



RF TEST REPORT

Applicant Micronet
FCC ID U80-A9
Product SmarTab-8
Brand TREQ
Model SmarTab-8
Report No. R1912A0704-R6
Issue Date February 24, 2020

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2019)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Approved by: Kai Xu

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Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Average conducted output power	15.407(a)	PASS
2	Unwanted Emissions	15.407(b)	PASS
3	Conducted Emissions	15.207	PASS
Date of Testing: December 14, 2019~ January 17, 2020			
Note: 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.			

Conducted test items except for RF Power Output refer to module A9 test report(Report No.: I19D00117-SRD07/ I19D00117-SRD08).



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
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2. General Description of Equipment under Test

2.1. Applicant and Manufacturer Information

Applicant	Micronet
Applicant address	1865 West 2100 South, Suite 2 Salt Lake City, Utah 84119 United States
Manufacturer	Micronet
Manufacturer address	1865 West 2100 South, Suite 2 Salt Lake City, Utah 84119 United States

2.2. General information

EUT Description	
Model	SmarTab-8
IMEI	353436100010544
Hardware Version	A9: C801_V1.00_PCB
Software Version	MSTAB8_9.00.2.7.0
Power Supply	Battery/AC adapter
Antenna Type	Internal Antenna
Antenna Gain	6.0dBi
Directional Gain	NA
Test Mode(s)	U-NII-1(5150MHz-5250MHz) U-NII-3(5725MHz-5850MHz)
Modulation Type	802.11a/n (HT20/HT40) : OFDM 802.11ac (VHT20/VHT40): OFDM
Max. Conducted Power	12.30 dBm
Operating Frequency Range(s)	U-NII-1: 5150-5250MHz U-NII-3: 5725-5850MHz
Operating temperature range:	-20 ° C to 70° C
Operating voltage range:	3.7V to 4.2 V
State DC voltage:	3.8V
EUT Accessory	
Battery	Manufacturer: Howell Model: HWE30100100 6600mAH (ENH.)
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 (2019) Unlicensed National Information Infrastructure Devices

ANSI C63.10 (2013)

Reference standard:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

4. Test Configuration

Test Mode

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

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

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
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz
			165	5825MHz
			40 MHz	151
		159		5795MHz

Does this device support TPC Function? Yes No

5. Test Case Results

5.1. Average Power Output –Conducted

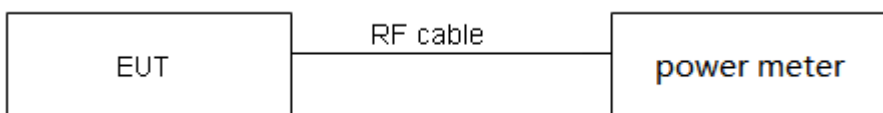
Ambient condition

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 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	1.36	1.56	0.87	0.59
802.11n HT20	1.27	1.47	0.87	0.63
802.11n HT40	0.64	0.84	0.76	1.21
802.11ac VHT20	0.97	1.17	0.83	0.81
802.11ac VHT40	0.49	0.69	0.71	1.49

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

Single Antenna Power Index						
Packet Type	CH36	CH40	CH48	CH149	CH157	CH165
802.11a	18	18	18	17	17	17
802.11n HT20	18	18	17	17	17	17
802.11ac VHT20	17	17	17	17	17	17
Packet Type	CH38	CH46	CH151	CH159	/	/
802.11n HT40	16.5	16.5	16.5	16.5	/	/
802.11ac VHT40	16.5	16.5	16.5	16.5	/	/



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	10.83	11.42	24	PASS
	40/5200	10.45	11.04	24	PASS
	48/5240	10.72	11.31	24	PASS
802.11n HT20	36/5180	11.12	11.75	24	PASS
	40/5200	10.70	11.33	24	PASS
	48/5240	10.95	11.58	24	PASS
802.11n HT40	38/5190	9.74	10.95	24	PASS
	46/5230	9.82	11.03	24	PASS
802.11ac VHT20	36/5180	10.63	11.44	24	PASS
	40/5200	10.75	11.56	24	PASS
	48/5240	10.98	11.79	24	PASS
802.11ac VHT40	38/5190	10.24	11.73	24	PASS
	46/5230	10.81	12.30	24	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	7.53	8.12	30	PASS
	157/5785	7.42	8.01	30	PASS
	165/5825	7.11	7.70	30	PASS
802.11n HT20	149/5745	7.74	8.37	30	PASS
	157/5785	7.68	8.31	30	PASS
	165/5825	7.03	7.66	30	PASS
802.11n HT40	151/5755	7.25	8.46	30	PASS
	159/5795	7.12	8.33	30	PASS
802.11ac VHT20	149/5745	7.96	8.77	30	PASS
	157/5785	8.24	9.05	30	PASS
	165/5825	8.13	8.94	30	PASS
802.11ac VHT40	151/5755	7.63	9.12	30	PASS
	159/5795	8.16	9.65	30	PASS

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

5.2. 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 \geq [3 \times 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 \geq [3 \times RBW].

c) Detector = RMS (power averaging), if [span / (# of points in sweep)] \leq 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.

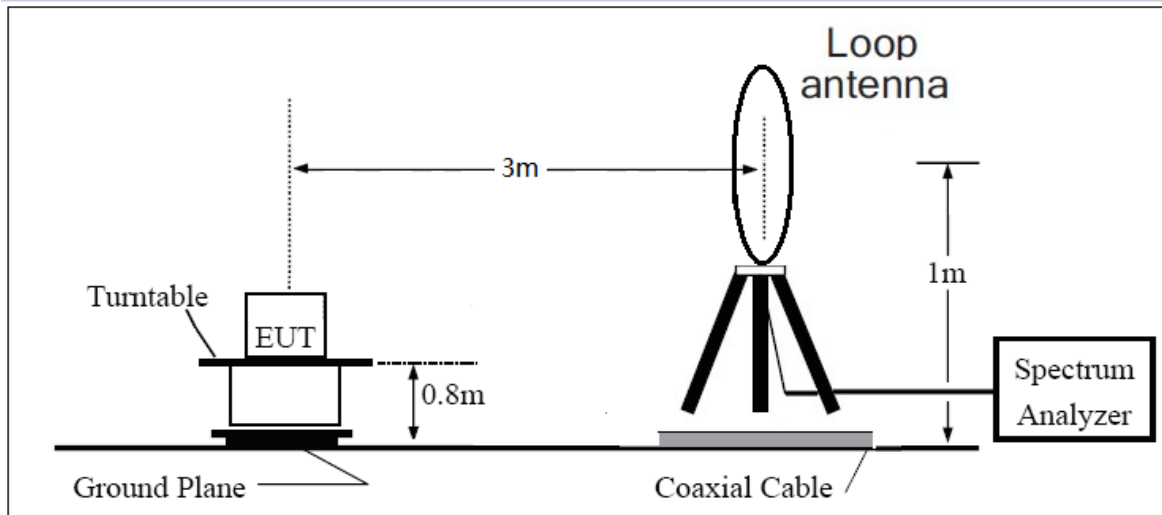
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

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 $[1 / (\text{minimum transmitter on time})]$ and no less than 1 Hz.

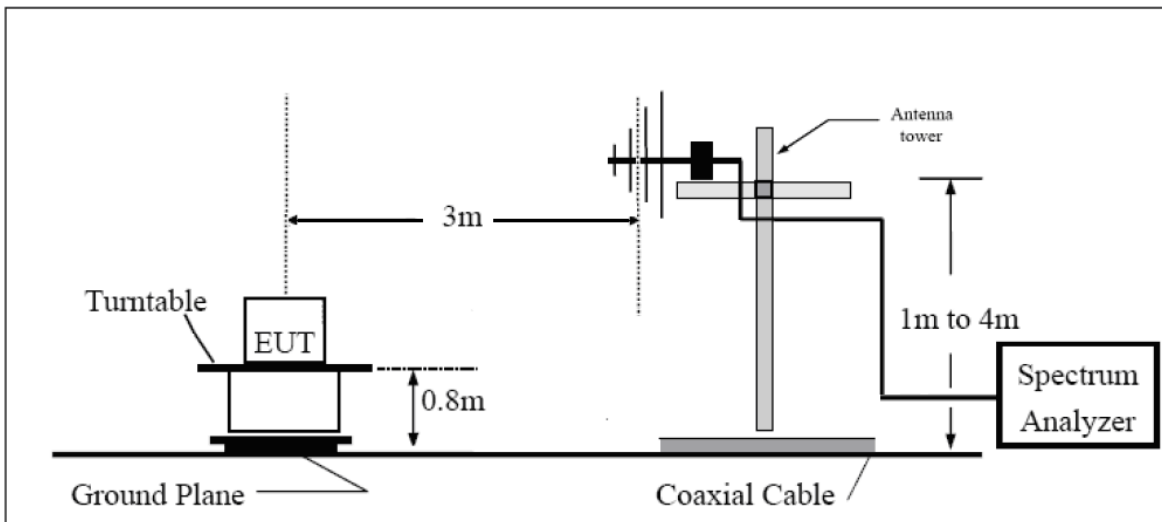
The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the loop antenna is vertical, others antenna are vertical and horizontal.

The test is in transmitting mode.

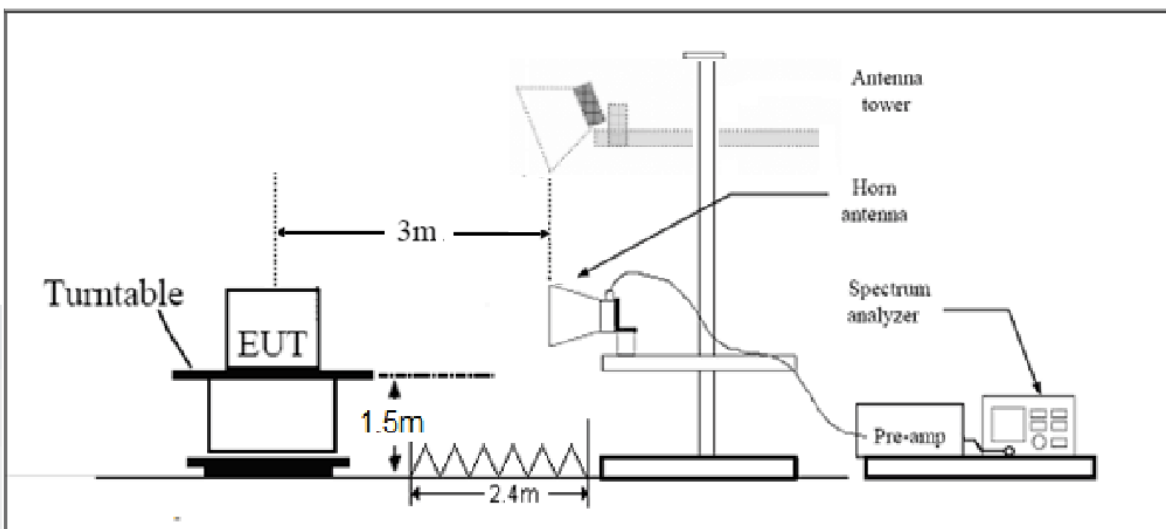
9KHz~~~30MHz



30MHz~~~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

- (1) For transmitters operating in the 5725-5850 MHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (2) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz(68.2dB μ V/m).

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

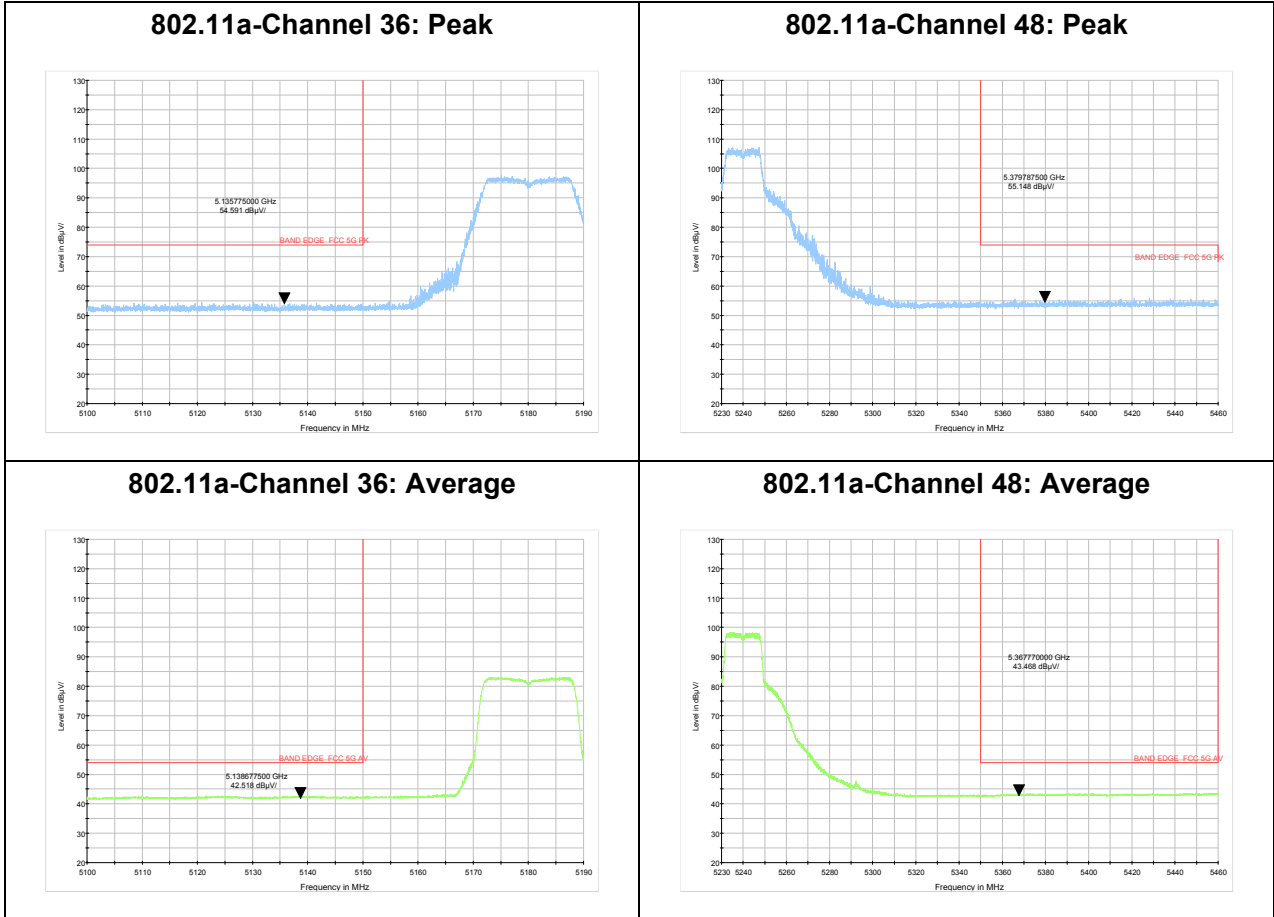


Test Results:

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.

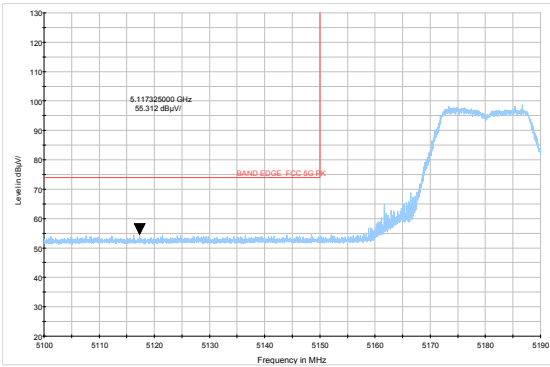
The signal beyond the limit is carrier.

U-NII-1

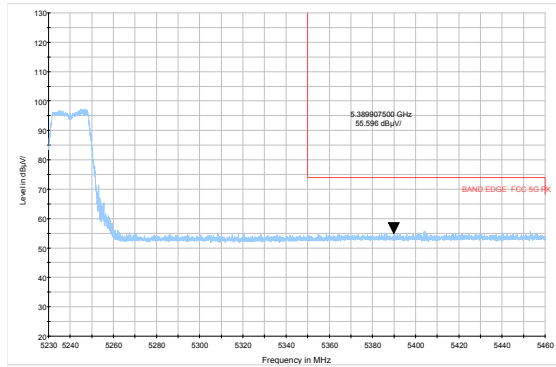




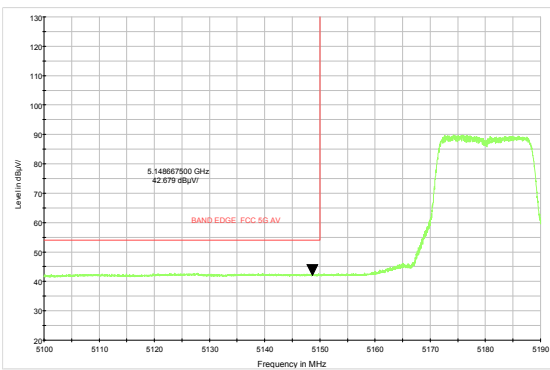
802.11n HT20-Channel 36: Peak



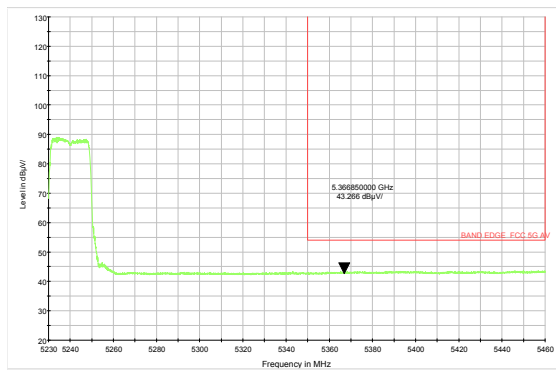
802.11n HT20-Channel 48: Peak



802.11n HT20-Channel 36: Average

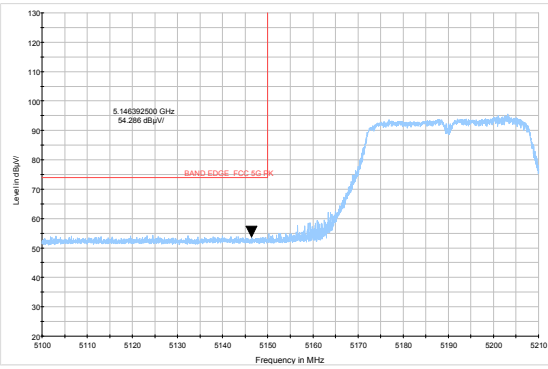


802.11n HT20-Channel 48: Average

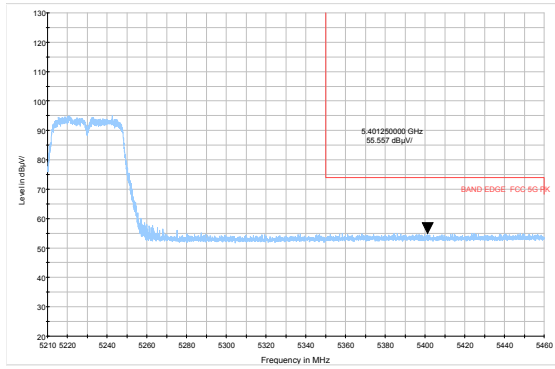




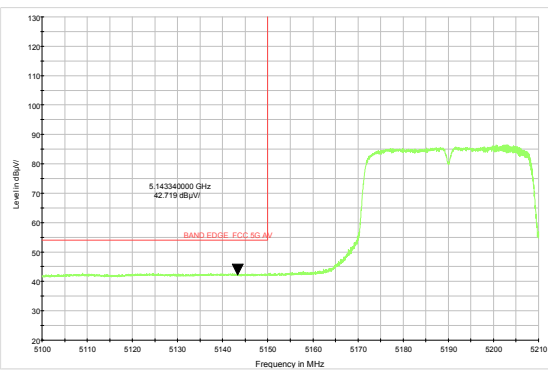
802.11n HT40-Channel 38: Peak



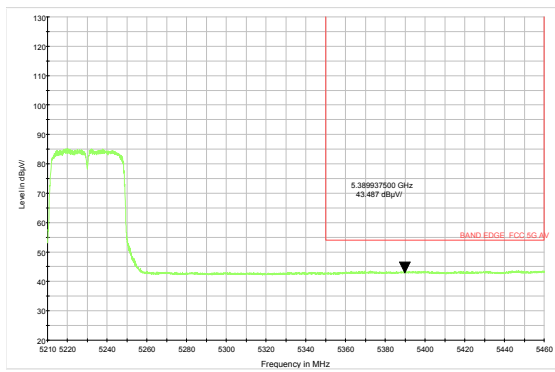
802.11n HT40-Channel 46: Peak



802.11n HT40-Channel 38: Average



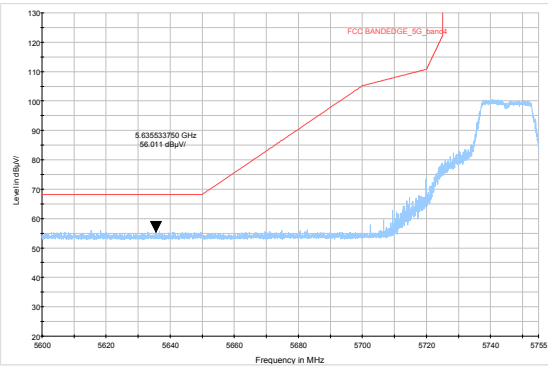
802.11n HT40-Channel 46: Average



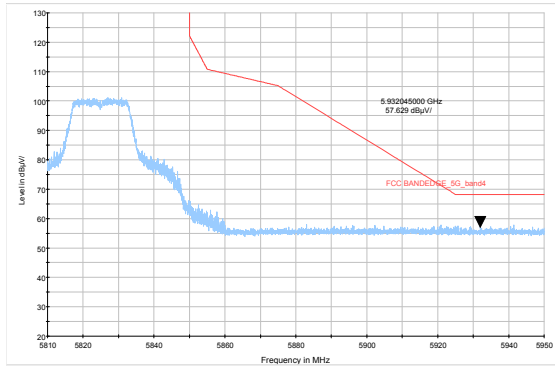


U-NII-3

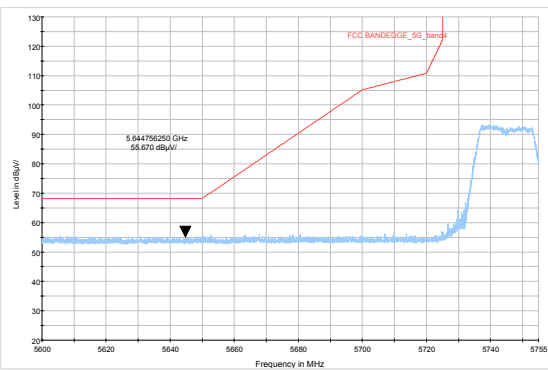
802.11a-Channel 149: Peak



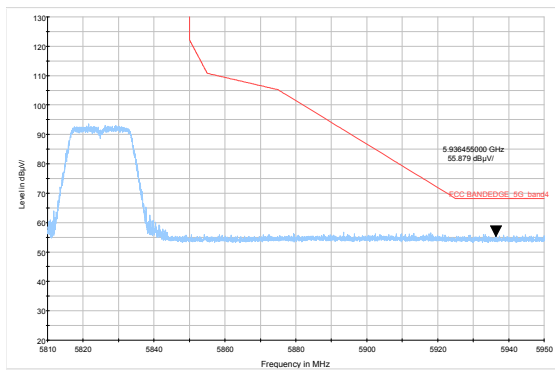
802.11a-Channel 165: Peak



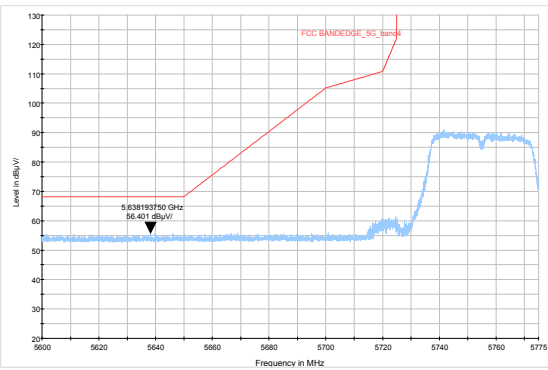
802.11n HT20-Channel 149: Peak



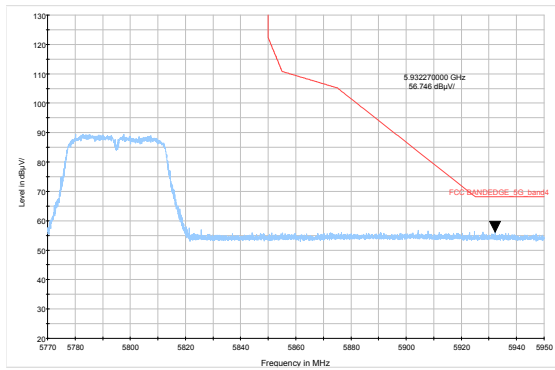
802.11n HT20-Channel 165: Peak



802.11n HT40-Channel 151: Peak



802.11n HT40-Channel 159: Peak



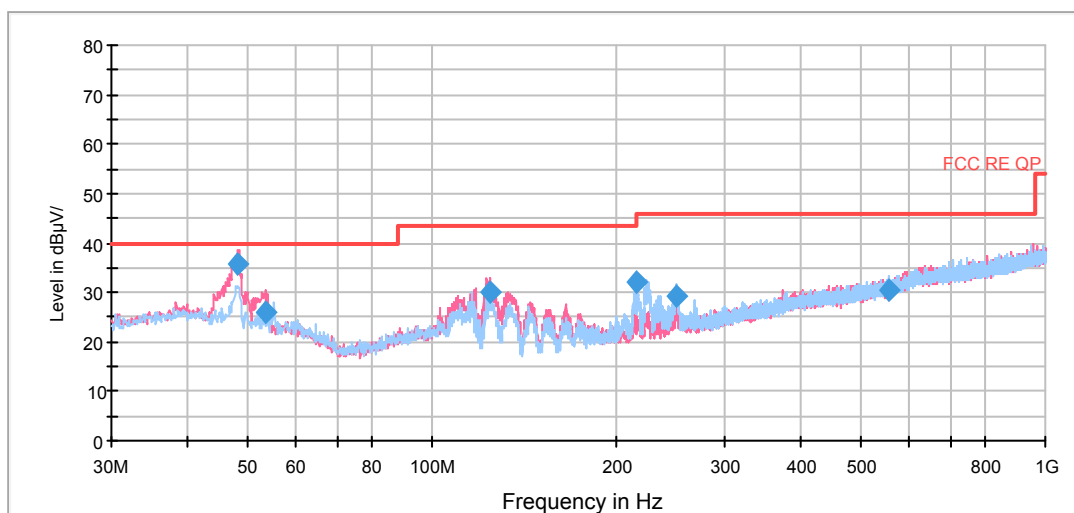
Result of RE

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 36 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Continuous TX mode:



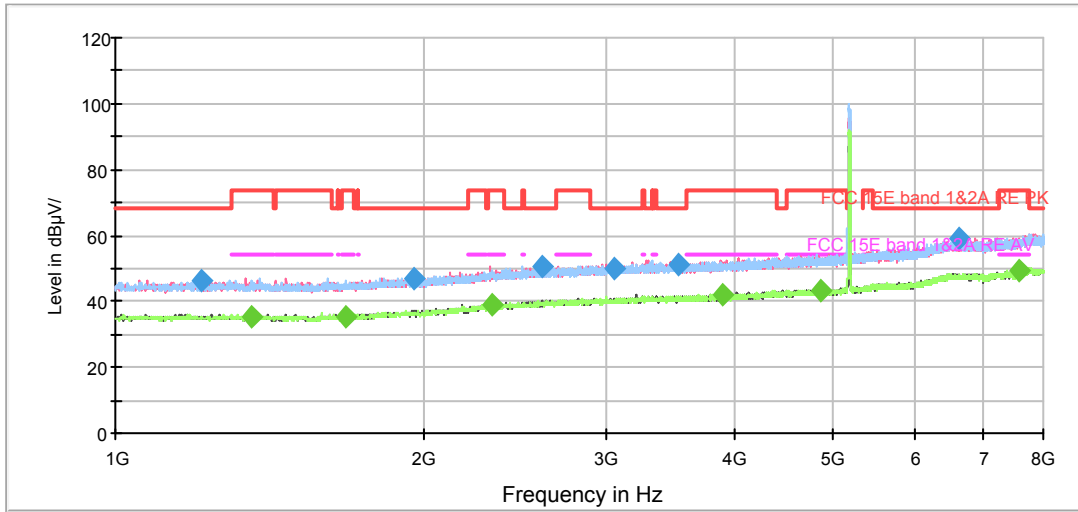
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
48.350000	35.7	100.0	V	286.0	14.2	4.3	40.0
53.407500	26.2	100.0	V	302.0	13.7	13.8	40.0
124.210000	30.1	125.0	V	0.0	10.9	13.4	43.5
215.997500	32.0	125.0	H	108.0	12.6	11.5	43.5
250.516250	29.3	100.0	H	331.0	14.0	16.7	46.0
554.365000	30.3	175.0	H	68.0	22.2	15.7	46.0

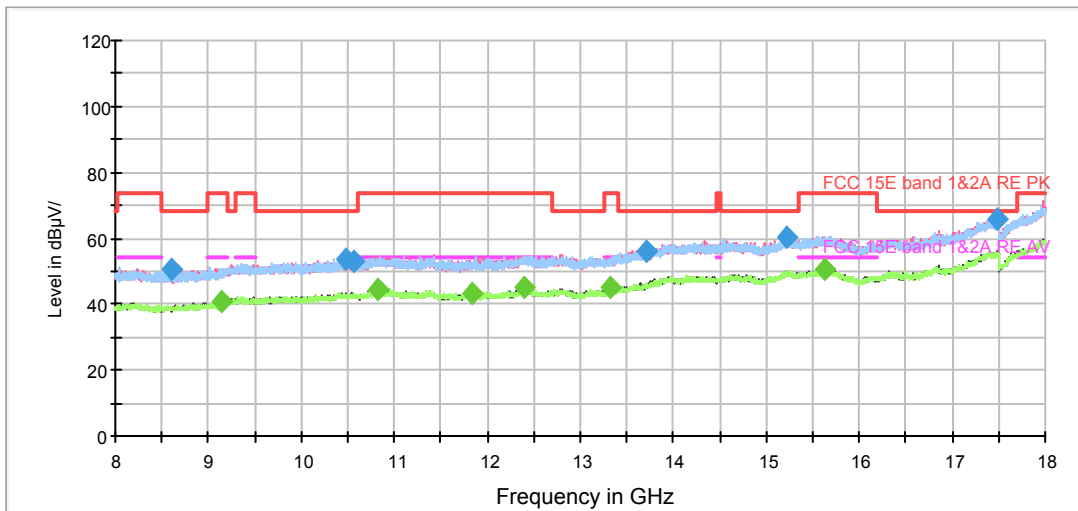
**Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)
 2. Margin = Limit – Quasi-Peak**



802.11a CH36



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



Radiates Emission from 8GHz to 18GHz



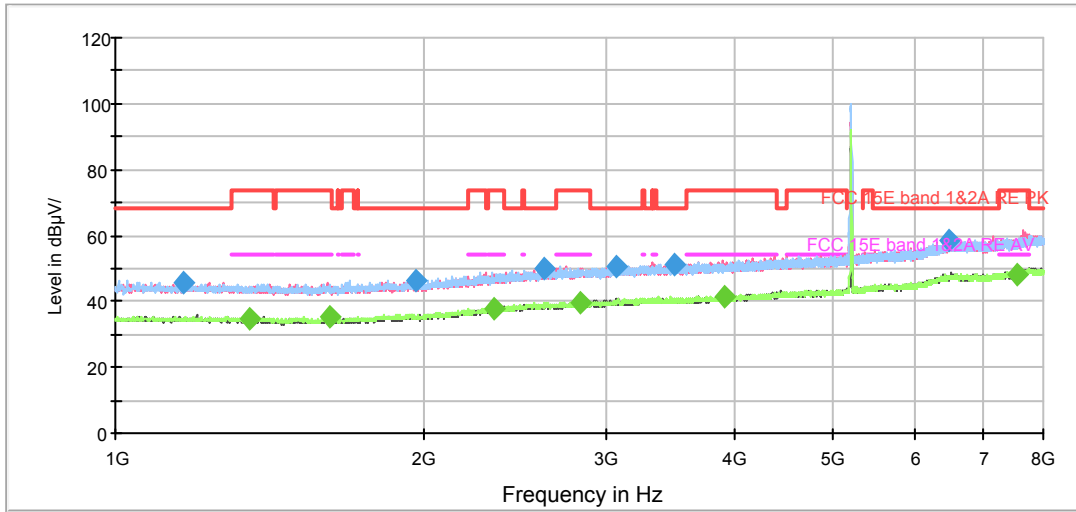
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1212.625000	46.4	100.0	H	8.0	-6.5	21.8	68.2
1953.750000	47.0	100.0	V	329.0	-3.9	21.2	68.2
2604.750000	50.8	200.0	H	348.0	-0.7	17.4	68.2
3056.250000	50.1	100.0	V	359.0	0.5	18.1	68.2
3526.125000	51.5	100.0	V	0.0	1.6	16.7	68.2
6631.500000	58.9	200.0	V	138.0	11.2	9.3	68.2

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

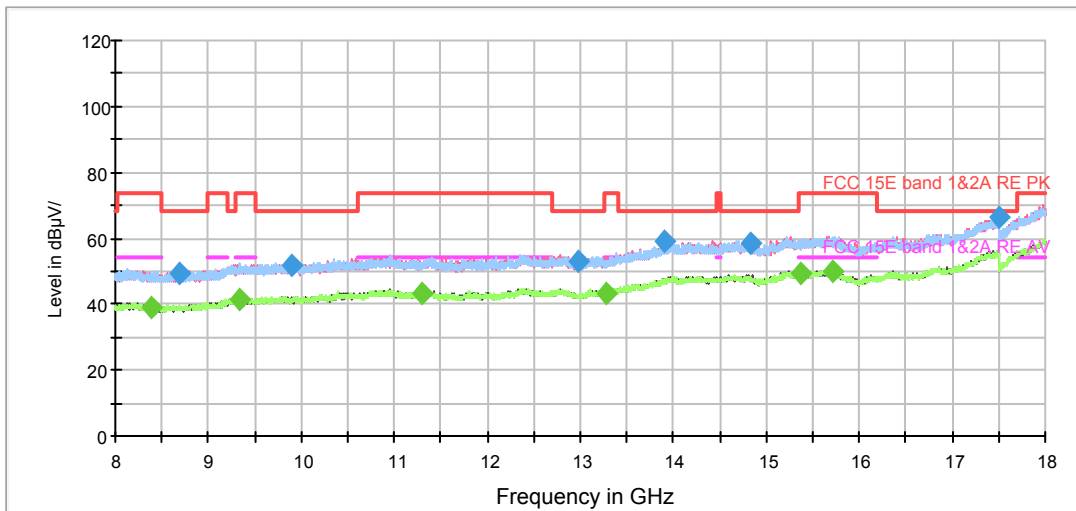
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1357.000000	35.3	100.0	V	358.0	-6.1	18.7	54.0
1672.875000	35.3	100.0	H	25.0	-4.9	18.7	54.0
2330.000000	38.8	200.0	V	0.0	-1.8	15.2	54.0
3905.875000	41.8	200.0	H	352.0	2.6	12.2	54.0
4870.125000	43.5	200.0	V	122.0	5.2	10.5	54.0
7584.375000	49.1	200.0	H	145.0	12.4	4.9	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



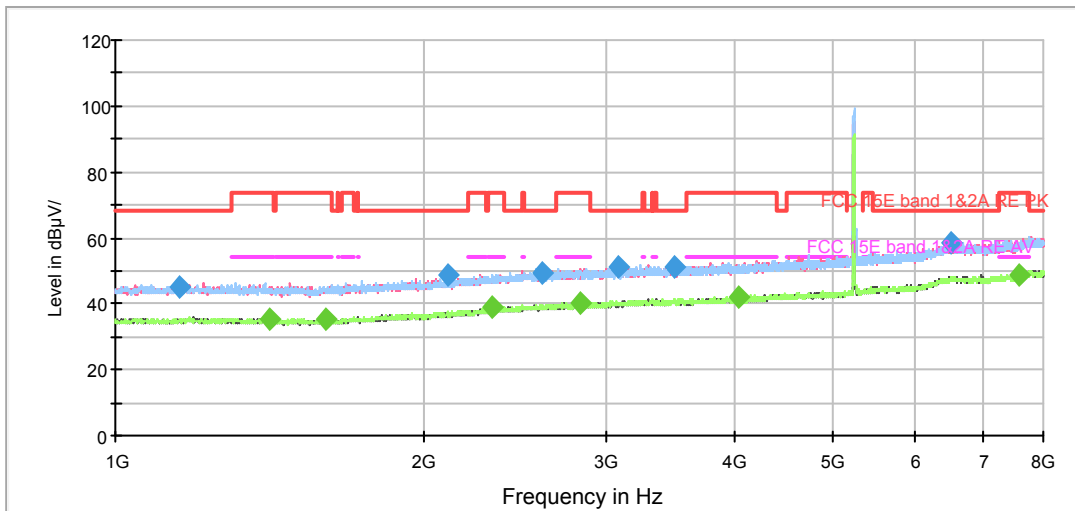
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1166.250000	45.4	100.0	V	2.0	-6.6	22.8	68.2
1965.125000	46.1	200.0	H	239.0	-3.9	22.1	68.2
2613.500000	49.7	100.0	V	322.0	-0.6	18.5	68.2
3068.500000	50.8	200.0	V	18.0	0.6	17.4	68.2
3506.875000	51.1	200.0	H	337.0	1.6	17.1	68.2
6488.875000	58.3	200.0	H	0.0	11.1	9.9	68.2

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

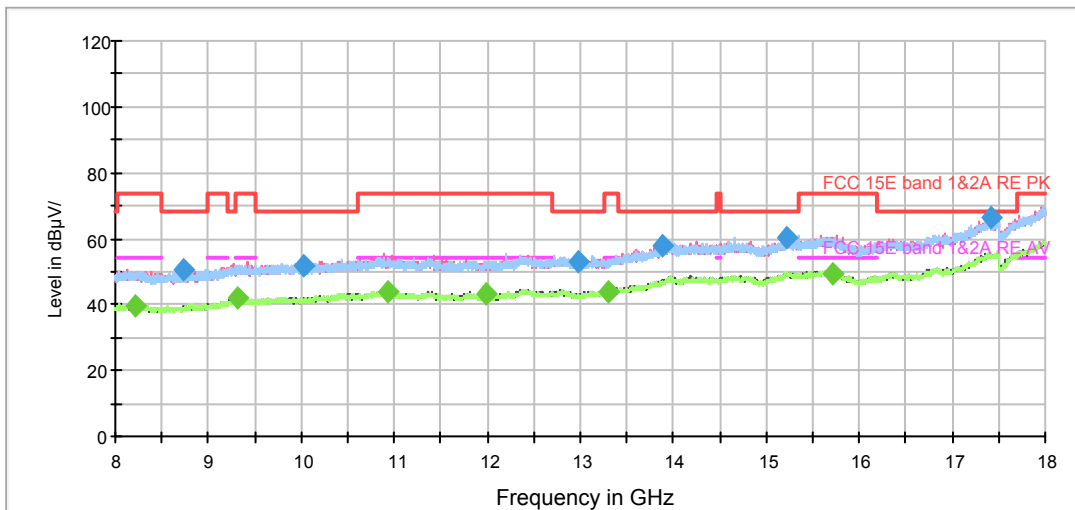
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1352.625000	34.9	100.0	H	142.0	-6.1	19.1	54.0
1616.875000	35.1	200.0	H	359.0	-5.2	18.9	54.0
2334.375000	38.0	100.0	V	0.0	-1.8	16.0	54.0
2828.750000	39.5	200.0	V	60.0	0.0	14.5	54.0
3923.375000	41.7	100.0	V	332.0	2.6	12.3	54.0
7559.000000	48.3	100.0	V	347.0	12.3	5.7	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



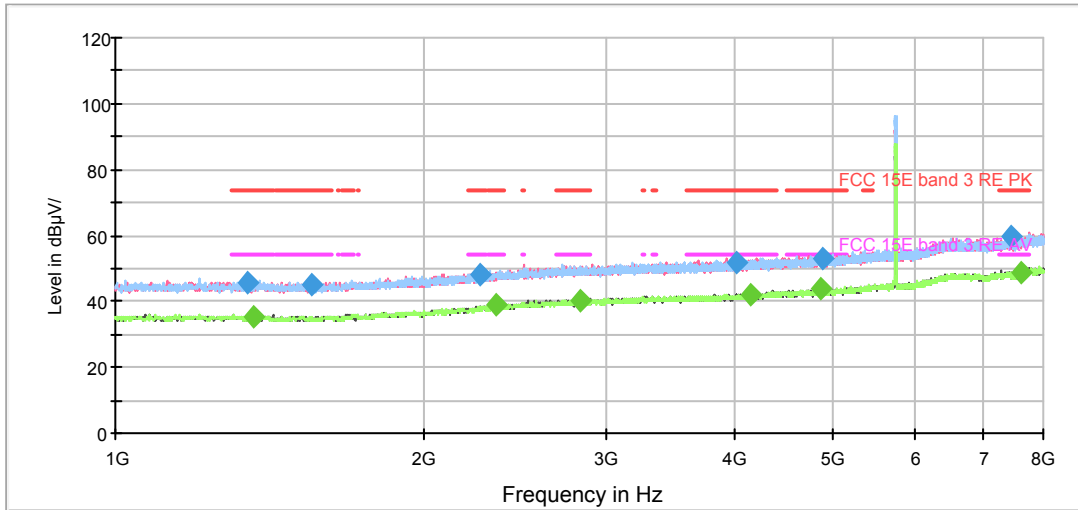
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1154.875000	45.3	200.0	H	128.0	-6.7	22.9	68.2
2111.250000	48.6	100.0	H	30.0	-3.1	19.6	68.2
2600.375000	49.5	100.0	H	0.0	-0.8	18.7	68.2
3085.125000	51.1	100.0	V	180.0	0.6	17.1	68.2
3495.500000	51.0	100.0	H	161.0	1.5	17.2	68.2
6497.625000	58.2	100.0	H	7.0	11.2	10.0	68.2

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

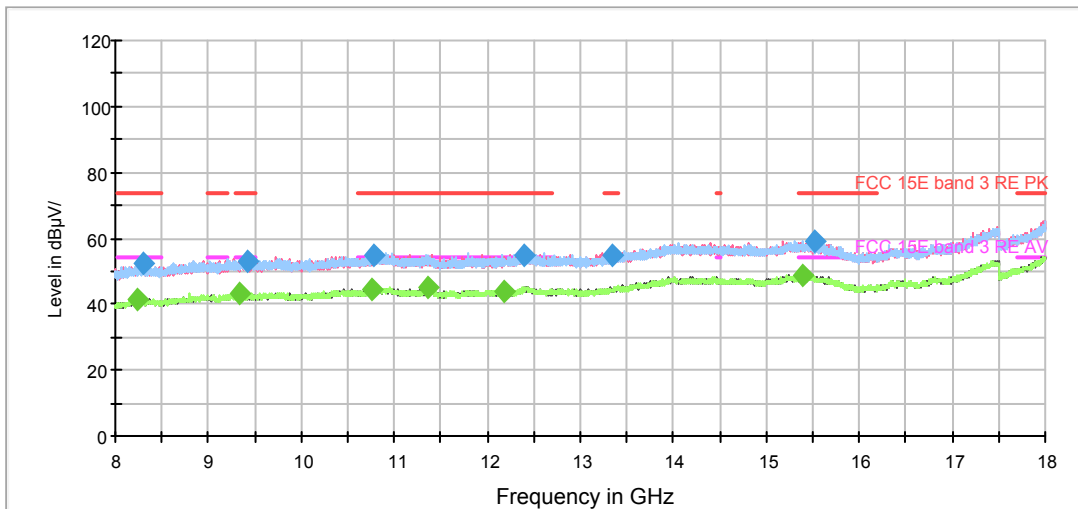
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1414.750000	35.6	100.0	H	7.0	-5.9	18.4	54.0
1602.000000	35.2	100.0	V	0.0	-5.2	18.8	54.0
2327.375000	38.8	200.0	H	344.0	-1.8	15.2	54.0
2828.750000	40.4	200.0	V	2.0	0.0	13.6	54.0
4038.875000	41.7	200.0	V	2.0	2.9	12.3	54.0
7569.500000	48.8	100.0	V	287.0	12.4	5.2	54.0

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



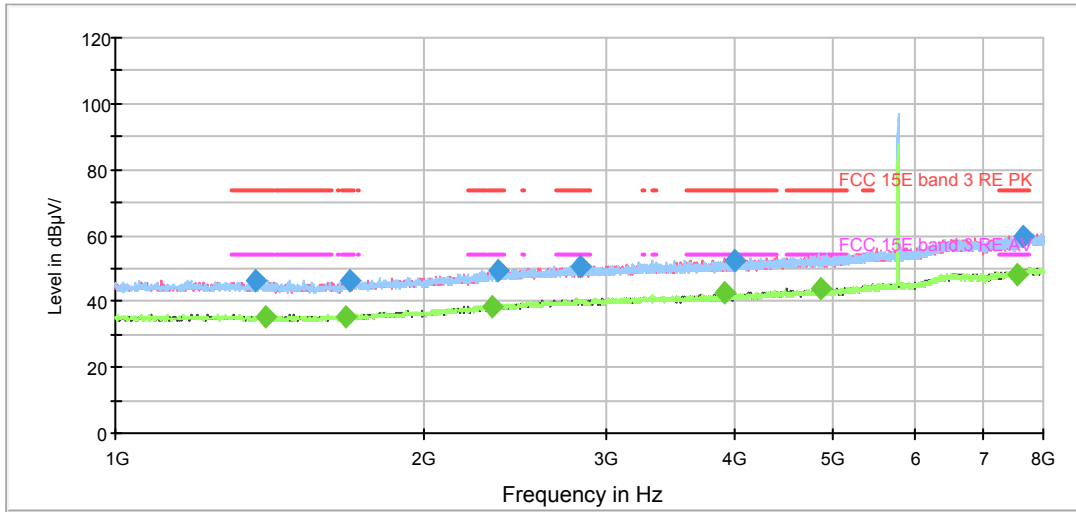
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1343.000000	45.9	100.0	V	355.0	-6.2	28.1	74.0
1553.000000	44.9	100.0	H	124.0	-5.4	29.1	74.0
2268.750000	48.0	200.0	H	355.0	-2.1	26.0	74.0
4028.375000	52.0	200.0	H	287.0	2.9	22.0	74.0
4882.375000	53.1	100.0	V	0.0	5.2	20.9	74.0
7435.625000	59.6	200.0	V	0.0	12.1	14.4	74.0

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

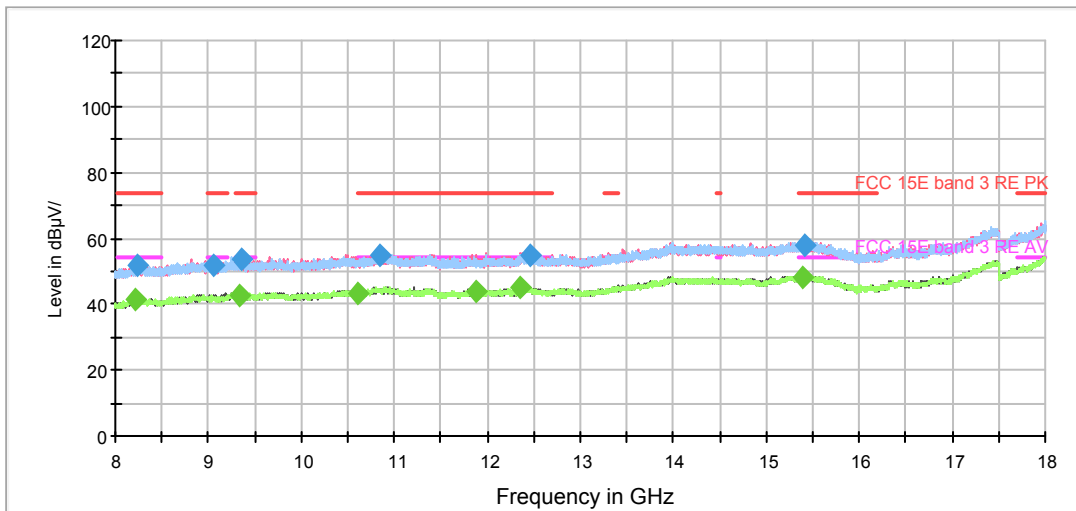
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1361.375000	35.1	200.0	H	124.0	-6.0	18.9	54.0
2345.750000	39.1	200.0	H	0.0	-1.7	14.9	54.0
2830.500000	40.0	200.0	V	25.0	0.0	14.0	54.0
4159.625000	42.3	100.0	V	355.0	3.2	11.7	54.0
4852.625000	43.9	200.0	H	124.0	5.1	10.1	54.0
7624.625000	48.8	100.0	V	335.0	12.7	5.2	54.0

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)
1368.375000	46.3	200.0	V	5.0	-6.0	27.7	74.0
1691.250000	46.1	100.0	H	180.0	-4.8	27.9	74.0
2356.250000	49.6	100.0	V	349.0	-1.7	24.4	74.0
2829.625000	50.6	100.0	V	234.0	0.0	23.4	74.0
3997.750000	52.3	100.0	H	17.0	2.8	21.7	74.0
7658.750000	59.5	200.0	V	237.0	12.9	14.5	74.0

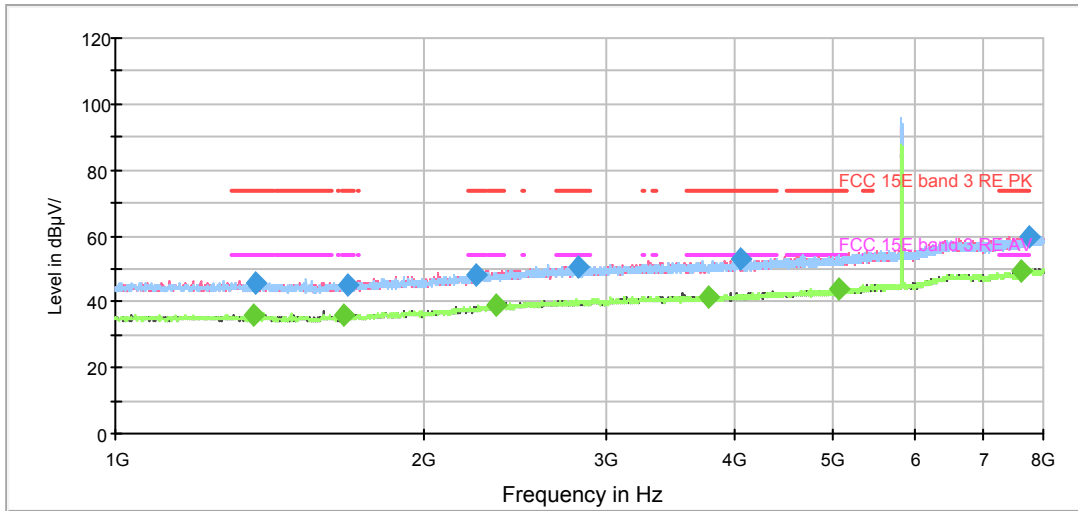
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1398.125000	35.5	100.0	V	252.0	-5.9	18.5	54.0
1678.125000	35.6	200.0	V	180.0	-4.9	18.4	54.0
2323.875000	38.6	200.0	V	33.0	-1.9	15.4	54.0
3920.750000	42.3	200.0	V	0.0	2.6	11.7	54.0
4870.125000	43.6	200.0	V	56.0	5.2	10.4	54.0
7561.625000	48.4	200.0	H	270.0	12.3	5.6	54.0

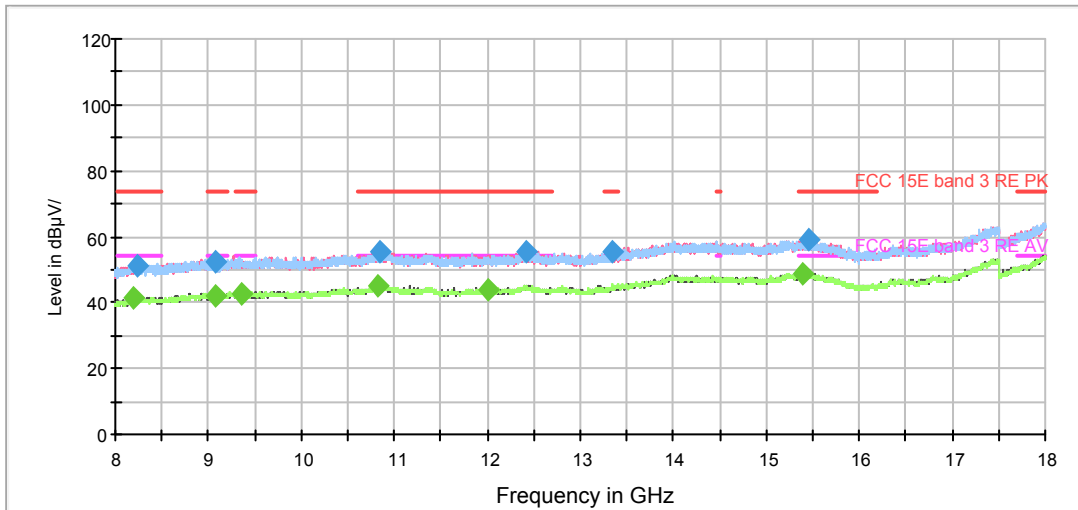
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11a CH165



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



Radiates Emission from 8GHz to 18GHz



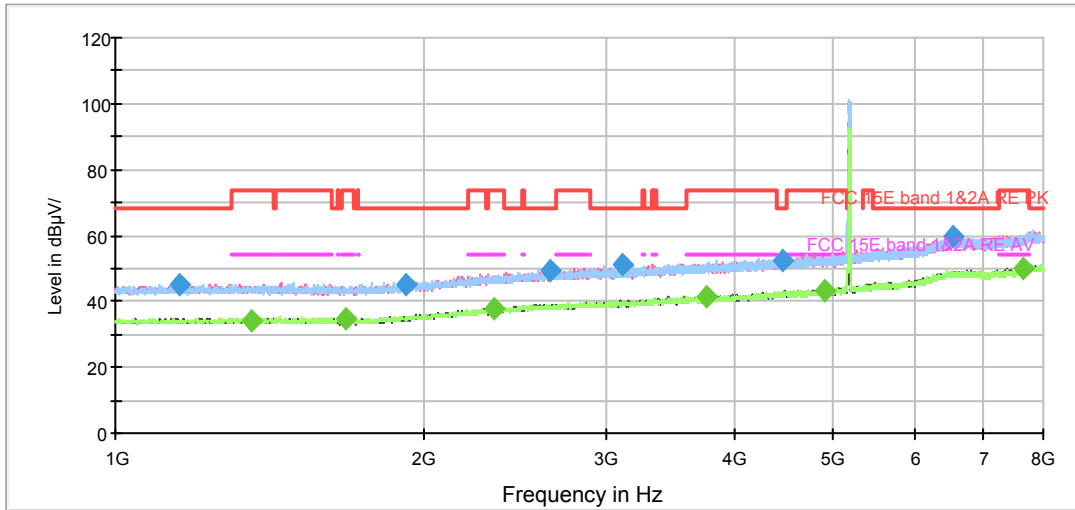
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1368.375000	46.0	100.0	V	142.0	-6.0	28.0	74.0
1686.000000	44.9	100.0	V	288.0	-4.8	29.1	74.0
2246.875000	48.2	100.0	H	1.0	-2.4	25.8	74.0
2823.500000	50.8	200.0	H	0.0	-0.1	23.2	74.0
4060.750000	52.9	200.0	H	277.0	2.9	21.1	74.0
7735.750000	59.7	200.0	V	17.0	13.1	14.3	74.0

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

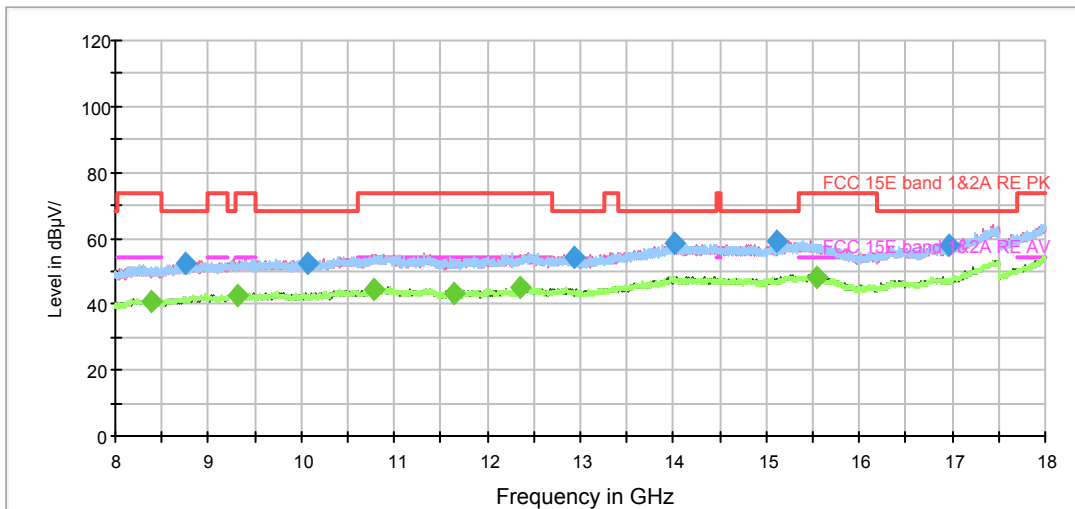
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1363.125000	36.1	200.0	H	359.0	-6.0	17.9	54.0
1670.250000	35.8	200.0	V	358.0	-4.9	18.2	54.0
2345.750000	39.2	100.0	V	358.0	-1.7	14.8	54.0
3772.000000	41.5	100.0	H	32.0	2.1	12.5	54.0
5061.750000	43.7	100.0	V	357.0	5.7	10.3	54.0
7613.250000	49.5	100.0	H	23.0	12.6	4.5	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



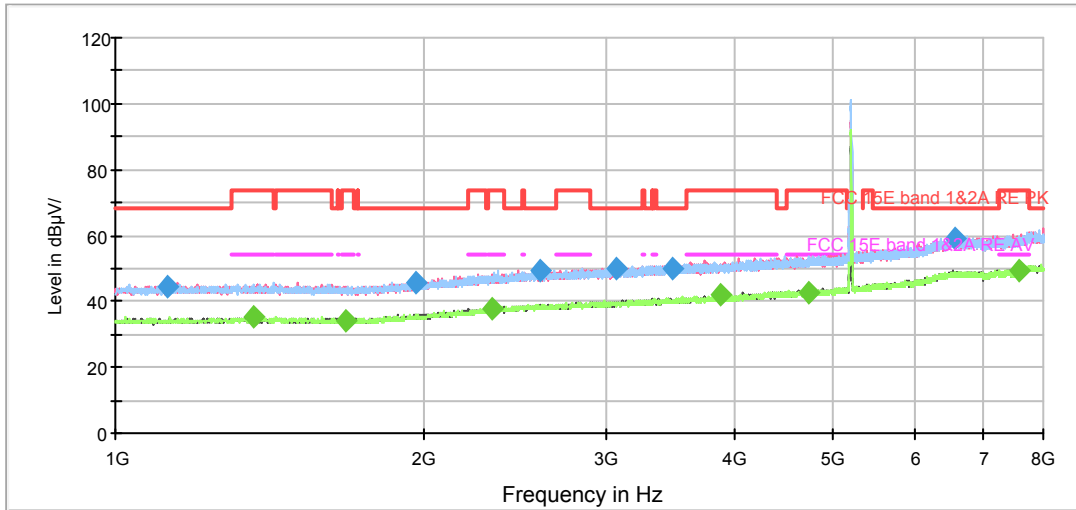
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1154.000000	44.8	100.0	H	300.0	-1.3	23.4	68.2
1917.875000	44.9	200.0	H	239.0	1.0	23.3	68.2
2645.000000	49.2	100.0	V	324.0	3.9	19.0	68.2
3115.750000	51.2	200.0	H	357.0	5.0	17.0	68.2
4465.875000	52.6	200.0	H	144.0	8.7	15.6	68.2
6547.500000	59.5	200.0	V	19.0	14.9	8.7	68.2

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

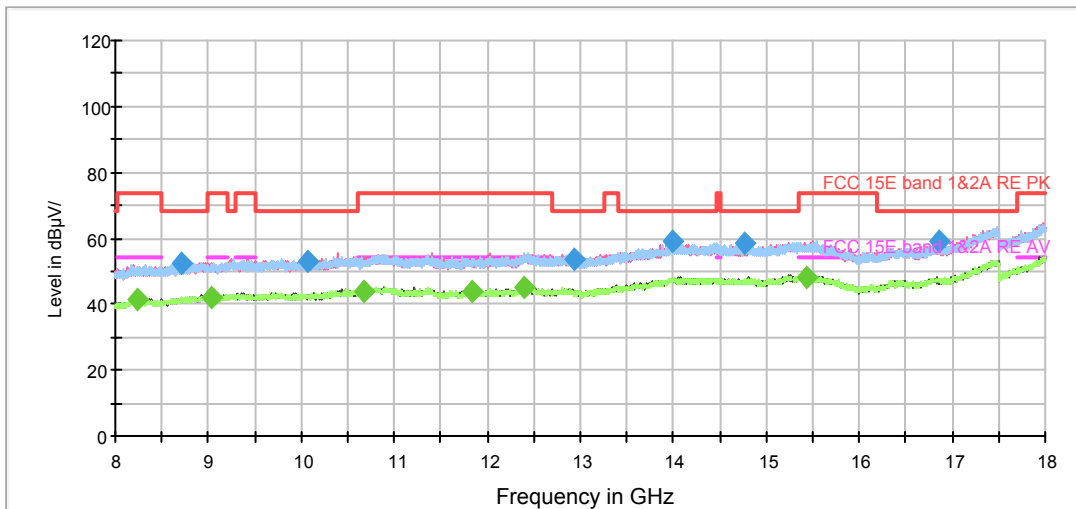
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1354.375000	34.4	200.0	V	8.0	-0.9	19.6	54.0
1679.000000	34.7	200.0	H	351.0	0.3	19.3	54.0
2333.500000	37.8	200.0	H	0.0	2.9	16.2	54.0
3766.750000	41.3	200.0	H	355.0	6.7	12.7	54.0
4913.875000	43.5	100.0	V	0.0	9.5	10.5	54.0
7637.750000	49.7	100.0	V	342.0	16.6	4.3	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



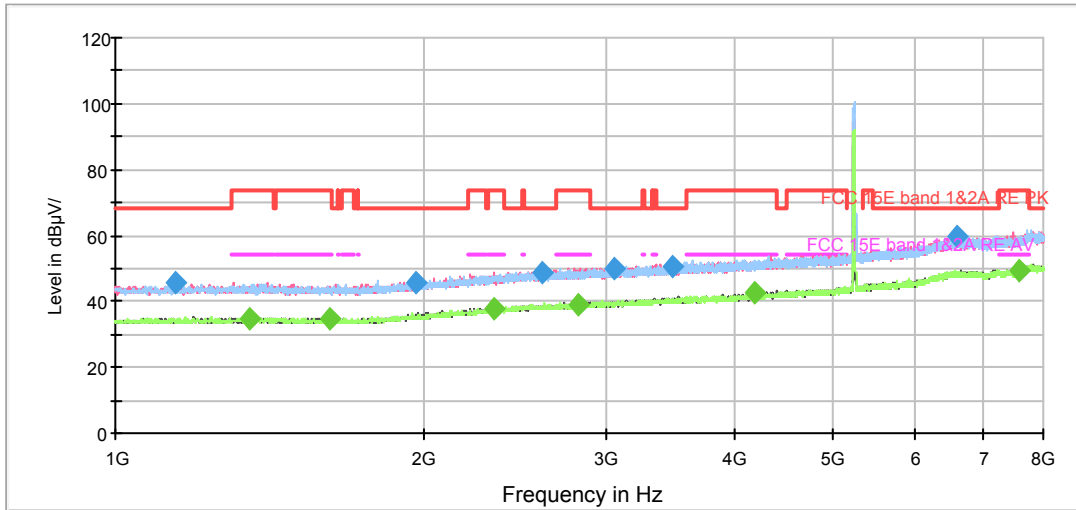
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1123.375000	44.4	200.0	V	2.0	-1.3	23.8	68.2
1960.750000	45.5	200.0	H	207.0	1.0	22.7	68.2
2589.875000	49.5	200.0	V	5.0	3.8	18.7	68.2
3074.625000	50.1	100.0	H	214.0	5.0	18.1	68.2
3478.875000	50.2	200.0	V	5.0	6.0	18.0	68.2
6551.875000	58.8	200.0	H	347.0	15.0	9.4	68.2

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

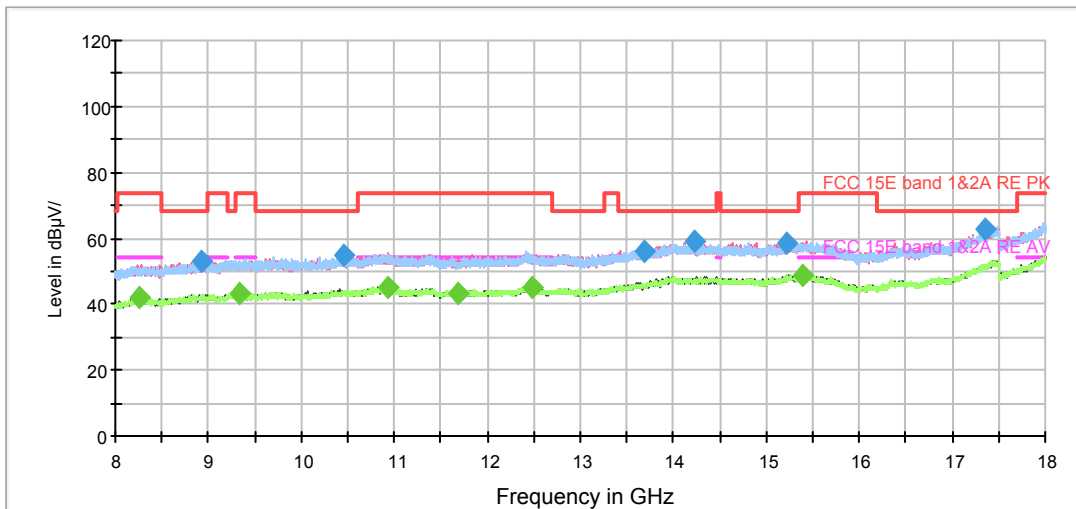
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1360.500000	35.2	200.0	V	0.0	-0.8	18.8	54.0
1675.500000	34.3	100.0	H	248.0	0.3	19.7	54.0
2330.875000	37.9	200.0	V	120.0	2.9	16.1	54.0
3885.750000	41.7	200.0	V	8.0	7.0	12.3	54.0
4722.250000	42.8	100.0	V	255.0	9.2	11.2	54.0
7577.375000	49.2	200.0	V	319.0	16.4	4.8	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



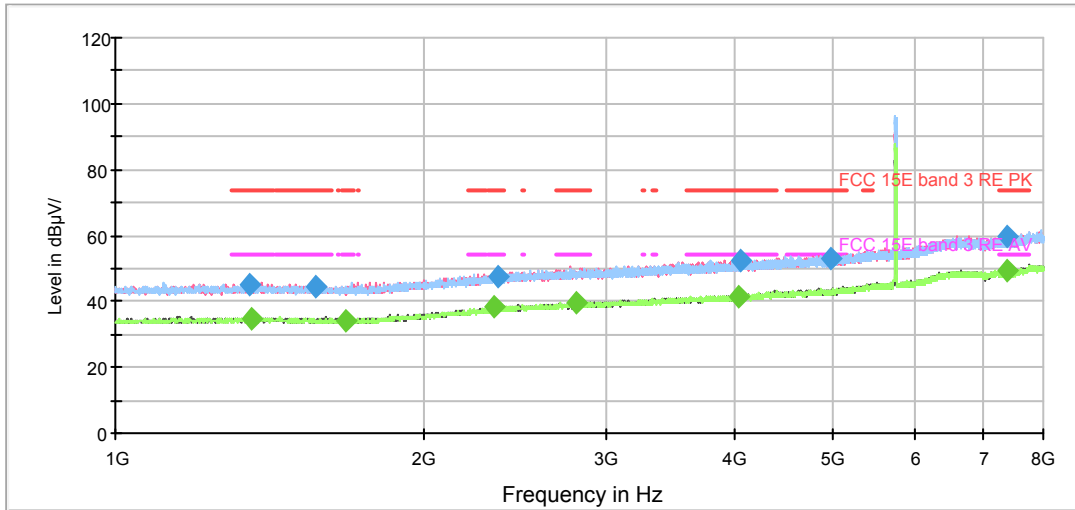
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1144.375000	45.5	200.0	V	183.0	-1.3	22.7	68.2
1964.250000	45.7	200.0	V	135.0	1.0	22.5	68.2
2600.375000	48.6	200.0	V	183.0	3.8	19.6	68.2
3065.875000	49.9	100.0	V	357.0	5.0	18.3	68.2
3484.125000	50.8	200.0	H	0.0	6.0	17.4	68.2
6582.500000	59.5	100.0	V	74.0	15.0	8.7	68.2

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

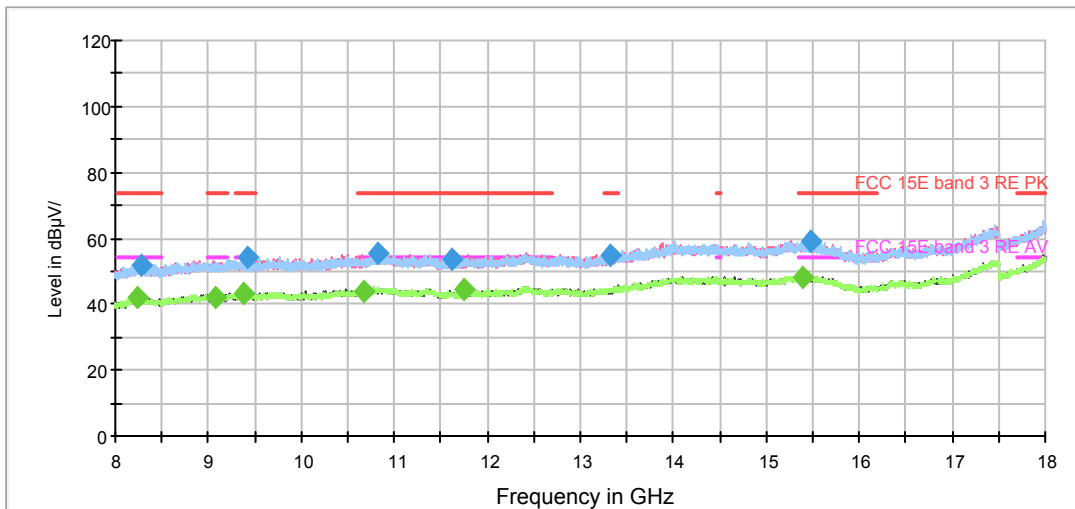
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1350.000000	34.6	100.0	V	333.0	-0.9	19.4	54.0
1615.125000	35.0	100.0	H	231.0	0.0	19.0	54.0
2339.625000	38.0	100.0	H	58.0	3.0	16.0	54.0
2817.375000	39.0	100.0	V	0.0	4.3	15.0	54.0
4197.250000	42.3	100.0	V	347.0	7.8	11.7	54.0
7569.500000	49.2	200.0	V	18.0	16.3	4.8	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



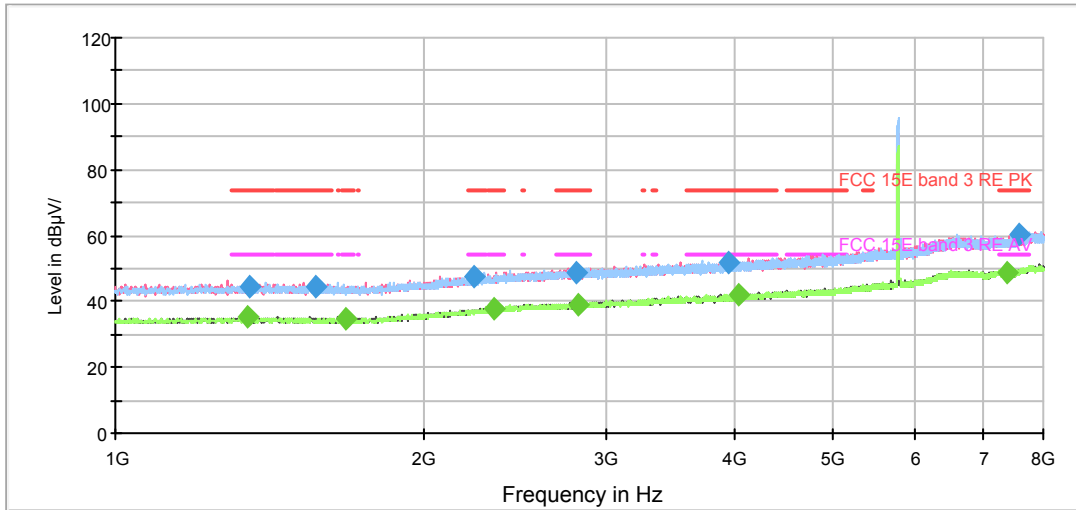
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1352.625000	45.0	200.0	V	177.0	-0.9	29.0	74.0
1565.250000	44.6	100.0	H	121.0	-0.2	29.4	74.0
2360.625000	47.8	100.0	H	28.0	3.0	26.2	74.0
4066.000000	52.3	200.0	H	344.0	7.6	21.7	74.0
4965.500000	52.9	200.0	V	7.0	9.5	21.1	74.0
7376.125000	59.5	100.0	V	218.0	15.8	14.5	74.0

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

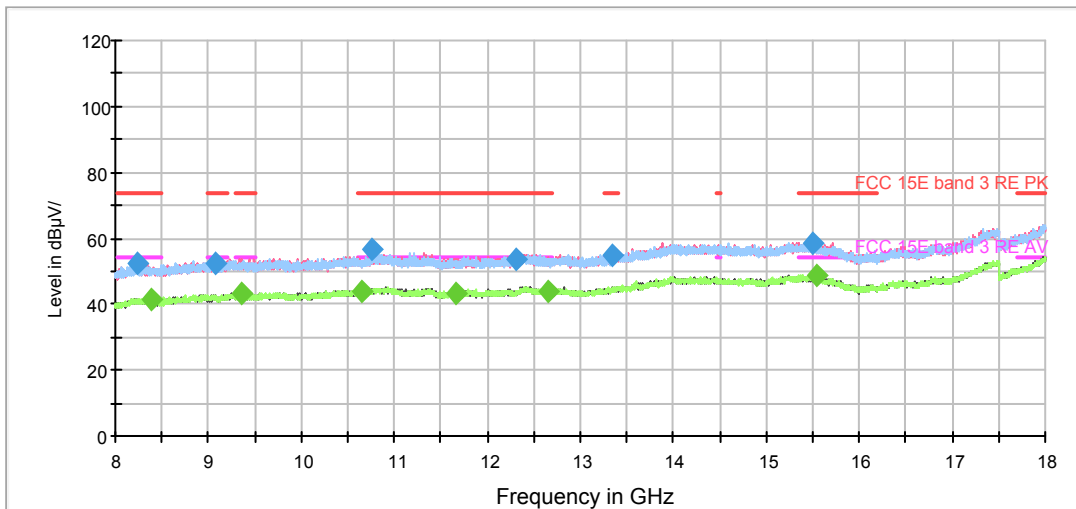
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1357.000000	34.9	200.0	H	328.0	-0.9	19.1	54.0
1673.750000	34.3	100.0	V	0.0	0.3	19.7	54.0
2336.125000	38.5	200.0	V	55.0	3.0	15.5	54.0
2811.250000	39.6	200.0	H	328.0	4.3	14.4	54.0
4038.875000	41.4	200.0	V	197.0	7.5	12.6	54.0
7366.500000	49.1	100.0	V	218.0	15.7	4.9	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)
1349.125000	44.6	200.0	V	10.0	-0.9	29.4	74.0
1563.500000	44.4	200.0	V	31.0	-0.2	29.6	74.0
2230.250000	47.7	100.0	H	215.0	2.4	26.3	74.0
2804.250000	49.0	200.0	H	304.0	4.3	25.0	74.0
3954.000000	51.6	200.0	H	328.0	7.1	22.4	74.0
7569.500000	60.4	100.0	H	178.0	16.3	13.6	74.0

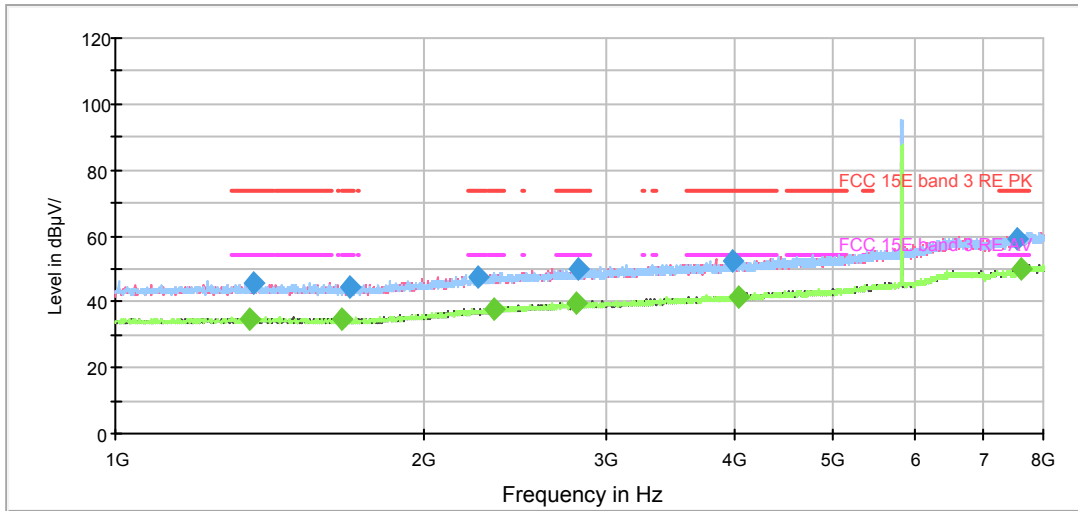
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1346.500000	35.1	200.0	H	290.0	-0.9	18.9	54.0
1674.625000	34.5	200.0	V	0.0	0.3	19.5	54.0
2332.625000	37.8	100.0	V	254.0	2.9	16.2	54.0
2825.250000	39.2	200.0	V	122.0	4.4	14.8	54.0
4034.500000	42.0	100.0	V	125.0	7.5	12.0	54.0
7393.625000	48.9	100.0	H	6.0	15.8	5.1	54.0

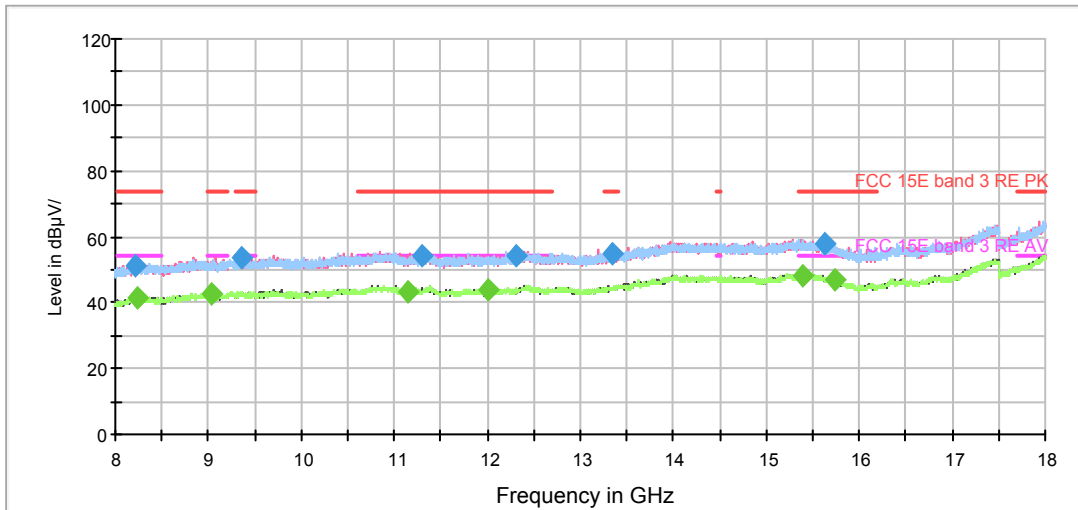
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11n (HT20) CH165



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



Radiates Emission from 8GHz to 18GHz



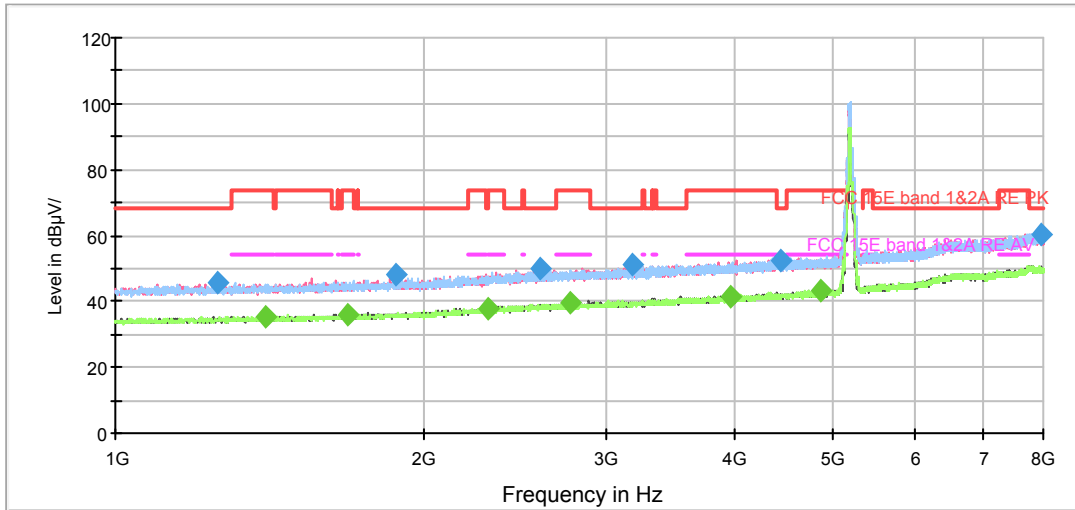
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1362.250000	45.7	100.0	V	288.0	-0.8	28.3	74.0
1688.625000	44.4	200.0	V	16.0	0.4	29.6	74.0
2252.125000	47.6	200.0	V	5.0	2.5	26.4	74.0
2826.125000	49.8	100.0	H	293.0	4.4	24.2	74.0
3979.375000	52.5	200.0	V	72.0	7.2	21.5	74.0
7539.750000	59.3	100.0	V	121.0	16.2	14.7	74.0

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

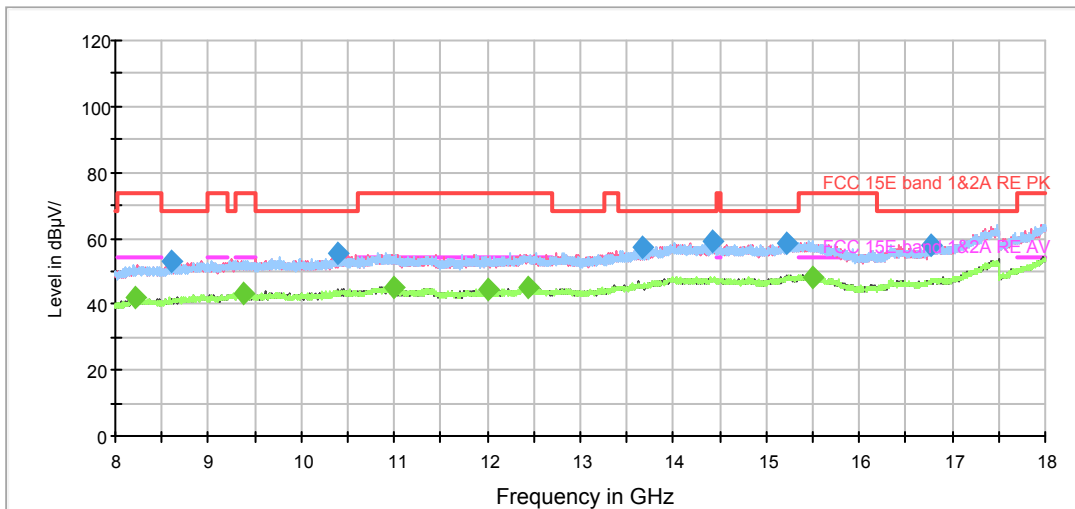
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1351.750000	34.5	200.0	H	0.0	-0.9	19.5	54.0
1662.375000	34.7	200.0	V	7.0	0.2	19.3	54.0
2334.375000	37.7	200.0	H	337.0	3.0	16.3	54.0
2809.500000	39.5	100.0	H	2.0	4.3	14.5	54.0
4033.625000	41.3	200.0	V	56.0	7.4	12.7	54.0
7601.000000	49.8	200.0	V	0.0	16.5	4.2	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



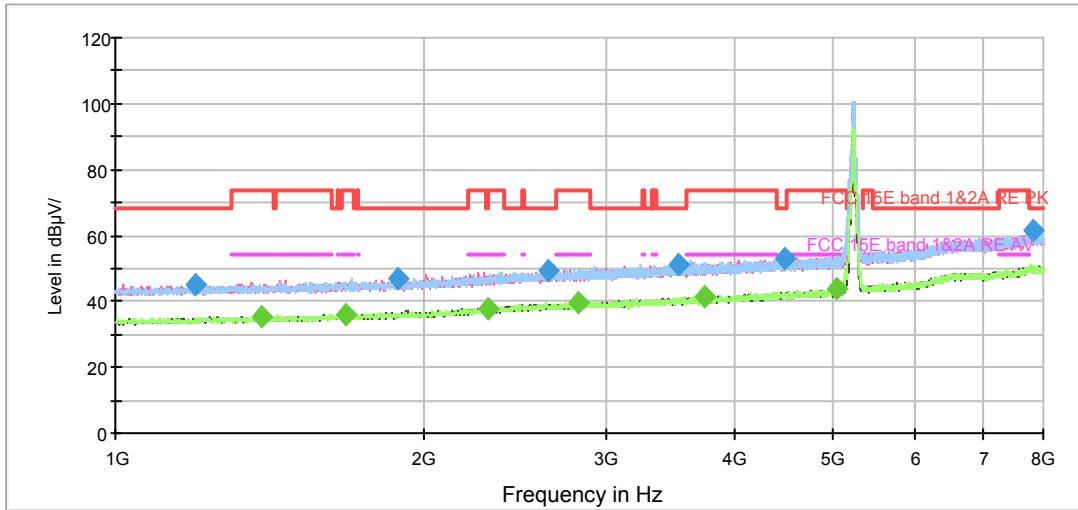
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1256.375000	45.4	200.0	V	0.0	-1.1	22.8	68.2
1875.875000	47.9	100.0	V	172.0	0.8	20.3	68.2
2595.125000	49.7	200.0	H	121.0	3.8	18.5	68.2
3191.000000	51.2	100.0	V	192.0	5.3	17.0	68.2
4450.125000	52.6	200.0	H	158.0	8.7	15.6	68.2
7980.750000	60.4	200.0	V	264.0	18.1	7.8	68.2

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

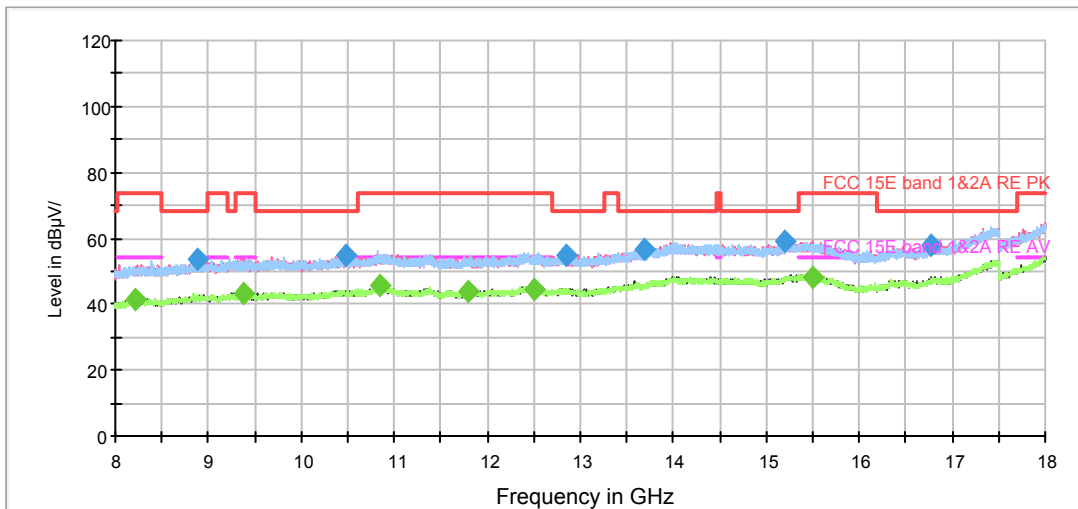
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1401.625000	35.5	200.0	H	23.0	-0.7	18.5	54.0
1681.625000	35.7	200.0	H	139.0	0.3	18.3	54.0
2305.500000	37.7	200.0	H	0.0	2.7	14.0	54.0
2766.625000	39.5	100.0	V	247.0	4.2	14.5	54.0
3973.250000	41.6	200.0	V	247.0	7.1	12.4	54.0
4850.000000	43.3	100.0	V	0.0	9.4	10.7	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



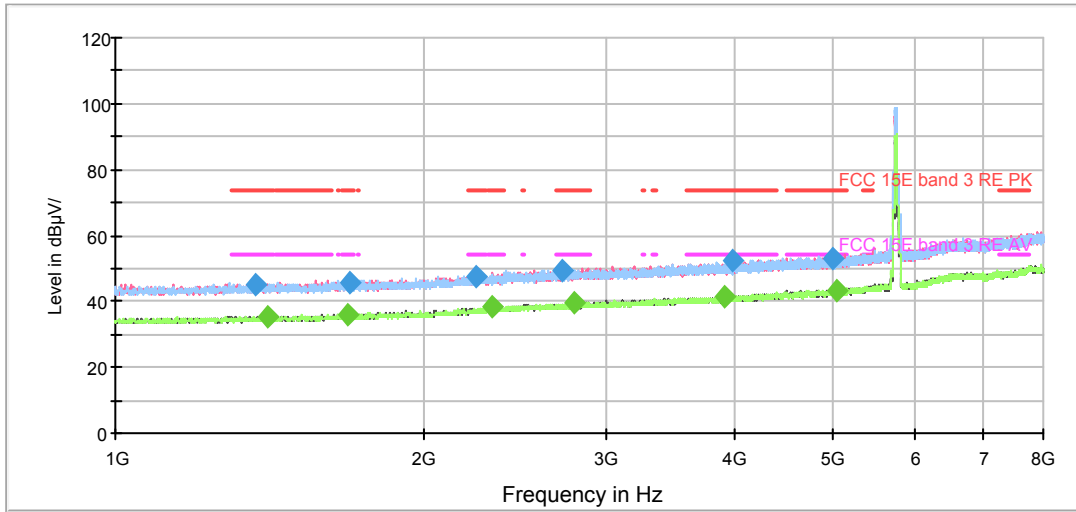
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1197.750000	45.1	100.0	V	82.0	-1.2	23.1	68.2
1887.250000	46.8	100.0	V	182.0	0.8	21.4	68.2
2640.625000	49.4	200.0	V	358.0	3.9	18.8	68.2
3527.000000	51.2	200.0	H	213.0	6.3	17.0	68.2
4483.375000	53.3	100.0	H	22.0	8.8	14.9	68.2
7814.500000	61.4	200.0	H	68.0	17.4	6.8	68.2

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

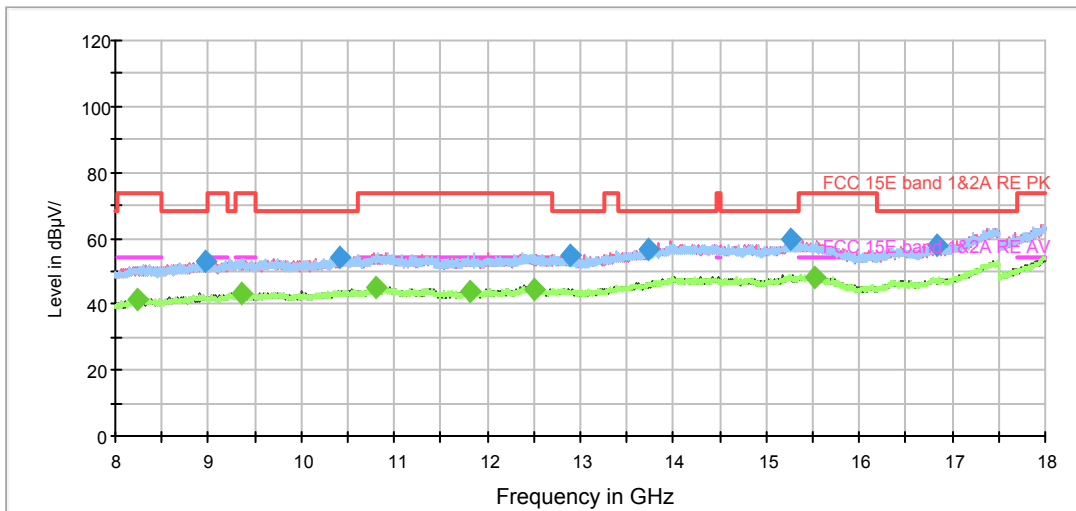
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1389.375000	35.5	200.0	V	349.0	-0.7	18.5	54.0
1674.625000	36.0	200.0	H	22.0	0.3	18.0	54.0
2301.125000	37.8	100.0	V	237.0	2.7	14.2	54.0
2818.250000	39.6	200.0	H	22.0	4.3	14.4	54.0
3747.500000	41.6	200.0	H	10.0	6.6	12.4	54.0
5034.625000	44.0	200.0	V	0.0	9.8	10.0	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



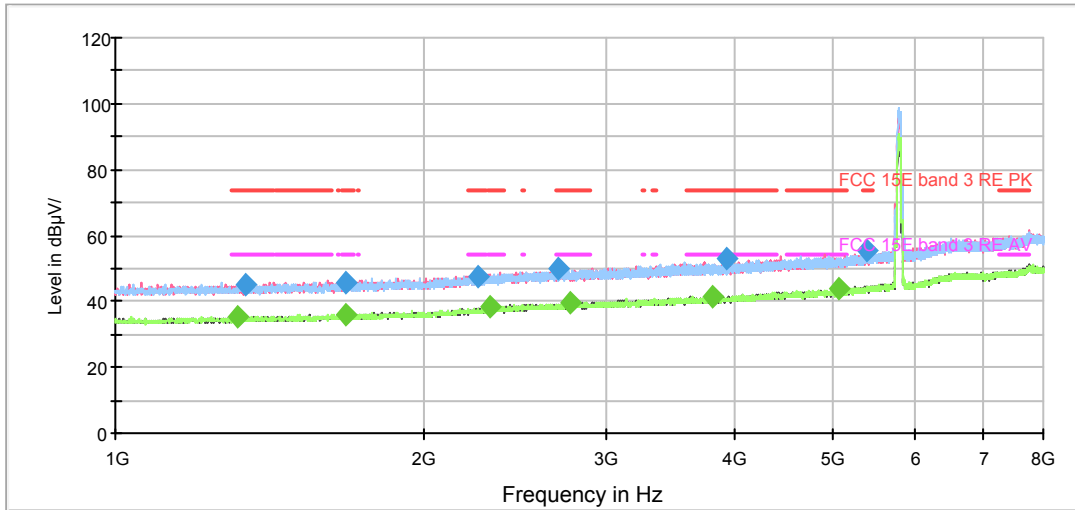
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1370.125000	45.3	200.0	H	6.0	-0.8	28.7	74.0
1687.750000	45.5	200.0	V	345.0	0.4	28.5	74.0
2239.875000	47.4	200.0	V	350.0	2.4	26.6	74.0
2727.250000	49.5	200.0	V	239.0	4.1	24.5	74.0
3989.875000	52.2	200.0	V	358.0	7.2	21.8	74.0
5003.125000	53.0	200.0	V	0.0	9.6	21.0	74.0

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

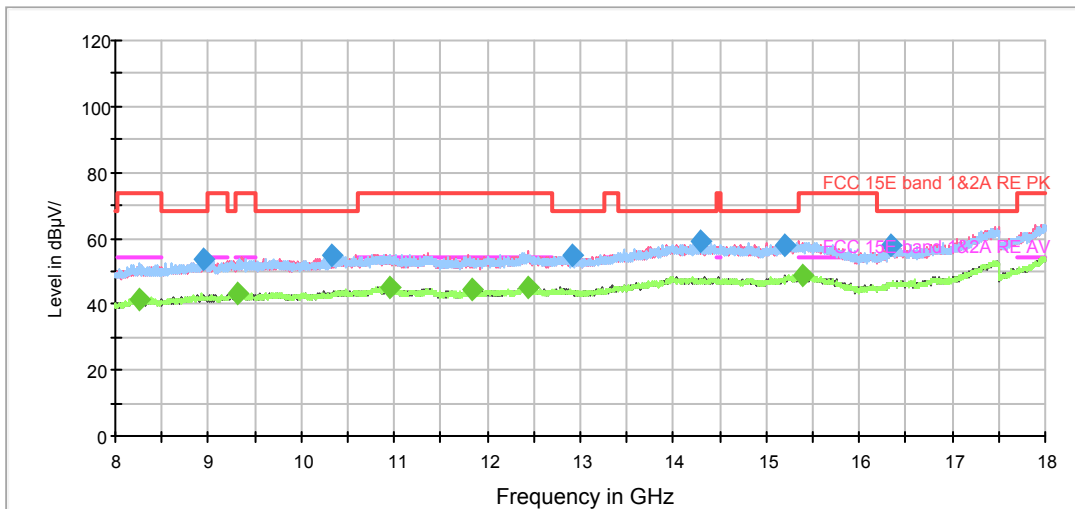
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1408.625000	35.6	200.0	H	52.0	-0.7	18.4	54.0
1682.500000	36.0	200.0	H	157.0	0.3	18.0	54.0
2330.000000	38.3	200.0	V	0.0	2.9	15.7	54.0
2795.500000	39.7	200.0	V	257.0	4.3	14.3	54.0
3912.875000	41.5	200.0	V	257.0	7.1	12.5	54.0
5043.375000	43.1	200.0	H	251.0	9.8	10.9	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)
1337.750000	44.9	200.0	H	0.0	-0.9	29.1	74.0
1672.875000	45.4	200.0	H	43.0	0.3	28.6	74.0
2250.375000	47.5	200.0	H	2.0	2.4	26.5	74.0
2694.000000	49.7	200.0	V	126.0	4.0	24.3	74.0
3928.625000	52.9	200.0	H	32.0	7.1	21.1	74.0
5397.750000	55.2	200.0	V	328.0	10.9	18.8	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)
1315.000000	35.4	200.0	H	16.0	-0.9	18.6	54.0
1678.125000	36.0	200.0	V	349.0	0.3	18.0	54.0
2312.500000	38.3	200.0	V	202.0	2.8	15.7	54.0
2766.625000	39.4	200.0	H	293.0	4.2	14.6	54.0
3813.125000	41.4	200.0	H	272.0	6.8	12.6	54.0
5051.250000	43.7	200.0	H	0.0	9.8	10.3	54.0

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

5.3. Conducted Emission

Ambient condition

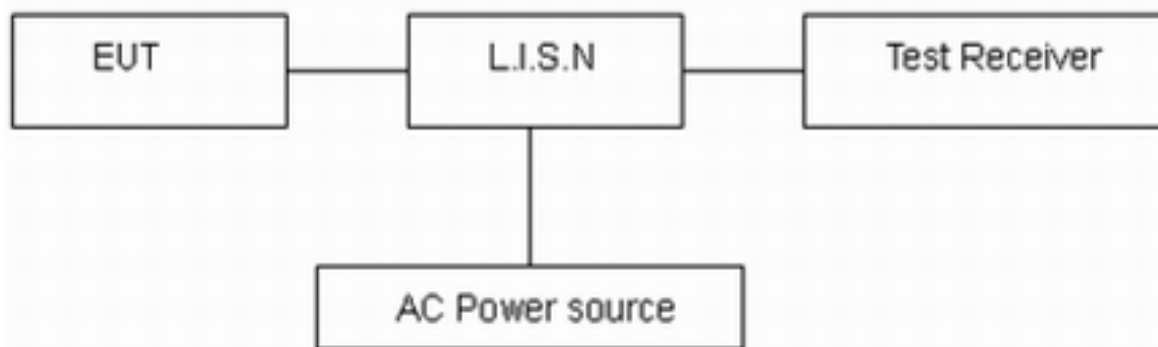
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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

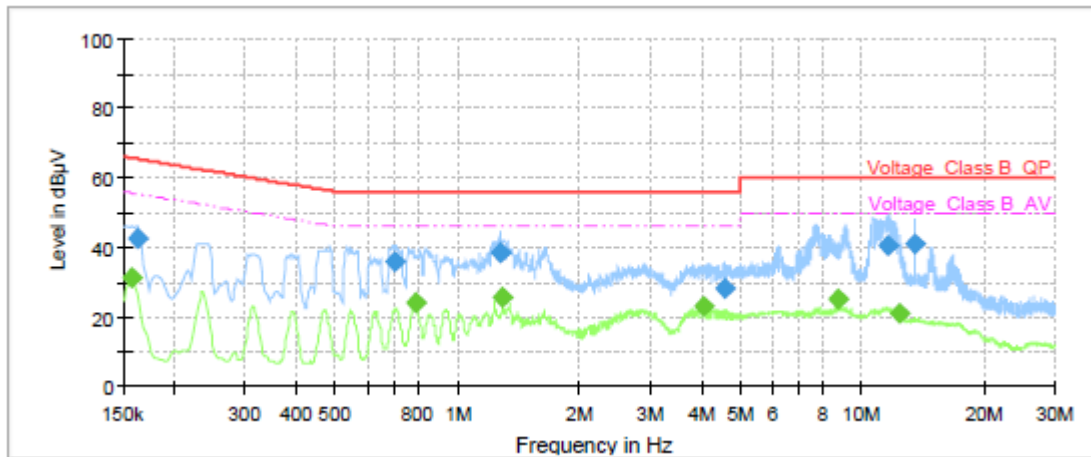
*: Decreases with the logarithm of the frequency.

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:

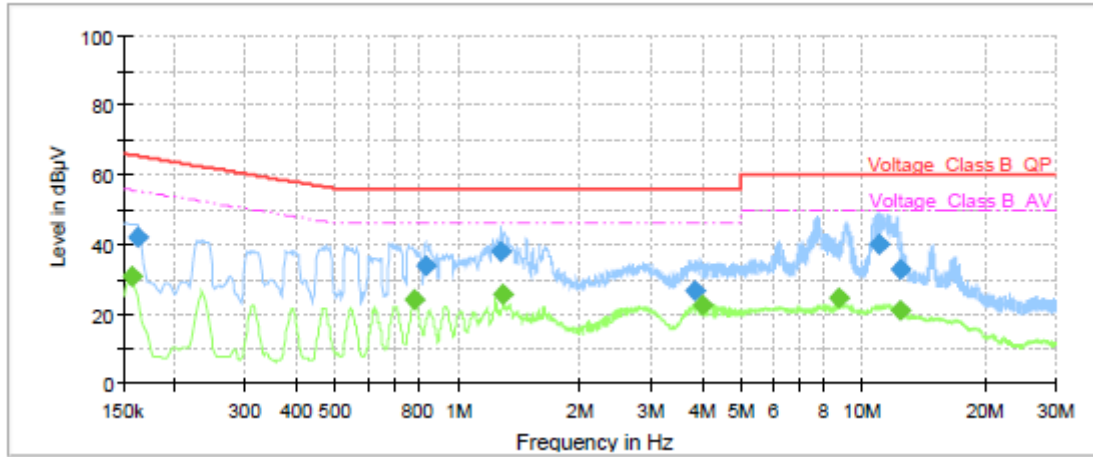
Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, 802.11a, Channel 36 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.16	---	31.29	55.63	24.34	1000.0	9.000	L1	ON	19
0.16	42.74	---	65.40	22.66	1000.0	9.000	L1	ON	19
0.70	36.01	---	56.00	19.99	1000.0	9.000	L1	ON	19
0.79	---	24.35	46.00	21.65	1000.0	9.000	L1	ON	19
1.28	38.22	---	56.00	17.78	1000.0	9.000	L1	ON	19
1.29	---	25.53	46.00	20.47	1000.0	9.000	L1	ON	19
4.04	---	22.87	46.00	23.13	1000.0	9.000	L1	ON	19
4.59	28.06	---	56.00	27.94	1000.0	9.000	L1	ON	19
8.72	---	24.99	50.00	25.01	1000.0	9.000	L1	ON	19
11.62	40.33	---	60.00	19.67	1000.0	9.000	L1	ON	19
12.44	---	20.88	50.00	29.12	1000.0	9.000	L1	ON	19
13.56	40.96	---	60.00	19.04	1000.0	9.000	L1	ON	19

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)
0.16	---	30.82	55.63	24.81	1000.0	9.000	N	ON	19
0.16	42.30	---	65.40	23.10	1000.0	9.000	N	ON	19
0.78	---	24.06	46.00	21.94	1000.0	9.000	N	ON	19
0.83	33.96	---	56.00	22.04	1000.0	9.000	N	ON	19
1.28	37.84	---	56.00	18.16	1000.0	9.000	N	ON	19
1.29	---	25.69	46.00	20.31	1000.0	9.000	N	ON	19
3.85	26.76	---	56.00	29.24	1000.0	9.000	N	ON	19
4.04	---	22.82	46.00	23.18	1000.0	9.000	N	ON	19
8.72	---	24.80	50.00	25.20	1000.0	9.000	N	ON	19
10.98	39.85	---	60.00	20.15	1000.0	9.000	N	ON	19
12.41	32.85	---	60.00	27.15	1000.0	9.000	N	ON	19
12.45	---	20.90	50.00	29.10	1000.0	9.000	N	ON	19

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	2019-05-19	2020-05-18
EMI Test Receiver	R&S	ESCI	100948	2019-05-19	2020-05-18
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2020-09-25
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	9163-201	2017-11-18	2020-11-17
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	2020-07-19
Broadband Horn Antenna	SCHWARZBECK	BBHA 9120D	430	2018-07-07	2020-07-06
EMI Test Receiver	R&S	ESR	101667	2019-05-19	2020-05-18
LISN	R&S	ENV216	101171	2018-12-15	2021-12-14
Spectrum Analyzer	KEYSIGHT	N9020A	MY54420163	2019-12-15	2020-12-14
RF Cable	Agilent	SMA 15cm	0001	2019-12-13	2020-06-12
TEMPERATURE CHAMBER	WEISS	VT4002	582261194500 10	2018-12-16	2019-12-15
AV Power Meter	R&S	NRP	104306	2019-05-19	2020-05-18
Power Probe	R&S	NRP-Z21	104799	2019-05-19	2020-05-18
DC Power Supply	GWINSTEK	GPS-3030D	GEP882653	2019-05-19	2020-05-18
Software	R&S	EMC32	9.26.0	/	/

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