



# RF TEST REPORT

**Applicant** Honeywell International Inc.  
**FCC ID** HS9-TH6220WF01DB  
**Product** Honeywell Home Wi-Fi Thermostat  
**Model** RCHT8610WF2006DB  
**Report No.** RXA1707-0207RF02R2  
**Issue Date** November 24, 2017

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2017)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Xianqing Li

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## Summary of measurement results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Average conducted output power	15.407(a)	PASS
2	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Maximum power spectral density	15.407(a)	PASS
5	Unwanted Emissions	15.407(b)	PASS
6	Conducted Emissions	15.207	PASS
Date of Testing: July 11, 2017~ November 24, 2017			



## 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. This report must not be used by the client to claim product certification, approval, or endorsement by any government agencies.

### 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>	Honeywell International Inc.
<b>Applicant address</b>	2 Corporate Center Drive, Melville, NY, USA
<b>Manufacturer</b>	Jabil Circuit de Mexico
<b>Manufacturer address</b>	Valdepeñas 1993, Zapopan, Mexico

### General information

EUT Description	
Model:	RCHT8610WF2006DB
SN:	/
Hardware Version:	200-01841B
Software Version:	2.6.5
Power Supply:	AC Power Supply
Antenna Type:	Internal Antenna
Antenna Gain:	Antenna 1: 4.22 dbi Antenna 2: 4.22 dbi
Test Mode:	U-NII-1, U-NII-2A, U-NII-2C, U-NII-3
Modulation Type:	802.11a/n (HT20/HT40) : OFDM
Max. Conducted Power	13.16 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
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 (2017)** Unlicensed National Information Infrastructure Devices

**ANSI C63.10 (2013)**

**KDB 789033 D02 General UNII Test Procedures New Rules v01r04**

## 4. Test Configuration

### Test Mode

The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

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

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

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

Worst-case data rates are shown as following table.

Band	Data Rate	
	Antenna 1	Antenna 2
802.11a	6 Mbps	6 Mbps
802.11n HT20	MCS0	MCS0
802.11n HT40	MCS0	MCS0

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	Antenna 1	Antenna 2
Average conducted output power	O	O
Occupied bandwidth	O	--
Frequency stability	802.11a	--
Power Spectral Density	O	O
Unwanted Emissions	O	--
Conducted Emissions	802.11a	--
Note: "O": test all bands		



## 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.

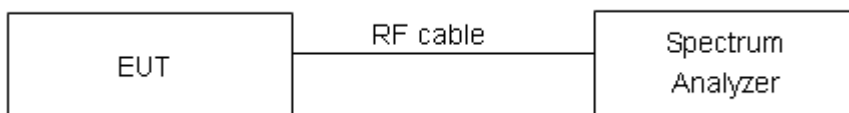
For U-NII-1, set RBW  $\approx$ 1% OCB kHz, VBW  $\geq$  3  $\times$  RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured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

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5180	16.500	20.85	500	PASS
	5200	16.512	20.77	500	PASS
	5240	16.521	20.83	500	PASS
802.11n HT20	5180	17.756	21.29	500	PASS
	5200	17.759	21.20	500	PASS
	5240	17.761	21.06	500	PASS
802.11n HT40	5190	36.213	39.95	500	PASS
	5230	36.232	39.72	500	PASS

**U-NII-2A**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5260	16.508	20.84	500	PASS
	5300	16.514	20.85	500	PASS
	5320	16.534	20.82	500	PASS
802.11n HT20	5260	17.791	21.10	500	PASS
	5300	17.774	21.31	500	PASS
	5320	17.791	21.19	500	PASS
802.11n HT40	5270	36.177	39.79	500	PASS
	5310	36.229	39.71	500	PASS

**U-NII-2C**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5500	16.526	20.94	500	PASS
	5580	16.528	21.06	500	PASS
	5700	16.518	20.72	500	PASS
802.11n HT20	5500	17.793	21.16	500	PASS
	5580	17.784	20.96	500	PASS
	5700	17.795	21.17	500	PASS
802.11n HT40	5510	36.222	39.85	500	PASS
	5670	36.263	39.84	500	PASS



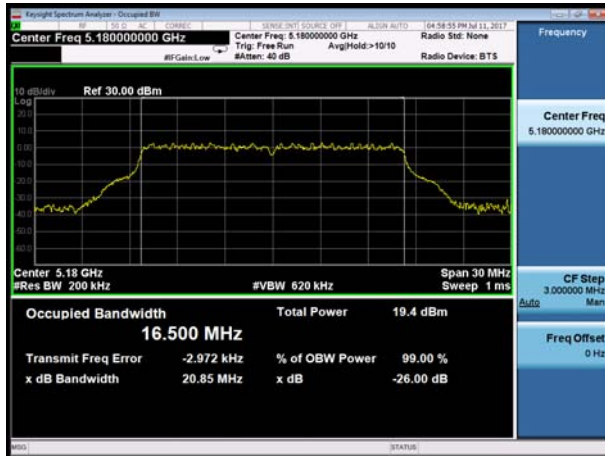
## U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	16.462	16.40	500	PASS
	5785	16.440	16.36	500	PASS
	5825	16.439	16.40	500	PASS
802.11n HT20	5745	17.669	17.66	500	PASS
	5785	17.673	17.72	500	PASS
	5825	17.689	17.68	500	PASS
802.11n HT40	5755	36.014	35.79	500	PASS
	5795	36.066	35.89	500	PASS



Antenna 1

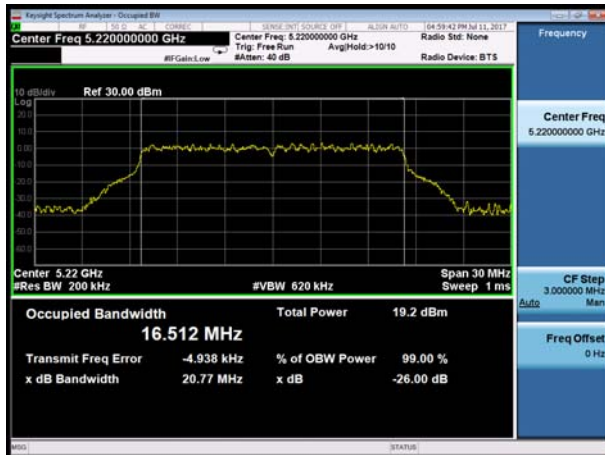
U-NII-1, 802.11a  
Carrier frequency (MHz): 5180



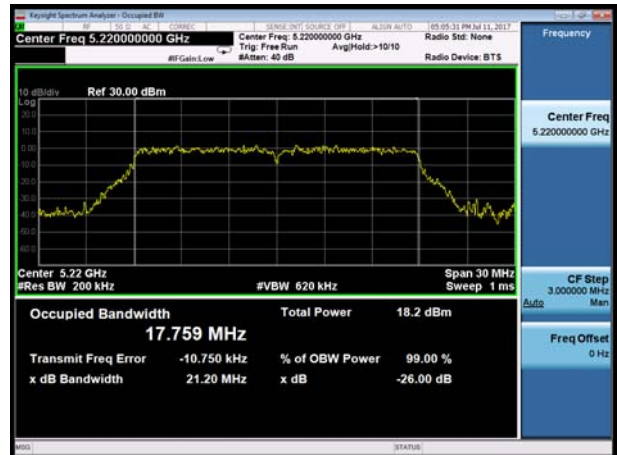
U-NII-1, 802.11n HT20  
Carrier frequency (MHz): 5180



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



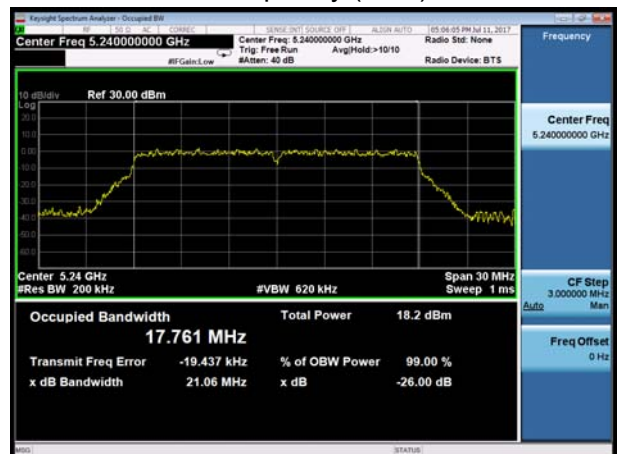
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Carrier frequency (MHz): 5200

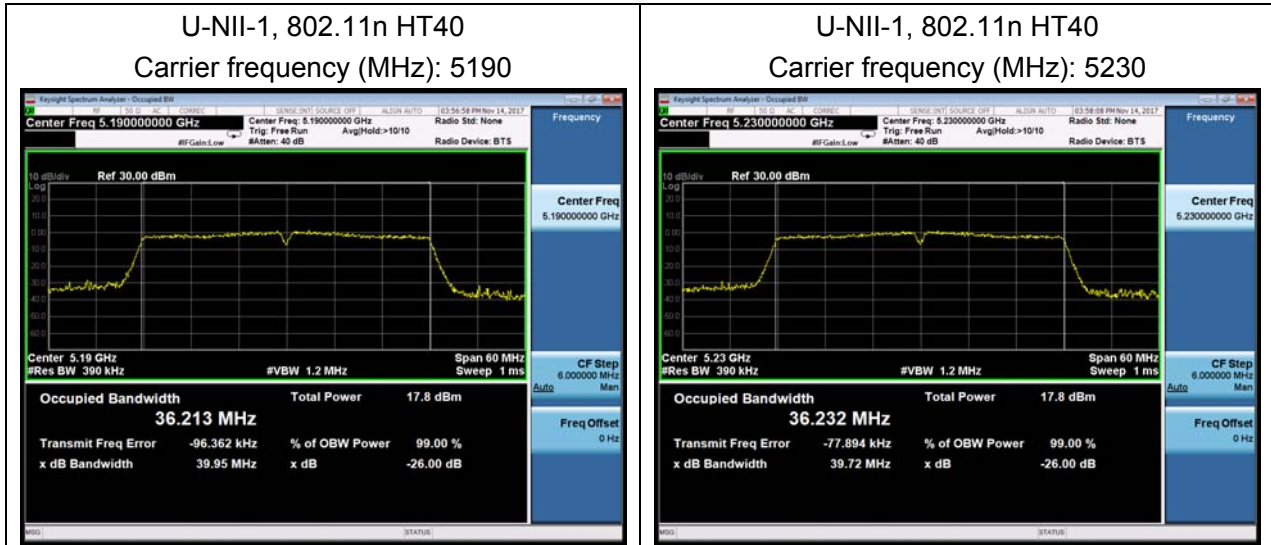


U-NII-1, 802.11a  
Carrier frequency (MHz):5240



U-NII-1, 802.11n HT20  
Carrier frequency (MHz):5240



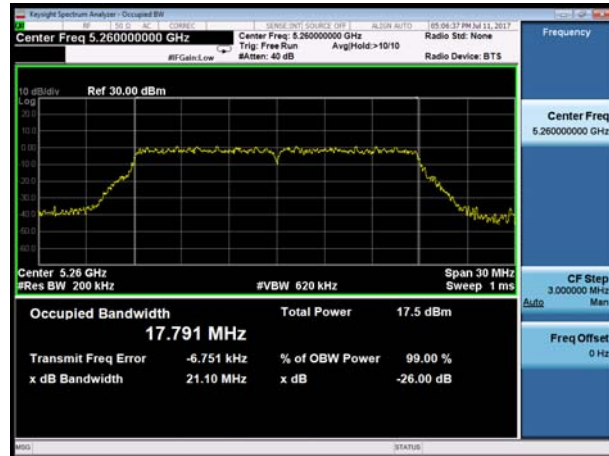




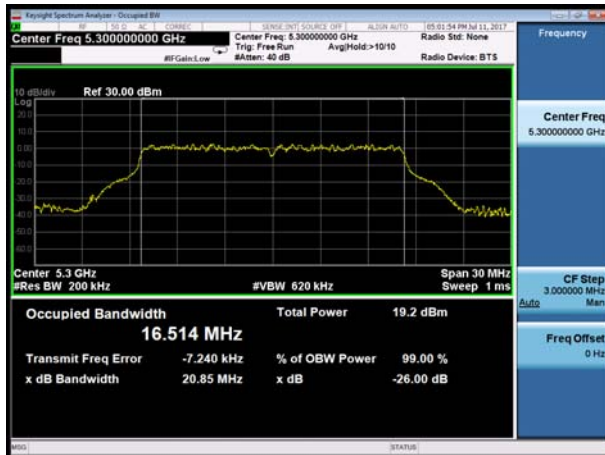
U-NII-2A, 802.11a  
Carrier frequency (MHz): 5260



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



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



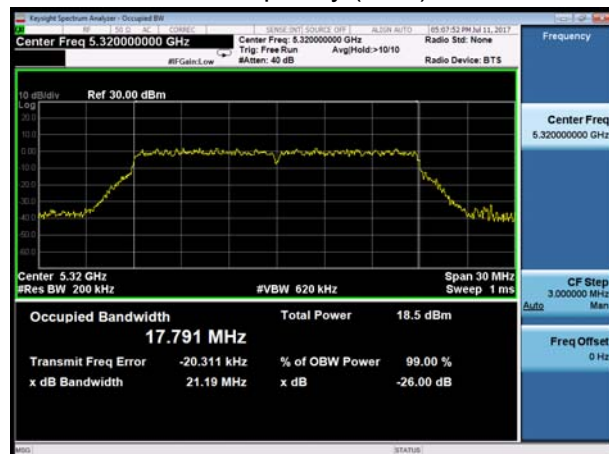
U-NII-2A, 802.11n HT20  
Carrier frequency (MHz): 5300



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



U-NII-2A, 802.11n HT20  
Carrier frequency (MHz):5320





U-NII-2A, 802.11n HT40  
Carrier frequency (MHz): 5270



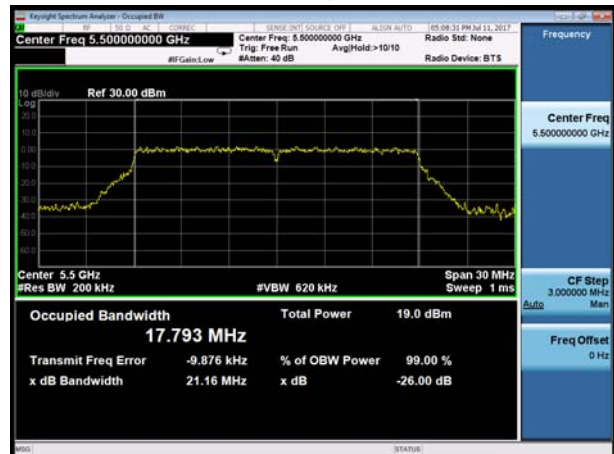
U-NII-2A, 802.11n HT40  
Carrier frequency (MHz): 5310



U-NII-2C, 802.11a  
Carrier frequency (MHz): 5500



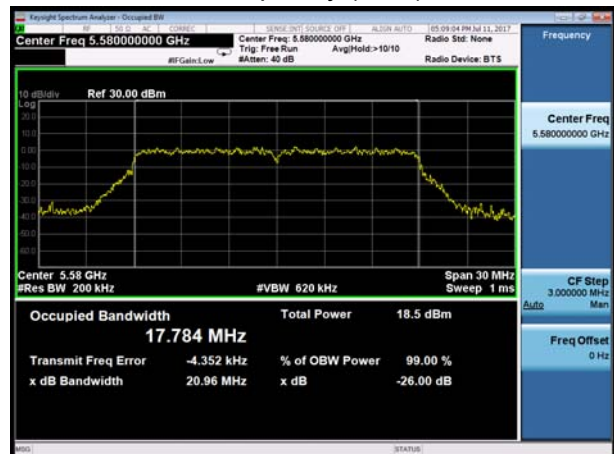
U-NII-2C, 802.11n HT20  
Carrier frequency (MHz): 5500



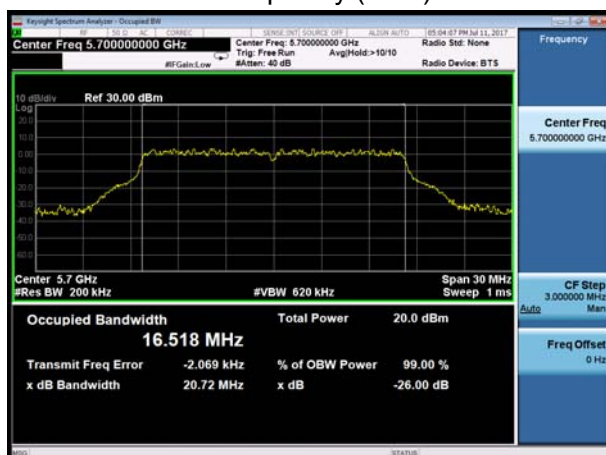
U-NII-2C, 802.11a  
Carrier frequency (MHz): 5580



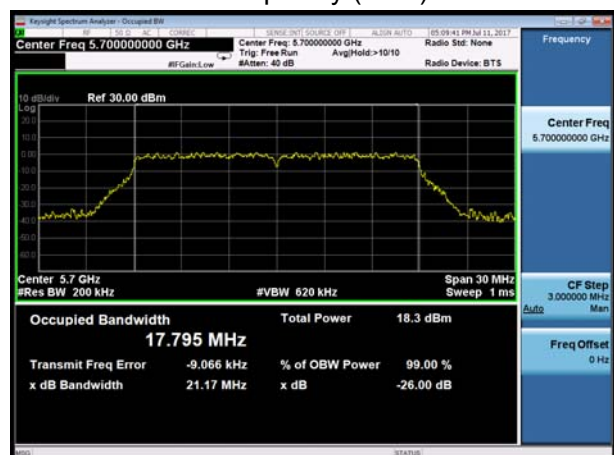
U-NII-2C, 802.11n HT20  
Carrier frequency (MHz): 5580



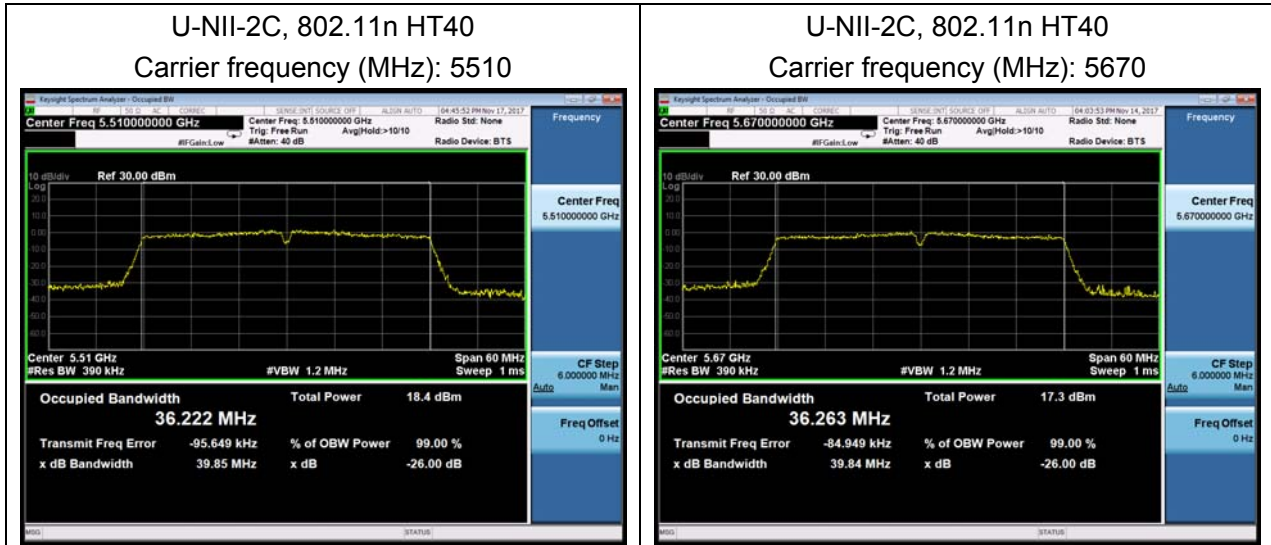
U-NII-2C, 802.11a  
Carrier frequency (MHz): 5700



U-NII-2C, 802.11n HT20  
Carrier frequency (MHz): 5700









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



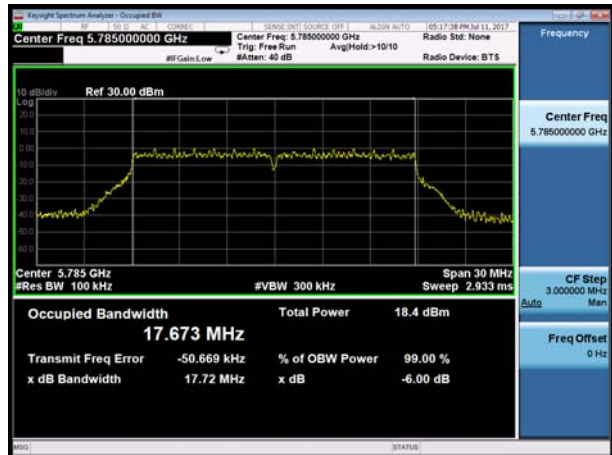
U-NII-3, 802.11n HT20  
Carrier frequency (MHz): 5745



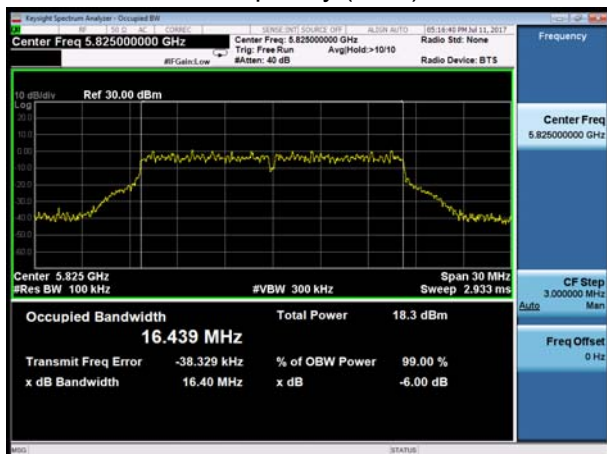
U-NII-3, 802.11a  
Carrier frequency (MHz): 5785



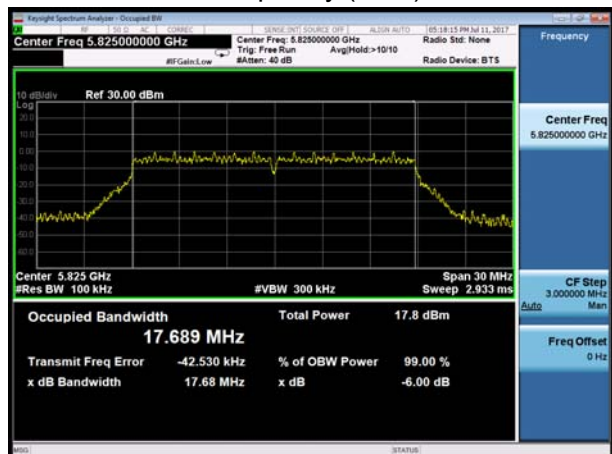
U-NII-3, 802.11n HT20  
Carrier frequency (MHz): 5785

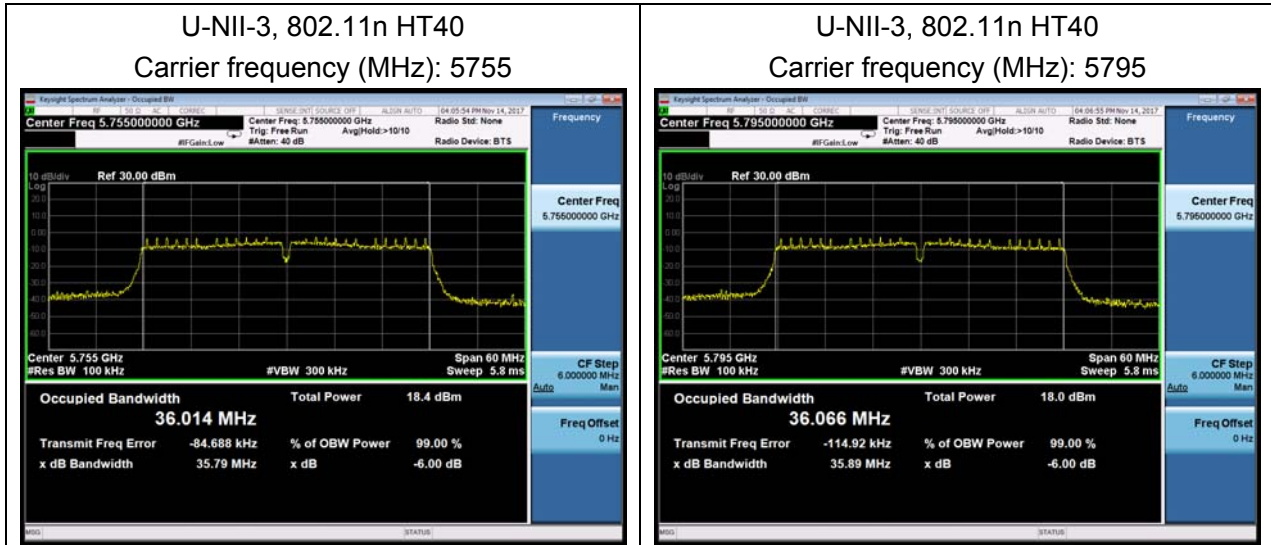


U-NII-3, 802.11a  
Carrier frequency (MHz): 5825



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





## 5.2. Average Power Output –Conducted

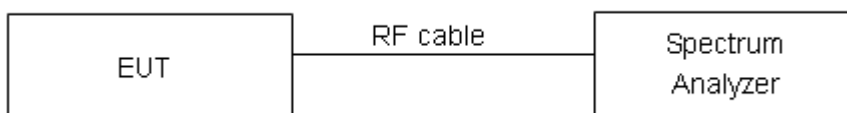
### Ambient condition

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

### **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

Packet Type	Single Antenna Power Index
802.11a	14
802.11n HT20	13
Packet Type	Single Antenna Power Index
802.11n HT40	12

Network Standards		Channel/Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit(dBm)
U-NII-2A	802.11a	52/5260	20.84	24.19>24	24
		60/5300	20.85	24.19>24	24
		64/5320	20.82	24.18>24	24
	802.11n HT20	52/5260	21.10	24.24>24	24
		60/5300	21.31	24.29>24	24
		64/5320	21.19	24.26>24	24
	802.11n HT40	54/5270	39.79	27.00>24	24
62/5310		39.71	26.99>24	24	
U-NII-2C	802.11a	100/5500	20.94	24.21>24	24
		116/5580	21.06	24.23>24	24
		140/5700	20.72	24.16>24	24
	802.11n HT20	100/5500	21.16	24.26>24	24
		116/5580	20.96	24.21>24	24
		140/5700	21.17	24.26>24	24
	802.11n HT40	102/5510	39.85	27.00>24	24
		134/5670	39.84	27.00>24	24

**Test results**

**Antenna 1**

**U-NII-1**

Network Standards	Channel/Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	12.84	30	PASS
	40/5200	12.81	30	PASS
	48/5240	12.89	30	PASS
802.11n HT20	36/5180	12.29	30	PASS
	40/5200	12.15	30	PASS
	48/5240	12.15	30	PASS
802.11n HT40	38/5190	11.63	30	PASS
	46/5230	11.32	30	PASS

**U-NII-2A**

Network Standards	Channel/Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	12.68	24	PASS
	60/5300	12.65	24	PASS
	64/5320	12.80	24	PASS
802.11n HT20	52/5260	11.83	24	PASS
	60/5300	11.96	24	PASS
	64/5320	12.22	24	PASS
802.11n HT40	54/5270	11.04	24	PASS
	62/5310	11.14	24	PASS

**U-NII-2C**

Network Standards	Channel/Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	13.04	24	PASS
	116/5580	13.16	24	PASS
	140/5700	12.46	24	PASS
802.11n HT20	100/5500	12.52	24	PASS
	116/5580	12.41	24	PASS
	140/5700	11.62	24	PASS
802.11n HT40	102/5510	11.28	24	PASS
	134/5670	10.95	24	PASS

**U-NII-3**

Network Standards	Channel/Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	12.28	30.00	PASS
	157/5785	12.23	30.00	PASS
	165/5825	11.57	30.00	PASS
802.11n HT20	149/5745	11.59	30.00	PASS
	157/5785	11.42	30.00	PASS
	165/5825	10.91	30.00	PASS
802.11n HT40	151/5755	11.75	30.00	PASS
	159/5795	11.47	30.00	PASS

**Antenna 2**

**U-NII-1**

Network Standards	Channel/Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	12.02	30	PASS
	40/5200	12.05	30	PASS
	48/5240	12.01	30	PASS
802.11n HT20	36/5180	11.16	30	PASS
	40/5200	11.28	30	PASS
	48/5240	10.99	30	PASS
802.11n HT40	38/5190	10.60	30	PASS
	46/5230	11.13	30	PASS

**U-NII-2A**

Network Standards	Channel/Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	52/5260	11.60	24	PASS
	60/5300	12.06	24	PASS
	64/5320	12.36	24	PASS
802.11n HT20	52/5260	10.74	24	PASS
	60/5300	11.18	24	PASS
	64/5320	11.23	24	PASS
802.11n HT40	54/5270	10.59	24	PASS
	62/5310	10.71	24	PASS





## U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	100/5500	12.35	24	PASS
	116/5580	12.81	24	PASS
	140/5700	12.38	24	PASS
802.11n HT20	100/5500	11.55	24	PASS
	116/5580	12.04	24	PASS
	140/5700	11.83	24	PASS
802.11n HT40	102/5510	10.71	24	PASS
	134/5670	10.23	24	PASS

## U-NII-3

Network Standards	Channel/ Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	12.42	30	PASS
	157/5785	12.60	30	PASS
	165/5825	11.92	30	PASS
802.11n HT20	149/5745	11.34	30	PASS
	157/5785	11.70	30	PASS
	165/5825	11.12	30	PASS
802.11n HT40	151/5755	10.67	30	PASS
	159/5795	10.42	30	PASS

### 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****Antenna 1**

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5200MHz			
		1min	2min	5min	10min
24	-20	5199.995	5199.993	5199.986	5199.978
24	-10	5199.988	5199.988	5199.978	5199.973
24	0	5199.98	5199.984	5199.972	5199.967
24	10	5199.979	5199.982	5199.966	5199.958
24	20	5199.975	5199.975	5199.961	5199.956
24	30	5199.966	5199.969	5199.959	5199.951
24	40	5199.964	5199.961	5199.951	5199.941
24	50	5199.957	5199.96	5199.942	5199.931
16.2	20	5199.957	5199.951	5199.938	5199.922
33	20	5199.954	5199.948	5199.929	5199.918
MHz		-0.04621	-0.05243	-0.07072	-0.08182
PPM		-8.88587	-10.0827	-13.5999	-15.7345

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5300MHz			
		1min	2min	5min	10min
24	-20	5299.991	5299.988	5299.984	5299.982
24	-10	5299.986	5299.983	5299.981	5299.981
24	0	5299.984	5299.982	5299.974	5299.973
24	10	5299.983	5299.975	5299.97	5299.963
24	20	5299.977	5299.967	5299.966	5299.959
24	30	5299.976	5299.961	5299.961	5299.95
24	40	5299.969	5299.952	5299.958	5299.941
24	50	5299.969	5299.949	5299.953	5299.934
16.2	20	5299.962	5299.942	5299.946	5299.928
33	20	5299.953	5299.94	5299.94	5299.918
MHz		-0.04667	-0.0604	-0.0603	-0.0818
PPM		-8.80594	-11.3959	-11.3778	-15.4336



Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5580MHz			
		1min	2min	5min	10min
24	-20	5580.009	5580.005	5579.998	5579.994
24	-10	5580.002	5579.996	5579.993	5579.993
24	0	5579.994	5579.989	5579.987	5579.984
24	10	5579.992	5579.985	5579.982	5579.983
24	20	5579.984	5579.982	5579.976	5579.982
24	30	5579.976	5579.975	5579.975	5579.98
24	40	5579.966	5579.974	5579.967	5579.973
24	50	5579.959	5579.965	5579.96	5579.964
16.2	20	5579.95	5579.96	5579.95	5579.963
33	20	5579.947	5579.958	5579.944	5579.958
	MHz	-0.05327	-0.04217	-0.05566	-0.04173
	PPM	-9.54692	-7.55686	-9.97562	-7.47792

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
24	-20	5785.006	5784.998	5784.989	5784.981
24	-10	5785.003	5784.998	5784.984	5784.977
24	0	5784.998	5784.997	5784.976	5784.968
24	10	5784.994	5784.995	5784.973	5784.962
24	20	5784.991	5784.992	5784.964	5784.956
24	30	5784.99	5784.988	5784.962	5784.948
24	40	5784.989	5784.986	5784.952	5784.947
24	50	5784.985	5784.983	5784.946	5784.938
16.2	20	5784.976	5784.976	5784.937	5784.93
33	20	5784.974	5784.974	5784.933	5784.927
	MHz	-0.02605	-0.0262	-0.06682	-0.0725
	PPM	-4.50269	-4.52967	-11.5499	-12.5329

### 5.4. Power Spectral Density

#### Ambient condition

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

#### Method of Measurement

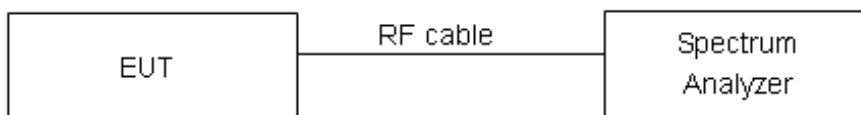
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

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.

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	17dBm/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:****Antenna 1****U-NII-1**

Network Standards	Channel Number	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36	1.039	17	PASS
	40	1.134	17	PASS
	48	0.949	17	PASS
802.11n HT20	36	0.269	17	PASS
	40	-0.078	17	PASS
	48	-0.416	17	PASS
802.11n HT40	38	-1.724	17	PASS
	46	-1.917	17	PASS

**U-NII-2A**

Network Standards	Channel Number	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52	0.969	11	PASS
	60	0.043	11	PASS
	64	0.283	11	PASS
802.11n HT20	52	-0.951	11	PASS
	60	-0.591	11	PASS
	64	-0.704	11	PASS
802.11n HT40	54	-2.349	11	PASS
	62	-2.098	11	PASS

**U-NII-2C**

Network Standards	Channel Number	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100	1.171	11	PASS
	116	1.057	11	PASS
	140	0.925	11	PASS
802.11n HT20	100	0.014	11	PASS
	116	0.381	11	PASS
	140	-0.418	11	PASS
802.11n HT40	102	-2.295	11	PASS
	134	-2.239	11	PASS





## U-NII-3

Network Standards	Channel Number	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149	-2.091	30	PASS
	157	-1.701	30	PASS
	165	-2.884	30	PASS
802.11n HT20	149	-3.346	30	PASS
	157	-3.769	30	PASS
	165	-4.319	30	PASS
802.11n HT40	151	-1.400	30	PASS
	159	-2.094	30	PASS

## Antenna 2

## U-NII-1

Network Standards	Channel Number	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36	0.653	17	PASS
	40	1.037	17	PASS
	48	0.259	17	PASS
802.11n HT20	36	-0.104	17	PASS
	40	-0.682	17	PASS
	48	-0.595	17	PASS
802.11n HT40	38	-2.288	17	PASS
	46	-2.154	17	PASS

## U-NII-2A

Network Standards	Channel Number	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	52	-0.402	11	PASS
	60	-0.124	11	PASS
	64	0.229	11	PASS
802.11n HT20	52	-0.752	11	PASS
	60	-1.483	11	PASS
	64	-1.297	11	PASS
802.11n HT40	54	-2.208	11	PASS
	62	-1.983	11	PASS



## U-NII-2C

Network Standards	Channel Number	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	100	0.434	11	PASS
	116	0.919	11	PASS
	140	0.458	11	PASS
802.11n HT20	100	-0.755	11	PASS
	116	-0.482	11	PASS
	140	-0.789	11	PASS
802.11n HT40	102	-2.918	11	PASS
	134	-3.577	11	PASS

## U-NII-3

Network Standards	Channel Number	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149	-2.577	30	PASS
	157	-2.495	30	PASS
	165	-2.515	30	PASS
802.11n HT20	149	-3.634	30	PASS
	157	-3.438	30	PASS
	165	-3.260	30	PASS
802.11n HT40	151	-3.675	30	PASS
	159	-3.793	30	PASS

## 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):

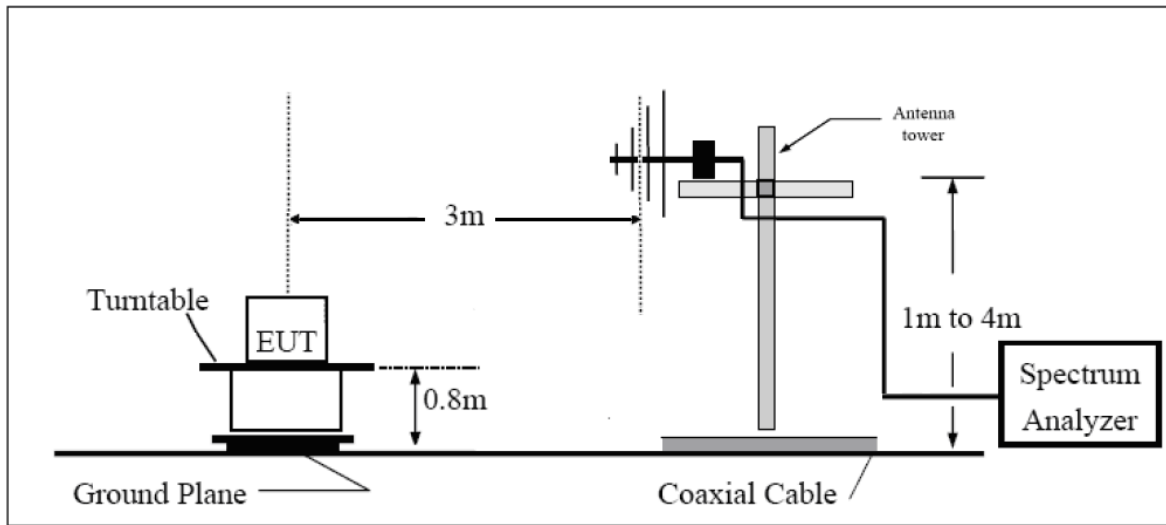
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

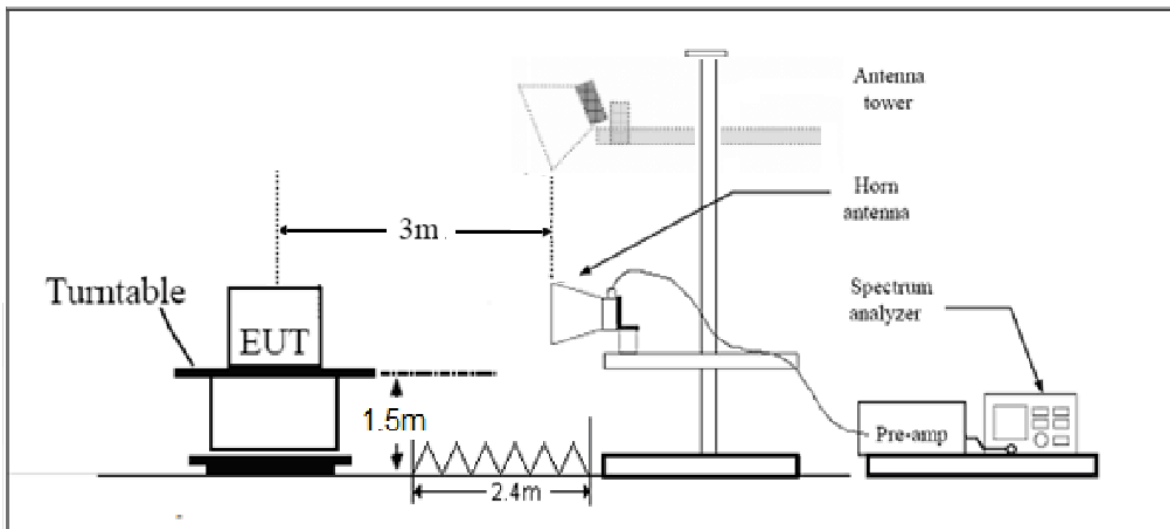
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

The test is in transmitting mode.

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	4.19 dB
200MHz-1GHz	3.63 dB
1GHz-26.5G	3.68 dB
26.5G-40GHz	4.76dB

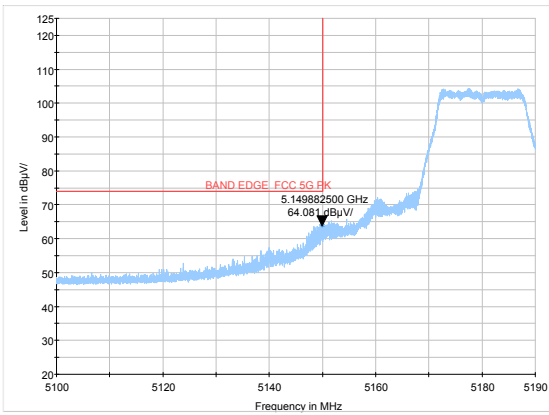


**Test Results:**

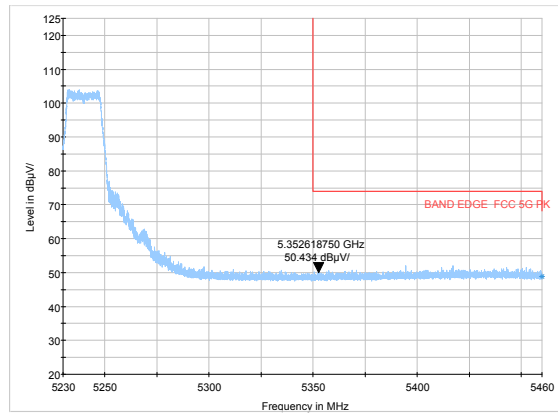
The signal beyond the limit is carrier.

**U-NII-1**

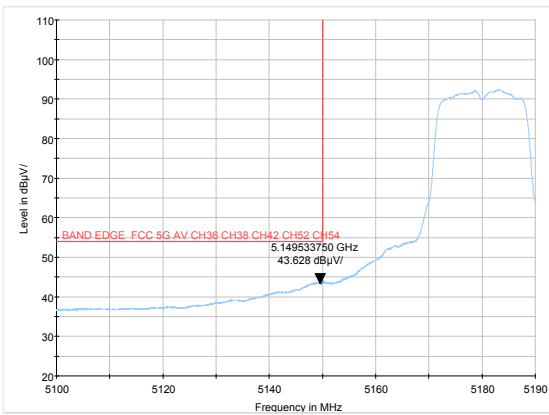
**802.11a-Channel 36: Peak**



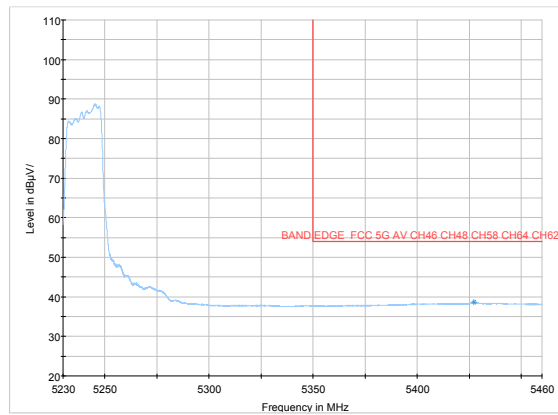
**802.11a-Channel 48: Peak**



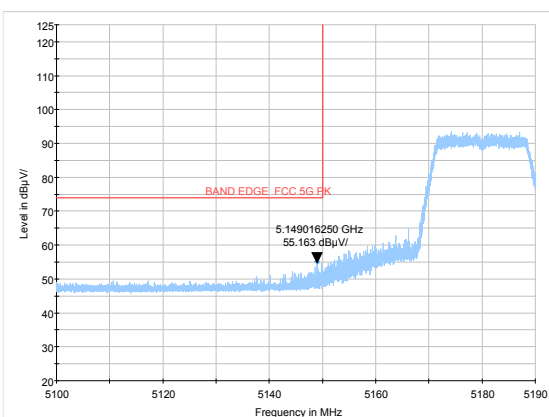
**802.11a-Channel 36: Average**



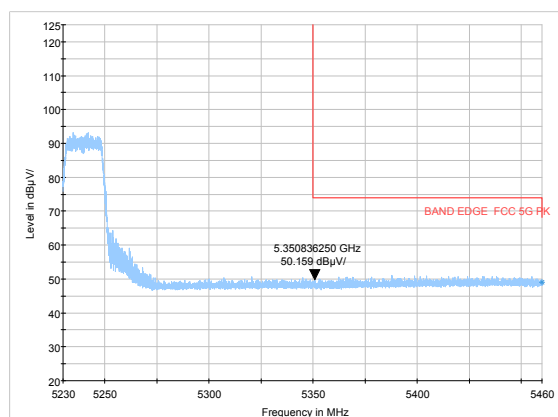
**802.11a-Channel 48: Average**



**802.11n HT20-Channel 36: Peak**

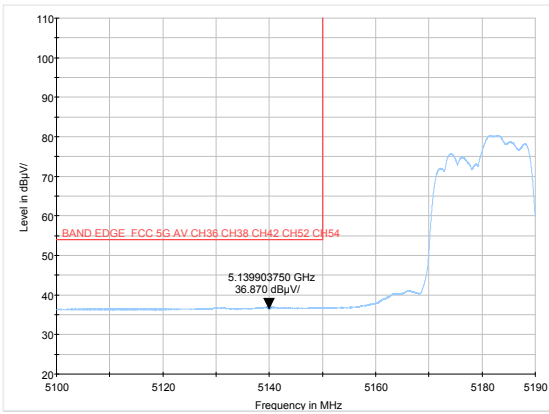


**802.11n HT20-Channel 48: Peak**

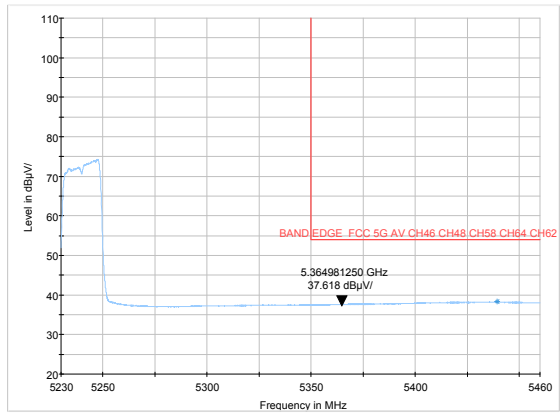




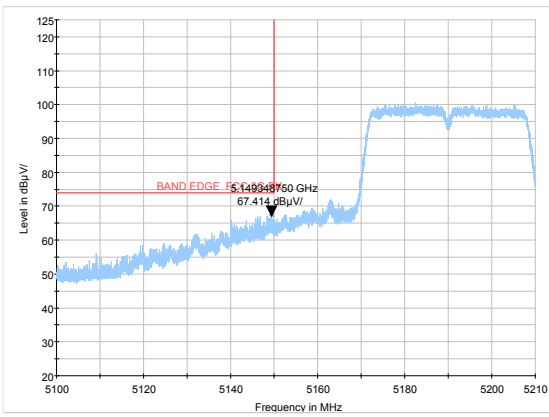
802.11n HT20-Channel 36: Average



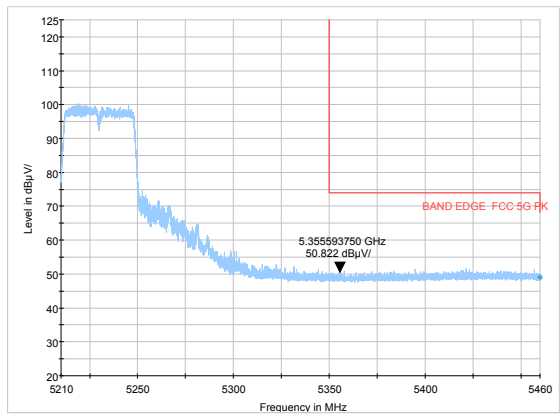
802.11n HT20-Channel 48: Average



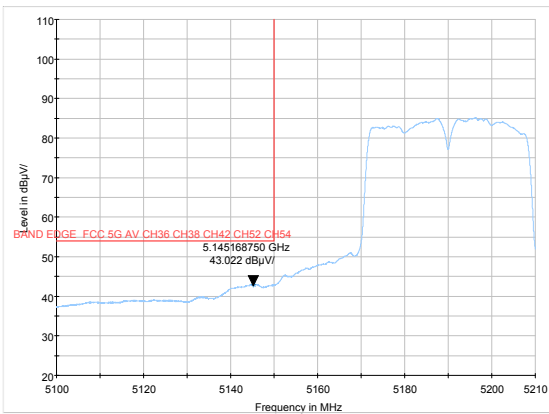
802.11n HT40-Channel 38: Peak



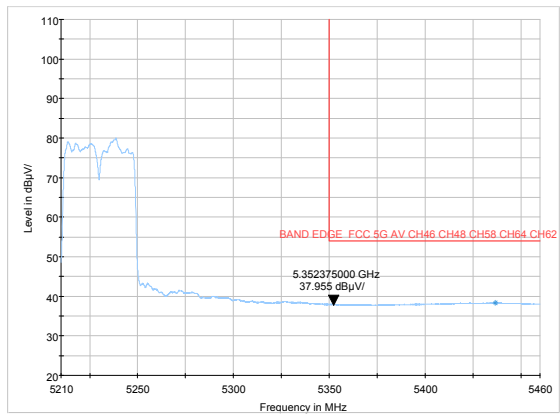
802.11n HT40-Channel 46: Peak



802.11n HT40-Channel 38: Average



802.11n HT40-Channel 46: Average

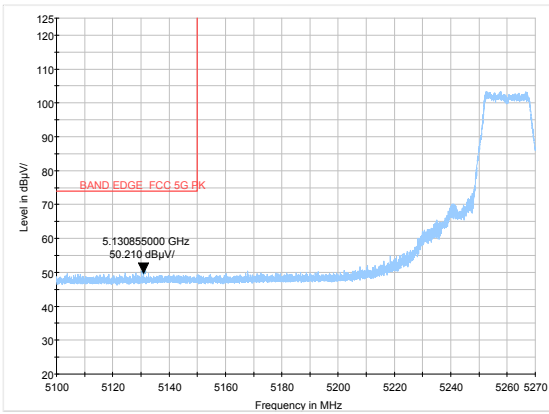




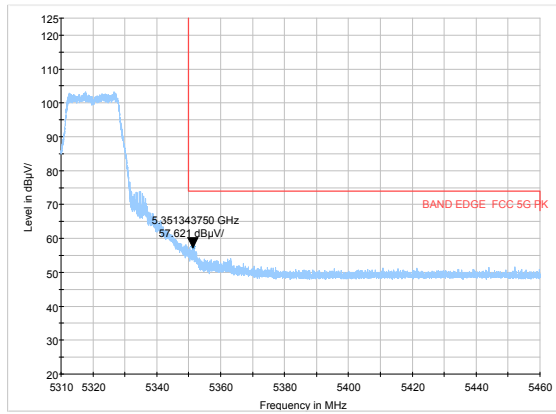


U-NII-2A

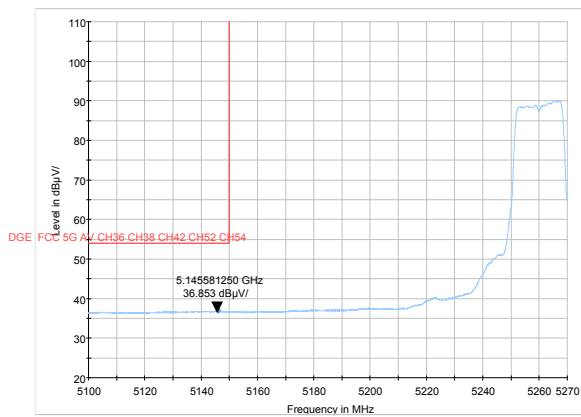
802.11a-Channel 52: Peak



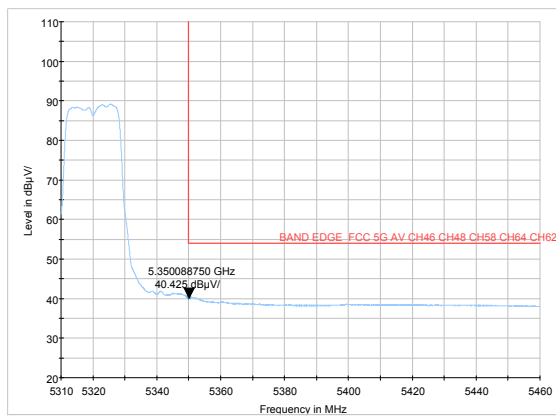
802.11a-Channel 64: Peak



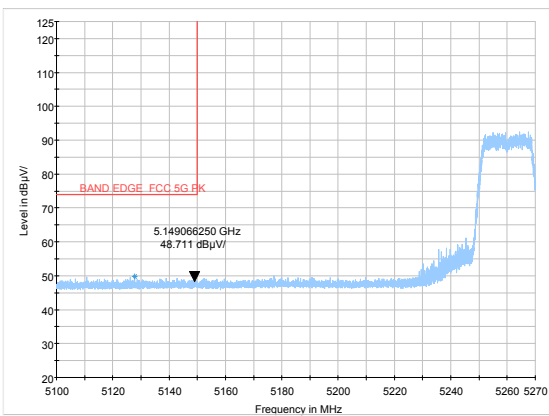
802.11a-Channel 52: Average



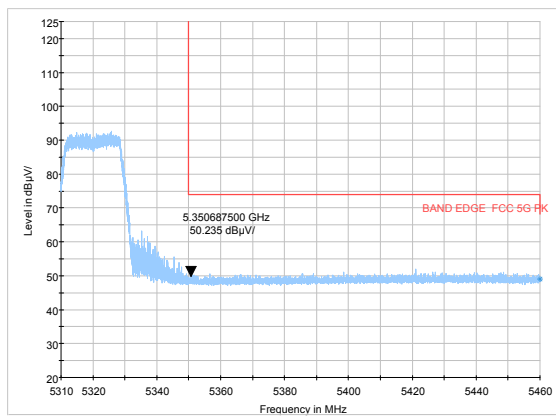
802.11a-Channel 64: Average



802.11n HT20-Channel 52: Peak

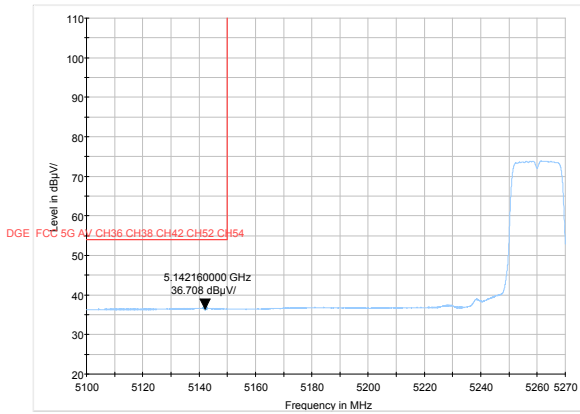


802.11n HT20-Channel 64: Peak

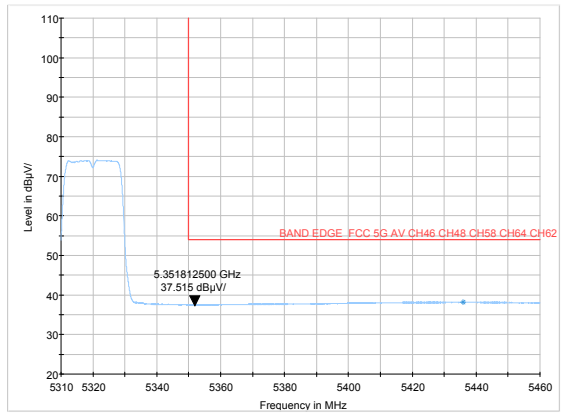




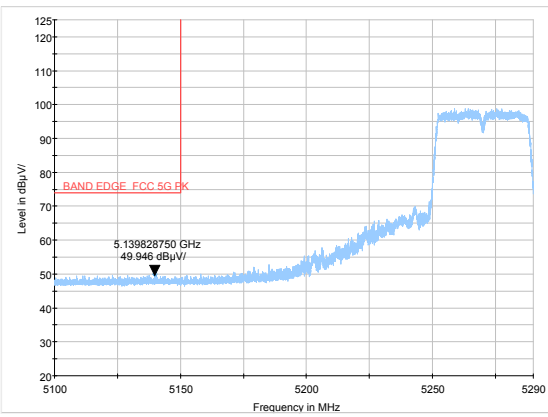
802.11n HT20-Channel 52: Average



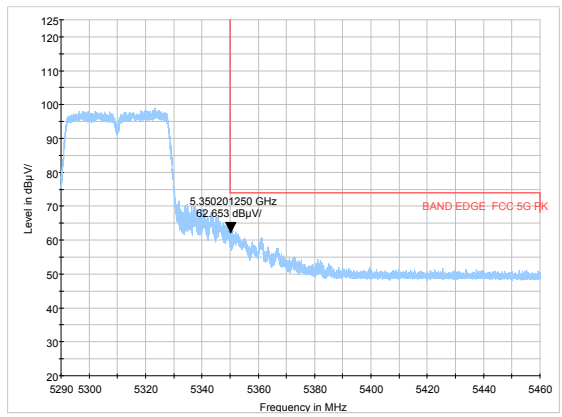
802.11n HT20-Channel 64: Average



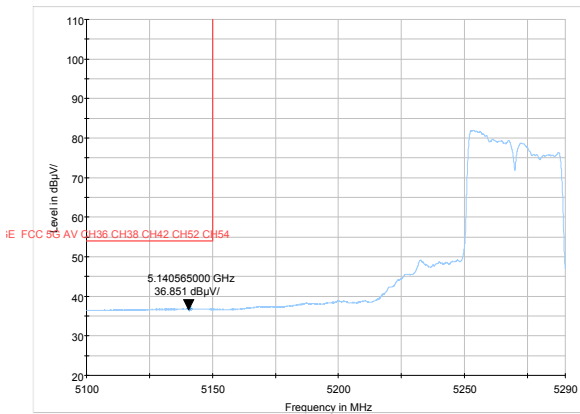
802.11n HT40-Channel 54: Peak



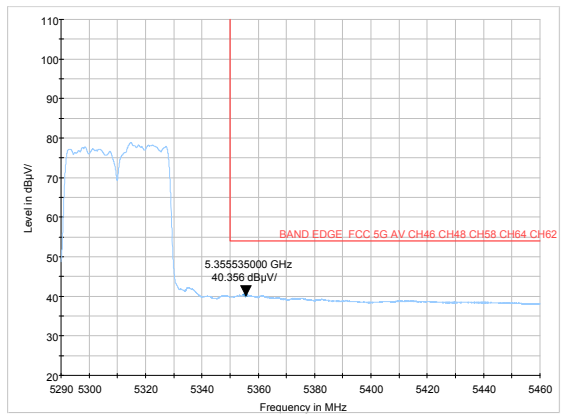
802.11n HT40-Channel 62: Peak



802.11n HT40-Channel 54: Average



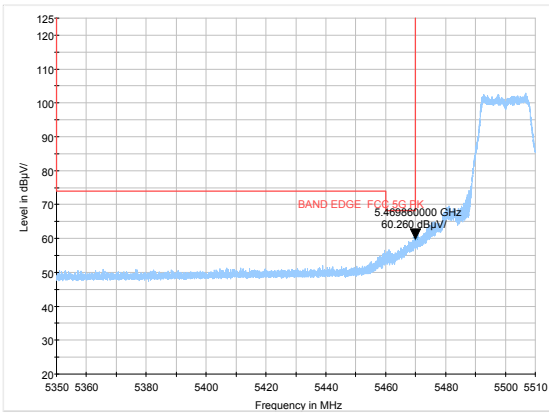
802.11n HT40-Channel 62: Average



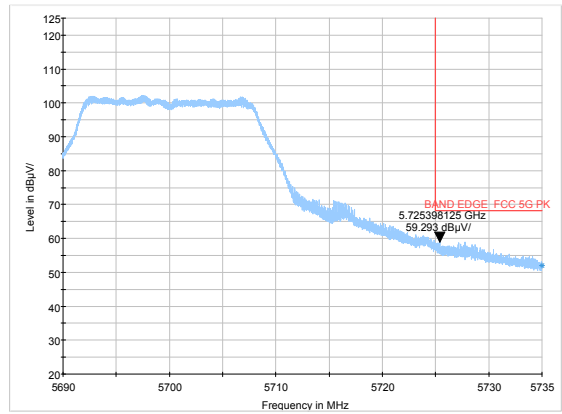


U-NII-2C

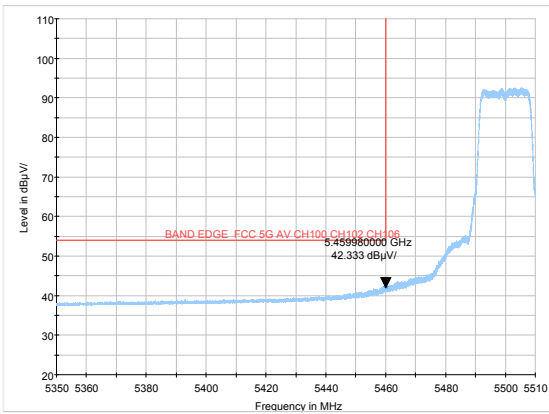
802.11a-Channel 100: Peak



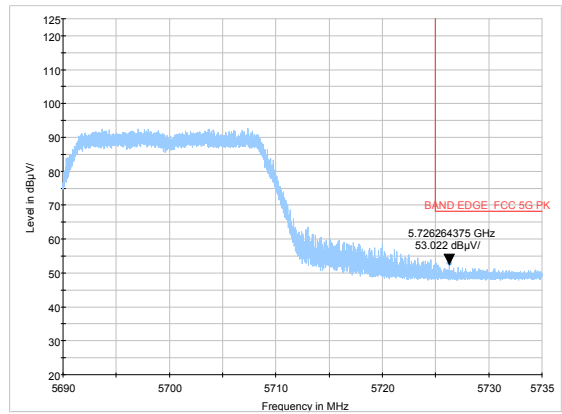
802.11a-Channel 140: Peak



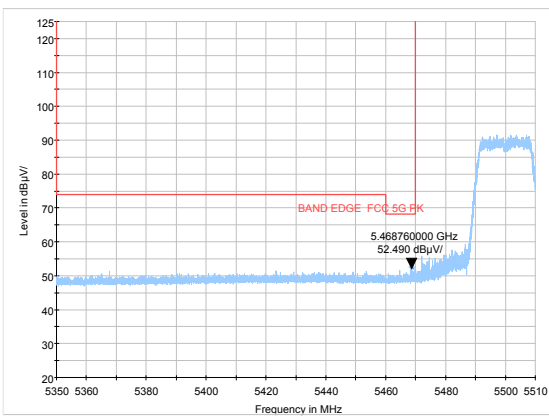
802.11a-Channel 100: Average



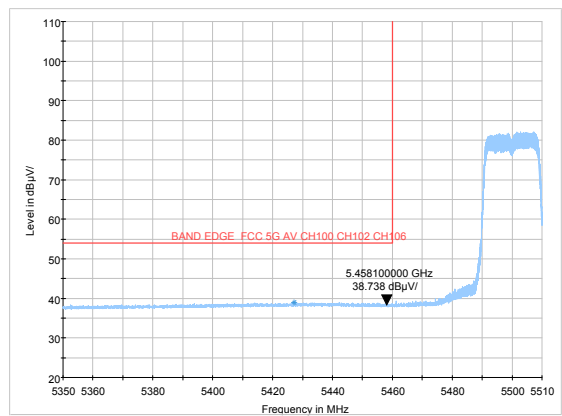
802.11n HT20-Channel 140: Peak



802.11n HT20-Channel 100: Peak

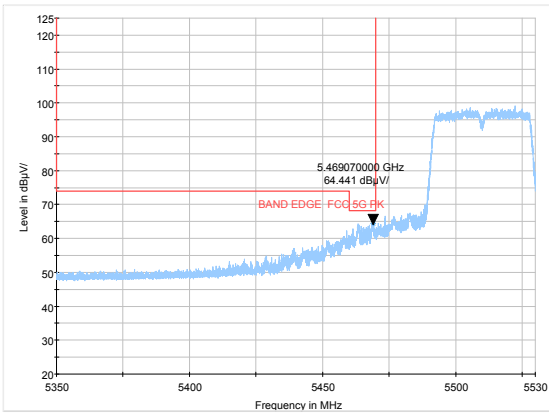


802.11n HT20-Channel 100: Average

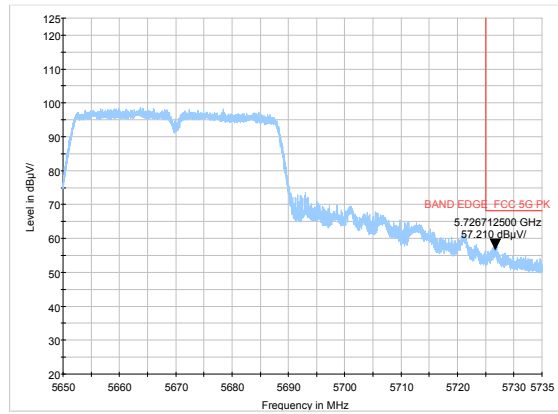




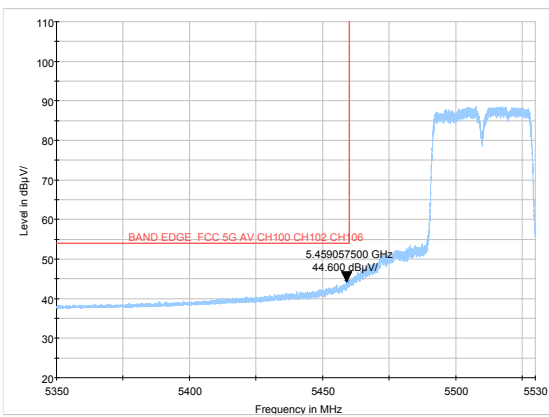
### 802.11n HT40-Channel 102: Peak



### 802.11n HT40-Channel 138: Peak



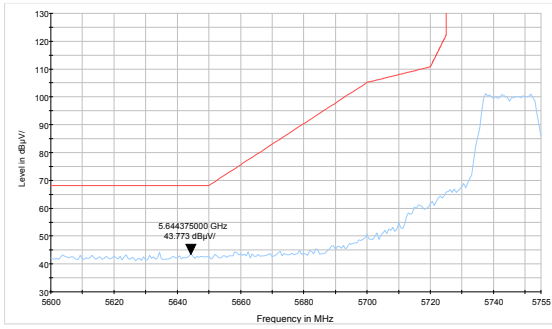
### 802.11n HT40-Channel 102: Average



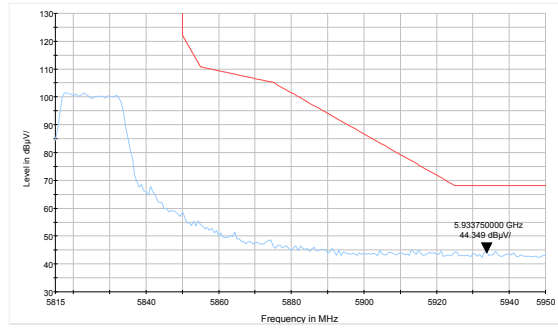


U-NII-3

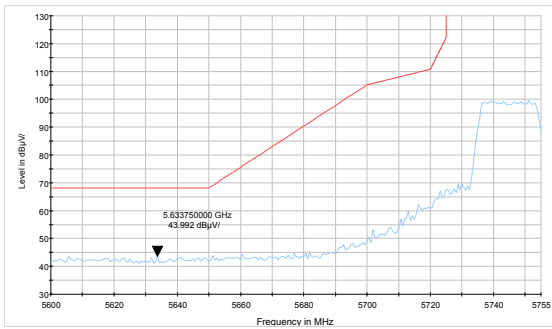
802.11a-Channel 149: Peak



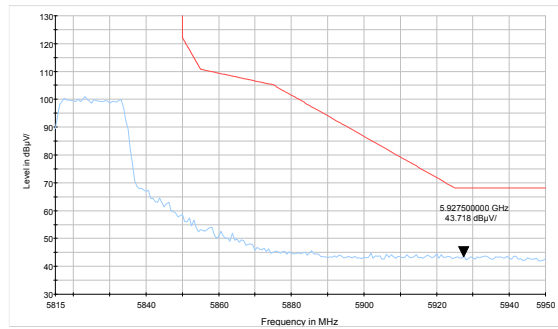
802.11a-Channel 165: Peak



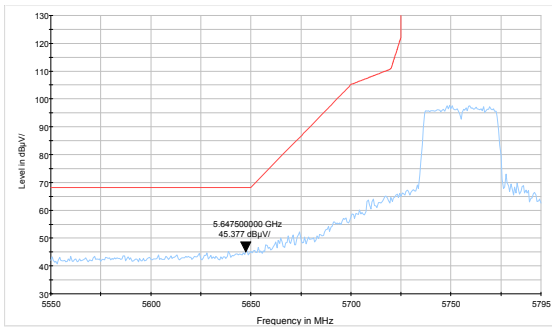
802.11n HT20-Channel 149: Peak



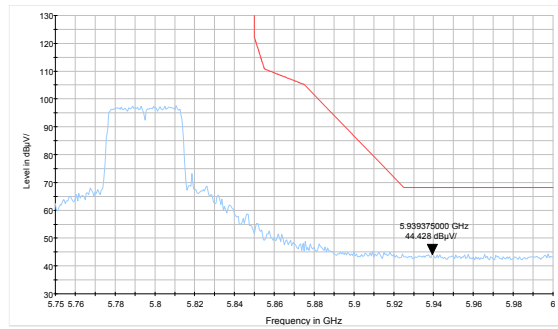
802.11n HT20-Channel 165: Peak



802.11n HT40-Channel 151: Peak



802.11n HT40-Channel 159: Peak

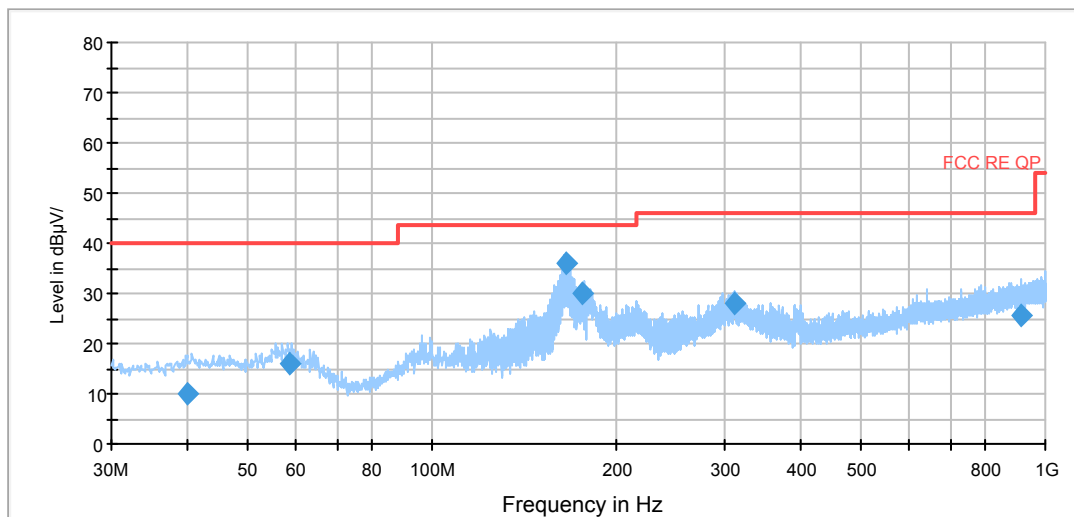


**Result of RE****Test result**

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and 9KHz-30MHz, the emissions more than 20 dB below the permissible value are not reported.

**Continuous TX mode:**

FCC RE 0.03-1GHz QP Class B



Radiates Emission from 30MHz to 1GHz

802.11a CH36

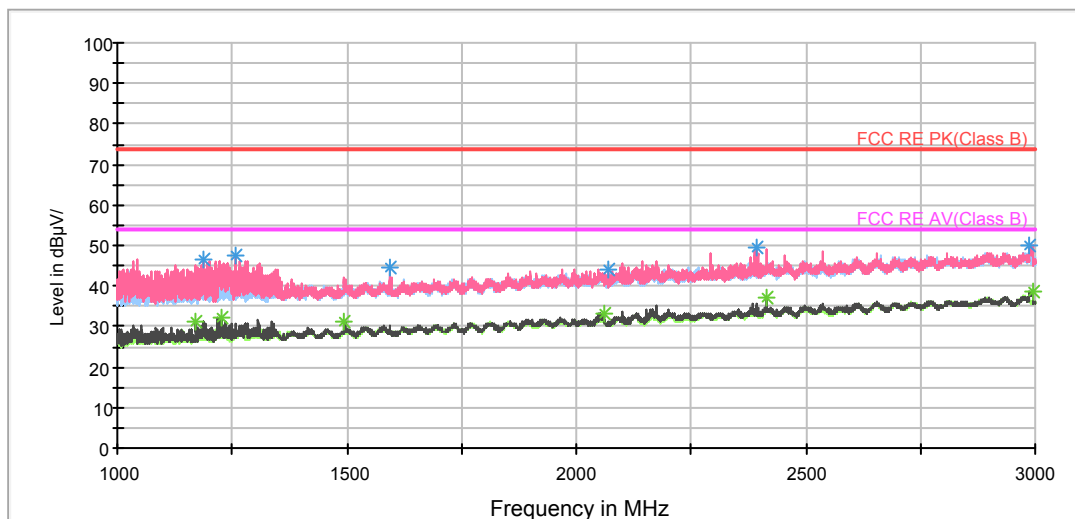
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3186.250000	40.3	102.0	V	254.0	43.2	-2.9	33.7	74
3564.375000	44.9	202.0	H	55.0	47.0	-2.1	29.1	74
4780.000000	42.7	102.0	V	254.0	41.7	1.0	31.3	74
6385.625000	46.2	102.0	V	276.0	41.2	5.0	27.8	74
6975.625000	47.0	202.0	V	214.0	40.7	6.3	27.0	74
7648.125000	46.5	202.0	V	0.0	39.6	6.9	27.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3453.125000	29.2	102.0	H	0.0	31.4	-2.2	24.8	54
3563.750000	33.2	202.0	H	55.0	35.3	-2.1	20.8	54
4865.625000	30.2	202.0	H	55.0	28.5	1.7	23.8	54
6148.750000	33.5	202.0	H	0.0	28.0	5.5	20.5	54
6906.875000	35.0	102.0	H	131.0	28.7	6.3	19.0	54
7525.625000	34.2	102.0	V	0.0	27.1	7.1	19.8	54

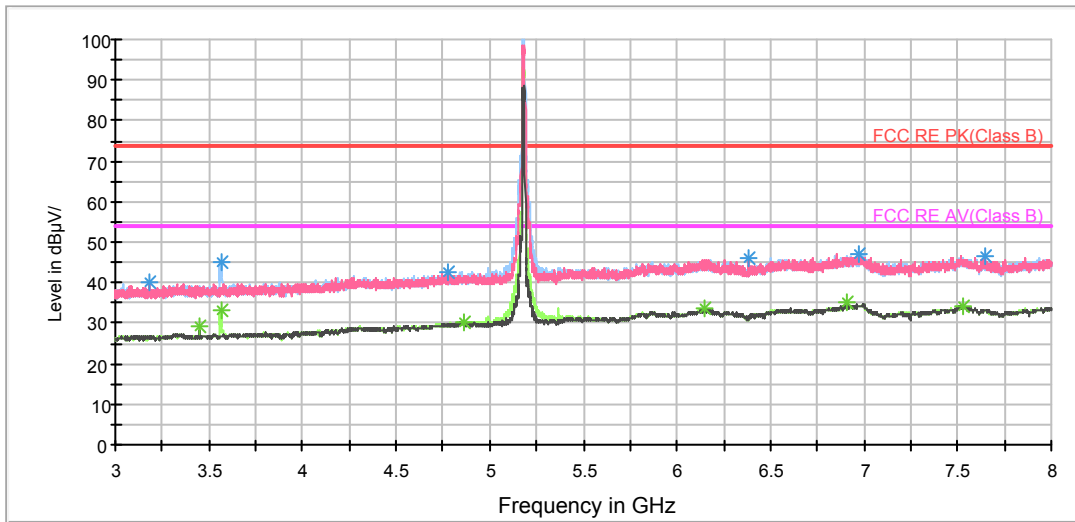
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



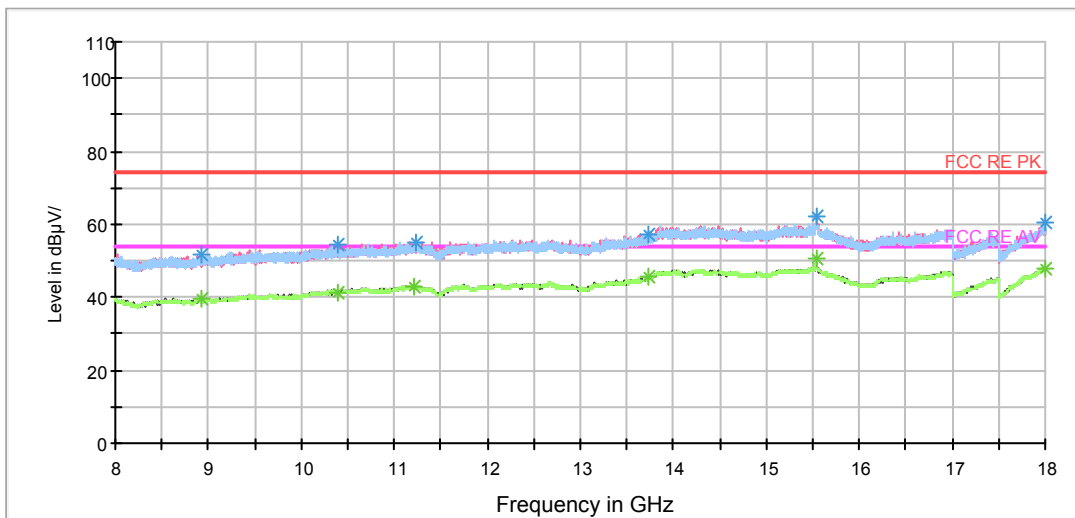
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

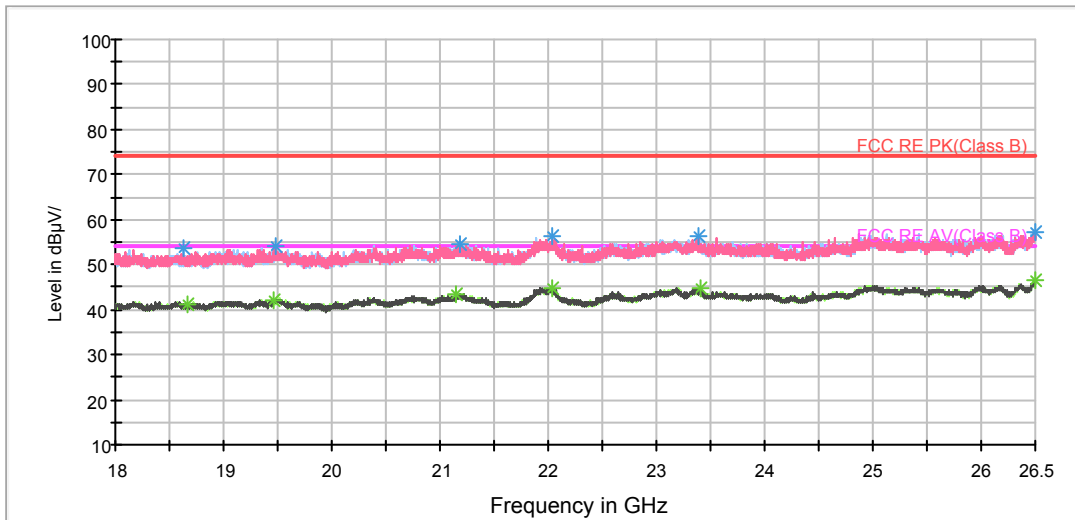
FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

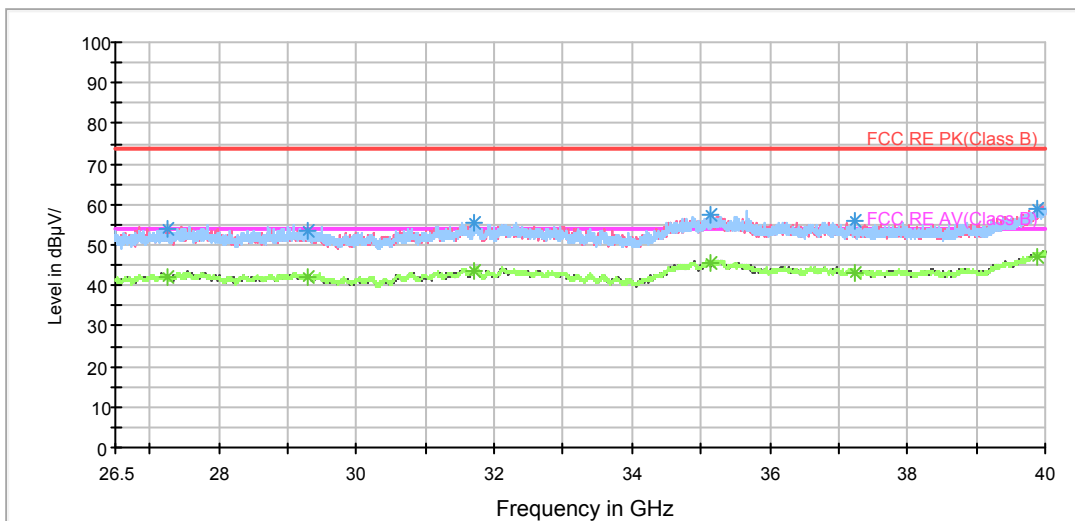


BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



802.11a CH40

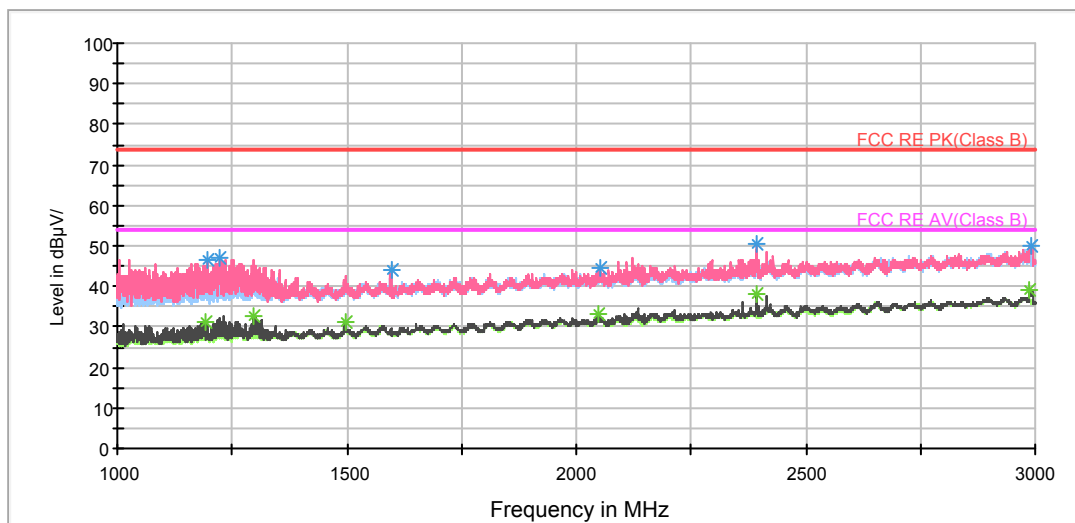
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3115.625000	39.8	102.0	V	0.0	42.4	-2.6	34.2	74
3598.125000	43.1	202.0	H	64.0	45.3	-2.2	30.9	74
4753.125000	42.7	202.0	H	1.0	41.7	1.0	31.3	74
5863.750000	45.6	102.0	V	188.0	40.8	4.8	28.4	74
6711.250000	46.1	202.0	V	340.0	40.9	5.2	27.9	74
6972.500000	47.0	202.0	H	0.0	40.7	6.3	27.0	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3466.250000	30.1	202.0	H	106.0	32.2	-2.1	23.9	54
3593.750000	31.1	202.0	H	64.0	33.4	-2.3	22.9	54
4851.875000	30.3	202.0	H	84.0	28.7	1.6	23.7	54
6152.500000	33.5	102.0	V	125.0	27.9	5.6	20.5	54
6791.875000	33.6	102.0	H	0.0	27.9	5.7	20.4	54
6933.750000	35.1	102.0	H	247.0	28.9	6.2	18.9	54

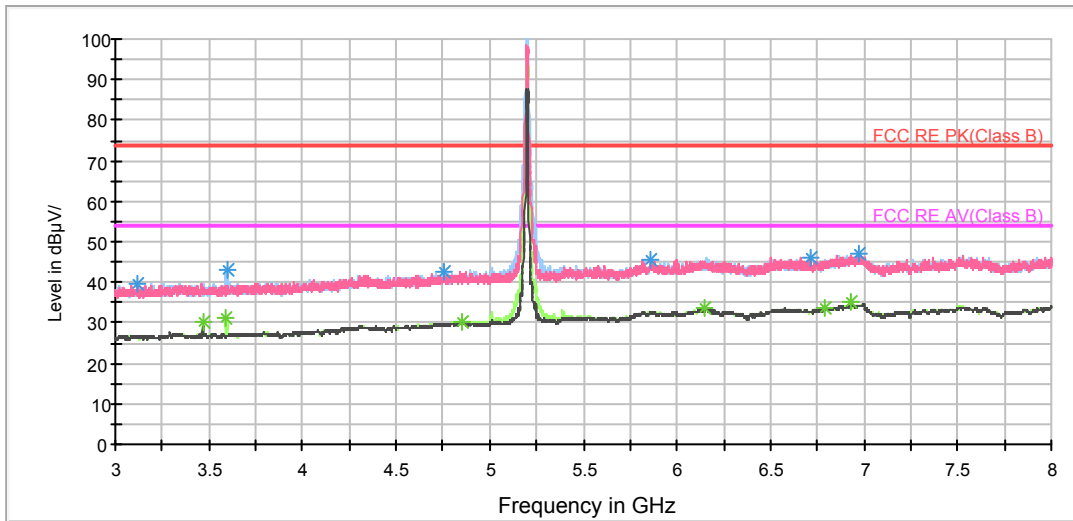
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



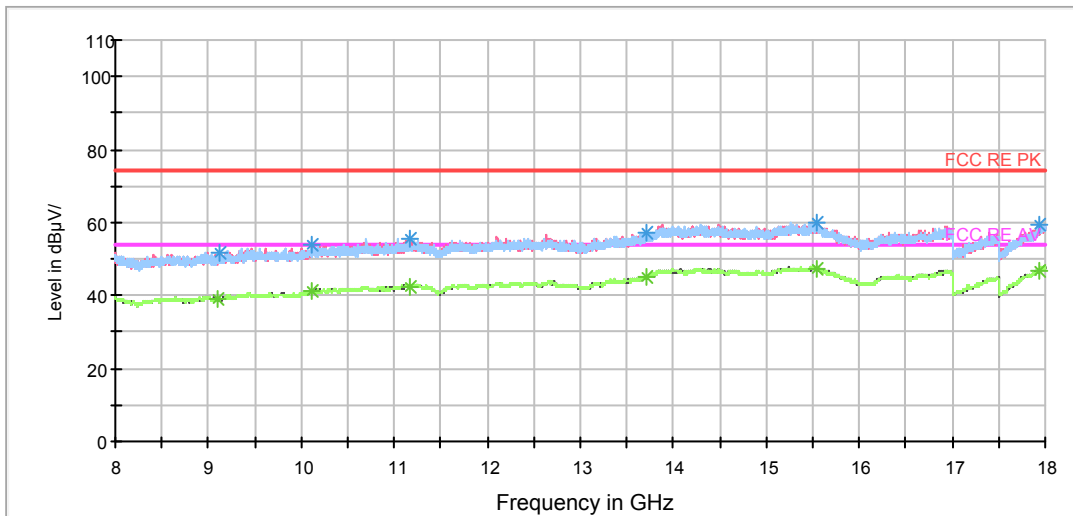
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



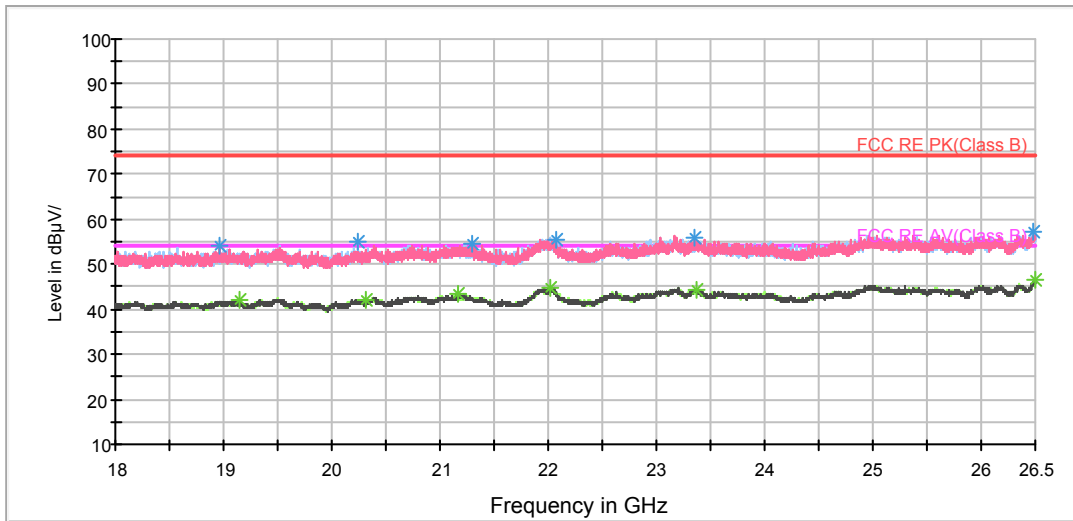
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

802.11a CH48

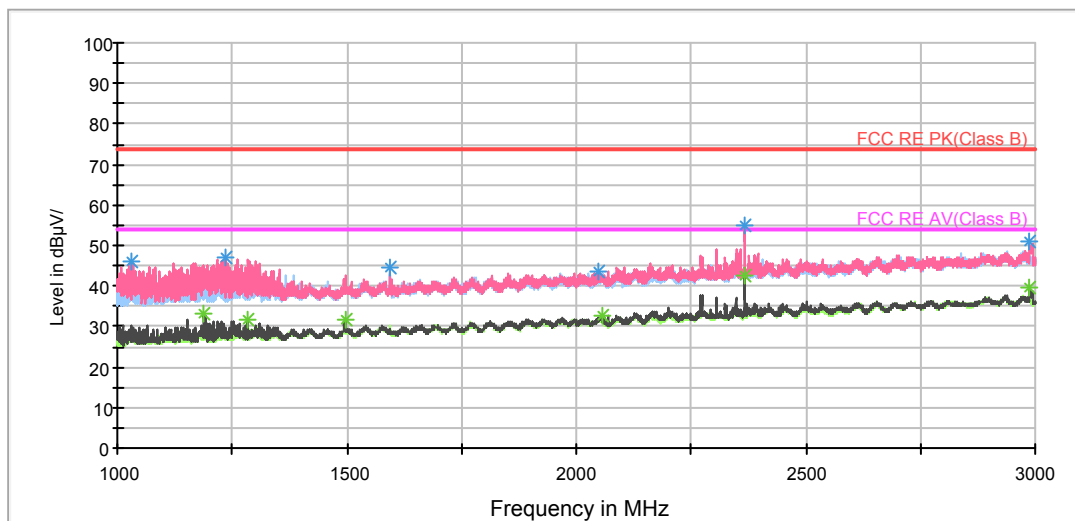
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3478.125000	39.7	202.0	V	296.0	41.7	-2.0	34.3	74
3660.000000	43.2	202.0	H	62.0	45.1	-1.9	30.8	74
4731.875000	42.4	202.0	V	0.0	41.6	0.8	31.6	74
6145.625000	45.9	202.0	V	0.0	40.5	5.4	28.1	74
6752.500000	46.4	202.0	H	298.0	40.9	5.5	27.6	74
6883.125000	46.8	102.0	V	0.0	40.8	6.0	27.2	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3493.125000	30.1	202.0	V	191.0	32.2	-2.1	23.9	54
3656.875000	31.5	202.0	H	62.0	33.4	-1.9	22.5	54
4845.000000	30.3	202.0	H	84.0	28.7	1.6	23.7	54
6158.125000	33.5	102.0	V	0.0	27.9	5.6	20.5	54
6999.375000	34.7	202.0	H	0.0	28.2	6.5	19.3	54
7531.250000	34.0	202.0	H	62.0	26.9	7.1	20.0	54

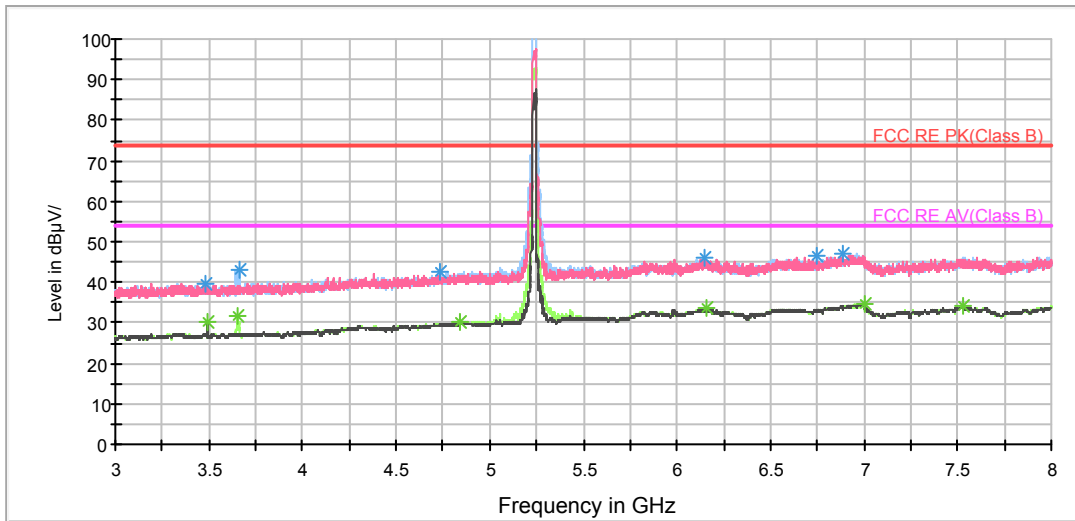
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



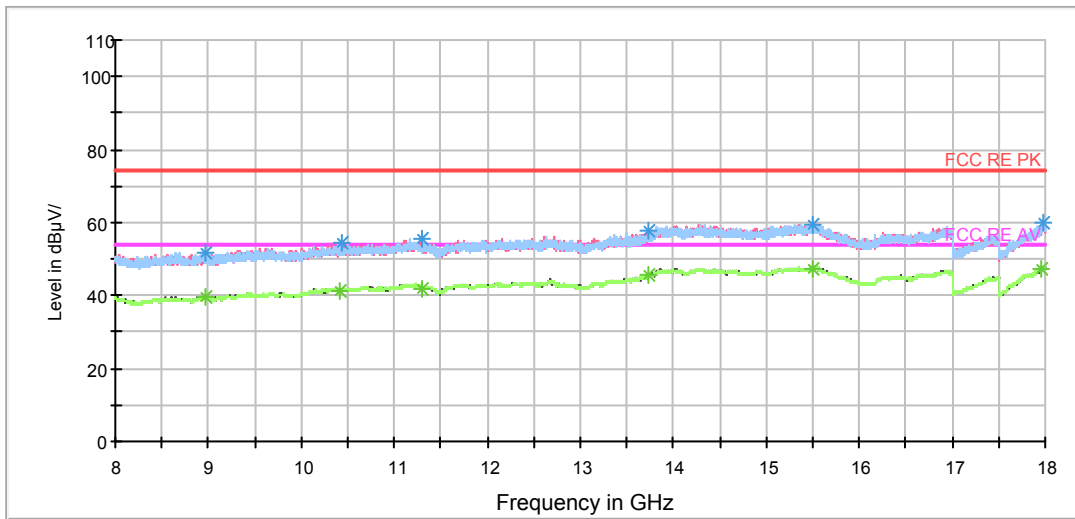
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



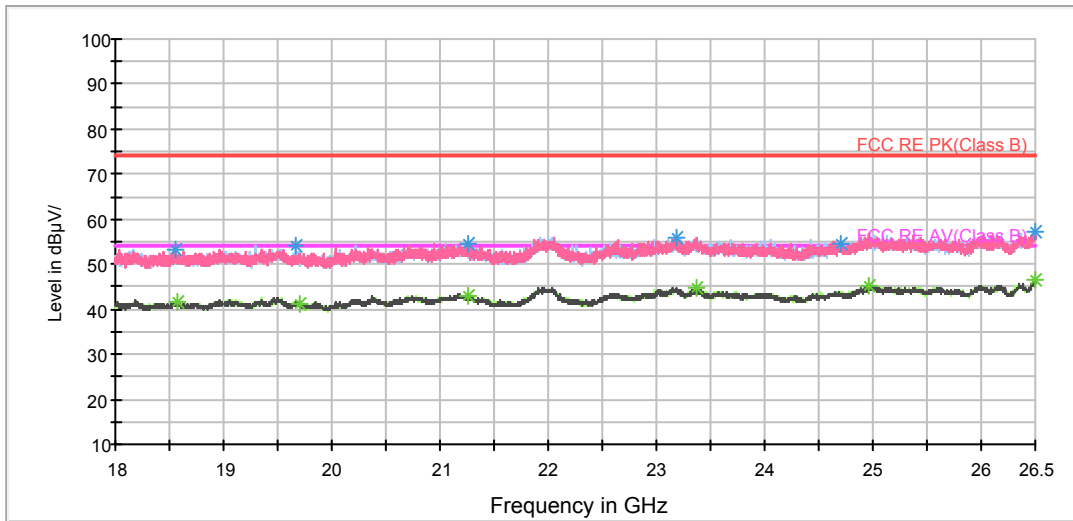
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



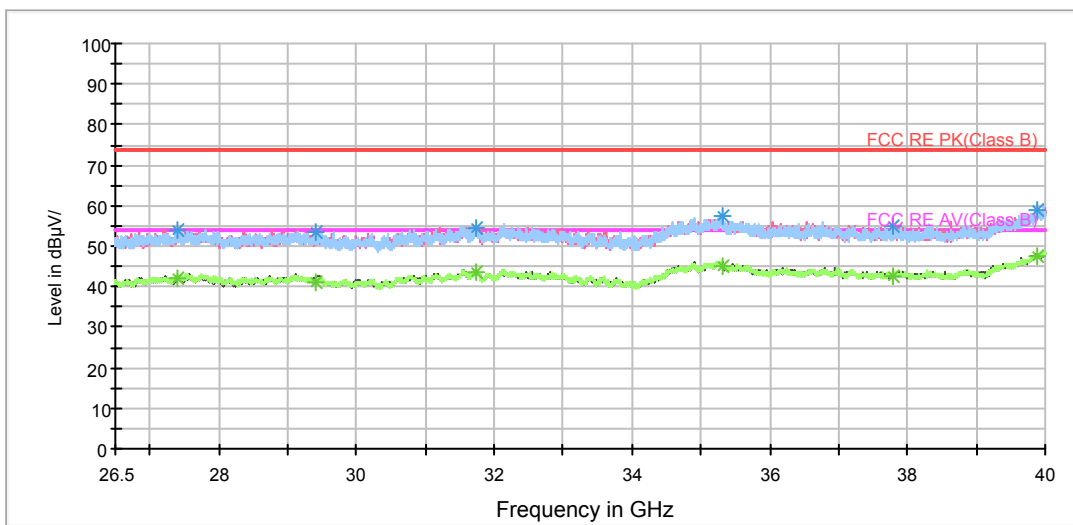
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



802.11a CH52

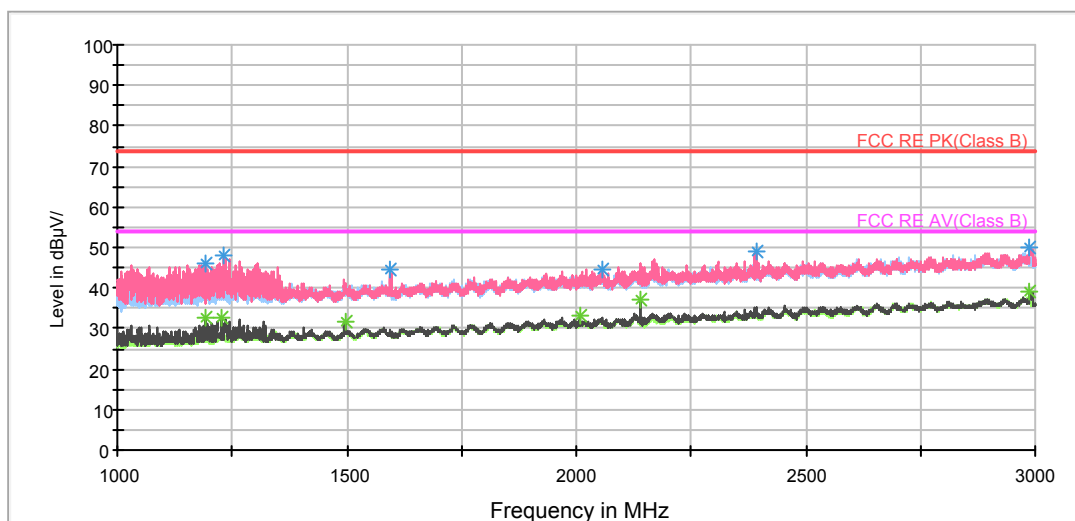
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3403.750000	40.1	202.0	H	21.0	42.6	-2.5	33.9	74
3683.750000	41.7	202.0	H	63.0	43.4	-1.7	32.3	74
4733.750000	42.9	102.0	V	0.0	42.1	0.8	31.1	74
5986.875000	46.1	202.0	V	283.0	41.3	4.8	27.9	74
6537.500000	46.3	202.0	V	303.0	41.0	5.3	27.7	74
6943.750000	47.4	102.0	H	0.0	41.3	6.1	26.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3506.250000	30.5	202.0	H	104.0	32.6	-2.1	23.5	54
3683.750000	30.0	202.0	H	63.0	31.7	-1.7	24.0	54
4859.375000	30.2	202.0	H	0.0	28.5	1.7	23.8	54
5448.125000	33.0	202.0	H	0.0	30.2	2.8	21.0	54
6665.625000	33.5	202.0	H	0.0	28.0	5.5	20.5	54
6999.375000	34.7	102.0	H	233.0	28.2	6.5	19.3	54

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

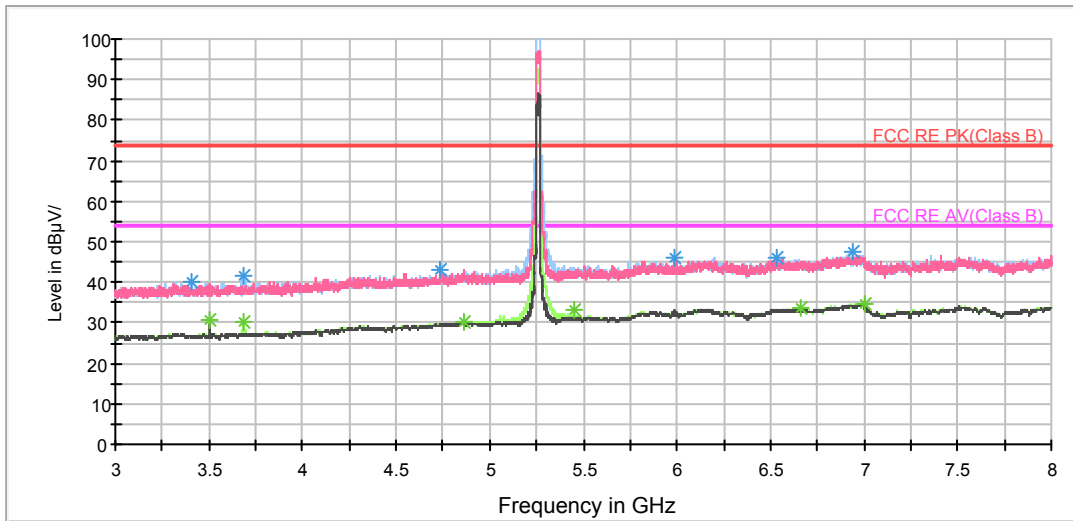
RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

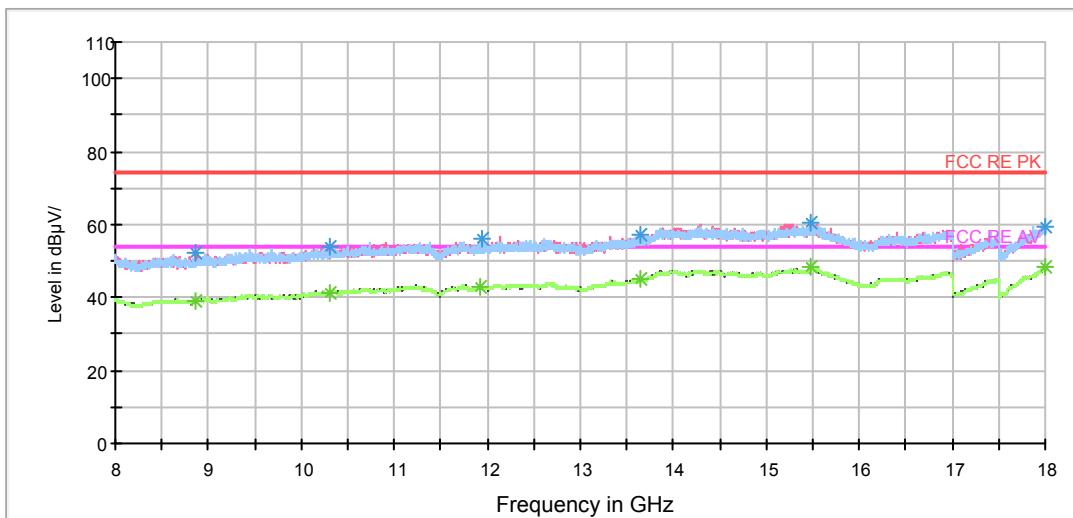


RE 3-18GHz PK+AV



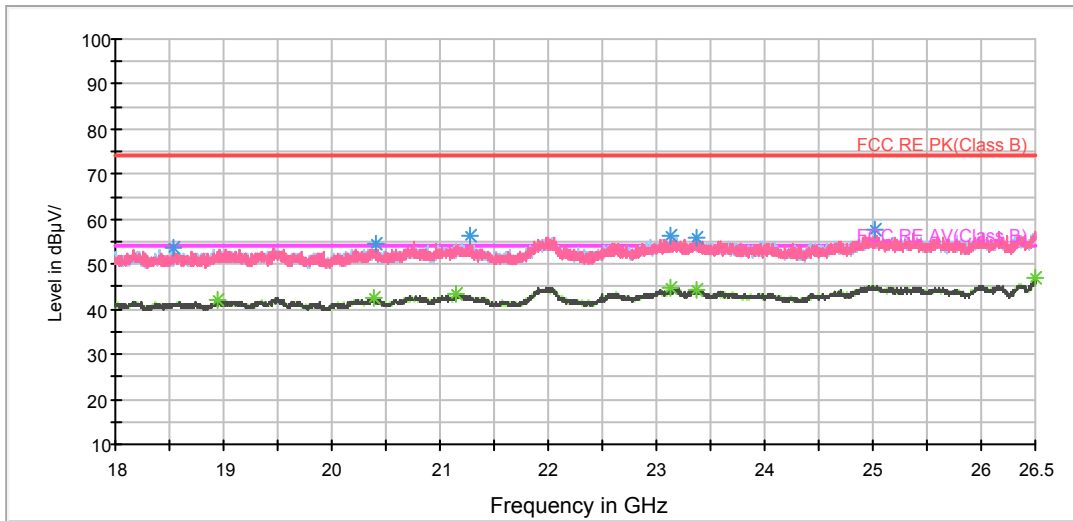
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



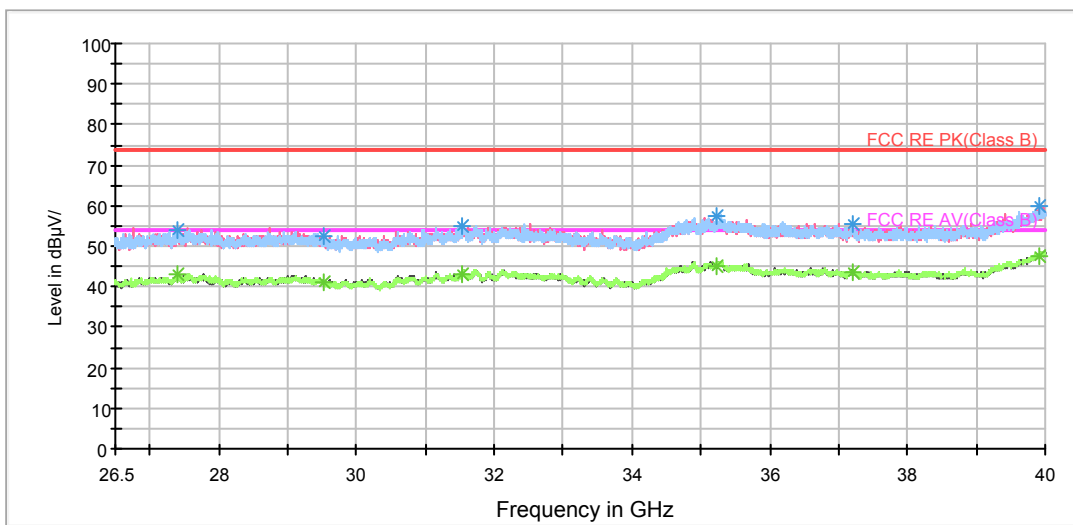
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

**802.11a CH60**

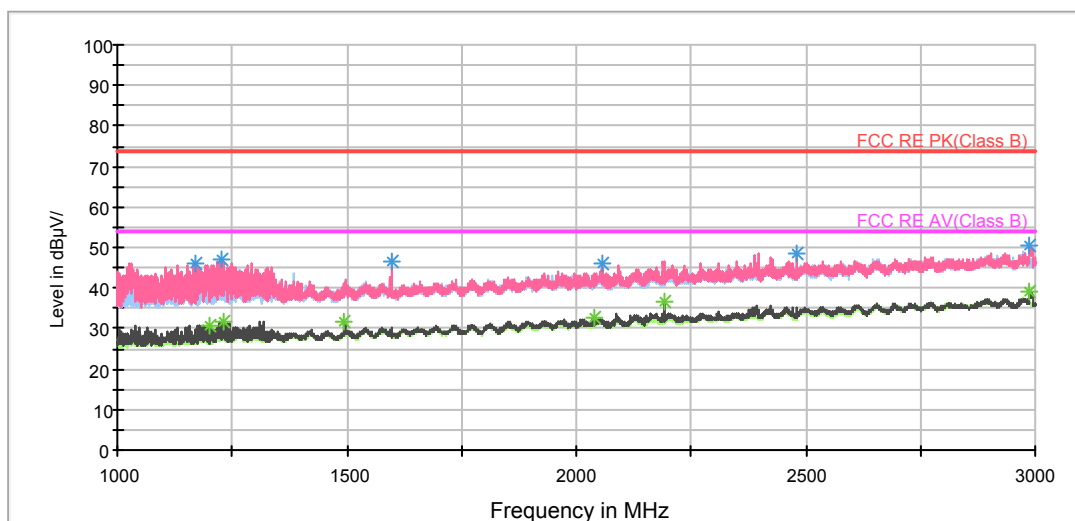
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3235.625000	40.2	202.0	H	43.0	42.8	-2.6	33.8	74
3742.500000	40.7	202.0	H	43.0	42.4	-1.7	33.3	74
4742.500000	42.9	202.0	H	127.0	42.1	0.8	31.1	74
6082.500000	46.2	202.0	V	214.0	41.0	5.2	27.8	74
6473.750000	46.5	202.0	V	0.0	41.4	5.1	27.5	74
6998.125000	47.4	202.0	V	255.0	40.9	6.5	26.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3532.500000	29.1	202.0	H	64.0	31.2	-2.1	24.9	54
3533.125000	30.8	202.0	H	105.0	32.9	-2.1	23.2	54
4711.250000	30.6	202.0	H	64.0	29.8	0.8	23.4	54
5986.250000	33.3	202.0	V	318.0	28.5	4.8	20.7	54
6550.625000	33.4	202.0	V	0.0	27.8	5.6	20.6	54
6998.750000	34.8	102.0	V	190.0	28.3	6.5	19.2	54

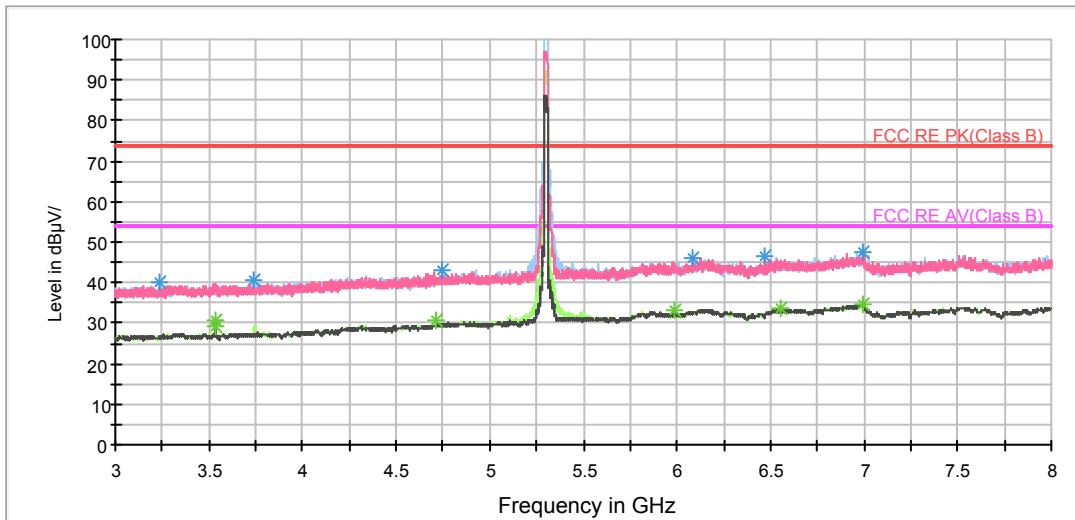
**Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)**

RE 1G-3GHz PK+AV



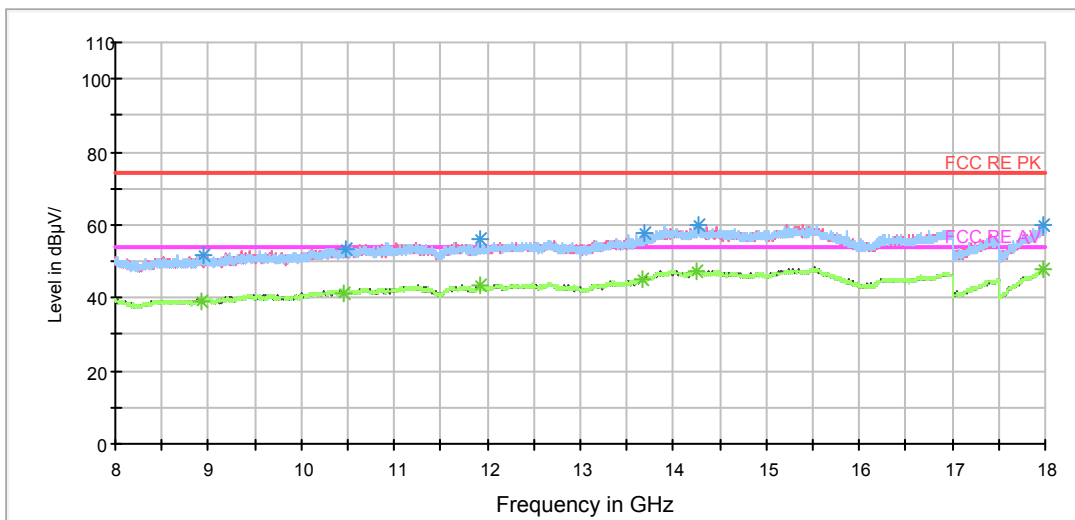
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



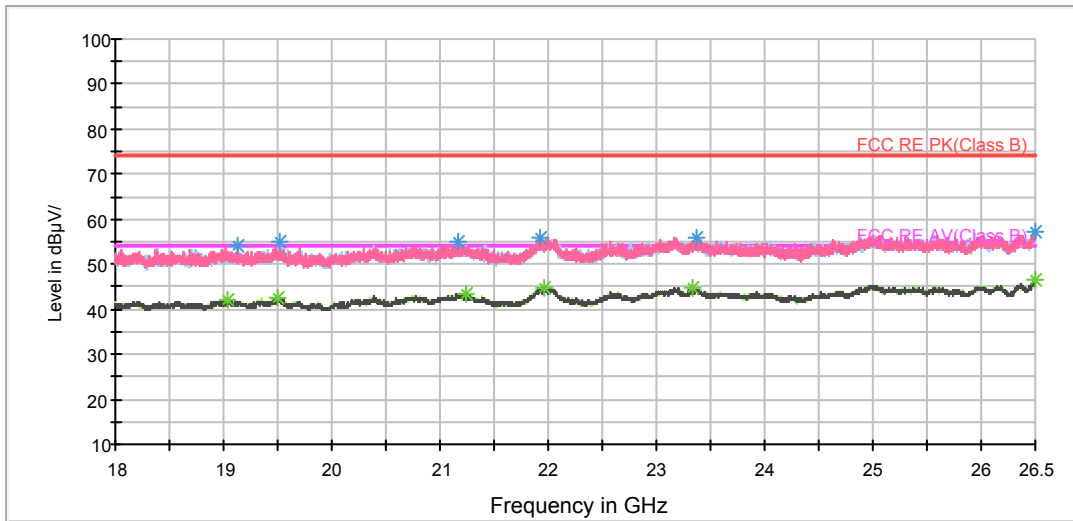
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



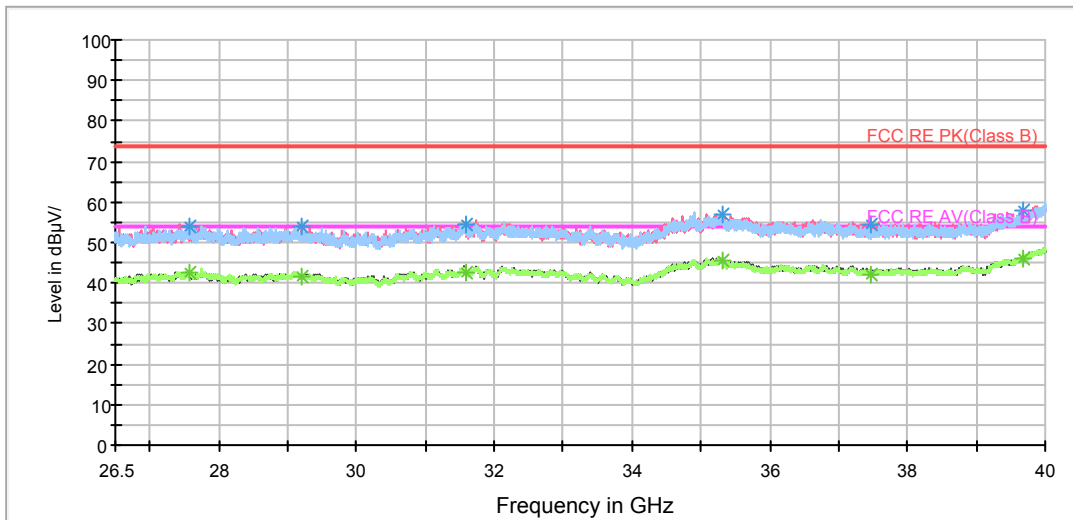
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



802.11a CH64

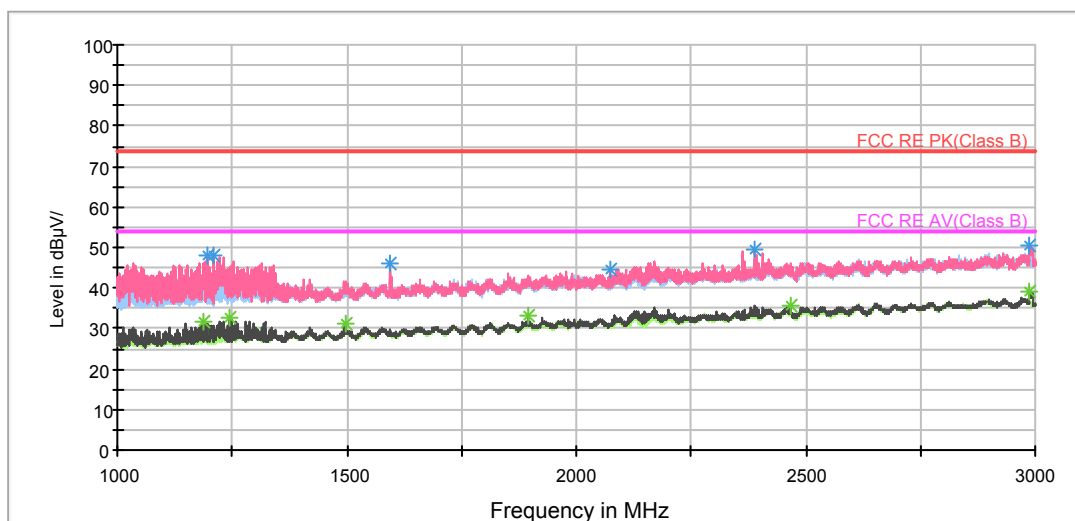
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3192.500000	40.3	202.0	V	0.0	43.2	-2.9	33.7	74
3773.750000	41.6	202.0	H	65.0	43.4	-1.8	32.4	74
4847.500000	42.6	202.0	H	85.0	41.0	1.6	31.4	74
5864.375000	45.6	202.0	V	317.0	40.8	4.8	28.4	74
6741.250000	46.1	202.0	V	338.0	40.6	5.5	27.9	74
6815.625000	47.4	202.0	H	0.0	41.6	5.8	26.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3347.500000	27.4	202.0	H	0.0	29.7	-2.3	26.6	54
3546.250000	29.7	202.0	H	106.0	31.9	-2.2	24.3	54
4728.750000	30.3	202.0	H	85.0	29.5	0.8	23.7	54
6146.250000	33.5	202.0	H	0.0	28.0	5.5	20.5	54
6998.125000	34.8	102.0	V	148.0	28.3	6.5	19.2	54
7516.250000	34.0	202.0	H	0.0	26.9	7.1	20.0	54

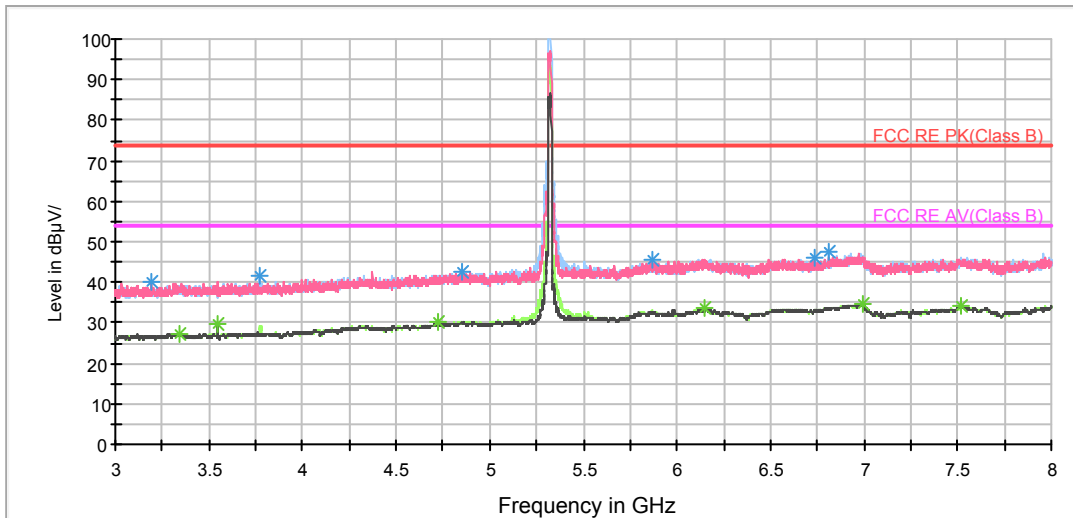
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



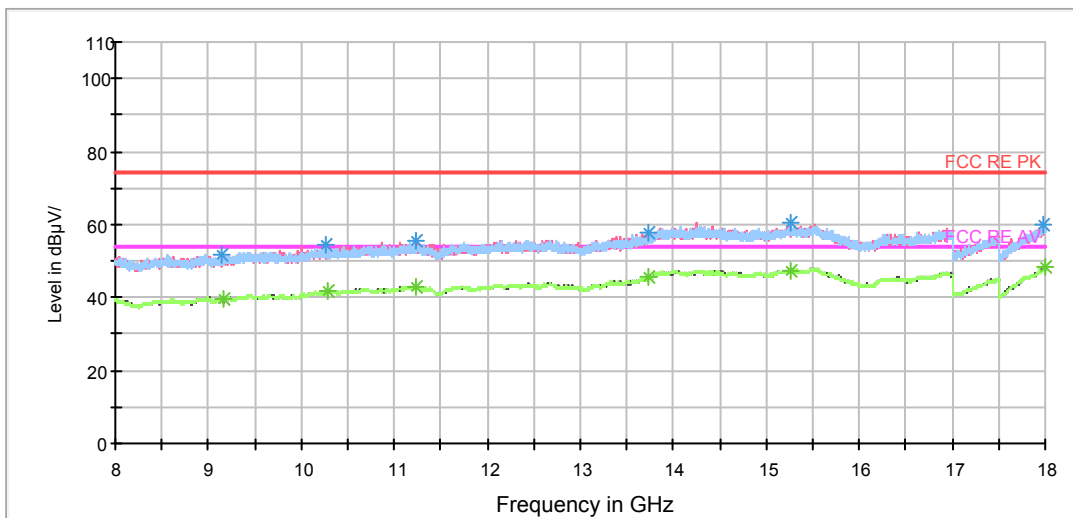
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



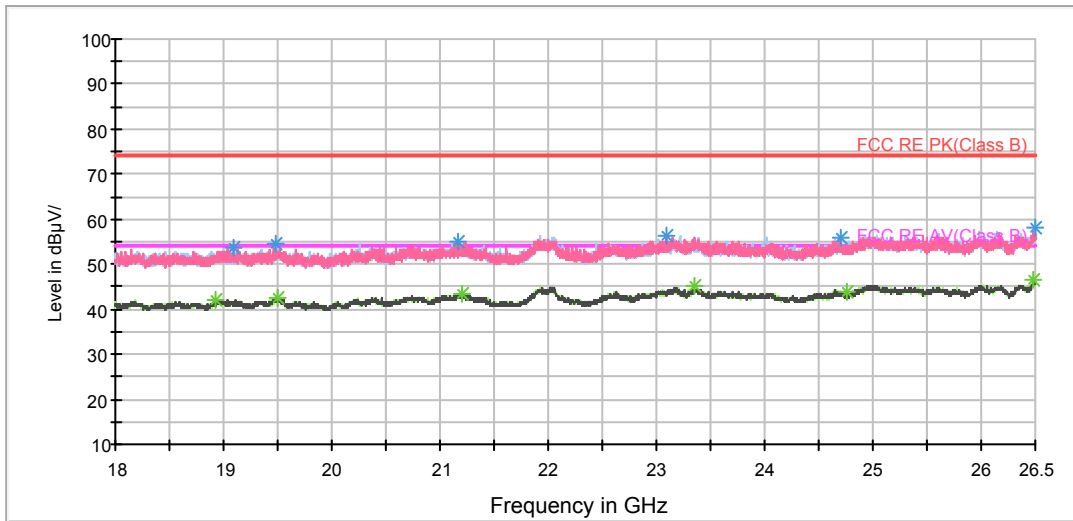
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



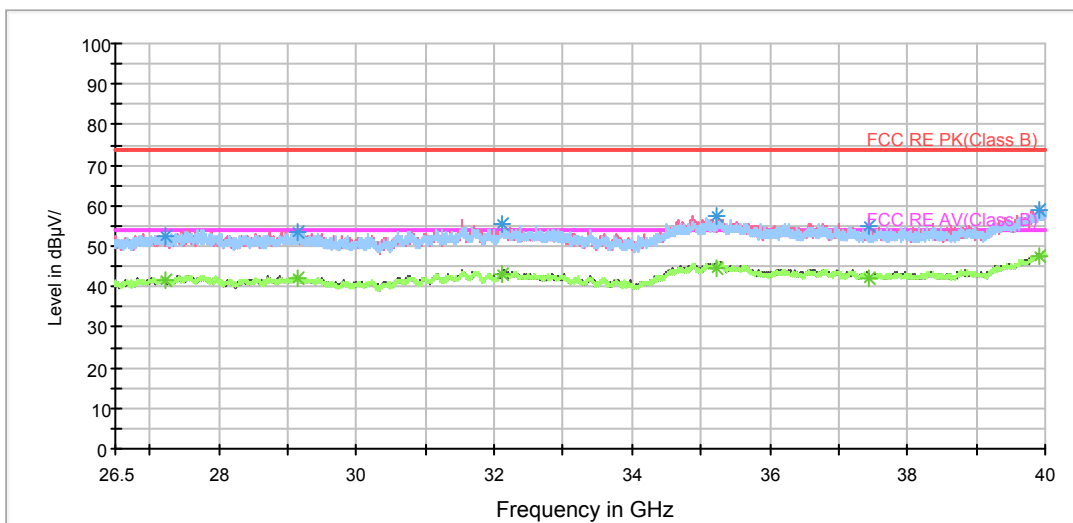
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



802.11a CH100

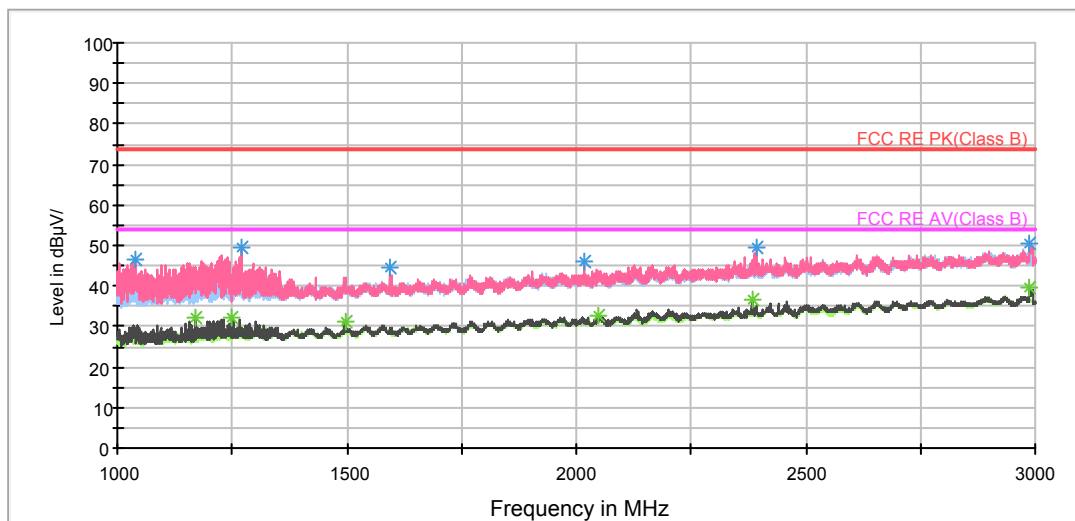
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3290.000000	40.2	102.0	V	0.0	42.4	-2.2	33.8	74
4153.125000	40.6	202.0	V	296.0	40.7	-0.1	33.4	74
4831.875000	42.5	102.0	V	3.0	41.0	1.5	31.5	74
6128.125000	46.1	202.0	H	176.0	40.7	5.4	27.9	74
6585.000000	46.1	102.0	V	212.0	40.5	5.6	27.9	74
6957.500000	46.8	102.0	H	0.0	40.6	6.2	27.2	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3328.750000	27.3	102.0	V	233.0	29.5	-2.2	26.7	54
3666.250000	29.8	102.0	V	44.0	31.7	-1.9	24.2	54
4888.750000	30.7	202.0	H	48.0	28.8	1.9	23.3	54
6151.875000	33.5	202.0	V	232.0	28.0	5.5	20.5	54
6765.625000	33.6	102.0	H	0.0	28.1	5.5	20.4	54
6999.375000	34.7	102.0	V	148.0	28.2	6.5	19.3	54

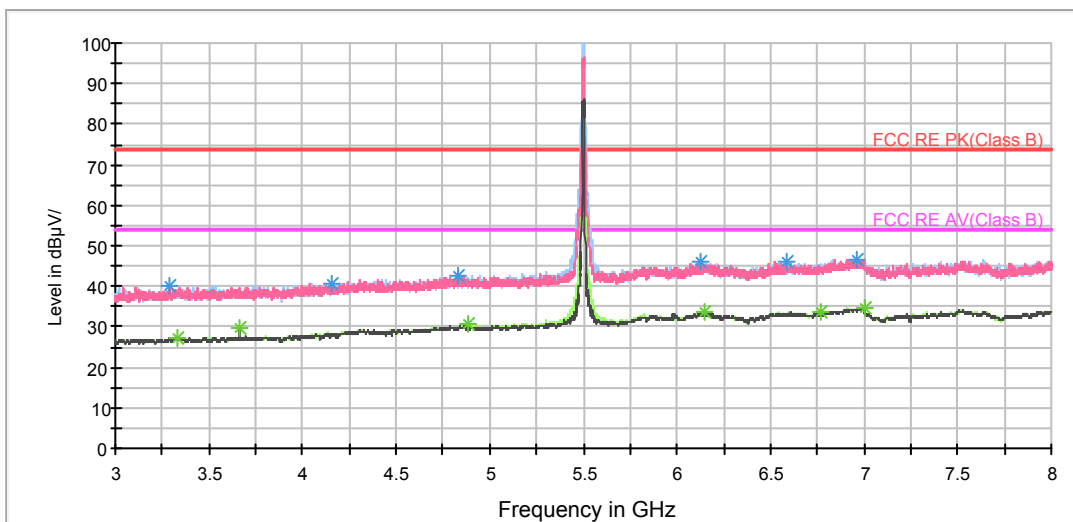
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



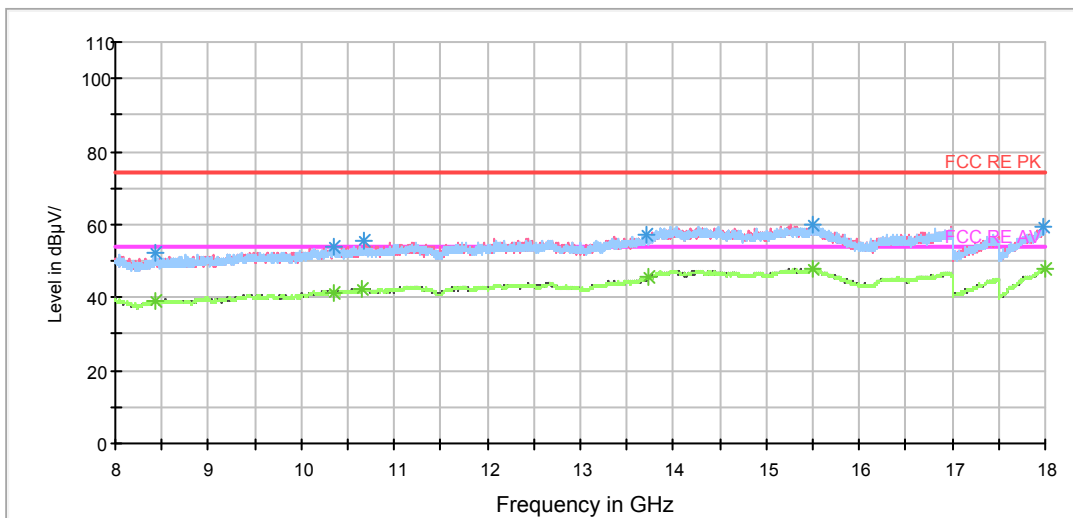
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



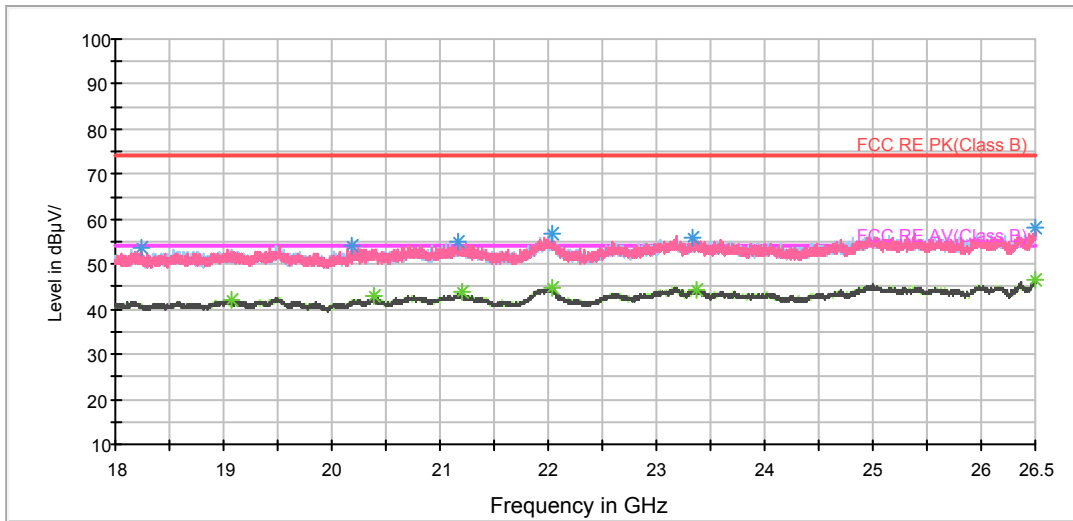
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



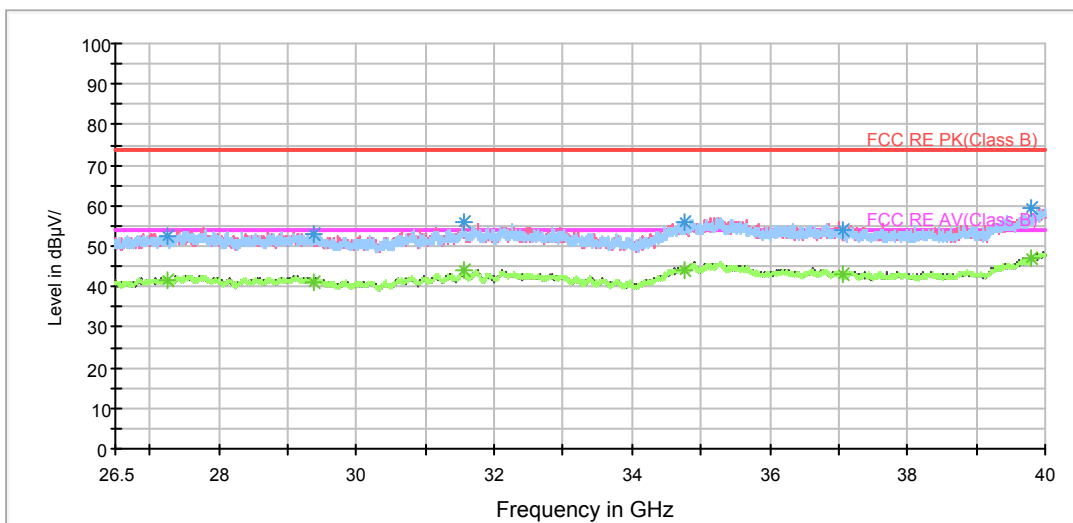
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

802.11a CH116

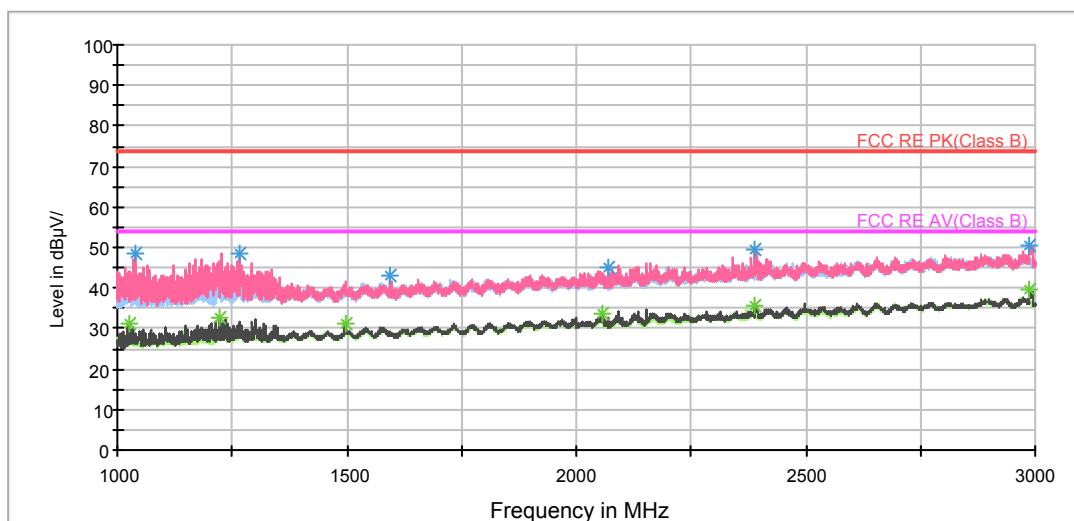
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3186.250000	40.5	202.0	V	106.0	43.4	-2.9	33.5	74
4124.375000	41.2	202.0	H	233.0	41.6	-0.4	32.8	74
4889.375000	42.6	102.0	H	0.0	40.7	1.9	31.4	74
6119.375000	45.8	102.0	H	336.0	40.4	5.4	28.2	74
6942.500000	47.0	202.0	V	0.0	40.9	6.1	27.0	74
7543.750000	46.5	202.0	H	0.0	39.5	7.0	27.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3322.500000	27.4	202.0	H	170.0	29.5	-2.1	26.6	54
3720.000000	29.7	202.0	H	127.0	31.3	-1.6	24.3	54
4861.875000	30.1	202.0	H	65.0	28.4	1.7	23.9	54
6791.875000	33.5	102.0	V	0.0	27.8	5.7	20.5	54
6999.375000	34.8	202.0	H	2.0	28.3	6.5	19.2	54
7538.125000	34.0	202.0	H	0.0	27.0	7.0	20.0	54

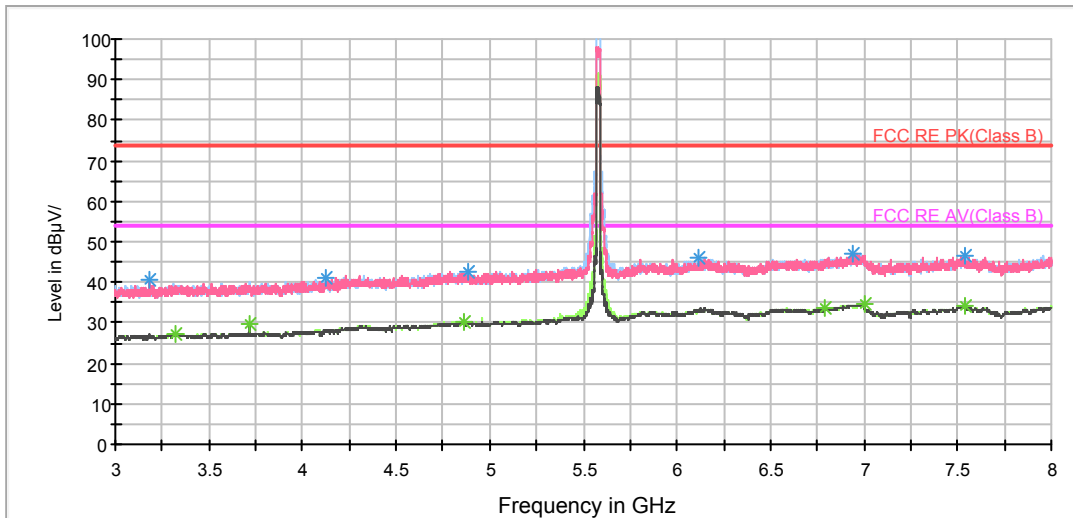
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



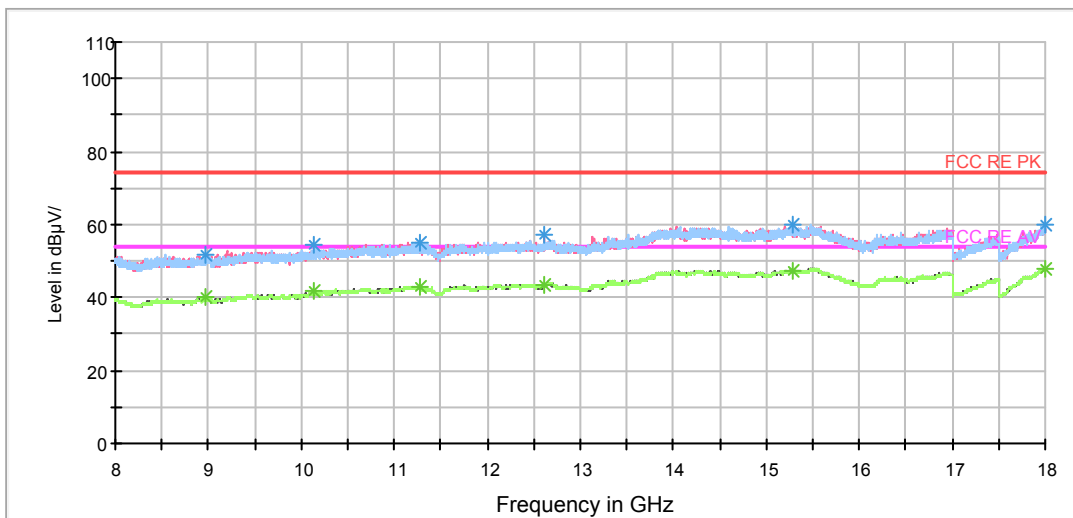
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



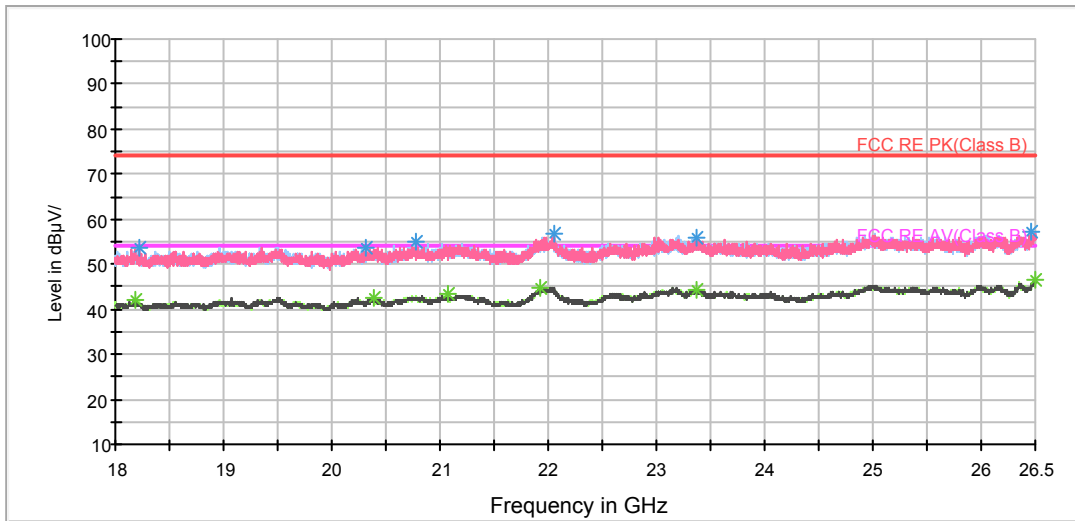
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



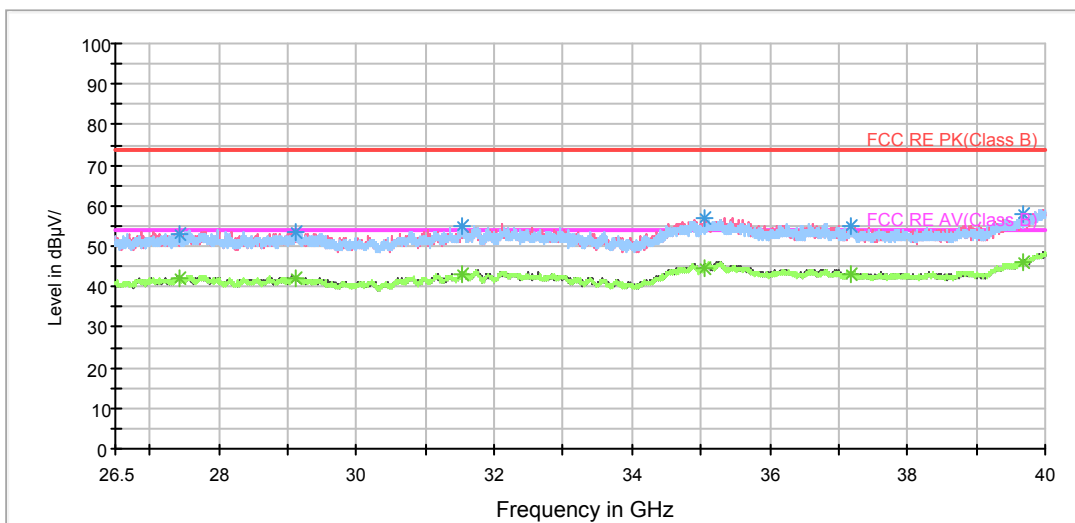
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



802.11a CH140

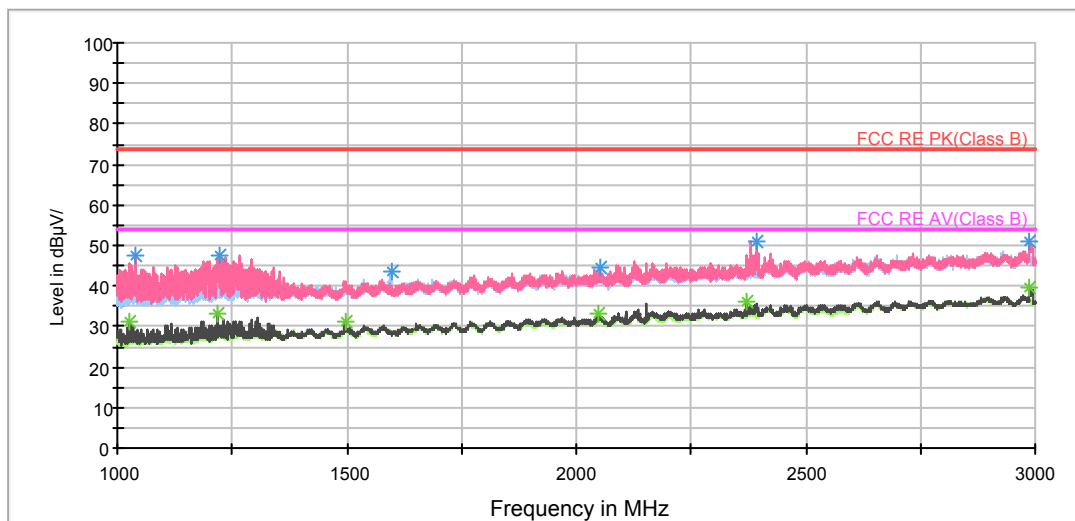
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3332.500000	39.8	202.0	V	254.0	42.0	-2.2	34.2	74
3800.000000	40.7	202.0	H	126.0	42.4	-1.7	33.3	74
4702.500000	42.4	102.0	V	3.0	41.6	0.8	31.6	74
6080.000000	46.2	102.0	V	107.0	40.9	5.3	27.8	74
6781.875000	46.3	102.0	H	192.0	40.7	5.6	27.7	74
6991.250000	47.4	202.0	H	0.0	40.9	6.5	26.6	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3323.125000	27.2	202.0	H	0.0	29.3	-2.1	26.8	54
3799.375000	32.1	202.0	H	168.0	33.8	-1.7	21.9	54
4863.125000	30.2	202.0	H	275.0	28.5	1.7	23.8	54
5974.375000	33.2	202.0	V	317.0	28.5	4.7	20.8	54
6793.125000	33.5	202.0	V	149.0	27.8	5.7	20.5	54
6996.250000	34.7	102.0	V	148.0	28.2	6.5	19.3	54

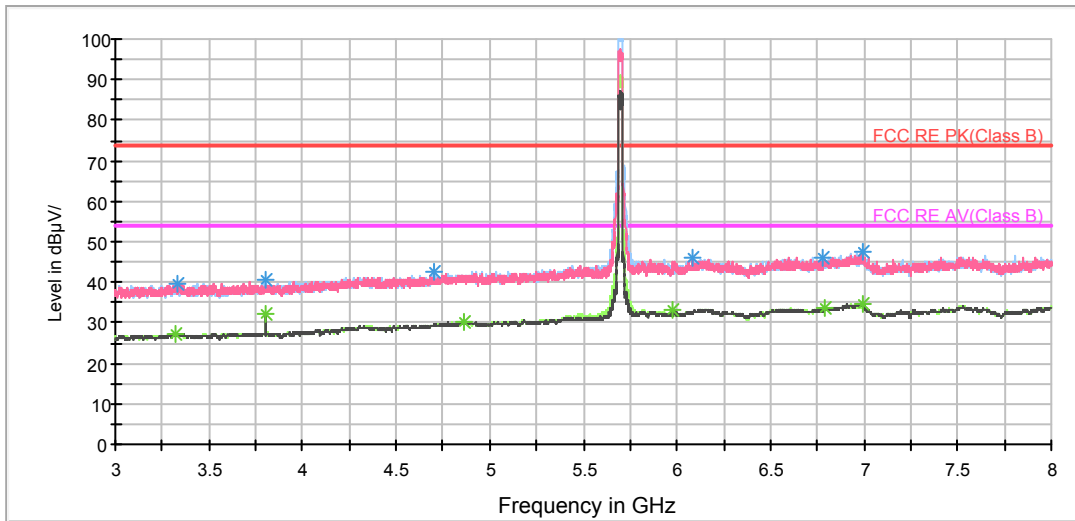
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



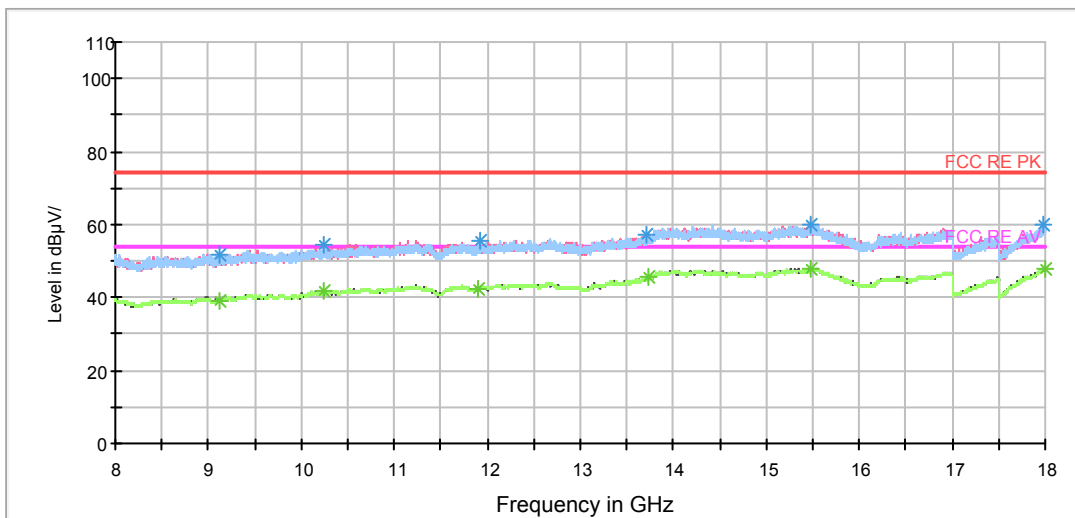
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

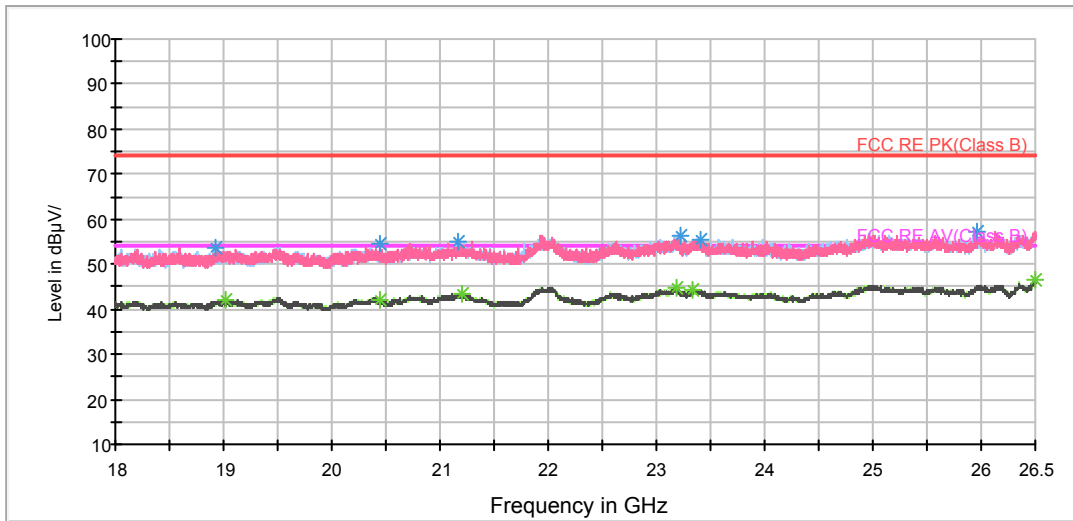
FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

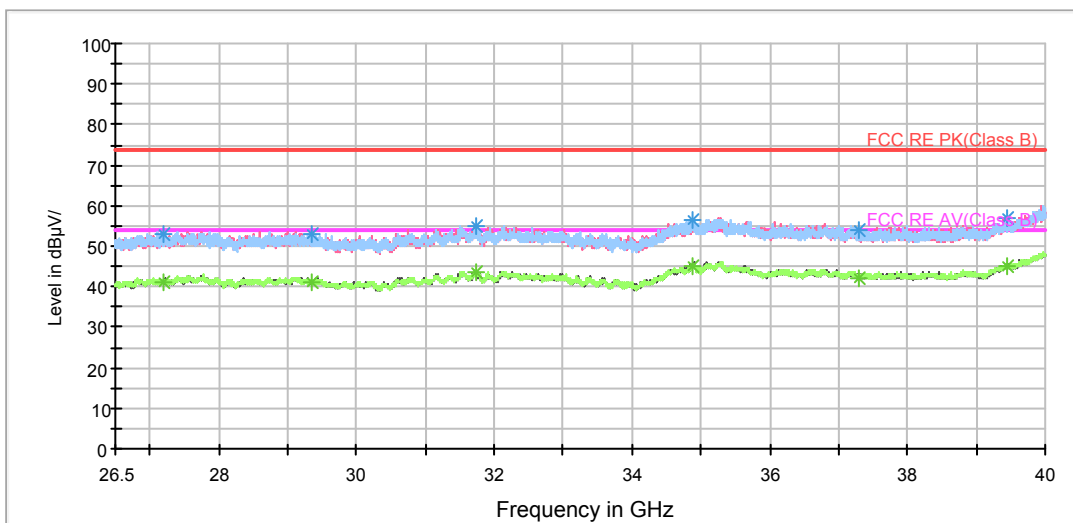


BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



802.11a CH149

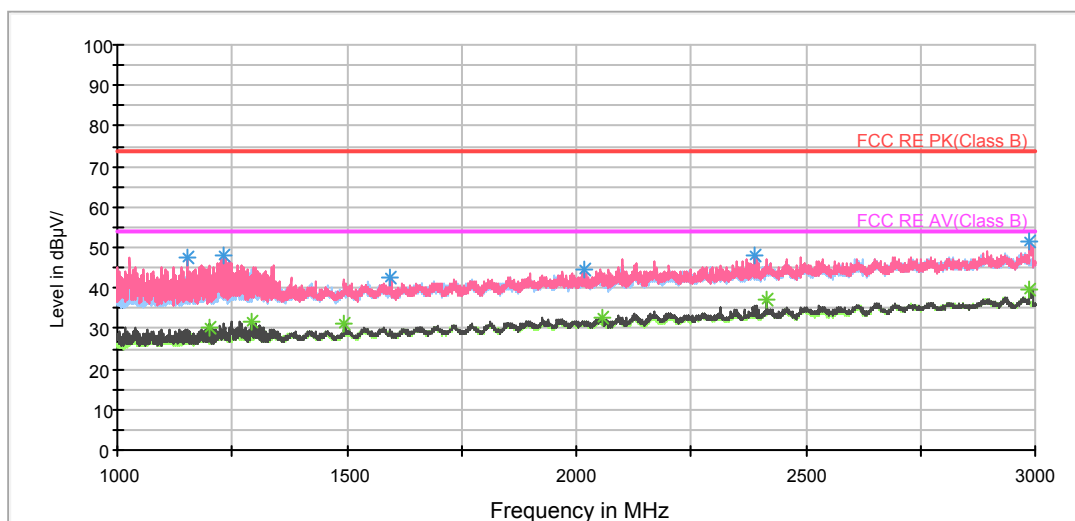
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3322.500000	39.9	202.0	V	274.0	42.0	-2.1	34.1	74
3830.000000	41.6	102.0	V	210.0	43.3	-1.7	32.4	74
4782.500000	42.9	102.0	V	169.0	41.8	1.1	31.1	74
6145.000000	45.5	202.0	H	0.0	40.1	5.4	28.5	74
6975.000000	47.1	102.0	V	2.0	40.8	6.3	26.9	74
7540.000000	46.5	102.0	V	22.0	39.5	7.0	27.5	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3327.500000	27.3	202.0	V	295.0	29.5	-2.2	26.7	54
3830.000000	34.9	102.0	V	210.0	36.6	-1.7	19.1	54
4782.500000	30.1	202.0	V	316.0	29.0	1.1	23.9	54
5986.875000	33.3	202.0	V	316.0	28.5	4.8	20.7	54
6996.875000	34.7	102.0	V	0.0	28.2	6.5	19.3	54
7540.000000	33.6	102.0	V	22.0	26.6	7.0	20.4	54

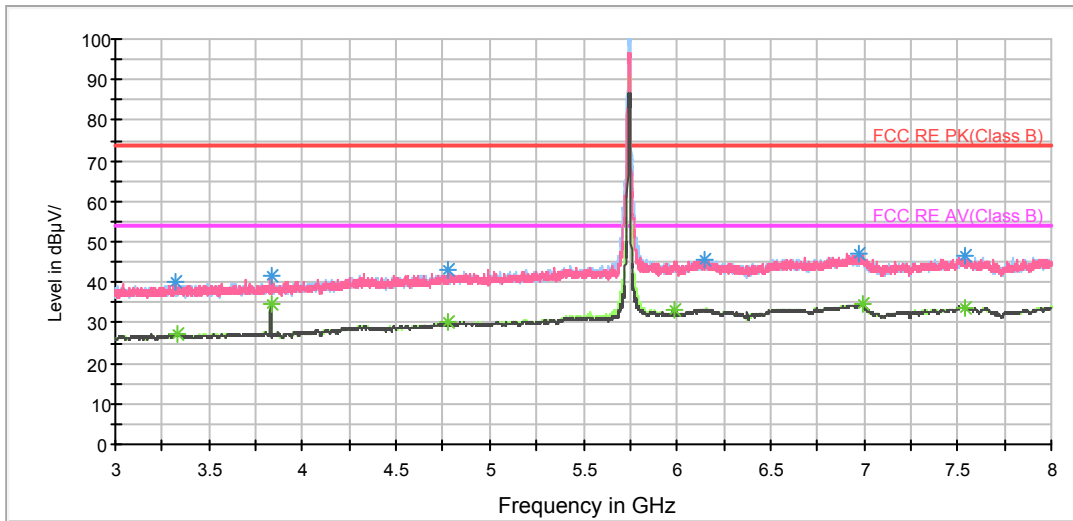
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



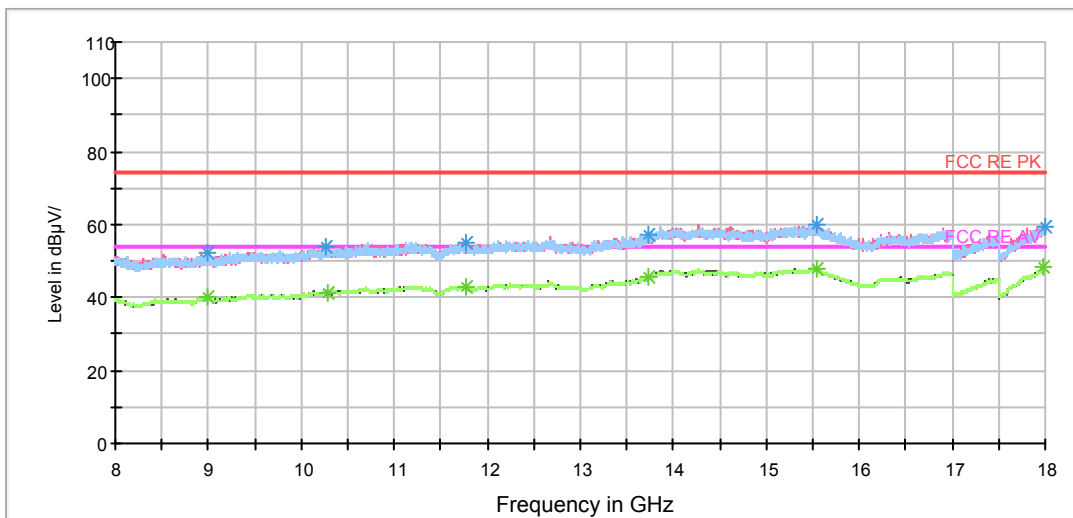
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

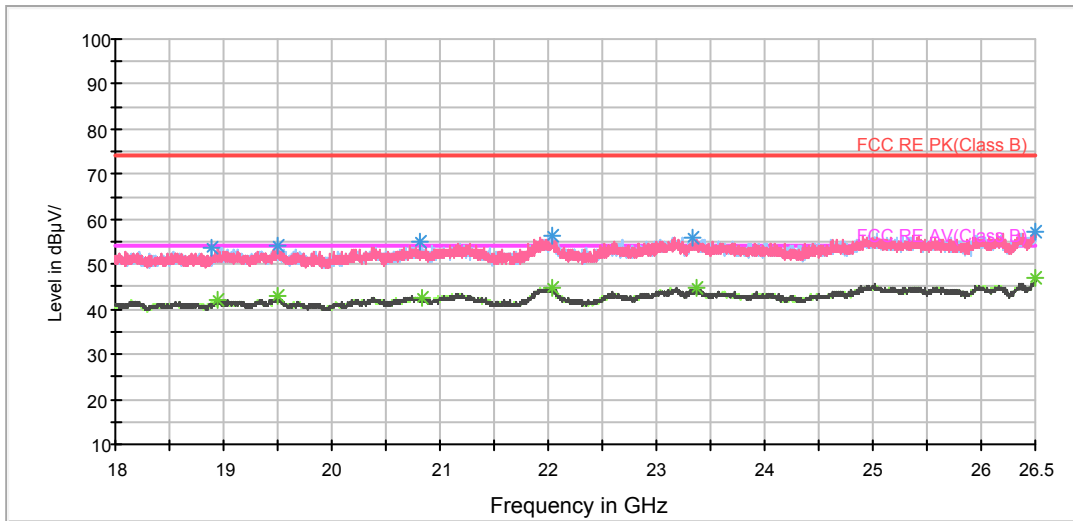
FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

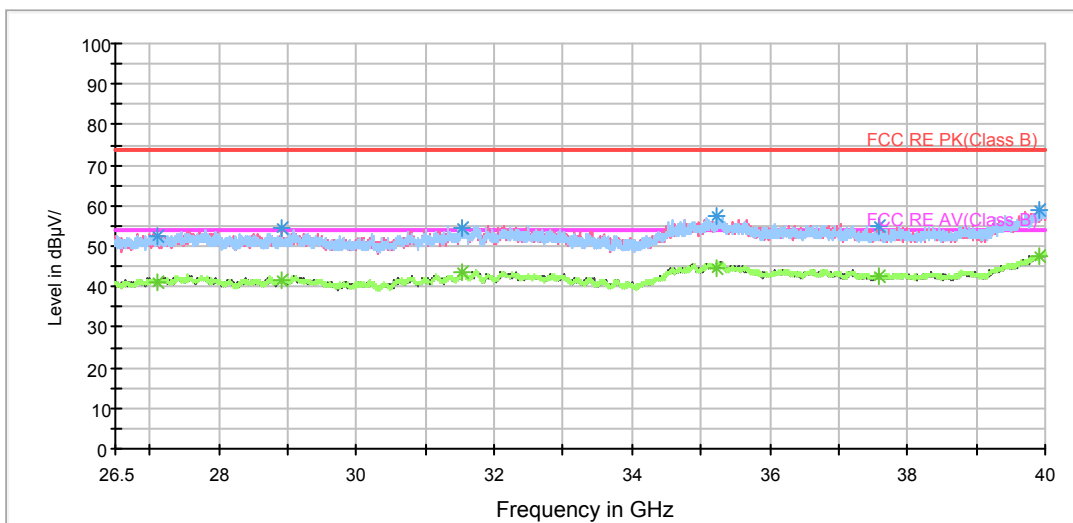


BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

802.11a CH157

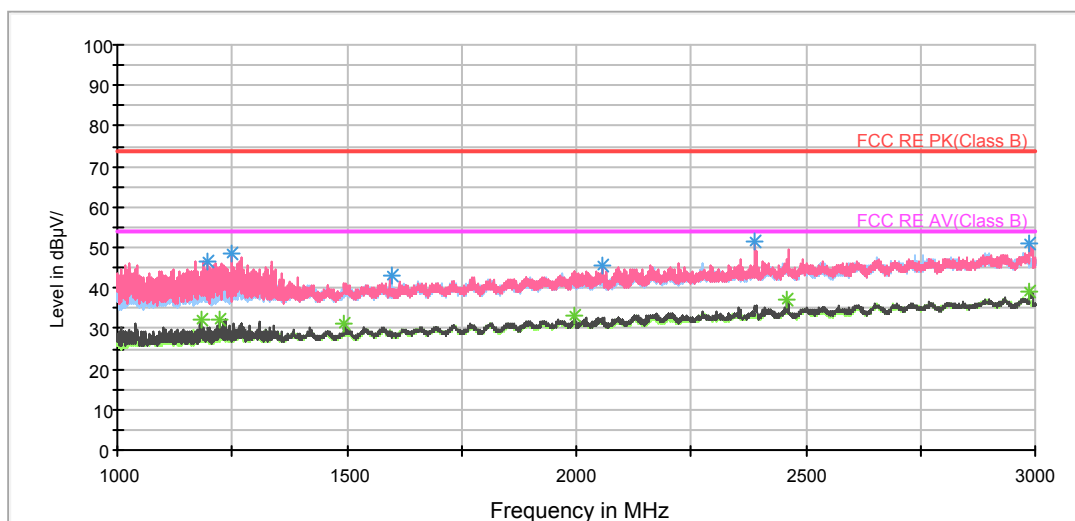
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3351.250000	39.8	202.0	H	0.0	42.1	-2.3	34.2	74
3856.250000	42.0	102.0	V	211.0	43.6	-1.6	32.0	74
4843.750000	42.8	202.0	H	318.0	41.2	1.6	31.2	74
6132.500000	45.9	202.0	V	170.0	40.5	5.4	28.1	74
6995.625000	47.2	202.0	H	231.0	40.7	6.5	26.8	74
7858.125000	45.9	102.0	V	42.0	38.7	7.2	28.1	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3483.750000	27.3	202.0	H	0.0	29.3	-2.0	26.7	54
3856.875000	35.6	102.0	V	211.0	37.2	-1.6	18.4	54
4862.500000	30.1	202.0	H	104.0	28.4	1.7	23.9	54
6146.875000	33.3	202.0	H	146.0	27.8	5.5	20.7	54
6996.250000	34.8	202.0	V	191.0	28.3	6.5	19.2	54
7510.000000	34.0	102.0	V	0.0	27.0	7.0	20.0	54

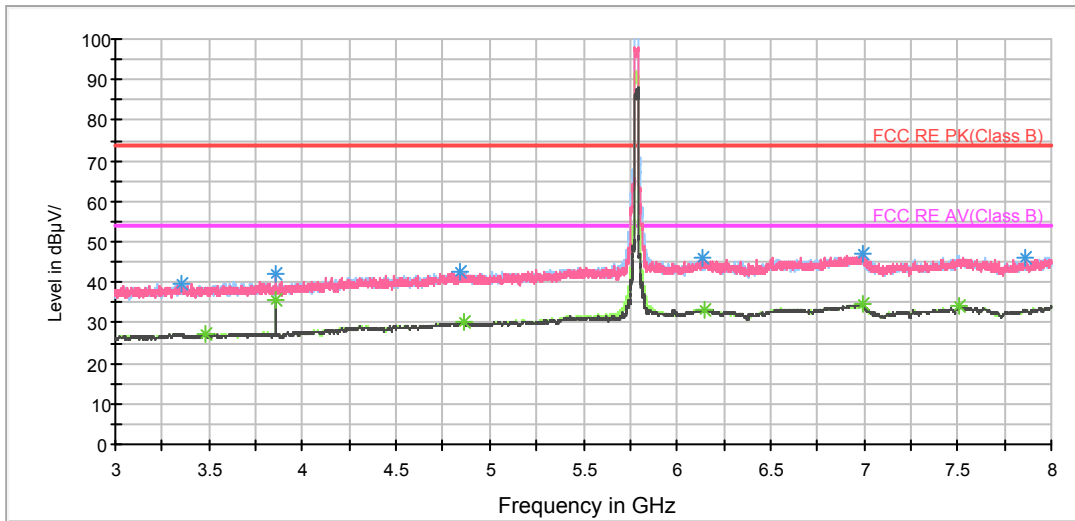
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 1G-3GHz PK+AV



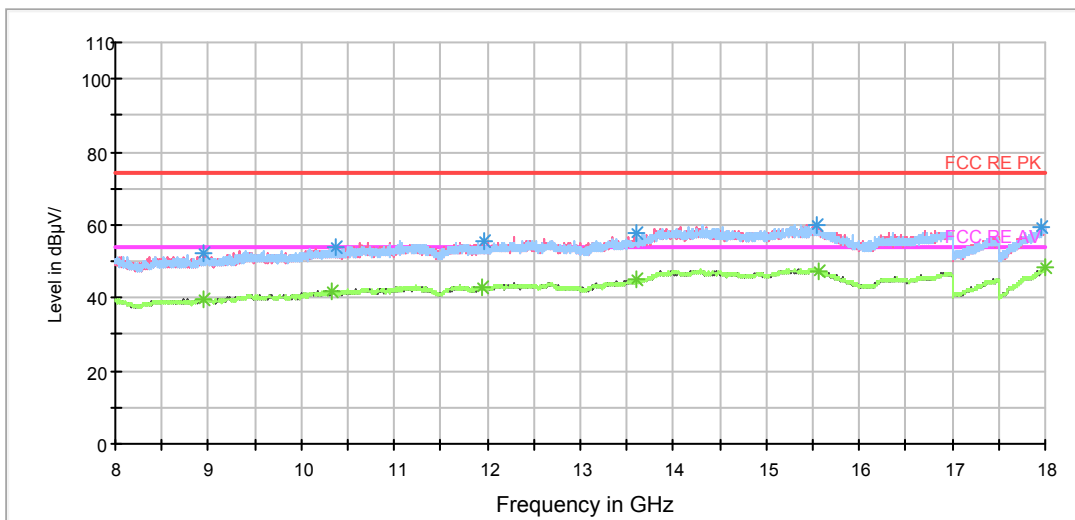
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



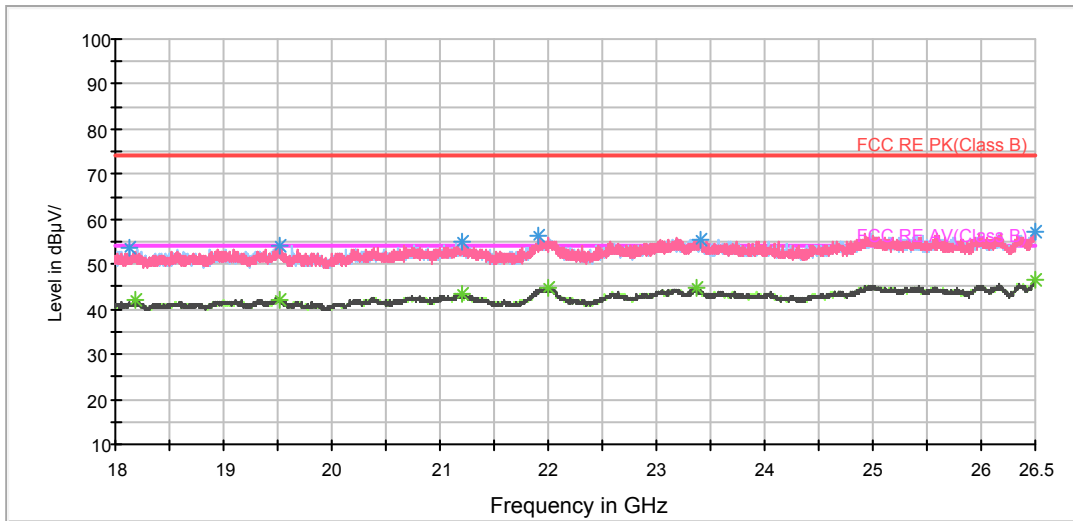
Note: The signal beyond the limit is carrier.  
Radiates Emission from 3GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



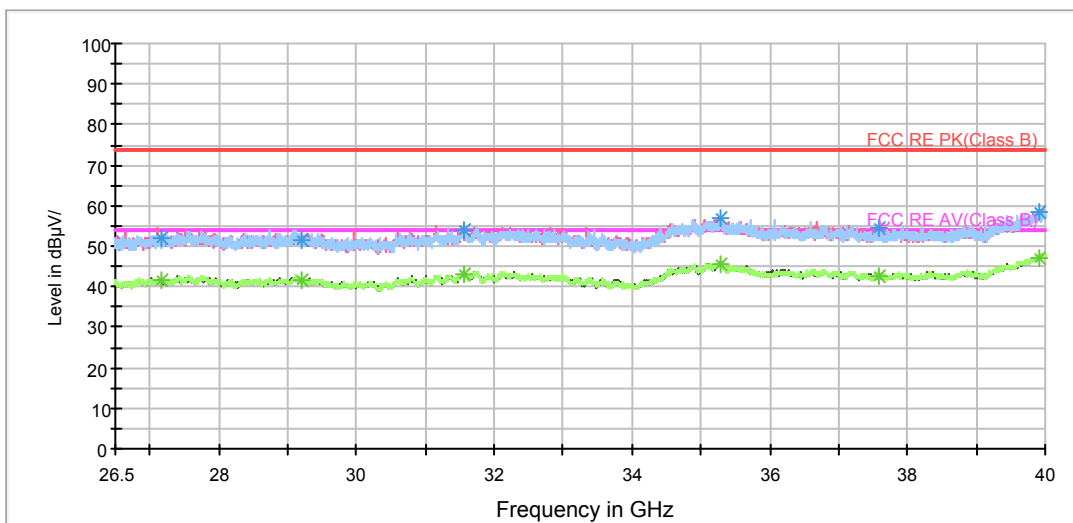
Radiates Emission from 8GHz to 18GHz

BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

BELL\_RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz



802.11a CH165

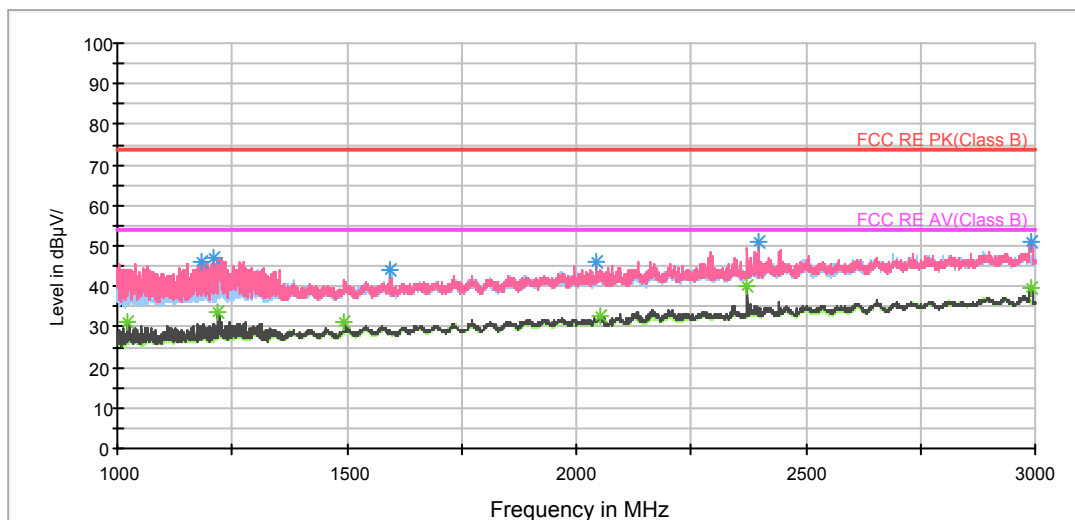
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3348.750000	39.7	202.0	H	39.0	42.0	-2.3	34.3	74
3883.125000	41.6	102.0	V	210.0	42.9	-1.3	32.4	74
4814.375000	42.1	202.0	V	85.0	40.8	1.3	31.9	74
6176.875000	45.7	202.0	H	0.0	40.3	5.4	28.3	74
6965.625000	46.7	102.0	V	0.0	40.5	6.2	27.3	74
7530.000000	47.0	202.0	H	0.0	39.9	7.1	27.0	74

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

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3322.500000	27.4	202.0	H	186.0	29.5	-2.1	26.6	54
3883.125000	36.5	102.0	V	210.0	37.8	-1.3	17.5	54
4859.375000	30.1	202.0	H	144.0	28.4	1.7	23.9	54
5986.250000	33.4	202.0	V	317.0	28.6	4.8	20.6	54
6998.750000	34.7	102.0	V	0.0	28.2	6.5	19.3	54
7514.375000	34.0	202.0	H	19.0	27.0	7.0	20.0	54

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

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz