



# RF TEST REPORT

**Applicant**      MobiWire SAS  
**FCC ID**          QPN-NUNA  
**Product**        4G Smart Phone  
**Brand**            MobiWire, Altice  
**Model**            MobiWire Nuna, Altice S42  
**Report No.**      R1905A0216-R4V1  
**Issue Date**      July 5, 2019

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

Performed by: Peng Tao

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	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Power spectral density	15.407(a)	PASS
5	Unwanted Emissions	15.407(b)	PASS
6	Conducted Emissions	15.207	PASS
Date of Testing: April 27, 2019 ~May 30, 2019			



## 1. Test Laboratory

### 1.1. Notes of the test report

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

### 1.2. Test facility

#### **CNAS (accreditation number: L2264)**

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

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

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

#### **IC (recognition number is 8510A)**

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

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

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

#### **A2LA (Certificate Number: 3857.01)**

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



### 1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
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## 2. General Description of Equipment under Test

### Client Information

<b>Applicant</b>	MobiWire SAS
<b>Applicant address</b>	79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX France.
<b>Manufacturer</b>	MobiWire SAS
<b>Manufacturer address</b>	79 AVENUE FRANCOIS ARAGO 92017 NANTERRE CEDEX France.

### General information

EUT Description	
Model	MobiWire Nuna, Altice S42
IMEI	IMEI 1:355647100004604 IMEI 2: 355647100004612
Hardware Version	V00
Software Version	ALTICE_S42
Power Supply	Battery/AC adapter
Antenna Type	Internal Antenna
Antenna Gain	0 dBi
additional beamforming gain	NA
Test Mode(s)	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5725MHz without 5600MHz -5650MHz) U-NII-3(5725MHz-5850MHz)
Modulation Type	802.11a/n (HT20/HT40) : OFDM
Max. Conducted Power	14.05 dBm
Operating Frequency Range(s)	U-NII-1: 5150-5250MHz U-NII-2A:5250-5350MHz U-NII-2C:5470-5725MHz (without 5600MHz -5650MHz) U-NII-3: 5725-5850MHz
Operating temperature range:	-10 ° C to 55° C
Operating voltage range:	3.6 V to 4.35 V
State DC voltage:	3.8V
EUT Accessory	



Adapter	Manufacturer: DONGGUAN AOHAI POWER TECHNOLOGY CO., LTD. Model: A31A-050100U_EU1
Battery	Manufacturer: Veken Model: 178159967
Earphone	Manufacturer: JUWEI ELECTRONICS CO., LTD Model: JWEP0957-M01R
USB Cable	Manufacturer: / Model: AM/MICRO5P
Note: The information of the EUT is declared by the manufacturer.	



### 3. Applied Standards

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

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

**ANSI C63.10 (2013)**

**KDB 789033 D02 General UNII Test Procedures New Rules v02r01**



## 4. Test Configuration

### Test Mode

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

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

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

Worst-case data rates are shown as following table.

and	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	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-2A	20 MHz	52	5260MHz
			56	5280MHz
			60	5300MHz
			64	5320MHz
		40 MHz	54	5270MHz
			62	5310MHz
	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
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz
165			5825MHz	
40 MHz		151	5755MHz	
		159	5795MHz	
Does this device support TPC Function? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Does this device support TDWR Band? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				

## 5. Test Case Results

### 5.1. Occupied Bandwidth

#### Ambient condition

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

#### Method of Measurement

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

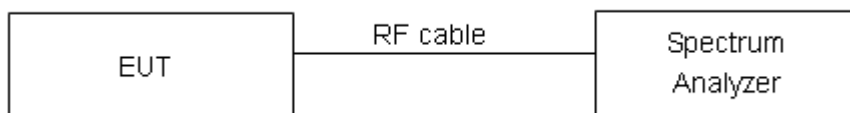
For U-NII-1/U-NII-2A/U-NII-2C, set RBW  $\approx$ 1% OCB kHz, VBW  $\geq$  3  $\times$  RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum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

For U-NII-3, Set RBW = 100 kHz, VBW  $\geq$  3  $\times$  RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

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

Use the 99 % power bandwidth function of the instrument

#### Test Setup



#### Limits

Rule FCC Part §15.407(e)

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

#### Measurement Uncertainty

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

**Test Results:****U-NII-1**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	16.401	18.58	PASS
	5200	16.416	19.32	PASS
	5240	16.425	19.10	PASS
802.11n HT20	5180	17.599	19.49	PASS
	5200	17.563	19.47	PASS
	5240	17.602	19.59	PASS
802.11n HT40	5190	35.895	39.16	PASS
	5230	35.974	38.78	PASS

**U-NII-2A**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5260	16.411	19.03	PASS
	5300	16.399	19.17	PASS
	5320	16.411	19.13	PASS
802.11n HT20	5260	17.618	19.42	PASS
	5300	17.597	19.60	PASS
	5320	17.600	19.46	PASS
802.11n HT40	5270	35.990	39.34	PASS
	5310	36.010	39.45	PASS

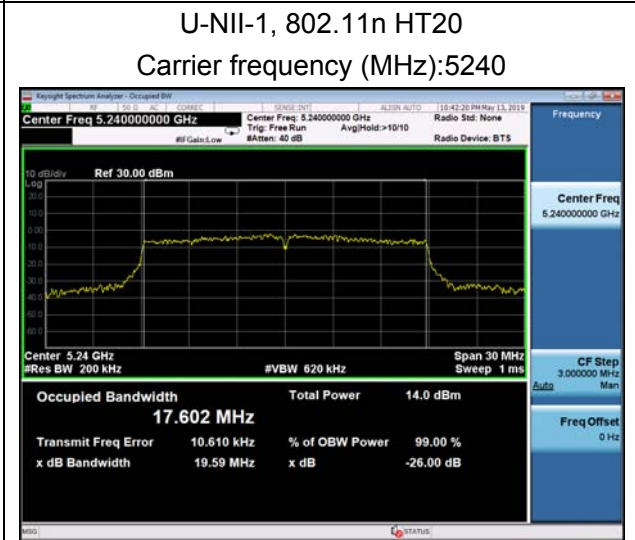
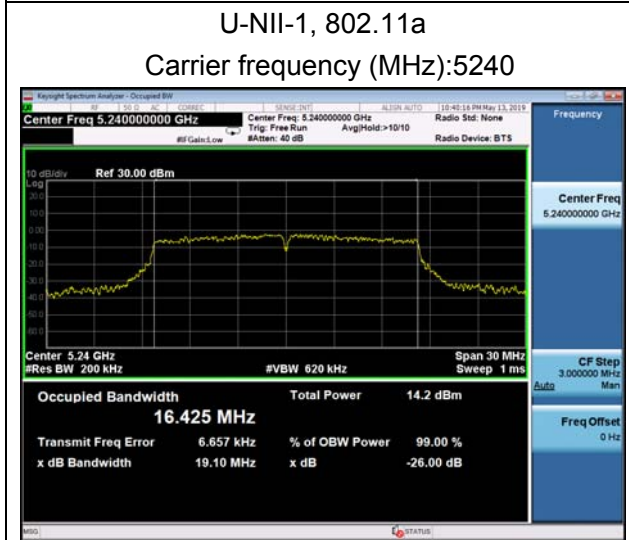
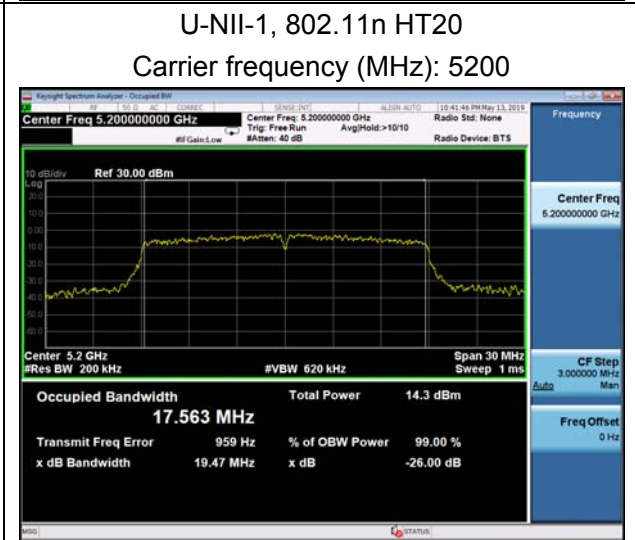
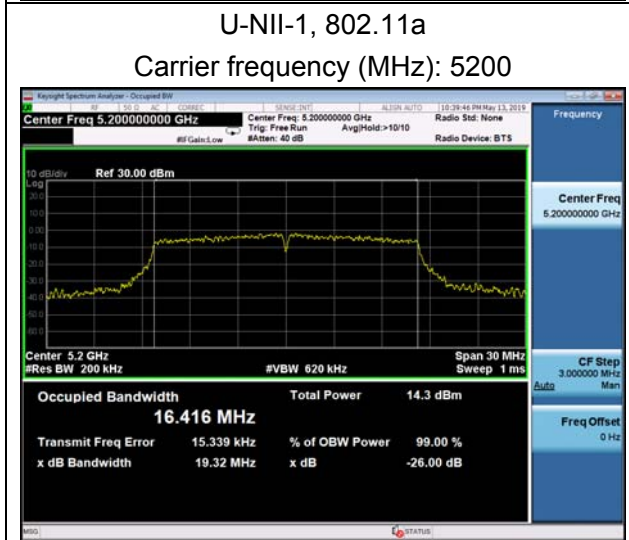
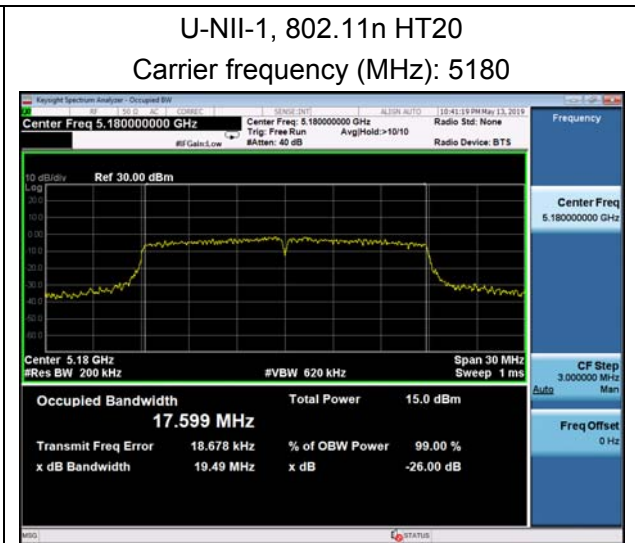
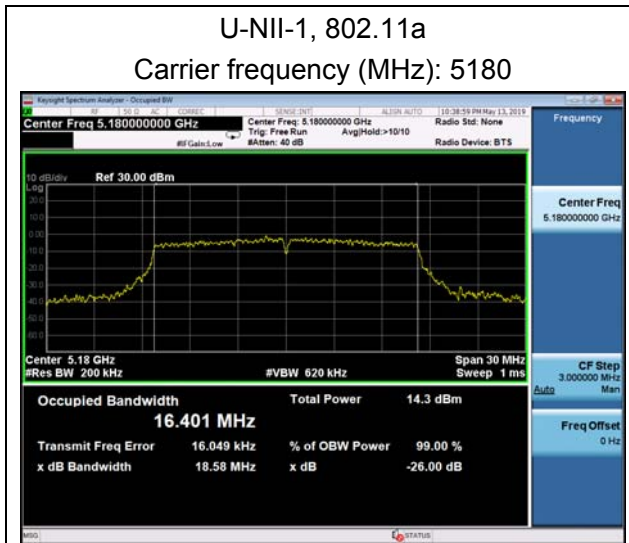
**U-NII-2C**

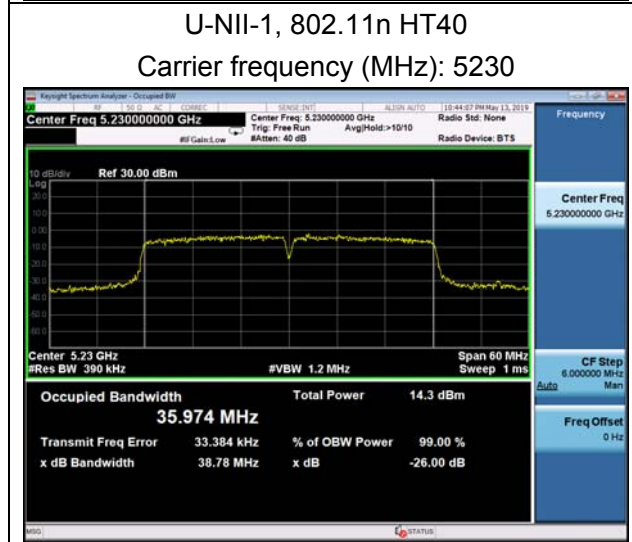
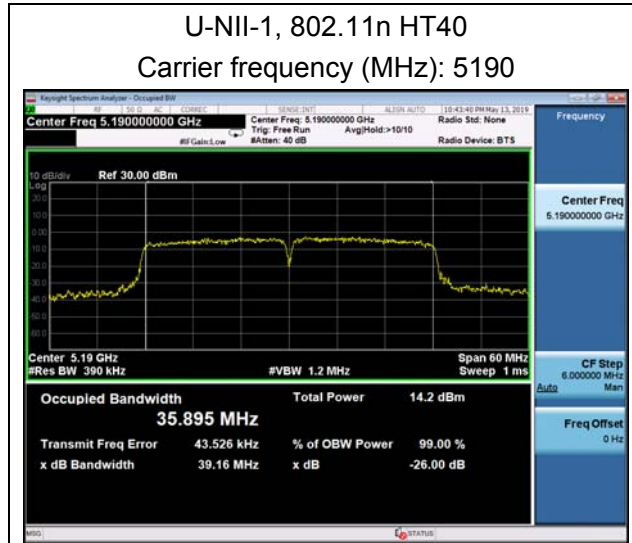
Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5500	16.462	25.39	PASS
	5580	16.457	20.57	PASS
	5700	16.409	19.70	PASS
802.11n HT20	5500	17.677	26.66	PASS
	5580	17.619	20.79	PASS
	5700	17.640	22.51	PASS
802.11n HT40	5510	36.032	52.50	PASS
	5550	36.132	55.16	PASS
	5670	36.054	52.36	PASS

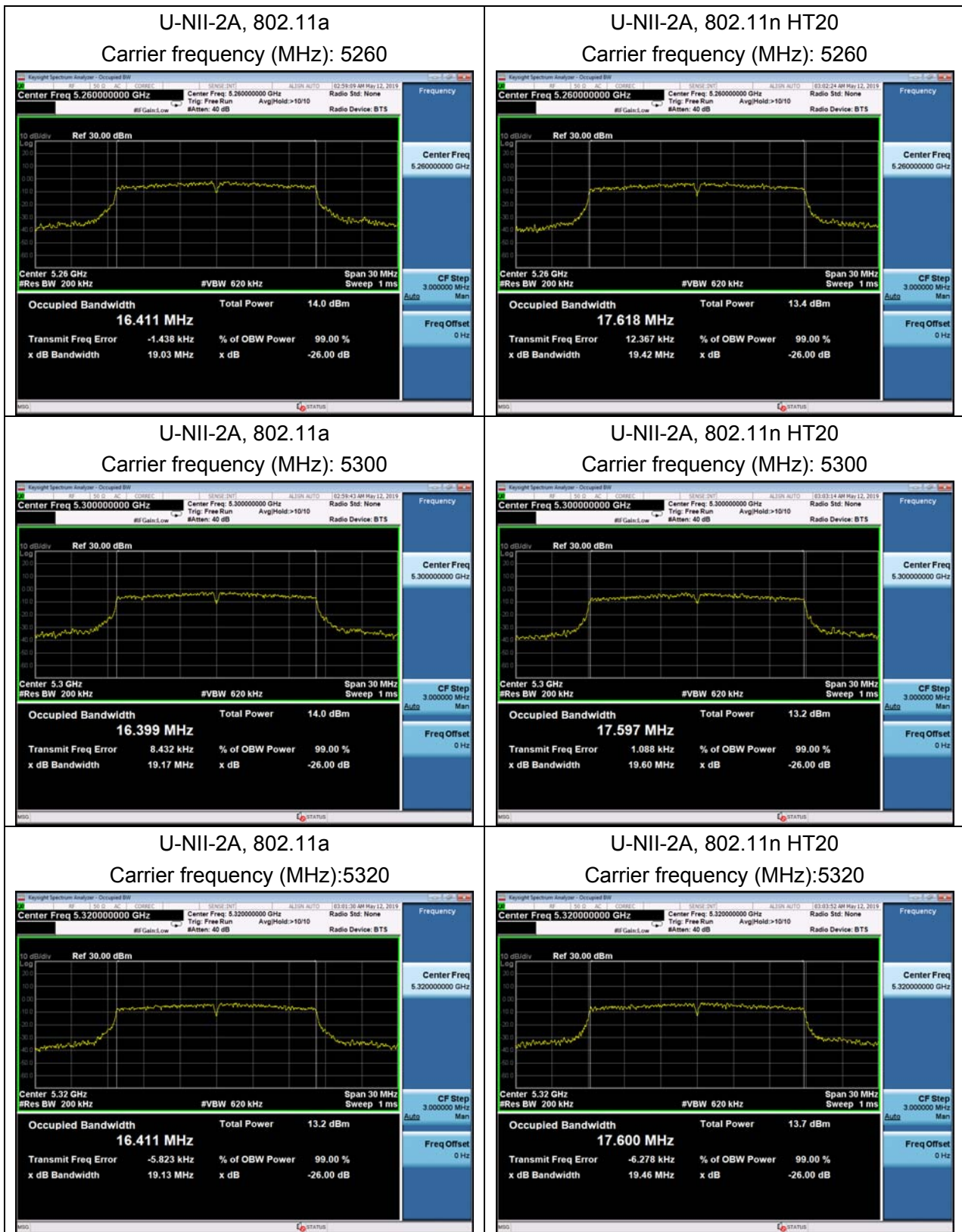


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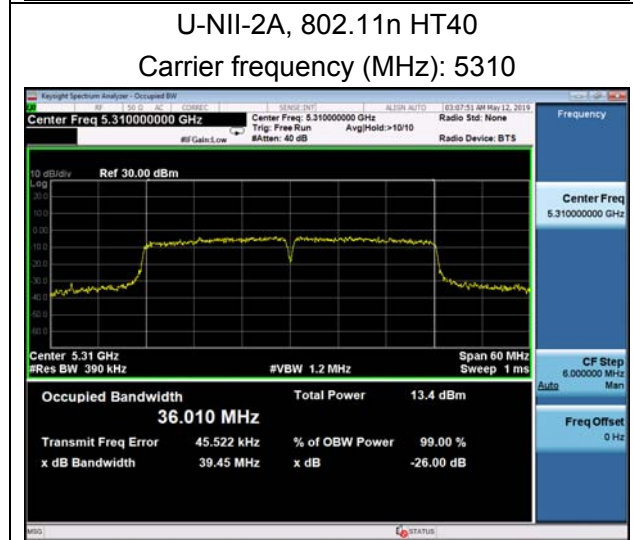
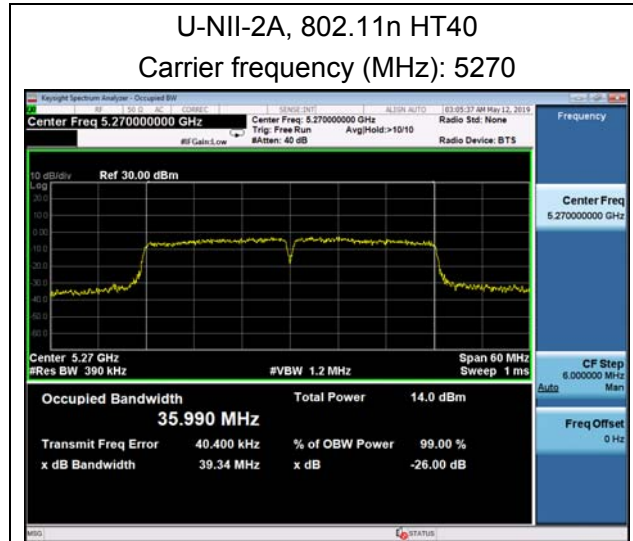
Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	16.463	16.48	500	PASS
	5785	16.412	16.39	500	PASS
	5825	16.406	16.41	500	PASS
802.11n HT20	5745	17.660	17.64	500	PASS
	5785	17.589	17.63	500	PASS
	5825	17.595	17.63	500	PASS
802.11n HT40	5755	36.168	36.36	500	PASS
	5795	36.024	36.09	500	PASS



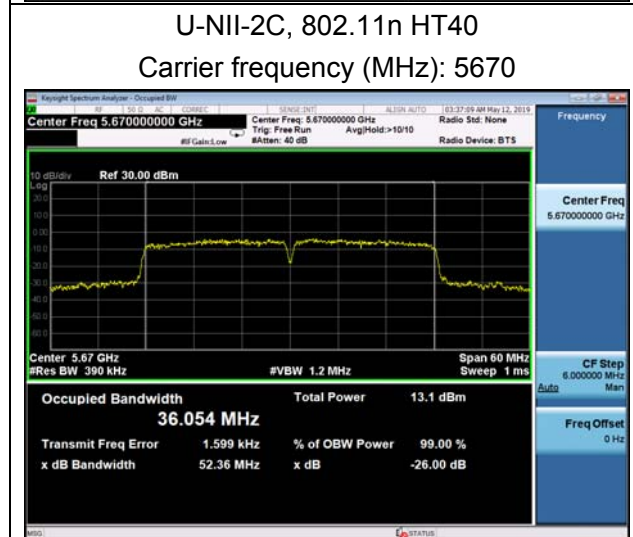
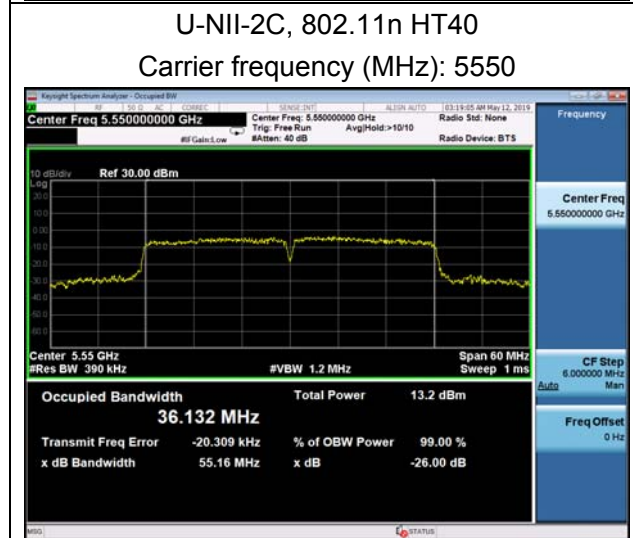
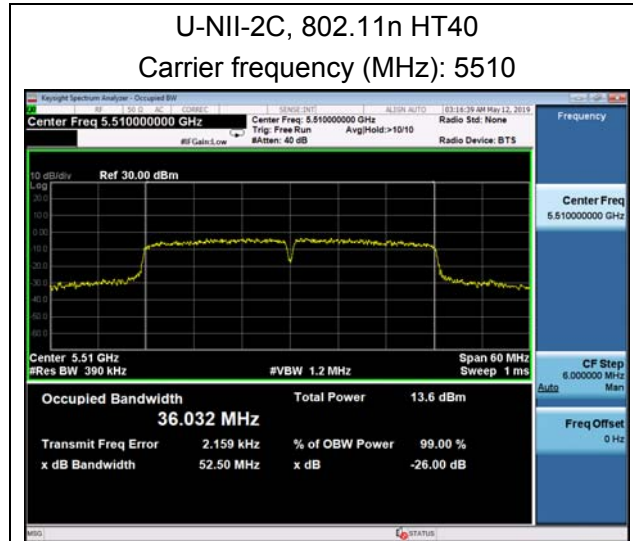






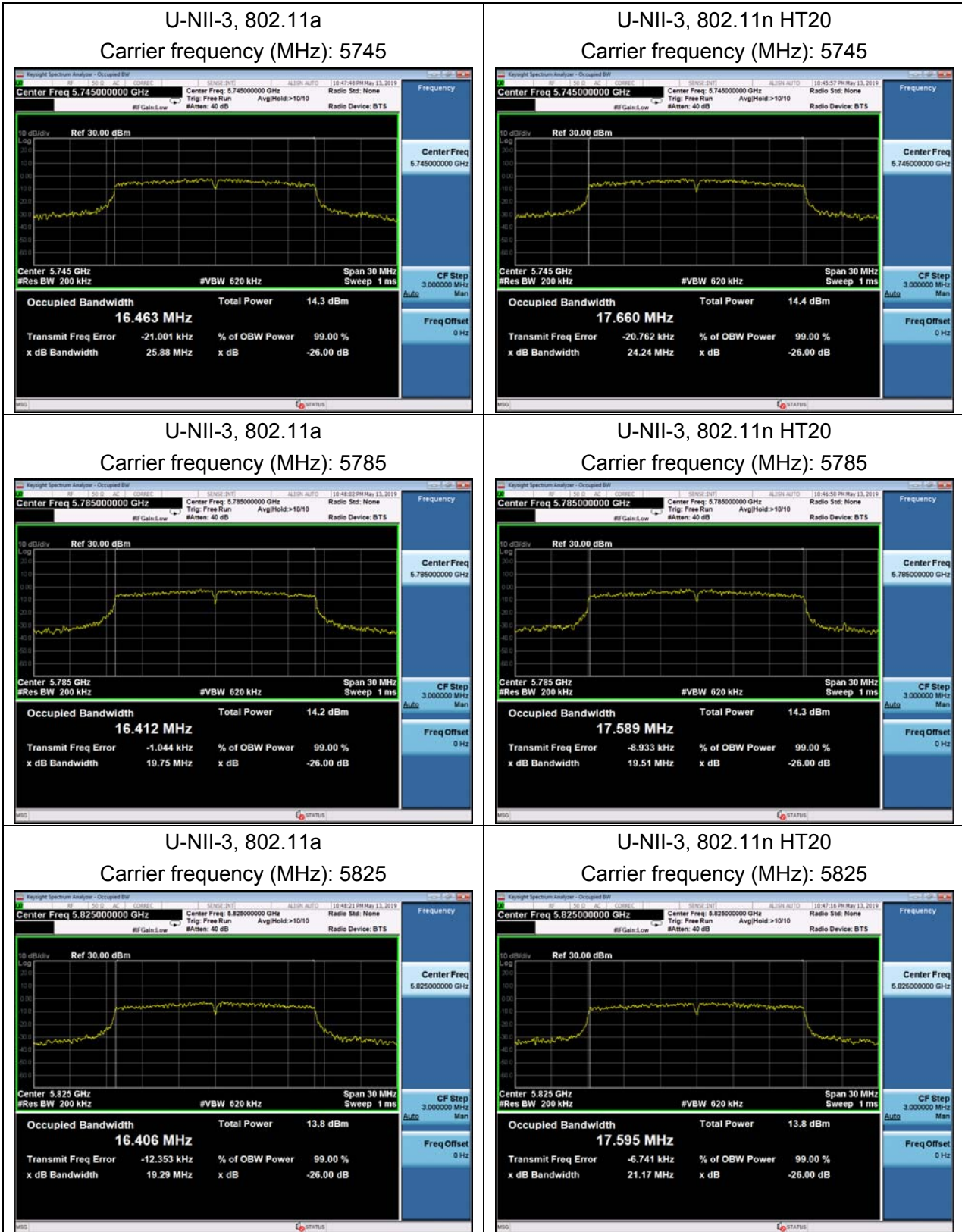


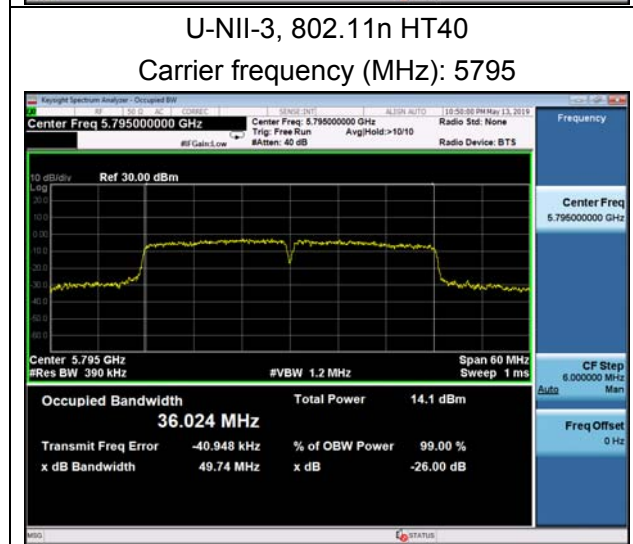
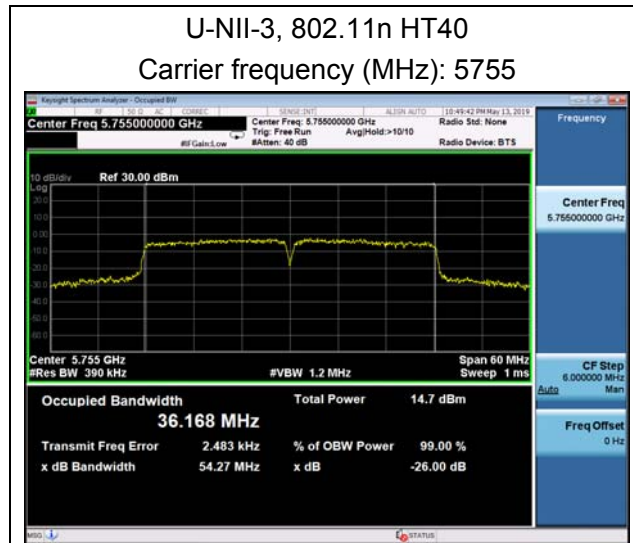






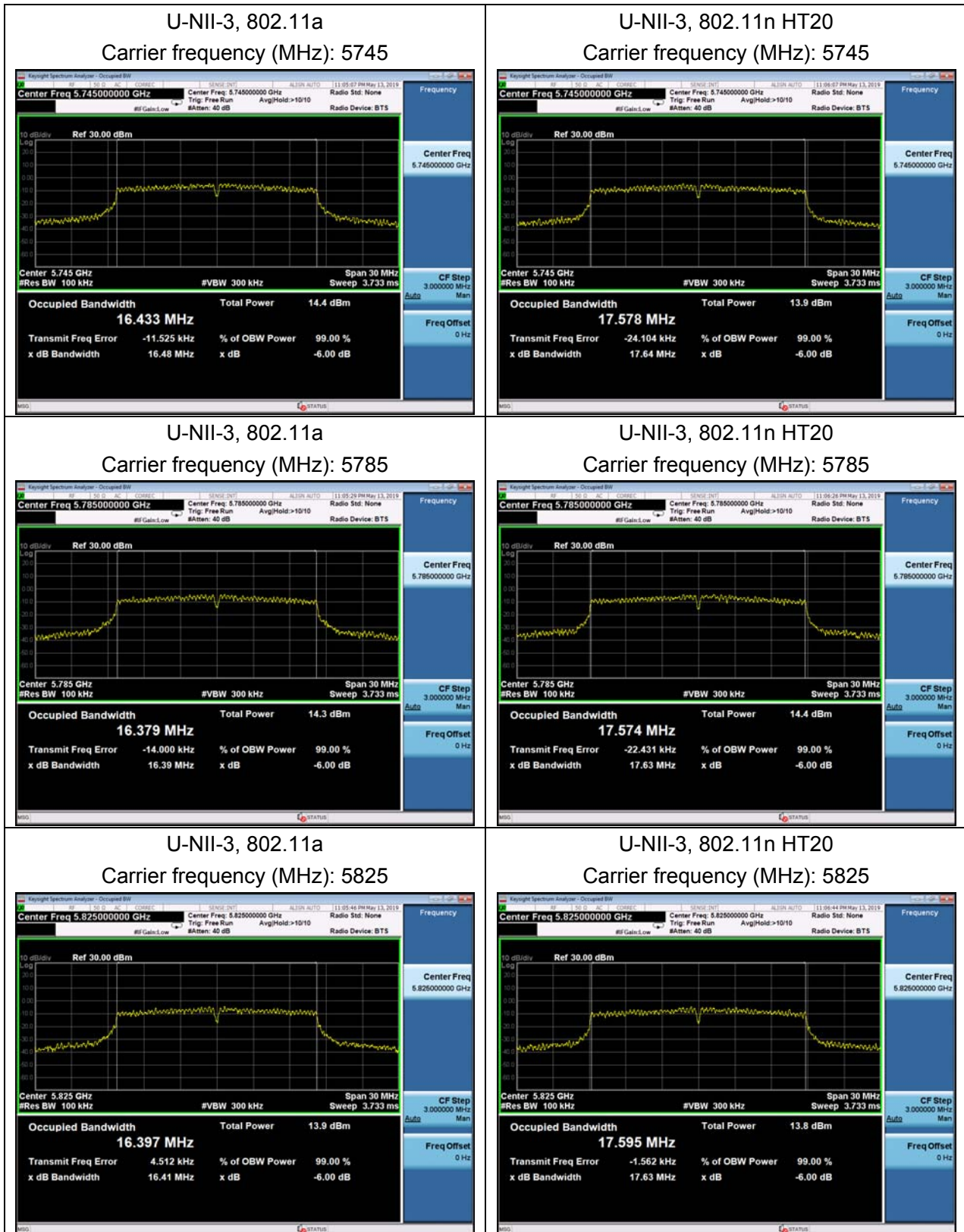
99% bandwidth

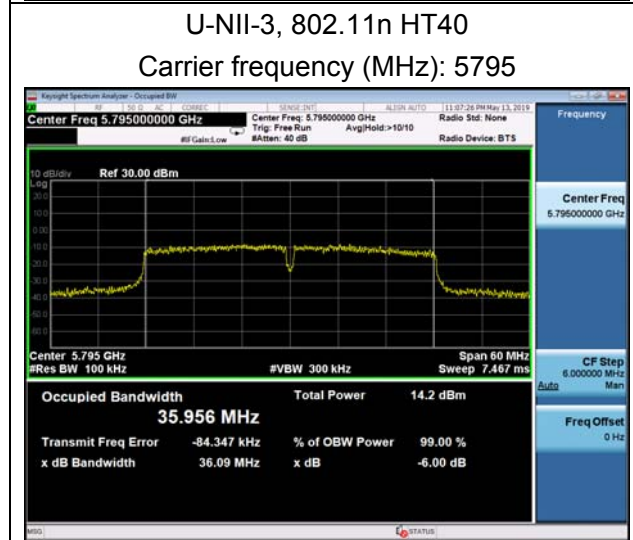
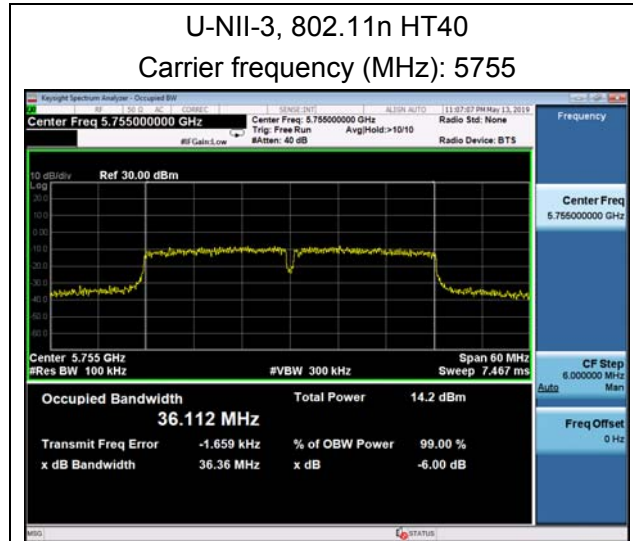






Minimum 6 dB bandwidth





## 5.2. Average Power Output –Conducted

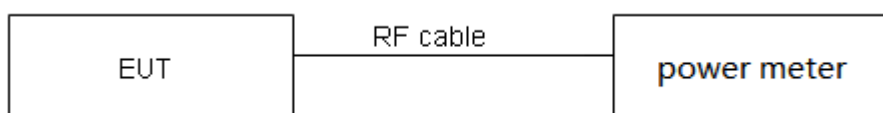
### Ambient condition

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

### Methods of Measurement

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

### Test Setup



### Limits

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

(1) For the band 5.15-5.25 GHz.

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

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

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





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

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

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

#### **Measurement Uncertainty**

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



## Test Results

Band	T <sub>on</sub> (ms)	T <sub>(on+off)</sub> (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11a	1.39	1.43	0.97	0.11
802.11n HT20	1.30	1.34	0.97	0.12
802.11n HT40	0.65	0.68	0.95	0.22

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

Single Antenna Power Index												
Packet Type	CH36	CH40	CH48	CH52	CH60	CH64	CH 100	CH 116	CH 140	CH 149	CH 157	CH 165
802.11a	15	15	15	15	15	15	16	16	16	17	17	17
802.11n HT20	15	15	15	15	15	15	16	16	16	17	17	17
Packet Type	CH38	CH46	CH54	CH62	CH 102	CH 110	CH 134	CH 151	CH 159	/	/	/
802.11n HT40	15	15	15	15	16	16	16	17	17	/	/	/



Network Standards		Channel/Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit(dBm)
U-NII-2A	802.11a	52/5260	19.03	23.79<24	23.79
		60/5300	19.17	23.83<24	23.83
		64/5320	19.13	23.82<24	23.82
	802.11n HT20	52/5260	19.42	23.88<24	23.88
		60/5300	19.60	23.92<24	23.92
		64/5320	19.46	23.89<24	23.89
	802.11n HT40	54/5270	39.34	26.95>24	24.00
		62/5310	39.45	26.96>24	24.00
	U-NII-2C	802.11a	100/5500	25.39	25.05>24
116/5580			20.57	24.13>24	24.00
140/5700			19.70	23.94<24	23.94
802.11n HT20		100/5500	26.66	25.26>24	24.00
		116/5580	20.79	24.18>24	24.00
		140/5700	22.51	24.52>24	24.00
802.11n HT40		102/5510	52.50	28.20>24	24.00
		110/5550	55.16	28.42>24	24.00
		134/5670	52.36	28.19>24	24.00
Note: 250mW=24dBm					

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

**U-NII-1**

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	13.45	13.56	24	PASS
	40/5200	13.83	13.94	24	PASS
	48/5240	13.54	13.65	24	PASS
802.11n HT20	36/5180	13.43	13.55	24	PASS
	40/5200	13.65	13.77	24	PASS
	48/5240	13.67	13.79	24	PASS
802.11n HT40	38/5190	13.78	14.00	24	PASS
	46/5230	13.83	14.05	24	PASS

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

**U-NII-2A**

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	13.38	13.49	23.79	PASS
	60/5300	13.30	13.41	23.83	PASS
	64/5320	13.35	13.46	23.82	PASS
802.11n HT20	52/5260	13.26	13.38	23.88	PASS
	60/5300	13.33	13.45	23.92	PASS
	64/5320	13.42	13.54	23.89	PASS
802.11n HT40	54/5270	13.31	13.53	24.00	PASS
	62/5310	13.37	13.59	24.00	PASS

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



## U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	13.65	13.76	24.00	PASS
	116/5580	13.32	13.43	24.00	PASS
	140/5700	13.26	13.37	23.94	PASS
802.11n HT20	100/5500	13.62	13.74	24.00	PASS
	116/5580	13.28	13.40	24.00	PASS
	140/5700	13.25	13.37	24.00	PASS
802.11n HT40	102/5510	13.53	13.75	24.00	PASS
	110/5550	13.37	13.59	24.00	PASS
	134/5670	13.35	13.57	24.00	PASS

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

## U-NII-3

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	13.43	13.54	30	PASS
	157/5785	13.87	13.98	30	PASS
	165/5825	13.35	13.46	30	PASS
802.11n HT20	149/5745	13.47	13.59	30	PASS
	157/5785	13.89	14.01	30	PASS
	165/5825	13.34	13.46	30	PASS
802.11n HT40	151/5755	13.56	13.78	30	PASS
	159/5795	13.69	13.91	30	PASS

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

### 5.3. Frequency Stability

#### Ambient condition

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

#### Method of Measurement

##### 1. Frequency stability with respect to ambient temperature

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

##### 2. Frequency stability when varying supply voltage

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

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



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

**Limit**

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

**Measurement Uncertainty**

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

**Test Results**

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
3.8V	-10	5200.003256	5199.994104	5199.984705	5199.980539
3.8V	0	5200.004938	5199.990500	5199.978869	5199.977135
3.8V	10	5200.003843	5199.986674	5199.975927	5199.969422
3.8V	20	5200.000577	5199.982431	5199.970574	5199.961067
3.8V	30	5199.998167	5199.980620	5199.966289	5199.958924
3.8V	40	5199.991558	5199.976282	5199.960548	5199.952192
3.8V	50	5199.987929	5199.969312	5199.954134	5199.947812
3.8V	55	5199.982766	5199.966988	5199.946521	5199.938406
3.6V	20	5199.973335	5199.961069	5199.941733	5199.933837
4.35V	20	5199.970437	5199.956166	5199.938196	5199.928330
3.8V		-0.029563	-0.043834	-0.061804	-0.071670
PPM		-5.685287	-8.429672	-11.885385	-13.782692

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
3.8V	-10	5300.008616	5300.003827	5300.003151	5299.998545
3.8V	0	5300.004254	5300.001754	5299.998225	5299.996368
3.8V	10	5299.999995	5299.991874	5299.997485	5299.992203
3.8V	20	5299.995248	5299.986690	5299.995920	5299.988320
3.8V	30	5299.990921	5299.978474	5299.993546	5299.979828
3.8V	40	5299.989708	5299.978170	5299.989997	5299.973692
3.8V	50	5299.982774	5299.974365	5299.988329	5299.965788
3.8V	55	5299.977080	5299.970062	5299.987354	5299.963333
3.6V	20	5299.969130	5299.961198	5299.982307	5299.960105
4.35V	20	5299.963173	5299.957983	5299.973362	5299.959204
MHz		-0.036827	-0.042017	-0.026638	-0.040796
PPM		-6.948556	-7.927672	-5.026000	-7.697292





Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
3.8V	-10	5580.006981	5580.002537	5579.997719	5579.988906
3.8V	0	5579.998854	5579.995516	5579.990705	5579.981895
3.8V	10	5579.998816	5579.985728	5579.984478	5579.975186
3.8V	20	5579.991980	5579.976450	5579.981276	5579.965385
3.8V	30	5579.991232	5579.972985	5579.972202	5579.963317
3.8V	40	5579.988630	5579.966980	5579.970868	5579.962880
3.8V	50	5579.978698	5579.959979	5579.969558	5579.957140
3.8V	55	5579.971234	5579.951801	5579.966267	5579.956313
3.6V	20	5579.971044	5579.945440	5579.959100	5579.952197
4.35V	20	5579.962515	5579.939023	5579.951726	5579.947156
MHz		-0.037485	-0.060977	-0.048274	-0.052844
PPM		-6.717772	-10.927825	-8.651172	-9.470196

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
3.8V	-10	5784.998280	5784.991297	5784.981812	5784.979563
3.8V	0	5784.989962	5784.990790	5784.977498	5784.978282
3.8V	10	5784.987016	5784.981184	5784.976103	5784.970086
3.8V	20	5784.982771	5784.978538	5784.974117	5784.964045
3.8V	30	5784.982544	5784.977289	5784.973061	5784.963181
3.8V	40	5784.974313	5784.975883	5784.963721	5784.960798
3.8V	50	5784.967409	5784.966382	5784.960547	5784.952822
3.8V	55	5784.963761	5784.958251	5784.957212	5784.944999
3.6V	20	5784.956036	5784.956410	5784.952839	5784.940263
4.35V	20	5784.948515	5784.951924	5784.950864	5784.938345
MHz		-0.051485	-0.048076	-0.049136	-0.061655
PPM		-8.899703	-8.310506	-8.493760	-10.657759

## 5.4. Power Spectral Density

### Ambient condition

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

### Method of Measurement

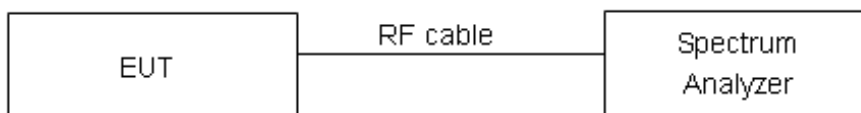
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

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

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

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

### Test setup



### Limits

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

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

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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



amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Bands/MHz	Limits
5150-5250	17/11dBm/MHz
5.25-5.35 GHz and 5.47-5.725 GHz	11dBm/MHz
5725-5850	30dBm/500kHz

### Measurement Uncertainty

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

**Test Results:**

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

**U-NII-1**

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36	3.32	3.43	11	PASS
	40	3.10	3.21	11	PASS
	48	3.24	3.35	11	PASS
802.11n HT20	36	3.26	3.38	11	PASS
	40	3.37	3.49	11	PASS
	48	3.15	3.27	11	PASS
802.11n HT40	38	-0.60	-0.38	11	PASS
	46	-0.41	-0.18	11	PASS

**U-NII-2A**

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52	2.77	2.88	11	PASS
	60	2.81	2.92	11	PASS
	64	2.92	3.03	11	PASS
802.11n HT20	52	3.02	3.14	11	PASS
	60	3.04	3.16	11	PASS
	64	2.93	3.05	11	PASS
802.11n HT40	54	-0.70	-0.48	11	PASS
	62	-1.04	-0.82	11	PASS



## U-NII-2C

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100	3.21	3.32	11	PASS
	116	2.76	2.87	11	PASS
	140	2.45	2.56	11	PASS
802.11n HT20	100	2.78	2.90	11	PASS
	116	2.76	2.88	11	PASS
	140	2.24	2.35	11	PASS
802.11n HT40	102	-0.44	-0.22	11	PASS
	110	-0.64	-0.41	11	PASS
	134	-0.61	-0.39	11	PASS

## U-NII-3

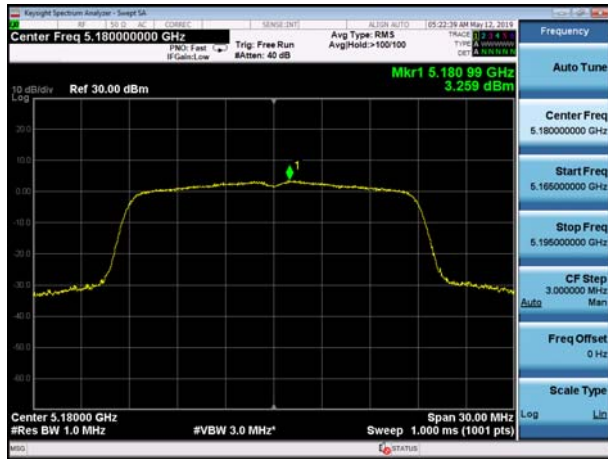
Network Standards	Channel Number	Read Value (dBm/500kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149	0.25	0.36	30	PASS
	157	0.19	0.30	30	PASS
	165	0.22	0.33	30	PASS
802.11n HT20	149	-0.18	-0.06	30	PASS
	157	0.55	0.67	30	PASS
	165	-0.45	-0.33	30	PASS
802.11n HT40	151	-3.52	-3.29	30	PASS
	159	-3.34	-3.11	30	PASS



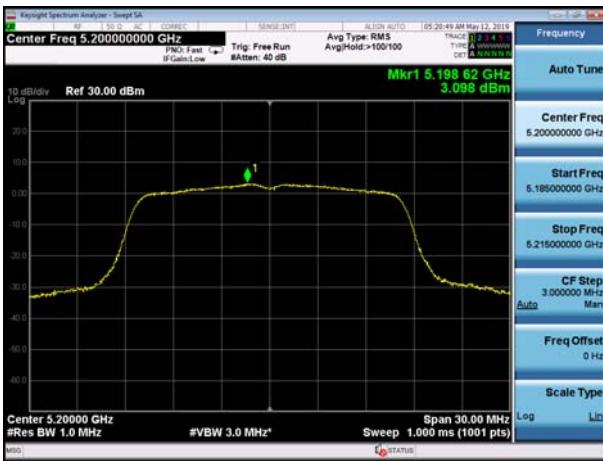
U-NII-1, 802.11a, Channel No.: 36



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



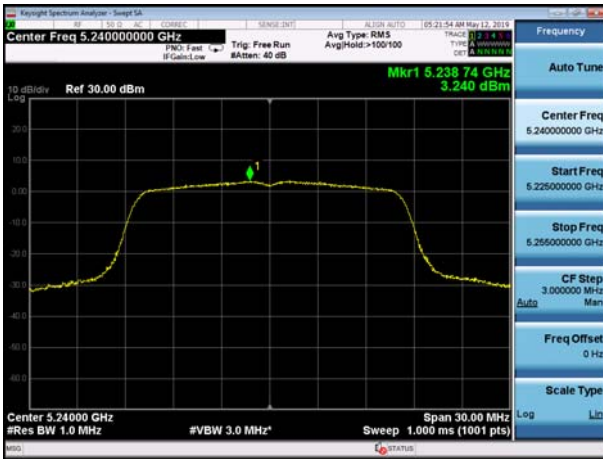
U-NII-1, 802.11a, Channel No.: 40



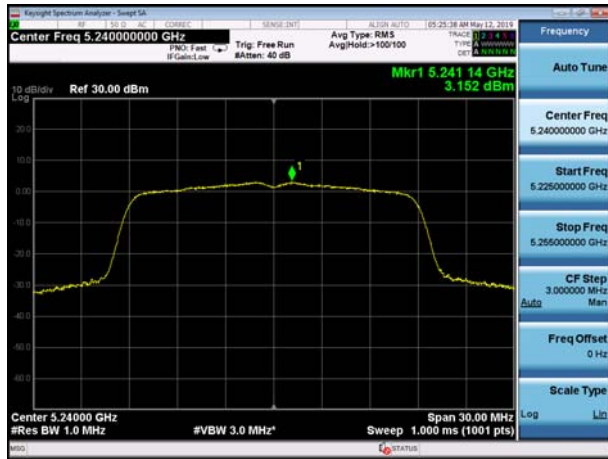
U-NII-1, 802.11n HT20, Channel No.: 40



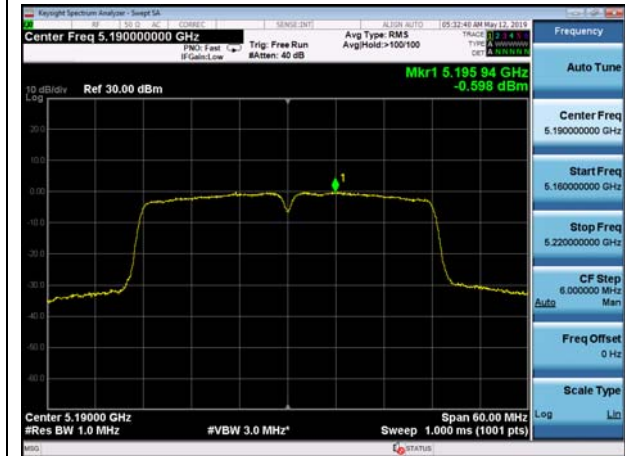
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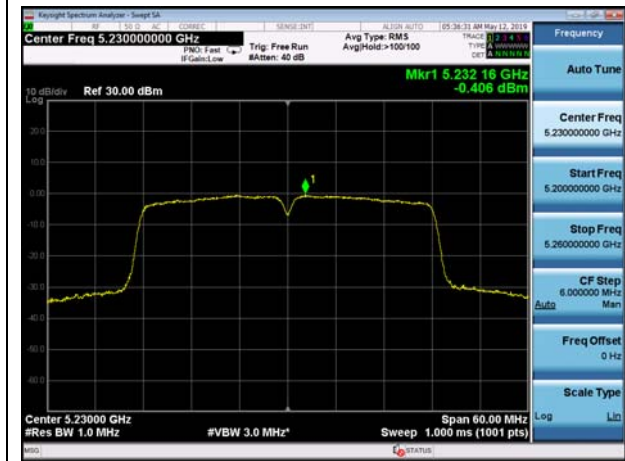
U-NII-1, 802.11n HT20, Channel No.: 48



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

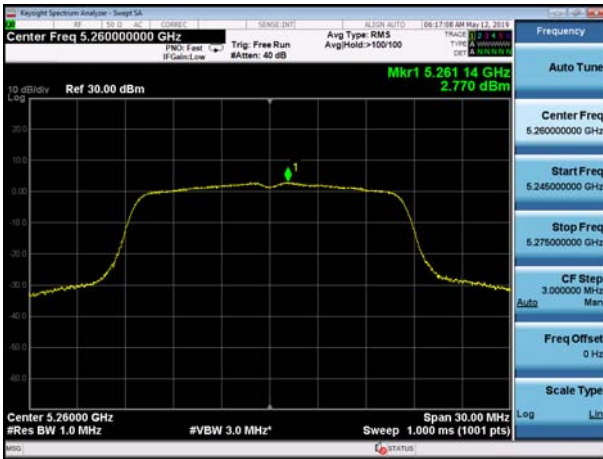


U-NII-1, 802.11n HT40, Channel No.: 46





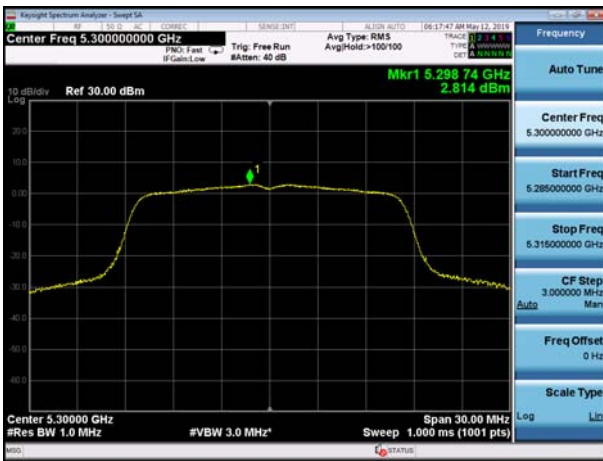
U-NII-2A, 802.11a, Channel No.: 52



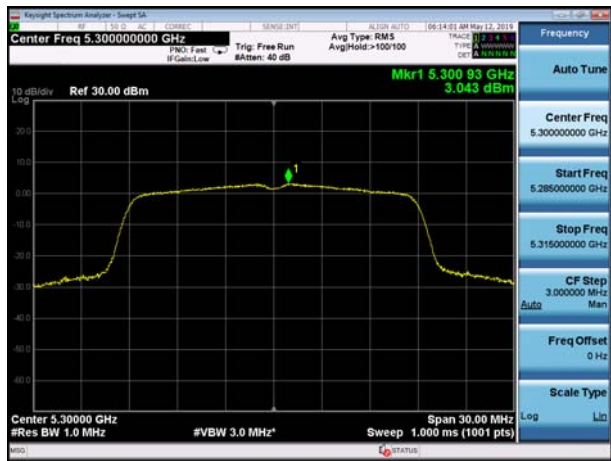
U-NII-2A, 802.11n HT20, Channel No.: 52



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



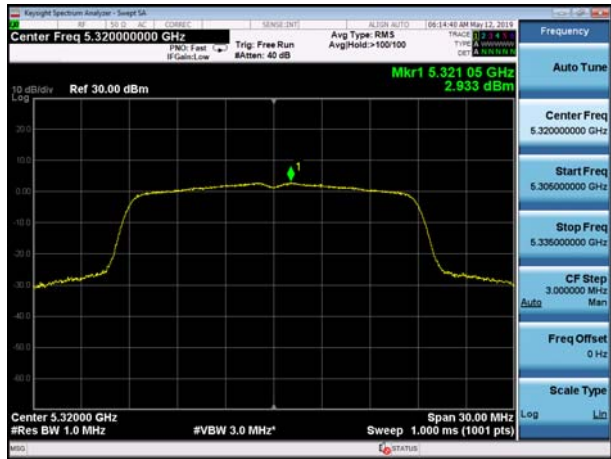
U-NII-2A, 802.11n HT20, Channel No.: 60



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

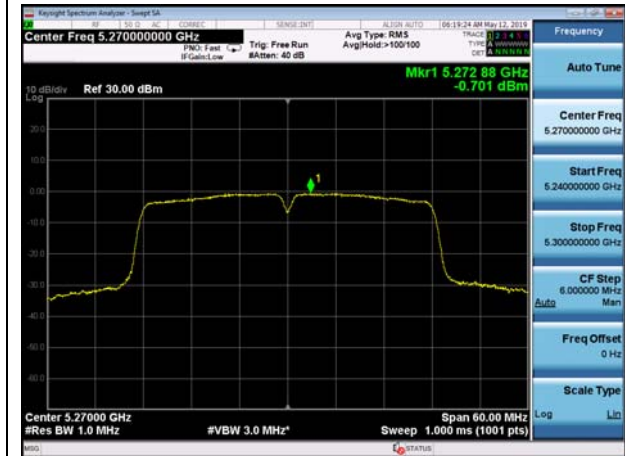


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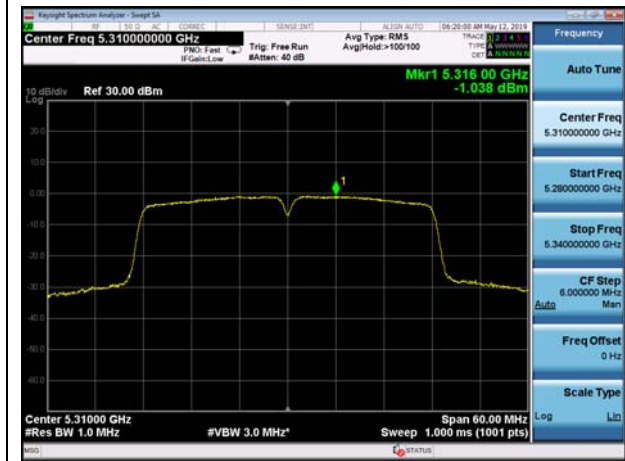




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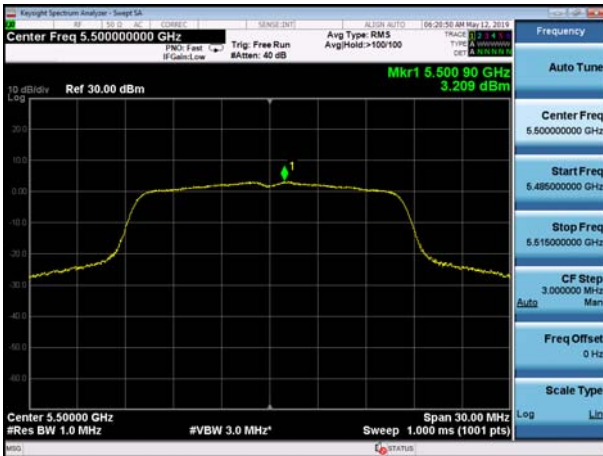


U-NII-2A, 802.11n HT40, Channel No.: 62





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



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



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



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



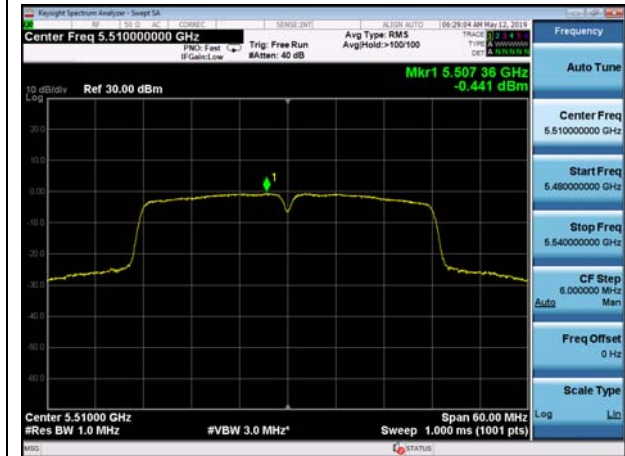
U-NII-2C, 802.11a, Channel No.: 140



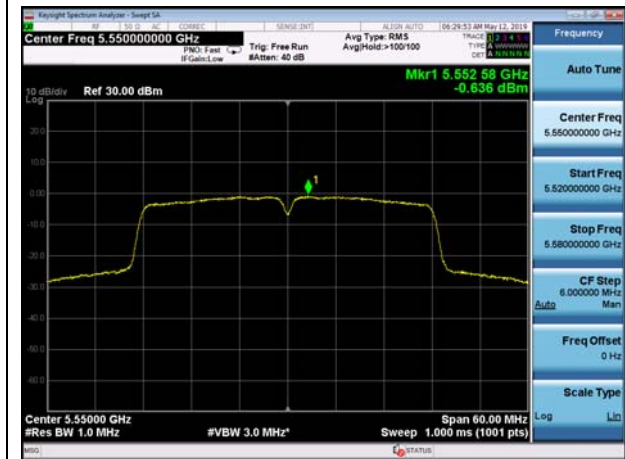
U-NII-2C, 802.11n HT20, Channel No.: 140



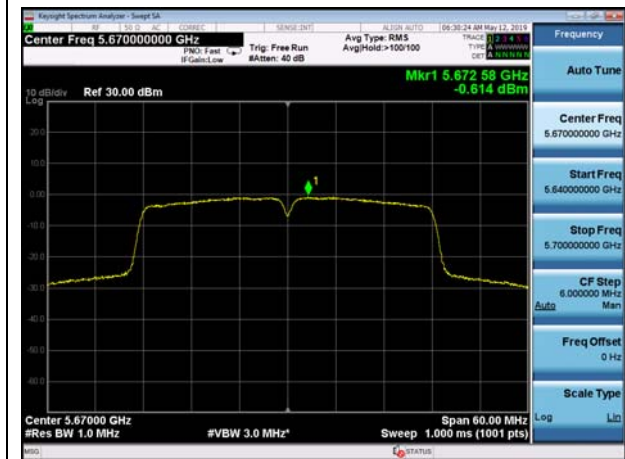
U-NII-2C, 802.11n HT40, Channel No.: 102



U-NII-2C, 802.11n HT40, Channel No.: 110

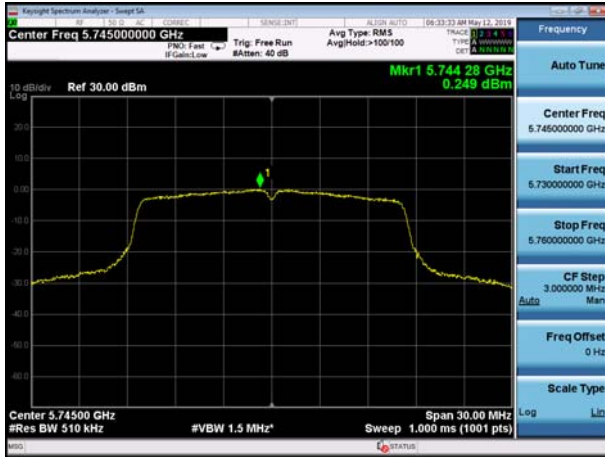


U-NII-2C, 802.11n HT40, Channel No.: 134

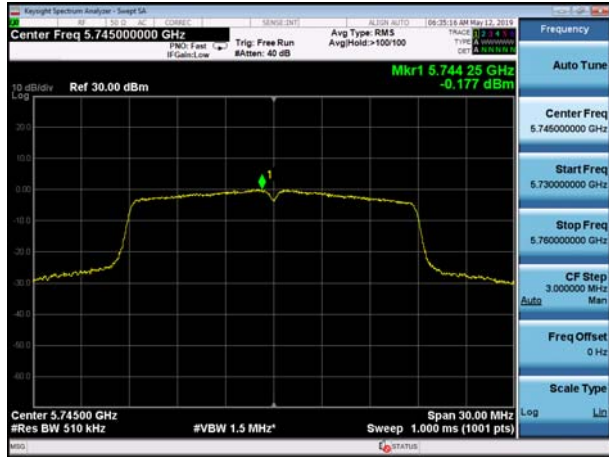




U-NII-3, 802.11a, Channel No.: 149



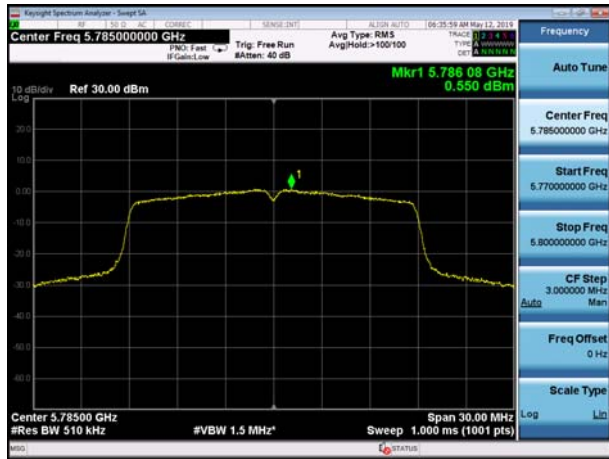
U-NII-3, 802.11n HT20, Channel No.: 149



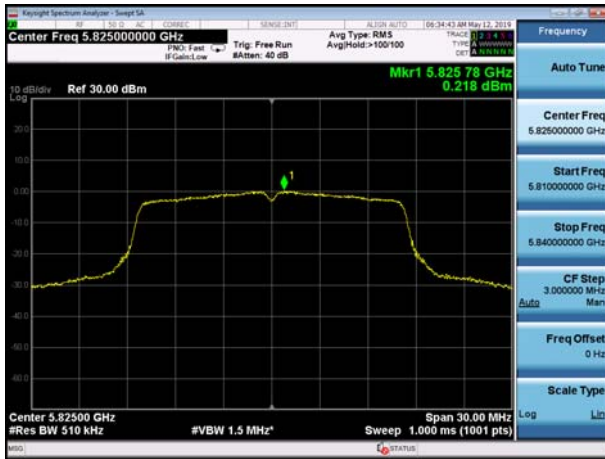
U-NII-3, 802.11a, Channel No.: 157



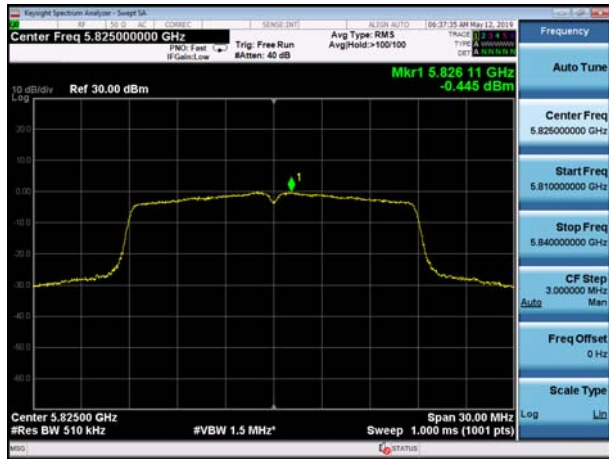
U-NII-3, 802.11n HT20, Channel No.: 157

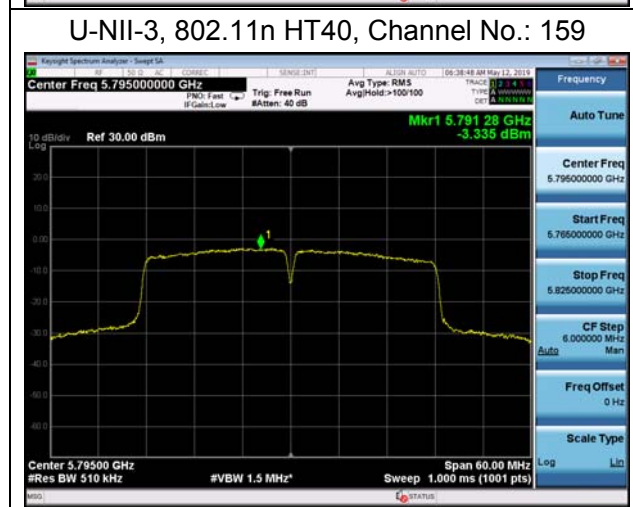
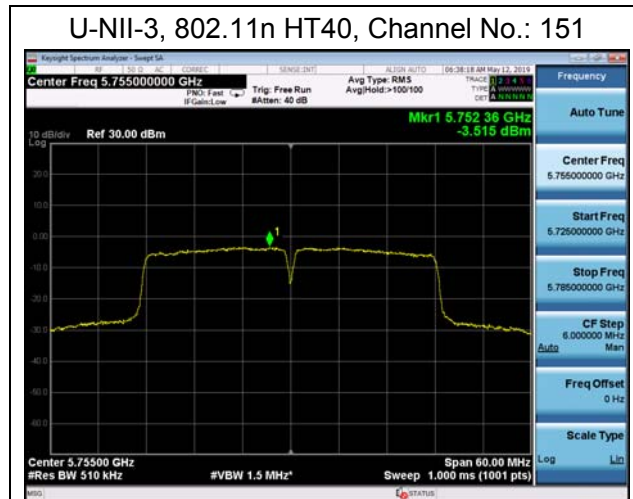


U-NII-3, 802.11a, Channel No.: 165



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





## 5.5. Unwanted Emission

### Ambient condition

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

### Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10-2013. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

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

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

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

Above 1GHz (detector: Peak):

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

1) RBW = 1 MHz.

2) VBW  $\geq$  [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.

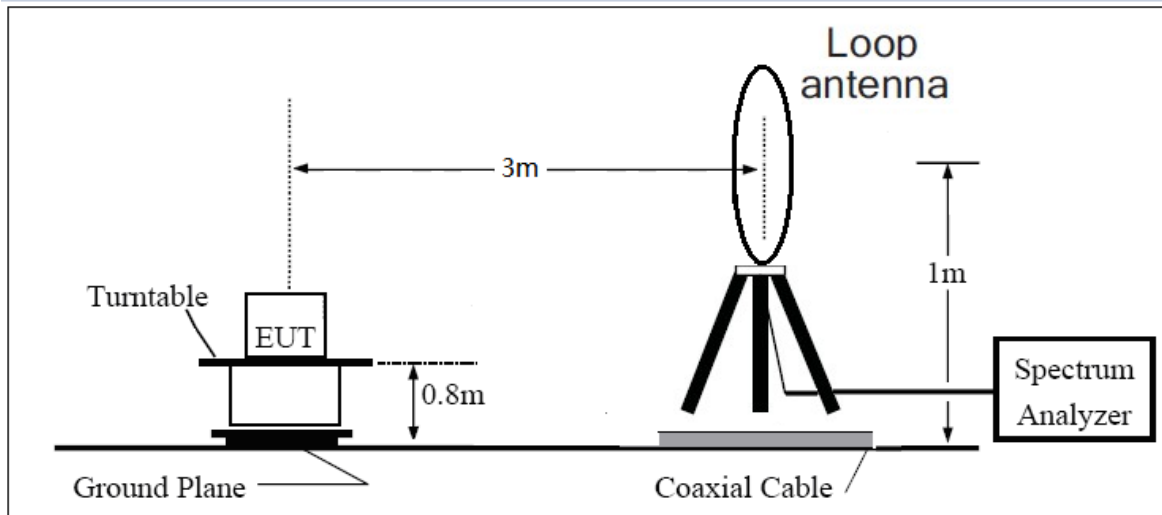
3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

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.

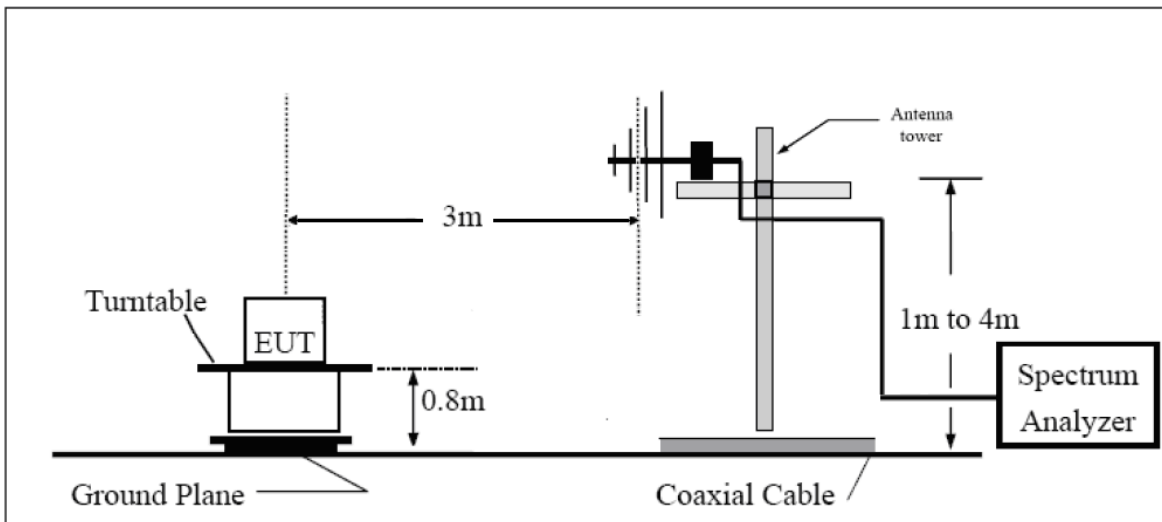
The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the loop antenna is vertical, others antenna are vertical and horizontal.

The test is in transmitting mode.

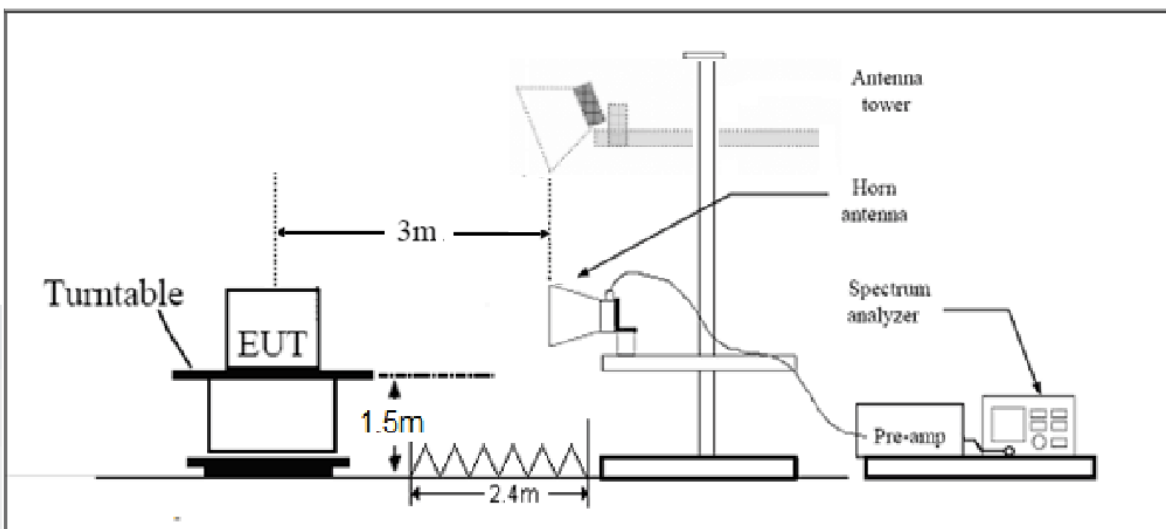
9KHz~~~30MHz



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(68.2dBμV/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、  $E[\text{dB}\mu\text{V}/\text{m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{meters}]) + 104.77$ , where E = field strength and

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

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

- (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
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	( <sup>2</sup> )
13.36 - 13.41			

### Measurement Uncertainty

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

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.02 dB
200MHz-1GHz	3.28 dB
1GHz-18G	3.70 dB
18GHz-26.5GHz	5.78 dB
26.5G-40GHz	5.82 dB

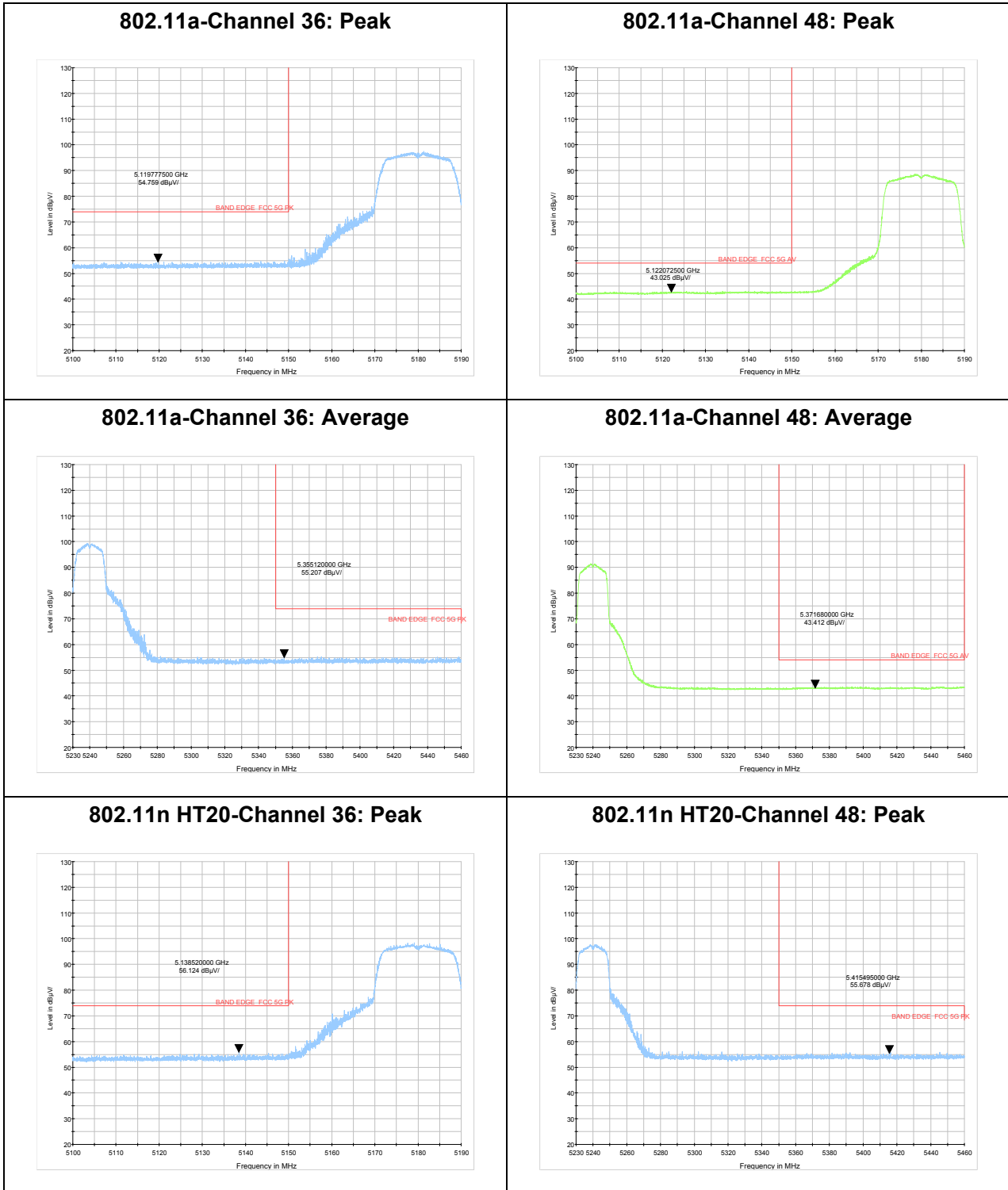


**Test Results:**

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

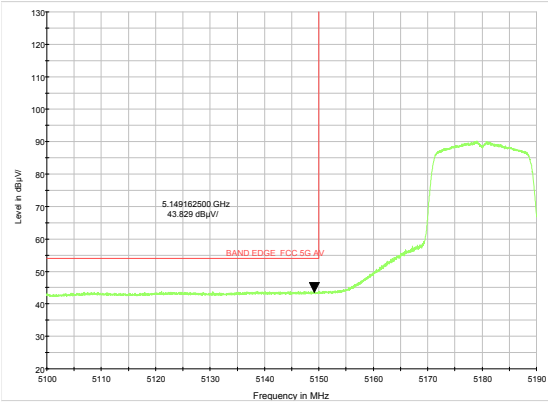
**The signal beyond the limit is carrier.**

**U-NII-1**

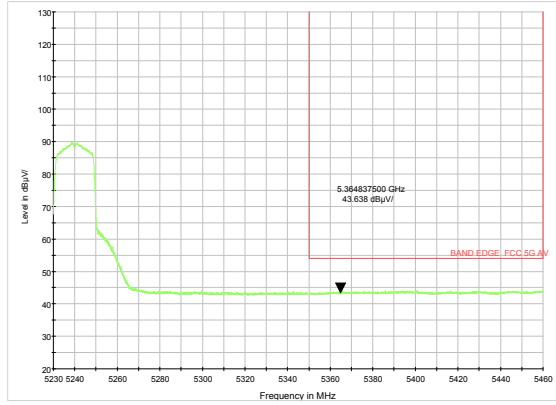




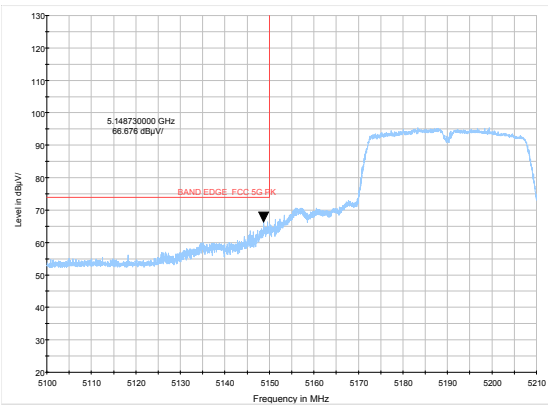
802.11n HT20-Channel 36: Average



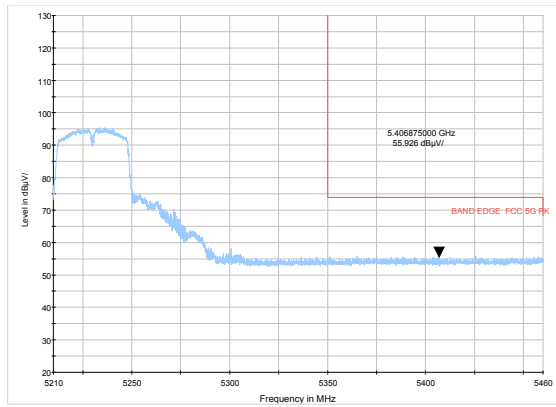
802.11n HT20-Channel 48: Average



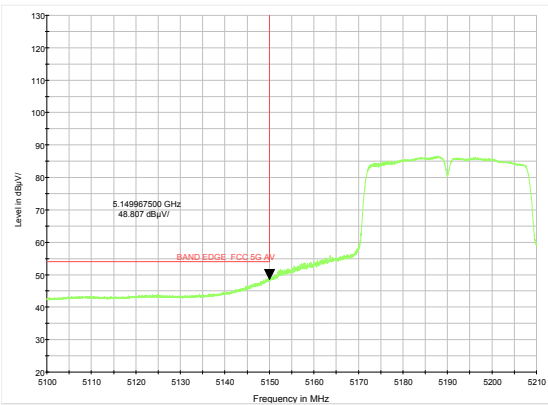
802.11n HT40-Channel 38: Peak



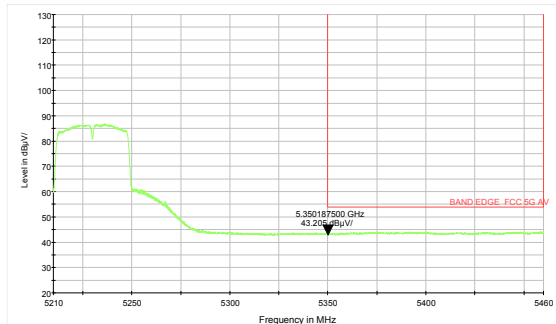
802.11n HT40-Channel 46: Peak



802.11n HT40-Channel 38: Average



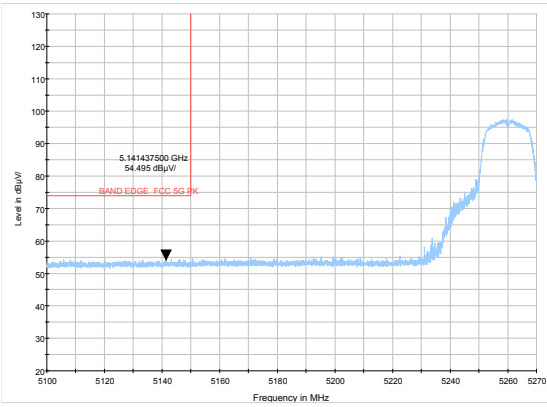
802.11n HT40-Channel 46: Average



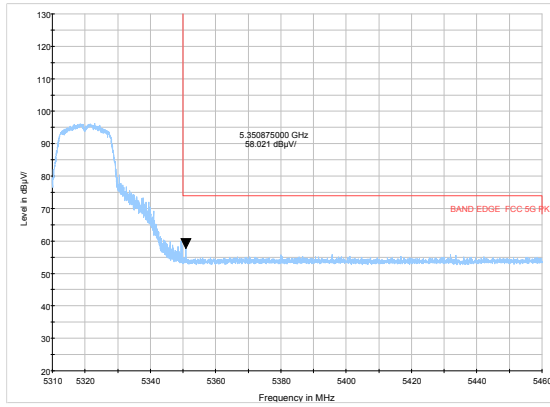


U-NII-2A

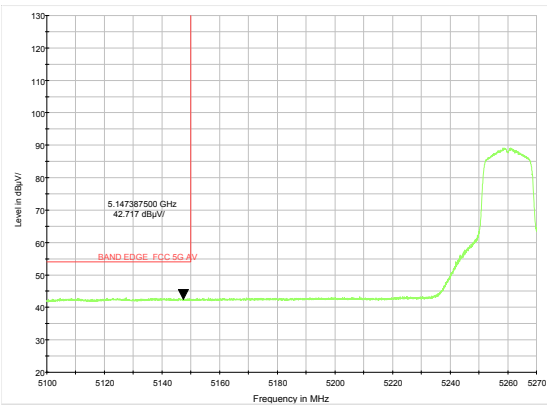
802.11a-Channel 52: Peak



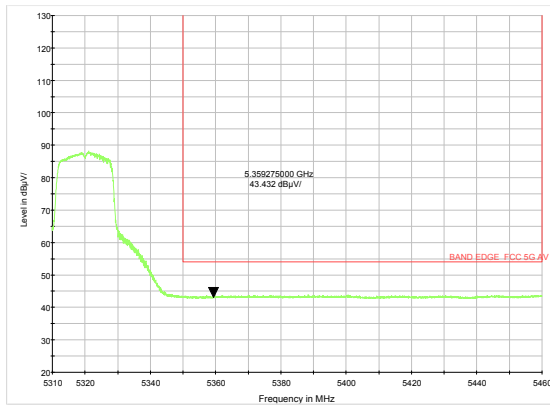
802.11a-Channel 64: Peak



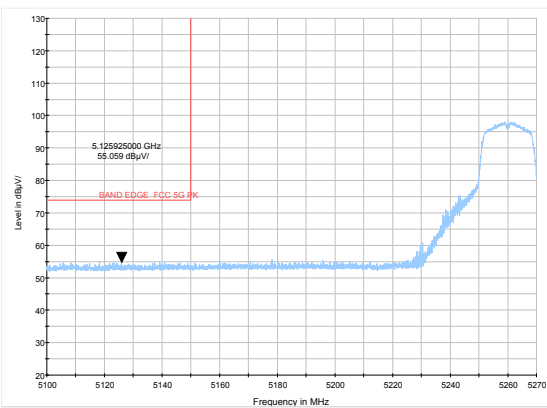
802.11a-Channel 52: Average



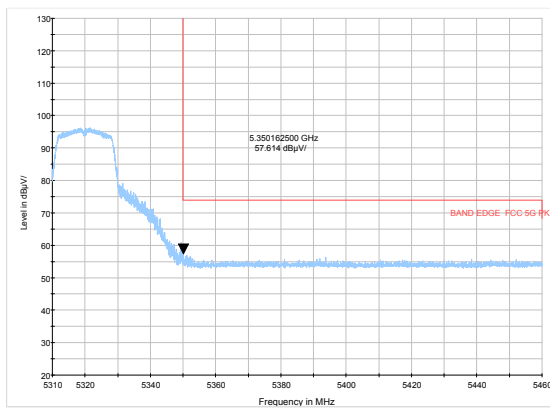
802.11a-Channel 64: Average



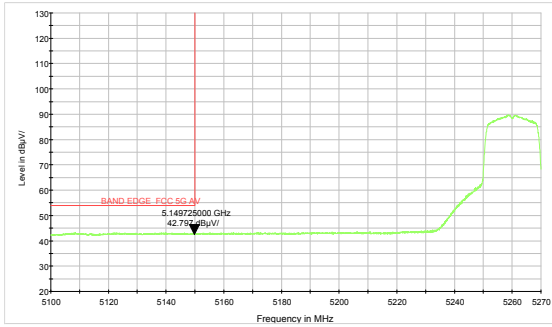
802.11n HT20-Channel 52: Peak



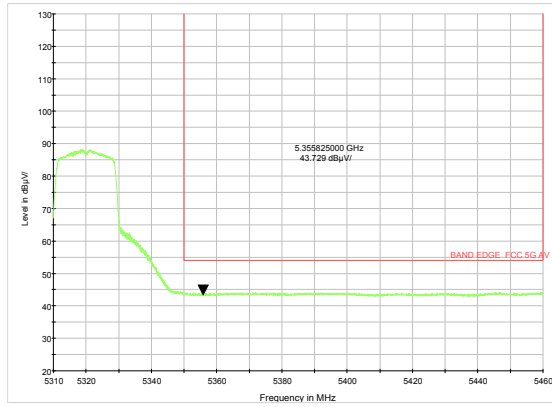
802.11n HT20-Channel 64: Peak



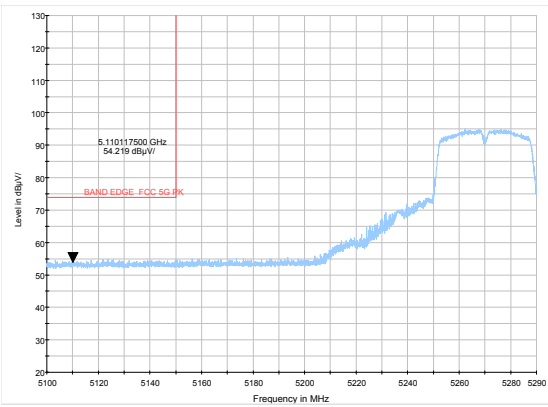
**802.11n HT20-Channel 52: Average**



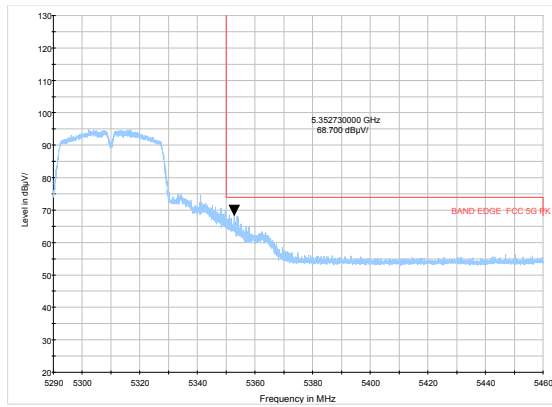
**802.11n HT20-Channel 64: Average**



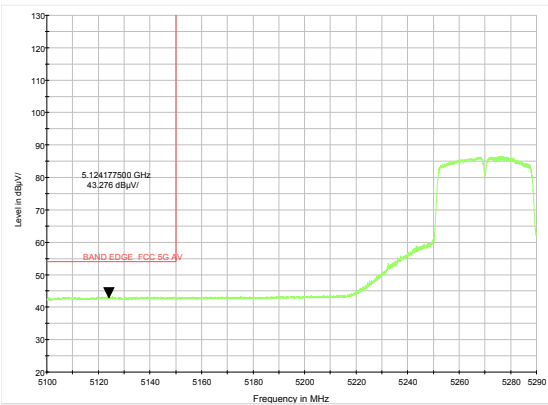
**802.11n HT40-Channel 54: Peak**



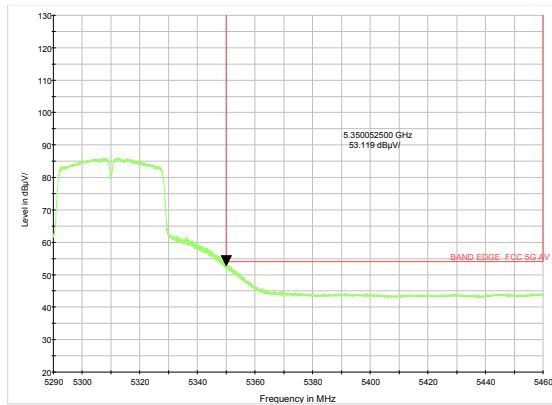
**802.11n HT40-Channel 62: Peak**



**802.11n HT40-Channel 54: Average**



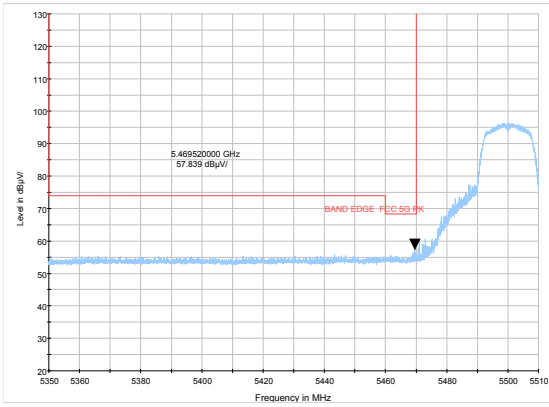
**802.11n HT40-Channel 62: Average**



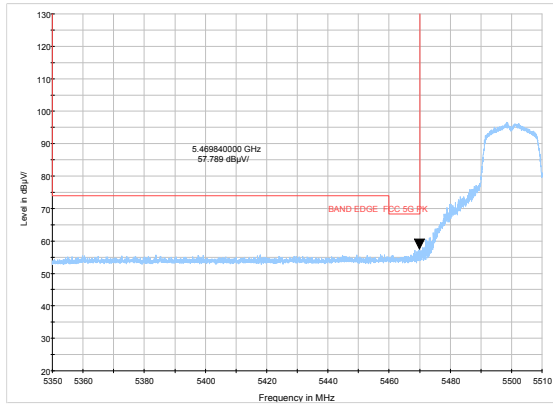


U-NII-2C

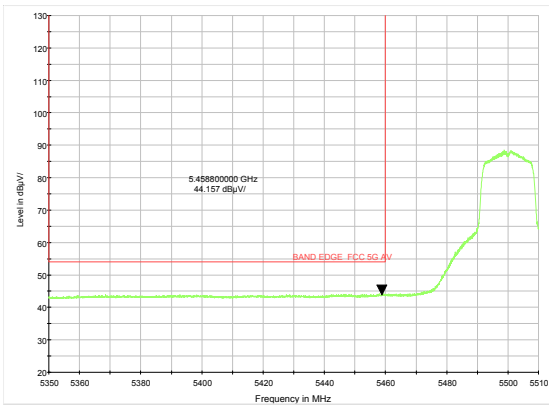
802.11a-Channel 100: Peak



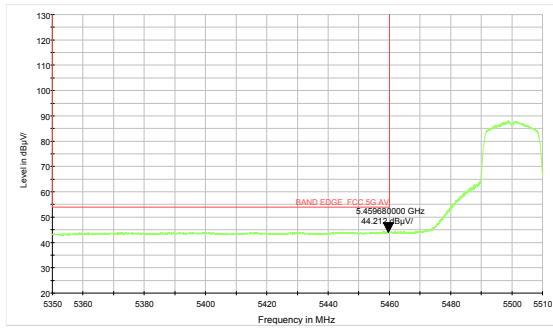
802.11n HT20-Channel 100: Peak



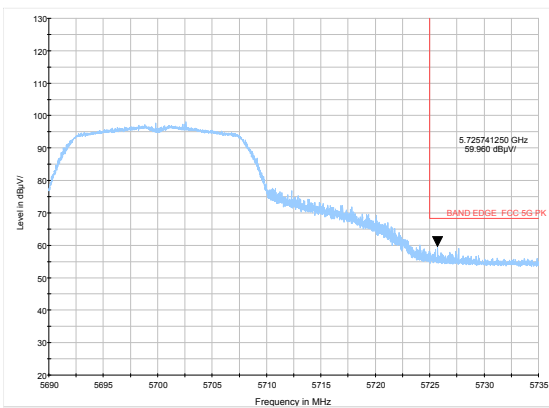
802.11a-Channel 100: Average



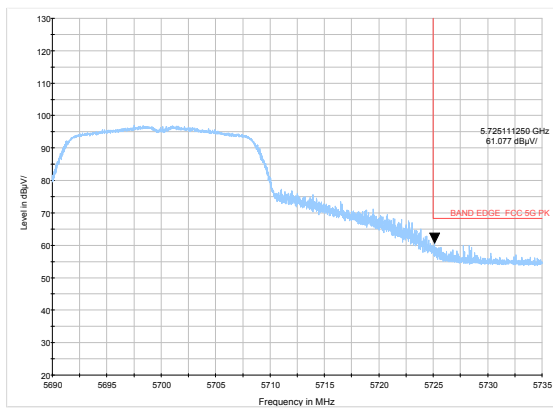
802.11n HT20-Channel 100: Average



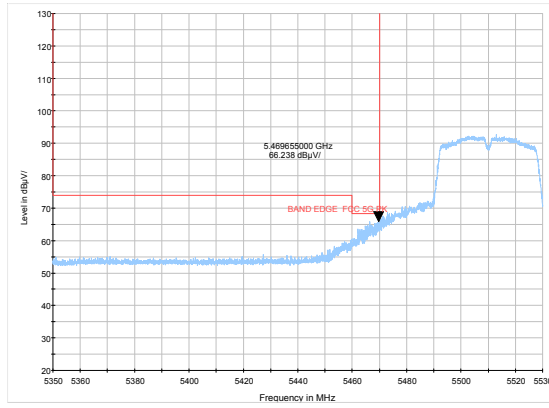
802.11a-Channel 140: Peak



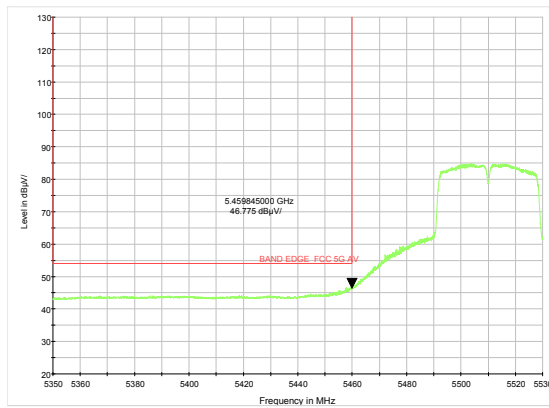
802.11n HT20-Channel 140: Peak



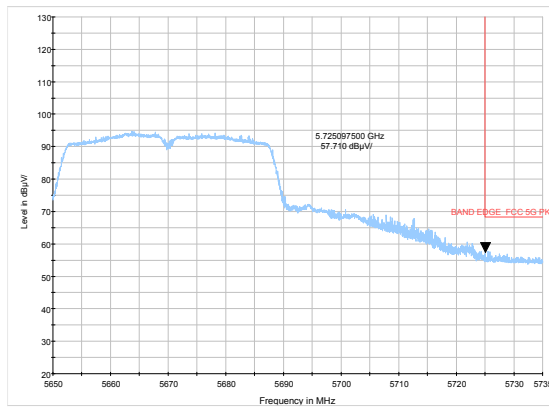
**802.11n HT40-Channel 102: Peak**



**802.11n HT40-Channel 102: Average**



**802.11n HT40-Channel 134: Peak**

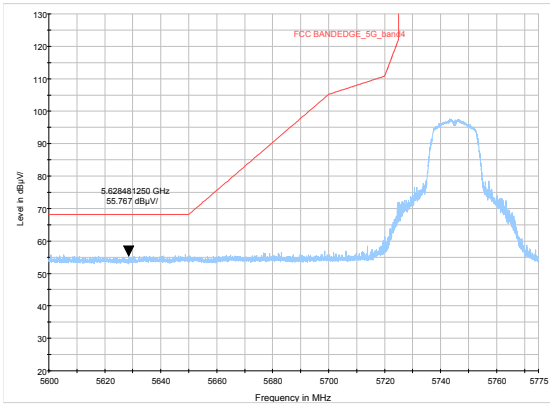




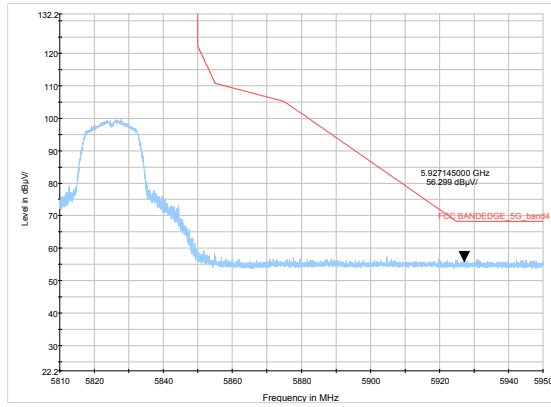


U-NII-3

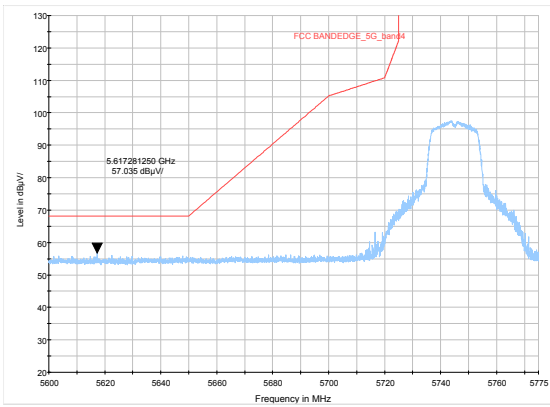
802.11a-Channel 149: Peak



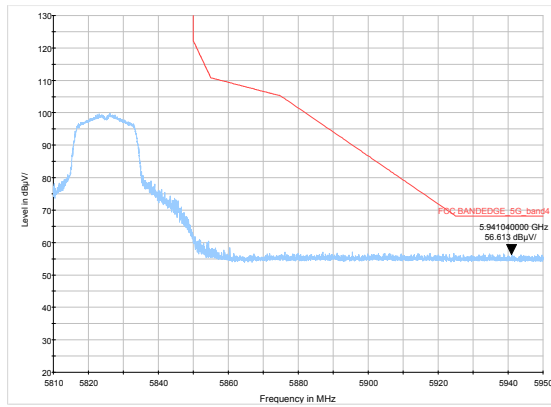
802.11a-Channel 165: Peak



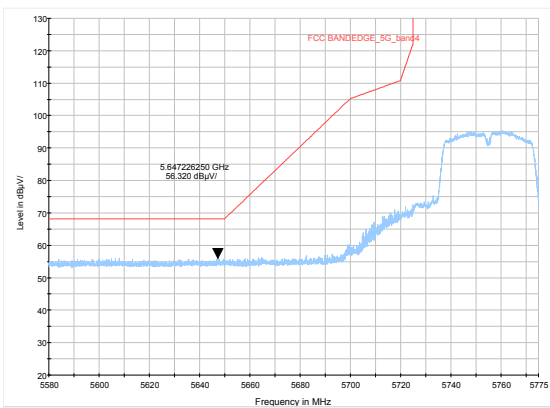
802.11n HT20-Channel 149: Peak



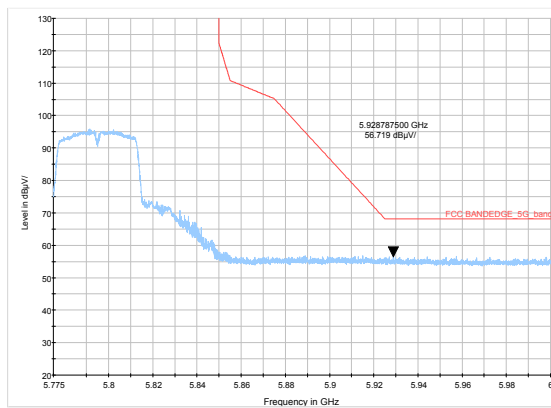
802.11n HT20-Channel 165: Peak



802.11n HT40-Channel 151: Peak



802.11n HT40-Channel 159: Peak



**Result of RE**

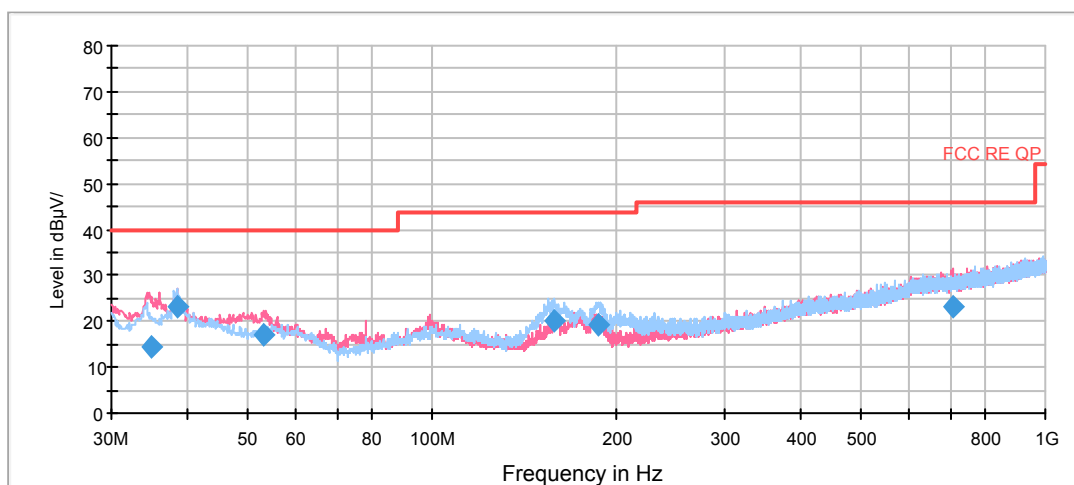
**Test result**

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 18GHz-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 (HT40) CH46 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

**Continuous TX mode:**

RE 0.03-1GHz QP Class B



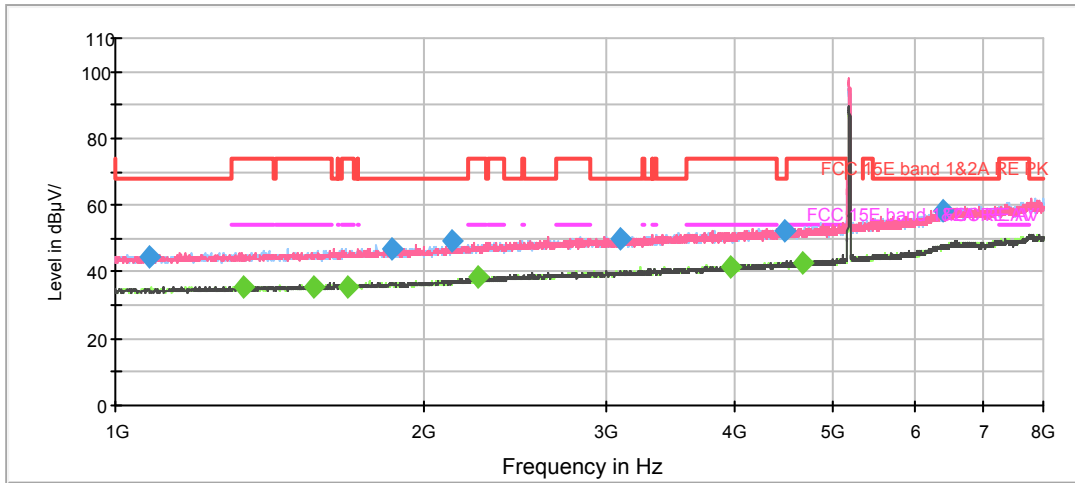
Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
34.843750	14.4	100.0	V	356.0	16.3	25.6	40.0
38.326250	23.4	200.0	H	312.0	16.8	16.6	40.0
53.203750	17.1	100.0	V	181.0	13.7	22.9	40.0
158.277500	20.1	200.0	H	90.0	10.0	23.4	43.5
187.267500	19.4	100.0	H	97.0	11.4	24.1	43.5
704.881250	23.0	200.0	V	119.0	24.0	23.0	46.0

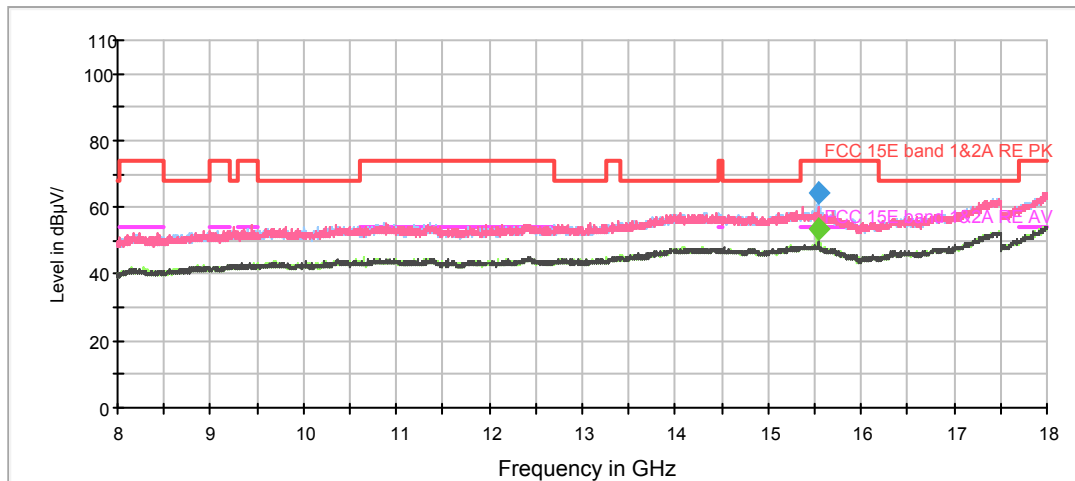
**Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)  
 2. Margin = Limit – Quasi-Peak**



802.11a CH36



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



Radiates Emission from 8GHz to 18GHz



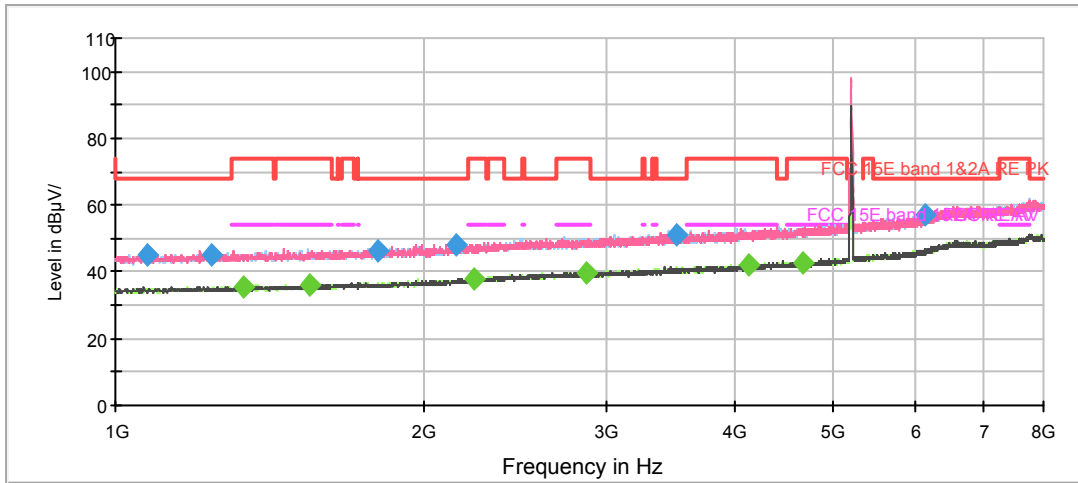
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1080.500000	44.7	200.0	V	281.0	-1.5	23.5	68.2
1860.125000	46.9	200.0	V	237.0	0.8	21.3	68.2
2127.875000	49.1	100.0	V	173.0	1.8	19.1	68.2
3100.875000	49.7	100.0	H	358.0	5.0	18.5	68.2
4486.875000	52.4	100.0	H	280.0	8.8	15.8	68.2
6404.000000	58.2	200.0	H	0.0	14.3	10.0	68.2

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

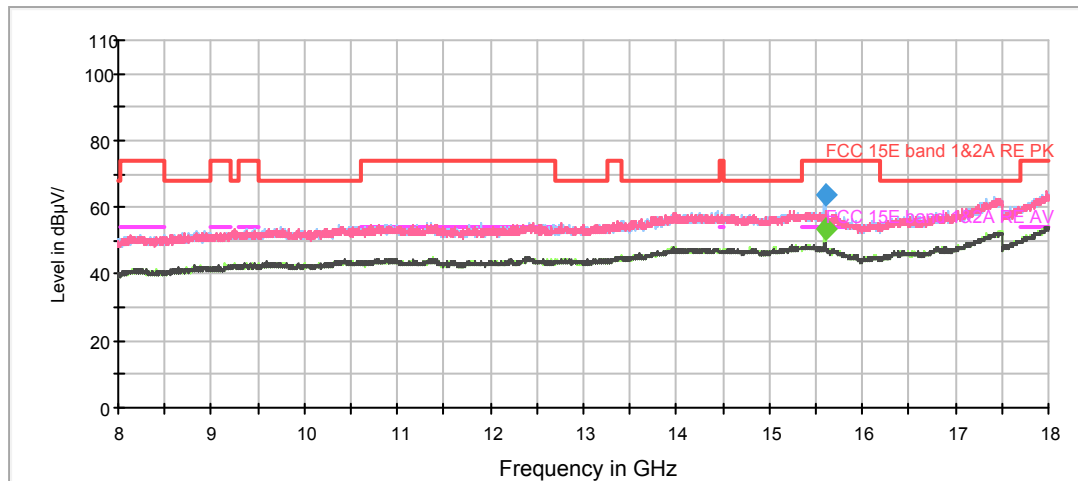
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1335.125000	35.3	100.0	V	173.0	-0.9	18.7	54.0
1559.125000	35.5	100.0	H	280.0	-0.2	18.5	54.0
1686.000000	35.4	100.0	H	291.0	0.3	18.6	54.0
2251.250000	38.2	200.0	H	146.0	2.4	15.8	54.0
3964.500000	41.5	200.0	V	325.0	7.1	12.5	54.0
4663.625000	42.7	100.0	V	196.0	9.1	11.3	54.0

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

802.11a CH40



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1072.625000	45.0	200.0	V	0.0	-1.5	23.2	68.2
1243.250000	45.1	200.0	V	0.0	-1.1	23.1	68.2
1799.750000	46.3	100.0	H	235.0	0.6	21.9	68.2
2141.875000	48.2	100.0	H	313.0	1.9	20.0	68.2
3515.625000	50.9	200.0	V	318.0	6.2	17.3	68.2
6134.500000	56.9	200.0	H	247.0	12.7	11.3	68.2

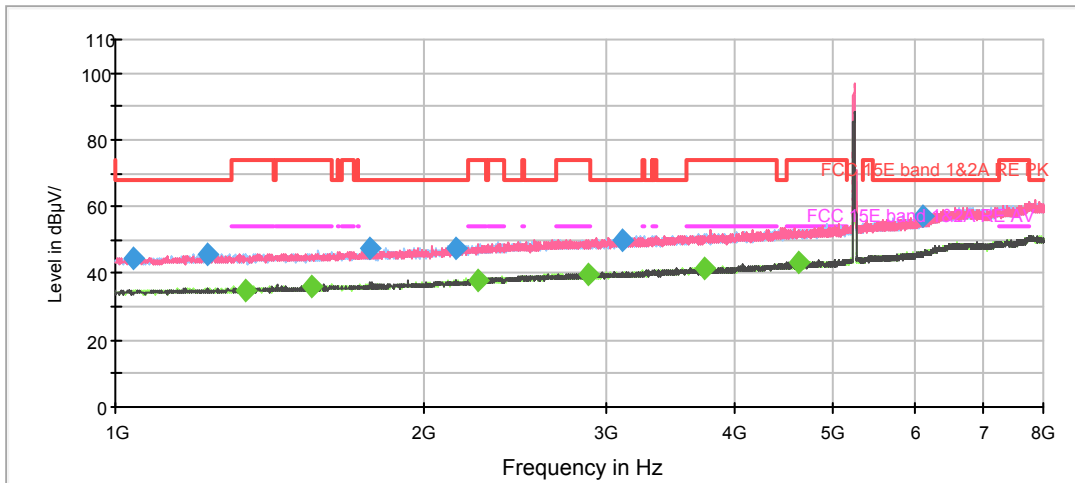
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1335.125000	35.4	100.0	H	90.0	-0.9	18.6	54.0
1546.875000	36.0	100.0	V	243.0	-0.2	18.0	54.0
2237.250000	37.8	100.0	H	168.0	2.4	16.2	54.0
2873.375000	39.9	100.0	V	14.0	4.5	14.1	54.0
4136.000000	41.9	100.0	H	324.0	7.7	12.1	54.0
4664.500000	42.8	100.0	V	6.0	9.1	11.2	54.0

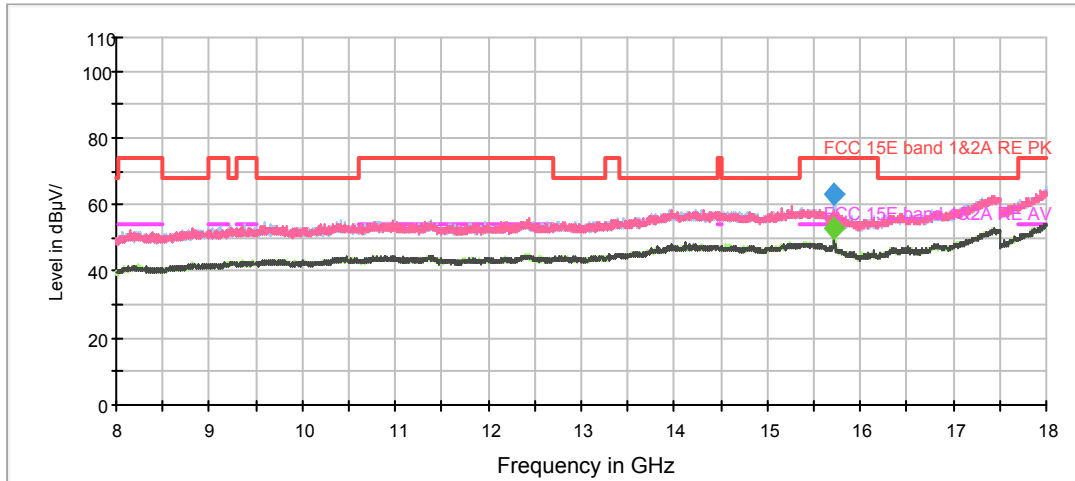
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11a CH48



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1040.250000	44.4	100.0	V	61.0	-1.7	23.8	68.2
1230.125000	45.5	200.0	V	24.0	-1.2	22.7	68.2
1770.000000	47.2	100.0	H	188.0	0.6	21.0	68.2
2146.250000	47.3	100.0	H	307.0	1.9	20.9	68.2
3115.750000	49.7	200.0	H	51.0	5.0	18.5	68.2
6118.750000	57.1	200.0	V	0.0	12.6	11.1	68.2

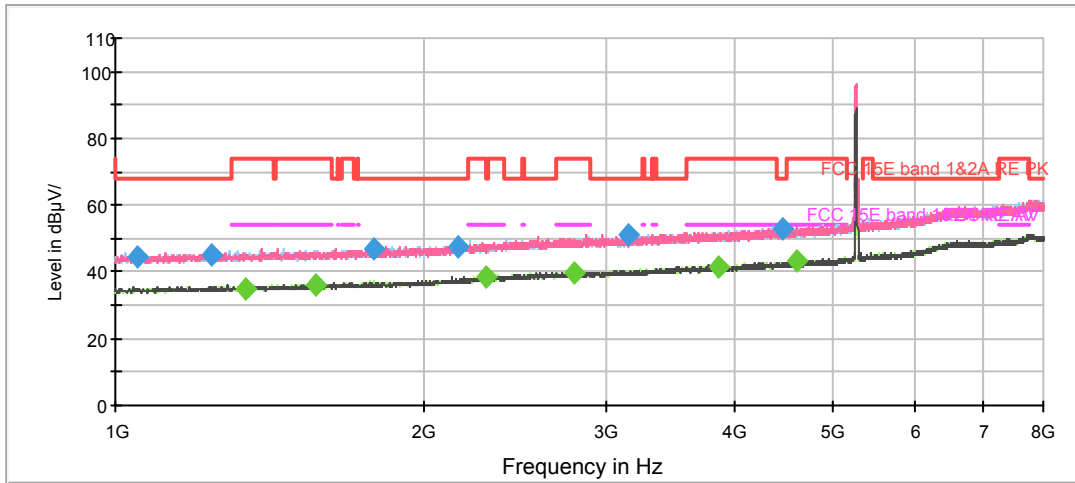
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1341.250000	35.1	200.0	H	30.0	-0.9	18.9	54.0
1555.625000	35.8	100.0	H	355.0	-0.2	18.2	54.0
2254.750000	37.9	200.0	H	61.0	2.5	16.1	54.0
2880.375000	39.9	100.0	V	2.0	4.5	14.1	54.0
3744.875000	41.6	200.0	H	15.0	6.6	12.4	54.0
4622.500000	43.3	100.0	H	343.0	9.0	10.7	54.0

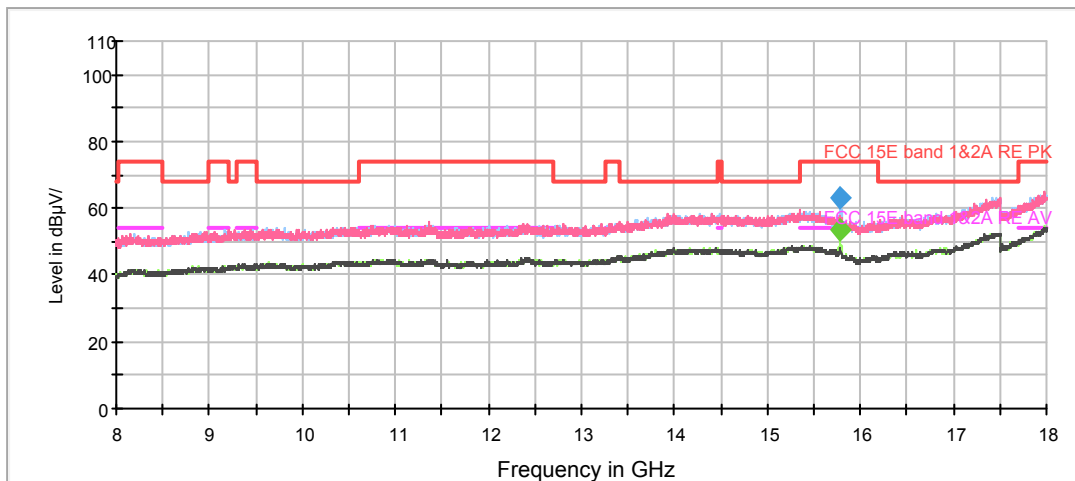
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11a CH52



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



Radiates Emission from 8GHz to 18GHz



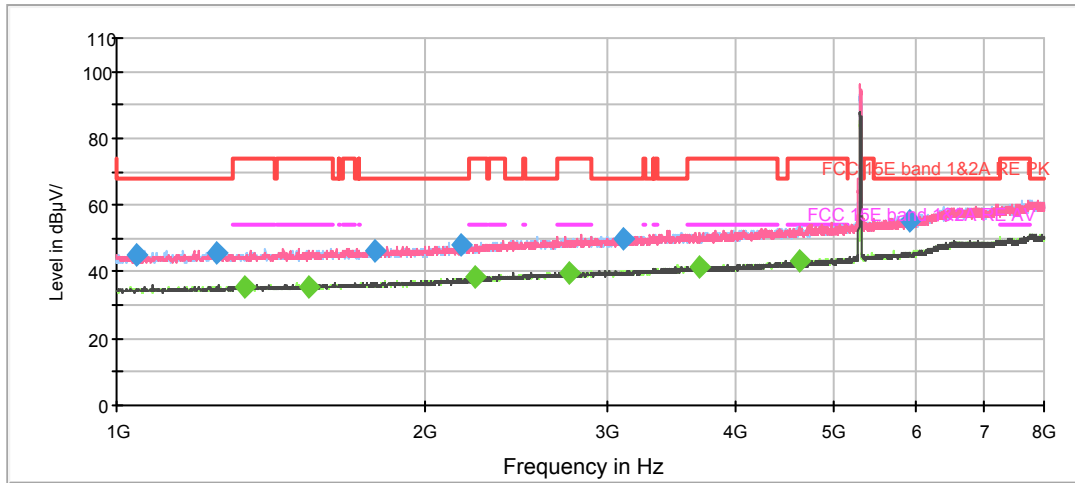
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1050.750000	44.8	100.0	H	309.0	-1.6	23.4	68.2
1243.250000	45.3	200.0	V	355.0	-1.1	22.9	68.2
1786.625000	46.6	100.0	H	0.0	0.6	21.6	68.2
2156.750000	47.5	100.0	V	26.0	2.0	20.7	68.2
3154.250000	50.8	100.0	V	283.0	5.1	17.4	68.2
4457.125000	52.7	200.0	V	209.0	8.7	15.5	68.2

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

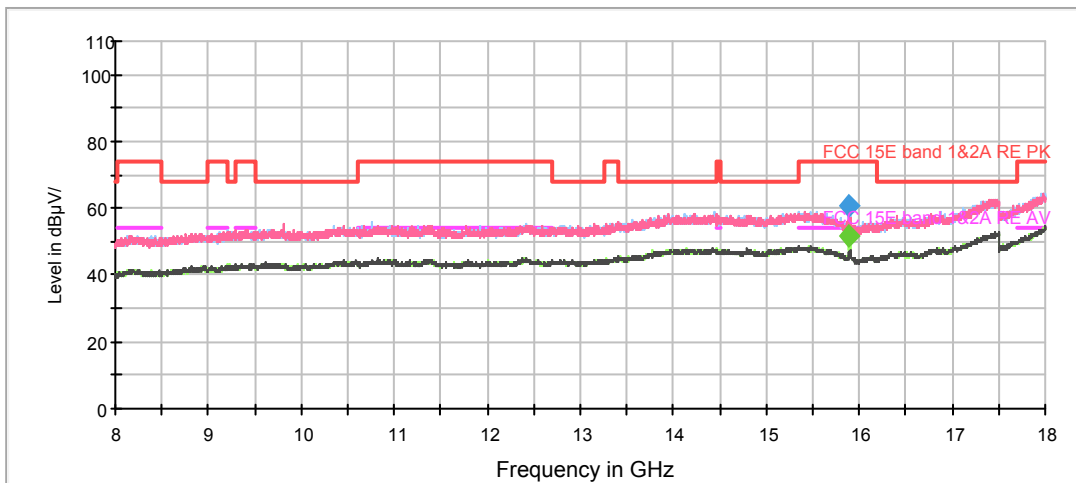
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1339.500000	35.2	200.0	H	8.0	-0.9	18.8	54.0
1563.500000	35.9	200.0	V	231.0	-0.2	18.1	54.0
2295.000000	38.4	100.0	H	345.0	2.7	15.6	54.0
2800.750000	39.4	200.0	H	1.0	4.3	14.6	54.0
3868.250000	41.7	200.0	V	120.0	6.9	12.3	54.0
4614.625000	43.3	100.0	V	71.0	9.0	10.7	54.0

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

## 802.11a CH60



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



Radiates Emission from 8GHz to 18GHz



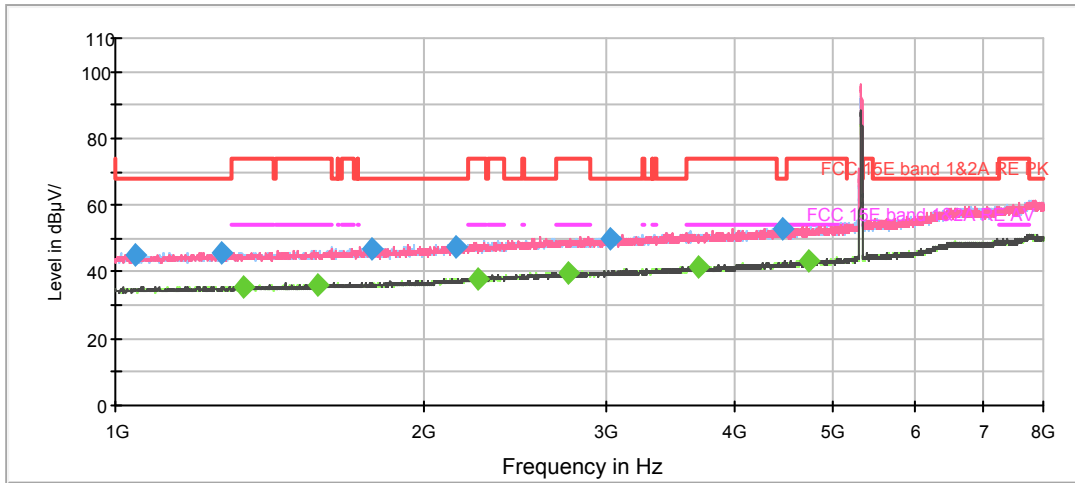
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1043.750000	44.8	200.0	H	284.0	-1.7	23.4	68.2
1253.750000	45.6	100.0	H	291.0	-1.1	22.6	68.2
1784.000000	46.4	100.0	H	333.0	0.6	21.8	68.2
2167.250000	48.0	100.0	H	100.0	2.1	20.2	68.2
3121.000000	50.1	200.0	H	260.0	5.0	18.1	68.2
5924.500000	55.3	200.0	H	51.0	12.0	12.9	68.2

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

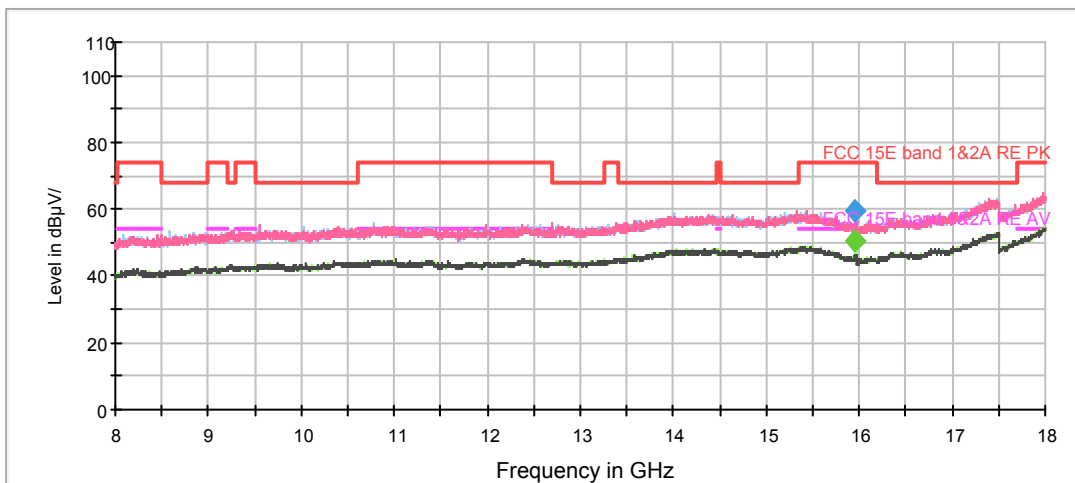
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1330.750000	35.4	100.0	H	312.0	-0.9	18.6	54.0
1541.625000	35.4	200.0	H	115.0	-0.3	18.6	54.0
2238.125000	38.3	200.0	V	146.0	2.4	15.7	54.0
2757.875000	39.5	100.0	H	347.0	4.2	14.5	54.0
3688.000000	41.2	200.0	V	357.0	6.5	12.8	54.0
4629.500000	43.2	100.0	H	226.0	9.0	10.8	54.0

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

802.11a CH64



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1044.625000	45.2	200.0	V	247.0	-1.7	23.0	68.2
1266.000000	45.6	200.0	H	3.0	-1.1	22.6	68.2
1778.750000	46.9	100.0	V	51.0	0.6	21.3	68.2
2147.125000	47.6	100.0	V	126.0	1.9	20.6	68.2
3031.750000	50.0	200.0	V	247.0	4.8	18.2	68.2
4458.875000	52.7	200.0	H	156.0	8.7	15.5	68.2

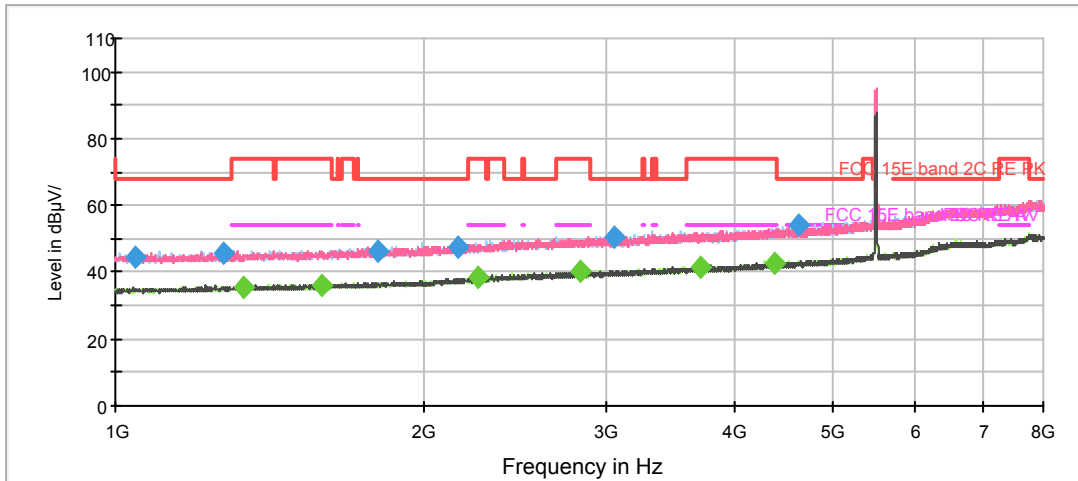
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1336.000000	35.4	100.0	H	234.0	-0.9	18.6	54.0
1572.250000	36.1	100.0	V	7.0	-0.1	17.9	54.0
2253.000000	37.8	100.0	H	338.0	2.5	16.2	54.0
2757.000000	39.4	200.0	H	74.0	4.2	14.6	54.0
3689.750000	41.5	200.0	V	312.0	6.5	12.5	54.0
4727.500000	43.1	200.0	V	280.0	9.2	10.9	54.0

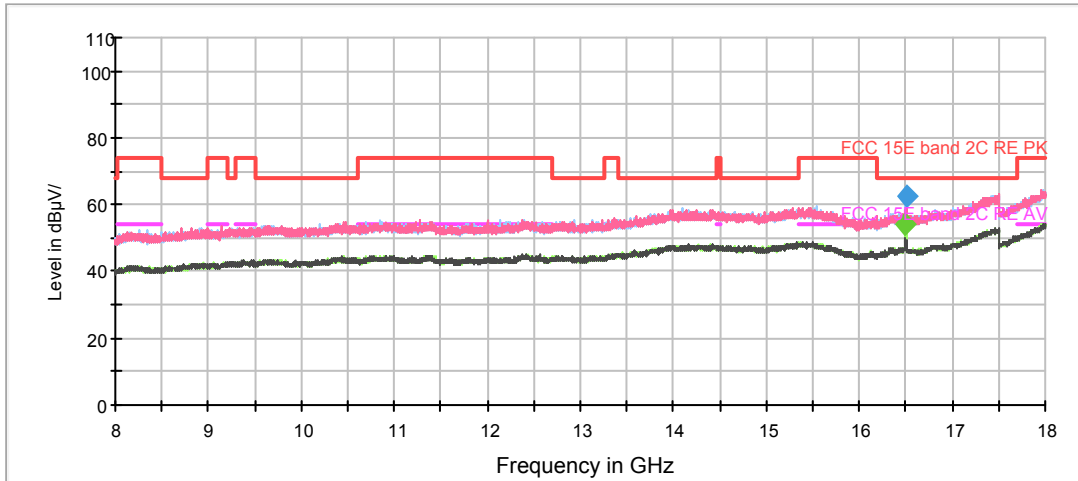
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11a CH100



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1043.750000	44.7	100.0	H	308.0	-1.7	23.5	68.2
1273.875000	45.8	100.0	V	2.0	-1.1	22.4	68.2
1798.875000	46.1	200.0	H	52.0	0.6	22.1	68.2
2156.750000	47.6	200.0	H	147.0	2.0	20.6	68.2
3056.250000	50.5	200.0	V	0.0	4.9	17.7	68.2
4630.375000	53.9	100.0	H	0.0	9.0	14.3	68.2

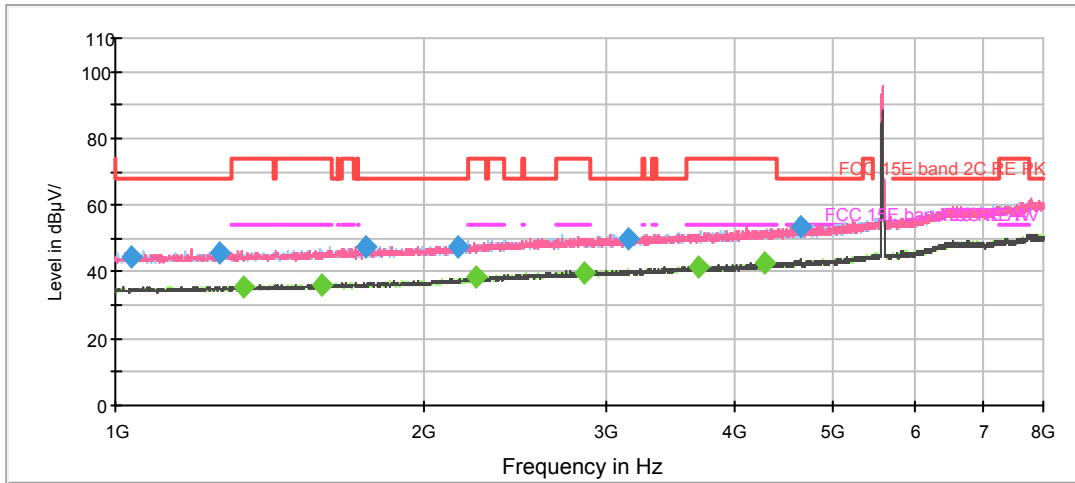
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1331.625000	35.7	200.0	H	283.0	-0.9	18.3	54.0
1588.000000	36.1	200.0	V	359.0	-0.1	17.9	54.0
2259.125000	38.7	100.0	V	115.0	2.5	15.3	54.0
2838.375000	40.1	200.0	H	296.0	4.4	13.9	54.0
3704.625000	41.2	200.0	V	244.0	6.5	12.8	54.0
4374.000000	42.7	100.0	V	21.0	8.5	11.3	54.0

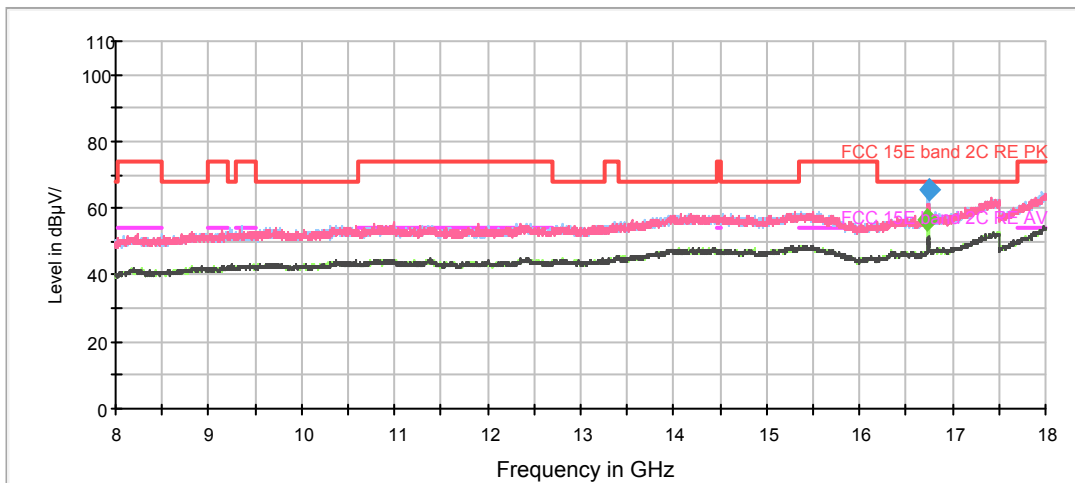
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11a CH116



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1036.750000	44.5	200.0	V	255.0	-1.7	23.7	68.2
1261.625000	45.6	200.0	H	138.0	-1.1	22.6	68.2
1754.250000	47.2	200.0	V	168.0	0.5	21.0	68.2
2153.250000	47.5	100.0	H	179.0	2.0	20.7	68.2
3163.000000	50.0	100.0	H	201.0	5.2	18.2	68.2
4651.375000	53.8	200.0	V	101.0	9.1	14.4	68.2

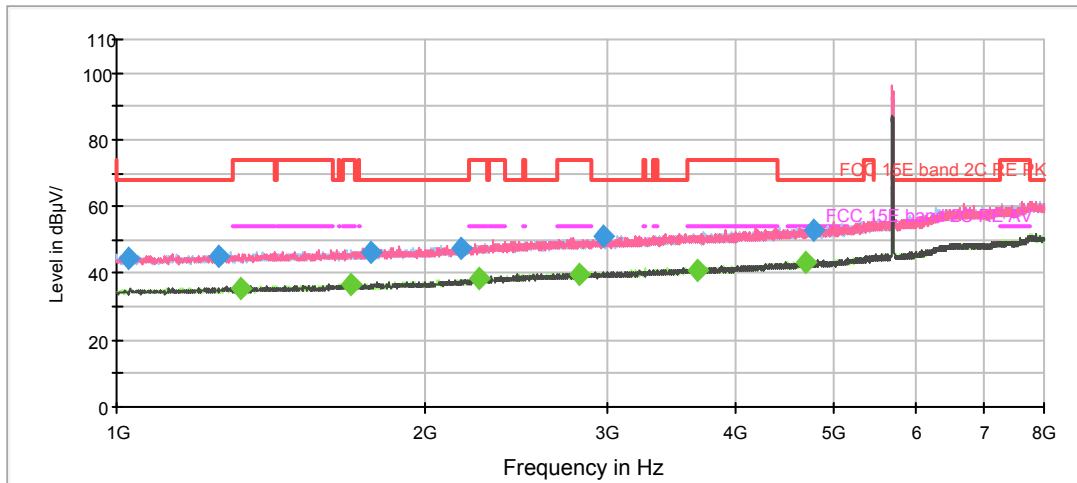
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1331.625000	35.4	100.0	H	358.0	-0.9	18.6	54.0
1589.750000	36.0	100.0	H	245.0	-0.1	18.0	54.0
2246.000000	38.2	100.0	V	40.0	2.4	15.8	54.0
2858.500000	39.5	100.0	V	271.0	4.4	14.5	54.0
3691.500000	41.4	200.0	H	116.0	6.5	12.6	54.0
4288.250000	42.5	200.0	H	127.0	8.2	11.5	54.0

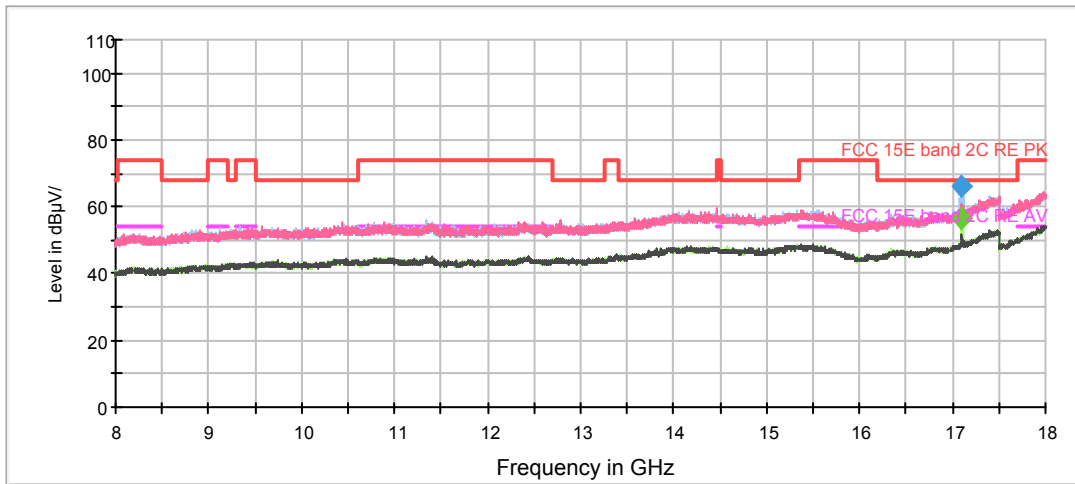
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11a CH140



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



Radiates Emission from 8GHz to 18GHz



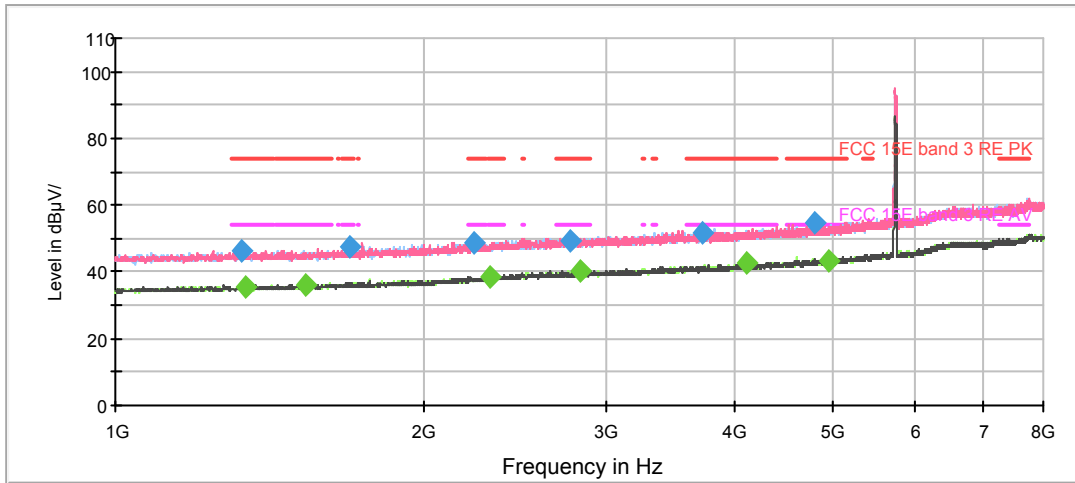
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1027.125000	44.7	200.0	H	225.0	-1.8	23.5	68.2
1259.875000	45.3	100.0	H	255.0	-1.1	22.9	68.2
1770.875000	46.1	100.0	H	89.0	0.6	22.1	68.2
2169.000000	47.7	200.0	H	67.0	2.1	20.5	68.2
2980.125000	51.0	100.0	V	2.0	4.7	17.2	68.2
4775.625000	53.0	100.0	H	266.0	9.3	15.2	68.2

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

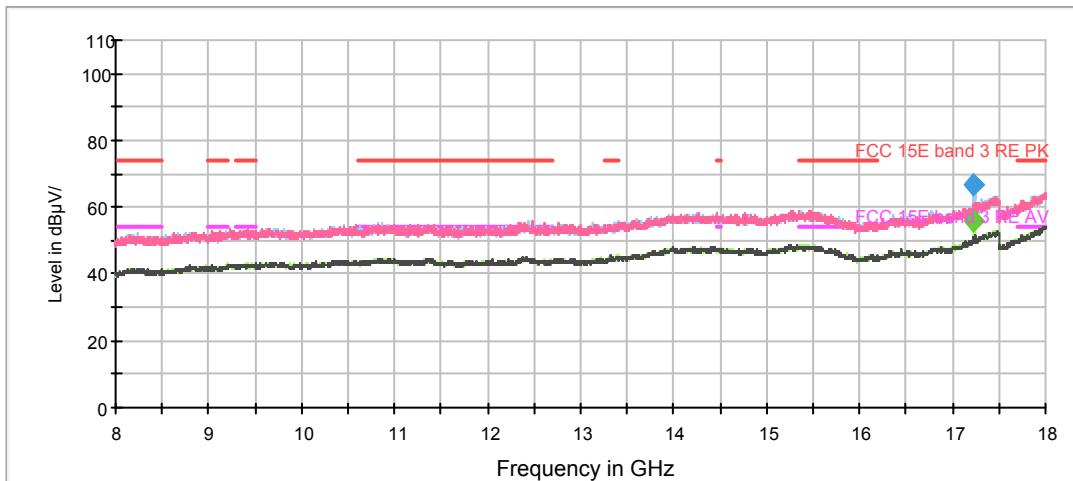
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1321.125000	35.6	100.0	H	245.0	-0.9	18.4	54.0
1693.875000	36.5	200.0	H	114.0	0.4	17.5	54.0
2253.000000	38.2	100.0	H	356.0	2.5	15.8	54.0
2820.000000	39.4	100.0	H	298.0	4.4	14.6	54.0
3682.750000	41.2	200.0	H	94.0	6.5	12.8	54.0
4696.000000	43.4	100.0	H	112.0	9.2	10.6	54.0

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

### 802.11a CH149



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



Radiates Emission from 8GHz to 18GHz



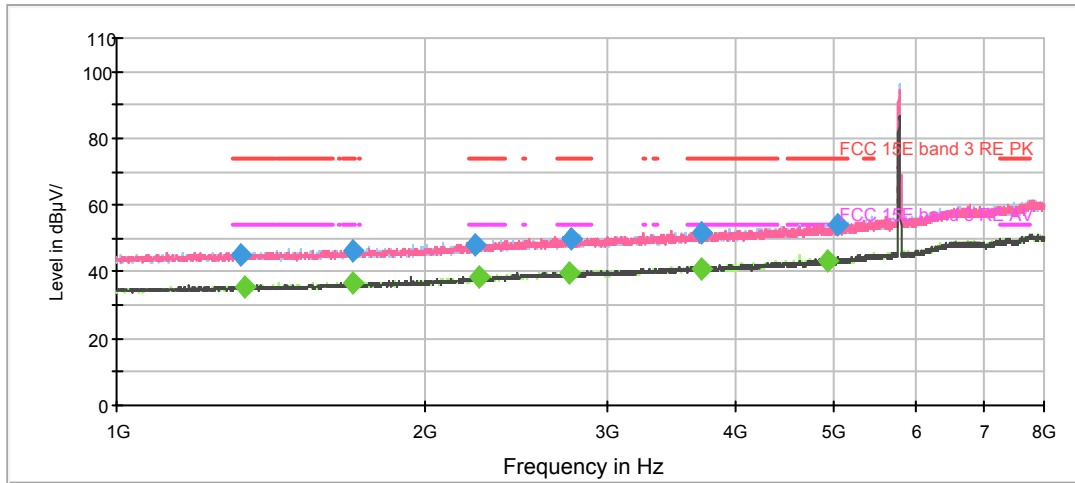
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1324.625000	46.1	200.0	V	265.0	-0.9	27.9	74.0
1690.375000	47.2	100.0	V	335.0	0.4	26.8	74.0
2237.250000	48.6	200.0	H	10.0	2.4	25.4	74.0
2771.000000	49.5	100.0	V	103.0	4.2	24.5	74.0
3723.000000	51.9	100.0	H	112.0	6.6	22.1	74.0
4791.375000	54.5	200.0	V	349.0	9.3	19.5	74.0

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

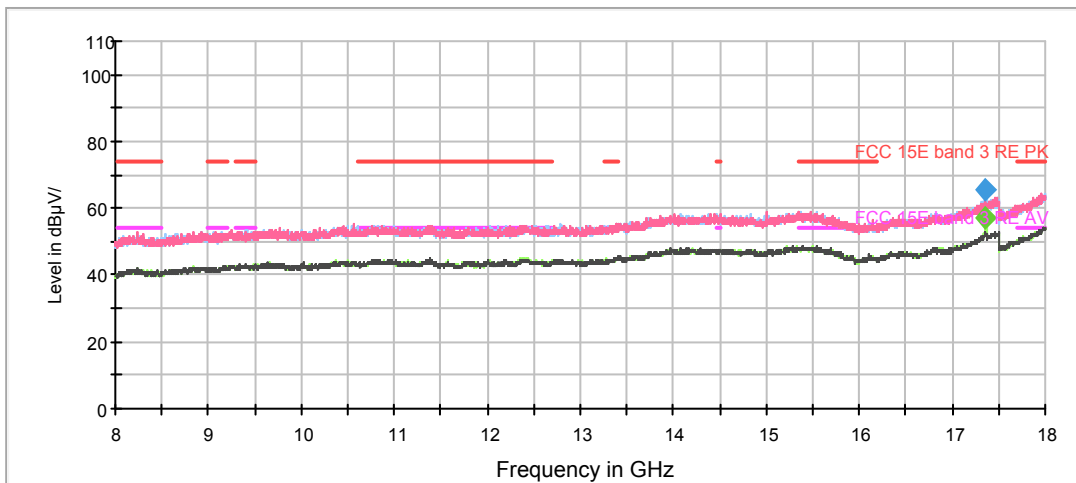
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1339.500000	35.5	200.0	V	359.0	-0.9	18.5	54.0
1532.875000	35.9	200.0	H	0.0	-0.3	18.1	54.0
2320.375000	38.4	200.0	H	148.0	2.8	15.6	54.0
2836.625000	40.6	100.0	H	267.0	4.4	13.4	54.0
4120.250000	42.5	200.0	V	329.0	7.7	11.5	54.0
4941.000000	43.1	100.0	H	350.0	9.5	10.9	54.0

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

## 802.11a CH157



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1322.000000	45.2	200.0	V	0.0	-0.9	28.8	74.0
1700.875000	46.1	200.0	H	125.0	0.4	27.9	74.0
2232.875000	48.0	200.0	H	52.0	2.4	26.0	74.0
2776.250000	49.7	200.0	H	191.0	4.2	24.3	74.0
3716.000000	51.4	100.0	V	92.0	6.6	22.6	74.0
5036.375000	54.3	200.0	H	191.0	9.8	19.7	74.0

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

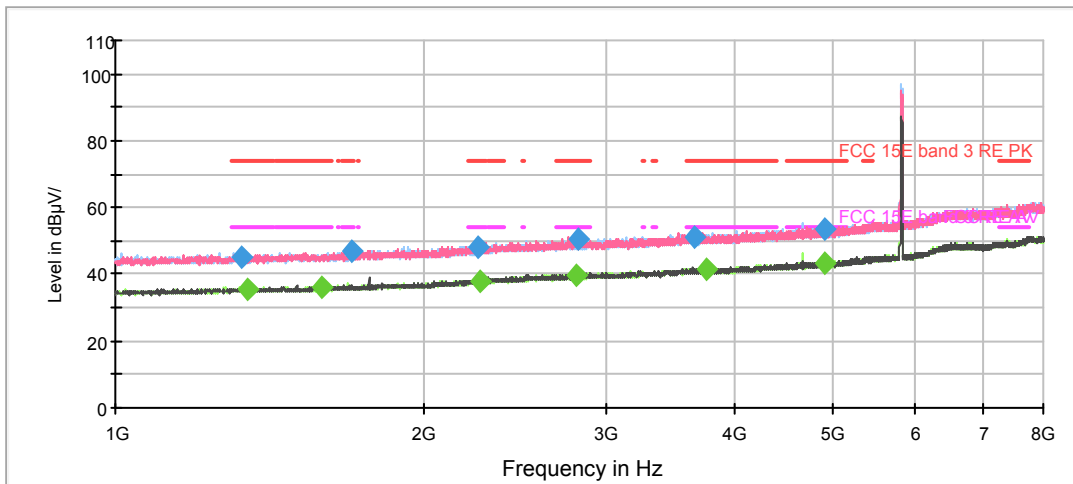
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1331.625000	35.5	100.0	H	0.0	-0.9	18.5	54.0
1702.625000	36.8	100.0	H	330.0	0.4	17.2	54.0
2253.875000	38.3	100.0	V	180.0	2.5	15.7	54.0
2759.625000	39.6	200.0	V	358.0	4.2	14.4	54.0
3710.750000	40.9	100.0	V	6.0	6.5	13.1	54.0
4935.750000	43.1	100.0	V	146.0	9.5	10.9	54.0

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

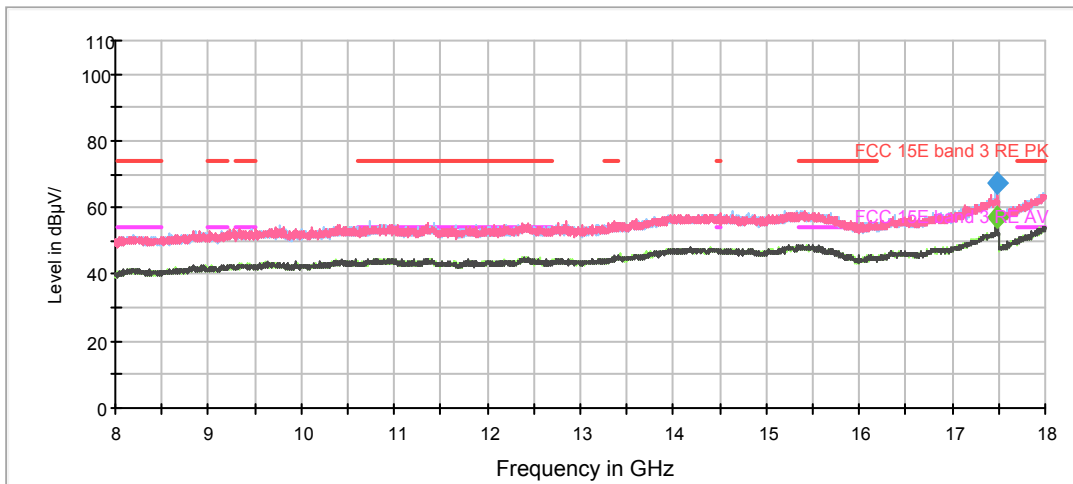




802.11a CH165



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



Radiates Emission from 8GHz to 18GHz



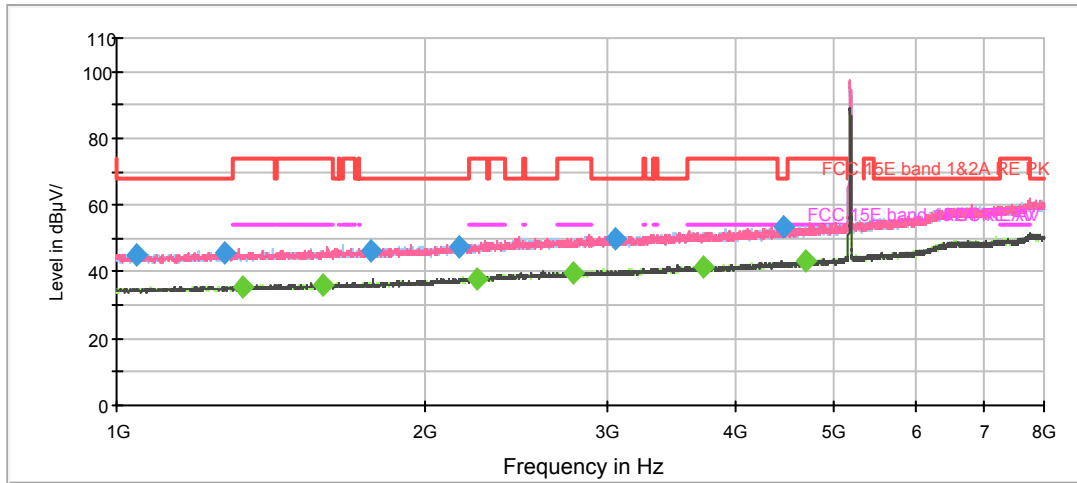
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1324.625000	45.2	200.0	H	202.0	-0.9	28.8	74.0
1699.125000	46.7	200.0	V	356.0	0.4	27.3	74.0
2255.625000	48.2	200.0	H	136.0	2.5	25.8	74.0
2825.250000	50.2	100.0	V	192.0	4.4	23.8	74.0
3666.125000	51.3	200.0	H	104.0	6.6	22.7	74.0
4902.500000	53.7	100.0	V	214.0	9.5	20.3	74.0

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

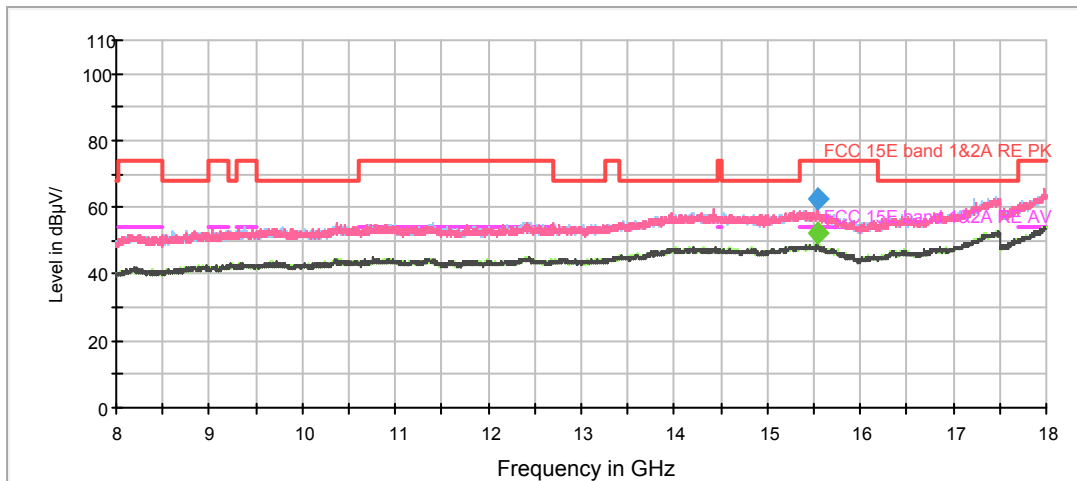
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1346.500000	35.7	100.0	V	4.0	-0.9	18.3	54.0
1589.750000	36.2	200.0	H	104.0	-0.1	17.8	54.0
2266.125000	37.9	200.0	H	82.0	2.6	16.1	54.0
2809.500000	39.6	100.0	H	354.0	4.3	14.4	54.0
3768.500000	41.2	100.0	H	0.0	6.7	12.8	54.0
4912.125000	43.1	100.0	H	212.0	9.5	10.9	54.0

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

### 802.11n (HT20) CH36



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



Radiates Emission from 8GHz to 18GHz



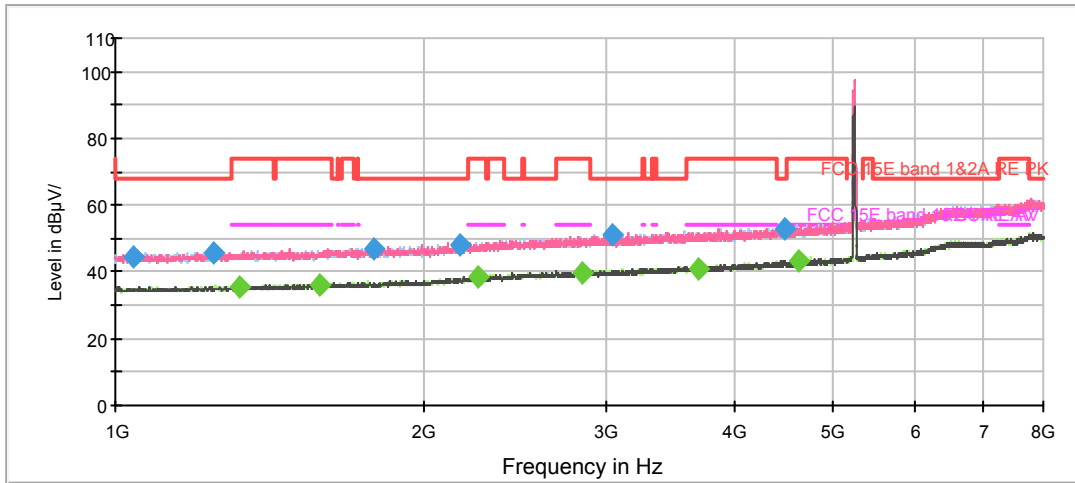
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1048.125000	44.8	100.0	V	126.0	-1.7	23.4	68.2
1274.750000	45.9	200.0	H	247.0	-1.1	22.3	68.2
1772.625000	46.1	200.0	H	229.0	0.6	22.1	68.2
2159.375000	47.4	100.0	V	214.0	2.0	20.8	68.2
3054.500000	50.0	200.0	V	0.0	4.9	18.2	68.2
4470.250000	53.4	200.0	H	73.0	8.7	14.8	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)
1329.000000	35.5	100.0	V	30.0	-0.9	18.5	54.0
1590.625000	36.3	100.0	V	214.0	-0.1	17.7	54.0
2239.875000	37.9	100.0	H	358.0	2.4	16.1	54.0
2780.625000	39.5	200.0	H	128.0	4.2	14.5	54.0
3730.875000	41.7	200.0	H	15.0	6.6	12.3	54.0
4693.375000	43.5	200.0	H	42.0	9.2	10.5	54.0

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

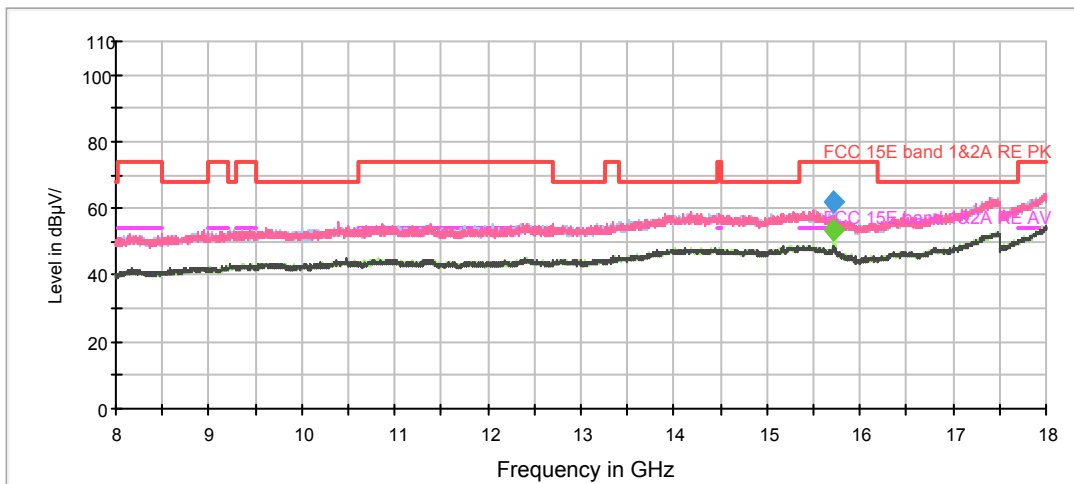
802.11n (HT20) CH48



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 8GHz

FCC RE 15 1502.11n HT20 Class B



Radiates Emission from 8GHz to 18GHz



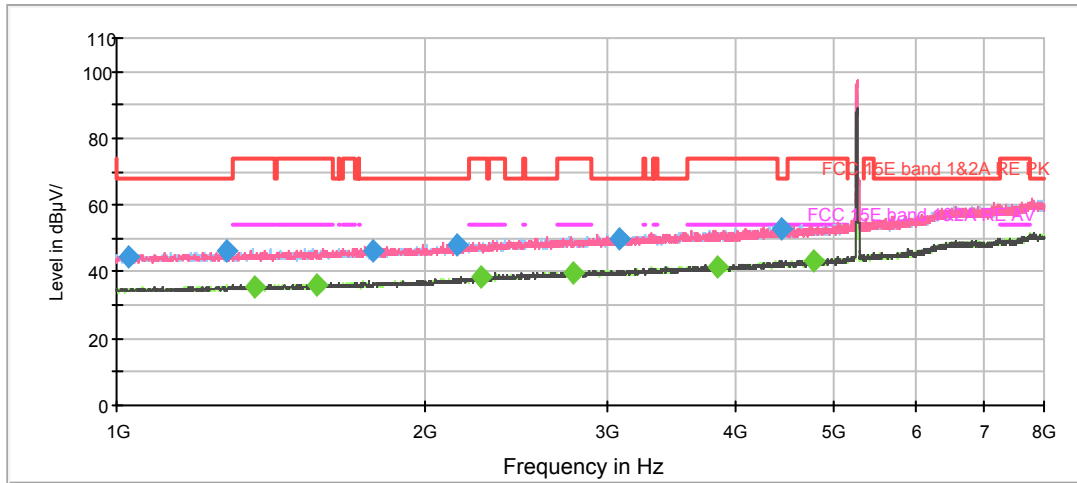
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1042.000000	44.7	200.0	V	357.0	-1.7	23.5	68.2
1244.125000	45.5	200.0	H	0.0	-1.1	22.7	68.2
1787.500000	46.7	100.0	H	347.0	0.6	21.5	68.2
2165.500000	48.3	100.0	V	114.0	2.0	19.9	68.2
3042.250000	50.8	200.0	H	0.0	4.8	17.4	68.2
4482.500000	53.0	100.0	H	355.0	8.8	15.2	68.2

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

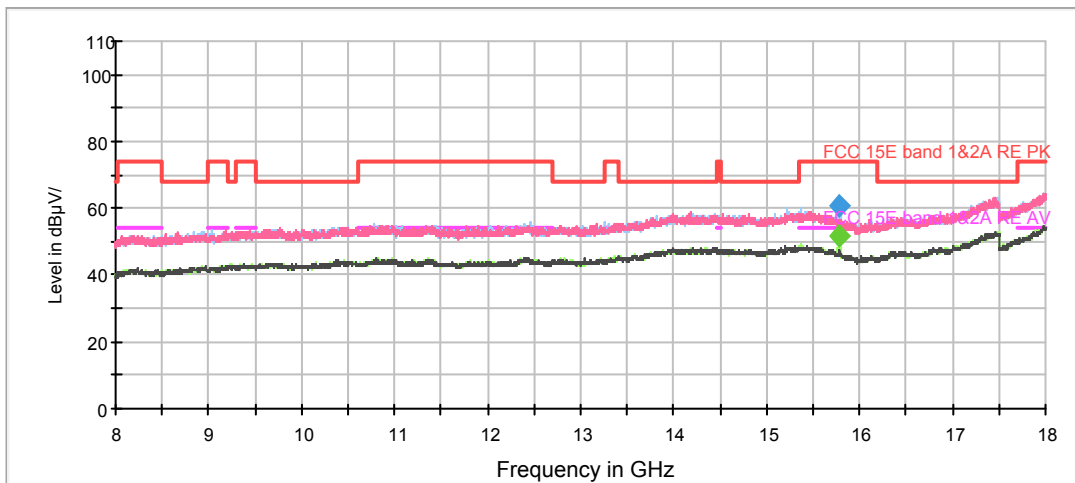
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1318.500000	35.7	200.0	H	61.0	-0.9	18.3	54.0
1581.875000	35.9	100.0	V	262.0	-0.1	18.1	54.0
2255.625000	38.5	100.0	V	14.0	2.5	15.5	54.0
2842.750000	39.5	200.0	H	0.0	4.4	14.5	54.0
3695.000000	41.1	100.0	V	6.0	6.5	12.9	54.0
4634.750000	43.3	100.0	H	0.0	9.0	10.7	54.0

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

802.11n (HT20) CH52



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1027.125000	44.7	200.0	H	67.0	-1.8	23.5	68.2
1277.375000	46.1	200.0	V	256.0	-1.1	22.1	68.2
1778.750000	46.3	200.0	H	5.0	0.6	21.9	68.2
2148.875000	48.1	200.0	H	78.0	1.9	20.1	68.2
3091.250000	49.7	200.0	H	0.0	5.0	18.5	68.2
4447.500000	52.8	100.0	V	4.0	8.6	15.4	68.2

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

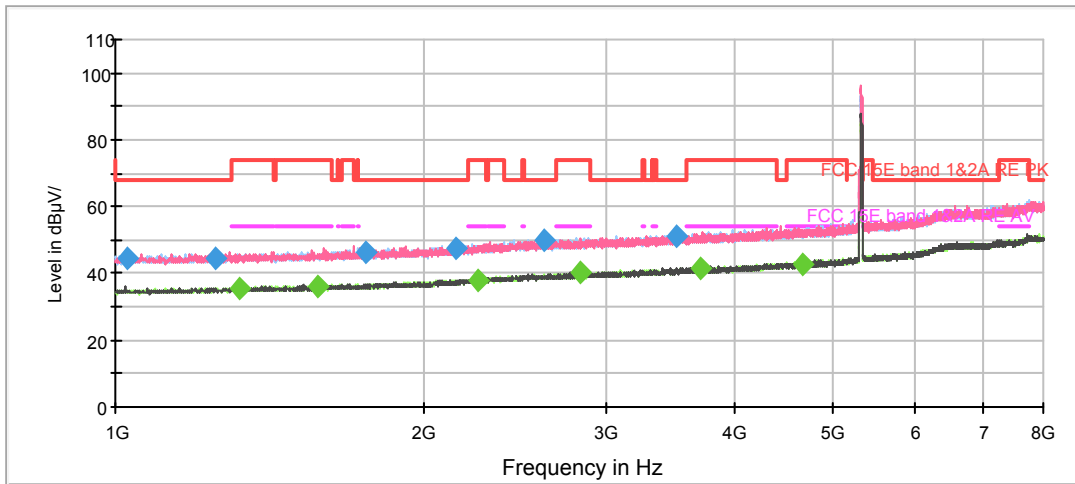
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1360.500000	35.5	200.0	V	338.0	-0.8	18.5	54.0
1567.000000	36.2	200.0	V	146.0	-0.1	17.8	54.0
2263.500000	38.2	200.0	H	89.0	2.6	15.8	54.0
2779.750000	39.9	100.0	V	0.0	4.2	14.1	54.0
3841.125000	41.5	100.0	H	356.0	6.8	12.5	54.0
4780.000000	43.1	200.0	V	0.0	9.3	10.9	54.0

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

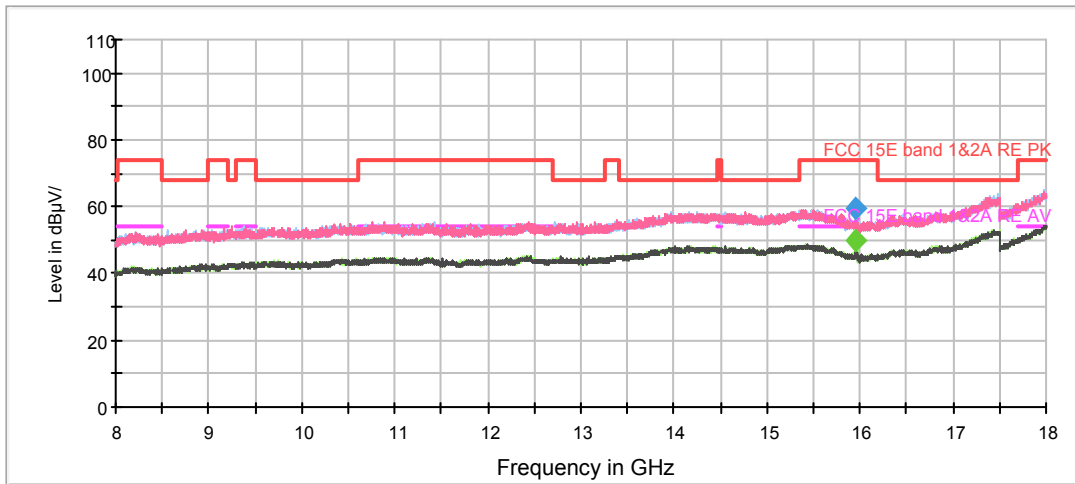




802.11n (HT20) CH64



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



Radiates Emission from 8GHz to 18GHz



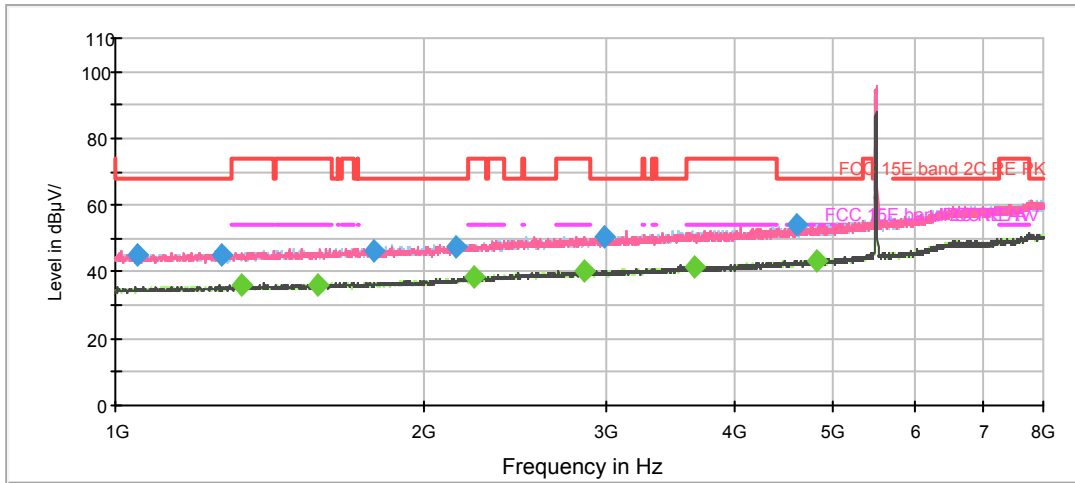
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1026.250000	44.6	200.0	V	186.0	-1.8	23.6	68.2
1251.125000	44.7	200.0	H	1.0	-1.1	23.5	68.2
1754.250000	46.3	100.0	H	0.0	0.5	21.9	68.2
2143.625000	47.4	200.0	H	229.0	1.9	20.8	68.2
2611.750000	50.1	100.0	V	310.0	3.8	18.1	68.2
3514.750000	51.2	100.0	H	346.0	6.2	17.0	68.2

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

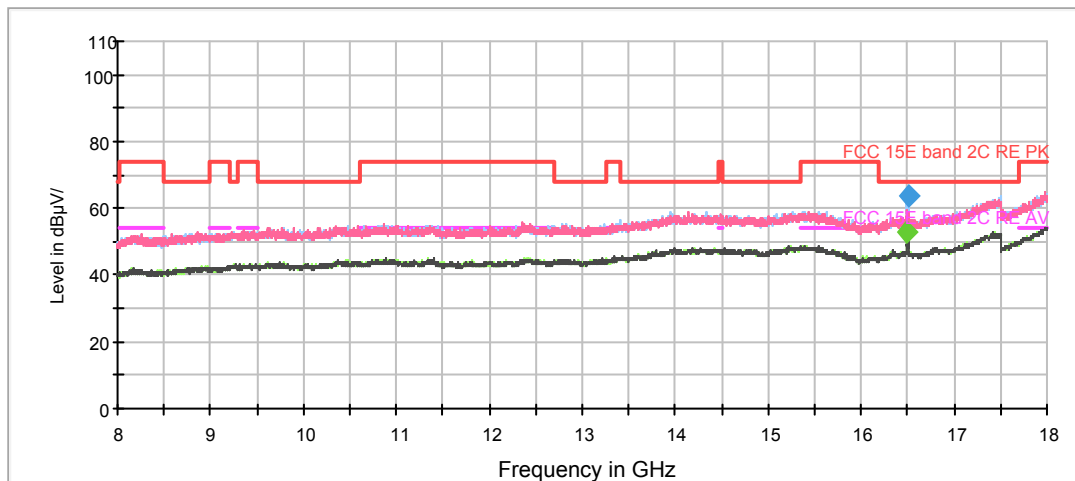
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1322.000000	35.6	100.0	H	8.0	-0.9	18.4	54.0
1574.000000	36.3	200.0	V	197.0	-0.1	17.7	54.0
2253.000000	37.9	200.0	H	184.0	2.5	16.1	54.0
2837.500000	40.0	200.0	H	310.0	4.4	14.0	54.0
3718.625000	41.5	200.0	H	0.0	6.6	12.5	54.0
4663.625000	42.9	200.0	V	337.0	9.1	11.1	54.0

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

802.11n (HT20) CH100



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



Radiates Emission from 8GHz to 18GHz



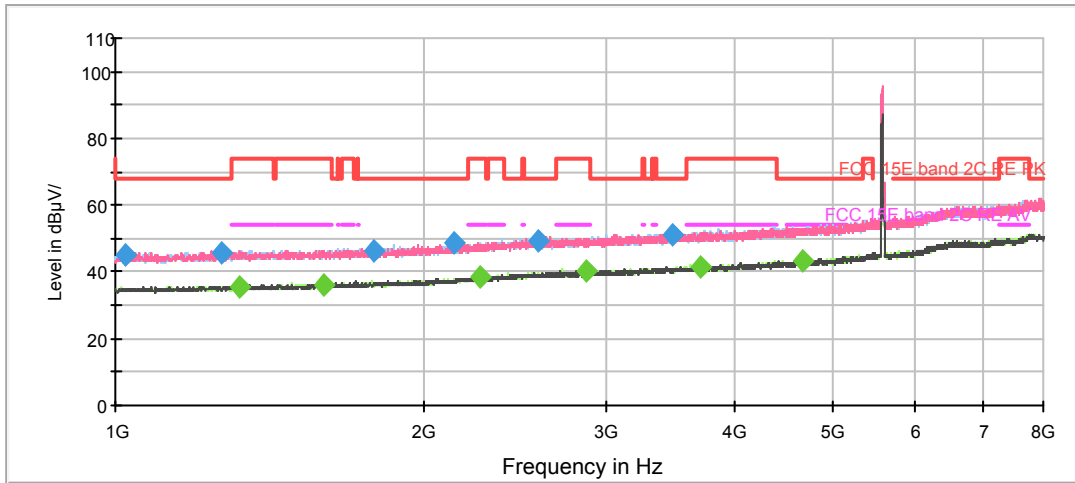
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1049.875000	45.3	100.0	H	0.0	-1.7	22.9	68.2
1268.625000	45.3	200.0	V	201.0	-1.1	22.9	68.2
1788.375000	46.1	200.0	H	50.0	0.6	22.1	68.2
2144.500000	47.7	200.0	H	61.0	1.9	20.5	68.2
2997.625000	50.4	200.0	H	50.0	4.8	17.8	68.2
4605.000000	54.2	100.0	H	97.0	9.0	14.0	68.2

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

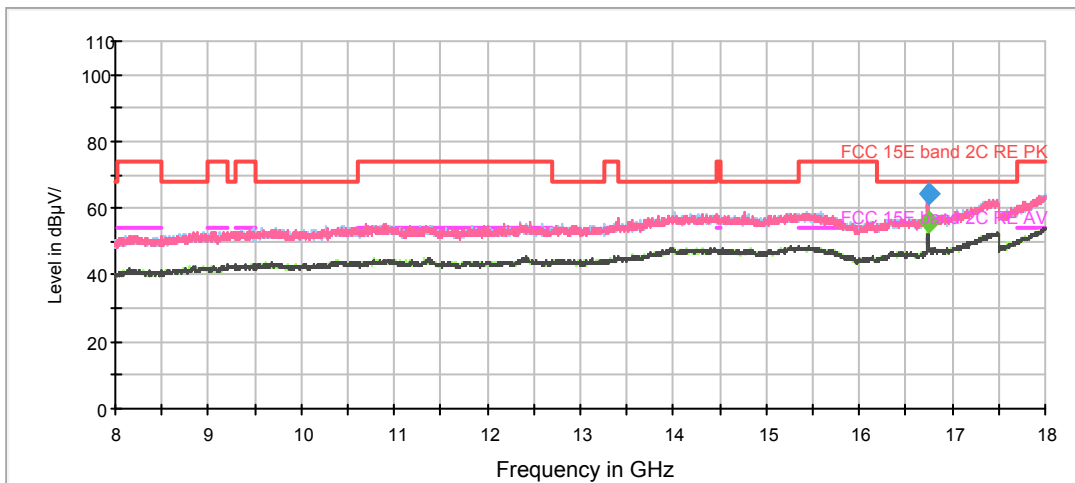
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1325.500000	35.9	200.0	V	265.0	-0.9	18.1	54.0
1570.500000	35.9	100.0	H	263.0	-0.1	18.1	54.0
2239.000000	38.5	200.0	H	86.0	2.4	15.5	54.0
2855.875000	40.3	200.0	V	234.0	4.4	13.7	54.0
3662.625000	41.2	100.0	H	316.0	6.5	12.8	54.0
4825.500000	43.2	200.0	H	0.0	9.4	10.8	54.0

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

802.11n (HT20) CH116



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



Radiates Emission from 8GHz to 18GHz



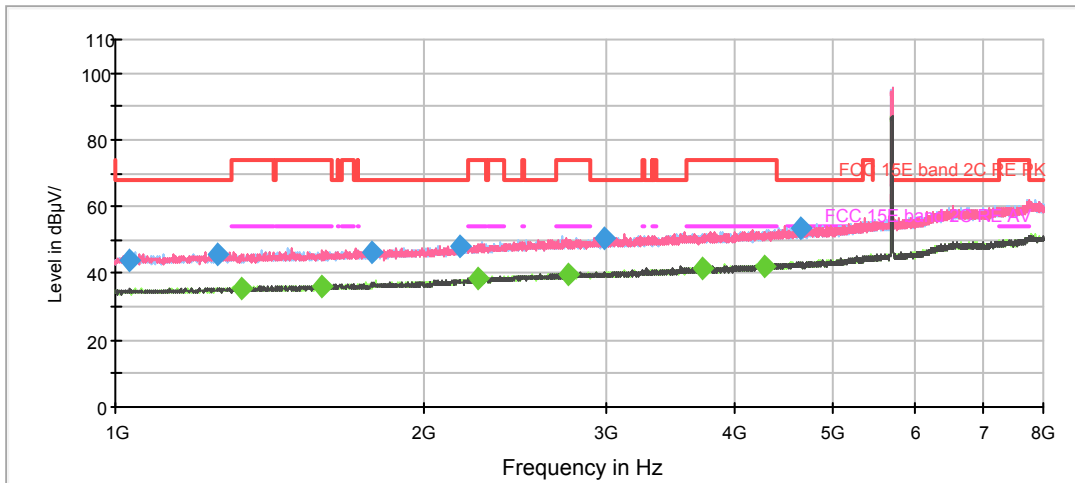
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1024.500000	45.0	100.0	V	286.0	-1.8	23.2	68.2
1269.500000	45.9	200.0	H	76.0	-1.1	22.3	68.2
1782.250000	46.3	200.0	H	274.0	0.6	21.9	68.2
2132.250000	48.5	200.0	H	76.0	1.8	19.7	68.2
2581.125000	49.3	100.0	V	107.0	3.8	18.9	68.2
3480.625000	51.2	200.0	V	107.0	6.0	17.0	68.2

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

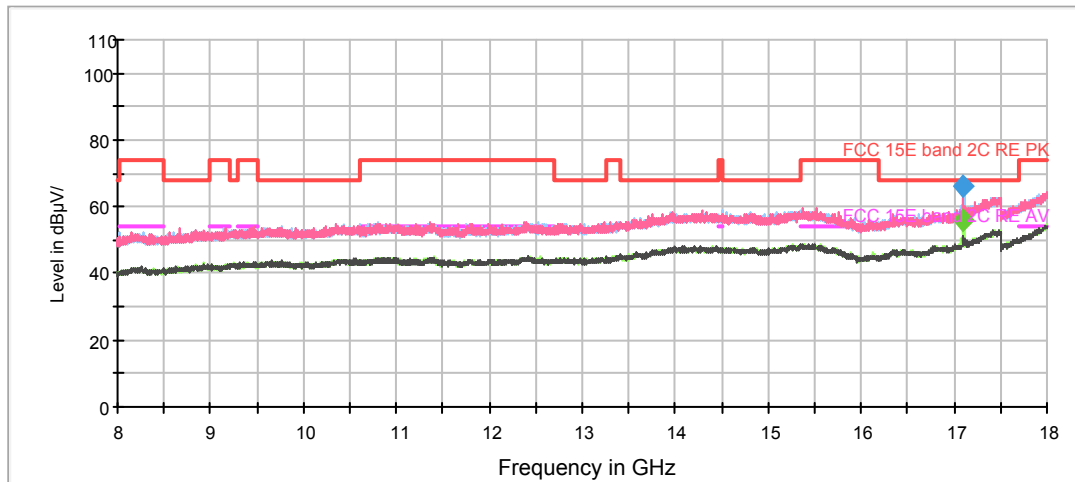
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1322.875000	35.7	200.0	V	293.0	-0.9	18.3	54.0
1592.375000	36.1	200.0	H	129.0	-0.1	17.9	54.0
2260.000000	38.5	100.0	V	274.0	2.5	15.5	54.0
2869.875000	40.0	100.0	H	0.0	4.4	14.0	54.0
3706.375000	41.5	100.0	V	24.0	6.5	12.5	54.0
4668.000000	43.1	200.0	H	173.0	9.1	10.9	54.0

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

802.11n (HT20) CH140



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1034.125000	43.9	100.0	H	355.0	-1.7	24.3	68.2
1255.500000	45.6	100.0	V	3.0	-1.1	22.6	68.2
1780.500000	46.4	200.0	H	0.0	0.6	21.8	68.2
2162.000000	47.8	100.0	V	352.0	2.0	20.4	68.2
2991.500000	50.8	100.0	V	0.0	4.8	17.4	68.2
4655.750000	53.4	100.0	V	33.0	9.1	14.8	68.2

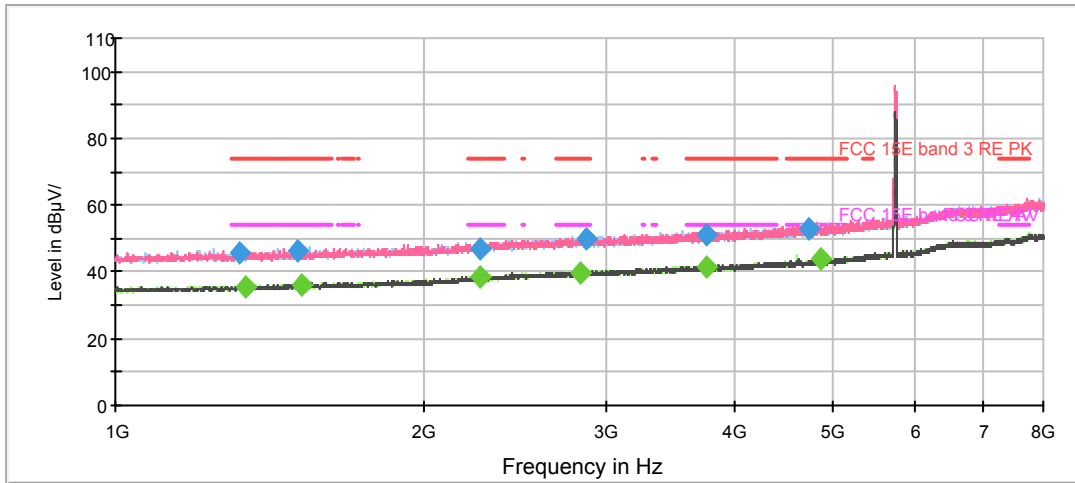
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1325.500000	35.6	200.0	H	64.0	-0.9	18.4	54.0
1585.375000	36.2	100.0	V	250.0	-0.1	17.8	54.0
2253.000000	38.2	100.0	V	85.0	2.5	15.8	54.0
2763.125000	39.8	200.0	V	352.0	4.2	14.2	54.0
3722.125000	41.3	100.0	H	220.0	6.6	12.7	54.0
4289.125000	42.3	200.0	H	0.0	8.2	11.7	54.0

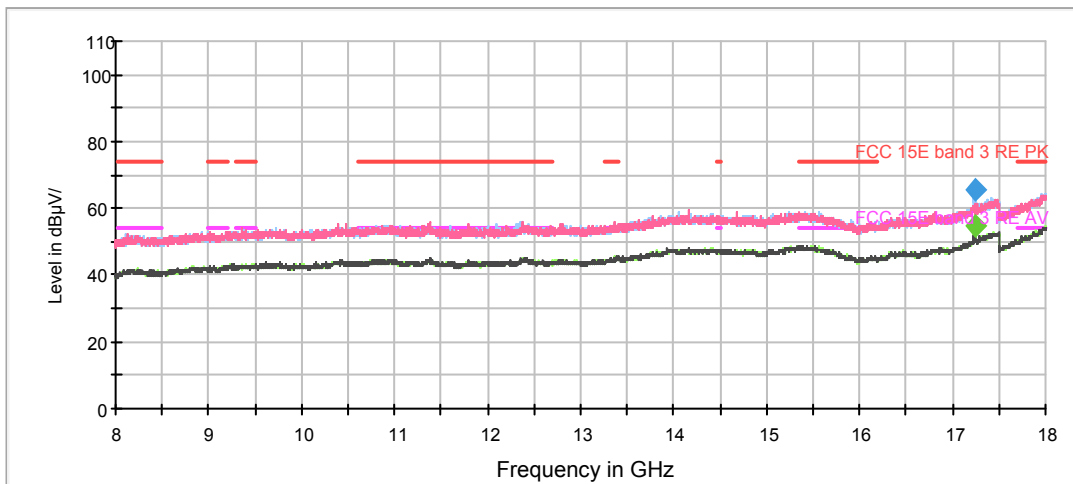
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11n (HT20) CH149



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1319.375000	45.6	200.0	V	231.0	-0.9	28.4	74.0
1506.625000	46.2	100.0	V	239.0	-0.4	27.8	74.0
2263.500000	46.8	100.0	H	358.0	2.6	27.2	74.0
2868.125000	49.7	200.0	H	108.0	4.4	24.3	74.0
3770.250000	51.3	200.0	V	110.0	6.8	22.7	74.0
4727.500000	53.2	200.0	H	24.0	9.2	20.8	74.0

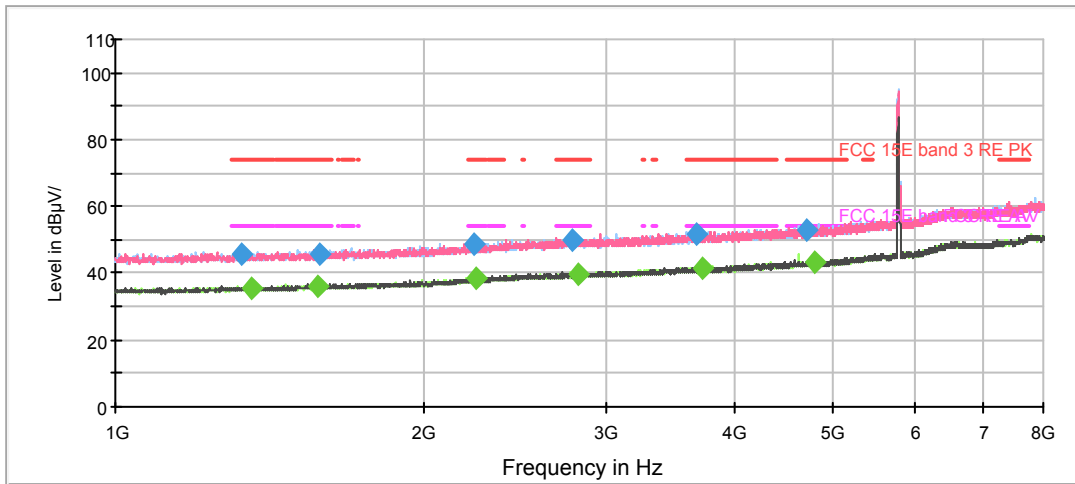
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1341.250000	35.4	200.0	H	34.0	-0.9	18.6	54.0
1515.375000	35.9	100.0	H	98.0	-0.4	18.1	54.0
2260.875000	38.2	100.0	H	264.0	2.5	15.8	54.0
2828.750000	39.7	100.0	H	285.0	4.4	14.3	54.0
3761.500000	41.5	100.0	H	306.0	6.7	12.5	54.0
4854.375000	43.7	100.0	V	285.0	9.5	10.3	54.0

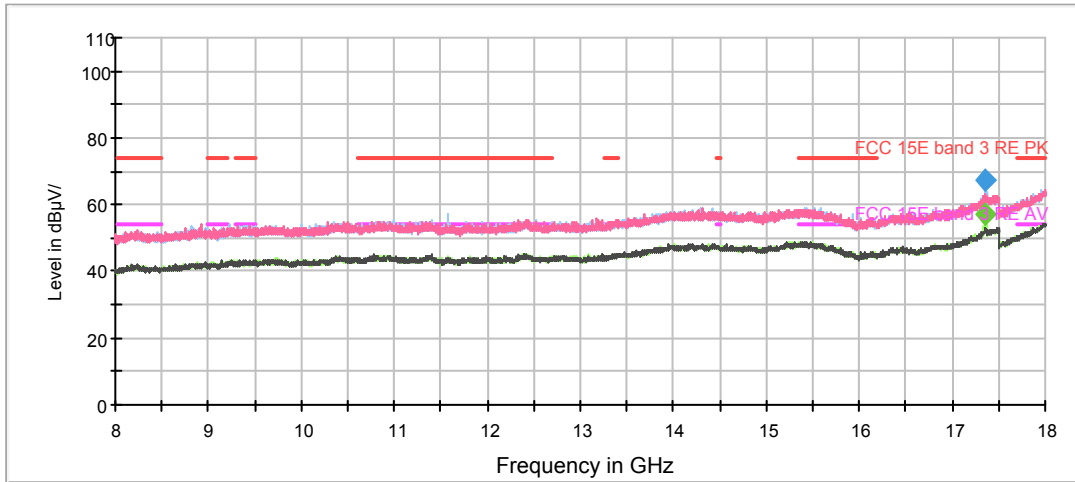
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11n (HT20) CH157



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1329.000000	45.5	200.0	V	354.0	-0.9	28.5	74.0
1578.375000	45.6	100.0	V	0.0	-0.1	28.4	74.0
2235.500000	48.8	100.0	V	32.0	2.4	25.2	74.0
2780.625000	49.9	200.0	H	117.0	4.2	24.1	74.0
3679.250000	51.6	200.0	H	172.0	6.5	22.4	74.0
4717.000000	52.9	100.0	V	150.0	9.2	21.1	74.0

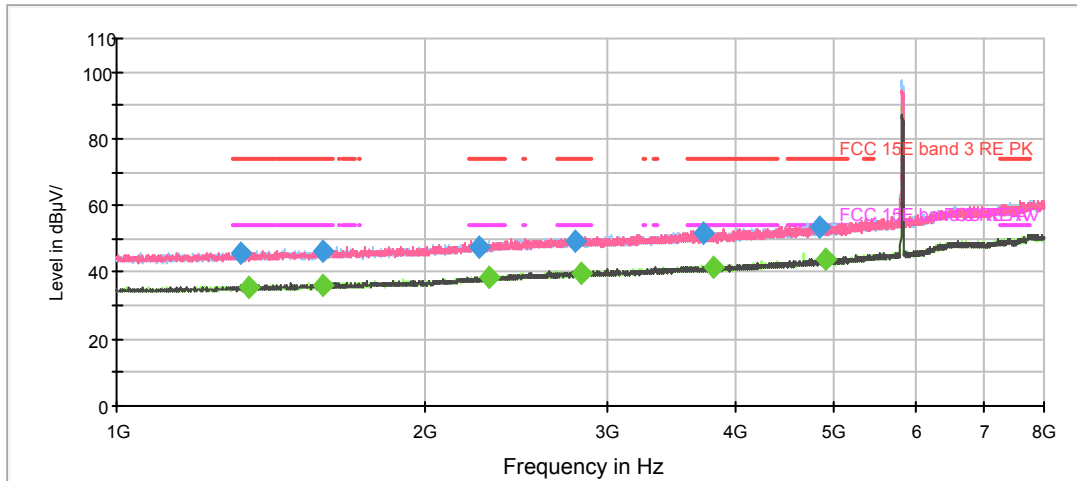
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1355.250000	35.5	200.0	H	128.0	-0.9	18.5	54.0
1570.500000	36.1	200.0	H	0.0	-0.1	17.9	54.0
2246.000000	38.3	200.0	V	0.0	2.4	15.7	54.0
2823.500000	40.0	200.0	V	0.0	4.4	14.0	54.0
3728.250000	41.5	200.0	H	7.0	6.6	12.5	54.0
4789.625000	43.3	100.0	V	5.0	9.3	10.7	54.0

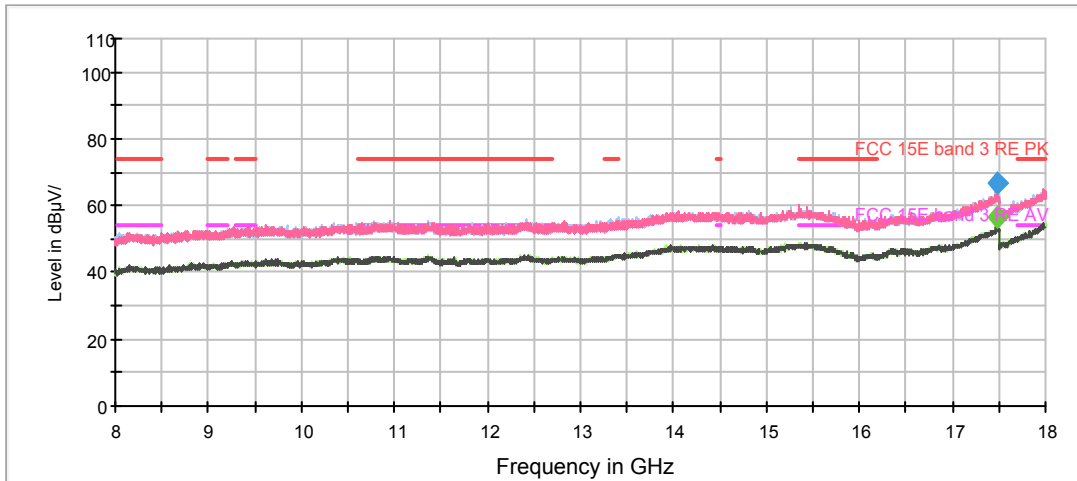
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11n (HT20) CH165



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



Radiates Emission from 8GHz to 18GHz



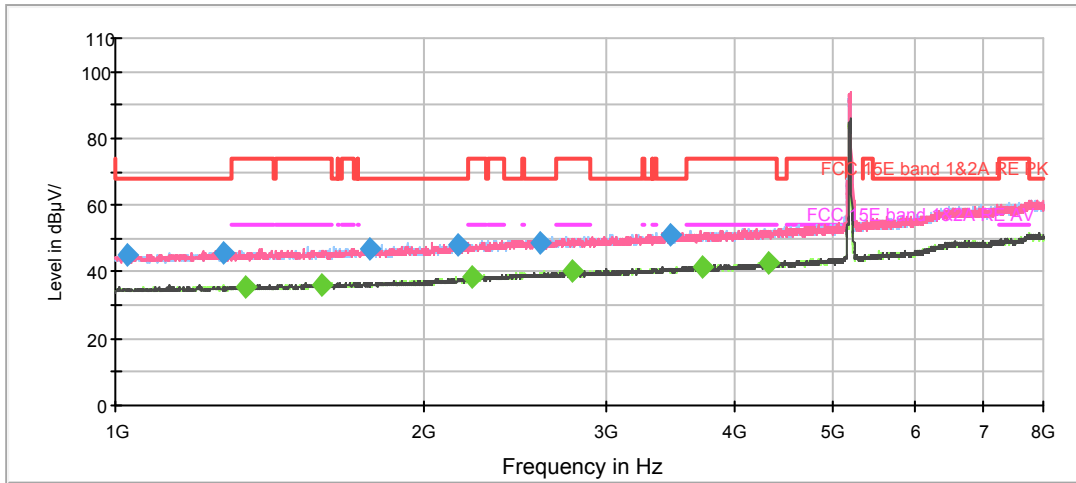
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1322.875000	45.7	100.0	H	236.0	-0.9	28.3	74.0
1591.500000	46.2	200.0	H	194.0	-0.1	27.8	74.0
2251.250000	47.8	100.0	H	357.0	2.4	26.2	74.0
2793.750000	49.6	200.0	H	3.0	4.3	24.4	74.0
3720.375000	51.7	200.0	H	32.0	6.6	22.3	74.0
4847.375000	53.3	200.0	H	3.0	9.4	20.7	74.0

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

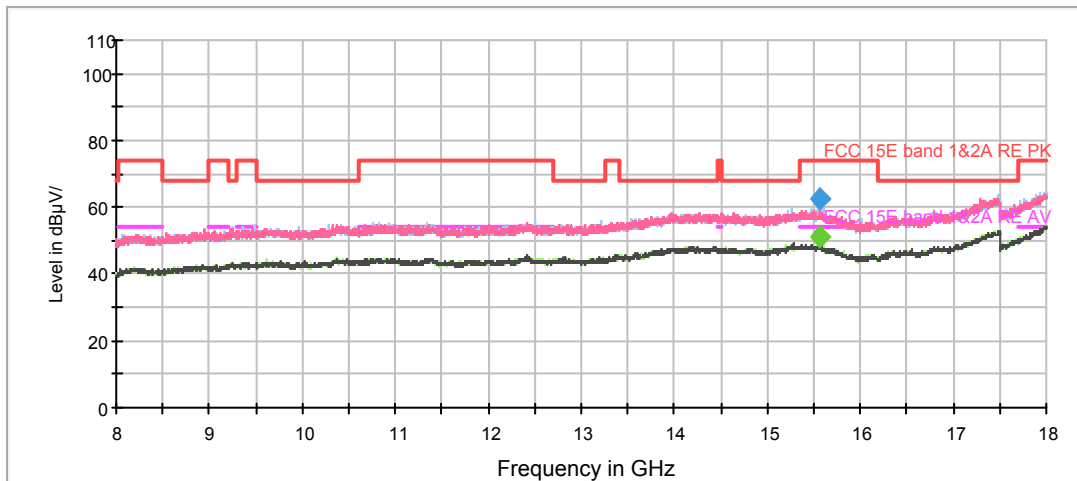
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1347.375000	35.3	100.0	H	136.0	-0.9	18.7	54.0
1590.625000	36.3	200.0	H	352.0	-0.1	17.7	54.0
2309.875000	38.4	200.0	H	171.0	2.8	15.6	54.0
2841.000000	39.5	100.0	H	300.0	4.4	14.5	54.0
3811.375000	41.3	200.0	H	182.0	6.8	12.7	54.0
4904.250000	43.6	100.0	V	64.0	9.5	10.4	54.0

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

## 802.11n (HT40) CH38



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1026.250000	45.2	100.0	V	0.0	-1.8	23.0	68.2
1273.875000	45.7	100.0	H	0.0	-1.1	22.5	68.2
1770.000000	46.7	200.0	H	70.0	0.6	21.5	68.2
2158.500000	48.0	200.0	V	38.0	2.0	20.2	68.2
2596.000000	48.7	100.0	H	356.0	3.8	19.5	68.2
3476.250000	50.8	200.0	V	0.0	6.0	17.4	68.2

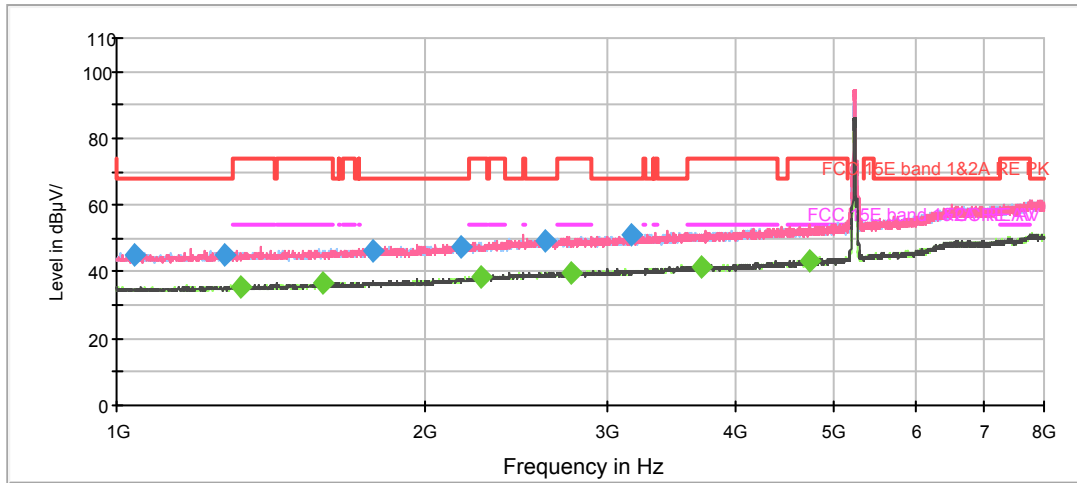
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1336.875000	35.4	100.0	V	64.0	-0.9	18.6	54.0
1585.375000	36.0	200.0	H	92.0	-0.1	18.0	54.0
2228.500000	38.4	100.0	V	0.0	2.4	15.6	54.0
2783.250000	40.0	200.0	V	143.0	4.2	14.0	54.0
3730.000000	41.7	100.0	H	350.0	6.6	12.3	54.0
4330.250000	42.9	100.0	H	339.0	8.3	11.1	54.0

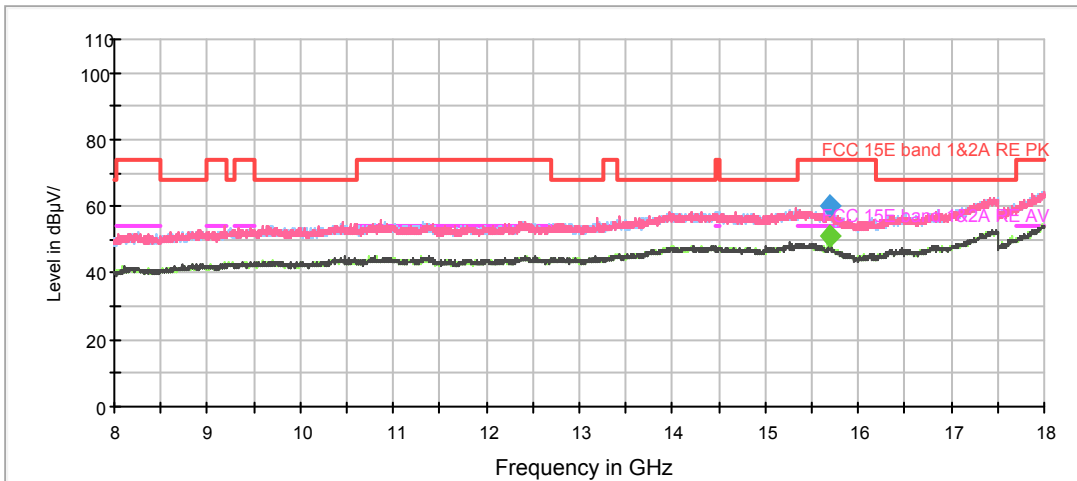
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



802.11n (HT40) CH46



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



Radiates Emission from 8GHz to 18GHz



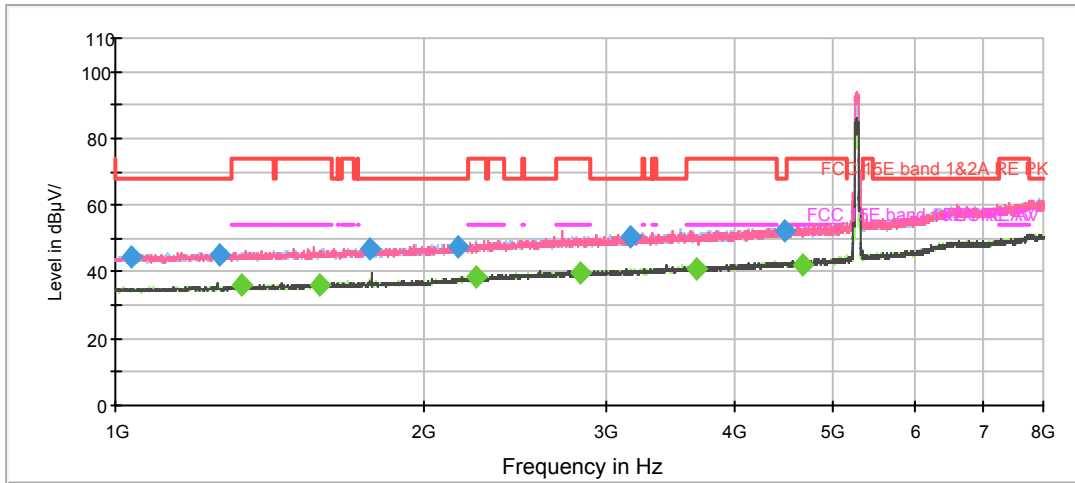
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1040.250000	45.1	100.0	V	0.0	-1.7	23.1	68.2
1273.000000	45.3	100.0	H	348.0	-1.1	22.9	68.2
1775.250000	46.3	100.0	H	133.0	0.6	21.9	68.2
2166.375000	47.3	100.0	H	357.0	2.1	20.9	68.2
2610.875000	49.2	200.0	H	0.0	3.8	19.0	68.2
3164.750000	50.8	100.0	H	355.0	5.2	17.4	68.2

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

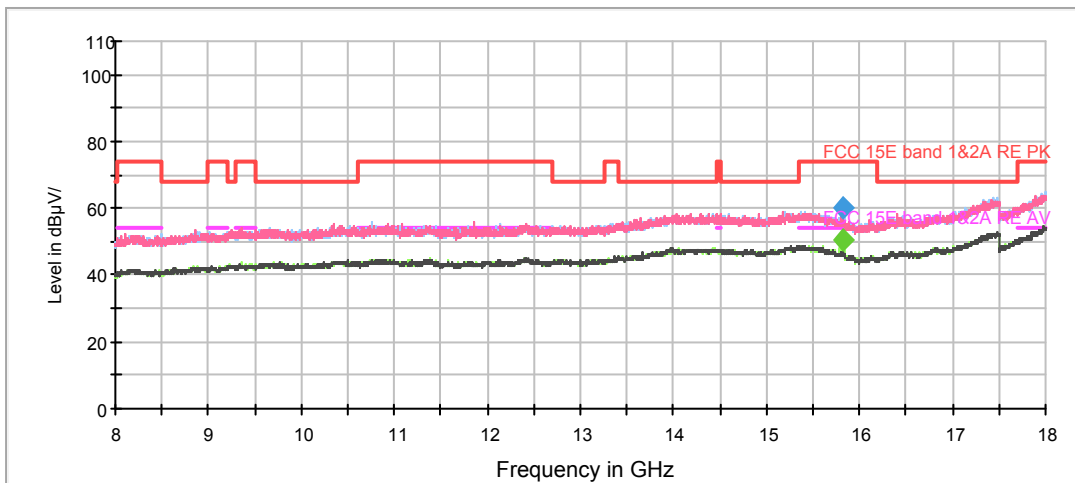
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1322.875000	35.4	200.0	H	33.0	-0.9	18.6	54.0
1587.125000	36.5	100.0	V	134.0	-0.1	17.5	54.0
2266.125000	38.6	200.0	H	195.0	2.6	15.4	54.0
2772.750000	39.9	200.0	H	17.0	4.2	14.1	54.0
3709.875000	41.4	100.0	V	189.0	6.5	12.6	54.0
4738.875000	43.3	200.0	H	140.0	9.2	10.7	54.0

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

### 802.11n (HT40) CH54



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



Radiates Emission from 8GHz to 18GHz



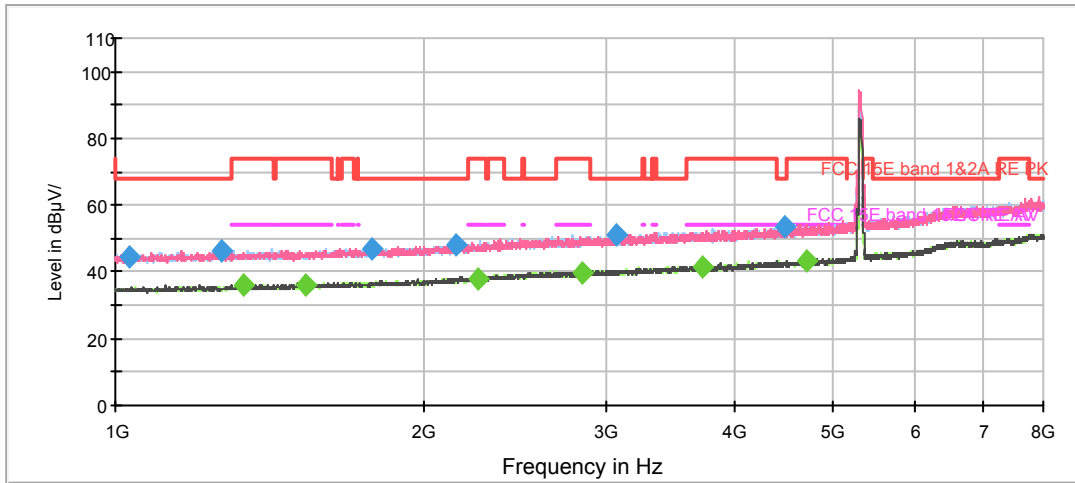
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1035.000000	44.4	200.0	V	231.0	-1.7	23.8	68.2
1265.125000	45.4	200.0	V	359.0	-1.1	22.8	68.2
1768.250000	46.9	200.0	H	17.0	0.5	21.3	68.2
2155.000000	47.6	100.0	H	75.0	2.0	20.6	68.2
3177.875000	50.4	100.0	H	155.0	5.2	17.8	68.2
4475.500000	52.4	100.0	H	236.0	8.8	15.8	68.2

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

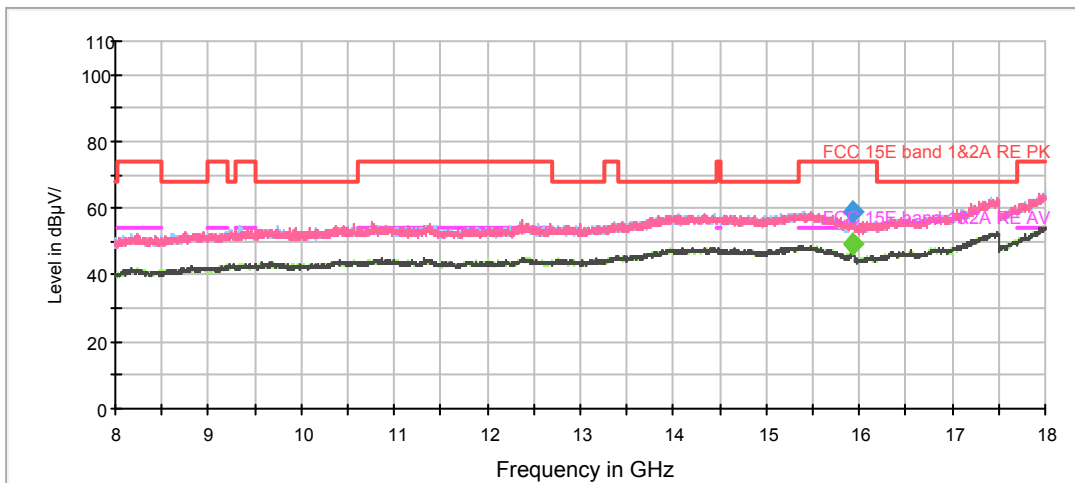
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1328.125000	36.0	200.0	H	151.0	-0.9	18.0	54.0
1580.125000	35.9	200.0	H	7.0	-0.1	18.1	54.0
2248.625000	38.3	200.0	H	229.0	2.4	15.7	54.0
2836.625000	39.9	200.0	H	76.0	4.4	14.1	54.0
3681.875000	41.1	200.0	H	3.0	6.5	12.9	54.0
4670.625000	41.8	200.0	H	98.0	9.1	12.2	54.0

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

### 802.11n (HT40) CH62



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



Radiates Emission from 8GHz to 18GHz



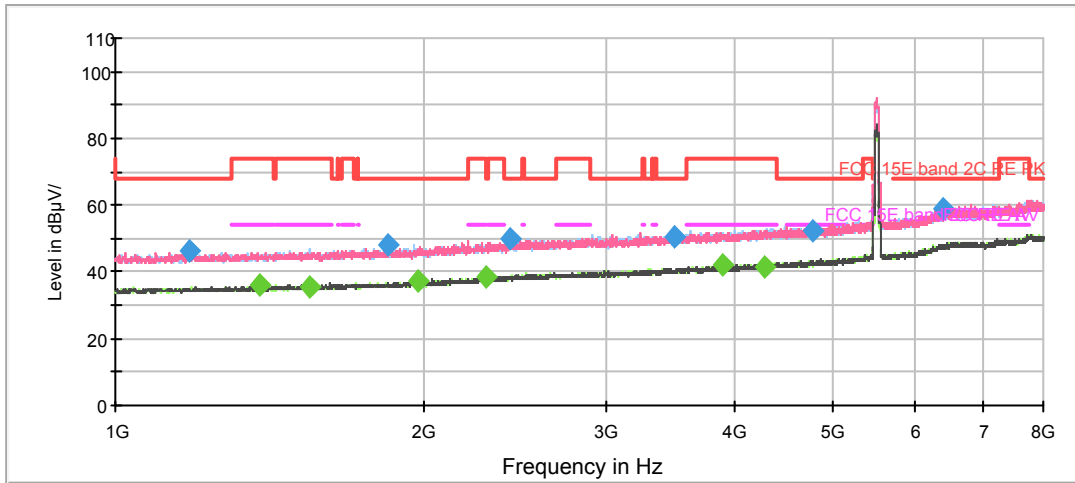
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1029.750000	44.6	200.0	H	2.0	-1.8	23.6	68.2
1271.250000	46.0	100.0	H	358.0	-1.1	22.2	68.2
1779.625000	47.1	100.0	V	297.0	0.6	21.1	68.2
2149.750000	47.9	200.0	H	20.0	1.9	20.3	68.2
3068.500000	51.3	100.0	V	261.0	5.0	16.9	68.2
4486.875000	53.6	100.0	H	63.0	8.8	14.6	68.2

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

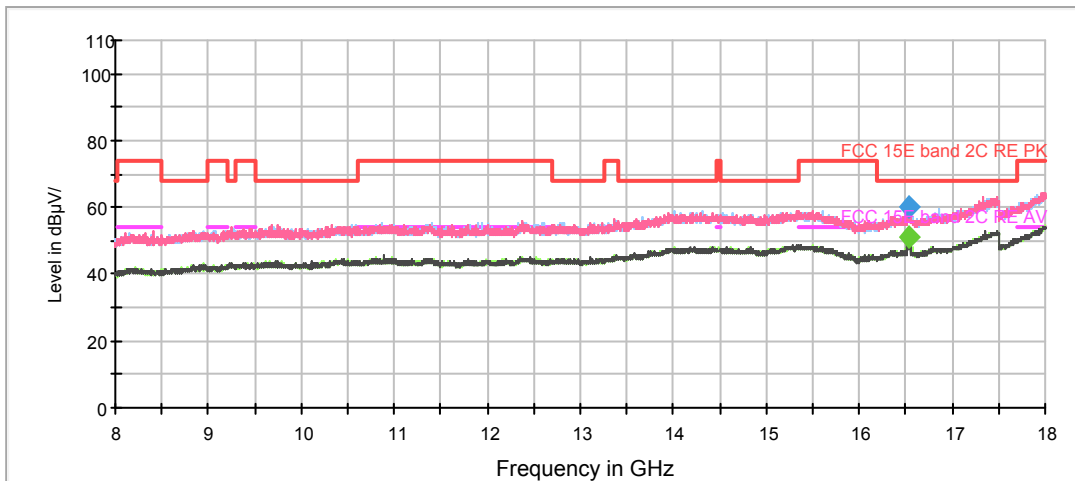
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1332.500000	35.9	200.0	H	146.0	-0.9	18.1	54.0
1535.500000	35.8	200.0	H	28.0	-0.3	18.2	54.0
2255.625000	38.1	100.0	H	203.0	2.5	15.9	54.0
2851.500000	39.6	200.0	V	353.0	4.4	14.4	54.0
3729.125000	41.7	200.0	H	1.0	6.6	12.3	54.0
4705.625000	43.2	100.0	V	84.0	9.2	10.8	54.0

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

802.11n (HT40) CH102



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1179.375000	46.2	200.0	H	47.0	-1.3	22.0	68.2
1840.875000	48.3	100.0	H	358.0	0.7	19.9	68.2
2422.750000	49.9	200.0	H	2.0	3.3	18.3	68.2
3495.500000	50.8	200.0	V	0.0	6.0	17.4	68.2
4763.375000	52.6	200.0	H	90.0	9.3	15.6	68.2
6385.625000	58.7	200.0	H	2.0	14.3	9.5	68.2

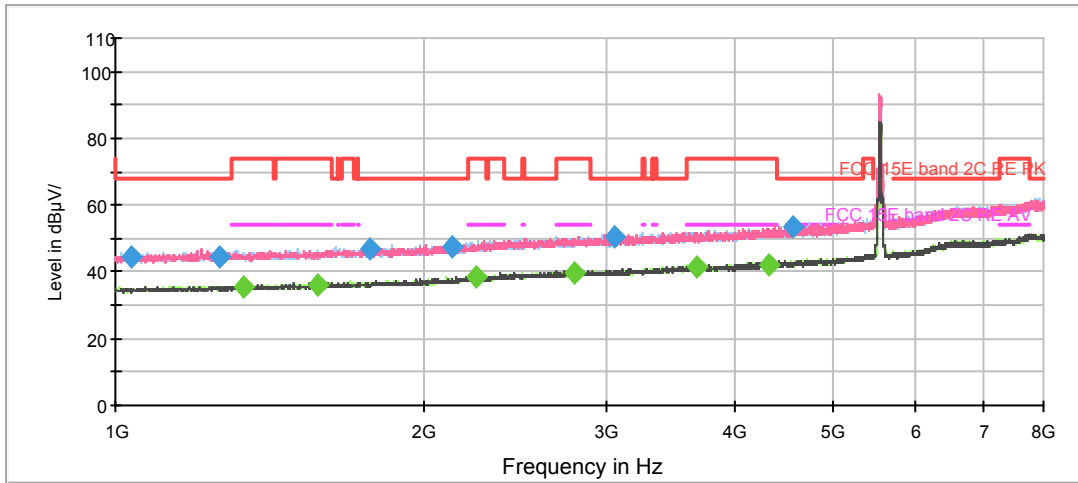
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1384.125000	35.9	100.0	H	334.0	-0.7	18.1	54.0
1547.750000	35.4	200.0	V	358.0	-0.2	18.6	54.0
1970.375000	37.0	200.0	V	241.0	1.0	17.0	54.0
2294.125000	38.6	100.0	H	0.0	2.7	15.4	54.0
3898.000000	41.8	200.0	V	344.0	7.1	12.2	54.0
4276.875000	41.5	200.0	H	102.0	8.1	12.5	54.0

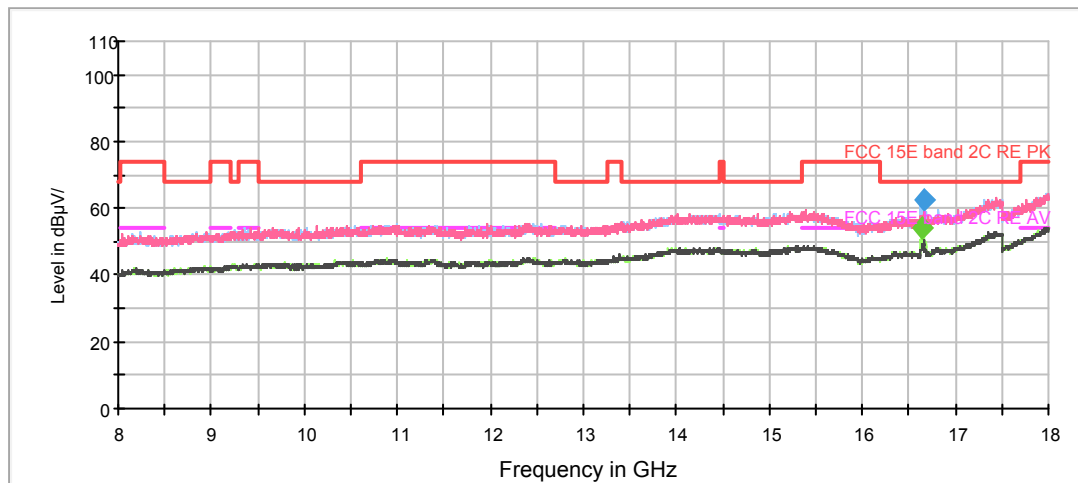
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



### 802.11n (HT40) CH110



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



Radiates Emission from 8GHz to 18GHz



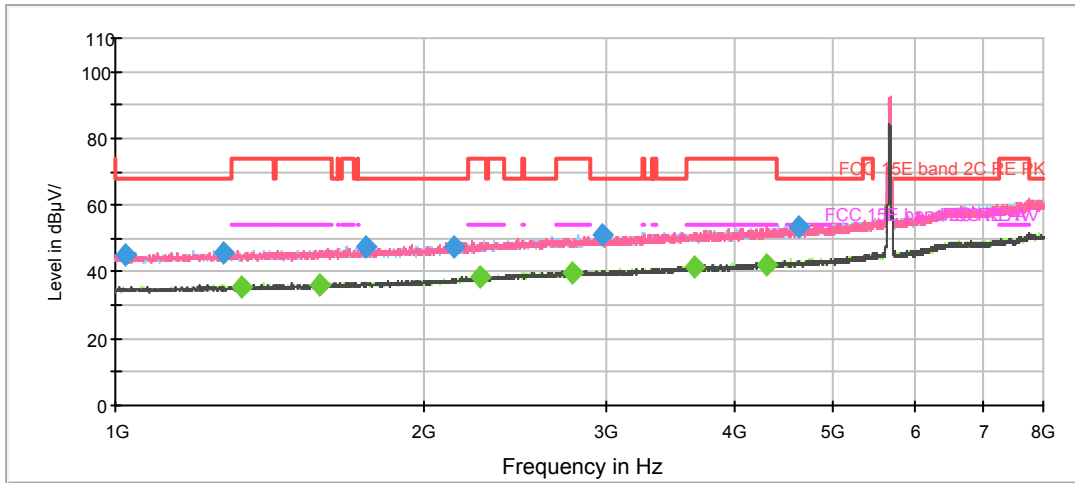
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1035.875000	44.8	200.0	V	327.0	-1.7	23.4	68.2
1265.125000	44.7	100.0	V	59.0	-1.1	23.5	68.2
1771.750000	47.0	100.0	H	148.0	0.6	21.2	68.2
2124.375000	47.5	200.0	H	2.0	1.8	20.7	68.2
3058.875000	50.5	200.0	V	294.0	4.9	17.7	68.2
4560.375000	53.3	200.0	V	144.0	8.9	14.9	68.2

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

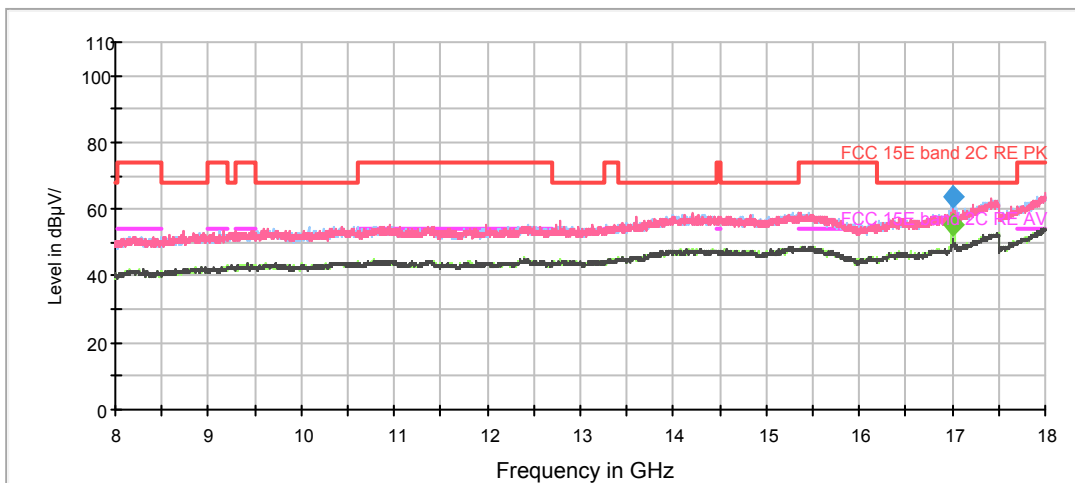
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1330.750000	35.6	100.0	H	160.0	-0.9	18.4	54.0
1575.750000	36.0	100.0	H	354.0	-0.1	18.0	54.0
2248.625000	38.3	200.0	V	177.0	2.4	15.7	54.0
2796.375000	39.5	200.0	H	4.0	4.3	14.5	54.0
3679.250000	41.3	200.0	V	76.0	6.5	12.7	54.0
4315.375000	41.9	100.0	H	356.0	8.2	12.1	54.0

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

802.11n (HT40) CH134



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



Radiates Emission from 8GHz to 18GHz



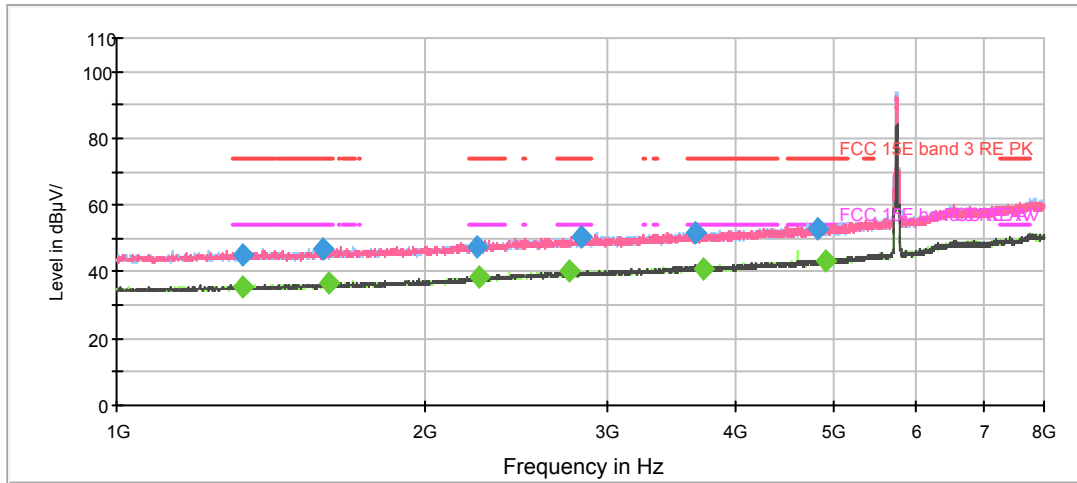
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1024.500000	45.0	100.0	H	349.0	-1.8	23.2	68.2
1275.625000	45.5	100.0	H	0.0	-1.1	22.7	68.2
1750.750000	47.5	200.0	H	16.0	0.5	20.7	68.2
2137.500000	47.6	100.0	H	0.0	1.9	20.6	68.2
2981.000000	50.9	100.0	V	3.0	4.7	17.3	68.2
4615.500000	53.3	200.0	H	3.0	9.0	14.9	68.2

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

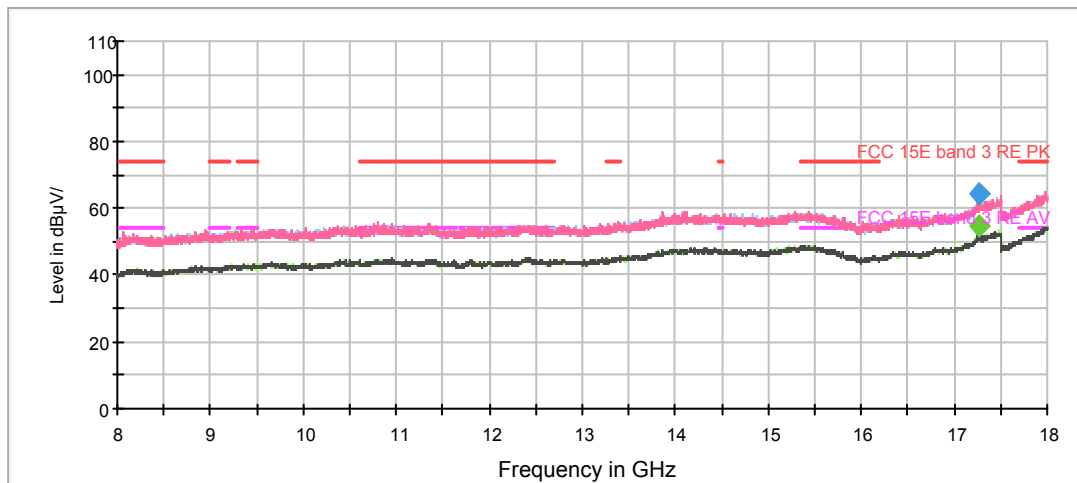
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1329.000000	35.4	100.0	H	338.0	-0.9	18.6	54.0
1580.125000	35.9	200.0	H	272.0	-0.1	18.1	54.0
2263.500000	38.2	200.0	H	116.0	2.6	15.8	54.0
2784.125000	39.5	200.0	H	215.0	4.2	14.5	54.0
3665.250000	41.5	100.0	V	160.0	6.5	12.5	54.0
4308.375000	42.3	200.0	H	182.0	8.2	11.7	54.0

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

802.11n (HT40) CH151



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



Radiates Emission from 8GHz to 18GHz



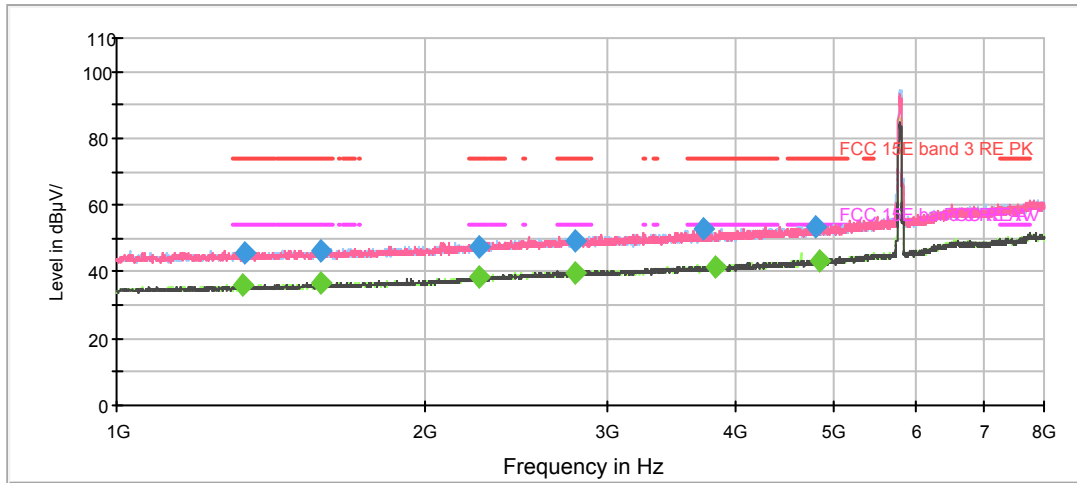
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1326.375000	45.2	200.0	H	228.0	-0.9	23.0	68.2
1586.250000	46.9	100.0	V	183.0	-0.1	21.3	68.2
2247.750000	47.7	100.0	H	258.0	2.4	20.5	68.2
2837.500000	50.8	100.0	V	336.0	4.4	17.4	68.2
3667.000000	51.6	100.0	V	285.0	6.6	16.6	68.2
4814.125000	52.9	100.0	H	354.0	9.4	15.3	68.2

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

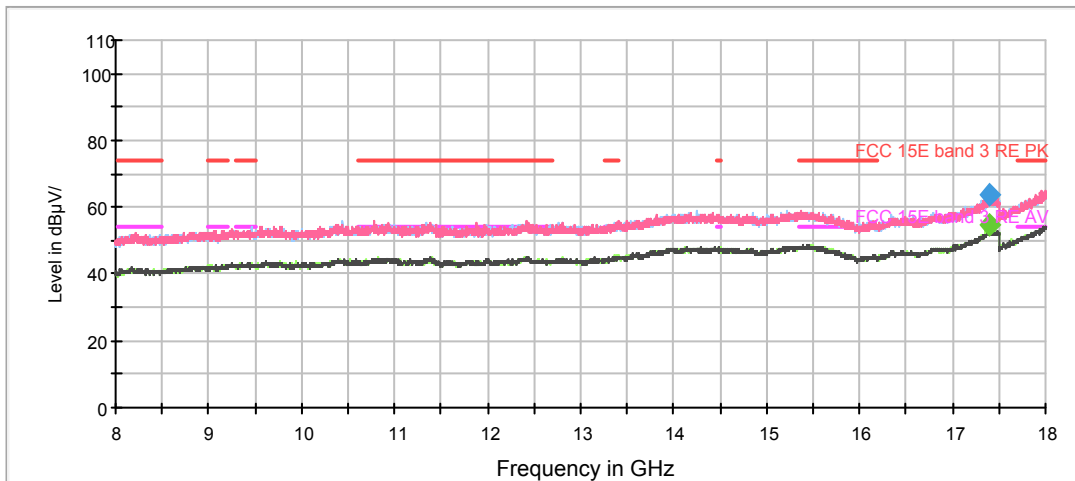
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1326.375000	35.5	200.0	H	228.0	-0.9	18.5	54.0
1610.750000	36.4	200.0	V	336.0	0.0	17.6	54.0
2249.500000	38.2	100.0	V	272.0	2.4	15.8	54.0
2755.250000	40.0	200.0	H	23.0	4.2	14.0	54.0
3735.250000	41.1	100.0	H	356.0	6.6	12.9	54.0
4903.375000	43.5	200.0	H	32.0	9.5	10.5	54.0

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

802.11n (HT40) CH159



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



Radiates Emission from 8GHz to 18GHz



Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1331.625000	45.9	200.0	V	306.0	-0.9	28.1	74.0
1581.000000	46.4	100.0	H	212.0	-0.1	27.6	74.0
2257.375000	47.2	200.0	H	1.0	2.5	26.8	74.0
2799.875000	49.4	200.0	H	40.0	4.3	24.6	74.0
3733.500000	53.1	200.0	V	0.0	6.6	20.9	74.0
4788.750000	53.6	100.0	H	338.0	9.3	20.4	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)
1329.000000	36.0	200.0	V	336.0	-0.9	18.0	54.0
1581.875000	36.4	200.0	V	317.0	-0.1	17.6	54.0
2258.250000	38.3	100.0	H	298.0	2.5	15.7	54.0
2795.500000	39.4	100.0	H	350.0	4.3	14.6	54.0
3828.875000	41.5	100.0	H	146.0	6.8	12.5	54.0
4830.750000	43.2	100.0	V	3.0	9.4	10.8	54.0

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



## 5.6. Conducted Emission

### Ambient condition

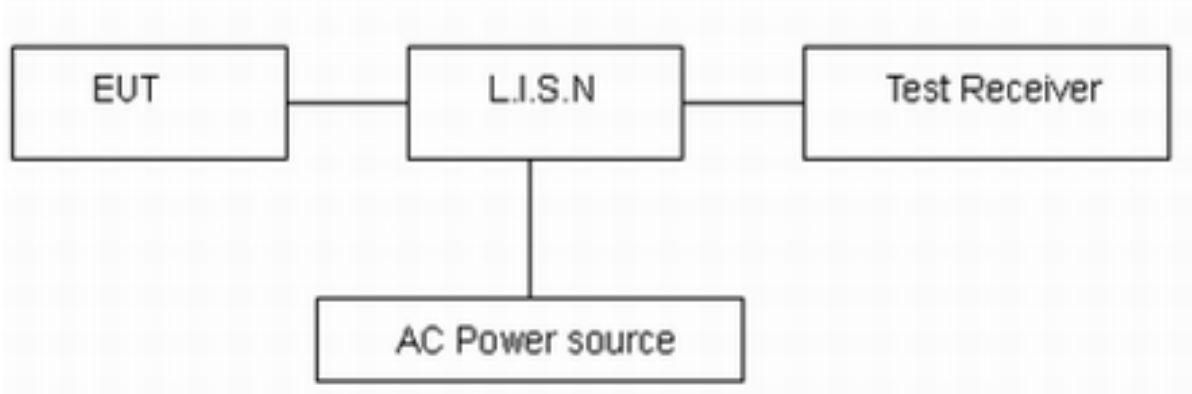
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Methods of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10-2013. 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

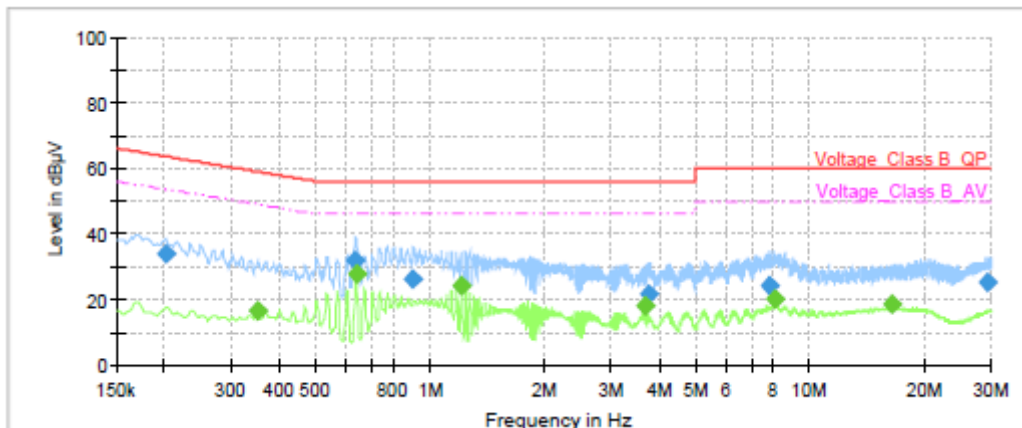
\*: Decreases with the logarithm of the frequency.

### 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:**

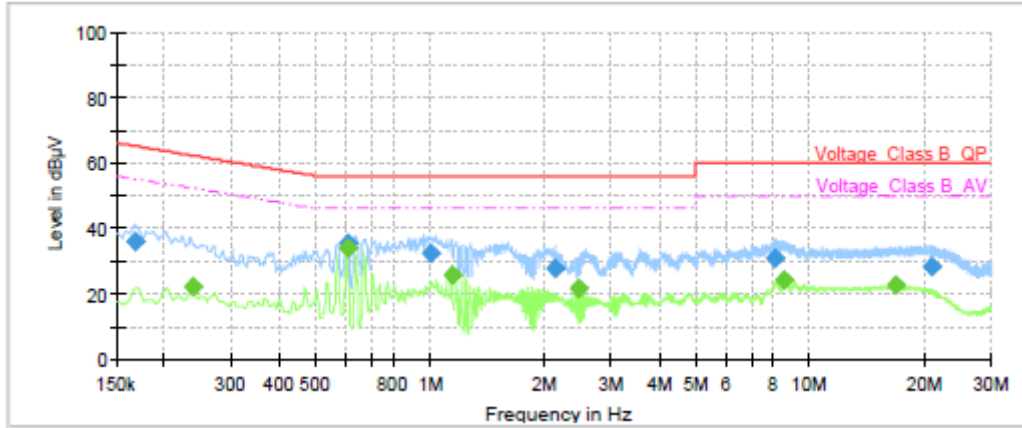
Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, 802.11n (HT40) CH46 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.20	33.60	---	63.54	29.94	1000.0	9.000	L1	ON	19.18
0.35	---	16.37	48.90	32.53	1000.0	9.000	L1	ON	19.18
0.64	31.93	---	56.00	24.07	1000.0	9.000	L1	ON	19.27
0.64	---	27.44	46.00	18.56	1000.0	9.000	L1	ON	19.28
0.90	26.40	---	56.00	29.60	1000.0	9.000	L1	ON	19.24
1.21	---	23.87	46.00	22.13	1000.0	9.000	L1	ON	19.23
3.70	---	18.00	46.00	28.00	1000.0	9.000	L1	ON	19.07
3.75	21.57	---	56.00	34.43	1000.0	9.000	L1	ON	19.06
7.84	24.03	---	60.00	35.97	1000.0	9.000	L1	ON	19.21
8.10	---	19.83	50.00	30.17	1000.0	9.000	L1	ON	19.21
16.51	---	18.45	50.00	31.55	1000.0	9.000	L1	ON	19.52
29.49	25.17	---	60.00	34.83	1000.0	9.000	L1	ON	19.84

**Remark: Correct factor=cable loss + LISN factor**

L line Conducted Emission from 150 KHz to 30 MHz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.17	35.98	---	65.06	29.08	1000.0	9.000	N	ON	19.16
0.24	---	21.85	52.17	30.32	1000.0	9.000	N	ON	19.12
0.60	---	33.71	46.00	12.29	1000.0	9.000	N	ON	19.27
0.60	35.51	---	56.00	20.49	1000.0	9.000	N	ON	19.27
1.01	32.26	---	56.00	23.74	1000.0	9.000	N	ON	19.24
1.14	---	25.42	46.00	20.58	1000.0	9.000	N	ON	19.24
2.12	27.72	---	56.00	28.28	1000.0	9.000	N	ON	19.08
2.45	---	21.52	46.00	24.48	1000.0	9.000	N	ON	19.03
8.10	30.79	---	60.00	29.21	1000.0	9.000	N	ON	19.22
8.58	---	24.02	50.00	25.98	1000.0	9.000	N	ON	19.26
16.76	---	22.57	50.00	27.43	1000.0	9.000	N	ON	19.47
20.98	28.23	---	60.00	31.77	1000.0	9.000	N	ON	19.53

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 KHz to 30 MHz



## 6. Main Test Instruments

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

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