

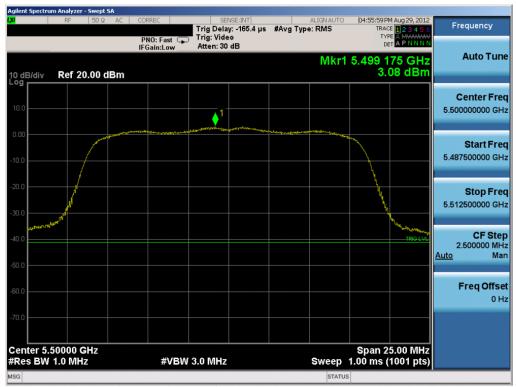
Plot 6-40. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2) - Ch. 54)



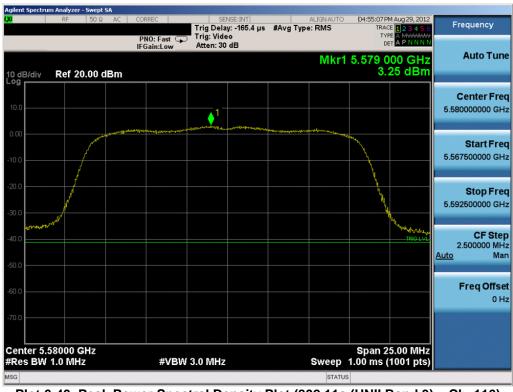
Plot 6-41. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 2) - Ch. 62)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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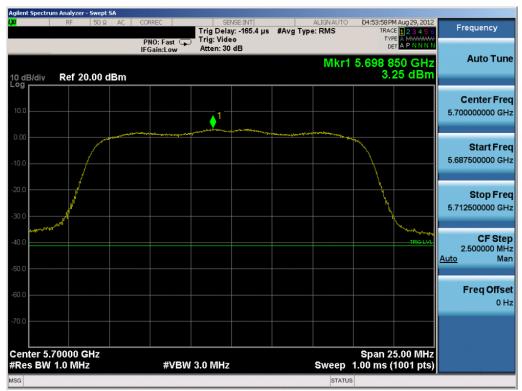
Plot 6-42. Peak Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 100)



Plot 6-43. Peak Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 116)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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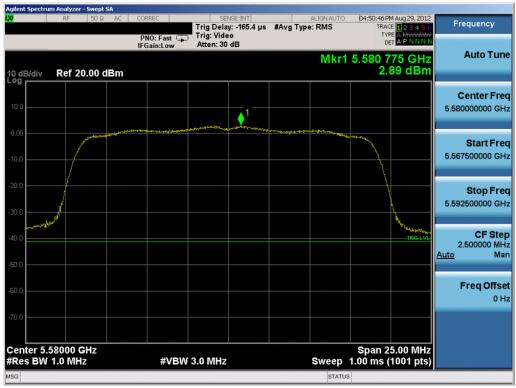
Plot 6-44. Peak Power Spectral Density Plot (802.11a (UNII Band 3) - Ch. 140)



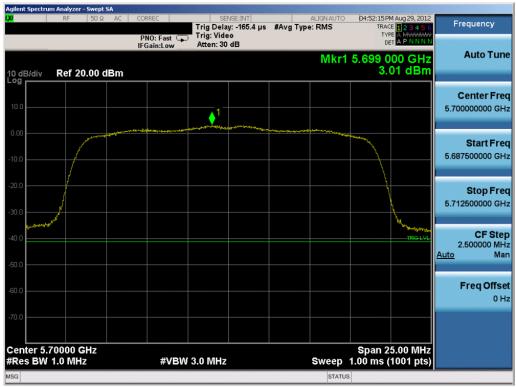
Plot 6-45. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 100)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 6-46. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 116)



Plot 6-47. Peak Power Spectral Density Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 140)

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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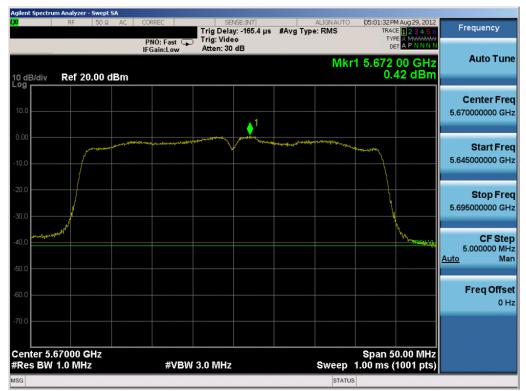
Plot 6-48. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) - Ch. 102)



Plot 6-49. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) - Ch. 110)

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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Plot 6-50. Peak Power Spectral Density Plot (40MHz BW 802.11n (UNII Band 3) - Ch. 134)

FCC ID: A3LSGHT889	PCTEST INCIDENCE CARDEACORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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### 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.

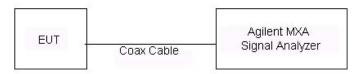


Figure 6-4. Test Instrument & Measurement Setup

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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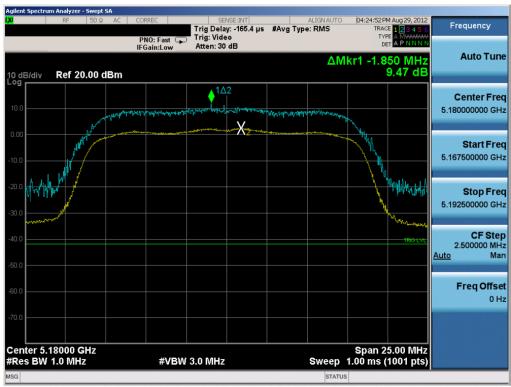


	Frequency [MHz]	Channel No.	802.11 Mode	Data Rate [Mbps]	Measured Peak Excursion Ratio [dBm]	Max Permissible Peak Excursion Ratio [dBm/MHz]	Margin [dB]
	5180	36	а	6	9.47	13.0	-3.53
	5200	40	а	6	8.29	13.0	-4.71
	5240	48	а	6	7.48	13.0	-5.52
I pc	5180	36	n (20MHz)	6.5/7.2 (MCS0)	8.60	13.0	-4.40
Band	5200	40	n (20MHz)	6.5/7.2 (MCS0)	7.79	13.0	-5.21
	5240	48	n (20MHz)	6.5/7.2 (MCS0)	8.79	13.0	-4.21
	5190	38	n (40MHz)	13.5/15 (MCS0)	8.52	13.0	-4.48
	5230	46	n (40MHz)	13.5/15 (MCS0)	9.33	13.0	-3.67
	5260	52	а	6	8.28	13.0	-4.72
	5280	56	а	6	8.22	13.0	-4.78
	5320	64	а	6	8.61	13.0	-4.39
= pu	5260	52	n (20MHz)	6.5/7.2 (MCS0)	9.28	13.0	-3.72
Band	5280	56	n (20MHz)	6.5/7.2 (MCS0)	8.45	13.0	-4.55
	5320	64	n (20MHz)	6.5/7.2 (MCS0)	9.52	13.0	-3.48
	5270	54	n (40MHz)	13.5/15 (MCS0)	8.49	13.0	-4.51
	5310	62	n (40MHz)	13.5/15 (MCS0)	8.84	13.0	-4.16
	5500	100	а	6	8.24	13.0	-4.76
	5580	116	а	6	8.42	13.0	-4.58
	5700	140	а	6	8.60	13.0	-4.40
=	5500	100	n (20MHz)	6.5/7.2 (MCS0)	8.60	13.0	-4.40
Band	5580	116	n (20MHz)	6.5/7.2 (MCS0)	8.66	13.0	-4.34
Ä	5700	140	n (20MHz)	6.5/7.2 (MCS0)	8.51	13.0	-4.49
	5510	102	n (40MHz)	13.5/15 (MCS0)	8.97	13.0	-4.03
	5550	110	n (40MHz)	13.5/15 (MCS0)	8.77	13.0	-4.23
	5670	134	n (40MHz)	13.5/15 (MCS0)	8.89	13.0	-4.11

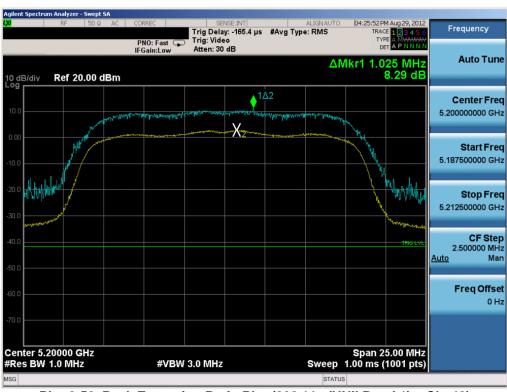
**Table 6-7. Conducted Peak Excursion Ratio Measurements** 

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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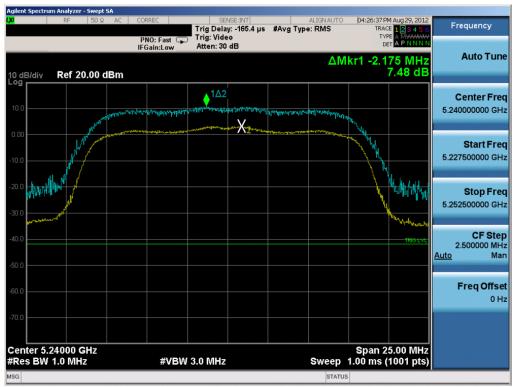
Plot 6-51. Peak Excursion Ratio Plot (802.11a (UNII Band 1) - Ch. 36)



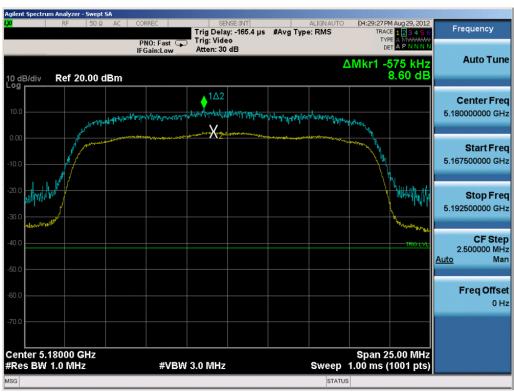
Plot 6-52. Peak Excursion Ratio Plot (802.11a (UNII Band 1) - Ch. 40)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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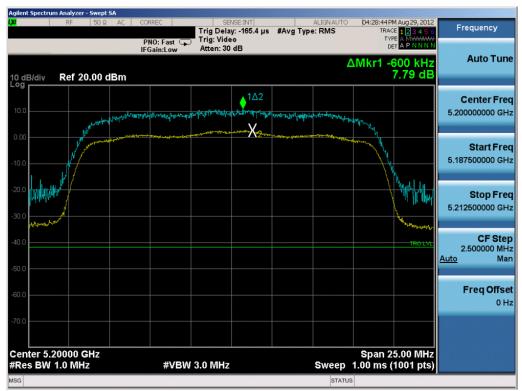
Plot 6-53. Peak Excursion Ratio Plot (802.11a (UNII Band 1) - Ch. 48)



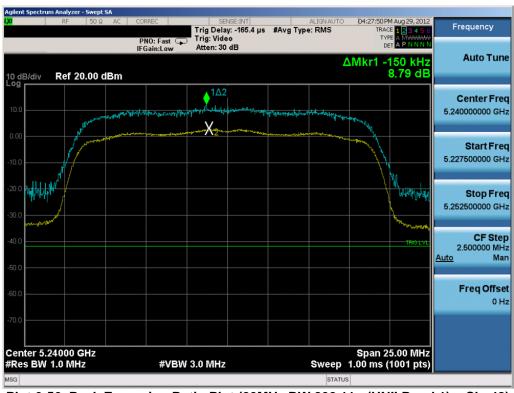
Plot 6-54. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) - Ch. 36)

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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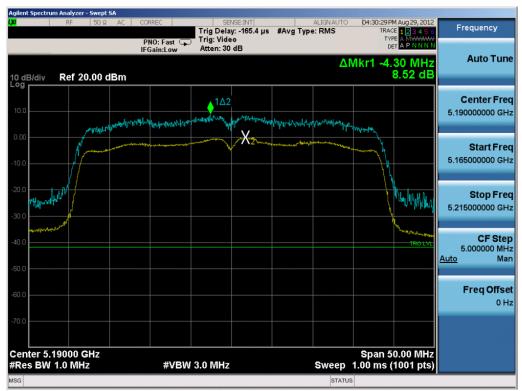
Plot 6-55. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 1) - Ch. 40)



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

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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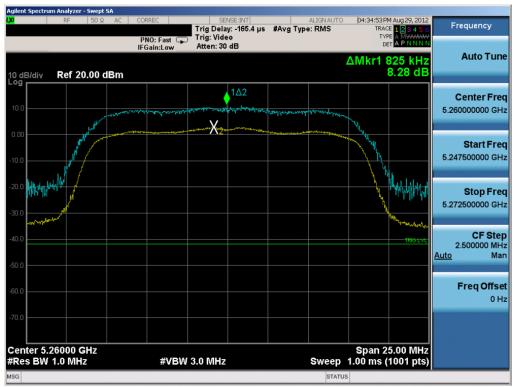
Plot 6-57. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) - Ch. 38)



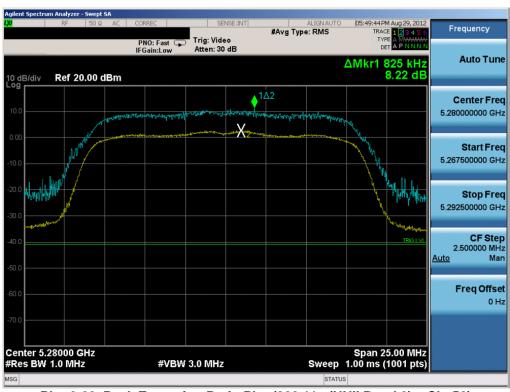
Plot 6-58. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 1) - Ch. 46)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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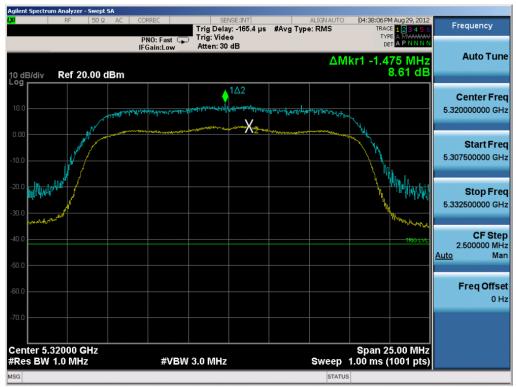
Plot 6-59. Peak Excursion Ratio Plot (802.11a (UNII Band 2) - Ch. 52)



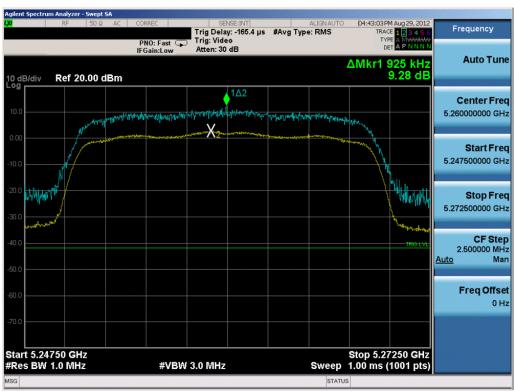
Plot 6-60. Peak Excursion Ratio Plot (802.11a (UNII Band 2) - Ch. 56)

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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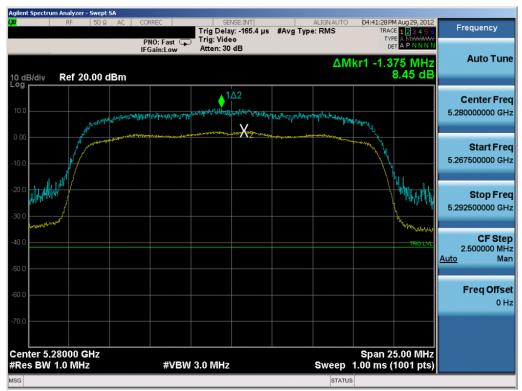
Plot 6-61. Peak Excursion Ratio Plot (802.11a (UNII Band 2) - Ch. 64)



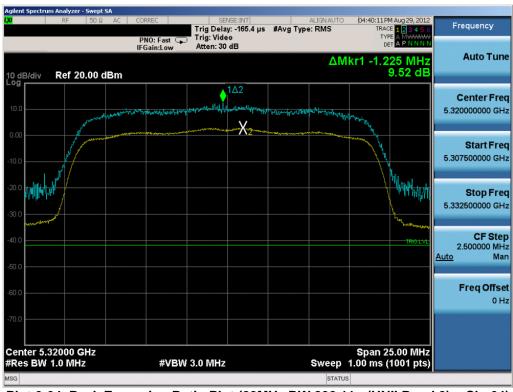
Plot 6-62. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2) - Ch. 52)

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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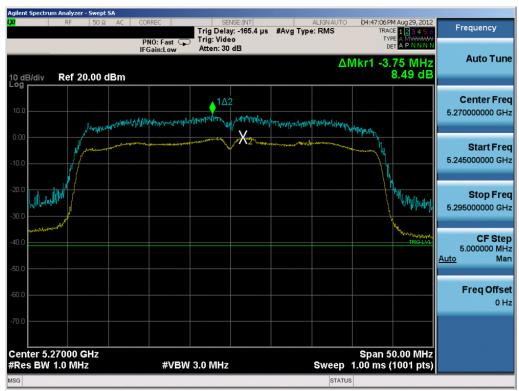
Plot 6-63. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2) - Ch. 56)



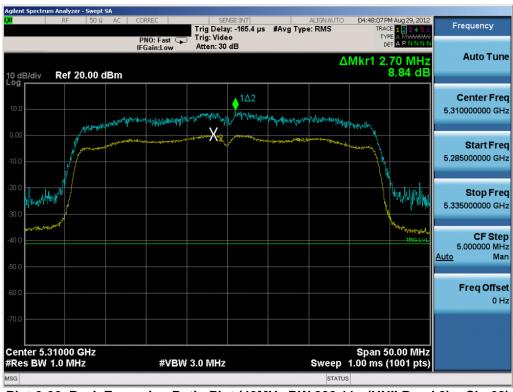
Plot 6-64. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 2) - Ch. 64)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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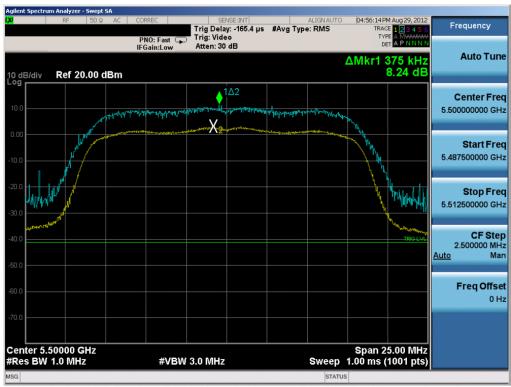
Plot 6-65. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 2) - Ch. 54)



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

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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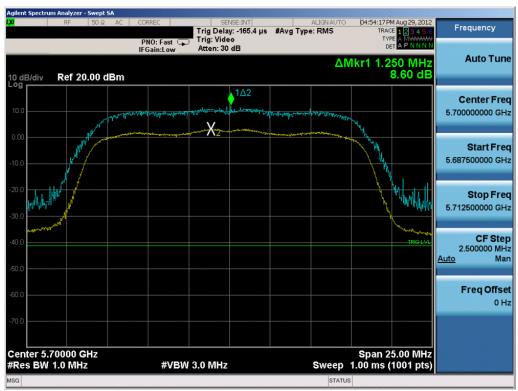
Plot 6-67. Peak Excursion Ratio Plot (802.11a (UNII Band 3) - Ch. 100)



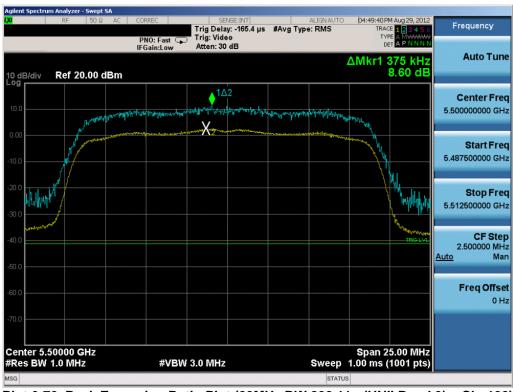
Plot 6-68. Peak Excursion Ratio Plot (802.11a (UNII Band 3) - Ch. 116)

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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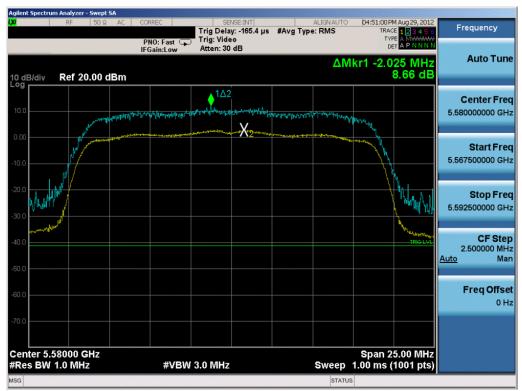
Plot 6-69. Peak Excursion Ratio Plot (802.11a (UNII Band 3) - Ch. 140)



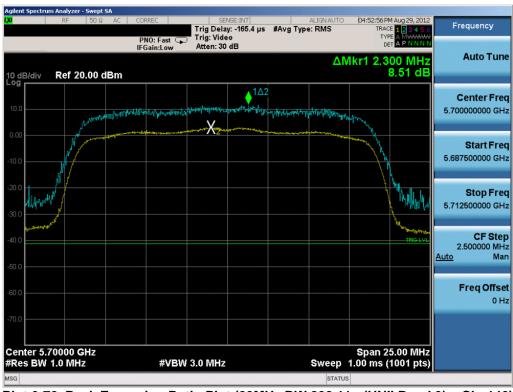
Plot 6-70. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 100)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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Plot 6-71. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 116)



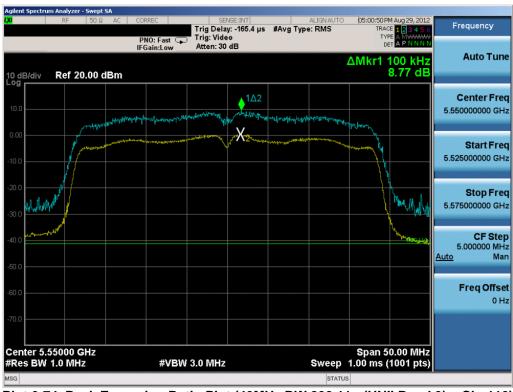
Plot 6-72. Peak Excursion Ratio Plot (20MHz BW 802.11n (UNII Band 3) - Ch. 140)

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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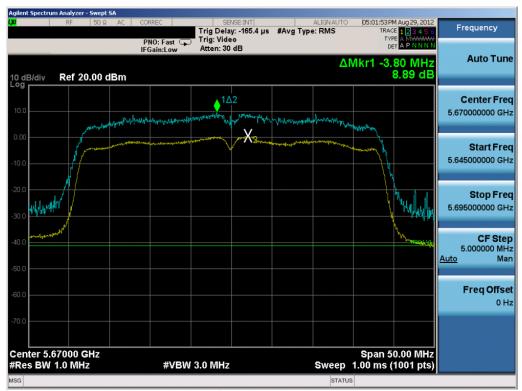
Plot 6-73. Peak Excursion Ratio Plot (40MHz BW 802.11n (UNII Band 3) - Ch. 102)



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

FCC ID: A3LSGHT889	PCTEST INCINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		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: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)		Reviewed by: Quality Manager
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#### 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:

REFERENCE VOLTAGE: 3.8 VDC

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.80	+20 (Ref)	5,180,000,018	18	0.0000003
100 %		- 30	5,180,000,007	7	0.0000001
100 %		- 20	5,180,000,003	3	0.0000001
100 %		- 10	5,179,999,993	-7	-0.0000001
100 %		0	5,180,000,014	14	0.0000003
100 %		+ 10	5,180,000,009	9	0.0000002
100 %		+ 20	5,180,000,013	13	0.0000003
100 %		+ 30	5,179,999,982	-18	-0.0000003
100 %		+ 40	5,179,999,995	-5	-0.0000001
100 %		+ 50	5,179,999,997	-3	-0.0000001
115 %	4.37	+ 20	5,179,999,987	-13	-0.0000003
BATT. ENDPOINT	3.50	+ 20	5,179,999,987	-13	-0.0000003

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

FCC ID: A3LSGHT889	PCTEST*	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)	5,260,000,005	5	0.0000001
100 %		- 30	5,260,000,007	7	0.0000001
100 %		- 20	5,259,999,992	-8	-0.0000002
100 %		- 10	5,259,999,999	-1	0.0000000
100 %		0	5,259,999,999	-1	0.0000000
100 %		+ 10	5,260,000,013	13	0.0000002
100 %		+ 20	5,259,999,981	-19	-0.0000004
100 %		+ 30	5,260,000,004	4	0.000001
100 %		+ 40	5,259,999,985	-15	-0.0000003
100 %		+ 50	5,260,000,008	8	0.0000002
115 %	4.37	+ 20	5,260,000,017	17	0.0000003
BATT. ENDPOINT	3.50	+ 20	5,259,999,994	-6	-0.0000001

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

FCC ID: A3LSGHT889	PCTEST*	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CERTIFICATION)	SAMSUNG	Reviewed by: Quality Manager
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### Frequency Stability (Cont'd) §15.407(q)

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)	5,500,000,012	12	0.0000002
100 %		- 30	5,500,000,003	3	0.0000001
100 %		- 20	5,499,999,982	-18	-0.0000003
100 %		- 10	5,499,999,999	-1	0.0000000
100 %		0	5,500,000,013	13	0.0000002
100 %		+ 10	5,499,999,995	-5	-0.0000001
100 %		+20	5,500,000,012	12	0.0000002
100 %		+ 30	5,500,000,018	18	0.0000003
100 %		+ 40	5,500,000,006	6	0.000001
100 %		+ 50	5,500,000,005	5	0.0000001
115 %	4.37	+ 20	5,499,999,982	-18	-0.0000003
BATT. ENDPOINT	3.50	+ 20	5,500,000,010	10	0.0000002

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

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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 10<sup>th</sup> 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**

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

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
	10360.00	-100.11	Peak	Н	45.89	52.79	68.20	-15.41
*	15540.00	-135.00	Average	Н	58.35	30.35	53.98	-23.63
*	15540.00	-125.00	Peak	Н	58.35	40.35	73.98	-33.63
*	20720.00	-135.00	Average	Н	44.02	16.02	53.98	-37.96
*	20720.00	-125.00	Peak	Н	44.02	26.02	73.98	-47.96
	25900.00	-125.00	Peak	Н	44.85	26.85	68.20	-41.35

Table 6-12. Radiated Measurements @ 3 meters

- 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  $dB\mu V/m$  can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu V/m$ .
- 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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
	10400.00	-100.77	Peak	Н	45.98	52.21	68.20	-15.99
*	15600.00	-135.00	Average	Н	58.64	30.64	53.98	-23.34
*	15600.00	-125.00	Peak	Н	58.64	40.64	73.98	-33.34
*	20800.00	-135.00	Average	Н	44.00	16.00	53.98	-37.98
*	20800.00	-125.00	Peak	Н	44.00	26.00	73.98	-47.98
	26000.00	-125.00	Peak	Н	44.88	26.88	68.20	-41.32

Table 6-13. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
	10480.00	-100.70	Peak	Н	46.14	52.44	68.20	-15.76
*	15720.00	-135.00	Average	Н	59.21	31.21	53.98	-22.77
*	15720.00	-125.00	Peak	Н	59.21	41.21	73.98	-32.77
*	20960.00	-135.00	Average	Н	43.99	15.99	53.98	-37.99
*	20960.00	-125.00	Peak	Н	43.99	25.99	73.98	-47.99
	26200.00	-125.00	Peak	Н	44.82	26.82	68.20	-41.38

Table 6-14. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
	10520.00	-100.90	Peak	Н	46.23	52.32	68.20	-15.88
*	15780.00	-135.00	Average	Н	59.53	31.53	53.98	-22.45
*	15780.00	-125.00	Peak	Н	59.53	41.53	73.98	-32.45
*	21040.00	-135.00	Average	Н	44.01	16.01	53.98	-37.97
*	21040.00	-125.00	Peak	Н	44.01	26.01	73.98	-47.97
	26300.00	-125.00	Peak	Н	44.87	26.87	68.20	-41.33

Table 6-15. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
	10560.00	-100.50	Peak	Н	46.32	52.83	68.20	-15.37
*	15840.00	-135.00	Average	Н	59.88	31.88	53.98	-22.09
*	15840.00	-125.00	Peak	Н	59.88	41.88	73.98	-32.09
*	21120.00	-135.00	Average	Н	44.00	16.00	53.98	-37.98
*	21120.00	-125.00	Peak	Н	44.00	26.00	73.98	-47.98
	26400.00	-125.00	Peak	Н	44.81	26.81	68.20	-41.39

Table 6-16. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
*	10640.00	-113.01	Average	Н	46.52	40.50	53.98	-13.47
*	10640.00	-100.89	Peak	Н	46.52	52.62	73.98	-21.35
*	15960.00	-135.00	Average	Н	62.27	34.27	53.98	-19.71
*	15960.00	-125.00	Peak	Н	62.27	44.27	73.98	-29.71
*	21280.00	-135.00	Average	Н	44.02	16.02	53.98	-37.96
*	21280.00	-125.00	Peak	Н	44.02	26.02	73.98	-47.96
	26600.00	-125.00	Peak	Н	44.70	26.70	68.20	-41.50

#### Table 6-17. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
*	11000.00	-113.11	Average	Н	46.98	40.87	53.98	-13.11
*	11000.00	-100.52	Peak	Н	46.98	53.46	73.98	-20.52
	16500.00	-125.00	Peak	Н	60.10	42.10	68.20	-26.10
	22000.00	-125.00	Peak	Н	44.30	26.30	68.20	-41.90
	27500.00	-125.00	Peak	Н	47.96	29.96	68.20	-38.24

Table 6-18. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
*	11160.00	-112.17	Average	Н	49.42	44.26	53.98	-9.72
*	11160.00	-99.52	Peak	Н	49.42	56.91	73.98	-17.07
	16740.00	-125.00	Peak	Н	58.53	40.53	68.20	-27.67
*	22320.00	-135.00	Average	Н	44.40	16.40	53.98	-37.58
*	22320.00	-125.00	Peak	Н	44.40	26.40	73.98	-47.58
	27900.00	-125.00	Peak	Н	48.14	30.14	68.20	-38.06

Table 6-19. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
*	11400.00	-113.67	Average	Н	47.61	40.94	53.98	-13.04
*	11400.00	-101.23	Peak	Н	47.61	53.38	73.98	-20.60
	17100.00	-125.00	Peak	Н	56.08	38.08	68.20	-30.12
*	22800.00	-135.00	Average	Н	44.45	16.45	53.98	-37.53
*	22800.00	-125.00	Peak	Н	44.45	26.45	73.98	-47.53
	28500.00	-125.00	Peak	Н	48.28	30.28	68.20	-37.92

Table 6-20. Radiated Measurements @ 3 meters

- 1. All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz (68.2dB $\mu$ V/m). At a distance of 3 meters, the field strength limit in dB $\mu$ V/m can be determined by adding a "conversion" factor of 95.2dB to the EIRP limit of -27dBm/MHz to obtain the limit for out of band spurious emissions of 68.2dB $\mu$ V/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. No significant emissions were found beyond the second harmonic for this device.
- 7. Levels at 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- 8. Above 960MHz the limit is 500  $\mu$ V/m (54dB $\mu$ /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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
5108.33	-100.87	Average	Н	39.21	44.49	53.98	-9.49
5108.33	-88.54	Peak	Н	39.21	55.63	73.98	-18.35
5148.96	-97.71	Average	Н	39.27	45.46	53.98	-8.52
5148.96	-82.88	Peak	Н	39.27	58.21	73.98	-15.77
5150.00	-93.34	Average	Н	39.27	45.54	53.98	-8.44
5150.00	-77.06	Peak	Н	39.27	57.85	73.98	-16.13

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

- 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  $\mu$ V/m (54dB $\mu$ /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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
5350.00	-99.94	Average	Н	39.53	46.59	53.98	-7.39
5350.00	-87.45	Peak	Н	39.53	59.08	73.98	-14.90
5351.06	-100.26	Average	Н	39.53	46.27	53.98	-7.71
5351.06	-85.76	Peak	Н	39.53	60.77	73.98	-13.21
5353.70	-100.71	Average	Н	39.53	45.83	53.98	-8.15
5353.70	-86.20	Peak	Н	39.53	60.34	73.98	-13.64

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

- 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 (68.2dB $\mu$ V/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  $\mu$ V/m (54dB $\mu$ /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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
5407.64	-101.67	Average	Н	39.60	44.93	53.98	-9.05
5407.64	-89.69	Peak	Н	39.60	56.91	73.98	-17.07
5422.80	-101.07	Average	Н	39.62	45.55	53.98	-8.43
5422.80	-89.96	Peak	Н	39.62	56.66	73.98	-17.32
5469.62	-88.03	Peak	Н	39.68	58.65	68.20	-9.55

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

- 1. Emissions within 5.35-5.46 GHz lie in a restricted band and are subject to the radiated emissions limits specified in §15.209. Emission within 5.46-5.47 GHz are at the lower band edge of UNII Band 3 transmission and are subject to the -27dBm/MHz ( $68.2 dB\mu V/m$ ) 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  $\mu$ V/m (54dB $\mu$ /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 [dB <sub>µ</sub> V/m]	Limit [dB <sub>µ</sub> V/m]	Margin [dB]
5725.60	-91.64	Peak	Н	40.18	55.54	68.20	-12.66
5735.10	-91.73	Peak	Н	40.20	55.47	68.20	-12.73
5771.75	-91.71	Peak	Н	40.30	55.58	68.20	-12.62

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

- 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  $\mu$ V/m (54dB $\mu$ /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]
5126.04	-100.87	Average	Н	39.24	45.37	53.98	-8.61
5126.04	-88.54	Peak	Н	39.24	57.70	73.98	-16.28
5142.71	-97.71	Average	Н	39.26	48.55	53.98	-5.43
5142.71	-82.88	Peak	Н	39.26	63.38	73.98	-10.60
5150.00	-93.34	Average	Н	39.27	52.93	53.98	-1.05
5150.00	-77.06	Peak	Н	39.27	69.21	73.98	-4.77

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

- 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  $\mu$ V/m (54dB $\mu$ /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	-95.80	Average	Н	39.53	50.73	53.98	-3.25
5350.00	-77.78	Peak	Н	39.53	68.75	73.98	-5.23
5351.23	-96.68	Average	Н	39.53	49.85	53.98	-4.13
5351.23	-77.23	Peak	Н	39.53	69.30	73.98	-4.68
5353.53	-97.88	Average	Н	39.53	48.66	53.98	-5.32
5353.53	-80.49	Peak	Н	39.53	66.05	73.98	-7.93

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

- 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 (68.2dB $\mu$ V/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  $\mu$ V/m (54dB $\mu$ /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 [dB µV/m]	Margin [dB]
5451.71	-101.42	Average	Н	39.66	45.24	53.98	-8.74
5451.71	-88.97	Peak	Н	39.66	57.69	73.98	-8.74
5457.18	-101.13	Average	Н	39.67	45.54	53.98	-8.61
5457.18	-87.82	Peak	Н	39.67	58.85	73.98	-16.28
5469.62	-81.74	Peak	Н	39.68	64.94	68.20	-5.43

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

- 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 (68.2dB $\mu$ V/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  $\mu$ V/m (54dB $\mu$ /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 [dB µV/m]	Margin [dB]
5727.76	-92.03	Peak	Н	40.18	55.15	68.20	-13.05
5732.81	-91.84	Peak	Н	40.19	55.35	68.20	-12.85
5736.78	-91.13	Peak	Н	40.20	56.06	68.20	-12.14

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

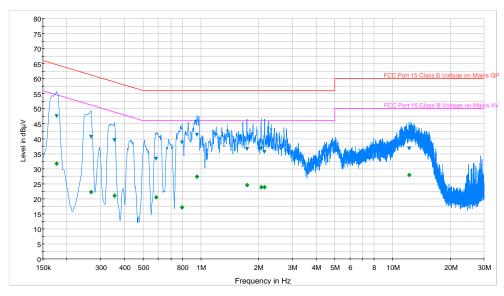
- 1. For frequencies above 1GHz, peak emissions are measured using RBW = 1MHz and VBW = 3MHz. Average emissions are measured using RBW = 1MHz, VBW = 3MHz, RMS detector, and 100 trace averages under continuous operation ("Method AD") per KDB 789033.
- 2. The antenna is manipulated through typical positions, 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  $\mu$ V/m (54dB $\mu$ /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]



FCC Part 15 Class B Voltage on Mains QP.LimitLine FCC Part 15 Class B Voltage on Mains AV.LimitLine Preview Result 1-PK+ Final Result 1-QPK

Plot 6-76. Line Conducted Plot with 802.11a UNII Band 1 (L1)

Frequency	Line	Corr.	QuasiPeak	Limit	Margin	Average	Limit	Margin
MHz		dB	dΒμV	dΒμV	dB	dΒμV	dΒμV	dB
0.177	L1	0.2	47.40	64.60	17.20	31.70	54.60	22.90
0.267	L1	0.1	40.60	61.20	20.60	22.30	51.20	28.90
0.355	L1	0.1	39.50	58.90	19.40	21.00	48.90	27.90
0.584	L1	0.1	33.30	56.00	22.70	20.50	46.00	25.50
0.798	L1	0.1	38.70	56.00	17.30	17.20	46.00	28.80
0.956	L1	0.1	41.30	56.00	14.70	27.40	46.00	18.60
1.741	L1	0.2	36.60	56.00	19.40	24.50	46.00	21.50
2.065	L1	0.2	36.70	56.00	19.30	23.90	46.00	22.10
2.150	L1	0.2	35.70	56.00	20.30	23.80	46.00	22.20
12.194	L1	0.4	36.70	60.00	23.30	27.90	50.00	22.10

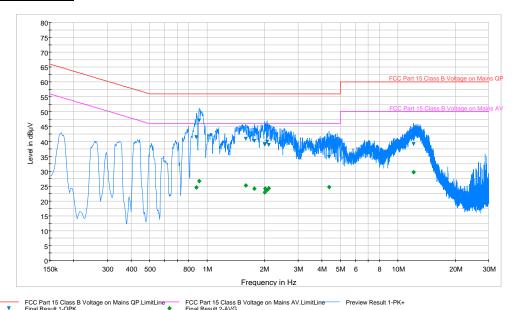
Table 6-29. Line Conducted Data with 802.11a UNII Band 1 (L1)

- 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 36. 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  $(dB\mu V) = QP/AV$  Analyzer/Receiver Level  $(dB\mu V) + Corr.$  (dB)
- 6. Margin (dB) = QP/AVLimit (dB $\mu$ V) QP/AV Level (dB $\mu$ V)
- 7. Traces shown in plot are made using a peak detector.
- 8. Deviations to the Specifications: None.

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§15.207; RSS-Gen [7.2.2]



Plot 6-77. Line Conducted Plot with 802.11a UNII Band 1 (N)

Frequency	Line	Corr.	QuasiPeak	Limit	Margin	Average	Limit	Margin
MHz		dB	dΒμV	dΒμV	dB	dΒμV	dΒμV	dB
0.879	N	0.1	41.40	56.00	14.60	24.60	46.00	21.40
0.911	N	0.1	47.10	56.00	8.90	26.70	46.00	19.30
1.595	N	0.2	40.80	56.00	15.20	25.20	46.00	20.80
1.772	N	0.2	40.10	56.00	15.90	24.20	46.00	21.80
2.006	N	0.2	39.00	56.00	17.00	23.00	46.00	23.00
2.018	N	0.2	39.10	56.00	16.90	24.10	46.00	21.90
2.067	N	0.2	39.90	56.00	16.10	23.70	46.00	22.30
2.110	N	0.2	38.90	56.00	17.10	24.20	46.00	21.80
4.367	N	0.2	34.80	56.00	21.20	24.80	46.00	21.20
12.122	N	0.5	39.10	60.00	20.90	29.60	50.00	20.40

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

#### Notes:

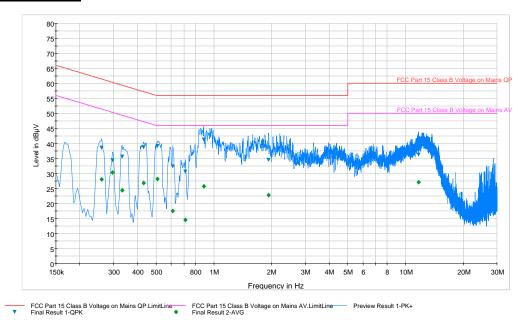
- 1. All modes of operation, data rates, and test channels were investigated and the worst-case emissions are reported in 802.11a mode using 6Mbps on Channel 36. The emissions found were not affected by the choice of channel used during testing.
- 2. The limit for Class B device(s) from 150kHz to 30MHz 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 (dB $\mu$ V) = QP/AV Analyzer/Receiver Level (dB $\mu$ V) + Corr. (dB)
- 6. Margin (dB) = QP/AVLimit (dB $\mu$ V) QP/AV Level (dB $\mu$ V)
- 7. Traces shown in plot are made using a peak detector.
- 8. Deviations to the Specifications: None.

# **Line-Conducted Test Data (Cont'd)**

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# §15.207; RSS-Gen [7.2.2]



Plot 6-78. Line Conducted Plot with 802.11a UNII Band 2 (L1)

Frequency	Line	Corr.	QuasiPeak	Limit	Margin	Average	Limit	Margin
MHz		dB	dΒμV	dΒμV	dB	dΒμV	dΒμV	dB
0.260	L1	0.1	38.50	61.40	22.90	28.10	51.40	23.30
0.296	L1	0.1	34.40	60.30	25.90	30.30	50.30	20.00
0.332	L1	0.1	35.60	59.40	23.80	24.40	49.40	25.00
0.431	L1	0.1	38.70	57.20	18.50	26.80	47.20	20.40
0.508	L1	0.1	39.10	56.00	16.90	28.20	46.00	17.80
0.611	L1	0.1	32.30	56.00	23.70	17.60	46.00	28.40
0.710	L1	0.1	30.60	56.00	25.40	14.60	46.00	31.40
0.886	L1	0.1	41.30	56.00	14.70	25.80	46.00	20.20
1.932	L1	0.2	34.60	56.00	21.40	22.80	46.00	23.20
11.668	L1	0.4	36.30	60.00	23.70	27.10	50.00	22.90

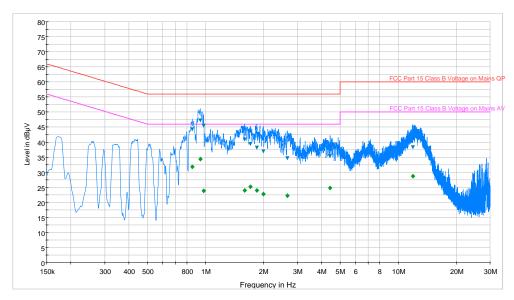
Table 6-31. Line Conducted Data with 802.11a UNII Band 2 (L1)

- 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.
- 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 (dB $\mu$ V) = QP/AV Analyzer/Receiver Level (dB $\mu$ V) + Corr. (dB)
- 6. Margin (dB) = QP/AVLimit (dB $\mu$ V) QP/AV Level (dB $\mu$ V)
- 7. Traces shown in plot are made using a peak detector.
- 8. Deviations to the Specifications: None.

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FCC Part 15 Class B Voltage on Mains AV.LimitLine
Final Result 2-AVG

Plot 6-79. Line Conducted Plot with 802.11a UNII Band 2 (N)

Frequency	Line	Corr.	QuasiPeak	Limit	Margin	Average	Limit	Margin
MHz		dB	dΒμV	dΒμV	dB	dΒμV	dΒμV	dB
0.854	N	0.1	44.20	56.00	11.80	31.80	46.00	14.20
0.940	N	0.1	47.20	56.00	8.80	34.40	46.00	11.60
0.976	N	0.2	45.50	56.00	10.50	23.80	46.00	22.20
1.595	N	0.2	40.80	56.00	15.20	24.10	46.00	21.90
1.707	N	0.2	39.40	56.00	16.60	25.20	46.00	20.80
1.844	N	0.2	38.20	56.00	17.80	24.00	46.00	22.00
2.000	N	0.2	37.00	56.00	19.00	22.80	46.00	23.20
2.654	N	0.2	34.60	56.00	21.40	22.30	46.00	23.70
4.436	N	0.2	35.40	56.00	20.60	24.80	46.00	21.20
11.929	N	0.4	38.30	60.00	21.70	28.70	50.00	21.30

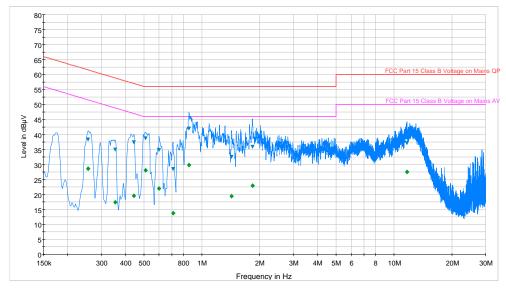
Table 6-32. Line Conducted Data with 802.11a UNII Band 2 (N)

- 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 52. 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 (dB $\mu$ V) = QP/AV Analyzer/Receiver Level (dB $\mu$ V) + Corr. (dB)
- Margin (dB) = QP/AVLimit (dB $\mu$ V) QP/AV Level (dB $\mu$ V) 6.
- 7. Traces shown in plot are made using a peak detector.
- 8. Deviations to the Specifications: None.

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FCC Part 15 Class B Voltage on Mains QP.LimitLine FCC Part 15 Class B Voltage on Mains AV.LimitLine Preview Result 1-PK4 Final Result 1-QPK

Plot 6-80. Line Conducted Plot with 802.11a UNII Band 3 (L1)

Frequency	Line	Corr.	QuasiPeak	Limit	Margin	Average	Limit	Margin
MHz		dB	dΒμV	dΒμV	dB	dΒμV	dΒμV	dB
0.256	L1	0.1	38.30	61.60	23.30	28.60	51.60	23.00
0.355	L1	0.1	34.90	58.90	24.00	17.40	48.90	31.50
0.443	L1	0.1	37.30	57.00	19.70	19.50	47.00	27.50
0.510	L1	0.1	38.70	56.00	17.30	28.00	46.00	18.00
0.600	L1	0.1	34.80	56.00	21.20	22.00	46.00	24.00
0.708	L1	0.1	28.40	56.00	27.60	13.80	46.00	32.20
0.859	L1	0.1	41.90	56.00	14.10	29.80	46.00	16.20
1.428	L1	0.2	32.50	56.00	23.50	19.40	46.00	26.60
1.838	L1	0.2	35.80	56.00	20.20	23.00	46.00	23.00
11.713	L1	0.4	37.10	60.00	22.90	27.50	50.00	22.50

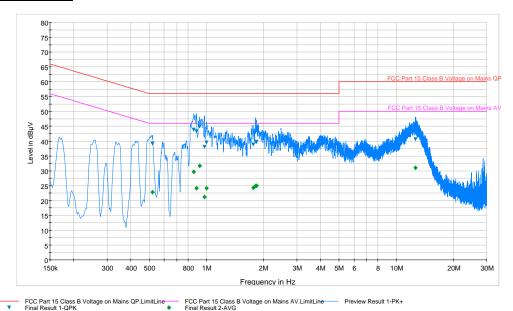
Table 6-33. Line Conducted Plot with 802.11a UNII Band 3 (L1)

- 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  $(dB\mu V) = QP/AV$  Analyzer/Receiver Level  $(dB\mu V) + Corr.$  (dB)
- 6. Margin (dB) = QP/AVLimit (dB $\mu$ V) QP/AV Level (dB $\mu$ V)
- 7. Traces shown in plot are made using a peak detector.
- 8. Deviations to the Specifications: None.

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Plot 6-81. Line Conducted Plot with 802.11a UNII Band 3 (N)

Frequency	Line	Corr.	QuasiPeak	Limit	Margin	Average	Limit	Margin
MHz		dB	dΒμV	dΒμV	dB	dΒμV	dΒμV	dB
0.521	N	0.1	39.20	56.00	16.80	22.80	46.00	23.20
0.859	N	0.1	43.80	56.00	12.20	29.70	46.00	16.30
0.886	N	0.1	43.30	56.00	12.70	24.10	46.00	21.90
0.922	N	0.1	44.90	56.00	11.10	31.60	46.00	14.40
0.978	N	0.2	38.10	56.00	17.90	21.10	46.00	24.90
1.003	N	0.2	39.50	56.00	16.50	24.10	46.00	21.90
1.770	N	0.2	38.90	56.00	17.10	24.20	46.00	21.80
1.817	N	0.2	39.80	56.00	16.20	25.00	46.00	21.00
1.840	N	0.2	39.70	56.00	16.30	25.00	46.00	21.00
12.626	N	0.5	40.60	60.00	19.40	31.00	50.00	19.00

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

- 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
- Corr. (dB) = Cable loss (dB) + LISN insertion factor (dB) 4.
- 5. QP/AV Level (dB $\mu$ V) = QP/AV Analyzer/Receiver Level (dB $\mu$ V) + Corr. (dB)
- 6. Margin (dB) = QP/AVLimit (dB $\mu$ V) - QP/AV Level (dB $\mu$ V)
- Traces shown in plot are made using a peak detector. 7.
- 8. Deviations to the Specifications: None.

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#### CONCLUSION 7.0

The data collected relate only the item(s) tested and show that the Samsung Portable Handset FCC ID: A3LSGHT889 is in compliance with Part 15E of the FCC Rules and RSS-210 of the Industry Canada Rules.

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