



**FCC PART 15  
TEST REPORT  
No. I21Z70659-EMC12**

**for**

**Samsung Electronics Co., Ltd.**

**Notebook PC**

**NP750XEE**

**with**

**FCC ID: ZCANP750XEE**

**Hardware Version: REV1.0**

**Software Version: Windows11**

**Issued Date: 2022-01-26**

**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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No. I21Z70659-EMC12

## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Description</b>	<b>Issue Date</b>
I21Z70659-EMC12	Rev.0	1st edition	2022-01-26

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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: 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: 2021-12-10

Testing End Date: 2022-01-24

### 1.5. Signature



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Li Yan

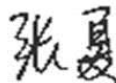
(Prepared this test report)



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Zhang Ying

(Reviewed this test report)



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Zhang Xia

Deputy Director of the laboratory

(Approved this test report)



## **2. CLIENT INFORMATION**

### **2.1. Applicant Information**

Company Name: Samsung Electronics Co., Ltd.  
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Fax: /

### **2.2. Manufacturer Information**

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Telephone: +82-10-2722-4159  
Fax: /

### 3. PRODUCT INFORMATION

#### 3.1. About EUT

Description	Notebook PC
Model name	NP750XEE
FCC ID	ZCANP750XEE

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of T CTTL-Telecommunication Technology Labs, CAICT

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

EUT ID*	IMEI	HW Version	SW Version
EUT1	2170659UT13a	REV1.0	Windows11
EUT2	2170659UT22a	REV1.0	Windows11

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

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

AE ID*	Description	SN	Remarks
AE1	Travel Adapter	/	/
AE2	Data Cable	/	/
AE3	battery	/	Inbuilt

AE1

Model	EP-TA865
Manufacturer	DONGYANG E&P Inc
Length of cable	/

AE2

Model	/
Manufacturer	/
Length of cable	/

AE3

Model	/
Manufacturer	/

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

### 3.4. General Description

The Equipment Under Test (EUT) was a Notebook Computer with Bluetooth, Bluetooth Low Energy and 802.11 a/b/g/n/ac/ax capabilities in the 2.4 GHz and 5 GHz bands.

Antenna information

Item	Spec.	Vendor	Vendor P/N	Sample under test
Antenna	Main antenna (Chain A)	INNOWAVE	/	EUT1
	Auxiliary antenna (Chain B)			
Antenna	Main antenna (Chain A)	SPEED	/	EUT2
	Auxiliary antenna (Chain B)			

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

Samples undergoing test were selected by the Client.

For more EUT information please refer to the manufacturer's specifications or user's manual.

### 3.5. Test Configuration

For 802.11a mode the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, but not simultaneously.

For 802.11n20 & 802.11ac20 & 802.11ax20 (20 MHz channel bandwidth), 802.11n40 & 802.11ac40 & 802.11ax40 (40MHz channel bandwidth) and 802.11ac80 & 802.11ax80 (80MHz channel bandwidth) modes the EUT can transmit at both CHAIN A and CHAIN B RF outputs individually, and also simultaneously (MIMO).

The software DRTU provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

### 3.6. 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.

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

Note: The test methods have no deviation with standards.



## 5. SUMMARY OF TEST RESULTS

### 5.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15	Verdict
Radiated Spurious Emission	15.407, 15.205, 15.209	<b>P</b>
AC Power line Conducted Emission	15.407, 15.207	<b>P</b>

Please refer to **ANNEX C** for detail.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by CTTL
BR	Re-use test data from basic model report.
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

### 5.2. Statements

The test cases as listed in section 5.1 of this report for the EUT specified in section 3 was performed by CTTL and according to the standards or reference documents listed in section 4.2 The EUT met all requirements of the standards or reference documents, and only the WLAN function was tested in this report.

### 5.3. Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage

For this report, if the test cases listed above are tested under normal temperature and normal voltage, and also under norm humidity, the specific condition is shown as follows:

Temperature	T nom	22-26°C
Voltage	V nom	15.4V
Humidity	H nom	20-75%

## 6. TEST EQUIPMENTS UTILIZED

### Radiated emission test system

No.	Equipment	Model	Manufacturer	Serial Number	Calibration Period	Calibration Due date
1	Test Receiver	ESW44	R&S	103023	1 year	2022-10-18
2	Analytical Spectrometer	FSW67	R&S	103290	1 year	2022-01-20
3	EMI Antenna	VULB 9163	SCHWARZBECK	01223	1 year	2022-03-22
4	EMI Antenna	3115	ETS-Lindgren	00167250	1 year	2022-07-01
5	EMI Antenna	3116	ETS-Lindgren	2663	1 year	2022-08-10
6	Loop Antenna	HFH2-Z2	R&S	829324/007	1 year	2022-12-22

### AC Power Line Conducted Emission

No.	Equipment	Model	Manufacturer	Serial Number	Calibration Period	Calibration Due date
1	LISN	ENV216	R&S	101200	1 year	2022-05-30
2	Test Receiver	ESCI	R&S	100344	1 year	2022-02-23

## 7. Measurement Uncertainty

### Radiated Spurious Emission

(k=2)

Frequency Range	Uncertainty(dB)
9kHz-30MHz	/
$30\text{MHz} \leq f \leq 1\text{GHz}$	5.16
$1\text{GHz} \leq f \leq 18\text{GHz}$	5.44
$18\text{GHz} \leq f \leq 40\text{GHz}$	5.28

### AC Power-line Conducted Emission

Measurement Uncertainty: 3.08dB,k=2



## **ANNEX A: EUT parameters**

Disclaimer: The antenna gain and setting power 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: Antenna Requirements**

According to FCC 47 CFR § 15.203, §15.407:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- (1) The antennas of the EUT are permanently attached.
- (2) The EUT complies with the requirement of §15.203, §15.407.

## **ANNEX C: Detailed Test Results**

### **C.1. Radiated Spurious Emission**

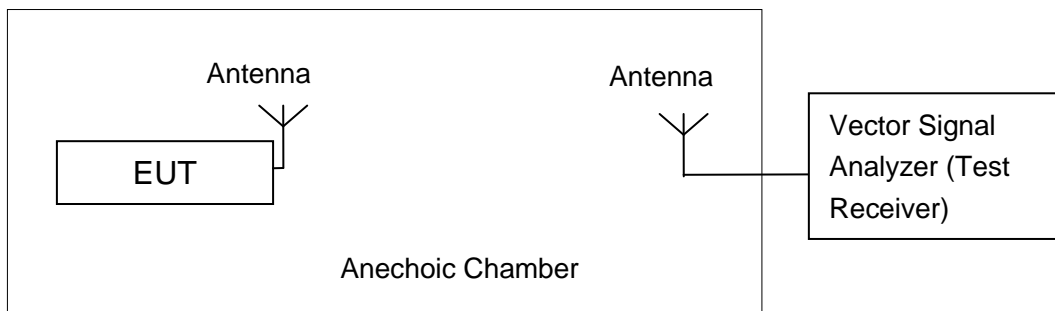
#### **Specification Reference**

FCC 47 CFR Part 15, Clause 15.407 (b) Clause 15.205 Clause 15.209

#### **Method of Measurement**

Testing was performed in according with ANSI C63.10-2013 and 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.



#### **Measurement Limit**

<b>Standard</b>	<b>Limit (dBm/MHz)</b>	
FCC 47 CFR Part 15.407	at the band edge	27
	at 5 MHz above or below the band edge	15.6
	at 25 MHz above or below the band edge	10
	at 75 MHz or more above or below the band edge	-27
	Note: Increasing linearly from point to point.	

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

Limit in restricted band:

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

Frequency of emission (MHz)	Field strength(dB $\mu$ V/m)	Measurement distance(m)
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

### **Test settings**

Frequency of emission (MHz)	RBW/VBW
30-1000	100kHz/300kHz
1000-4000	1MHz/3MHz
4000-18000	1MHz/3MHz
18000-26500	1MHz/3MHz
26500-40000	1MHz/3MHz

### **Sample Calculation**

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

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

Where:

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

$D$  is the measurement distance in meters

EIRP is the equivalent isotropically radiated power in dbm

2. The measurement results are obtained as described below:

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

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

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

### **Test Notes**

1. The EUT is operating at its maximum duty cycle and its maximum power control level.
2. Investigation has been done on all channel, modes and modulations/data rates. Only the radiated emissions of the configurations that produced the worst case emissions are reported in this section.
- 3.

For EUT1 with INNOWAVE antenna the measurements were performed separately in Chain A, Chain B, and MIMO (Chain A+B), and only the worst cases are shown in this report.

For EUT2 with SPEED antenna the measurements were performed separately in Chain A, Chain B, and MIMO (Chain A+B), and only the worst cases are shown in this report.

### C.1.1 Radiated Spurious Emission- above 1GHz

#### INNOWAVE

The measurements were performed separately in Chain A, Chain B, and MIMO (Chain A+B), and only the worst cases are shown in this section.

#### Average Results:

##### 802.11a

##### Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17978.500	41.98	-25.50	46.66	20.82	54.00	12.02	H
17973.600	41.95	-25.50	46.66	20.79	54.00	12.05	H
13323.400	37.54	-29.49	39.71	27.32	54.00	16.46	H
13265.600	37.39	-29.67	39.55	27.51	54.00	16.61	V
11844.400	36.23	-31.85	39.05	29.03	54.00	17.77	H
11859.300	36.18	-31.85	39.05	28.98	54.00	17.82	V

##### Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17969.800	42.49	-25.50	46.66	21.33	54.00	11.51	H
17946.100	42.07	-25.50	46.66	20.91	54.00	11.93	V
13327.800	37.65	-29.49	39.71	27.43	54.00	16.35	V
13340.400	37.61	-29.49	39.71	27.39	54.00	16.39	V
11850.500	36.07	-31.85	39.05	28.87	54.00	17.93	H
11854.900	36.07	-31.85	39.05	28.87	54.00	17.93	V

##### Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17951.000	42.11	-25.50	46.66	20.95	54.00	11.89	H
17953.800	42.09	-25.50	46.66	20.93	54.00	11.91	V
13251.900	37.64	-29.67	39.55	27.76	54.00	16.36	V
13258.500	37.61	-29.67	39.55	27.73	54.00	16.39	V
11787.800	36.21	-31.99	38.98	29.22	54.00	17.79	H
11856.500	36.12	-31.85	39.05	28.92	54.00	17.88	V

**802.11n-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17956.500	42.04	-25.50	46.66	20.88	54.00	11.96	H
17952.700	41.97	-25.50	46.66	20.81	54.00	12.03	H
13263.400	38.01	-29.67	39.55	28.13	54.00	15.99	V
13256.800	37.58	-29.67	39.55	27.70	54.00	16.42	H
11870.300	36.13	-31.85	39.05	28.93	54.00	17.87	H
11877.400	36.08	-31.85	39.05	28.88	54.00	17.92	H

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17949.400	42.08	-25.50	46.66	20.92	54.00	11.92	V
17953.800	41.91	-25.50	46.66	20.75	54.00	12.09	V
13328.900	37.59	-29.49	39.71	27.37	54.00	16.41	V
13275.500	37.43	-29.67	39.55	27.55	54.00	16.57	H
11853.200	36.33	-31.85	39.05	29.13	54.00	17.67	V
11792.200	36.25	-31.99	38.98	29.26	54.00	17.75	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17943.300	42.02	-25.50	46.66	20.86	54.00	11.98	H
17948.800	41.88	-25.50	46.66	20.72	54.00	12.12	V
13341.500	37.50	-29.49	39.71	27.28	54.00	16.50	H
15644.900	37.27	-27.23	38.61	25.89	54.00	16.73	V
11870.300	36.12	-31.85	39.05	28.92	54.00	17.88	V
11839.500	36.06	-31.85	39.05	28.86	54.00	17.94	V



**802.11n-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17946.100	41.91	-25.50	46.66	20.75	54.00	12.09	V
17943.900	41.86	-25.50	46.66	20.70	54.00	12.14	H
13257.400	37.56	-29.67	39.55	27.68	54.00	16.44	V
13327.200	37.33	-29.49	39.71	27.11	54.00	16.67	H
11779.500	36.25	-31.99	38.98	29.26	54.00	17.75	H
11987.400	36.06	-31.48	39.09	28.45	54.00	17.94	V

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.000	41.97	-25.50	46.66	20.81	54.00	12.03	H
17948.300	41.94	-25.50	46.66	20.78	54.00	12.06	H
15658.100	37.50	-27.23	38.61	26.12	54.00	16.50	V
15550.900	37.49	-27.36	38.73	26.12	54.00	16.51	V
11799.300	36.05	-31.85	39.05	28.85	54.00	17.95	V
11886.800	36.05	-31.85	39.05	28.85	54.00	17.95	V

**802.11ac-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17939.000	42.10	-25.50	46.66	20.94	54.00	11.90	V
17965.300	42.10	-25.50	46.66	20.94	54.00	11.90	H
13343.700	37.48	-29.49	39.71	27.26	54.00	16.52	V
13335.500	37.47	-29.49	39.71	27.25	54.00	16.53	V
11859.800	36.27	-31.85	39.05	29.07	54.00	17.73	V
11860.400	36.17	-31.85	39.05	28.97	54.00	17.83	H

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17955.500	42.00	-25.50	46.66	20.84	54.00	12.00	V
17965.300	41.99	-25.50	46.66	20.83	54.00	12.01	H
13337.600	37.39	-29.49	39.71	27.17	54.00	16.61	H
15646.500	37.38	-27.23	38.61	26.00	54.00	16.62	V
11783.400	36.35	-31.99	38.98	29.36	54.00	17.65	V
11861.500	36.32	-31.85	39.05	29.12	54.00	17.68	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17943.300	41.99	-25.50	46.66	20.83	54.00	12.01	H
17959.300	41.93	-25.50	46.66	20.77	54.00	12.07	V
15647.100	37.59	-27.23	38.61	26.21	54.00	16.41	V
13337.100	37.44	-29.49	39.71	27.22	54.00	16.56	V
11788.900	36.25	-31.99	38.98	29.26	54.00	17.75	V
11829.600	36.15	-31.85	39.05	28.95	54.00	17.85	H

**802.11ac-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17975.200	41.96	-25.50	46.66	20.80	54.00	12.04	V
17967.000	41.90	-25.50	46.66	20.74	54.00	12.10	H
13346.500	37.41	-29.49	39.71	27.19	54.00	16.59	H
13339.900	37.39	-29.49	39.71	27.17	54.00	16.61	H
11846.600	36.12	-31.85	39.05	28.92	54.00	17.88	H
11864.800	36.08	-31.85	39.05	28.88	54.00	17.92	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	42.33	-25.50	46.66	21.17	54.00	11.67	V
17940.000	42.15	-25.50	46.66	20.99	54.00	11.85	H
13329.400	37.65	-29.49	39.71	27.43	54.00	16.35	V
13342.000	37.61	-29.49	39.71	27.39	54.00	16.39	V
11790.500	36.21	-31.99	38.98	29.22	54.00	17.79	H
11865.900	36.17	-31.85	39.05	28.97	54.00	17.83	V

**802.11ac-HT80**

## Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17949.400	42.56	-25.50	46.66	21.40	54.00	11.44	H
17968.100	42.41	-25.50	46.66	21.25	54.00	11.59	H
13338.800	37.97	-29.49	39.71	27.75	54.00	16.03	V
13259.500	37.90	-29.67	39.55	28.02	54.00	16.10	V
11854.900	36.18	-31.85	39.05	28.98	54.00	17.82	V
11847.700	36.14	-31.85	39.05	28.94	54.00	17.86	V

**802.11ax-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17953.200	42.06	-25.50	46.66	20.90	54.00	11.94	H
17956.500	42.03	-25.50	46.66	20.87	54.00	11.97	H
13334.400	37.50	-29.49	39.71	27.28	54.00	16.50	V
13332.100	37.45	-29.49	39.71	27.23	54.00	16.55	V
11776.200	36.28	-31.99	38.98	29.29	54.00	17.72	H
11854.900	36.24	-31.85	39.05	29.04	54.00	17.76	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17942.200	42.43	-25.50	46.66	21.27	54.00	11.57	V
17935.100	42.08	-25.50	46.66	20.92	54.00	11.92	H
15650.400	37.42	-27.23	38.61	26.04	54.00	16.58	H
13261.200	37.39	-29.67	39.55	27.51	54.00	16.61	H
11871.400	36.14	-31.85	39.05	28.94	54.00	17.86	H
11787.200	36.05	-31.99	38.98	29.06	54.00	17.95	V

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17960.400	42.20	-25.50	46.66	21.04	54.00	11.80	H
17940.000	41.92	-25.50	46.66	20.76	54.00	12.08	H
13321.700	37.56	-29.49	39.71	27.34	54.00	16.44	H
13256.800	37.42	-29.67	39.55	27.54	54.00	16.58	V
11854.300	36.13	-31.85	39.05	28.93	54.00	17.87	V
11863.700	36.07	-31.85	39.05	28.87	54.00	17.93	V

**802.11ax-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17965.900	42.36	-25.50	46.66	21.20	54.00	11.64	V
17959.800	42.17	-25.50	46.66	21.01	54.00	11.83	V
13339.900	37.91	-29.49	39.71	27.69	54.00	16.09	H
13339.300	37.67	-29.49	39.71	27.45	54.00	16.33	V
11862.600	36.24	-31.85	39.05	29.04	54.00	17.76	V
11789.400	36.20	-31.99	38.98	29.21	54.00	17.80	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17966.500	42.13	-25.50	46.66	20.97	54.00	11.87	V
17964.200	42.08	-25.50	46.66	20.92	54.00	11.92	V
15651.000	37.74	-27.23	38.61	26.36	54.00	16.26	H
13336.500	37.60	-29.49	39.71	27.38	54.00	16.40	H
11846.600	36.26	-31.85	39.05	29.06	54.00	17.74	V
11836.700	36.16	-31.85	39.05	28.96	54.00	17.84	V

**802.11ax-HT80**

## Ch155

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	42.37	-25.50	46.66	21.21	54.00	11.63	H
17971.400	42.37	-25.50	46.66	21.21	54.00	11.63	H
15935.900	37.65	-27.35	38.54	26.46	54.00	16.35	H
16040.400	37.60	-27.35	38.54	26.41	54.00	16.40	H
11830.700	36.09	-31.85	39.05	28.89	54.00	17.91	H
11789.400	36.08	-31.99	38.98	29.09	54.00	17.92	V

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

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17988.500	53.12	-25.50	46.66	31.96	74.00	20.88	H
17939.000	53.07	-25.50	46.66	31.91	74.00	20.93	H
16560.100	51.02	-26.87	40.65	37.24	68.30	17.28	V
16565.600	50.87	-26.87	40.65	37.09	68.30	17.43	H
11935.200	48.06	-31.48	39.09	40.45	74.00	25.94	V
11854.900	47.95	-31.85	39.05	40.75	74.00	26.05	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17953.200	53.50	-25.50	46.66	32.34	74.00	20.50	H
17392.800	53.43	-26.85	45.25	35.03	68.30	14.87	H
14064.200	51.04	-29.44	41.66	38.82	68.30	17.26	H
16391.200	50.58	-26.96	39.82	37.72	68.30	17.72	H
10740.600	47.81	-32.77	38.49	42.09	74.00	26.19	V
10658.100	47.80	-32.76	38.38	42.18	74.00	26.20	V

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17956.500	53.93	-25.50	46.66	32.77	74.00	20.07	V
17972.000	53.43	-25.50	46.66	32.27	74.00	20.57	V
16595.300	51.34	-26.87	40.65	37.56	68.30	16.96	V
16540.300	50.78	-26.96	39.82	37.92	68.30	17.52	V
11839.500	48.21	-31.85	39.05	41.01	74.00	25.79	V
11911.000	48.14	-31.85	39.05	40.94	74.00	25.86	H

**802.11n-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17983.000	53.72	-25.50	46.66	32.56	74.00	20.28	H
17998.900	53.47	-25.50	46.66	32.31	74.00	20.53	V
16522.200	51.29	-26.96	39.82	38.43	68.30	17.01	V
16545.200	50.99	-26.87	40.65	37.21	68.30	17.31	H
11908.200	47.65	-31.85	39.05	40.45	74.00	26.35	H
11316.400	47.59	-32.36	38.77	41.19	74.00	26.41	H

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17945.000	53.34	-25.50	46.66	32.18	74.00	20.66	H
17946.100	53.32	-25.50	46.66	32.16	74.00	20.68	V
16574.400	51.24	-26.87	40.65	37.46	68.30	17.06	V
16599.200	50.87	-26.87	40.65	37.09	68.30	17.43	H
11757.500	48.16	-31.99	38.98	41.17	74.00	25.84	H
9106.000	48.02	-33.76	38.13	43.65	74.00	25.98	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17865.200	53.64	-25.50	46.66	32.48	74.00	20.36	V
17968.100	53.58	-25.50	46.66	32.42	74.00	20.42	H
16423.700	51.28	-26.96	39.82	38.42	68.30	17.02	V
16548.500	51.27	-26.87	40.65	37.49	68.30	17.03	V
11799.300	48.59	-31.85	39.05	41.39	74.00	25.41	V
11912.100	47.77	-31.85	39.05	40.57	74.00	26.23	V

**802.11n-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17946.700	53.88	-25.50	46.66	32.72	74.00	20.12	H
17967.500	53.41	-25.50	46.66	32.25	74.00	20.59	V
16482.000	51.39	-26.96	39.82	38.53	68.30	16.91	H
16487.000	51.02	-26.96	39.82	38.16	68.30	17.28	V
11997.300	47.71	-31.48	39.09	40.10	74.00	26.29	H
11529.800	47.41	-32.26	38.84	40.84	74.00	26.59	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17987.900	53.87	-25.50	46.66	32.71	74.00	20.13	H
17985.200	53.41	-25.50	46.66	32.25	74.00	20.59	H
13649.000	51.24	-29.50	40.43	40.31	68.30	17.06	V
16423.200	50.96	-26.96	39.82	38.10	68.30	17.34	H
11787.800	47.96	-31.99	38.98	40.97	74.00	26.04	H
11758.600	47.82	-31.99	38.98	40.83	74.00	26.18	V



**802.11ac-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17985.700	54.08	-25.50	46.66	32.92	74.00	19.92	H
17998.300	53.82	-25.50	46.66	32.66	74.00	20.18	H
13756.800	51.04	-29.10	40.86	39.27	68.30	17.26	H
13653.900	50.70	-29.50	40.43	39.77	68.30	17.60	H
11809.800	47.95	-31.85	39.05	40.75	74.00	26.05	V
11779.000	47.85	-31.99	38.98	40.86	74.00	26.15	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17930.700	53.42	-25.50	46.66	32.26	74.00	20.58	H
17314.700	53.10	-25.95	44.35	34.69	68.30	15.20	V
16561.800	51.13	-26.87	40.65	37.35	68.30	17.17	H
16442.400	50.83	-26.96	39.82	37.97	68.30	17.47	V
11255.400	48.31	-32.36	38.77	41.91	74.00	25.69	H
11793.300	48.16	-31.99	38.98	41.17	74.00	25.84	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17715.100	53.75	-25.74	45.95	33.54	74.00	20.25	H
17944.500	53.47	-25.50	46.66	32.31	74.00	20.53	H
16572.800	50.95	-26.87	40.65	37.17	68.30	17.35	H
16418.200	50.81	-26.96	39.82	37.95	68.30	17.49	H
11848.300	47.72	-31.85	39.05	40.52	74.00	26.28	H
11693.700	47.47	-31.99	38.98	40.48	74.00	26.53	V

**802.11ac-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17982.400	53.35	-25.50	46.66	32.19	74.00	20.65	H
17950.500	53.26	-25.50	46.66	32.10	74.00	20.74	H
16579.300	51.43	-26.87	40.65	37.65	68.30	16.87	H
16450.700	50.66	-26.96	39.82	37.80	68.30	17.64	H
11699.800	47.88	-31.99	38.98	40.89	74.00	26.12	H
11802.600	47.88	-31.85	39.05	40.68	74.00	26.12	V

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17954.900	53.71	-25.50	46.66	32.55	74.00	20.29	V
17806.400	53.62	-25.50	46.66	32.46	74.00	20.38	V
16390.700	51.01	-26.96	39.82	38.15	68.30	17.29	H
16510.600	51.00	-26.96	39.82	38.14	68.30	17.30	H
11827.900	48.21	-31.85	39.05	41.01	74.00	25.79	H
11921.400	47.92	-31.48	39.09	40.31	74.00	26.08	V

**802.11ac-HT80**

## Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17975.800	53.34	-25.50	46.66	32.18	74.00	20.66	H
17937.300	53.14	-25.50	46.66	31.98	74.00	20.86	V
16537.000	52.25	-26.96	39.82	39.39	68.30	16.05	V
16442.400	51.89	-26.96	39.82	39.03	68.30	16.41	H
11517.700	47.89	-32.26	38.84	41.32	74.00	26.11	H
11869.700	47.84	-31.85	39.05	40.64	74.00	26.16	V

**802.11ax-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17974.700	53.41	-25.50	46.66	32.25	74.00	20.59	V
17958.200	53.35	-25.50	46.66	32.19	74.00	20.65	H
16551.800	51.41	-26.87	40.65	37.63	68.30	16.89	H
13728.700	51.11	-29.10	40.86	39.34	68.30	17.19	V
11858.700	48.42	-31.85	39.05	41.22	74.00	25.58	H
11794.400	48.04	-31.99	38.98	41.05	74.00	25.96	H

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17973.000	54.54	-25.50	46.66	33.38	74.00	19.46	V
17974.700	53.45	-25.50	46.66	32.29	74.00	20.55	V
16718.000	51.36	-26.62	41.49	36.49	68.30	16.94	H
16505.100	51.10	-26.96	39.82	38.24	68.30	17.2	H
11777.300	47.70	-31.99	38.98	40.71	74.00	26.3	V
11819.700	47.61	-31.85	39.05	40.41	74.00	26.39	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17961.500	54.31	-25.50	46.66	33.15	74.00	19.69	V
17415.900	54.12	-26.85	45.25	35.72	68.30	14.18	V
16586.000	51.61	-26.87	40.65	37.83	68.30	16.69	H
16710.800	51.16	-26.62	41.49	36.29	68.30	17.14	V
11913.700	48.06	-31.48	39.09	40.45	74.00	25.94	H
11744.300	47.73	-31.99	38.98	40.74	74.00	26.27	V

**802.11ax-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17409.800	53.72	-26.85	45.25	35.32	68.30	14.58	V
17946.700	53.52	-25.50	46.66	32.36	74.00	20.48	H
16533.700	51.70	-26.96	39.82	38.84	68.30	16.6	H
16507.300	51.54	-26.96	39.82	38.68	68.30	16.76	V
11901.600	48.02	-31.85	39.05	40.82	74.00	25.98	V
11823.000	47.77	-31.85	39.05	40.57	74.00	26.23	V

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17994.000	53.22	-25.50	46.66	32.06	74.00	20.78	H
17941.200	53.11	-25.50	46.66	31.95	74.00	20.89	H
13750.700	51.21	-29.10	40.86	39.44	68.30	17.09	H
16582.100	51.16	-26.87	40.65	37.38	68.30	17.14	V
11964.300	48.00	-31.48	39.09	40.39	74.00	26	V
11815.800	47.64	-31.85	39.05	40.44	74.00	26.36	V

**802.11ax-HT80**

## Ch155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17939.000	53.99	-25.50	46.66	32.83	74.00	20.01	V
17957.100	53.93	-25.50	46.66	32.77	74.00	20.07	H
16513.900	51.83	-26.96	39.82	38.97	68.30	16.47	V
16690.500	51.82	-26.87	40.65	38.04	68.30	16.48	H
11796.600	48.06	-31.85	39.05	40.86	74.00	25.94	H
10712.000	47.95	-32.77	38.49	42.23	74.00	26.05	H

Note: the spurious emission above 18G is noise only

**Conclusion: pass**

## SPEED

The measurements were performed separately in Chain A, Chain B, and MIMO (Chain A+B), and only the worst cases are shown in this section.

### Average Results:

#### 802.11a

##### Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17995.600	42.37	-25.50	46.66	21.21	54.00	11.63	H
17979.700	42.30	-25.50	46.66	21.14	54.00	11.70	H
16058.000	37.99	-26.77	38.93	25.83	54.00	16.01	H
13293.600	37.82	-29.49	39.71	27.60	54.00	16.18	H
11901.100	36.51	-31.85	39.05	29.31	54.00	17.49	V
11886.800	36.44	-31.85	39.05	29.24	54.00	17.56	V

##### Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17990.100	42.42	-25.50	46.66	21.26	54.00	11.58	V
17987.900	42.25	-25.50	46.66	21.09	54.00	11.75	H
13322.800	37.88	-29.49	39.71	27.66	54.00	16.12	V
13351.400	37.84	-29.49	39.71	27.62	54.00	16.16	H
11893.900	36.40	-31.85	39.05	29.20	54.00	17.60	V
11930.800	36.39	-31.48	39.09	28.78	54.00	17.61	V

##### Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17994.000	42.34	-25.50	46.66	21.18	54.00	11.66	V
17992.300	42.26	-25.50	46.66	21.10	54.00	11.74	V
13334.900	38.00	-29.49	39.71	27.78	54.00	16.00	V
13328.300	37.76	-29.49	39.71	27.54	54.00	16.24	H
11884.000	36.47	-31.85	39.05	29.27	54.00	17.53	V
11838.400	36.46	-31.85	39.05	29.26	54.00	17.54	V

**802.11n-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17997.200	42.36	-25.50	46.66	21.20	54.00	11.64	V
17989.500	42.26	-25.50	46.66	21.10	54.00	11.74	V
13261.800	37.90	-29.67	39.55	28.02	54.00	16.10	H
13370.600	37.65	-29.49	39.71	27.43	54.00	16.35	V
11804.800	36.45	-31.85	39.05	29.25	54.00	17.55	V
11994.000	36.38	-31.48	39.09	28.77	54.00	17.62	H

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17963.700	42.21	-25.50	46.66	21.05	54.00	11.79	H
17994.500	42.17	-25.50	46.66	21.01	54.00	11.83	H
13288.700	37.79	-29.67	39.55	27.91	54.00	16.21	H
15647.100	37.70	-27.23	38.61	26.32	54.00	16.30	H
11808.700	36.42	-31.85	39.05	29.22	54.00	17.58	V
11799.300	36.39	-31.85	39.05	29.19	54.00	17.61	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17986.800	42.17	-25.50	46.66	21.01	54.00	11.83	V
17972.000	42.16	-25.50	46.66	21.00	54.00	11.84	H
13349.800	37.92	-29.49	39.71	27.70	54.00	16.08	V
15651.500	37.71	-27.23	38.61	26.33	54.00	16.29	H
11829.600	36.35	-31.85	39.05	29.15	54.00	17.65	V
11787.800	36.31	-31.99	38.98	29.32	54.00	17.69	V

**802.11n-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17981.300	42.44	-25.50	46.66	21.28	54.00	11.56	V
17971.400	42.41	-25.50	46.66	21.25	54.00	11.59	V
16059.600	38.21	-26.77	38.93	26.05	54.00	15.79	H
13312.900	37.96	-29.49	39.71	27.74	54.00	16.04	V
11809.200	36.63	-31.85	39.05	29.43	54.00	17.37	H
11856.500	36.58	-31.85	39.05	29.38	54.00	17.42	V

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17976.300	42.32	-25.50	46.66	21.16	54.00	11.68	H
17992.300	42.27	-25.50	46.66	21.11	54.00	11.73	H
13278.800	37.83	-29.67	39.55	27.95	54.00	16.17	H
13371.200	37.78	-29.49	39.71	27.56	54.00	16.22	H
11888.400	36.64	-31.85	39.05	29.44	54.00	17.36	V
11810.900	36.46	-31.85	39.05	29.26	54.00	17.54	V

**802.11ac-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17970.800	42.27	-25.50	46.66	21.11	54.00	11.73	V
17988.500	42.25	-25.50	46.66	21.09	54.00	11.75	V
15654.800	37.86	-27.23	38.61	26.48	54.00	16.14	V
13288.700	37.69	-29.67	39.55	27.81	54.00	16.31	V
11887.900	36.55	-31.85	39.05	29.35	54.00	17.45	V
11822.400	36.44	-31.85	39.05	29.24	54.00	17.56	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17998.300	42.49	-25.50	46.66	21.33	54.00	11.51	V
17985.200	42.48	-25.50	46.66	21.32	54.00	11.52	V
13251.900	37.78	-29.67	39.55	27.90	54.00	16.22	V
15943.500	37.65	-27.35	38.54	26.46	54.00	16.35	V
11809.800	36.44	-31.85	39.05	29.24	54.00	17.56	H
11843.300	36.42	-31.85	39.05	29.22	54.00	17.58	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17987.300	42.23	-25.50	46.66	21.07	54.00	11.77	H
17993.400	42.15	-25.50	46.66	20.99	54.00	11.85	H
13289.800	37.62	-29.67	39.55	27.74	54.00	16.38	V
15640.000	37.62	-27.23	38.61	26.24	54.00	16.38	H
11788.900	36.55	-31.99	38.98	29.56	54.00	17.45	V
11879.100	36.49	-31.85	39.05	29.29	54.00	17.51	V



**802.11ac-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17981.300	42.55	-25.50	46.66	21.39	54.00	11.45	V
17970.800	42.28	-25.50	46.66	21.12	54.00	11.72	V
13297.500	37.93	-29.49	39.71	27.71	54.00	16.07	H
13319.500	37.78	-29.49	39.71	27.56	54.00	16.22	H
11857.100	36.57	-31.85	39.05	29.37	54.00	17.43	H
11879.100	36.45	-31.85	39.05	29.25	54.00	17.55	V

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17991.800	42.25	-25.50	46.66	21.09	54.00	11.75	V
17991.200	42.24	-25.50	46.66	21.08	54.00	11.76	V
14491.500	37.78	-28.59	42.46	23.91	54.00	16.22	V
13358.500	37.71	-29.49	39.71	27.49	54.00	16.29	V
11807.600	36.50	-31.85	39.05	29.30	54.00	17.50	H
11812.500	36.38	-31.85	39.05	29.18	54.00	17.62	H

**802.11ac-HT80**

## Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17950.000	42.26	-25.50	46.66	21.10	54.00	11.74	V
17997.200	42.21	-25.50	46.66	21.05	54.00	11.79	H
13323.900	37.72	-29.49	39.71	27.50	54.00	16.28	H
13314.500	37.67	-29.49	39.71	27.45	54.00	16.33	H
11838.900	36.31	-31.85	39.05	29.11	54.00	17.69	H
11893.400	36.31	-31.85	39.05	29.11	54.00	17.69	H

**802.11ax-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17991.200	42.16	-25.50	46.66	21.00	54.00	11.84	V
17933.500	42.10	-25.50	46.66	20.94	54.00	11.90	H
13345.400	37.67	-29.49	39.71	27.45	54.00	16.33	H
13316.800	37.59	-29.49	39.71	27.37	54.00	16.41	H
11836.700	36.62	-31.85	39.05	29.42	54.00	17.38	H
11896.700	36.54	-31.85	39.05	29.34	54.00	17.46	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17981.800	42.32	-25.50	46.66	21.16	54.00	11.68	V
17995.600	42.19	-25.50	46.66	21.03	54.00	11.81	V
13294.800	38.26	-29.49	39.71	28.04	54.00	15.74	H
15665.800	37.96	-27.23	38.61	26.58	54.00	16.04	V
11833.400	36.34	-31.85	39.05	29.14	54.00	17.66	H
11793.800	36.32	-31.99	38.98	29.33	54.00	17.68	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17947.800	42.29	-25.50	46.66	21.13	54.00	11.71	V
17991.200	42.27	-25.50	46.66	21.11	54.00	11.73	V
13317.900	37.70	-29.49	39.71	27.48	54.00	16.30	H
13312.900	37.52	-29.49	39.71	27.30	54.00	16.48	H
11815.800	36.62	-31.85	39.05	29.42	54.00	17.38	V
11807.600	36.51	-31.85	39.05	29.31	54.00	17.49	H

**802.11ax-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17991.200	42.60	-25.50	46.66	21.44	54.00	11.40	H
17965.900	42.42	-25.50	46.66	21.26	54.00	11.58	V
13347.500	37.66	-29.49	39.71	27.44	54.00	16.34	V
13305.200	37.64	-29.49	39.71	27.42	54.00	16.36	H
11881.300	36.60	-31.85	39.05	29.40	54.00	17.40	H
11816.900	36.49	-31.85	39.05	29.29	54.00	17.51	V

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17985.200	42.26	-25.50	46.66	21.10	54.00	11.74	V
17970.800	42.25	-25.50	46.66	21.09	54.00	11.75	H
13370.600	37.60	-29.49	39.71	27.38	54.00	16.40	V
13345.900	37.54	-29.49	39.71	27.32	54.00	16.46	H
11830.100	36.56	-31.85	39.05	29.36	54.00	17.44	V
11887.900	36.44	-31.85	39.05	29.24	54.00	17.56	H

**802.11ax-HT80**

## Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17965.000	42.76	-25.50	46.66	21.60	54.00	11.24	V
17975.000	42.71	-25.50	46.66	21.55	54.00	11.29	H
13325.000	38.02	-29.49	39.71	27.80	54.00	15.98	H
13320.500	38.07	-29.49	39.71	27.85	54.00	15.93	H
11852.900	37.09	-31.85	39.05	29.89	54.00	16.91	H
11895.000	37.08	-31.85	39.05	29.88	54.00	16.92	H

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

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17955.500	54.10	-25.50	46.66	32.94	74.00	19.90	H
17954.300	53.60	-25.50	46.66	32.44	74.00	20.40	V
16847.200	51.96	-26.62	41.49	37.09	68.30	16.34	V
16468.200	51.71	-26.96	39.82	38.85	68.30	16.59	V
11893.400	48.71	-31.85	39.05	41.51	74.00	25.29	V
11766.900	47.97	-31.99	38.98	40.98	74.00	26.03	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17915.300	53.75	-25.50	46.66	32.59	74.00	20.25	V
17988.500	53.62	-25.50	46.66	32.46	74.00	20.38	H
16536.500	51.99	-26.96	39.82	39.13	68.30	16.31	H
16428.100	51.59	-26.96	39.82	38.73	68.30	16.71	V
11922.000	48.95	-31.48	39.09	41.34	74.00	25.05	H
11792.700	48.28	-31.99	38.98	41.29	74.00	25.72	V

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17984.600	54.15	-25.50	46.66	32.99	74.00	19.85	H
17996.200	53.73	-25.50	46.66	32.57	74.00	20.27	H
16712.500	51.63	-26.62	41.49	36.76	68.30	16.67	V
16583.200	51.58	-26.87	40.65	37.80	68.30	16.72	H
11422.600	48.47	-32.42	38.79	42.10	74.00	25.53	H
10835.200	48.33	-32.33	38.59	42.07	74.00	25.67	V

**802.11n-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17621.600	53.76	-25.74	45.95	33.55	68.30	14.54	V
17970.800	53.69	-25.50	46.66	32.53	74.00	20.31	V
16588.700	51.63	-26.87	40.65	37.85	68.30	16.67	V
16558.500	51.17	-26.87	40.65	37.39	68.30	17.13	V
11891.700	48.26	-31.85	39.05	41.06	74.00	25.74	H
11874.700	48.00	-31.85	39.05	40.80	74.00	26.00	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17961.000	54.07	-25.50	46.66	32.91	74.00	19.93	V
17901.000	53.76	-25.50	46.66	32.60	74.00	20.24	V
16948.400	51.61	-26.32	42.36	35.56	68.30	16.69	V
16450.700	51.30	-26.96	39.82	38.44	68.30	17.00	V
10856.600	48.97	-32.33	38.59	42.71	74.00	25.03	V
8700.600	48.82	-34.42	38.00	45.23	68.30	19.48	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17975.200	54.44	-25.50	46.66	33.28	74.00	19.56	V
17955.500	54.08	-25.50	46.66	32.92	74.00	19.92	V
16554.000	51.60	-26.87	40.65	37.82	68.30	16.70	H
16594.800	51.51	-26.87	40.65	37.73	68.30	16.79	V
11858.200	49.14	-31.85	39.05	41.94	74.00	24.86	V
11158.600	48.25	-32.60	38.75	42.11	74.00	25.75	V

**802.11n-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17926.800	53.76	-25.50	46.66	32.60	74.00	20.24	H
17963.200	53.71	-25.50	46.66	32.55	74.00	20.29	V
16837.800	52.56	-26.62	41.49	37.69	68.30	15.74	V
16653.000	51.96	-26.87	40.65	38.18	68.30	16.34	H
11918.100	48.75	-31.48	39.09	41.14	74.00	25.25	V
11985.800	48.71	-31.48	39.09	41.10	74.00	25.29	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17975.800	53.92	-25.50	46.66	32.76	74.00	20.08	H
17972.000	53.76	-25.50	46.66	32.60	74.00	20.24	V
16419.800	51.63	-26.96	39.82	38.77	68.30	16.67	H
16541.400	51.25	-26.96	39.82	38.39	68.30	17.05	V
11907.700	48.23	-31.85	39.05	41.03	74.00	25.77	H
11925.300	48.12	-31.48	39.09	40.51	74.00	25.88	V

**802.11ac-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17869.100	53.96	-25.50	46.66	32.80	74.00	20.04	H
17923.000	53.83	-25.50	46.66	32.67	74.00	20.17	V
16546.900	52.62	-26.87	40.65	38.84	68.30	15.68	V
16536.500	51.44	-26.96	39.82	38.58	68.30	16.86	H
11727.800	48.40	-31.99	38.98	41.41	74.00	25.60	H
11819.700	48.30	-31.85	39.05	41.10	74.00	25.70	V

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17977.500	54.07	-25.50	46.66	32.91	74.00	19.93	H
17947.200	53.96	-25.50	46.66	32.80	74.00	20.04	V
16746.500	51.19	-26.62	41.49	36.32	68.30	17.11	H
16932.500	51.10	-26.32	42.36	35.05	68.30	17.20	V
11908.200	48.68	-31.85	39.05	41.48	74.00	25.32	V
11787.200	48.04	-31.99	38.98	41.05	74.00	25.96	V

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17818.500	54.33	-25.50	46.66	33.17	74.00	19.67	V
17947.200	53.72	-25.50	46.66	32.56	74.00	20.28	V
16436.300	52.07	-26.96	39.82	39.21	68.30	16.23	H
16526.000	51.64	-26.96	39.82	38.78	68.30	16.66	H
11797.700	48.05	-31.85	39.05	40.85	74.00	25.95	H
10665.800	48.04	-32.76	38.38	42.42	74.00	25.96	H

**802.11ac-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17393.900	53.96	-26.85	45.25	35.56	68.30	14.34	H
17982.400	53.55	-25.50	46.66	32.39	74.00	20.45	V
16594.200	51.56	-26.87	40.65	37.78	68.30	16.74	H
16557.900	51.52	-26.87	40.65	37.74	68.30	16.78	V
11797.700	48.12	-31.85	39.05	40.92	74.00	25.88	V
11846.600	48.00	-31.85	39.05	40.80	74.00	26.00	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17929.000	53.64	-25.50	46.66	32.48	74.00	20.36	H
17990.100	53.57	-25.50	46.66	32.41	74.00	20.43	V
16598.000	51.73	-26.87	40.65	37.95	68.30	16.57	V
16697.600	51.45	-26.87	40.65	37.67	68.30	16.85	V
11846.600	48.48	-31.85	39.05	41.28	74.00	25.52	H
11824.100	48.23	-31.85	39.05	41.03	74.00	25.77	H

**802.11ac-HT80**

## Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17606.800	53.83	-25.74	45.95	33.62	68.30	14.47	V
17413.200	53.58	-26.85	45.25	35.18	68.30	14.72	H
16489.700	51.54	-26.96	39.82	38.68	68.30	16.76	H
16454.500	51.21	-26.96	39.82	38.35	68.30	17.09	H
11887.900	48.38	-31.85	39.05	41.18	74.00	25.62	H
11763.000	48.10	-31.99	38.98	41.11	74.00	25.90	H



**802.11ax-HT20**

## Channel 149

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17949.400	55.05	-25.50	46.66	33.89	74.00	18.95	H
17996.700	53.90	-25.50	46.66	32.74	74.00	20.10	H
16506.200	51.74	-26.96	39.82	38.88	68.30	16.56	V
16446.800	51.42	-26.96	39.82	38.56	68.30	16.88	H
11772.900	48.42	-31.99	38.98	41.43	74.00	25.58	H
11864.200	48.15	-31.85	39.05	40.95	74.00	25.85	H

## Channel 157

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17979.700	54.05	-25.50	46.66	32.89	74.00	19.95	H
17370.200	53.77	-25.95	44.35	35.36	68.30	14.53	V
16514.500	51.82	-26.96	39.82	38.96	68.30	16.48	V
16829.600	51.51	-26.62	41.49	36.64	68.30	16.79	V
10955.100	48.31	-32.82	38.70	42.43	74.00	25.69	V
11321.400	48.17	-32.36	38.77	41.77	74.00	25.83	H

## Channel 165

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17978.000	53.83	-25.50	46.66	32.67	74.00	20.17	H
17995.600	53.71	-25.50	46.66	32.55	74.00	20.29	V
16422.000	51.52	-26.96	39.82	38.66	68.30	16.78	H
16590.900	51.19	-26.87	40.65	37.41	68.30	17.11	H
11920.900	48.39	-31.48	39.09	40.78	74.00	25.61	H
10136.100	48.34	-33.45	38.13	43.66	68.30	19.96	V

**802.11ax-HT40**

## Channel 151

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17972.500	53.69	-25.50	46.66	32.53	74.00	20.31	H
17956.500	53.67	-25.50	46.66	32.51	74.00	20.33	H
16478.700	51.96	-26.96	39.82	39.10	68.30	16.34	H
16556.200	51.57	-26.87	40.65	37.79	68.30	16.73	V
11903.300	48.69	-31.85	39.05	41.49	74.00	25.31	V
10947.900	48.19	-32.82	38.70	42.31	74.00	25.81	H

## Channel 159

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17933.500	53.83	-25.50	46.66	32.67	74.00	20.17	H
17984.600	53.75	-25.50	46.66	32.59	74.00	20.25	V
16591.500	51.61	-26.87	40.65	37.83	68.30	16.69	H
16659.100	51.38	-26.87	40.65	37.60	68.30	16.92	V
11874.100	48.86	-31.85	39.05	41.66	74.00	25.14	H
11832.900	48.33	-31.85	39.05	41.13	74.00	25.67	V

**802.11ax-HT80**

## Channel 155

Frequency (MHz)	Measurement Result (dBuV/m)	Cable Loss (dB)	Antenna Factor (dB/m)	Receiver Reading (dBuV)	Limit (dBuV/m)	Margin (dB)	Antenna Pol. (H/V)
17596.500	54.26	-25.54	45.95	33.85	68.30	14.04	V
17403.200	53.60	-26.85	45.25	35.20	68.30	14.70	H
16509.700	51.36	-26.96	39.82	38.50	68.30	16.94	H
16424.500	51.51	-26.96	39.82	38.65	68.30	16.79	H
11887.900	49.40	-31.85	39.05	42.20	74.00	24.60	H
11765.000	49.04	-31.99	38.98	42.05	74.00	24.96	H

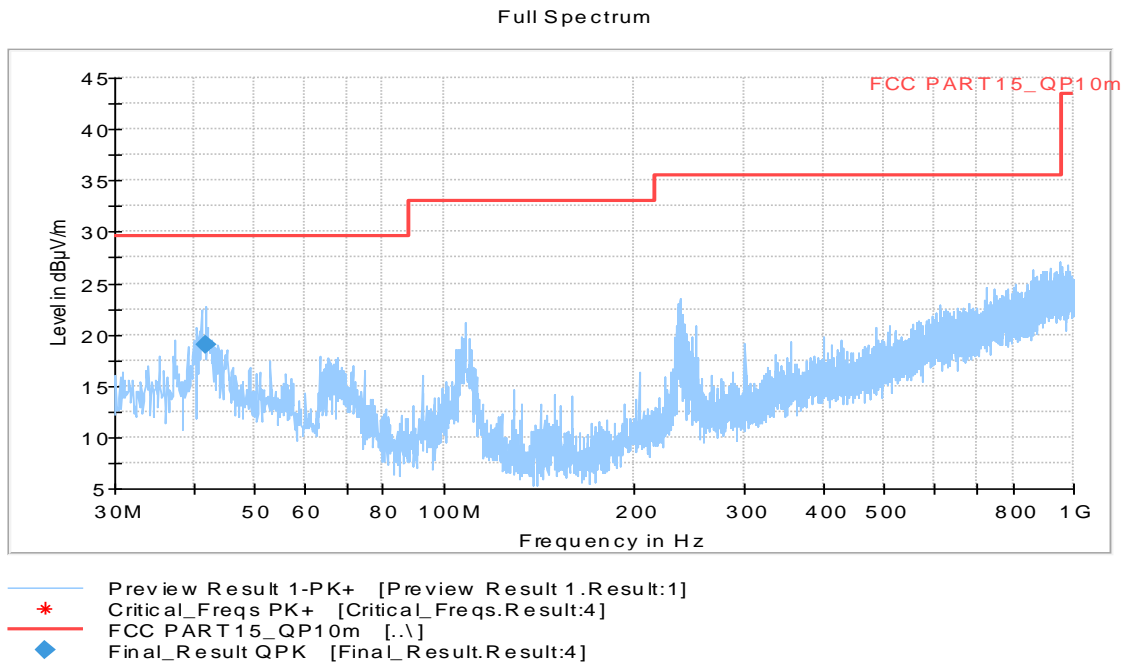
Note: the spurious emission above 18G is noise only

**Conclusion: pass**

## C.1.2 Radiated Spurious Emission- Below 1GHz

### WOSRT CASE BELOW 1GHz

- FCC Part 15C 30-1G Limit
- Peak Preview Result
- ◆ Final Result QPK



Frequency (MHz)	QuasiPeak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Margin (dB)	Limit (dBuV/m)
41.834000	19.03	275.0	V	260.0	10.51	29.54

Note: 10 meters' limit is got by converting from 3 meters test distance.

$$\text{Limit (10m)} = \text{limit (3m)} + 20(\log(3/10))$$

### BELOW 30MHz

There are no emissions found below 30MHz with in 20dB of the limit.

### C.1.3 Band Edges Compliance– Radiated

#### Measurement Result:

#### INNOWAVE:

Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz(CH149)	Fig.1	P
	5825 MHz(CH165)	Fig.2	P
802.11n HT20	5745 MHz(CH149)	Fig.3	P
	5825 MHz(CH165)	Fig.4	P
802.11n HT40	5755 MHz(CH151)	Fig.5	P
	5795 MHz(CH159)	Fig.6	P
802.11ac HT20	5745 MHz(CH149)	Fig.7	P
	5825 MHz(CH165)	Fig.8	P
802.11ac HT40	5755 MHz(CH151)	Fig.9	P
	5795 MHz(CH159)	Fig.10	P
802.11ac HT80	5775 MHz(CH155)	Fig.11 Fig.12	P
	5775 MHz(CH155)	Fig.11 Fig.12	P
802.11ax HT20	5745 MHz(CH149)	Fig.13	P
	5825 MHz(CH165)	Fig.14	P
802.11ax HT40	5755 MHz(CH151)	Fig.15	P
	5795 MHz(CH159)	Fig.16	P
802.11ax HT80	5775 MHz(CH155)	Fig.17 Fig.18	P
	5775 MHz(CH155)	Fig.17 Fig.18	P

The measurements were performed separately in Chain A, Chain B, and MIMO (Chain A+B), and only the worst cases are shown in this section.

**Conclusion: PASS**

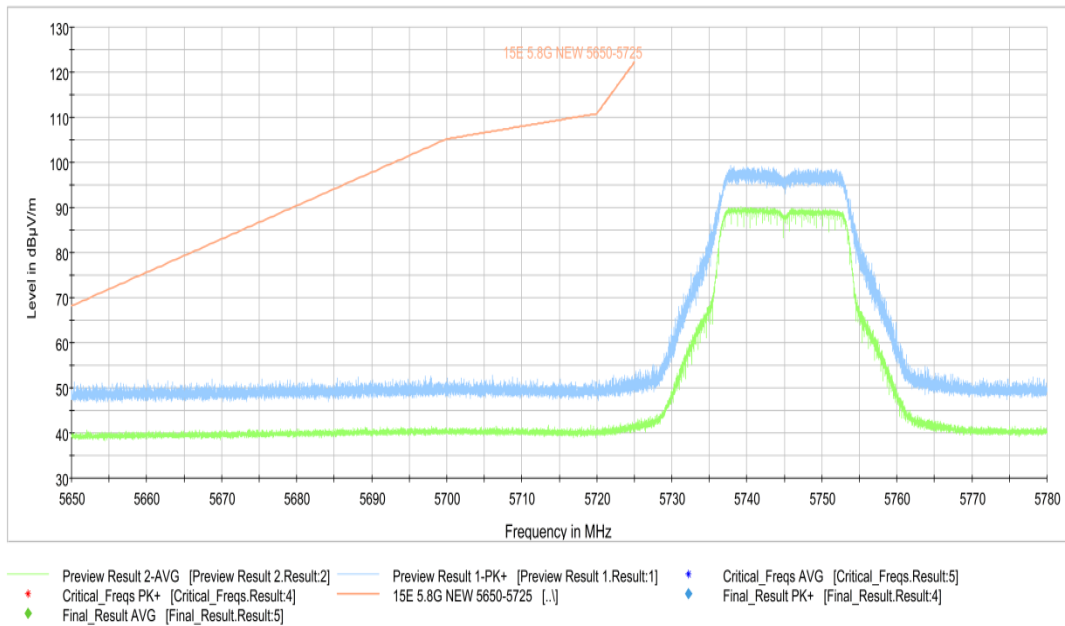
**SPEED:**

Mode	Channel	Test Results	Conclusion
802.11a	5745 MHz(CH149)	Fig.19	P
	5825 MHz(CH165)	Fig.20	P
802.11n HT20	5745 MHz(CH149)	Fig.21	P
	5825 MHz(CH165)	Fig.22	P
802.11n HT40	5755 MHz(CH151)	Fig.23	P
	5795 MHz(CH159)	Fig.24	P
802.11ac HT20	5745 MHz(CH149)	Fig.25	P
	5825 MHz(CH165)	Fig.26	P
802.11ac HT40	5755 MHz(CH151)	Fig.27	P
	5795 MHz(CH159)	Fig.28	P
802.11ac HT80	5775 MHz(CH155)	Fig.29 Fig.30	P
802.11ax HT20	5745 MHz(CH149)	Fig.31	P
	5825 MHz(CH165)	Fig.32	P
802.11ax HT40	5755 MHz(CH151)	Fig.33	P
	5795 MHz(CH159)	Fig.34	P
802.11ax HT80	5775 MHz(CH155)	Fig.35 Fig.36	P

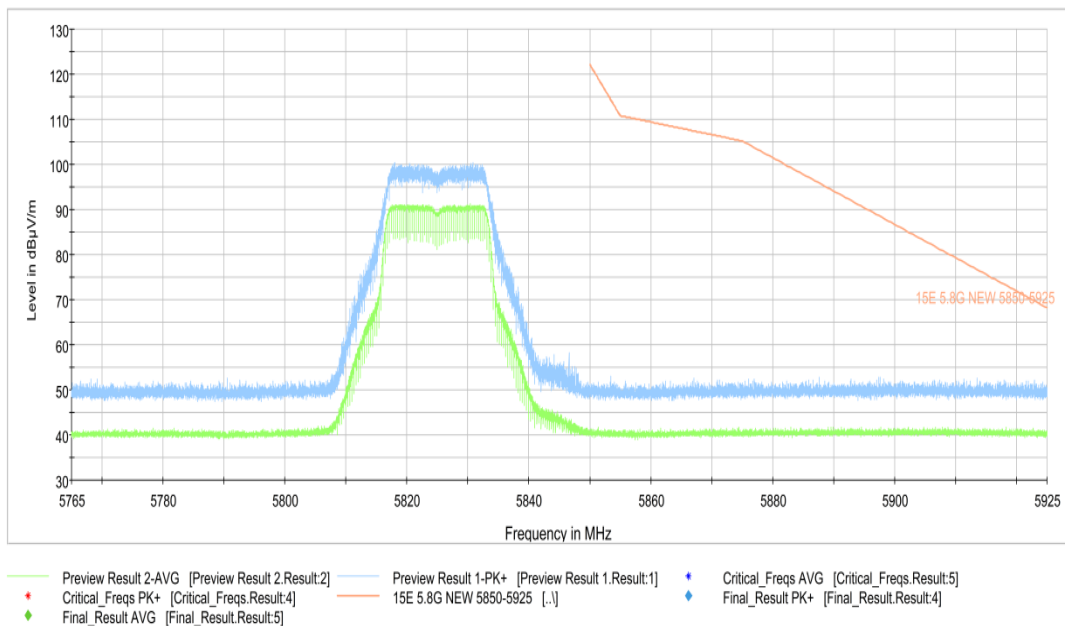
The measurements were performed separately in Chain A, Chain B, and MIMO (Chain A+B), and only the worst cases are shown in this section.

**Conclusion: PASS**

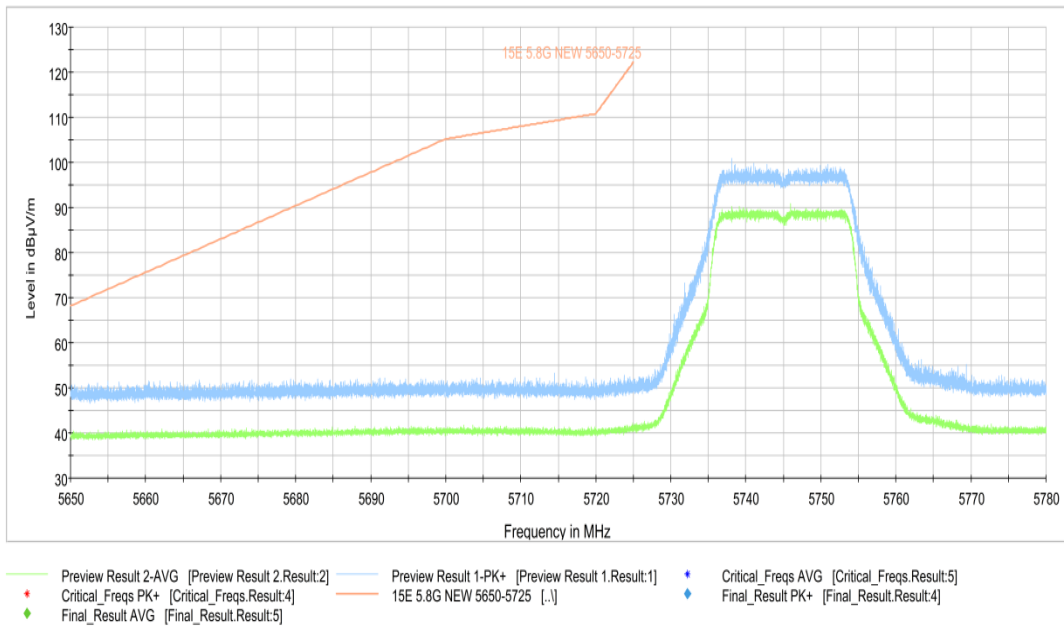
Test graphs as below:



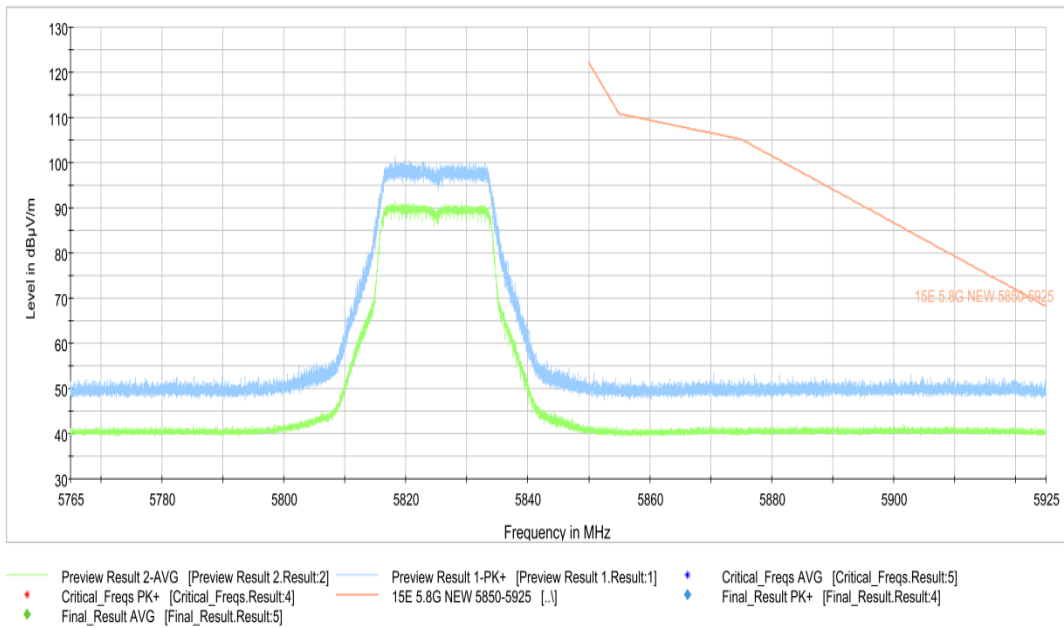
**Fig. 1 Band Edges (802.11a,CH149, 5745MHz)**



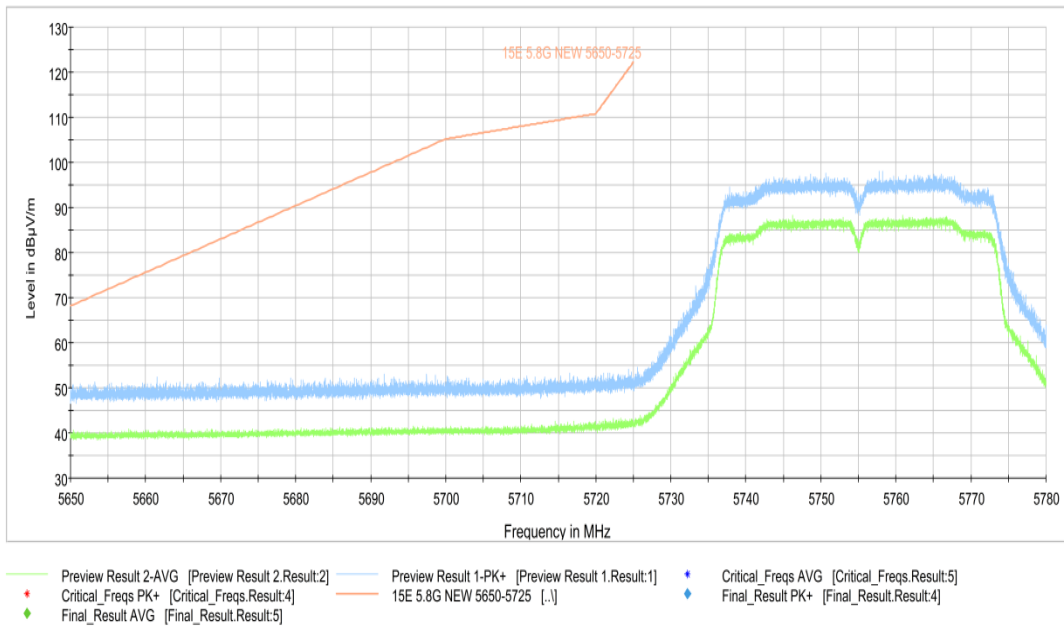
**Fig. 2 Band Edges (802.11a, CH165, 5825MHz)**



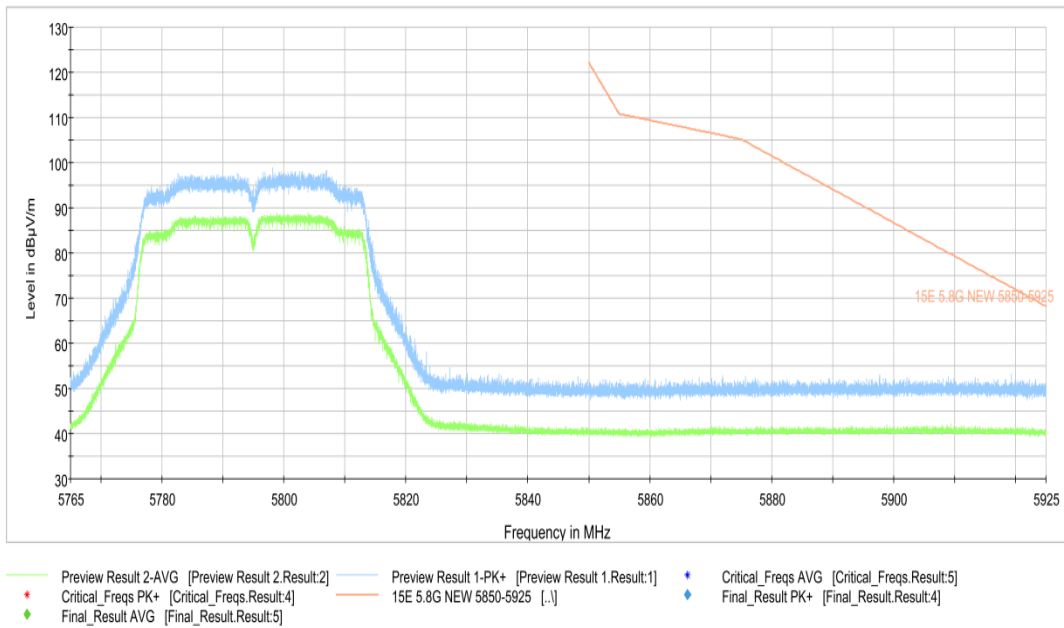
**Fig. 3 Band Edges (802.11n-HT20, CH149, 5745MHz)**



**Fig. 4 Band Edges (802.11n-HT20, CH165, 5825MHz)**

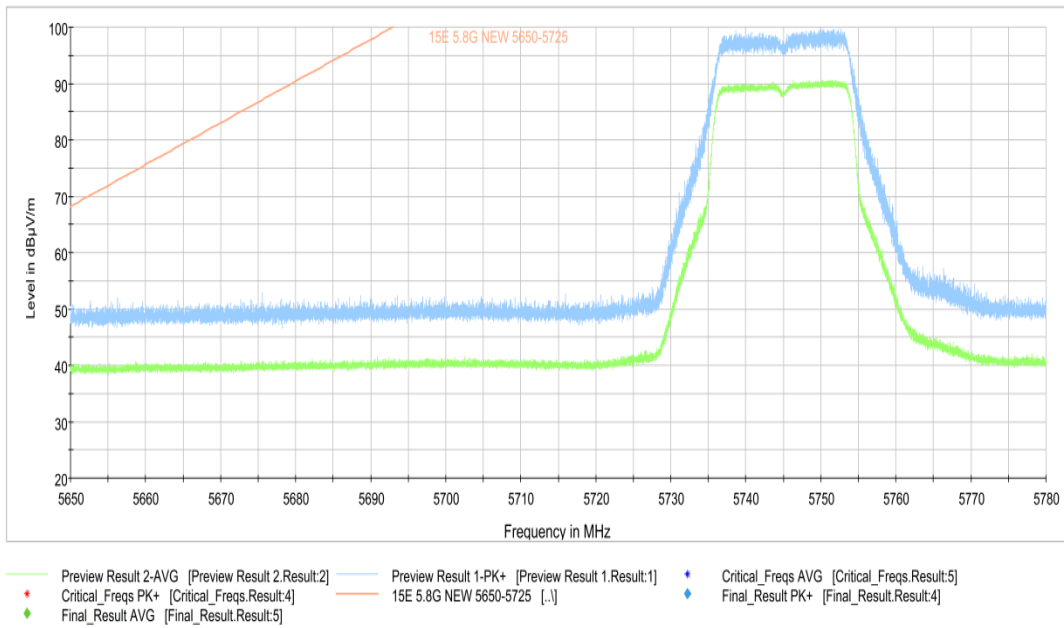


**Fig. 5 Band Edges (802.11n-HT40, CH151, 5755MHz)**

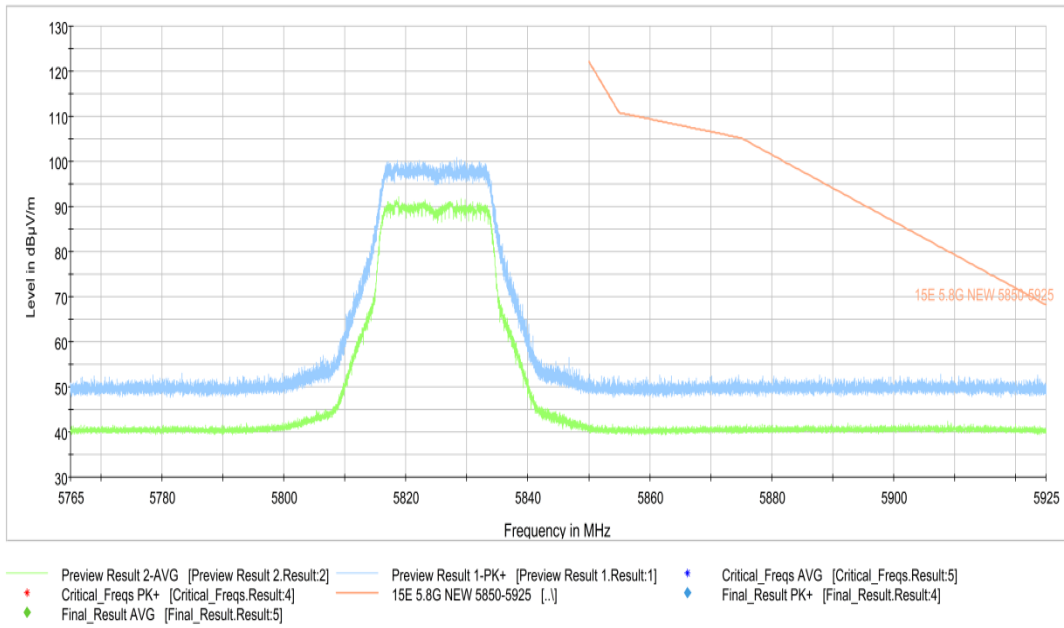


**Fig. 6 Band Edges (802.11n-HT40, CH159, 5795MHz)**

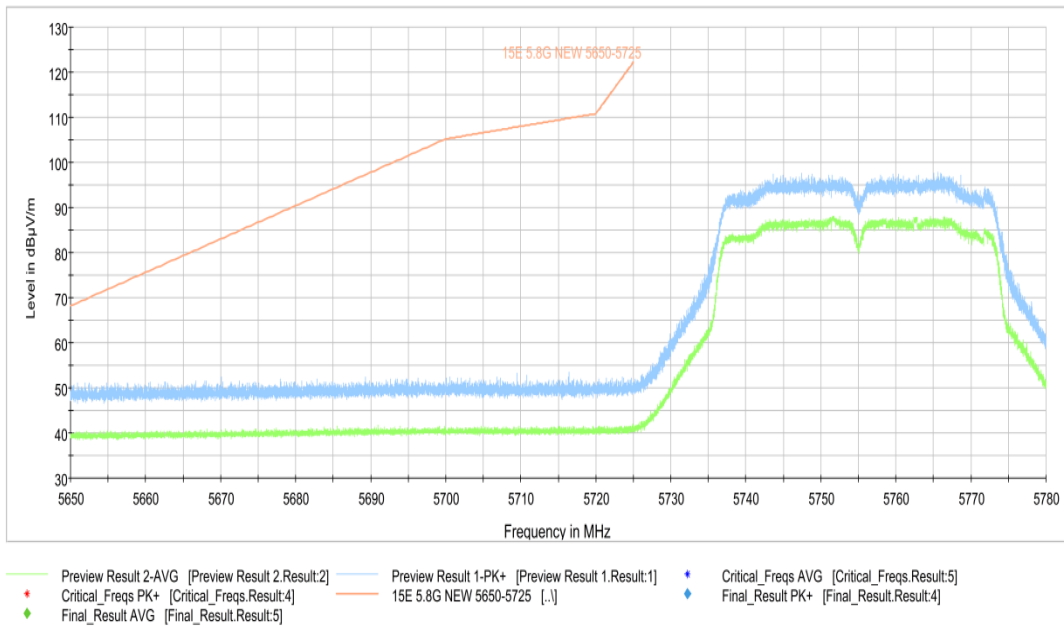




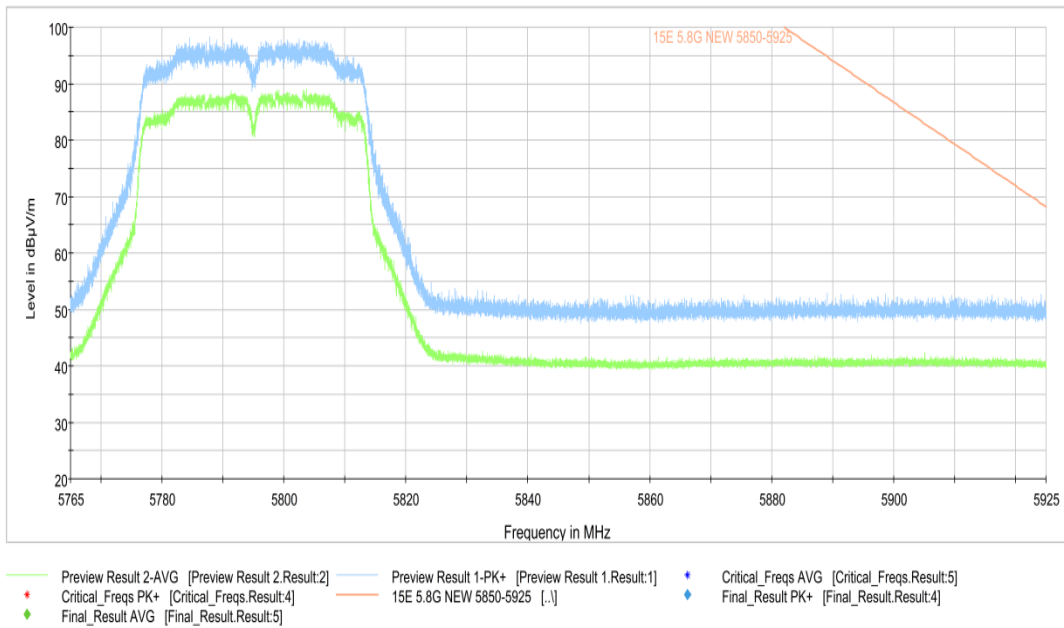
**Fig. 7 Band Edges (802.11ac-HT20, CH149, 5745MHz)**



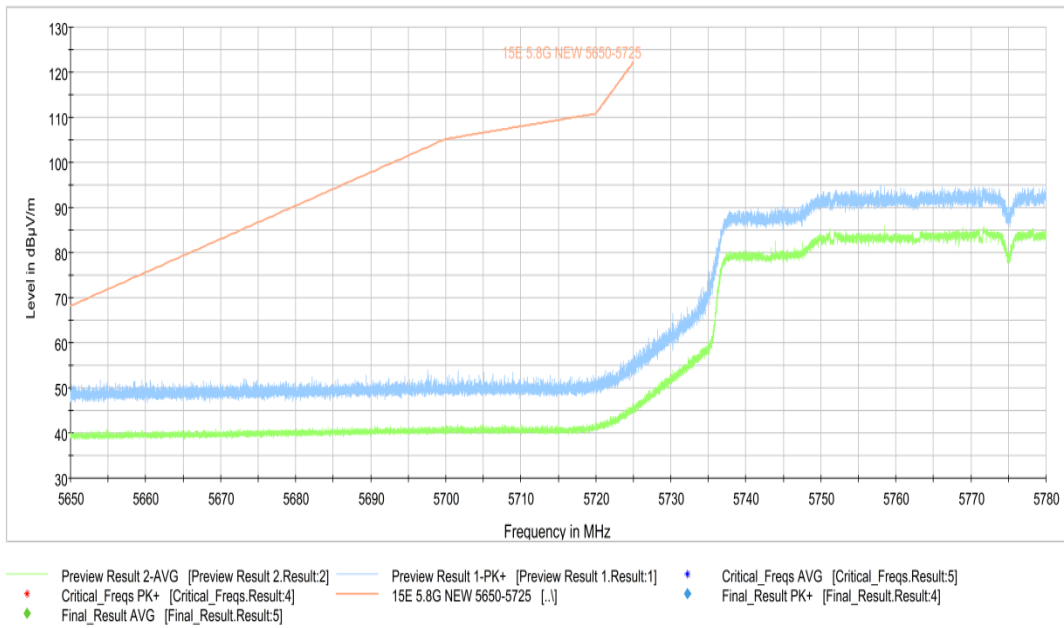
**Fig. 8 Band Edges (802.11ac-HT20, CH165, 5825MHz)**



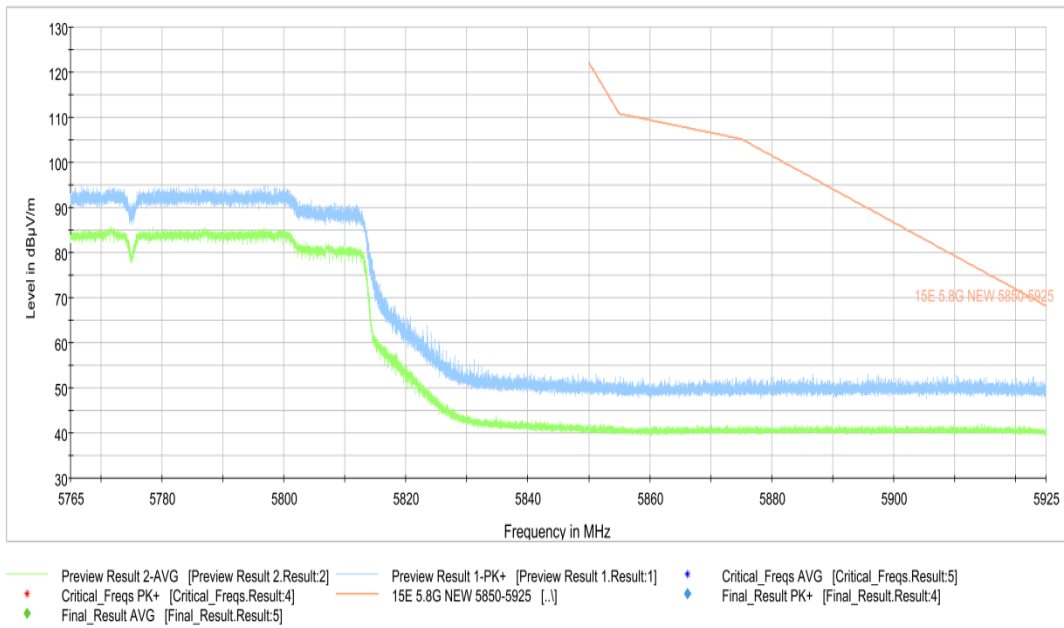
**Fig. 9 Band Edges (802.11ac-HT40,CH151, 5755MHz)**



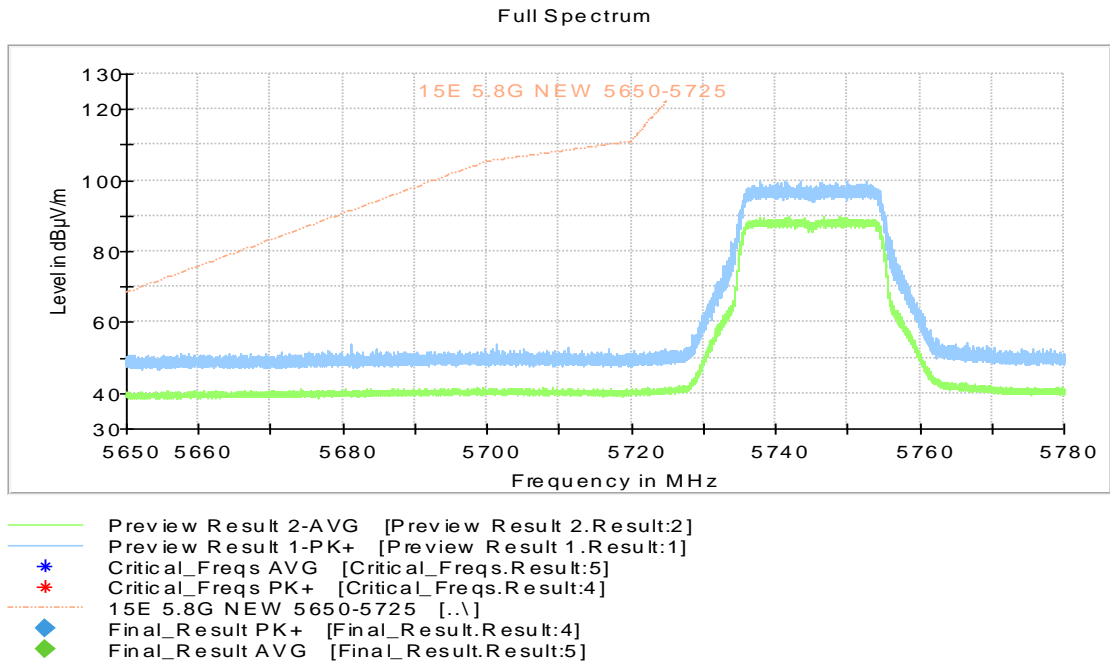
**Fig. 10 Band Edges (802.11ac-HT40,CH159, 5795MHz)**



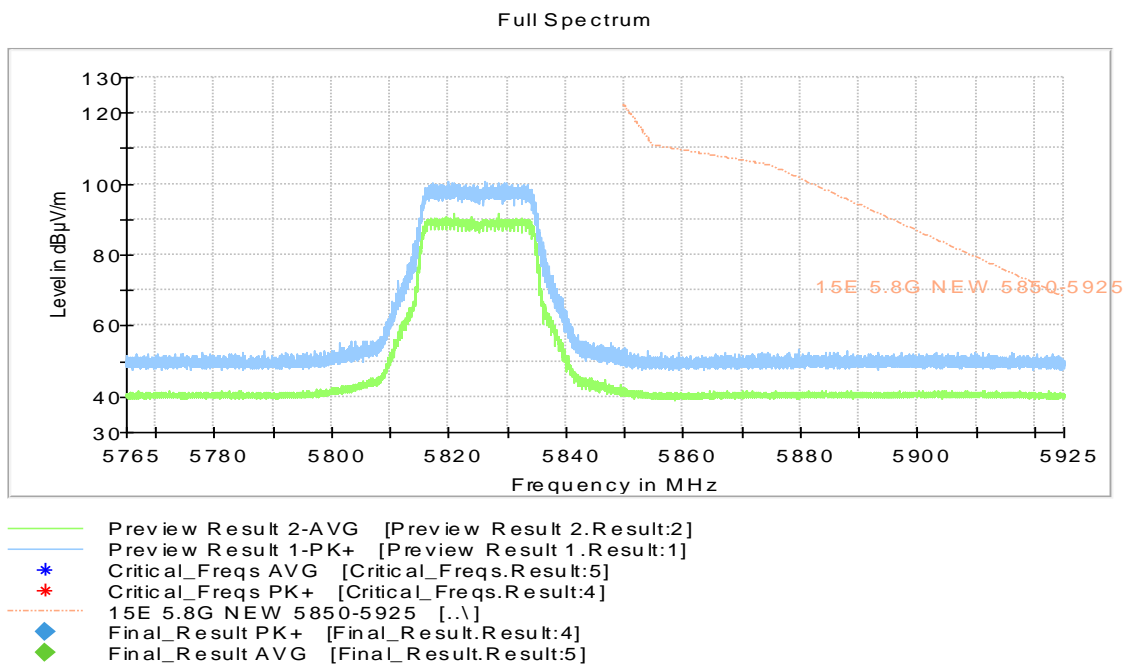
**Fig. 11 Band Edges (802.11ac-HT80, CH155, 5775MHz)**



**Fig. 12 Band Edges (802.11ac-HT80, CH155, 5775MHz)**

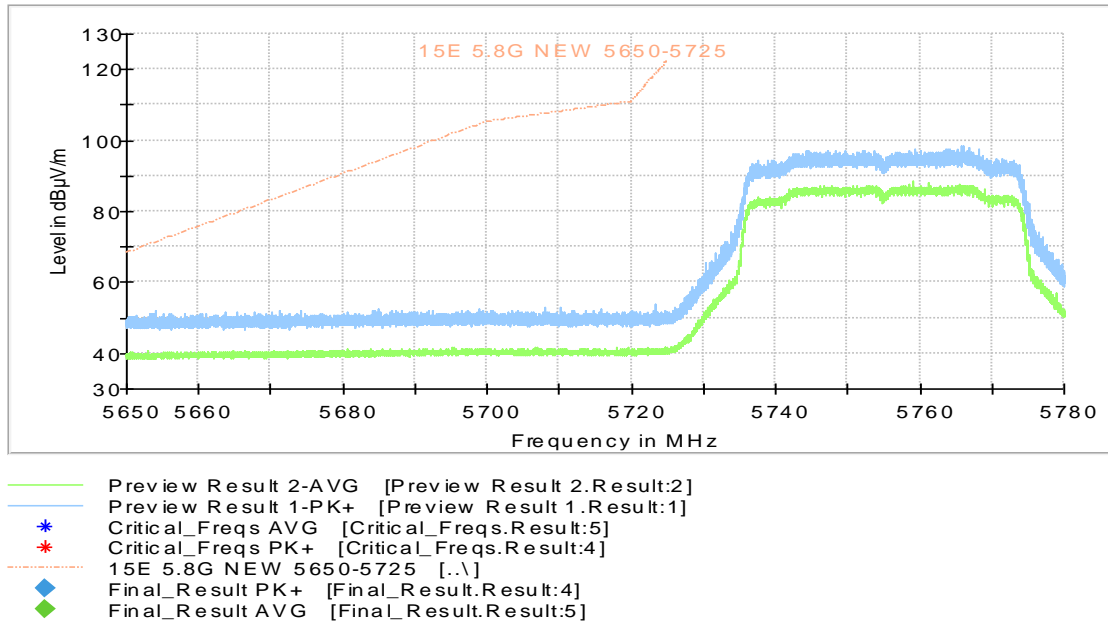


**Fig. 13 Band Edges (802.11ax-HT20, CH149, 5745MHz)**



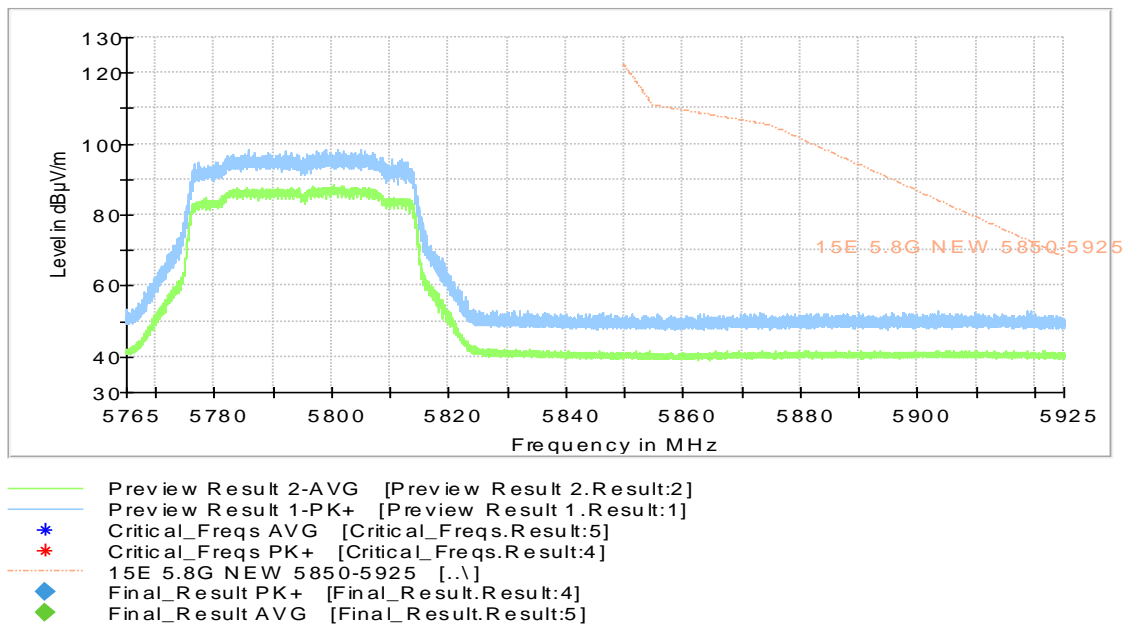
**Fig. 14 Band Edges (802.11ax-HT20, CH165, 5825MHz)**

Full Spectrum

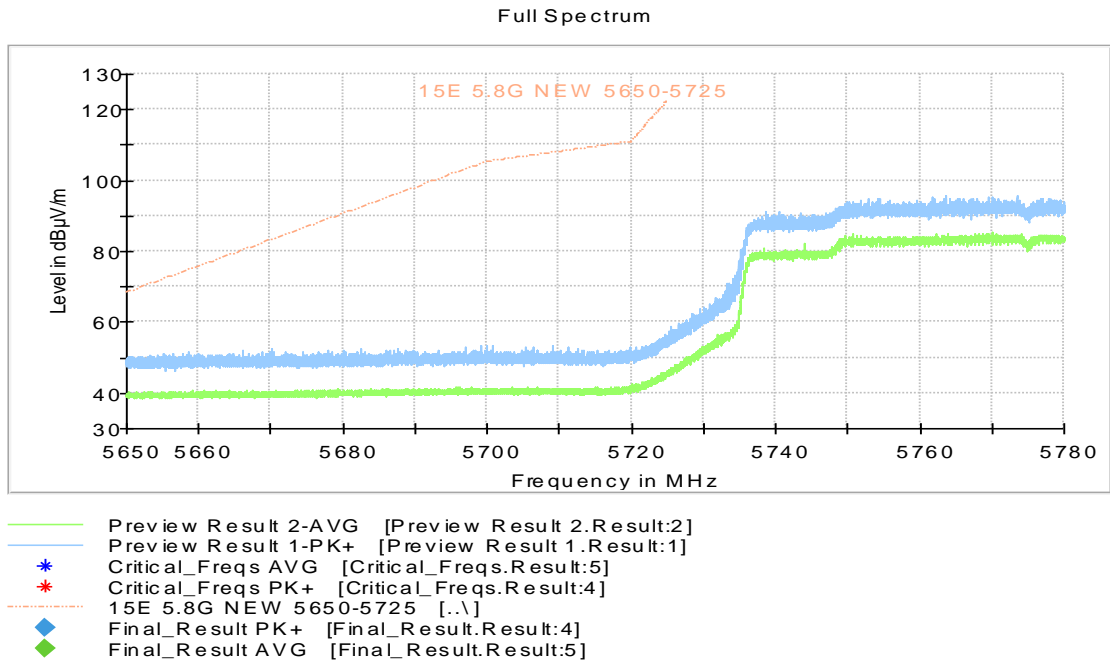


**Fig. 15 Band Edges (802.11ax-HT40,CH151, 5755MHz)**

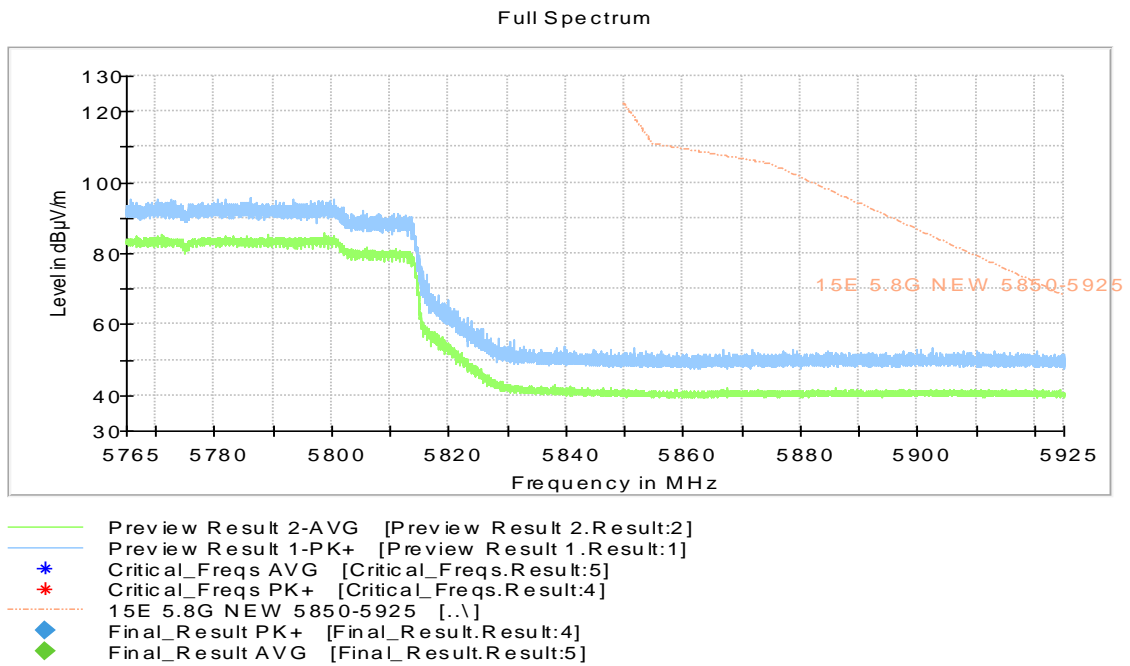
Full Spectrum



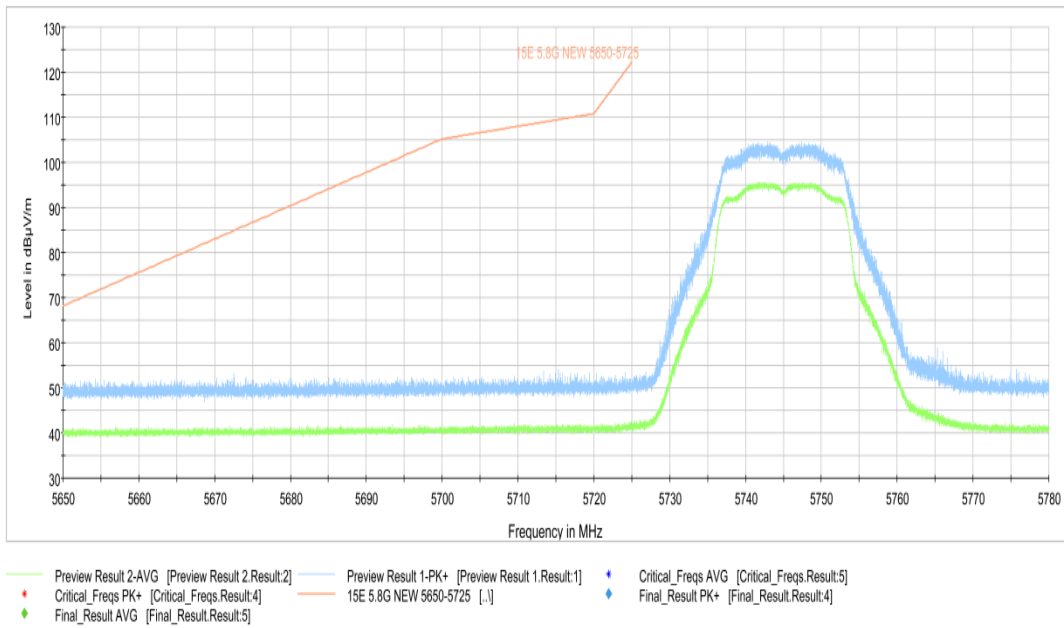
**Fig. 16 Band Edges (802.11ax-HT40,CH159, 5795MHz)**



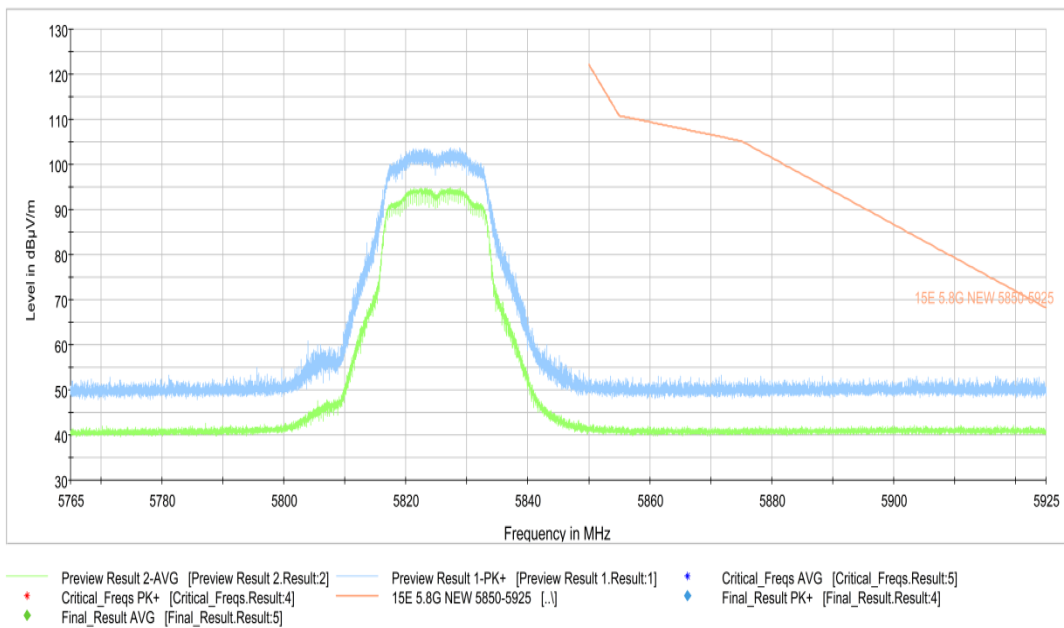
**Fig. 17 Band Edges (802.11ax-HT80, CH155, 5775MHz)**



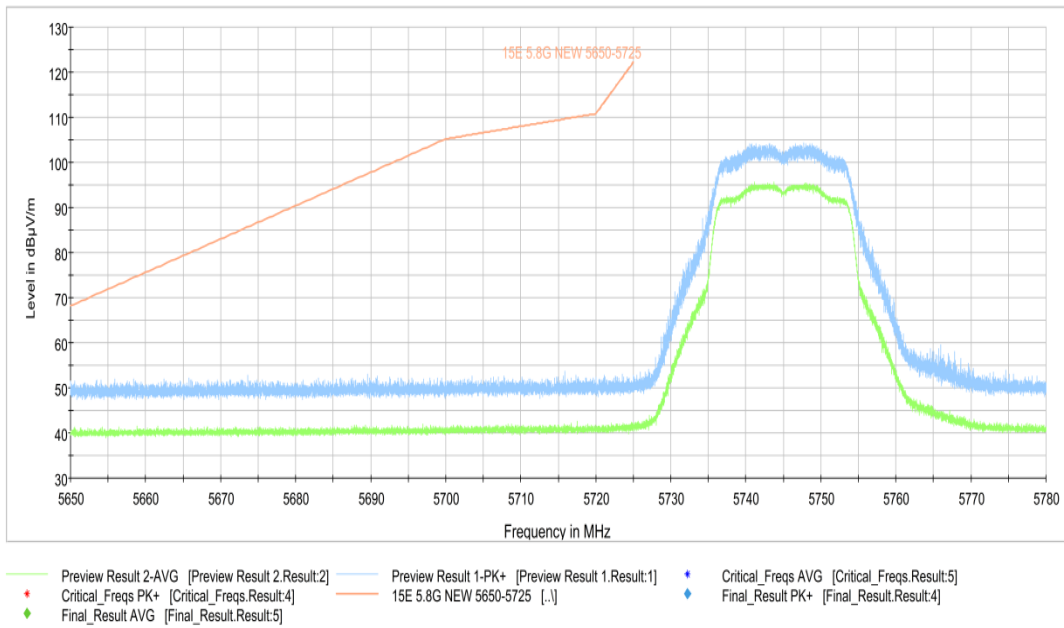
**Fig. 18 Band Edges (802.11ax-HT80, CH155, 5775MHz)**



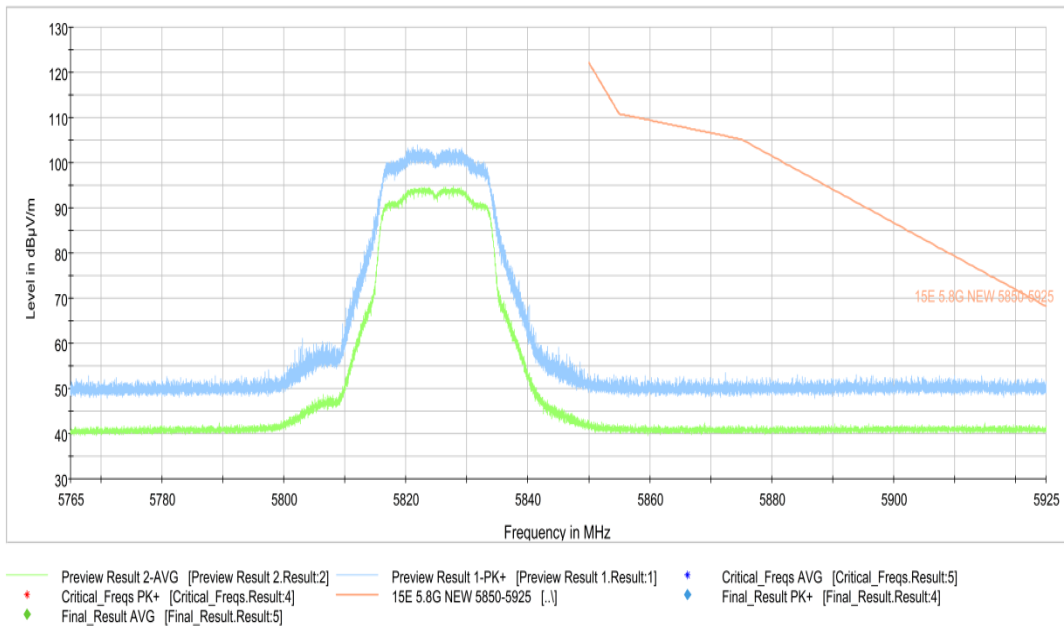
**Fig. 19 Band Edges (802.11a,CH149, 5745MHz)**



**Fig. 20 Band Edges (802.11a, CH165, 5825MHz)**

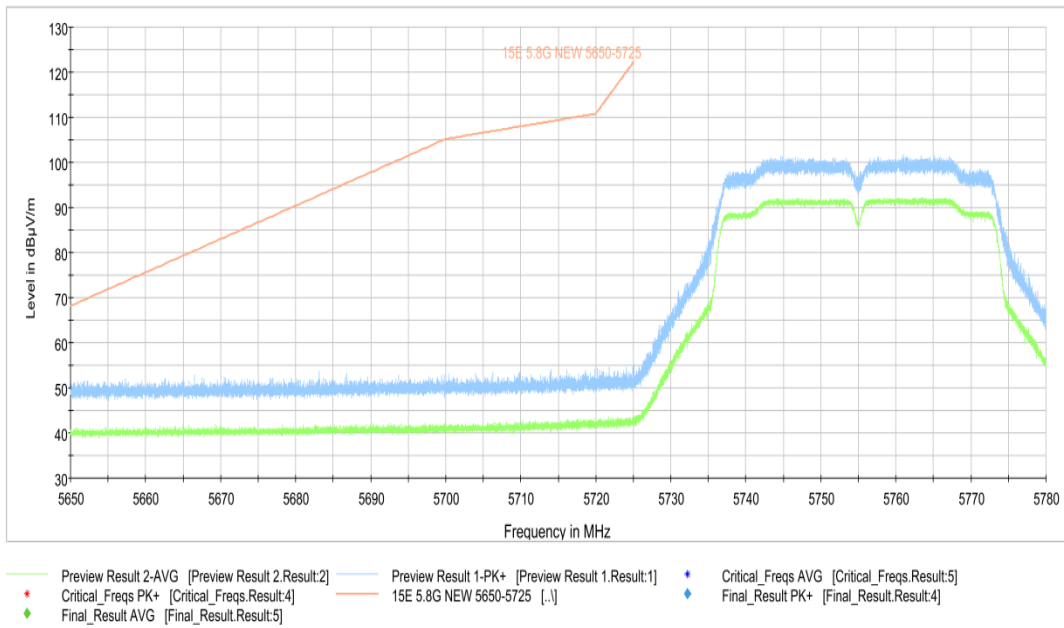


**Fig. 21 Band Edges (802.11n-HT20, CH149, 5745MHz)**

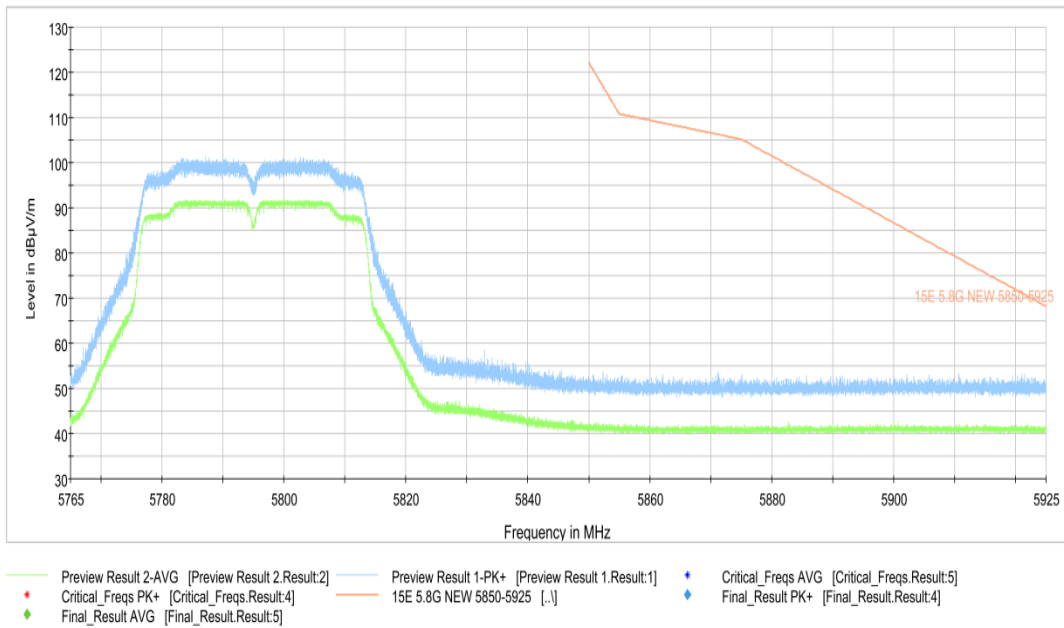


**Fig. 22 Band Edges (802.11n-HT20, CH165, 5825MHz)**

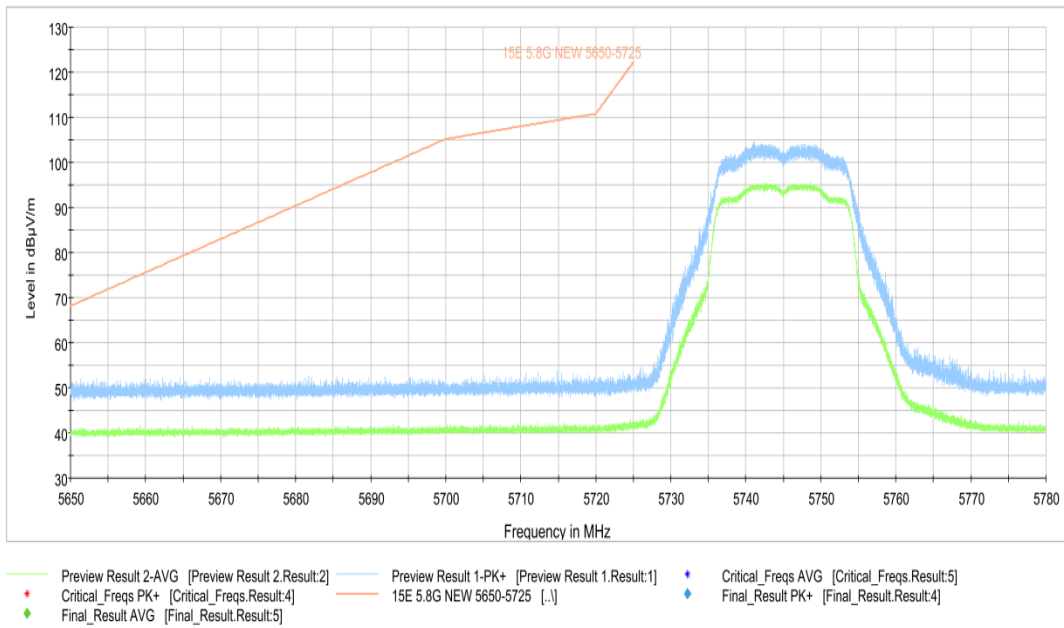




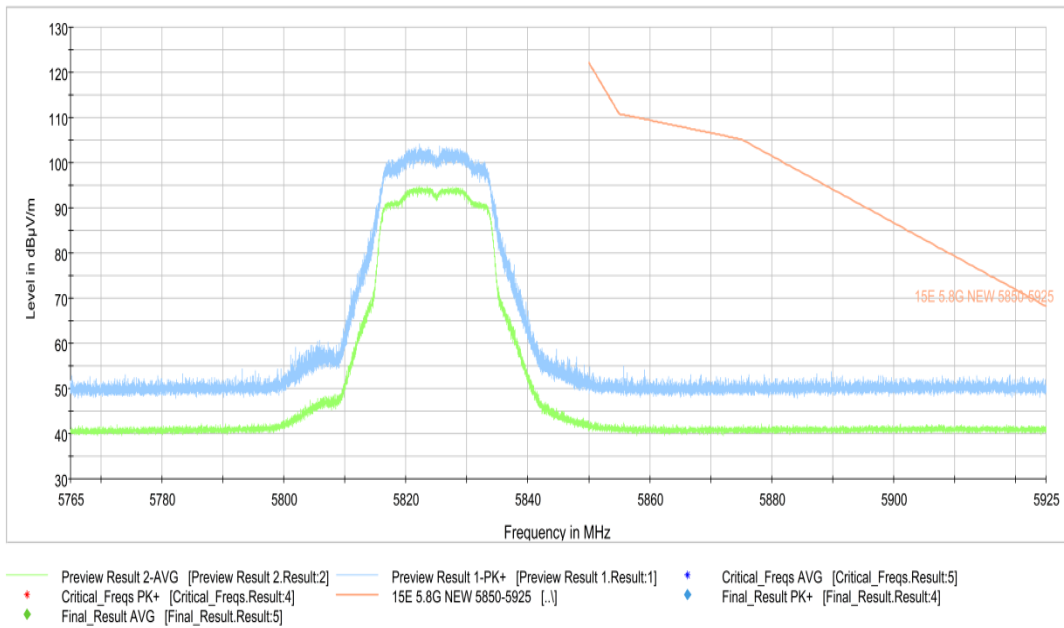
**Fig. 23 Band Edges (802.11n-HT40, CH151, 5755MHz)**



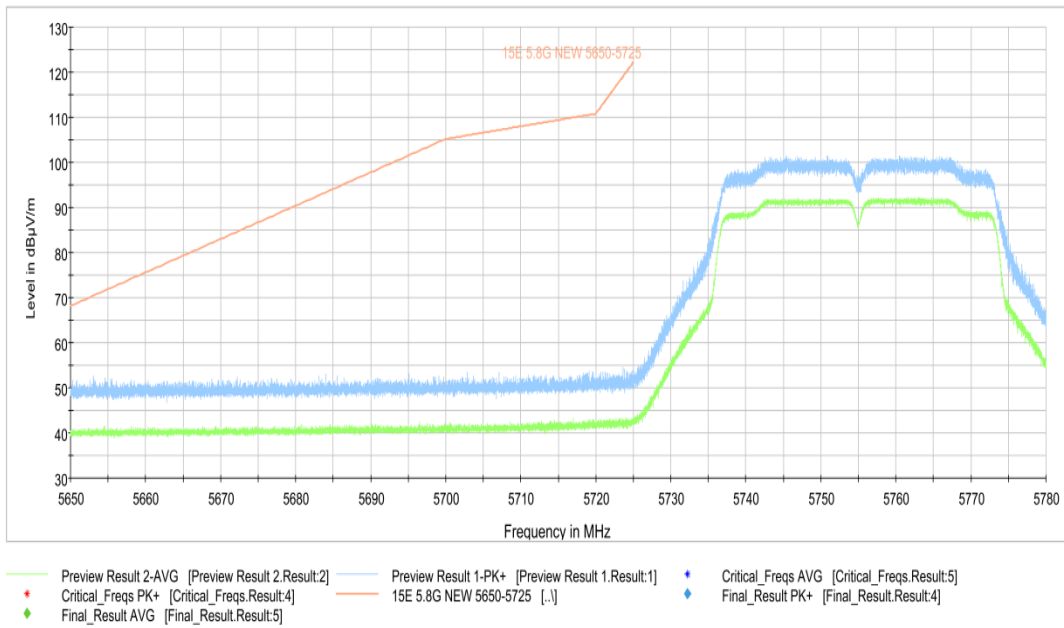
**Fig. 24 Band Edges (802.11n-HT40, CH159, 5795MHz)**



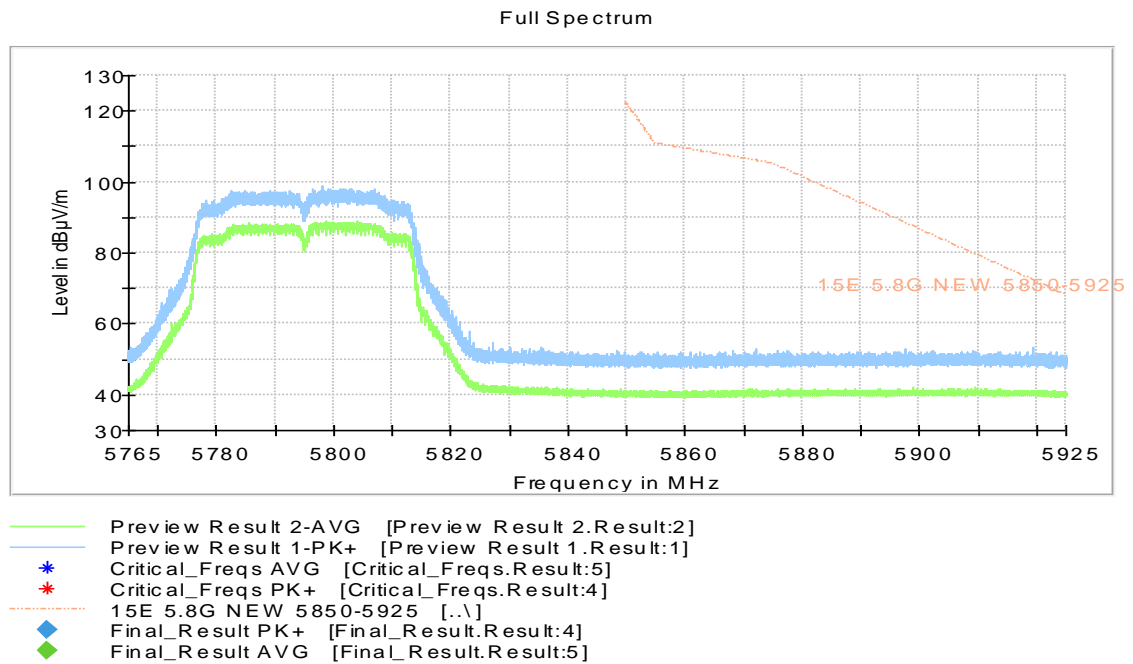
**Fig. 25 Band Edges (802.11ac-HT20, CH149, 5745MHz)**



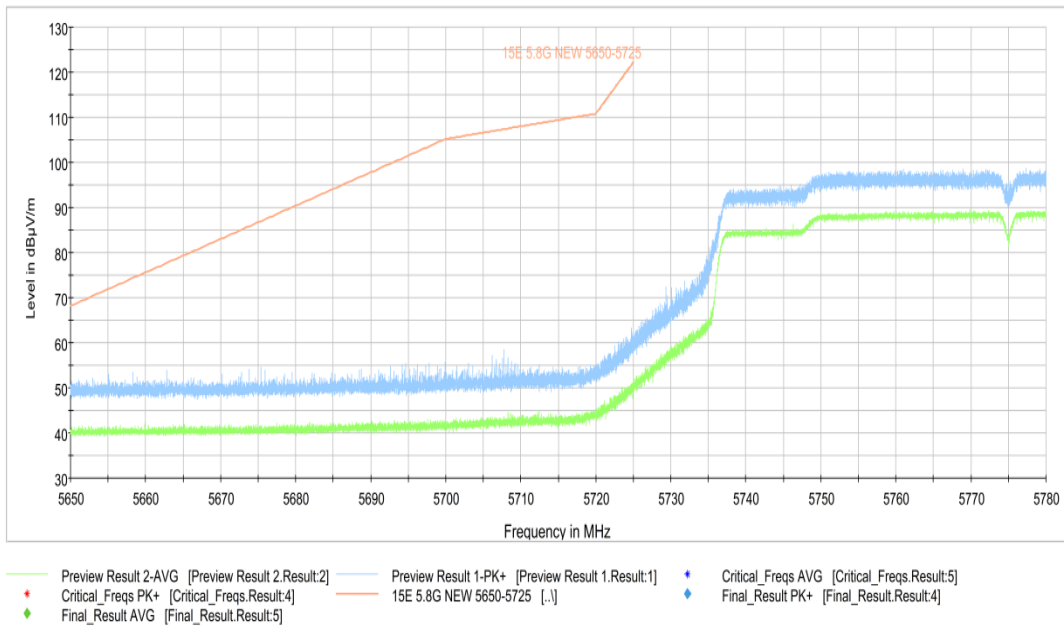
**Fig. 26 Band Edges (802.11ac-HT20, CH165, 5825MHz)**



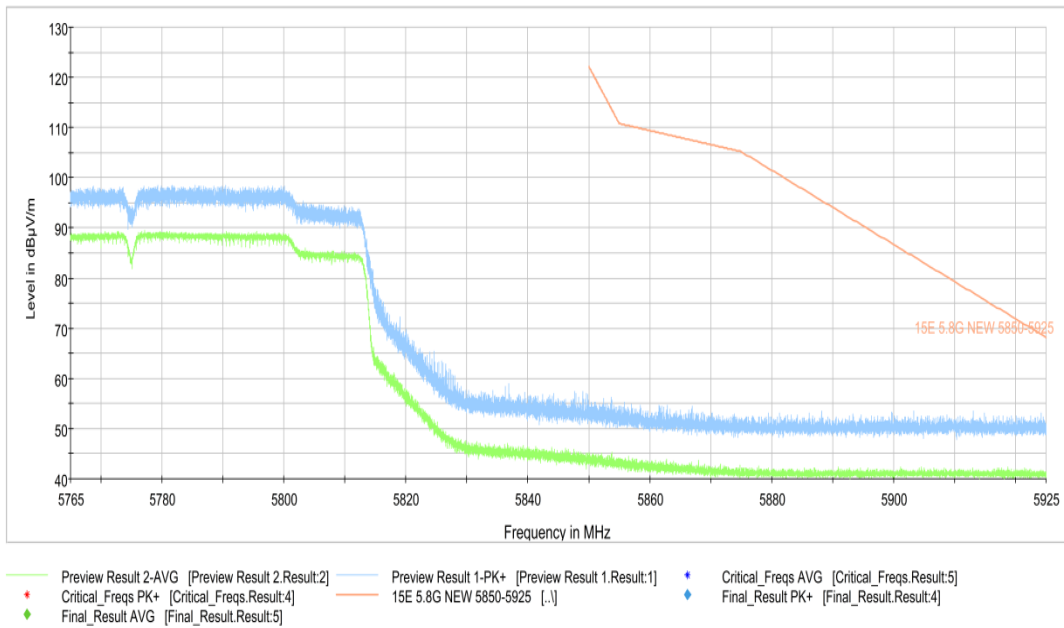
**Fig. 27 Band Edges (802.11ac-HT40,CH151, 5755MHz)**



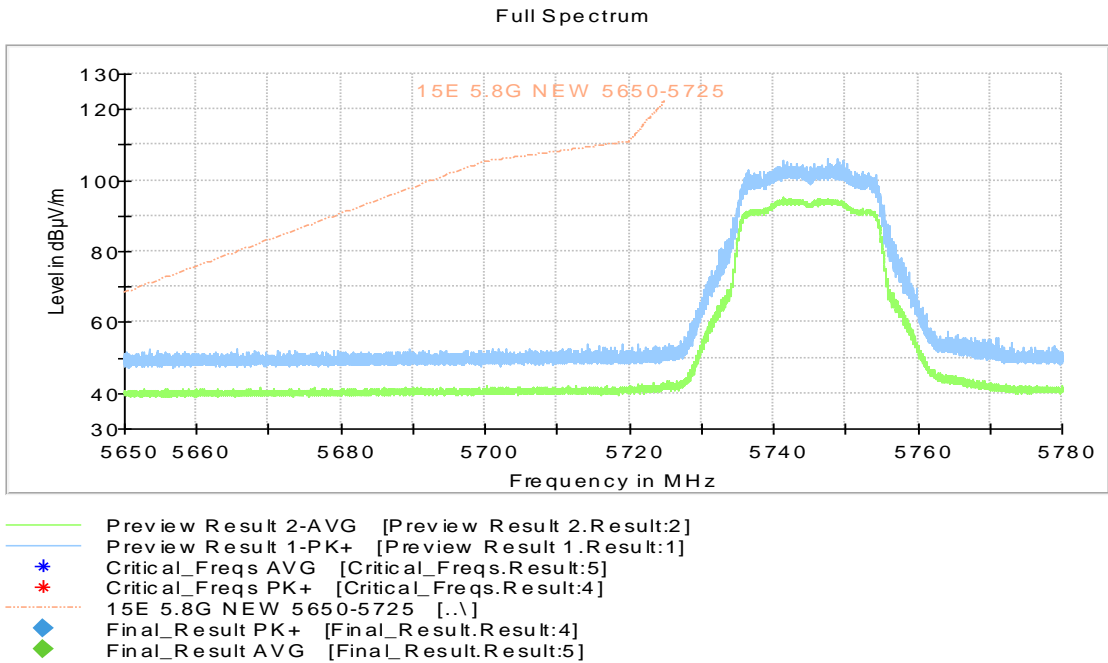
**Fig. 28 Band Edges (802.11ac-HT40,CH159, 5795MHz)**



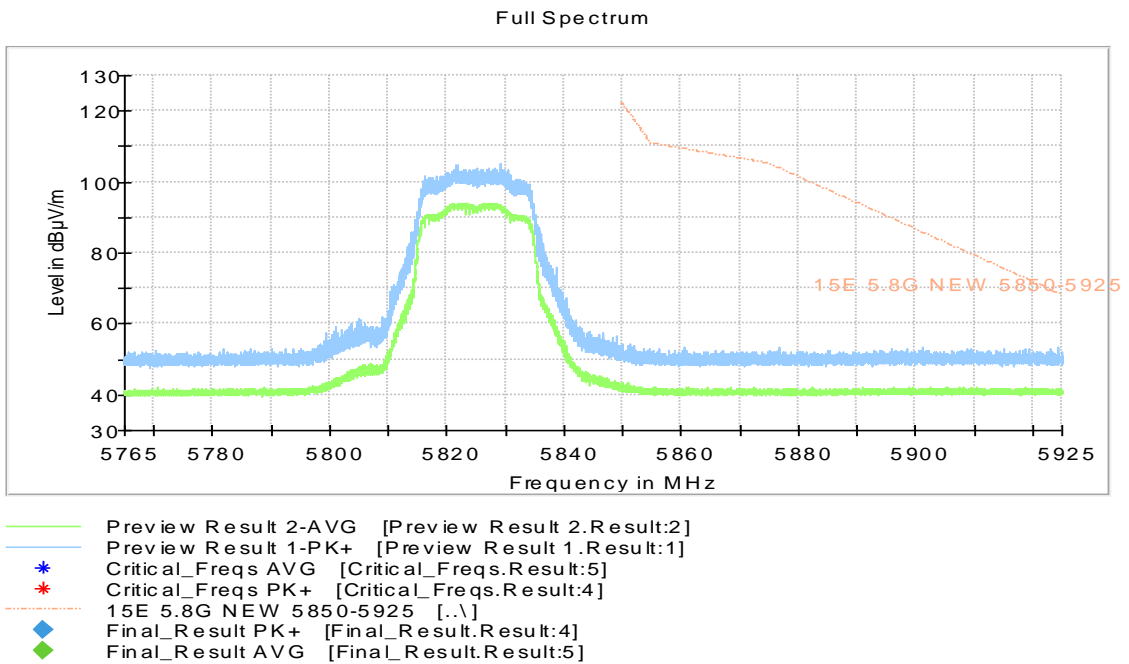
**Fig. 29 Band Edges (802.11ac-HT80, CH155, 5775MHz)**



**Fig. 30 Band Edges (802.11ac-HT80, CH155, 5775MHz)**

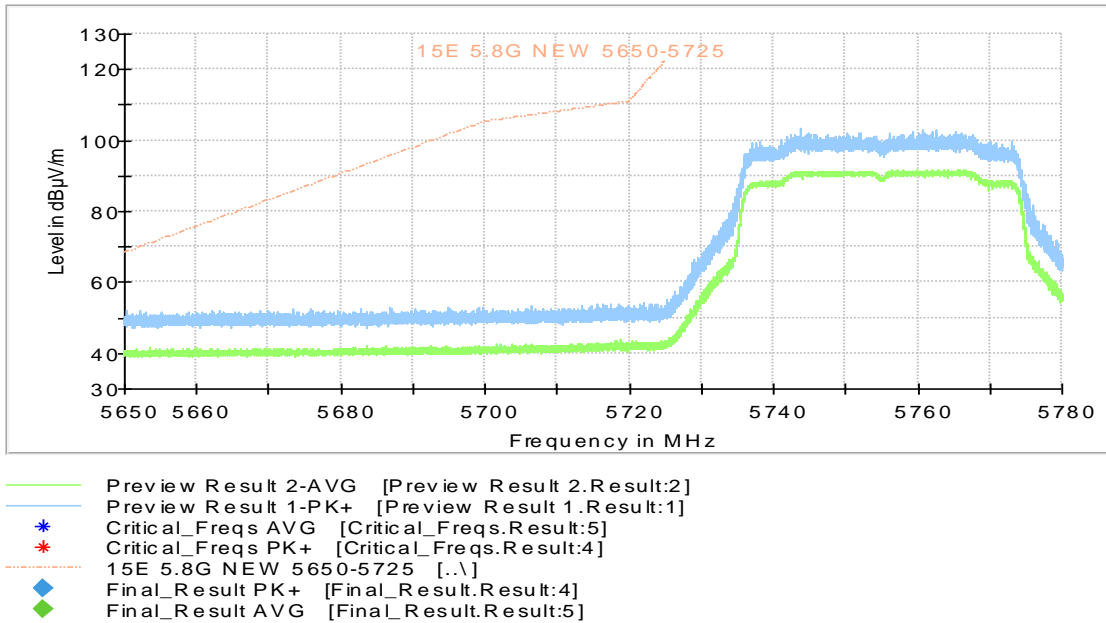


**Fig. 31 Band Edges (802.11ax-HT20, CH149, 5745MHz)**



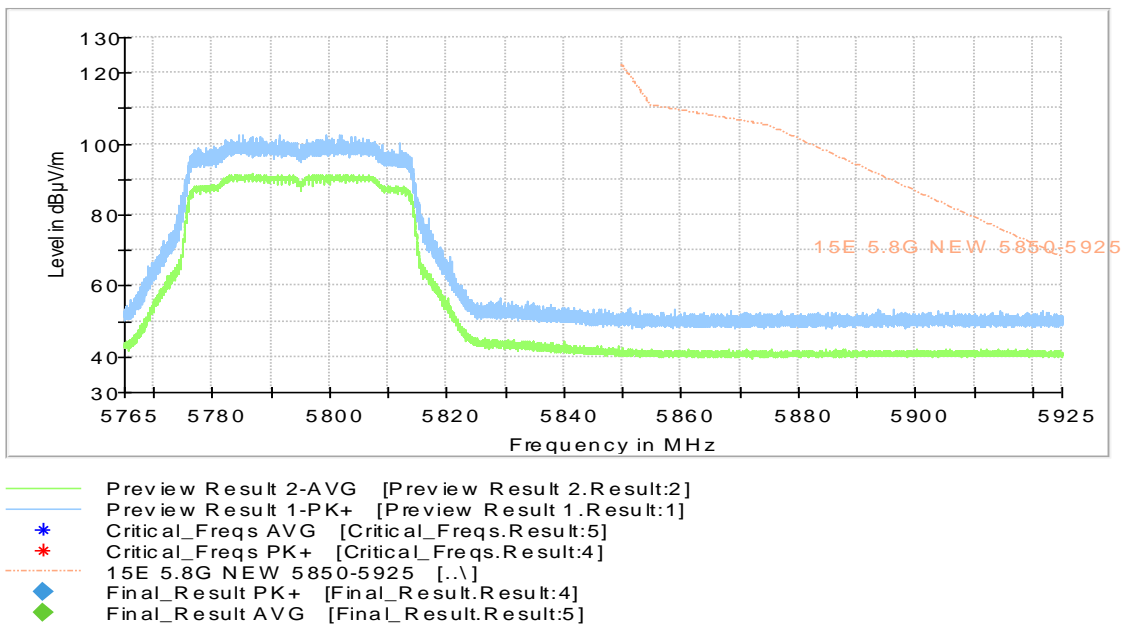
**Fig. 32 Band Edges (802.11ax-HT20, CH165, 5825MHz)**

Full Spectrum

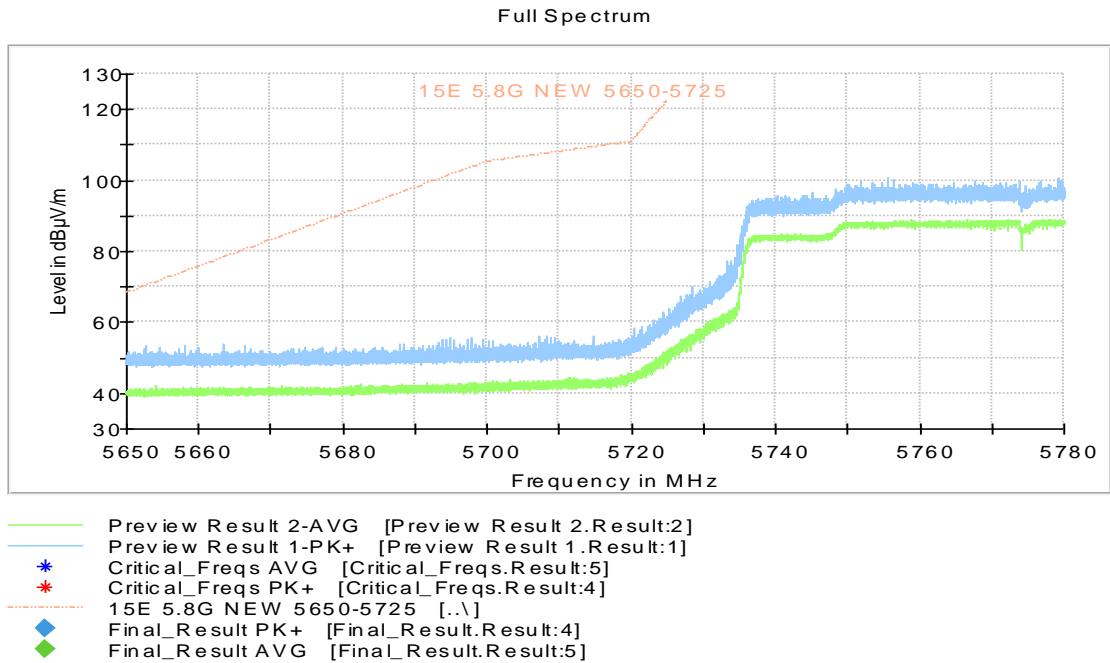


**Fig. 33 Band Edges (802.11ax-HT40,CH151, 5755MHz)**

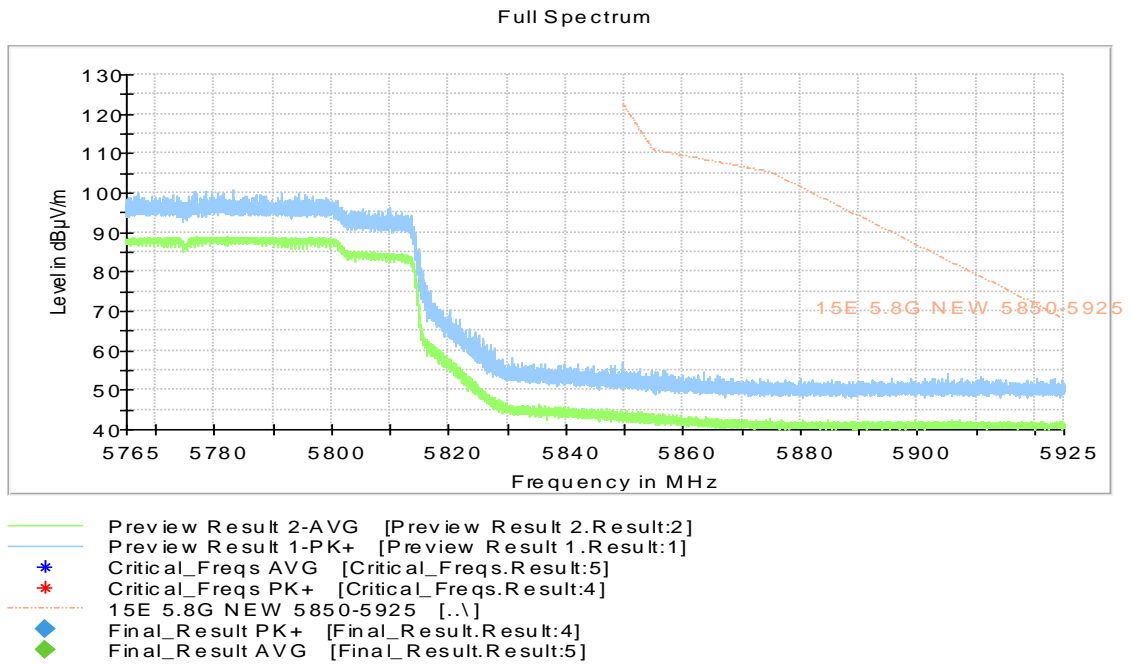
Full Spectrum



**Fig. 34 Band Edges (802.11ax-HT40,CH159, 5795MHz)**



**Fig. 35 Band Edges (802.11ax-HT80, CH155, 5775MHz)**



**Fig. 36 Band Edges (802.11ax-HT80, CH155, 5775MHz)**

## **C.2. AC Power-line Conducted Emission**

### **Reference**

FCC 47 CFR Part 15, Clause 15.407 Clause 15.207

### **Method of Measurement:**

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

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

The conducted emissions from the AC port of the EUT are measured in a shielding room. The EUT is connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection was performed. The measurements were performed with a quasi-peak detector and if required, an average detector.

The conducted emission measurements were made with the following detector of the test receiver: Quasi-Peak / Average Detector.

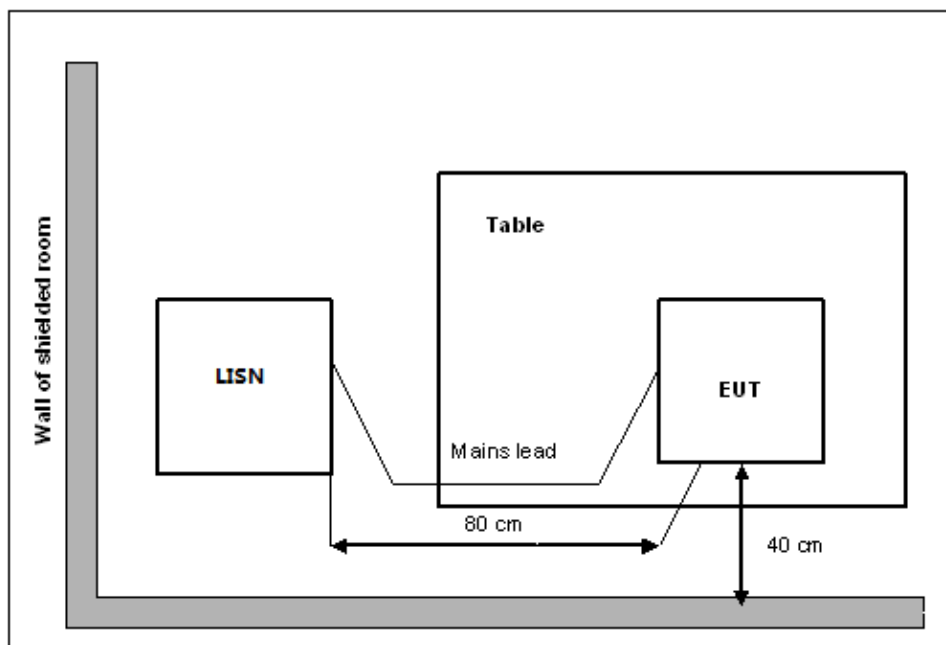
The measurement bandwidth is:

Frequency of Emission (MHz)	RBW/IF bandwidth	Sweep Time(s)
0.15-30	9kHz	1

### **Test Condition:**

Voltage (V)	Frequency (Hz)
120	60

### **Measurement Setup**



### **EUT Operating Mode and Test Conditions**

The measurement of EUT is carried out under the transmit state.

The EUT is powered by an AC/travel adapter.



**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.C.2.1	Fig.C.2.2	<b>P</b>
0.5 to 5	56			
5 to 30	60			

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

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11a	Idle	
0.15 to 0.5	56 to 46	Fig.C.2.1	Fig.C.2.2	<b>P</b>
0.5 to 5	46			
5 to 30	50			

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

Note: all modes have been tested and the worst results shown here.

**Conclusion: Pass**
**Test graphs as below:**

Traffic:

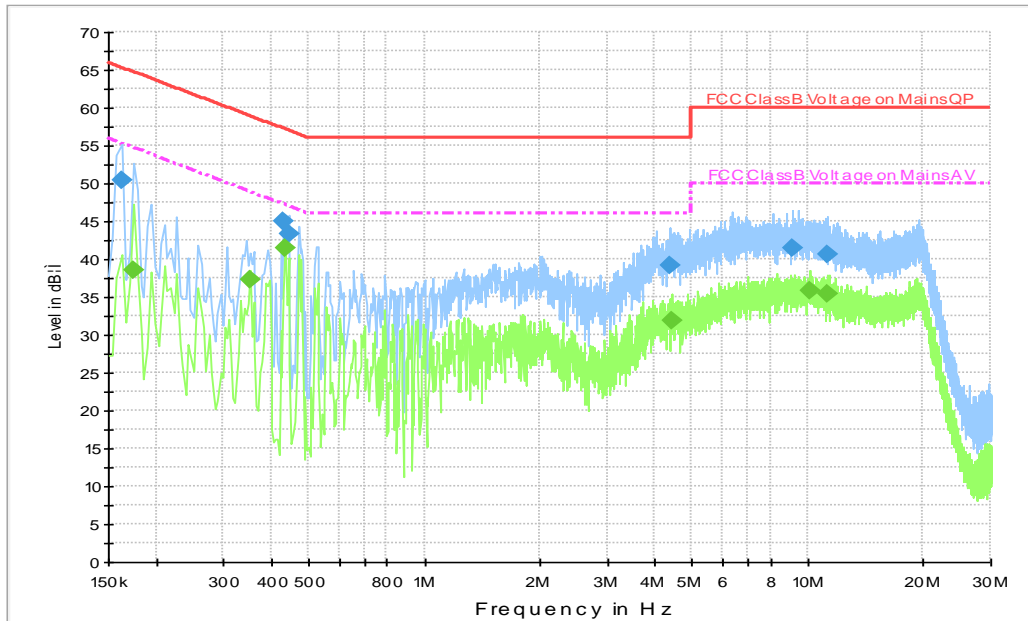


Fig.C.2.1 AC Power line Conducted Emission-802.11a

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

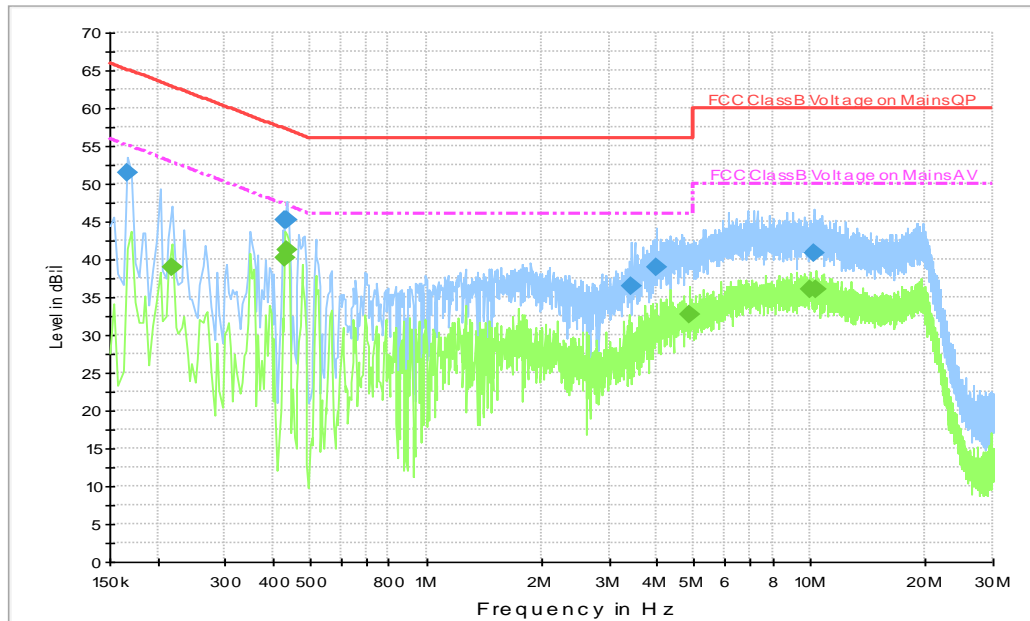
**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.162000	50.5	2000.	9.000	L1	20.0	14.8	65.4
0.430000	45.0	2000.	9.000	L1	19.9	12.3	57.3
0.442000	43.3	2000.	9.000	L1	19.9	13.7	57.0
4.390000	39.1	2000.	9.000	N	19.7	16.9	56.0
9.118000	41.4	2000.	9.000	N	19.7	18.6	60.0
11.278000	40.6	2000.	9.000	N	19.7	19.4	60.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.174000	38.4	2000.0	9.000	N	19.7	16.3	54.8
0.350000	37.4	2000.0	9.000	L1	19.9	11.6	49.0
0.434000	41.4	2000.0	9.000	L1	19.9	5.8	47.2
4.414000	31.9	2000.0	9.000	N	19.7	14.1	46.0
10.154000	35.9	2000.0	9.000	N	19.8	14.1	50.0
11.214000	35.5	2000.0	9.000	N	19.7	14.5	50.0

Idle:



**Fig.C.2.2 AC Power line Conducted Emission-Idle**

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

**Final Result 1**

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.166000	51.5	2000.	9.000	L1	20.0	13.7	65.2
0.430000	45.1	2000.	9.000	L1	19.9	12.1	57.3
0.434000	45.3	2000.	9.000	L1	19.9	11.9	57.2
3.414000	36.4	2000.	9.000	N	19.7	19.6	56.0
3.986000	39.0	2000.	9.000	N	19.7	17.0	56.0
10.222000	40.8	2000.	9.000	N	19.8	19.2	60.0

**Final Result 2**

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.218000	39.0	2000.0	9.000	L1	20.0	13.9	52.9
0.430000	40.2	2000.0	9.000	L1	19.9	7.1	47.3
0.434000	41.2	2000.0	9.000	L1	19.9	6.0	47.2
4.854000	32.8	2000.0	9.000	N	19.8	13.2	46.0
9.974000	36.0	2000.0	9.000	N	19.8	14.0	50.0
10.398000	36.0	2000.0	9.000	N	19.8	14.0	50.0

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