RF TEST REPORT

Applicant	Quectel Wireless Solutions Co., Ltd
Product	Wi-Fi&BT module
FCC ID	XMR201703FC20
Brand	Quectel
Model	FC20
Report No.	R2105A0465-R3
Issue Date	July 23, 2021

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

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Approved by: Kai Xu

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TABLE OF CONTENT

Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Unwanted Emissions	15.407(b)	PASS
2	Conducted Emissions	15.207	PASS
Date of Testing: June 2, 2021 ~ July 22, 2021 Date of Sample Received: March 20, 2021			
Note: PASS: The EUT complies with the essential requirements in the standard. FAIL: The EUT does not comply with the essential requirements in the standard. All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.			

This report only tests Unwanted Emissions and Conducted Emissions. Other test items referred to the report. (Report No. 16050028-FCC-R2)

1. Test Laboratory

1.1. Notes of the test report

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

1.2. Test facility

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

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

A2LA (Certificate Number: 3857.01)

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

1.3. Testing Location

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

2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Quectel Wireless Solutions Co., Ltd
Applicant address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233
Manufacturer	Quectel Wireless Solutions Co., Ltd
Manufacturer address	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

2.2. General information

EUT Description	
Model	FC20
SN	MP820JU08025246
Hardware Version	R1.0
Software Version	FC20TEA-Q73
Power Supply	External power supply
Antenna Type	External Antenna / PCB Antenna
Antenna Gain	Antenna 2: 5dBi Antenna 3: 4dBi Antenna 4: 2dBi
Test Band	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5725MHz U-NII-3(5725MHz-5850MHz)
Modulation Type	802.11a/n (HT20/HT40) : OFDM 802.11ac (VHT20/VHT40/VHT80): OFDM
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-2A:5250MHz -5350MHz U-NII-2C:(5470MHz-5725MHz 5470MHz-5600MHz ,5650MHz-5725MHz) U-NII-3: 5725MHz -5850MHz
Extreme temperature range:	-30 ° C to 50° C
Operating temperature range:	-40 ° C to 85° C
Operating voltage range:	3.4V to 3.46 V
State DC voltage:	3.3V
Note:1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.	

3. Applied Standards

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

Test standards:

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

ANSI C63.10 (2013)

Reference standard:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

4. Test Configuration

Test Mode

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

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

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

Worst-case data rates are shown as following table.

Mode	Data Rate		
	Antenna 2	Antenna 3	Antenna 4
802.11a	6 Mbps	6 Mbps	6 Mbps
802.11n HT20	MCS0	MCS0	MCS0
802.11n HT40	MCS0	MCS0	MCS0
802.11ac VHT20	MCS0	MCS0	MCS0
802.11ac VHT40	MCS0	MCS0	MCS0
802.11ac VHT80	MCS0	MCS0	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
			132	5660MHz
			136	5680MHz
			140	5700MHz
		40 MHz	102	5510MHz
			110	5550MHz
			118	5590MHz
			134	5670MHz
			142	5710MHz
		80 MHz	106	5530MHz
			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. Unwanted Emission

Ambient condition

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

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.
Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.
Set the spectrum analyzer in the following:
9kHz~150 kHz
RBW=200Hz, VBW=1kHz/ Sweep=AUTO
150 kHz~30MHz
RBW=9KHz, VBW=30KHz,/ Sweep=AUTO
Below 1GHz
RBW=100kHz / VBW=300kHz / Sweep=AUTO
a) Peak emission levels are measured by setting the instrument as follows:
Above 1GHz
PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO
b) Average emission levels are measured by setting the instrument as follows:
Above 1GHz
AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO
c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.
d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
e) Sweep time = auto.
f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission

is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

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

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

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

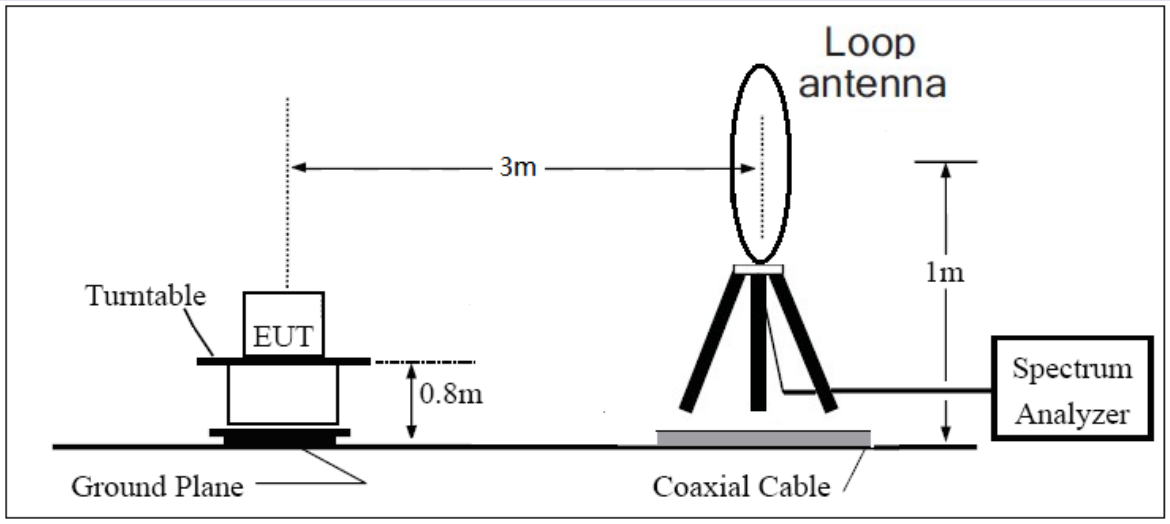
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

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

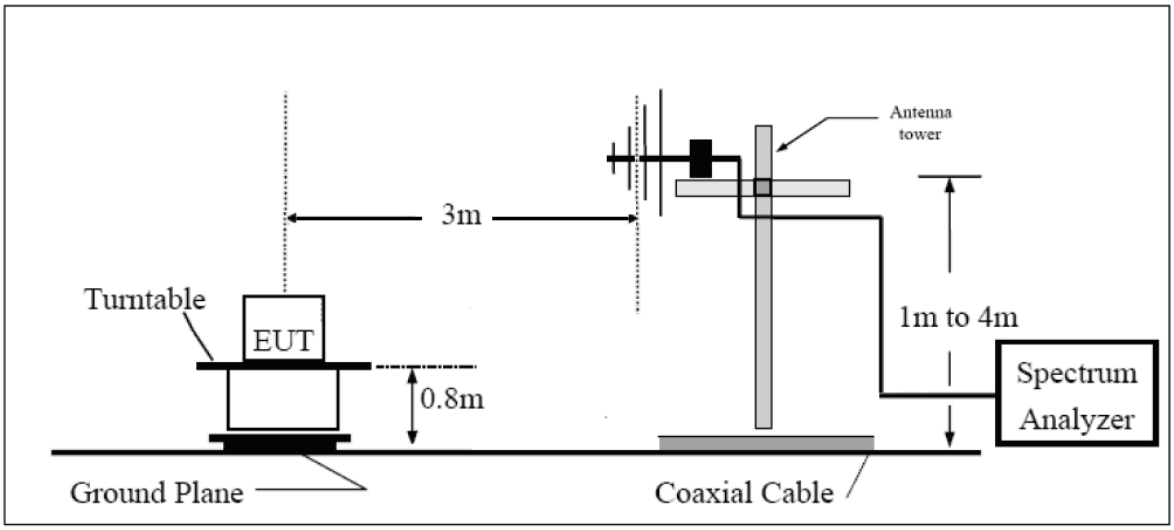
The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the loop antenna is vertical, others antenna are vertical and horizontal.

The test is in transmitting mode.

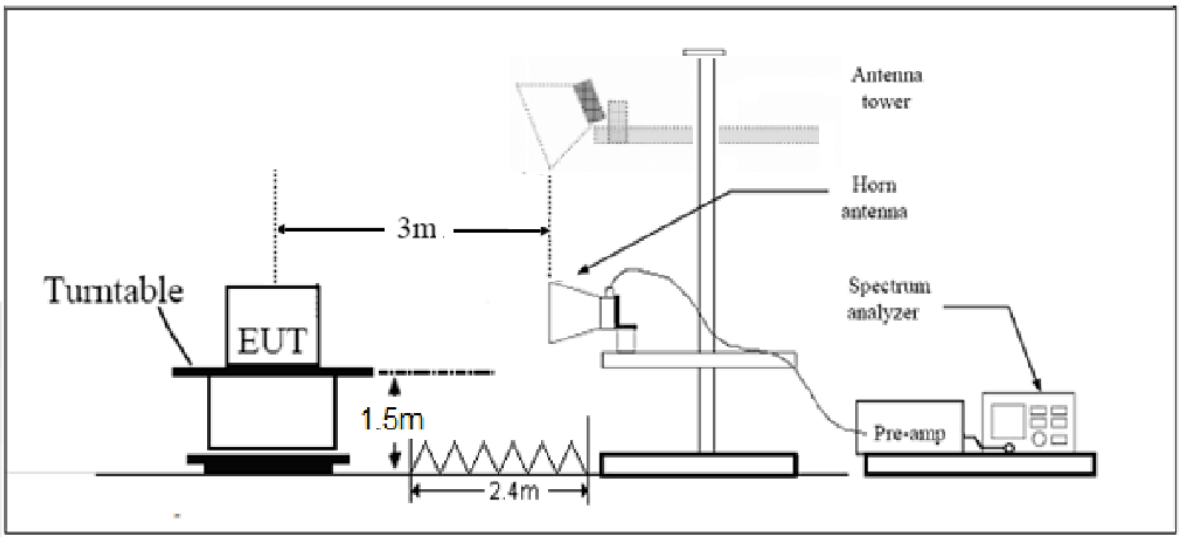
9KHz~~~30MHz



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	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB

Test Results:

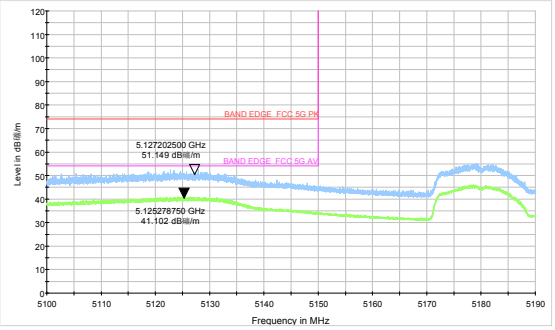
The signal beyond the limit is carrier.

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

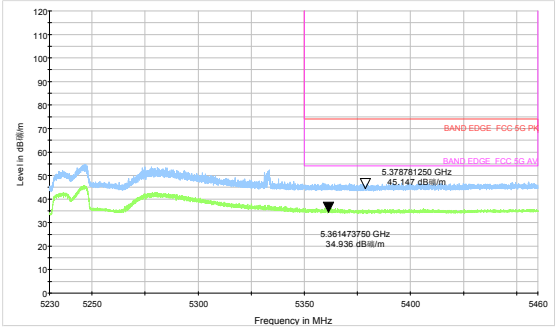
A font (dB V/)in the test plot =(dB μ V/m)

SISO Antenna 2

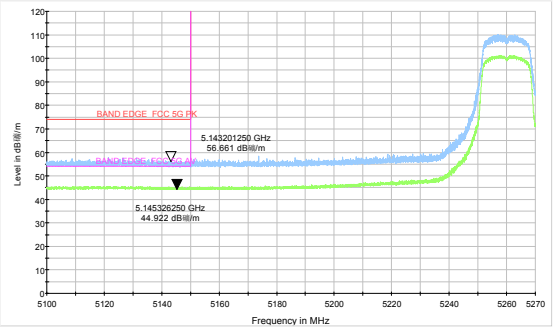
802.11a-Channel 36: Peak+ Average



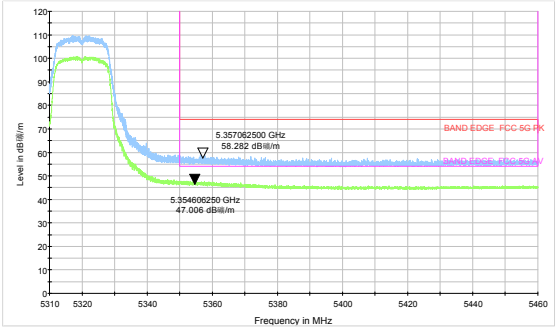
802.11a-Channel 48: Peak+ Average



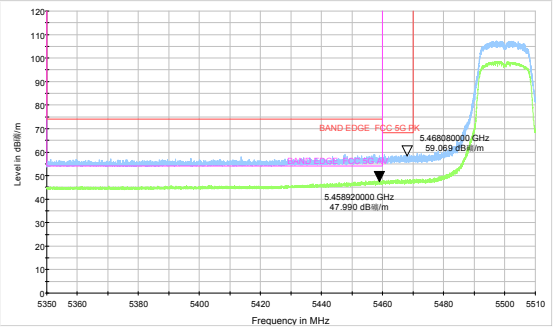
802.11a-Channel 52: Peak+ Average



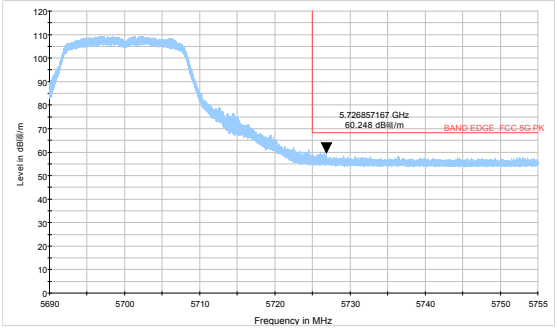
802.11a-Channel 64: Peak+ Average



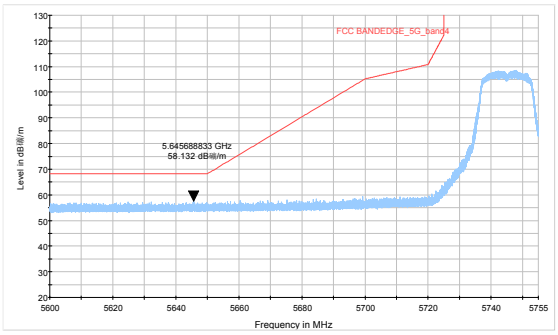
802.11a-Channel 100: Peak+ Average



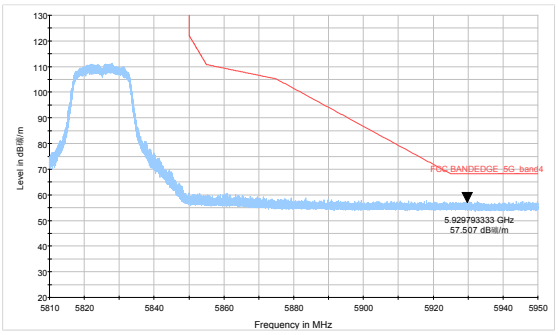
802.11a-Channel 140: Peak+ Average



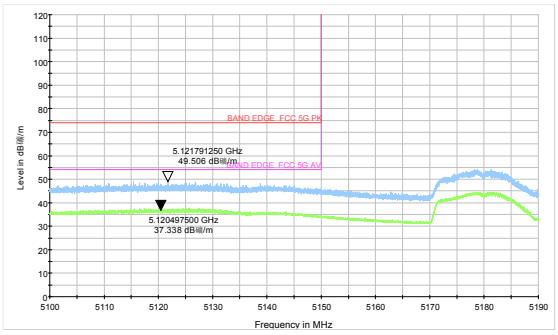
802.11a-Channel 149: Peak+ Average



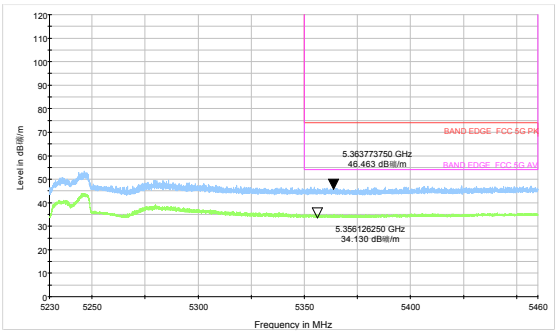
802.11a-Channel 165: Peak+ Average



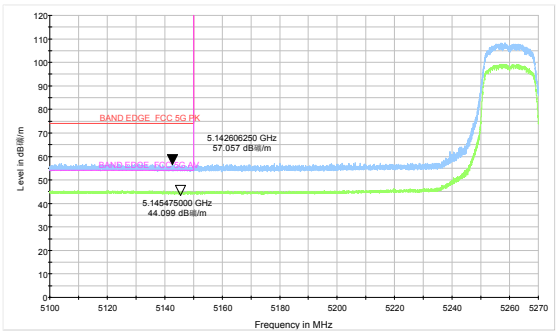
802.11n HT20-Channel 36: Peak+ Average



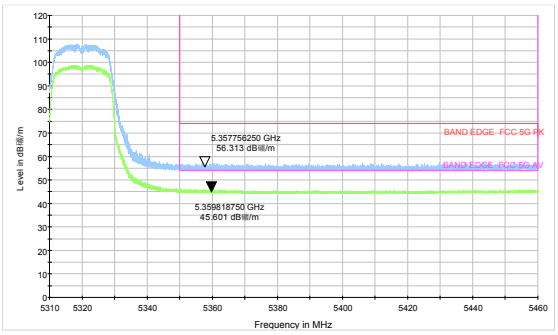
802.11n HT20-Channel 48: Peak+ Average



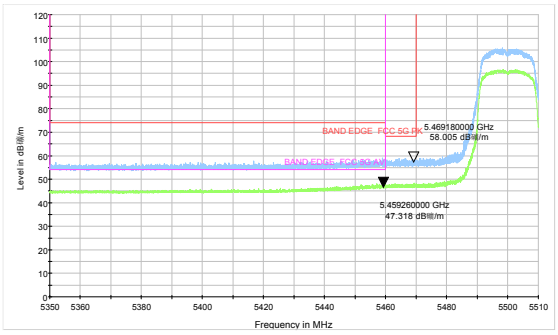
802.11n HT20-Channel 52: Peak+ Average



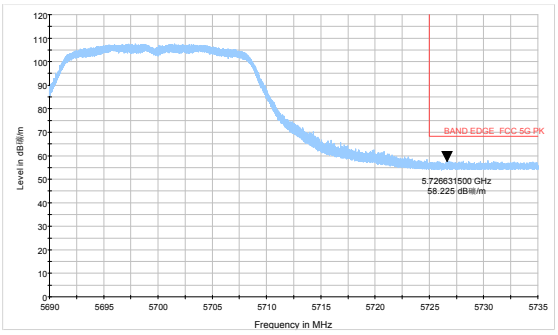
802.11n HT20-Channel 64: Peak+ Average



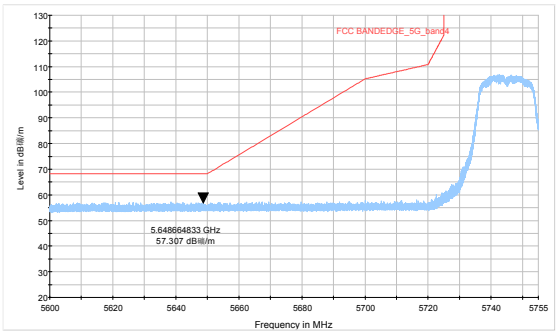
802.11n HT20-Channel 100: Peak+ Average



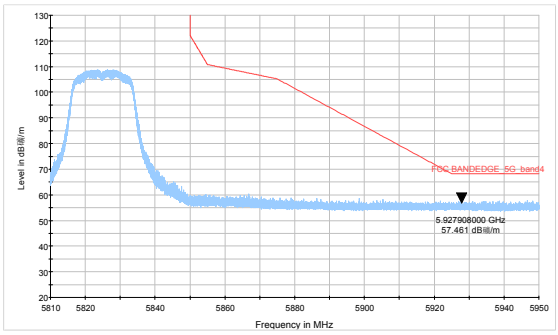
802.11n HT20-Channel 140: Peak+ Average



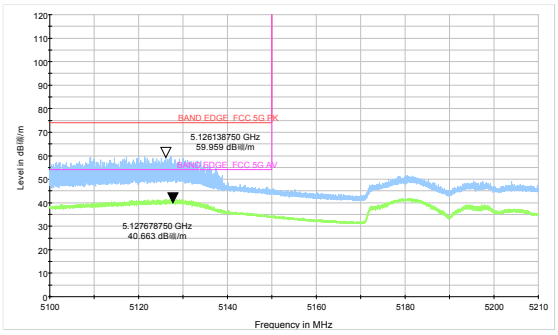
802.11n HT20-Channel 149: Peak+ Average



802.11n HT20-Channel 165: Peak+ Average



802.11n HT40-Channel 38: Peak+ Average



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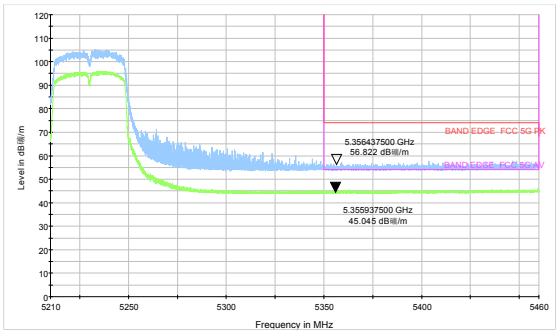

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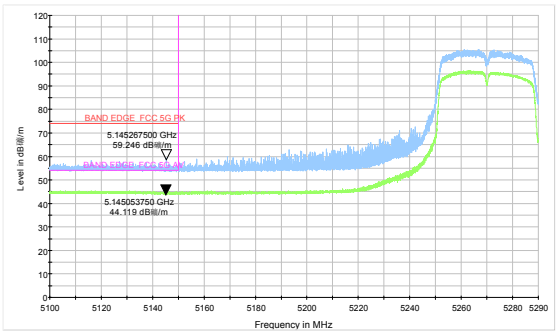
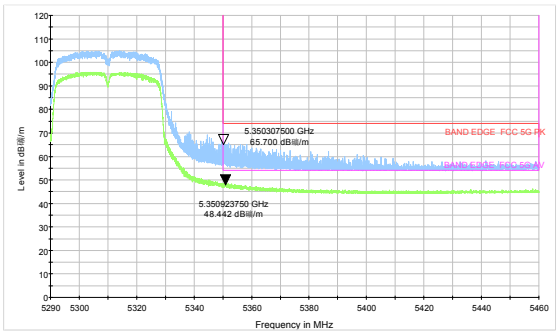
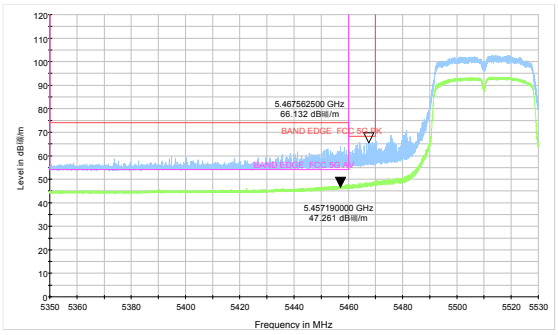


802.11n HT40-Channel 62: Peak+ Average



802.11n HT40-Channel 102: Peak+ Average



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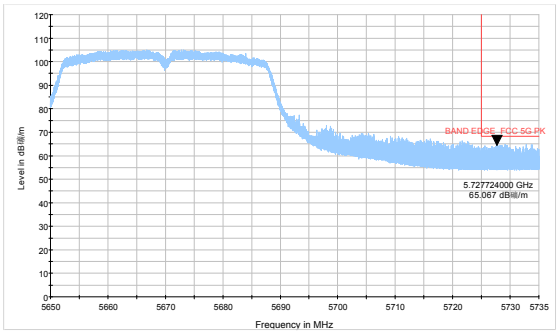
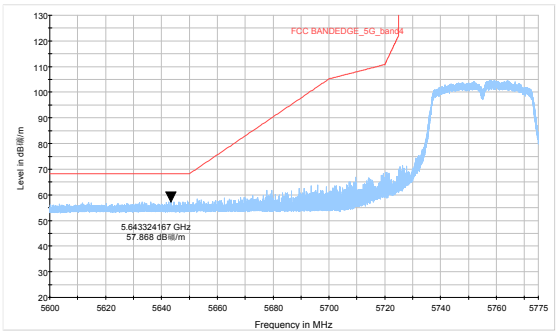
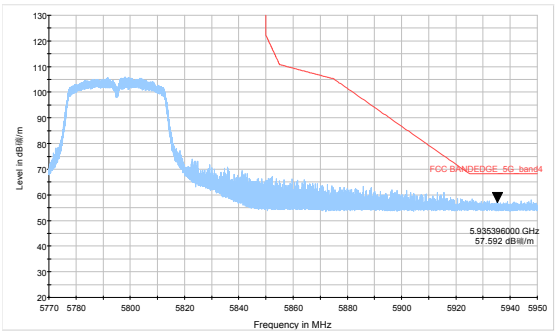


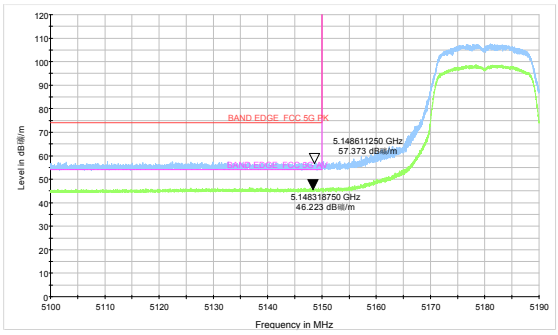
802.11n HT40-Channel 151: Peak+ Average



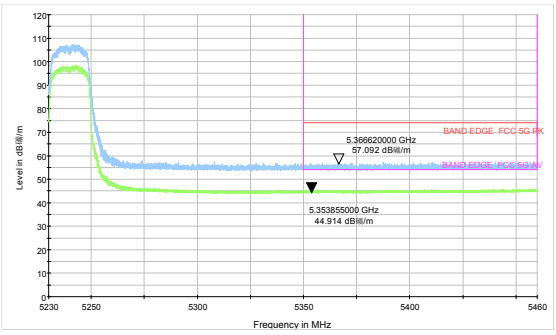
802.11n HT40-Channel 159: Peak+ Average



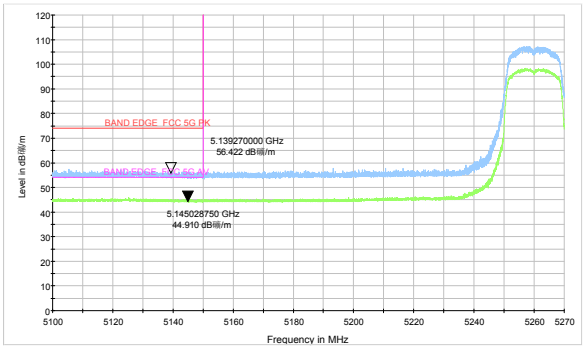
802.11ac VHT20 -Channel 36: Peak+ Average



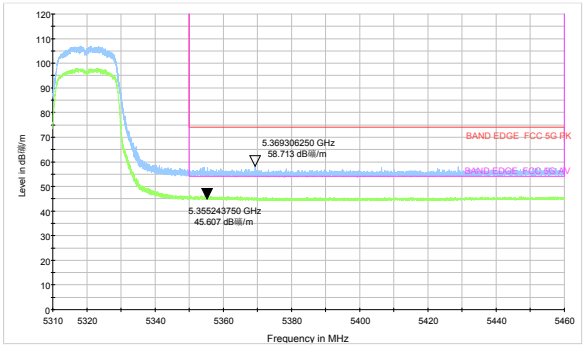
802.11ac VHT20 -Channel 48: Peak+ Average



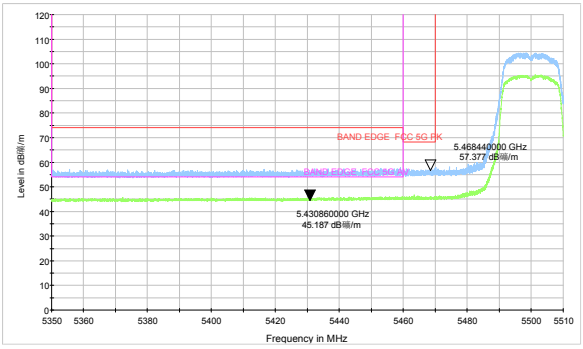
802.11ac VHT20 -Channel 52: Peak+ Average



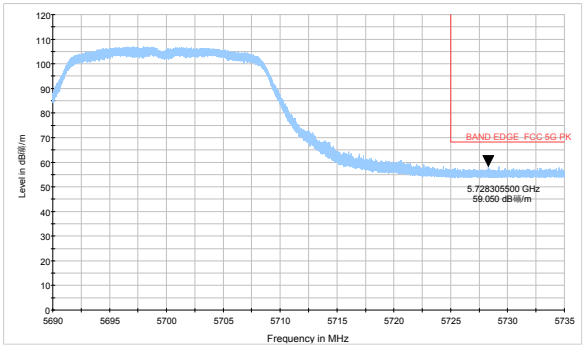
802.11ac VHT20 -Channel 64: Peak+ Average



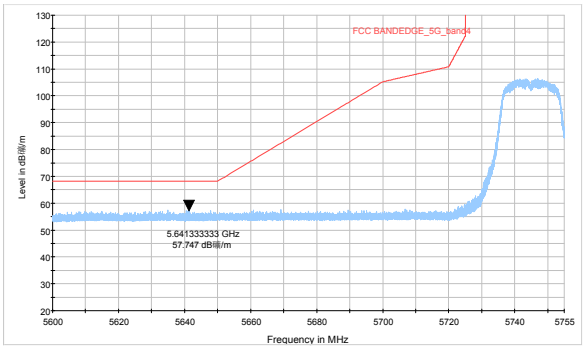
802.11ac VHT20 -Channel 100: Peak+ Average



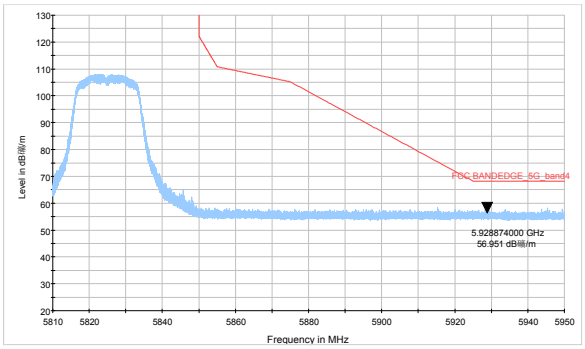
802.11ac VHT20 -Channel 140: Peak+ Average



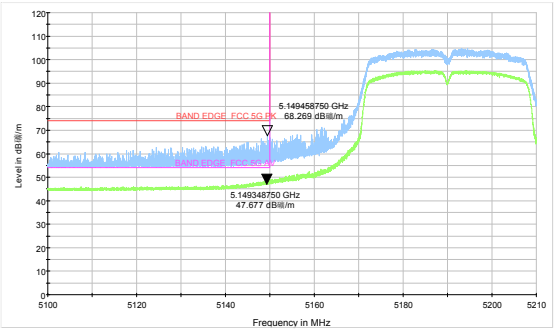
802.11ac VHT20 -Channel 149: Peak+ Average



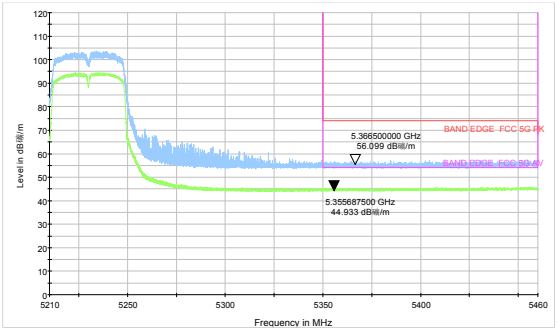
802.11ac VHT20 -Channel 165: Peak+ Average



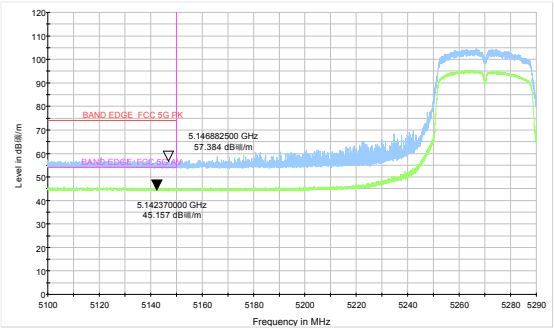
802.11ac VHT40-Channel 38: Peak+ Average



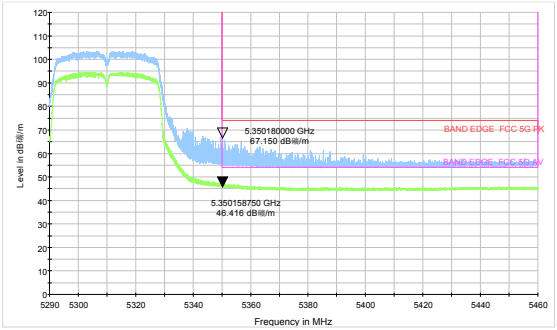
802.11ac VHT40-Channel 46: Peak+ Average



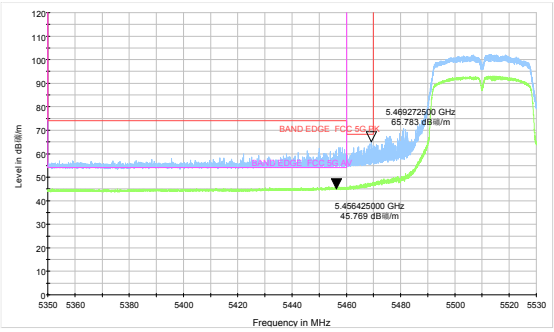
802.11ac VHT40-Channel 54: Peak+ Average



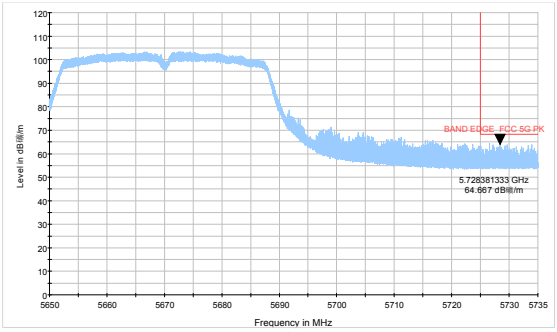
802.11ac VHT40-Channel 62: Peak+ Average



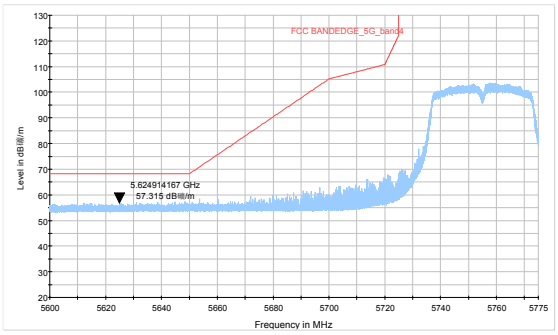
802.11ac VHT40-Channel 102: Peak+ Average



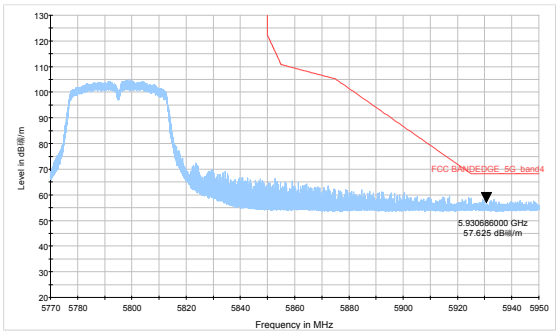
802.11ac VHT40-Channel 134: Peak+ Average



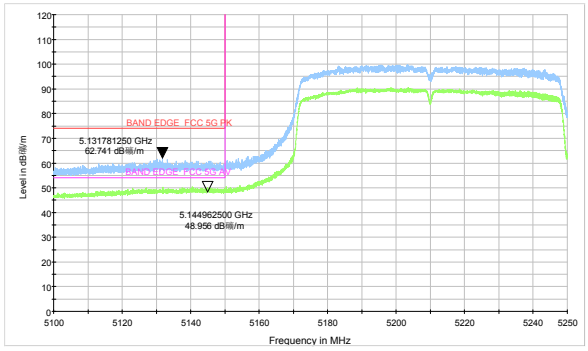
802.11ac VHT40-Channel 151: Peak+ Average



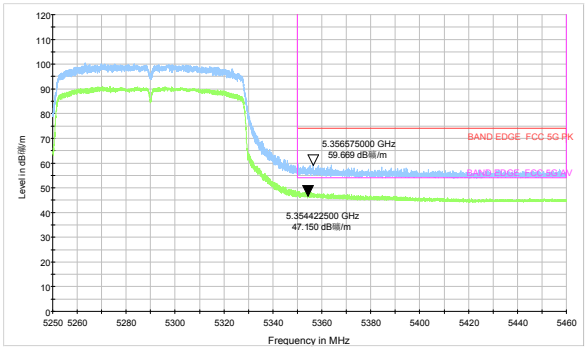
802.11ac VHT40-Channel 159: Peak+ Average



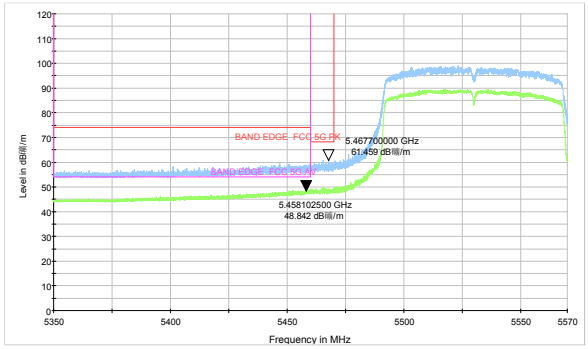
802.11ac VHT80 –Channel 42: Peak+ Average



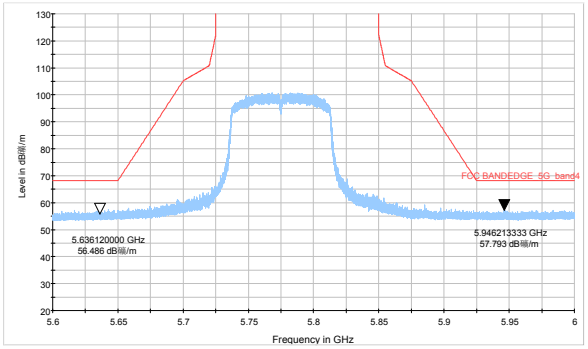
802.11ac VHT80- Channel 58: Average



802.11ac VHT80 –Channel 106: Peak+ Average



802.11ac VHT80 –Channel 155: Peak+ Average



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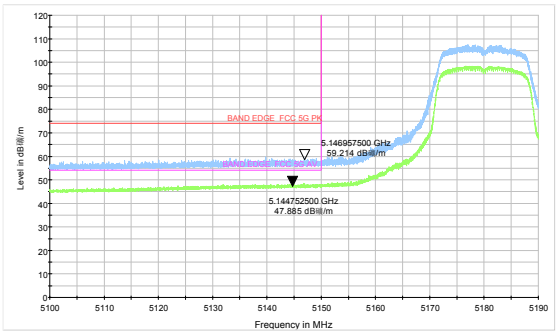
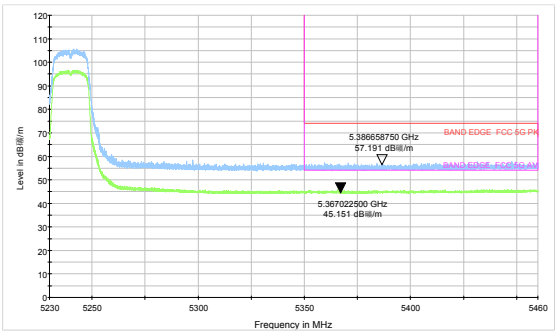
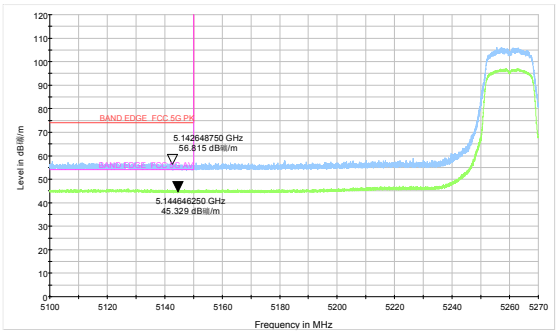
802.11a-Channel 36: Peak+ Average



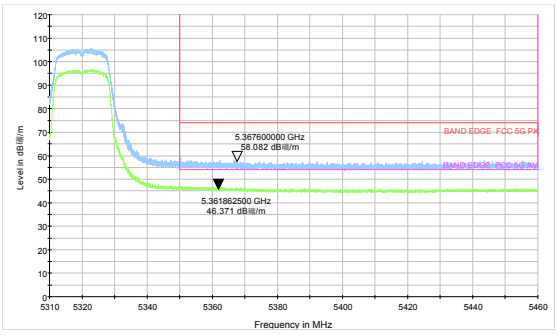
802.11a-Channel 48: Peak+ Average



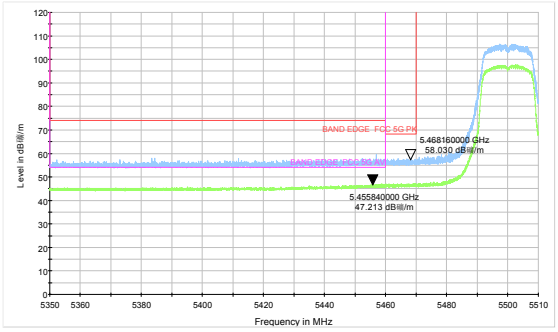
802.11a-Channel 52: Peak+ Average



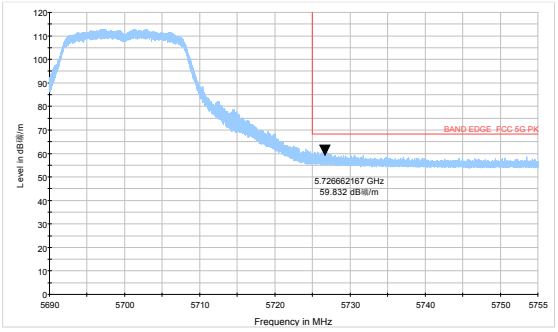
802.11a-Channel 64: Peak+ Average



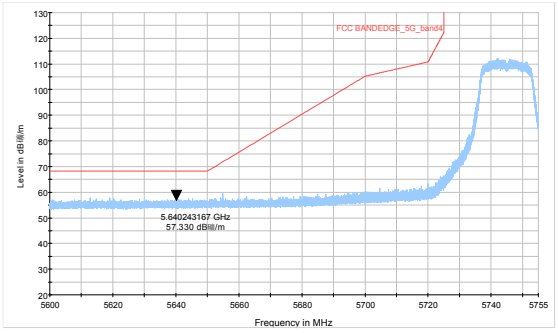
802.11a-Channel 100: Peak+ Average



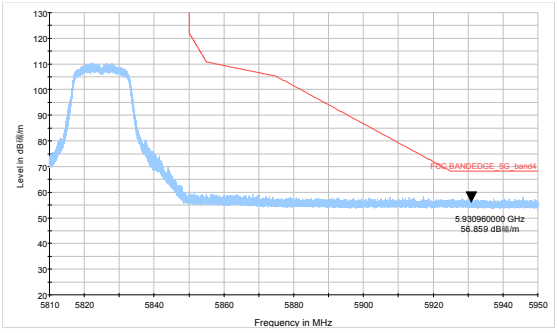
802.11a-Channel 140: Peak+ Average



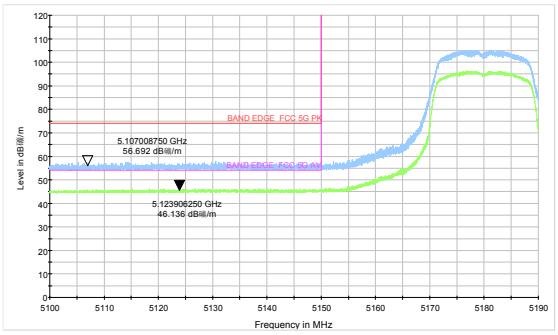
802.11a-Channel 149: Peak+ Average



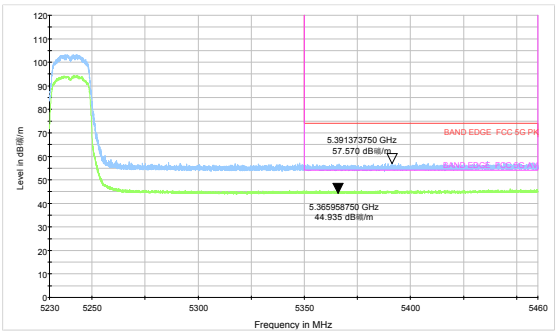
802.11a-Channel 165: Peak+ Average



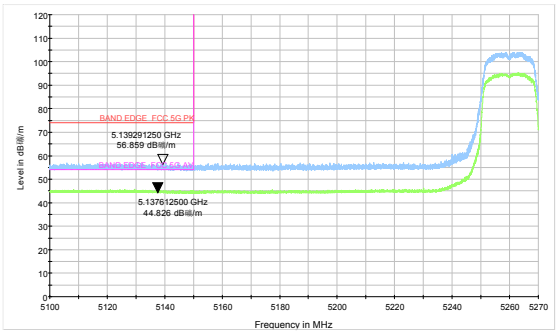
802.11n HT20-Channel 36: Peak+ Average



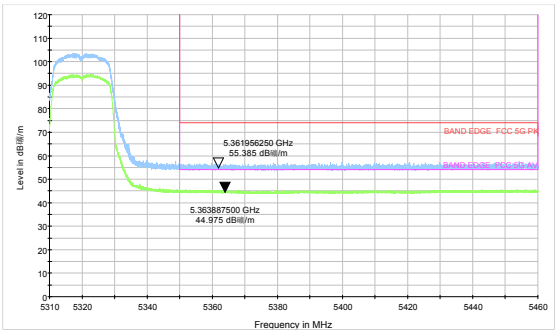
802.11n HT20-Channel 48: Peak+ Average



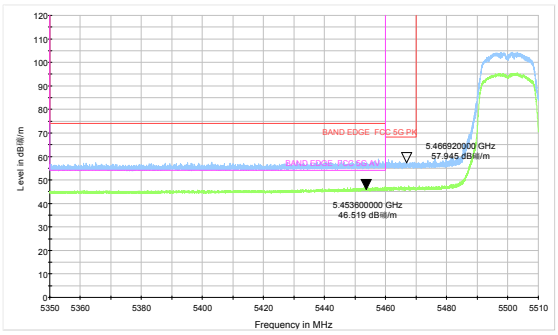
802.11n HT20-Channel 52: Peak+ Average



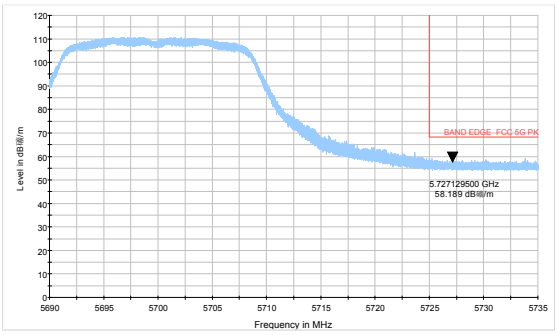
802.11n HT20-Channel 64: Peak+ Average



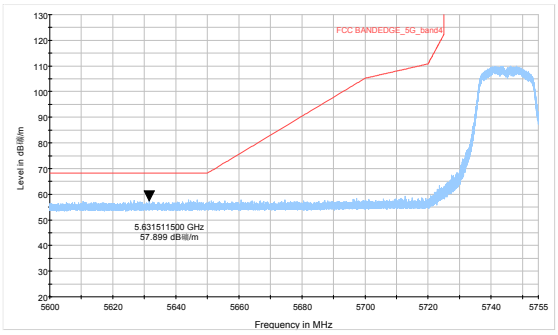
802.11n HT20-Channel 100: Peak+ Average



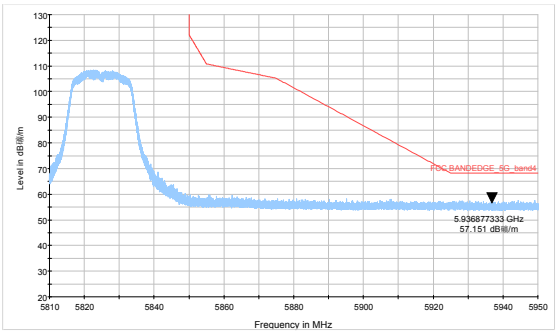
802.11n HT20-Channel 140: Peak+ Average



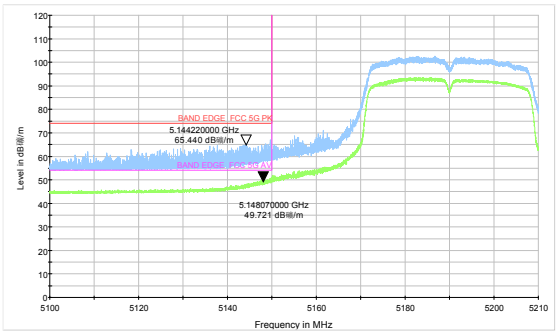
802.11n HT20-Channel 149: Peak+ Average



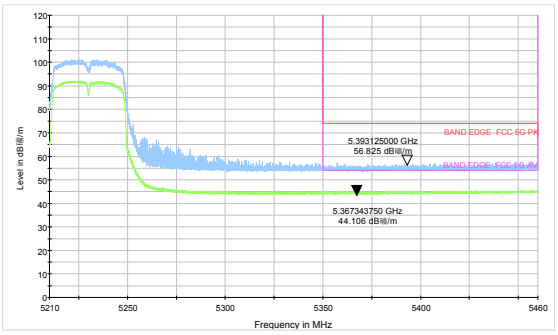
802.11n HT20-Channel 165: Peak+ Average



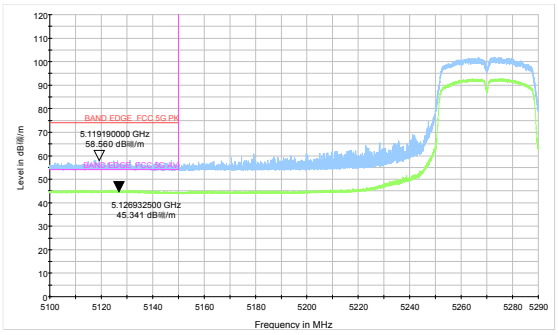
802.11n HT40-Channel 38: Peak+ Average



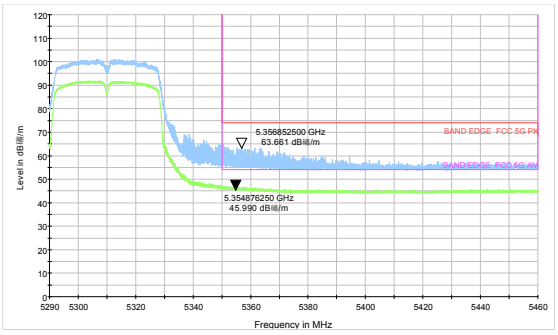
802.11n HT40-Channel 46: Peak+ Average



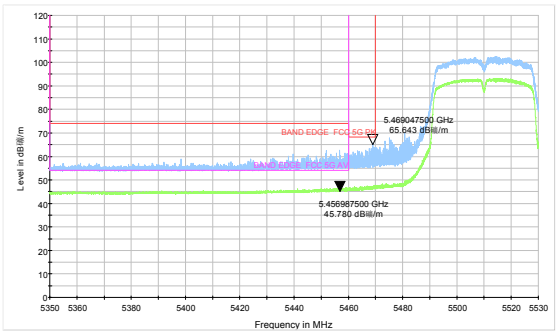
802.11n HT40-Channel 54: Peak+ Average



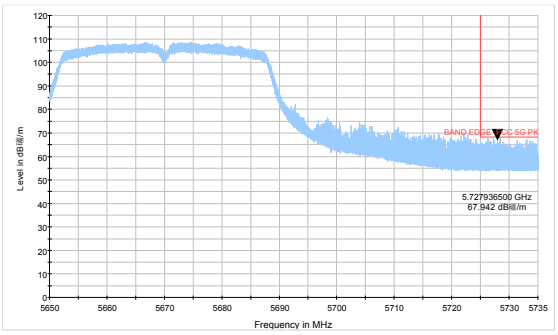
802.11n HT40-Channel 62: Peak+ Average



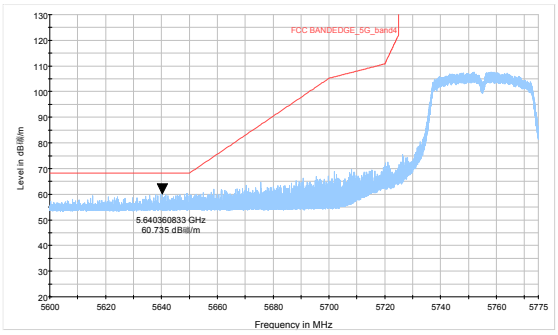
802.11n HT40-Channel 102: Peak+ Average



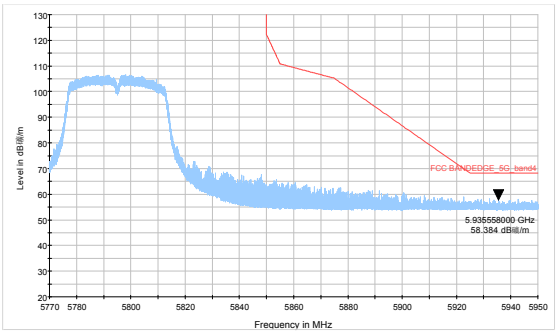
802.11n HT40-Channel 134: Peak+ Average



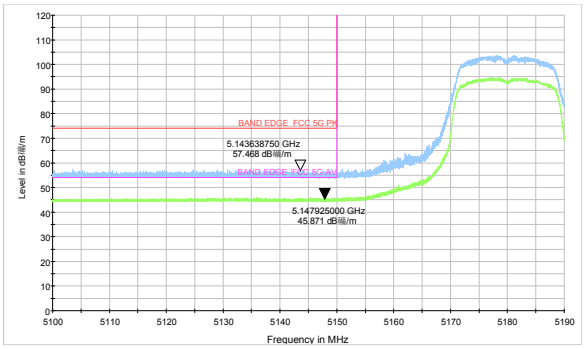
802.11n HT40-Channel 151: Peak+ Average



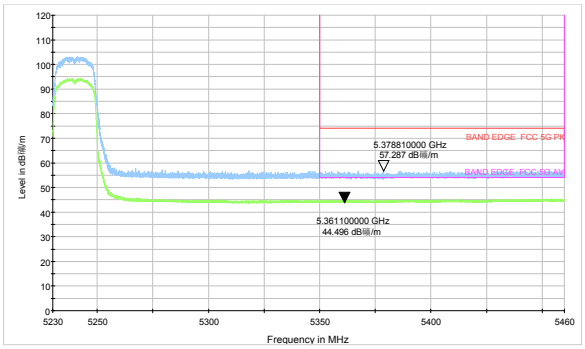
802.11n HT40-Channel 159: Peak+ Average



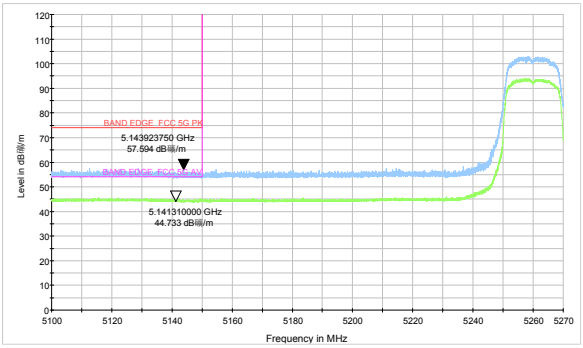
802.11ac VHT20 -Channel 36: Peak+ Average



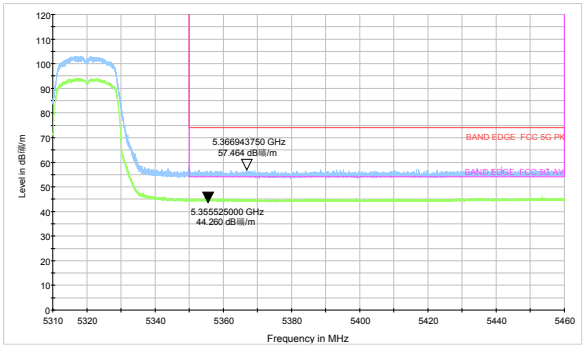
802.11ac VHT20 -Channel 48: Peak+ Average



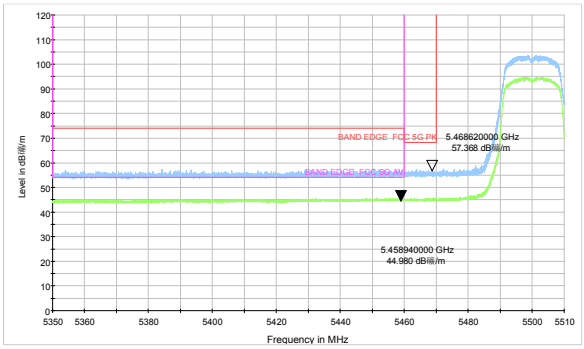
802.11ac VHT20 -Channel 52: Peak+ Average



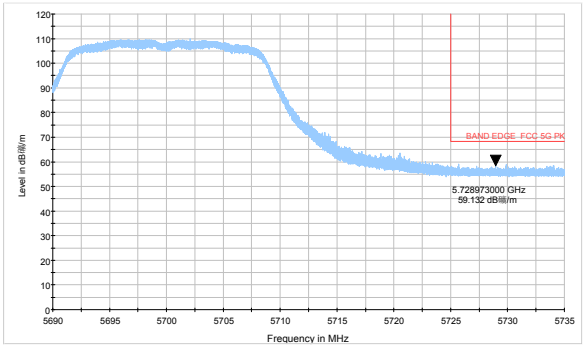
802.11ac VHT20 -Channel 64: Peak+ Average



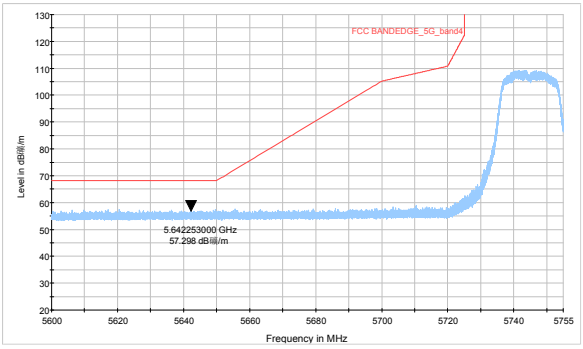
802.11ac VHT20 -Channel 100: Peak+ Average



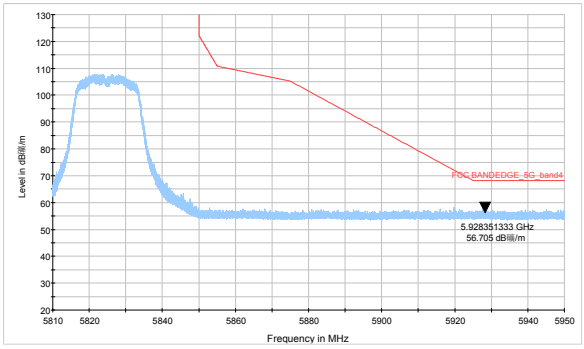
802.11ac VHT20 -Channel 140: Peak+ Average



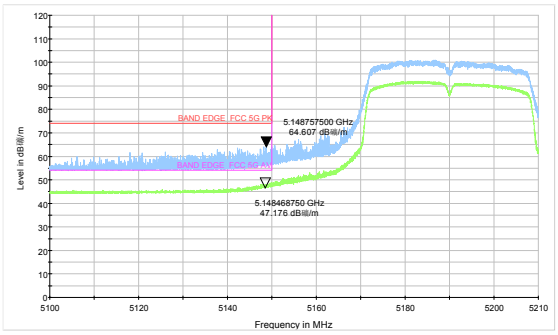
802.11ac VHT20 -Channel 149: Peak+ Average



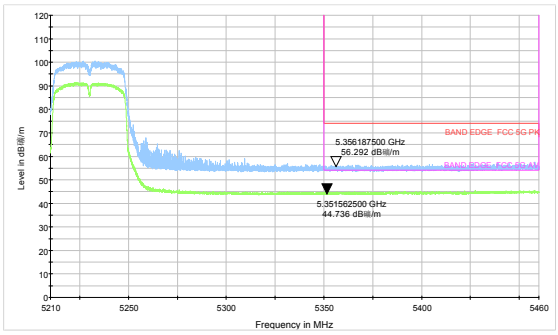
802.11ac VHT20 -Channel 165: Peak+ Average



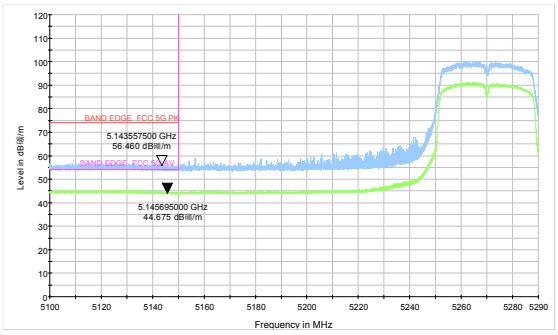
802.11ac VHT40-Channel 38: Peak+ Average



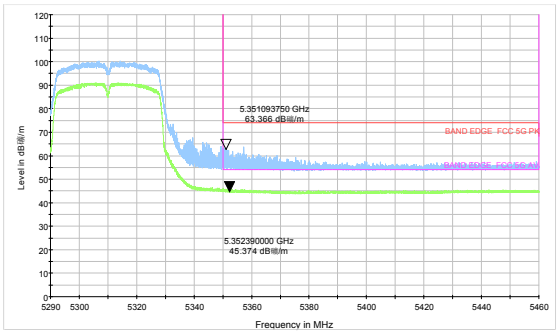
802.11ac VHT40-Channel 46: Peak+ Average



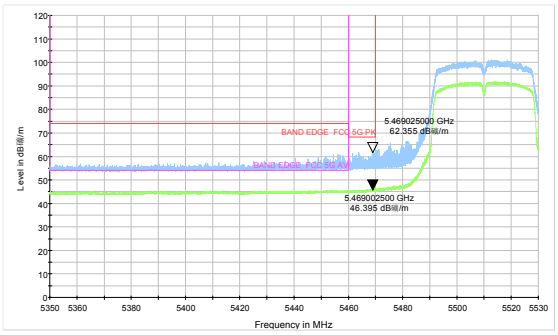
802.11ac VHT40-Channel 54: Peak+ Average



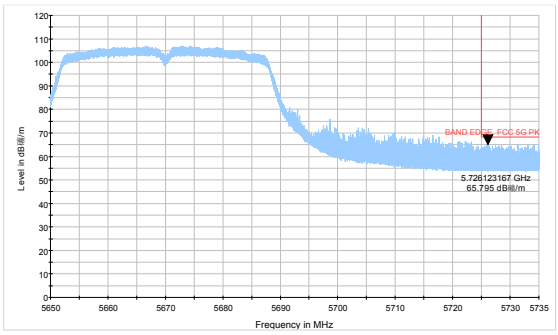
802.11ac VHT40-Channel 62: Peak+ Average



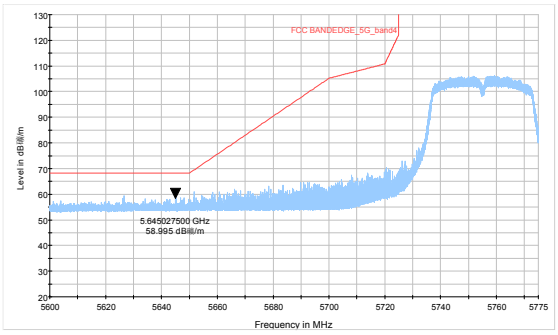
802.11ac VHT40-Channel 102: Peak+ Average



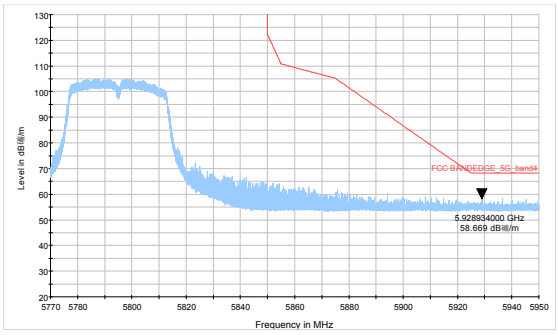
802.11ac VHT40-Channel 134: Peak+ Average



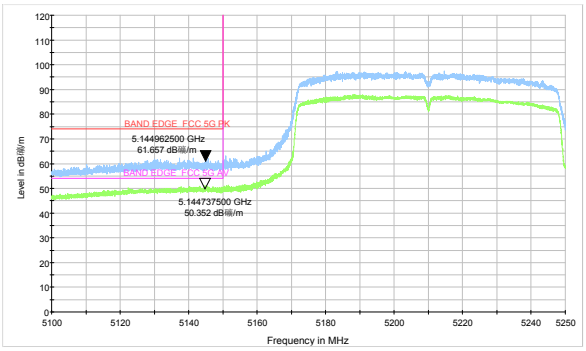
802.11ac VHT40-Channel 151: Peak+ Average



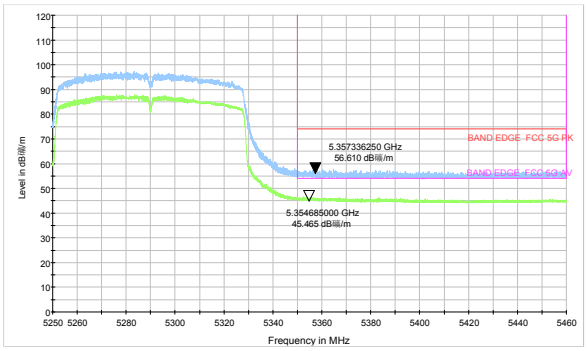
802.11ac VHT40-Channel 159: Peak+ Average



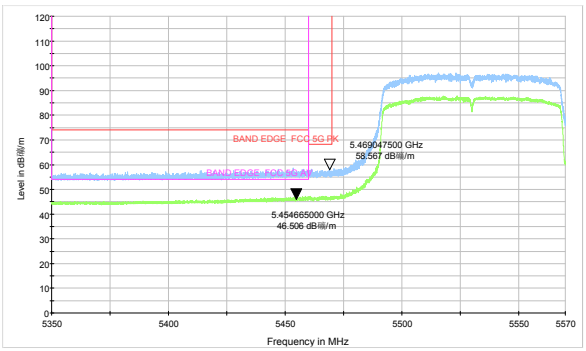
802.11ac VHT80 –Channel 42: Peak+ Average



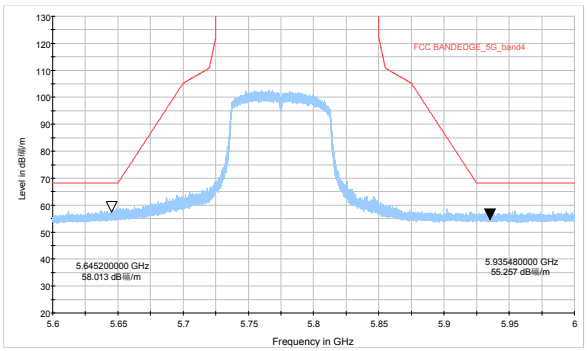
802.11ac VHT80- Channel 58: Average



802.11ac VHT80 –Channel 106: Peak+ Average



802.11ac VHT80 –Channel 155: Peak+ Average



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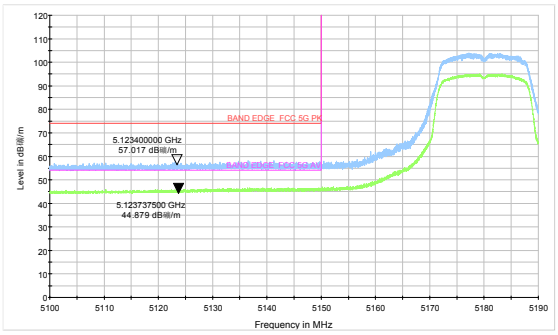
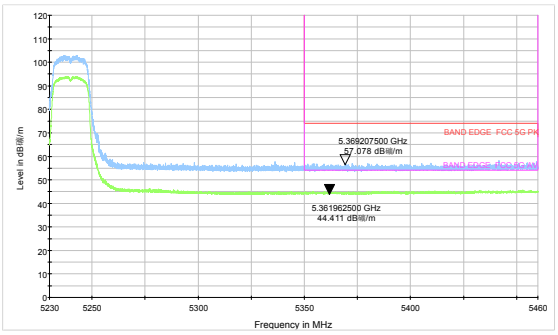
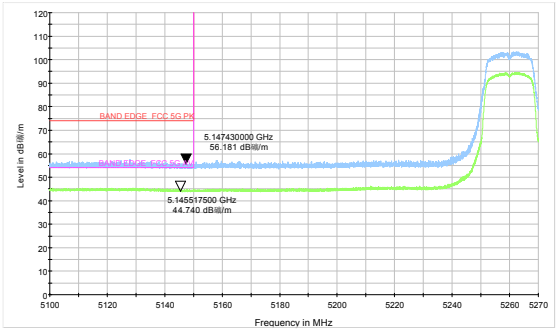
802.11a-Channel 36: Peak+ Average



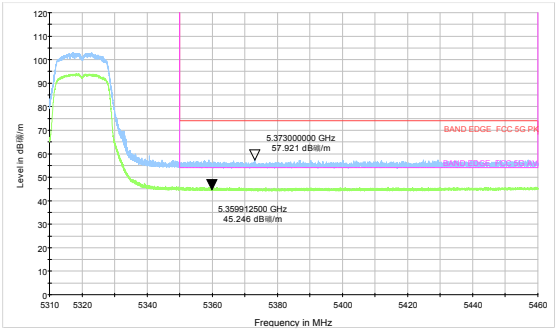
802.11a-Channel 48: Peak+ Average



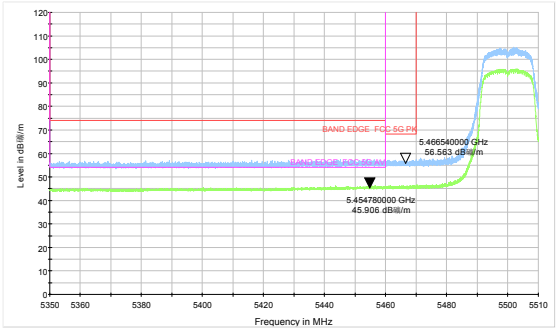
802.11a-Channel 52: Peak+ Average



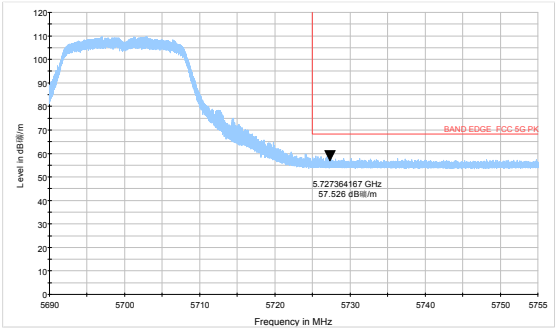
802.11a-Channel 64: Peak+ Average



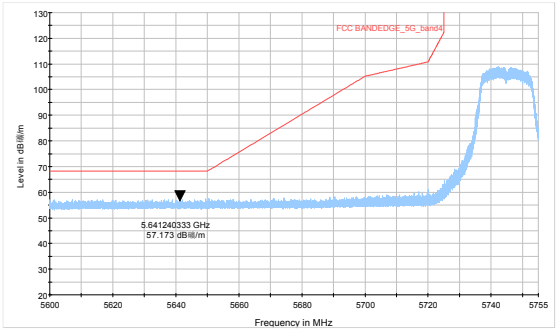
802.11a-Channel 100: Peak+ Average



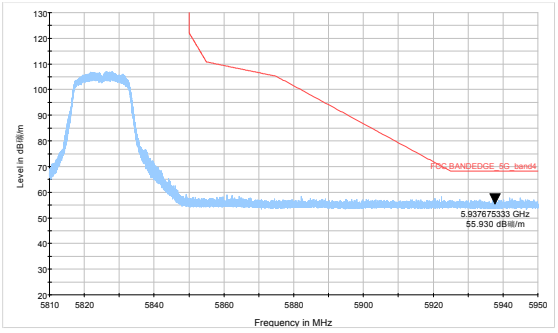
802.11a-Channel 140: Peak+ Average



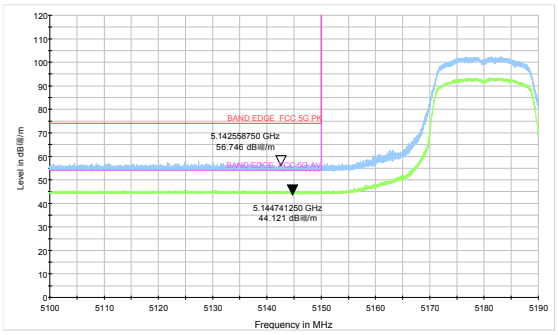
802.11a-Channel 149: Peak+ Average



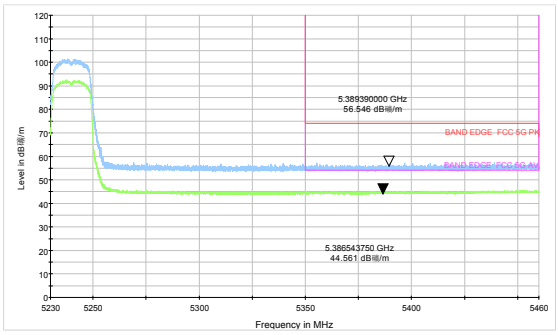
802.11a-Channel 165: Peak+ Average



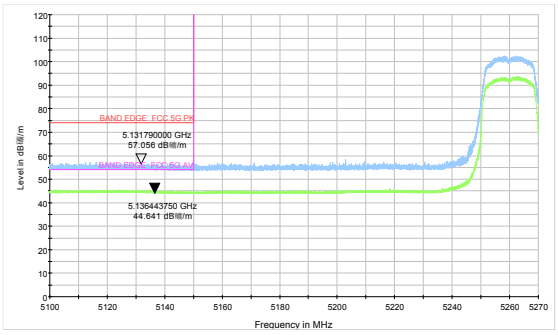
802.11n HT20-Channel 36: Peak+ Average



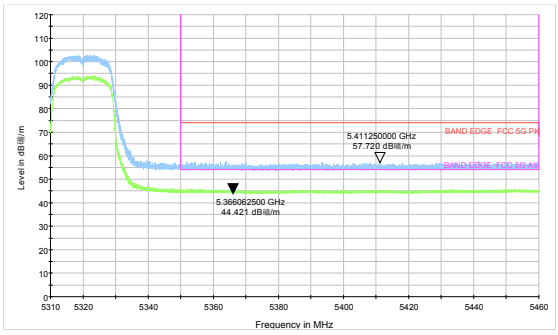
802.11n HT20-Channel 48: Peak+ Average



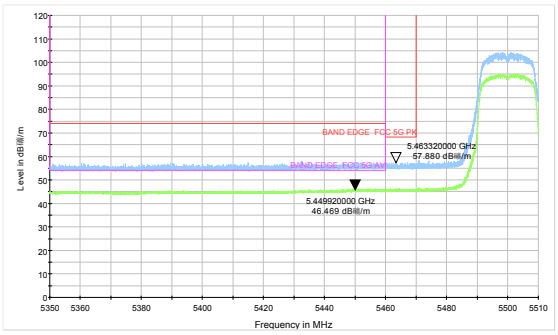
802.11n HT20-Channel 52: Peak+ Average



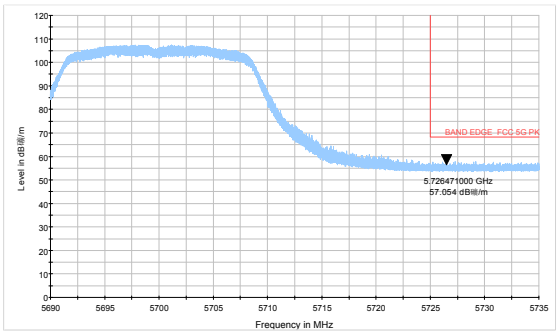
802.11n HT20-Channel 64: Peak+ Average



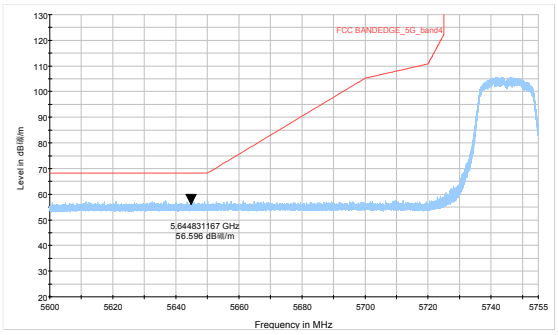
802.11n HT20-Channel 100: Peak+ Average



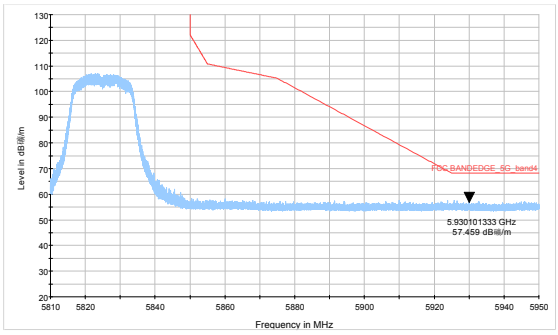
802.11n HT20-Channel 140: Peak+ Average



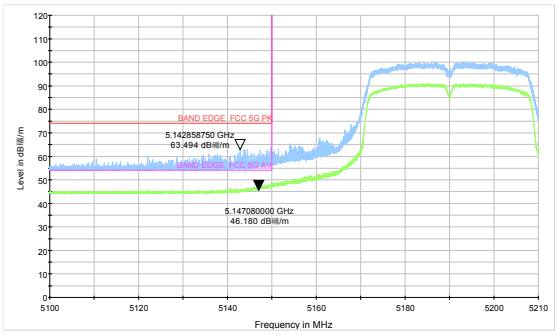
802.11n HT20-Channel 149: Peak+ Average



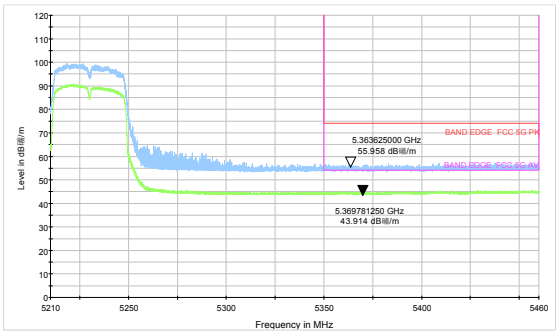
802.11n HT20-Channel 165: Peak+ Average



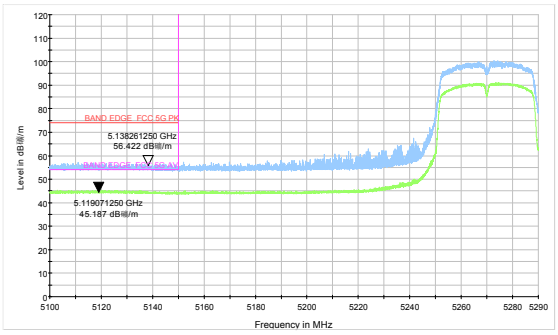
802.11n HT40-Channel 38: Peak+ Average



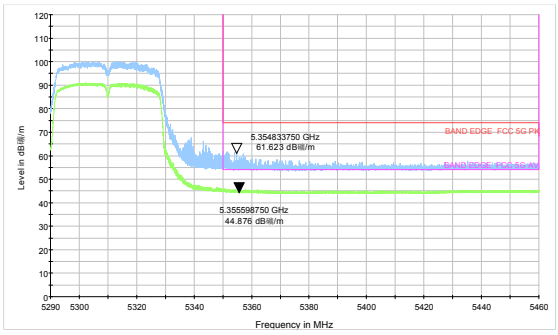
802.11n HT40-Channel 46: Peak+ Average



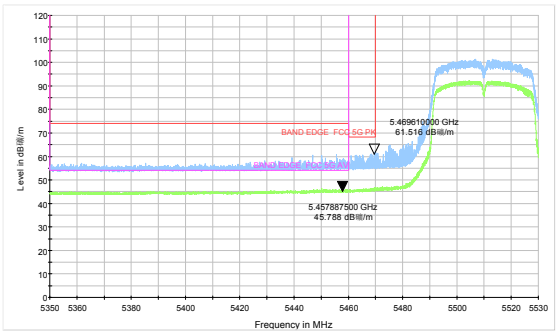
802.11n HT40-Channel 54: Peak+ Average



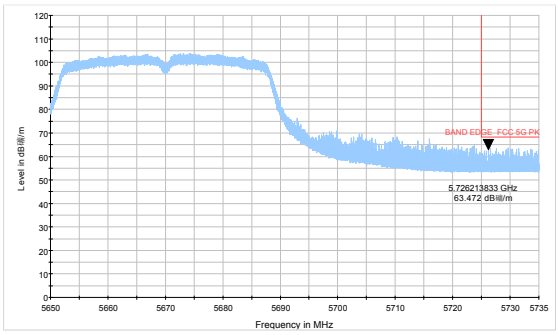
802.11n HT40-Channel 62: Peak+ Average



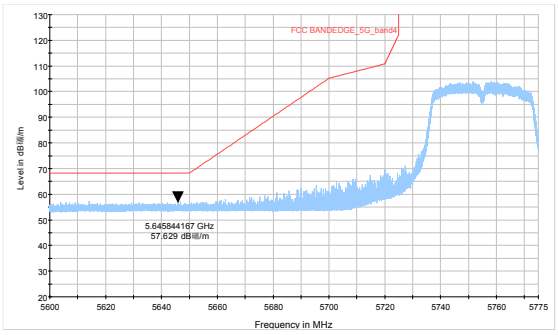
802.11n HT40-Channel 102: Peak+ Average



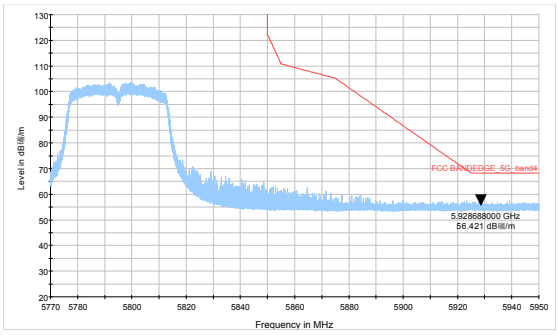
802.11n HT40-Channel 134: Peak+ Average



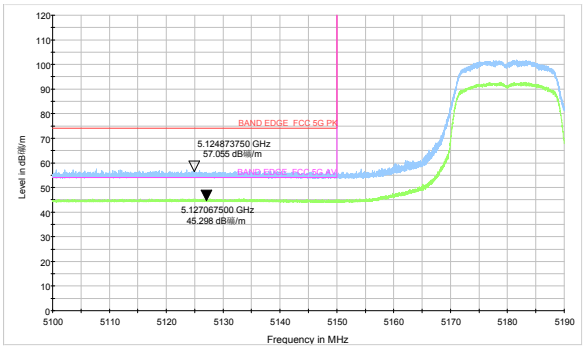
802.11n HT40-Channel 151: Peak+ Average



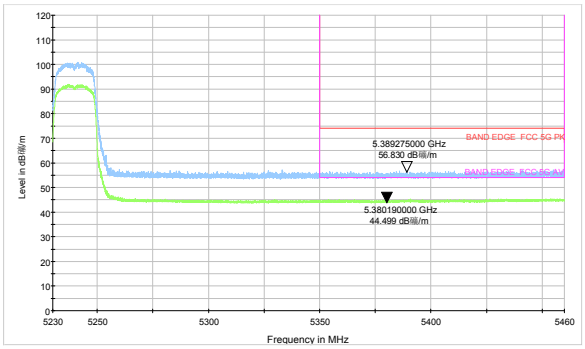
802.11n HT40-Channel 159: Peak+ Average



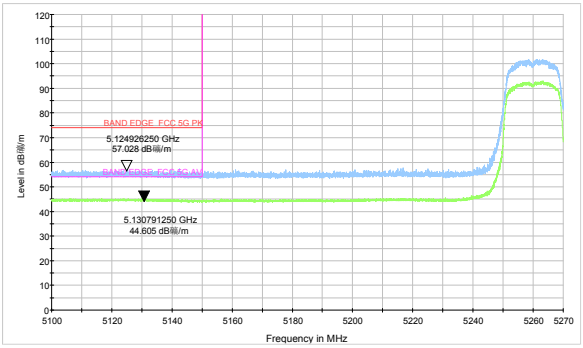
802.11ac VHT20 -Channel 36: Peak+ Average



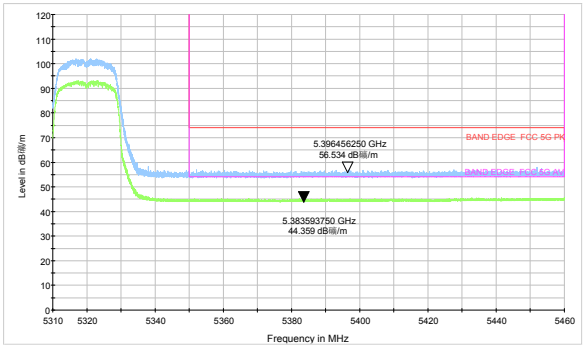
802.11ac VHT20 -Channel 48: Peak+ Average



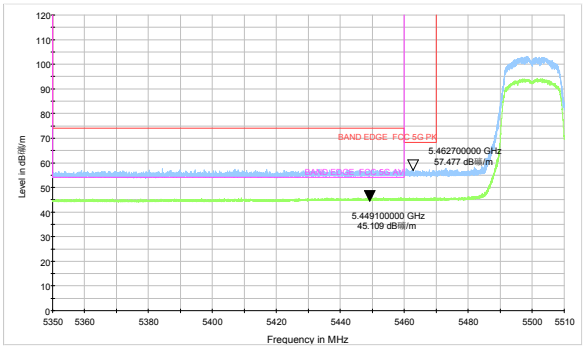
802.11ac VHT20 -Channel 52: Peak+ Average



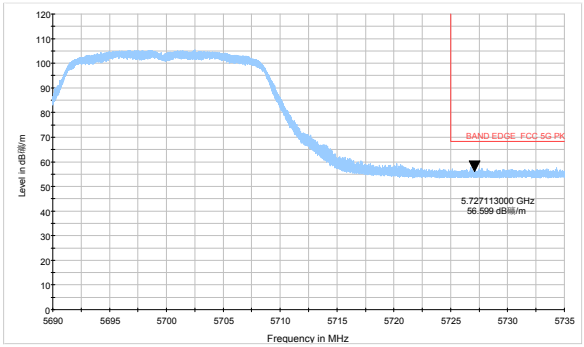
802.11ac VHT20 -Channel 64: Peak+ Average



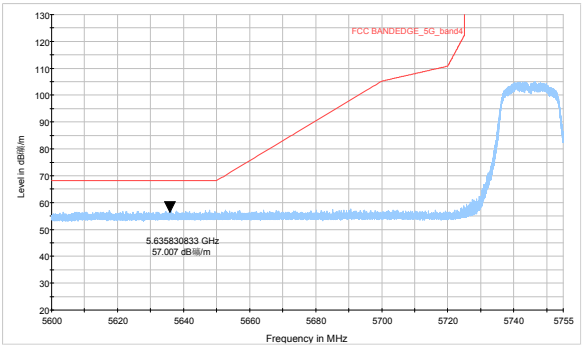
802.11ac VHT20 -Channel 100: Peak+ Average



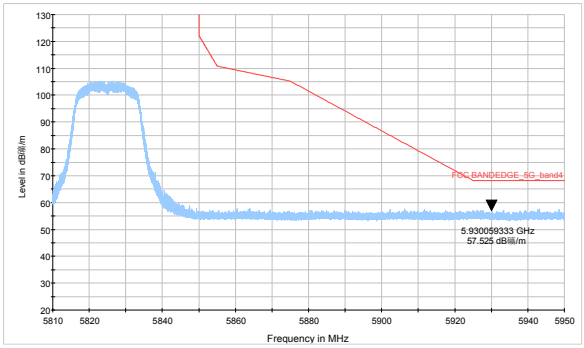
802.11ac VHT20 -Channel 140: Peak+ Average



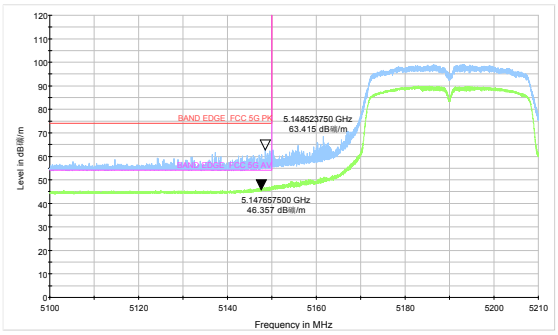
802.11ac VHT20 -Channel 149: Peak+ Average



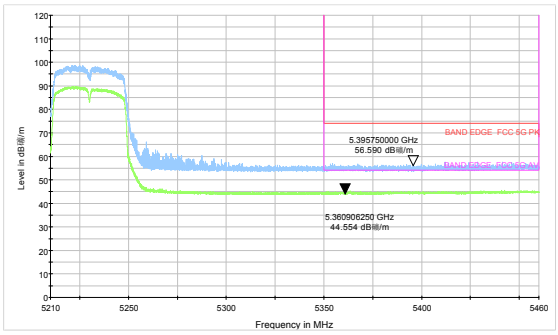
802.11ac VHT20 -Channel 165: Peak+ Average



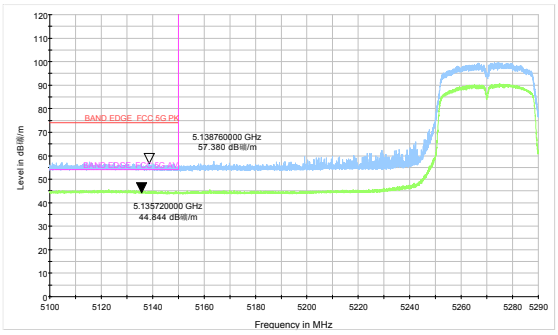
802.11ac VHT40-Channel 38: Peak+ Average



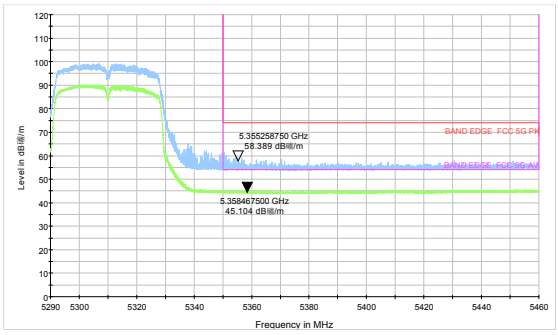
802.11ac VHT40-Channel 46: Peak+ Average



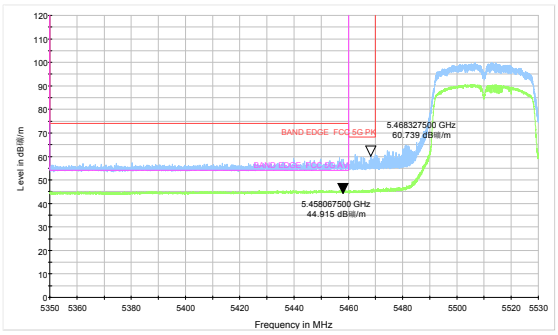
802.11ac VHT40-Channel 54: Peak+ Average



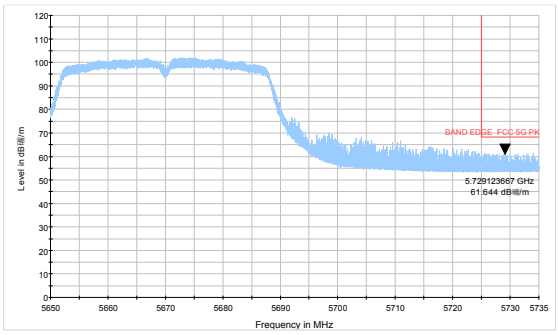
802.11ac VHT40-Channel 62: Peak+ Average



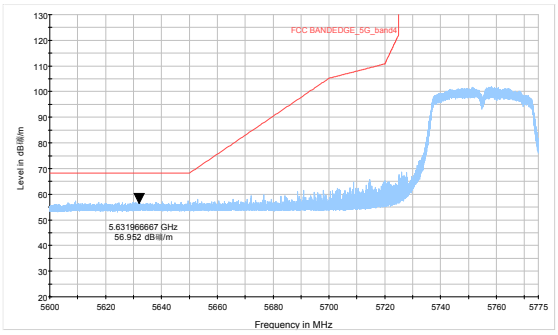
802.11ac VHT40-Channel 102: Peak+ Average



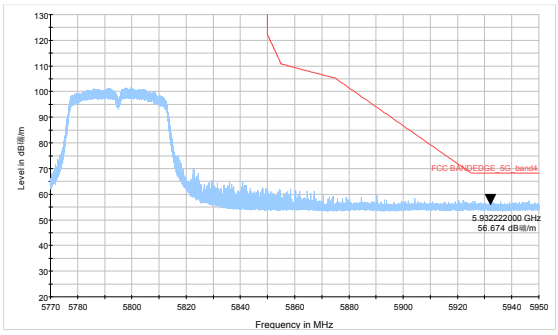
802.11ac VHT40-Channel 134: Peak+ Average



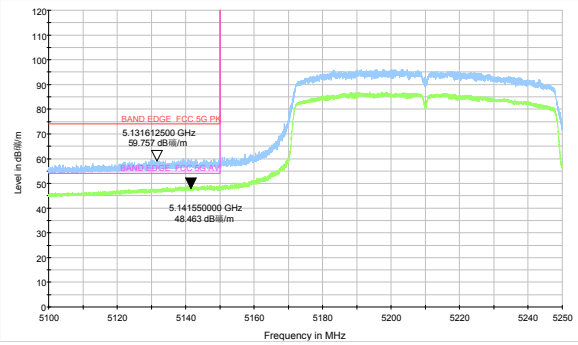
802.11ac VHT40-Channel 151: Peak+ Average



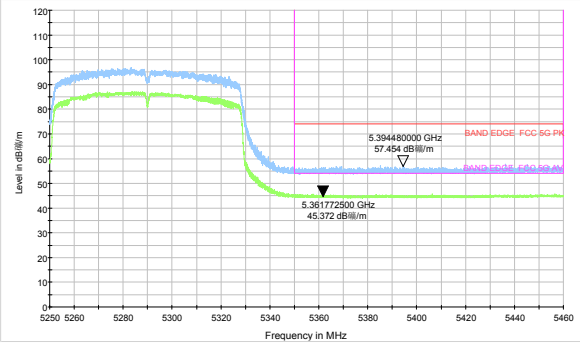
802.11ac VHT40-Channel 159: Peak+ Average



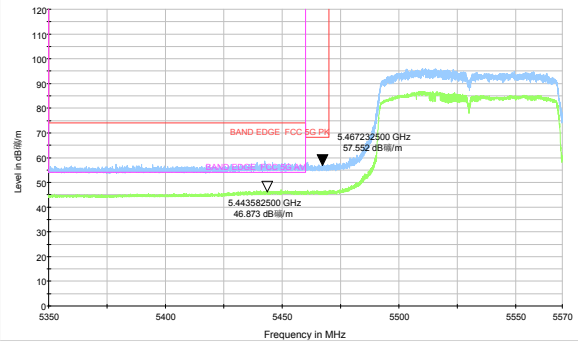
802.11ac VHT80 –Channel 42: Peak+ Average



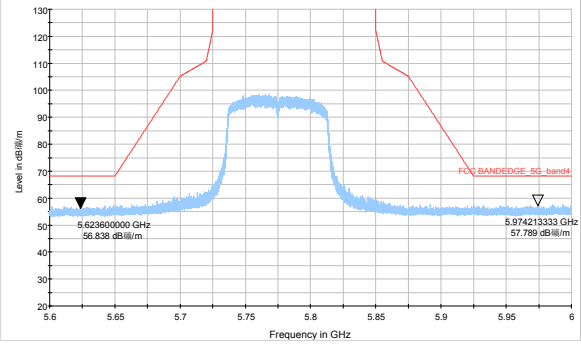
802.11ac VHT80- Channel 58: Average



802.11ac VHT80 –Channel 106: Peak+ Average



802.11ac VHT80 –Channel 155: Peak+ Average



Result of RE

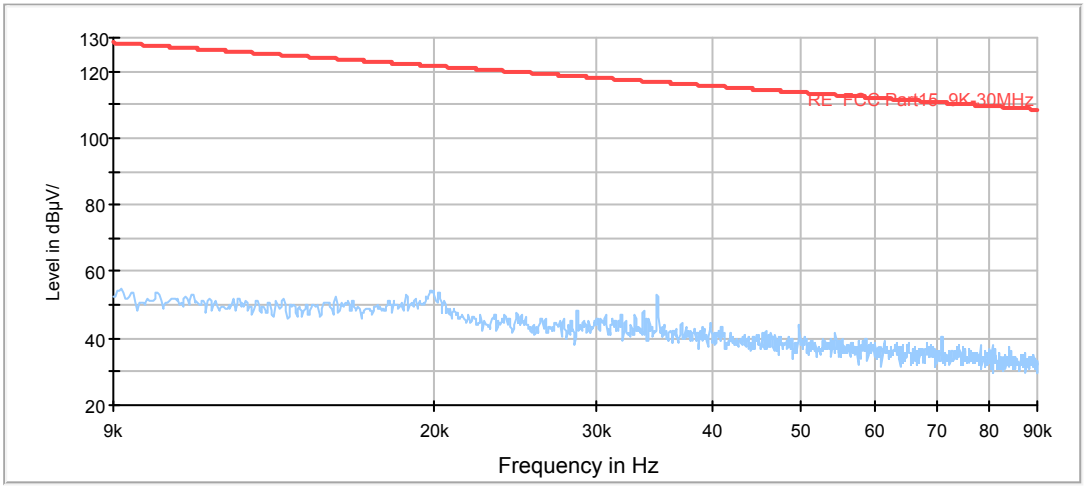
Test result

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, 802.11n(HT20), Channel 149, 802.11ac(HT80), Channel 40,802.11n (HT20) are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

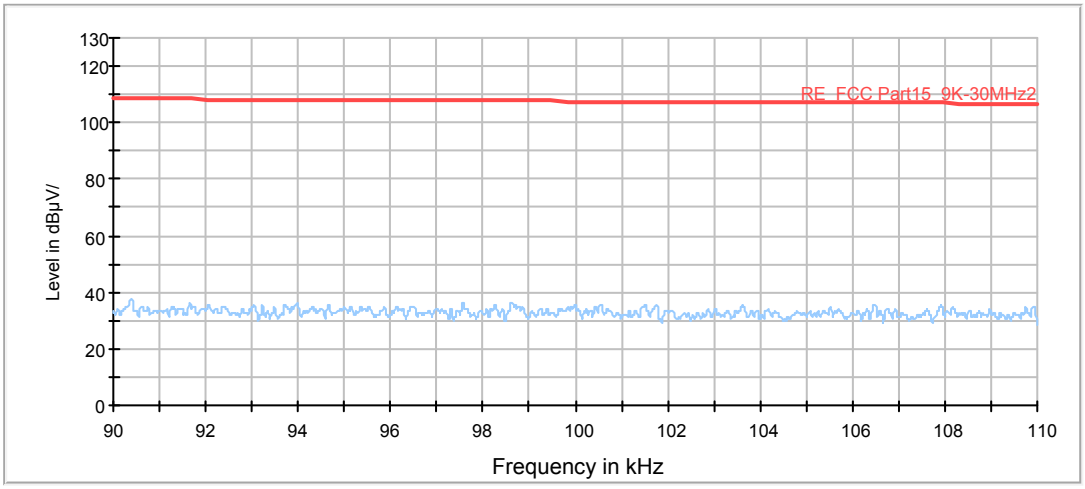
Continuous TX mode:

FCC RE 9K-90KHz AV



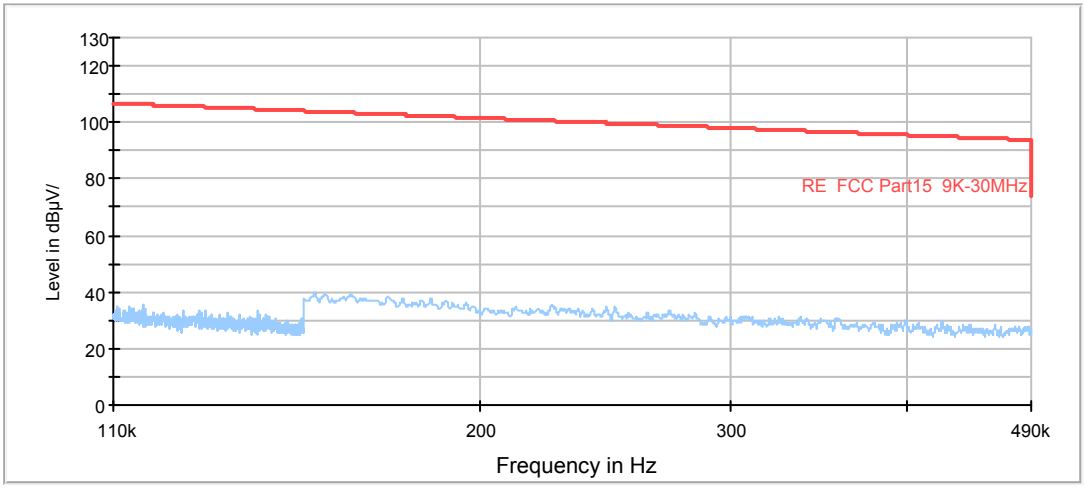
Radiates Emission from 9KHz to 90KHz

FCC RE 90K-110KHz QP



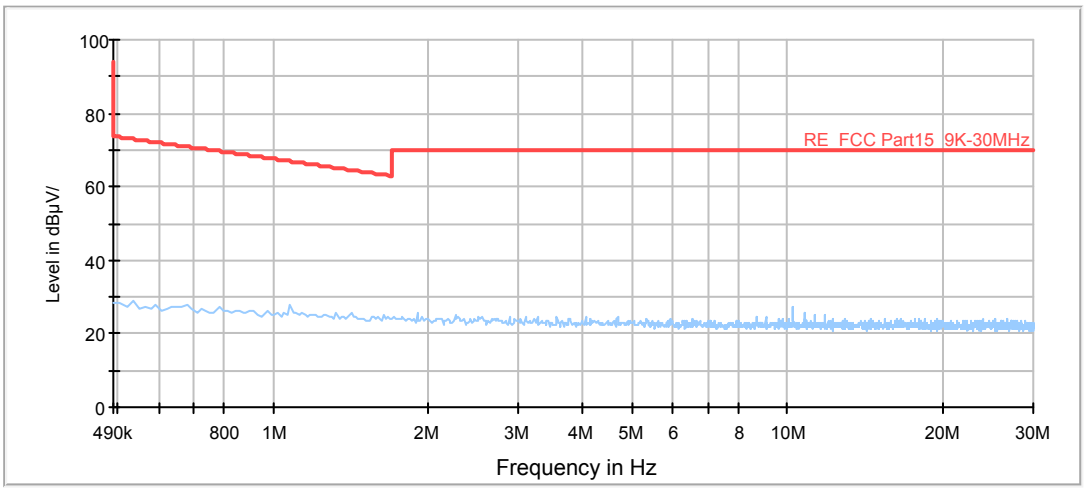
Radiates Emission from 90KHz to 110KHz

FCC RE 110K-490KHz AV



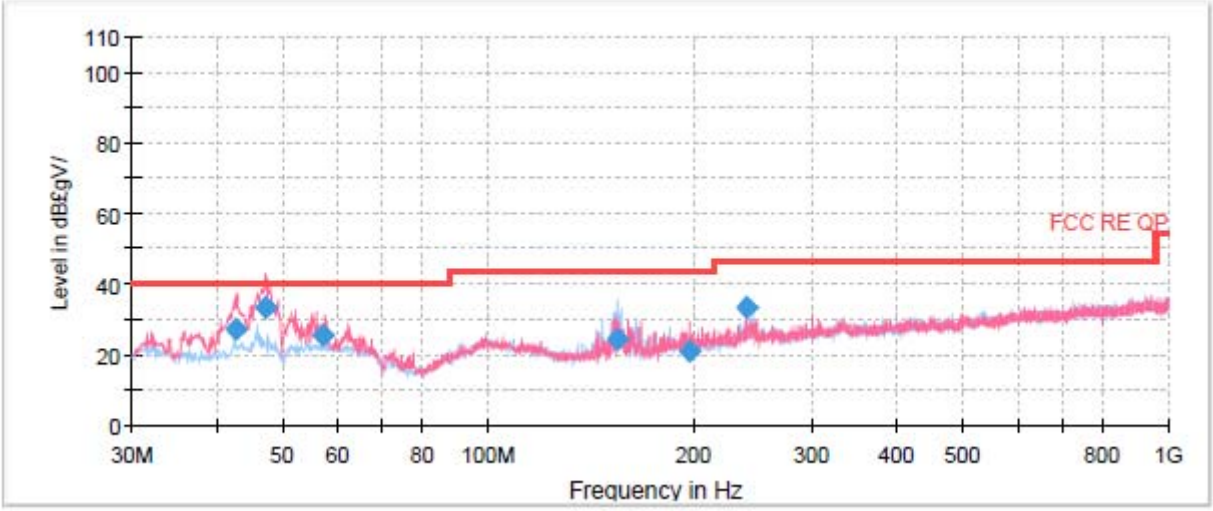
Radiates Emission from 110KHz to 490KHz

FCC RE 490K-30MHz QP



Radiates Emission from 490KHz to 30MHz

SISO Antenna 2



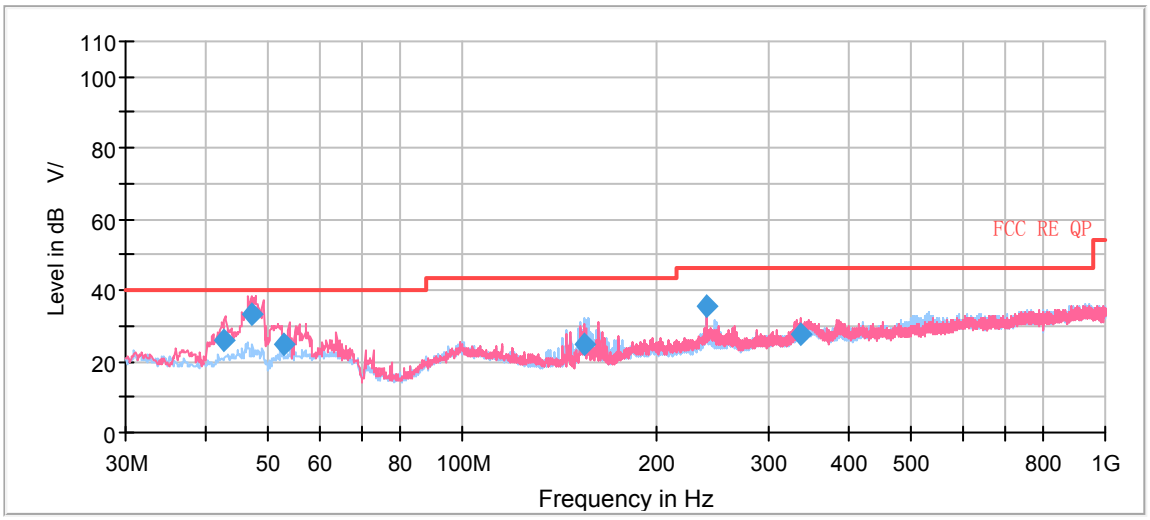
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
42.648750	27.07	100.0	V	237.0	-5.2	12.93	40.00
47.295000	33.22	100.0	V	18.0	-5.0	6.78	40.00
57.147500	25.37	100.0	V	43.0	-4.8	14.63	40.00
155.092000	24.07	185.0	H	283.0	-9.5	19.43	43.50
197.488750	20.95	100.0	V	80.0	-5.3	22.55	43.50
240.005000	33.43	125.0	H	258.0	-4.6	12.57	46.00

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

2. Margin = Limit – Quasi-Peak

SISO Antenna 3



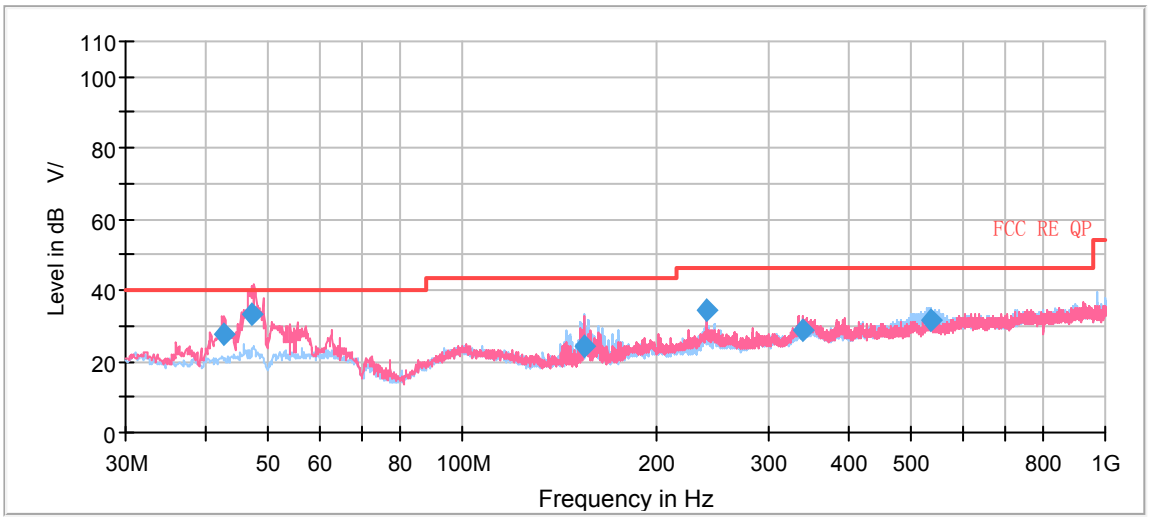
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
42.691250	25.95	175.0	V	25.0	-5.3	14.05	40.00
47.175000	33.22	210.0	V	207.0	-5.0	6.78	40.00
52.686250	25.01	100.0	V	0.0	-4.8	14.99	40.00
155.172000	24.68	184.0	H	268.0	-9.5	18.82	43.50
240.005000	35.55	109.0	H	288.0	-4.6	10.45	46.00
336.237000	27.80	100.0	V	208.0	-2.5	18.20	46.00

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

2. Margin = Limit – Quasi-Peak

SISO Antenna 4



Radiates Emission from 30MHz to 1GHz

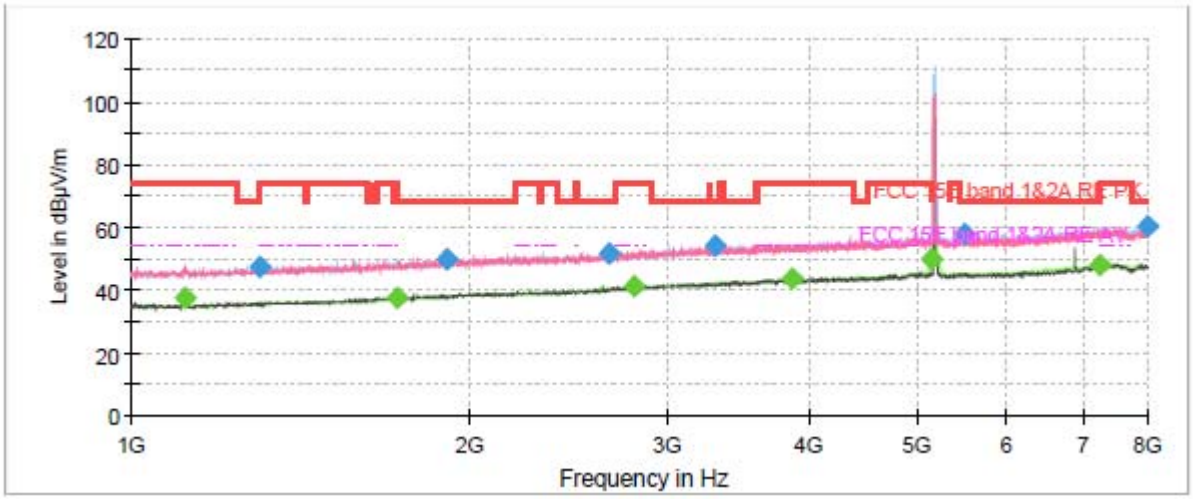
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
42.727500	27.66	100.0	V	357.0	-5.3	12.34	40.00
47.261250	33.26	100.0	V	351.0	-5.0	6.74	40.00
154.971250	24.42	184.0	H	260.0	-9.5	19.08	43.50
240.005000	34.43	125.0	H	80.0	-4.6	11.57	46.00
338.694250	28.49	100.0	V	219.0	-2.3	17.51	46.00
536.388250	31.63	109.0	H	102.0	1.2	14.37	46.00

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

2. Margin = Limit – Quasi-Peak

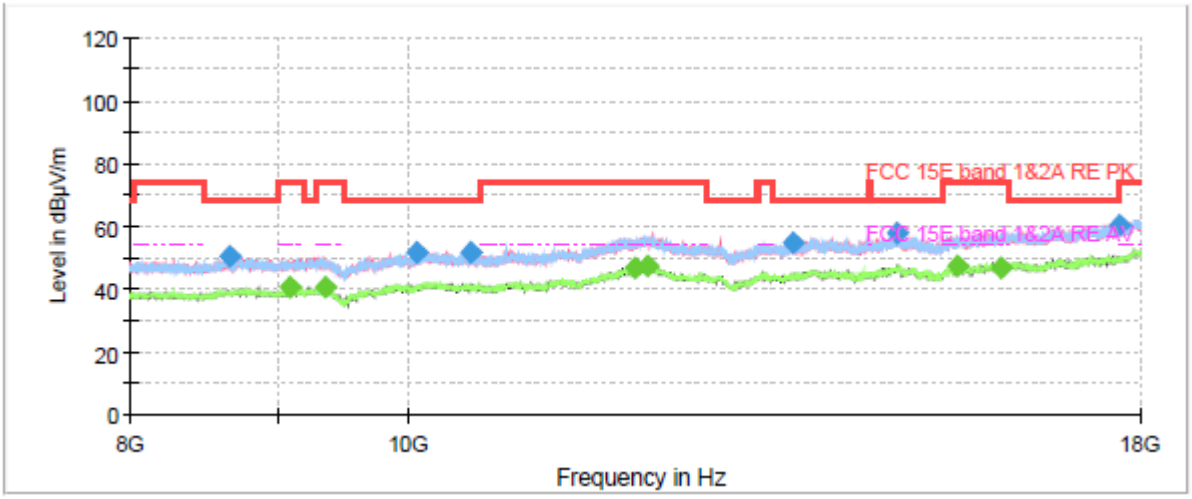
SISO Antenna 2

802.11a CH36



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

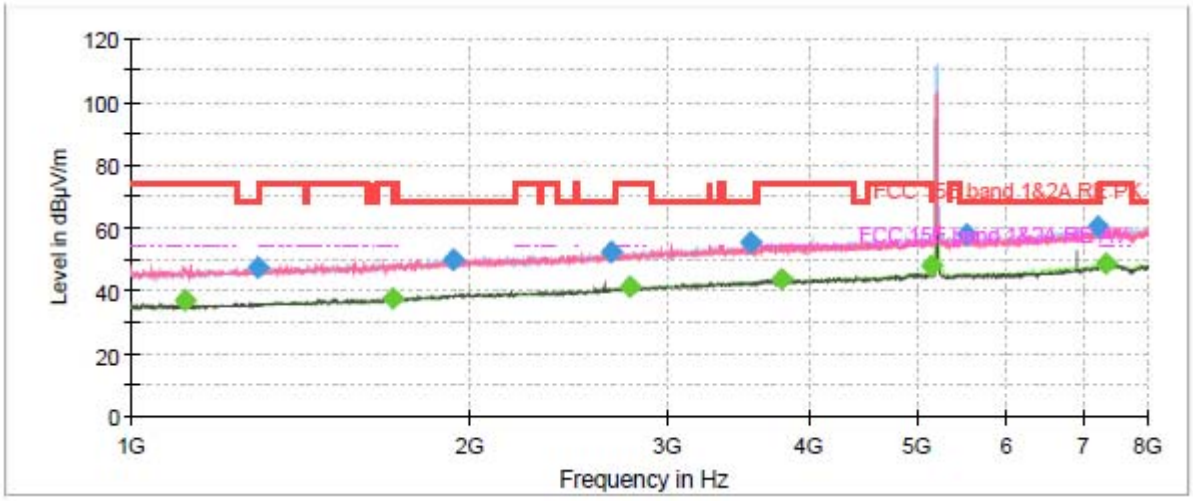


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1116.375000	---	37.31	54.00	16.69	200.0	V	160.0	-10.6
1299.250000	47.26	---	68.20	20.94	100.0	V	104.0	-9.6
1721.000000	---	37.50	54.00	16.50	200.0	H	183.0	-7.0
1904.750000	50.03	---	68.20	18.17	100.0	H	85.0	-6.1
2659.000000	51.96	---	68.20	16.24	200.0	H	46.0	-3.9
2804.250000	---	40.97	54.00	13.03	100.0	H	249.0	-3.4
3308.250000	54.09	---	68.20	14.11	200.0	H	52.0	-1.8
3872.625000	---	43.64	54.00	10.36	100.0	H	317.0	0.0
5148.375000	---	50.02	54.00	3.98	100.0	H	57.0	3.8
5494.875000	57.73	---	68.20	10.47	100.0	H	273.0	4.6
7260.625000	---	48.27	54.00	5.73	200.0	H	30.0	8.4
7989.500000	60.26	---	68.20	7.94	200.0	H	210.0	7.8

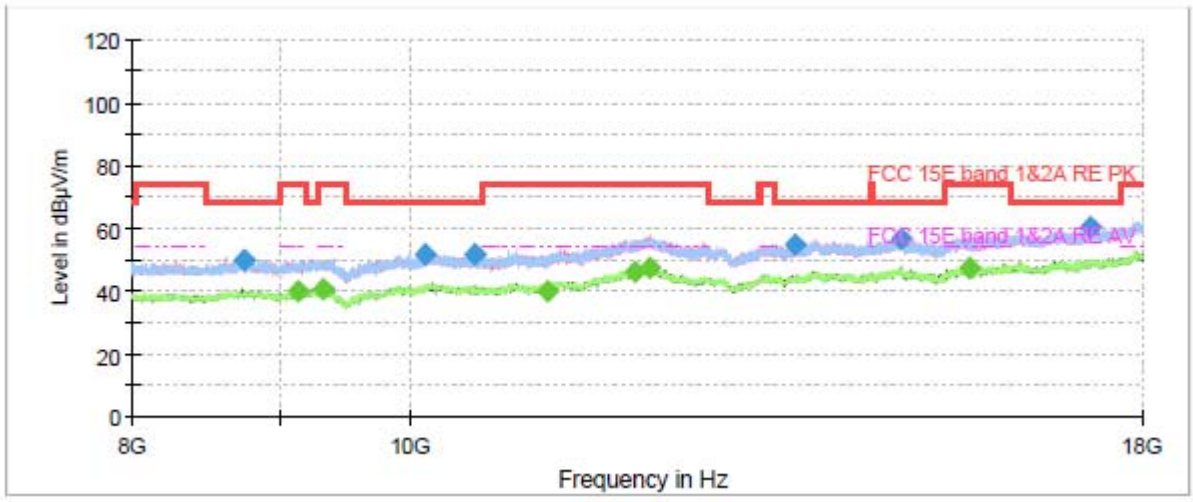
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH40



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

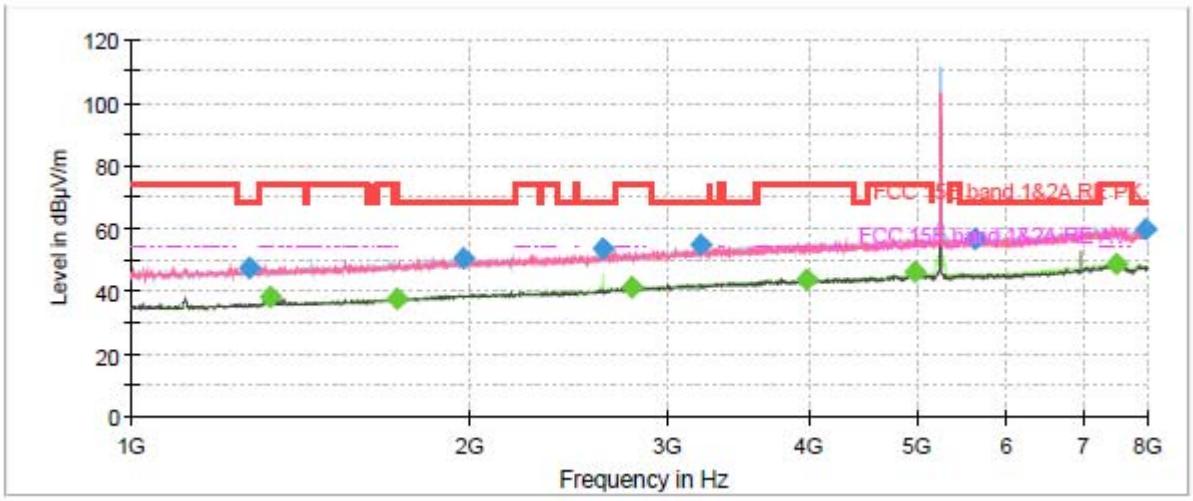


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.250000	---	37.11	54.00	16.89	100.0	V	165.0	-10.6
1296.625000	47.24	---	68.20	20.96	100.0	V	217.0	-9.6
1708.750000	---	37.44	54.00	16.56	100.0	V	0.0	-7.1
1937.125000	49.93	---	68.20	18.27	200.0	V	209.0	-5.9
2667.750000	52.14	---	68.20	16.06	100.0	H	221.0	-3.8
2779.750000	---	40.94	54.00	13.06	200.0	V	281.0	-3.4
3549.750000	55.08	---	68.20	13.12	200.0	H	159.0	-1.2
3779.875000	---	43.60	54.00	10.40	100.0	H	347.0	-0.1
5148.375000	---	48.22	54.00	5.78	100.0	H	226.0	3.8
5528.125000	58.07	---	68.20	10.13	200.0	V	214.0	4.6
7221.250000	60.15	---	68.20	8.05	100.0	H	35.0	8.3
7349.000000	---	48.60	54.00	5.40	200.0	H	225.0	8.2

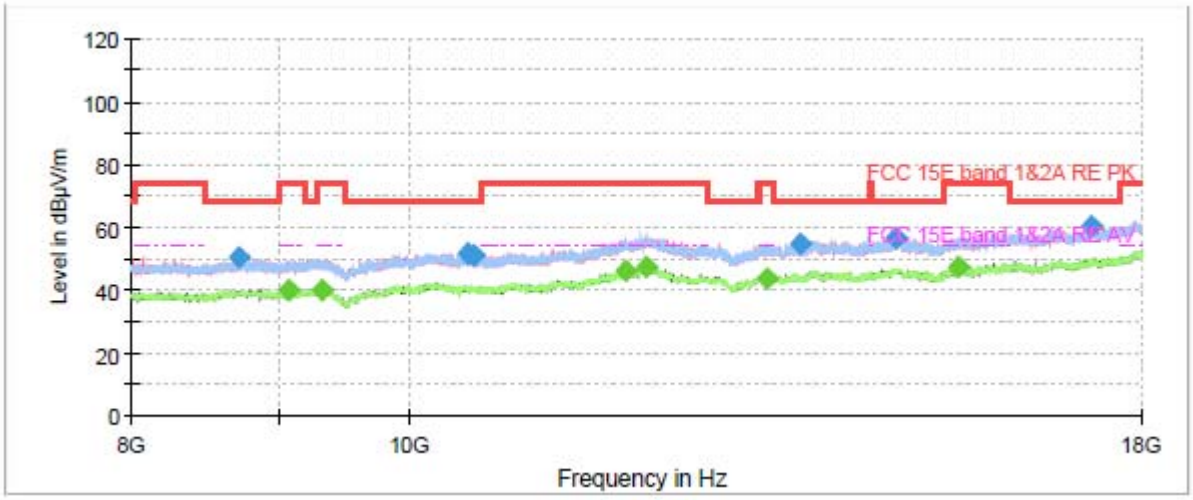
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH48



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

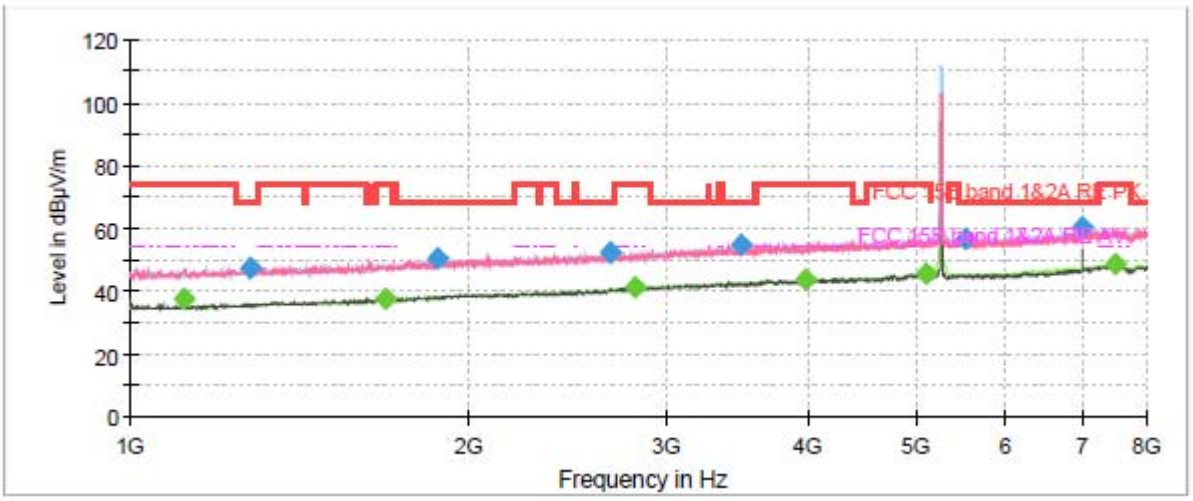


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1275.625000	47.25	---	68.20	20.95	100.0	V	317.0	-9.7
1329.000000	---	37.86	54.00	16.14	100.0	V	77.0	-9.4
1720.125000	---	37.68	54.00	16.32	100.0	H	0.0	-7.0
1976.500000	50.19	---	68.20	18.01	200.0	H	125.0	-5.7
2624.000000	53.61	---	68.20	14.59	200.0	V	160.0	-4.0
2783.250000	---	40.97	54.00	13.03	200.0	H	149.0	-3.4
3205.000000	54.59	---	68.20	13.61	200.0	H	104.0	-2.1
3984.625000	---	43.78	54.00	10.22	100.0	V	339.0	0.4
4962.000000	---	46.17	54.00	7.83	100.0	H	276.0	4.1
5611.250000	56.91	---	68.20	11.29	100.0	H	334.0	4.6
7520.500000	---	48.76	54.00	5.24	100.0	V	98.0	7.9
7963.250000	59.91	---	68.20	8.29	100.0	V	202.0	7.8

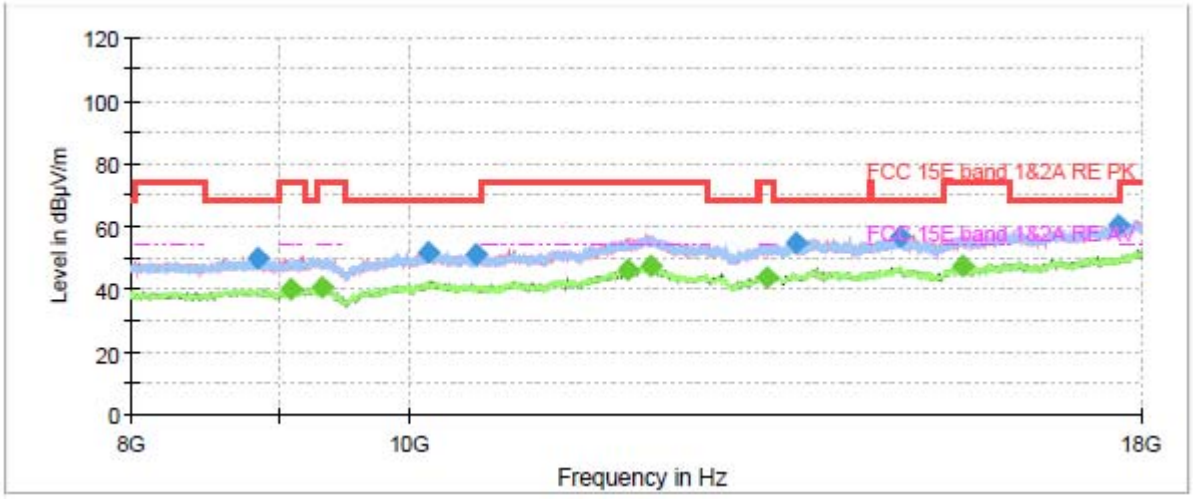
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH52



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

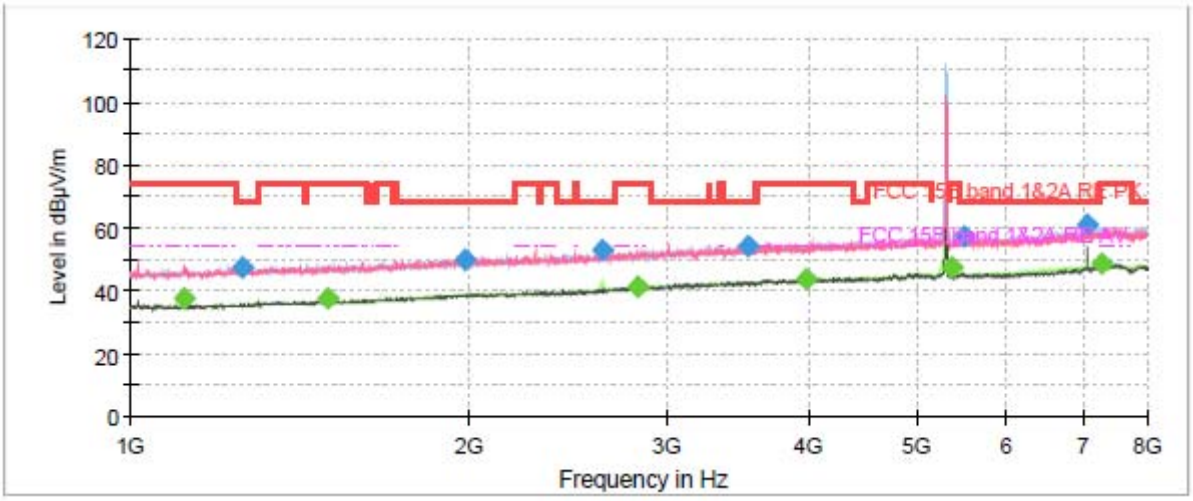


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1116.375000	---	37.68	54.00	16.32	100.0	V	170.0	-10.6
1280.000000	47.16	---	68.20	21.04	200.0	H	180.0	-9.7
1688.625000	---	37.72	54.00	16.28	100.0	V	3.0	-7.2
1873.250000	50.58	---	68.20	17.62	100.0	H	212.0	-6.2
2668.625000	52.32	---	68.20	15.88	200.0	H	90.0	-3.8
2806.000000	---	41.18	54.00	12.82	100.0	H	79.0	-3.3
3496.375000	54.60	---	68.20	13.60	200.0	H	117.0	-1.3
3982.875000	---	43.70	54.00	10.30	200.0	H	122.0	0.4
5097.625000	---	45.82	54.00	8.18	100.0	H	336.0	3.8
5518.500000	56.77	---	68.20	11.43	100.0	H	311.0	4.6
7013.875000	60.30	---	68.20	7.90	200.0	V	39.0	7.5
7514.375000	---	48.48	54.00	5.52	200.0	V	316.0	7.9

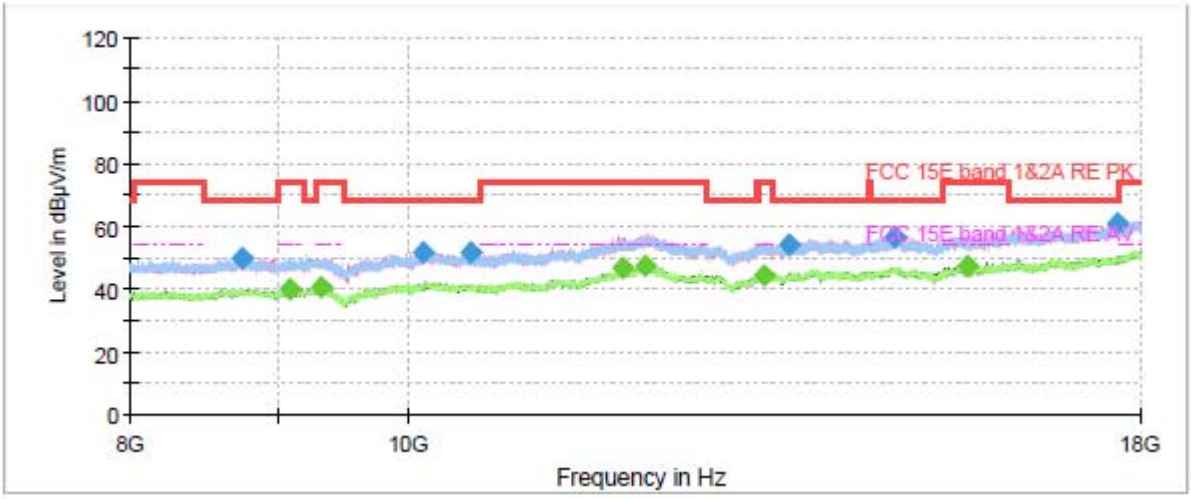
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH60



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

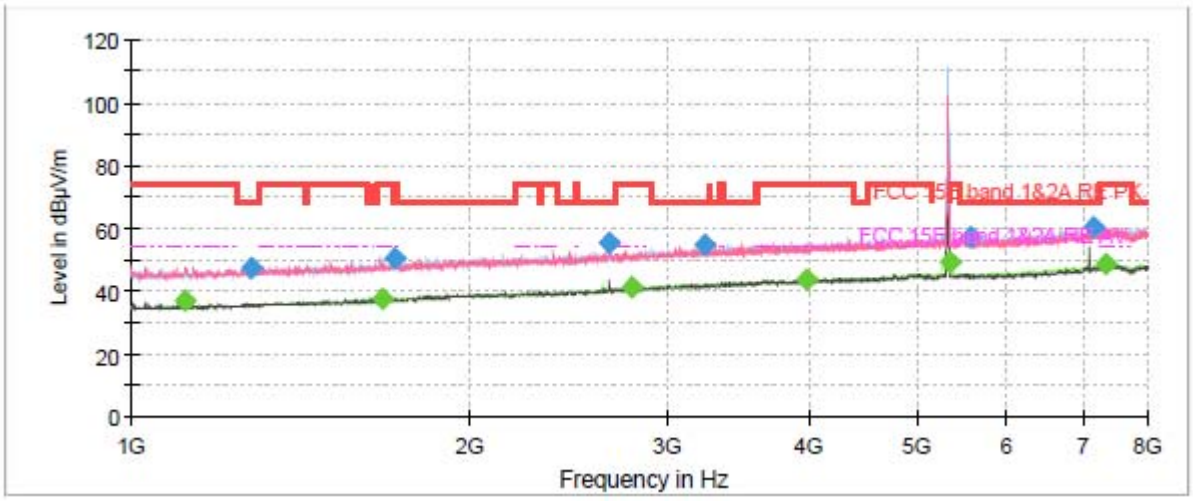


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1116.375000	---	37.41	54.00	16.59	200.0	V	177.0	-10.6
1256.375000	47.34	---	68.20	20.86	200.0	V	160.0	-9.8
1497.875000	---	37.78	54.00	16.22	200.0	V	278.0	-8.4
1984.375000	50.03	---	68.20	18.17	200.0	H	184.0	-5.7
2626.625000	52.73	---	68.20	15.47	100.0	H	283.0	-4.0
2821.750000	---	41.16	54.00	12.84	200.0	H	205.0	-3.3
3536.625000	54.09	---	68.20	14.11	100.0	H	341.0	-1.2
3985.500000	---	43.89	54.00	10.11	100.0	H	336.0	0.4
5356.625000	---	47.31	54.00	6.69	100.0	H	222.0	4.1
5495.750000	57.07	---	68.20	11.13	200.0	H	82.0	4.6
7067.250000	60.82	---	68.20	7.38	200.0	V	39.0	7.8
7281.625000	---	48.36	54.00	5.64	100.0	H	253.0	8.3

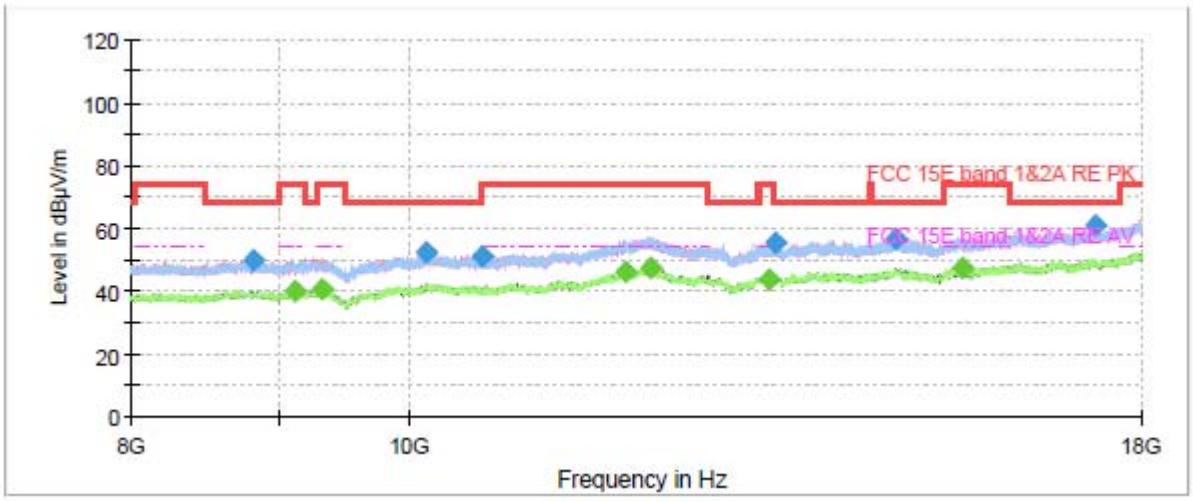
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH64



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

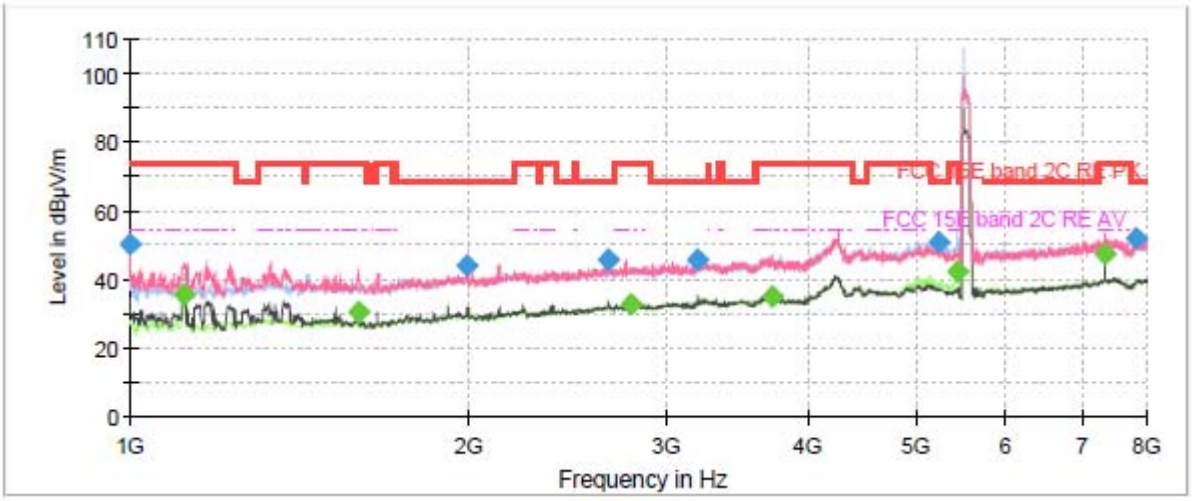


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1116.375000	---	37.10	54.00	16.90	100.0	V	168.0	-10.6
1279.125000	47.44	---	68.20	20.76	200.0	V	272.0	-9.7
1672.875000	---	37.68	54.00	16.32	200.0	V	125.0	-7.3
1714.000000	50.29	---	68.20	17.91	100.0	V	168.0	-7.1
2661.625000	55.45	---	68.20	12.75	200.0	V	94.0	-3.8
2782.375000	---	41.07	54.00	12.93	100.0	H	353.0	-3.4
3228.625000	54.59	---	68.20	13.61	100.0	V	65.0	-2.1
3990.750000	---	43.79	54.00	10.21	100.0	H	305.0	0.4
5352.250000	---	49.21	54.00	4.79	100.0	H	348.0	4.1
5576.250000	57.02	---	68.20	11.18	200.0	H	67.0	4.7
7168.750000	60.60	---	68.20	7.60	200.0	H	0.0	8.3
7340.250000	---	48.37	54.00	5.63	200.0	H	205.0	8.2

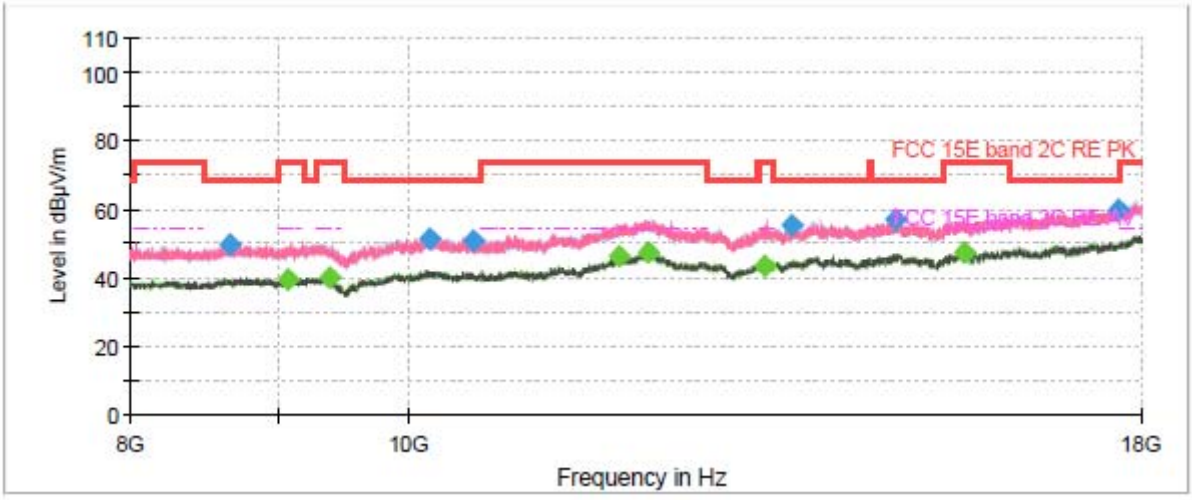
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH100



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

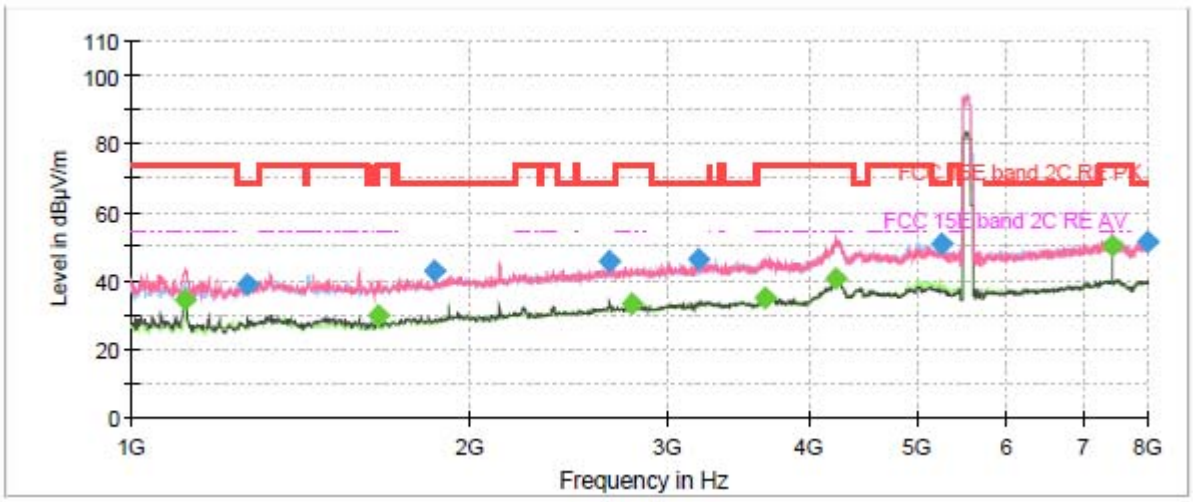


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1000.000000	49.96	---	74.00	24.04	200.0	V	231.0	-20.2
1116.375000	---	35.76	54.00	18.24	100.0	V	166.0	-20.0
1596.750000	---	30.53	54.00	23.47	200.0	V	170.0	-17.0
1994.875000	43.81	---	68.20	24.39	200.0	V	231.0	-14.7
2662.500000	45.86	---	68.20	22.34	200.0	V	231.0	-12.6
2791.125000	---	32.84	54.00	21.16	200.0	V	132.0	-12.3
3192.750000	45.91	---	68.20	22.29	100.0	V	130.0	-10.6
3718.625000	---	35.05	54.00	18.95	200.0	V	11.0	-8.9
5222.750000	50.67	---	68.20	17.53	100.0	H	60.0	-3.3
5441.500000	---	42.33	54.00	11.67	100.0	H	60.0	-3.3
7333.250000	---	47.37	54.00	6.63	200.0	V	1.0	0.3
7842.500000	51.83	---	68.20	16.37	200.0	V	1.0	0.0

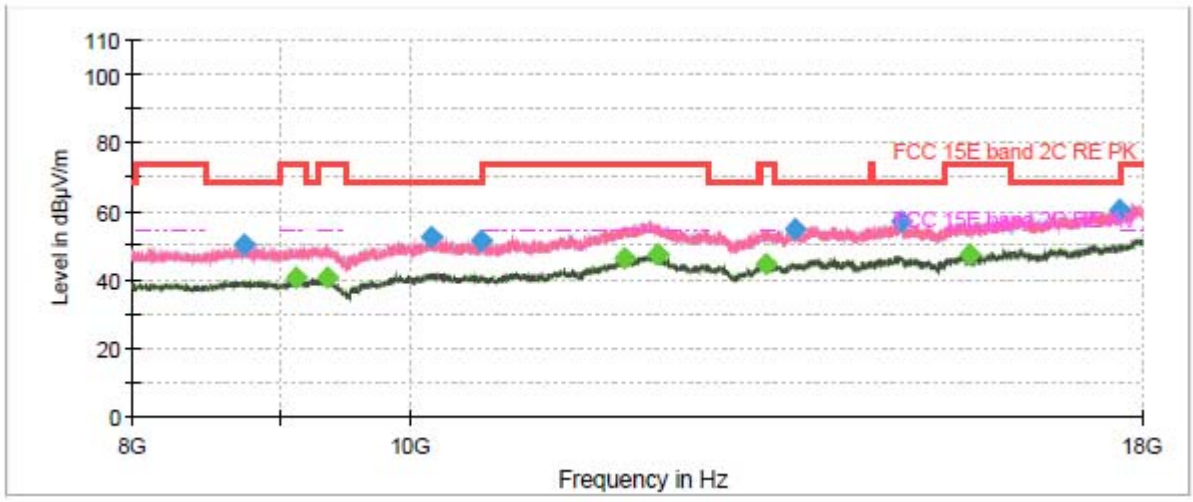
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH116



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

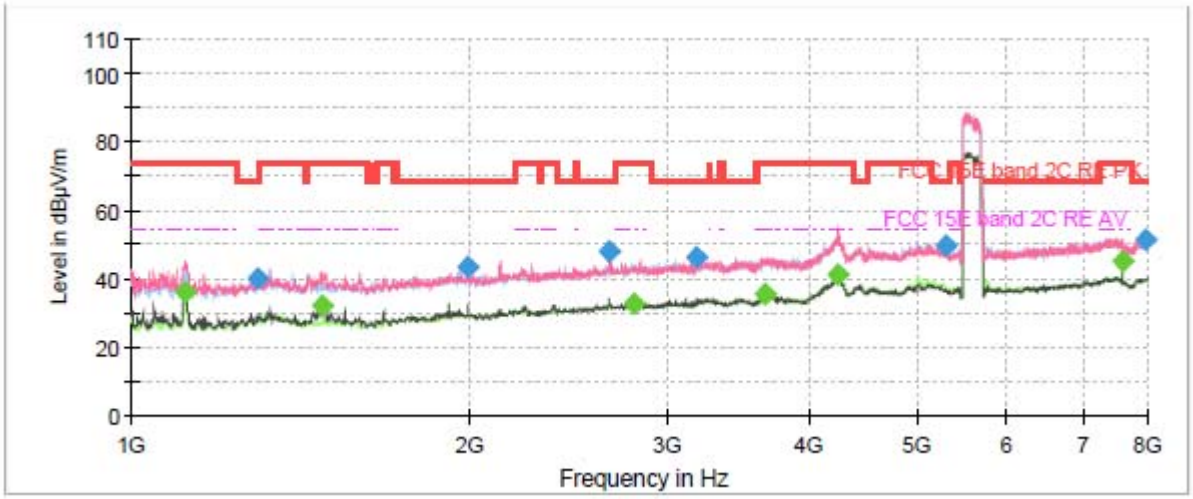


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.250000	---	34.51	54.00	19.49	200.0	V	162.0	-20.0
1269.500000	38.97	---	68.20	29.23	100.0	V	157.0	-19.1
1661.500000	---	29.70	54.00	24.30	200.0	V	321.0	-16.6
1860.125000	42.86	---	68.20	25.34	200.0	V	167.0	-15.3
2656.375000	45.78	---	68.20	22.42	200.0	V	108.0	-12.6
2789.375000	---	33.18	54.00	20.82	200.0	V	102.0	-12.3
3195.375000	46.00	---	68.20	22.20	100.0	V	132.0	-10.6
3654.750000	---	35.07	54.00	18.93	200.0	H	16.0	-8.4
4234.875000	---	40.87	54.00	13.13	100.0	H	255.0	-0.5
5243.750000	50.52	---	68.20	17.68	100.0	H	51.0	-3.5
7440.000000	---	50.08	54.00	3.92	200.0	V	6.0	0.0
7997.375000	51.48	---	68.20	16.72	100.0	V	208.0	-0.2

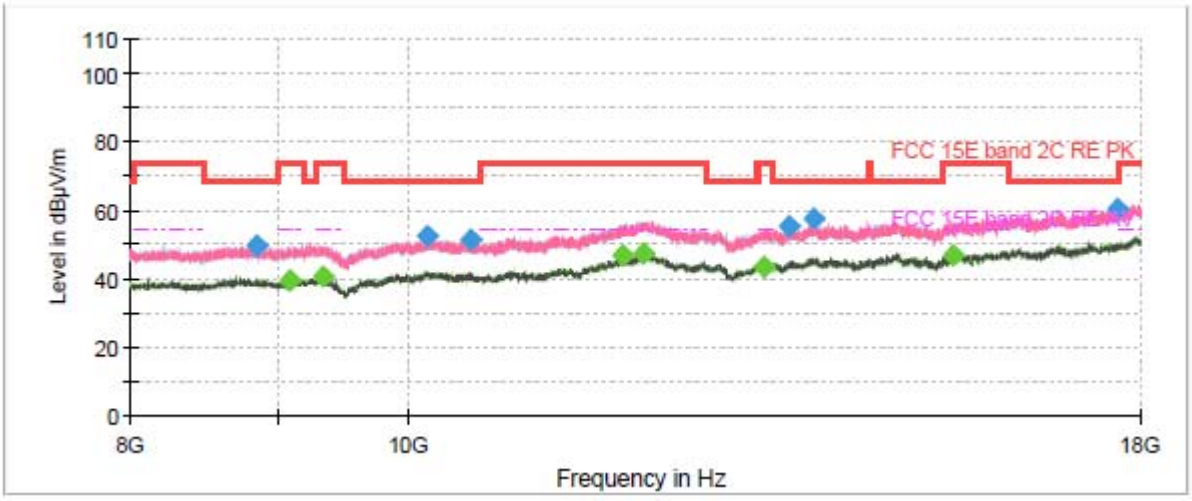
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH140



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

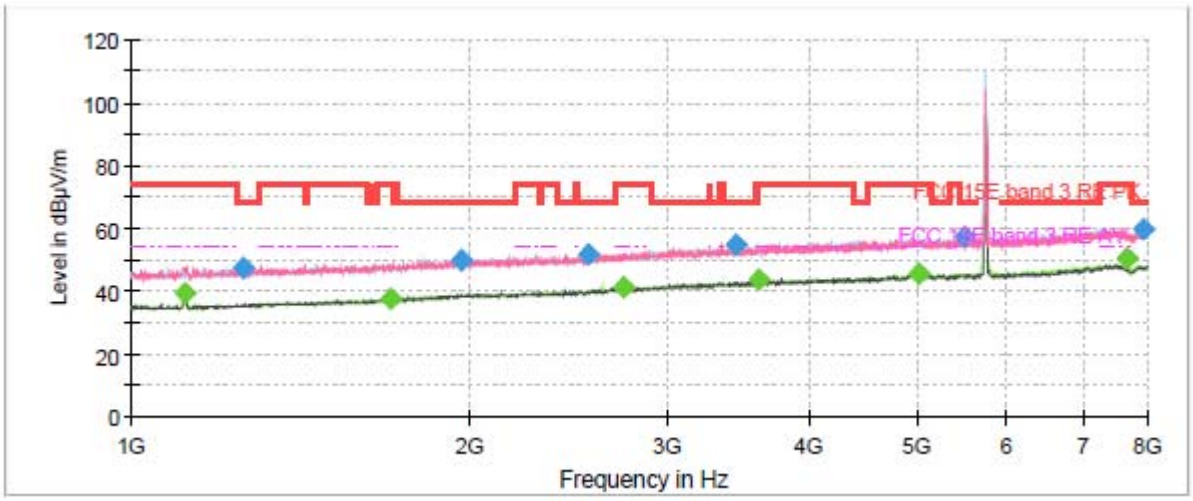


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1116.375000	---	35.92	54.00	18.08	200.0	V	174.0	-20.0
1297.500000	39.81	---	68.20	28.39	100.0	V	148.0	-18.9
1477.750000	---	32.03	54.00	21.97	100.0	V	169.0	-17.7
1992.250000	43.32	---	68.20	24.88	200.0	V	191.0	-14.8
2663.375000	47.67	---	68.20	20.53	200.0	V	100.0	-12.5
2802.500000	---	32.61	54.00	21.39	100.0	V	185.0	-12.2
3183.125000	46.35	---	68.20	21.85	200.0	V	327.0	-10.6
3653.875000	---	35.35	54.00	18.65	200.0	V	0.0	-8.4
4251.500000	---	41.01	54.00	12.99	200.0	V	163.0	-1.1
5305.000000	49.84	---	68.20	18.36	100.0	H	51.0	-3.8
7600.125000	---	45.20	54.00	8.80	200.0	V	112.0	-0.2
7963.250000	51.54	---	68.20	16.66	200.0	V	67.0	-0.2

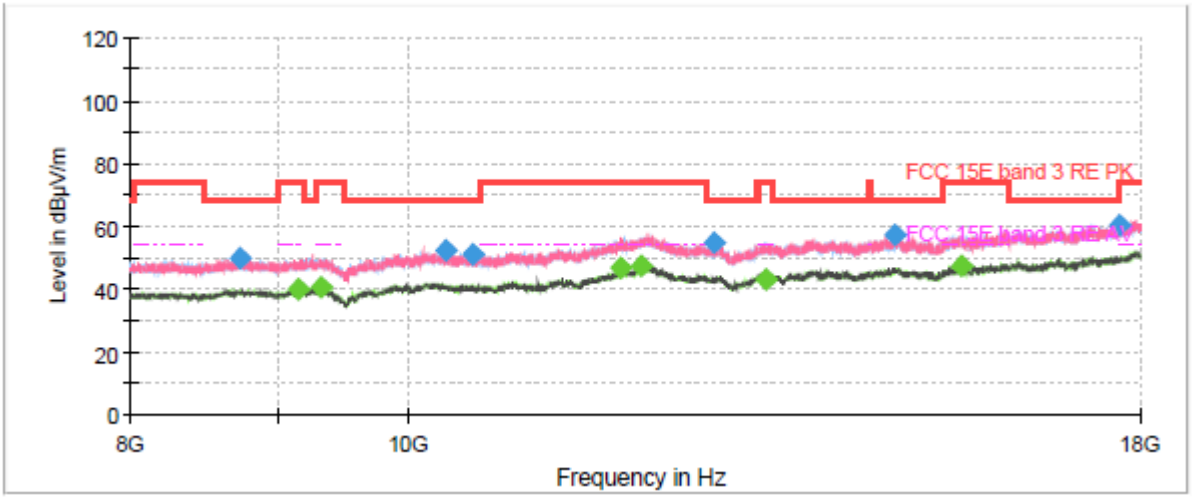
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH149



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

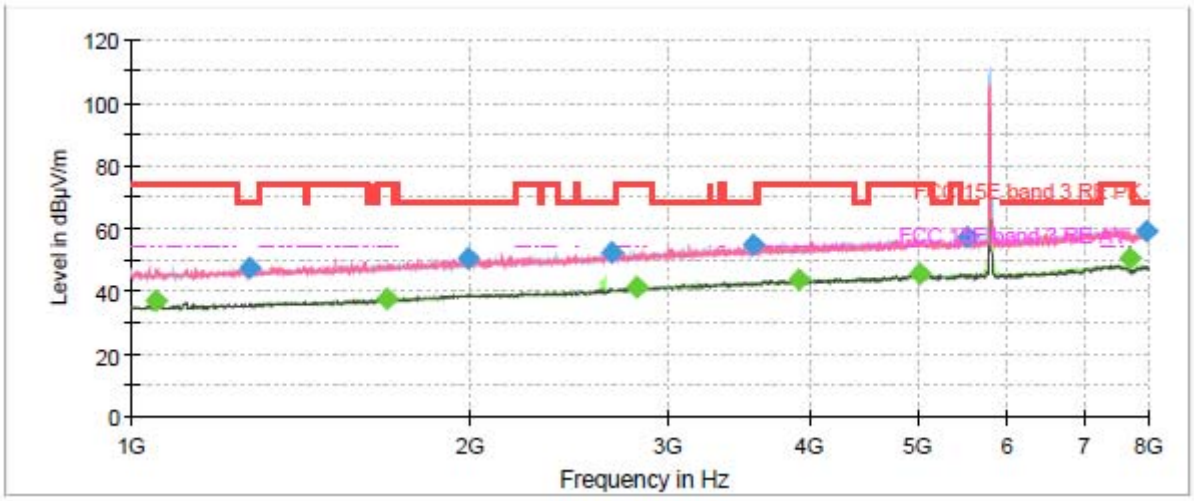


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.250000	---	39.53	54.00	14.47	200.0	V	201.0	-10.6
1259.000000	47.17	---	68.20	21.03	100.0	V	36.0	-9.8
1701.750000	---	37.46	54.00	16.54	100.0	V	49.0	-7.2
1965.125000	49.89	---	68.20	18.31	100.0	H	242.0	-5.8
2554.000000	51.82	---	68.20	16.38	200.0	H	57.0	-4.4
2740.375000	---	41.03	54.00	12.97	100.0	V	43.0	-3.5
3449.125000	54.89	---	68.20	13.31	200.0	V	201.0	-1.4
3611.875000	---	43.58	54.00	10.42	100.0	H	282.0	-0.7
5004.875000	---	45.73	54.00	8.27	100.0	H	0.0	4.1
5507.125000	57.51	---	68.20	10.69	200.0	V	175.0	4.6
7660.500000	---	50.37	54.00	3.63	200.0	V	112.0	7.7
7924.750000	59.82	---	68.20	8.38	100.0	H	268.0	7.9

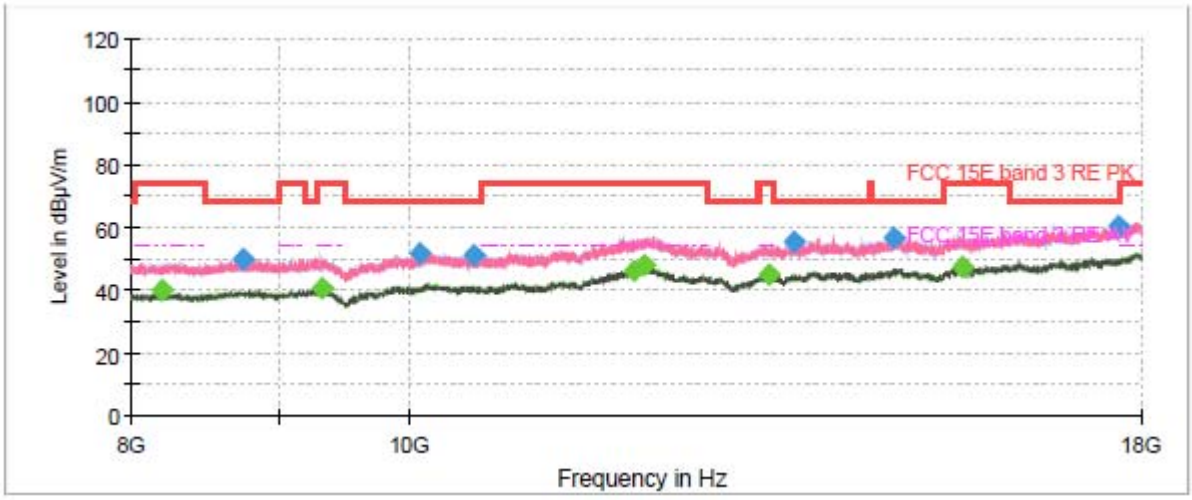
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH157



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

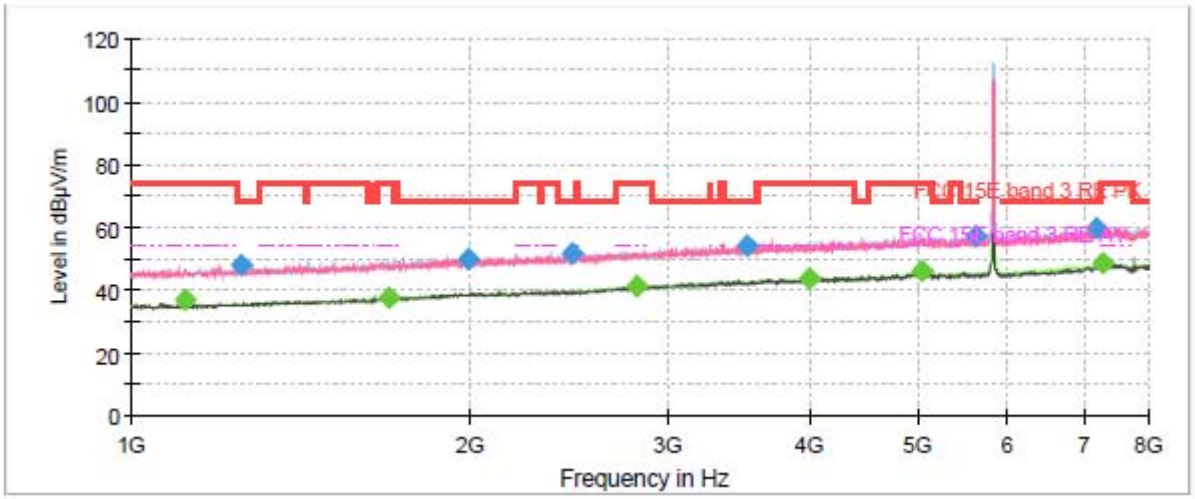


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1052.500000	---	36.89	54.00	17.11	200.0	V	192.0	-10.8
1272.125000	47.48	---	68.20	20.72	200.0	V	348.0	-9.7
1685.125000	---	37.78	54.00	16.22	200.0	V	0.0	-7.2
1993.125000	50.69	---	68.20	17.51	100.0	H	338.0	-5.6
2665.125000	52.58	---	68.20	15.62	200.0	V	221.0	-3.8
2809.500000	---	41.04	54.00	12.96	200.0	V	277.0	-3.3
3562.875000	54.53	---	68.20	13.67	100.0	V	0.0	-1.1
3921.625000	---	43.53	54.00	10.47	200.0	V	354.0	0.2
5010.125000	---	45.48	54.00	8.52	100.0	H	158.0	4.1
5516.750000	57.06	---	68.20	11.14	100.0	H	280.0	4.6
7713.875000	---	50.18	54.00	3.82	200.0	V	106.0	7.6
7977.250000	59.26	---	68.20	8.94	100.0	V	6.0	7.8

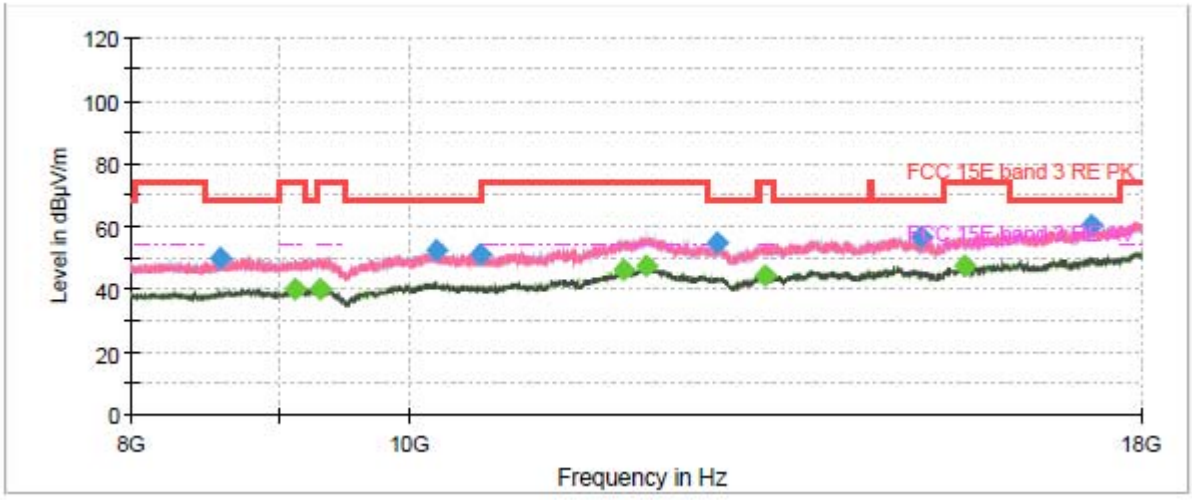
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11a CH165



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

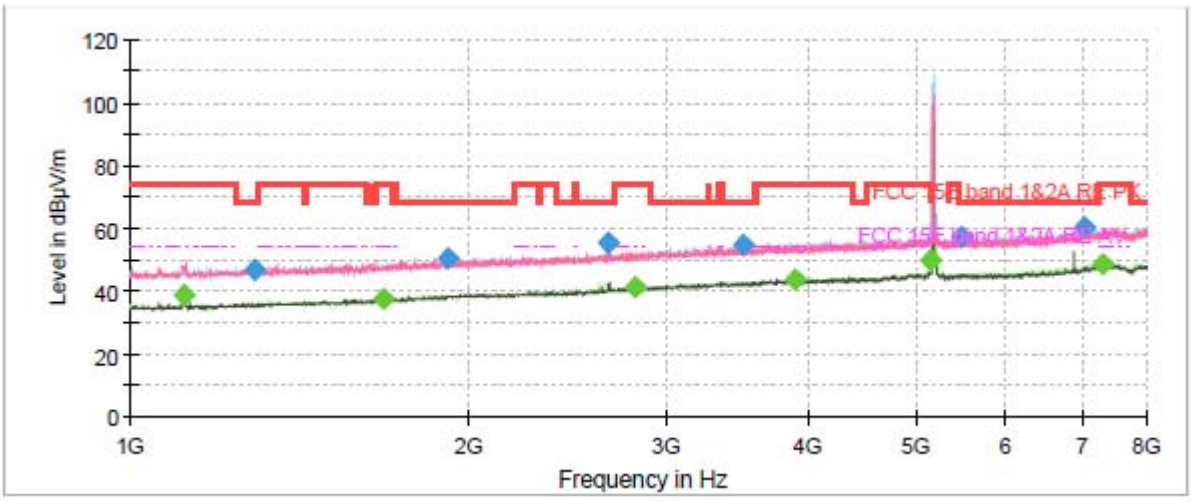


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1115.500000	---	36.66	54.00	17.34	100.0	V	168.0	-10.6
1250.250000	48.01	---	68.20	20.19	200.0	V	19.0	-9.9
1692.125000	---	37.61	54.00	16.39	200.0	V	246.0	-7.2
1991.375000	50.09	---	68.20	18.11	100.0	V	213.0	-5.7
2461.250000	51.97	---	68.20	16.23	200.0	H	17.0	-4.5
2806.000000	---	41.14	54.00	12.86	200.0	V	180.0	-3.3
3526.125000	54.39	---	68.20	13.81	100.0	V	81.0	-1.2
3999.500000	---	43.72	54.00	10.28	200.0	H	156.0	0.5
5032.000000	---	45.86	54.00	8.14	100.0	H	225.0	4.0
5621.750000	57.45	---	68.20	10.75	100.0	H	185.0	4.6
7203.750000	59.79	---	68.20	8.41	200.0	H	31.0	8.3
7275.500000	---	48.55	54.00	5.45	100.0	H	212.0	8.3

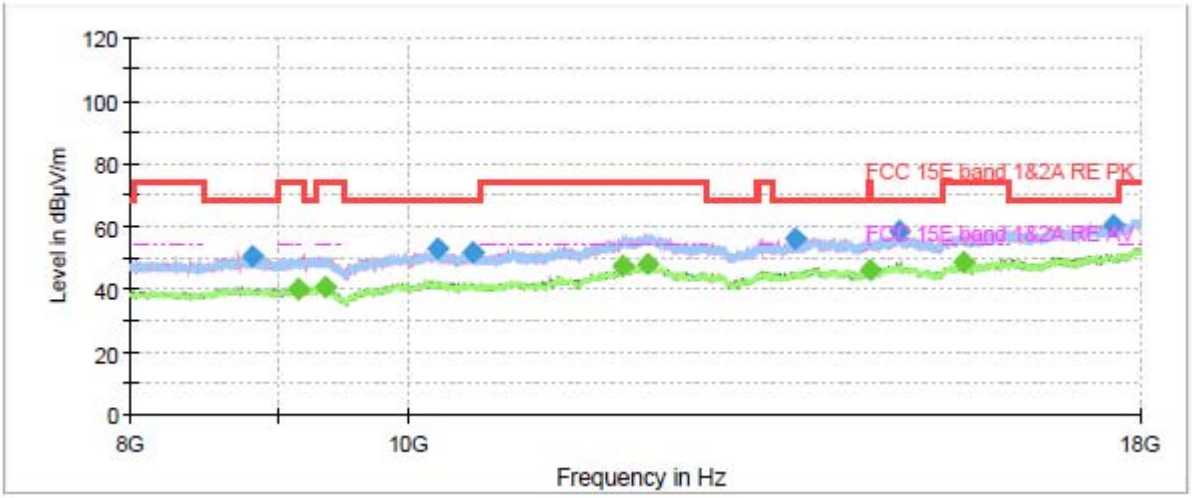
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH36



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

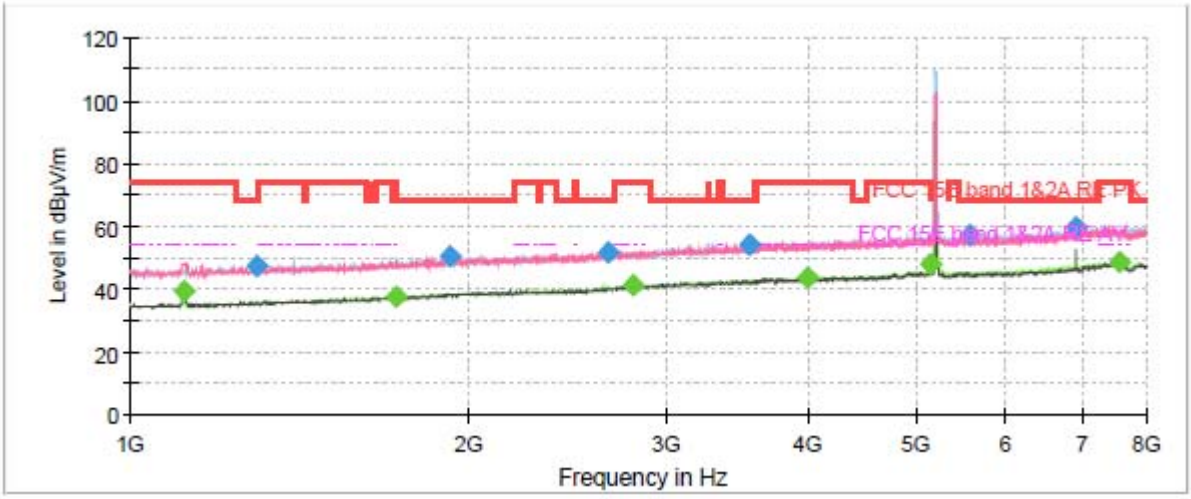


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.250000	---	39.03	54.00	14.97	200.0	V	166.0	-10.6
1289.625000	47.02	---	68.20	21.18	100.0	V	148.0	-9.6
1679.875000	---	37.75	54.00	16.25	200.0	H	96.0	-7.3
1916.125000	50.50	---	68.20	17.70	100.0	H	274.0	-6.0
2659.875000	55.52	---	68.20	12.68	200.0	V	182.0	-3.8
2811.250000	---	41.21	54.00	12.79	200.0	V	359.0	-3.3
3508.625000	54.62	---	68.20	13.58	100.0	V	104.0	-1.2
3904.125000	---	43.63	54.00	10.37	200.0	H	33.0	0.1
5148.375000	---	49.98	54.00	4.02	100.0	H	34.0	3.8
5470.375000	57.00	---	68.20	11.20	100.0	H	268.0	4.7
7049.750000	60.30	---	68.20	7.90	200.0	V	78.0	7.7
7328.000000	---	48.40	54.00	5.60	200.0	H	18.0	8.3

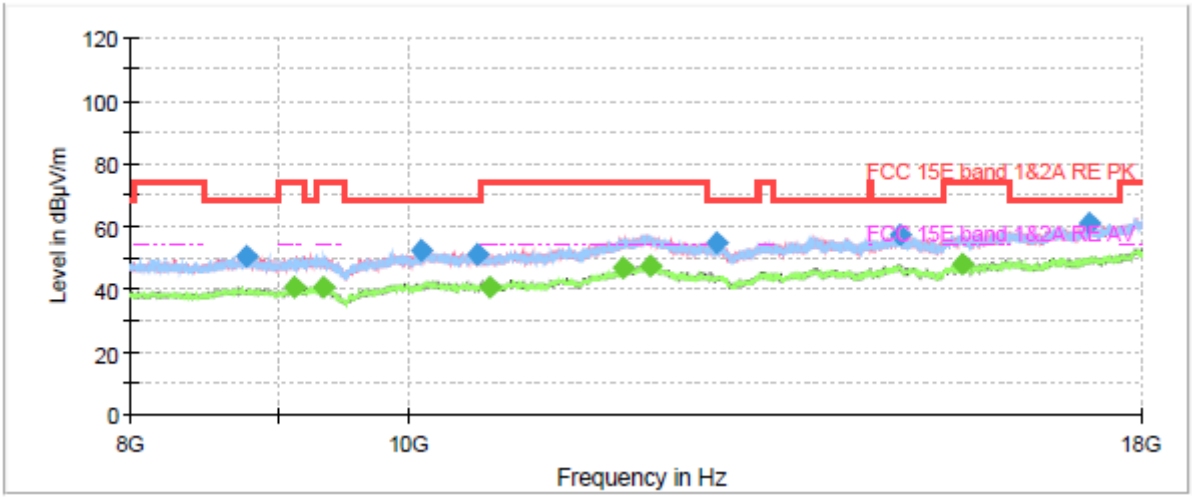
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH40



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

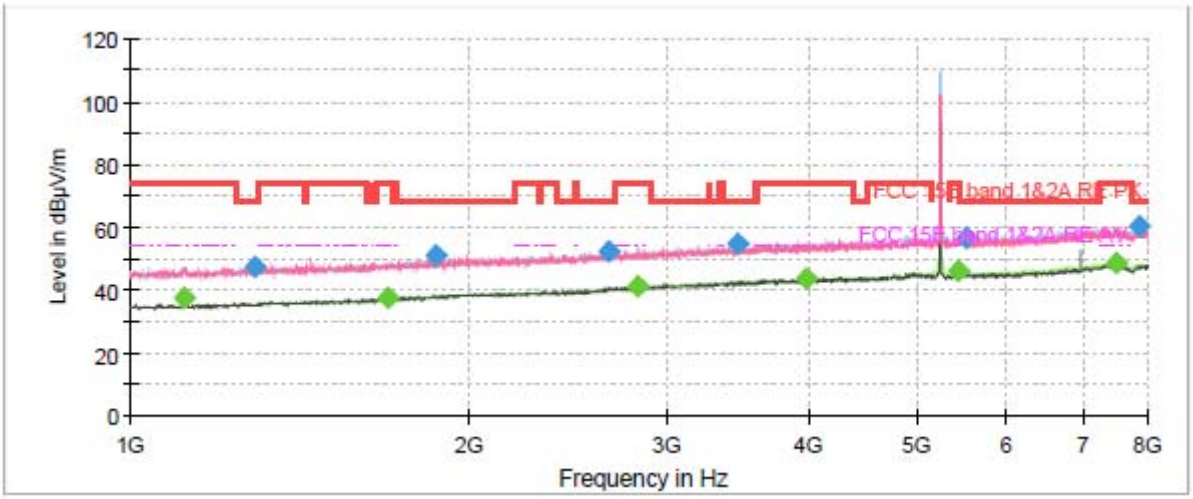


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1114.625000	---	39.28	54.00	14.72	200.0	V	164.0	-10.6
1298.375000	47.21	---	68.20	20.99	200.0	H	6.0	-9.6
1721.875000	---	37.76	54.00	16.24	100.0	H	359.0	-7.0
1924.000000	50.63	---	68.20	17.57	100.0	V	112.0	-6.0
2655.500000	51.46	---	68.20	16.74	100.0	V	59.0	-3.9
2797.250000	---	40.98	54.00	13.02	200.0	H	168.0	-3.4
3555.000000	54.14	---	68.20	14.06	100.0	V	189.0	-1.2
3997.750000	---	43.92	54.00	10.08	100.0	H	328.0	0.5
5148.375000	---	48.08	54.00	5.92	100.0	H	40.0	3.8
5583.250000	56.99	---	68.20	11.21	200.0	H	195.0	4.7
6933.375000	59.96	---	68.20	8.24	200.0	V	39.0	7.4
7557.250000	---	48.37	54.00	5.63	100.0	H	79.0	7.8

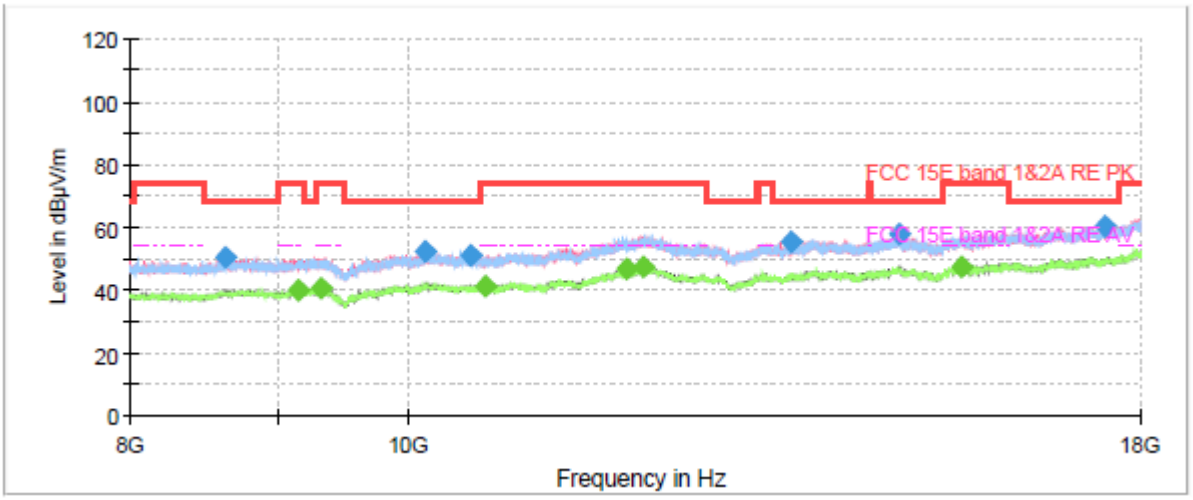
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH48



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

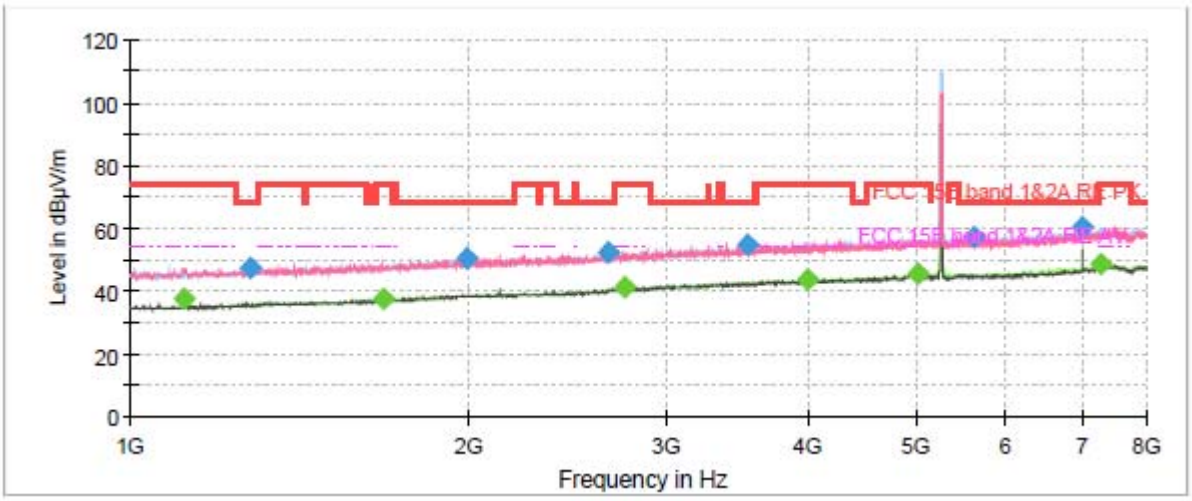


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1115.500000	---	37.55	54.00	16.45	200.0	V	166.0	-10.6
1288.750000	47.21	---	68.20	20.99	100.0	H	140.0	-9.6
1692.125000	---	37.54	54.00	16.46	100.0	V	110.0	-7.2
1867.125000	50.83	---	68.20	17.37	200.0	V	171.0	-6.3
2661.625000	52.56	---	68.20	15.64	200.0	V	0.0	-3.8
2820.875000	---	41.00	54.00	13.00	100.0	H	183.0	-3.3
3464.000000	54.50	---	68.20	13.70	100.0	V	170.0	-1.4
3986.375000	---	43.75	54.00	10.25	200.0	H	34.0	0.4
5441.500000	---	45.98	54.00	8.02	200.0	H	67.0	4.6
5536.875000	56.86	---	68.20	11.34	200.0	V	22.0	4.6
7512.625000	---	48.53	54.00	5.47	100.0	V	164.0	7.9
7849.500000	60.15	---	68.20	8.05	100.0	H	249.0	8.0

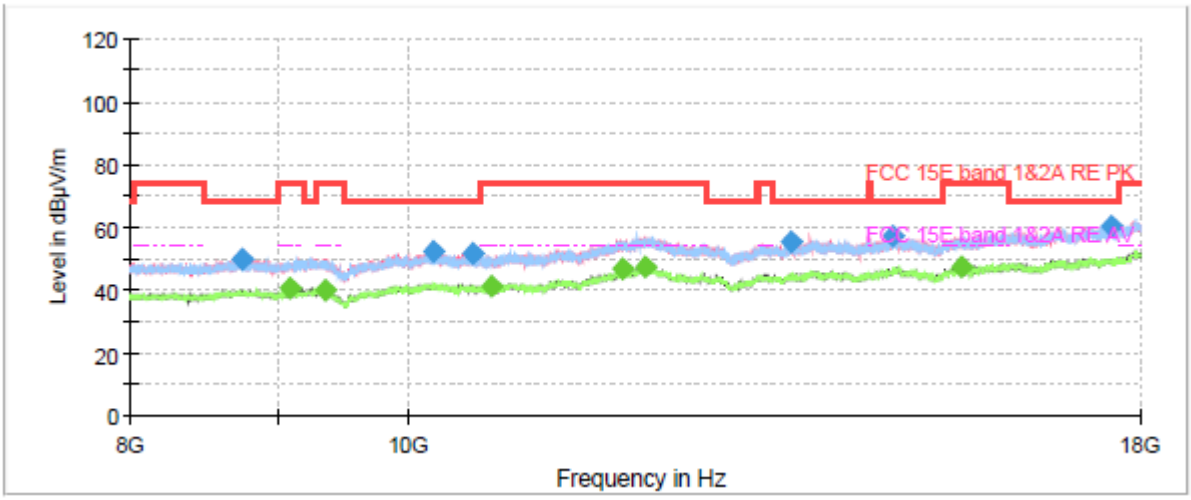
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH52



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

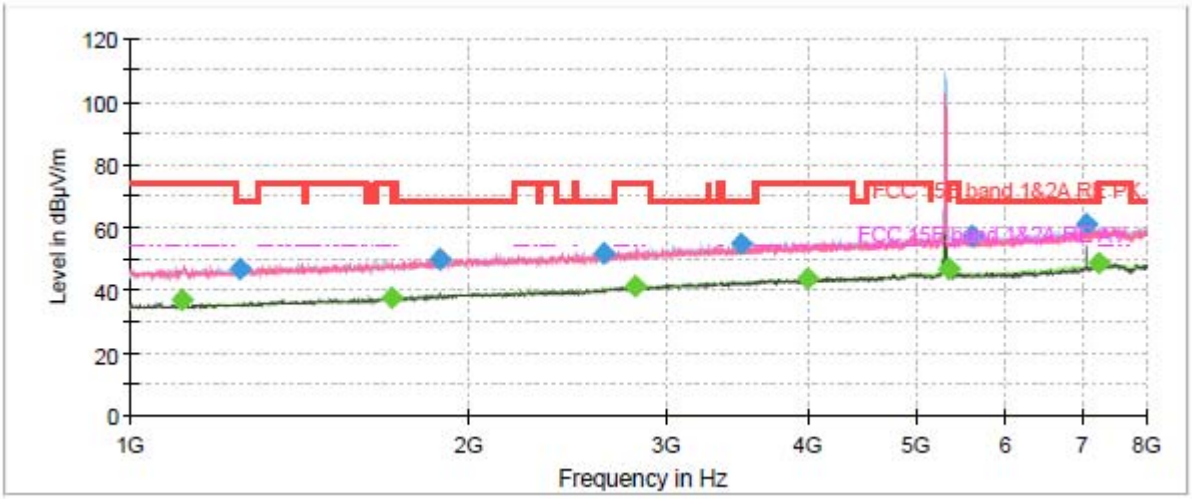


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.250000	---	37.69	54.00	16.31	200.0	V	170.0	-10.6
1281.750000	47.24	---	68.20	20.96	200.0	H	255.0	-9.7
1682.500000	---	37.53	54.00	16.47	200.0	V	208.0	-7.2
1995.750000	50.57	---	68.20	17.63	100.0	H	272.0	-5.6
2659.000000	52.09	---	68.20	16.11	100.0	V	138.0	-3.9
2750.000000	---	41.00	54.00	13.00	200.0	V	348.0	-3.5
3538.375000	54.88	---	68.20	13.32	200.0	V	67.0	-1.2
3996.875000	---	43.80	54.00	10.20	200.0	H	111.0	0.5
5002.250000	---	45.63	54.00	8.37	100.0	H	145.0	4.1
5619.125000	57.06	---	68.20	11.14	200.0	H	76.0	4.6
7013.875000	60.53	---	68.20	7.67	200.0	V	39.0	7.5
7270.250000	---	48.45	54.00	5.55	200.0	H	168.0	8.3

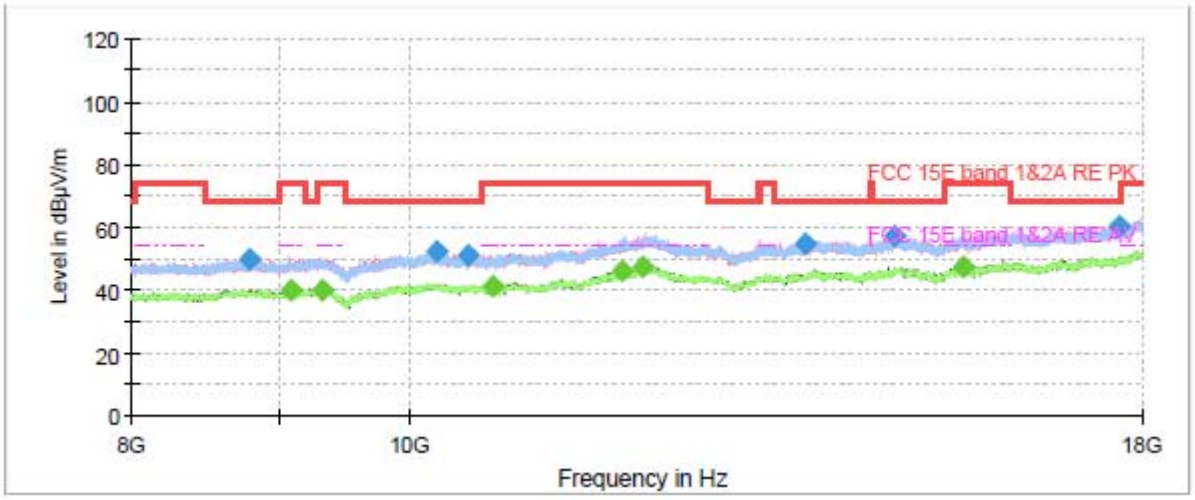
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH60



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

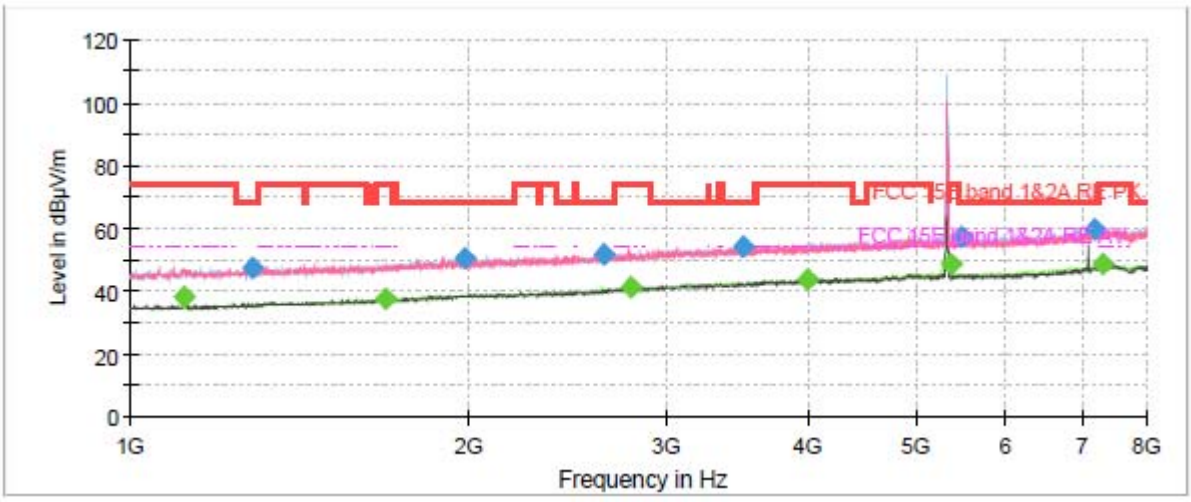


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1112.875000	---	37.11	54.00	16.89	100.0	V	169.0	-10.6
1253.750000	47.05	---	68.20	21.15	100.0	V	131.0	-9.8
1707.000000	---	37.64	54.00	16.36	200.0	H	0.0	-7.1
1882.000000	49.83	---	68.20	18.37	100.0	H	242.0	-6.2
2638.000000	51.61	---	68.20	16.59	200.0	H	251.0	-4.0
2813.000000	---	41.20	54.00	12.80	100.0	H	232.0	-3.3
3497.250000	54.66	---	68.20	13.54	200.0	V	218.0	-1.3
3997.750000	---	43.68	54.00	10.32	200.0	H	138.0	0.5
5351.375000	---	46.66	54.00	7.34	100.0	H	52.0	4.1
5599.000000	57.05	---	68.20	11.15	200.0	H	74.0	4.6
7067.250000	60.76	---	68.20	7.44	100.0	V	33.0	7.8
7250.125000	---	48.52	54.00	5.48	100.0	H	331.0	8.4

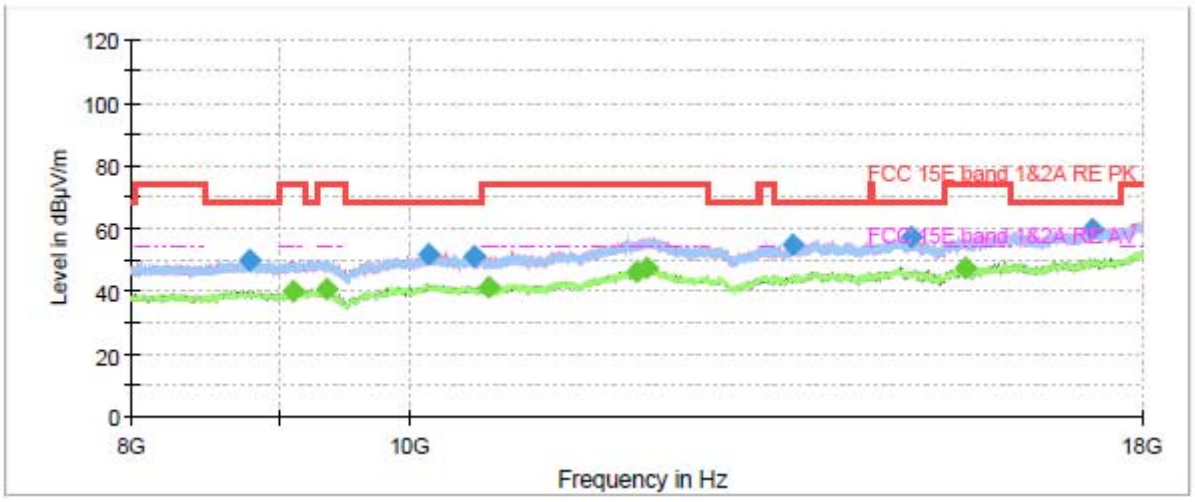
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH64



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

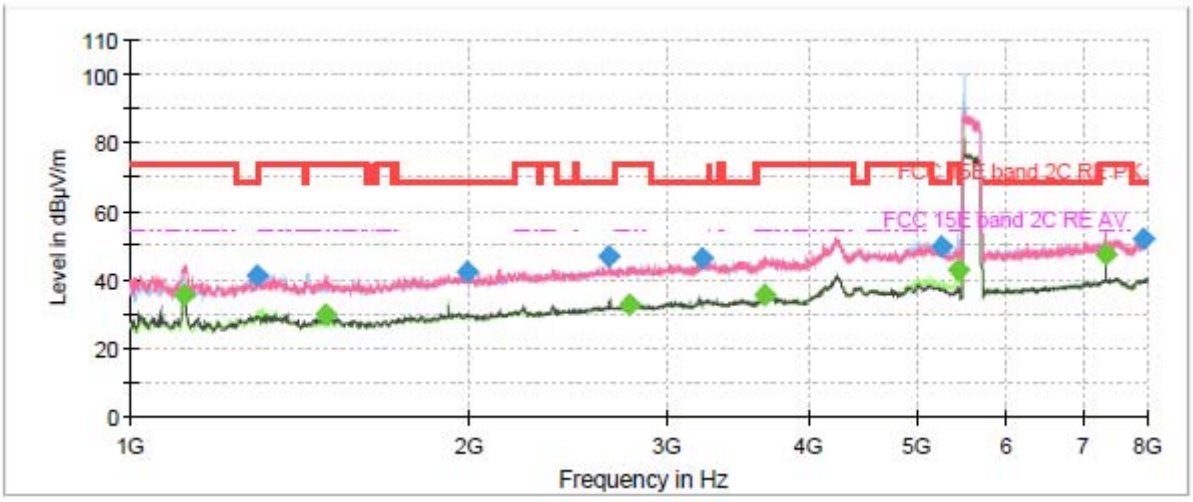


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.250000	---	37.99	54.00	16.01	200.0	V	165.0	-10.6
1282.625000	47.43	---	68.20	20.77	100.0	V	171.0	-9.7
1687.750000	---	37.52	54.00	16.48	200.0	V	300.0	-7.2
1980.875000	50.37	---	68.20	17.83	200.0	V	0.0	-5.7
2640.625000	51.71	---	68.20	16.49	100.0	H	334.0	-4.0
2785.875000	---	41.03	54.00	12.97	100.0	H	183.0	-3.4
3501.625000	54.36	---	68.20	13.84	100.0	V	65.0	-1.3
3997.750000	---	43.71	54.00	10.29	200.0	H	11.0	0.5
5353.125000	---	48.64	54.00	5.36	100.0	H	205.0	4.1
5468.625000	57.13	---	68.20	11.07	100.0	H	260.0	4.7
7191.500000	59.86	---	68.20	8.34	100.0	H	220.0	8.3
7323.625000	---	48.32	54.00	5.68	200.0	H	69.0	8.3

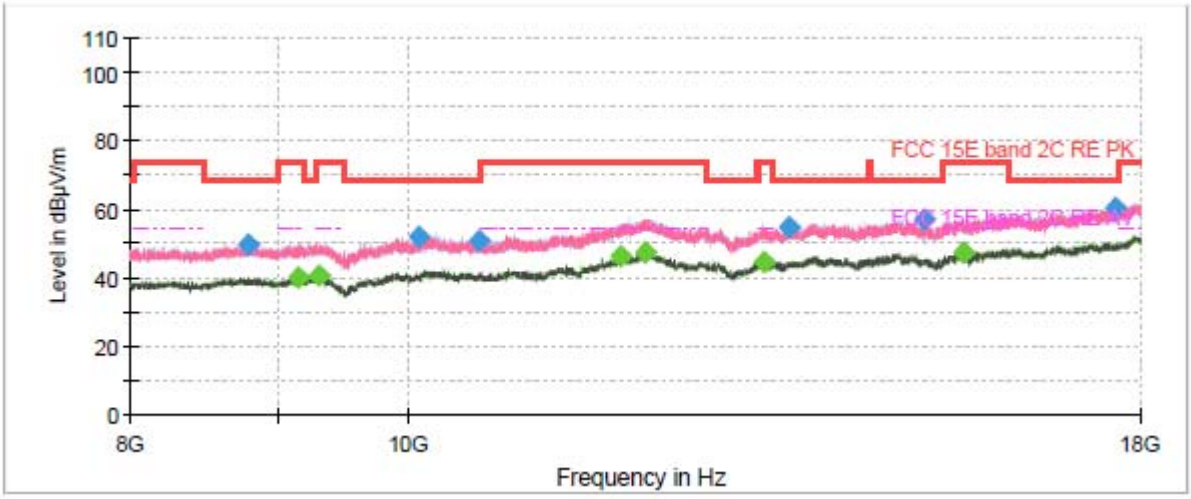
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH100



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

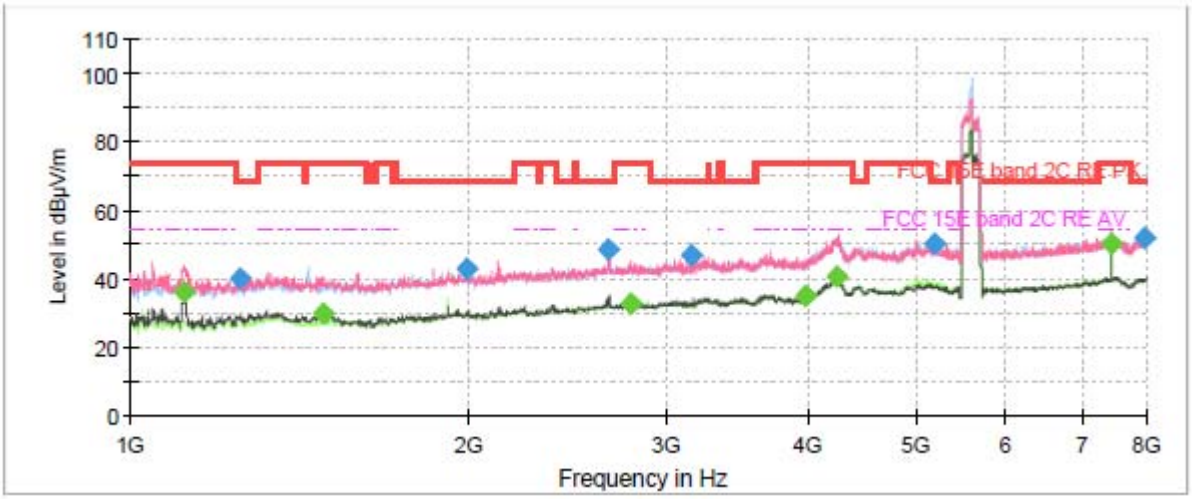


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1116.375000	---	35.38	54.00	18.62	200.0	V	166.0	-20.0
1294.875000	40.94	---	68.20	27.26	100.0	H	217.0	-18.9
1491.750000	---	29.91	54.00	24.09	200.0	V	198.0	-17.7
1994.875000	42.03	---	68.20	26.17	200.0	V	198.0	-14.7
2659.000000	46.99	---	68.20	21.21	200.0	V	101.0	-12.6
2779.750000	---	32.75	54.00	21.25	200.0	V	198.0	-12.3
3224.250000	46.00	---	68.20	22.20	200.0	V	182.0	-10.5
3655.625000	---	35.34	54.00	18.66	200.0	V	304.0	-8.4
5251.625000	49.89	---	68.20	18.31	100.0	H	217.0	-3.5
5439.750000	---	42.83	54.00	11.17	100.0	H	0.0	-3.3
7333.250000	---	47.23	54.00	6.77	200.0	V	6.0	0.3
7931.750000	51.73	---	68.20	16.47	200.0	V	160.0	-0.1

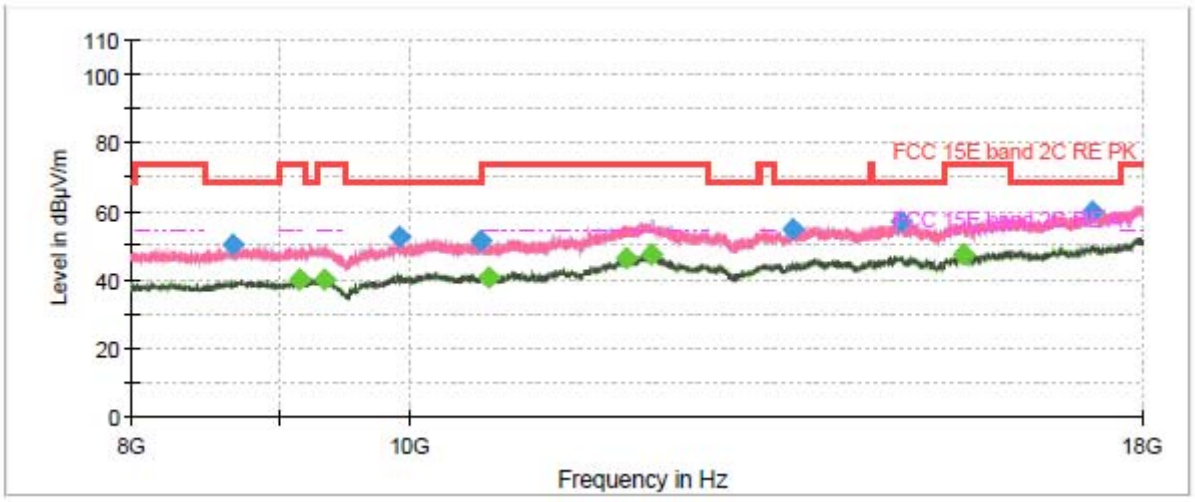
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH116



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

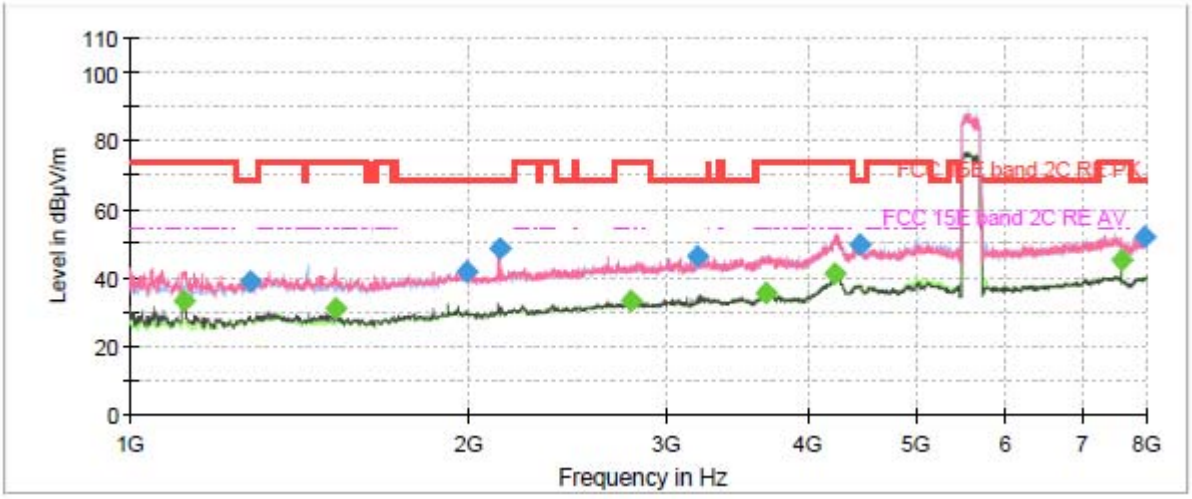


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1117.250000	---	35.85	54.00	18.15	100.0	V	175.0	-20.0
1254.625000	40.01	---	68.20	28.19	200.0	V	155.0	-19.2
1483.875000	---	30.08	54.00	23.92	200.0	V	319.0	-17.7
1994.875000	42.70	---	68.20	25.50	200.0	V	301.0	-14.7
2659.875000	48.43	---	68.20	19.77	100.0	V	72.0	-12.6
2788.500000	---	32.81	54.00	21.19	200.0	V	209.0	-12.3
3158.625000	47.03	---	68.20	21.17	200.0	V	340.0	-10.8
3990.750000	---	35.14	54.00	18.86	100.0	V	72.0	-8.1
4239.250000	---	40.88	54.00	13.12	100.0	H	329.0	-0.6
5177.250000	50.11	---	68.20	18.09	100.0	H	56.0	-3.3
7440.000000	---	49.93	54.00	4.07	200.0	V	2.0	0.0
7976.375000	51.71	---	68.20	16.49	200.0	H	137.0	-0.2

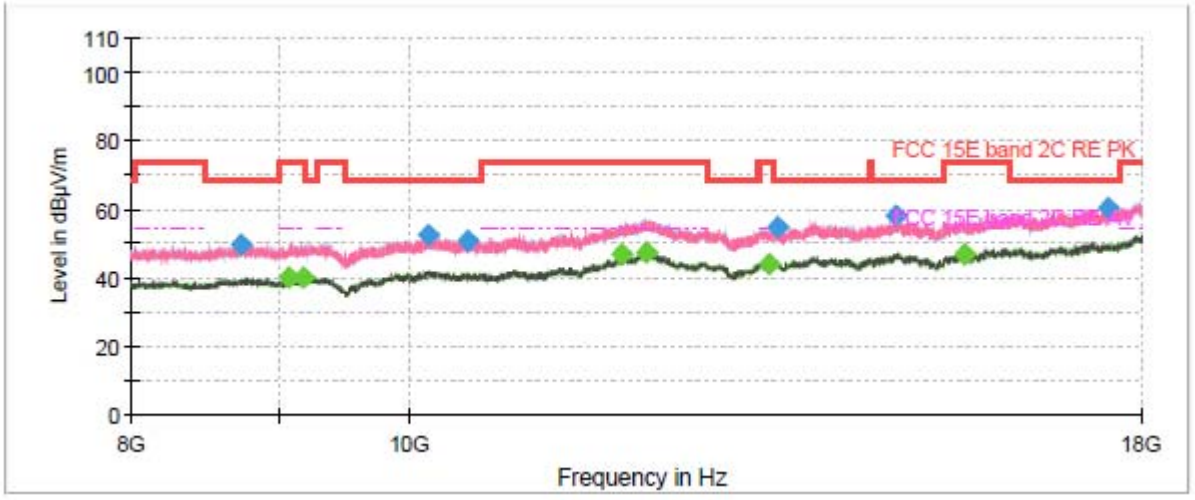
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH140



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.

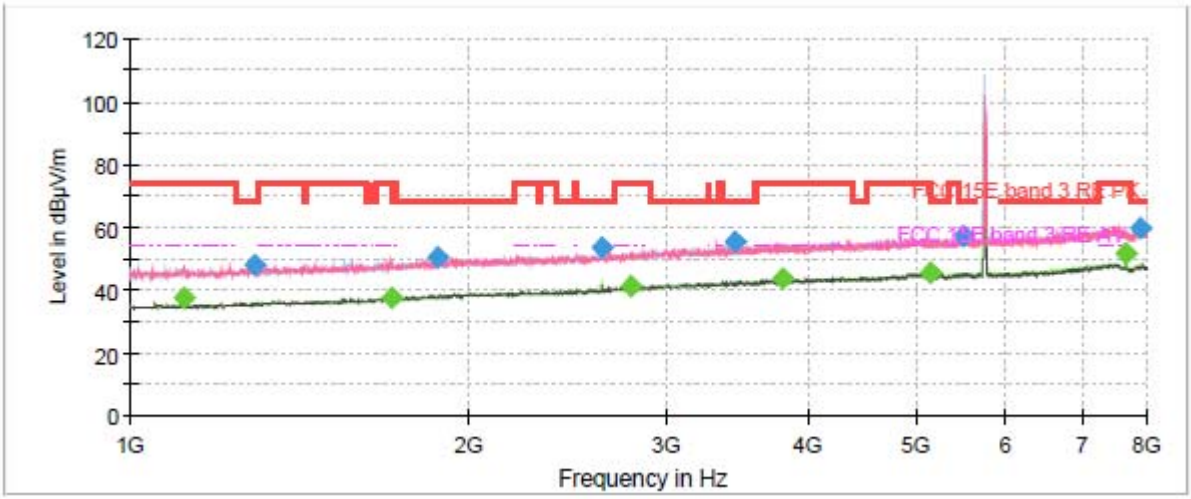


Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Average (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
1118.125000	---	33.29	54.00	20.71	200.0	V	163.0	-20.0
1279.125000	38.82	---	68.20	29.38	200.0	H	123.0	-19.0
1521.500000	---	31.19	54.00	22.81	100.0	V	163.0	-17.6
1991.375000	41.88	---	68.20	26.32	200.0	V	37.0	-14.8
2130.500000	48.56	---	68.20	19.64	200.0	V	217.0	-14.3
2791.125000	---	33.30	54.00	20.70	200.0	V	124.0	-12.3
3191.875000	46.12	---	68.20	22.08	200.0	V	329.0	-10.6
3673.125000	---	35.79	54.00	18.21	100.0	H	359.0	-8.7
4233.125000	---	41.20	54.00	12.80	100.0	H	304.0	-0.4
4445.750000	49.73	---	68.20	18.47	200.0	H	128.0	-3.8
7600.125000	---	44.90	54.00	9.10	200.0	V	108.0	-0.2
7957.125000	52.01	---	68.20	16.19	200.0	V	141.0	-0.1

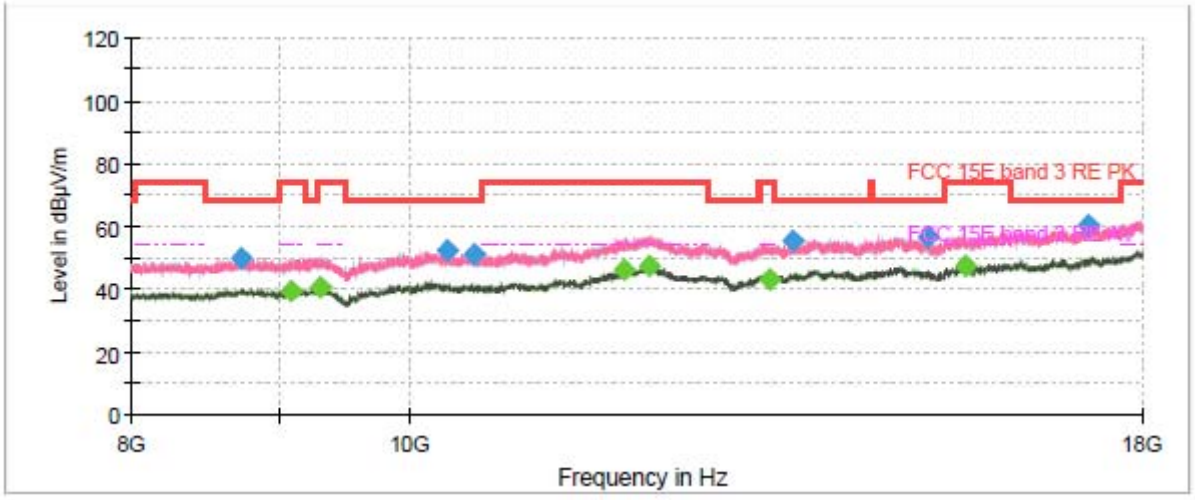
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11n (HT20) CH149



Radiates Emission from 1GHz to 8GHz

Note: The signal beyond the limit is carrier.



Radiates Emission from 8GHz to 18GHz