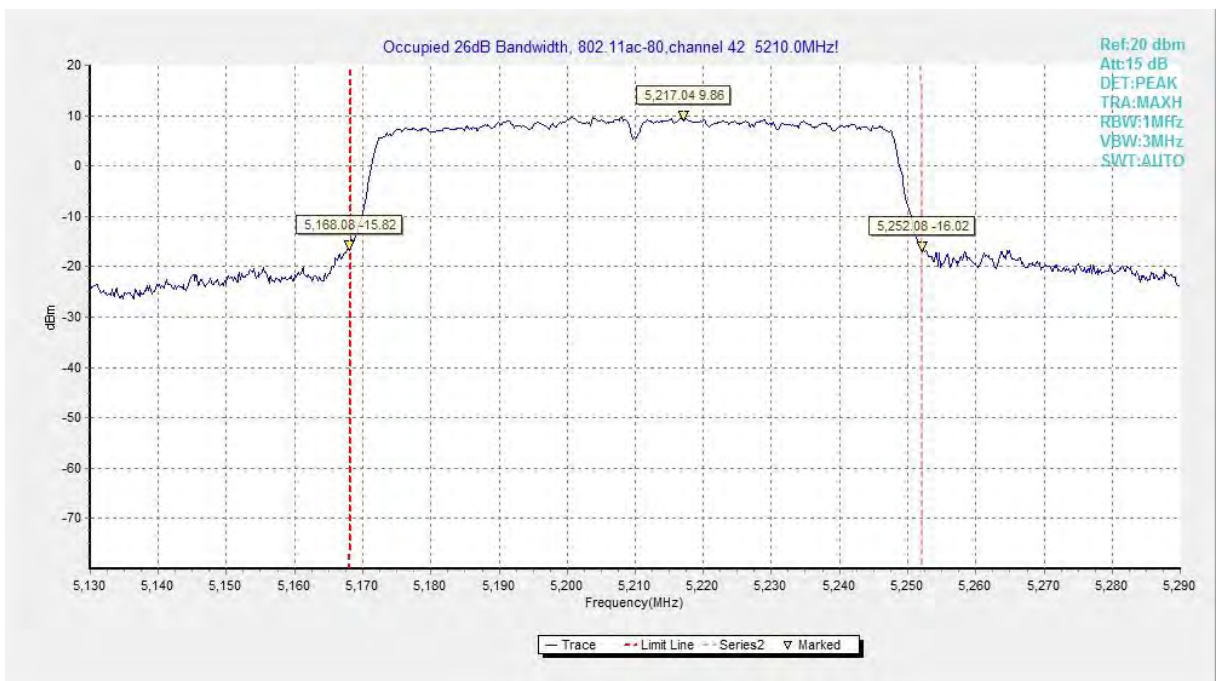


**Fig.27 Occupied 26dB Bandwidth (802.11ac-HT40, 5670MHz)**





**Fig.28 Occupied 26dB Bandwidth (802. 11ac-HT40, 5710MHz)**



**Fig.29 Occupied 26dB Bandwidth (802. 11ac-HT80, 5210MHz)**

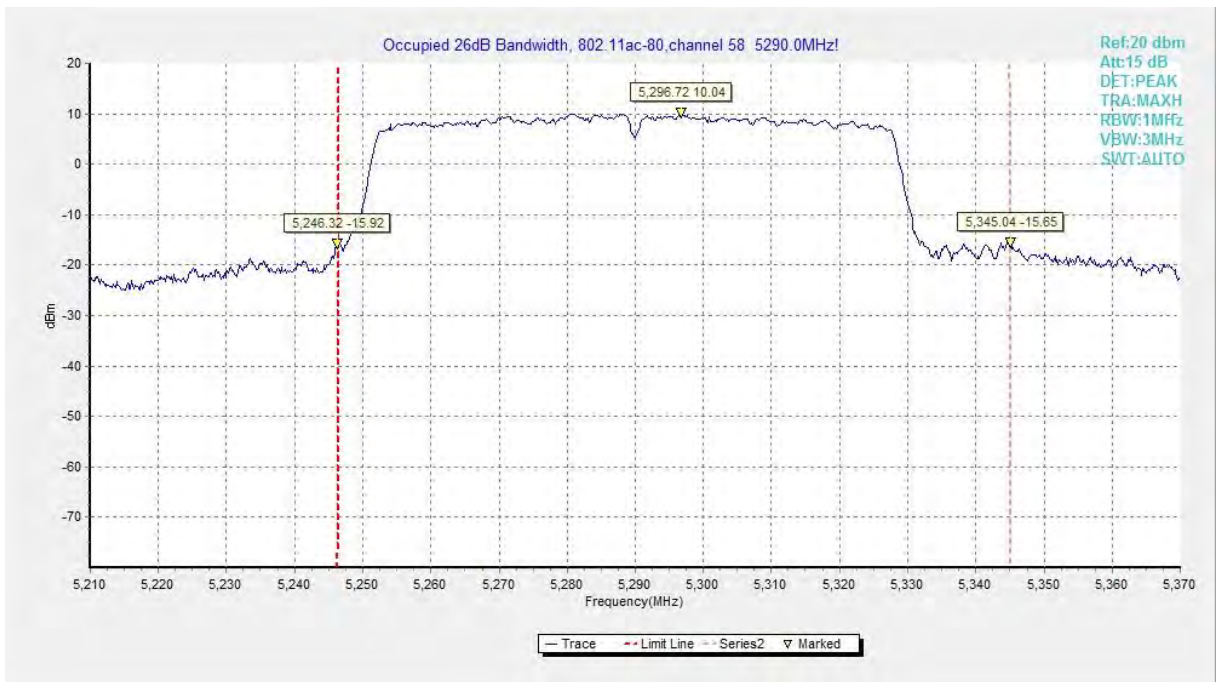


Fig.30 Occupied 26dB Bandwidth (802. 11ac-HT80, 5290MHz)

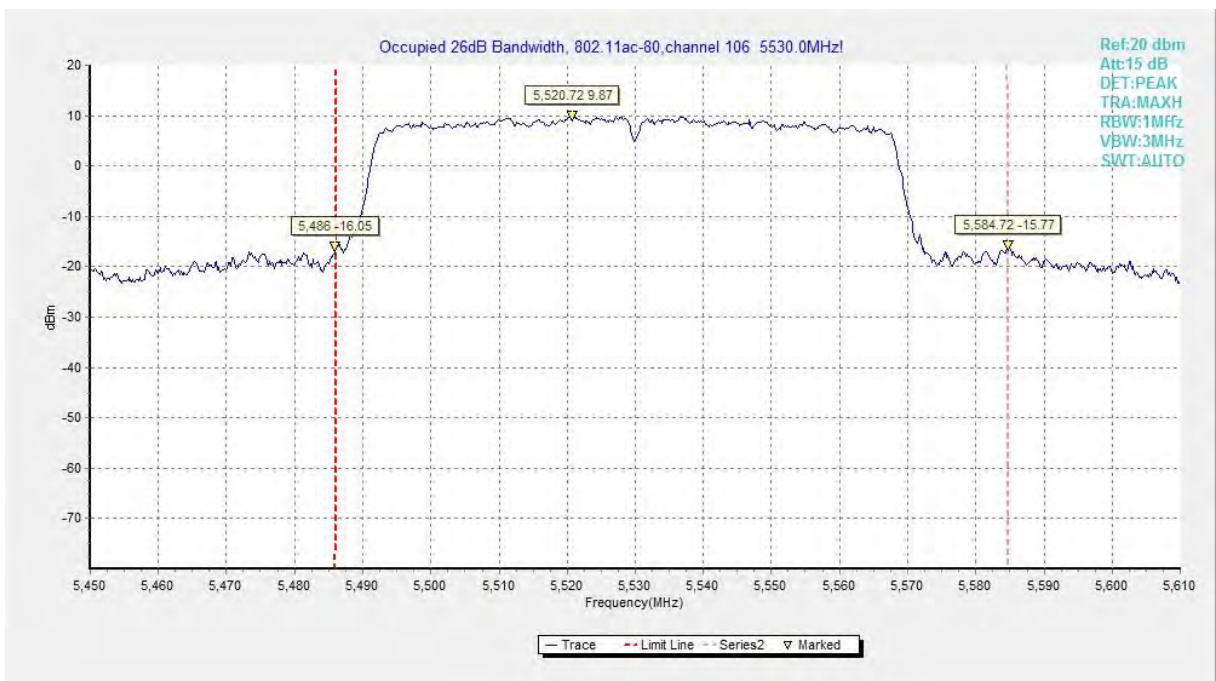
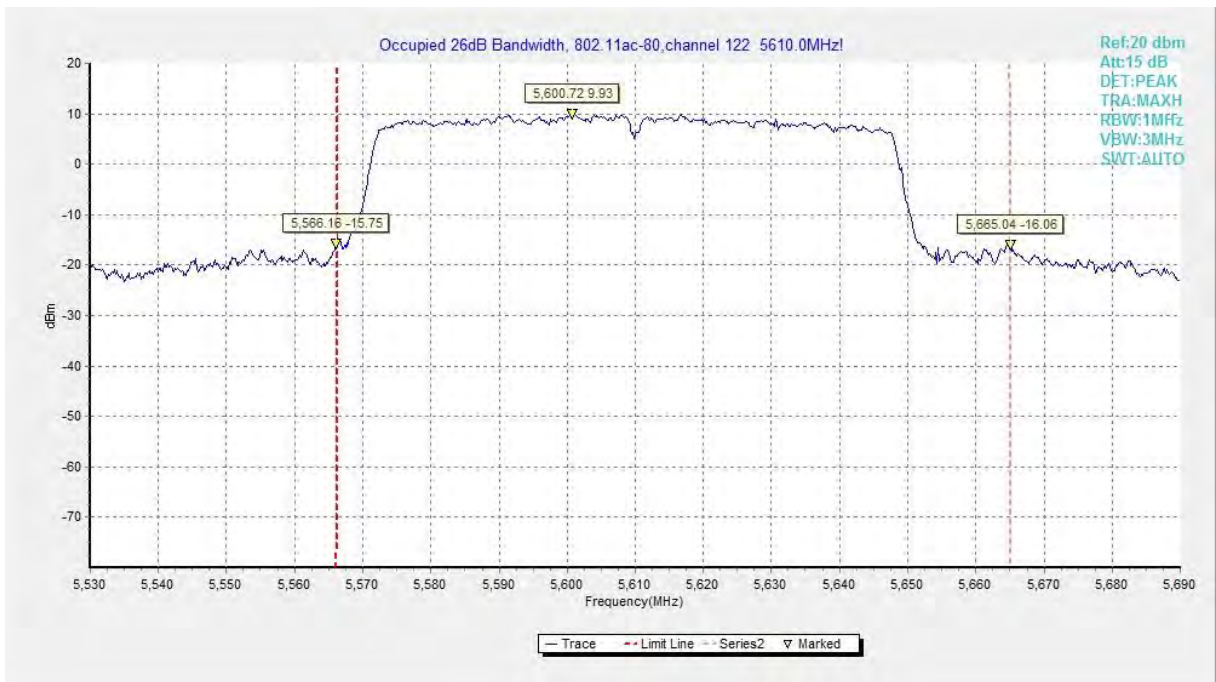
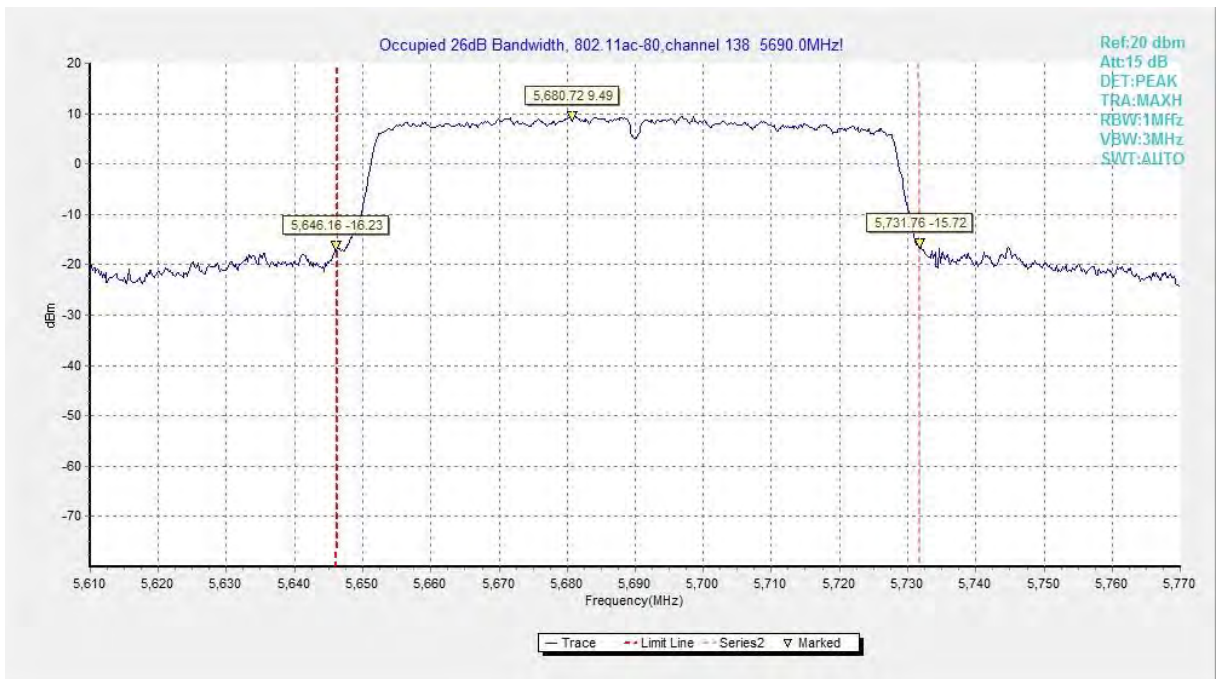


Fig.31 Occupied 26dB Bandwidth (802. 11ac-HT80, 5530MHz)



**Fig.32 Occupied 26dB Bandwidth (802.11ac-HT80, 5610MHz)**



**Fig.33 Occupied 26dB Bandwidth (802.11ac-HT80, 5690MHz)**



## A.5. Band Edges Compliance

### A5.1 Band Edges - Radiated

#### Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407	-27 dBm/MHz

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)).

#### Limit in restricted band:

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

The measurement is made according to ANSI C63.10-2013 and KDB 789033

#### Measurement Result:

Mode	Channel	Test Results	Conclusion
802.11a	5180 MHz	Fig.34	P
	5320 MHz	Fig.35	P
	5500 MHz	Fig.36	P
	5700 MHz	Fig.37	P
802.11n HT20	5180 MHz	Fig.38	P
	5320 MHz	Fig.39	P
	5500 MHz	Fig.40	P
	5700 MHz	Fig.41	P
802.11n HT40	5190 MHz	Fig.42	P
	5310 MHz	Fig.43	P
	5510 MHz	Fig.44	P
	5670 MHz	Fig.45	P
802.11ac HT20	5180 MHz	Fig.46	P
	5320 MHz	Fig.47	P
	5500 MHz	Fig.48	P
	5700 MHz	Fig.49	P
802.11ac HT40	5190 MHz	Fig.50	P
	5310 MHz	Fig.51	P
	5510 MHz	Fig.52	P
	5670 MHz	Fig.53	P
802.11ac HT80	5210MHz	Fig.54	P
	5290MHz	Fig.55	P
	5530MHz	Fig.56	P
	5610MHz	Fig.57	P

Conclusion: PASS

Test graphs as below:

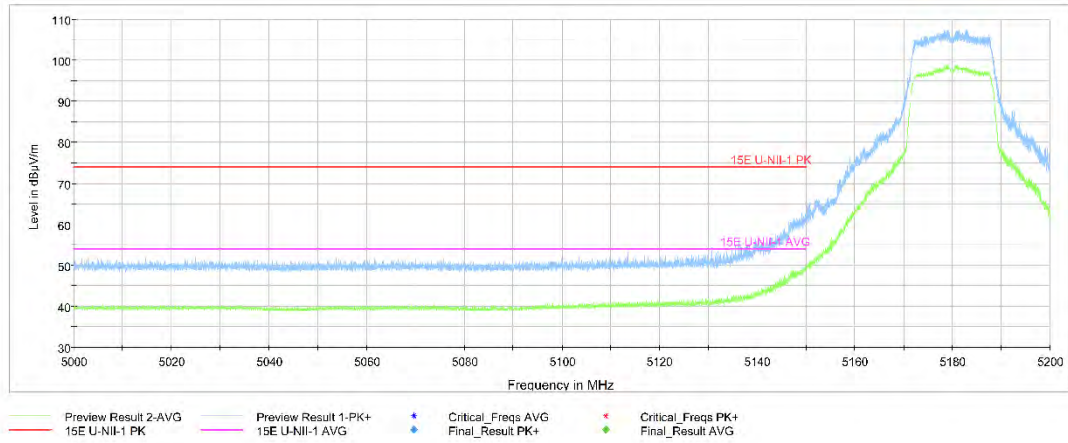


Fig.34 Band Edges (802.11a Ch36, 5180MHz)

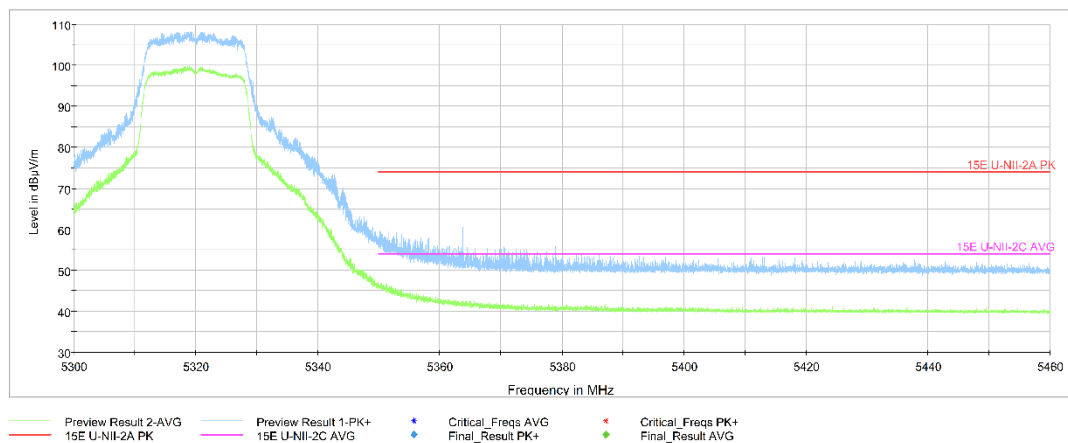
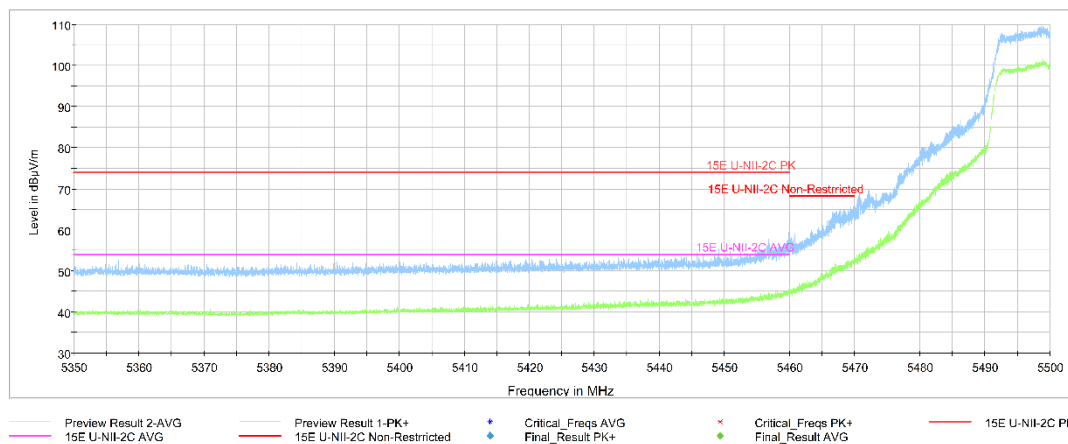
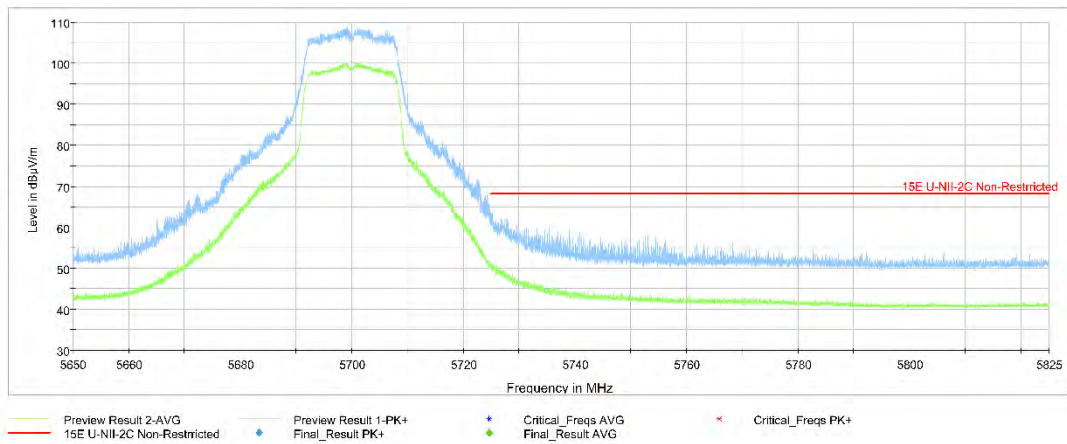


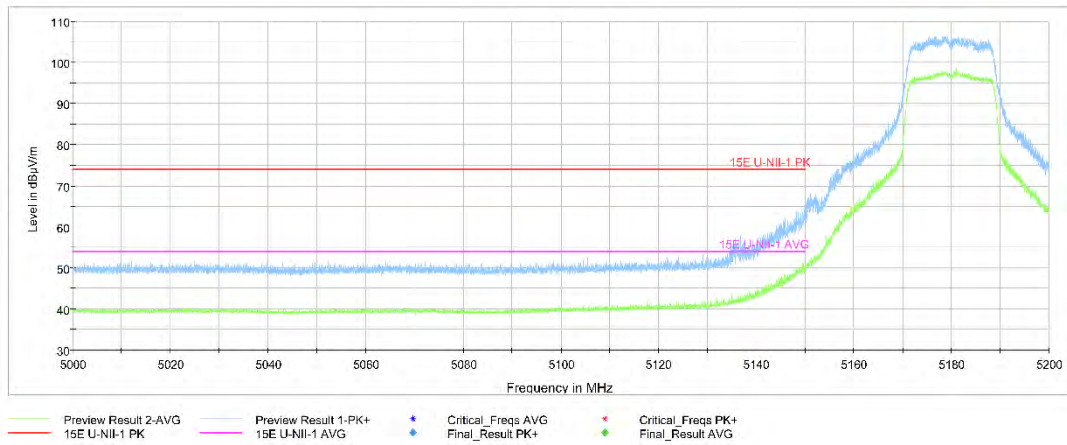
Fig.35 Band Edges (802.11a Ch64, 5320MHz)



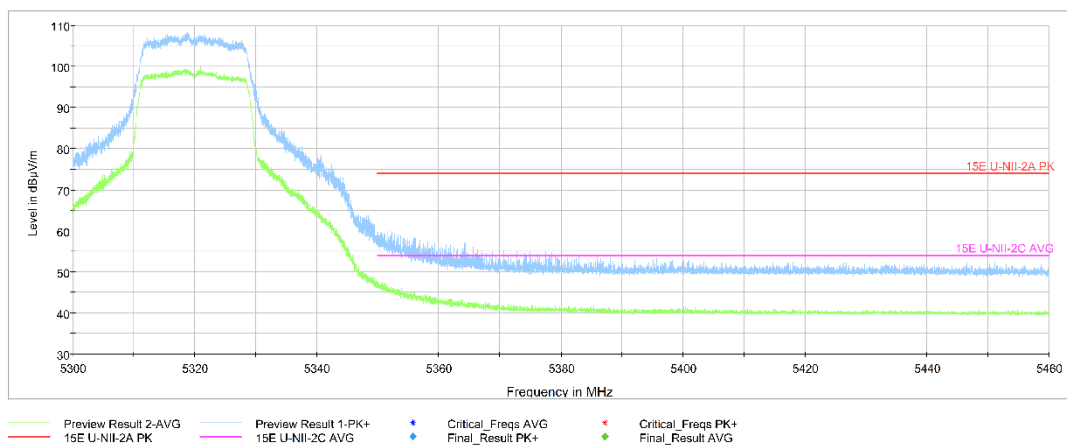
**Fig.36 Band Edges (802.11a Ch100, 5500MHz)**



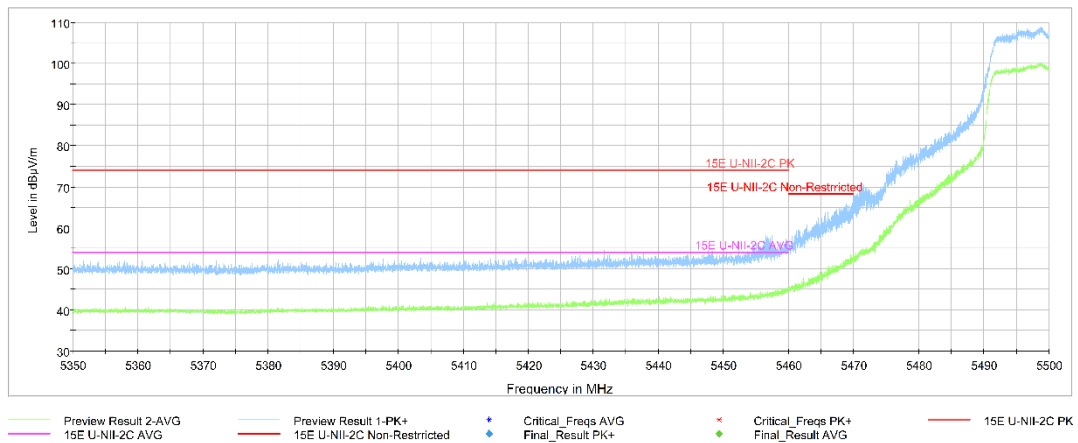
**Fig.37 Band Edges (802.11a Ch140, 5700MHz)**



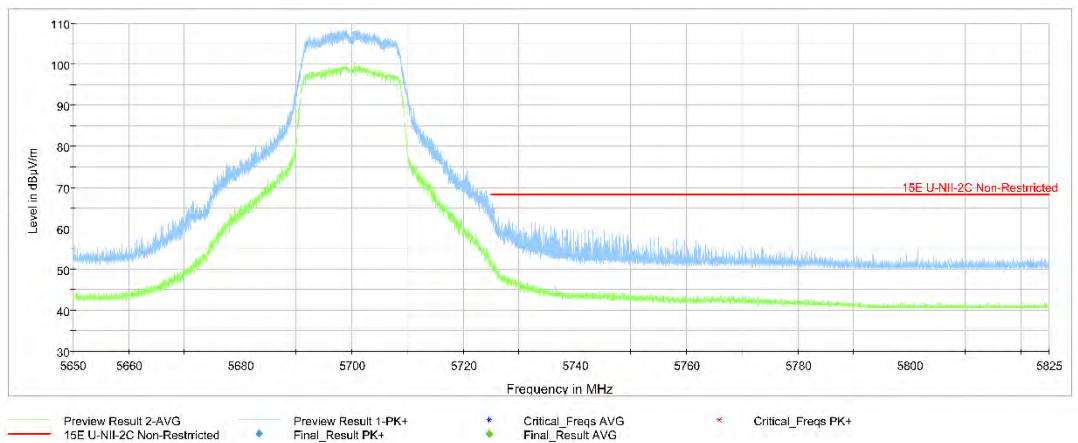
**Fig.38 Band Edges (802.11n-HT20 Ch36, 5180MHz)**



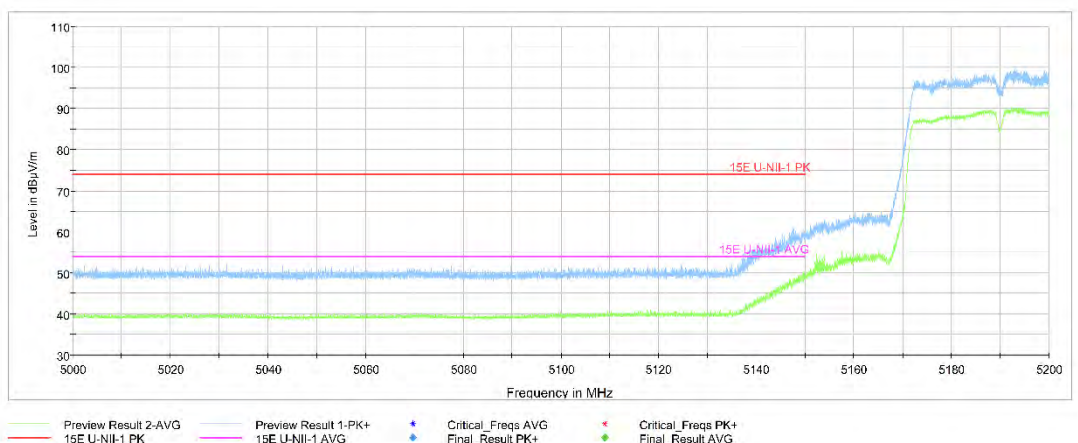
**Fig.39 Band Edges (802.11n-HT20 Ch64, 5320MHz)**



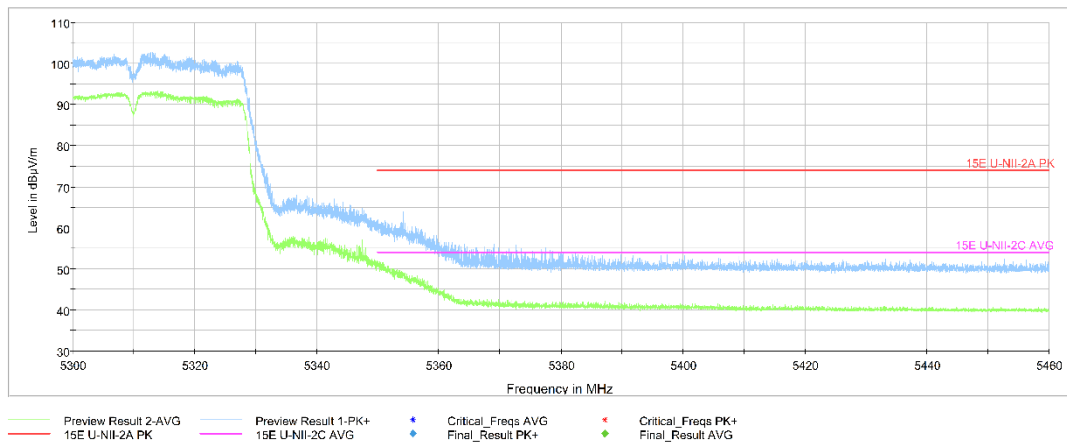
**Fig.40 Band Edges (802.11n-HT20 Ch100, 5500MHz)**



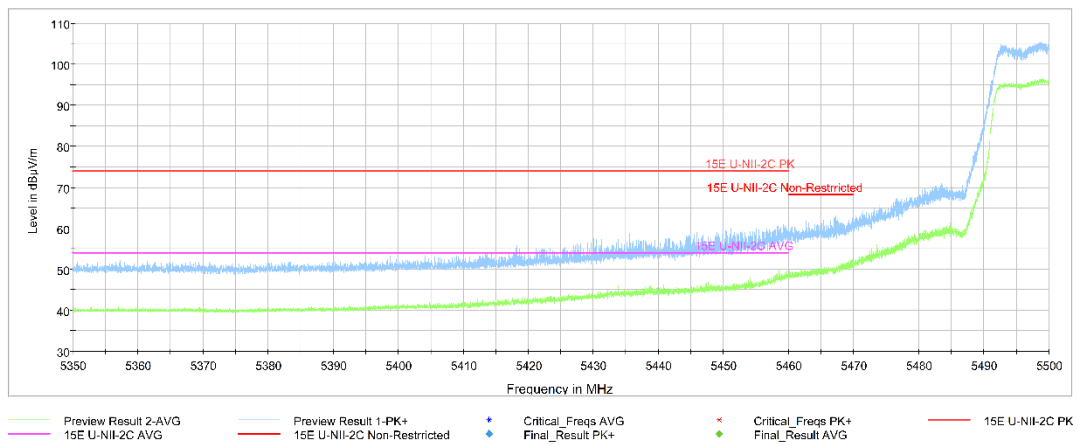
**Fig.41 Band Edges (802.11n-HT20 Ch140, 5700MHz)**



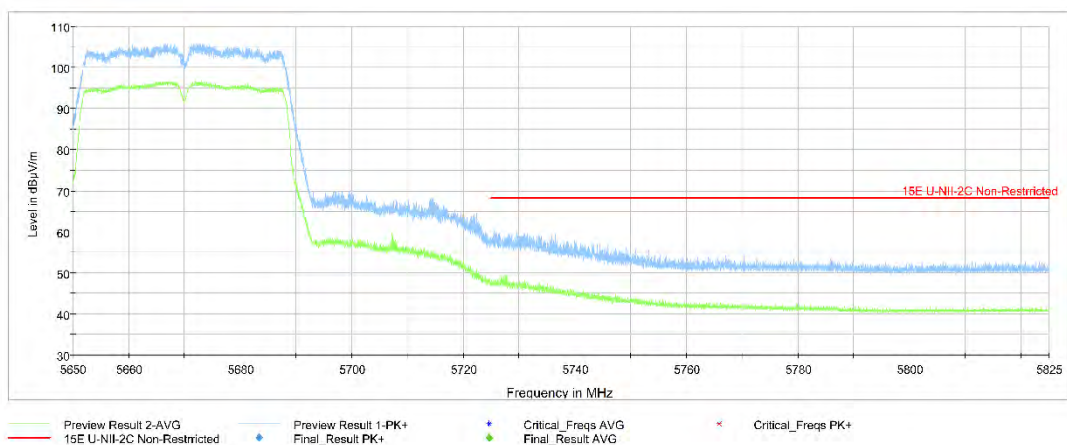
**Fig.42 Band Edges (802.11n-HT40 Ch38, 5190MHz)**



**Fig.43 Band Edges (802.11n-HT40 Ch62, 5310MHz)**

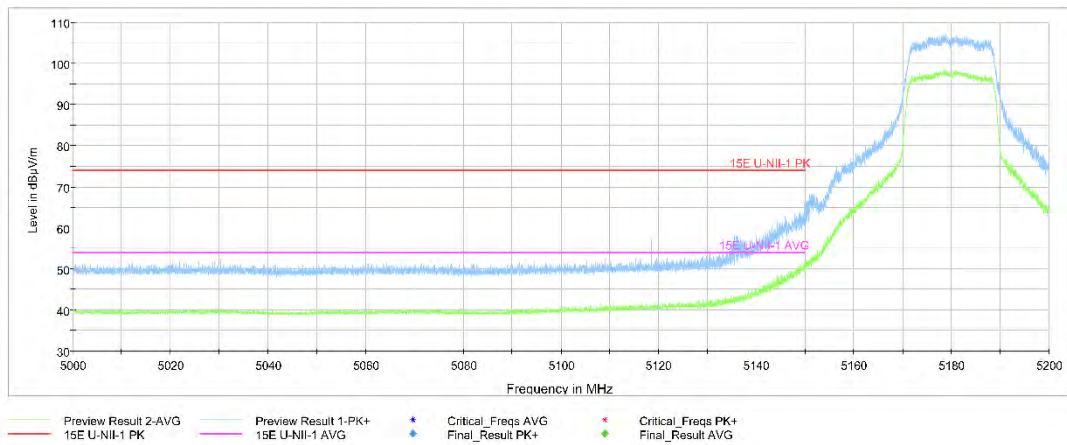


**Fig.44 Band Edges (802.11n-HT40 Ch102, 5510MHz)**

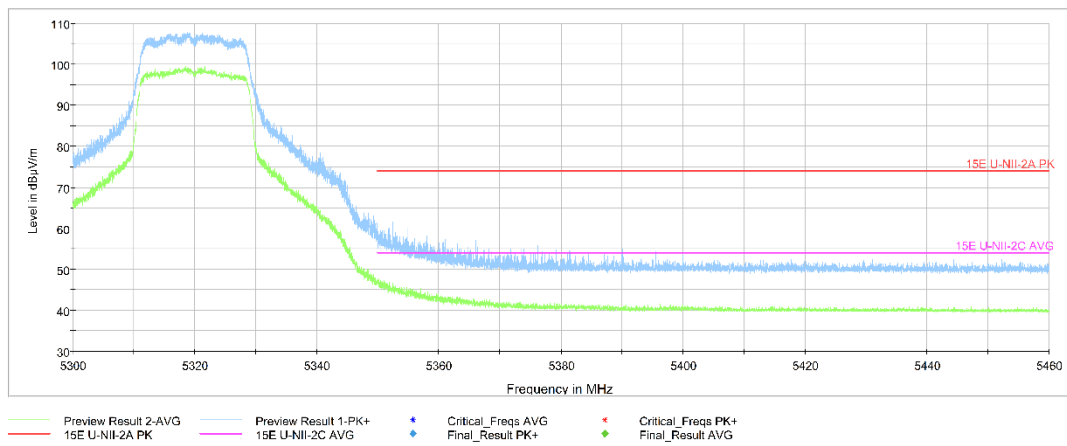


**Fig.45 Band Edges (802.11n-HT40 Ch134, 5670MHz)**

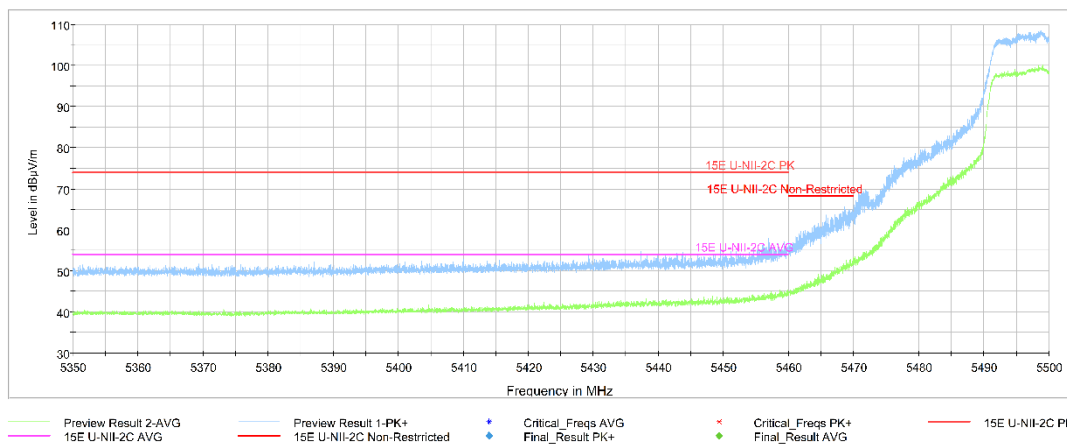




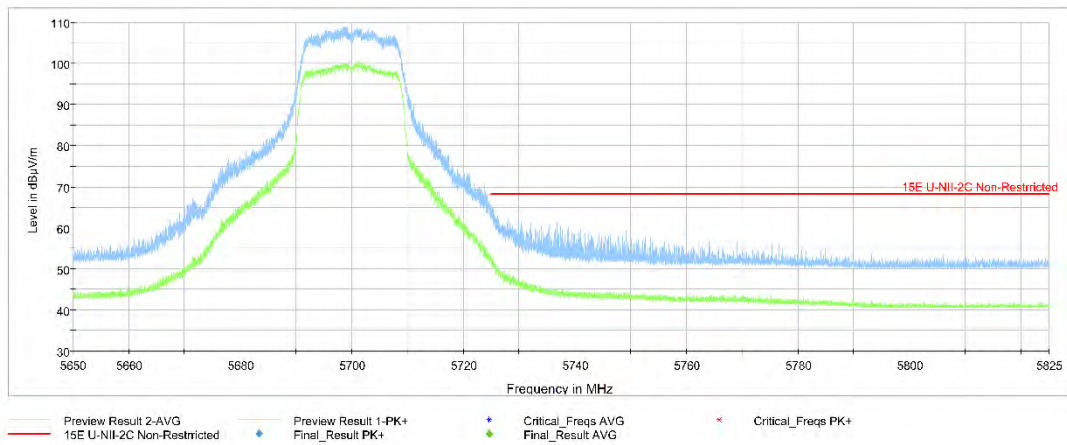
**Fig.46 Band Edges (802.11ac-HT20 Ch36, 5180MHz)**



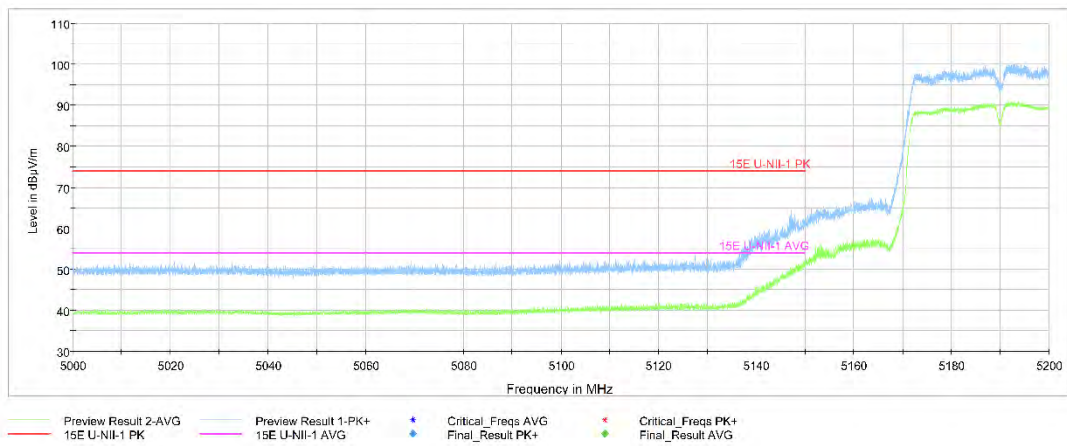
**Fig.47 Band Edges (802.11ac-HT20 Ch64, 5320MHz)**



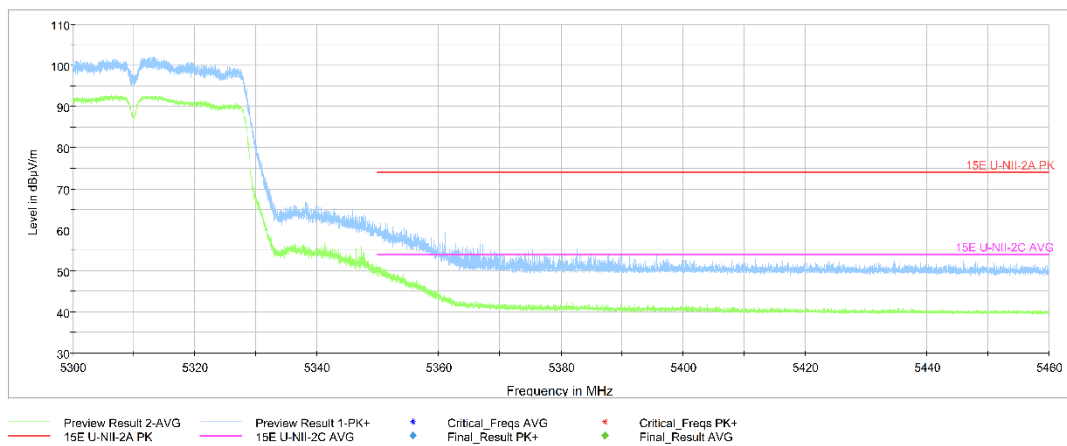
**Fig.48 Band Edges (802.11ac-HT20 Ch100, 5500MHz)**



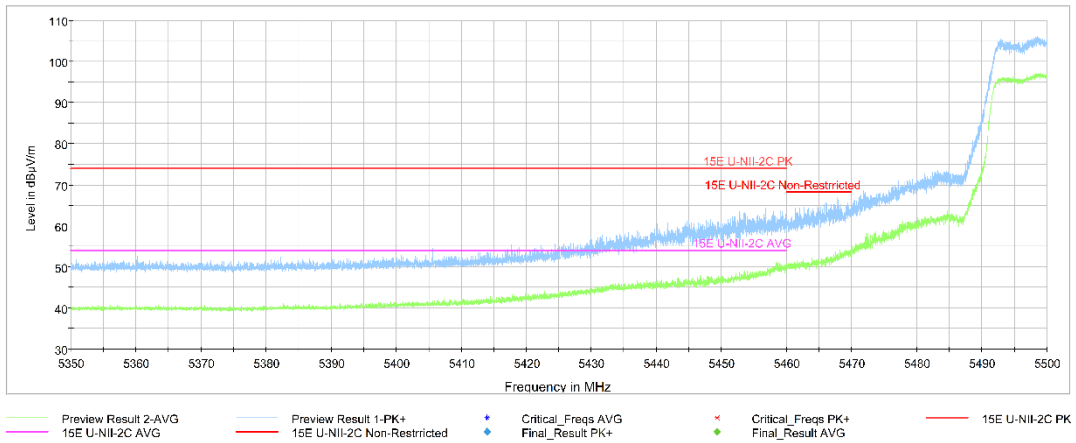
**Fig.49 Band Edges (802.11ac-HT20 Ch140, 5700MHz)**



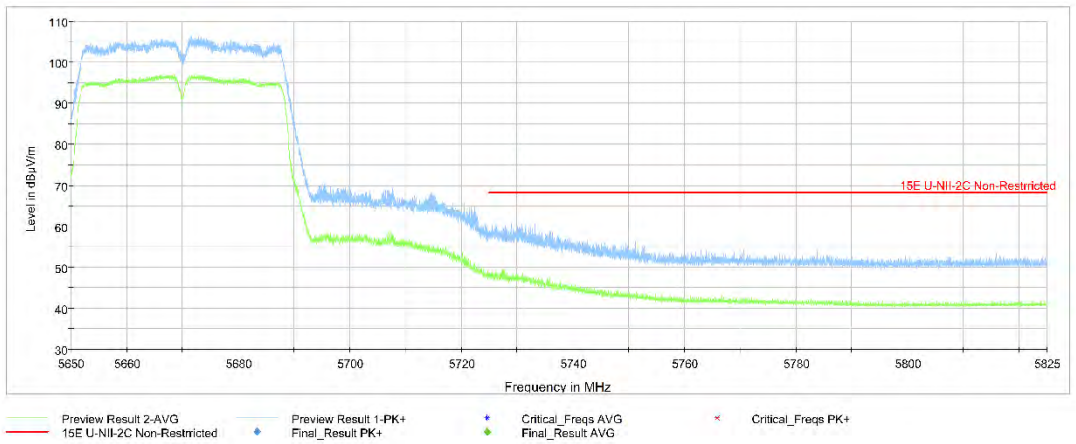
**Fig.50 Band Edges (802.11ac-HT40 Ch38, 5190MHz)**



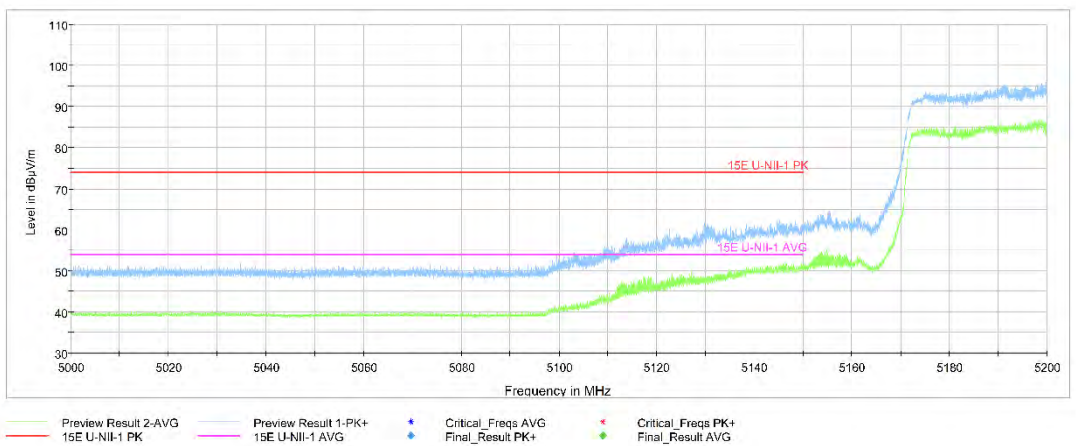
**Fig.51 Band Edges (802.11ac-HT40 Ch62, 5310MHz)**



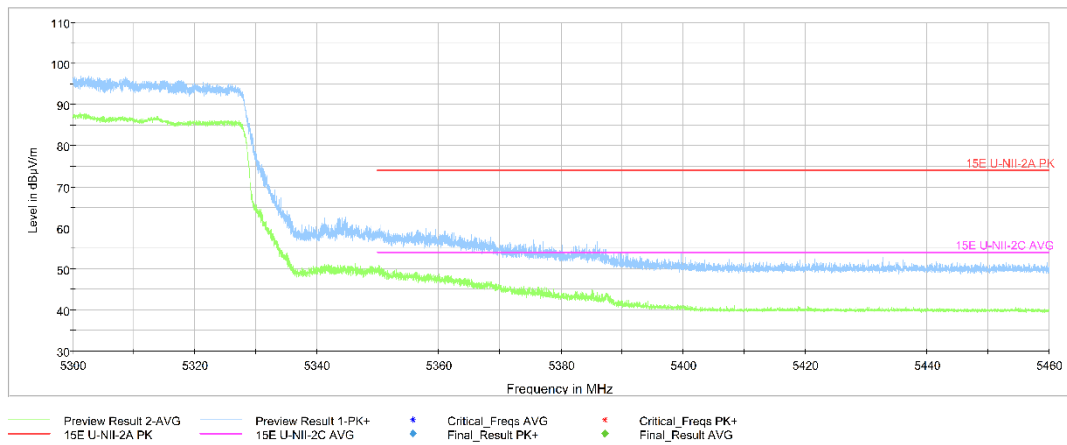
**Fig.52 Band Edges (802.11ac-HT40 Ch102, 5510MHz)**



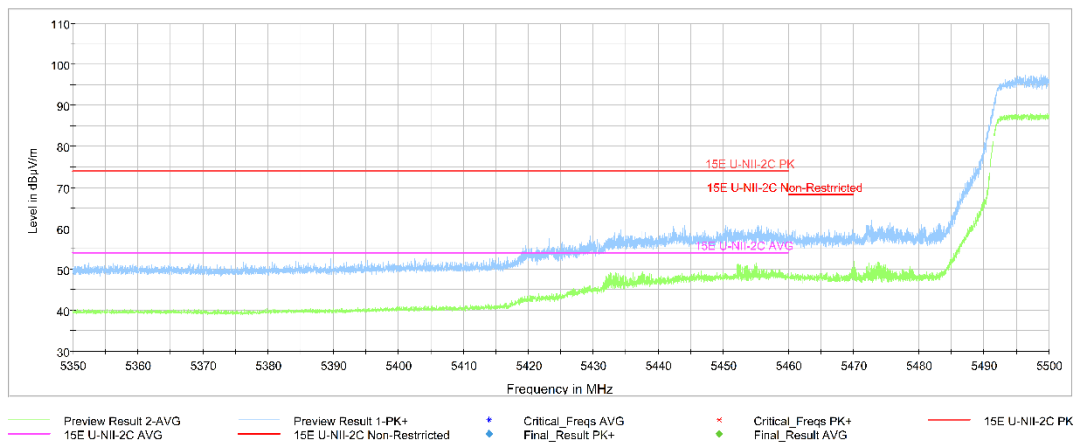
**Fig.53 Band Edges (802.11ac-HT40 Ch134, 5670MHz)**



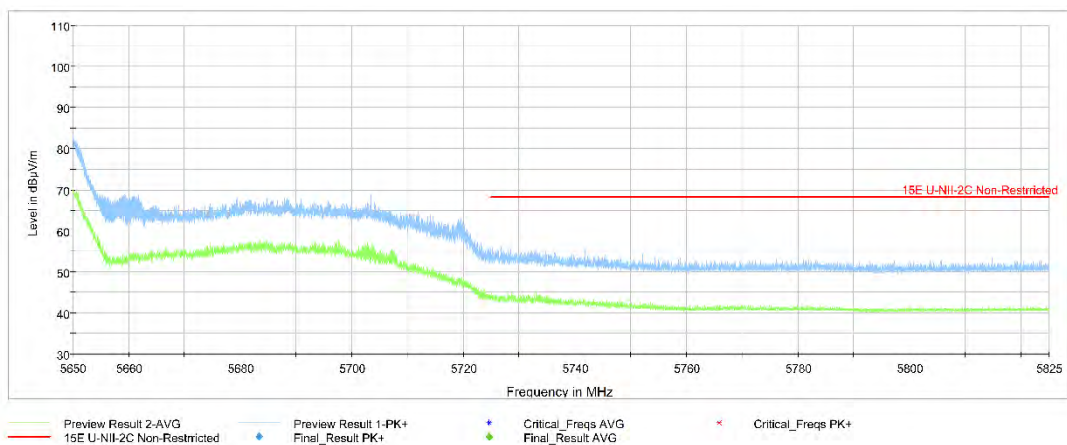
**Fig.54 Band Edges (802.11ac-HT80 Ch42 , 5210MHz)**



**Fig.55 Band Edges (802.11ac-HT80 Ch58, 5290MHz)**



**Fig.56 Band Edges (802.11ac-HT80 Ch106, 5530MHz)**



**Fig.57 Band Edges (802.11ac-HT80 Ch122, 5610MHz)**

## A.6. Transmitter Spurious Emission

### Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.407	-27 dBm/MHz

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)).

### Limit in restricted band:

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

The measurement is made according to ANSI C63.10-2013 and KDB 789033

### Measurement Results:

**802.11a mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11a	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	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
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	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
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	120(5600MHz)	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
	140(5700MHz)	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	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	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
		26.5 GHz ~ 40 GHz	---	P
	48(5240MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	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
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	120(5600MHz)	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
	140(5700MHz)	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	38(5190MHz)	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
	46(5230MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	54(5270MHz)	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
	62(5310MHz)	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
	102(5510MHz)	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
	118(5590MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
134(5670MHz)	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	

**802.11ac-HT20 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac -HT20	36(5180MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	40(5200MHz)	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
		48(5240MHz)	1 GHz ~ 3 GHz	---
	3 GHz ~ 7 GHz		---	P
	7 GHz ~ 18 GHz		---	P
	52(5260MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	56(5280MHz)	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
	64(5320MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	100(5500MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	120(5600MHz)	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
	140(5700MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P

**802.11ac-HT40 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac HT40	38(5190MHz)	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
	46(5230MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	54(5270MHz)	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
	62(5310MHz)	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
	102(5510MHz)	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
	118(5590MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
134(5670MHz)	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	

**802.11ac-HT80 mode**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11ac -HT80	42(5210MHz)	1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
		7 GHz ~ 18 GHz	---	P
	58(5290MHz)	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
	106(5530MHz)	26.5 GHz ~ 40 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
	122(5610MHz)	7 GHz ~ 18 GHz	---	P
		1 GHz ~ 3 GHz	---	P
		3 GHz ~ 7 GHz	---	P
			7 GHz ~ 18 GHz	---

**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.

The measurement results are obtained as described below:

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

**AVERAGE Results:**
**802.11a**

## Channel 36

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)
17913.650	41.50	-25.50	46.66	20.34	54.00	12.50	H
17996.700	41.00	-25.50	46.66	19.84	54.00	13.00	H
13325.550	38.11	-29.49	39.71	27.89	54.00	15.89	H
13305.200	38.09	-29.49	39.71	27.87	54.00	15.91	V
5149.980	49.54	-27.61	33.67	43.48	54.00	4.46	H
5149.600	49.28	-27.61	33.67	43.22	54.00	4.72	V

## Channel 40

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)
17982.950	40.94	-25.50	46.66	19.78	54.00	13.06	V
17964.250	40.86	-25.50	46.66	19.70	54.00	13.14	V
13309.600	37.71	-29.49	39.71	27.49	54.00	16.29	V
13310.150	37.70	-29.49	39.71	27.48	54.00	16.30	V
11821.300	36.64	-31.85	39.05	29.44	54.00	17.36	V
11243.250	36.47	-32.36	38.77	30.07	54.00	17.53	H

## Channel 48

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17990.650	41.21	-25.50	46.66	20.05	54.00	12.79	H
17938.950	41.19	-25.50	46.66	20.03	54.00	12.81	V
13305.200	37.62	-29.49	39.71	27.40	54.00	16.38	H
13337.100	37.62	-29.49	39.71	27.40	54.00	16.38	H
11780.600	36.55	-31.99	38.98	29.56	54.00	17.45	H
11788.850	36.37	-31.99	38.98	29.38	54.00	17.63	H



## Channel 52

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	41.11	-25.50	46.66	19.95	54.00	12.89	V
17926.850	40.91	-25.50	46.66	19.75	54.00	13.09	H
13327.200	37.67	-29.49	39.71	27.45	54.00	16.33	H
13296.400	37.55	-29.49	39.71	27.33	54.00	16.45	V
11794.900	36.76	-31.99	38.98	29.77	54.00	17.24	H
10834.050	36.36	-32.33	38.59	30.10	54.00	17.64	V

## Channel 56

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)
17947.200	40.98	-25.50	46.66	19.82	54.00	13.02	V
17986.800	40.75	-25.50	46.66	19.59	54.00	13.25	V
13317.300	37.60	-29.49	39.71	27.38	54.00	16.40	V
13306.850	37.54	-29.49	39.71	27.32	54.00	16.46	H
11359.850	36.52	-32.42	38.79	30.15	54.00	17.48	V
11388.450	36.50	-32.42	38.79	30.13	54.00	17.50	H

## Channel 64

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)
17953.800	40.97	-25.50	46.66	19.81	54.00	13.03	H
17982.950	40.83	-25.50	46.66	19.67	54.00	13.17	V
14485.500	37.86	-28.59	42.46	23.99	54.00	16.14	H
13312.900	37.84	-29.49	39.71	27.62	54.00	16.16	V
5350.416	46.98	-27.43	34.01	40.40	54.00	7.02	H
5351.184	46.72	-27.43	34.01	40.14	54.00	7.28	H

## Channel 100

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)
17923.000	40.95	-25.50	46.66	19.79	54.00	13.05	H
17992.300	40.89	-25.50	46.66	19.73	54.00	13.11	V
13324.450	37.72	-29.49	39.71	27.50	54.00	16.28	H
13308.500	37.67	-29.49	39.71	27.45	54.00	16.33	V
5459.980	45.21	-27.18	34.17	38.22	54.00	8.79	V
5459.920	44.81	-27.18	34.17	37.82	54.00	9.19	V

## Channel 120

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)
17994.500	40.93	-25.50	46.66	19.77	54.00	13.07	H
17963.150	40.81	-25.50	46.66	19.65	54.00	13.19	H
13305.200	37.78	-29.49	39.71	27.56	54.00	16.22	H
13326.650	37.52	-29.49	39.71	27.30	54.00	16.48	H
11821.850	36.47	-31.85	39.05	29.27	54.00	17.53	V
10831.850	36.43	-32.33	38.59	30.17	54.00	17.57	H

## Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.800	40.92	-25.50	46.66	19.76	54.00	13.08	V
17970.300	40.90	-25.50	46.66	19.74	54.00	13.10	V
13307.400	38.01	-29.49	39.71	27.79	54.00	15.99	V
13292.550	37.76	-29.49	39.71	27.54	54.00	16.24	H
11789.400	36.84	-31.99	38.98	29.85	54.00	17.16	H
11783.900	36.34	-31.99	38.98	29.35	54.00	17.66	V

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## Channel 36

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17965.900	41.17	-25.50	46.66	20.01	54.00	12.83	V
17941.700	40.92	-25.50	46.66	19.76	54.00	13.08	V
13326.650	37.76	-29.49	39.71	27.54	54.00	16.24	H
13309.050	37.54	-29.49	39.71	27.32	54.00	16.46	H
5149.760	48.94	-27.61	33.67	42.88	54.00	5.06	V
5148.860	48.67	-27.61	33.67	42.61	54.00	5.33	H

## Channel 40

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)
17954.350	40.81	-25.50	46.66	19.65	54.00	13.19	V
17974.700	40.74	-25.50	46.66	19.58	54.00	13.26	H
13309.050	37.84	-29.49	39.71	27.62	54.00	16.16	V
14496.500	37.76	-28.59	42.46	23.89	54.00	16.24	H
11797.100	36.99	-31.85	39.05	29.79	54.00	17.01	V
11399.450	36.78	-32.42	38.79	30.41	54.00	17.22	V

## Channel 48

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)
17976.350	40.96	-25.50	46.66	19.80	54.00	13.04	H
17932.900	40.92	-25.50	46.66	19.76	54.00	13.08	H
13333.800	37.62	-29.49	39.71	27.40	54.00	16.38	H
14497.600	37.61	-28.59	42.46	23.74	54.00	16.39	H
11887.850	36.47	-31.85	39.05	29.27	54.00	17.53	V
11797.650	36.33	-31.85	39.05	29.13	54.00	17.67	H

## Channel 52

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)
17982.950	40.99	-25.50	46.66	19.83	54.00	13.01	V
17970.850	40.95	-25.50	46.66	19.79	54.00	13.05	H
13324.450	37.80	-29.49	39.71	27.58	54.00	16.20	V
13328.300	37.62	-29.49	39.71	27.40	54.00	16.38	V
10861.000	36.44	-32.33	38.59	30.18	54.00	17.56	H
10910.500	36.37	-32.82	38.70	30.49	54.00	17.63	V

## Channel 56

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17974.700	40.87	-25.50	46.66	19.71	54.00	13.13	V
17993.950	40.76	-25.50	46.66	19.60	54.00	13.24	V
13318.950	37.74	-29.49	39.71	27.52	54.00	16.26	V
13282.100	37.62	-29.67	39.55	27.74	54.00	16.38	H
11796.000	37.00	-31.85	39.05	29.80	54.00	17.00	H
11813.600	36.69	-31.85	39.05	29.49	54.00	17.31	H

## Channel 64

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)
17982.400	40.97	-25.50	46.66	19.81	54.00	13.03	V
17971.400	40.94	-25.50	46.66	19.78	54.00	13.06	V
13296.950	37.63	-29.49	39.71	27.41	54.00	16.37	H
13311.800	37.58	-29.49	39.71	27.36	54.00	16.42	V
5350.048	47.64	-27.43	34.01	41.06	54.00	6.36	H
5350.784	47.41	-27.43	34.01	40.83	54.00	6.59	H

## Channel 100

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)
17963.150	40.94	-25.50	46.66	19.78	54.00	13.06	H
17987.350	40.77	-25.50	46.66	19.61	54.00	13.23	V
13326.100	37.75	-29.49	39.71	27.53	54.00	16.25	H
14488.250	37.61	-28.59	42.46	23.74	54.00	16.39	V
5459.650	44.59	-27.18	34.17	37.60	54.00	9.41	H
5459.830	44.43	-27.18	34.17	37.44	54.00	9.57	H

## Channel 120

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)
17940.600	41.14	-25.50	46.66	19.98	54.00	12.86	V
17946.650	40.89	-25.50	46.66	19.73	54.00	13.11	V
13329.950	37.60	-29.49	39.71	27.38	54.00	16.40	V
14487.150	37.55	-28.59	42.46	23.68	54.00	16.45	V
11803.150	36.77	-31.85	39.05	29.57	54.00	17.23	V
10845.050	36.37	-32.33	38.59	30.11	54.00	17.63	H

## Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17965.900	40.87	-25.50	46.66	19.71	54.00	13.13	H
17968.100	40.87	-25.50	46.66	19.71	54.00	13.13	H
13319.500	37.90	-29.49	39.71	27.68	54.00	16.10	V
14484.400	37.68	-28.59	42.46	23.81	54.00	16.32	H
11809.750	36.67	-31.85	39.05	29.47	54.00	17.33	H
11785.000	36.61	-31.99	38.98	29.62	54.00	17.39	V



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## Channel 38

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)
17984.050	40.90	-25.50	46.66	19.74	54.00	13.10	H
17921.350	40.85	-25.50	46.66	19.69	54.00	13.15	H
14477.250	37.66	-28.59	42.46	23.79	54.00	16.34	V
14489.900	37.48	-28.59	42.46	23.61	54.00	16.52	H
5149.940	50.26	-27.61	33.67	44.20	54.00	3.74	V
5149.740	50.24	-27.61	33.67	44.18	54.00	3.76	V

## Channel 46

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)
17927.950	40.94	-25.50	46.66	19.78	54.00	13.06	H
17995.600	40.92	-25.50	46.66	19.76	54.00	13.08	H
13320.050	37.80	-29.49	39.71	27.58	54.00	16.20	V
13309.600	37.65	-29.49	39.71	27.43	54.00	16.35	H
11247.650	36.35	-32.36	38.77	29.95	54.00	17.65	H
11388.450	36.35	-32.42	38.79	29.98	54.00	17.65	H

## Channel 54

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	40.72	-25.50	46.66	19.56	54.00	13.28	H
17998.900	40.70	-25.50	46.66	19.54	54.00	13.30	V
13331.050	37.68	-29.49	39.71	27.46	54.00	16.32	V
13342.050	37.66	-29.49	39.71	27.44	54.00	16.34	H
11893.900	36.50	-31.85	39.05	29.30	54.00	17.50	H
11372.500	36.37	-32.42	38.79	30.00	54.00	17.63	V

Channel 62

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)
17935.650	40.80	-25.50	46.66	19.64	54.00	13.20	V
17926.300	40.72	-25.50	46.66	19.56	54.00	13.28	V
14498.700	37.66	-28.59	42.46	23.79	54.00	16.34	H
13294.750	37.63	-29.49	39.71	27.41	54.00	16.37	H
5350.784	50.79	-27.43	34.01	44.21	54.00	3.21	V
5350.352	50.48	-27.43	34.01	43.90	54.00	3.52	V

Channel 102

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17951.050	41.05	-25.50	46.66	19.89	54.00	12.95	V
17927.400	40.91	-25.50	46.66	19.75	54.00	13.09	V
13306.300	37.63	-29.49	39.71	27.41	54.00	16.37	V
14498.150	37.42	-28.59	42.46	23.55	54.00	16.58	H
5459.800	49.25	-27.18	34.17	42.26	54.00	4.75	V
5459.980	49.01	-27.18	34.17	42.02	54.00	4.99	H

Channel 118

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)
17862.500	40.90	-25.50	46.66	19.74	54.00	13.10	V
17958.750	40.72	-25.50	46.66	19.56	54.00	13.28	H
13290.900	37.70	-29.67	39.55	27.82	54.00	16.30	V
13300.250	37.58	-29.49	39.71	27.36	54.00	16.42	V
11794.900	36.51	-31.99	38.98	29.52	54.00	17.49	H
11373.050	36.42	-32.42	38.79	30.05	54.00	17.58	V



Channel 134

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)
17948.850	41.00	-25.50	46.66	19.84	54.00	13.00	V
17969.200	40.77	-25.50	46.66	19.61	54.00	13.23	H
13310.150	37.81	-29.49	39.71	27.59	54.00	16.19	V
13305.200	37.54	-29.49	39.71	27.32	54.00	16.46	V
11797.650	36.95	-31.85	39.05	29.75	54.00	17.05	V
11791.050	36.27	-31.99	38.98	29.28	54.00	17.73	V

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Channel 36

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)
17967.000	41.27	-25.50	46.66	20.11	54.00	12.73	H
17925.200	41.16	-25.50	46.66	20.00	54.00	12.84	H
13311.800	37.88	-29.49	39.71	27.66	54.00	16.12	V
13323.900	37.77	-29.49	39.71	27.55	54.00	16.23	V
5149.980	49.73	-27.61	33.67	43.67	54.00	4.27	V
5149.940	49.39	-27.61	33.67	43.33	54.00	4.61	V

Channel 40

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)
17912.000	41.06	-25.50	46.66	19.90	54.00	12.94	H
17982.400	40.95	-25.50	46.66	19.79	54.00	13.05	V
13325.550	37.71	-29.49	39.71	27.49	54.00	16.29	V
13328.850	37.63	-29.49	39.71	27.41	54.00	16.37	H
11790.500	36.61	-31.99	38.98	29.62	54.00	17.39	V
11784.450	36.46	-31.99	38.98	29.47	54.00	17.54	H

## Channel 48

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)
17978.550	41.37	-25.50	46.66	20.21	54.00	12.63	V
17995.600	40.96	-25.50	46.66	19.80	54.00	13.04	H
13327.750	37.90	-29.49	39.71	27.68	54.00	16.10	V
13300.800	37.70	-29.49	39.71	27.48	54.00	16.30	V
11796.550	36.52	-31.85	39.05	29.32	54.00	17.48	H
10734.500	36.47	-32.77	38.49	30.75	54.00	17.53	H

## Channel 52

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)
17938.950	40.82	-25.50	46.66	19.66	54.00	13.18	H
17942.250	40.78	-25.50	46.66	19.62	54.00	13.22	V
13311.250	37.61	-29.49	39.71	27.39	54.00	16.39	H
13325.550	37.61	-29.49	39.71	27.39	54.00	16.39	V
11793.800	36.71	-31.99	38.98	29.72	54.00	17.29	H
11792.150	36.45	-31.99	38.98	29.46	54.00	17.55	H

## Channel 56

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)
17949.950	40.99	-25.50	46.66	19.83	54.00	13.01	H
17964.800	40.89	-25.50	46.66	19.73	54.00	13.11	V
13273.300	37.57	-29.67	39.55	27.69	54.00	16.43	V
13301.350	37.52	-29.49	39.71	27.30	54.00	16.48	V
11799.300	36.63	-31.85	39.05	29.43	54.00	17.37	V
11784.450	36.45	-31.99	38.98	29.46	54.00	17.55	V

## Channel 64

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)
17925.750	41.22	-25.50	46.66	20.06	54.00	12.78	V
17959.300	40.89	-25.50	46.66	19.73	54.00	13.11	V
13291.450	37.69	-29.49	39.71	27.47	54.00	16.31	V
13276.600	37.63	-29.67	39.55	27.75	54.00	16.37	V
5350.208	47.73	-27.43	34.01	41.15	54.00	6.27	H
5351.152	47.30	-27.43	34.01	40.72	54.00	6.70	H

## Channel 100

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)
17941.150	40.89	-25.50	46.66	19.73	54.00	13.11	H
17923.550	40.78	-25.50	46.66	19.62	54.00	13.22	H
14498.700	37.80	-28.59	42.46	23.93	54.00	16.20	H
13293.650	37.67	-29.49	39.71	27.45	54.00	16.33	V
5459.860	44.59	-27.18	34.17	37.60	54.00	9.41	V
5459.650	44.54	-27.18	34.17	37.55	54.00	9.46	V

## Channel 120

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)
17942.250	40.82	-25.50	46.66	19.66	54.00	13.18	V
17997.250	40.80	-25.50	46.66	19.64	54.00	13.20	H
13304.100	37.44	-29.49	39.71	27.22	54.00	16.56	V
14494.300	37.35	-28.59	42.46	23.48	54.00	16.65	H
11379.650	36.60	-32.42	38.79	30.23	54.00	17.40	V
11781.150	36.58	-31.99	38.98	29.59	54.00	17.42	H



## Channel 140

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17959.300	40.88	-25.50	46.66	19.72	54.00	13.12	V
17913.650	40.71	-25.50	46.66	19.55	54.00	13.29	H
14485.500	37.74	-28.59	42.46	23.87	54.00	16.26	H
13325.000	37.71	-29.49	39.71	27.49	54.00	16.29	V
11388.450	36.46	-32.42	38.79	30.09	54.00	17.54	V
11390.100	36.43	-32.42	38.79	30.06	54.00	17.57	V

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## Channel 38

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)
17934.000	41.08	-25.50	46.66	19.92	54.00	12.92	H
17964.800	41.01	-25.50	46.66	19.85	54.00	12.99	H
13314.550	37.77	-29.49	39.71	27.55	54.00	16.23	H
14481.100	37.71	-28.59	42.46	23.84	54.00	16.29	H
5149.420	49.73	-27.61	33.67	43.67	54.00	4.27	H
5149.880	49.64	-27.61	33.67	43.58	54.00	4.36	H

## Channel 46

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)
17949.950	41.34	-25.50	46.66	20.18	54.00	12.66	H
17943.900	41.29	-25.50	46.66	20.13	54.00	12.71	H
13327.200	37.64	-29.49	39.71	27.42	54.00	16.36	V
13288.150	37.60	-29.67	39.55	27.72	54.00	16.40	V
11791.600	36.97	-31.99	38.98	29.98	54.00	17.03	H
11398.350	36.61	-32.42	38.79	30.24	54.00	17.39	V

## Channel 54

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)
17930.700	41.19	-25.50	46.66	20.03	54.00	12.81	V
17935.650	40.80	-25.50	46.66	19.64	54.00	13.20	V
13298.600	37.57	-29.49	39.71	27.35	54.00	16.43	V
13274.950	37.55	-29.67	39.55	27.67	54.00	16.45	V
11799.300	36.68	-31.85	39.05	29.48	54.00	17.32	H
11794.350	36.54	-31.99	38.98	29.55	54.00	17.46	H

## Channel 62

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17968.650	41.04	-25.50	46.66	19.88	54.00	12.96	H
17953.250	40.96	-25.50	46.66	19.80	54.00	13.04	V
13290.900	37.58	-29.67	39.55	27.70	54.00	16.42	H
13325.550	37.46	-29.49	39.71	27.24	54.00	16.54	H
5350.272	48.54	-27.43	34.01	41.96	54.00	5.46	V
5350.176	48.39	-27.43	34.01	41.81	54.00	5.61	V

## Channel 102

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)
17922.450	41.00	-25.50	46.66	19.84	54.00	13.00	H
17929.050	40.92	-25.50	46.66	19.76	54.00	13.08	V
13297.500	37.94	-29.49	39.71	27.72	54.00	16.06	V
13305.200	37.67	-29.49	39.71	27.45	54.00	16.33	V
5458.735	48.66	-27.18	34.17	41.67	54.00	5.34	V
5458.450	48.62	-27.18	34.17	41.63	54.00	5.38	V

## Channel 118

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17991.200	41.44	-25.50	46.66	20.28	54.00	12.56	V
17953.800	40.95	-25.50	46.66	19.79	54.00	13.05	H
13304.650	37.79	-29.49	39.71	27.57	54.00	16.21	V
13320.600	37.66	-29.49	39.71	27.44	54.00	16.34	H
11792.150	36.77	-31.99	38.98	29.78	54.00	17.23	H
11784.450	36.56	-31.99	38.98	29.57	54.00	17.44	V

## Channel 134

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)
17941.150	41.04	-25.50	46.66	19.88	54.00	12.96	H
17948.850	41.01	-25.50	46.66	19.85	54.00	12.99	V
14489.350	37.64	-28.59	42.46	23.77	54.00	16.36	H
13308.500	37.53	-29.49	39.71	27.31	54.00	16.47	V
11802.050	36.64	-31.85	39.05	29.44	54.00	17.36	H
11792.150	36.46	-31.99	38.98	29.47	54.00	17.54	V

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## Channel 42

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)
17916.950	40.91	-25.50	46.66	19.75	54.00	13.09	V
17991.200	40.83	-25.50	46.66	19.67	54.00	13.17	V
13296.400	37.39	-29.49	39.71	27.17	54.00	16.61	H
13294.200	37.38	-29.49	39.71	27.16	54.00	16.62	V
5147.260	50.97	-27.61	33.67	44.91	54.00	3.03	V
5149.340	50.90	-27.61	33.67	44.84	54.00	3.10	V

## Channel 58

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)
17952.150	40.89	-25.50	46.66	19.73	54.00	13.11	V
17936.750	40.84	-25.50	46.66	19.68	54.00	13.16	H
14491.550	37.47	-28.59	42.46	23.60	54.00	16.53	H
13271.100	37.46	-29.67	39.55	27.58	54.00	16.54	V
5350.176	50.91	-27.43	34.01	44.33	54.00	3.09	V
5350.336	50.57	-27.43	34.01	43.99	54.00	3.43	V

## Channel 106

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)
17971.400	40.97	-25.50	46.66	19.81	54.00	13.03	V
17921.350	40.95	-25.50	46.66	19.79	54.00	13.05	V
13298.600	37.75	-29.49	39.71	27.53	54.00	16.25	H
13295.300	37.69	-29.49	39.71	27.47	54.00	16.31	V
5433.415	47.20	-27.18	34.17	40.21	54.00	6.80	V
5432.815	47.08	-27.18	34.17	40.09	54.00	6.92	V

## Channel 122

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17951.600	40.79	-25.50	46.66	19.63	54.00	13.21	V
17969.750	40.79	-25.50	46.66	19.63	54.00	13.21	H
13313.450	37.63	-29.49	39.71	27.41	54.00	16.37	V
14484.400	37.63	-28.59	42.46	23.76	54.00	16.37	H
11795.450	36.72	-31.85	39.05	29.52	54.00	17.28	H
11792.700	36.53	-31.99	38.98	29.54	54.00	17.47	V

**PEAK Results:**
**802.11a**

## Channel 36

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)
17228.350	51.88	-25.95	44.35	33.47	68.20	16.32	H
17088.650	51.76	-26.60	43.36	35.00	68.20	16.44	H
14067.500	49.78	-29.44	41.66	37.56	68.20	18.42	H
13752.350	49.77	-29.10	40.86	38.00	68.20	18.43	H
5149.180	62.77	-27.61	33.67	56.71	74.00	11.23	V
5149.860	62.42	-27.61	33.67	56.36	74.00	11.58	V

## Channel 40

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17986.250	51.63	-25.50	46.66	30.47	74.00	22.37	H
17923.550	51.54	-25.50	46.66	30.38	74.00	22.46	H
13657.200	50.20	-29.50	40.43	39.27	68.20	18.00	H
13774.900	49.88	-29.10	40.86	38.11	68.20	18.32	V
9371.600	47.48	-33.91	37.97	43.42	74.00	26.52	H
11798.200	46.93	-31.85	39.05	39.73	74.00	27.07	H

## Channel 48

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)
17550.100	53.75	-26.85	45.25	35.35	68.20	14.45	H
17549.550	53.66	-26.85	45.25	35.26	68.20	14.54	H
13741.350	49.62	-29.10	40.86	37.85	68.20	18.58	H
14624.650	49.50	-27.29	41.90	34.89	68.20	18.70	H
11802.050	48.22	-31.85	39.05	41.02	74.00	25.78	V
11823.500	47.52	-31.85	39.05	40.32	74.00	26.48	V



## Channel 52

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)
16864.800	52.35	-26.62	41.49	37.48	68.20	15.85	H
17046.850	52.29	-26.60	43.36	35.53	68.20	15.91	H
14606.500	49.72	-27.29	41.90	35.11	68.20	18.48	V
13728.700	49.71	-29.10	40.86	37.94	68.20	18.49	V
11453.350	47.87	-32.26	38.84	41.30	74.00	26.13	V
11814.700	47.18	-31.85	39.05	39.98	74.00	26.82	V

## Channel 56

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)
17430.200	52.74	-26.85	45.25	34.34	68.20	15.46	V
17692.000	51.63	-25.74	45.95	31.42	68.20	16.57	H
14076.850	49.48	-29.44	41.66	37.26	68.20	18.72	V
13743.550	49.43	-29.10	40.86	37.66	68.20	18.77	V
11903.250	48.06	-31.85	39.05	40.86	74.00	25.94	H
11785.000	47.30	-31.99	38.98	40.31	74.00	26.70	H

## Channel 64

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)
17644.150	51.67	-25.74	45.95	31.46	68.20	16.53	V
17327.900	51.59	-25.95	44.35	33.18	68.20	16.61	H
14610.900	49.54	-27.29	41.90	34.93	68.20	18.66	V
13704.500	49.51	-29.10	40.86	37.74	68.20	18.69	V
5363.808	60.60	-27.43	34.01	54.02	74.00	13.40	H
5350.192	59.44	-27.43	34.01	52.86	74.00	14.56	H

## Channel 100

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)
16968.200	51.91	-26.32	42.36	35.86	68.20	16.29	H
17621.050	51.42	-25.74	45.95	31.21	68.20	16.78	V
14632.350	49.50	-27.29	41.90	34.89	68.20	18.70	V
13765.000	49.41	-29.10	40.86	37.64	68.20	18.79	H
5459.980	56.85	-27.18	34.17	49.86	74.00	17.15	V
5469.835	64.52	-27.18	34.17	57.53	68.20	3.68	V

## Channel 120

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)
17094.150	52.35	-26.60	43.36	35.59	68.20	15.85	V
17619.400	52.10	-25.74	45.95	31.89	68.20	16.10	H
14110.400	49.59	-28.99	42.00	36.57	68.20	18.61	V
13653.350	49.58	-29.50	40.43	38.65	68.20	18.62	H
11795.450	47.35	-31.85	39.05	40.15	74.00	26.65	H
11385.150	46.96	-32.42	38.79	40.59	74.00	27.04	H

## Channel 140

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)
17949.950	52.76	-25.50	46.66	31.60	74.00	21.24	V
16964.350	51.48	-26.32	42.36	35.43	68.20	16.72	H
13728.700	49.94	-29.10	40.86	38.17	68.20	18.26	H
13658.850	49.59	-29.50	40.43	38.66	68.20	18.61	V
5725.005	64.02	-27.07	34.31	56.78	68.20	4.18	H
5725.302	63.92	-27.07	34.31	56.68	68.20	4.28	H

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## Channel 36

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)
17560.550	51.99	-26.85	45.25	33.59	68.20	16.21	H
17409.850	51.43	-26.85	45.25	33.03	68.20	16.77	V
13655.000	49.74	-29.50	40.43	38.81	68.20	18.46	H
14608.150	49.71	-27.29	41.90	35.10	68.20	18.49	V
5149.900	62.15	-27.61	33.67	56.09	74.00	11.85	V
5149.840	62.02	-27.61	33.67	55.96	74.00	11.98	H

## Channel 40

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)
16854.900	51.99	-26.62	41.49	37.12	68.20	16.21	H
16949.500	51.69	-26.32	42.36	35.64	68.20	16.51	H
14190.150	50.18	-28.99	42.00	37.16	68.20	18.02	V
13939.350	49.64	-29.51	41.30	37.85	68.20	18.56	V
11356.000	47.73	-32.42	38.79	41.36	74.00	26.27	H
11749.250	47.15	-31.99	38.98	40.16	74.00	26.85	V

## Channel 48

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)
16914.850	52.78	-26.32	42.36	36.73	68.20	15.42	V
16914.300	52.68	-26.32	42.36	36.63	68.20	15.52	V
14087.850	50.45	-29.44	41.66	38.23	68.20	17.75	V
13717.700	50.06	-29.10	40.86	38.29	68.20	18.14	V
11905.450	47.28	-31.85	39.05	40.08	74.00	26.72	H
11138.750	47.02	-32.60	38.75	40.88	74.00	26.98	H

## Channel 52

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)
17638.650	51.88	-25.74	45.95	31.67	68.20	16.32	V
17225.050	51.75	-25.95	44.35	33.34	68.20	16.45	V
13583.500	49.47	-29.50	40.43	38.54	68.20	18.73	H
13699.000	48.97	-29.10	40.86	37.20	68.20	19.23	V
11796.550	47.37	-31.85	39.05	40.17	74.00	26.63	V
11706.350	46.90	-31.99	38.98	39.91	74.00	27.10	V

## Channel 56

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)
17879.550	51.91	-25.50	46.66	30.75	74.00	22.09	H
17127.150	51.51	-26.60	43.36	34.75	68.20	16.69	H
14598.800	50.49	-27.29	41.90	35.88	68.20	17.71	V
14108.200	49.68	-29.44	41.66	37.46	68.20	18.52	V
11143.700	47.44	-32.60	38.75	41.30	74.00	26.56	H
11814.700	47.16	-31.85	39.05	39.96	74.00	26.84	V

## Channel 64

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)
17915.850	52.17	-25.50	46.66	31.01	74.00	21.83	V
17921.350	51.93	-25.50	46.66	30.77	74.00	22.07	H
13711.650	49.61	-29.10	40.86	37.84	68.20	18.59	V
13655.000	49.20	-29.50	40.43	38.27	68.20	19.00	H
5352.144	60.55	-27.43	34.01	53.97	74.00	13.45	V
5351.680	59.86	-27.43	34.01	53.28	74.00	14.14	V

## Channel 100

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)
16882.400	51.89	-26.32	42.36	35.84	68.20	16.31	V
17965.900	51.30	-25.50	46.66	30.14	74.00	22.70	V
14064.750	49.70	-29.44	41.66	37.48	68.20	18.50	H
13748.500	49.43	-29.10	40.86	37.66	68.20	18.77	V
5457.220	56.28	-27.18	34.17	49.29	74.00	17.72	V
5469.850	63.99	-27.18	34.17	57.00	68.20	4.21	H

## Channel 120

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)
17651.850	51.78	-25.74	45.95	31.57	68.20	16.42	V
17032.550	51.72	-26.32	42.36	35.67	68.20	16.48	H
13823.850	49.36	-29.10	40.86	37.59	68.20	18.84	H
13699.000	49.35	-29.10	40.86	37.58	68.20	18.85	H
10819.200	47.78	-32.33	38.59	41.52	74.00	26.22	V
11374.700	47.24	-32.42	38.79	40.87	74.00	26.76	V

## Channel 140

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	52.16	-25.50	46.66	31.00	74.00	21.84	H
17401.600	51.65	-26.85	45.25	33.25	68.20	16.55	V
13703.400	49.56	-29.10	40.86	37.79	68.20	18.64	H
14592.750	49.35	-27.29	41.90	34.74	68.20	18.85	V
5725.267	65.20	-27.07	34.31	57.96	68.20	3.00	H
5725.127	63.41	-27.07	34.31	56.17	68.20	4.79	H



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## Channel 38

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)
17667.250	51.75	-25.74	45.95	31.54	68.20	16.45	V
17045.750	51.43	-26.60	43.36	34.67	68.20	16.77	V
14087.300	49.92	-29.44	41.66	37.70	68.20	18.28	V
13734.750	49.74	-29.10	40.86	37.97	68.20	18.46	V
5147.780	60.77	-27.61	33.67	54.71	74.00	13.23	V
5147.680	60.76	-27.61	33.67	54.70	74.00	13.24	V

## Channel 46

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)
17259.700	51.92	-25.95	44.35	33.51	68.20	16.28	H
17954.900	51.87	-25.50	46.66	30.71	74.00	22.13	V
13781.500	49.61	-29.10	40.86	37.84	68.20	18.59	V
14086.750	49.46	-29.44	41.66	37.24	68.20	18.74	V
11291.650	47.74	-32.36	38.77	41.34	74.00	26.26	V
11800.950	47.52	-31.85	39.05	40.32	74.00	26.48	V

## Channel 54

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)
17225.050	52.60	-25.95	44.35	34.19	68.20	15.60	V
17965.350	51.82	-25.50	46.66	30.66	74.00	22.18	V
14080.150	50.31	-29.44	41.66	38.09	68.20	17.89	V
13708.900	49.61	-29.10	40.86	37.84	68.20	18.59	V
10562.900	47.12	-32.99	38.27	41.83	68.20	21.08	V
8712.150	46.88	-34.42	38.00	43.29	68.20	21.32	V

## Channel 62

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)
17343.300	51.65	-25.95	44.35	33.24	68.20	16.55	V
17310.300	51.58	-25.95	44.35	33.17	68.20	16.62	H
14605.400	49.89	-27.29	41.90	35.28	68.20	18.31	V
13731.450	49.67	-29.10	40.86	37.90	68.20	18.53	V
5350.000	62.04	-27.43	34.01	55.46	74.00	11.96	H
5351.856	60.71	-27.43	34.01	54.13	74.00	13.29	V

## Channel 102

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)
17569.350	51.98	-25.74	45.95	31.77	68.20	16.22	V
17035.850	51.88	-26.32	42.36	35.83	68.20	16.32	V
13762.250	49.53	-29.10	40.86	37.76	68.20	18.67	V
14076.300	49.52	-29.44	41.66	37.30	68.20	18.68	H
5458.675	61.62	-27.18	34.17	54.63	74.00	12.38	V
5467.735	63.78	-27.18	34.17	56.79	68.20	4.42	H

## Channel 118

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)
17978.550	52.24	-25.50	46.66	31.08	74.00	21.76	V
17439.000	51.40	-26.85	45.25	33.00	68.20	16.80	H
13739.150	50.29	-29.10	40.86	38.52	68.20	17.91	H
13733.650	49.83	-29.10	40.86	38.06	68.20	18.37	H
10752.100	47.43	-32.77	38.49	41.71	74.00	26.57	V
10598.650	46.87	-32.76	38.38	41.25	68.20	21.33	V

## Channel 134

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)
16826.300	51.84	-26.62	41.49	36.97	68.20	16.36	H
17939.500	51.73	-25.50	46.66	30.57	74.00	22.27	H
13640.700	49.36	-29.50	40.43	38.43	68.20	18.84	V
13861.250	49.26	-29.51	41.30	37.47	68.20	18.94	V
5725.477	60.24	-27.07	34.31	53.00	68.20	7.96	H
5732.845	60.05	-27.07	34.31	52.81	68.20	8.15	H

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## Channel 36

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)
17943.350	52.93	-25.50	46.66	31.77	74.00	21.07	V
17473.100	52.19	-26.85	45.25	33.79	68.20	16.01	V
14605.400	49.67	-27.29	41.90	35.06	68.20	18.53	V
13731.450	49.65	-29.10	40.86	37.88	68.20	18.55	H
5149.860	63.06	-27.61	33.67	57.00	74.00	10.94	H
5150.000	62.62	-27.61	33.67	56.56	74.00	11.38	V

## Channel 40

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)
16944.000	51.90	-26.32	42.36	35.85	68.20	16.30	H
17922.450	51.77	-25.50	46.66	30.61	74.00	22.23	V
13743.000	50.01	-29.10	40.86	38.24	68.20	18.19	H
13723.750	49.42	-29.10	40.86	37.65	68.20	18.78	H
11817.450	47.32	-31.85	39.05	40.12	74.00	26.68	V
11907.650	47.15	-31.85	39.05	39.95	74.00	26.85	V

## Channel 48

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)
17549.000	52.17	-26.85	45.25	33.77	68.20	16.03	H
17248.150	51.54	-25.95	44.35	33.13	68.20	16.66	V
14132.400	50.61	-28.99	42.00	37.59	68.20	17.59	H
13710.550	50.34	-29.10	40.86	38.57	68.20	17.86	V
11886.200	47.24	-31.85	39.05	40.04	74.00	26.76	V
11781.150	46.83	-31.99	38.98	39.84	74.00	27.17	H

## Channel 52

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)
17450.000	52.25	-26.85	45.25	33.85	68.20	15.95	H
16959.400	51.96	-26.32	42.36	35.91	68.20	16.24	V
14174.750	49.52	-28.99	42.00	36.50	68.20	18.68	V
13689.100	49.35	-29.50	40.43	38.42	68.20	18.85	V
10856.600	47.71	-32.33	38.59	41.45	74.00	26.29	H
10476.550	47.66	-32.99	38.27	42.37	68.20	20.54	H

## Channel 56

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)
17445.050	52.68	-26.85	45.25	34.28	68.20	15.52	H
16769.100	52.34	-26.62	41.49	37.47	68.20	15.86	H
13832.100	49.80	-29.51	41.30	38.01	68.20	18.40	V
14106.000	49.77	-29.44	41.66	37.55	68.20	18.43	H
10934.700	47.42	-32.82	38.70	41.54	74.00	26.58	V
11231.150	47.41	-32.36	38.77	41.01	74.00	26.59	H

## Channel 64

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)
17931.800	52.77	-25.50	46.66	31.61	74.00	21.23	H
17577.050	52.12	-25.74	45.95	31.91	68.20	16.08	H
14119.750	49.52	-28.99	42.00	36.50	68.20	18.68	H
13727.050	49.43	-29.10	40.86	37.66	68.20	18.77	V
5352.432	61.52	-27.43	34.01	54.94	74.00	12.48	H
5354.832	60.12	-27.43	34.01	53.54	74.00	13.88	H

## Channel 100

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)
17354.300	51.74	-25.95	44.35	33.33	68.20	16.46	H
17235.500	51.73	-25.95	44.35	33.32	68.20	16.47	V
13747.950	50.34	-29.10	40.86	38.57	68.20	17.86	V
13570.300	49.75	-29.50	40.43	38.82	68.20	18.45	H
5457.685	56.69	-27.18	34.17	49.70	74.00	17.31	V
5469.805	64.14	-27.18	34.17	57.15	68.20	4.06	V

## Channel 120

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)
17954.900	51.76	-25.50	46.66	30.60	74.00	22.24	V
17527.550	51.70	-26.85	45.25	33.30	68.20	16.50	V
13540.050	49.71	-29.56	39.99	39.28	68.20	18.49	H
14604.850	49.42	-27.29	41.90	34.81	68.20	18.78	H
10878.600	47.22	-32.33	38.59	40.96	74.00	26.78	H
10577.200	47.10	-32.76	38.38	41.48	68.20	21.10	H

## Channel 140

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)
17448.900	51.65	-26.85	45.25	33.25	68.20	16.55	V
16937.400	51.63	-26.32	42.36	35.58	68.20	16.57	H
14106.550	49.71	-29.44	41.66	37.49	68.20	18.49	H
13732.550	49.22	-29.10	40.86	37.45	68.20	18.98	V
5725.075	64.86	-27.07	34.31	57.62	68.20	3.34	H
5725.302	64.59	-27.07	34.31	57.35	68.20	3.61	H

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## Channel 38

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)
17569.350	52.29	-25.74	45.95	32.08	68.20	15.91	H
17657.350	52.17	-25.74	45.95	31.96	68.20	16.03	H
13706.150	50.57	-29.10	40.86	38.80	68.20	17.63	H
13747.950	49.75	-29.10	40.86	37.98	68.20	18.45	H
5147.440	62.34	-27.61	33.67	56.28	74.00	11.66	H
5149.940	60.68	-27.61	33.67	54.62	74.00	13.32	H

## Channel 46

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)
17204.700	51.51	-26.60	43.36	34.75	68.20	16.69	V
17859.200	51.21	-25.50	46.66	30.05	74.00	22.79	V
14097.750	49.24	-29.44	41.66	37.02	68.20	18.96	H
14025.700	49.20	-29.44	41.66	36.98	68.20	19.00	V
11395.600	47.26	-32.42	38.79	40.89	74.00	26.74	V
10444.100	47.07	-33.22	38.19	42.10	68.20	21.13	V



## Channel 54

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)
17332.300	51.58	-25.95	44.35	33.17	68.20	16.62	V
17418.650	51.45	-26.85	45.25	33.05	68.20	16.75	H
13747.950	50.05	-29.10	40.86	38.28	68.20	18.15	H
14130.200	49.44	-28.99	42.00	36.42	68.20	18.76	H
11841.650	47.08	-31.85	39.05	39.88	74.00	26.92	H
11452.250	46.90	-32.26	38.84	40.33	74.00	27.10	V

## Channel 62

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)
17226.150	51.80	-25.95	44.35	33.39	68.20	16.40	V
17626.000	51.76	-25.74	45.95	31.55	68.20	16.44	H
13749.050	49.63	-29.10	40.86	37.86	68.20	18.57	V
13562.600	49.22	-29.50	40.43	38.29	68.20	18.98	H
5350.016	58.49	-27.43	34.01	51.91	74.00	15.51	V
5352.512	58.15	-27.43	34.01	51.57	74.00	15.85	H

## Channel 102

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)
17877.900	51.42	-25.50	46.66	30.26	74.00	22.58	H
17464.850	51.37	-26.85	45.25	32.97	68.20	16.83	H
13746.850	50.17	-29.10	40.86	38.40	68.20	18.03	V
13727.600	49.22	-29.10	40.86	37.45	68.20	18.98	H
5457.340	60.90	-27.18	34.17	53.91	74.00	13.10	V
5467.510	62.09	-27.18	34.17	55.10	68.20	6.11	H

**Channel 118**

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)
17612.800	52.22	-25.74	45.95	32.01	68.20	15.98	H
17959.850	51.65	-25.50	46.66	30.49	74.00	22.35	H
13727.050	49.72	-29.10	40.86	37.95	68.20	18.48	H
14114.250	49.14	-28.99	42.00	36.12	68.20	19.06	V
11366.450	46.82	-32.42	38.79	40.45	74.00	27.18	V
11792.150	46.75	-31.99	38.98	39.76	74.00	27.25	H

**Channel 134**

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17964.250	51.85	-25.50	46.66	30.69	74.00	22.15	V
17133.750	51.75	-26.60	43.36	34.99	68.20	16.45	H
13657.750	49.86	-29.50	40.43	38.93	68.20	18.34	V
13735.850	49.79	-29.10	40.86	38.02	68.20	18.41	H
5733.160	60.74	-27.07	34.31	53.50	68.20	7.46	H
5730.797	60.69	-27.07	34.31	53.45	68.20	7.51	H

**802.11ac-HT80**
**Channel 42**

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)
17314.700	51.56	-25.95	44.35	33.15	68.20	16.64	V
17957.100	51.49	-25.50	46.66	30.33	74.00	22.51	V
14605.400	49.83	-27.29	41.90	35.22	68.20	18.37	H
13727.050	49.55	-29.10	40.86	37.78	68.20	18.65	H
5145.440	61.96	-27.61	33.67	55.90	74.00	12.04	V
5131.320	61.66	-27.61	33.67	55.60	74.00	12.34	V

## Channel 58

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)
16849.950	51.66	-26.62	41.49	36.79	68.20	16.54	H
17946.650	51.52	-25.50	46.66	30.36	74.00	22.48	V
13702.850	49.62	-29.10	40.86	37.85	68.20	18.58	H
13776.000	49.08	-29.10	40.86	37.31	68.20	19.12	V
5350.496	60.74	-27.43	34.01	54.16	74.00	13.26	V
5356.560	59.81	-27.43	34.01	53.23	74.00	14.19	V

## Channel 106

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)
17349.350	52.74	-25.95	44.35	34.33	68.20	15.46	H
17225.600	52.26	-25.95	44.35	33.85	68.20	15.94	V
14190.700	49.66	-28.99	42.00	36.64	68.20	18.54	V
14099.950	49.41	-29.44	41.66	37.19	68.20	18.79	H
5450.035	58.43	-27.18	34.17	51.44	74.00	15.57	H
5467.615	57.67	-27.18	34.17	50.68	68.20	10.53	H

## Channel 122

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)
17639.750	51.94	-25.74	45.95	31.73	68.20	16.26	V
17450.550	51.82	-26.85	45.25	33.42	68.20	16.38	V
14015.250	49.67	-29.44	41.66	37.45	68.20	18.53	H
13719.350	49.54	-29.10	40.86	37.77	68.20	18.66	H
5726.755	56.34	-27.07	34.31	49.10	68.20	11.86	H
5728.033	55.94	-27.07	34.31	48.70	68.20	12.26	H

## A.7. AC Powerline Conducted Emission (150kHz- 30MHz)

### Test Condition:

Voltage (V)	Frequency (Hz)
120	60

### Measurement uncertainty:

Expanded measurement uncertainty for this test item is U =3.10dB, 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 AE5		
		802.11a	Idle	
0.15 to 0.5	66 to 56	Fig.58	Fig.59	<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)

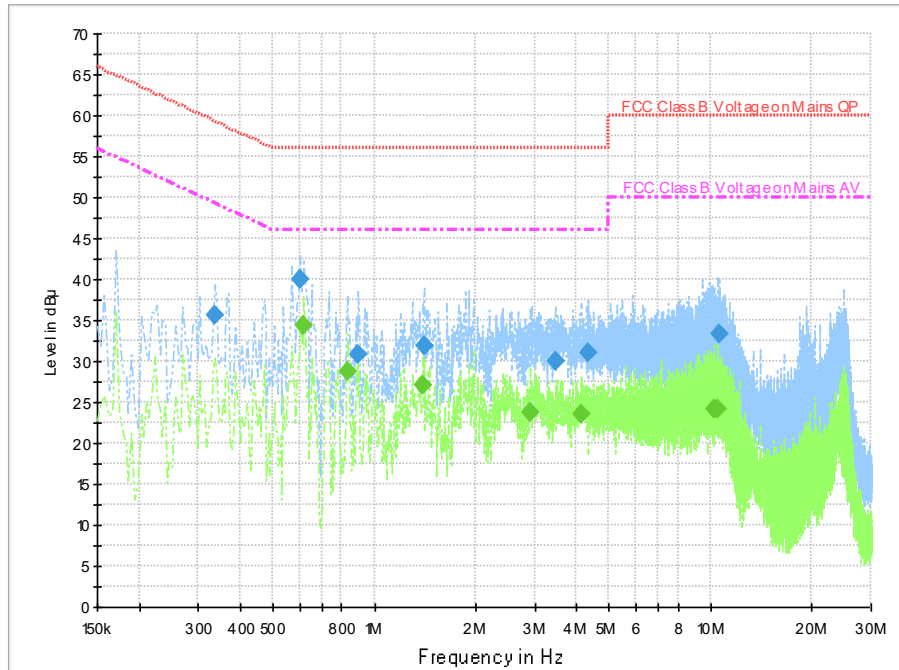
Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger AE5		
		802.11a	Idle	
0.15 to 0.5	67 56 to 46	Fig.58	Fig.59	<b>P</b>
0.5 to 5	46			
5 to 30	50			

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:

Traffic:



**Fig.58 Conducted Emission (802.11a, Ch36, TX)**

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

**Final Result 1**

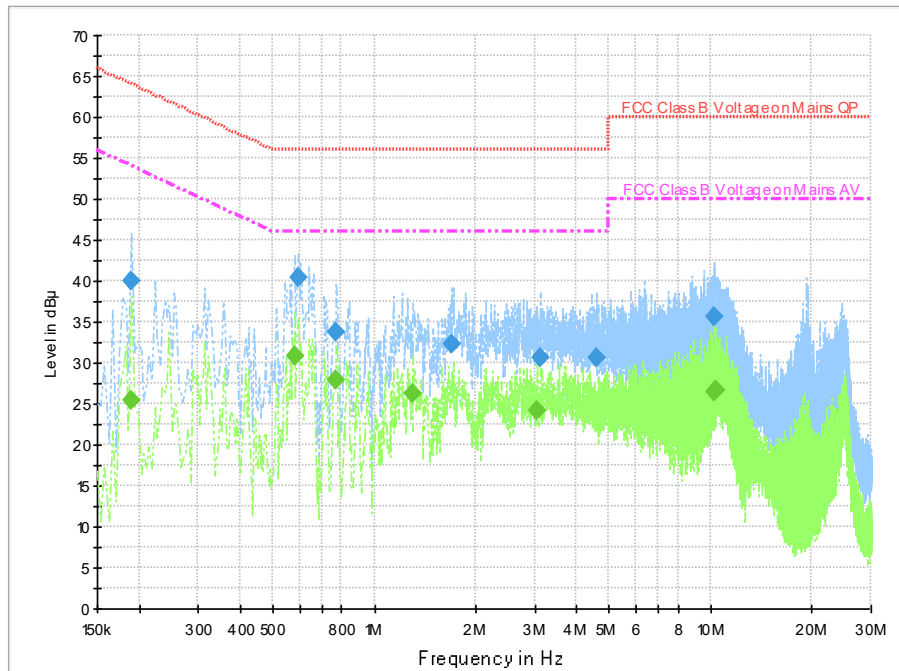
Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.334000	35.7	2000.0	9.000	On	N	19.7	23.7	59.4
0.602000	39.9	2000.0	9.000	On	L1	19.7	16.1	56.0
0.898000	30.7	2000.0	9.000	On	L1	19.7	25.3	56.0
1.402000	31.9	2000.0	9.000	On	N	19.6	24.1	56.0
3.446000	29.9	2000.0	9.000	On	N	19.6	26.1	56.0
4.310000	31.0	2000.0	9.000	On	L1	19.6	25.0	56.0

**Final Result 2**

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.618000	34.3	2000.0	9.000	On	L1	19.7	11.7	46.0
0.834000	28.7	2000.0	9.000	On	N	19.6	17.3	46.0
1.394000	27.0	2000.0	9.000	On	L1	19.6	19.0	46.0
2.906000	23.8	2000.0	9.000	On	L1	19.6	22.2	46.0
4.122000	23.6	2000.0	9.000	On	L1	19.6	22.4	46.0
10.266000	24.3	2000.0	9.000	On	L1	19.7	25.7	50.0

Note2: The measurement results showed here are worst cases of the combinations of different cables and chargers

Idle:



**Fig.59 Conducted Emission(802.11a, 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)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	40.1	2000.0	9.000	On	N	19.7	23.9	64.0
0.594000	40.3	2000.0	9.000	On	L1	19.7	15.7	56.0
0.770000	33.7	2000.0	9.000	On	N	19.7	22.3	56.0
1.702000	32.2	2000.0	9.000	On	L1	19.6	23.8	56.0
3.126000	30.7	2000.0	9.000	On	N	19.6	25.3	56.0
4.562000	30.6	2000.0	9.000	On	N	19.6	25.4	56.0

**Final Result 2**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.190000	25.5	2000.0	9.000	On	N	19.7	28.6	54.0
0.578000	30.8	2000.0	9.000	On	L1	19.7	15.2	46.0
0.770000	27.9	2000.0	9.000	On	N	19.7	18.1	46.0
1.306000	26.3	2000.0	9.000	On	L1	19.6	19.7	46.0
3.062000	24.1	2000.0	9.000	On	L1	19.6	21.9	46.0
10.254000	26.4	2000.0	9.000	On	L1	19.7	23.6	50.0

Note2: The measurement results showed here are worst cases of the combinations of different cables and chargers



### A.8. 99% Occupied bandwidth

Method of Measurement: See ANSI C63.10-2013-clause 12.4.2.

- a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.
- b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement.
- c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than  $[10 \log (OBW/RBW)]$  below the reference level. Specific guidance is given in 4.1.5.2.
- d) Step a) through step c) might require iteration to adjust within the specified range.
- e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.
- f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.
- g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.
- h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

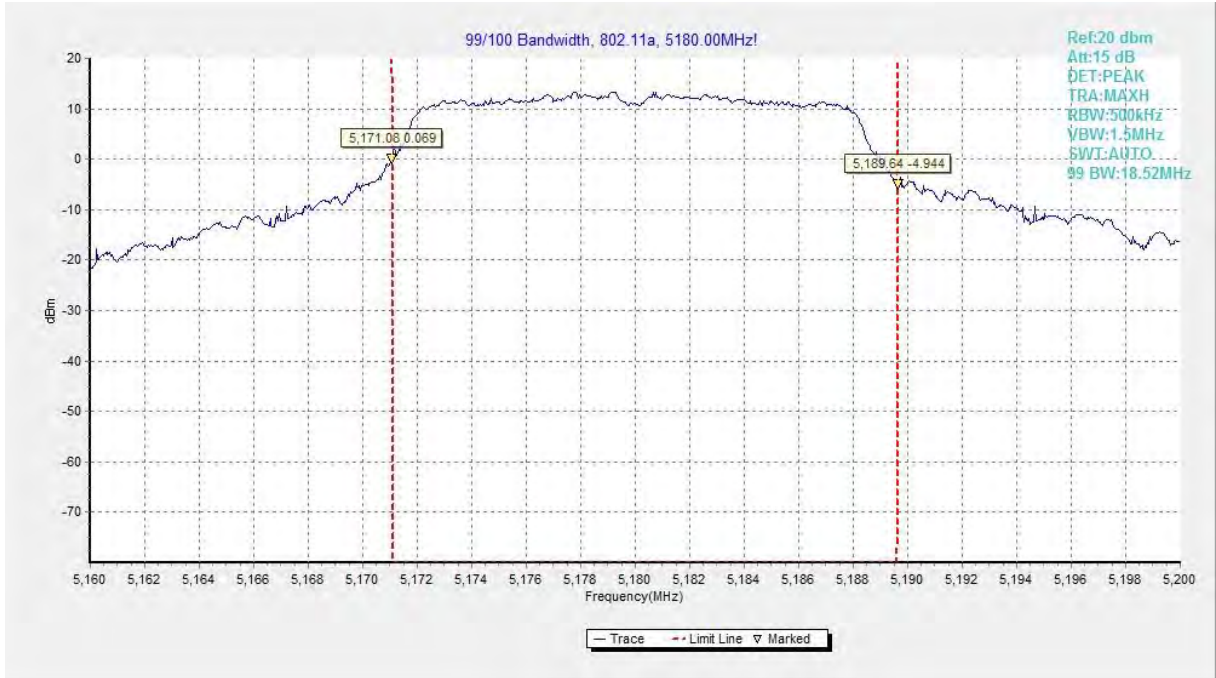
#### Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
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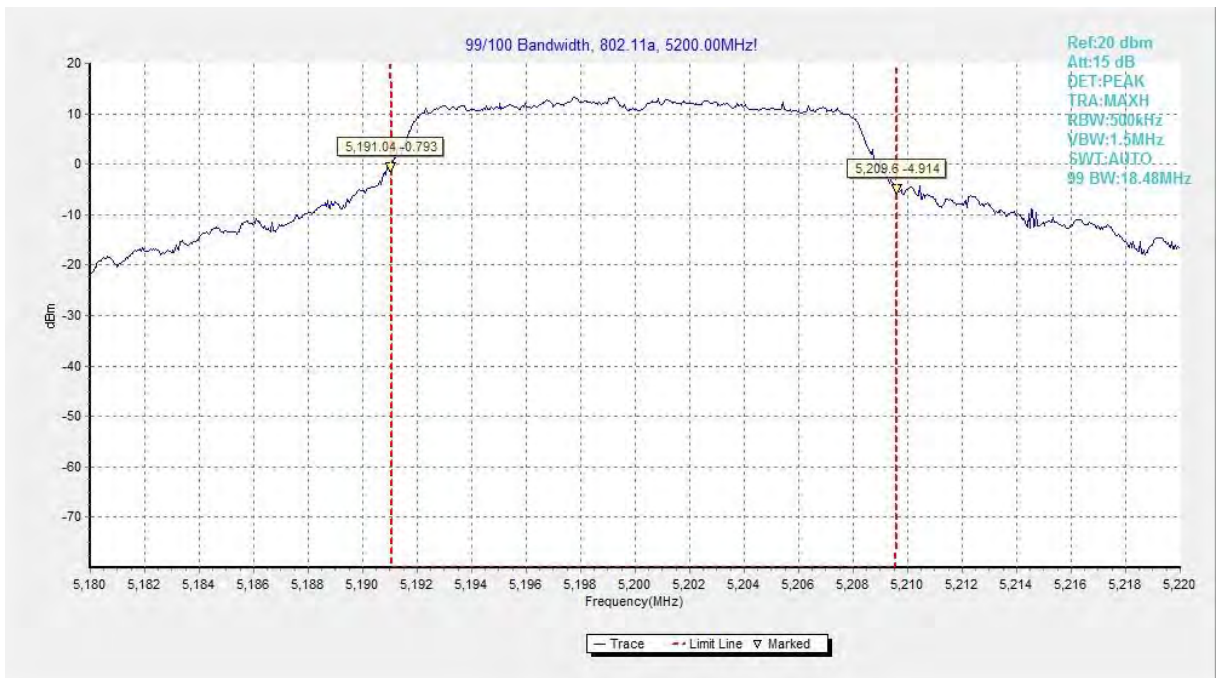
#### Measurement Result:

Mode	Frequency	99% Occupied bandwidth ( MHz)		conclusion
		Lower	Upper	
802.11a	5180 MHz	Fig.60	18.52	P
	5200 MHz	Fig.61	18.48	P
	5240 MHz	Fig.62	18.40	P
802.11ac HT20	5180 MHz	Fig.63	19.48	P
	5200 MHz	Fig.64	19.48	P
	5240 MHz	Fig.65	19.32	P
802.11ac HT40	5190 MHz	Fig.66	36.44	P
	5230 MHz	Fig.67	36.50	P
802.11ac HT80	5210 MHz	Fig.68	75.86	P

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



**Fig.60 99% Occupied bandwidth (802.11a, 5180MHz)**



**Fig.61 99% Occupied bandwidth (802.11a, 5200MHz)**



**Fig.62 99% Occupied bandwidth (802.11a, 5240MHz)**

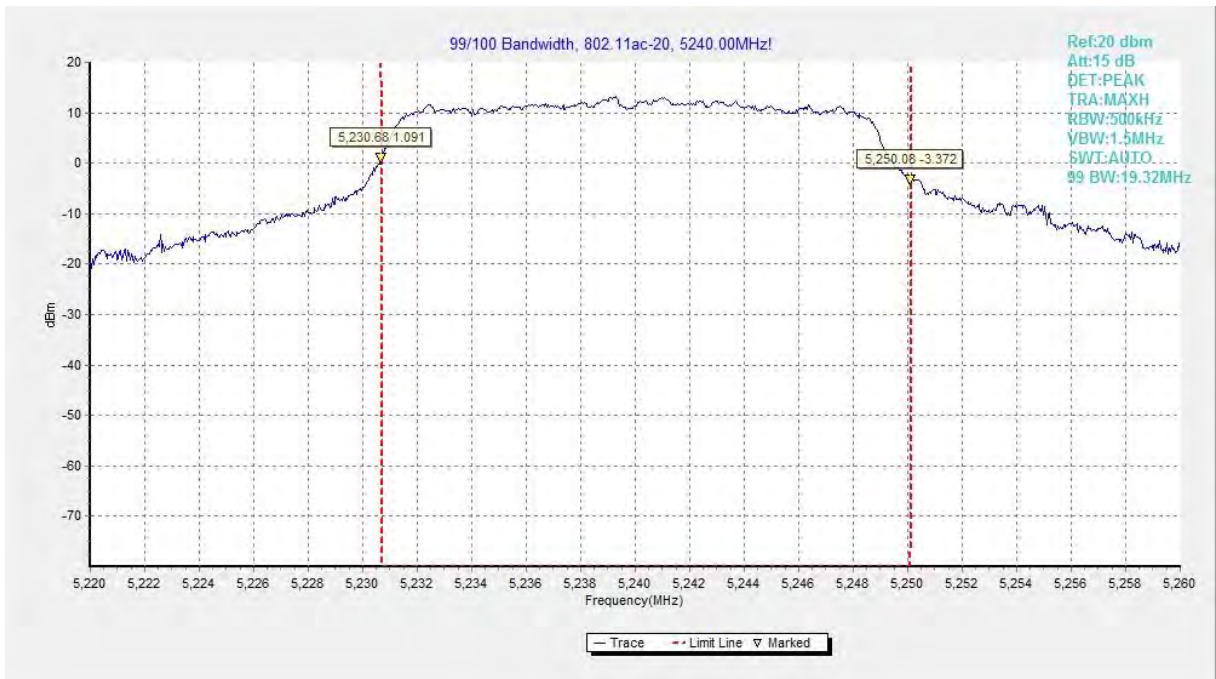


**Fig.63 99% Occupied bandwidth (802.11ac-HT20, 5180MHz)**

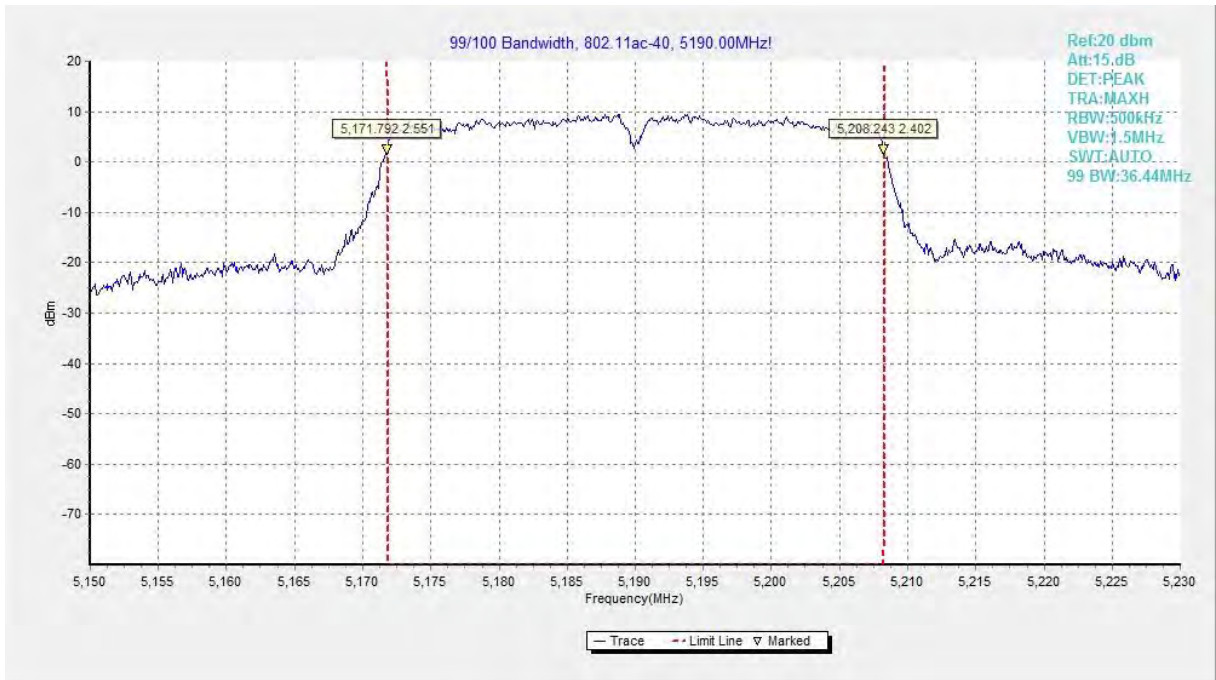




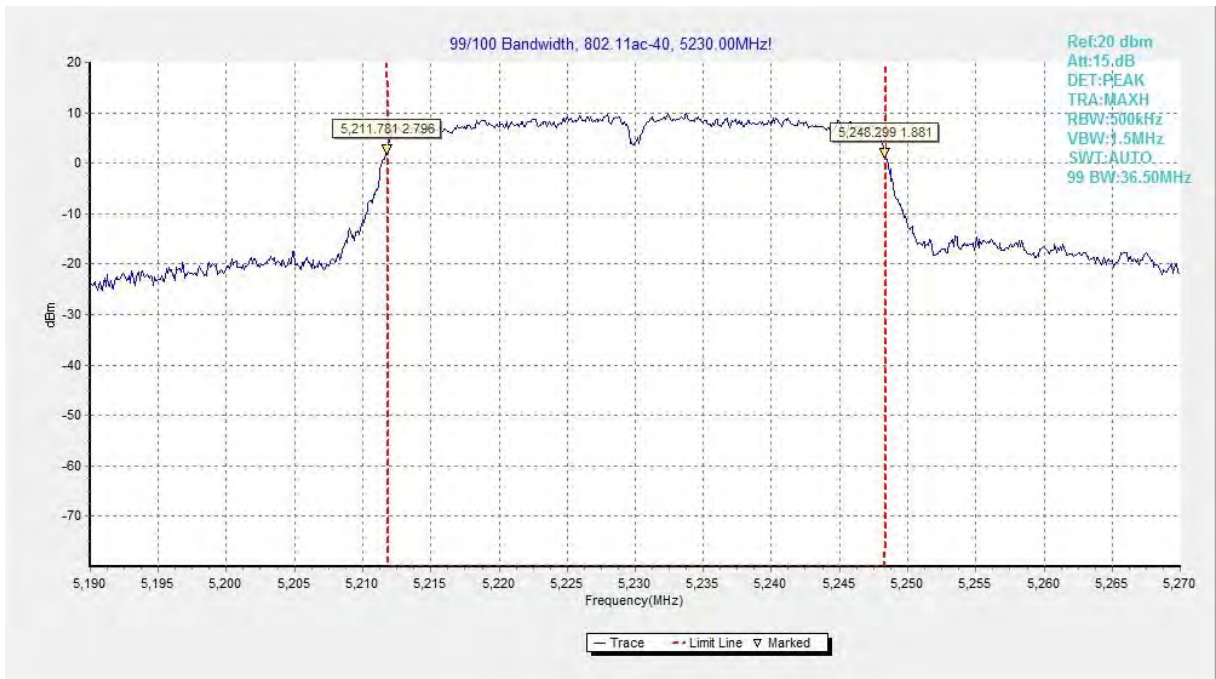
**Fig.64 99% Occupied bandwidth (802.11ac-HT20, 5200MHz)**



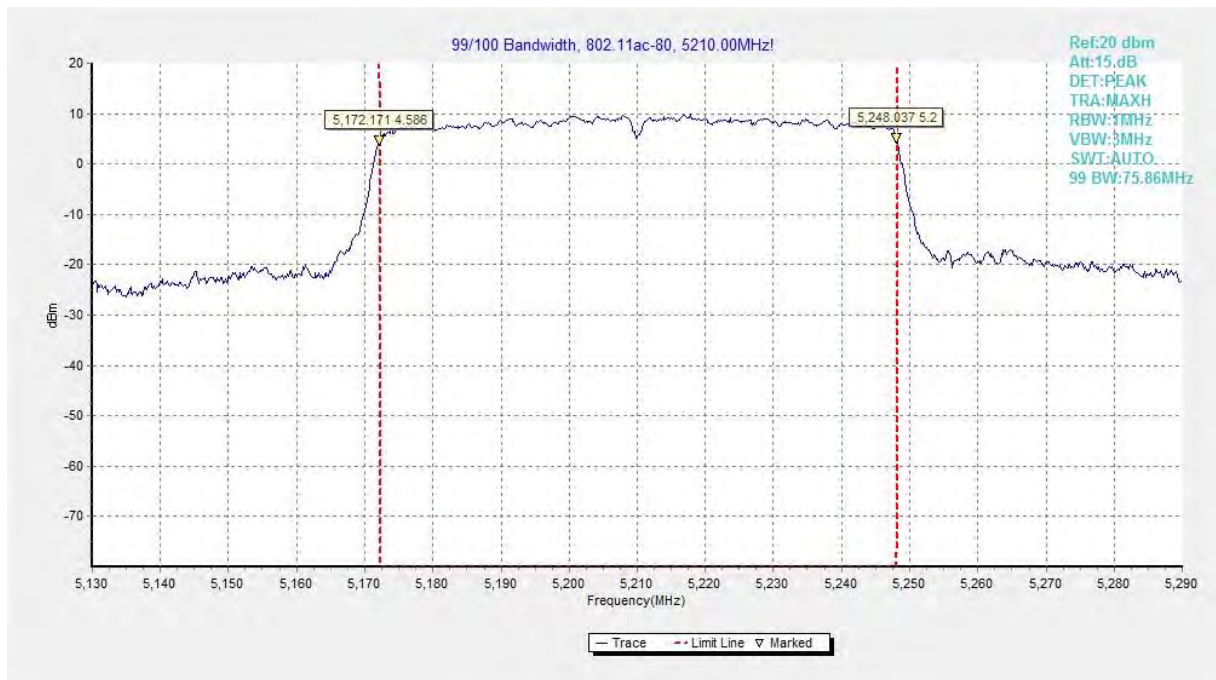
**Fig.65 99% Occupied bandwidth (802.11ac-HT20, 5240MHz)**



**Fig.66 99% Occupied bandwidth (802.11ac-HT40, 5190MHz)**



**Fig.67 99% Occupied bandwidth (802.11ac-HT40, 5230MHz)**



**Fig.68 99% Occupied bandwidth (802.11ac-HT80, 5210MHz)**

### A.9. Power control

A Transmission Power Control mechanism is not required for systems with an e.i.r.p. of less than 27dBm (500 mW).

## **ANNEX B: EUT parameters**

Disclaimer: The 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



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