RF TEST REPORT

Applicant	Huawei Technologies Co., Ltd.
FCC ID	QISMAR-LX1AM
Product	Smart Phone
Model	MAR-LX1Am
Report No.	R1905H0093-R7
Issue Date	May 20, 2019

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2018)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Peng Tao

Performed by: Peng Tao

Kai Xu

Approved by: Kai Xu

TA Technology (Shanghai) Co., Ltd.

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TABLE OF CONTENT

Summary of measurement results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Average conducted 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: May 8, 2019~ May 19, 2019			

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

CNAS (accreditation number: L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

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.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

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
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
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

Client Information

Applicant	Huawei Technologies Co., Ltd.
Applicant address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.China.
Manufacturer	Huawei Technologies Co., Ltd.
Manufacturer address	Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.China.

General information

EUT Description	
Model	MAR-LX1Am
SN	76YDU19415000023
Hardware Version	HL4MARLM
Software Version	9.0.1.152(SP2C900E140R1P6)
Power Supply	Battery/AC adapter
Antenna Type	Internal Antenna
Antenna Gain	2.0dBi
additional beamforming gain	NA
Test Mode(s)	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5725MHz with 5600MHz -5650MHz) U-NII-3(5725MHz-5850MHz)
Modulation Type	802.11a/n (HT20/HT40) : OFDM 802.11ac (VHT20/VHT40/VHT80): OFDM
Max. Conducted Power	17.42 dBm
Operating Frequency Range(s)	U-NII-1: 5150-5250MHz U-NII-2A:5250-5350MHz U-NII-2C:5470-5725MHz (with 5600MHz -5650MHz) U-NII-3: 5725-5850MHz
Operating temperature range:	0 ° C to 35° C
Operating voltage range:	3.6 V to 4.35 V
State DC voltage:	3.8V
EUT Accessory	

Adapter 1	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-090200EH0
Adapter 2	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-090200BH0
Adapter 3	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-090200AH0
Adapter 4	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-090200UH0
Adapter 5	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-059200EHQ
Adapter 6	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-090200UH1
Adapter 7	Manufacturer: Huawei Technologies Co., Ltd. Model: HW-090200IH0
Battery 1	Manufacturer: Huawei Technologies Co., Ltd. (Sunwoda Electronic CO., LTD) Model: HB356687ECW
Battery 2	Manufacturer: Huawei Technologies Co., Ltd. (Huizhou Desay Battcry Co., Ltd) Model: HB356687ECW
Battery 3	Manufacturer: Huawei Technologies Co., Ltd. (SCUD (FUJIAN) Electronics Co., Ltd) Model: HB356687ECW
Earphone 1	Manufacturer: Jiangxi Lianchuang Hongsheng Electronic Co., LTD. Model: MEND1532B528A02
Earphone 2	Manufacturer: Boluo County Quancheng Electronic Co., Ltd. Model: 1293-3283-3.5mm-322
Earphone 3	Manufacturer: FOXCONN INTERCONNECT TECHNOLOGY LIMITED Model: EPAB542-2WH05-DH
Earphone 4	Manufacturer: Jiangxi Lianchuang Hongsheng Electronic Co., LTD. Model: MEND1532B528B00
Earphone 5	Manufacturer: Boluo County Quancheng Electronic Co., Ltd. Model: 1293-3283-3.5mm-336
Earphone 6	Manufacturer: FOXCONN INTERCONNECT TECHNOLOGY LIMITED Model: EPAB542-2WH06-DH
USB Cable 1	Manufacturer: HUIZHOU DEHONG TECHNOLOGY CO.,LTD. Model: 330-50507
USB Cable 2	Manufacturer: FOXCONN INTERCONNECT TECHNOLOGY LIMITED

	Model: CUDU01B-HC295-EH
USB Cable 3	Manufacturer: NingBo Broad Telecommunication Co.,Ltd. Model: WA0020
USB Cable 4	Manufacturer: LUXSHARE Precision Industry Co., Ltd. Model: L99UC131-CS-H
USB Cable 5	Manufacturer: Freeport Resources Enterprises (Jiangxi) Co.,Ltd Model: 18-93C2CHO-001HF
USB Cable 6	Manufacturer: Dongguan Mingji Electronics Technology Group Co.,Ltd Model: 203-1572-0
Note: 1. The information of the EUT is declared by the manufacturer. 2. There is more than one Adapter, one USB cable, one Battery and Earphone, each one should be applied throughout the compliance test respectively, and however, only the worst case (Adapter 1, USB cable 3/ Battery 1/ Earphone 2) will be recorded in this report.	

3. Applied Standards

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

FCC CFR47 Part 15E (2018) Unlicensed National Information Infrastructure Devices

ANSI C63.10 (2013)

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 lie-down 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.

Band	**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	U-NII-1	20 MHz	36	5180MHz
			40	5200MHz
			44	5220MHz
			48	5240MHz
		40 MHz	38	5190MHz
			46	5230MHz
		80 MHz	42	5210MHz
	U-NII-2A	20 MHz	52	5260MHz
			56	5280MHz
			60	5300MHz
			64	5320MHz
		40 MHz	54	5270MHz
			62	5310MHz
		80 MHz	58	5290MHz
	U-NII-2C	20 MHz	100	5500MHz
			104	5520MHz
			108	5540MHz
			112	5560MHz
			116	5580MHz
			120	5600MHz
			124	5620MHz
			128	5640MHz
			132	5660MHz
			136	5680MHz
			140	5700MHz
		40 MHz	102	5510MHz
			110	5550MHz
			118	5590MHz
			126	5630MHz
			134	5670MHz
		80 MHz	106	5530MHz
			122	5610MHz
			138	5690MHz
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz

			165	5825MHz
		40 MHz	151	5755MHz
			159	5795MHz
		80 MHz	155	5775MHz
Does this device support TPC Function? ☒Yes ☐No				
Does this device support TDWR Band? ☒Yes ☐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.

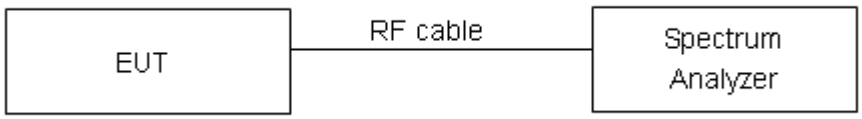
For U-NII-1/U-NII-2A/U-NII-2C, set RBW ≈1% OCB kHz, VBW ≥ 3 × RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the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

For U-NII-3, Set RBW = 100 kHz, VBW ≥ 3 × 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

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	17.637	20.53	PASS
	5200	17.639	20.17	PASS
	5240	17.632	20.11	PASS
802.11n HT20	5180	17.638	20.07	PASS
	5200	17.626	20.03	PASS
	5240	17.622	20.45	PASS
802.11n HT40	5190	35.960	39.17	PASS
	5230	35.995	38.90	PASS
802.11ac VHT20	5180	17.653	20.01	PASS
	5200	17.631	20.07	PASS
	5240	17.628	20.21	PASS
802.11ac VHT40	5190	35.996	38.80	PASS
	5230	35.965	38.66	PASS
802.11ac VHT80	5210	74.859	79.93	PASS

U-NII-2A

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.572	20.06	PASS
	5300	16.544	20.00	PASS
	5320	16.572	20.00	PASS
802.11n HT20	5260	17.614	20.00	PASS
	5300	17.627	20.03	PASS
	5320	17.621	20.00	PASS
802.11n HT40	5270	36.008	39.09	PASS
	5310	35.953	38.91	PASS
802.11ac VHT20	5260	17.624	20.06	PASS
	5300	17.628	20.27	PASS
	5320	17.633	20.10	PASS
802.11ac VHT40	5270	35.988	39.06	PASS
	5310	35.967	38.91	PASS
802.11ac VHT80	5290	75.002	79.78	PASS

U-NII-2C

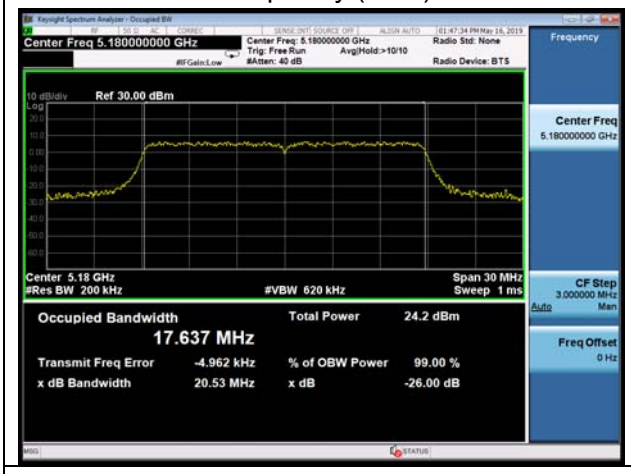
Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.554	20.35	PASS
	5580	16.537	20.07	PASS
	5700	16.550	20.56	PASS
802.11n HT20	5500	17.646	20.09	PASS
	5580	17.614	20.07	PASS
	5700	17.626	20.05	PASS
802.11n HT40	5510	35.996	38.72	PASS
	5550	35.938	38.85	PASS
	5670	36.011	39.17	PASS
802.11ac VHT20	5500	17.639	20.22	PASS
	5580	17.620	20.02	PASS
	5700	17.644	20.11	PASS
802.11ac VHT40	5510	35.952	39.10	PASS
	5550	35.946	38.92	PASS
	5670	36.018	39.06	PASS
802.11ac VHT80	5530	74.971	80.38	PASS

U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	16.544	16.40	500	PASS
	5785	16.571	16.35	500	PASS
	5825	16.553	16.40	500	PASS
802.11n HT20	5745	17.643	17.68	500	PASS
	5785	17.635	17.59	500	PASS
	5825	17.634	17.59	500	PASS
802.11n HT40	5755	35.965	34.21	500	PASS
	5795	35.994	35.51	500	PASS
802.11ac VHT20	5745	17.643	17.77	500	PASS
	5785	17.647	17.76	500	PASS
	5825	17.648	17.74	500	PASS
802.11ac VHT40	5755	35.970	35.15	500	PASS
	5795	35.993	35.24	500	PASS
802.11ac VHT80	5775	74.865	75.18	500	PASS

U-NII-1, 802.11a

Carrier frequency (MHz): 5180



U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5180

U-NII-1, 802.11a

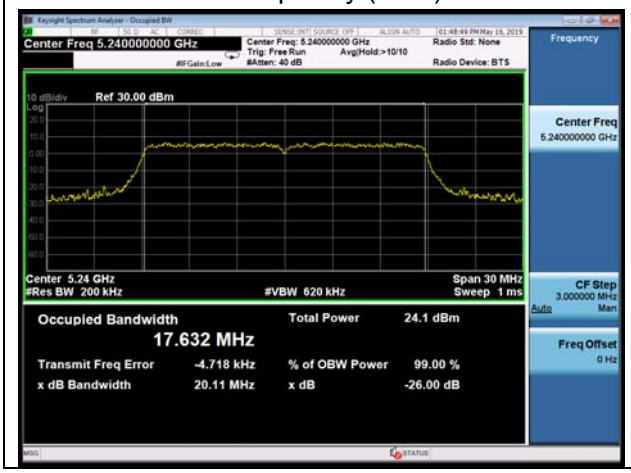
Carrier frequency (MHz): 5200

U-NII-1, 802.11n HT20

Carrier frequency (MHz): 5200

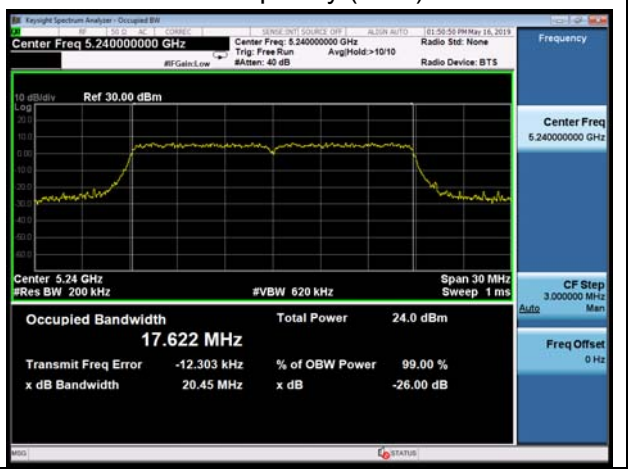
U-NII-1, 802.11a

Carrier frequency (MHz):5240



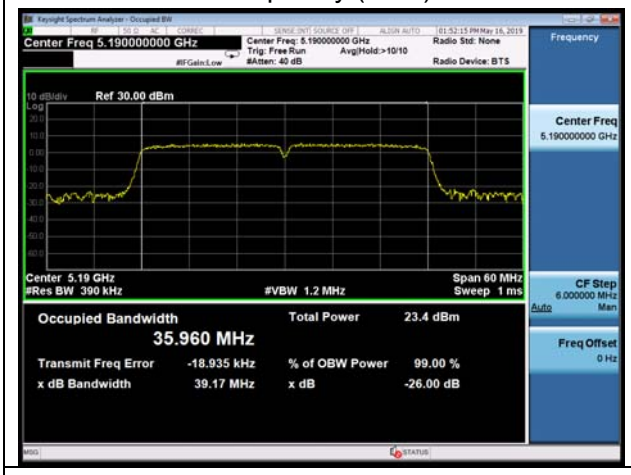
U-NII-1, 802.11n HT20

Carrier frequency (MHz):5240



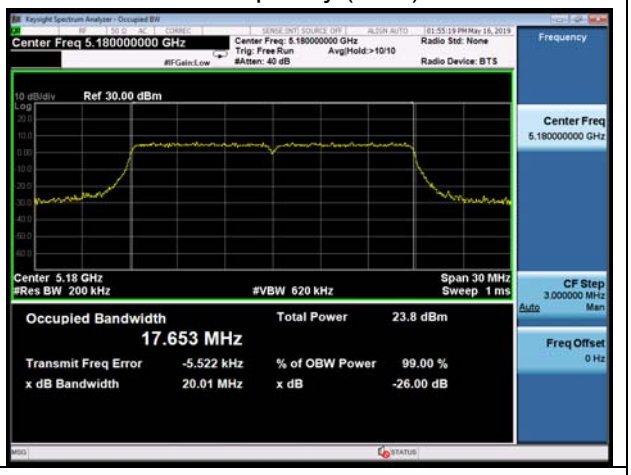
U-NII-1, 802.11n HT40

Carrier frequency (MHz): 5190



U-NII-1, 802.11ac VHT20

Carrier frequency (MHz): 5180



U-NII-1, 802.11n HT40

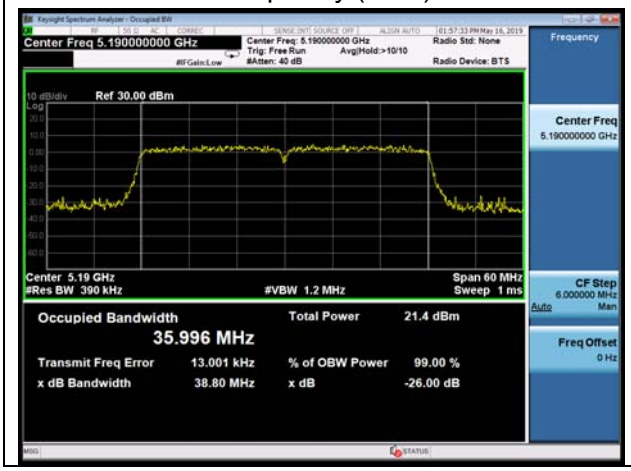
Carrier frequency (MHz): 5230

U-NII-1, 802.11ac VHT20

Carrier frequency (MHz): 5200

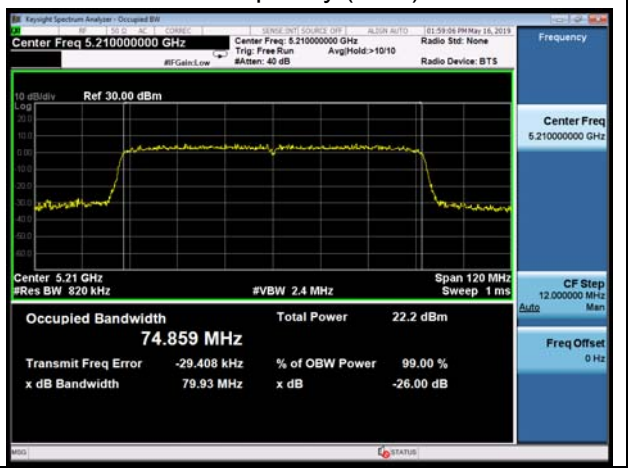
U-NII-1, 802.11ac VHT40

Carrier frequency (MHz): 5190



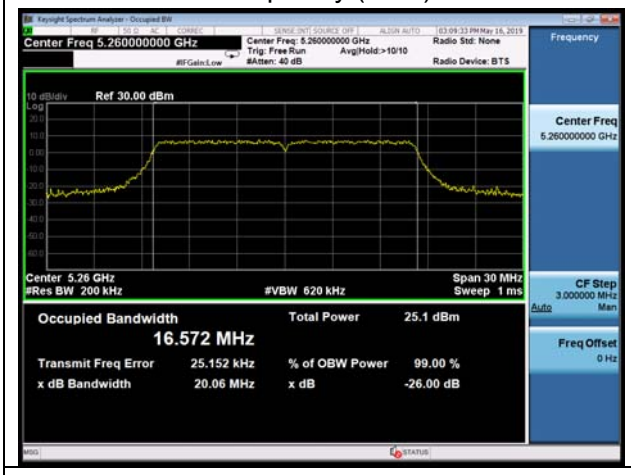
U-NII-1, 802.11ac VHT20

Carrier frequency (MHz):5240

U-NII-1, 802.11ac VHT40 Carrier frequency (MHz): 5230	U-NII-1, 802.11ac VHT80 Carrier frequency (MHz): 5210
	

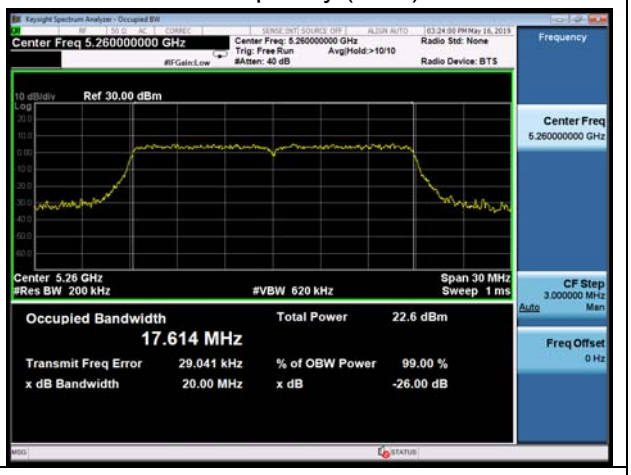
U-NII-2A, 802.11a

Carrier frequency (MHz): 5260



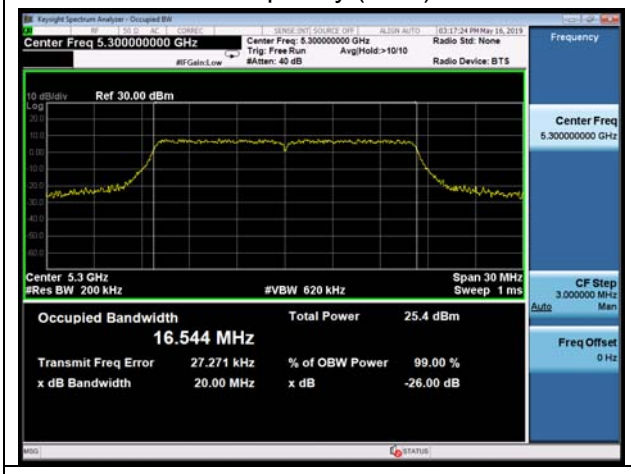
U-NII-2A, 802.11n HT20

Carrier frequency (MHz): 5260



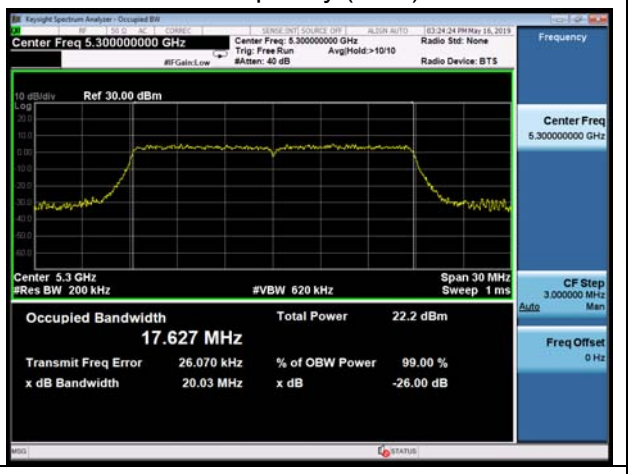
U-NII-2A, 802.11a

Carrier frequency (MHz): 5300



U-NII-2A, 802.11n HT20

Carrier frequency (MHz): 5300



U-NII-2A, 802.11a

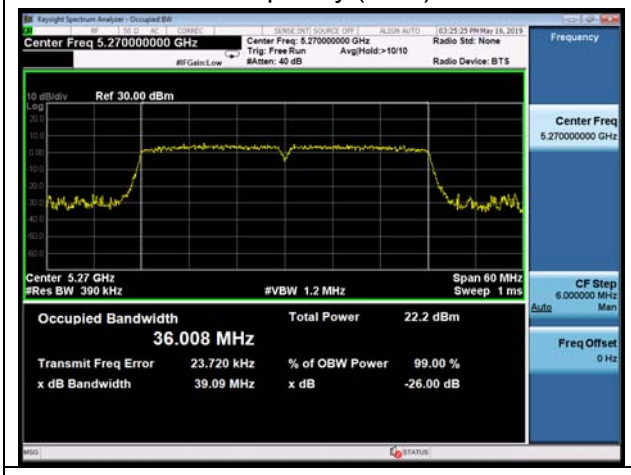
Carrier frequency (MHz):5320

U-NII-2A, 802.11n HT20

Carrier frequency (MHz):5320

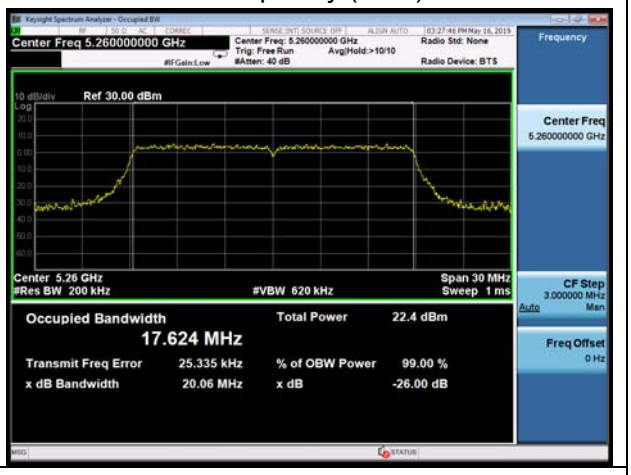
U-NII-2A, 802.11n HT40

Carrier frequency (MHz): 5270



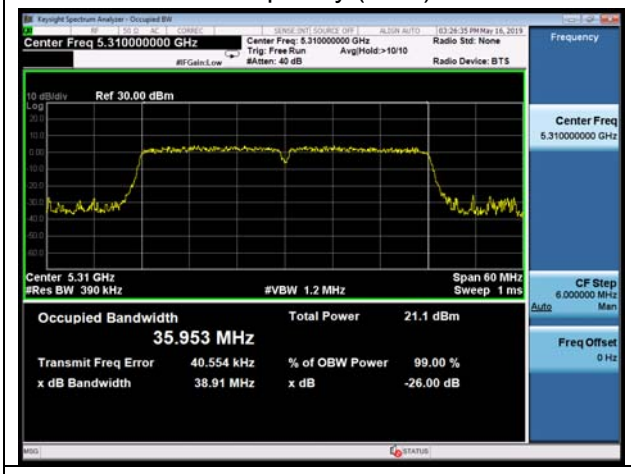
U-NII-2A, 802.11ac VHT20

Carrier frequency (MHz):5260



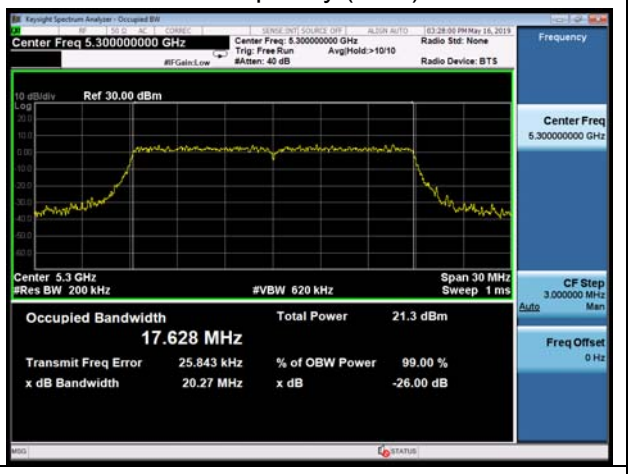
U-NII-2A, 802.11n HT40

Carrier frequency (MHz): 5310



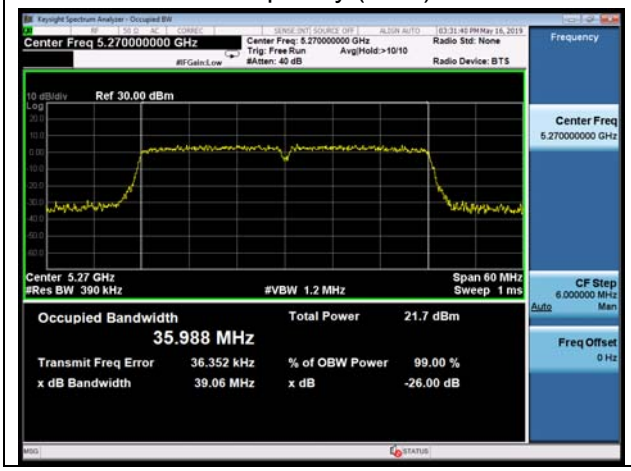
U-NII-2A, 802.11ac VHT20

Carrier frequency (MHz): 5300



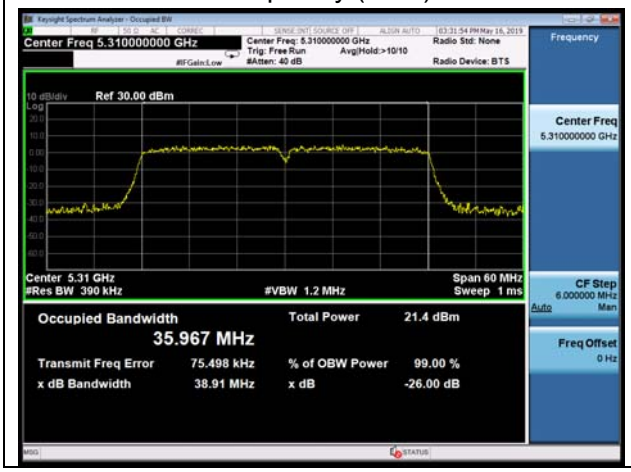
U-NII-2A, 802.11ac VHT40

Carrier frequency (MHz): 5270



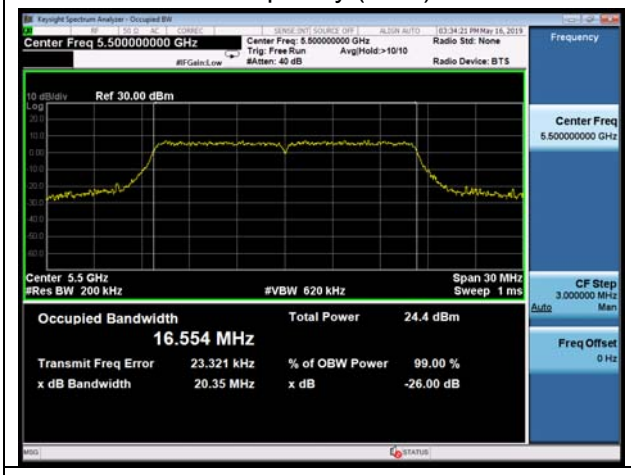
U-NII-2A, 802.11ac VHT20

Carrier frequency (MHz):5320

U-NII-2A, 802.11ac VHT40 Carrier frequency (MHz): 5310	U-NII-2A, 802.11ac VHT80 Carrier frequency (MHz): 5290
	

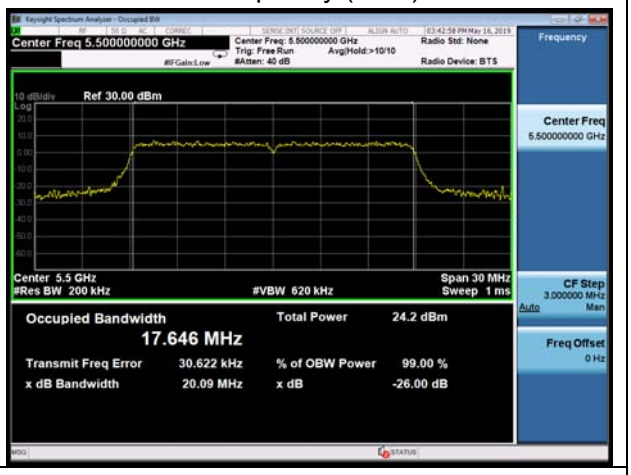
U-NII-2C, 802.11a

Carrier frequency (MHz): 5500



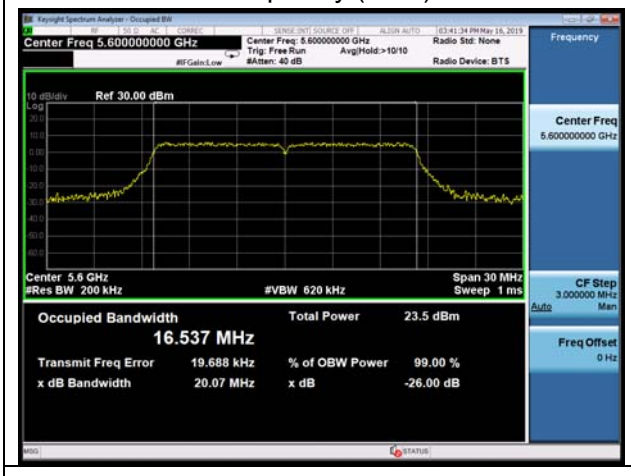
U-NII-2C, 802.11n HT20

Carrier frequency (MHz): 5500



U-NII-2C, 802.11a

Carrier frequency (MHz): 5580



U-NII-2C, 802.11n HT20

Carrier frequency (MHz): 5580

U-NII-2C, 802.11a

Carrier frequency (MHz):5700

U-NII-2C, 802.11n HT20

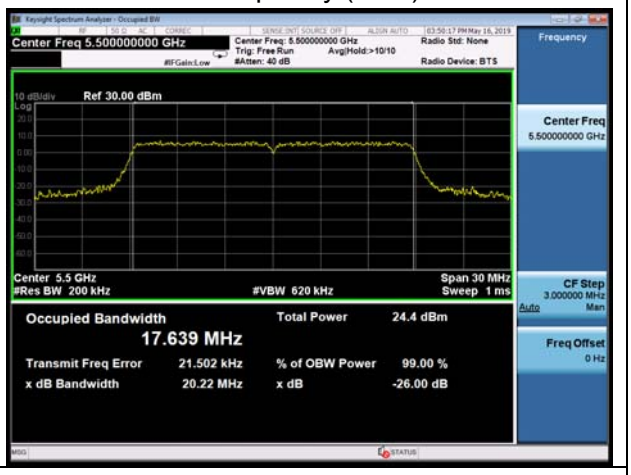
Carrier frequency (MHz):5700

U-NII-2C, 802.11n HT40

Carrier frequency (MHz): 5510

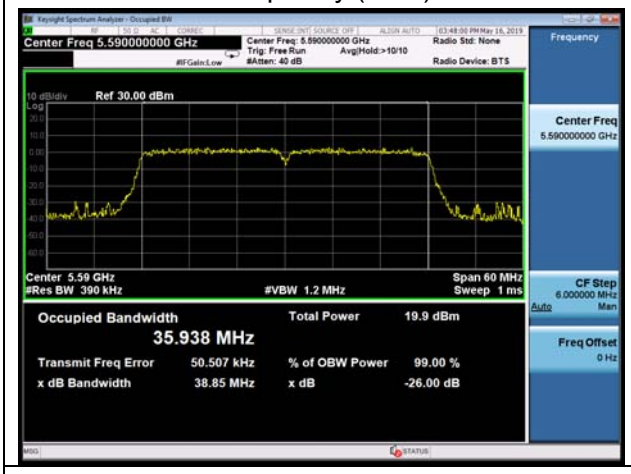
U-NII-2C, 802.11ac VHT20

Carrier frequency (MHz): 5500



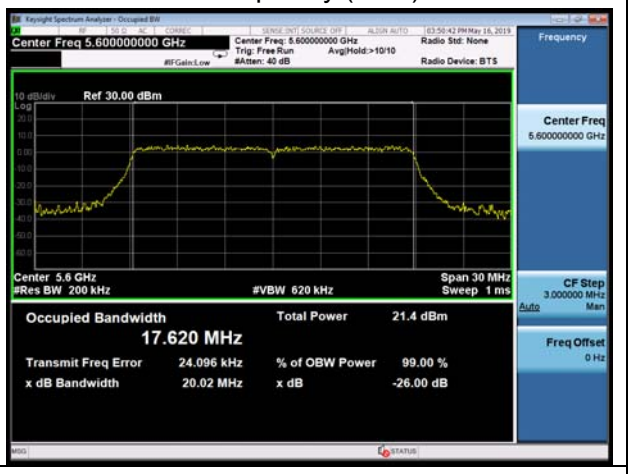
U-NII-2C, 802.11n HT40

Carrier frequency (MHz): 5550



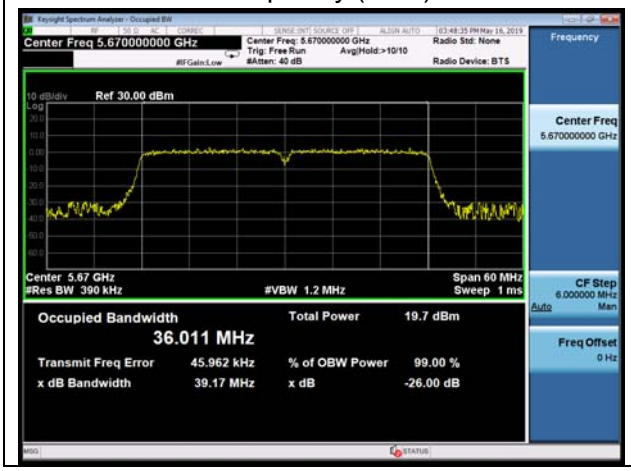
U-NII-2C, 802.11ac VHT20

Carrier frequency (MHz): 5580



U-NII-2C, 802.11n HT40

Carrier frequency (MHz): 5670

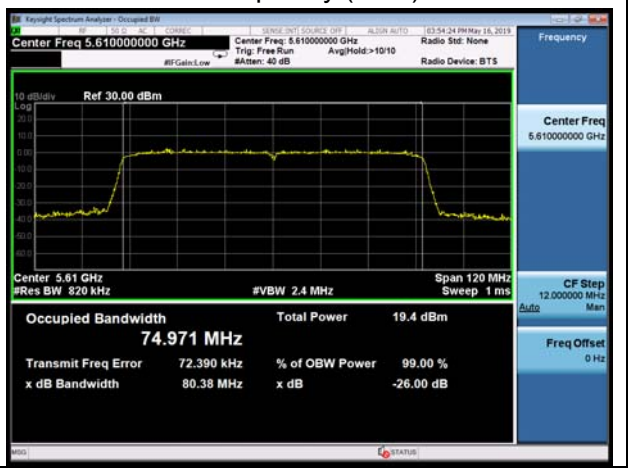


U-NII-2C, 802.11ac VHT20

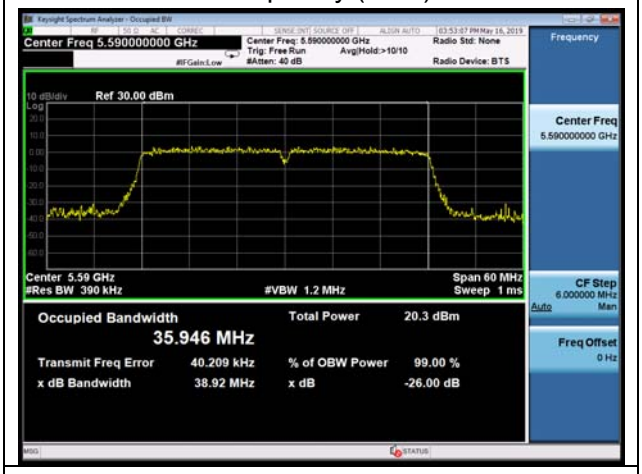
Carrier frequency (MHz):5700

U-NII-2C, 802.11ac VHT40
Carrier frequency (MHz): 5510

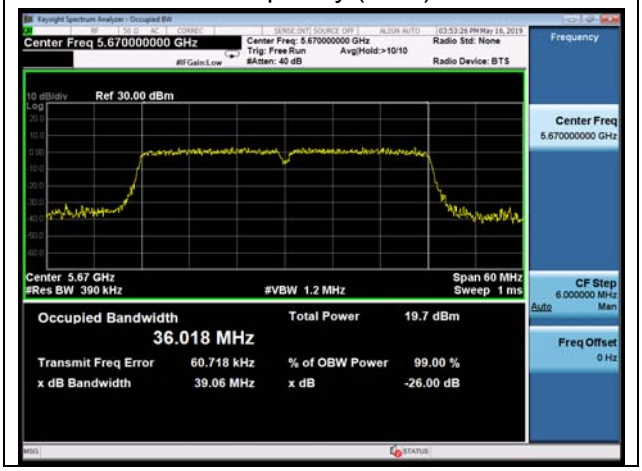
U-NII-2C, 802.11ac VHT80
Carrier frequency (MHz): 5530



U-NII-2C, 802.11ac VHT40
Carrier frequency (MHz): 5550



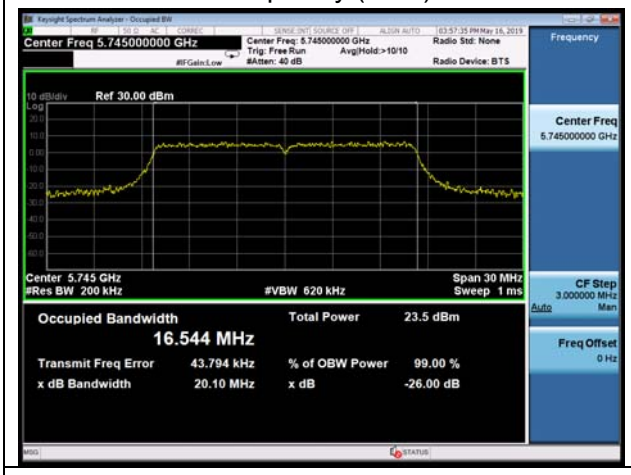
U-NII-2C, 802.11ac VHT40
Carrier frequency (MHz): 5670



99% bandwidth

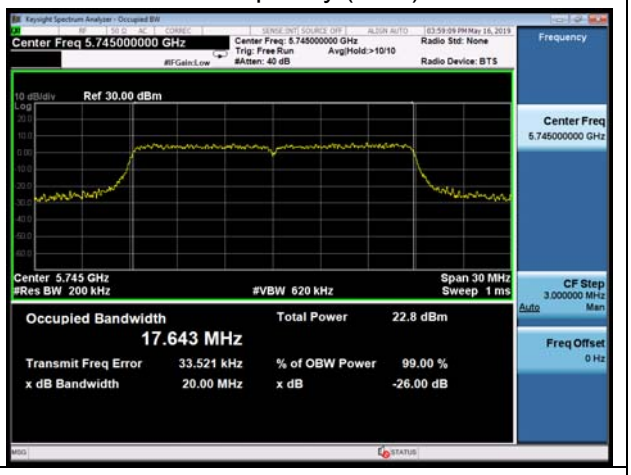
U-NII-3, 802.11a

Carrier frequency (MHz): 5745



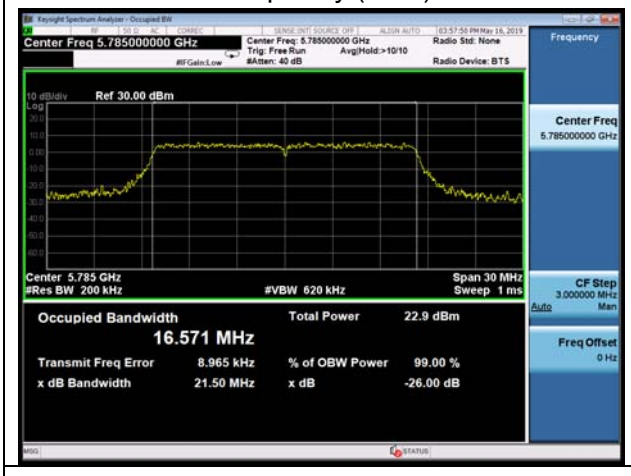
U-NII-3, 802.11n HT20

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

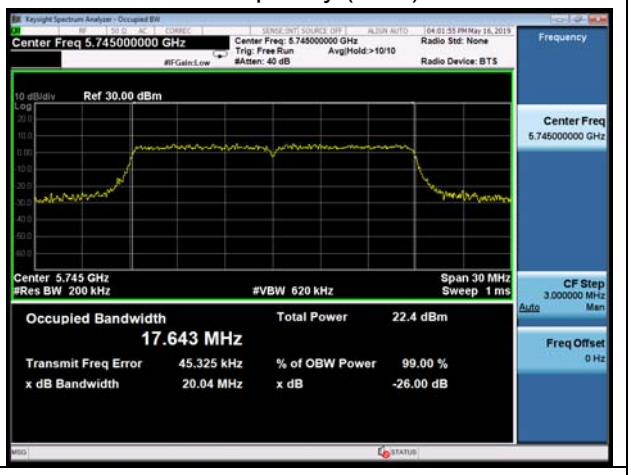
Carrier frequency (MHz): 5825

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

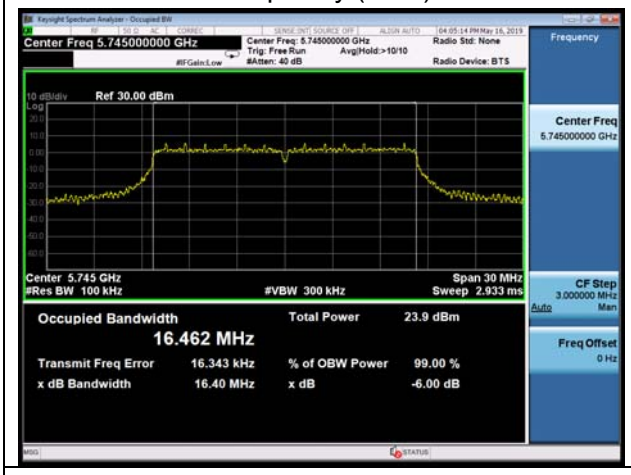
Carrier frequency (MHz): 5825

U-NII-3, 802.11ac VHT40 Carrier frequency (MHz): 5795	U-NII-3, 802.11ac VHT80 Carrier frequency (MHz): 5775
	

Minimum 6 dB bandwidth

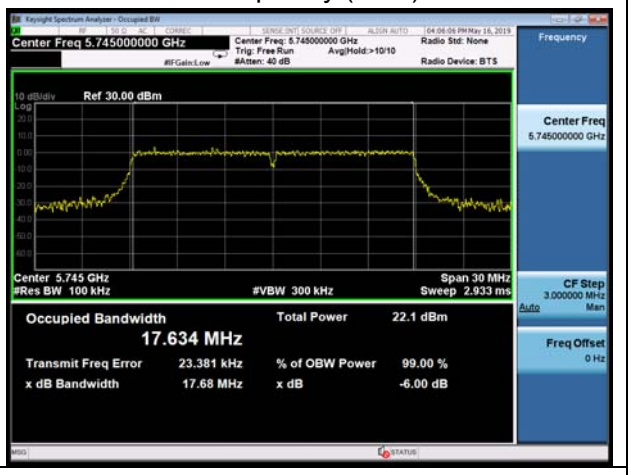
U-NII-3, 802.11a

Carrier frequency (MHz): 5745



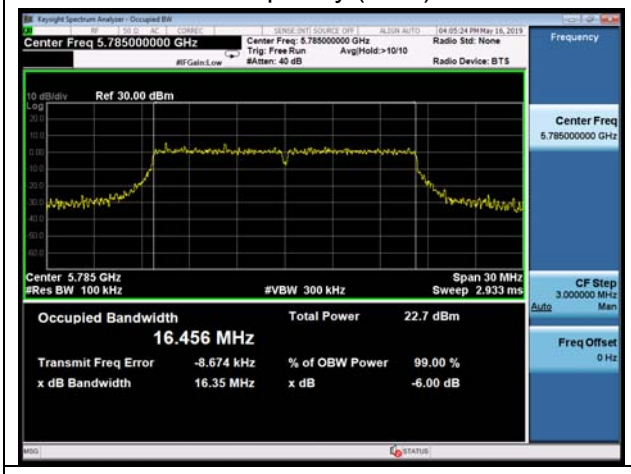
U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5745



U-NII-3, 802.11a

Carrier frequency (MHz): 5785

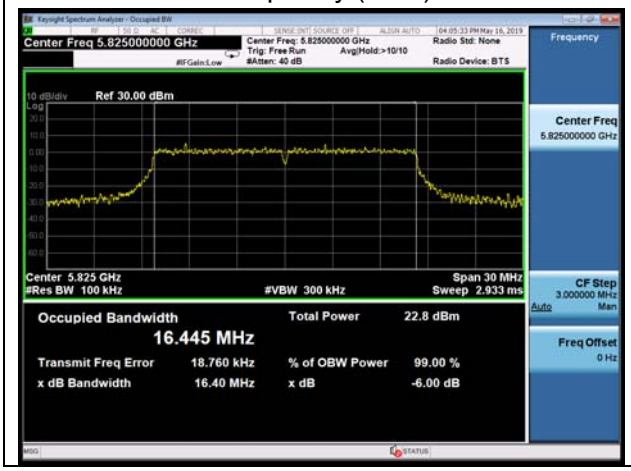


U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5785

U-NII-3, 802.11a

Carrier frequency (MHz): 5825

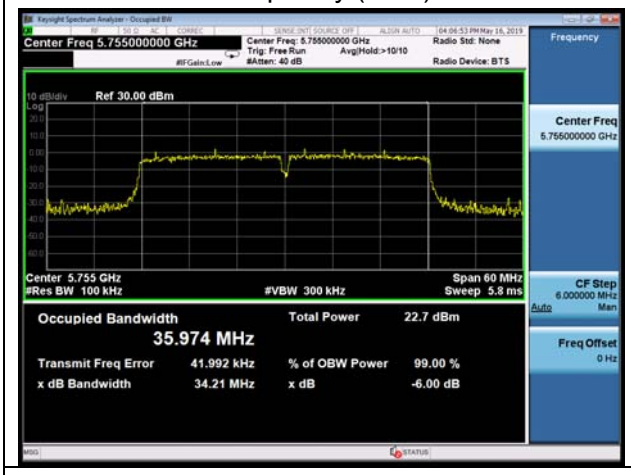


U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5825

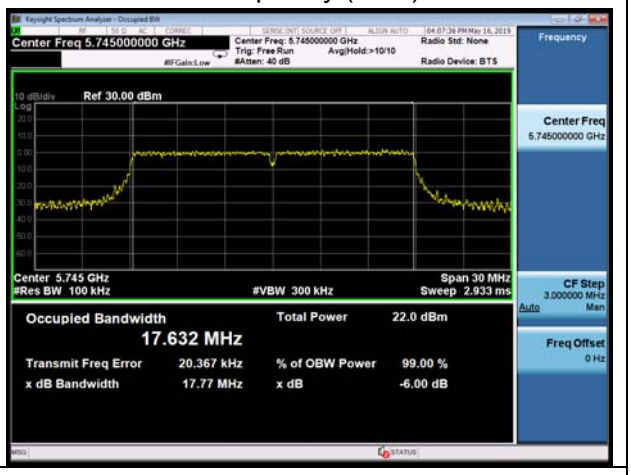
U-NII-3, 802.11n HT40

Carrier frequency (MHz): 5755



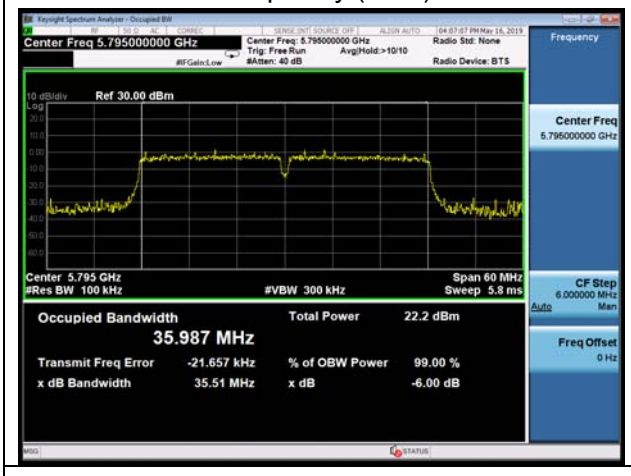
U-NII-3, 802.11ac VHT20

Carrier frequency (MHz): 5745



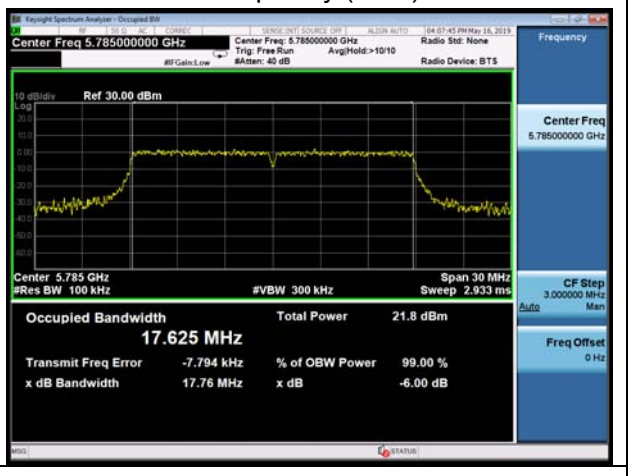
U-NII-3, 802.11n HT40

Carrier frequency (MHz): 5795



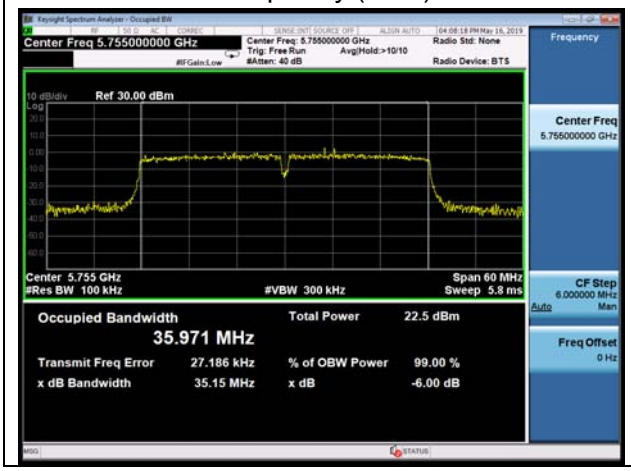
U-NII-3, 802.11ac VHT20

Carrier frequency (MHz): 5785



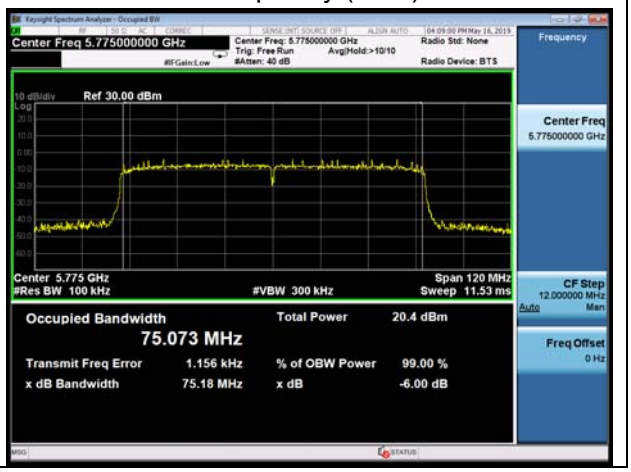
U-NII-3, 802.11ac VHT40

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
	

5.2. Average Power Output –Conducted

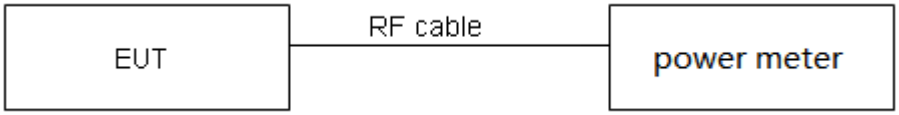
Ambient condition

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

Band	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11a	2.06	2.11	0.98	0.10
802.11n HT20	2.60	2.65	0.98	NA
802.11n HT40	1.27	1.31	0.97	0.14
802.11ac VHT20	5.01	5.06	0.99	NA
802.11ac VHT40	2.43	2.48	0.98	0.09
802.11ac VHT80	1.14	1.19	0.96	0.16
Note: when Duty cycle>0.98, Duty cycle correction Factor not required.				

Single Antenna Power Index												
Packet Type	**CH36**	**CH40**	**CH48**	**CH52**	**CH60**	**CH64**	**CH 100**	**CH 120**	**CH 140**	**CH 149**	**CH 157**	**CH 165**
802.11a	16	16	16	16	16	16	16	15	15	16	16	16
802.11n HT20	15	15	15	15	15	15	15	14	14	15	15	15
802.11ac VHT20	15	15	15	15	15	15	15	14	14	15	15	15
Packet Type	**CH38**	**CH46**	**CH54**	**CH62**	**CH 102**	**CH 118**	**CH 134**	**CH 151**	**CH 159**	/	/	
802.11n HT40	13	13	13	13	13	12	12	13	13	/	/	
802.11ac VHT40	13	13	13	13	13	12	12	13	13	/	/	
Packet Type	**CH42**	**CH58**	**CH 122**	**CH 155**	/	/	/	/	/	/	/	
802.11ac VHT80	13	13	13	13	/	/	/	/	/	/	/	

Network Standards		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	20.06	24.02>24	24
		60/5300	20.00	24.01>24	24
		64/5320	20.00	24.01>24	24
	802.11n HT20	52/5260	20.00	24.01>24	24
		60/5300	20.03	24.02>24	24
		64/5320	20.00	24.01>24	24
	802.11n HT40	54/5270	39.09	26.92>24	24
		62/5310	38.91	26.90>24	24
	802.11ac VHT20	52/5260	20.06	24.02>24	24
		60/5300	20.27	24.07>24	24
		64/5320	20.10	24.03>24	24
	802.11ac VHT40	54/5270	39.06	26.92>24	24
		62/5310	38.91	26.90>24	24
	802.11ac VHT80	58/5290	79.78	30.02>24	24
U-NII-2C	802.11a	100/5500	20.35	24.09>24	24
		120/5600	20.07	24.03>24	24
		140/5700	20.56	24.13>24	24
	802.11n HT20	100/5500	20.09	24.03>24	24
		120/5600	20.07	24.03>24	24
		140/5700	20.05	24.02>24	24
	802.11n HT40	102/5510	38.72	26.88>24	24
		118/5590	38.85	26.89>24	24
		134/5670	39.17	26.93>24	24
	802.11ac VHT20	100/5500	20.22	24.06>24	24
		120/5600	20.02	24.01>24	24
		140/5700	20.11	24.03>24	24
	802.11ac VHT40	102/5510	39.10	26.92>24	24
		118/5590	38.92	26.90>24	24
		134/5670	39.06	26.92>24	24
	802.11ac VHT80	122/5610	80.38	30.05>24	24
Note: 250mW=24dBm					

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

U-NII-1

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	17.27	17.37	24	PASS
	40/5200	17.21	17.31	24	PASS
	48/5240	17.16	17.26	24	PASS
802.11n HT20	36/5180	16.84	16.84	24	PASS
	40/5200	16.85	16.85	24	PASS
	48/5240	16.76	16.76	24	PASS
802.11n HT40	38/5190	14.79	14.93	24	PASS
	46/5230	14.81	14.95	24	PASS
802.11ac VHT20	36/5180	16.75	16.75	24	PASS
	40/5200	16.81	16.81	24	PASS
	48/5240	16.73	16.73	24	PASS
802.11ac VHT40	38/5190	14.88	14.97	24	PASS
	46/5230	14.78	14.87	24	PASS
802.11ac VHT80	42/5210	14.41	14.57	24	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2A

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	17.31	17.41	24.00	PASS
	60/5300	17.19	17.29	24.00	PASS
	64/5320	17.26	17.36	24.00	PASS
802.11n HT20	52/5260	16.83	16.83	24.00	PASS
	60/5300	16.79	16.79	24.00	PASS
	64/5320	16.74	16.74	24.00	PASS
802.11n HT40	54/5270	14.69	14.83	24.00	PASS
	62/5310	14.64	14.78	24.00	PASS
802.11ac VHT20	52/5260	16.79	16.79	24.00	PASS
	60/5300	16.83	16.83	24.00	PASS
	64/5320	16.88	16.88	24.00	PASS
802.11ac VHT40	54/5270	14.78	14.87	24.00	PASS
	62/5310	14.75	14.84	24.00	PASS
802.11ac VHT80	58/5290	14.65	14.81	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	17.14	17.24	24.00	PASS
	120/5600	16.21	16.31	24.00	PASS
	140/5700	16.16	16.26	24.00	PASS
802.11n HT20	100/5500	16.81	16.81	24.00	PASS
	120/5600	15.97	15.97	24.00	PASS
	140/5700	15.91	15.91	24.00	PASS
802.11n HT40	102/5510	14.58	14.72	24.00	PASS
	118/5590	13.82	13.96	24.00	PASS
	134/5670	13.80	13.94	24.00	PASS
802.11ac VHT20	100/5500	16.77	16.77	24.00	PASS
	120/5600	15.76	15.76	24.00	PASS
	140/5700	15.78	15.78	24.00	PASS
802.11ac VHT40	102/5510	14.64	14.73	24.00	PASS
	118/5590	13.80	13.89	24.00	PASS
	134/5670	13.77	13.86	24.00	PASS
802.11ac VHT80	122/5610	13.63	13.79	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	17.32	17.42	30	PASS
	157/5785	17.28	17.38	30	PASS
	165/5825	17.31	17.41	30	PASS
802.11n HT20	149/5745	16.61	16.61	30	PASS
	157/5785	16.64	16.64	30	PASS
	165/5825	16.63	16.63	30	PASS
802.11n HT40	151/5755	14.75	14.89	30	PASS
	159/5795	14.78	14.92	30	PASS
802.11ac VHT20	149/5745	16.73	16.73	30	PASS
	157/5785	16.71	16.71	30	PASS
	165/5825	16.75	16.75	30	PASS
802.11ac VHT40	151/5755	14.61	14.70	30	PASS
	159/5795	14.74	14.83	30	PASS
802.11ac VHT80	155/5775	14.45	14.61	30	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 that 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= 936Hz

Test Results

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
3.8	0	5199.993702	5199.986892	5199.980313	5199.979747
3.8	5	5199.984222	5199.986338	5199.974729	5199.979123
3.8	10	5199.979788	5199.981646	5199.971722	5199.978023
3.8	15	5199.971392	5199.978384	5199.962027	5199.974952
3.8	20	5199.961429	5199.976240	5199.955733	5199.971079
3.8	25	5199.958554	5199.973499	5199.954032	5199.962876
3.8	30	5199.949513	5199.964662	5199.946231	5199.962021
3.8	35	5199.940927	5199.958082	5199.940744	5199.961787
3.6	20	5199.931959	5199.953595	5199.937001	5199.961234
4.35	20	5199.930743	5199.952922	5199.928441	5199.959755
MHz		-0.069257	-0.047078	-0.071559	-0.040245
PPM		-13.318601	-9.053383	-13.761399	-7.739406

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
3.8	0	5300.004839	5300.001000	5299.999597	5299.991218
3.8	5	5299.994850	5300.000288	5299.990575	5299.986682
3.8	10	5299.991534	5299.993070	5299.989989	5299.981118
3.8	15	5299.988505	5299.988695	5299.982514	5299.972132
3.8	20	5299.980459	5299.984199	5299.981444	5299.969839
3.8	25	5299.974007	5299.974313	5299.980601	5299.968485
3.8	30	5299.967015	5299.965810	5299.973816	5299.964981
3.8	35	5299.964123	5299.958999	5299.966806	5299.955483
3.6	20	5299.959644	5299.952615	5299.957673	5299.953275
4.35	20	5299.953218	5299.948337	5299.952800	5299.943588
MHz		-0.046782	-0.051663	-0.047200	-0.056412
PPM		-8.826775	-9.747688	-8.905566	-10.643842

Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
3.8	0	5579.990717	5579.984716	5579.980563	5579.979730
3.8	5	5579.984051	5579.980058	5579.975487	5579.972252
3.8	10	5579.983210	5579.971532	5579.972403	5579.968214
3.8	15	5579.980199	5579.965887	5579.971276	5579.967700
3.8	20	5579.976257	5579.960680	5579.971262	5579.967457
3.8	25	5579.975447	5579.957467	5579.964969	5579.959398
3.8	30	5579.965605	5579.948221	5579.960069	5579.958343
3.8	35	5579.959924	5579.940255	5579.955982	5579.954060
3.6	20	5579.959566	5579.935565	5579.952350	5579.948169
4.35	20	5579.958217	5579.926860	5579.951414	5579.946924
MHz		-0.041783	-0.073140	-0.048586	-0.053076
PPM		-7.487949	-13.107594	-8.707245	-9.511864

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
3.8	0	5785.001088	5784.997095	5784.992329	5784.982553
3.8	5	5784.997908	5784.993402	5784.990973	5784.975368
3.8	10	5784.992534	5784.987740	5784.986179	5784.971240
3.8	15	5784.986877	5784.980839	5784.981121	5784.967094
3.8	20	5784.978953	5784.974184	5784.974139	5784.958582
3.8	25	5784.976900	5784.972189	5784.966113	5784.955752
3.8	30	5784.969277	5784.969138	5784.964978	5784.948025
3.8	35	5784.960187	5784.963162	5784.962223	5784.947104
3.6	20	5784.954446	5784.961997	5784.962004	5784.944409
4.35	20	5784.944857	5784.956012	5784.953668	5784.942707
MHz		-0.055143	-0.043988	-0.046332	-0.057293
PPM		-9.532081	-7.603825	-8.008932	-9.903731

5.4. Power Spectral Density

Ambient condition

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

Method of Measurement

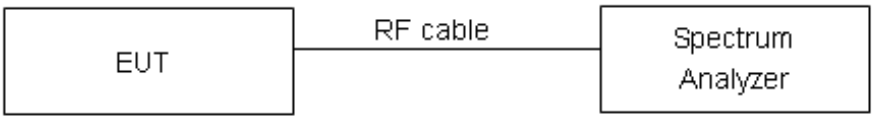
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

Set RBW = 500 kHz, VBW =1.5MHz for the band 5.725-5.85 GHz

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

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.
(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.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. 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 500-kHz band. If transmittingantennas 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 and 5.47-5.725 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= 0.75dB.

Test Results:

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

U-NII-1

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36	5.728	5.828	11	PASS
	40	6.157	6.257	11	PASS
	48	5.97	6.070	11	PASS
802.11n HT20	36	5.179	5.179	11	PASS
	40	5.222	5.222	11	PASS
	48	5.163	5.163	11	PASS
802.11n HT40	38	2.301	2.442	11	PASS
	46	1.976	2.117	11	PASS
802.11ac VHT20	36	5.239	5.239	11	PASS
	40	5.455	5.455	11	PASS
	48	5.248	5.248	11	PASS
802.11ac VHT40	38	2.225	2.313	11	PASS
	46	1.922	2.010	11	PASS
802.11ac VHT80	42	-3.215	-3.051	11	PASS

U-NII-2A

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52	5.503	5.603	11	PASS
	60	5.322	5.422	11	PASS
	64	5.148	5.248	11	PASS
802.11n HT20	52	5.661	5.661	11	PASS
	60	5.45	5.450	11	PASS
	64	4.958	4.958	11	PASS
802.11n HT40	54	2.126	2.267	11	PASS
	62	1.91	2.051	11	PASS
802.11ac VHT20	52	5.402	5.402	11	PASS
	60	5.13	5.130	11	PASS
	64	4.861	4.861	11	PASS
802.11ac VHT40	54	2.385	2.473	11	PASS
	62	2.513	2.601	11	PASS
802.11ac VHT80	58	-3.149	-2.985	11	PASS

U-NII-2C

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100	5.402	5.50	11	PASS
	120	4.212	4.31	11	PASS
	140	5.015	5.11	11	PASS
802.11n HT20	100	4.542	4.54	11	PASS
	120	3.997	4.00	11	PASS
	140	4.032	4.03	11	PASS
802.11n HT40	102	1.805	1.95	11	PASS
	118	-0.959	-0.82	11	PASS
	134	-1.081	-0.94	11	PASS
802.11ac VHT20	100	4.944	4.94	11	PASS
	120	3.269	3.27	11	PASS
	140	3.107	3.11	11	PASS
802.11ac VHT40	102	2.095	2.18	11	PASS
	118	-1.71	-1.62	11	PASS
	134	-1.203	-1.11	11	PASS
802.11ac VHT80	122	-3.687	-3.52	11	PASS

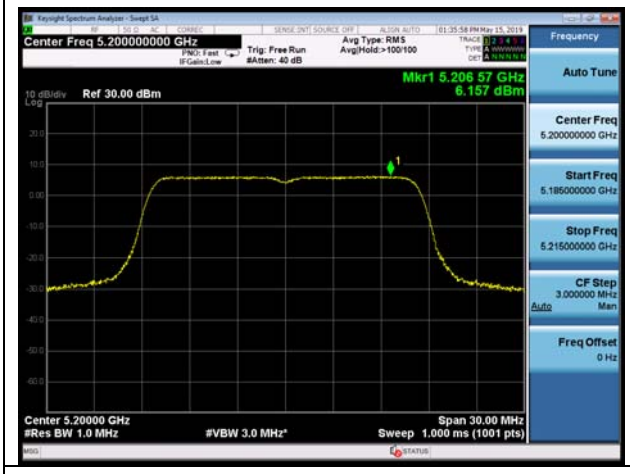
U-NII-3

Network Standards	Channel Number	Read Value (dBm/500kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149	3.092	3.192	30	PASS
	157	3.015	3.115	30	PASS
	165	3.087	3.187	30	PASS
802.11n HT20	149	1.781	1.781	30	PASS
	157	1.778	1.778	30	PASS
	165	1.853	1.853	30	PASS
802.11n HT40	151	-2.546	-2.405	30	PASS
	159	-2.568	-2.427	30	PASS
802.11ac VHT20	149	2.211	2.211	30	PASS
	157	2.274	2.274	30	PASS
	165	2.345	2.345	30	PASS
802.11ac VHT40	151	-2.775	-2.687	30	PASS
	159	-2.573	-2.485	30	PASS
802.11ac VHT80	155	-5.77	-5.606	30	PASS

U-NII-1, 802.11a, Channel No.: 36

U-NII-1, 802.11n HT20, Channel No.: 36

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



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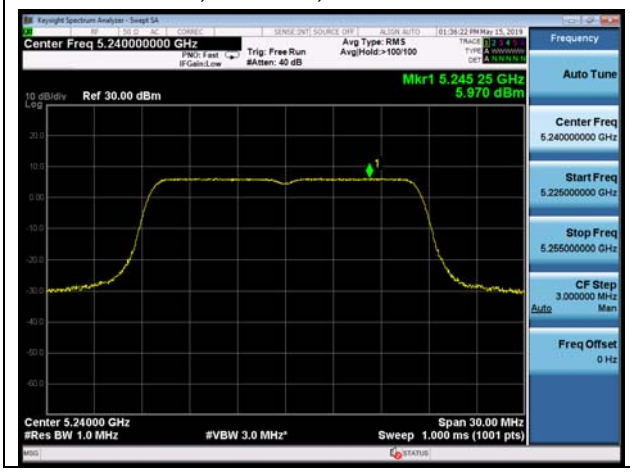
U-NII-1, 802.11a, Channel No.: 48



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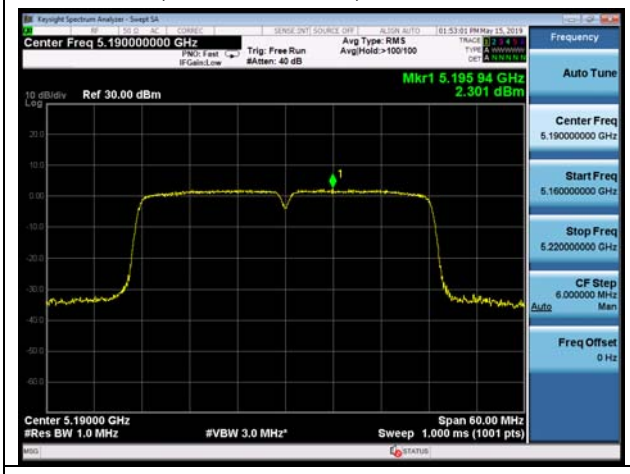
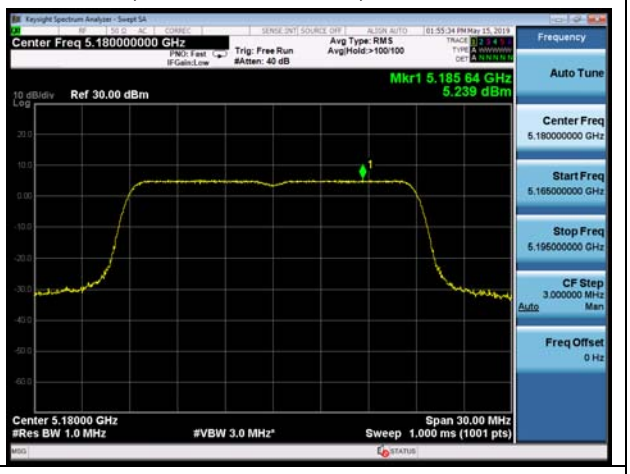
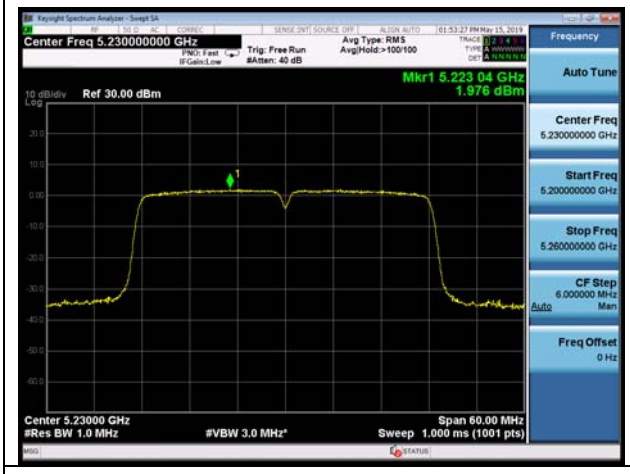
U-NII-1, 802.11n HT40, Channel No.: 38



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

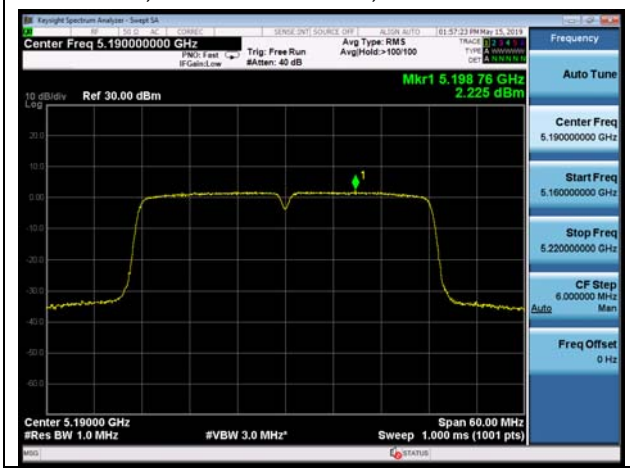


U-NII-1, 802.11n HT40, Channel No.: 46

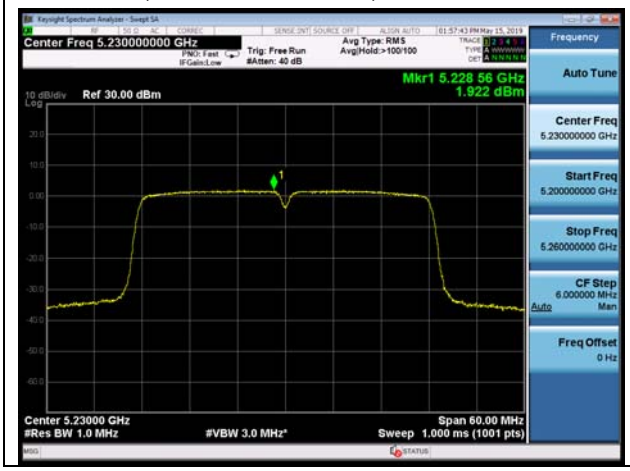


U-NII-1, 802.11ac VHT20, Channel No.: 40

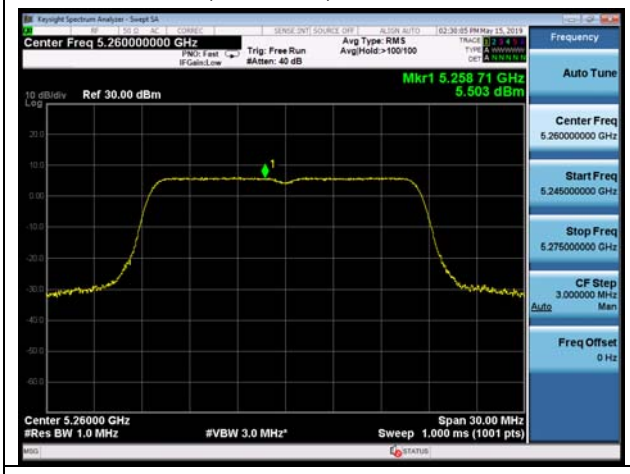
U-NII-1, 802.11ac VHT40, Channel No.: 38



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

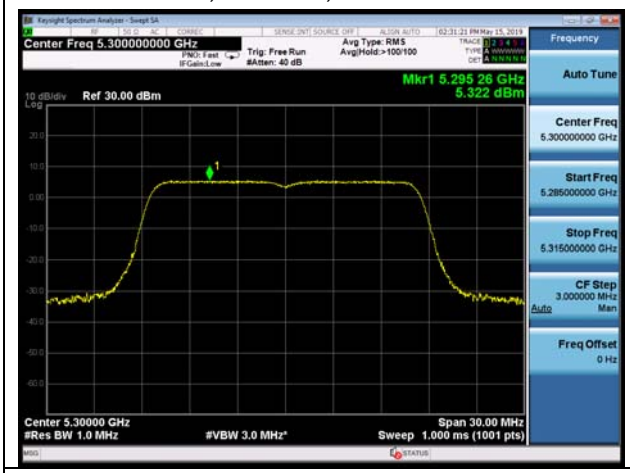
U-NII-1, 802.11ac VHT40, Channel No.: 46	U-NII-1, 802.11ac VHT80, Channel No.: 42
	

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

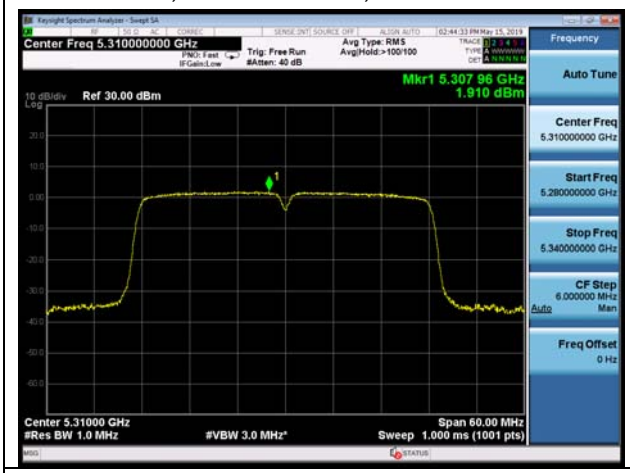
U-NII-2A, 802.11a, Channel No.: 64

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

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

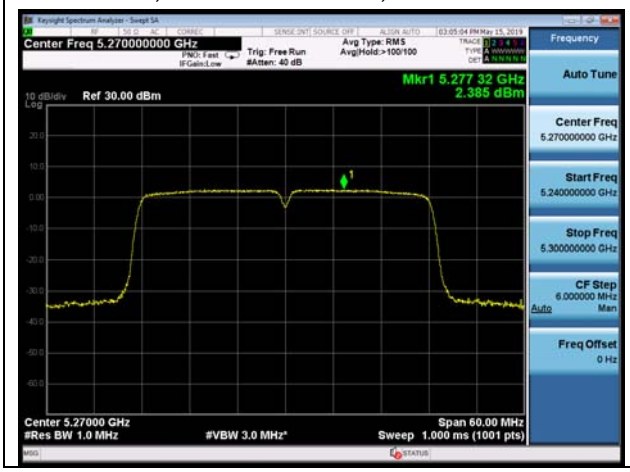
U-NII-2A, 802.11ac VHT20, Channel No.:52

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

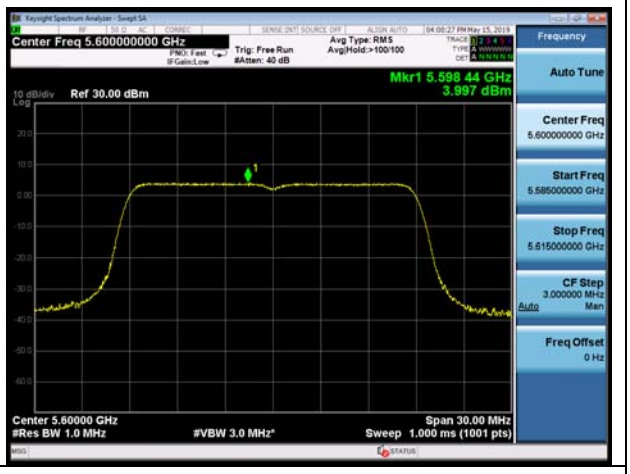
U-NII-2A, 802.11ac VHT40, Channel No.: 62	U-NII-2A, 802.11ac VHT80, Channel No.: 58
	

U-NII-2C, 802.11a, Channel No.: 100

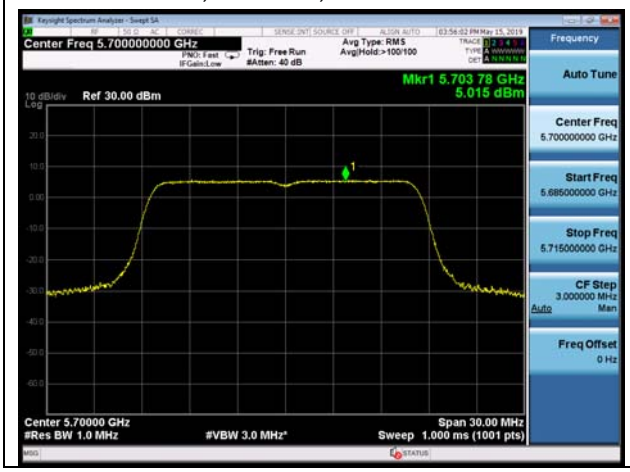
U-NII-2C, 802.11n HT20, Channel No.: 100

U-NII-2C, 802.11a, Channel No.: 120

U-NII-2C, 802.11n HT20, Channel No.: 116

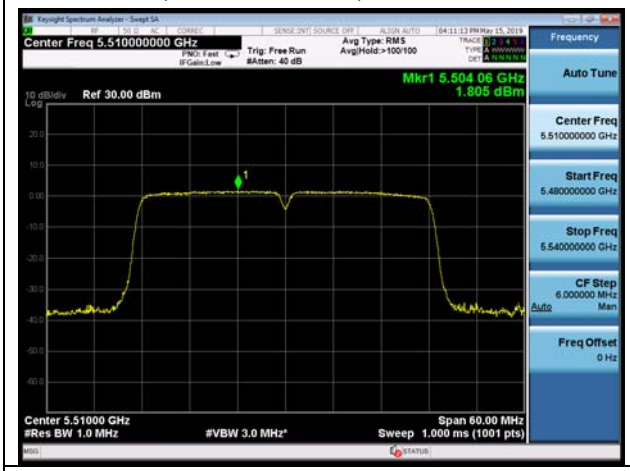


U-NII-2C, 802.11a, Channel No.: 140



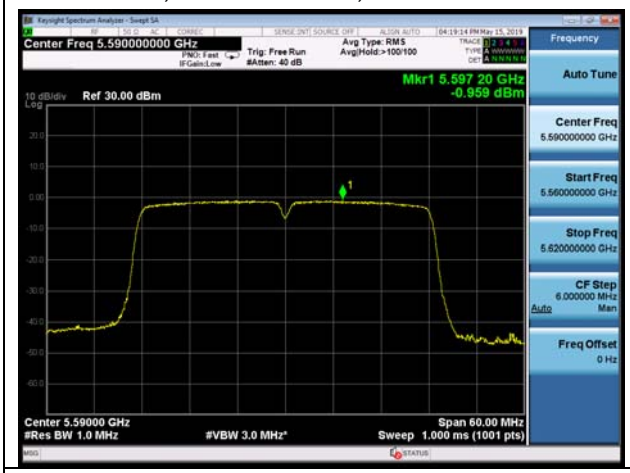
U-NII-2C, 802.11n HT20, Channel No.: 140

U-NII-2C, 802.11n HT40, Channel No.: 102



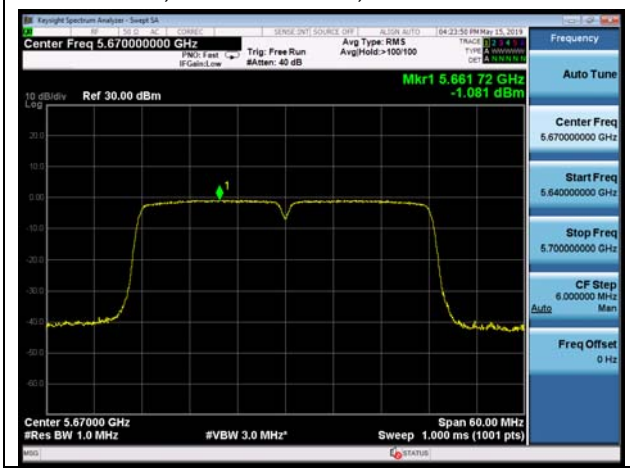
U-NII-2C, 802.11ac VHT20, Channel No.: 100

U-NII-2C, 802.11n HT40, Channel No.: 118



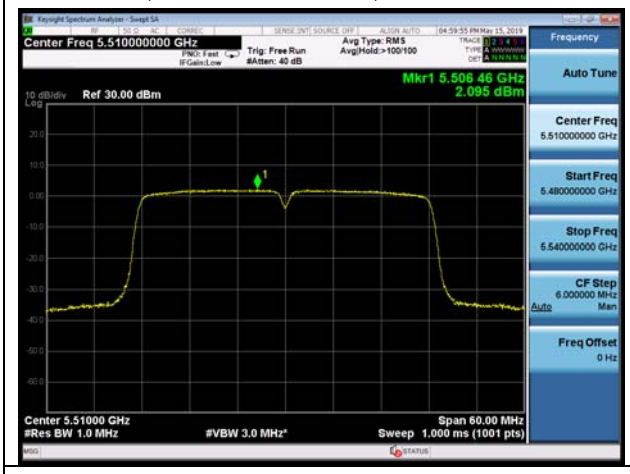
U-NII-2C, 802.11ac VHT20, Channel No.: 120

U-NII-2C, 802.11n HT40, Channel No.: 134



U-NII-2C, 802.11ac VHT20, Channel No.: 140

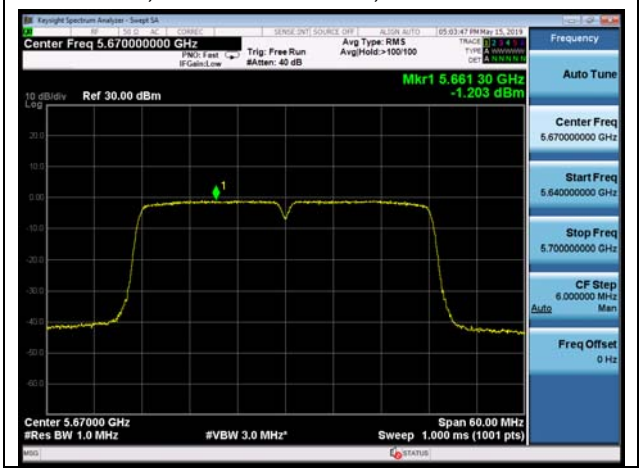
U-NII-2C, 802.11ac VHT40, Channel No.: 102



U-NII-2C, 802.11ac VHT80, Channel No.: 106

U-NII-2C, 802.11ac VHT40, Channel No.: 118

U-NII-2C, 802.11ac VHT40, Channel No.: 134



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

U-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 C63.10-2013. 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:
Below 1GHz (detector: Peak and Quasi-Peak)
RBW=100kHz / VBW=300kHz / Sweep=AUTO
Above 1GHz (detector: Peak):
I) Peak emission levels are measured by setting the instrument as follows:
1) RBW = 1 MHz.
2) VBW ≥ [3 × RBW]
3) Detector = peak.
4) Sweep time = auto.
5) Trace mode = max hold.
6) Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, then the time required for the trace to stabilize will increase by a factor of approximately 1 / D, where D is the duty cycle.

II) Average emission levels are measured by setting the instrument as follows:
a) RBW = 1 MHz.
b) VBW ≥ [3 × RBW].
c) Detector = RMS (power averaging), if [span / (# of points in sweep)] ≤ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
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.

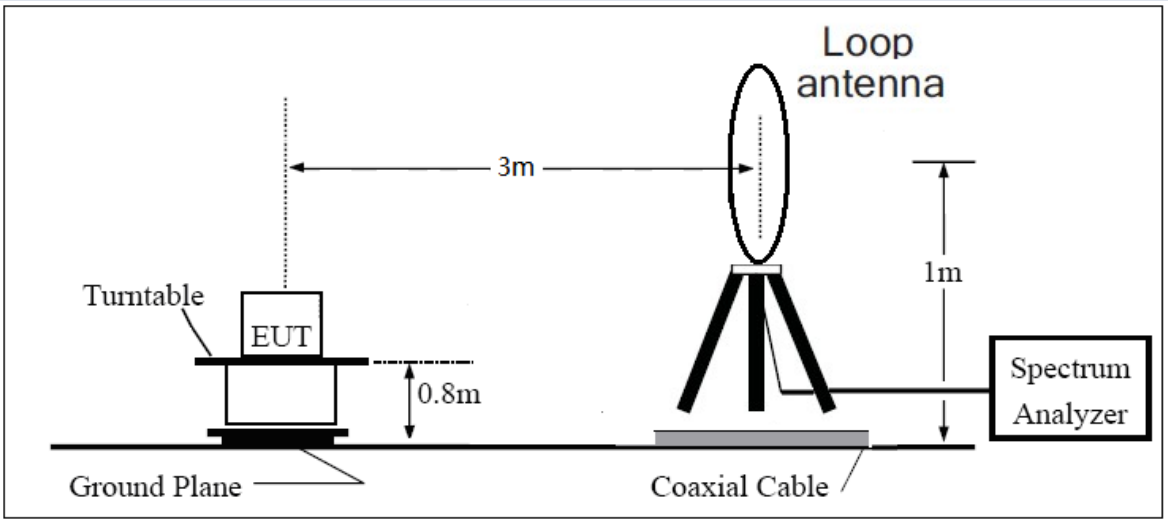
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

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 / (minimum transmitter on time)] and no less than 1 Hz.

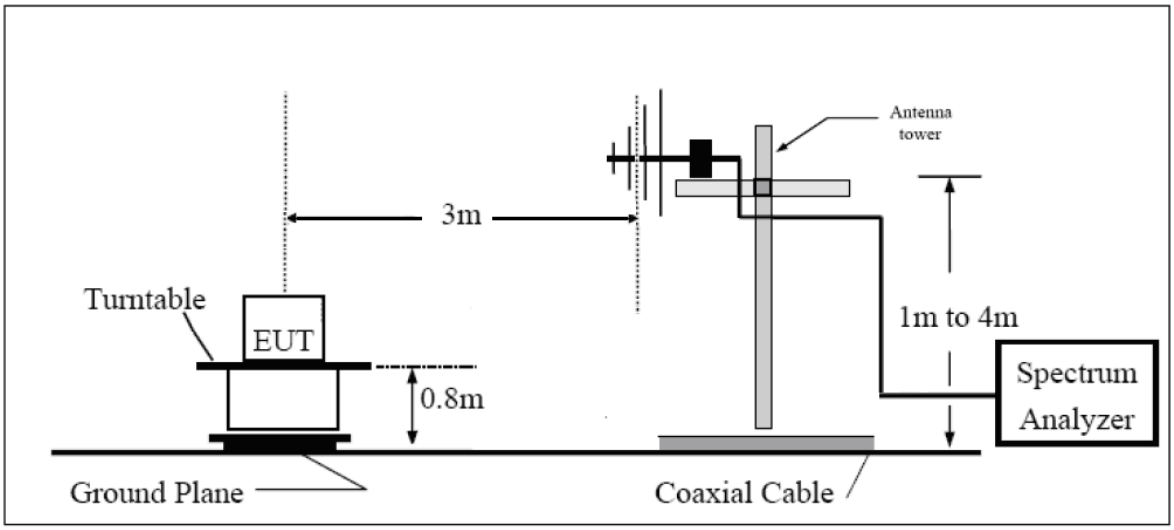
The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the loop antenna is vertical, others antenna are vertical and horizontal.

The test is in transmitting mode.

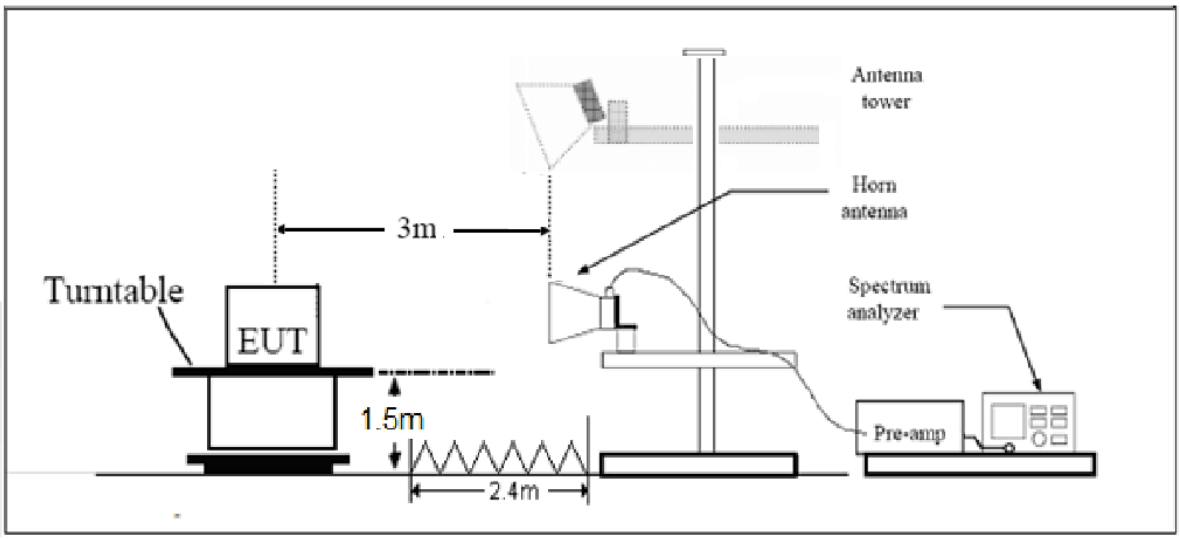
9KHz~~~30MHz



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).

(4) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

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

§1、E[dBμV/m] = EIRP[dBm] - 20 log(d[meters]) + 104.77, where E = field strength and

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

§2、E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters

(5) 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
[1]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	4.02 dB
200MHz-1GHz	3.28 dB
1GHz-18G	3.70 dB
18GHz-26.5GHz	5.78 dB
26.5G-40GHz	5.82 dB

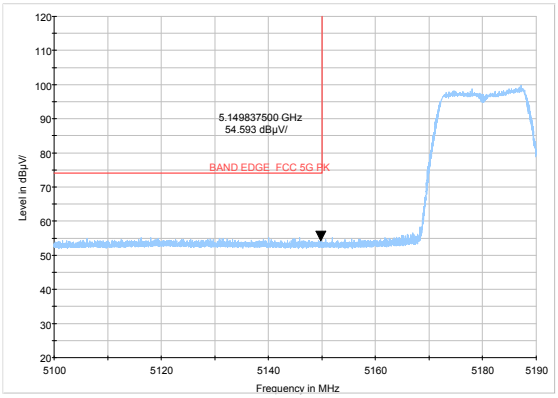
Test Results:

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.

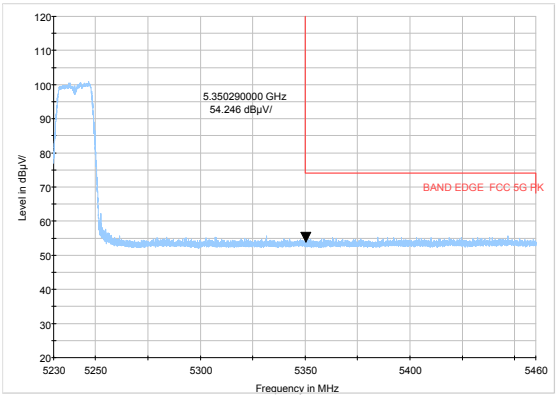
The signal beyond the limit is carrier.

U-NII-1

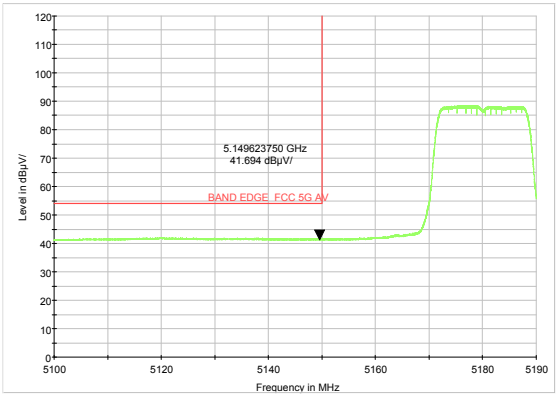
802.11a-Channel 36: Peak



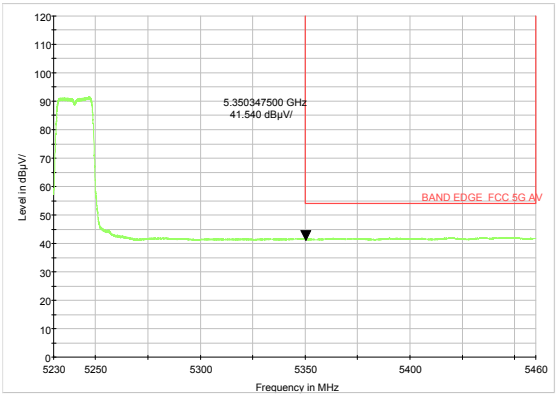
802.11a-Channel 48: Peak



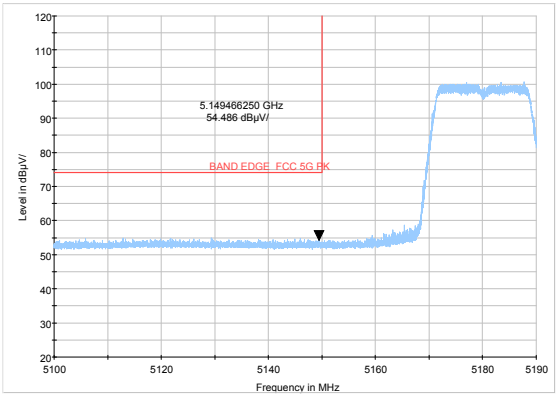
802.11a-Channel 36: Average



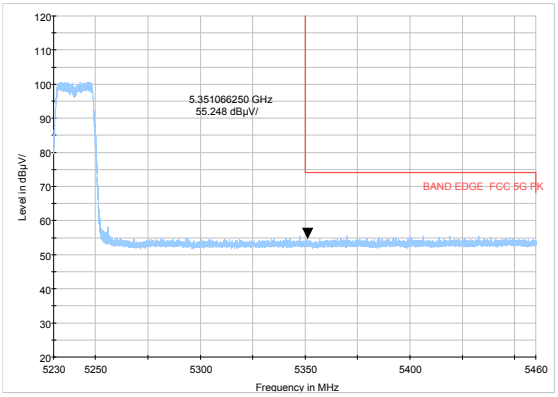
802.11a-Channel 48: Average



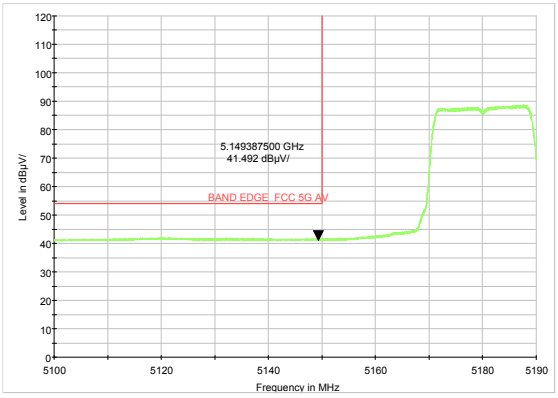
802.11n HT20-Channel 36: Peak



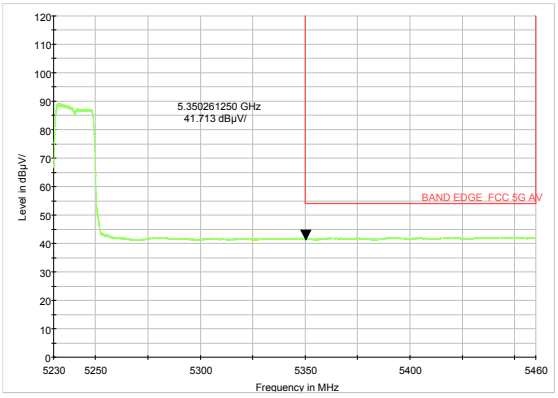
802.11n HT20-Channel 48: Peak



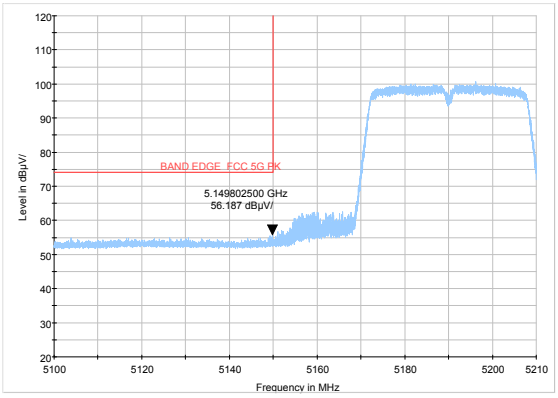
802.11n HT20-Channel 36: Average



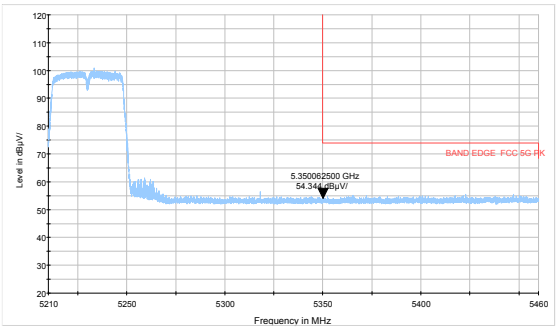
802.11n HT20-Channel 48: Average



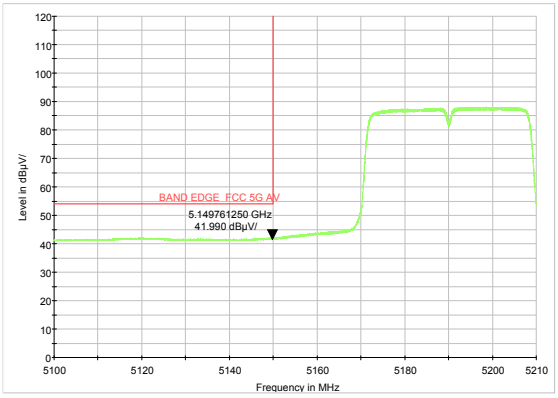
802.11n HT40-Channel 38: Peak



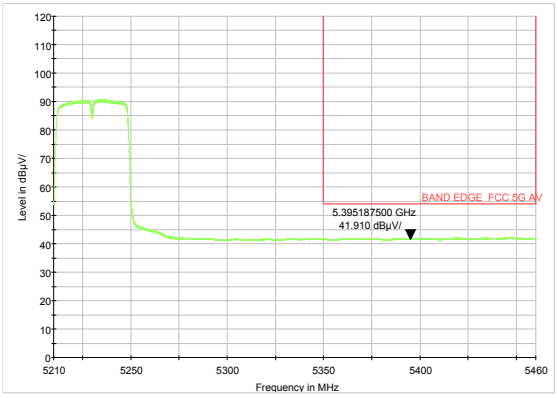
802.11n HT40-Channel 46: Peak

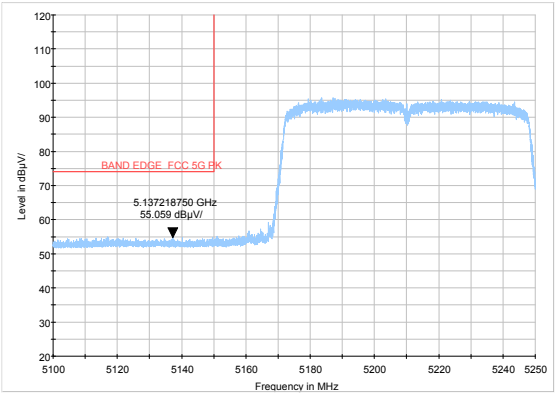
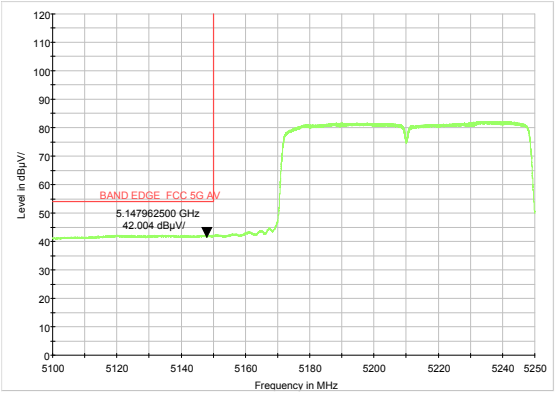


802.11n HT40-Channel 38: Average



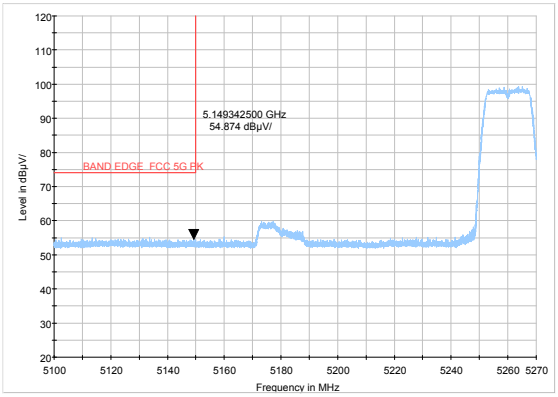
802.11n HT40-Channel 46: Average



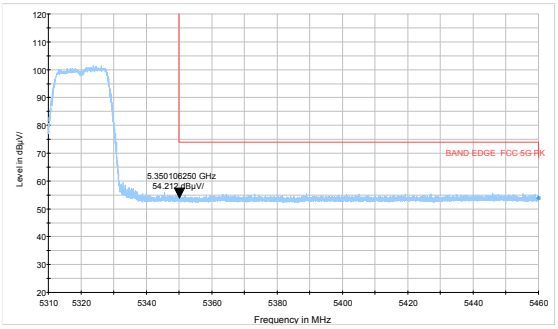
802.11ac VHT80 –Channel 42: Peak	802.11ac VHT80- Channel 42: Average
	

U-NII-2A

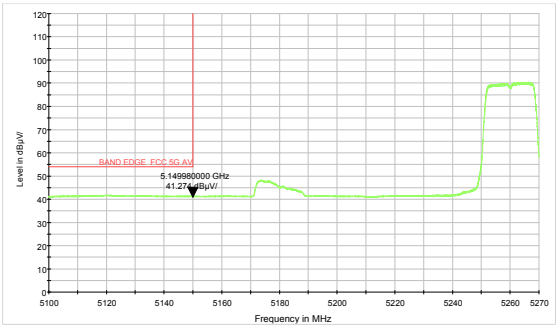
802.11a-Channel 52: Peak



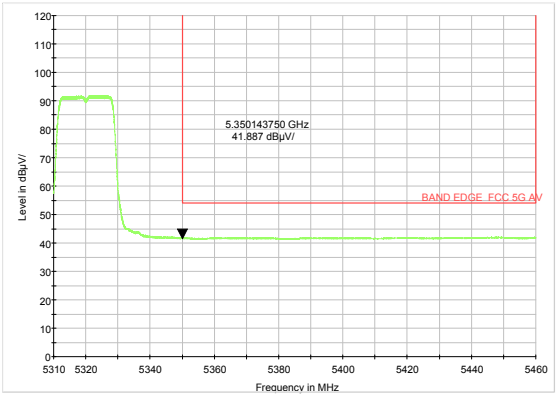
802.11a-Channel 64: Peak



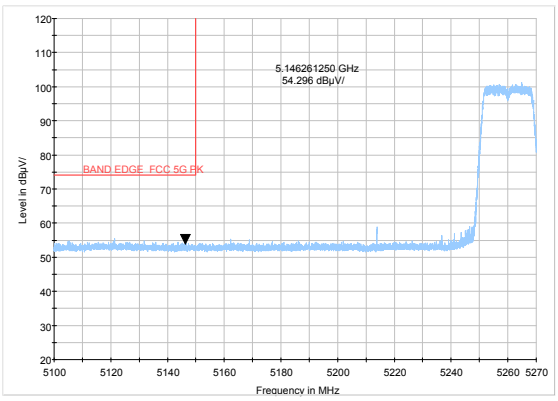
802.11a-Channel 52: Average



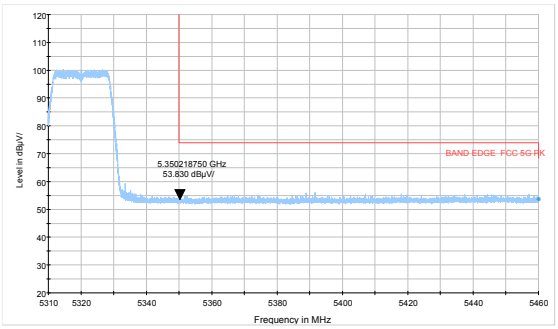
802.11a-Channel 64: Average



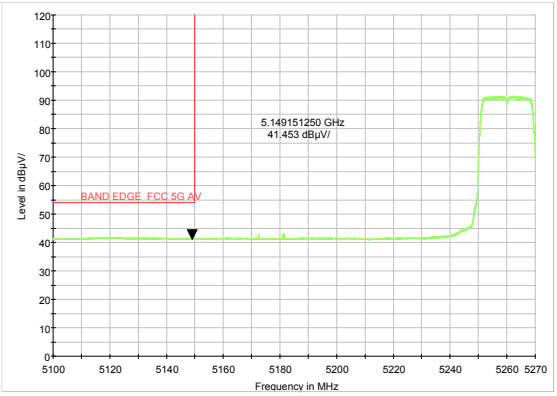
802.11n HT20-Channel 52: Peak



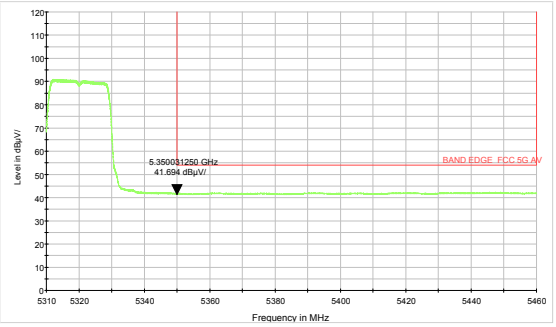
802.11n HT20-Channel 64: Peak



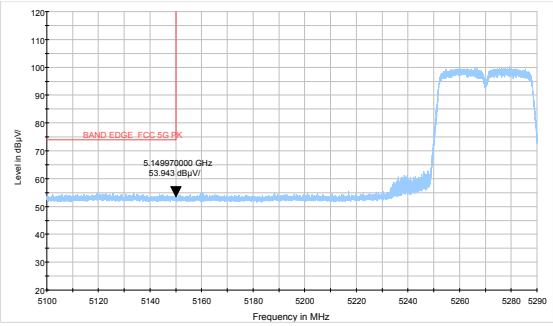
802.11n HT20-Channel 52: Average



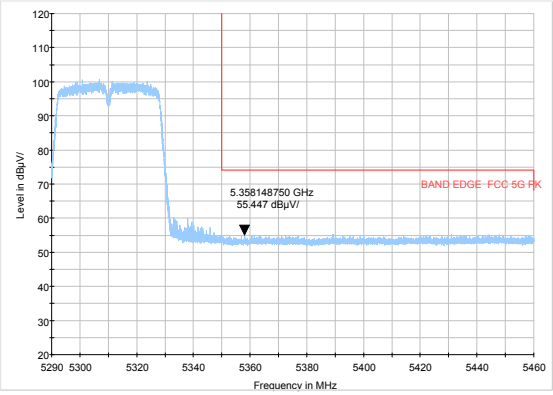
802.11n HT20-Channel 64: Average



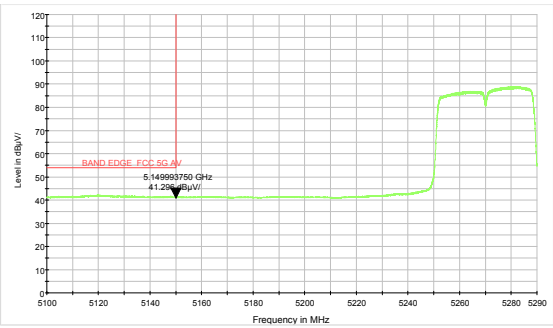
802.11n HT40-Channel 54: Peak



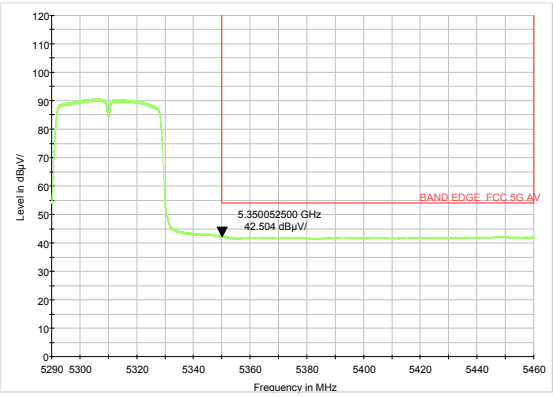
802.11n HT40-Channel 62: Peak

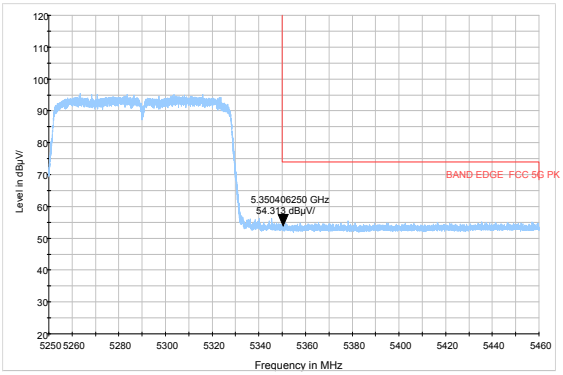
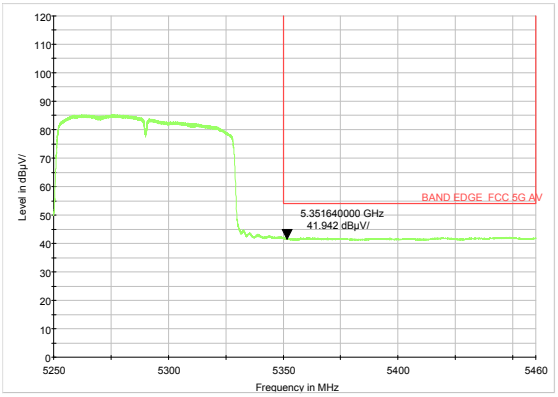


802.11n HT40-Channel 54: Average



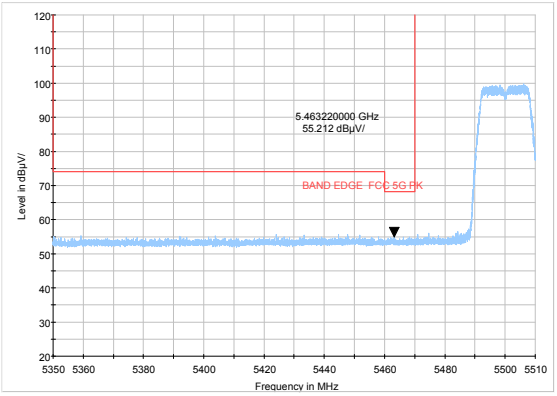
802.11n HT40-Channel 62: Average



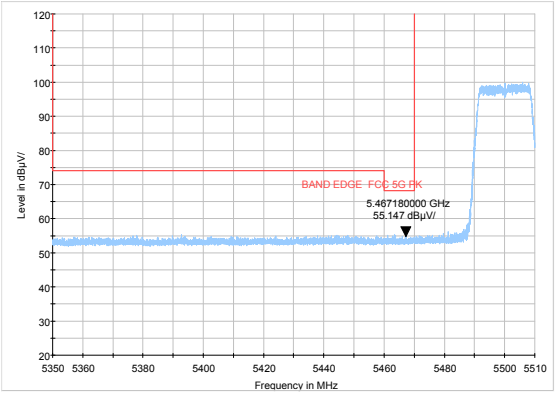
802.11ac VHT80 –Channel 58: Peak	802.11ac VHT80- Channel 58: Average
	

U-NII-2C

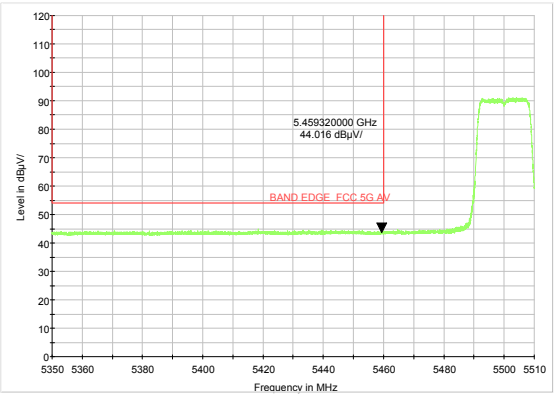
802.11a-Channel 100: Peak



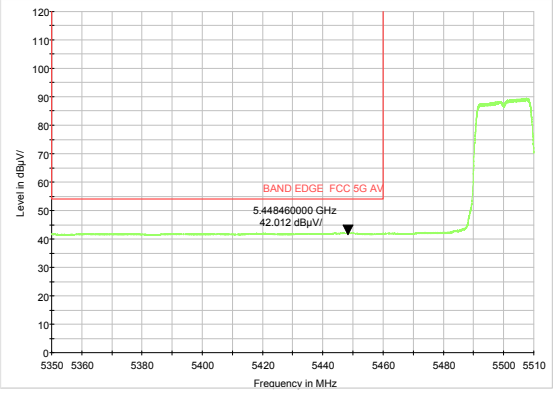
802.11n HT20-Channel 100: Peak



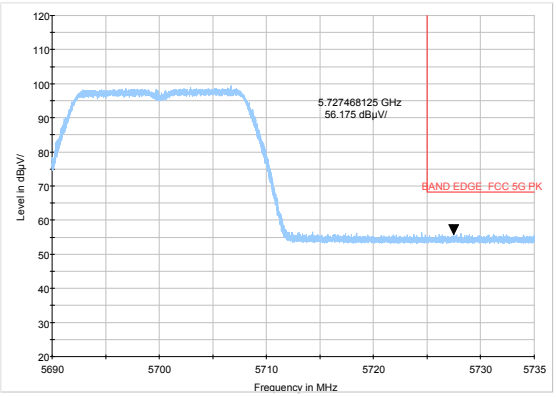
802.11a-Channel 100: Average



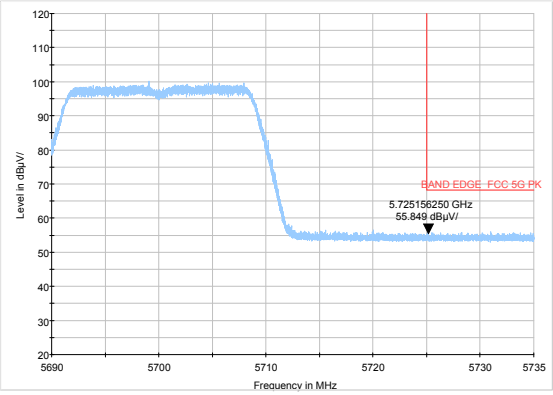
802.11n HT20-Channel 100: Average



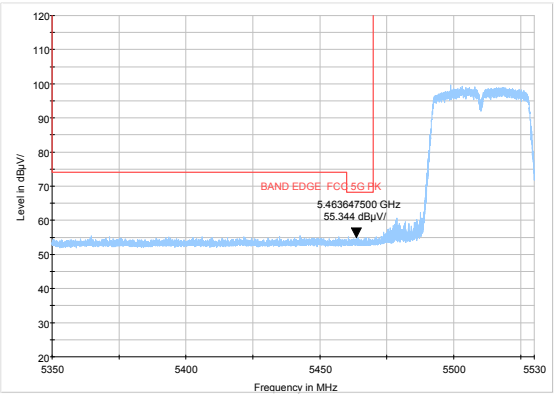
802.11a-Channel 140: Peak



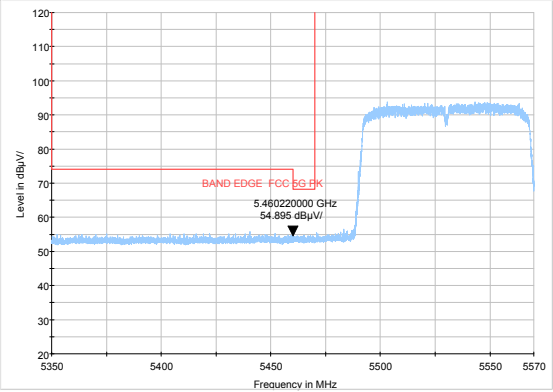
802.11n HT20-Channel 140: Peak



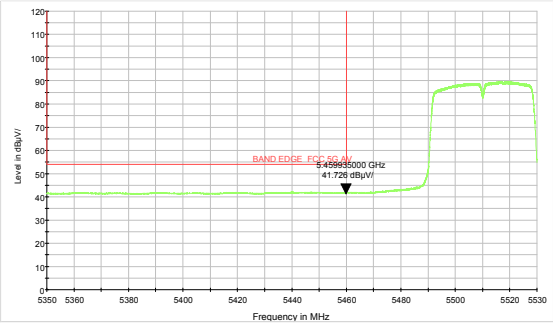
802.11n HT40-Channel 102: Peak



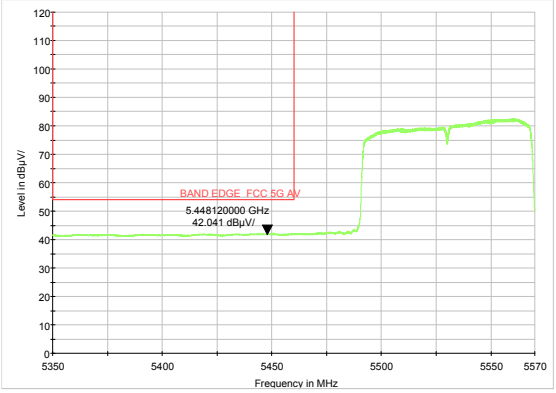
802.11ac VHT80 –Channel 106: Peak



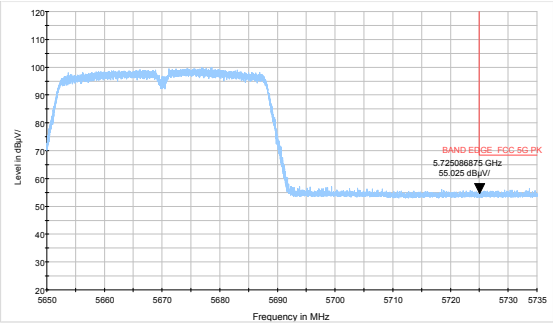
802.11n HT40-Channel 102: Average



802.11ac VHT80- Channel 106: Average

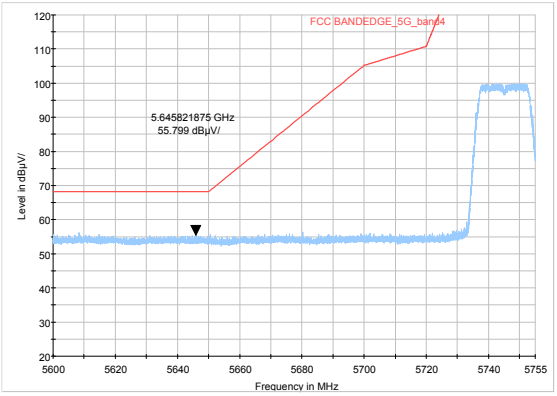


802.11n HT40-Channel 134: Peak

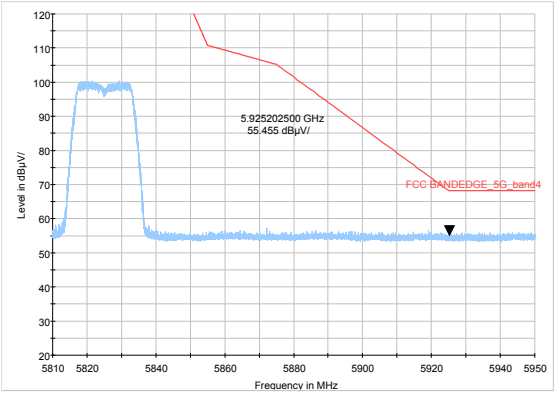


U-NII-3

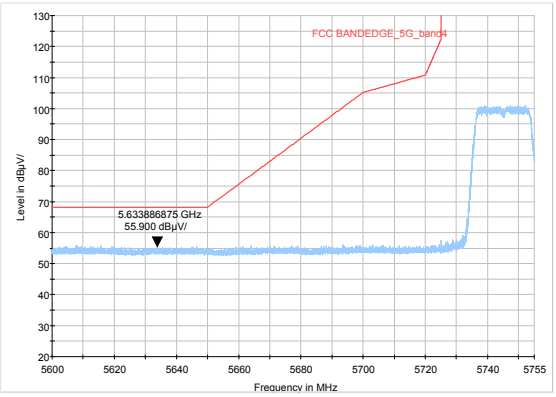
802.11a-Channel 149: Peak



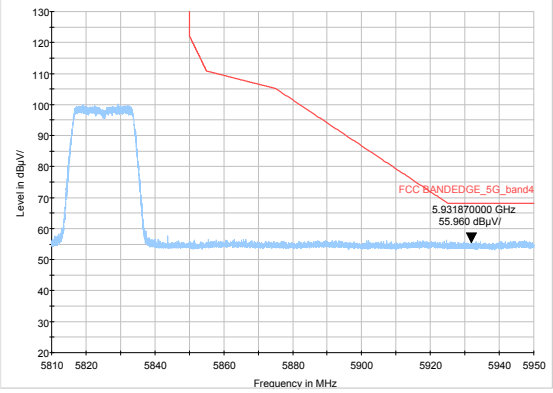
802.11a-Channel 165: Peak



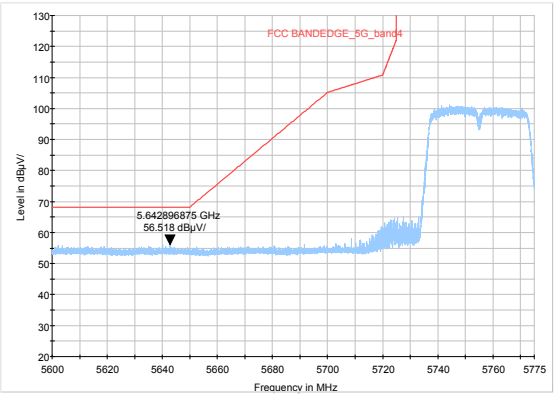
802.11n HT20-Channel 149: Peak



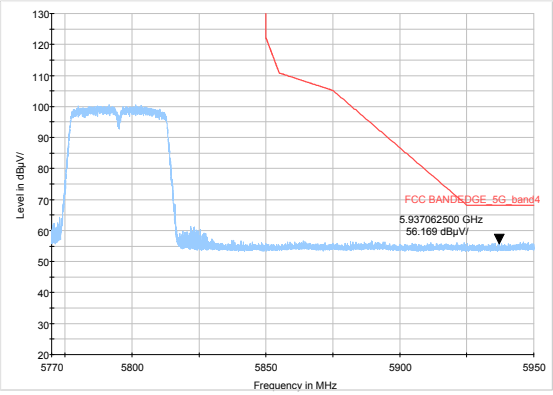
802.11n HT20-Channel 165: Peak



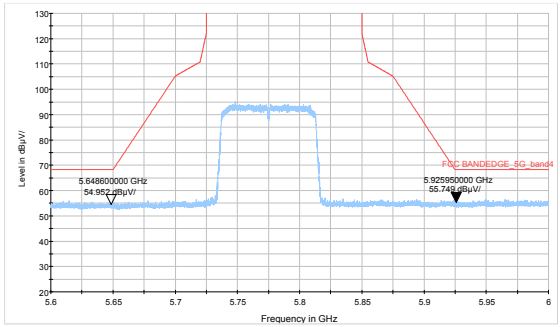
802.11n HT40-Channel 151: Peak



802.11n HT40-Channel 159: Peak



802.11ac VHT80- Channel 155: Peak



Result of RE

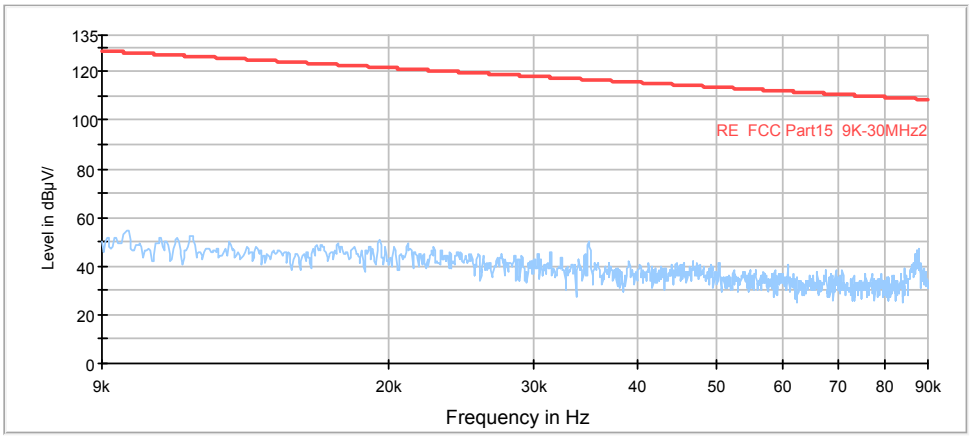
Test result

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.

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11a, Channel 149 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

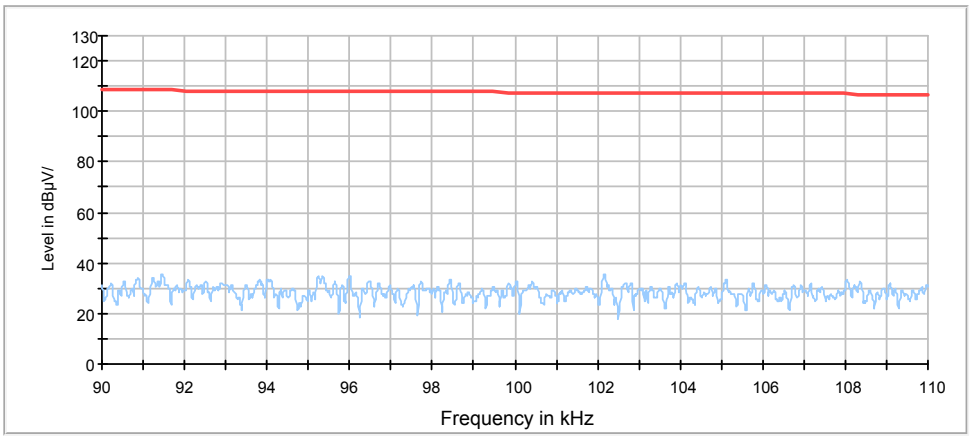
Continuous TX mode:

FCC RE 9K-90KHz AV

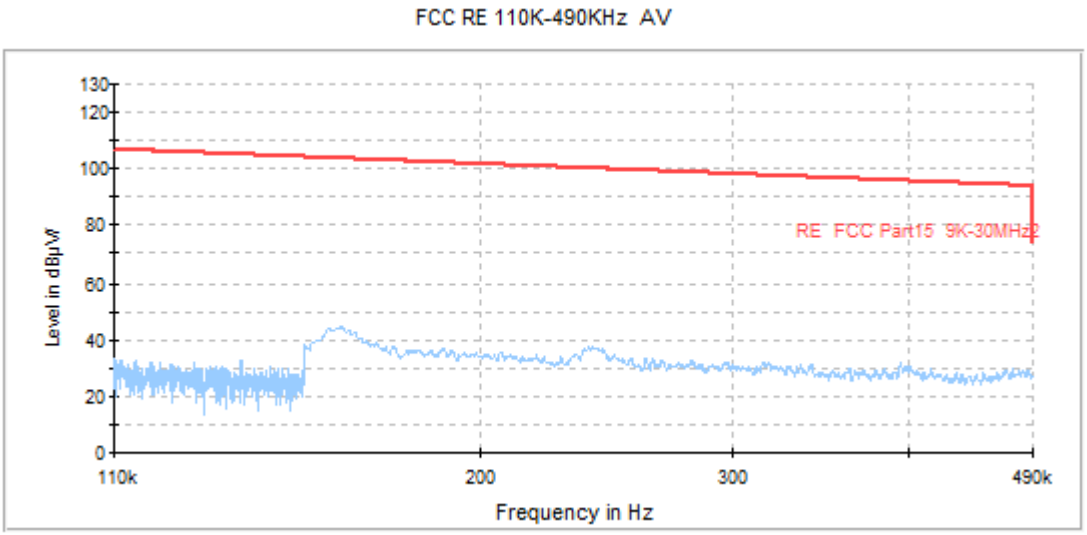


Radiates Emission from 9KHz to 90KHz

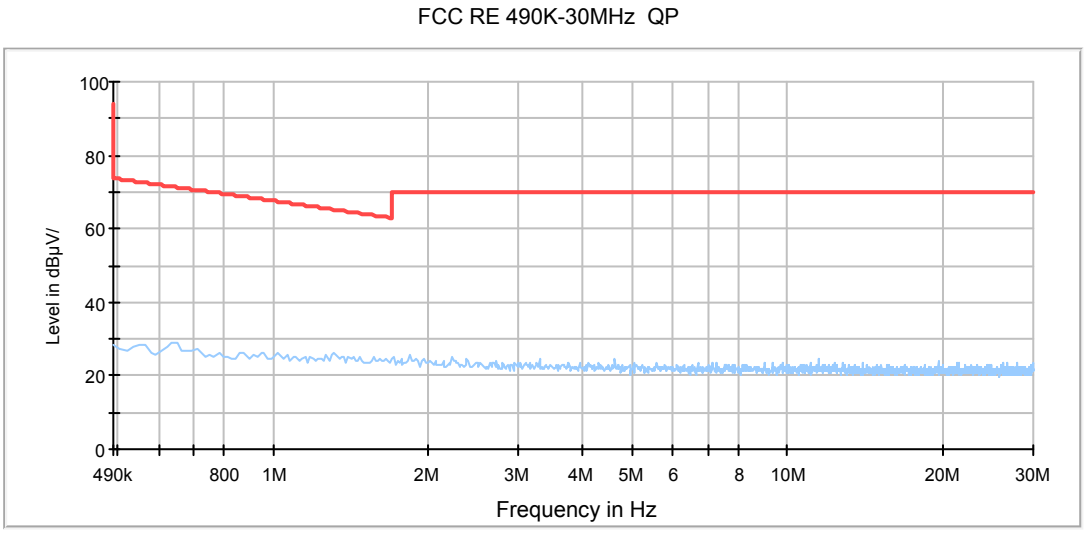
FCC RE 90K-110KHz QP



Radiates Emission from 90KHz to 110KHz

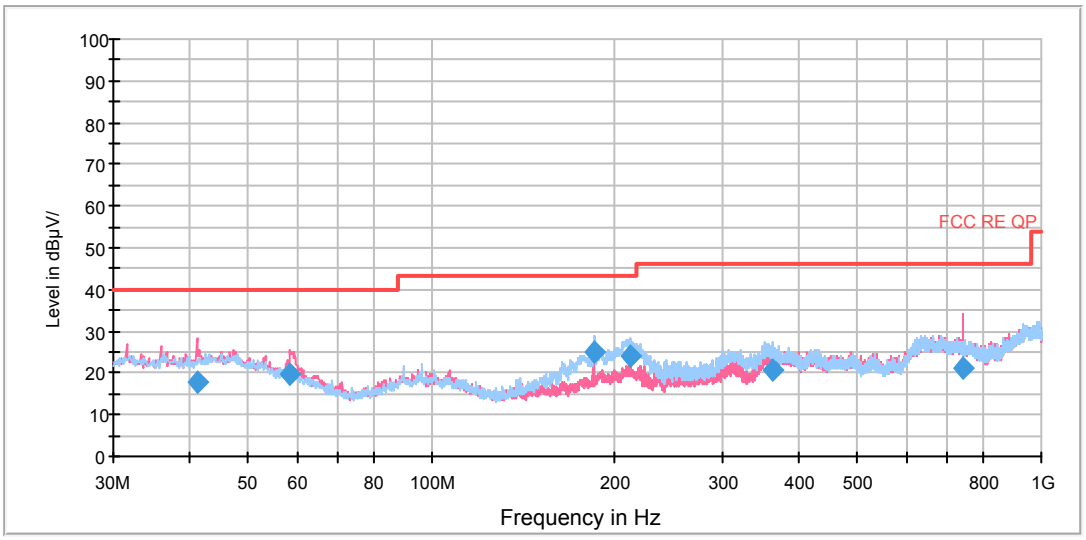


Radiates Emission from 110KHz to 490KHz



Radiates Emission from 490KHz to 30MHz

RE 30M-1GHz QP



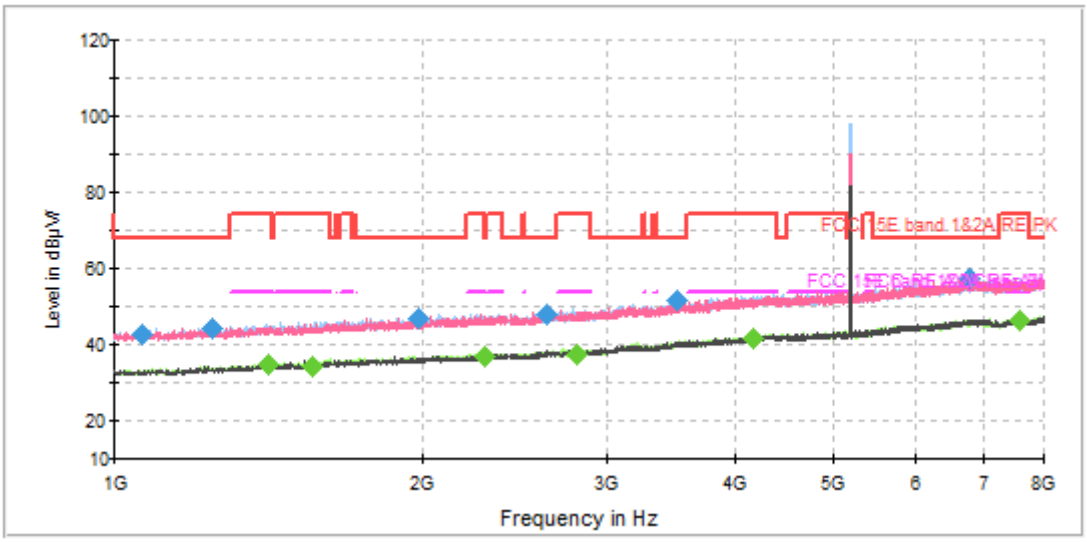
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
41.252112	18.0	100.0	V	22.0	-4.4	22.0	40.0
58.518431	19.6	100.0	V	286.0	-8.1	20.4	40.0
184.249425	24.9	195.0	H	106.0	-13.0	18.6	43.5
211.385500	24.0	120.0	H	97.0	-12.2	19.5	43.5
361.157500	20.8	100.0	H	92.0	-5.5	25.2	46.0
744.599000	21.0	221.0	V	22.0	-2.3	25.0	46.0

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

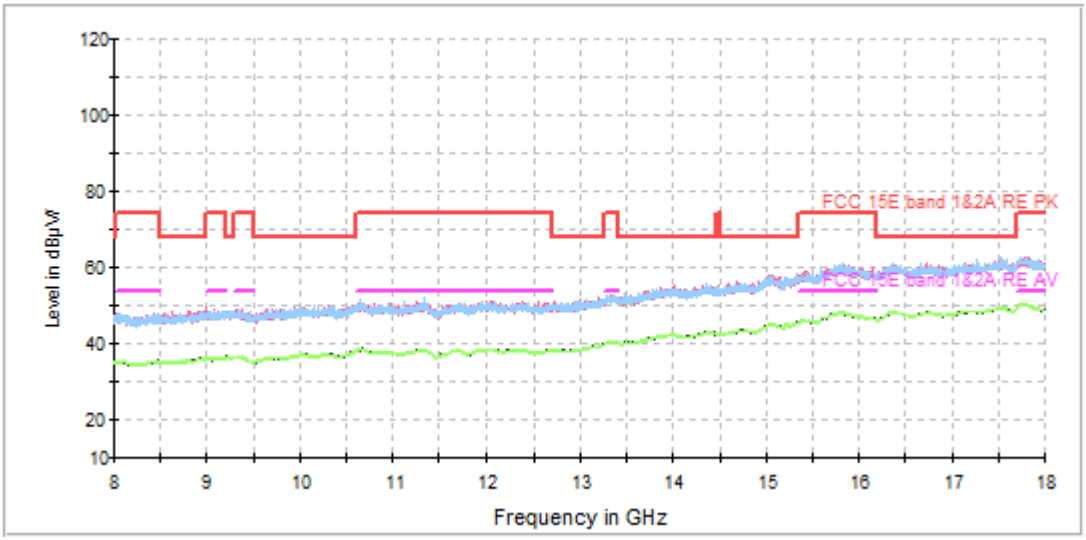
2. Margin = Limit – Quasi-Peak

802.11a CH36



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

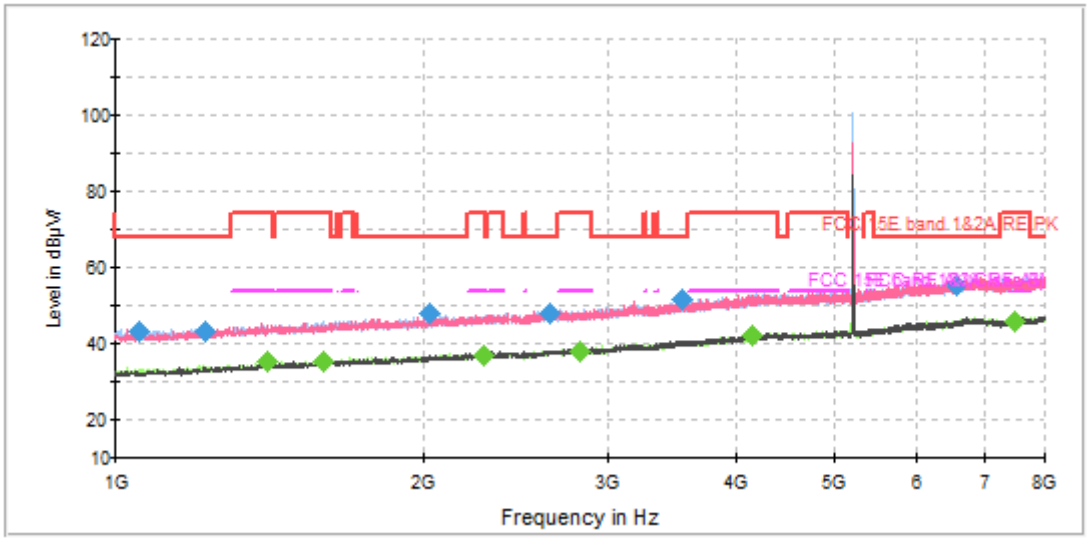
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1064.750000	43.0	200.0	V	159.0	-0.2	25.2	68.2
1245.875000	44.3	100.0	H	304.0	1.0	23.9	68.2
1979.125000	47.0	100.0	H	312.0	4.2	21.2	68.2
2626.625000	48.1	100.0	H	49.0	6.8	20.1	68.2
3513.875000	52.0	100.0	V	0.0	10.0	16.2	68.2
6780.250000	57.8	200.0	V	263.0	17.7	10.4	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1411.250000	34.9	100.0	H	335.0	1.9	19.1	54.0
1558.250000	34.5	100.0	H	341.0	2.3	19.5	54.0
2294.125000	37.0	200.0	H	212.0	5.4	17.0	54.0
2805.125000	37.7	200.0	H	3.0	7.4	16.3	54.0
4172.750000	41.5	200.0	H	35.0	12.1	12.5	54.0
7567.750000	46.6	200.0	V	106.0	18.7	7.4	54.0

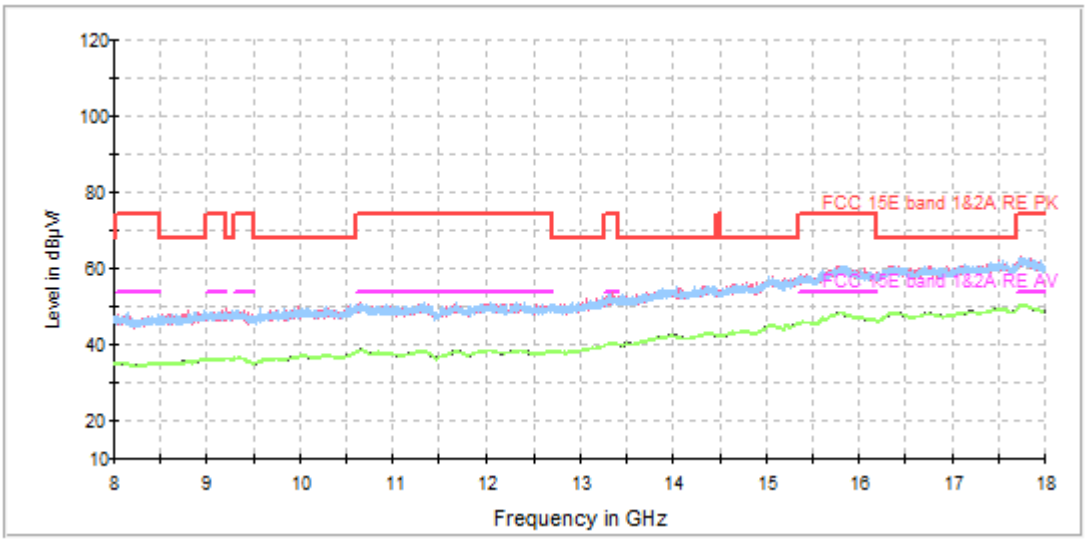
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH40



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

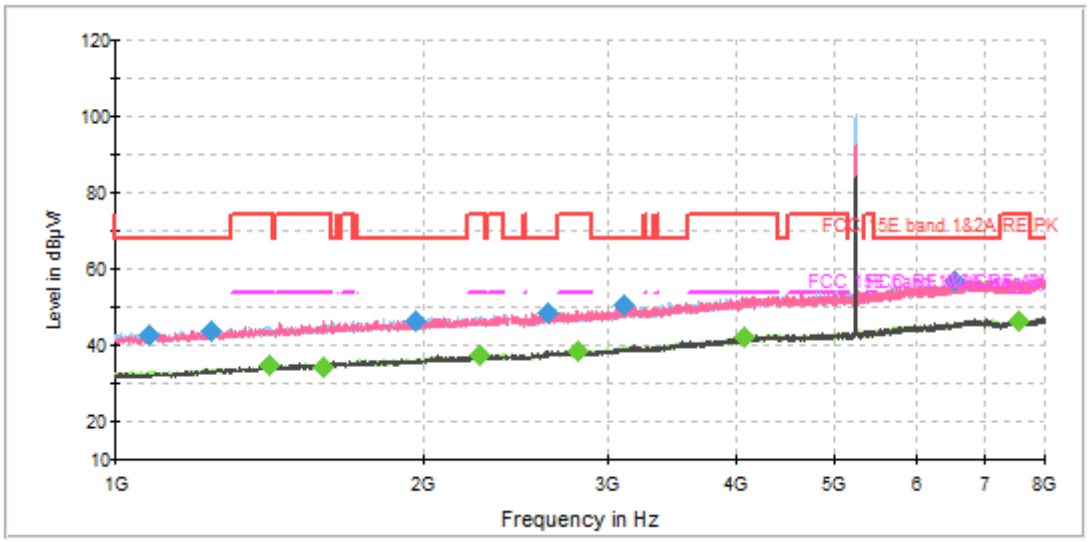
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1053.375000	43.3	100.0	H	112.0	-0.3	24.9	68.2
1221.375000	43.3	100.0	H	147.0	0.9	24.9	68.2
2022.875000	48.0	200.0	V	88.0	4.3	20.2	68.2
2632.750000	48.0	200.0	H	36.0	6.8	20.2	68.2
3548.000000	51.7	200.0	H	183.0	10.2	16.5	68.2
6573.750000	55.7	100.0	V	146.0	17.2	12.5	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1406.000000	35.3	100.0	H	163.0	1.9	18.7	54.0
1596.750000	35.2	100.0	H	323.0	2.5	18.8	54.0
2286.250000	37.0	100.0	H	166.0	5.4	17.0	54.0
2826.125000	38.2	200.0	H	20.0	7.5	15.8	54.0
4147.375000	42.2	100.0	V	138.0	12.0	11.8	54.0
7485.500000	46.0	100.0	H	235.0	18.4	8.0	54.0

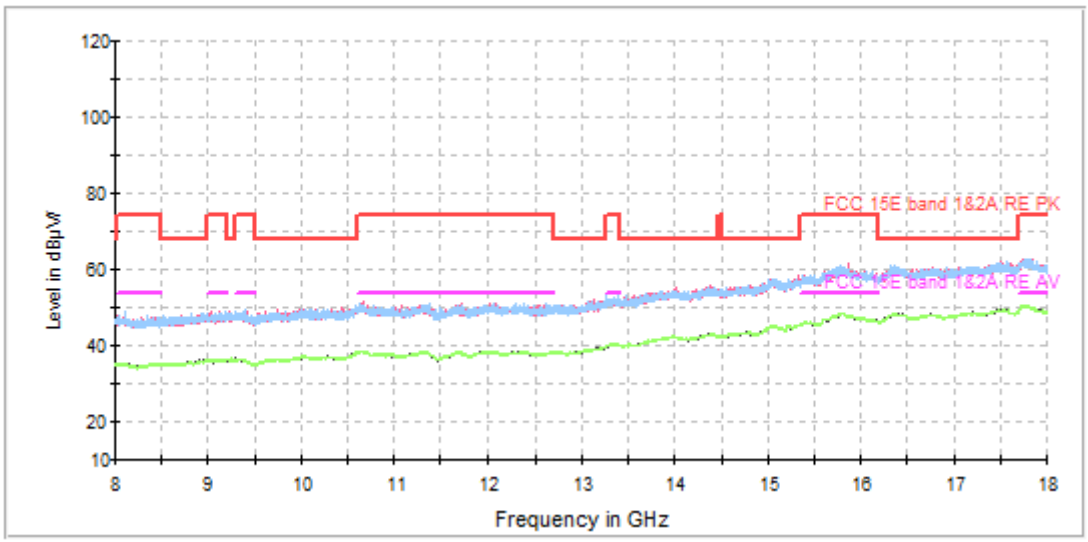
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH48



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

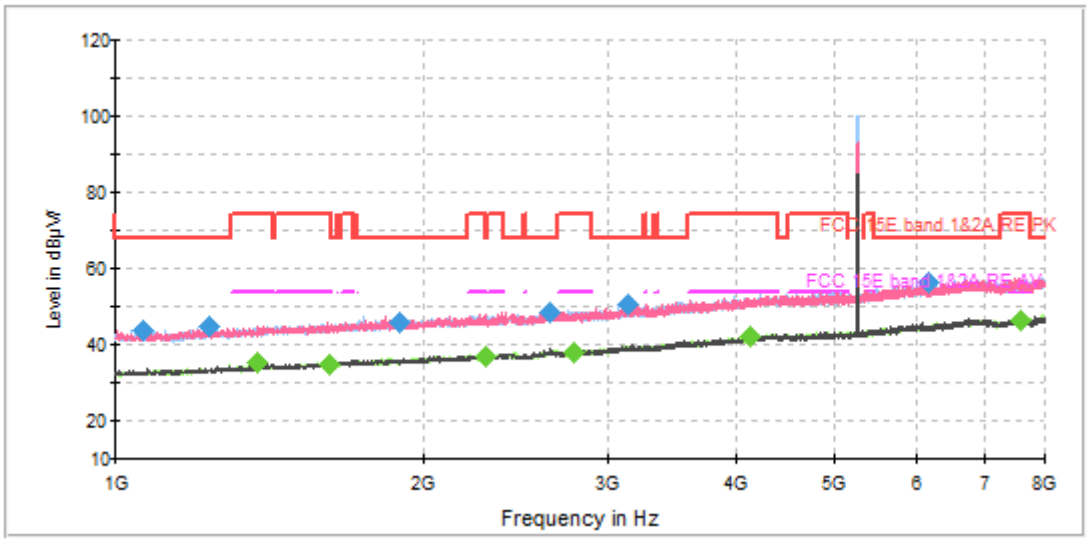
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1077.000000	42.9	100.0	H	308.0	-0.1	25.3	68.2
1238.000000	43.9	200.0	V	35.0	0.9	24.3	68.2
1960.750000	46.4	100.0	H	329.0	4.1	21.8	68.2
2622.250000	48.5	100.0	H	180.0	6.7	19.7	68.2
3112.250000	50.6	200.0	H	31.0	8.7	17.6	68.2
6534.375000	57.2	200.0	H	345.0	17.1	11.0	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1412.125000	34.8	200.0	H	328.0	1.9	19.2	54.0
1593.250000	34.5	100.0	H	194.0	2.5	19.5	54.0
2267.000000	37.6	100.0	V	231.0	5.3	16.4	54.0
2808.625000	38.6	100.0	H	291.0	7.4	15.4	54.0
4078.250000	42.2	100.0	V	70.0	11.8	11.8	54.0
7545.875000	46.3	200.0	V	280.0	18.6	7.7	54.0

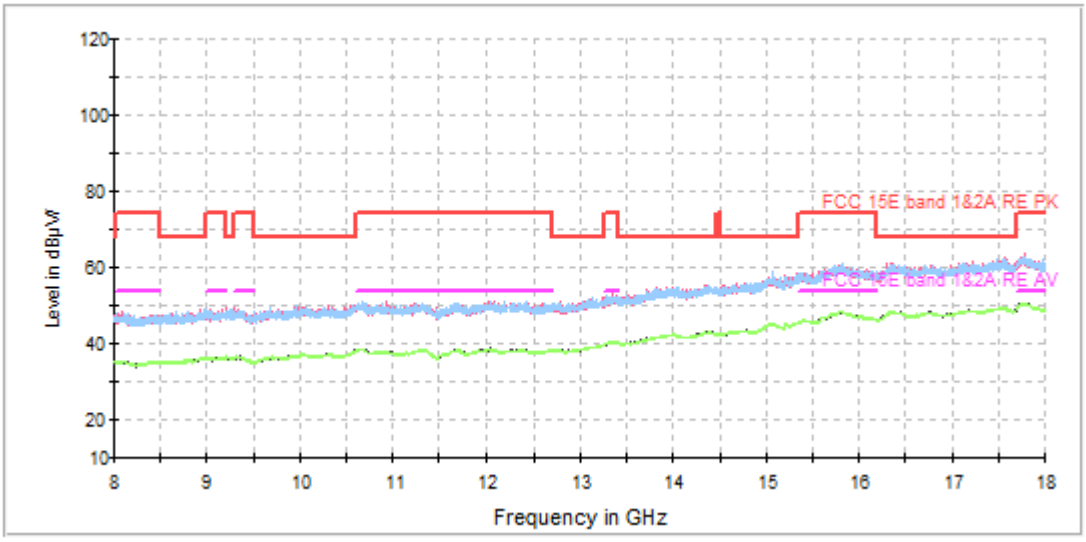
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH52



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

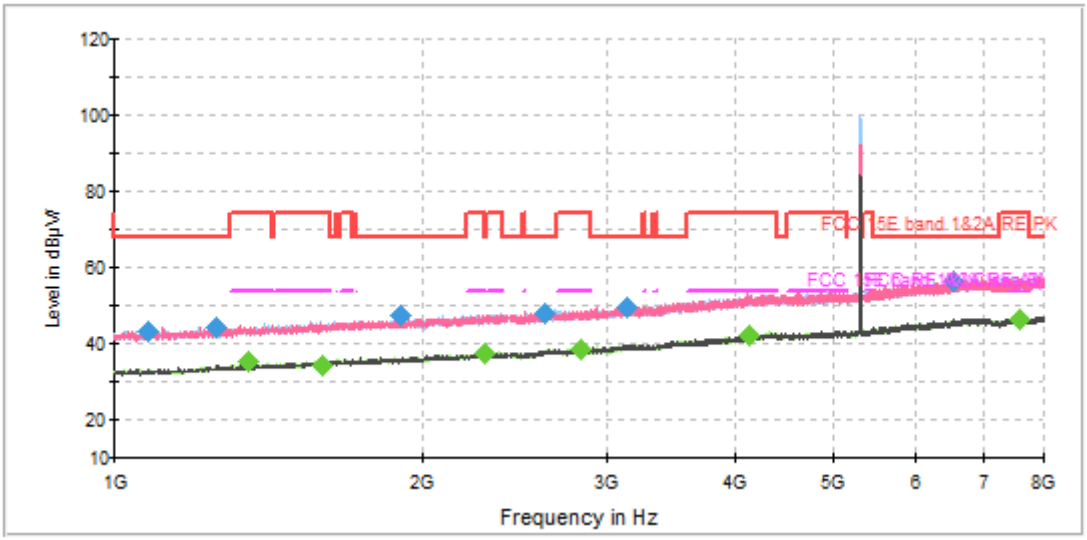
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1064.750000	43.8	200.0	V	301.0	-0.2	24.4	68.2
1233.625000	44.7	200.0	H	53.0	0.9	23.5	68.2
1889.875000	46.2	200.0	V	293.0	3.7	22.0	68.2
2644.125000	48.8	100.0	V	24.0	6.9	19.4	68.2
3139.375000	50.6	100.0	H	329.0	8.8	17.6	68.2
6166.000000	56.4	100.0	H	257.0	16.2	11.8	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1375.375000	35.4	100.0	H	177.0	1.7	18.6	54.0
1614.250000	34.7	200.0	V	139.0	2.6	19.3	54.0
2292.375000	37.1	200.0	H	110.0	5.4	16.9	54.0
2790.250000	38.1	200.0	H	0.0	7.3	15.9	54.0
4125.500000	42.1	200.0	H	102.0	12.0	11.9	54.0
7582.625000	46.5	100.0	V	40.0	18.8	7.5	54.0

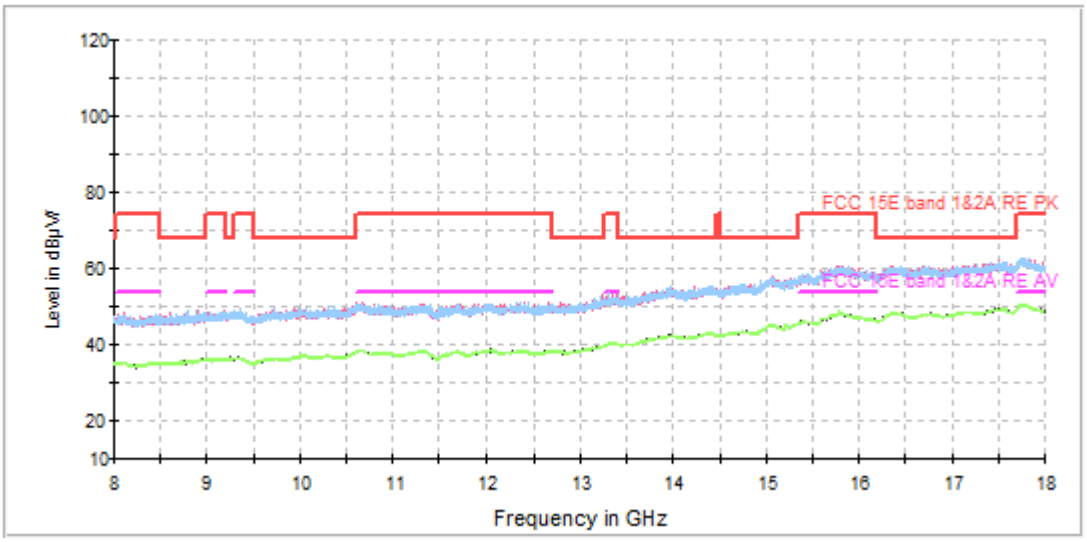
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH60



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

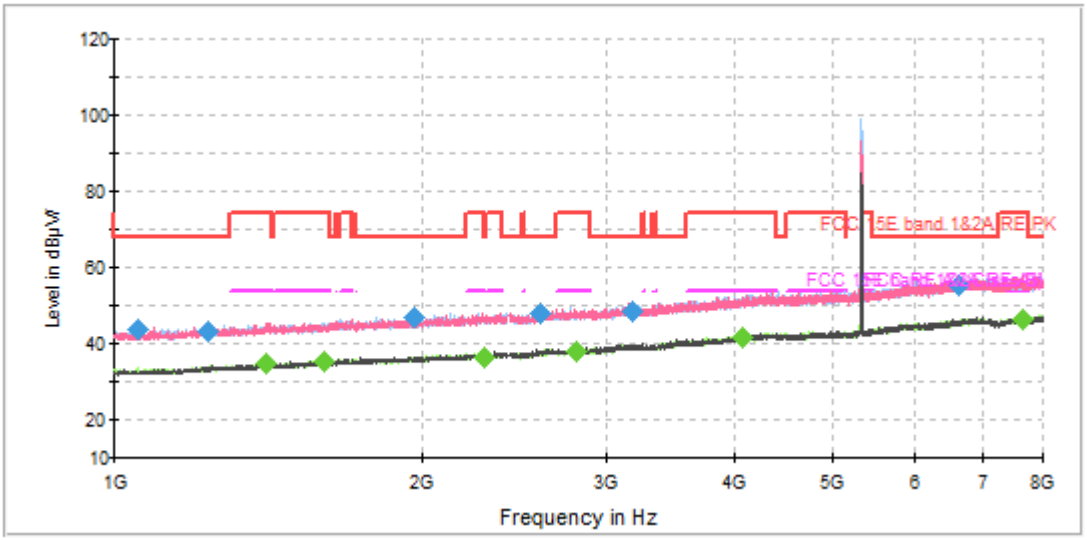
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1079.625000	43.5	200.0	H	121.0	-0.1	24.7	68.2
1254.625000	44.5	200.0	V	111.0	1.0	23.7	68.2
1903.875000	47.3	100.0	H	347.0	3.8	20.9	68.2
2617.875000	48.3	200.0	V	167.0	6.7	19.9	68.2
3143.750000	49.7	100.0	H	305.0	8.8	18.5	68.2
6548.375000	56.6	100.0	H	236.0	17.2	11.6	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1350.875000	35.2	100.0	H	214.0	1.5	18.8	54.0
1595.875000	34.4	100.0	H	111.0	2.5	19.6	54.0
2296.750000	37.3	100.0	H	197.0	5.4	16.7	54.0
2828.750000	38.4	200.0	H	61.0	7.5	15.6	54.0
4136.875000	42.2	200.0	V	214.0	12.0	11.8	54.0
7589.625000	46.6	100.0	V	0.0	18.8	7.4	54.0

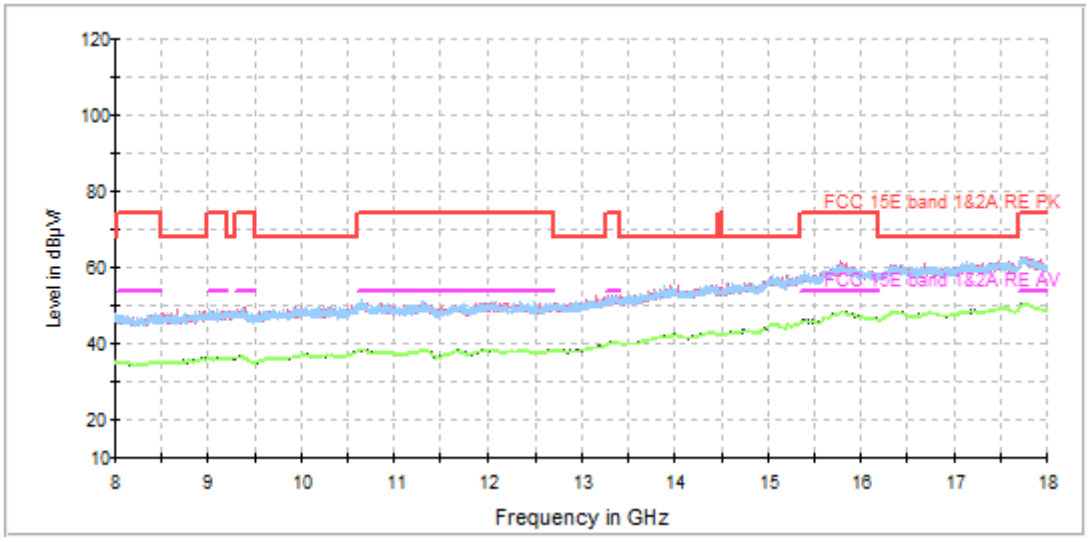
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH64



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

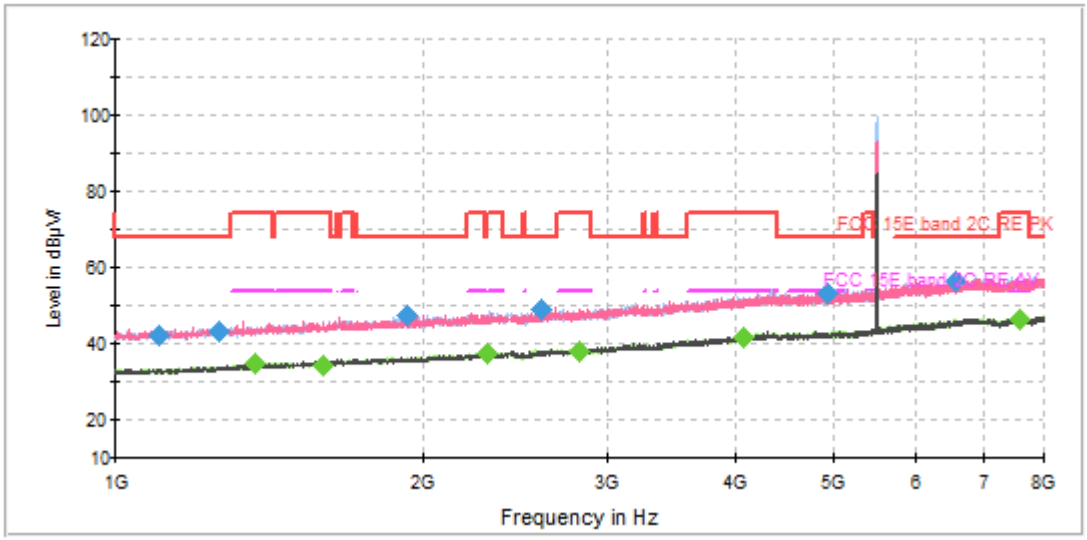
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1053.375000	43.7	100.0	H	123.0	-0.3	24.5	68.2
1237.125000	43.5	200.0	H	107.0	0.9	24.7	68.2
1957.250000	46.8	100.0	V	197.0	4.1	21.4	68.2
2591.625000	48.2	200.0	H	2.0	6.6	20.0	68.2
3185.750000	48.6	100.0	H	358.0	8.9	19.6	68.2
6610.500000	55.7	200.0	H	82.0	17.3	12.5	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	34.9	100.0	V	0.0	1.9	19.1	54.0
1603.750000	35.3	200.0	V	66.0	2.6	18.7	54.0
2300.250000	36.6	100.0	H	328.0	5.4	17.4	54.0
2809.500000	38.2	200.0	V	193.0	7.4	15.8	54.0
4076.500000	41.6	200.0	H	175.0	11.8	12.4	54.0
7643.875000	46.6	100.0	H	304.0	18.9	7.4	54.0

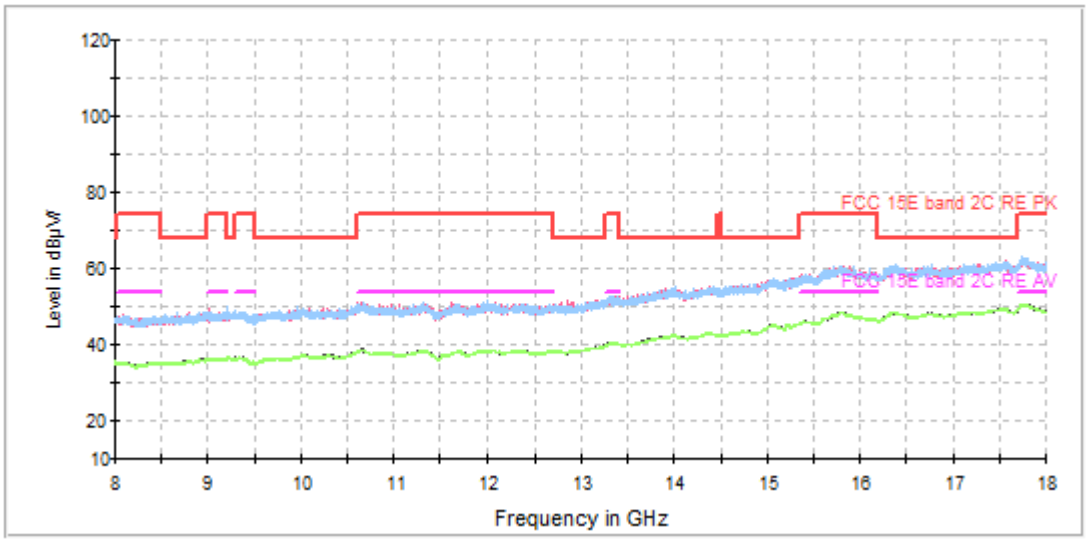
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH100



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

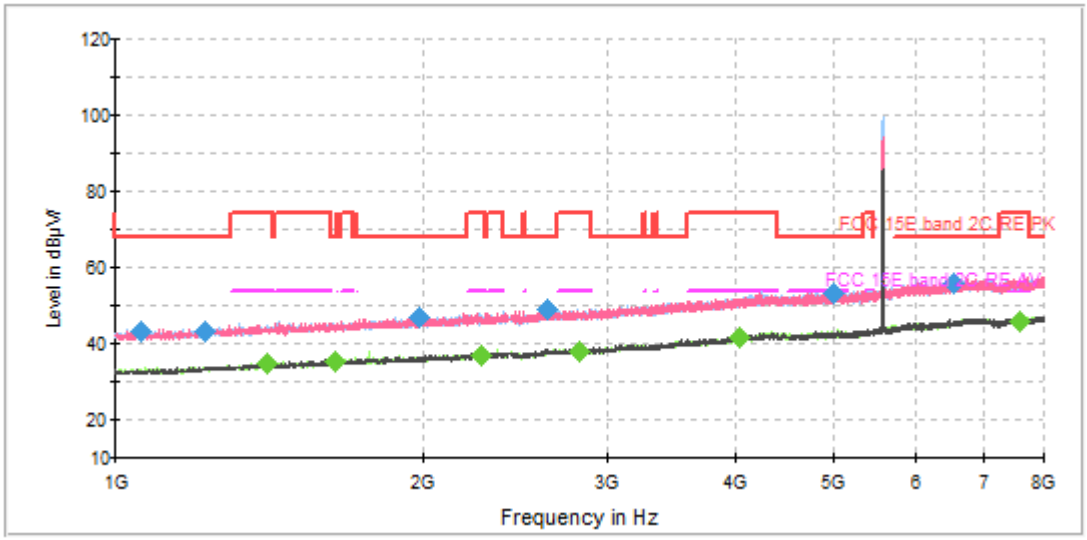
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1102.375000	42.2	100.0	H	220.0	0.1	26.0	68.2
1261.625000	43.1	100.0	H	151.0	1.0	25.1	68.2
1927.500000	47.7	200.0	H	0.0	3.9	20.5	68.2
2594.250000	49.3	200.0	V	308.0	6.6	18.9	68.2
4922.625000	53.3	100.0	H	331.0	13.5	14.9	68.2
6577.250000	56.4	100.0	H	212.0	17.2	11.8	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1370.125000	34.9	200.0	H	219.0	1.6	19.1	54.0
1593.250000	34.5	100.0	H	347.0	2.5	19.5	54.0
2301.125000	37.5	100.0	V	228.0	5.4	16.5	54.0
2816.500000	38.3	200.0	H	180.0	7.4	15.7	54.0
4074.750000	41.6	200.0	V	292.0	11.8	12.4	54.0
7596.625000	46.4	200.0	V	124.0	18.8	7.6	54.0

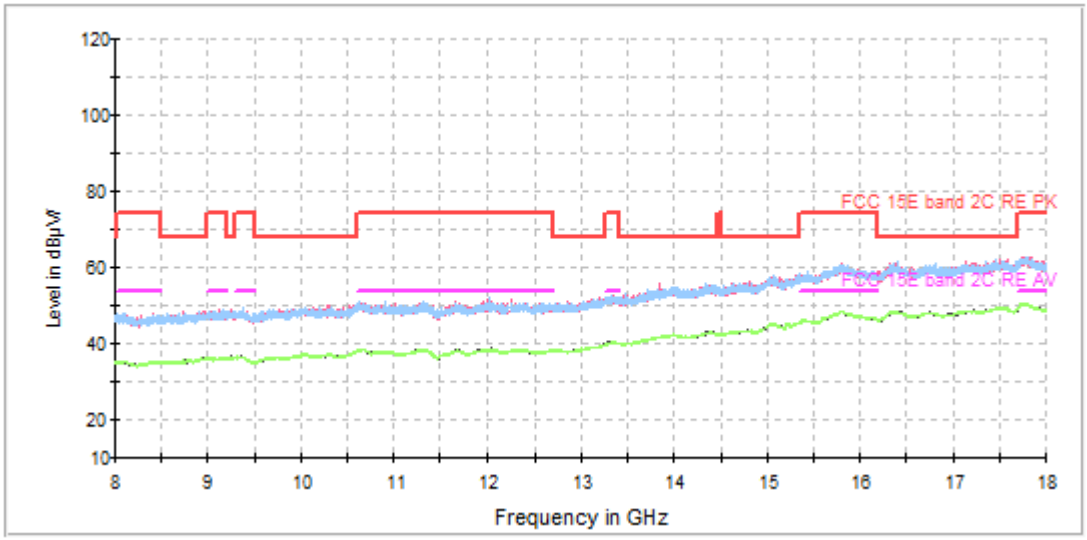
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH116



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

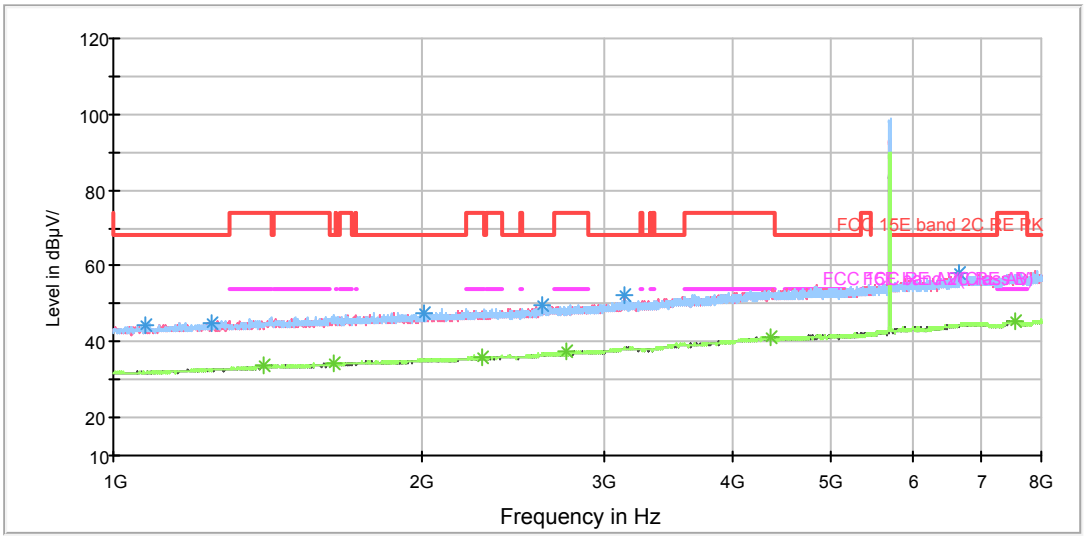
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1059.500000	43.3	100.0	H	224.0	-0.3	24.9	68.2
1223.125000	43.5	200.0	H	48.0	0.9	24.7	68.2
1980.000000	47.1	200.0	V	269.0	4.2	21.1	68.2
2621.375000	49.0	100.0	V	82.0	6.7	19.2	68.2
4995.250000	53.3	100.0	V	0.0	13.6	14.9	68.2
6547.500000	56.0	200.0	V	285.0	17.2	12.2	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1409.500000	34.7	100.0	V	41.0	1.9	19.3	54.0
1639.625000	35.3	200.0	H	63.0	2.8	18.7	54.0
2271.375000	37.1	100.0	H	232.0	5.3	16.9	54.0
2817.375000	38.2	200.0	H	157.0	7.5	15.8	54.0
4036.250000	41.7	100.0	H	0.0	11.7	12.3	54.0
7596.625000	46.1	200.0	V	195.0	18.8	7.9	54.0

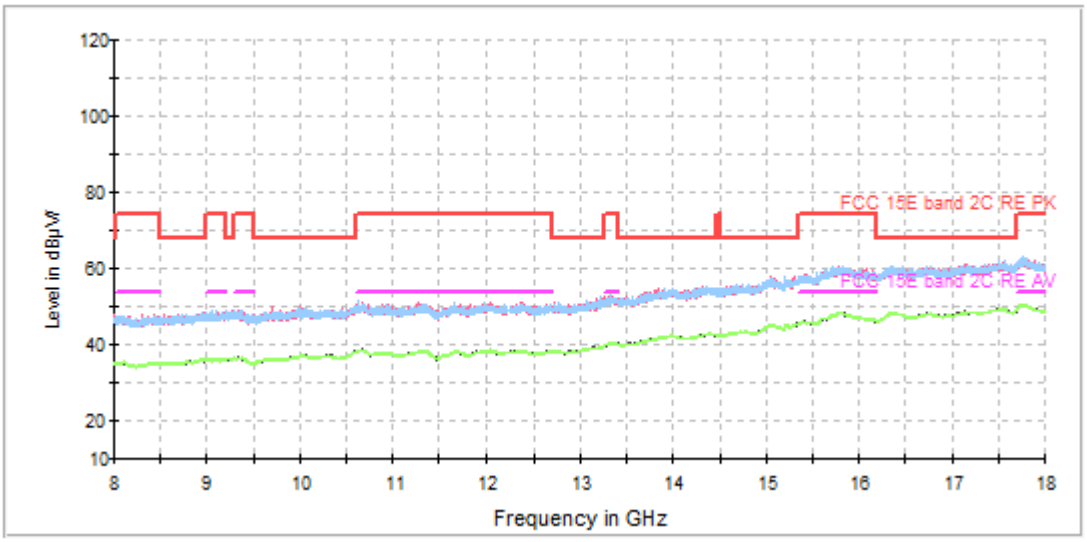
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH140



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

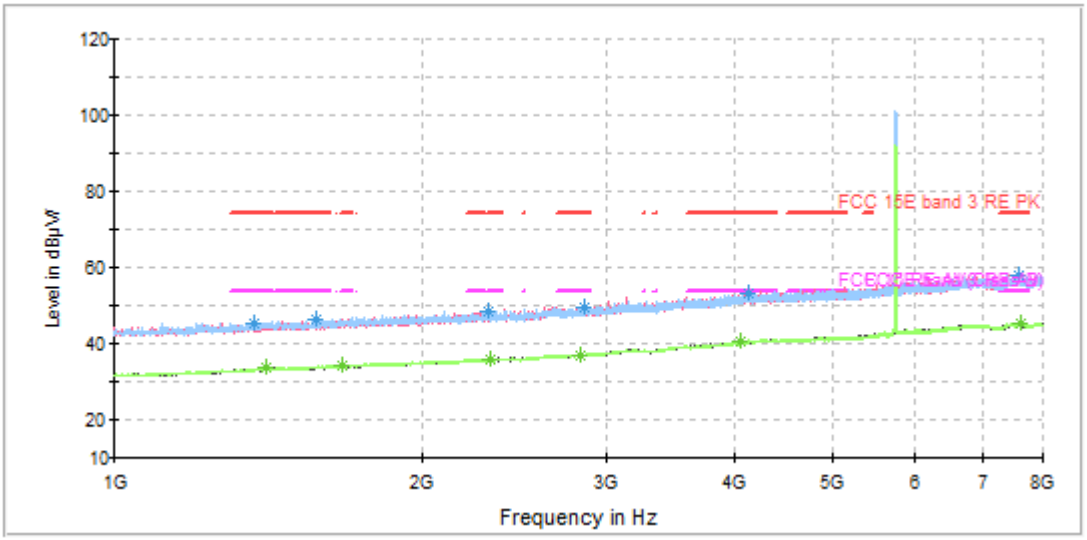
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1074.375000	44.4	200.0	V	123	-0.2	23.8	68.2
1247.625000	44.8	100.0	H	189	1.0	23.4	68.2
2002.750000	47.8	100.0	H	0	4.3	20.4	68.2
2612.625000	49.8	100.0	H	359	6.7	18.4	68.2
3144.625000	52.2	200.0	V	14	8.8	16.0	68.2
6651.625000	58.3	200.0	V	137	17.5	9.9	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1400.750000	33.6	100.0	H	0	1.9	20.4	54
1638.750000	34.2	200.0	V	55	2.7	19.8	54
2287.125000	36.1	200.0	V	232	5.4	17.9	54
2758.750000	37.3	100.0	H	271	7.2	16.7	54
4370.500000	41.2	200.0	V	0	12.5	12.8	54
7545.000000	45.4	200.0	H	48	18.6	8.6	54

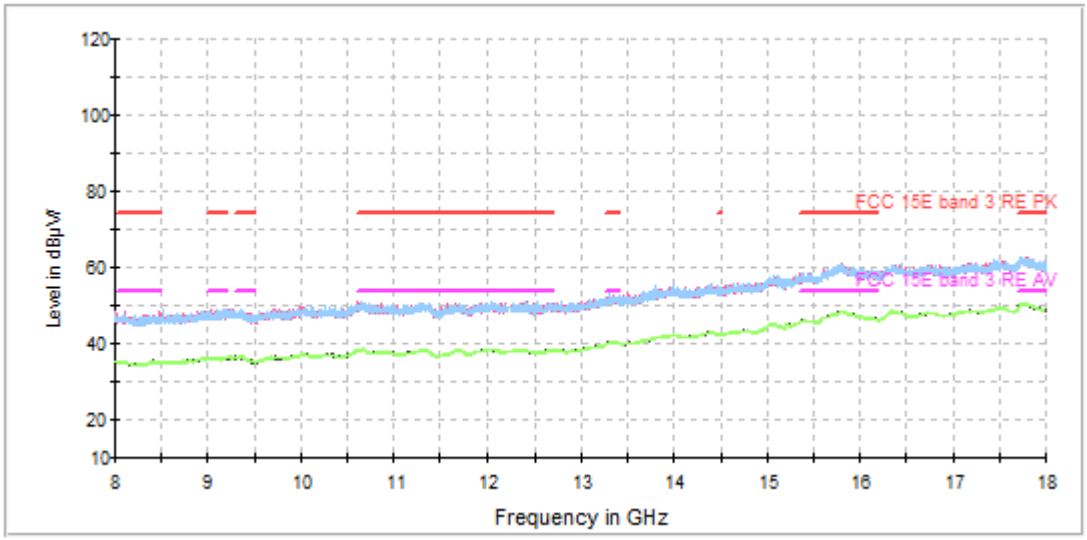
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH149



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

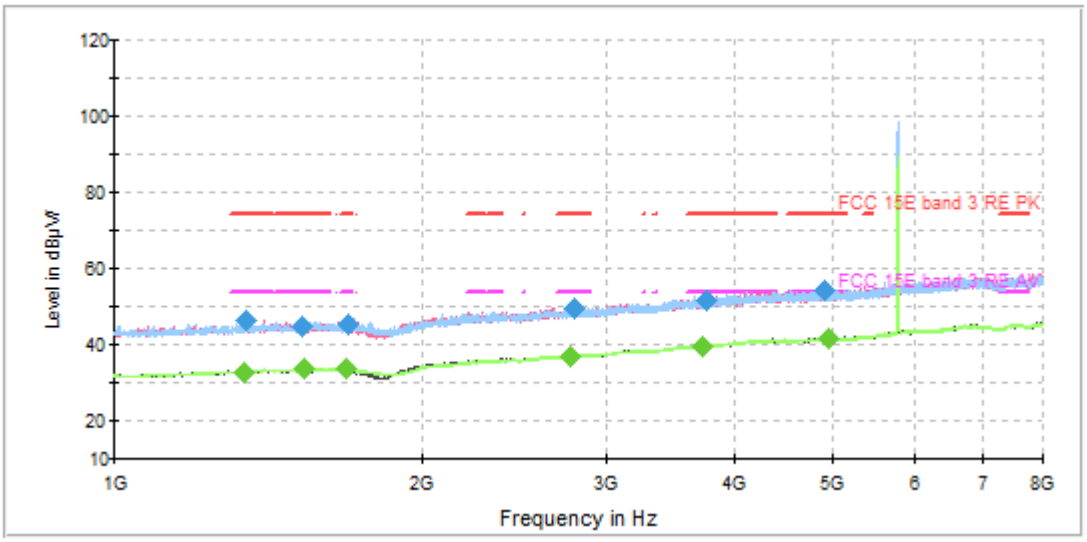
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1371.875000	45.6	200.0	V	51.0	1.6	28.4	74
1570.500000	46.7	200.0	V	147.0	2.4	27.3	74
2315.125000	48.6	100.0	H	272.0	5.5	25.4	74
2864.625000	49.6	200.0	V	147.0	7.6	24.4	74
4128.125000	53.1	100.0	V	353.0	12.0	20.9	74
7563.375000	57.9	200.0	H	0.0	18.7	16.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1407.750000	33.8	200.0	V	79.0	1.9	20.2	54
1665.000000	34.4	200.0	V	134.0	2.9	19.6	54
2329.125000	36.0	200.0	V	79.0	5.5	18.0	54
2832.250000	37.2	200.0	V	38.0	7.5	16.8	54
4057.250000	40.6	200.0	V	286.0	11.8	13.4	54
7607.125000	45.3	100.0	V	216.0	18.8	8.7	54

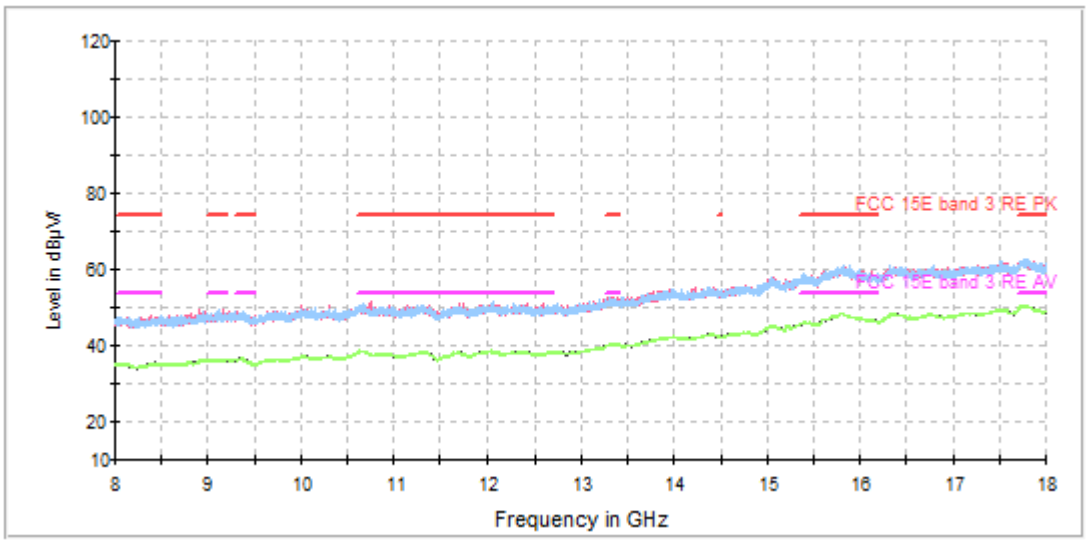
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH157



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

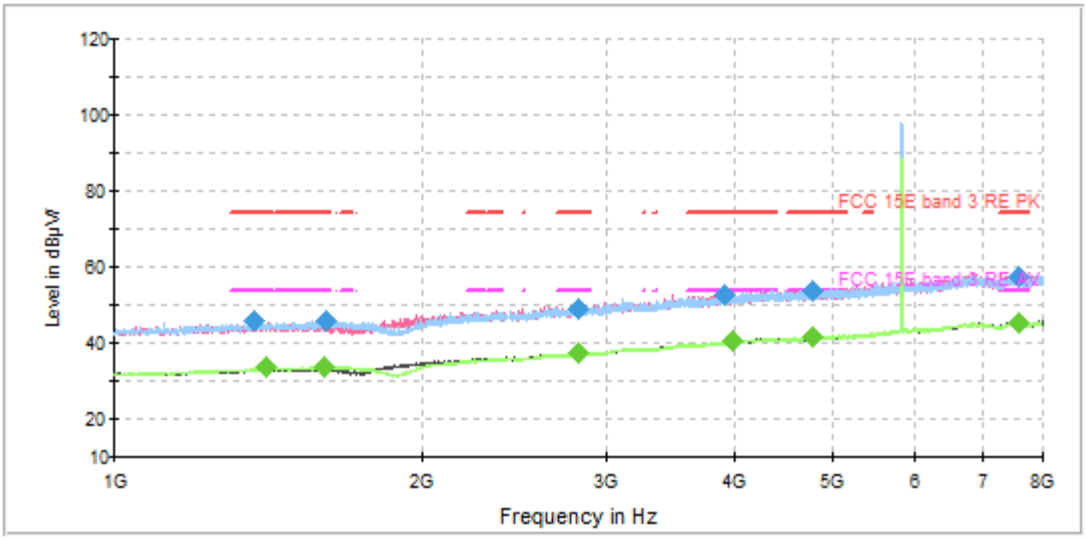
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1343.000000	46.7	100.0	H	65.0	1.4	27.3	74.0
1523.250000	45.1	200.0	H	88.0	2.2	28.9	74.0
1688.625000	45.3	200.0	H	0.0	2.9	28.7	74.0
2799.875000	49.4	200.0	V	0.0	7.4	24.6	74.0
3753.625000	52.0	100.0	V	245.0	10.6	22.0	74.0
4906.875000	54.3	100.0	H	0.0	13.5	19.7	74.0

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1341.250000	33.0	100.0	V	0.0	1.4	21.0	54.0
1534.625000	33.6	200.0	H	294.0	2.2	20.4	54.0
1684.250000	33.7	200.0	H	22.0	2.9	20.3	54.0
2778.000000	37.0	200.0	V	0.0	7.3	17.0	54.0
3727.375000	39.4	200.0	V	148.0	10.5	14.6	54.0
4937.500000	41.6	200.0	H	102.0	13.5	12.4	54.0

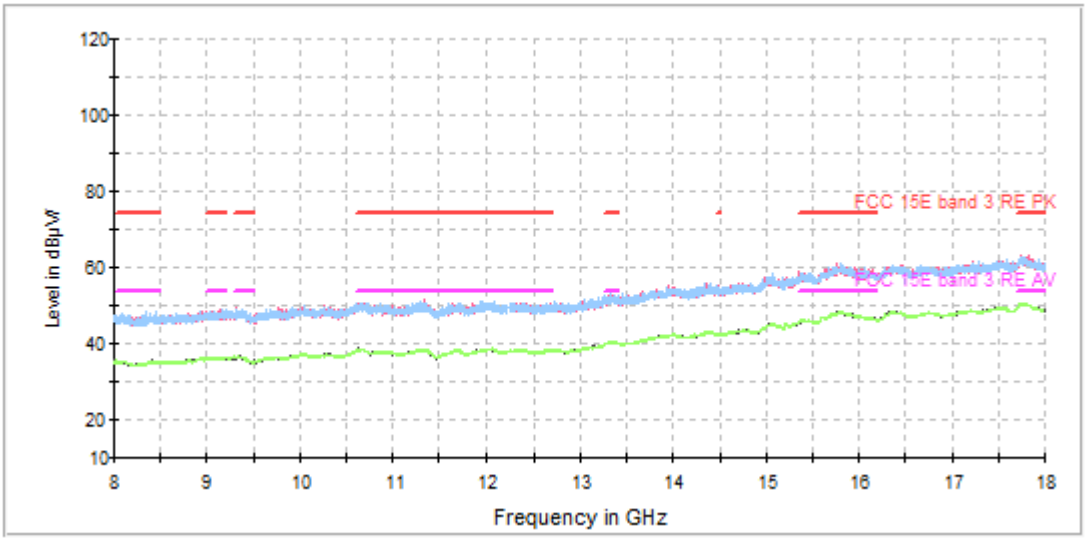
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH165



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

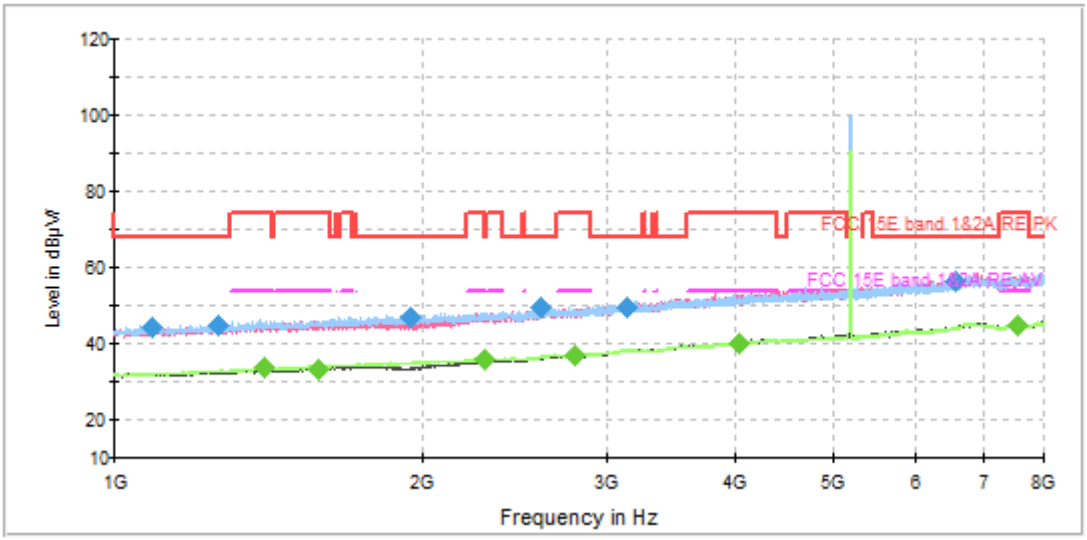
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1370.125000	46.1	100.0	H	66.0	1.6	27.9	74.0
1607.250000	46.0	100.0	H	189.0	2.6	28.0	74.0
2818.250000	49.3	100.0	H	231.0	7.5	24.7	74.0
3920.750000	52.8	200.0	H	267.0	11.3	21.2	74.0
4783.500000	53.7	100.0	H	0.0	13.3	20.3	74.0
7579.125000	57.6	100.0	V	0.0	18.8	16.4	74.0

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1406.875000	33.7	200.0	H	297.0	1.9	20.3	54.0
1604.625000	33.7	100.0	H	300.0	2.6	20.3	54.0
2827.000000	37.3	200.0	H	144.0	7.5	16.7	54.0
3979.375000	40.6	100.0	H	0.0	11.5	13.4	54.0
4779.125000	41.7	100.0	H	286.0	13.3	12.3	54.0
7578.250000	45.5	200.0	H	337.0	18.7	8.5	54.0

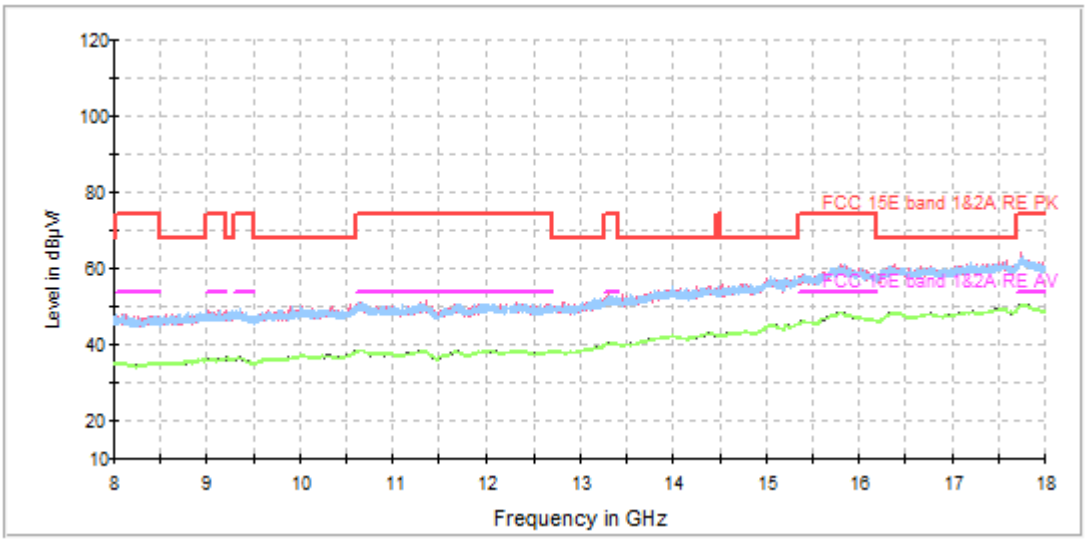
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH36



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

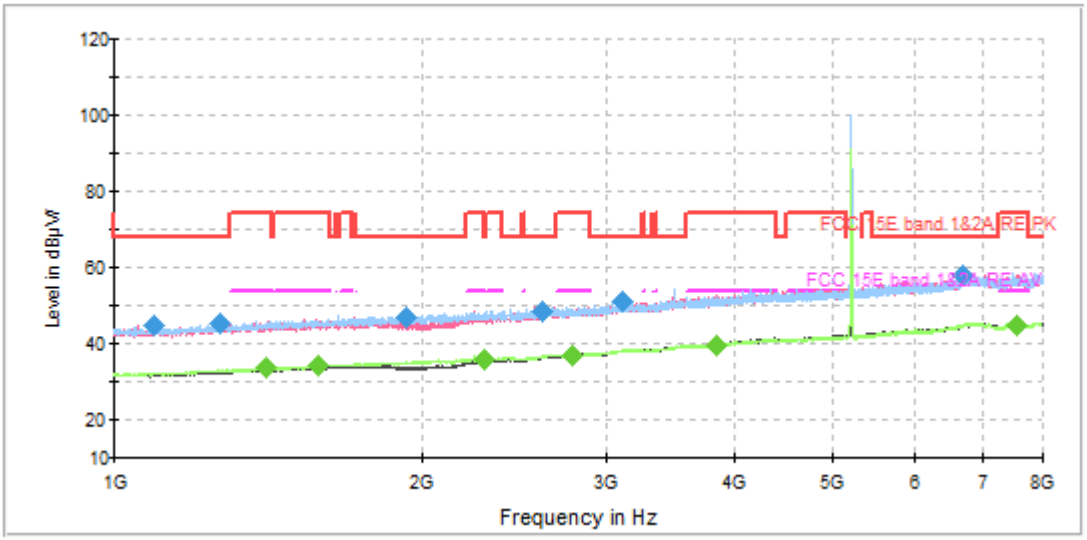
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1087.500000	44.4	100.0	H	313.0	-0.1	23.8	68.2
1263.375000	45.0	100.0	H	37.0	1.0	23.2	68.2
1945.000000	46.8	200.0	H	321.0	4.0	21.4	68.2
2593.375000	49.6	100.0	H	119.0	6.6	18.6	68.2
3143.750000	49.7	200.0	V	12.0	8.8	18.5	68.2
6563.250000	56.7	200.0	H	0.0	17.2	11.5	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1400.750000	33.6	200.0	H	350.0	1.9	20.4	54.0
1584.500000	33.3	100.0	V	253.0	2.5	20.7	54.0
2299.375000	35.8	100.0	H	51.0	5.4	18.2	54.0
2792.875000	37.1	100.0	H	119.0	7.4	16.9	54.0
4041.500000	40.4	100.0	V	0.0	11.7	13.6	54.0
7533.625000	45.1	100.0	V	240.0	18.6	8.9	54.0

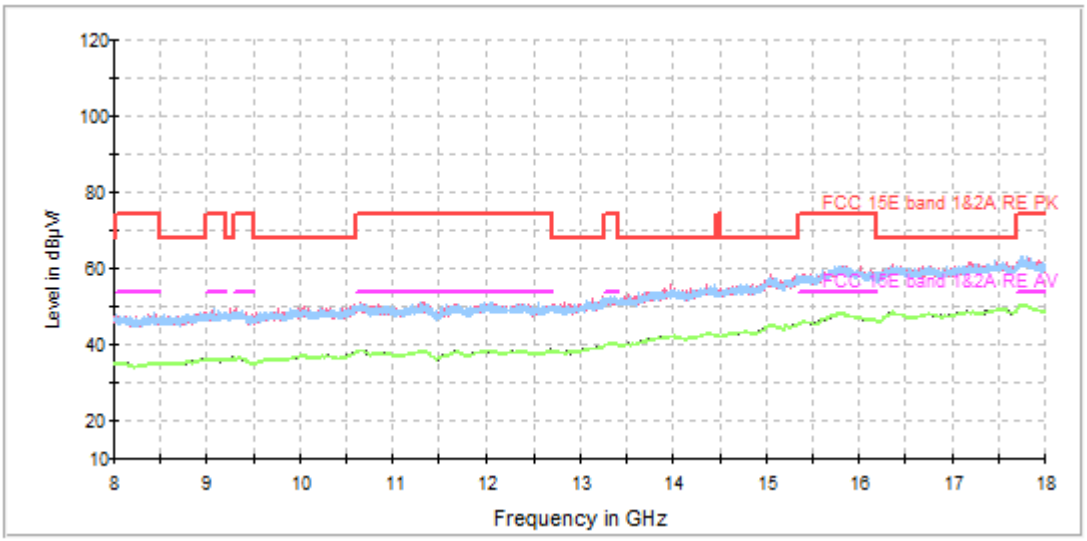
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH40



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

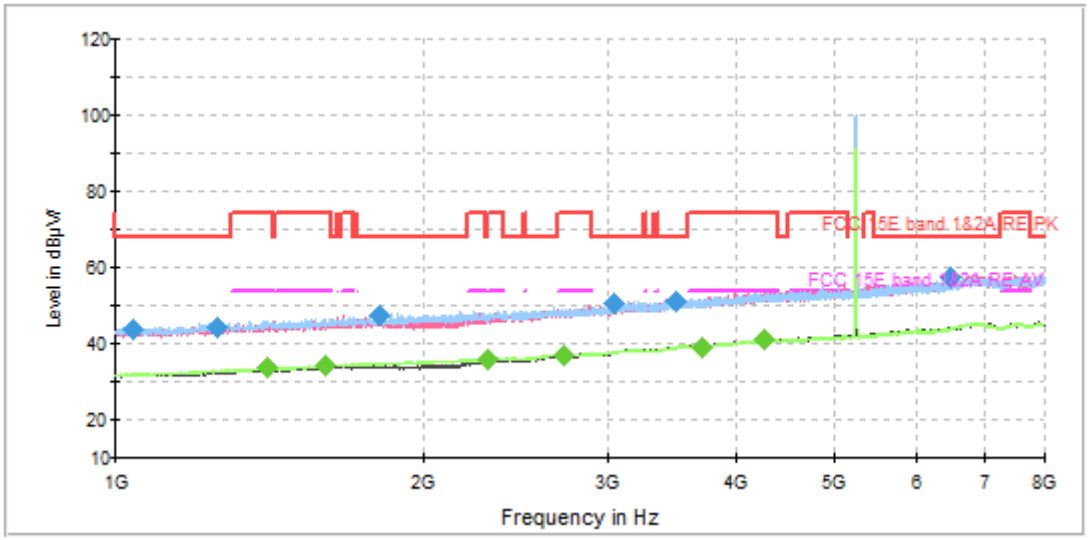
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1092.750000	45.0	100.0	H	37.0	0.0	23.2	68.2
1269.500000	45.3	100.0	H	187.0	1.1	22.9	68.2
1930.125000	46.9	100.0	H	187.0	3.9	21.3	68.2
2604.750000	48.6	200.0	H	227.0	6.6	19.6	68.2
3120.125000	51.1	200.0	V	39.0	8.7	17.1	68.2
6688.375000	58.1	200.0	H	172.0	17.6	10.1	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	33.6	200.0	H	268.0	1.9	20.4	54.0
1579.250000	34.1	100.0	H	174.0	2.4	19.9	54.0
2294.125000	36.1	200.0	H	0.0	5.4	17.9	54.0
2779.750000	36.9	200.0	H	172.0	7.3	17.1	54.0
3845.500000	39.8	200.0	V	0.0	10.9	14.2	54.0
7558.125000	45.1	100.0	V	348.0	18.7	8.9	54.0

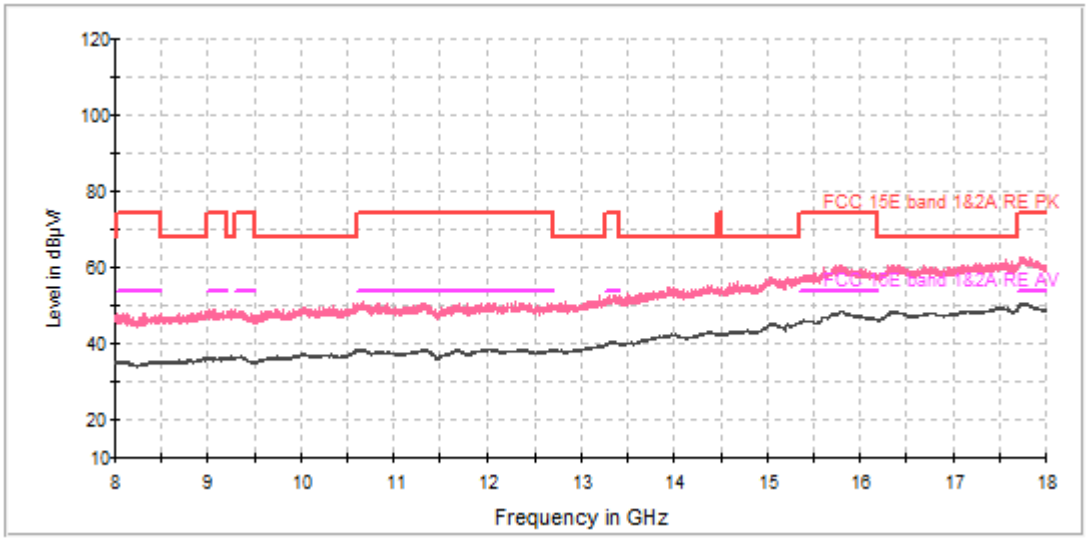
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH48



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

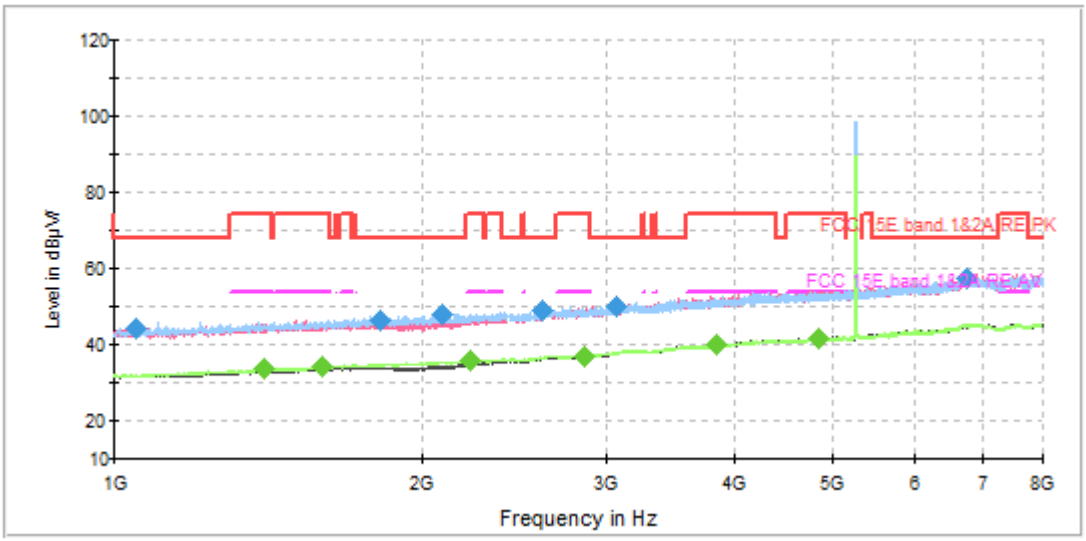
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1040.250000	44.0	200.0	H	352.0	-0.4	24.2	68.2
1254.625000	44.5	200.0	H	187.0	1.0	23.7	68.2
1812.875000	47.5	100.0	V	75.0	3.5	20.7	68.2
3047.500000	50.5	100.0	H	0.0	8.4	17.7	68.2
3494.625000	51.4	100.0	H	188.0	9.9	16.8	68.2
6475.750000	57.6	200.0	V	10.0	17.0	10.6	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	33.6	100.0	H	38.0	1.9	20.4	54.0
1603.750000	34.1	100.0	H	0.0	2.6	19.9	54.0
2310.750000	36.0	100.0	H	25.0	5.5	18.0	54.0
2722.875000	37.1	100.0	H	93.0	7.1	16.9	54.0
3709.875000	39.3	100.0	V	337.0	10.5	14.7	54.0
4266.375000	41.0	100.0	V	0.0	12.3	13.0	54.0

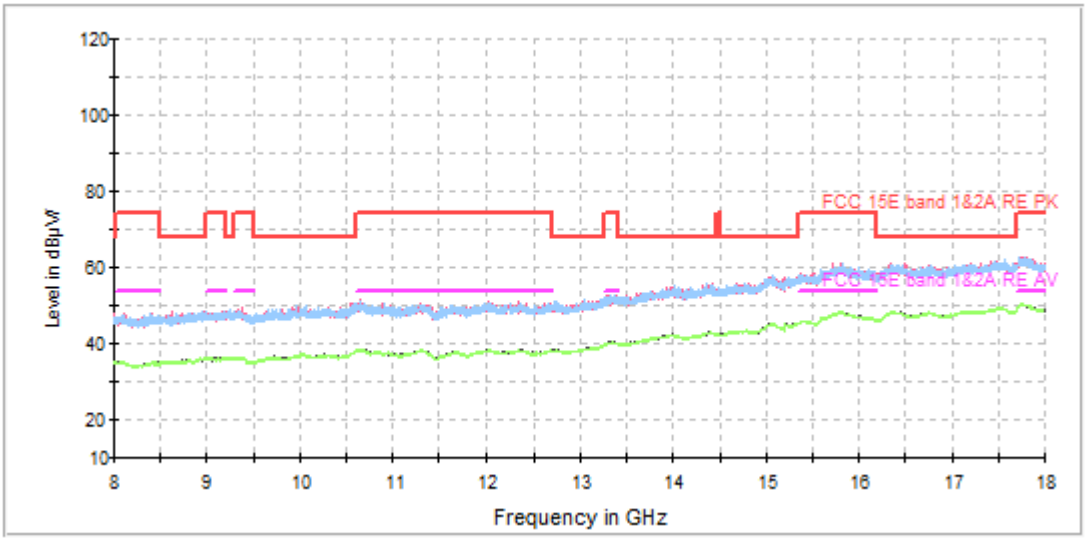
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH52



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

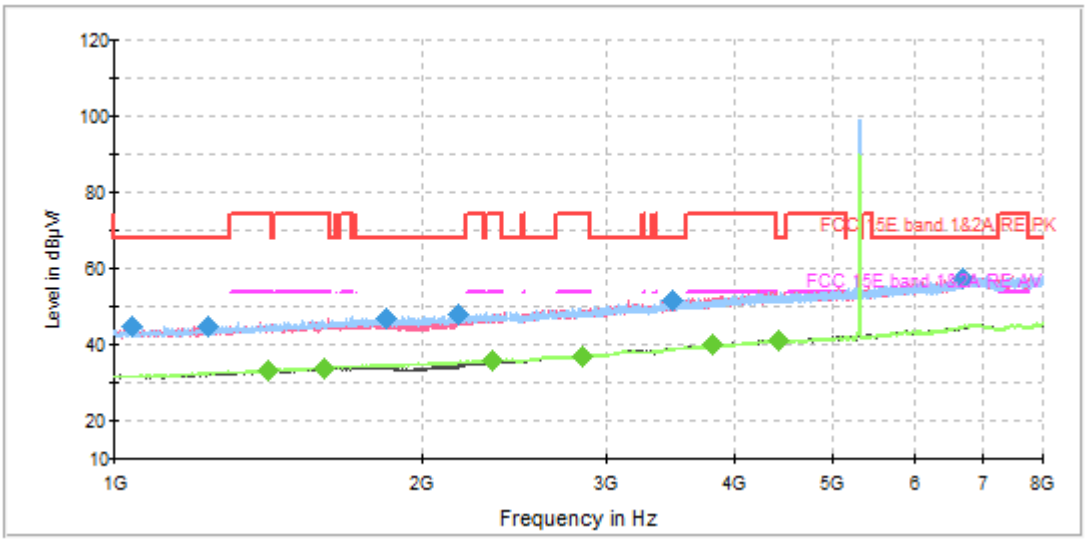
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1049.000000	44.3	200.0	V	0.0	-0.4	23.9	68.2
1816.375000	46.4	200.0	H	115.0	3.5	21.8	68.2
2091.125000	47.9	100.0	H	0.0	4.5	20.3	68.2
2601.250000	49.1	200.0	V	0.0	6.6	19.1	68.2
3067.625000	50.3	100.0	V	0.0	8.5	17.9	68.2
6759.250000	57.6	200.0	V	132.0	17.7	10.6	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1402.500000	33.7	100.0	H	327.0	1.9	20.3	54.0
1594.125000	34.1	100.0	H	119.0	2.5	19.9	54.0
2228.500000	35.8	100.0	H	24.0	5.1	18.2	54.0
2860.250000	36.9	200.0	V	311.0	7.6	17.1	54.0
3842.875000	40.0	100.0	V	0.0	10.9	14.0	54.0
4847.375000	41.6	200.0	V	242.0	13.4	12.4	54.0

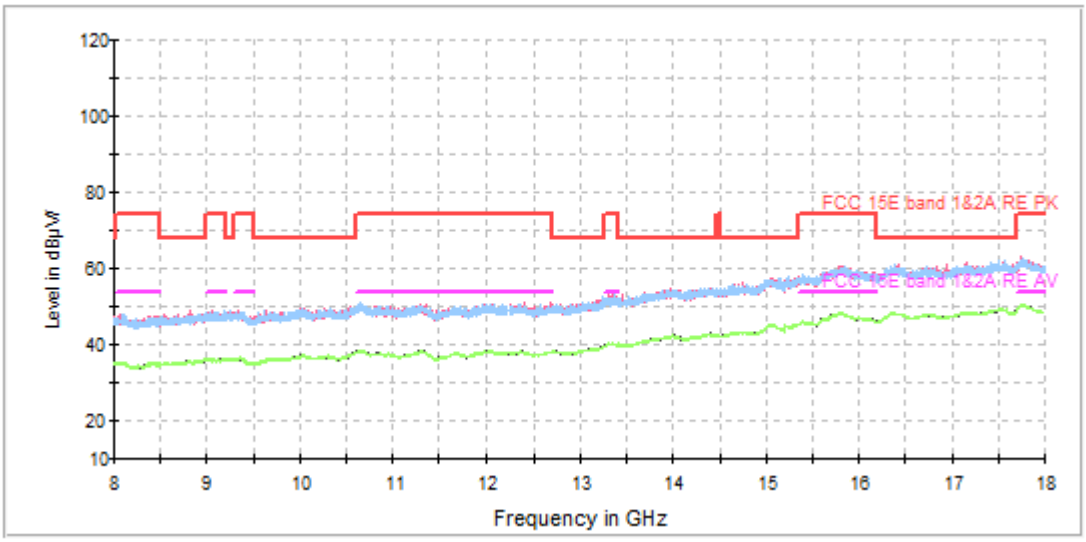
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH60



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

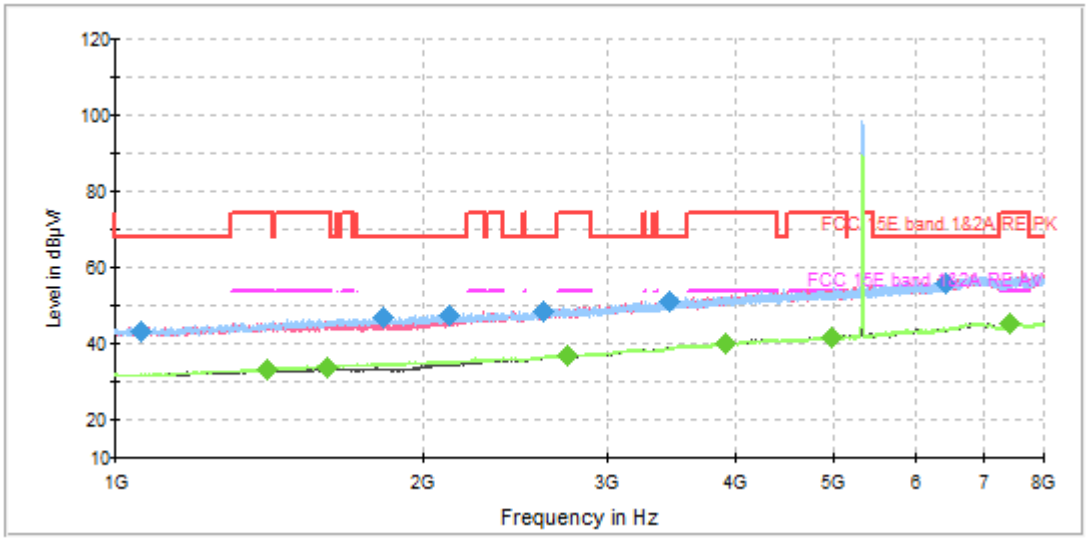
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1041.125000	44.7	100.0	V	6.0	-0.4	23.5	68.2
1237.125000	45.1	100.0	V	0.0	0.9	23.1	68.2
1838.250000	47.0	200.0	H	74.0	3.5	21.2	68.2
2168.125000	48.3	200.0	H	61.0	4.8	19.9	68.2
3481.500000	51.8	100.0	H	94.0	9.8	16.4	68.2
6698.000000	57.7	100.0	H	66.0	17.6	10.5	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1413.875000	33.5	200.0	H	350.0	1.9	20.5	54.0
1601.125000	34.0	200.0	H	144.0	2.6	20.0	54.0
2333.500000	35.8	200.0	H	130.0	5.5	18.2	54.0
2846.250000	37.0	200.0	V	0.0	7.5	17.0	54.0
3812.250000	39.9	200.0	V	176.0	10.9	14.1	54.0
4422.125000	41.0	200.0	V	259.0	12.5	13.0	54.0

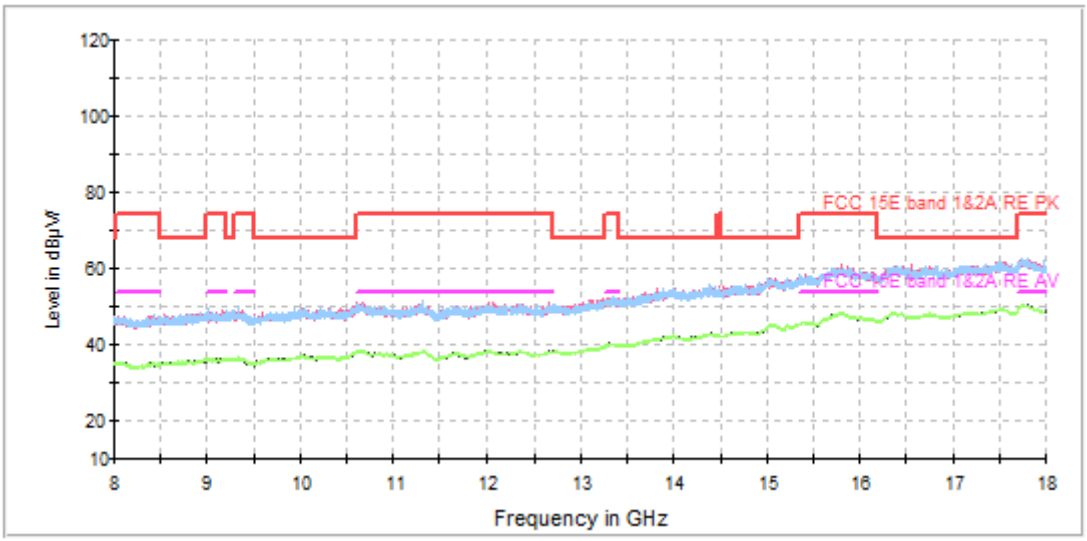
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH64



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

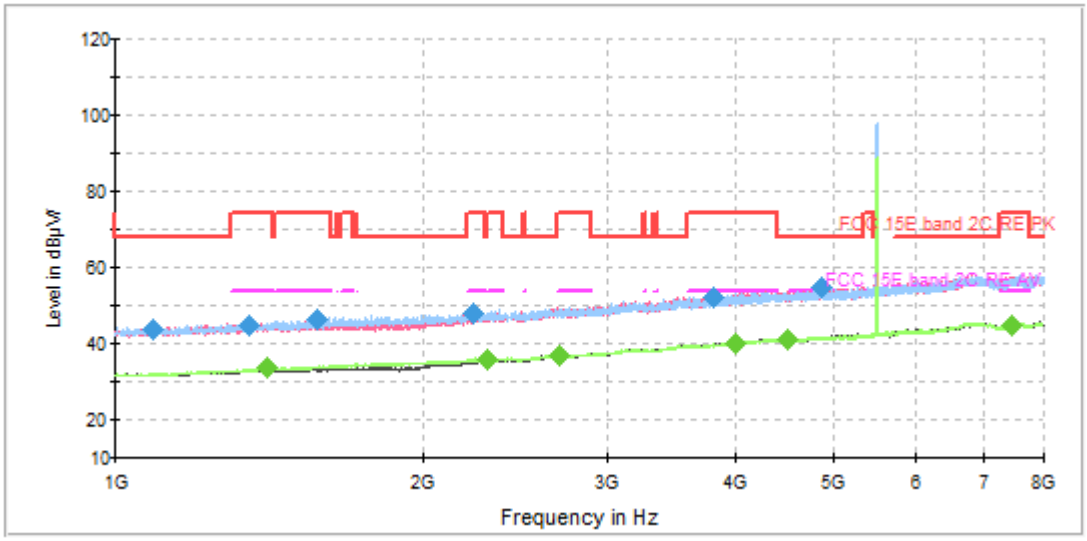
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1060.375000	43.4	200.0	V	0.0	-0.3	24.8	68.2
1829.500000	46.8	100.0	H	67.0	3.5	21.4	68.2
2113.000000	47.4	200.0	H	158.0	4.6	20.8	68.2
2603.875000	48.7	100.0	V	129.0	6.6	19.5	68.2
3453.500000	51.4	100.0	H	0.0	9.7	16.8	68.2
6421.500000	56.3	200.0	V	0.0	16.8	11.9	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1407.750000	33.5	200.0	H	350.0	1.9	20.5	54.0
1609.875000	33.9	100.0	H	177.0	2.6	20.1	54.0
2752.625000	37.0	200.0	H	0.0	7.2	17.0	54.0
3914.625000	40.0	200.0	V	298.0	11.2	14.0	54.0
4977.750000	41.8	100.0	V	0.0	13.6	12.2	54.0
7418.125000	45.2	100.0	V	311.0	18.2	8.8	54.0

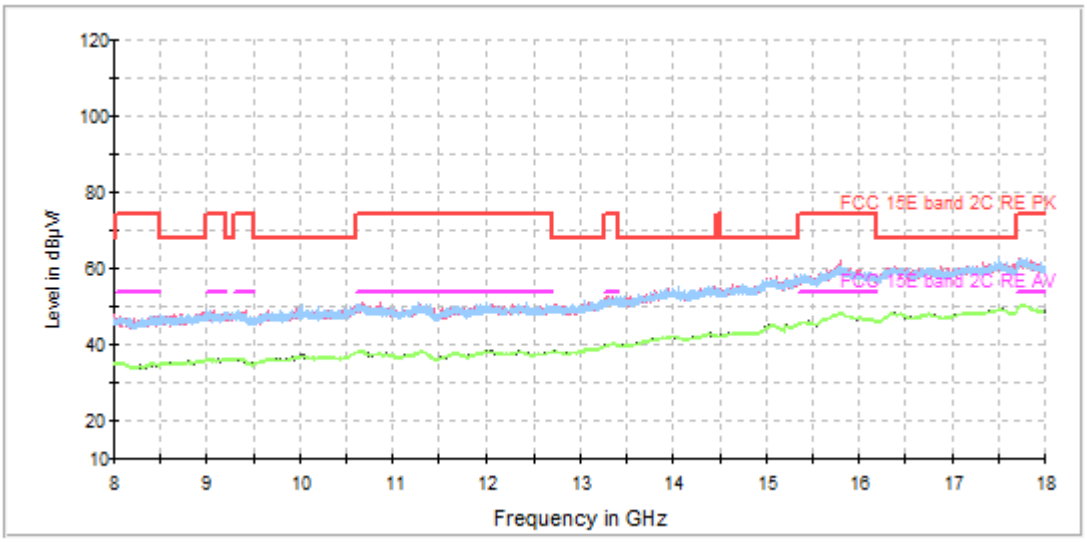
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH100



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

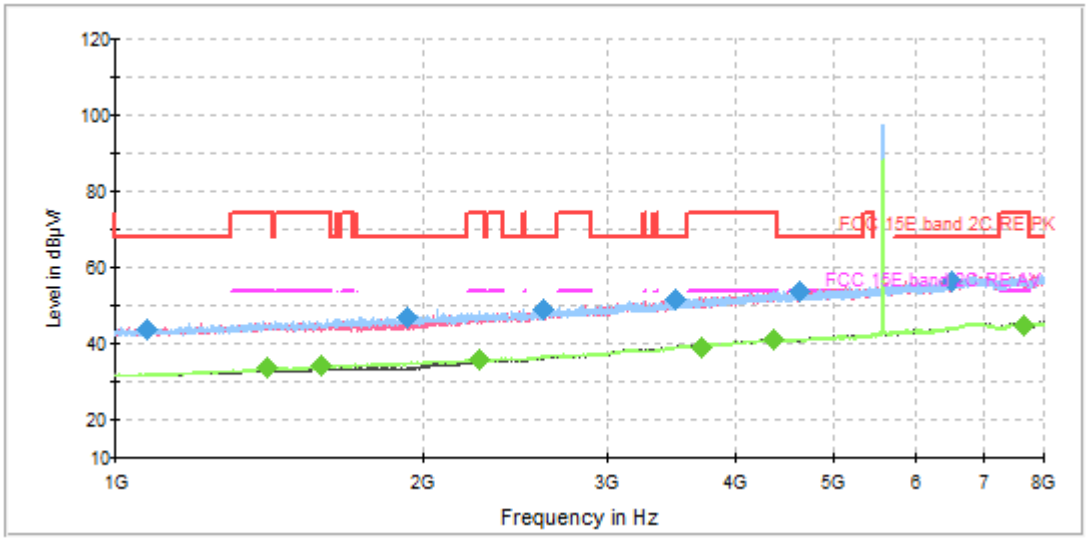
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1091.000000	44.1	200.0	H	212	0.0	24.1	68.2
1351.750000	44.7	200.0	V	150	1.5	29.3	74
1576.625000	46.6	100.0	V	281	2.4	27.4	74
2232.000000	48.2	200.0	H	225	5.1	25.8	74
3814.875000	52.4	100.0	H	0	10.9	21.6	74
4850.875000	54.7	100.0	V	0	13.4	13.5	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1405.125000	33.7	200.0	H	307	1.9	20.3	54.0
2310.750000	35.9	200.0	H	0	5.5	18.1	54.0
2703.625000	37.2	200.0	H	143	7.1	16.8	54.0
3999.500000	40.4	100.0	H	41	11.6	13.6	54.0
4502.625000	41.2	200.0	V	287	12.6	12.8	54.0
7451.375000	45.1	100.0	V	226	18.3	8.9	54.0

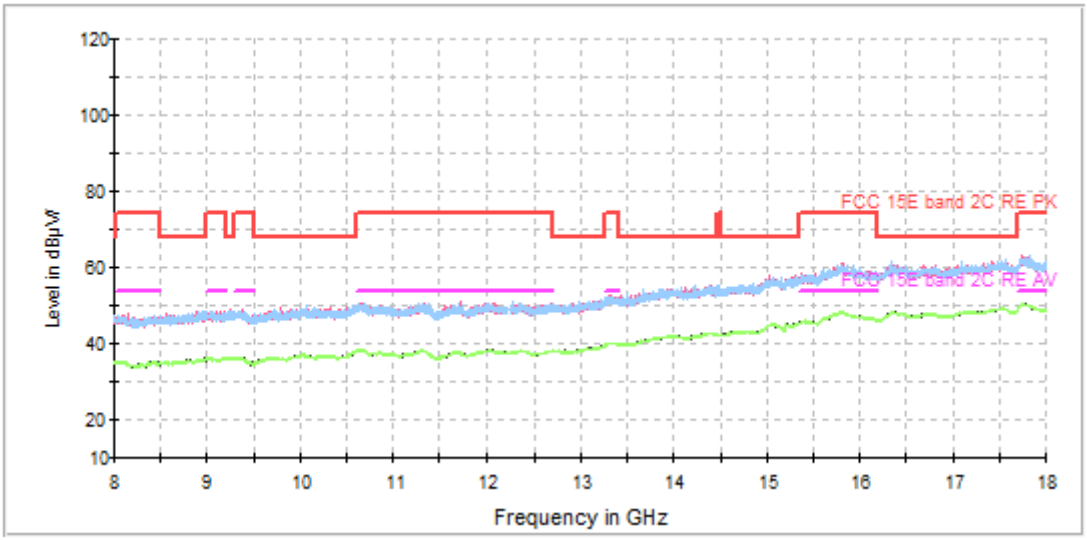
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH116



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

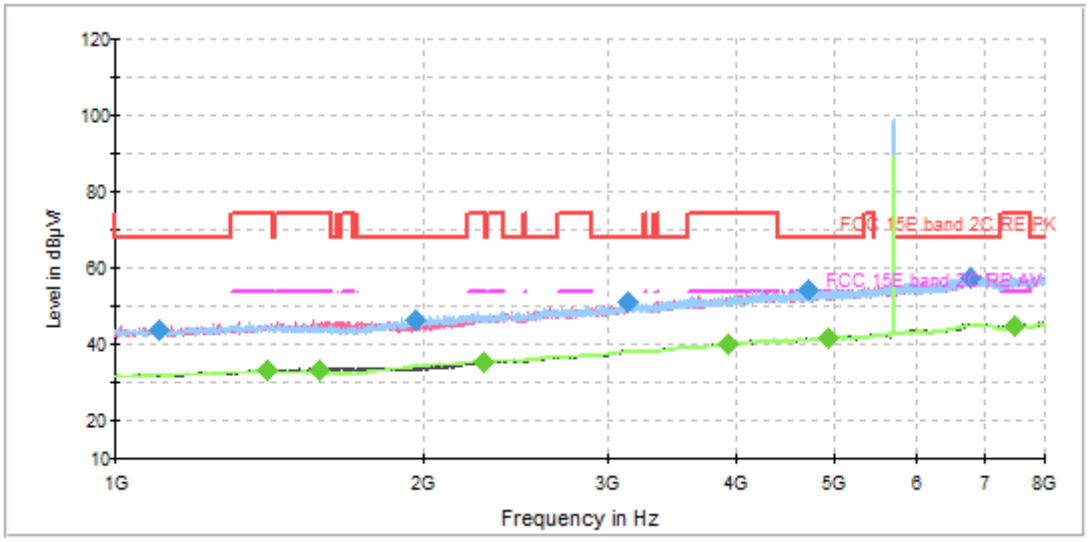
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1074.375000	44.0	100.0	V	0.0	-0.2	24.2	68.2
1930.125000	46.8	200.0	H	324.0	3.9	21.4	68.2
2597.750000	49.0	100.0	V	0.0	6.6	19.2	68.2
3498.125000	51.9	100.0	H	94.0	9.9	16.3	68.2
4626.000000	54.0	100.0	H	0.0	12.9	14.2	68.2
6515.125000	56.3	100.0	H	108.0	17.1	11.9	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	33.8	200.0	H	0.0	1.9	20.2	54.0
1587.125000	34.1	200.0	H	187.0	2.5	19.9	54.0
2268.750000	35.7	200.0	H	160.0	5.3	18.3	54.0
3718.625000	39.3	100.0	V	253.0	10.5	14.7	54.0
4361.750000	41.1	100.0	V	115.0	12.5	12.9	54.0
7650.000000	45.0	200.0	V	0.0	18.9	9.0	54.0

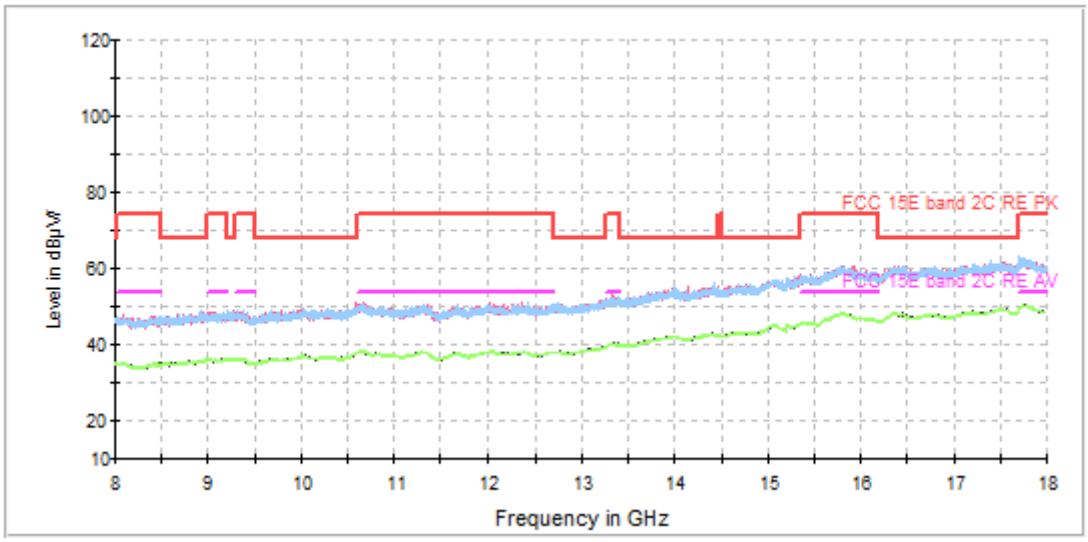
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH140



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

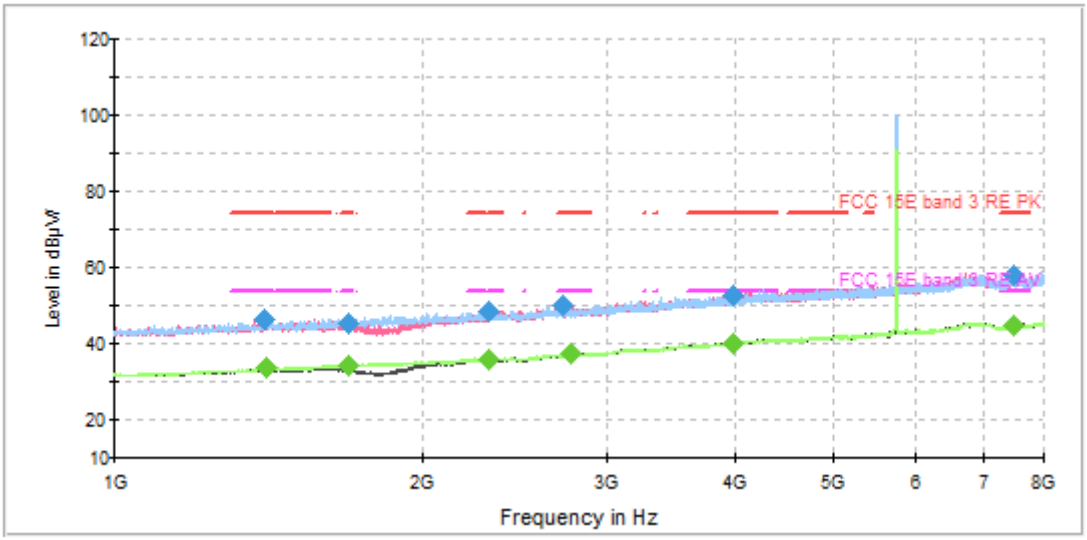
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1105.000000	44.0	200.0	H	0.0	0.1	24.2	68.2
1962.500000	46.5	200.0	H	144.0	4.1	21.7	68.2
3143.750000	51.1	100.0	H	94.0	8.8	17.1	68.2
4714.375000	54.4	100.0	H	135.0	13.1	13.8	68.2
6777.625000	57.5	100.0	V	296.0	17.7	10.7	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1406.875000	33.4	100.0	V	0.0	1.9	20.6	54.0
1581.000000	33.5	100.0	V	33.0	2.4	20.5	54.0
2288.875000	35.6	200.0	H	60.0	5.4	18.4	54.0
3933.875000	40.0	200.0	V	79.0	11.3	14.0	54.0
4917.375000	41.6	200.0	V	339.0	13.5	12.4	54.0
7491.625000	45.0	200.0	V	24.0	18.5	9.0	54.0

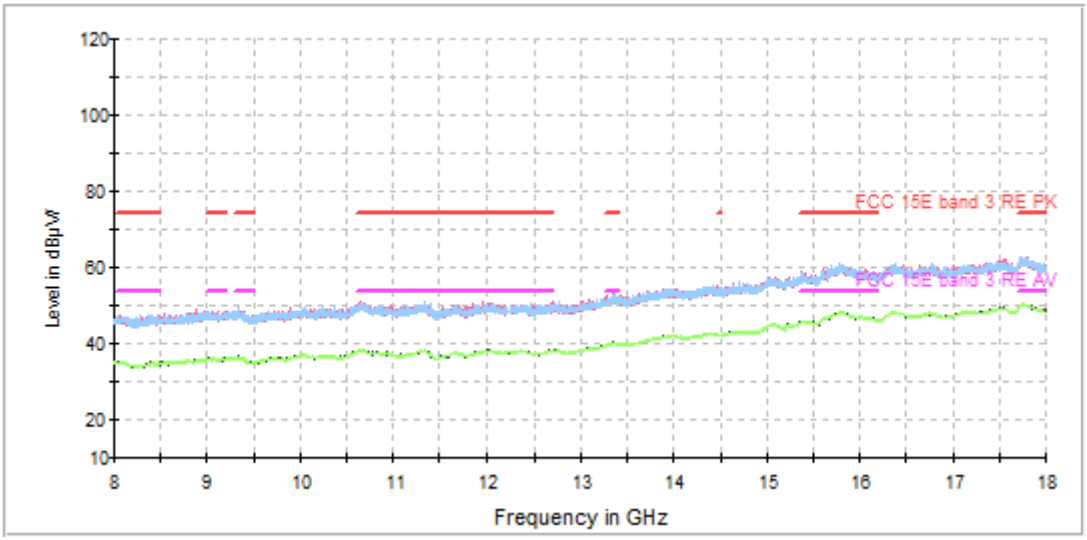
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH149



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

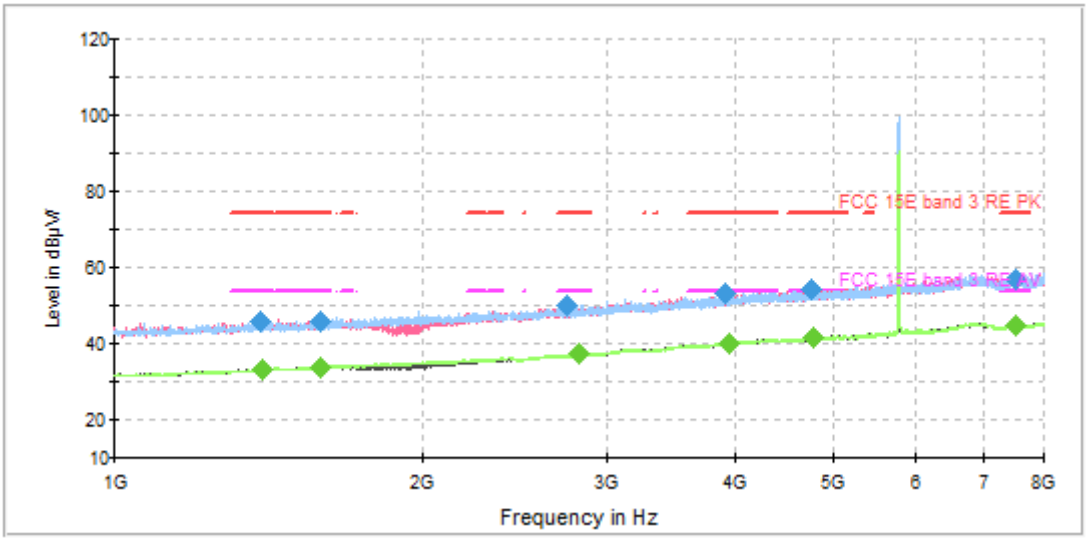
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1400.750000	46.5	200.0	V	91.0	1.9	27.5	74.0
1688.625000	45.7	200.0	H	116.0	2.9	28.3	74.0
2319.500000	48.7	200.0	V	0.0	5.5	25.3	74.0
2725.500000	50.0	100.0	V	124.0	7.1	24.0	74.0
3979.375000	52.8	200.0	V	104.0	11.5	21.2	74.0
7493.375000	58.1	200.0	V	50.0	18.5	15.9	74.0

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1404.250000	33.7	200.0	H	268.0	1.9	20.3	54.0
1688.625000	34.1	200.0	H	116.0	2.9	19.9	54.0
2318.625000	35.8	100.0	H	0.0	5.5	18.2	54.0
2774.500000	37.2	100.0	H	54.0	7.3	16.8	54.0
3985.500000	40.3	100.0	H	163.0	11.5	13.7	54.0
7494.250000	45.1	200.0	V	228.0	18.5	8.9	54.0

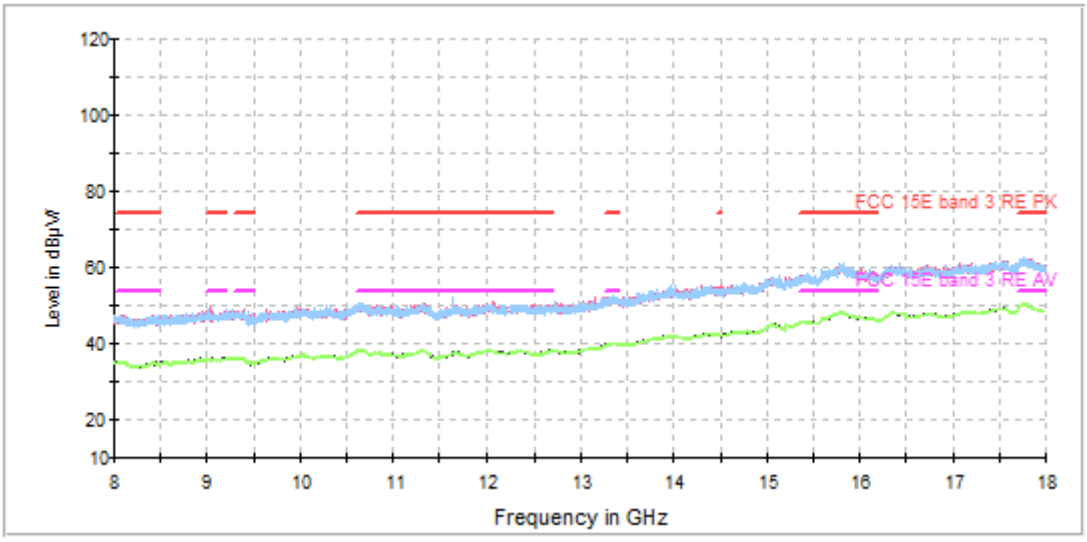
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH157



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

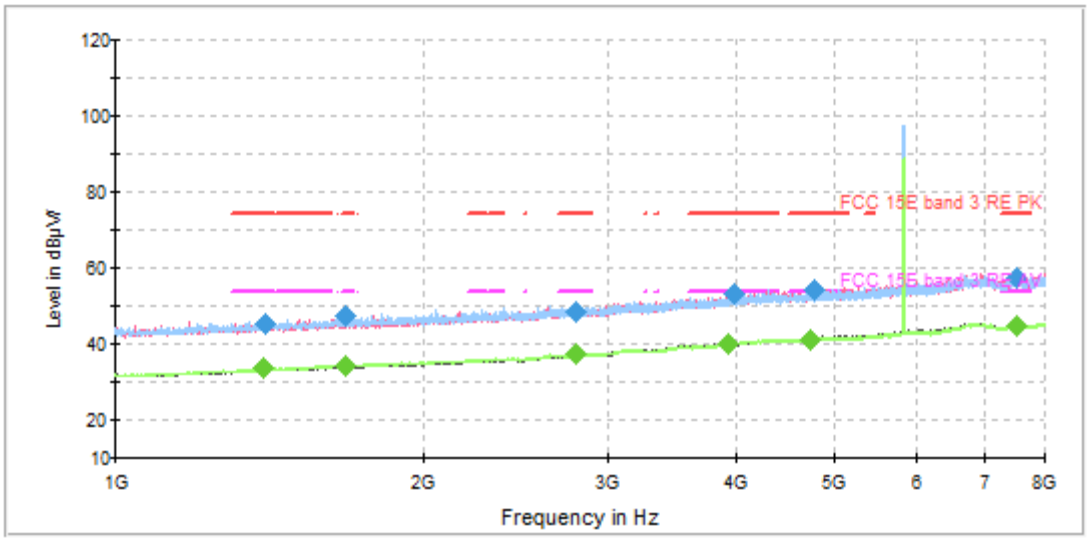
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1387.625000	46.1	100.0	V	279.0	1.8	27.9	74.0
1587.125000	45.8	200.0	H	0.0	2.5	28.2	74.0
2750.000000	50.1	100.0	H	230.0	7.2	23.9	74.0
3919.000000	53.4	100.0	V	293.0	11.2	20.6	74.0
4748.500000	54.6	100.0	H	108.0	13.2	19.4	74.0
7496.000000	57.2	200.0	H	325.0	18.5	16.8	74.0

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1392.875000	33.5	100.0	V	266.0	1.8	20.5	54.0
1588.000000	33.7	100.0	V	224.0	2.5	20.3	54.0
2824.375000	37.2	100.0	H	40.0	7.5	16.8	54.0
3954.875000	40.4	200.0	V	0.0	11.4	13.6	54.0
4780.875000	41.7	200.0	V	190.0	13.3	12.3	54.0
7496.875000	45.1	200.0	V	51.0	18.5	8.9	54.0

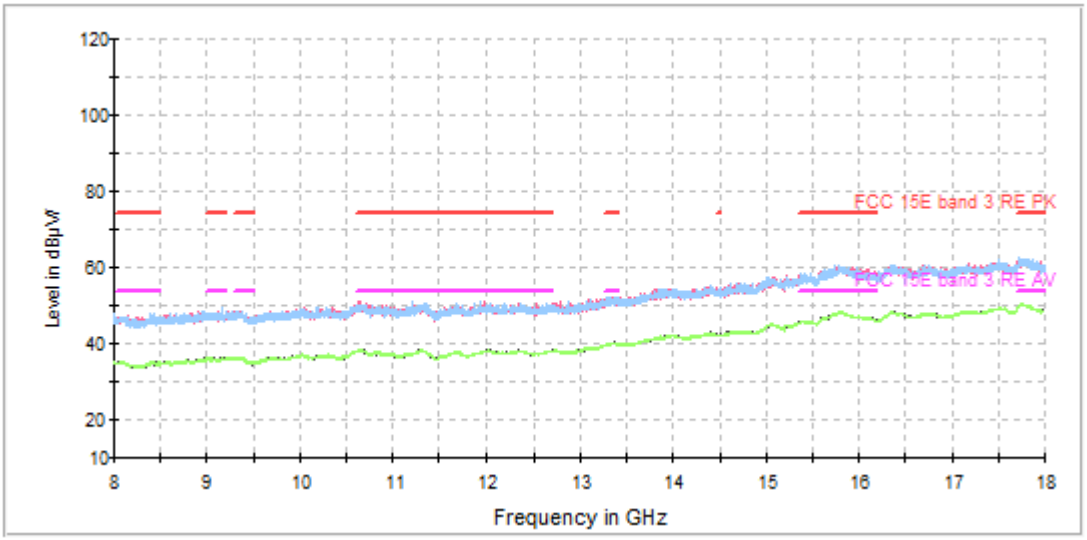
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH165



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

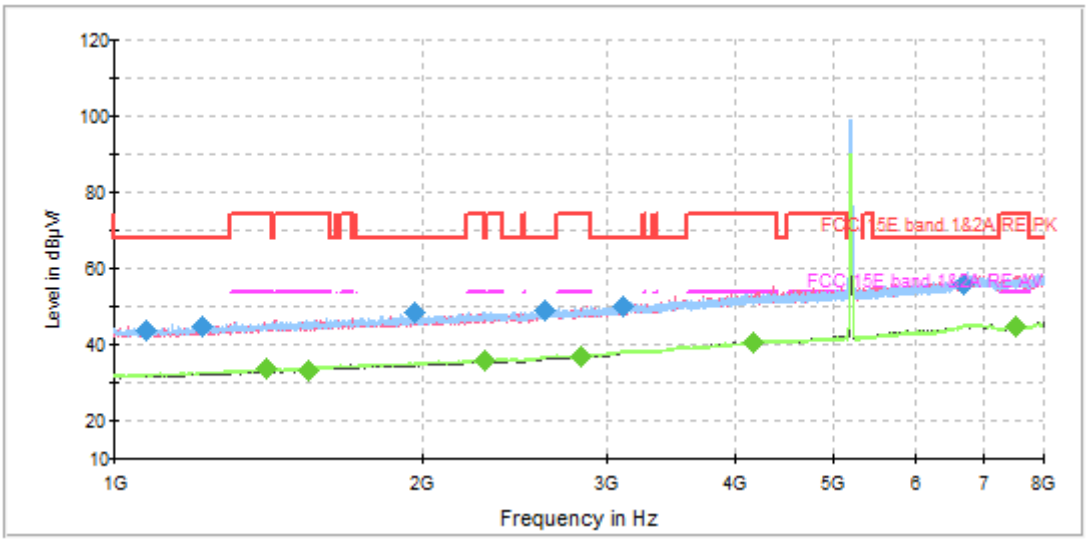
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1401.625000	45.7	100.0	H	11.0	1.9	28.3	74.0
1675.500000	47.4	100.0	H	133.0	2.9	26.6	74.0
2800.750000	48.9	200.0	V	0.0	7.4	25.1	74.0
3979.375000	53.2	100.0	H	78.0	11.5	20.8	74.0
4766.000000	54.4	100.0	H	146.0	13.3	19.6	74.0
7521.375000	57.6	100.0	V	0.0	18.6	16.4	74.0

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1391.125000	33.7	200.0	V	0.0	1.8	20.3	54.0
1675.500000	34.5	100.0	H	133.0	2.9	19.5	54.0
2801.625000	37.4	100.0	H	0.0	7.4	16.6	54.0
3940.000000	40.3	200.0	V	0.0	11.3	13.7	54.0
4739.750000	41.3	100.0	V	322.0	13.2	12.7	54.0
7521.375000	45.0	100.0	V	0.0	18.6	9.0	54.0

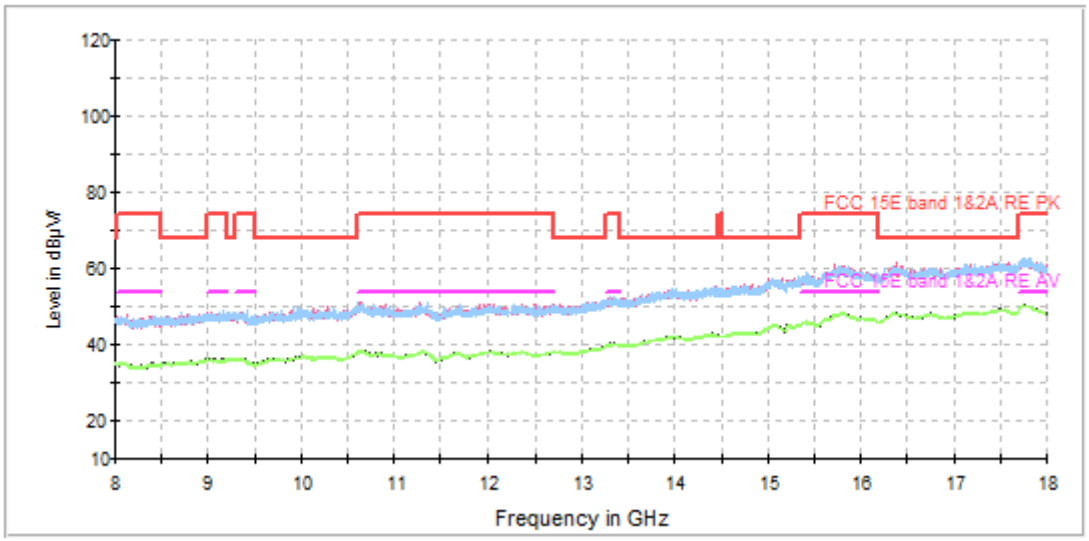
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH38



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

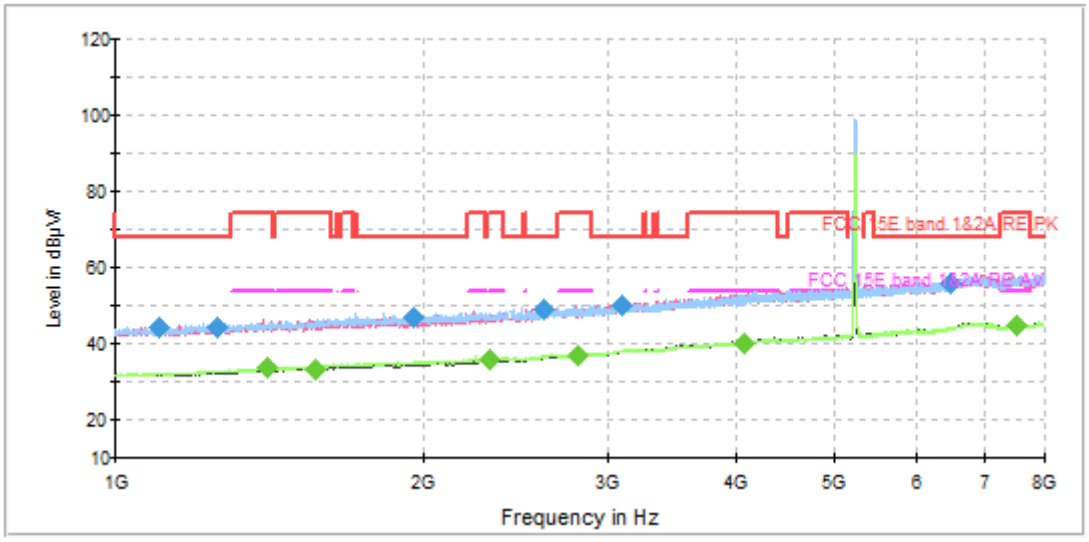
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1075.250000	44.1	200.0	V	92.0	-0.2	24.1	68.2
1219.625000	44.7	100.0	H	12.0	0.9	23.5	68.2
1961.625000	48.8	100.0	H	120.0	4.1	19.4	68.2
2618.750000	49.1	100.0	V	143.0	6.7	19.1	68.2
3117.500000	50.2	100.0	V	309.0	8.7	18.0	68.2
6691.875000	56.2	100.0	V	0.0	17.6	12.0	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	33.6	100.0	H	53.0	1.9	20.4	54.0
1546.875000	33.4	200.0	V	313.0	2.3	20.6	54.0
2299.375000	35.7	200.0	V	0.0	5.4	18.3	54.0
2831.375000	37.0	200.0	V	10.0	7.5	17.0	54.0
4178.875000	40.7	200.0	V	37.0	12.1	13.3	54.0
7514.375000	45.0	100.0	V	157.0	18.6	9.0	54.0

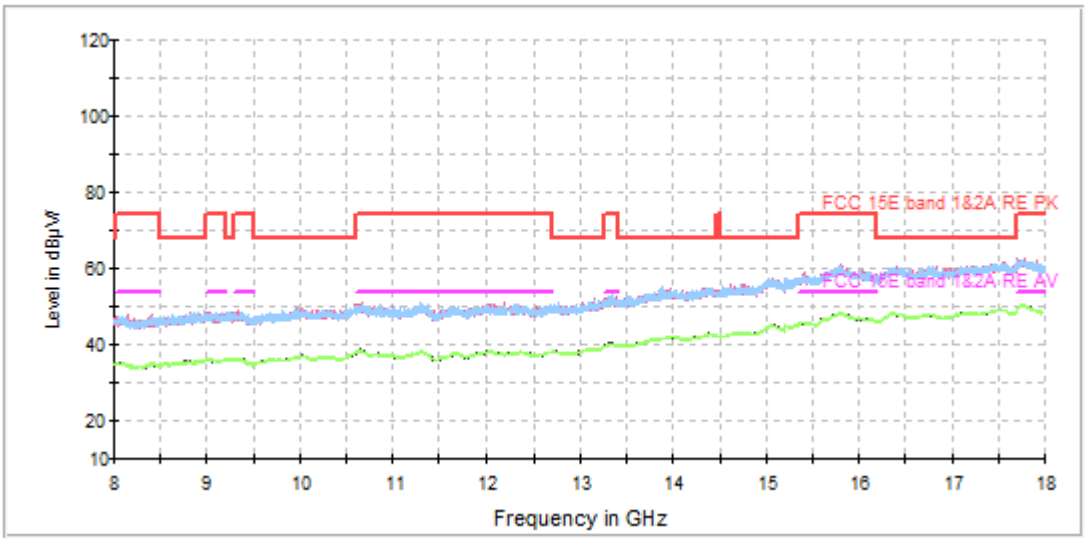
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH46



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

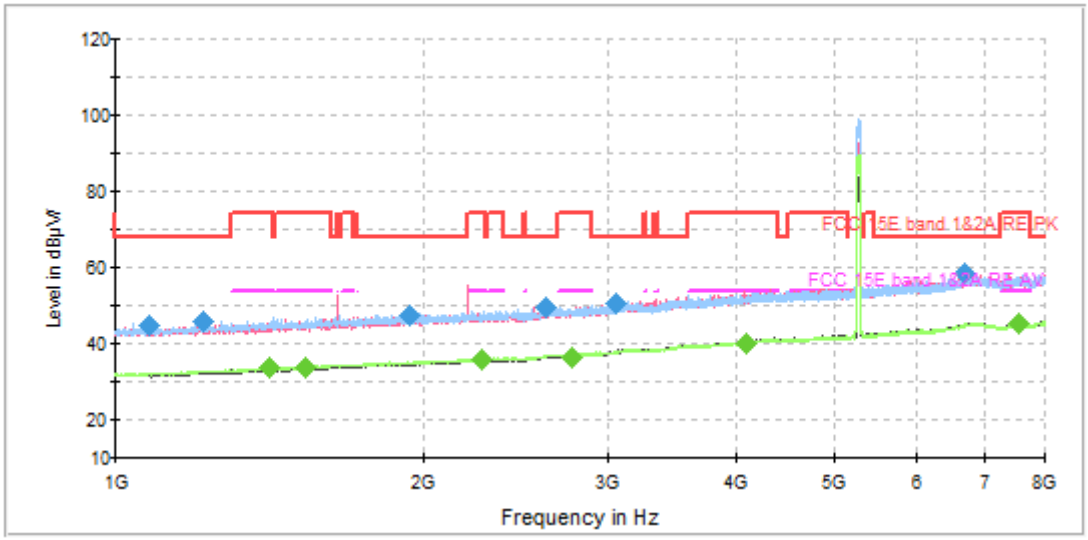
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1105.875000	44.6	200.0	V	147.0	0.1	23.6	68.2
1257.250000	44.5	200.0	V	216.0	1.0	23.7	68.2
1956.375000	46.9	200.0	H	253.0	4.1	21.3	68.2
2600.375000	49.3	200.0	H	280.0	6.6	18.9	68.2
3094.750000	50.3	100.0	V	198.0	8.6	17.9	68.2
6480.125000	55.9	200.0	H	280.0	17.0	12.3	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1406.000000	33.5	100.0	H	39.0	1.9	20.5	54.0
1563.500000	33.4	200.0	V	0.0	2.4	20.6	54.0
2316.875000	35.8	200.0	H	116.0	5.5	18.2	54.0
2806.000000	37.1	100.0	V	59.0	7.4	16.9	54.0
4081.750000	40.3	100.0	V	0.0	11.8	13.7	54.0
7498.625000	45.1	100.0	V	269.0	18.5	8.9	54.0

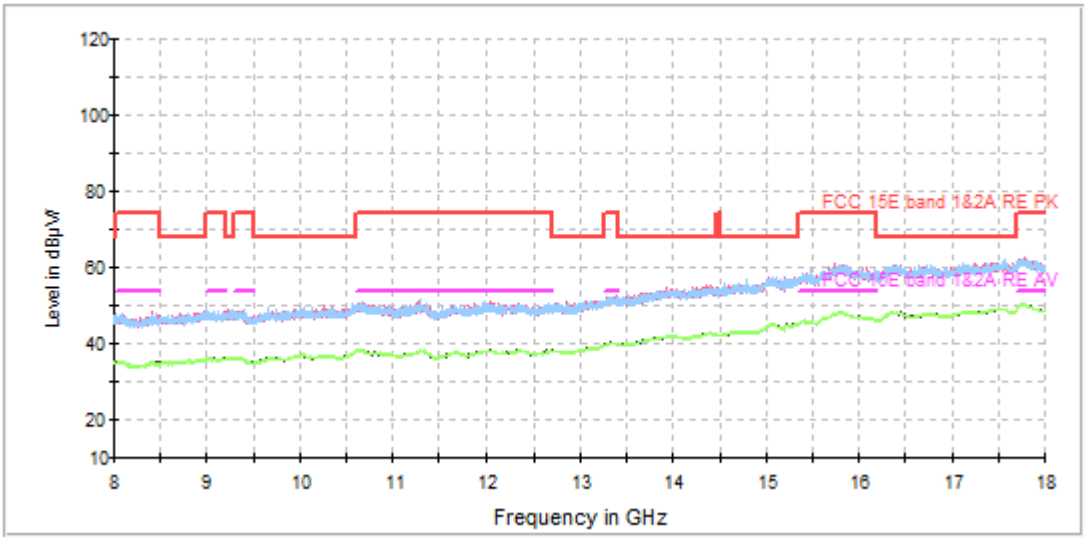
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH54



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

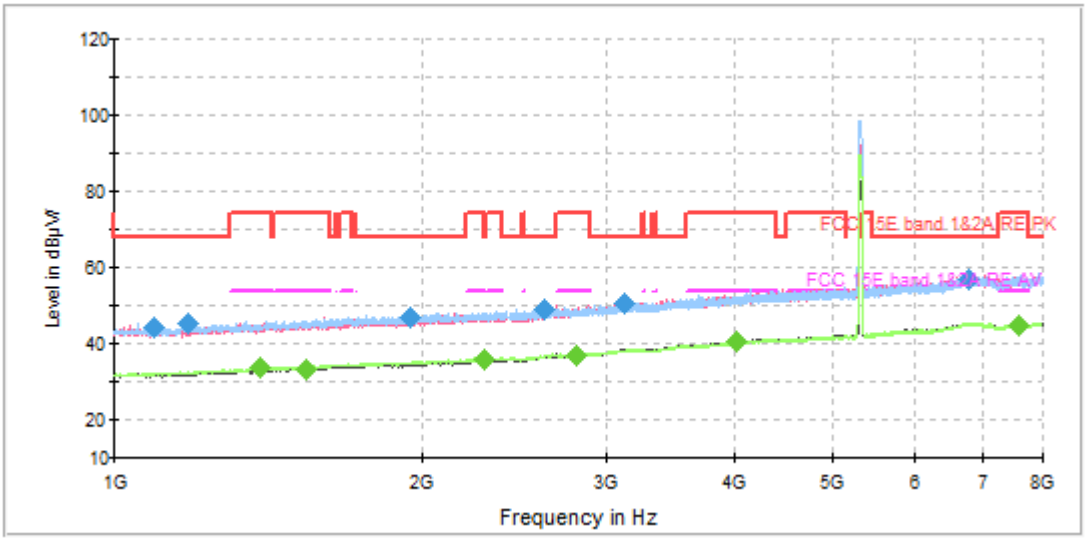
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1081.375000	44.9	100.0	H	0.0	-0.1	23.3	68.2
1218.750000	46.0	200.0	H	310.0	0.9	22.2	68.2
1936.250000	47.8	100.0	H	134.0	3.9	20.4	68.2
2613.500000	49.5	200.0	V	0.0	6.7	18.7	68.2
3065.875000	50.9	100.0	H	216.0	8.5	17.3	68.2
6687.500000	58.7	100.0	V	200.0	17.6	9.5	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1413.875000	33.8	100.0	H	49.0	1.9	20.2	54.0
1534.625000	33.8	100.0	H	49.0	2.2	20.2	54.0
2277.500000	35.8	100.0	H	120.0	5.3	18.2	54.0
2774.500000	36.6	100.0	V	6.0	7.3	17.4	54.0
4101.875000	40.2	200.0	V	0.0	11.9	13.8	54.0
7533.625000	45.2	200.0	V	91.0	18.6	8.8	54.0

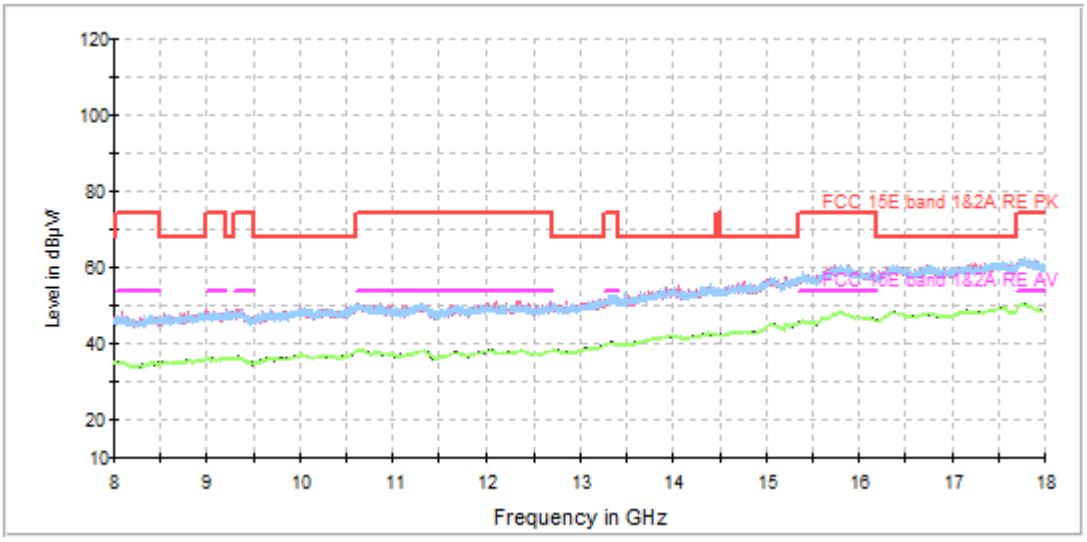
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH62



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

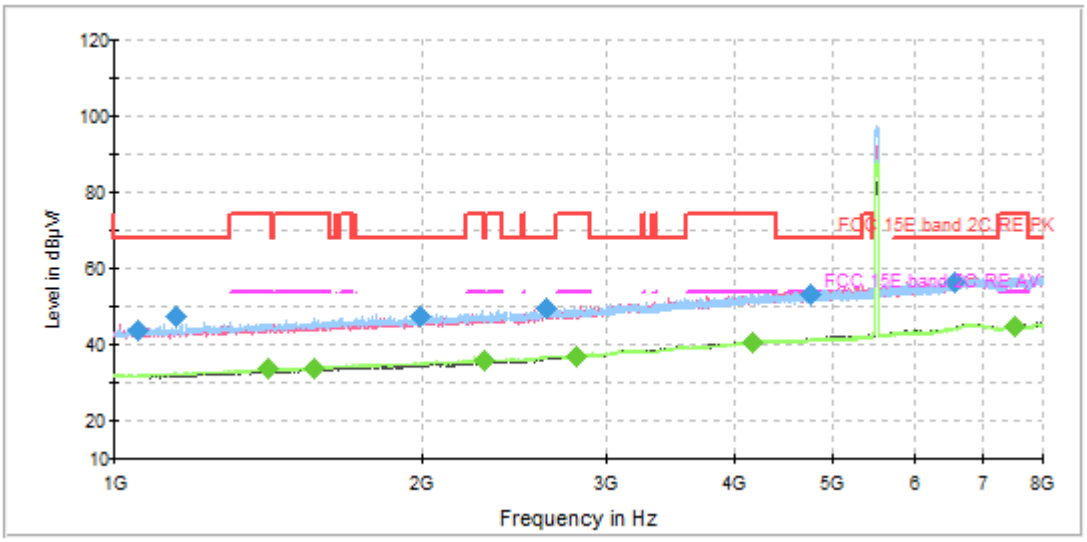
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1094.500000	44.6	200.0	H	326.0	0.0	23.6	68.2
1179.375000	45.2	200.0	H	103.0	0.6	23.0	68.2
1942.375000	46.8	100.0	H	11.0	4.0	21.4	68.2
2613.500000	49.1	100.0	H	52.0	6.7	19.1	68.2
3128.875000	50.7	100.0	V	0.0	8.7	17.5	68.2
6786.375000	57.2	100.0	V	198.0	17.7	11.0	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1389.375000	33.8	100.0	H	52.0	1.8	20.2	54.0
1538.125000	33.3	200.0	V	96.0	2.2	20.7	54.0
2294.125000	35.8	200.0	H	0.0	5.4	18.2	54.0
2808.625000	37.0	200.0	V	163.0	7.4	17.0	54.0
4017.000000	40.5	100.0	V	254.0	11.6	13.5	54.0
7589.625000	45.1	100.0	V	295.0	18.8	8.9	54.0

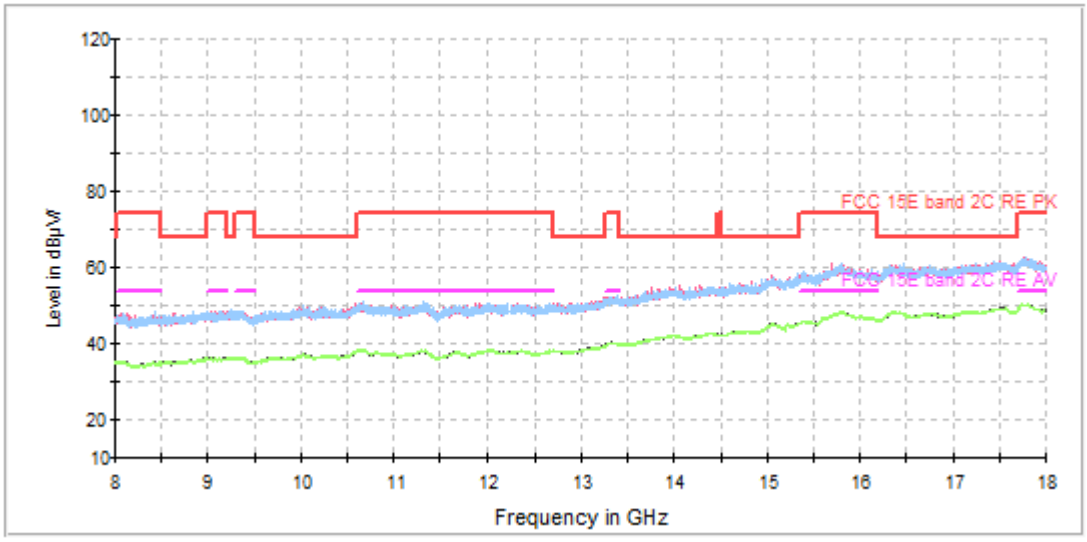
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH102



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

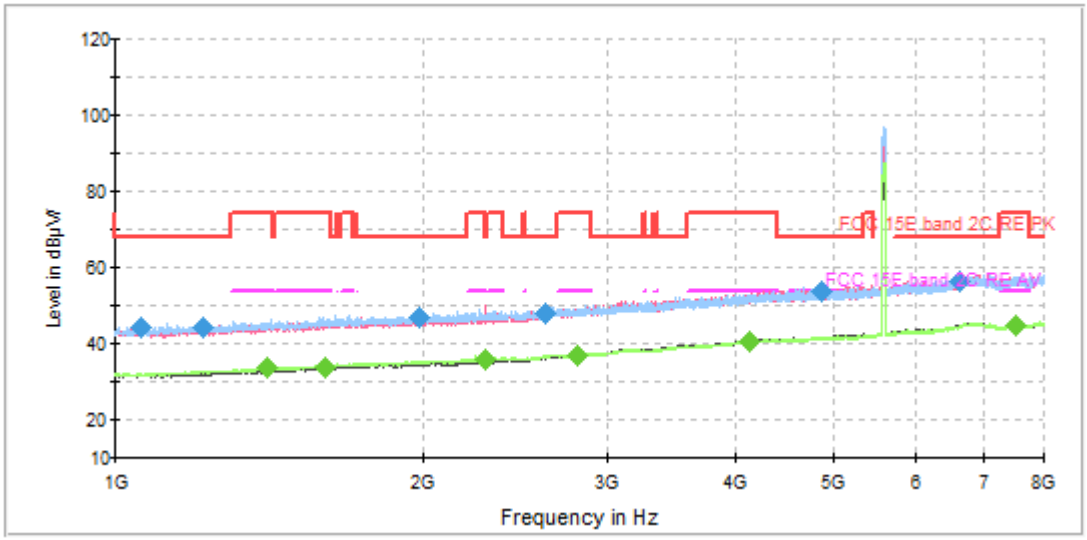
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1055.125000	44.0	200.0	V	136.0	-0.3	24.2	68.2
1148.750000	47.7	100.0	H	0.0	0.4	20.5	68.2
1986.125000	47.4	100.0	H	73.0	4.2	20.8	68.2
2630.125000	49.4	100.0	H	0.0	6.8	18.8	68.2
4759.000000	53.5	100.0	H	45.0	13.2	14.7	68.2
6569.375000	56.5	200.0	H	319.0	17.2	11.7	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1412.125000	33.7	100.0	H	234.0	1.9	20.3	54.0
1568.750000	33.6	200.0	V	327.0	2.4	20.4	54.0
2299.375000	35.9	100.0	H	73.0	5.4	18.1	54.0
2807.750000	37.1	200.0	V	83.0	7.4	16.9	54.0
4172.750000	40.5	200.0	V	347.0	12.1	13.5	54.0
7522.250000	45.0	200.0	H	0.0	18.6	9.0	54.0

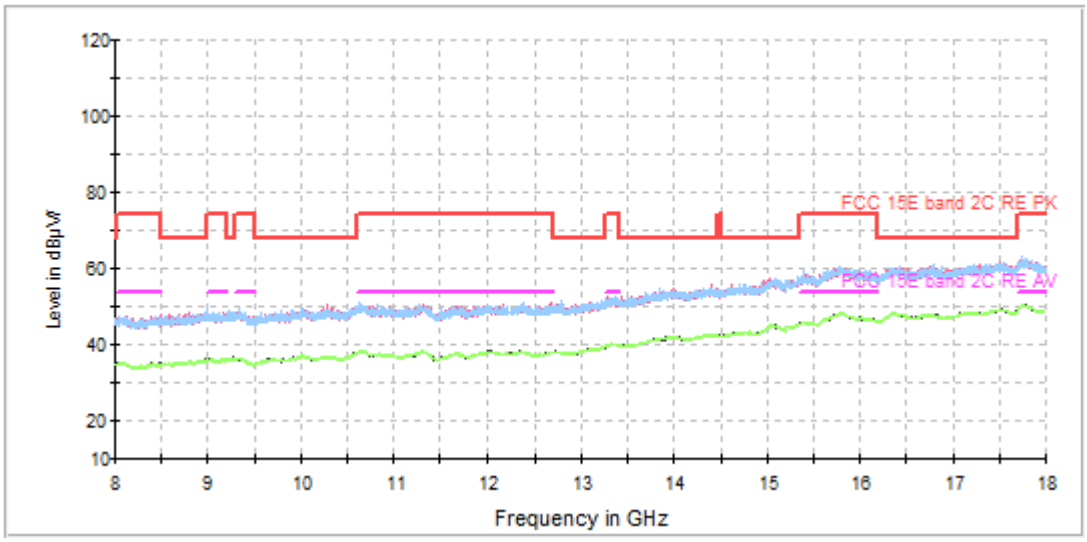
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH118



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

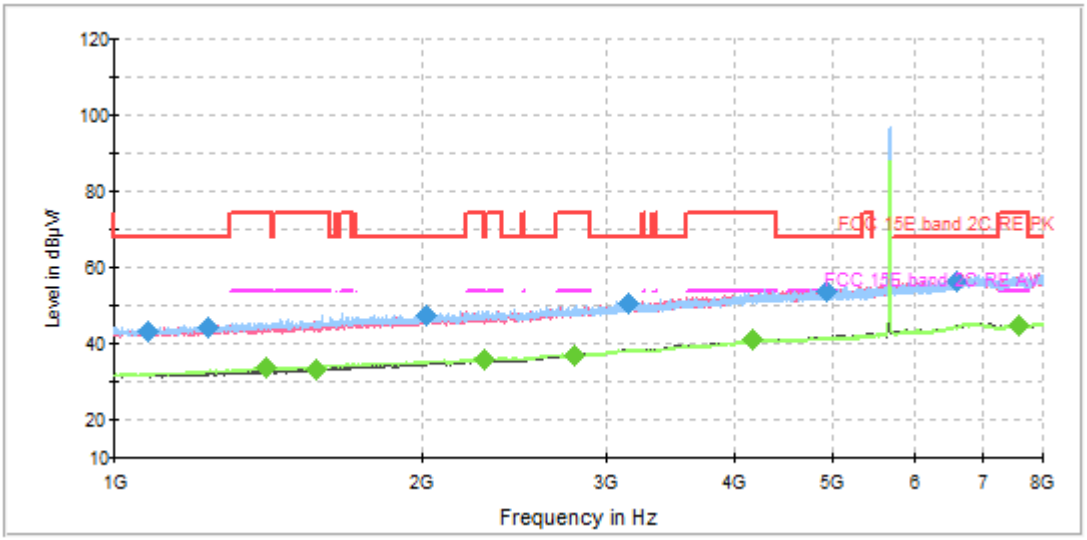
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1061.250000	44.5	200.0	H	0.0	-0.3	23.7	68.2
1220.500000	44.1	200.0	H	0.0	0.9	24.1	68.2
1974.750000	46.8	100.0	V	291.0	4.2	21.4	68.2
2611.750000	48.2	200.0	V	338.0	6.7	20.0	68.2
4869.250000	54.0	200.0	V	192.0	13.4	14.2	68.2
6616.625000	56.3	200.0	V	232.0	17.4	11.9	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1409.500000	33.8	200.0	H	0.0	1.9	20.2	54.0
1602.000000	34.1	100.0	H	76.0	2.6	19.9	54.0
2299.375000	35.8	200.0	H	224.0	5.4	18.2	54.0
2806.000000	37.0	200.0	V	17.0	7.4	17.0	54.0
4142.125000	40.6	100.0	V	291.0	12.0	13.4	54.0
7496.875000	45.2	200.0	V	178.0	18.5	8.8	54.0

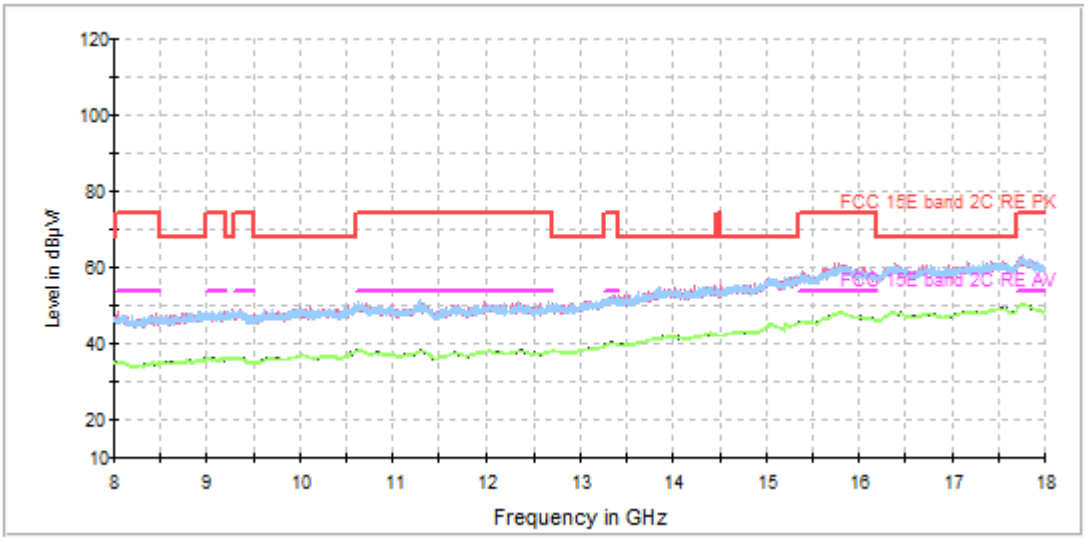
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH134



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

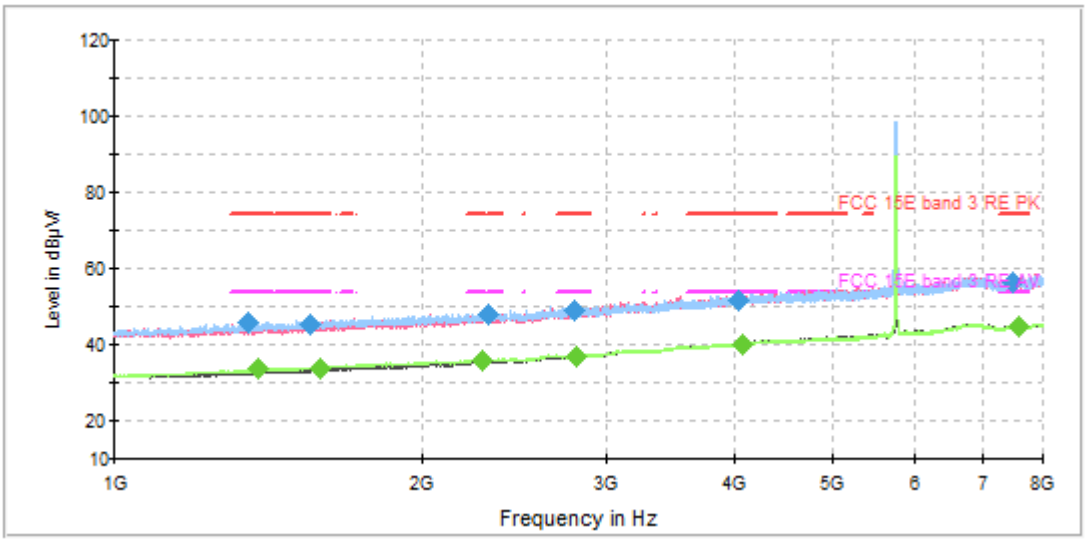
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1080.500000	43.4	200.0	V	0.0	-0.1	24.8	68.2
1234.500000	44.6	100.0	H	92.0	0.9	23.6	68.2
2016.750000	47.7	200.0	H	0.0	4.3	20.5	68.2
3156.875000	50.7	200.0	V	61.0	8.8	17.5	68.2
4920.875000	53.9	100.0	V	186.0	13.5	14.3	68.2
6588.625000	56.5	200.0	V	0.0	17.3	11.7	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1406.875000	33.7	100.0	H	0.0	1.9	20.3	54.0
1572.250000	33.2	100.0	V	214.0	2.4	20.8	54.0
2294.125000	36.0	100.0	H	0.0	5.4	18.0	54.0
2791.125000	36.9	200.0	V	33.0	7.4	17.1	54.0
4176.250000	41.0	200.0	V	143.0	12.1	13.0	54.0
7589.625000	45.0	100.0	V	255.0	18.8	9.0	54.0

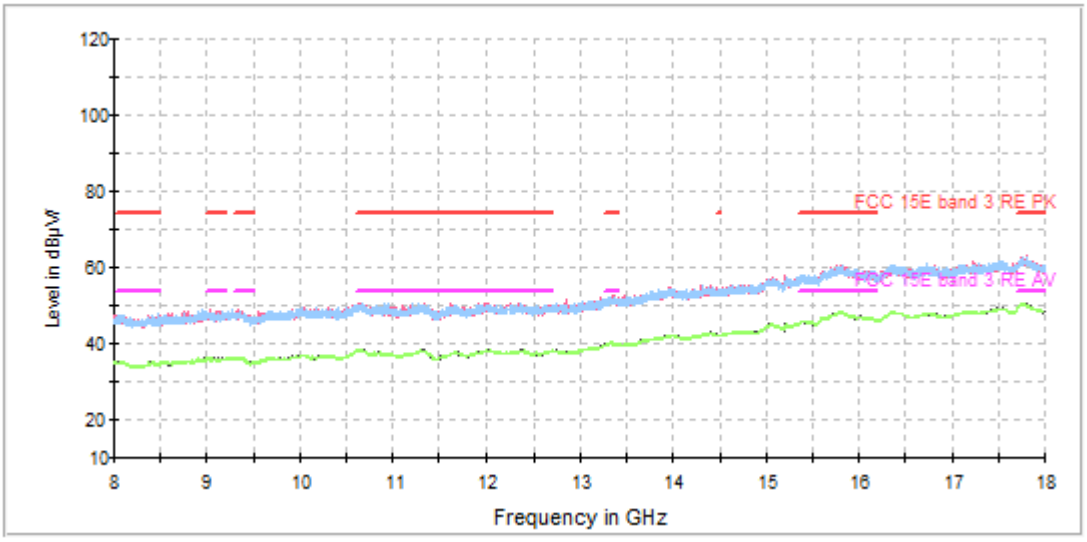
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH151



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

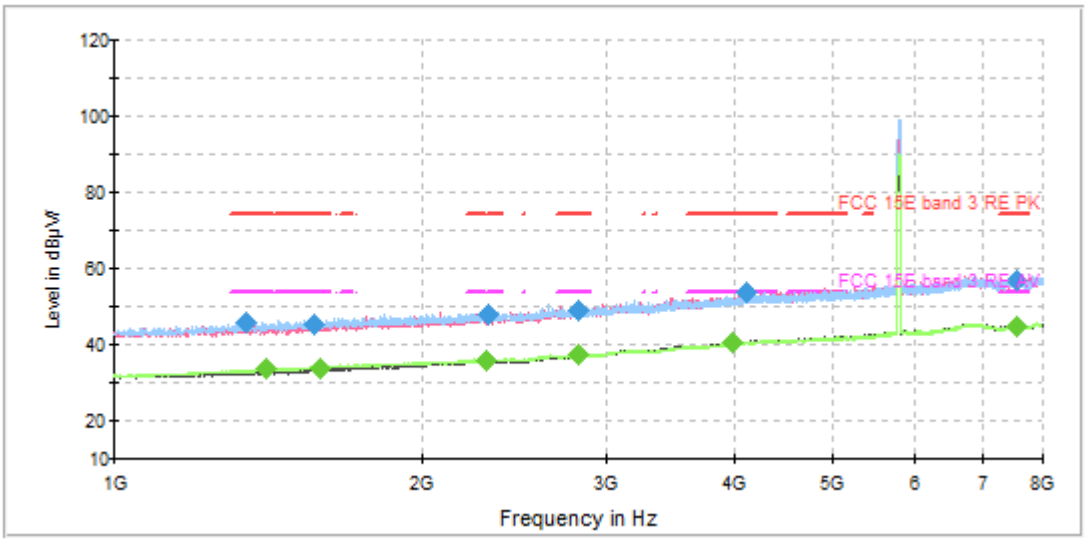
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1349.125000	46.0	100.0	H	91.0	1.5	28.0	74.0
1553.000000	45.4	100.0	H	215.0	2.3	28.6	74.0
2316.875000	48.0	200.0	V	0.0	5.5	26.0	74.0
2798.125000	49.4	100.0	V	129.0	7.4	24.6	74.0
4051.125000	52.0	100.0	V	129.0	11.8	22.0	74.0
7473.250000	56.4	100.0	V	349.0	18.4	17.6	74.0

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1379.750000	33.8	100.0	H	37.0	1.7	20.2	54.0
1588.000000	34.0	200.0	H	285.0	2.5	20.0	54.0
2288.000000	35.9	200.0	H	354.0	5.4	18.1	54.0
2811.250000	36.9	200.0	V	0.0	7.4	17.1	54.0
4071.250000	40.2	100.0	V	0.0	11.8	13.8	54.0
7571.250000	45.0	200.0	V	258.0	18.7	9.0	54.0

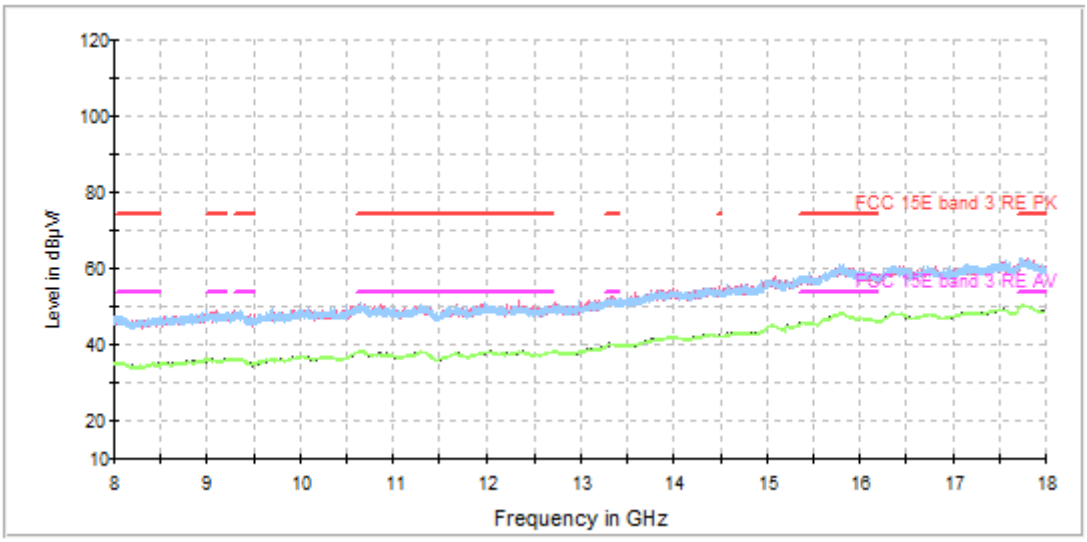
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT40) CH159



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

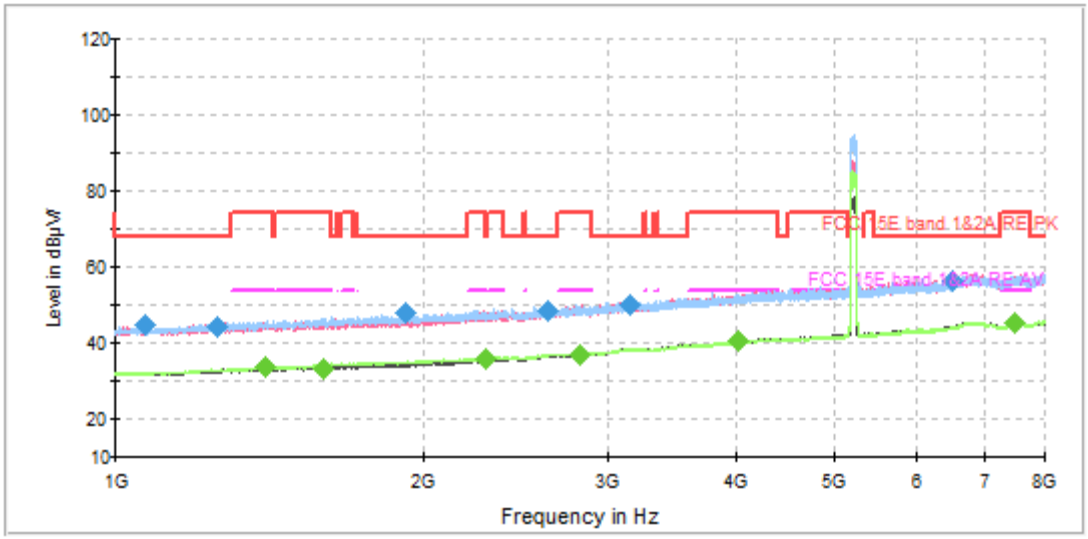
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1343.000000	45.8	100.0	H	0.0	1.4	28.2	74.0
1565.250000	45.4	100.0	H	24.0	2.4	28.6	74.0
2319.500000	47.8	200.0	V	0.0	5.5	26.2	74.0
2821.750000	49.3	100.0	H	38.0	7.5	24.7	74.0
4124.625000	53.9	200.0	V	204.0	12.0	20.1	74.0
7536.250000	57.0	200.0	V	122.0	18.6	17.0	74.0

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	33.7	100.0	H	286.0	1.9	20.3	54.0
1586.250000	34.0	100.0	H	0.0	2.5	20.0	54.0
2310.750000	35.8	200.0	H	0.0	5.5	18.2	54.0
2827.875000	37.4	100.0	H	0.0	7.5	16.6	54.0
3987.250000	40.5	200.0	V	0.0	11.5	13.5	54.0
7553.750000	45.0	200.0	V	95.0	18.7	9.0	54.0

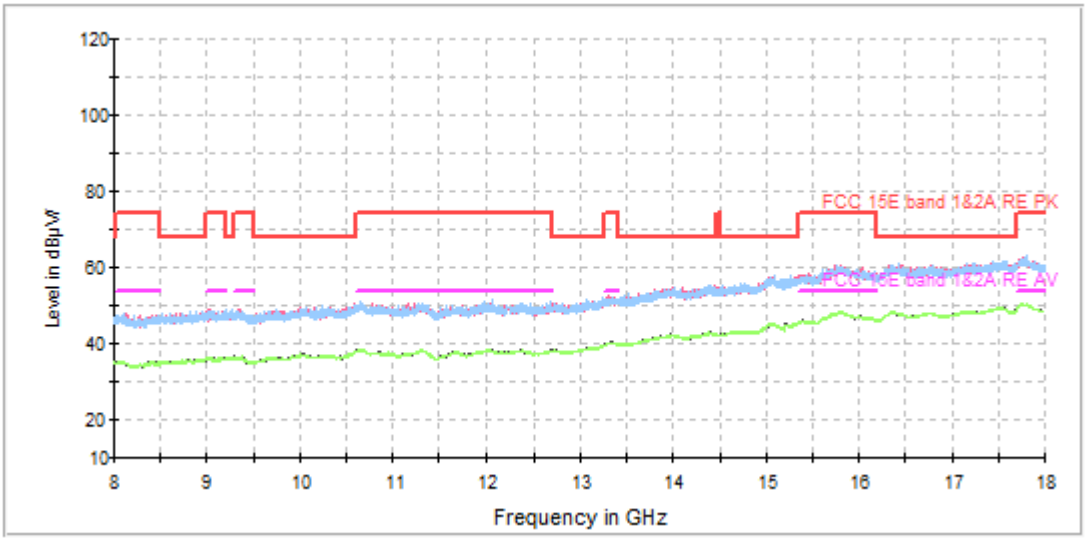
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH42



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

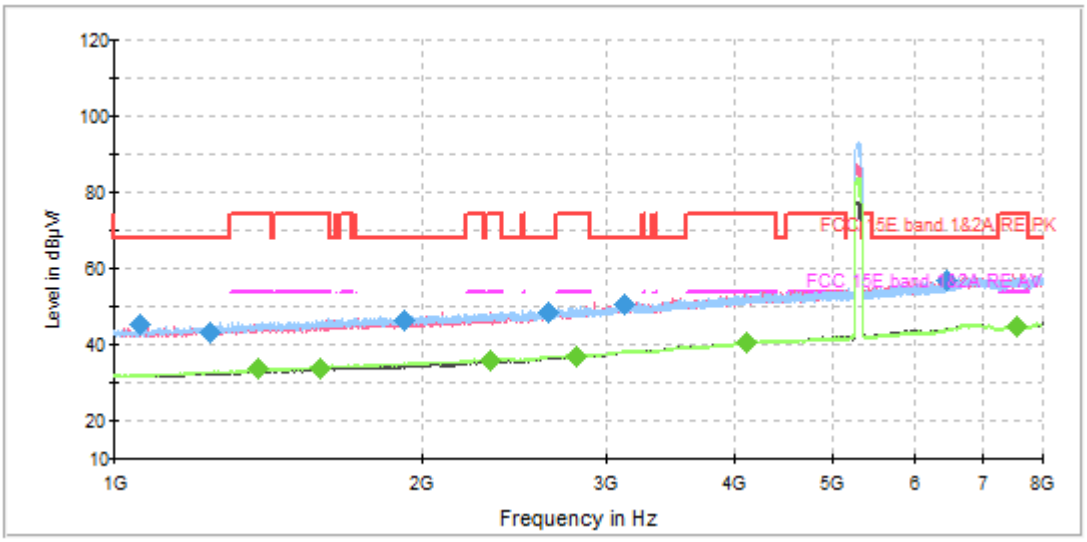
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1070.875000	44.9	100.0	H	120.0	-0.2	23.3	68.2
1258.125000	44.6	200.0	H	0.0	1.0	23.6	68.2
1918.750000	48.1	200.0	H	0.0	3.9	20.1	68.2
2627.500000	48.8	100.0	V	323.0	6.8	19.4	68.2
3153.375000	50.4	100.0	V	310.0	8.8	17.8	68.2
6512.500000	56.6	100.0	H	0.0	17.1	11.6	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1400.750000	33.6	100.0	H	314.0	1.9	20.4	54.0
1593.250000	33.4	200.0	V	92.0	2.5	20.6	54.0
2299.375000	35.9	100.0	H	147.0	5.4	18.1	54.0
2819.125000	37.0	200.0	V	65.0	7.5	17.0	54.0
4020.500000	40.5	100.0	H	174.0	11.6	13.5	54.0
7478.500000	45.2	100.0	V	0.0	18.4	8.8	54.0

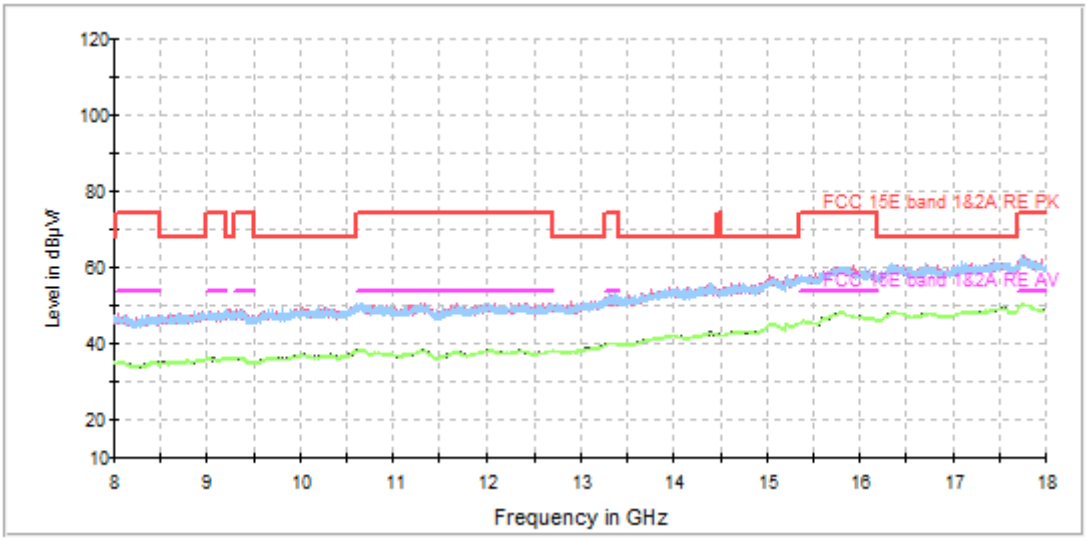
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH58



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

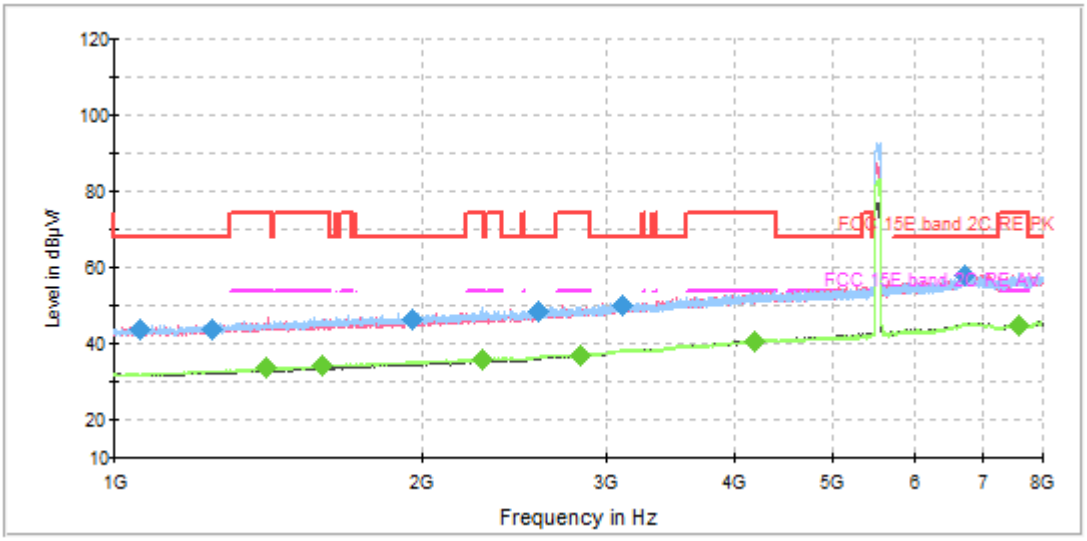
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1057.750000	45.2	100.0	H	0.0	-0.3	23.0	68.2
1238.875000	43.6	200.0	V	0.0	0.9	24.6	68.2
1921.375000	46.3	200.0	H	339.0	3.9	21.9	68.2
2638.000000	48.8	200.0	V	314.0	6.8	19.4	68.2
3130.625000	50.9	100.0	H	64.0	8.7	17.3	68.2
6447.750000	57.0	100.0	V	277.0	16.9	11.2	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1382.375000	33.7	100.0	H	0.0	1.7	20.3	54.0
1588.000000	34.0	100.0	H	50.0	2.5	20.0	54.0
2322.125000	35.8	200.0	H	298.0	5.5	18.2	54.0
2805.125000	36.9	200.0	V	13.0	7.4	17.1	54.0
4111.500000	40.6	200.0	V	162.0	12.0	13.4	54.0
7552.875000	45.1	200.0	V	0.0	18.7	8.9	54.0

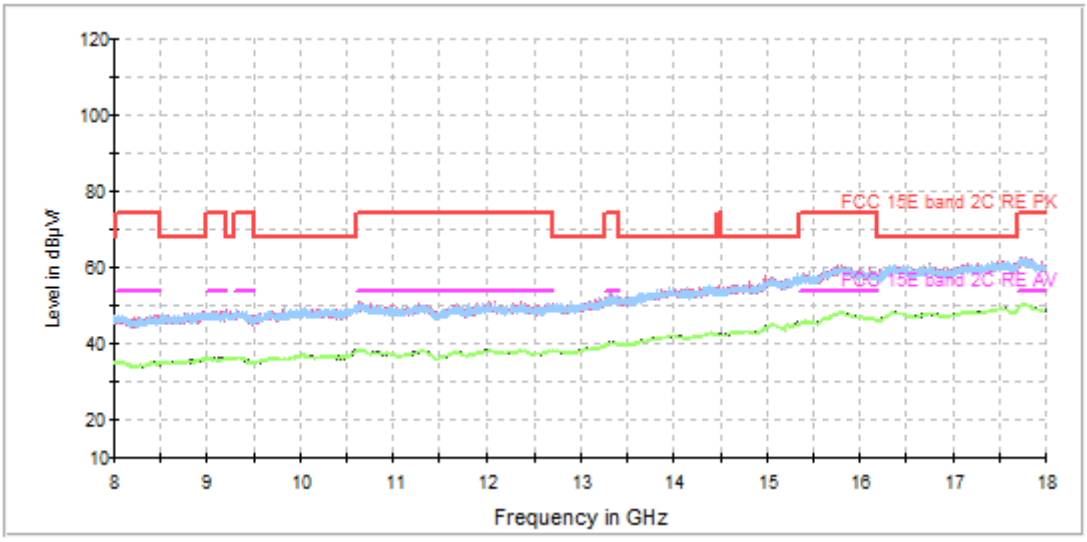
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH106



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

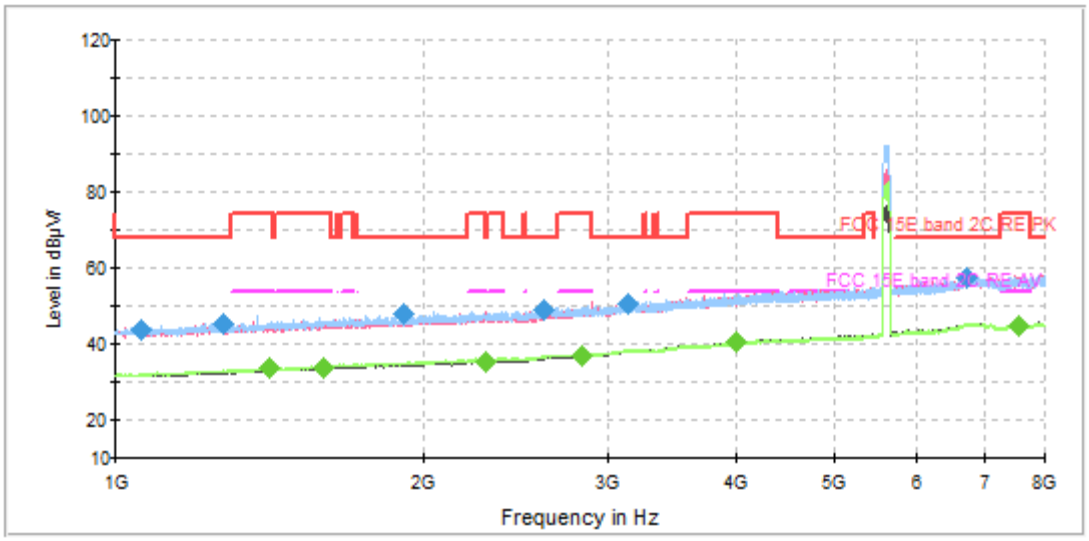
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1060.375000	43.9	100.0	H	232.0	-0.3	24.3	68.2
1247.625000	44.1	200.0	V	0.0	1.0	24.1	68.2
1956.375000	46.4	100.0	H	273.0	4.1	21.8	68.2
2579.375000	48.7	100.0	H	27.0	6.5	19.5	68.2
3120.125000	50.3	200.0	V	150.0	8.7	17.9	68.2
6704.125000	57.9	200.0	V	0.0	17.6	10.3	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	33.8	200.0	H	269.0	1.9	20.2	54.0
1596.750000	34.2	200.0	H	160.0	2.5	19.8	54.0
2282.750000	35.9	100.0	H	246.0	5.4	18.1	54.0
2839.250000	36.9	100.0	V	228.0	7.5	17.1	54.0
4182.375000	40.6	200.0	V	0.0	12.1	13.4	54.0
7571.250000	45.0	100.0	V	338.0	18.7	9.0	54.0

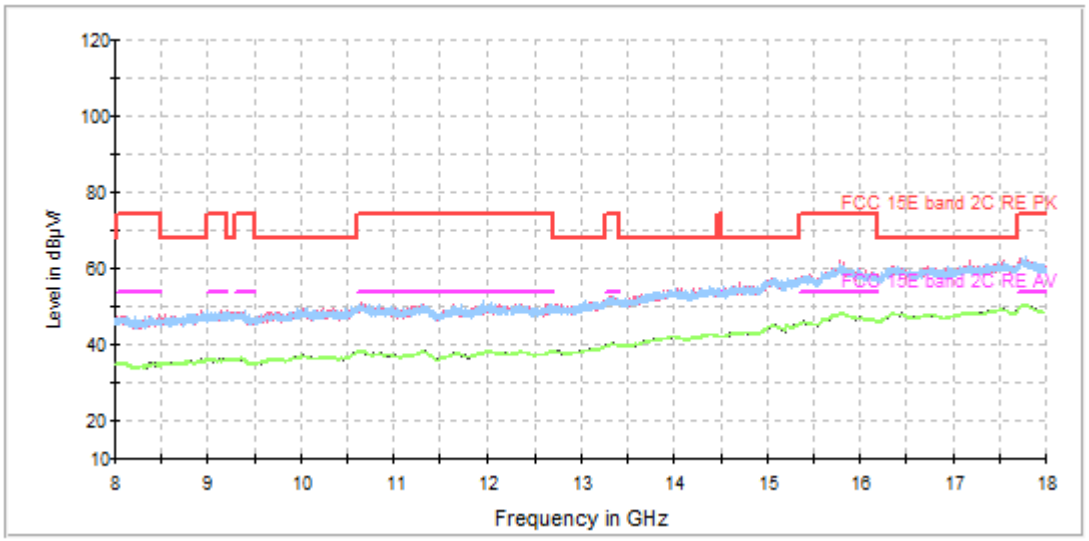
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH122



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

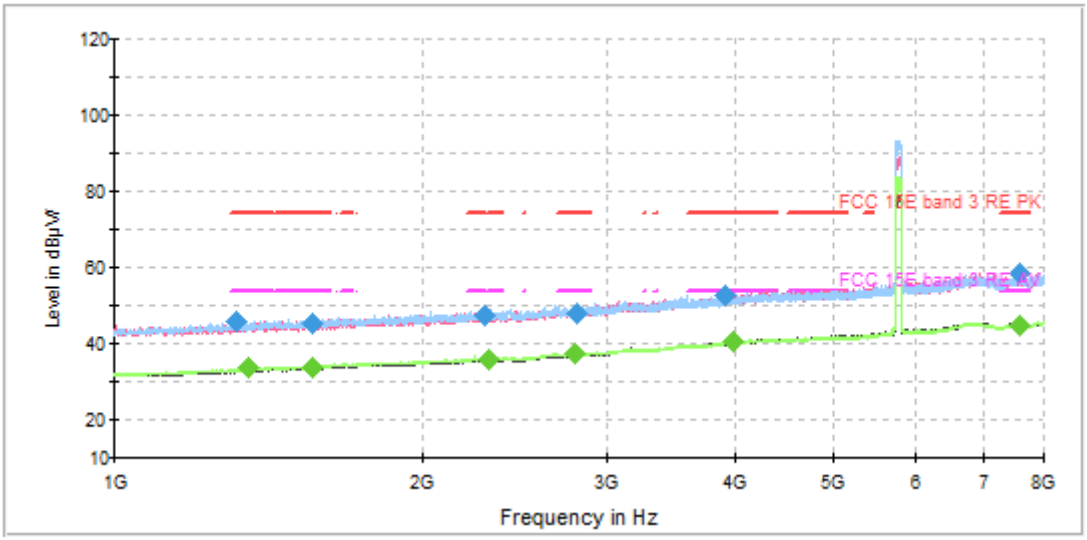
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1061.250000	44.0	200.0	H	0.0	-0.3	24.2	68.2
1275.625000	45.7	200.0	H	270.0	1.1	22.5	68.2
1905.625000	48.2	200.0	V	13.0	3.8	20.0	68.2
2598.625000	49.2	100.0	H	53.0	6.6	19.0	68.2
3142.000000	50.7	100.0	V	231.0	8.8	17.5	68.2
6718.125000	57.4	200.0	V	67.0	17.7	10.8	68.2

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1412.125000	33.7	100.0	H	121.0	1.9	20.3	54.0
1593.250000	34.0	200.0	H	270.0	2.5	20.0	54.0
2294.125000	35.4	200.0	V	40.0	5.4	18.6	54.0
2841.000000	36.8	200.0	V	162.0	7.5	17.2	54.0
4008.250000	40.4	100.0	V	74.0	11.6	13.6	54.0
7557.250000	45.1	200.0	V	0.0	18.7	8.9	54.0

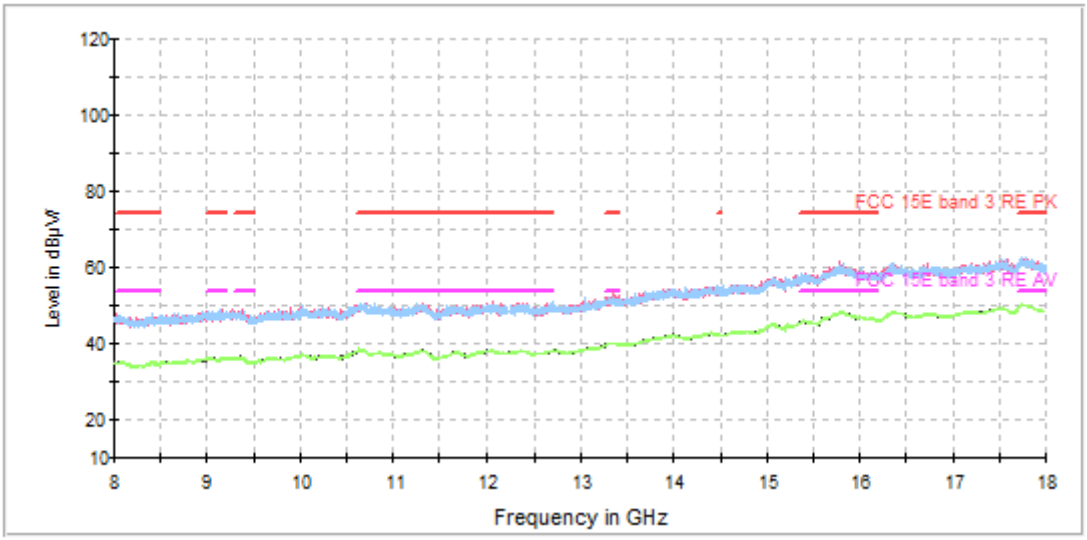
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH155



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1317.625000	46.2	200.0	H	218.0	1.3	27.8	74.0
1558.250000	45.5	200.0	V	134.0	2.3	28.5	74.0
2293.250000	47.4	100.0	V	246.0	5.4	26.6	74.0
2814.750000	47.9	200.0	V	0.0	7.4	26.1	74.0
3916.375000	53.0	100.0	V	121.0	11.2	21.0	74.0
7569.500000	58.5	200.0	H	245.0	18.7	15.5	74.0

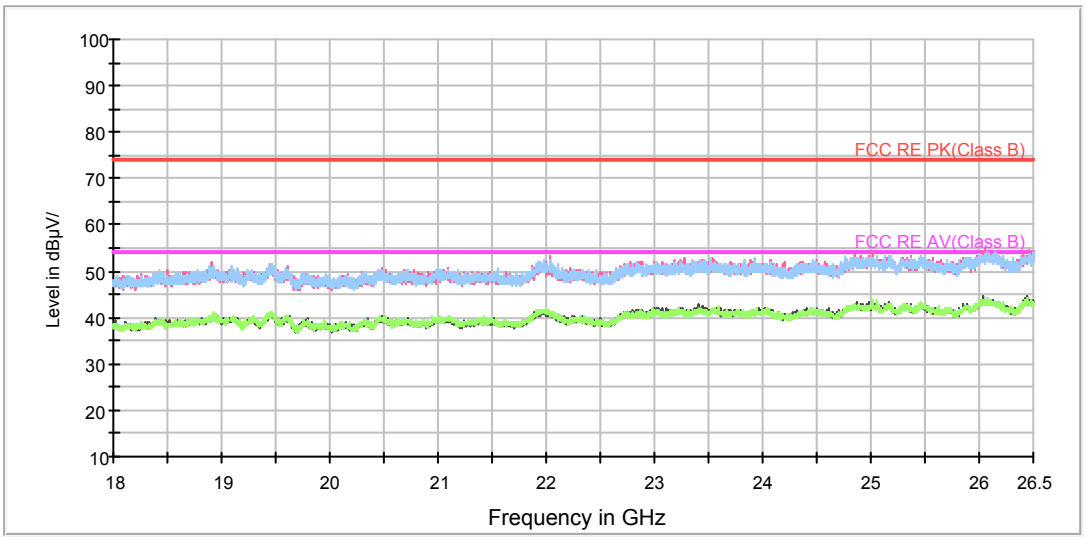
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1351.750000	33.7	100.0	H	91.0	1.5	20.3	54.0
1560.875000	34.1	200.0	H	162.0	2.3	19.9	54.0
2314.250000	35.8	200.0	V	0.0	5.5	18.2	54.0
2797.250000	37.3	200.0	H	0.0	7.4	16.7	54.0
3988.125000	40.4	200.0	H	25.0	11.5	13.6	54.0
7589.625000	45.1	100.0	V	148.0	18.8	8.9	54.0

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

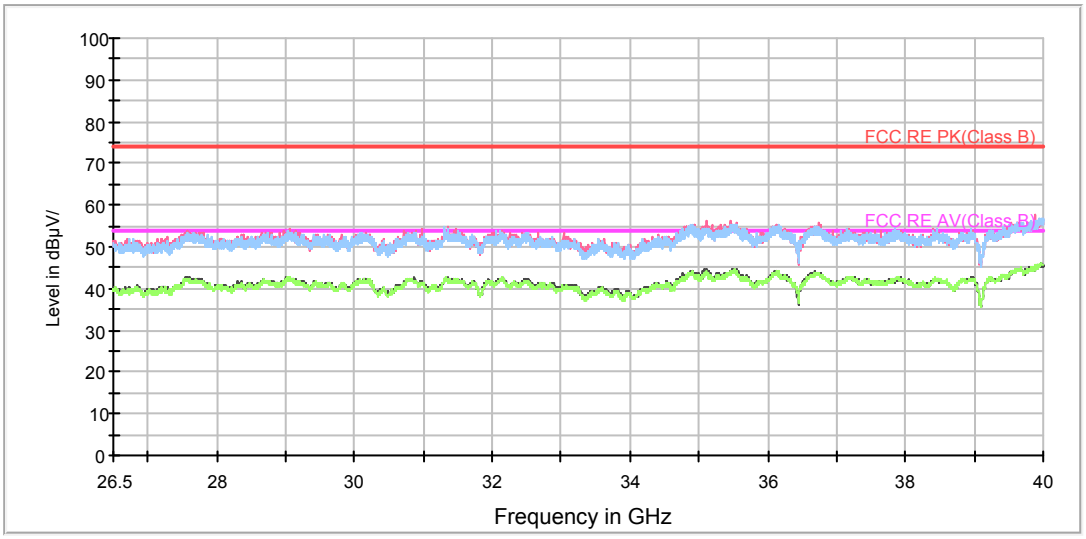
During the test, the Radiates Emission from 18GHz to 40GHz was performed in all modes with all channels, 802.11a, Channel 149 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

5.6. Conducted Emission

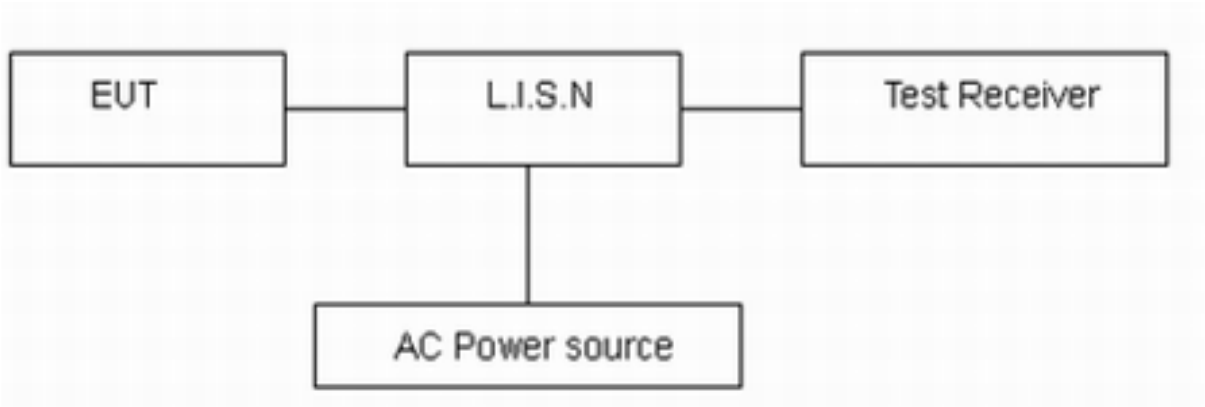
Ambient condition

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 C63.10-2013.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

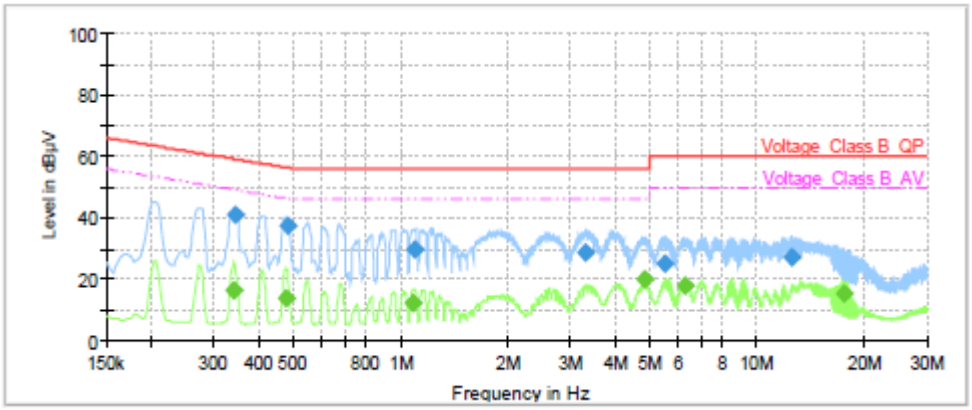
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

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:

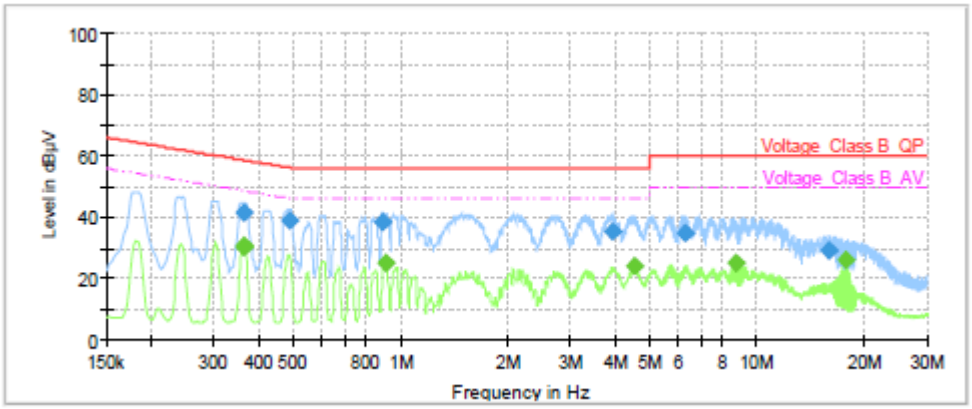
Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, 802.11a, Channel 149 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.34	---	16.38	49.17	32.79	1000.0	9.000	L1	ON	19.18
0.34	41.22	---	59.12	17.90	1000.0	9.000	L1	ON	19.18
0.48	---	13.69	46.37	32.68	1000.0	9.000	L1	ON	19.23
0.49	37.42	---	56.25	18.83	1000.0	9.000	L1	ON	19.23
1.08	---	12.25	46.00	33.75	1000.0	9.000	L1	ON	19.24
1.10	29.81	---	56.00	26.19	1000.0	9.000	L1	ON	19.24
3.29	28.49	---	56.00	27.51	1000.0	9.000	L1	ON	19.06
4.83	---	20.19	46.00	25.81	1000.0	9.000	L1	ON	19.07
5.49	25.02	---	60.00	34.98	1000.0	9.000	L1	ON	19.10
6.28	---	18.16	50.00	31.84	1000.0	9.000	L1	ON	19.13
12.49	27.39	---	60.00	32.61	1000.0	9.000	L1	ON	19.44
17.56	---	15.37	50.00	34.63	1000.0	9.000	L1	ON	19.58

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)
0.36	---	30.42	48.69	18.27	1000.0	9.000	N	ON	19.19
0.36	41.31	---	58.69	17.38	1000.0	9.000	N	ON	19.19
0.36	---	30.64	48.64	18.00	1000.0	9.000	N	ON	19.19
0.49	39.21	---	56.17	16.96	1000.0	9.000	N	ON	19.23
0.89	38.62	---	56.00	17.38	1000.0	9.000	N	ON	19.24
0.91	---	25.01	46.00	20.99	1000.0	9.000	N	ON	19.24
3.91	35.29	---	56.00	20.71	1000.0	9.000	N	ON	19.04
4.52	---	24.07	46.00	21.93	1000.0	9.000	N	ON	19.10
6.26	34.88	---	60.00	25.12	1000.0	9.000	N	ON	19.13
8.73	---	25.05	50.00	24.95	1000.0	9.000	N	ON	19.28
15.93	29.03	---	60.00	30.97	1000.0	9.000	N	ON	19.38
17.70	---	25.90	50.00	24.10	1000.0	9.000	N	ON	19.47

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
Spectrum Analyzer	R&S	FSV40	15195-01-00	2018-05-20	2019-05-19
EMI Test Receiver	R&S	ESCI	100948	2018-05-20	2019-05-19
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2019-09-25
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	9163-201	2017-11-18	2019-11-17
Double Ridged Waveguide Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Standard Gain Horn	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Standard Gain Horn	STEATITE	QSH-SL-26-40 -K-15	16779	2017-07-20	2019-07-19
Broadband Horn Antenna	SCHWARZBECK	BBHA 9120D	430	2018-07-07	2020-07-06
EMI Test Receiver	R&S	ESR	101667	2018-05-20	2019-05-19
LISN	R&S	ENV216	101171	2016-12-16	2019-12-15
Spectrum Analyzer	KEYSIGHT	N9020A	MY54420163	2018-12-16	2019-12-15
RF Cable	Agilent	SMA 15cm	0001	2019-03-15	2019-06-14
TEMPERATURE CHAMBER	WEISS	VT4002	582261194500 10	2018-12-16	2019-12-15
WLAN AP	Cisco	Air-AP1262N-A-K9	LDK102073 (FCC ID)	/	/
AV Power Meter	R&S	NRP	104306	2018-05-20	2019-05-19
Power Probe	R&S	NRP-Z21	104799	2018-05-20	2019-05-19
DC Power Supply	GWINSTEK	GPS-3030D	GEP882653	2018-05-20	2020-05-19
Software	R&S	EMC32	9.26.0	/	/

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