

6.6 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: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,180,000,004	4	0.000000
100 %		- 30	5,180,000,008	8	0.000000
100 %		- 20	5,180,000,005	5	0.000000
100 %		- 10	5,180,000,007	7	0.000000
100 %		0	5,180,000,009	9	0.000000
100 %		+ 10	5,180,000,011	11	0.000000
100 %		+ 20	5,179,999,997	-3	0.000000
100 %		+ 30	5,179,999,998	-2	0.000000
100 %		+ 40	5,180,000,003	3	0.000000
100 %		+ 50	5,179,999,990	-10	0.000000
115 %	4.37	+ 20	5,180,000,008	8	0.000000
BATT. ENDPOINT	3.50	+ 20	5,180,000,006	6	0.000000

Table 6-8. 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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Frequency Stability (Cont'd)

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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: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,259,999,998	-2	0.000000
100 %		- 30	5,260,000,010	10	0.000000
100 %		- 20	5,260,000,007	7	0.000000
100 %		- 10	5,260,000,013	13	0.000000
100 %		0	5,259,999,996	-4	0.000000
100 %		+ 10	5,259,999,995	-5	0.000000
100 %		+ 20	5,260,000,009	9	0.000000
100 %		+ 30	5,260,000,010	10	0.000000
100 %		+ 40	5,260,000,005	5	0.000000
100 %		+ 50	5,260,000,007	7	0.000000
115 %		+ 20	5,259,999,996	-4	0.000000
BATT. ENDPOINT	3.50	+ 20	5,260,000,007	7	0.000000

Table 6-9. Frequency Stability Measurements for UNII Band 2 (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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Frequency Stability (Cont'd)

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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: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,499,999,996	-4	0.000000
100 %		- 30	5,499,999,990	-10	0.000000
100 %		- 20	5,500,000,005	5	0.000000
100 %		- 10	5,499,999,998	-2	0.000000
100 %		0	5,500,000,007	7	0.000000
100 %		+ 10	5,500,000,005	5	0.000000
100 %		+ 20	5,499,999,997	-3	0.000000
100 %		+ 30	5,499,999,992	-8	0.000000
100 %		+ 40	5,500,000,005	5	0.000000
100 %		+ 50	5,500,000,004	4	0.000000
115 %		+ 20	5,499,999,996	-4	0.000000
BATT. ENDPOINT	3.50	+ 20	5,500,000,009	9	0.000000

Table 6-10. Frequency Stability Measurements for UNII Band 3 (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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6.7 Radiated Spurious Emission Measurements

§15.407(b)(1), (6), §15.205, §15.209; RSS-210 [A9.2]

The EUT was tested from 9kHz and up to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHz. Above 1 GHz, peak measurements were taken using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033 and linearly polarized horn antennas. 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 6-11 per Section 15.209.

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 measurements shown in this section were obtained using traditional radiated test methods as defined in C63.10-2009. The optional test procedures for antenna port conducted measurements of unwanted emissions per the guidance of KDB 789033 were not used to evaluate this device.

Frequency	Field Strength [μV/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 6-11. Radiated Limits

Sample Calculation

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

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5180MHz

Channel: 36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	-102.97	Peak	H	45.89	0.00	49.93	68.20	-18.27
* 15540.00	-135.00	Average	H	58.35	0.00	30.35	53.98	-23.63
* 15540.00	-125.00	Peak	H	58.35	0.00	40.35	73.98	-33.63
* 20720.00	-111.84	Average	H	44.02	-9.54	29.64	53.98	-24.34
* 20720.00	-102.46	Peak	H	44.02	-9.54	39.02	73.98	-34.96
25900.00	-106.19	Peak	H	44.85	-9.54	36.12	68.20	-32.08

Table 6-12. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5200MHz

Channel: 40

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
	10400.00	-103.20	Peak	H	45.98	0.00	49.78	68.20	-18.42
*	15600.00	-135.00	Average	H	58.64	0.00	30.64	53.98	-23.34
*	15600.00	-125.00	Peak	H	58.64	0.00	40.64	73.98	-33.34
*	20800.00	-111.77	Average	H	44.00	-9.54	29.68	53.98	-24.30
*	20800.00	-102.60	Peak	H	44.00	-9.54	38.85	73.98	-35.13
	26000.00	-108.29	Peak	H	44.88	-9.54	34.05	68.20	-34.15

Table 6-13. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5240MHz

Channel: 48

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
	10480.00	-102.77	Peak	H	46.14	0.00	50.37	68.20	-17.83
*	15720.00	-135.00	Average	H	59.21	0.00	31.21	53.98	-22.77
*	15720.00	-125.00	Peak	H	59.21	0.00	41.21	73.98	-32.77
*	20960.00	-112.63	Average	H	43.99	-9.54	28.82	53.98	-25.16
*	20960.00	-103.46	Peak	H	43.99	-9.54	37.99	73.98	-35.99
	26200.00	-106.40	Peak	H	44.82	-9.54	35.88	68.20	-32.32

Table 6-14. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5260MHz

Channel: 52

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
	10520.00	-103.19	Peak	H	46.23	0.00	50.03	68.20	-18.17
*	15780.00	-135.00	Average	H	59.53	0.00	31.53	53.98	-22.45
*	15780.00	-125.00	Peak	H	59.53	0.00	41.53	73.98	-32.45
*	21040.00	-112.96	Average	H	44.01	-9.54	28.51	53.98	-25.47
*	21040.00	-103.78	Peak	H	44.01	-9.54	37.69	73.98	-36.29
	26300.00	-106.96	Peak	H	44.87	-9.54	35.37	68.20	-32.83

Table 6-15. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5280MHz

Channel: 56

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
	10560.00	-103.57	Peak	H	46.32	0.00	49.76	68.20	-18.44
*	15840.00	-135.00	Average	H	59.88	0.00	31.88	53.98	-22.09
*	15840.00	-125.00	Peak	H	59.88	0.00	41.88	73.98	-32.09
*	21120.00	-113.38	Average	H	44.00	-9.54	28.08	53.98	-25.90
*	21120.00	-104.83	Peak	H	44.00	-9.54	36.63	73.98	-37.35
	26400.00	-106.75	Peak	H	44.81	-9.54	35.52	68.20	-32.68

Table 6-16. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5320MHz

Channel: 64

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	10640.00	-116.91	Average	H	46.52	0.00	36.60	53.98	-17.37
*	10640.00	-104.38	Peak	H	46.52	0.00	49.13	73.98	-24.84
*	15960.00	-135.00	Average	H	62.27	0.00	34.27	53.98	-19.71
*	15960.00	-125.00	Peak	H	62.27	0.00	44.27	73.98	-29.71
*	21280.00	-112.49	Average	H	44.02	-9.54	28.99	53.98	-24.99
*	21280.00	-102.60	Peak	H	44.02	-9.54	38.88	73.98	-35.10
	26600.00	-101.93	Peak	H	44.70	-9.54	40.23	68.20	-27.97

Table 6-17. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5500MHz

Channel: 100

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11000.00	-115.96	Average	H	46.98	0.00	38.02	53.98	-15.96
*	11000.00	-105.11	Peak	H	46.98	0.00	48.87	73.98	-25.11
	16500.00	-125.00	Peak	H	60.10	0.00	42.10	68.20	-26.10
	22000.00	-97.38	Peak	H	44.30	-9.54	44.38	68.20	-23.82
	27500.00	-126.60	Peak	H	47.96	-9.54	18.81	68.20	-49.39

Table 6-18. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5580MHz

Channel: 116

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11160.00	-116.44	Average	H	49.42	0.00	39.99	53.98	-13.99
*	11160.00	-105.71	Peak	H	49.42	0.00	50.72	73.98	-23.26
	16740.00	-125.00	Peak	H	58.53	0.00	40.53	68.20	-27.67
*	22320.00	-111.51	Average	H	44.40	-9.54	30.35	53.98	-23.63
*	22320.00	-100.20	Peak	H	44.40	-9.54	41.66	73.98	-32.32
	27900.00	-127.92	Peak	H	48.14	-9.54	17.68	68.20	-50.52

Table 6-19. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

FCC ID: A3LGTI8190N		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 1 & 3 Meters

Operating Frequency: 5700MHz

Channel: 140

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11400.00	-116.81	Average	H	47.61	0.00	37.80	53.98	-16.18
*	11400.00	-105.79	Peak	H	47.61	0.00	48.82	73.98	-25.16
	17100.00	-125.00	Peak	H	56.08	0.00	38.08	68.20	-30.12
*	22800.00	-113.38	Average	H	44.45	-9.54	28.53	53.98	-25.45
*	22800.00	-102.66	Peak	H	44.45	-9.54	39.25	73.98	-34.73
	28500.00	-128.72	Peak	H	48.28	-9.54	17.01	68.20	-51.19

Table 6-20. Radiated Measurements @ 1 & 3 meters

NOTES:

- All harmonics 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.
- 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 6-11.
- For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. Emissions whose levels were not within 20dB of the respective limits were not reported.
- Average levels at -135dBm and peak levels at -125dBm represent the analyzer noise floor and signify that no emission was detected.
- Emissions below 18GHz were measured at a 3 meter test distance and emissions above 18GHz were measured at a 1 meter test distance with the application of a distance correction factor.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

FCC ID: A3LGTI8190N		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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6.8 Radiated Band Edge Measurements (20MHz BW)

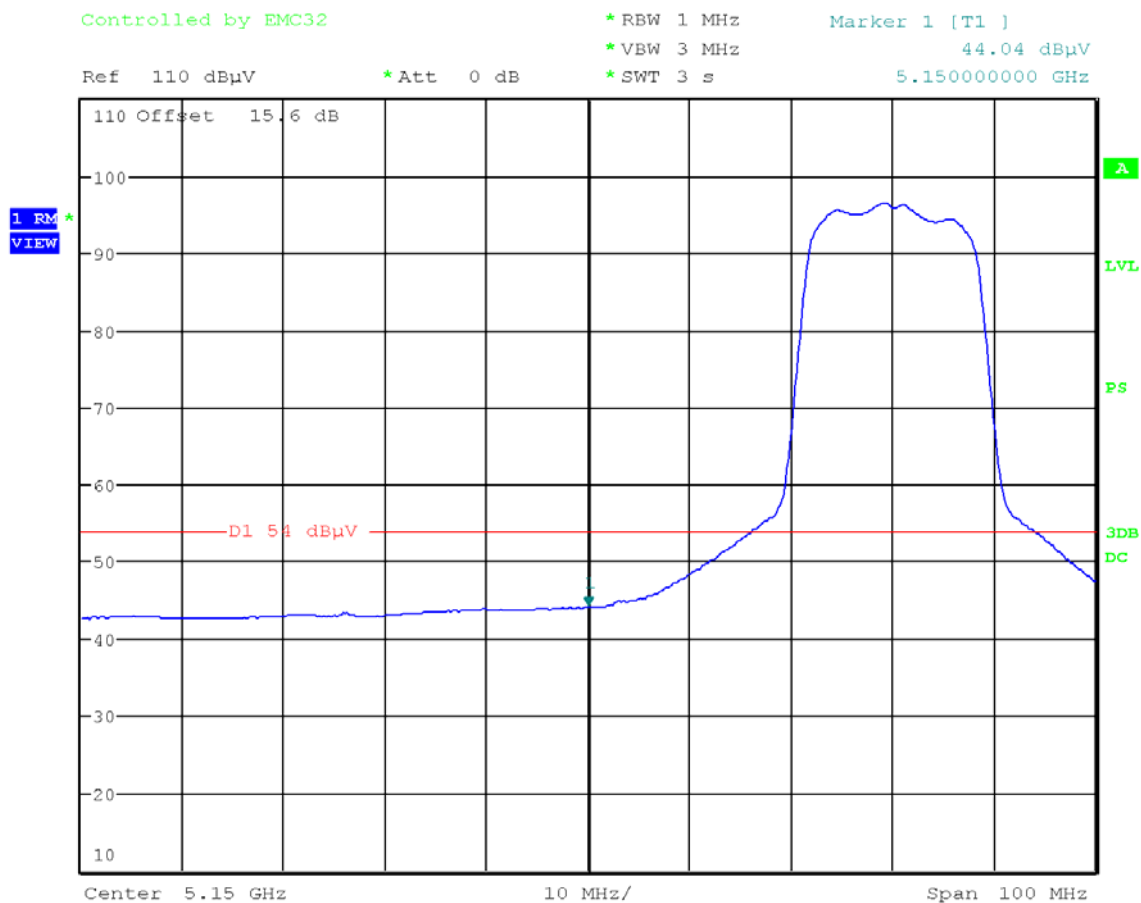
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

The amplitude offset shown in the following plots was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain}$$

Worst Case Mode: 802.11n (20MHz)
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 5180MHz
Channel: 36

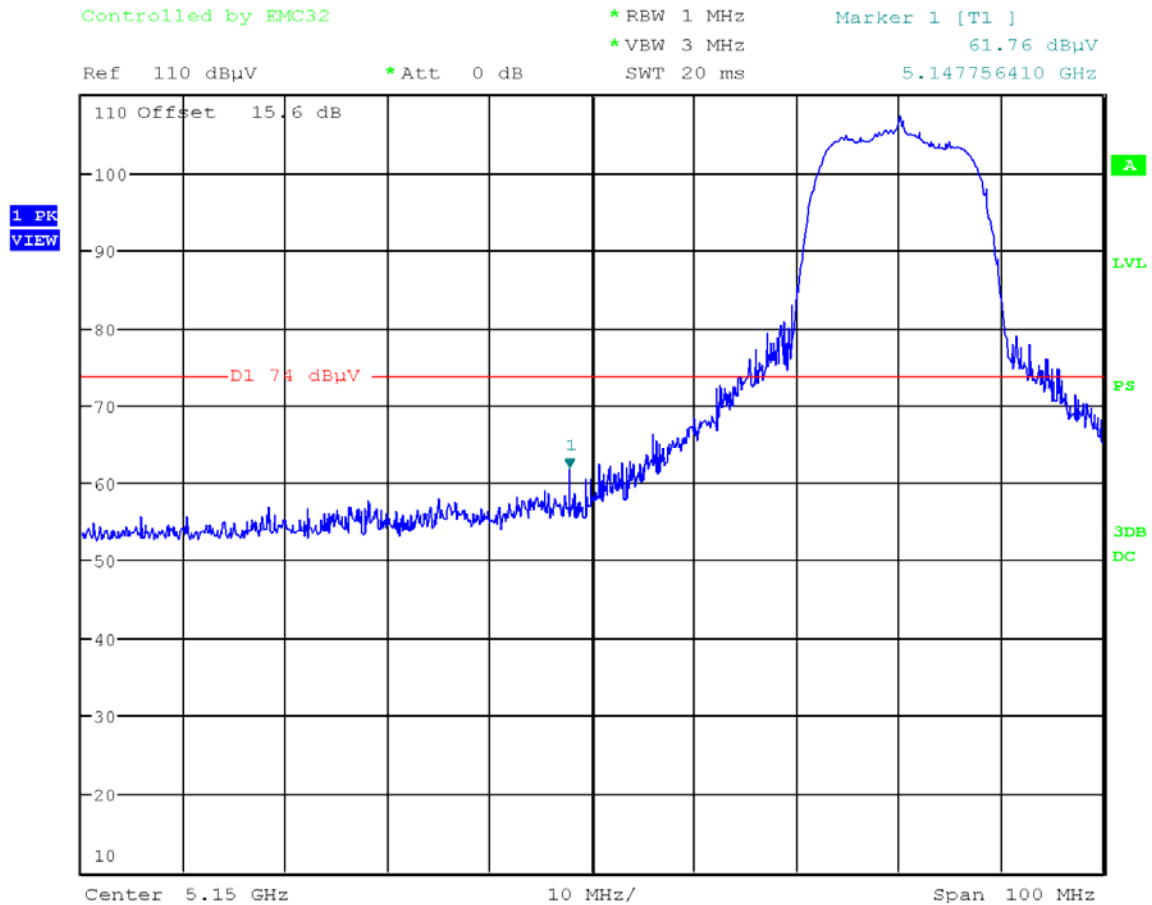


Plot 6-54. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071604.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 58 of 78

Radiated Band Edge Measurements (20MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Plot 6-55. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Radiated Band Edge Measurements (20MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

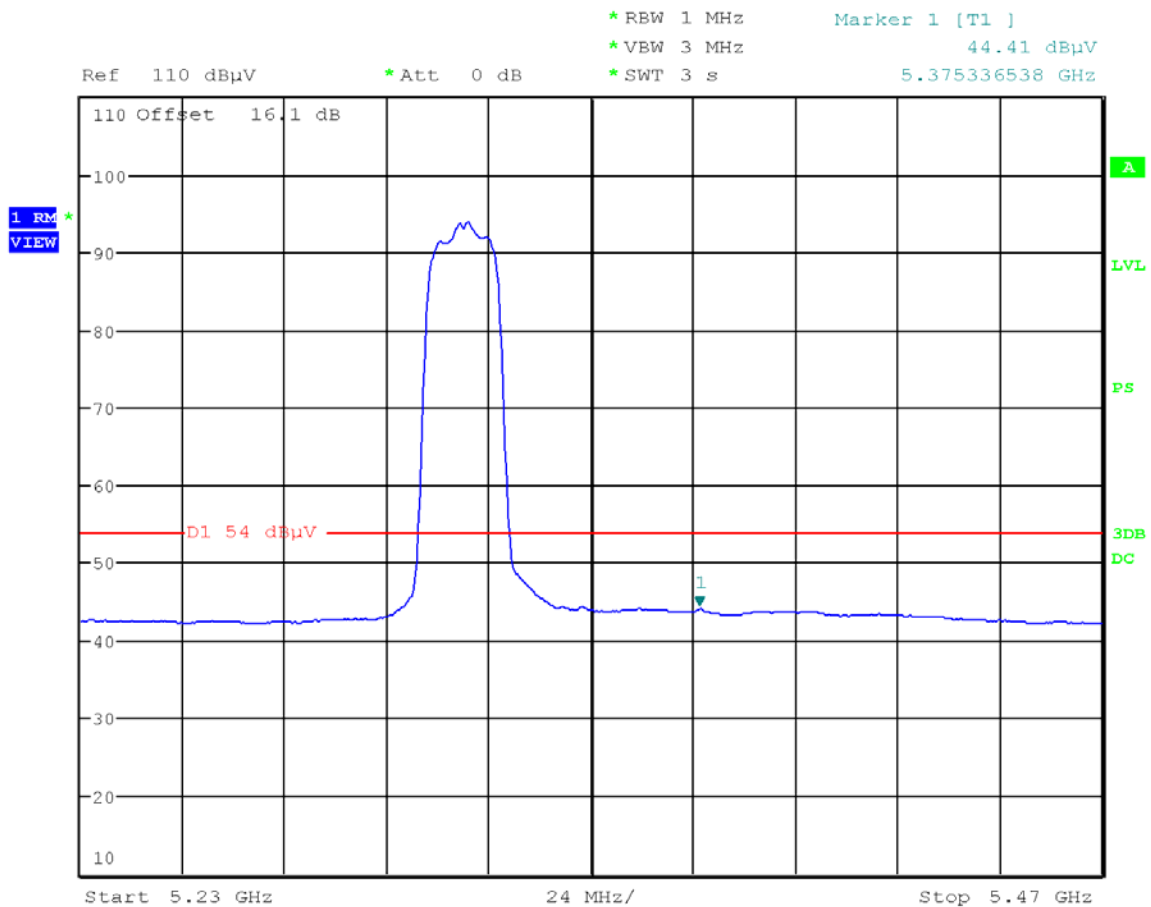
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

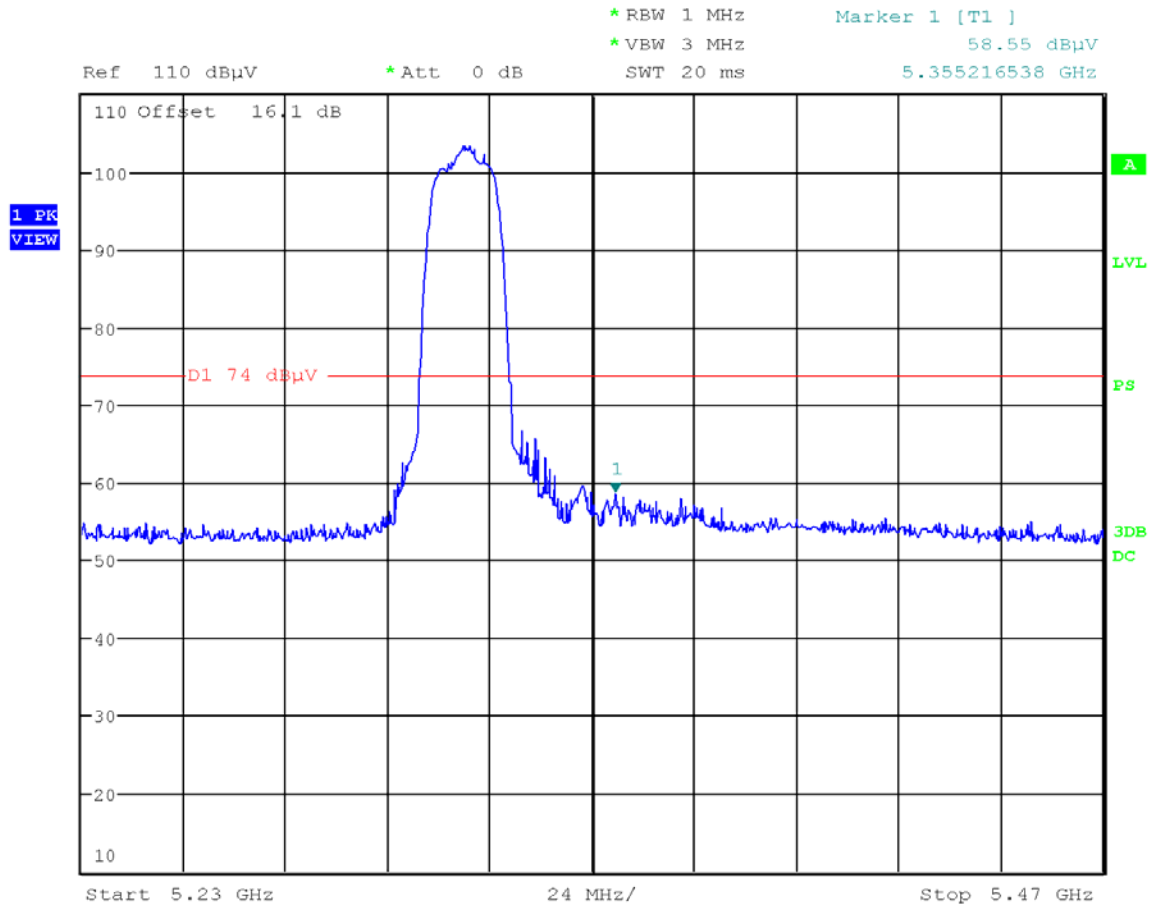


Plot 6-56. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Radiated Band Edge Measurements (20MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Plot 6-57. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2)

NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071604.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 61 of 78

Radiated Band Edge Measurements (20MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

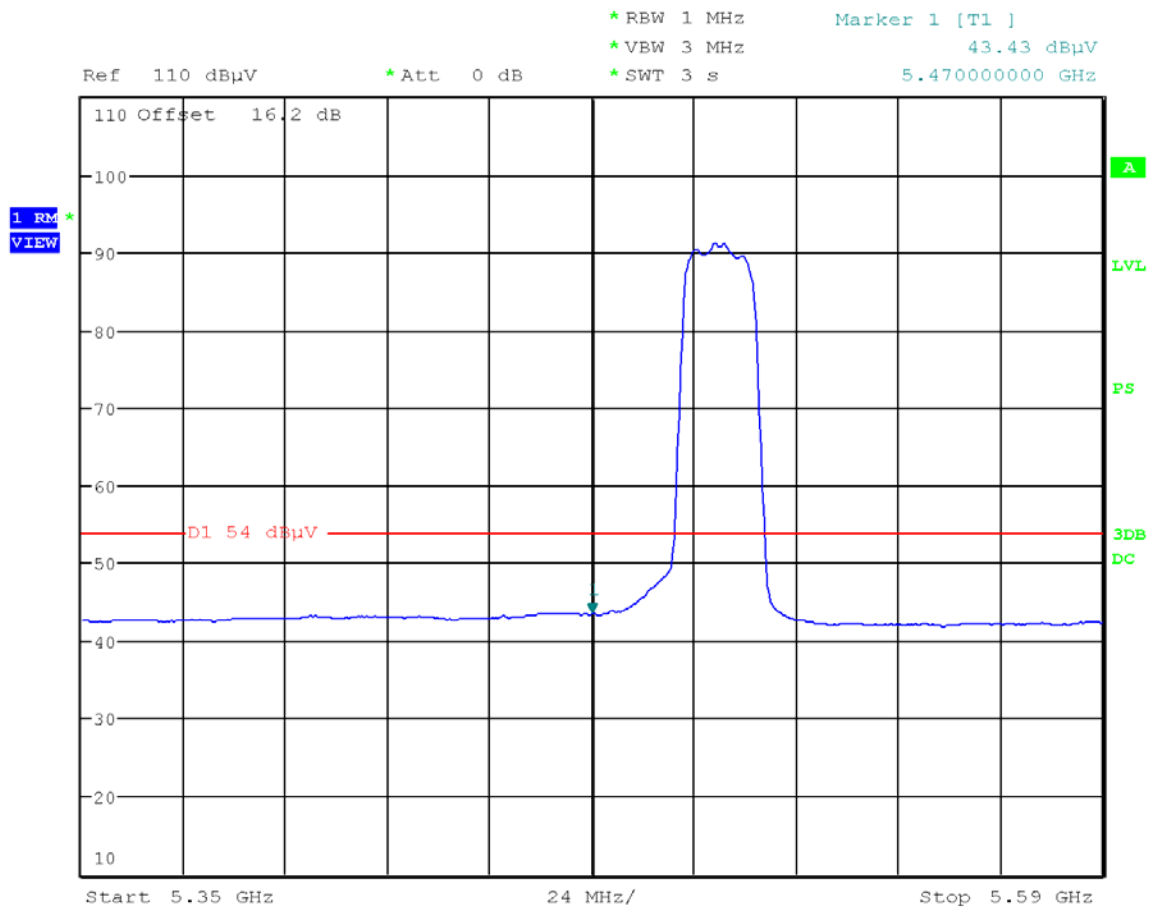
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

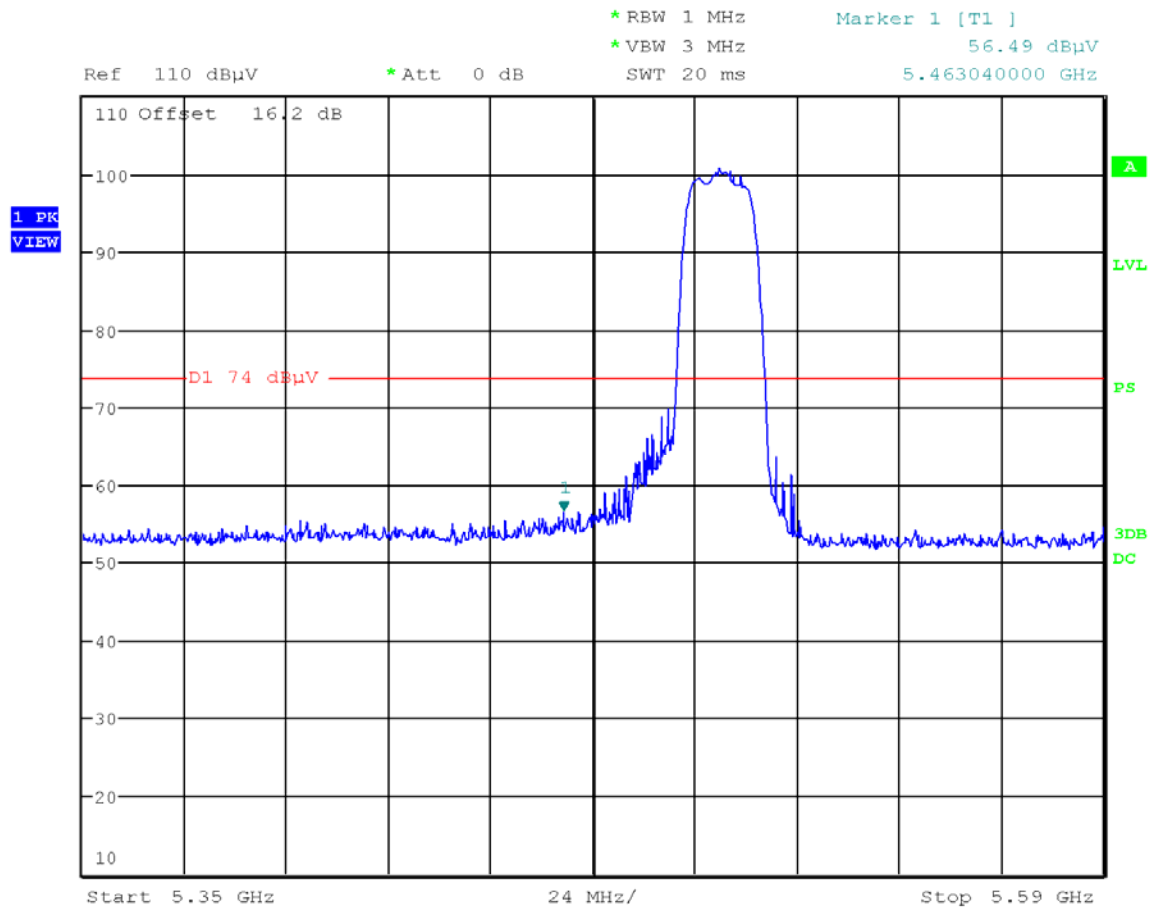


Plot 6-58. Radiated Restricted Lower Band Edge Plot (Average – UNII Band 3)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071604.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 62 of 78

Radiated Band Edge Measurements (20MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Plot 6-59. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 3)

NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Radiated Band Edge Measurements (20MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

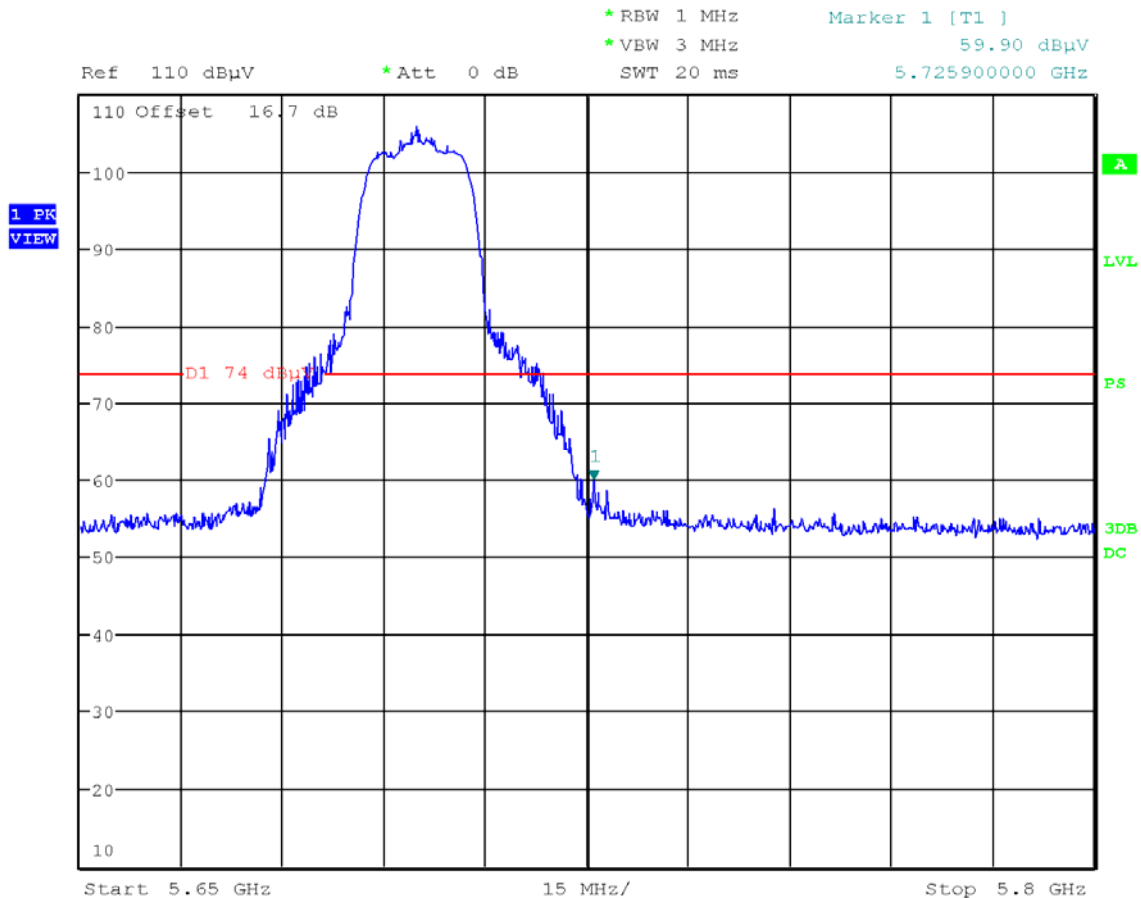
Worst Case Mode: 802.11n (20MHz)

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140



Plot 6-60. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071604.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 64 of 78

6.9 Radiated Band Edge Measurements (40MHz BW)

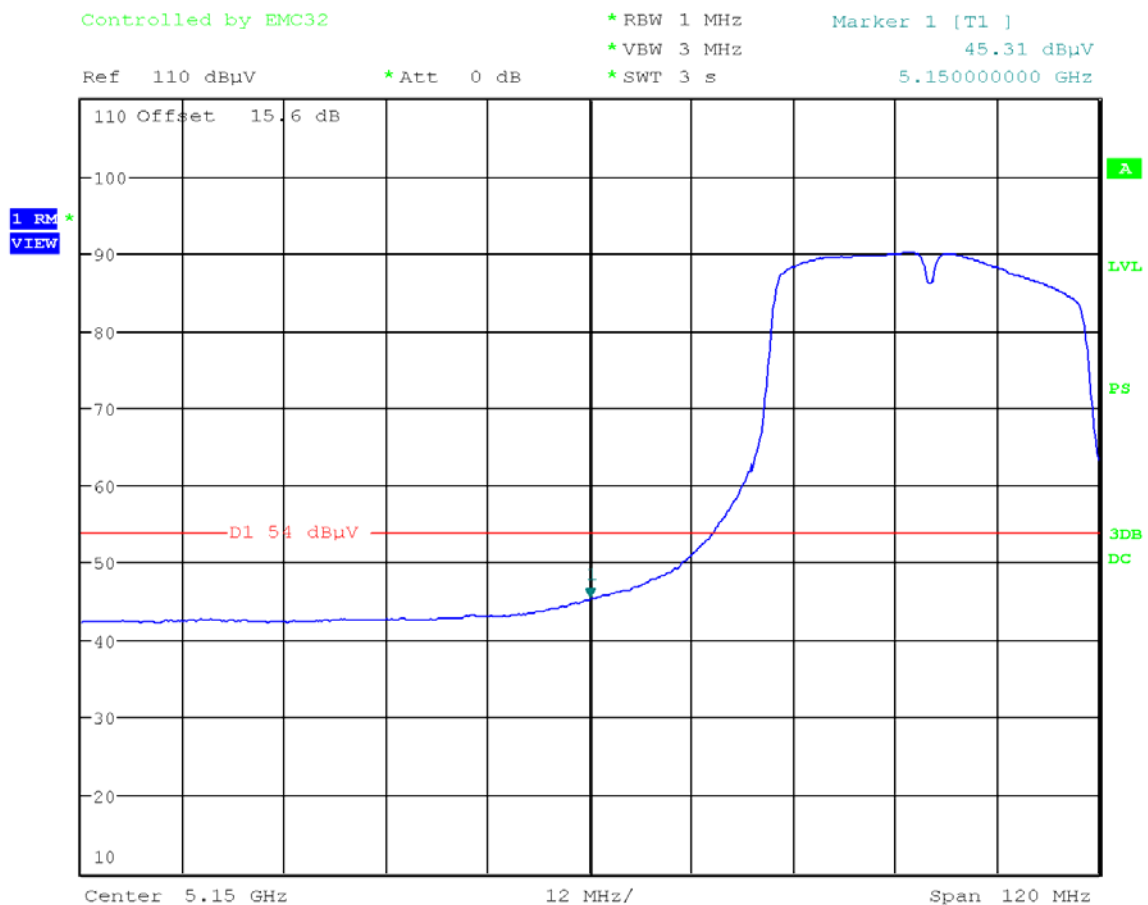
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting.

The amplitude offset shown in the following plots was calculated using the formula:

$$\text{Offset (dB)} = (\text{Antenna Factor} + \text{Cable Loss} + 10 \text{ dB Attenuator}) - \text{Preamplifier Gain}$$

Worst Case Mode: 802.11n (40MHz)
Worst Case Transfer Rate: 6 Mbps
Distance of Measurements: 3 Meters
Operating Frequency: 5190MHz
Channel: 38

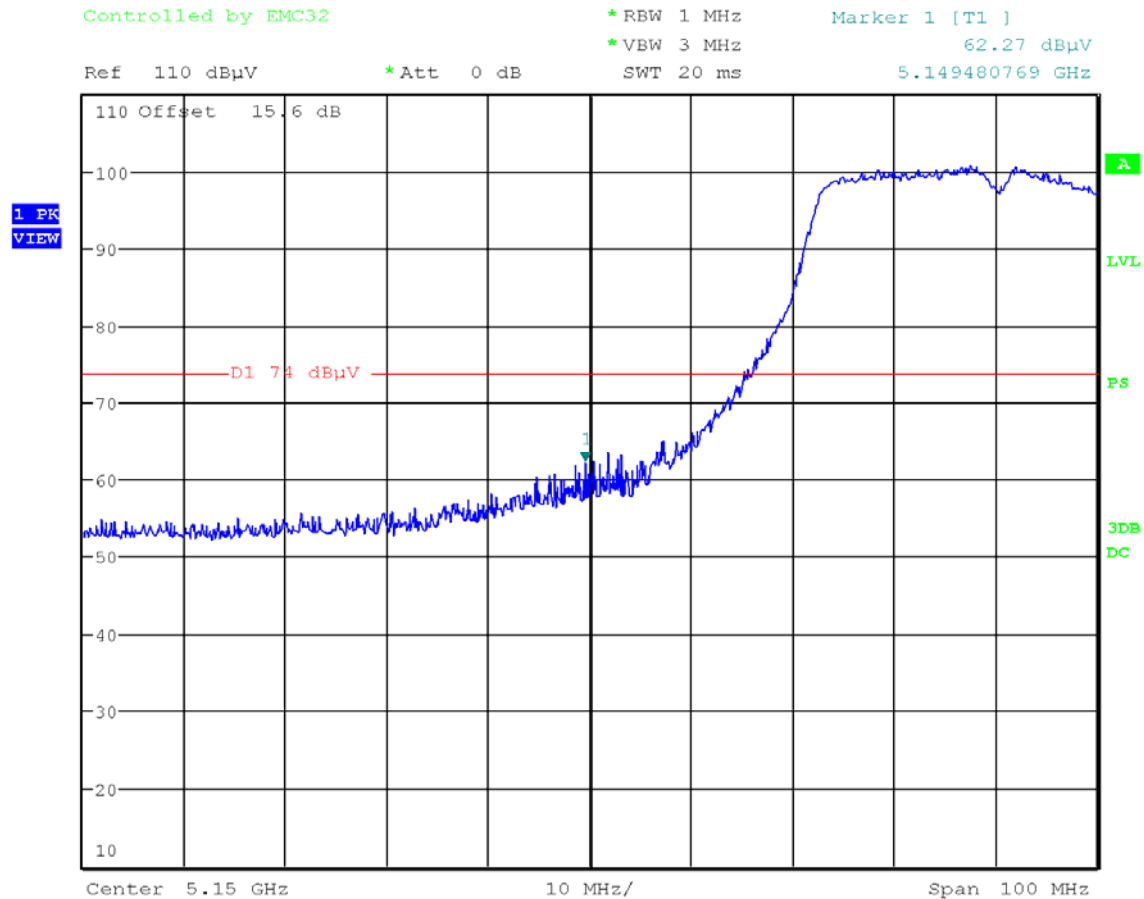


Plot 6-61. Radiated Restricted Lower Band Edge Plot (Average - UNII Band 1)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071604.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 65 of 78

Radiated Band Edge Measurements (40MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Plot 6-62. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 1)

NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Radiated Band Edge Measurements (40MHz BW) (Cont'd) §15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

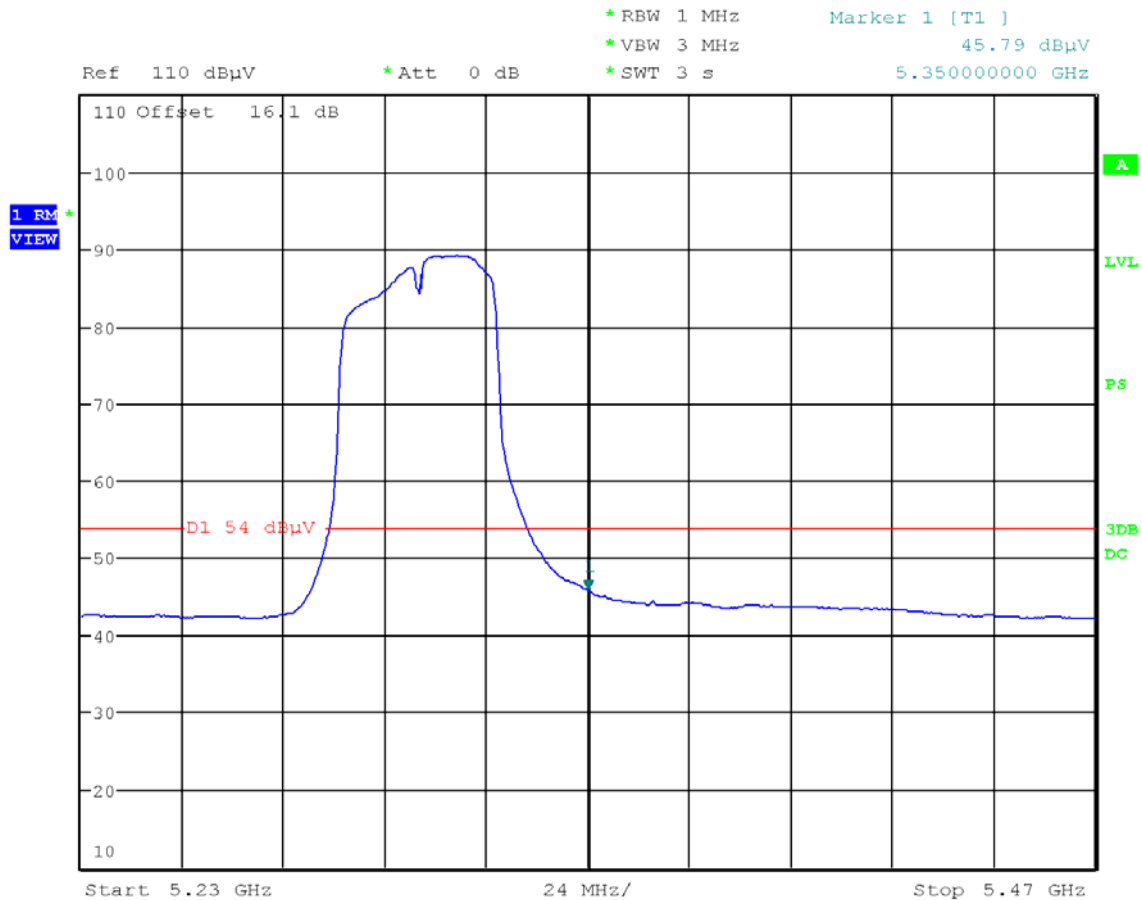
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

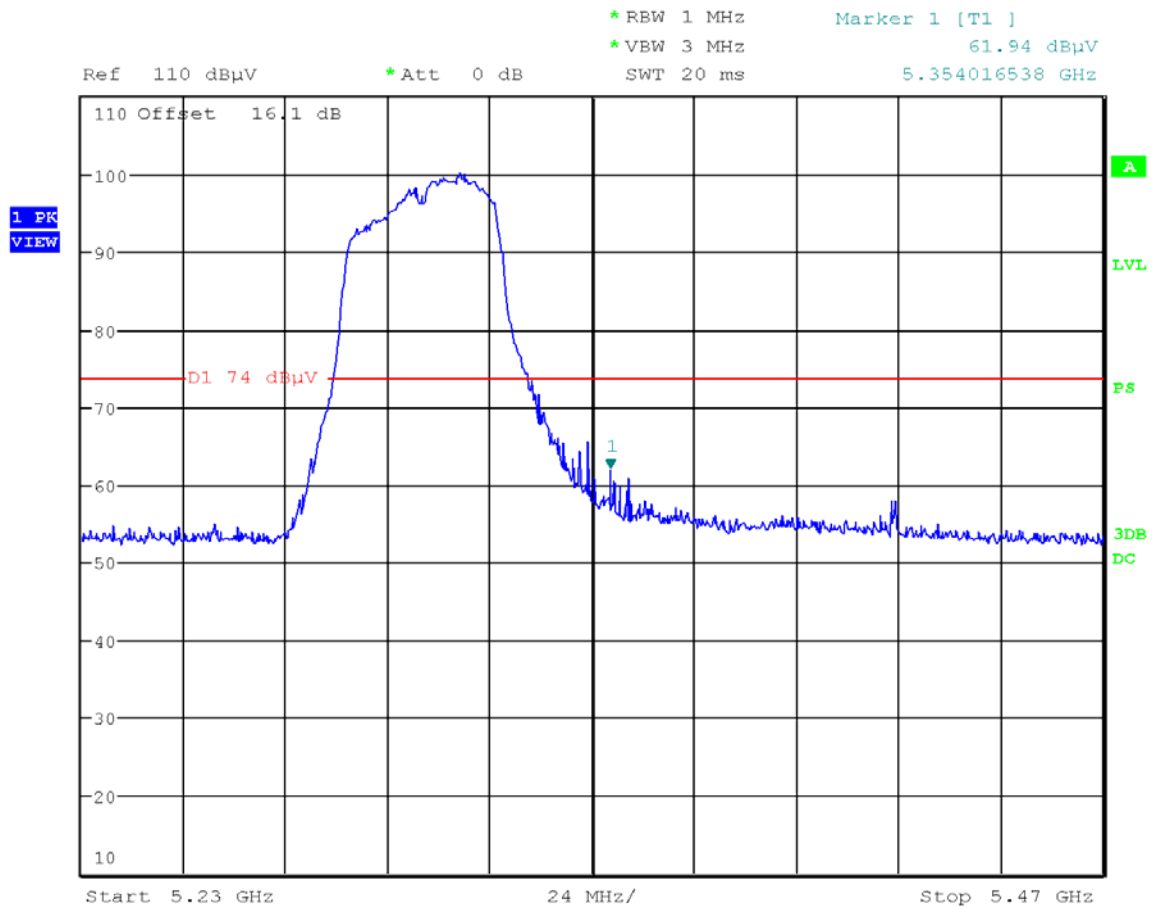


Plot 6-63. Radiated Restricted Upper Band Edge Plot (Average – UNII Band 2)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Radiated Band Edge Measurements (40MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Plot 6-64. Radiated Restricted Upper Band Edge Plot (Peak – UNII Band 2)

NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Radiated Band Edge Measurements (40MHz BW) (Cont'd) §15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

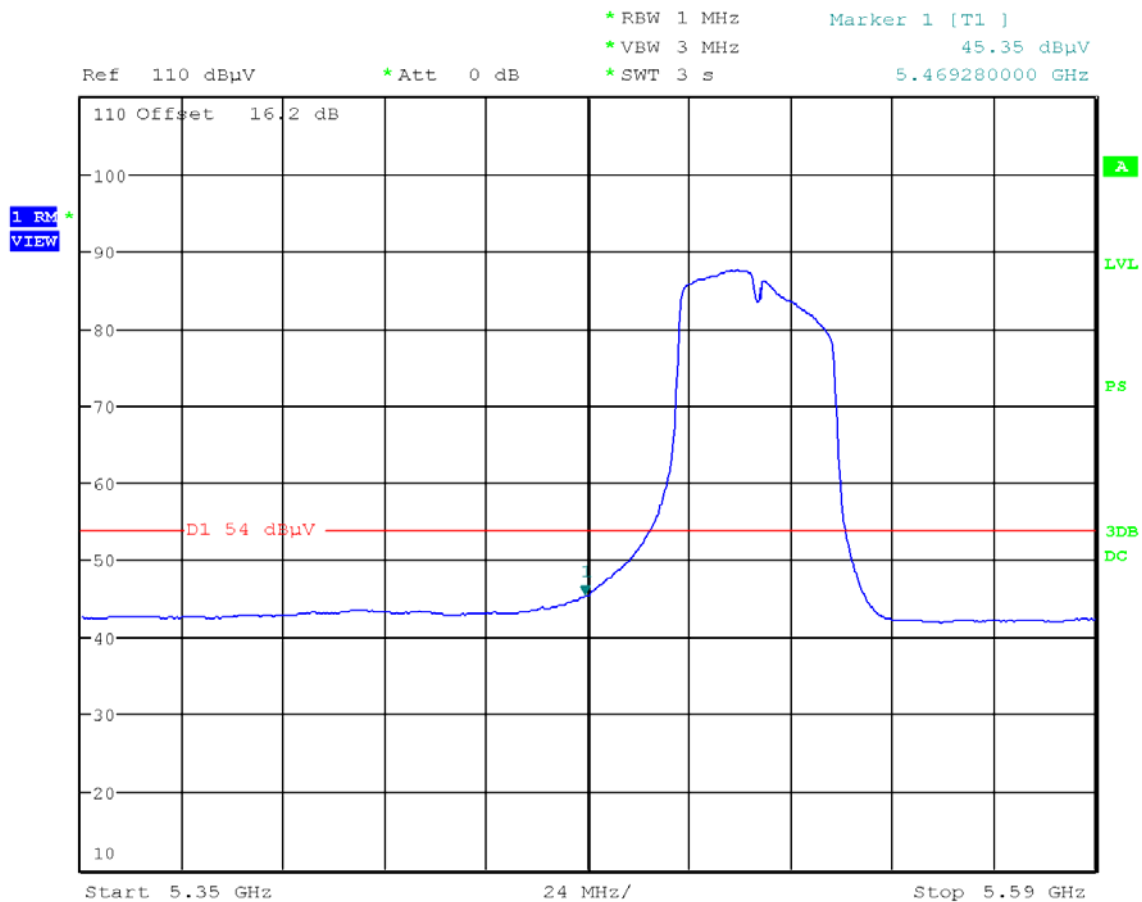
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

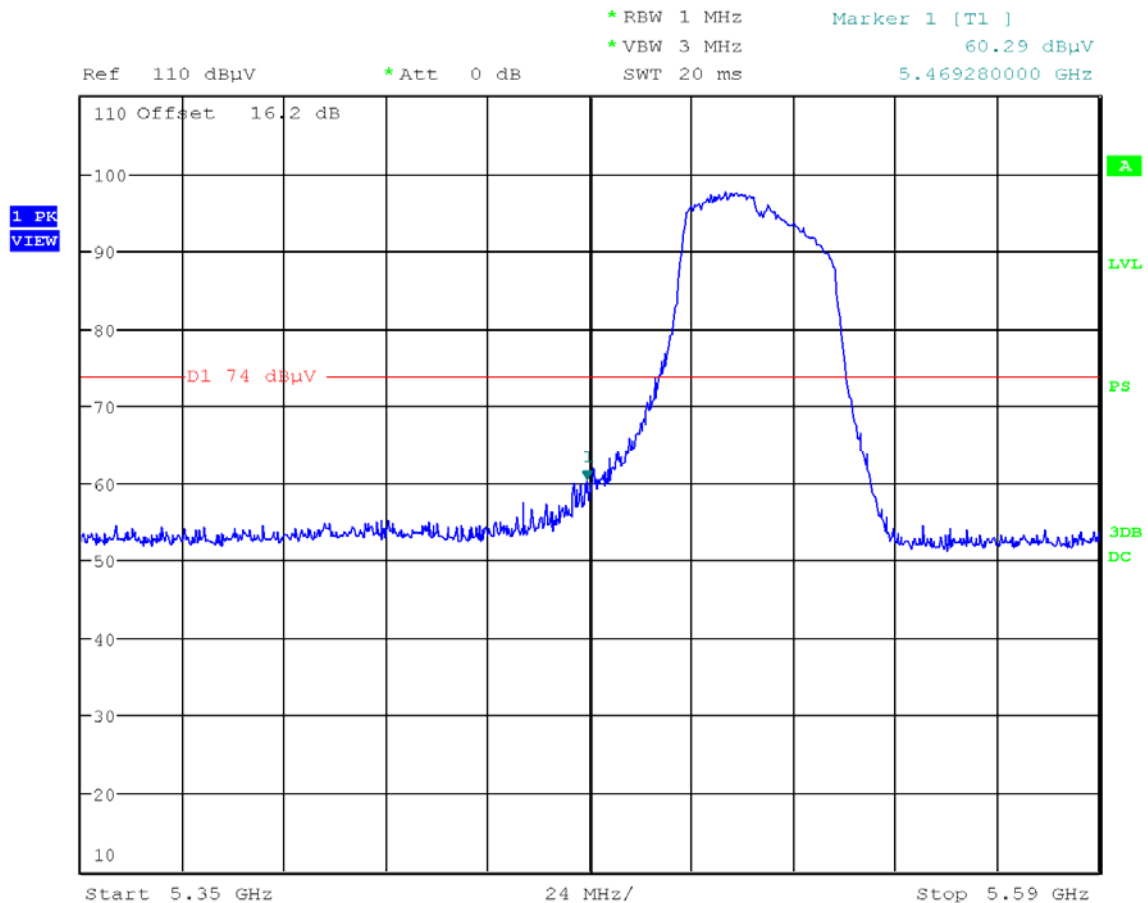


Plot 6-65. Radiated Restricted Lower Band Edge Plot (Average - UNII Band 3)

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Radiated Band Edge Measurements (40MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Plot 6-66. Radiated Restricted Lower Band Edge Plot (Peak – UNII Band 3)

NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071604.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 70 of 78

Radiated Band Edge Measurements (40MHz BW) (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

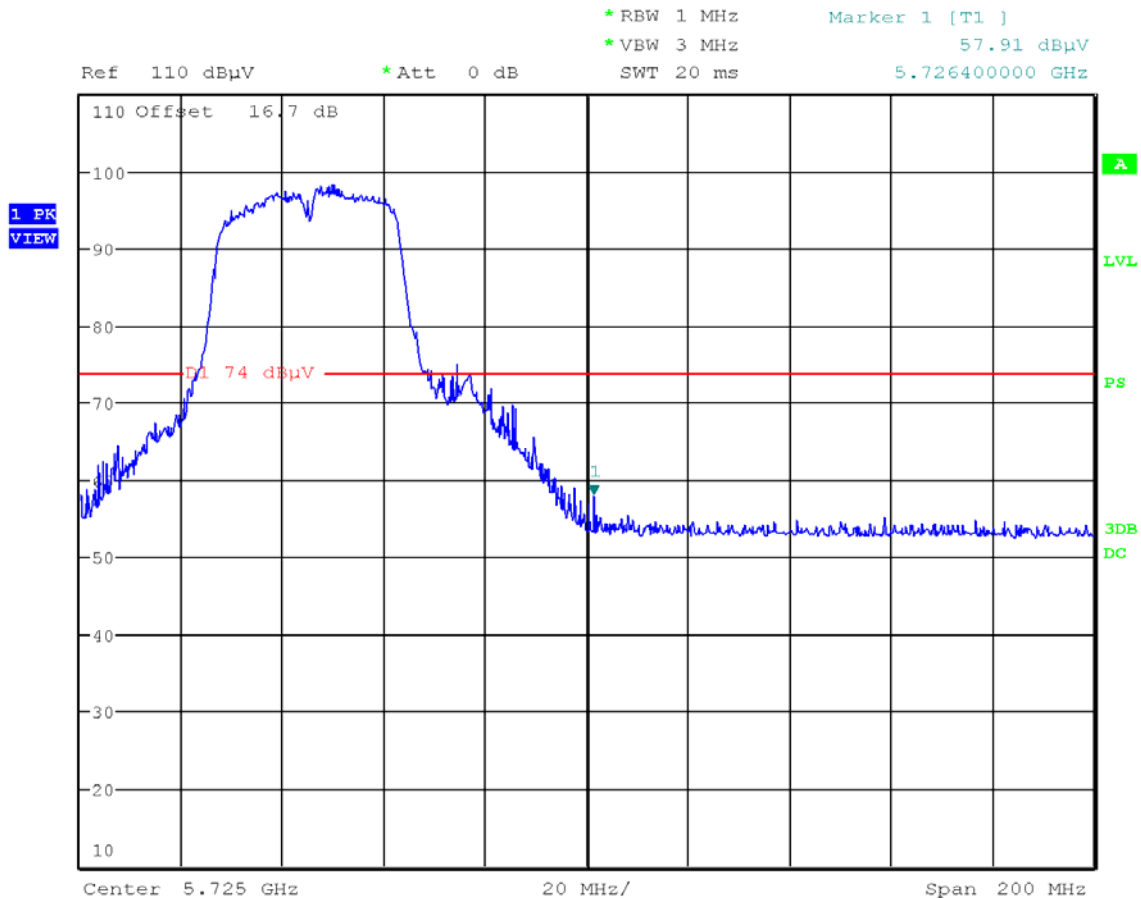
Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5670MHz

Channel: 134



Plot 6-67. Radiated Upper Band Edge Plot (Peak – UNII Band 3)

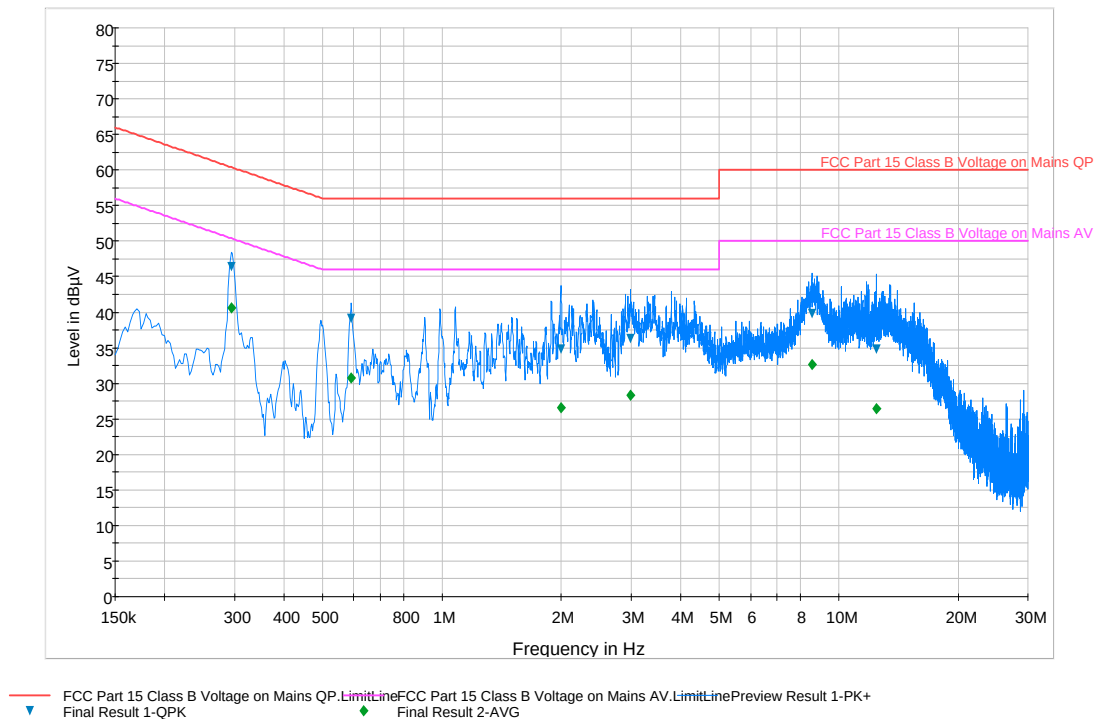
NOTES:

1. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033. Peak emissions are measured using RBW = 1MHz and VBW = 3MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.

FCC ID: A3LGTI8190N	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1211071604.A3L	Test Dates: 10/02 - 11/15/2012	EUT Type: Portable Handset		Page 71 of 78

6.10 Line-Conducted Test Data

§15.207; RSS-Gen [7.2.2]



Plot 6-68. Line Conducted Plot with 802.11a UNII Band 1 (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBμV	Limit dBμV	Margin dB	Average dBμV	Limit dBμV	Margin dB
0.294	L1	0.1	46.50	60.40	13.90	40.60	50.40	9.80
0.591	L1	0.1	39.10	56.00	16.90	30.70	46.00	15.30
1.995	L1	0.2	34.80	56.00	21.20	26.60	46.00	19.40
2.992	L1	0.2	36.30	56.00	19.70	28.30	46.00	17.70
8.552	L1	0.3	39.80	60.00	20.20	32.70	50.00	17.30
12.478	L1	0.5	34.80	60.00	25.20	26.50	50.00	23.50

Table 6-21. Line Conducted Data with 802.11a UNII Band 1 (L1)

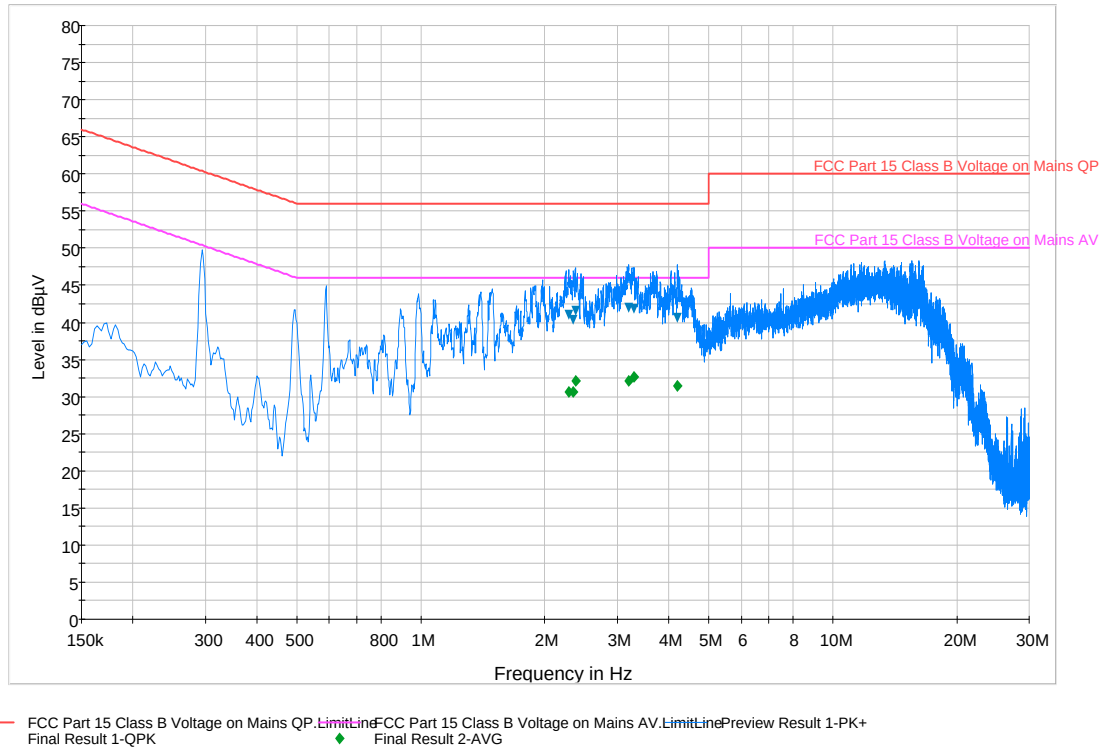
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 36. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBμV) - QP/AV Level (dBμV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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Line-Conducted Test Data (Cont'd)

§15.207; RSS-Gen [7.2.2]



Plot 6-69. Line Conducted Plot with 802.11a UNII Band 1 (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
2.285	N	0.2	41.10	56.00	14.90	30.60	46.00	15.40
2.348	N	0.2	40.30	56.00	15.70	30.70	46.00	15.30
2.373	N	0.2	41.60	56.00	14.40	32.10	46.00	13.90
3.194	N	0.2	42.00	56.00	14.00	32.10	46.00	13.90
3.284	N	0.2	41.90	56.00	14.10	32.60	46.00	13.40
4.200	N	0.2	40.60	56.00	15.40	31.40	46.00	14.60

Table 6-22. Line Conducted Data with 802.11a UNII Band 1 (N)

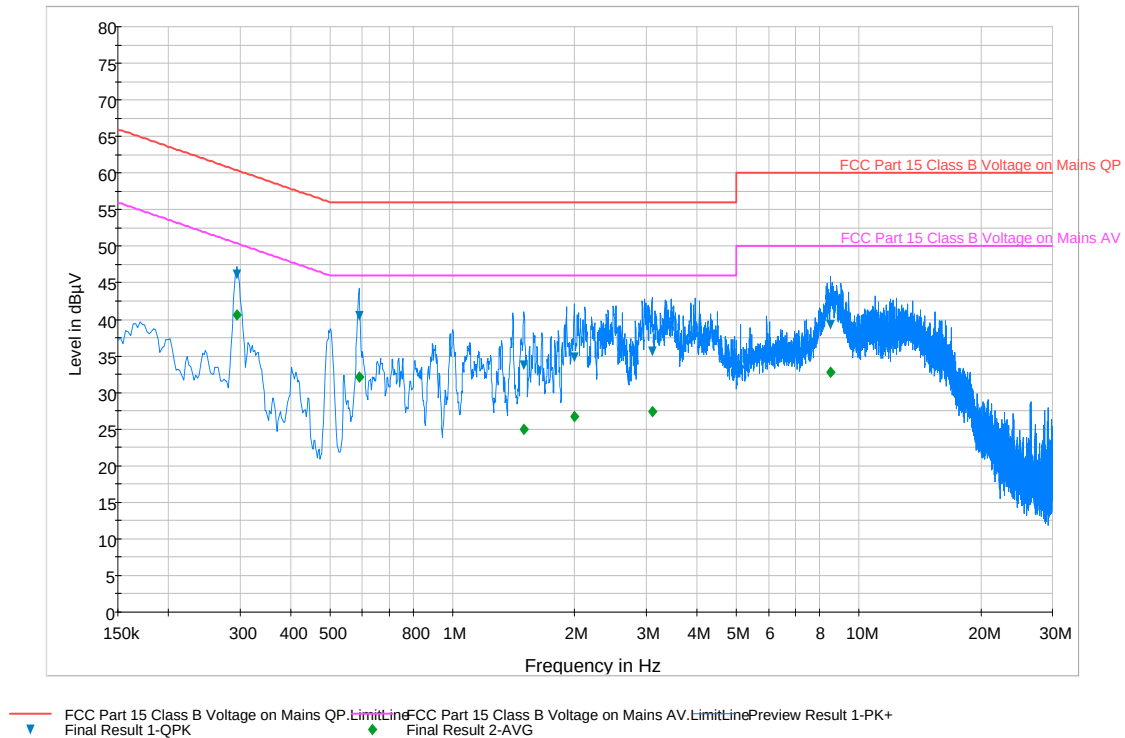
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 36. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AV Limit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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Plot 6-70. Line Conducted Plot with 802.11a UNII Band 2 (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBμV	Limit dBμV	Margin dB	Average dBμV	Limit dBμV	Margin dB
0.294	L1	0.1	46.20	60.40	14.20	40.60	50.40	9.80
0.589	L1	0.1	40.50	56.00	15.50	32.10	46.00	13.90
1.500	L1	0.2	33.70	56.00	22.30	24.90	46.00	21.10
1.997	L1	0.2	34.90	56.00	21.10	26.70	46.00	19.30
3.100	L1	0.2	35.60	56.00	20.40	27.40	46.00	18.60
8.518	L1	0.3	39.30	60.00	20.70	32.70	50.00	17.30

Table 6-23. Line Conducted Data with 802.11a UNII Band 2 (L1)

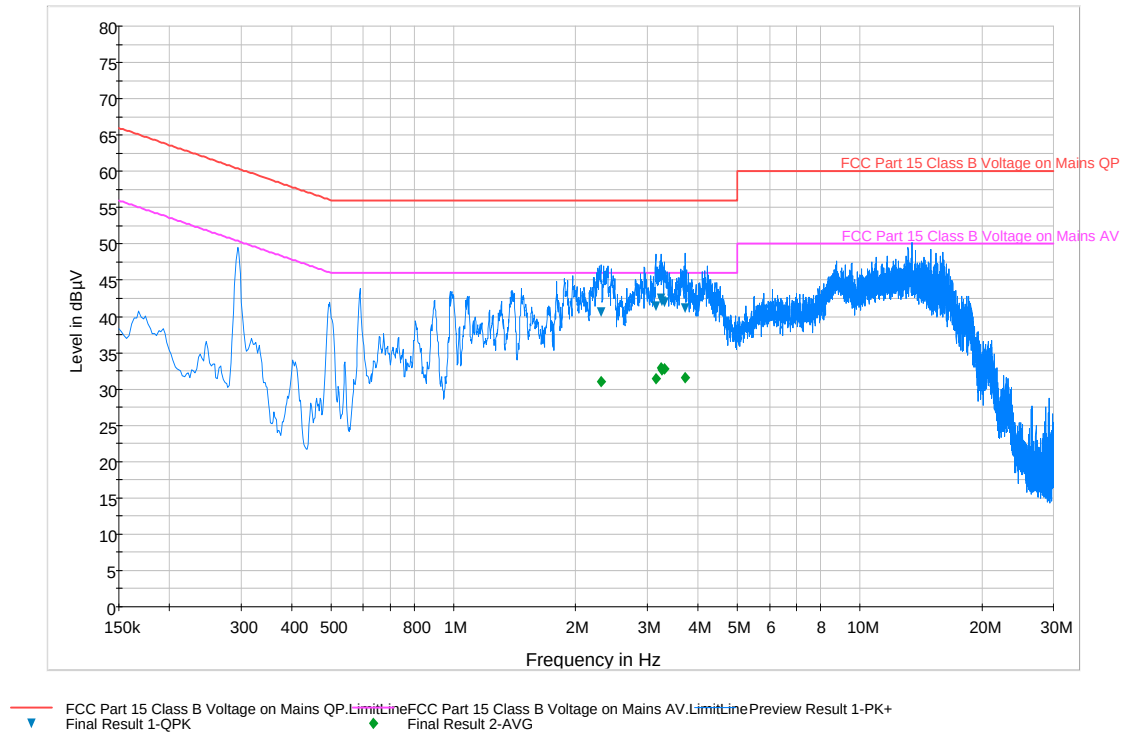
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 52. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBμV) - QP/AV Level (dBμV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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Plot 6-71. Line Conducted Plot with 802.11a UNII Band 2 (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
2.308	N	0.2	40.60	56.00	15.40	31.10	46.00	14.90
3.147	N	0.2	41.40	56.00	14.60	31.50	46.00	14.50
3.242	N	0.2	42.50	56.00	13.50	32.90	46.00	13.10
3.266	N	0.2	42.00	56.00	14.00	32.70	46.00	13.30
3.307	N	0.2	41.90	56.00	14.10	32.80	46.00	13.20
3.723	N	0.2	41.20	56.00	14.80	31.60	46.00	14.40

Table 6-24. Line Conducted Data with 802.11a UNII Band 2 (N)

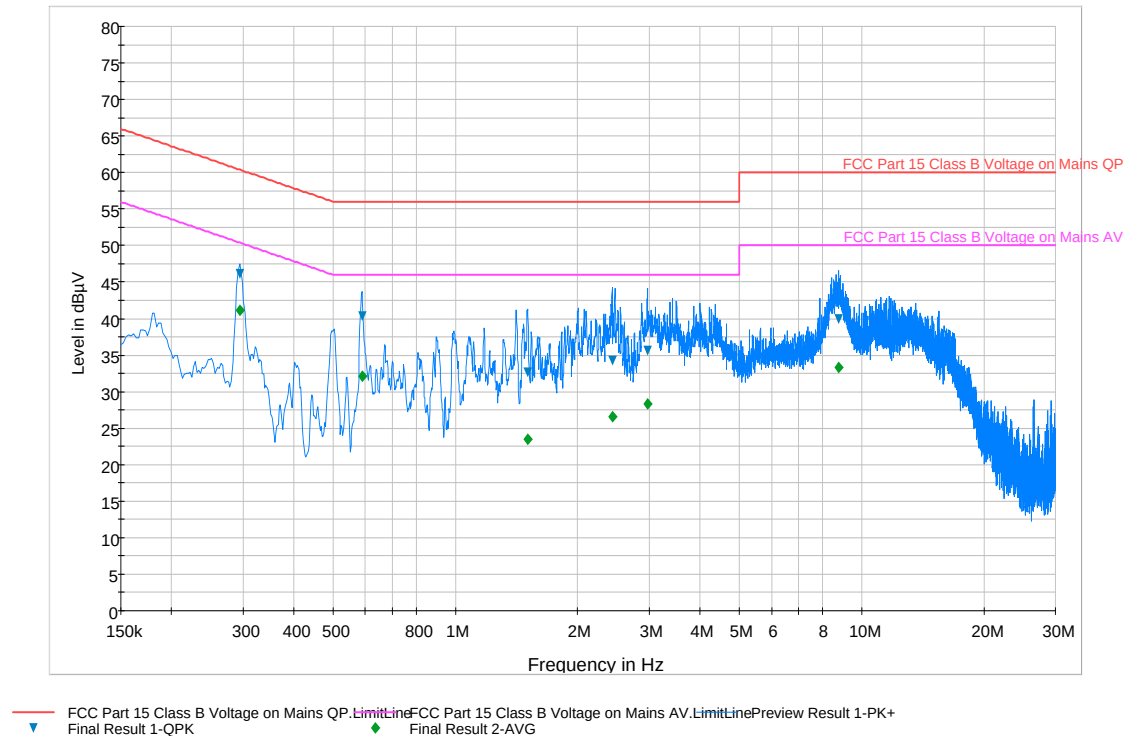
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 52. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AV Limit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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Line-Conducted Test Data (Cont'd)

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Plot 6-72. Line Conducted Plot with 802.11a UNII Band 3 (L1)

Frequency MHz	Line	Corr. dB	QuasiPeak dBμV	Limit dBμV	Margin dB	Average dBμV	Limit dBμV	Margin dB
0.294	L1	0.1	46.20	60.40	14.20	41.10	50.40	9.30
0.589	L1	0.1	40.40	56.00	15.60	32.10	46.00	13.90
1.507	L1	0.2	32.70	56.00	23.30	23.50	46.00	22.50
2.432	L1	0.2	34.20	56.00	21.80	26.60	46.00	19.40
2.972	L1	0.2	35.60	56.00	20.40	28.30	46.00	17.70
8.799	L1	0.3	39.90	60.00	20.10	33.30	50.00	16.70

Table 6-25. Line Conducted Plot with 802.11a UNII Band 3 (L1)

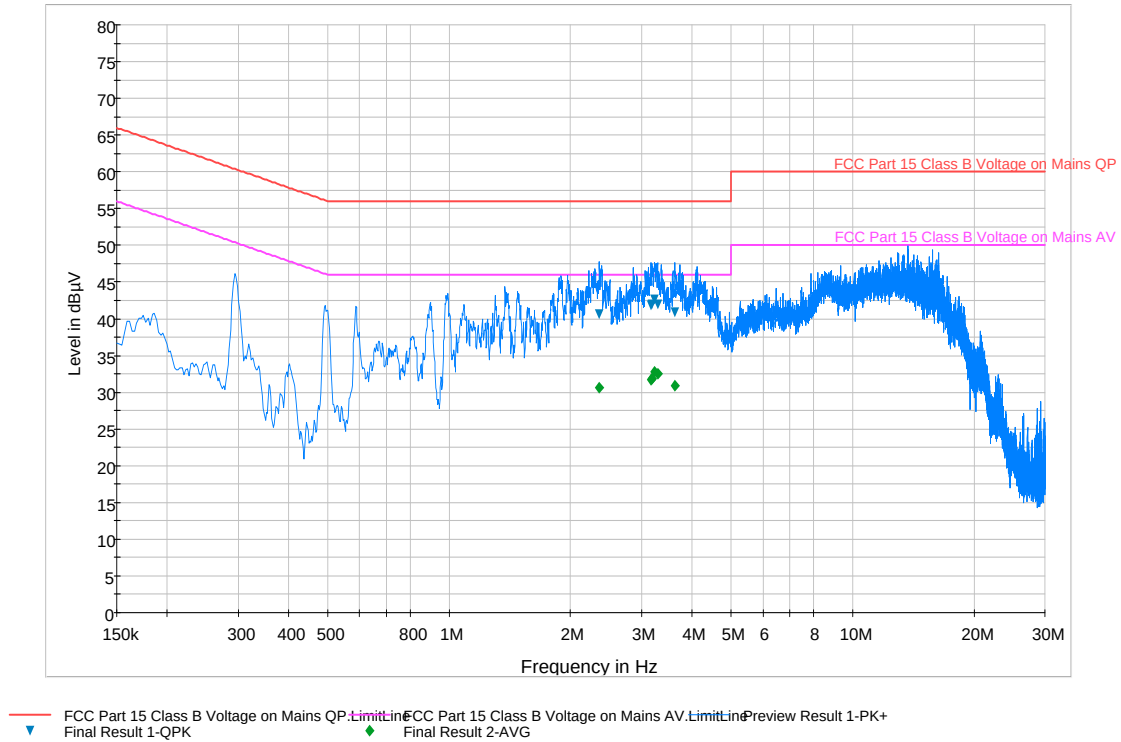
Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBμV) - QP/AV Level (dBμV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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Plot 6-73. Line Conducted Plot with 802.11a UNII Band 3 (N)

Frequency MHz	Line	Corr. dB	QuasiPeak dBµV	Limit dBµV	Margin dB	Average dBµV	Limit dBµV	Margin dB
2.355	N	0.2	40.70	56.00	15.30	30.60	46.00	15.40
3.170	N	0.2	41.80	56.00	14.20	31.70	46.00	14.30
3.183	N	0.2	42.00	56.00	14.00	31.90	46.00	14.10
3.226	N	0.2	42.60	56.00	13.40	32.80	46.00	13.20
3.284	N	0.2	42.00	56.00	14.00	32.60	46.00	13.40
3.624	N	0.2	40.90	56.00	15.10	30.90	46.00	15.10

Table 6-26. Line Conducted Data with 802.11a UNII Band 3 (N)

Notes:

- All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 100. The emissions found were not affected by the choice of channel used during testing.
- The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
- L1 = Phase; N = Neutral
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
- QP/AV Level (dBµV) = QP/AV Analyzer/Receiver Level (dBµV) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dBµV) - QP/AV Level (dBµV)
- Traces shown in plot are made using a peak detector.
- Deviations to the Specifications: None.

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7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LGTI8190N** is in compliance with Part 15E of the FCC Rules and RSS-210 of the Industry Canada Rules.

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