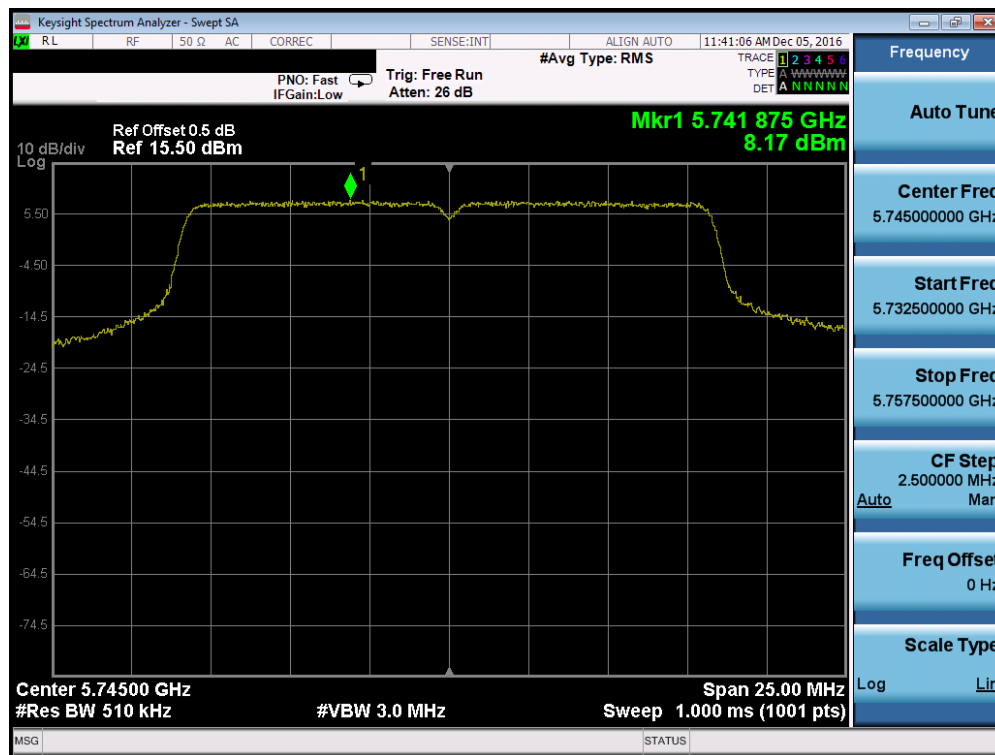


Antenna-1 Power Spectral Density Measurements

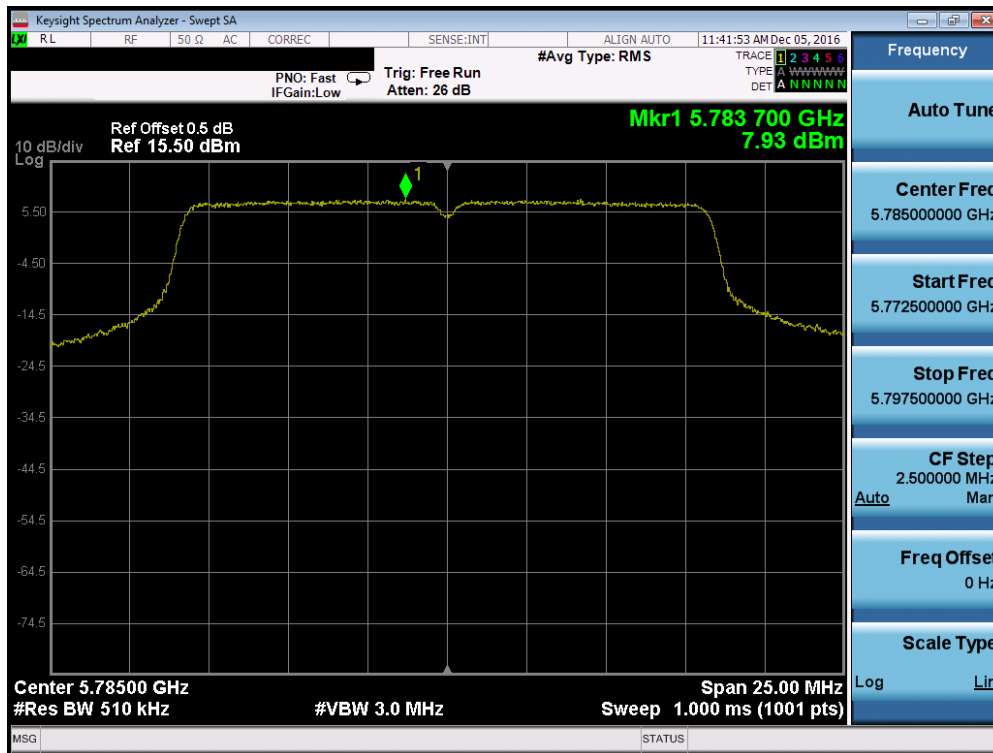
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	5745	149	a	6	8.17	30.0	-21.84	Pass
	5785	157	a	6	7.93	30.0	-22.07	Pass
	5825	165	a	6	7.73	30.0	-22.27	Pass
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	7.81	30.0	-22.19	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	6.60	30.0	-23.40	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	7.25	30.0	-22.75	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	4.54	30.0	-25.46	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	4.12	30.0	-25.88	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	4.44	30.0	-25.56	Pass

Table 7-31. Band 3 Conducted Power Spectral Density Measurements

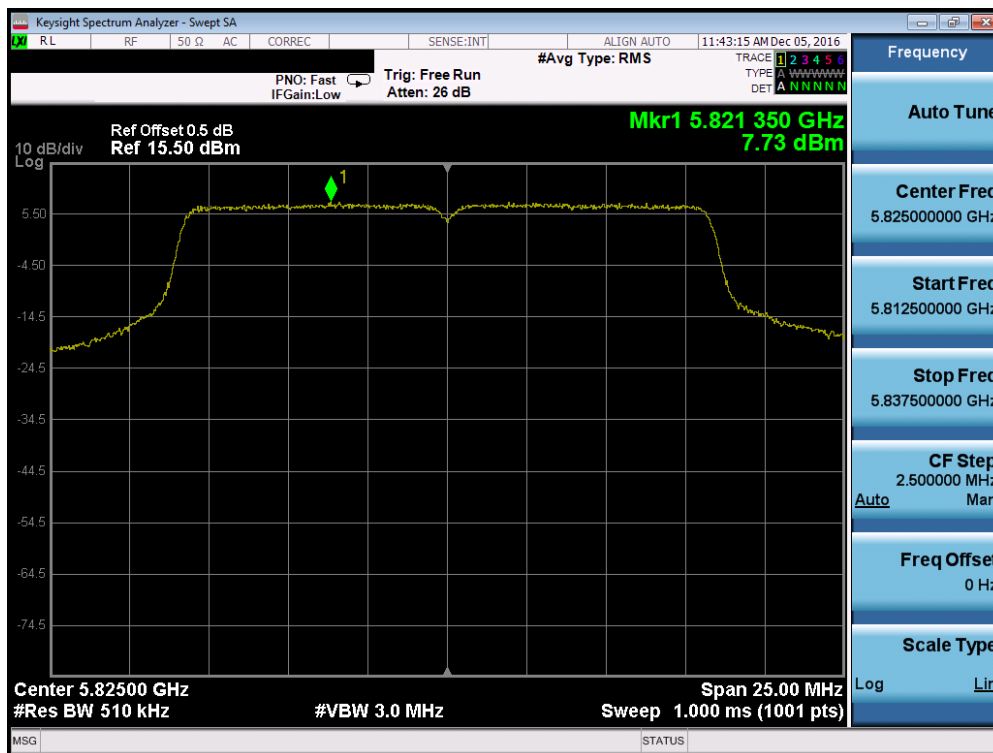


Plot 7-109. Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 149)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 89 of 233

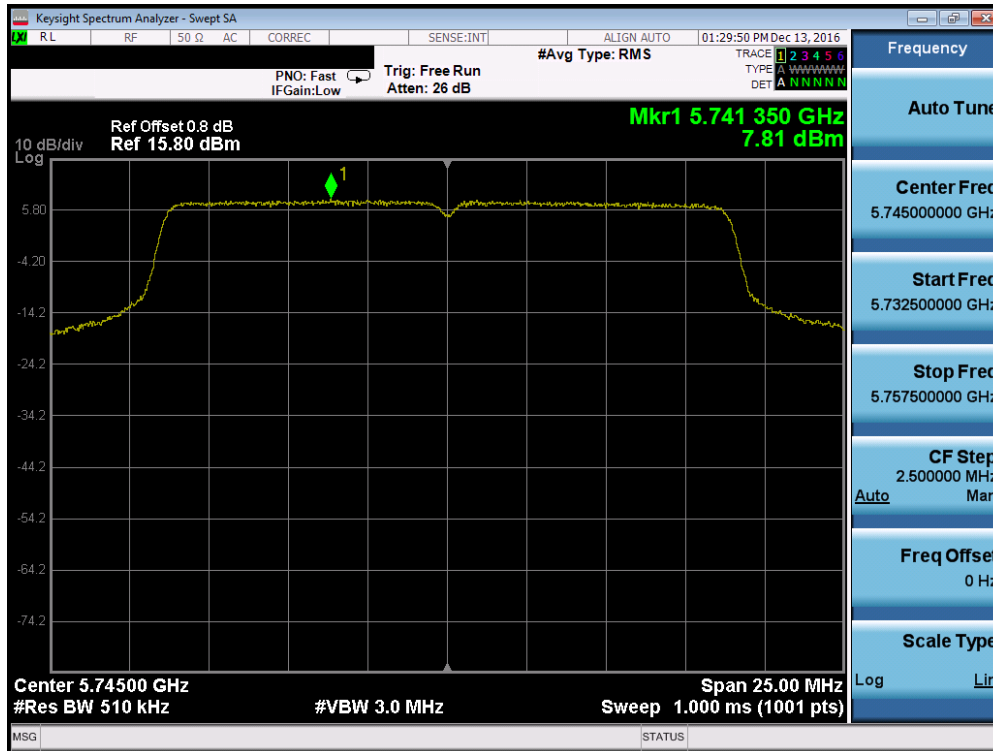


Plot 7-110. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

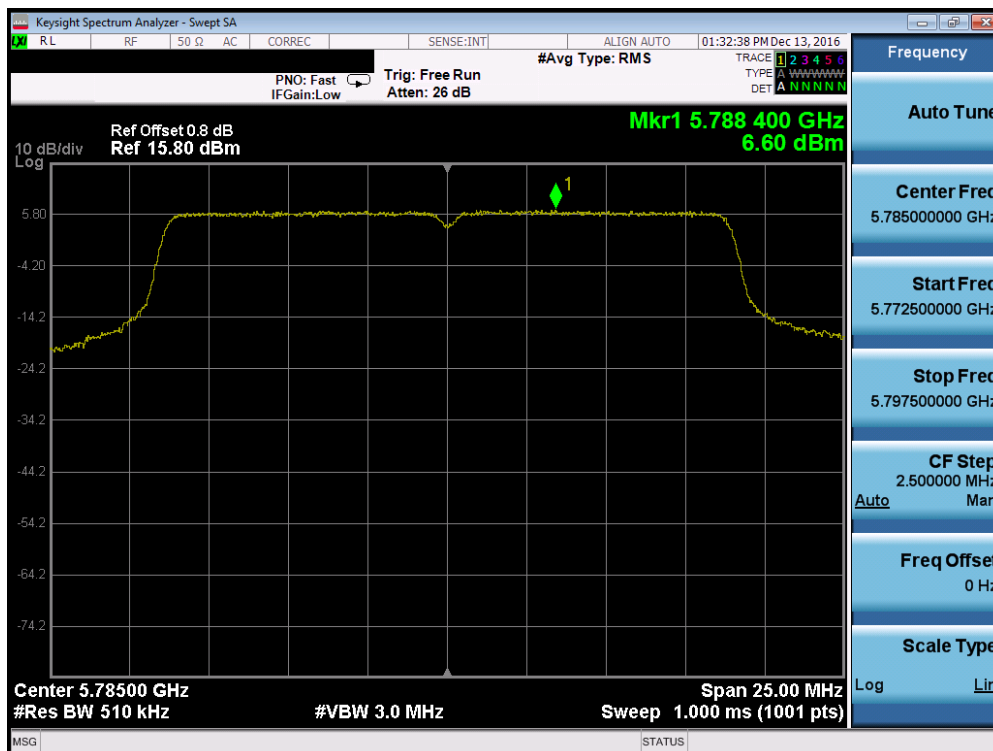


Plot 7-111. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 90 of 233

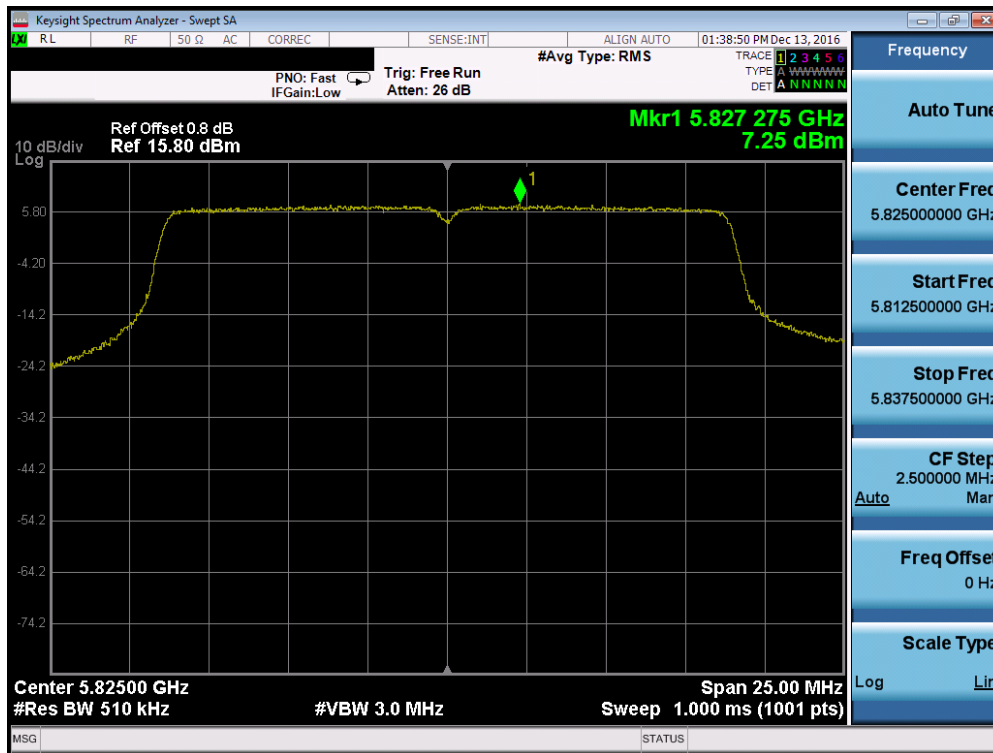


Plot 7-112. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

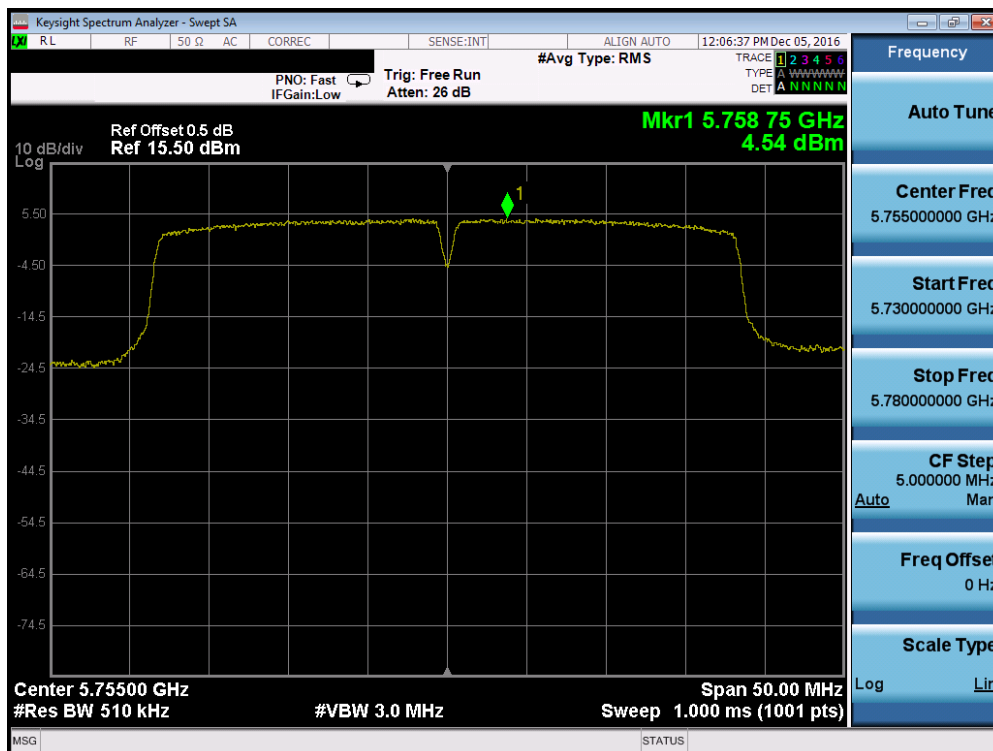


Plot 7-113. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 91 of 233

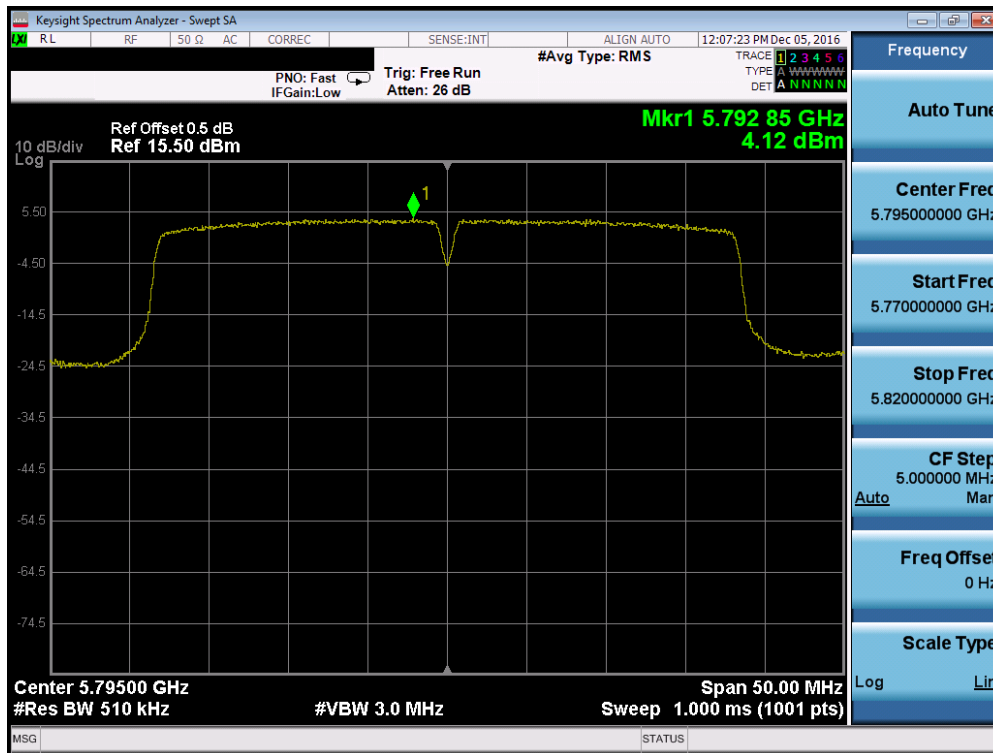


Plot 7-114. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

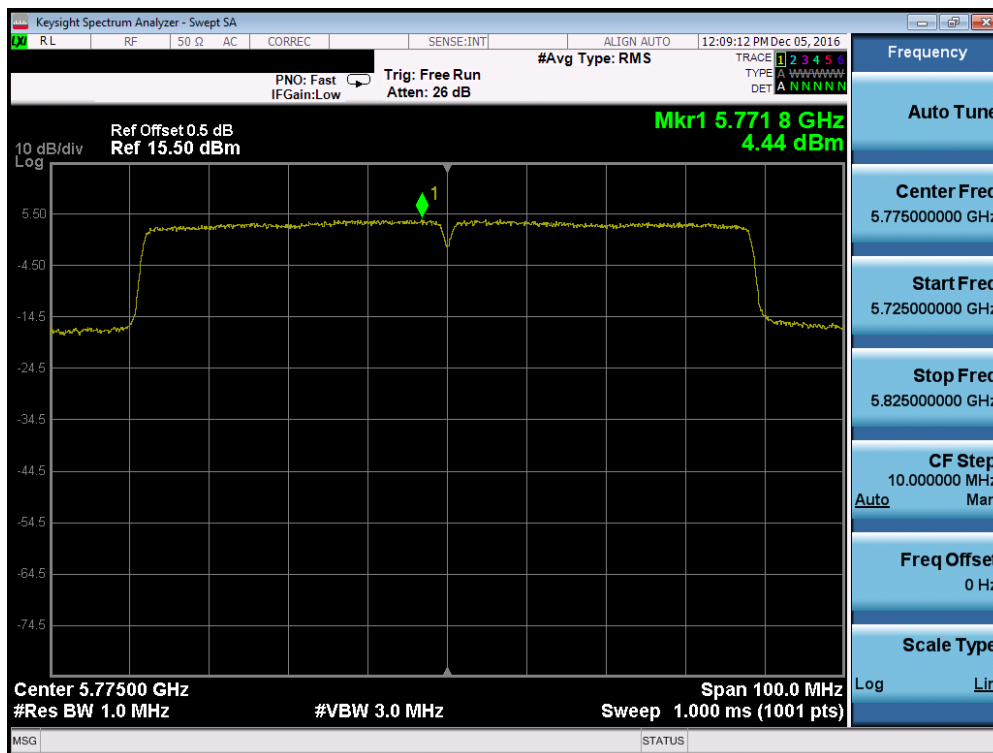


Plot 7-115. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 92 of 233



Plot 7-116. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



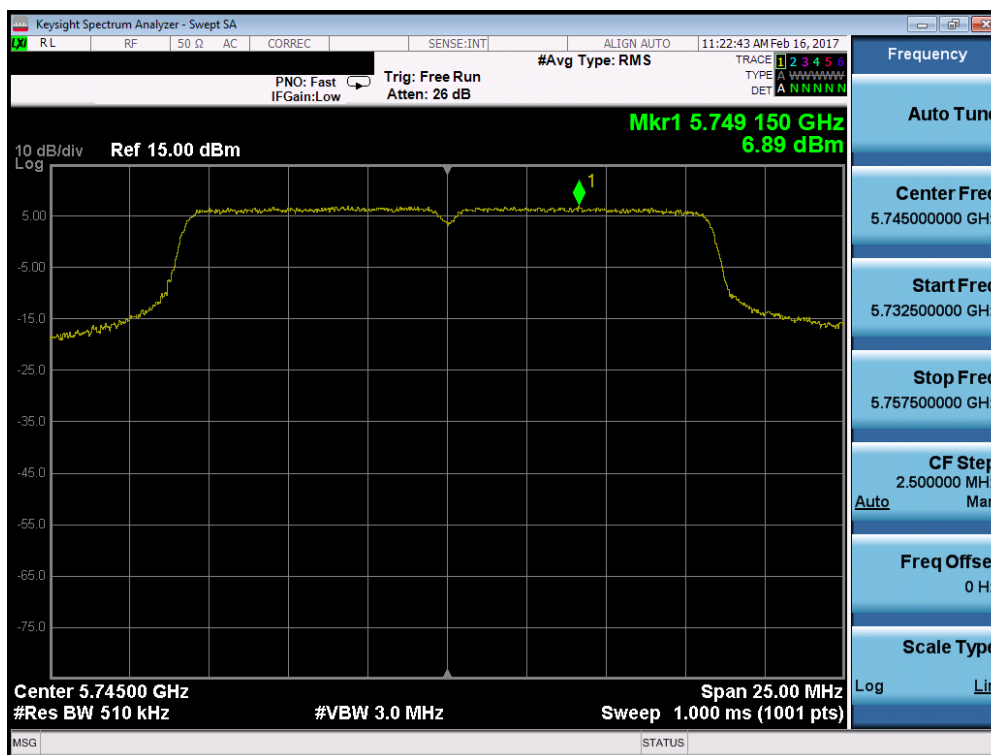
Plot 7-117. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 93 of 233

Antenna-2 Power Spectral Density Measurements

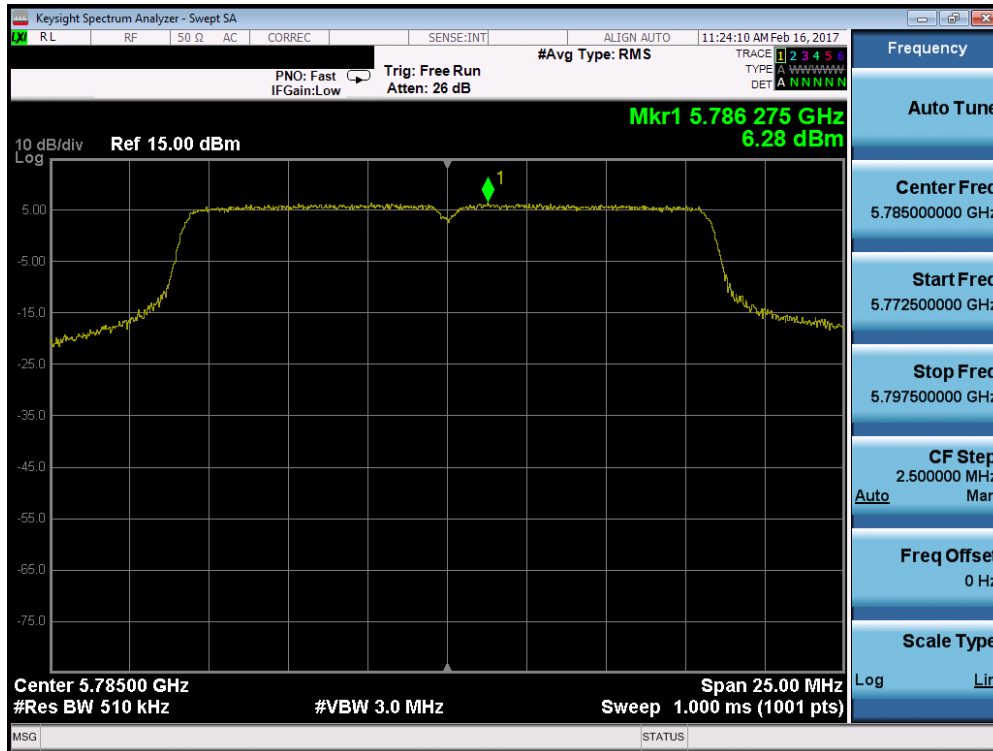
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	5745	149	a	6	6.89	30.0	-23.11	Pass
	5785	157	a	6	6.28	30.0	-23.72	Pass
	5825	165	a	6	6.02	30.0	-23.98	Pass
	5745	149	n (20MHz)	6.5/7.2 (MCS0)	6.95	30.0	-23.05	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	6.46	30.0	-23.54	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	6.33	30.0	-23.67	Pass
	5755	151	n (40MHz)	13.5/15 (MCS0)	8.57	30.0	-21.43	Pass
	5795	159	n (40MHz)	13.5/15 (MCS0)	8.13	30.0	-21.87	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	8.33	30.0	-21.67	Pass

Table 7-32. Band 3 Conducted Power Spectral Density Measurements

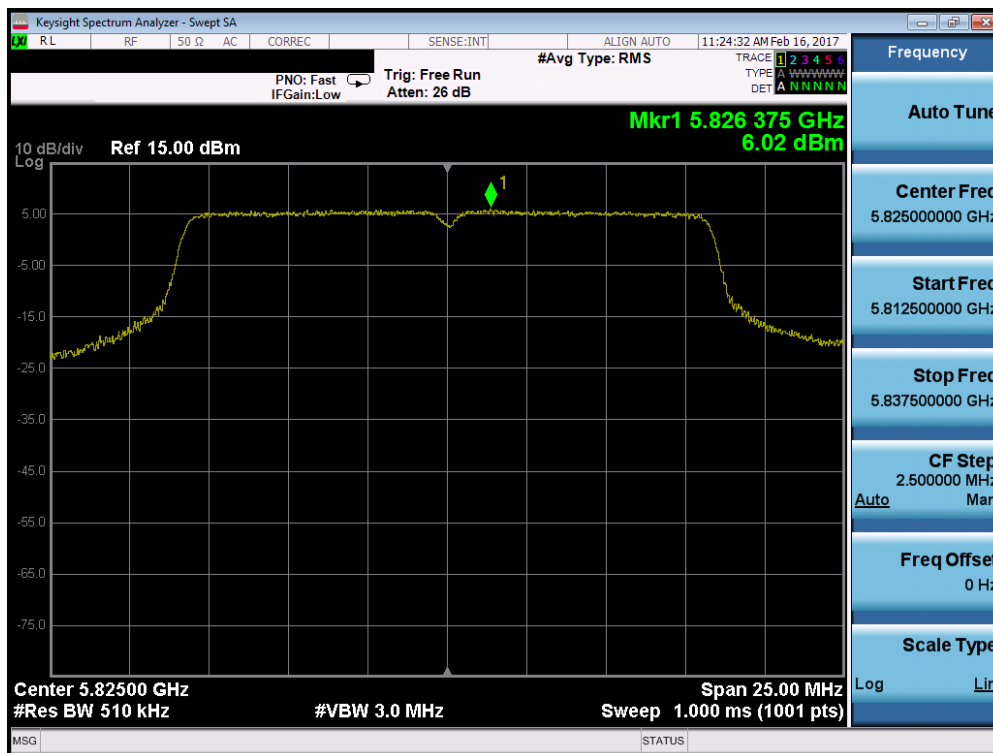


Plot 7-118. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 94 of 233

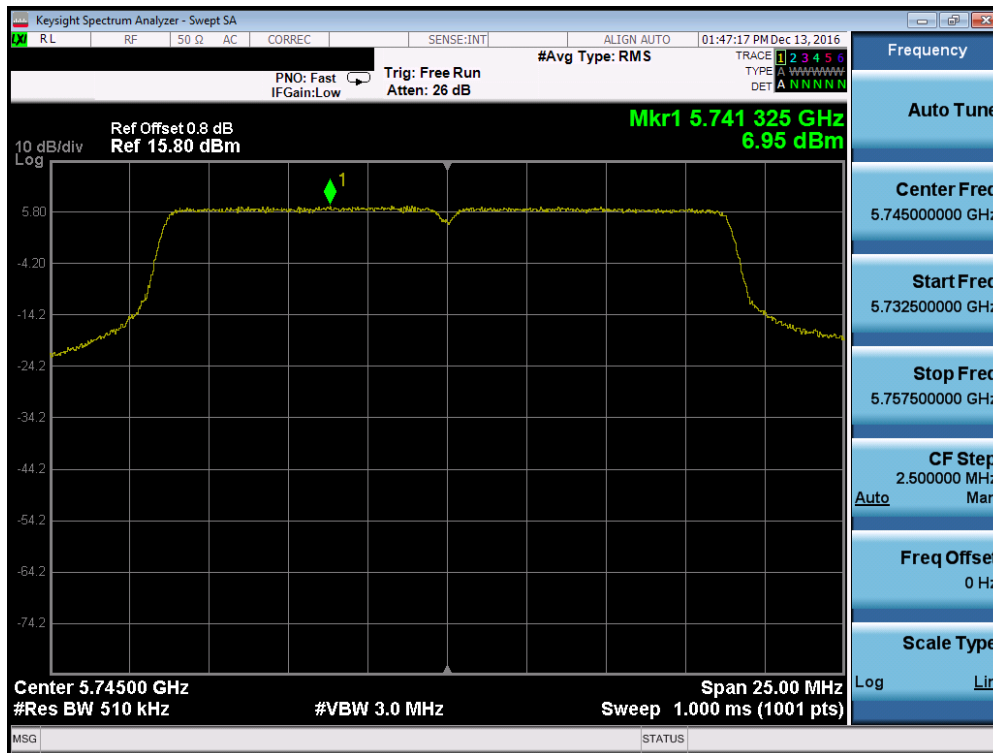


Plot 7-119. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

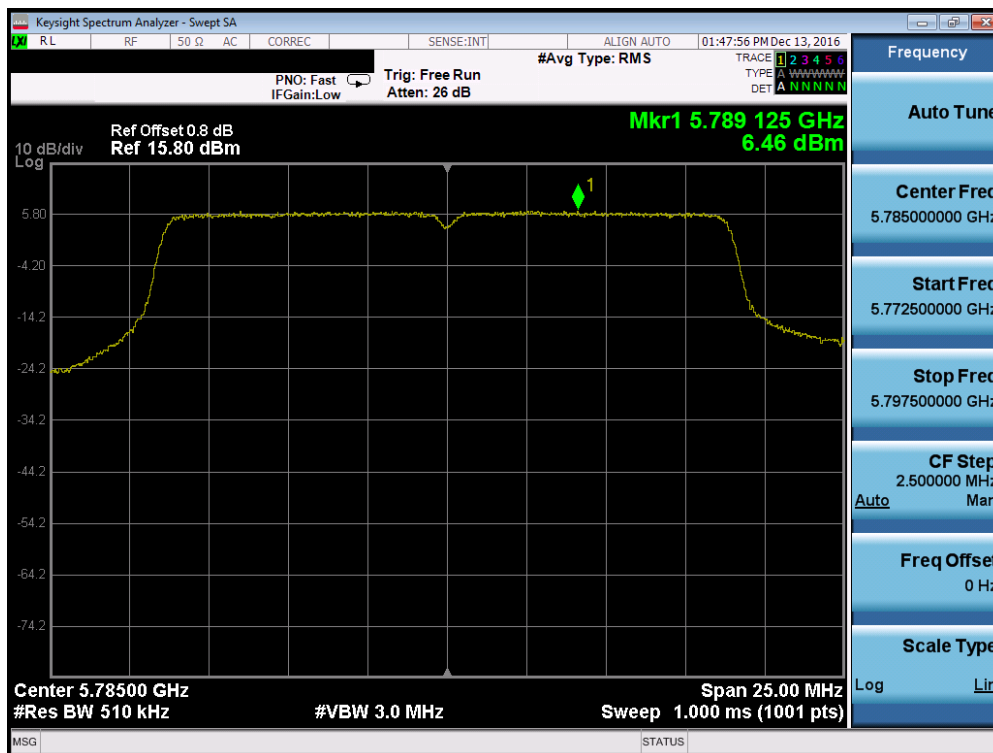


Plot 7-120. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 95 of 233

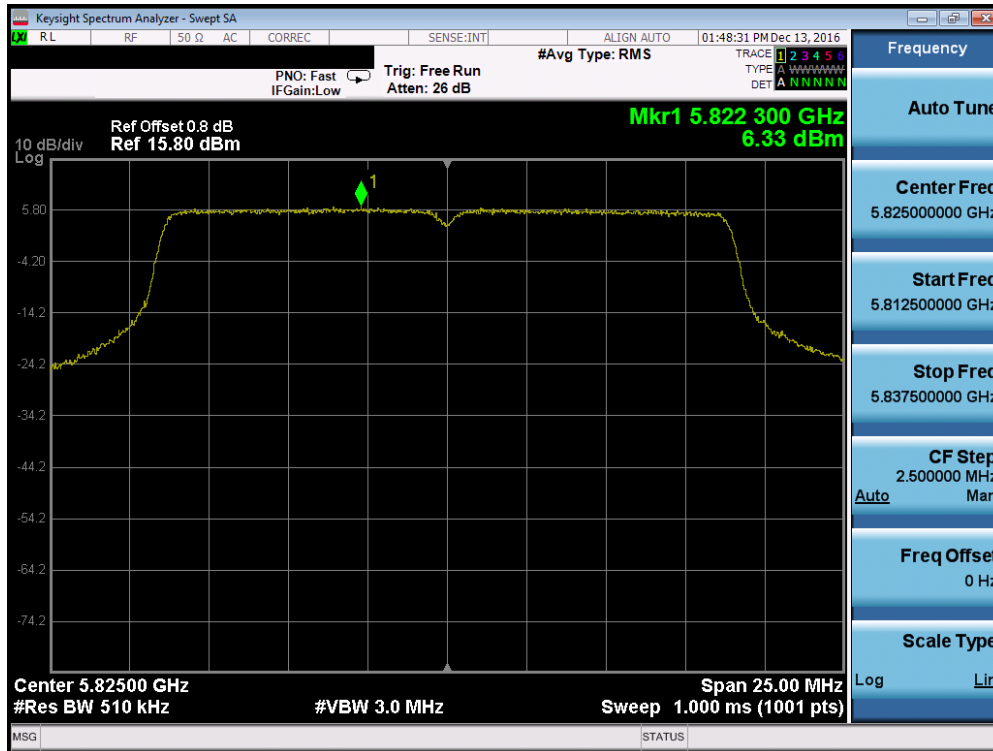


Plot 7-121. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

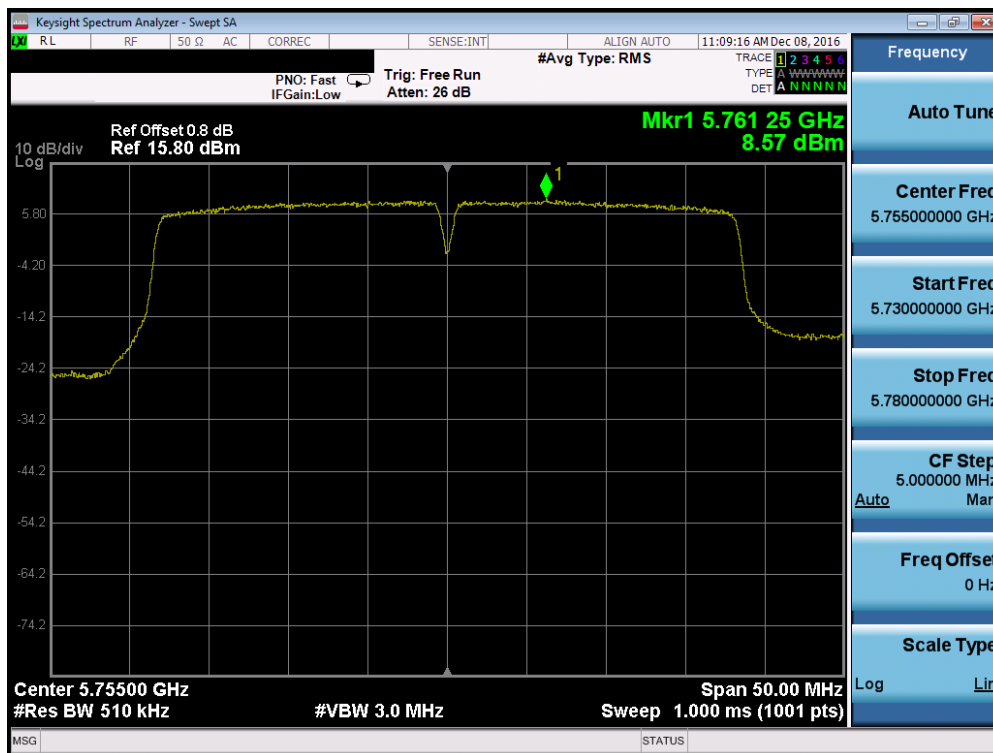


Plot 7-122. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 96 of 233

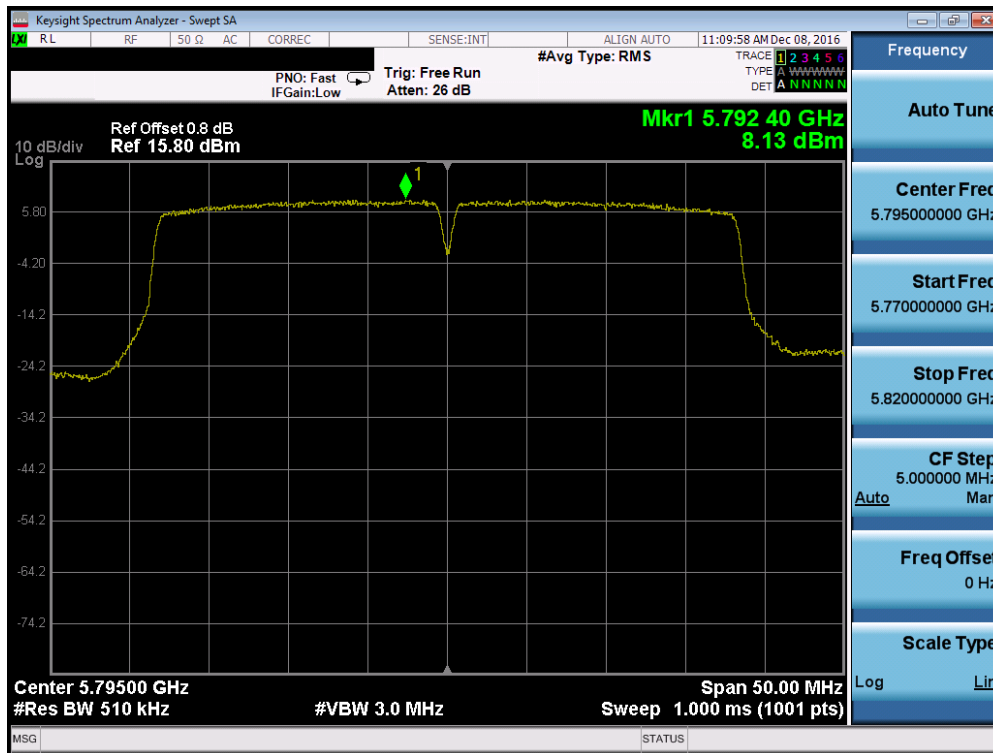


Plot 7-123. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

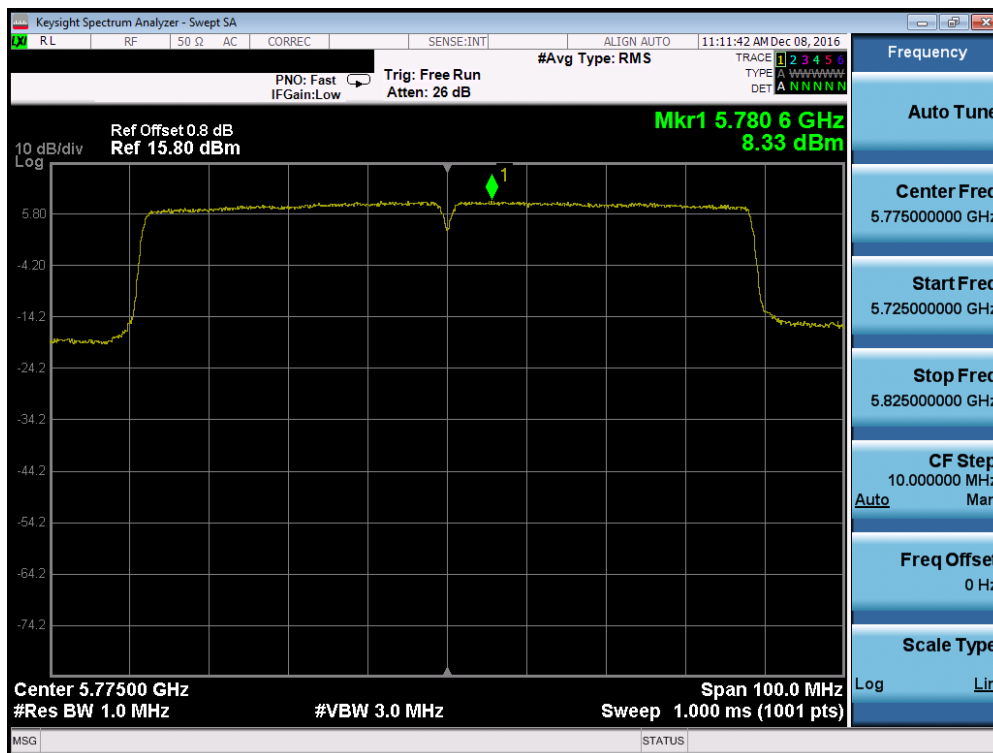


Plot 7-124. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 97 of 233



Plot 7-125. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



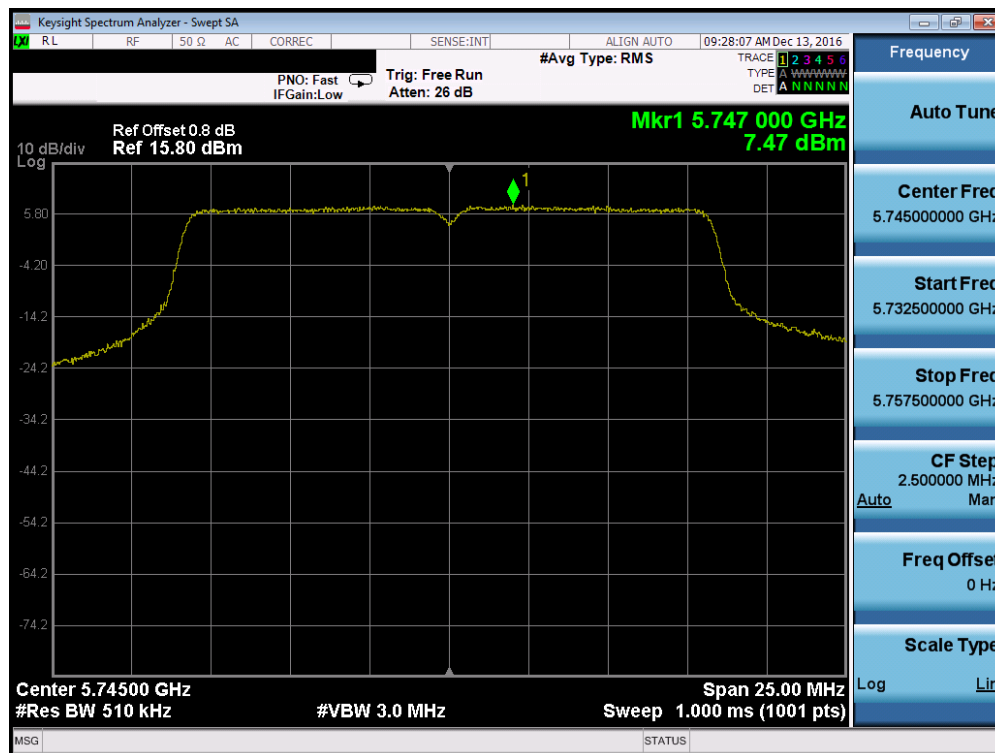
Plot 7-126. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 98 of 233

Antenna-3 Power Spectral Density Measurements

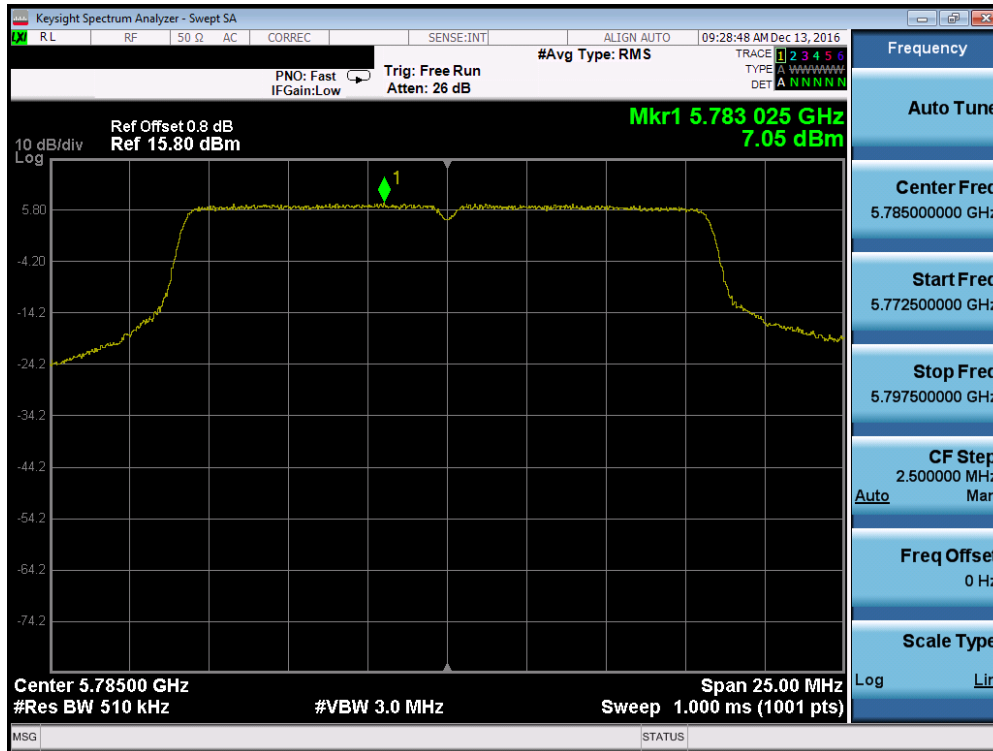
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	6.85	149	a	6	7.47	30.0	-22.53	Pass
	6.536	157	a	6	7.05	30.0	-22.95	Pass
	6.315	165	a	6	6.74	30.0	-23.26	Pass
	4.008	149	n (20MHz)	6.5/7.2 (MCS0)	6.85	30.0	-23.15	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	6.54	30.0	-23.46	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	6.32	30.0	-23.68	Pass
	3.689	151	n (40MHz)	13.5/15 (MCS0)	4.01	30.0	-25.99	Pass
	4.027	159	n (40MHz)	13.5/15 (MCS0)	3.69	30.0	-26.31	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	4.03	30.0	-25.97	Pass

Table 7-33. Band 3 Conducted Power Spectral Density Measurements

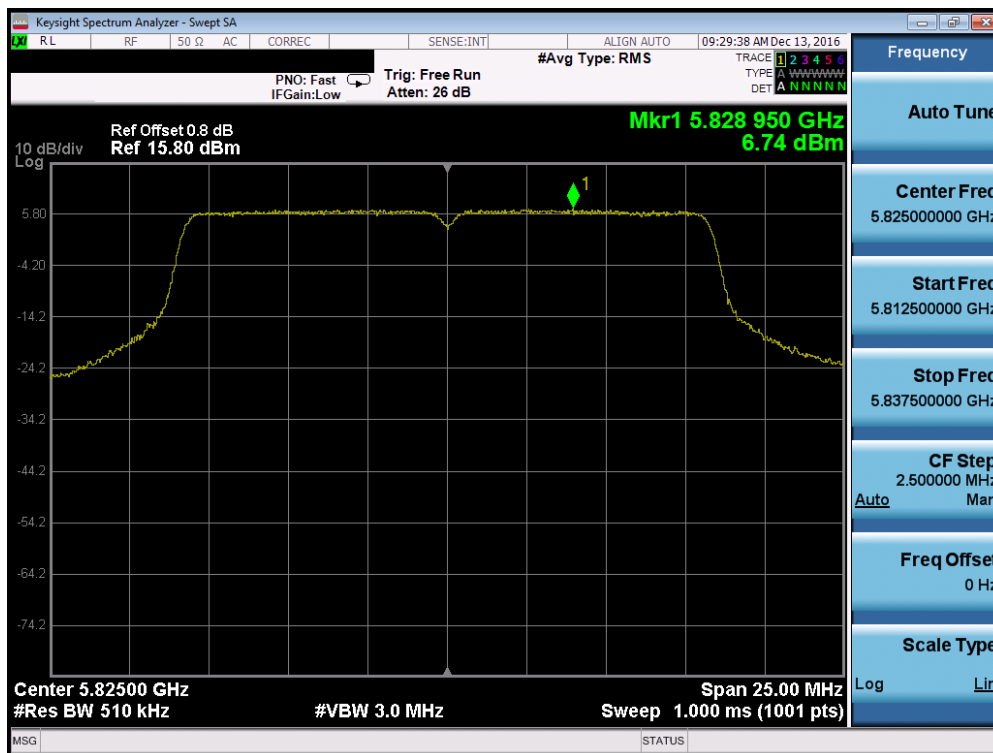


Plot 7-127. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 99 of 233

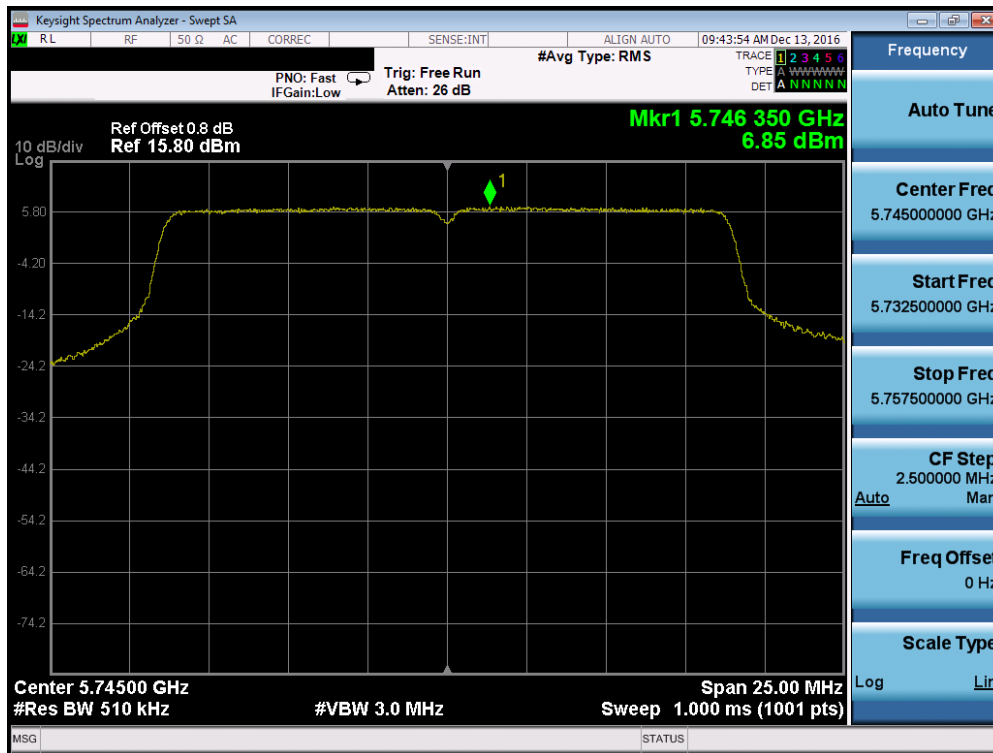


Plot 7-128. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

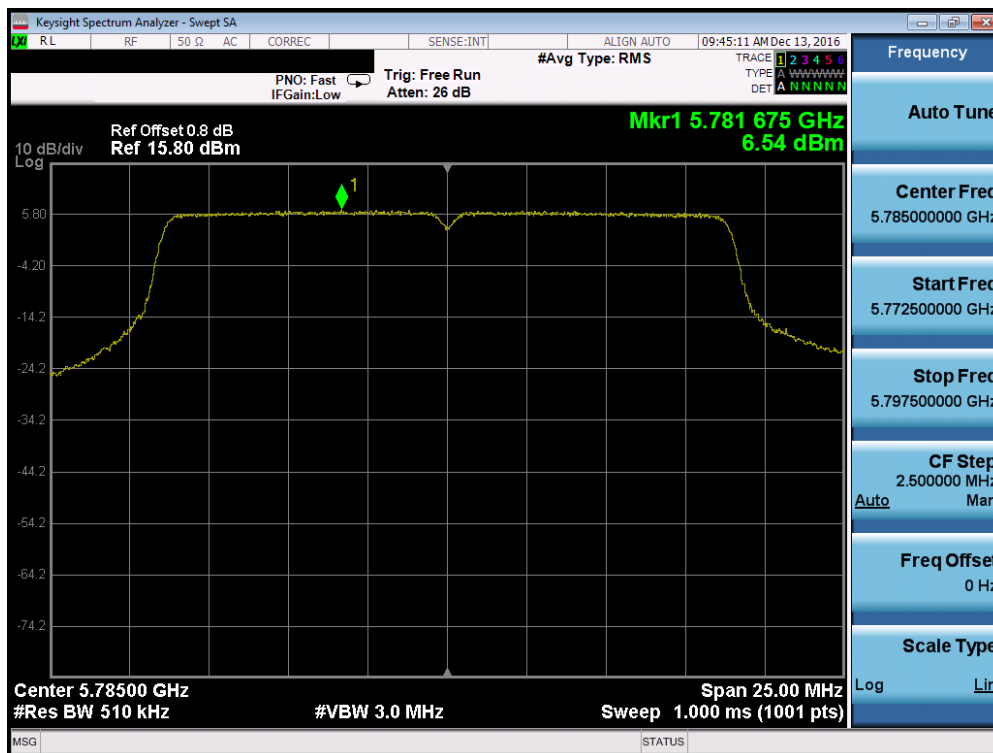


Plot 7-129. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 100 of 233

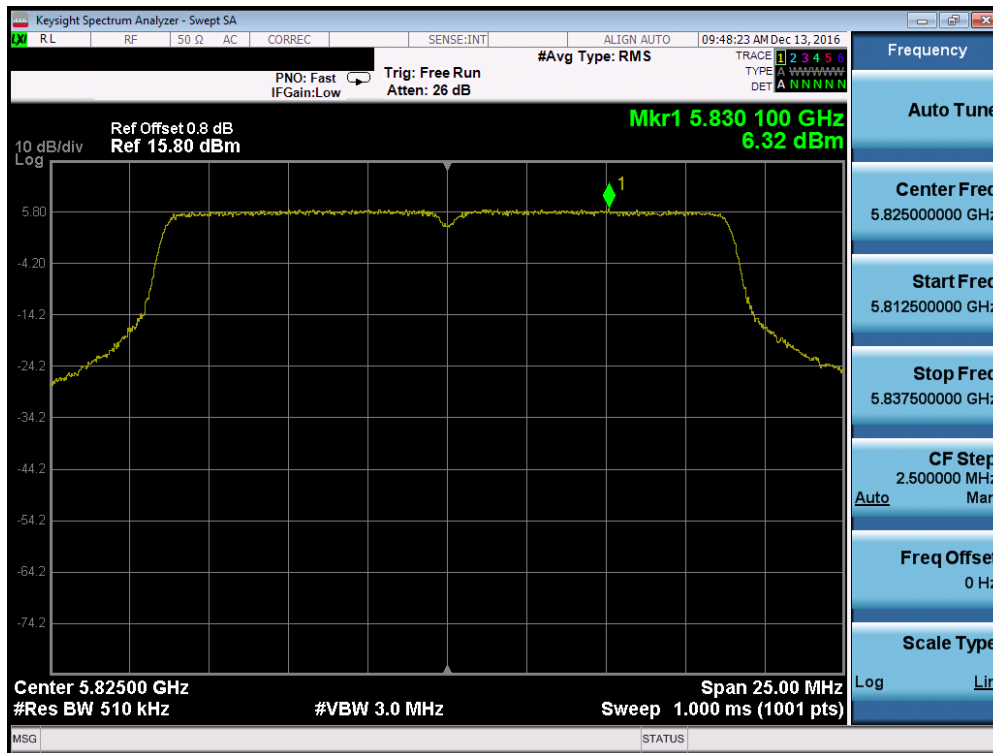


Plot 7-130. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

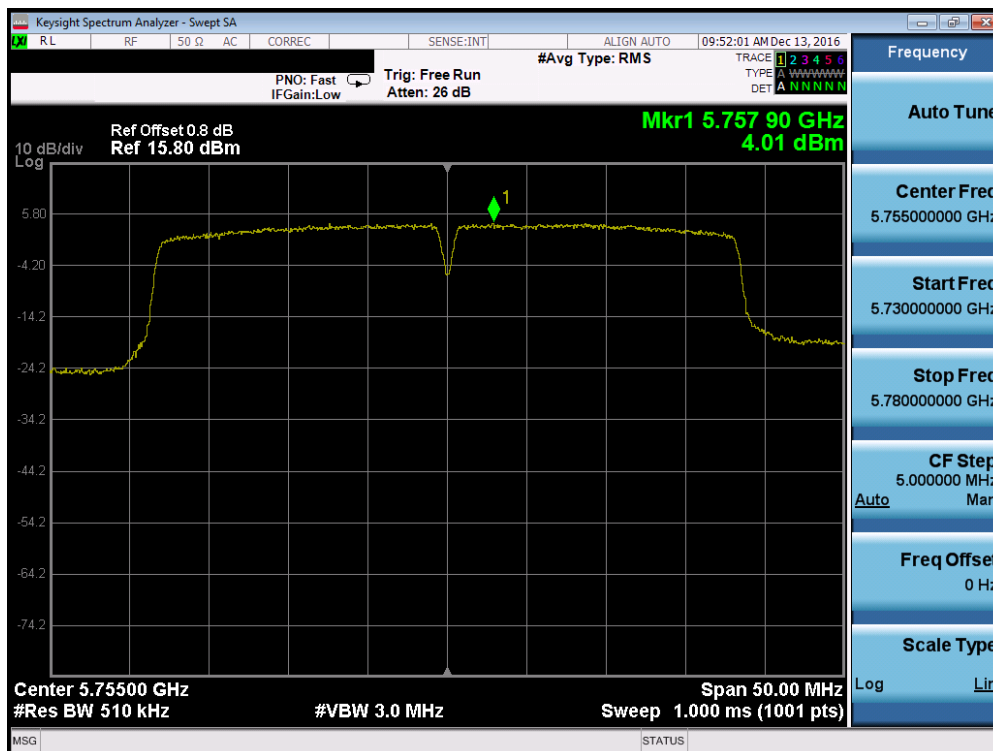


Plot 7-131. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 101 of 233

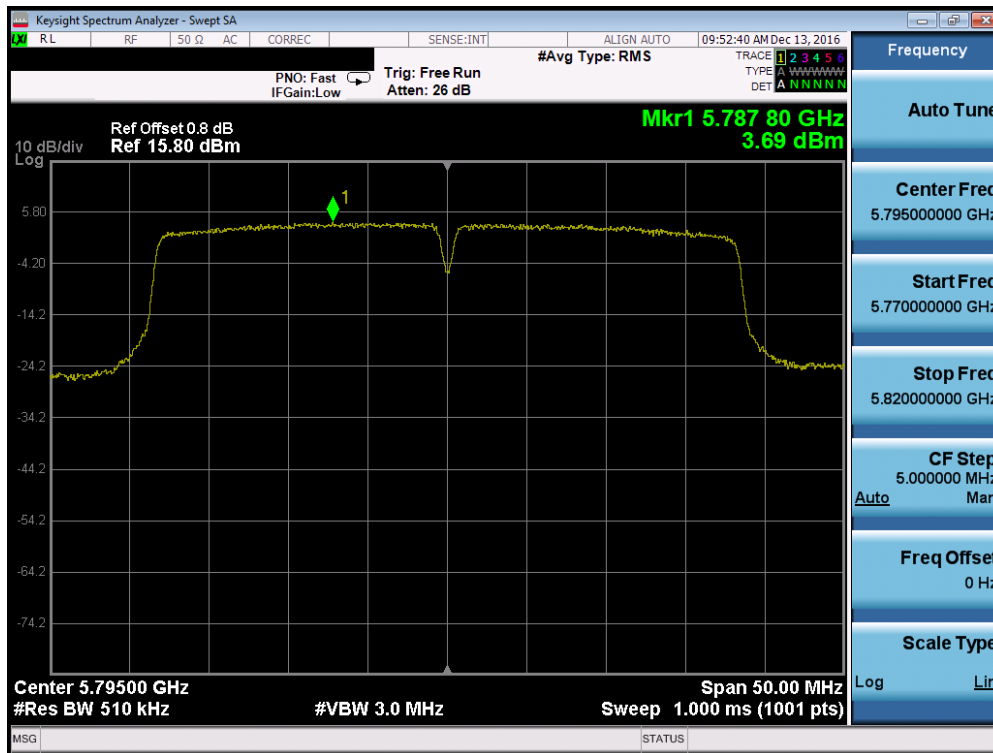


Plot 7-132. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

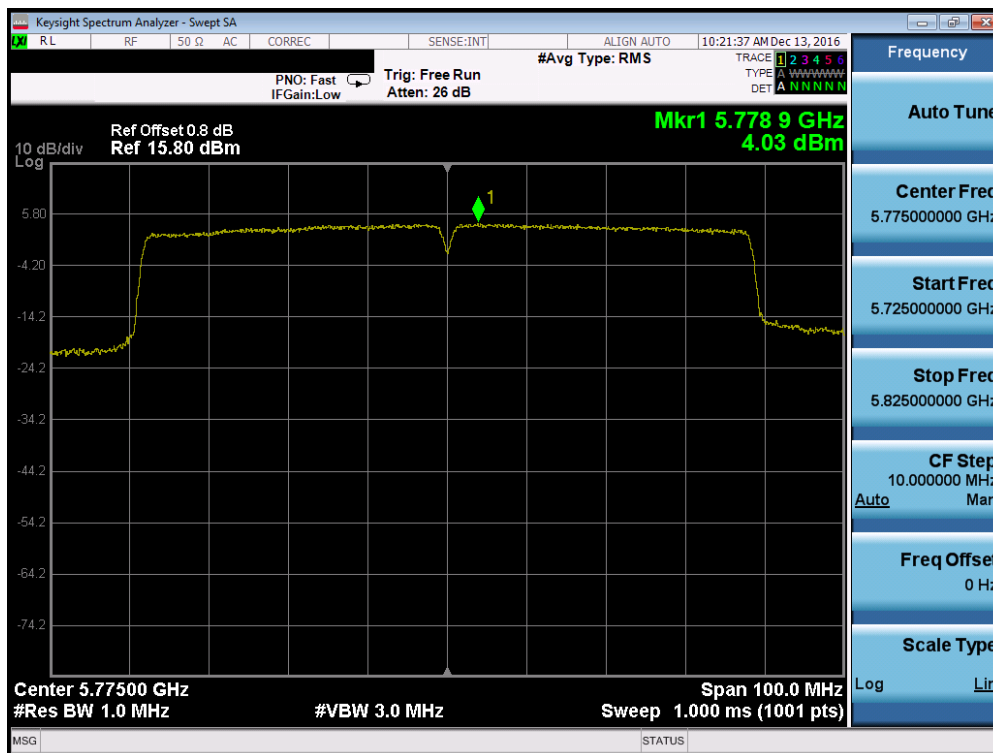


Plot 7-133. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 102 of 233



Plot 7-134. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



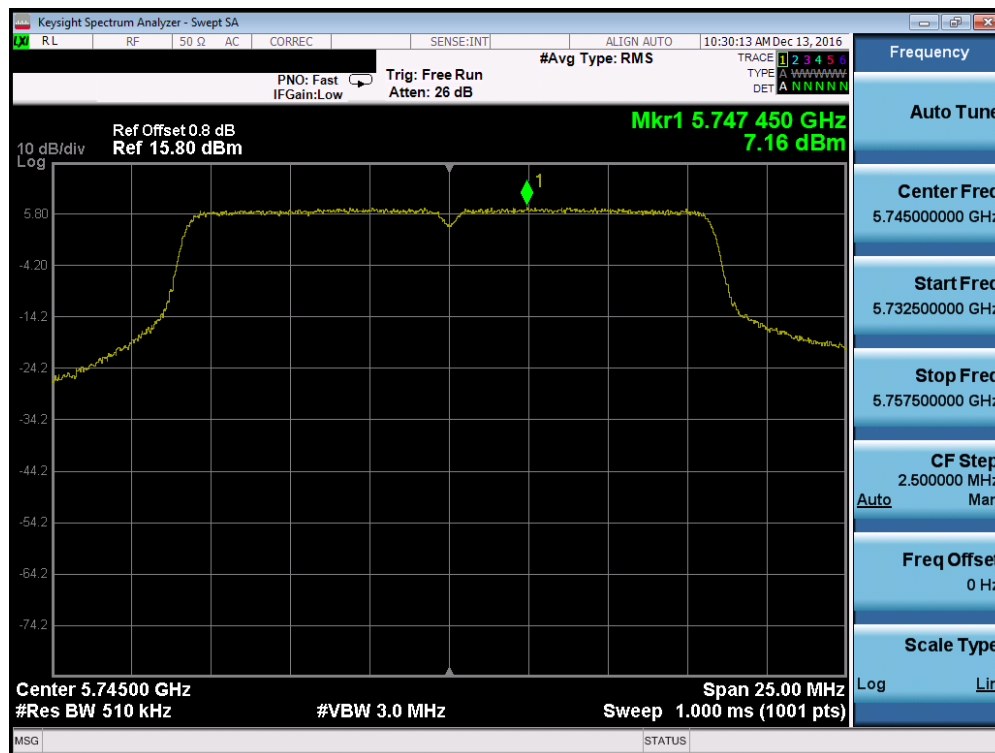
Plot 7-135. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 103 of 233

Antenna-4 Power Spectral Density Measurements

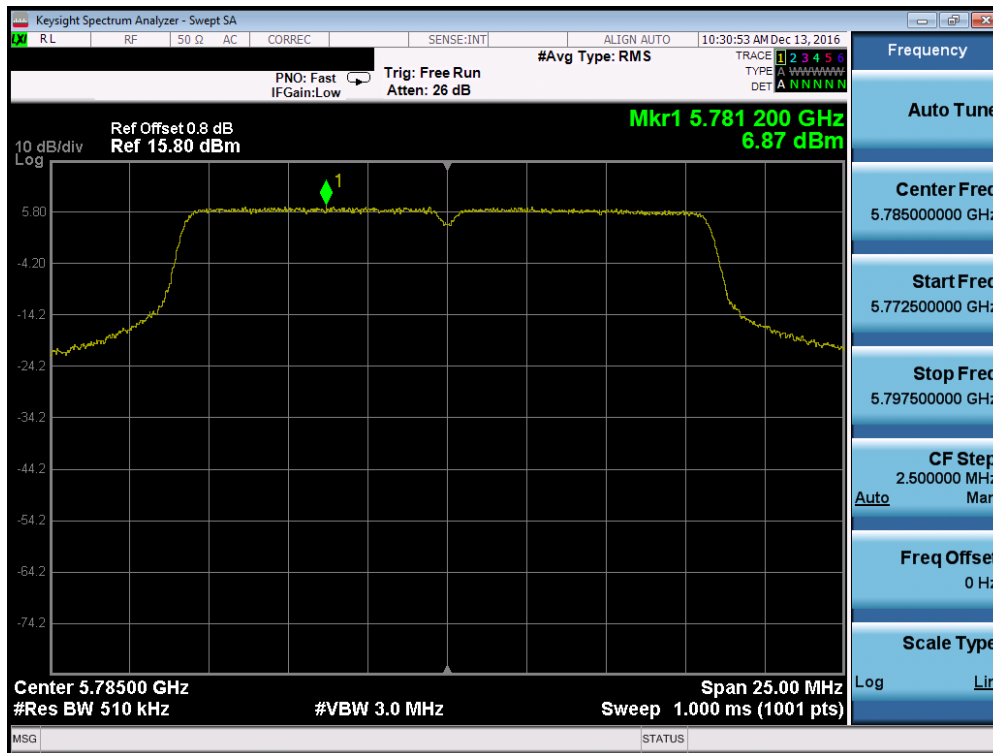
	6.884	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	6.676	149	a	6	7.16	30.0	-22.84	Pass
	6.319	157	a	6	6.87	30.0	-23.13	Pass
	6.159	165	a	6	6.88	30.0	-23.12	Pass
	3.967	149	n (20MHz)	6.5/7.2 (MCS0)	6.68	30.0	-23.32	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	6.32	30.0	-23.68	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	6.16	30.0	-23.84	Pass
	3.254	151	n (40MHz)	13.5/15 (MCS0)	3.97	30.0	-26.03	Pass
	3.619	159	n (40MHz)	13.5/15 (MCS0)	3.25	30.0	-26.75	Pass
	5775	155	ac (80MHz)	29.3/32.5 (MCS0)	3.62	30.0	-26.38	Pass

Table 7-34. Band 3 Conducted Power Spectral Density Measurements

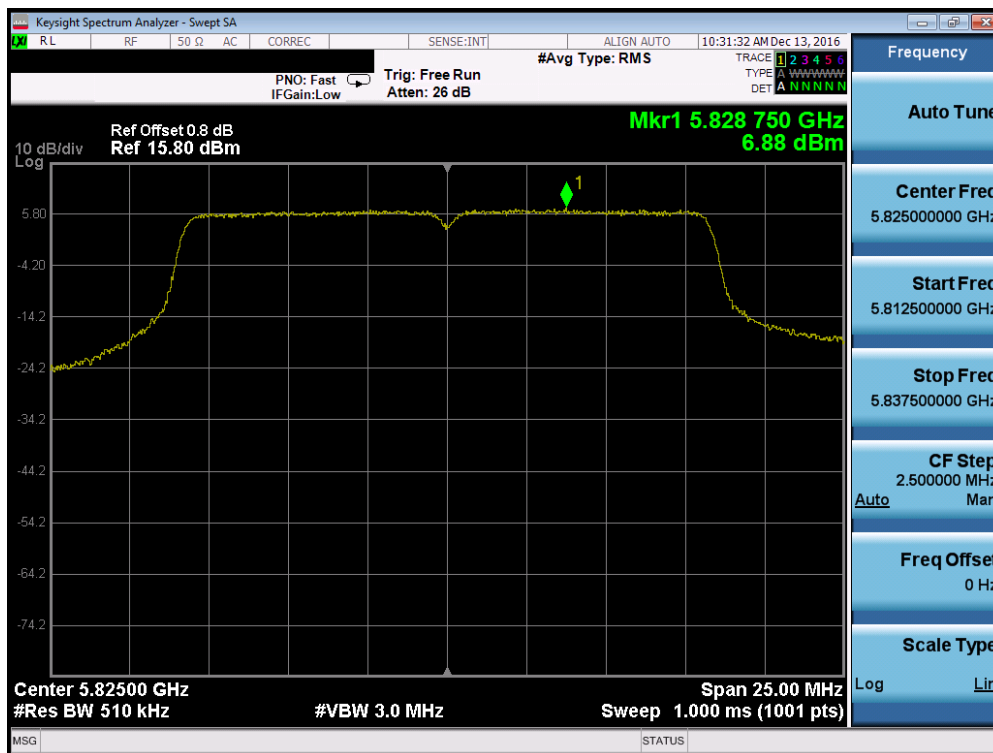


Plot 7-136. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 149)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 104 of 233

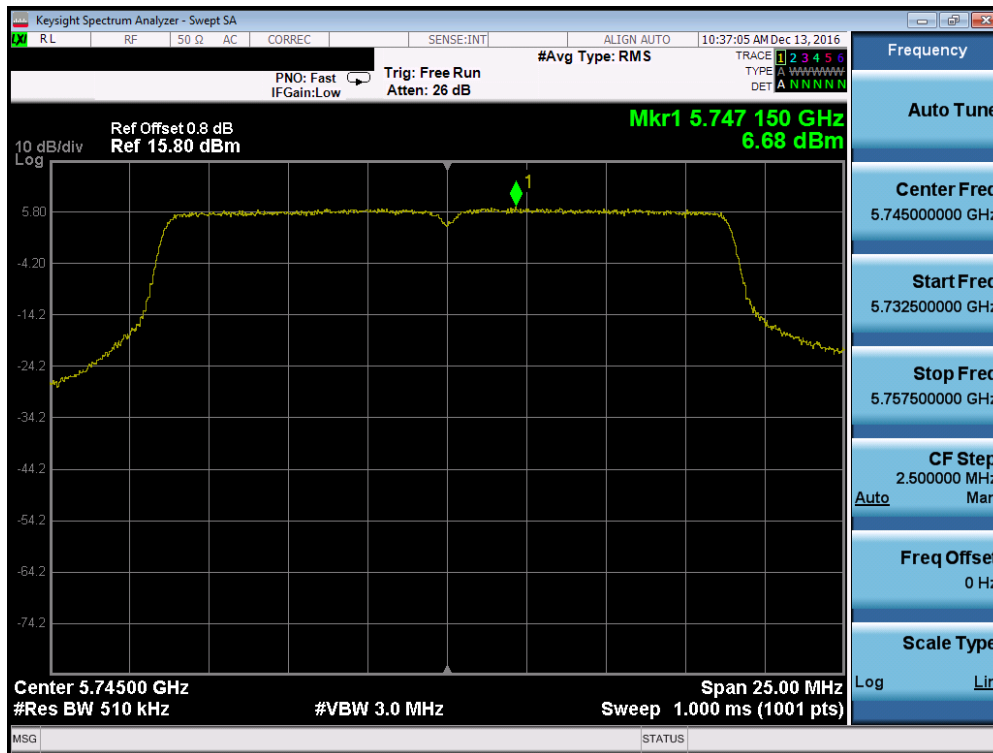


Plot 7-137. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 157)

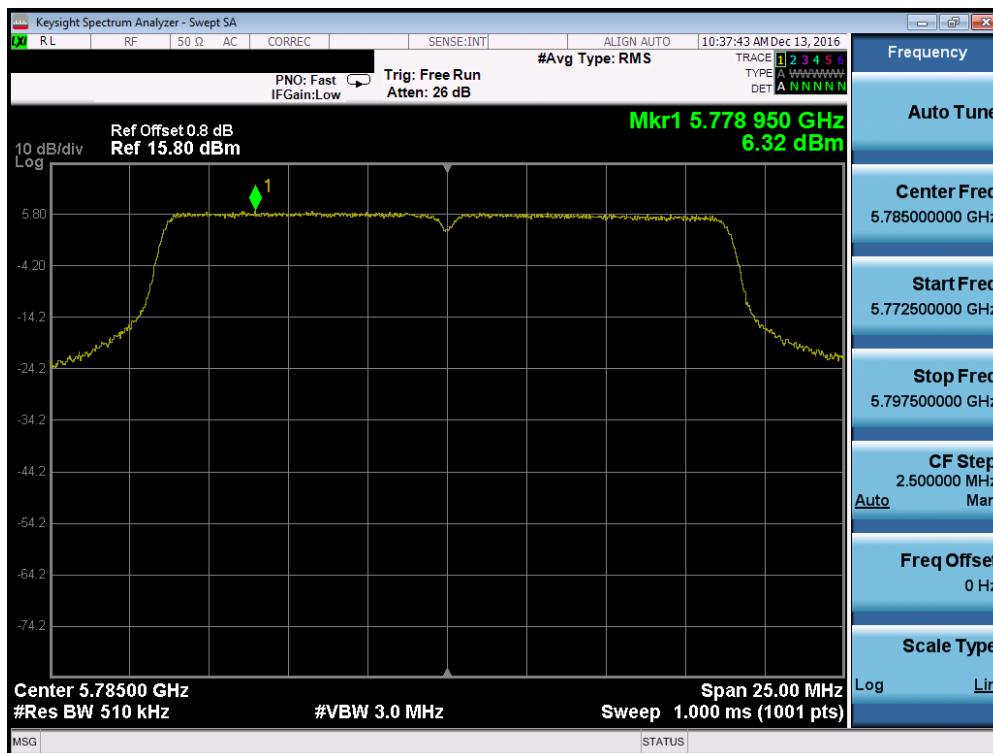


Plot 7-138. Power Spectral Density Plot (802.11a (UNII Band 3) – Ch. 165)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 105 of 233

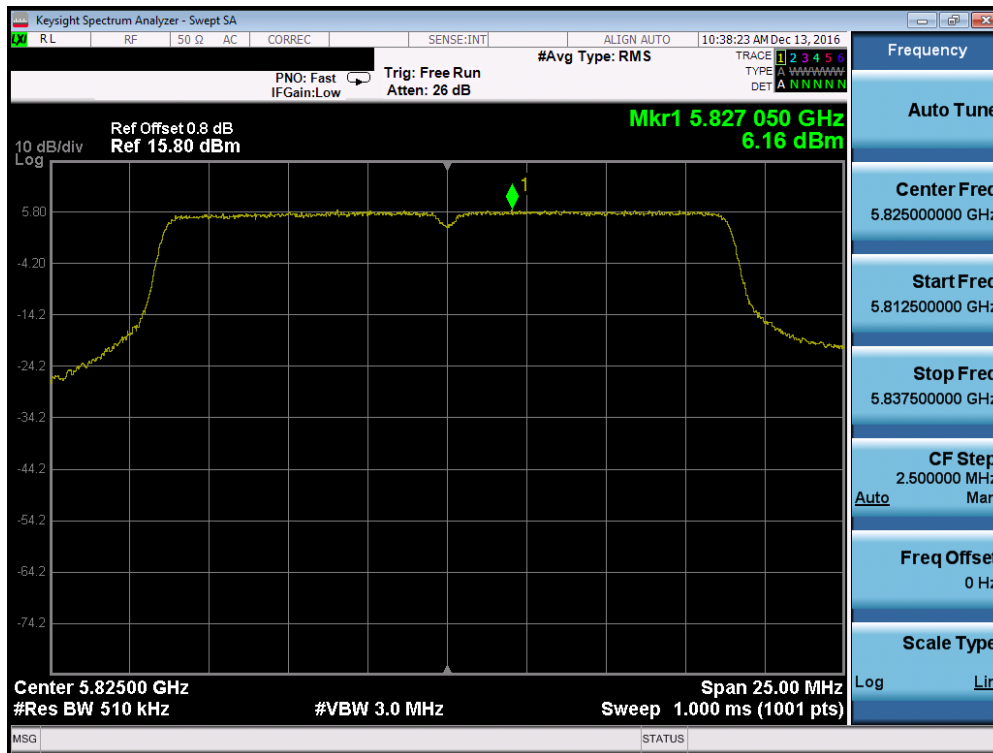


Plot 7-139. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 149)

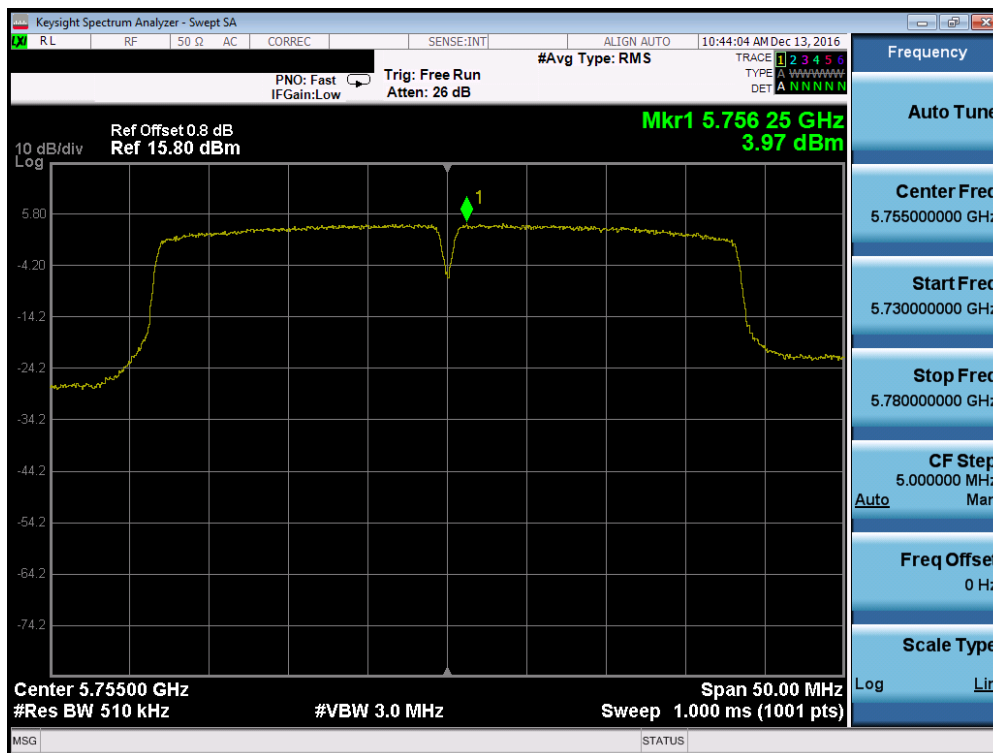


Plot 7-140. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 157)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 106 of 233

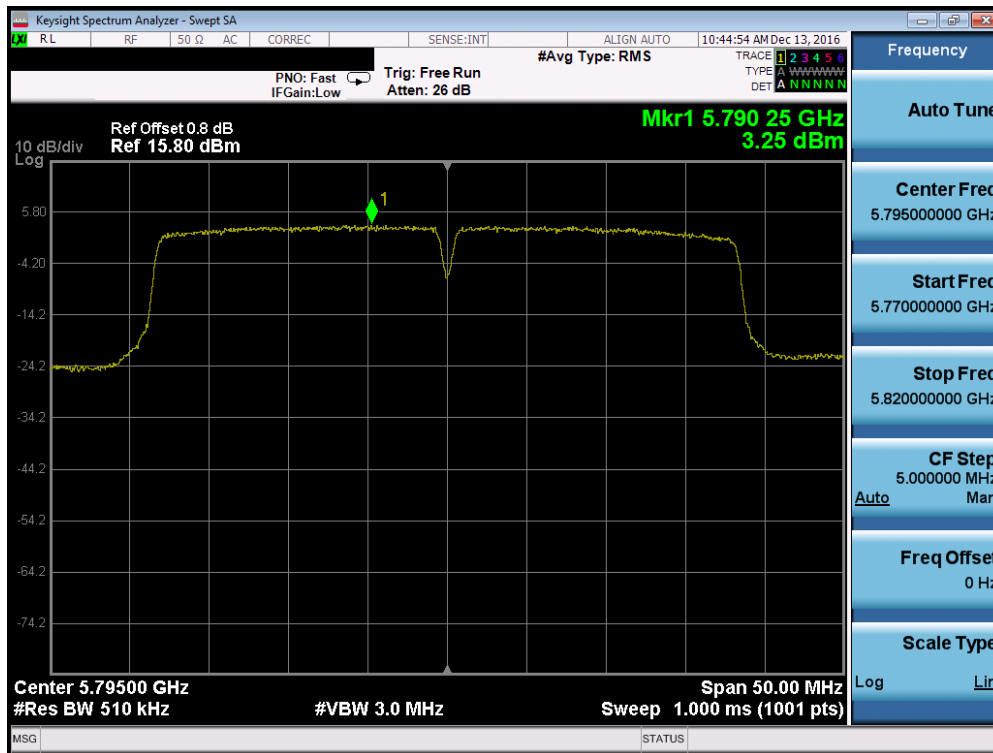


Plot 7-141. Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 165)

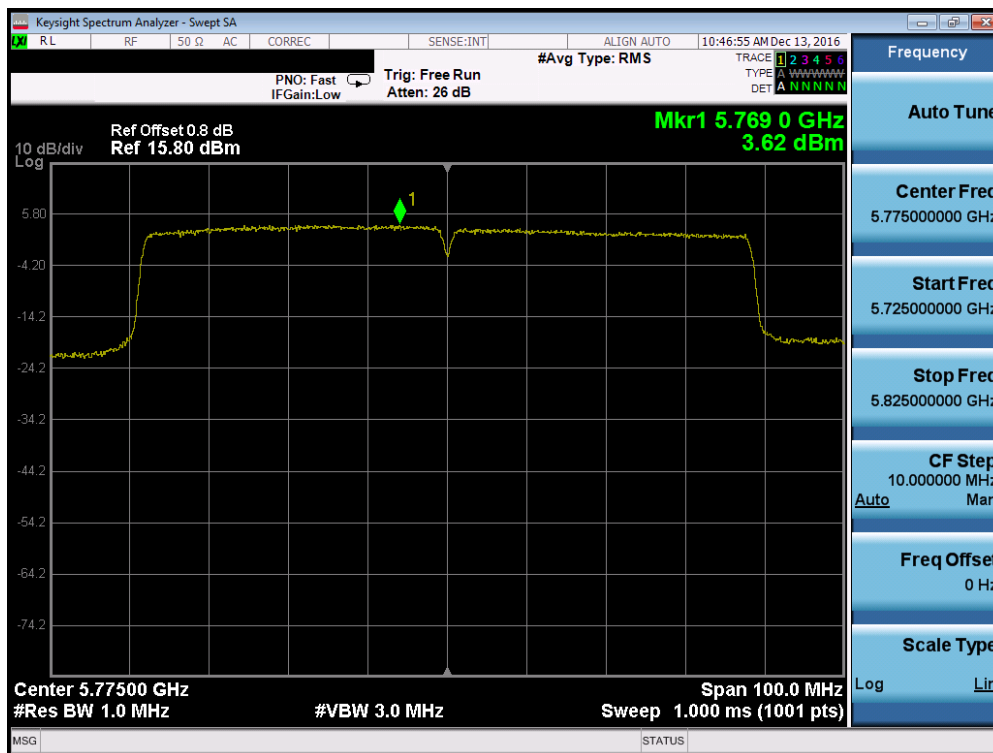


Plot 7-142. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 151)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 107 of 233



Plot 7-143. Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 159)



Plot 7-144. Power Spectral Density Plot (80MHz BW 802.11ac (UNII Band 3) – Ch. 155)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Summed MIMO Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Directional Gain [dBi]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-3 Power Density [dBm]	Antenna-4 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Adjusted Limit [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	n (20MHz)	6.5/7.2 (MCS0)	9.18	3.18	3.83	3.35	2.84	9.34	17.0	13.82	-4.48	Pass
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	9.18	3.07	3.87	3.43	2.82	9.34	17.0	13.82	-4.48	Pass
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	9.19	3.20	3.38	2.97	2.86	9.13	17.0	13.81	-4.68	Pass
	5190	38	n (40MHz)	13.5/15 (MCS0)	9.18	0.68	1.12	0.88	-0.32	6.64	17.0	13.82	-7.18	Pass
	5230	46	n (40MHz)	13.5/15 (MCS0)	9.18	0.85	0.69	0.41	-0.09	6.50	17.0	13.82	-7.32	Pass
	5210	42	ac (80MHz)	29.3/32.5 (MCS0)	9.19	0.98	1.46	1.02	0.35	6.99	17.0	13.81	-6.82	Pass

Table 7-35. Band 1 MIMO Conducted Power Spectral Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Directional Gain [dBi]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-3 Power Density [dBm]	Antenna-4 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Adjusted Limit [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	5745	149	n (20MHz)	6.5/7.2 (MCS0)	9.48	7.81	6.95	6.85	6.68	13.12	30.0	26.5	-13.40	Pass
	5785	157	n (20MHz)	6.5/7.2 (MCS0)	9.48	6.60	6.46	6.54	6.32	12.50	30.0	26.5	-14.02	Pass
	5825	165	n (20MHz)	6.5/7.2 (MCS0)	9.87	7.25	6.33	6.32	6.16	12.56	30.0	26.1	-13.57	Pass
	5755	151	n (40MHz)	13.5/15	9.48	4.54	8.57	4.01	3.97	11.78	30.0	26.5	-14.74	Pass
	5795	159	n (40MHz)	13.5/15	9.48	4.12	8.13	3.69	3.25	11.32	30.0	26.5	-15.20	Pass
	5775	155	ac (80MHz)	29.3/32.5	9.87	4.44	8.33	4.03	3.62	11.59	30.0	26.1	-14.54	Pass

Table 7-36. Band 3 MIMO Conducted Power Spectral Density Measurements

Note:

Per KDB 662911 v02r01 Section E)2), the power spectral density at Antenna 1, Antenna 2, Antenna 3 and Antenna 4 were first measured separately as shown in the section above. The measured values were then summed in linear power units then converted back to dBm.

Per KDB 662911 v02r01, Section F)2), the directional gain is calculated using the following formula, where G_n is the gain of the nth antenna and N_{ANT} , the total number of antennas used.

$$\text{Directional gain} = 10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})^2 / N_{ANT}] \text{ dBi}$$

The Power Density limits were then adjusted using the following formula:

$$\text{Max permissible power density} = [6 - (\text{Directional gain})]$$

Sample MIMO Calculation:

At 5180MHz the average conducted power spectral density was measured to be N/A dBm for Antenna-1, N/A dBm for Antenna-2, 3.35 dBm for Antenna-3, and 2.84 dBm for Antenna-4.

$$\text{Antenna 1} + \text{Antenna 2} + \text{Antenna 3} + \text{Antenna 4} = \text{MIMO}$$

$$(N/A \text{ dBm} + N/A \text{ dBm} + 3.35 \text{ dBm} + 2.84 \text{ dBm}) = (N/A \text{ mW} + N/A \text{ mW} + 2.16 \text{ mW} + 1.92 \text{ mW}) = 8.58 \text{ mW} = N/A \text{ dBm}$$

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7.6 Frequency Stability

§15.407(g)

The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° 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.

OPERATING FREQUENCY: 5,180,000,000 Hz
 CHANNEL: 36
 REFERENCE VOLTAGE: 120 VAC

VOLTAGE (%)	POWER (VAC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	120	+ 20 (Ref)	5,180,022,885	0	0.00000000
100 %		- 30	5,180,053,528	-30,643	-0.00059156
100 %		- 20	5,180,027,582	-4,696	-0.00009066
100 %		- 10	5,180,079,270	-56,385	-0.00108851
100 %		0	5,180,037,062	-14,177	-0.00027369
100 %		+ 10	5,180,081,262	-58,377	-0.00112697
100 %		+ 20	5,180,032,995	-10,110	-0.00019518
100 %		+ 30	5,180,012,963	9,922	0.00019155
100 %		+ 40	5,180,028,022	-5,137	-0.00009917
100 %		+ 50	5,180,038,676	-15,791	-0.00030484
115 %	138	+ 20	5,180,057,576	-34,691	-0.00066971
85 %	102	+ 20	5,180,047,676	-24,791	-0.00047859

Table 7-37. Frequency Stability Measurements for UNII Band U1 (Ch. 36)

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 and voltage range as tested.

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Frequency Stability

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The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -30°C and +50°C. The temperature was incremented by 10° 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.

OPERATING FREQUENCY: 5,745,000,000 Hz
 CHANNEL: 149
 REFERENCE VOLTAGE: 120 VAC

VOLTAGE (%)	POWER (VAC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	120	+ 20 (Ref)	5745032995	0	0.00000000
100 %		- 30	5745073538	-40,542	-0.00070570
100 %		- 20	5745057692	-24,696	-0.00042987
100 %		- 10	5745039469	-6,474	-0.00011269
100 %		0	5745038093	-5,098	-0.00008874
100 %		+ 10	5745027372	5,623	0.00009788
100 %		+ 20	5745032995	0	0.00000000
100 %		+ 30	5745032995	0	0.00000000
100 %		+ 40	5745036022	-3,027	-0.00005269
100 %		+ 50	5745049686	-16,691	-0.00029053
115 %	138	+ 20	5745038686	-5,691	-0.00009906
85 %	102	+ 20	5745039386	-6,391	-0.00011124

Table 7-38. Frequency Stability Measurements for UNII Band 3 (Ch. 149)

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 and voltage range as tested.

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7.7 Radiated Spurious Emission Measurements – Above 1GHz

§15.407(b) §15.205 §15.209

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at its maximum power control level, as defined in KDB 789033 D02 v01r04, and at the appropriate frequencies. All channels, modes (e.g. 802.11a, 802.11n (20MHz BW), 802.11n (40MHz BW), and 802.11ac (80MHz)), and modulations/data rates were investigated among all UNII bands. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

For transmitters operating in the 5.15-5.25 GHz shall not exceed an EIRP of -27 dBm/MHz.

For transmitters operating in the 5.725-5.85 GHz 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.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 7-39 per Section 15.209.

Frequency	Field Strength [μV/m]	Measured Distance [Meters]
Above 960.0 MHz	500	3

Table 7-39. Radiated Limits

Test Procedures Used

KDB 789033 D02 v01r04 – Section G

Test Settings

Average Measurements above 1GHz (Method AD)

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = power average (RMS)
5. Number of measurement points = 1001 (Number of points must be $\geq 2 \times \text{span/RBW}$)
6. Averaging type = power (RMS)
7. Sweep time = auto couple
8. Trace was averaged over 100 sweeps

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Peak Measurements above 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = 120kHz
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

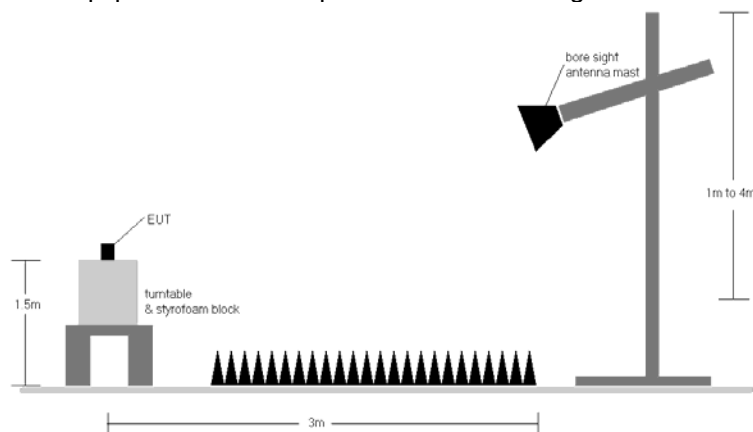


Figure 7-5. Test Instrument & Measurement Setup

Test Notes

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 D02 v01r04 Section G.
2. All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 7-39.

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3. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-39. All spurious emissions that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz. At a distance of 3 meters, the field strength limit in dB μ V/m can be determined by adding a “conversion” factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB μ V/m.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. This unit was tested with its standard battery.
6. The spectrum is measured from 9kHz to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, average and peak measurements were taken using linearly polarized horn antennas. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
7. Emissions below 18GHz were measured at a 3 meter test distance while emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
8. Radiated spurious emissions were investigated while operating in MIMO mode, however, it was determined that single antenna operation produced the worst case emissions. Since the emissions produced from MIMO operation were found to be more than 20dB below the limit, the MIMO emissions are not reported.
9. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. Any emissions found to be within 20dB of the limit are fully investigated and the results are shown in this section. Rohde & Schwarz EMC32, Version 9.15.00 automated test software was used to perform the Radiated Spurious Emissions Pre-Scan testing.
10. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Sample Calculations

Determining Spurious Emissions Levels

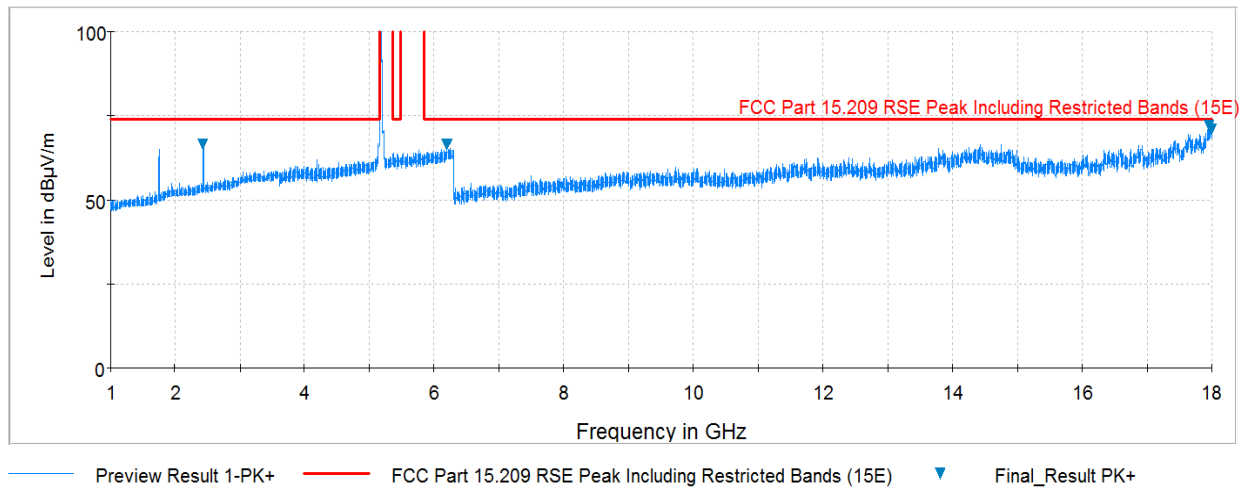
- o Field Strength Level [dB μ V/m] = Analyzer Level [dBm] + 107 + AFCL [dB/m]
- o AFCL [dB/m] = Antenna Factor [dB/m] + Cable Loss [dB]
- o Margin [dB] = Field Strength Level [dB μ V/m] – Limit [dB μ V/m]

Radiated Band Edge Measurement Offset

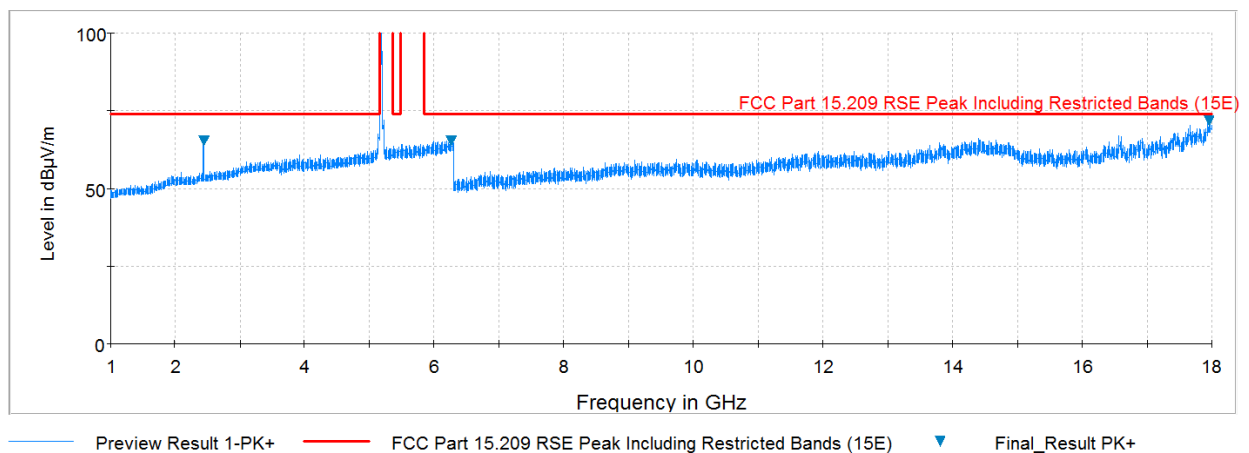
- o The amplitude offset shown in the radiated restricted band edge plots in Section 7.7 was calculated using the formula:
Offset (dB) = (Antenna Factor + Cable Loss + Attenuator) – Preamplifier Gain

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7.7.1 Antenna-1 Radiated Spurious Emission Measurements

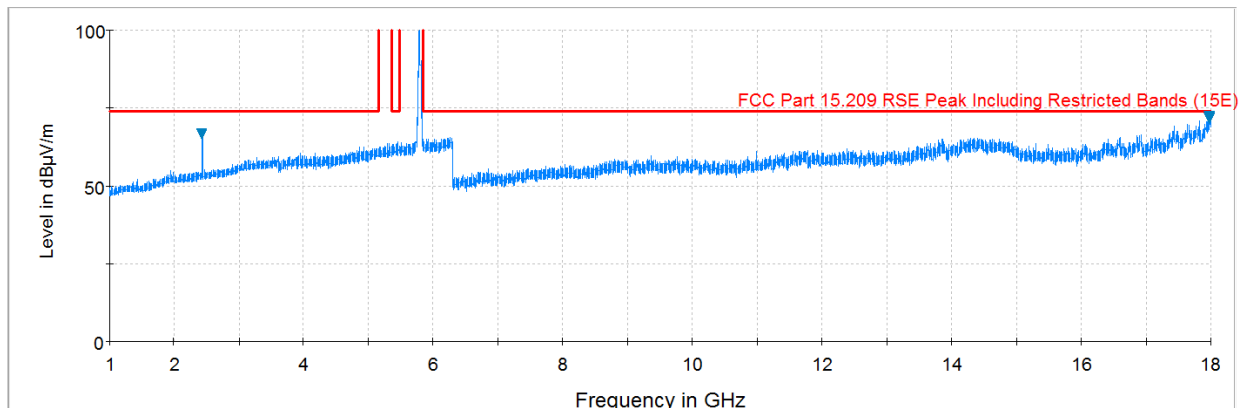


Plot 7-145. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)



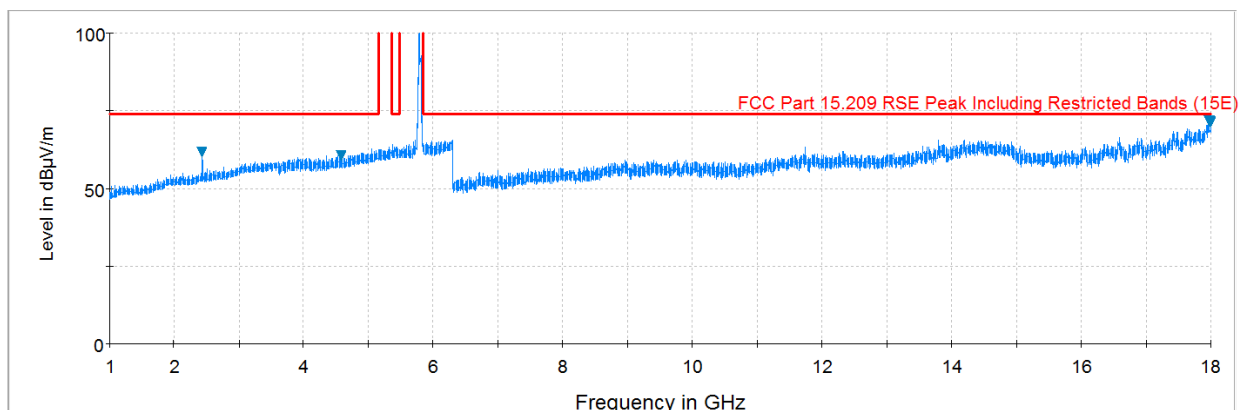
Plot 7-146. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

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Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-147. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



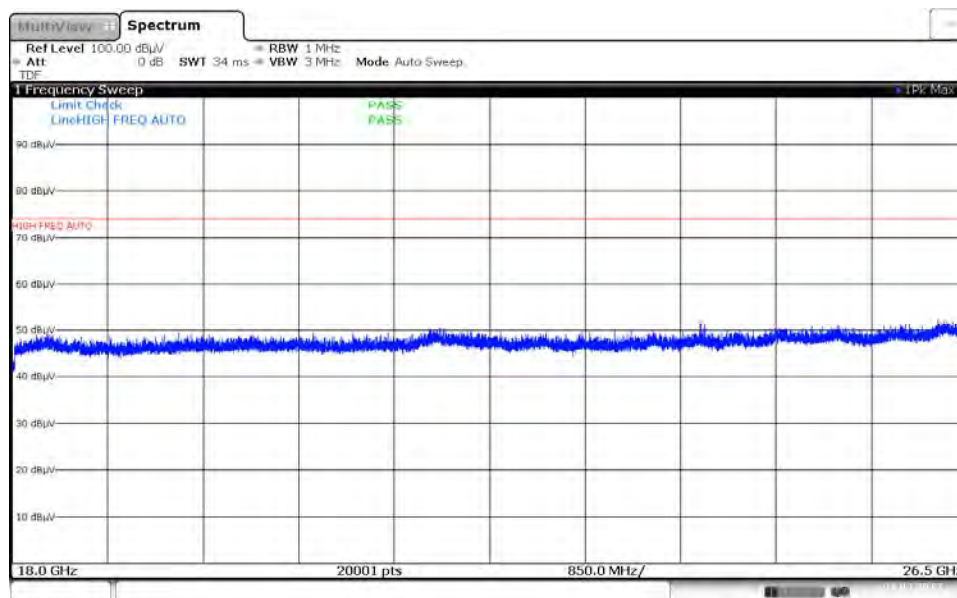
Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-148. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

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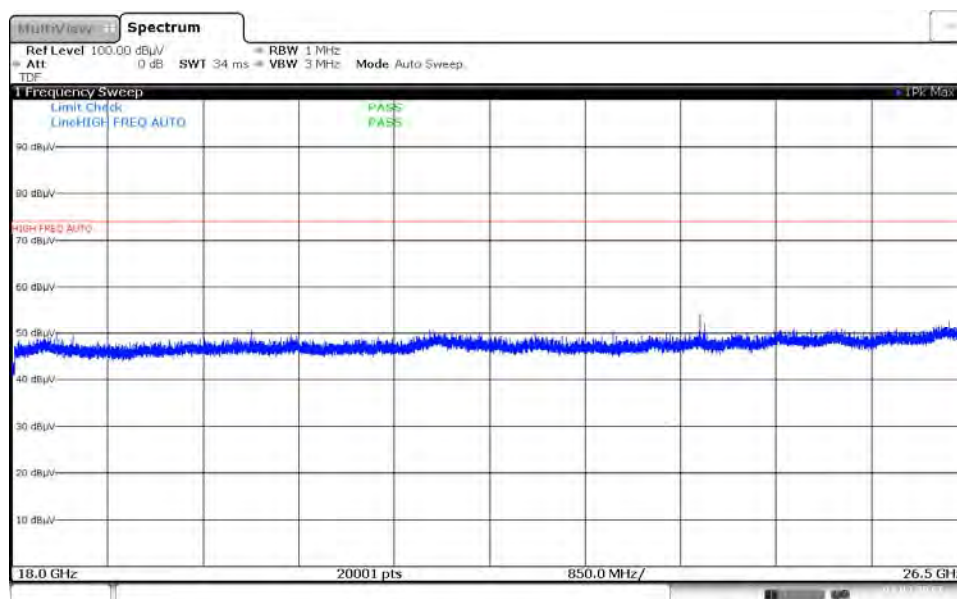
Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



13:43:55 07.02.2017

Plot 7-149. Radiated Spurious Plot 18GHz - 26.5GHz (802.11a – Ant. Pol. H)



13:45:40 07.02.2017

Plot 7-150. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. V)

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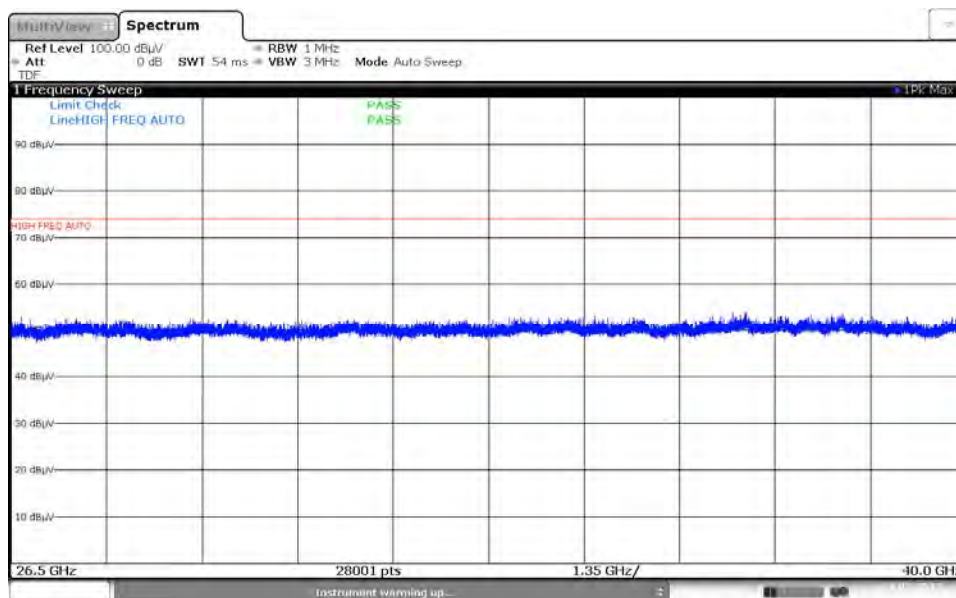
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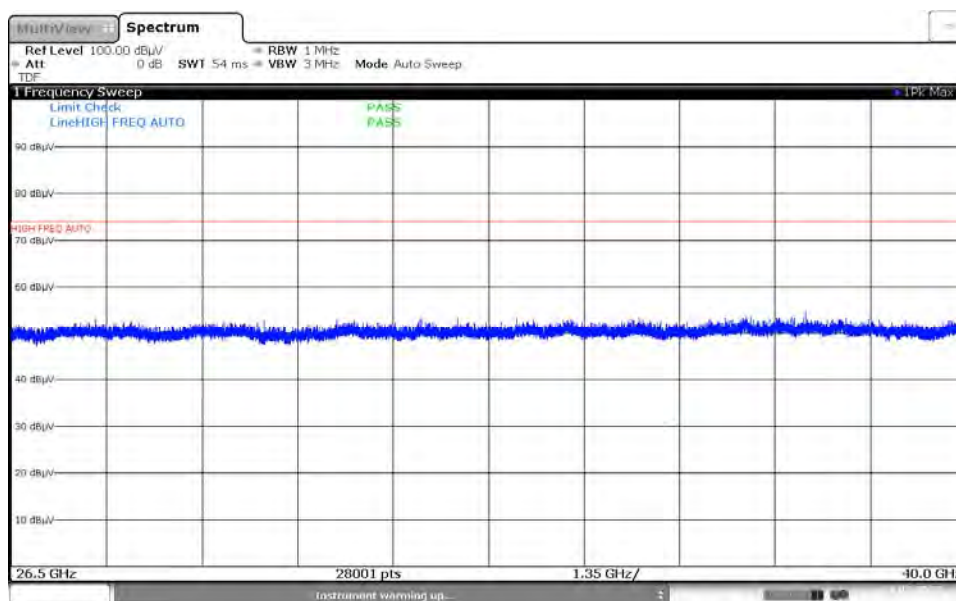
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Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Plot 7-151. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a – Ant. Pol. H)



Plot 7-152. Radiated Spurious Plot above 26.5GHz - 40GHz (802.11a – Ant. Pol. V)

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Antenna-1 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5180MHz
Channel: 36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	V	-	-	-58.41	11.80	0.00	60.39	68.20	-7.81
* 15540.00	Average	V	-	-	-74.25	17.66	0.00	50.41	53.98	-3.57
* 15540.00	Peak	V	-	-	-58.46	17.66	0.00	66.20	73.98	-7.78
* 20720.00	Average	V	-	-	-108.49	44.43	-9.54	33.40	53.98	-20.58
* 20720.00	Peak	V	-	-	-96.16	44.43	-9.54	45.73	73.98	-28.25
25900.00	Peak	V	-	-	-96.30	45.16	-9.54	46.32	68.20	-21.88

Table 7-40. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5200MHz
Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	V	-	-	-59.47	11.53	0.00	59.06	68.20	-9.14
* 15600.00	Average	V	-	-	-74.23	17.52	0.00	50.29	53.98	-3.69
* 15600.00	Peak	V	-	-	-57.69	17.52	0.00	66.83	73.98	-7.15
* 20800.00	Average	V	-	-	-108.41	44.43	-9.54	33.48	53.98	-20.50
* 20800.00	Peak	V	-	-	-96.09	44.43	-9.54	45.80	73.98	-28.18
26000.00	Peak	V	-	-	-96.27	45.16	-9.54	46.35	68.20	-21.85

Table 7-41. Radiated Measurements

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Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	-	-	-59.43	11.82	0.00	59.39	68.20	-8.81
* 15720.00	Average	V	-	-	-74.35	18.10	0.00	50.75	53.98	-3.23
* 15720.00	Peak	V	-	-	-57.88	18.10	0.00	67.22	73.98	-6.76
* 20960.00	Average	V	-	-	-108.76	44.45	-9.54	33.15	53.98	-20.83
* 20960.00	Peak	V	-	-	-96.00	44.45	-9.54	45.91	73.98	-28.07
26200.00	Peak	V	-	-	-92.69	45.07	-9.54	49.84	68.20	-18.36

Table 7-42. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	V	-	-	-78.55	21.68	0.00	50.13	53.98	-3.85
* 11490.00	Peak	V	-	-	-59.31	21.68	0.00	69.37	73.98	-4.61
17235.00	Peak	V	-	-	-69.34	27.16	0.00	64.82	68.20	-3.38
* 22980.00	Average	V	-	-	-108.74	44.72	-9.54	33.44	53.98	-20.54
* 22980.00	Peak	V	-	-	-96.39	44.72	-9.54	45.79	73.98	-28.19
28725.00	Peak	V	-	-	-102.88	48.09	-9.54	42.67	68.20	-25.53

Table 7-43. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 120 of 233

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-77.57	21.53	0.00	50.96	53.98	-3.01
* 11570.00	Peak	V	-	-	-59.20	21.53	0.00	69.33	73.98	-4.64
17355.00	Peak	V	-	-	-70.22	26.72	0.00	63.50	68.20	-4.70
23140.00	Peak	V	-	-	-96.24	44.84	-9.54	46.06	68.20	-22.14
28925.00	Peak	V	-	-	-102.41	48.09	-9.54	43.14	68.20	-25.06

Table 7-44. Radiated Measurements

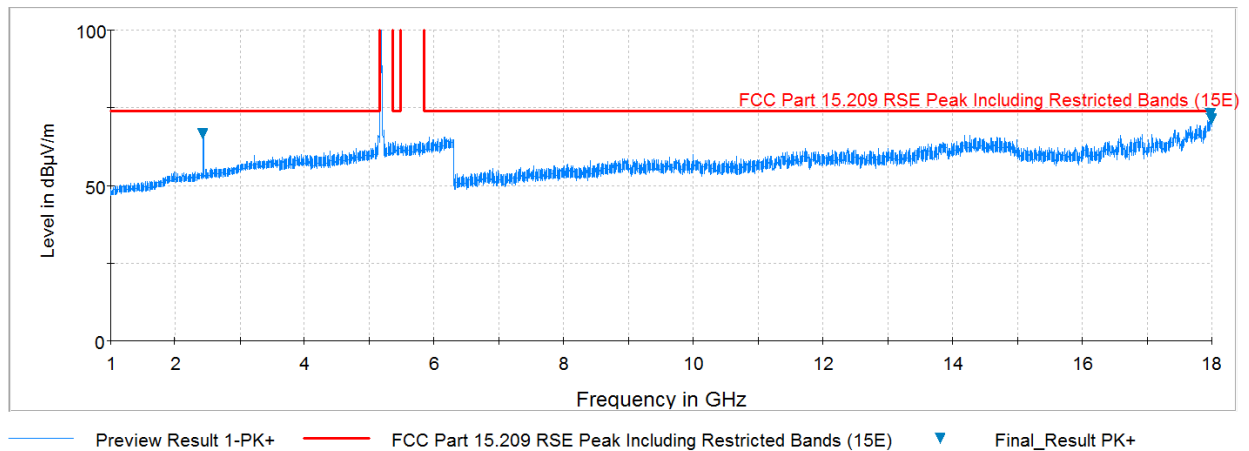
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-77.54	21.46	0.00	50.92	53.98	-3.06
* 11650.00	Peak	V	-	-	-59.34	21.46	0.00	69.12	73.98	-4.86
17475.00	Peak	V	-	-	-69.27	25.78	0.00	63.51	68.20	-4.69
23300.00	Peak	V	-	-	-96.06	44.86	-9.54	46.26	68.20	-21.94
29125.00	Peak	V	-	-	-102.66	48.09	-9.54	42.89	68.20	-25.31

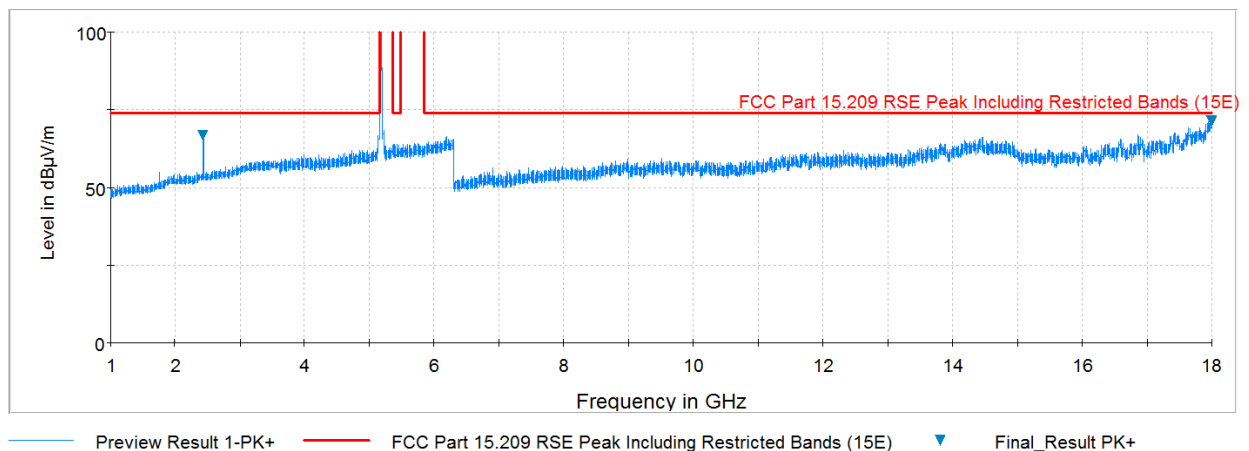
Table 7-45. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 121 of 233

7.7.2 Antenna-2 Radiated Spurious Emission Measurements

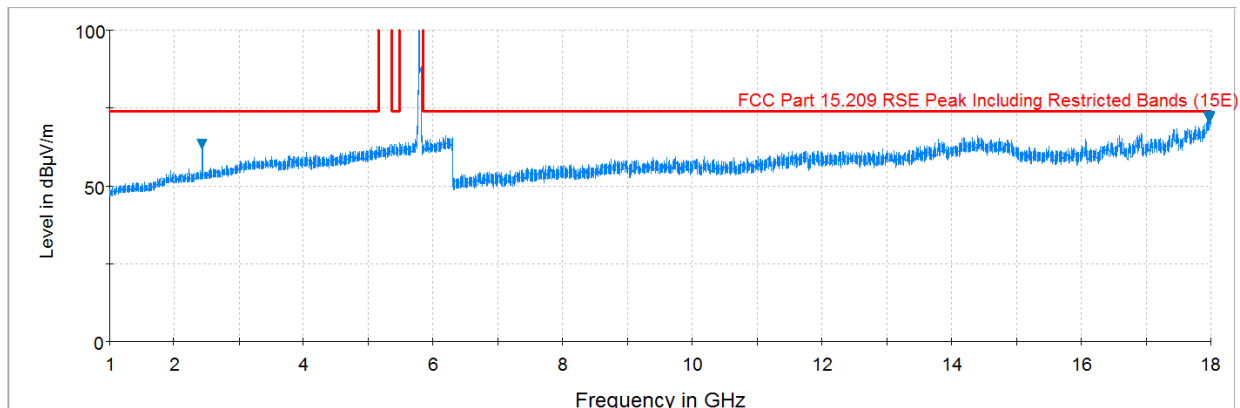


Plot 7-153. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)



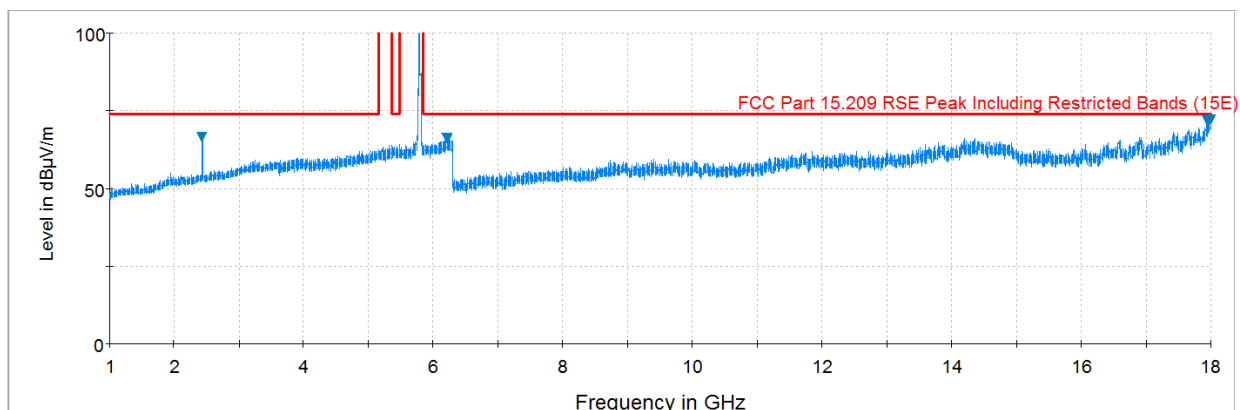
Plot 7-154. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 122 of 233



Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-155. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



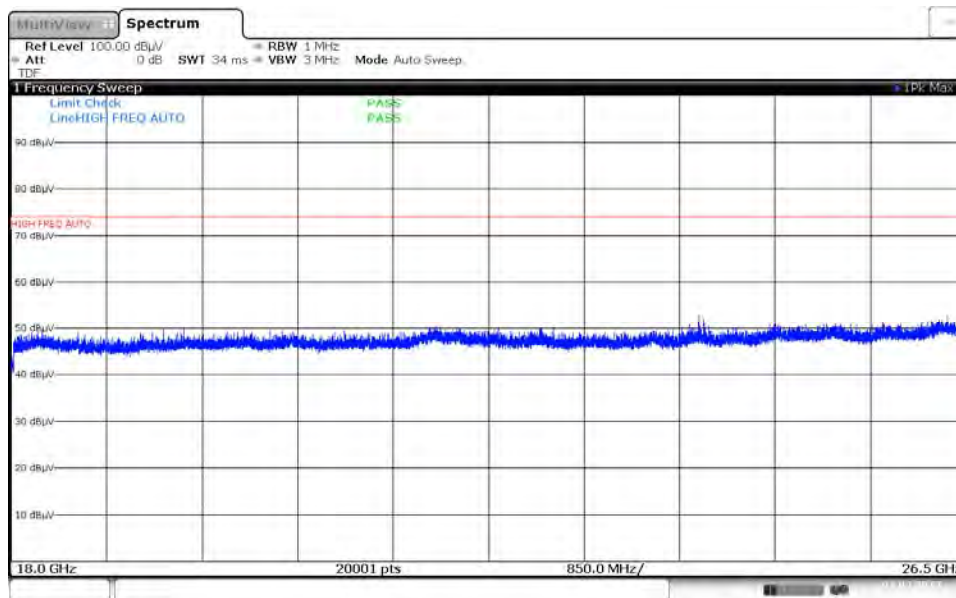
Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-156. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

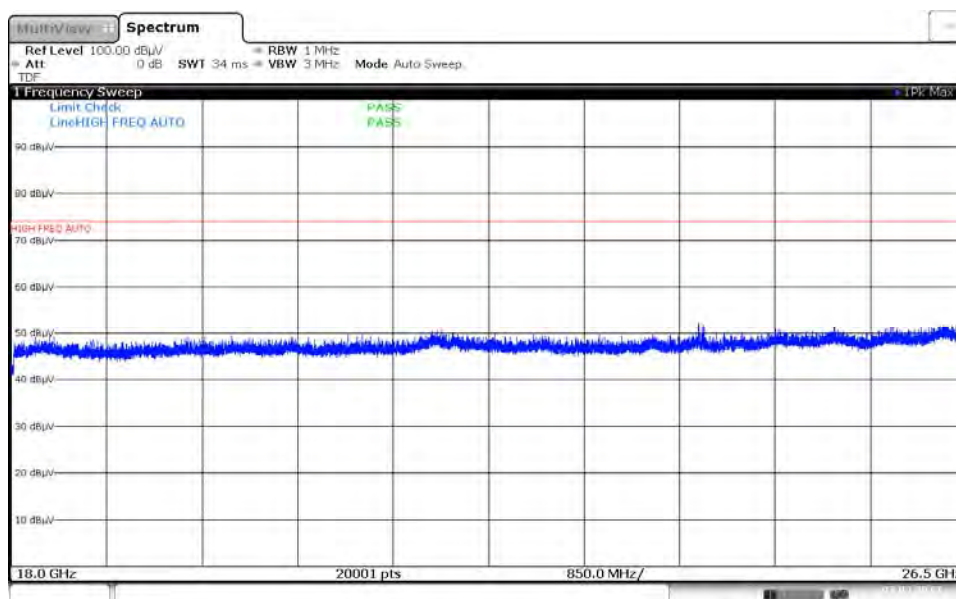
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 123 of 233

Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Plot 7-157. Radiated Spurious Plot 18GHz - 26.5GHz (802.11a – Ant. Pol. H)

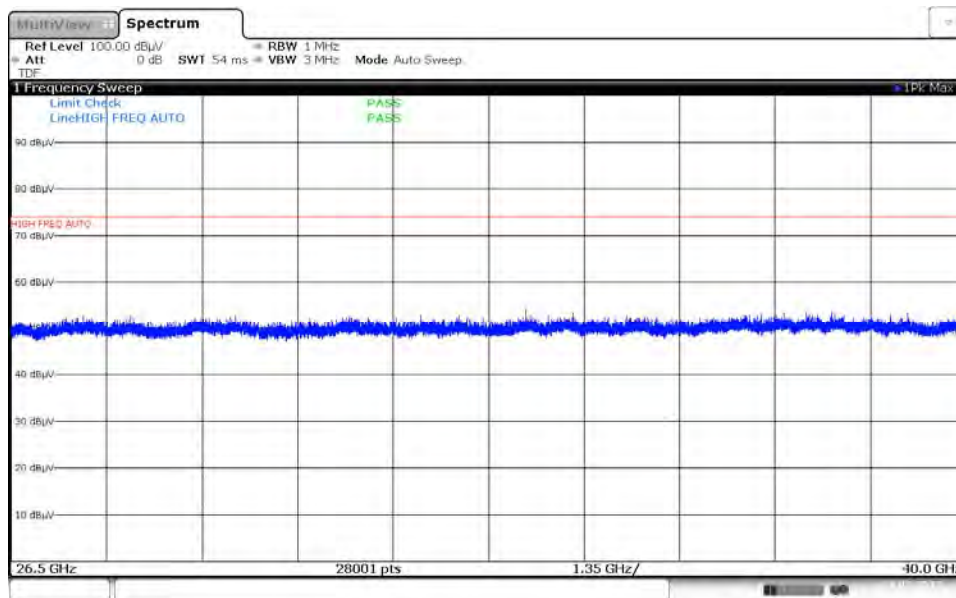


Plot 7-158. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 124 of 233

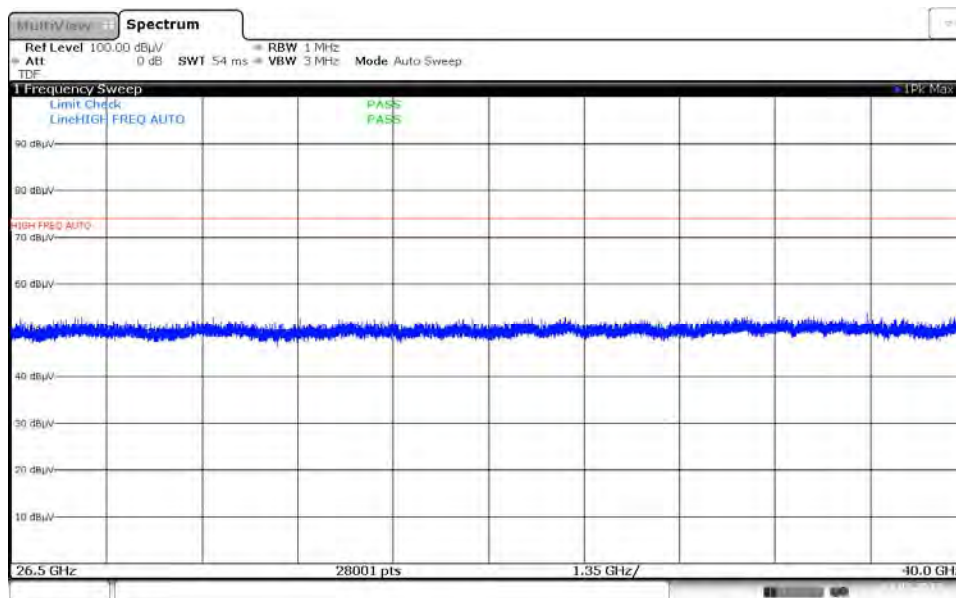
Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



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Plot 7-159. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a – Ant. Pol. H)



13:07:21 07.02.2017

Plot 7-160. Radiated Spurious Plot above 26.5GHz - 40GHz (802.11a – Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 125 of 233

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Antenna-2 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5180MHz
Channel: 36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-58.44	11.80	0.00	60.36	68.20	-7.84
* 15540.00	Average	H	-	-	-73.74	17.66	0.00	50.92	53.98	-3.06
* 15540.00	Peak	H	-	-	-58.33	17.66	0.00	66.33	73.98	-7.65
* 20720.00	Average	H	-	-	-108.54	44.43	-9.54	33.35	53.98	-20.63
* 20720.00	Peak	H	-	-	-96.10	44.43	-9.54	45.79	73.98	-28.19
25900.00	Peak	H	-	-	-96.20	45.16	-9.54	46.42	68.20	-21.78

Table 7-46. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5200MHz
Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	H	-	-	-59.61	11.53	0.00	58.92	68.20	-9.28
* 15600.00	Average	H	-	-	-74.23	17.52	0.00	50.29	53.98	-3.69
* 15600.00	Peak	H	-	-	-58.64	17.52	0.00	65.88	73.98	-8.10
* 20800.00	Average	H	-	-	-108.83	44.43	-9.54	33.06	53.98	-20.92
* 20800.00	Peak	H	-	-	-95.16	44.43	-9.54	46.73	73.98	-27.25
26000.00	Peak	H	-	-	-96.28	45.16	-9.54	46.34	68.20	-21.86

Table 7-47. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 126 of 233

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5240MHz
Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	-	-	-59.87	11.82	0.00	58.95	68.20	-9.25
* 15720.00	Average	H	-	-	-74.24	18.10	0.00	50.86	53.98	-3.12
* 15720.00	Peak	H	-	-	-57.64	18.10	0.00	67.46	73.98	-6.52
* 20960.00	Average	H	-	-	-108.56	44.45	-9.54	33.35	53.98	-20.63
* 20960.00	Peak	H	-	-	-96.20	44.45	-9.54	45.71	73.98	-28.27
26200.00	Peak	H	-	-	-92.77	45.07	-9.54	49.76	68.20	-18.44

Table 7-48. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5745MHz
Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	-	-	-78.54	21.68	0.00	50.14	53.98	-3.84
* 11490.00	Peak	H	-	-	-58.64	21.68	0.00	70.04	73.98	-3.94
17235.00	Peak	H	-	-	-69.01	27.16	0.00	65.15	68.20	-3.05
* 22980.00	Average	H	-	-	-109.76	44.72	-9.54	32.42	53.98	-21.56
* 22980.00	Peak	H	-	-	-96.51	44.72	-9.54	45.67	73.98	-28.31
28725.00	Peak	H	-	-	-103.14	48.09	-9.54	42.41	68.20	-25.79

Table 7-49. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 127 of 233

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	-	-	-78.68	21.53	0.00	49.85	53.98	-4.12
* 11570.00	Peak	H	-	-	-58.77	21.53	0.00	69.76	73.98	-4.21
17355.00	Peak	H	-	-	-68.61	26.72	0.00	65.11	68.20	-3.09
23140.00	Peak	H	-	-	-96.25	44.84	-9.54	46.05	68.20	-22.15
28925.00	Peak	H	-	-	-103.41	48.09	-9.54	42.14	68.20	-26.06

Table 7-50. Radiated Measurements

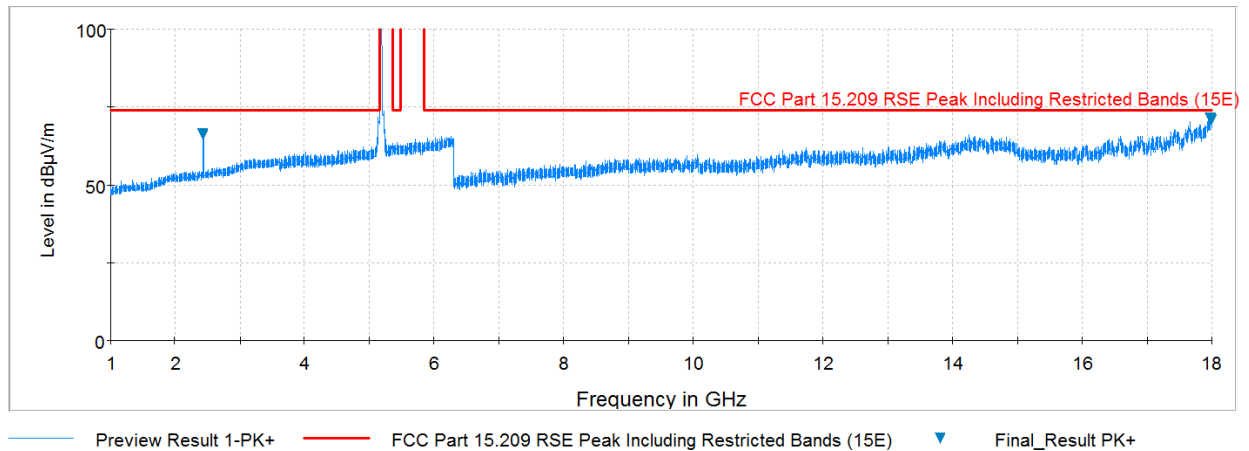
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	-	-	-79.84	21.46	0.00	48.62	53.98	-5.36
* 11650.00	Peak	H	-	-	-59.67	21.46	0.00	68.79	73.98	-5.19
17475.00	Peak	H	-	-	-68.40	25.78	0.00	64.38	68.20	-3.82
23300.00	Peak	H	-	-	-95.13	44.86	-9.54	47.19	68.20	-21.01
29125.00	Peak	H	-	-	-103.63	48.09	-9.54	41.92	68.20	-26.28

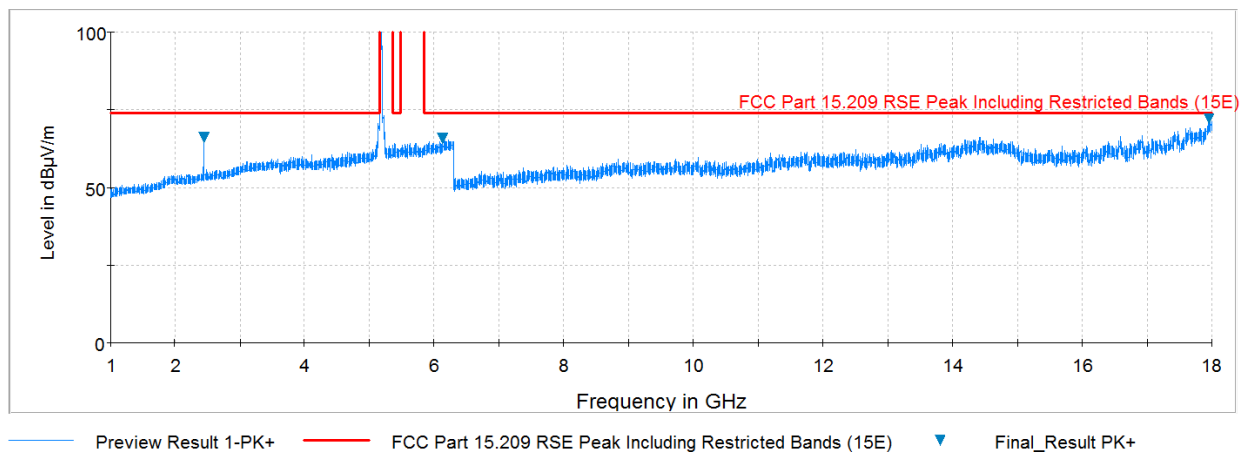
Table 7-51. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 128 of 233

7.7.3 Antenna-3 Radiated Spurious Emission Measurements

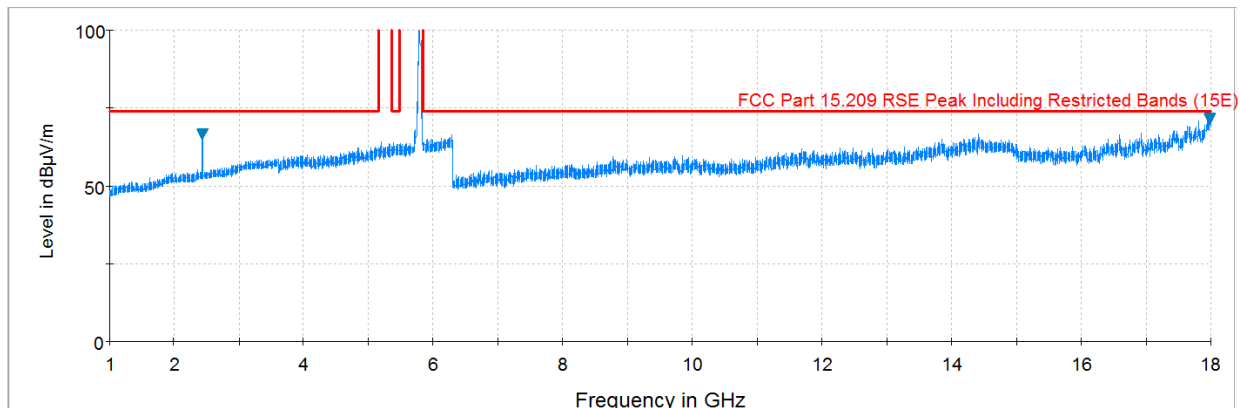


Plot 7-161. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)



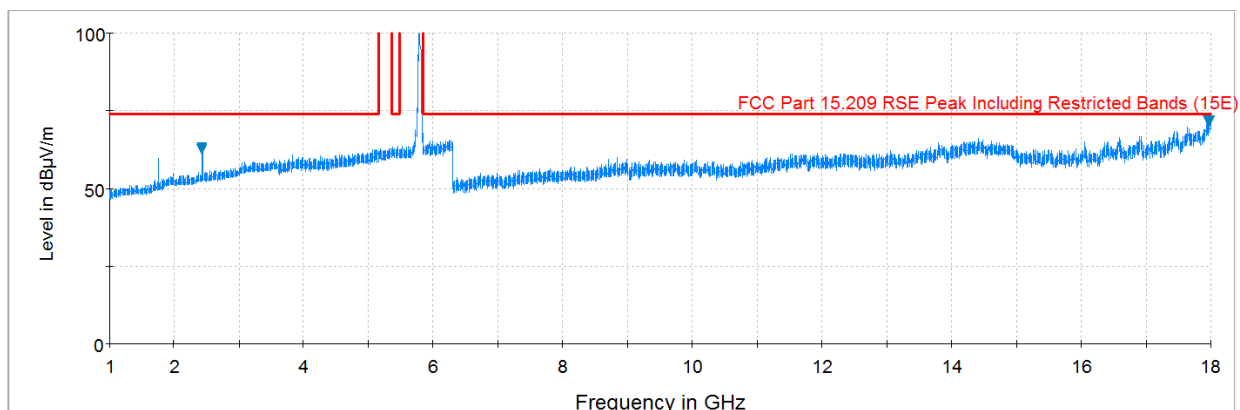
Plot 7-162. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 129 of 233



Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-163. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

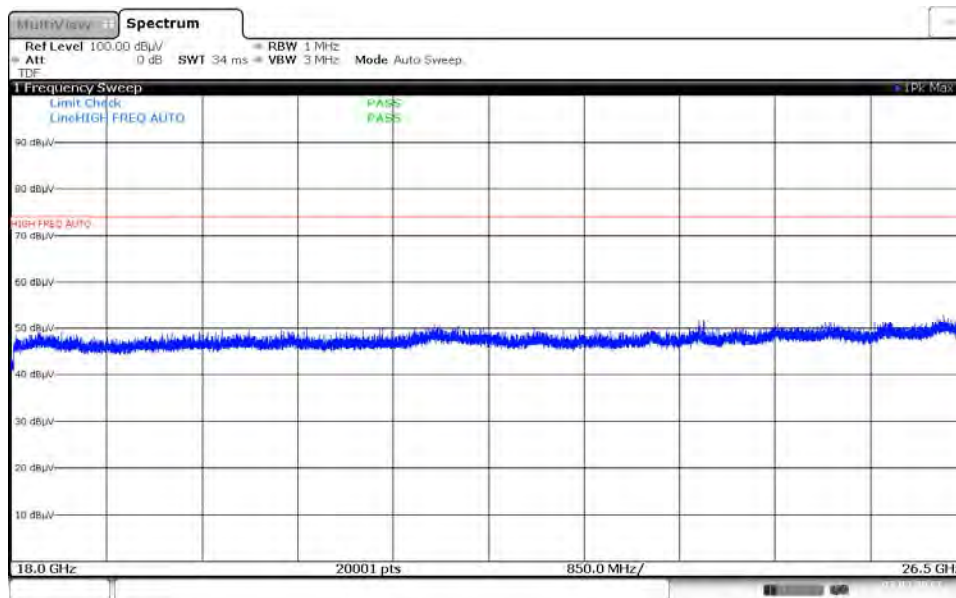


Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-164. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

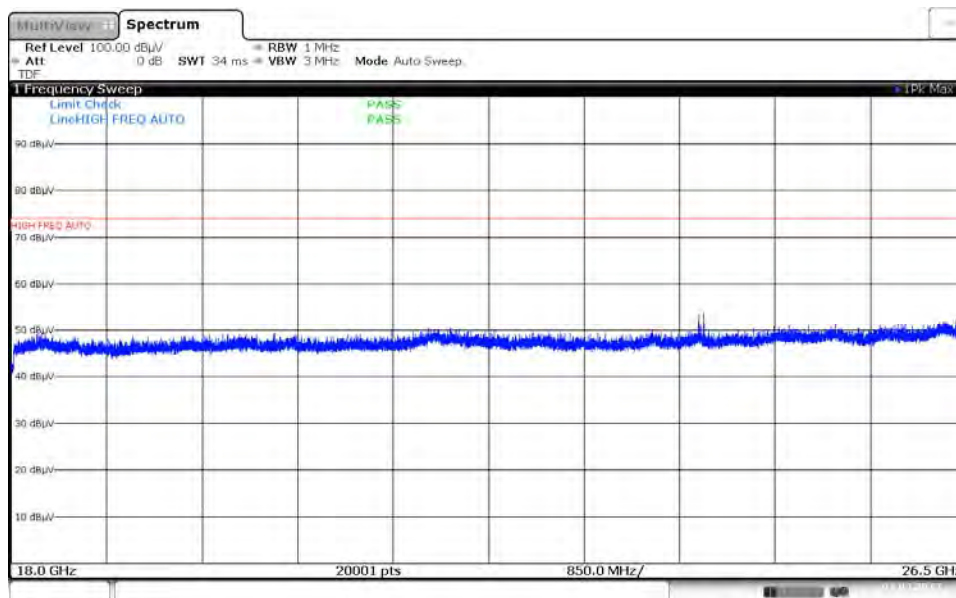
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 130 of 233

Antenna-3 Radiated Spurious Emissions Measurements (Above 18GHz) §15.209



13:58:28 07.02.2017

Plot 7-165. Radiated Spurious Plot 18GHz - 26.5GHz (802.11a – Ant. Pol. H)



14:00:21 07.02.2017

Plot 7-166. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 131 of 233

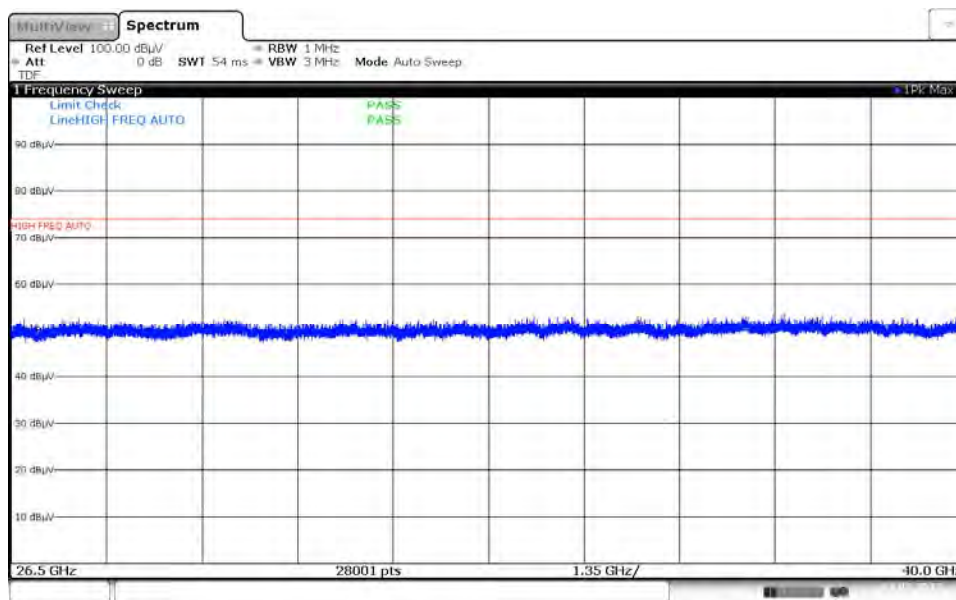
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05/19/2017

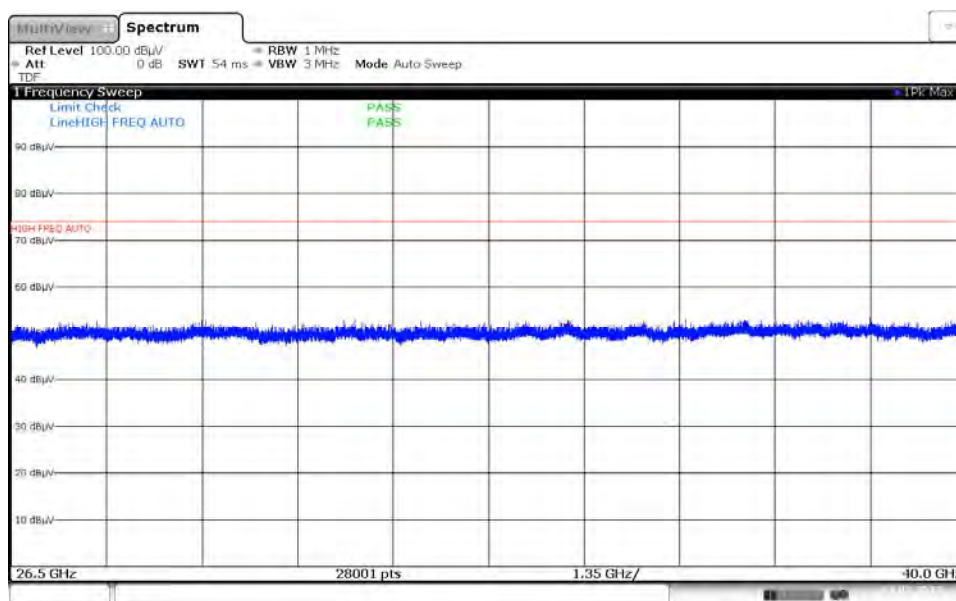
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Antenna-3 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Plot 7-167. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a – Ant. Pol. H)



Plot 7-168. Radiated Spurious Plot above 26.5GHz - 40GHz (802.11a – Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 132 of 233

Antenna-3 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5180MHz
Channel: 36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	H	-	-	-58.34	11.80	0.00	60.46	68.20	-7.74
* 15540.00	Average	H	-	-	-74.54	17.66	0.00	50.12	53.98	-3.86
* 15540.00	Peak	H	-	-	-58.37	17.66	0.00	66.29	73.98	-7.69
* 20720.00	Average	H	-	-	-108.51	44.43	-9.54	33.38	53.98	-20.60
* 20720.00	Peak	H	-	-	-96.10	44.43	-9.54	45.79	73.98	-28.19
25900.00	Peak	H	-	-	-96.28	45.16	-9.54	46.34	68.20	-21.86

Table 7-52. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5200MHz
Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	H	-	-	-59.67	11.53	0.00	58.86	68.20	-9.34
* 15600.00	Average	H	-	-	-73.84	17.52	0.00	50.68	53.98	-3.30
* 15600.00	Peak	H	-	-	-57.64	17.52	0.00	66.88	73.98	-7.10
* 20800.00	Average	H	-	-	-108.83	44.43	-9.54	33.06	53.98	-20.92
* 20800.00	Peak	H	-	-	-96.12	44.43	-9.54	45.77	73.98	-28.21
26000.00	Peak	H	-	-	-95.00	45.16	-9.54	47.62	68.20	-20.58

Table 7-53. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 133 of 233

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5240MHz
Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	H	-	-	-59.60	11.82	0.00	59.22	68.20	-8.98
* 15720.00	Average	H	-	-	-74.37	18.10	0.00	50.73	53.98	-3.25
* 15720.00	Peak	H	-	-	-58.67	18.10	0.00	66.43	73.98	-7.55
* 20960.00	Average	H	-	-	-108.85	44.45	-9.54	33.06	53.98	-20.92
* 20960.00	Peak	H	-	-	-96.19	44.45	-9.54	45.72	73.98	-28.26
26200.00	Peak	H	-	-	-93.42	45.07	-9.54	49.11	68.20	-19.09

Table 7-54. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5745MHz
Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	H	-	-	-79.87	21.68	0.00	48.81	53.98	-5.17
* 11490.00	Peak	H	-	-	-59.38	21.68	0.00	69.30	73.98	-4.68
17235.00	Peak	H	-	-	-69.67	27.16	0.00	64.49	68.20	-3.71
* 22980.00	Average	H	-	-	-108.96	44.72	-9.54	33.22	53.98	-20.76
* 22980.00	Peak	H	-	-	-96.33	44.72	-9.54	45.85	73.98	-28.13
28725.00	Peak	H	-	-	-102.97	48.09	-9.54	42.58	69.20	-26.62

Table 7-55. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 134 of 233

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	H	-	-	-79.84	21.53	0.00	48.69	53.98	-5.28
* 11570.00	Peak	H	-	-	-59.84	21.53	0.00	68.69	73.98	-5.28
17355.00	Peak	H	-	-	-69.68	26.72	0.00	64.04	68.20	-4.16
23140.00	Peak	H	-	-	-95.18	44.84	-9.54	47.12	68.20	-21.08
28925.00	Peak	H	-	-	-102.15	48.09	-9.54	43.40	68.20	-24.80

Table 7-56. Radiated Measurements

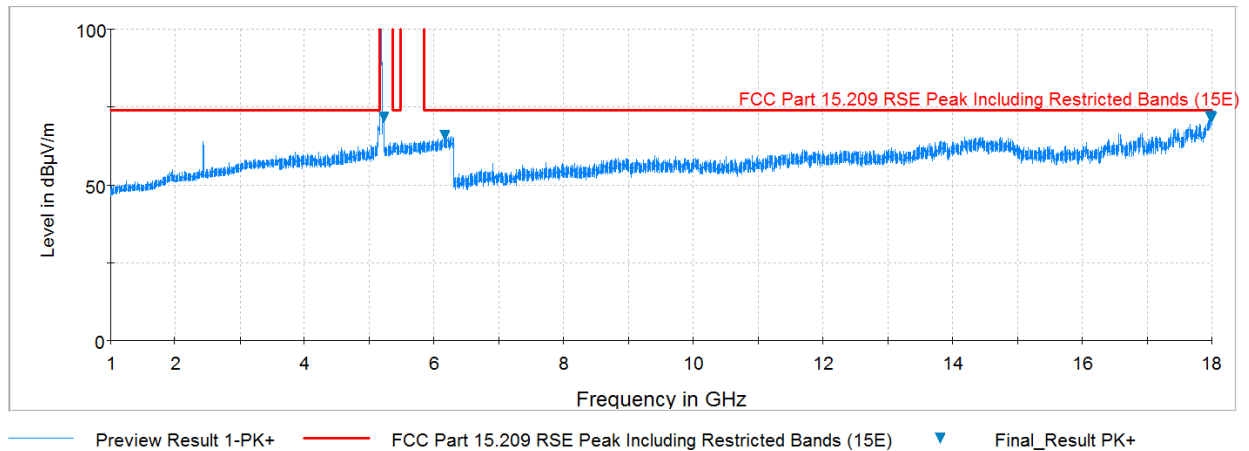
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	H	-	-	-79.87	21.46	0.00	48.59	53.98	-5.39
* 11650.00	Peak	H	-	-	-59.84	21.46	0.00	68.62	73.98	-5.36
17475.00	Peak	H	-	-	-68.67	25.78	0.00	64.11	68.20	-4.09
23300.00	Peak	H	-	-	-95.04	44.86	-9.54	47.28	68.20	-20.92
29125.00	Peak	H	-	-	-103.53	48.09	-9.54	42.02	68.20	-26.18

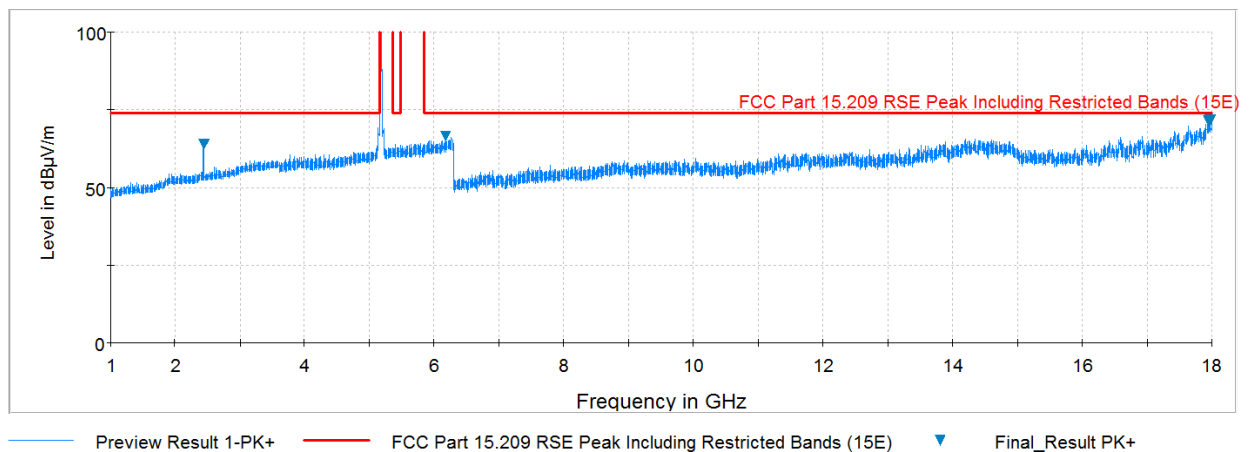
Table 7-57. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 135 of 233

7.7.4 Antenna-4 Radiated Spurious Emission Measurements

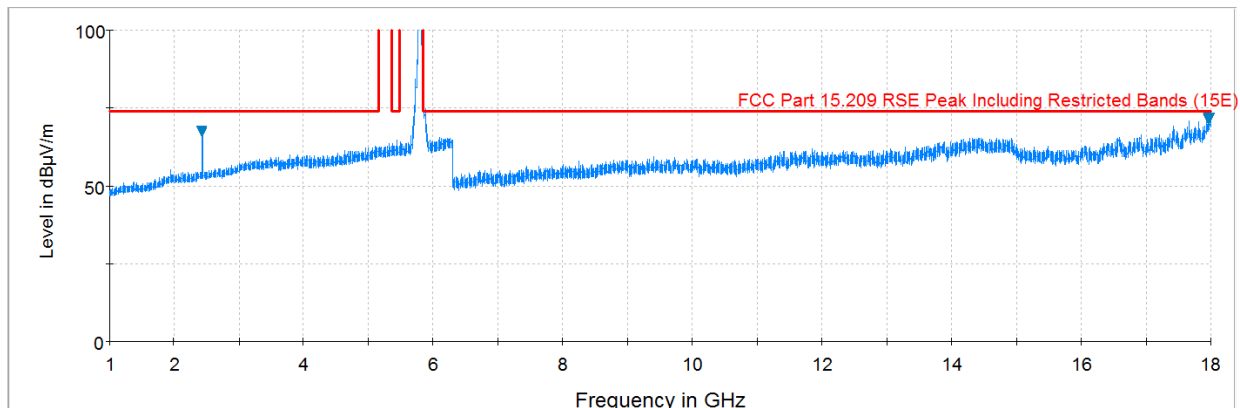


Plot 7-169. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)



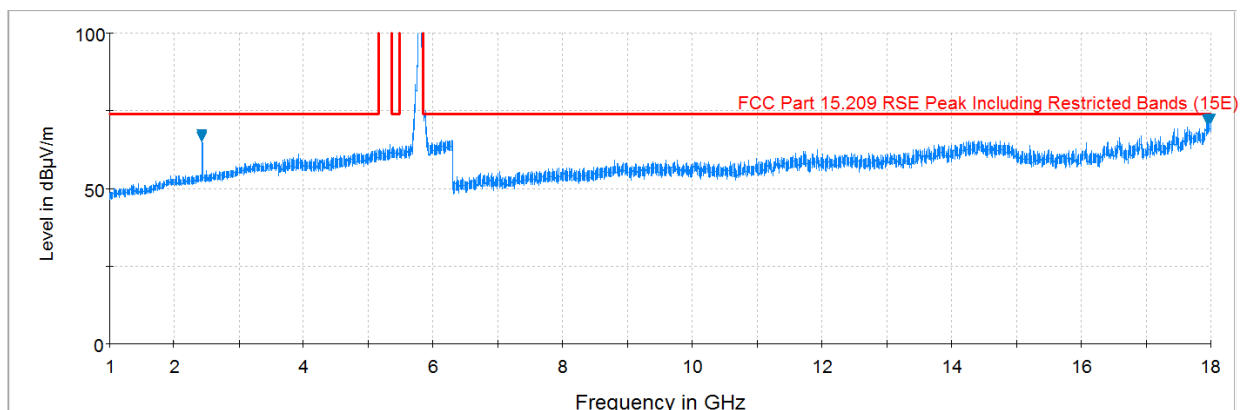
Plot 7-170. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 136 of 233



Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-171. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

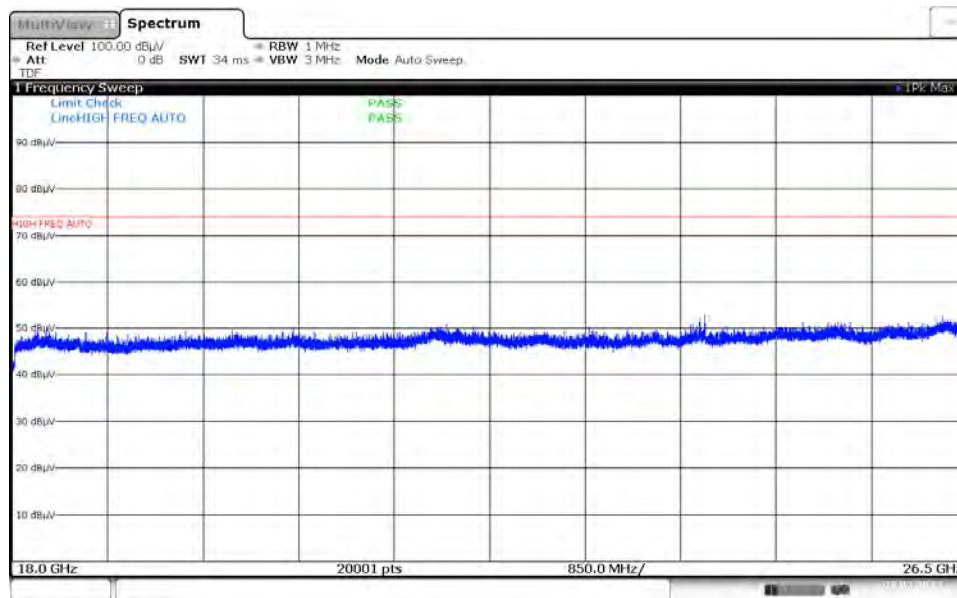


Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) Final_Result PK+

Plot 7-172. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

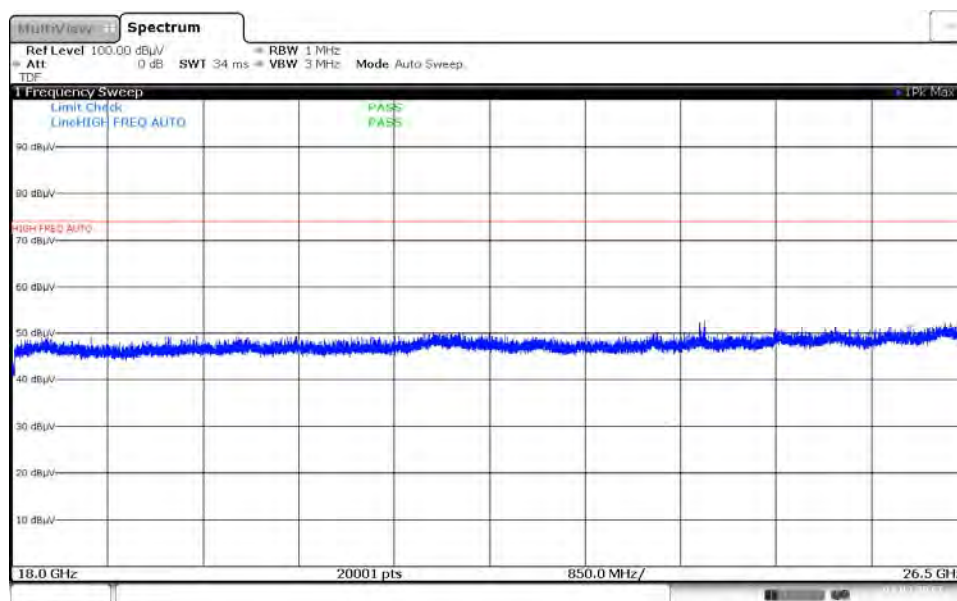
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 137 of 233

Antenna-4 Radiated Spurious Emissions Measurements (Above 18GHz) §15.209



14:06:30 07.02.2017

Plot 7-173. Radiated Spurious Plot 18GHz - 26.5GHz (802.11a – Ant. Pol. H)



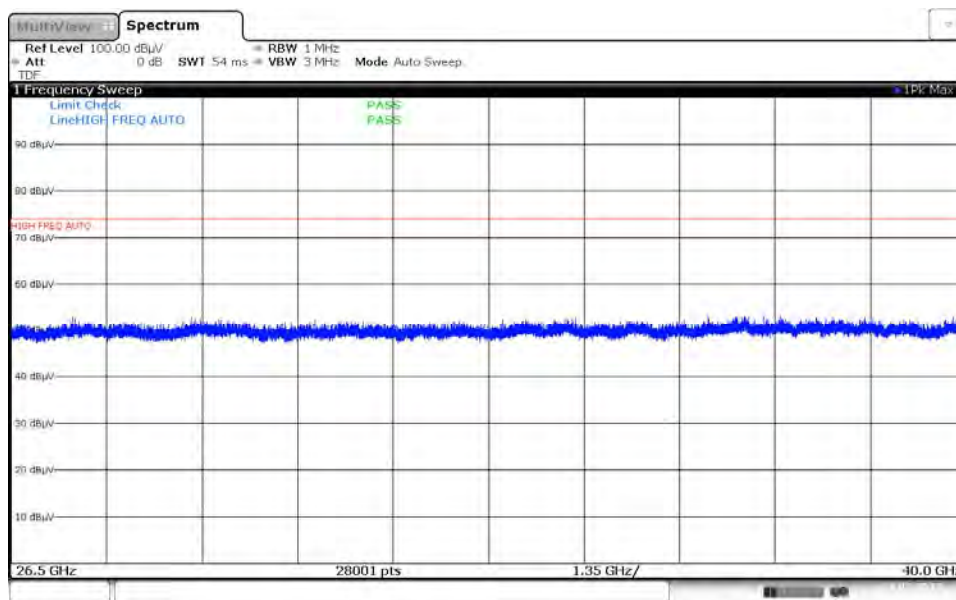
14:08:42 07.02.2017

Plot 7-174. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. V)

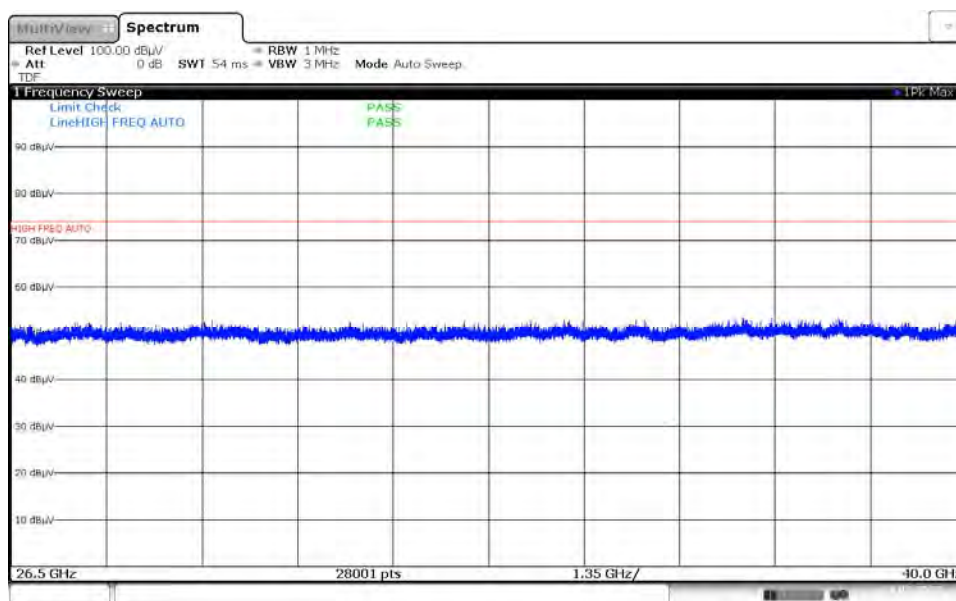
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 138 of 233

Antenna-4 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Plot 7-175. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a – Ant. Pol. H)



Plot 7-176. Radiated Spurious Plot above 26.5GHz - 40GHz (802.11a – Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 139 of 233

Antenna-4 Radiated Spurious Emission Measurements

§15.247(d) §15.205 & §15.209

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5180MHz
Channel: 36

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	Peak	V	-	-	-58.44	11.80	0.00	60.36	68.20	-7.84
* 15540.00	Average	V	-	-	-73.75	17.66	0.00	50.91	53.98	-3.07
* 15540.00	Peak	V	-	-	-58.34	17.66	0.00	66.32	73.98	-7.66
* 20720.00	Average	V	-	-	-108.51	44.43	-9.54	33.38	53.98	-20.60
* 20720.00	Peak	V	-	-	-96.17	44.43	-9.54	45.72	73.98	-28.26
* 25900.00	Peak	V	-	-	-96.26	45.16	-9.54	46.36	68.20	-21.84

Table 7-58. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5200MHz
Channel: 40

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	Peak	V	-	-	-59.40	11.53	0.00	59.13	68.20	-9.07
* 15600.00	Average	V	-	-	-73.61	17.52	0.00	50.91	53.98	-3.07
* 15600.00	Peak	V	-	-	-58.34	17.52	0.00	66.18	73.98	-7.80
* 20800.00	Average	V	-	-	-108.43	44.43	-9.54	33.46	53.98	-20.52
* 20800.00	Peak	V	-	-	-95.90	44.43	-9.54	45.99	73.98	-27.99
* 26000.00	Peak	V	-	-	-96.26	45.16	-9.54	46.36	68.20	-21.84

Table 7-59. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 140 of 233

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5240MHz
 Channel: 48

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	Peak	V	-	-	-59.84	11.82	0.00	58.98	68.20	-9.22
* 15720.00	Average	V	-	-	-74.12	18.10	0.00	50.98	53.98	-3.00
* 15720.00	Peak	V	-	-	-57.84	18.10	0.00	67.26	73.98	-6.72
* 20960.00	Average	V	-	-	-108.53	44.45	-9.54	33.38	53.98	-20.60
* 20960.00	Peak	V	-	-	-95.98	44.45	-9.54	45.93	73.98	-28.05
26200.00	Peak	V	-	-	-92.65	45.07	-9.54	49.88	68.20	-18.32

Table 7-60. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5745MHz
 Channel: 149

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11490.00	Average	V	-	-	-79.35	21.68	0.00	49.33	53.98	-4.65
* 11490.00	Peak	V	-	-	-59.41	21.68	0.00	69.27	73.98	-4.71
17235.00	Peak	V	-	-	-70.91	27.16	0.00	63.25	68.20	-4.95
* 22980.00	Average	V	-	-	-108.97	44.72	-9.54	33.21	53.98	-20.77
* 22980.00	Peak	V	-	-	-96.32	44.72	-9.54	45.86	73.98	-28.12
28725.00	Peak	V	-	-	-102.87	48.09	-9.54	42.68	68.20	-25.52

Table 7-61. Radiated Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 141 of 233

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5785MHz
 Channel: 157

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11570.00	Average	V	-	-	-79.80	21.53	0.00	48.73	53.98	-5.24
* 11570.00	Peak	V	-	-	-59.34	21.53	0.00	69.19	73.98	-4.78
17355.00	Peak	V	-	-	-69.54	26.72	0.00	64.18	68.20	-4.02
23140.00	Peak	V	-	-	-96.19	44.84	-9.54	46.11	68.20	-22.09
28925.00	Peak	V	-	-	-102.47	48.09	-9.54	43.08	68.20	-25.12

Table 7-62. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11650.00	Average	V	-	-	-79.35	21.46	0.00	49.11	53.98	-4.87
* 11650.00	Peak	V	-	-	-59.38	21.46	0.00	69.08	73.98	-4.90
17475.00	Peak	V	-	-	-69.20	25.78	0.00	63.58	68.20	-4.62
23300.00	Peak	V	-	-	-96.08	44.86	-9.54	46.24	68.20	-21.96
29125.00	Peak	V	-	-	-103.64	48.09	-9.54	41.91	68.20	-26.29

Table 7-63. Radiated Measurements

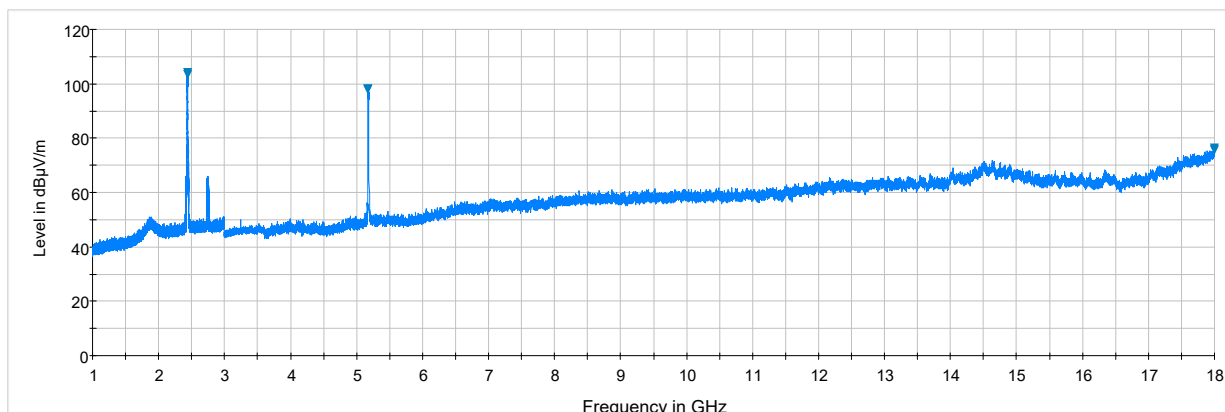
FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 142 of 233

7.7.5 Simultaneous Tx Radiated Spurious Emissions Measurements

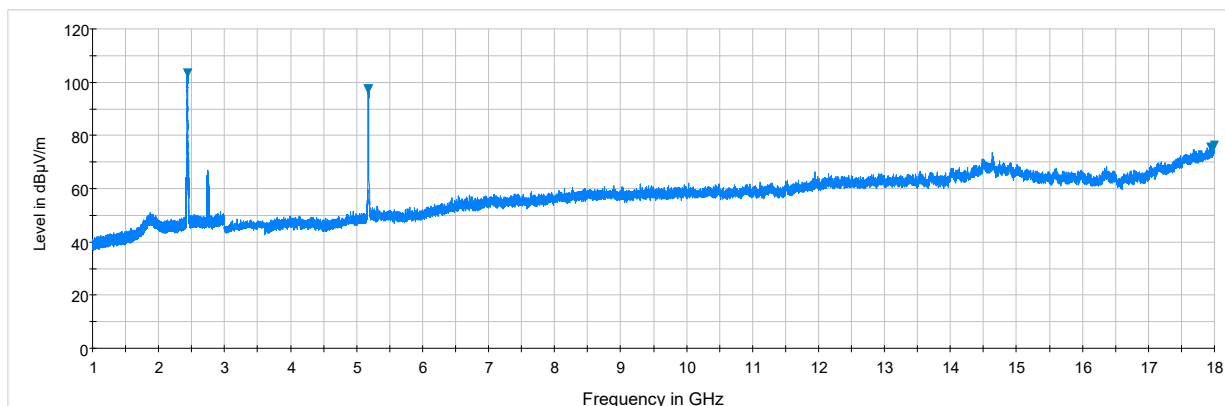
§15.247(d) §15.205 & §15.209

Description	2.4 GHz Emission	5 GHz Emission
Antenna	ALL	ALL
Channel	6	36
Operating Frequency(MHz)	2437	5180
Data Rate (Mbps)	1	6
Band	WLAN	UNII 1
Mode	802.11g	802.11a

Table 7-64. Simultaneous Transmission Config



Plot 7-177. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. H)



Plot 7-178. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 143 of 233	

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
3028.00	Avg	H	-	-	-103.59	45.62	50.08	53.98	-3.90
3028.00	Peak	H	-	-	-95.92	45.62	62.16	73.98	-11.82
5763.00	Avg	H	-	-	-101.32	51.59	50.46	53.98	-3.52
5763.00	Peak	H	-	-	-94.00	51.59	66.35	73.98	-7.63
7912.00	Avg	H	-	-	-111.68	46.22	50.44	53.98	-3.54
7912.00	Peak	H	-	-	-99.88	46.22	61.67	73.98	-12.31
8498.00	Avg	H	-	-	-101.32	46.93	50.79	53.98	-3.19
8498.00	Peak	H	-	-	-94.00	46.93	59.36	73.98	-14.62
10647.00	Avg	H	-	-	-111.68	48.25	50.52	53.98	-3.46
10647.00	Peak	H	-	-	-99.88	48.25	63.51	73.98	-10.47

Table 7-65. Radiated Measurements (Ant. Pol. H)

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
3028.00	Avg	V	-	-	-103.59	45.62	50.88	53.98	-3.10
3028.00	Peak	V	-	-	-95.92	45.62	62.26	73.98	-11.72
5763.00	Avg	V	-	-	-101.32	51.59	50.65	53.98	-3.33
5763.00	Peak	V	-	-	-94.00	51.59	66.62	73.98	-7.36
7912.00	Avg	V	-	-	-111.68	46.22	50.02	53.98	-3.96
7912.00	Peak	V	-	-	-99.88	46.22	60.61	73.98	-13.37
8498.00	Avg	V	-	-	-101.32	46.93	50.68	53.98	-3.30
8498.00	Peak	V	-	-	-94.00	46.93	60.54	73.98	-13.44
10647.00	Avg	V	-	-	-111.68	48.25	49.61	53.98	-4.37
10647.00	Peak	V	-	-	-99.88	48.25	63.60	73.98	-10.38

Table 7-66. Radiated Measurements (Ant. Pol. V)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 144 of 233	

7.7.6 Antenna-1 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

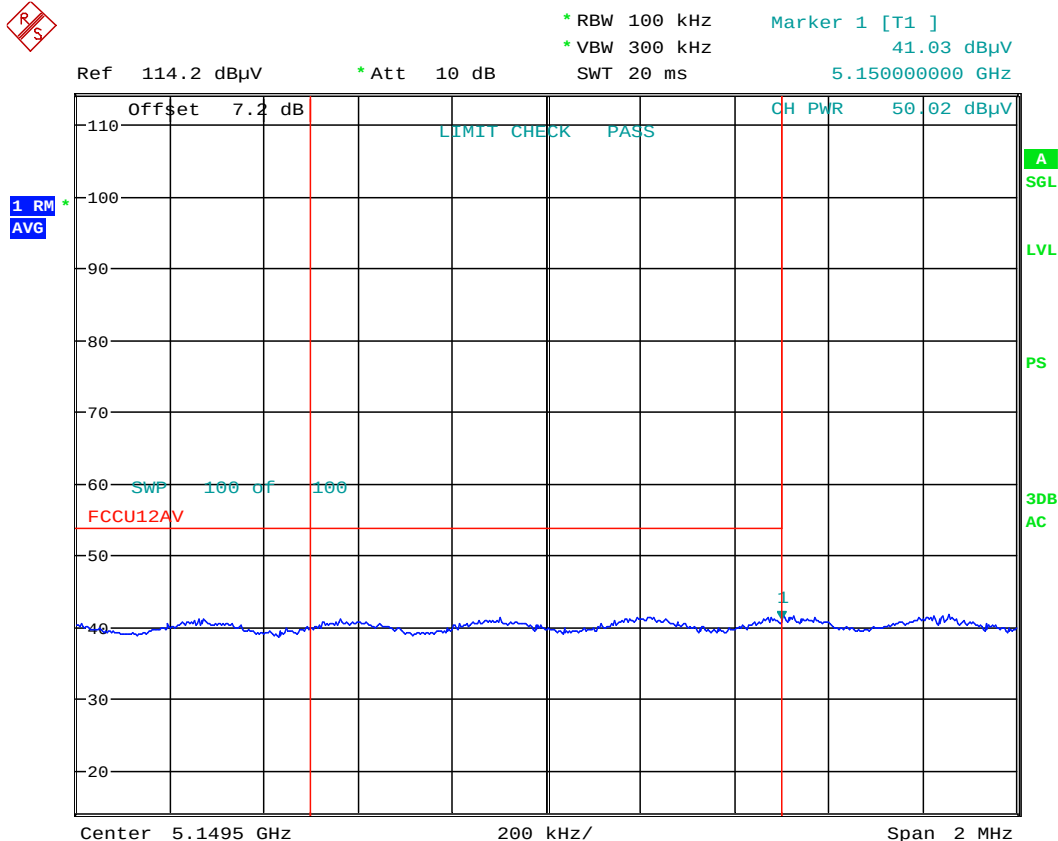
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



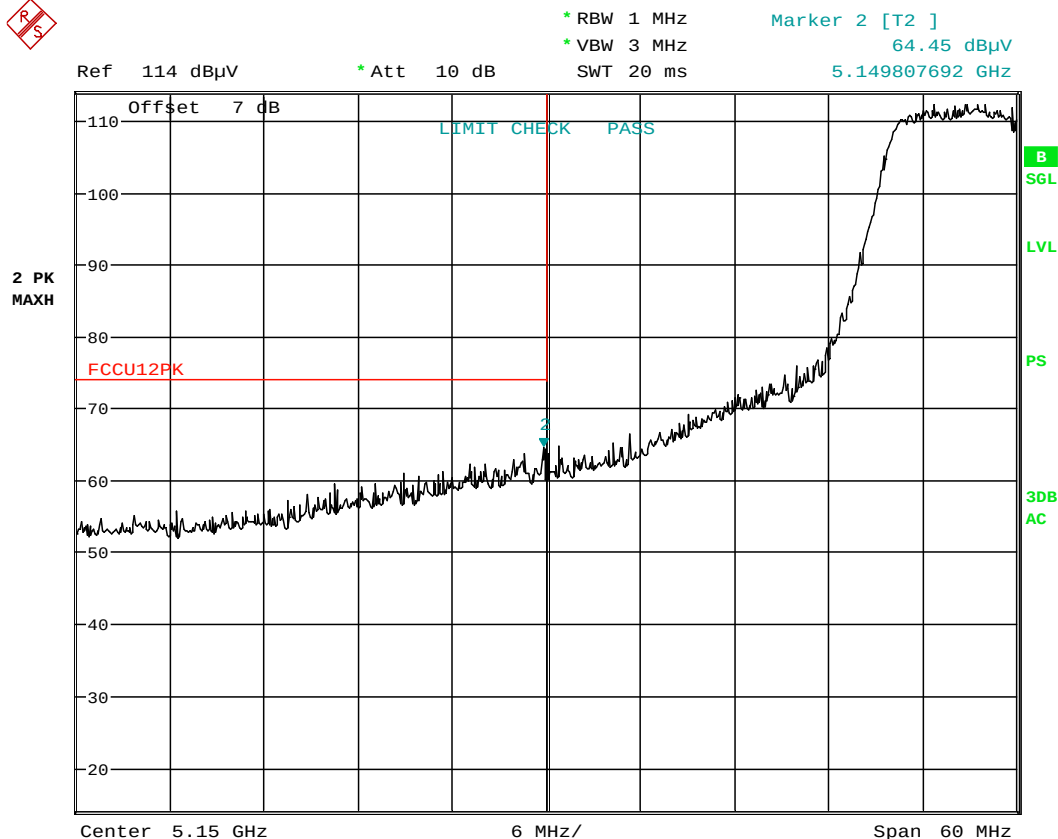
Date: 1.DEC.2016 12:05:42

Plot 7-179. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 145 of 233

Antenna-1 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 1.DEC.2016 12:05:58

Plot 7-180. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 146 of 233

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05/19/2017

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Antenna-1 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

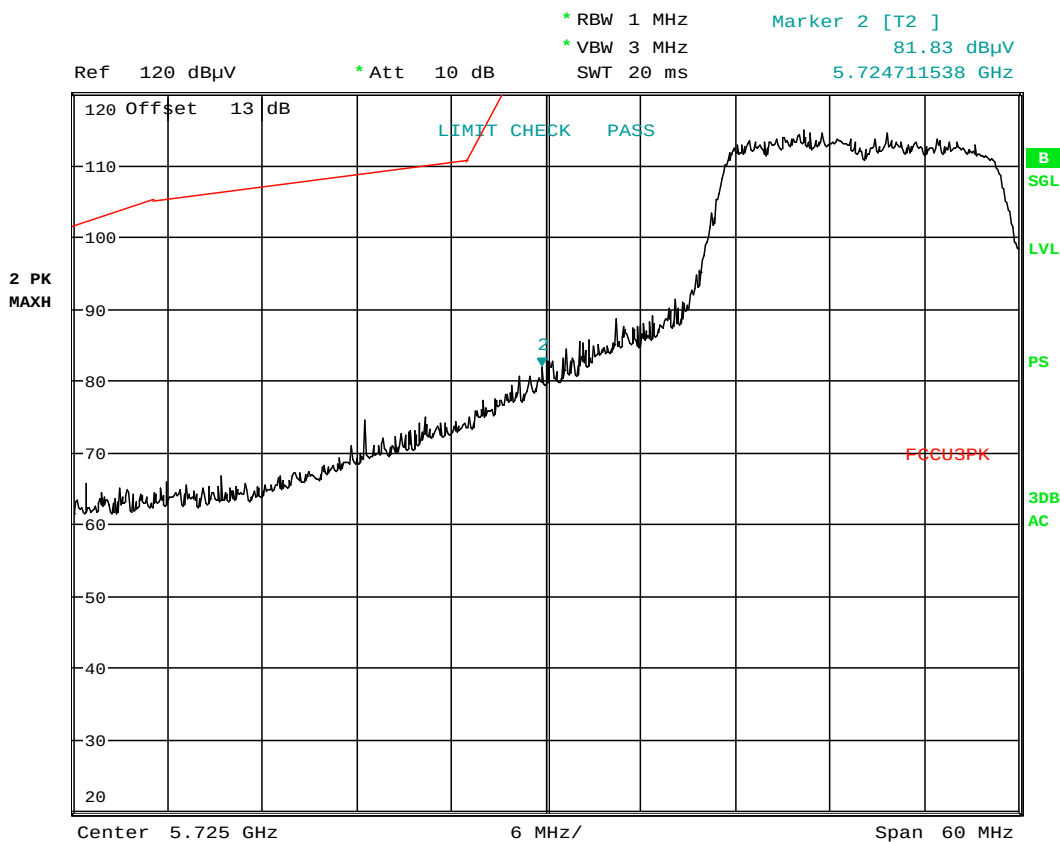
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5745MHz

Channel: 149



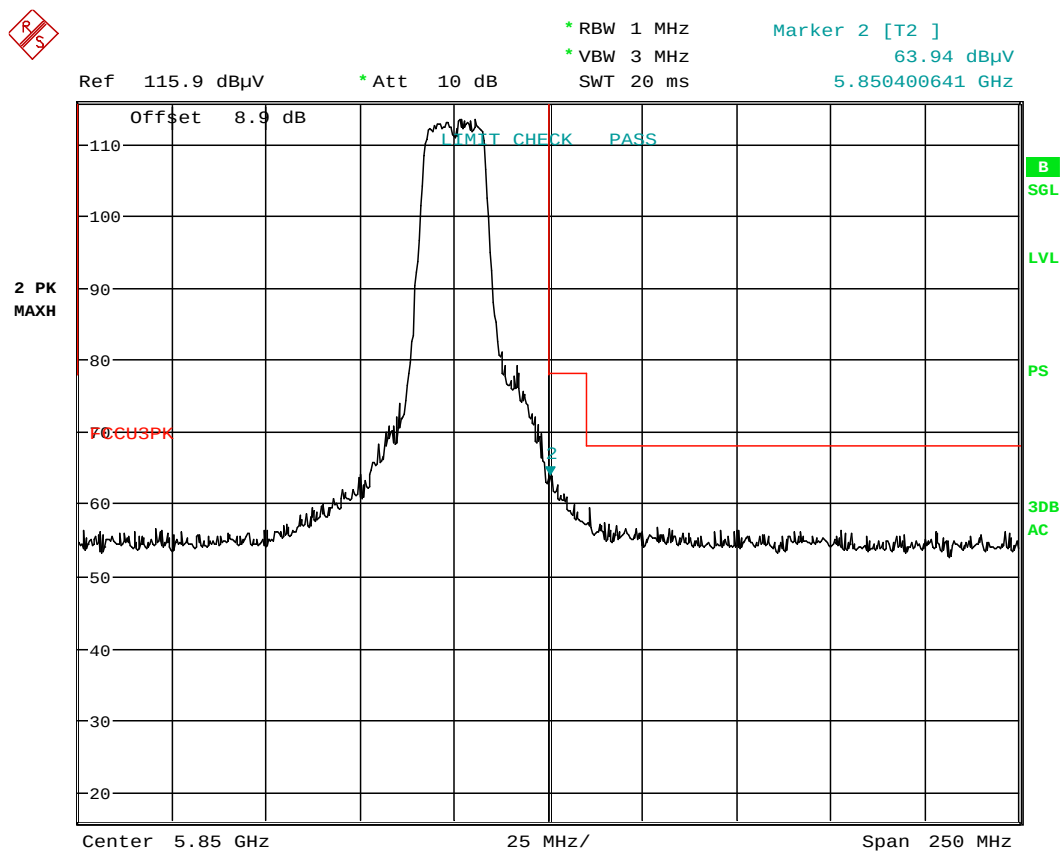
Date: 23.DEC.2016 11:22:29

Plot 7-181. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 147 of 233

Antenna-1 Radiated Band Edge Measurements (20MHz BW)
 §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	<u>802.11a</u>
Worst Case Transfer Rate:	<u>6 Mbps</u>
Distance of Measurements:	<u>3 Meters</u>
Operating Frequency:	<u>5825MHz</u>
Channel:	165



Date: 1.DEC.2016 12:30:41

Plot 7-182. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 148 of 233

7.7.7 Antenna-1 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

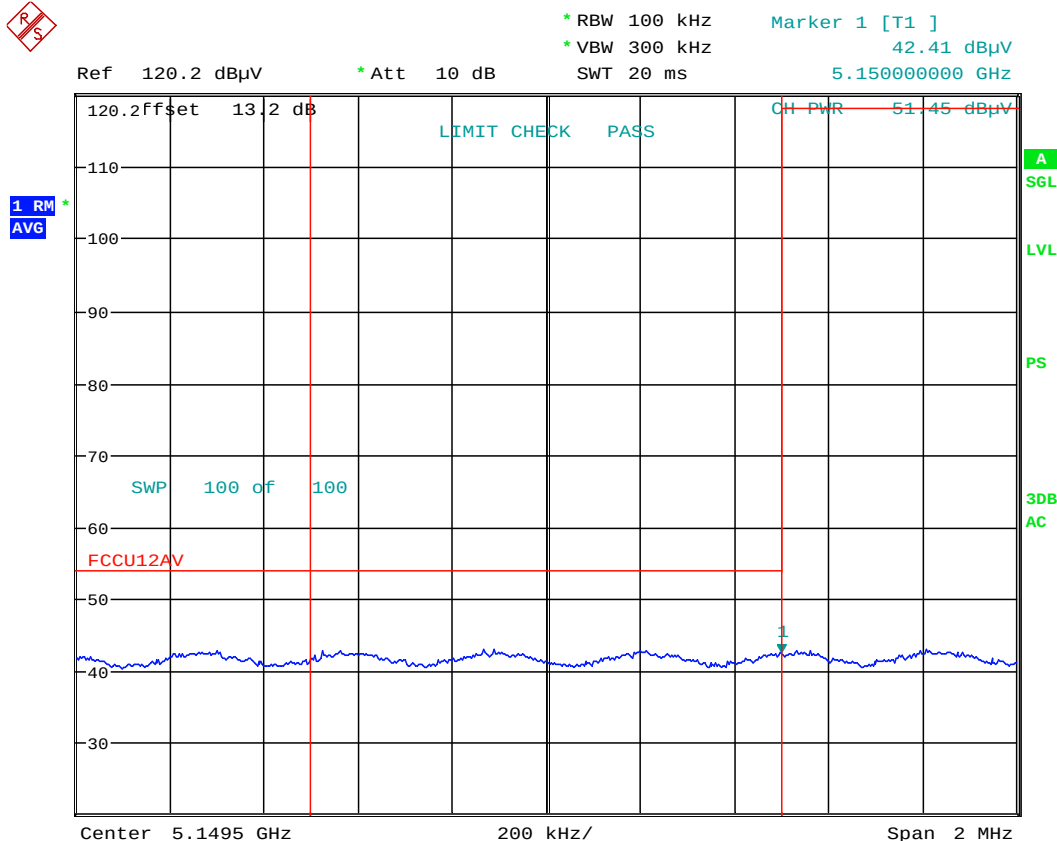
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



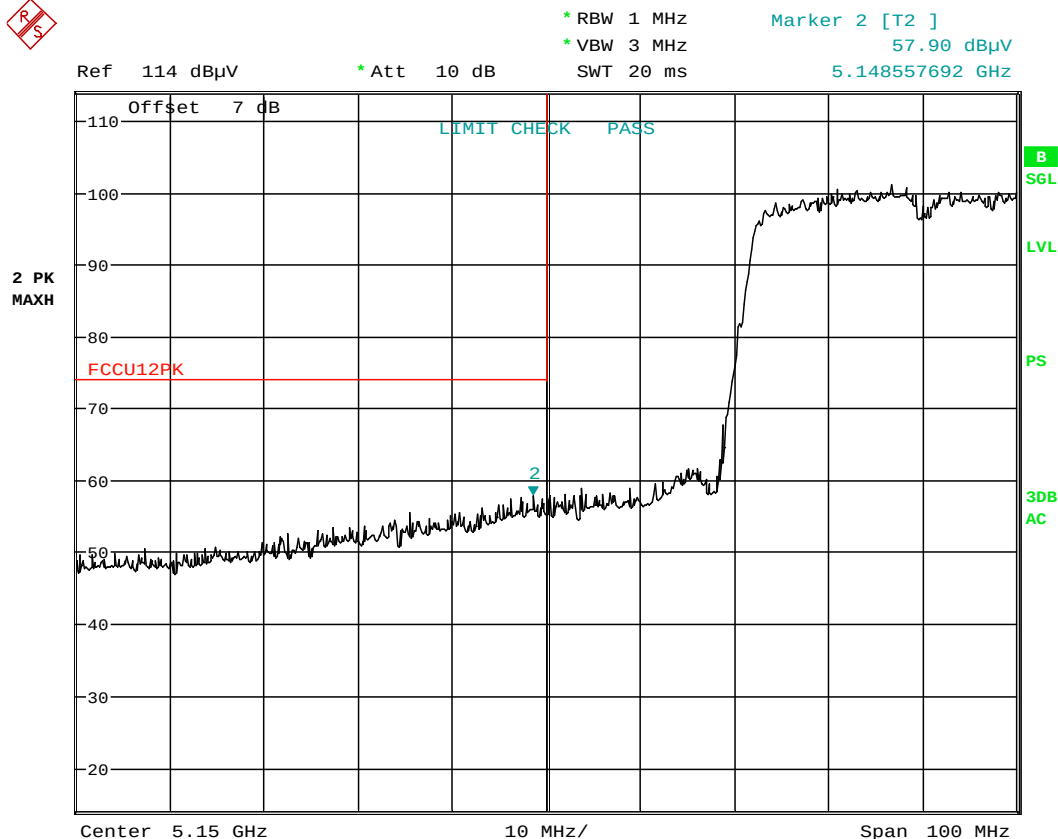
Date: 30.NOV.2016 12:46:42

Plot 7-183. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 149 of 233

Antenna-1 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 30.NOV.2016 12:47:11

Plot 7-184. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 150 of 233

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Antenna-1 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

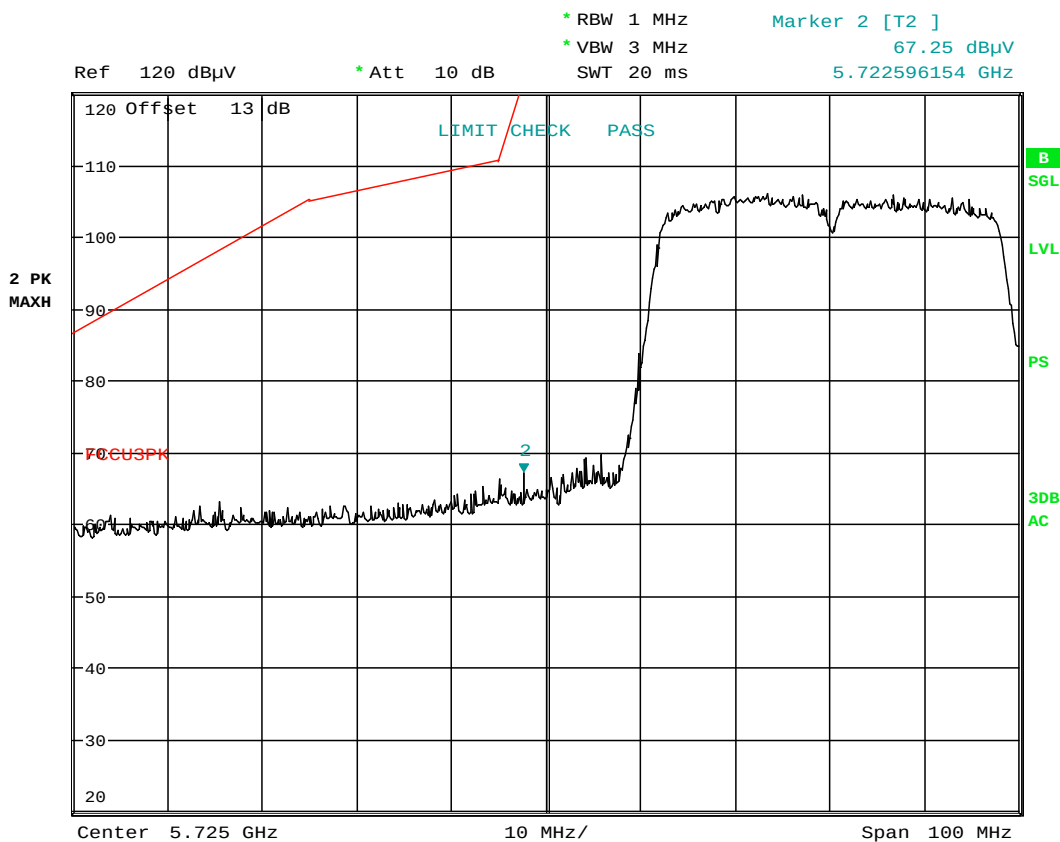
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5755MHz

Channel: 151



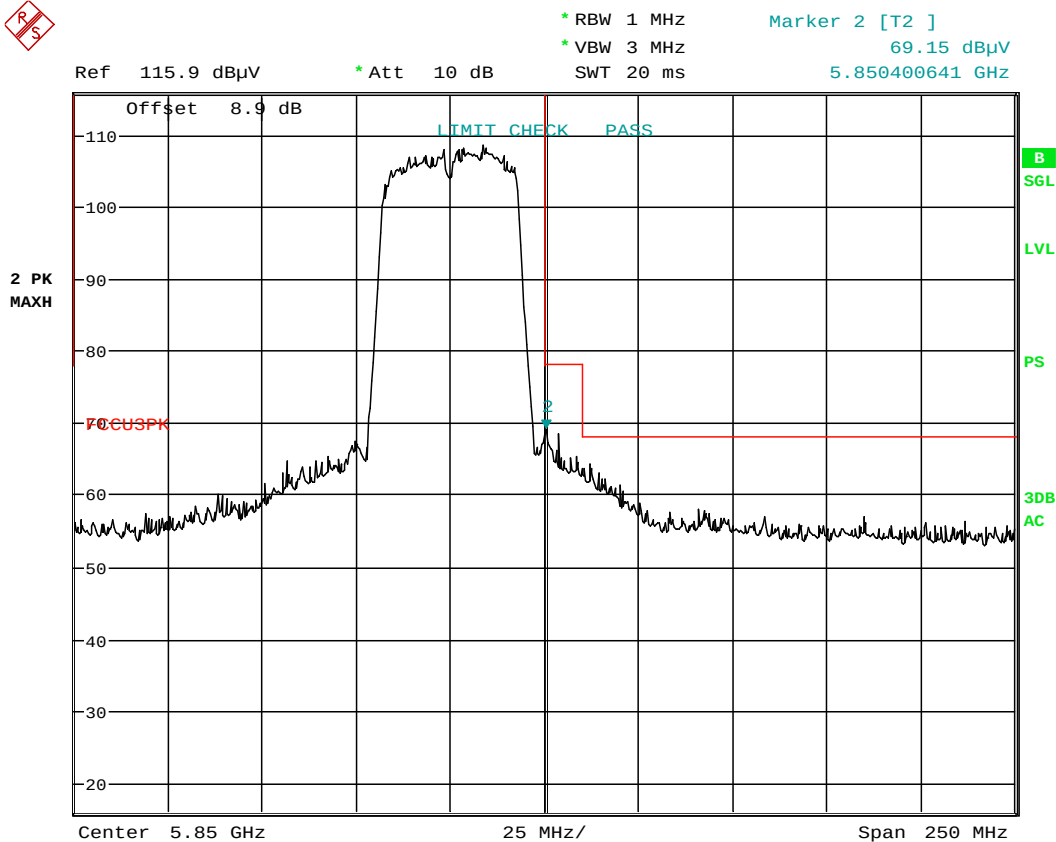
Date: 23.DEC.2016 14:29:12

Plot 7-185. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 151 of 233

Antenna-1 Radiated Band Edge Measurements (40MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159



Date: 1.DEC.2016 12:59:24

Plot 7-186. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 152 of 233

7.7.8 Antenna-1 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

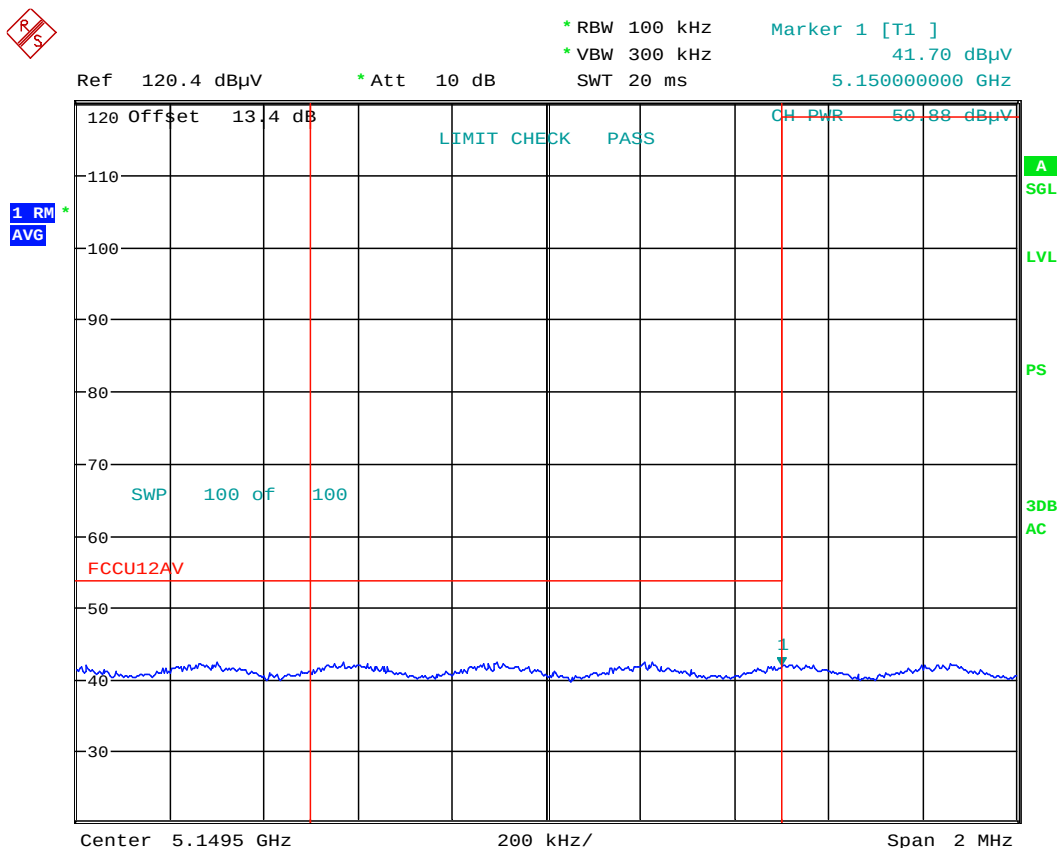
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



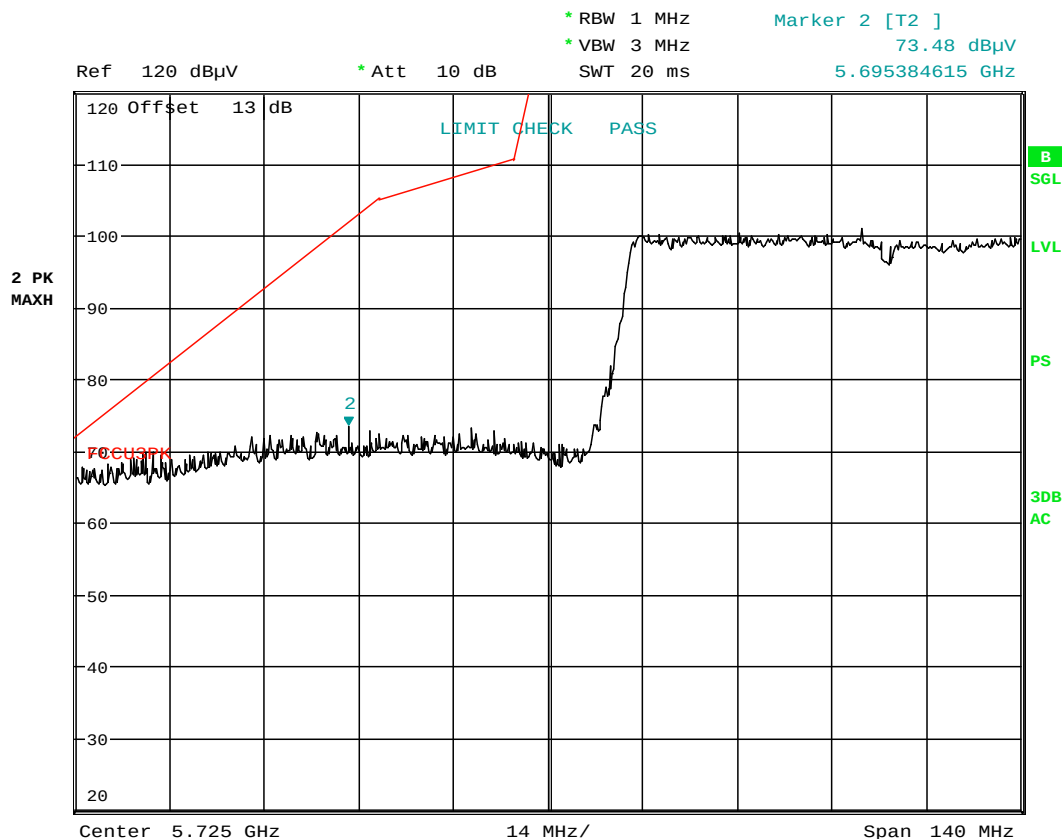
Date: 30.NOV.2016 13:08:23

Plot 7-187. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 153 of 233

Antenna-1 Radiated Band Edge Measurements (80MHz BW)

\$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 23.DEC.2016 14:36:32

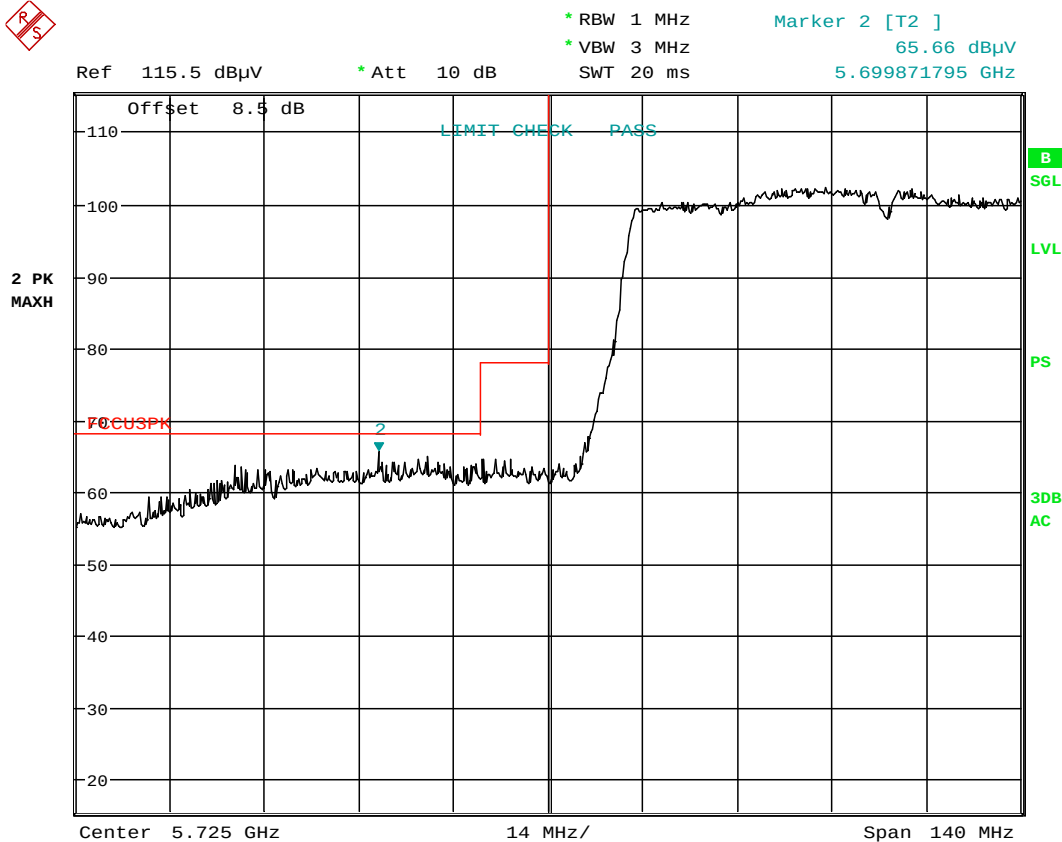
Plot 7-188. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 154 of 233

Antenna-1 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Date: 1.DEC.2016 13:24:26

Plot 7-189. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 155 of 233

Antenna-1 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

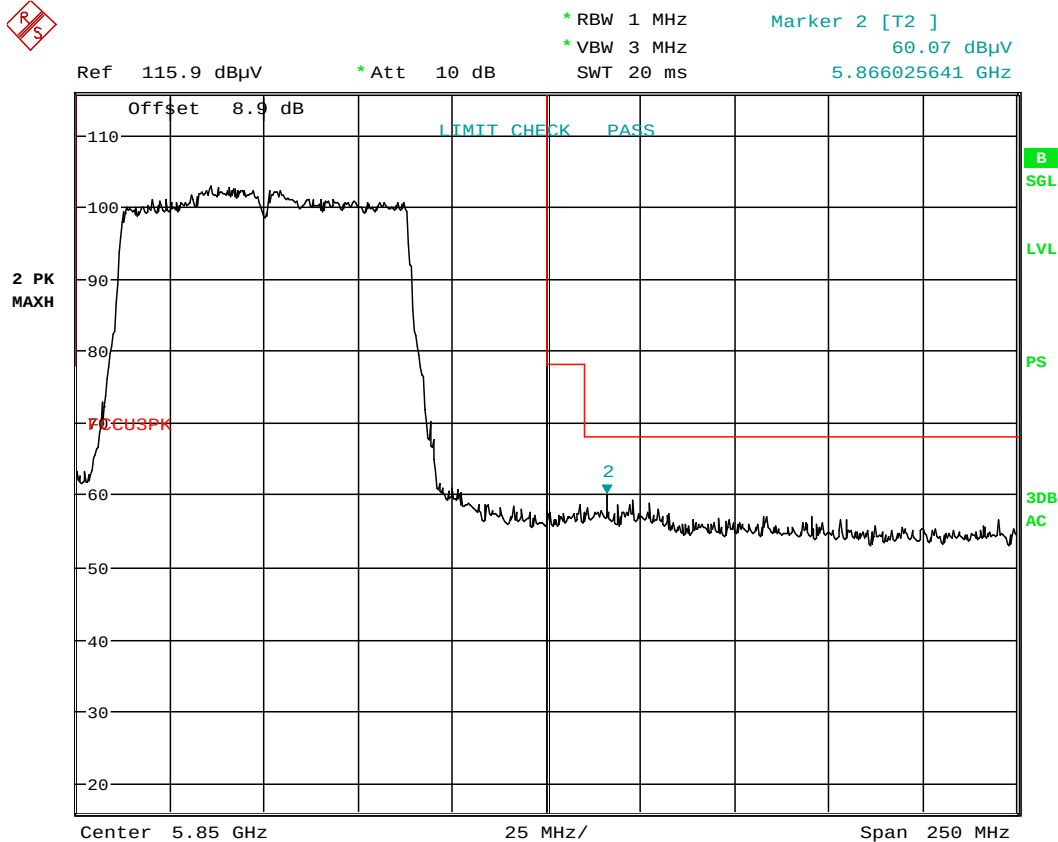
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 1.DEC.2016 13:25:53

Plot 7-190. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 156 of 233

7.7.9 Antenna-2 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

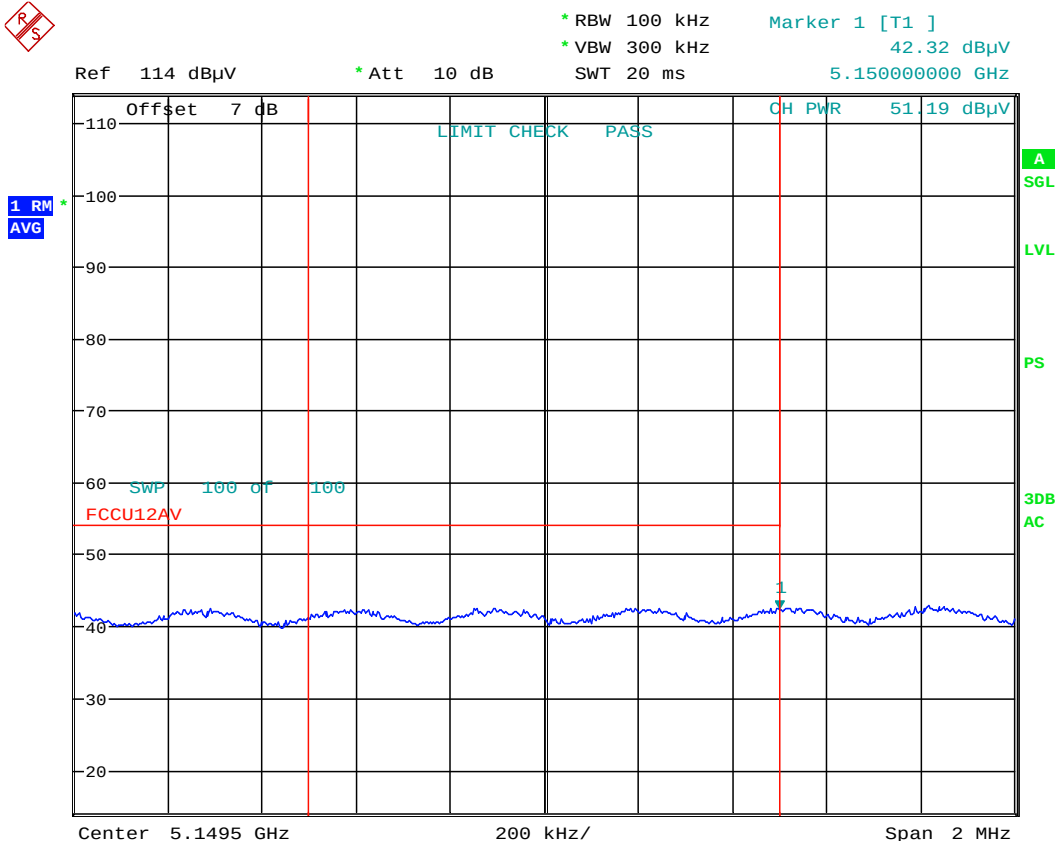
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



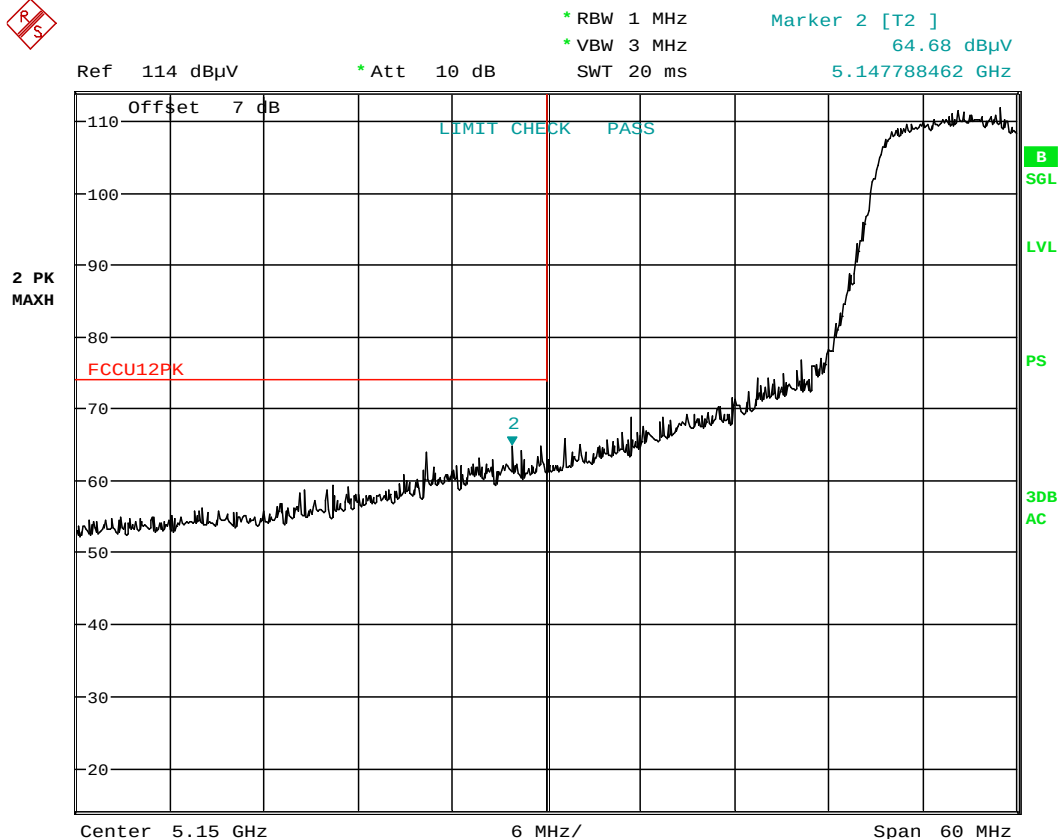
Date: 1.DEC.2016 13:53:17

Plot 7-191. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 157 of 233

Antenna-2 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 1.DEC.2016 13:54:53

Plot 7-192. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 158 of 233

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Antenna-2 Radiated Band Edge Measurements (20MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

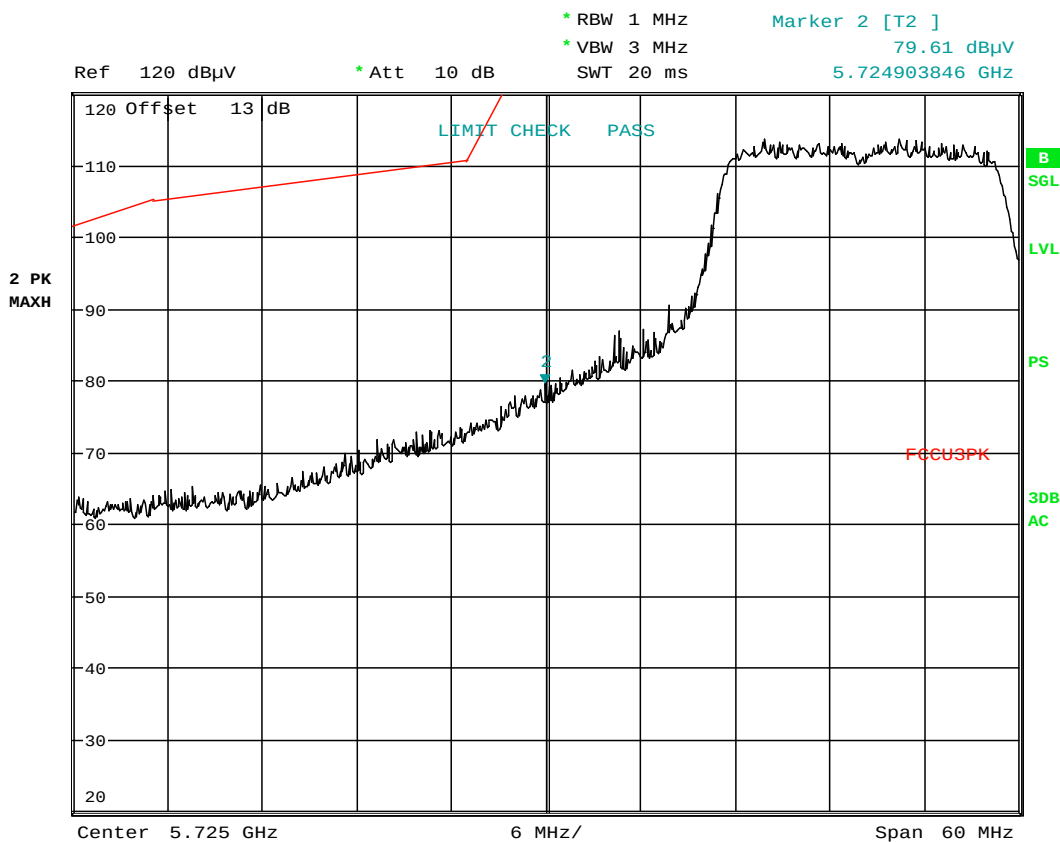
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5745MHz

Channel: 149



Date: 23.DEC.2016 11:26:54

Plot 7-193. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 159 of 233

Antenna-2 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

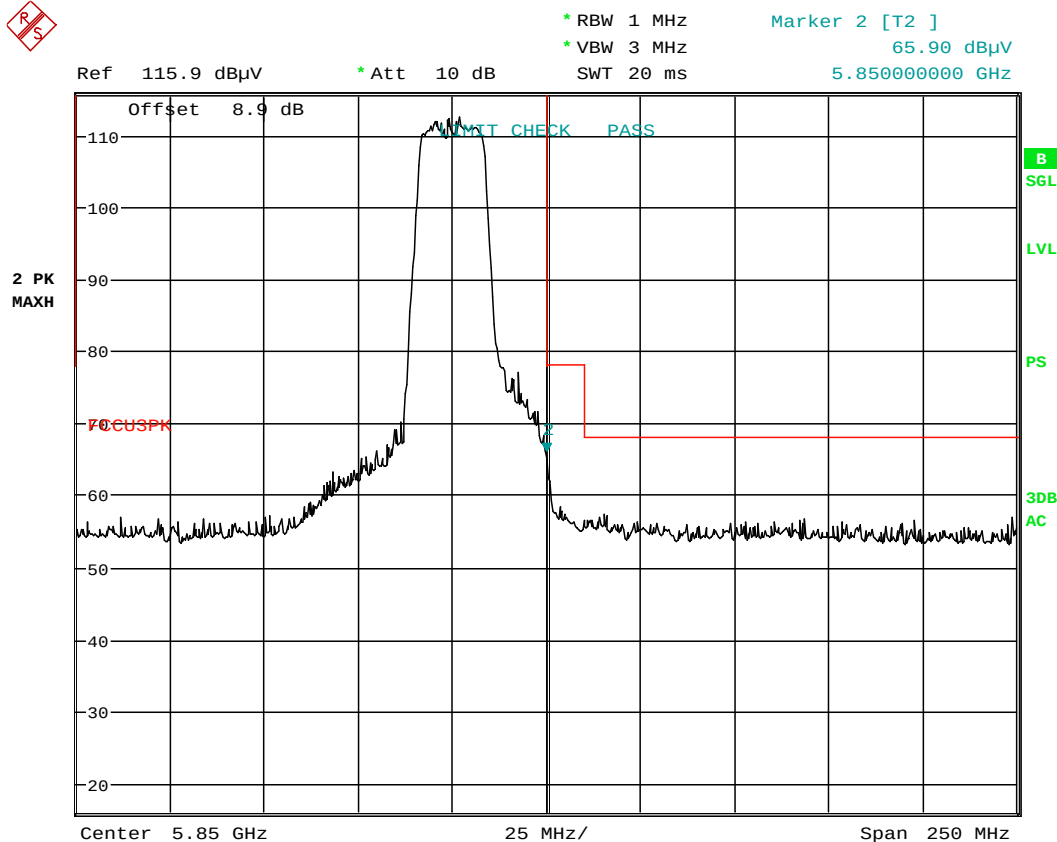
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 1.DEC.2016 14:04:53

Plot 7-194. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 160 of 233

7.7.10 Antenna-2 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

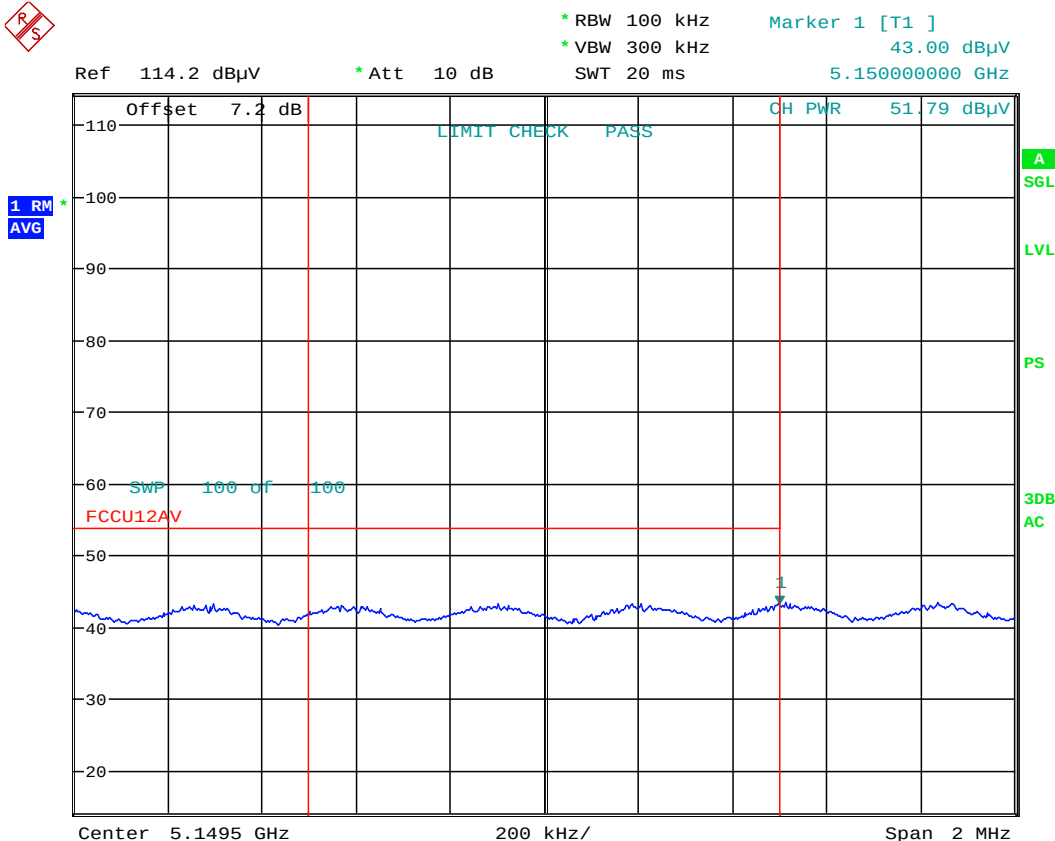
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



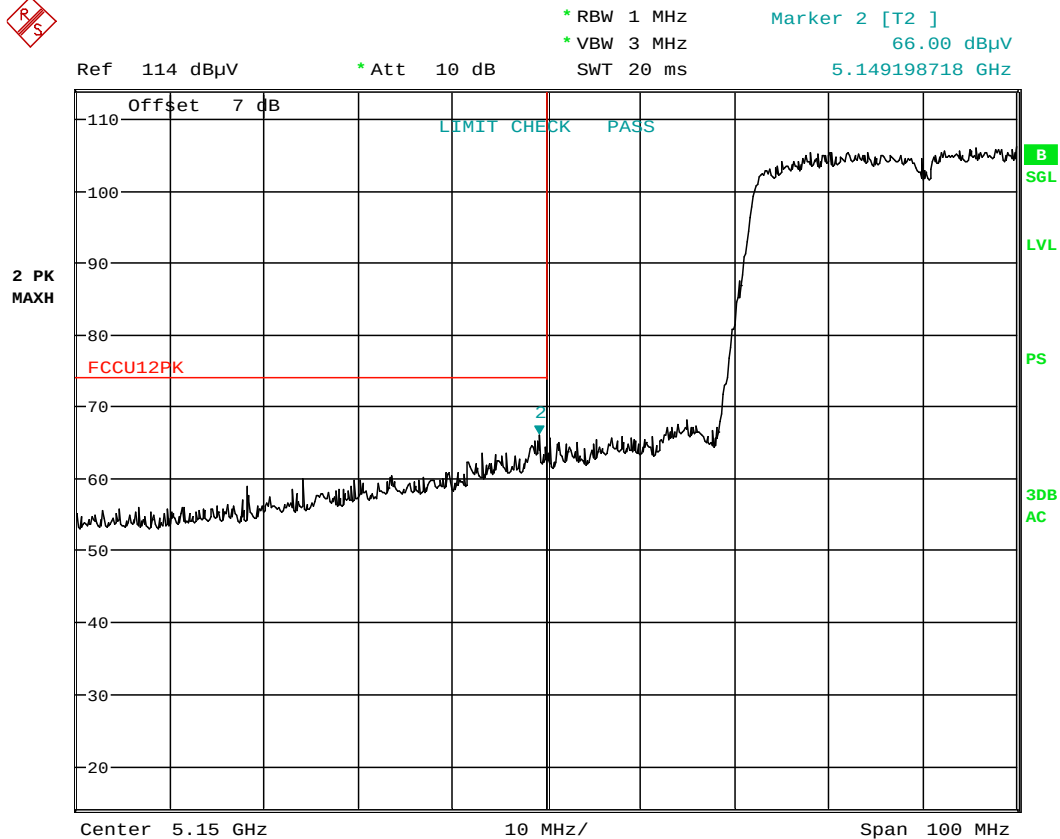
Date: 1.DEC.2016 14:17:12

Plot 7-195. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 161 of 233

Antenna-2 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 1.DEC.2016 14:17:48

Plot 7-196. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 162 of 233

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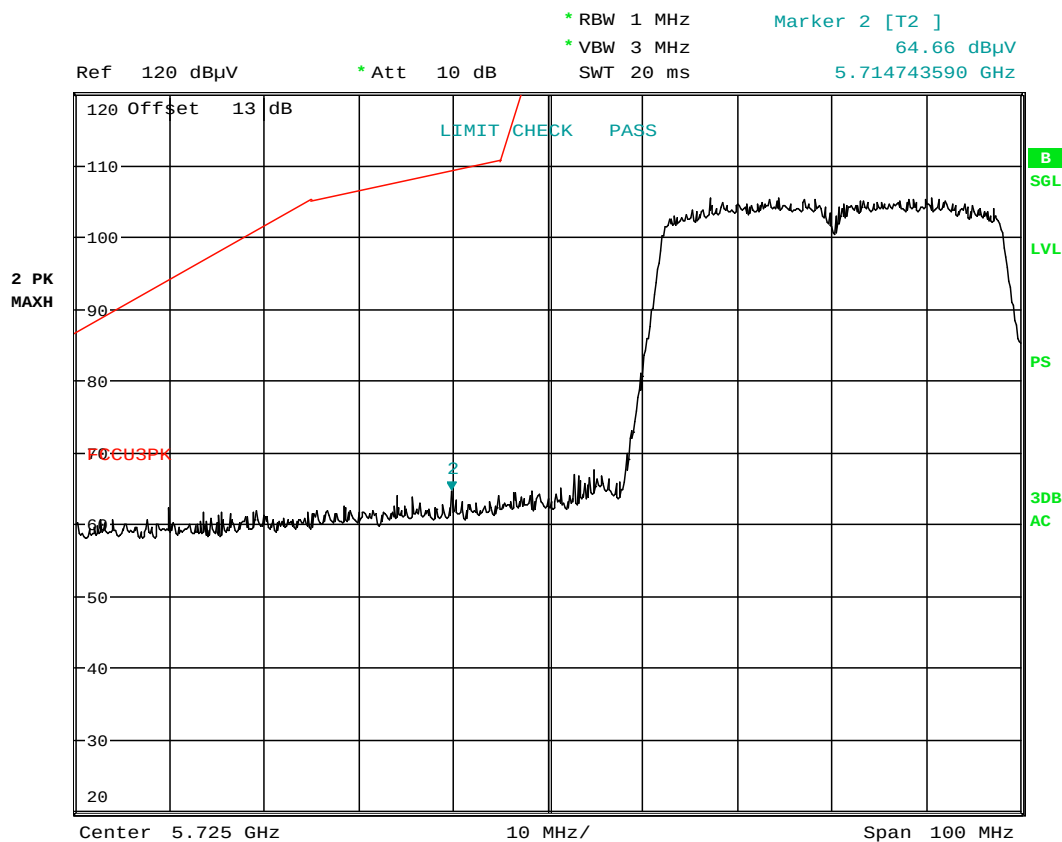
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Antenna-2 Radiated Band Edge Measurements (40MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5755MHz
Channel: 151



Date: 23.DEC.2016 14:08:55

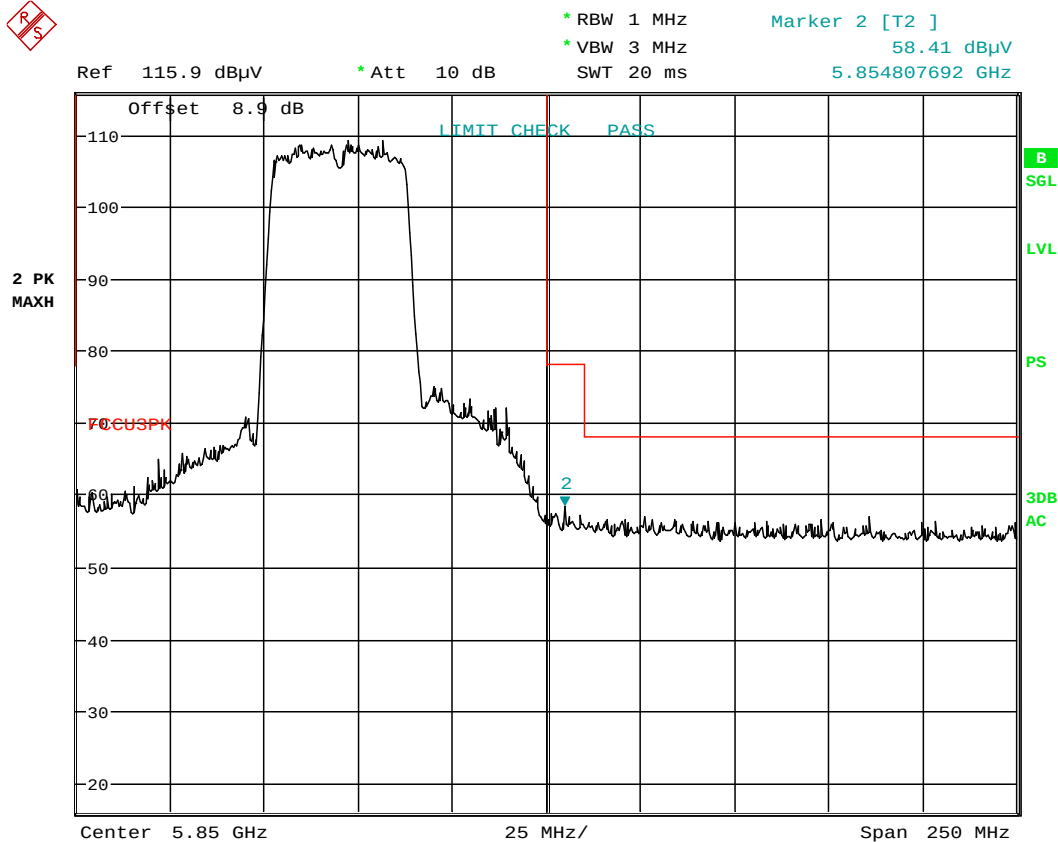
Plot 7-197. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 163 of 233

Antenna-2 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159



Date: 1.DEC.2016 14:26:17

Plot 7-198. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 164 of 233

7.7.11 Antenna-2 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

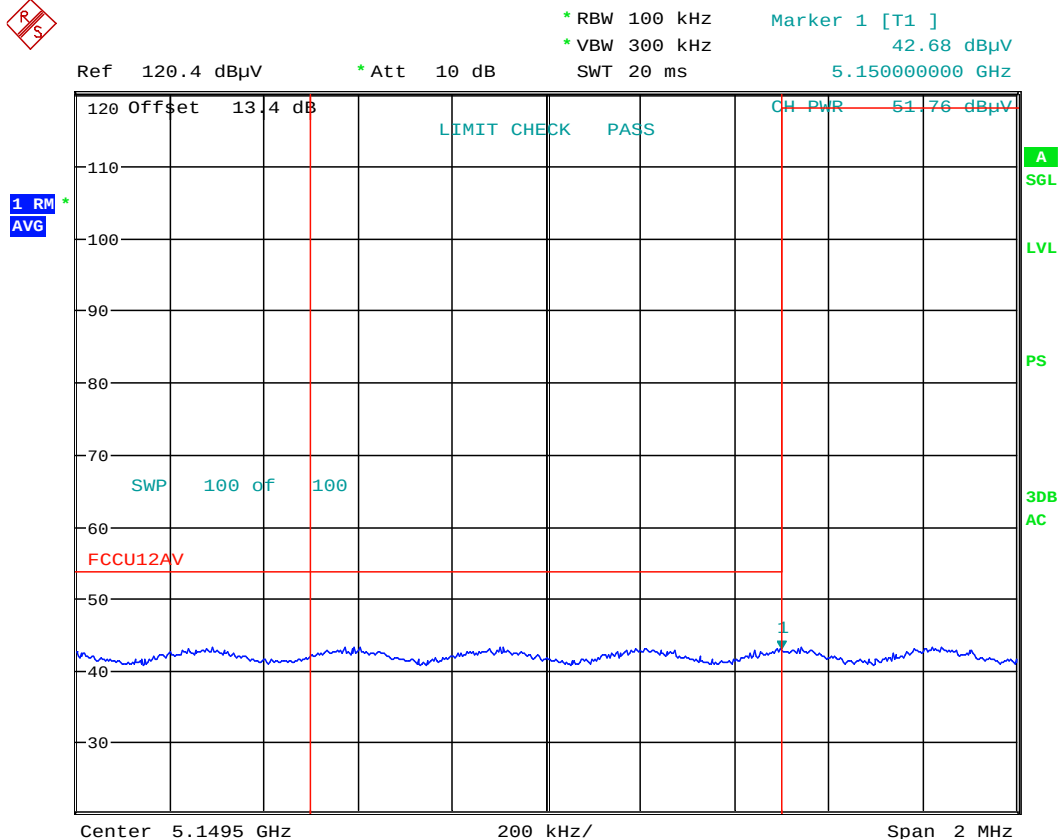
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



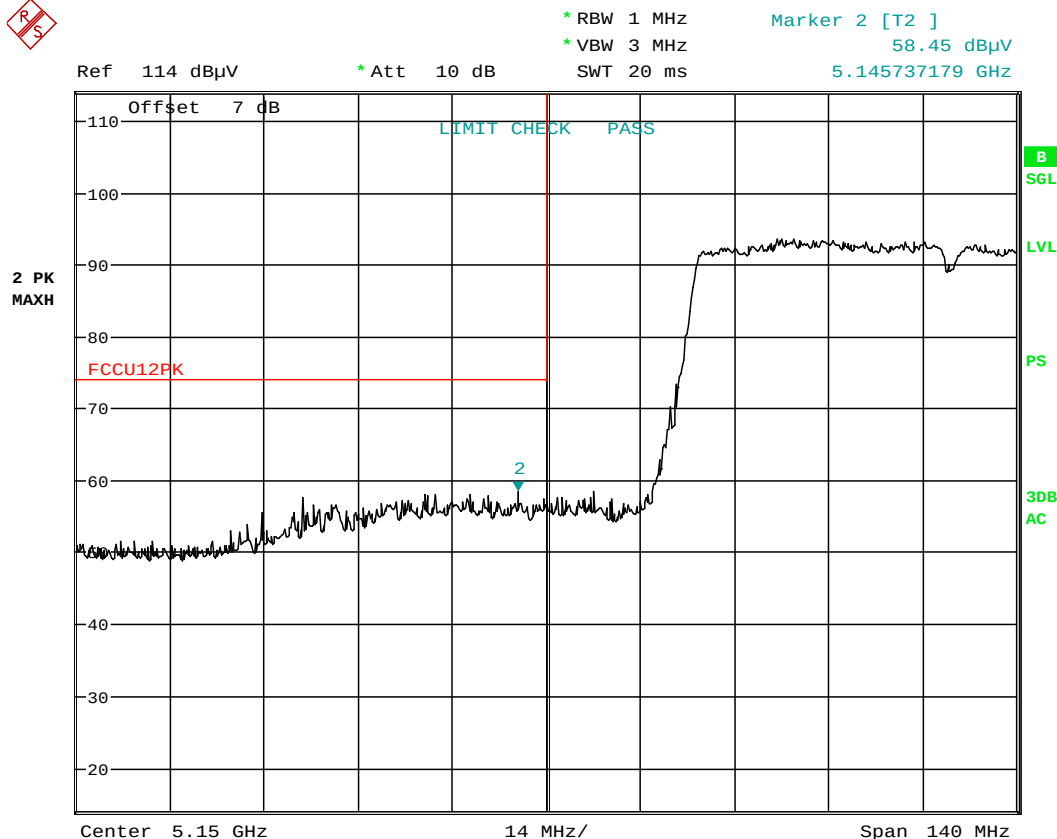
Date: 30.NOV.2016 14:23:08

Plot 7-199. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 165 of 233

Antenna-2 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 30.NOV.2016 14:23:37

Plot 7-200. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 166 of 233

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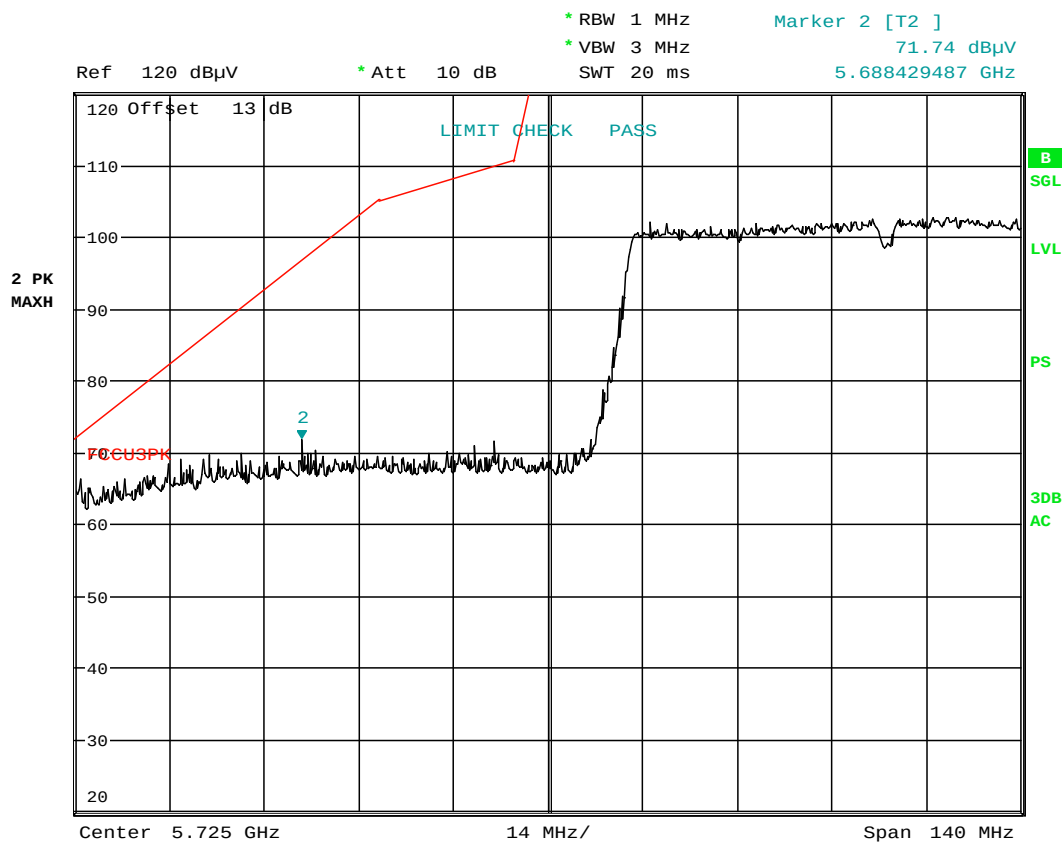
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Antenna-2 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Date: 23.DEC.2016 14:42:31

Plot 7-201. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 167 of 233

Antenna-2 Radiated Band Edge Measurements (80MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

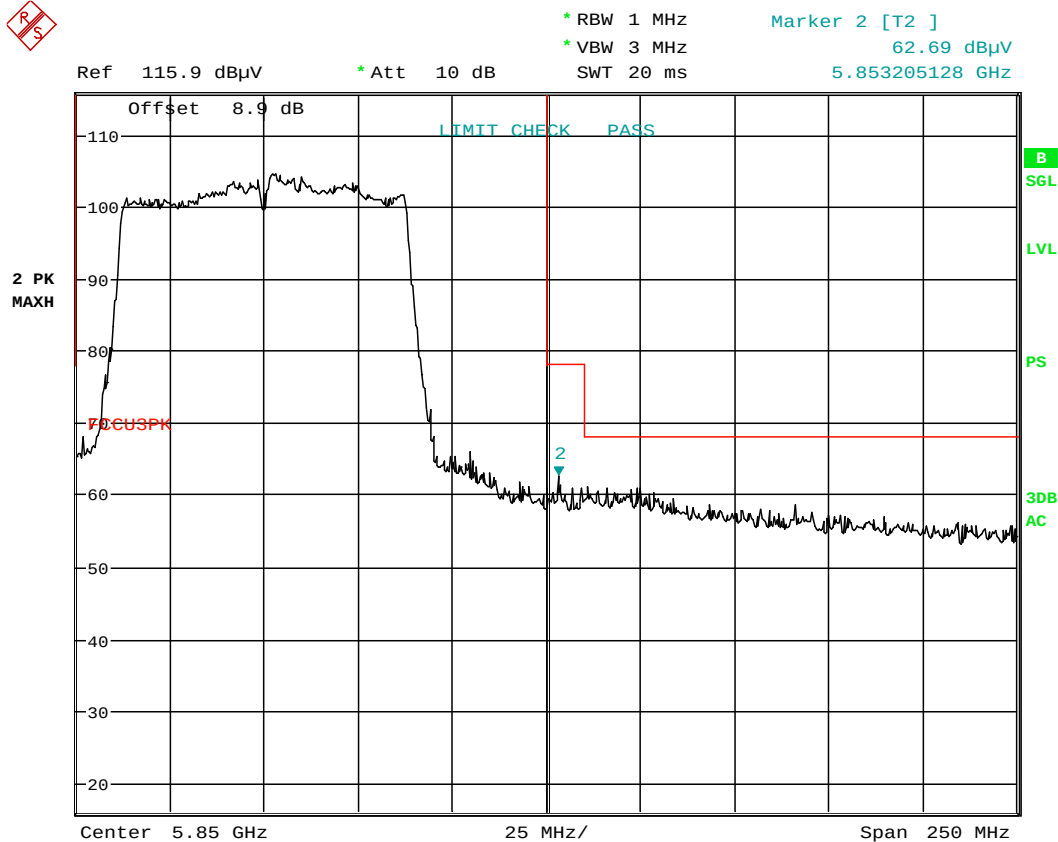
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 1.DEC.2016 14:44:55

Plot 7-202. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 168 of 233

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7.7.12 Antenna-3 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

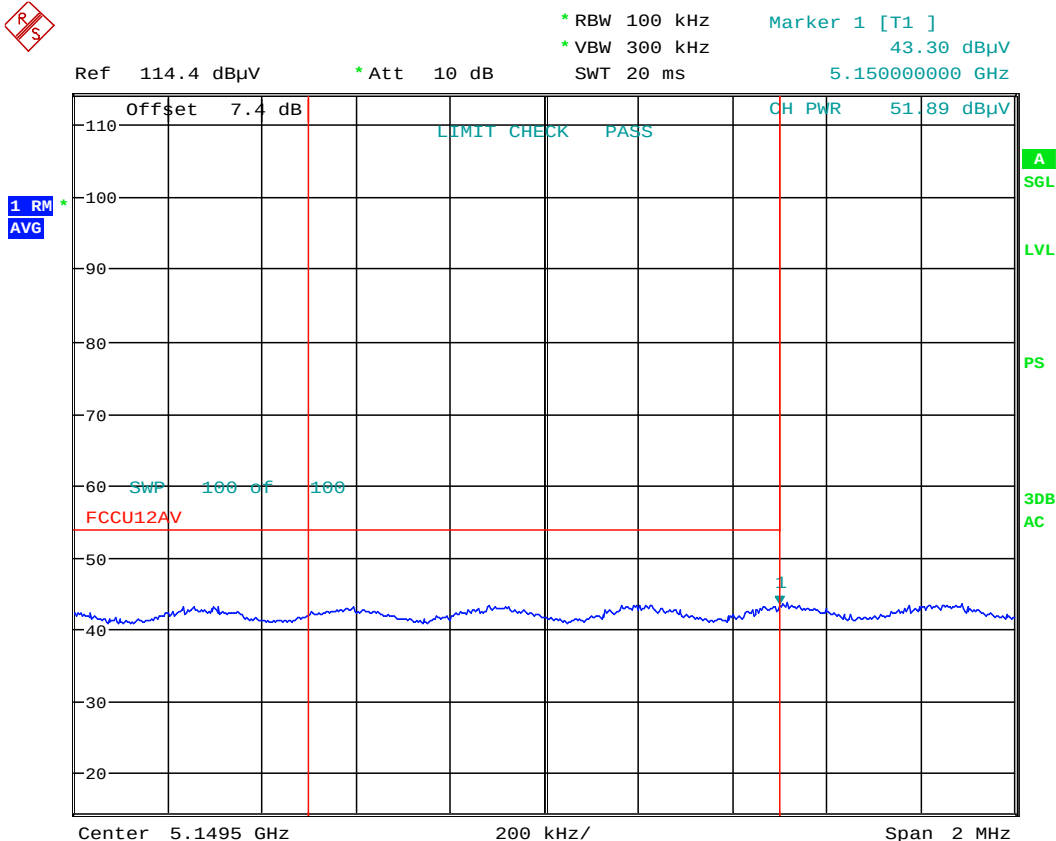
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



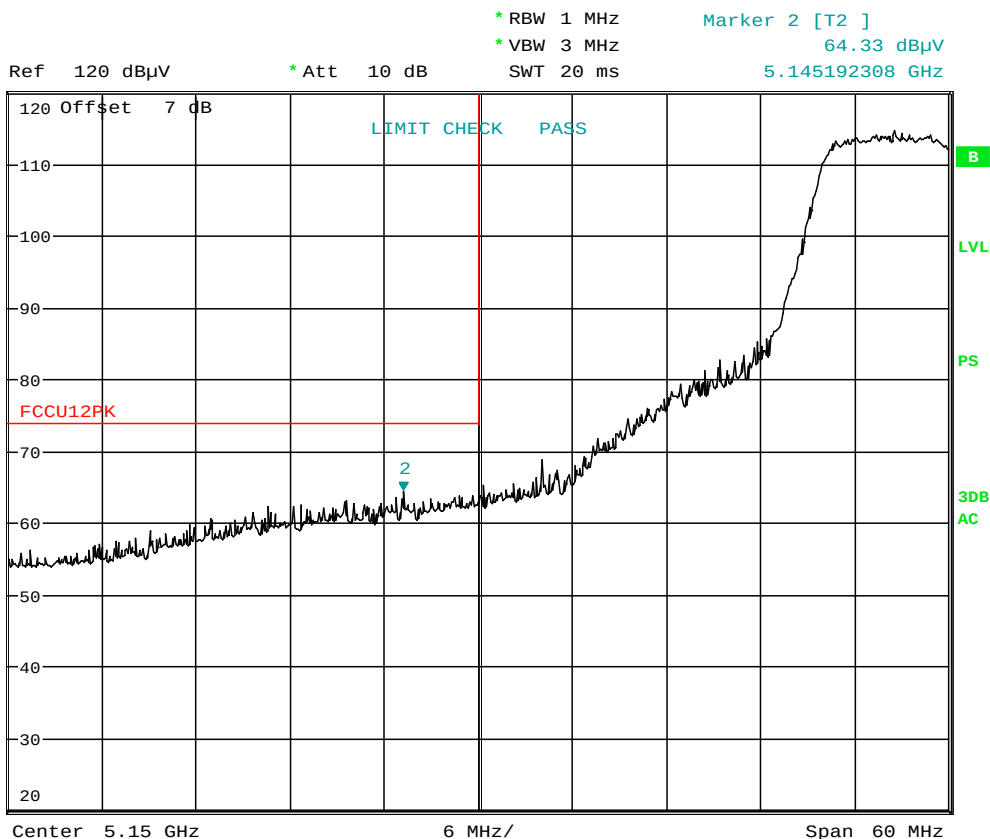
Date: 1.DEC.2016 14:58:08

Plot 7-203. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 169 of 233

Antenna-3 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 1.DEC.2016 14:59:40

Plot 7-204. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 170 of 233

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Antenna-3 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

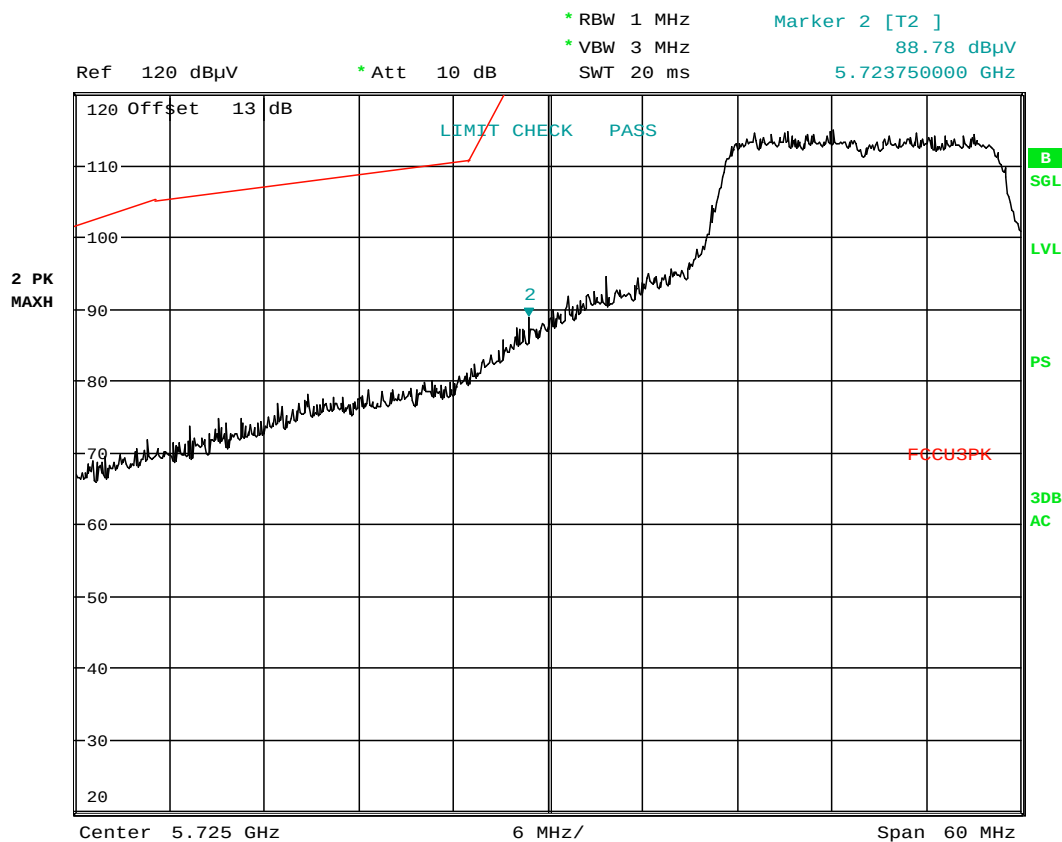
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5745MHz

Channel: 149



Date: 23.DEC.2016 11:51:00

Plot 7-205. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 171 of 233

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Antenna-3 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

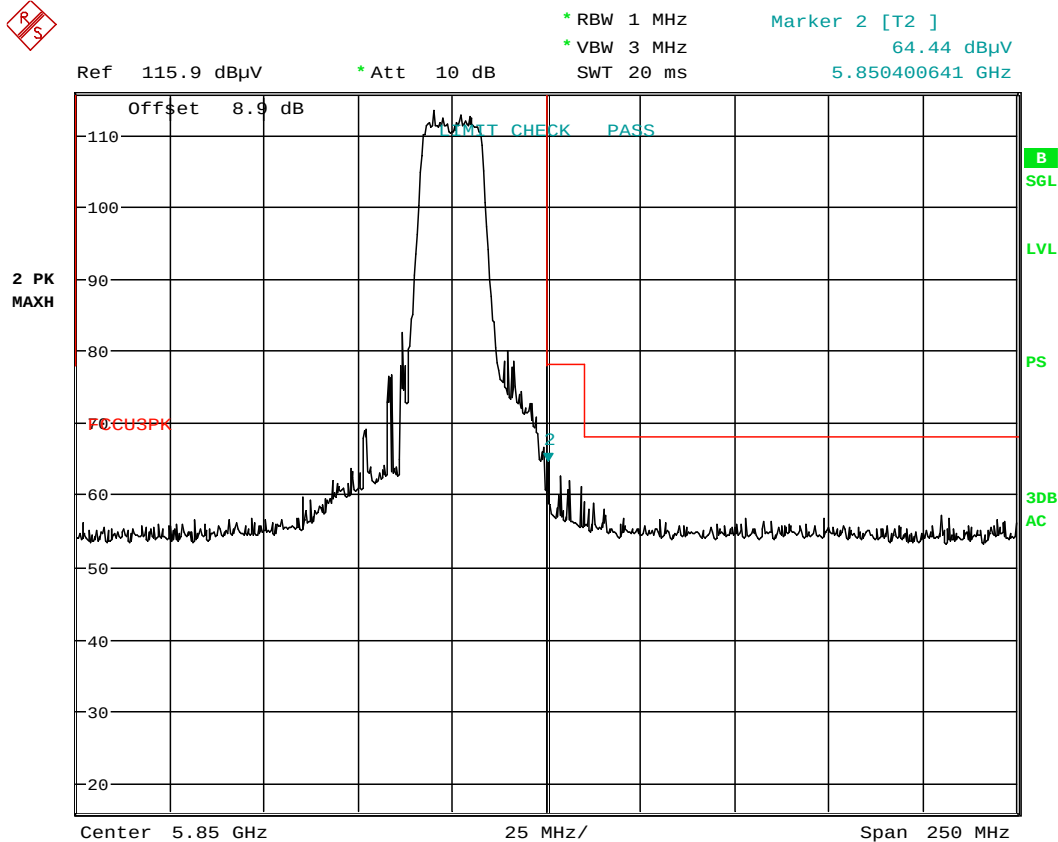
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 1.DEC.2016 15:13:46

Plot 7-206. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 172 of 233

7.7.13 Antenna-3 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

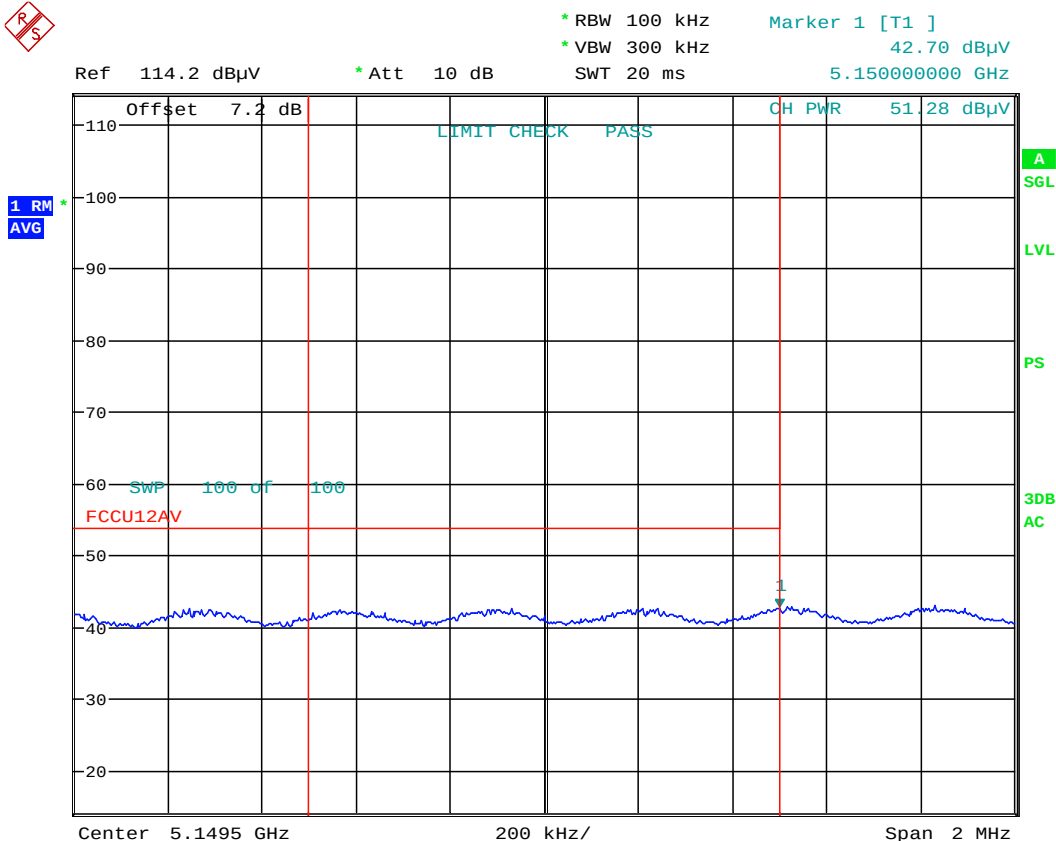
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



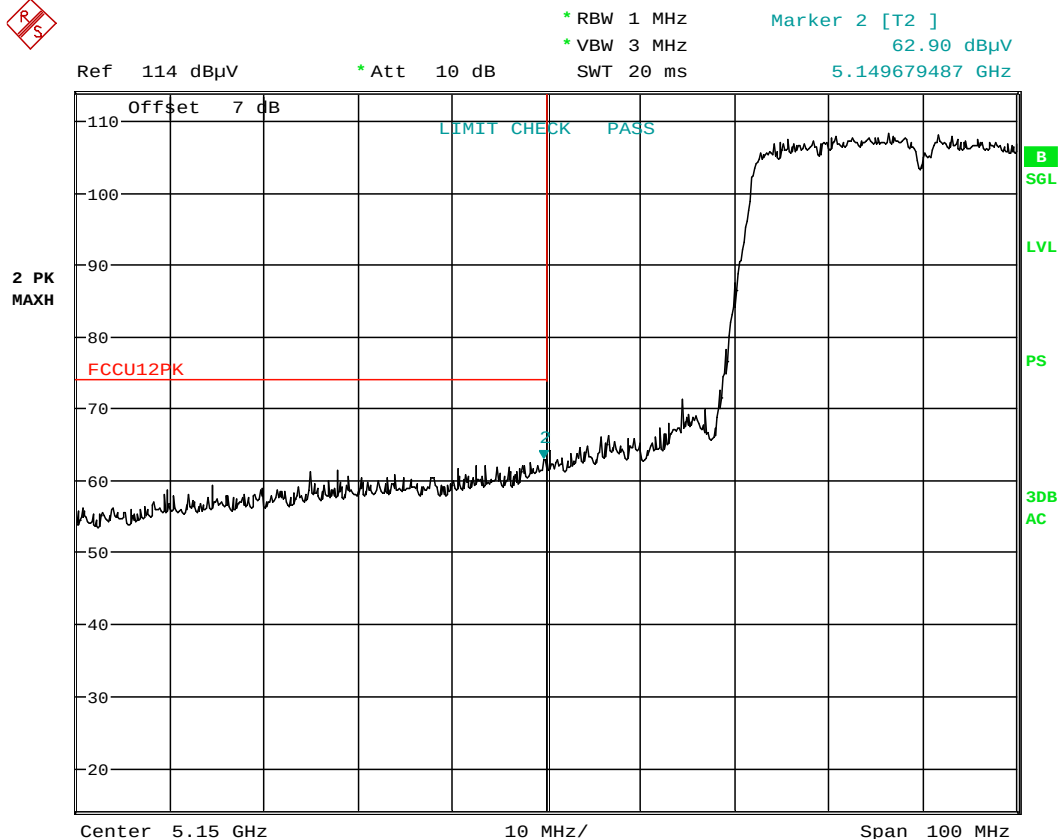
Date: 1.DEC.2016 15:29:24

Plot 7-207. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 173 of 233

Antenna-3 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 1.DEC.2016 15:29:54

Plot 7-208. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 174 of 233

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Antenna-3 Radiated Band Edge Measurements (40MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

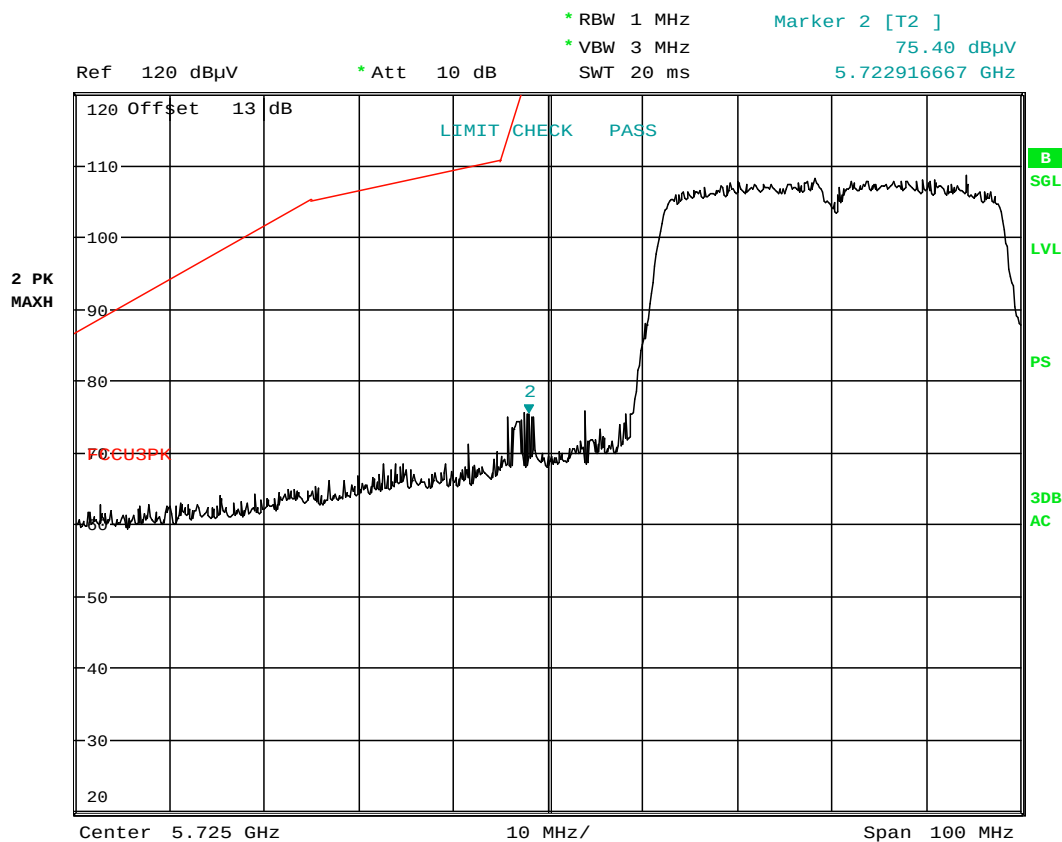
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5755MHz

Channel: 151



Date: 23.DEC.2016 13:51:36

Plot 7-209. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 175 of 233

Antenna-3 Radiated Band Edge Measurements (40MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

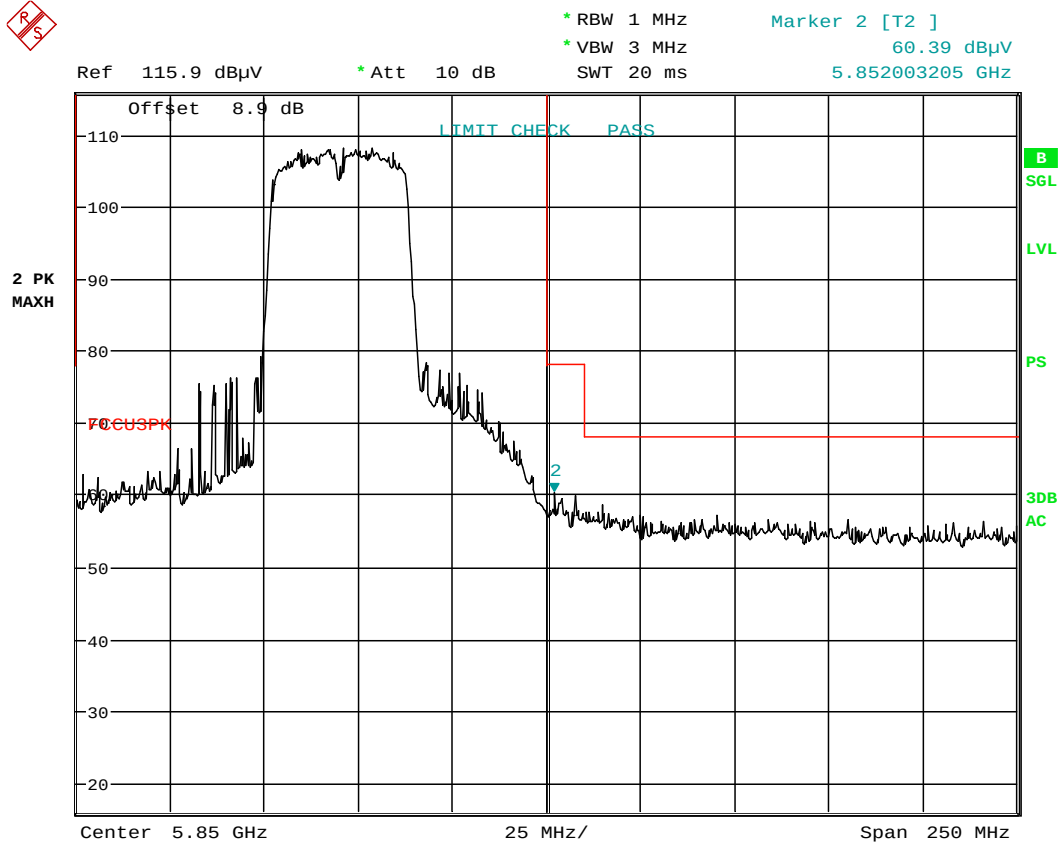
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5795MHz

Channel: 159



Date: 1.DEC.2016 15:38:59

Plot 7-210. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 176 of 233

7.7.14 Antenna-3 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

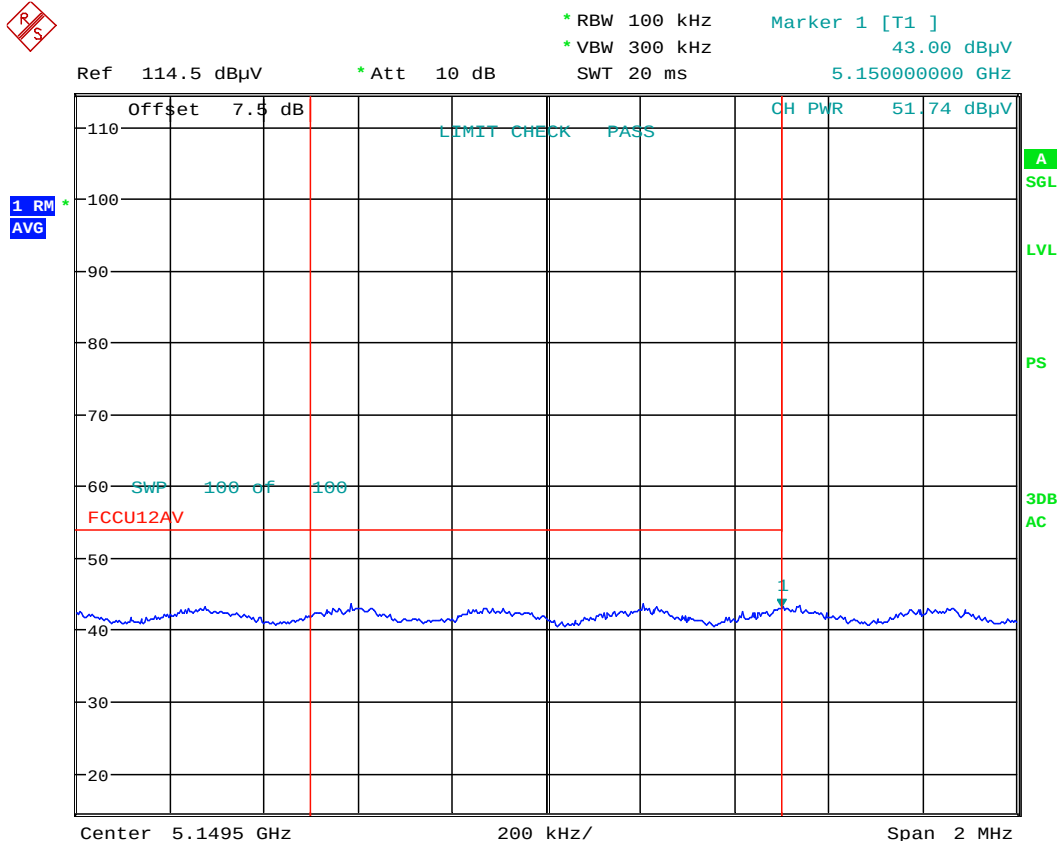
Worst Case Mode: 802.11n (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



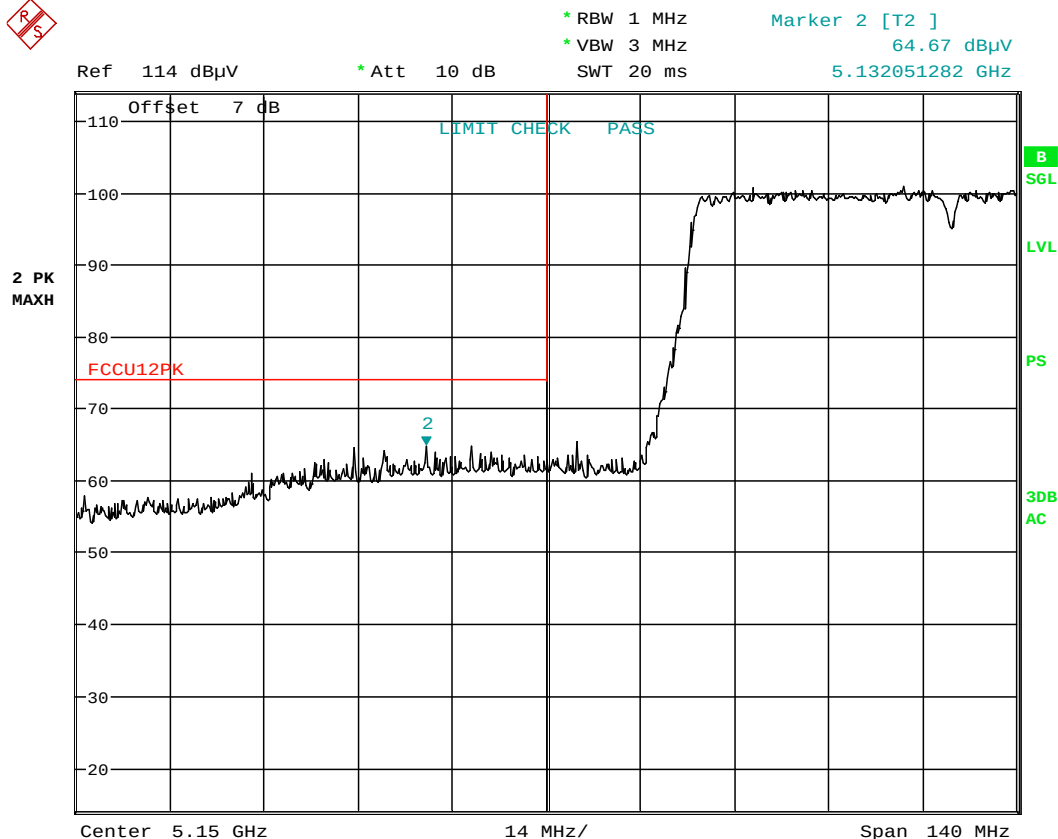
Date: 1.DEC.2016 15:50:43

Plot 7-211. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 177 of 233

Antenna-3 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 1.DEC.2016 15:51:24

Plot 7-212. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 178 of 233

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Antenna-3 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

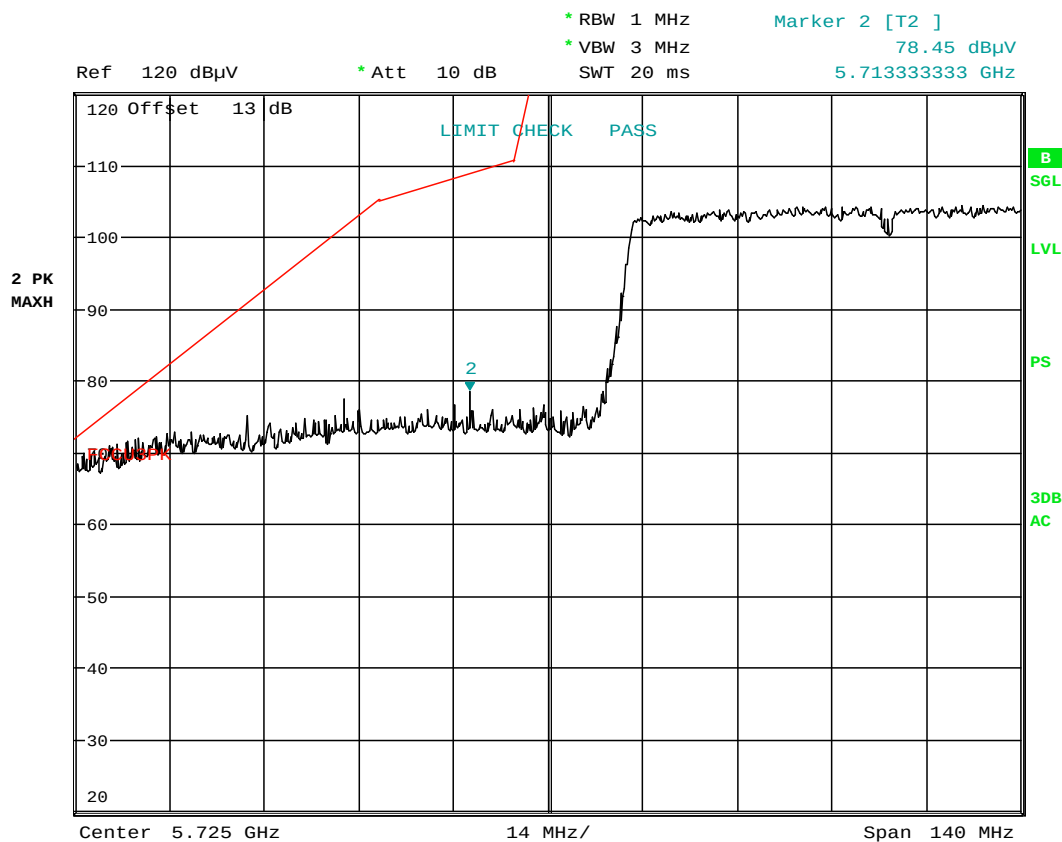
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 23.DEC.2016 14:50:11

Plot 7-213. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 179 of 233

Antenna-3 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

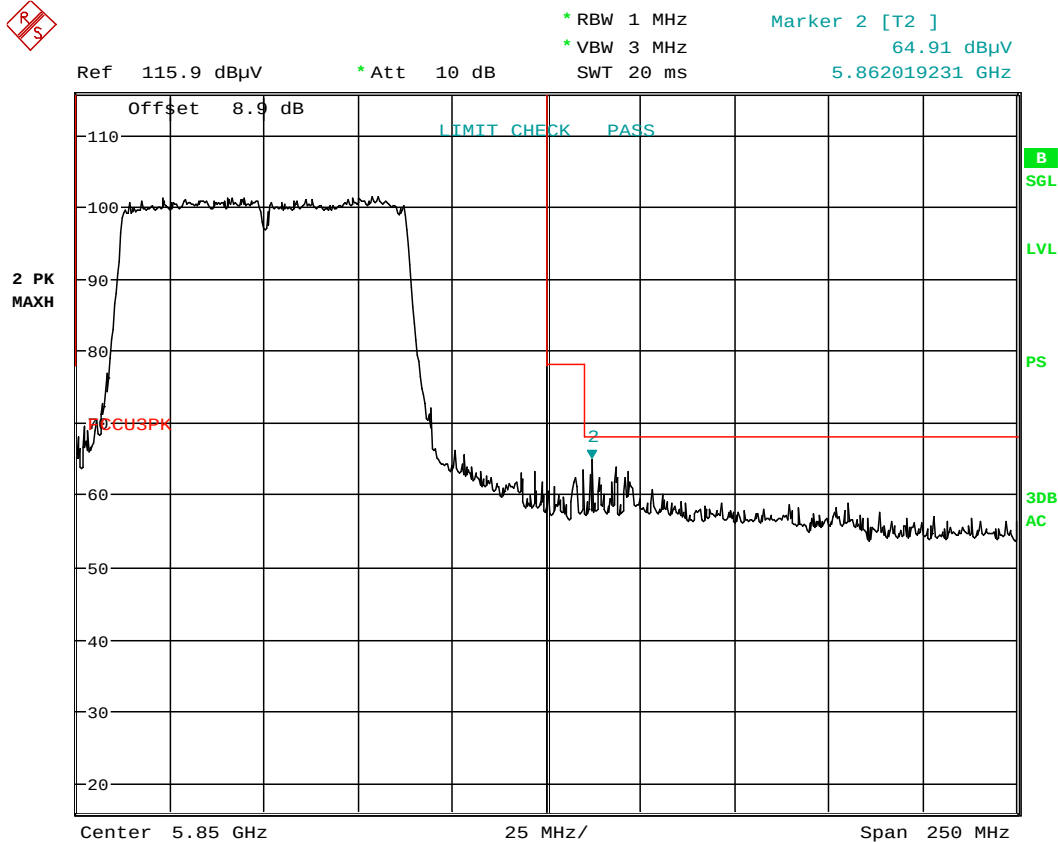
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 1.DEC.2016 15:58:19

Plot 7-214. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 180 of 233

7.7.15 Antenna-4 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

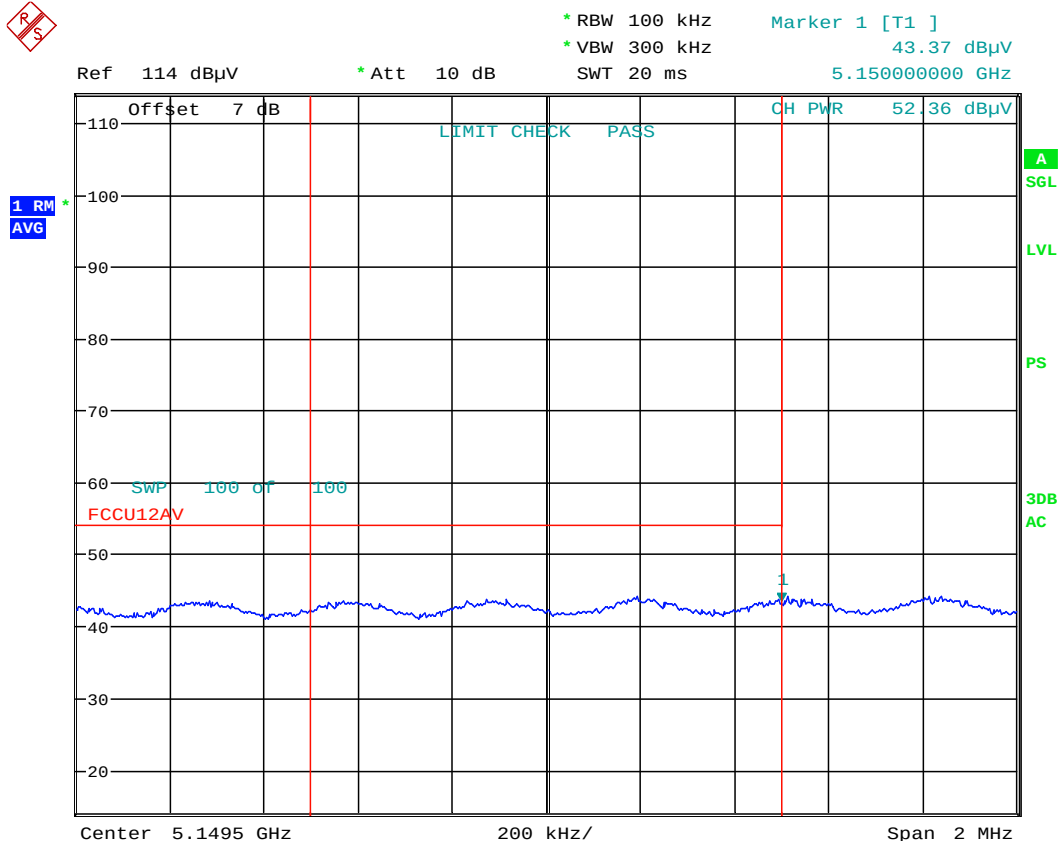
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



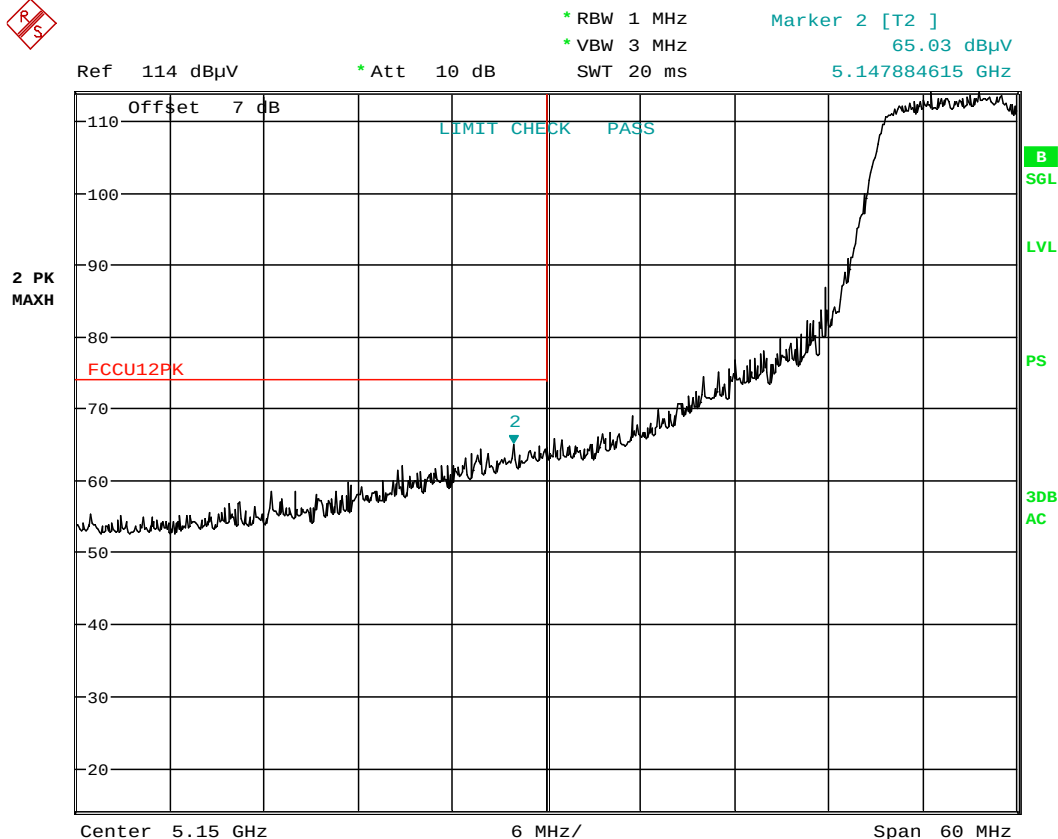
Date: 2.DEC.2016 10:43:01

Plot 7-215. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 181 of 233

Antenna-4 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 2.DEC.2016 10:43:29

Plot 7-216. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 182 of 233

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Antenna-4 Radiated Band Edge Measurements (20MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

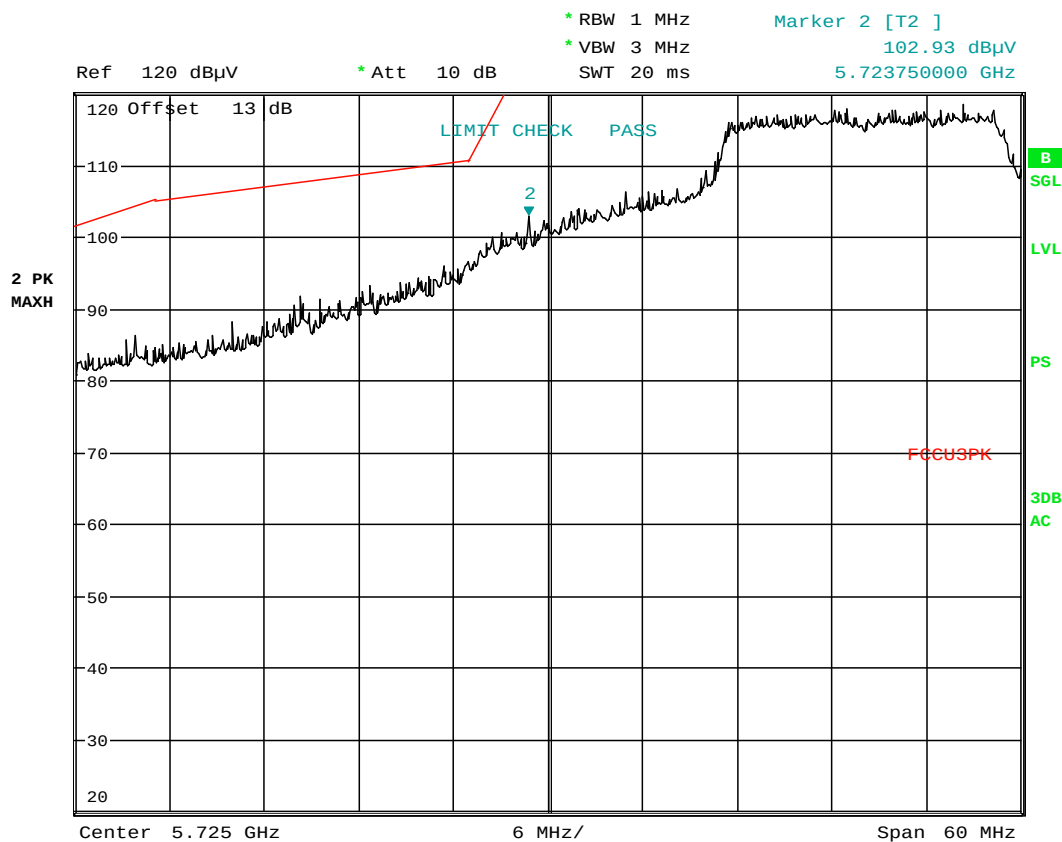
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5745MHz

Channel: 149



Date: 23.DEC.2016 12:03:51

Plot 7-217. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 183 of 233

Antenna-4 Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

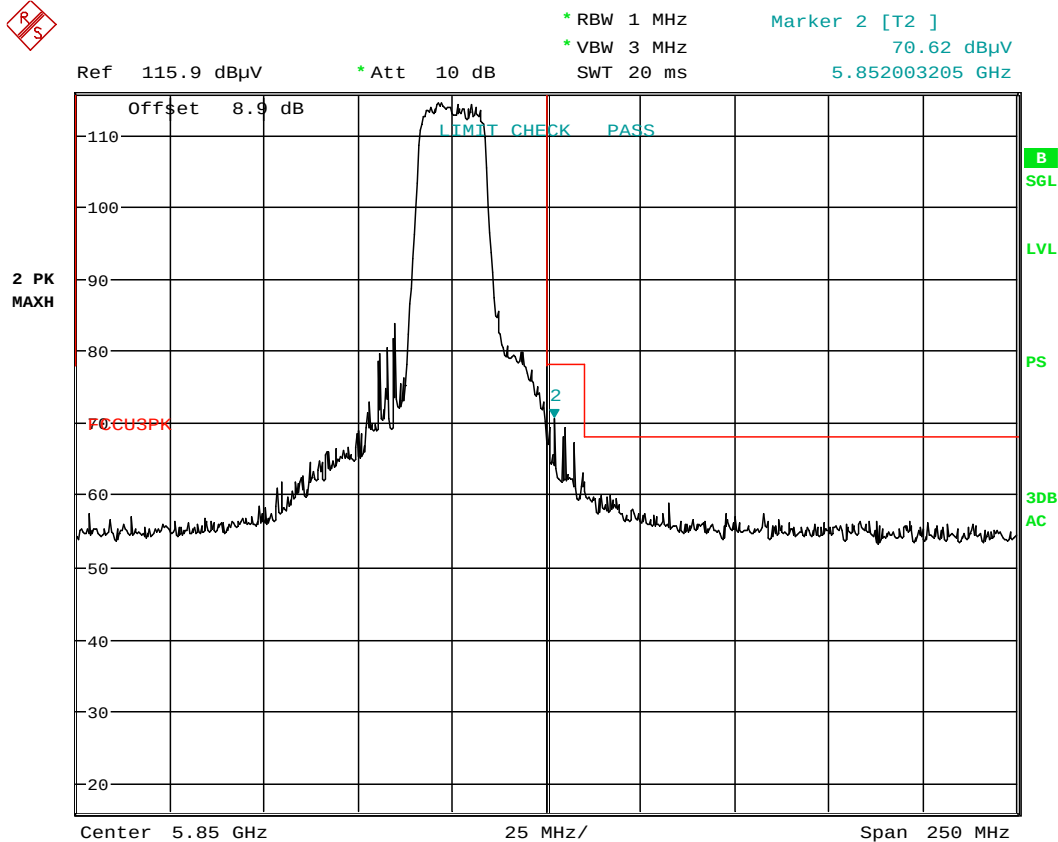
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 2.DEC.2016 11:50:25

Plot 7-218. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 184 of 233

7.7.16 Antenna-4 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

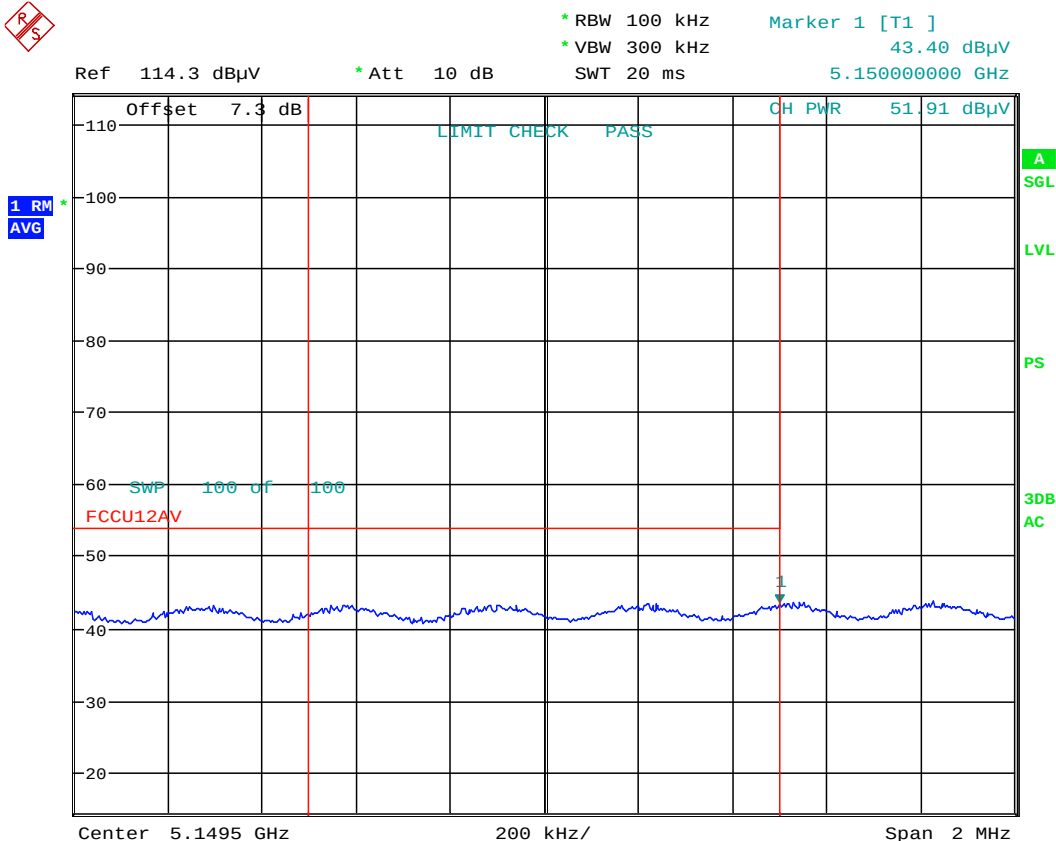
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



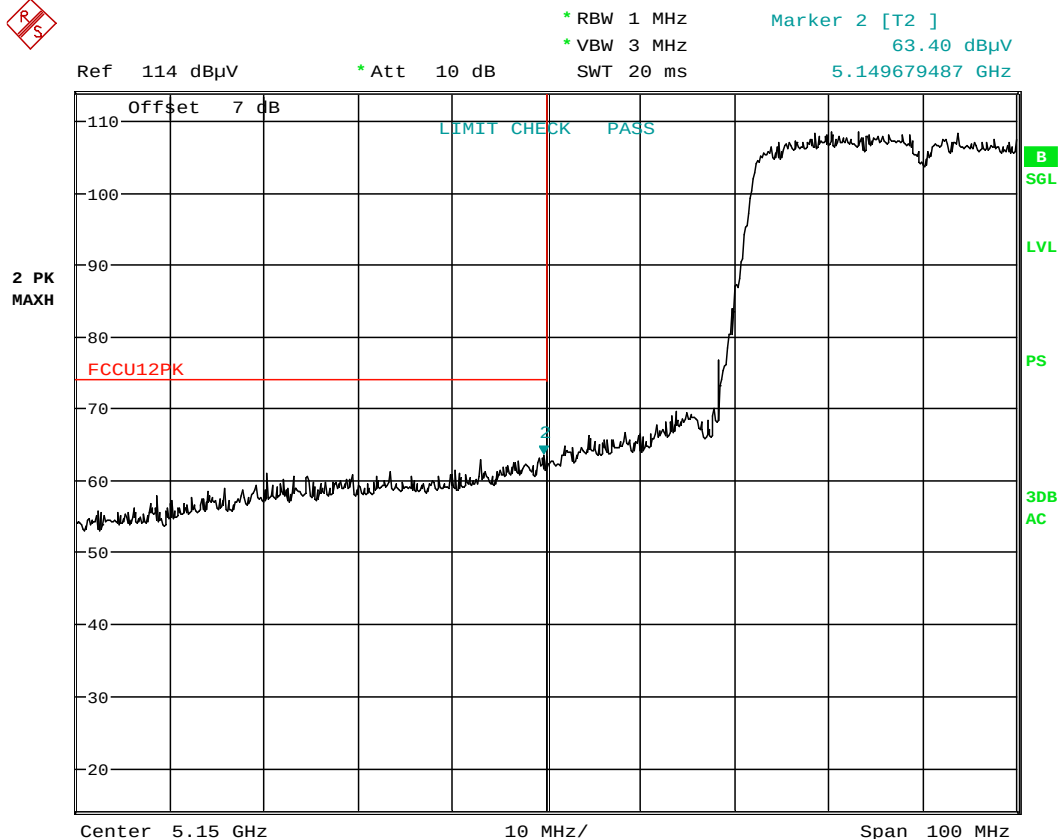
Date: 2.DEC.2016 12:05:34

Plot 7-219. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 185 of 233

Antenna-4 Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 2.DEC.2016 12:06:03

Plot 7-220. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 186 of 233

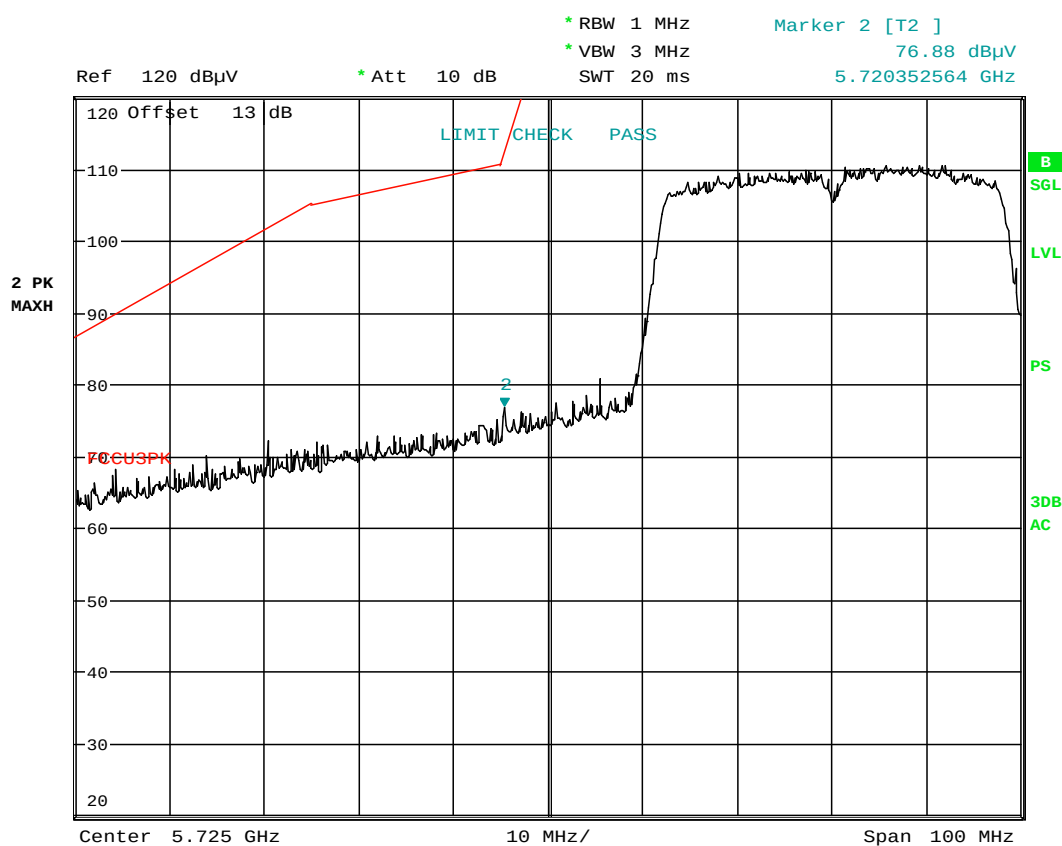
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Antenna-4 Radiated Band Edge Measurements (40MHz BW)
 §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode:	<u>802.11n (40MHz)</u>
Worst Case Transfer Rate:	<u>MCS0</u>
Distance of Measurements:	<u>3 Meters</u>
Operating Frequency:	<u>5755MHz</u>
Channel:	151



Date: 23.DEC.2016 13:33:46

Plot 7-221. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	 FCC Pt. 15.407 802.11a/n/lac UNII MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 187 of 233

Antenna-4 Radiated Band Edge Measurements (40MHz BW) **§15.407(b.1)(b.2) §15.205 §15.209**

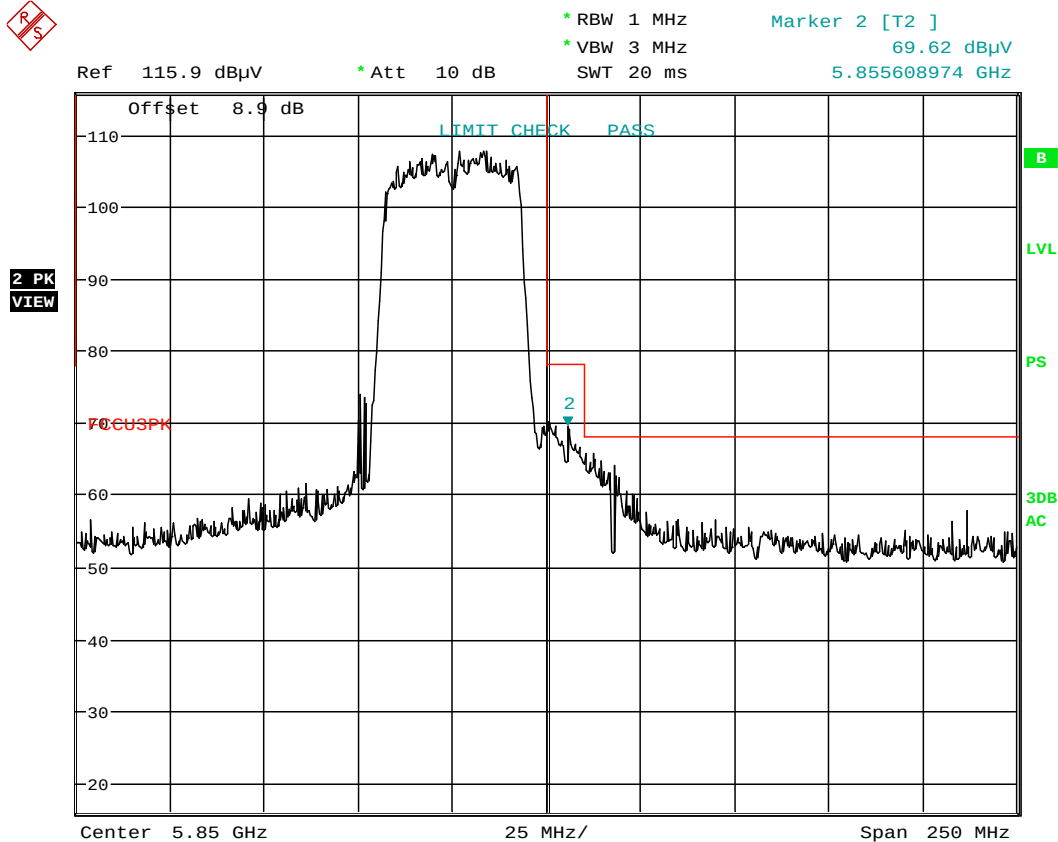
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5795MHz

Channel: 159



Date: 2.DEC.2016 12:20:18

Plot 7-222. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 188 of 233

7.7.17 Antenna-4 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

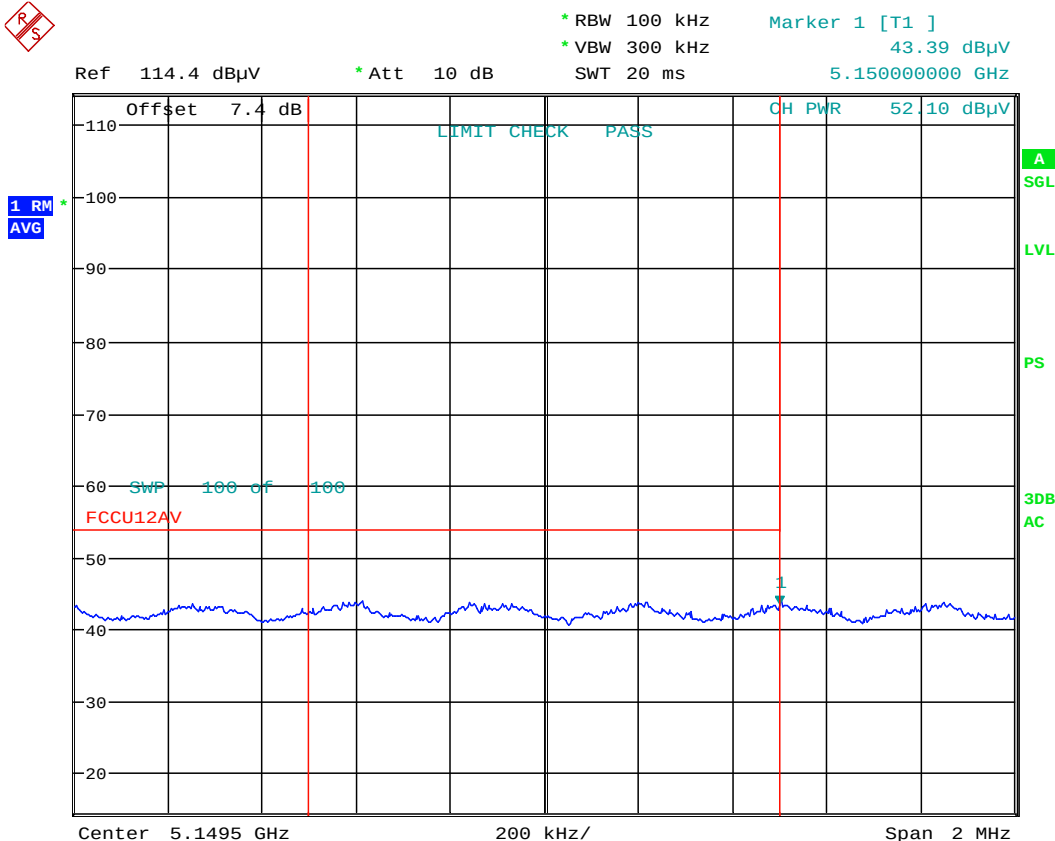
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



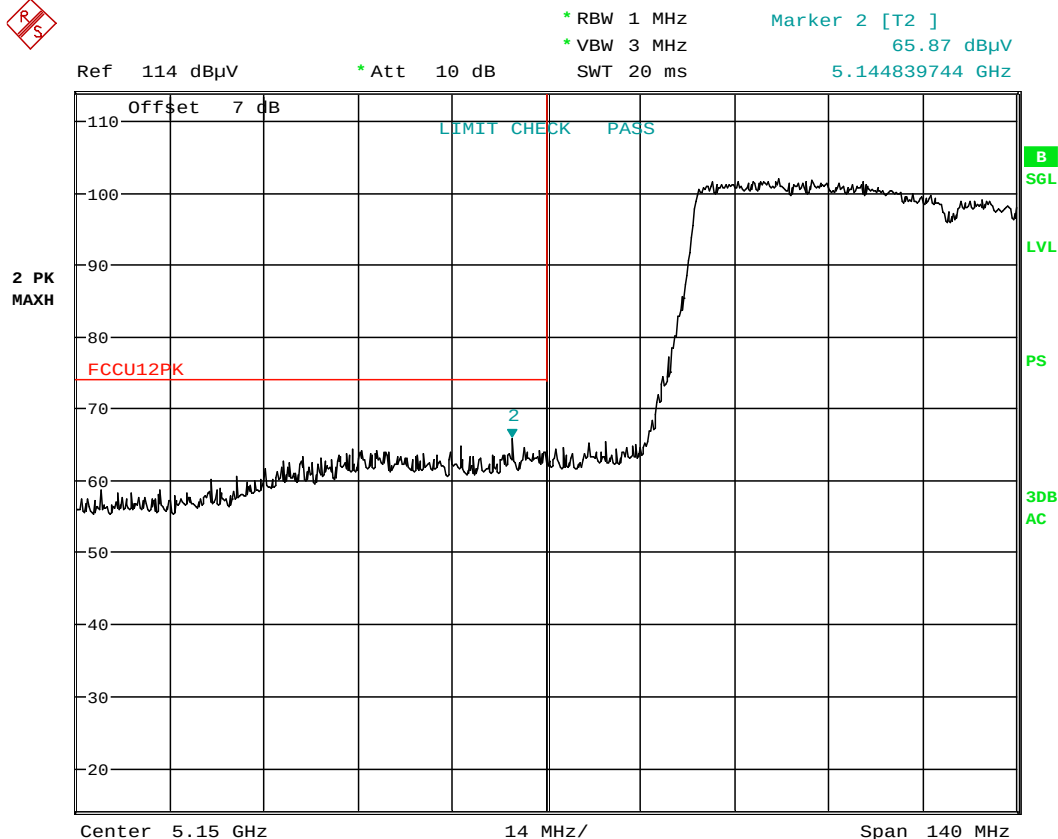
Date: 2.DEC.2016 12:31:25

Plot 7-223. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 189 of 233

Antenna-4 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 2.DEC.2016 12:31:58

Plot 7-224. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 190 of 233

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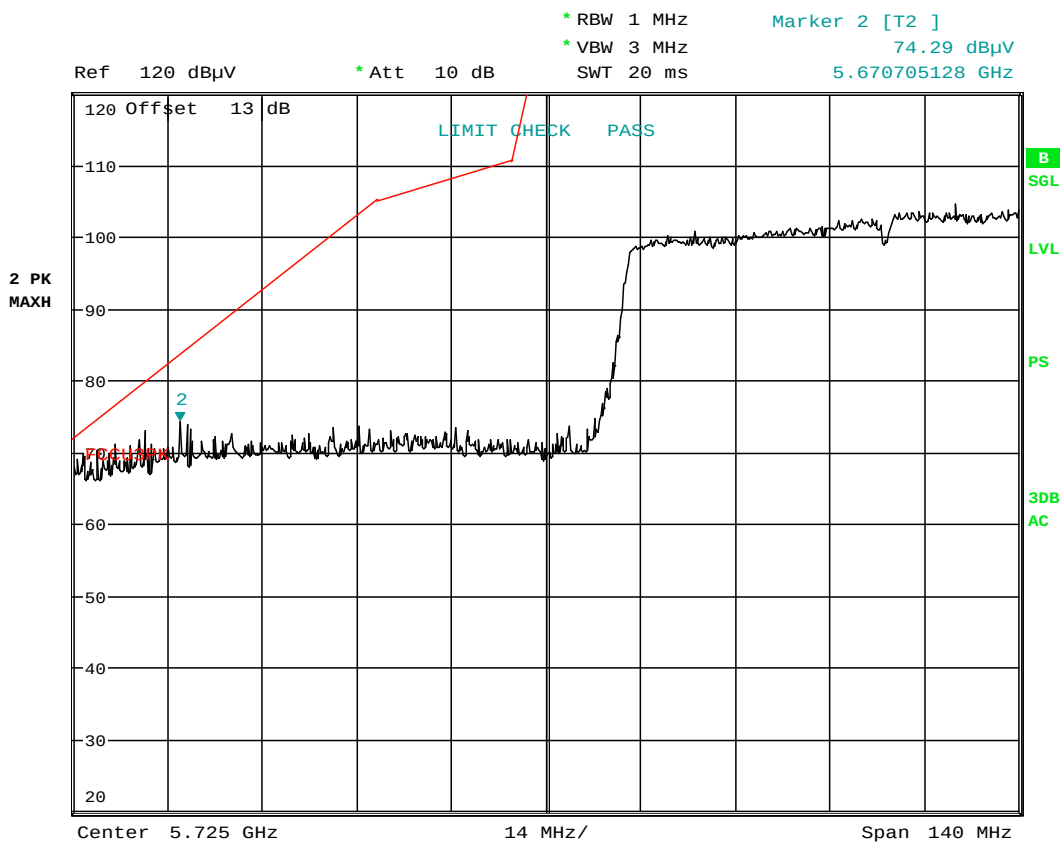
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Antenna-4 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Date: 23.DEC.2016 15:02:47

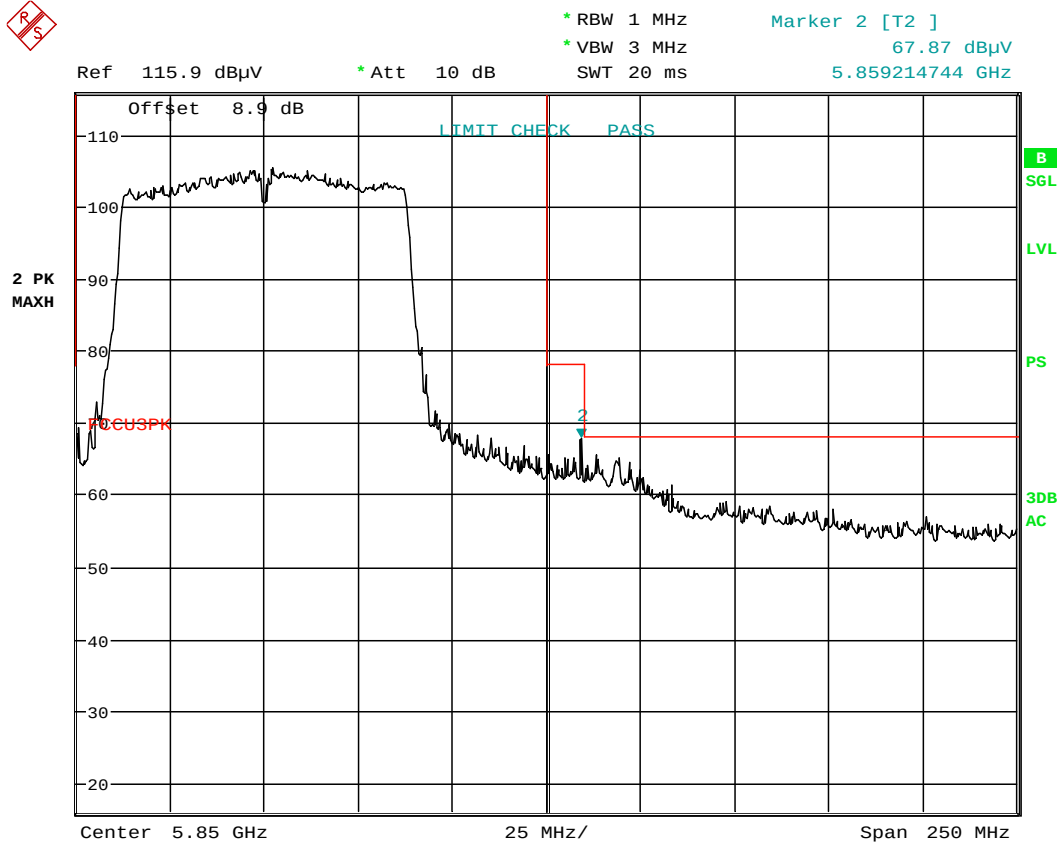
Plot 7-225. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 191 of 233

Antenna-4 Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Date: 2.DEC.2016 12:43:41

Plot 7-226. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 192 of 233

7.7.18 MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

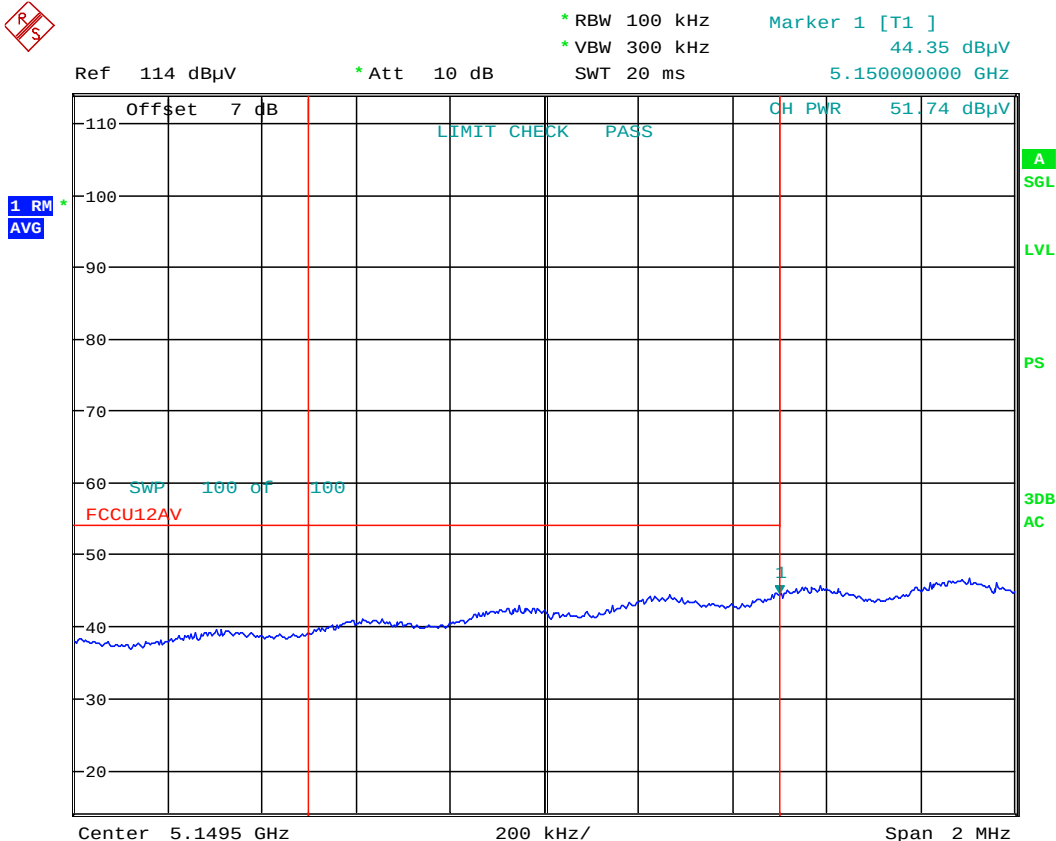
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 2.DEC.2016 13:29:15

Plot 7-227. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 193 of 233

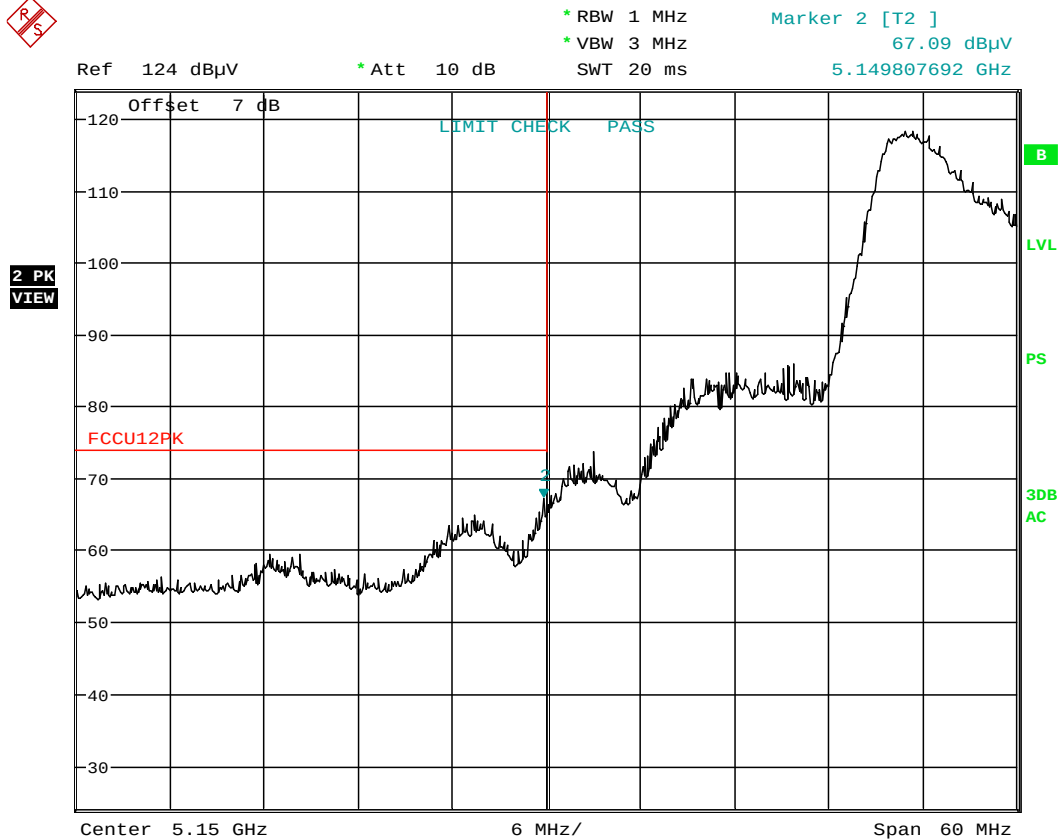
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V 6.5
05/19/2017

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MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 2.DEC.2016 13:30:35

Plot 7-228. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 194 of 233

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MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

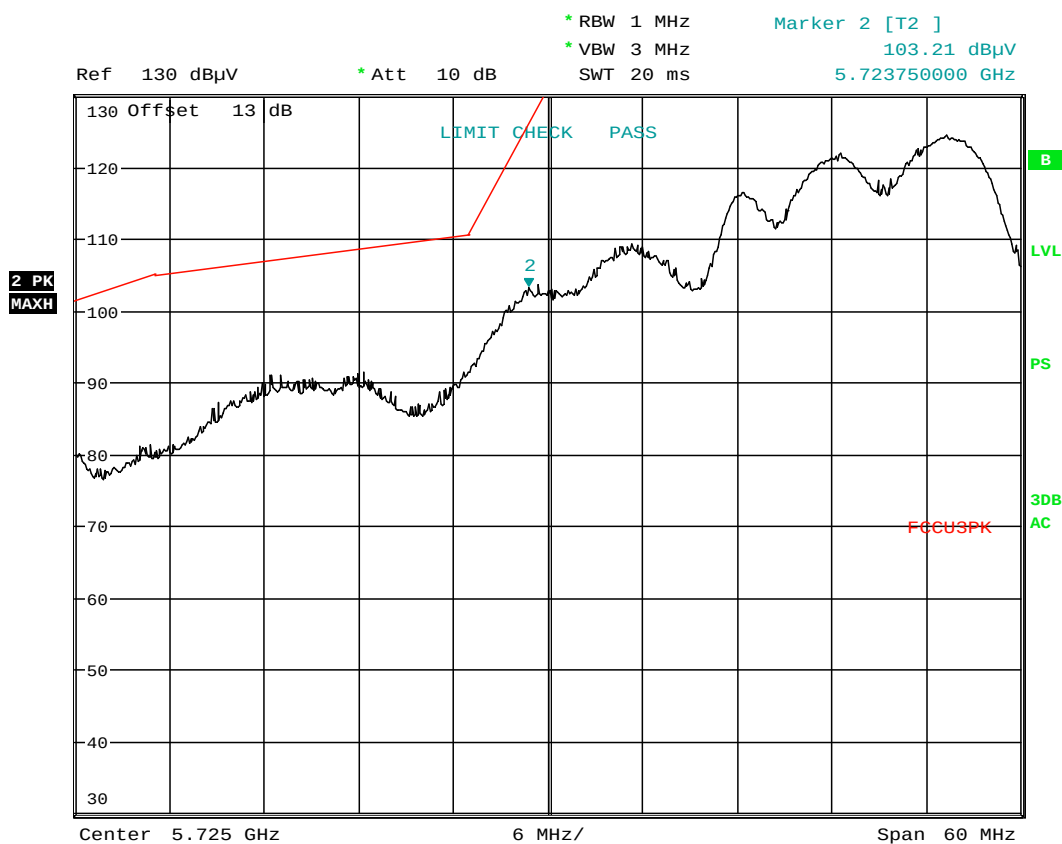
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5745MHz

Channel: 149



Date: 23.DEC.2016 12:53:44

Plot 7-229. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 195 of 233

MIMO Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

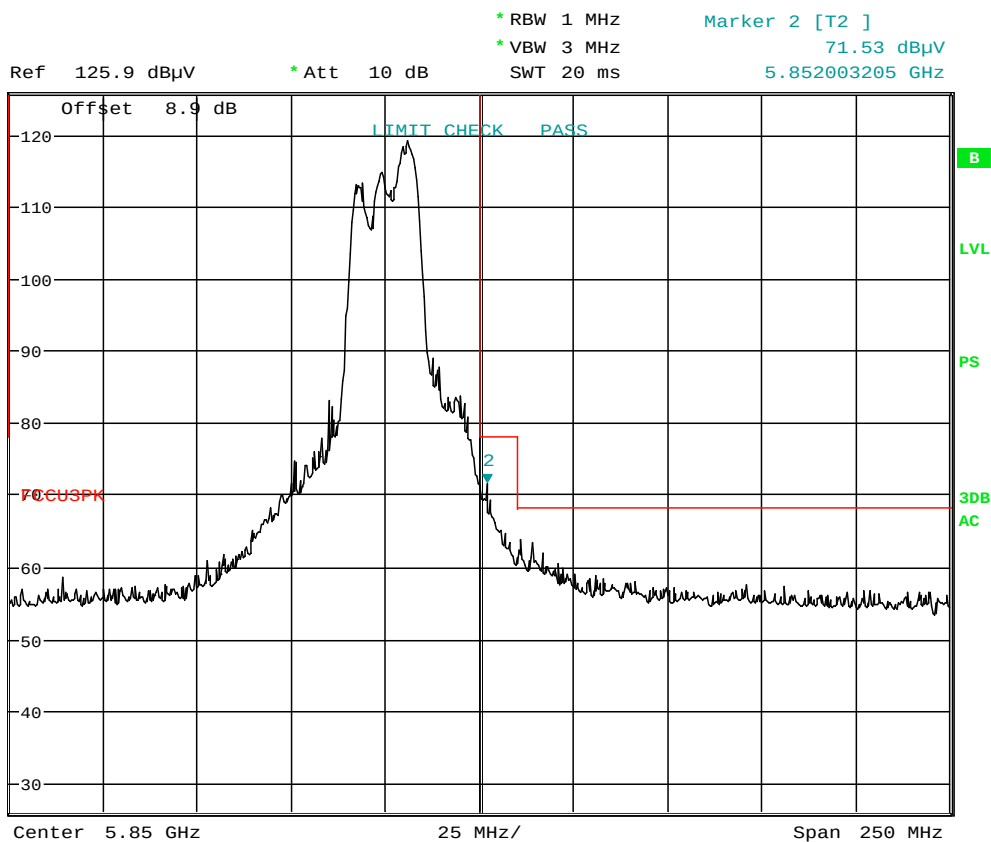
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



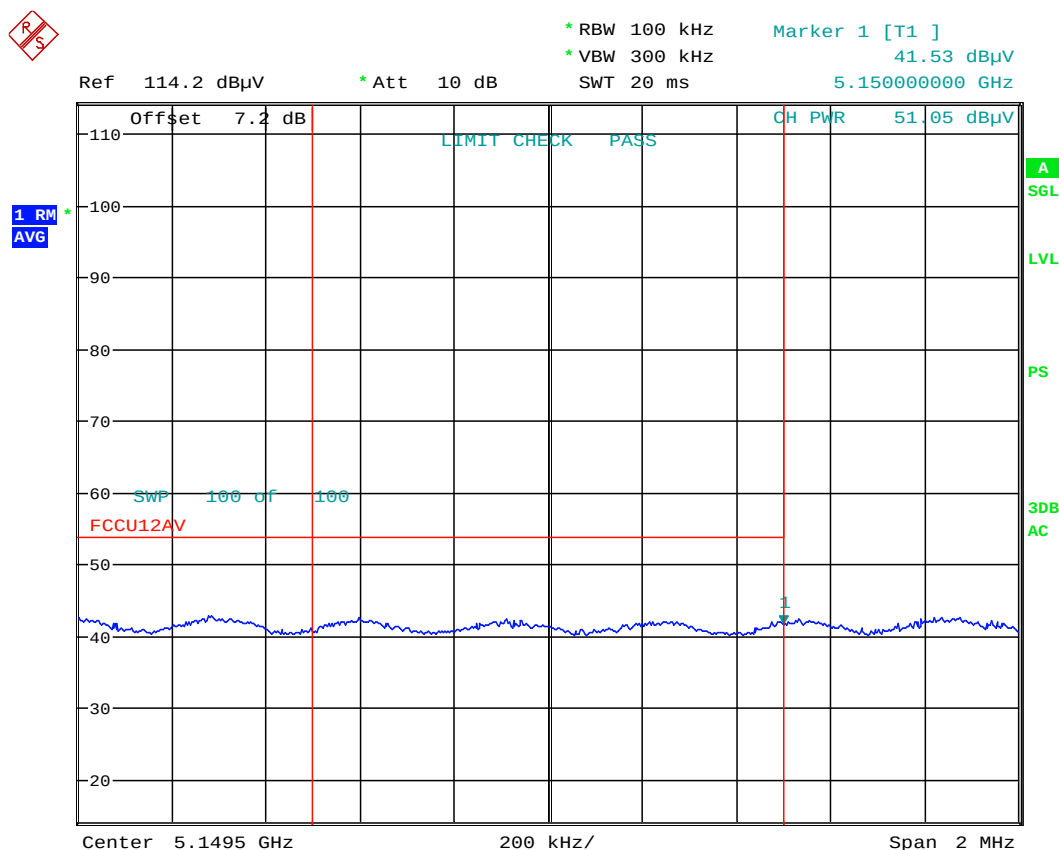
Date: 2.DEC.2016 13:40:17

Plot 7-230. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 196 of 233

7.7.19 MIMO Radiated Band Edge Measurements (40MHz BW)
§15.407(b.1)(b.2) §15.205 §15.209

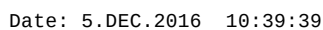
Worst Case Mode:	<u>802.11n (40MHz)</u>
Worst Case Transfer Rate:	<u>MCS0</u>
Distance of Measurements:	<u>3 Meters</u>
Operating Frequency:	<u>5190MHz</u>
Channel:	38



Date: 5.DEC.2016 10:39:08

Plot 7-231. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03_A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 197 of 233



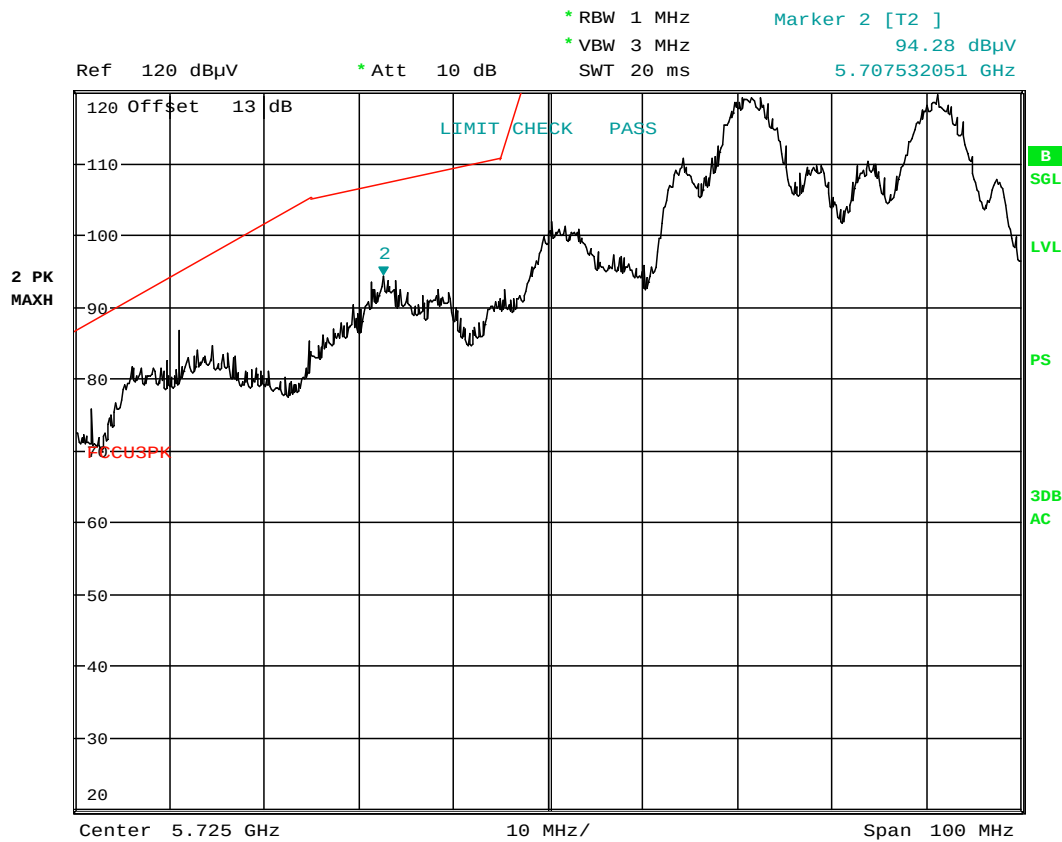
Plot 7-232. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

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MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5755MHz
Channel: 151



Date: 23.DEC.2016 13:00:10

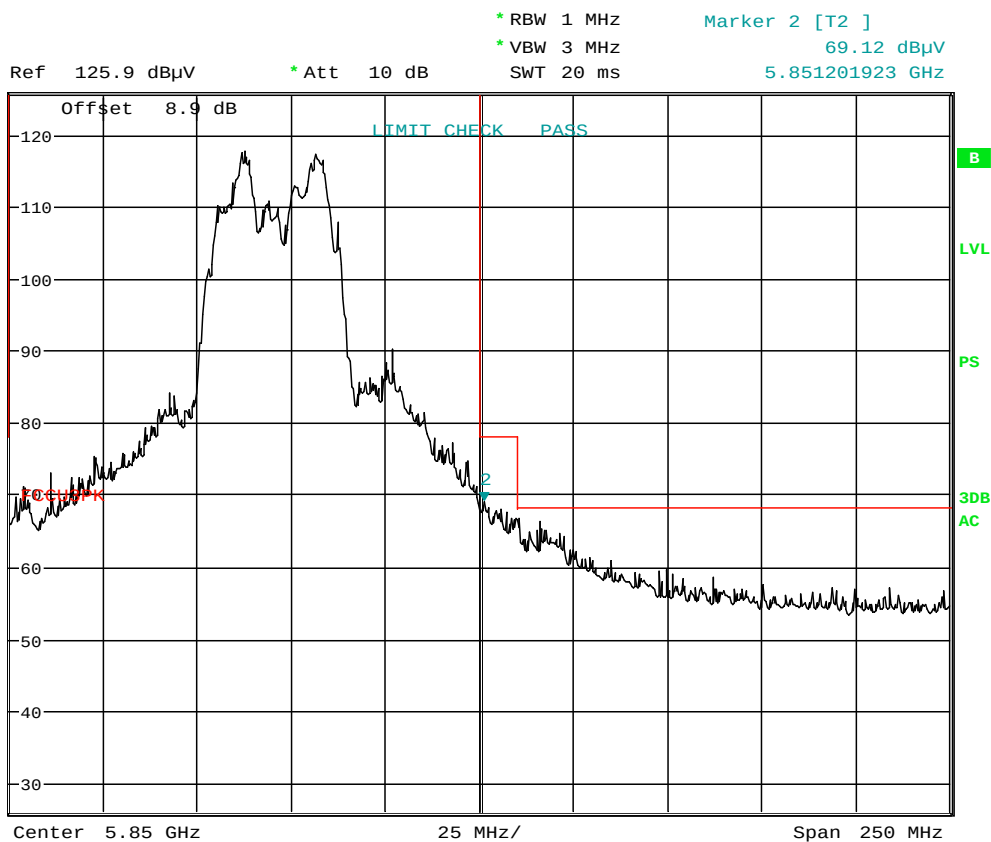
Plot 7-233. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 199 of 233

MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5795MHz
Channel: 159



Date: 5.DEC.2016 10:56:17

Plot 7-234. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 200 of 233

7.7.20 MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

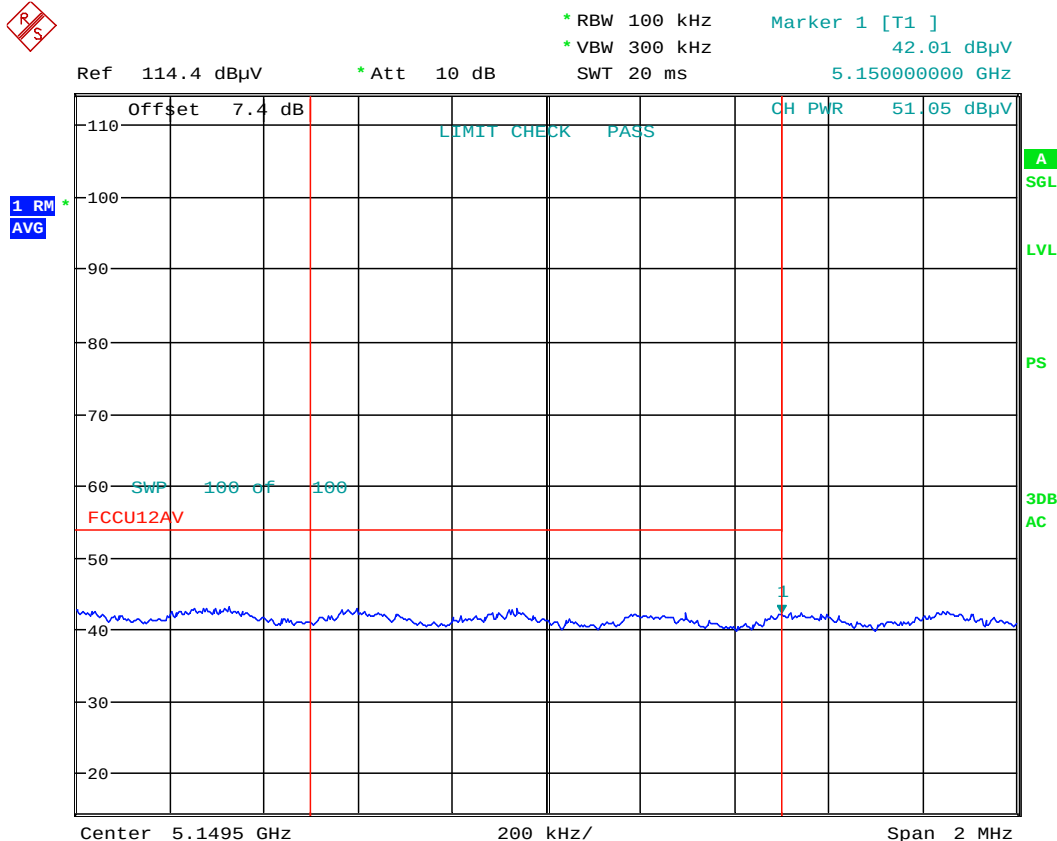
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



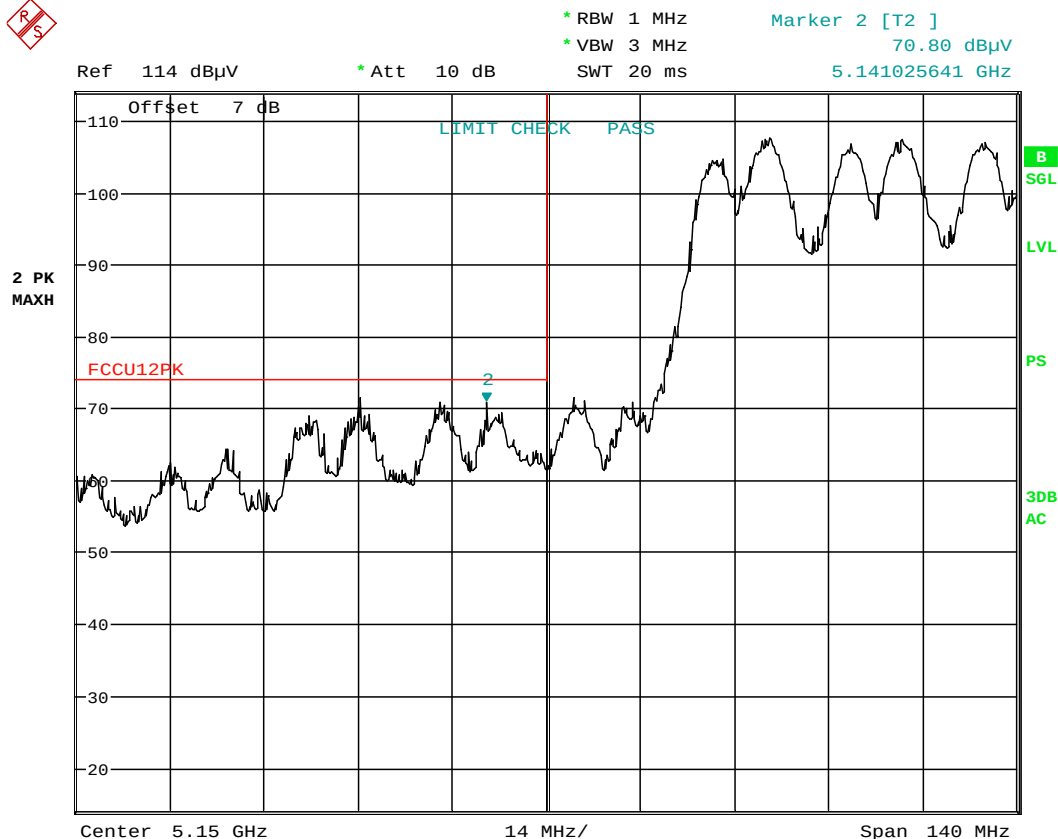
Date: 5.DEC.2016 11:07:32

Plot 7-235. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 201 of 233

MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 5.DEC.2016 11:07:56

Plot 7-236. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 202 of 233

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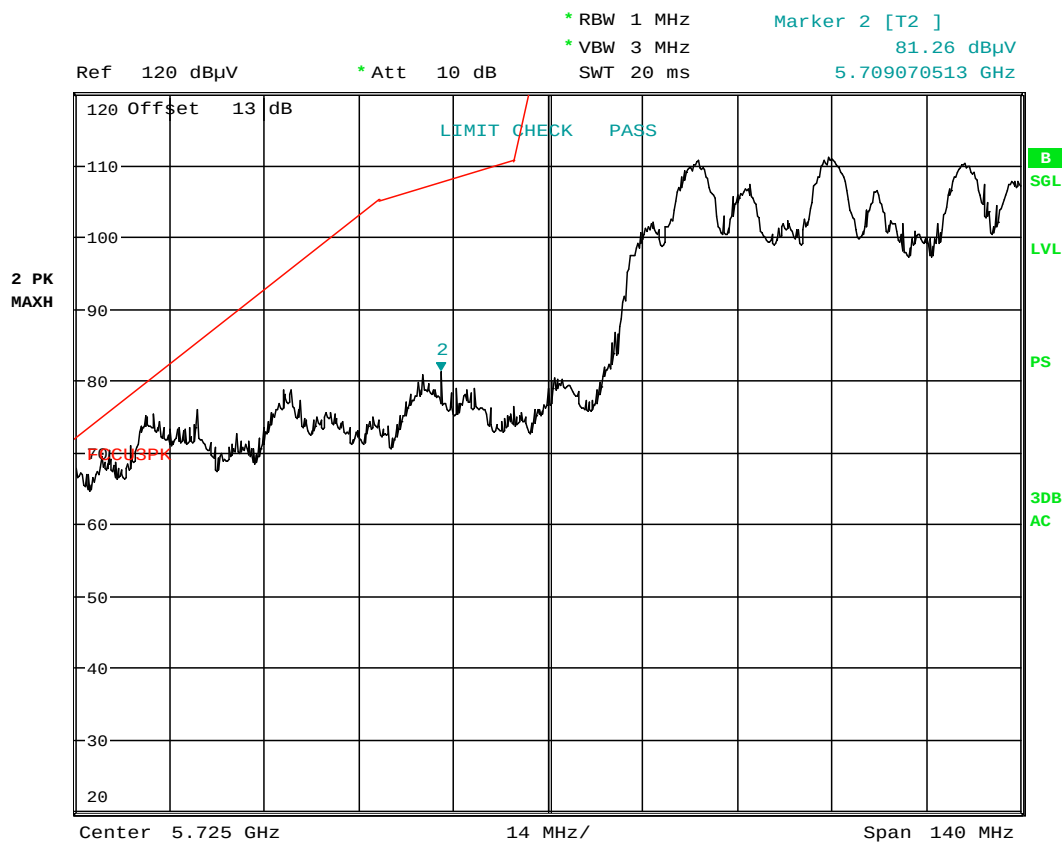
V 6.5
05/19/2017

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MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Date: 23.DEC.2016 15:07:16

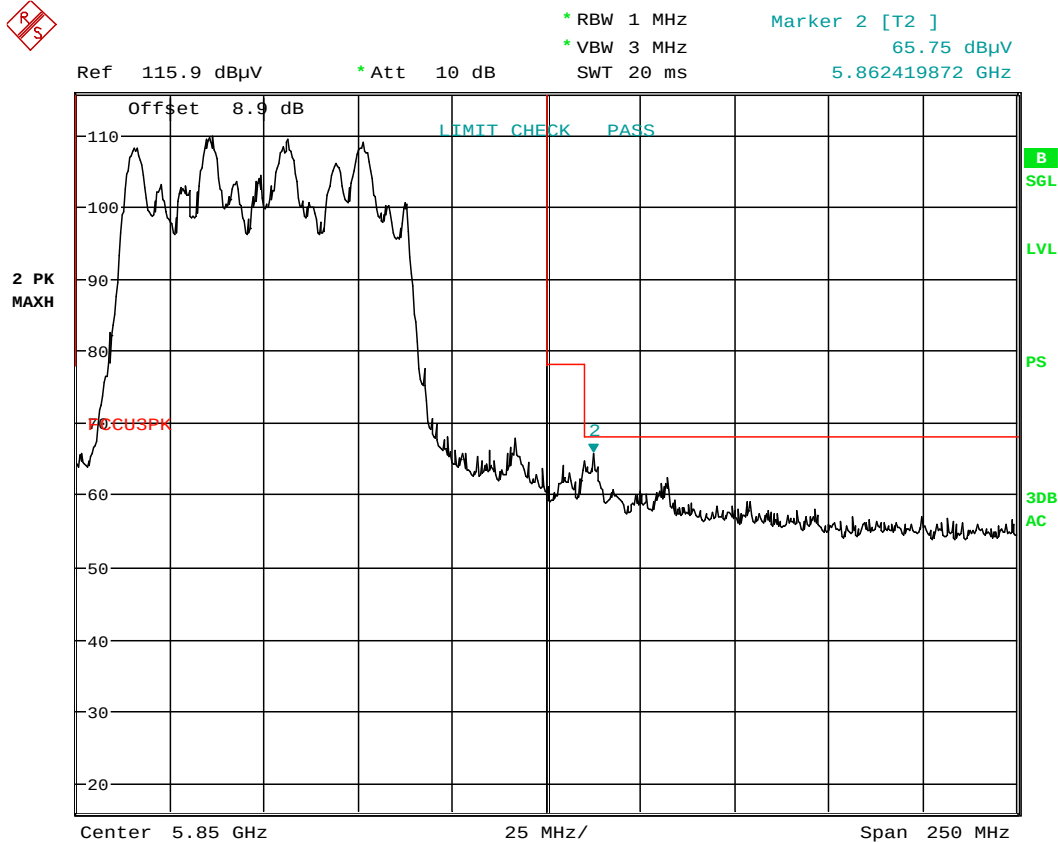
Plot 7-237. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 203 of 233

MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11ac (80MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5775MHz
Channel: 155



Date: 5.DEC.2016 11:18:18

Plot 7-238. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 204 of 233

7.8 Radiated Spurious Emissions Measurements – Below 1GHz

§15.209

Test Overview and Limit

All out of band radiated spurious emissions are measured with a spectrum analyzer connected to a receive antenna while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 7-67 per Section 15.209.

Frequency	Field Strength [$\mu\text{V/m}$]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3

Table 7-67. Radiated Limits

Test Procedures Used

ANSI C63.10-2013

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 120kHz (for emissions from 30MHz – 1GHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 205 of 233

Test Setup

The EUT and measurement equipment were set up as shown in the diagrams below.

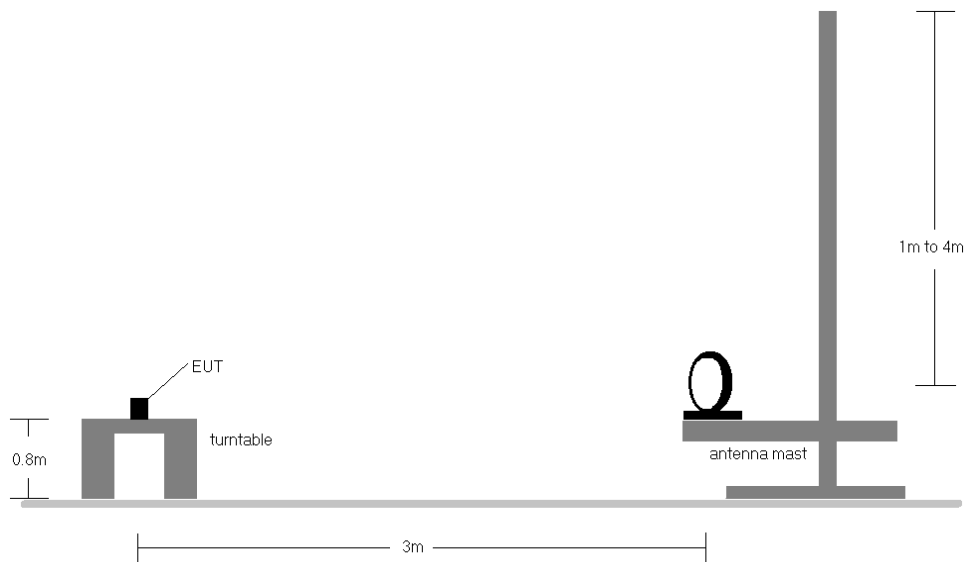


Figure 7-6. Radiated Test Setup < 30MHz

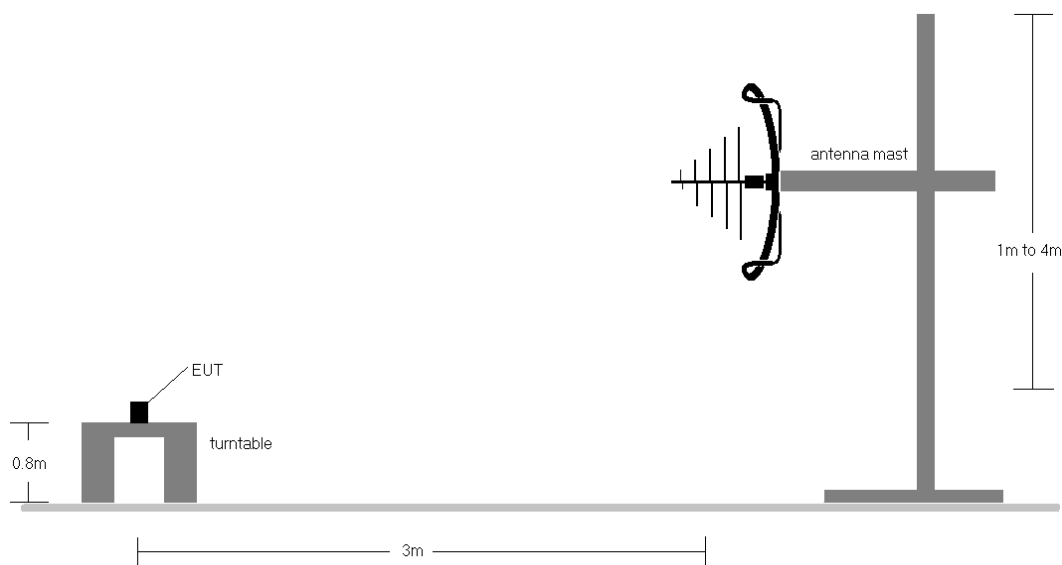


Figure 7-7. Radiated Test Setup < 1GHz

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 206 of 233

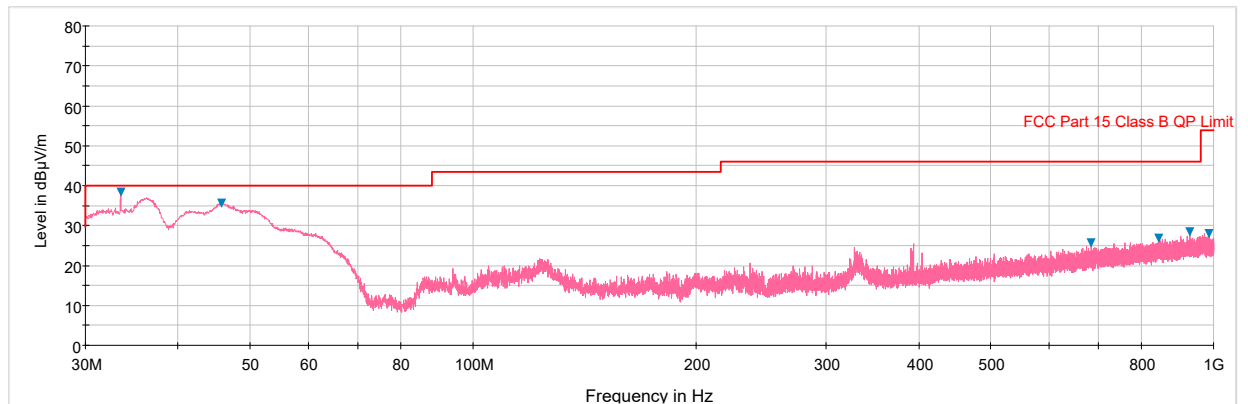
Test Notes

1. All emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-67.
2. The broadband receive antenna is manipulated through vertical and horizontal polarizations during the tests. The EUT is manipulated through three orthogonal planes.
3. This unit was tested with its standard battery.
4. The spectrum is investigated using a peak detector and final measurements are recorded using CISPR quasi peak detector. The worst-case emissions are reported however emissions whose levels were not within 20dB of the respective limits were not reported.
5. Emissions were measured at a 3 meter test distance.
6. Emissions are investigated while operating on the center channel of the mode, band, and modulation that produced the worst case results during the transmitter spurious emissions testing.
7. No spurious emissions were detected within 20dB of the limit below 30MHz.
8. The results recorded using the broadband antenna is known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy. The VSWR for the measurement antenna was found to be less than 2:1.
9. The wide spectrum spurious emissions plots shown on the following pages are used only for the purpose of emission identification. There were no emissions detected in the 30MHz – 1GHz frequency range, as shown in the subsequent plots.

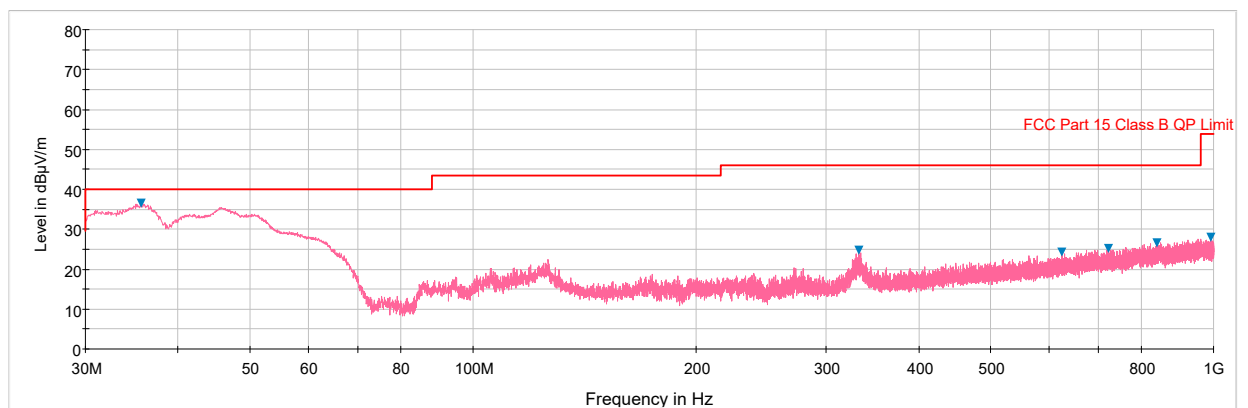
FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 207 of 233

Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-239. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

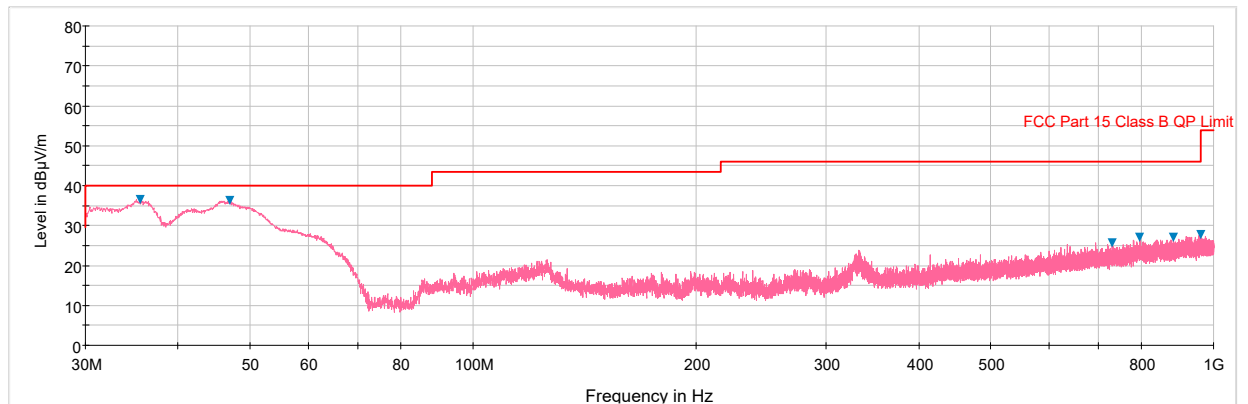


Plot 7-240. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

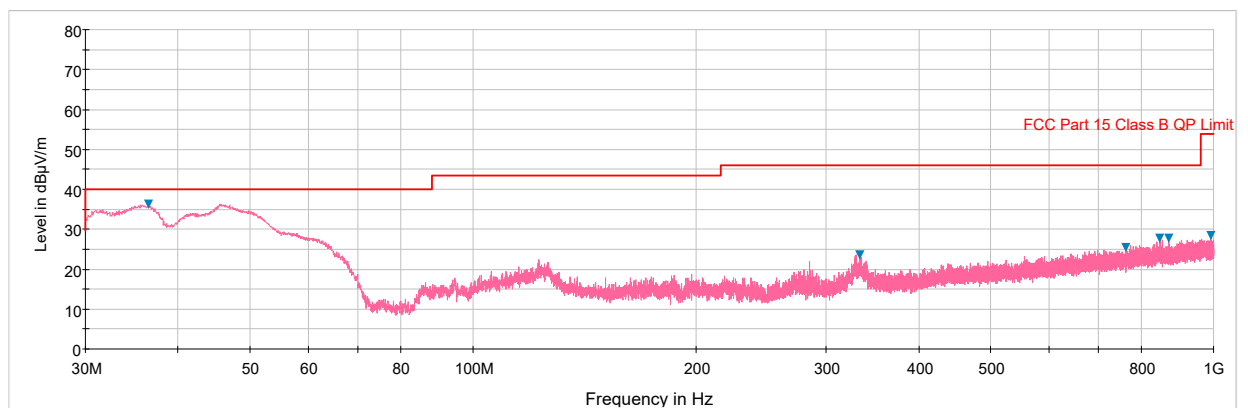
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 208 of 233

Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-241. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

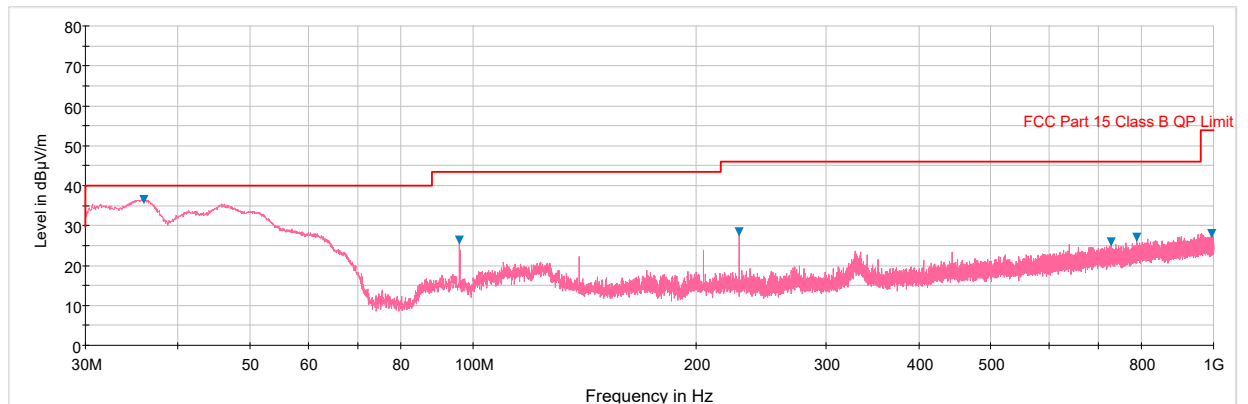


Plot 7-242. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

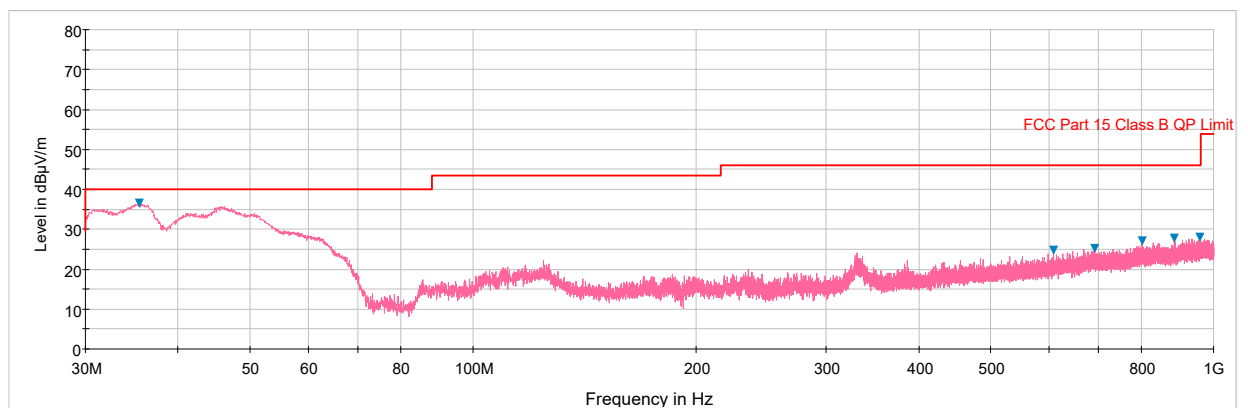
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 209 of 233	

Antenna-3 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-243. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)

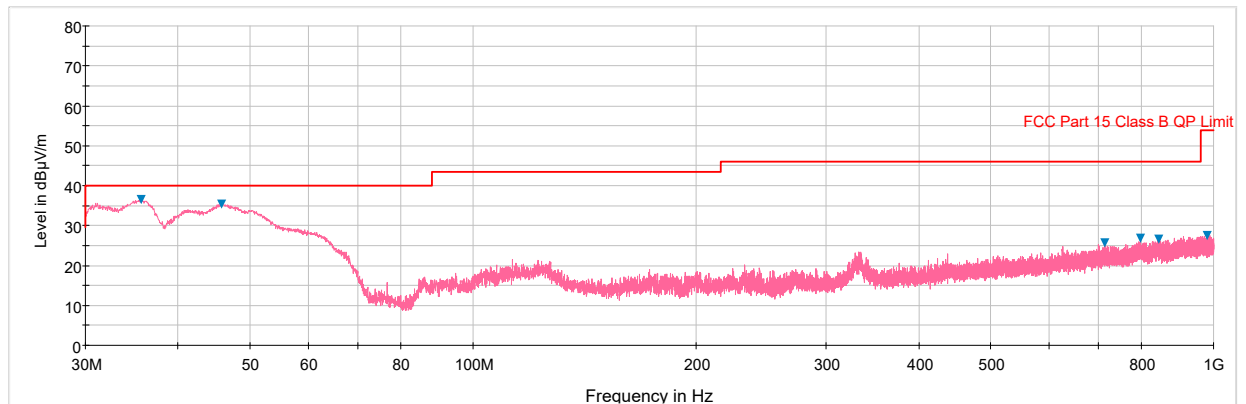


Plot 7-244. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

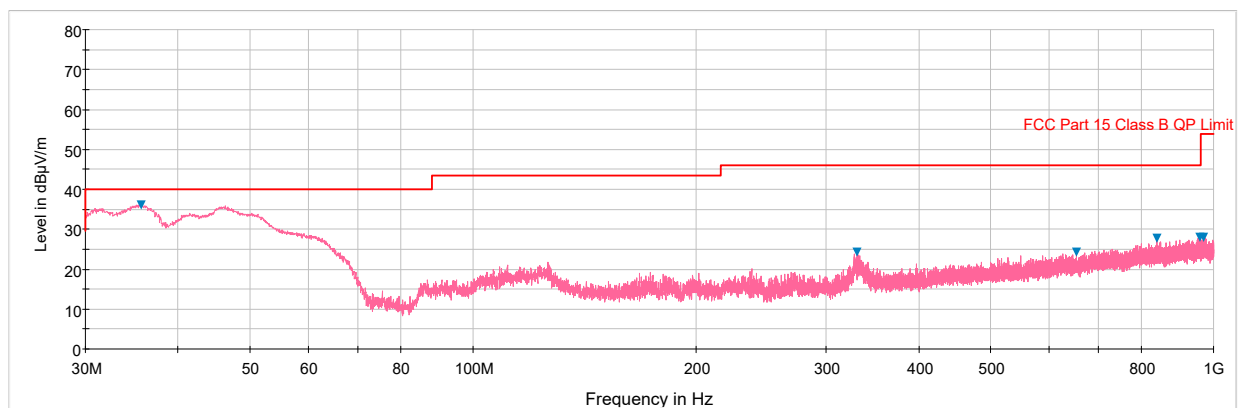
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 210 of 233

Antenna-4 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-245. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-246. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 211 of 233

Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Margin [dB]
51.25	Quasi-Peak	V	110	162	-48.30	-21.81	36.89	-3.11
50.54	Quasi-Peak	V	110	136	-49.28	-21.69	36.03	-3.97

Table 7-68. Radiated Spurious Emissions below 1GHz

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 212 of 233

7.9 Line-Conducted Test Data

§15.407

Test Overview and Limit

All AC line conducted spurious emissions are measured with a receiver connected to a grounded LISN while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates and modes were investigated for conducted spurious emissions. Only the conducted emissions of the configuration that produced the worst case emissions are reported in this section.

All conducted emissions must not exceed the limits shown in the table below, per Section 15.207.

Frequency of emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5	66 to 56*	56 to 46*
0.5 – 5	56	46
5 – 30	60	50

Table 7-69. Conducted Limits

*Decreases with the logarithm of the frequency.

Test Procedures Used

ANSI C63.10-2013, Section 6.2

Test Settings

Quasi-Peak Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = quasi-peak
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the spurious emission of interest
2. RBW = 9kHz (for emissions from 150kHz – 30MHz)
3. Detector = RMS
4. Sweep time = auto couple
5. Trace mode = max hold
6. Trace was allowed to stabilize

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 213 of 233

Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.

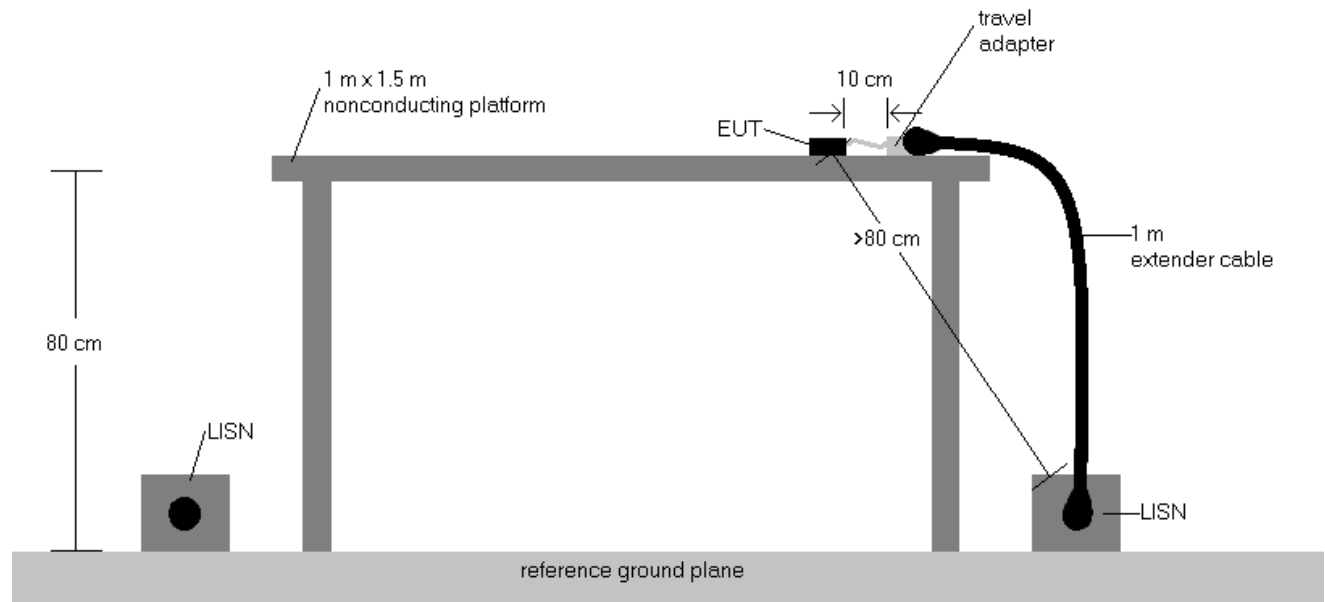


Figure 7-8. Test Instrument & Measurement Setup

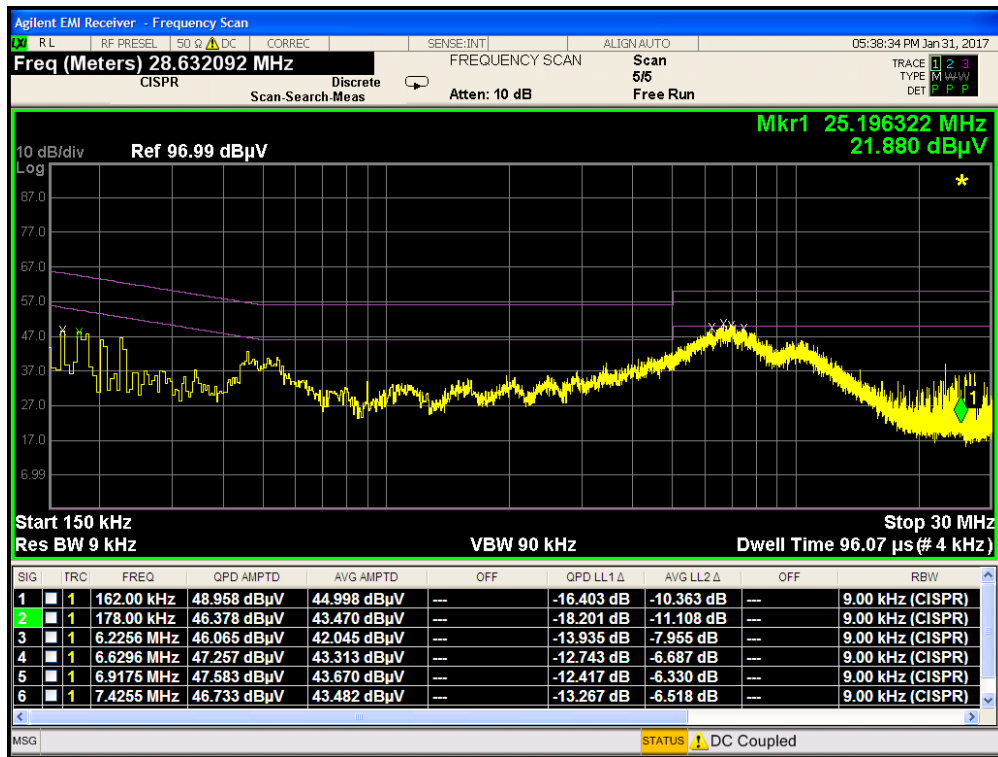
Test Notes

1. All modes of operation were investigated and the worst-case emissions are reported using mid channel. The emissions found were not affected by the choice of channel used during testing.
2. The limit for an intentional radiator from 150kHz to 30MHz are specified in 15.207.
3. $\text{Corr. (dB)} = \text{Cable loss (dB)} + \text{LISN insertion factor (dB)}$
4. $\text{QP/AV Level (dB}\mu\text{V)} = \text{QP/AV Analyzer/Receiver Level (dB}\mu\text{V)} + \text{Corr. (dB)}$
5. $\text{Margin (dB)} = \text{QP/AV Limit (dB}\mu\text{V)} - \text{QP/AV Level (dB}\mu\text{V)}$
6. Traces shown in plot are made using a peak detector.
7. Deviations to the Specifications: None.

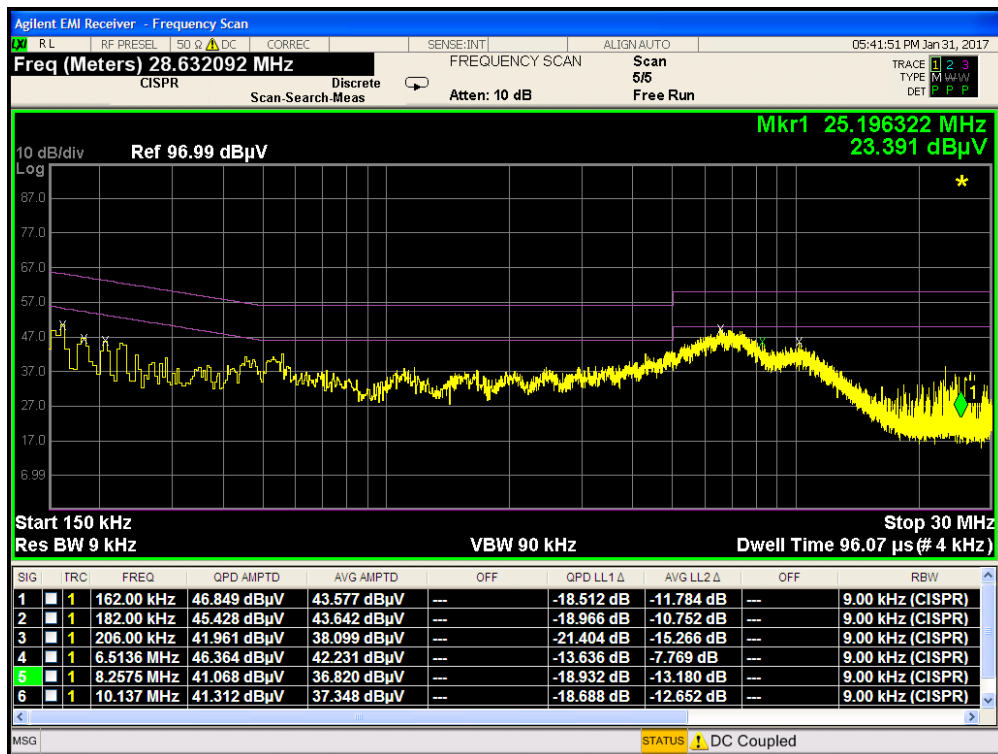
FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 214 of 233

Antenna 1 Line-Conducted Test Data

\$15.407



Plot 7-247. Line Conducted Plot with 802.11a UNII Band 1 (L1)



Plot 7-248. Line Conducted Plot with 802.11a UNII Band 1 (N)

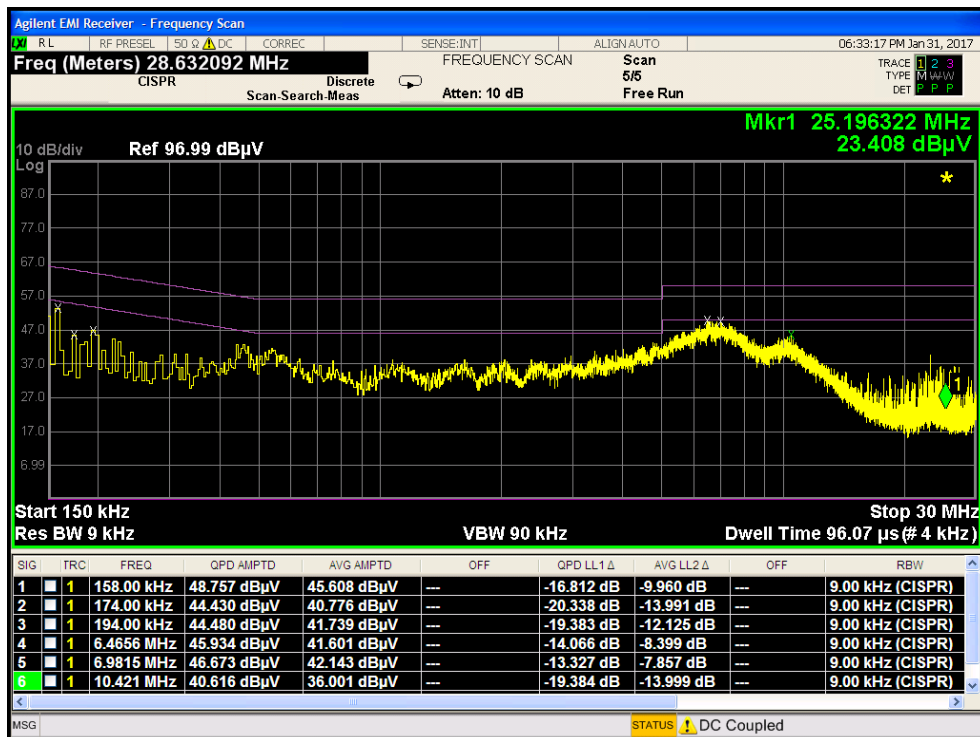
FCC ID: A3LETWV531			FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 215 of 233		

Antenna 1 Line-Conducted Test Data

\$15.407



Plot 7-249. Line Conducted Plot with 802.11a UNII Band 3 (L1)

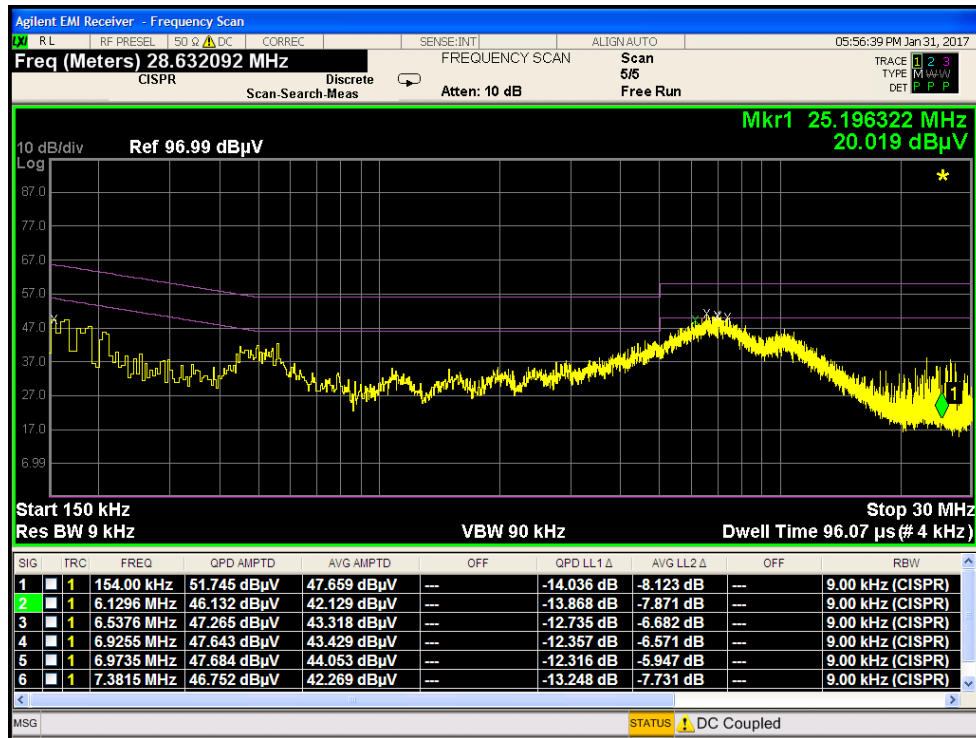


Plot 7-250. Line Conducted Plot with 802.11a UNII Band 3 (N)

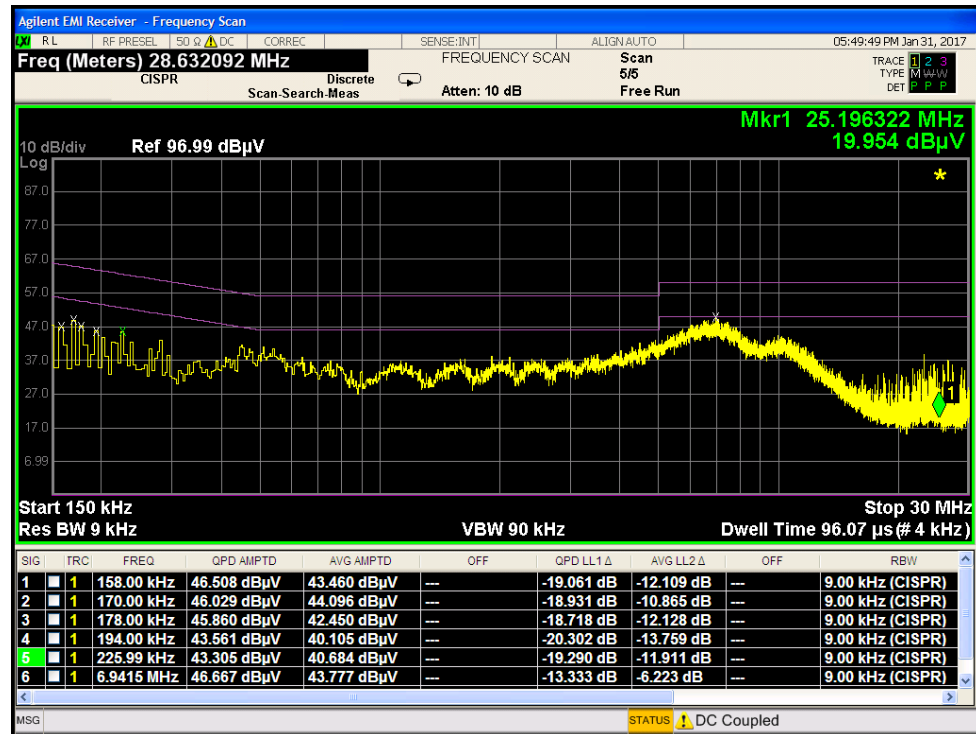
FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 216 of 233

Antenna 2 Line-Conducted Test Data

\$15.407



Plot 7-251. Line Conducted Plot with 802.11a UNII Band 1 (L1)

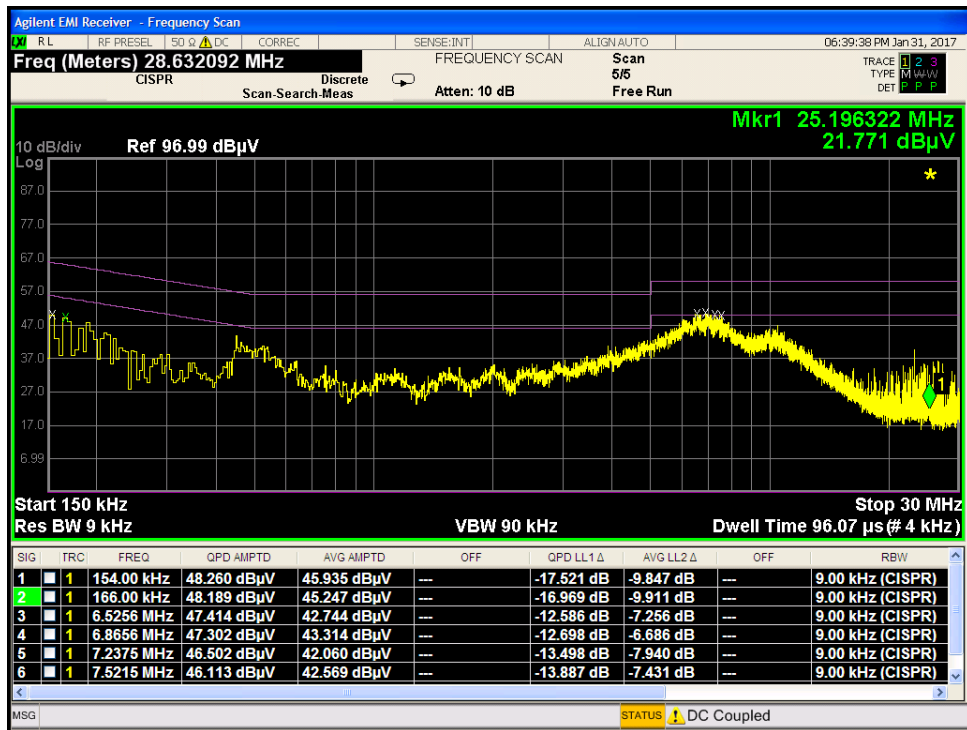


Plot 7-252. Line Conducted Plot with 802.11a UNII Band 1 (N)

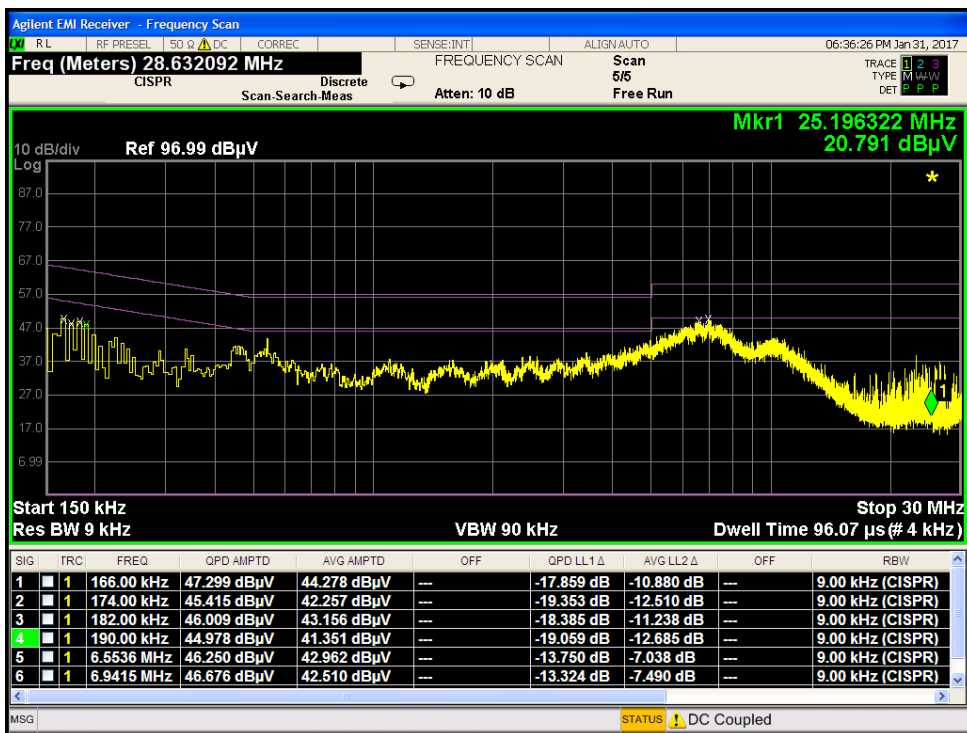
FCC ID: A3LETWV531	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 217 of 233

Antenna 2 Line-Conducted Test Data

\$15.407



Plot 7-253. Line Conducted Plot with 802.11a UNII Band 3 (L1)

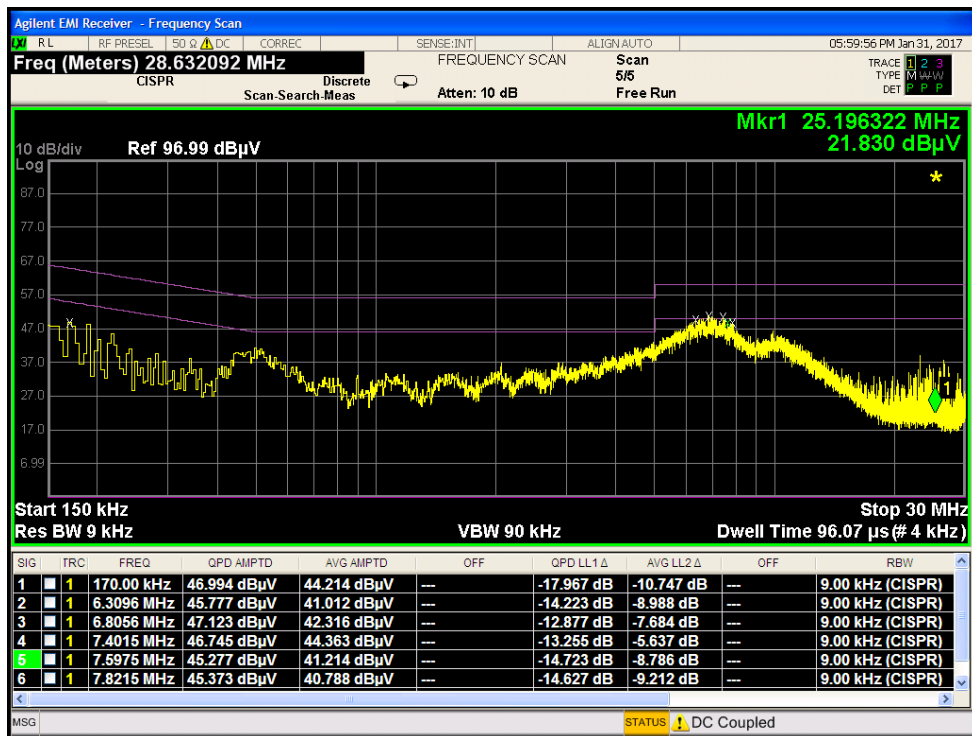


Plot 7-254. Line Conducted Plot with 802.11a UNII Band 3 (N)

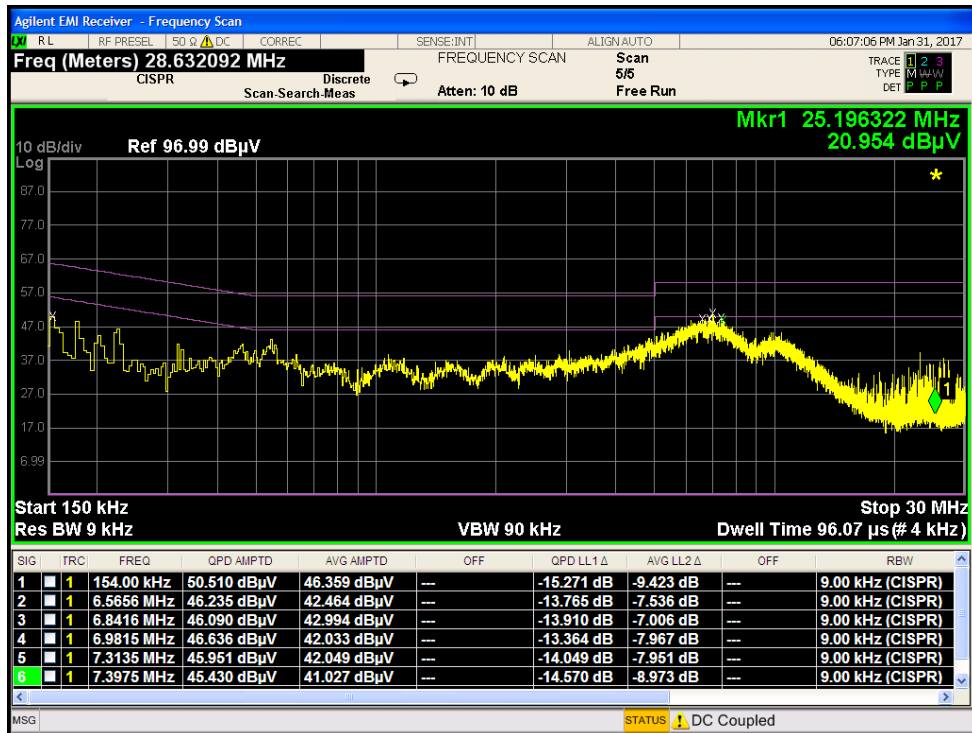
FCC ID: A3LETWV531	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 218 of 233

Antenna 3 Line-Conducted Test Data

\$15.407



Plot 7-255. Line Conducted Plot with 802.11a UNII Band 1 (L1)

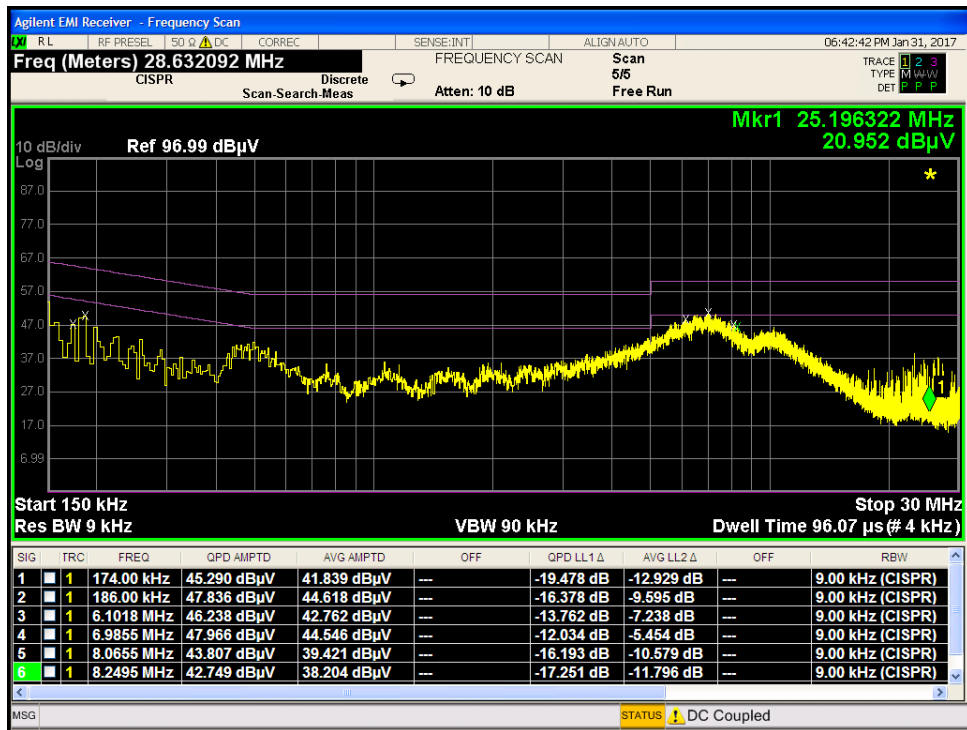


Plot 7-256. Line Conducted Plot with 802.11a UNII Band 1 (N)

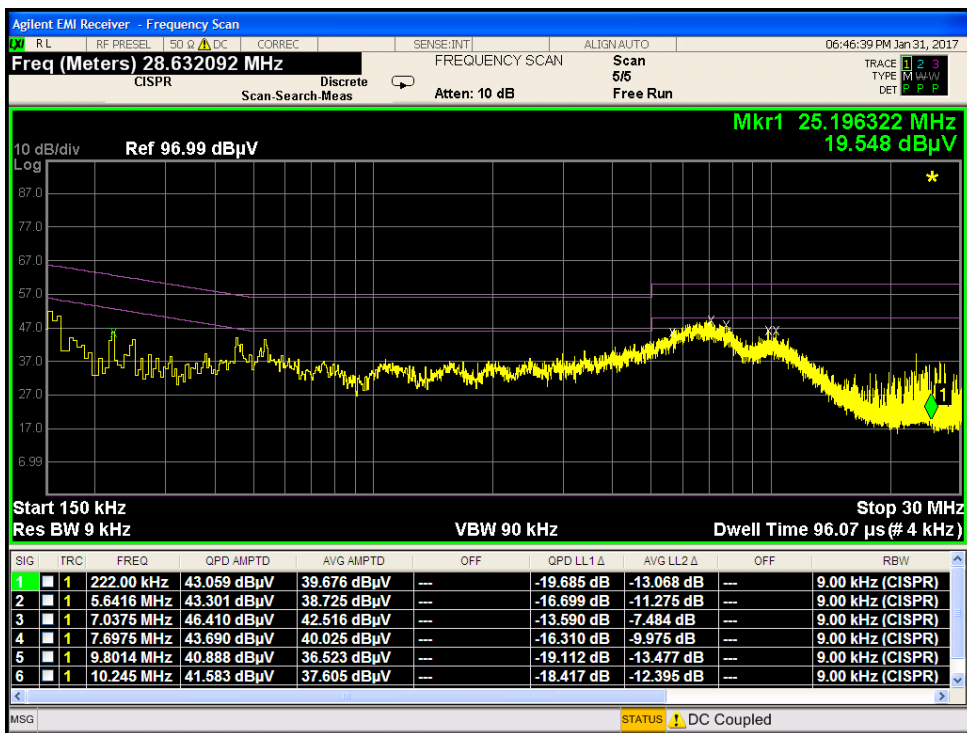
FCC ID: A3LETWV531	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 219 of 233

Antenna 3 Line-Conducted Test Data

\$15.407



Plot 7-257. Line Conducted Plot with 802.11a UNII Band 3 (L1)



Plot 7-258. Line Conducted Plot with 802.11a UNII Band 3 (N)

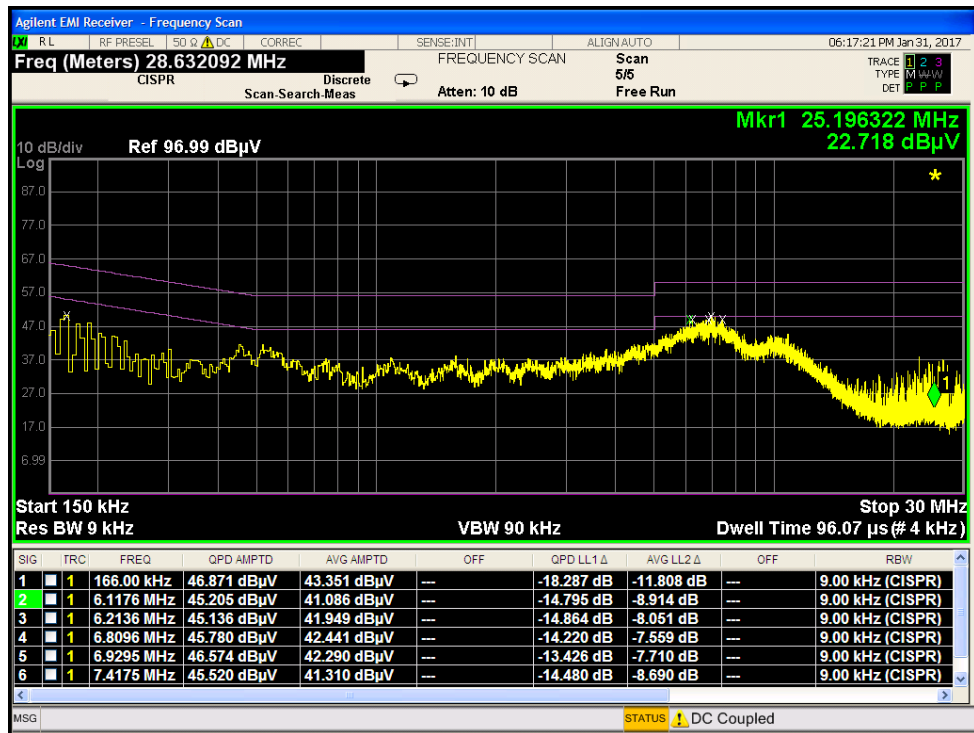
FCC ID: A3LETWV531	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 220 of 233

Antenna 4 Line-Conducted Test Data

\$15.407



Plot 7-259. Line Conducted Plot with 802.11a UNII Band 1 (L1)

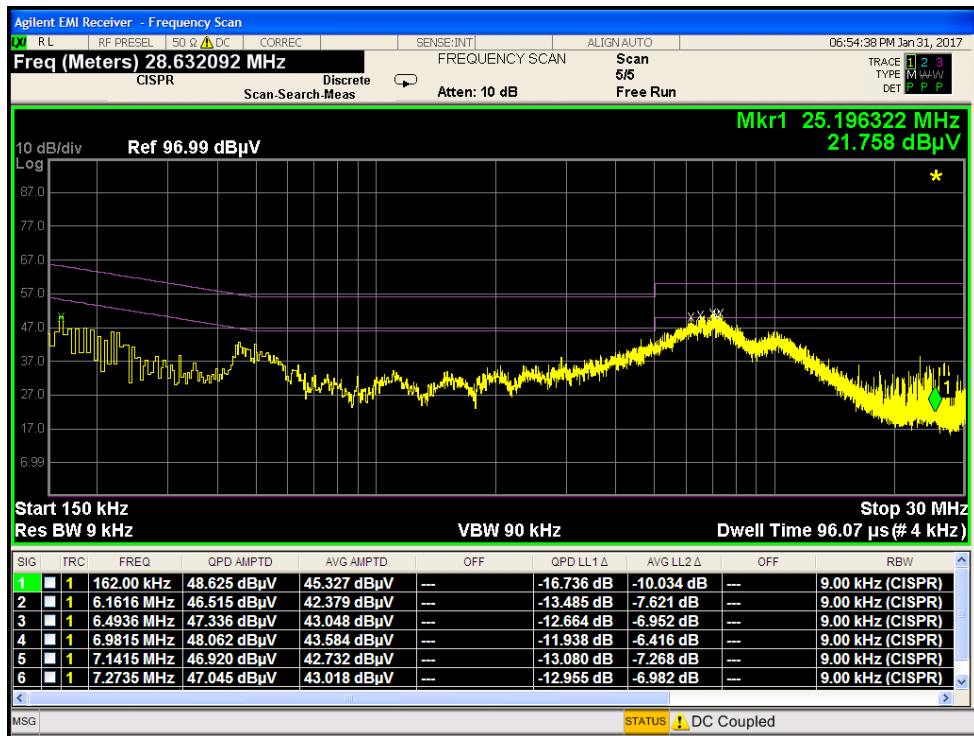


Plot 7-260. Line Conducted Plot with 802.11a UNII Band 1 (N)

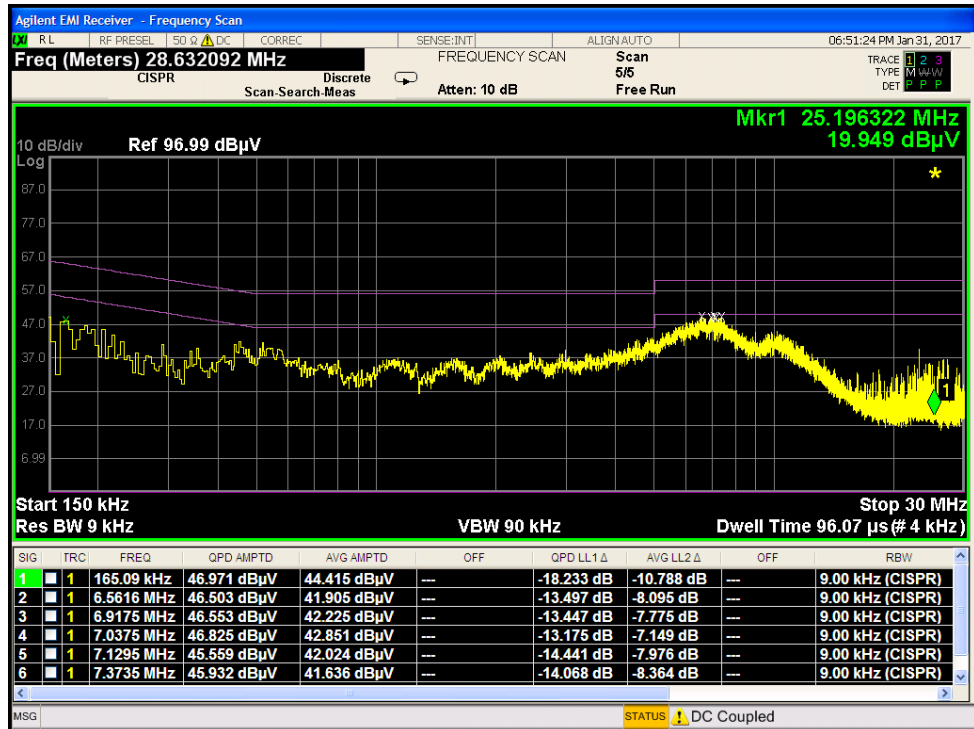
FCC ID: A3LETWV531			FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 221 of 233		

Antenna 4 Line-Conducted Test Data

\$15.407



Plot 7-261. Line Conducted Plot with 802.11a UNII Band 3 (L1)



Plot 7-262. Line Conducted Plot with 802.11a UNII Band 3 (N)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 222 of 233

8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Indoor Access Point FCC ID: A3LETWV531** is in compliance with Part 15E of the FCC Rules.

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 223 of 233

APPENDIX A. 802.11A DUAL TX

A.1 Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
15.407 (a.1)	Maximum Conducted Output Power	Maximum conducted powers must meet limits detailed in 15.407(a)	CONDUCTED	PASS	Section A.2
15.407 (a.1), (5)	Maximum Power Spectral Density	Maximum power spectral density must meet the limits detailed in 15.407(a)		PASS	Section A.3
15.205, 15.407(b.1),(5),(6)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209		PASS	Section A.4

Table A.1-1. Summary of Test Results

Notes:

1. This device employs dual transmission in 802.11a and 802.11g modes using Cyclic Delay Diversity. For all test cases, the device was set to transmit from four antennas simultaneously. The data in this section demonstrates compliance to the dual-transmission requirements specified in KDB 662911 v02r01.
2. All data found in this section is compiled from plots found in the main body of this test report.
3. Since this device is able to transmit the same data through four of its antennas in a given symbol period, then, by the definition specified in KDB 662911 v02r01 Section F)1), the transmission symbols are correlated.
4. For CDD operation where $N_{ss} = 1$, the array gain for power density measurements is equal to $10\log(N_{ANT}/N_{SS})$ dB and the array gain for power measurements is 0dB.
5. For conducted spurious emissions, per KDB 662911 v02r01 Section E)3)b), the emissions on each individual output complied with its corresponding relative limit for that output, so additional testing was not required for dual transmission operation.

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 224 of 233	

A.2 Output Power Measurement

§15.247(b.3)

Test Overview

Using the “Measure and Sum” technique, the measured conducted power values were summed in linear power units then converted back to dBm. Original measured values are found in Section 7.4 of this report.

Freq [MHz]	Channel	Directional Gain [dBi]	Detector	5GHz (20MHz) Conducted Power [dBm]					Max Permissible Conducted Power [dBm]	Adjusted Limit	Margin [dB]
				IEEE Transmission Mode							
				ANT1	ANT2	ANT3	ANT4	MIMO			
5180	36	9.18	AVG	14.90	13.98	14.30	14.37	20.42	30.00	26.82	-6.40
5200	40	9.18	AVG	15.14	14.21	14.40	13.76	20.43	30.00	26.82	-6.39
5220	44	9.18	AVG	15.22	14.00	14.22	13.84	20.38	30.00	26.82	-6.44
5240	48	9.19	AVG	15.21	14.23	13.98	13.80	20.36	30.00	26.81	-6.45
5745	149	9.48	AVG	15.23	14.26	14.26	13.99	20.48	30.00	26.52	-6.04
5785	157	9.48	AVG	15.24	14.31	13.89	14.26	20.47	30.00	26.52	-6.05
5825	165	9.87	AVG	15.24	14.26	13.84	14.33	20.47	30.00	26.13	-5.66

Table A2-1. Dual Tx 802.11a-mode Conducted Output Power Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)				Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point				Page 225 of 233

A.3 Power Spectral Density

§15.247(e)

Test Overview

Using the “Measure and Sum” technique, the measured conducted power density values were summed in linear power units then converted back to dBm. Original measured values are found in Section 7.5 of this report.

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Directional Gain [dBi]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-3 Power Density [dBm]	Antenna-4 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Adjusted Limit [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6	9.18	2.82	3.91	3.89	3.22	9.50	17.0	13.82	-4.32	Pass
	5200	40	a	6	9.18	2.81	3.73	3.20	3.03	9.23	17.0	13.82	-4.59	Pass
	5240	48	a	6	9.19	3.03	3.15	3.08	3.21	9.14	17.0	13.81	-4.67	Pass

Table A3-1.802.11a Dual Tx Conducted Power Density Measurements

	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Directional Gain [dBi]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Antenna-3 Power Density [dBm]	Antenna-4 Power Density [dBm]	Summed MIMO Power Density [dBm]	Max Permissible Power Density [dBm/500kHz]	Adjusted Limit [dBm/500kHz]	Margin [dB]	Pass / Fail
Band 3	5745	149	a (20MHz)	6.5/7.2 (MCS0)	9.48	8.17	12.77	7.47	7.16	15.59	30.0	26.5	-10.93	Pass
	5785	157	a (20MHz)	6.5/7.2 (MCS0)	9.48	7.93	11.65	7.05	6.87	14.88	30.0	26.5	-11.64	Pass
	5825	165	a (20MHz)	6.5/7.2 (MCS0)	9.87	7.73	11.93	6.74	6.88	14.93	30.0	26.1	-11.20	Pass

Table A3-2.802.11a Dual Tx Conducted Power Density Measurements

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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A.4 Dual Tx Radiated Restricted Band Edge Measurements

§15.205 §15.209

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting on both outputs in 802.11a mode.

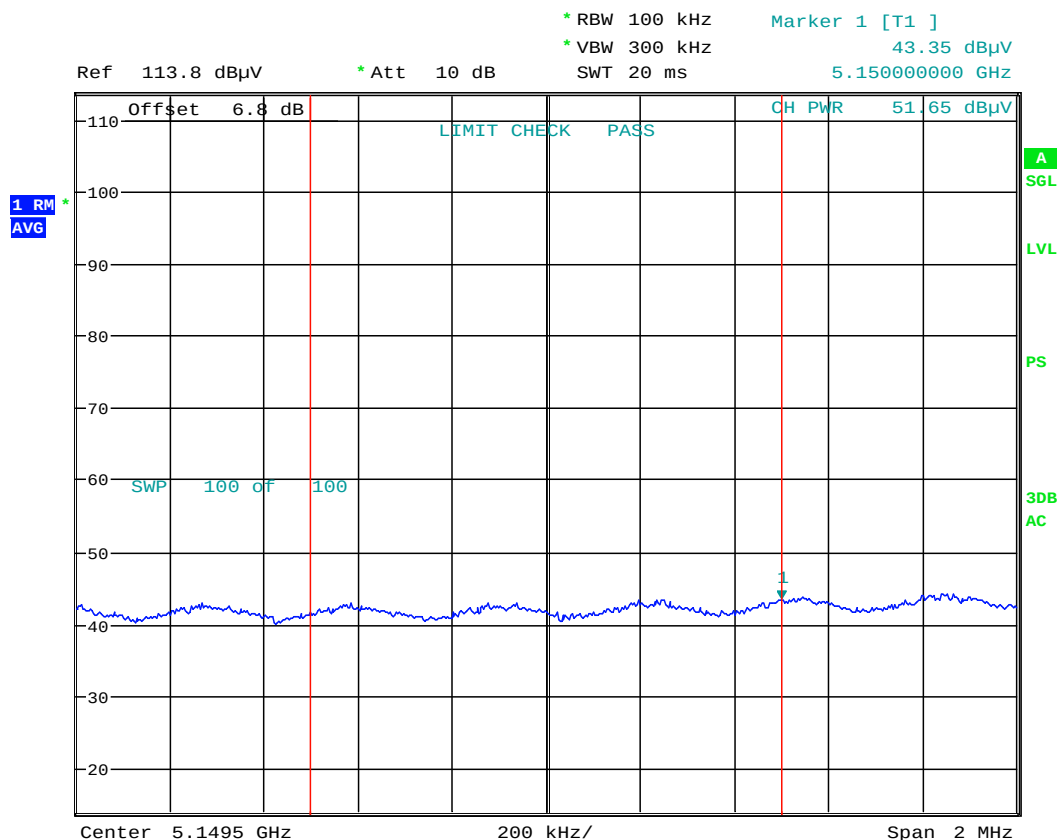
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 17.JAN.2017 10:13:03

Plot A.4-1. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 227 of 233

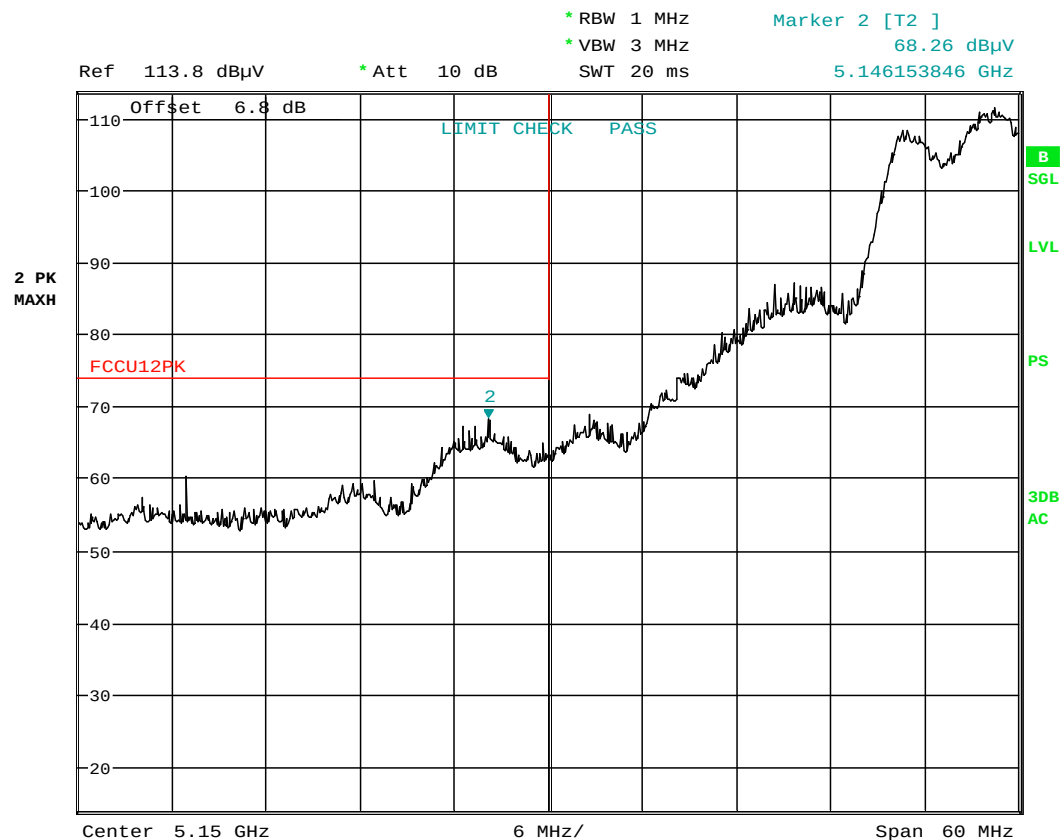
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Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209



Date: 17.JAN.2017 10:13:45

Plot A.4-1. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 228 of 233

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Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209

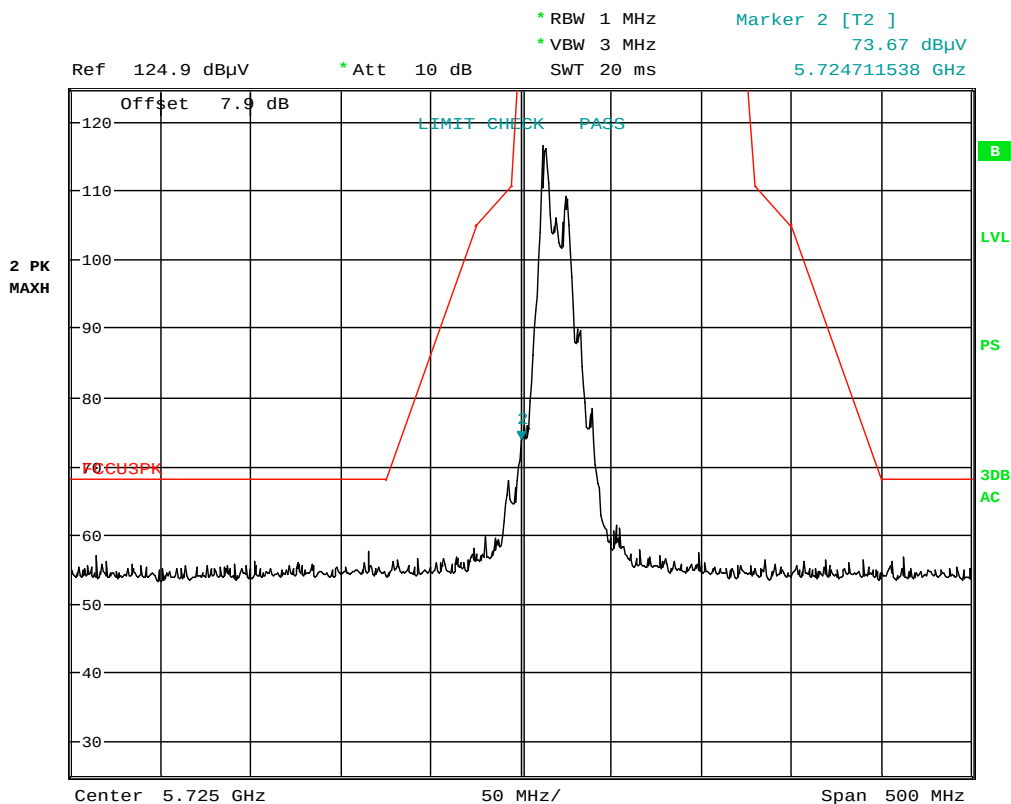
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5745MHz

Channel: 149



Date: 17.FEB.2017 09:16:39

Plot 0-1. Radiated Lower Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 229 of 233

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Dual Tx Radiated Restricted Band Edge Measurements

\$15.407(b.1)(b.2) \$15.205 \$15.209

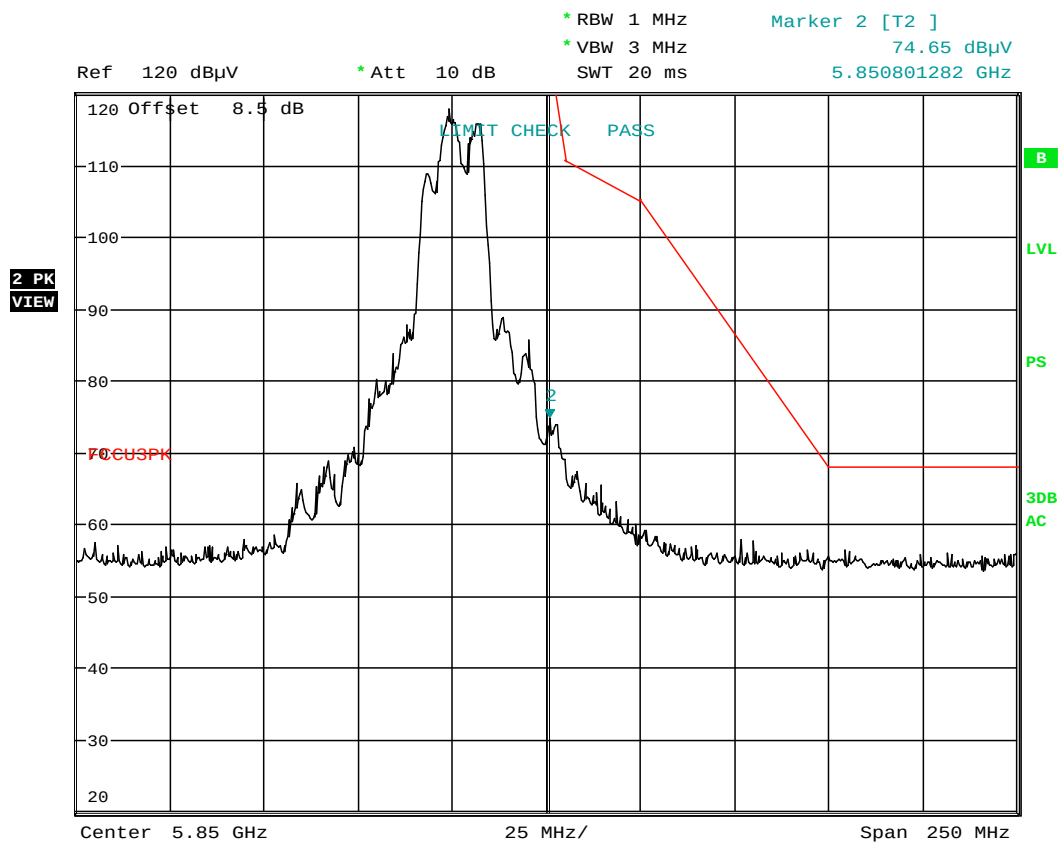
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 17. JAN. 2017 10:40:47

Plot A.4-9. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 230 of 233

APPENDIX B. 80MHZ + 80MHZ TX

B.1 Summary

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)					
15.205, 15.407(b.1),(5),(6)	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209	RADIATED	PASS	Section B.2

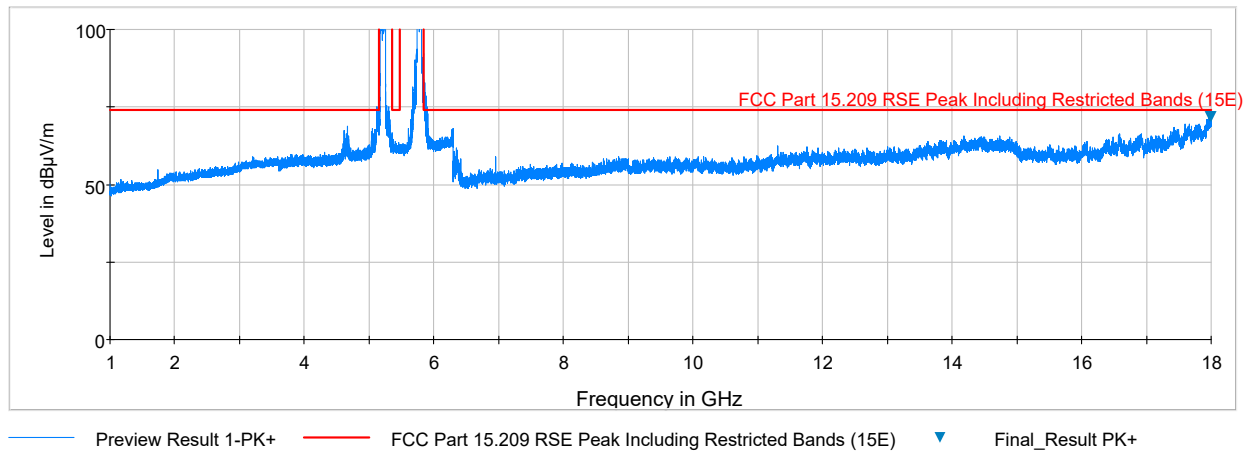
Table B.1-1. Summary of Test Results

Notes:

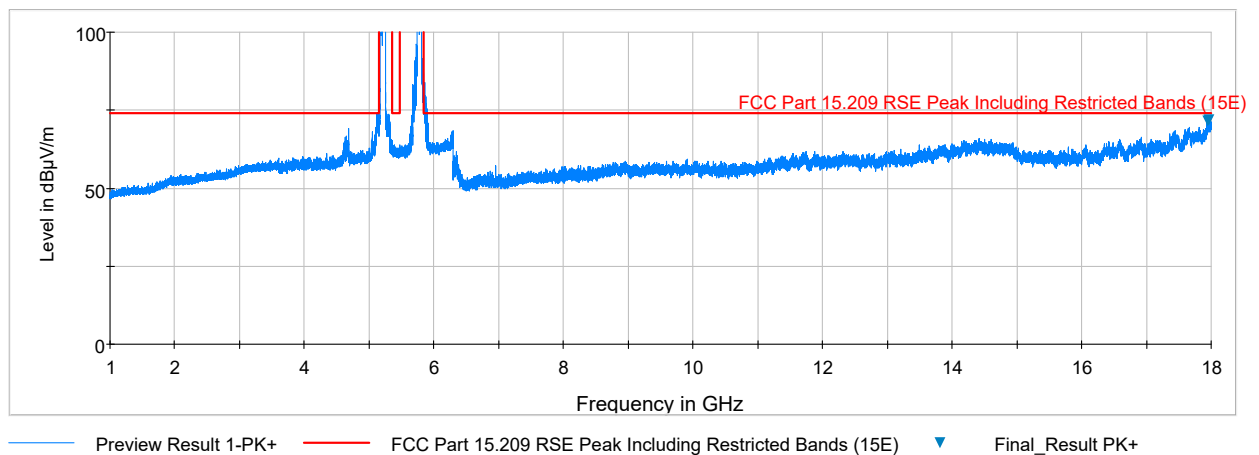
1. This device employs dual transmission in 802.11ac mode. For all test cases, the device was set to transmit two different 80MHz signal from all four antennas simultaneously. The data in this section demonstrates compliance to the dual-transmission requirements specified in KDB 662911 v02r01.
2. All data found in this section is compiled from plots found in the main body of this test report.
3. Since this device is able to transmit the same data through both of its antennas in a given symbol period, then, by the definition specified in KDB 662911 v02r01 Section F)1), the transmission symbols are correlated.
4. For conducted spurious emissions, per KDB 662911 v02r01 Section E)3)b), the emissions on each individual output complied with its corresponding relative limit for that output, so additional testing was not required for dual transmission operation.

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 231 of 233	

B.2 Radiated Spurious Emissions



Plot B-1. Radiated Spurious Plot above 1GHz (Ant. Pol. H)



Plot B-2. Radiated Spurious Plot above 1GHz (Ant. Pol. V)

FCC ID: A3LETWV531	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point	Page 232 of 233	

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
2950.00	Avg	H	-	-	-103.59	-4.11	1.37	53.98	-52.61
2950.00	Peak	H	-	-	-95.92	-4.11	13.65	73.98	-60.33
3515.00	Avg	H	-	-	-101.32	-2.92	3.57	53.98	-50.41
3515.00	Peak	H	-	-	-94.00	-2.92	15.28	73.98	-58.70
4667.00	Avg	H	-	-	-111.68	4.59	49.75	53.98	-4.23
4667.00	Peak	H	-	-	-99.88	4.59	69.04	73.98	-4.94
4645.00	Avg	H	-	-	-101.32	-0.40	37.53	53.98	-16.45
4645.00	Peak	H	-	-	-94.00	-0.40	49.04	73.98	-24.94
6340.00	Avg	H	100	35	-111.68	8.10	50.69	53.98	-3.29
6340.00	Peak	H	100	35	-99.88	8.10	65.79	73.98	-8.19
6905.00	Avg	H	-	-	-111.68	8.82	45.71	53.98	-8.27
6905.00	Peak	H	-	-	-99.88	8.82	55.94	73.98	-18.04
7470.00	Avg	H	-	-	-111.68	10.17	46.80	53.98	-7.18
7470.00	Peak	H	-	-	-99.88	10.17	57.57	73.98	-16.41
8035.00	Avg	H	-	-	-111.68	11.33	48.23	53.98	-5.75
8035.00	Peak	H	-	-	-99.88	11.33	59.44	73.98	-14.54

Table B-1. Radiated Measurements (Ant. Pol. H)

Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
2950.00	Avg	V	-	-	-103.59	-4.05	1.37	53.98	-52.61
2950.00	Peak	V	-	-	-95.92	-4.05	14.37	73.98	-59.61
3515.00	Avg	V	-	-	-101.32	-2.88	2.45	53.98	-51.53
3515.00	Peak	V	-	-	-94.00	-2.88	15.66	73.98	-58.32
4667.00	Avg	V	-	-	-111.68	4.63	48.01	53.98	-5.97
4667.00	Peak	V	-	-	-99.88	4.63	62.71	73.98	-11.27
4645.00	Avg	V	-	-	-101.32	-0.36	37.47	53.98	-16.51
4645.00	Peak	V	-	-	-94.00	-0.36	48.98	73.98	-25.00
6340.00	Avg	V	112	242	-111.68	8.15	48.20	53.98	-5.78
6340.00	Peak	V	112	242	-99.88	8.15	65.56	73.98	-8.42
6905.00	Avg	V	-	-	-111.68	8.80	46.16	53.98	-7.82
6905.00	Peak	V	-	-	-99.88	8.80	57.13	73.98	-16.85
7470.00	Avg	V	-	-	-111.68	10.17	46.66	53.98	-7.32
7470.00	Peak	V	-	-	-99.88	10.17	57.74	73.98	-16.24
8035.00	Avg	V	-	-	-111.68	11.33	48.05	53.98	-5.93
8035.00	Peak	V	-	-	-99.88	11.33	59.18	73.98	-14.80

Table B-2. Radiated Measurements (Ant. Pol. V)

FCC ID: A3LETWV531		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1705180171-03 .A3L	Test Dates: 11/23/2016-02/17/2017	EUT Type: Indoor Access Point		Page 233 of 233