



RF TEST REPORT

Applicant Bluebird Inc.
FCC ID SS4CF550
Product Cost-Effective Full Touch Handheld Computer
Brand BLUEBIRD
Model CF550
Report No. R2111A0957-R6
Issue Date January 7, 2022

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2020)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Approved by: Kai Xu

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Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Average output power	15.407(a)	PASS
2	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Power spectral density	15.407(a)	PASS
5	Unwanted Emissions	15.407(b)	PASS
6	Conducted Emissions	15.207	PASS

Date of Testing: November 15, 2021 ~ December 24, 2021

Date of Sample Received: November 9, 2021

Note: PASS: The EUT complies with the essential requirements in the standard.

FAIL: The EUT does not comply with the essential requirements in the standard.

All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City: Shanghai
Post code: 201201
Country: P. R. China
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Fax: +86-021-50791141/2/3-8000
Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Bluebird Inc.
Applicant address	3F, 115, Irwon-ro, Gangnam-gu, Seoul, Republic of Korea
Manufacturer	Bluebird Inc.
Manufacturer address	3F, 115, Irwon-ro, Gangnam-gu, Seoul, Republic of Korea

2.2. General information

EUT Description	
Model	CF550
IMEI	IMEI 1: 358671240002572 IMEI 2: 358671240002580
Hardware Version	V1.0
Software Version	20211026_R1.00
Power Supply	AC adapter
Antenna Type	Coupling type (LDS)
Antenna Gain	2dBi
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-2A:5250MHz -5350MHz U-NII-3: 5725MHz -5850MHz
Modulation Type	802.11a/n (HT20/HT40): OFDM 802.11ac (VHT20/VHT40/ VHT80): OFDM
Max. Conducted Power	15.76dBm
Testing temperature range:	-20 ° C to 50° C
Operating temperature range:	-20 ° C to 50° C
Operating voltage range:	3.4V to 4.33V
State DC voltage:	3.85V
EUT Accessory	
Adapter	Manufacturer: Kuantech (Beihai) Co., Ltd. Model: KSA29B0500200D5
Battery	Manufacturer: Ningbo Veken Battery Co.,Ltd. Model: BAT-435001B
USB Cable	Manufacturer: GAC Model: GAC-BBD20-002 100cm Cable, Shielded
<p>Note: 1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.</p> <p>2. This device support automatically discontinue transmission, while the device is not</p>	



transmitting any information, the device can automatically discontinue transmission and become standby mode for power saving. The device can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.

3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR47 Part 15E (2020) Unlicensed National Information Infrastructure Devices

ANSI C63.10 (2013)

Reference standard:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

4. Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (X axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Mode	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

Wireless Technology and Frequency Range

Wireless Technology	Bandwidth	Channel	Frequency	
Wi-Fi	20 MHz	36	5180MHz	
		40	5200MHz	
		44	5220MHz	
		48	5240MHz	
	40 MHz	38	5190MHz	
		46	5230MHz	
		42	5210MHz	
	20 MHz	52	5260MHz	
		56	5280MHz	
		60	5300MHz	
		64	5320MHz	
		40 MHz	54	5270MHz
			62	5310MHz
	80 MHz	58	5290MHz	
149		5745MHz		
20 MHz	153	5765MHz		



			157	5785MHz
			161	5805MHz
			165	5825MHz
		40 MHz	151	5755MHz
			159	5795MHz
		80 MHz	155	5775MHz
Does this device support TPC Function? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Does this device support TDWR Band? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				

5. Test Case Results

5.1. Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

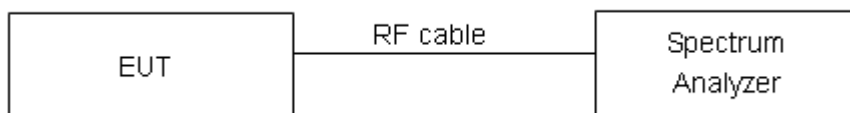
For U-NII-1/U-NII-2A/U-NII-2C, set RBW \approx 1% OCB kHz, VBW \geq 3 \times RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

For U-NII-3, Set RBW = 100 kHz, VBW \geq 3 \times RBW, 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.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

Use the 99 % power bandwidth function of the instrument

Test Setup



Limits

Rule FCC Part §15.407(e)

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

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936$ Hz.

Test Results:
U-NII-1

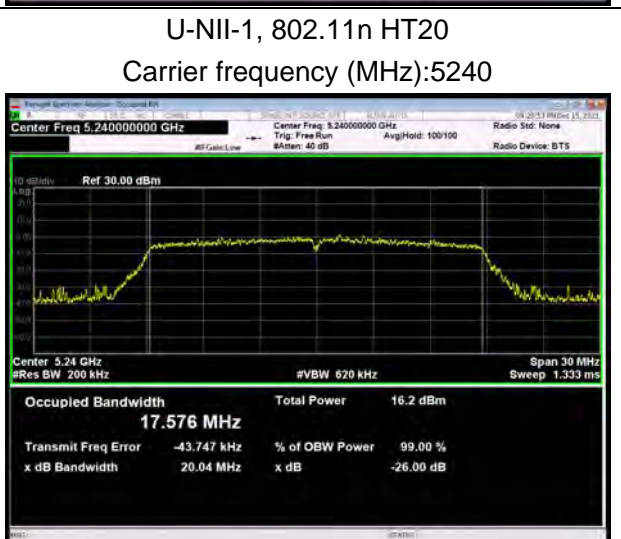
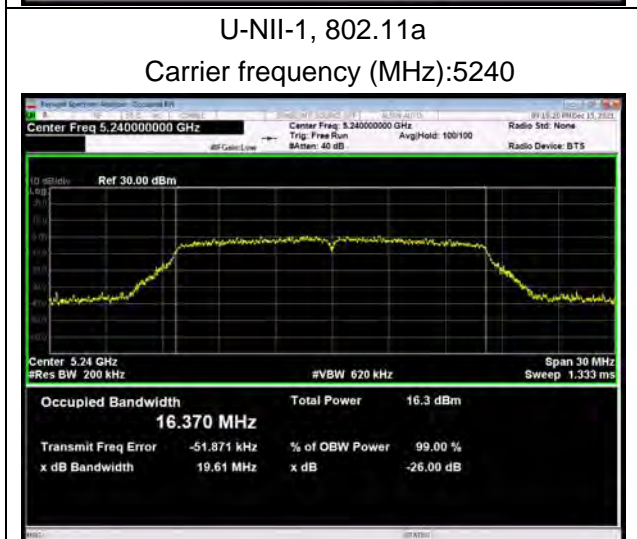
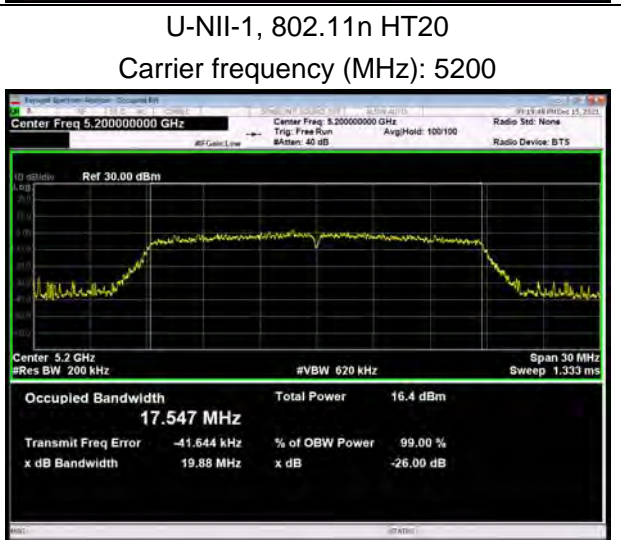
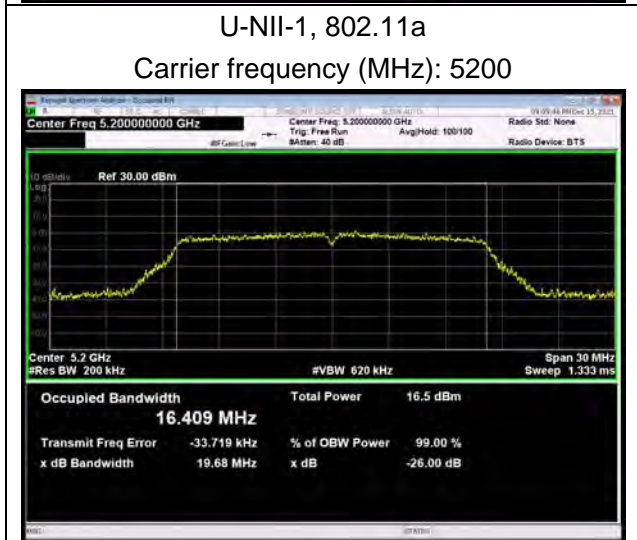
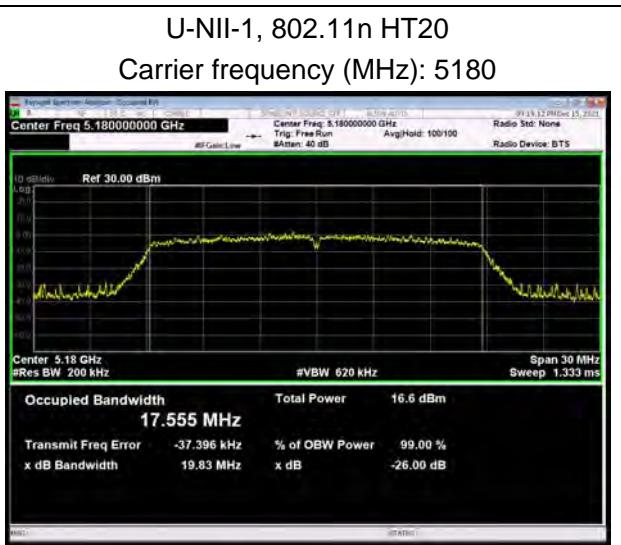
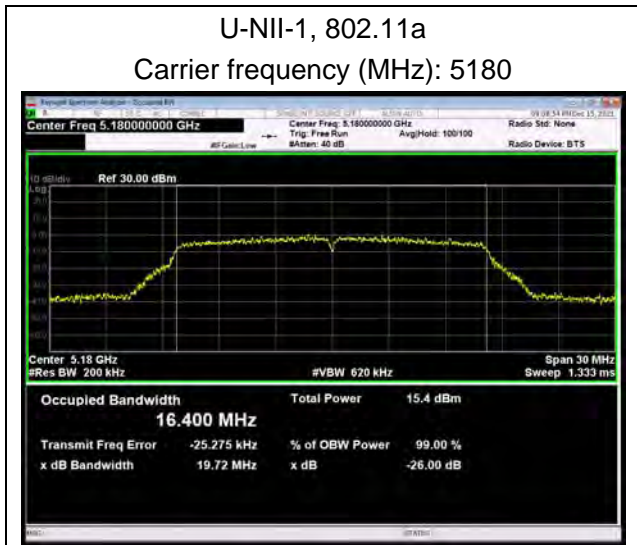
Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	16.40	19.92	PASS
	5200	16.41	20.02	PASS
	5240	16.37	20.07	PASS
802.11n HT20	5180	17.55	20.42	PASS
	5200	17.55	20.37	PASS
	5240	17.58	20.56	PASS
802.11n HT40	5190	35.99	39.75	PASS
	5230	36.00	39.67	PASS
802.11ac VHT20	5180	17.54	20.31	PASS
	5200	17.55	20.28	PASS
	5240	17.54	20.31	PASS
802.11ac VHT40	5190	35.98	39.83	PASS
	5230	35.99	39.63	PASS
802.11ac VHT80	5210	75.35	80.07	PASS

U-NII-2A

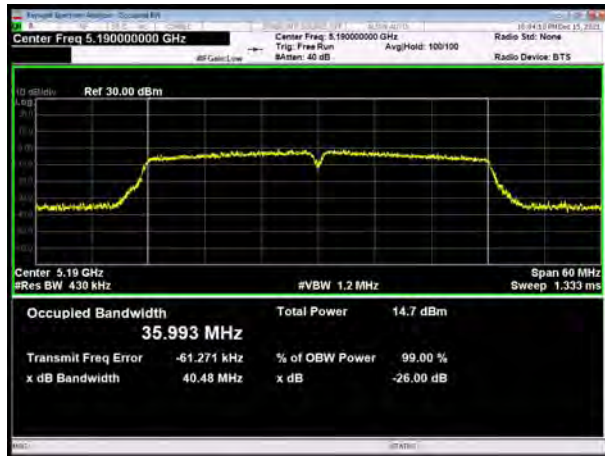
Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.39	19.85	PASS
	5300	16.41	20.10	PASS
	5320	16.37	20.07	PASS
802.11n HT20	5260	17.57	20.33	PASS
	5300	17.55	20.37	PASS
	5320	17.56	20.33	PASS
802.11n HT40	5270	35.97	39.89	PASS
	5310	36.03	40.55	PASS
802.11ac VHT20	5260	17.56	20.28	PASS
	5300	17.55	20.45	PASS
	5320	17.54	20.50	PASS
802.11ac VHT40	5270	36.00	39.56	PASS
	5310	35.95	40.05	PASS
802.11ac VHT80	5290	75.38	80.14	PASS

U-NII-3

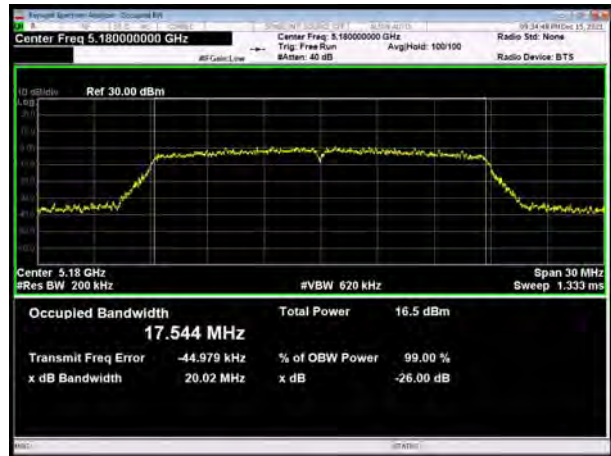
Mode	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	16.41	14.67	500	PASS
	5785	16.39	14.78	500	PASS
	5825	16.37	14.00	500	PASS
802.11n HT20	5745	17.54	15.03	500	PASS
	5785	17.53	16.55	500	PASS
	5825	17.54	15.64	500	PASS
802.11n HT40	5755	36.01	35.07	500	PASS
	5795	36.00	35.08	500	PASS
802.11ac VHT20	5745	17.54	15.10	500	PASS
	5785	17.54	16.26	500	PASS
	5825	17.54	15.06	500	PASS
802.11ac VHT40	5755	35.99	35.08	500	PASS
	5795	35.95	32.80	500	PASS
802.11ac VHT80	5775	75.23	75.07	500	PASS



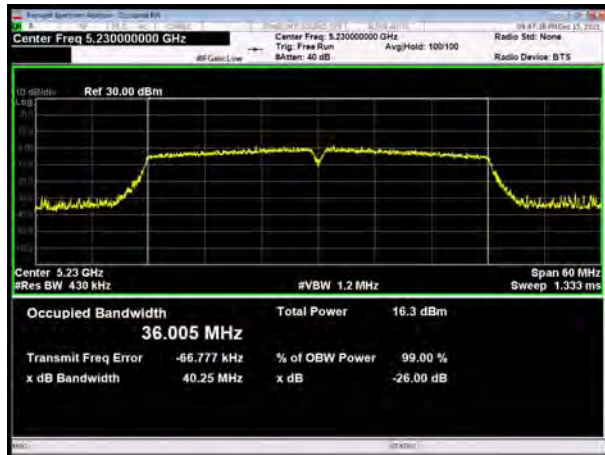
U-NII-1, 802.11n HT40
Carrier frequency (MHz): 5190



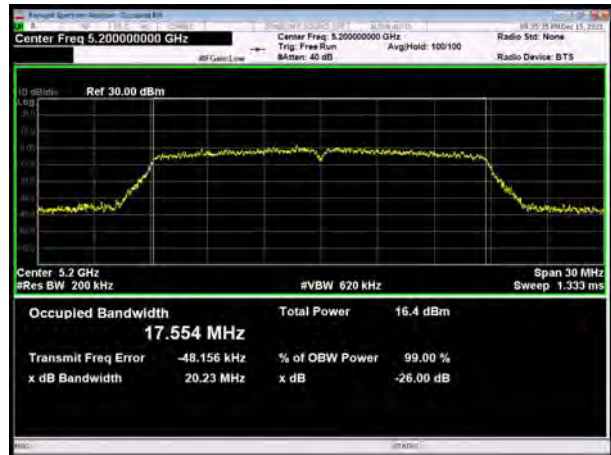
U-NII-1, 802.11ac VHT20
Carrier frequency (MHz): 5180



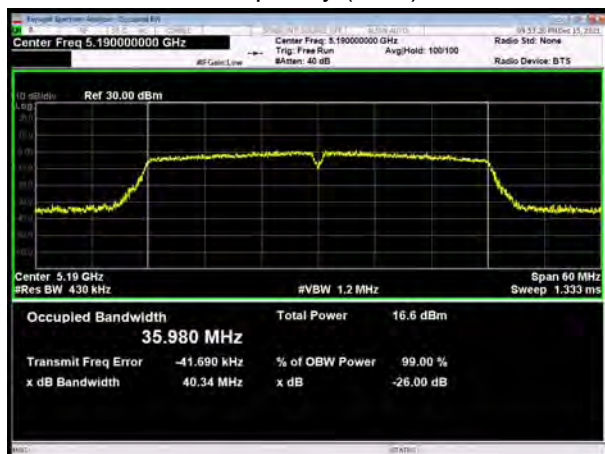
U-NII-1, 802.11n HT40
Carrier frequency (MHz): 5230



U-NII-1, 802.11ac VHT20
Carrier frequency (MHz): 5200



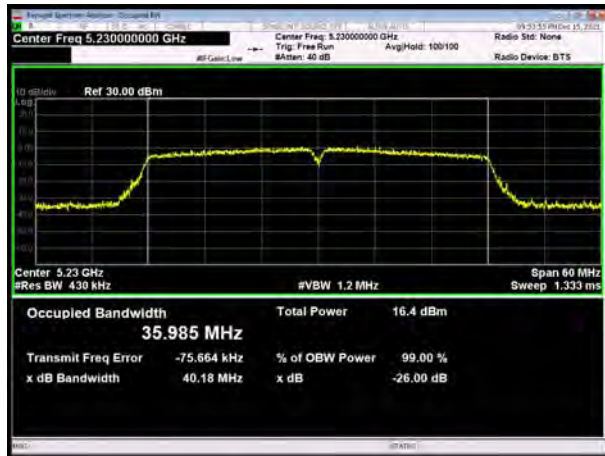
U-NII-1, 802.11ac VHT40
Carrier frequency (MHz): 5190



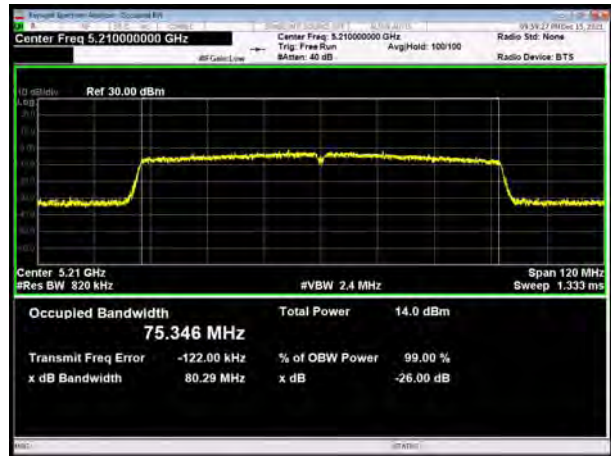
U-NII-1, 802.11ac VHT20
Carrier frequency (MHz): 5240



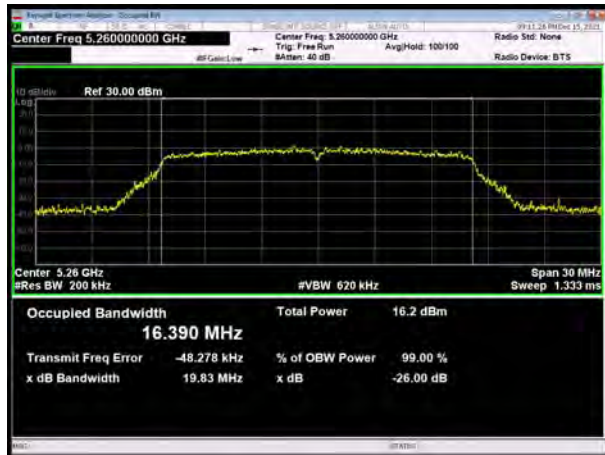
U-NII-1, 802.11ac VHT40
Carrier frequency (MHz): 5230



U-NII-1, 802.11ac VHT80
Carrier frequency (MHz): 5210



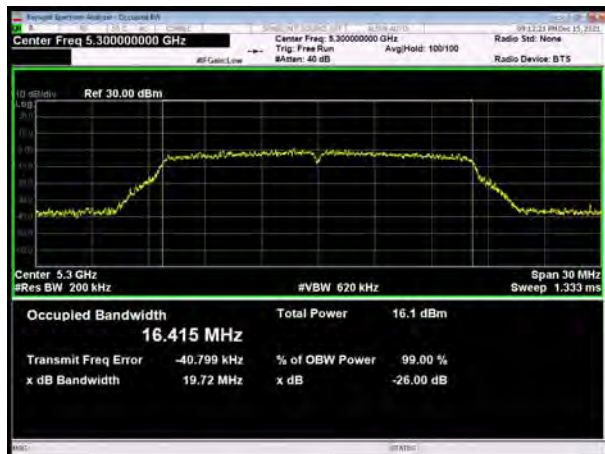
U-NII-2A, 802.11a
Carrier frequency (MHz): 5260



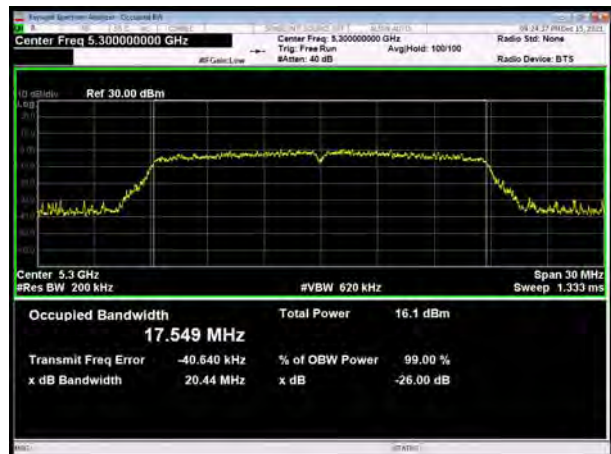
U-NII-2A, 802.11n HT20
Carrier frequency (MHz): 5260

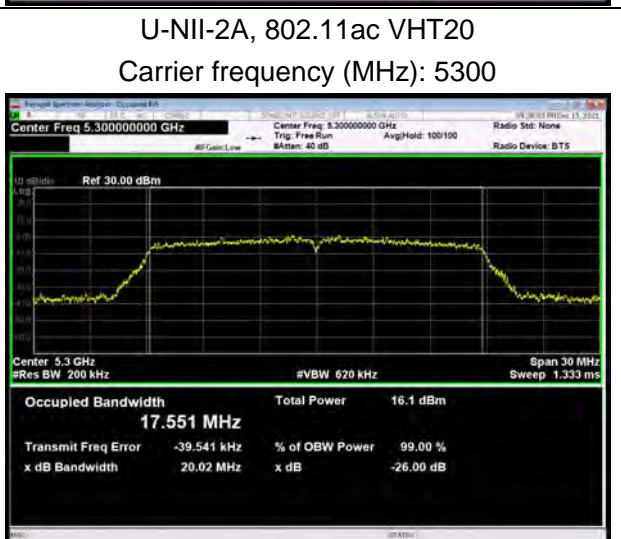
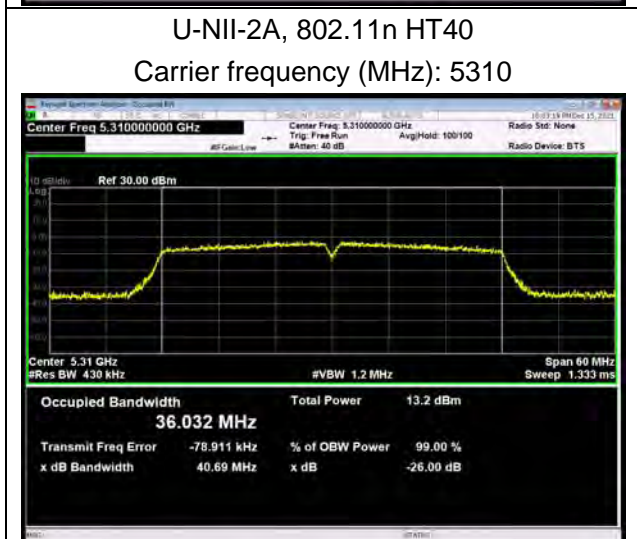
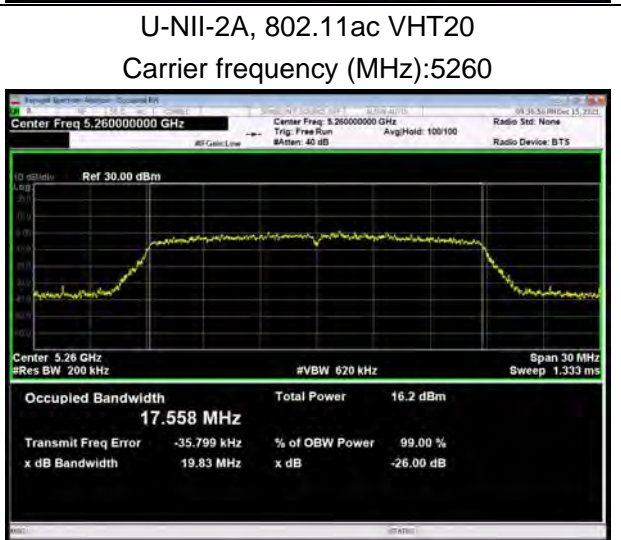
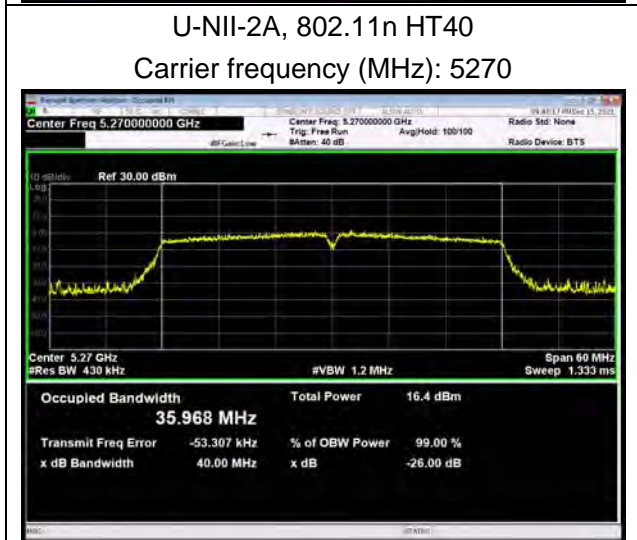
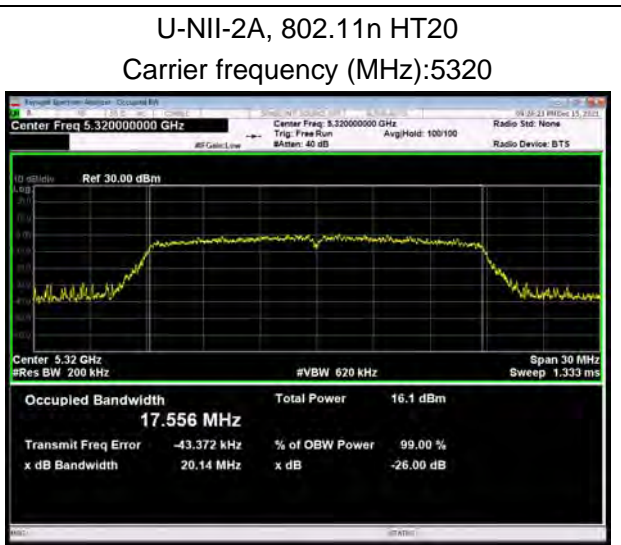
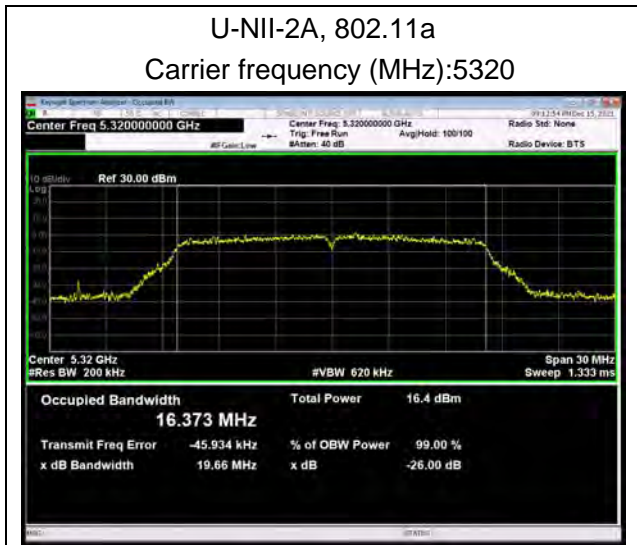


U-NII-2A, 802.11a
Carrier frequency (MHz): 5300

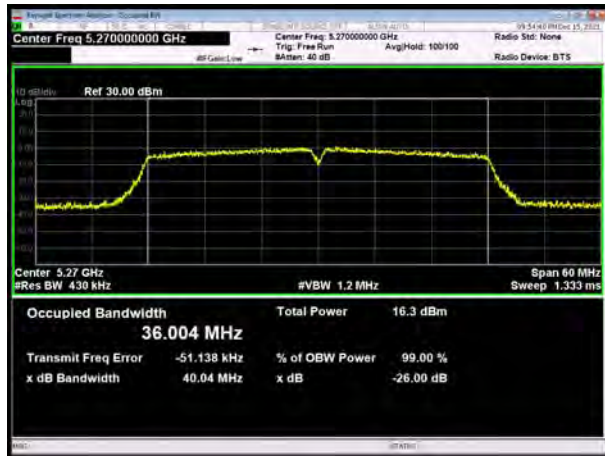


U-NII-2A, 802.11n HT20
Carrier frequency (MHz): 5300

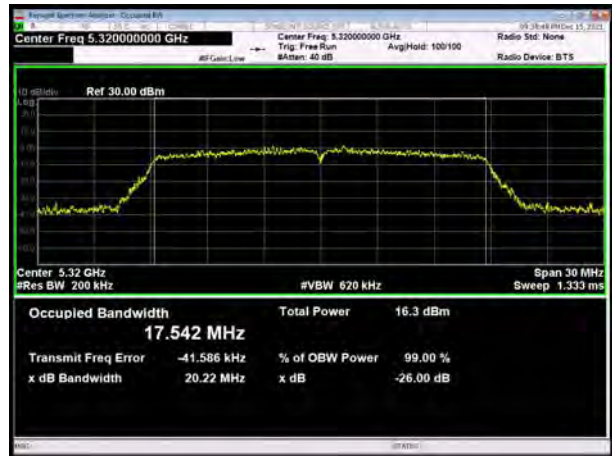




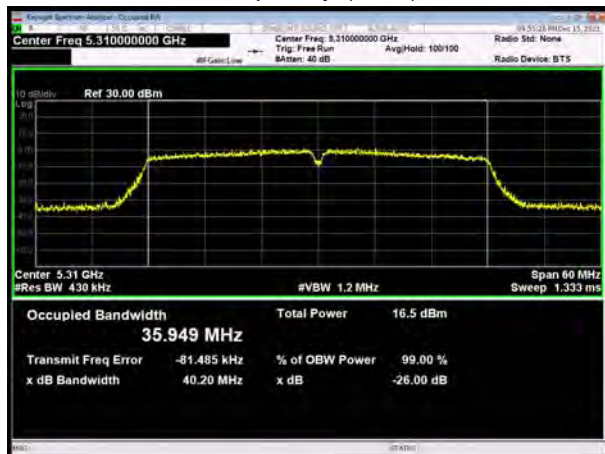
U-NII-2A, 802.11ac VHT40
Carrier frequency (MHz): 5270



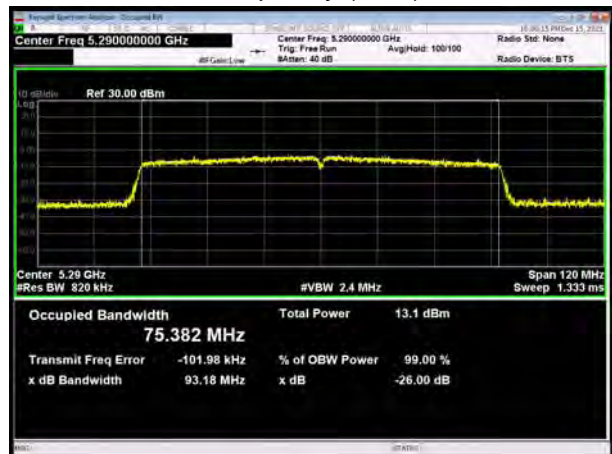
U-NII-2A, 802.11ac VHT20
Carrier frequency (MHz): 5320



U-NII-2A, 802.11ac VHT40
Carrier frequency (MHz): 5310



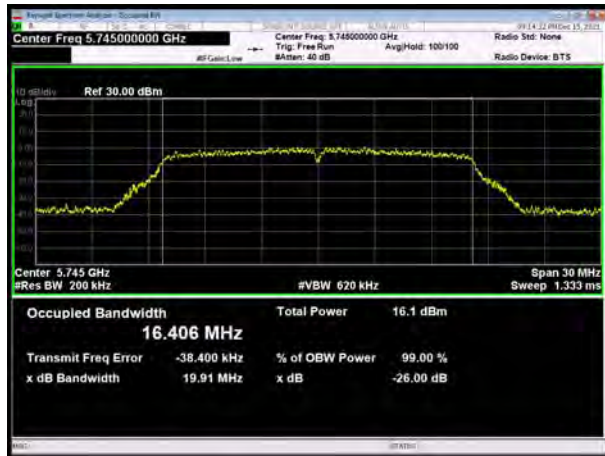
U-NII-2A, 802.11ac VHT80
Carrier frequency (MHz): 5290



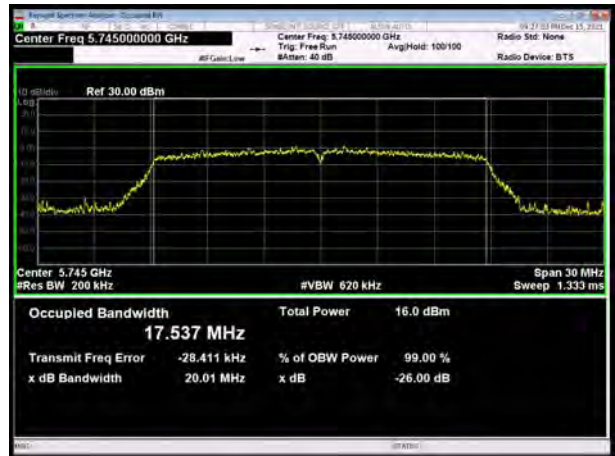


99% bandwidth

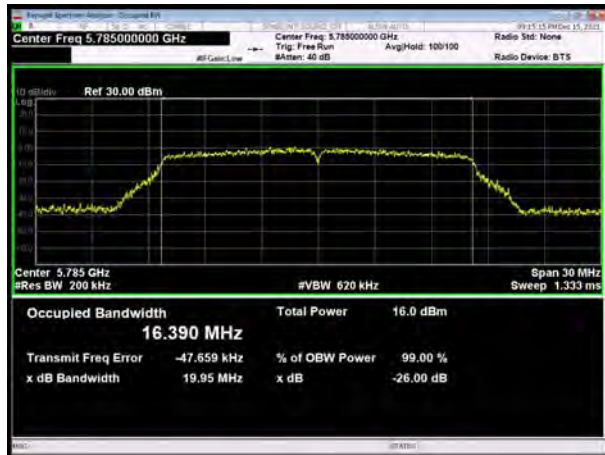
U-NII-3, 802.11a
Carrier frequency (MHz): 5745



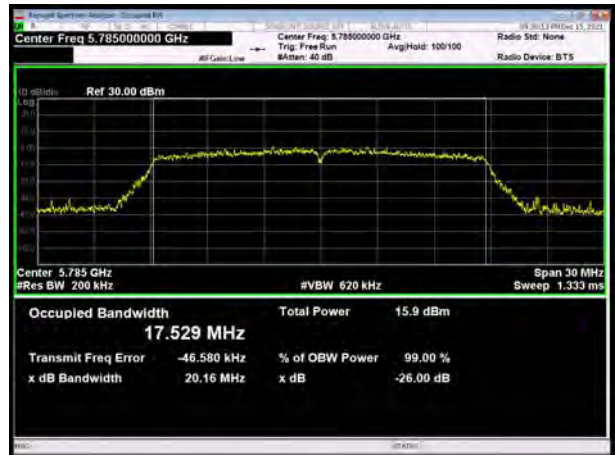
U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5745



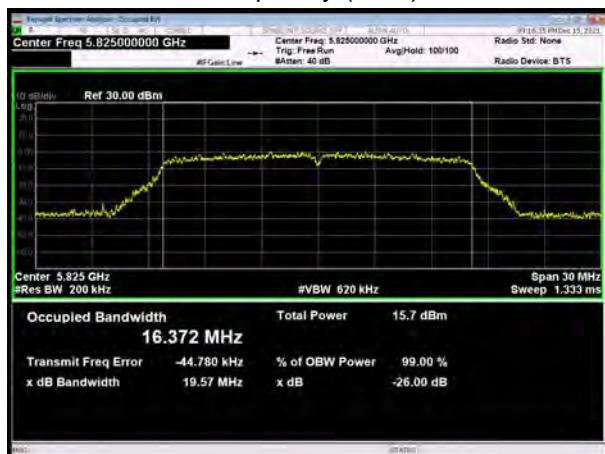
U-NII-3, 802.11a
Carrier frequency (MHz): 5785



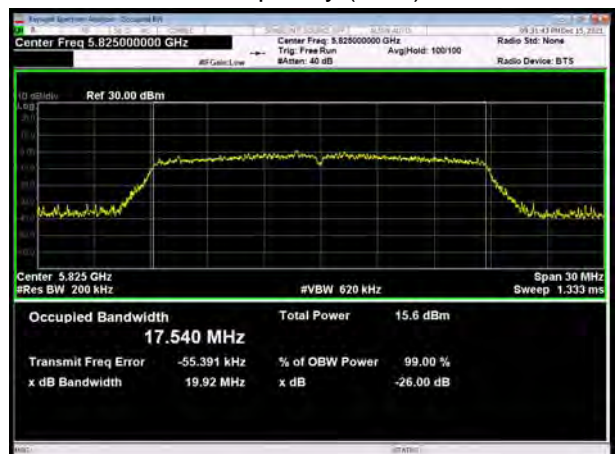
U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5785



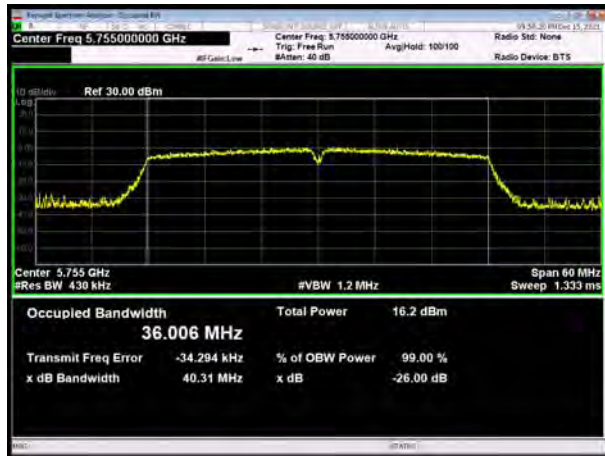
U-NII-3, 802.11a
Carrier frequency (MHz): 5825



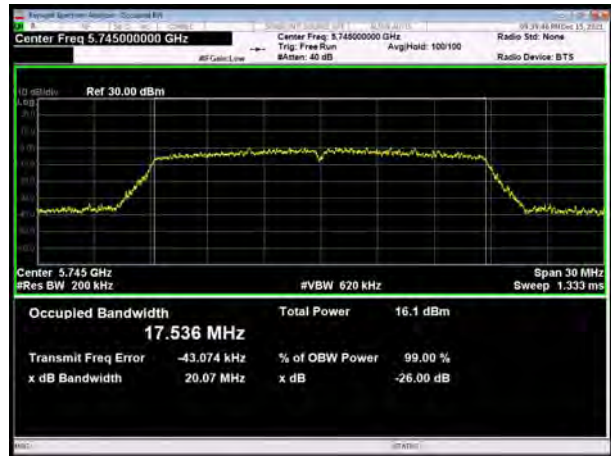
U-NII-3, 802.11n HT20
Carrier frequency (MHz): 5825



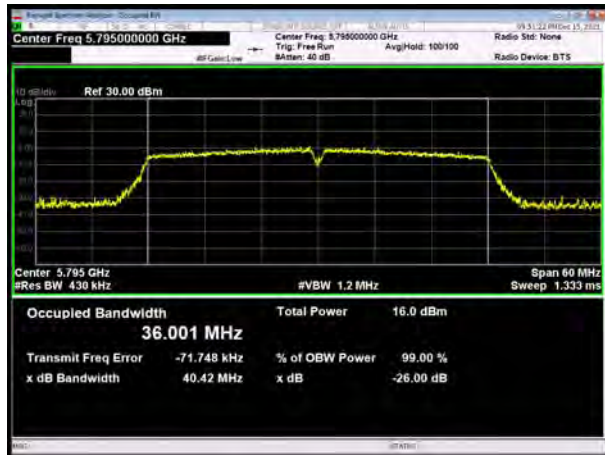
U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5755



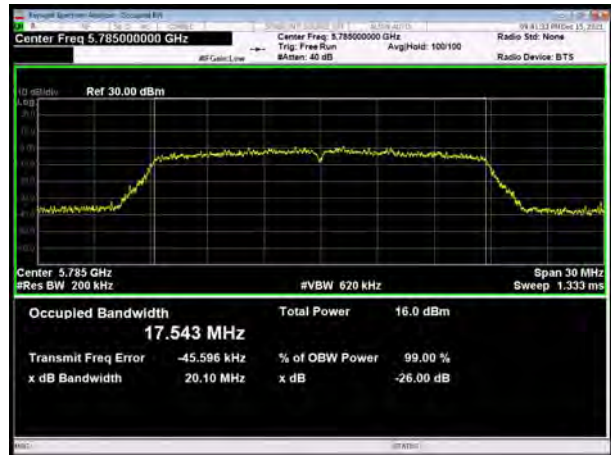
U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5795



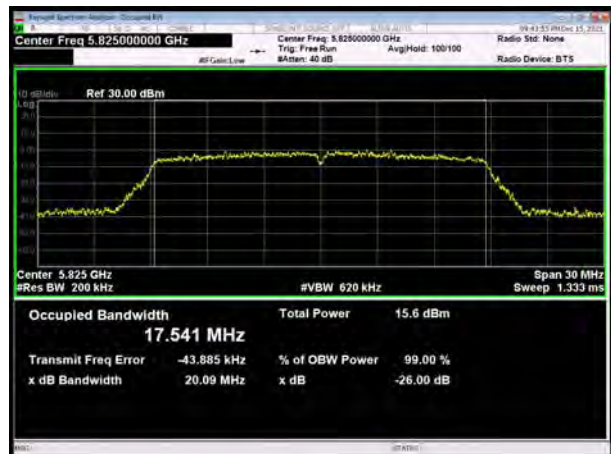
U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5785



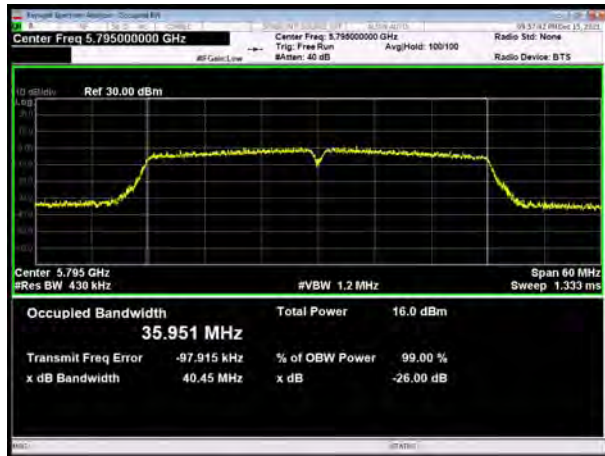
U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5755



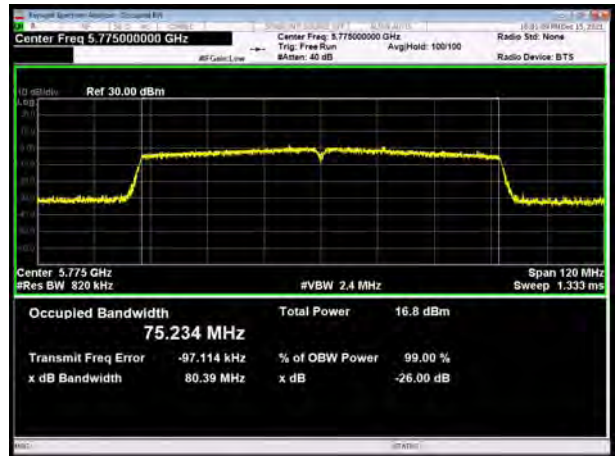
U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5825



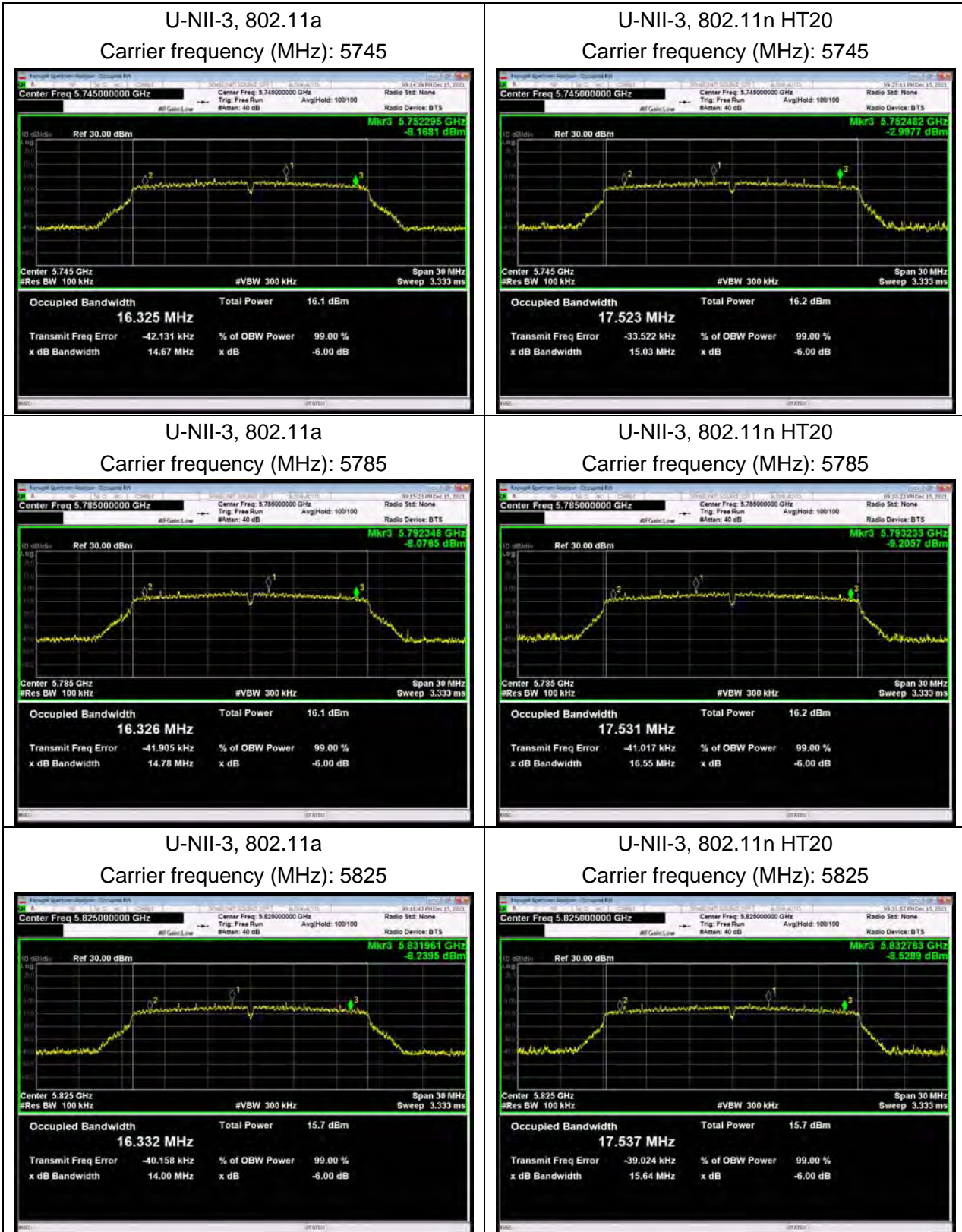
U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5795



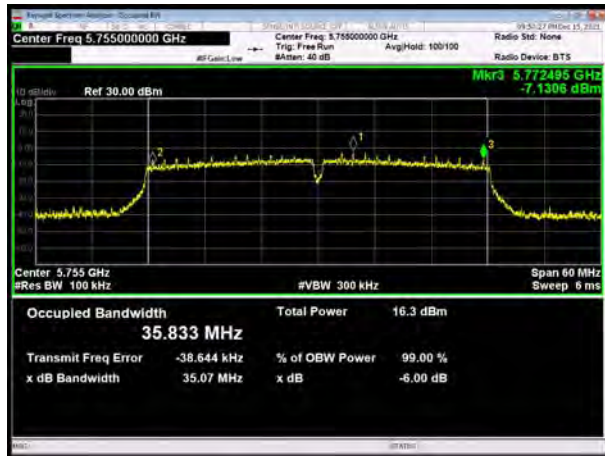
U-NII-3, 802.11ac VHT80
Carrier frequency (MHz): 5775



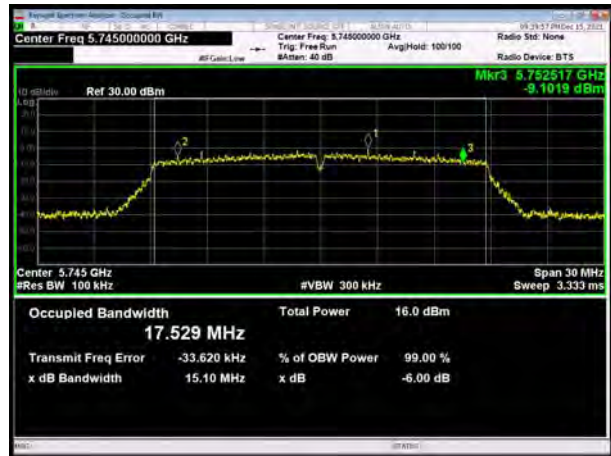
Minimum 6 dB bandwidth



U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5755



U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT40
Carrier frequency (MHz): 5795



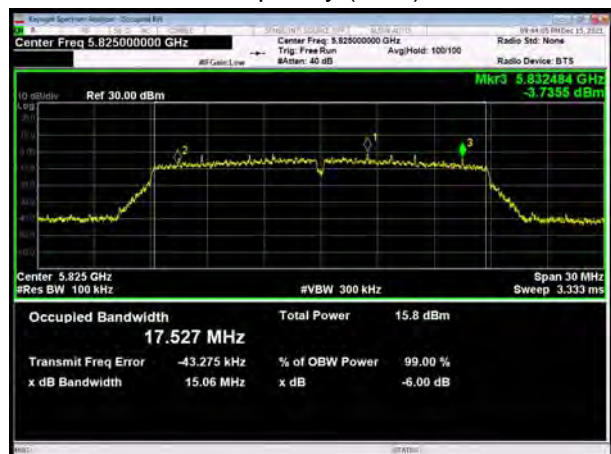
U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5785



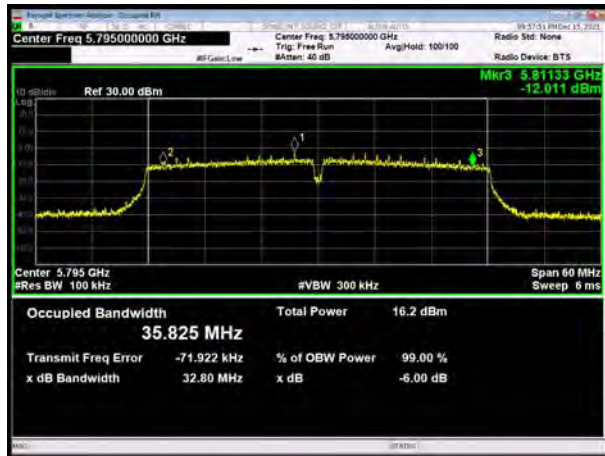
U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5755



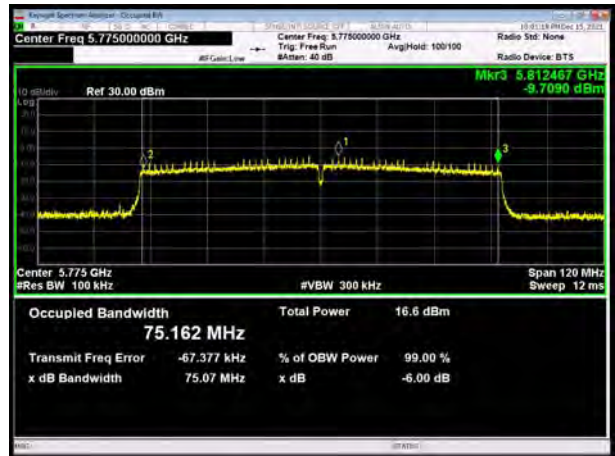
U-NII-3, 802.11ac VHT20
Carrier frequency (MHz): 5825



U-NII-3, 802.11ac VHT40
Carrier frequency (MHz): 5795



U-NII-3, 802.11ac VHT80
Carrier frequency (MHz): 5775



5.2. Average Power Output

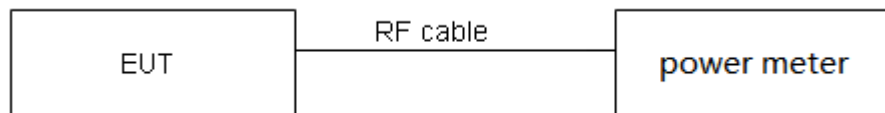
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the average power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use Maximum average Conducted Output Power Level Method in KDB789033 for this test

Test Setup



Limits

Rule FCC Part 15.407(a)(1)(2)(3)

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude

the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) 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. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.44$ dB.

Test Results

Mode	T _{on} (ms)	T _(on+off) (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11a	1.39	1.44	0.967	0.15
802.11n HT20	1.30	1.34	0.964	0.16
802.11n HT40	0.65	0.69	0.936	0.29
802.11ac VHT20	1.31	1.36	0.968	0.14
802.11ac VHT40	0.65	0.70	0.937	0.28
802.11ac VHT80	0.32	0.37	0.880	0.55

Note: when Duty cycle ≥ 0.98 , Duty cycle correction Factor not required.

Power Index								
Channel	802.11a	802.11n HT20	802.11ac VHT20	Channel	802.11n HT40	802.11ac VHT40	Channel	802.11ac VHT80
CH36	15.00	16.00	16.00	CH38	14.00	16.00	CH42	13.00
CH40	16.00	16.00	16.00	CH46	16.00	16.00	/	/
CH48	16.00	16.00	16.00	/	/	/	/	/
CH52	16.00	16.00	16.00	CH54	16.00	16.00	CH58	12.00
CH60	16.00	16.00	16.00	CH62	13.00	16.00	/	/
CH64	16.00	16.00	16.00	/	/	/	/	/
CH149	16.00	16.00	16.00	CH151	16.00	16.00	CH155	16.00
CH157	16.00	16.00	16.00	CH159	16.00	16.00	/	/
CH165	16.00	16.00	16.00	/	/	/	/	/

Test Mode		Channel/Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit(dBm)
U-NII-2A	802.11a	52/5260	19.85	23.98<24	23.98
		60/5300	20.10	24.03>24	24.00
		64/5320	20.07	24.03>24	24.00
	802.11n HT20	52/5260	20.33	24.08>24	24.00
		60/5300	20.37	24.09>24	24.00
		64/5320	20.33	24.08>24	24.00
	802.11n HT40	54/5270	39.89	27.01>24	24.00
		62/5310	40.55	27.08>24	24.00
	802.11ac VHT20	52/5260	20.28	24.07>24	24.00
		60/5300	20.45	24.11>24	24.00
		64/5320	20.50	24.12>24	24.00
	802.11ac VHT40	54/5270	39.56	26.97>24	24.00
		62/5310	40.05	27.03>24	24.00
802.11ac VHT80	58/5290	80.14	30.04>24	24.00	
Note: 250mW=24dBm					

Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor

U-NII-1

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	13.38	13.53	24.00	PASS
	40/5200	15.11	15.26	24.00	PASS
	48/5240	15.22	15.37	24.00	PASS
802.11n HT20	36/5180	15.12	15.28	24.00	PASS
	40/5200	15.18	15.34	24.00	PASS
	48/5240	15.47	15.63	24.00	PASS
802.11n HT40	38/5190	12.04	12.33	24.00	PASS
	46/5230	15.11	15.40	24.00	PASS
802.11ac VHT20	36/5180	15.34	15.48	24.00	PASS
	40/5200	15.22	15.36	24.00	PASS
	48/5240	15.25	15.39	24.00	PASS
802.11ac VHT40	38/5190	15.23	15.51	24.00	PASS
	46/5230	15.22	15.50	24.00	PASS
802.11ac VHT80	42/5210	11.38	11.93	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2A

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	15.23	15.38	23.98	PASS
	60/5300	15.38	15.53	24.00	PASS
	64/5320	15.33	15.48	24.00	PASS
802.11n HT20	52/5260	15.47	15.63	24.00	PASS
	60/5300	15.34	15.50	24.00	PASS
	64/5320	15.26	15.42	24.00	PASS
802.11n HT40	54/5270	15.31	15.60	24.00	PASS
	62/5310	10.42	10.71	24.00	PASS
802.11ac VHT20	52/5260	15.62	15.76	24.00	PASS
	60/5300	15.59	15.73	24.00	PASS
	64/5320	15.32	15.46	24.00	PASS
802.11ac VHT40	54/5270	15.23	15.51	24.00	PASS
	62/5310	15.32	15.60	24.00	PASS
802.11ac VHT80	58/5290	10.66	11.21	24.00	PASS

Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor

U-NII-3

Test Mode	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	14.91	15.06	30.00	PASS
	157/5785	14.92	15.07	30.00	PASS
	165/5825	14.95	15.10	30.00	PASS
802.11n HT20	149/5745	14.79	14.95	30.00	PASS
	157/5785	14.85	15.01	30.00	PASS
	165/5825	15.08	15.24	30.00	PASS
802.11n HT40	151/5755	14.88	15.17	30.00	PASS
	159/5795	14.72	15.01	30.00	PASS
802.11ac VHT20	149/5745	14.71	14.85	30.00	PASS
	157/5785	14.77	14.91	30.00	PASS
	165/5825	14.94	15.08	30.00	PASS
802.11ac VHT40	151/5755	14.81	15.09	30.00	PASS
	159/5795	14.68	14.96	30.00	PASS
802.11ac VHT80	155/5775	14.64	15.19	30.00	PASS

Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor

5.3. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency stability with respect to ambient temperature

- a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.
- b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.
- c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.
- e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.
- f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.
- g) Measure the frequency at each of frequencies specified in 5.6.
- h) Switch OFF the EUT but do not switch OFF the oscillator heater.
- i) Lower the chamber temperature by not more than 10°C, and allow the temperature inside the chamber to stabilize.
- j) Repeat step f) through step i) down to the lowest specified temperature.

2. Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15°C to +25 °C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

- a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

- b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
- c) Measure the frequency at each of the frequencies specified in 5.6.
- d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 936\text{Hz}$

**Test Results**

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
3.85	-20	5199.997418	5199.991949	5199.988138	5199.980401
3.85	-10	5200.006067	5199.989769	5199.986816	5199.978918
3.85	0	5200.003783	5199.984394	5199.979196	5199.969745
3.85	10	5200.002215	5199.979119	5199.976371	5199.963669
3.85	20	5199.996393	5199.975062	5199.973078	5199.960532
3.85	30	5199.988797	5199.966697	5199.973058	5199.952692
3.85	40	5199.986109	5199.957591	5199.971766	5199.946348
3.85	50	5199.978976	5199.953461	5199.967442	5199.943717
3.40	20	5199.975877	5199.945093	5199.964880	5199.937759
4.33	20	5199.970732	5199.940356	5199.964351	5199.929962
Max. ΔMHz		-0.029268222	-0.059644284	-0.035649189	-0.070038241
PPM		-5.628504327	-11.47005457	-6.855613363	-13.46889245

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
3.85	-20	5299.997978	5299.990354	5299.983669	5299.979821
3.85	-10	5299.988598	5299.983157	5299.979026	5299.971444
3.85	0	5299.985594	5299.981580	5299.974393	5299.966601
3.85	10	5299.982763	5299.980872	5299.970969	5299.957046
3.85	20	5299.980977	5299.977222	5299.969827	5299.950077
3.85	30	5299.976865	5299.973354	5299.963873	5299.943626
3.85	40	5299.973103	5299.973058	5299.963045	5299.940439
3.85	50	5299.970857	5299.968464	5299.962748	5299.938211
3.40	20	5299.962967	5299.962350	5299.957339	5299.931119
4.33	20	5299.961096	5299.960831	5299.950368	5299.921501
Max. ΔMHz		-0.038903909	-0.039169283	-0.049632265	-0.078498571
PPM		-7.340360212	-7.390430825	-9.364578358	-14.81105117

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
3.85	-20	5784.995800	5784.986456	5784.976966	5784.974302
3.85	-10	5784.988813	5784.985370	5784.976564	5784.970975
3.85	0	5784.978963	5784.978455	5784.971191	5784.966542
3.85	10	5784.974277	5784.974199	5784.967111	5784.964550
3.85	20	5784.964339	5784.966835	5784.959261	5784.957973
3.85	30	5784.959479	5784.962323	5784.949627	5784.953324
3.85	40	5784.952182	5784.960691	5784.941362	5784.946615
3.85	50	5784.951519	5784.955544	5784.931747	5784.943346
3.40	20	5784.941935	5784.949842	5784.930960	5784.938006
4.33	20	5784.937280	5784.944634	5784.924709	5784.934133
Max. ΔMHz		-0.062720389	-0.055366287	-0.075290545	-0.06586722
PPM		-10.84189953	-9.570663294	-13.01478745	-11.38586337

5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

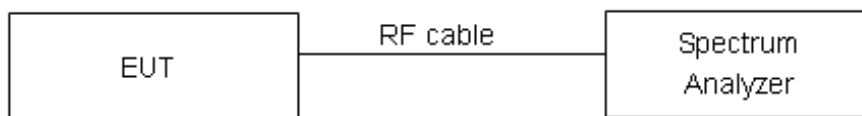
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

Set RBW = 1MHz, VBW =3MHz for the band 5.150-5.250GHz, 5.250-5.350GHz.

Set RBW = 470kHz, VBW =1.5MHz for the band 5.725-5.850GHz

The conducted PSD is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule FCC Part 15.407(a)(1)/ Part 15.407(a)(2) / Part 15.407(a)(3)

For an indoor 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. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Bands/MHz	Limits
5150-5250	17/11dBm/MHz
5.25-5.35 GHz	11dBm/MHz
5725-5850	30dBm/500kHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U = 0.75\text{dB}$.

Test Results:

Note: Power Spectral Density =Read Value+Duty cycle correction factor

U-NII-1

Mode	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36	0.33	0.48	11.00	PASS
	40	1.39	1.54	11.00	PASS
	48	1.20	1.35	11.00	PASS
802.11n HT20	36	1.21	1.37	11.00	PASS
	40	1.33	1.49	11.00	PASS
	48	1.11	1.27	11.00	PASS
802.11n HT40	38	-3.80	-3.51	11.00	PASS
	46	-1.71	-1.42	11.00	PASS
802.11ac VHT20	36	1.31	1.45	11.00	PASS
	40	0.89	1.03	11.00	PASS
	48	0.81	0.95	11.00	PASS
802.11ac VHT40	38	-2.01	-1.73	11.00	PASS
	46	-2.08	-1.80	11.00	PASS
802.11ac VHT80	42	-8.43	-7.88	11.00	PASS

U-NII-2A

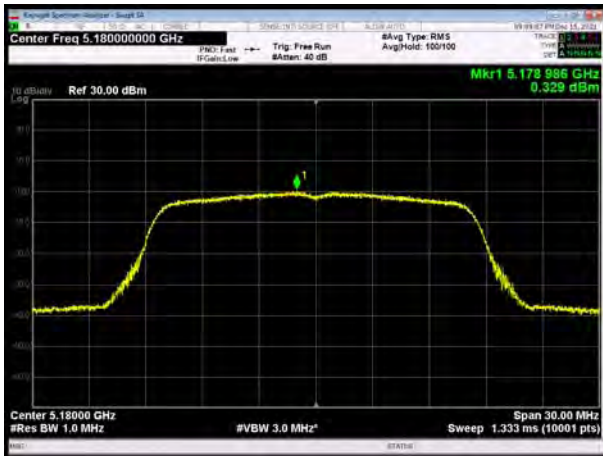
Mode	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52	1.18	1.33	11.00	PASS
	60	1.09	1.24	11.00	PASS
	64	1.28	1.43	11.00	PASS
802.11n HT20	52	0.88	1.04	11.00	PASS
	60	0.63	0.79	11.00	PASS
	64	0.99	1.15	11.00	PASS
802.11n HT40	54	-2.01	-1.72	11.00	PASS
	62	-5.31	-5.02	11.00	PASS
802.11ac VHT20	52	0.83	0.97	11.00	PASS
	60	0.74	0.88	11.00	PASS
	64	1.19	1.33	11.00	PASS
802.11ac VHT40	54	-2.06	-1.78	11.00	PASS
	62	-2.20	-1.92	11.00	PASS
802.11ac VHT80	58	-9.59	-9.04	11.00	PASS

U-NII-3

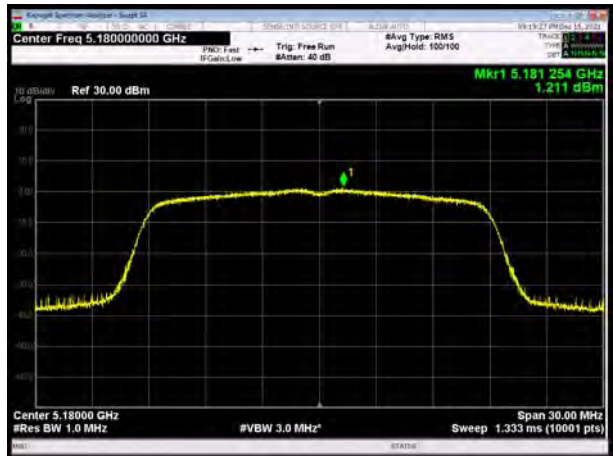
Mode	Channel Number	Read Value (dBm/470kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149	-2.46	-2.04	30.00	PASS
	157	-2.15	-1.73	30.00	PASS
	165	-2.82	-2.40	30.00	PASS
802.11n HT20	149	-2.70	-2.27	30.00	PASS
	157	-2.70	-2.27	30.00	PASS
	165	-3.12	-2.69	30.00	PASS
802.11n HT40	151	-5.31	-4.75	30.00	PASS
	159	-6.11	-5.55	30.00	PASS
802.11ac VHT20	149	-2.56	-2.15	30.00	PASS
	157	-2.43	-2.02	30.00	PASS
	165	-2.92	-2.51	30.00	PASS
802.11ac VHT40	151	-5.73	-5.18	30.00	PASS
	159	-6.06	-5.51	30.00	PASS
802.11ac VHT80	155	-9.28	-8.46	30.00	PASS

Note: PSD=Read Value + Duty cycle correction factor+10*LOG10(500/470)

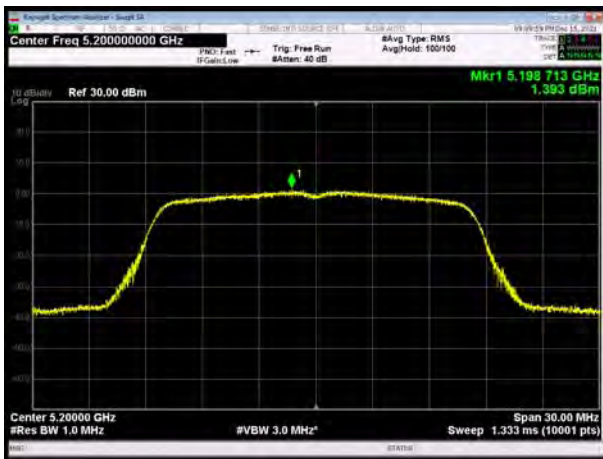
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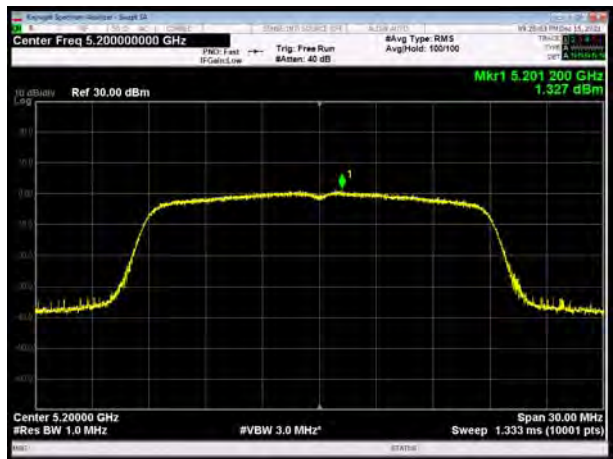
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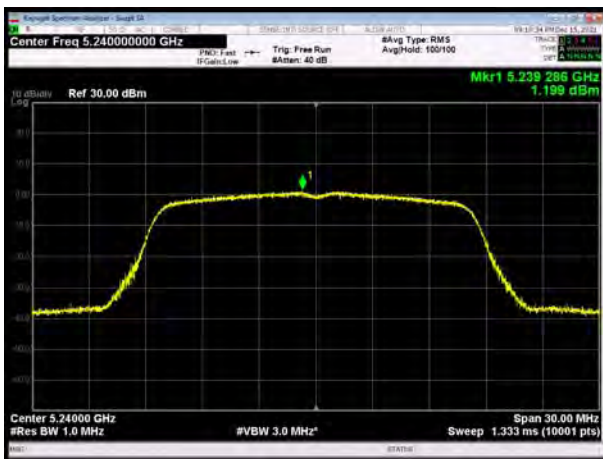
U-NII-1, 802.11a, Channel No.: 40



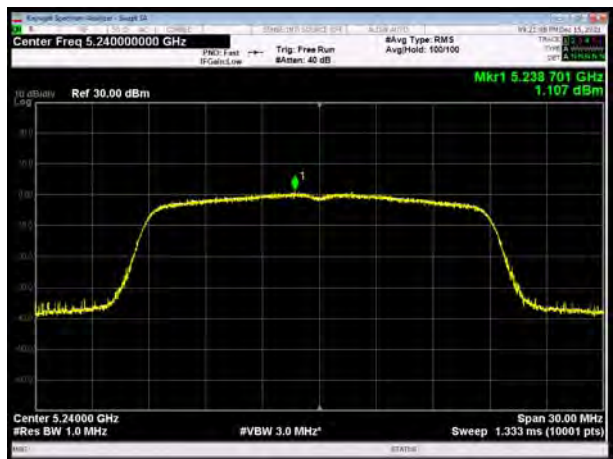
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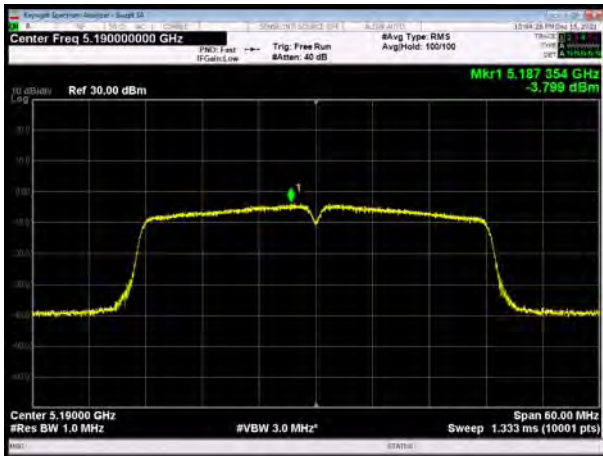
U-NII-1, 802.11a, Channel No.: 48



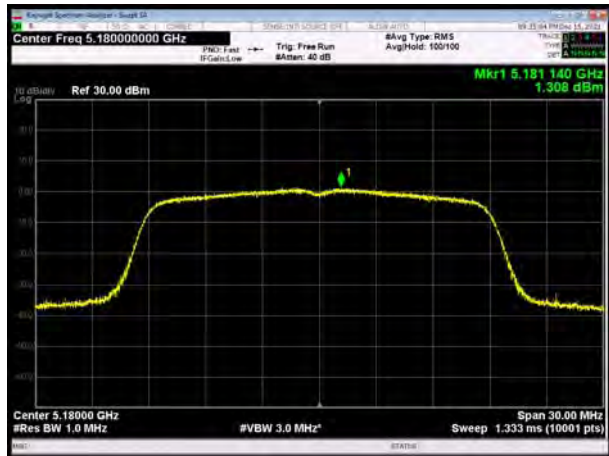
U-NII-1, 802.11n HT20, Channel No.: 48



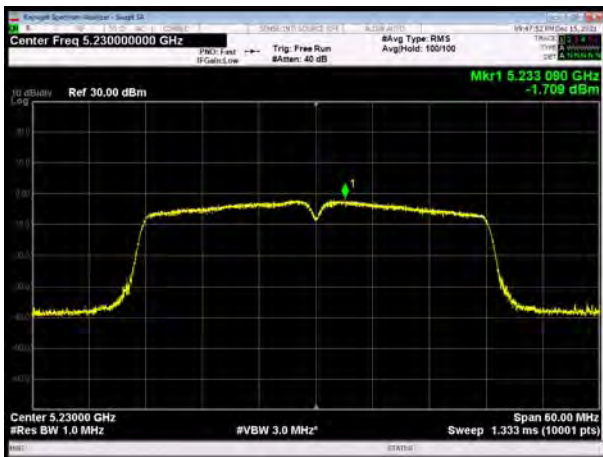
U-NII-1, 802.11n HT40, Channel No.: 38



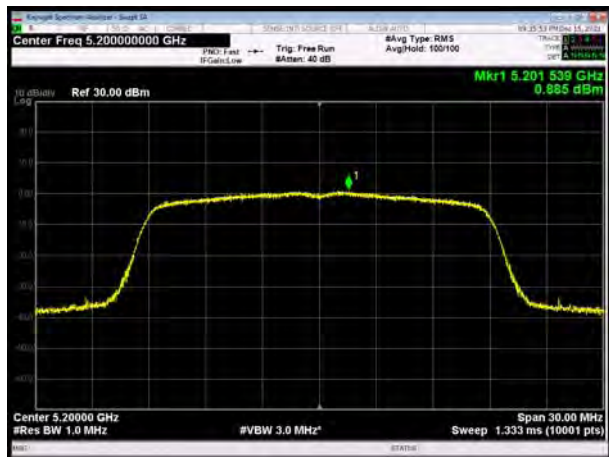
U-NII-1, 802.11ac VHT20, Channel No.: 36



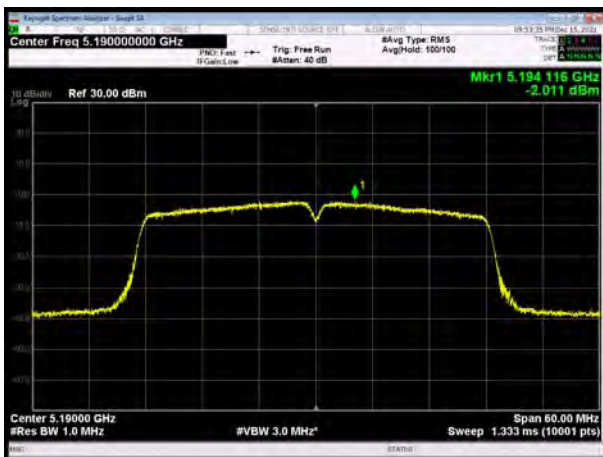
U-NII-1, 802.11n HT40, Channel No.: 46



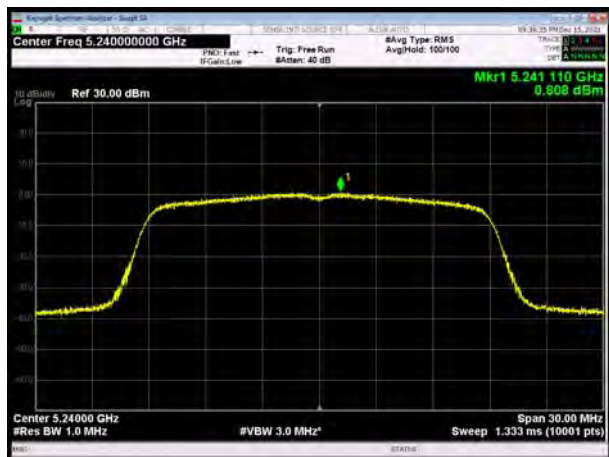
U-NII-1, 802.11ac VHT20, Channel No.: 40



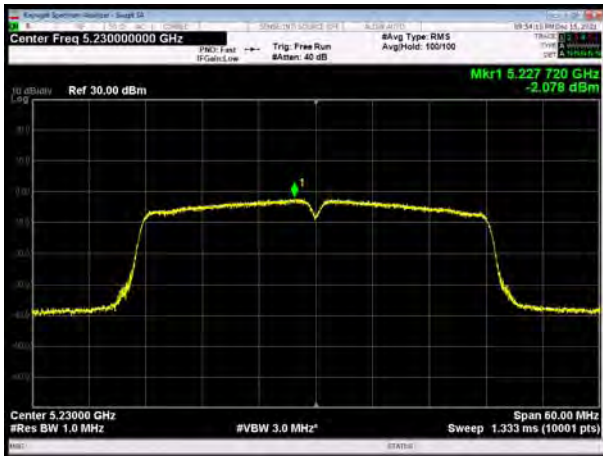
U-NII-1, 802.11ac VHT40, Channel No.: 38



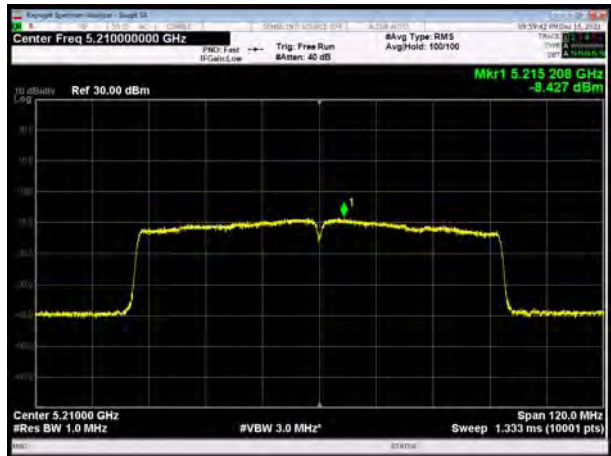
U-NII-1, 802.11ac VHT20, Channel No.: 48



U-NII-1, 802.11ac VHT40, Channel No.: 46



U-NII-1, 802.11ac VHT80, Channel No.: 42



U-NII-2A, 802.11a, Channel No.: 52



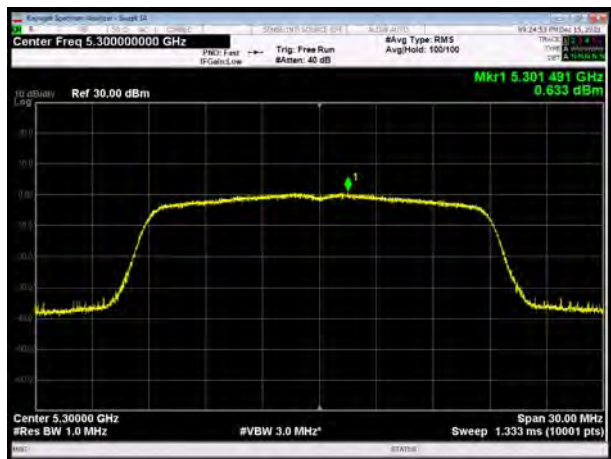
U-NII-2A, 802.11n HT20, Channel No.: 52



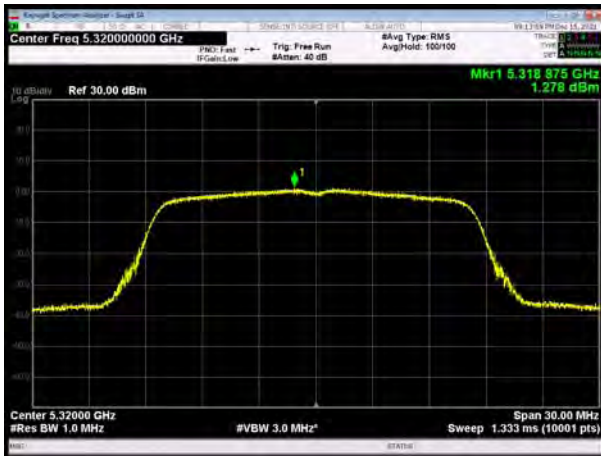
U-NII-2A, 802.11a, Channel No.: 60



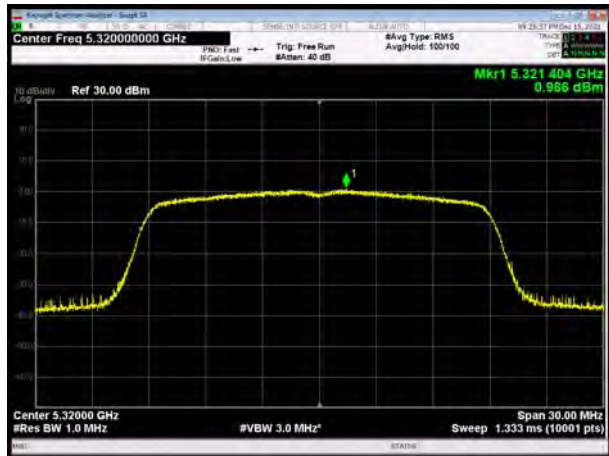
U-NII-2A, 802.11n HT20, Channel No.: 60



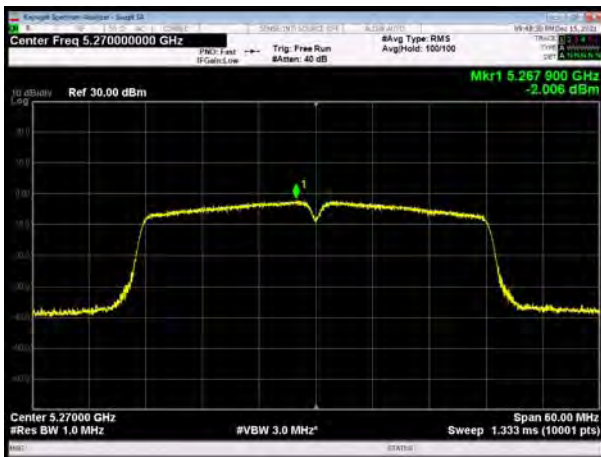
U-NII-2A, 802.11a, Channel No.: 64



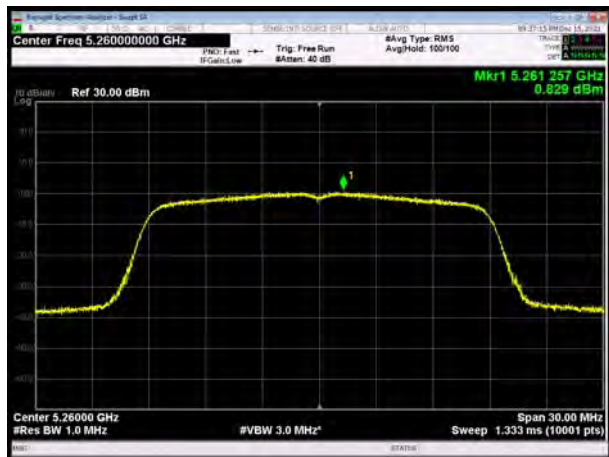
U-NII-2A, 802.11n HT20, Channel No.: 64



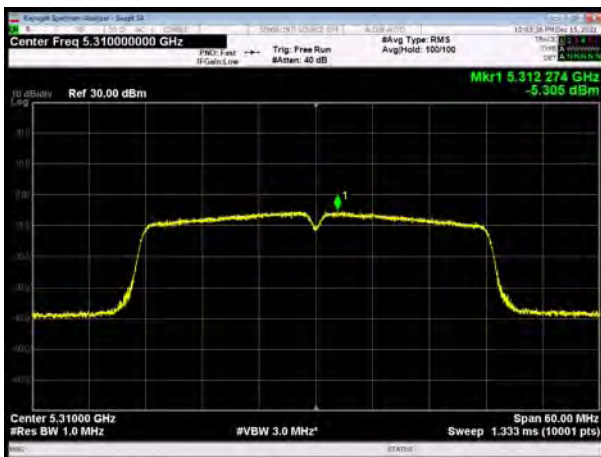
U-NII-2A, 802.11n HT40, Channel No.: 54



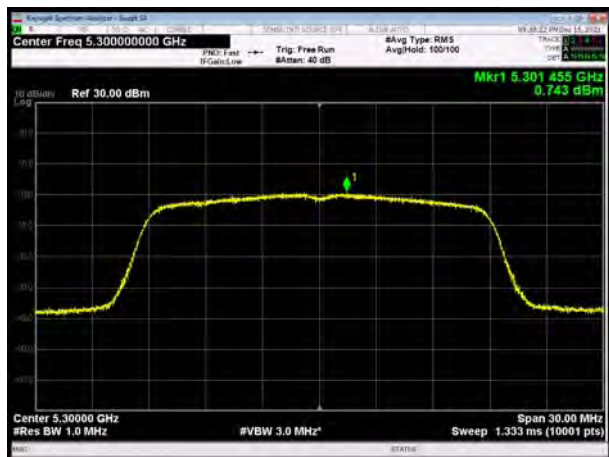
U-NII-2A, 802.11ac VHT20, Channel No.:52



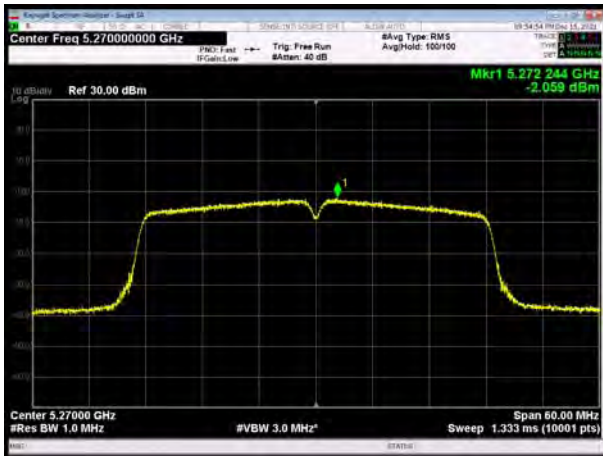
U-NII-2A, 802.11n HT40, Channel No.: 62



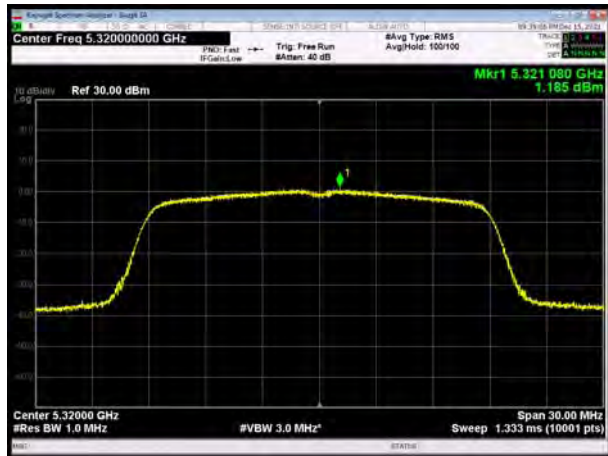
U-NII-2A, 802.11ac VHT20, Channel No.: 60



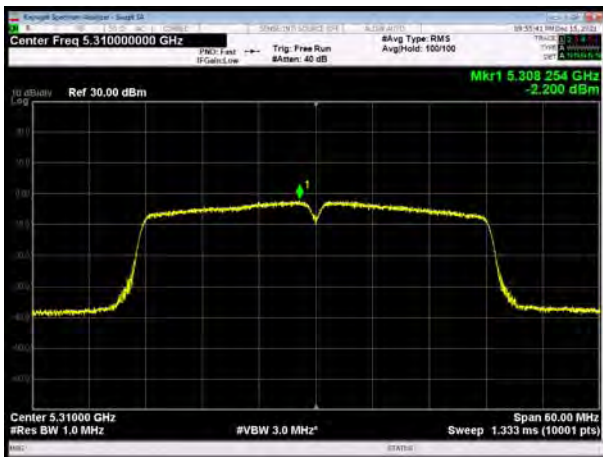
U-NII-2A, 802.11ac VHT40, Channel No.: 54



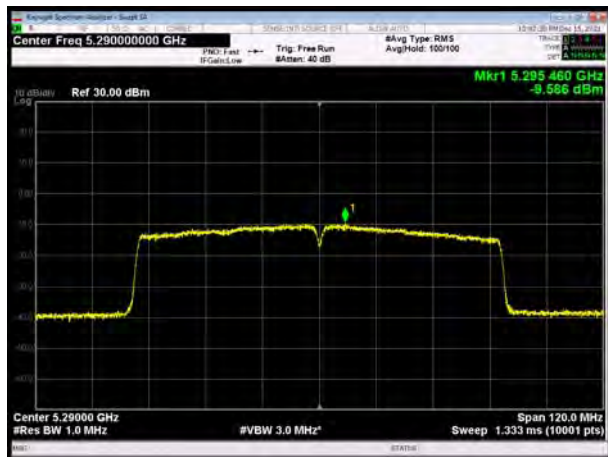
U-NII-2A, 802.11ac VHT20, Channel No.: 64



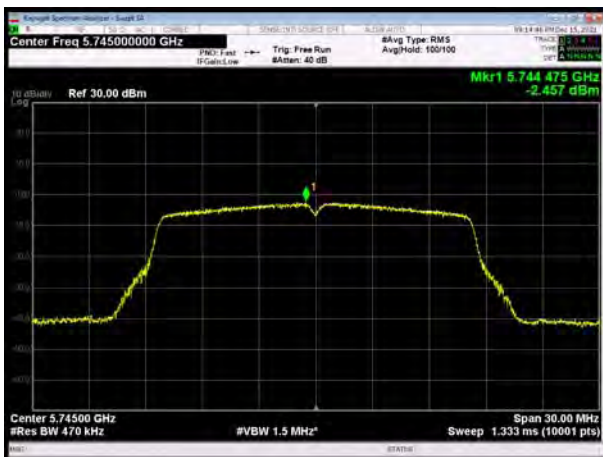
U-NII-2A, 802.11ac VHT40, Channel No.: 62



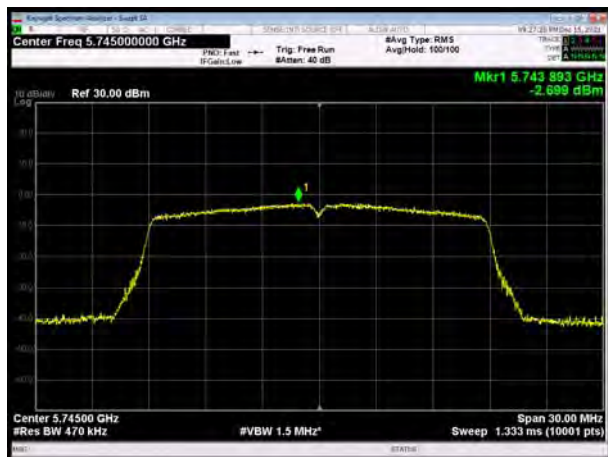
U-NII-2A, 802.11ac VHT80, Channel No.: 58



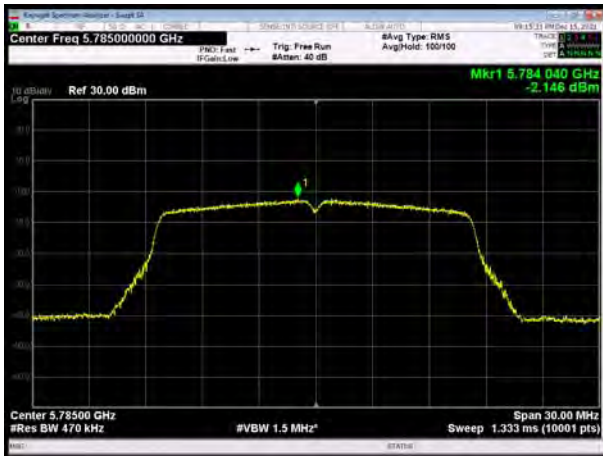
U-NII-3, 802.11a, Channel No.: 149



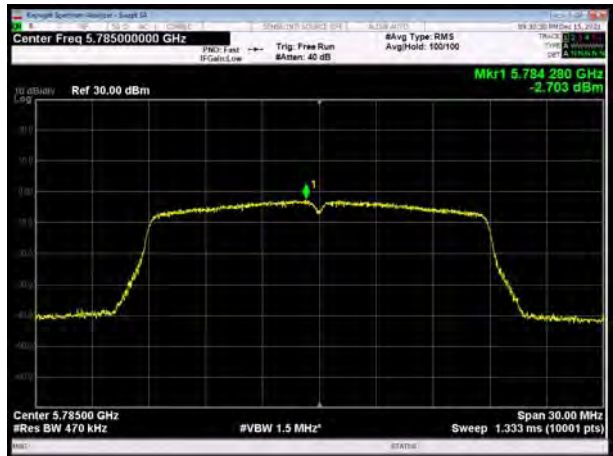
U-NII-3, 802.11n HT20, Channel No.: 149



U-NII-3, 802.11a, Channel No.: 157



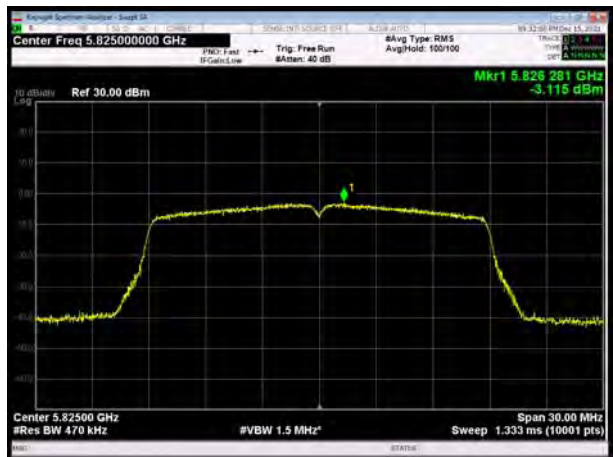
U-NII-3, 802.11n HT20, Channel No.: 157



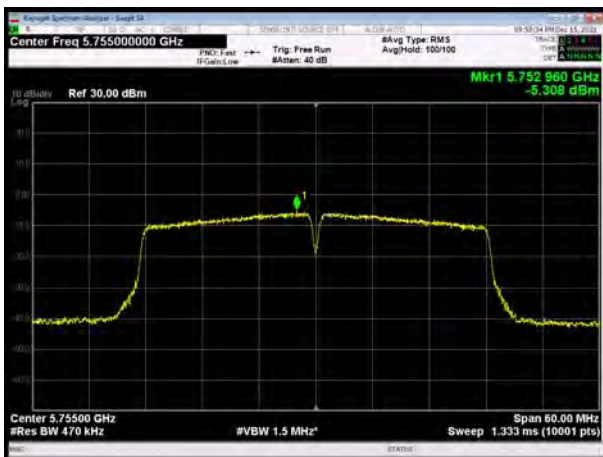
U-NII-3, 802.11a, Channel No.: 165



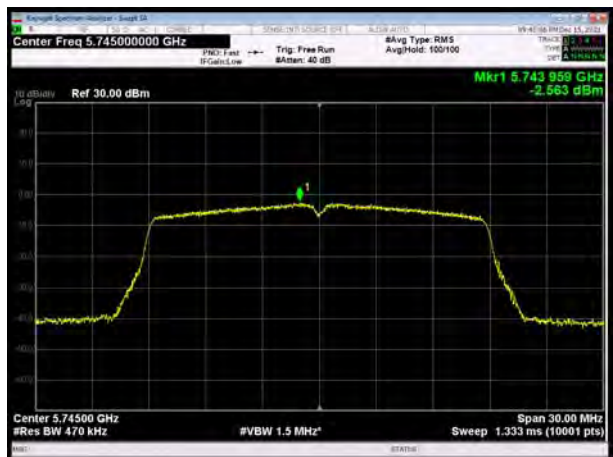
U-NII-3, 802.11n HT20, Channel No.: 165



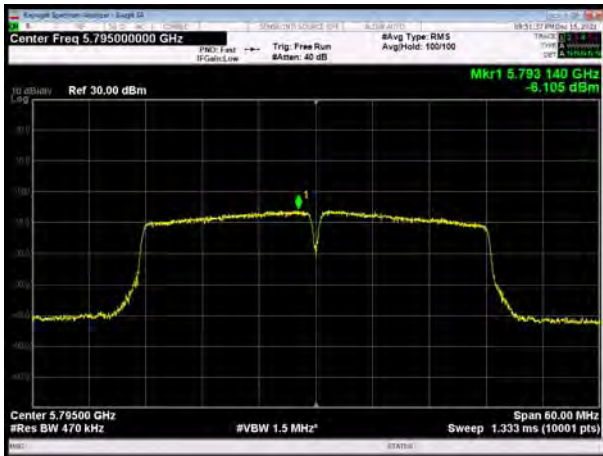
-NII-3, 802.11n HT40, Channel No.: 151



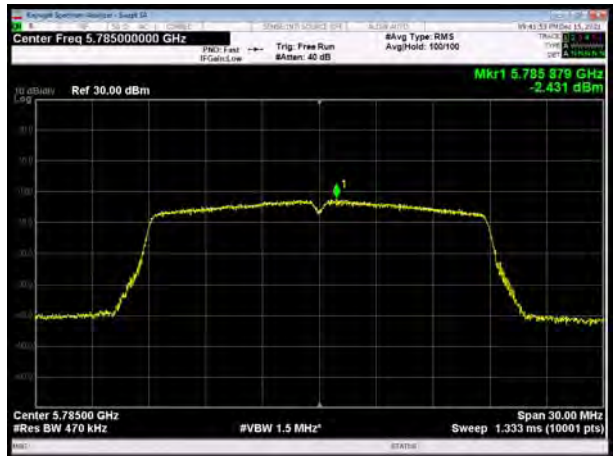
U-NII-3, 802.11ac VHT20, Channel No.: 149



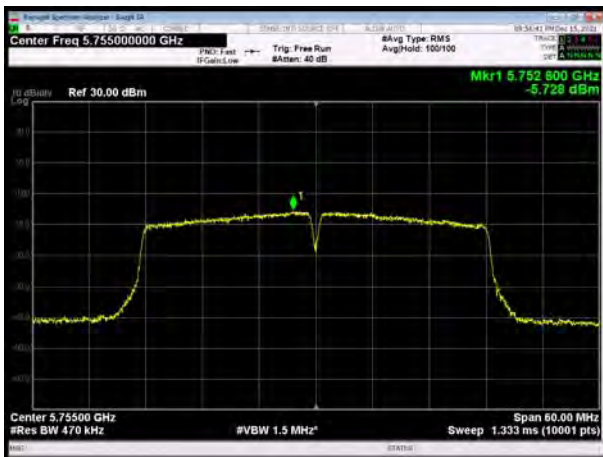
U-NII-3, 802.11n HT40, Channel No.: 159



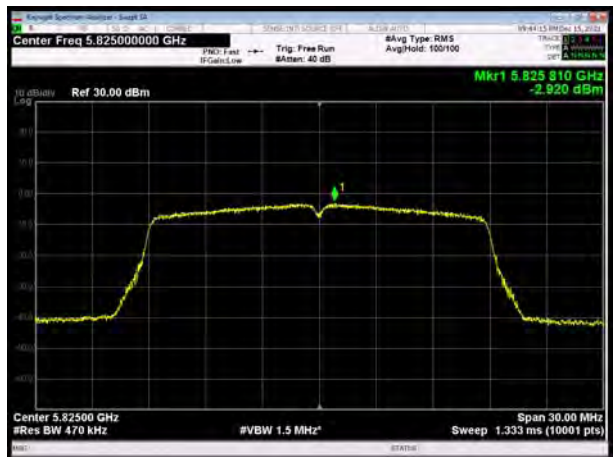
U-NII-3, 802.11ac VHT20, Channel No.: 157



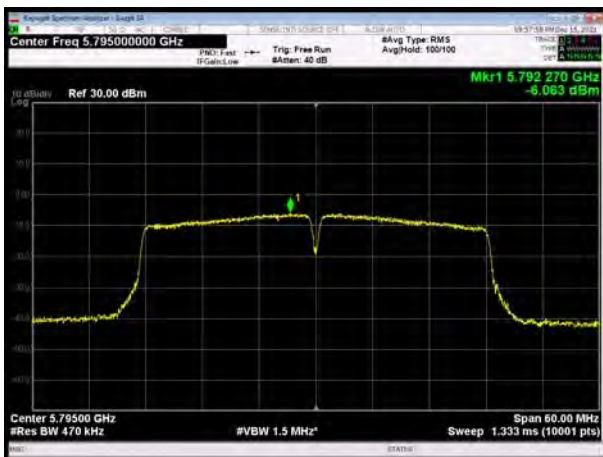
U-NII-3, 802.11ac VHT40, Channel No.: 151



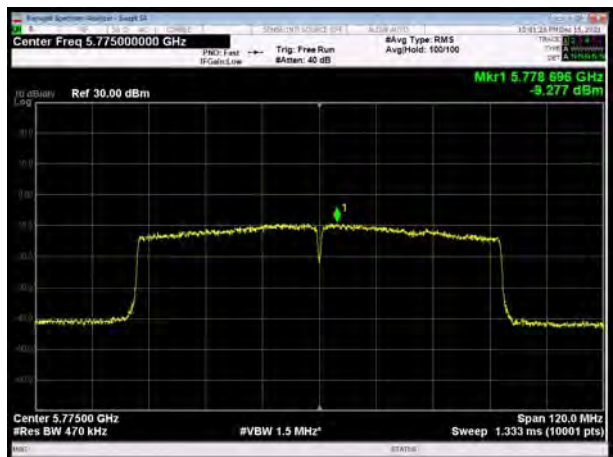
U-NII-3, 802.11ac VHT20, Channel No.: 165



U-NII-3, 802.11ac VHT40, Channel No.: 159



U-NII-3, 802.11ac VHT80, Channel No.: 155



5.5. Unwanted Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.

Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

9kHz~150 kHz

RBW=200Hz, VBW=1kHz/ Sweep=AUTO

150 kHz~30MHz

RBW=9KHz, VBW=30KHz,/ Sweep=AUTO

Below 1GHz

RBW=100kHz / VBW=300kHz / Sweep=AUTO

a) Peak emission levels are measured by setting the instrument as follows:

Above 1GHz

PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

b) Average emission levels are measured by setting the instrument as follows:

Above 1GHz

AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)

e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific

emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is $[10 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is $[20 \log (1 / D)]$, where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

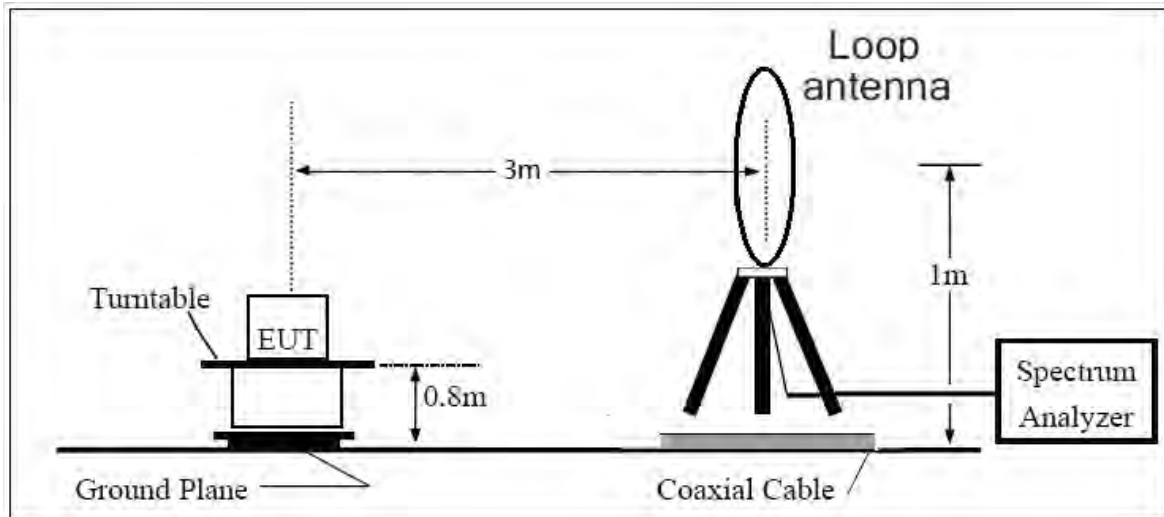
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

Reduce the video bandwidth until no significant variations in the displayed signal are observed in subsequent traces, provided the video bandwidth is no less than 1 Hz. For regulatory requirements that specify averaging only over the transmit duration (e.g., digital transmission system [DTS] and Unlicensed National Information Infrastructure [U-NII]), the video bandwidth shall be greater than $[1 / (\text{minimum transmitter on time})]$ and no less than 1 Hz.

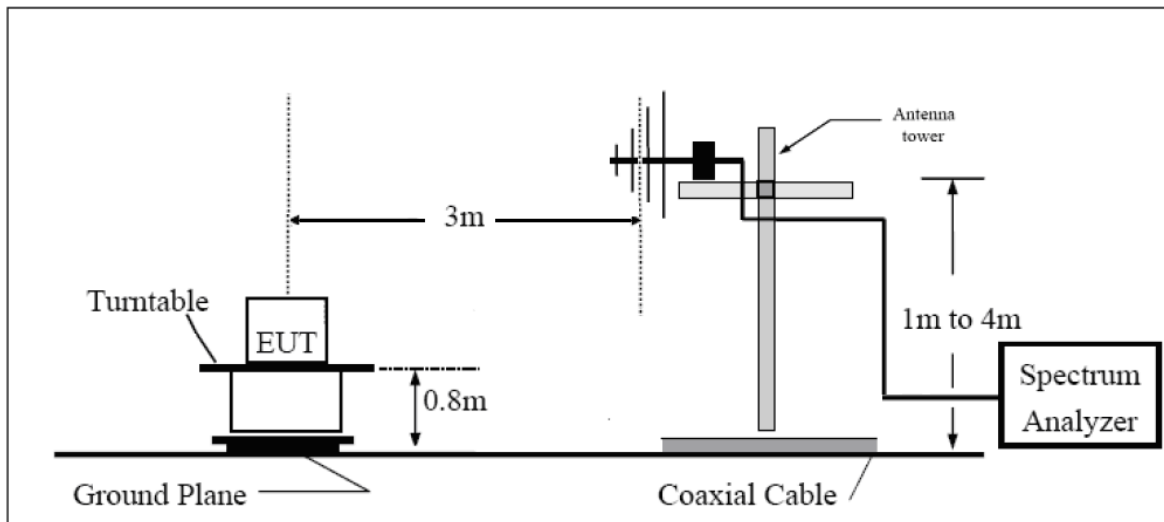
The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the loop antenna is vertical, others antenna are vertical and horizontal.

The test is in transmitting mode.

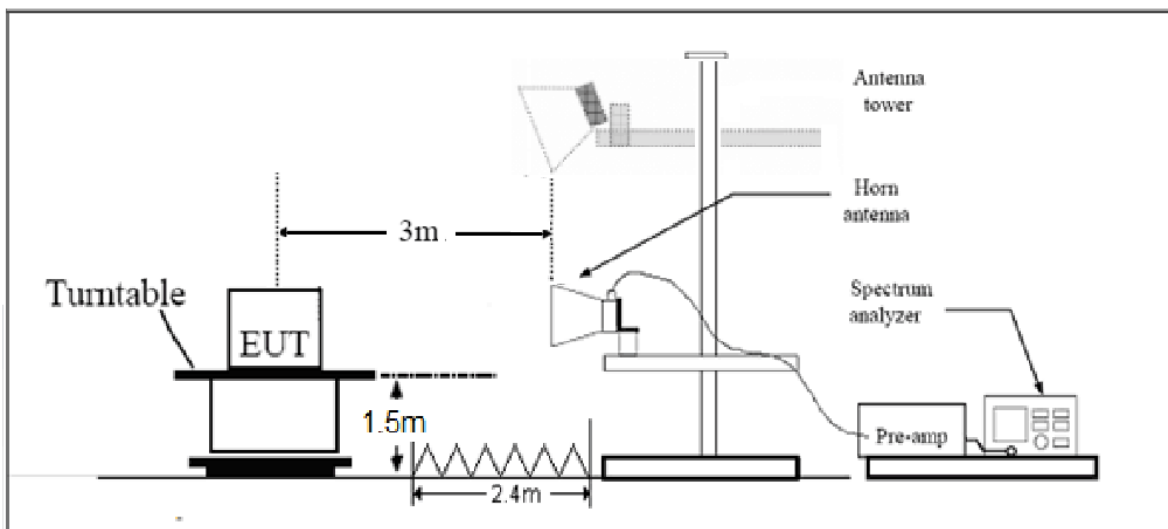
9KHz~~~30MHz



30MHz~~~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

- (1) For transmitters operating in the 5725-5850 MHz 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.
- (2) 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(68.2dBμV/m).
- (3) 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(68.2dBμV/m).

Note: the following formula is used to convert the EIRP to field strength

§1、 $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{meters}]) + 104.77$, where E = field strength and

d = distance at which field strength limit is specified in the rules;

§2、 $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] + 95.2$, for d = 3 meters

- (4) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table.

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB

Test Results:

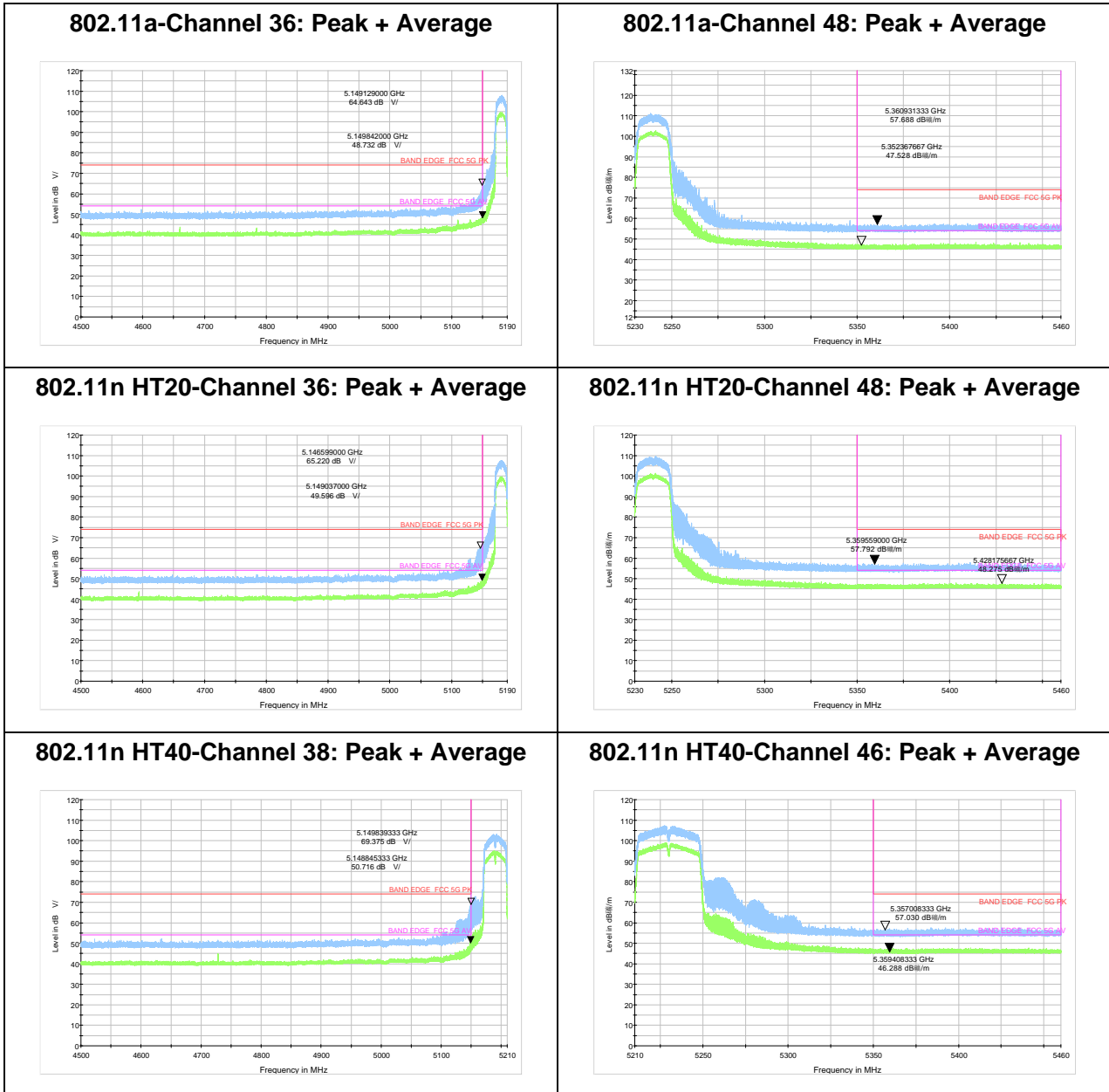
The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for V20MHz/V40MHz, therefore investigated worst case to representative mode in test report.

A font (Level in dB μ V/m) in the test plot =(level in dB μ V/m)

A font (Level in dB μ V/) in the test plot =(level in dB μ V/m)

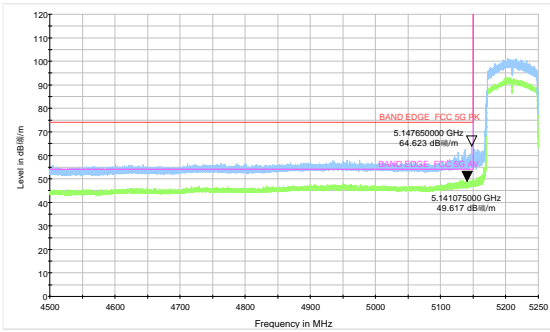
The signal beyond the limit is carrier.

U-NII-1



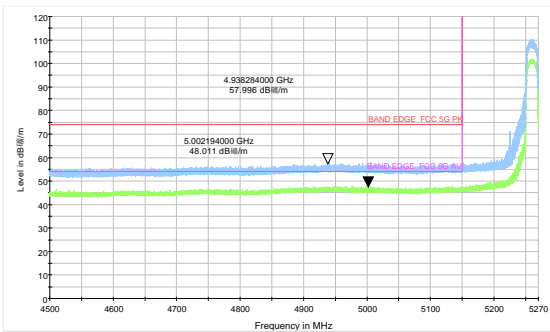


802.11ac VHT80 –Channel 42: Peak + Average

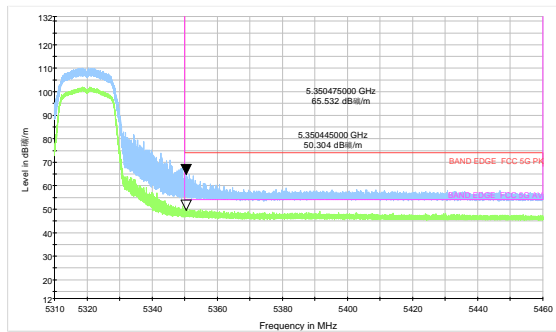


U-NII-2A

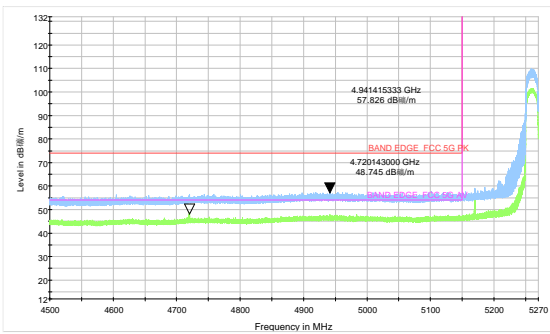
802.11a-Channel 52: Peak + Average



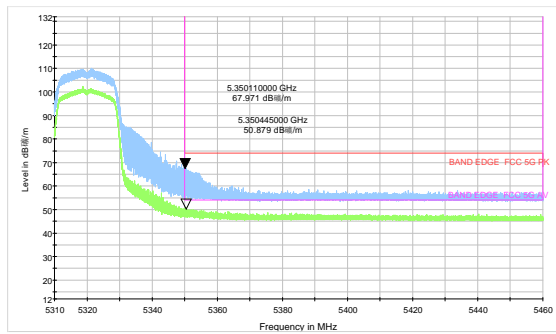
802.11a-Channel 64: Peak + Average



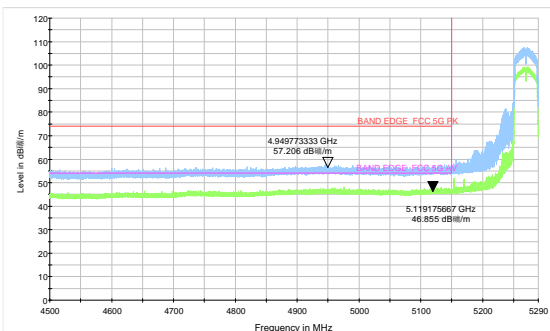
802.11n HT20-Channel 52: Peak + Average



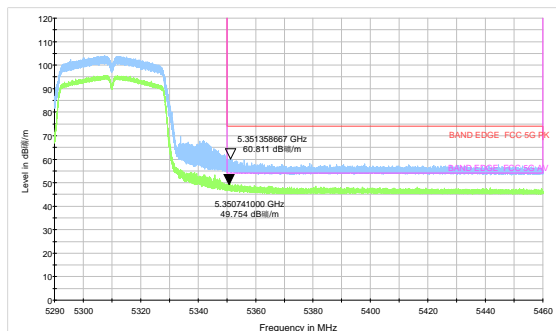
802.11n HT20-Channel 64: Peak + Average



802.11n HT40-Channel 54: Peak + Average

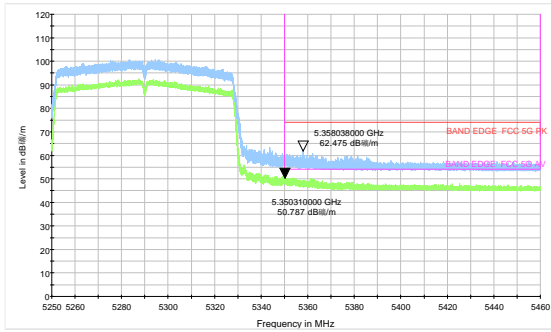


802.11n HT40-Channel 62: Peak + Average



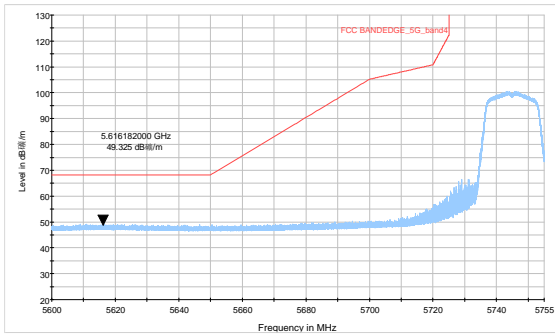


802.11ac VHT80 –Channel 58: Peak + Average

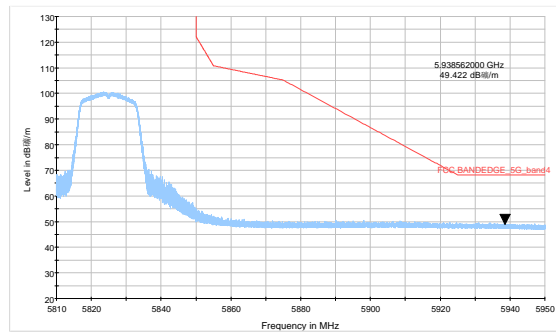


U-NII-3

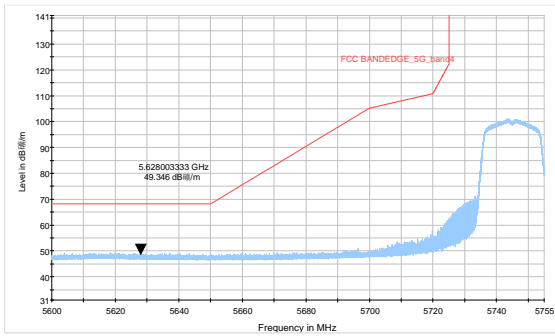
802.11a-Channel 149: Peak



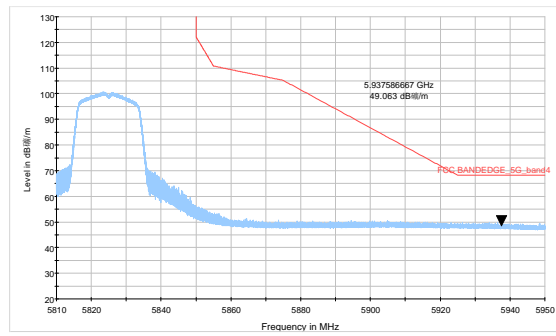
802.11a-Channel 165: Peak



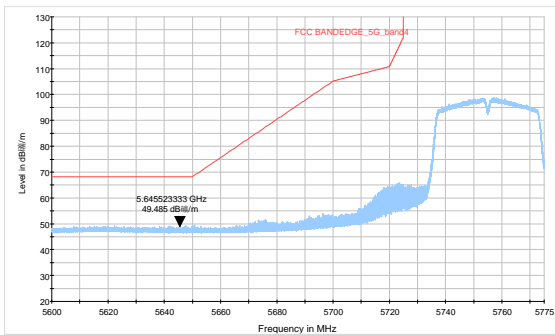
802.11n HT20-Channel 149: Peak



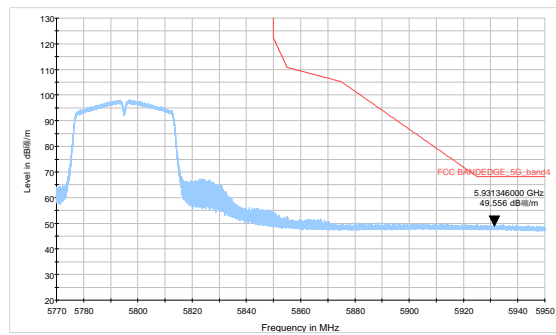
802.11n HT20-Channel 165: Peak



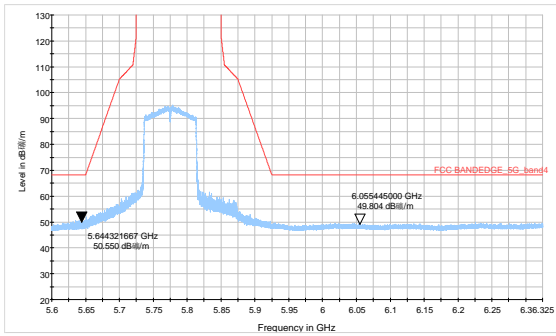
802.11n HT40-Channel 151: Peak



802.11n HT40-Channel 159: Peak



802.11ac VHT80- Channel 155: Peak



Result of RE

Test result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 9kHz-30MHz and 26.5GHz-40GHz are more than 20dB below the limit are not reported.

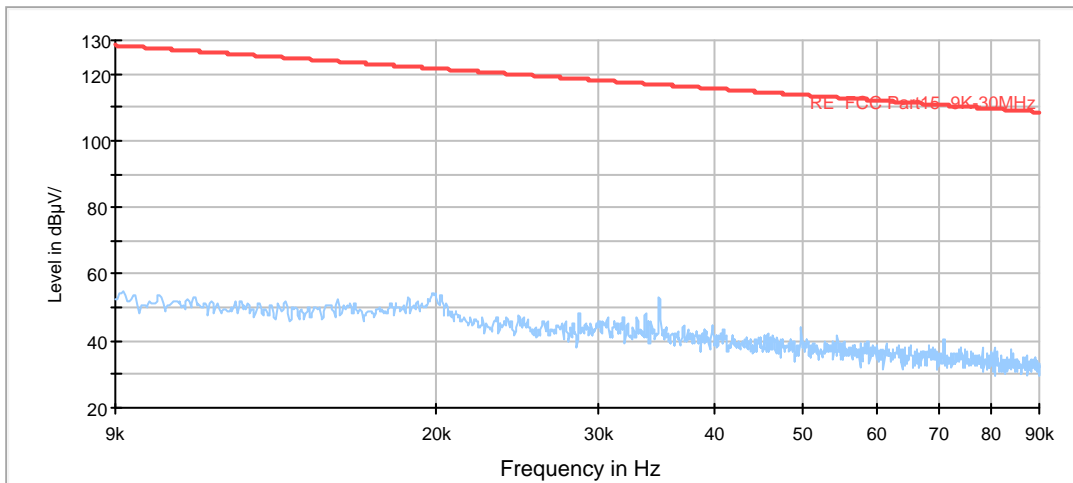
A font (Level in dB μ V/m) in the test plot =(level in dB μ V/m)

A font (Level in dB μ V/) in the test plot =(level in dB μ V/m)

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11a, Channel 60 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

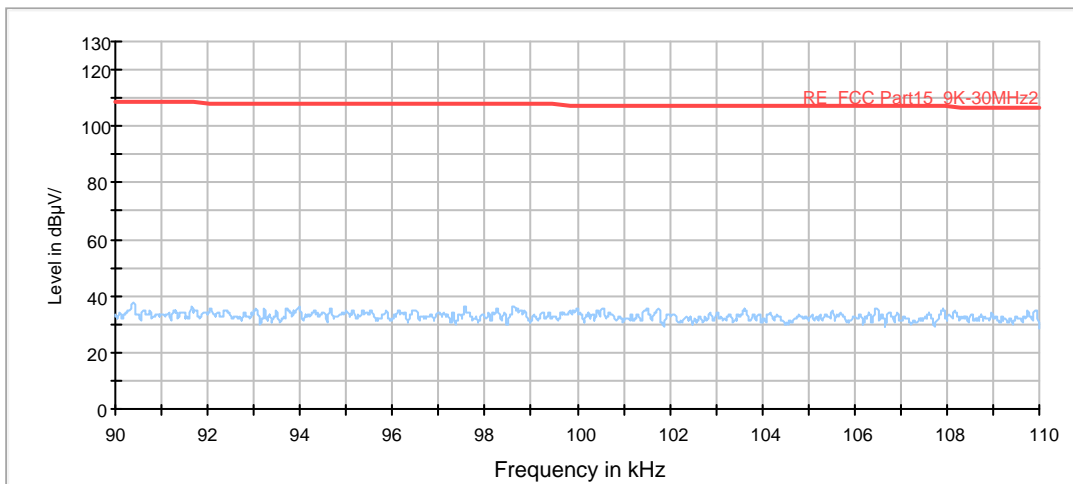
Continuous TX mode:

FCC RE 9K-90KHz AV



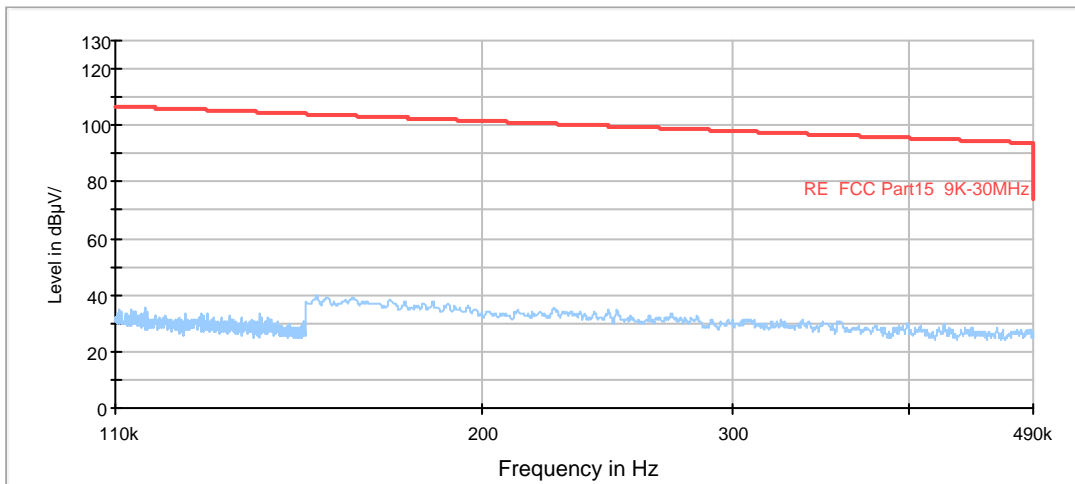
Radiates Emission from 9 KHz to 90KHz

FCC RE 90K-110KHz QP



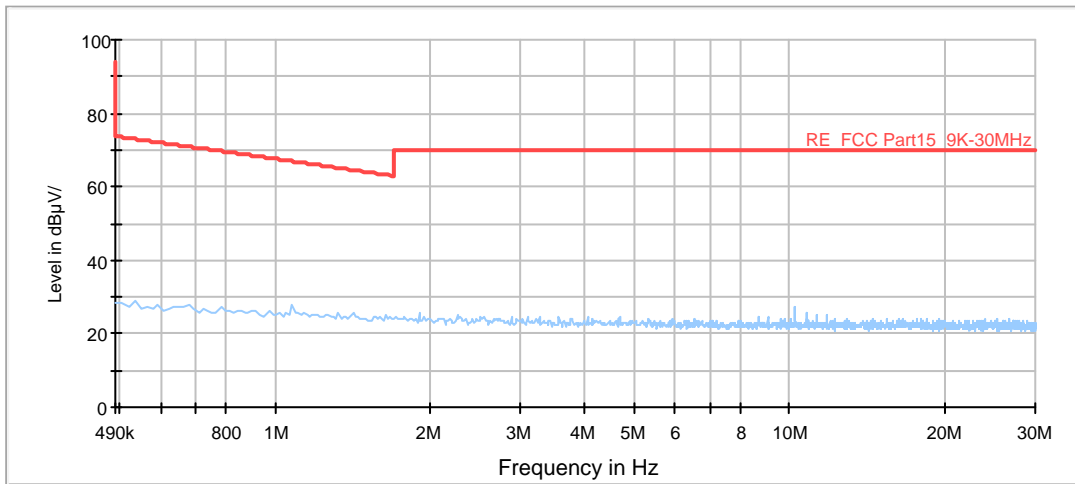
Radiates Emission from 90 KHz to 110 KHz

FCC RE 110K-490KHz AV

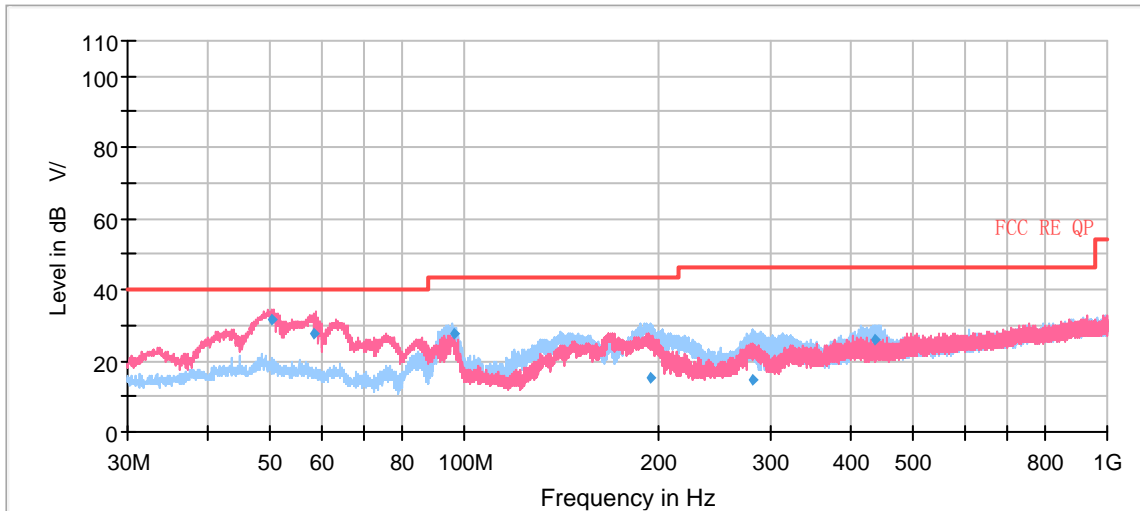


Radiates Emission from 110 KHz to 490 KHz

FCC RE 490K-30MHz QP



Radiates Emission from 490 KHz to 30MHz



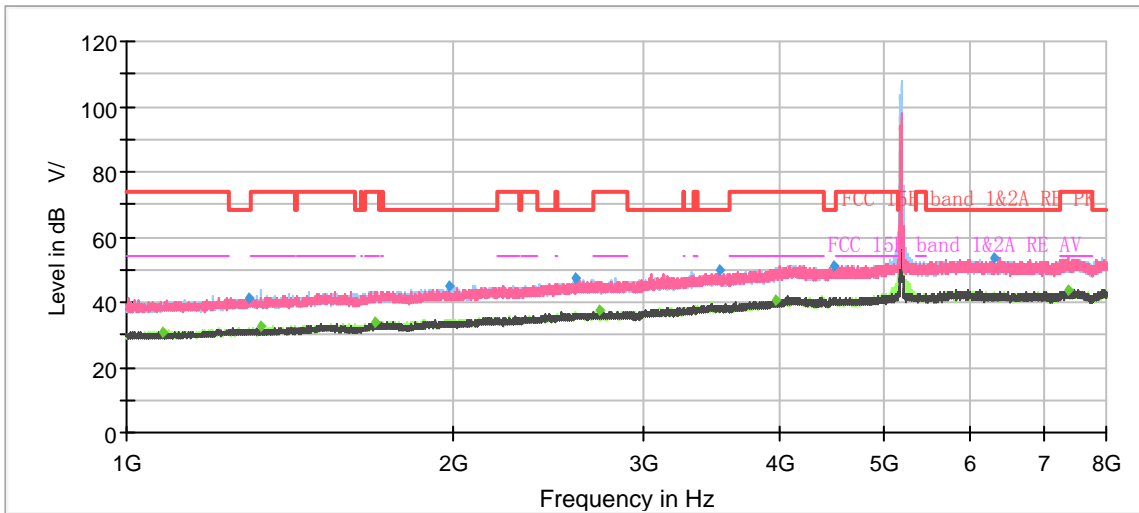
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
50.198000	31.64	125.0	V	0.0	21	8.36	40.00
58.321333	27.45	110.0	V	344.0	20	12.55	40.00
96.834667	27.92	225.0	H	226.0	18	15.58	43.50
194.907667	15.29	100.0	H	92.0	19	28.21	43.50
281.793333	14.77	125.0	H	85.0	20	31.23	46.00
436.271000	25.72	100.0	H	297.0	24	20.28	46.00

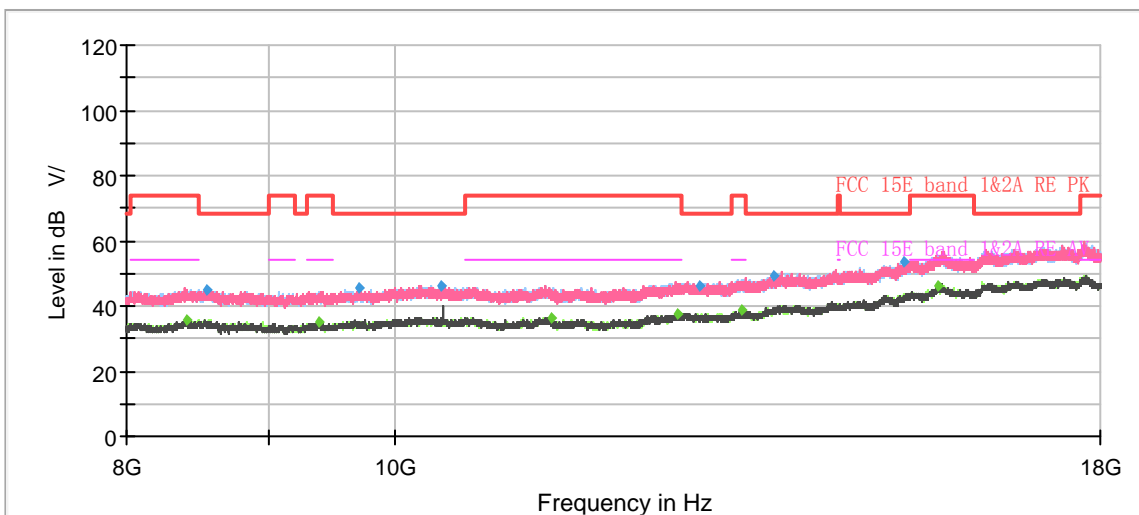
Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

2. Margin = Limit – Quasi-Peak

802.11a CH36



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

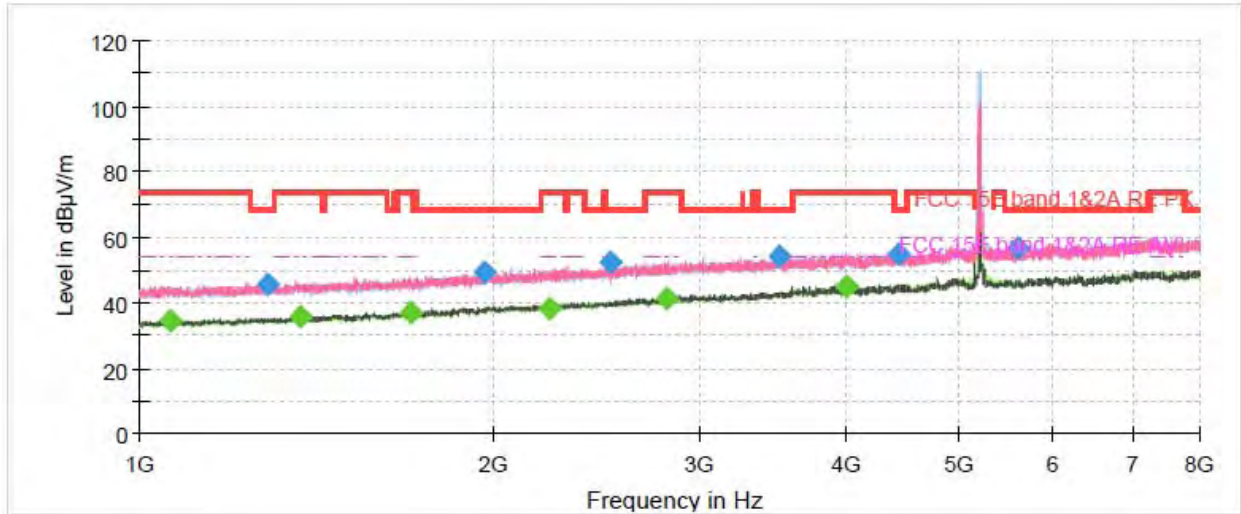


Radiates Emission from 8GHz to 18GHz

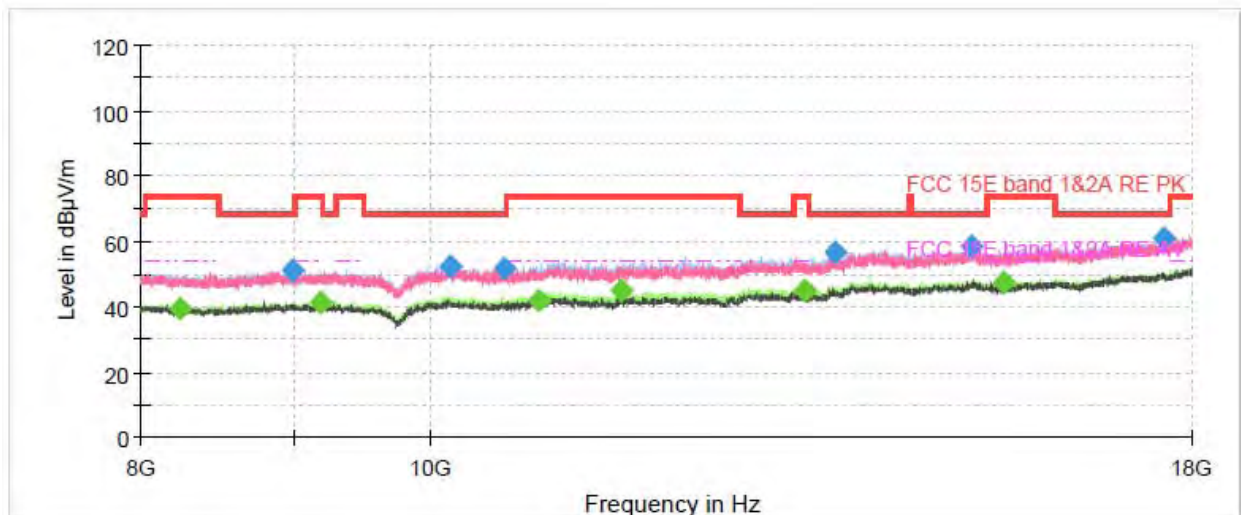
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1079.566667	---	30.55	54.00	23.45	200.0	V	24.0	-8
1296.100000	41.19	---	68.20	27.01	200.0	V	326.0	-7
1329.466667	---	32.70	54.00	21.30	200.0	H	117.0	-7
1697.200000	---	34.01	54.00	19.99	200.0	V	251.0	-5
1984.433333	44.79	---	68.20	23.41	200.0	H	37.0	-3
2587.133333	47.20	---	68.20	21.00	100.0	H	202.0	0
2725.966667	---	37.28	54.00	16.72	200.0	H	129.0	1
3523.033333	49.59	---	68.20	18.61	100.0	V	231.0	4
3959.600000	---	40.50	54.00	13.50	200.0	H	2.0	6
4478.300000	50.95	---	68.20	17.25	100.0	V	16.0	7
6300.400000	53.38	---	68.20	14.82	200.0	H	117.0	10
7386.333333	---	43.68	54.00	10.32	100.0	V	242.0	11

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH40



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

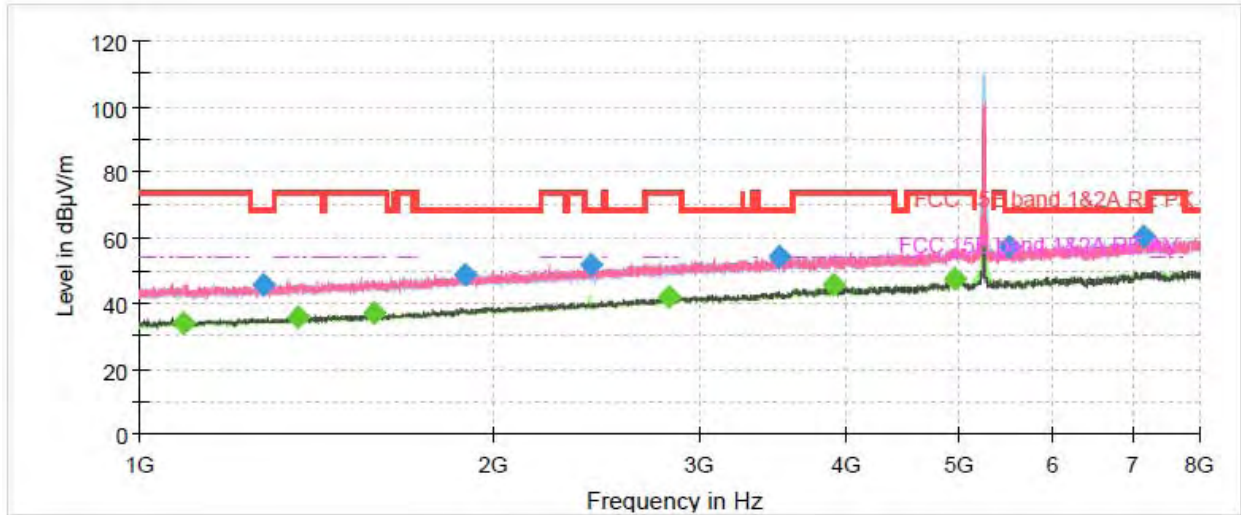


Radiates Emission from 8GHz to 18GHz

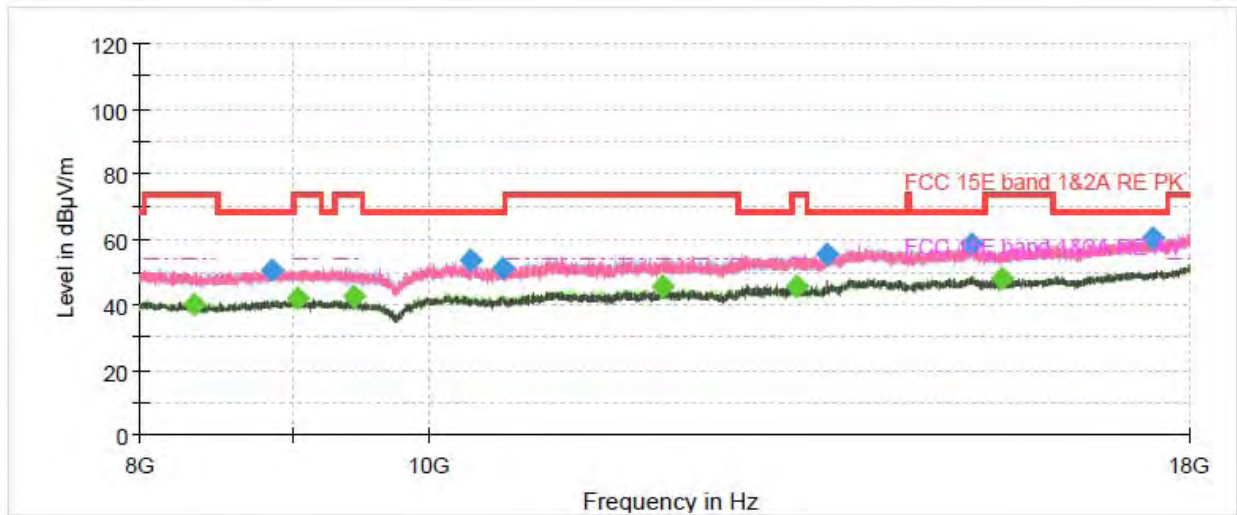
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1060.666667	---	34.40	54.00	19.60	100.0	V	313.0	-3.7
1286.533333	45.79	---	68.20	22.41	200.0	H	357.0	-2.9
1369.833333	---	35.95	54.00	18.05	100.0	H	0.0	-2.2
1699.766667	---	37.07	54.00	16.93	100.0	V	167.0	-0.9
1969.033333	49.22	---	68.20	18.98	100.0	V	339.0	0.4
2235.266667	---	38.35	54.00	15.65	100.0	H	229.0	1.1
2521.566667	52.14	---	68.20	16.06	200.0	H	74.0	2.0
2811.133333	---	41.34	54.00	12.66	100.0	V	0.0	3.3
3505.766667	54.08	---	68.20	14.12	200.0	H	60.0	5.5
3999.733333	---	45.20	54.00	8.80	200.0	V	192.0	7.0
4433.500000	54.96	---	68.20	13.24	100.0	H	0.0	7.3
5597.133333	56.58	---	68.20	11.62	200.0	H	29.0	9.1

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH48



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

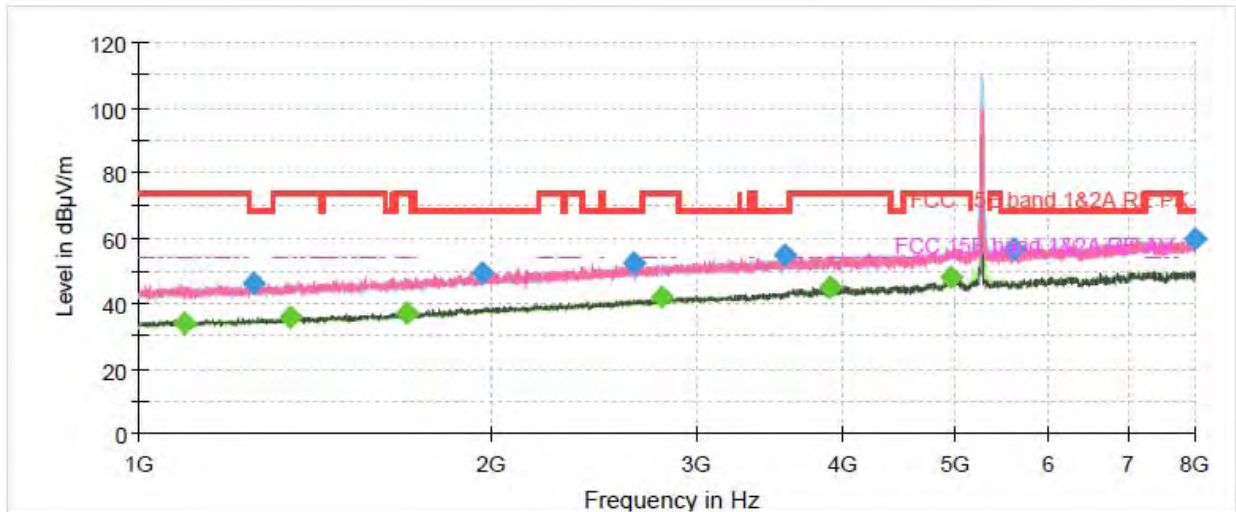


Radiates Emission from 8GHz to 18GHz

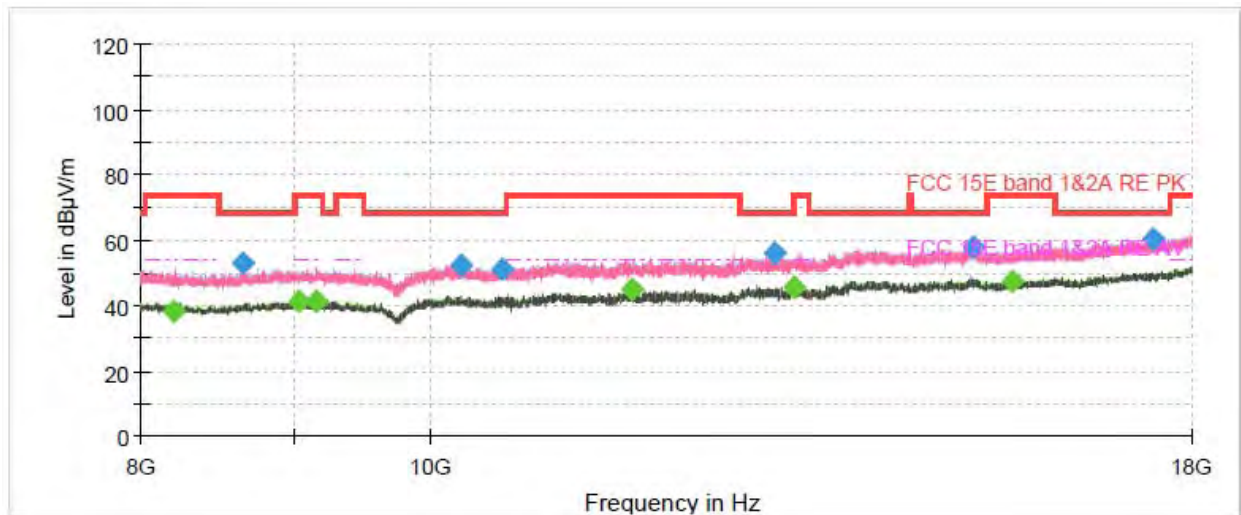
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1089.366667	---	33.94	54.00	20.06	100.0	V	236.0	-3.9
1276.266667	45.77	---	68.20	22.43	200.0	H	203.0	-2.8
1363.300000	---	35.94	54.00	18.06	100.0	V	330.0	-2.3
1582.166667	---	37.19	54.00	16.81	100.0	V	263.0	-1.3
1893.666667	48.89	---	68.20	19.31	100.0	H	106.0	0.0
2417.733333	51.61	---	68.20	16.59	100.0	H	256.0	1.8
2820.700000	---	41.58	54.00	12.42	200.0	V	346.0	3.2
3510.200000	54.26	---	68.20	13.94	200.0	H	161.0	5.5
3900.333333	---	45.25	54.00	8.75	100.0	V	43.0	6.6
4937.500000	---	47.63	54.00	6.37	100.0	H	25.0	8.8
5498.666667	56.95	---	68.20	11.25	200.0	V	205.0	9.2
7169.566667	60.42	---	68.20	7.78	200.0	H	216.0	12.1

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH52



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

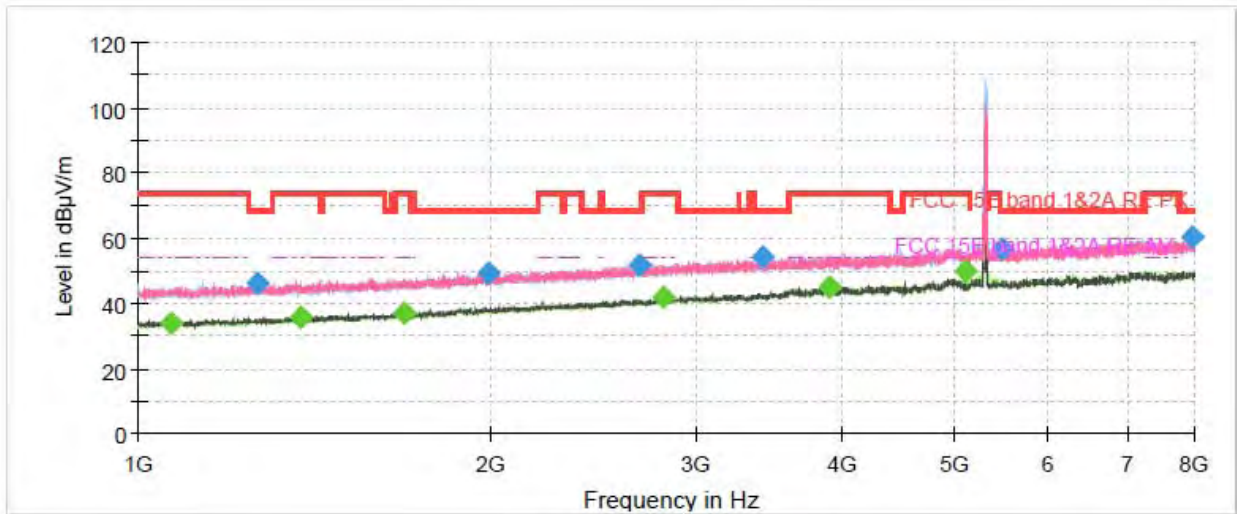


Radiates Emission from 8GHz to 18GHz

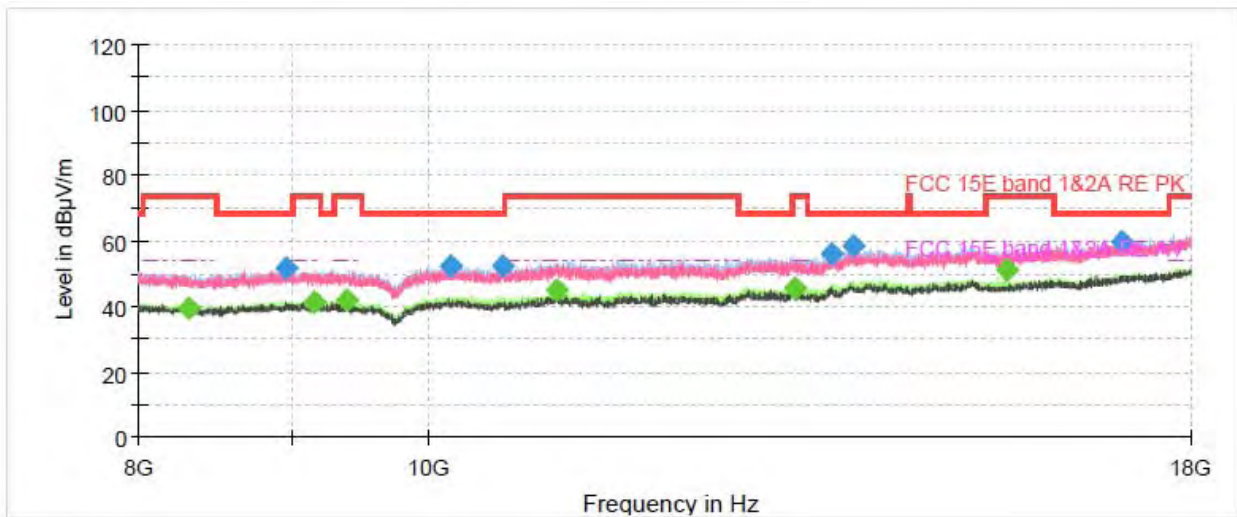
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1094.500000	---	33.94	54.00	20.06	200.0	H	251.0	-3.9
1250.366667	46.16	---	68.20	22.04	200.0	V	219.0	-3.0
1347.433333	---	35.89	54.00	18.11	100.0	V	86.0	-2.6
1691.600000	---	36.95	54.00	17.05	100.0	V	43.0	-0.9
1964.133333	49.04	---	68.20	19.16	200.0	H	265.0	0.3
2648.033333	52.17	---	68.20	16.03	100.0	V	86.0	2.5
2799.466667	---	41.62	54.00	12.38	100.0	H	232.0	3.4
3571.566667	54.47	---	68.20	13.73	200.0	V	72.0	5.6
3896.133333	---	45.01	54.00	8.99	200.0	H	0.0	6.5
4955.466667	---	47.74	54.00	6.26	200.0	H	0.0	8.8
5592.700000	56.33	---	68.20	11.87	200.0	H	0.0	9.1
7987.400000	59.93	---	68.20	8.27	100.0	V	358.0	12.2

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH60



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

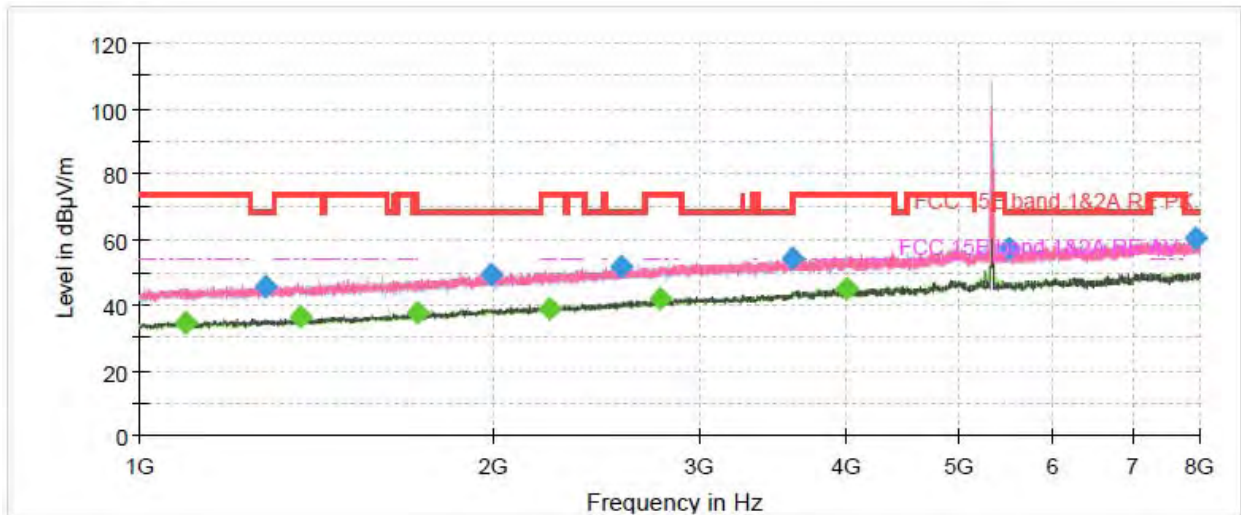


Radiates Emission from 8GHz to 18GHz

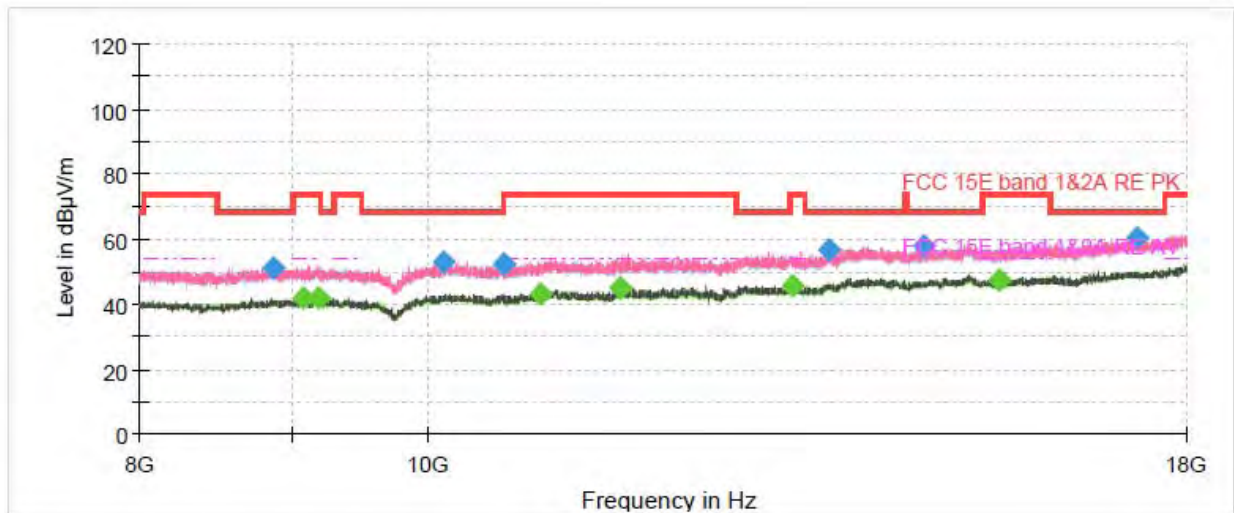
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1066.033333	---	33.99	54.00	20.01	200.0	H	308.0	-3.7
1262.033333	46.14	---	68.20	22.06	200.0	V	99.0	-2.9
1374.033333	---	35.95	54.00	18.05	100.0	V	0.0	-2.3
1690.433333	---	37.16	54.00	16.84	200.0	V	99.0	-1.0
1995.400000	49.34	---	68.20	18.86	200.0	H	295.0	0.5
2679.766667	51.53	---	68.20	16.67	200.0	H	0.0	2.9
2813.700000	---	41.95	54.00	12.05	100.0	V	342.0	3.3
3424.800000	53.87	---	68.20	14.33	100.0	V	355.0	5.0
3905.000000	---	45.02	54.00	8.98	100.0	V	355.0	6.6
5095.466667	---	49.58	54.00	4.42	100.0	V	181.0	8.3
5485.600000	56.85	---	68.20	11.35	100.0	H	122.0	9.1
7956.600000	60.16	---	68.20	8.04	200.0	V	138.0	12.3
15628.666667	---	50.81	54.00	3.19	100.0	H	195.0	13.2

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH64



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

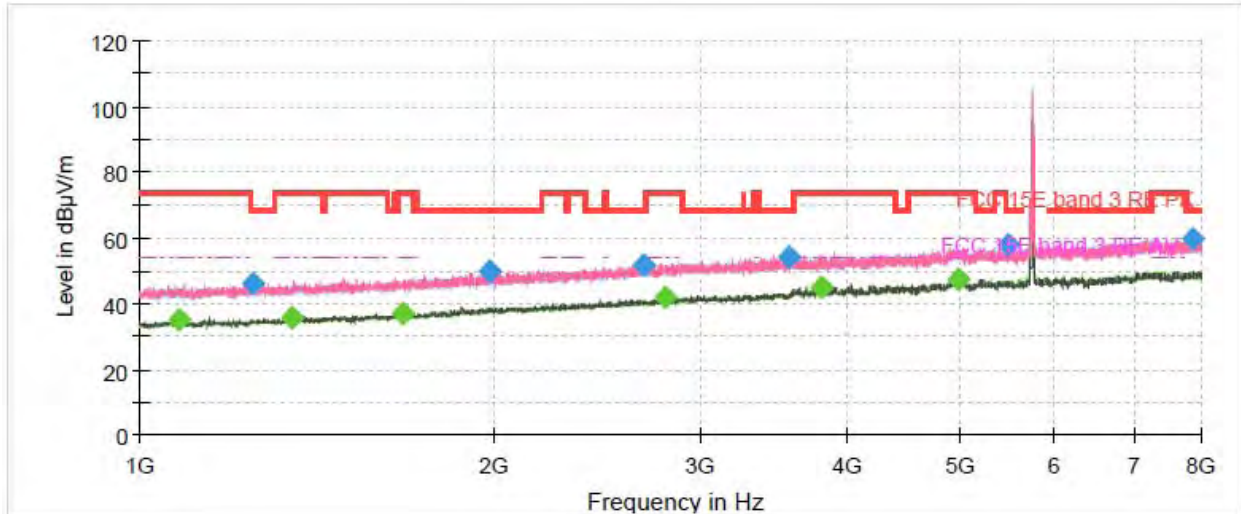


Radiates Emission from 8GHz to 18GHz

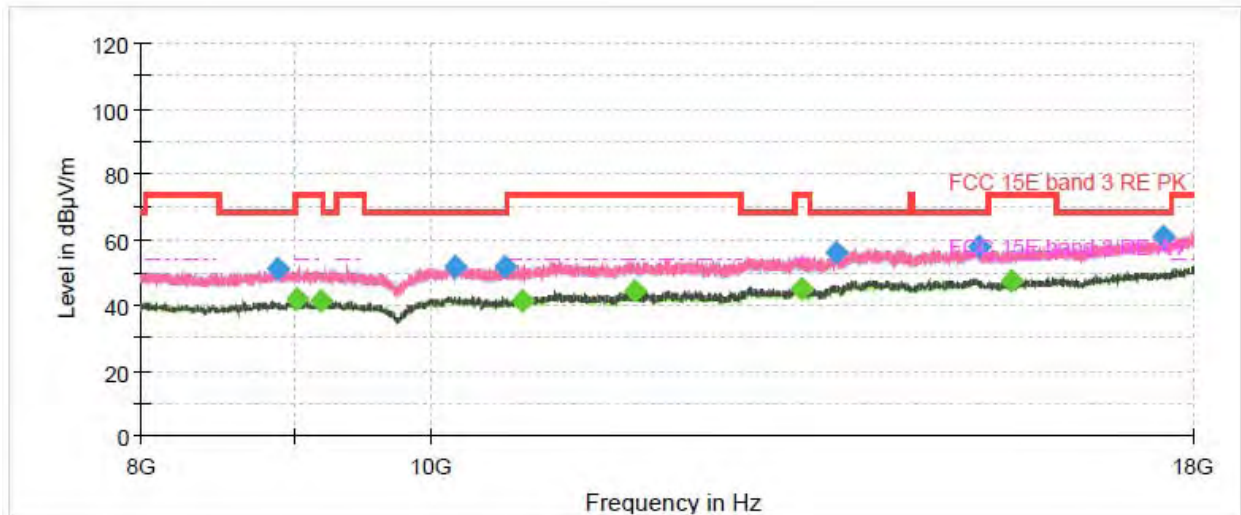
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1091.700000	---	34.52	54.00	19.48	100.0	V	142.0	-3.9
1279.533333	45.52	---	68.20	22.68	200.0	V	48.0	-2.8
1367.266667	---	36.28	54.00	17.72	200.0	V	249.0	-2.2
1721.933333	---	37.54	54.00	16.46	100.0	V	142.0	-1.1
1995.400000	49.02	---	68.20	19.18	100.0	V	316.0	0.5
2232.000000	---	38.76	54.00	15.24	100.0	H	162.0	1.1
2569.400000	51.51	---	68.20	16.69	100.0	V	183.0	2.3
2779.166667	---	41.72	54.00	12.28	200.0	V	0.0	3.2
3596.533333	54.23	---	68.20	13.97	200.0	V	276.0	5.9
3996.933333	---	45.08	54.00	8.92	200.0	V	0.0	6.9
5500.766667	57.23	---	68.20	10.97	100.0	V	197.0	9.2
7922.300000	60.09	---	68.20	8.11	100.0	V	87.0	12.4

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH149



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

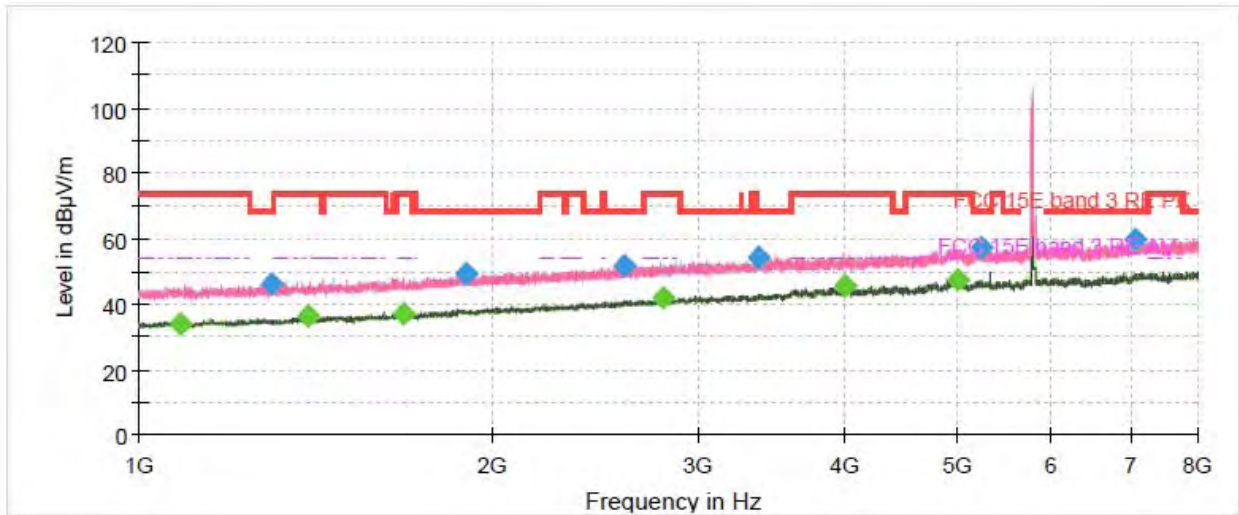


Radiates Emission from 8GHz to 18GHz

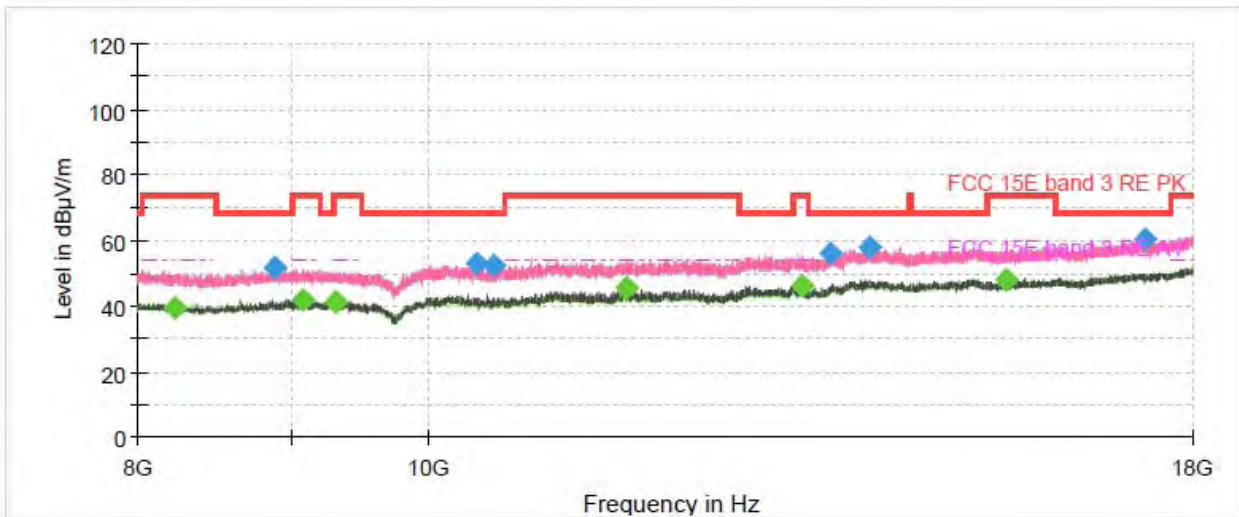
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1078.400000	---	34.79	54.00	19.21	200.0	V	41.0	-3.7
1249.200000	46.32	---	68.20	21.88	200.0	V	178.0	-3.0
1349.066667	---	35.79	54.00	18.21	200.0	V	302.0	-2.5
1674.566667	---	37.02	54.00	16.98	100.0	V	262.0	-1.0
1980.700000	50.09	---	68.20	18.11	200.0	V	2.0	0.7
2677.200000	51.45	---	68.20	16.75	100.0	V	276.0	2.9
2798.766667	---	41.63	54.00	12.37	200.0	V	55.0	3.4
3565.500000	54.44	---	68.20	13.76	200.0	V	111.0	5.4
3794.400000	---	45.18	54.00	8.82	100.0	H	18.0	6.4
4964.566667	---	47.67	54.00	6.33	200.0	V	0.0	8.8
5483.033333	57.87	---	68.20	10.33	100.0	H	0.0	9.0
7860.466667	59.72	---	68.20	8.48	200.0	V	331.0	12.4

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH157



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

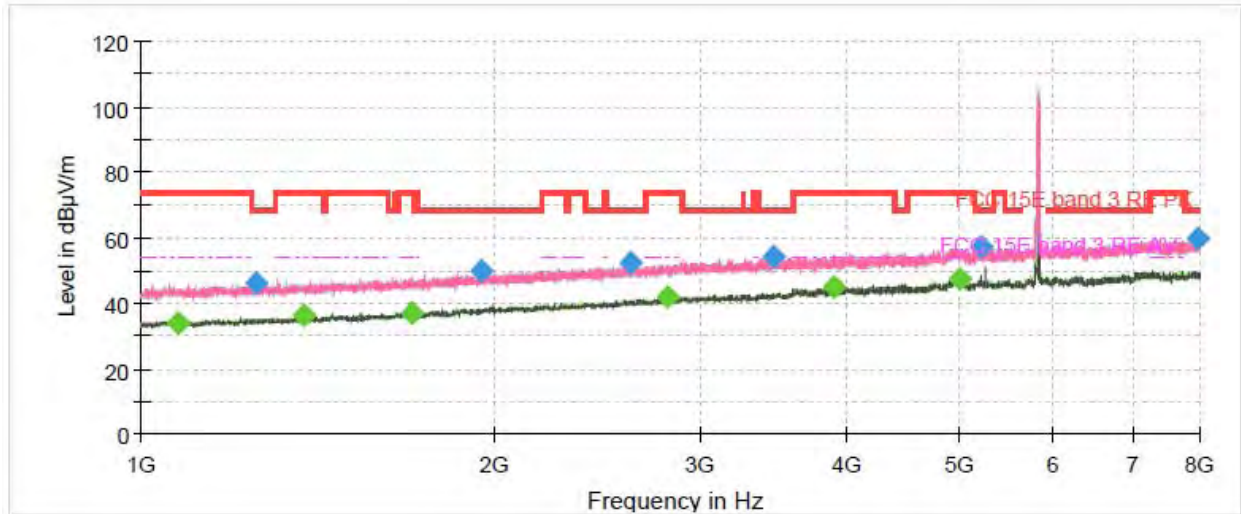


Radiates Emission from 8GHz to 18GHz

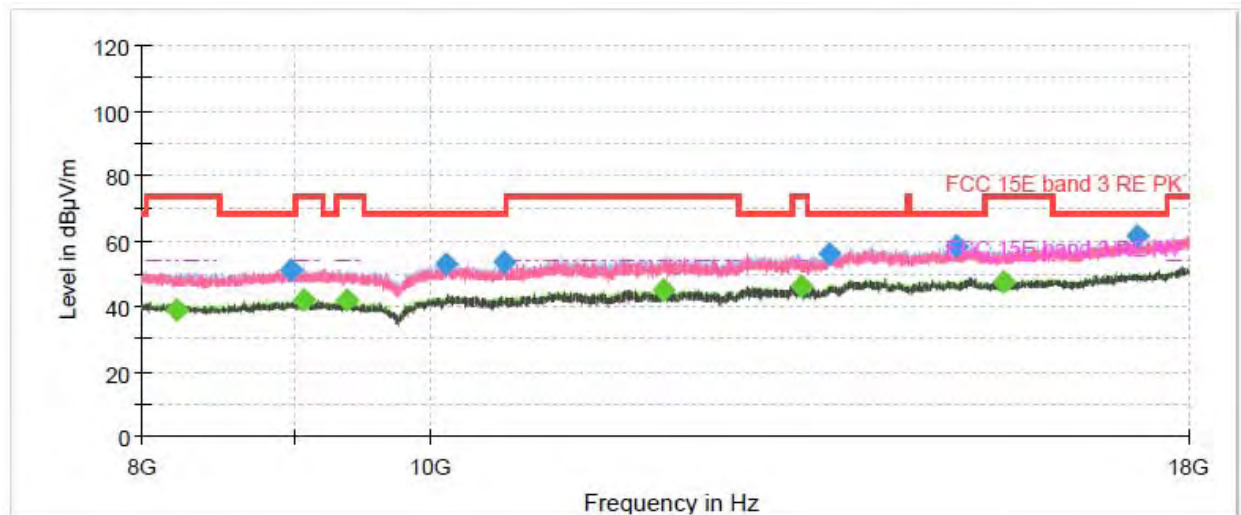
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1085.400000	---	34.11	54.00	19.89	200.0	H	329.0	-3.8
1293.533333	45.91	---	68.20	22.29	200.0	V	0.0	-3.0
1395.733333	---	36.30	54.00	17.70	200.0	H	342.0	-2.5
1680.400000	---	37.00	54.00	17.01	100.0	V	0.0	-0.9
1902.533333	49.10	---	68.20	19.10	100.0	V	301.0	0.0
2595.533333	51.53	---	68.20	16.67	200.0	V	316.0	2.5
2799.700000	---	41.81	54.00	12.19	200.0	H	155.0	3.4
3367.166667	53.96	---	68.20	14.24	200.0	V	112.0	5.1
3991.800000	---	45.26	54.00	8.74	200.0	H	98.0	6.7
4985.800000	---	47.65	54.00	6.35	200.0	H	302.0	8.8
5229.633333	56.93	---	68.20	11.27	100.0	V	98.0	8.7
7069.233333	59.71	---	68.20	8.49	200.0	V	288.0	11.9

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH165



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz



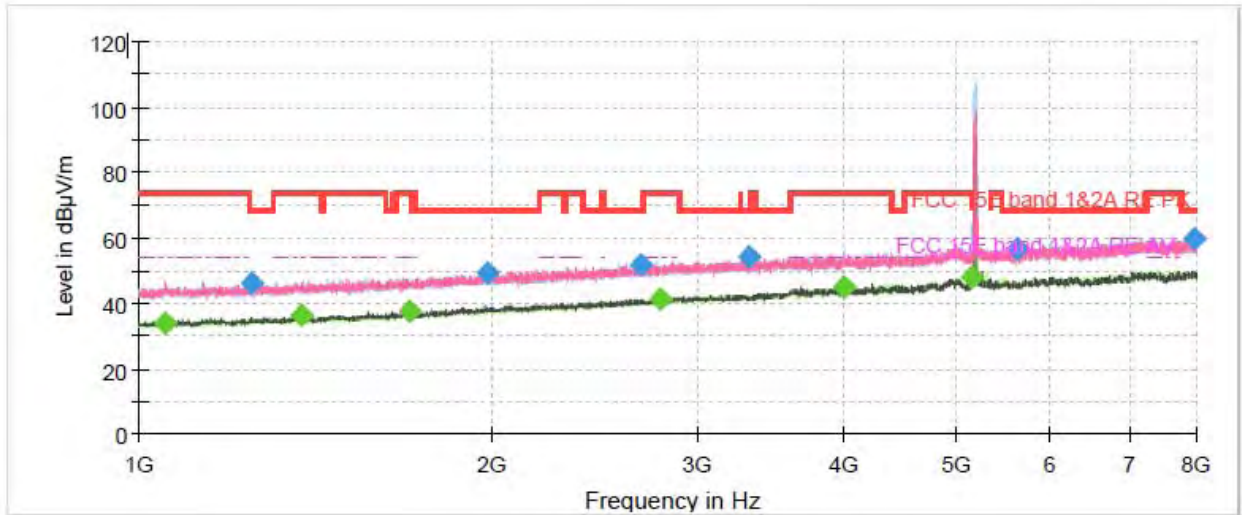
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1074.666667	---	34.10	54.00	19.90	200.0	H	276.0	-3.7
1254.100000	46.16	---	68.20	22.04	200.0	H	155.0	-3.0
1378.233333	---	36.30	54.00	17.70	100.0	H	146.0	-2.4
1702.333333	---	36.92	54.00	17.08	200.0	H	222.0	-0.9
1951.066667	49.82	---	68.20	18.38	200.0	V	263.0	0.3
2611.400000	52.12	---	68.20	16.08	200.0	V	7.0	2.5
2815.100000	---	41.56	54.00	12.44	200.0	V	7.0	3.3
3464.233333	54.11	---	68.20	14.09	200.0	V	100.0	5.4
3902.666667	---	44.78	54.00	9.22	100.0	H	25.0	6.6
4990.000000	---	47.48	54.00	6.52	200.0	H	342.0	8.8
5211.666667	57.02	---	68.20	11.18	100.0	V	301.0	8.8
7971.066667	59.46	---	68.20	8.74	200.0	H	263.0	12.3

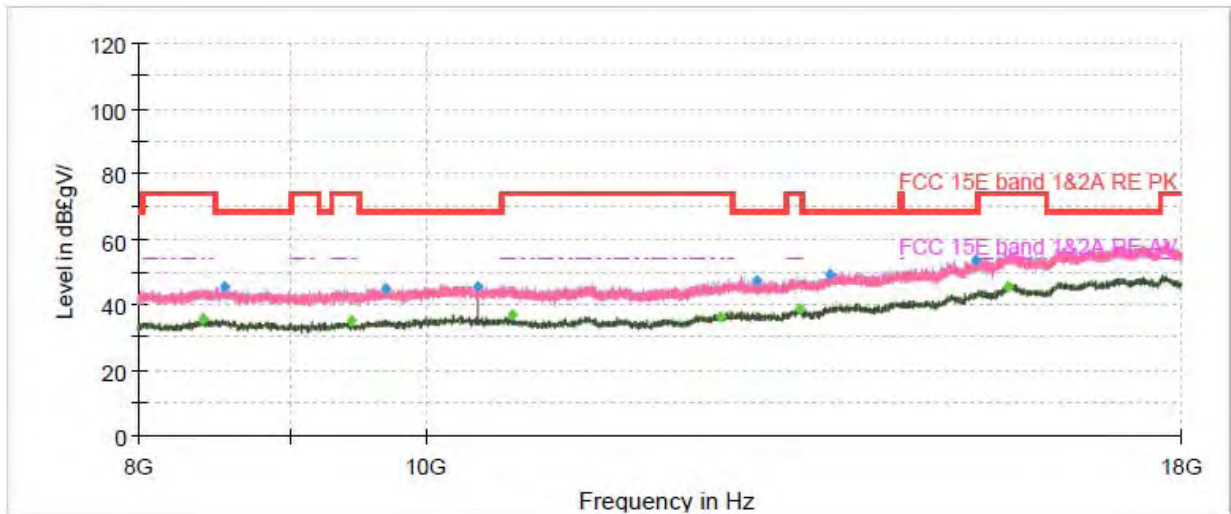
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11n (HT20) CH36



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

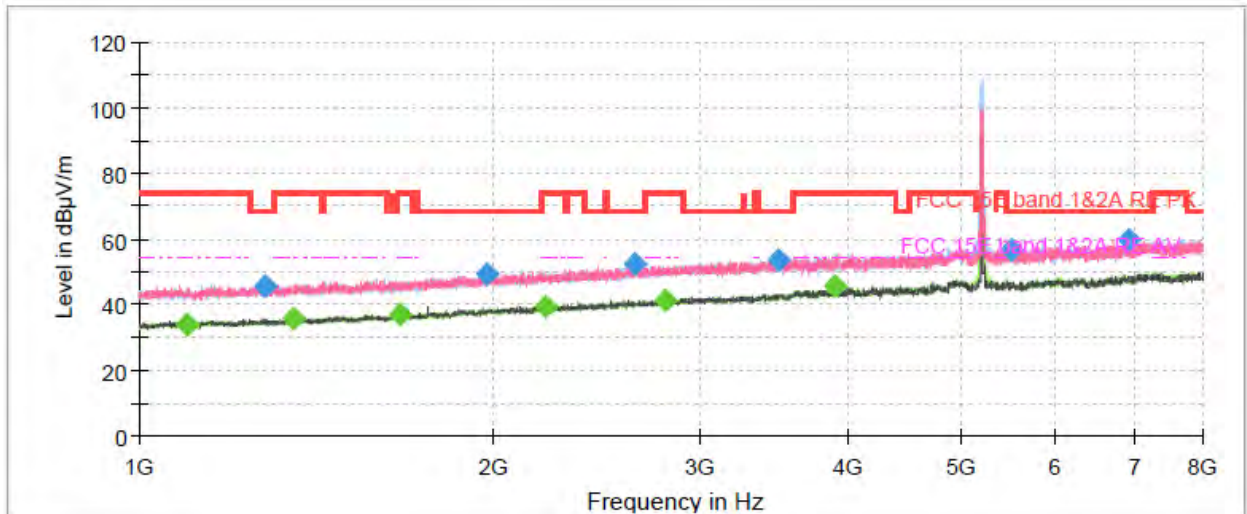


Radiates Emission from 8GHz to 18GHz

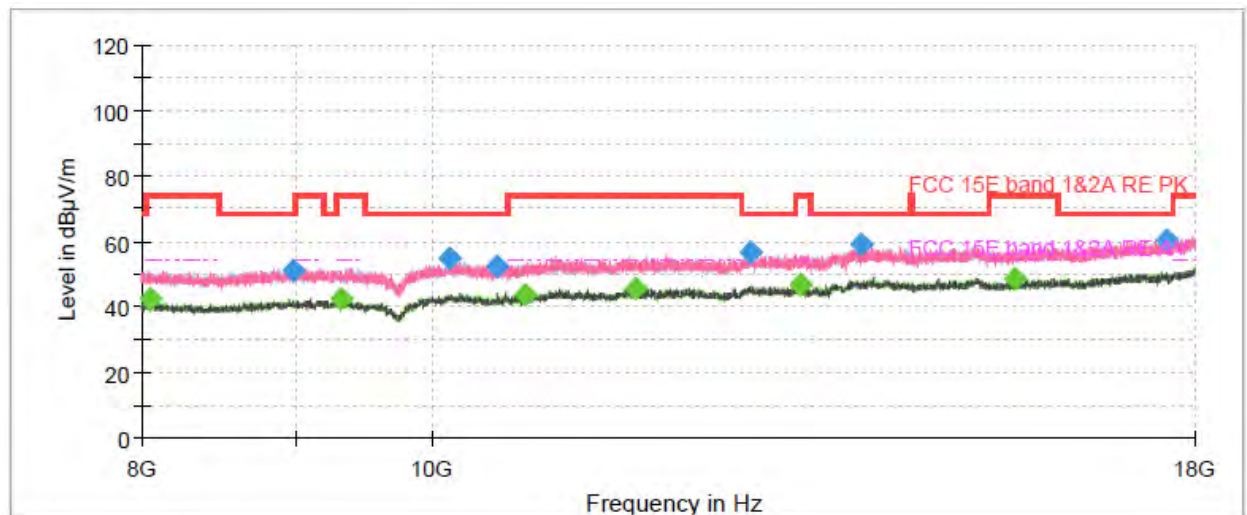
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1052.966667	---	34.13	54.00	19.87	100.0	H	331.0	-3.7
1246.633333	45.88	---	68.20	22.32	100.0	V	28.0	-3.0
1377.766667	---	36.15	54.00	17.85	200.0	V	83.0	-2.4
1701.166667	---	37.28	54.00	16.72	200.0	V	150.0	-0.9
1981.166667	48.96	---	68.20	19.24	200.0	V	69.0	0.7
2684.433333	51.39	---	68.20	16.81	100.0	V	194.0	2.9
2788.266667	---	41.51	54.00	12.49	200.0	V	191.0	3.3
3316.533333	54.10	---	68.20	14.10	100.0	V	328.0	4.7
3999.033333	---	44.98	54.00	9.02	100.0	V	248.0	6.9
5148.900000	---	48.23	54.00	5.77	100.0	H	359.0	8.4
5623.500000	56.49	---	68.20	11.71	200.0	V	96.0	9.2
7974.800000	59.81	---	68.20	8.39	100.0	H	203.0	12.3

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH40



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

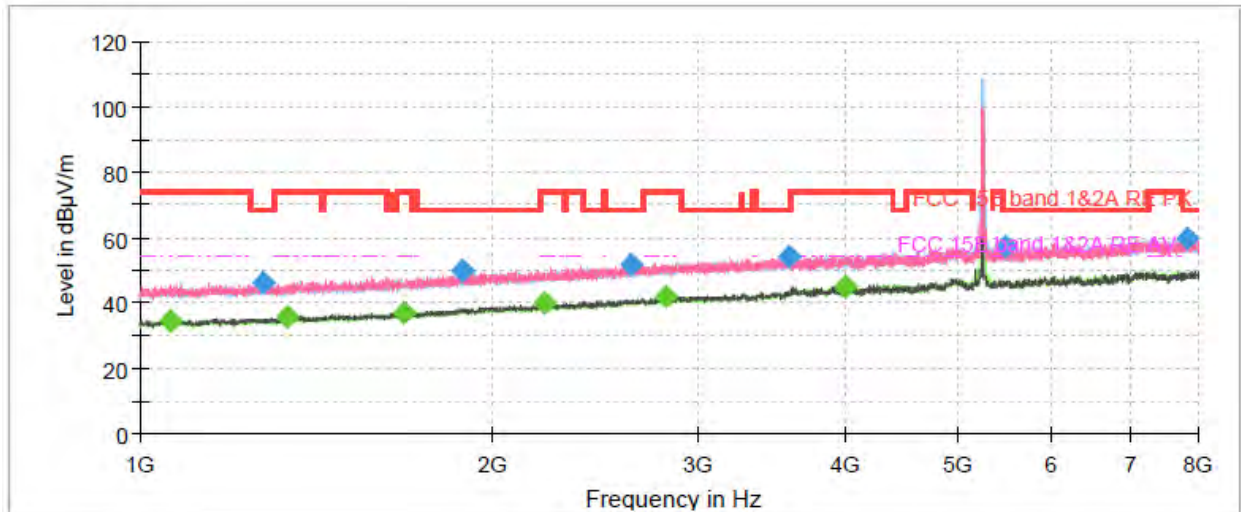


Radiates Emission from 8GHz to 18GHz

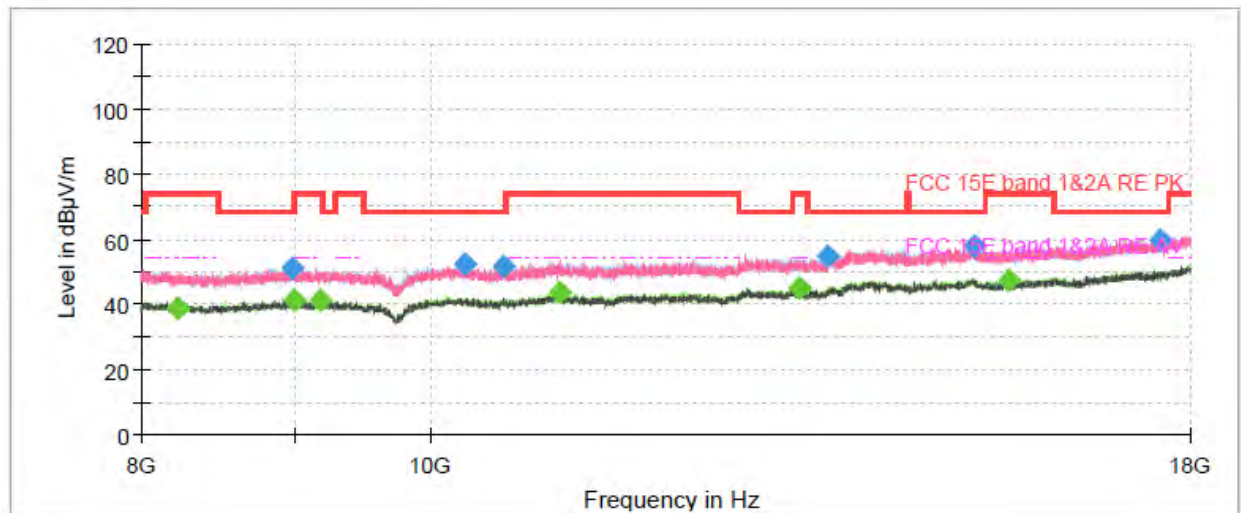
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1097.066667	---	33.95	54.00	20.05	100.0	V	276.0	-3.8
1281.633333	45.44	---	68.20	22.76	200.0	H	248.0	-2.8
1352.333333	---	35.96	54.00	18.04	200.0	H	30.0	-2.5
1663.133333	---	37.11	54.00	16.89	100.0	V	209.0	-1.2
1978.366667	49.51	---	68.20	18.69	200.0	H	177.0	0.6
2215.200000	---	39.35	54.00	14.65	200.0	H	164.0	1.2
2639.866667	52.05	---	68.20	16.15	200.0	H	218.0	2.5
2798.533333	---	41.52	54.00	12.48	100.0	V	343.0	3.4
3498.300000	53.78	---	68.20	14.42	100.0	V	100.0	5.5
3903.133333	---	45.40	54.00	8.60	100.0	V	86.0	6.6
5495.633333	56.82	---	68.20	11.38	100.0	V	72.0	9.1
6920.133333	59.65	---	68.20	8.55	200.0	V	5.0	11.1
15661.666667	---	48.38	54.00	5.62	200.0	H	151.0	13.3

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH48



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

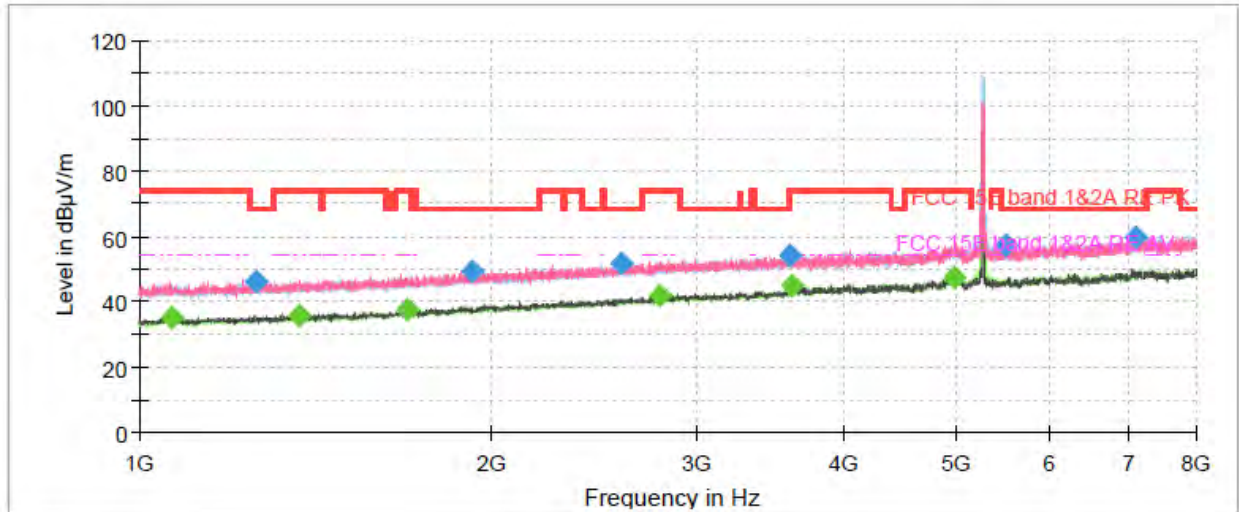


Radiates Emission from 8GHz to 18GHz

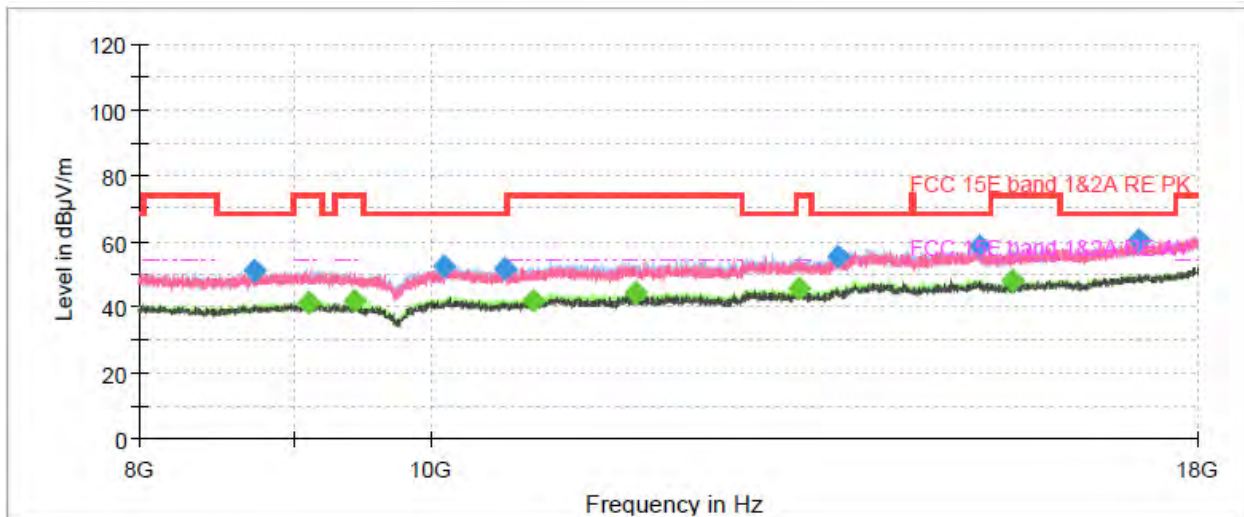
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1063.466667	---	34.69	54.00	19.31	200.0	V	357.0	-3.7
1274.166667	46.31	---	68.20	21.89	100.0	V	162.0	-2.9
1335.066667	---	35.89	54.00	18.11	200.0	V	0.0	-2.7
1679.233333	---	36.95	54.00	17.05	100.0	V	3.0	-0.9
1881.533333	49.85	---	68.20	18.35	200.0	H	258.0	0.3
2213.100000	---	39.82	54.00	14.18	200.0	V	0.0	1.2
2627.500000	51.80	---	68.20	16.40	100.0	V	202.0	2.6
2814.400000	---	41.62	54.00	12.38	100.0	V	68.0	3.3
3584.166667	53.98	---	68.20	14.22	100.0	H	306.0	5.9
3996.233333	---	44.89	54.00	9.11	200.0	V	304.0	6.9
5487.233333	57.00	---	68.20	11.20	200.0	H	301.0	9.1
7827.566667	59.78	---	68.20	8.42	200.0	V	0.0	12.3

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH52



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

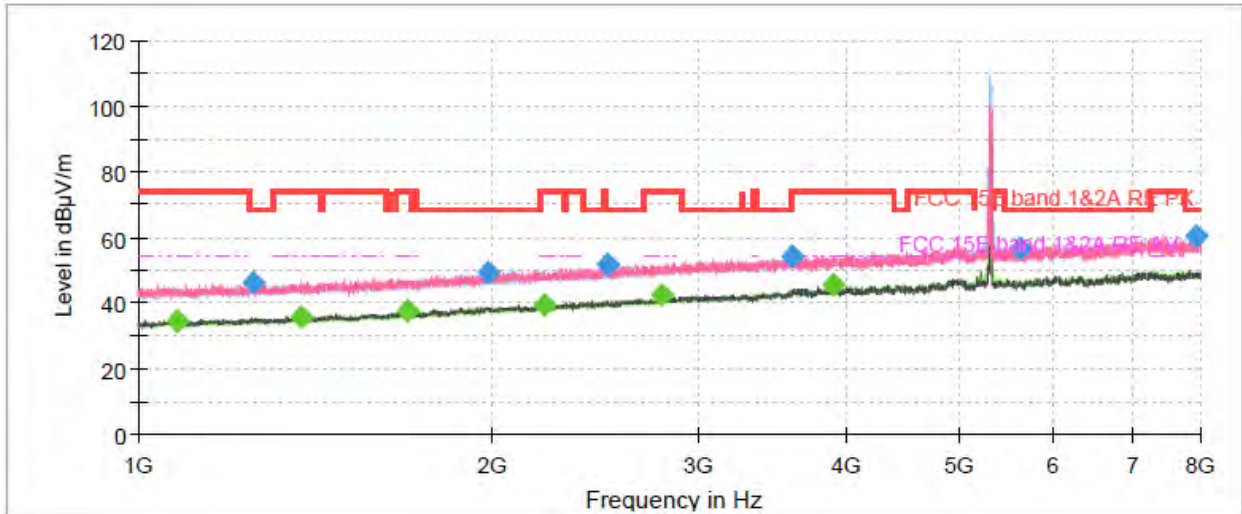


Radiates Emission from 8GHz to 18GHz

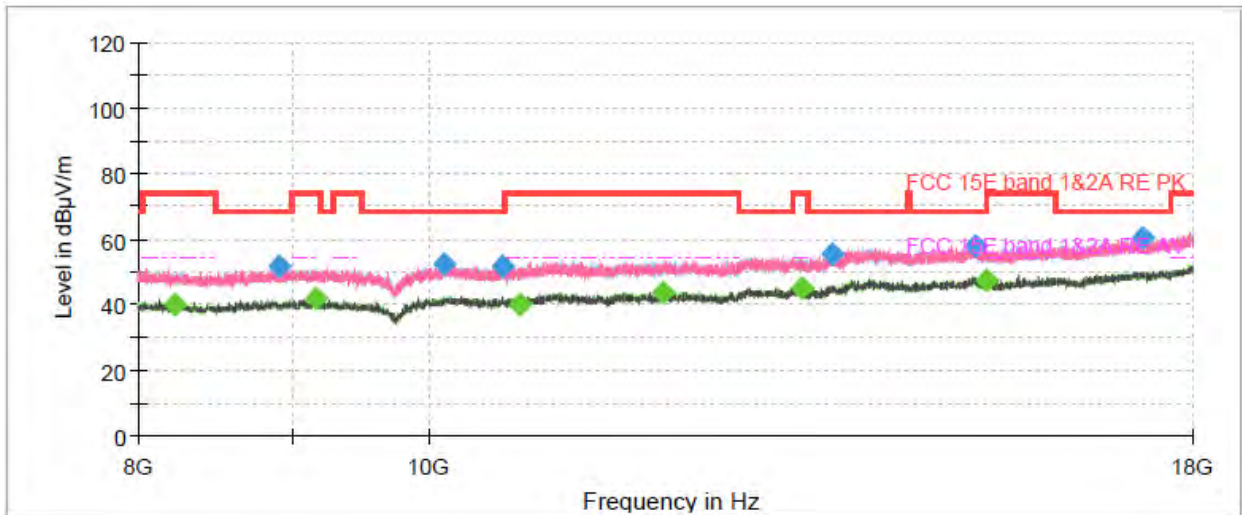
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1065.333333	---	34.80	54.00	19.20	100.0	V	72.0	-3.7
1259.233333	46.14	---	68.20	22.06	100.0	V	221.0	-3.0
1370.766667	---	35.85	54.00	18.15	200.0	V	0.0	-2.3
1694.866667	---	37.44	54.00	16.56	200.0	V	305.0	-0.9
1921.900000	49.30	---	68.20	18.90	200.0	V	292.0	0.0
2578.266667	51.86	---	68.20	16.34	200.0	V	74.0	2.3
2787.566667	---	41.71	54.00	12.29	100.0	V	235.0	3.3
3598.866667	54.29	---	68.20	13.91	200.0	V	278.0	5.8
3613.333333	---	45.01	54.00	8.99	200.0	V	278.0	5.9
4969.233333	---	47.19	54.00	6.81	200.0	V	74.0	8.8
5504.966667	57.17	---	68.20	11.03	100.0	V	0.0	9.2
7088.600000	59.68	---	68.20	8.52	100.0	V	153.0	11.8

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH60



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

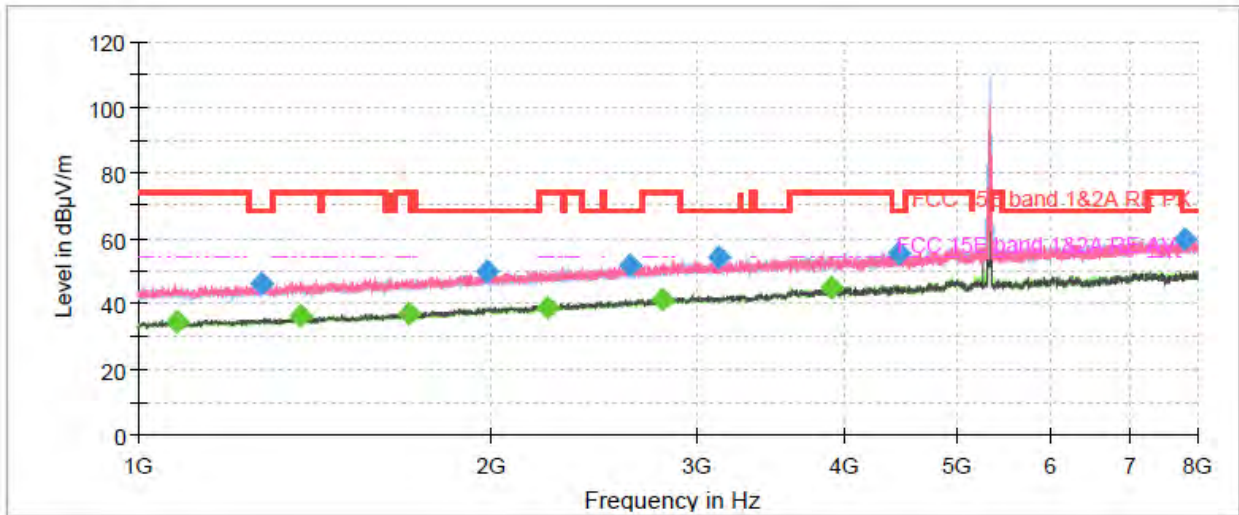


Radiates Emission from 8GHz to 18GHz

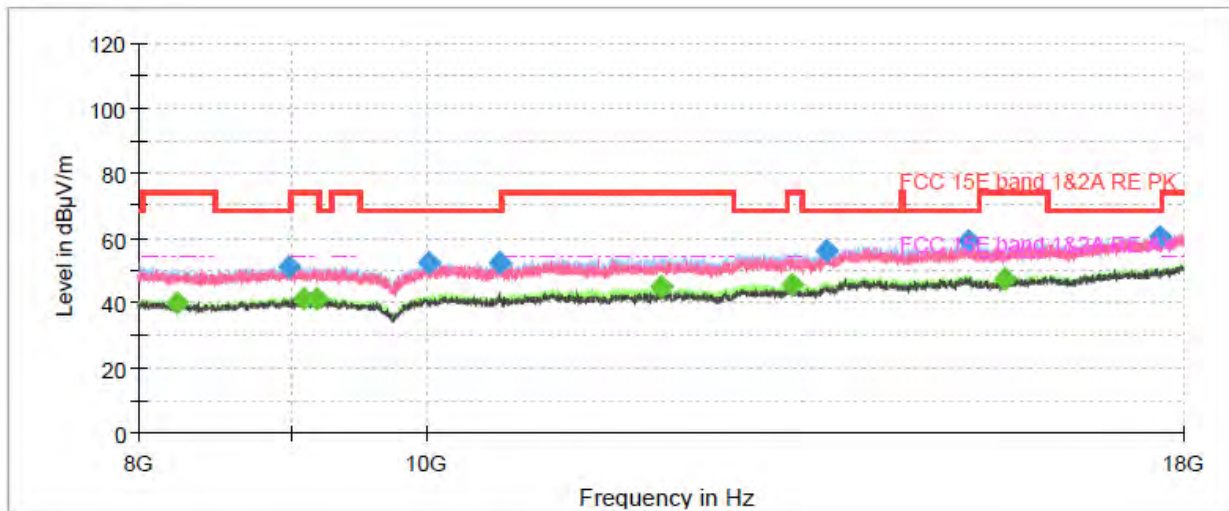
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1079.566667	---	34.19	54.00	19.81	200.0	V	275.0	-3.7
1252.933333	46.08	---	68.20	22.12	100.0	H	0.0	-3.0
1372.866667	---	35.66	54.00	18.34	100.0	V	180.0	-2.3
1696.500000	---	37.24	54.00	16.76	200.0	V	355.0	-0.8
1983.033333	49.45	---	68.20	18.75	200.0	V	275.0	0.6
2215.200000	---	39.32	54.00	14.68	200.0	V	182.0	1.2
2502.666667	51.54	---	68.20	16.66	100.0	V	126.0	2.1
2785.000000	---	42.17	54.00	11.83	200.0	V	302.0	3.3
3589.766667	54.13	---	68.20	14.07	100.0	H	199.0	5.9
3894.500000	---	45.36	54.00	8.64	200.0	V	0.0	6.5
5624.666667	56.74	---	68.20	11.46	200.0	V	275.0	9.2
7921.600000	60.08	---	68.20	8.12	100.0	H	294.0	12.4

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH64



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

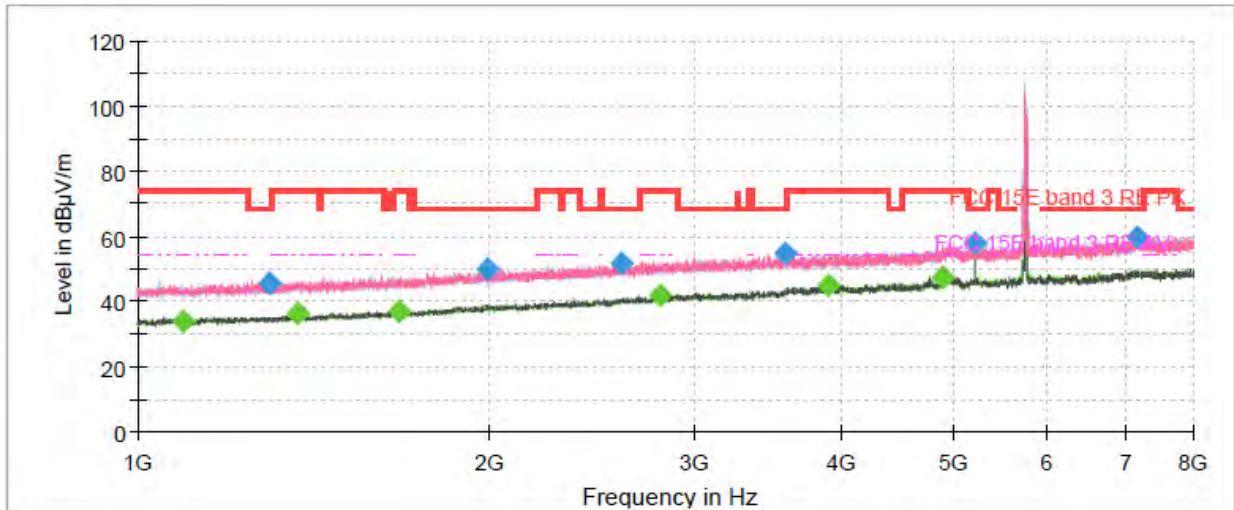


Radiates Emission from 8GHz to 18GHz

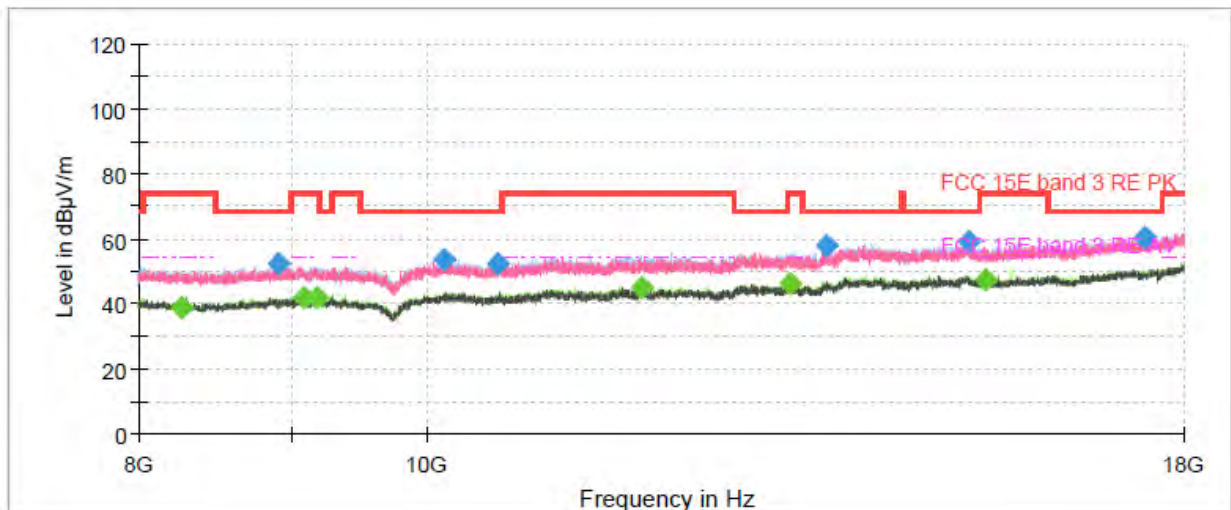
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1078.633333	---	34.75	54.00	19.25	200.0	H	0.0	-3.7
1271.600000	46.12	---	68.20	22.08	200.0	V	198.0	-2.9
1375.900000	---	36.02	54.00	17.98	100.0	V	17.0	-2.4
1704.433333	---	37.15	54.00	16.85	200.0	V	358.0	-1.0
1981.866667	49.57	---	68.20	18.63	200.0	H	83.0	0.7
2234.800000	---	38.80	54.00	15.20	100.0	V	288.0	1.1
2629.833333	51.93	---	68.20	16.27	100.0	V	258.0	2.6
2800.633333	---	41.49	54.00	12.51	100.0	V	217.0	3.4
3123.566667	54.04	---	68.20	14.16	100.0	V	56.0	4.2
3898.933333	---	45.15	54.00	8.85	100.0	H	225.0	6.6
4448.200000	55.52	---	68.20	12.68	100.0	H	0.0	7.2
7785.800000	59.63	---	68.20	8.57	200.0	V	292.0	12.0

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH149



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz



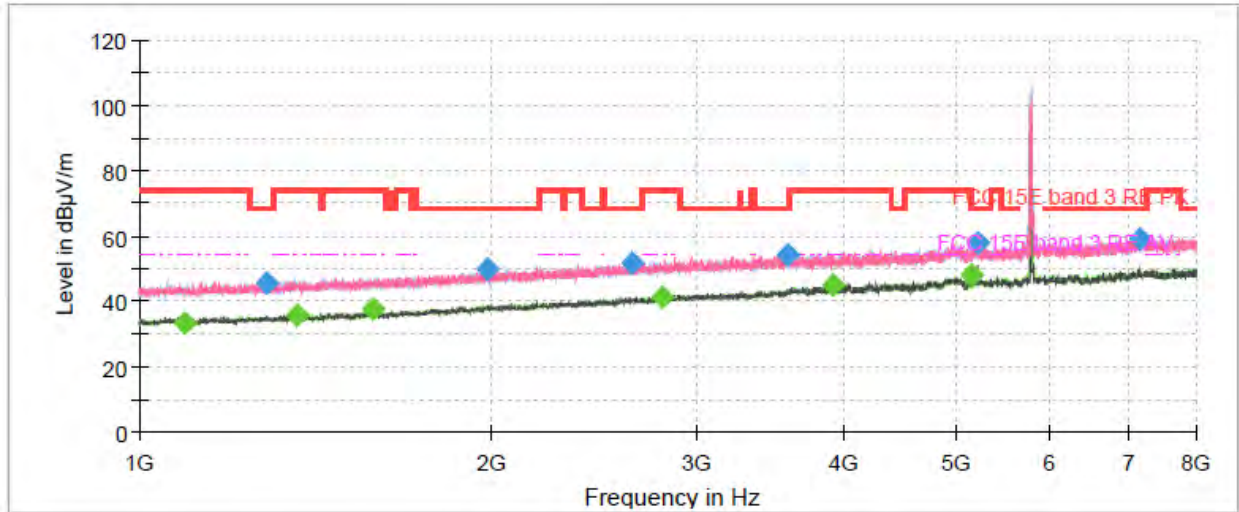
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1094.733333	---	33.93	54.00	20.07	200.0	V	208.0	-3.9
1294.466667	45.54	---	68.20	22.66	200.0	H	195.0	-3.0
1368.666667	---	36.15	54.00	17.85	200.0	V	262.0	-2.2
1676.200000	---	36.98	54.00	17.02	200.0	V	355.0	-1.0
1995.400000	49.84	---	68.20	18.36	100.0	H	28.0	0.5
2589.933333	51.52	---	68.20	16.68	200.0	H	278.0	2.5
2798.533333	---	41.62	54.00	12.38	200.0	H	0.0	3.4
3579.266667	54.51	---	68.20	13.69	200.0	H	88.0	5.8
3897.066667	---	45.09	54.00	8.91	100.0	H	278.0	6.5
4881.033333	---	47.66	54.00	6.34	100.0	V	139.0	8.2
5210.266667	57.88	---	68.20	10.32	100.0	V	207.0	8.8
7162.333333	59.81	---	68.20	8.39	100.0	V	166.0	12.1

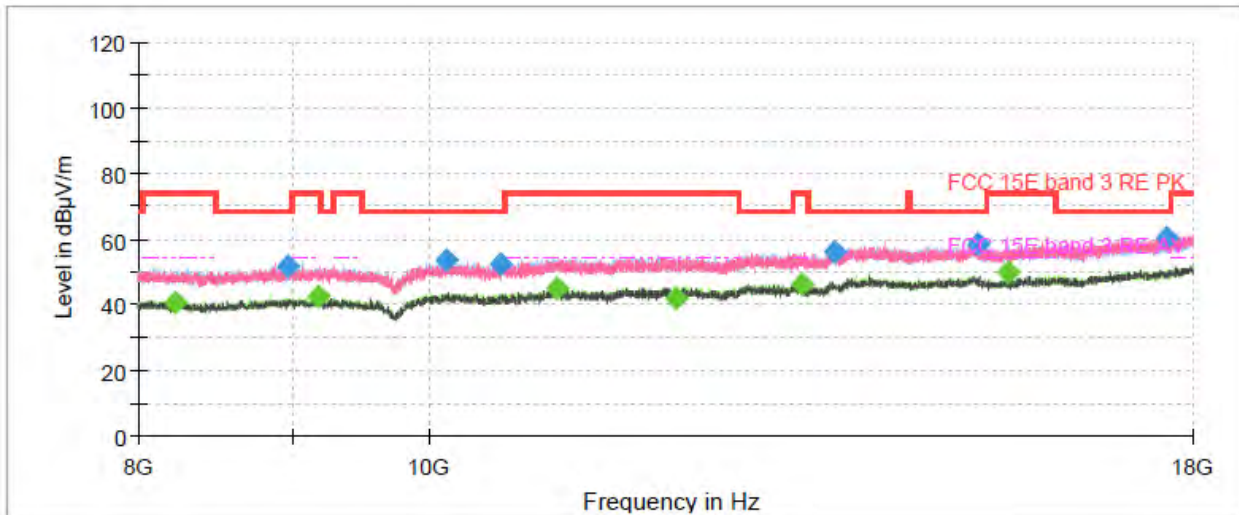
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11n (HT20) CH157



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

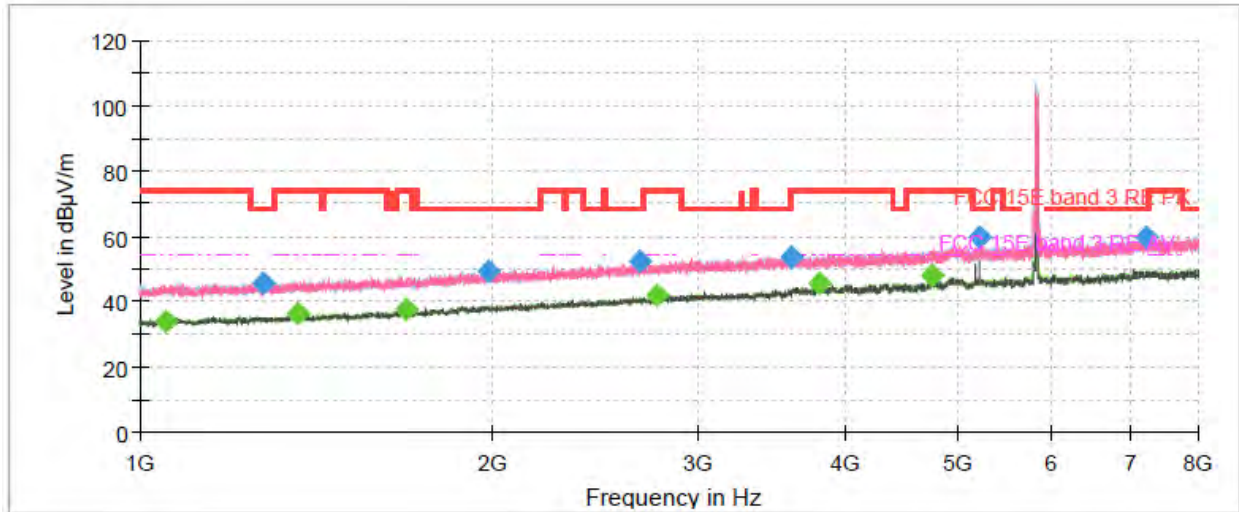


Radiates Emission from 8GHz to 18GHz

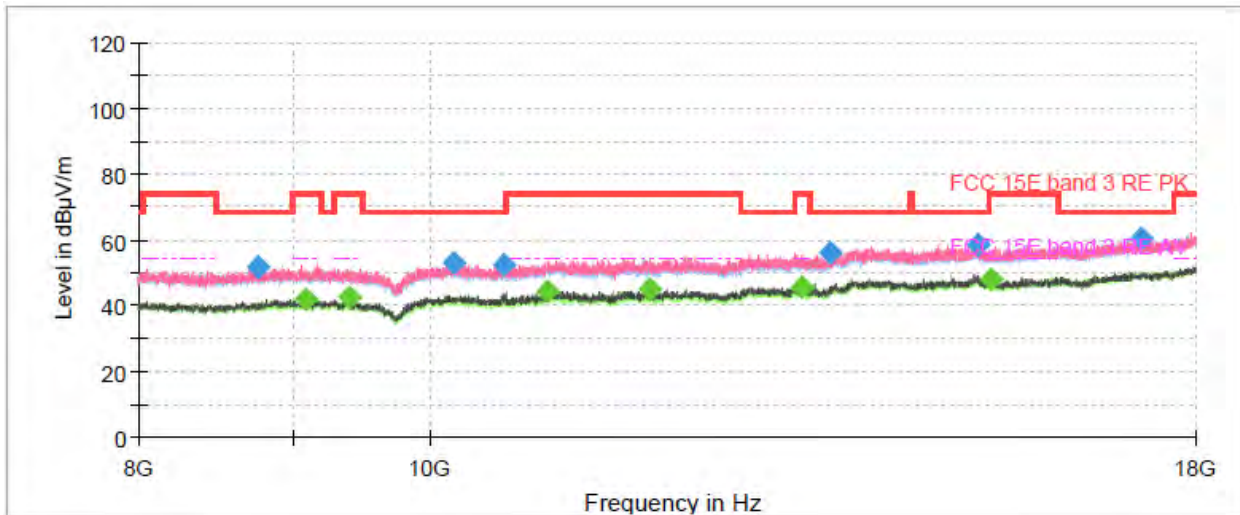
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1093.566667	---	33.50	54.00	20.50	200.0	H	0.0	-3.9
1287.000000	45.79	---	68.20	22.41	100.0	V	332.0	-2.9
1363.066667	---	35.99	54.00	18.01	200.0	V	357.0	-2.3
1579.600000	---	37.26	54.00	16.74	200.0	V	264.0	-1.3
1981.633333	49.60	---	68.20	18.60	200.0	H	0.0	0.7
2635.433333	51.95	---	68.20	16.25	200.0	H	209.0	2.5
2794.333333	---	41.47	54.00	12.53	200.0	V	1.0	3.4
3584.400000	54.27	---	68.20	13.93	200.0	V	223.0	5.9
3909.200000	---	44.75	54.00	9.25	100.0	V	5.0	6.6
5130.000000	---	47.94	54.00	6.06	200.0	H	0.0	8.4
5210.500000	57.75	---	68.20	10.45	100.0	V	233.0	8.8
7167.466667	59.37	---	68.20	8.83	200.0	H	114.0	12.1
15630.000000	---	49.69	54.00	4.31	100.0	H	55.0	13.2

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH165



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

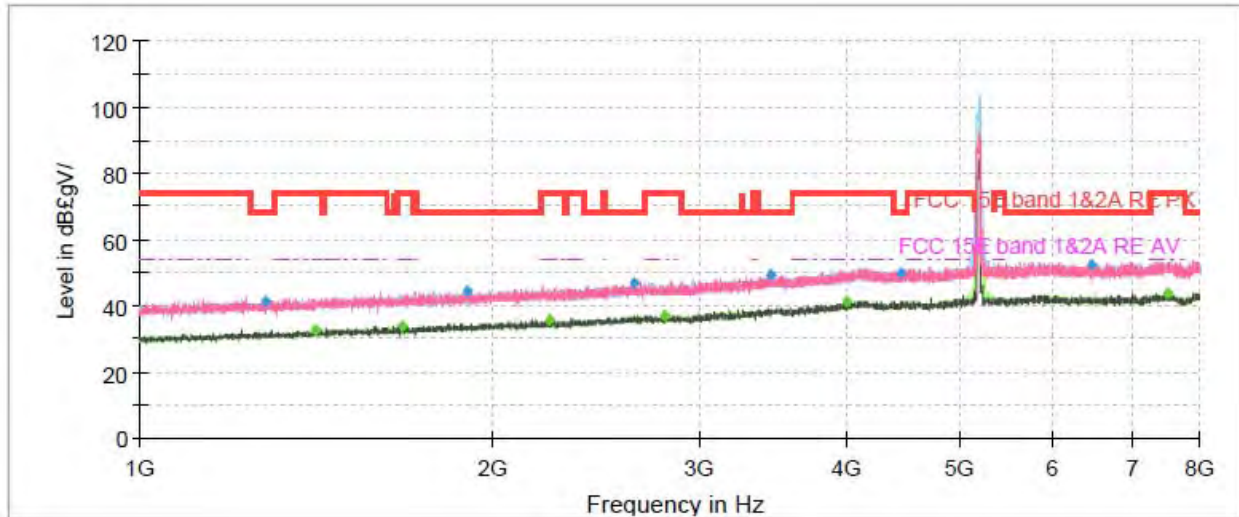


Radiates Emission from 8GHz to 18GHz

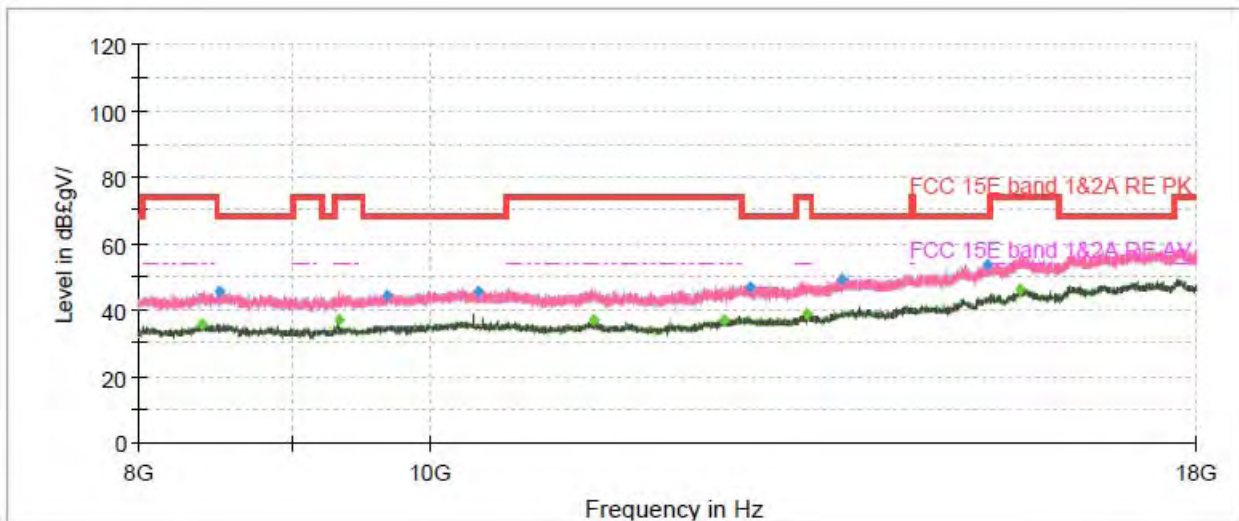
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1051.800000	---	33.94	54.00	20.06	200.0	H	358.0	-3.7
1275.333333	45.56	---	68.20	22.64	200.0	H	292.0	-2.8
1363.533333	---	36.01	54.00	17.99	100.0	V	46.0	-2.3
1687.866667	---	37.44	54.00	16.56	200.0	H	358.0	-1.0
1982.800000	49.16	---	68.20	19.04	200.0	V	234.0	0.6
2671.833333	52.30	---	68.20	15.90	200.0	V	18.0	2.8
2764.000000	---	41.76	54.00	12.24	200.0	V	169.0	3.1
3595.833333	53.75	---	68.20	14.45	200.0	H	346.0	5.9
3798.366667	---	45.40	54.00	8.60	200.0	V	118.0	6.3
4751.066667	---	47.81	54.00	6.19	100.0	H	0.0	7.9
5209.566667	59.72	---	68.20	8.48	100.0	V	88.0	8.8
7236.066667	59.66	---	68.20	8.54	200.0	V	304.0	12.1

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH38



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

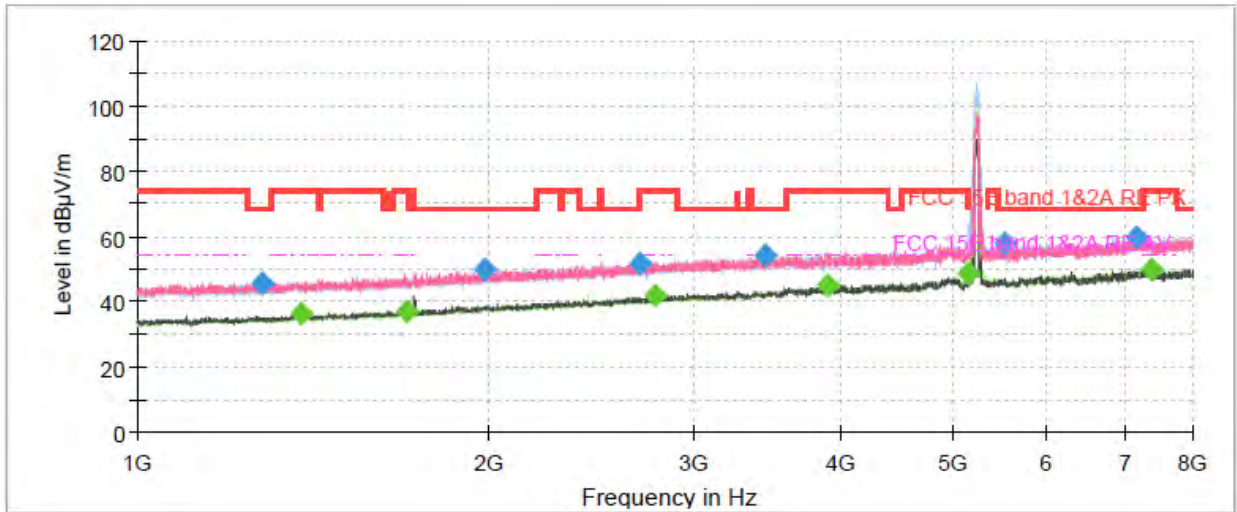


Radiates Emission from 8GHz to 18GHz

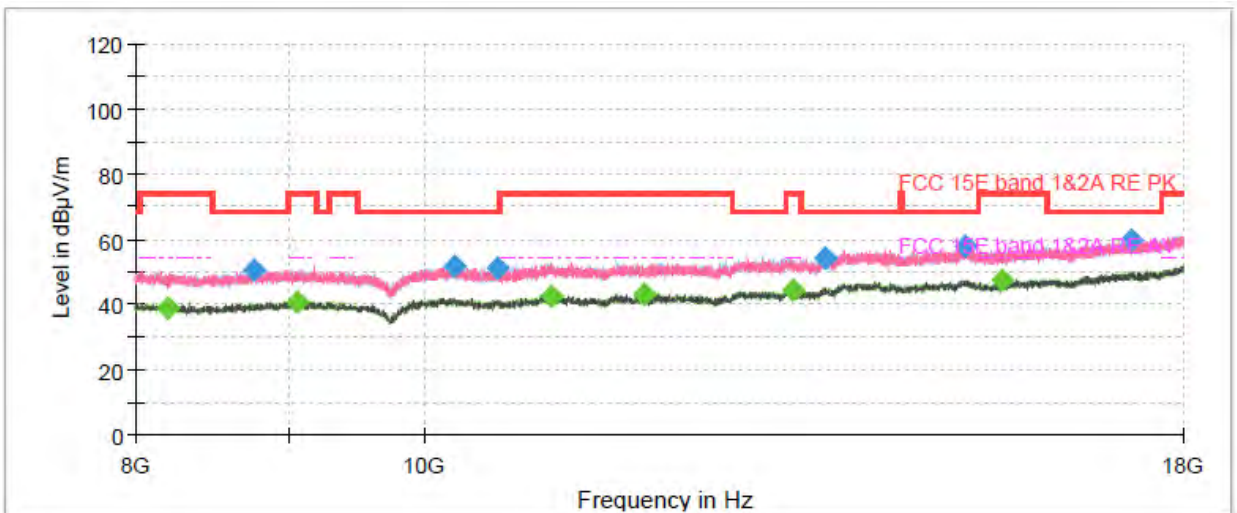
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1281.866667	41.53	---	68.20	26.67	100.0	H	91.0	-7
1411.833333	---	32.57	54.00	21.43	100.0	H	330.0	-6
1675.966667	---	34.02	54.00	19.98	200.0	V	257.0	-5
1898.800000	44.49	---	68.20	23.71	200.0	V	0.0	-4
2229.900000	---	35.48	54.00	18.52	200.0	V	351.0	-2
2640.333333	46.99	---	68.20	21.21	200.0	H	8.0	0
2799.466667	---	37.15	54.00	16.85	200.0	H	116.0	1
3440.200000	49.14	---	68.20	19.06	100.0	V	118.0	4
3992.966667	---	41.10	54.00	12.90	200.0	H	8.0	6
4448.900000	50.00	---	68.20	18.20	200.0	H	83.0	7
6476.800000	52.29	---	68.20	15.91	200.0	H	116.0	10
7516.533333	---	43.61	54.00	10.39	200.0	H	138.0	11

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH46



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

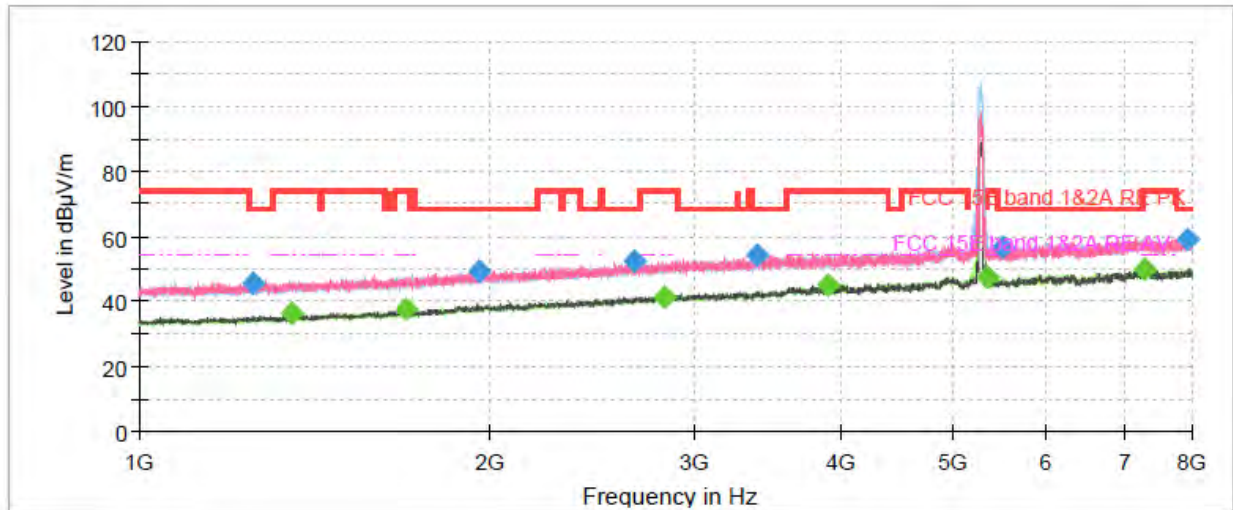


Radiates Emission from 8GHz to 18GHz

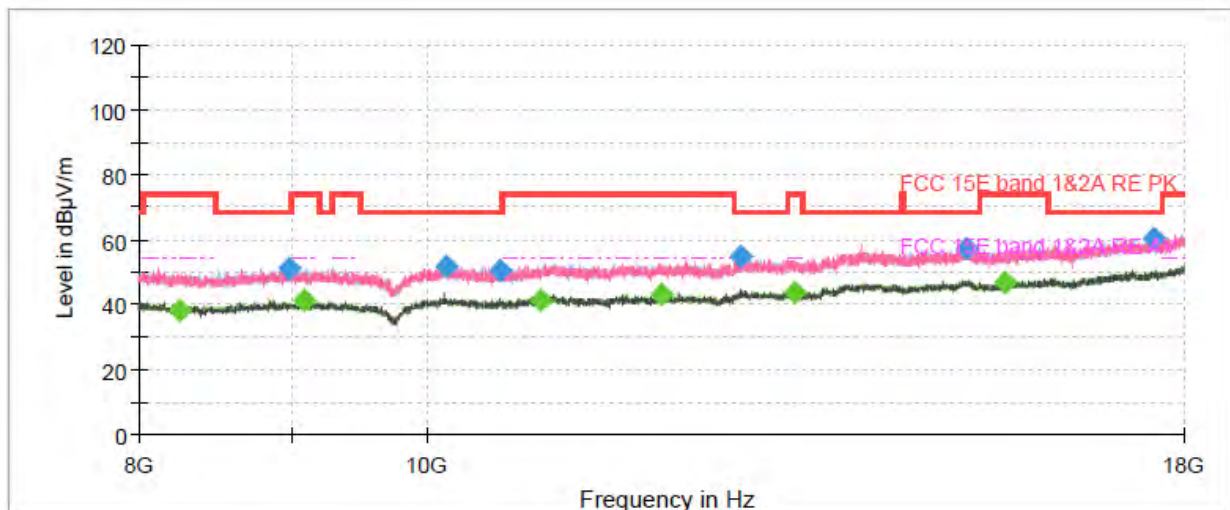
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1282.100000	45.79	---	68.20	22.41	100.0	H	0.0	-2.8
1382.666667	---	36.29	54.00	17.71	200.0	V	32.0	-2.5
1699.300000	---	37.21	54.00	16.79	100.0	V	331.0	-0.9
1981.866667	49.99	---	68.20	18.21	200.0	V	124.0	0.7
2688.633333	51.49	---	68.20	16.71	100.0	V	113.0	2.9
2779.400000	---	41.66	54.00	12.34	100.0	V	127.0	3.2
3450.000000	54.09	---	68.20	14.11	100.0	H	300.0	5.0
3904.066667	---	45.21	54.00	8.79	100.0	H	80.0	6.6
5146.800000	---	48.49	54.00	5.51	100.0	H	0.0	8.4
5518.500000	57.55	---	68.20	10.65	100.0	H	26.0	9.1
7151.133333	59.54	---	68.20	8.66	200.0	V	274.0	12.1
7370.000000	---	49.66	54.00	4.34	200.0	H	359.0	12.1

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH54



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

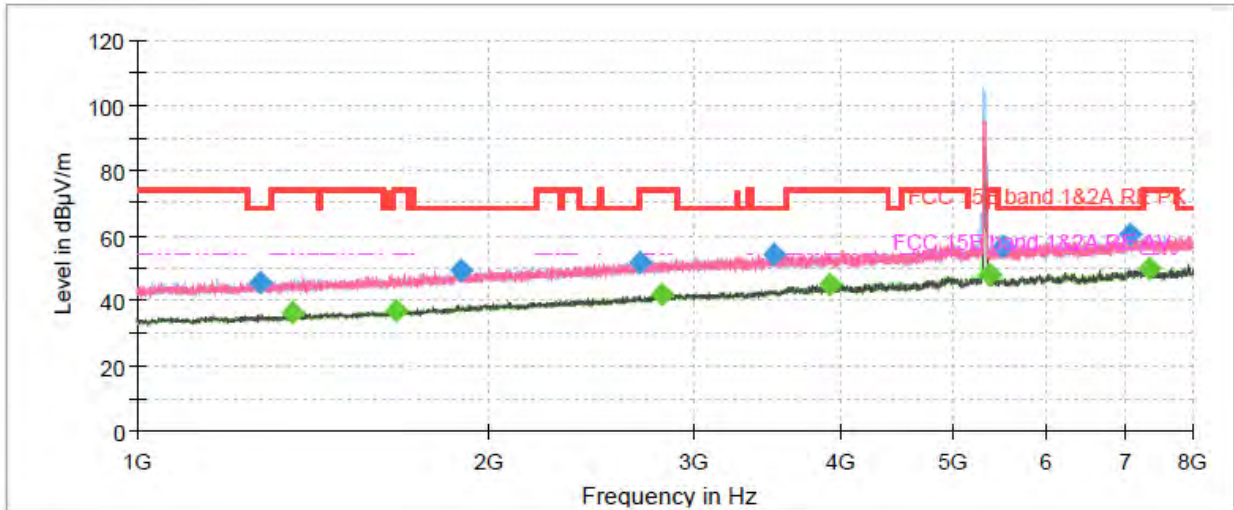


Radiates Emission from 8GHz to 18GHz

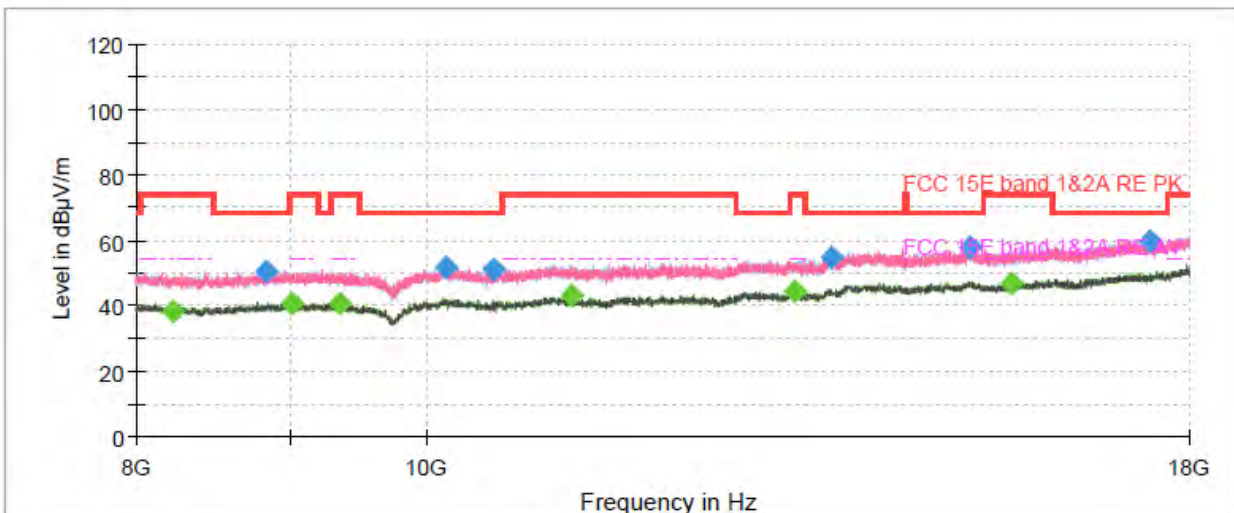
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1254.100000	45.61	---	68.20	22.59	200.0	V	139.0	-3.0
1354.666667	---	36.13	54.00	17.87	100.0	H	246.0	-2.4
1696.500000	---	37.29	54.00	16.71	100.0	V	114.0	-0.8
1958.533333	49.37	---	68.20	18.83	100.0	V	342.0	0.3
2658.066667	52.09	---	68.20	16.11	100.0	V	236.0	2.6
2820.700000	---	41.47	54.00	12.53	200.0	V	152.0	3.2
3393.300000	54.16	---	68.20	14.04	100.0	V	222.0	5.2
3907.333333	---	44.93	54.00	9.07	200.0	V	72.0	6.6
5350.266667	---	47.35	54.00	6.65	100.0	H	0.0	8.5
5501.233333	56.76	---	68.20	11.44	100.0	H	288.0	9.2
7278.766667	---	49.70	54.00	4.30	200.0	H	28.0	12.2
7920.433333	59.14	---	68.20	9.06	200.0	V	99.0	12.4

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH62



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

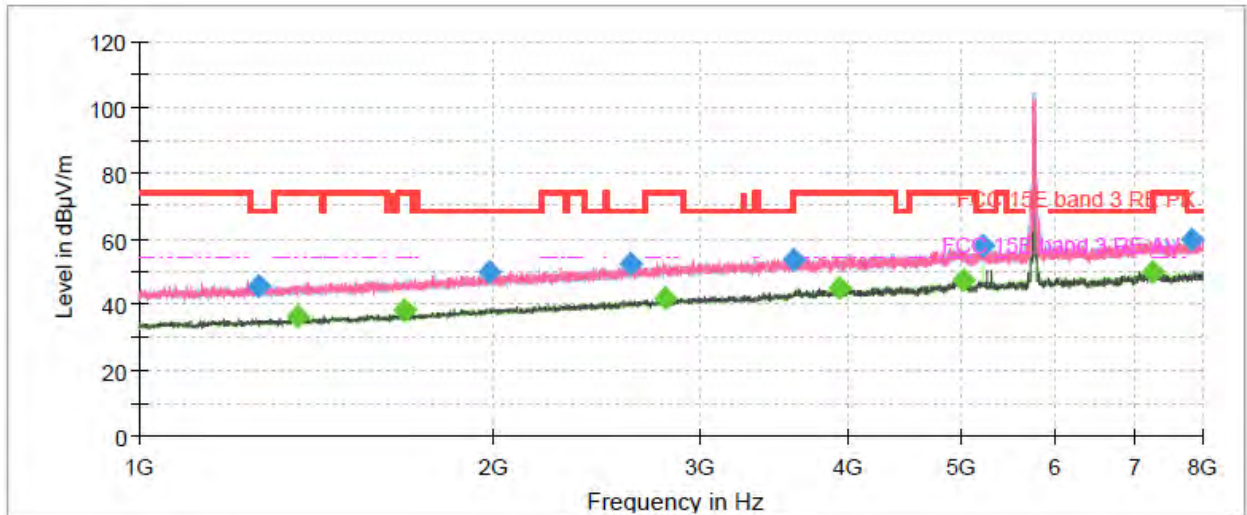


Radiates Emission from 8GHz to 18GHz

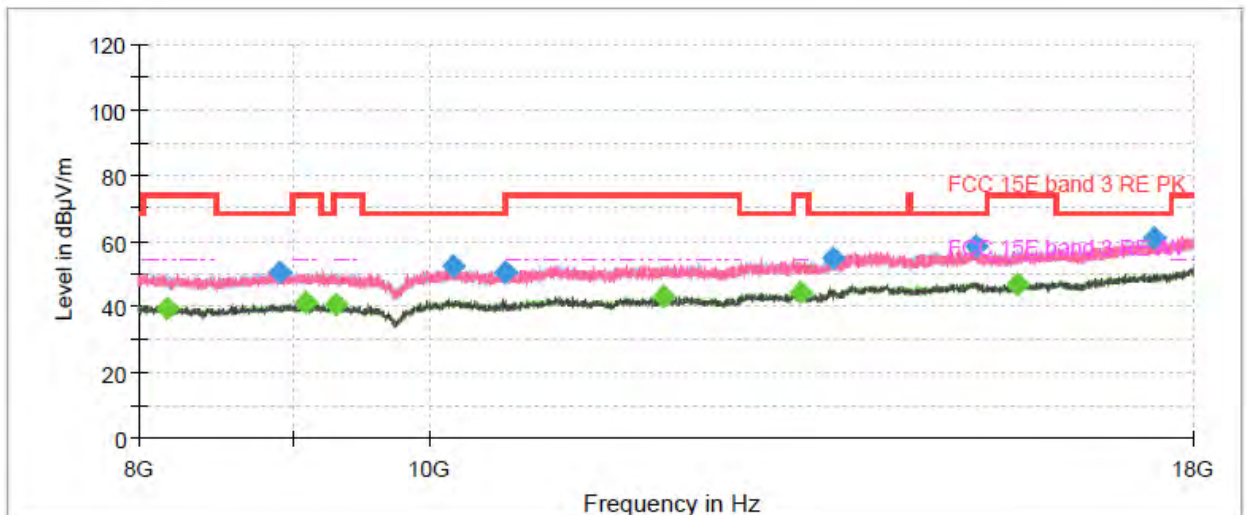
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1276.266667	45.49	---	68.20	22.71	100.0	V	225.0	-2.8
1357.233333	---	36.02	54.00	17.98	100.0	V	43.0	-2.4
1666.400000	---	37.21	54.00	16.79	200.0	V	163.0	-1.1
1889.466667	49.05	---	68.20	19.15	200.0	H	208.0	0.1
2688.166667	51.78	---	68.20	16.42	100.0	H	97.0	2.9
2810.666667	---	41.86	54.00	12.14	200.0	H	221.0	3.3
3513.233333	54.33	---	68.20	13.87	100.0	V	198.0	5.5
3912.466667	---	44.96	54.00	9.04	100.0	V	143.0	6.5
5354.466667	---	48.09	54.00	5.91	100.0	H	27.0	8.5
5496.800000	56.84	---	68.20	11.36	200.0	V	190.0	9.1
7059.200000	60.15	---	68.20	8.05	200.0	V	262.0	11.8
7354.366667	---	49.60	54.00	4.40	100.0	H	318.0	12.3

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH151



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

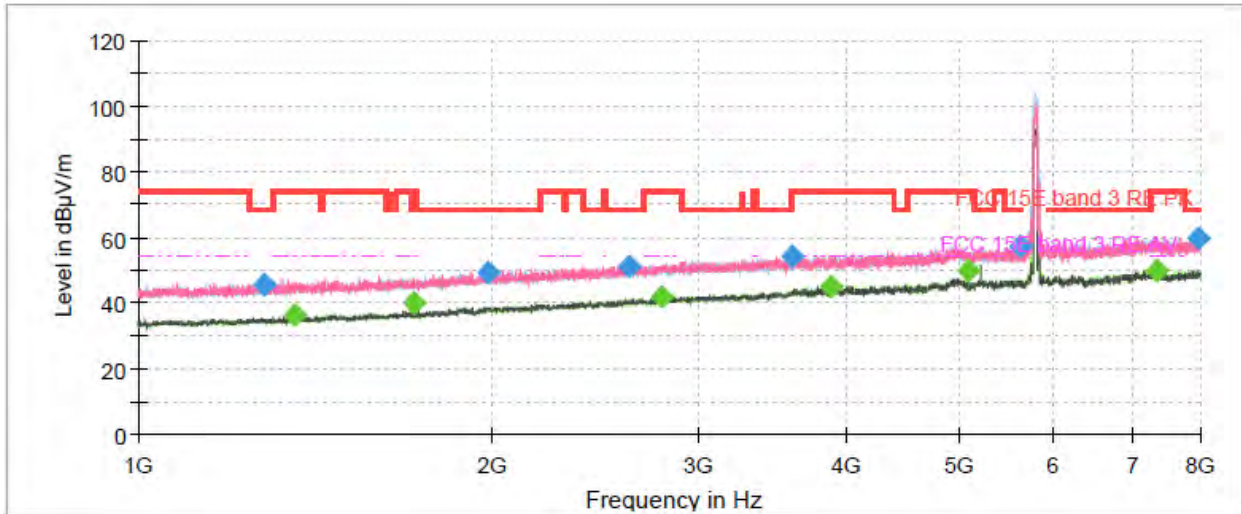


Radiates Emission from 8GHz to 18GHz

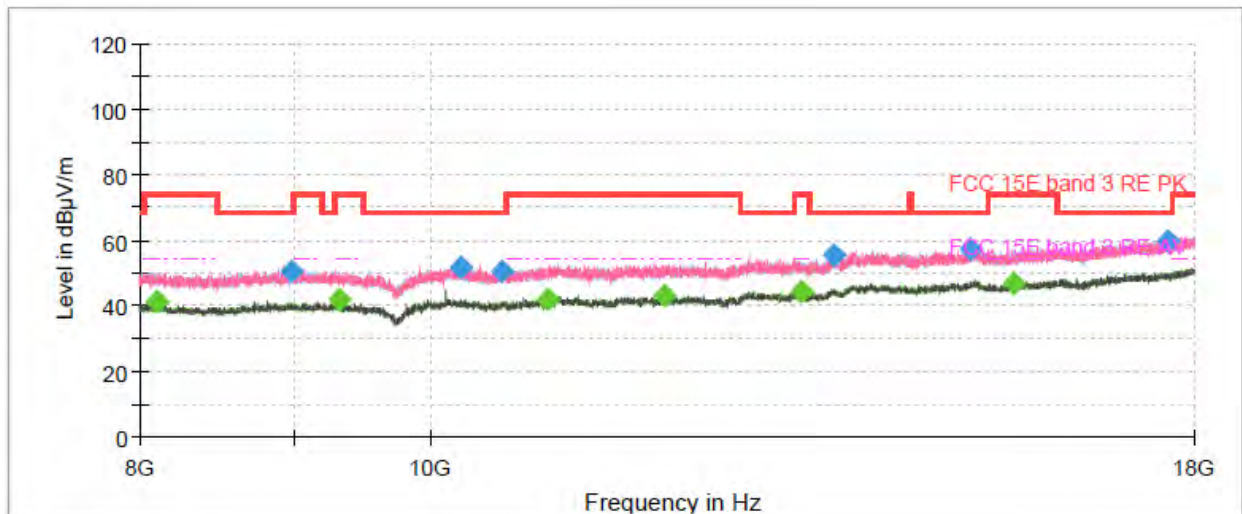
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1265.766667	45.80	---	68.20	22.40	200.0	H	155.0	-2.9
1365.633333	---	36.20	54.00	17.80	200.0	V	0.0	-2.3
1681.333333	---	37.98	54.00	16.02	100.0	V	99.0	-0.9
1981.166667	49.71	---	68.20	18.49	100.0	V	333.0	0.7
2613.033333	52.08	---	68.20	16.12	200.0	V	15.0	2.5
2798.533333	---	41.64	54.00	12.36	200.0	V	110.0	3.4
3596.533333	53.72	---	68.20	14.48	100.0	H	83.0	5.9
3931.366667	---	45.01	54.00	8.99	200.0	V	123.0	6.3
5011.700000	---	47.39	54.00	6.61	200.0	V	42.0	8.9
5209.566667	57.97	---	68.20	10.23	200.0	H	1.0	8.8
7265.466667	---	50.10	54.00	3.90	100.0	H	260.0	12.2
7821.500000	59.58	---	68.20	8.62	200.0	H	292.0	12.2

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH159



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

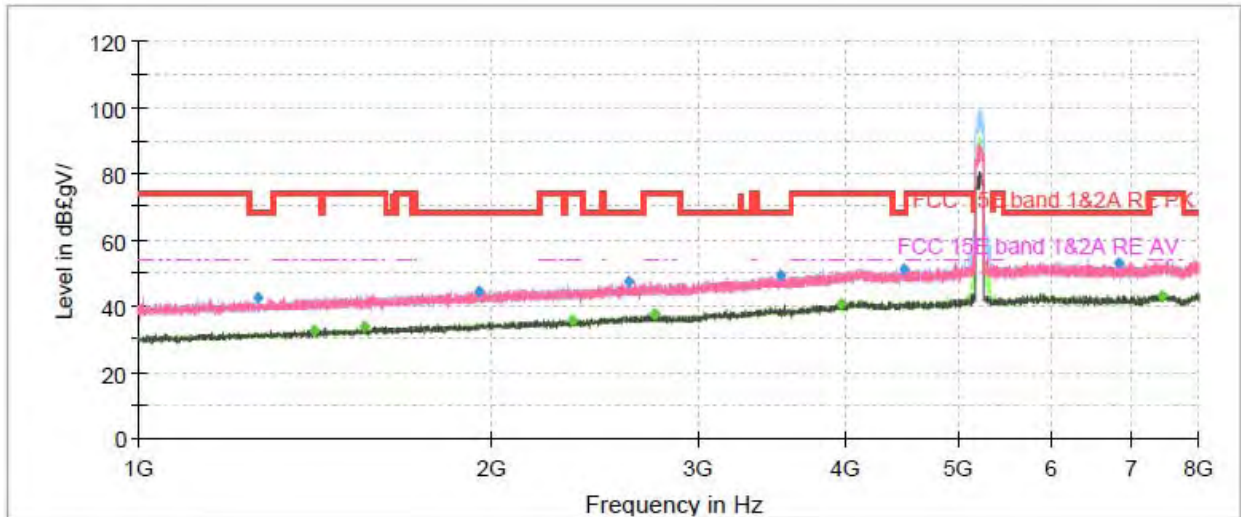


Radiates Emission from 8GHz to 18GHz

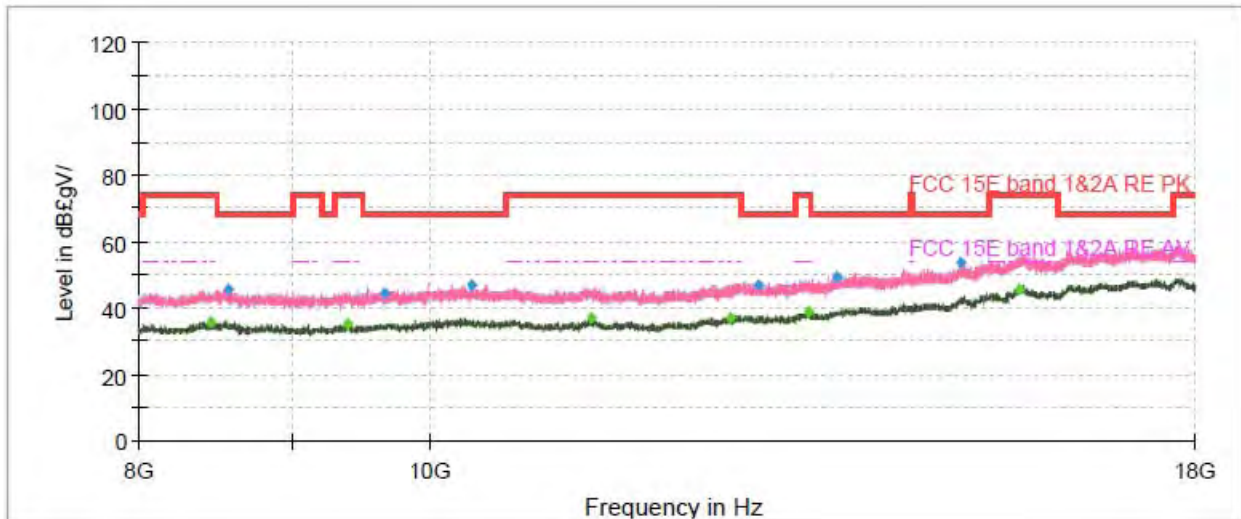
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1281.633333	45.85	---	68.20	22.35	200.0	H	236.0	-2.8
1357.000000	---	36.05	54.00	17.95	100.0	V	0.0	-2.4
1719.133333	---	39.83	54.00	14.17	200.0	H	342.0	-1.1
1983.966667	49.09	---	68.20	19.11	100.0	V	357.0	0.6
2610.466667	51.38	---	68.20	16.82	200.0	H	209.0	2.5
2792.000000	---	41.76	54.00	12.24	100.0	V	317.0	3.3
3590.233333	53.89	---	68.20	14.31	200.0	V	121.0	5.9
3886.800000	---	44.99	54.00	9.01	100.0	V	0.0	6.3
5084.033333	---	49.61	54.00	4.39	100.0	V	194.0	8.2
5612.300000	57.14	---	68.20	11.06	100.0	H	80.0	9.3
7336.166667	---	50.00	54.00	4.00	100.0	H	26.0	12.2
7982.033333	59.65	---	68.20	8.55	100.0	H	26.0	12.3

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (VHT80) CH42



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz



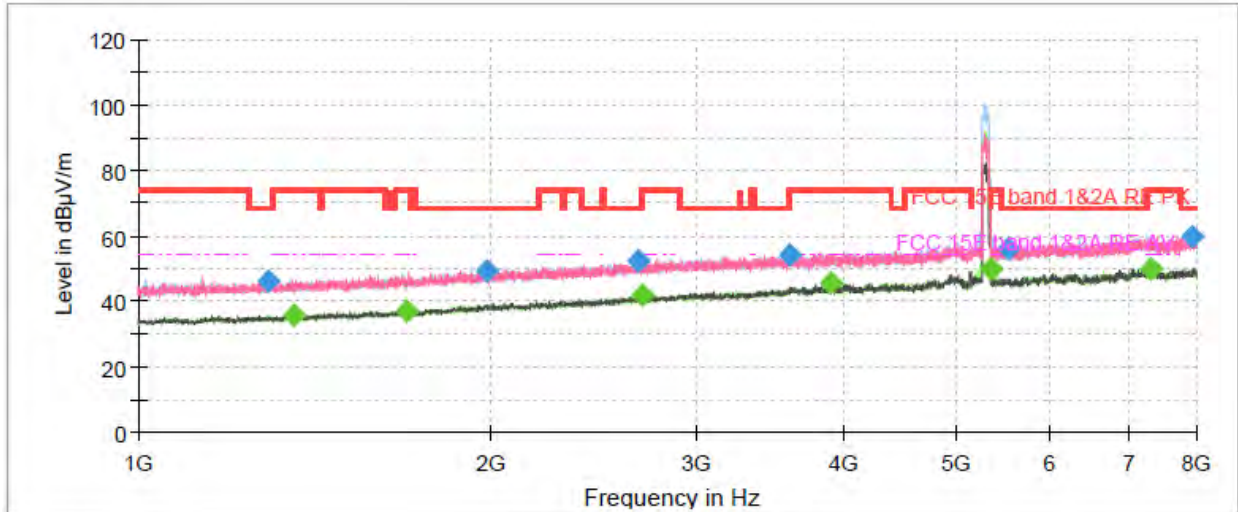
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1261.333333	42.77	---	68.20	25.43	100.0	V	136.0	-7
1413.466667	---	32.77	54.00	21.23	100.0	V	293.0	-6
1553.000000	---	33.80	54.00	20.20	100.0	V	148.0	-5
1949.666667	44.46	---	68.20	23.74	200.0	H	279.0	-3
2335.833333	---	35.43	54.00	18.57	200.0	H	1.0	-1
2613.966667	47.62	---	68.20	20.58	100.0	H	93.0	0
2750.700000	---	37.55	54.00	16.45	200.0	H	183.0	1
3521.866667	49.08	---	68.20	19.12	100.0	V	56.0	4
3958.433333	---	40.90	54.00	13.10	100.0	V	30.0	6
4486.000000	51.08	---	68.20	17.12	200.0	V	342.0	7
• 6825.166667	52.68	---	68.20	15.52	200.0	H	90.0	10
7437.433333	---	43.38	54.00	10.62	200.0	V	290.0	11

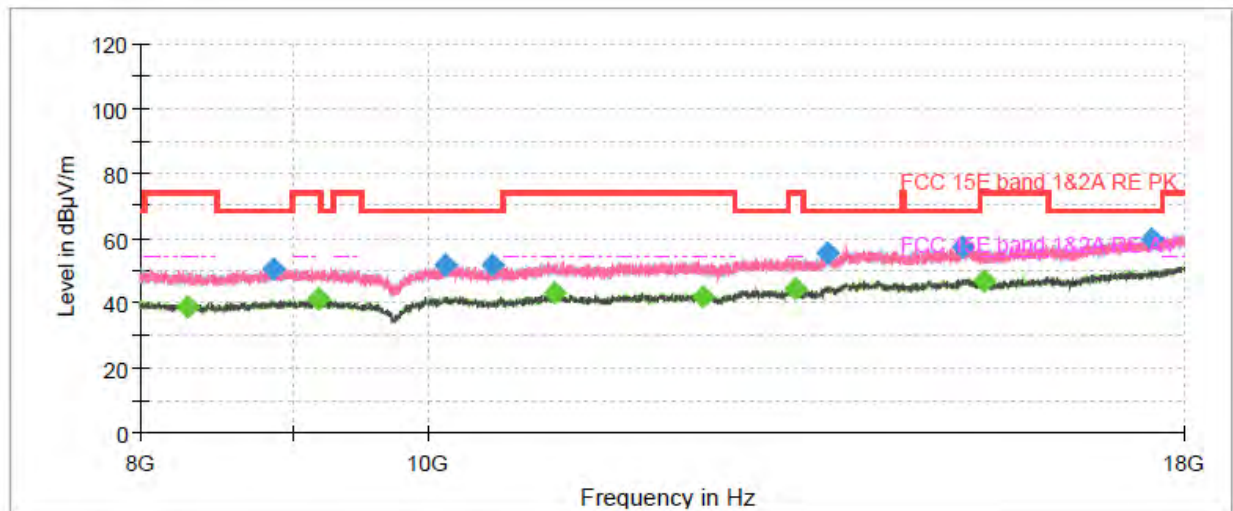
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11ac (VHT80) CH58



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

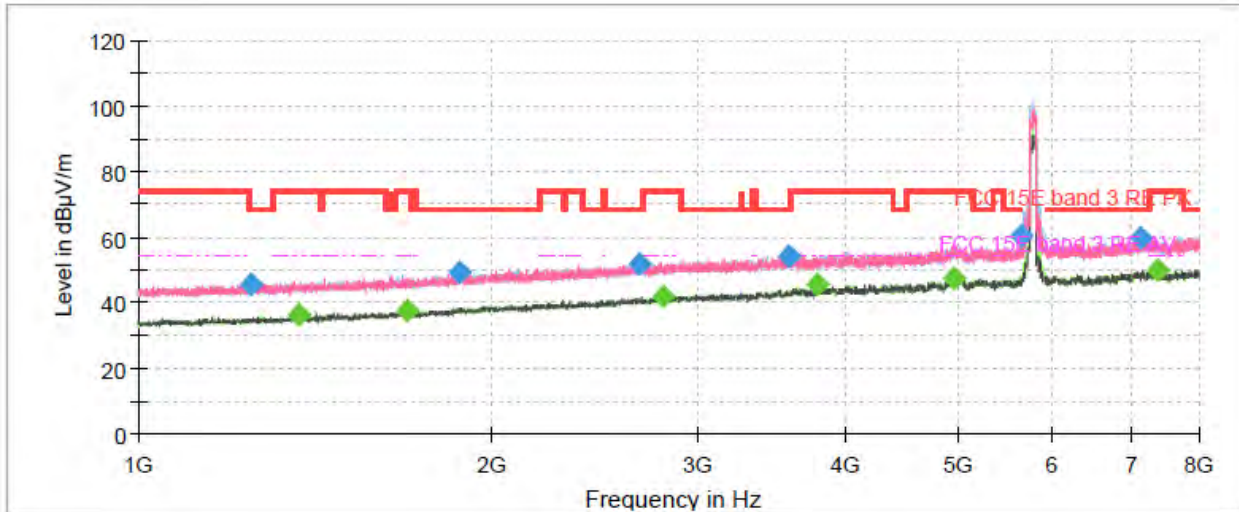


Radiates Emission from 8GHz to 18GHz

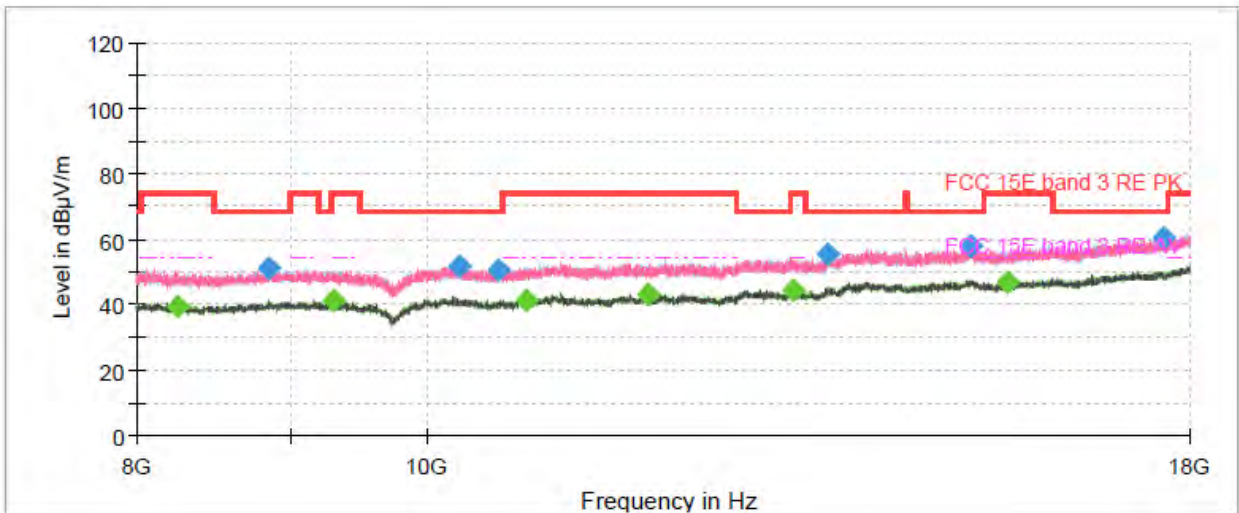
Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1291.900000	46.39	---	68.20	21.81	100.0	V	165.0	-3.0
1357.933333	---	35.94	54.00	18.06	200.0	V	263.0	-2.4
1690.900000	---	37.08	54.00	16.92	100.0	H	42.0	-0.9
1980.700000	49.27	---	68.20	18.93	100.0	H	56.0	0.7
2676.266667	52.47	---	68.20	15.73	200.0	H	0.0	2.9
2694.233333	---	41.85	54.00	12.15	200.0	V	167.0	2.8
3598.400000	53.98	---	68.20	14.22	200.0	V	235.0	5.8
3898.233333	---	45.46	54.00	8.54	200.0	V	317.0	6.5
5350.966667	---	49.59	54.00	4.41	100.0	H	1.0	8.5
5516.166667	56.25	---	68.20	11.95	100.0	V	206.0	9.2
7327.533333	---	49.67	54.00	4.33	100.0	V	247.0	12.1
7917.166667	59.89	---	68.20	8.31	100.0	V	5.0	12.4

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (VHT80) CH155



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz



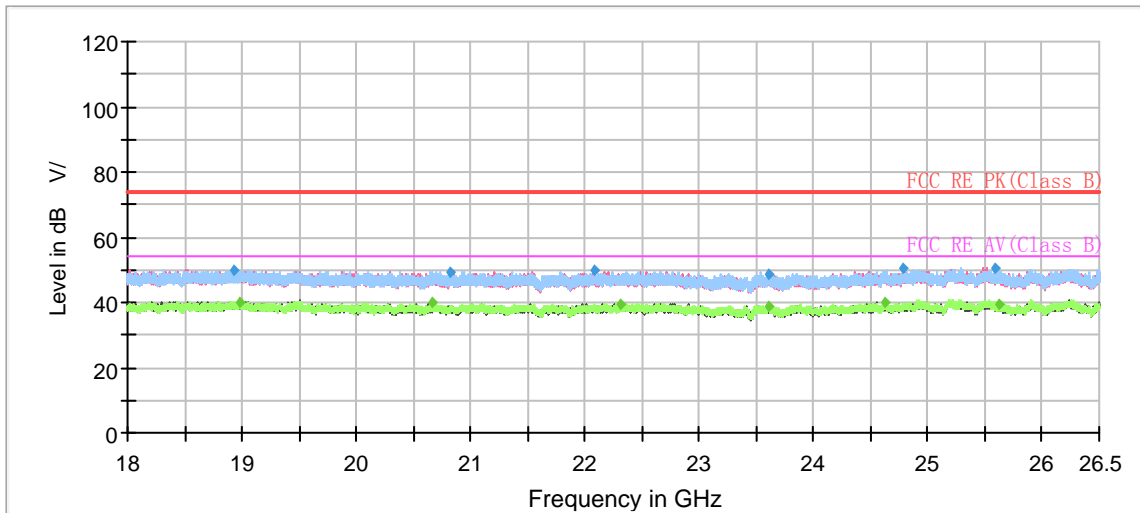
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1245.466667	45.70	---	68.20	22.50	200.0	H	3.0	-3.1
1371.000000	---	36.12	54.00	17.88	200.0	H	56.0	-2.3
1692.766667	---	37.25	54.00	16.75	200.0	H	331.0	-0.9
1873.833333	49.39	---	68.20	18.81	100.0	H	276.0	0.2
2673.466667	51.98	---	68.20	16.22	100.0	H	316.0	2.8
2796.200000	---	41.72	54.00	12.28	100.0	H	127.0	3.4
3574.366667	54.23	---	68.20	13.97	200.0	H	246.0	5.6
3790.200000	---	45.48	54.00	8.52	100.0	H	342.0	6.4
4946.833333	---	47.46	54.00	6.54	100.0	H	356.0	8.8
5647.766667	60.28	---	68.20	7.92	100.0	H	290.0	8.9
7147.400000	59.94	---	68.20	8.26	100.0	H	329.0	12.1
7367.666667	---	49.76	54.00	4.24	100.0	H	342.0	12.1

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



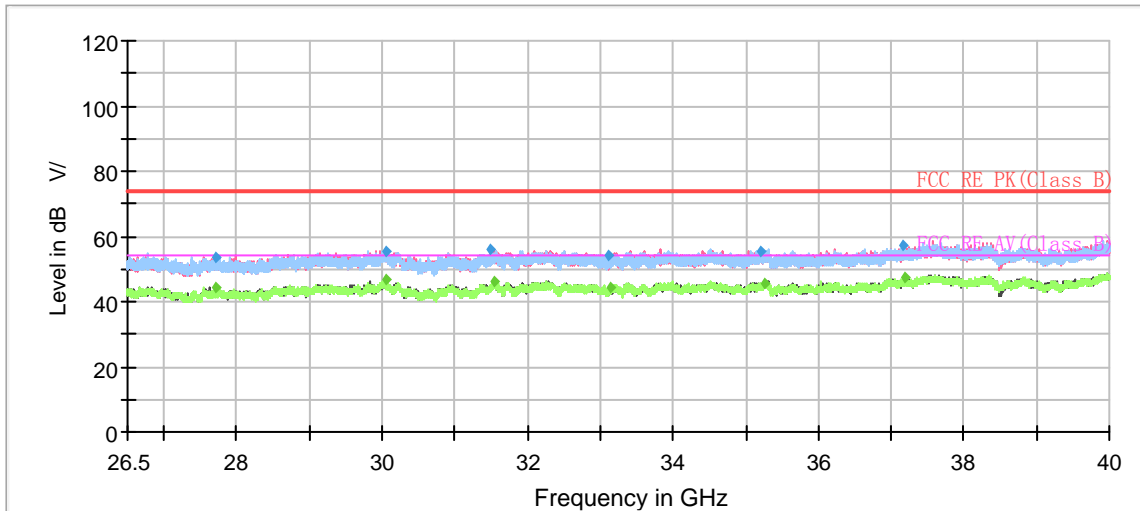
During the test, the Radiates Emission from 18GHz to 40GHz was performed in all modes with all channels, 802.11a, Channel 60 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
18930.750000	49.58	---	74.00	24.42	100.0	V	16.0	-1
18976.366667	---	40.30	54.00	13.70	200.0	H	296.0	-1
20660.216667	---	39.78	54.00	14.22	100.0	H	194.0	0
20818.883333	49.39	---	74.00	24.61	100.0	H	48.0	0
22079.433333	49.77	---	74.00	24.23	200.0	V	94.0	1
22312.616667	---	39.64	54.00	14.36	100.0	H	314.0	2
23601.783333	48.87	---	74.00	25.13	200.0	H	44.0	2
23604.900000	---	38.86	54.00	15.14	100.0	V	140.0	2
24621.783333	---	39.88	54.00	14.12	200.0	H	231.0	3
24783.850000	50.18	---	74.00	23.82	200.0	H	309.0	3
25580.016667	50.50	---	74.00	23.50	200.0	H	179.0	3
25627.616667	---	39.27	54.00	14.73	200.0	V	0.0	3

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
27710.500000	53.76	---	74.00	20.24	200.0	H	147.0	6
27710.500000	---	44.46	54.00	9.54	200.0	H	147.0	6
30041.050000	55.59	---	74.00	18.41	100.0	H	1.0	7
30046.900000	---	46.57	54.00	7.43	200.0	V	257.0	7
31499.500000	55.86	---	74.00	18.14	200.0	V	281.0	8
31547.650000	---	46.35	54.00	7.65	200.0	V	0.0	8
33103.300000	54.05	---	74.00	19.95	200.0	V	66.0	7
33131.650000	---	44.32	54.00	9.68	100.0	H	270.0	7
35194.900000	55.16	---	74.00	18.84	100.0	V	351.0	8
35249.350000	---	45.68	54.00	8.32	100.0	H	0.0	8
37168.600000	57.11	---	74.00	16.89	200.0	V	173.0	10
37198.750000	---	47.12	54.00	6.88	200.0	V	217.0	10

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

5.6. Conducted Emission

Ambient condition

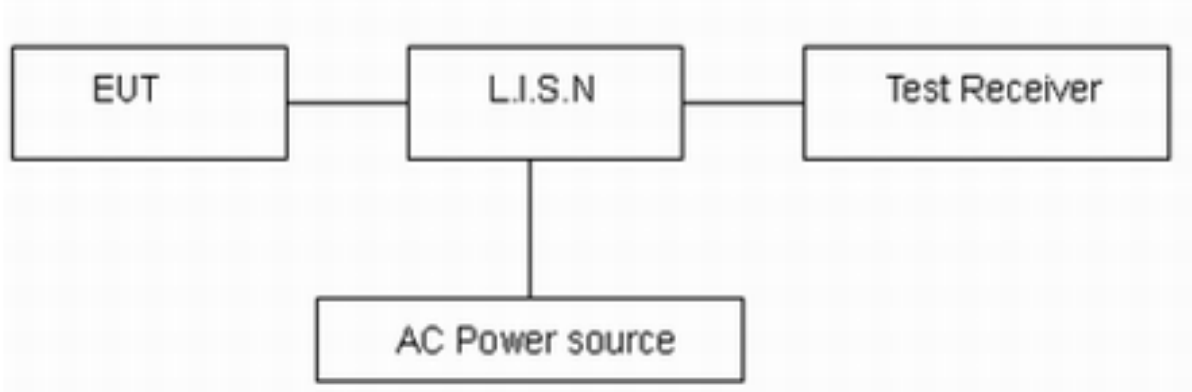
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10. Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz, VBW is set to 30kHz The measurement result should include both L line and N line.

The test is in transmitting mode.

Test Setup



Note: AC Power source is used to change the voltage 110V/60Hz.

Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

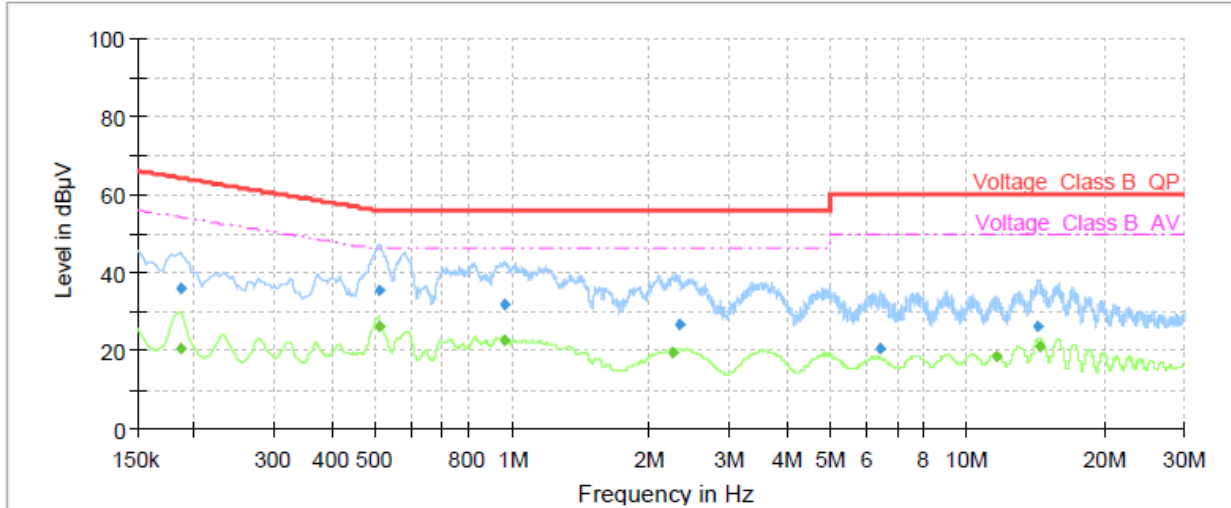
*: Decreases with the logarithm of the frequency.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U = 2.69$ dB.

Test Results:

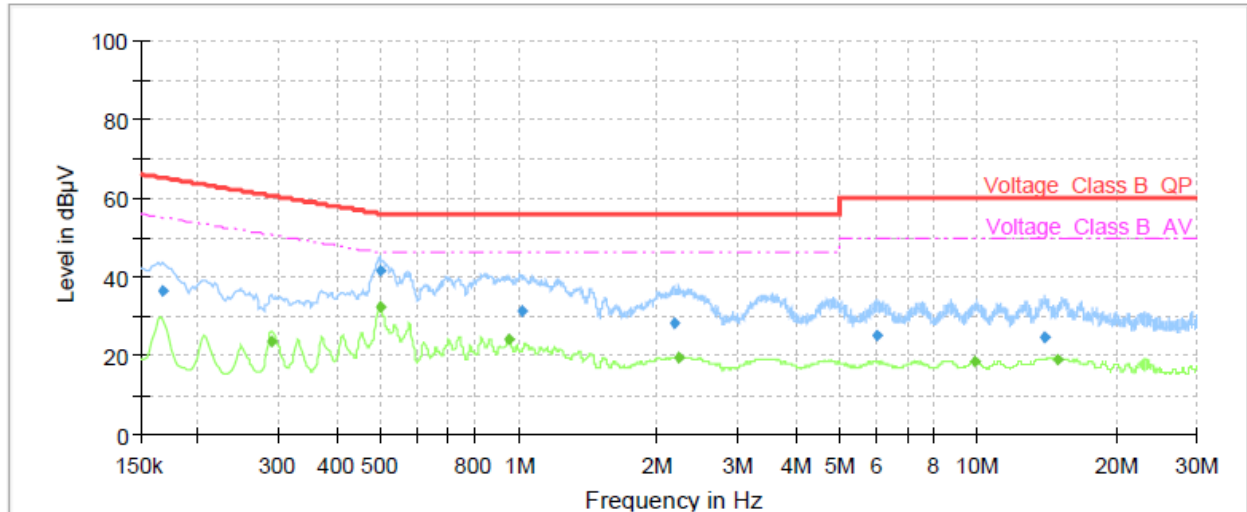
Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, 802.11a, Channel 60 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.19	---	20.35	54.21	33.86	70.0	9.000	L1	ON	21
0.19	35.89	---	64.21	28.32	70.0	9.000	L1	ON	21
0.51	---	25.94	46.00	20.06	70.0	9.000	L1	ON	20
0.51	35.63	---	56.00	20.37	70.0	9.000	L1	ON	20
0.96	---	22.44	46.00	23.56	70.0	9.000	L1	ON	20
0.96	31.62	---	56.00	24.38	70.0	9.000	L1	ON	20
2.25	---	19.62	46.00	26.38	70.0	9.000	L1	ON	19
2.32	26.57	---	56.00	29.43	70.0	9.000	L1	ON	19
6.45	20.41	---	60.00	39.59	70.0	9.000	L1	ON	19
11.62	---	18.26	50.00	31.74	70.0	9.000	L1	ON	20
14.35	26.15	---	60.00	33.85	70.0	9.000	L1	ON	20
14.45	---	21.28	50.00	28.72	70.0	9.000	L1	ON	20

Remark: Correct factor=cable loss + LISN factor

L line Conducted Emission from 150 KHz to 30 MHz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.17	36.65	---	65.06	28.41	70.0	9.000	N	ON	21
0.29	---	23.83	50.54	26.71	70.0	9.000	N	ON	21
0.50	---	32.08	46.06	13.98	70.0	9.000	N	ON	20
0.50	41.36	---	56.06	14.70	70.0	9.000	N	ON	20
0.95	---	24.24	46.00	21.76	70.0	9.000	N	ON	20
1.01	31.43	---	56.00	24.57	70.0	9.000	N	ON	20
2.17	28.17	---	56.00	27.83	70.0	9.000	N	ON	20
2.24	---	19.52	46.00	26.48	70.0	9.000	N	ON	20
6.05	25.09	---	60.00	34.91	70.0	9.000	N	ON	20
9.86	---	18.31	50.00	31.69	70.0	9.000	N	ON	20
13.95	24.84	---	60.00	35.16	70.0	9.000	N	ON	20
14.95	---	19.02	50.00	30.98	70.0	9.000	N	ON	20

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 KHz to 30 MHz

6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Artificial main network	R&S	ENV216	101171	2020-12-13	2022-12-12
EMI Test Receiver	R&S	ESR	101667	2021-05-15	2022-05-14
Software	R&S	EMC32	10.35.10	/	/
EMI Test Receiver	R&S	ESR	102389	2021-06-04	2022-06-03
EMI Test Receiver	R&S	ESCI7	100936	2021-12-12	2022-12-11
Signal Analyzer	R&S	FSV40	100815	2021-05-15	2022-05-14
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2020-04-02	2023-04-01
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2019-12-16	2022-12-15
Horn Antenna	R&S	HF907	102723	2020-08-11	2023-08-10
Horn Antenna	ETS-Lindgren	3160-09	00102643	2018-06-20	2023-06-19
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2019-12-24	2022-12-23
Software	R&S	EMC32	9.26.01	/	/
Spectrum Analyzer	Agilent	N9010A	MY47191109	2021-05-15	2022-05-14
Wireless Communication Tester	R&S	CMW270	100673	2021/05/15	2022-05-14
Climate Chamber	WEISS	WT2040	582261246600 50	2021-12-12	2022-12-11
Power Probe	R&S	NRP18S	101954	2021-05-15	2022-05-14

*****END OF REPORT *****

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.