



TEST REPORT

REPORT NUMBER: I21W00017-WLAN_5G_Rev1

ON

Type of Equipment: Tracker
Model Name: PA32
Manufacturer: Micron Electronics LLC.

ACCORDING TO

FCC Part 15, Subpart E, 2019:

15.407 General technical requirements

ANSI C63.10-2013: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

Chongqing Academy of Information and Communications Technology

Month date, year

Aug 13, 2021

Signature



Xiang Luoyong
Director

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 Chongqing Academy of Information and Communications Technology.

Report No.:I21W00017-WLAN_5G_Rev1
Revision Version

Report Number	Revision	Date	Memo
I21W00017-WLAN_5G	V0.0	2021-08-02	--
I21W00017-WLAN_5G_Rev1	V1.0	2021-08-13	--

Report No.:I21W00017-WLAN_5G_Rev1**FCC ID:** ZKQ-CM911B**Report Date:** 2021-08-13**Test Firm Name:** Chongqing Academy of Information and Communications Technology**FCC Registration Number:** CN1239**Statement**

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC Parts 15, subpart E. The sample tested was found to comply with the requirements defined in the applied rules.

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1 General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC Parts 15, subpart E and ANSI C63.10-2013 .

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex B.

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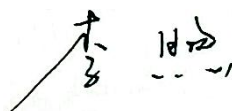
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1.2 Testers

Name: Li Xu
Position: Engineer
Department: Department of RF test
Date: 2021-06-18 to 2021-08-13

Signature:



Editor of this test report:

Name: Chen Wen
Position: Engineer
Department: Department of RF test
Date: 2021-08-13

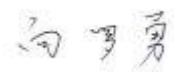
Signature:



Technical responsibility for area of testing:

Name: Xiang Luoyong
Position: Manager
Department: Director of the laboratory
Date: 2021-08-13

Signature:



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1.3 Testing Laboratory information

1.3.1 Location

Name: Chongqing Academy of Information and Communications Technology

Address: Building B, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China, 401336

Tel: +86-23-88069965

Fax: +86-23-88608777

Email: liqiao@caict.ac.cn

1.3.2 Test location, where different from section 1.3.1

Name: -----

Street: -----

City: -----

Country: -----

Telephone: -----

Fax: -----

Postcode: -----

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1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name: Micron Electronics LLC.
Address: 1001 Yamato Road, Suite 400, Boca Raton, FL 33431, USA
Country: USA
Telephone: +18885383489
Fax: --
Contact: Ping Cheng
Email: pcheng@micron-electronics.com

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name: --
Address: --
Country: --
Telephone: --
Fax: --
Contact: --
Email: --

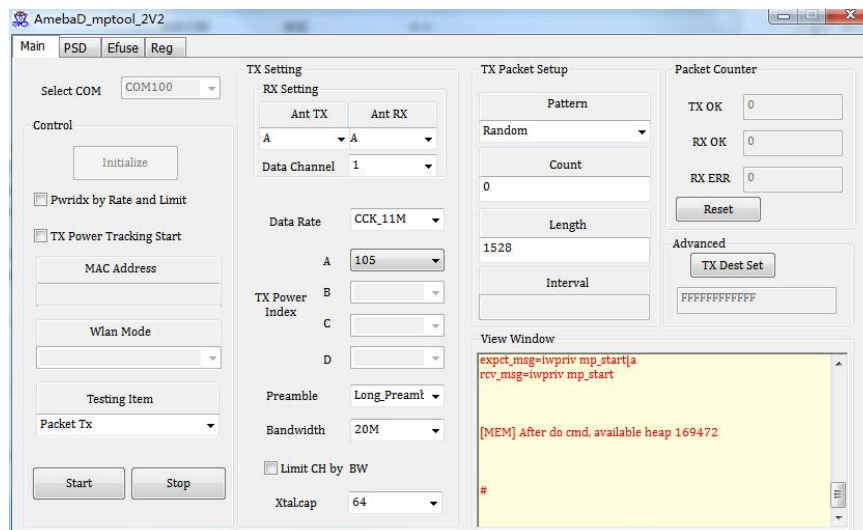
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2 Test Item

2.1 General Information

Manufacturer:	Micron Electronics LLC.
Type of Equipment:	Tracker
Model Name:	PA32
Production Status:	Product
Hardware Version:	A108_V2_PCB
Software Version:	PA32V02.01B06.I01
Antenna description:	Built in FPC antenna
Antenna Gain:	0.5dBi
Test SW Version:	2V2
frequency range:	5150-5250/5725-5850MHz
Normal Voltages	3.80 V
High Voltages	4.20V
Low Voltages	3.50V
Receipt date of test item:	2021-06-18

EUT uses tool to control emission measurement,Change power level, channel, rate and bandwidth.11b transmitter power level set to 105,11a/n transmitter power level set to 95.



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Report No.:I21W00017-WLAN_5G_Rev1**2.2 Outline of Equipment under Test**

The PA32, referred to as “EUT” hereafter, is a multi-Band wireless modem operating on the GSM/CAT-M1/Wi-Fi/BLUETOOTH 5.0 networks. The table below shows the supported bands for the EUT.

Technology	Freq.(MHz)	support mode
UNII 1	5150-5250	11a/n20(M)
UNII 3	5725-5850	

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	Modules	Micron Electronics LLC.	Tracker	866884045658218	None
B	Modules	Micron Electronics LLC.	Tracker	866884045658127	None
C	data line	--	--	--	--
D	Adapter	--	--	50714	--

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2.5 ANTENNA REQUIREMENT

Standard Applicable

For intentional device , according to FCC 47 FR Section 15.203 , an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device .

Refer to statement below for compliance .

The manufacturer may design the unit so that the user can replace a broken antenna , but the use of a standard antenna jack or electrical connector is prohibited . Further , this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

The antenna used in this product is a Internal Antenna . It conforms to the standard requirements . The directional gains of antenna used for transmitting is 0.5dBi.

2.6 Other Information

--

3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

FCC standard	Name of Test	Limit	Result
CFR 47, FCC Parts Subpart E (§15.407)	Maximum Peak Output Power	15.407(a)	Pass
	Peak Power Spectral Density	15.407(a)	Pass
	6dB Bandwidth & 26dB Bandwidth & 99% Occupied Bandwidth	15.407(a) 15.407(e)	Pass
	Band Edges Compliance	15.407(b)	Pass
	RADIATED SPURIOUS EMISSIONS	15.407(b)	Pass
	Power line Conducted Emissions	15.407(b)	Pass
	FREQUENCY STABILITY	15.407(g)	Pass
Note:--			

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4 Test Equipments and Ancillaries Used For Tests

The test equipments and ancillaries used are as follows.

No.	Equipment	Model	SN	Manufacture	Cal. Date	Cal. Due Date
1	Spectrum analyzer	FSQ 26	201137/026	R&S	2021-05-12	2022-06-11
2	Spectrum analyzer	N9020A	MY50200376	Agilent	2021-05-12	2022-06-11
3	power sensor	NPR8S	102336	R&S	2021-05-12	2022-06-11
4	EMI Test Receiver	ESU 40	100350	R&S	2021-05-12	2022-06-11
5	Trilog super broad band test antenna	VULB 9163	00995	R&S	2021-03-04	2023-04-03
6	Double-Ridged Horn Antenna	HF907	100357	R&S	2019-07-21	2021-08-20
7	Double Ridged Guide Antenna	DATE 1152	LM7127	ETS	2020-07-15	2021-08-16
8	Double Ridged Guide Antenna	DATE 1012	LM5945	ETS	2020-07-15	2021-08-16
9	Fully-Anechoic Chamber	FAC	--	TDK	2020-12-23	2024-01-22
10	Artificial Power Network	ENV 216	R&S	102368	2021-05-12	2022-06-11
11	Test Receiver	ESR 3	R&S	102477	2021-05-12	2022-06-11
12	Test Receiver	ESW 26	101382	R&S	2021-05-12	2022-06-11

Test software Used:

No.	Test item	Test software name	Manufacturer	Version:
1	Radiated Emission	EMC32	R/S	V8.51.0
2	Conducted Emission	EMC32	R/S	V8.51.0

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5 Test Results

5.1 Maximum conducted(average) power

Specifications:	FCC Part 15.407 (a)
DUT Serial Number:	866884045658218
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

The maximum peak output power of the intentional radiator shall not exceed the following:

1. For client devices in the 5.15–5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi.
2. For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

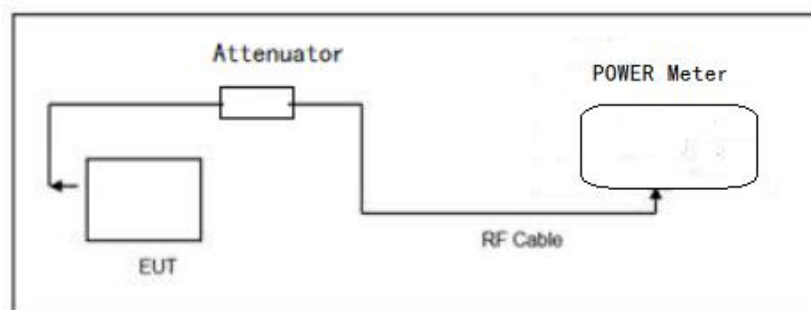
Measurement Uncertainty:

Measurement Uncertainty	$\pm 1.0\text{dB}$
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Test Procedure:

- 1) The RF output of EUT was connected to the broadband average RF power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
- 2) Set to the maximum power setting and enable the EUT transmit continuously.
- 3) Measure the conducted output power and record the results in the test report.

Test block diagram:



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Measurement Results:

5150-5250MHz:

802.11a mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch36	Ch40	Ch48	
802.11a	6	12.70	13.30	12.70	Pass
	9	12.66	13.27	12.79	Pass
	12	12.68	13.27	12.81	Pass
	18	12.85	13.38	12.95	Pass
	24	12.98	13.71	13.02	Pass
	36	12.92	13.58	13.04	Pass
	48	13.11	13.65	13.14	Pass
	54	12.85	13.48	12.89	Pass

802.11n mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch36	Ch40	Ch48	
802.11n (20MHz)	MCS0	13.19	13.20	12.73	Pass
	MCS1	12.56	13.02	12.68	Pass
	MCS2	12.68	13.22	12.77	Pass
	MCS3	12.91	13.43	13.32	Pass
	MCS4	13.14	13.58	13.22	Pass
	MCS5	13.07	13.56	13.14	Pass
	MCS6	13.07	13.58	13.23	Pass
	MCS7	12.90	13.42	13.02	Pass

5725-5850MHz:

802.11a mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch149	Ch157	Ch165	
802.11a	6	14.33	12.82	12.62	Pass
	9	14.06	12.96	12.58	Pass
	12	14.20	13.08	12.64	Pass
	18	14.26	13.15	12.80	Pass
	24	14.29	13.30	12.90	Pass
	36	14.24	13.69	12.86	Pass
	48	14.39	13.23	12.96	Pass
	54	14.23	13.12	12.83	Pass

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802.11n mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch149	Ch157	Ch165	
802.11n (20MHz)	MCS0	8.86	12.89	12.53	Pass
	MCS1	8.79	12.86	12.53	Pass
	MCS2	8.96	13.05	12.64	Pass
	MCS3	9.25	13.19	12.80	Pass
	MCS4	9.42	13.38	13.03	Pass
	MCS5	9.39	13.33	12.97	Pass
	MCS6	9.44	13.36	13.07	Pass
	MCS7	9.27	13.14	12.89	Pass

EIRP Measurement Results:

5150-5250MHz:

802.11a mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch36	Ch40	Ch48	
802.11a	6	13.20	13.80	13.20	Pass
	9	13.16	13.77	13.29	Pass
	12	13.18	13.77	13.31	Pass
	18	13.35	13.88	13.45	Pass
	24	13.48	14.21	13.52	Pass
	36	13.42	14.08	13.54	Pass
	48	13.61	14.15	13.64	Pass
	54	13.35	13.98	13.39	Pass

802.11n mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch36	Ch40	Ch48	
802.11n (20MHz)	MCS0	13.69	13.70	13.23	Pass
	MCS1	13.06	13.52	13.18	Pass
	MCS2	13.18	13.72	13.27	Pass
	MCS3	13.41	13.93	13.82	Pass
	MCS4	13.64	14.08	13.72	Pass
	MCS5	13.57	14.06	13.64	Pass
	MCS6	13.57	14.08	13.73	Pass
	MCS7	13.40	13.92	13.52	Pass

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5725-5850MHz:

802.11a mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch149	Ch157	Ch165	
802.11a	6	14.83	13.32	13.12	Pass
	9	14.56	13.46	13.08	Pass
	12	14.70	13.58	13.14	Pass
	18	14.76	13.65	13.30	Pass
	24	14.79	13.80	13.40	Pass
	36	14.74	14.19	13.36	Pass
	48	14.89	13.73	13.46	Pass
	54	14.73	13.62	13.33	Pass

802.11n mode

Mode	Data Rate(Mbps)	Teat Result(dBm)			Conclusion
		Ch149	Ch157	Ch165	
802.11n (20MHz)	MCS0	9.36	13.39	13.03	Pass
	MCS1	9.29	13.36	13.03	Pass
	MCS2	9.46	13.55	13.14	Pass
	MCS3	9.75	13.69	13.3	Pass
	MCS4	9.92	13.88	13.53	Pass
	MCS5	9.89	13.83	13.47	Pass
	MCS6	9.94	13.86	13.57	Pass
	MCS7	9.77	13.64	13.39	Pass

Conclusion: PASS

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5.2 Peak Power Spectral Density

Specifications:	FCC Part 15.407 (a)
DUT Serial Number:	866884045658218
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 15.407(a)

For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500kHz band.

Measurement Uncertainty:

Measurement Uncertainty	$\pm 0.82\text{dBm/KHz}$
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Test Procedure:

Spectrum Parameters	Setting
RBW	1MHz(For U-NII-1&U-NII-2A&U-NII-2C) 500KHz(For U-NII-3)
VBW	3×RBW
Span	encompass the entire 26 dB EBW or 99% OBW of the signal
Sweep Time	Auto
Number of Sweep Point	$\geq 2 \times \text{SPAN/RBW}$
Detector	RMS

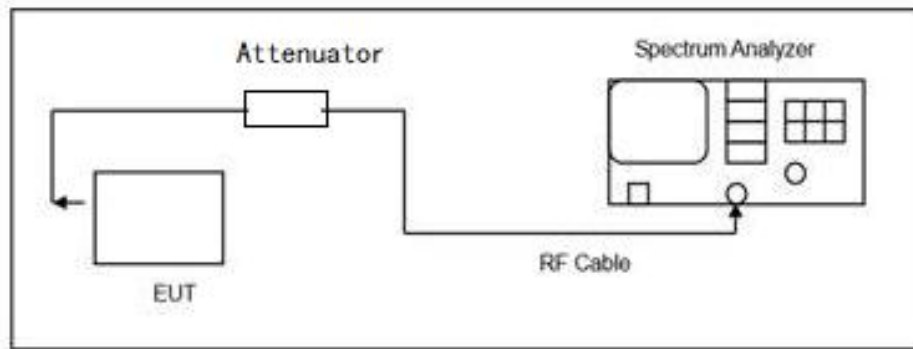
Note: --

Test block diagram:

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Test Results:

5150-5250MHz:

802.11a/n mode

Mode	Power Spectral Density			Conclusion
	Ch36	Ch40	Ch48	
802.11a	1.92	3.39	2.61	Pass
802.11n	2.25	2.93	2.54	Pass

5725-5850MHz:

802.11a/n mode

Mode	Power Spectral Density			Conclusion
	Ch149	Ch157	Ch165	
802.11a	5.63	4.21	4.32	Pass
802.11n	5.45	4.12	4.13	Pass

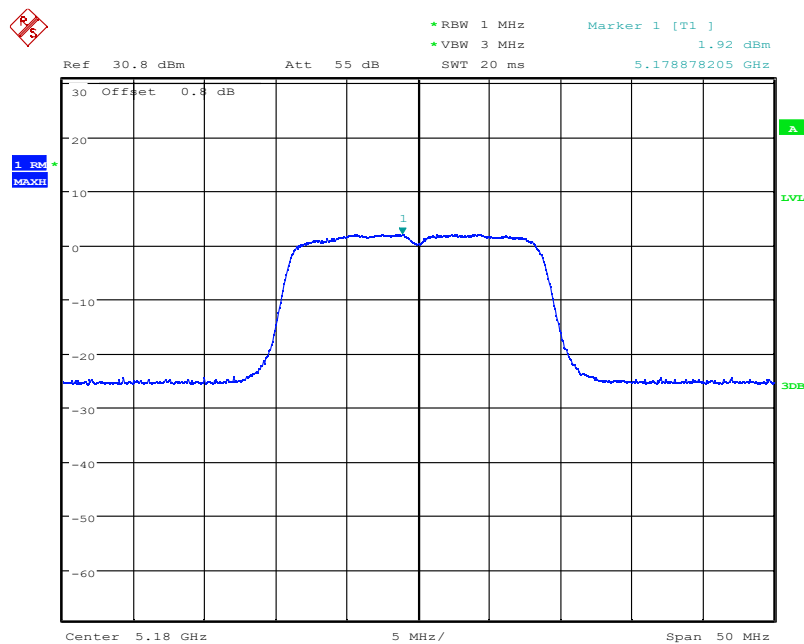
Conclusion: PASS

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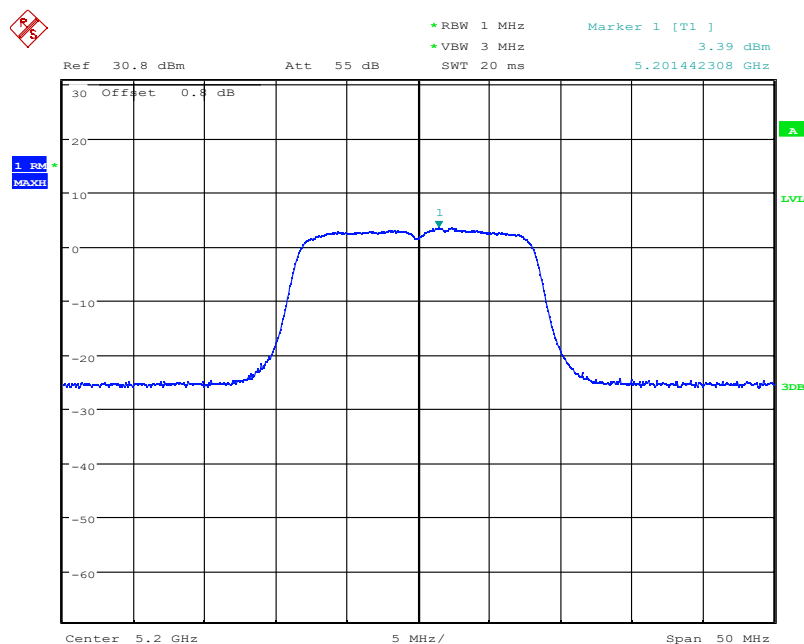
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Test figure as below:



Date: 2.JUL.2021 14:04:11

Fig.1 Power spectral density: CH36,11a



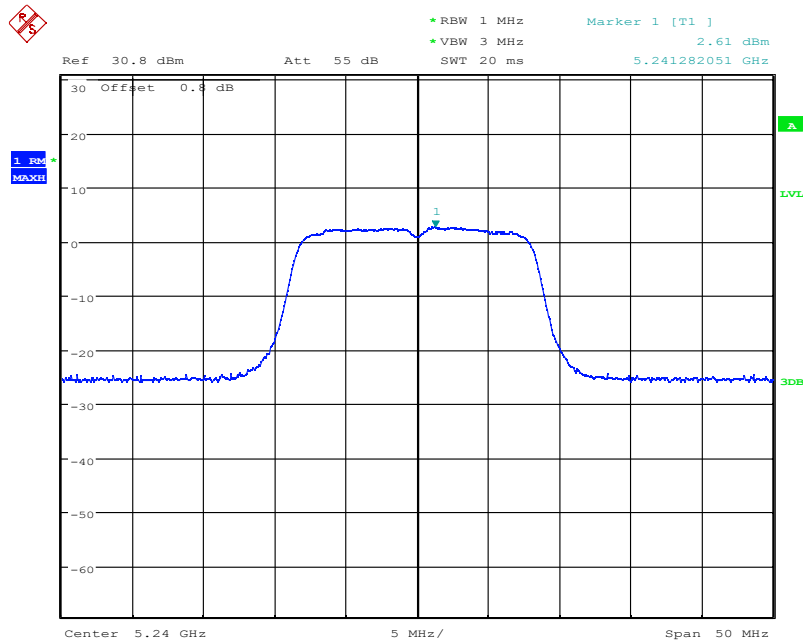
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Fig.2 Power spectral density: CH40,11a

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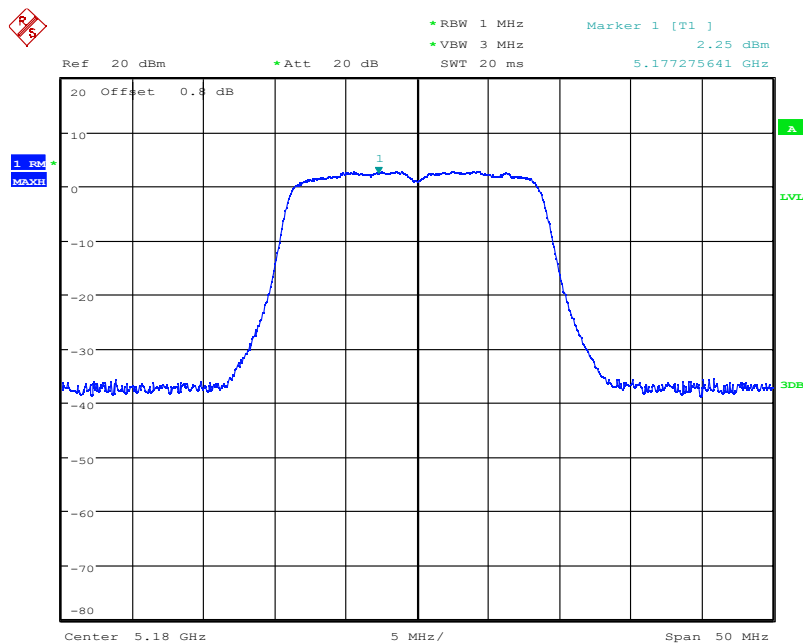
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Date: 2.JUL.2021 14:04:57

Fig.3 Power spectral density: CH48,11a



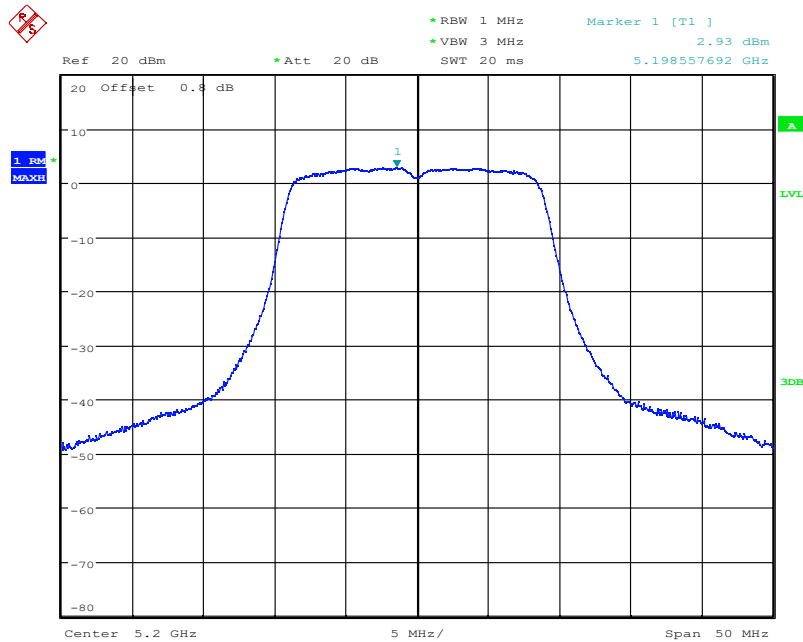
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Fig.4 Power spectral density: CH36,11n

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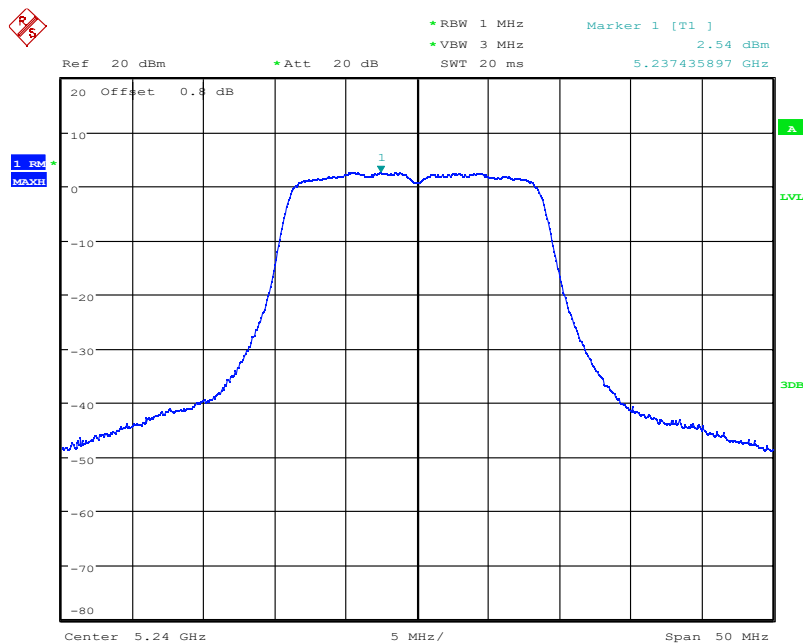
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Date: 2.JUL.2021 14:06:52

Fig.5 Power spectral density: CH40,11n



Date: 2.JUL.2021 14:07:09

Fig.6 Power spectral density: CH48,11n

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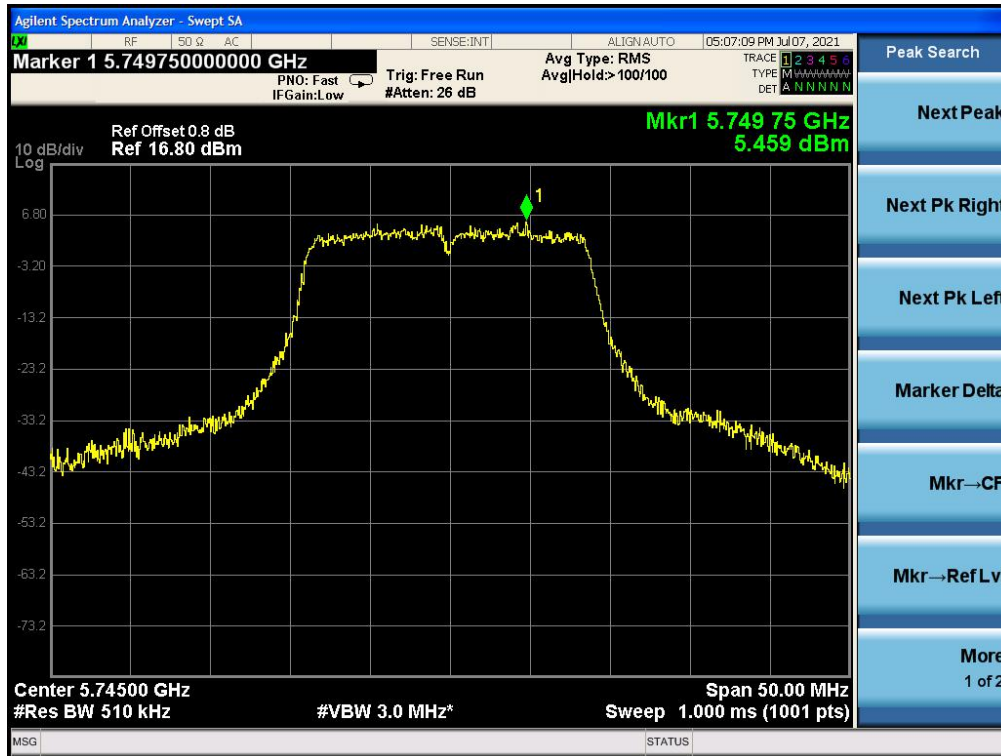


Fig.7 Power spectral density: CH149,11a

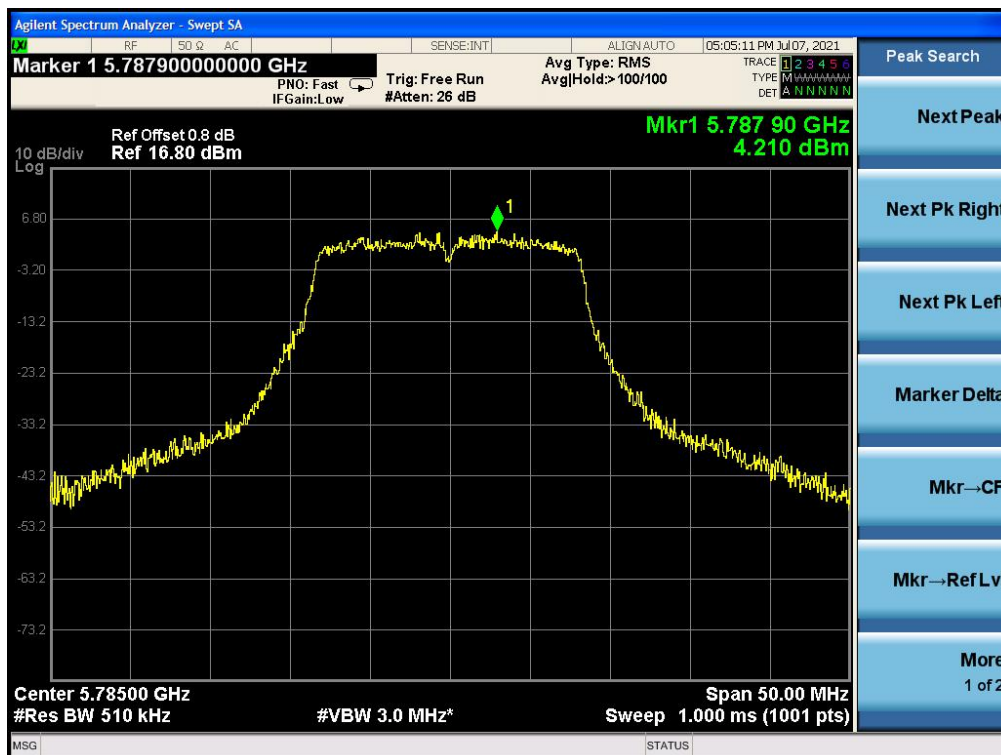


Fig.8 Power spectral density: CH157,11a

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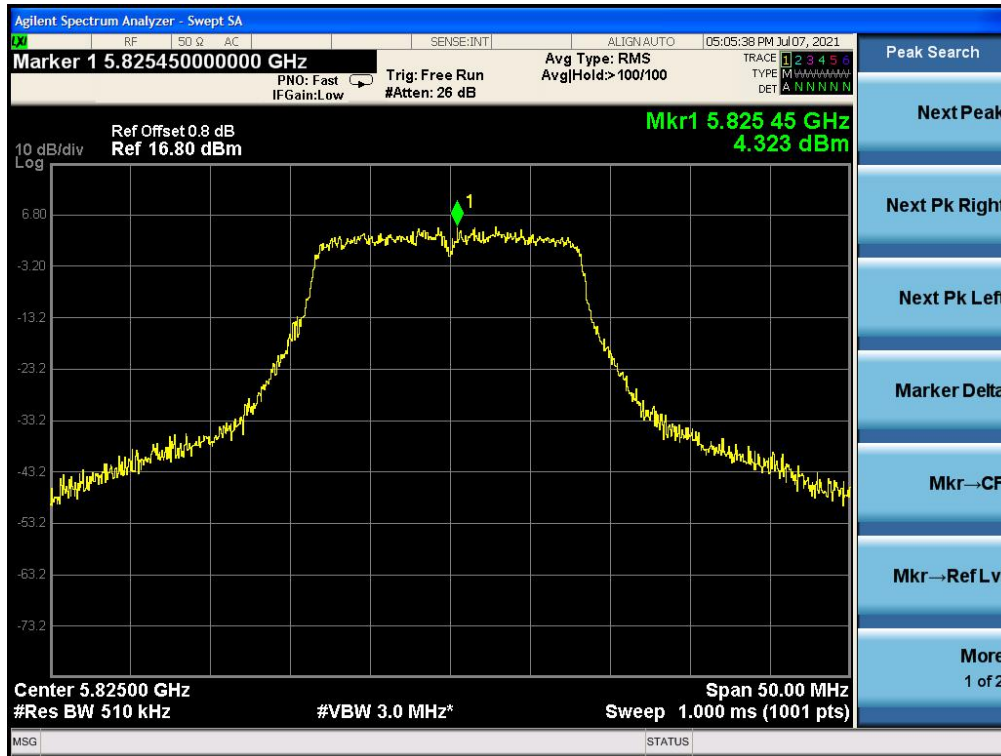


Fig.9 Power spectral density: CH165,11a



Fig.10 Power spectral density: CH149,11n

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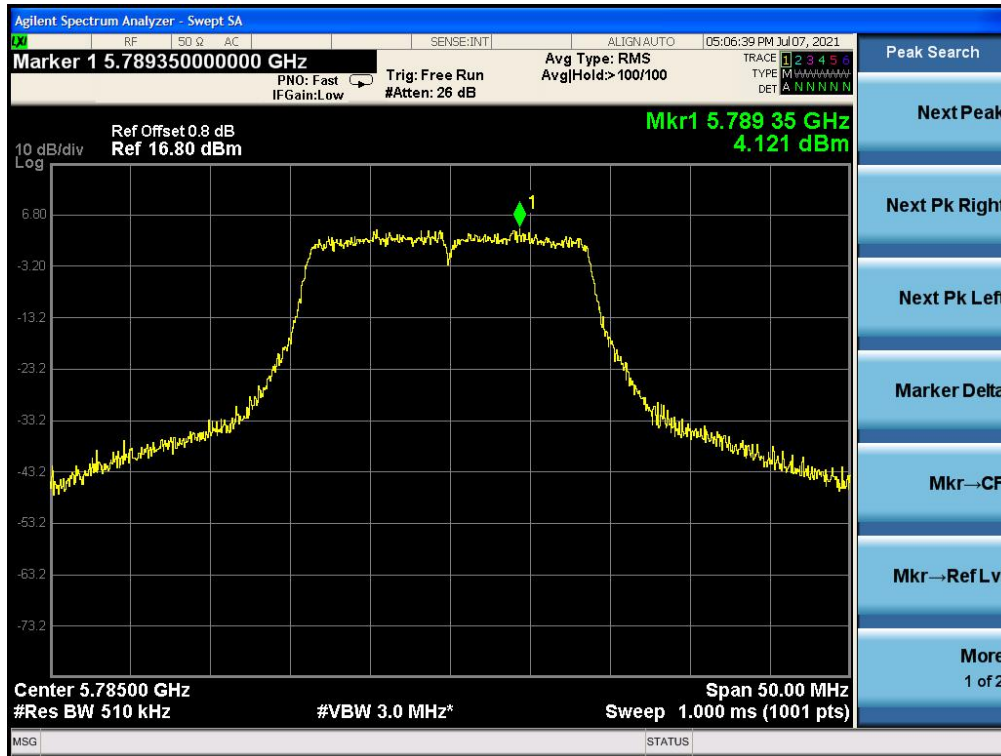


Fig.11 Power spectral density: CH157,11n



Fig.12 Power spectral density: CH165,11n

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Report No.:I21W00017-WLAN_5G_Rev1**5.3 Occupied Bandwidth**

Specifications:	FCC Part 15. 407 (e)
DUT Serial Number:	866884045658218
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:**According to Part 15.407(e)**

For an outdoor access point operating in the band 5.15-5.25 GHz, not required.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, not required.

For the band 5.725-5.85 GHz, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Measurement Uncertainty:

Measurement Uncertainty	$\pm 1.1\text{KHz}$
-------------------------	---------------------

Test Procedure:**1. 6dB**

Section 15.407(e) specifies the minimum 6 dB emission bandwidth of at least 500 kHz for the band 5.715-5.85 GHz The following procedure shall be used for measuring this bandwidth

- Set RBW=100 kHz
- Set the video bandwidth(VBW) $\geq 3 \times$ RBW
- Detector= Peak
- Trace mode= max hold
- Sweep=auto couple.
- Allow the trace to stabilize
- measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points(upper and lower frequencies) that are attenuated by 6 db relative to the maximum level measured in the fundamental emission

2. 26dB/99%

The following procedure shall be used for measuring(99%)/(26dB) power bandwidth

- Set center frequency to the nominal EUT channel center frequency
- Set span=1.5 times to 5.0 times the OBW
- Set RBW=1% to 5% of the OBW
- SetVBW $> 3 \cdot$ RBW
- 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

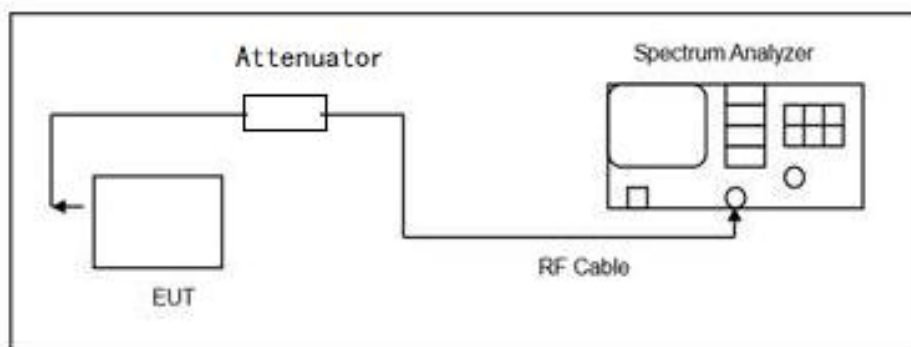
Note: --

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Test block diagram:



Test Result:

5150-5250MHz:

802.11a/n mode

Mode	Occupied 26dB Bandwidth(MHz)			Conclusion
	Ch36	Ch40	Ch48	
802.11a	19.38	20.09	20.09	Pass
802.11n(20MHz)	19.47	20.11	20.02	Pass

Mode	Occupied 99dB Bandwidth(MHz)			Conclusion
	Ch36	Ch40	Ch48	
802.11a	16.58	16.61	16.58	Pass
802.11n(20MHz)	16.62	16.59	16.58	Pass

5720-5850MHz:

802.11a/n mode

Mode	Occupied 26dB Bandwidth(MHz)			Conclusion
	Ch149	Ch157	Ch165	
802.11a	20.50	20.25	19.89	Pass
802.11n(20MHz)	20.47	20.29	20.41	Pass

Mode	Occupied 99dB Bandwidth(MHz)			Conclusion
	Ch149	Ch157	Ch165	
802.11a	17.69	17.75	17.70	Pass
802.11n(20MHz)	17.74	17.71	17.70	Pass

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Mode	Occupied 6dB Bandwidth(MHz)			Conclusion
	Ch149	Ch157	Ch165	
802.11a	16.50	16.52	16.48	Pass
802.11n(20MHz)	17.75	17.77	17.76	Pass

Conclusion: PASS

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Test figure as below:

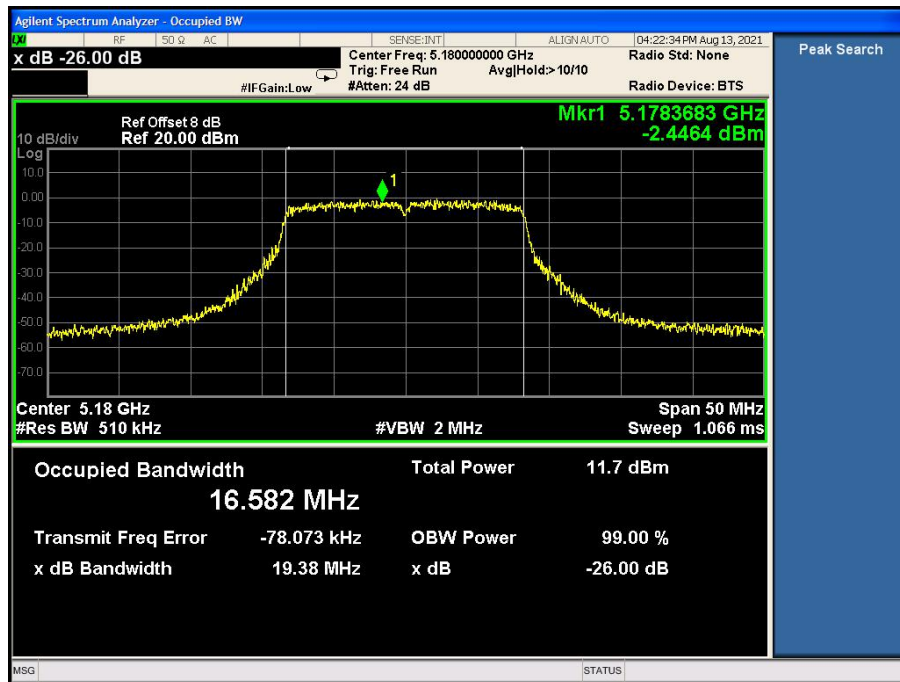


Fig.13 26dB/99% Bandwidth: Ch36,11a

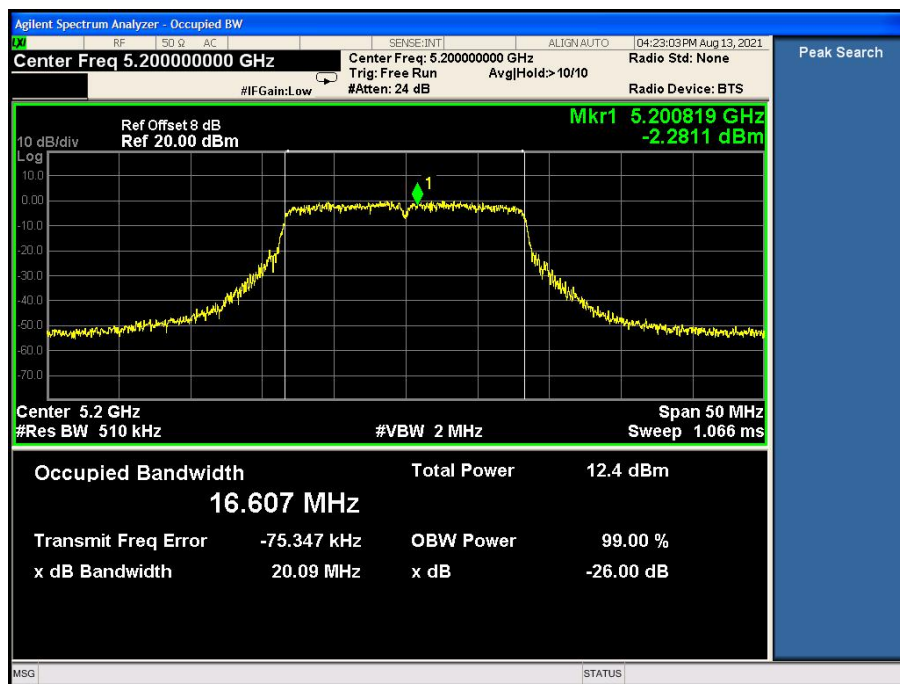


Fig.14 26dB/99% Bandwidth: Ch40,11a

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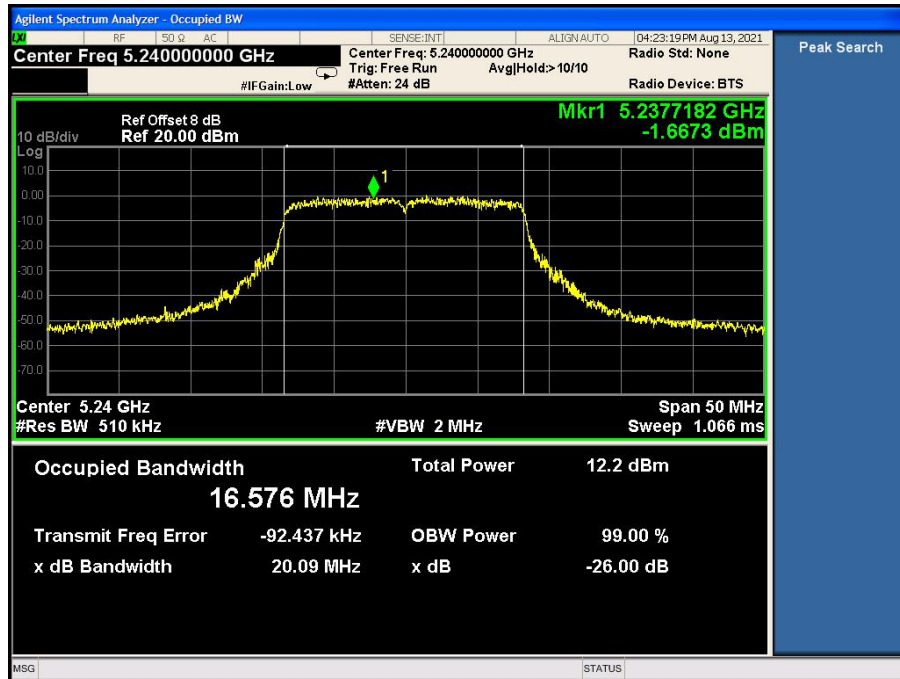


Fig.15 26dB/99% Bandwidth: Ch48,11a

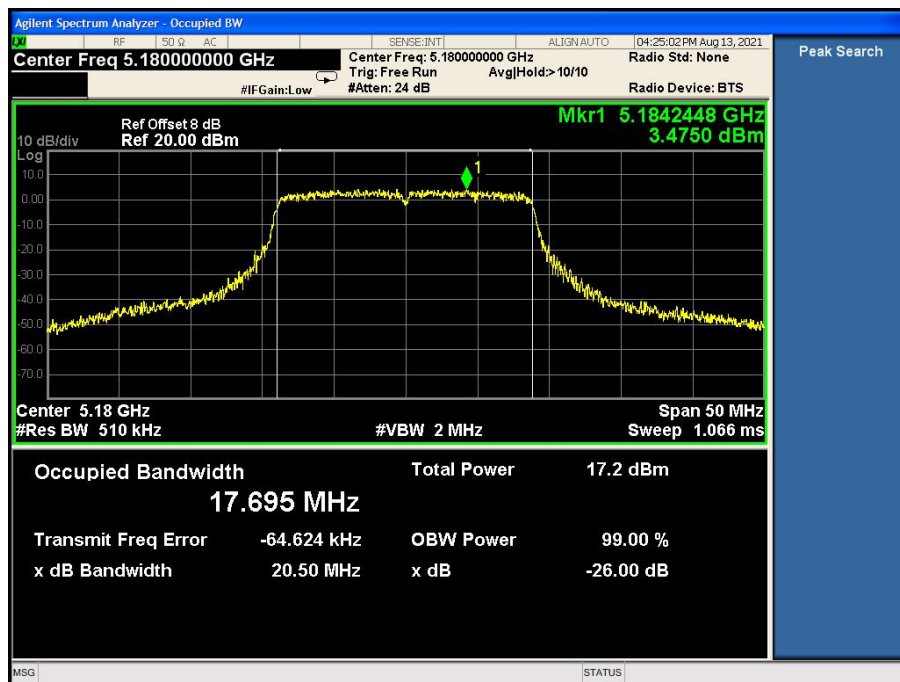


Fig.16 26dB/99% Bandwidth: Ch36,11n

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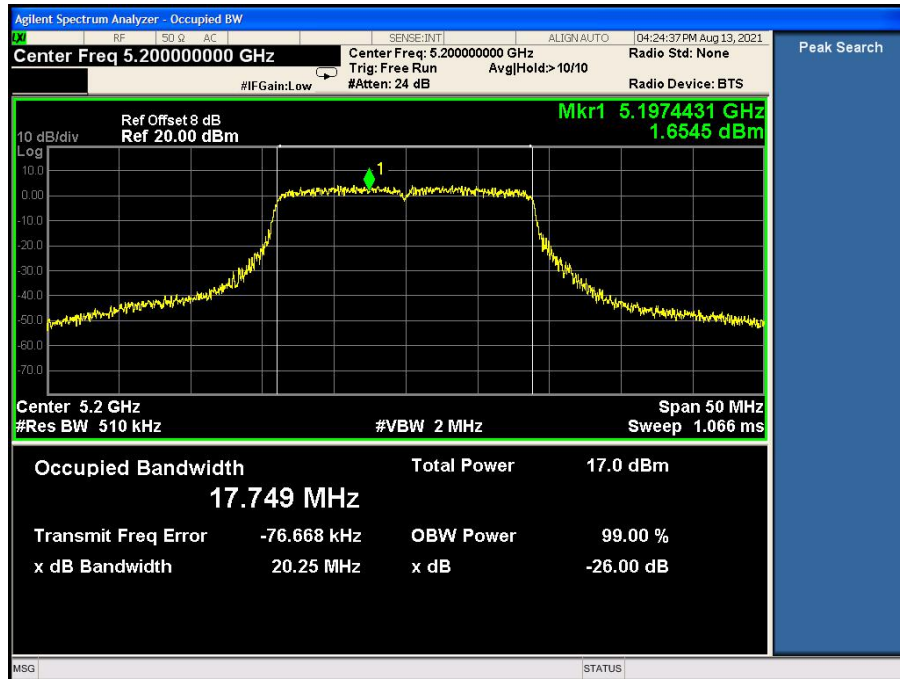


Fig.17 26dB/99% Bandwidth: Ch40,11n

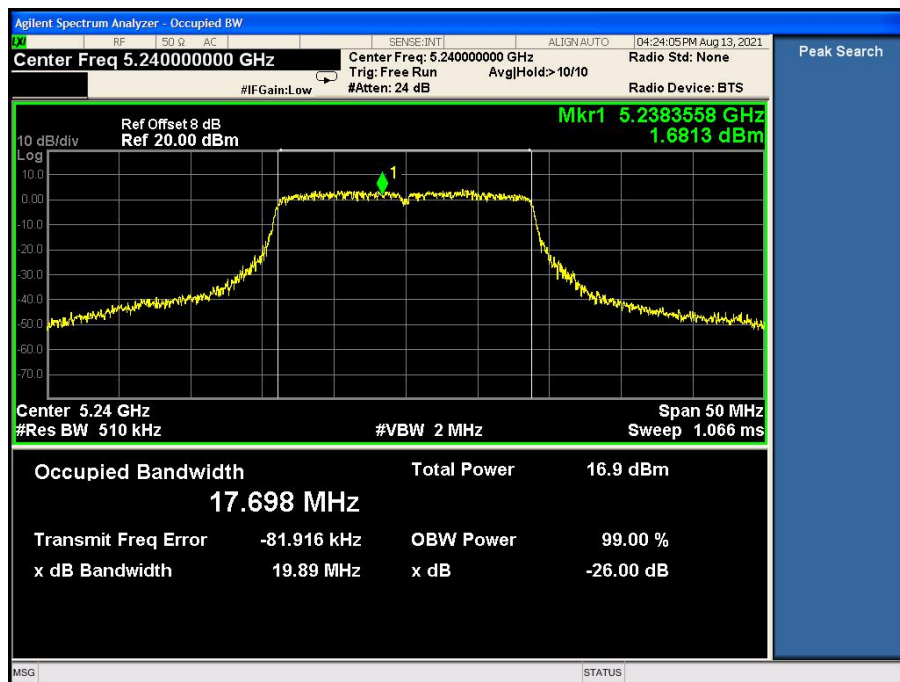


Fig.18 26dB/99% Bandwidth: Ch48,11n

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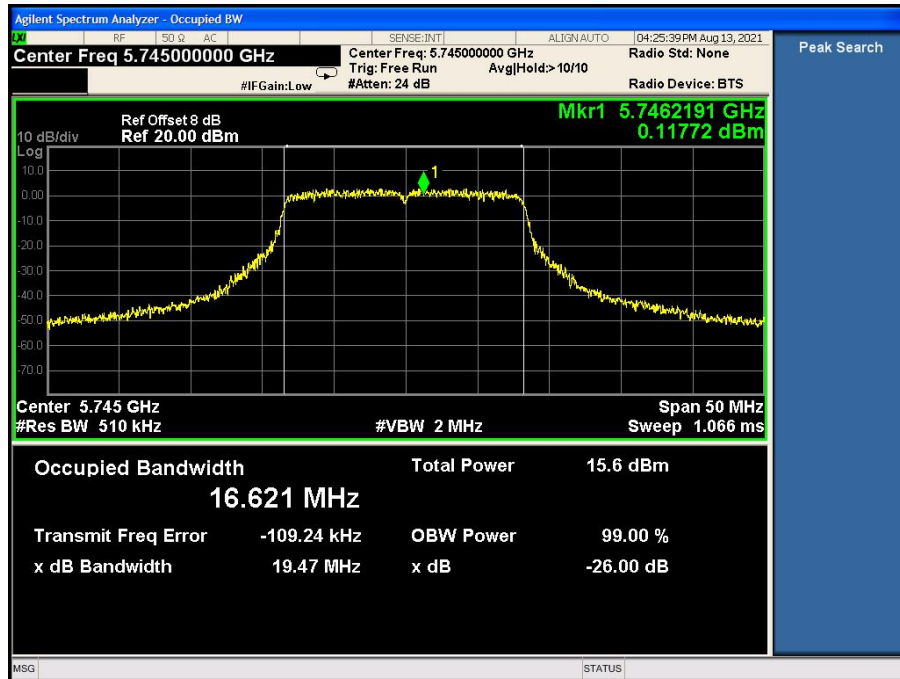


Fig.19 26dB/99% Bandwidth: Ch149,11a

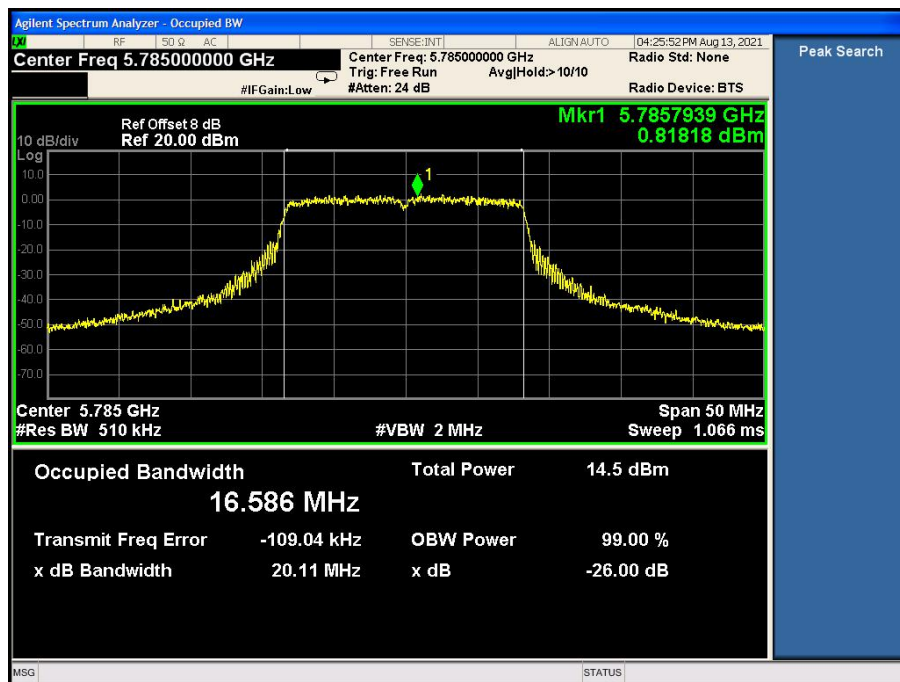


Fig.20 26dB/99% Bandwidth: Ch157,11a

Report No.:I21W00017-WLAN_5G_Rev1

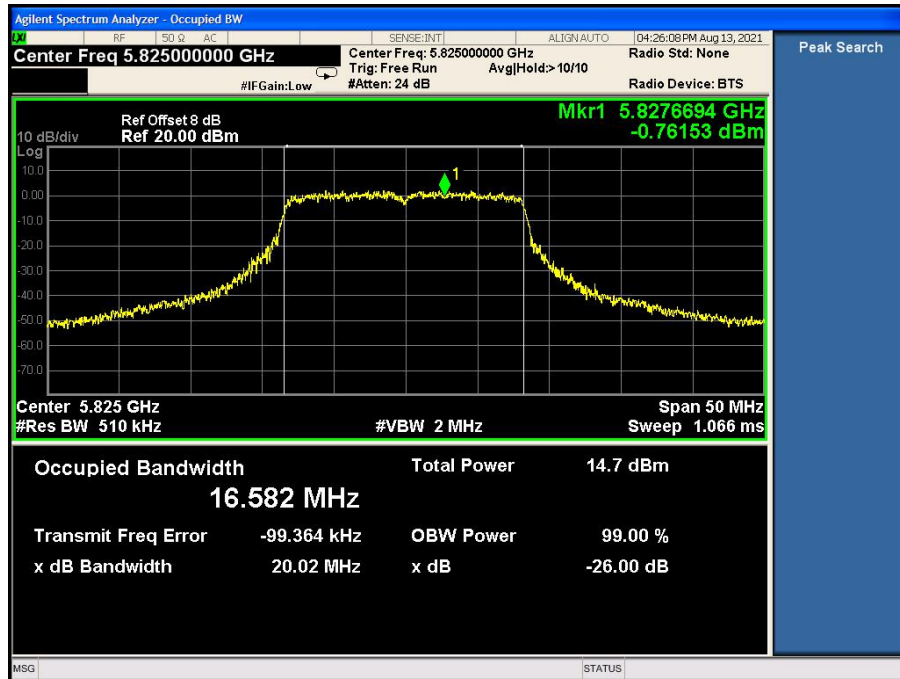


Fig.21 26dB/99% Bandwidth: Ch165,11a

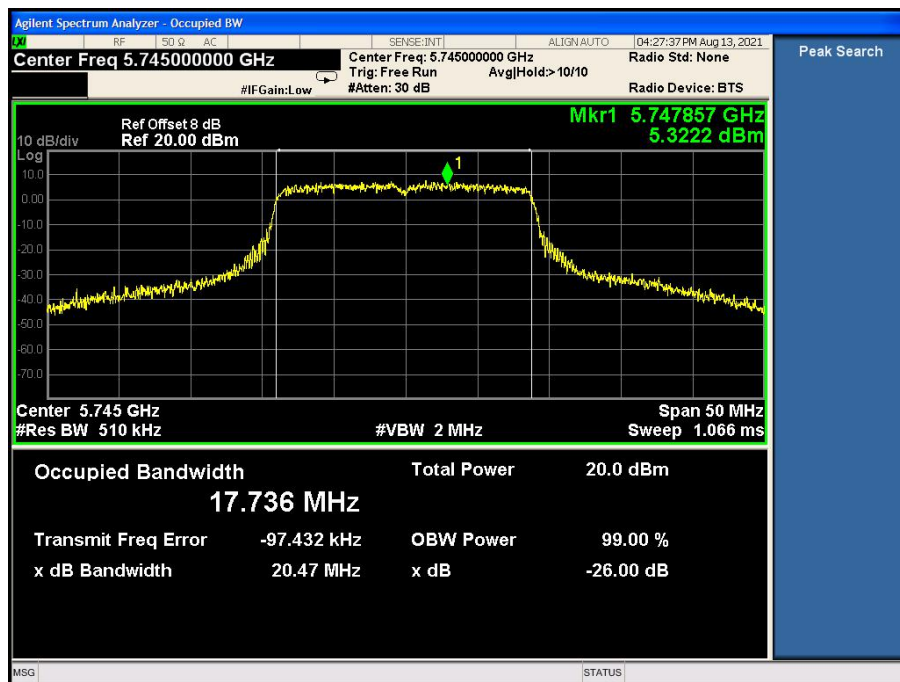


Fig.22 26dB/99% Bandwidth: Ch149,11n

Report No.:I21W00017-WLAN_5G_Rev1

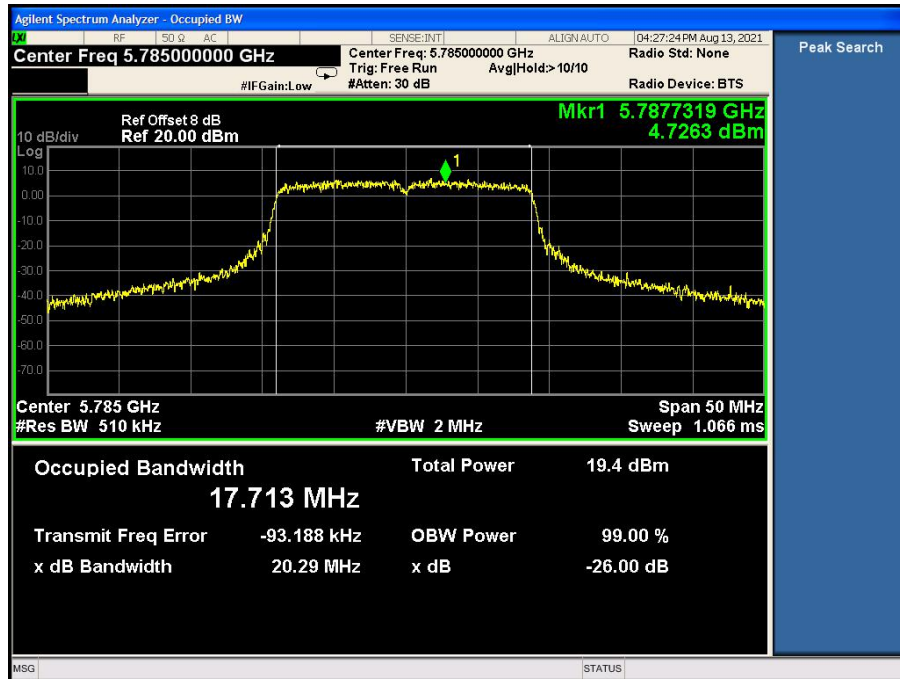


Fig.23 26dB/99% Bandwidth: Ch157,11n

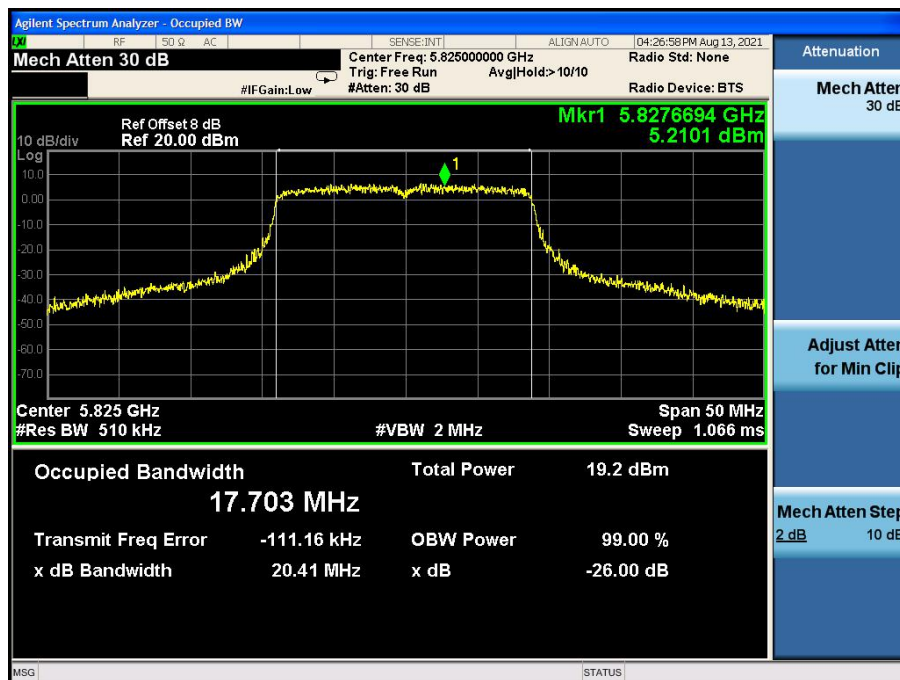


Fig.24 26dB/99% Bandwidth: Ch165,11n

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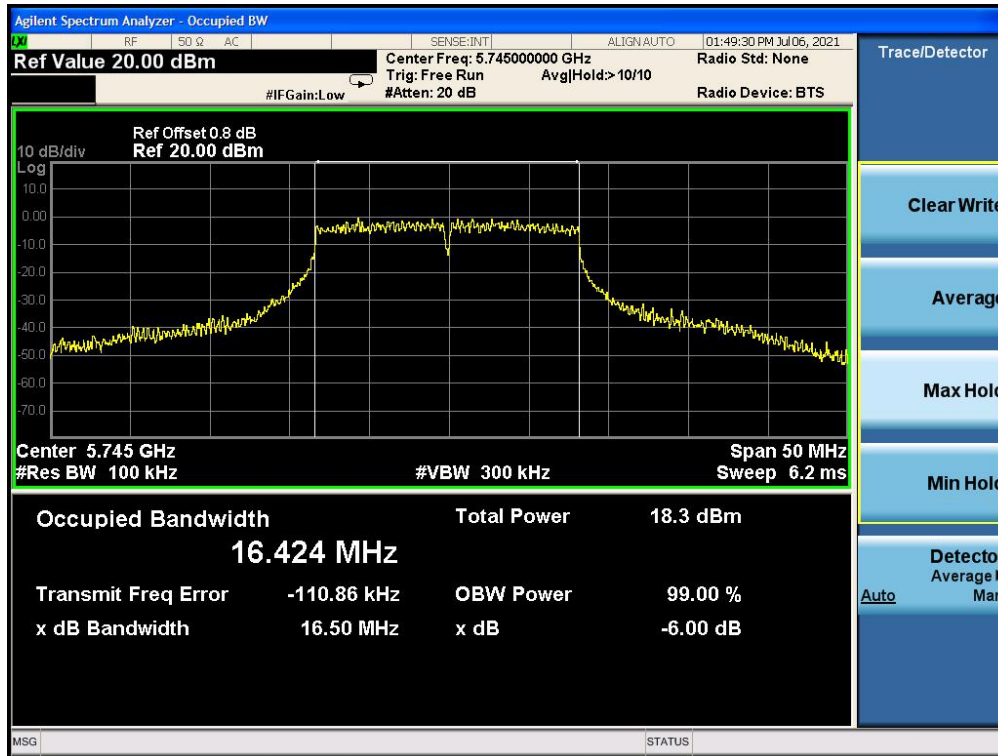


Fig.25 6dB Bandwidth: Ch149,11a



Fig.26 6dB Bandwidth: Ch157,11a

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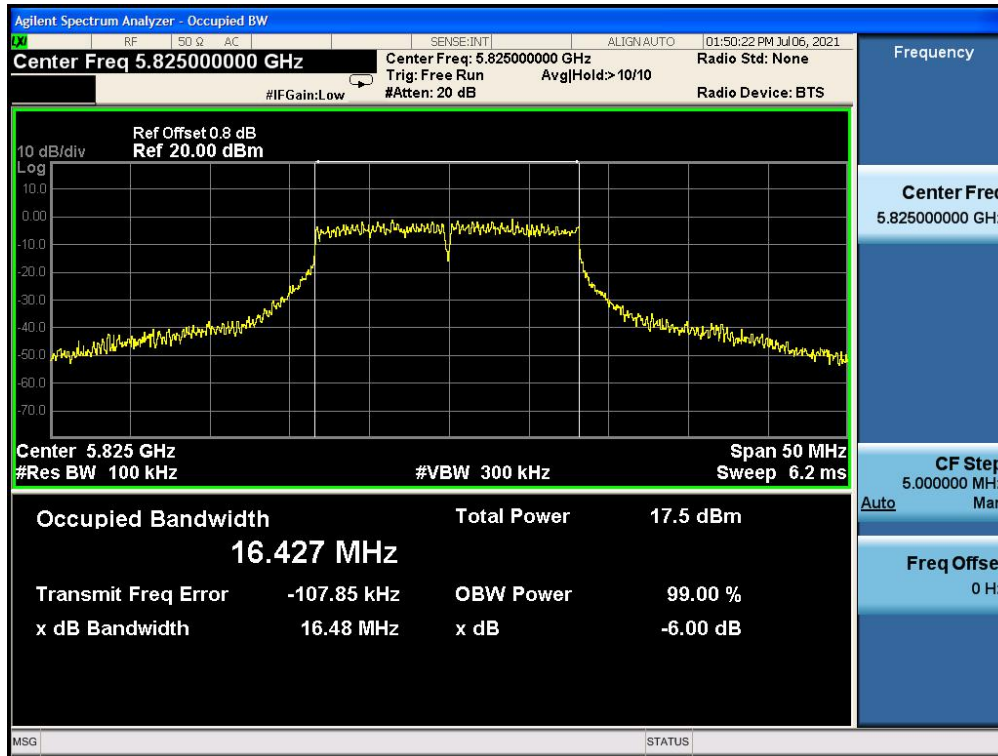


Fig.27 6dB Bandwidth: Ch165,11a



Fig.28 6dB Bandwidth: Ch149,11n

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Fig.29 6dB Bandwidth: Ch157,11n



Fig.30 6dB Bandwidth: Ch165,11n

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Report No.:I21W00017-WLAN_5G_Rev1**5.4 Band Edges Compliance**

Specifications:	FCC Part 15. 407 (b)
DUT Serial Number:	866884045658127
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit**According to Part 15.407(b)**

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band:

All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Measurement Uncertainty:

Frequency Range	Uncertainty
1 GHz to 6 GHz	4.84

Test Procedure

The measurement is according to ANSI C63.10 clause 11.13.

1. Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.
2. Reference level offset: Corrected for gains and losses of test antenna factor, preamp gain and cable loss, so as to indicate field strength, in units of dB μ V/m at 3 m, directly on the instrument display. Alternatively, the reference level offset may be set to zero and calculations shall be provided showing the conversion of raw measured data to the field strength in dB μ V/m at 3 m.
3. Reference level: As required to keep the signal from exceeding the maximum spectrum analyzer input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW/RBW})]$ below the reference level. Specific guidance is given in 4.1.5.2..

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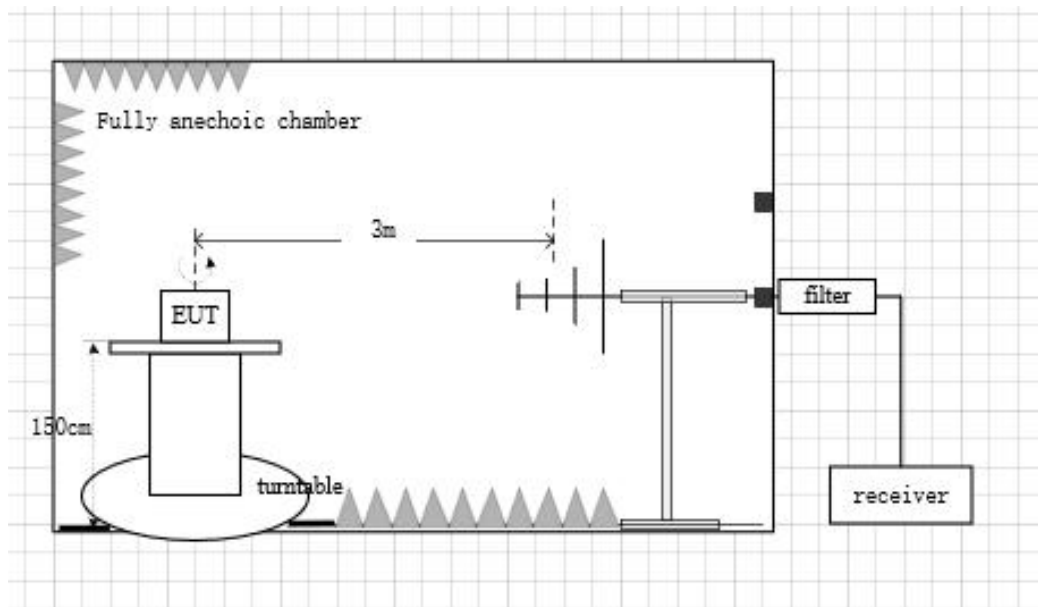
Report No.:I21W00017-WLAN_5G_Rev1

4. Attenuation: Auto (at least 10 dB preferred).
5. Sweep time: Coupled.
6. Resolution bandwidth: Above 1 GHz: 1 MHz
7. Video bandwidth: VBW for Peak, Quasi-peak, or Average Detector Function: $3 \times \text{RBW}$
8. Detector (unless specified otherwise): Peak and average above 1 GHz
9. Trace: Max hold for final measurement; a combination of two traces, clear-write and max hold, is recommended for maximizing the emission.

Note: --

Report No.:I21W00017-WLAN_5G_Rev1

Test block diagram:



Test Result:

802.11a mode

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11a	36	Fig.127	Pass
	48	Fig.128	Pass
	149	Fig.129	Pass
	165	Fig.130	Pass

802.11n mode

mode	Channel	Test Results(dBuV/m)	Conclusion
802.11n	36	Fig.131	Pass
	48	Fig.132	Pass
	149	Fig.133	Pass

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	165	Fig.134	Pass
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Conclusion: PASS

Test figure as below:

RE 3GHz-18GHz

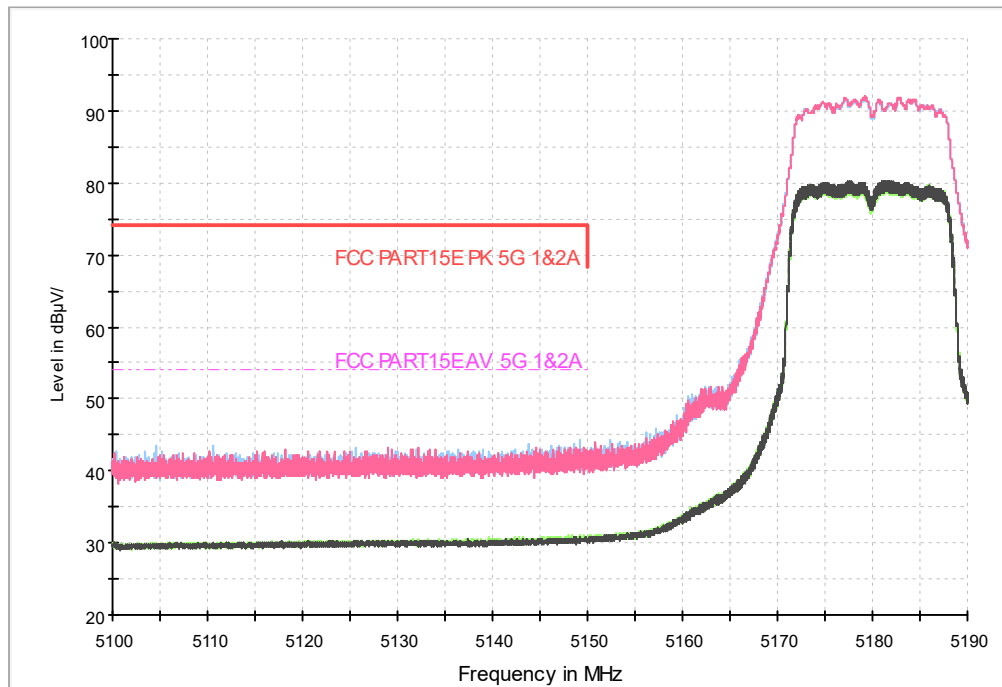


Fig.31 Frequency Band Edge: 802.11a,CH36

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RE 3GHz-18GHz

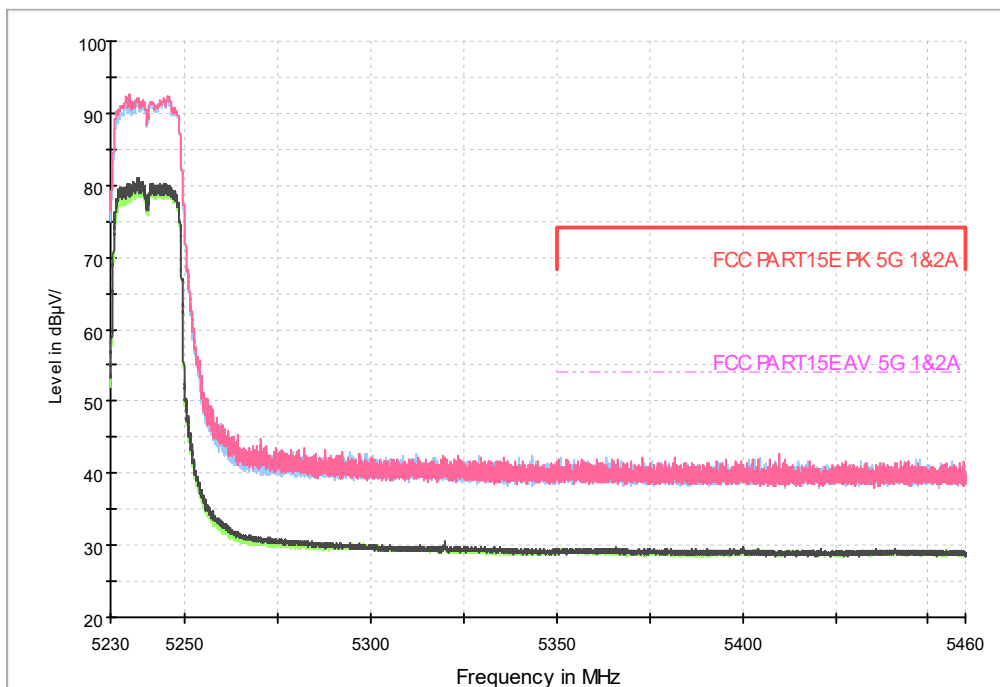


Fig.32 Frequency Band Edge: 802.11a,CH48

RE 3GHz-18GHz

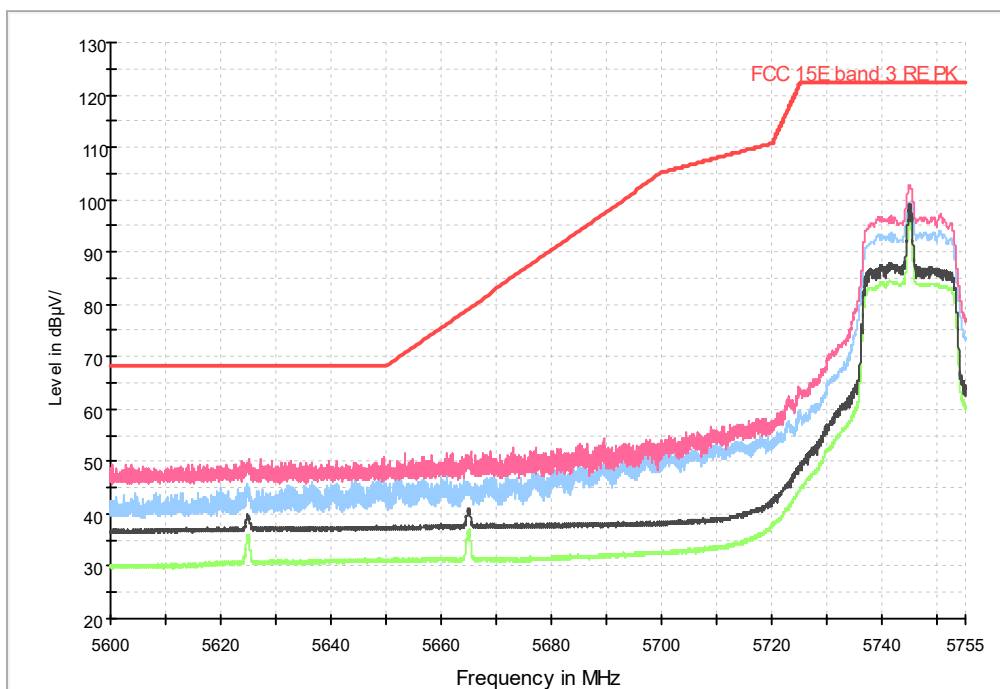


Fig.33 Frequency Band Edge:802.11a,CH149

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RE 3GHz-18GHz

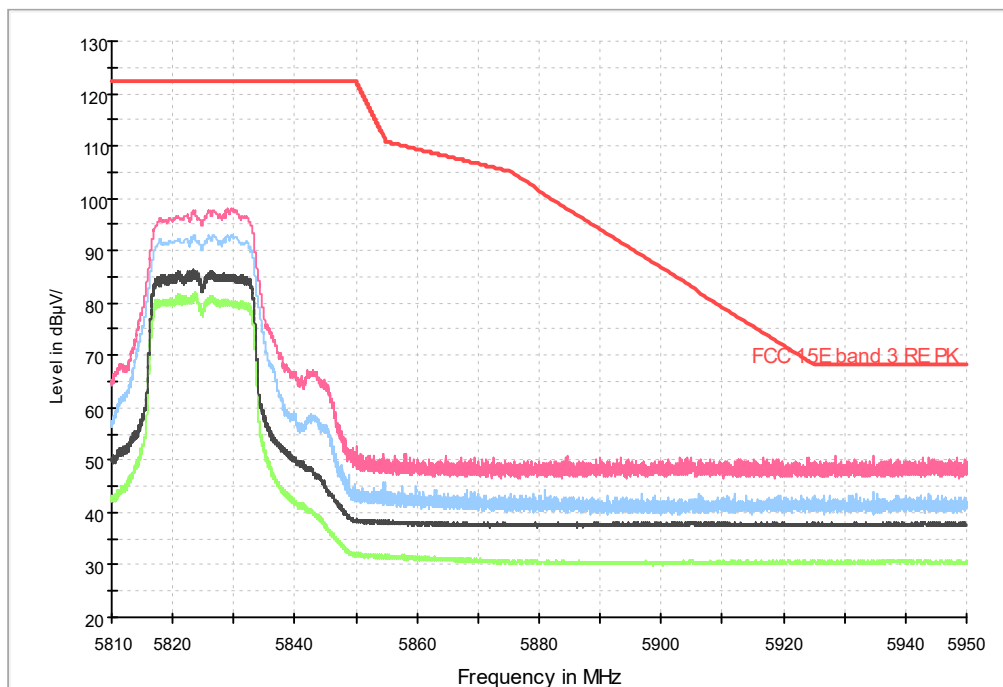


Fig.34 Frequency Band Edge: 802.11a,CH165

RE 3GHz-18GHz

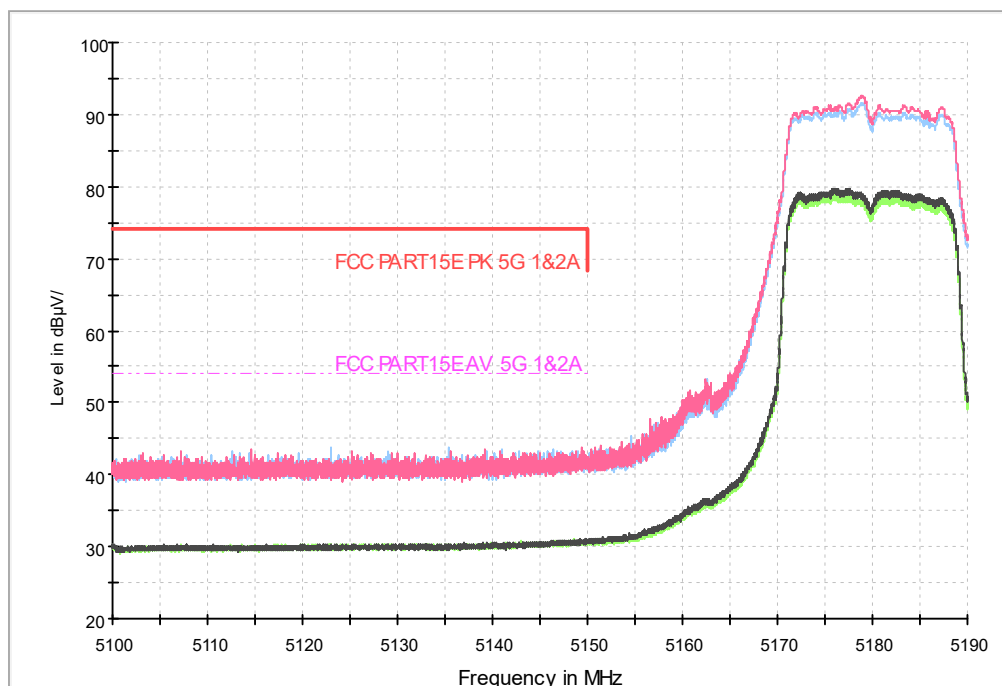


Fig.35 Frequency Band Edge: 802.11n,CH36

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RE 3GHz-18GHz

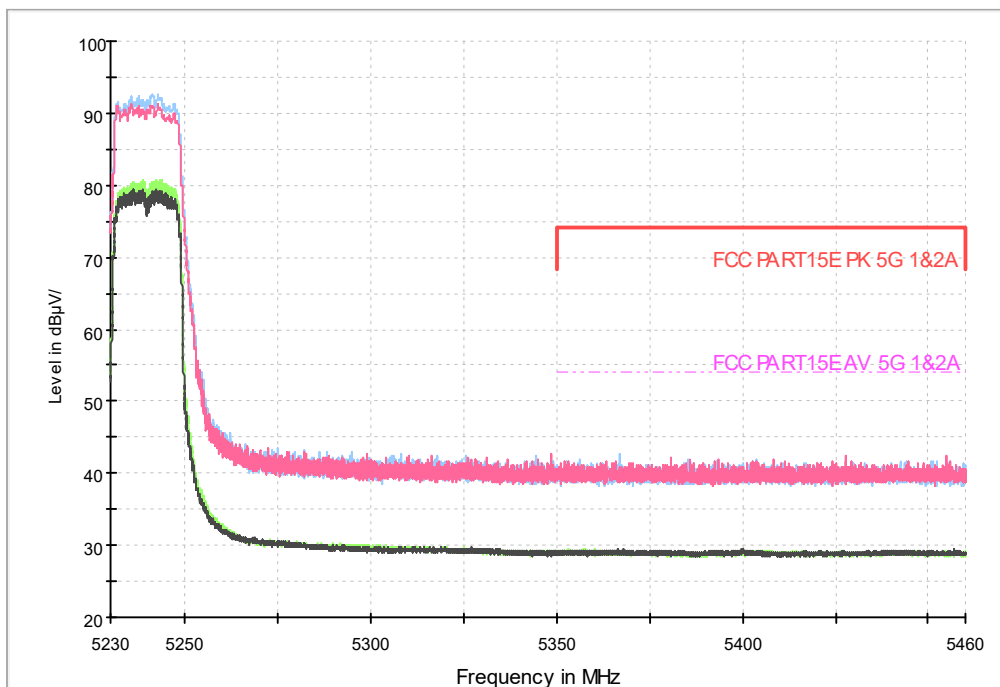


Fig.36 Frequency Band Edge:802.11n,CH48

RE 3GHz-18GHz

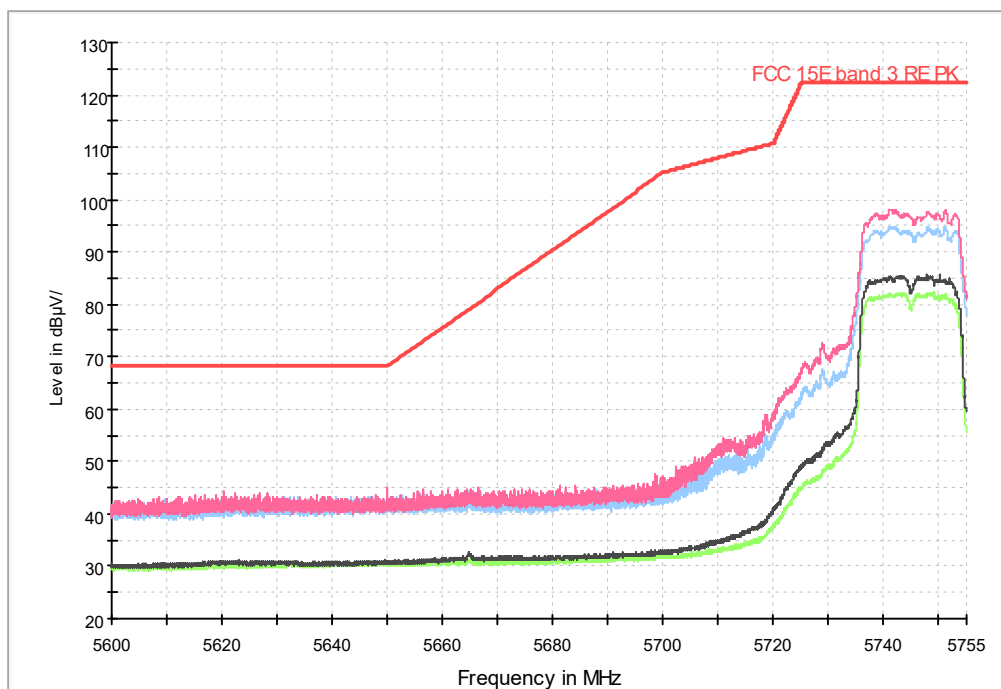


Fig.37 Frequency Band Edge:802.11n,CH149

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RE 3GHz-18GHz

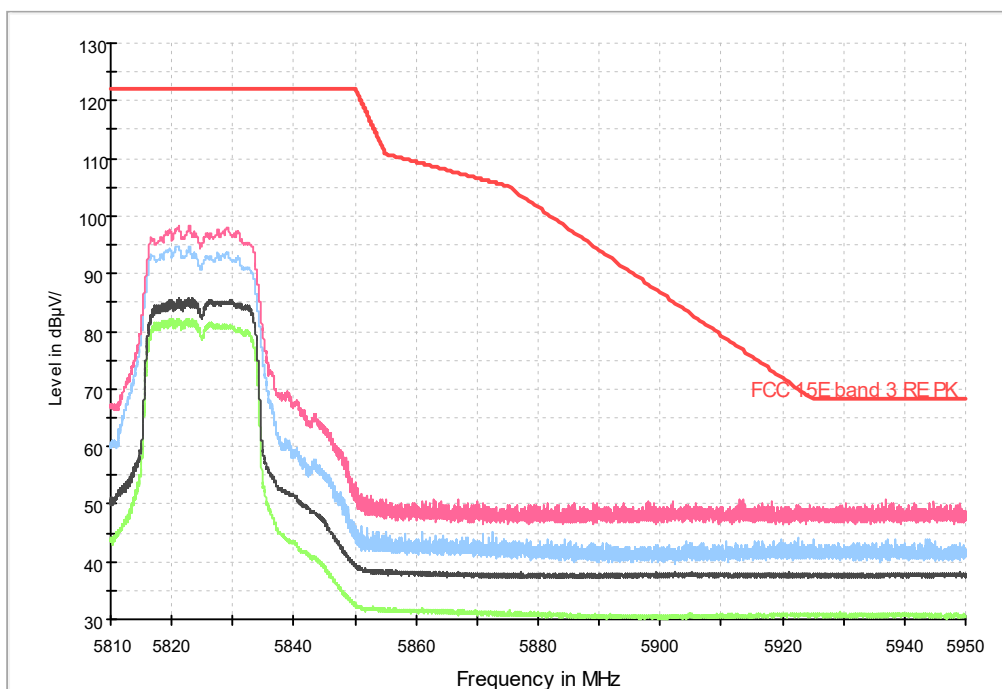


Fig.38 Frequency Band Edge: 802.11n,CH165

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5.6 RADIATED SPURIOUS EMISSIONS

Specifications:	FCC Part 15. 407 (b)
DUT Serial Number:	866884045658127
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit

According to Part 15.407(b)

For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz band:

All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Measurement Uncertainty:

Frequency Range	Uncertainty
30MHz -1GHz	3.51
1GHz - 6GHz	4.84
6GHz - 18GHz	4.52
18GHz - 26GHz	6.19
26GHz - 40GHz	6.04

Limit in restricted band:

Frequency of emission (MHz)	Field strength (uV/m)	Field strength (dBuV/m)
30~88	100	40
88~216	150	43.5
216~960	200	46

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Above 960	500	54
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Test Procedure

Portable, small, lightweight, or modular devices that may be handheld, worn on the body, or placed on a table during operation shall be positioned on a non-conducting platform, the top of which is 80 cm above the reference ground plane. The preferred area occupied by the EUT arrangement is 1 m by 1.5 m, but it may be larger or smaller to accommodate various sized EUTs. For testing purposes, ceiling- and wall-mounted devices also shall be positioned on a tabletop (see also ANSI C63.10-2013 section 6.3.4 and 6.3.5). In making any tests involving handheld, body-worn, or ceiling-mounted equipment, it is essential to recognize that the measured levels may be dependent on the orientation (attitude) of the three orthogonal axes of the EUT. Thus, exploratory tests as specified in 8.3.1 shall be carried out for various axes orientations to determine the attitude having maximum or near-maximum emission level.

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time
30~1000	100KHz/300KHz	5s
1000~3000	1MHz/3MHz	3s
3000~18000	1MHz/3MHz	7s
18000~26500	1MHz/3MHz	0.5s
26500~40000	1MHz/3MHz	0.5s

Test Result:

A “reference path loss” is established and AR_{pi} is the attenuation of “reference path loss”, and including the gain of receive antenna , the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

AR_{pi}= Cable loss + Antenna Gain-Preamplifier gain

Result=PM_{ea} + AR_{pi}

Mode	Channel	Frequency Range	Test Results	Conclusion
All channels		30MH-1GHz	Fig.39	Pass
802.11a	36	1GHz-3GHz	Fig.40	Pass

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		3GHz-6GHz	Fig.41	
		6GHz-18GHz	Fig.42	
	40	1GHz-3GHz	Fig.43	Pass
		3GHz-6GHz	Fig.44	
		6GHz-18GHz	Fig.45	
	48	1GHz-3GHz	Fig.46	Pass
		3GHz-6GHz	Fig.47	
		6GHz-18GHz	Fig.48	
	149	1GHz-3GHz	Fig.49	Pass
		3GHz-6GHz	Fig.50	
		6GHz-18GHz	Fig.51	
	157	1GHz-3GHz	Fig.52	Pass
		3GHz-6GHz	Fig.53	
		6GHz-18GHz	Fig.54	
	165	1GHz-3GHz	Fig.55	Pass
		3GHz-6GHz	Fig.56	
		6GHz-18GHz	Fig.57	
Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n	36	1GHz-3GHz	Fig.58	Pass
		3GHz-6GHz	Fig.59	
		6GHz-18GHz	Fig.60	
	40	1GHz-3GHz	Fig.61	Pass
		3GHz-6GHz	Fig.62	
		6GHz-18GHz	Fig.63	
	48	1GHz-3GHz	Fig.64	Pass
		3GHz-6GHz	Fig.65	
		6GHz-18GHz	Fig.66	
	149	1GHz-3GHz	Fig.67	Pass
		3GHz-6GHz	Fig.68	
		6GHz-18GHz	Fig.69	
	157	1GHz-3GHz	Fig.70	Pass
		3GHz-6GHz	Fig.71	
		6GHz-18GHz	Fig.72	

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