

6.5 Peak Excursion Ratio – 802.11a/n

§15.407(a)(6)

The spectrum analyzer was connected to the antenna terminal while the EUT was operating in the continuous transmission mode at the appropriate center frequencies.

Method SA-1, as defined in KDB 789033 and with the settings described in Section 6.4 of this test report, was used to generate the average signal trace and the procedure outlined in section F) was used to generate the peak signal trace. A minimum of 100 trace averages were used for the average signal. The peak and average traces are then used to determine the peak excursion.

The largest permissible difference between the modulation envelope (measured using a peak hold function) and the maximum conducted output power is 13 dBm/MHz.

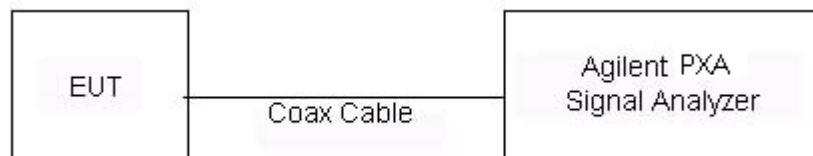


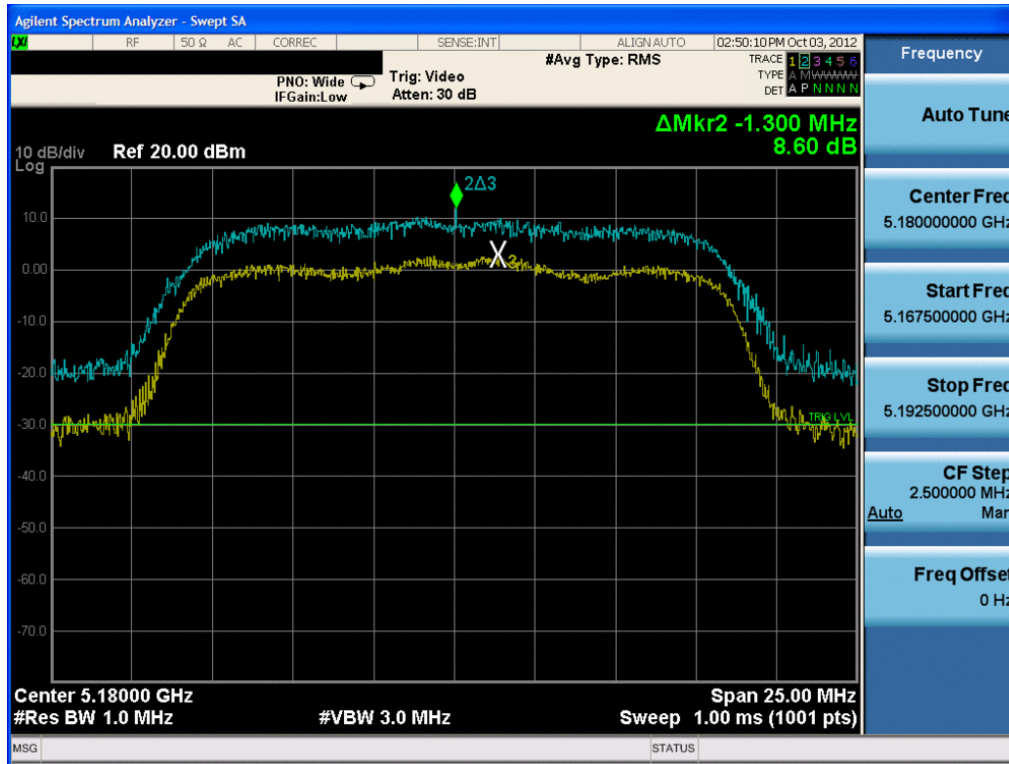
Figure 6-4. Test Instrument & Measurement Setup

FCC ID: A3LGTI8190		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 42 of 84

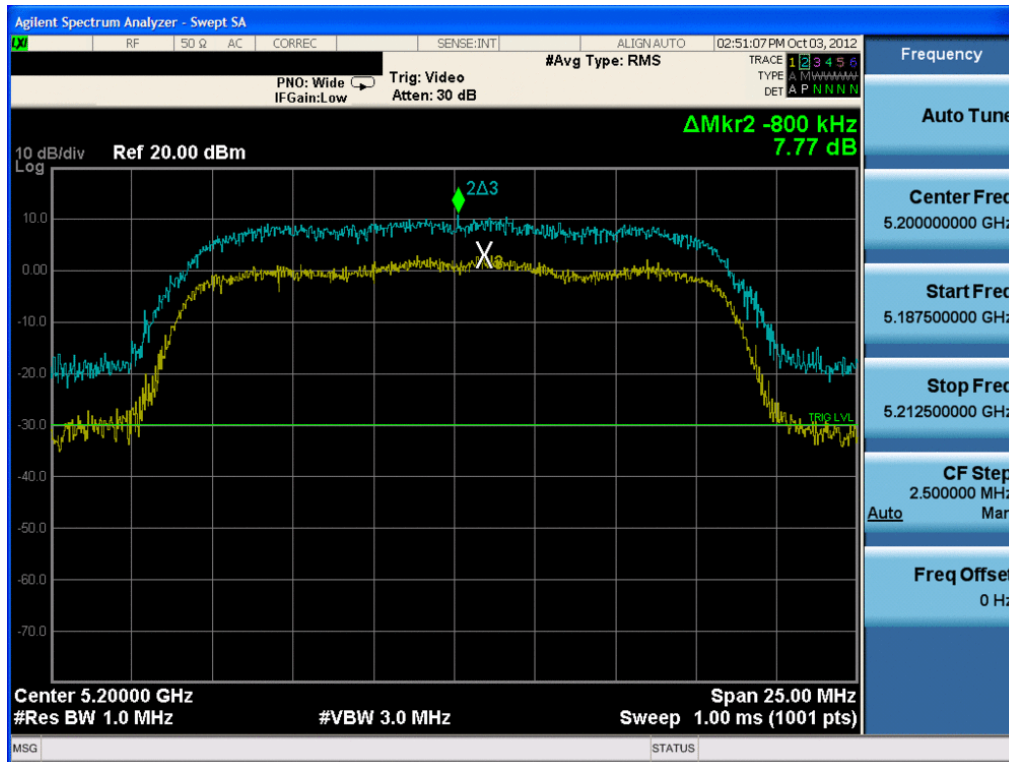
	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]
Band I	5180	36	a	6	8.60	13.0	-4.40
	5200	40	a	6	7.77	13.0	-5.23
	5240	48	a	6	8.95	13.0	-4.05
	5180	36	n (20MHz)	6.5/7.2 (MCS0)	7.67	13.0	-5.33
	5200	40	n (20MHz)	6.5/7.2 (MCS0)	7.85	13.0	-5.15
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	6.78	13.0	-6.22
	5190	38	n (40MHz)	13.5/15 (MCS0)	8.85	13.0	-4.15
	5230	46	n (40MHz)	13.5/15 (MCS0)	7.55	13.0	-5.45
Band II	5260	52	a	6	8.85	13.0	-4.15
	5280	56	a	6	7.63	13.0	-5.37
	5320	64	a	6	5.80	13.0	-7.20
	5260	52	n (20MHz)	6.5/7.2 (MCS0)	7.34	13.0	-5.66
	5280	56	n (20MHz)	6.5/7.2 (MCS0)	6.53	13.0	-6.47
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	7.11	13.0	-5.89
	5270	54	n (40MHz)	13.5/15 (MCS0)	8.72	13.0	-4.28
	5310	62	n (40MHz)	13.5/15 (MCS0)	8.54	13.0	-4.46
Band III	5500	100	a	6	7.77	13.0	-5.23
	5580	116	a	6	7.00	13.0	-6.00
	5700	140	a	6	6.35	13.0	-6.65
	5500	100	n (20MHz)	6.5/7.2 (MCS0)	6.66	13.0	-6.34
	5580	116	n (20MHz)	6.5/7.2 (MCS0)	6.44	13.0	-6.56
	5700	140	n (20MHz)	6.5/7.2 (MCS0)	7.01	13.0	-5.99
	5510	102	n (40MHz)	13.5/15 (MCS0)	8.91	13.0	-4.09
	5550	110	n (40MHz)	13.5/15 (MCS0)	8.51	13.0	-4.49
	5670	134	n (40MHz)	13.5/15 (MCS0)	9.06	13.0	-3.94

Table 6-7. Conducted Peak Excursion Ratio Measurements

FCC ID: A3LGTI8190		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 43 of 84

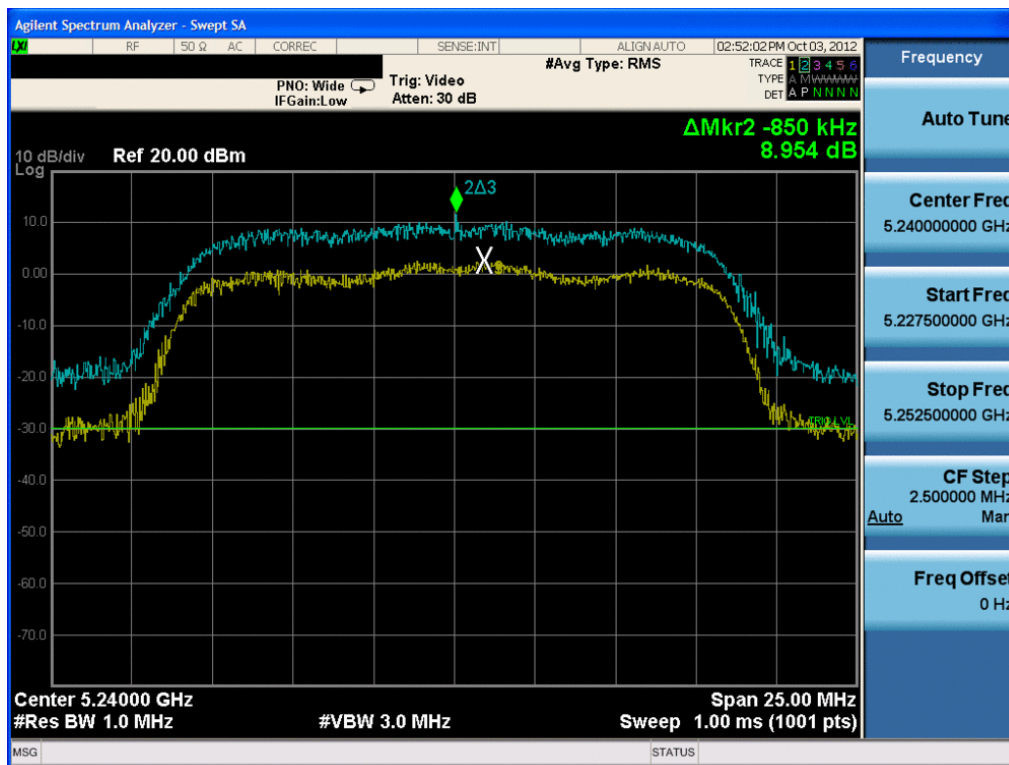


Plot 6-51. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 36)

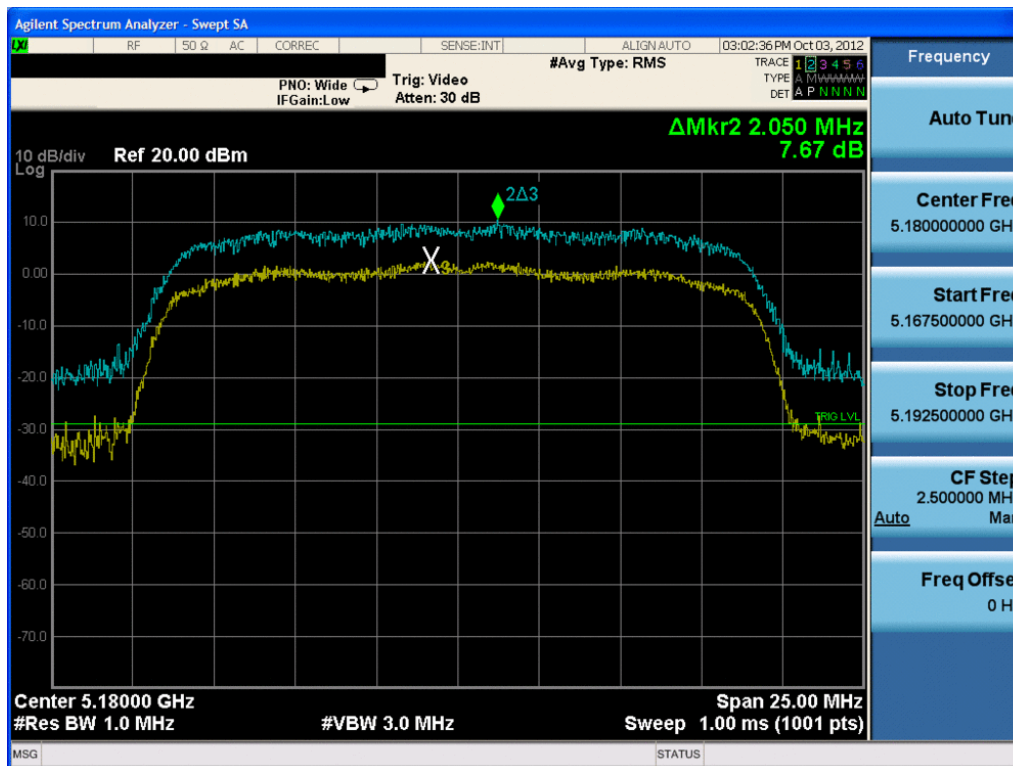


Plot 6-52. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 40)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 44 of 84

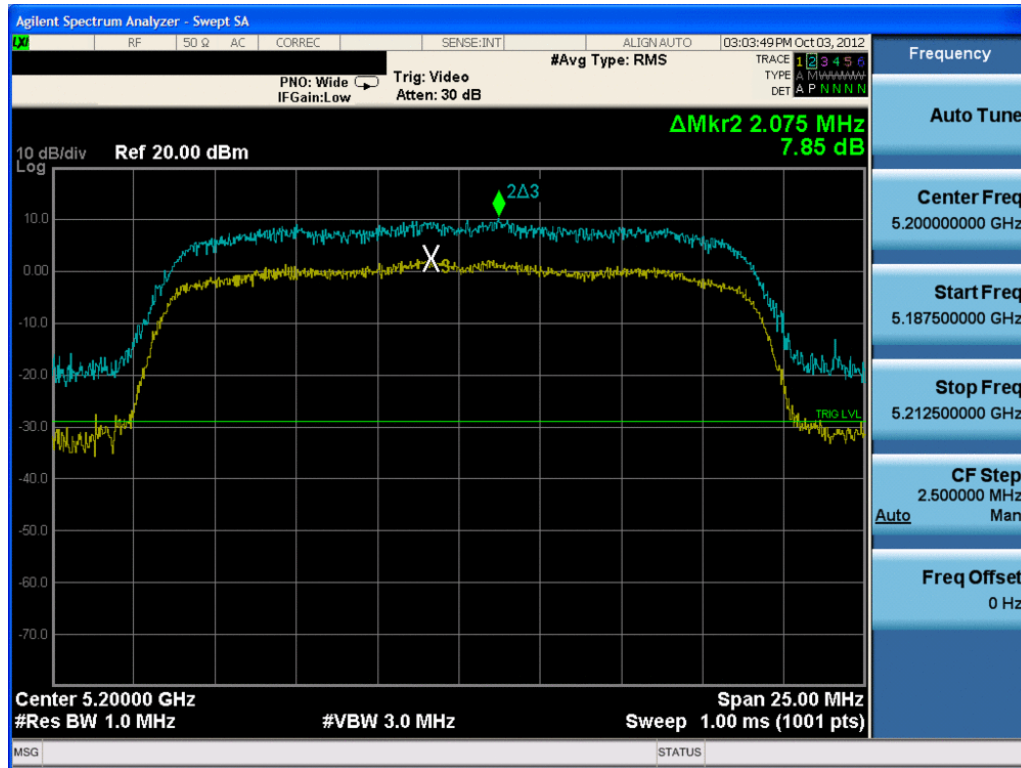


Plot 6-53. Peak Excursion Ratio Plot (802.11a (UNII Band 1) – Ch. 48)

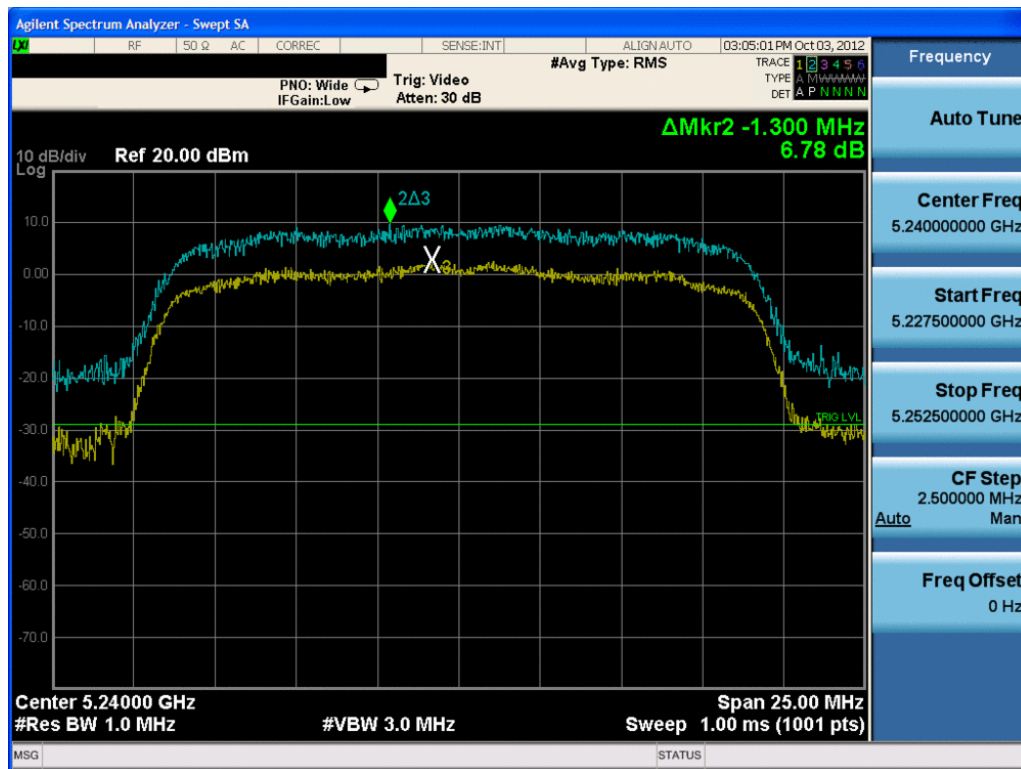


Plot 6-54. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 36)

FCC ID: A3LGT18190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 45 of 84

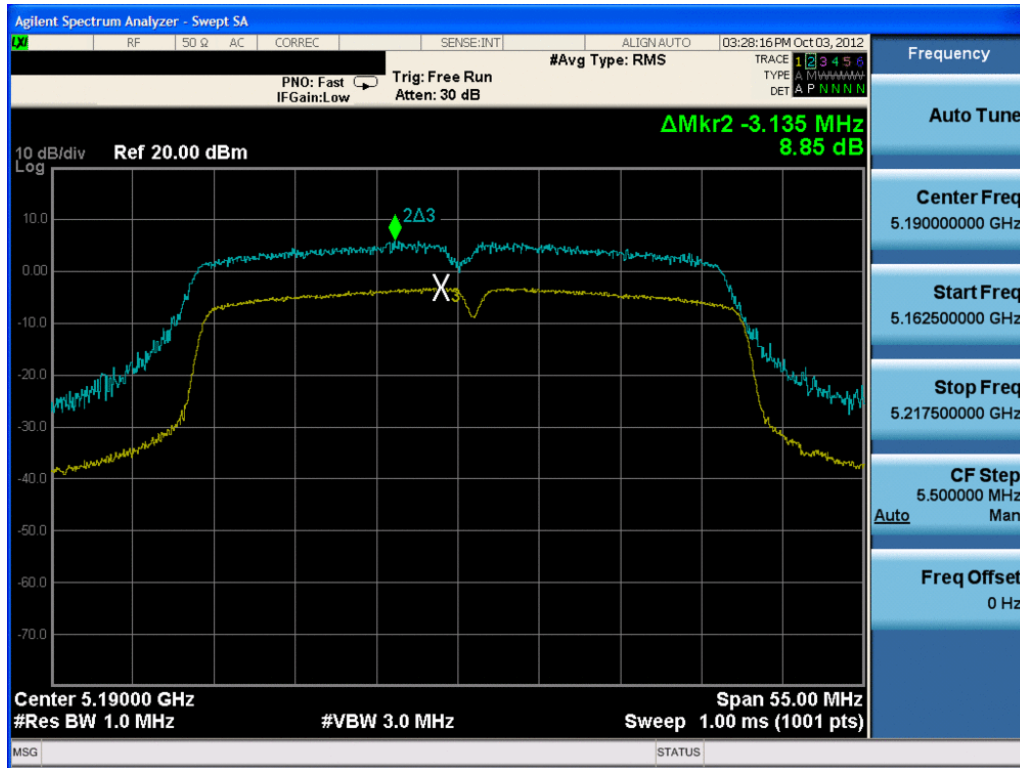


Plot 6-55. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 40)

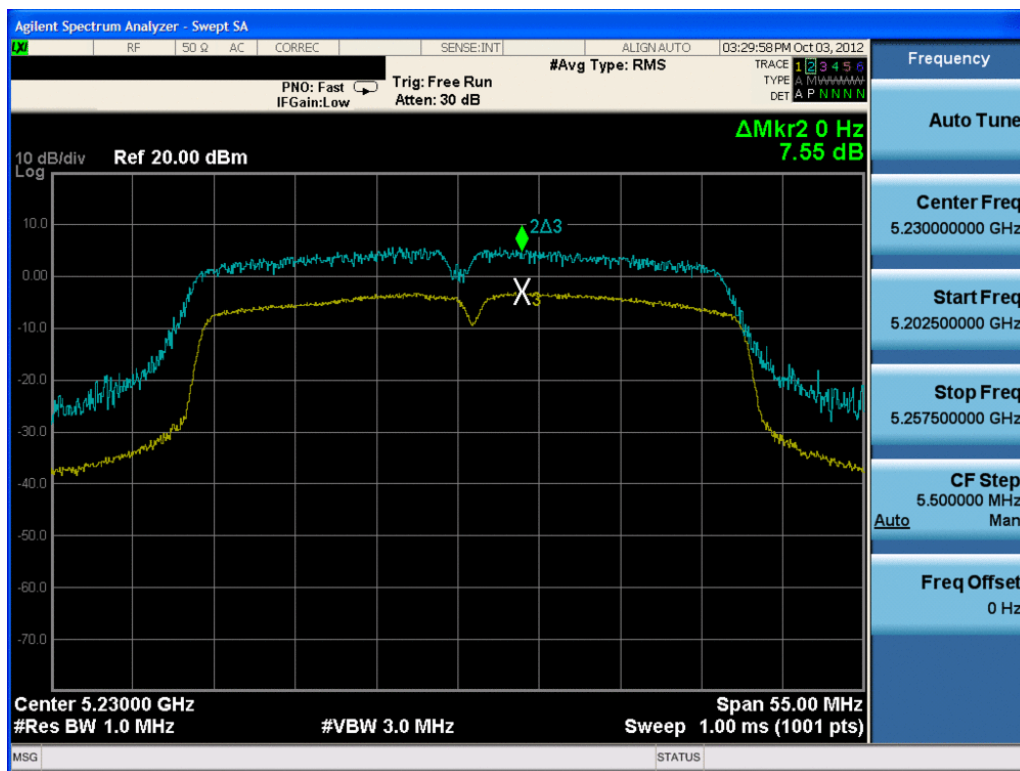


Plot 6-56. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) – Ch. 48)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 46 of 84

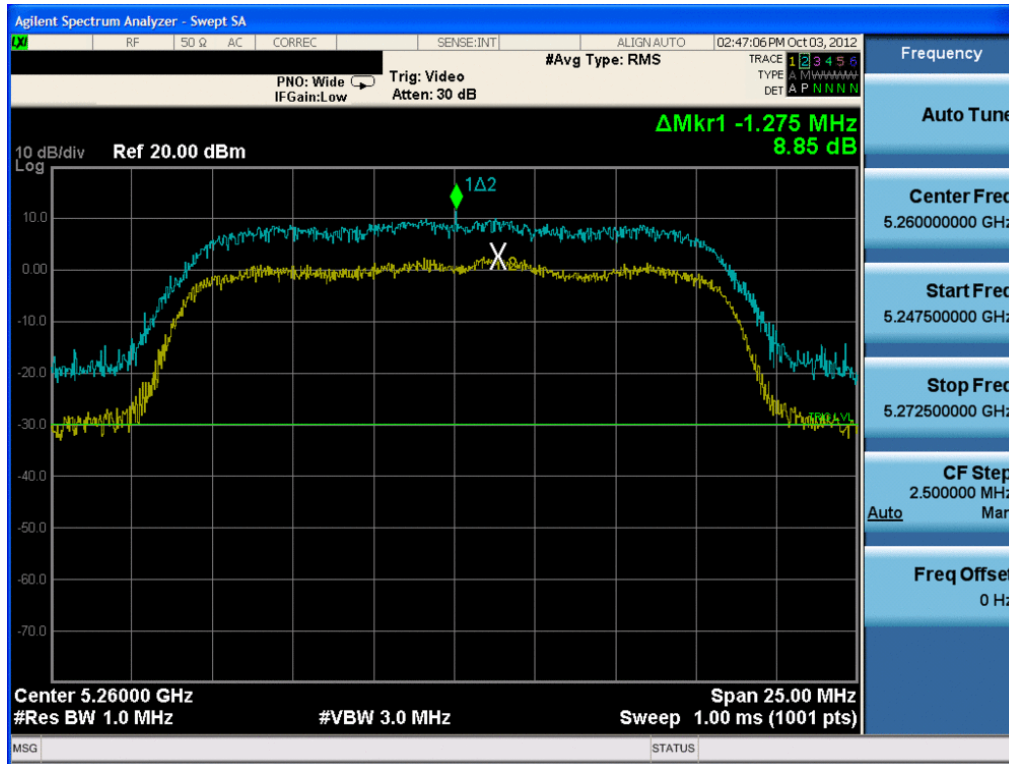


Plot 6-57. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) - Ch. 38)

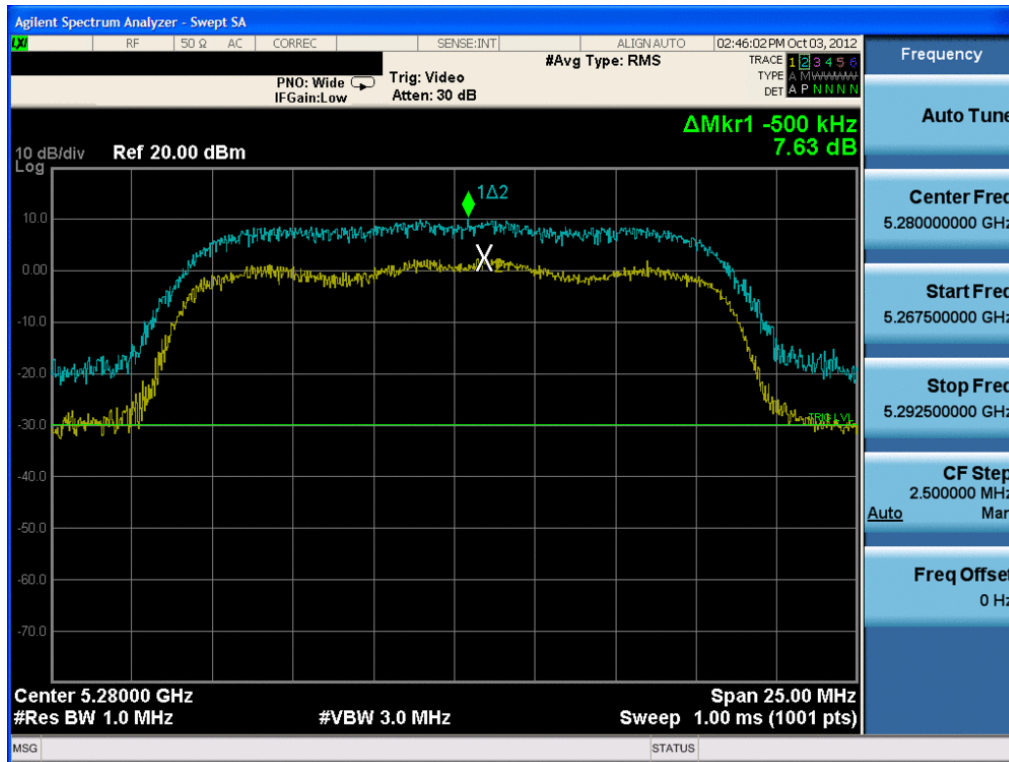


Plot 6-58. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) - Ch. 46)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 47 of 84

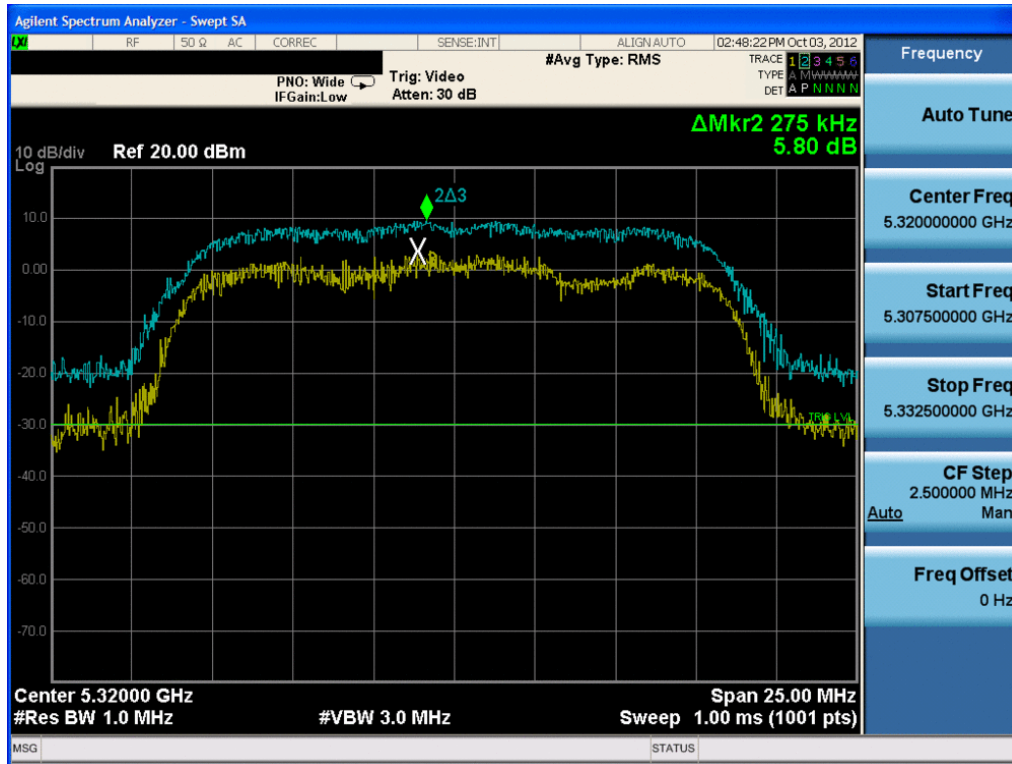


Plot 6-59. Peak Excursion Ratio Plot (802.11a (UNII Band 2) – Ch. 52)

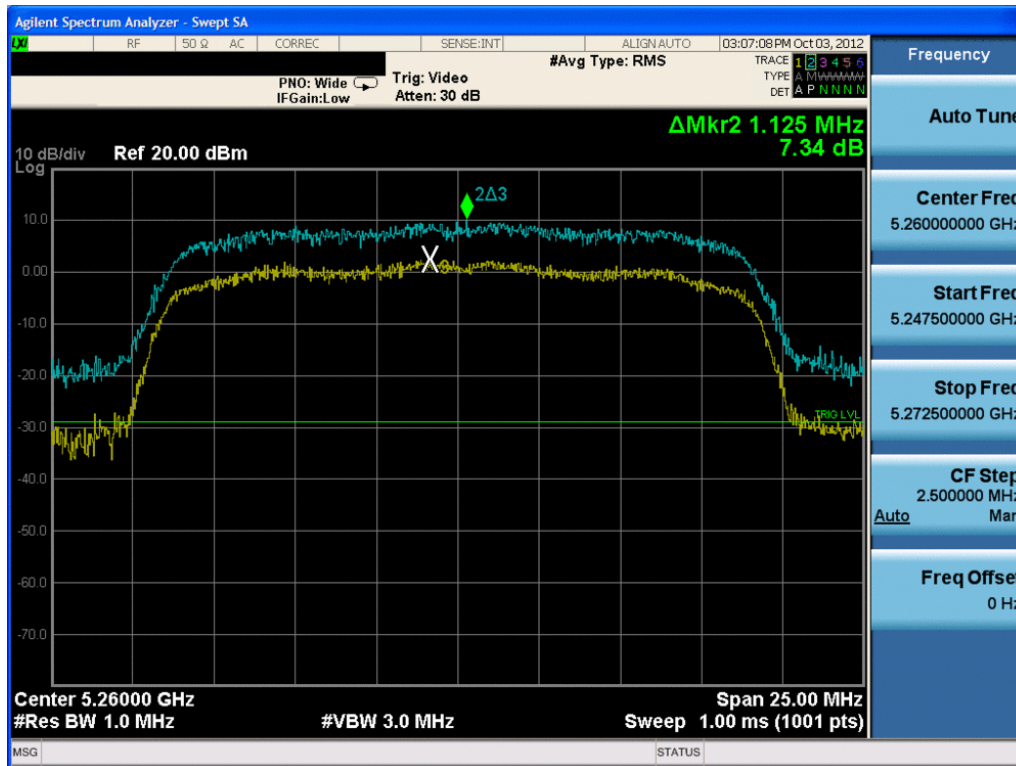


Plot 6-60. Peak Excursion Ratio Plot (802.11a (UNII Band 2) – Ch. 56)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 48 of 84

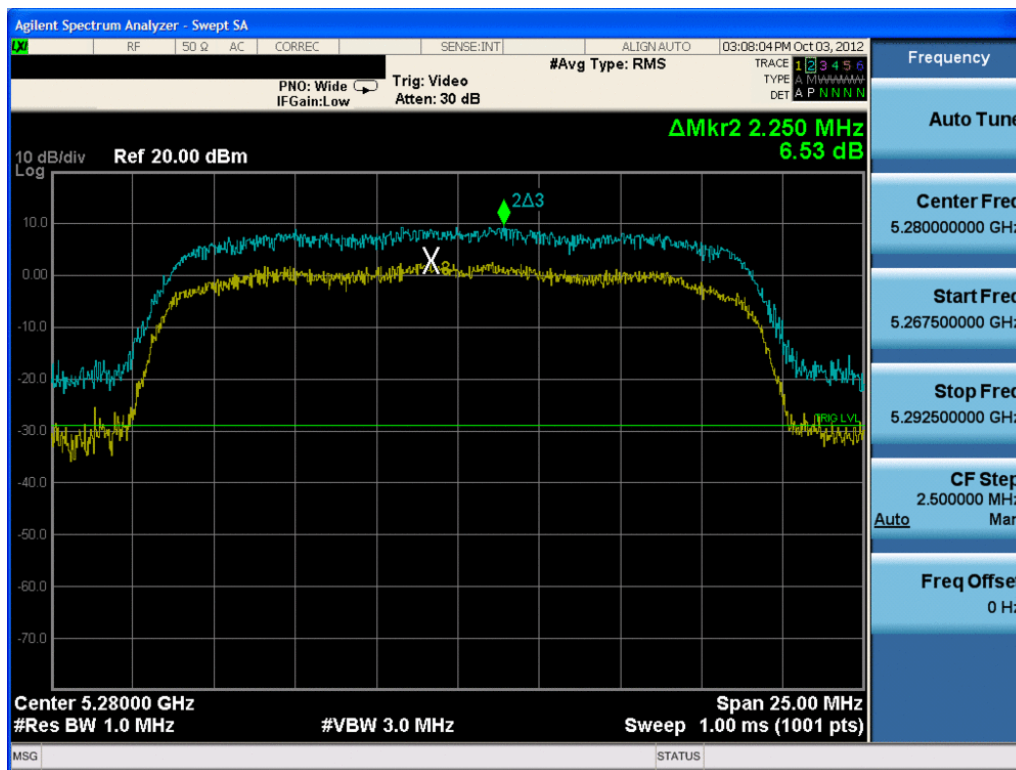


Plot 6-61. Peak Excursion Ratio Plot (802.11a (UNII Band 2) – Ch. 64)

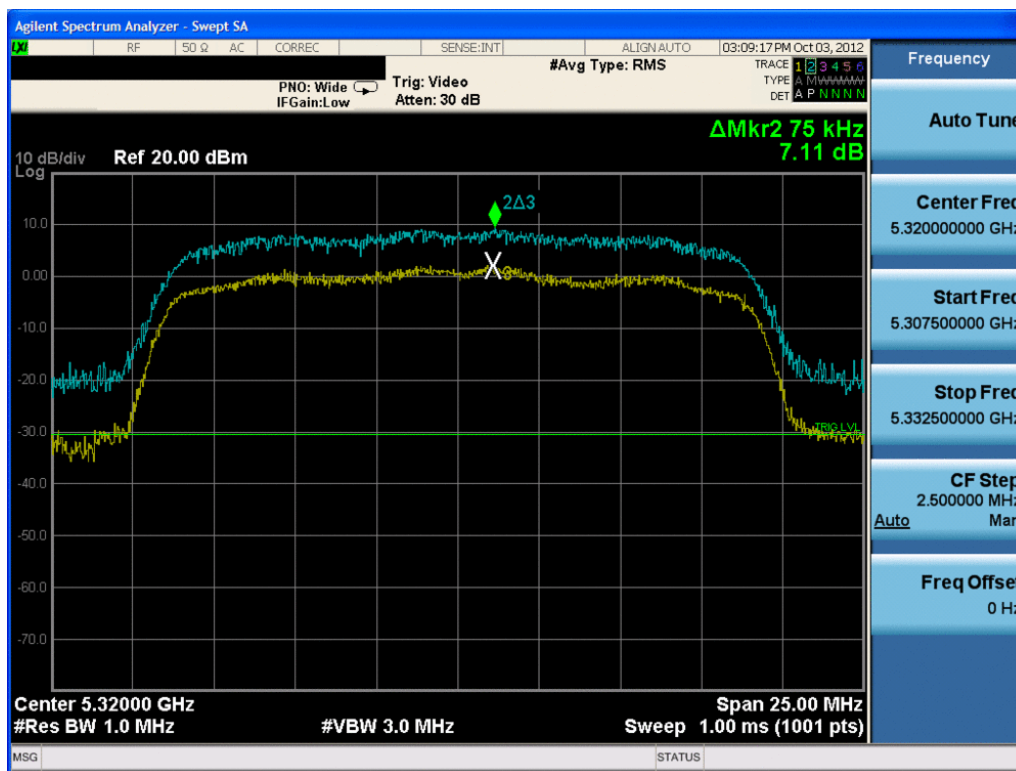


Plot 6-62. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2) – Ch. 52)

FCC ID: A3LGT18190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 49 of 84

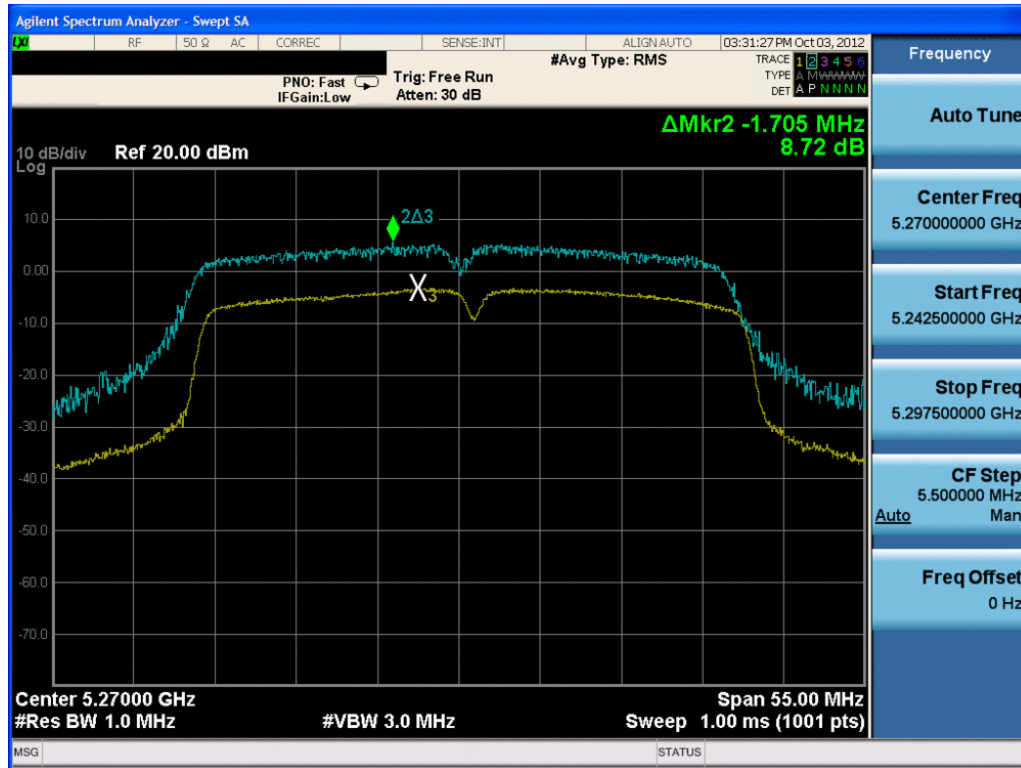


Plot 6-63. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2) – Ch. 56)

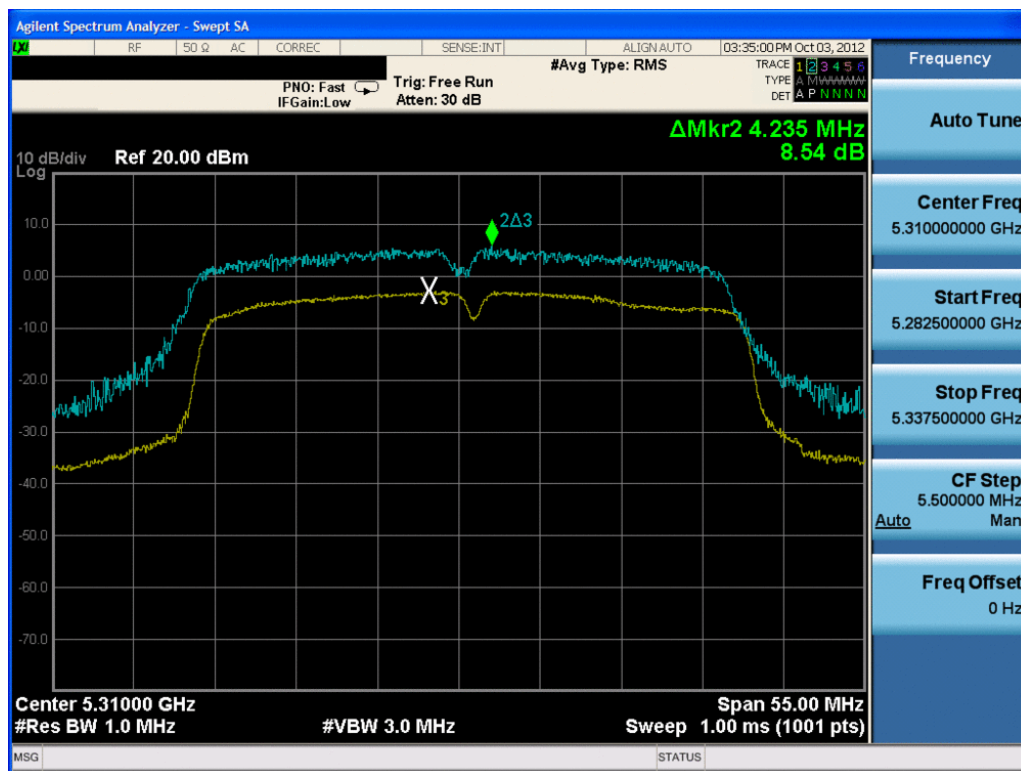


Plot 6-64. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2) – Ch. 64)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 50 of 84

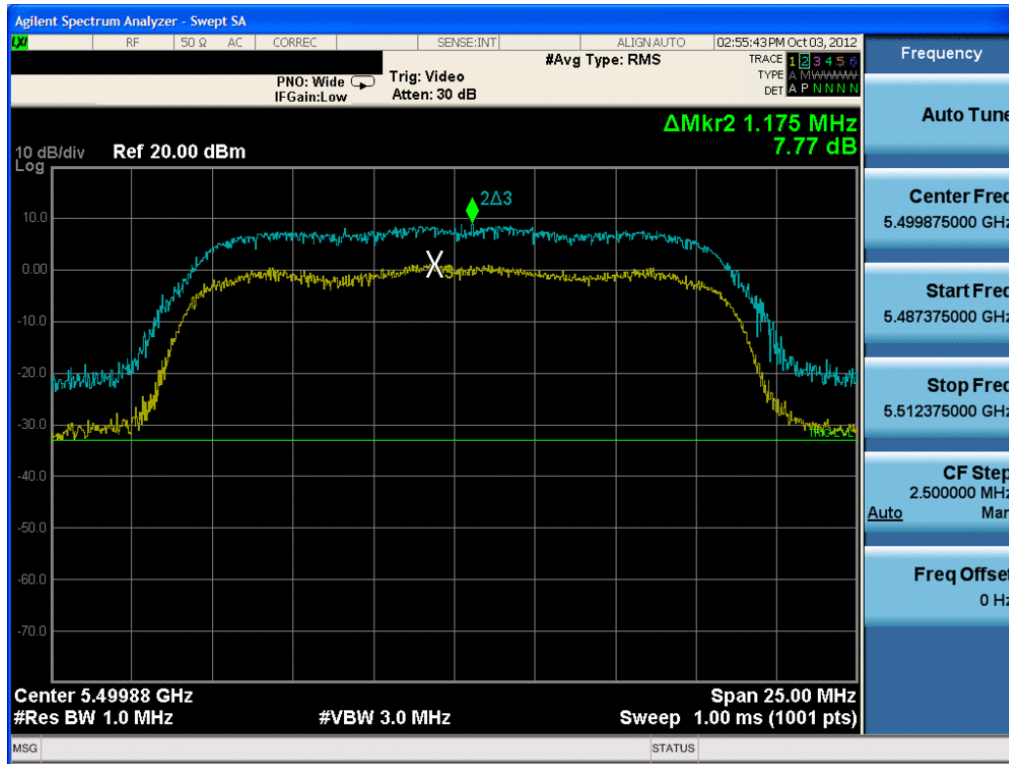


Plot 6-65. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2) – Ch. 54)

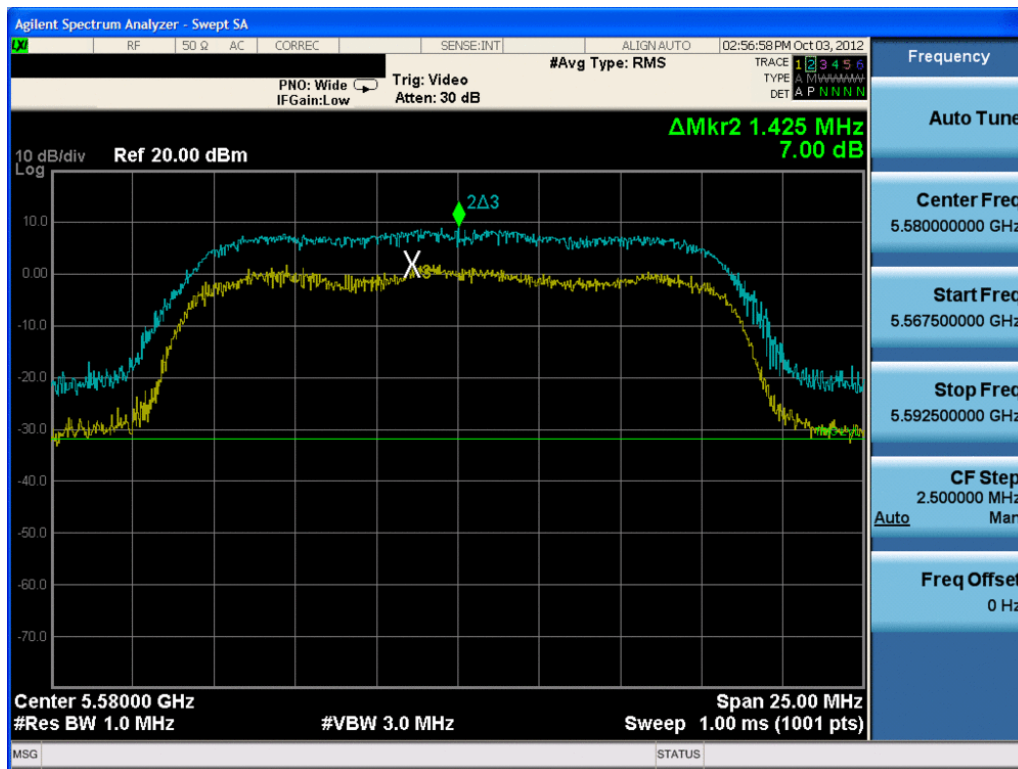


Plot 6-66. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2) – Ch. 62)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 51 of 84

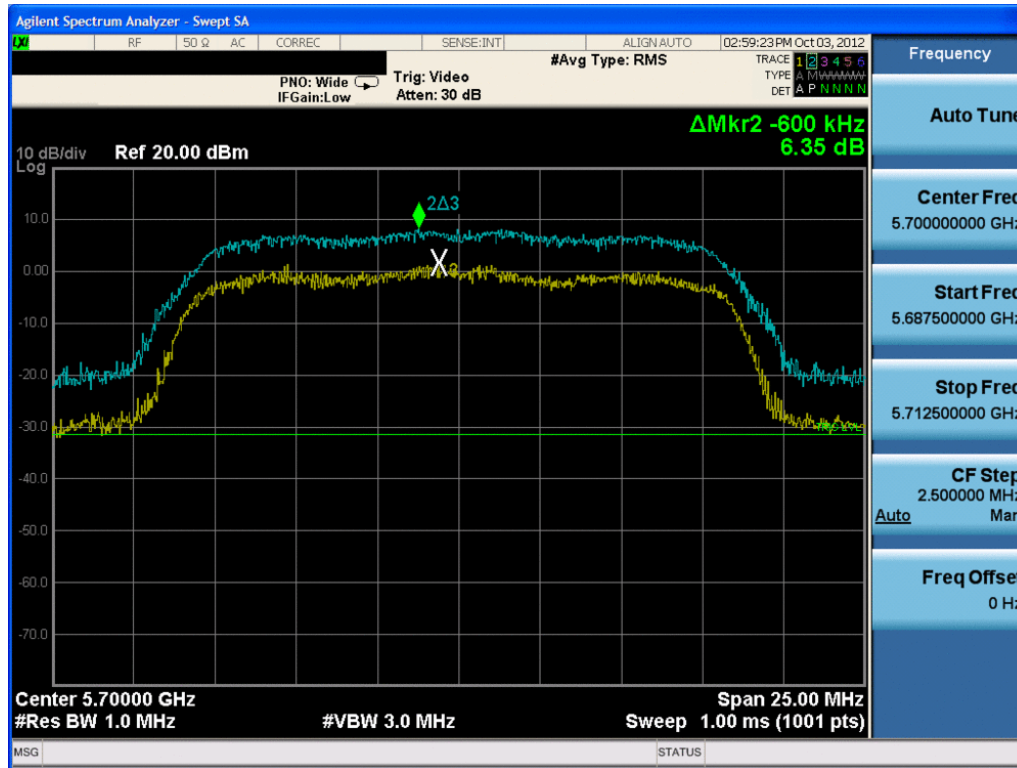


Plot 6-67. Peak Excursion Ratio Plot (802.11a (UNII Band 3) – Ch. 100)

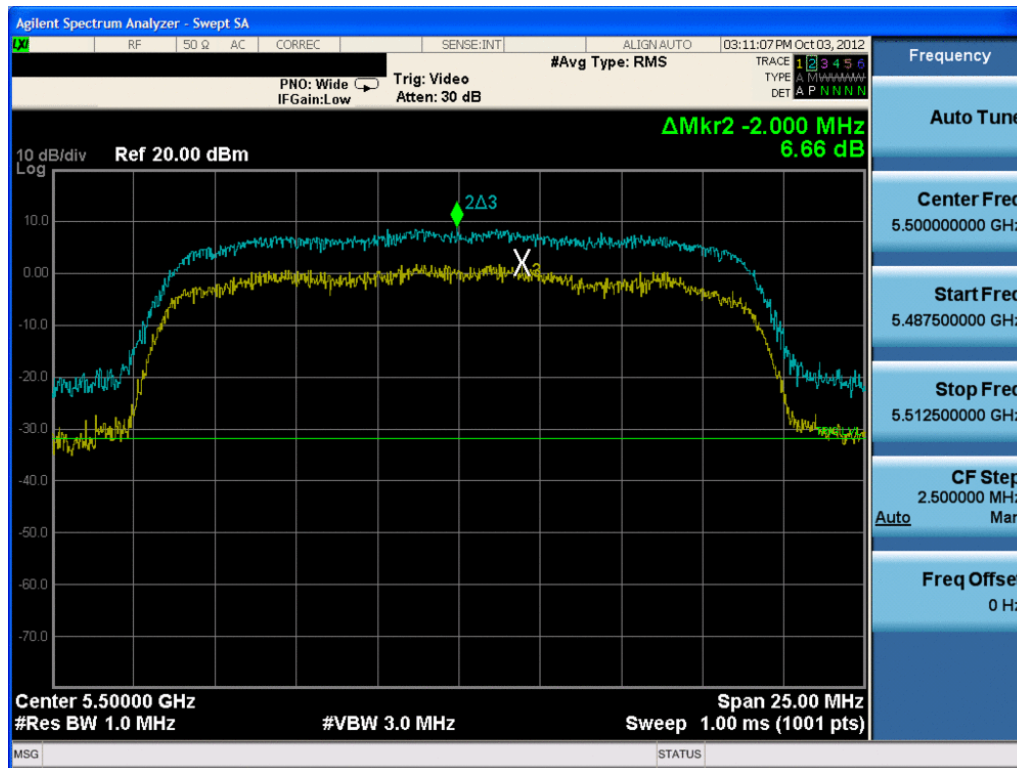


Plot 6-68. Peak Excursion Ratio Plot (802.11a (UNII Band 3) – Ch. 116)

FCC ID: A3LGT18190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 52 of 84

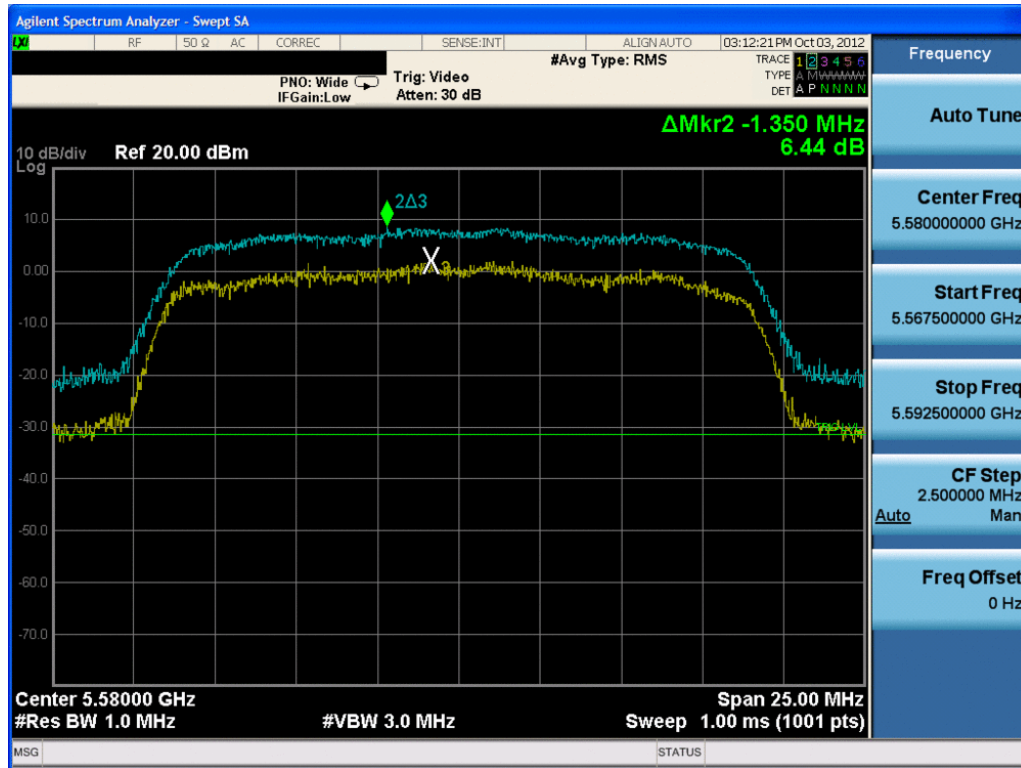


Plot 6-69. Peak Excursion Ratio Plot (802.11a (UNII Band 3) – Ch. 140)

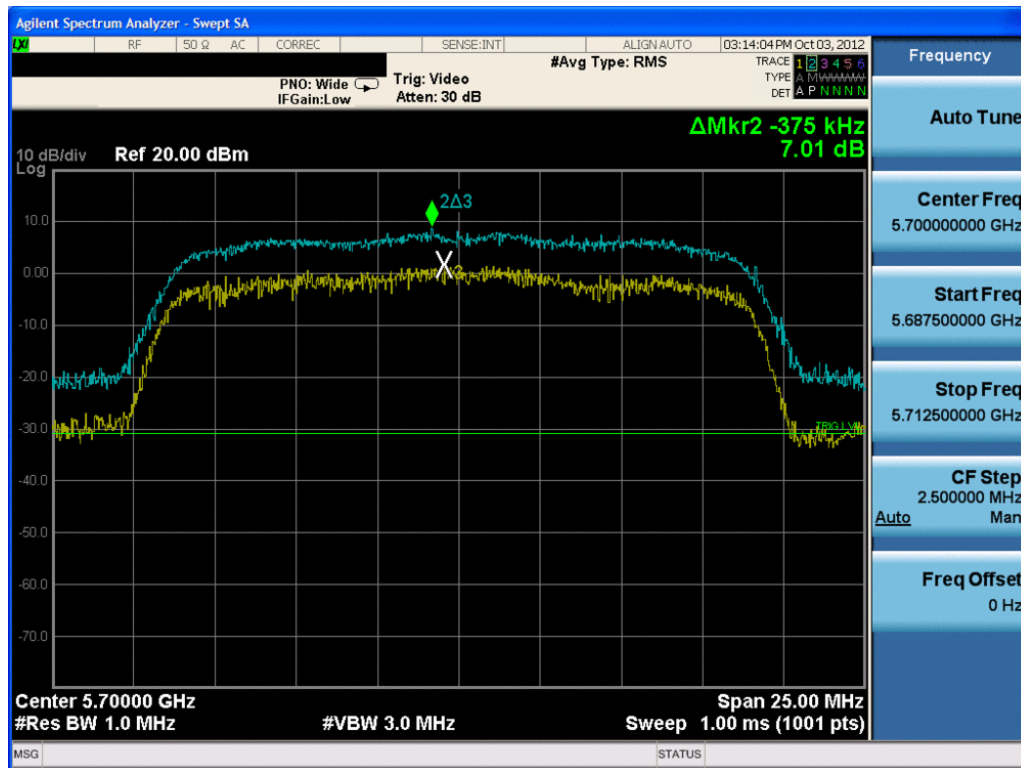


Plot 6-70. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 100)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 53 of 84

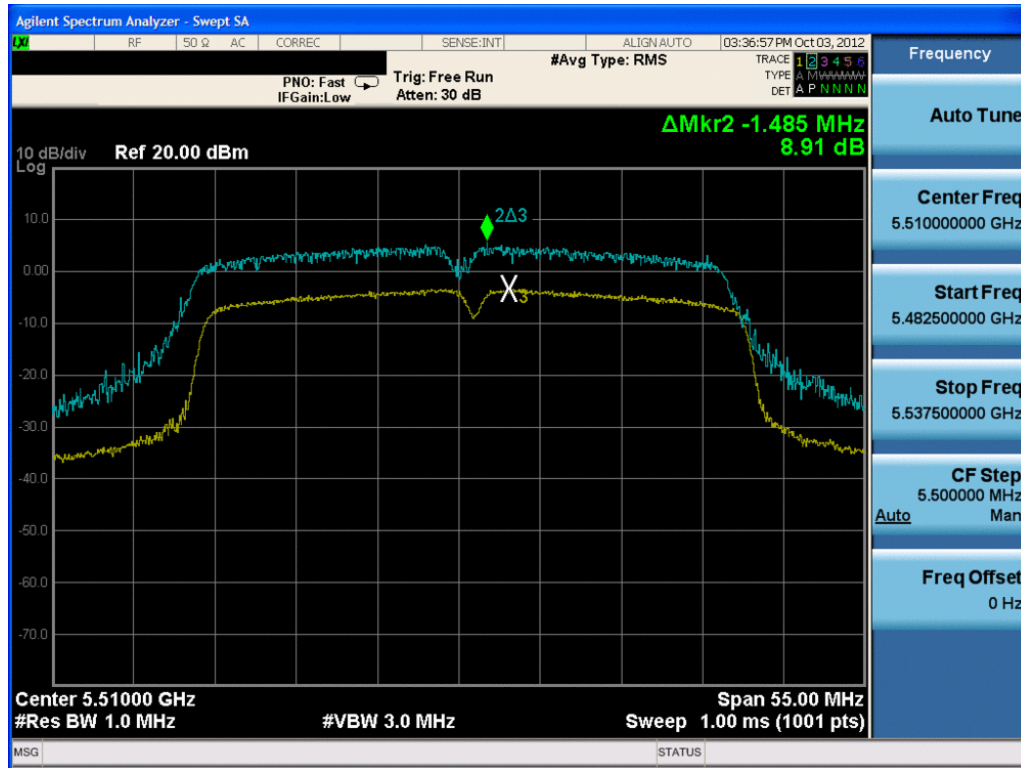


Plot 6-71. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 116)

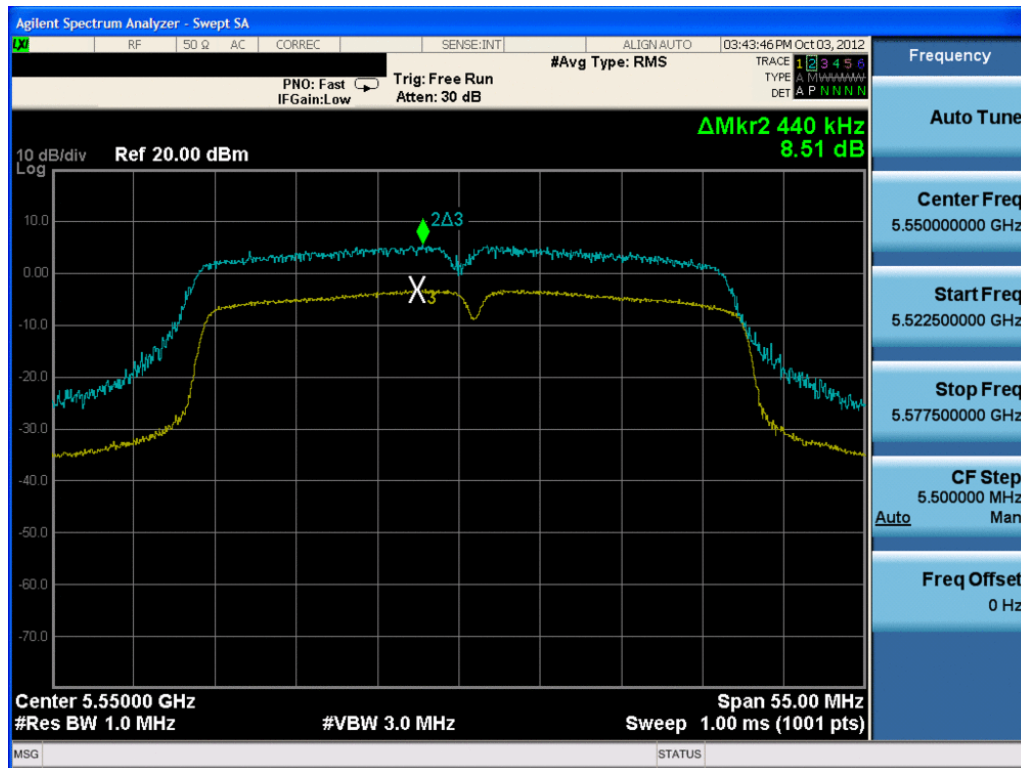


Plot 6-72. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 3) – Ch. 140)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 54 of 84

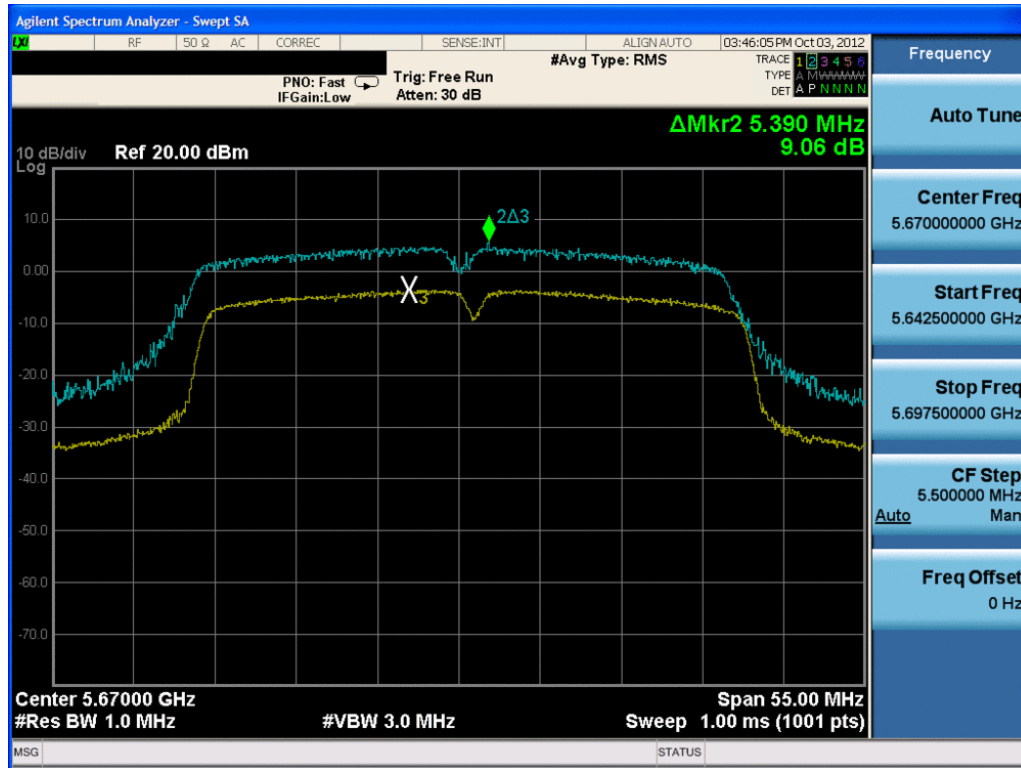


Plot 6-73. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 102)



Plot 6-74. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 110)

FCC ID: A3LGTI8190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 6-75. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 3) – Ch. 134)

FCC ID: A3LGT18190	PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
Test Report S/N: 0Y1209261421.A3L	Test Dates: 9/28/12-10/4/12	EUT Type: Portable Handset		Page 56 of 84

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)	5,180,000,008	8	0.00000015
100 %		- 30	5,180,000,019	19	0.00000037
100 %		- 20	5,180,000,019	19	0.00000037
100 %		- 10	5,180,000,006	6	0.00000012
100 %		0	5,180,000,001	1	0.00000002
100 %		+ 10	5,180,000,017	17	0.00000033
100 %		+ 20	5,180,000,013	13	0.00000025
100 %		+ 30	5,179,999,998	-2	-0.00000004
100 %		+ 40	5,179,999,984	-16	-0.00000031
100 %		+ 50	5,179,999,995	-5	-0.00000010
115 %	4.37	+ 20	5,179,999,986	-14	-0.00000027
BATT. ENDPOINT	3.50	+ 20	5,180,000,012	12	0.00000023

Table 6-8. Frequency Stability Measurements for UNII Band 1 (Ch. 36)

Note:

Based on the results of the frequency stability test, 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.

FCC ID: A3LGTI8190		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Frequency Stability (Cont'd)

§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: 5,260,000,000 Hz
 CHANNEL: 52
 REFERENCE VOLTAGE: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+ 20 (Ref)	5,180,000,014	14	0.00000027
100 %		- 30	5,180,000,016	16	0.00000031
100 %		- 20	5,180,000,007	7	0.00000014
100 %		- 10	5,180,000,007	7	0.00000014
100 %		0	5,179,999,985	-15	-0.00000029
100 %		+ 10	5,180,000,005	5	0.00000010
100 %		+ 20	5,179,999,997	-3	-0.00000006
100 %		+ 30	5,180,000,008	8	0.00000015
100 %		+ 40	5,179,999,991	-9	-0.00000017
100 %		+ 50	5,180,000,002	2	0.00000004
115 %	4.37	+ 20	5,180,000,004	4	0.00000008
BATT. ENDPOINT	3.50	+ 20	5,180,000,000	0	0.00000000

Table 6-9. Frequency Stability Measurements for UNII Band 2 (Ch. 52)

Note:

Based on the results of the frequency stability test, 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.

FCC ID: A3LGTI8190		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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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)	5,180,000,020	20	0.00000039
100 %		- 30	5,180,000,009	9	0.00000017
100 %		- 20	5,179,999,995	-5	-0.00000010
100 %		- 10	5,180,000,004	4	0.00000008
100 %		0	5,180,000,013	13	0.00000025
100 %		+ 10	5,179,999,991	-9	-0.00000017
100 %		+ 20	5,179,999,983	-17	-0.00000033
100 %		+ 30	5,179,999,990	-10	-0.00000019
100 %		+ 40	5,180,000,007	7	0.00000014
100 %		+ 50	5,179,999,993	-7	-0.00000014
115 %	4.37	+ 20	5,180,000,009	9	0.00000017
BATT. ENDPOINT	3.50	+ 20	5,179,999,988	-12	-0.00000023

Table 6-10. Frequency Stability Measurements for UNII Band 3 (Ch. 100)

Note:

Based on the results of the frequency stability test, 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.

FCC ID: A3LGTI8190		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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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: 3 Meters

Operating Frequency: 5180MHz

Channel: 36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	-100.22	Peak	H	45.89	52.68	68.20	-15.52
* 15540.00	-135.00	Average	H	58.35	30.35	53.98	-23.63
* 15540.00	-125.00	Peak	H	58.35	40.35	73.98	-33.63
* 20720.00	-135.00	Average	H	45.30	17.30	53.98	-36.68
* 20720.00	-125.00	Peak	H	45.30	27.30	73.98	-46.68
25900.00	-125.00	Peak	H	31.66	13.66	68.20	-54.54

Table 6-12. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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: 3 Meters

Operating Frequency: 5200MHz

Channel: 40

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	-100.66	Peak	H	45.98	52.32	68.20	-15.88
* 15600.00	-135.00	Average	H	58.64	30.64	53.98	-23.34
* 15600.00	-125.00	Peak	H	58.64	40.64	73.98	-33.34
* 20800.00	-135.00	Average	H	45.07	17.07	53.98	-36.91
* 20800.00	-125.00	Peak	H	45.07	27.07	73.98	-46.91
26000.00	-125.00	Peak	H	31.42	13.42	68.20	-54.78

Table 6-13. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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: 3 Meters

Operating Frequency: 5240MHz

Channel: 48

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	-100.58	Peak	H	46.14	52.56	68.20	-15.64
* 15720.00	-135.00	Average	H	59.21	31.21	53.98	-22.77
* 15720.00	-125.00	Peak	H	59.21	41.21	73.98	-32.77
* 20960.00	-135.00	Average	H	44.60	16.60	53.98	-37.38
* 20960.00	-125.00	Peak	H	44.60	26.60	73.98	-47.38
26200.00	-125.00	Peak	H	30.95	12.95	68.20	-55.25

Table 6-14. Radiated Measurements @ 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.
- Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 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: 3 Meters

Operating Frequency: 5260MHz

Channel: 52

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	-100.70	Peak	H	46.23	52.52	68.20	-15.68
* 15780.00	-135.00	Average	H	59.53	31.53	53.98	-22.45
* 15780.00	-125.00	Peak	H	59.53	41.53	73.98	-32.45
* 21040.00	-135.00	Average	H	44.37	16.37	53.98	-37.61
* 21040.00	-125.00	Peak	H	44.37	26.37	73.98	-47.61
26300.00	-125.00	Peak	H	30.72	12.72	68.20	-55.48

Table 6-15. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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: 3 Meters

Operating Frequency: 5280MHz

Channel: 56

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	-100.91	Peak	H	46.32	52.42	68.20	-15.78
* 15840.00	-135.00	Average	H	59.88	31.88	53.98	-22.09
* 15840.00	-125.00	Peak	H	59.88	41.88	73.98	-32.09
* 21120.00	-135.00	Average	H	44.13	16.13	53.98	-37.85
* 21120.00	-125.00	Peak	H	44.13	26.13	73.98	-47.85
26400.00	-125.00	Peak	H	30.49	12.49	68.20	-55.71

Table 6-16. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	10640.00	-112.51	Average	H	46.52	41.00	53.98	-12.97
*	10640.00	-100.47	Peak	H	46.52	53.04	73.98	-20.93
*	15960.00	-135.00	Average	H	62.27	34.27	53.98	-19.71
*	15960.00	-125.00	Peak	H	62.27	44.27	73.98	-29.71
*	21280.00	-135.00	Average	H	43.67	15.67	53.98	-38.31
*	21280.00	-125.00	Peak	H	43.67	25.67	73.98	-48.31
	26600.00	-125.00	Peak	H	30.03	12.03	68.20	-56.17

Table 6-17. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11000.00	-112.35	Average	H	46.98	41.63	53.98	-12.35
*	11000.00	-100.53	Peak	H	46.98	53.45	73.98	-20.53
	16500.00	-125.00	Peak	H	60.10	42.10	68.20	-26.10
	22000.00	-125.00	Peak	H	41.64	23.64	68.20	-44.56
	27500.00	-125.00	Peak	H	27.99	9.99	68.20	-58.21

Table 6-18. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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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§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: 3 Meters

Operating Frequency: 5580MHz

Channel: 116

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11160.00	-111.20	Average	H	49.42	45.23	53.98	-8.75
*	11160.00	-99.45	Peak	H	49.42	56.98	73.98	-17.00
	16740.00	-125.00	Peak	H	58.53	40.53	68.20	-27.67
*	22320.00	-135.00	Average	H	40.75	12.75	53.98	-41.22
*	22320.00	-125.00	Peak	H	40.75	22.75	73.98	-51.22
	27900.00	-125.00	Peak	H	27.11	9.11	68.20	-59.09

Table 6-19. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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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§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: 3 Meters

Operating Frequency: 5700MHz

Channel: 140

	Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
*	11400.00	-112.82	Average	H	47.61	41.79	53.98	-12.19
*	11400.00	-101.23	Peak	H	47.61	53.38	73.98	-20.60
	17100.00	-125.00	Peak	H	56.08	38.08	68.20	-30.12
*	22800.00	-135.00	Average	H	39.45	11.45	53.98	-42.53
*	22800.00	-125.00	Peak	H	39.45	21.45	73.98	-52.53
	28500.00	-125.00	Peak	H	25.81	7.81	68.20	-60.39

Table 6-20. Radiated Measurements @ 3 meters

NOTES:

1. 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.
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 6-11.
3. 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.
4. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
5. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
6. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported.
7. Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
8. 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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6.8 Radiated Band Edge Measurements (20MHz BW)

§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: 3 Meters

Operating Frequency: 5180MHz

Channel: 36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5133.33	-106.98	Average	H	39.25	39.27	53.98	-14.71
5133.33	-88.82	Peak	H	39.25	57.43	73.98	-16.55
5144.79	-105.80	Average	H	39.26	40.46	53.98	-13.51
5144.79	-85.56	Peak	H	39.26	60.70	73.98	-13.27
5150.00	-104.54	Average	H	39.27	41.73	53.98	-12.25
5150.00	-84.34	Peak	H	39.27	61.93	73.98	-12.05

Table 6-21. Radiated Restricted Band Measurements at 3 meters (4.5 – 5.15GHz)

NOTES:

1. 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.
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.
4. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
5. 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 Band Edge Measurements (20MHz BW) (Cont'd)

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

Worst Case Mode: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5320MHz

Channel: 64

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5350.00	-103.05	Average	H	39.53	43.48	53.98	-10.50
5350.00	-87.12	Peak	H	39.53	59.41	73.98	-14.57
5356.17	-103.77	Average	H	39.54	42.76	53.98	-11.22
5356.17	-86.48	Peak	H	39.54	60.05	73.98	-13.93
5364.81	-103.90	Average	H	39.55	42.64	53.98	-11.34
5364.81	-88.19	Peak	H	39.55	58.35	73.98	-15.63

Table 6-22. Radiated Restricted Band Measurements at 3 meters (5.35 – 5.46GHz, 5.46 – 5.47GHz)

NOTES:

1. Emissions within 5.35 – 5.46GHz lie in a restricted band and are subject to the radiated emissions limits specified in §15.209. Emission within 5.46 – 5.47GHz are at the lower band edge of UNII Band 3 transmission and are subject to the -27dBm/MHz (68.2dBμV/m) EIRP limit specified in §15.407.
2. 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.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
6. Above 960MHz the limit is 500 μV/m (54dBμV/m) at 3 meters radiated for emissions that lie in restricteds band specified in §15.205.

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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: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5500MHz

Channel: 100

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5398.08	-104.46	Average	H	39.59	42.13	53.98	-11.85
5398.08	-88.79	Peak	H	39.59	57.80	73.98	-16.18
5449.62	-105.13	Average	H	39.66	41.52	53.98	-12.46
5449.62	-90.14	Peak	H	39.66	56.51	73.98	-17.47
5469.51	-88.47	Peak	H	39.68	58.21	68.20	-9.99

Table 6-23. Radiated Restricted Band Measurements at 3 meters (5.35 – 5.46GHz, 5.46 – 5.47GHz)

NOTES:

1. Emissions within 5.35 – 5.46GHz lie in a restricted band and are subject to the radiated emissions limits specified in §15.209. Emission within 5.46 – 5.47GHz are at the lower band edge of UNII Band 3 transmission and are subject to the -27dBm/MHz (68.2dBμV/m) EIRP limit specified in §15.407.
2. 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.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
6. Above 960MHz the limit is 500 μV/m (54dBμV/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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: 802.11a

Worst Case Transfer Rate: 6 Mbps

Distance of Measurements: 3 Meters

Operating Frequency: 5700MHz

Channel: 140

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5725.28	-106.28	Peak	H	40.18	40.90	68.20	-27.30
5726.40	-107.24	Peak	H	40.18	39.94	68.20	-28.26
5731.73	-108.40	Peak	H	40.19	38.79	68.20	-29.41

Table 6-24. Radiated Restricted Band Measurements at 3 meters

NOTES:

1. 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.
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.
4. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
5. 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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6.9 Radiated Band Edge Measurements (40MHz BW)

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

Worst Case Mode: 802.11n (40MHz)

Worst Case Transfer Rate: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5190MHz

Channel: 38

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5129.17	-109.40	Average	H	39.24	36.84	53.98	-17.14
5129.17	-91.32	Peak	H	39.24	54.92	73.98	-19.06
5137.50	-108.22	Average	H	39.25	38.03	53.98	-15.95
5137.50	-87.42	Peak	H	39.25	58.83	73.98	-15.15
5150.00	-103.74	Average	H	39.27	42.53	53.98	-11.45
5150.00	-85.47	Peak	H	39.27	60.80	73.98	-13.18

Table 6-25. Radiated Restricted Band Measurements at 3 meters (4.5 – 5.15GHz)

NOTES:

- 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.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμV/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5310MHz

Channel: 62

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5350.00	-93.34	Average	H	39.53	53.19	53.98	-0.79
5350.00	-77.63	Peak	H	39.53	68.90	73.98	-5.08
5352.12	-94.97	Average	H	39.53	51.56	53.98	-2.42
5352.12	-75.21	Peak	H	39.53	71.32	73.98	-2.66
5354.76	-97.25	Average	H	39.53	49.28	53.98	-4.70
5354.76	-77.17	Peak	H	39.53	69.36	73.98	-4.62

Table 6-26. Radiated Restricted Band Measurements at 3 meters (5.35 – 5.46GHz, 5.46 – 5.47GHz)

NOTES:

1. Emissions within 5.35 – 5.46GHz lie in a restricted band and are subject to the radiated emissions limits specified in §15.209. Emission within 5.46 – 5.47GHz are at the lower band edge of UNII Band 3 transmission and are subject to the -27dBm/MHz (68.2dBμV/m) EIRP limit specified in §15.407.
2. 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.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
6. Above 960MHz the limit is 500 μV/m (54dBμV/m) at 3 meters radiated for emissions that lie in restricteds band specified in §15.205.

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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: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5510MHz

Channel: 102

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5449.31	-107.45	Average	H	39.66	39.20	53.98	-14.78
5449.31	-93.26	Peak	H	39.66	53.39	73.98	-20.59
5455.00	-107.38	Average	H	39.66	39.29	53.98	-14.69
5455.00	-90.52	Peak	H	39.66	56.15	73.98	-17.83
5470.00	-86.24	Peak	H	39.68	60.44	68.20	-7.76

Table 6-27. Radiated Restricted Band Measurements at 3 meters (5.35 – 5.46GHz, 5.46 – 5.47GHz)

NOTES:

1. Emissions within 5.35 – 5.46GHz lie in a restricted band and are subject to the radiated emissions limits specified in §15.209. Emission within 5.46 – 5.47GHz are at the lower band edge of UNII Band 3 transmission and are subject to the -27dBm/MHz (68.2dBμV/m) EIRP limit specified in §15.407.
2. 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.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. Levels at -135 dBm represent the analyzer noise floor and signify that no emission was detected.
6. Above 960MHz the limit is 500 μV/m (54dBμV/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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: MCS0

Distance of Measurements: 3 Meters

Operating Frequency: 5690MHz

Channel: 138

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB/m]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5725.00	-92.05	Peak	H	40.18	55.13	68.20	-13.07
5726.40	-91.35	Peak	H	40.18	55.83	68.20	-12.37
5736.22	-95.31	Peak	H	40.20	51.89	68.20	-16.31

Table 6-28. Radiated Restricted Band Measurements at 3 meters

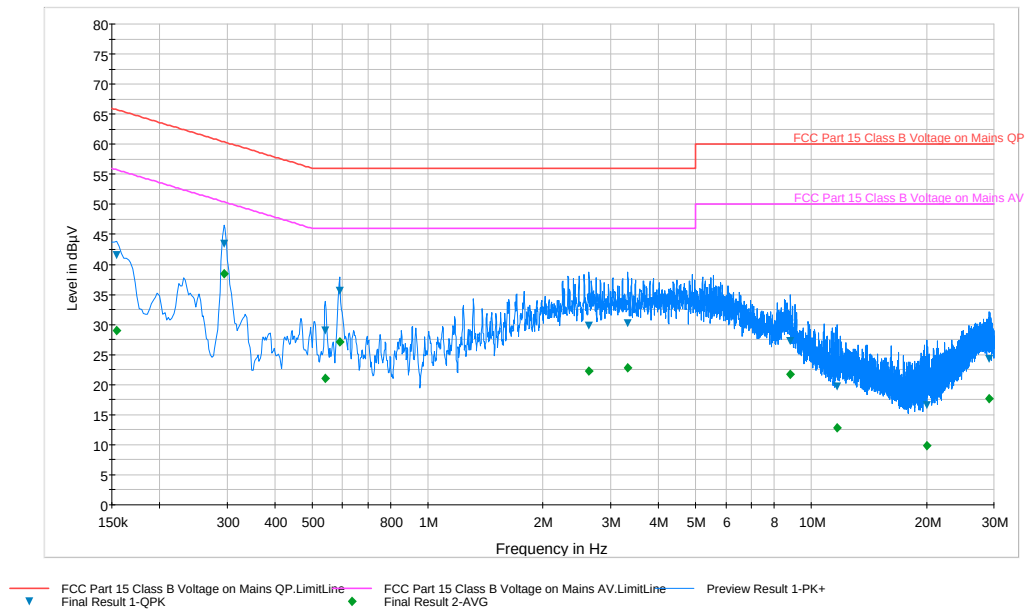
NOTES:

1. 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.
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.
4. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
5. Above 960MHz the limit is 500 μV/m (54dBμV/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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6.10 Line-Conducted Test Data

§15.207; RSS-Gen [7.2.2]



Plot 6-76. 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
0.155	L1	0.2	41.60	65.80	24.20	29.00	55.80	26.80
0.294	L1	0.1	43.50	60.40	16.90	38.40	50.40	12.00
0.542	L1	0.1	28.90	56.00	27.10	21.00	46.00	25.00
0.589	L1	0.1	35.70	56.00	20.30	27.10	46.00	18.90
2.636	L1	0.2	29.80	56.00	26.20	22.20	46.00	23.80
3.329	L1	0.2	30.20	56.00	25.80	22.80	46.00	23.20
8.840	L1	0.3	27.20	60.00	32.80	21.70	50.00	28.30
11.686	L1	0.4	19.70	60.00	40.30	12.80	50.00	37.20
20.031	L1	0.7	16.60	60.00	43.40	9.80	50.00	40.20
29.150	L1	1.0	24.30	60.00	35.70	17.70	50.00	32.30

Table 6-29. Line Conducted Data with 802.11a UNII Band 1 (L1)

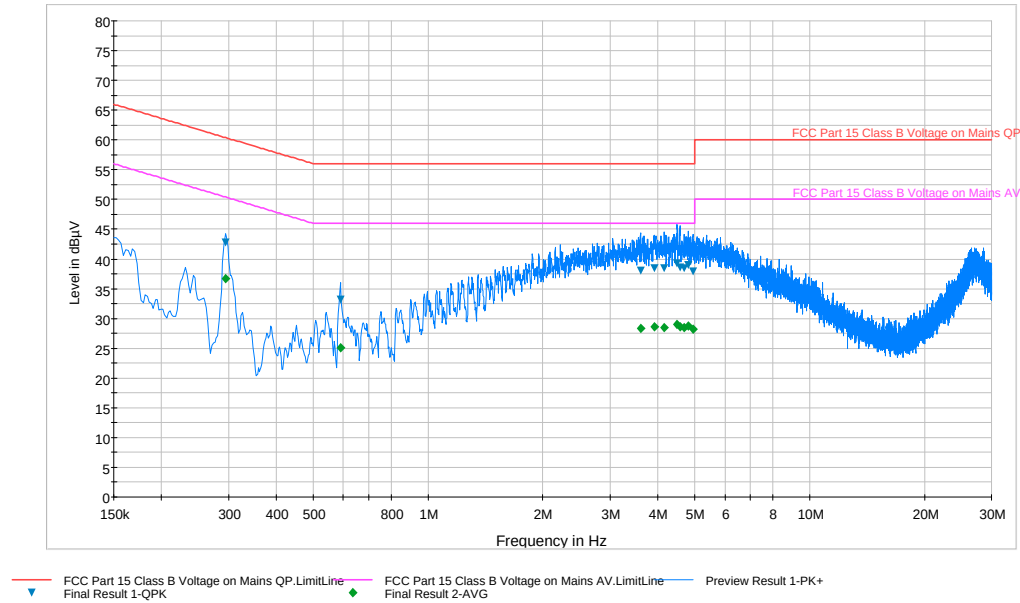
Notes:

- 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 6-77. 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
0.294	N	0.2	42.80	60.40	17.60	36.60	50.40	13.80
0.589	N	0.1	33.10	56.00	22.90	25.10	46.00	20.90
3.604	N	0.2	38.00	56.00	18.00	28.30	46.00	17.70
3.914	N	0.2	38.40	56.00	17.60	28.50	46.00	17.50
4.160	N	0.2	38.40	56.00	17.60	28.40	46.00	17.60
4.495	N	0.2	39.30	56.00	16.70	28.90	46.00	17.10
4.571	N	0.2	38.60	56.00	17.40	28.60	46.00	17.40
4.693	N	0.2	38.40	56.00	17.60	28.50	46.00	17.50
4.808	N	0.2	39.00	56.00	17.00	28.70	46.00	17.30
4.943	N	0.2	37.90	56.00	18.10	28.20	46.00	17.80

Table 6-30. Line Conducted Data with 802.11a UNII Band 1 (N)

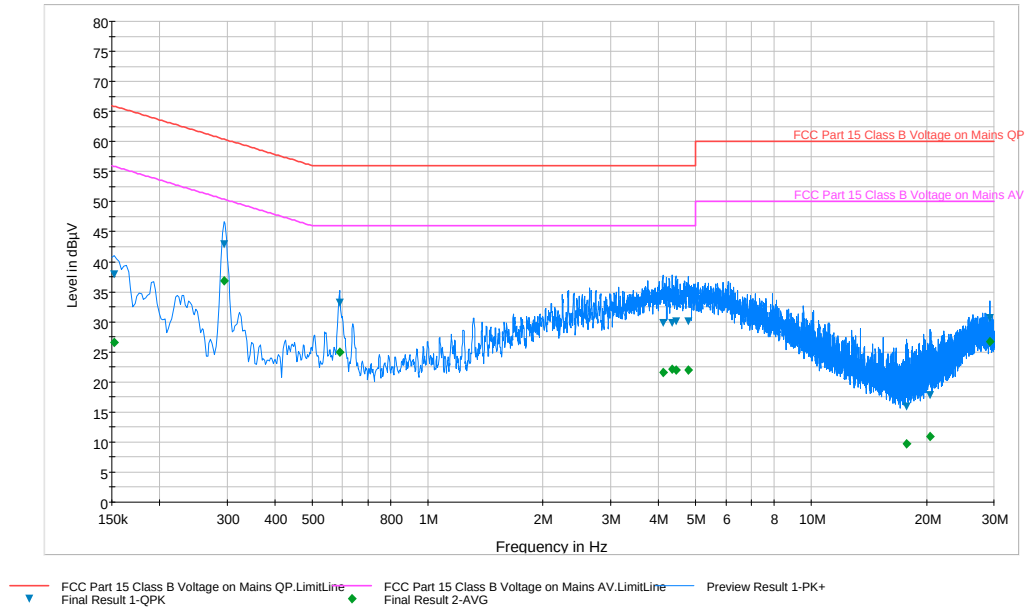
Notes:

- 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/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 6-78. 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
0.152	L1	0.2	37.90	65.90	28.00	26.60	55.90	29.30
0.294	L1	0.1	42.90	60.40	17.50	36.80	50.40	13.60
0.589	L1	0.1	33.20	56.00	22.80	24.90	46.00	21.10
4.108	L1	0.2	29.90	56.00	26.10	21.50	46.00	24.50
4.344	L1	0.2	29.80	56.00	26.20	22.10	46.00	23.90
4.439	L1	0.2	30.10	56.00	25.90	22.00	46.00	24.00
4.783	L1	0.2	30.10	56.00	25.90	22.00	46.00	24.00
17.743	L1	0.7	15.90	60.00	44.10	9.70	50.00	40.30
20.452	L1	0.7	17.80	60.00	42.20	11.00	50.00	39.00
29.236	L1	1.0	30.60	60.00	29.40	26.70	50.00	23.30

Table 6-31. Line Conducted Data with 802.11a UNII Band 2 (L1)

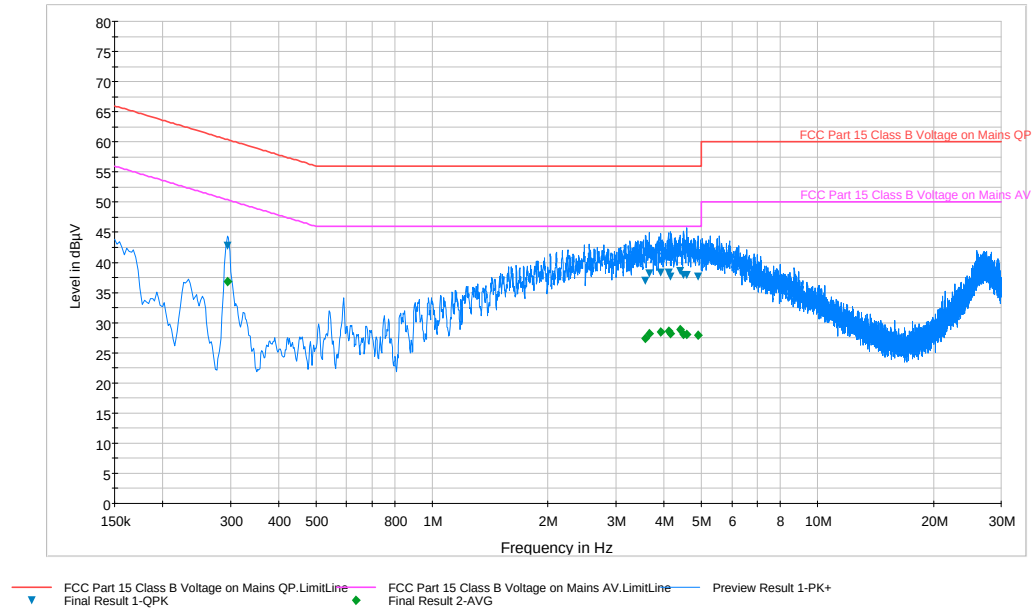
Notes:

- 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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Line-Conducted Test Data (Cont'd)

§15.207; RSS-Gen [7.2.2]



Plot 6-79. 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
0.294	N	0.2	42.80	60.40	17.60	36.80	50.40	13.60
3.584	N	0.2	37.00	56.00	19.00	27.40	46.00	18.60
3.667	N	0.2	38.10	56.00	17.90	28.20	46.00	17.80
3.917	N	0.2	38.30	56.00	17.70	28.50	46.00	17.50
4.108	N	0.2	38.30	56.00	17.70	28.60	46.00	17.40
4.160	N	0.2	37.70	56.00	18.30	28.10	46.00	17.90
4.414	N	0.2	38.60	56.00	17.40	28.80	46.00	17.20
4.502	N	0.2	37.90	56.00	18.10	28.10	46.00	17.90
4.578	N	0.2	38.00	56.00	18.00	28.10	46.00	17.90
4.893	N	0.2	37.70	56.00	18.30	27.90	46.00	18.10

Table 6-32. Line Conducted Data with 802.11a UNII Band 2 (N)

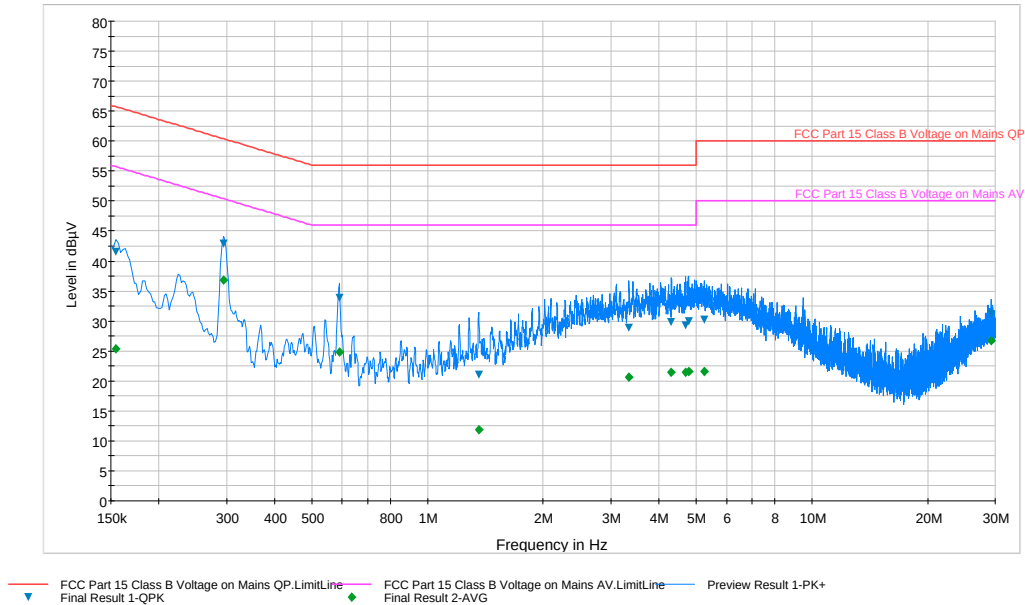
Notes:

- 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/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 6-80. 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
0.155	L1	0.2	41.50	65.80	24.30	25.30	55.80	30.50
0.294	L1	0.1	42.90	60.40	17.50	36.80	50.40	13.60
0.589	L1	0.1	33.90	56.00	22.10	24.80	46.00	21.20
1.358	L1	0.2	21.00	56.00	35.00	11.80	46.00	34.20
3.345	L1	0.2	28.90	56.00	27.10	20.60	46.00	25.40
4.310	L1	0.2	29.80	56.00	26.20	21.50	46.00	24.50
4.691	L1	0.2	29.20	56.00	26.80	21.40	46.00	24.60
4.774	L1	0.2	29.90	56.00	26.10	21.60	46.00	24.40
5.246	L1	0.2	30.20	60.00	29.80	21.60	50.00	28.40
29.238	L1	1.0	31.10	60.00	28.90	26.70	50.00	23.30

Table 6-33. Line Conducted Plot with 802.11a UNII Band 3 (L1)

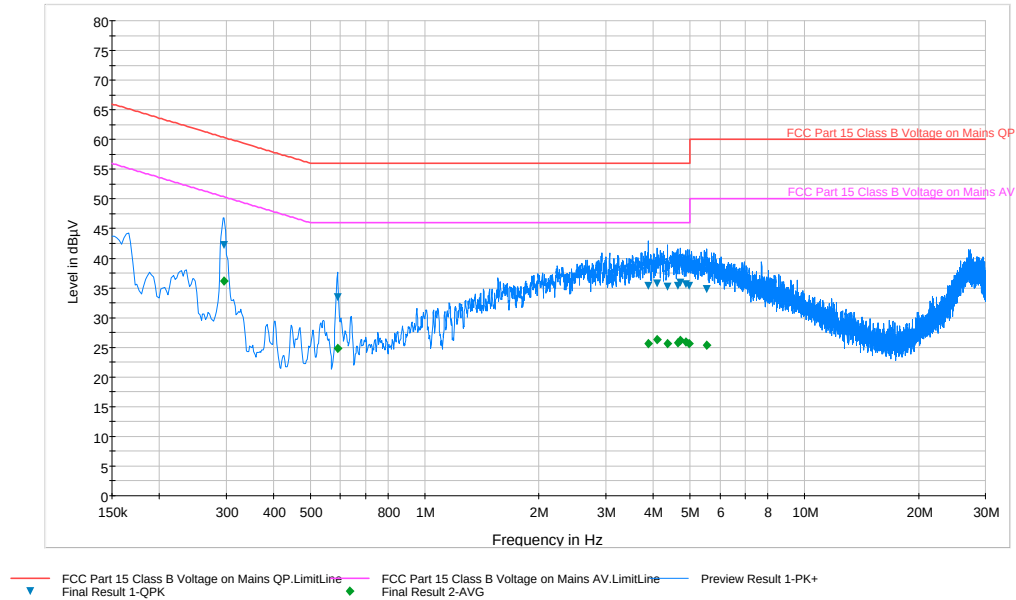
Notes:

- 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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Line-Conducted Test Data (Cont'd)

§15.207; RSS-Gen [7.2.2]



Plot 6-81. 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
0.296	N	0.2	42.30	60.30	18.00	36.20	50.30	14.10
0.589	N	0.1	33.50	56.00	22.50	24.90	46.00	21.10
3.885	N	0.2	35.40	56.00	20.60	25.60	46.00	20.40
4.094	N	0.2	35.70	56.00	20.30	26.30	46.00	19.70
4.369	N	0.2	35.10	56.00	20.90	25.70	46.00	20.30
4.643	N	0.2	35.30	56.00	20.70	25.80	46.00	20.20
4.720	N	0.2	35.80	56.00	20.20	26.20	46.00	19.80
4.882	N	0.2	35.60	56.00	20.40	26.00	46.00	20.00
4.967	N	0.2	35.30	56.00	20.70	25.70	46.00	20.30
5.528	N	0.3	34.80	60.00	25.20	25.30	50.00	24.70

Table 6-34. Line Conducted Data with 802.11a UNII Band 3 (N)

Notes:

1. 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.
2. The limit for Class B device(s) from 150kHz to 30MHz are specified in Section 15.207 of the Title 47 CFR.
3. L1 = Phase; N = Neutral
4. Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB)
5. QP/AV Level (dBμV) = QP/AV Analyzer/Receiver Level (dBμV) + Corr. (dB)
6. Margin (dB) = QP/AVLimit (dBμV) - QP/AV Level (dBμV)
7. Traces shown in plot are made using a peak detector.
8. 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: A3LGTI8190** is in compliance with Part 15E of the FCC Rules and RSS-210 of the Industry Canada Rules.

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