



# RF TEST REPORT

**Applicant** ZTE Corporation  
**FCC ID** SRQ-MF985U  
**Product** LTE UFI  
**Model** MF985U  
**Report No.** RXA1712-0441RF05R1  
**Issue Date** March 8, 2018

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

Approved by: Kai Xu

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## TA Technology (Shanghai) Co., Ltd.

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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
7	EIRP Power at elevation angle above 30 degrees restriction	15.407(1)(i)	PASS
Date of Testing: December 26, 2017 ~ March 8, 2018			



## 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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City: Shanghai  
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## 2. General Description of Equipment under Test

### Client Information

<b>Applicant</b>	ZTE Corporation
<b>Applicant address</b>	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China
<b>Manufacturer</b>	ZTE Corporation
<b>Manufacturer address</b>	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China

### General information

EUT Description	
Model	MF985U
IMEI	99000897000101
Hardware Version	MF985UHW1.0
Software Version	USCC_US_MF985UV1.0.0B02
Power Supply	Battery/AC adapter
Antenna Type	Internal Antenna
Antenna Gain	Antenna 1: 1.30 dBi Antenna 2: 1.05 dBi
additional beamforming gain	0 dB
Test Mode(s)	U-NII-1(5150MHz-5250MHz) U-NII-3(5725MHz-5850MHz)
Modulation Type	802.11a/n (HT20/HT40) : OFDM 802.11ac (HT20.HT40/HT80): OFDM
Max. Conducted Power	14.79 dBm
Operating Frequency Range(s)	U-NII-1: 5150-5250MHz U-NII-3: 5725-5850MHz
EUT Accessory	
Adapter 1	Manufacturer: SHENZHEN RUIJING INDUSTRIAL CO LTD Model: STC-A515A-Z
Adapter 2	Manufacturer: Jiangsu Chenyang Electron Co., Ltd. Model: STC-A515A-Z
Adapter 3	Manufacturer: Shenzhen Dokocom Energy Technology Co., Ltd. Model: STC-A515A-Z
Battery	Manufacturer: ARBIN COSLIGHT POWER CO LTD Model: Li3930T44P4h794659
USB Cable 1	Manufacturer: LUXSHARE-ICT



	100cm Cable, Shielded
USB Cable 2	Manufacturer: kingpower-tech 100cm Cable, Shielded
<p>Note: The information of the EUT is declared by the manufacturer.</p> <p>2. There is more than one USB cable/one Adapter, each one should be applied throughout the compliance test respectively, and however, only the worst case (USB cable 1/ Adapter 1) will be recorded in this report.</p>	



### 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 v02r01**

**KDB 662911 D01 Multiple Transmitter Output v02r01**

## 4. Test Configuration

### Test Mode

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

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

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

Worst-case data rates are shown as following table.

Band	Data Rate		
	Antenna 1	Antenna 2	MIMO
802.11a	6 Mbps	6 Mbps	/
802.11n HT20	MCS0	MCS0	MCS8
802.11n HT40	MCS0	MCS0	MCS8
802.11ac HT20	MCS0	MCS0	MCS8
802.11ac HT40	MCS0	MCS0	MCS8
802.11ac HT80	MCS0	MCS0	MCS8

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

Test Cases	Antenna 1	Antenna 2	MIMO
Average conducted output power	802.11a	802.11a	802.11n HT20/40 802.11ac HT20/40/80
EIRP Power at elevation angle above 30 degrees restriction	802.11a	802.11a	802.11n HT20/40 802.11ac HT20/40/80
Occupied bandwidth	802.11a	--	802.11n HT20/40 802.11ac HT20/40/80
Frequency stability	802.11a	--	--
Power Spectral Density	802.11a	802.11a	802.11n HT20/40 802.11ac HT20/40/80
Unwanted Emissions	802.11a	--	802.11n HT20/40 802.11ac HT20/40/80
Conducted Emissions	802.11a	--	802.11n HT20/40 802.11ac HT20/40/80
Note: "O": test all bands			

**Wireless Technology and Frequency Range**

Wireless Technology		Bandwidth	Channel	Frequency
Wi-Fi	U-NII-1	20 MHz	36	5180MHz
			40	5200MHz
			44	5220MHz
			48	5240MHz
		40 MHz	38	5190MHz
			46	5230MHz
	U-NII-3	20 MHz	42	5210MHz
			149	5745MHz
			157	5785MHz
		40 MHz	165	5825MHz
			151	5755MHz
			159	5795MHz
	80 MHz	155	5775MHz	
Does this device support TPC Function? <input type="checkbox"/> Yes <input checked="" 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.

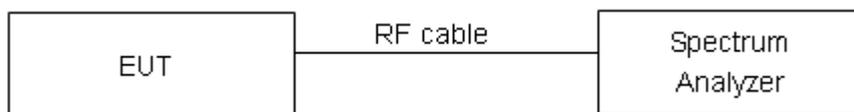
For U-NII-1, set RBW  $\approx$ 1% OCB kHz, VBW  $\geq$  3  $\times$  RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured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

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11a	5180	16.219	19.46	PASS
	5200	16.233	19.47	PASS
	5240	16.250	19.20	PASS

**MIMO**

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11n HT20	5180	17.390	20.05	PASS
	5200	17.489	20.49	PASS
	5240	17.525	21.03	PASS
802.11n HT40	5190	35.864	43.89	PASS
	5230	35.923	45.26	PASS
802.11ac HT20	5180	17.425	20.59	PASS
	5200	17.397	19.79	PASS
	5240	17.428	20.03	PASS
802.11ac HT40	5190	35.744	40.44	PASS
	5230	35.740	39.82	PASS
802.11ac HT80	5210	75.061	82.56	PASS



## U-NII-3

## SISO Antenna 1

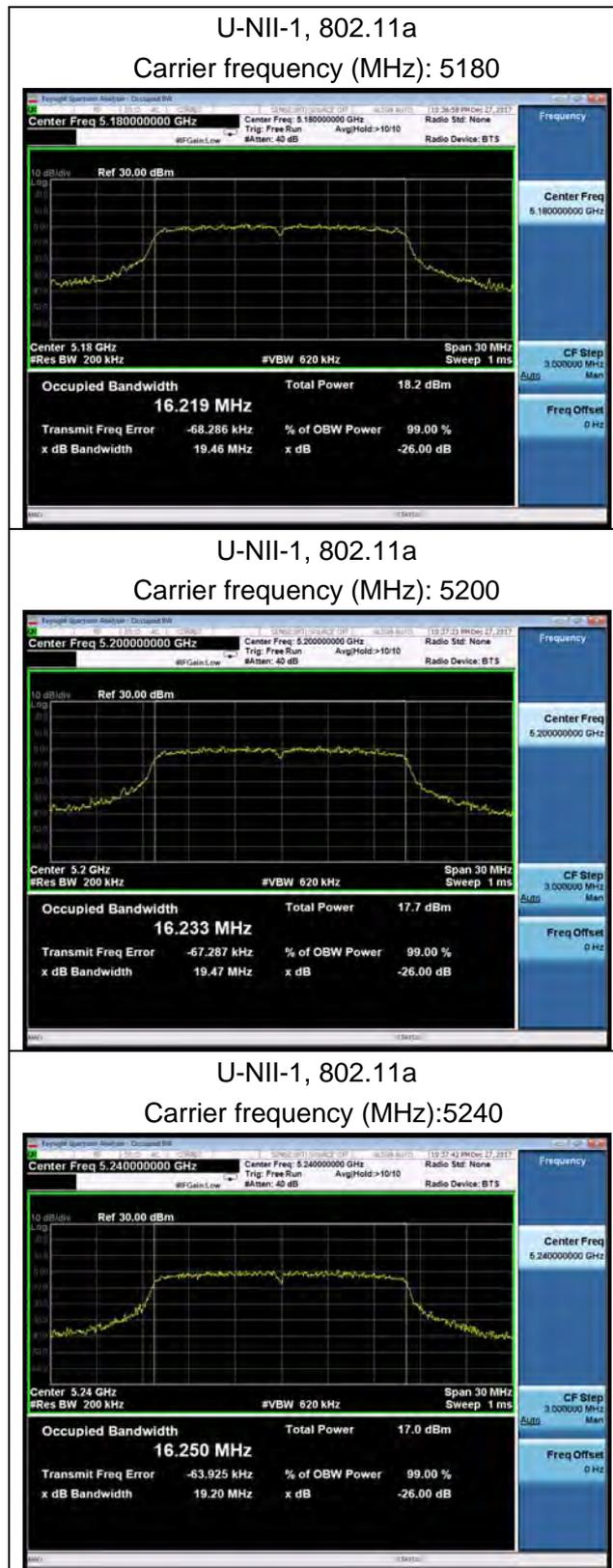
Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11a	5745	16.229	15.03	500	PASS
	5785	16.236	15.32	500	PASS
	5825	16.240	15.35	500	PASS

## MIMO

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11n HT20	5745	17.460	15.15	500	PASS
	5785	17.410	15.47	500	PASS
	5825	17.398	15.09	500	PASS
802.11n HT40	5755	35.804	35.02	500	PASS
	5795	35.790	33.91	500	PASS
802.11ac HT20	5745	17.400	16.25	500	PASS
	5785	17.440	15.95	500	PASS
	5825	17.388	16.56	500	PASS
802.11ac HT40	5755	35.718	31.31	500	PASS
	5795	35.793	32.63	500	PASS
802.11ac HT80	5775	74.969	75.12	500	PASS

U-NII-1

SISO Antenna 1



MIMO

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



U-NII-1, 802.11n HT40  
Carrier frequency (MHz): 5190



U-NII-1, 802.11n HT20  
Carrier frequency (MHz): 5200

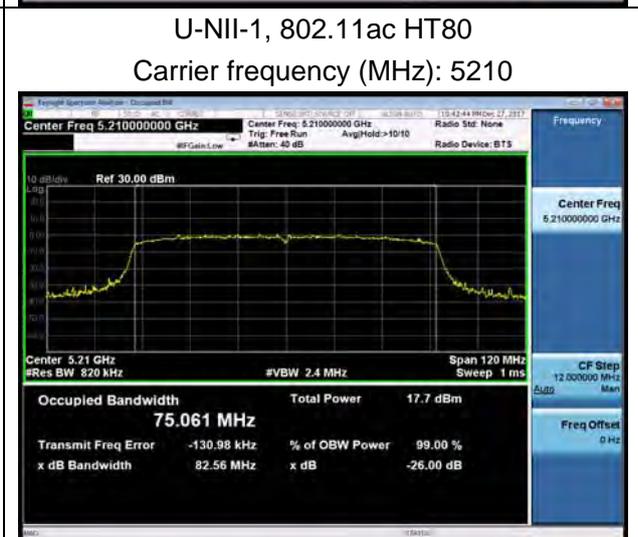
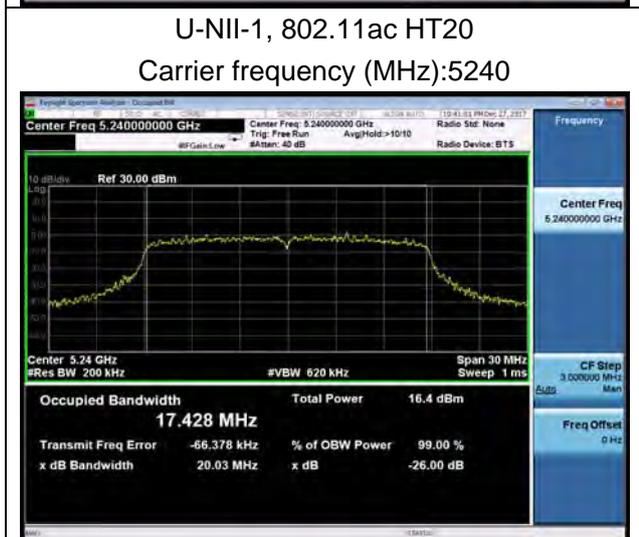
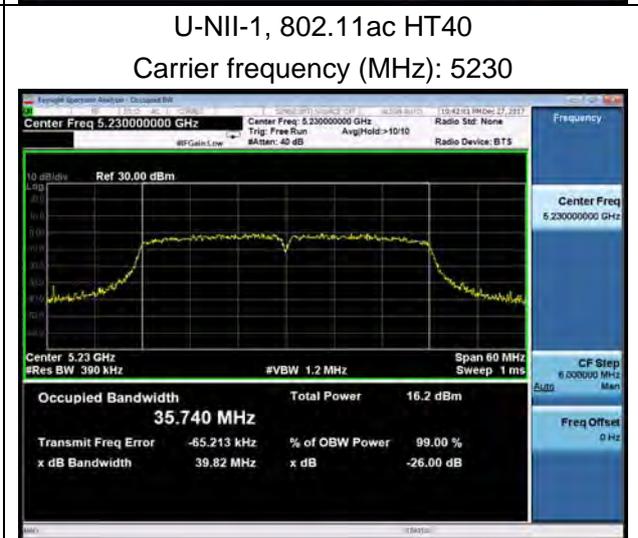
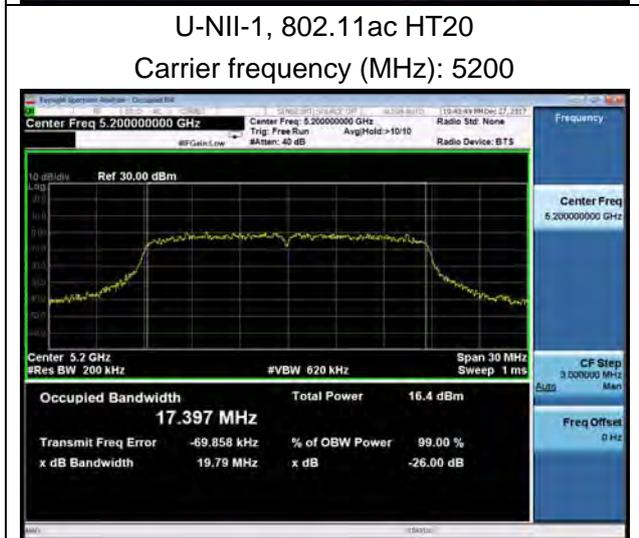
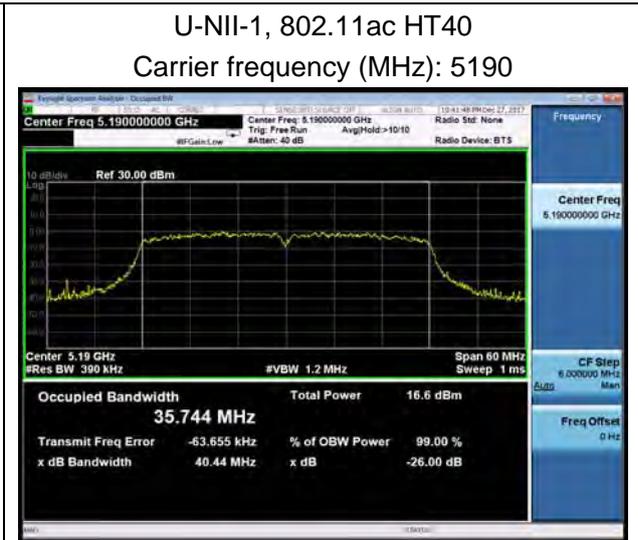
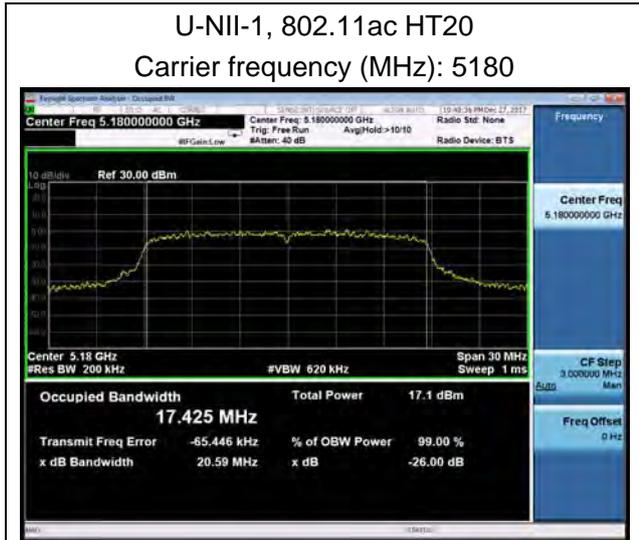


U-NII-1, 802.11n HT40  
Carrier frequency (MHz): 5230



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







U-NII-3

SISO Antenna 1

99% bandwidth

U-NII-3, 802.11a

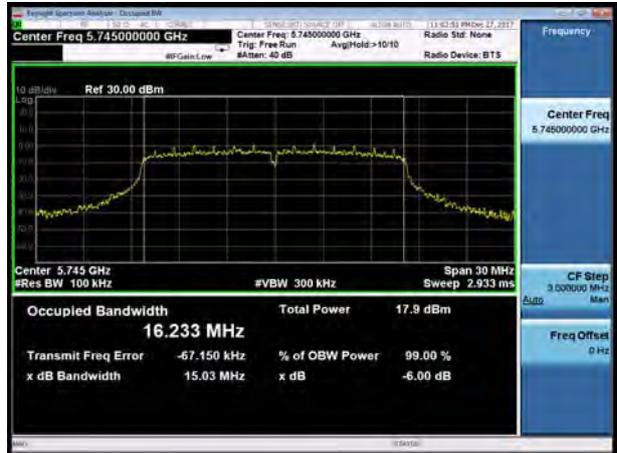
Carrier frequency (MHz): 5745



Minimum 6 dB bandwidth

U-NII-3, 802.11a

Carrier frequency (MHz): 5745



U-NII-3, 802.11a

Carrier frequency (MHz): 5785



U-NII-3, 802.11a

Carrier frequency (MHz): 5785



U-NII-3, 802.11a

Carrier frequency (MHz): 5825



U-NII-3, 802.11a

Carrier frequency (MHz): 5825



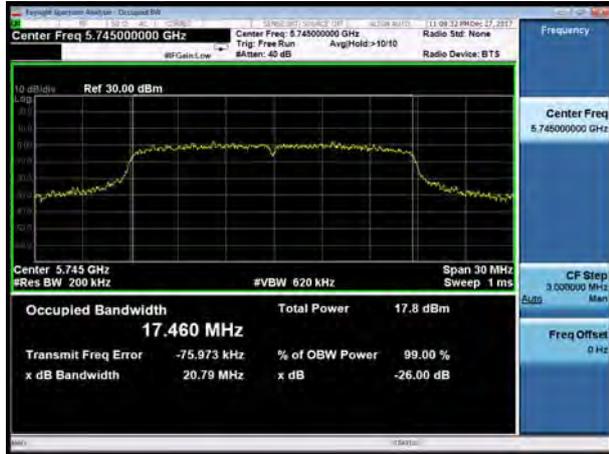


MIMO

99% bandwidth

U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5745



U-NII-3, 802.11n HT40

Carrier frequency (MHz): 5755



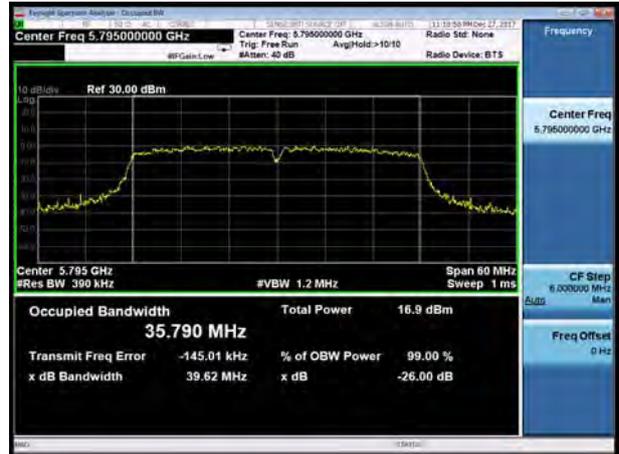
U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5785



U-NII-3, 802.11n HT40

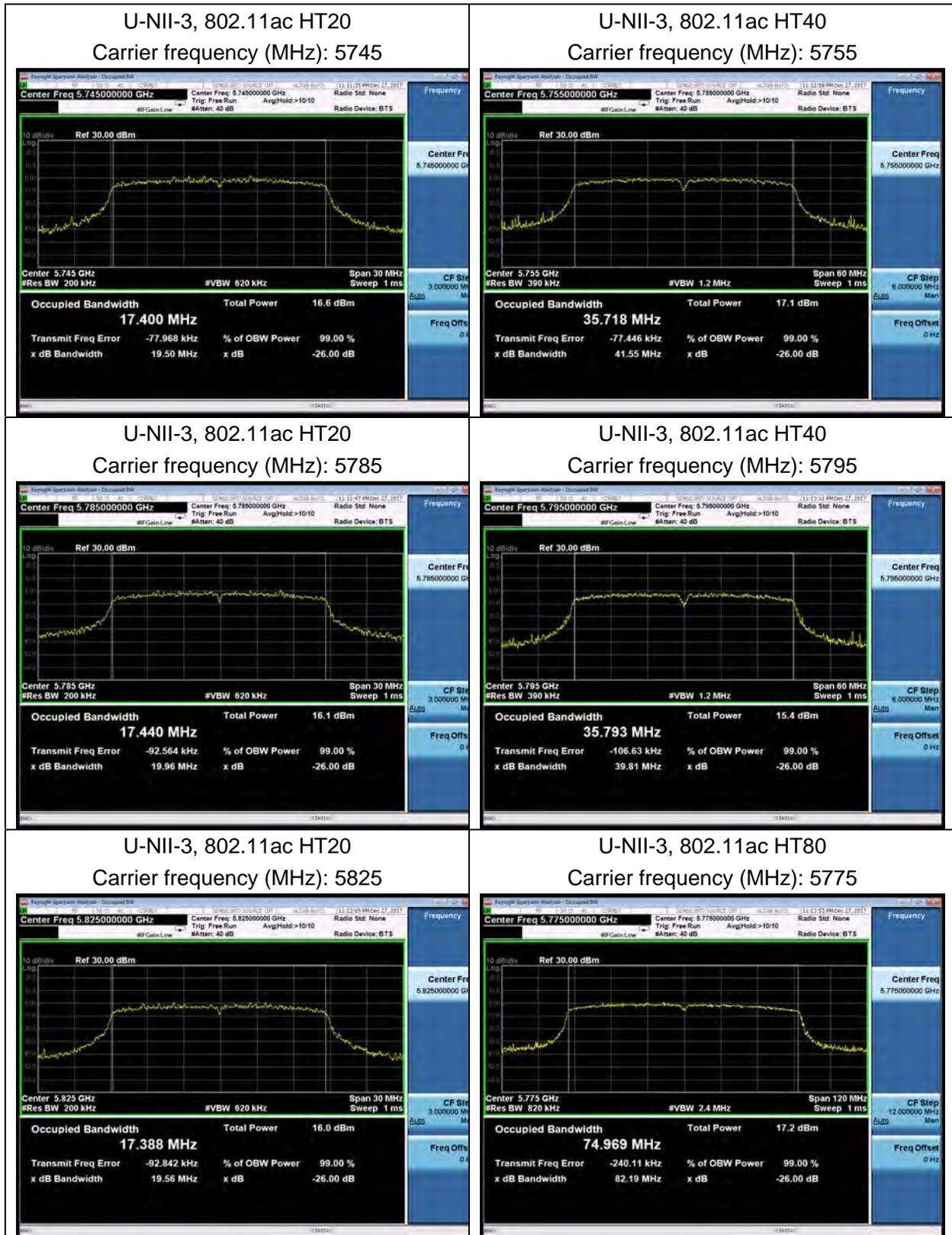
Carrier frequency (MHz): 5795



U-NII-3, 802.11n HT20

Carrier frequency (MHz): 5825





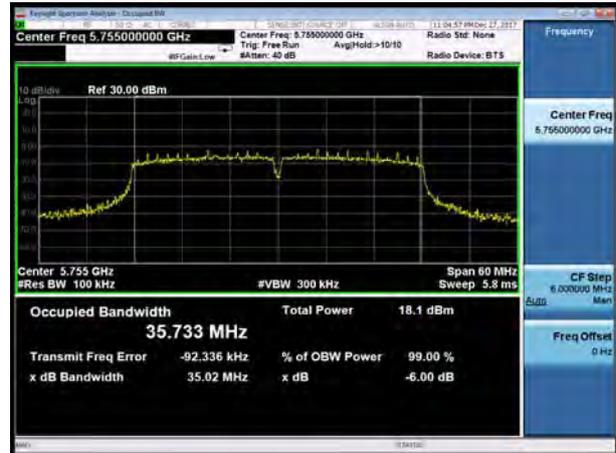


Minimum 6 dB bandwidth

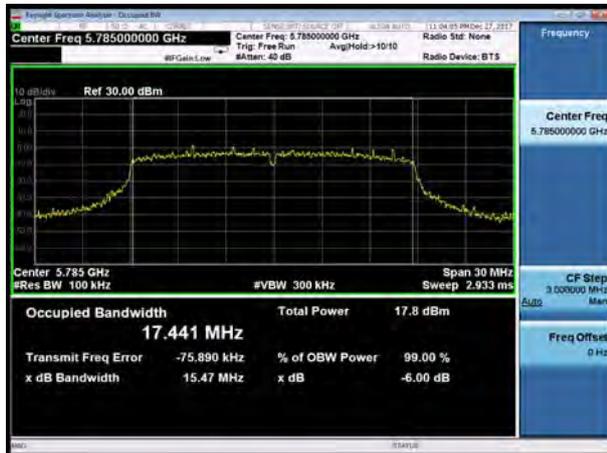
U-NII-3, 802.11n HT20  
Carrier frequency (MHz): 5745



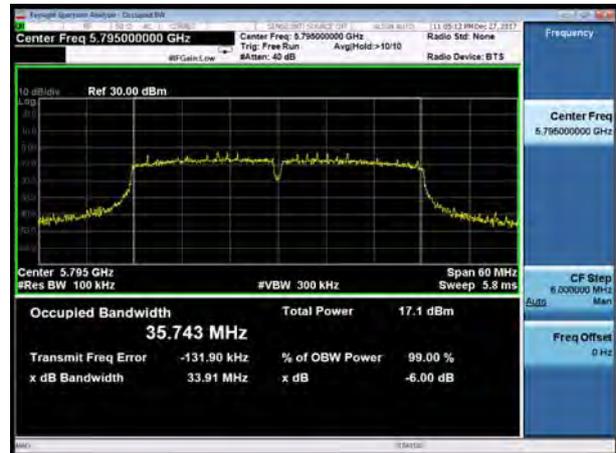
U-NII-3, 802.11n HT40  
Carrier frequency (MHz): 5755



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



U-NII-3, 802.11n HT40  
Carrier frequency (MHz): 5795



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



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



U-NII-3, 802.11ac HT40  
Carrier frequency (MHz): 5755



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



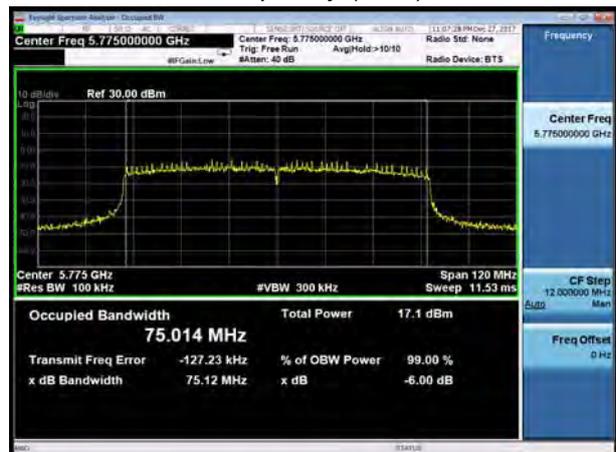
U-NII-3, 802.11ac HT40  
Carrier frequency (MHz): 5795



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



U-NII-3, 802.11ac HT80  
Carrier frequency (MHz): 5775



## 5.2. Average Power Output –Conducted

### Ambient condition

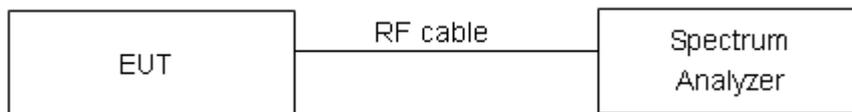
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Methods of Measurement

During the process of the testing, The EUT was connected to spectrum analyzer 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

The conducted Power 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)(2)(3)

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 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.

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	2.06	2.16	0.96	0.20
802.11n HT20	1.92	2.02	0.95	0.21
802.11n HT40	0.94	1.04	0.91	0.42
802.11ac HT20	1.94	2.02	0.96	0.19
802.11ac HT40	0.95	1.05	0.91	0.42
802.11ac HT80	0.46	0.56	0.83	0.79

Single Antenna Power Index U-NII-1						
Packet Type	Antenna 1			Antenna 2		
	CH36	CH40	CH48	CH36	CH40	CH48
802.11a	13	13	13	14	14	14

Single Antenna Power Index U-NII-3						
Packet Type	Antenna 1			Antenna 2		
	CH149	CH157	CH165	CH36	CH40	CH48
802.11a	13	13	13	14	14	14

MIMO Power Index						
Packet Type	U-NII-1			U-NII-3		
	CH36	CH40	CH48	CH149	CH157	CH165
802.11n HT20	15	15	15	14	14	14
802.11ac HT20	14	14	14	13	13	13
Packet Type	CH38	CH46	/	CH151	CH159	/
802.11n HT40	14	14	/	14	14	/
802.11ac HT40	13	13	/	12	12	/
Packet Type	CH42	/	/	CH155	/	/
802.11ac HT80	13	/	/	12	/	/

**Test results****SISO Antenna 1****U-NII-1**

Network Standards	Channel/ Frequency (MHz)	Read Value (dBm)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	11.06	11.26	30	PASS
	40/5200	11.17	11.37	30	PASS
	48/5240	11.00	11.20	30	PASS
Note: Output Power=Read Value+Duty cycle correction factor					

**U-NII-3**

Network Standards	Channel/ Frequency (MHz)	Read Value (dBm)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	11.07	11.27	30	PASS
	157/5785	11.11	11.31	30	PASS
	165/5825	10.51	10.71	30	PASS
Note: Output Power=Read Value+Duty cycle correction factor					

**SISO Antenna 2****U-NII-1**

Network Standards	Channel/ Frequency (MHz)	Read Value (dBm)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	36/5180	10.95	11.15	30	PASS
	40/5200	10.67	10.87	30	PASS
	48/5240	10.48	10.68	30	PASS
Note: Output Power=Read Value+Duty cycle correction factor					

**U-NII-3**

Network Standards	Channel/ Frequency (MHz)	Read Value (dBm)	Output Power (dBm)	Limit (dBm)	Conclusion
802.11a	149/5745	10.89	11.09	30	PASS
	157/5785	11.30	11.50	30	PASS
	165/5825	11.22	11.42	30	PASS
Note: Output Power=Read Value+Duty cycle correction factor					



## MIMO

Network Standards		Channel/ Frequency (MHz)	Output Power				Total Power (dBm)	Limit (dBm)	Conclusion
			ANT1		ANT2				
			Read Value (dBm)	Output Power (dBm)	Read Value (dBm)	Output Power (dBm)			
U-NII-1	802.11n HT20	36/5180	11.50	11.71	11.64	11.85	14.79	30.00	PASS
		44/5220	11.43	11.64	11.35	11.56	14.61	30.00	PASS
		48/5240	11.61	11.82	11.34	11.55	14.70	30.00	PASS
	802.11n HT40	38/5190	10.81	11.23	10.86	11.28	14.27	30.00	PASS
		46/5230	11.08	11.50	10.77	11.19	14.36	30.00	PASS
	802.11ac HT20	36/5180	10.52	10.71	10.71	10.90	13.82	30.00	PASS
		44/5220	10.51	10.70	10.46	10.65	13.69	30.00	PASS
		48/5240	10.69	10.88	10.37	10.56	13.74	30.00	PASS
	802.11ac HT40	38/5190	9.84	10.26	10.03	10.45	13.36	30.00	PASS
		46/5230	10.13	10.55	9.94	10.36	13.46	30.00	PASS
	802.11ac HT80	42/5210	9.51	10.30	9.28	10.07	13.19	30.00	PASS

Note: 1. Output Power=Read Value+Duty cycle correction factor

2. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power =  $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)} + 10^{(\text{Power antenna3 in dBm}/10)})$ .

3. Direction gain calculation according to KDB662911 D01 Multiple Transmitter Output v02r01 F) 2) f) (ii), so direction gain =  $\max(\text{Gant1}, \text{Gant2}) = 1.3 < 6\text{dBi}$ . So the limit is 30dB



Network Standards		Channel/ Frequency (MHz)	Output Power				Total Power (dBm)	Limit (dBm)	Conclusion
			ANT1		ANT2				
			Read Value (dBm)	Output Power (dBm)	Read Value (dBm)	Output Power (dBm)			
U-NII-3	802.11n HT20	149/5745	11.72	11.93	10.86	11.07	14.53	30.00	PASS
		157/5785	11.59	11.80	10.98	11.19	14.52	30.00	PASS
		165/5825	10.88	11.09	10.94	11.15	14.13	30.00	PASS
	802.11n HT40	151/5755	11.21	11.63	11.24	11.66	14.66	30.00	PASS
		159/5795	10.49	10.91	11.21	11.63	14.30	30.00	PASS
	802.11ac HT20	149/5745	10.70	10.89	10.02	10.21	13.58	30.00	PASS
		157/5785	10.60	10.79	10.02	10.21	13.52	30.00	PASS
		165/5825	10.22	10.41	10.08	10.27	13.35	30.00	PASS
	802.11ac HT40	151/5755	10.21	10.63	10.33	10.75	13.70	30.00	PASS
		159/5795	9.44	9.86	10.42	10.84	13.39	30.00	PASS
	802.11ac HT80	155/5775	8.97	9.76	9.8	10.59	13.20	30.00	PASS

Note: 1. Output Power=Read Value+Duty cycle correction factor

2. For Total Power, according to KDB 662911 D01 Multiple Transmitter Output v02r01 1),

The Total Power =  $10\log(10^{(\text{Power antenna1 in dBm}/10)} + 10^{(\text{Power antenna2 in dBm}/10)} + 10^{(\text{Power antenna3 in dBm}/10)})$ .

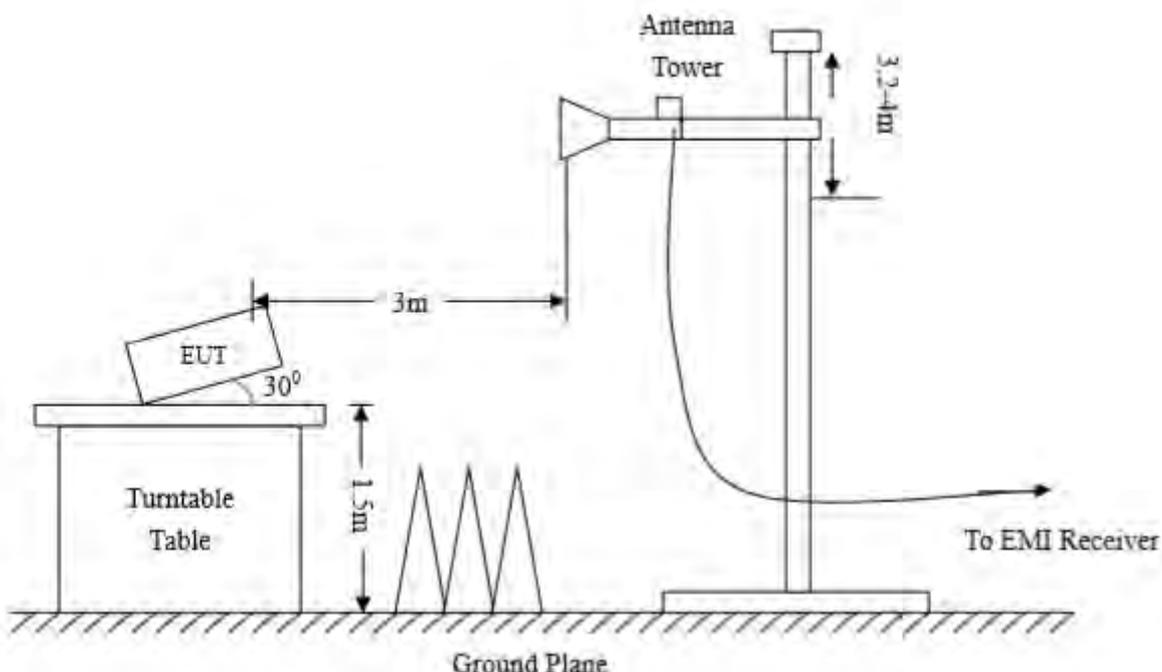
3. Direction gain calculation according to KDB662911 D01 Multiple Transmitter Output v02r01 F) 2) f) (ii), so direction gain =  $\max(\text{Gant1}, \text{Gant2}) = 1.3 < 6\text{dBi}$ . So the limit is 30dB

### 5.3. EIRP Power at elevation angle above 30 degrees restriction

**Ambient condition**

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

**Method of Measurement**



Frequency: Above 1GHz  
 RBW=1MHz, VBW=3MHz  
 Sweep time= Auto  
 Trace = max hold  
 Detector function = peak

**Limit:**

According to §15.407(1)(i) requirements. According to §15.407(1)(i) requirements. 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).

**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
1GHz-26.5G	3.68 dB



## Test Results:

Network Standards	Carrier frequency (MHz)	Read Value(dBm)	Correct (dBm)	Result (dBm)	Limt (dBm)	Margin (dB)	Polar (H/V)	Detector
802.11a ANT1	36/5180	-56.26	65.40	9.14	21.00	11.86	H	PK
	36/5180	-58.31	64.37	6.06	21.00	14.94	V	PK
	40/5200	-56.27	65.43	9.16	21.00	11.84	H	PK
	40/5200	-58.18	64.31	6.13	21.00	14.87	V	PK
	48/5240	-56.23	65.44	9.21	21.00	11.79	H	PK
	48/5240	-58.14	64.25	6.11	21.00	14.89	V	PK
802.11a ANT2	36/5180	-56.04	65.40	9.36	21.00	11.64	H	PK
	36/5180	-58.22	64.37	6.15	21.00	14.85	V	PK
	40/5200	-56.16	65.43	9.27	21.00	11.73	H	PK
	40/5200	-58.08	64.31	6.23	21.00	14.77	V	PK
	48/5240	-56.03	65.44	9.41	21.00	11.59	H	PK
	48/5240	-57.99	64.25	6.26	21.00	14.74	V	PK
802.11n HT20 MIMO	36/5180	-56.22	65.40	9.17	21.00	11.83	H	PK
	36/5180	-58.40	64.37	5.97	21.00	15.03	V	PK
	40/5200	-56.32	65.43	9.11	21.00	11.89	H	PK
	40/5200	-58.27	64.31	6.04	21.00	14.96	V	PK
	48/5240	-56.24	65.44	9.20	21.00	11.80	H	PK
	48/5240	-58.10	64.25	6.15	21.00	14.85	V	PK
802.11n HT40 MIMO	38/5190	-56.93	65.23	8.30	21.00	12.70	H	PK
	38/5190	-58.81	64.31	5.49	21.00	15.51	V	PK
	46/5230	-56.91	65.36	8.44	21.00	12.56	H	PK
	46/5230	-58.90	64.36	5.46	21.00	15.54	V	PK
802.11ac HT20 MIMO	36/5180	-56.36	65.40	9.04	21.00	11.96	H	PK
	36/5180	-58.28	64.37	6.09	21.00	14.91	V	PK
	40/5200	-56.30	65.43	9.13	21.00	11.87	H	PK
	40/5200	-58.08	64.31	6.22	21.00	14.78	V	PK
	48/5240	-56.22	65.44	9.22	21.00	11.78	H	PK
	48/5240	-58.10	64.25	6.15	21.00	14.85	V	PK
802.11ac HT40 MIMO	38/5190	-56.82	65.23	8.42	21.00	12.58	H	PK
	38/5190	-58.82	64.31	5.49	21.00	15.51	V	PK
	46/5230	-56.99	65.36	8.37	21.00	12.63	H	PK
	46/5230	-58.79	64.36	5.57	21.00	15.43	V	PK

## 5.4. 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
3.85	-20	5200.001	5199.994	5199.991	5199.988
3.85	-10	5199.995	5199.984	5199.982	5199.985
3.85	0	5199.987	5199.98	5199.975	5199.976
3.85	10	5199.984	5199.98	5199.972	5199.97
3.85	20	5199.974	5199.975	5199.966	5199.961
3.85	30	5199.968	5199.968	5199.956	5199.96
3.85	40	5199.959	5199.962	5199.954	5199.951
3.85	50	5199.956	5199.957	5199.946	5199.949
3.4	20	5199.952	5199.954	5199.941	5199.944
4.4	20	5199.947	5199.947	5199.936	5199.941
MHz		-0.05335	-0.0529	-0.06424	-0.05852
PPM		-10.2587	-10.173	-12.354	-11.2531

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5785MHz			
		1min	2min	5min	10min
3.85	-20	5785.009	5785.007	5785.000	5784.990
3.85	-10	5785.005	5785.001	5784.994	5784.988
3.85	0	5785.005	5784.996	5784.987	5784.984
3.85	10	5784.999	5784.991	5784.984	5784.976
3.85	20	5784.995	5784.991	5784.976	5784.969
3.85	30	5784.985	5784.991	5784.973	5784.968
3.85	40	5784.975	5784.988	5784.963	5784.967
3.85	50	5784.967	5784.986	5784.955	5784.965
3.4	20	5784.962	5784.977	5784.95	5784.962
4.4	20	5784.961	5784.972	5784.943	5784.956
MHz		-0.03853	-0.02794	-0.05712	-0.04429
PPM		-6.6600	-4.83013	-9.87422	-7.65685

### 5.5. Power Spectral Density

#### Ambient condition

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

#### Method of Measurement

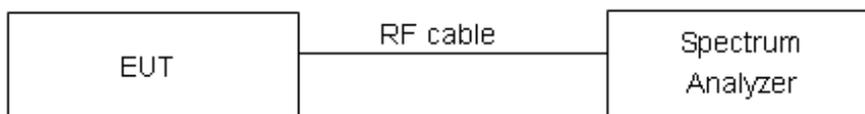
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

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 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
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

## SISO Antenna 1

Network Standards	Channel Number	Read Value (dBm/MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36	0.013	0.21	17	PASS
	40	0.222	0.42	17	PASS
	48	0.227	0.42	17	PASS

## SISO Antenna 2

Network Standards	Channel Number	Read Value (dBm/MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11a	36	0.244	0.44	17	PASS
	40	-0.247	-0.05	17	PASS
	48	-0.171	0.03	17	PASS

## U-NII-1

## MIMO

Network Standards	Channel/ Frequency (MHz)	Power Spectral Density					Limit (dBm /MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm /MHz)		
		Read Value (dBm/MHz)	PSD (dBm /MHz)	Read Value (dBm/MHz)	PSD (dBm /MHz)			
802.11n HT20	36	0.58	0.79	0.75	0.96	3.89	17	PASS
	40	0.72	0.93	0.79	1.01	3.98	17	PASS
	48	0.39	0.60	0.53	0.74	3.68	17	PASS
802.11n HT40	38	-3.39	-2.97	-3.16	-2.74	0.16	17	PASS
	46	-3.01	-2.59	-3.22	-2.80	0.32	17	PASS
802.11ac HT20	36	-0.42	-0.23	-0.09	0.10	2.95	17	PASS
	40	-0.46	-0.26	-0.74	-0.54	2.61	17	PASS
	48	-0.76	-0.56	-0.51	-0.32	2.57	17	PASS
802.11ac HT40	38	-4.36	-3.95	-3.55	-3.13	-0.51	17	PASS
	46	-4.30	-3.88	-4.24	-3.82	-0.84	17	PASS
802.11ac HT80	42	-8.24	-7.46	-8.44	-7.65	-4.54	17	PASS

Note: 1. Power Spectral Density =Read Value+Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a),the power spectral density= $10\log(10^{(PSD_{antenna1} \text{ in dBm}/10)}+10^{(PSD_{antenna2} \text{ in dBm}/10)})$

3. Direction gain calculation according to KDB662911 D01 Multiple Transmitter Output v02r01 F) 2) f) (ii),so direction gain= $\max(G_{ant1}, G_{ant2})=1.3 < 6\text{dBi}$ . So the limit is 17dB



## U-NII-3

## SISO Antenna 1

Network Standards	Channel Number	Read Value (dBm/500kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149	-3.432	-3.23	30	PASS
	157	-2.694	-2.50	30	PASS
	165	-3.063	-2.87	30	PASS

## SISO Antenna 2

Network Standards	Channel Number	Read Value (dBm/500kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11a	149	-2.749	-2.55	30	PASS
	157	-2.014	-1.82	30	PASS
	165	-1.832	-1.63	30	PASS

## U-NII-3

## MIMO

Network Standards	Channel/Frequency (MHz)	Power Spectral Density					Limit (dBm/MHz)	Conclusion
		Antenna 1		Antenna 2		Total Power (dBm/MHz)		
		Read Value (dBm/MHz)	PSD (dBm/MHz)	Read Value (dBm/MHz)	PSD (dBm/MHz)			
802.11n HT20	149	-2.77	-2.56	-3.29	-3.08	0.20	30	PASS
	157	-2.93	-2.72	-3.15	-2.94	0.18	30	PASS
	165	-2.84	-2.62	-2.50	-2.28	0.56	30	PASS
802.11n HT40	151	-6.10	-5.68	-6.14	-5.72	-2.69	30	PASS
	159	-6.09	-5.67	-5.27	-4.85	-2.23	30	PASS
802.11ac HT20	149	-3.31	-3.11	-3.83	-3.64	-0.36	30	PASS
	157	-3.24	-3.04	-4.03	-3.84	-0.41	30	PASS
	165	-3.40	-3.21	-2.87	-2.68	0.07	30	PASS
802.11ac HT40	151	-7.78	-7.36	-6.53	-6.11	-3.68	30	PASS
	159	-7.28	-6.87	-6.28	-5.87	-3.33	30	PASS
802.11ac HT80	155	-13.39	-12.61	-10.64	-9.85	-8.01	30	PASS

Note: 1. Power Spectral Density = Read Value + Duty cycle correction factor

2. For Total PSD, according to KDB 662911 D01 Multiple Transmitter Output v02r01 2)a), the power spectral density =  $10 \log(10^{(PSD_{antenna1} \text{ in dBm}/10)} + 10^{(PSD_{antenna2} \text{ in dBm}/10)})$

3. Direction gain calculation according to KDB662911 D01 Multiple Transmitter Output v02r01 F) 2) f) (ii), so direction gain =  $\max(G_{ant1}, G_{ant2}) = 1.3 < 6 \text{ dBi}$ . So the limit is 30dB



U-NII-1

SISO Antenna 1

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



SISO Antenna 2

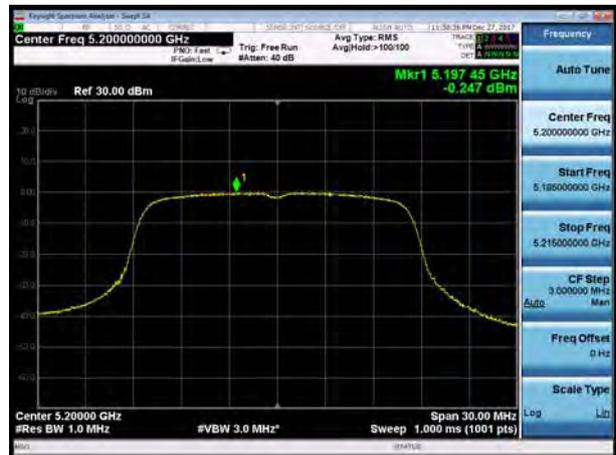
U-NII-1, 802.11a, Channel No.: 36



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



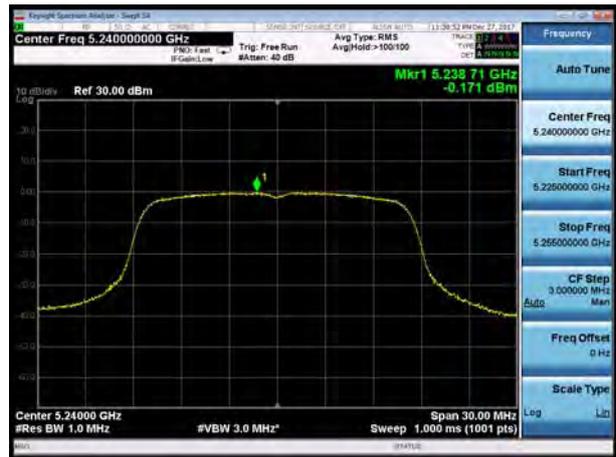
U-NII-1, 802.11a, Channel No.: 40



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



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





MIMO Antenna 1

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



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



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



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



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





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



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



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



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



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



U-NII-1, 802.11ac HT80, Channel No.: 42





MIMO Antenna 2

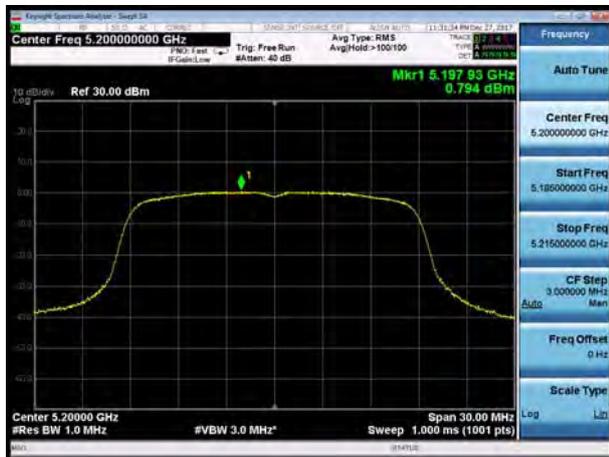
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U-NII-1, 802.11n HT40, Channel No.: 38



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



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

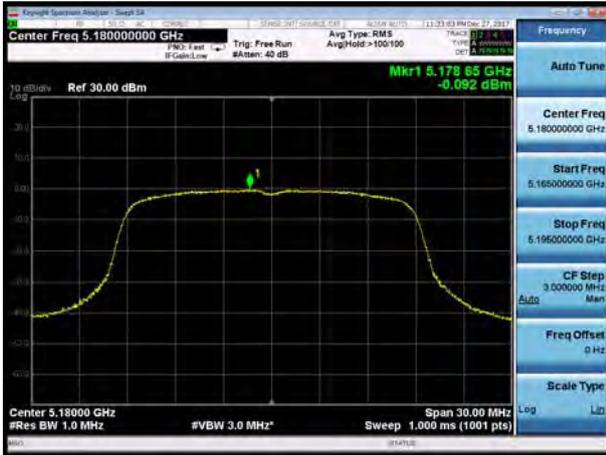


U-NII-1, 802.11n HT20, Channel No.: 48

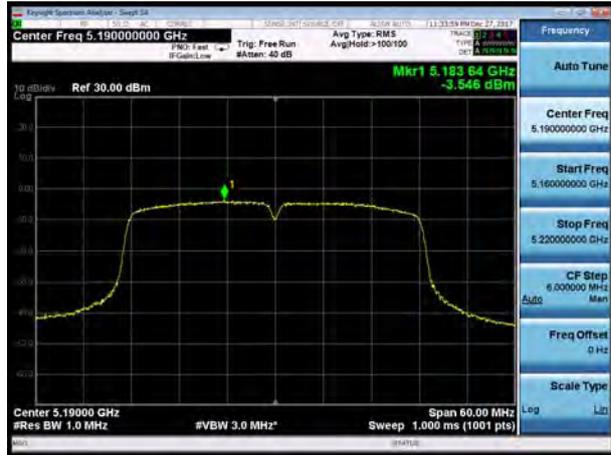




U-NII-1, 802.11ac HT20, Channel No.: 36



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



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



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



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



U-NII-1, 802.11ac HT80, Channel No.: 42





U-NII-3

SISO Antenna 1

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



SISO Antenna 2

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



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



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



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



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





MIMO Antenna 1

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



U-NII-3, 802.11n HT40, Channel No.: 151



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



U-NII-3, 802.11n HT40, Channel No.: 159



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



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



U-NII-3, 802.11ac HT40, Channel No.: 151



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



U-NII-3, 802.11ac HT40, Channel No.: 159



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



U-NII-3, 802.11ac HT80, Channel No.: 155





MIMO Antenna 2

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



U-NII-3, 802.11n HT40, Channel No.: 151



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



U-NII-3, 802.11n HT40, Channel No.: 159



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





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



U-NII-3, 802.11ac HT40, Channel No.: 151



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



U-NII-3, 802.11ac HT40, Channel No.: 159



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



U-NII-3, 802.11ac HT80, Channel No.: 155



## 5.6. 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):

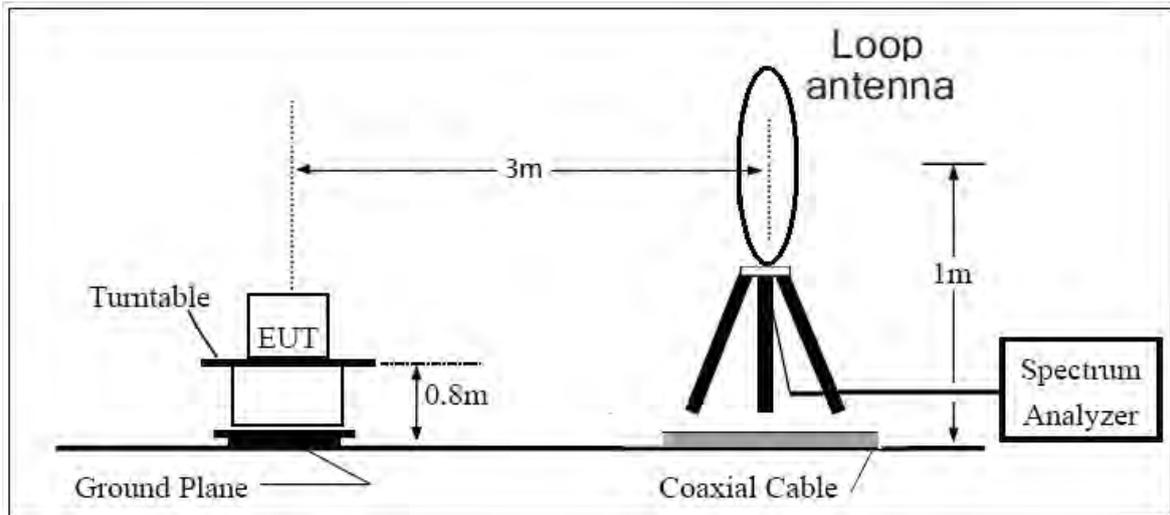
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

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

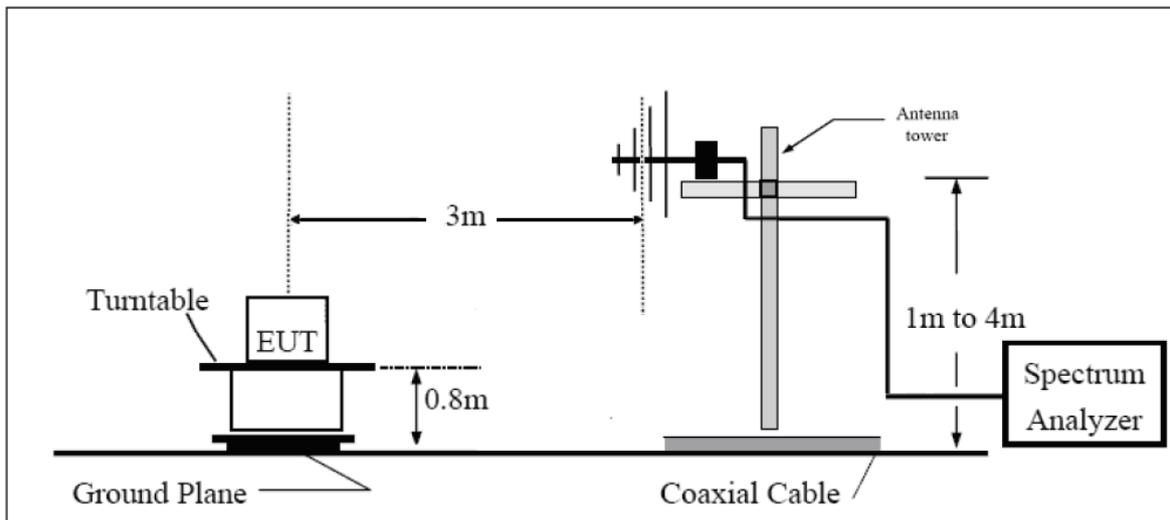
The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

The test is in transmitting mode.

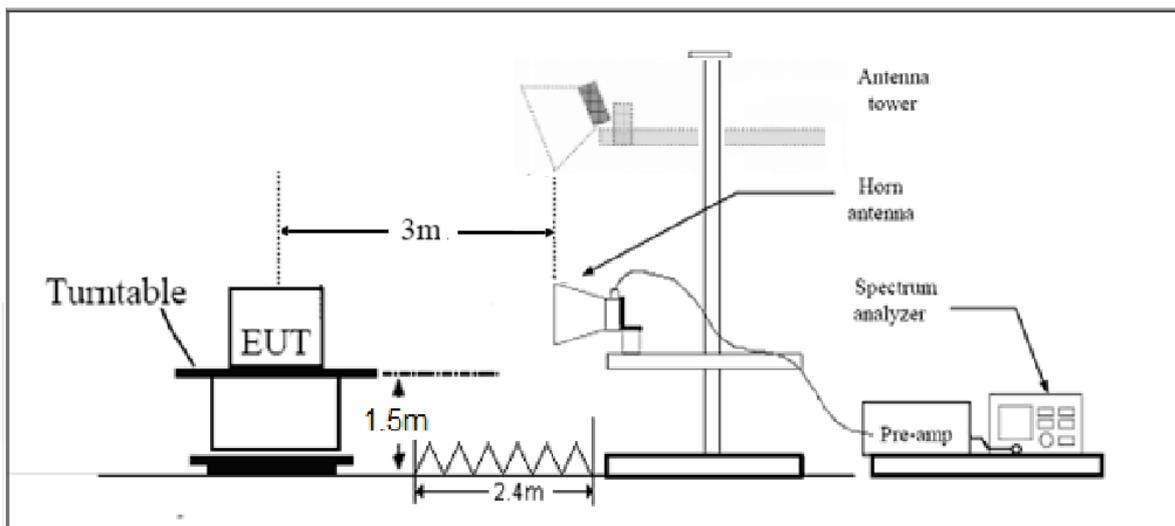
9KHz~~~30MHz



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

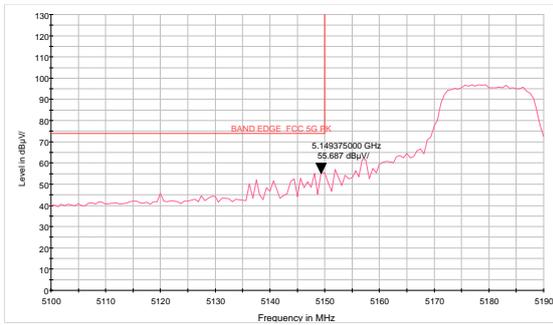


**Test Results:**

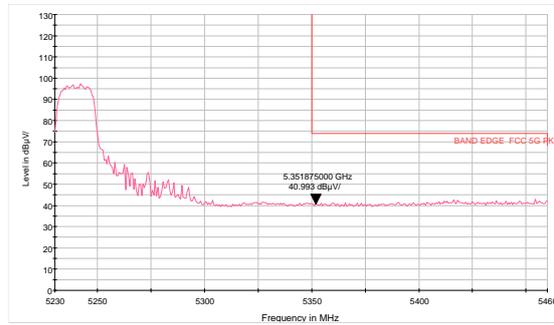
The signal beyond the limit is carrier.

**U-NII-1**

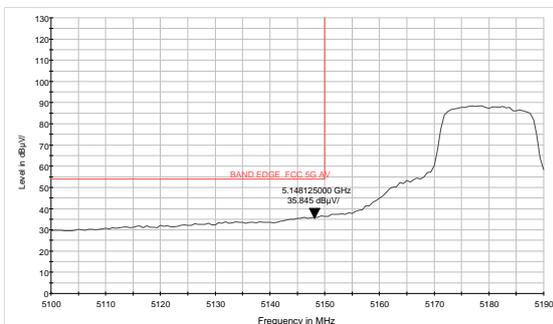
**802.11a-Channel 36: Peak**



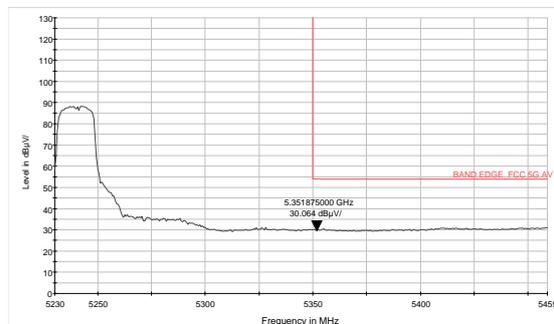
**802.11a-Channel 48: Peak**



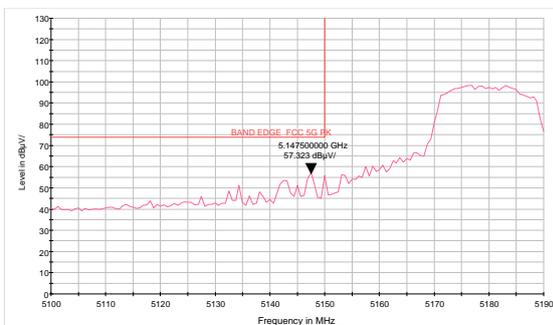
**802.11a-Channel 36: Average**



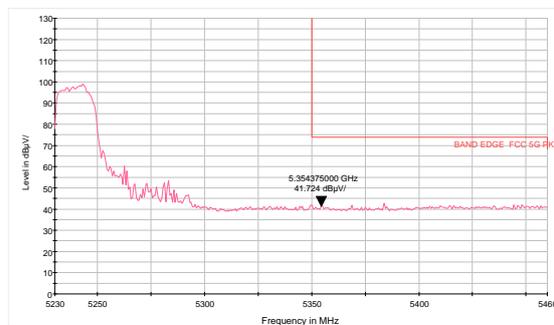
**802.11a-Channel 48: Average**



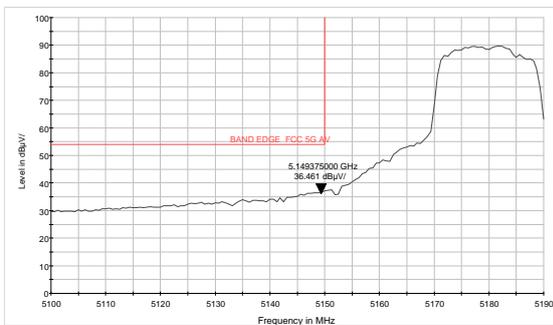
**802.11n HT20-Channel 36: Peak**



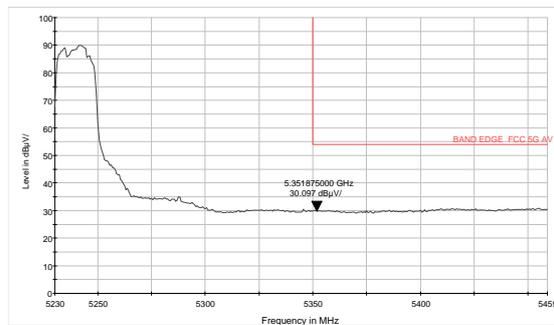
**802.11n HT20-Channel 48: Peak**



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

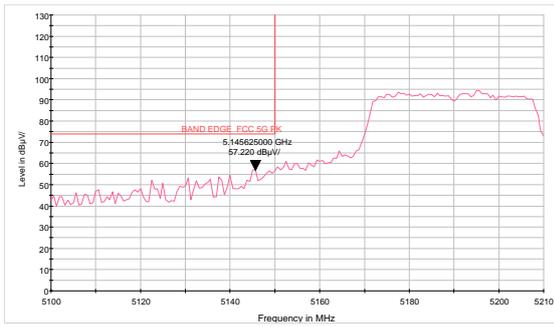


**802.11n HT20-Channel 48: Average**

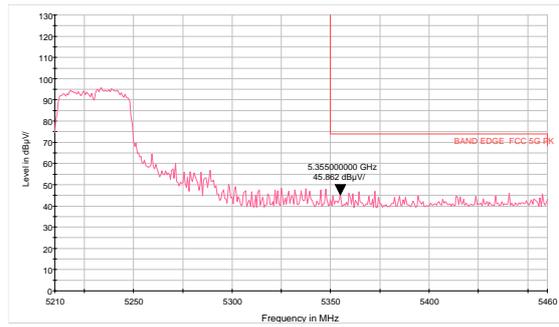




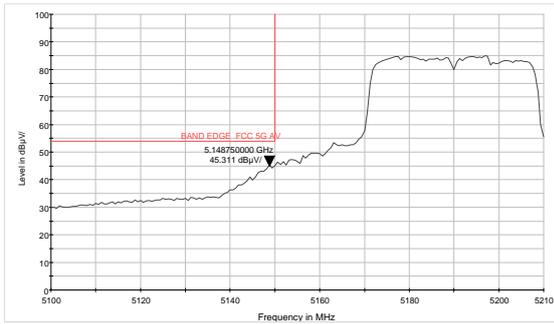
### 802.11n HT40-Channel 38: Peak



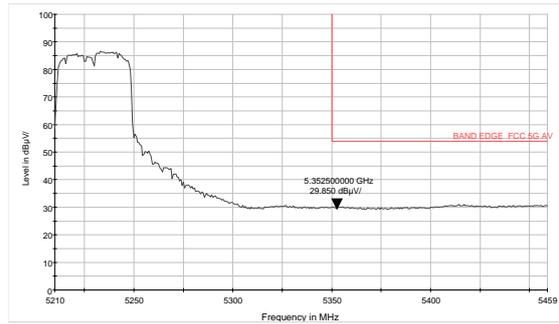
### 802.11n HT40-Channel 46: Peak



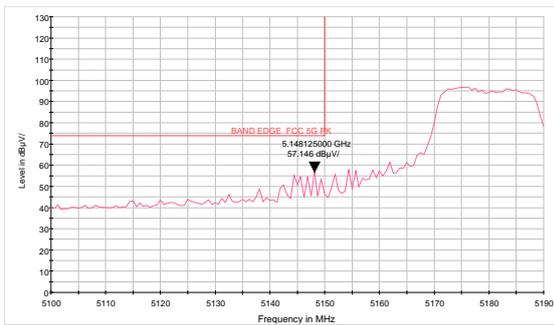
### 802.11n HT40-Channel 38: Average



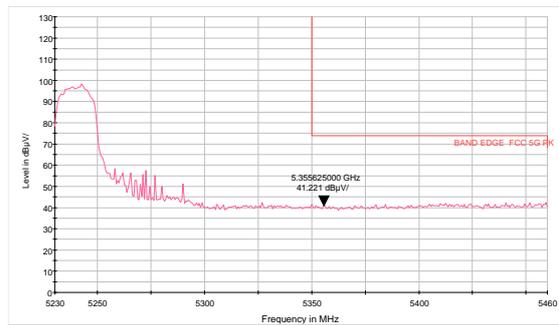
### 802.11n HT40-Channel 46: Average



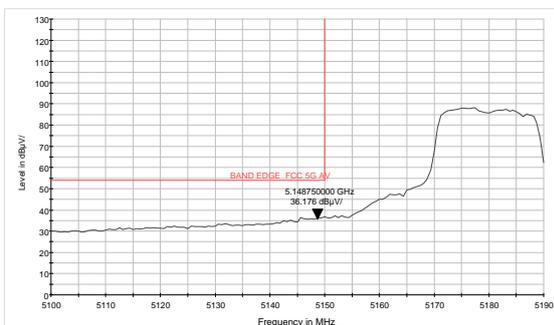
### 802.11ac HT20 -Channel 36: Peak



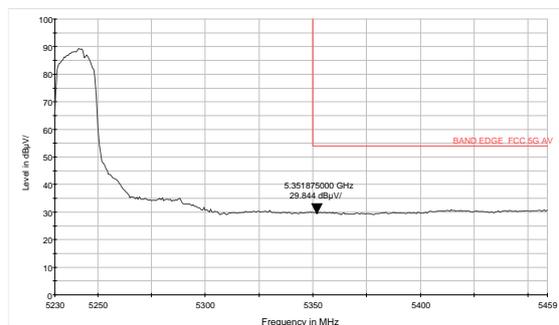
### 802.11ac HT20 -Channel 48: Peak



### 802.11ac HT20-Channel 36: Average

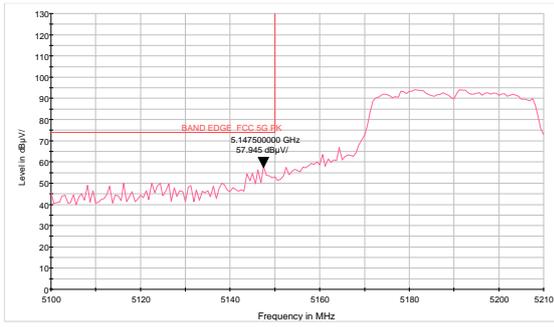


### 802.11ac HT20 -Channel 48: Average

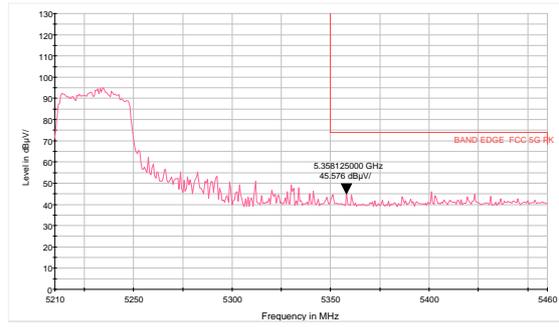




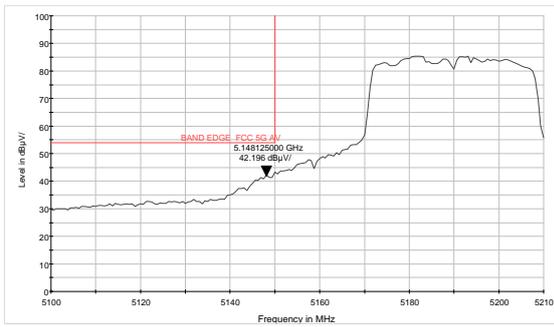
### 802.11ac HT40-Channel 38: Peak



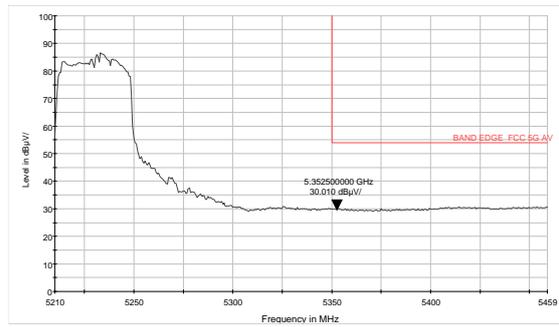
### 802.11ac HT40-Channel 46: Peak



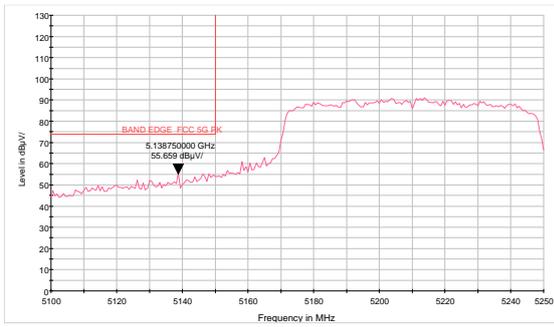
### 802.11ac HT40-Channel 38: Average



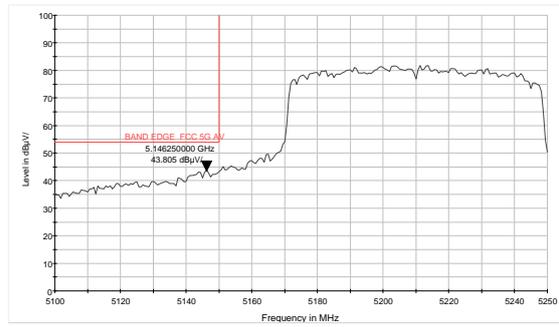
### 802.11ac HT40-Channel 46: Average



### 802.11ac HT80 -Channel 42: Peak



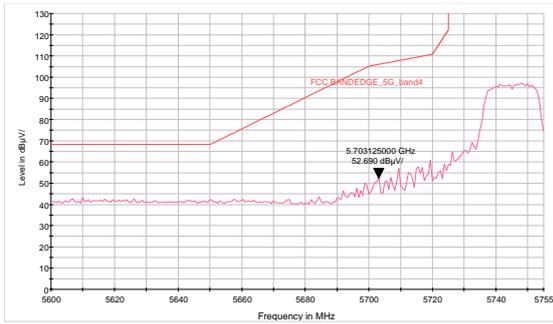
### 802.11ac HT80- Channel 42: Average



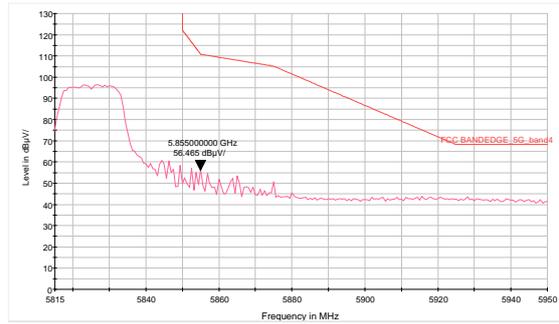


U-NII-3

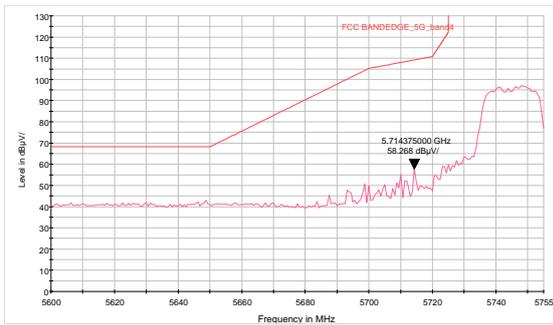
802.11a-Channel 149: Peak



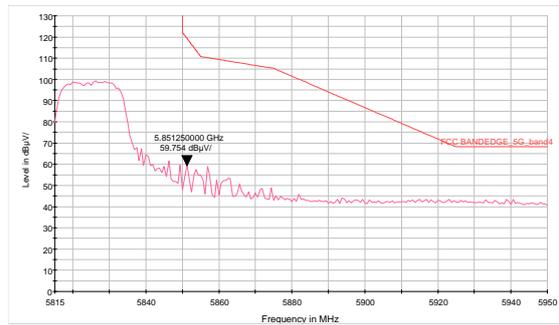
802.11a-Channel 165: Peak



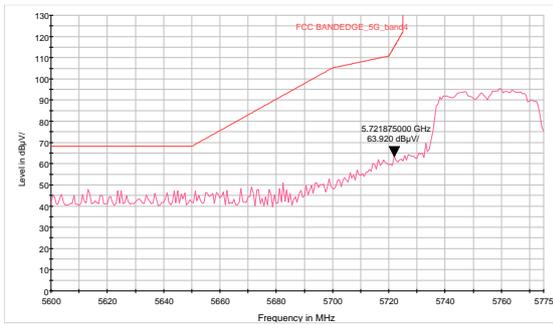
802.11n HT20-Channel 149: Peak



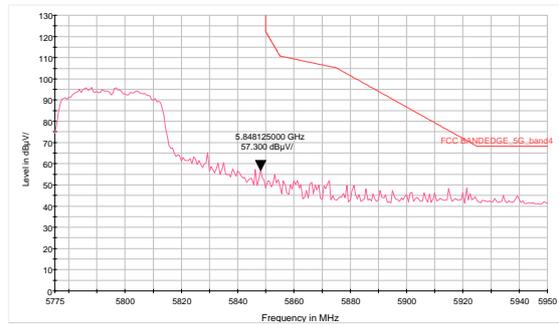
802.11n HT20-Channel 165: Peak



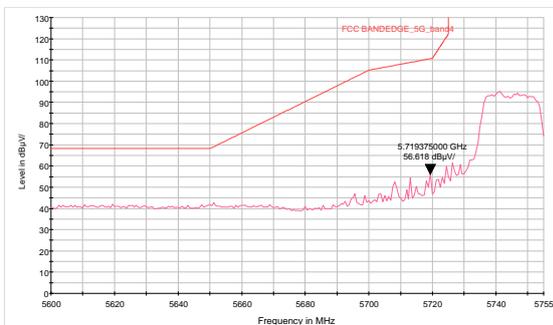
802.11n HT40-Channel 151: Peak



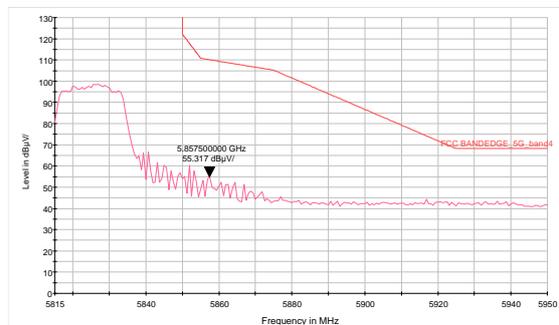
802.11n HT40-Channel 159: Peak



802.11ac HT20-Channel 149: Peak

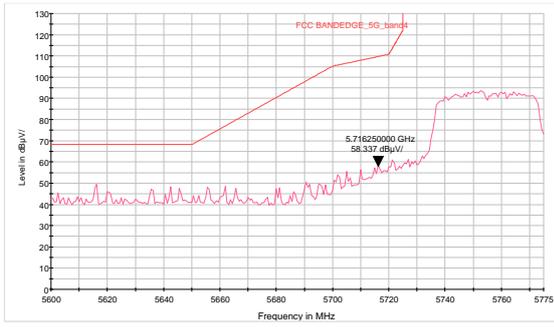


802.11ac HT20-Channel 165: Peak

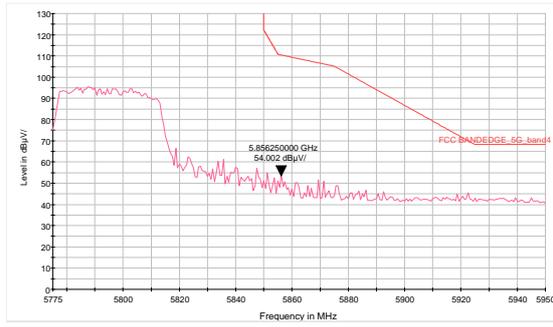




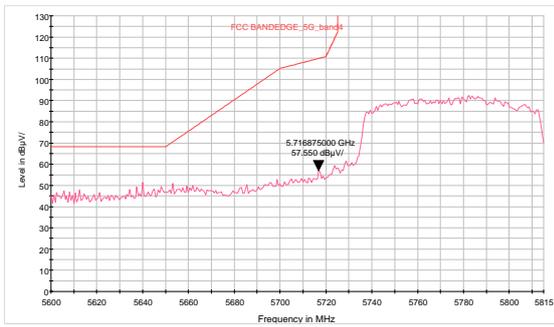
### 802.11ac HT40-Channel 151: Peak



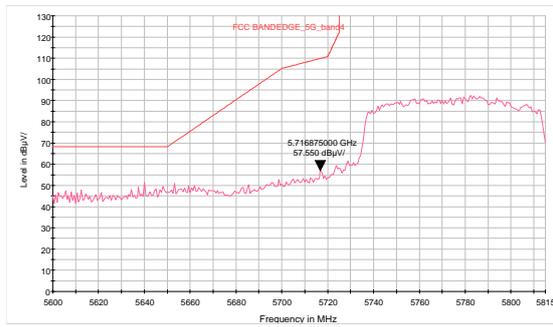
### 802.11ac HT40-Channel 159: Peak



### 802.11ac HT80- Channel 155: Peak



### 802.11ac HT80- Channel 155: Peak



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

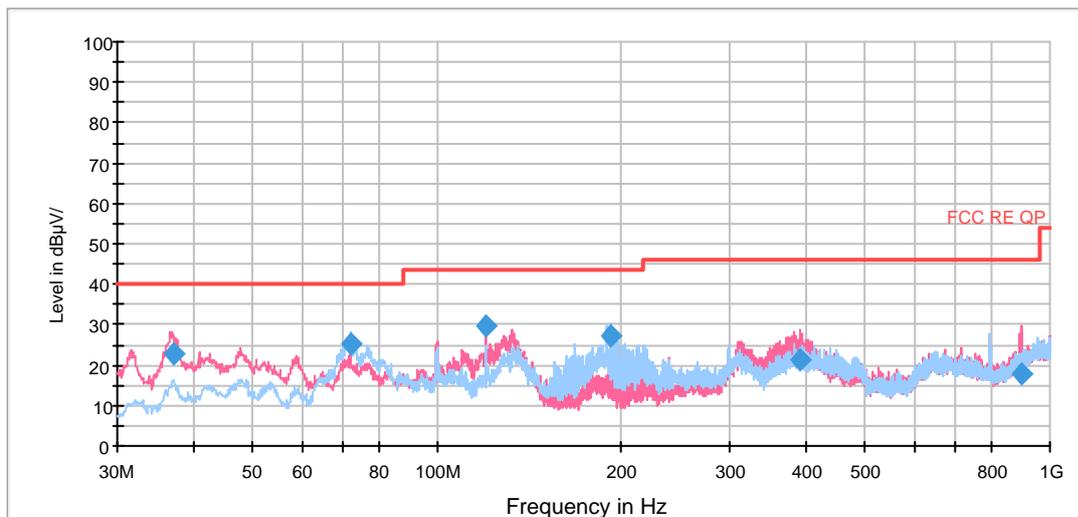
Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and 9KHz-30MHz, the emissions more than 20 dB below the permissible value are not reported.

**After the pre test, Antenna 1 was selected as the worst antenna.**

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11ac(HT20) , Channel 165 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

**Continuous TX mode:**

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Reading value (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
36.978972	22.5	41.1	100.0	V	238.0	-18.6	17.5	40.0
72.012619	25.3	52.2	225.0	H	0.0	-26.9	14.7	40.0
119.987581	29.7	56.8	100.0	V	22.0	-27.1	13.8	43.5
192.352866	27.2	52.4	100.0	H	73.0	-25.2	16.3	43.5
390.661000	21.1	41.2	100.0	V	43.0	-20.1	24.9	46.0
899.268500	18.0	31.2	120.0	V	72.0	-13.2	28.0	46.0

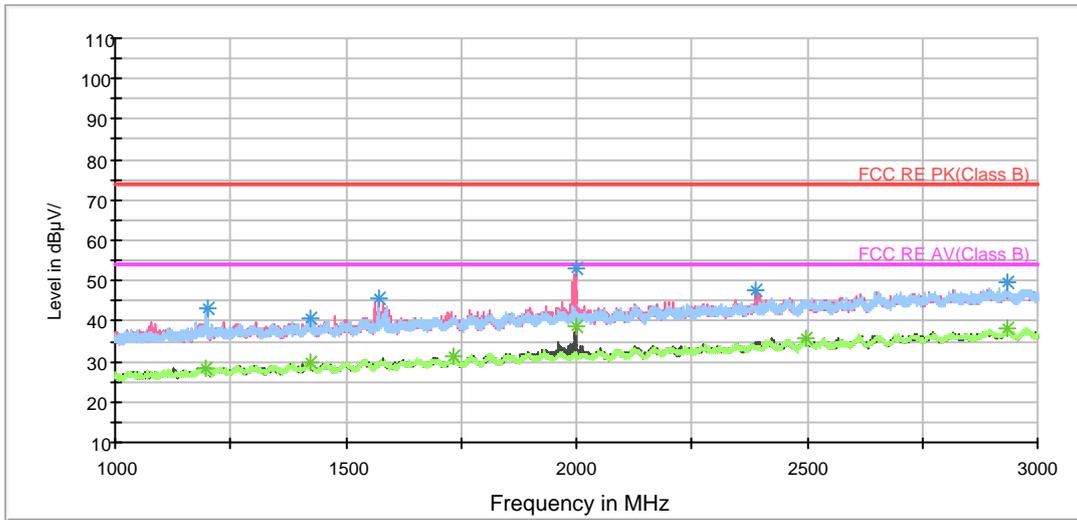
**Remark: 1. Quasi-Peak = Reading value + Correction factor**

**2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)**

**3. Margin = Limit – Quasi-Peak**

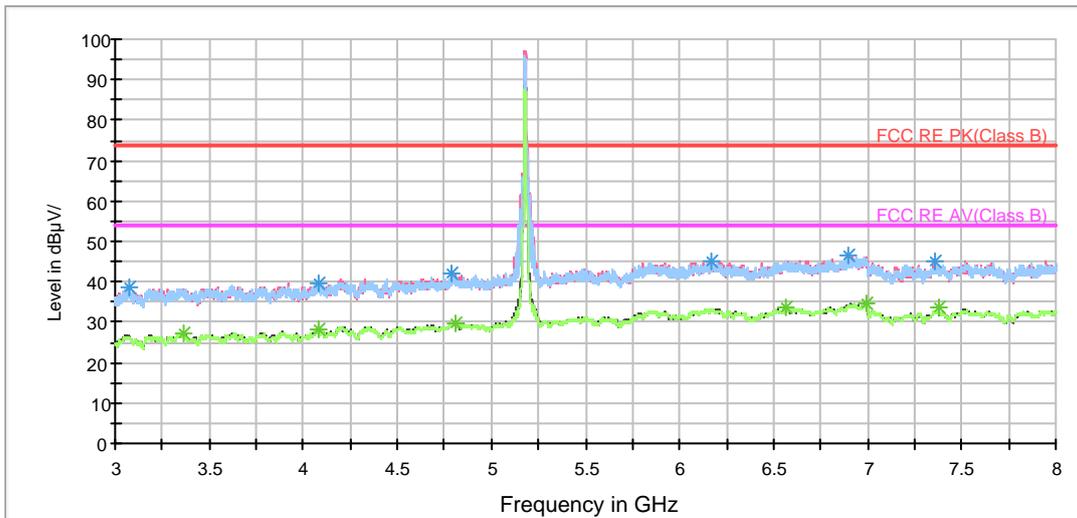
**SISO Antenna 1**  
**802.11a CH36**

RE 1G-3GHz PK+AV



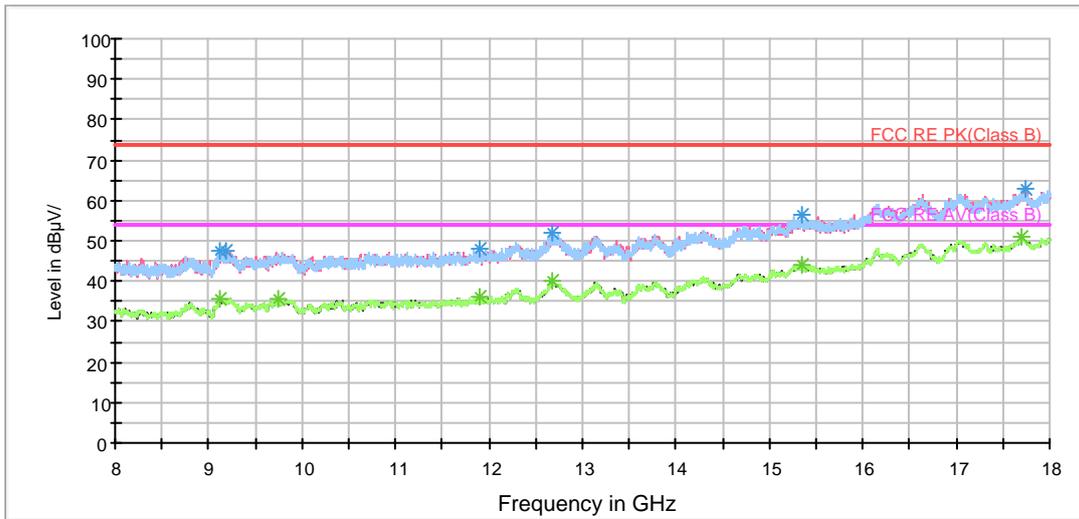
Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV



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

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

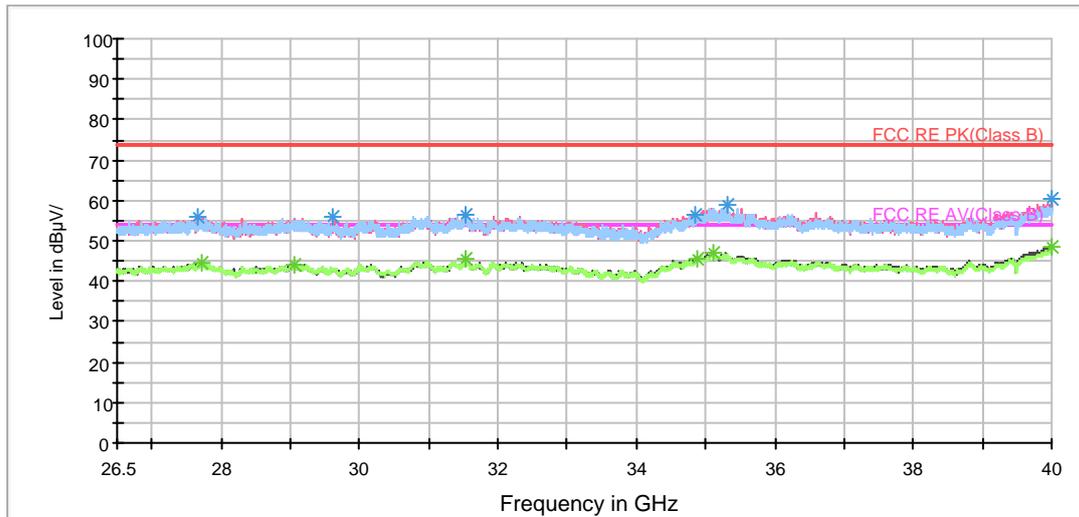
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3071.875000	38.6	200.0	H	296.0	41.6	-3.0	35.4	74
4078.125000	39.7	200.0	V	58.0	40.6	-0.9	34.3	74
4783.125000	42.3	100.0	H	78.0	41.2	1.1	31.7	74
6171.875000	45.3	200.0	H	0.0	39.8	5.5	28.7	74
6891.875000	46.5	200.0	H	0.0	40.3	6.2	27.5	74
7358.125000	45.1	100.0	V	28.0	38.1	7.0	28.9	74

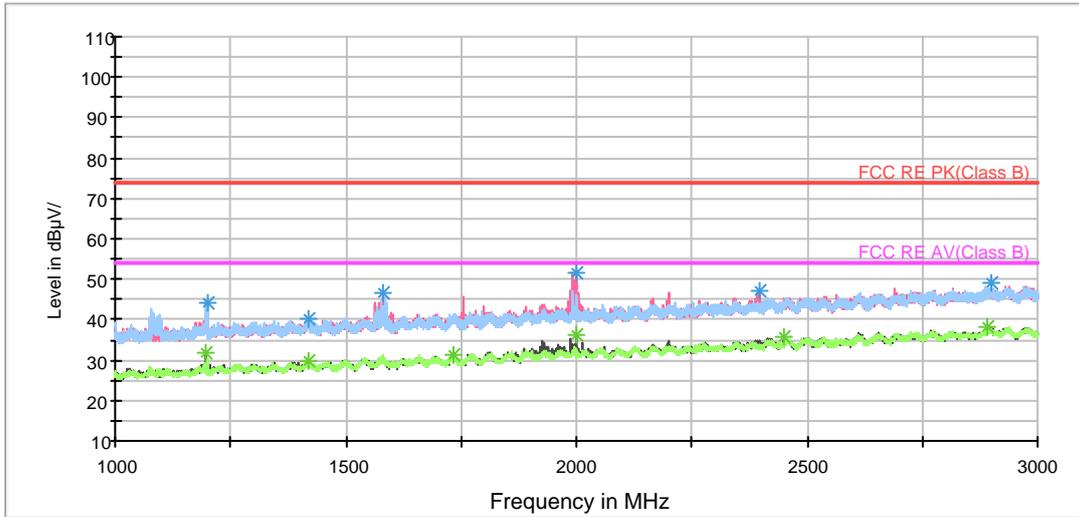
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3362.500000	27.1	200.0	V	147.0	29.4	-2.3	26.9	54
4077.500000	28.1	200.0	V	30.0	29.0	-0.9	25.9	54
4812.500000	29.9	200.0	V	147.0	28.6	1.3	24.1	54
6560.625000	33.6	200.0	V	0.0	27.8	5.8	20.4	54
6991.875000	34.5	100.0	V	326.0	28.0	6.5	19.5	54
7381.875000	33.7	200.0	H	311.0	26.6	7.1	20.3	54

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

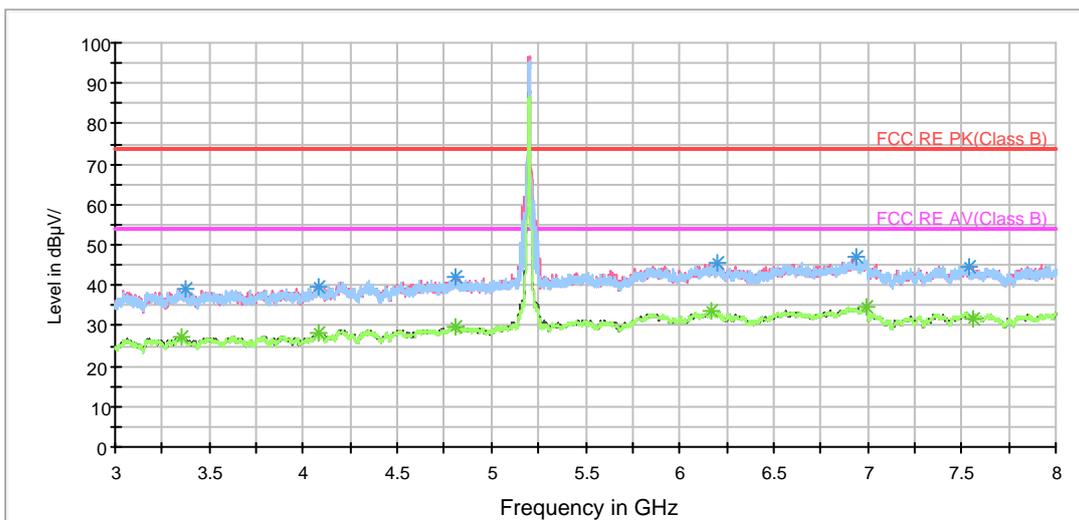
802.11a CH40

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

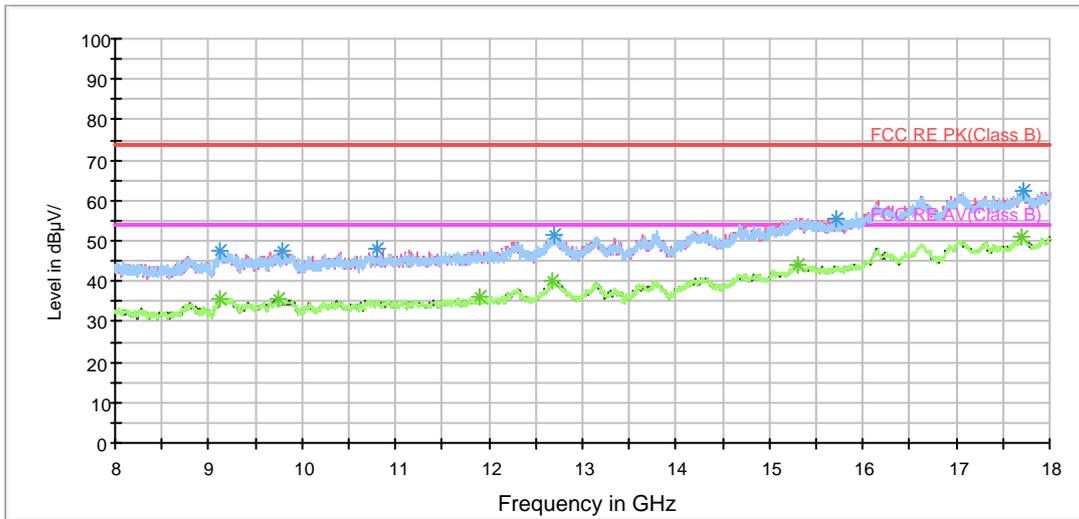
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



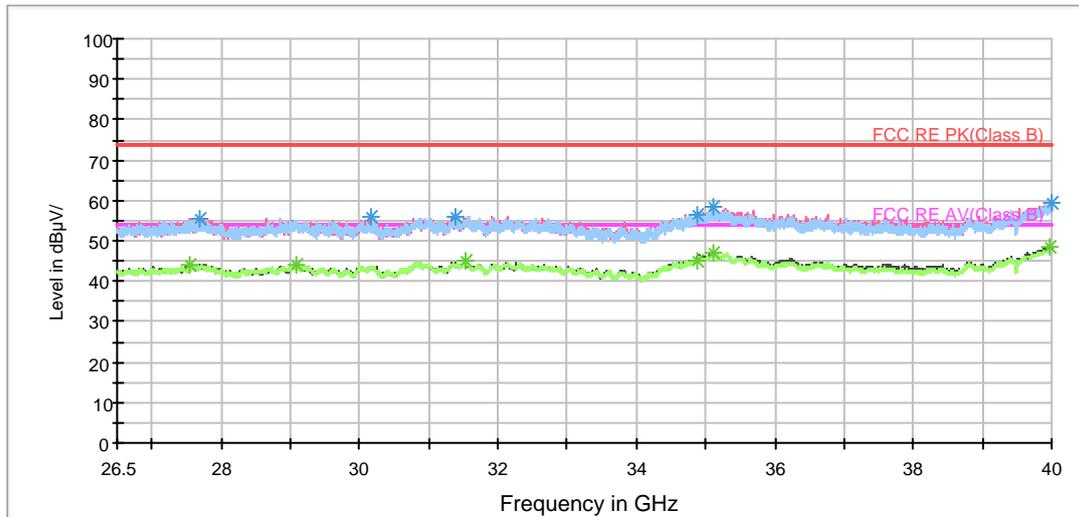
Radiates Emission from 8GHz to 18GHz

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

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3375.625000	39.2	200.0	V	164.0	41.8	-2.6	34.8	74
4080.625000	39.5	200.0	V	0.0	40.4	-0.9	34.5	74
4810.000000	42.0	100.0	H	0.0	40.7	1.3	32.0	74
6204.375000	45.4	100.0	V	152.0	40.0	5.4	28.6	74
6940.000000	46.8	200.0	H	0.0	40.7	6.1	27.2	74
7534.375000	44.5	200.0	H	270.0	37.5	7.0	29.5	74

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

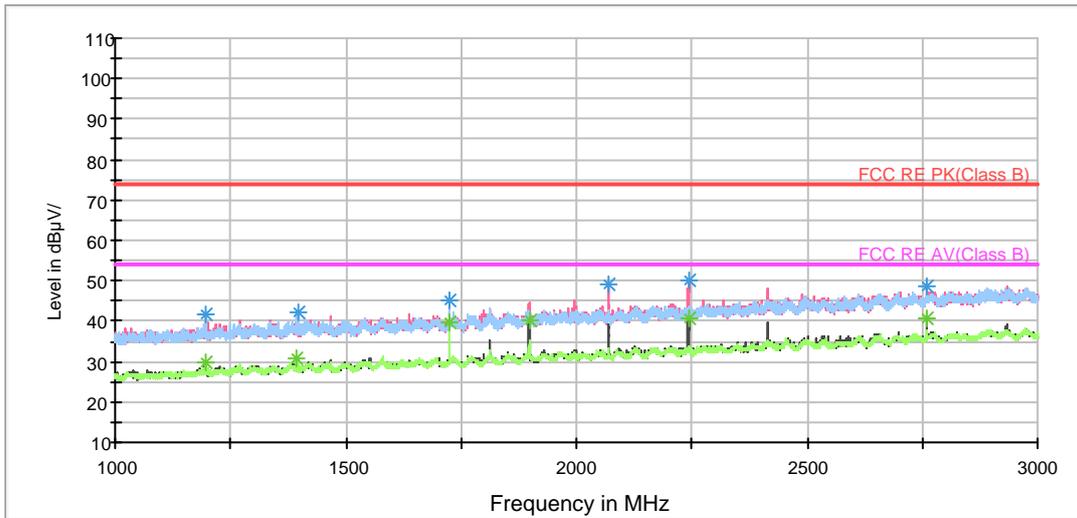
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3358.125000	27.1	200.0	V	0.0	29.4	-2.3	26.9	54
4079.375000	28.1	200.0	V	254.0	29.0	-0.9	25.9	54
4810.000000	29.9	100.0	H	0.0	28.6	1.3	24.1	54
6173.125000	33.8	100.0	H	194.0	28.3	5.5	20.2	54
6994.375000	34.5	100.0	H	333.0	28.0	6.5	19.5	54
7564.375000	31.7	200.0	V	44.0	24.7	7.0	22.3	54

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



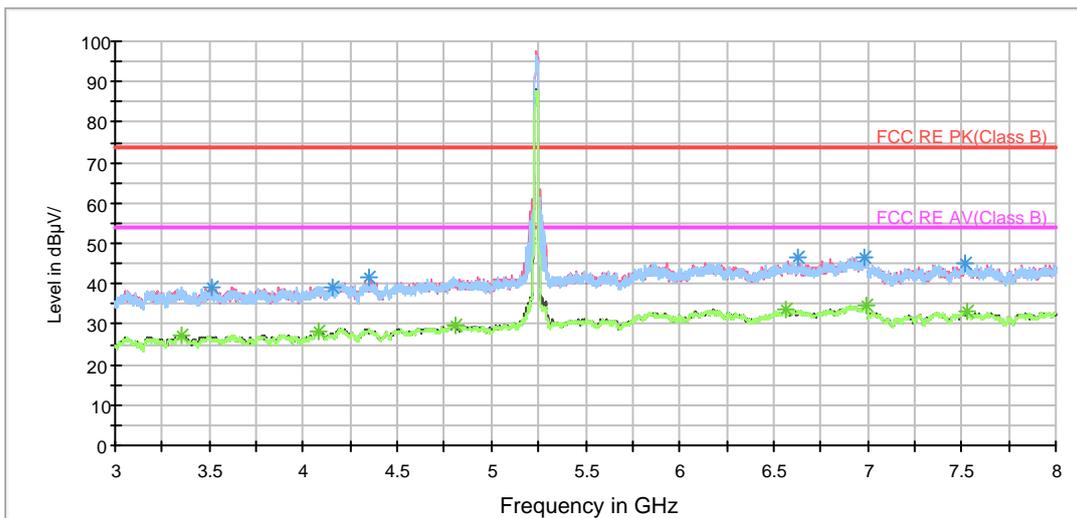
802.11a CH48

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

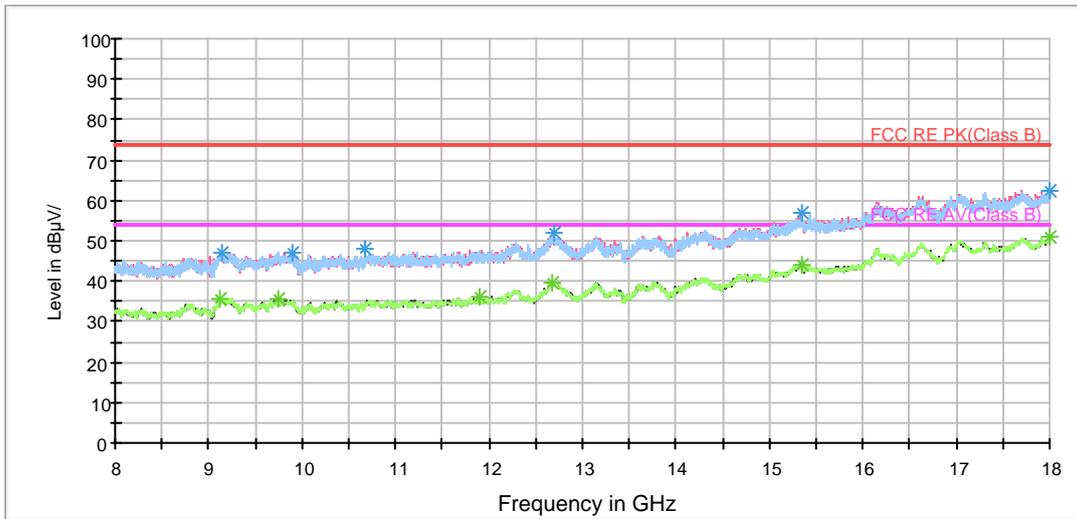
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

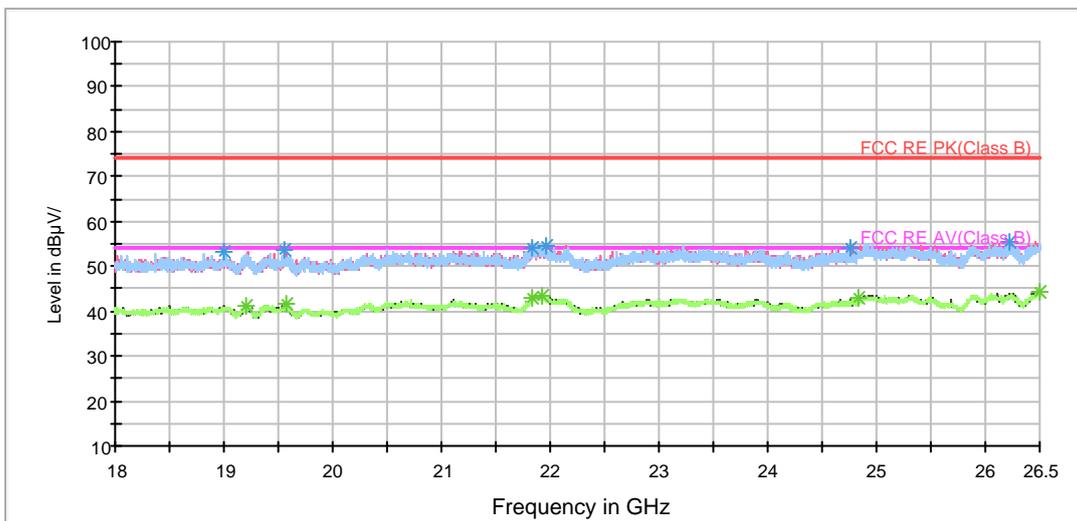
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

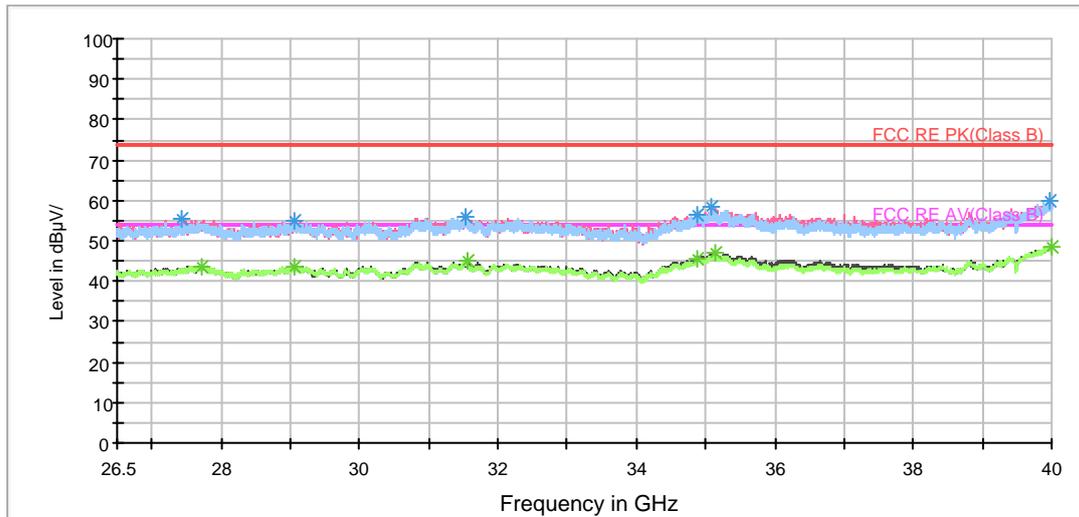
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3515.000000	39.1	100.0	V	0.0	41.1	-2.0	34.9	74
4158.125000	39.3	200.0	H	165.0	39.4	-0.1	34.7	74
4347.500000	41.7	200.0	V	91.0	41.2	0.5	32.3	74
6625.625000	46.4	100.0	H	0.0	40.9	5.5	27.6	74
6983.125000	46.7	100.0	V	28.0	40.3	6.4	27.3	74
7523.125000	44.9	100.0	V	0.0	37.8	7.1	29.1	74

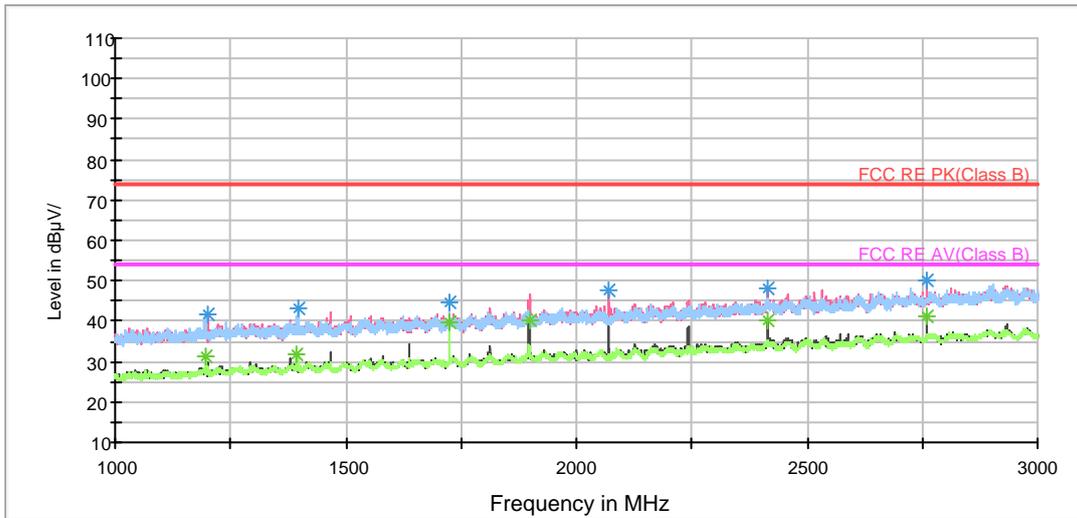
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3353.750000	27.2	200.0	V	0.0	29.5	-2.3	26.8	54
4078.125000	28.0	200.0	V	135.0	28.9	-0.9	26.0	54
4812.500000	29.8	100.0	H	268.0	28.5	1.3	24.2	54
6561.250000	33.4	200.0	V	193.0	27.6	5.8	20.6	54
6996.875000	34.5	100.0	H	86.0	28.0	6.5	19.5	54
7531.250000	33.2	100.0	V	253.0	26.1	7.1	20.8	54

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

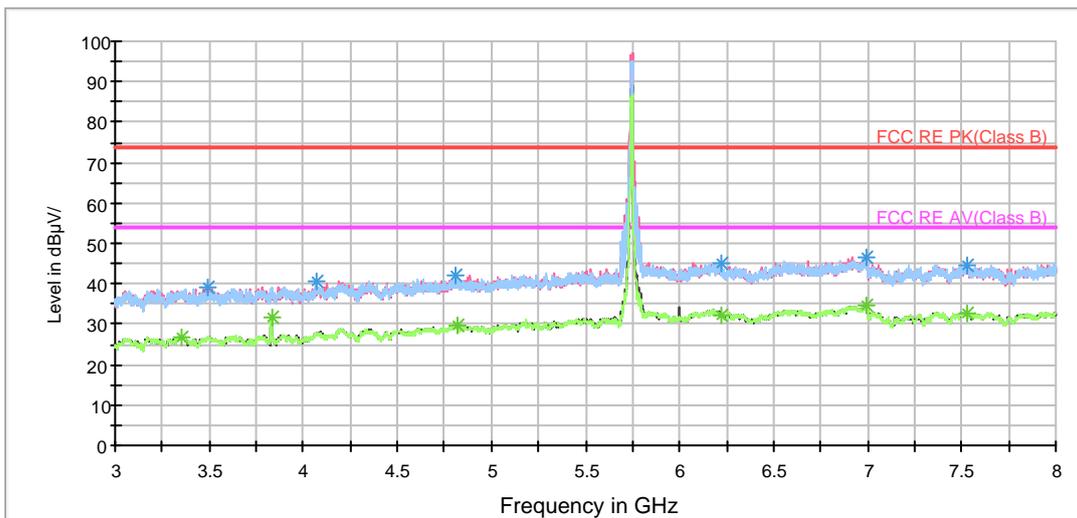
802.11a CH149

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

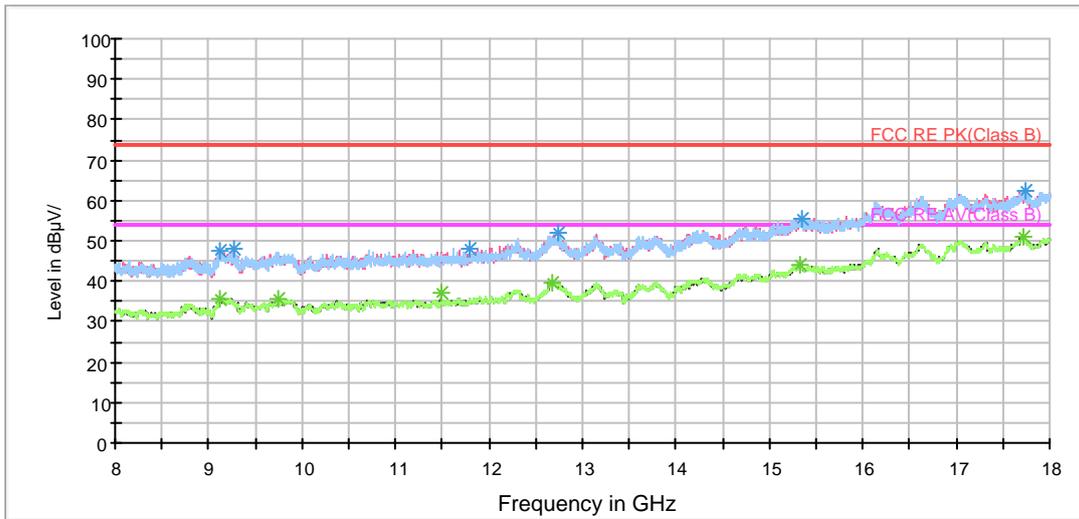
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

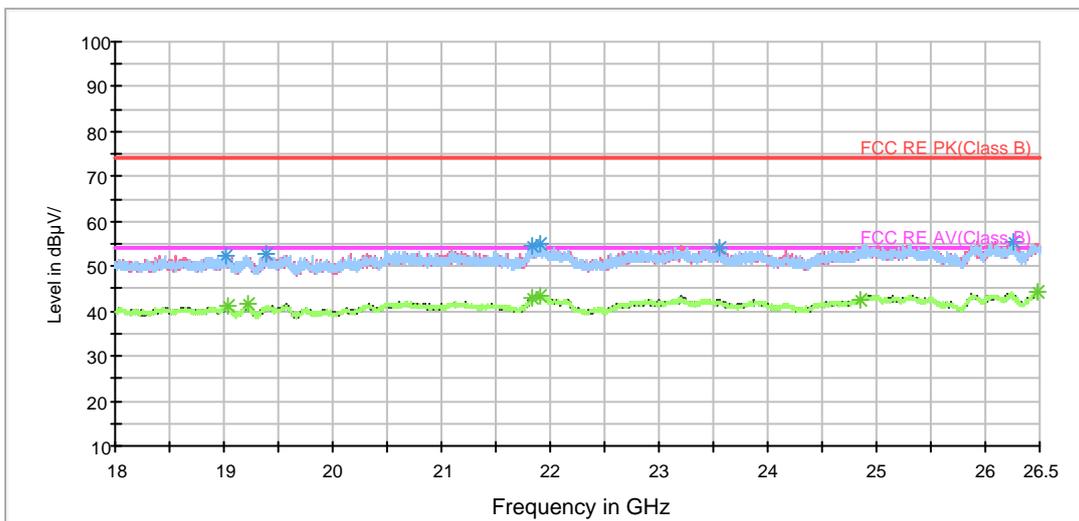
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

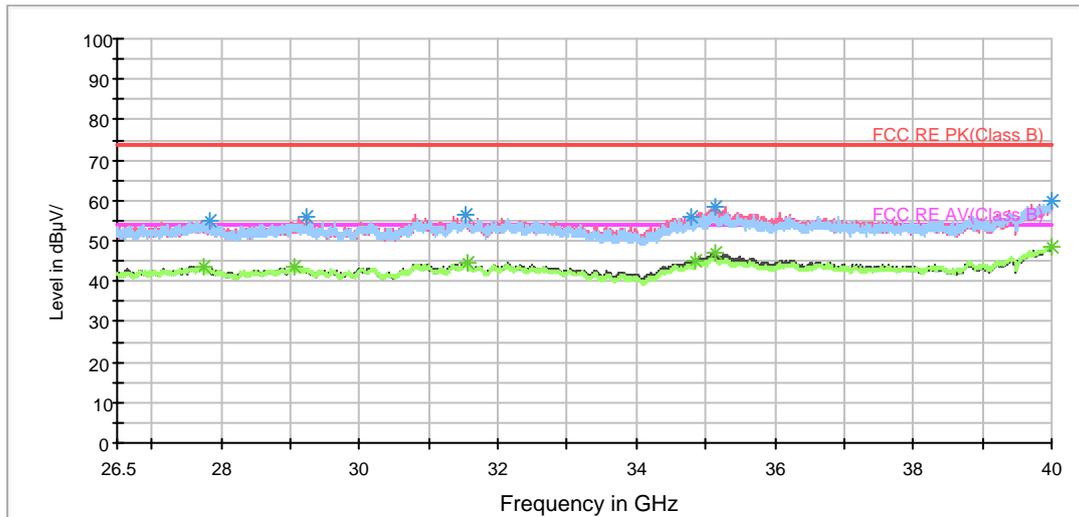
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3487.500000	39.1	200.0	V	30.0	41.1	-2.0	34.9	74
4065.625000	40.4	200.0	H	342.0	41.4	-1.0	33.6	74
4807.500000	42.2	100.0	V	255.0	40.9	1.3	31.8	74
6218.125000	45.2	100.0	V	135.0	39.8	5.4	28.8	74
6990.000000	46.7	100.0	H	300.0	40.2	6.5	27.3	74
7528.750000	44.7	200.0	H	61.0	37.6	7.1	29.3	74

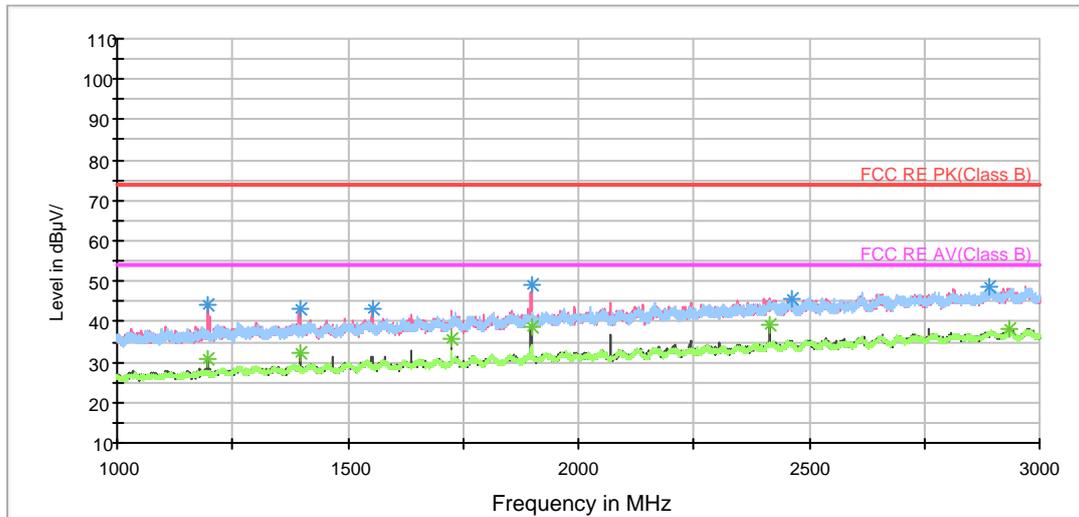
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3356.875000	26.9	200.0	V	0.0	29.2	-2.3	27.1	54
3830.000000	31.5	200.0	H	123.0	33.2	-1.7	22.5	54
4815.625000	29.7	200.0	H	357.0	28.4	1.3	24.3	54
6218.125000	32.4	100.0	V	135.0	27.0	5.4	21.6	54
6990.000000	34.7	100.0	H	300.0	28.2	6.5	19.3	54
7528.750000	32.8	200.0	H	61.0	25.7	7.1	21.2	54

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

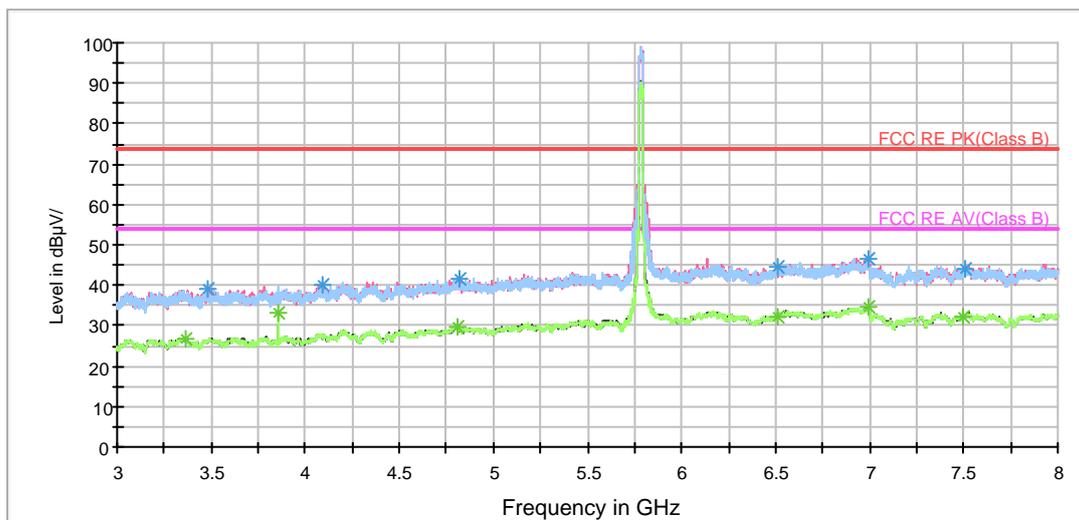
## 802.11a CH157

## RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

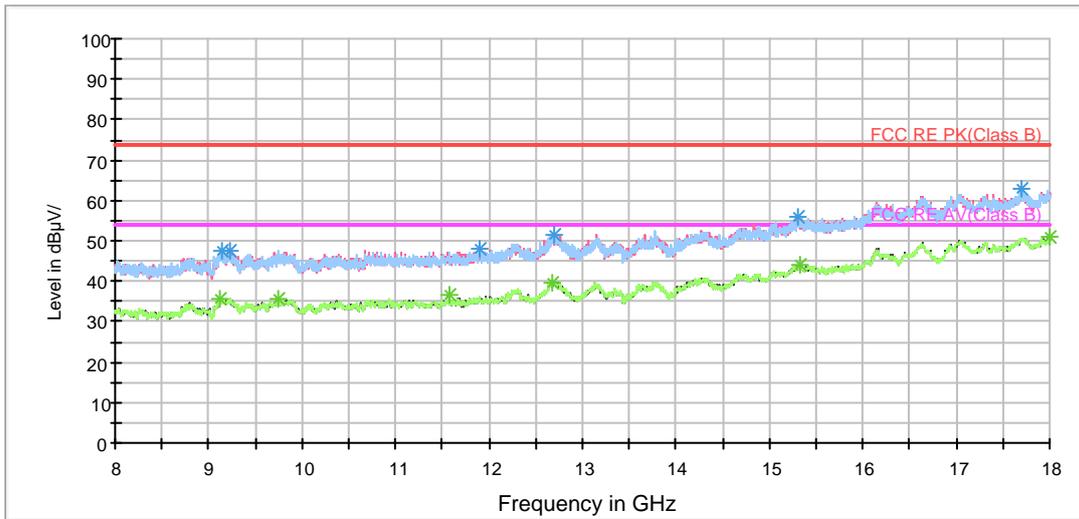
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

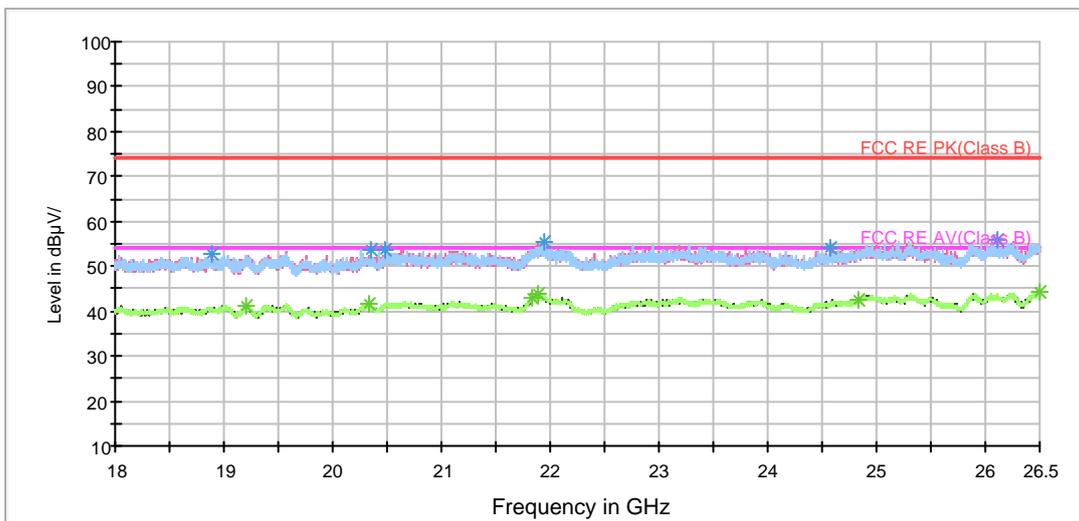
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



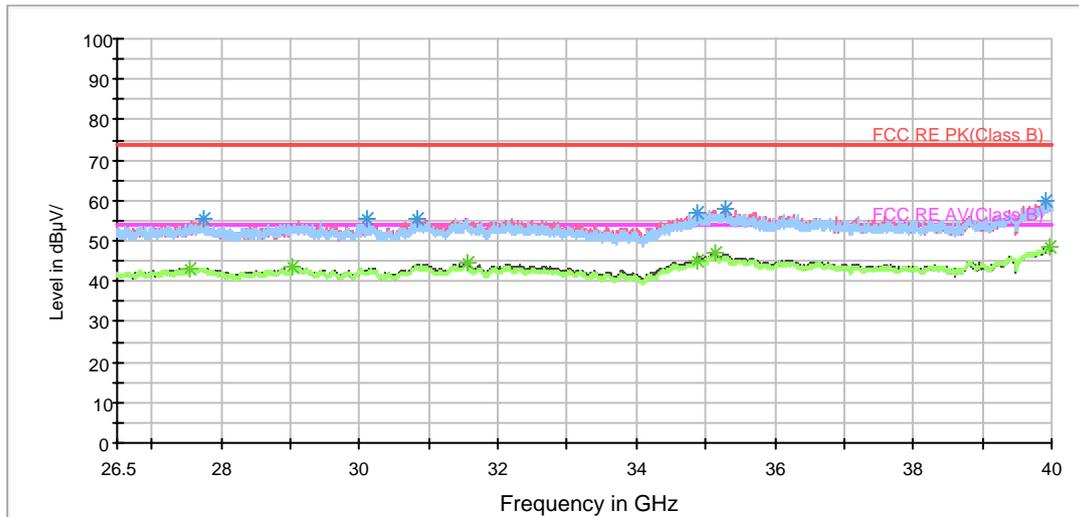
Radiates Emission from 8GHz to 18GHz

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

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3481.875000	38.9	200.0	H	344.0	40.9	-2.0	35.1	74
4095.625000	40.0	200.0	H	140.0	41.0	-1.0	34.0	74
4820.000000	41.7	100.0	H	313.0	40.4	1.3	32.3	74
6507.500000	44.4	100.0	V	139.0	39.0	5.4	29.6	74
6993.125000	46.7	200.0	V	27.0	40.2	6.5	27.3	74
7507.500000	44.3	200.0	H	199.0	37.4	6.9	29.7	74

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

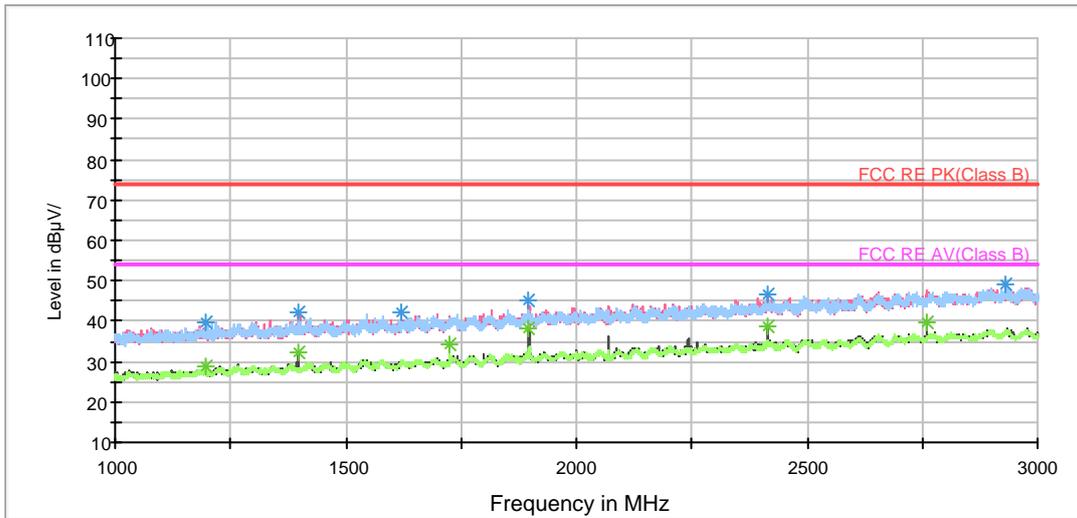
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3368.750000	26.9	100.0	V	344.0	29.4	-2.5	27.1	54
3856.250000	33.4	100.0	H	117.0	35.0	-1.6	20.6	54
4809.375000	29.7	200.0	H	0.0	28.4	1.3	24.3	54
6509.375000	32.0	200.0	V	0.0	26.6	5.4	22.0	54
6996.250000	34.7	100.0	V	0.0	28.2	6.5	19.3	54
7495.000000	32.0	200.0	H	358.0	25.2	6.8	22.0	54

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



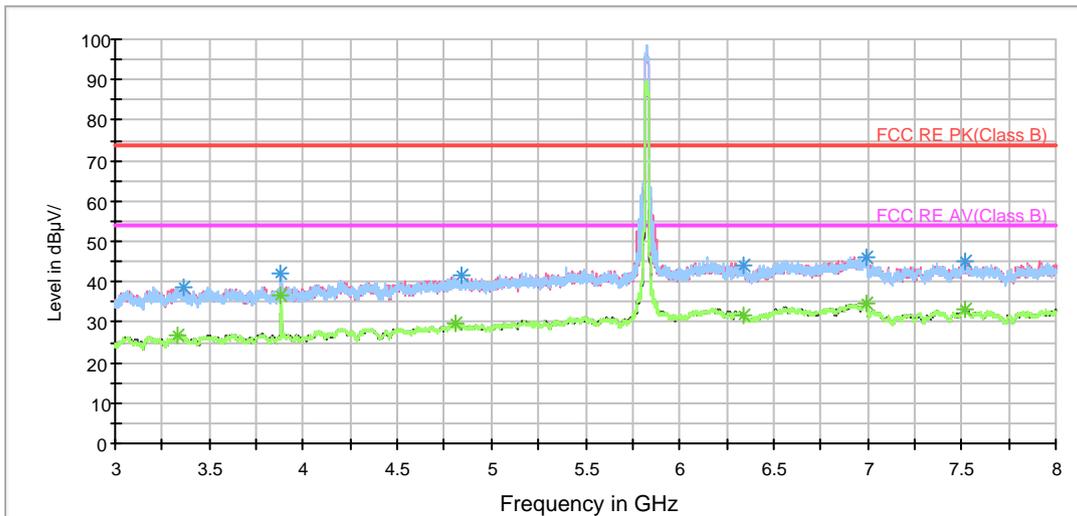
802.11a CH165

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

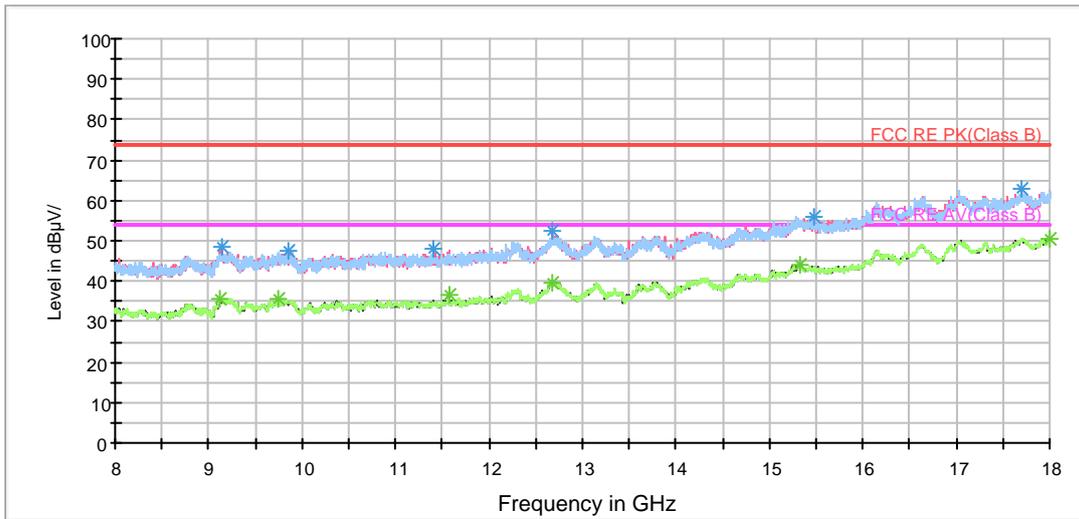
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

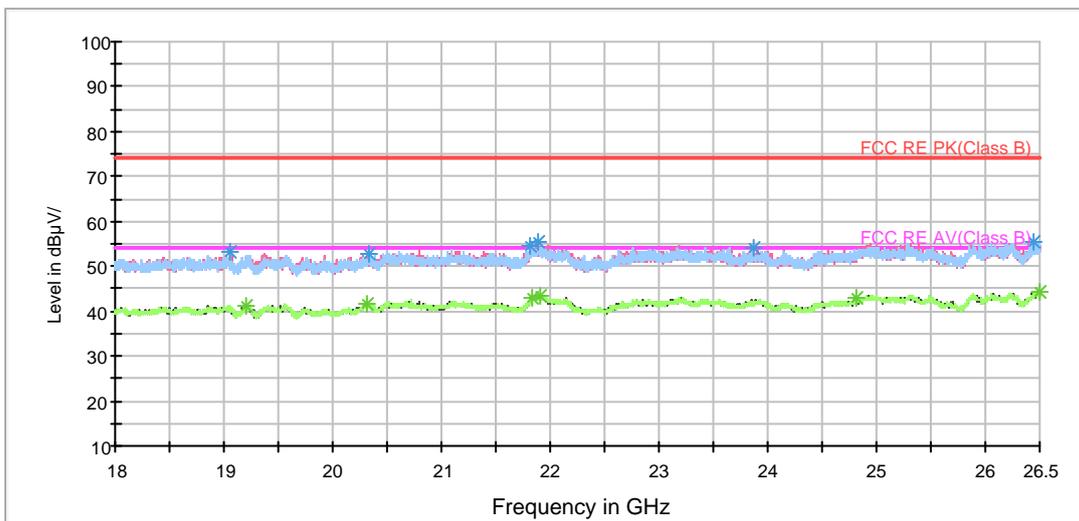
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



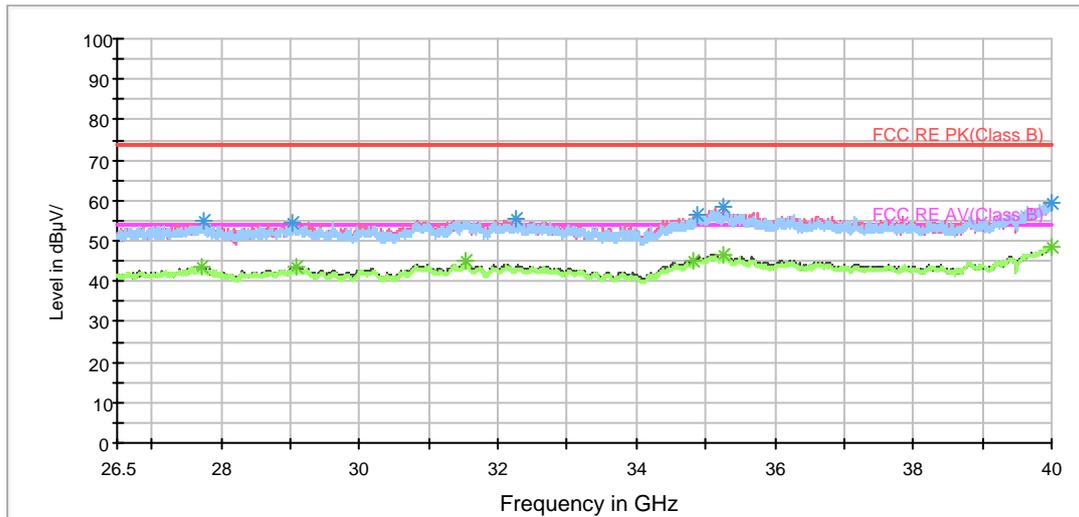
Radiates Emission from 8GHz to 18GHz

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

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3361.250000	38.8	100.0	H	74.0	41.1	-2.3	35.2	74
3883.125000	41.9	100.0	H	45.0	43.2	-1.3	32.1	74
4838.750000	41.4	100.0	H	74.0	39.8	1.6	32.6	74
6343.125000	43.9	100.0	H	60.0	38.5	5.4	30.1	74
6993.750000	46.3	100.0	V	0.0	39.8	6.5	27.7	74
7518.125000	44.9	100.0	H	45.0	37.8	7.1	29.1	74

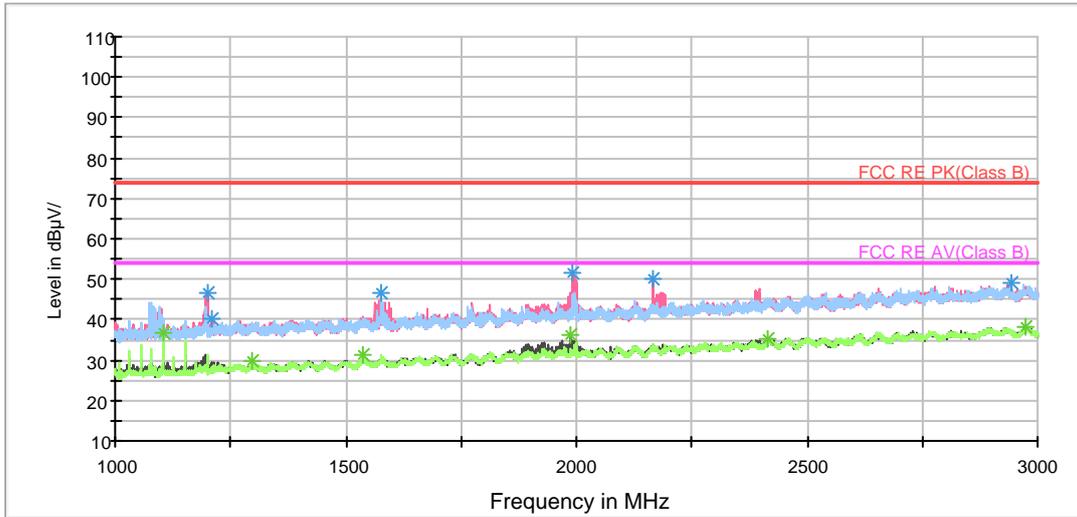
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3332.500000	26.7	100.0	V	269.0	28.9	-2.2	27.3	54
3883.125000	36.8	100.0	H	45.0	38.1	-1.3	17.2	54
4810.000000	29.6	100.0	H	149.0	28.3	1.3	24.4	54
6343.125000	31.6	100.0	H	60.0	26.2	5.4	22.4	54
6991.250000	34.9	100.0	H	0.0	28.4	6.5	19.1	54
7518.125000	33.0	100.0	H	45.0	25.9	7.1	21.0	54

MIMO

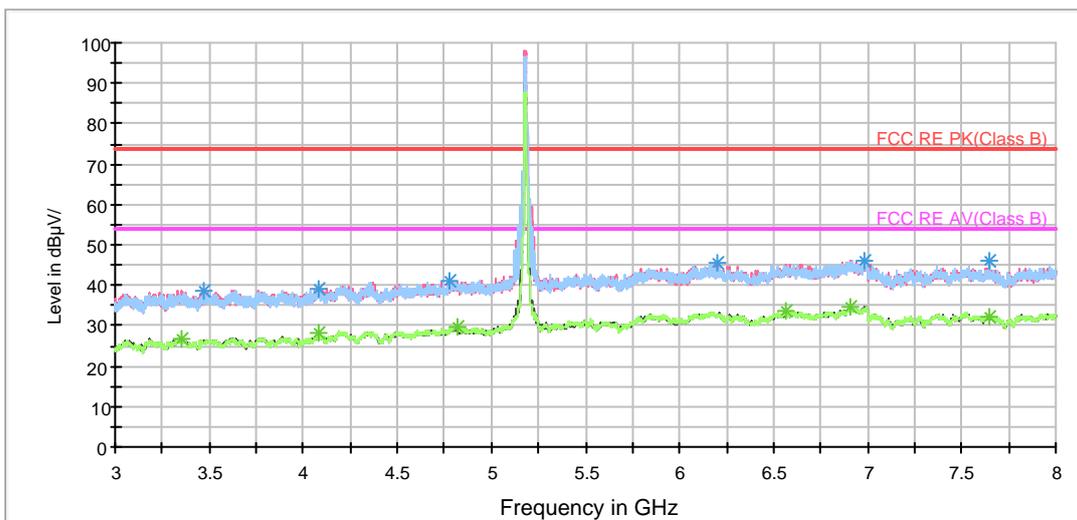
802.11n (HT20) CH36

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

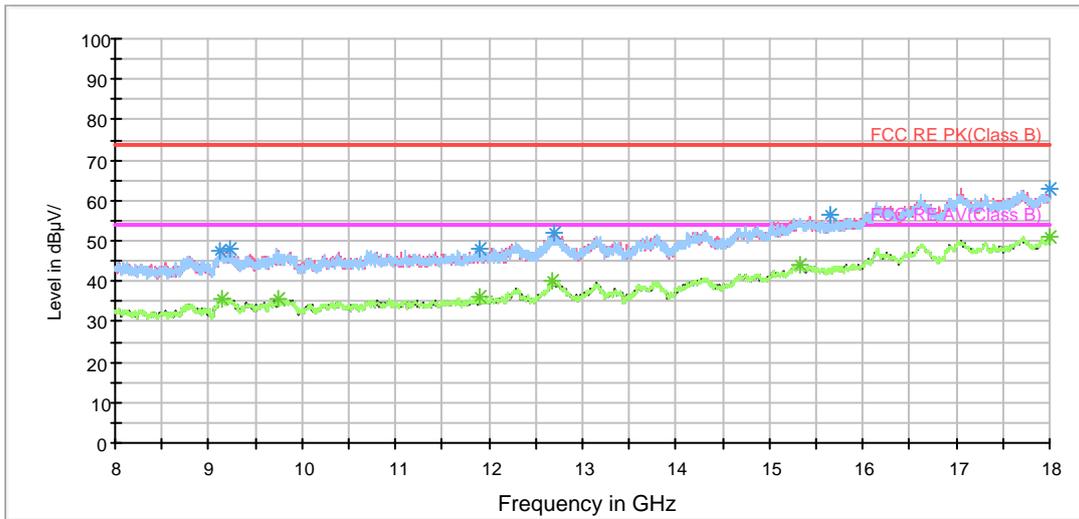
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

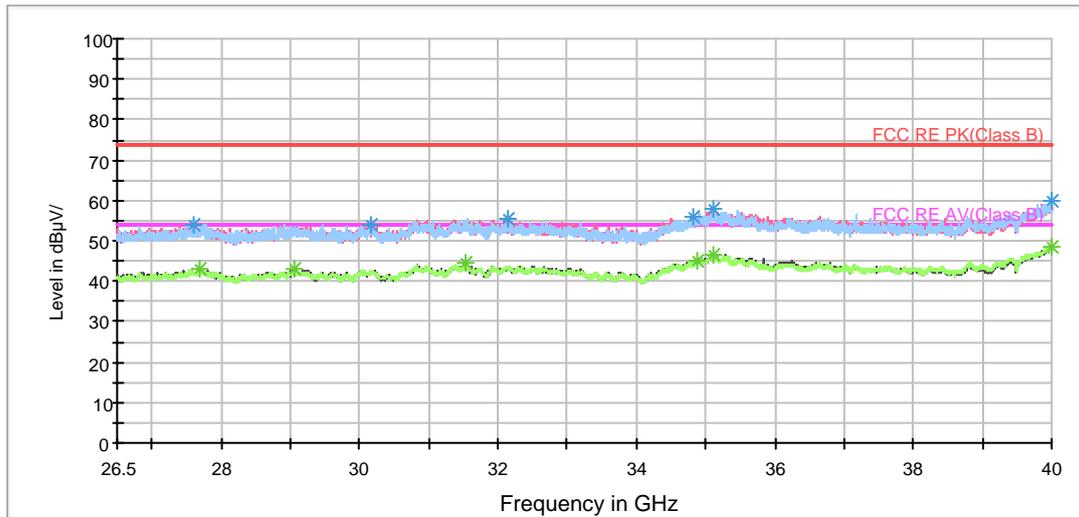
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3468.750000	38.8	100.0	V	0.0	40.9	-2.1	35.2	74
4080.625000	39.3	100.0	V	326.0	40.2	-0.9	34.7	74
4780.000000	41.3	100.0	V	211.0	40.3	1.0	32.7	74
6199.375000	45.7	100.0	V	211.0	40.3	5.4	28.3	74
6979.375000	46.2	100.0	H	210.0	39.9	6.3	27.8	74
7650.625000	46.0	100.0	H	0.0	39.1	6.9	28.0	74

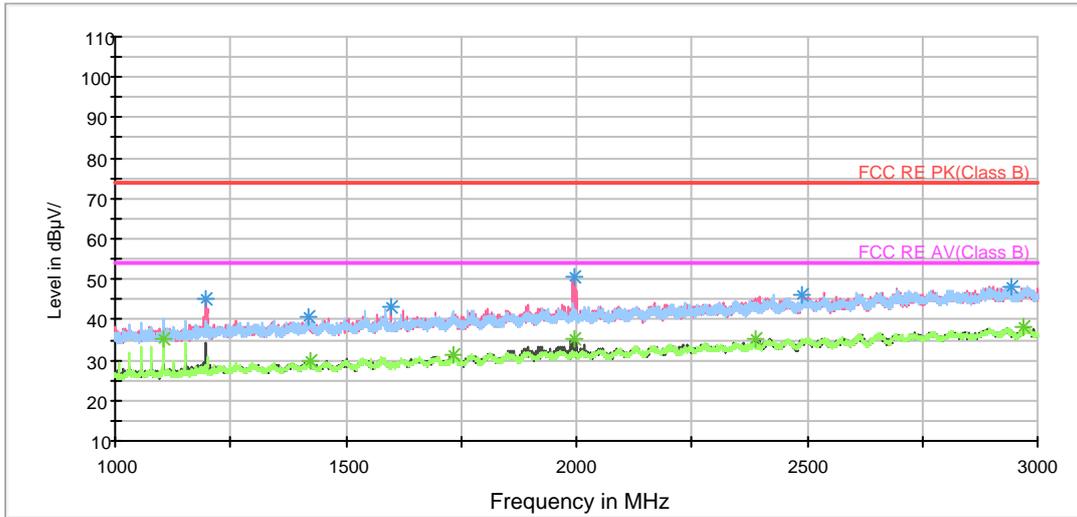
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3353.750000	26.6	100.0	H	0.0	28.9	-2.3	27.4	54
4078.125000	28.0	100.0	V	0.0	28.9	-0.9	26.0	54
4822.500000	29.5	100.0	H	0.0	28.2	1.3	24.5	54
6564.375000	33.5	100.0	H	285.0	27.8	5.7	20.5	54
6906.875000	34.8	100.0	V	284.0	28.5	6.3	19.2	54
7650.625000	32.2	100.0	H	0.0	25.3	6.9	21.8	54

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

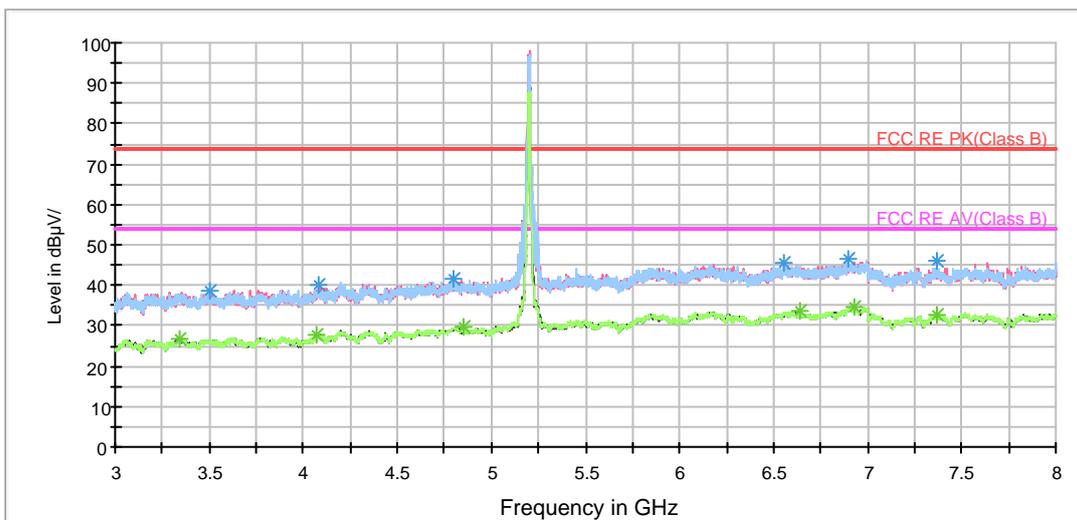
## 802.11n (HT20) CH40

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

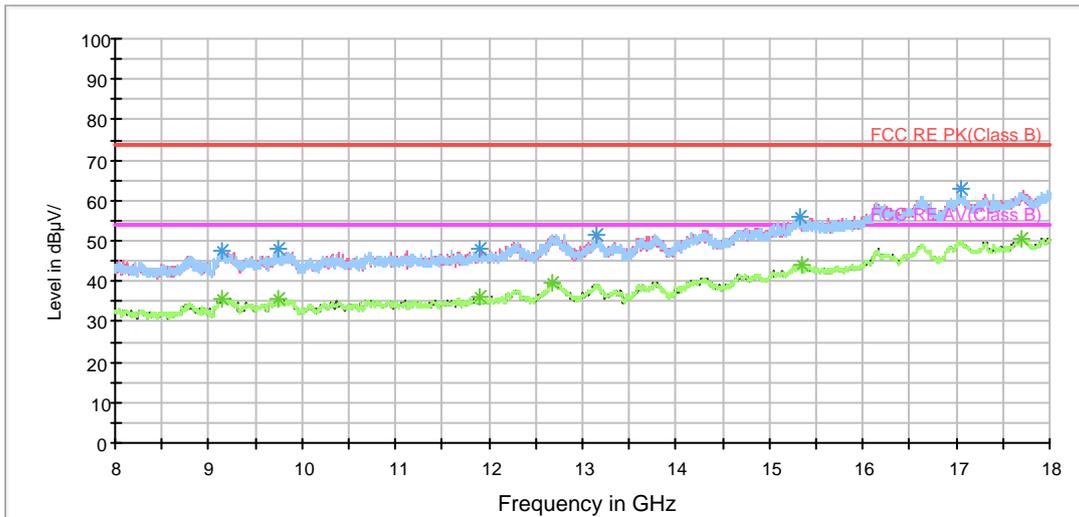
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

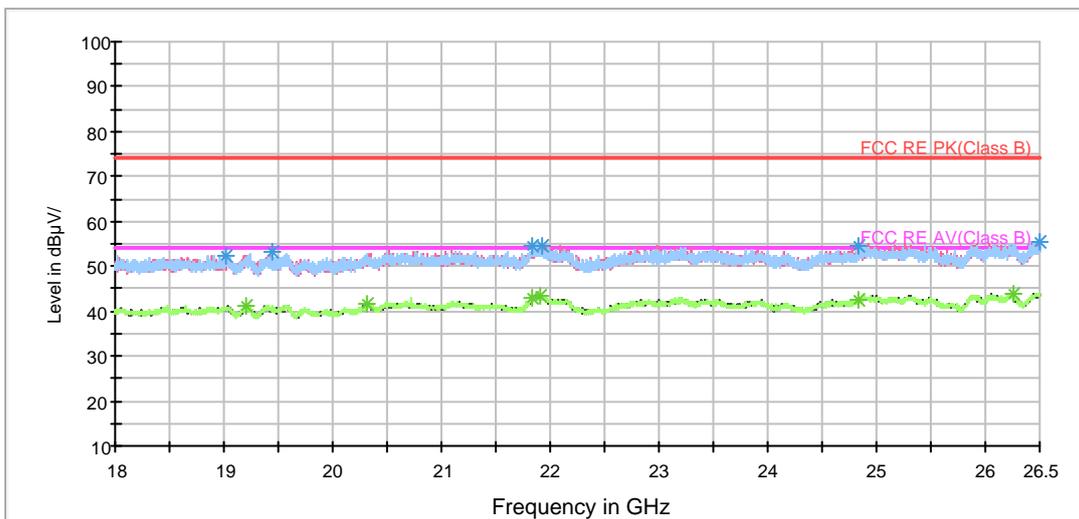
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

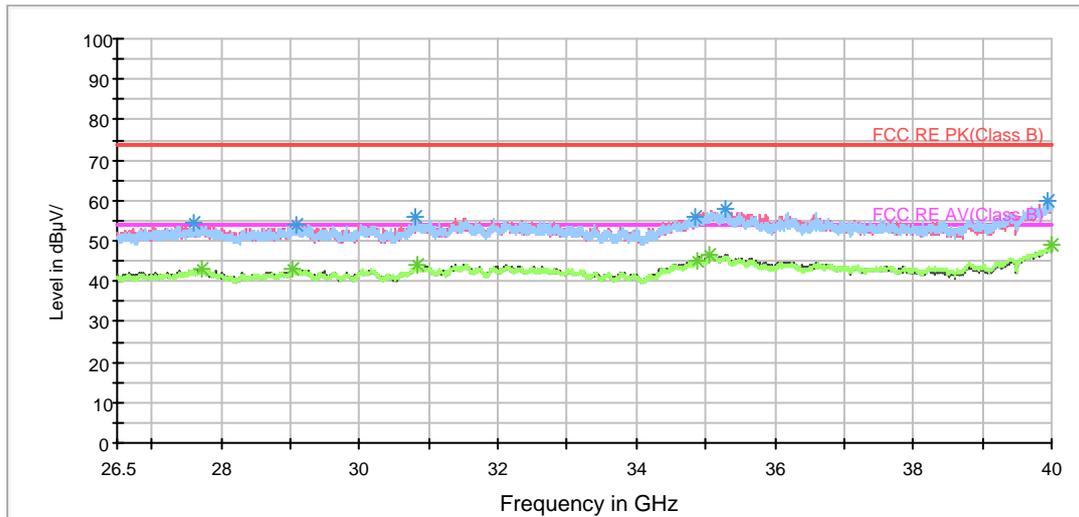
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3499.375000	38.6	100.0	V	95.0	40.7	-2.1	35.4	74
4082.500000	39.9	100.0	H	0.0	40.8	-0.9	34.1	74
4803.750000	41.8	100.0	H	18.0	40.5	1.3	32.2	74
6553.750000	45.5	100.0	V	359.0	39.9	5.6	28.5	74
6895.625000	46.3	100.0	H	91.0	40.1	6.2	27.7	74
7369.375000	45.8	100.0	V	199.0	38.8	7.0	28.2	74

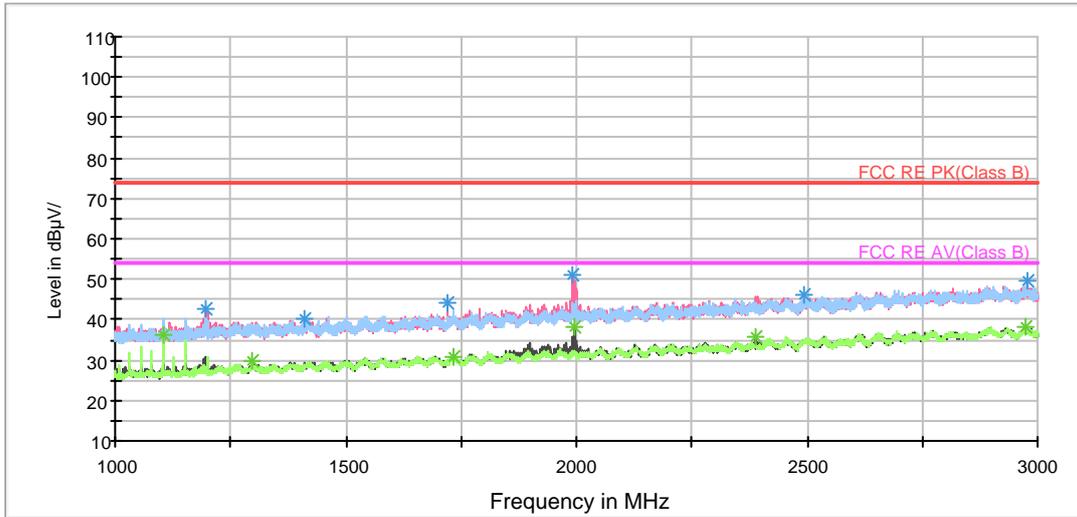
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3346.875000	26.8	100.0	V	346.0	29.1	-2.3	27.2	54
4075.625000	27.9	100.0	H	0.0	28.8	-0.9	26.1	54
4847.500000	29.8	100.0	H	349.0	28.2	1.6	24.2	54
6641.875000	33.5	100.0	H	240.0	28.0	5.5	20.5	54
6933.125000	34.5	100.0	V	0.0	28.3	6.2	19.5	54
7369.375000	32.5	100.0	V	199.0	25.5	7.0	21.5	54

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

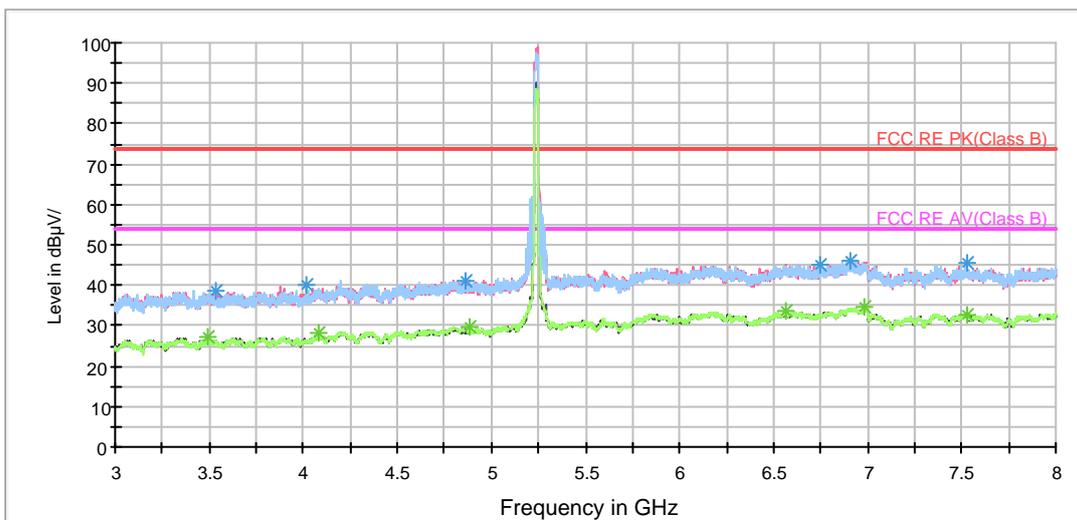
## 802.11n (HT20) CH48

## RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

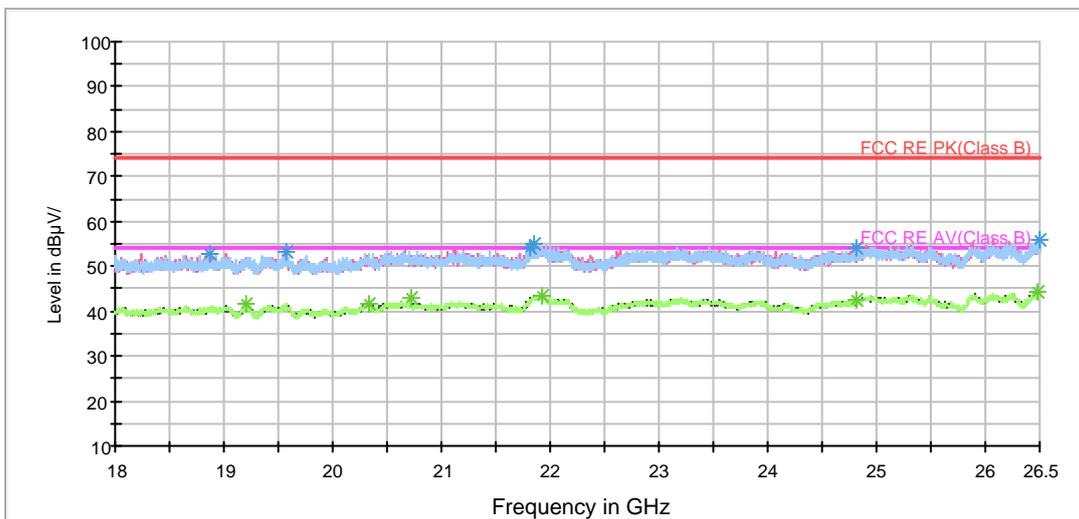
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



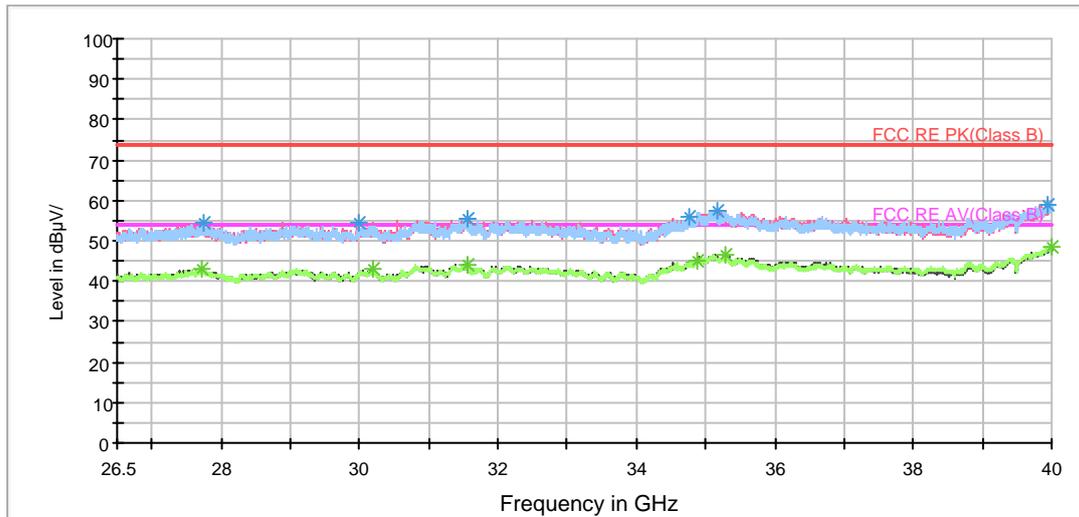
Radiates Emission from 8GHz to 18GHz

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

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3530.000000	38.7	100.0	V	315.0	40.8	-2.1	35.3	74
4016.875000	39.9	100.0	H	64.0	41.1	-1.2	34.1	74
4866.875000	41.3	100.0	V	270.0	39.6	1.7	32.7	74
6749.375000	45.2	100.0	H	93.0	39.7	5.5	28.8	74
6906.250000	45.9	100.0	H	49.0	39.6	6.3	28.1	74
7526.875000	45.4	100.0	H	240.0	38.3	7.1	28.6	74

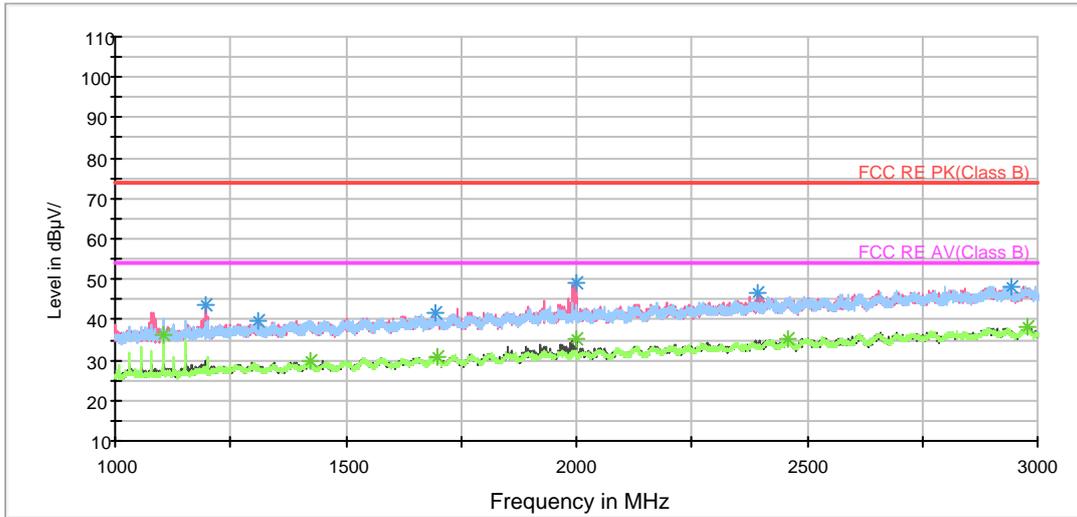
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3493.125000	27.2	100.0	H	35.0	29.3	-2.1	26.8	54
4080.625000	28.0	100.0	H	0.0	28.9	-0.9	26.0	54
4888.125000	29.9	100.0	H	0.0	28.0	1.9	24.1	54
6560.625000	33.7	100.0	V	75.0	27.9	5.8	20.3	54
6986.875000	34.8	100.0	V	242.0	28.4	6.4	19.2	54
7526.875000	32.6	100.0	H	240.0	25.5	7.1	21.4	54

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

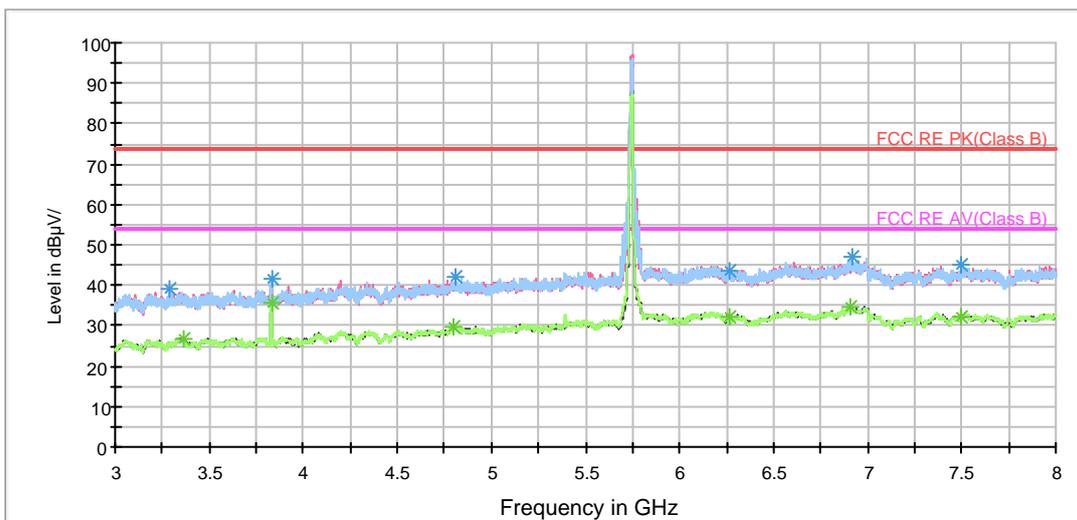
## 802.11n (HT20) CH149

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

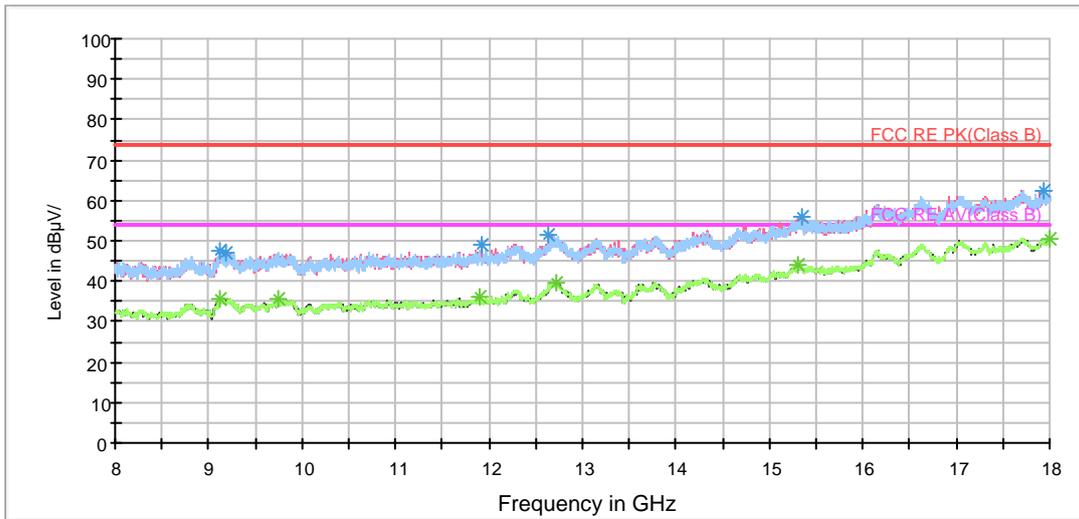
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

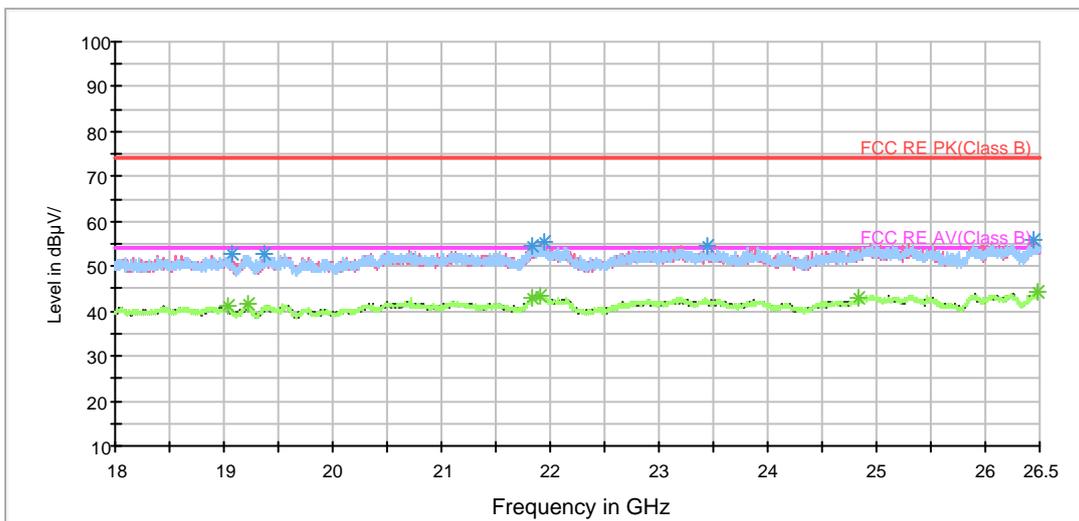
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



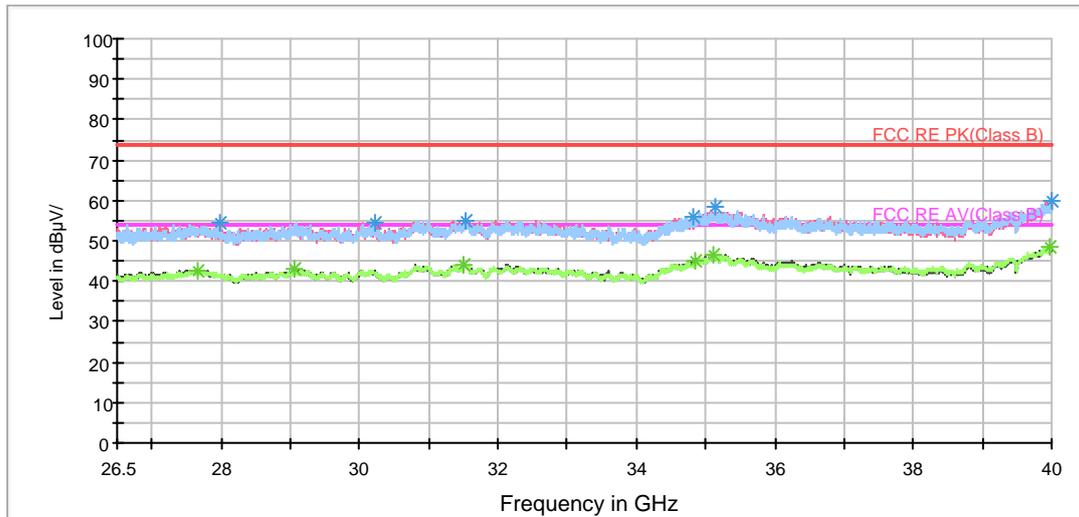
Radiates Emission from 8GHz to 18GHz

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

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3286.875000	38.9	100.0	H	7.0	41.1	-2.2	35.1	74
3830.000000	41.6	100.0	H	36.0	43.3	-1.7	32.4	74
4805.625000	41.9	100.0	V	0.0	40.6	1.3	32.1	74
6264.375000	43.8	100.0	H	240.0	38.3	5.5	30.2	74
6919.375000	47.3	100.0	H	107.0	41.1	6.2	26.7	74
7497.500000	44.8	100.0	V	0.0	38.0	6.8	29.2	74

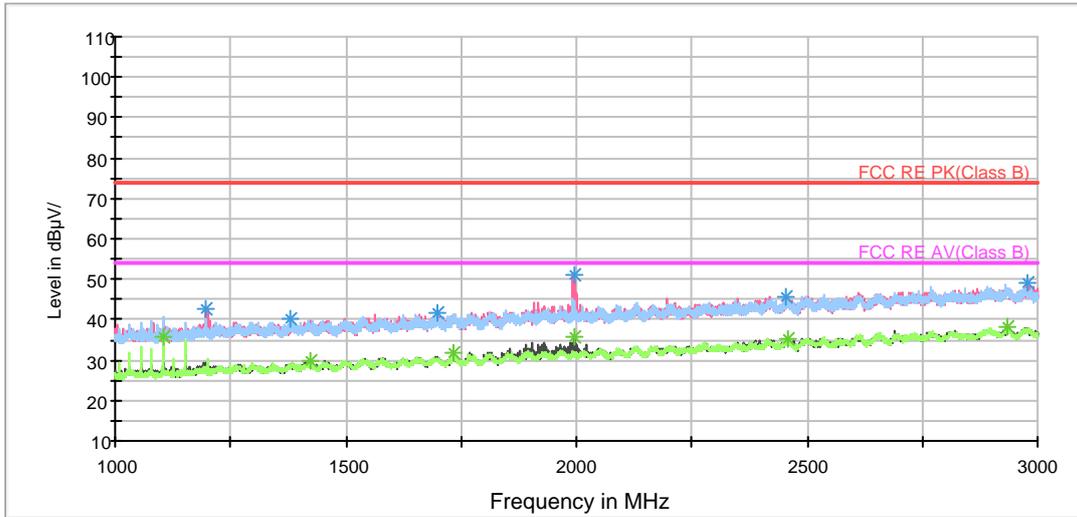
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3360.000000	26.6	100.0	H	122.0	28.9	-2.3	27.4	54
3830.000000	35.6	100.0	H	36.0	37.3	-1.7	18.4	54
4794.375000	29.8	100.0	H	7.0	28.6	1.2	24.2	54
6264.375000	32.2	100.0	H	240.0	26.7	5.5	21.8	54
6909.375000	34.5	100.0	H	0.0	28.3	6.2	19.5	54
7497.500000	32.4	100.0	V	0.0	25.6	6.8	21.6	54

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

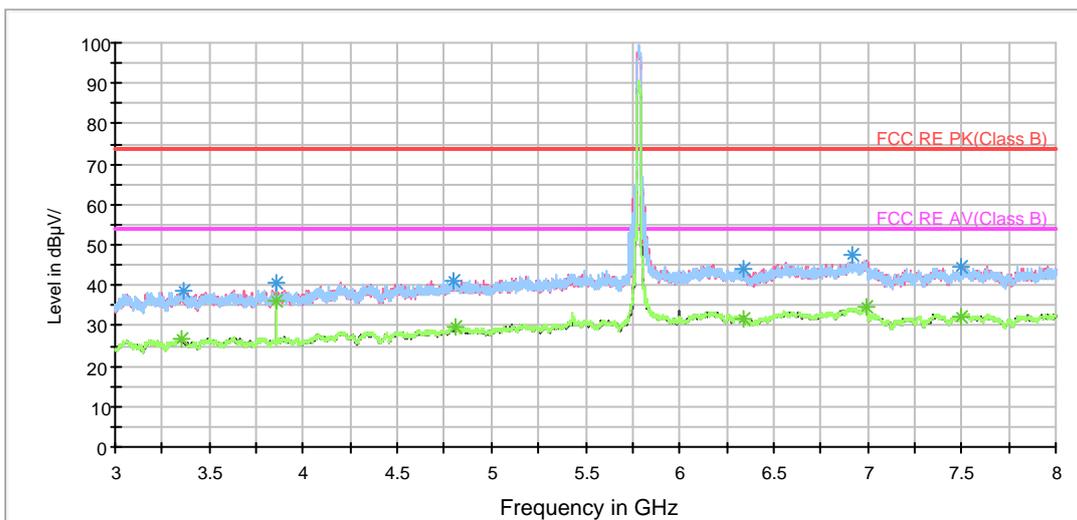
## 802.11n (HT20) CH157

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

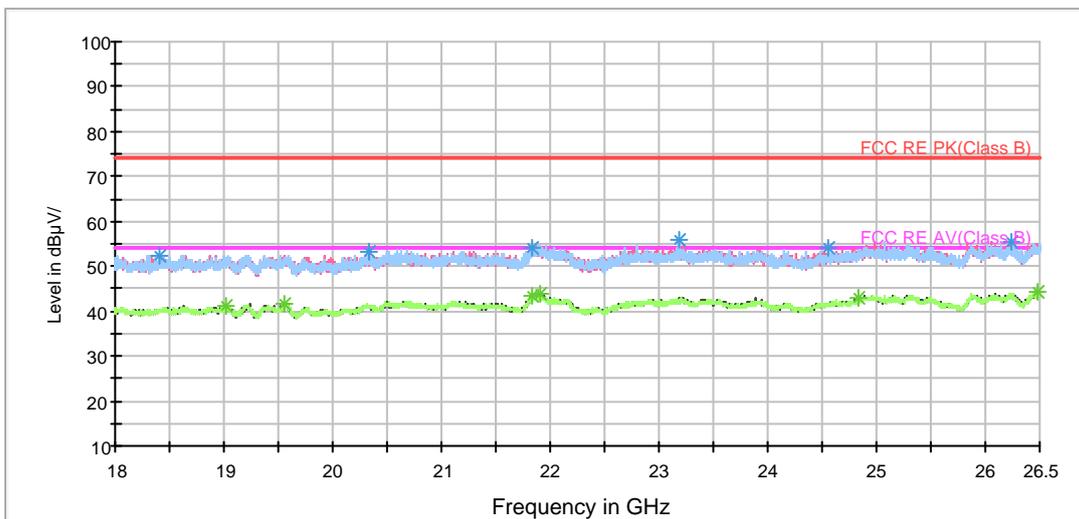
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

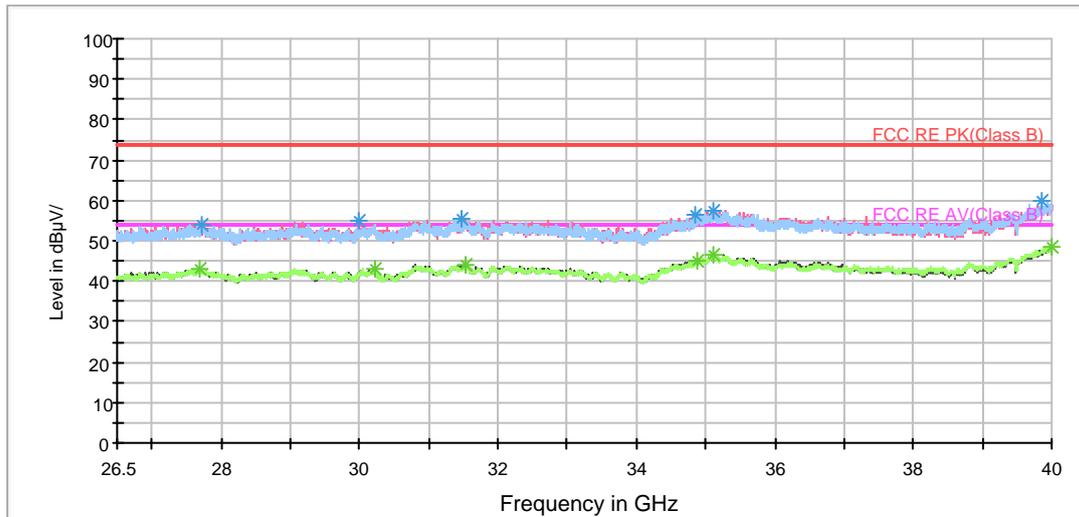
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3367.500000	38.7	100.0	V	0.0	41.1	-2.4	35.3	74
3856.250000	40.7	100.0	H	34.0	42.3	-1.6	33.3	74
4800.625000	41.3	100.0	V	0.0	40.0	1.3	32.7	74
6923.125000	47.6	100.0	H	165.0	41.4	6.2	26.4	74
6341.875000	44.2	100.0	V	181.0	38.8	5.4	29.8	74
7500.000000	44.3	100.0	H	20.0	37.4	6.9	29.7	74

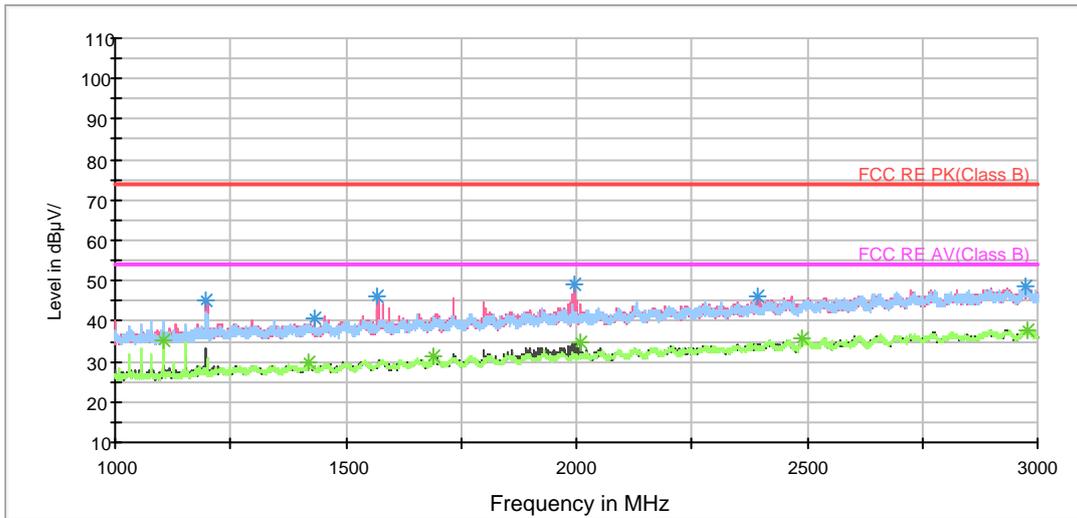
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3356.250000	27.0	100.0	H	284.0	29.3	-2.3	27.0	54
3856.250000	36.1	100.0	H	34.0	37.7	-1.6	17.9	54
4807.500000	29.6	100.0	H	0.0	28.3	1.3	24.4	54
6992.500000	34.7	100.0	H	284.0	28.2	6.5	19.3	54
6341.875000	31.5	100.0	V	181.0	26.1	5.4	22.5	54
7500.000000	32.2	100.0	H	20.0	25.3	6.9	21.8	54

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

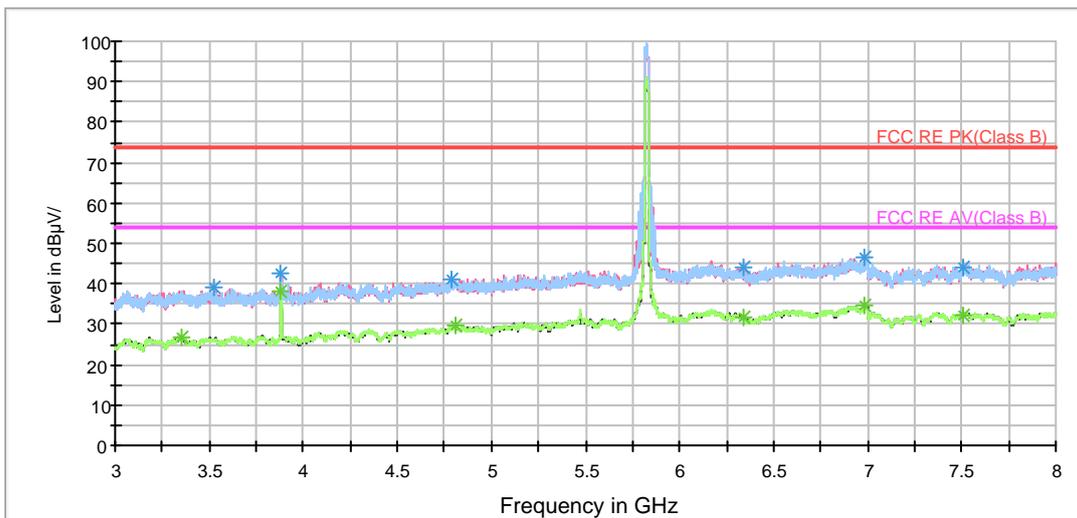
802.11n (HT20) CH165

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV

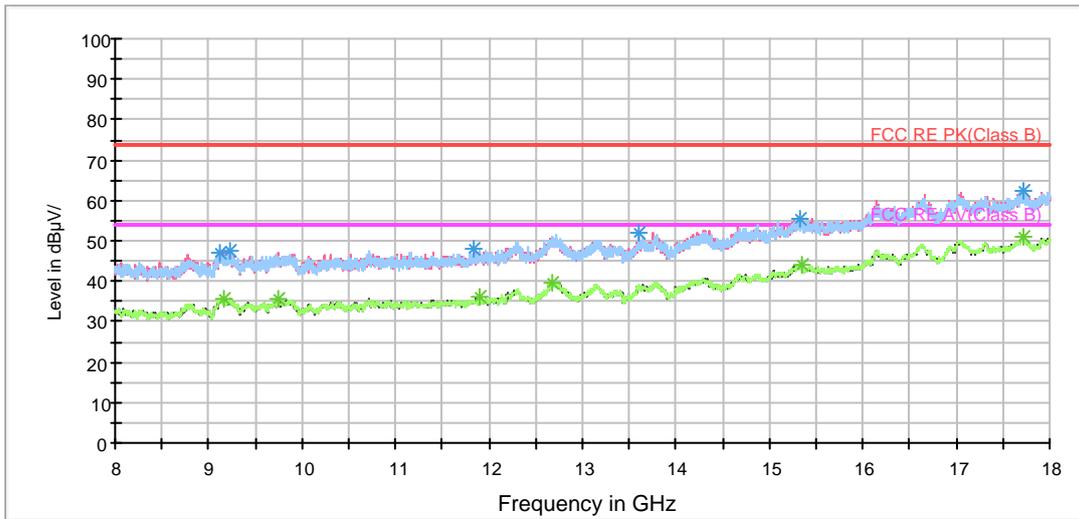


Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz



RE 3-18GHz PK+AV



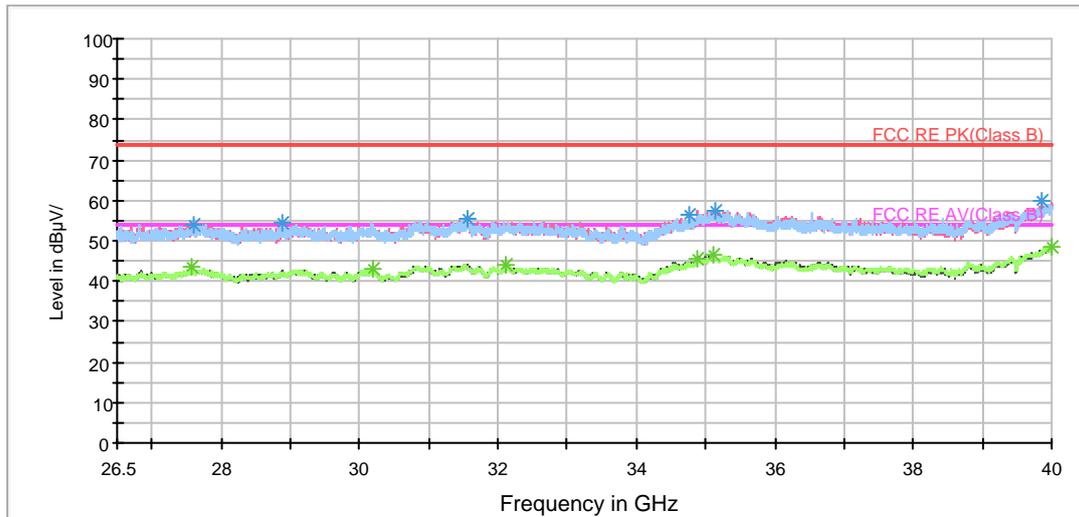
Radiates Emission from 8GHz to 18GHz

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

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3525.625000	38.9	100.0	H	145.0	40.9	-2.0	35.1	74
3883.125000	42.4	100.0	H	30.0	43.7	-1.3	31.6	74
4790.000000	41.2	100.0	H	159.0	40.0	1.2	32.8	74
6340.625000	44.2	100.0	V	241.0	38.8	5.4	29.8	74
6981.250000	46.5	100.0	H	284.0	40.1	6.4	27.5	74
7508.125000	44.1	100.0	V	254.0	37.1	7.0	29.9	74

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

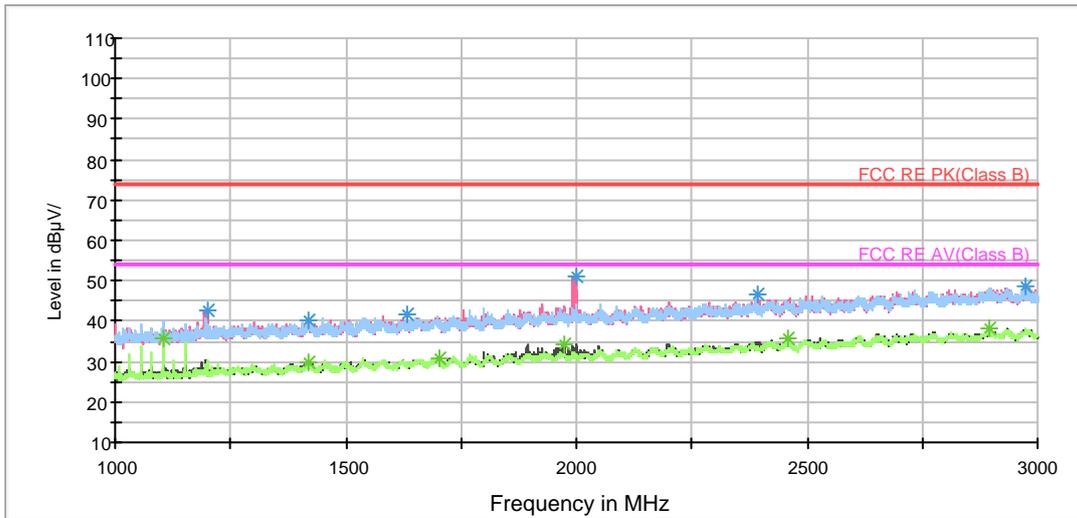
Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3351.875000	26.7	100.0	H	87.0	29.0	-2.3	27.3	54
3883.125000	37.9	100.0	H	30.0	39.2	-1.3	16.1	54
4811.250000	29.7	100.0	H	115.0	28.4	1.3	24.3	54
6340.625000	31.9	100.0	V	241.0	26.5	5.4	22.1	54
6988.125000	34.5	100.0	H	0.0	28.1	6.4	19.5	54
7508.125000	32.2	100.0	V	254.0	25.2	7.0	21.8	54

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



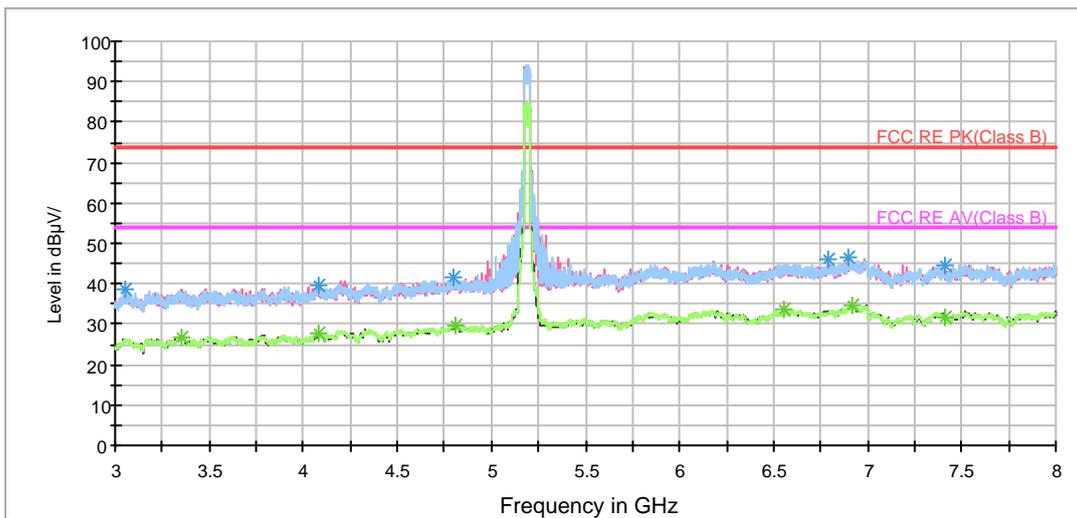
802.11n (HT40) CH38

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

RE 3-18GHz PK+AV

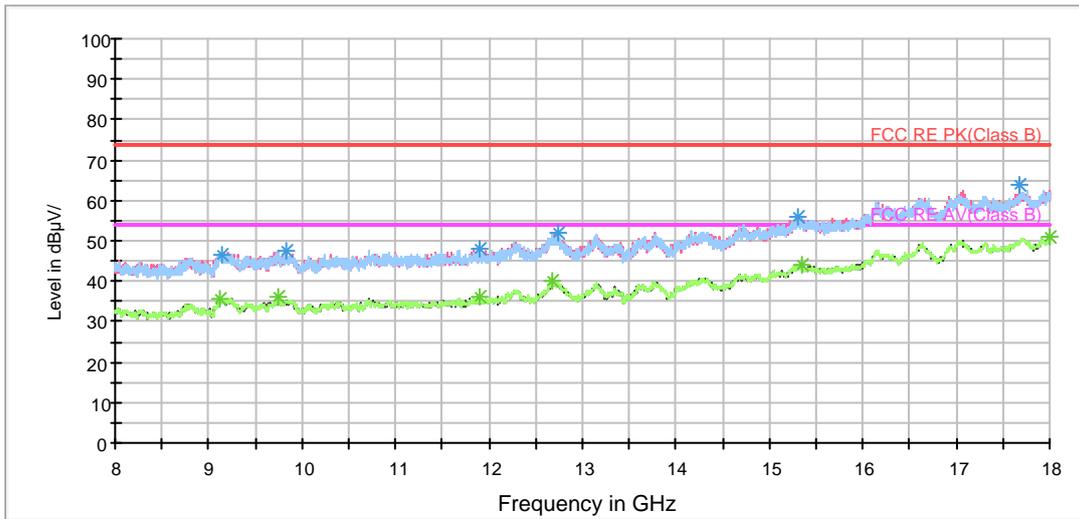


Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz



RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

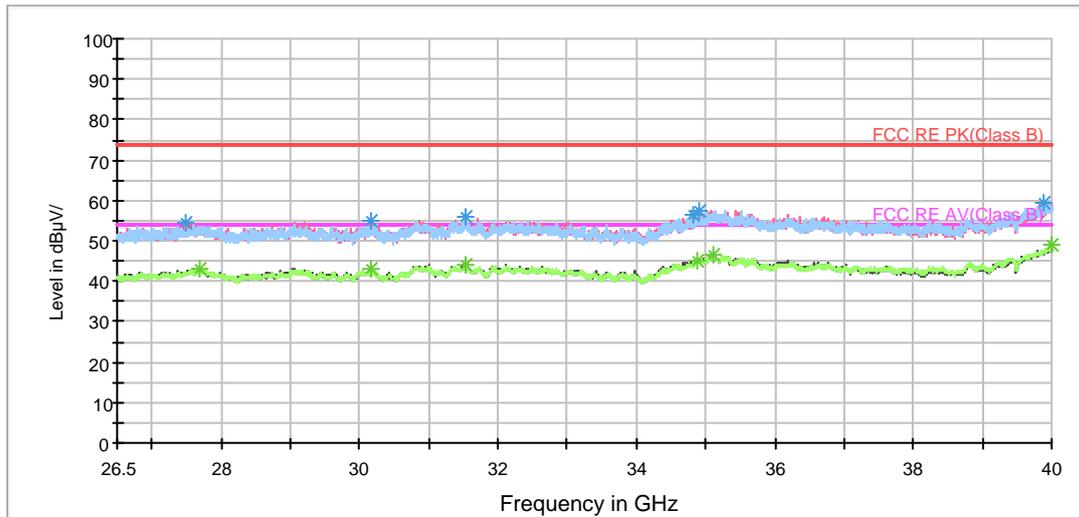
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3053.750000	38.5	100.0	H	0.0	41.7	-3.2	35.5	74
4076.250000	39.6	100.0	H	167.0	40.5	-0.9	34.4	74
4797.500000	41.5	100.0	H	152.0	40.2	1.3	32.5	74
6786.875000	46.0	100.0	V	355.0	40.3	5.7	28.0	74
6898.125000	46.4	100.0	H	0.0	40.2	6.2	27.6	74
7406.250000	44.4	100.0	H	52.0	37.5	6.9	29.6	74

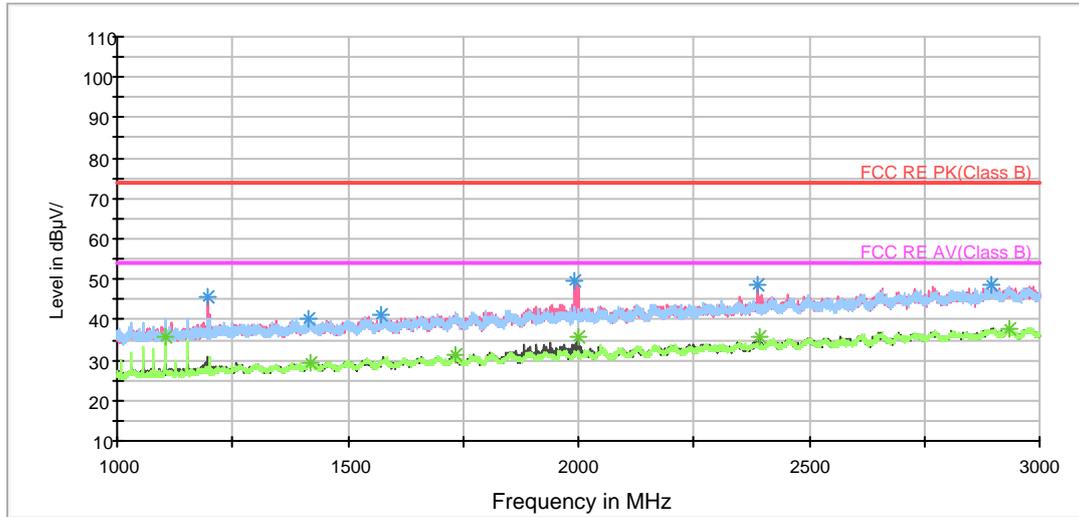
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3350.000000	26.9	100.0	H	38.0	29.2	-2.3	27.1	54
4083.750000	27.9	100.0	H	109.0	28.8	-0.9	26.1	54
4805.000000	29.5	100.0	H	0.0	28.2	1.3	24.5	54
6556.250000	33.4	100.0	H	152.0	27.7	5.7	20.6	54
6920.000000	34.9	100.0	V	128.0	28.7	6.2	19.1	54
7406.250000	31.7	100.0	H	52.0	24.8	6.9	22.3	54

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

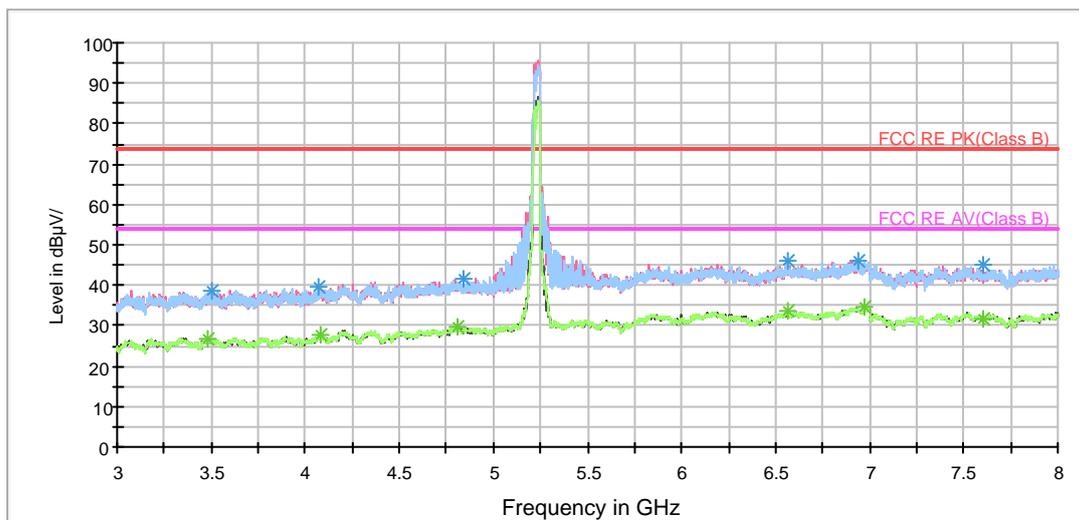
## 802.11n (HT40) CH46

## RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

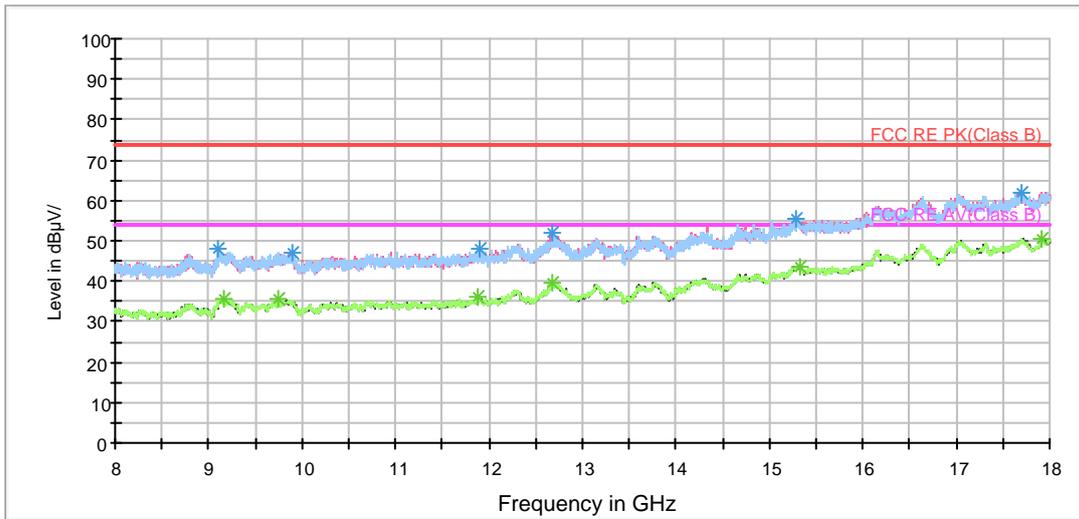
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

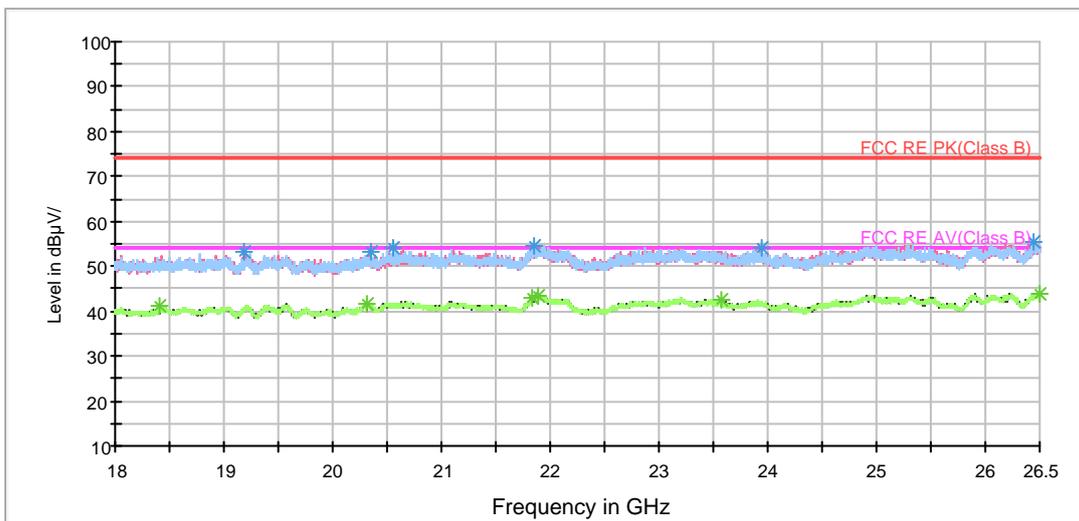
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

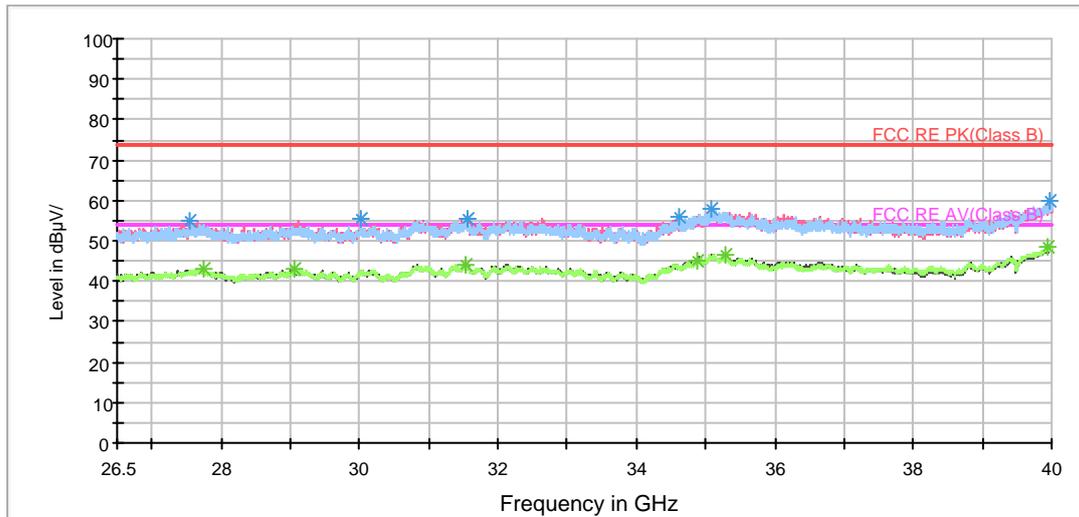
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3507.500000	38.7	100.0	V	318.0	40.7	-2.0	35.3	74
4073.750000	39.4	100.0	H	0.0	40.3	-0.9	34.6	74
4836.875000	41.8	100.0	V	288.0	40.3	1.5	32.2	74
6568.750000	46.1	100.0	H	0.0	40.4	5.7	27.9	74
6941.875000	46.0	100.0	V	318.0	39.9	6.1	28.0	74
7607.500000	45.2	100.0	H	350.0	38.3	6.9	28.8	74

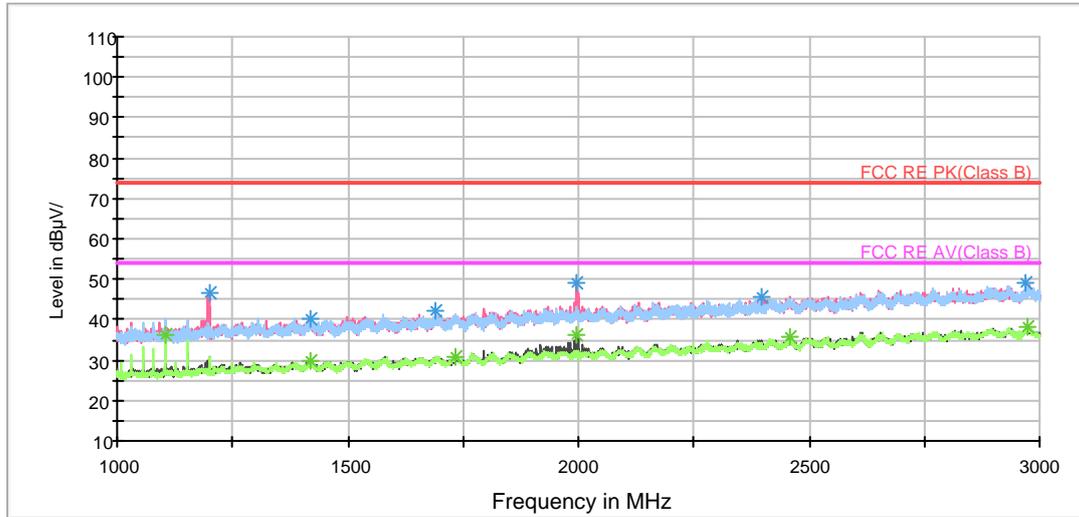
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3486.250000	26.9	100.0	V	0.0	28.9	-2.0	27.1	54
4078.750000	27.9	100.0	V	0.0	28.8	-0.9	26.1	54
4810.625000	29.6	100.0	H	41.0	28.3	1.3	24.4	54
6561.250000	33.5	100.0	V	318.0	27.7	5.8	20.5	54
6973.125000	34.6	100.0	V	243.0	28.3	6.3	19.4	54
7607.500000	31.5	100.0	H	350.0	24.6	6.9	22.5	54

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

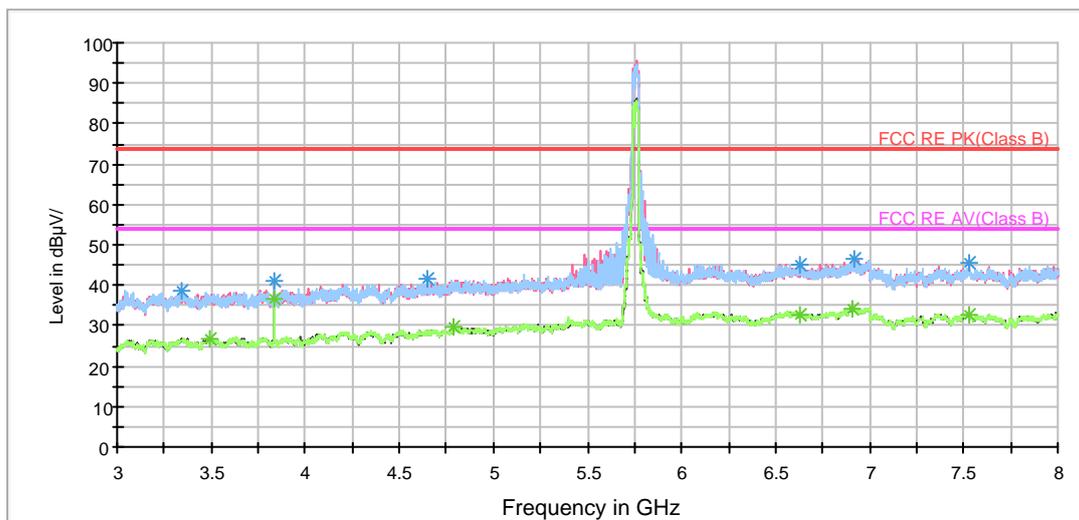
## 802.11n (HT40) CH151

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

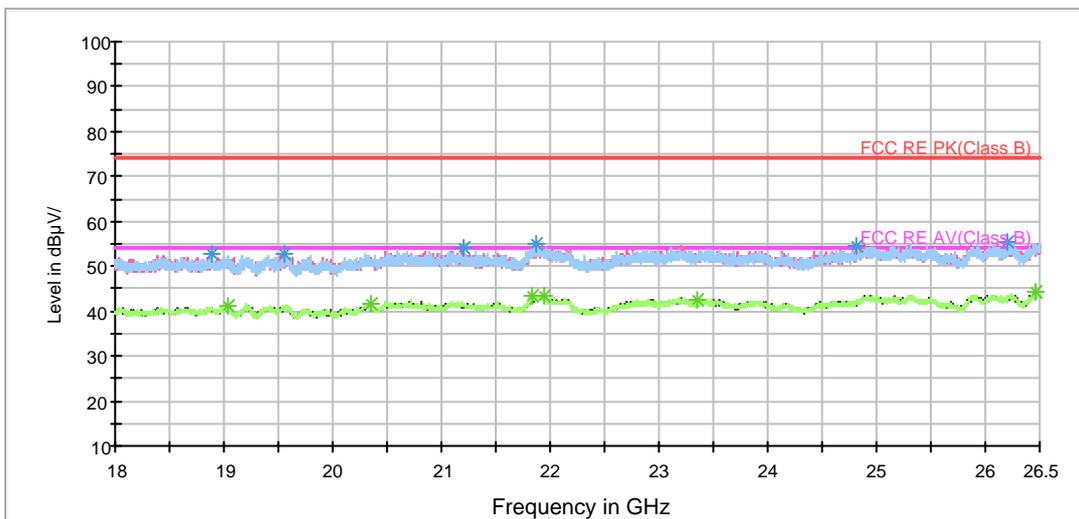
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



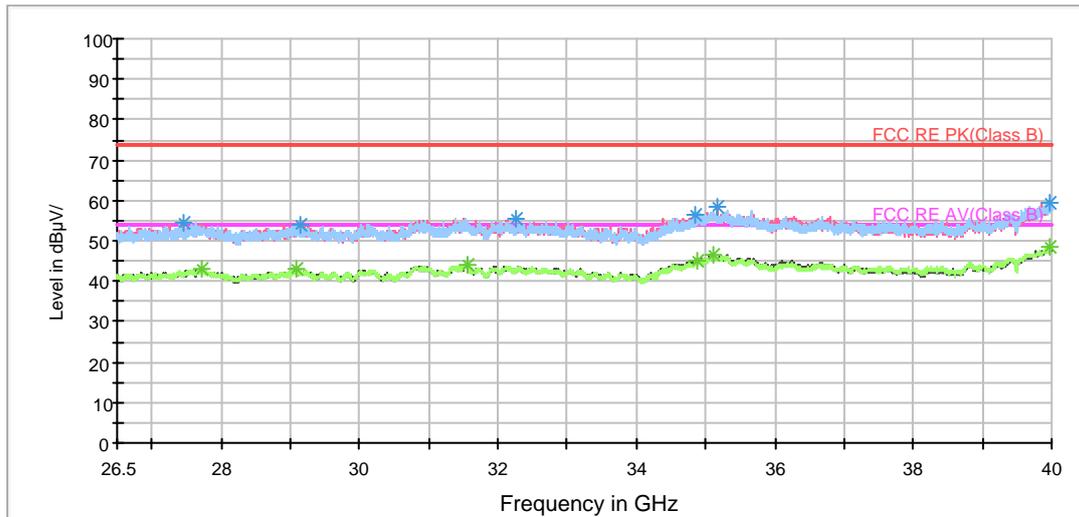
Radiates Emission from 8GHz to 18GHz

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

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3338.125000	38.7	100.0	H	123.0	41.0	-2.3	35.3	74
3836.250000	40.9	100.0	H	35.0	42.6	-1.7	33.1	74
4648.750000	41.4	100.0	V	136.0	40.5	0.9	32.6	74
6631.875000	45.0	100.0	H	107.0	39.5	5.5	29.0	74
6918.750000	46.4	100.0	H	107.0	40.2	6.2	27.6	74
7528.125000	45.3	100.0	V	327.0	38.2	7.1	28.7	74

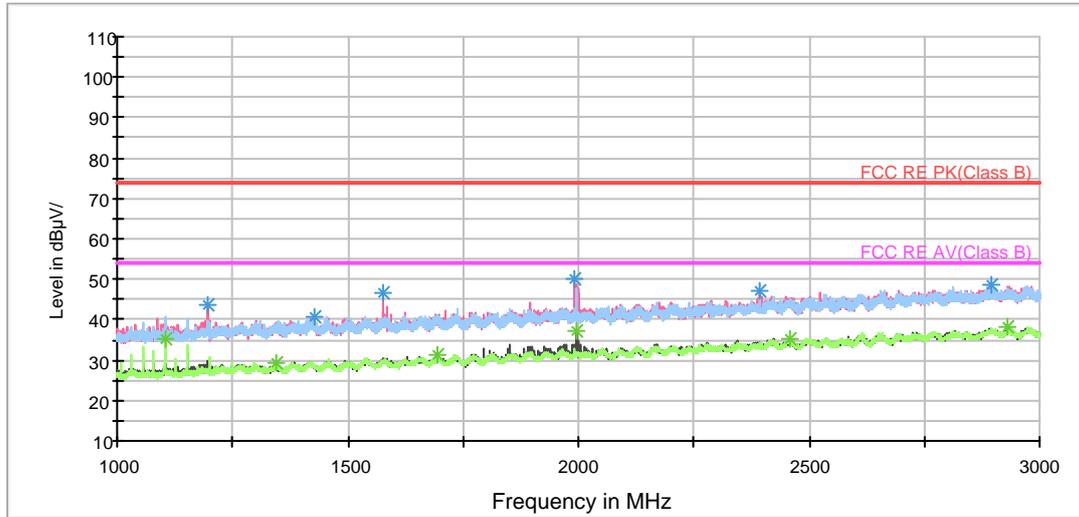
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3494.375000	26.7	100.0	V	356.0	28.8	-2.1	27.3	54
3836.250000	36.4	100.0	H	35.0	38.1	-1.7	17.6	54
4783.125000	29.6	100.0	H	255.0	28.5	1.1	24.4	54
6631.875000	32.6	100.0	H	107.0	27.1	5.5	21.4	54
6908.750000	34.4	100.0	H	35.0	28.2	6.2	19.6	54
7528.125000	32.7	100.0	V	327.0	25.6	7.1	21.3	54

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

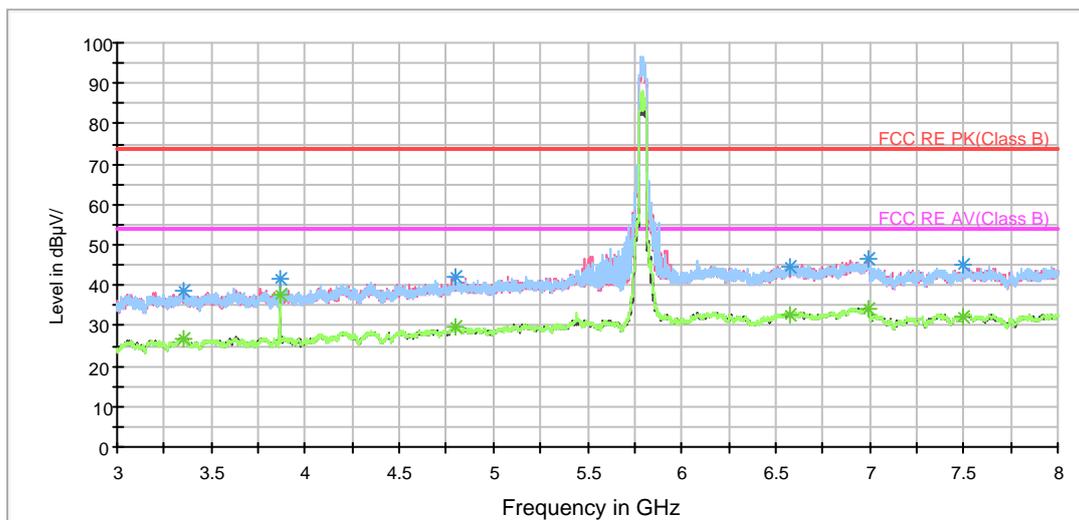
## 802.11n (HT40) CH159

## RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

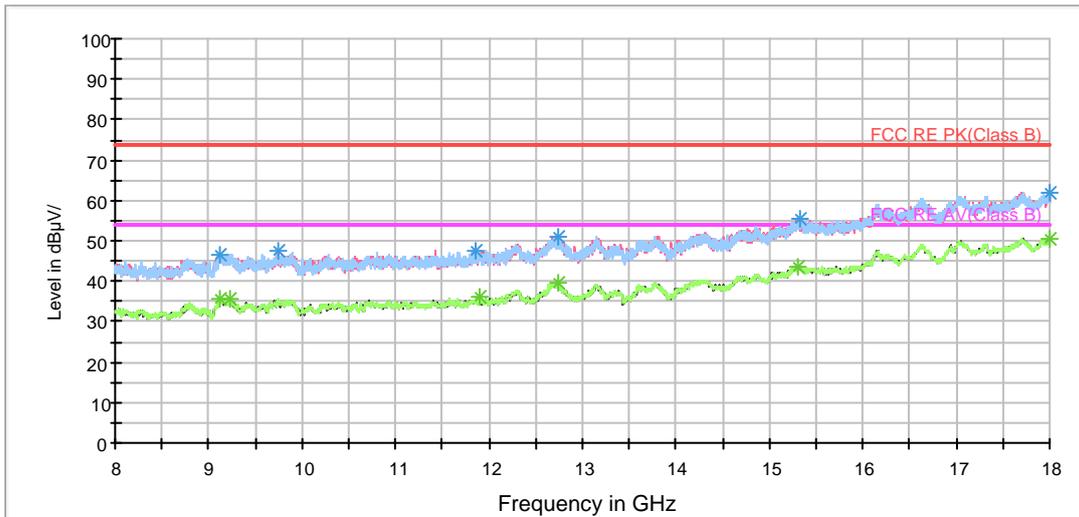
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

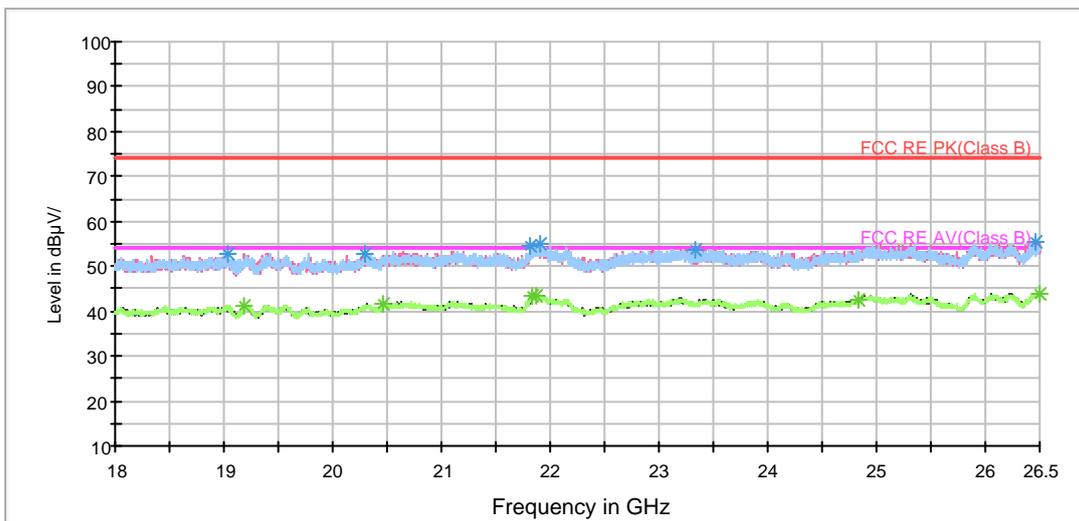
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

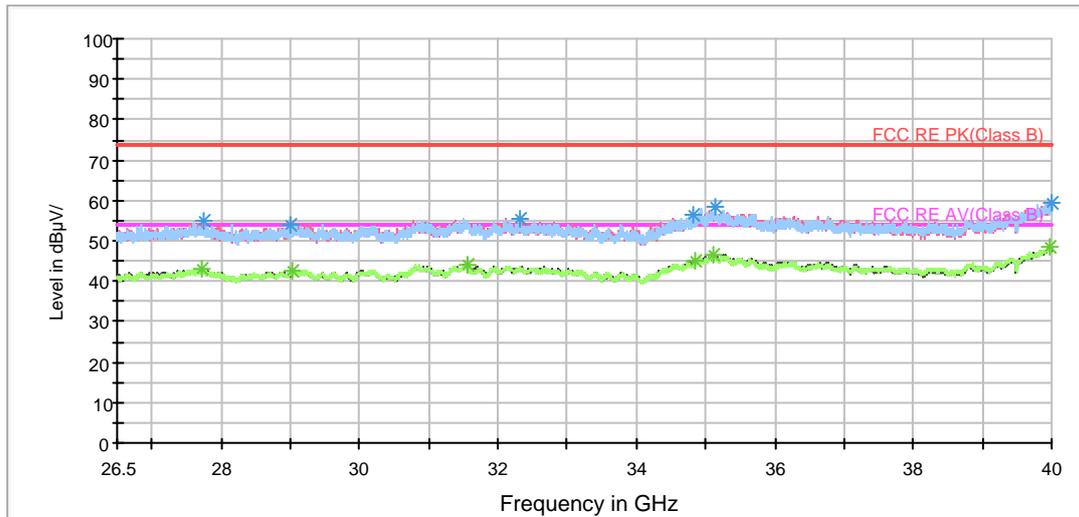
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3348.750000	38.4	100.0	H	285.0	40.7	-2.3	35.6	74
3863.125000	41.7	100.0	H	34.0	43.2	-1.5	32.3	74
4798.125000	42.1	100.0	V	359.0	40.8	1.3	31.9	74
6572.500000	44.6	100.0	V	0.0	39.0	5.6	29.4	74
6992.500000	46.6	100.0	V	287.0	40.1	6.5	27.4	74
7496.875000	45.0	100.0	H	20.0	38.2	6.8	29.0	74

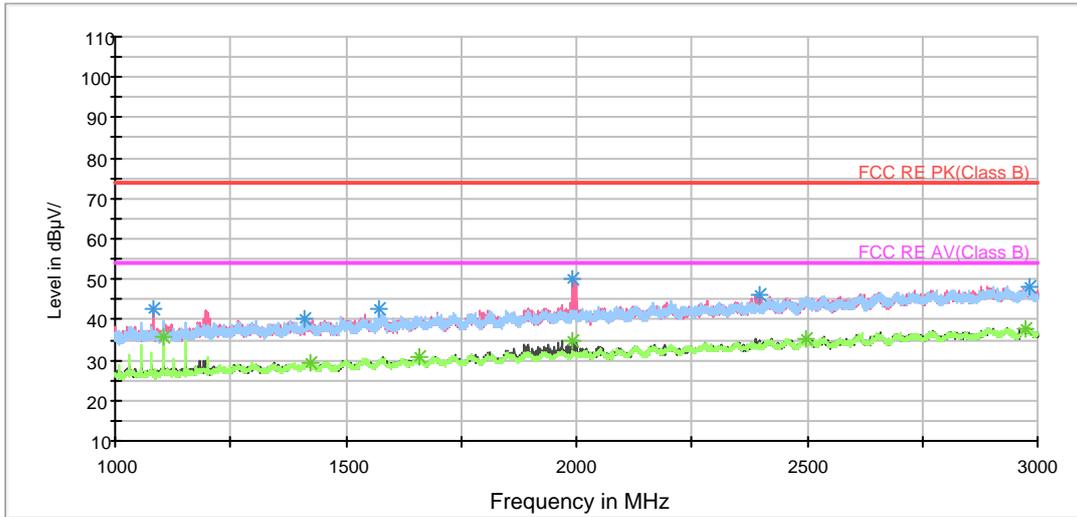
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3349.375000	26.8	100.0	V	302.0	29.1	-2.3	27.2	54
3863.125000	37.4	100.0	H	34.0	38.9	-1.5	16.6	54
4798.750000	29.7	100.0	H	20.0	28.4	1.3	24.3	54
6572.500000	32.7	100.0	V	0.0	27.1	5.6	21.3	54
6989.375000	34.4	100.0	V	155.0	28.0	6.4	19.6	54
7496.875000	32.2	100.0	H	20.0	25.4	6.8	21.8	54

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

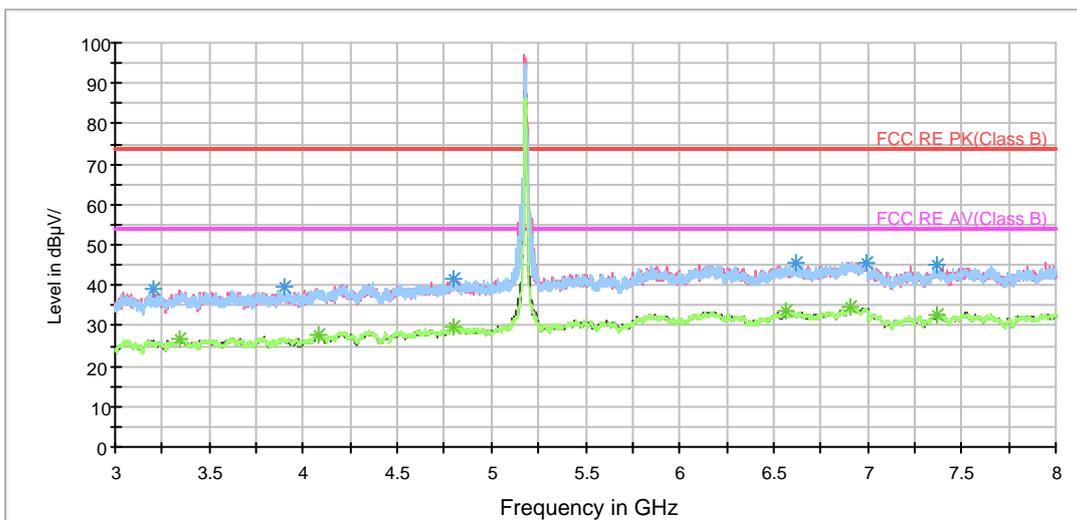
## 802.11ac (HT20) CH36

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

## RE 3-18GHz PK+AV

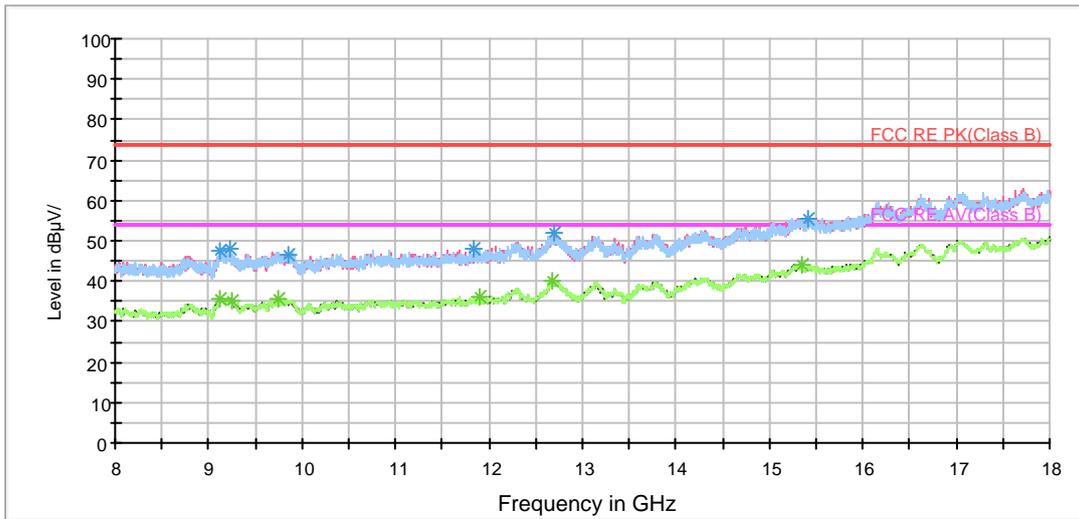


Note: The signal beyond the limit is carrier.

## Radiates Emission from 3GHz to 8GHz

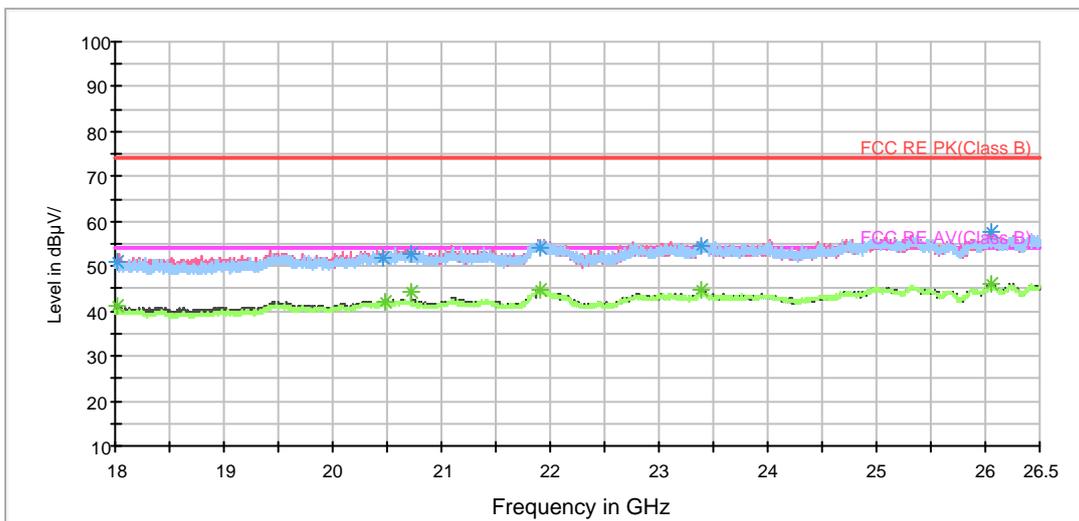


RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

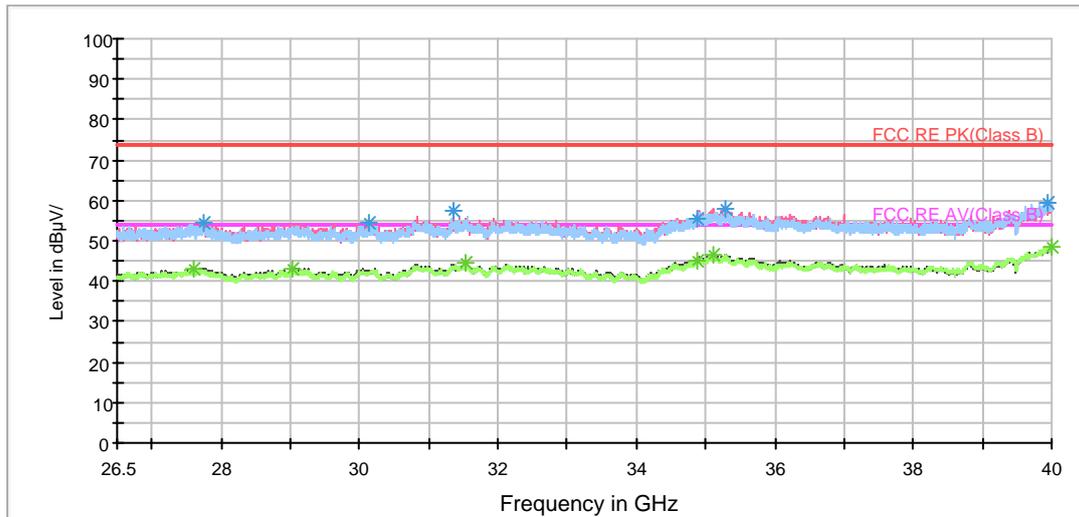
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3200.625000	38.9	100.0	V	355.0	41.7	-2.8	35.1	74
3900.000000	39.4	100.0	H	116.0	40.7	-1.3	34.6	74
4793.750000	41.5	100.0	H	0.0	40.3	1.2	32.5	74
6614.375000	45.4	100.0	V	327.0	39.9	5.5	28.6	74
6995.000000	45.7	100.0	V	269.0	39.2	6.5	28.3	74
7366.875000	45.1	100.0	H	73.0	38.1	7.0	28.9	74

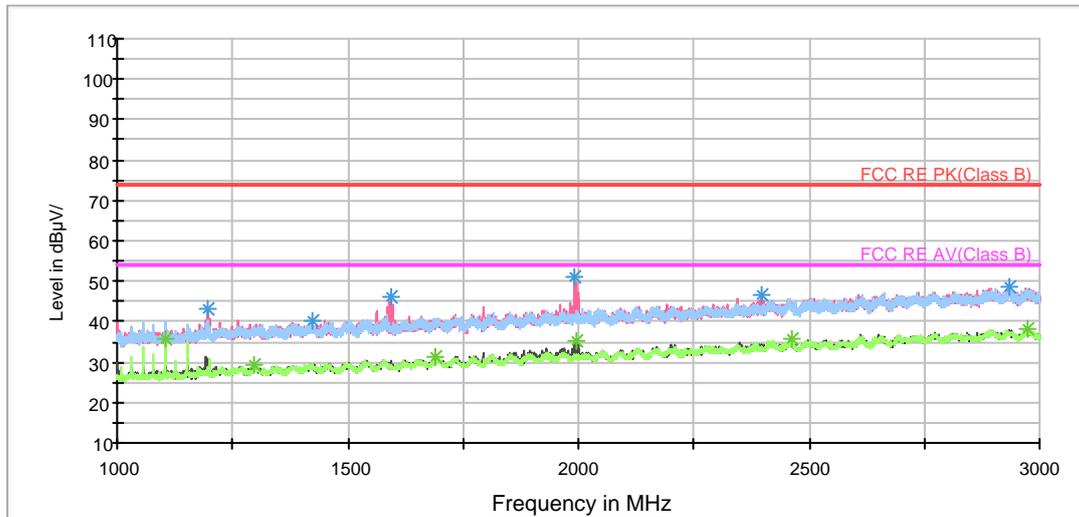
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3343.125000	26.5	100.0	H	44.0	28.9	-2.4	27.5	54
4079.375000	27.8	100.0	H	0.0	28.7	-0.9	26.2	54
4797.500000	29.5	100.0	H	1.0	28.2	1.3	24.5	54
6569.375000	33.8	100.0	V	0.0	28.1	5.7	20.2	54
6906.875000	34.8	100.0	V	239.0	28.5	6.3	19.2	54
7366.875000	32.6	100.0	H	73.0	25.6	7.0	21.4	54

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

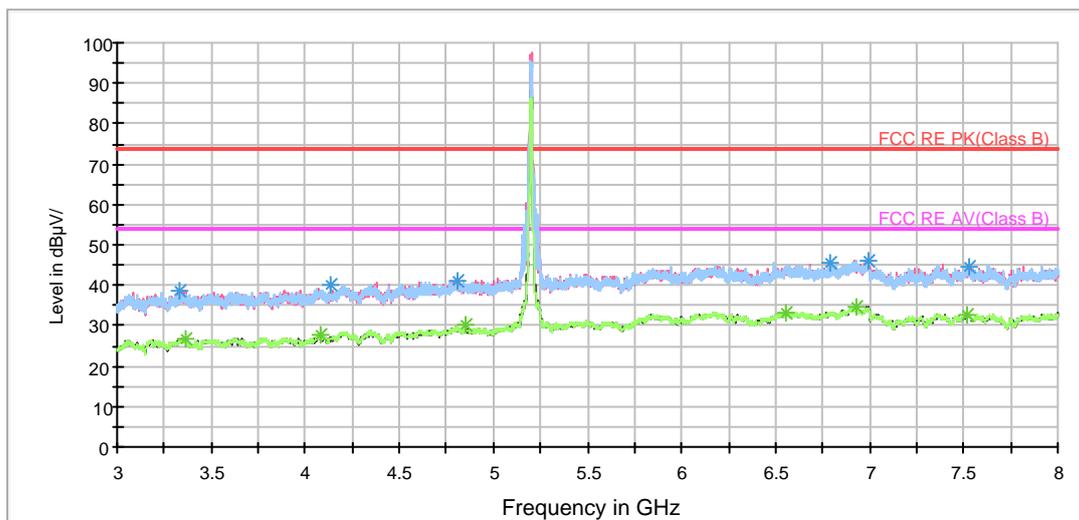
## 802.11ac (HT20) CH40

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

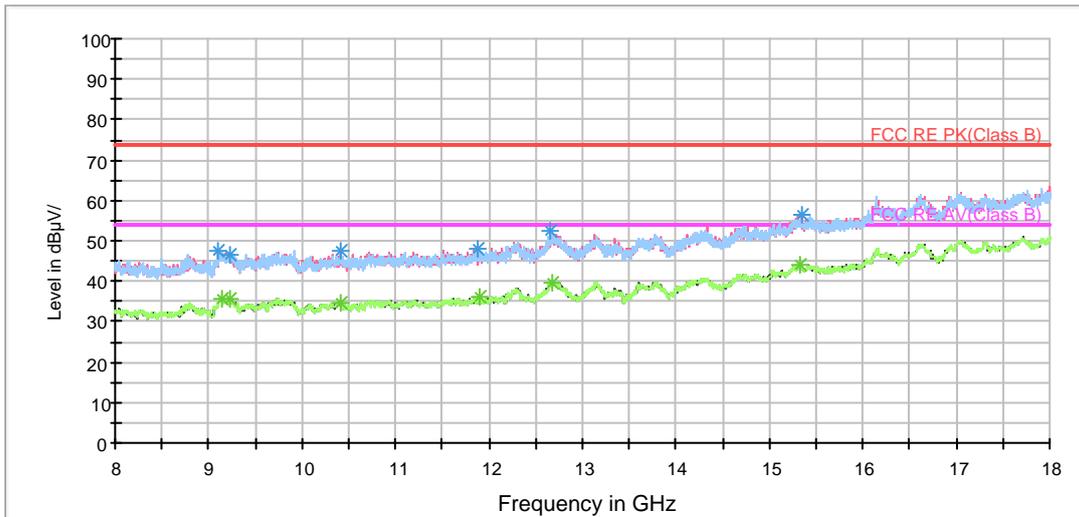
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

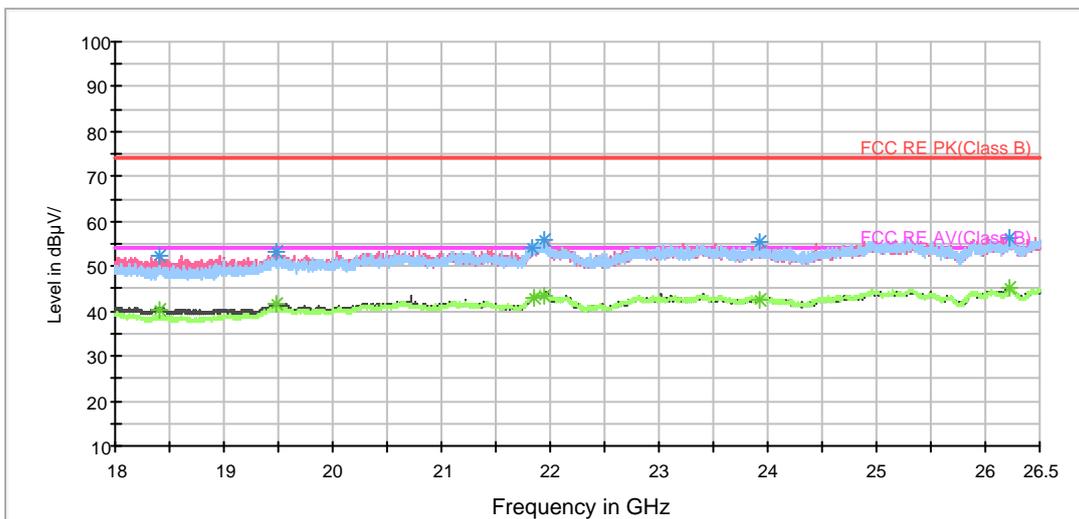
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

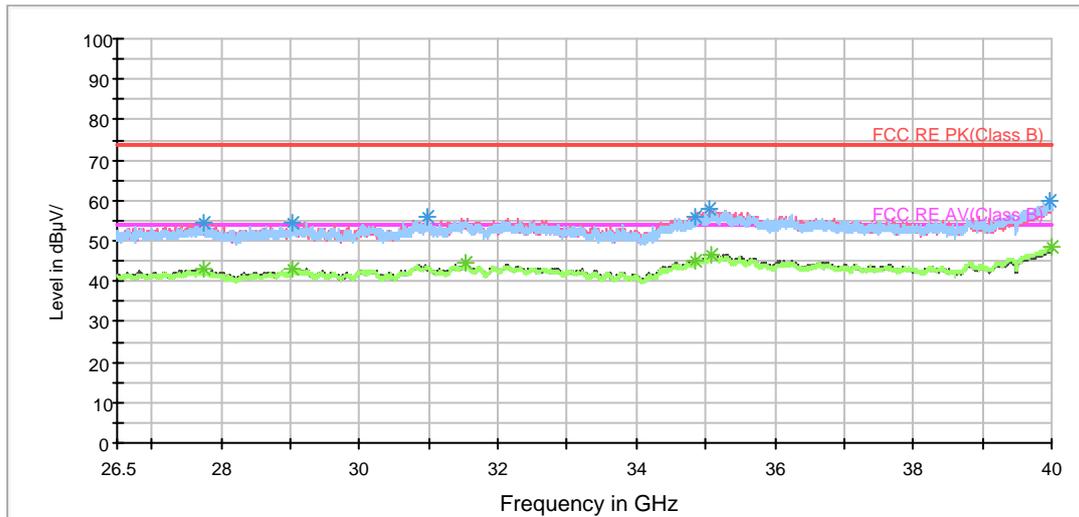
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3335.625000	38.6	100.0	H	60.0	40.9	-2.3	35.4	74
4139.375000	40.3	100.0	H	105.0	40.6	-0.3	33.7	74
4809.375000	41.3	100.0	V	59.0	40.0	1.3	32.7	74
6790.625000	45.4	100.0	H	75.0	39.7	5.7	28.6	74
6995.625000	46.3	100.0	V	0.0	39.8	6.5	27.7	74
7526.250000	44.4	100.0	H	2.0	37.3	7.1	29.6	74

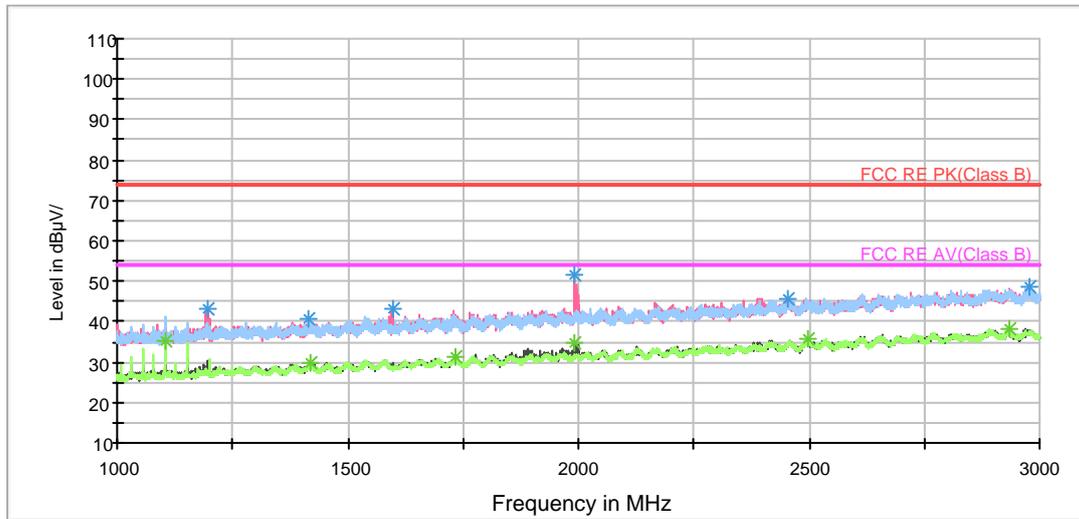
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3358.750000	26.6	100.0	V	119.0	28.9	-2.3	27.4	54
4078.125000	27.9	100.0	H	2.0	28.8	-0.9	26.1	54
4848.125000	30.0	100.0	H	2.0	28.4	1.6	24.0	54
6556.875000	33.3	100.0	V	133.0	27.6	5.7	20.7	54
6933.125000	34.6	100.0	V	177.0	28.4	6.2	19.4	54
7519.375000	32.6	100.0	H	0.0	25.5	7.1	21.4	54

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

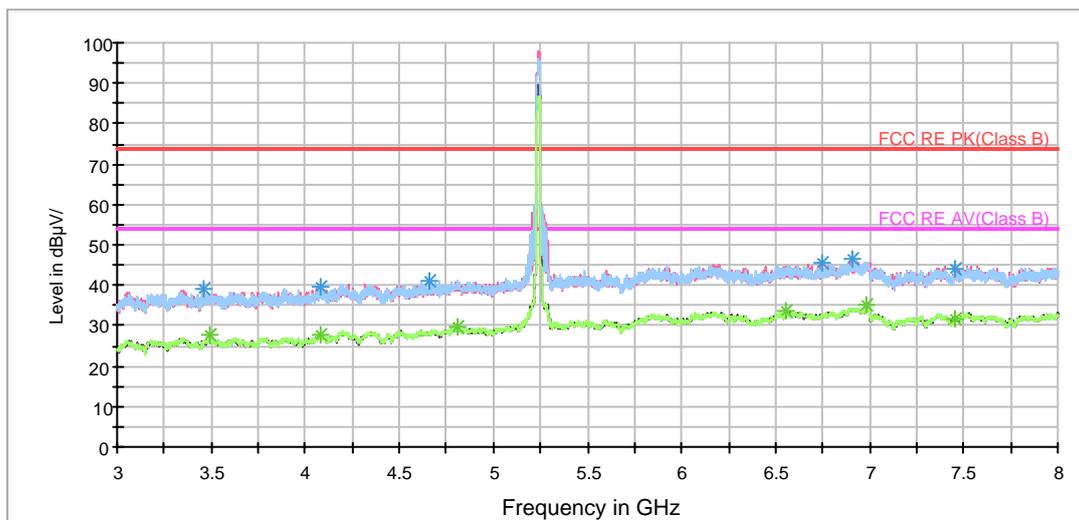
## 802.11ac (HT20) CH48

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

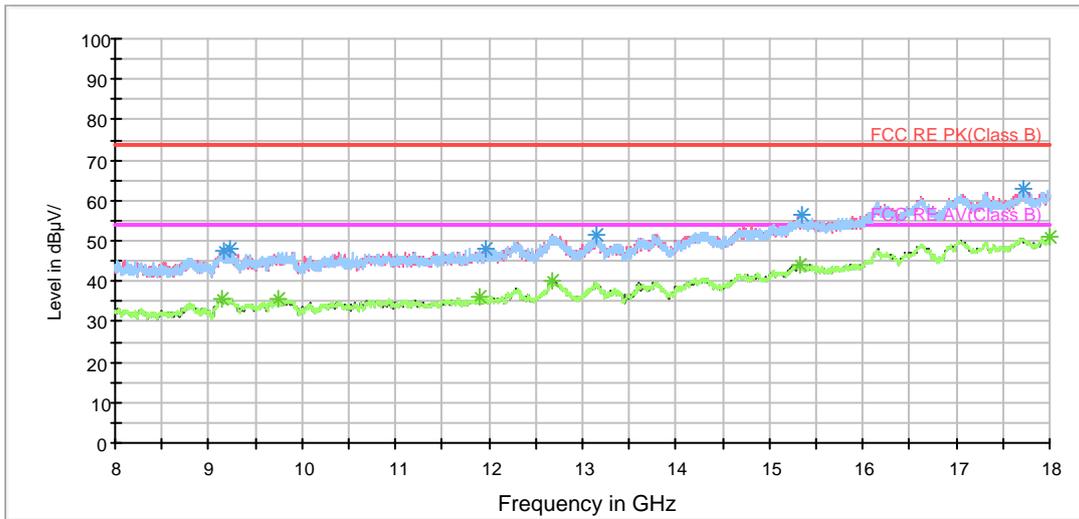
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

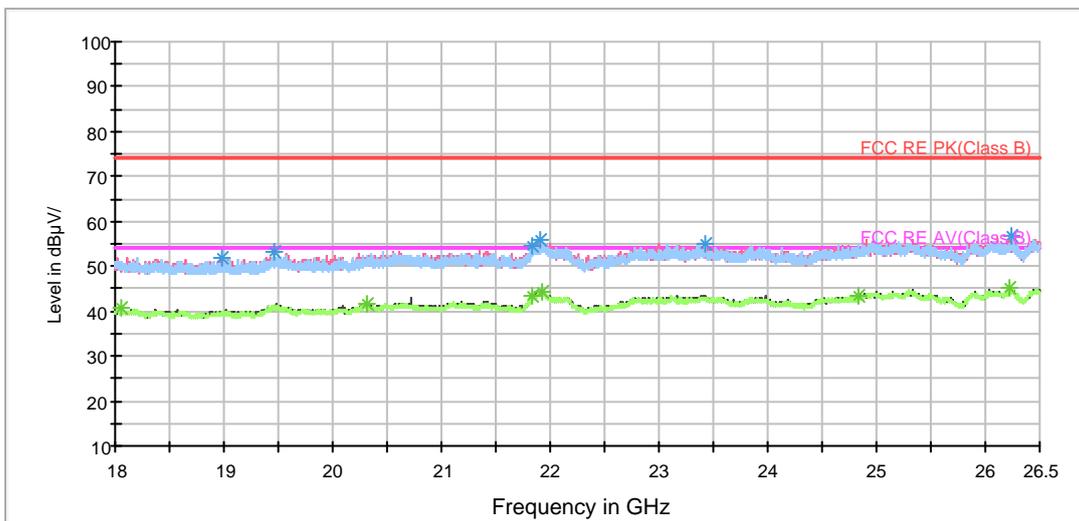
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

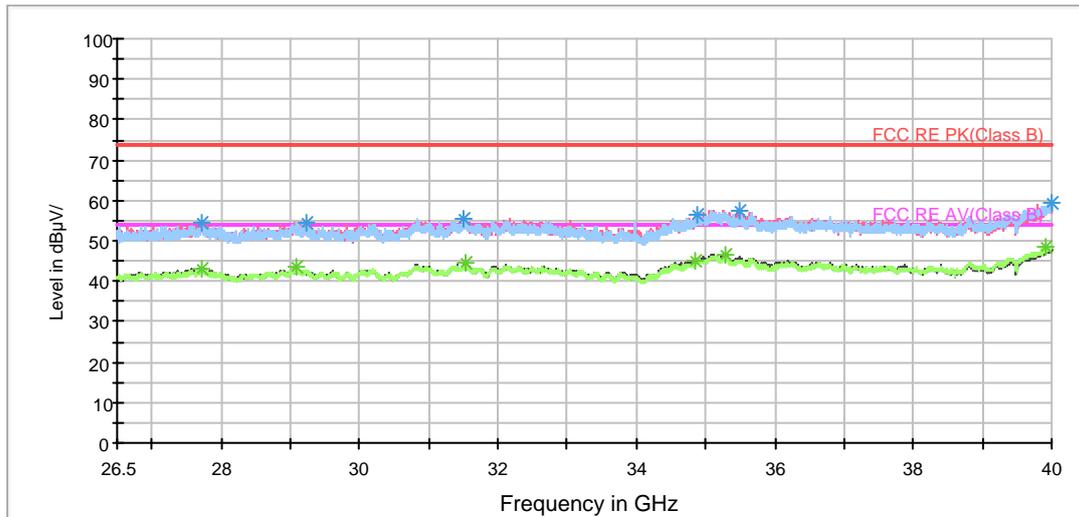
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3456.875000	39.1	100.0	V	269.0	41.3	-2.2	34.9	74
4085.000000	39.8	100.0	V	341.0	40.7	-0.9	34.2	74
4663.125000	41.1	100.0	H	182.0	40.4	0.7	32.9	74
6745.625000	45.4	100.0	H	0.0	39.9	5.5	28.6	74
6911.875000	46.4	100.0	V	0.0	40.2	6.2	27.6	74
7451.875000	43.8	100.0	H	0.0	37.0	6.8	30.2	74

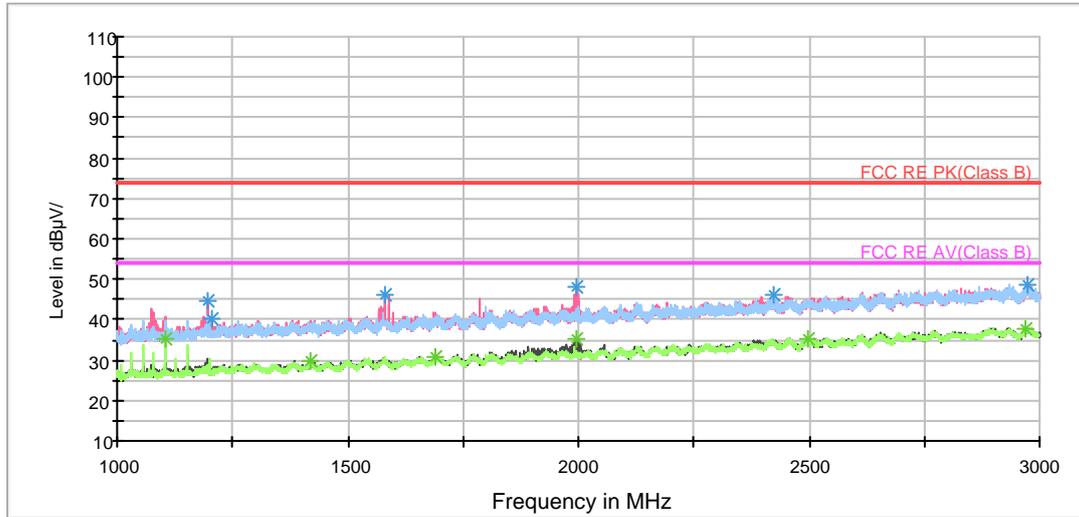
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3493.125000	27.9	100.0	H	36.0	30.0	-2.1	26.1	54
4084.375000	27.9	100.0	H	0.0	28.8	-0.9	26.1	54
4810.000000	29.7	100.0	H	0.0	28.4	1.3	24.3	54
6557.500000	33.4	100.0	V	297.0	27.7	5.7	20.6	54
6986.875000	35.1	100.0	V	239.0	28.7	6.4	18.9	54
7451.875000	31.6	100.0	H	0.0	24.8	6.8	22.4	54

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

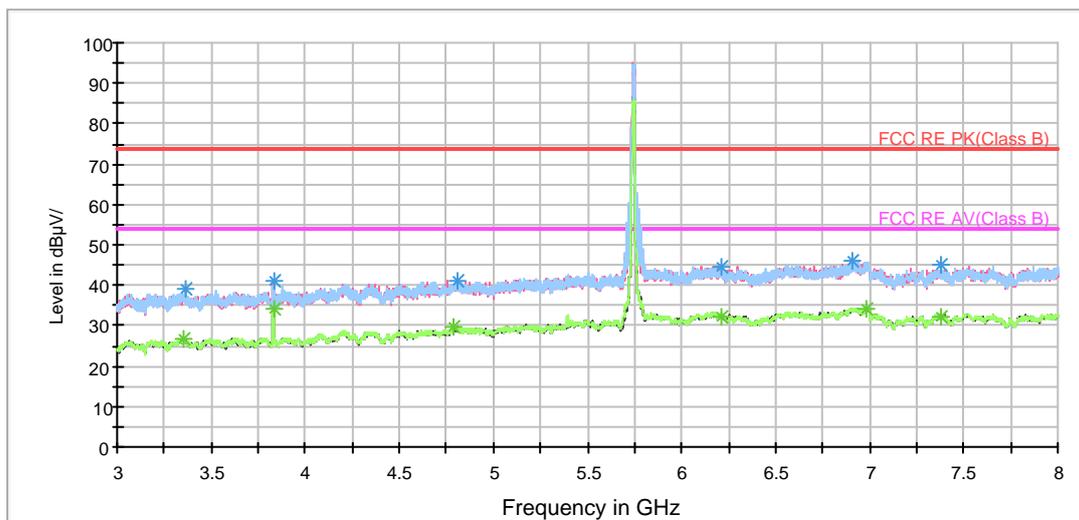
## 802.11ac (HT20) CH149

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

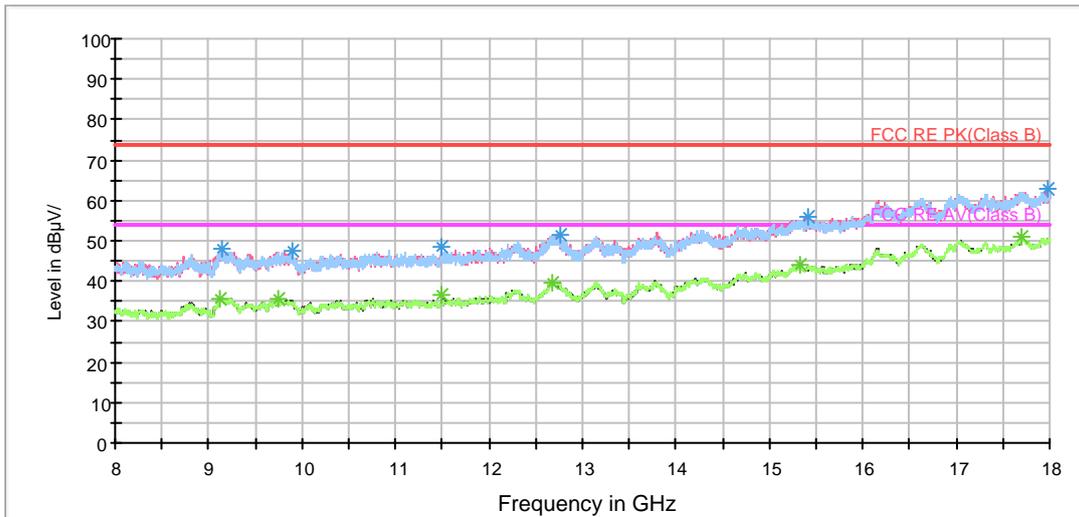
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

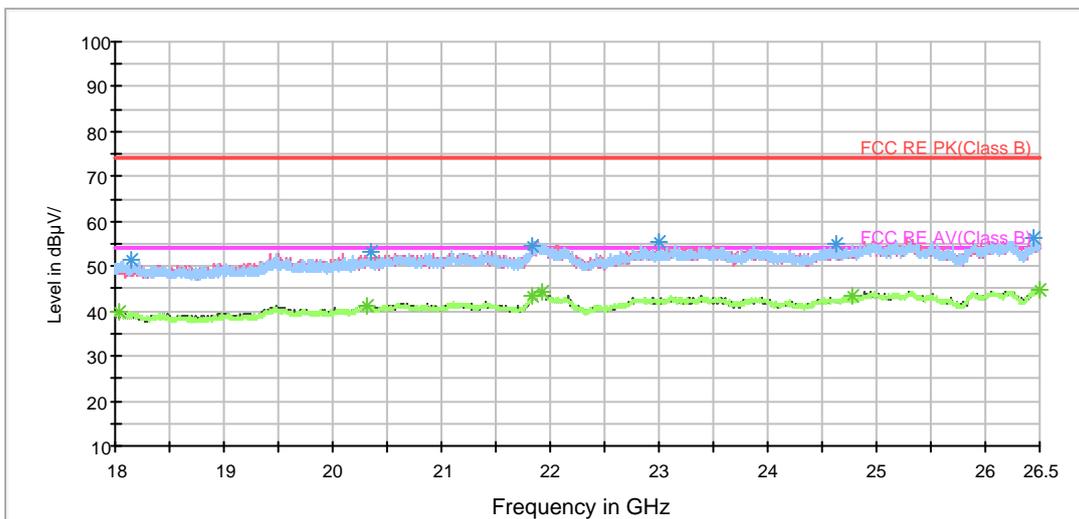
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

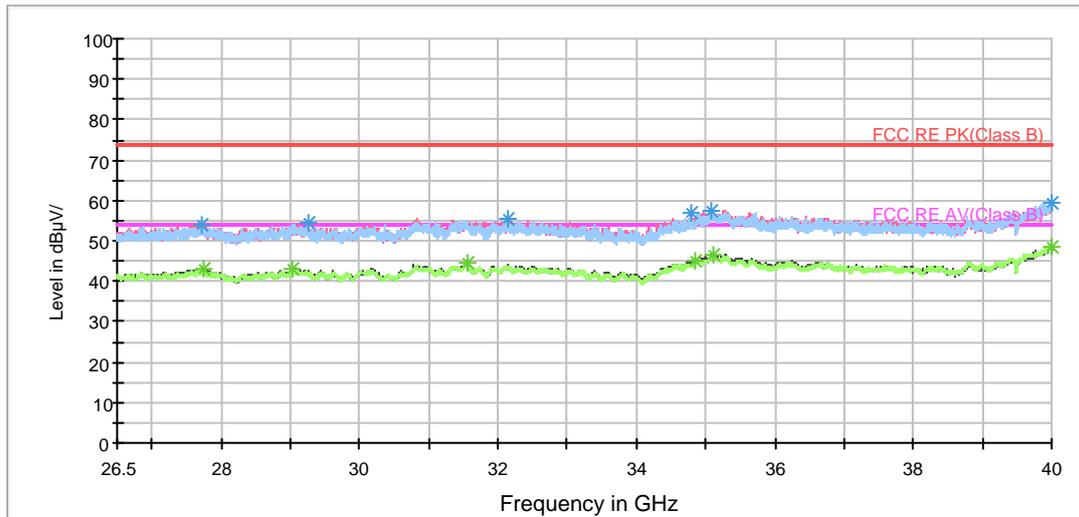
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3367.500000	39.3	100.0	V	296.0	41.7	-2.4	34.7	74
3830.000000	41.0	100.0	V	0.0	42.7	-1.7	33.0	74
4810.625000	41.0	100.0	V	251.0	39.7	1.3	33.0	74
6213.125000	44.5	100.0	V	58.0	39.1	5.4	29.5	74
6913.125000	46.0	100.0	H	0.0	39.8	6.2	28.0	74
7374.375000	45.1	100.0	V	0.0	38.0	7.1	28.9	74

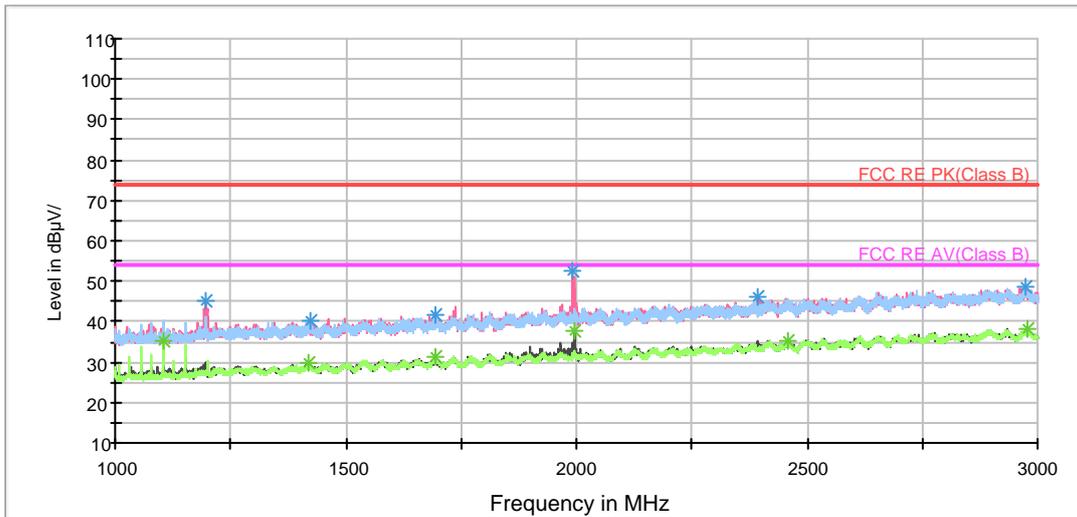
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3348.750000	26.5	100.0	V	353.0	28.8	-2.3	27.5	54
3830.000000	34.3	100.0	H	30.0	36.0	-1.7	19.7	54
4791.875000	29.6	100.0	H	44.0	28.4	1.2	24.4	54
6213.125000	32.2	100.0	V	58.0	26.8	5.4	21.8	54
6980.625000	34.3	100.0	V	193.0	27.9	6.4	19.7	54
7374.375000	32.4	100.0	V	0.0	25.3	7.1	21.6	54

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

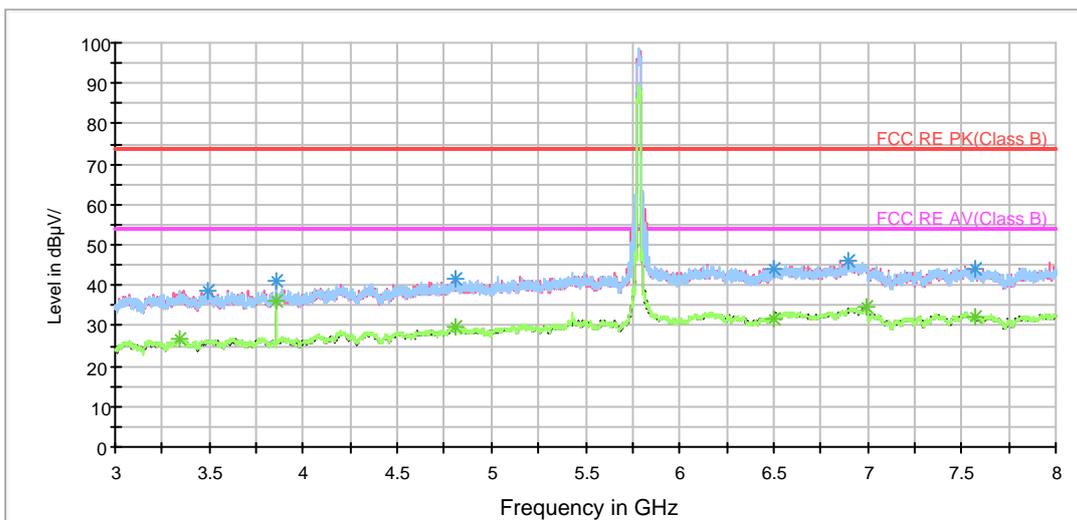
## 802.11ac (HT20) CH157

## RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

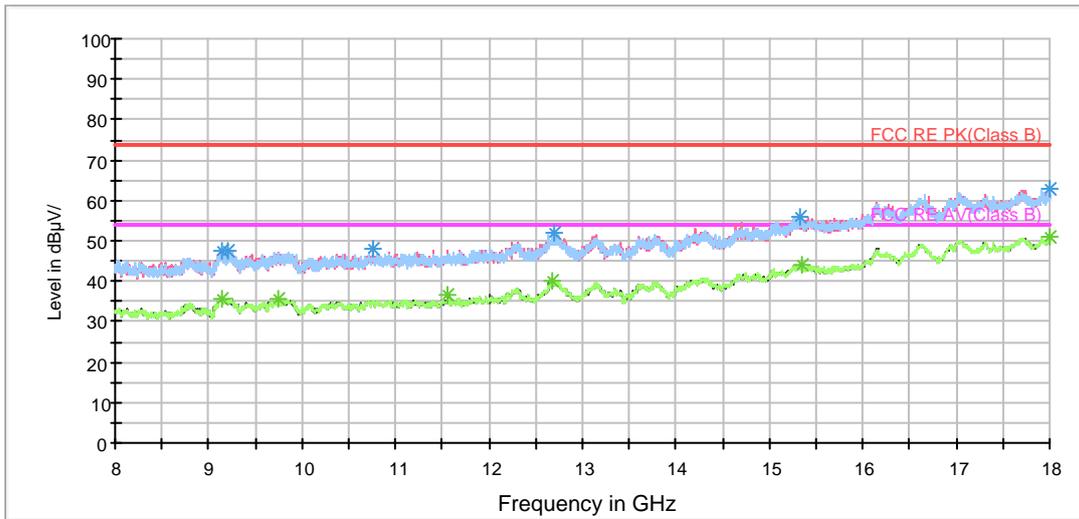
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

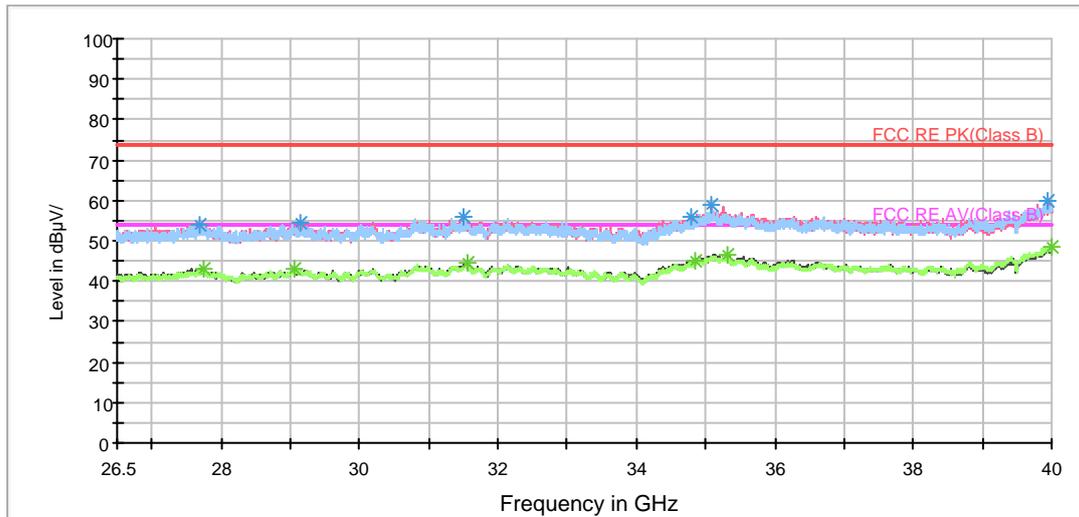
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3497.500000	38.7	100.0	H	90.0	40.8	-2.1	35.3	74
3856.875000	41.1	100.0	H	119.0	42.7	-1.6	32.9	74
4805.625000	41.8	100.0	V	270.0	40.5	1.3	32.2	74
6498.750000	44.1	100.0	V	328.0	38.8	5.3	29.9	74
6899.375000	46.0	100.0	V	181.0	39.7	6.3	28.0	74
7575.000000	43.8	100.0	H	62.0	36.7	7.1	30.2	74

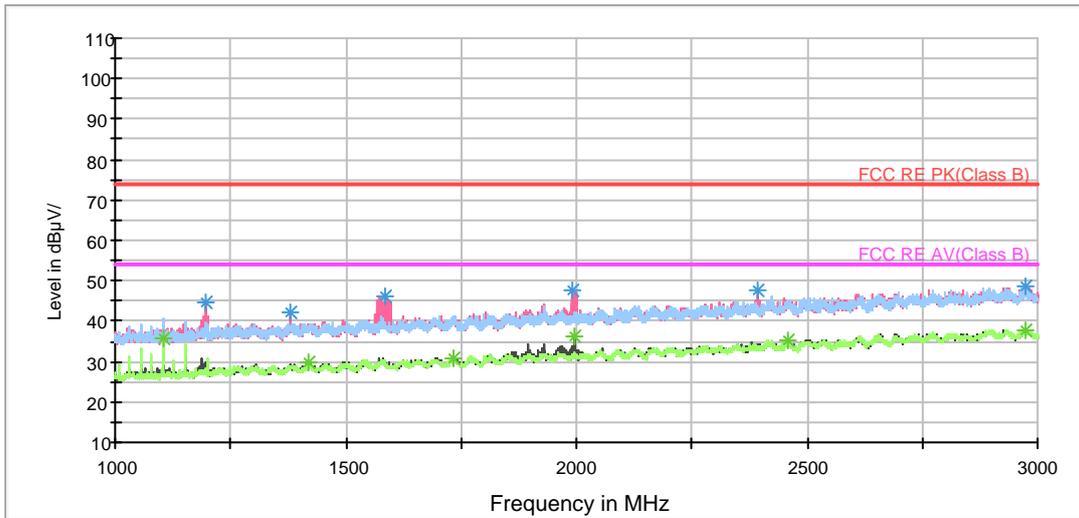
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3341.875000	26.8	100.0	H	163.0	29.2	-2.4	27.2	54
3856.250000	36.2	100.0	H	119.0	37.8	-1.6	17.8	54
4813.125000	29.6	100.0	H	34.0	28.3	1.3	24.4	54
6498.750000	31.9	100.0	V	328.0	26.6	5.3	22.1	54
6990.625000	34.5	100.0	V	0.0	28.0	6.5	19.5	54
7575.000000	32.0	100.0	H	62.0	24.9	7.1	22.0	54

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

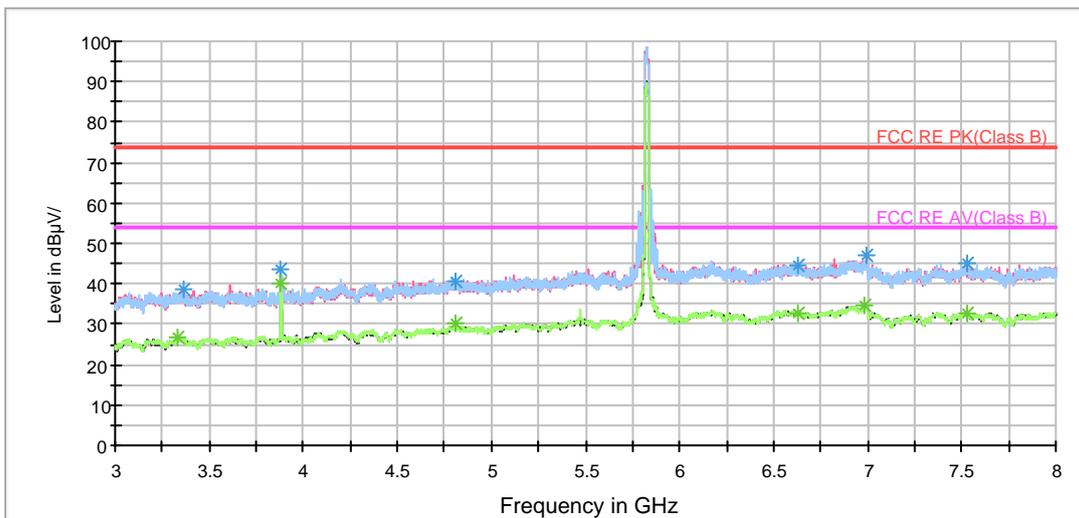
## 802.11ac (HT20) CH165

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

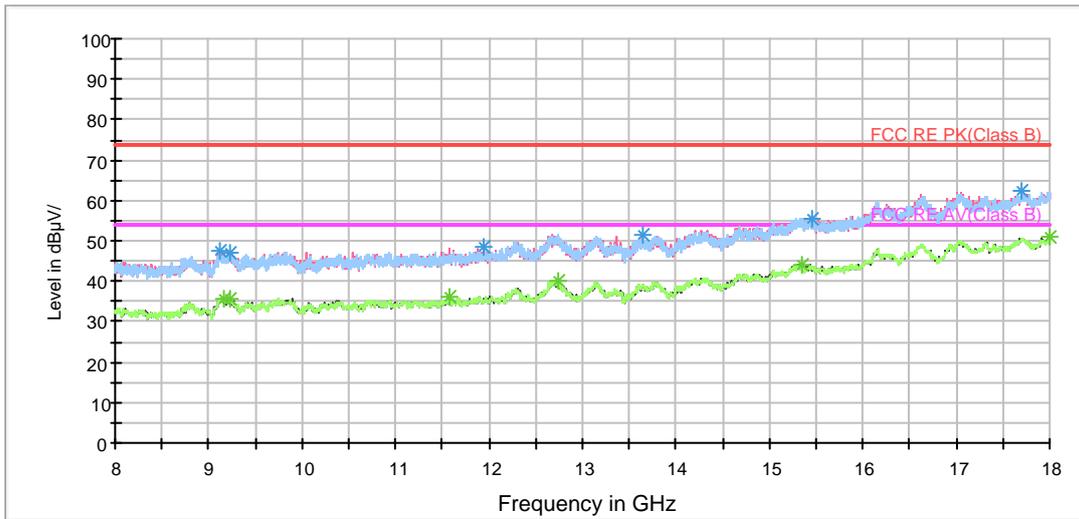
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

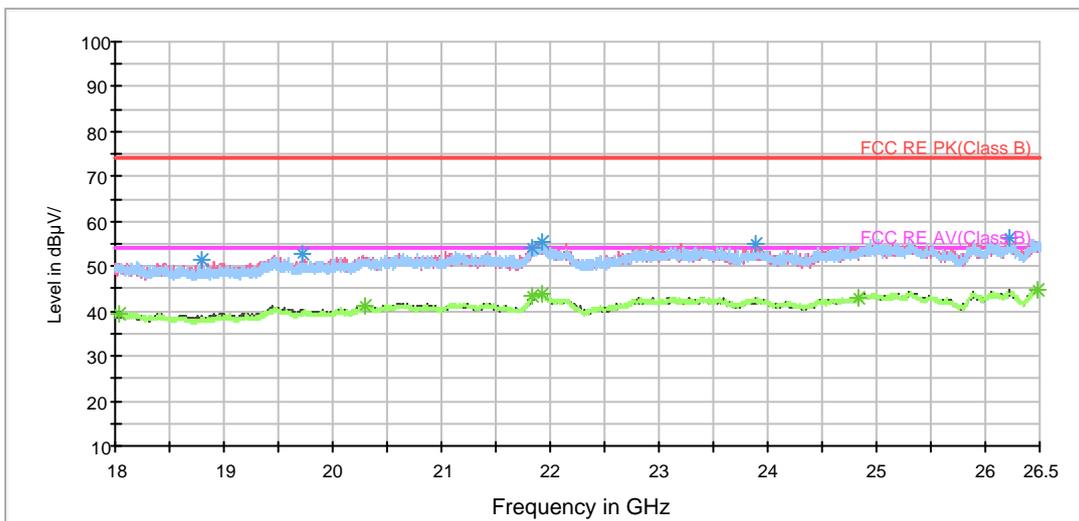
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

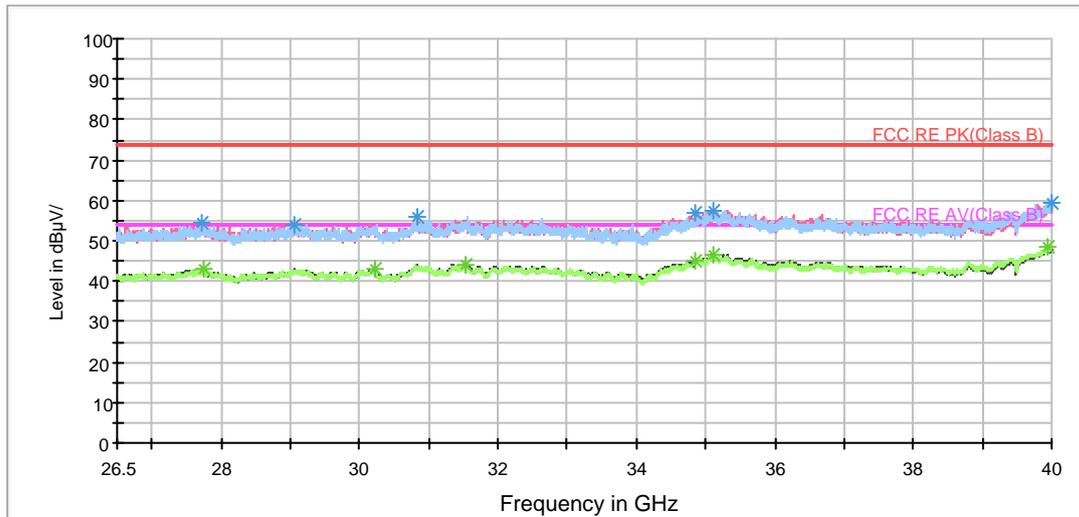
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3358.750000	38.8	100.0	V	148.0	41.1	-2.3	35.2	74
3883.125000	43.7	100.0	H	120.0	45.0	-1.3	30.3	74
4804.375000	40.7	100.0	V	281.0	39.4	1.3	33.3	74
6632.500000	44.6	100.0	V	339.0	39.1	5.5	29.4	74
6992.500000	47.0	100.0	V	324.0	40.5	6.5	27.0	74
7528.125000	45.1	100.0	V	339.0	38.0	7.1	28.9	74

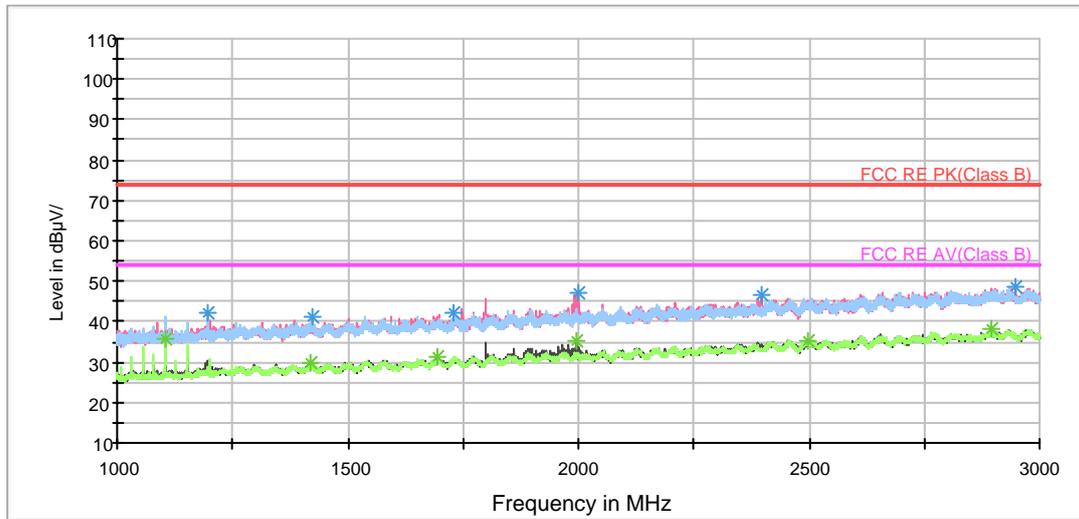
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3335.000000	26.7	100.0	H	351.0	29.0	-2.3	27.3	54
3883.125000	40.0	100.0	H	120.0	41.3	-1.3	14.0	54
4806.875000	30.0	100.0	H	0.0	28.7	1.3	24.0	54
6632.500000	32.4	100.0	V	339.0	26.9	5.5	21.6	54
6979.375000	34.4	100.0	V	281.0	28.1	6.3	19.6	54
7528.125000	32.6	100.0	V	339.0	25.5	7.1	21.4	54

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

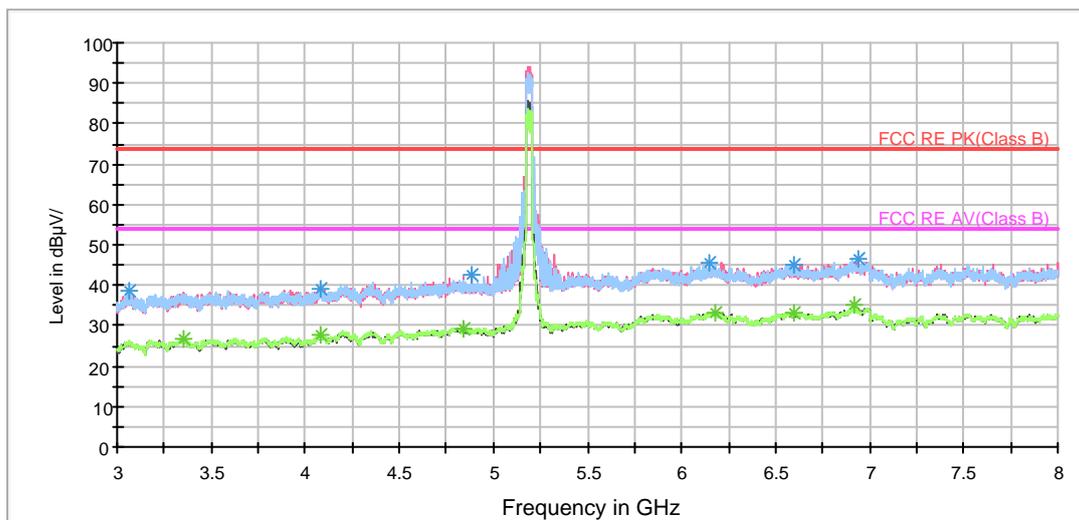
## 802.11ac (HT40) CH38

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

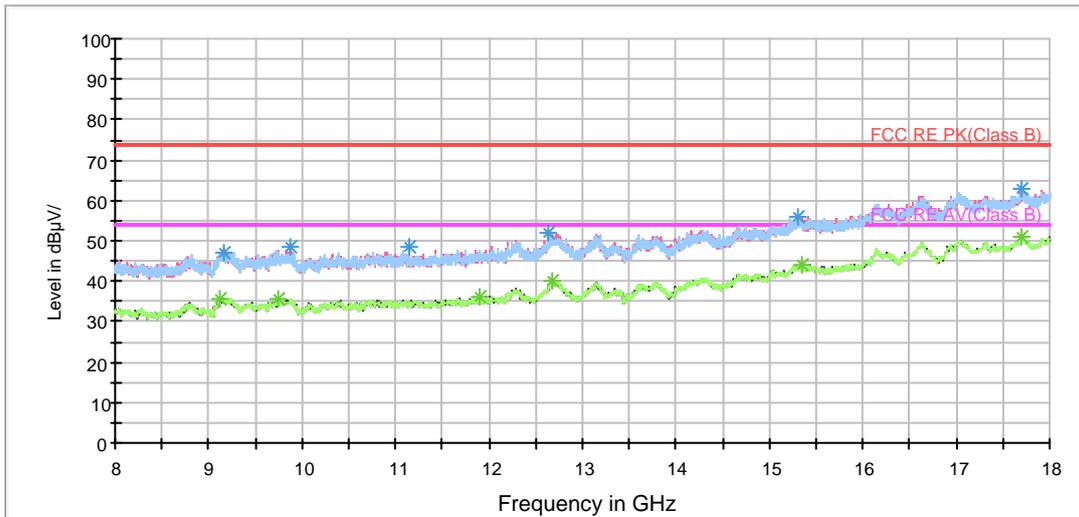
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

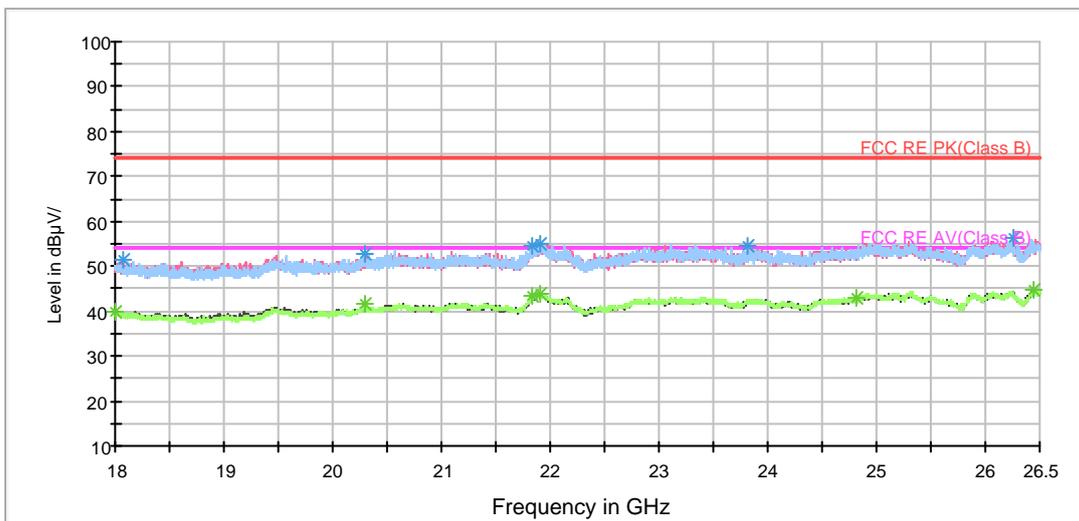
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

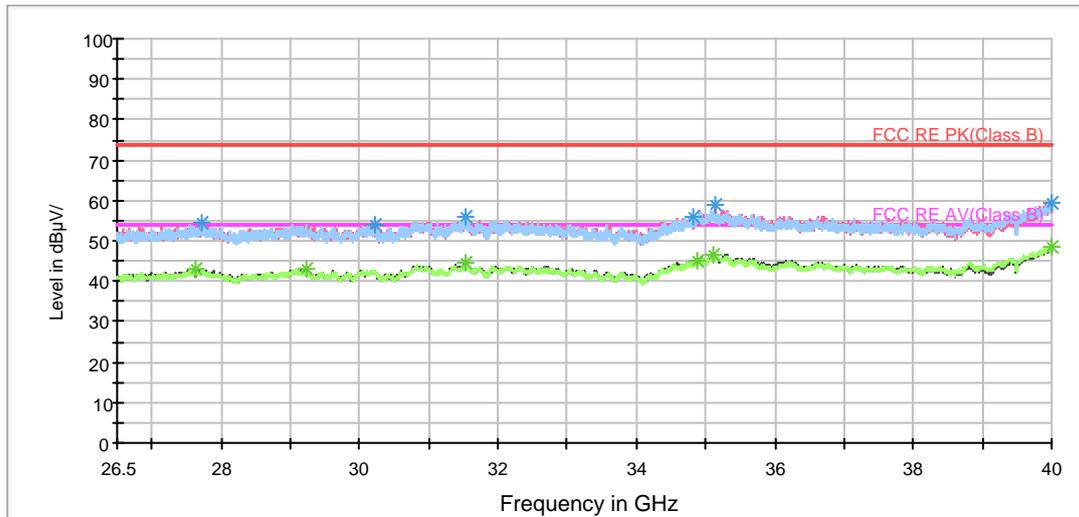
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3065.000000	38.5	100.0	H	181.0	41.6	-3.1	35.5	74
4082.500000	39.2	100.0	H	286.0	40.1	-0.9	34.8	74
4881.250000	42.8	100.0	V	243.0	41.0	1.8	31.2	74
6151.875000	45.7	100.0	H	50.0	40.2	5.5	28.3	74
6597.500000	45.1	100.0	V	353.0	39.4	5.7	28.9	74
6938.750000	46.7	100.0	V	272.0	40.6	6.1	27.3	74

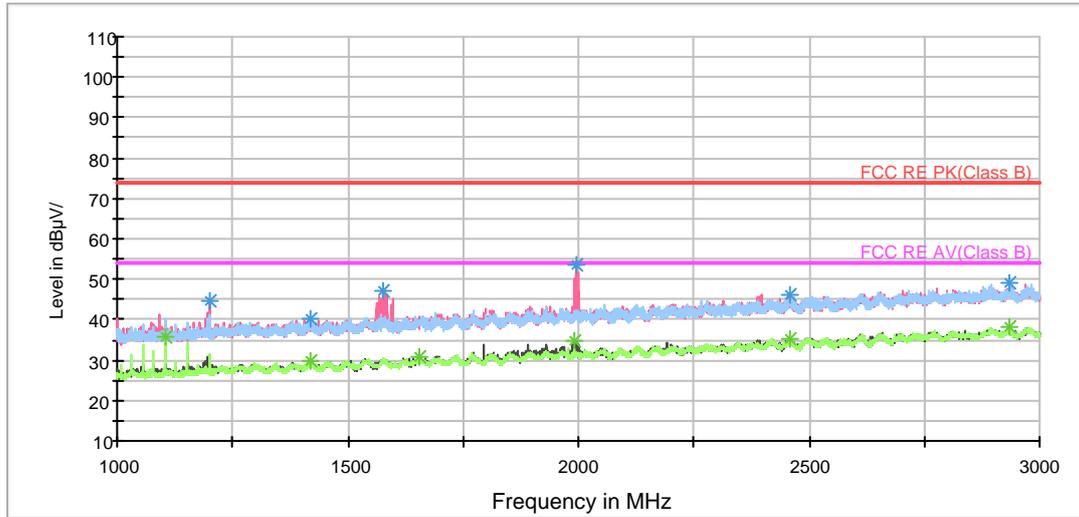
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3348.750000	26.5	100.0	H	64.0	28.8	-2.3	27.5	54
4077.500000	27.8	100.0	H	136.0	28.7	-0.9	26.2	54
4844.375000	29.4	100.0	H	0.0	27.8	1.6	24.6	54
6184.375000	33.0	100.0	V	0.0	27.6	5.4	21.0	54
6600.000000	33.4	100.0	H	93.0	27.7	5.7	20.6	54
6920.000000	35.0	100.0	V	286.0	28.8	6.2	19.0	54

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

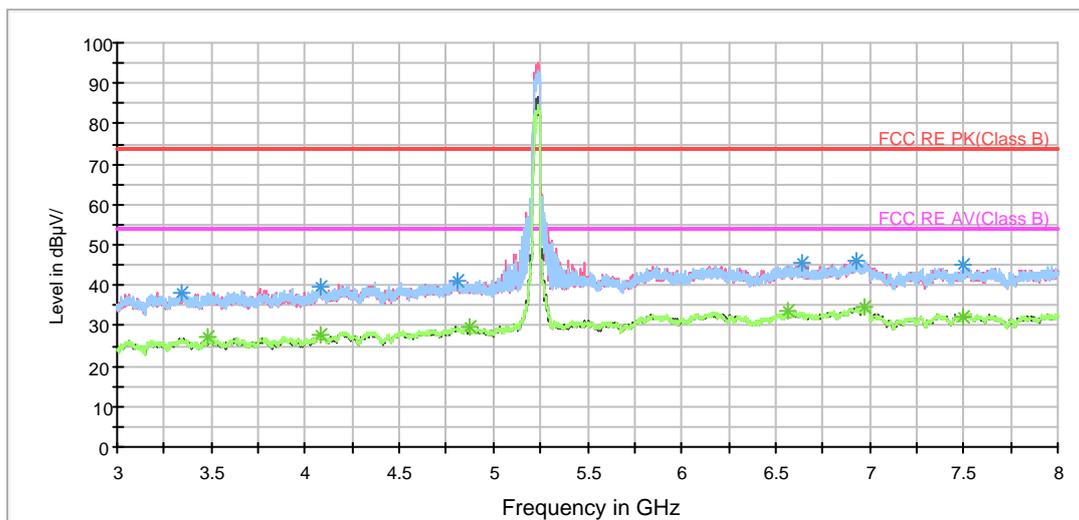
## 802.11ac (HT40) CH46

## RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

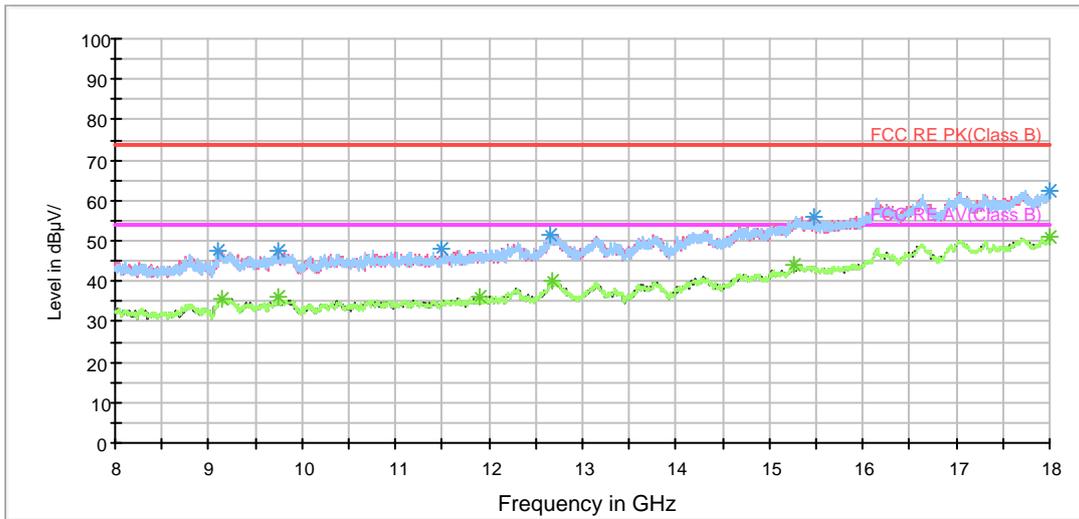
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

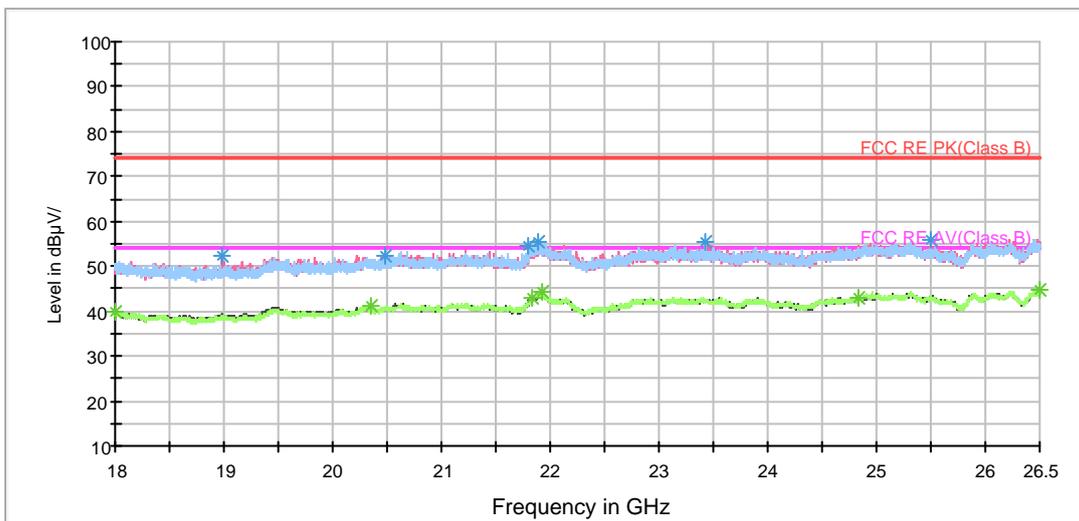
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

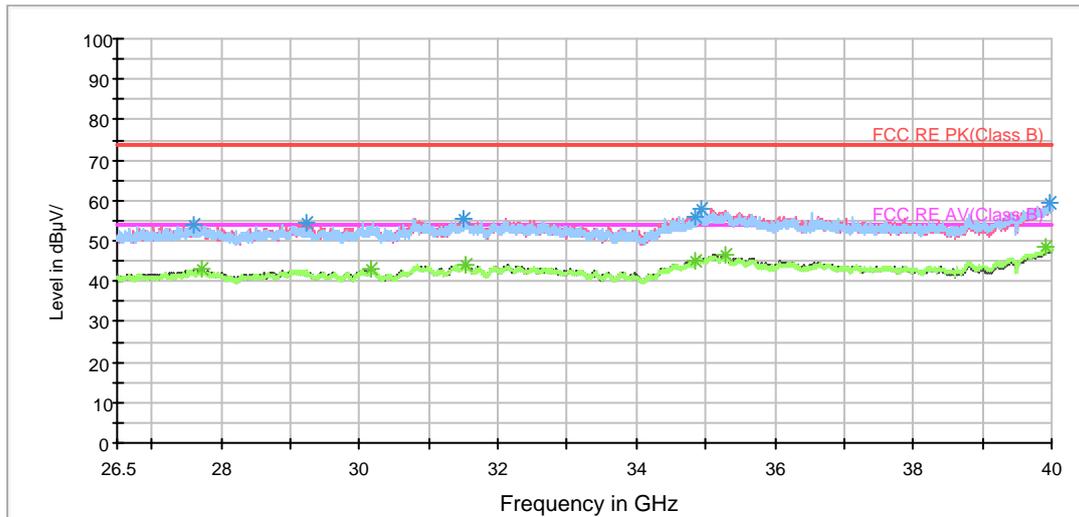
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3343.750000	38.2	100.0	V	0.0	40.6	-2.4	35.8	74
4082.500000	39.4	100.0	V	0.0	40.3	-0.9	34.6	74
4810.000000	41.1	100.0	V	181.0	39.8	1.3	32.9	74
6636.875000	45.6	100.0	H	8.0	40.1	5.5	28.4	74
6930.625000	45.9	100.0	H	0.0	39.7	6.2	28.1	74
7500.625000	45.3	100.0	V	0.0	38.4	6.9	28.7	74

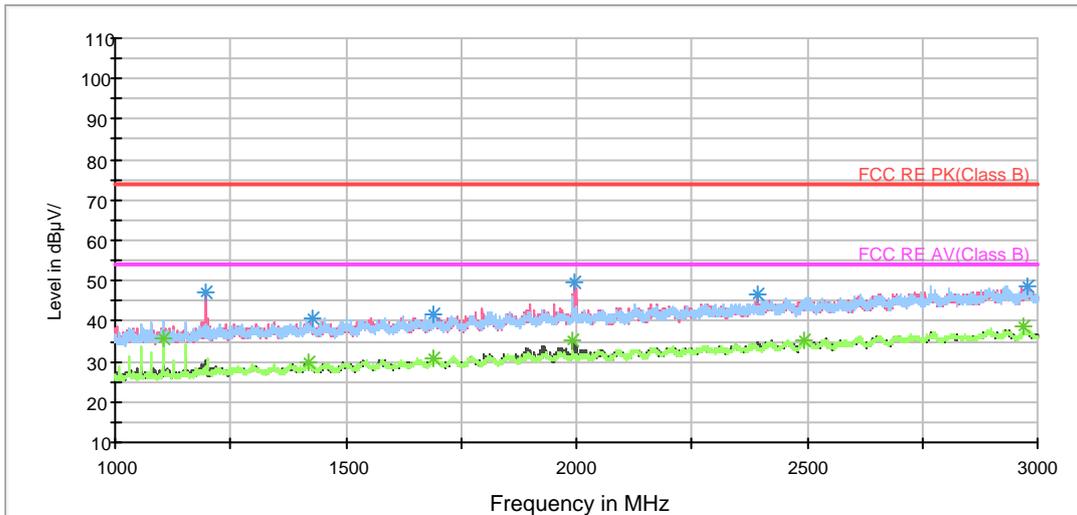
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3486.250000	27.4	100.0	V	196.0	29.4	-2.0	26.6	54
4081.875000	27.6	100.0	V	196.0	28.5	-0.9	26.4	54
4877.500000	29.5	100.0	H	0.0	27.7	1.8	24.5	54
6568.125000	33.5	100.0	H	181.0	27.8	5.7	20.5	54
6973.750000	34.6	100.0	V	269.0	28.3	6.3	19.4	54
7500.625000	32.0	100.0	V	0.0	25.1	6.9	22.0	54

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

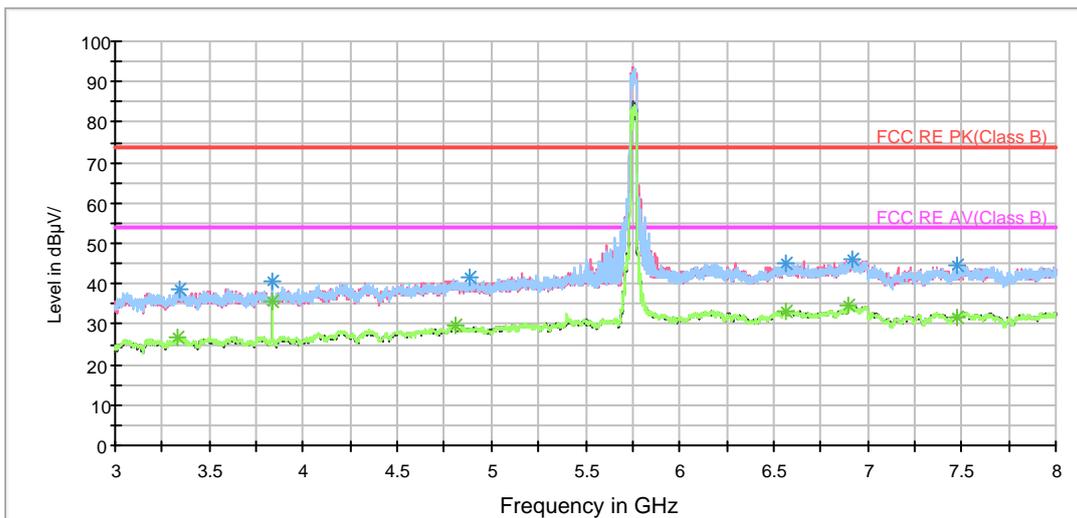
802.11ac (HT40) CH151

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

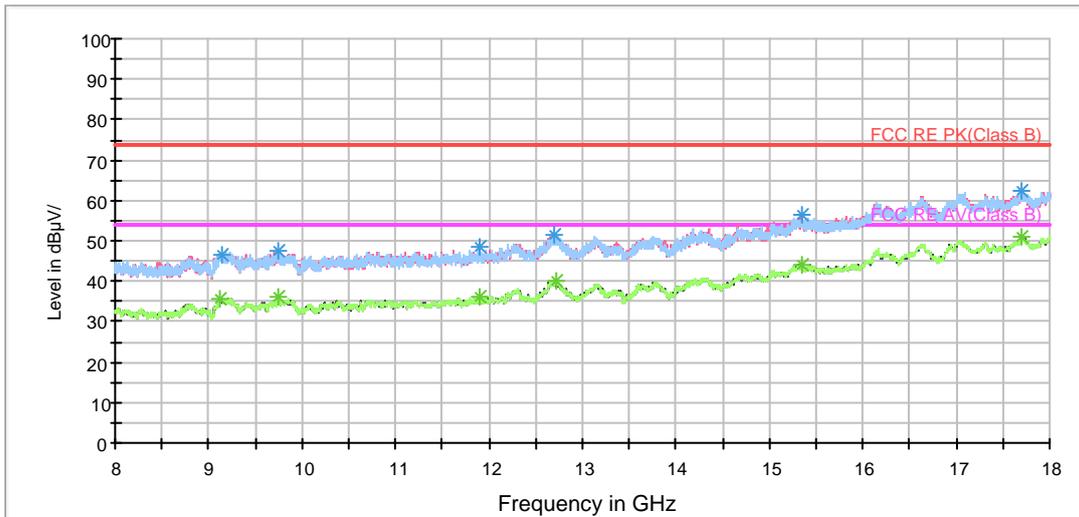
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

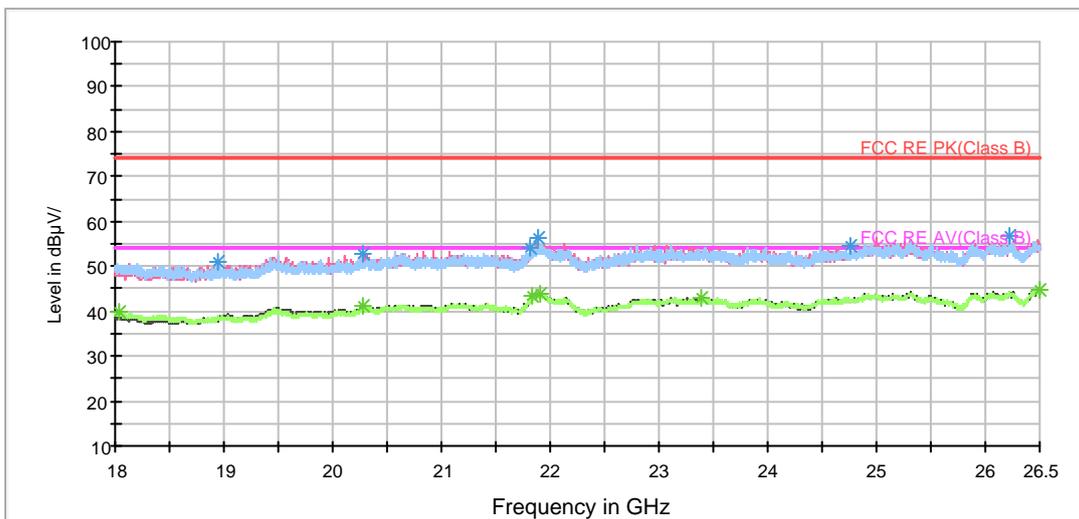
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

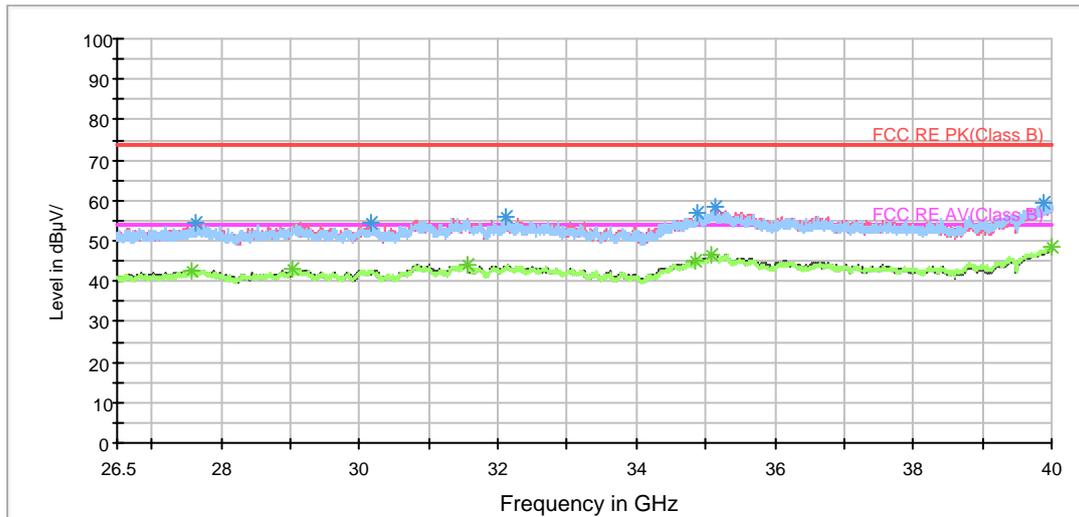
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3343.125000	38.7	100.0	H	19.0	41.1	-2.4	35.3	74
3836.250000	40.6	100.0	V	9.0	42.3	-1.7	33.4	74
4882.500000	41.5	100.0	H	91.0	39.6	1.9	32.5	74
6560.625000	45.1	100.0	H	0.0	39.3	5.8	28.9	74
6915.625000	46.2	100.0	V	0.0	40.0	6.2	27.8	74
7472.500000	44.4	100.0	V	343.0	37.6	6.8	29.6	74

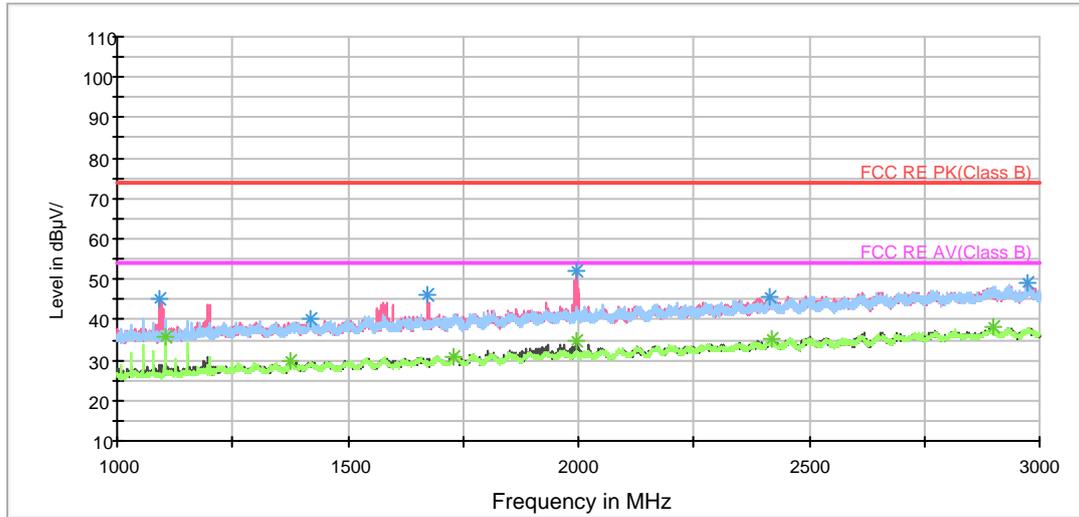
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3333.750000	26.6	100.0	V	166.0	28.9	-2.3	27.4	54
3836.250000	35.9	100.0	H	33.0	37.6	-1.7	18.1	54
4808.125000	29.6	100.0	V	313.0	28.3	1.3	24.4	54
6560.625000	33.0	100.0	H	0.0	27.2	5.8	21.0	54
6892.500000	34.5	100.0	H	135.0	28.3	6.2	19.5	54
7472.500000	31.5	100.0	V	343.0	24.7	6.8	22.5	54

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

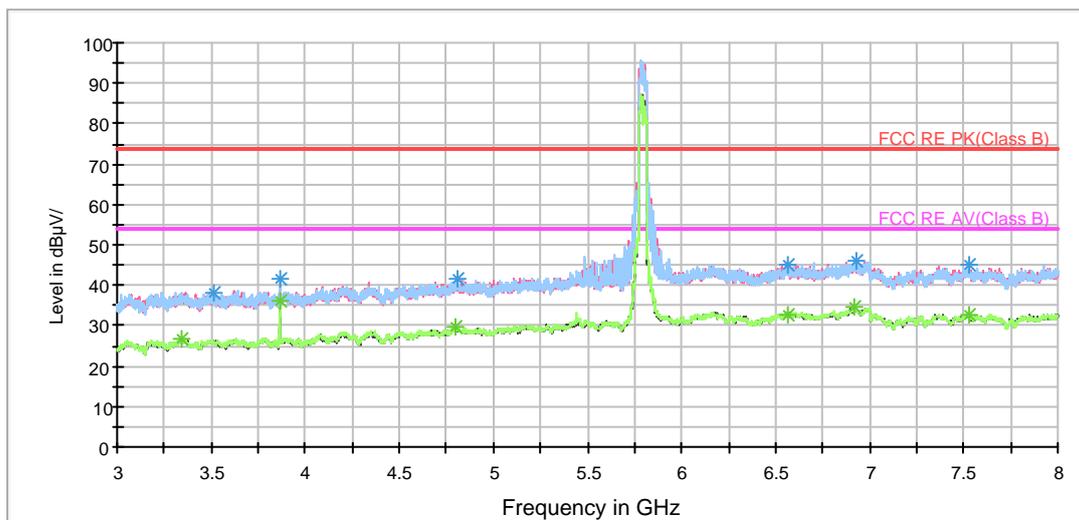
## 802.11ac (HT40) CH159

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

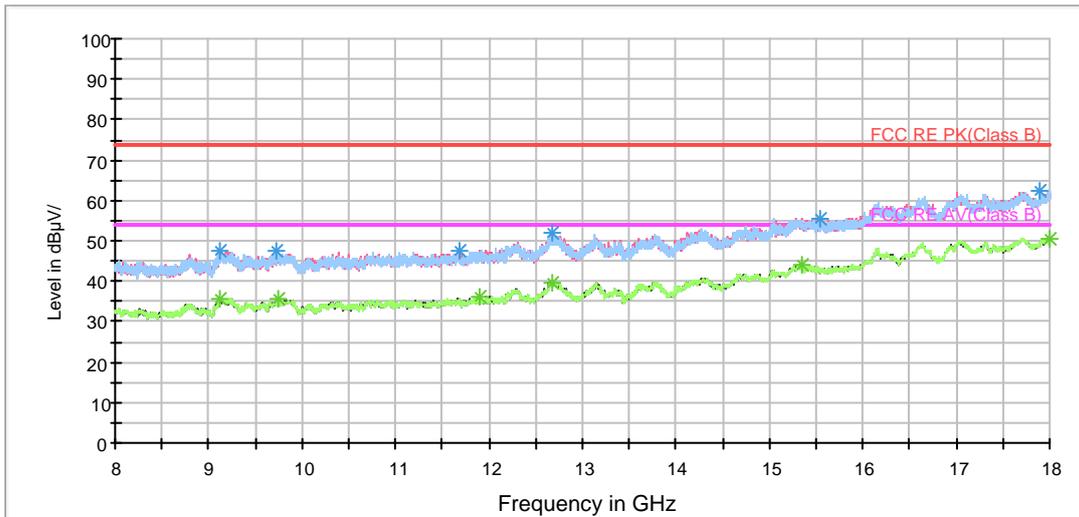
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

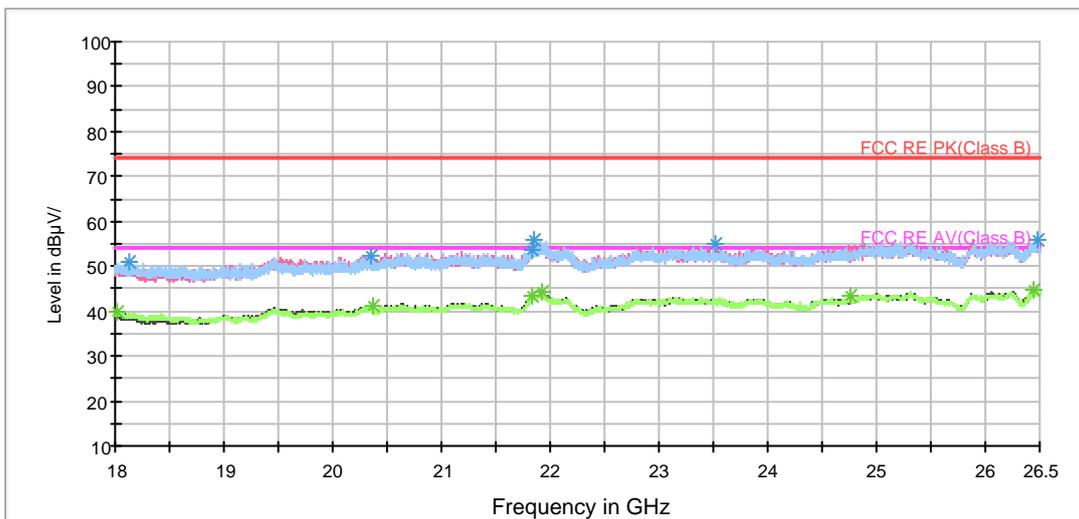
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

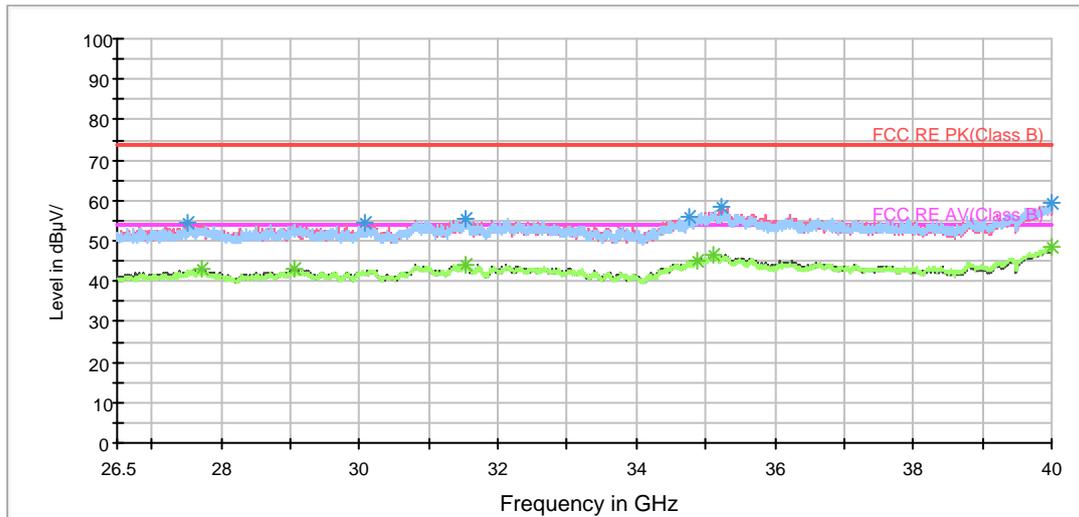
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3518.750000	38.3	100.0	V	280.0	40.3	-2.0	35.7	74
3863.125000	41.8	100.0	H	121.0	43.3	-1.5	32.2	74
4810.000000	41.5	100.0	V	324.0	40.2	1.3	32.5	74
6568.125000	45.3	100.0	V	294.0	39.6	5.7	28.7	74
6925.625000	46.1	100.0	H	121.0	39.9	6.2	27.9	74
7525.625000	44.8	100.0	H	1.0	37.7	7.1	29.2	74

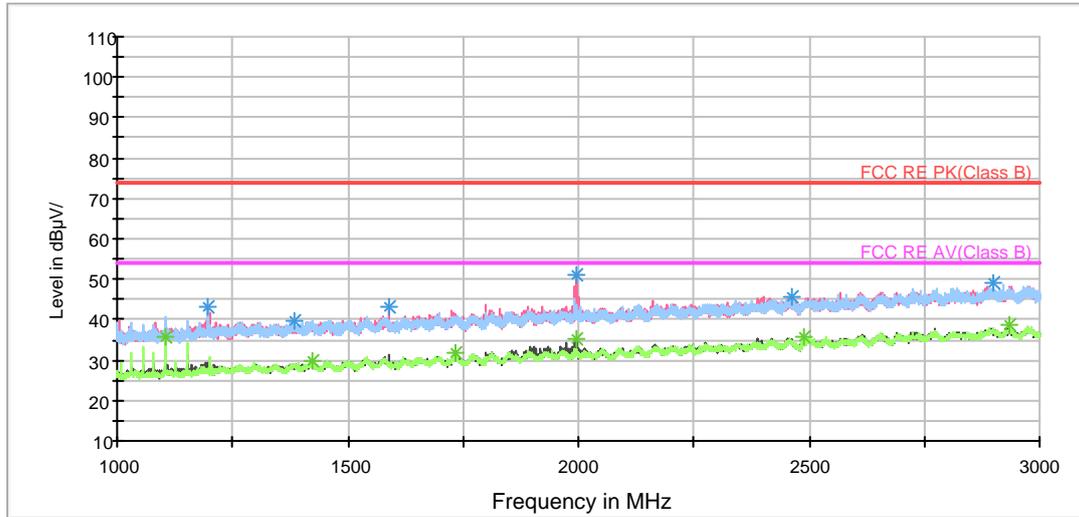
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3341.875000	26.6	100.0	H	285.0	29.0	-2.4	27.4	54
3863.125000	36.1	100.0	H	121.0	37.6	-1.5	17.9	54
4800.625000	29.5	100.0	H	0.0	28.2	1.3	24.5	54
6568.125000	32.8	100.0	V	294.0	27.1	5.7	21.2	54
6921.250000	34.5	100.0	H	15.0	28.3	6.2	19.5	54
7525.625000	32.4	100.0	H	1.0	25.3	7.1	21.6	54

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

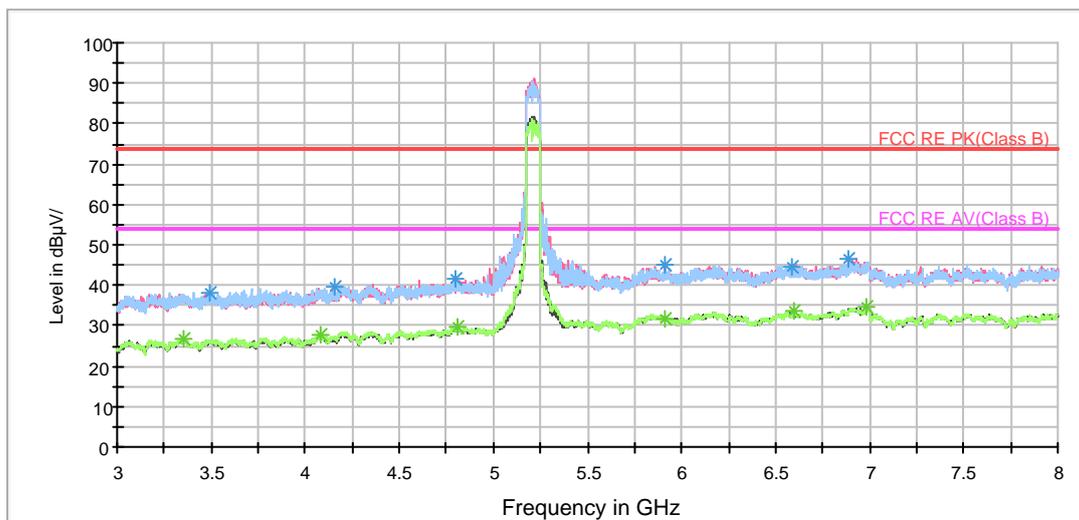
## 802.11ac (HT80) CH42

## RE 1G-3GHz PK+AV



## Radiates Emission from 1GHz to 3GHz

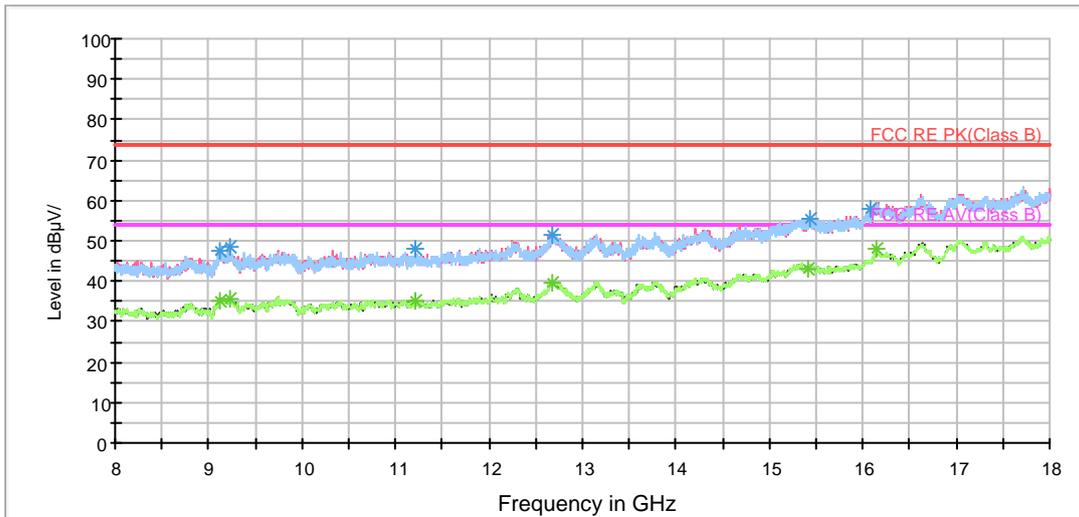
## RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

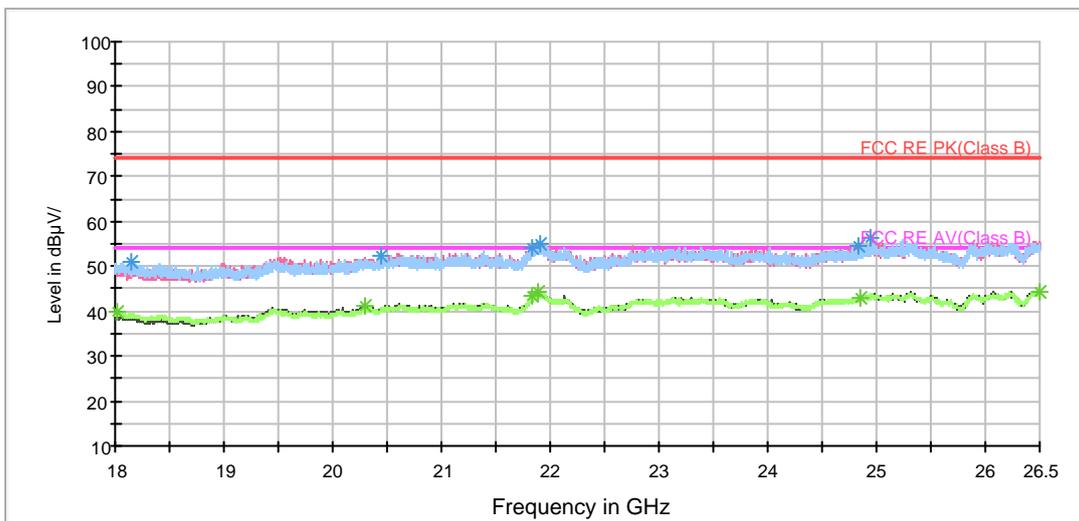
## Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

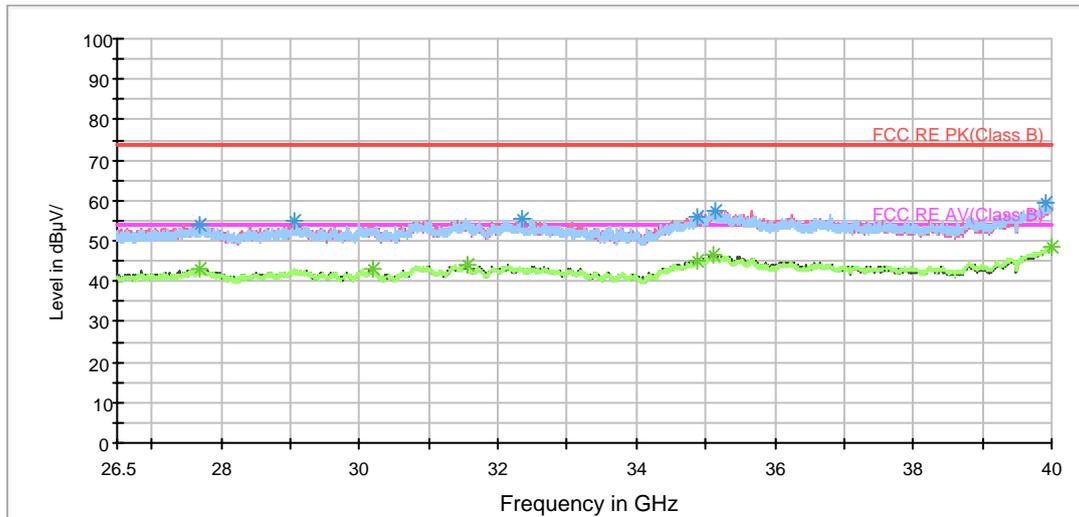
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3495.000000	38.1	100.0	H	0.0	40.2	-2.1	35.9	74
4154.375000	39.4	100.0	H	17.0	39.5	-0.1	34.6	74
4793.750000	41.4	100.0	H	2.0	40.2	1.2	32.6	74
5915.625000	44.9	100.0	V	258.0	40.0	4.9	29.1	74
6588.125000	44.5	100.0	V	315.0	38.9	5.6	29.5	74
6885.625000	46.7	100.0	V	0.0	40.6	6.1	27.3	74

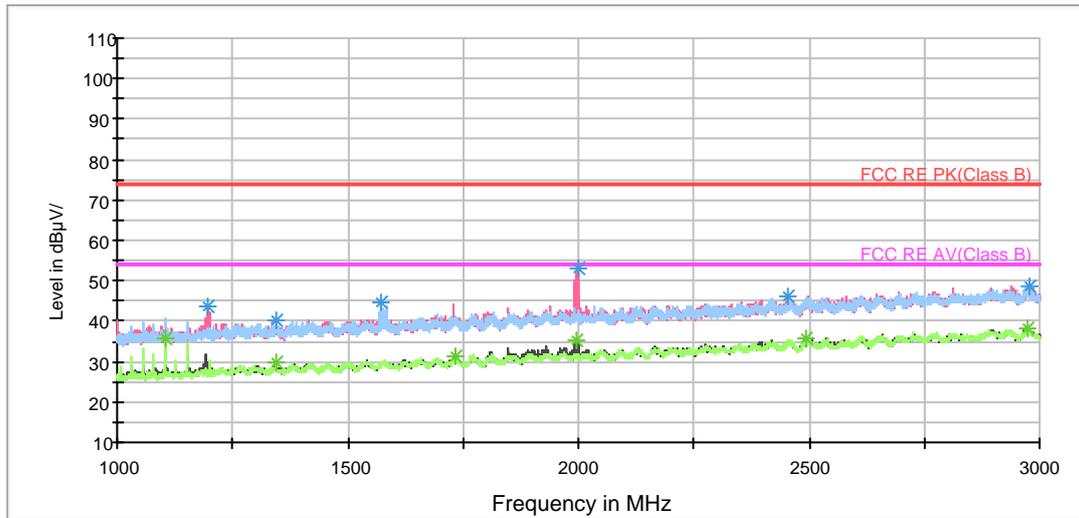
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3351.250000	26.6	100.0	H	300.0	28.9	-2.3	27.4	54
4078.750000	27.6	100.0	H	46.0	28.5	-0.9	26.4	54
4811.250000	29.5	100.0	V	0.0	28.2	1.3	24.5	54
5915.625000	31.8	100.0	V	258.0	26.9	4.9	22.2	54
6600.625000	33.4	100.0	H	119.0	27.7	5.7	20.6	54
6981.875000	34.5	100.0	H	254.0	28.1	6.4	19.5	54

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

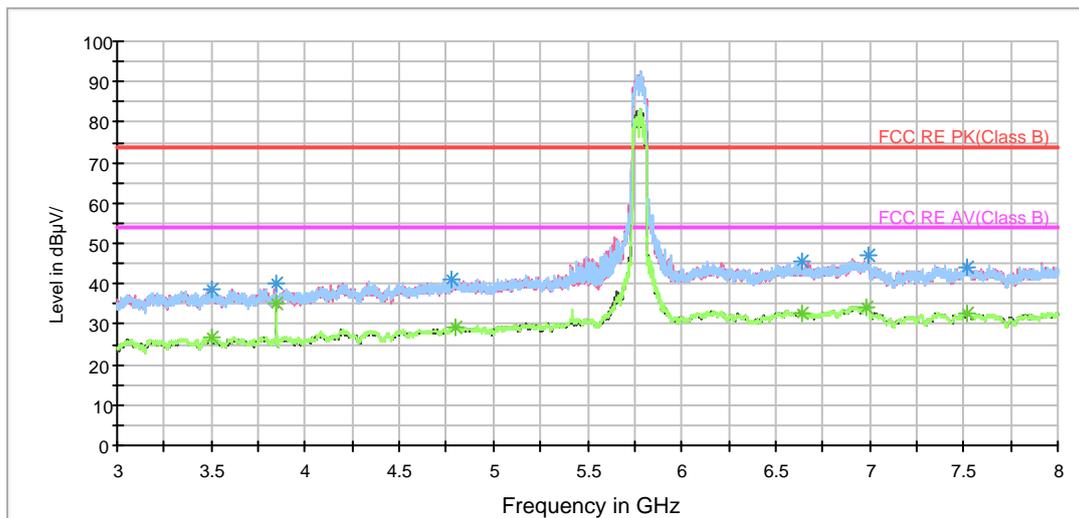
## 802.11ac (HT80) CH155

RE 1G-3GHz PK+AV



Radiates Emission from 1GHz to 3GHz

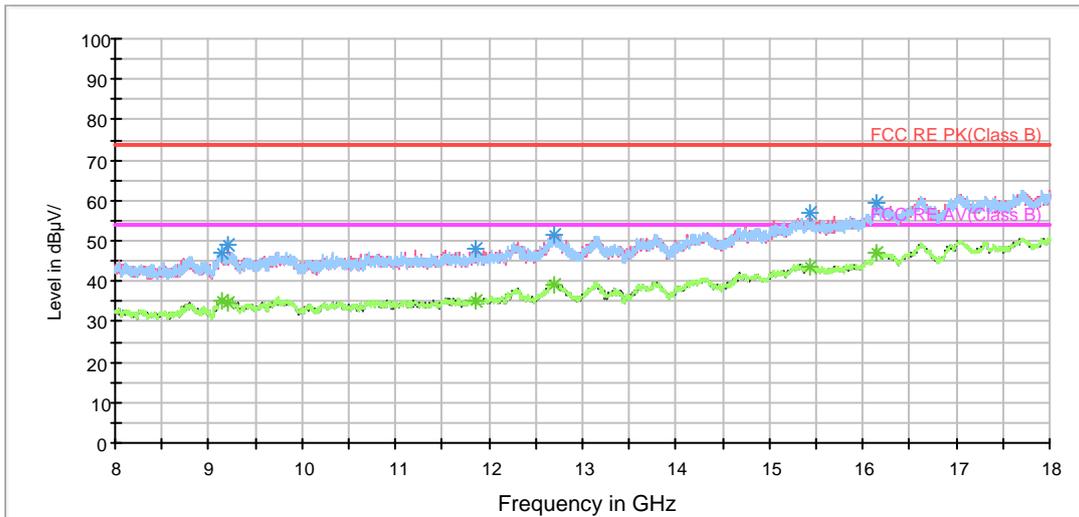
RE 3-18GHz PK+AV



Note: The signal beyond the limit is carrier.

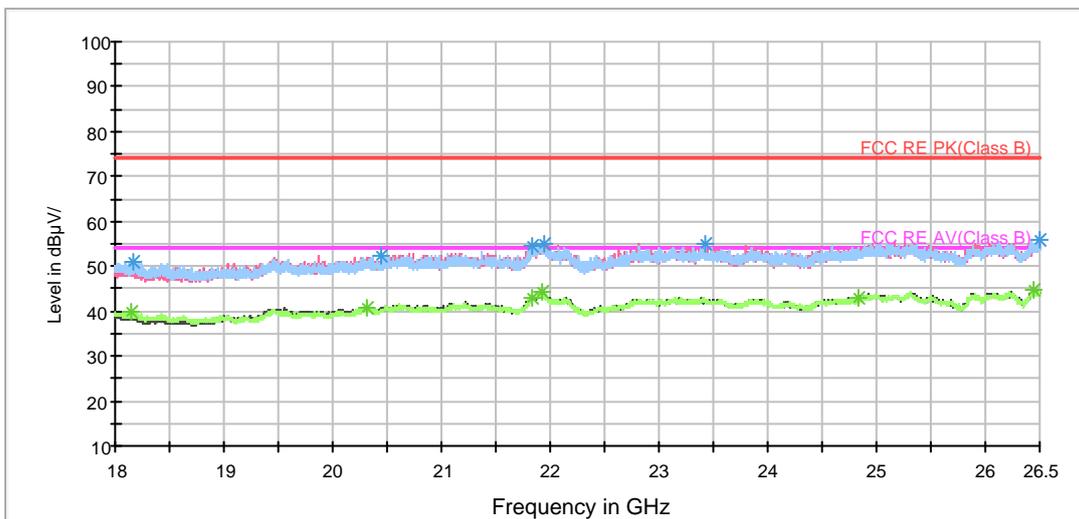
Radiates Emission from 3GHz to 8GHz

RE 3-18GHz PK+AV



Radiates Emission from 8GHz to 18GHz

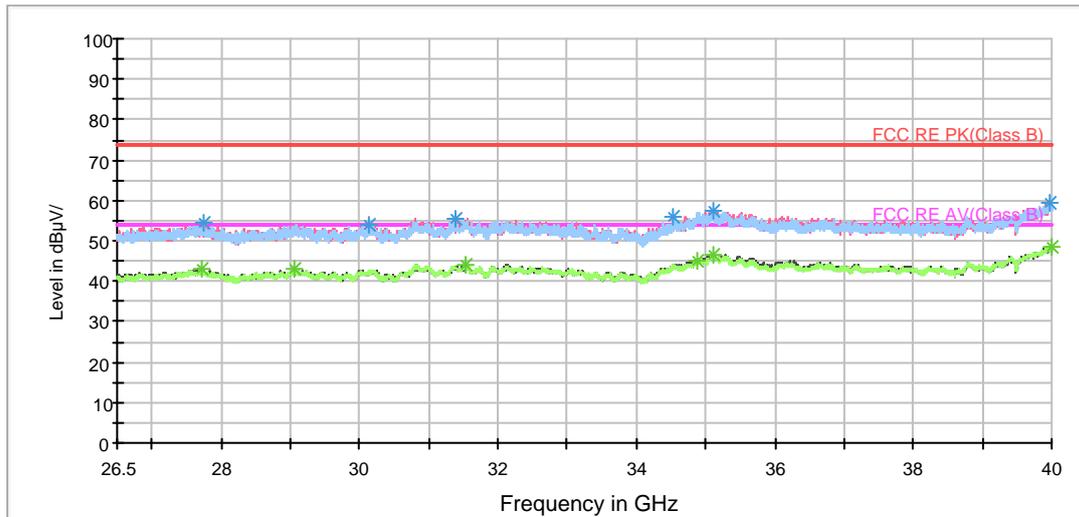
BELL\_RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz



BELL RE 26.5-40GHz PK+AV



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3501.250000	38.7	100.0	V	325.0	40.8	-2.1	35.3	74
3849.375000	40.3	100.0	H	35.0	41.9	-1.6	33.7	74
4779.375000	41.2	100.0	H	35.0	40.2	1.0	32.8	74
6638.125000	45.3	100.0	V	0.0	39.8	5.5	28.7	74
6993.125000	46.8	100.0	H	166.0	40.3	6.5	27.2	74
7517.500000	44.2	100.0	H	7.0	37.1	7.1	29.8	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)
3503.125000	26.5	100.0	H	271.0	28.6	-2.1	27.5	54
3850.000000	35.4	100.0	H	35.0	37.0	-1.6	18.6	54
4795.625000	29.4	100.0	V	180.0	28.2	1.2	24.6	54
6638.125000	32.7	100.0	V	0.0	27.2	5.5	21.3	54
6987.500000	34.3	100.0	V	311.0	27.9	6.4	19.7	54
7517.500000	32.6	100.0	H	7.0	25.5	7.1	21.4	54

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

## 5.7. Conducted Emission

### Ambient condition

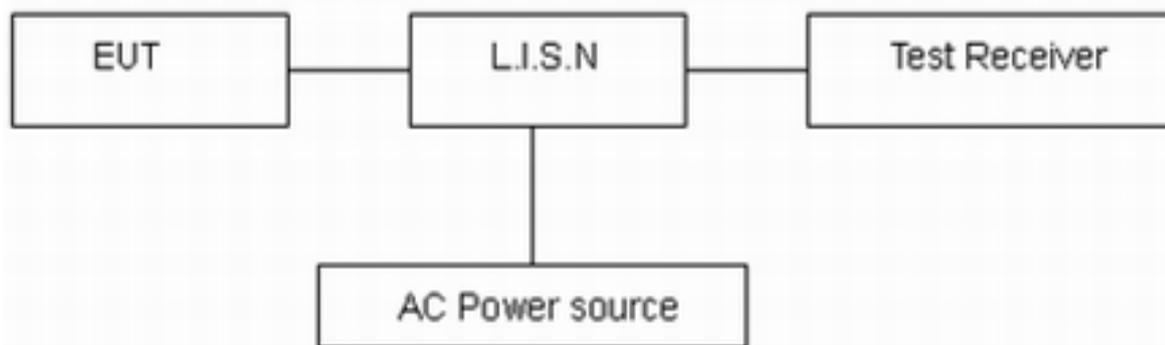
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### 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.

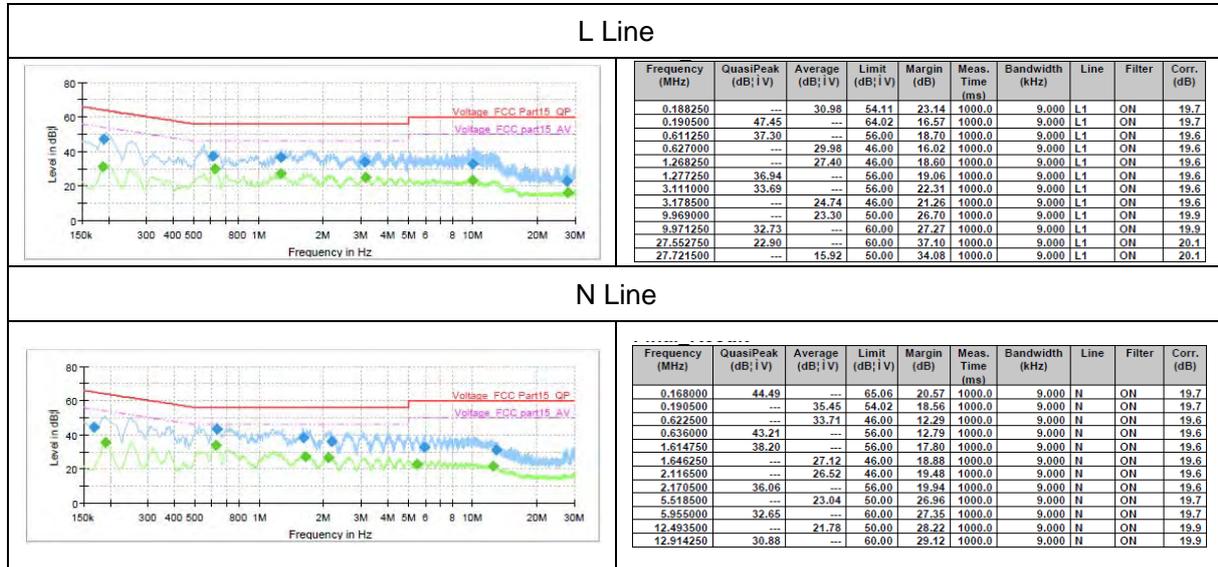
### Measurement Uncertainty

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, 802.11ac (HT20), Channel 165 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.





## 6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Spectrum Analyzer	R&S	FSV40	15195-01-00	2017-05-14	2018-05-13
EMI Test Receiver	R&S	ESCI	100948	2017-05-20	2018-05-19
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-02-18	2020-02-17
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-201	2017-11-18	2020-11-17
Double Ridged Waveguide Horn Antenna	R&S	HF907	100126	2014-12-06	2019-12-05
Standard Gain Horn	ETS-Lindgren	3160-09	00102644	2015-01-30	2020-01-29
Standard Gain Horn	STEATITE	QSH-SL-26-40 -K-15	16779	2016-03-21	2019-03-20
Broadband Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06024	2016-11-24	2019-11-23
EMI Test Receiver	R&S	ESR	101667	2017-09-06	2018-09-05
LISN	R&S	ENV216	101171	2016-12-16	2019-12-15
Spectrum Analyzer	Agilent	N9010A	MY47191109	2017-05-20	2018-05-19
RF Cable	Agilent	SMA 15cm	0001	2017-08-04	2018-02-03
RF Cable	Agilent	SMA 15cm	0001	2018-02-03	2018-08-02
TEMPERATURE CHAMBER	ESPEC	SU-242	93000506	2017-12-27	2018-12-26
AV Power Meter	R&S	NRP	102437	2017-12-17	2018-12-16
Power Probe	R&S	NRP-Z21	104799	2017-05-20	2018-05-19

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