

4.4 Power Spectral Density

Test Procedures

KDB 789033 – Section F (Method SA-2, Maximum Power Spectral Density)
KDB 662911 D01, D02 (Multiple Transmitter Output)

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 1 MHz, 500 KHz (UNII 3)
- b) VBW = 3 MHz, 1.5 MHz (UNII 3)
- c) Sweep time = auto
- d) Detector = power averaging (rms)
- e) Trace mode = Average at least 100
- f) Duty cycle factor = $10\log(1/x)$

Test mode		Duty Cycle Factor (dB)
CDD Mode	802.11a	0.16
	802.11n_HT20	0.17
	802.11n_HT40	0.33
	802.11ac_VHT20	0.17
	802.11ac_VHT40	0.33
	802.11ac_VHT80	0.63
SDM Mode	802.11n_HT20	0.32
	802.11n_HT40	0.60
	802.11ac_VHT20	0.32
	802.11ac_VHT40	0.71
	802.11ac_VHT80	1.25



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Limit

Operating Mode	Band	Mode	ANT Configuration	ANT Gain (dBi)	Limit (dBm)
SISO	UNII 1	802.11a/n/ac	ANT1, ANT2	2.00	17.00
	UNII 3				30.00
MIMO (2Tx)	UNII 1	802.11a/n/ac	ANT1 + ANT2	5.01	17.00
	UNII 3				30.00



Test Data

CDD Mode_ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	11.13	0.16	11.29	17.00	5.71
	5 200	11.12	0.16	11.28	17.00	5.72
	5 240	11.30	0.16	11.46	17.00	5.54
	5 745	7.85	0.16	8.01	30.00	21.99
	5 785	7.57	0.16	7.73	30.00	22.27
	5 825	6.83	0.16	6.99	30.00	23.01
802.11n_HT20	5 180	10.69	0.17	10.86	17.00	6.14
	5 200	10.99	0.17	11.16	17.00	5.84
	5 240	11.15	0.17	11.32	17.00	5.68
	5 745	7.81	0.17	7.98	30.00	22.02
	5 785	7.27	0.17	7.44	30.00	22.56
	5 825	6.67	0.17	6.84	30.00	23.16
802.11ac_VHT20	5 180	11.03	0.17	11.20	17.00	5.80
	5 200	10.97	0.17	11.14	17.00	5.86
	5 240	11.12	0.17	11.29	17.00	5.71
	5 745	7.71	0.17	7.88	30.00	22.12
	5 785	7.09	0.17	7.26	30.00	22.74
	5 825	7.05	0.17	7.22	30.00	22.78
802.11n_HT40	5 190	5.88	0.33	6.21	17.00	10.79
	5 230	6.56	0.33	6.89	17.00	10.11
	5 755	3.67	0.33	4.00	30.00	26.00
	5 795	3.02	0.33	3.35	30.00	26.65
802.11ac_VHT40	5 190	6.67	0.33	7.00	17.00	10.00
	5 230	6.64	0.33	6.97	17.00	10.03
	5 755	3.36	0.33	3.69	30.00	26.31
	5 795	3.09	0.33	3.42	30.00	26.58
802.11ac_VHT80	5 210	3.43	0.63	4.06	17.00	12.94
	5 775	0.02	0.63	0.65	30.00	29.35
Measurement uncertainty		± 1.5 dB				



CDD Mode_ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	10.86	0.16	11.02	17.00	5.98
	5 200	11.30	0.16	11.46	17.00	5.54
	5 240	11.23	0.16	11.39	17.00	5.61
	5 745	8.79	0.16	8.95	30.00	21.05
	5 785	8.11	0.16	8.27	30.00	21.73
	5 825	7.44	0.16	7.60	30.00	22.40
802.11n _HT20	5 180	10.77	0.17	10.94	17.00	6.06
	5 200	10.81	0.17	10.98	17.00	6.02
	5 240	11.12	0.17	11.29	17.00	5.71
	5 745	8.56	0.17	8.73	30.00	21.27
	5 785	7.96	0.17	8.13	30.00	21.87
	5 825	7.24	0.17	7.41	30.00	22.59
802.11ac _VHT20	5 180	10.71	0.17	10.88	17.00	6.12
	5 200	10.86	0.17	11.03	17.00	5.97
	5 240	10.95	0.17	11.12	17.00	5.88
	5 745	8.77	0.17	8.94	30.00	21.06
	5 785	8.13	0.17	8.30	30.00	21.70
	5 825	7.27	0.17	7.44	30.00	22.56
802.11n _HT40	5 190	5.44	0.33	5.77	17.00	11.23
	5 230	5.76	0.33	6.09	17.00	10.91
	5 755	3.71	0.33	4.04	30.00	25.96
	5 795	3.28	0.33	3.61	30.00	26.39
802.11ac _VHT40	5 190	6.20	0.33	6.53	17.00	10.47
	5 230	6.46	0.33	6.79	17.00	10.21
	5 755	4.04	0.33	4.37	30.00	25.63
	5 795	3.27	0.33	3.60	30.00	26.40
802.11ac _VHT80	5 210	2.39	0.63	3.02	17.00	13.98
	5 775	-0.52	0.63	0.11	30.00	29.89
Measurement uncertainty		± 1.5 dB				



CDD Mode_ANT1 + ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11a	5 180	14.01	0.16	14.17	17.00	2.83
	5 200	14.22	0.16	14.38	17.00	2.62
	5 240	14.28	0.16	14.44	17.00	2.56
	5 745	11.36	0.16	11.52	30.00	18.48
	5 785	10.86	0.16	11.02	30.00	18.98
	5 825	10.16	0.16	10.32	30.00	19.68
802.11n _HT20	5 180	13.74	0.17	13.91	17.00	3.09
	5 200	13.91	0.17	14.08	17.00	2.92
	5 240	14.15	0.17	14.32	17.00	2.68
	5 745	11.21	0.17	11.38	30.00	18.62
	5 785	10.64	0.17	10.81	30.00	19.19
	5 825	9.97	0.17	10.14	30.00	19.86
802.11ac _VHT20	5 180	13.88	0.17	14.05	17.00	2.95
	5 200	13.93	0.17	14.10	17.00	2.90
	5 240	14.05	0.17	14.22	17.00	2.78
	5 745	11.28	0.17	11.45	30.00	18.55
	5 785	10.65	0.17	10.82	30.00	19.18
	5 825	10.17	0.17	10.34	30.00	19.66
802.11n _HT40	5 190	8.68	0.33	9.01	17.00	7.99
	5 230	9.19	0.33	9.52	17.00	7.48
	5 755	6.70	0.33	7.03	30.00	22.97
	5 795	6.16	0.33	6.49	30.00	23.51
802.11ac _VHT40	5 190	9.45	0.33	9.78	17.00	7.22
	5 230	9.56	0.33	9.89	17.00	7.11
	5 755	6.72	0.33	7.05	30.00	22.95
	5 795	6.19	0.33	6.52	30.00	23.48
802.11ac _VHT80	5 210	5.95	0.63	6.58	17.00	10.42
	5 775	2.77	0.63	3.40	30.00	26.60
Measurement uncertainty		± 1.5 dB				



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SDM Mode_ANT1

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 180	11.20	0.32	11.52	17.00	5.48
	5 200	11.49	0.32	11.81	17.00	5.19
	5 240	11.38	0.32	11.70	17.00	5.30
	5 745	7.19	0.32	7.51	30.00	22.49
	5 785	6.88	0.32	7.20	30.00	22.80
	5 825	6.35	0.32	6.67	30.00	23.33
802.11ac _VHT20	5 180	10.50	0.32	10.82	17.00	6.18
	5 200	10.61	0.32	10.93	17.00	6.07
	5 240	10.72	0.32	11.04	17.00	5.96
	5 745	7.36	0.32	7.68	30.00	22.32
	5 785	6.58	0.32	6.90	30.00	23.10
	5 825	6.49	0.32	6.81	30.00	23.19
802.11n _HT40	5 190	4.82	0.60	5.42	17.00	11.58
	5 230	5.42	0.60	6.02	17.00	10.98
	5 755	2.95	0.60	3.55	30.00	26.45
	5 795	2.73	0.60	3.33	30.00	26.67
802.11ac _VHT40	5 190	5.21	0.71	5.92	17.00	11.08
	5 230	5.64	0.71	6.35	17.00	10.65
	5 755	3.02	0.71	3.73	30.00	26.27
	5 795	2.52	0.71	3.23	30.00	26.77
802.11ac _VHT80	5 210	1.93	1.25	3.18	17.00	13.82
	5 775	-0.83	1.25	0.42	30.00	29.58
Measurement uncertainty		± 1.5 dB				



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SDM Mode_ANT2

Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 180	10.65	0.32	10.97	17.00	6.03
	5 200	10.76	0.32	11.08	17.00	5.92
	5 240	10.86	0.32	11.18	17.00	5.82
	5 745	8.47	0.32	8.79	30.00	21.21
	5 785	7.64	0.32	7.96	30.00	22.04
	5 825	7.22	0.32	7.54	30.00	22.46
802.11ac _VHT20	5 180	10.15	0.32	10.47	17.00	6.53
	5 200	10.33	0.32	10.65	17.00	6.35
	5 240	10.49	0.32	10.81	17.00	6.19
	5 745	8.14	0.32	8.46	30.00	21.54
	5 785	7.48	0.32	7.80	30.00	22.20
	5 825	7.00	0.32	7.32	30.00	22.68
802.11n _HT40	5 190	4.97	0.60	5.57	17.00	11.43
	5 230	5.53	0.60	6.13	17.00	10.87
	5 755	3.85	0.60	4.45	30.00	25.55
	5 795	3.31	0.60	3.91	30.00	26.09
802.11ac _VHT40	5 190	5.26	0.71	5.97	17.00	11.03
	5 230	5.61	0.71	6.32	17.00	10.68
	5 755	4.07	0.71	4.78	30.00	25.22
	5 795	2.94	0.71	3.65	30.00	26.35
802.11ac _VHT80	5 210	2.25	1.25	3.50	17.00	13.50
	5 775	-0.06	1.25	1.19	30.00	28.81
Measurement uncertainty		± 1.5 dB				



SDM Mode_ANT1 + ANT2

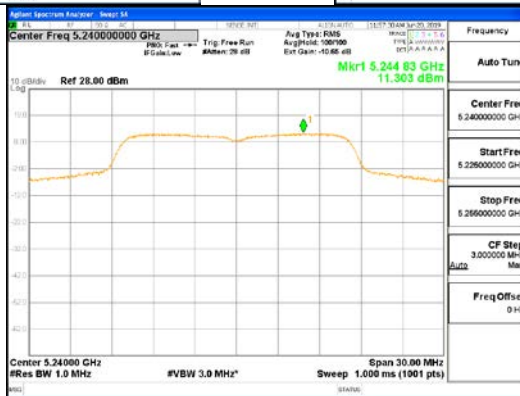
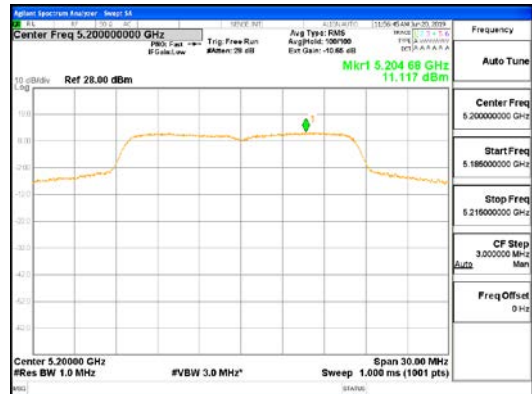
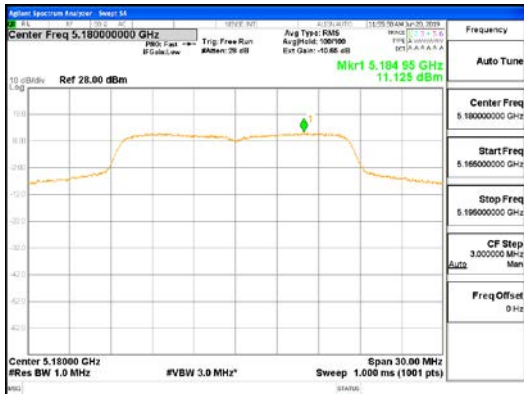
Test Mode	Frequency (MHz)	Measured Power Density (dBm)	Duty cycle Factor (dB)	Result Output Power (dBm)	Limit (dBm)	Margin (dB)
802.11n _HT20	5 180	13.94	0.32	14.26	17.00	2.74
	5 200	14.15	0.32	14.47	17.00	2.53
	5 240	14.14	0.32	14.46	17.00	2.54
	5 745	10.89	0.32	11.21	30.00	18.79
	5 785	10.29	0.32	10.61	30.00	19.39
	5 825	9.82	0.32	10.14	30.00	19.86
802.11ac _VHT20	5 180	13.34	0.32	13.66	17.00	3.34
	5 200	13.48	0.32	13.80	17.00	3.20
	5 240	13.62	0.32	13.94	17.00	3.06
	5 745	10.78	0.32	11.10	30.00	18.90
	5 785	10.06	0.32	10.38	30.00	19.62
	5 825	9.76	0.32	10.08	30.00	19.92
802.11n _HT40	5 190	7.91	0.60	8.51	17.00	8.49
	5 230	8.49	0.60	9.09	17.00	7.91
	5 755	6.43	0.60	7.03	30.00	22.97
	5 795	6.04	0.60	6.64	30.00	23.36
802.11ac _VHT40	5 190	8.25	0.71	8.96	17.00	8.04
	5 230	8.64	0.71	9.35	17.00	7.65
	5 755	6.59	0.71	7.30	30.00	22.70
	5 795	5.75	0.71	6.46	30.00	23.54
802.11ac _VHT80	5 210	5.10	1.25	6.35	17.00	10.65
	5 775	2.58	1.25	3.83	30.00	26.17
Measurement uncertainty		± 1.5 dB				

See next pages for actual measured spectrum plots.

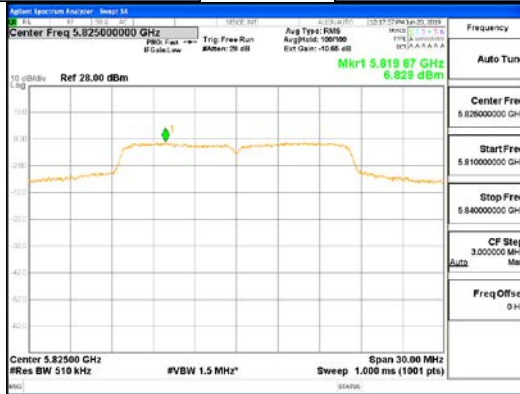
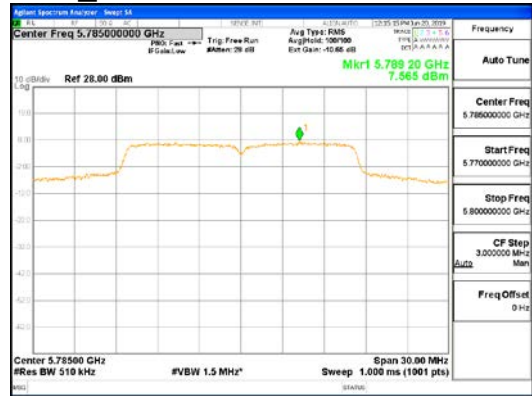
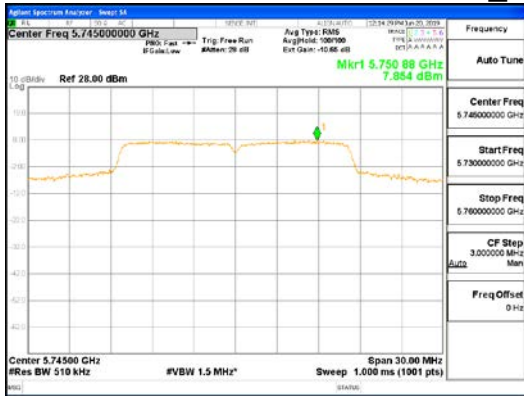


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CDD Mode_ANT1_802.11a_UNII-1

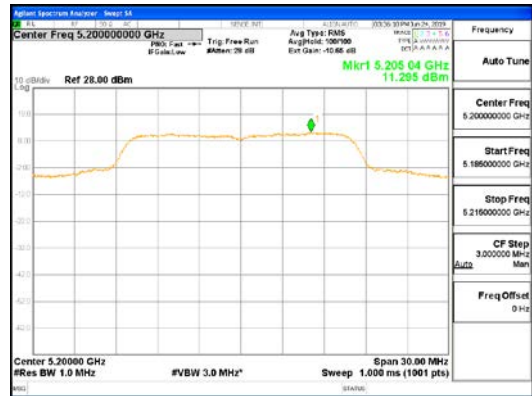
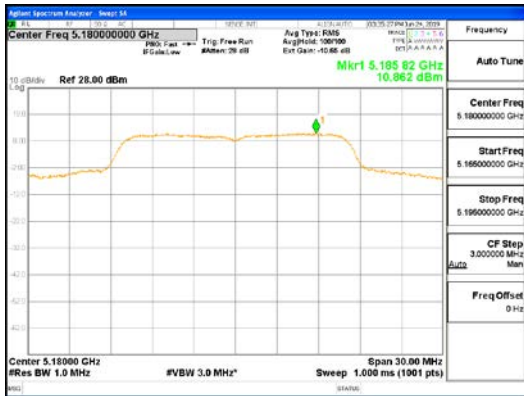


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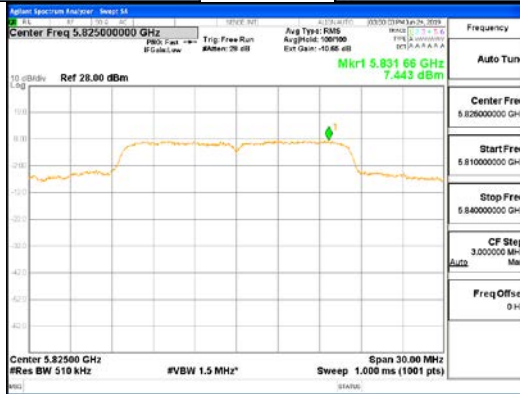
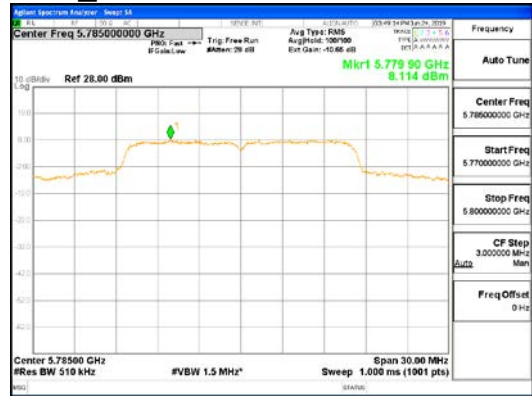
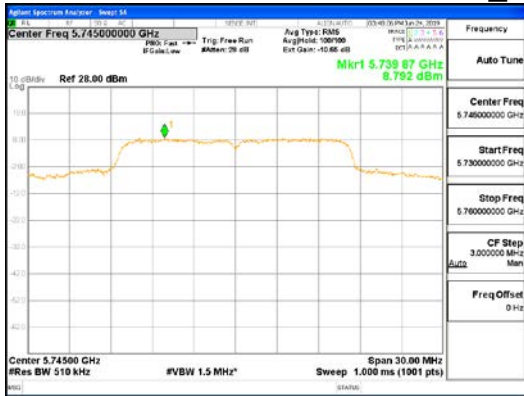


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CDD Mode_ANT2_802.11a_UNII-1

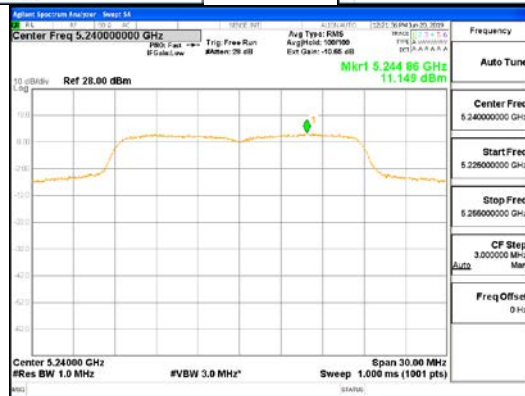
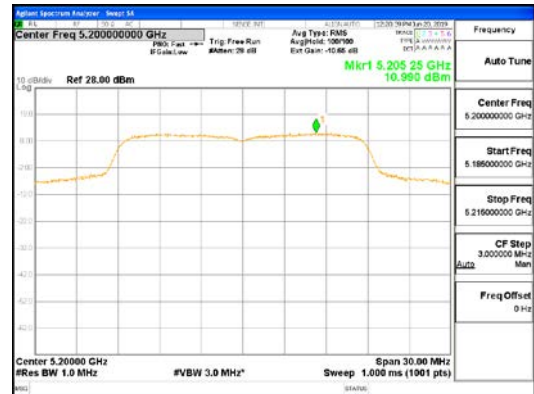
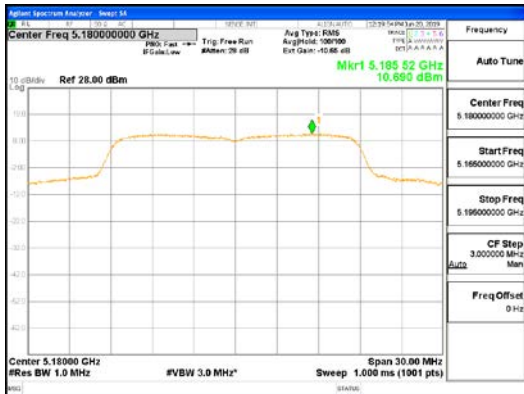


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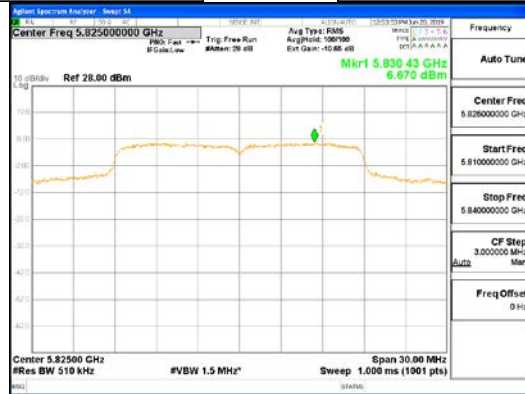
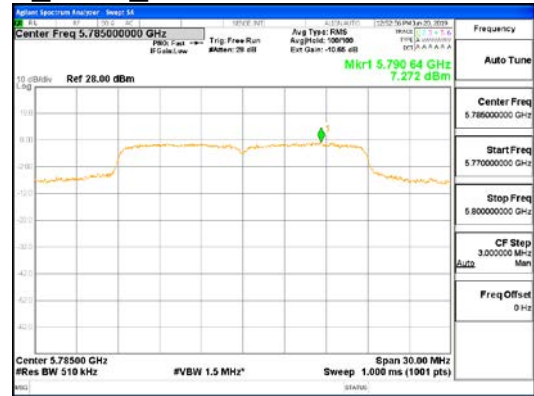
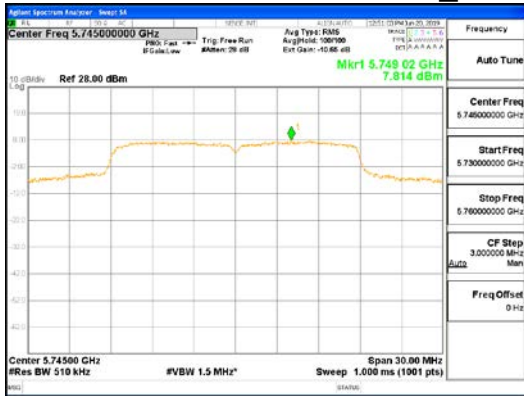


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CDD Mode_ANT1_802.11n_HT20_UNII-1

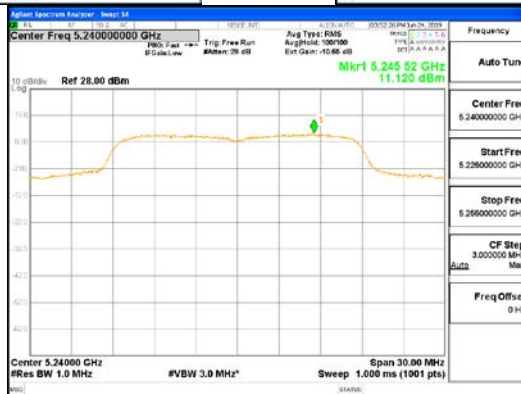
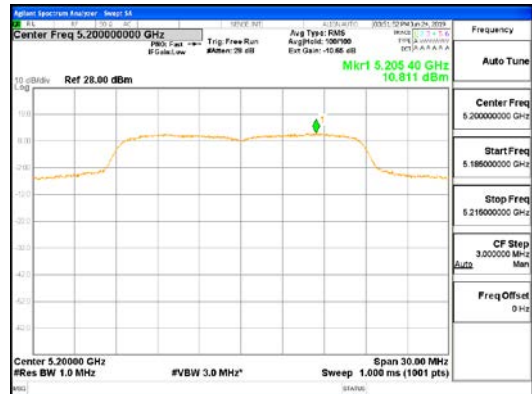
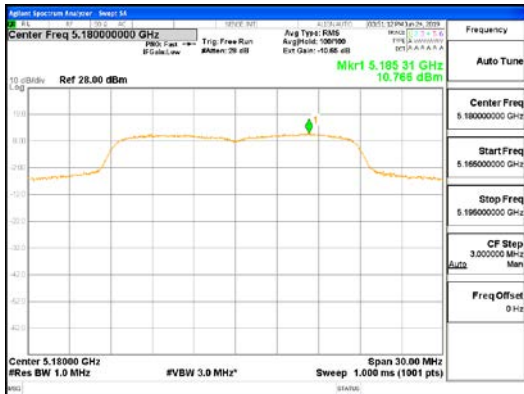


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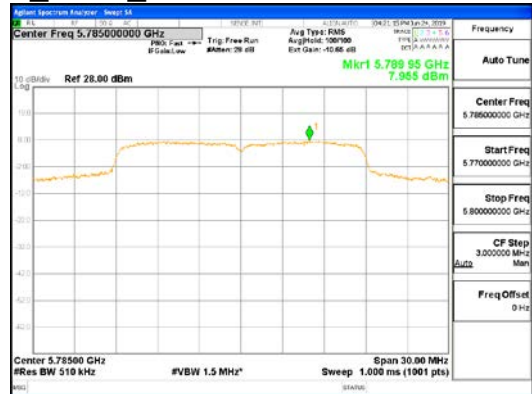


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CDD Mode_ANT2_802.11n_HT20_UNII-1

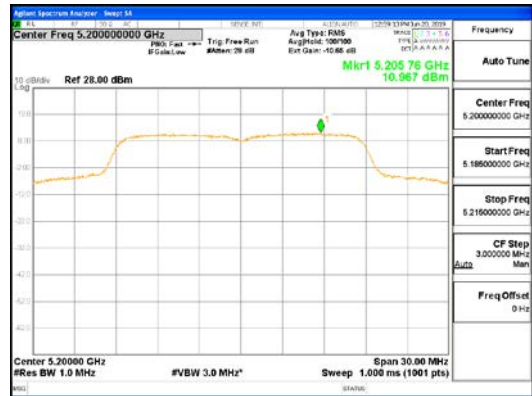
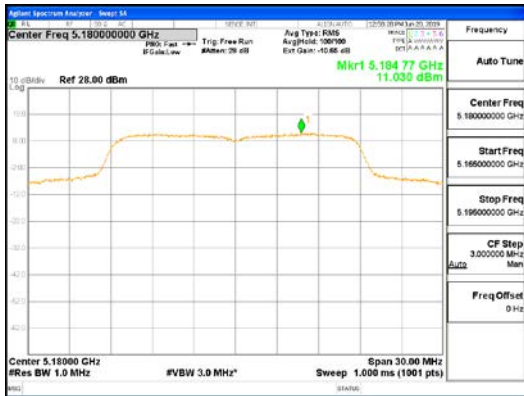


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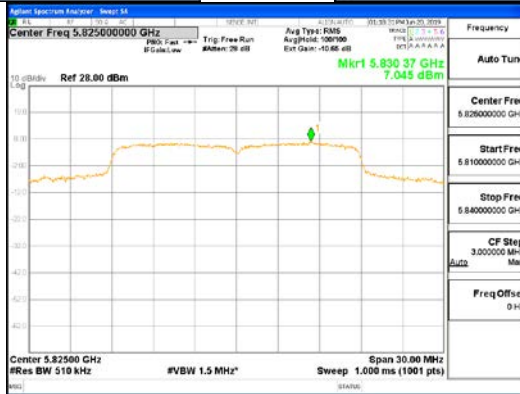
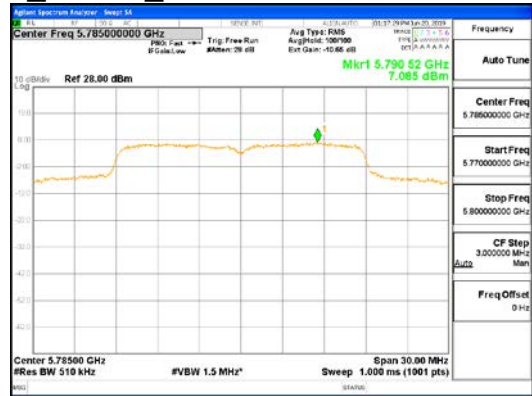
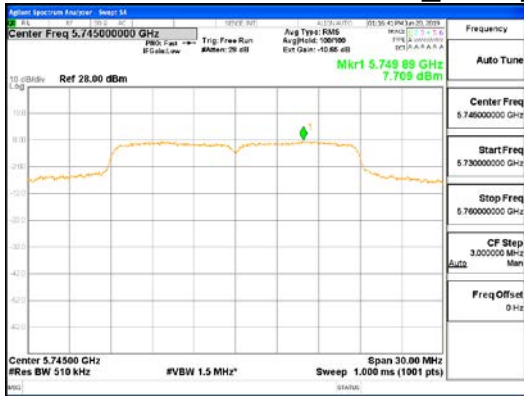


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CDD Mode_ANT1_802.11ac_VHT20_UNII-1

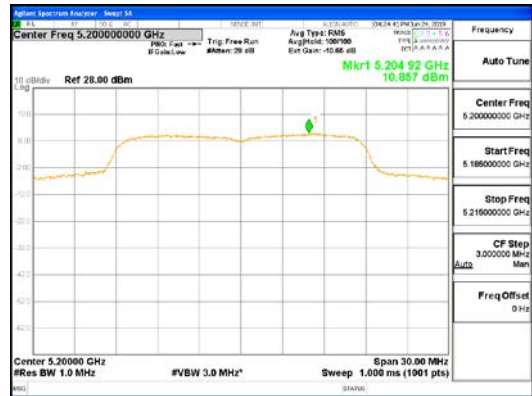
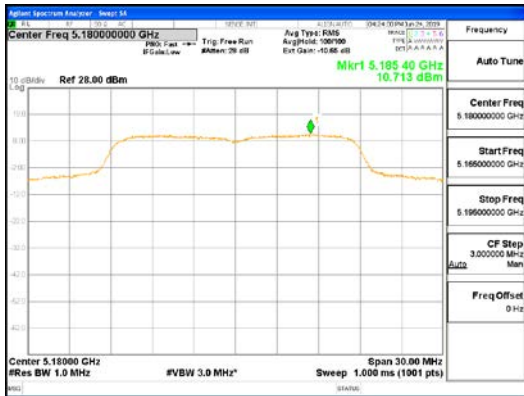


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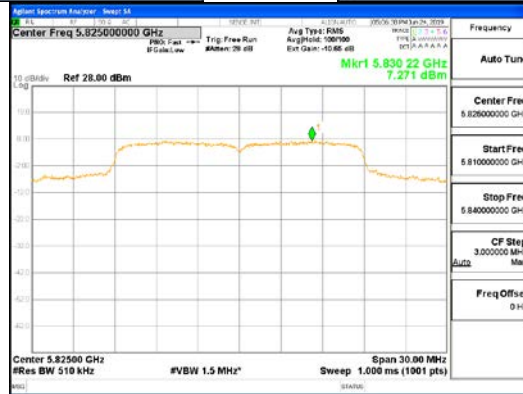
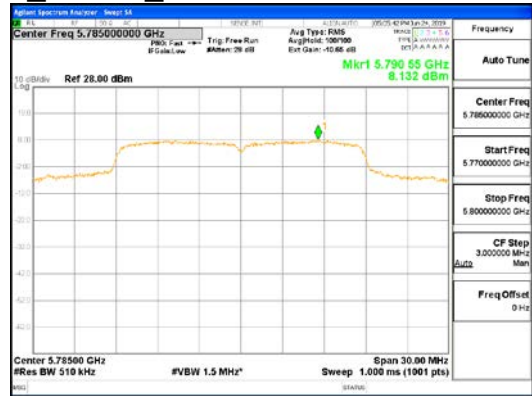
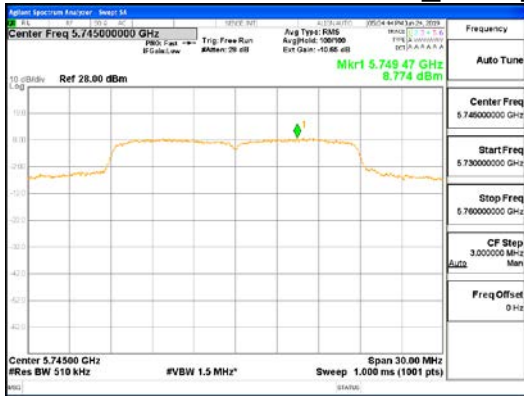


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CDD Mode_ANT2_802.11ac_VHT20_UNII-1

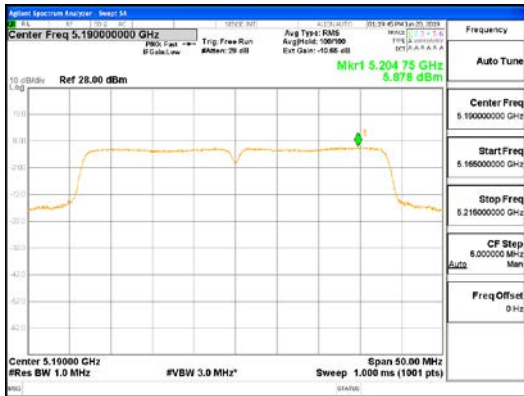


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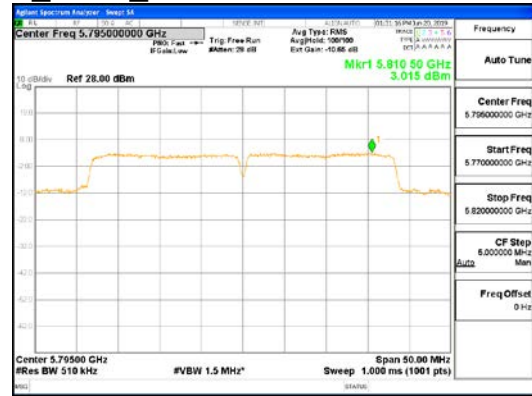
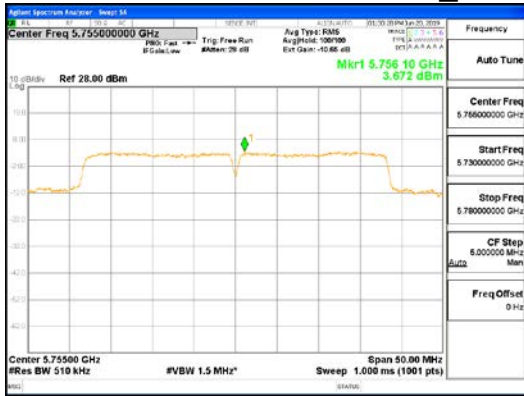
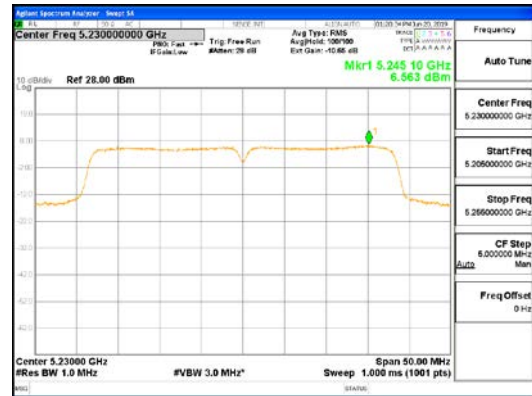


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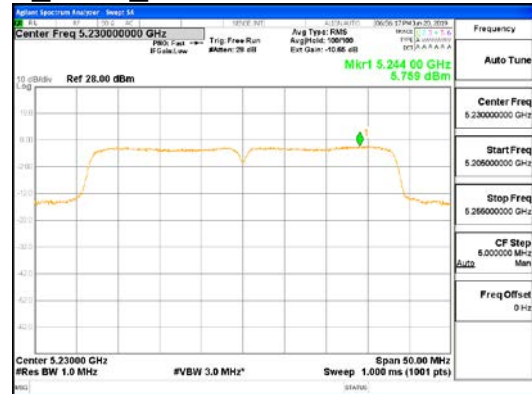
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CDD Mode_ANT1_802.11n_HT40_UNII-1



CDD Mode_ANT1_802.11n_HT40_UNII-3



CDD Mode_ANT2_802.11n_HT40_UNII-1



CDD Mode_ANT2_802.11n_HT40_UNII-3



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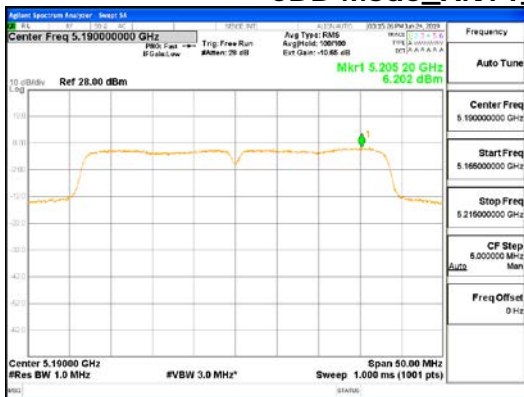
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CDD Mode_ANT1_802.11ac_VHT40_UNII-1



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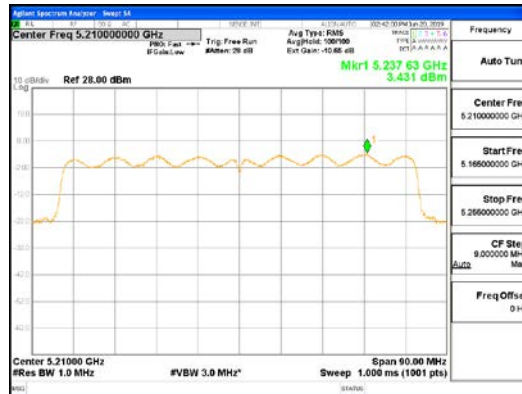


CDD Mode_ANT2_802.11ac_VHT40_UNII-1



CDD Mode_ANT2_802.11ac_VHT40_UNII-3





CDD Mode_ANT1_802.11ac_VHT80_UNII-1



CDD Mode_ANT1_802.11ac_VHT80_UNII-3



CDD Mode_ANT2_802.11ac_VHT80_UNII-1

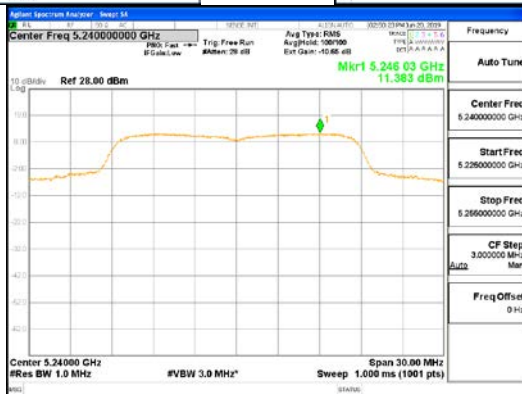
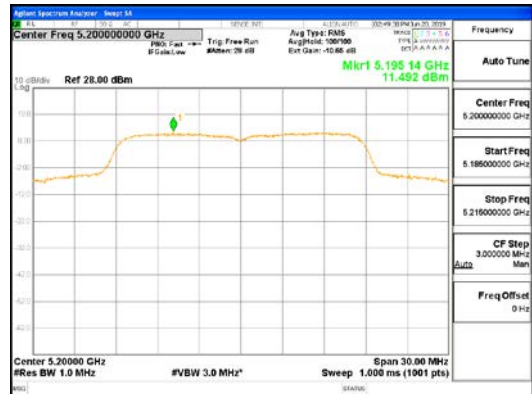
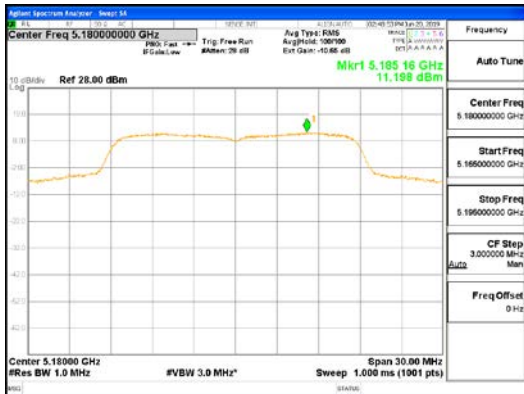


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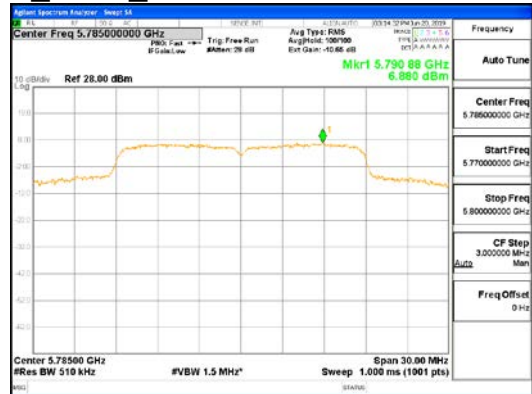


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SDM Mode_ANT1_802.11n_HT20_UNII-1

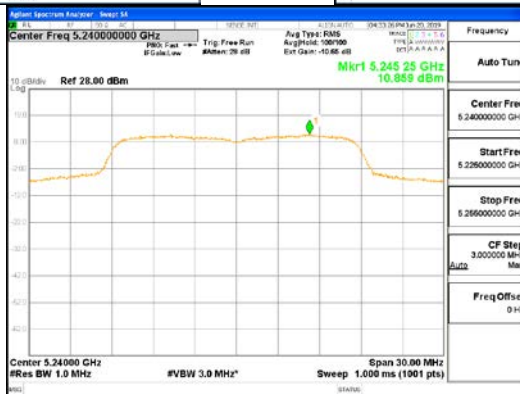
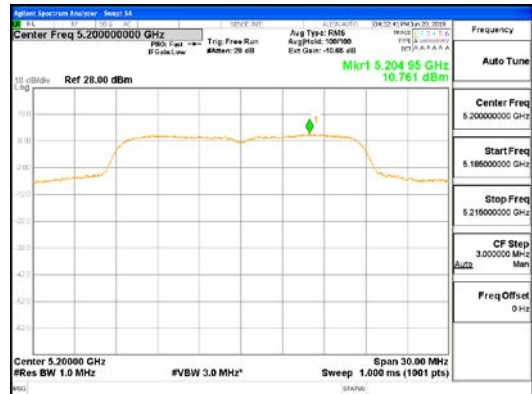
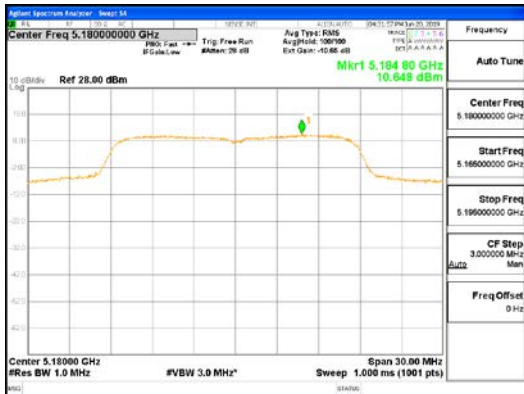


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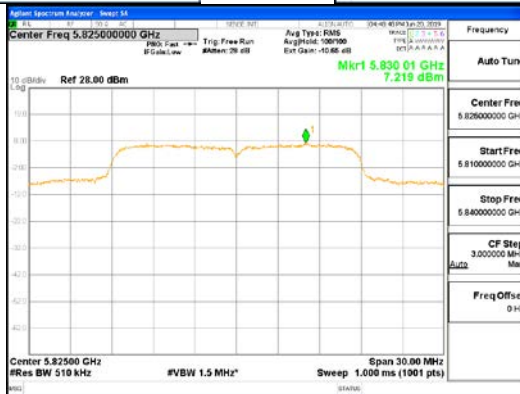
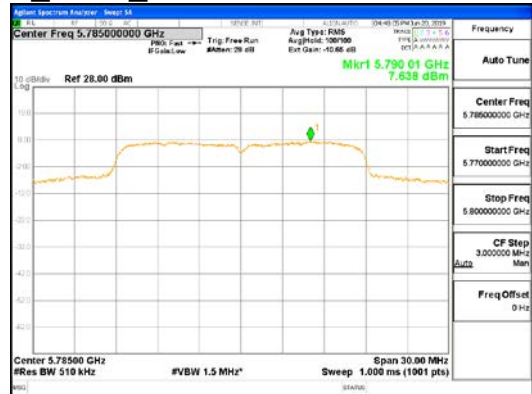
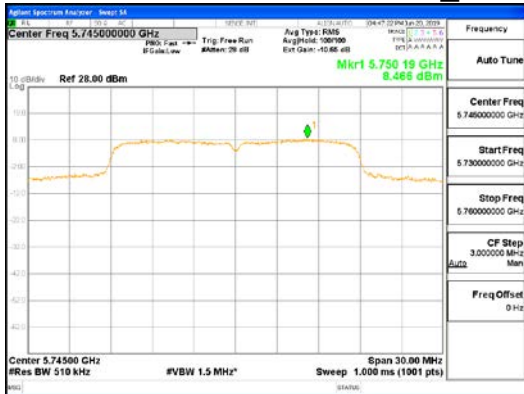


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SDM Mode_ANT2_802.11n_HT20_UNII-1

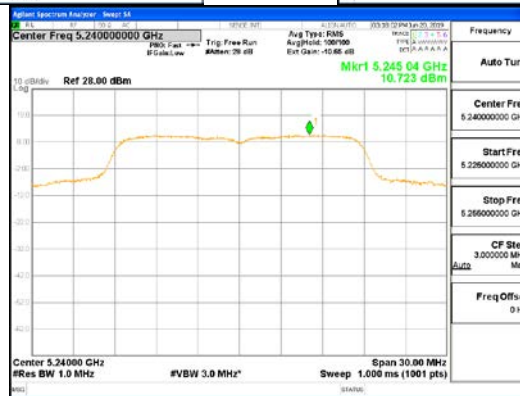
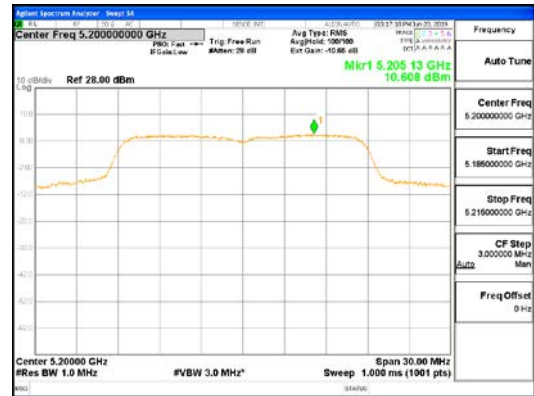
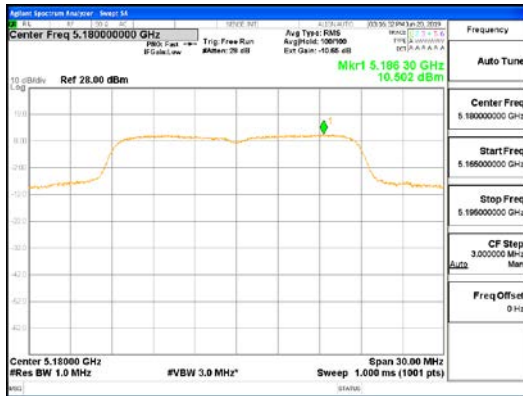


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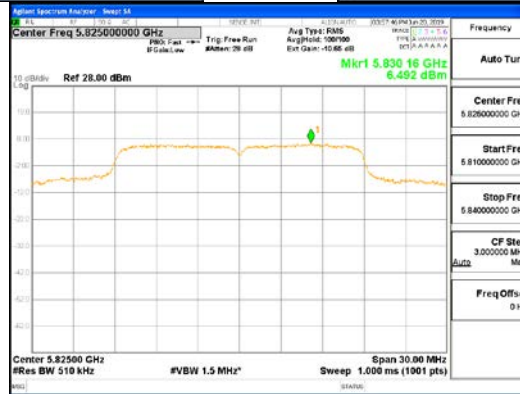
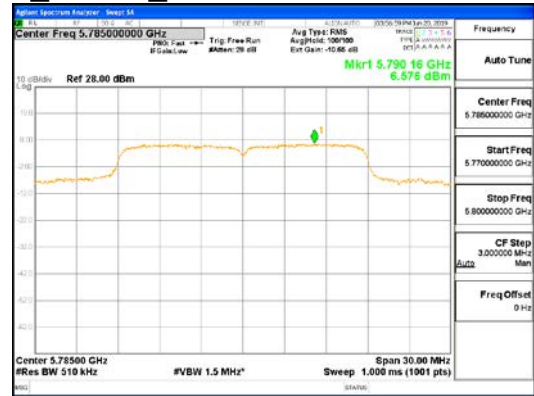
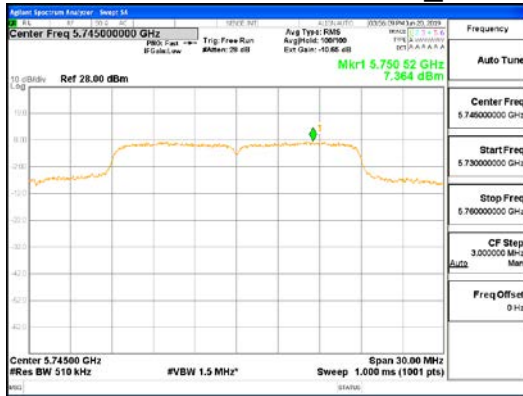


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SDM Mode_ANT1_802.11ac_VHT20_UNII-1

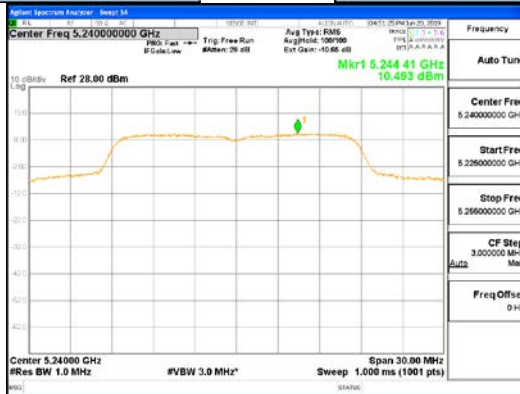
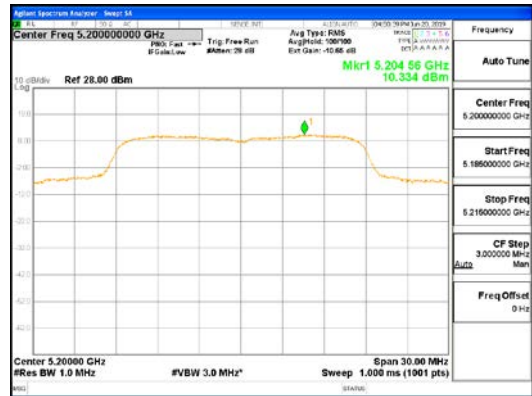
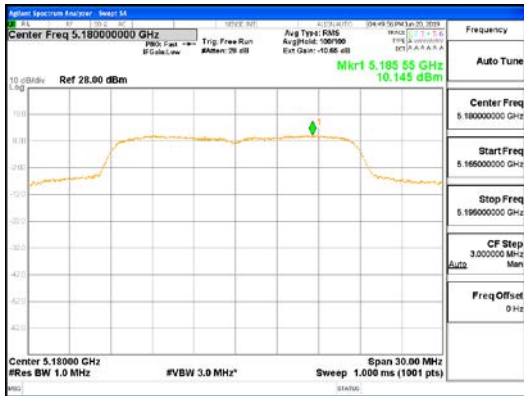


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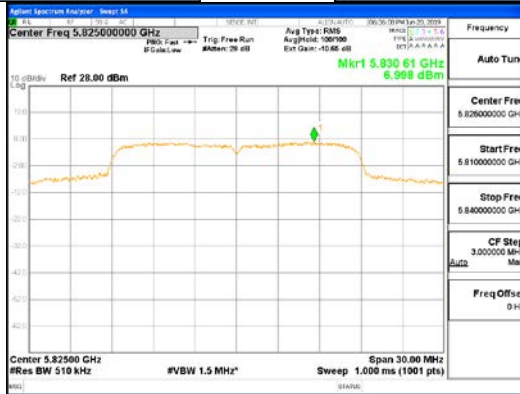
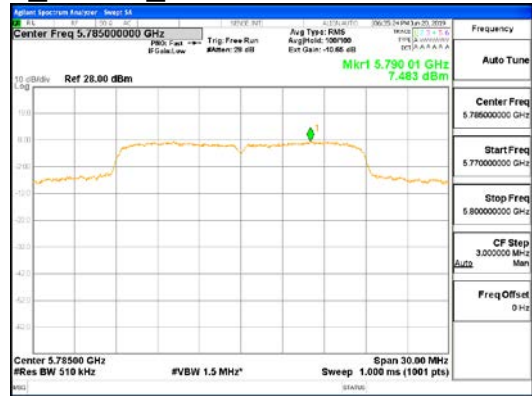
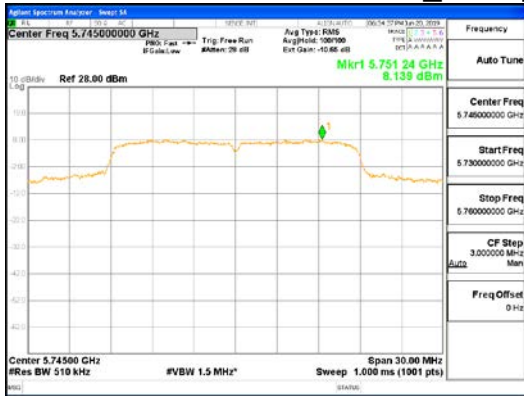


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SDM Mode_ANT2_802.11ac_VHT20_UNII-1

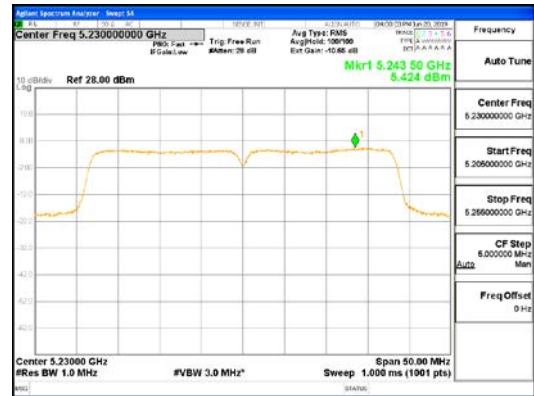
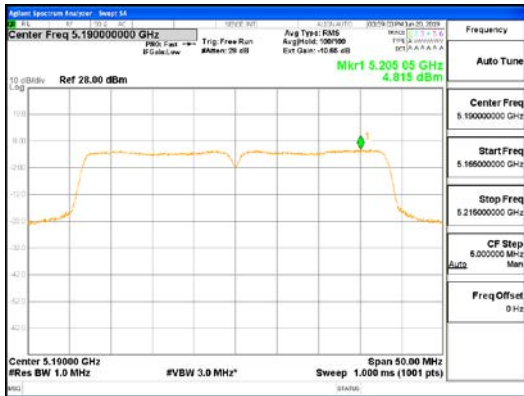


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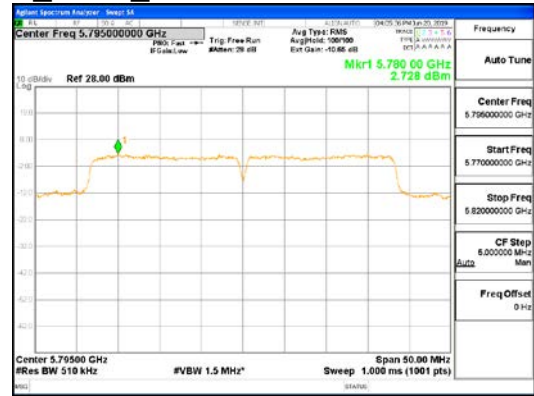


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SDM Mode_ANT1_802.11n_HT40_UNII-1



SDM Mode_ANT1_802.11n_HT40_UNII-3



SDM Mode_ANT2_802.11n_HT40_UNII-1

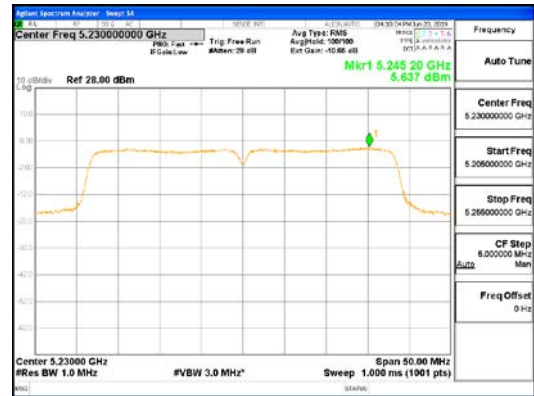
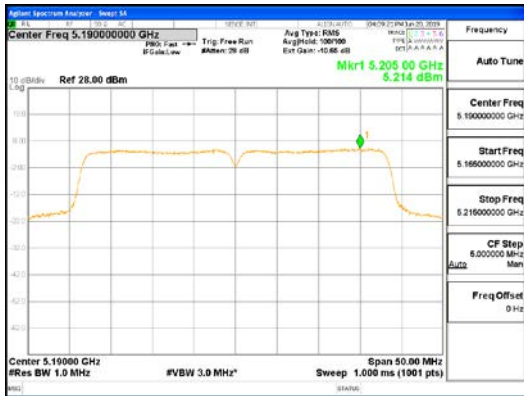


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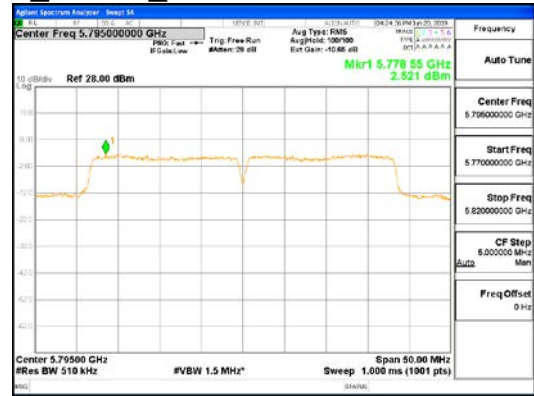


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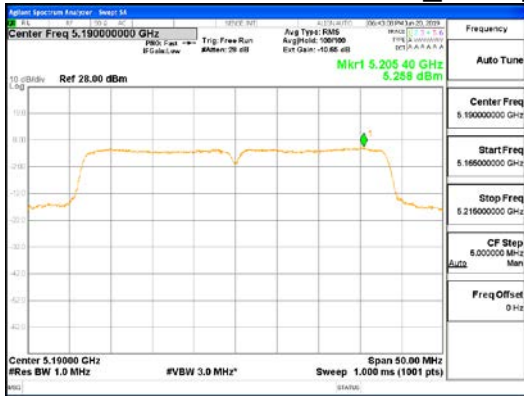
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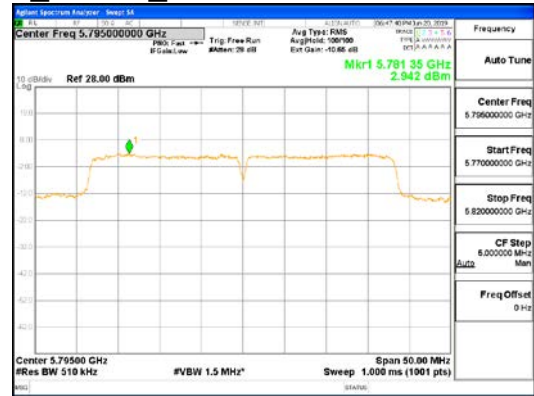
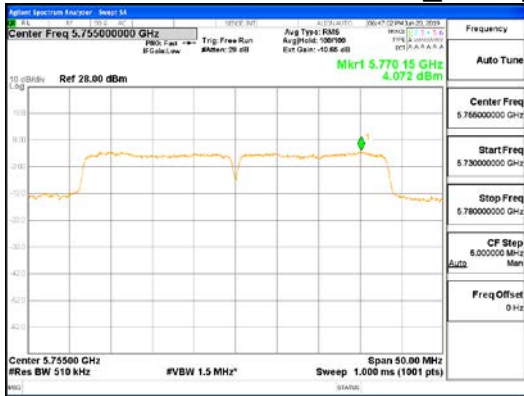
SDM Mode_ANT1_802.11ac_VHT40_UNII-1



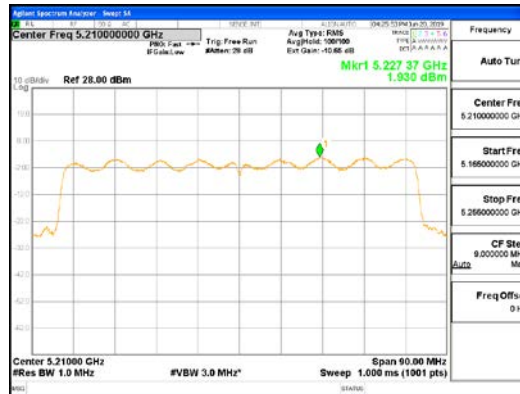
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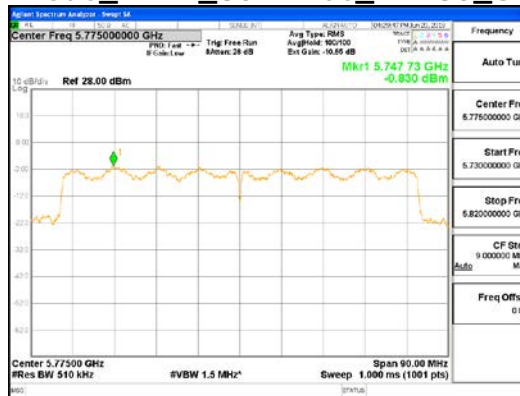
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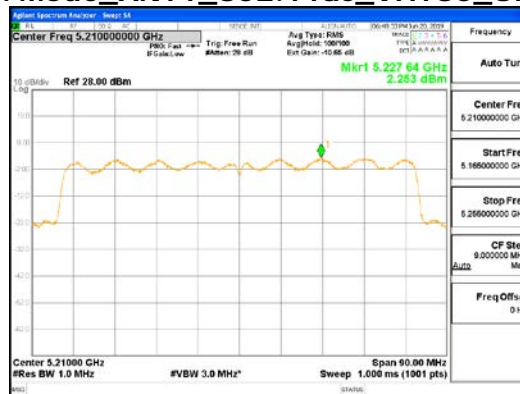
SDM Mode_ANT2_802.11ac_VHT40_UNII-3



SDM Mode_ANT1_802.11ac_VHT80_UNII-1



SDM Mode_ANT1_802.11ac_VHT80_UNII-3



SDM Mode_ANT2_802.11ac_VHT80_UNII-1



SDM Mode_ANT2_802.11ac_VHT80_UNII-3

4.5 Frequency Stability

Test Procedures

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between 0 °C and +40 °C (Declaration by the Manufacturer). The temperature was incremented by 10 °C (5 °C) intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded.

Data for the worst case channel is shown below.

Temperature (°C)	0	10	20	30	40
Frequency	Measured Frequency Error (kHz)				
5 180 MHz	16.157	11.137	4.081	-4.018	-6.264
5 200 MHz	16.266	10.617	3.456	-4.478	-6.109
5 240 MHz	16.373	10.540	3.263	-4.550	-5.985
5 745 MHz	18.322	11.833	3.993	-4.342	-5.616
5 785 MHz	18.395	12.132	4.245	-4.271	-5.682
5 825 MHz	18.635	12.356	4.407	-4.258	-5.677

Note :

Based on the results of the frequency stability test shown above the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore the device is determined to remain operating in band over the temperature range as tested.

4.6 Unwanted Emissions

Test Location

- 10 m SAC (test distance : 10 m, 3 m)
 3 m SAC (test distance : 3 m)

Test Procedures

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- 2) In the frequency range above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn Test Antenna(above 1 GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

Test Settings:

Frequency Range = 9 kHz ~ 1 GHz

- a) RBW = 100 kHz for $f < 1$ GHz, 9 kHz for $f < 30$ MHz
b) VBW \geq RBW
c) Detector = CISPR Quasi-peak
d) Sweep time = auto couple

- Peak

Frequency Range = 1 GHz ~ 40 GHz

- a) RBW = 1 MHz
b) VBW $\geq 3 \times$ RBW
c) Detector = Peak
d) Sweep time = auto
e) Trace mode = max hold

- Average (duty cycle $\geq 98\%$)

Frequency Range = 1 GHz ~ 40 GHz

- a) RBW = 1 MHz
b) VBW $\geq 3 \times$ RBW
c) Detector = RMS
d) Sweep time = auto
e) Averaging type = power (i.e., RMS)
f) Trace mode = average (at least 100 traces)

- Average (duty cycle < 98%)

Frequency Range = 1 GHz ~ 40 GHz

a) RBW = 1 MHz

b) VBW \geq 3 x RBW

c) Detector = RMS

d) Sweep time = auto

e) Averaging type = power (i.e., RMS)

f) Trace mode = average (at least 100 traces)

If power averaging (RMS) mode, then the applicable correction factor is $10 \log(1/x)$, where x is the duty cycle.

Test mode		Duty Cycle Factor (dB)
CDD Mode	802.11a	0.16
	802.11n_HT20	0.17
	802.11n_HT40	0.33
	802.11ac_VHT20	0.17
	802.11ac_VHT40	0.33
	802.11ac_VHT80	0.63
SDM Mode	802.11n_HT20	0.32
	802.11n_HT40	0.60
	802.11ac_VHT20	0.32
	802.11ac_VHT40	0.71
	802.11ac_VHT80	1.25

Limit

- 15.209(a)

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m	Deasurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705-30	30	-	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46	3
Above 960	500	54	3

** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

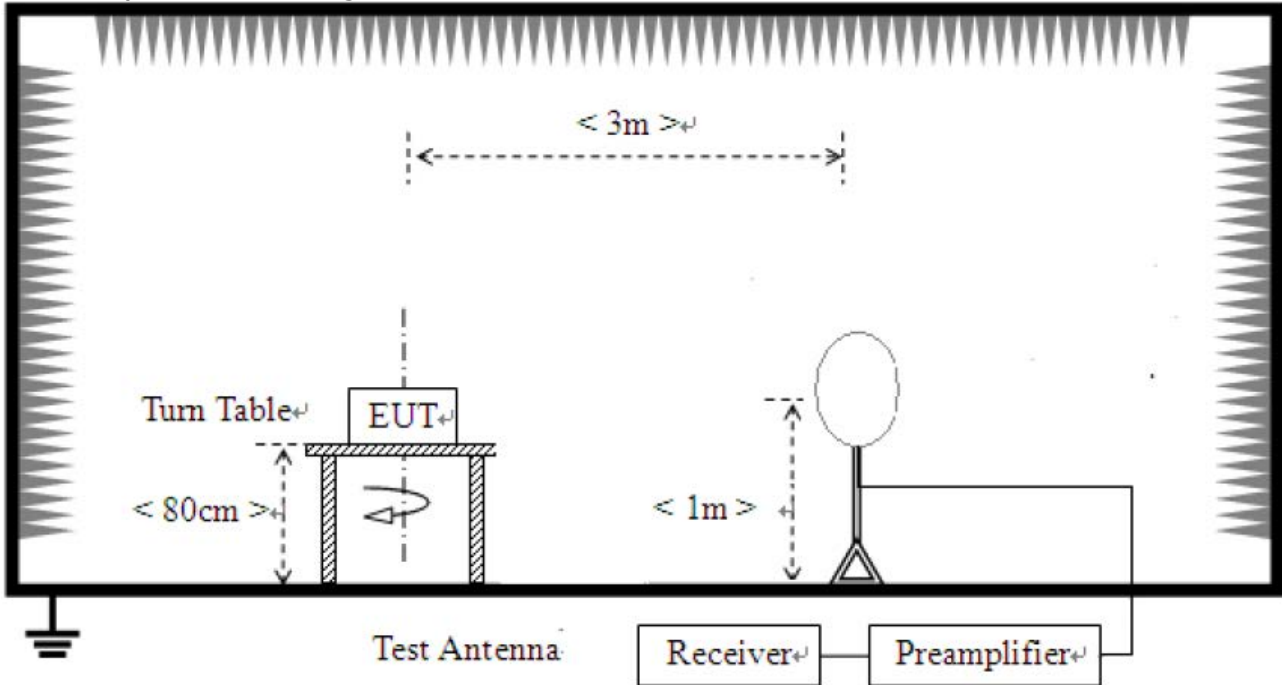
- 15.407, KDB 789033

E.I.R.P -27 dBm/MHz

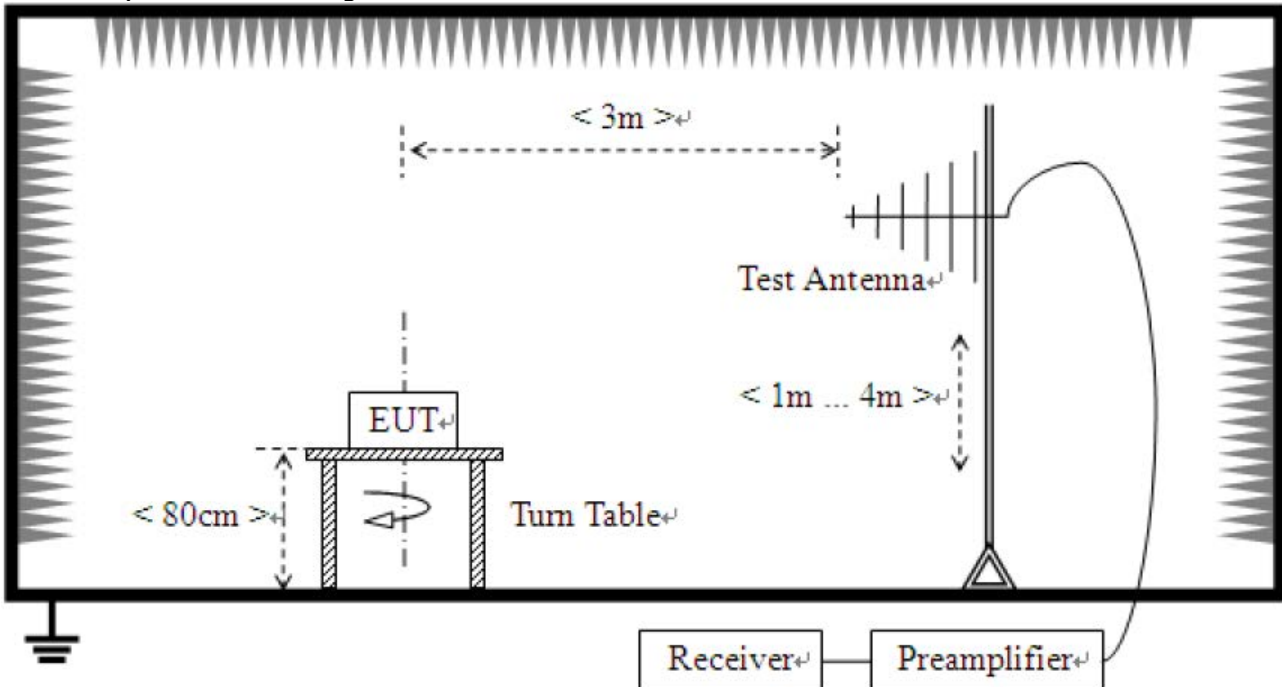
$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2$, for $d = 3\text{m}$

Test Setup:

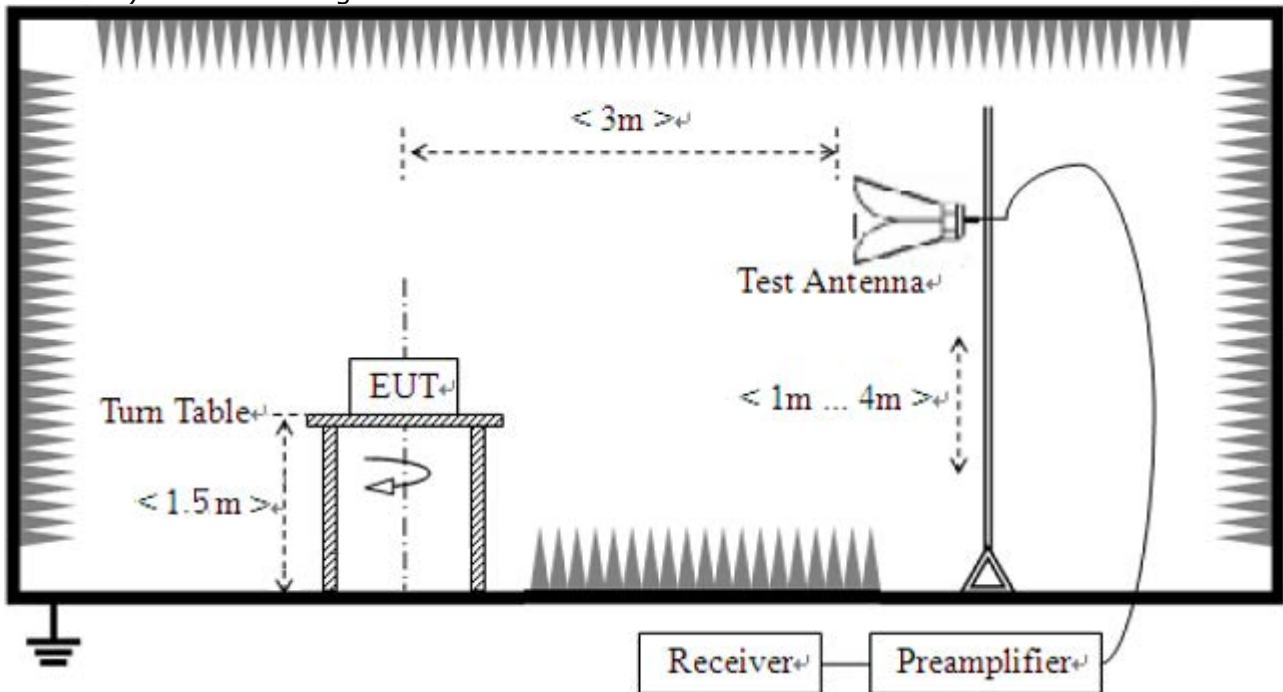
- 1) For field strength of emissions from 9 kHz to 30 MHz



- 2) For field strength of emissions from 30 MHz to 1 GHz



3) For field strength of emissions above 1 GHz



Test Mode

We have done all test mode.

The worst case antenna configuration and Test mode are determined to be as follows.

802.11a mode : ANT1 + ANT2 (MIMO)

802.11n CDD mode : ANT1 + ANT2 (MIMO)

802.11ac CDD mode : ANT1 + ANT2 (MIMO)

So the results are only attached worst cases.

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Test Results

1) 9 kHz to 30 MHz

Test mode : 802.11a, 802.11n, 802.11ac (Worst case)

The requirements are:

Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
-	-	-	See note

Note :

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)

2) 30 MHz to 1 GHz

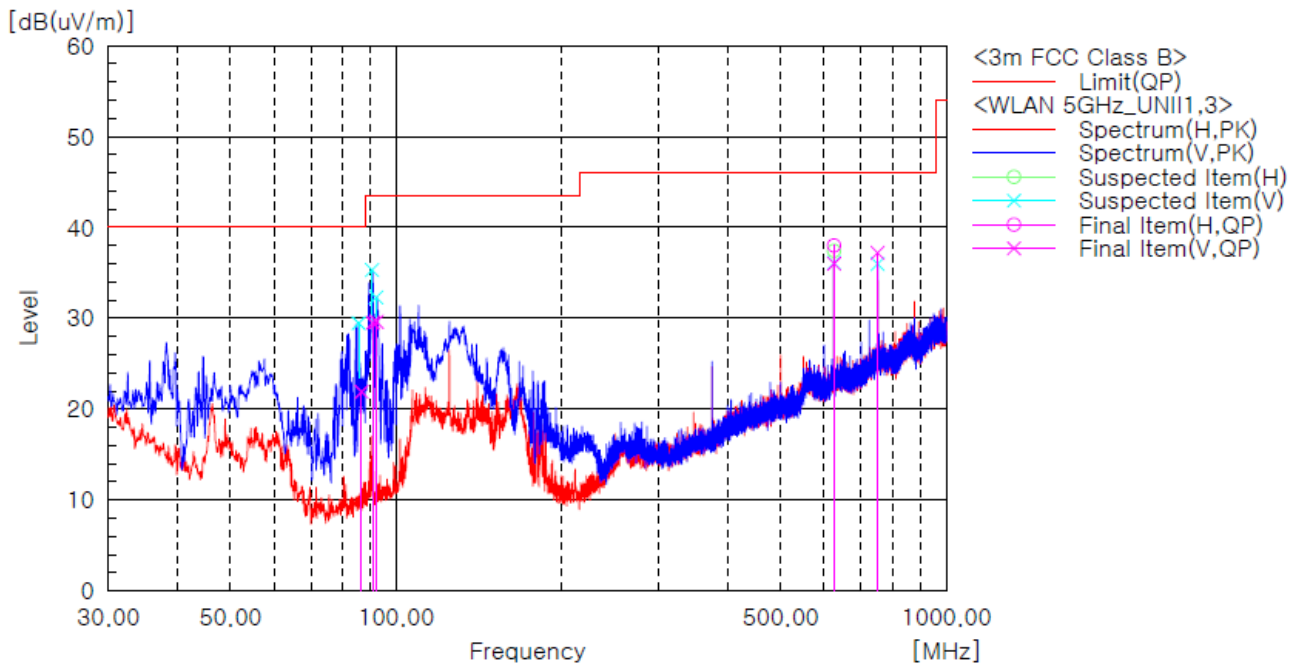
Test mode : 802.11a(Worst Case)

The requirements are:

Complies

Test Data

Test Model	: AR1031	Manufacturer	: GAON
Test Mode	: WLAN 5GHz_UNII1,3		:
Tester	: kim ji hye		:
	:		:
	:		:



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	86.552	V	37.1	-15.2	21.9	40.0	18.1	101.0	0.0
2	90.768	V	44.1	-14.6	29.5	43.5	14.0	200.0	0.0
3	92.169	V	44.1	-14.5	29.6	43.5	13.9	101.0	41.0
4	625.016	H	37.4	0.6	38.0	46.0	8.0	101.0	214.0
5	624.974	V	35.4	0.6	36.0	46.0	10.0	101.0	94.0
6	749.989	V	34.2	3.0	37.2	46.0	8.8	101.0	199.0

Remark :

1. The Unwanted 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.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator - Amp Gain
4. We have done all test mode. The results are only attached worst cases.



3) above 1 GHz

Test mode : 802.11a

The requirements are:

Complies

Test Data

Ch.36(5 180 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 907.14	H	54.00	74.00	43.46	50.50	10.54	23.50
6 907.14	V	54.00	74.00	47.26	55.20	6.74	18.80
9 687.89	H	54.00	74.00	39.66	49.80	14.34	24.20
9 687.89	V	54.00	74.00	41.66	49.70	12.34	24.30
5 149.93	H	54.00	74.00	53.36	67.60	0.64	6.40
5 149.84	V	54.00	74.00	52.96	71.20	1.04	2.80

Ch.40(5 200 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 934.07	H	54.00	74.00	42.46	49.60	11.54	24.40
6 934.07	V	54.00	74.00	45.66	55.40	8.34	18.60
9 687.89	H	54.00	74.00	39.36	48.30	14.64	25.70
9 687.89	V	54.00	74.00	42.46	49.20	11.54	24.80

Ch.48(5 240 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 987.05	H	54.00	74.00	41.86	49.00	12.14	25.00
6 987.05	V	54.00	74.00	45.46	53.80	8.54	20.20
9 687.89	H	54.00	74.00	39.86	48.50	14.14	25.50
9 687.89	V	54.00	74.00	42.26	49.90	11.74	24.10



Ch.149(5 745 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.46	48.10	14.54	25.90
9 687.89	V	54.00	74.00	42.26	49.70	11.74	24.30
11 487.91	H	54.00	74.00	39.96	48.60	14.04	25.40
11 487.91	V	54.00	74.00	42.06	52.80	11.94	21.20
5 649.75	H	-	68.20	-	62.70	-	5.50
5 645.73	V	-	68.20	-	67.00	-	1.20

Ch.157(5 785 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.56	48.40	14.44	25.60
9 687.89	V	54.00	74.00	41.66	49.60	12.34	24.40
11 569.72	H	54.00	74.00	40.66	50.90	13.34	23.10
11 566.69	V	54.00	74.00	43.66	55.60	10.34	18.40

Ch.165(5 825 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.66	48.70	14.34	25.30
9 687.89	V	54.00	74.00	41.96	49.40	12.04	24.60
11 646.49	H	54.00	74.00	41.66	51.10	12.34	22.90
11 644.47	V	54.00	74.00	44.56	54.20	9.44	19.80
5 926.85	H	-	68.20	-	57.80	-	10.40
5 930.54	V	-	68.20	-	62.50	-	5.70

Remarks

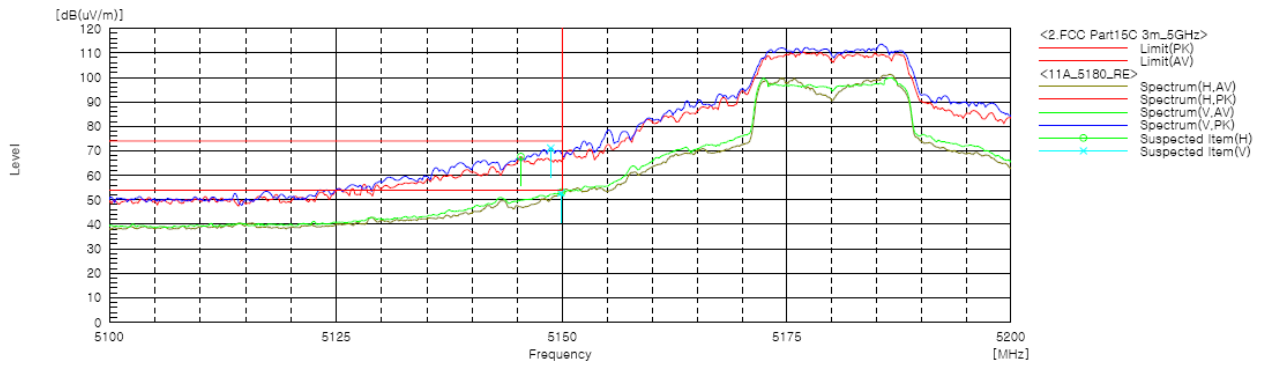
1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(X axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
 Average Result = Reading + c.f(Correction factor) + Duty cycle factor
3. Correction factor = Antenna factor + Cable loss - Amp Gain



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Worst Case Mode :	802.11a
Worst Case Transfer Rate :	6 Mbps
Distance of Measurements :	3 Meters
Operating Frequency :	5 180 MHz
Channel :	36



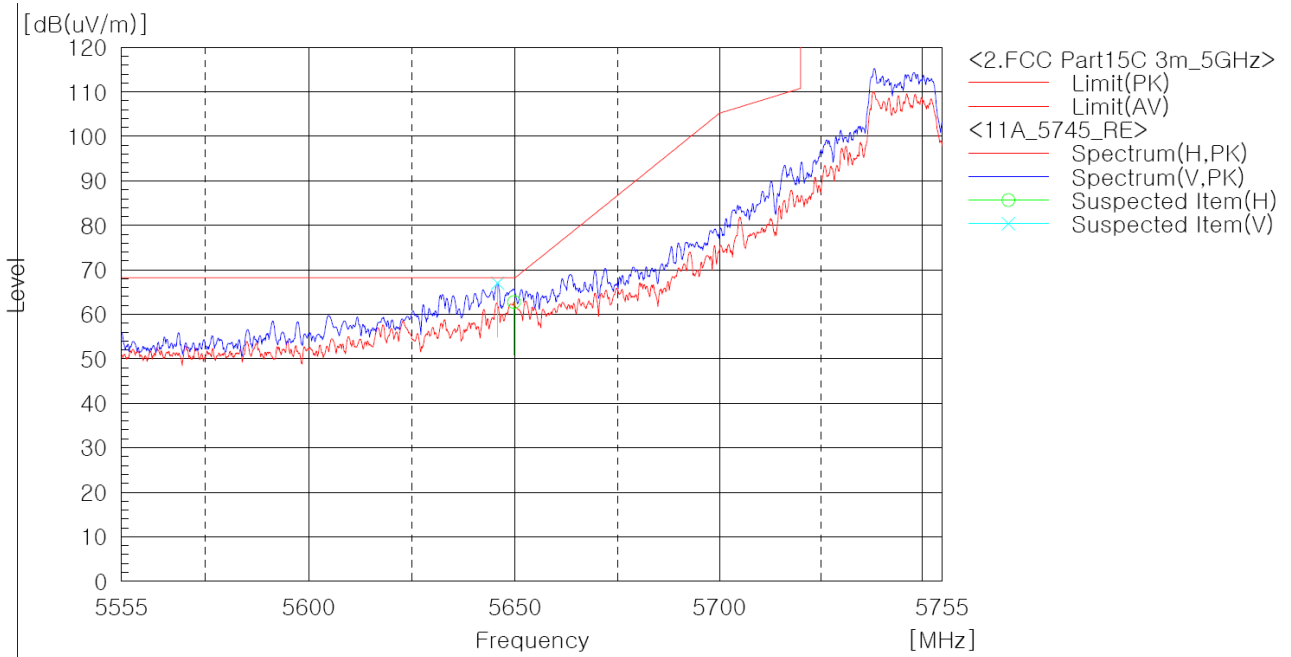
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Worst Case Mode :	802.11a
Worst Case Transfer Rate :	6 Mbps
Distance of Measurements :	3 Meters
Operating Frequency :	5 745 MHz
Channel :	149



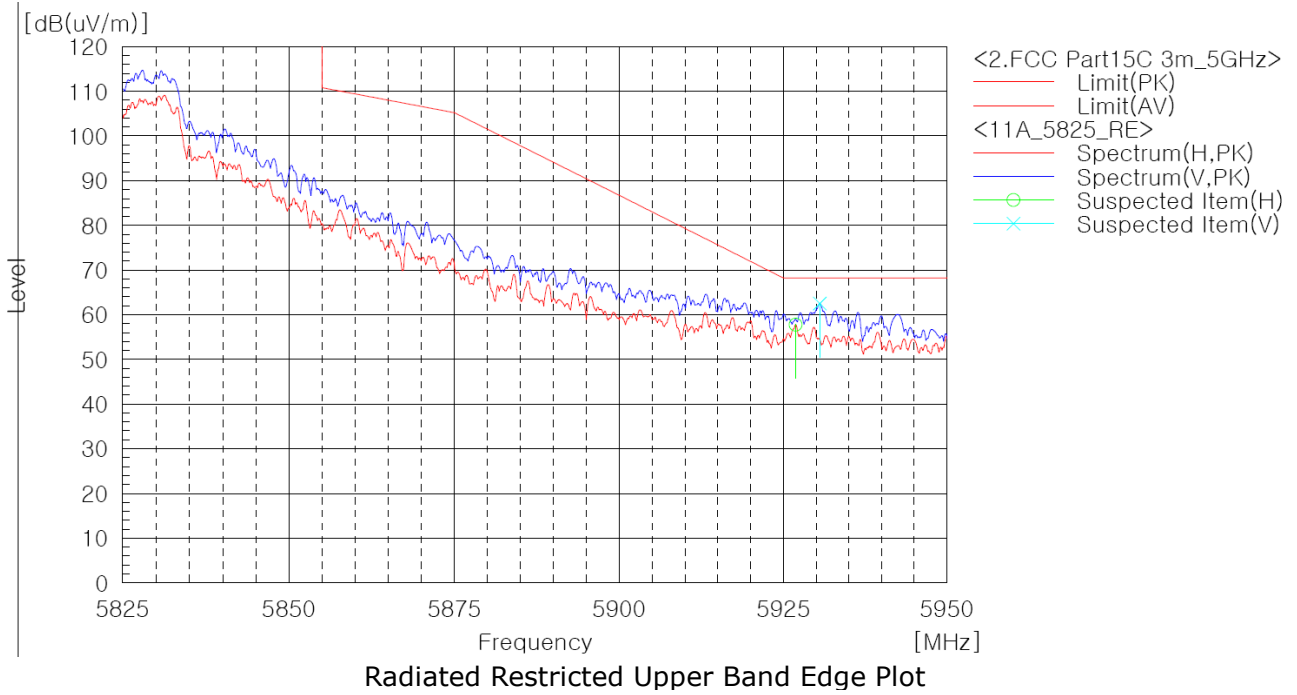
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Worst Case Mode :	802.11a
Worst Case Transfer Rate :	6 Mbps
Distance of Measurements :	3 Meters
Operating Frequency :	5 825 MHz
Channel :	165





Test mode : 802.11n_HT20_CDD Mode

The requirements are:

Complies

Test Data

Ch.36(5 180 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 907.14	H	54.00	74.00	43.67	50.20	10.33	23.80
6 907.14	V	54.00	74.00	47.17	55.70	6.83	18.30
9 687.89	H	54.00	74.00	39.47	47.90	14.53	26.10
9 687.89	V	54.00	74.00	42.17	49.50	11.83	24.50
5 149.88	H	54.00	74.00	51.87	67.50	2.13	6.50
5 148.42	V	54.00	74.00	51.77	70.60	2.23	3.40

Ch.40(5 200 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 934.07	H	54.00	74.00	42.27	50.10	11.73	23.90
6 934.07	V	54.00	74.00	46.07	55.00	7.93	19.00
9 687.89	H	54.00	74.00	39.47	47.70	14.53	26.30
9 687.89	V	54.00	74.00	41.57	49.60	12.43	24.40

Ch.48(5 240 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 687.05	H	54.00	74.00	41.57	48.90	12.43	25.10
6 987.05	V	54.00	74.00	45.87	54.40	8.13	19.60
9 687.89	H	54.00	74.00	39.67	48.40	14.33	25.60
9 687.89	V	54.00	74.00	42.07	49.10	11.93	24.90

Ch.149(5 745 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.67	48.20	14.33	25.80
9 687.89	V	54.00	74.00	41.57	50.00	12.43	24.00
11 491.95	H	54.00	74.00	39.77	50.30	14.23	23.70
11 488.92	V	54.00	74.00	40.97	51.30	13.03	22.70
5 644.00	V	-	68.20	-	66.30	-	1.90
5 649.52	H	-	68.20	-	62.70	-	5.50
5 651.63	V	-	69.40	-	68.20	-	1.20

Ch.157(5 785 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.77	48.40	14.23	25.60
9 687.89	V	54.00	74.00	41.57	49.60	12.43	24.40
11 574.78	H	54.00	74.00	40.57	50.70	13.43	23.30
11 570.74	V	54.00	74.00	41.27	53.20	12.73	20.80

Ch.165(5 825 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.37	48.30	14.63	25.70
9 687.89	V	54.00	74.00	41.47	49.30	12.53	24.70
11 652.55	H	54.00	74.00	41.27	51.60	12.73	22.40
11 649.52	V	54.00	74.00	41.77	53.60	12.23	20.40
5 924.52	V	-	68.60	-	62.40	-	6.20
5 927.63	V	-	68.20	-	61.50	-	6.70
5 932.07	H	-	68.20	-	57.10	-	11.10

Remarks

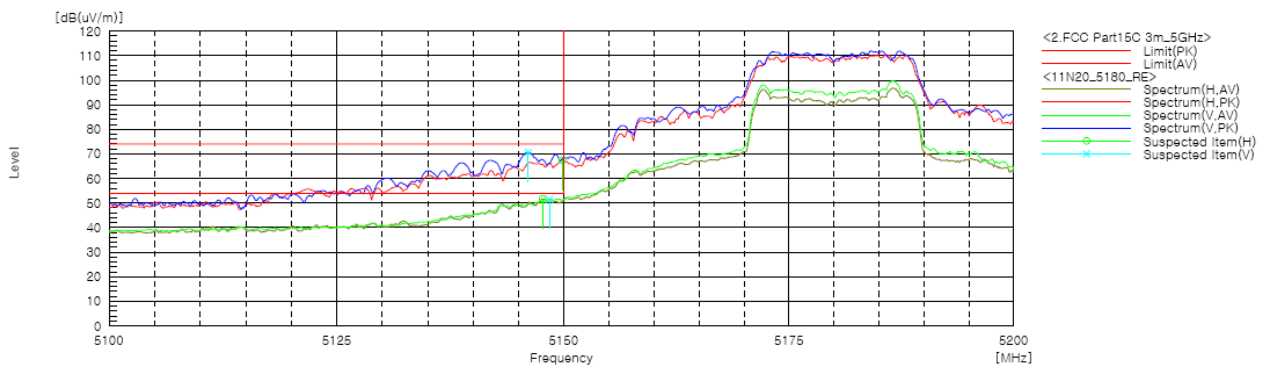
1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(X axis) and the worst case was recorded.
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Average Result = Reading + c.f(Correction factor) + Duty cycle factor
3. Correction factor = Antenna factor + Cable loss - Amp Gain



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Worst Case Mode :	802.11n_HT20_CDD Mode
Worst Case Transfer Rate :	MCS 16
Distance of Measurements :	3 Meters
Operating Frequency :	5 180 MHz
Channel :	36



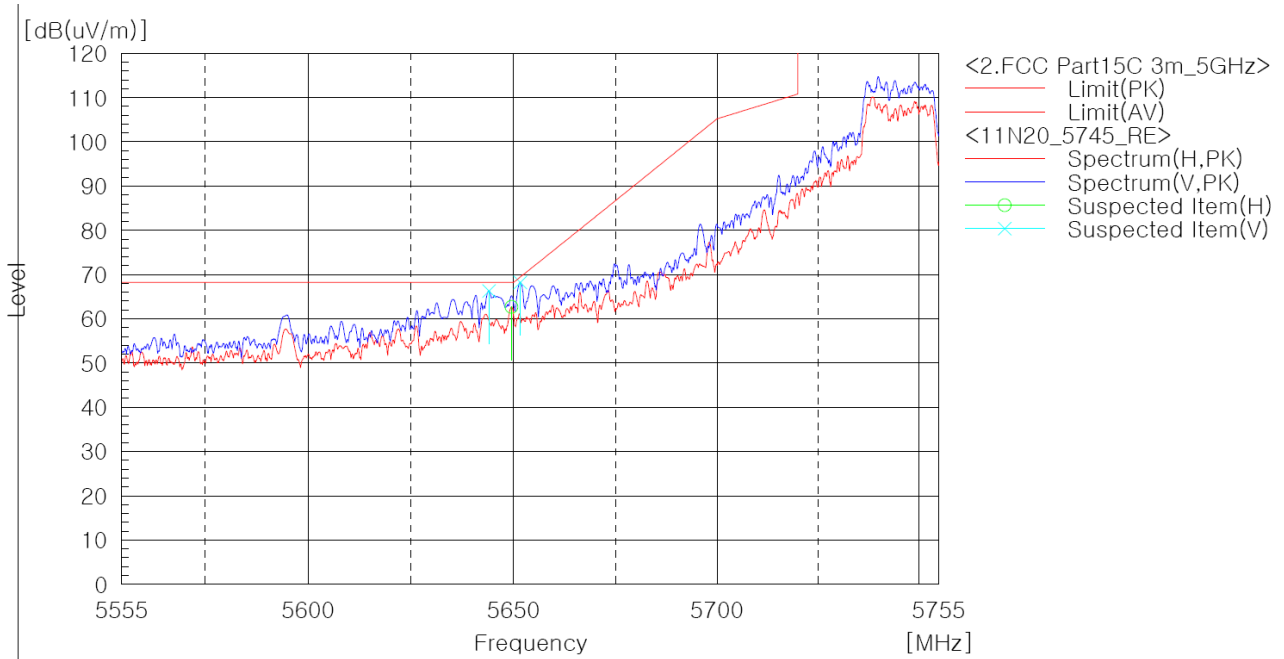
Radiated Restricted Lower Band Edge Plot



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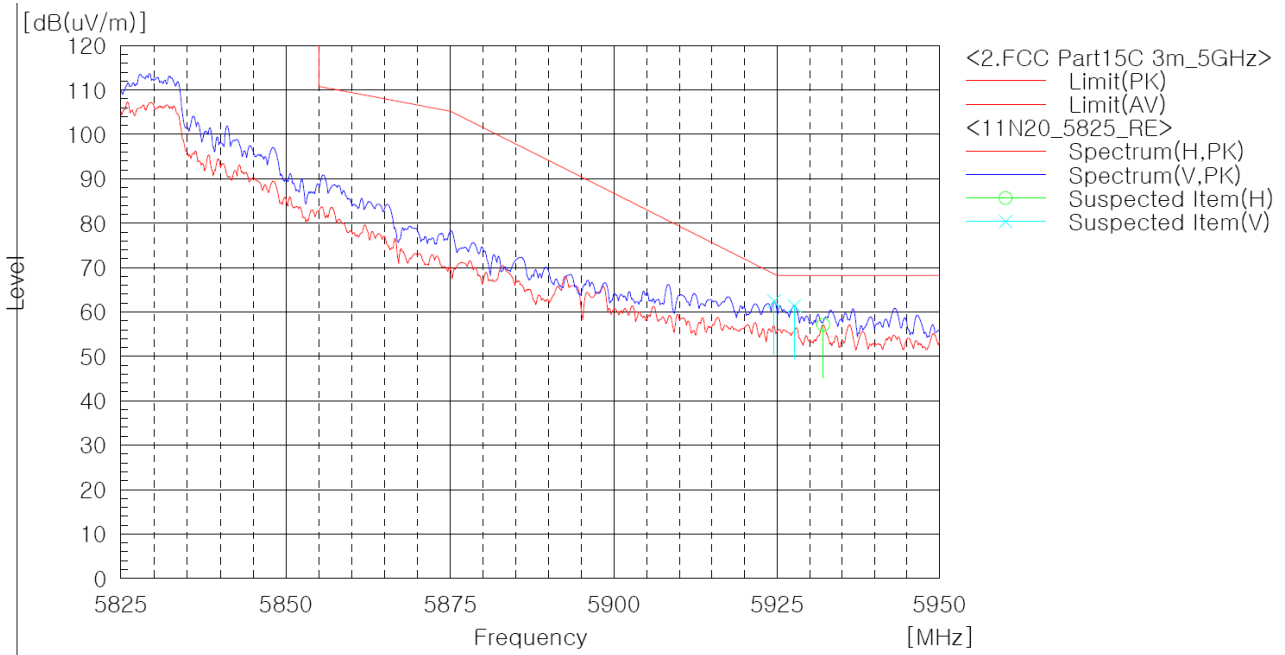
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Worst Case Mode :	802.11n_HT20_CDD Mode
Worst Case Transfer Rate :	MCS 16
Distance of Measurements :	3 Meters
Operating Frequency :	5 745 MHz
Channel :	149



Radiated Restricted Lower Band Edge Plot

Worst Case Mode :	802.11n_HT20_CDD Mode
Worst Case Transfer Rate :	MCS 16
Distance of Measurements :	3 Meters
Operating Frequency :	5 825 MHz
Channel :	165



Radiated Restricted Upper Band Edge Plot



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Report No.:
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Test mode : 802.11ac_VHT20_CDD Mode

The requirements are:

Complies

Test Data

Ch.36(5 180 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 907.14	H	54.00	74.00	43.57	50.50	10.43	23.50
6 907.14	V	54.00	74.00	46.87	55.40	7.13	18.60
9 687.89	H	54.00	74.00	39.37	47.70	14.63	26.30
9 687.89	V	54.00	74.00	41.97	49.00	12.03	25.00
5 149.94	H	54.00	74.00	51.77	68.00	2.23	6.00
5 148.89	V	54.00	74.00	51.27	70.50	2.73	3.50

Ch.40(5 200 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 934.07	H	54.00	74.00	42.27	50.20	11.73	23.80
6 934.07	V	54.00	74.00	45.57	55.40	8.43	18.60
9 687.89	H	54.00	74.00	39.47	48.10	14.53	25.90
9 687.89	V	54.00	74.00	42.07	49.50	11.93	24.50

Ch.48(5 240 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 987.05	H	54.00	74.00	41.67	50.10	12.33	23.90
6 987.05	V	54.00	74.00	45.67	53.70	8.33	20.30
9 687.89	H	54.00	74.00	39.87	47.50	14.13	26.50
9 687.89	V	54.00	74.00	42.27	49.20	11.73	24.80

Ch.149(5 745 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.37	47.80	14.63	26.20
9 687.89	V	54.00	74.00	41.77	51.30	12.23	22.70
5 646.61	H	-	68.20	-	61.50	-	6.70
5 649.59	V	-	68.20	-	66.60	-	1.60

Ch.157(5 785 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.47	48.30	14.53	25.70
9 687.89	V	54.00	74.00	41.77	50.30	12.23	23.70
11 569.72	H	54.00	74.00	40.57	50.90	13.43	23.10
11 569.72	V	54.00	74.00	41.67	51.90	12.33	22.10

Ch.165(5 825 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 687.89	H	54.00	74.00	39.57	48.30	14.43	25.70
9 687.89	V	54.00	74.00	41.87	48.80	12.13	25.20
11 653.56	H	54.00	74.00	41.87	52.30	12.13	21.70
11 649.52	V	54.00	74.00	41.37	52.60	12.63	21.40
5 932.76	H	-	68.20	-	58.90	-	9.30
5 925.00	V	-	68.20	-	62.90	-	5.30

Remarks

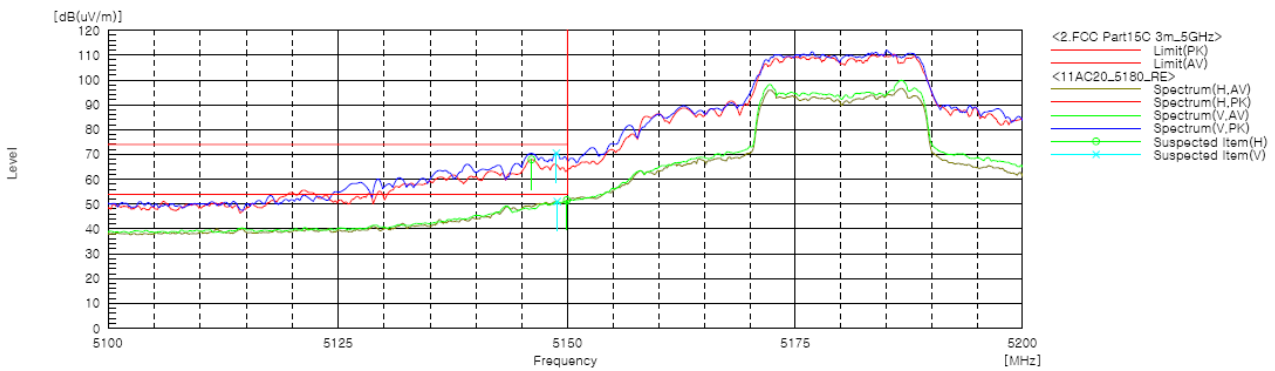
1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(X axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average Result = Reading + c.f(Correction factor) + Duty cycle factor
3. Correction factor = Antenna factor + Cable loss - Amp Gain



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Worst Case Mode :	802.11ac_VHT20_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 180 MHz
Channel :	36



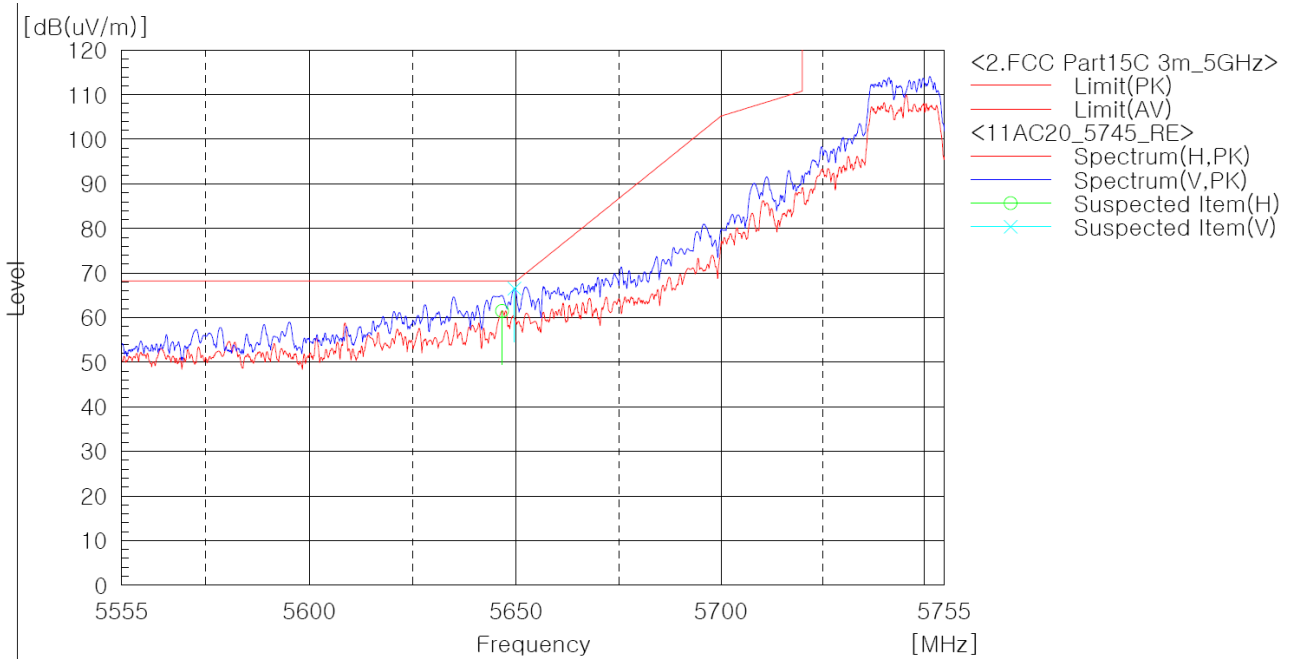
Radiated Restricted Lower Band Edge Plot



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Worst Case Mode :	802.11ac_VHT20_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 745 MHz
Channel :	149



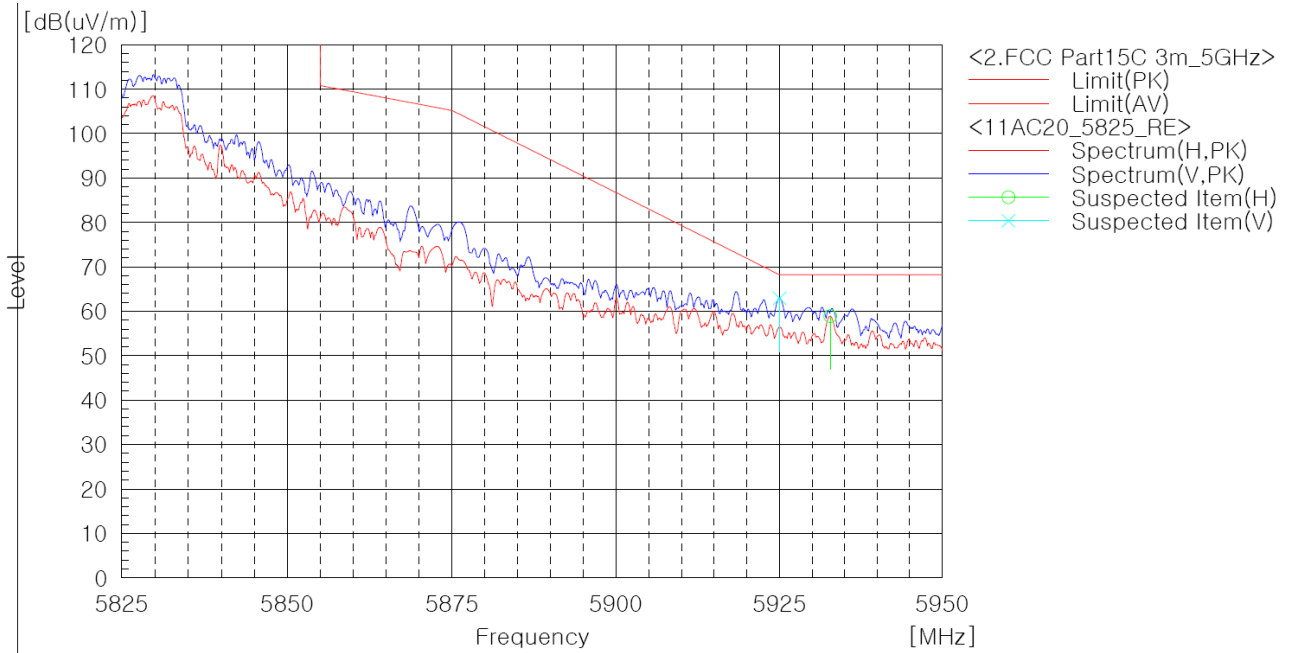
Radiated Restricted Lower Band Edge Plot



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Worst Case Mode :	802.11ac_VHT20_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 825 MHz
Channel :	165



Radiated Restricted Upper Band Edge Plot



Test mode : 802.11n_HT40_CDD Mode

The requirements are:

Complies

Test Data

Ch.38(5 190 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 920.61	H	54.00	74.00	45.13	50.90	8.87	23.10
6 920.61	V	54.00	74.00	48.93	56.50	5.07	17.50
9 787.89	H	54.00	74.00	39.83	49.00	14.17	25.00
9 787.89	V	54.00	74.00	44.13	50.70	9.87	23.30
5 149.86	H	54.00	74.00	51.53	68.00	2.47	6.00
5 147.97	V	54.00	74.00	51.63	70.00	2.37	4.00

Ch.46(5 230 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 973.58	H	54.00	74.00	43.83	51.40	10.17	22.60
6 973.58	V	54.00	74.00	48.43	56.00	5.57	18.00
9 787.89	H	54.00	74.00	40.03	49.90	13.97	24.10
9 787.89	V	54.00	74.00	44.13	50.40	9.87	23.60

Ch.151(5 755 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
7 673.92	H	54.00	74.00	40.43	48.10	13.57	25.90
7 673.92	V	54.00	74.00	42.43	49.60	11.57	24.40
9 787.89	H	54.00	74.00	40.03	48.60	13.97	25.40
9 787.89	V	54.00	74.00	44.43	51.60	9.57	22.40
5 642.25	H	-	68.20	-	60.90	-	7.30
5 649.12	V	-	68.20	-	64.40	-	3.80



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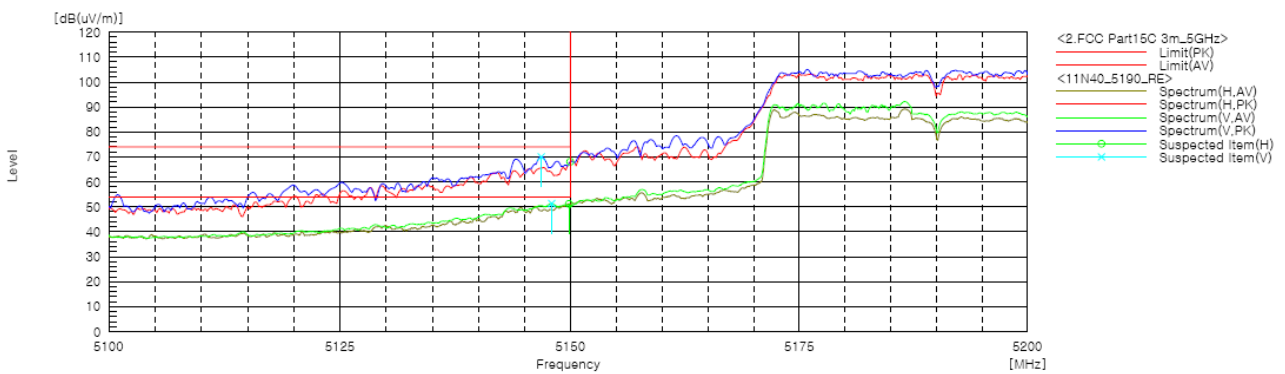
Ch.159(5 795 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
7 726.90	H	54.00	74.00	37.83	48.60	16.17	25.40
7 726.90	V	54.00	74.00	40.43	48.60	13.57	25.40
9 787.89	H	54.00	74.00	40.13	48.20	13.87	25.80
9 787.89	V	54.00	74.00	44.23	51.10	9.77	22.90
5 926.66	H	-	68.20	-	57.80	-	10.40
5 925.56	V	-	68.20	-	58.90	-	9.30

Remarks

1. The Unwanted 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.
2. Peak Result = Reading + c.f(Correction factor)
Average Result = Reading + c.f(Correction factor) + Duty cycle factor
3. Correction factor = Antenna factor + Cable loss - Amp Gain

Worst Case Mode :	802.11n_HT40_CDD Mode
Worst Case Transfer Rate :	MCS 16
Distance of Measurements :	3 Meters
Operating Frequency :	5 190 MHz
Channel :	38



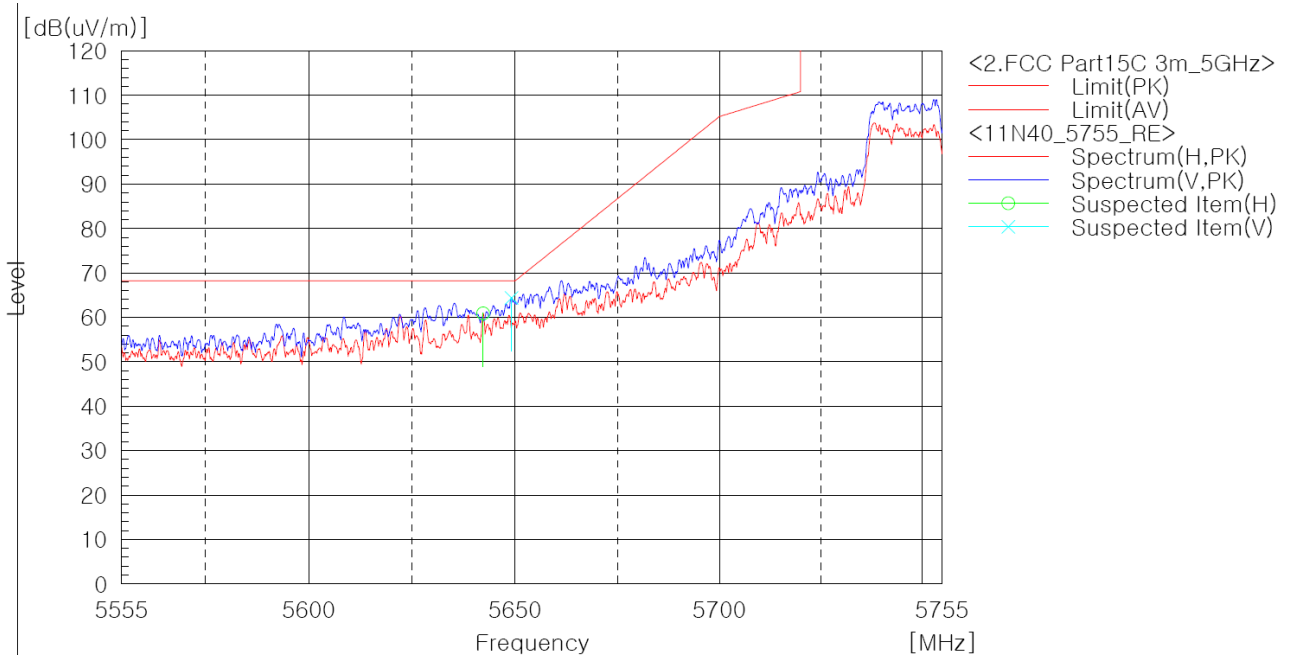
Radiated Restricted Lower Band Edge Plot



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Worst Case Mode :	802.11n_HT40_CDD Mode
Worst Case Transfer Rate :	MCS 16
Distance of Measurements :	3 Meters
Operating Frequency :	5 755 MHz
Channel :	151



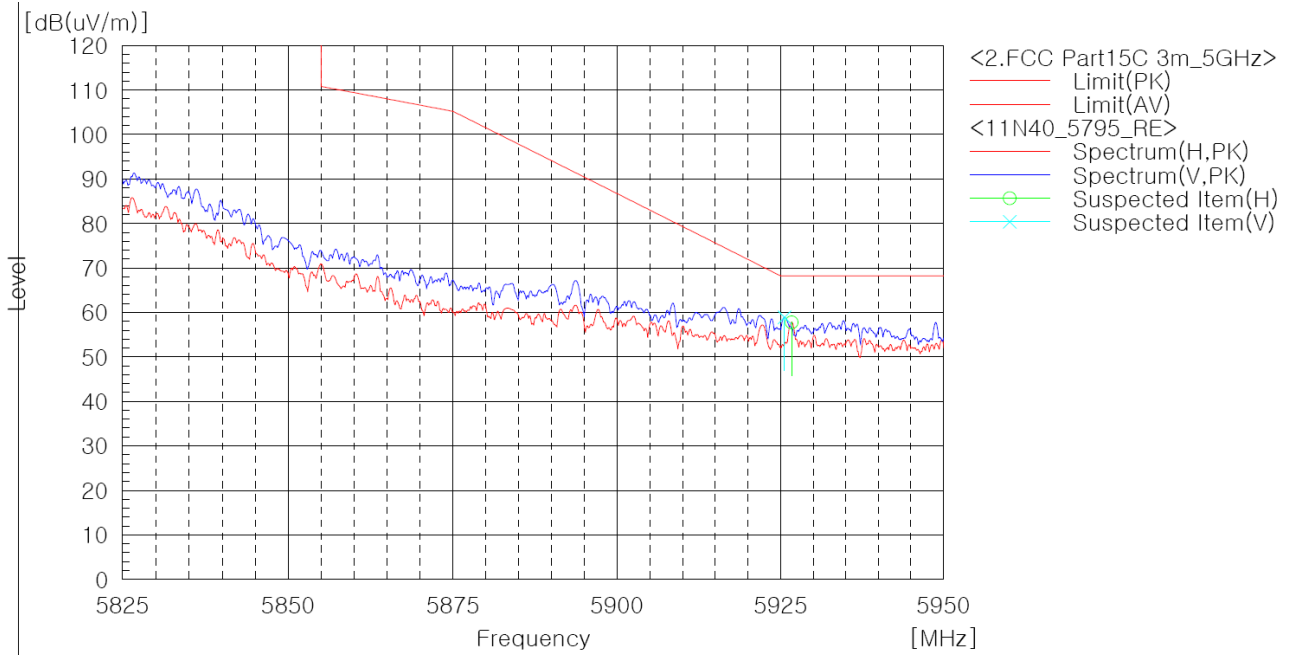
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Worst Case Mode :	802.11n_HT40_CDD Mode
Worst Case Transfer Rate :	MCS 16
Distance of Measurements :	3 Meters
Operating Frequency :	5 795 MHz
Channel :	159



Radiated Restricted Upper Band Edge Plot



Test mode : 802.11ac_VHT40_CDD Mode

The requirements are:

Complies

Test Data

Ch.38(5 190 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 920.61	H	54.00	74.00	44.83	51.20	9.17	22.80
6 920.61	V	54.00	74.00	48.73	55.80	5.27	18.20
9 787.89	H	54.00	74.00	39.93	50.30	14.07	23.70
9 787.89	V	54.00	74.00	44.53	50.00	9.47	24.00
5 147.52	H	54.00	74.00	50.83	65.90	3.17	8.10
5 149.99	V	54.00	74.00	51.33	69.30	2.67	4.70

Ch.46(5 230 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 973.58	H	54.00	74.00	43.43	50.50	10.57	23.50
6 973.58	V	54.00	74.00	47.33	55.80	6.67	18.20
9 787.89	H	54.00	74.00	40.23	49.50	13.77	24.50
9 787.89	V	54.00	74.00	44.33	51.00	9.67	23.00

Ch.151(5 755 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
7 673.92	H	54.00	74.00	41.03	48.30	12.97	25.70
7 673.92	V	54.00	74.00	43.03	48.70	10.97	25.30
9 787.89	H	54.00	74.00	40.03	49.00	13.97	25.00
9 787.89	V	54.00	74.00	44.13	50.70	9.87	23.30
5 649.44	H	-	68.20	-	60.10	-	8.10
5 645.62	V	-	68.20	-	64.80	-	3.40



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Ch.159(5 795 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
7 726.90	H	54.00	74.00	38.33	47.70	15.67	26.30
7 726.90	V	54.00	74.00	40.13	48.30	13.87	25.70
9 787.89	H	54.00	74.00	39.73	49.20	14.27	24.80
9 787.89	V	54.00	74.00	44.53	50.20	9.47	23.80
5 929.29	H	-	68.20	-	56.00	-	12.20
5 931.61	V	-	68.20	-	60.20	-	8.00

Remarks

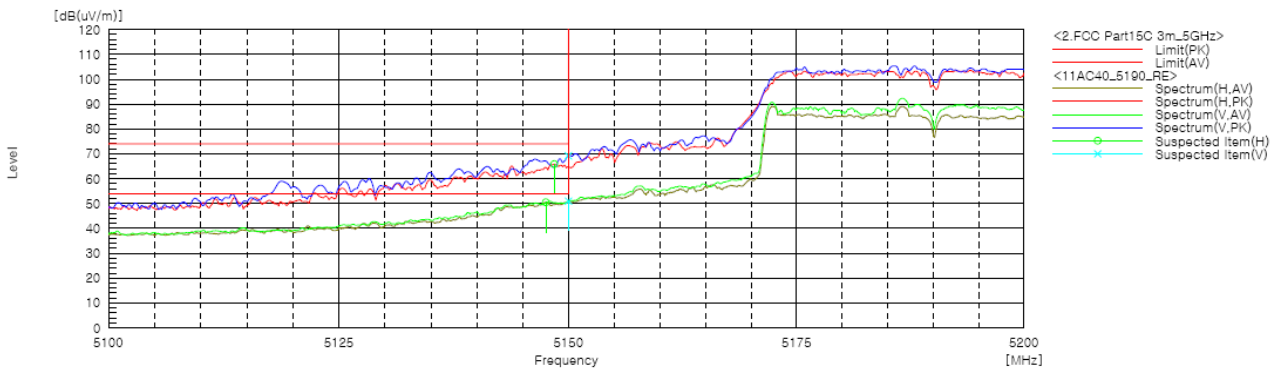
1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(X axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average Result = Reading + c.f(Correction factor) + Duty cycle factor
3. Correction factor = Antenna factor + Cable loss - Amp Gain



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Worst Case Mode :	802.11ac_VHT40_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 190 MHz
Channel :	38



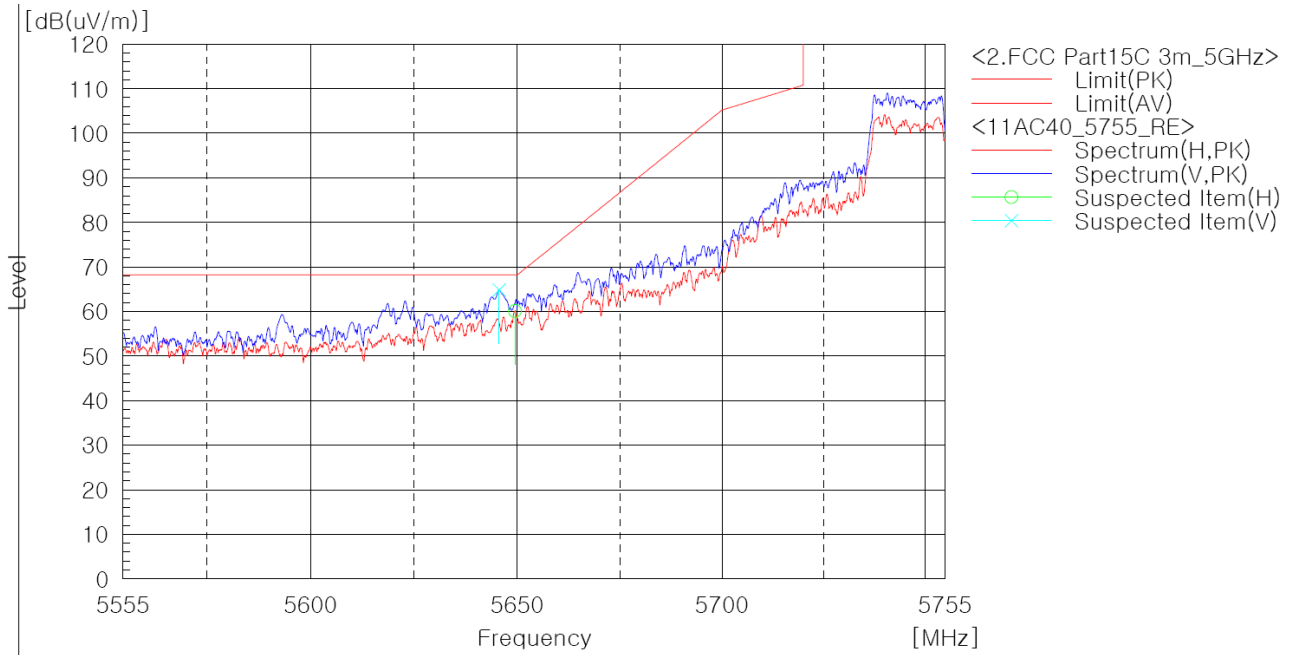
Radiated Restricted Lower Band Edge Plot



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Worst Case Mode :	802.11ac_VHT40_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 755 MHz
Channel :	151



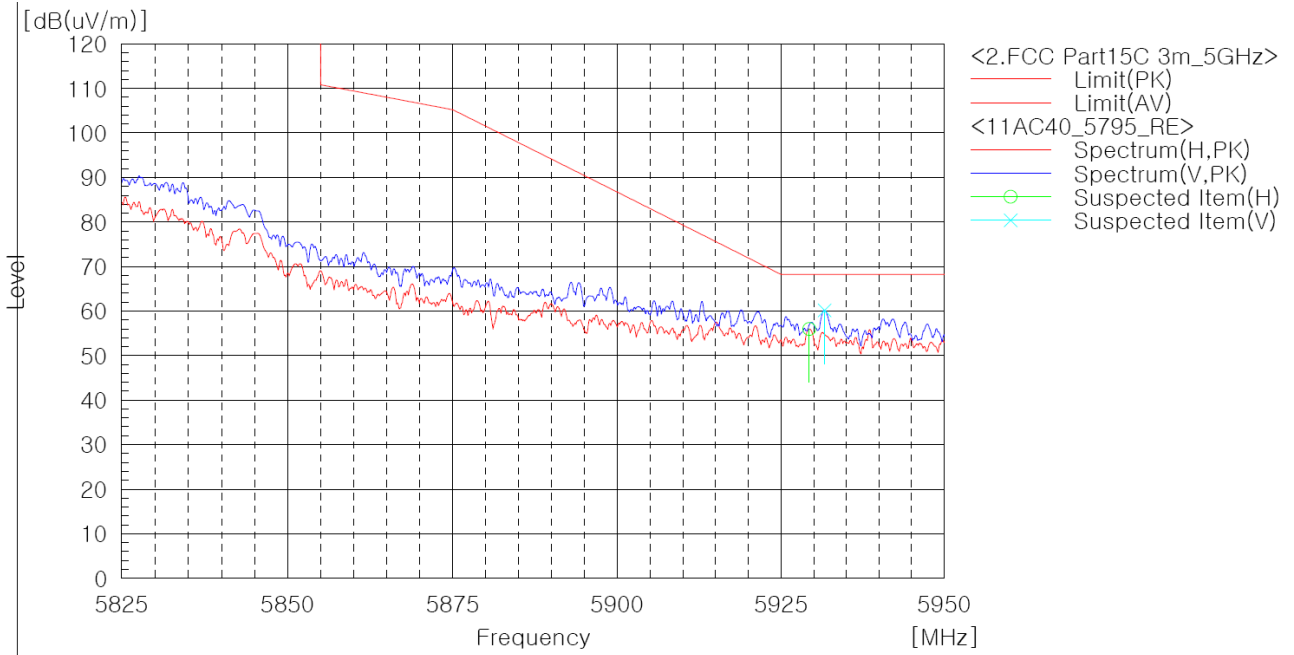
Radiated Restricted Lower Band Edge Plot



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Worst Case Mode :	802.11ac_VHT40_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 795 MHz
Channel :	159



Radiated Restricted Upper Band Edge Plot



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Test mode : 802.11ac_VHT80_CDD Mode

The requirements are:

Complies

Test Data

Ch.42(5 210 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
6 947.54	H	54.00	74.00	44.35	50.70	9.65	23.30
6 947.54	V	54.00	74.00	47.25	56.60	6.75	17.40
9 787.89	H	54.00	74.00	40.85	49.00	13.15	25.00
9 787.89	V	54.00	74.00	45.55	50.30	8.45	23.70
5 143.30	H	54.00	74.00	52.45	67.40	1.55	6.60
5 143.01	V	54.00	74.00	53.45	69.40	0.55	4.60

Ch.155(5 775 MHz)

Frequency [MHz]	(P)	Limit AV [dBuV/m]	Limit PK [dBuV/m]	Result AV [dBuV/m]	Result PK [dBuV/m]	Margin AV [dB]	Margin PK [dB]
9 787.89	H	54.00	74.00	41.05	49.50	12.95	24.50
9 787.89	V	54.00	74.00	44.95	49.80	9.05	24.20
5 649.93	H	-	68.20	-	63.50	-	4.70
5 600.16	V	-	68.20	-	64.20	-	4.00
5 947.00	H	-	68.20	-	55.90	-	12.30
5 928.17	V	-	68.20	-	60.20	-	8.00

Remarks

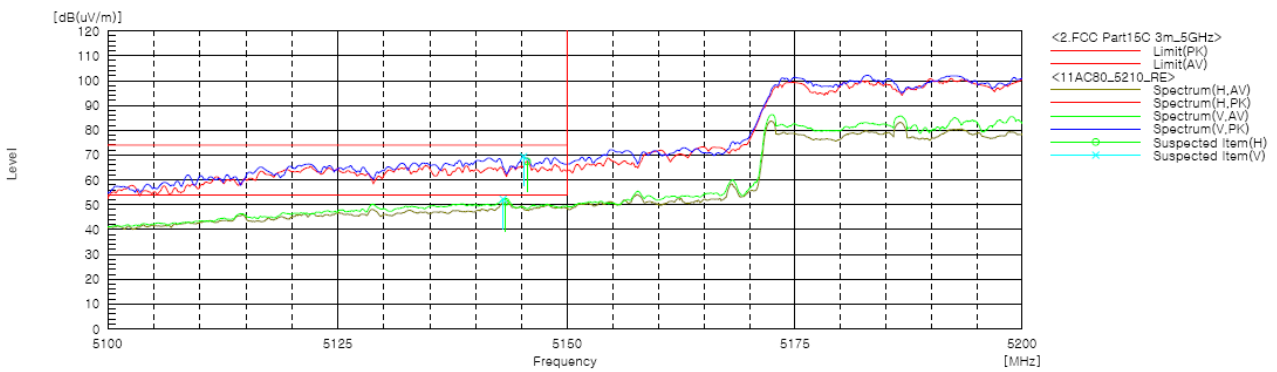
1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(X axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
 Average Result = Reading + c.f(Correction factor) + Duty cycle factor
3. Correction factor = Antenna factor + Cable loss - Amp Gain



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Worst Case Mode :	802.11ac_VHT80_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 210 MHz
Channel :	42



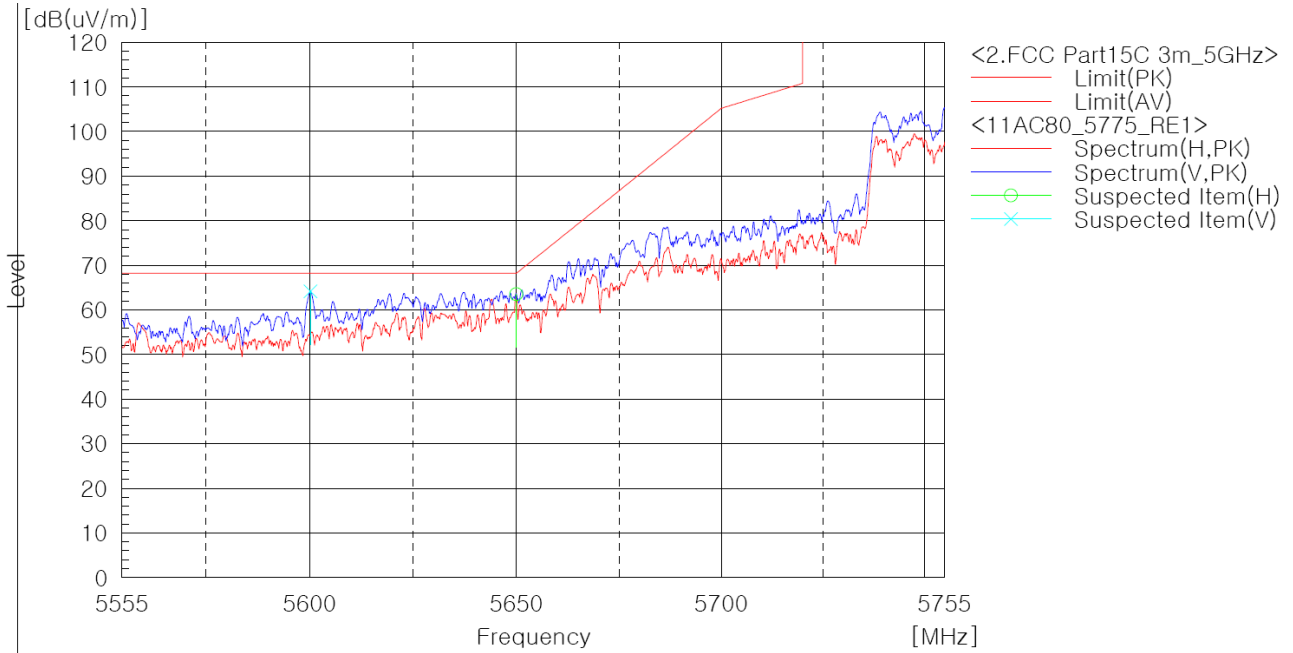
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Worst Case Mode :	802.11ac_VHT80_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 775 MHz
Channel :	155



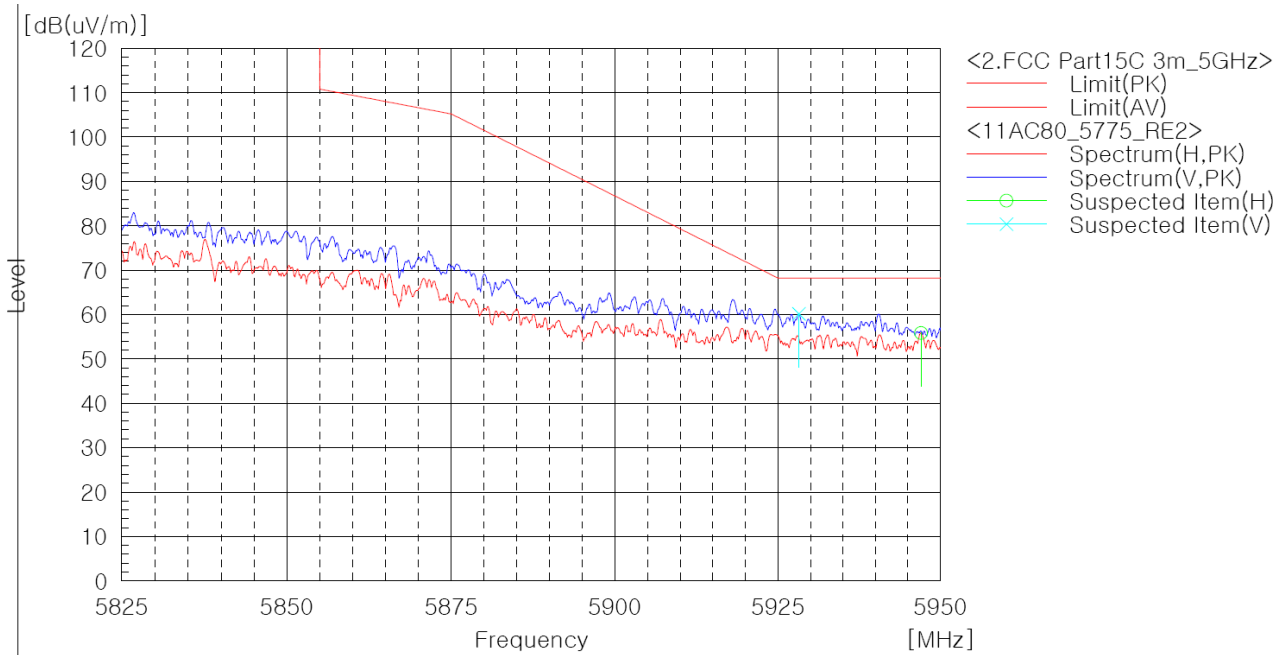
Radiated Restricted Lower Band Edge Plot



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Worst Case Mode :	802.11ac_VHT80_CDD Mode
Worst Case Transfer Rate :	MNSS 0
Distance of Measurements :	3 Meters
Operating Frequency :	5 775 MHz
Channel :	155



Radiated Restricted Upper Band Edge Plot



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4.7 AC Conducted Emissions

Test Location

Shielded Room

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

- 15.207(a)

Frequency (MHz)	Conducted Limit (dBuV)	
	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.

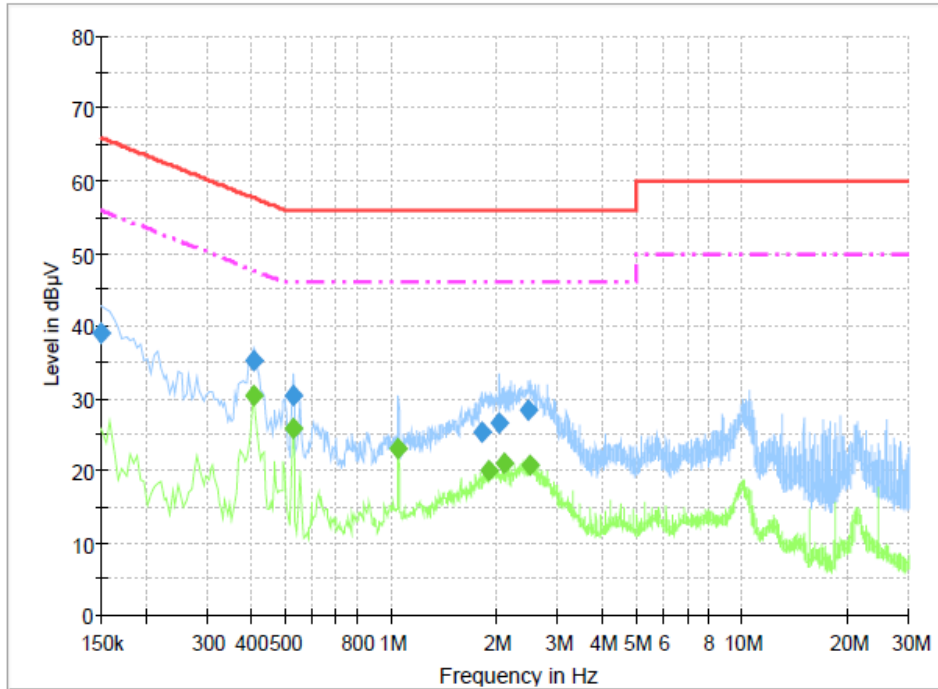
Test Results

The requirements are:

Complies

Test Data

[LINE]
(with EC)3CE_Class B_L1



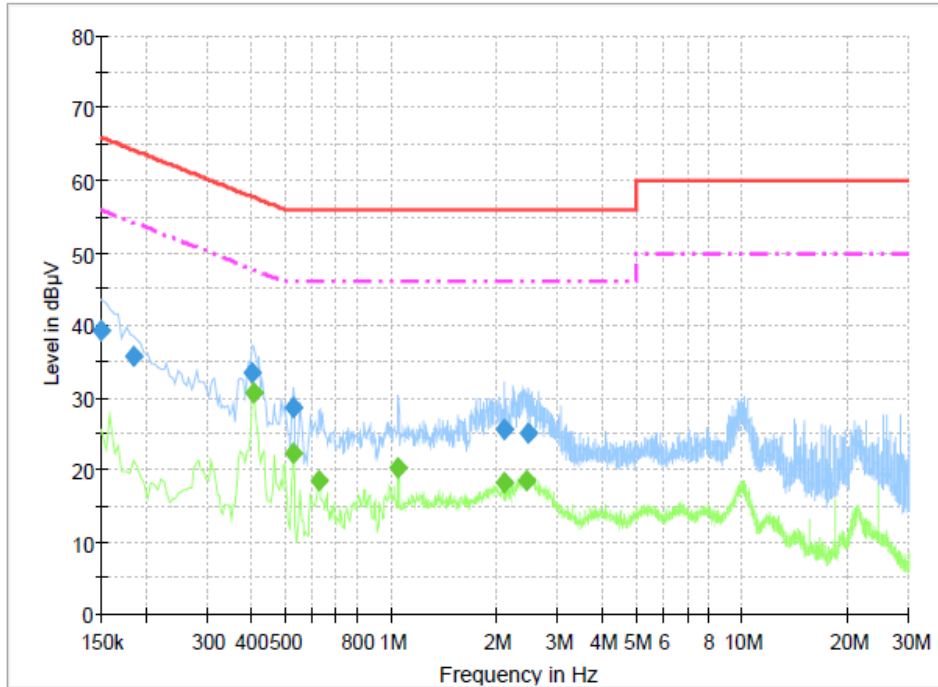
Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	39.0	1000.0	9.000	On	L1	10.0	27.0	66.0
0.406500	35.1	1000.0	9.000	On	L1	10.0	22.6	57.7
0.528000	30.5	1000.0	9.000	On	L1	10.0	25.5	56.0
1.815000	25.3	1000.0	9.000	On	L1	9.9	30.7	56.0
2.049000	26.7	1000.0	9.000	On	L1	9.9	29.3	56.0
2.467500	28.3	1000.0	9.000	On	L1	9.9	27.7	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.406500	30.5	1000.0	9.000	On	L1	10.0	17.2	47.7
0.528000	25.8	1000.0	9.000	On	L1	10.0	20.2	46.0
1.054500	23.1	1000.0	9.000	On	L1	9.9	22.9	46.0
1.900500	19.9	1000.0	9.000	On	L1	9.9	26.1	46.0
2.112000	21.0	1000.0	9.000	On	L1	9.9	25.0	46.0
2.494500	20.7	1000.0	9.000	On	L1	9.9	25.3	46.0

[NEUTRAL]
(with EC)3CE_Class B_N



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	39.3	1000.0	9.000	On	N	9.9	26.7	66.0
0.186000	35.8	1000.0	9.000	On	N	10.2	28.4	64.2
0.402000	33.3	1000.0	9.000	On	N	10.0	24.5	57.8
0.528000	28.7	1000.0	9.000	On	N	10.0	27.3	56.0
2.112000	25.6	1000.0	9.000	On	N	9.9	30.4	56.0
2.481000	25.2	1000.0	9.000	On	N	9.9	30.8	56.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.406500	30.7	1000.0	9.000	On	N	10.0	17.0	47.7
0.528000	22.3	1000.0	9.000	On	N	10.0	23.7	46.0
0.622500	18.6	1000.0	9.000	On	N	10.0	27.4	46.0
1.054500	20.2	1000.0	9.000	On	N	9.9	25.8	46.0
2.112000	18.3	1000.0	9.000	On	N	9.9	27.7	46.0
2.440500	18.6	1000.0	9.000	On	N	9.9	27.4	46.0



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APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Signal Analyzer	Agilent	N9020A	MY48011598	2018-10-25	2019-10-25
2	Signal Generator	Rohde & Schwarz	SMB100A	175528	2018-10-24	2019-10-24
3	EMI Test Receiver	Rohde & Schwarz	ESCI7	100814	2018-10-25	2019-10-25
4	Bilog Antenna	Schaffner	CBL6111C	2551	2018-05-10	2020-05-10
5	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-126	2018-05-27	2020-05-27
6	6dB Attenuator	R&S	DNF	272.4110.50-2	2018-10-25	2019-10-25
7	AMPLIFIER	SONOMA	310	291721	2019-01-28	2020-01-28
8	EMI Test Receiver	Rohde & Schwarz	ESU40	100336	2019-01-29	2020-01-29
9	Preamplifier	Agilent	8449B	3008A02011	2018-12-03	2019-12-03
10	Horn Antenna	ETS-Lindgren	3116	00062504	2017-12-04	2019-12-04
11	Horn Antenna	ETS-Lindgren	3117	00154525	2019-02-22	2021-02-22
12	Band Reject Filter	Micro Tronics	BRM50716	G184	2019-01-28	2020-01-28
13	EMI Test Receiver	R&S	ESCI3	100032	2019-01-29	2020-01-29
14	LISN	Rohde & Schwarz	ENV216	101236	2018-10-29	2019-10-29
15	Singnal Canditioning Unit	R&S	SCU-40	10023	2018-10-24	2019-10-24
16	Temp&Humi Chamber	ESPEC CORP.	SH-242	93008423	2018-09-18	2019-09-18

	Cable	Manufacturer	Model No.	Serial No.	Check Date
1	RF Cable	Canare Corporation	L-5D2W	N/A	2018-12-19
2	RF Cable	Junkosha Inc.	MWX221	1510S087	2019-05-23
3	RF Cable	HUBER+SUHNER	SUCOFLEX 102	MY073/2	2018-12-19
4	RF Cable	HUBER+SUHNER	SUCOFLEX 102	MY4728/2	2018-12-19
5	RF Cable	HUBER+SUHNER	SUCOFLEX 104	MY27558/4	2018-12-19
6	RF Cable	HUBER+SUHNER	SUCOFLEX 104	N/A	2018-12-19
7	RF Cable	HUBER+SUHNER	SUCOFLEX 104	MY27573/4	2018-12-19
8	RF Cable	HUBER+SUHNER	SUCOFLEX 106	N/A	2018-12-19