

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: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,180,000,358	358	0.00000691
100 %		- 30	5,180,000,253	253	0.00000488
100 %		- 20	5,179,999,997	-3	-0.00000006
100 %		- 10	5,179,999,984	-16	-0.00000031
100 %		0	5,179,999,861	-139	-0.00000268
100 %		+ 10	5,180,000,252	252	0.00000486
100 %		+ 20	5,179,999,934	-66	-0.00000127
100 %		+ 30	5,179,999,921	-79	-0.00000153
100 %		+ 40	5,180,000,175	175	0.00000338
100 %		+ 50	5,179,999,590	-410	-0.00000792
BATT. ENDPOINT	3.40	+ 20	5,180,000,036	36	0.00000069

Table 7-24. Frequency Stability Measurements for UNII Band 1 (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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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: 5,260,000,000 Hz
 CHANNEL: 52
 REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,260,000,004	4	0.00000008
100 %		- 30	5,259,999,917	-83	-0.00000158
100 %		- 20	5,260,000,166	166	0.00000316
100 %		- 10	5,259,999,843	-157	-0.00000298
100 %		0	5,259,999,709	-291	-0.00000553
100 %		+ 10	5,259,999,814	-186	-0.00000354
100 %		+ 20	5,259,999,834	-166	-0.00000316
100 %		+ 30	5,259,999,907	-93	-0.00000177
100 %		+ 40	5,260,000,054	54	0.00000103
100 %		+ 50	5,259,999,983	-17	-0.00000032
BATT. ENDPOINT	3.40	+ 20	5,259,999,866	-134	-0.00000255

Table 7-25. Frequency Stability Measurements for UNII Band 2A (Ch. 52)

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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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: 5,500,000,000 Hz
 CHANNEL: 100
 REFERENCE VOLTAGE: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,500,000,235	235	0.00000427
100 %		- 30	5,500,000,010	10	0.00000018
100 %		- 20	5,499,999,986	-14	-0.00000025
100 %		- 10	5,499,999,976	-24	-0.00000044
100 %		0	5,500,000,054	54	0.00000098
100 %		+ 10	5,499,999,566	-434	-0.00000789
100 %		+ 20	5,500,000,016	16	0.00000029
100 %		+ 30	5,500,000,111	111	0.00000202
100 %		+ 40	5,500,000,048	48	0.00000087
100 %		+ 50	5,500,000,060	60	0.00000109
BATT. ENDPOINT	3.40	+ 20	5,500,000,226	226	0.00000411

Table 7-26. Frequency Stability Measurements for UNII Band 2C (Ch. 100)

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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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: 3.80 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,744,999,935	-65	-0.00000113
100 %		- 30	5,744,999,913	-87	-0.00000151
100 %		- 20	5,745,000,007	7	0.00000012
100 %		- 10	5,744,999,955	-45	-0.00000078
100 %		0	5,744,999,895	-105	-0.00000183
100 %		+ 10	5,744,999,907	-93	-0.00000162
100 %		+ 20	5,745,000,034	34	0.00000059
100 %		+ 30	5,745,000,099	99	0.00000172
100 %		+ 40	5,744,999,807	-193	-0.00000336
100 %		+ 50	5,745,000,108	108	0.00000188
BATT. ENDPOINT	3.40	+ 20	5,744,999,998	-2	-0.00000003

Table 7-27. 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 v01r03, 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 and 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.

For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an 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 7-28 per Section 15.209.

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

Table 7-28. Radiated Limits

Test Procedures Used

KDB 789033 D02 v01r03 – 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.

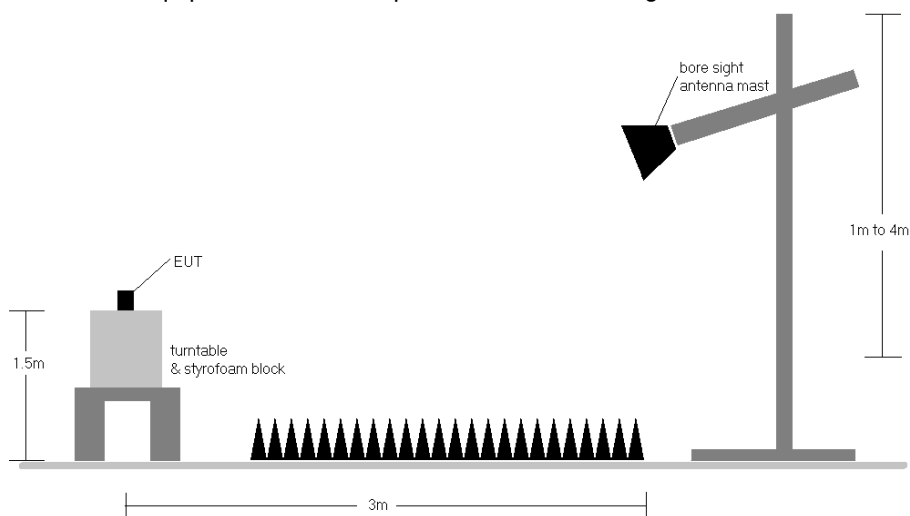


Figure 7-5. Test Instrument & Measurement Setup

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Test Notes

1. All radiated spurious emissions levels were measured in a radiated test setup per the guidance of KDB 789033 D02 v01r03 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 7-28.
3. All spurious emissions lying in restricted bands specified in §15.205 are below the limit shown in Table 7-28. 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 dBμV/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 68.2dBμV/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.

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Sample Calculations

Determining Spurious Emissions Levels

- Field Strength Level $[\text{dB}\mu\text{V/m}] = \text{Analyzer Level} [\text{dBm}] + 107 + \text{AFCL} [\text{dB/m}]$
- $\text{AFCL} [\text{dB/m}] = \text{Antenna Factor} [\text{dB/m}] + \text{Cable Loss} [\text{dB}]$
- $\text{Margin} [\text{dB}] = \text{Field Strength Level} [\text{dB}\mu\text{V/m}] - \text{Limit} [\text{dB}\mu\text{V/m}]$

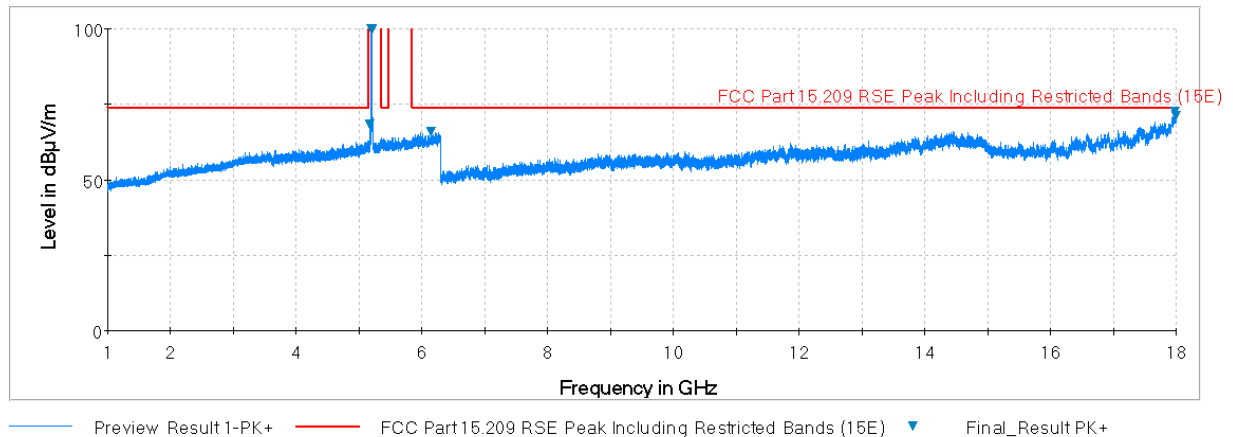
Radiated Band Edge Measurement Offset

- The amplitude offset shown in the radiated restricted band edge plots in Section 7.7 was calculated using the formula:

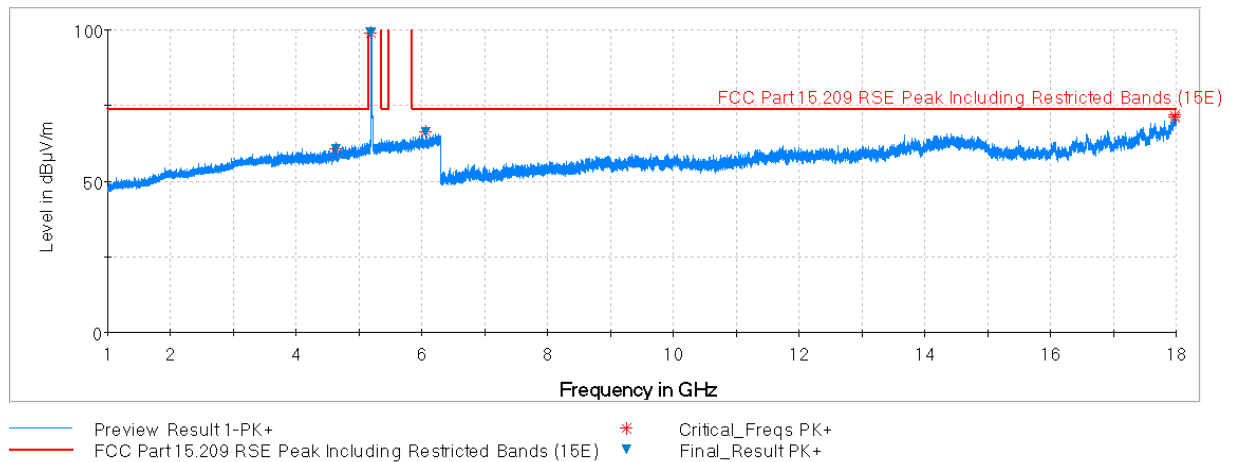
$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + \text{Attenuator}) - \text{Preamplifier Gain}$$

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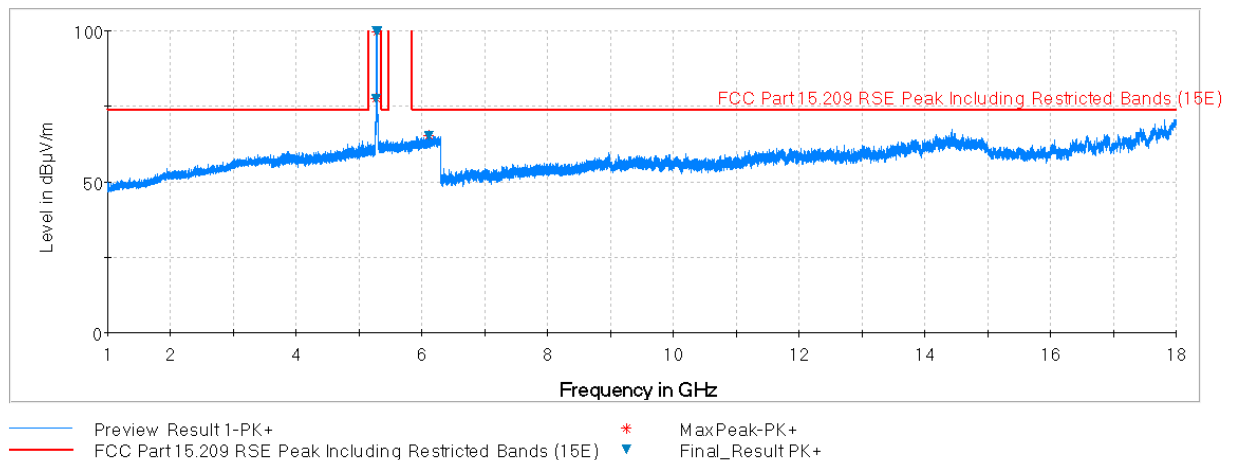
7.7.1 Antenna-1 Radiated Spurious Emission Measurements



Plot 7-157. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. H)

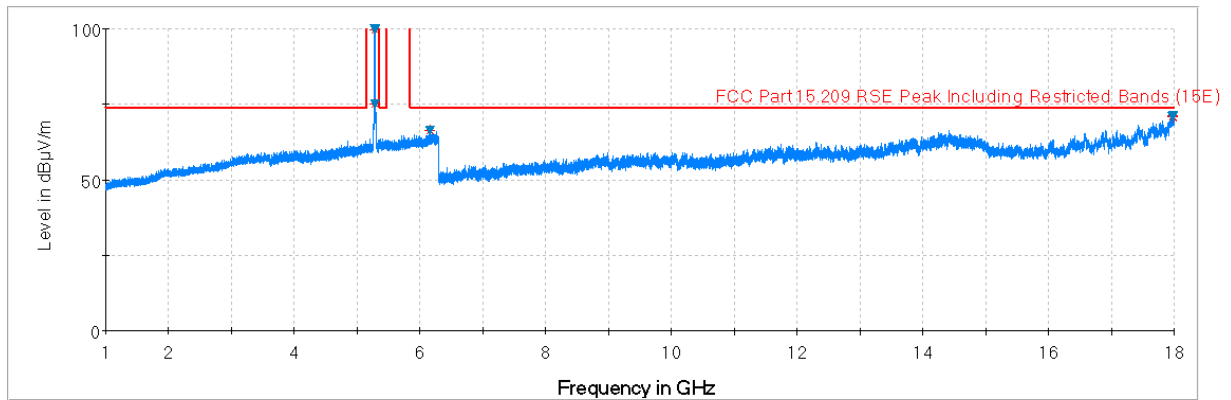


Plot 7-158. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)



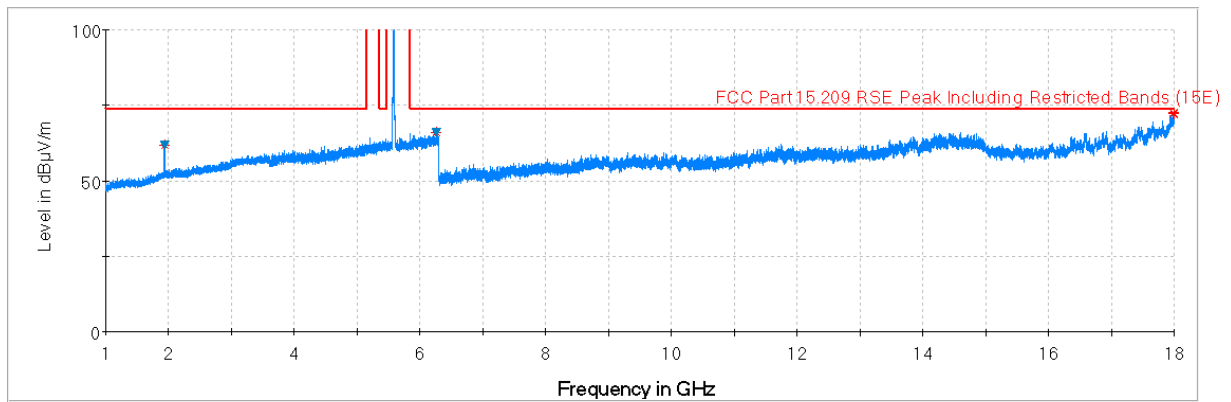
Plot 7-159. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

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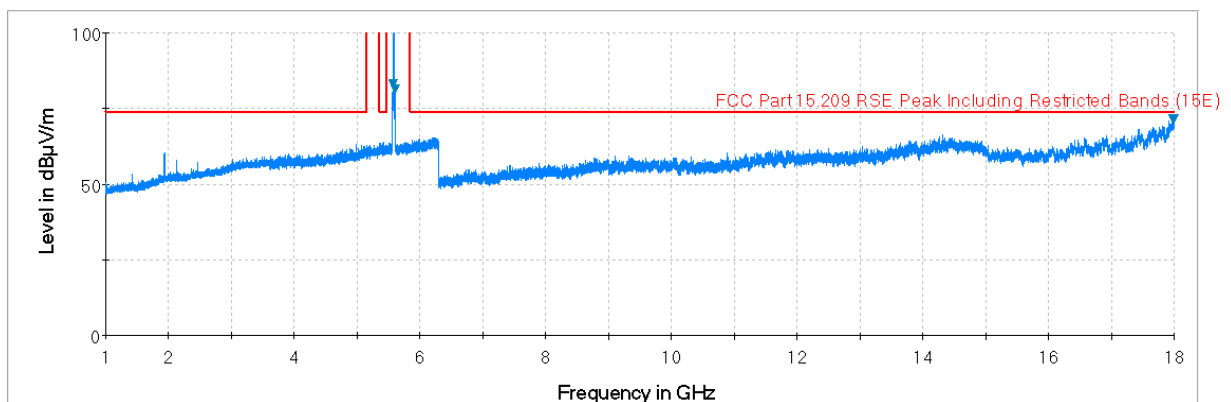
Preview Result 1-PK+ * MaxPeak-PK+
FCC Part 15.209 RSE Peak Including Restricted Bands (15E) ▼ Final_Result PK+

Plot 7-160. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)



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

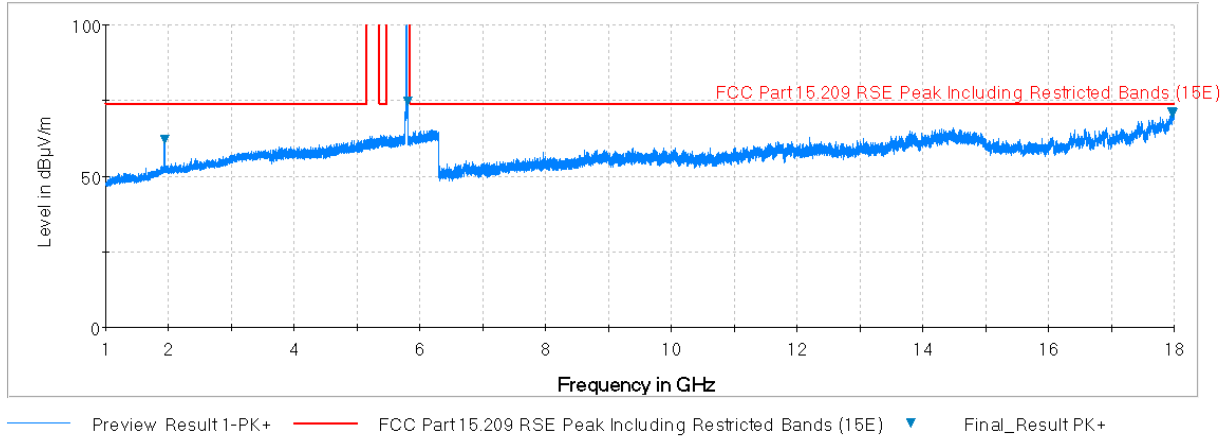
Plot 7-161. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. H)



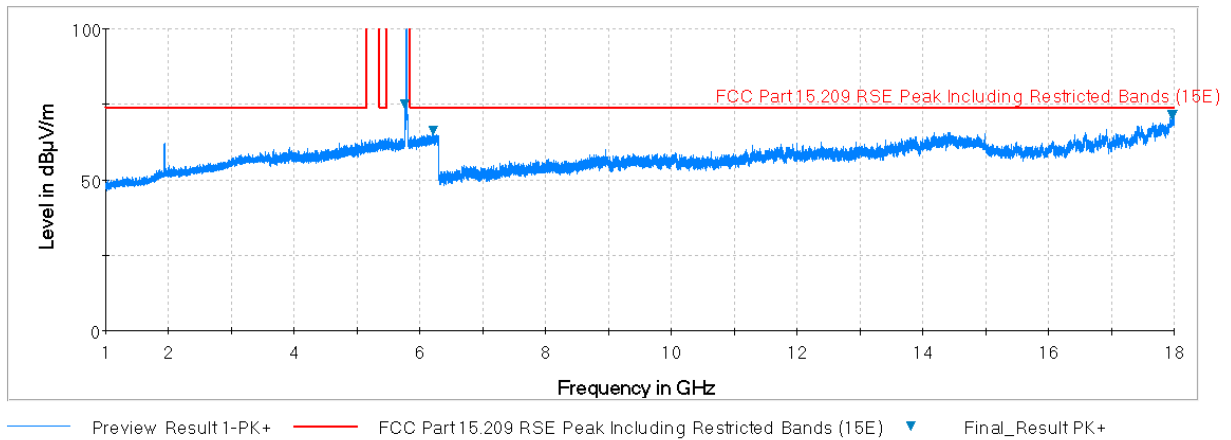
Preview Result 1-PK+ FCC Part 15.209 RSE Peak Including Restricted Bands (15E) ▼ Final_Result PK+

Plot 7-162. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. V)

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

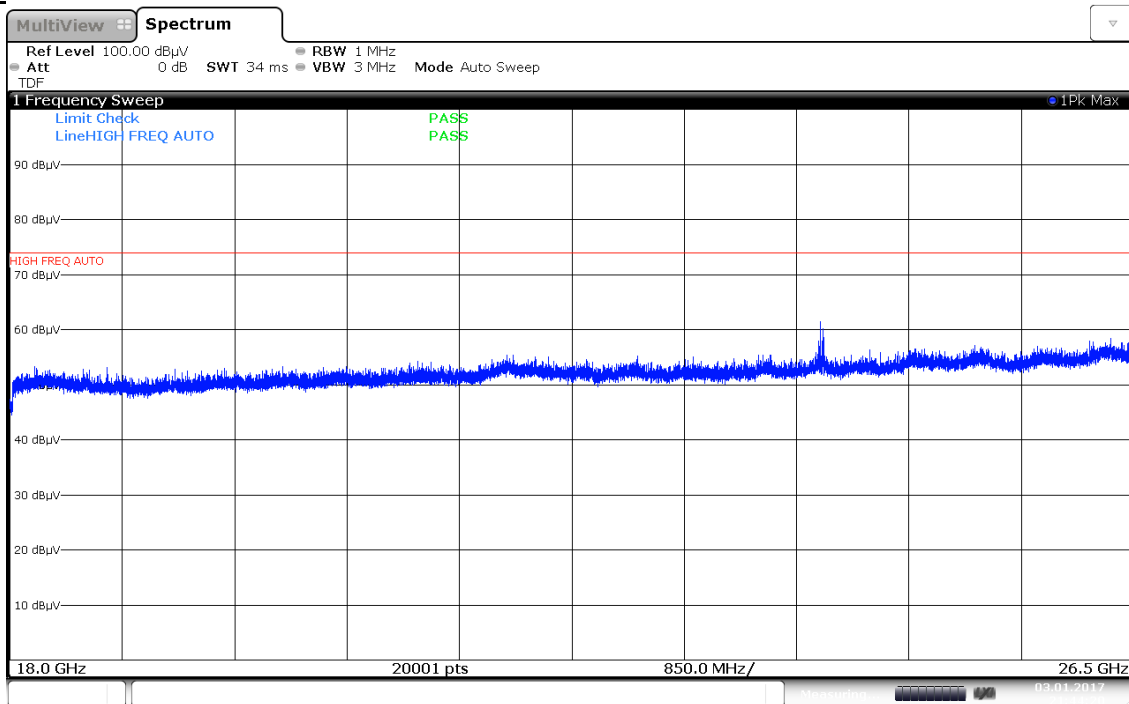


Plot 7-164. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

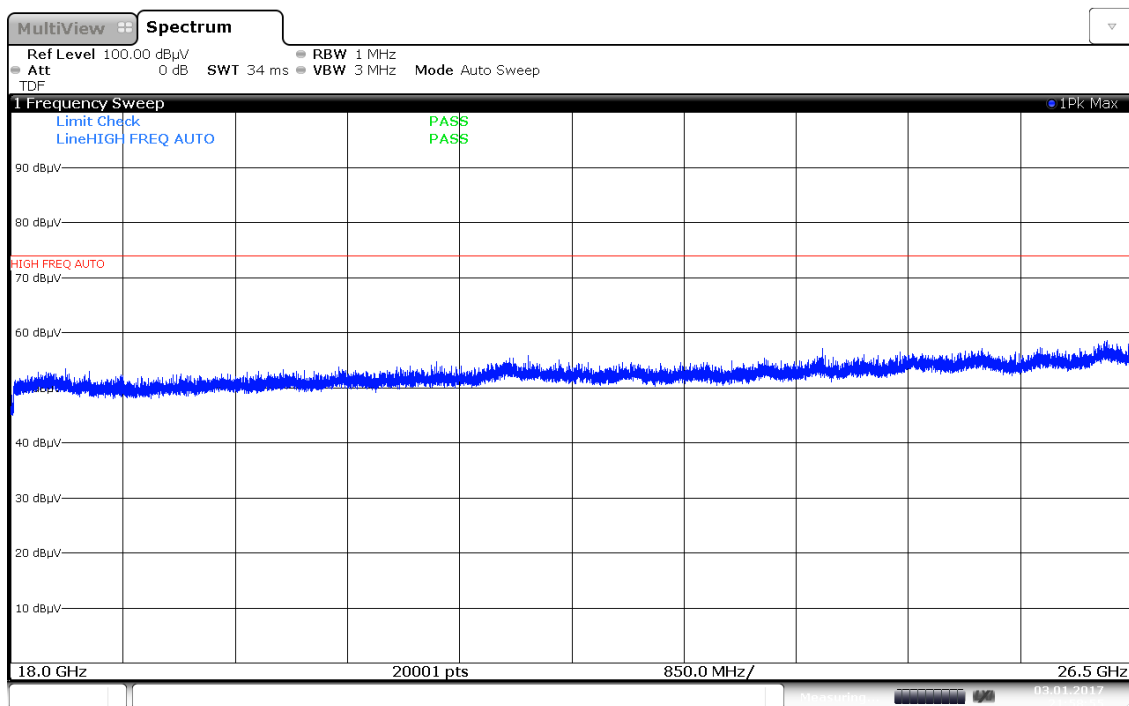
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Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



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



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

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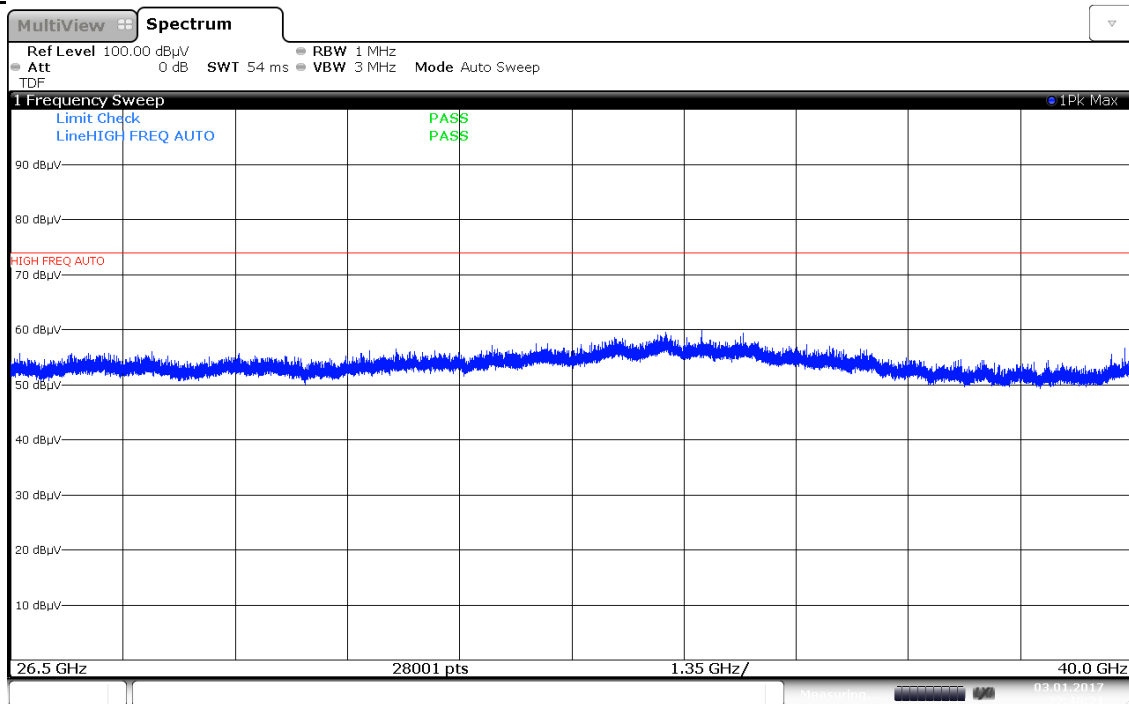
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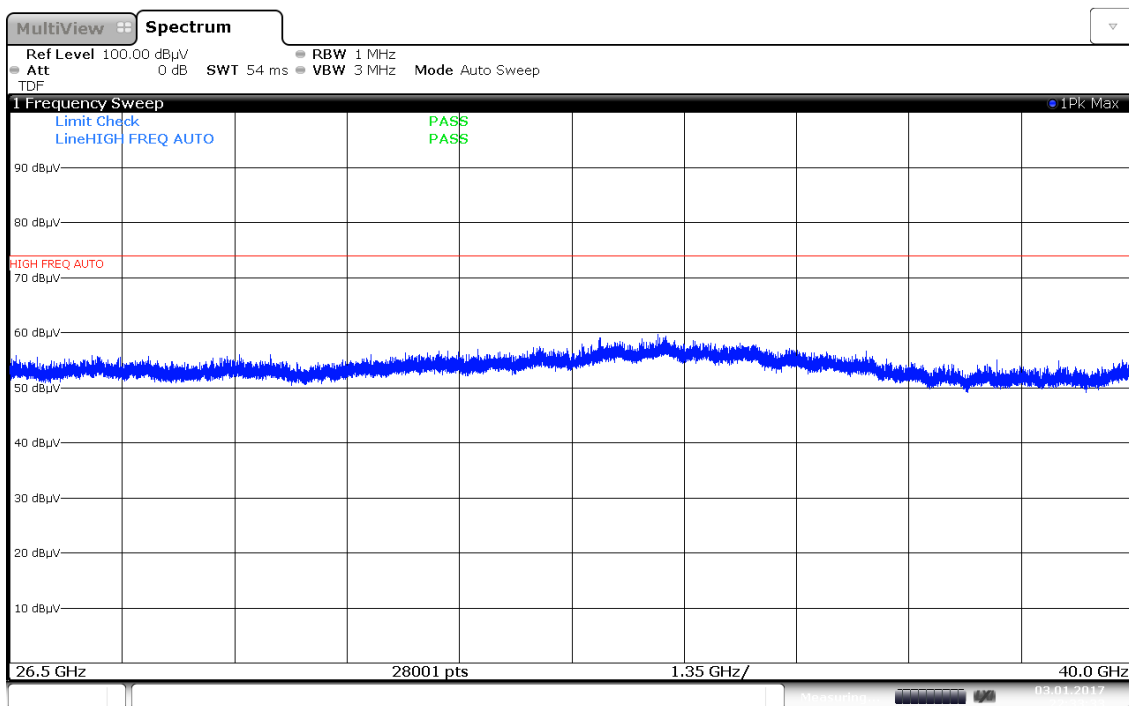
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Antenna-1 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Plot 7-167. 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)

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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	H	-	-	-58.29	12.69	0.00	61.40	68.20	-6.80
* 15540.00	Average	H	-	-	-73.83	17.58	0.00	50.75	53.98	-3.23
* 15540.00	Peak	H	-	-	-59.08	17.58	0.00	65.50	73.98	-8.48
* 20720.00	Average	H	-	-	-71.41	8.13	-9.54	34.18	53.98	-19.80
* 20720.00	Peak	H	-	-	-60.14	8.13	-9.54	45.45	73.98	-28.53
25900.00	Peak	H	-	-	-57.12	8.50	-9.54	48.84	68.20	-19.36

Table 7-29. 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	-	-	-58.47	13.01	0.00	61.54	68.20	-6.66
* 15600.00	Average	H	-	-	-74.34	17.45	0.00	50.11	53.98	-3.87
* 15600.00	Peak	H	-	-	-59.23	17.45	0.00	65.22	73.98	-8.76
* 20800.00	Average	H	-	-	-72.02	8.16	-9.54	33.59	53.98	-20.39
* 20800.00	Peak	H	-	-	-59.99	8.16	-9.54	45.62	73.98	-28.36
26000.00	Peak	H	-	-	-57.74	8.52	-9.54	48.24	68.20	-19.96

Table 7-30. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 125 of 260

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	-	-	-58.94	12.88	0.00	60.94	68.20	-7.26
* 15720.00	Average	H	-	-	-73.92	17.90	0.00	50.98	53.98	-3.00
* 15720.00	Peak	H	-	-	-58.91	17.90	0.00	65.99	73.98	-7.99
* 20960.00	Average	H	-	-	-72.38	8.12	-9.54	33.20	53.98	-20.78
* 20960.00	Peak	H	-	-	-60.52	8.12	-9.54	45.06	73.98	-28.92
26200.00	Peak	H	-	-	-57.34	8.62	-9.54	48.74	68.20	-19.46

Table 7-31. Radiated Measurements

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	-	-	-58.26	12.88	0.00	61.62	68.20	-6.58
* 15720.00	Average	H	-	-	-73.99	17.90	0.00	50.91	53.98	-3.07
* 15720.00	Peak	H	-	-	-59.28	17.90	0.00	65.62	73.98	-8.36
* 20960.00	Average	H	-	-	-73.29	8.12	-9.54	32.29	53.98	-21.69
* 20960.00	Peak	H	-	-	-60.73	8.12	-9.54	44.85	73.98	-29.13
26200.00	Peak	H	-	-	-57.11	8.62	-9.54	48.97	68.20	-19.23

Table 7-32. Radiated Measurements with WCP

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 126 of 260

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5260MHz
Channel: 52

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]
10520.00	Peak	H	-	-	-58.99	12.81	0.00	60.82	68.20	-7.38
* 15780.00	Average	H	-	-	-74.28	17.62	0.00	50.34	53.98	-3.64
* 15780.00	Peak	H	-	-	-59.14	17.62	0.00	65.48	73.98	-8.50
* 21040.00	Average	H	-	-	-72.37	8.10	-9.54	33.19	53.98	-20.79
* 21040.00	Peak	H	-	-	-58.85	8.10	-9.54	46.71	73.98	-27.27
26300.00	Peak	H	-	-	-56.42	11.48	-9.54	52.52	68.20	-15.68

Table 7-33. Radiated Measurements

Worst Case Mode: 802.11a
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 1 & 3 Meters
Operating Frequency: 5280MHz
Channel: 56

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]
10560.00	Peak	H	-	-	-60.71	13.19	0.00	59.48	68.20	-8.72
* 15840.00	Average	H	-	-	-74.16	18.14	0.00	50.98	53.98	-3.00
* 15840.00	Peak	H	-	-	-59.26	18.14	0.00	65.88	73.98	-8.10
* 21120.00	Average	H	-	-	-69.12	8.09	-9.54	36.42	53.98	-17.56
* 21120.00	Peak	H	-	-	-59.61	8.09	-9.54	45.93	73.98	-28.05
26400.00	Peak	H	-	-	-56.90	11.72	-9.54	52.27	68.20	-15.93

Table 7-34. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 127 of 260

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

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]
* 10640.00	Average	H	-	-	-70.34	13.63	0.00	50.29	53.98	-3.69
* 10640.00	Peak	H	-	-	-58.92	13.63	0.00	61.71	73.98	-12.27
* 15960.00	Average	H	-	-	-74.01	17.91	0.00	50.90	53.98	-3.08
* 15960.00	Peak	H	-	-	-58.76	17.91	0.00	66.15	73.98	-7.83
* 21280.00	Average	H	-	-	-72.01	8.07	-9.54	33.52	53.98	-20.46
* 21280.00	Peak	H	-	-	-60.02	8.07	-9.54	45.51	73.98	-28.47
26600.00	Peak	H	-	-	-46.01	-8.30	-9.54	43.15	68.20	-25.05

Table 7-35. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5280MHz
 Channel: 56

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]
10560.00	Peak	H	-	-	-59.36	13.19	0.00	60.83	68.20	-7.37
* 15840.00	Average	H	-	-	-74.31	18.14	0.00	50.83	53.98	-3.15
* 15840.00	Peak	H	-	-	-59.97	18.14	0.00	65.17	73.98	-8.81
* 21120.00	Average	H	-	-	-72.00	8.09	-9.54	33.55	53.98	-20.43
* 21120.00	Peak	H	-	-	-60.20	8.09	-9.54	45.34	73.98	-28.64
26400.00	Peak	H	-	-	-56.98	11.72	-9.54	52.19	73.98	-21.79

Table 7-36. Radiated Measurements with WCP

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 128 of 260

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

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]
* 11000.00	Average	H	-	-	-70.69	13.98	0.00	50.29	53.98	-3.69
* 11000.00	Peak	H	-	-	-58.15	13.98	0.00	62.83	73.98	-11.15
16500.00	Peak	H	-	-	-62.30	19.93	0.00	64.63	68.20	-3.57
22000.00	Peak	H	-	-	-57.91	8.35	-9.54	47.89	68.20	-20.31
27500.00	Peak	H	-	-	-45.62	-8.93	-9.54	42.91	68.20	-25.29

Table 7-37. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5600MHz
 Channel: 120

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]
* 11200.00	Average	H	-	-	-70.84	14.29	0.00	50.45	53.98	-3.53
* 11200.00	Peak	H	-	-	-57.96	14.29	0.00	63.33	73.98	-10.65
16800.00	Peak	H	-	-	-62.76	20.91	0.00	65.15	68.20	-3.05
* 22400.00	Average	H	-	-	-71.04	8.20	-9.54	34.62	53.98	-19.36
* 22400.00	Peak	H	-	-	-59.81	8.20	-9.54	45.85	73.98	-28.13
28000.00	Peak	H	-	-	-45.60	-9.24	-9.54	42.62	68.20	-25.58

Table 7-38. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 129 of 260

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144

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]
* 11400.00	Average	H	-	-	-70.92	14.81	0.00	50.89	53.98	-3.09
* 11400.00	Peak	H	-	-	-57.60	14.81	0.00	64.21	73.98	-9.77
17100.00	Peak	H	-	-	-65.24	23.41	0.00	65.17	68.20	-3.03
* 22800.00	Average	H	-	-	-71.59	8.29	-9.54	34.15	53.98	-19.83
* 22800.00	Peak	H	-	-	-59.99	8.29	-9.54	45.75	73.98	-28.23
28500.00	Peak	H	-	-	-45.77	-9.03	-9.54	42.66	68.20	-25.54

Table 7-39. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144

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]
* 11400.00	Average	H	-	-	-70.91	14.81	0.00	50.90	53.98	-3.08
* 11400.00	Peak	H	-	-	-58.04	14.81	0.00	63.77	73.98	-10.21
17100.00	Peak	H	-	-	-65.58	23.41	0.00	64.83	68.20	-3.37
* 22800.00	Average	H	-	-	-70.30	8.29	-9.54	35.44	53.98	-18.54
* 22800.00	Peak	H	-	-	-59.09	8.29	-9.54	46.65	73.98	-27.33
28500.00	Peak	H	-	-	-44.66	-9.03	-9.54	43.77	68.20	-24.43

Table 7-40. Radiated Measurements with WCP

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 130 of 260

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	-	-	-71.31	15.10	0.00	50.79	53.98	-3.19
* 11490.00	Peak	H	-	-	-58.78	15.10	0.00	63.32	73.98	-10.66
17235.00	Peak	H	-	-	-62.89	21.02	0.00	65.13	68.20	-3.07
* 22980.00	Average	H	-	-	-73.12	8.19	-9.54	32.53	53.98	-21.45
* 22980.00	Peak	H	-	-	-60.66	8.19	-9.54	44.99	73.98	-28.99
28725.00	Peak	H	-	-	-44.38	-9.45	-9.54	43.63	68.20	-24.57

Table 7-41. Radiated Measurements

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	-	-	-71.36	15.26	0.00	50.90	53.98	-3.08
* 11570.00	Peak	H	-	-	-58.95	15.26	0.00	63.31	73.98	-10.67
17355.00	Peak	H	-	-	-64.19	22.34	0.00	65.15	68.20	-3.05
23140.00	Peak	H	-	-	-60.07	8.47	-9.54	45.85	68.20	-22.35
28925.00	Peak	H	-	-	-44.20	-9.71	-9.54	43.55	68.20	-24.65

Table 7-42. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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	-	-	-71.65	15.60	0.00	50.95	53.98	-3.03
* 11650.00	Peak	H	-	-	-58.35	15.60	0.00	64.25	73.98	-9.73
17475.00	Peak	H	-	-	-66.63	24.82	0.00	65.19	68.20	-3.01
23300.00	Peak	H	-	-	-60.35	8.60	-9.54	45.71	68.20	-22.49
29125.00	Peak	H	-	-	-44.51	-9.93	-9.54	43.02	68.20	-25.18

Table 7-43. Radiated Measurements

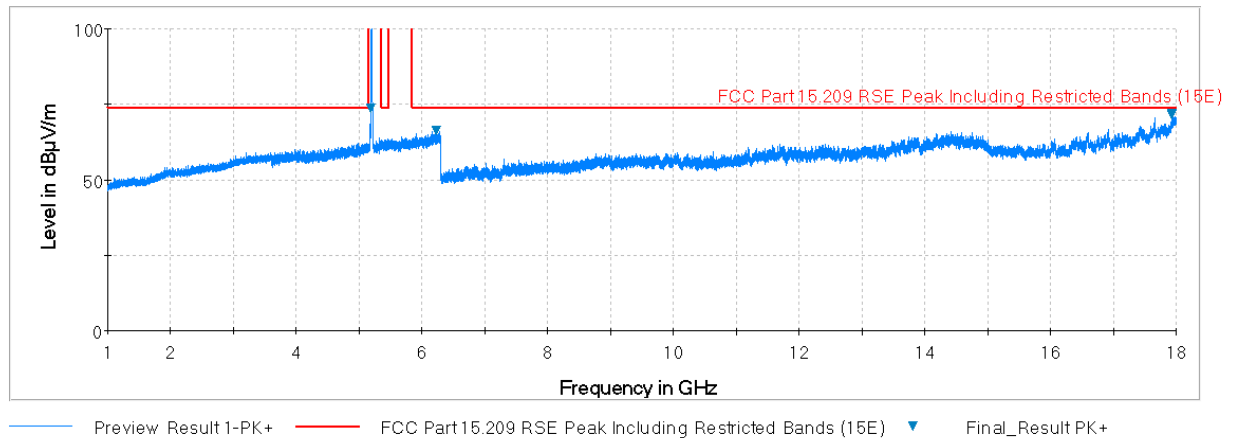
Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5825MHz
 Channel: 165

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	-	-	-71.63	15.60	0.00	50.97	53.98	-3.01
* 11650.00	Peak	H	-	-	-57.80	15.60	0.00	64.80	73.98	-9.18
17475.00	Peak	H	-	-	-66.65	24.82	0.00	65.17	68.20	-3.03
23300.00	Peak	H	-	-	-60.20	8.60	-9.54	45.86	68.20	-22.34
29125.00	Peak	H	-	-	-43.84	-9.93	-9.54	43.69	68.20	-24.51

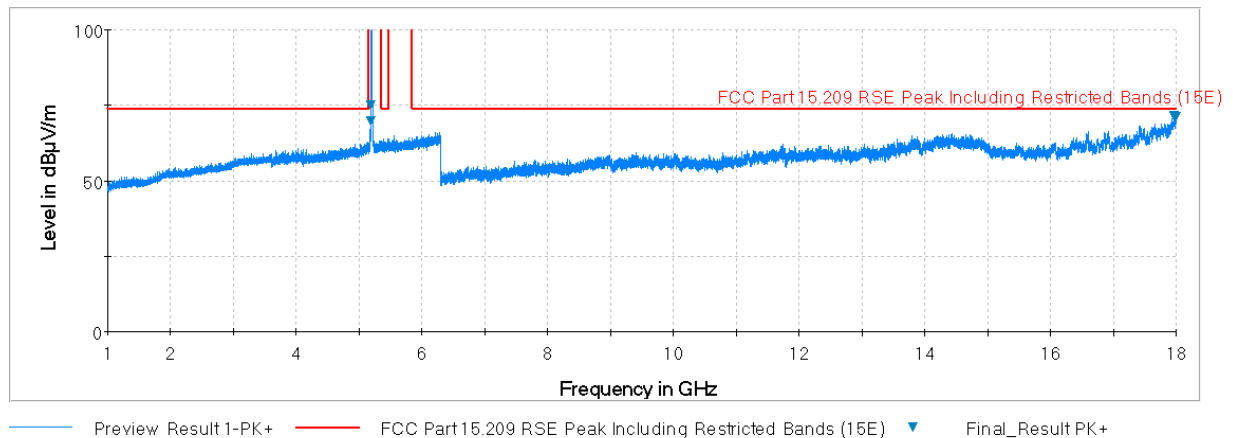
Table 7-44. Radiated Measurements with WCP

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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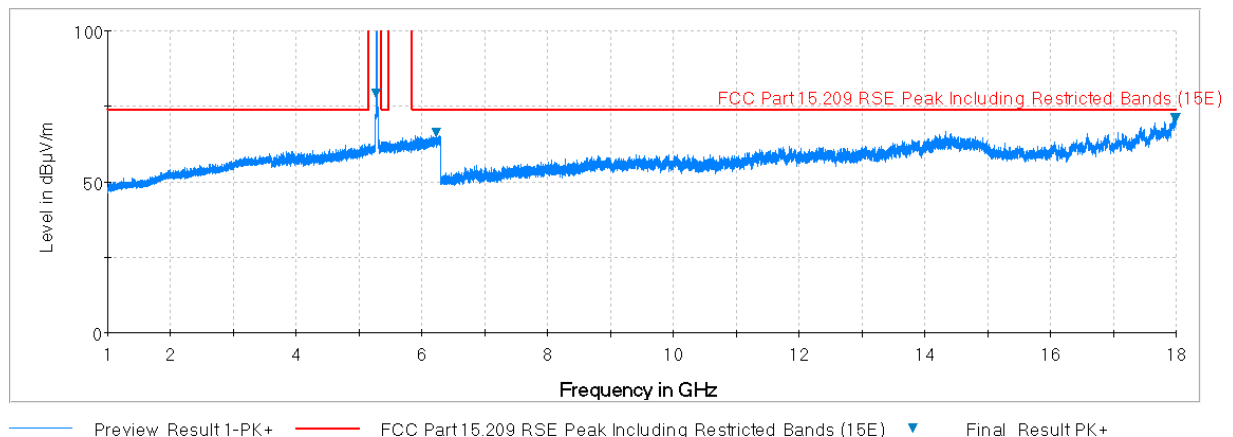
7.7.2 Antenna-2 Radiated Spurious Emission Measurements



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

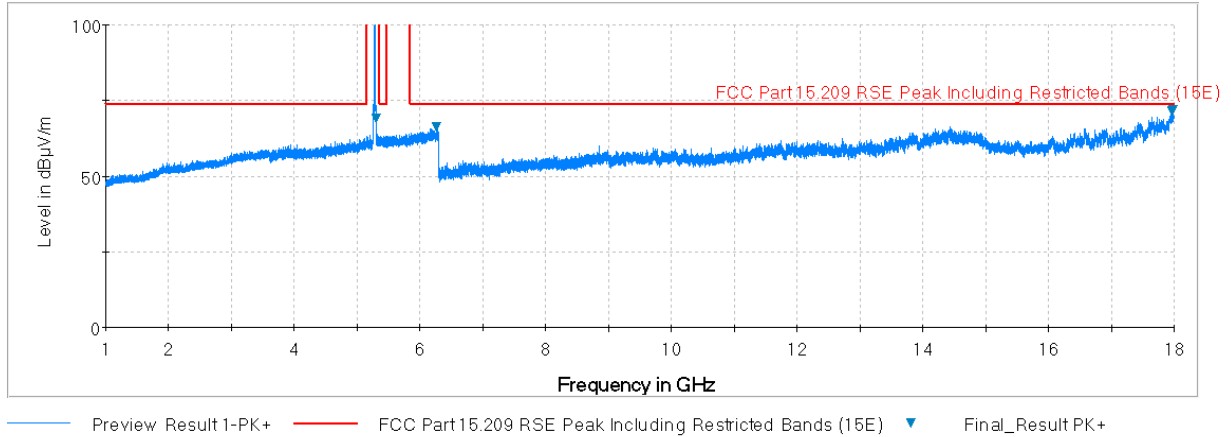


Plot 7-170. Radiated Spurious Plot above 1GHz (802.11a – U1 Ch. 40, Ant. Pol. V)

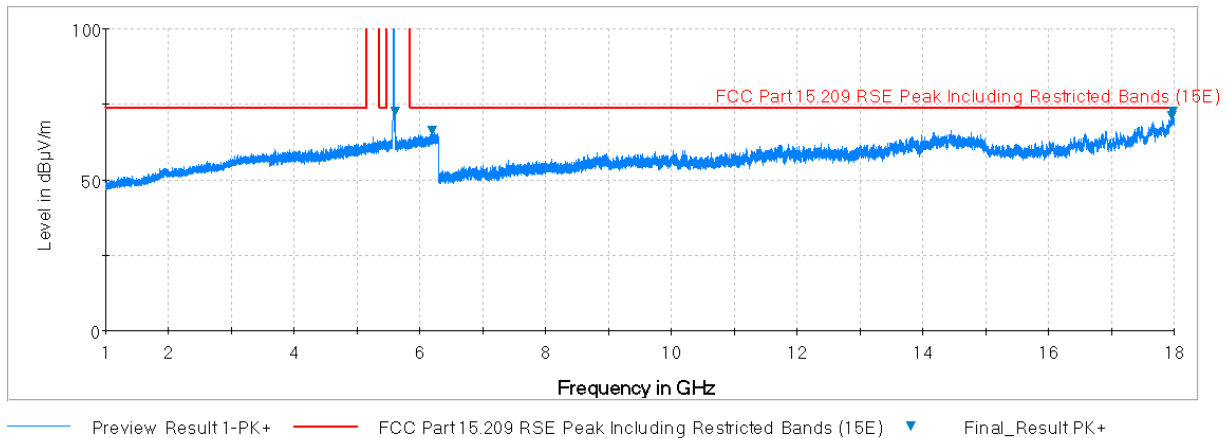


Plot 7-171. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. H)

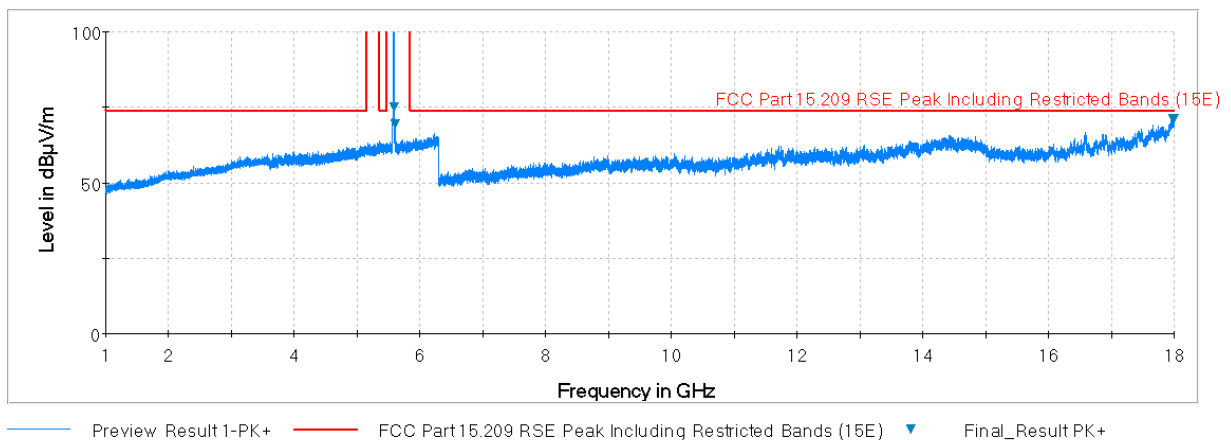
FCC ID: A3LSMG955U	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
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Plot 7-172. Radiated Spurious Plot above 1GHz (802.11a – U2A Ch. 56, Ant. Pol. V)

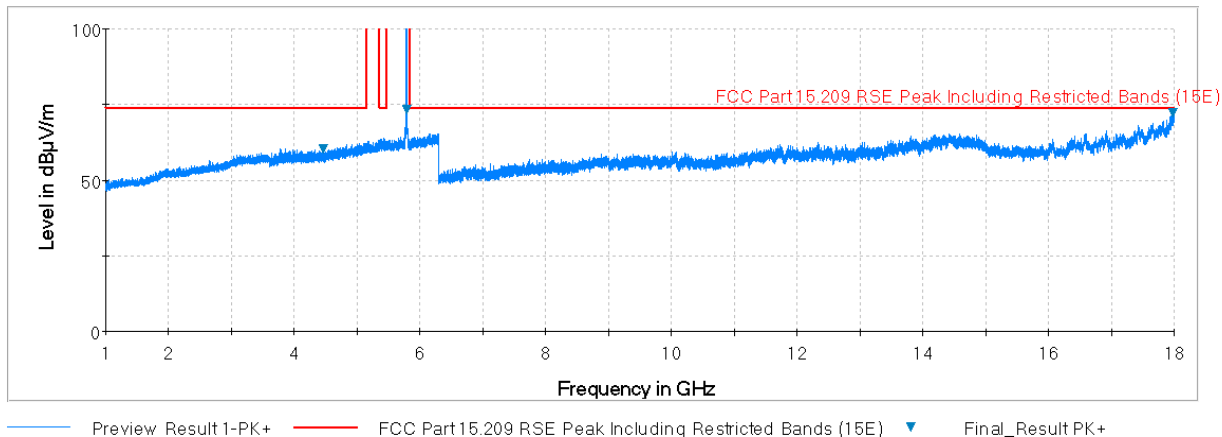


Plot 7-173. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. H)

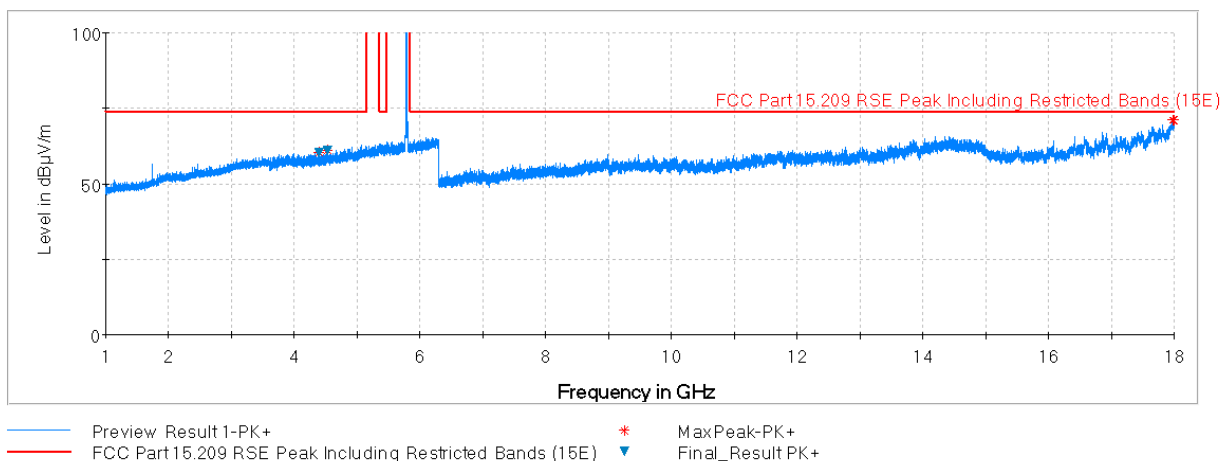


Plot 7-174. Radiated Spurious Plot above 1GHz (802.11a – U2C Ch. 120, Ant. Pol. V)

FCC ID: A3LSMG955U	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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Plot 7-175. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-176. Radiated Spurious Plot above 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 135 of 260

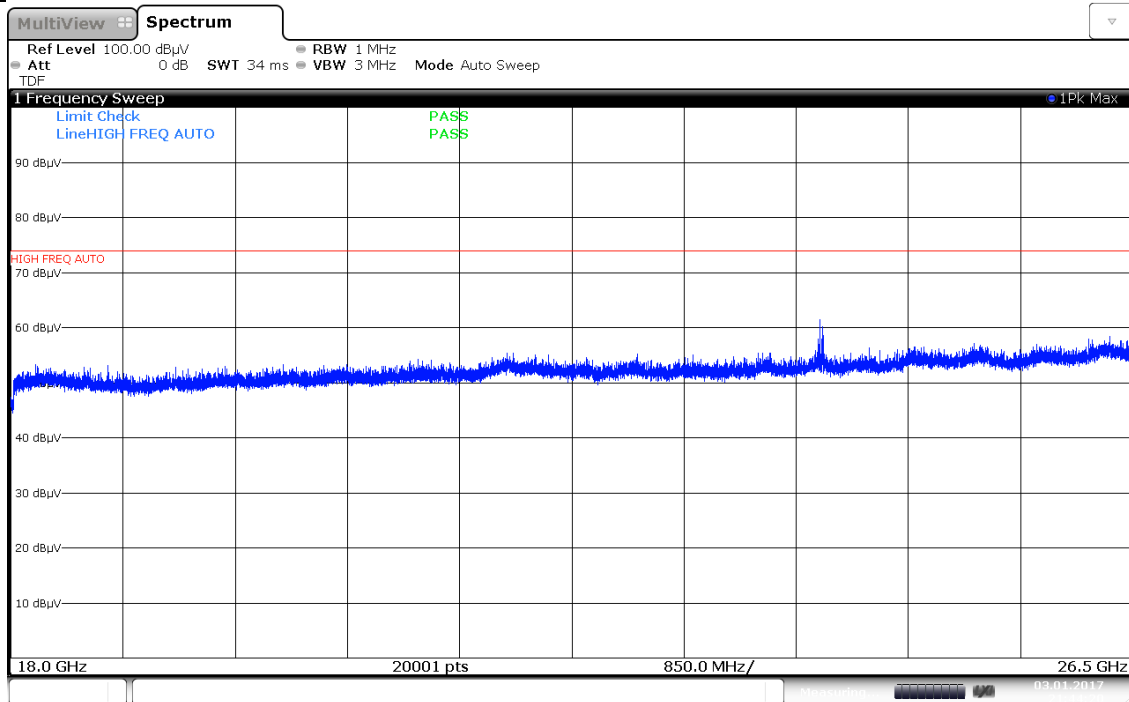
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12/26/2016

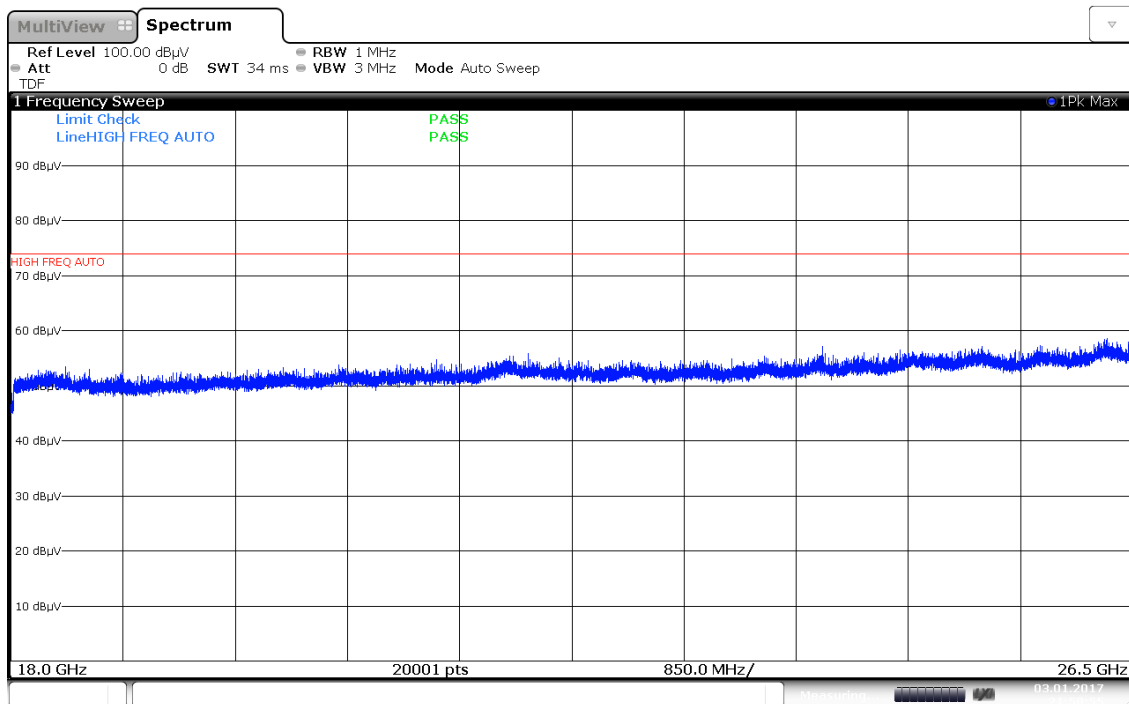
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Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



Plot 7-177. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. H)



Plot 7-178. Radiated Spurious Plot above 18GHz - 26.5GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 136 of 260

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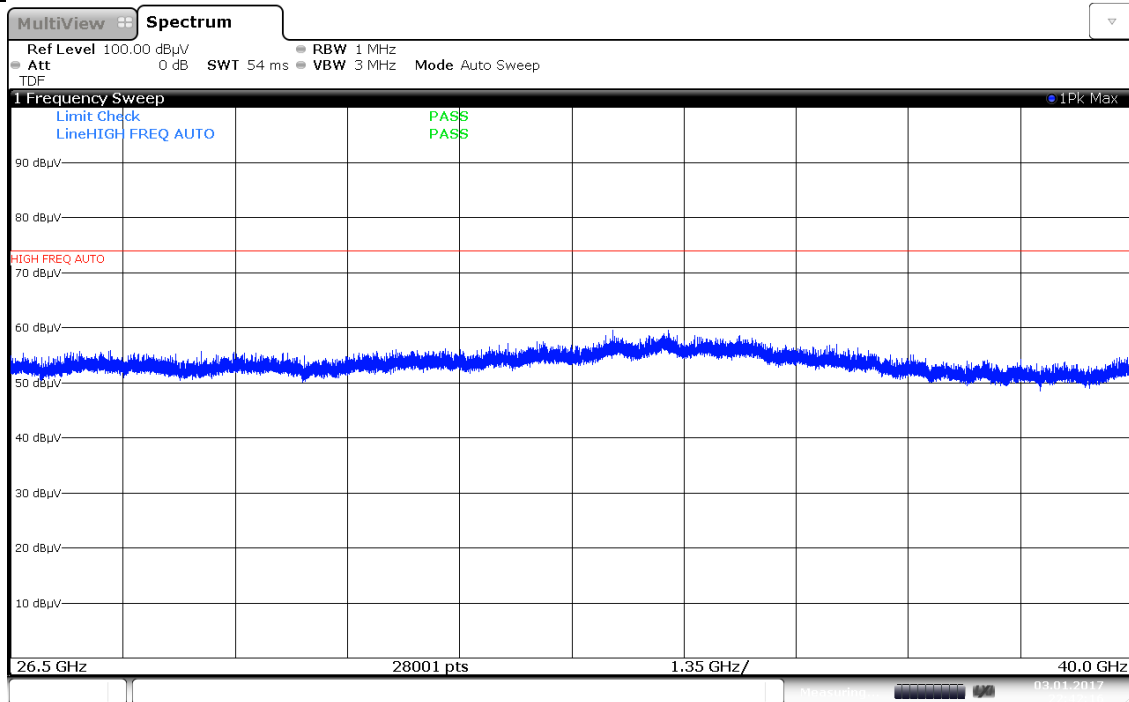
V 6.1

12/26/2016

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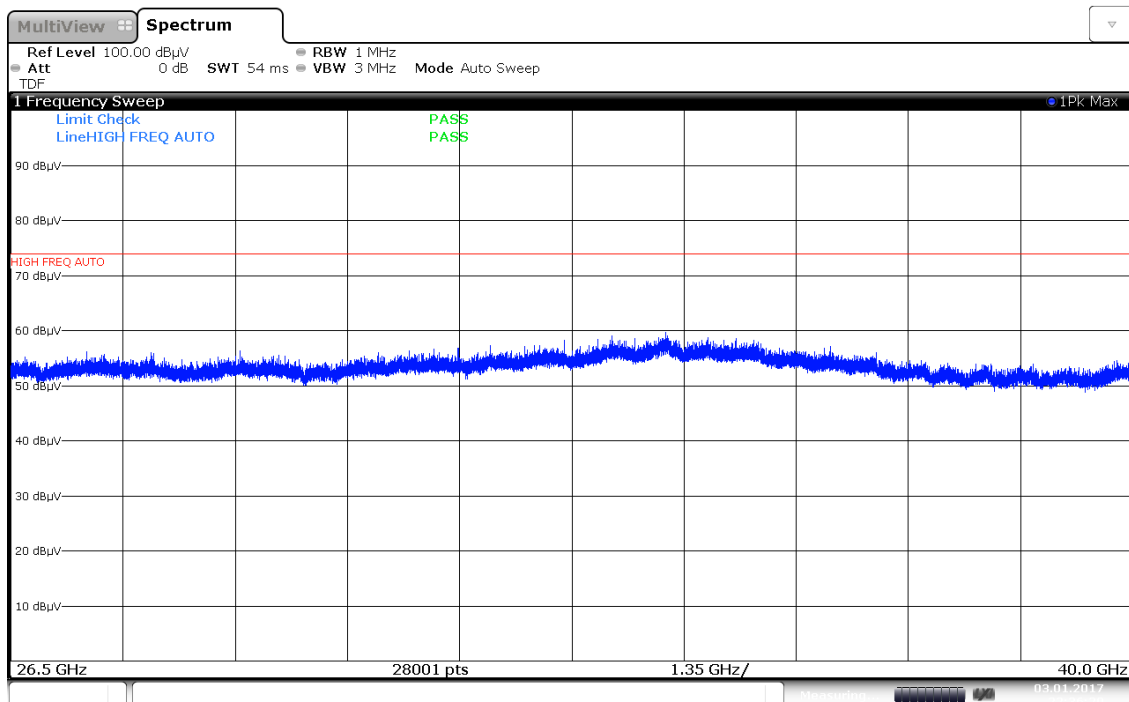
Antenna-2 Radiated Spurious Emissions Measurements (Above 18GHz)

\$15.209



22:42:17 03.01.2017

Plot 7-179. Radiated Spurious Plot 26.5GHz - 40GHz (802.11a – Ant. Pol. H)



22:36:21 03.01.2017

Plot 7-180. Radiated Spurious Plot above 26.5GHz - 40GHz (802.11a – Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 137 of 260

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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	-	-	-58.68	12.69	0.00	61.01	68.20	-7.19
* 15540.00	Average	H	-	-	-73.79	17.58	0.00	50.79	53.98	-3.19
* 15540.00	Peak	H	-	-	-59.42	17.58	0.00	65.16	73.98	-8.82
* 20720.00	Average	H	-	-	-71.26	8.13	-9.54	34.33	53.98	-19.65
* 20720.00	Peak	H	-	-	-60.34	8.13	-9.54	45.25	73.98	-28.73
25900.00	Peak	H	-	-	-57.65	8.50	-9.54	48.31	68.20	-19.89

Table 7-45. 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	-	-	-60.46	13.01	0.00	59.55	68.20	-8.65
* 15600.00	Average	H	-	-	-74.21	17.45	0.00	50.24	53.98	-3.74
* 15600.00	Peak	H	-	-	-60.23	17.45	0.00	64.22	73.98	-9.76
* 20800.00	Average	H	-	-	-71.89	8.16	-9.54	33.72	53.98	-20.26
* 20800.00	Peak	H	-	-	-60.08	8.16	-9.54	45.53	73.98	-28.45
26000.00	Peak	H	-	-	-56.93	8.52	-9.54	49.05	68.20	-19.15

Table 7-46. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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	H	-	-	-58.65	12.88	0.00	61.23	68.20	-6.97
* 15720.00	Average	H	-	-	-73.97	17.90	0.00	50.93	53.98	-3.05
* 15720.00	Peak	H	-	-	-59.53	17.90	0.00	65.37	73.98	-8.61
* 20960.00	Average	H	-	-	-73.03	8.12	-9.54	32.55	53.98	-21.43
* 20960.00	Peak	H	-	-	-60.44	8.12	-9.54	45.14	73.98	-28.84
26200.00	Peak	H	-	-	-57.45	8.62	-9.54	48.63	68.20	-19.57

Table 7-47. Radiated Measurements

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	-	-	-58.95	12.88	0.00	60.93	68.20	-7.27
* 15720.00	Average	H	-	-	-74.08	17.90	0.00	50.82	53.98	-3.16
* 15720.00	Peak	H	-	-	-59.31	17.90	0.00	65.59	73.98	-8.39
* 20960.00	Average	H	-	-	-72.61	8.12	-9.54	32.97	53.98	-21.01
* 20960.00	Peak	H	-	-	-60.78	8.12	-9.54	44.80	73.98	-29.18
26200.00	Peak	H	-	-	-57.47	8.62	-9.54	48.61	68.20	-19.59

Table 7-48. Radiated Measurements with WCP

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 139 of 260

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5260MHz
 Channel: 52

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]
10520.00	Peak	H	-	-	-59.23	12.81	0.00	60.58	68.20	-7.62
* 15780.00	Average	H	-	-	-73.72	17.62	0.00	50.90	53.98	-3.08
* 15780.00	Peak	H	-	-	-59.11	17.62	0.00	65.51	73.98	-8.47
* 21040.00	Average	H	-	-	-72.09	8.10	-9.54	33.47	53.98	-20.51
* 21040.00	Peak	H	-	-	-60.22	8.10	-9.54	45.34	73.98	-28.64
26300.00	Peak	H	-	-	-59.97	11.48	-9.54	48.97	68.20	-19.23

Table 7-49. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5280MHz
 Channel: 56

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]
10560.00	Peak	H	-	-	-59.44	13.19	0.00	60.75	68.20	-7.45
* 15840.00	Average	H	-	-	-74.25	18.14	0.00	50.89	53.98	-3.09
* 15840.00	Peak	H	-	-	-59.80	18.14	0.00	65.34	73.98	-8.64
* 21120.00	Average	H	-	-	-72.92	8.09	-9.54	32.62	53.98	-21.36
* 21120.00	Peak	H	-	-	-60.18	8.09	-9.54	45.36	73.98	-28.62
26400.00	Peak	H	-	-	-57.52	11.71	-9.54	51.65	68.20	-16.55

Table 7-50. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 140 of 260

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

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]
* 10640.00	Average	H	-	-	-70.52	13.63	0.00	50.11	53.98	-3.87
* 10640.00	Peak	H	-	-	-59.10	13.63	0.00	61.53	73.98	-12.45
* 15960.00	Average	H	-	-	-74.22	17.91	0.00	50.69	53.98	-3.29
* 15960.00	Peak	H	-	-	-58.86	17.91	0.00	66.05	73.98	-7.93
* 21280.00	Average	H	-	-	-71.48	8.07	-9.54	34.05	53.98	-19.93
* 21280.00	Peak	H	-	-	-59.37	8.07	-9.54	46.16	73.98	-27.82
26600.00	Peak	H	-	-	-46.00	-8.30	-9.54	43.16	68.20	-25.04

Table 7-51. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5320MHz
 Channel: 64

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]
* 10640.00	Average	H	-	-	-70.54	13.63	0.00	50.09	53.98	-3.89
* 10640.00	Peak	H	-	-	-59.47	13.63	0.00	61.16	73.98	-12.82
* 15960.00	Average	H	-	-	-74.00	17.91	0.00	50.91	53.98	-3.07
* 15960.00	Peak	H	-	-	-59.95	17.91	0.00	64.96	73.98	-9.02
* 21280.00	Average	H	-	-	-71.74	8.07	-9.54	33.79	53.98	-20.19
* 21280.00	Peak	H	-	-	-59.15	8.07	-9.54	46.38	73.98	-27.60
26600.00	Peak	H	-	-	-46.47	-8.30	-9.54	42.69	68.20	-25.51

Table 7-52. Radiated Measurements with WCP

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 141 of 260

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5500MHz
 Channel: 100

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]
* 11000.00	Average	H	-	-	-70.38	13.98	0.00	50.60	53.98	-3.38
* 11000.00	Peak	H	-	-	-59.17	13.98	0.00	61.81	73.98	-12.17
16500.00	Peak	H	-	-	-61.74	19.93	0.00	65.19	68.20	-3.01
22000.00	Peak	H	-	-	-59.00	8.35	-9.54	46.80	68.20	-21.40
27500.00	Peak	H	-	-	-46.42	-8.93	-9.54	42.11	68.20	-26.09

Table 7-53. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5580MHz
 Channel: 120

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]
* 11200.00	Average	H	-	-	-70.31	14.29	0.00	50.98	53.98	-3.00
* 11200.00	Peak	H	-	-	-57.93	14.29	0.00	63.36	73.98	-10.62
16800.00	Peak	H	-	-	-62.74	20.91	0.00	65.17	68.20	-3.03
* 22400.00	Average	H	-	-	-71.31	8.20	-9.54	34.35	53.98	-19.63
* 22400.00	Peak	H	-	-	-59.52	8.20	-9.54	46.14	73.98	-27.84
28000.00	Peak	H	-	-	-45.57	-9.24	-9.54	42.65	68.20	-25.55

Table 7-54. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 142 of 260

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144

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]
* 11400.00	Average	H	-	-	-70.92	14.81	0.00	50.89	53.98	-3.09
* 11400.00	Peak	H	-	-	-57.60	14.81	0.00	64.21	73.98	-9.77
17100.00	Peak	H	-	-	-65.24	23.41	0.00	65.17	68.20	-3.03
* 22800.00	Average	H	-	-	-71.59	8.29	-9.54	34.15	53.98	-19.83
* 22800.00	Peak	H	-	-	-59.99	8.29	-9.54	45.75	73.98	-28.23
28500.00	Peak	H	-	-	-45.77	-9.03	-9.54	42.66	68.20	-25.54

Table 7-55. Radiated Measurements

Worst Case Mode: 802.11a
 Worst Case Transfer Rate: 6 Mbps
 Distance of Measurements: 1 & 3 Meters
 Operating Frequency: 5720MHz
 Channel: 144

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]
* 11400.00	Average	H	-	-	-70.91	14.81	0.00	50.90	53.98	-3.08
* 11400.00	Peak	H	-	-	-58.04	14.81	0.00	63.77	73.98	-10.21
17100.00	Peak	H	-	-	-65.58	23.41	0.00	64.83	68.20	-3.37
* 22800.00	Average	H	-	-	-70.30	8.29	-9.54	35.44	53.98	-18.54
* 22800.00	Peak	H	-	-	-59.09	8.29	-9.54	46.65	73.98	-27.33
28500.00	Peak	H	-	-	-44.66	-9.03	-9.54	43.77	68.20	-24.43

Table 7-56. Radiated Measurements with WCP

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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	148	163	-71.52	15.10	0.00	50.58	53.98	-3.40
* 11490.00	Peak	H	148	163	-58.29	15.10	0.00	63.81	73.98	-10.17
17235.00	Peak	H	-	-	-62.85	21.02	0.00	65.17	68.20	-3.03
* 22980.00	Average	H	-	-	-72.37	8.19	-9.54	33.28	53.98	-20.70
* 22980.00	Peak	H	-	-	-60.95	8.19	-9.54	44.70	73.98	-29.28
28725.00	Peak	H	-	-	-44.83	-9.45	-9.54	43.18	68.20	-25.02

Table 7-57. Radiated Measurements

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	-	-	-71.28	15.26	0.00	50.98	53.98	-3.00
* 11570.00	Peak	H	-	-	-58.82	15.26	0.00	63.44	73.98	-10.54
17355.00	Peak	H	-	-	-64.19	22.34	0.00	65.15	68.20	-3.05
23140.00	Peak	H	-	-	-60.44	8.47	-9.54	45.48	68.20	-22.72
28925.00	Peak	H	-	-	-44.67	-9.71	-9.54	43.08	68.20	-25.12

Table 7-58. Radiated Measurements

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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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	-	-	-70.21	15.60	0.00	52.39	53.98	-1.59
* 11650.00	Peak	H	-	-	-58.60	15.60	0.00	64.00	73.98	-9.98
17475.00	Peak	H	-	-	-66.63	24.82	0.00	65.19	68.20	-3.01
23300.00	Peak	H	-	-	-58.50	8.60	-9.54	47.56	68.20	-20.64
29125.00	Peak	H	-	-	-44.57	-9.93	-9.54	42.96	68.20	-25.24

Table 7-59. 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	-	-	-71.79	15.60	0.00	50.81	53.98	-3.17
* 11650.00	Peak	H	-	-	-58.56	15.60	0.00	64.04	73.98	-9.94
17475.00	Peak	H	-	-	-66.82	24.82	0.00	65.00	68.20	-3.20
23300.00	Peak	H	-	-	-50.09	8.60	-9.54	55.97	68.20	-12.23
29125.00	Peak	H	-	-	-43.84	-9.93	-9.54	43.69	68.20	-24.51

Table 7-60. Radiated Measurements with WCP

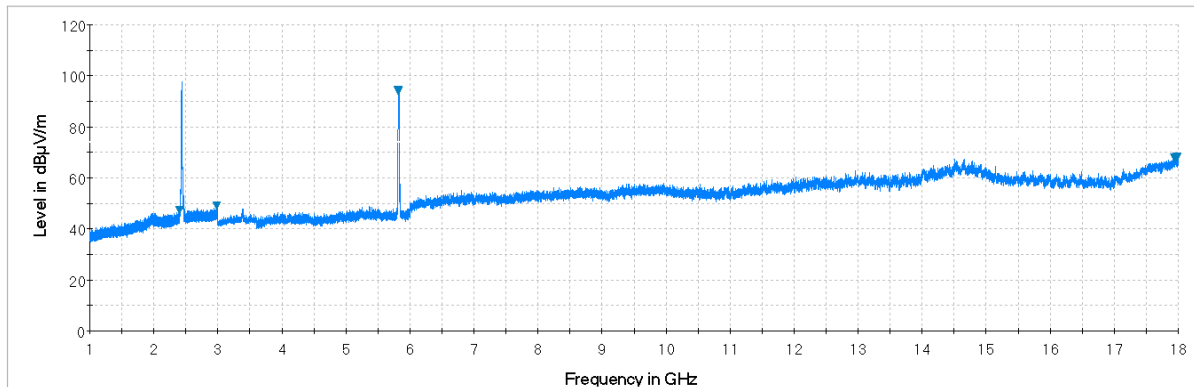
FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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7.7.3 Simultaneous Tx Radiated Spurious Emissions Measurements

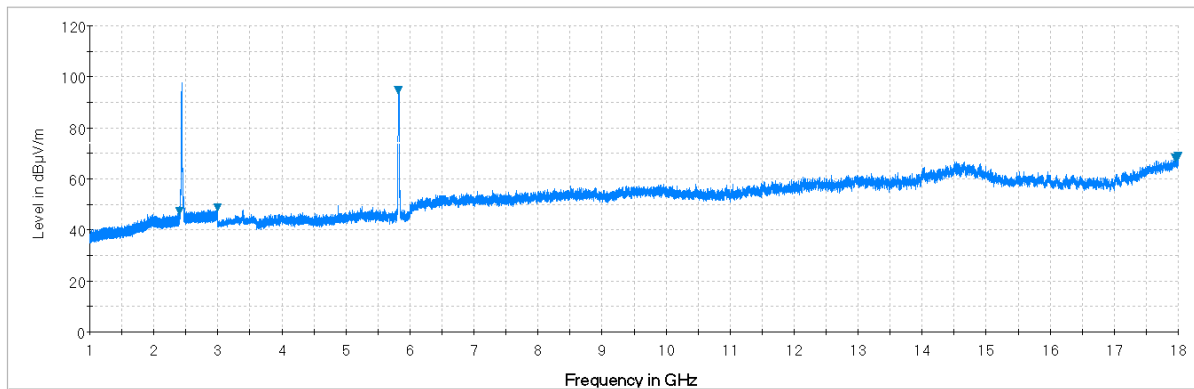
§15.247(d) §15.205 & §15.209

Description	2.4 GHz Emission	5 GHz Emission
Antenna	1	2
Channel	6	165
Operating Frequency(MHz)	2437	5825
Data Rate (Mbps)	1	MCS0
Mode	802.11b	802.11n

Table 7-61. Simultaneous Transmission Config-1

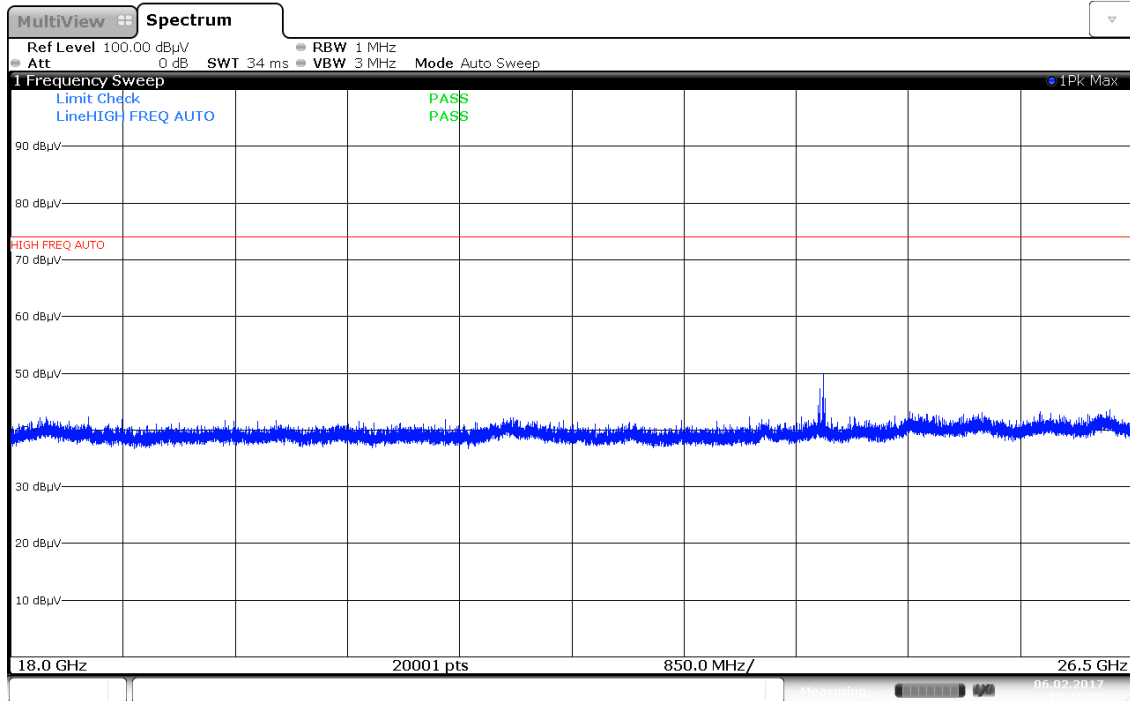


Plot 7-181. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. H)

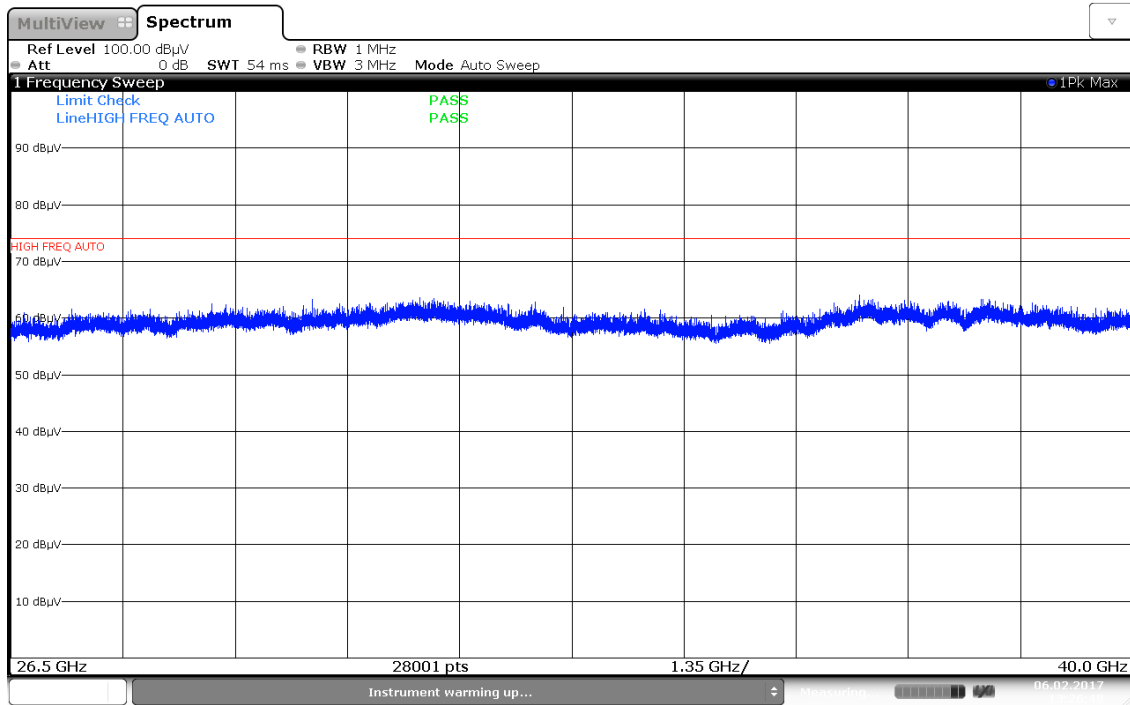


Plot 7-182. Radiated Spurious Plot above 1GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset	Page 146 of 260	



Plot 7-183. Radiated Spurious Plot 18-26.5GHz (2.4GHz – 5GHz, Ant. Pol. H)



Plot 7-184. Radiated Spurious Plot 26.5-40GHz (2.4GHz – 5GHz, Ant. Pol. H)

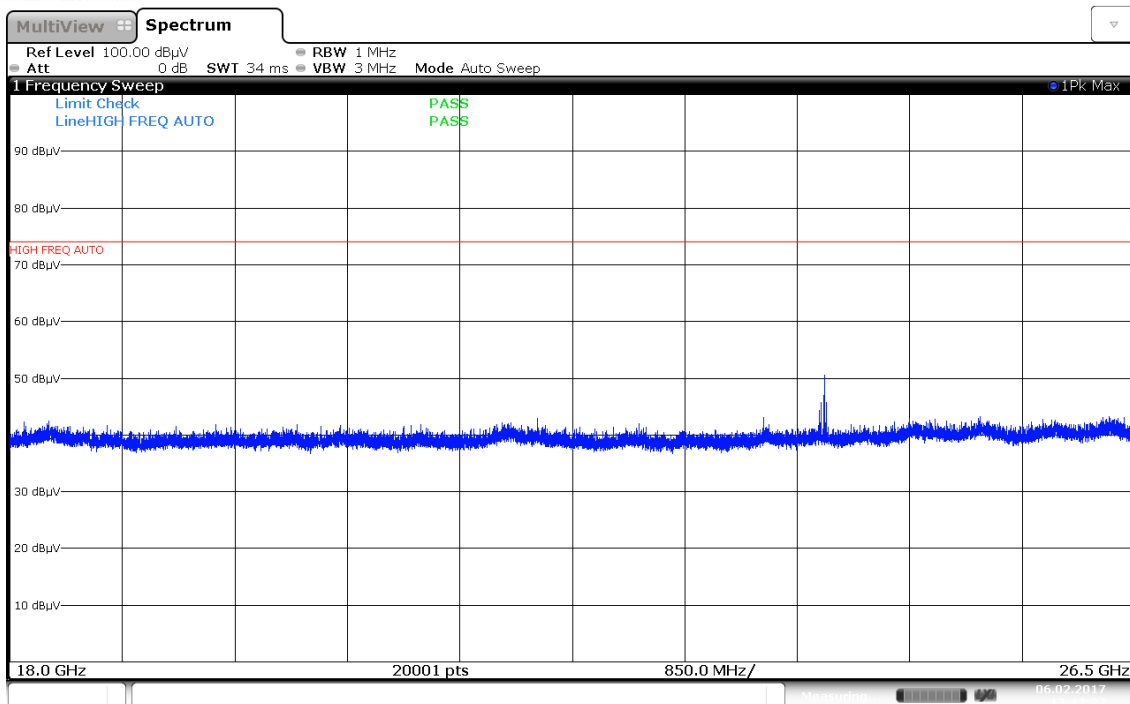
FCC ID: A3LSMG955U	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 147 of 260

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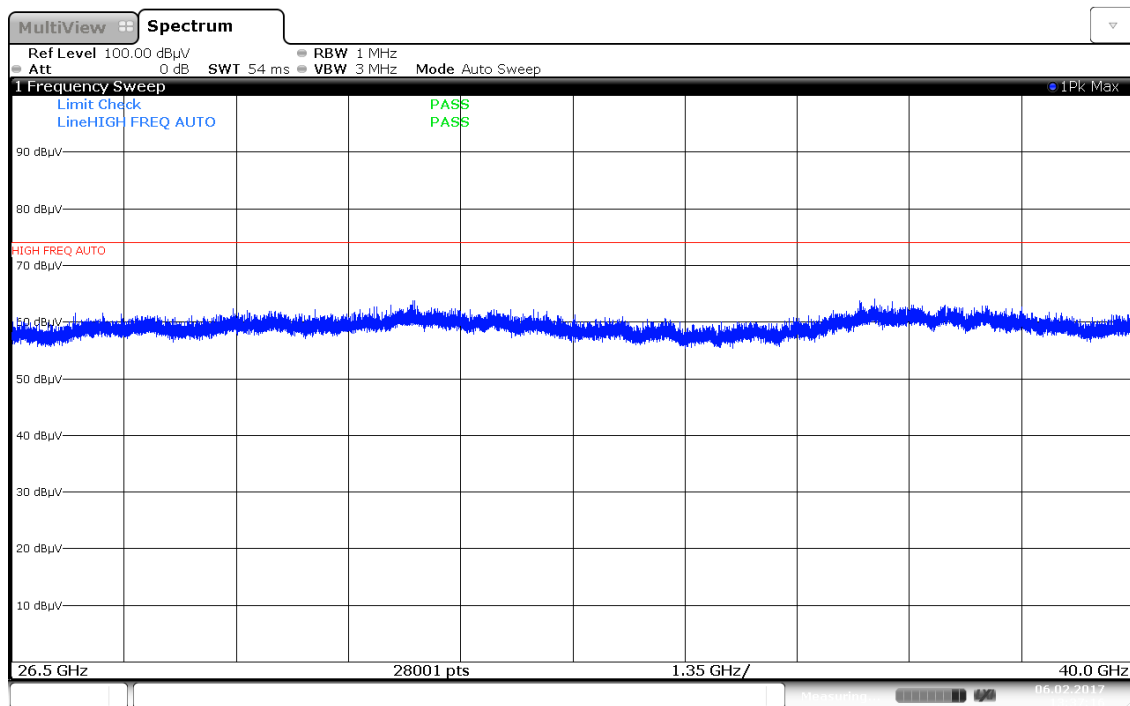
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Plot 7-185. Radiated Spurious Plot 18-26.5GHz (2.4GHz – 5GHz, Ant. Pol. V)



Plot 7-186. Radiated Spurious Plot 26.5-40GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 148 of 260

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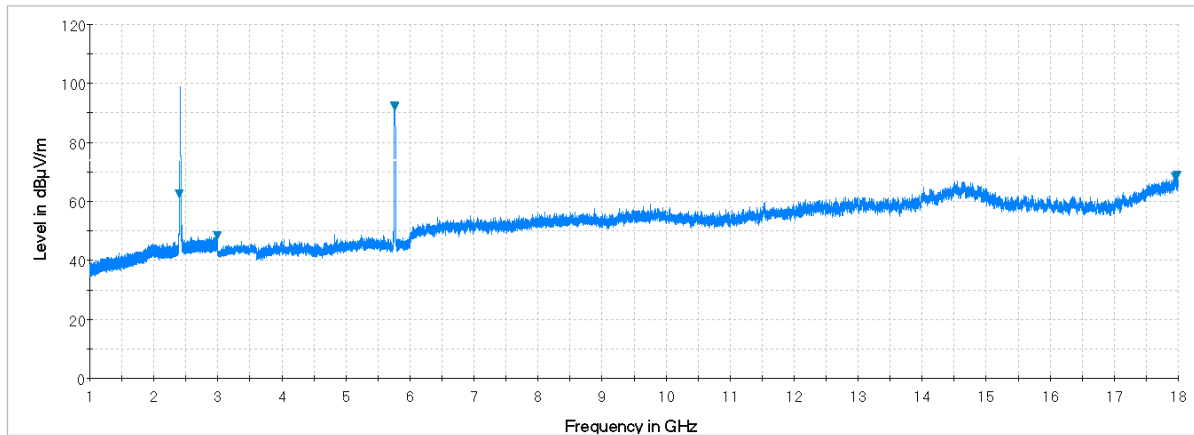
	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	2798.00	Peak	H	-	-	-57.16	-2.13	0.00	47.71	73.98	-26.27
*	2798.00	Average	H	-	-	-68.30	-2.13	0.00	36.57	53.98	-17.41
*	4924.00	Peak	H	-	-	-57.60	0.97	0.00	50.37	73.98	-23.61
*	4924.00	Average	H	-	-	-69.38	0.97	0.00	38.59	53.98	-15.39
*	7722.00	Peak	H	-	-	-58.78	9.99	0.00	58.21	73.98	-15.77
*	7722.00	Average	H	-	-	-69.98	9.99	0.00	47.01	53.98	-6.97
*	8058.00	Peak	H	-	-	-57.74	10.67	0.00	59.93	73.98	-14.05
*	8058.00	Average	H	-	-	-69.95	10.67	0.00	47.72	73.98	-26.26
	10184.00	Average	H	-	-	-69.73	12.16	0.00	49.43	53.98	-4.55
*	11490.00	Average	H	-	-	-70.63	14.08	0.00	50.45	53.98	-3.53
	12982.00	Peak	H	-	-	-57.75	14.17	0.00	63.42	73.98	-10.56
*	21040.00	Average	H	-	-	-72.39	8.10	-9.54	33.17	53.98	-20.81
*	21040.00	Peak	H	-	-	-61.09	8.10	-9.54	44.47	73.98	-29.51

Table 7-62. Radiated Measurements (ANT1 2.4GHz – ANT2 5GHz)

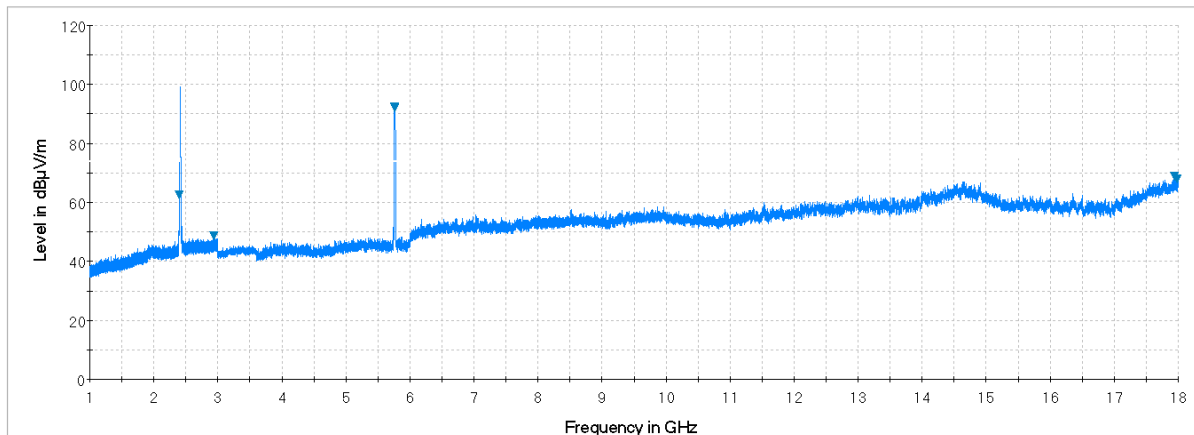
FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 149 of 260

Description	5 GHz Emission	2.4 GHz Emission
Antenna	1	2
Channel	153	1
Operating Frequency(MHz)	5765	2412
Data Rate (Mbps)	MCS0	1
Mode	802.11n	802.11b

Table 7-63. Simultaneous Transmission Config-2

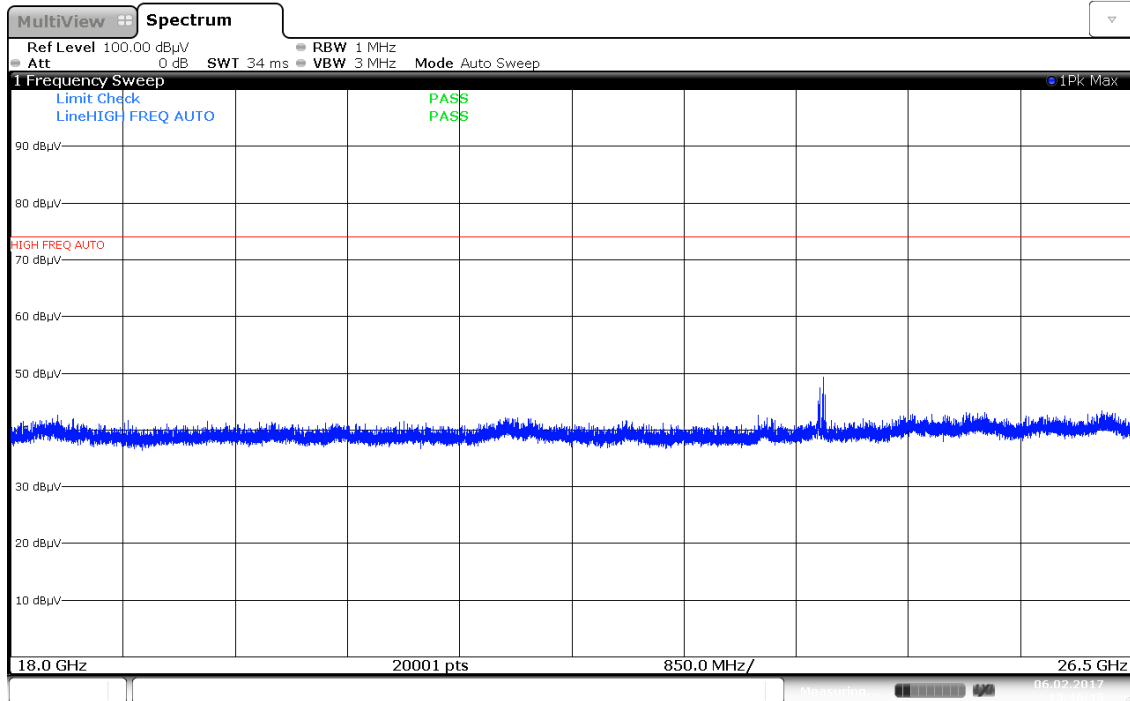


Plot 7-187. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz, Ant. Pol. H)

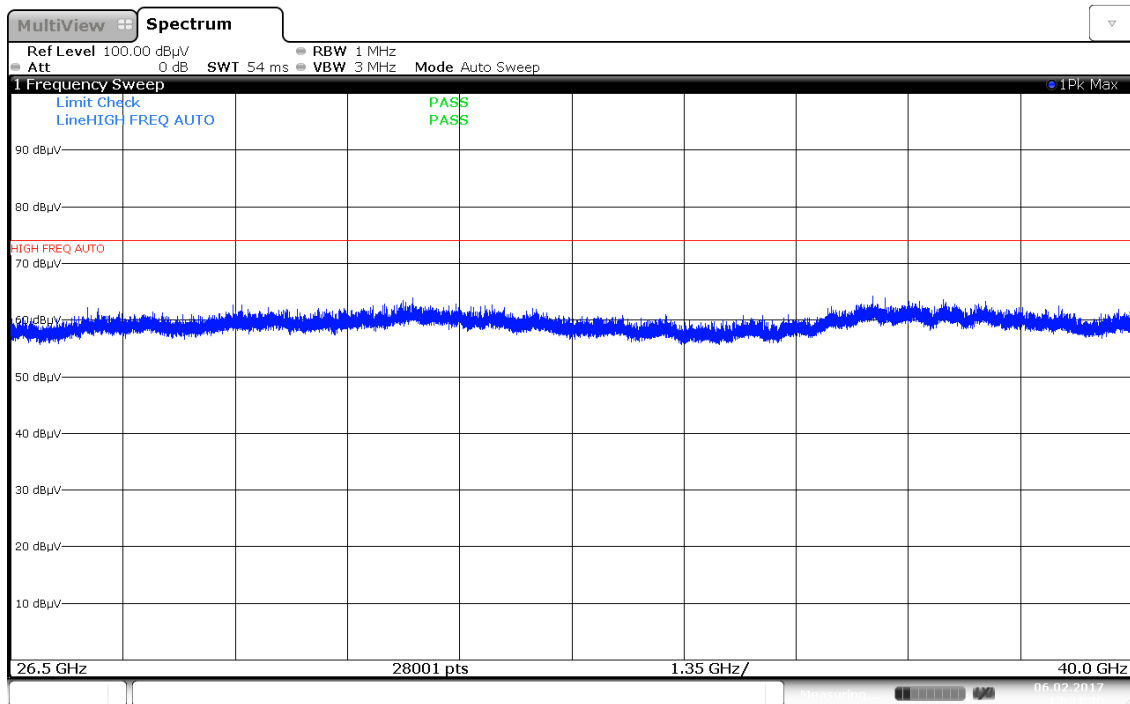


Plot 7-188. Radiated Spurious Plot above 1GHz (5GHz – 2.4 GHz, Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset	Page 150 of 260	



Plot 7-189. Radiated Spurious Plot 18-26.5GHz (5GHz – 2.4 GHz, Ant. Pol. H)



Plot 7-190. Radiated Spurious Plot 26.5-40GHz (2.4GHz – 5GHz, Ant. Pol. H)

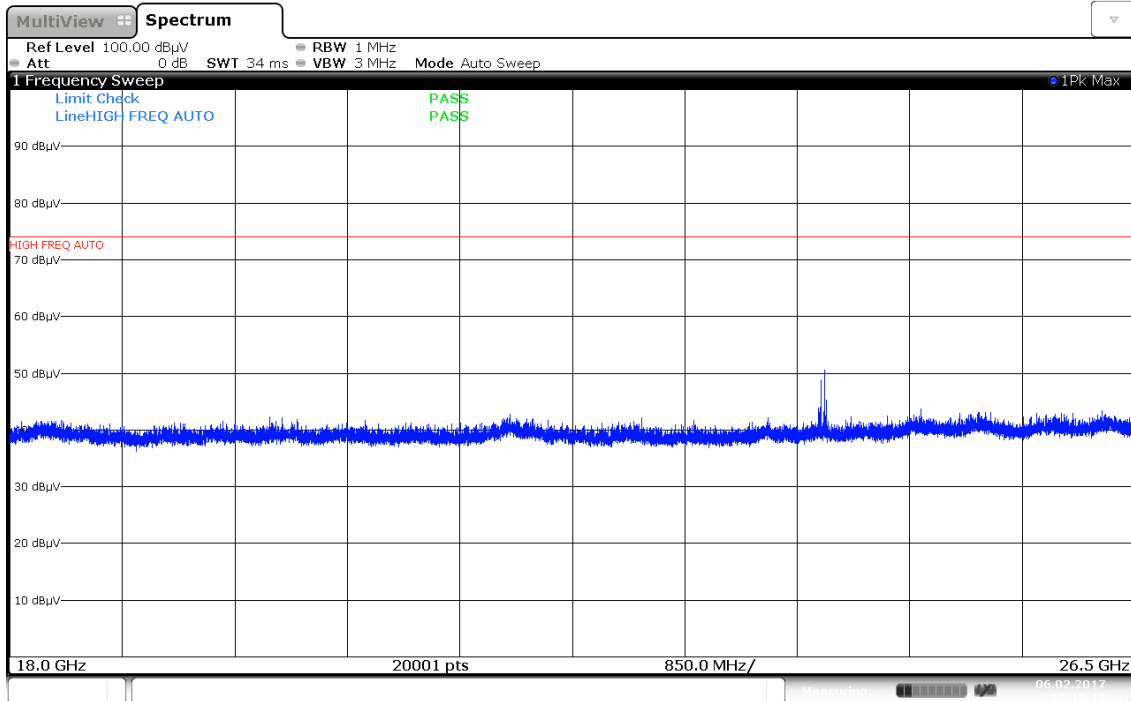
FCC ID: A3LSMG955U	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 151 of 260

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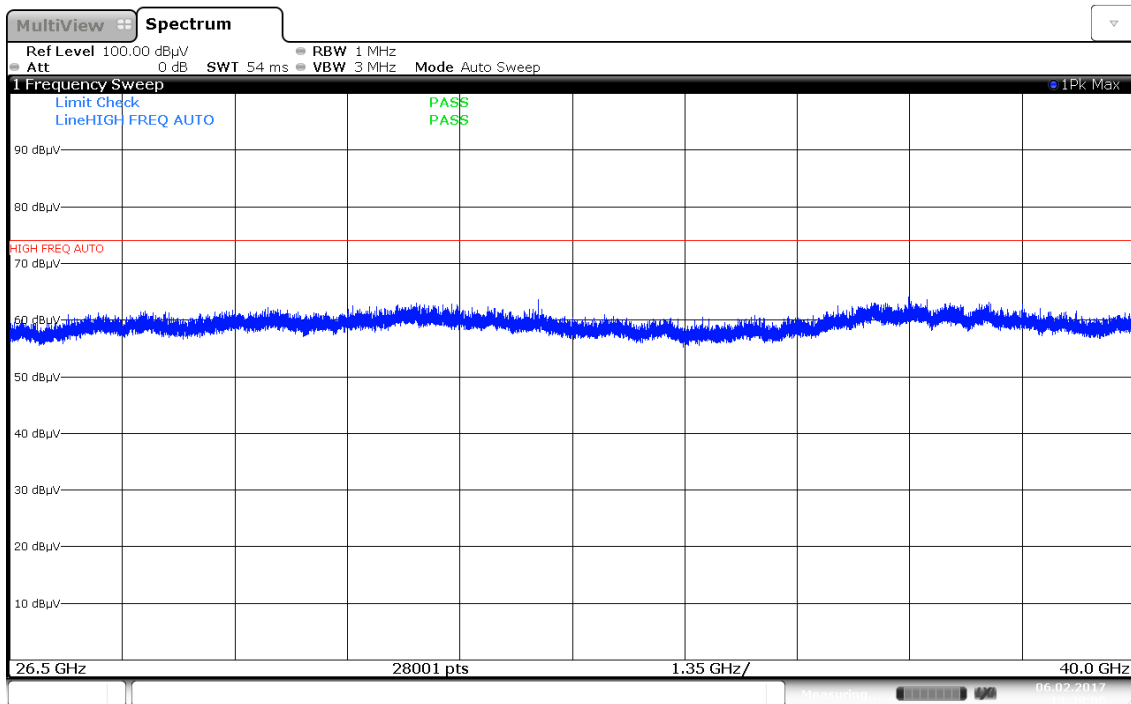
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Plot 7-191. Radiated Spurious Plot 18-26.5GHz (5GHz – 2.4 GHz, Ant. Pol. V)



Plot 7-192. Radiated Spurious Plot 26.5-40GHz (2.4GHz – 5GHz, Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 152 of 260

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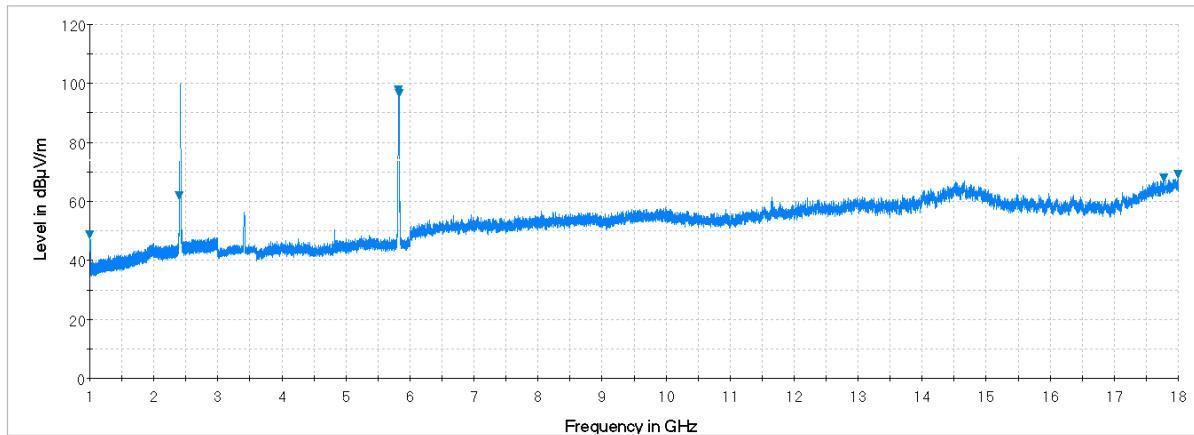
	Frequency [MHz]	Detector	Ant. Pol. [H/V]	Antenna Height [cm]	Turntable Azimuth [degree]	Analyzer Level [dBm]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	2798.00	Peak	H	-	-	-57.37	-2.13	0.00	47.50	73.98	-26.48
*	2798.00	Average	H	-	-	-68.54	-2.13	0.00	36.33	53.98	-17.65
*	4924.00	Peak	H	-	-	-57.31	0.97	0.00	50.66	73.98	-23.32
*	4924.00	Average	H	-	-	-69.13	0.97	0.00	38.84	53.98	-15.14
*	7722.00	Peak	H	-	-	-58.36	9.99	0.00	58.63	73.98	-15.35
*	7722.00	Average	H	-	-	-70.09	9.99	0.00	46.90	53.98	-7.08
*	8058.00	Peak	H	-	-	-58.91	10.67	0.00	58.76	73.98	-15.22
*	8058.00	Average	H	-	-	-70.01	10.67	0.00	47.66	73.98	-26.32
	10184.00	Average	H	-	-	-69.77	12.16	0.00	49.39	53.98	-4.59
*	11490.00	Average	H	-	-	-70.71	14.08	0.00	50.37	53.98	-3.61
	12982.00	Peak	H	-	-	-58.64	14.17	0.00	62.53	73.98	-11.45
*	21040.00	Average	H	-	-	-72.36	8.10	-9.54	33.20	53.98	-20.78
*	21040.00	Peak	H	-	-	-61.19	8.10	-9.54	44.37	73.98	-29.61

Table 7-64. Radiated Measurements (ANT1 5GHz – ANT2 2.4GHz)

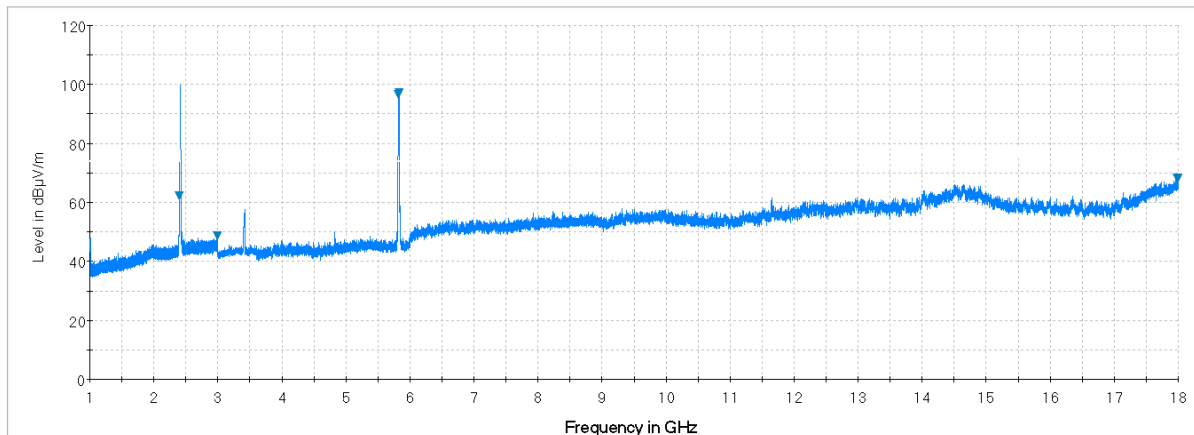
FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 153 of 260

Description	2.4 + 5 GHz Emission	2.4 + 5 GHz Emission
Antenna	1,2	1,2
Channel	1 and 165	1 and 165
Operating Frequency(MHz)	2412 and 5825	2412 and 5825
Data Rate (Mbps)	6 and MCS0	6 and MCS0
Mode	802.11g/n/a/ac	802.11g/n/a/ac

Table 7-65. Simultaneous Transmission Config-3

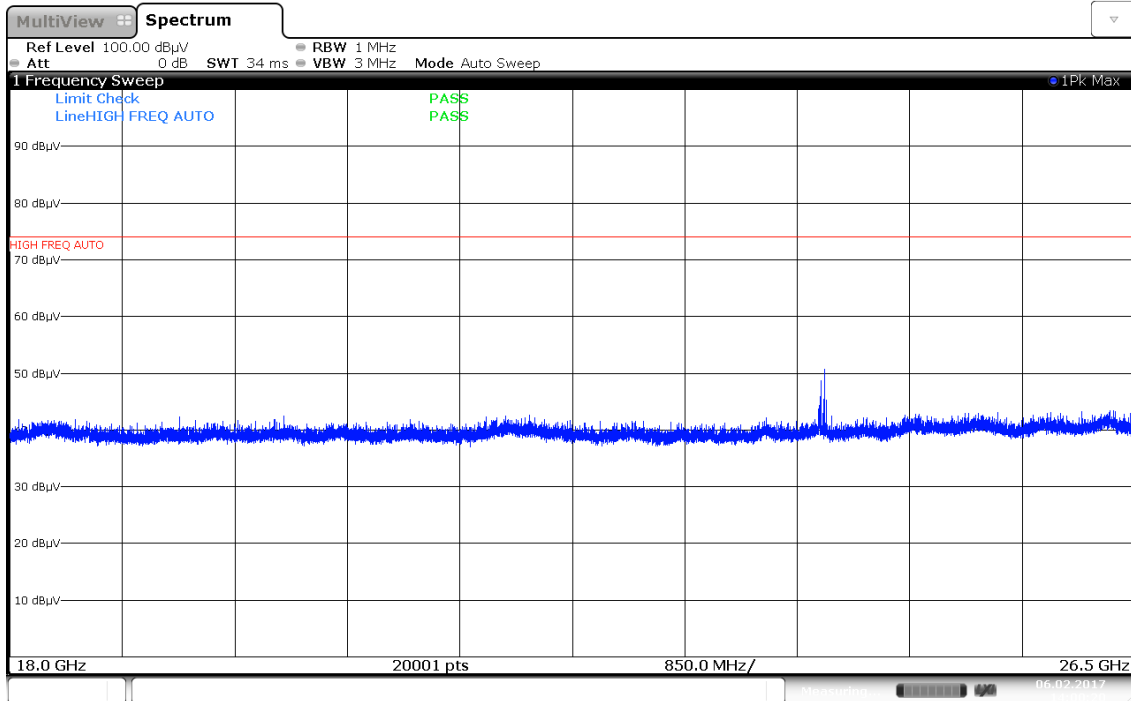


Plot 7-193. Radiated Spurious Plot above 1GHz (Ant1: 2.4 - 5GHz Ant2: 2.4 - 5GHz, Ant. Pol. H)

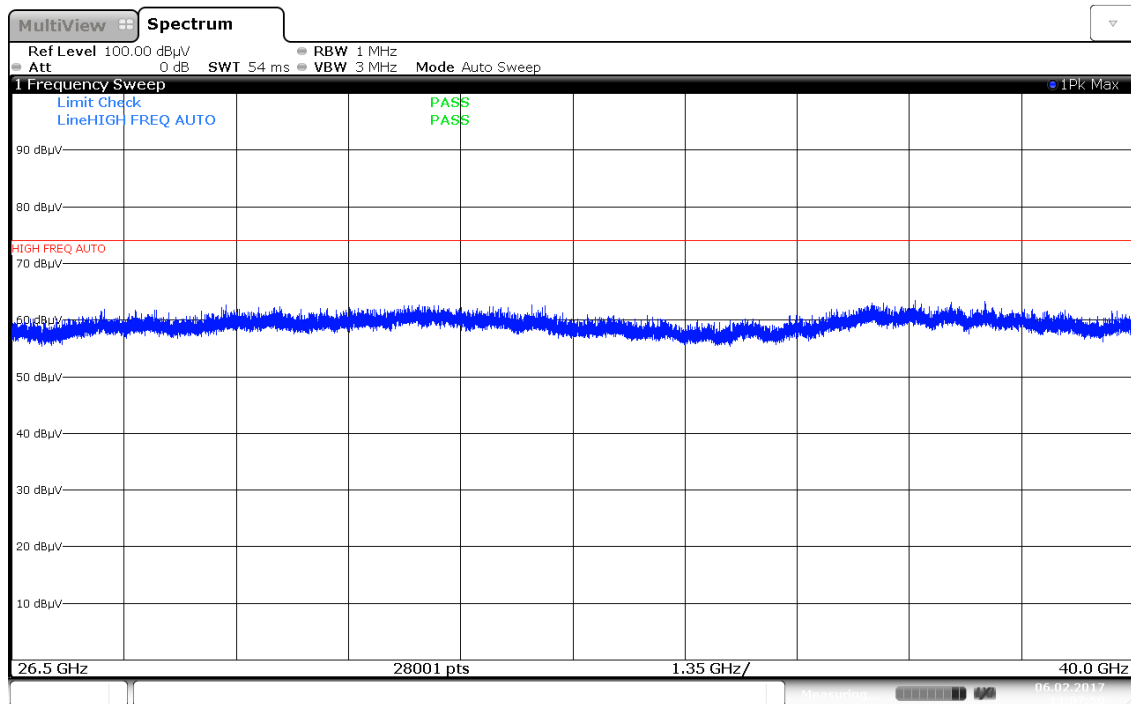


Plot 7-194. Radiated Spurious Plot above 1GHz (Ant1: 2.4 - 5GHz Ant2: 2.4 - 5GHz, Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 154 of 260



Plot 7-195. Radiated Spurious Plot 18-26.5GHz (Ant1: 2.4 - 5GHz Ant2: 2.4 - 5GHz, Ant. Pol. H)



Plot 7-196. Radiated Spurious Plot 26.5-40GHz (Ant1: 2.4 - 5GHz Ant2: 2.4 - 5GHz, Ant. Pol. H)

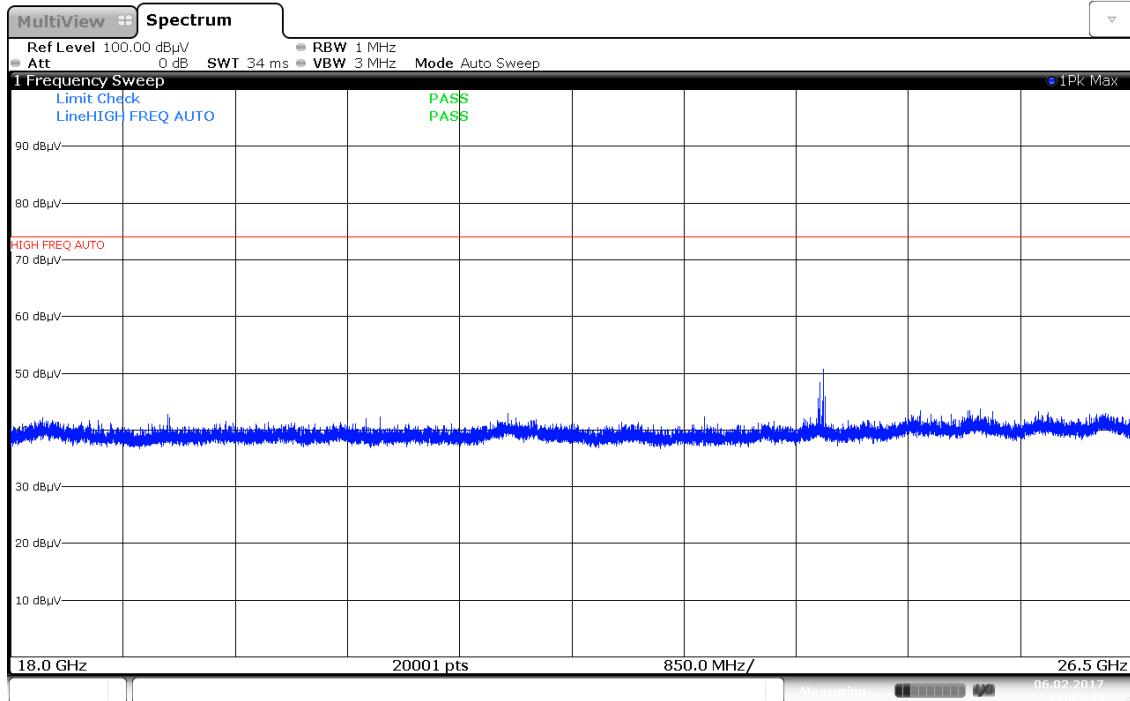
FCC ID: A3LSMG955U	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 155 of 260

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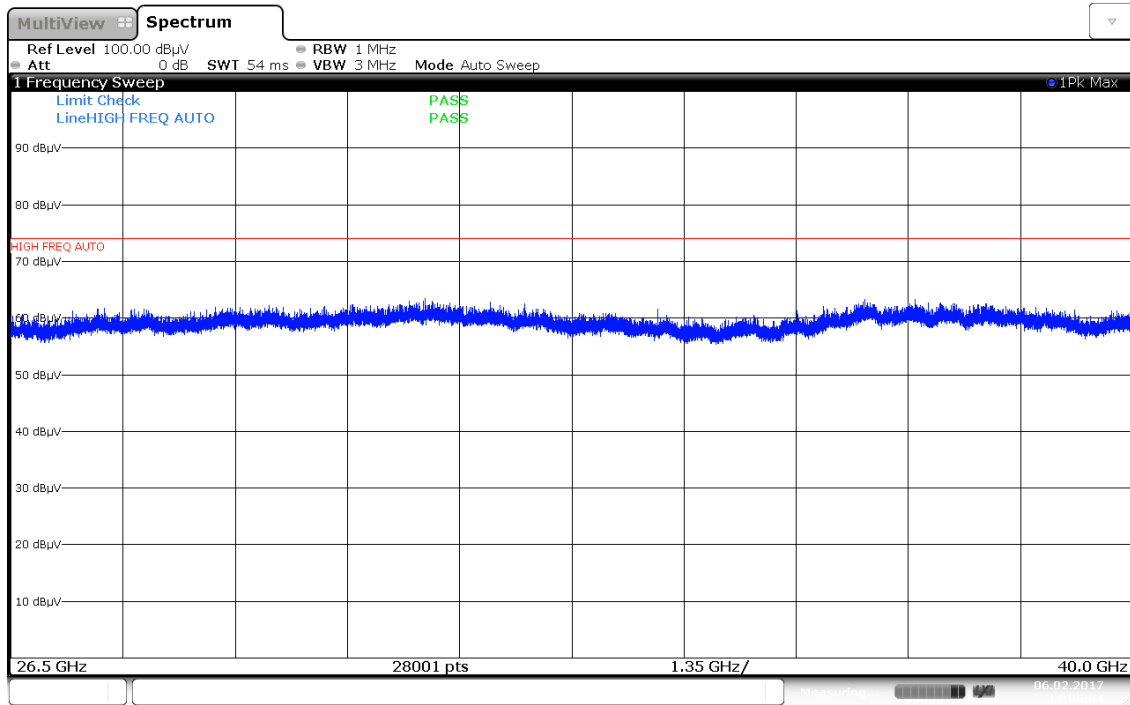
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Plot 7-197. Radiated Spurious Plot 18-26.5GHz (Ant1: 2.4 - 5GHz Ant2: 2.4 - 5GHz, Ant. Pol. V)



Plot 7-198. Radiated Spurious Plot 26.5-40GHz (Ant1: 2.4 - 5GHz Ant2: 2.4 - 5GHz, Ant. Pol. V)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 156 of 260

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	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]
*	2798.00	Peak	H	-	-	-57.39	-2.13	0.00	47.48	73.98	-26.50
*	2798.00	Average	H	-	-	-69.39	-2.13	0.00	35.48	53.98	-18.50
	3411.85	Peak	H	100	227	-41.33	-2.16	0.00	63.51	73.98	-10.47
	3411.85	Average	H	100	227	-53.93	-2.16	0.00	50.91	53.98	-3.07
*	4924.00	Peak	H	-	-	-57.81	0.97	0.00	50.16	73.98	-23.82
*	4924.00	Average	H	-	-	-69.60	0.97	0.00	38.37	53.98	-15.61
*	7722.00	Peak	H	-	-	-58.97	9.99	0.00	58.02	73.98	-15.96
*	7722.00	Average	H	-	-	-70.43	9.99	0.00	46.56	53.98	-7.42
*	8058.00	Peak	H	-	-	-58.66	10.67	0.00	59.01	73.98	-14.97
*	8058.00	Average	H	-	-	-70.11	10.67	0.00	47.56	73.98	-26.42
	10184.00	Average	H	-	-	-69.86	12.16	0.00	49.30	53.98	-4.68
*	11490.00	Average	H	-	-	-70.63	14.08	0.00	50.45	53.98	-3.53
	12982.00	Peak	H	-	-	-56.99	14.17	0.00	64.18	73.98	-9.80
*	21040.00	Average	H	-	-	-72.72	8.10	-9.54	32.84	53.98	-21.14
*	21040.00	Peak	H	-	-	-61.50	8.10	-9.54	44.06	73.98	-29.92

Table 7-66. Radiated Measurements (Ant1: 2.4 - 5GHz Ant2: 2.4 - 5GHz)

FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 157 of 260

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

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

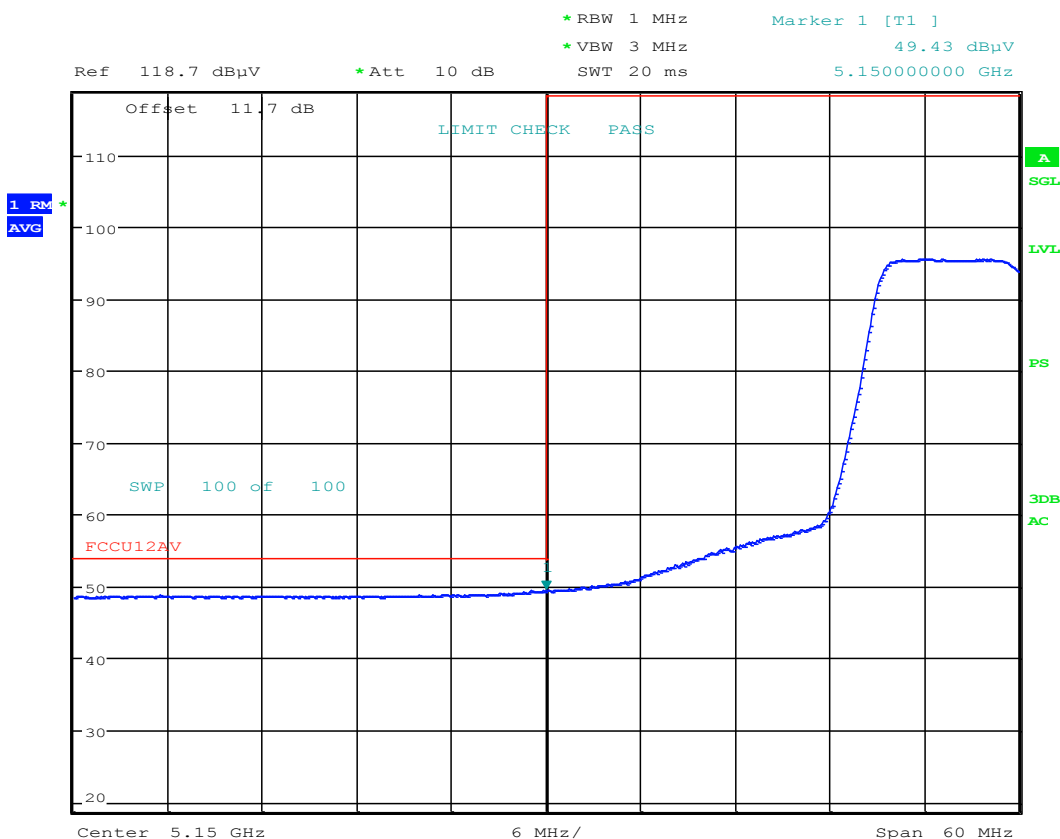
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 29.DEC.2016 15:05:19

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 158 of 260

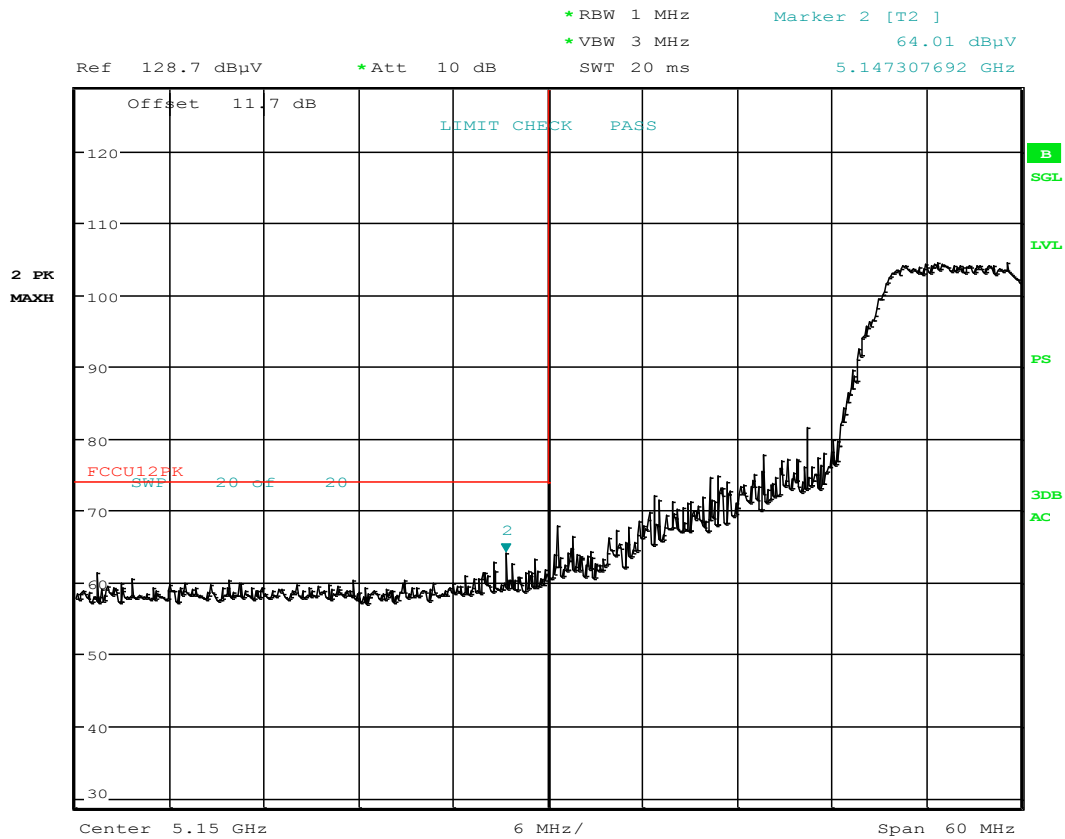
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Antenna-1 Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 15:05:48

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 159 of 260

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

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

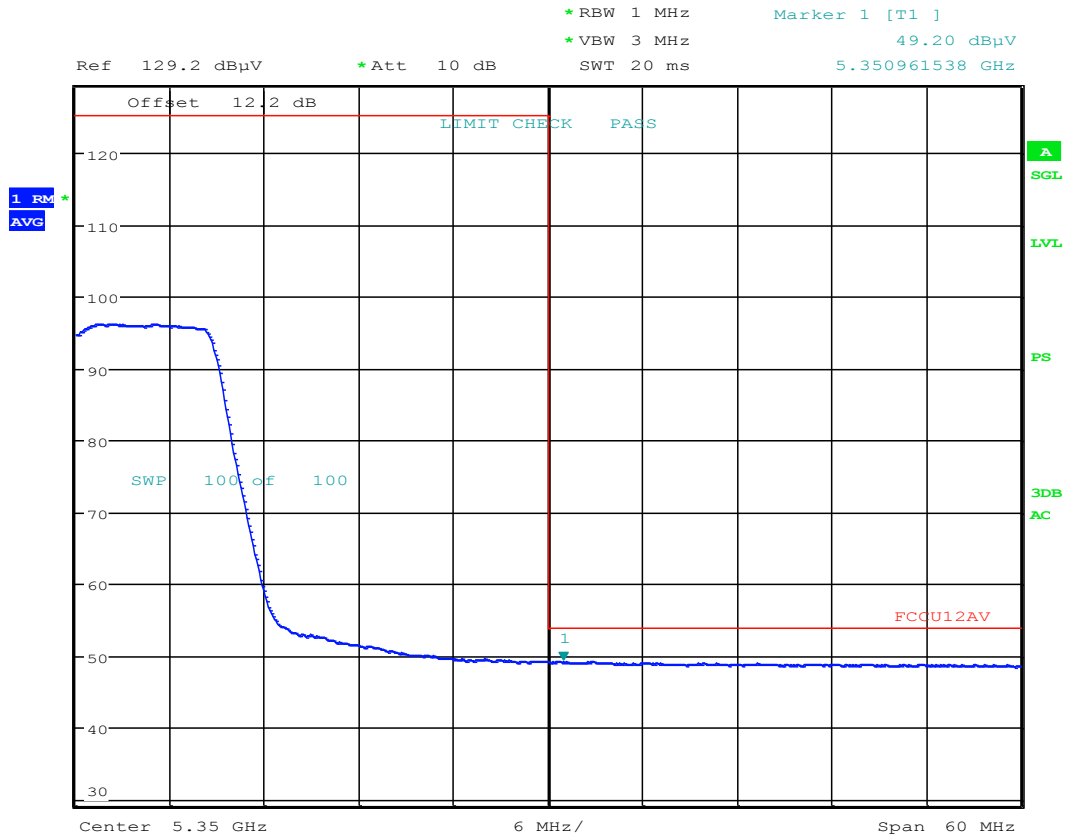
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



Date: 29.DEC.2016 16:03:04

Plot 7-201. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 160 of 260

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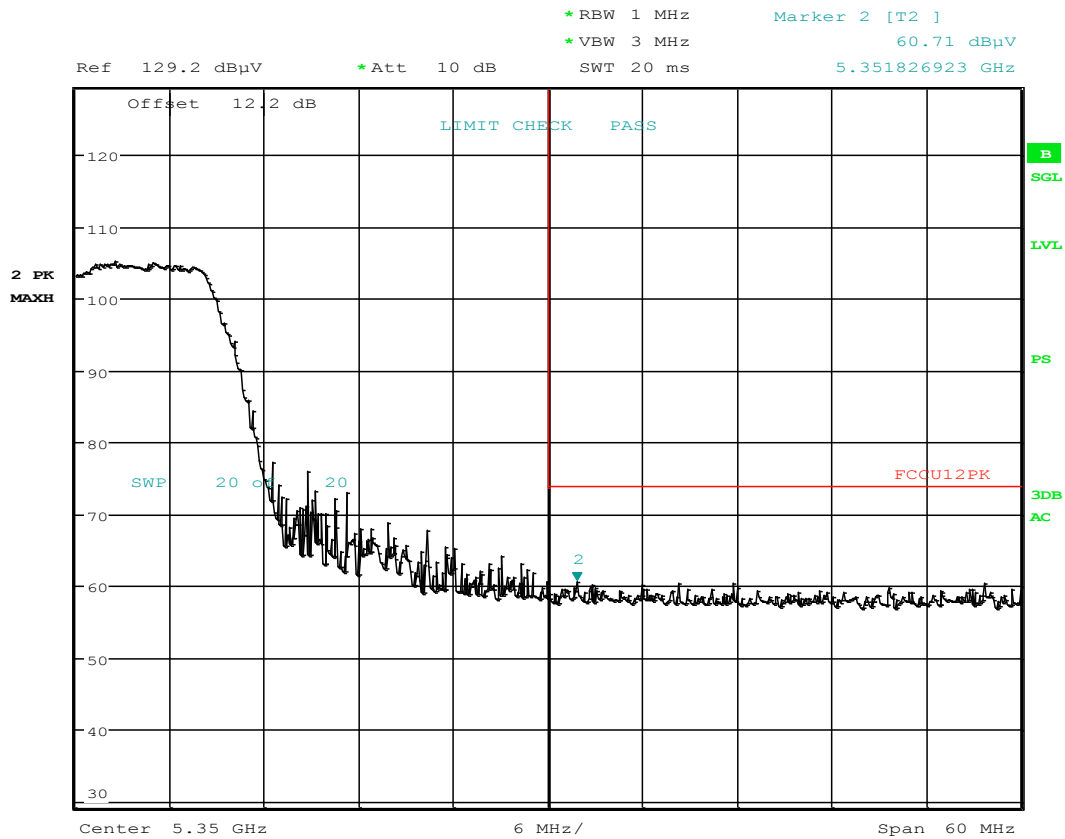
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Antenna-1 Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 16:03:29

Plot 7-202. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 161 of 260

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

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

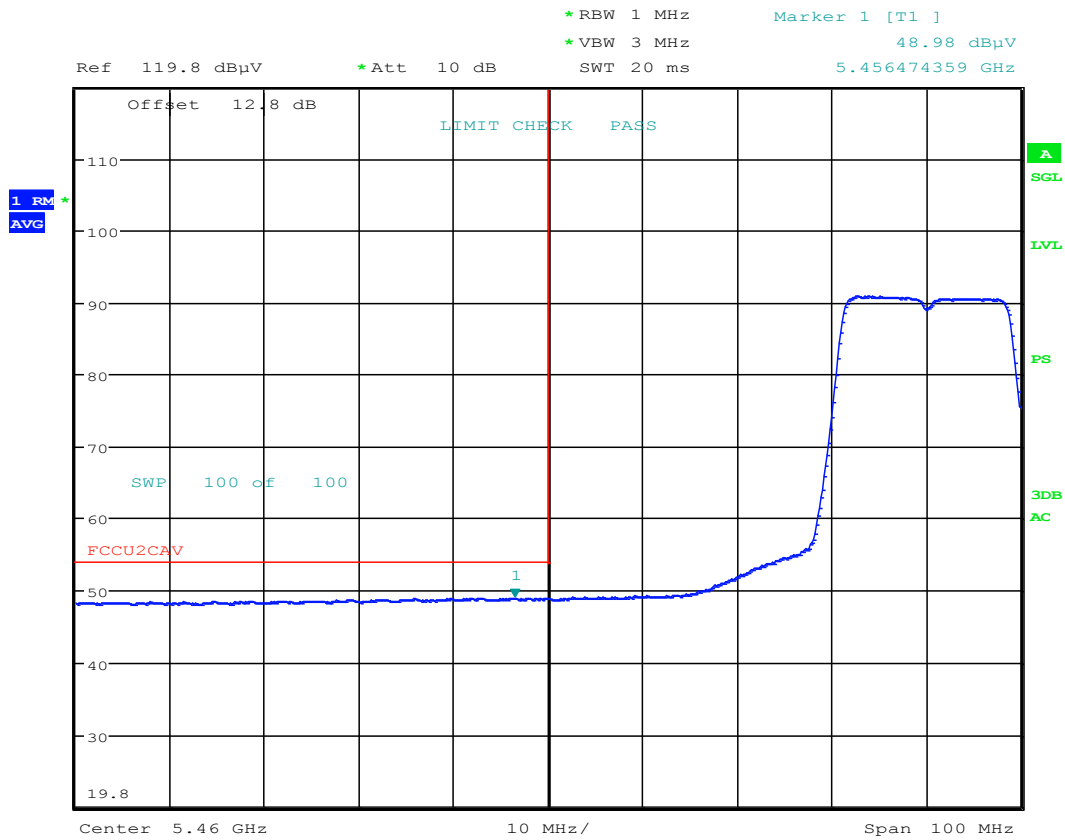
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



Date: 29.DEC.2016 16:11:33

Plot 7-203. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 162 of 260

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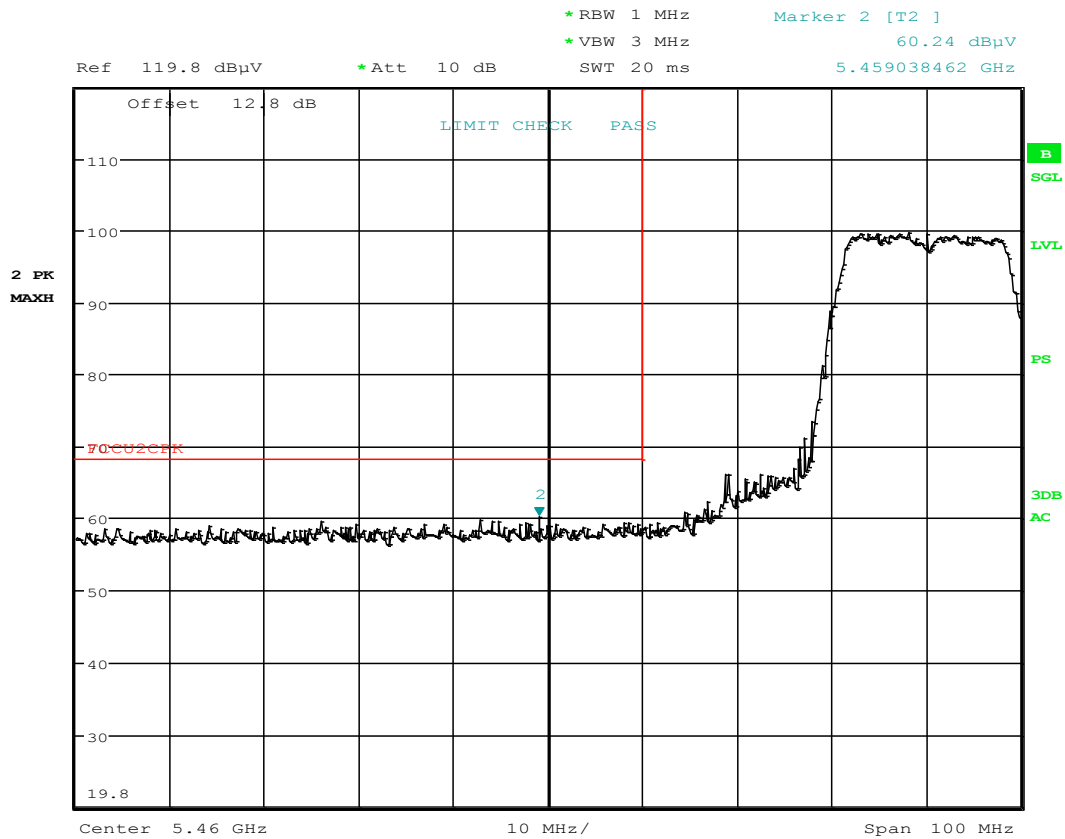
V 6.1

12/26/2016

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

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



Date: 29.DEC.2016 16:11:57

Plot 7-204. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 163 of 260

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

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

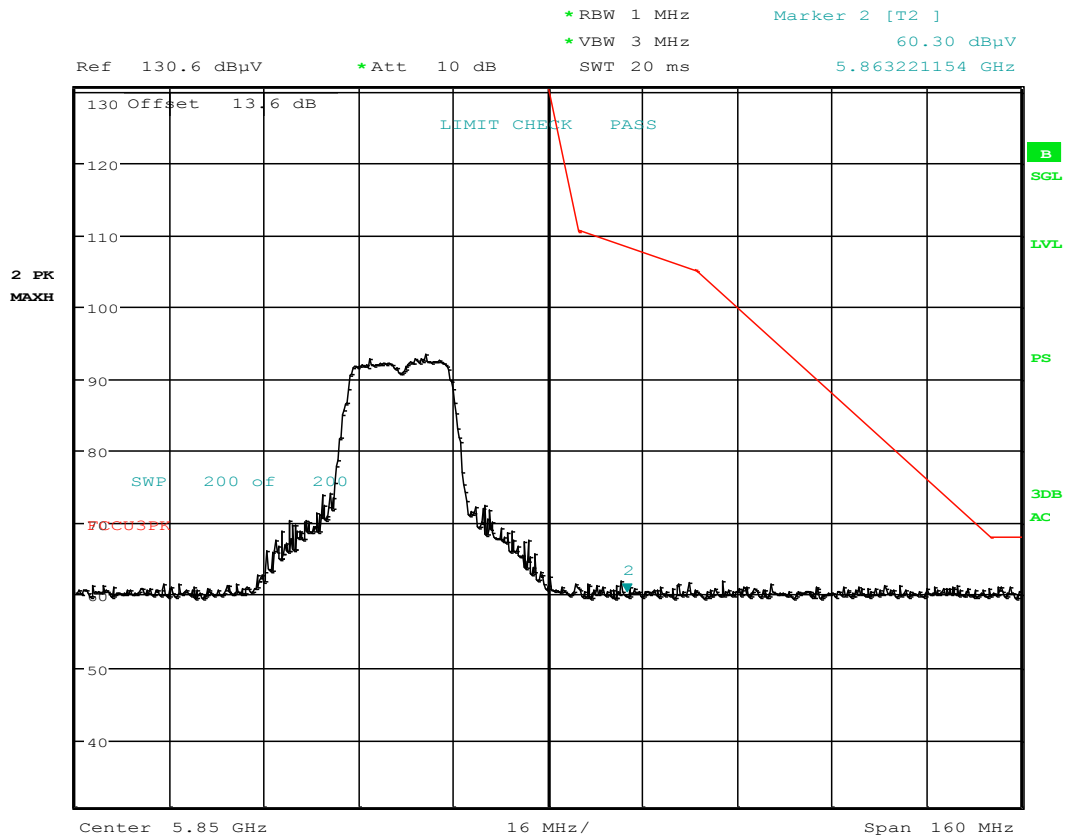
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 29.DEC.2016 16:17:57

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 164 of 260

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

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

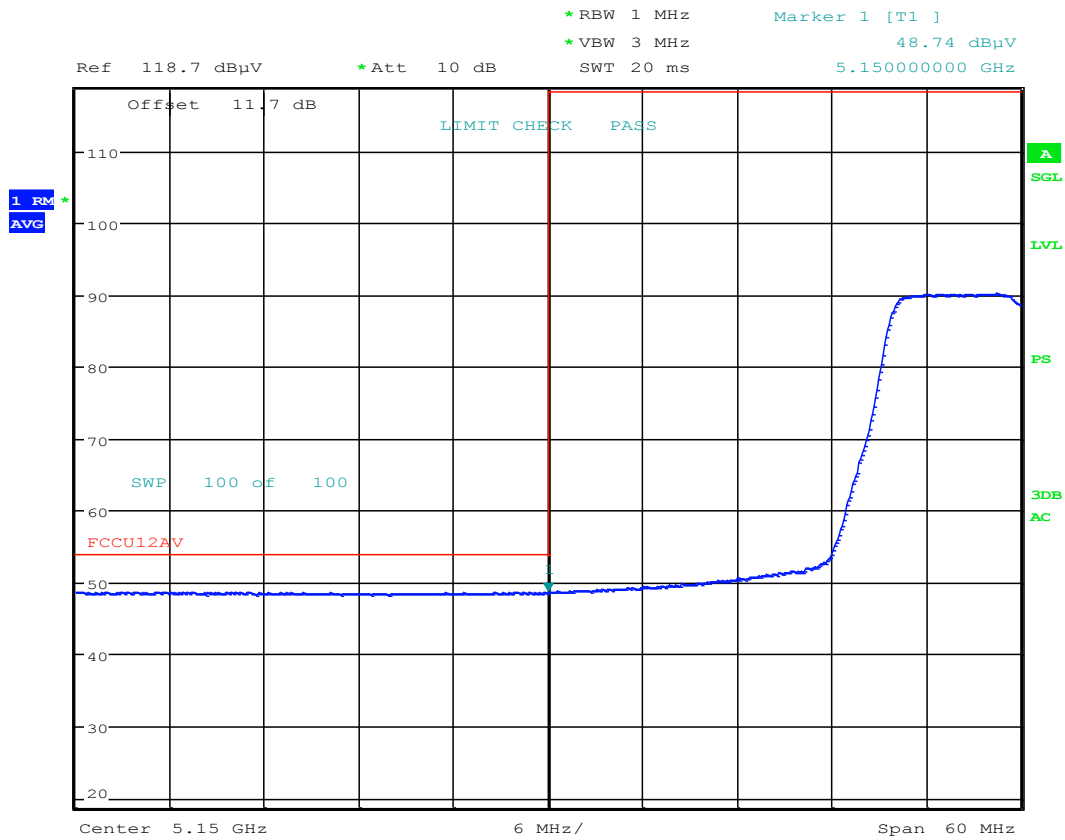
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 6.JAN.2017 07:35:15

Plot 7-206. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 165 of 260

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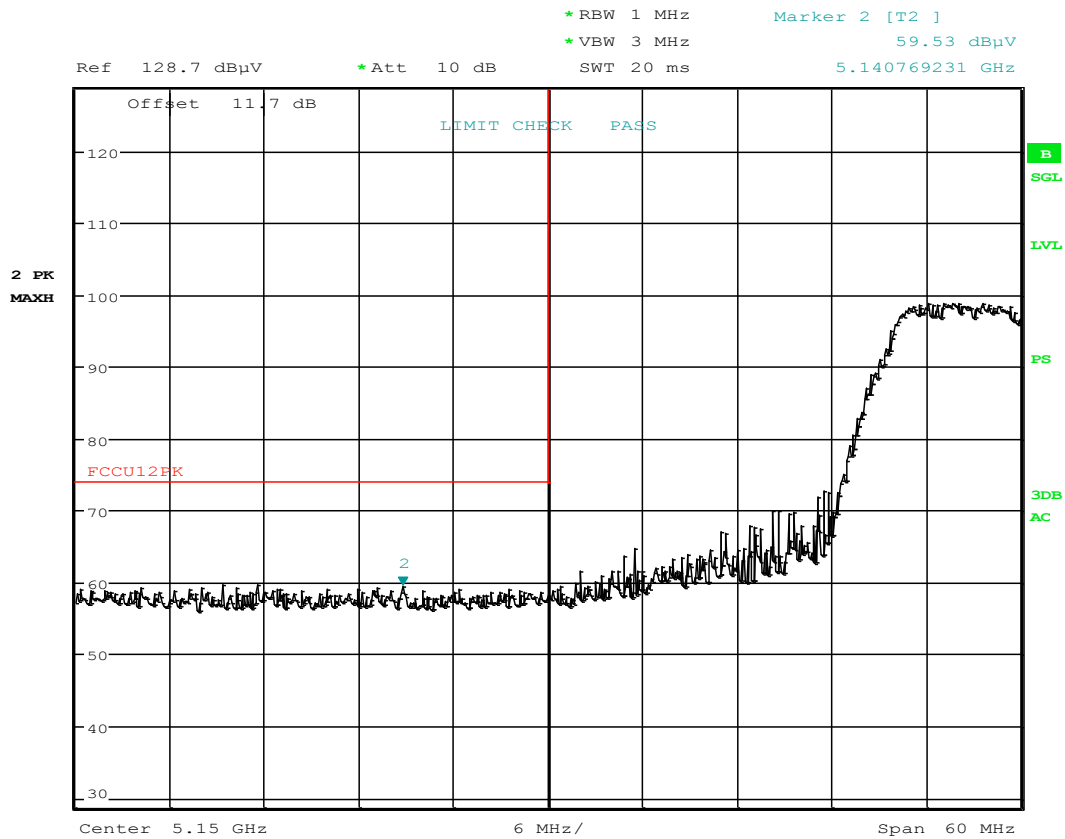
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Antenna-1 WCP Radiated Band Edge Measurements (20MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 6.JAN.2017 07:35:44

Plot 7-207. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 166 of 260

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

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

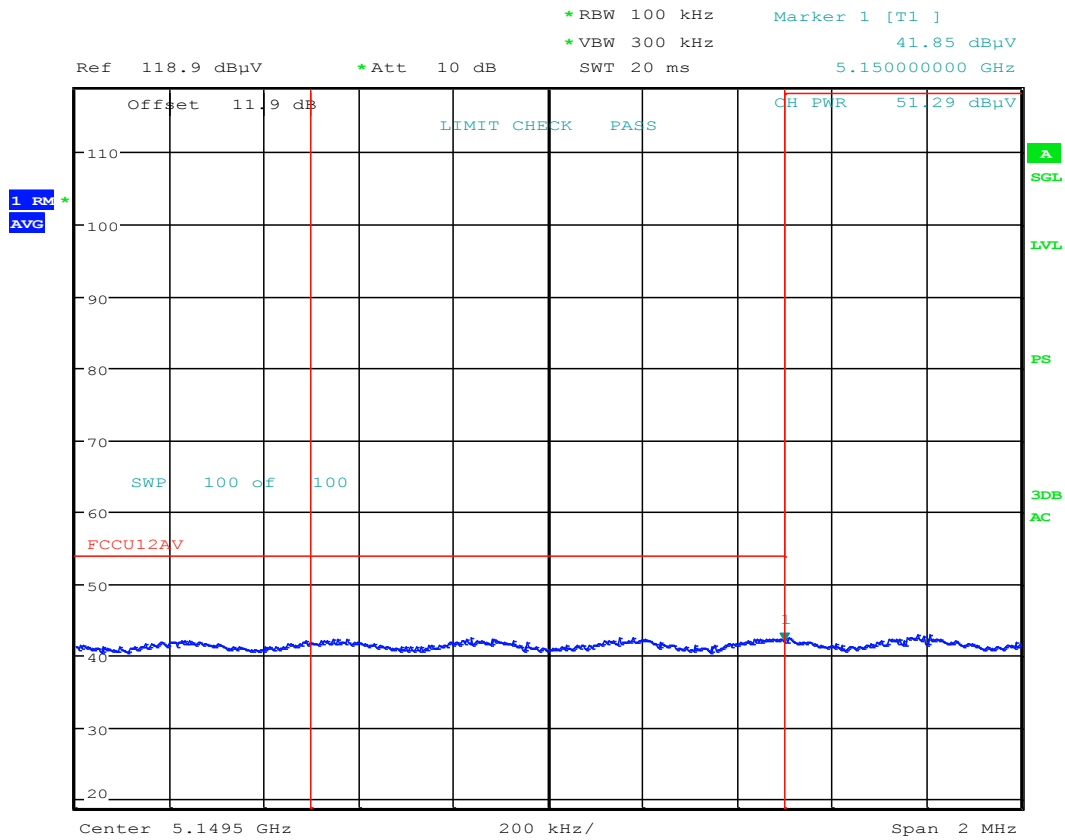
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 29.DEC.2016 21:18:43

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 167 of 260

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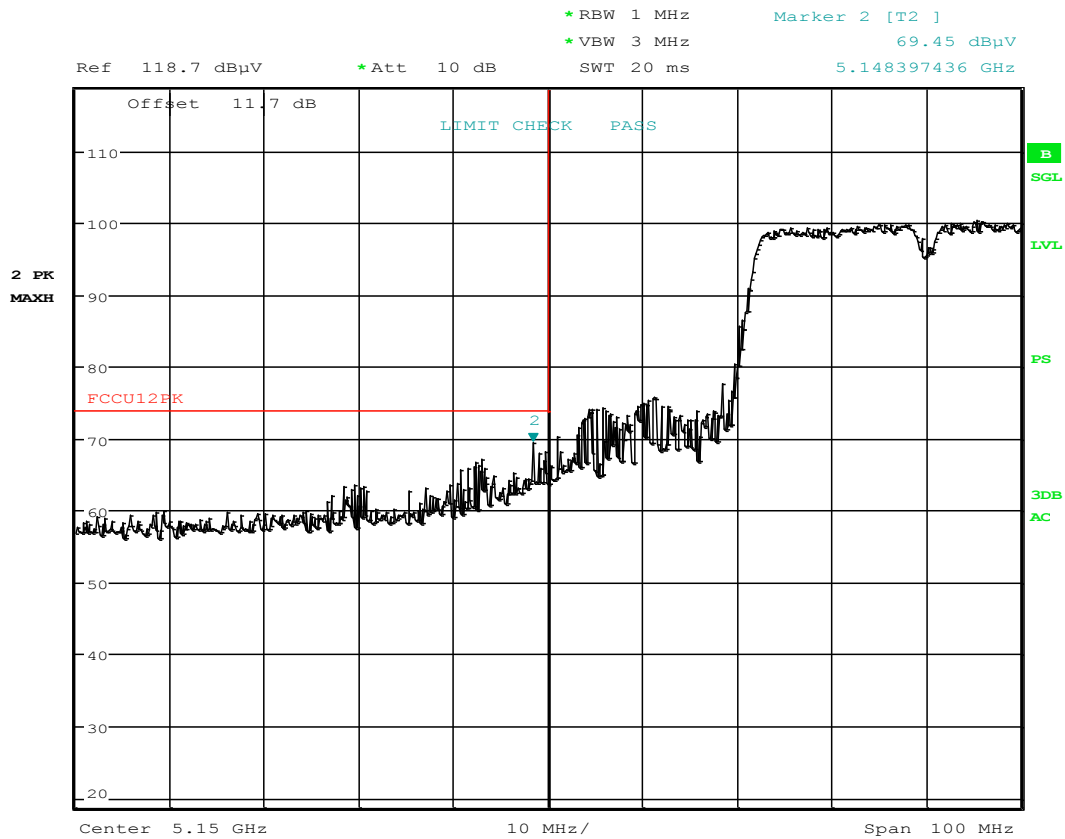
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Antenna-1 Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 21:19:00

Plot 7-209. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 168 of 260

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

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

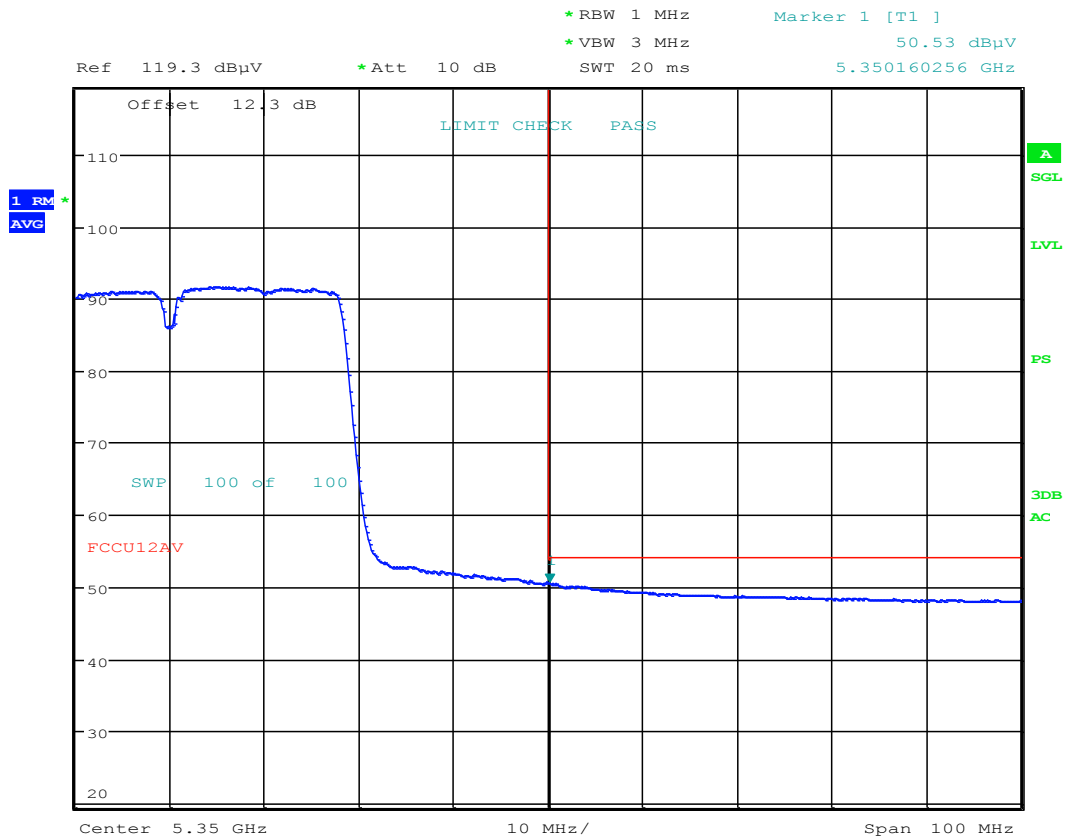
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62



Date: 29.DEC.2016 21:28:31

Plot 7-210. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 169 of 260

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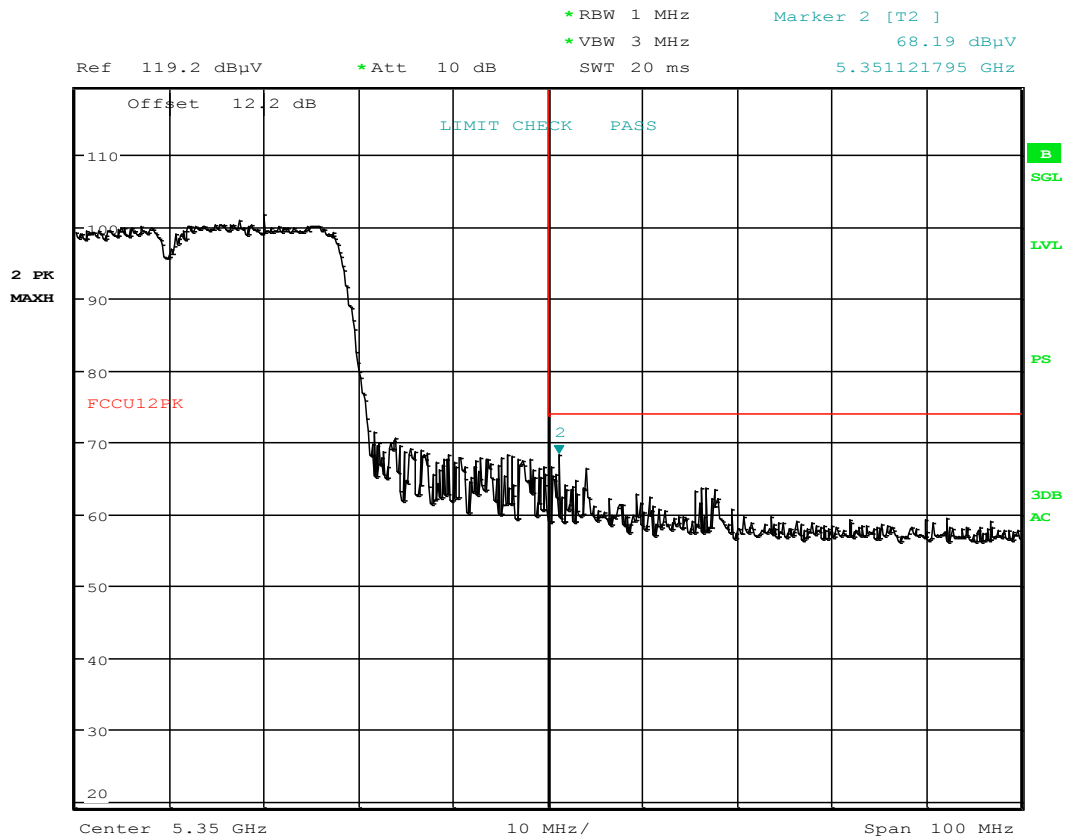
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Antenna-1 Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 21:28:41

Plot 7-211. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 170 of 260

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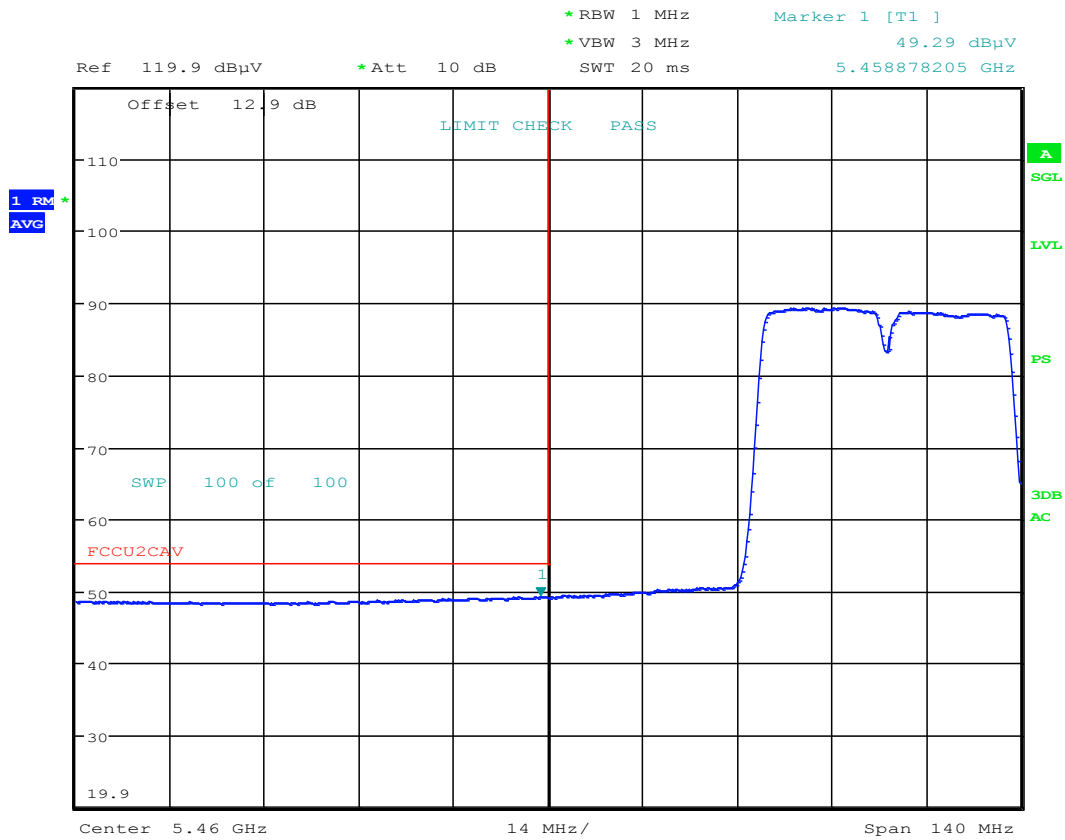
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Antenna-1 Radiated Band Edge Measurements (40MHz BW)

\$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: 5510MHz
Channel: 102



Date: 29.DEC.2016 21:35:21

Plot 7-212. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 171 of 260

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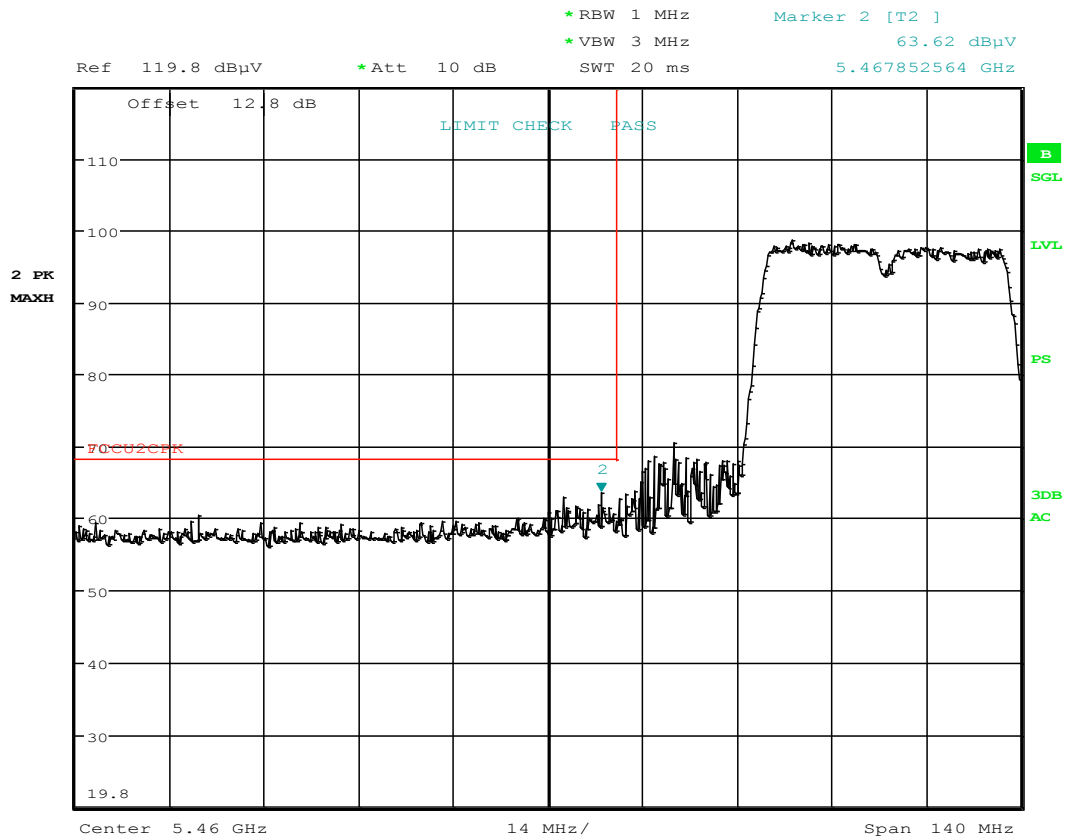
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Antenna-1 Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 21:35:43

Plot 7-213. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 172 of 260

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

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

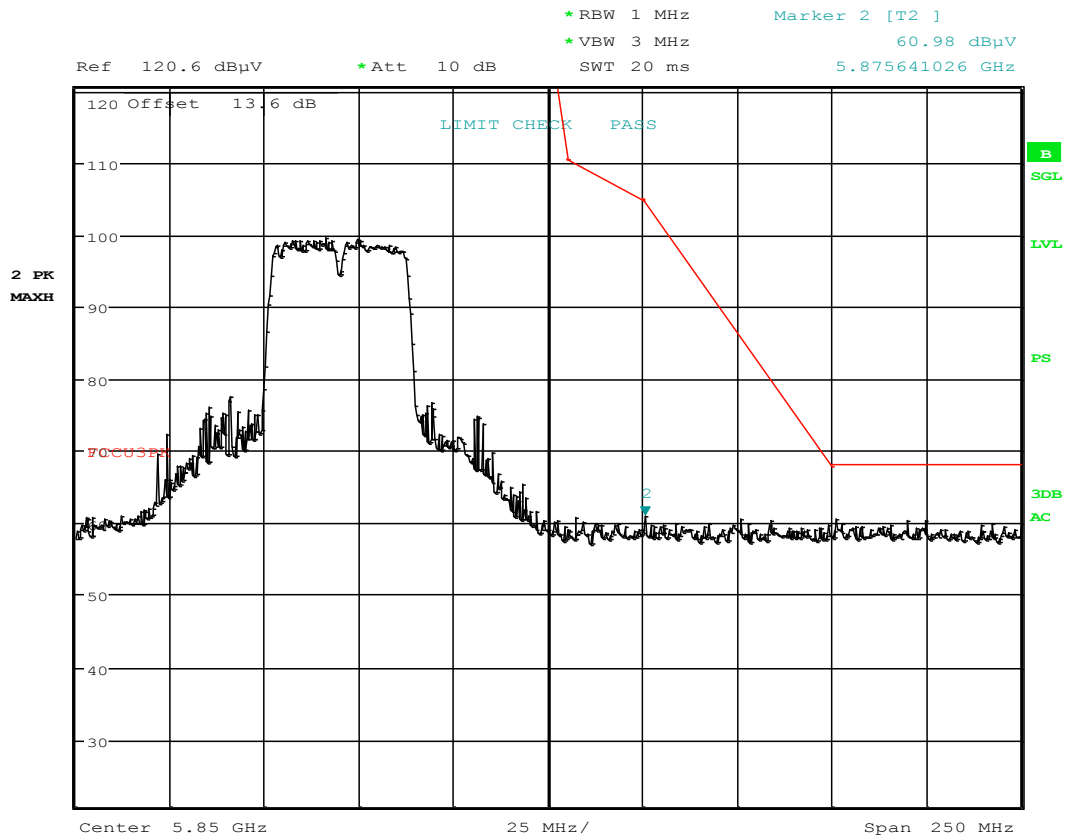
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5795MHz

Channel: 159



Date: 29.DEC.2016 21:45:26

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 173 of 260

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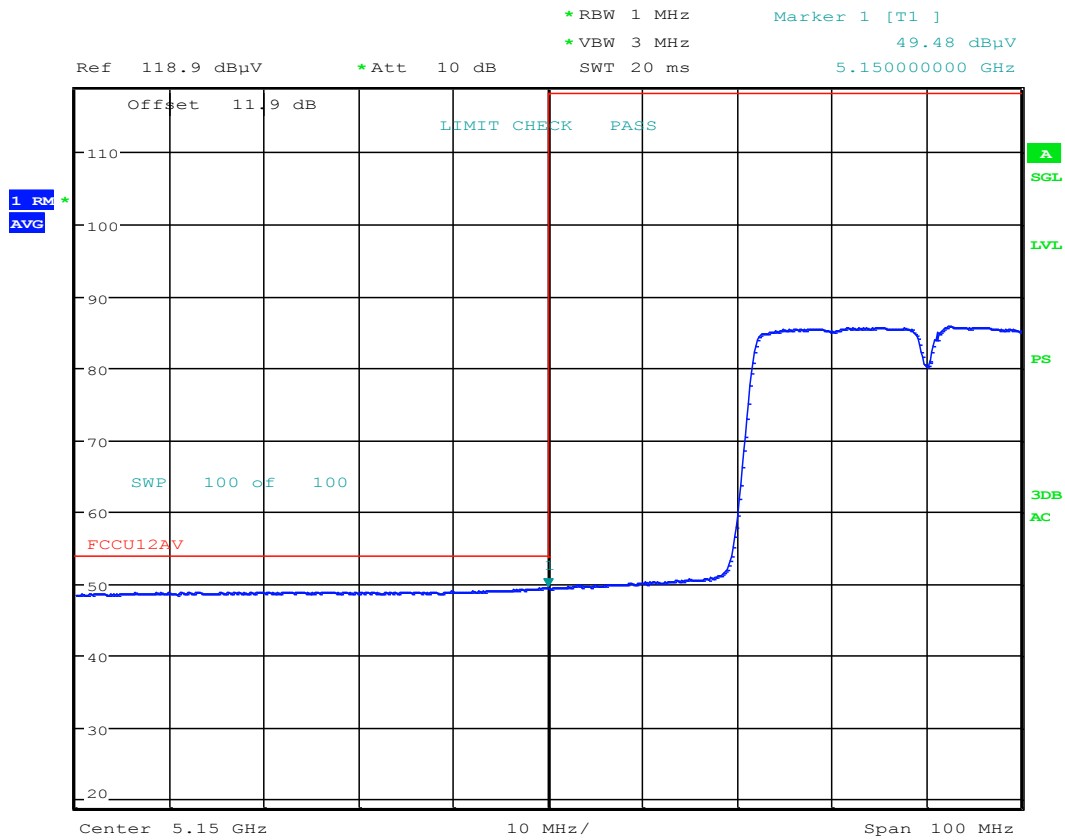
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Antenna-1 WCP Radiated Band Edge Measurements (40MHz BW) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5190MHz
Channel: 38



Date: 6.JAN.2017 07:54:19

Plot 7-215. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 174 of 260

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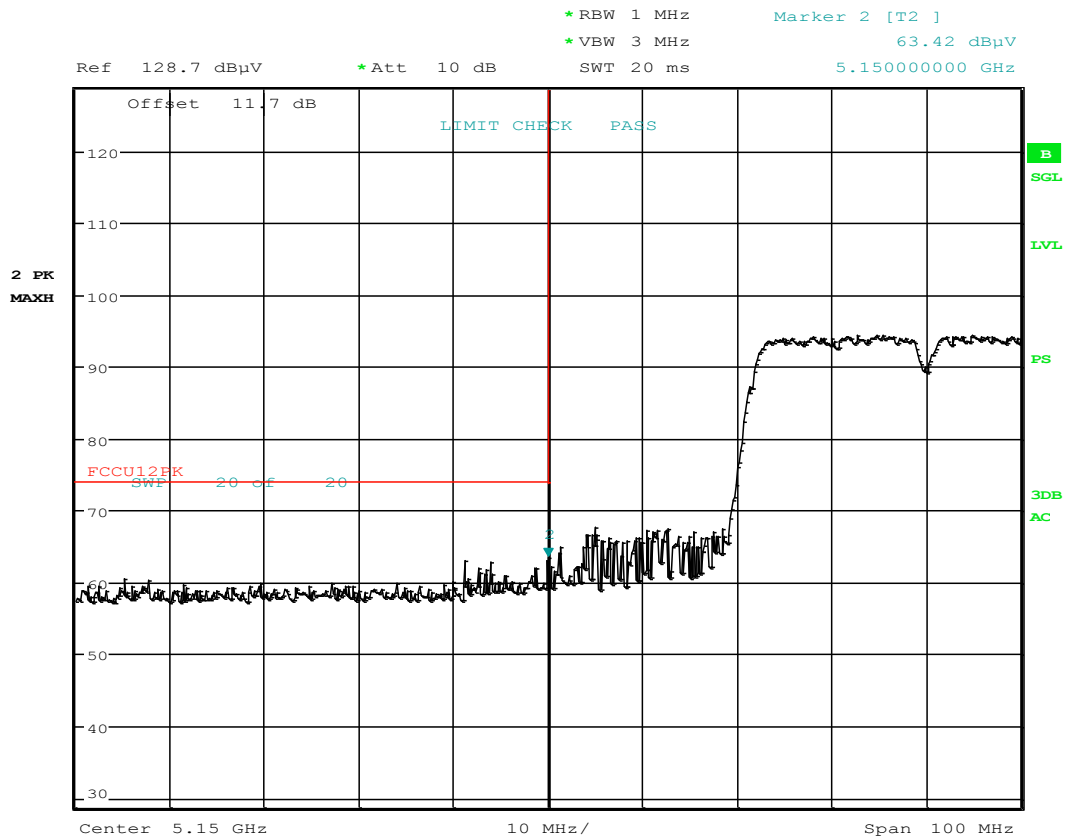
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Antenna-1 WCP Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 6.JAN.2017 07:53:18

Plot 7-216. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 175 of 260

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

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

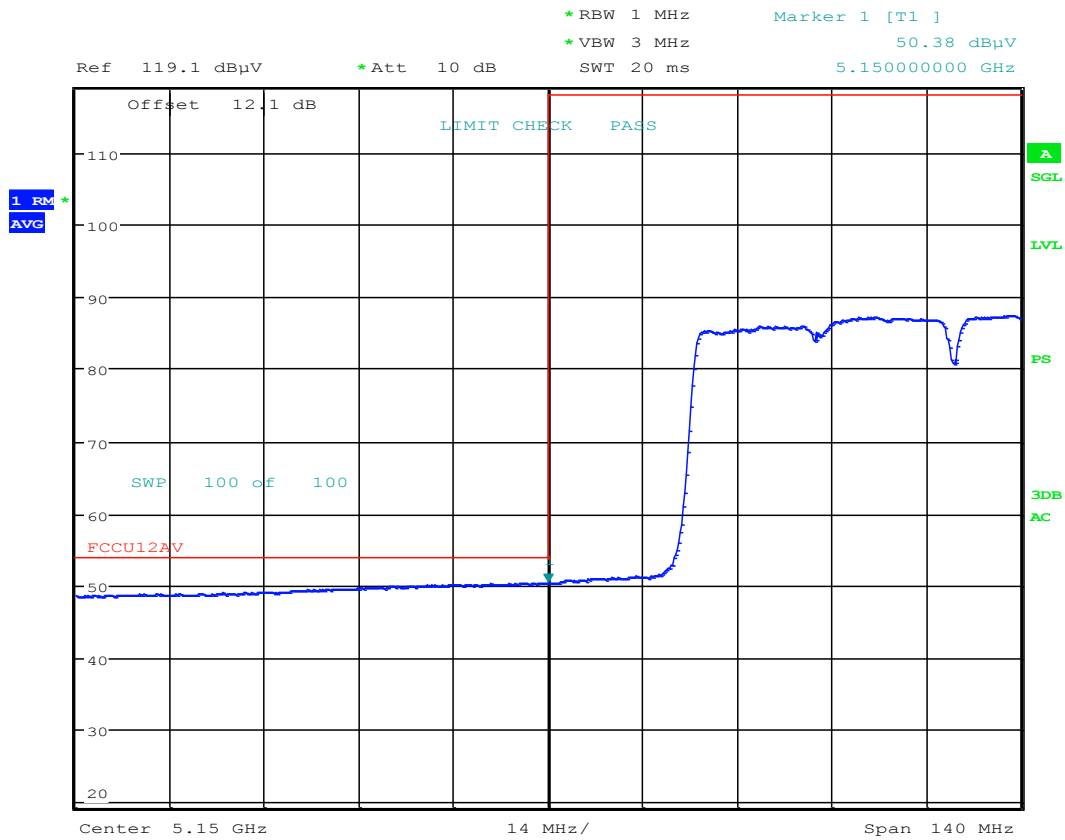
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



Date: 29.DEC.2016 21:22:15

Plot 7-217. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 176 of 260

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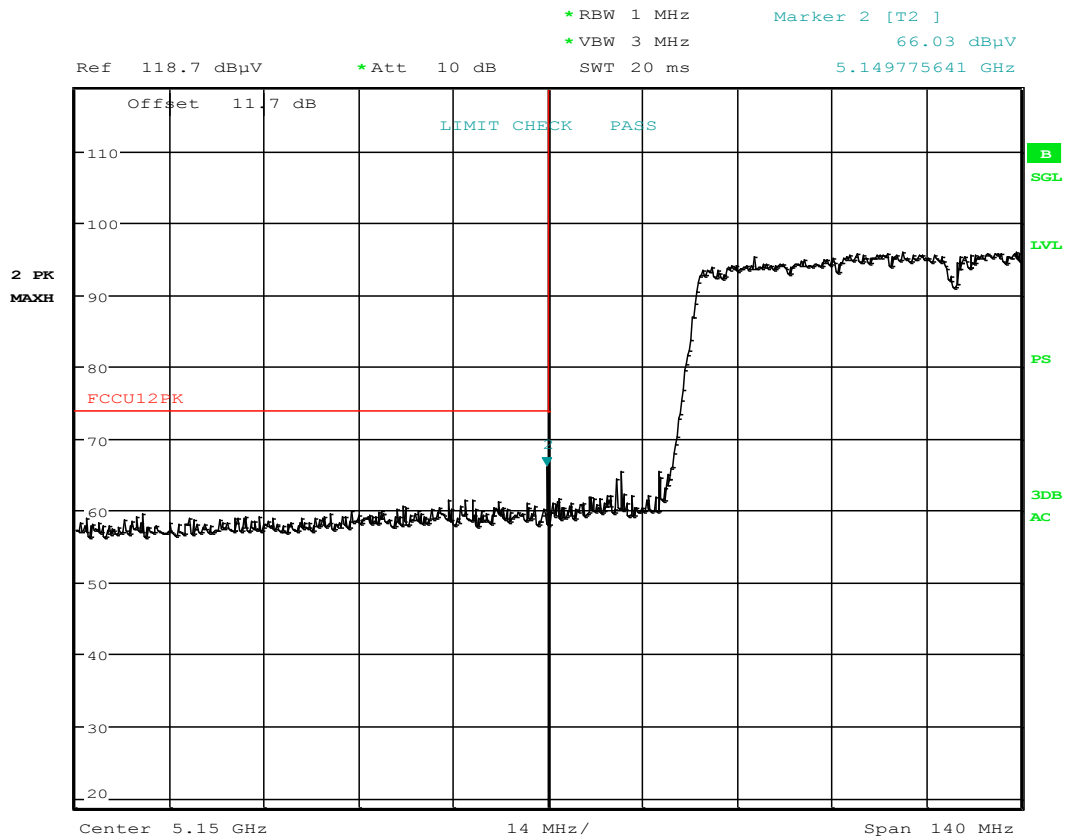
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Antenna-1 Radiated Band Edge Measurements (80MHz BW)

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



Date: 29.DEC.2016 21:22:29

Plot 7-218. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 177 of 260

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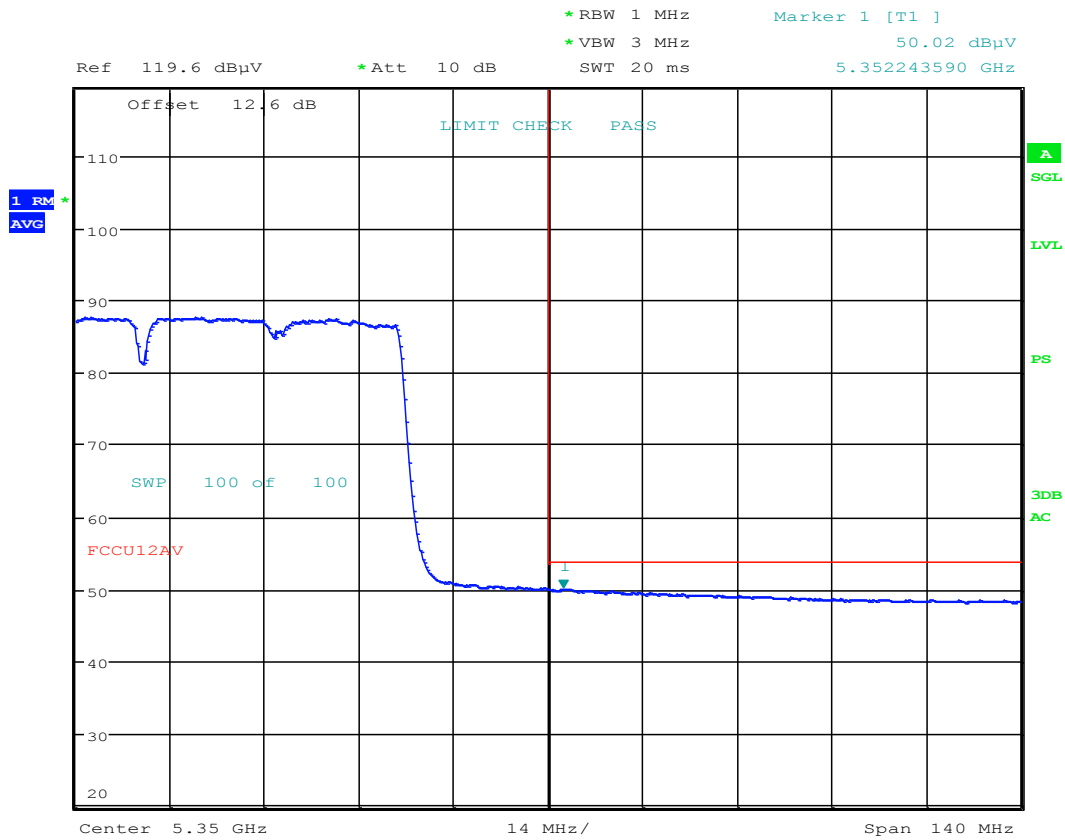
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Antenna-1 Radiated Band Edge Measurements (80MHz BW)

\$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: 5290MHz
Channel: 58



Date: 29.DEC.2016 21:29:46

Plot 7-219. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 178 of 260

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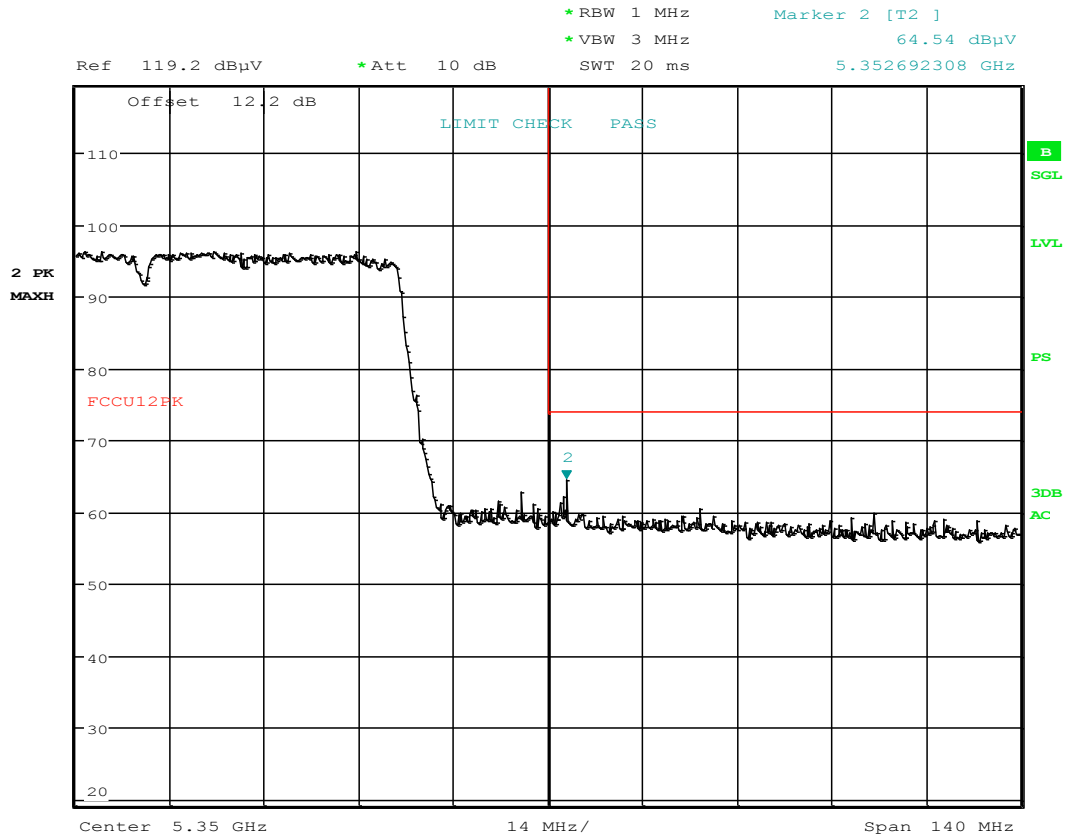
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Antenna-1 Radiated Band Edge Measurements (80MHz BW)

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



Date: 29.DEC.2016 21:29:58

Plot 7-220. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 179 of 260

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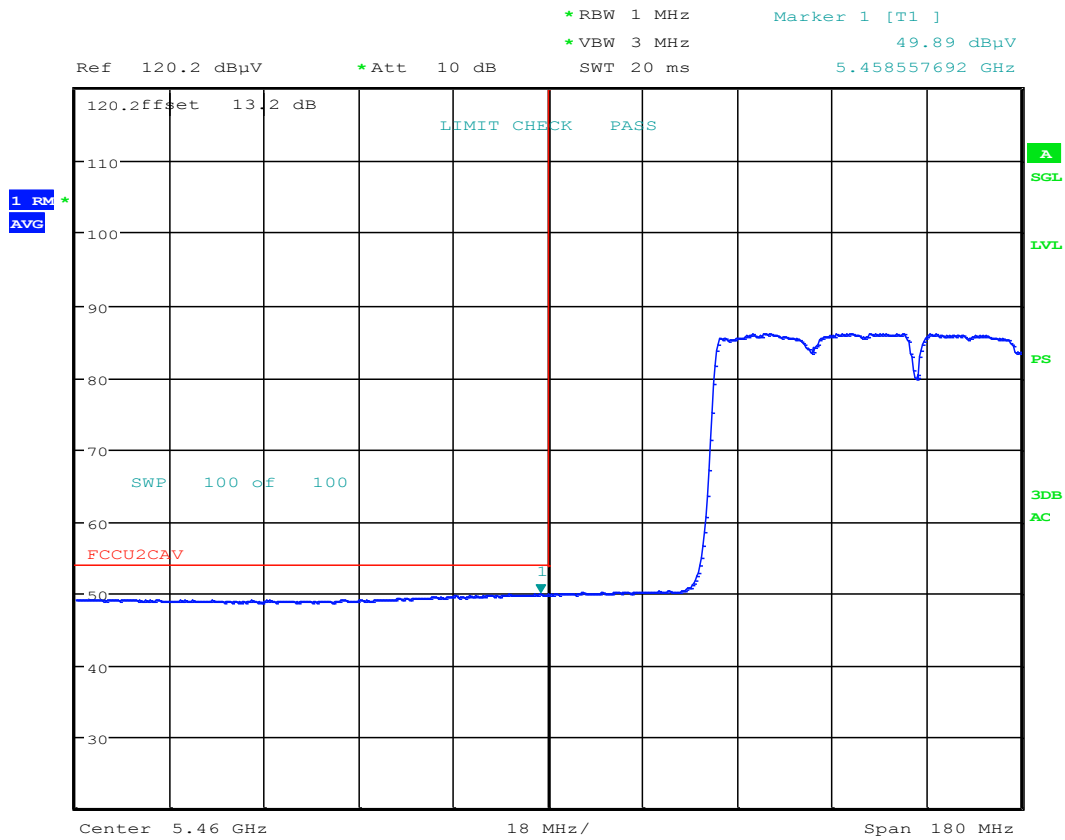
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Antenna-1 Radiated Band Edge Measurements (80MHz BW) **\$15.407(b.1)(b.2) \$15.205 \$15.209**

Worst Case Mode: 802.11ac (80MHz)
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5530MHz
Channel: 106



Date: 29.DEC.2016 21:38:01

Plot 7-221. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 180 of 260

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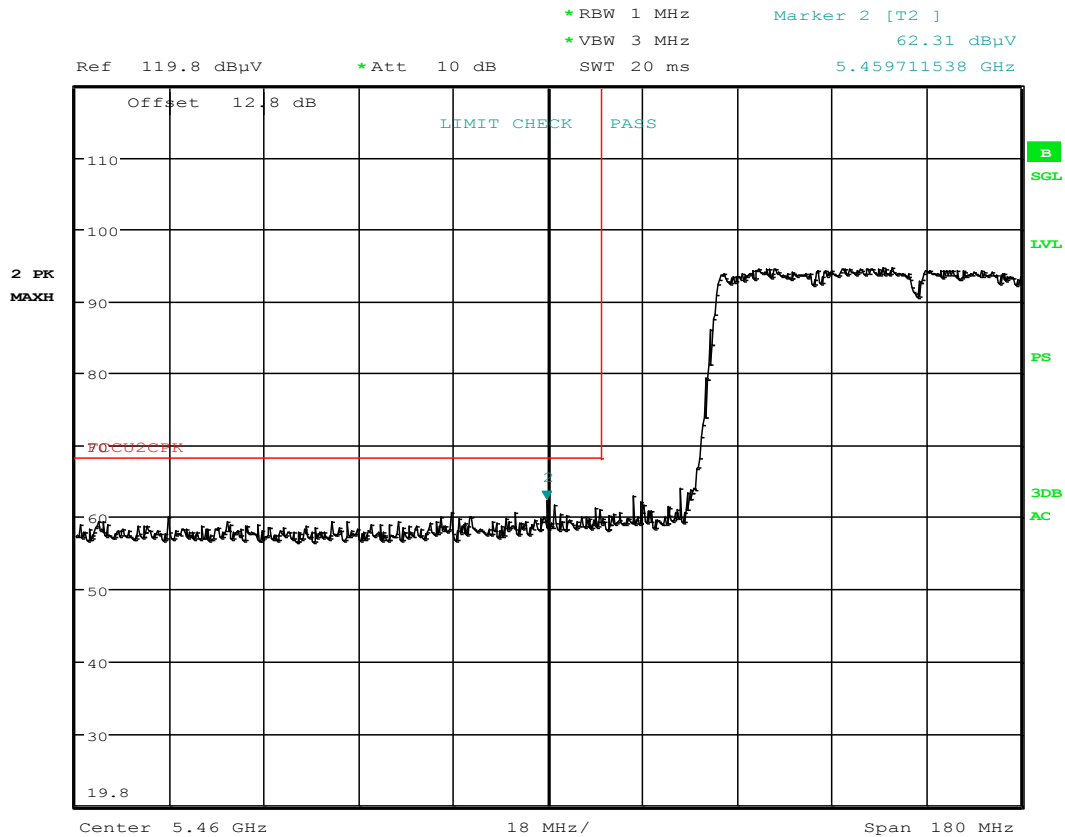
V 6.1

12/26/2016

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

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



Date: 29.DEC.2016 21:37:36

Plot 7-222. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 181 of 260

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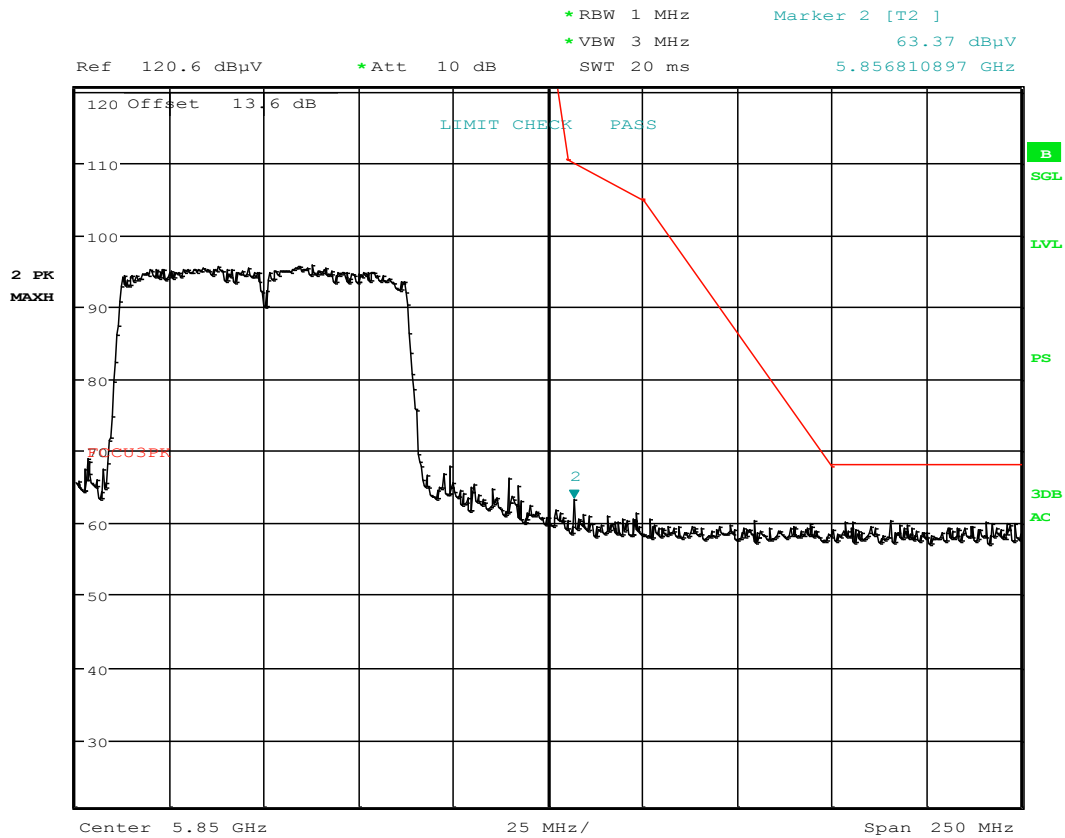
12/26/2016

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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: 29.DEC.2016 21:49:18

Plot 7-223. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 182 of 260

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

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

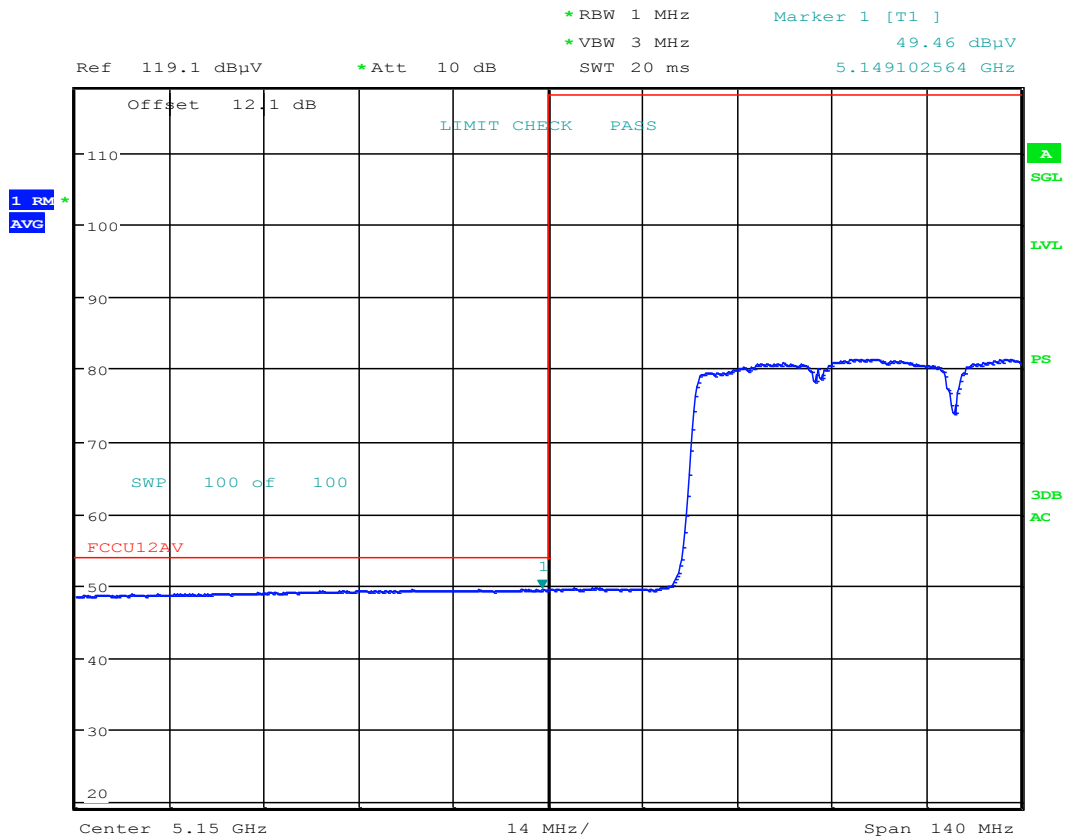
Worst Case Mode: 802.11ac

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



Date: 6.JAN.2017 09:08:50

Plot 7-224. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 183 of 260

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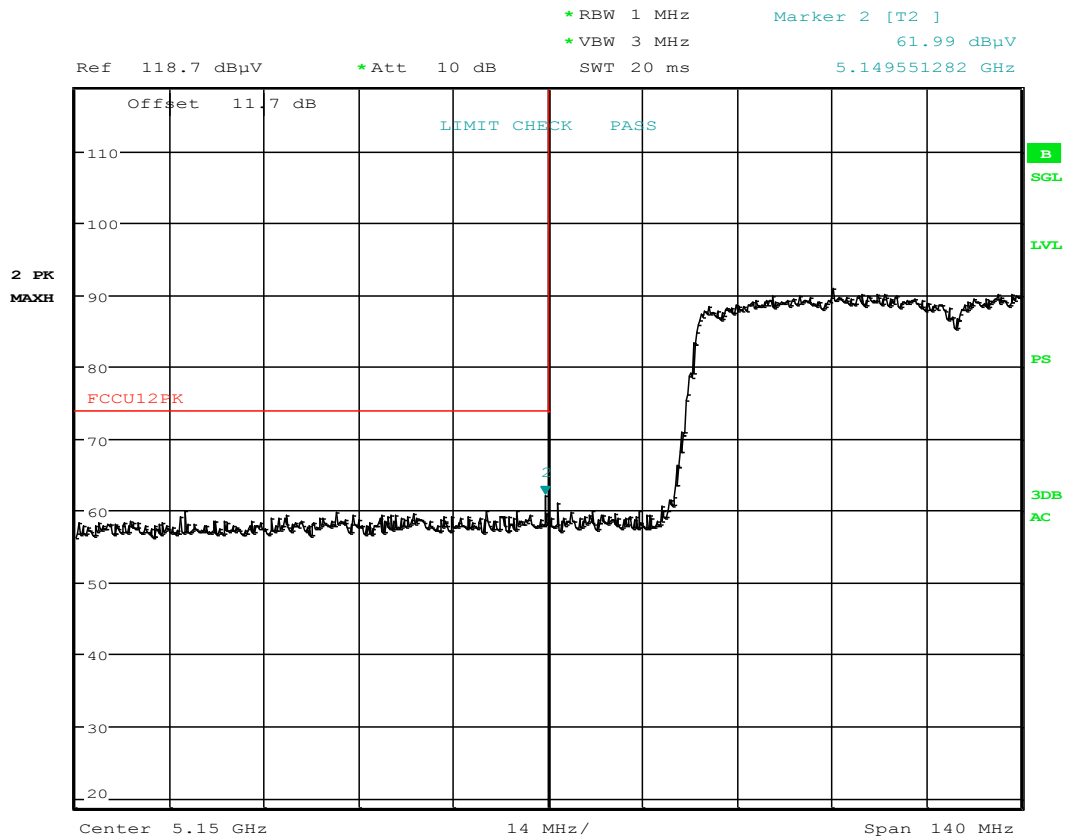
V 6.1

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

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



Date: 6.JAN.2017 09:09:30

Plot 7-225. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 184 of 260

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

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

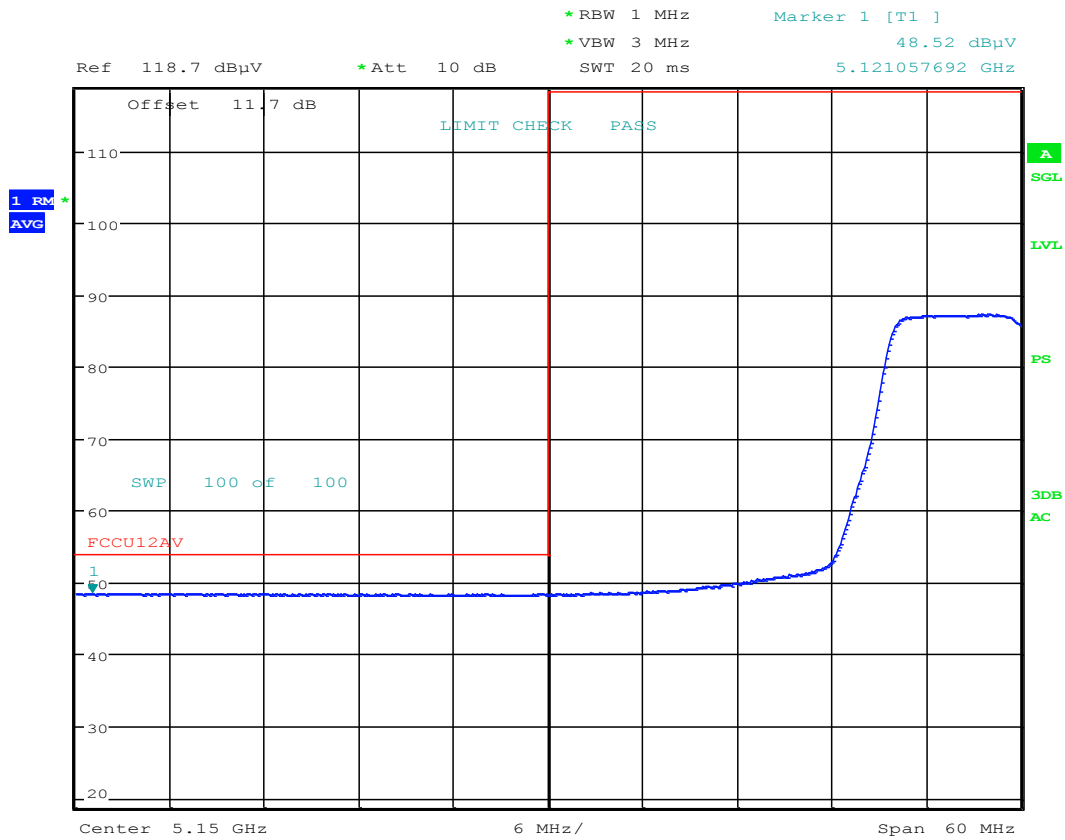
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 29.DEC.2016 16:23:14

Plot 7-226. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 185 of 260

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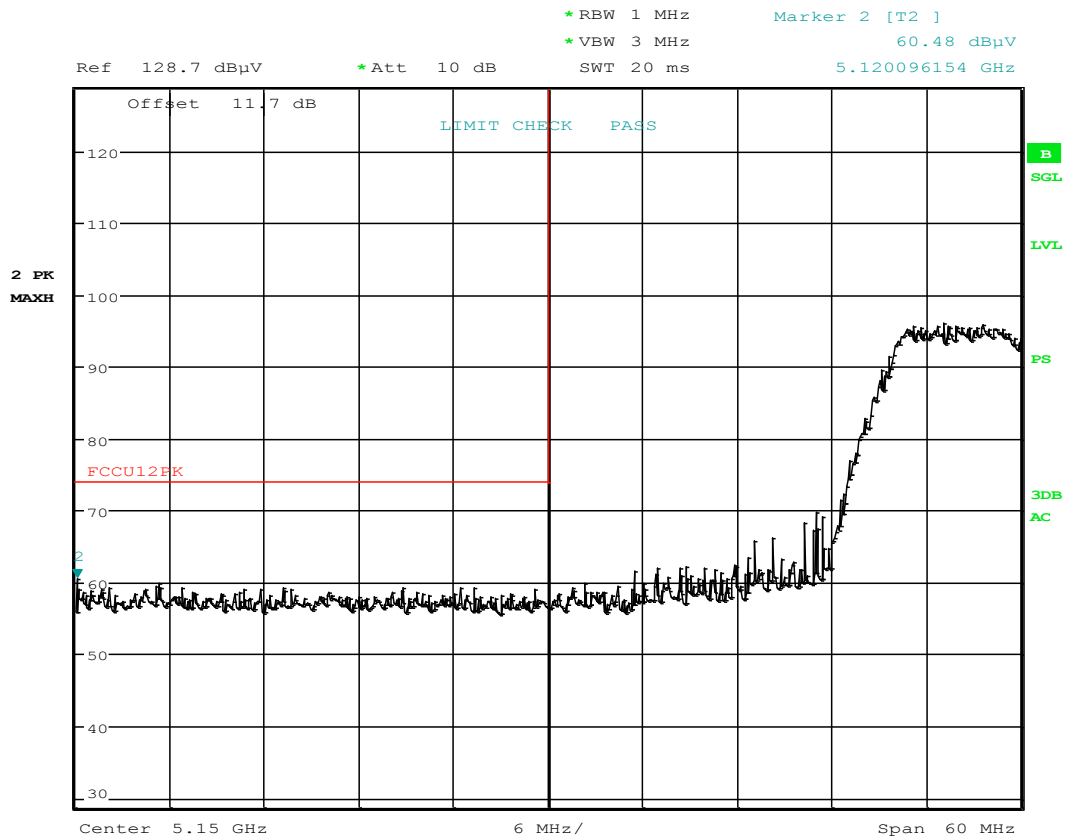
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Antenna-2 Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 16:23:35

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 186 of 260

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

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

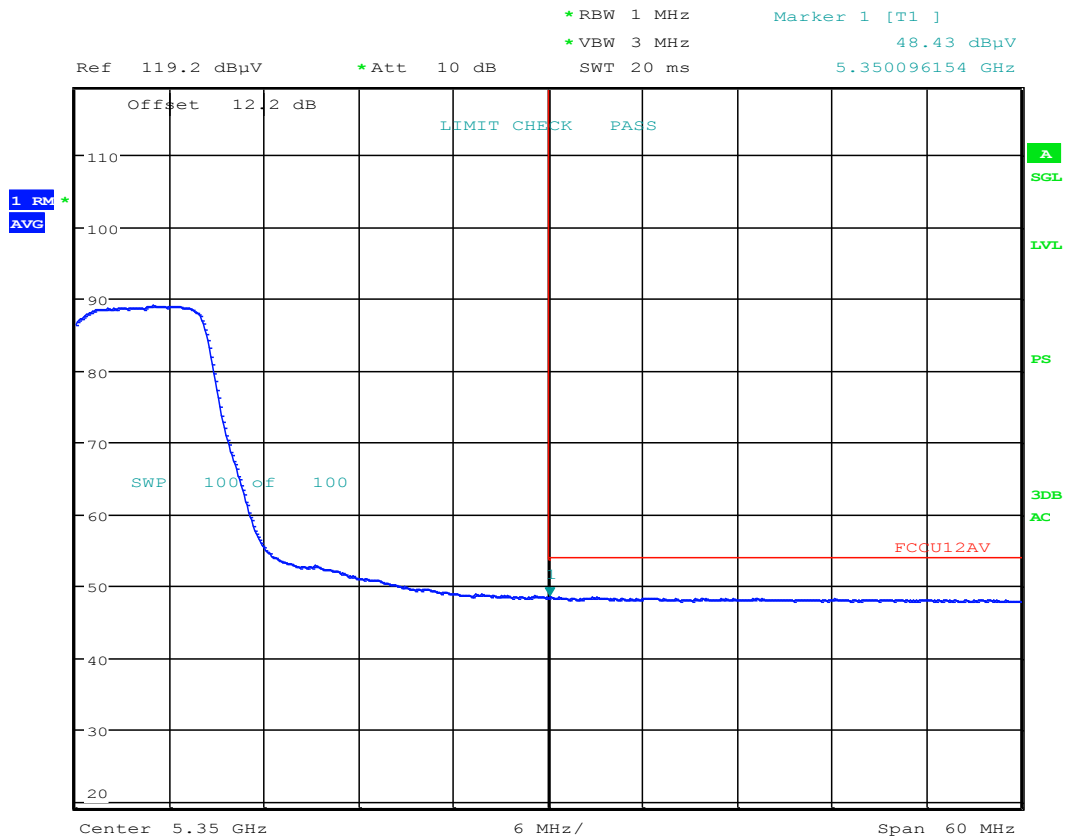
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



Date: 29.DEC.2016 16:28:31

Plot 7-228. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 187 of 260

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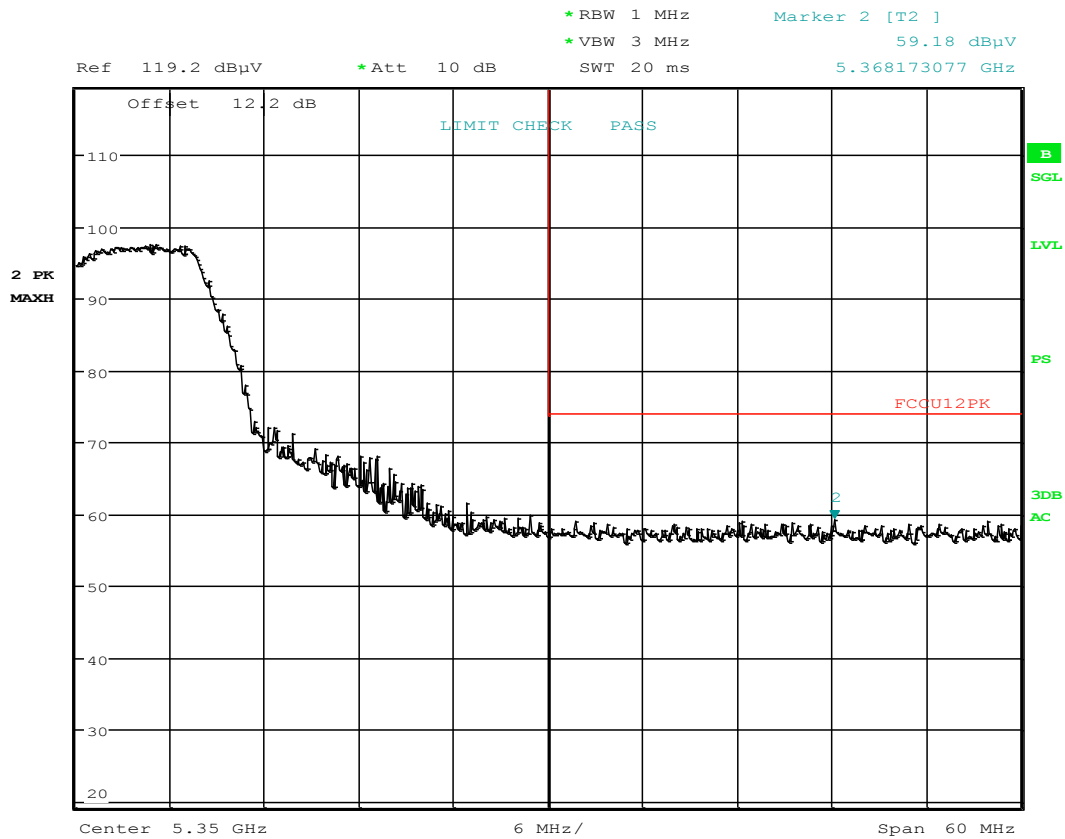
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Antenna-2 Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 16:28:43

Plot 7-229. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 188 of 260

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

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

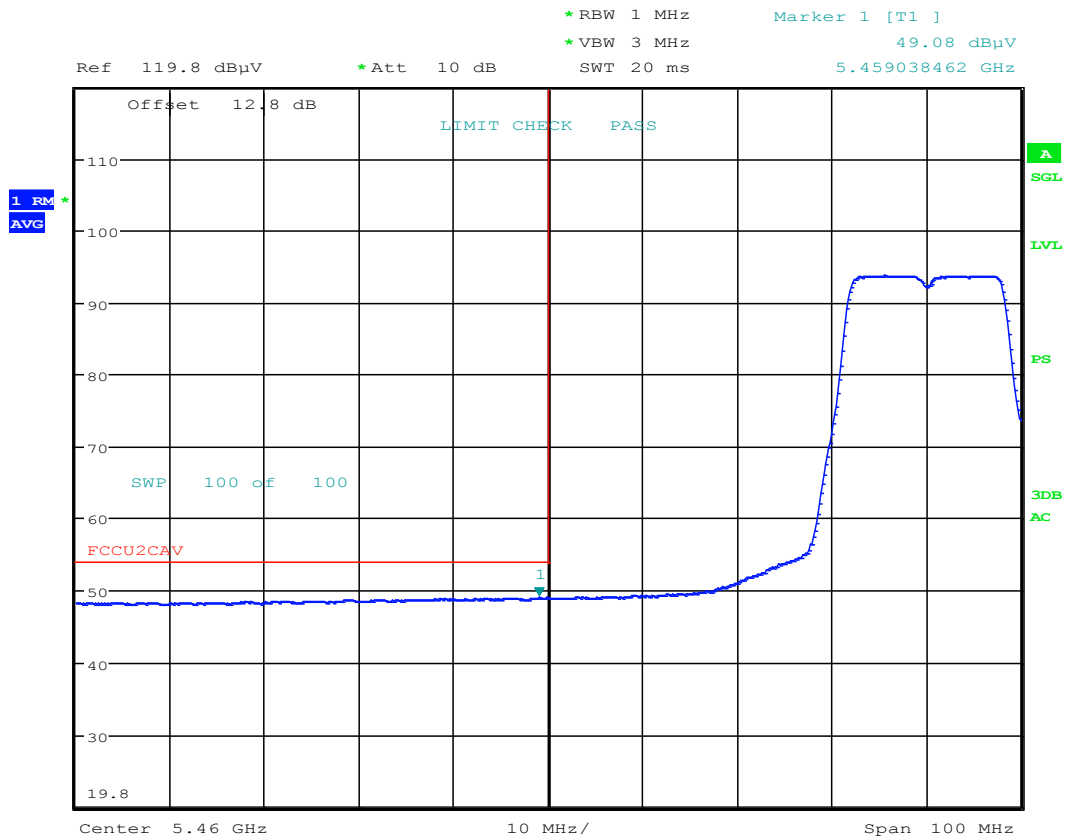
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



Date: 29.DEC.2016 16:33:56

Plot 7-230. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 189 of 260

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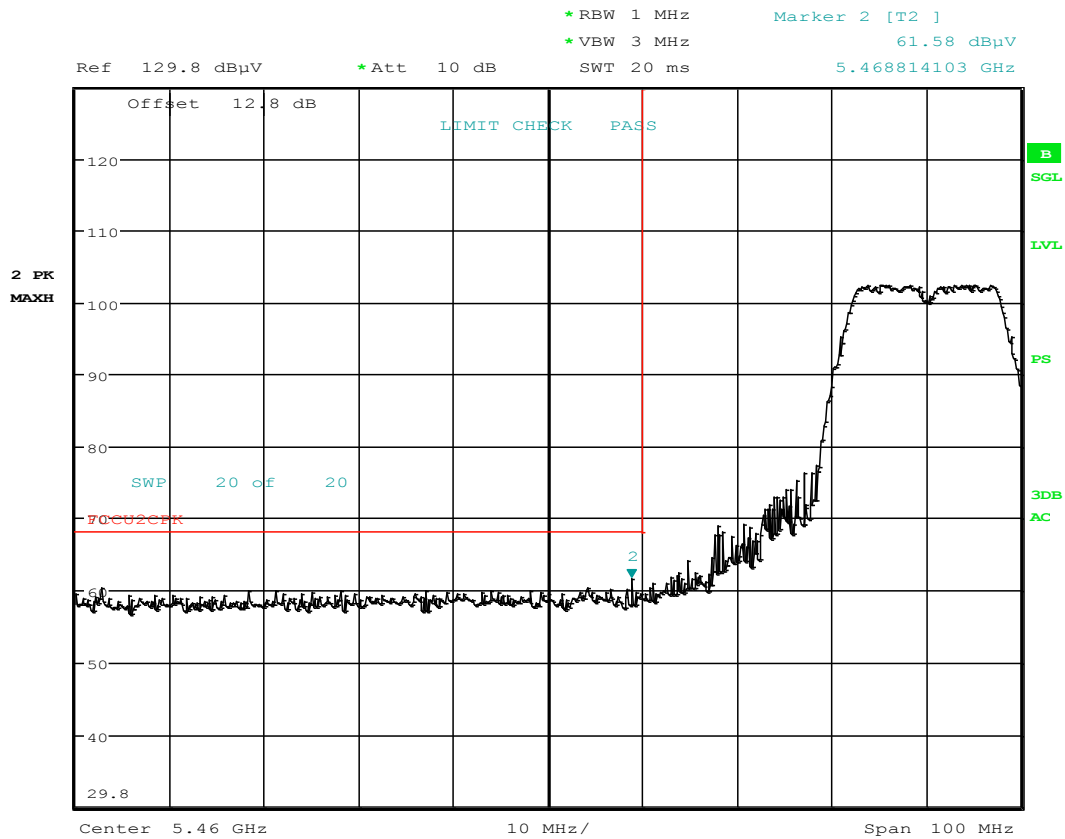
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Antenna-2 Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 16:34:26

Plot 7-231. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 190 of 260

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

§15.407(b.1)(b.2) §15.205 §15.209

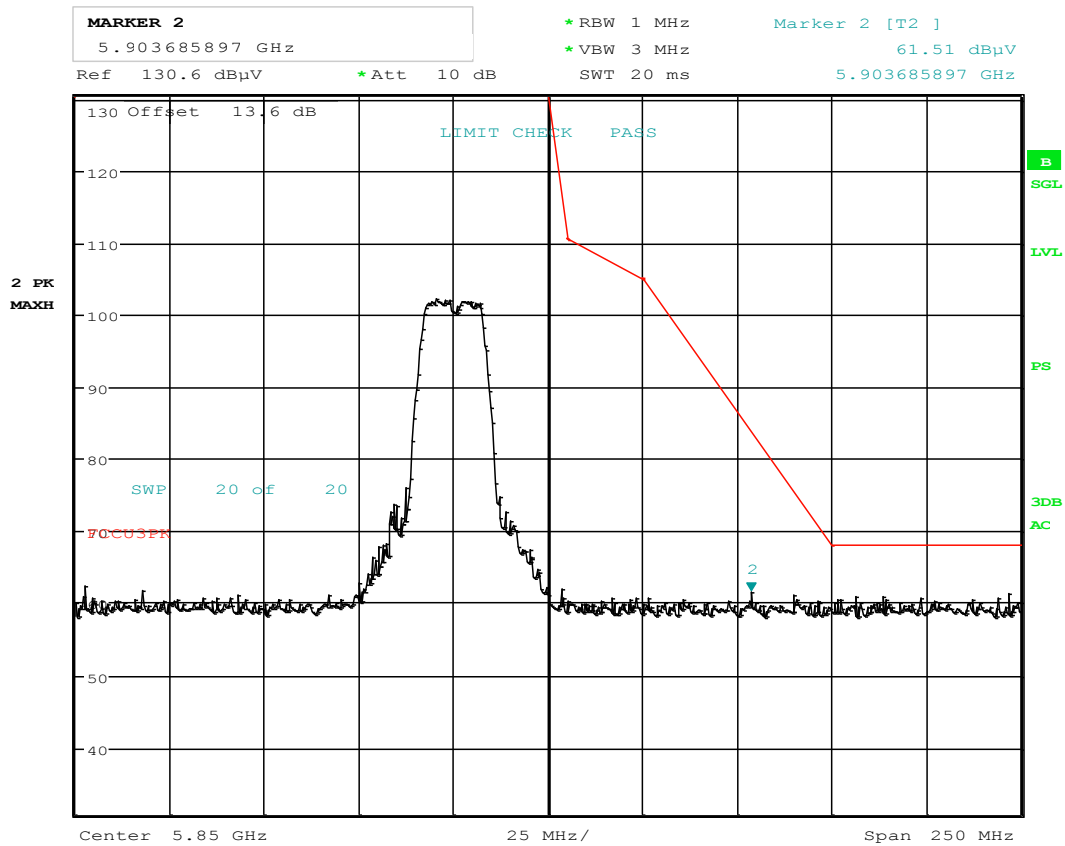
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 29.DEC.2016 16:38:18

Plot 7-232. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 191 of 260

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

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

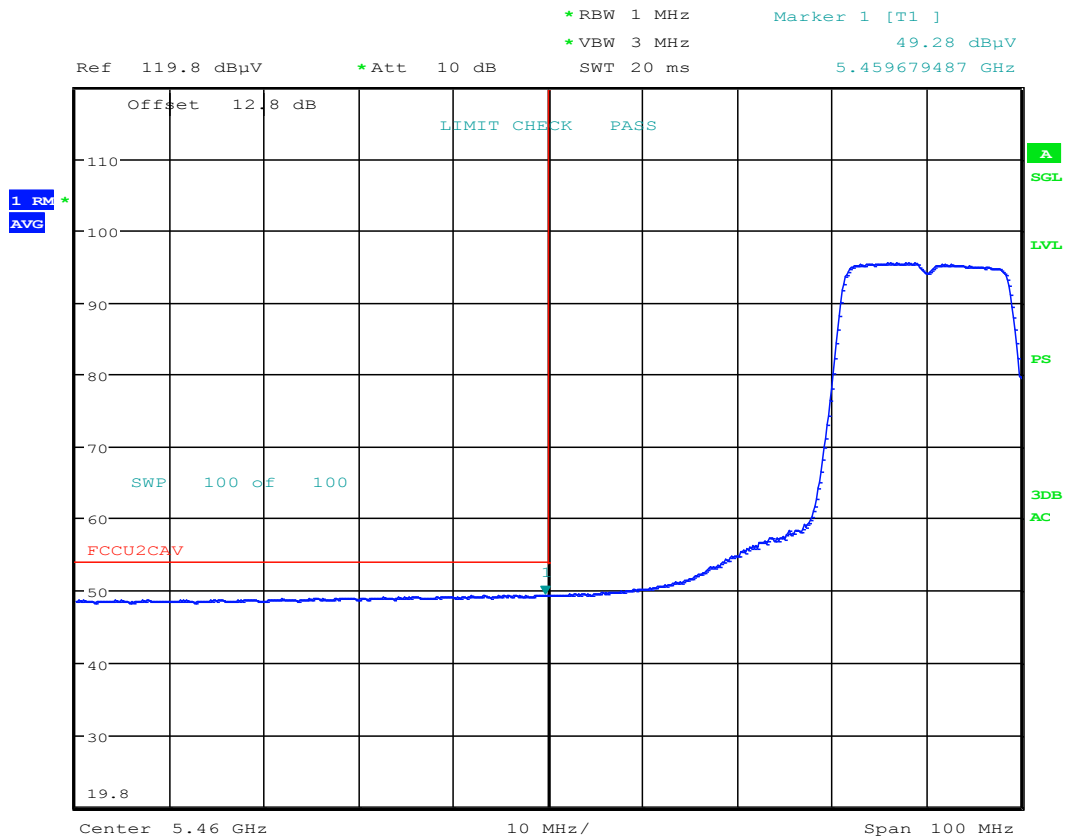
Worst Case Mode: 802.11n

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



Date: 6.JAN.2017 07:22:08

Plot 7-233. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 192 of 260

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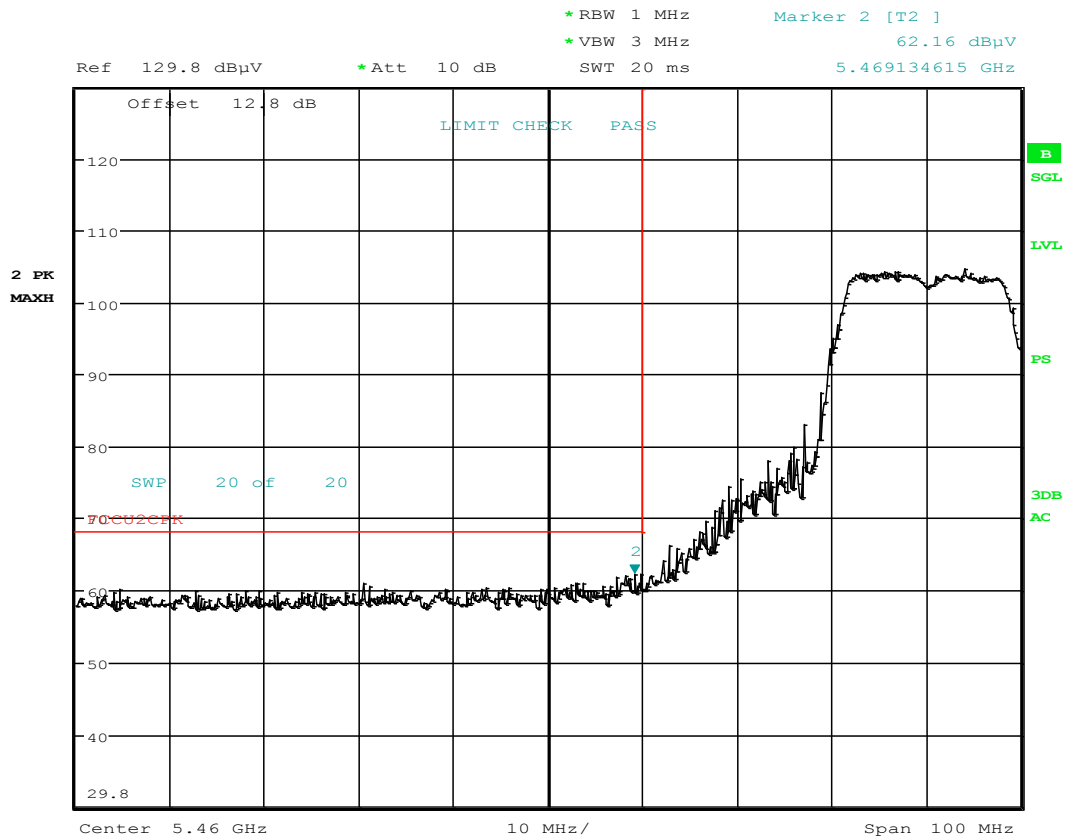
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Antenna-2 WCP Radiated Band Edge Measurements (20MHz BW)

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



Date: 6.JAN.2017 07:22:59

Plot 7-234. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 193 of 260

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

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

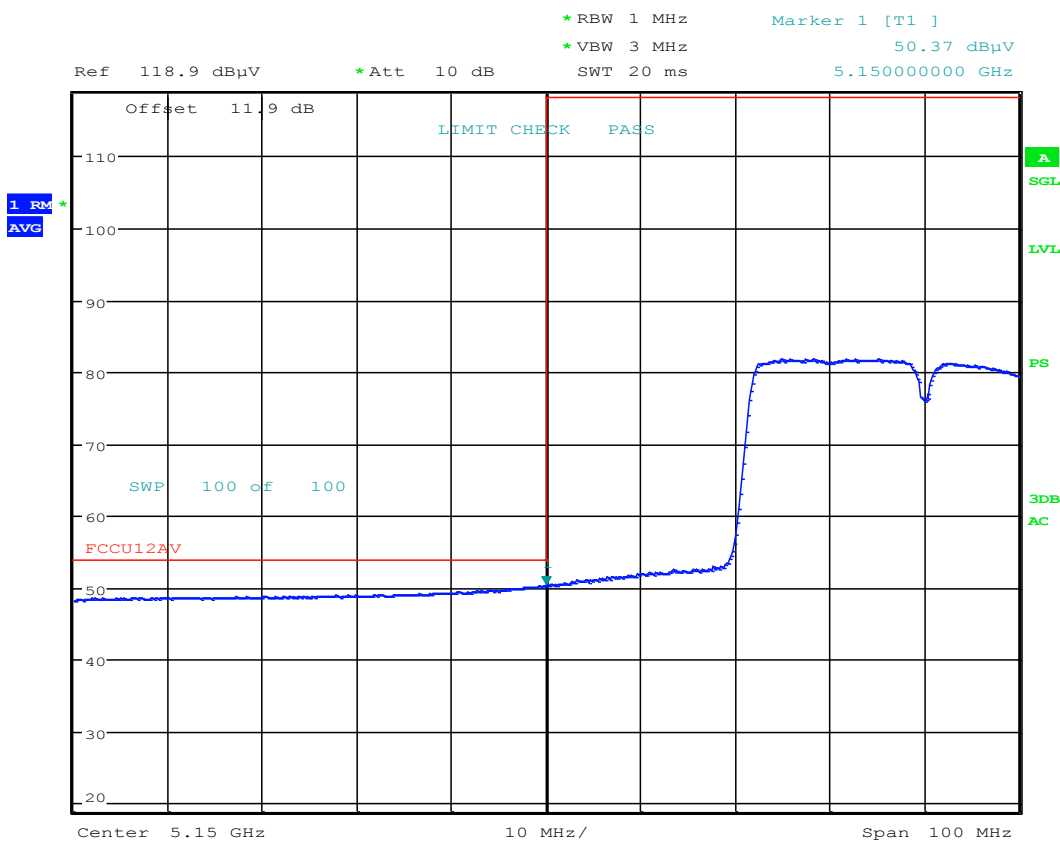
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 29.DEC.2016 22:21:31

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 194 of 260

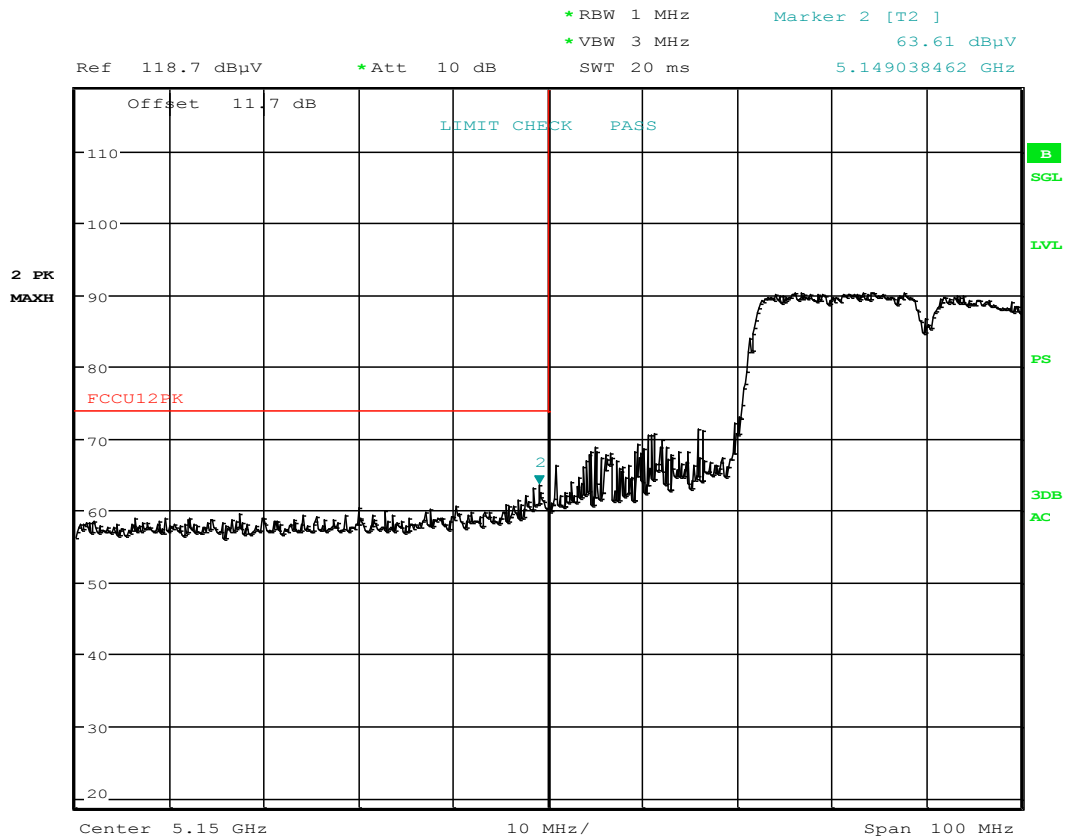
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Antenna-2 Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 22:21:40

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

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 195 of 260

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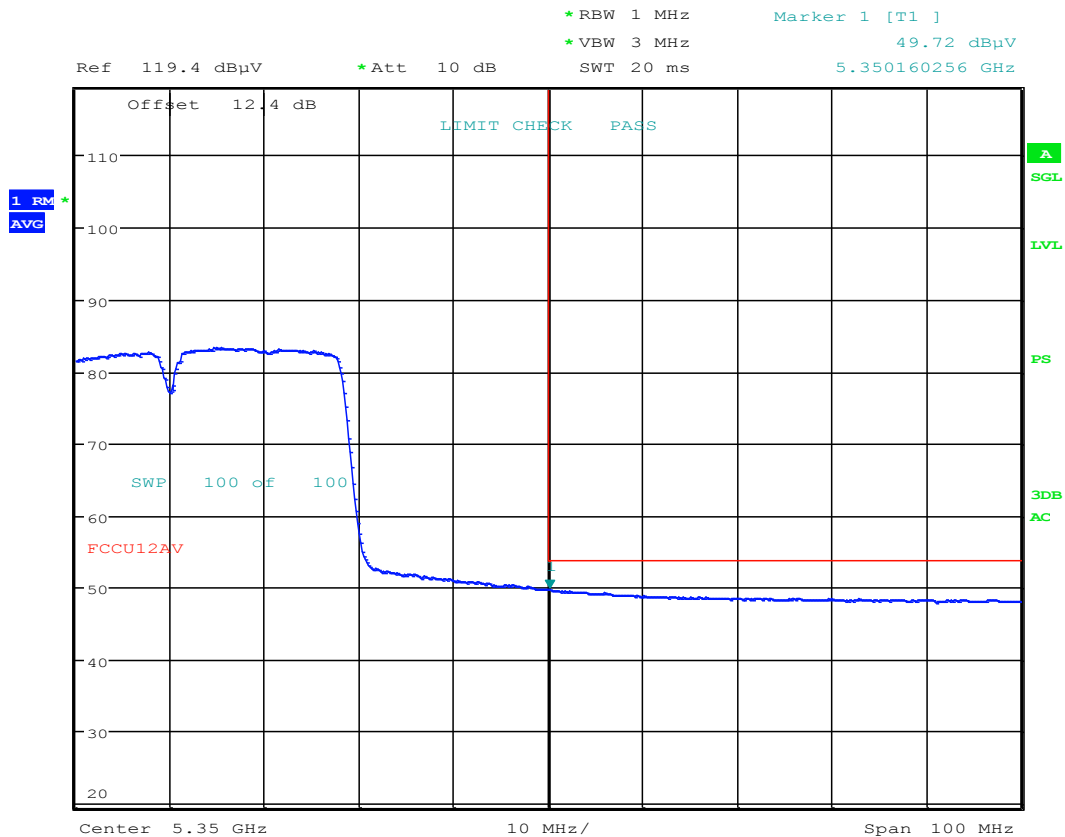
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Antenna-2 Radiated Band Edge Measurements (40MHz BW)

\$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: 5310MHz
Channel: 62



Date: 29.DEC.2016 22:31:26

Plot 7-237. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 196 of 260

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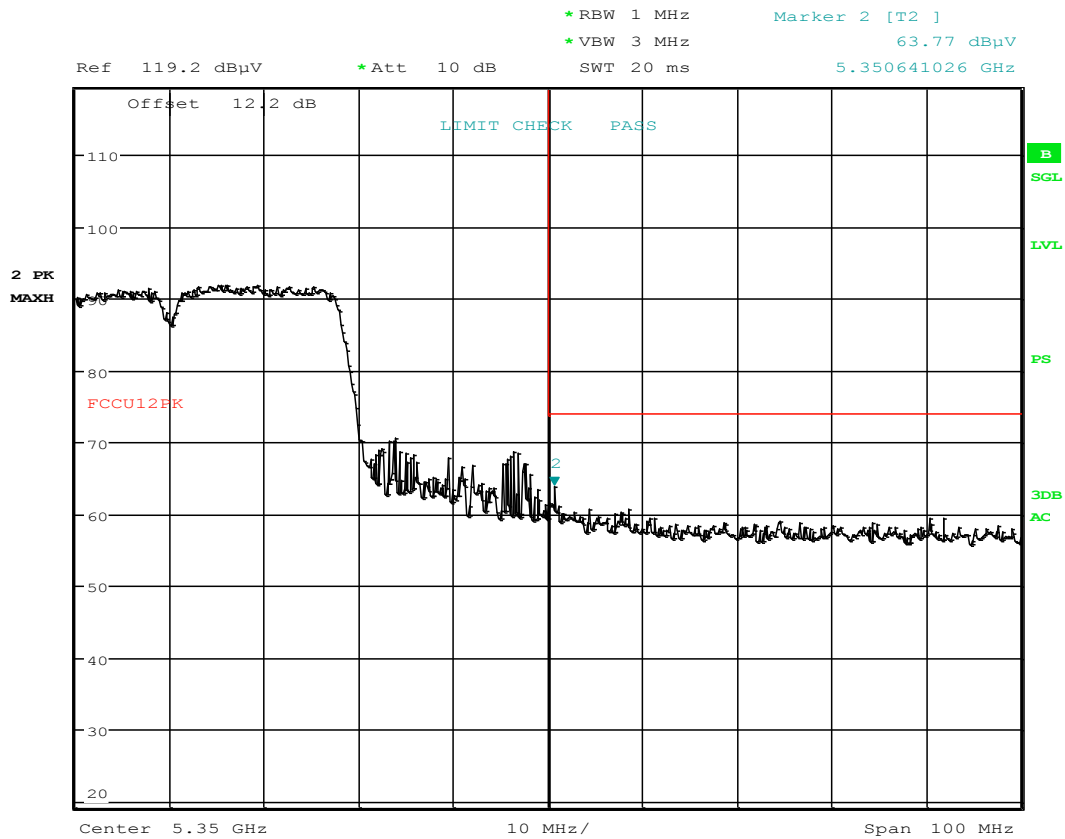
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Antenna-2 Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 22:31:35

Plot 7-238. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 197 of 260

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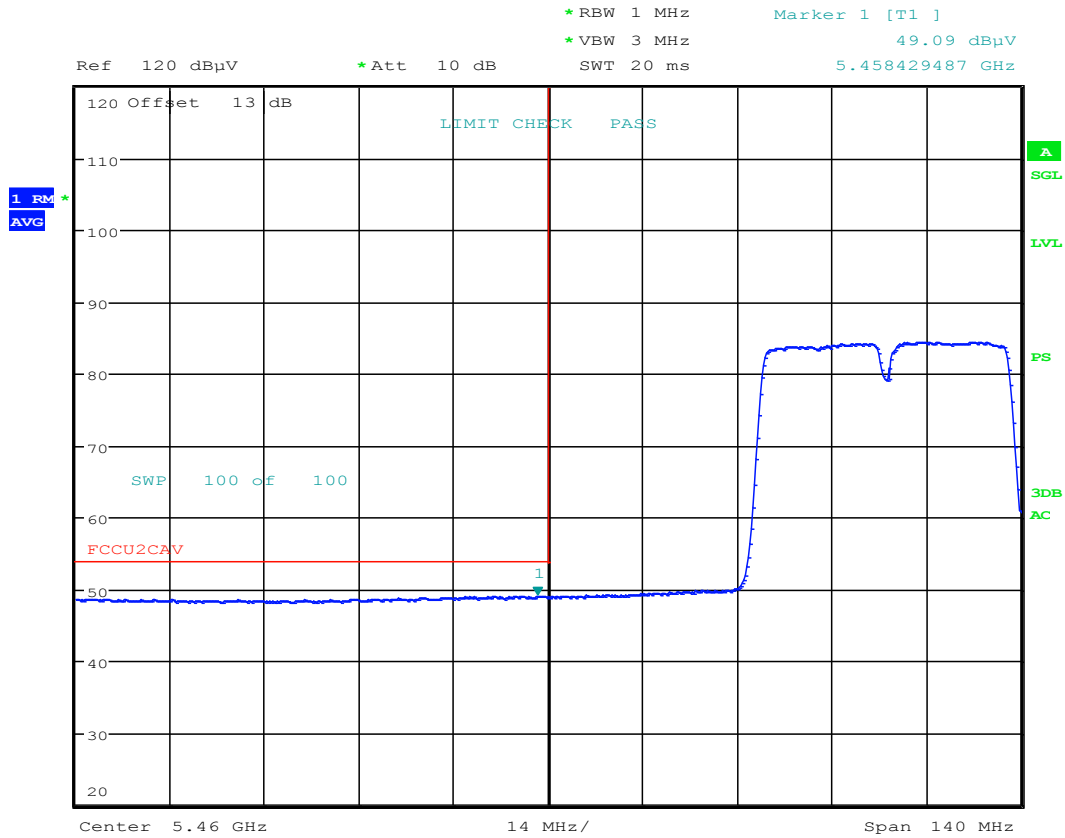
12/26/2016

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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: 5510MHz
Channel: 102



Date: 29.DEC.2016 22:38:32

Plot 7-239. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 198 of 260

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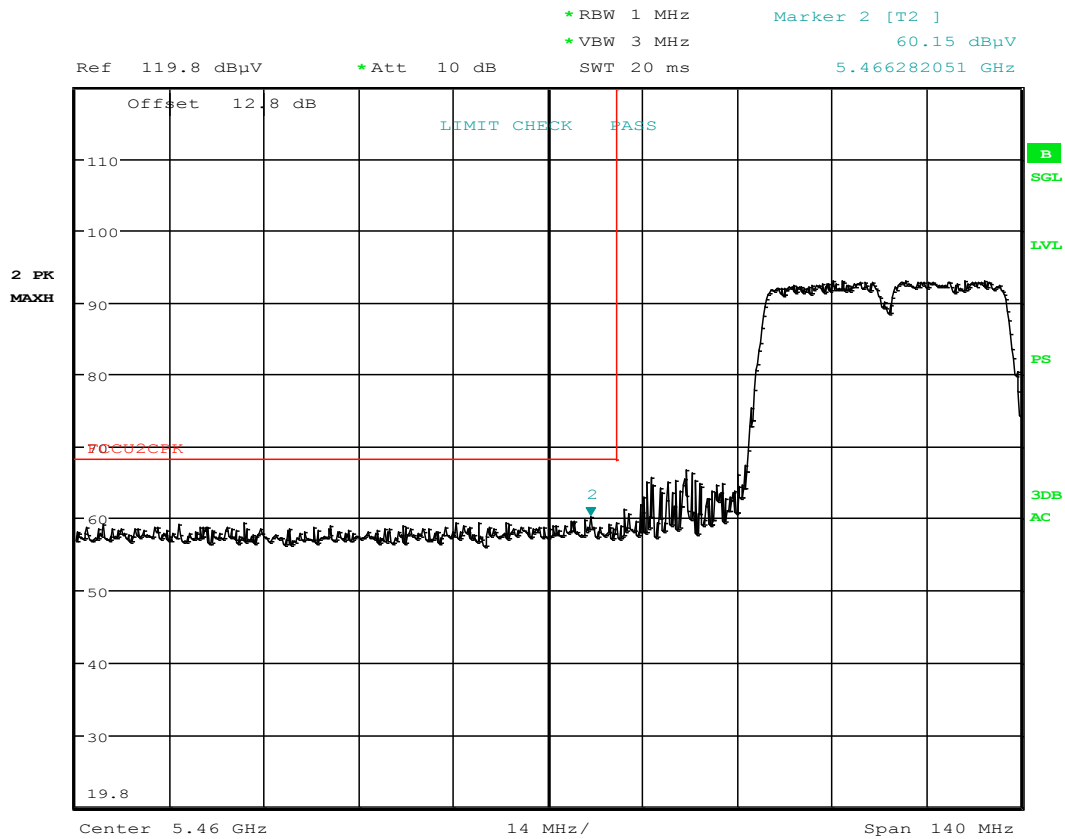
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Antenna-2 Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 22:38:56

Plot 7-240. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 199 of 260

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

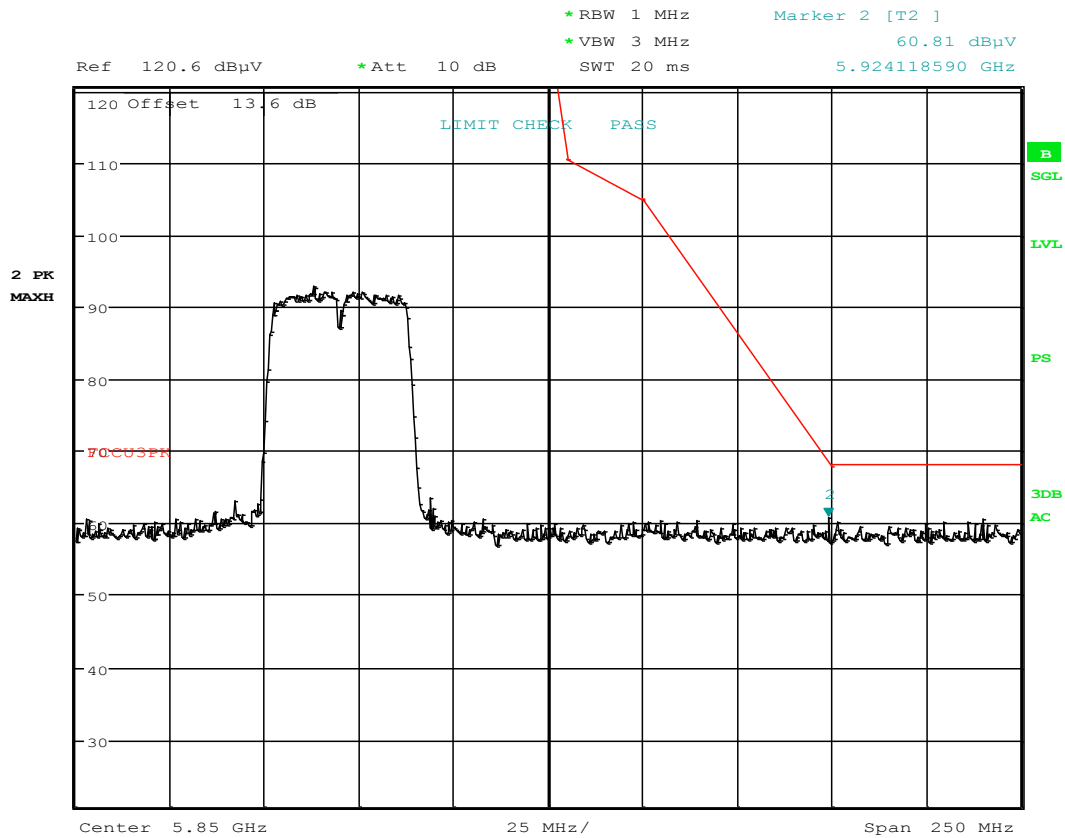
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5795MHz

Channel: 159



Date: 29.DEC.2016 22:53:06

Plot 7-241. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 200 of 260

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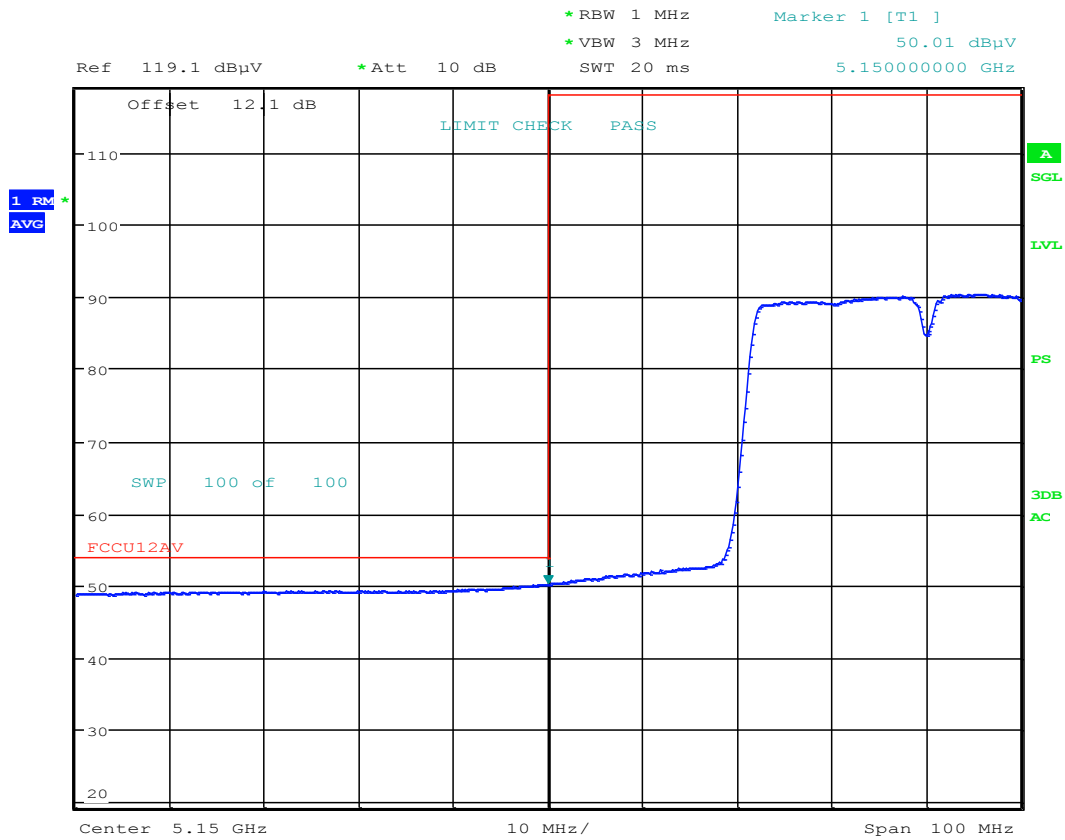
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Antenna-2 WCP Radiated Band Edge Measurements (40MHz BW) §15.407(b.1)(b.2) §15.205 §15.209

Worst Case Mode: 802.11n
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5190MHz
Channel: 38



Date: 6.JAN.2017 08:01:40

Plot 7-242. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 201 of 260

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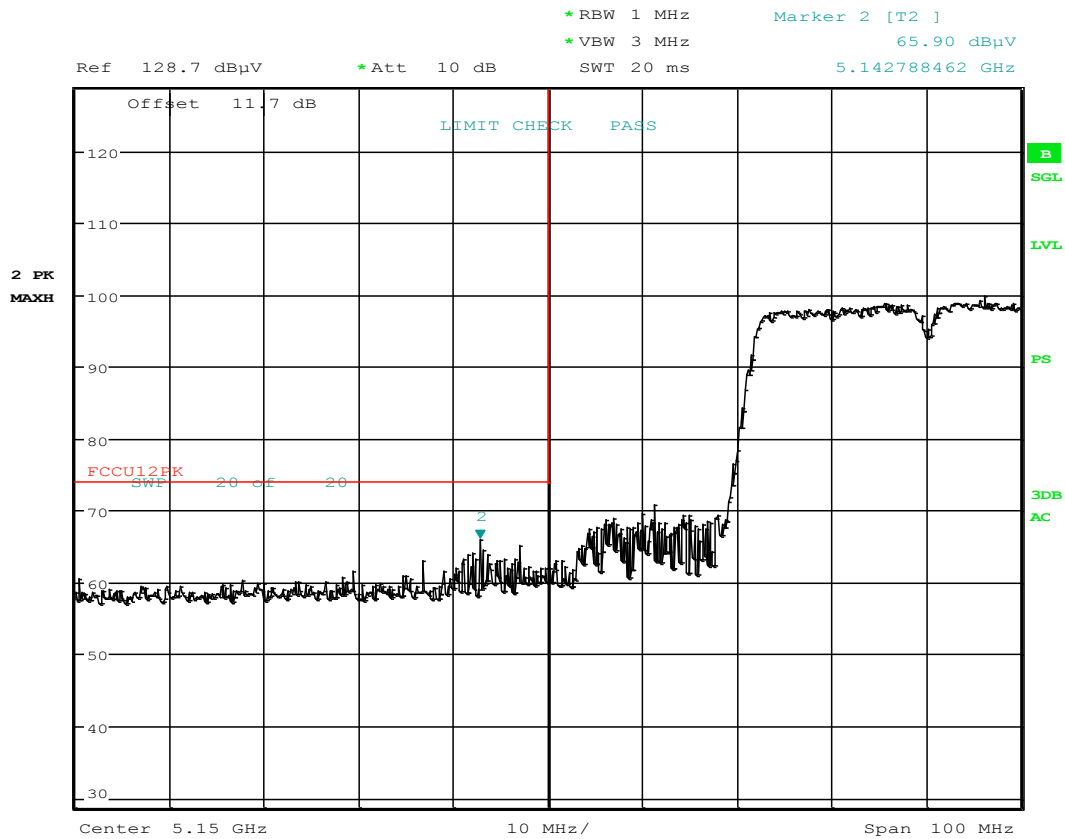
V 6.1

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

§15.407(b.1)(b.2) §15.205 §15.209



Date: 6.JAN.2017 08:02:35

Plot 7-243. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 202 of 260

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

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

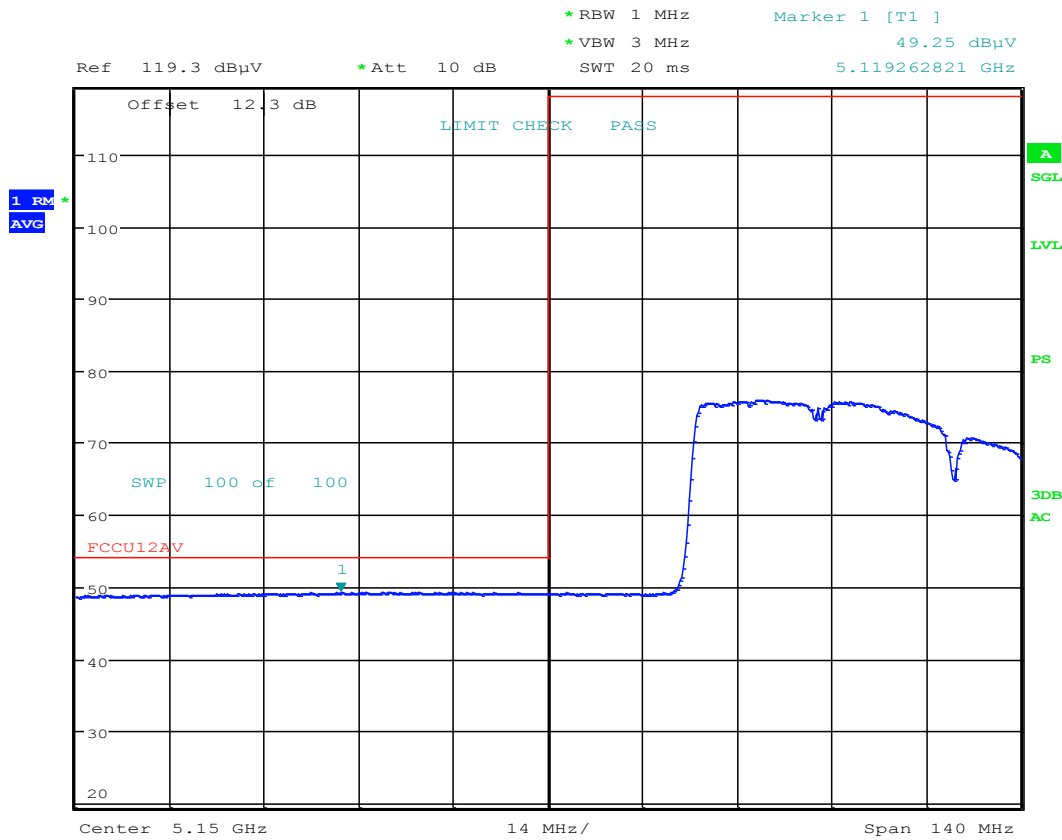
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



Date: 29.DEC.2016 22:22:38

Plot 7-244. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 203 of 260

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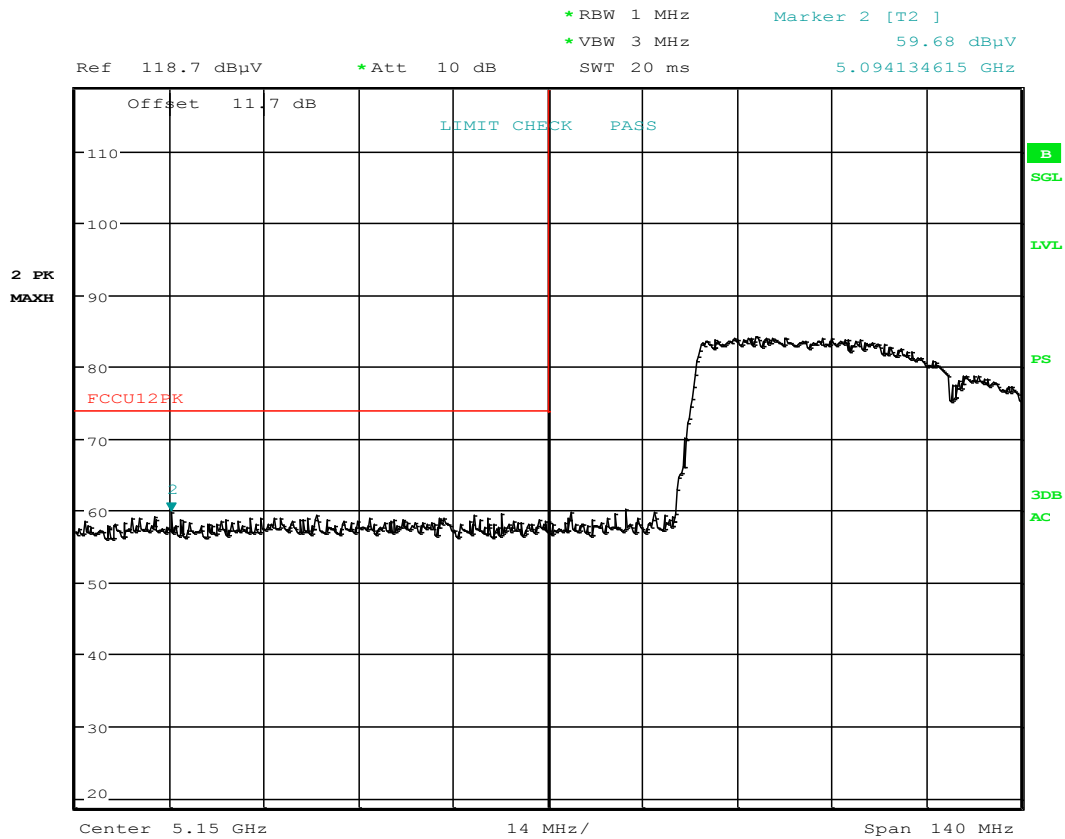
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Antenna-2 Radiated Band Edge Measurements (80MHz BW)

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



Date: 29.DEC.2016 22:22:48

Plot 7-245. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 204 of 260

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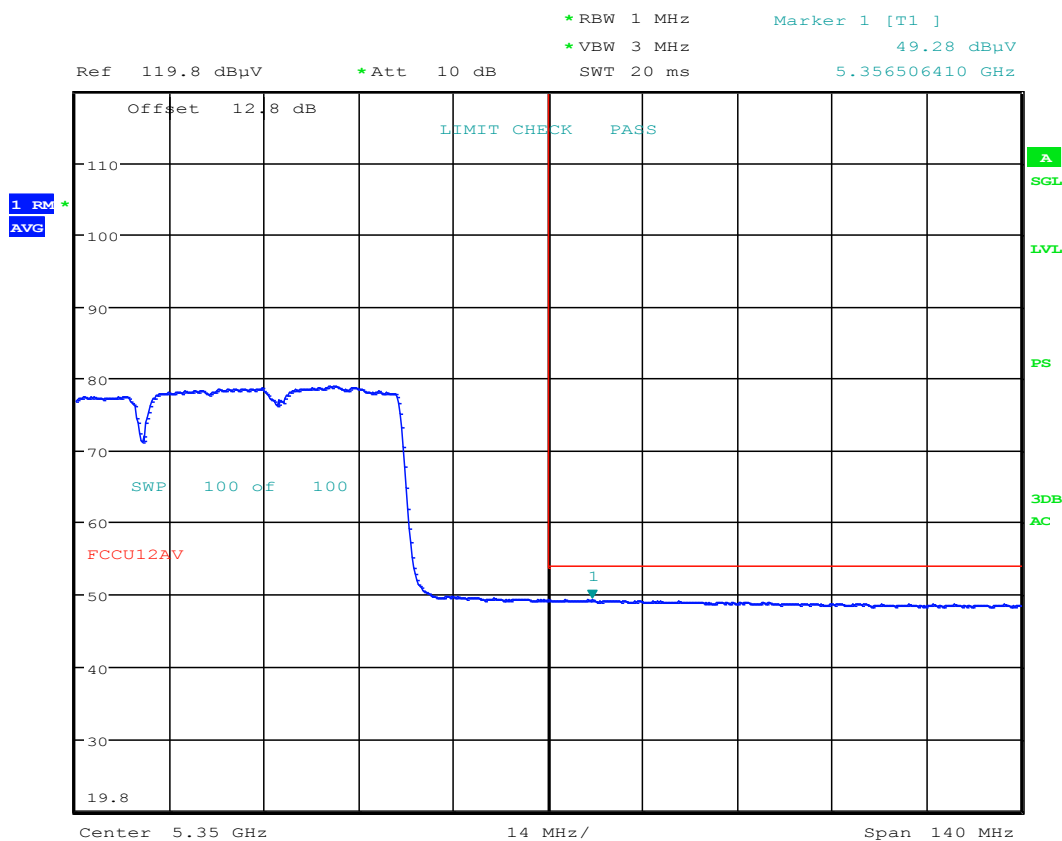
V 6.1

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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:	<u>802.11ac (80MHz)</u>
Worst Case Transfer Rate:	<u>MCS0</u>
Distance of Measurements:	<u>3 Meters</u>
Operating Frequency:	<u>5290MHz</u>
Channel:	58



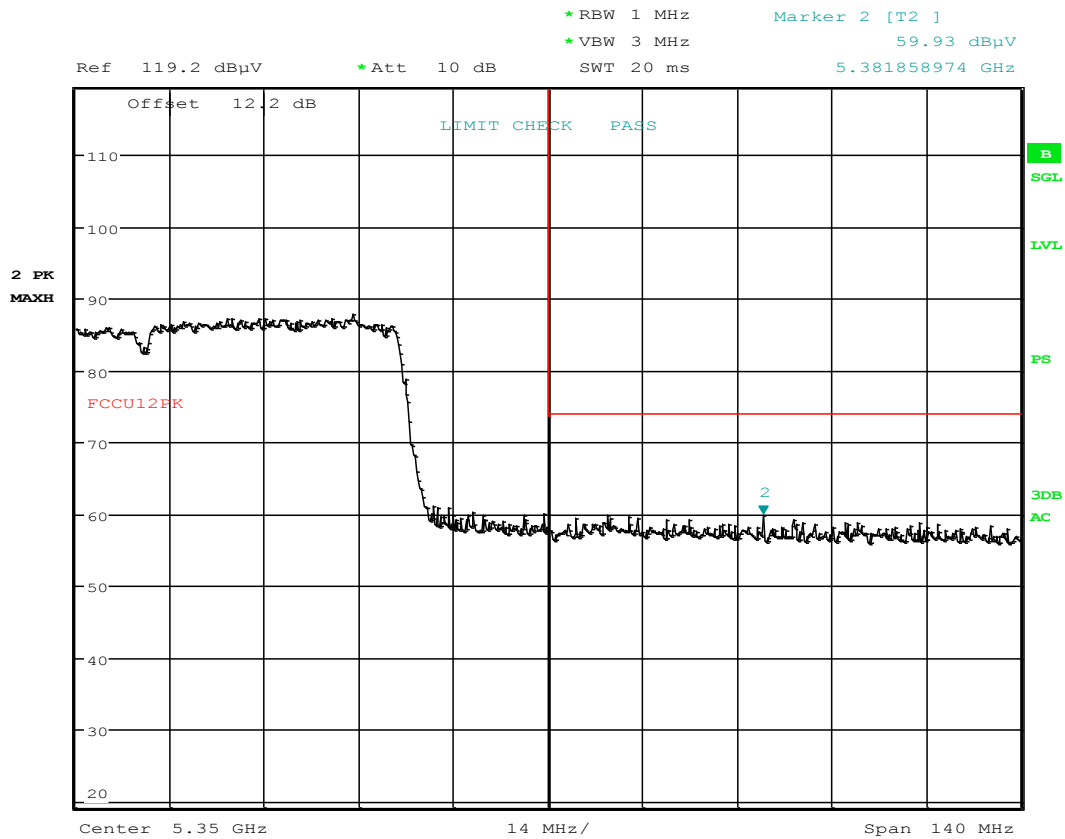
Date: 29.DEC.2016 22:32:41

Plot 7-246. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset	Page 205 of 260

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

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



Date: 29.DEC.2016 22:32:51

Plot 7-247. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 206 of 260

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

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

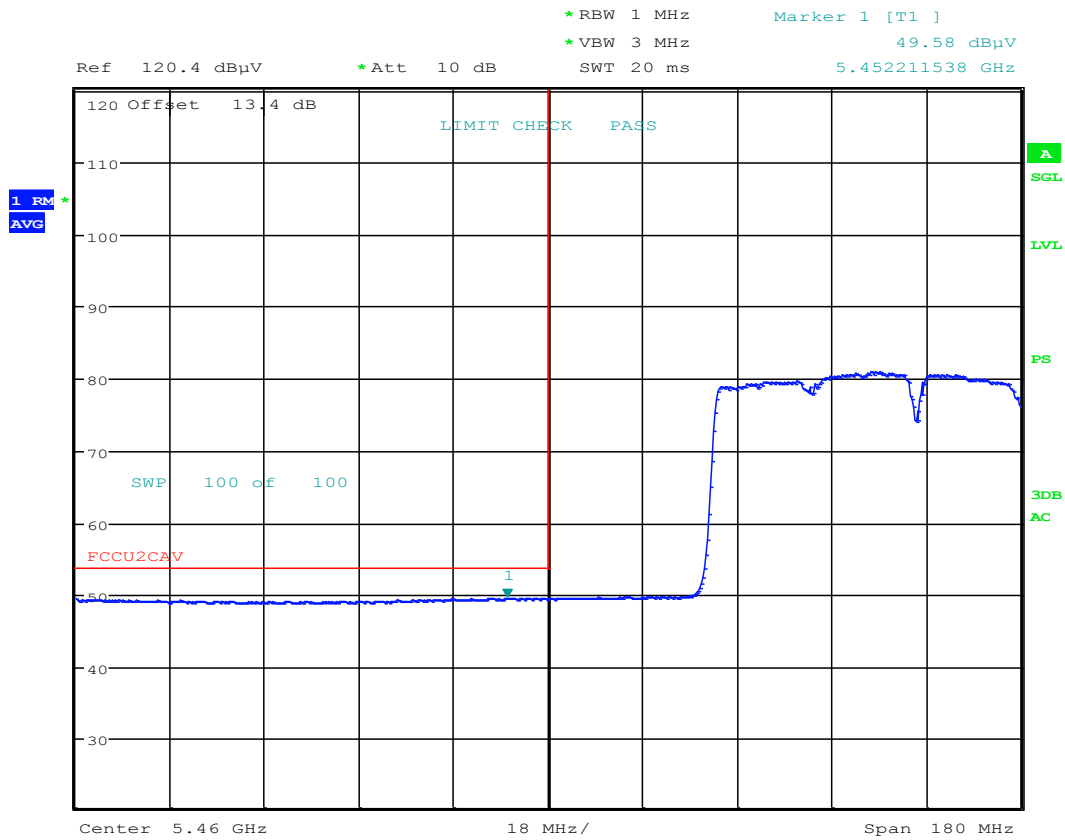
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5530MHz

Channel: 106



Date: 29.DEC.2016 22:40:33

Plot 7-248. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 207 of 260

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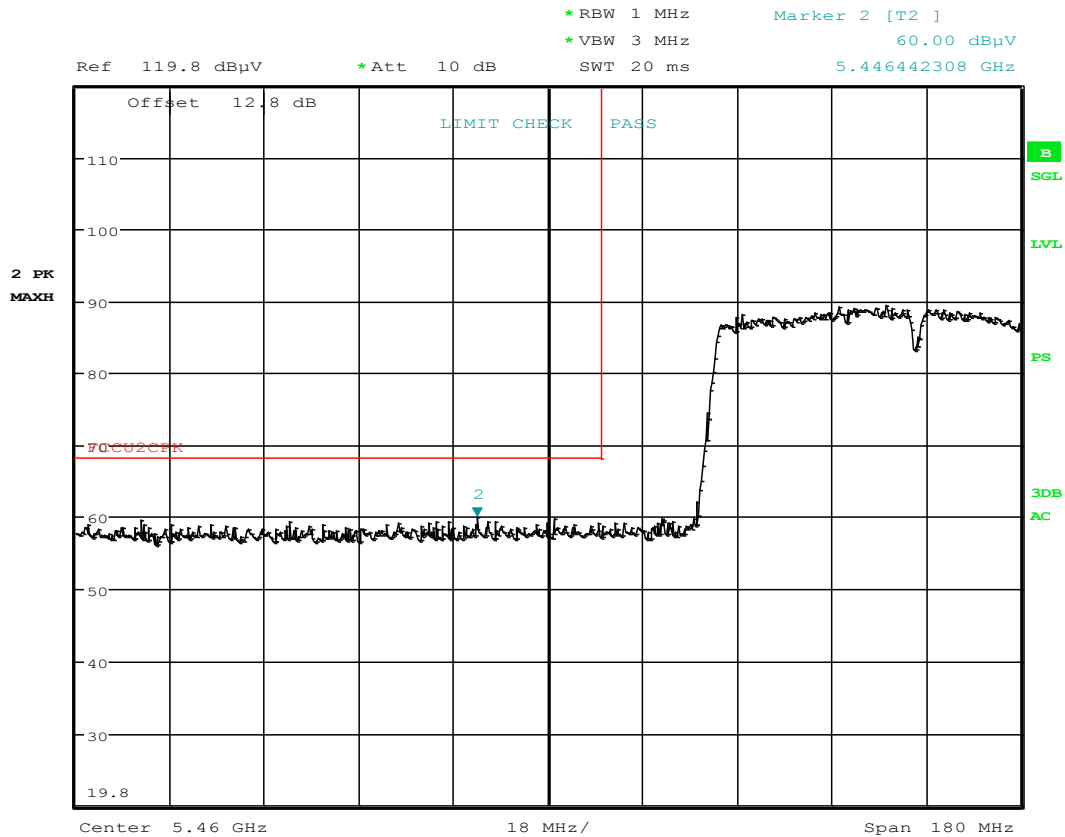
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Antenna-2 Radiated Band Edge Measurements (80MHz BW)

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



Date: 29.DEC.2016 22:40:10

Plot 7-249. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 208 of 260

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

§15.407(b.1)(b.2) §15.205 §15.209

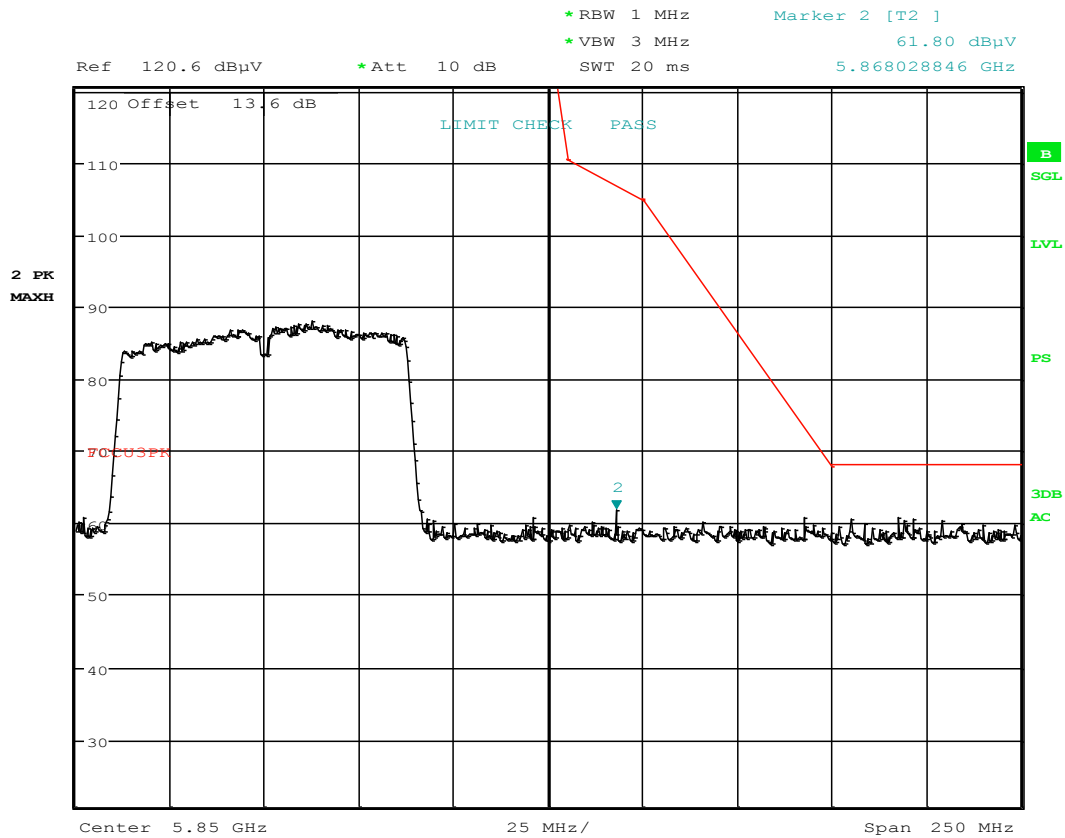
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5775MHz

Channel: 155



Date: 29.DEC.2016 22:54:17

Plot 7-250. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 209 of 260

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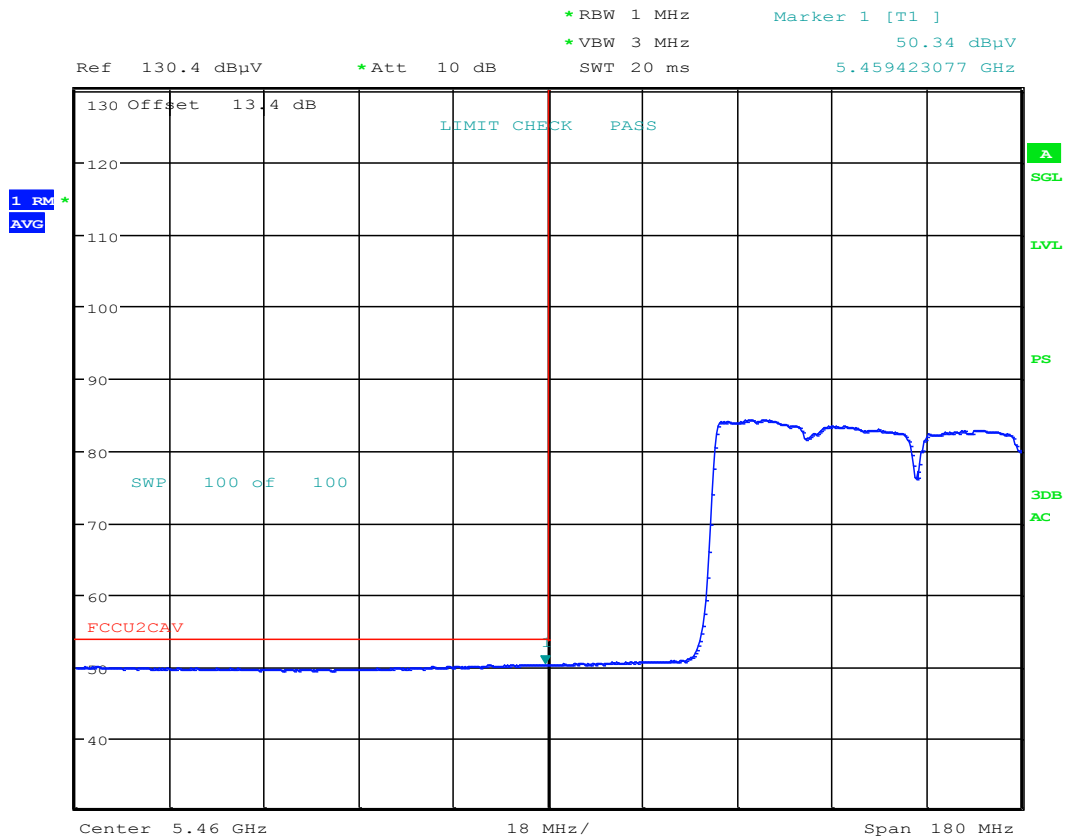
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Antenna-2 WCP Radiated Band Edge Measurements (80MHz BW) \$15.407(b.1)(b.2) \$15.205 \$15.209

Worst Case Mode: 802.11ac
Worst Case Transfer Rate: MCS0
Distance of Measurements: 3 Meters
Operating Frequency: 5530MHz
Channel: 106



Date: 6.JAN.2017 09:15:58

Plot 7-251. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 210 of 260

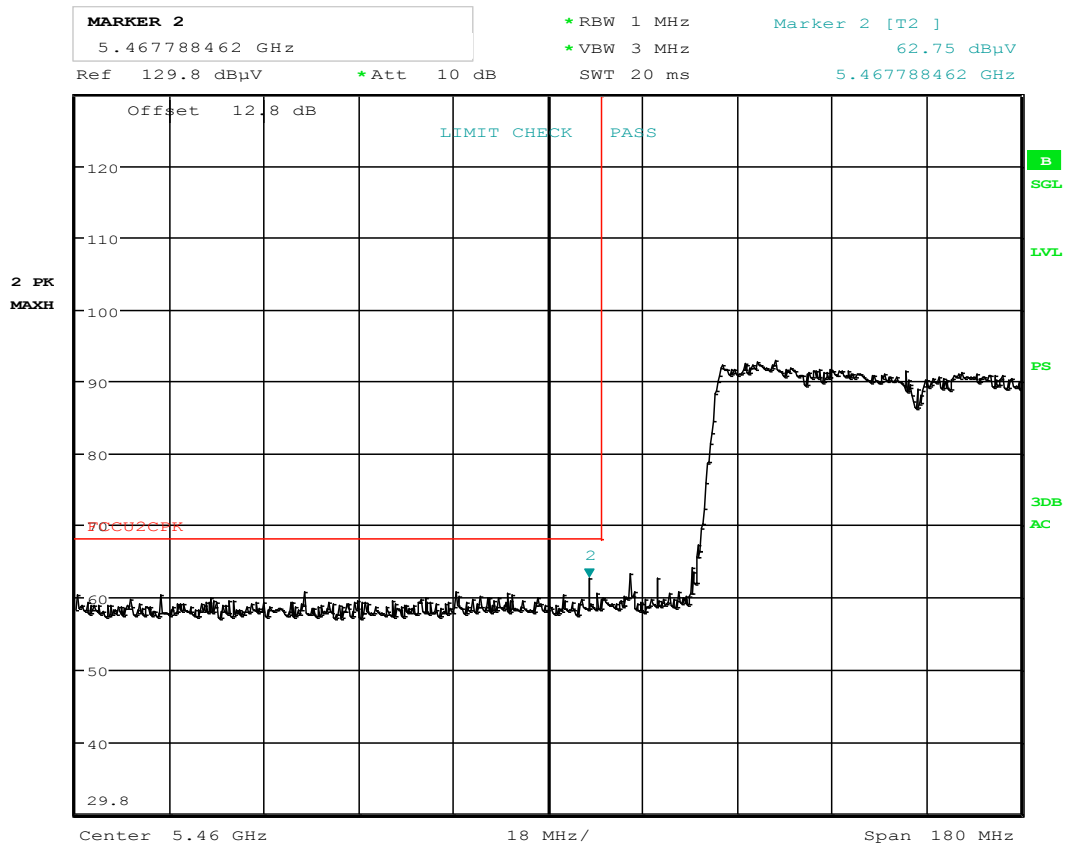
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Antenna-2 WCP Radiated Band Edge Measurements (80MHz BW) \$15.407(b.1)(b.2) \$15.205 \$15.209



Date: 6.JAN.2017 09:16:21

Plot 7-252. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 211 of 260

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7.7.10 MIMO Radiated Band Edge Measurements (20MHz BW)

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

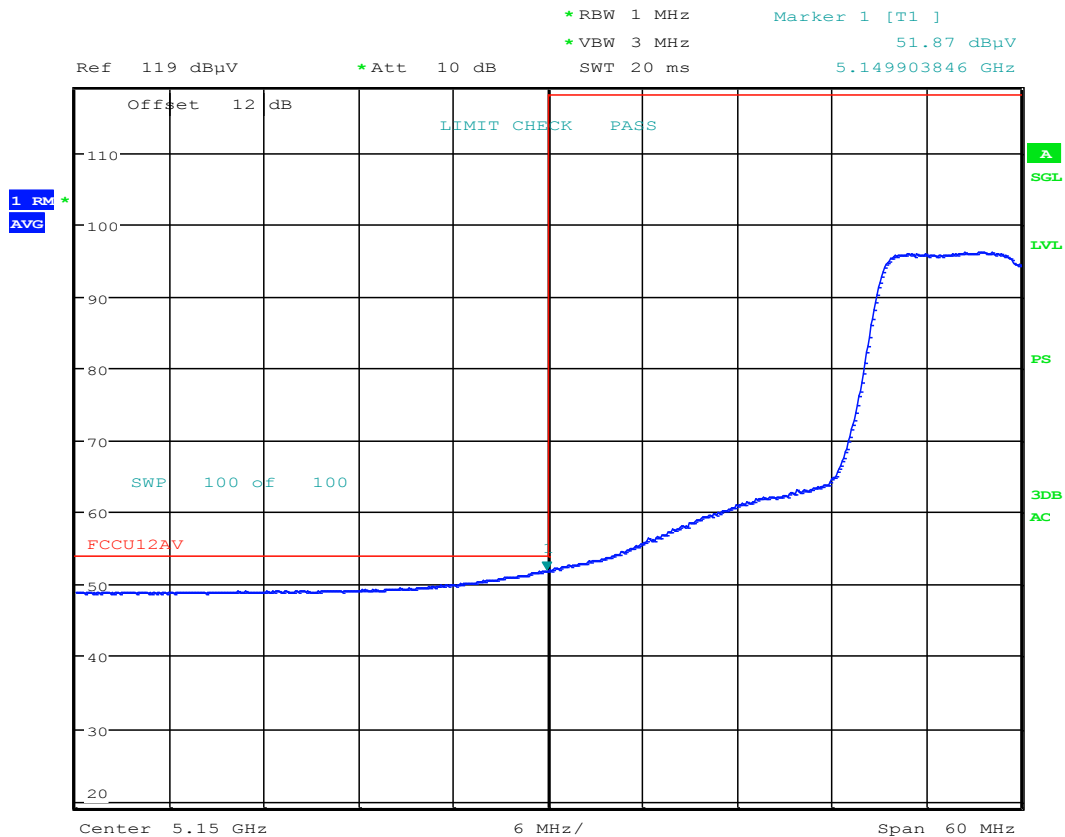
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 29.DEC.2016 16:48:22

Plot 7-253. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 212 of 260

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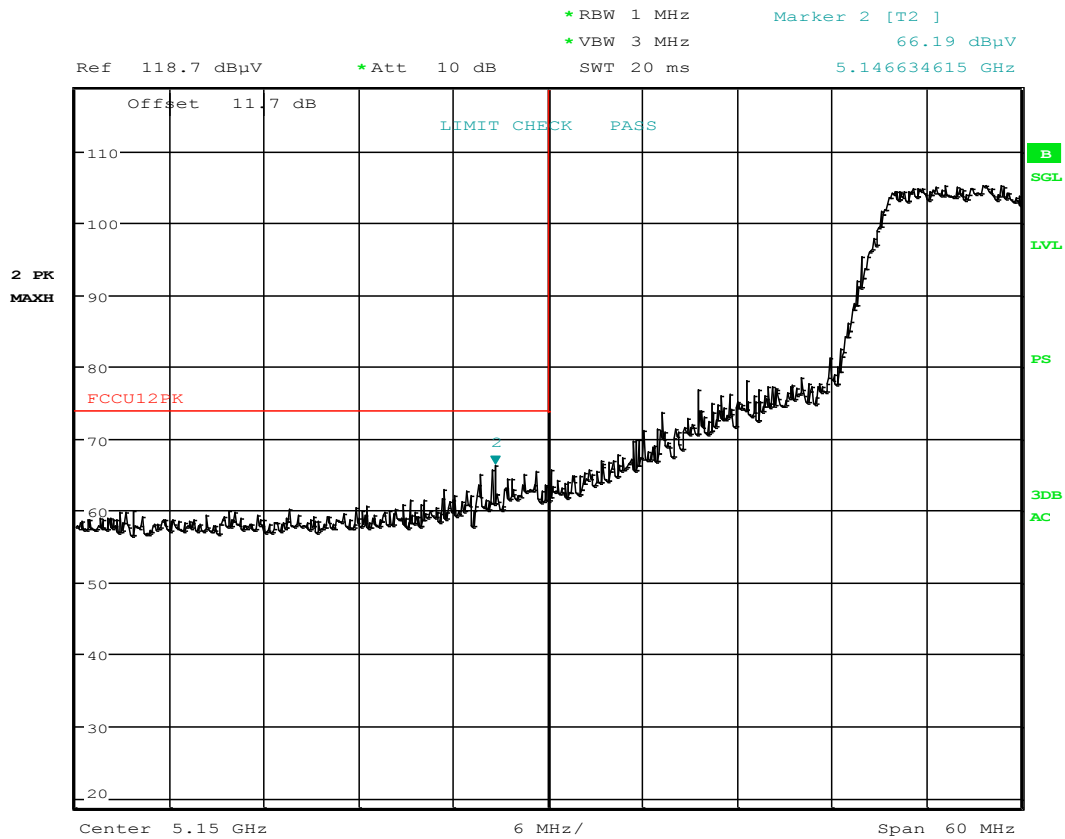
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MIMO Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 16:49:21

Plot 7-254. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 213 of 260

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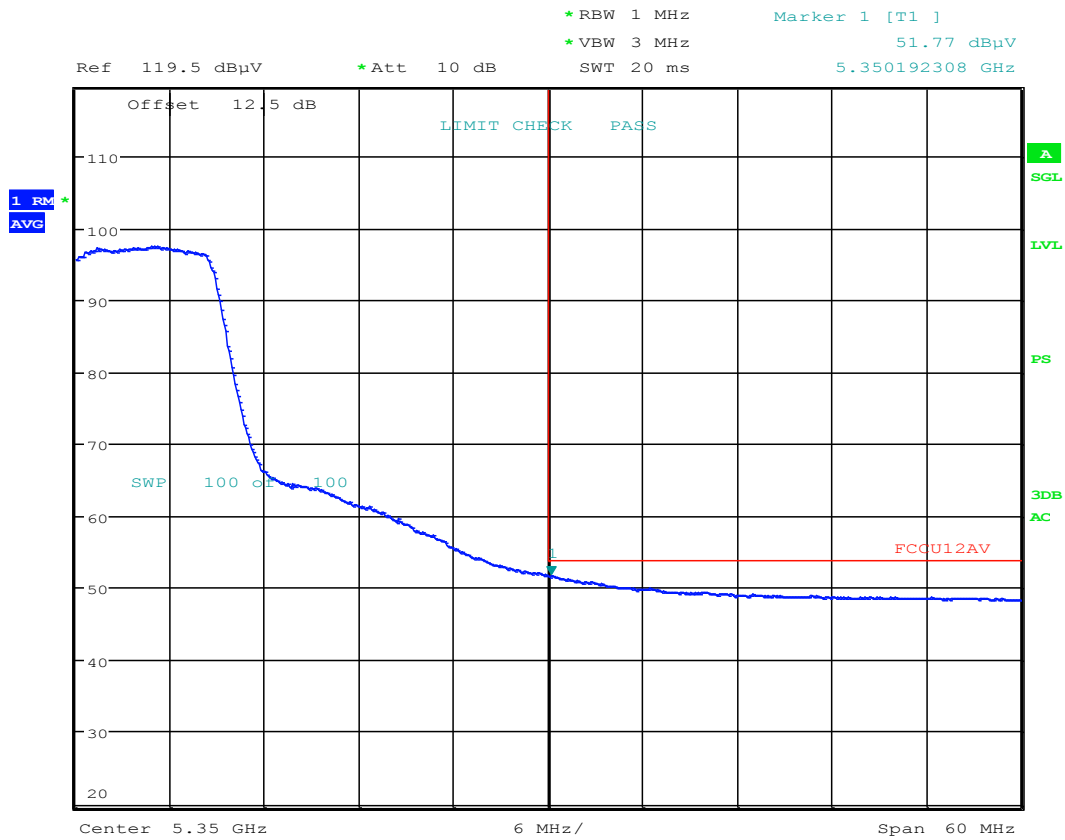
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MIMO Radiated Band Edge Measurements (20MHz BW)

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

Worst Case Mode: 802.11n (20MHz)
Worst Case Transfer Rate: MCS8
Distance of Measurements: 3 Meters
Operating Frequency: 5320MHz
Channel: 64



Date: 29.DEC.2016 16:53:30

Plot 7-255. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 214 of 260

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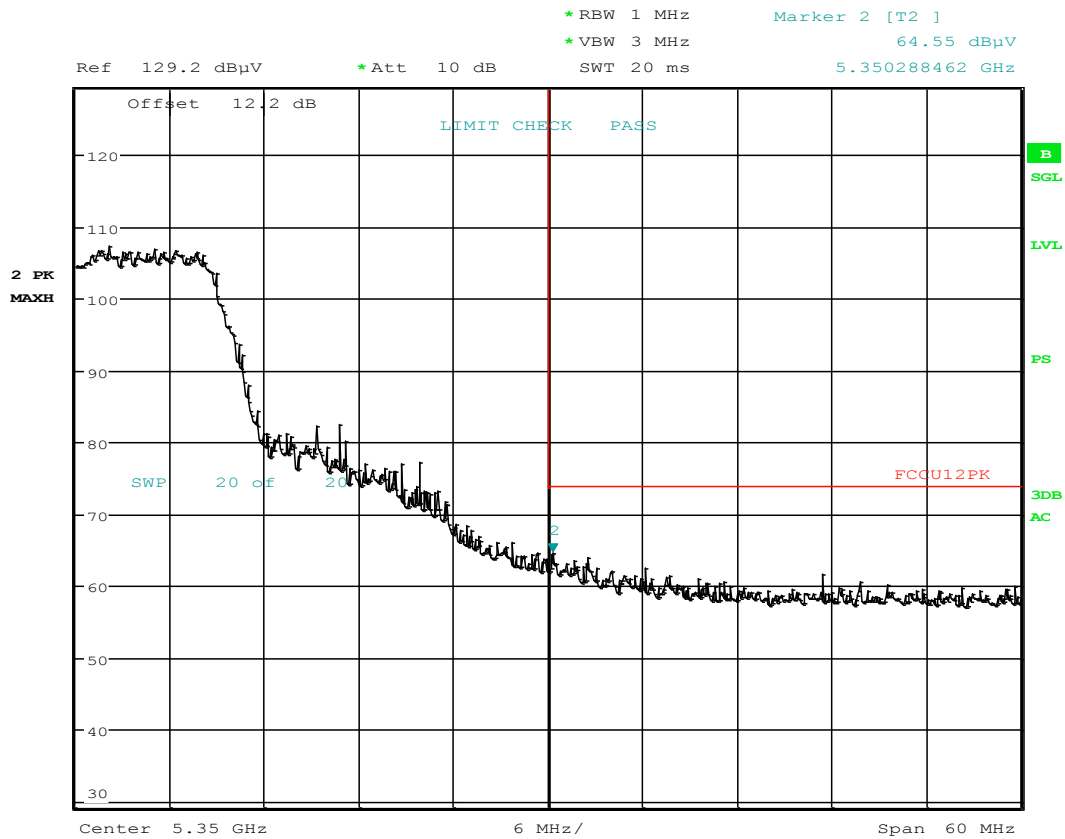
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MIMO Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 16:54:00

Plot 7-256. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 215 of 260

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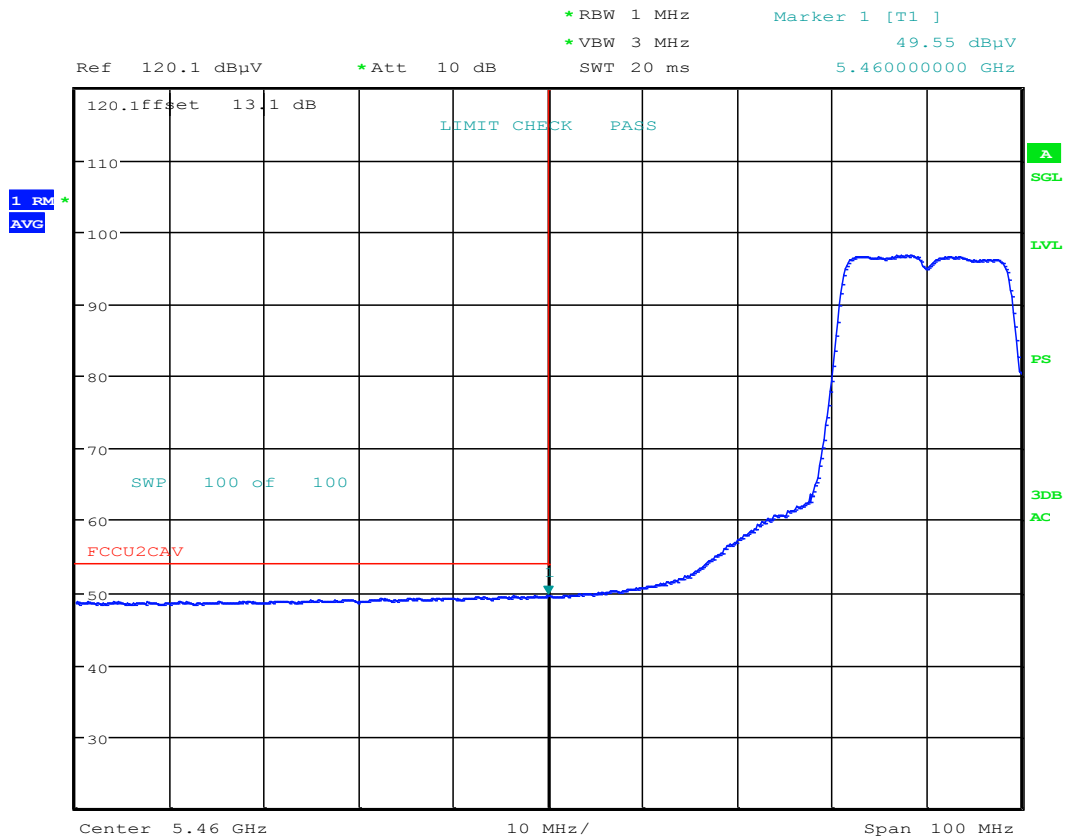
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MIMO Radiated Band Edge Measurements (20MHz BW)

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

Worst Case Mode: 802.11n (20MHz)
Worst Case Transfer Rate: MCS8
Distance of Measurements: 3 Meters
Operating Frequency: 5500MHz
Channel: 100



Date: 29.DEC.2016 16:58:24

Plot 7-257. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 216 of 260

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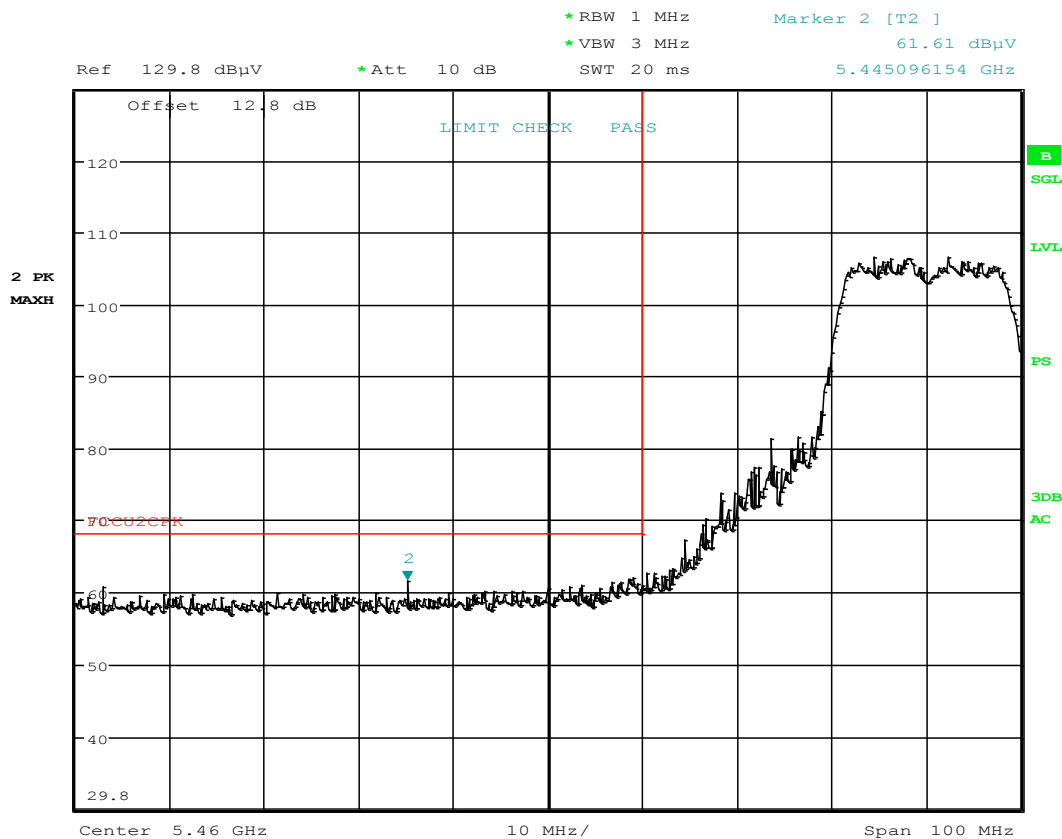
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MIMO Radiated Band Edge Measurements (20MHz BW)

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



Date: 29.DEC.2016 16:58:41

Plot 7-258. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 217 of 260

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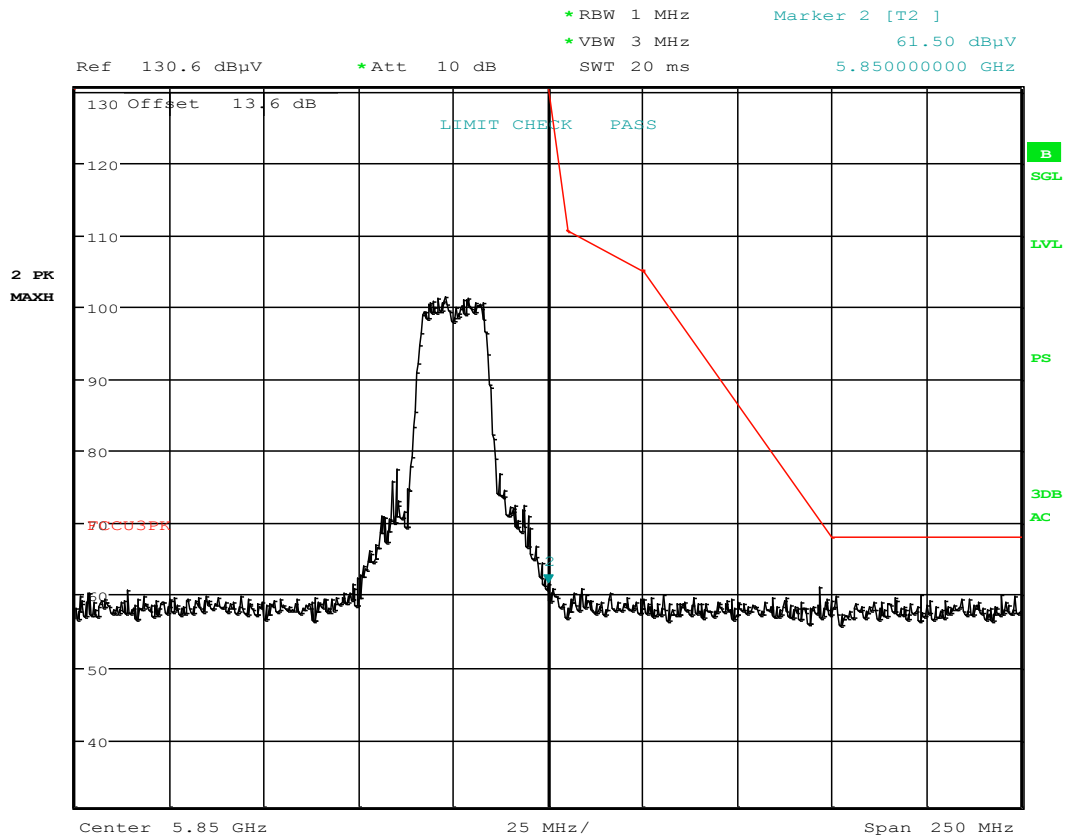
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MIMO Radiated Band Edge Measurements (20MHz BW)

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

Worst Case Mode: 802.11n (20MHz)
Worst Case Transfer Rate: MCS8
Distance of Measurements: 3 Meters
Operating Frequency: 5825MHz
Channel: 165



Date: 29.DEC.2016 17:03:24

Plot 7-259. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 218 of 260

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MIMO WCP Radiated Band Edge Measurements (20MHz BW)

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

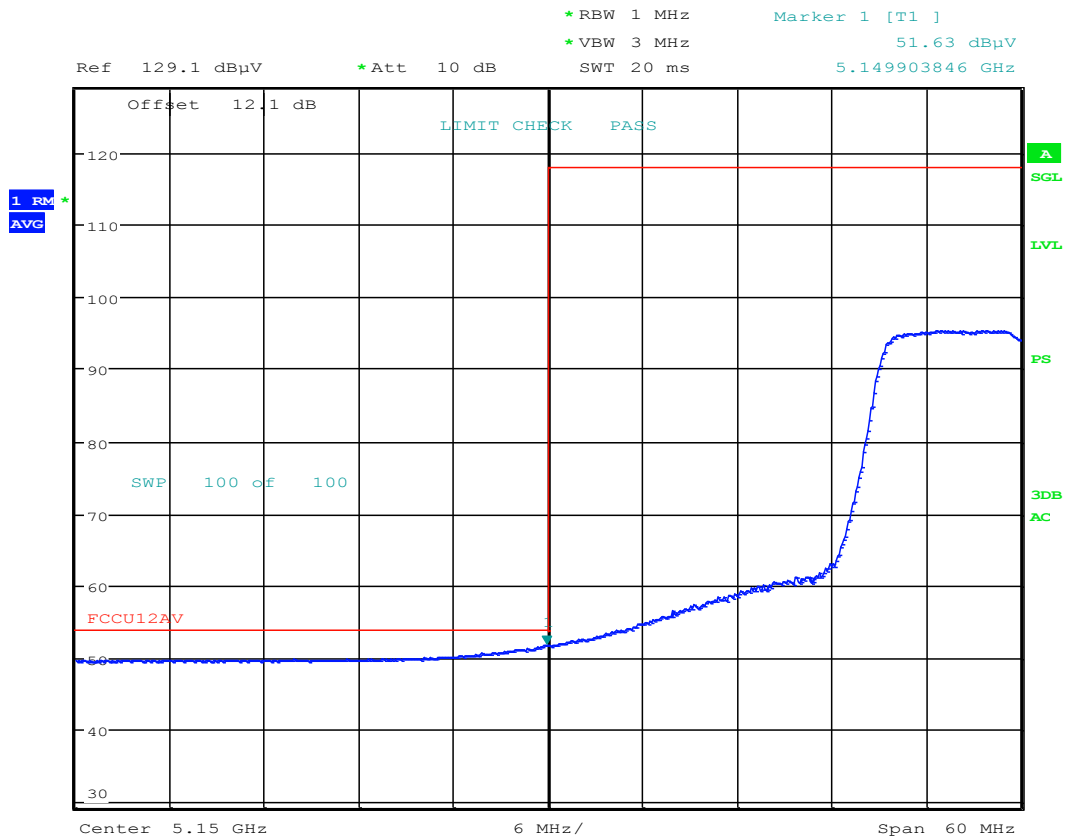
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 6.JAN.2017 07:10:51

Plot 7-260. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 219 of 260

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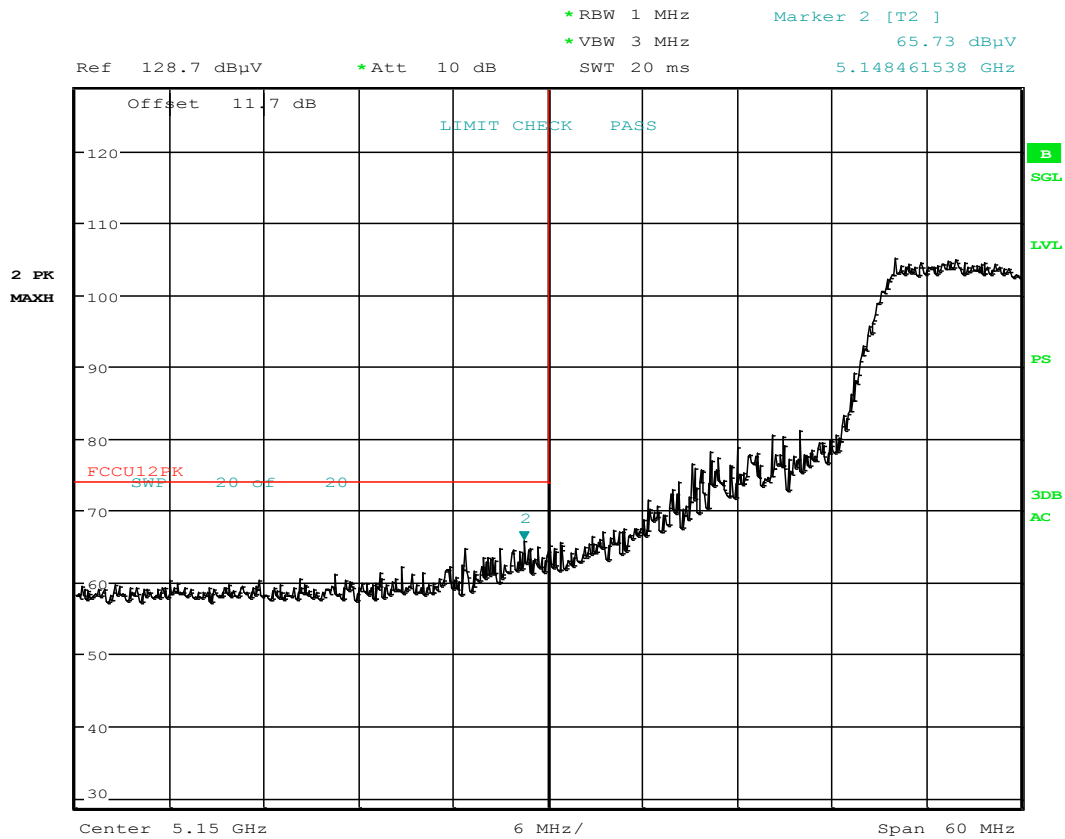
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MIMO WCP Radiated Band Edge Measurements (20MHz BW)

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



Date: 6.JAN.2017 07:12:36

Plot 7-261. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 220 of 260

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7.7.11 MIMO Radiated Band Edge Measurements (40MHz BW)

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

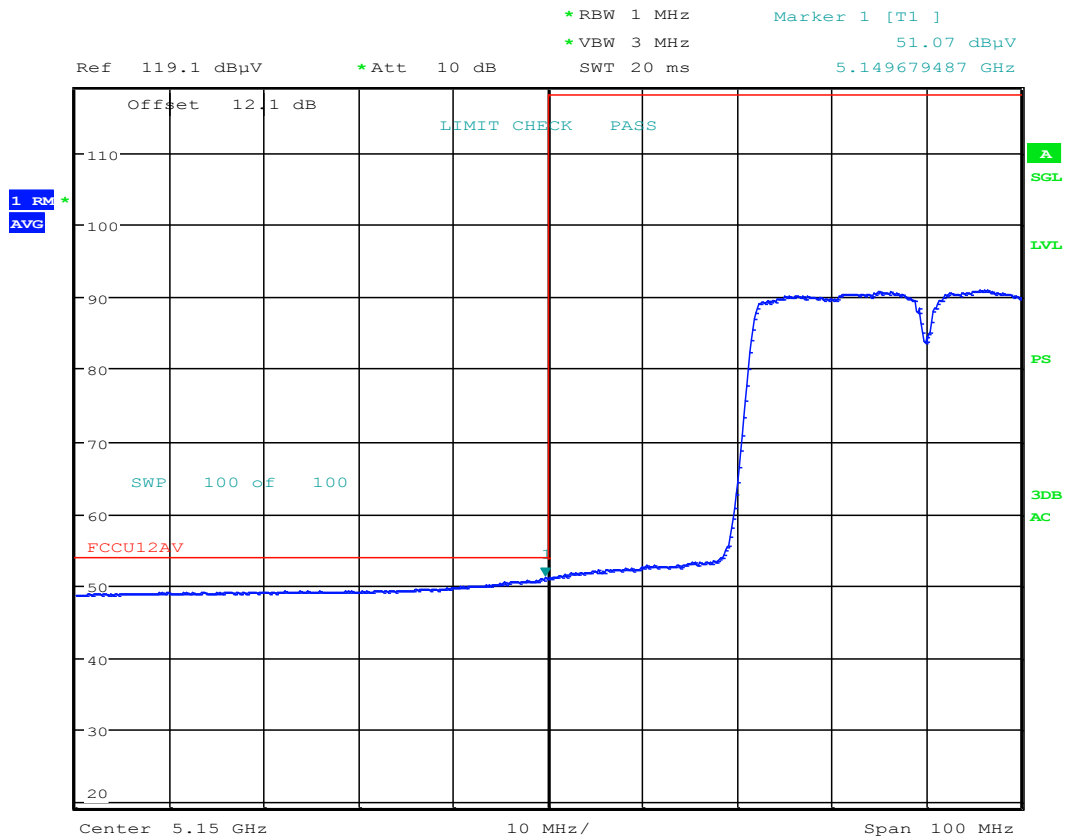
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38



Date: 29.DEC.2016 23:04:10

Plot 7-262. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 221 of 260

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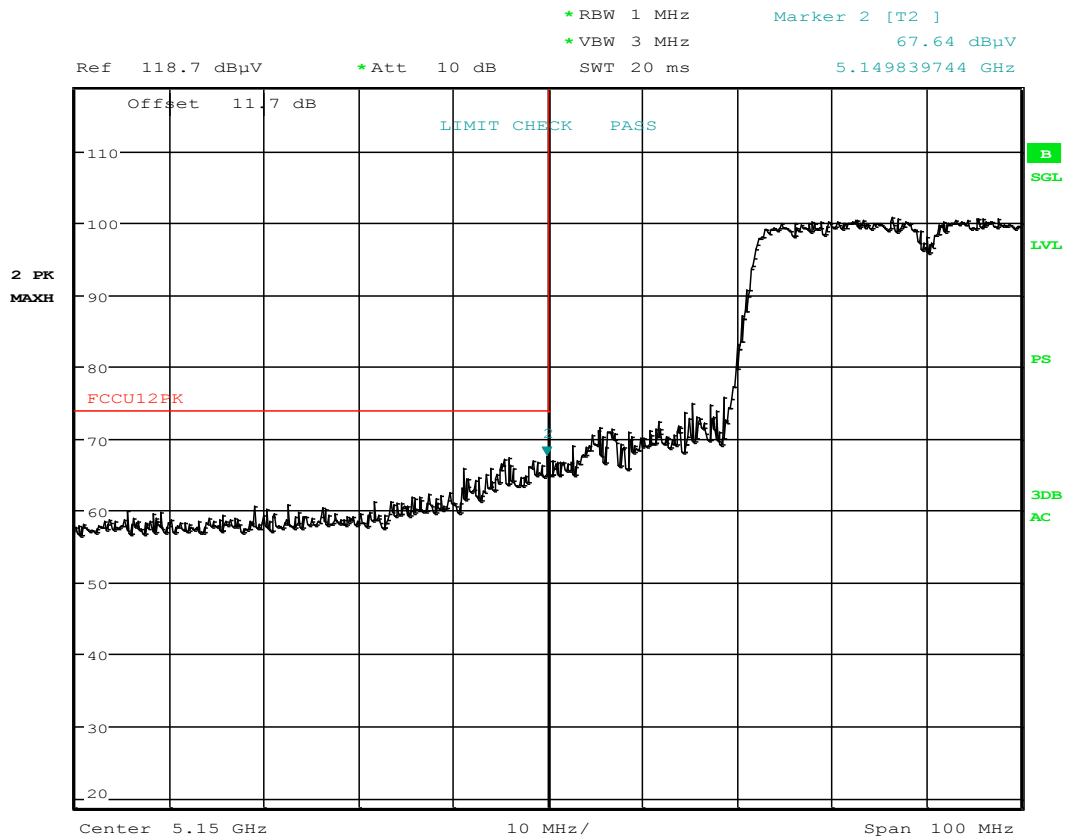
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MIMO Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 23:03:07

Plot 7-263. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 222 of 260

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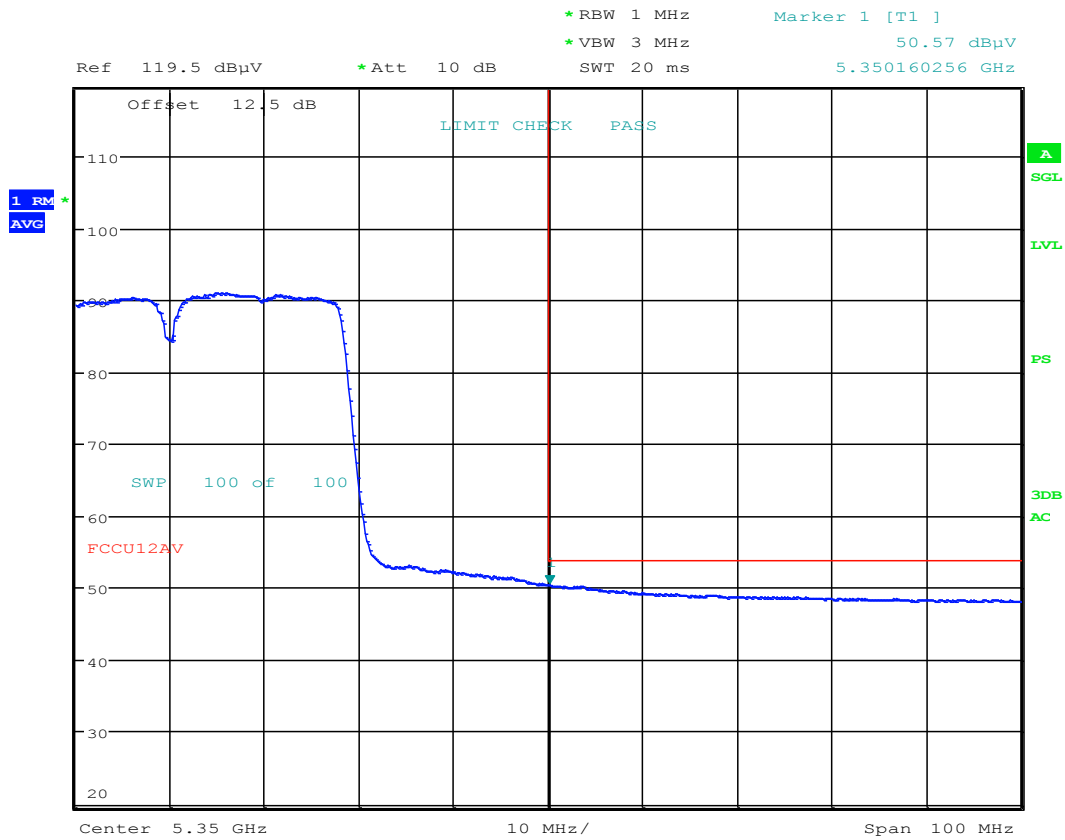
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MIMO Radiated Band Edge Measurements (40MHz BW)

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

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: MCS8
Distance of Measurements: 3 Meters
Operating Frequency: 5310MHz
Channel: 62



Date: 29.DEC.2016 23:21:59

Plot 7-264. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 223 of 260

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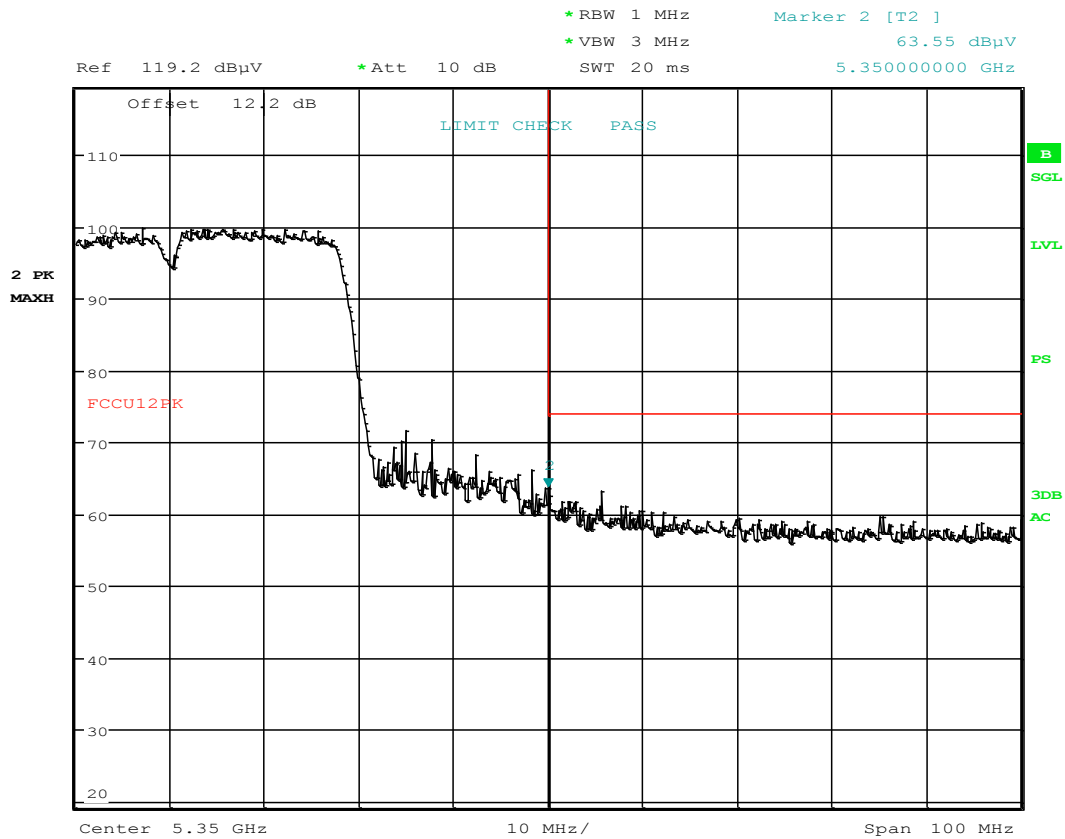
V 6.1

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MIMO Radiated Band Edge Measurements (40MHz BW)

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



Date: 29.DEC.2016 23:22:10

Plot 7-265. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 224 of 260

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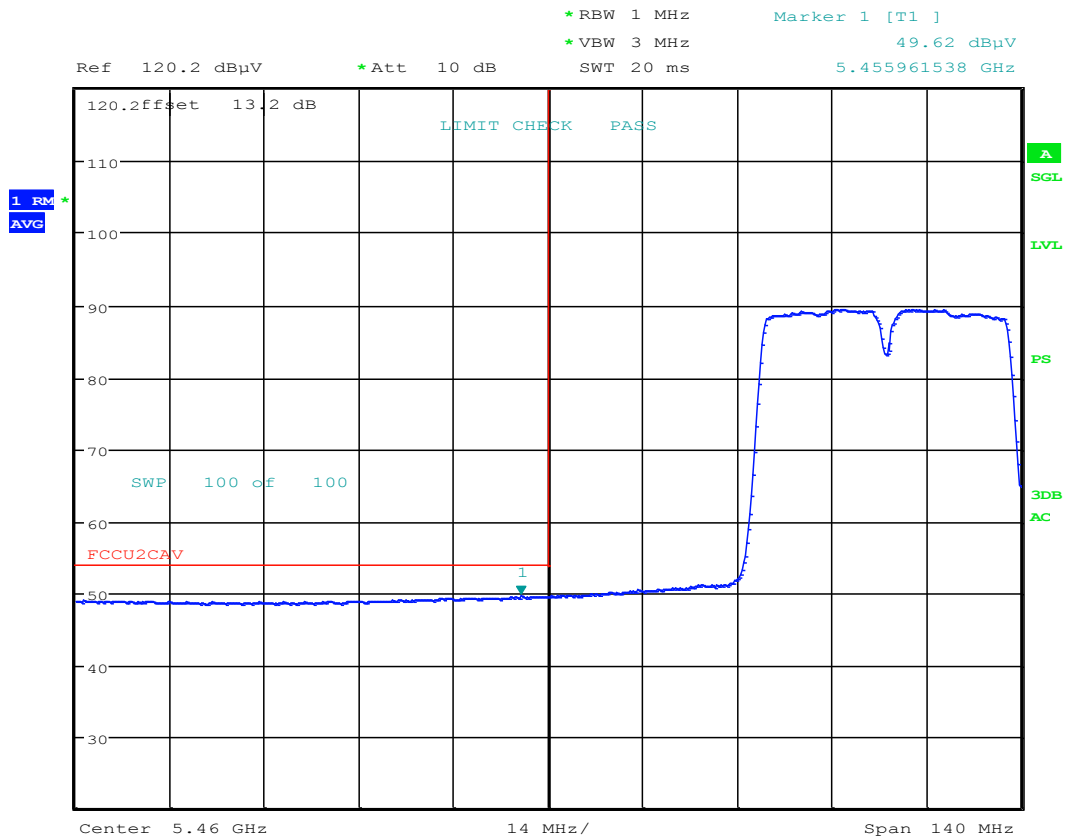
12/26/2016

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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: MCS8
Distance of Measurements: 3 Meters
Operating Frequency: 5510MHz
Channel: 102



Date: 29.DEC.2016 23:28:38

Plot 7-266. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 225 of 260

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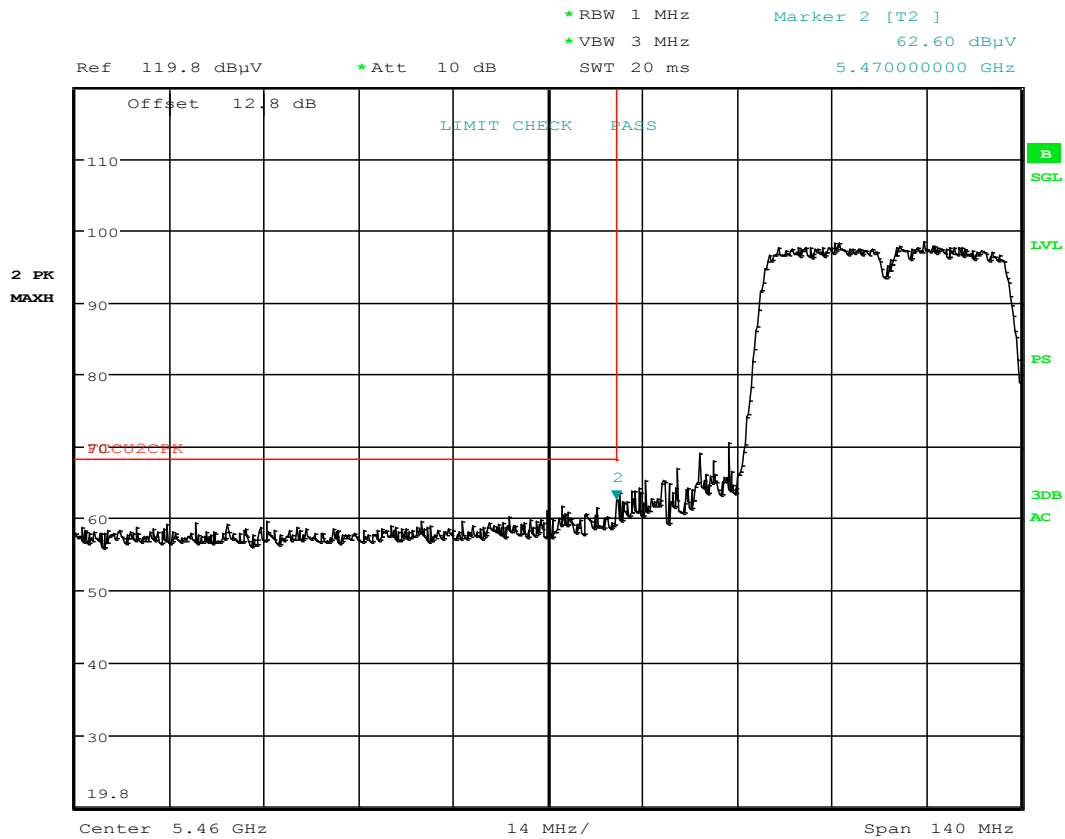
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MIMO Radiated Band Edge Measurements (40MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209



Date: 29.DEC.2016 23:28:54

Plot 7-267. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 226 of 260

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MIMO Radiated Band Edge Measurements (40MHz BW)

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

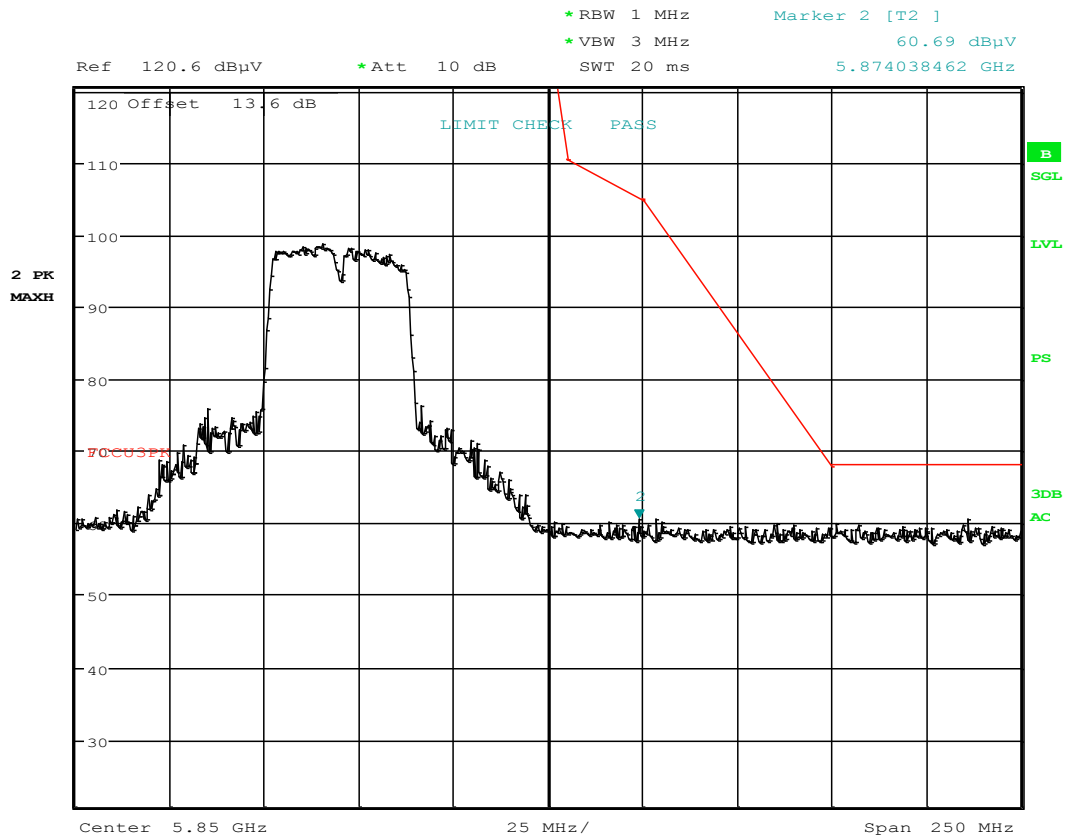
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS8

Distance of Measurements: 3 Meters

Operating Frequency: 5795MHz

Channel: 159



Date: 29.DEC.2016 23:31:42

Plot 7-268. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 227 of 260

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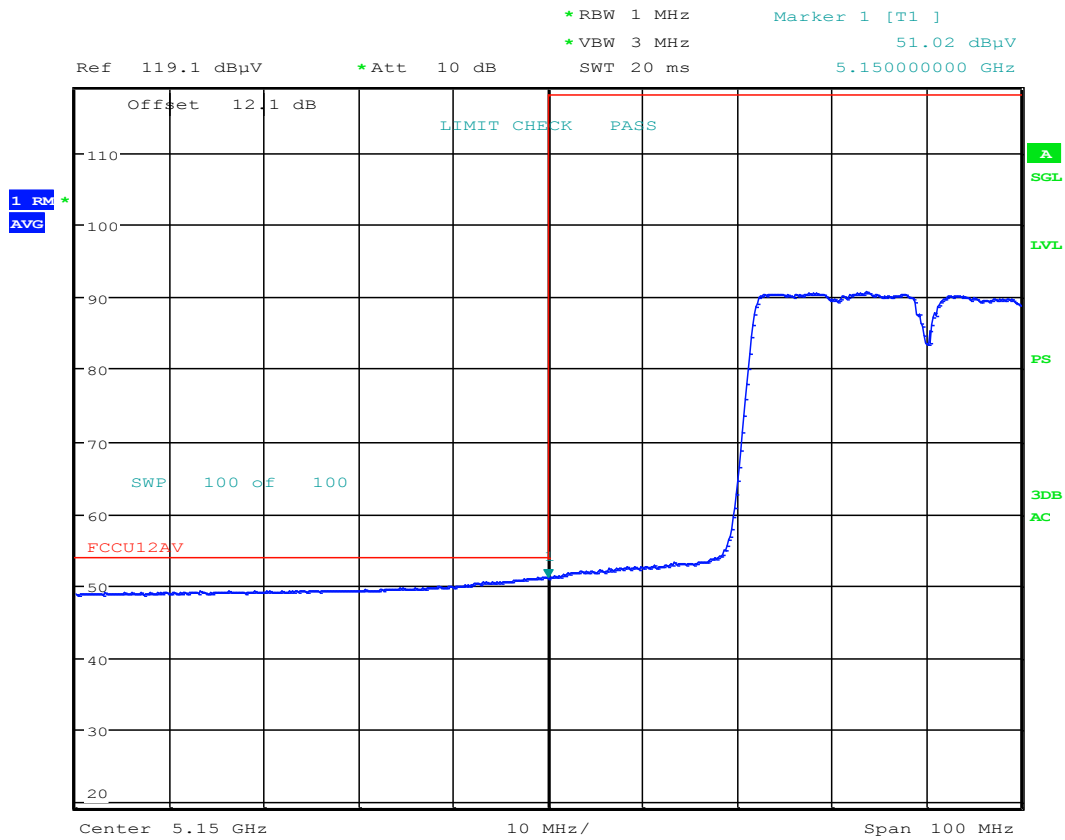
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MIMO WCP Radiated Band Edge Measurements (40MHz BW)

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

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: MCS8
Distance of Measurements: 3 Meters
Operating Frequency: 5190MHz
Channel: 38



Date: 6.JAN.2017 08:15:32

Plot 7-269. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 228 of 260

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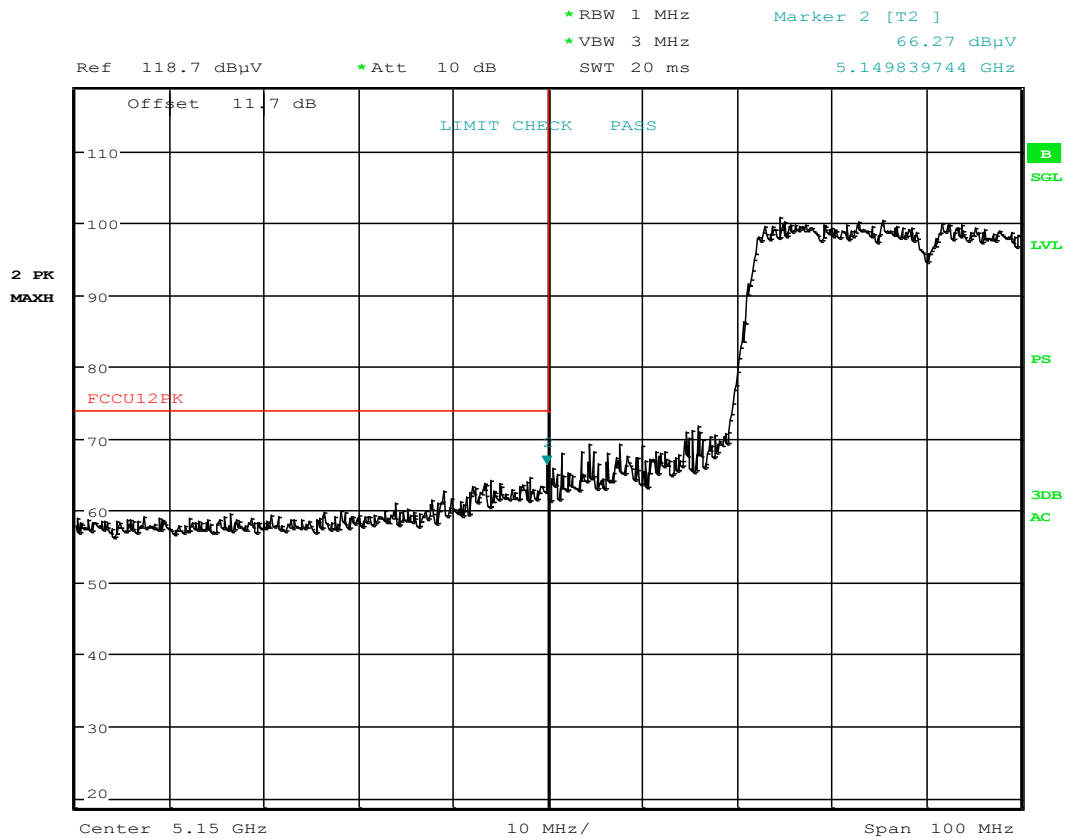
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MIMO WCP Radiated Band Edge Measurements (40MHz BW)

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



Date: 6.JAN.2017 08:14:15

Plot 7-270. Radiated Restricted Band Edge Plot with WCP

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 229 of 260

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7.7.12 MIMO Radiated Band Edge Measurements (80MHz BW)

§15.407(b.1)(b.2) §15.205 §15.209

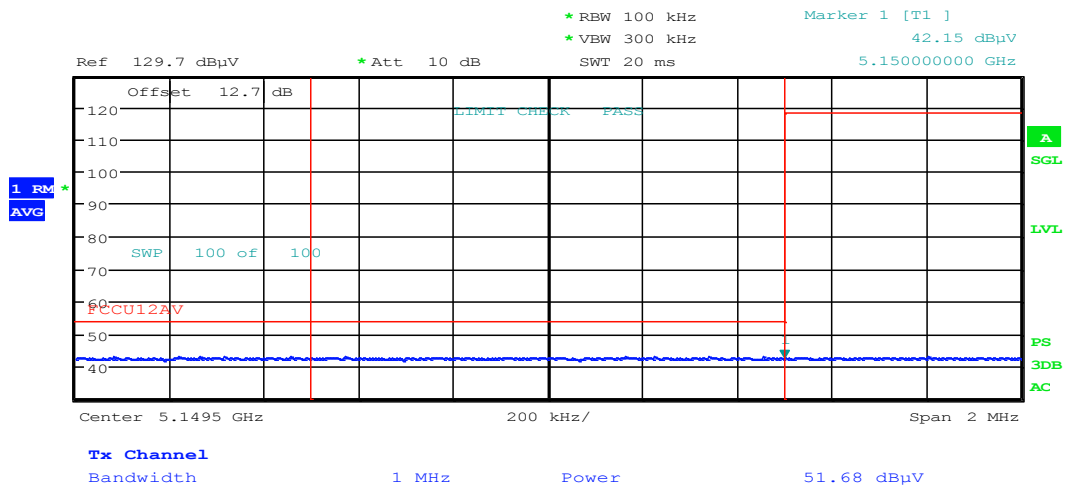
Worst Case Mode: 802.11ac (80MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5210MHz

Channel: 42



Date: 6.JAN.2017 09:25:12

Plot 7-271. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 230 of 260

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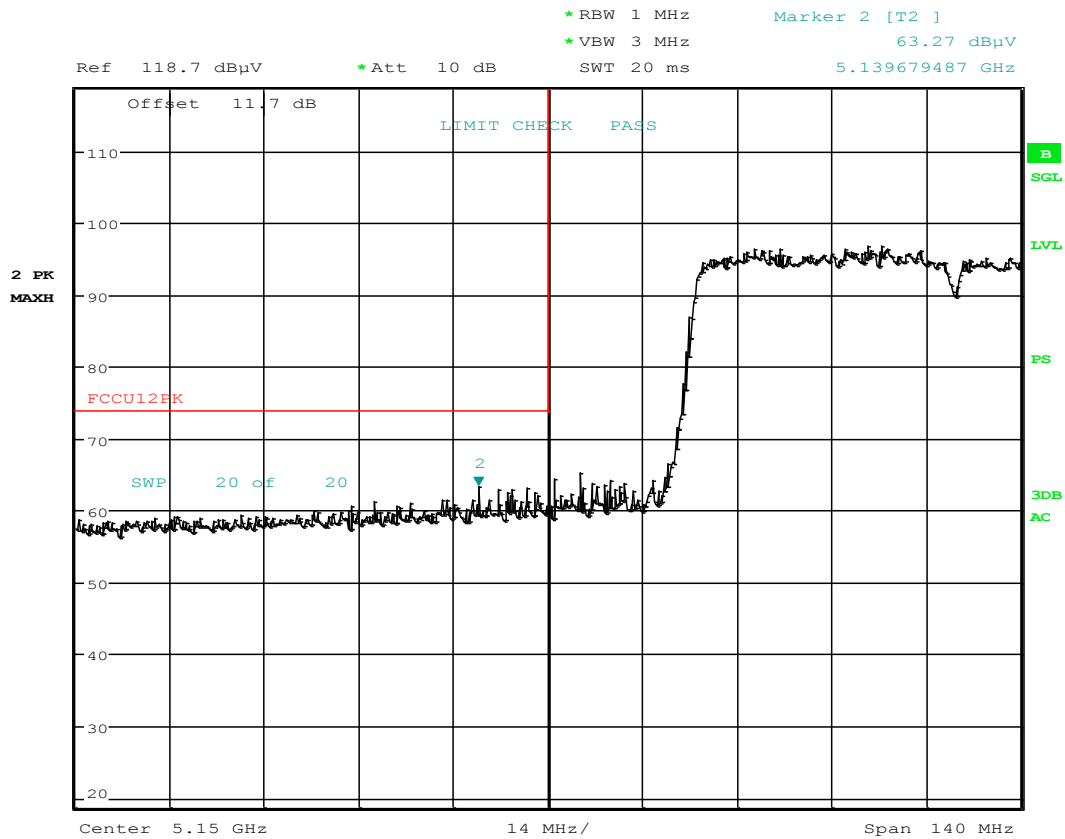
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MIMO Radiated Band Edge Measurements (80MHz BW)

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



Date: 6.JAN.2017 09:26:10

Plot 7-272. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 231 of 260

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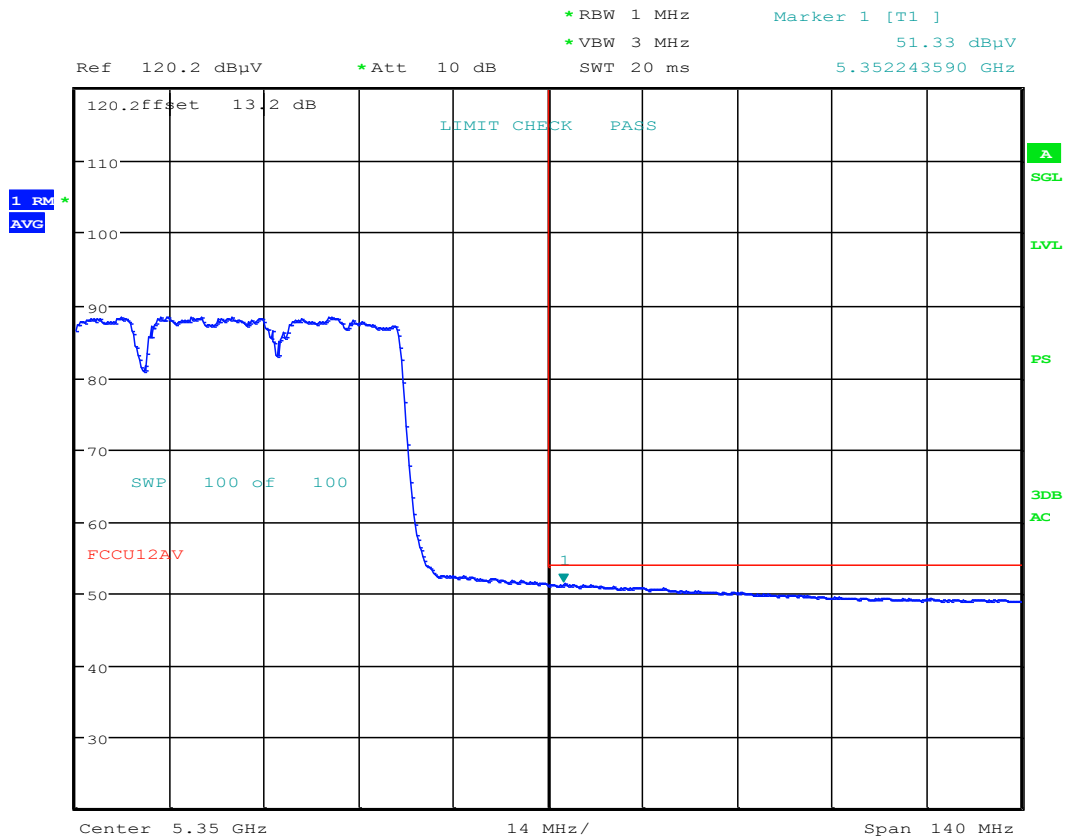
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MIMO Radiated Band Edge Measurements (80MHz BW)

\$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: 5290MHz
Channel: 58



Date: 29.DEC.2016 23:23:25

Plot 7-273. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 232 of 260

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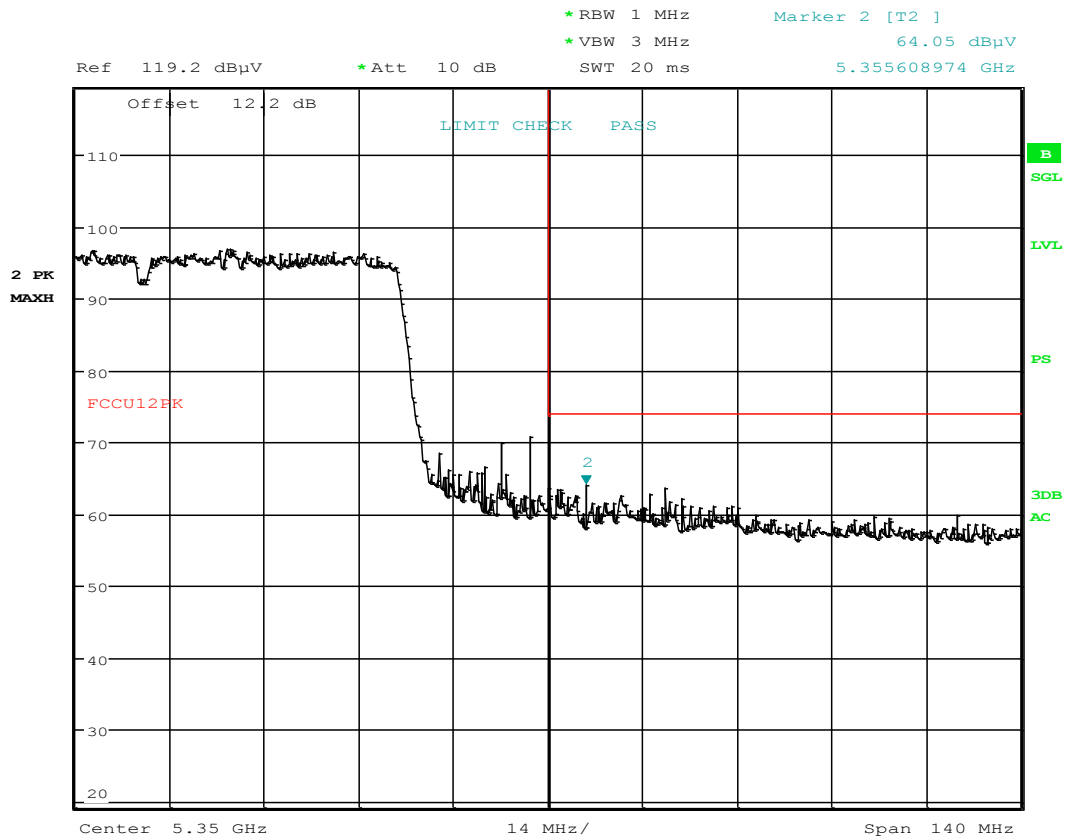
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MIMO Radiated Band Edge Measurements (80MHz BW)

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



Date: 29.DEC.2016 23:23:34

Plot 7-274. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 233 of 260

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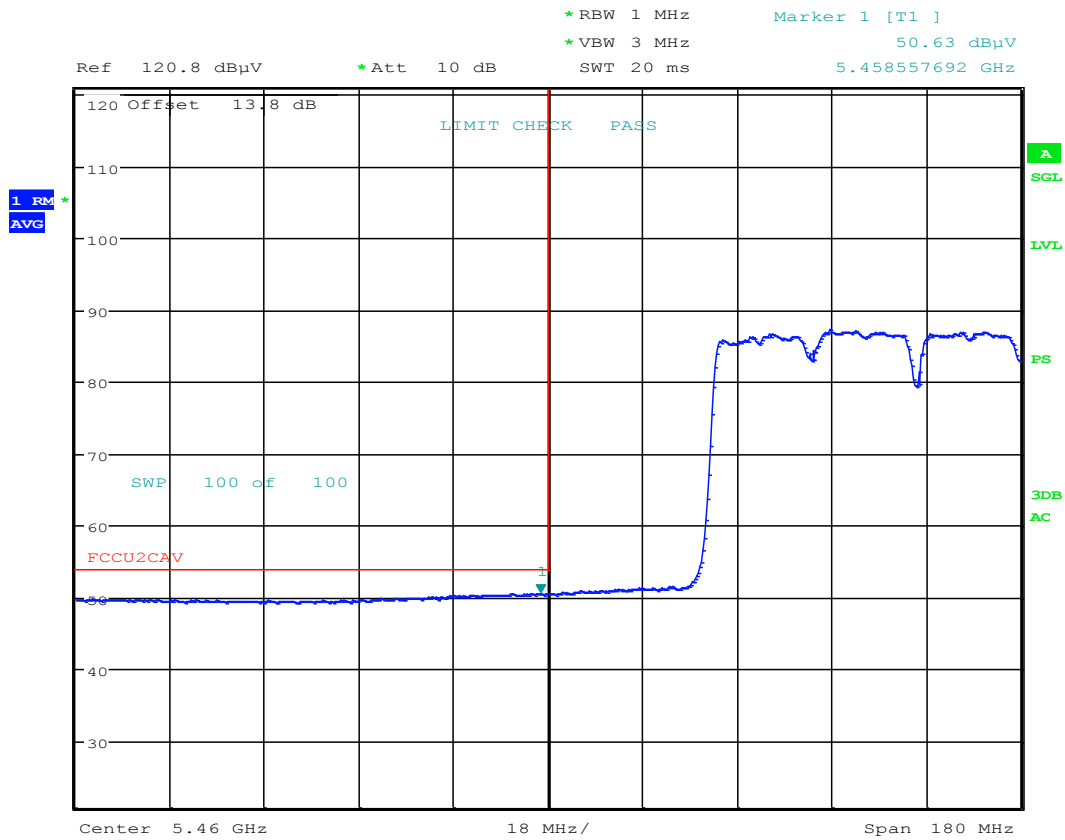
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MIMO Radiated Band Edge Measurements (80MHz BW)

\$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: 5530MHz
Channel: 106



Date: 29.DEC.2016 23:30:11

Plot 7-275. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 234 of 260

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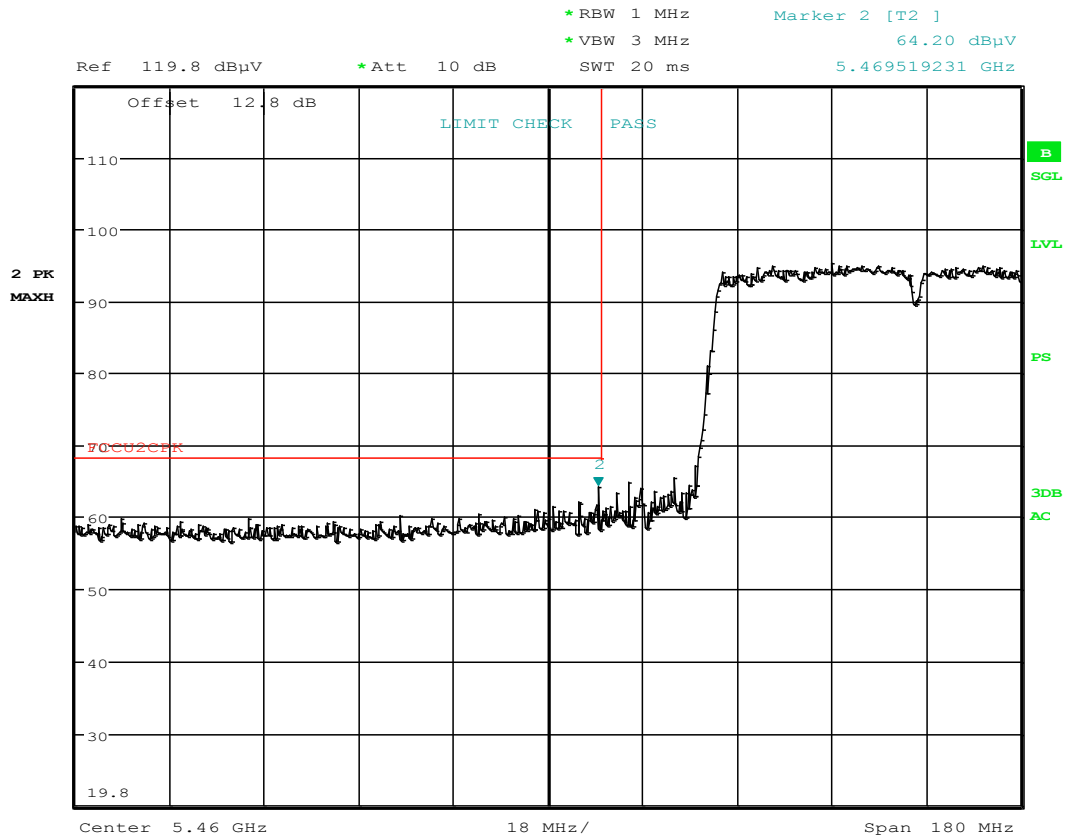
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MIMO Radiated Band Edge Measurements (80MHz BW)

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



Date: 29.DEC.2016 23:30:27

Plot 7-276. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

FCC ID: A3LSMG955U	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: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 235 of 260

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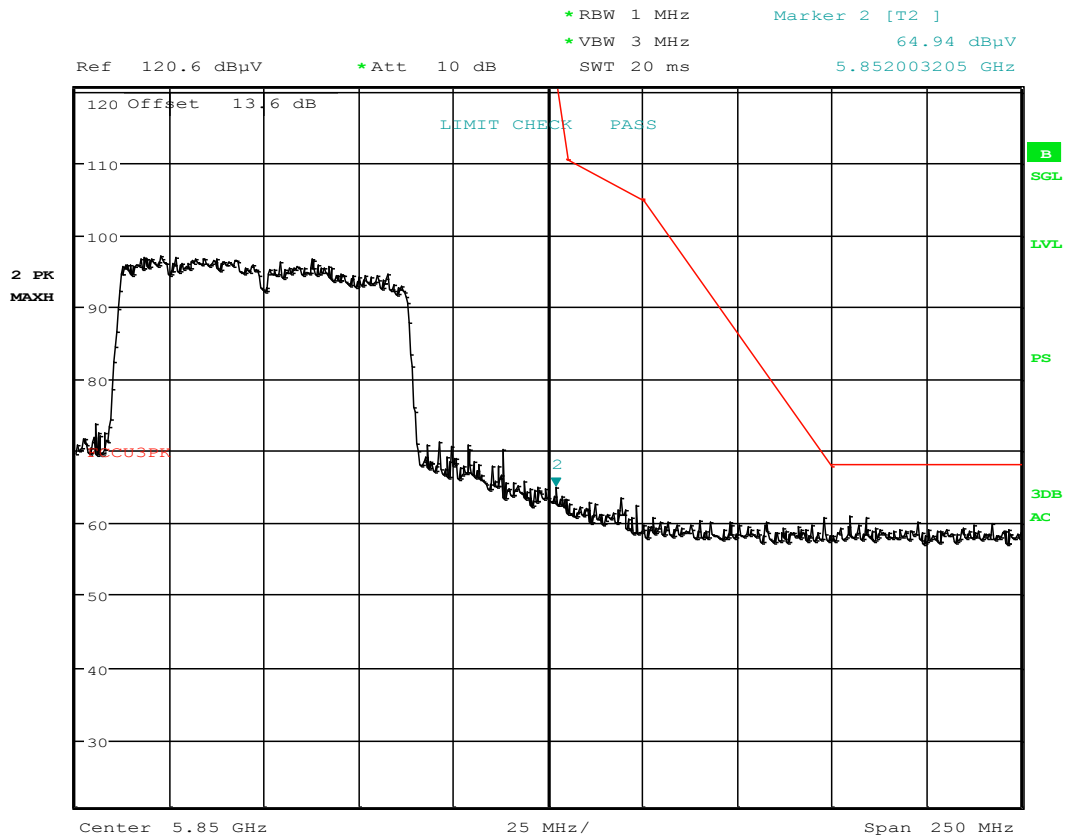
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MIMO Radiated Band Edge Measurements (80MHz BW)
\$15.407(b.1)(b.2) \$15.205 \$15.209

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



Date: 29.DEC.2016 23:32:59

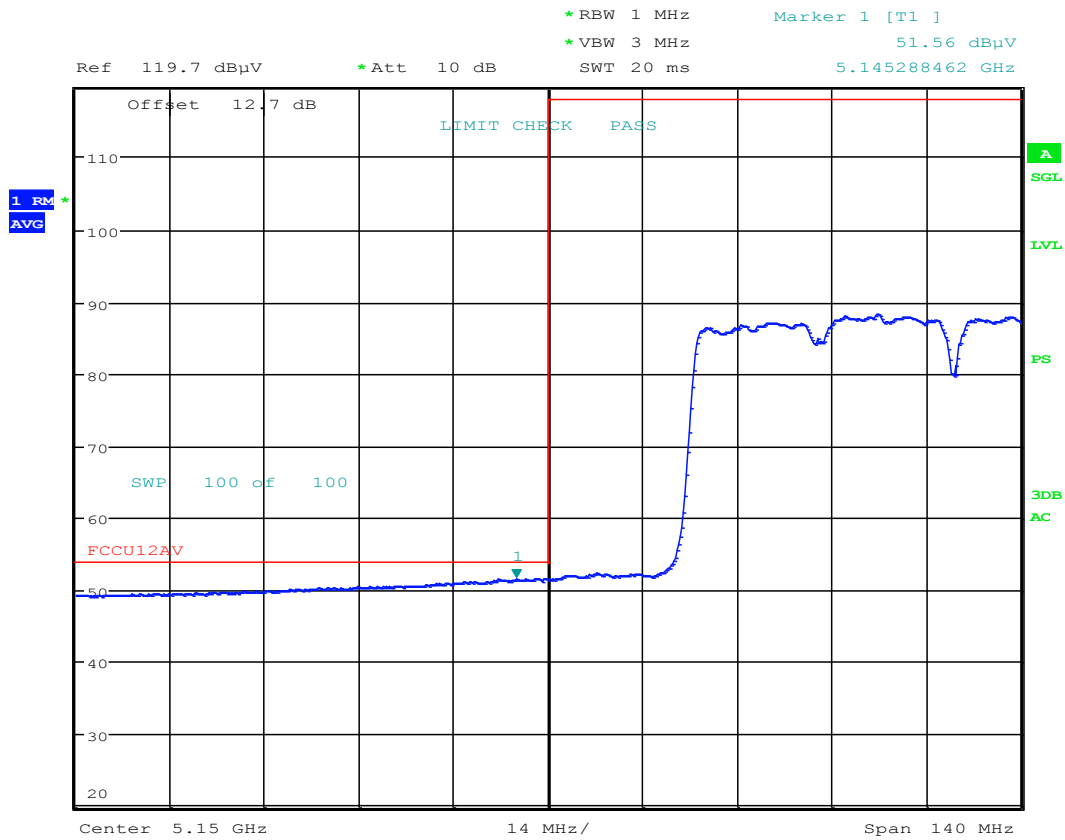
Plot 7-277. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

FCC ID: A3LSMG955U	 FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION) 		Approved by: Quality Manager
Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset	Page 236 of 260

MIMO WCP 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: 29.DEC.2016 23:05:22

Plot 7-278. Radiated Restricted Band Edge Plot with WCP

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Test Report S/N: 1M1701030005-06.A3L	Test Dates: 12/27/2016-2/6/2017	EUT Type: Portable Handset		Page 237 of 260

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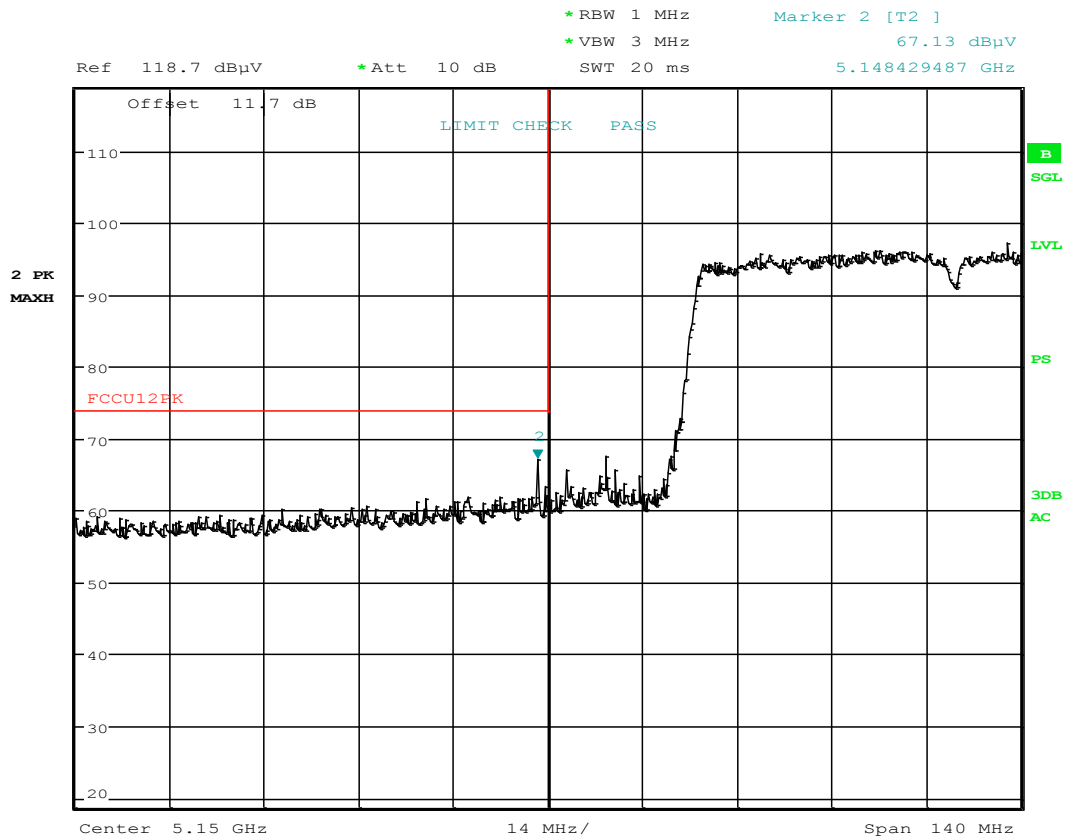
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MIMO WCP Radiated Band Edge Measurements (80MHz BW)

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



Date: 29.DEC.2016 23:08:13

Plot 7-279. Radiated Restricted Band Edge Plot with WCP

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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

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Test Setup

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

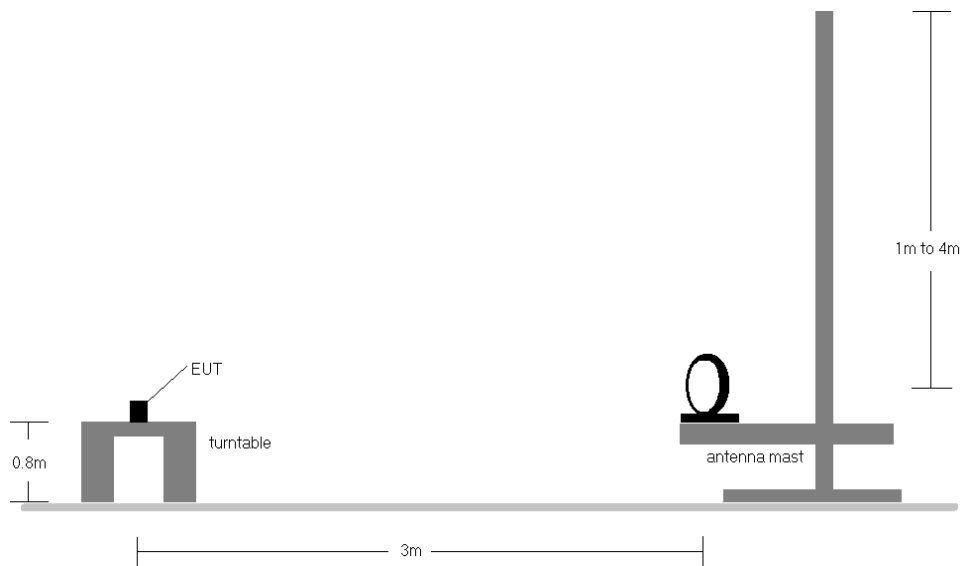


Figure 7-6. Radiated Test Setup < 30MHz

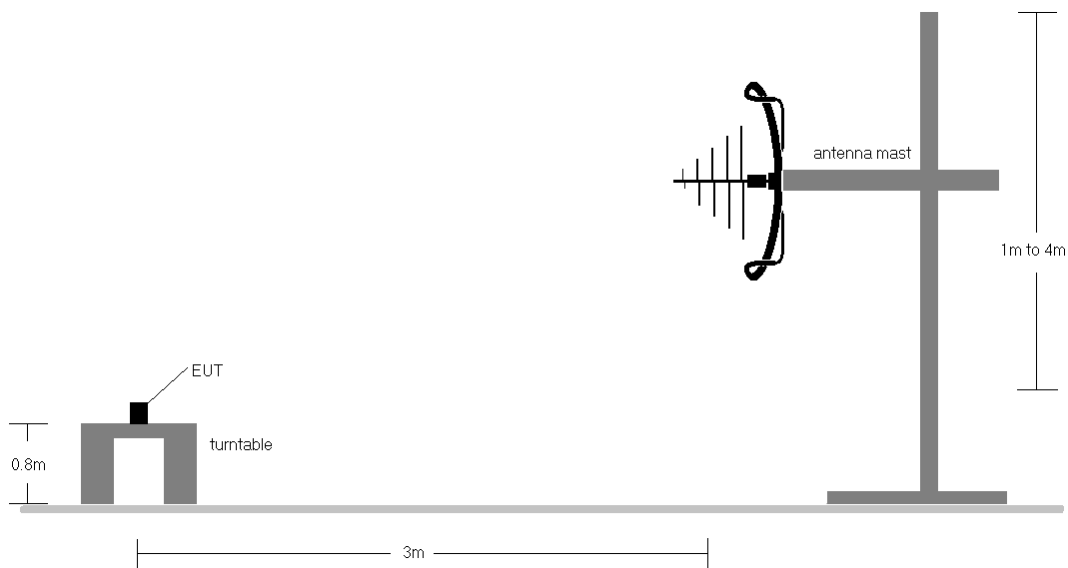


Figure 7-7. Radiated Test Setup < 1GHz

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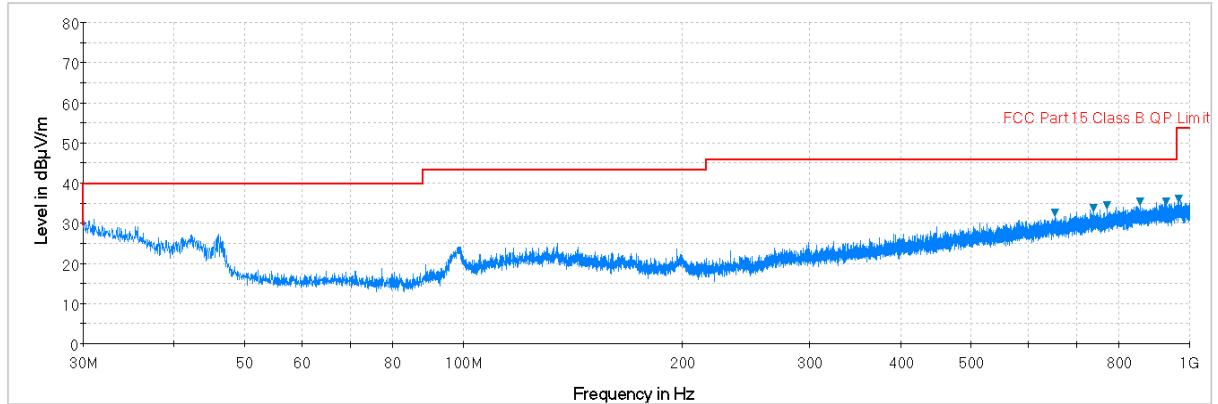
Test Notes

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.

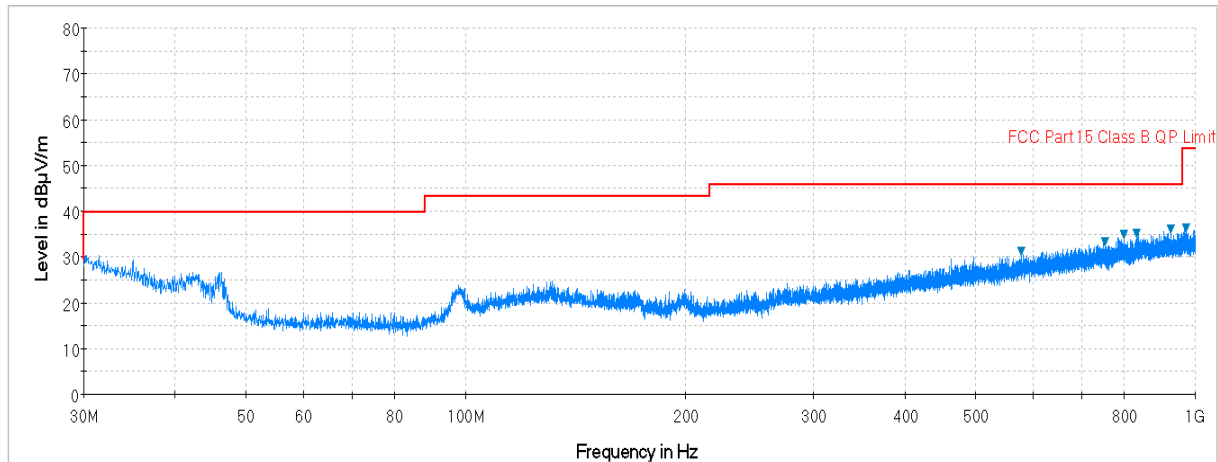
FCC ID: A3LSMG955U		FCC Pt. 15.407 802.11a/n/ac UNII MEASUREMENT REPORT (CERTIFICATION)		Approved by: Quality Manager
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Antenna-1 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-280. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-281. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

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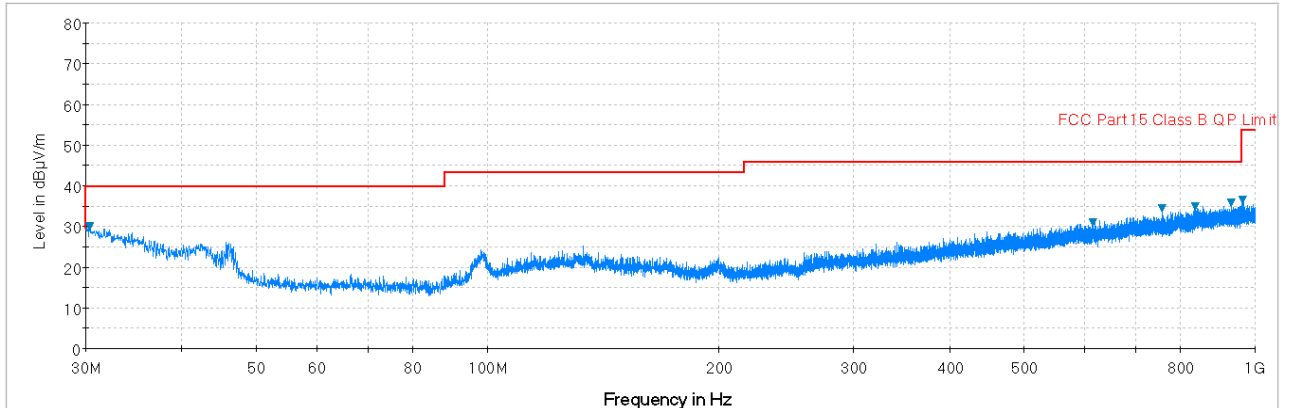
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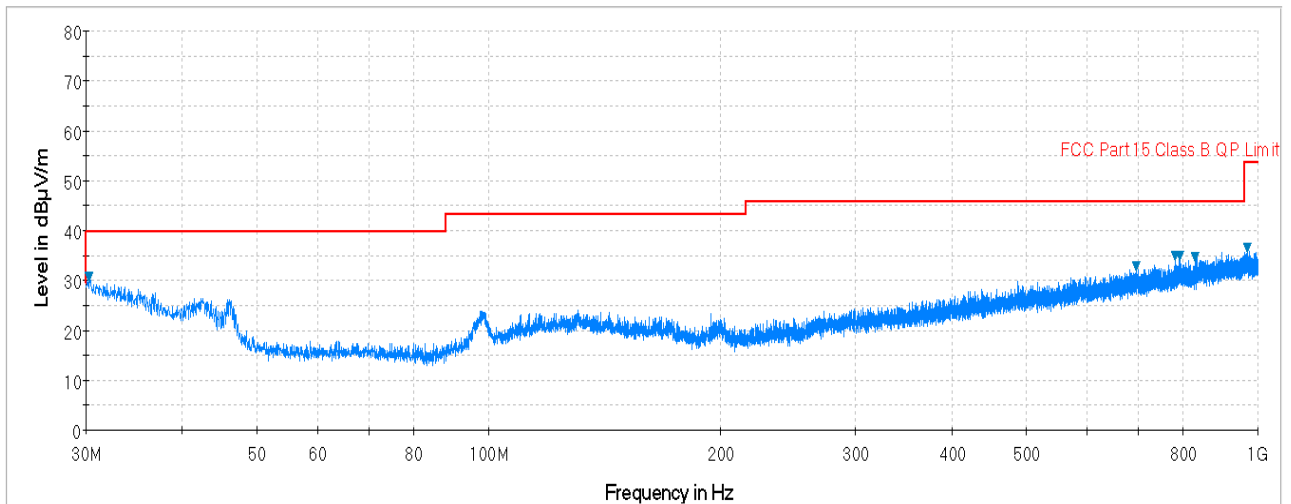
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Antenna-2 Radiated Spurious Emissions Measurements (Below 1GHz)

§15.209



Plot 7-282. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. H)



Plot 7-283. Radiated Spurious Plot below 1GHz (802.11a – U3 Ch. 157, Ant. Pol. V)

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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 7-68. 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

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Test Setup

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

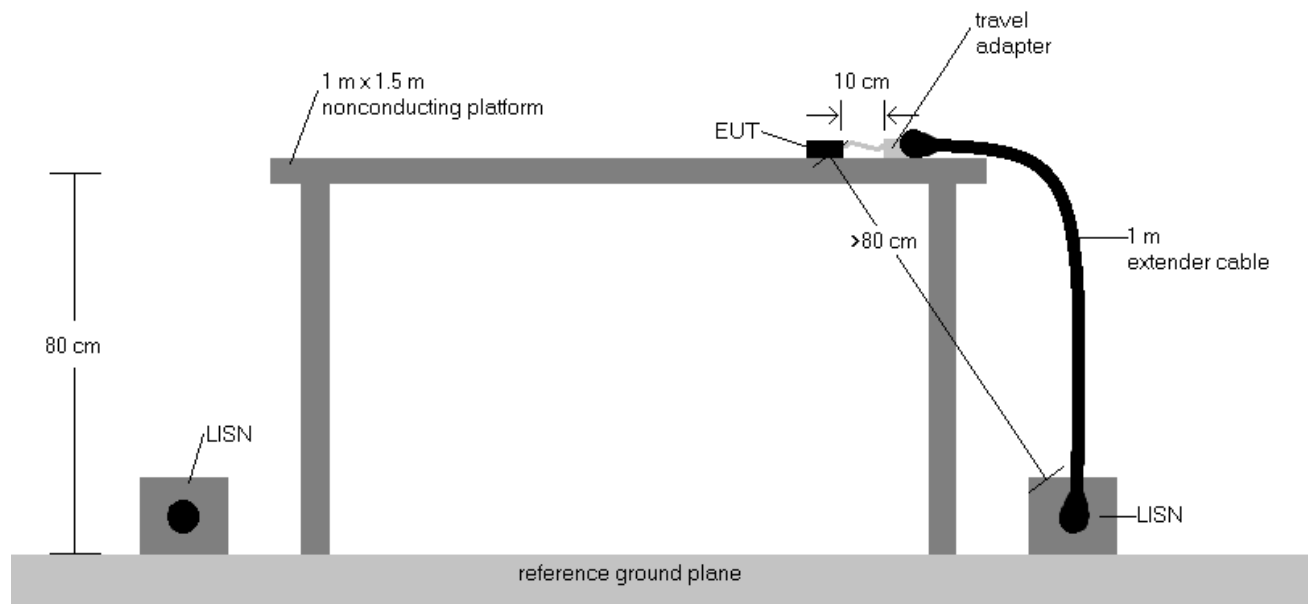


Figure 7-8. Test Instrument & Measurement Setup

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.

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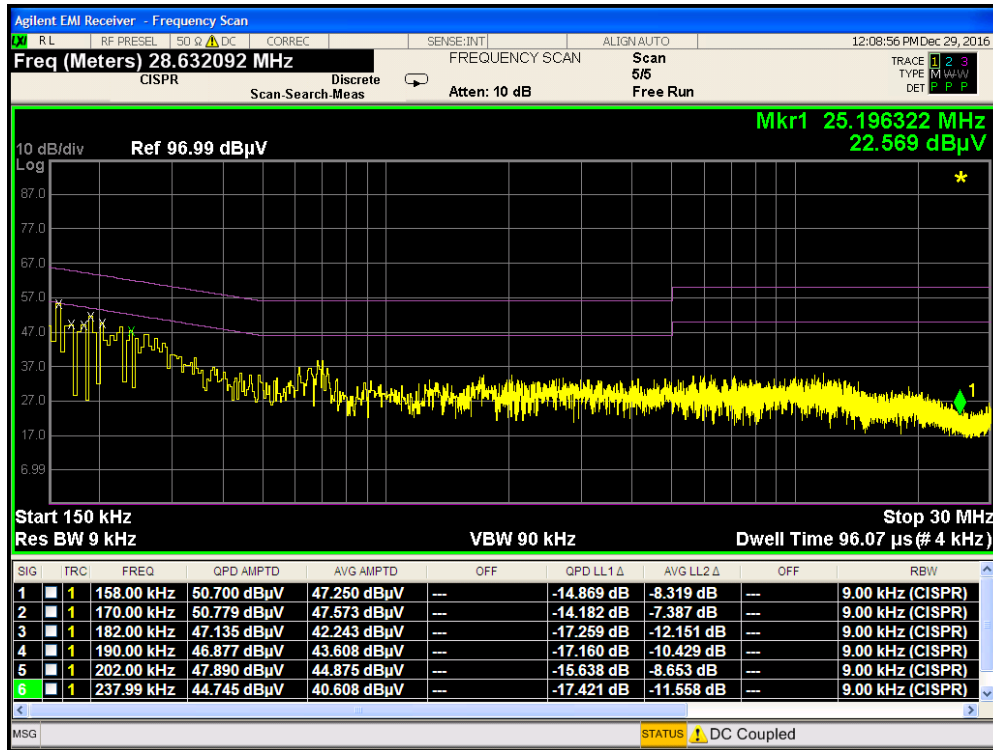
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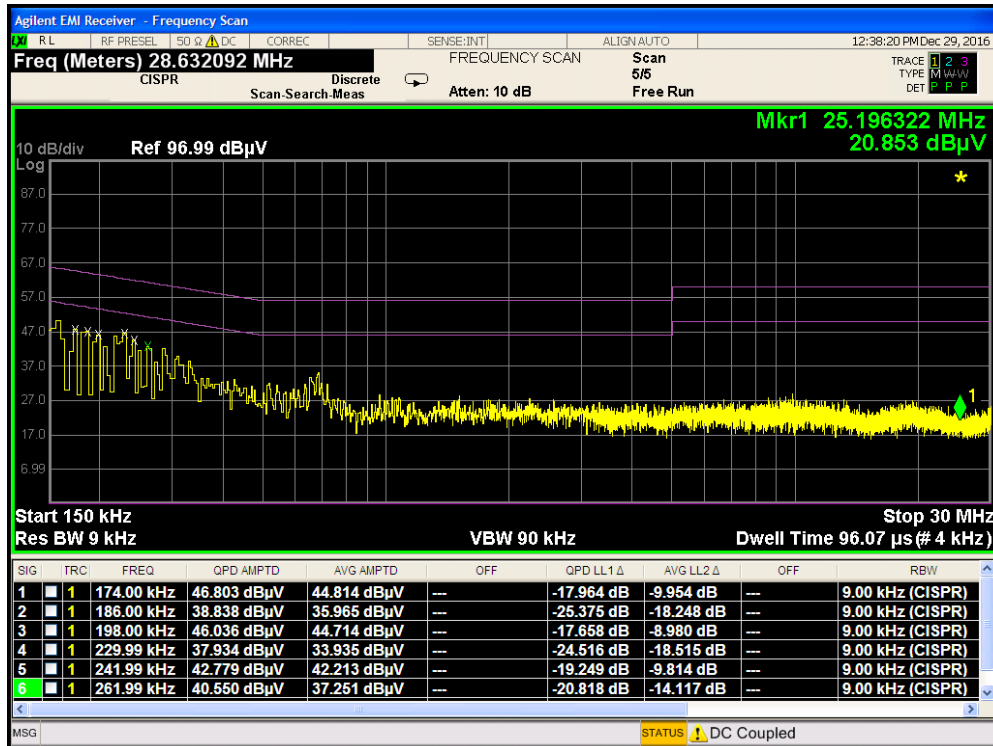
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Line-Conducted Test Data

\$15.407



Plot 7-284. Line Conducted Plot with 802.11a UNII Band 1 (L1)



Plot 7-285. Line Conducted Plot with 802.11a UNII Band 1 (N)

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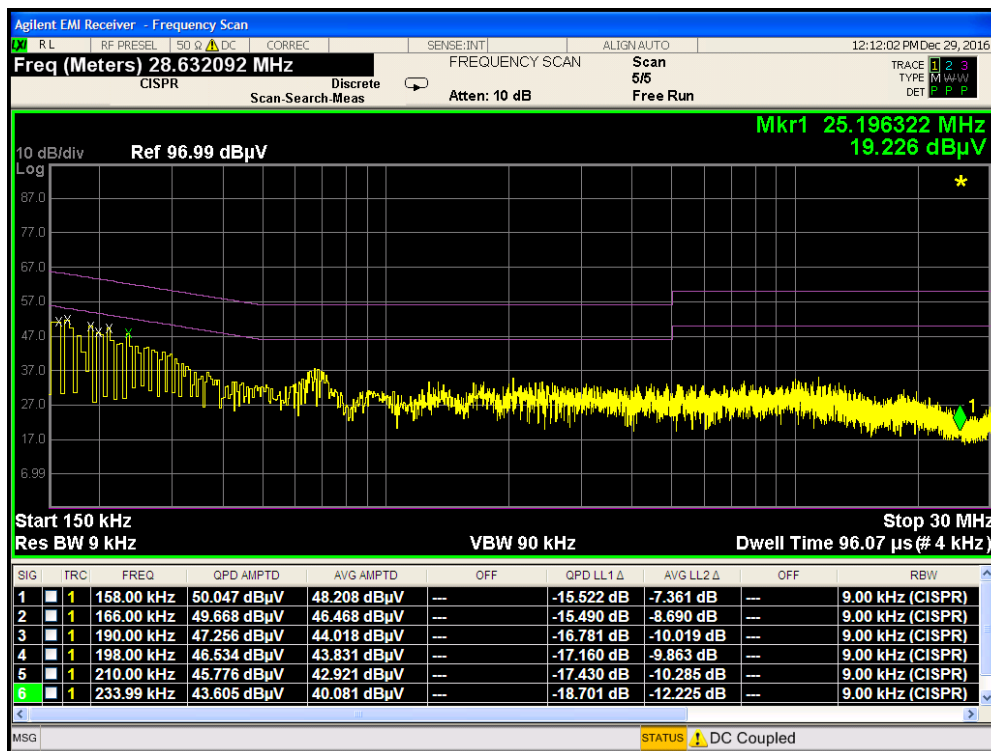
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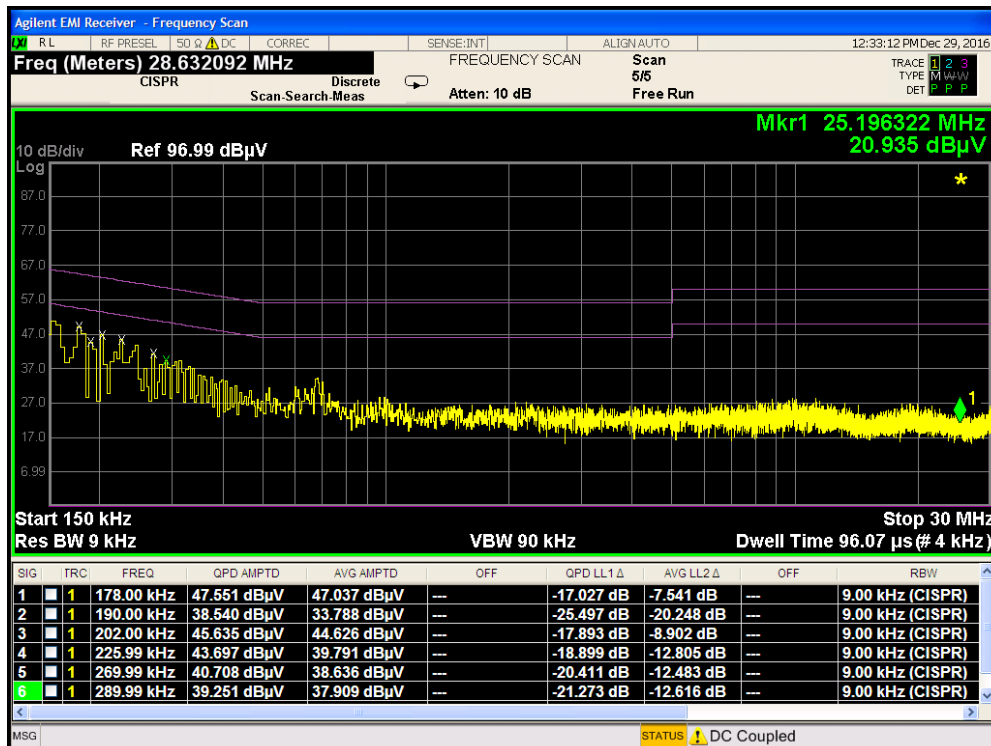
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Line-Conducted Test Data

\$15.407



Plot 7-286. Line Conducted Plot with 802.11a UNII Band 2A (L1)

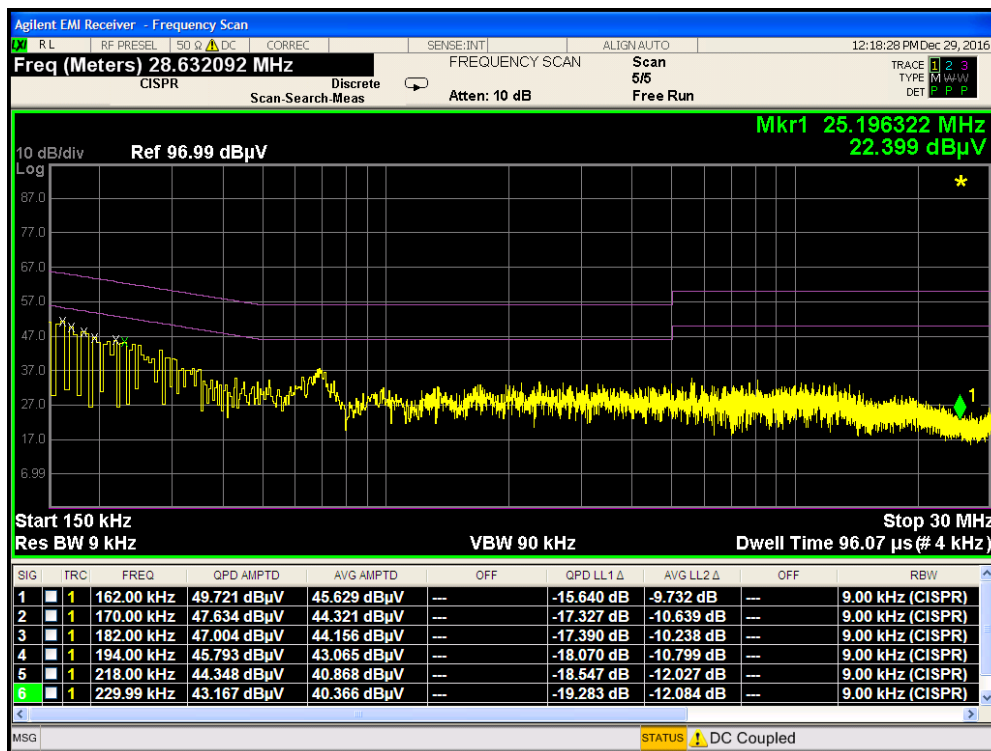


Plot 7-287. Line Conducted Plot with 802.11a UNII Band 2A (N)

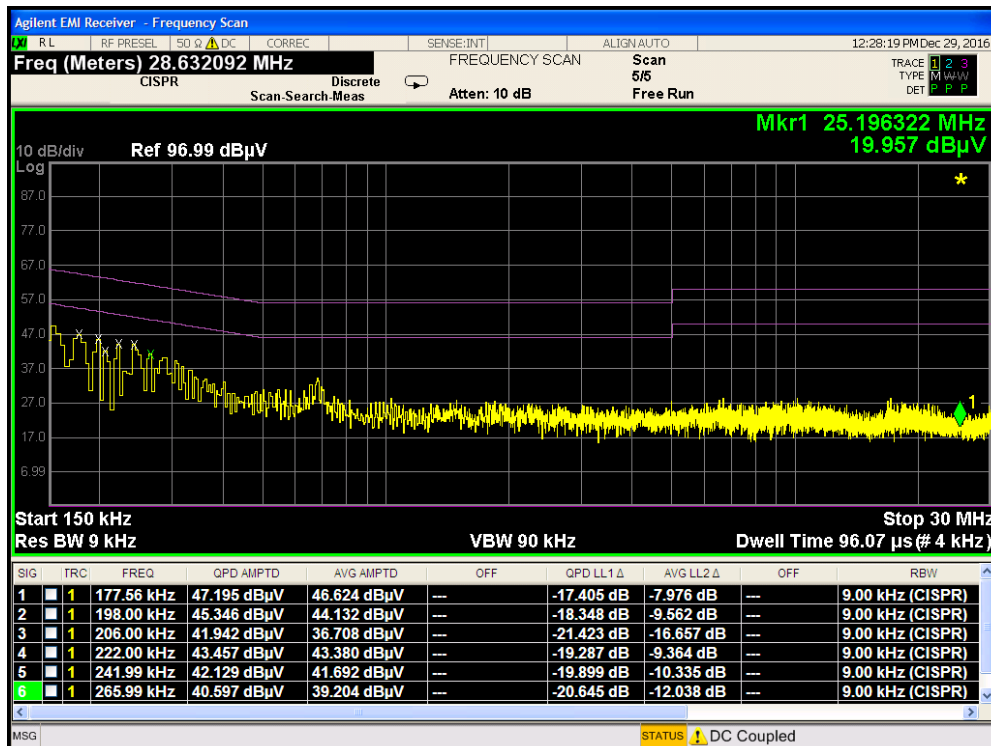
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Line-Conducted Test Data

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Plot 7-288. Line Conducted Plot with 802.11a UNII Band 2C (L1)



Plot 7-289. Line Conducted Plot with 802.11a UNII Band 2C (N)

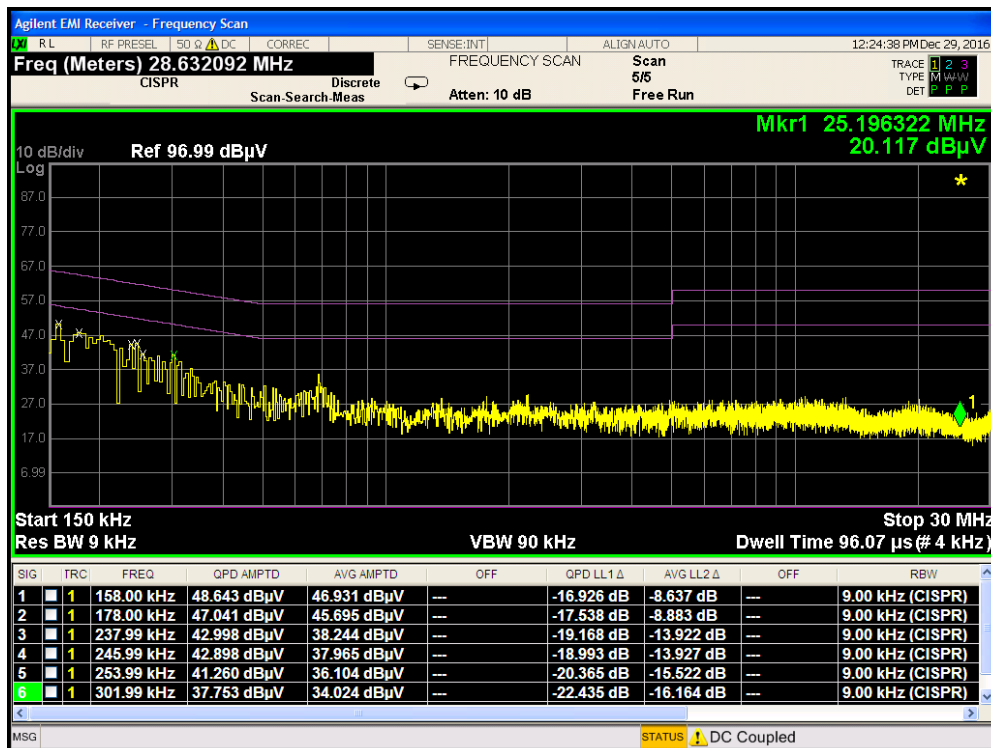
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Line-Conducted Test Data

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Plot 7-290. Line Conducted Plot with 802.11a UNII Band 3 (L1)



Plot 7-291. Line Conducted Plot with 802.11a UNII Band 3 (N)

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8.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LSMG955U** is in compliance with Part 15E of the FCC Rules.

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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.iv), (a.2), (a.3)	Maximum Conducted Output Power	Maximum conducted powers must meet the limits detailed in 15.407 (a)	CONDUCTED	PASS	Section A.2
15.407 (a.1.iv), (a.2), (a.3)	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 both 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) Since two antennas are supported in this device and a minimum of $N_{ss} = 1$ antenna can operate at any given time, the maximum array gain for two correlated signals is $10\log_{10}(N_{ant}/N_{ss}) = 3\text{dB}$, where N_{ss} is the number of spatial streams and N_{ant} is the total number of antennas.
- 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.

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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.

Freq [MHz]	Channel	Detector	5GHz (20MHz) Conducted Power [dBm]		
			IEEE Transmission Mode		
			ANT1	ANT2	CDD
5180	36	AVG	14.84	14.98	17.92
5200	40	AVG	14.84	15.02	17.94
5220	44	AVG	14.87	15.19	18.04
5240	48	AVG	14.78	15.10	17.95
5260	52	AVG	15.29	15.37	18.34
5280	56	AVG	15.19	15.42	18.32
5300	60	AVG	15.27	15.31	18.30
5320	64	AVG	15.10	15.41	18.27
5500	100	AVG	14.81	15.30	18.07
5520	104	AVG	14.83	15.11	17.98
5540	108	AVG	14.68	15.21	17.96
5560	112	AVG	14.77	15.25	18.03
5580	116	AVG	14.75	15.35	18.07
5600	120	AVG	15.05	15.29	18.18
5620	124	AVG	14.83	15.30	18.08
5640	128	AVG	14.82	15.23	18.04
5660	132	AVG	14.82	15.23	18.04
5680	136	AVG	15.02	15.28	18.16
5700	140	AVG	14.94	15.33	18.15
5720	144	AVG	14.69	15.13	17.93
5745	149	AVG	15.22	14.43	17.85
5765	153	AVG	15.31	14.42	17.90
5785	157	AVG	15.20	14.42	17.84
5805	161	AVG	15.15	15.16	18.17
5825	165	AVG	15.31	15.36	18.35

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

Note:

Per KDB 662911 D01 v02r01 Section E)1), the conducted powers at Antenna 1 and Antenna 2 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.

Sample CDD Calculation:

At 5180MHz the average conducted output power was measured to be 14.84 dBm for Antenna-1 and 14.98 dBm for Antenna-2.

$$\text{Antenna 1} + \text{Antenna 2} = \text{CDD Power}$$

$$(14.84 \text{ dBm} + 14.98 \text{ dBm}) = (30.47 \text{ mW} + 31.47 \text{ mW}) = 61.94 \text{ mW} = 17.92 \text{ dBm}$$

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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]	Antenna-1 Power Density [dBm]	Antenna-2 Power Density [dBm]	Summed CDD Power Density [dBm]	Max Permissible Power Density [dBm/MHz]	Margin [dB]	Pass / Fail
Band 1	5180	36	a	6.5/7.2 (MCS0)	6.29	5.83	9.07	11.0	-1.93	Pass
	5200	40	a	6.5/7.2 (MCS0)	6.10	6.69	9.42	11.0	-1.58	Pass
	5240	48	a	6.5/7.2 (MCS0)	6.35	6.99	9.69	11.0	-1.31	Pass
Band 2A	5260	52	a	6.5/7.2 (MCS0)	7.20	8.14	10.70	11.0	-0.30	Pass
	5280	56	a	6.5/7.2 (MCS0)	6.82	7.20	10.02	11.0	-0.98	Pass
	5320	64	a	6.5/7.2 (MCS0)	5.87	5.70	8.80	11.0	-2.20	Pass
Band 2C	5500	100	a	6.5/7.2 (MCS0)	6.44	6.34	9.40	11.0	-1.60	Pass
	5600	120	a	6.5/7.2 (MCS0)	5.69	4.83	8.29	11.0	-2.71	Pass
	5720	144	a	6.5/7.2 (MCS0)	6.62	6.76	9.70	11.0	-1.30	Pass
Band 3	5745	149	a	6.5/7.2 (MCS0)	3.31	4.71	7.08	30.0	-22.92	Pass
	5785	157	a	6.5/7.2 (MCS0)	3.15	4.00	6.60	30.0	-23.40	Pass
	5825	165	a	6.5/7.2 (MCS0)	2.65	4.32	6.57	30.0	-23.43	Pass

Table A3-1.802.11a Dual Tx Conducted Power Density Measurements

Note:

Per KDB 662911 D01 v02r01 Section E)2), the power spectral density at Antenna 1 and Antenna 2 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.

Sample CDD Calculation:

At 5180MHz the average conducted power spectral density was measured to be 6.29dBm for Antenna-1 and 5.83 dBm for Antenna-2.

$$\text{Antenna 1} + \text{Antenna 2} = \text{CDD}$$

$$(6.29 \text{ dBm} + 5.83 \text{ dBm}) = (4.25 \text{ mW} + 3.82 \text{ mW}) = 8.07 \text{ mW} = 9.07 \text{ dBm}$$

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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.

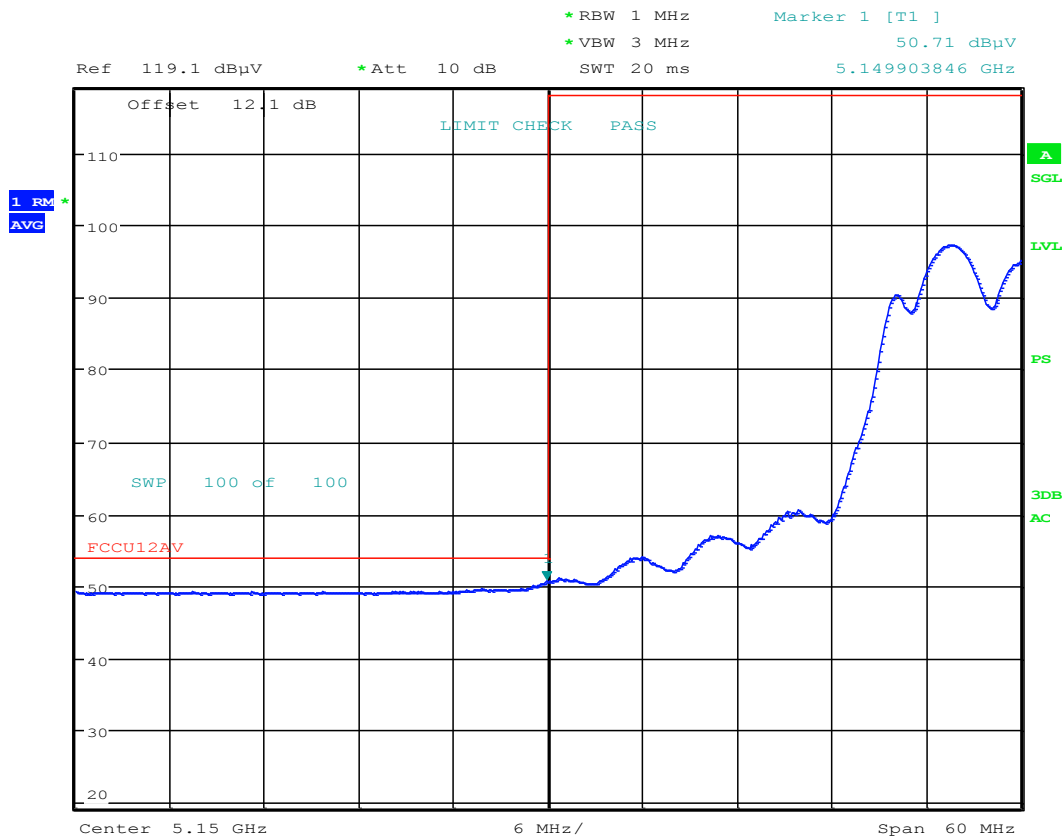
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5180MHz

Channel: 36



Date: 6.JAN.2017 08:21:53

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

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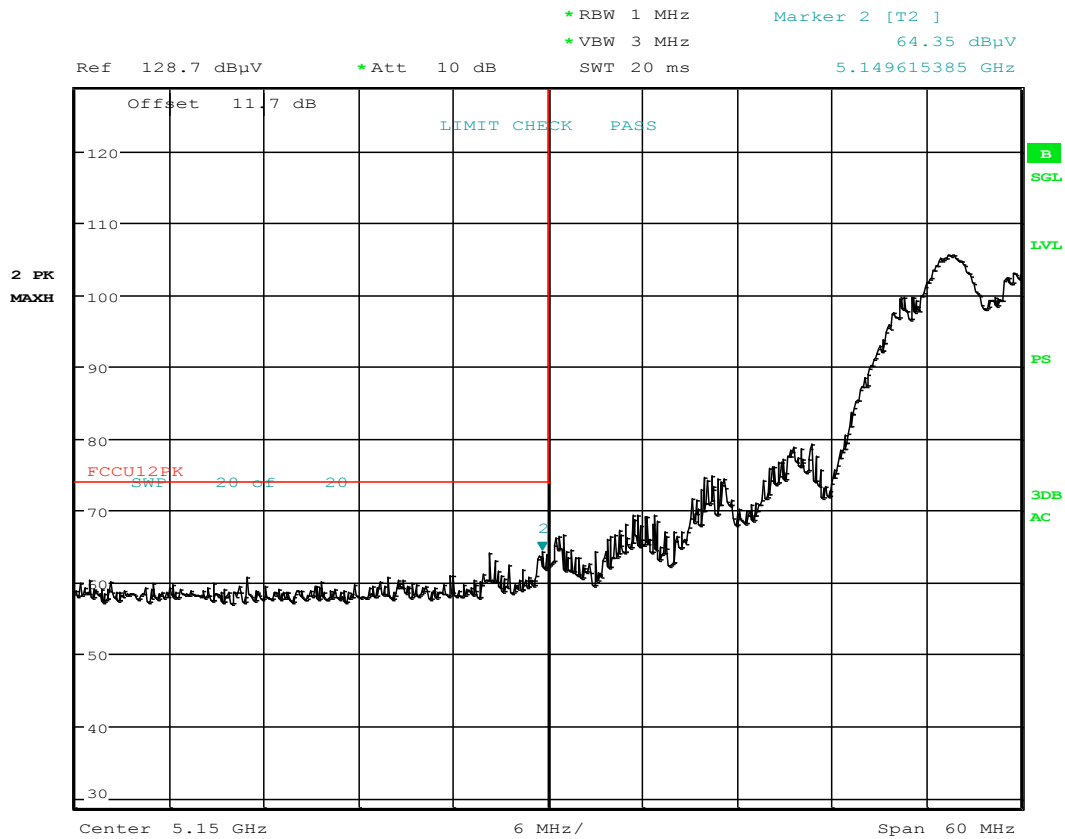
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Dual Tx Radiated Restricted Band Edge Measurements

§15.407(b.1)(b.2) §15.205 §15.209



Date: 6.JAN.2017 08:22:28

Plot A.4-2. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

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Dual Tx Radiated Restricted Band Edge Measurements

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

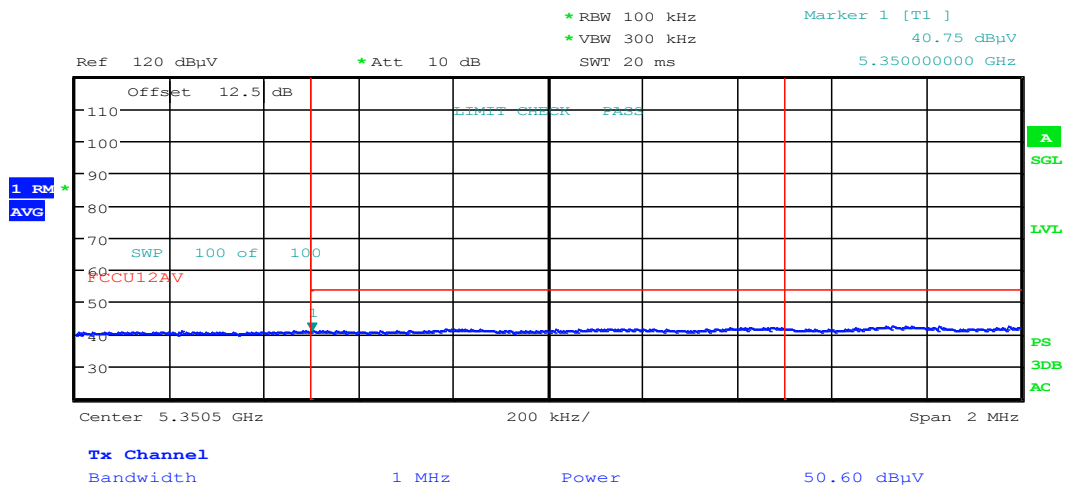
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64



Date: 6.JAN.2017 08:32:40

Plot A.4-3. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2A)

FCC ID: A3LSMG955U	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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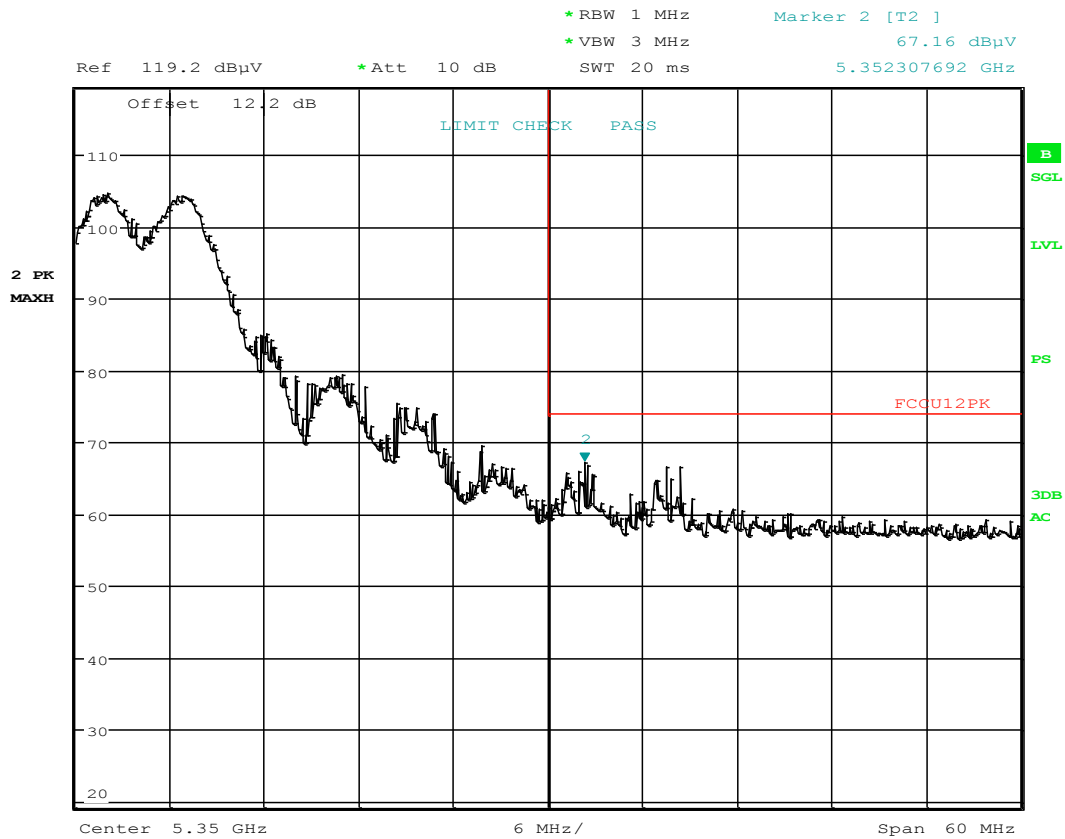
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Dual Tx Radiated Restricted Band Edge Measurements

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



Date: 6.JAN.2017 08:33:09

Plot A.4-4. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2A)

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Dual Tx Radiated Restricted Band Edge Measurements

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

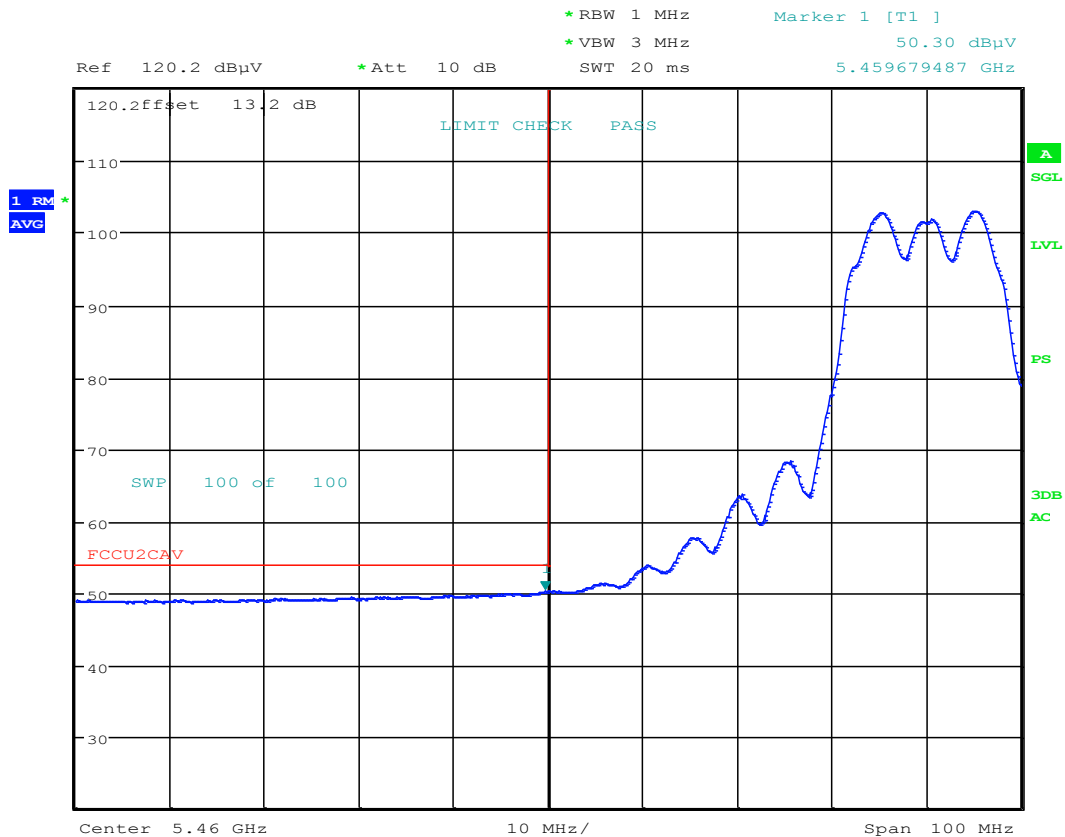
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100



Date: 6.JAN.2017 08:47:46

Plot A.4-5. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 2C)

Note:

Per KDB 789033 Section II)G)3)d)ii, the Integration Method was used to determine compliance with the out-of-band emission limits.

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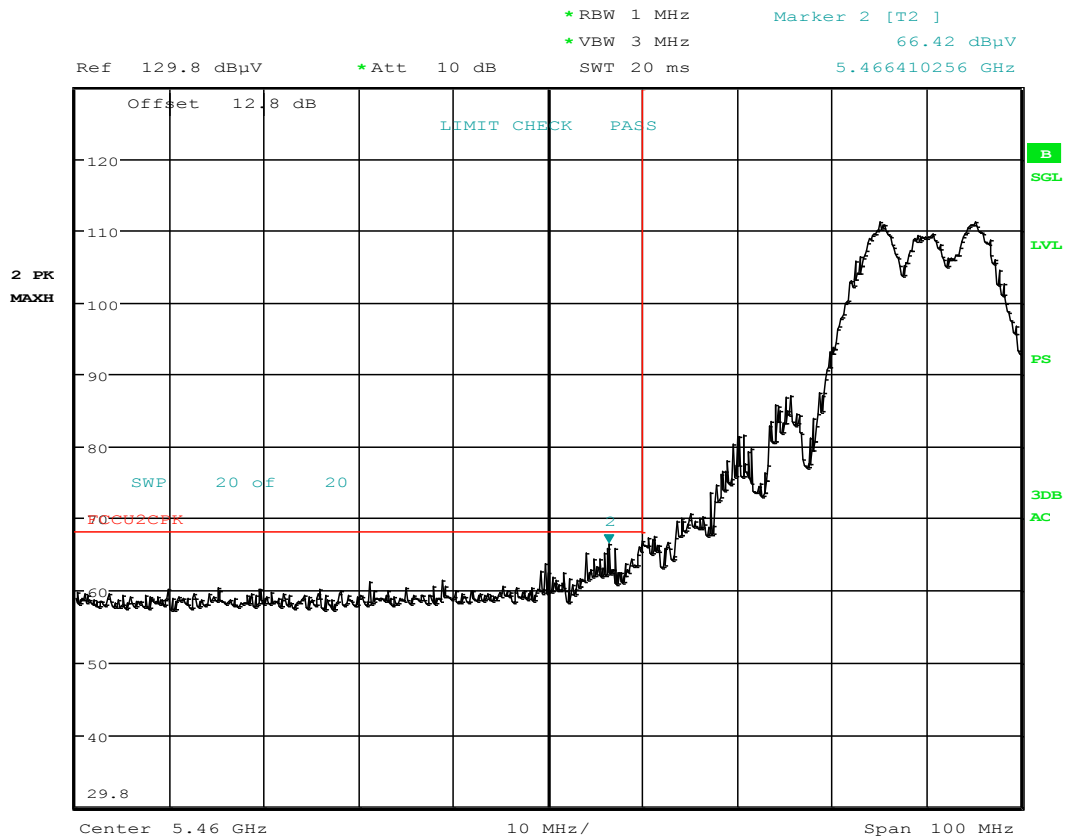
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Dual Tx Radiated Restricted Band Edge Measurements

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



Date: 6.JAN.2017 08:50:13

Plot A.4-6. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 2C)

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Dual Tx Radiated Restricted Band Edge Measurements

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

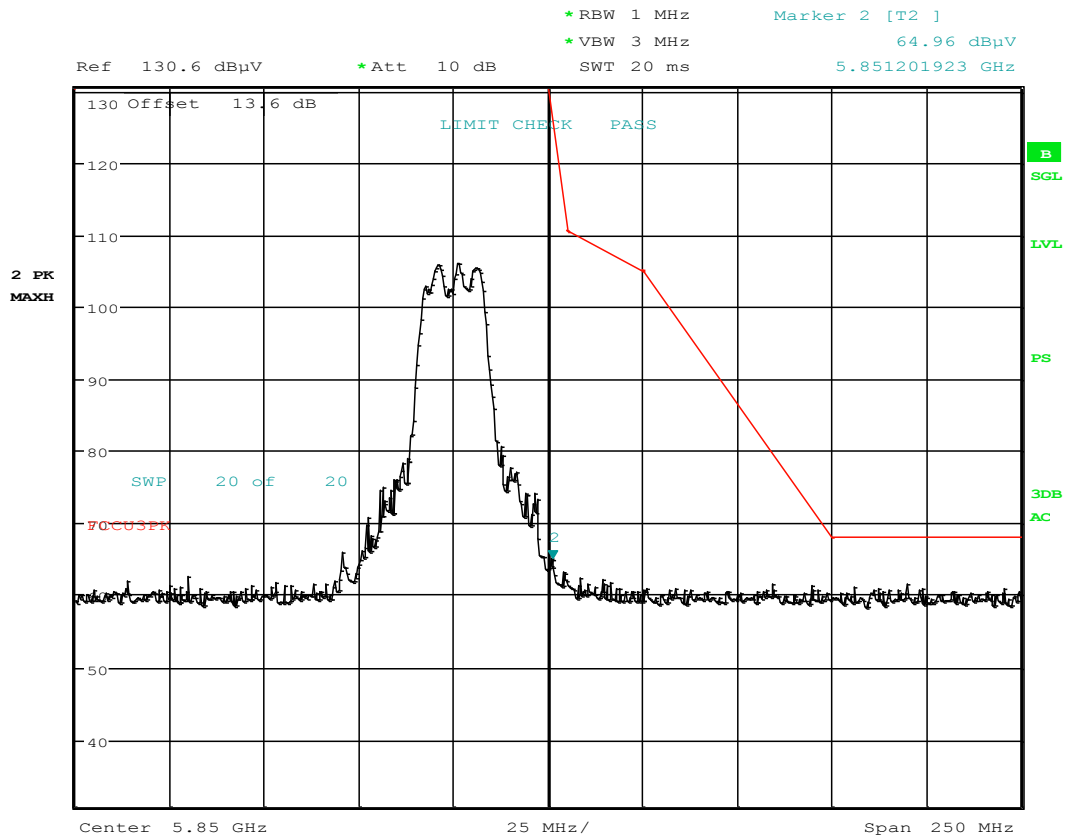
Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5825MHz

Channel: 165



Date: 6.JAN.2017 08:56:05

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

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