

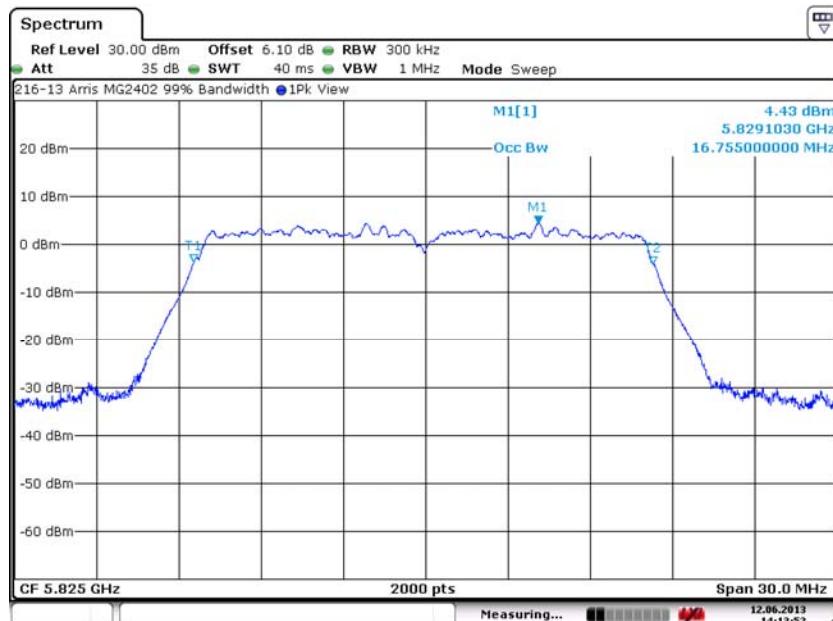
Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210) (continued)

7.3.43. 802.11/a: High Channel – 165, J5000



Date: 12.JUN.2013 14:13:52

7.3.44. 802.11/a: High Channel – 165, J5001



Date: 12.JUN.2013 14:14:50

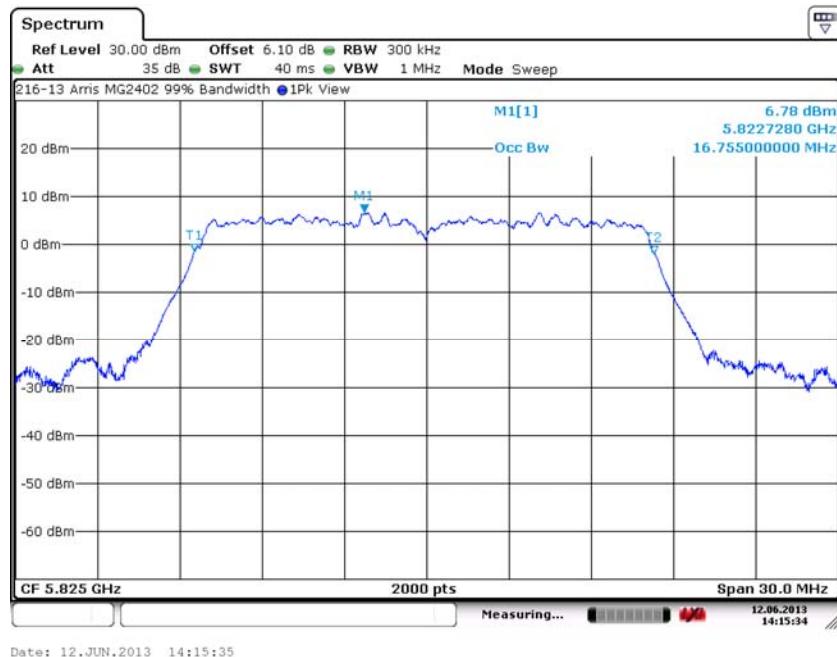
Test Number: 216-13R2

Issue Date: 6/18/2013

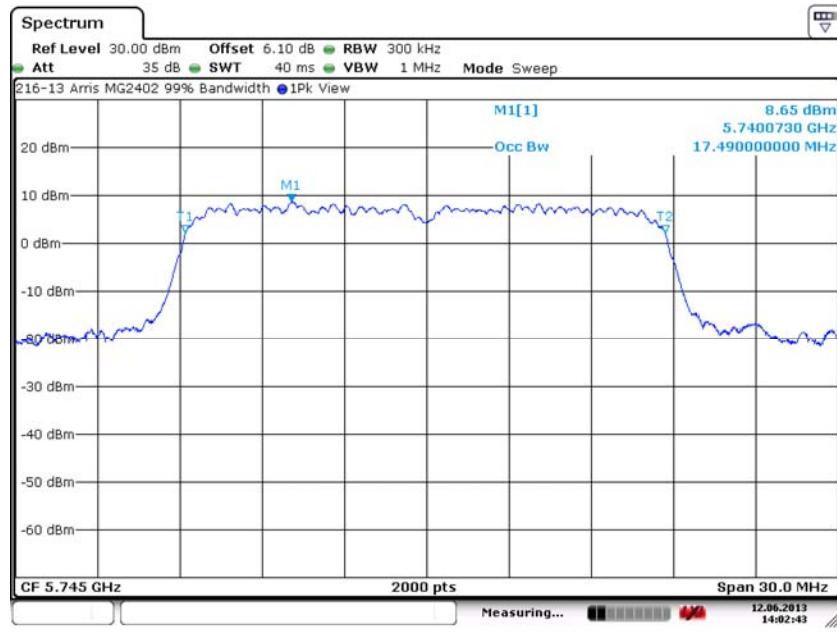
7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210) (continued)

7.3.45. 802.11/a: High Channel – 165, J5002



7.3.46. HT20: Low Channel – 149, J5000



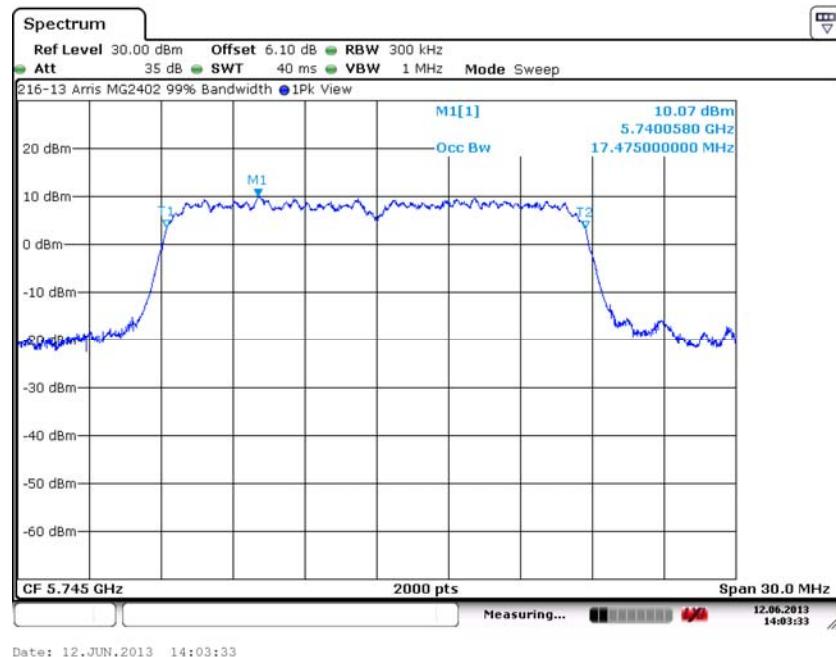
Test Number: 216-13R2

Issue Date: 6/18/2013

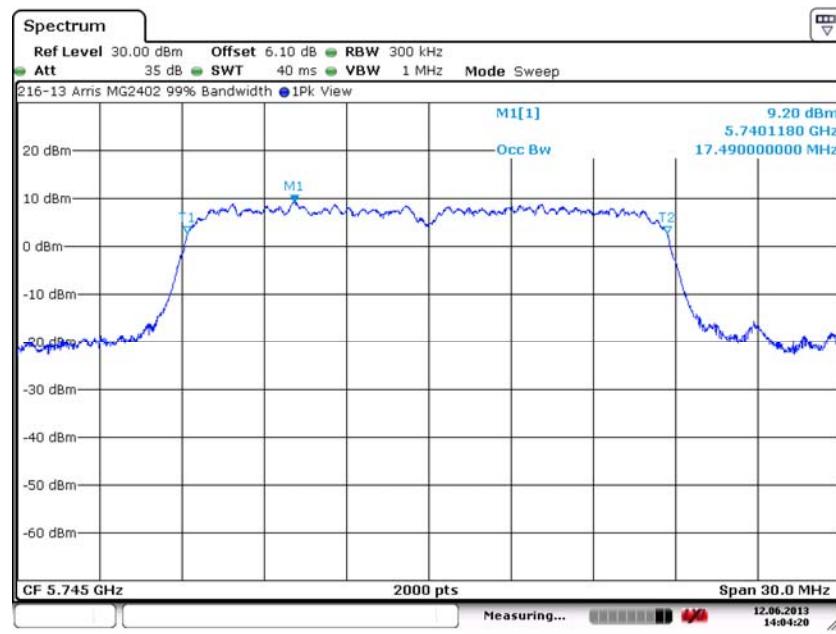
7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210) (continued)

7.3.47. HT20: Low Channel – 149, J5001



7.3.48. HT20: Low Channel – 149, J5002



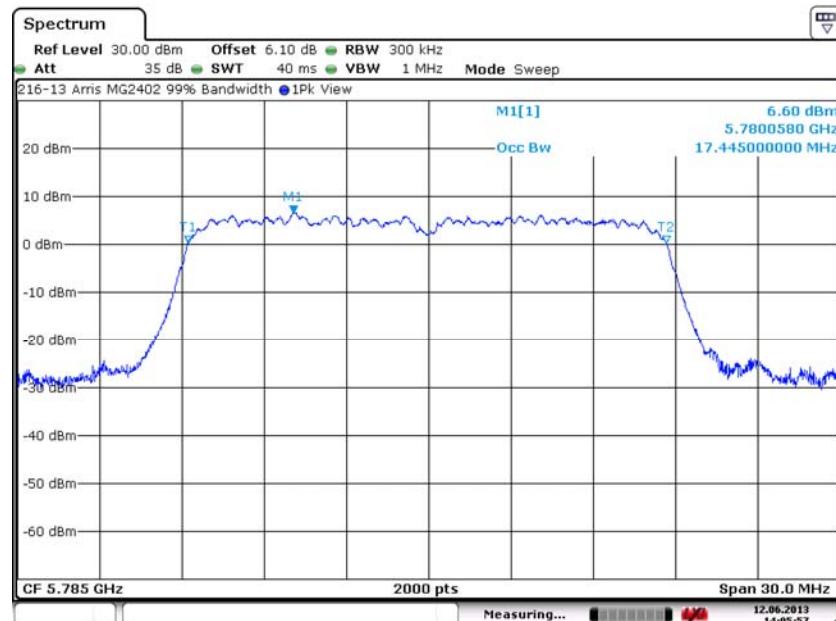
Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data (continued)

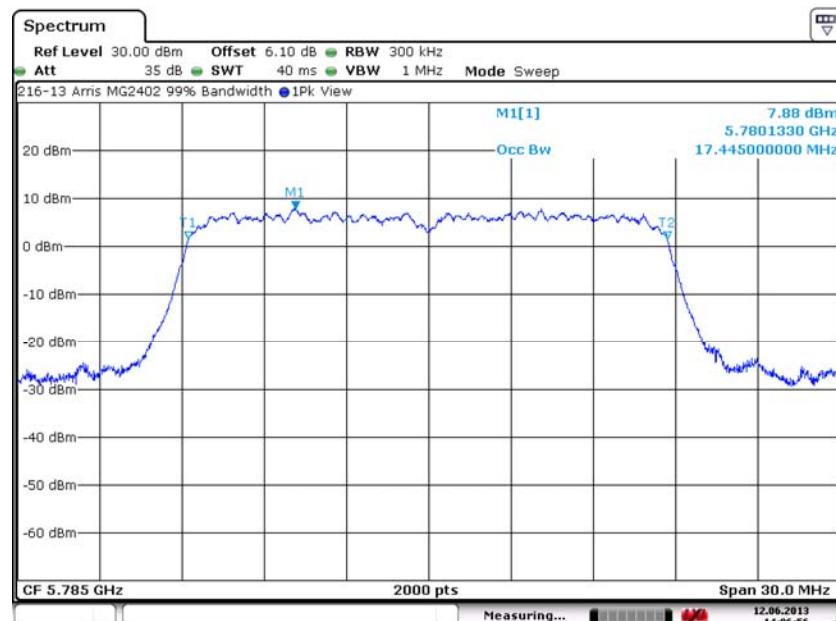
7.3. 99% Bandwidth (RSS 210) (continued)

7.3.49. HT20: Middle Channel – 157, J5000



Date: 12.JUN.2013 14:05:57

7.3.50. HT20: Middle Channel – 157, J5001



Date: 12.JUN.2013 14:06:56

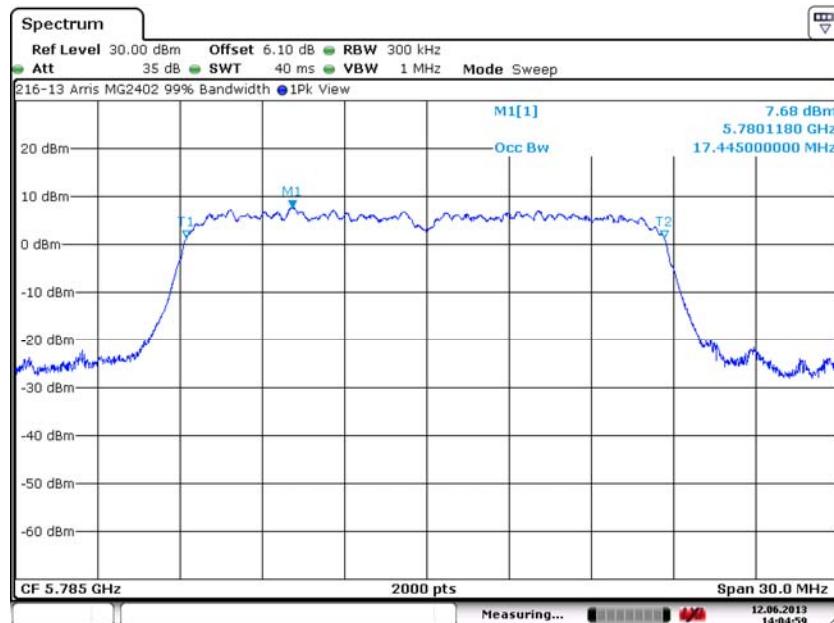
Test Number: 216-13R2

Issue Date: 6/18/2013

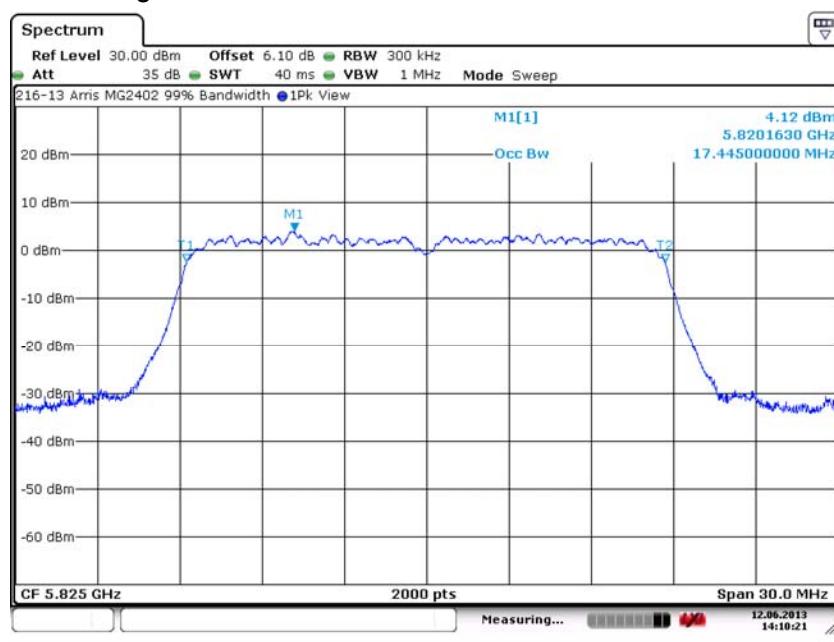
7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210) (continued)

7.3.51. HT20: Middle Channel – 157, J5002



7.3.52. HT20: High Channel – 165, J5000



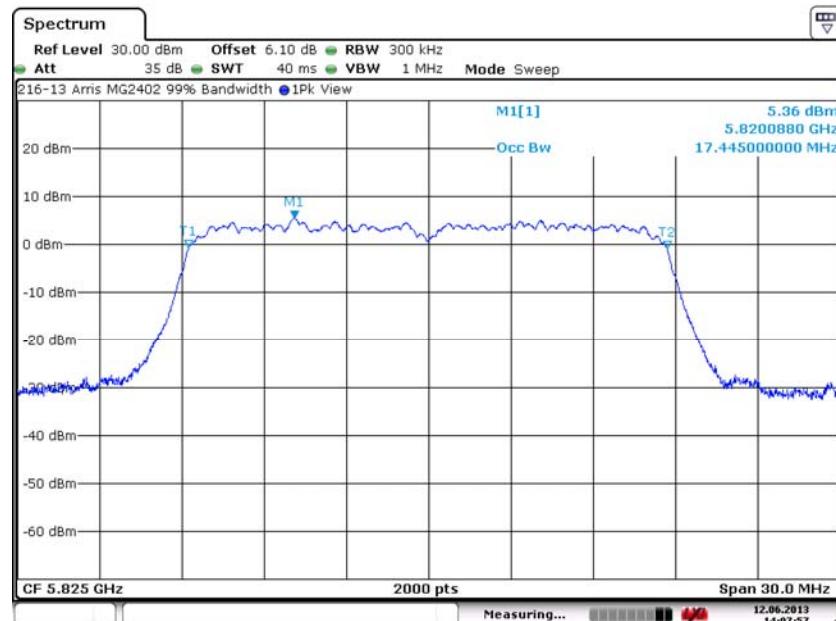
Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data (continued)

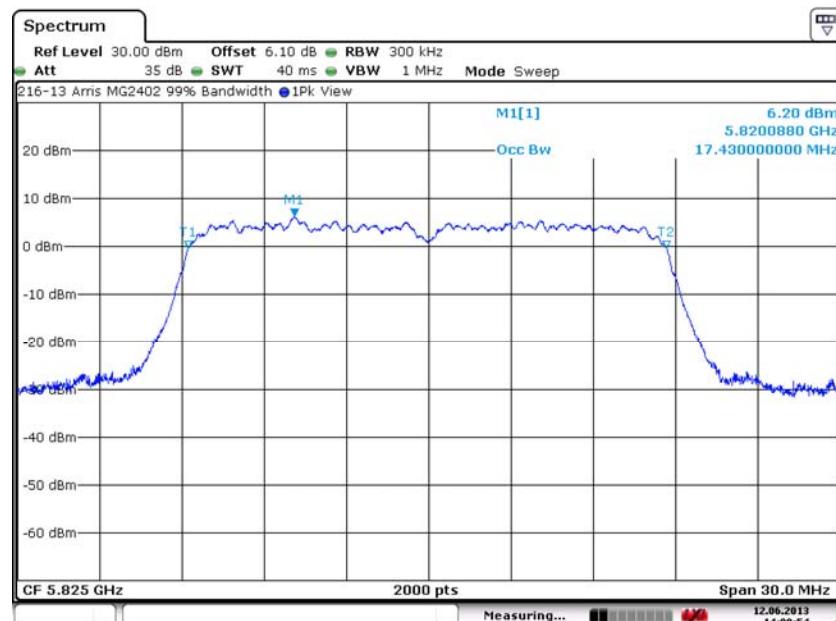
7.3. 99% Bandwidth (RSS 210) (continued)

7.3.53. HT20: High Channel – 165, J5001



Date: 12.JUN.2013 14:07:57

7.3.54. HT20: High Channel – 165, J5002



Date: 12.JUN.2013 14:08:54

Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210) (continued)

7.3.55. HT40: Low Channel – 151, J5000



Date: 12.JUN.2013 11:46:07

7.3.56. HT40: Low Channel – 151, J5001



Date: 12.JUN.2013 11:48:26

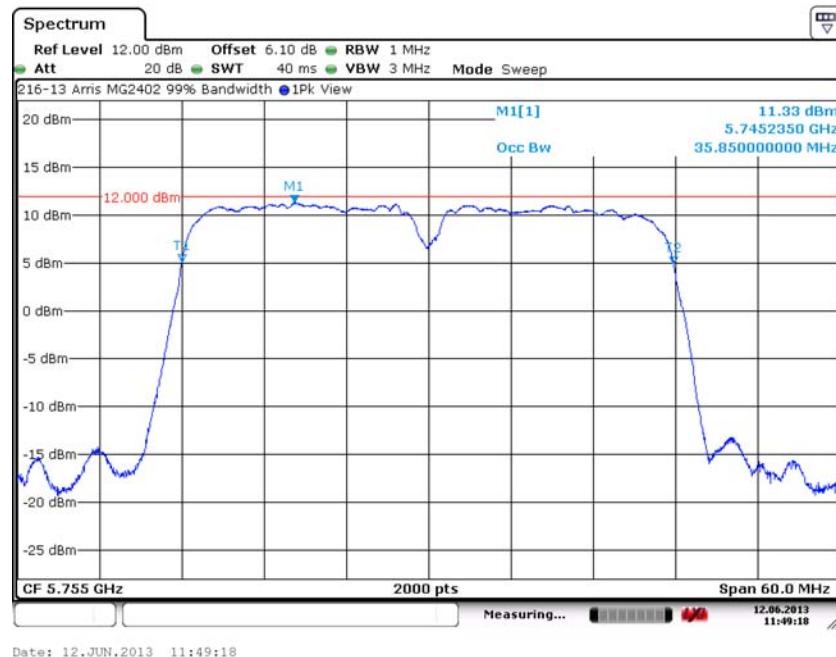
Test Number: 216-13R2

Issue Date: 6/18/2013

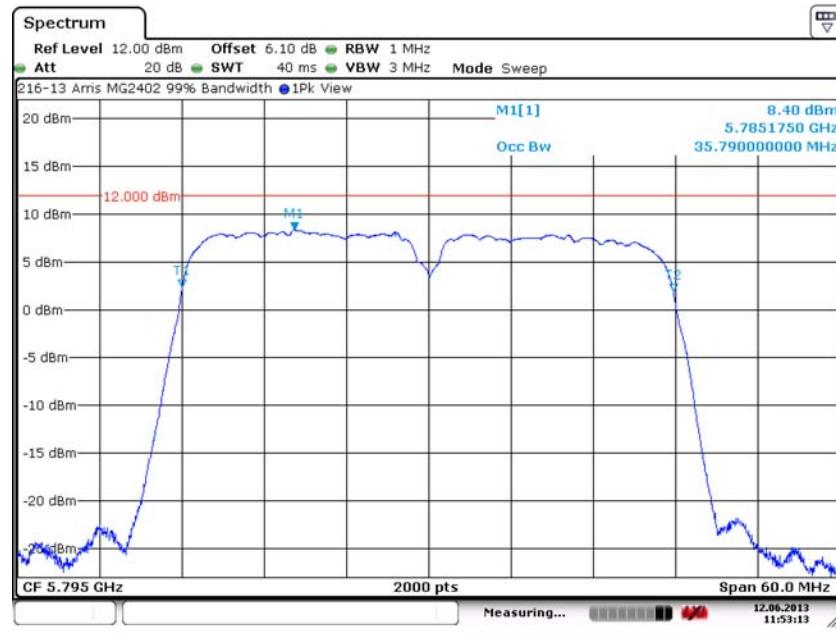
7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210) (continued)

7.3.57. HT40: Low Channel – 151, J5002



7.3.58. HT40: High Channel – 159, J5000



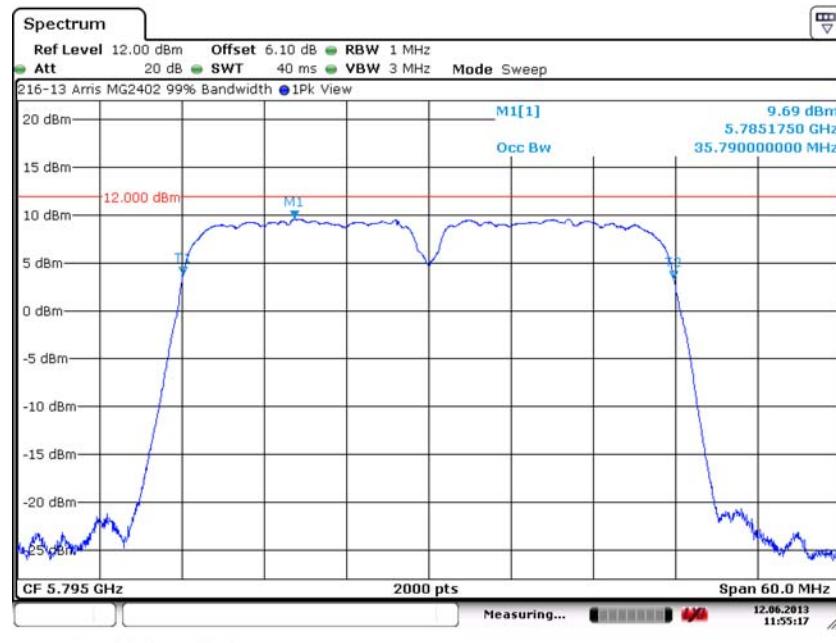
Test Number: 216-13R2

Issue Date: 6/18/2013

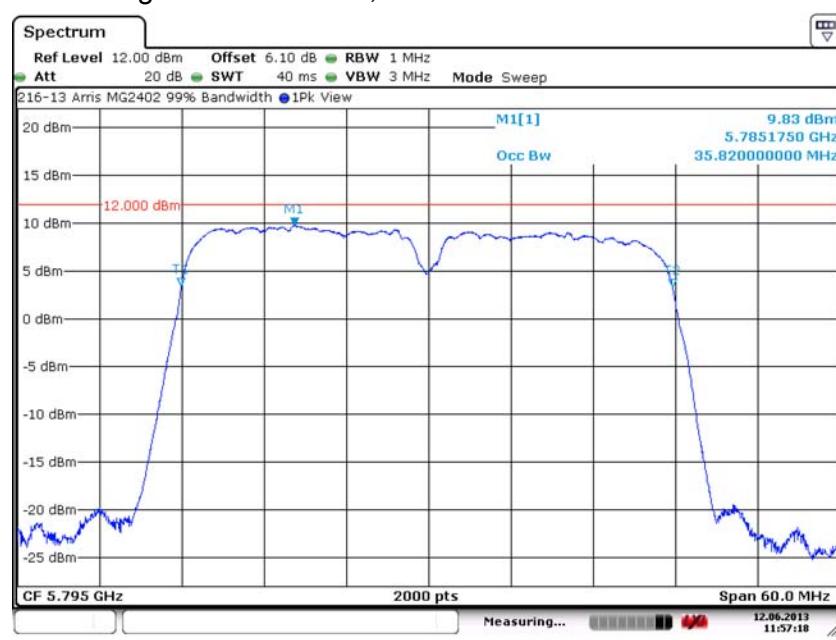
7. Measurement Data (continued)

7.3. 99% Bandwidth (RSS 210) (continued)

7.3.59. HT40: High Channel – 151, J5001



7.3.60. HT40: High Channel – 159, J5002



Test Number: 216-13R2
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power

Requirement: (15.247 (b) (3))

The maximum peak conducted output power of the intentional radiator shall not exceed the following: For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt (+30 dBm).

Procedure: This test was performed in accordance with the procedure detailed in FCC OET publication number 558074 D01, v02 (10/4/2012), Section 8.2.1, Option 1.

Using the Rohde & Schwarz FSV40 band power function, the integrated average power was measured. The band average power function span was determined by using the 26 dB Emission Bandwidth (EBW) measured in Section 7.2 of this report.

FCC OET publication number 662911 D01, v01r2 (9/26/2012) was referenced to determine the combined total power output of the three MIMO outputs. The measure-and-sum technique was used.

Conclusion: The device under test meets the required maximum peak conducted output power level of 1 Watt (+30 dBm).

802.11b Mode Channel	Frequency (MHz)	Maximum Conducted Output Power			Total Max Conducted Output Power (dBm)	Limit (dBm)	Result
		J2400	J2401	J2402			
		(dBm)					
Low	2412	19.21	18.50	17.82	23.32	30.00	Compliant
Middle	2437	19.18	19.20	17.97	23.59	30.00	Compliant
High	2462	19.69	19.08	18.23	23.81	30.00	Compliant

802.11g Mode Channel	Frequency (MHz)	Maximum Conducted Output Power			Total Max Conducted Output Power (dBm)	Limit (dBm)	Result
		J2400	J2401	J2402			
		(dBm)					
Low	2412	16.17	16.56	16.19	21.08	30.00	Compliant
Middle	2437	16.16	15.29	14.36	20.34	30.00	Compliant
High	2462	15.71	15.58	14.58	20.43	30.00	Compliant

Test Number: 216-13R2
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (continued)

Channel	HT20 Mode	Frequency	Maximum Conducted Output Power			Total Max Conducted Output Power	Limit	Result
			J2400	J2401	J2402			
			(MHz)	(dBm)		(dBm)	(dBm)	
Low	2412	17.90	16.51	16.28	21.73	30.00	Compliant	
Middle	2437	16.09	15.90	14.55	20.34	30.00	Compliant	
High	2462	16.35	15.43	14.66	20.31	30.00	Compliant	

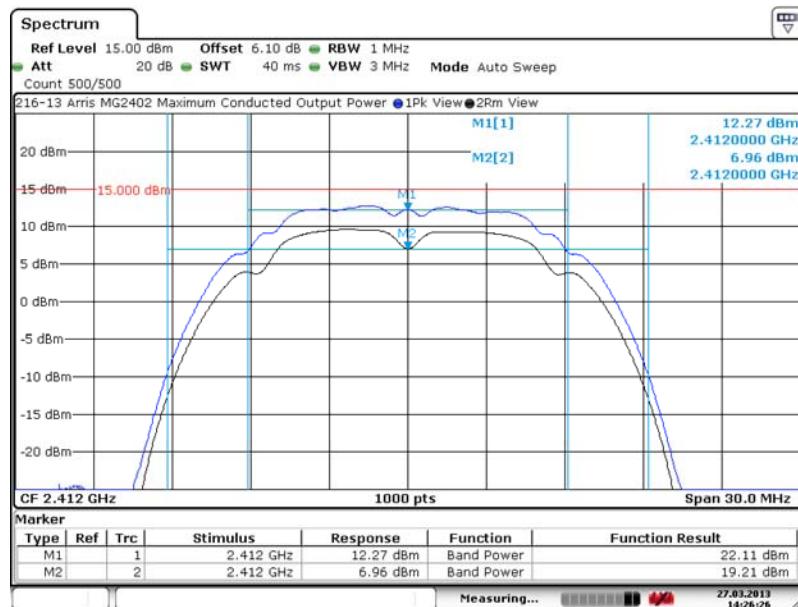
Channel	HT40 Mode	Frequency	Maximum Conducted Output Power			Total Max Conducted Output Power	Limit	Result
			J2400	J2401	J2402			
			(MHz)	(dBm)		(dBm)	(dBm)	
Low	2422	15.81	15.4	14.40	20.01	30.00	Compliant	
Middle	2437	15.58	14.8	13.94	19.60	30.00	Compliant	
High	2452	15.55	15.1	13.54	19.57	30.00	Compliant	

Test Number: 216-13R2
Issue Date: 6/18/2013

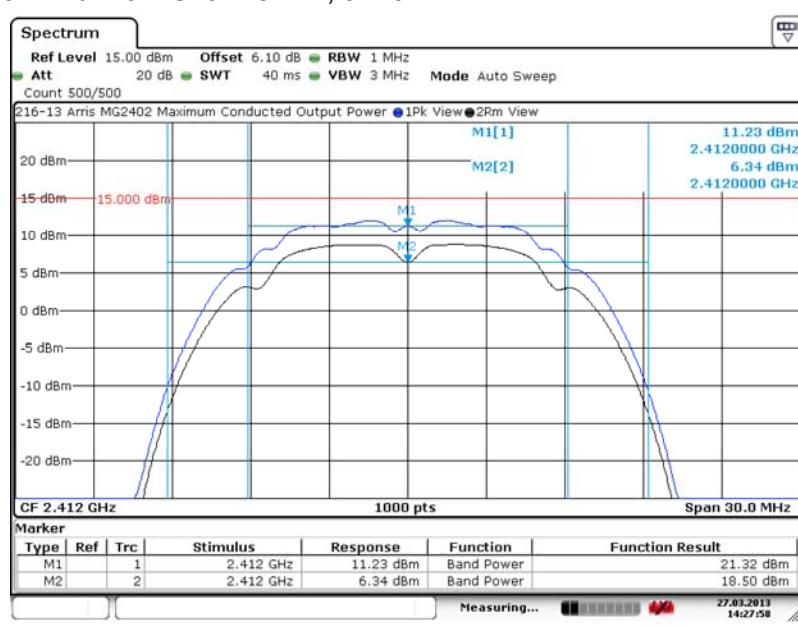
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.1. 802.11b: Low Channel – 1, J2400



7.4.2. 802.11b: Low Channel – 1, J2401



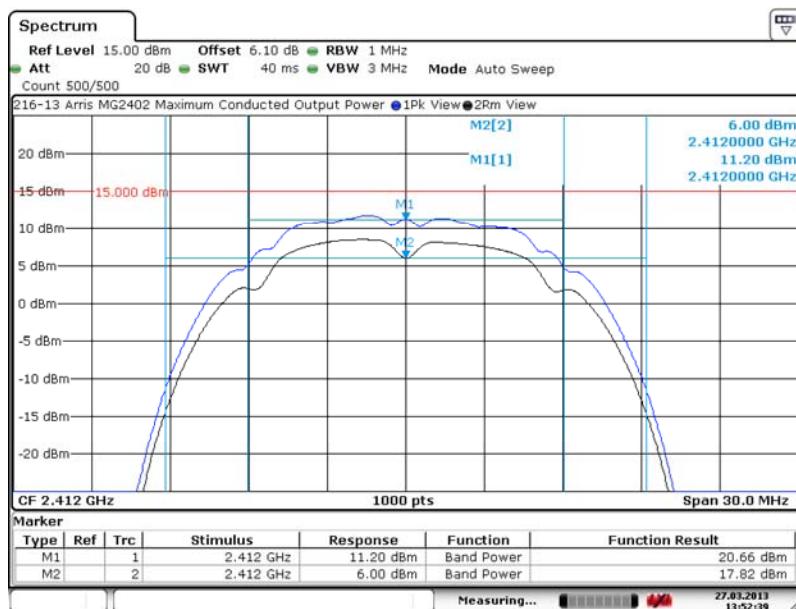
Test Number: 216-13R2

Issue Date: 6/18/2013

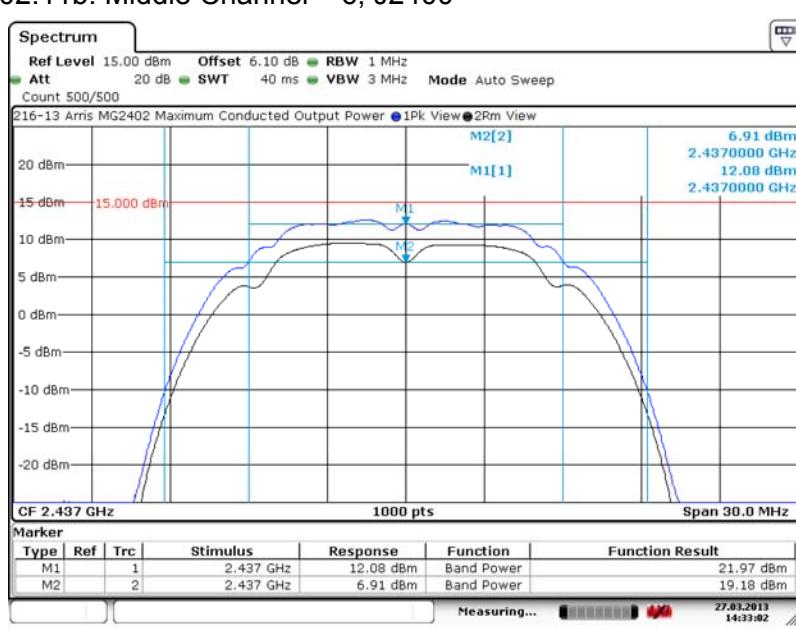
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.3. 802.11b: Low Channel – 1, J2402



7.4.4. 802.11b: Middle Channel – 6, J2400



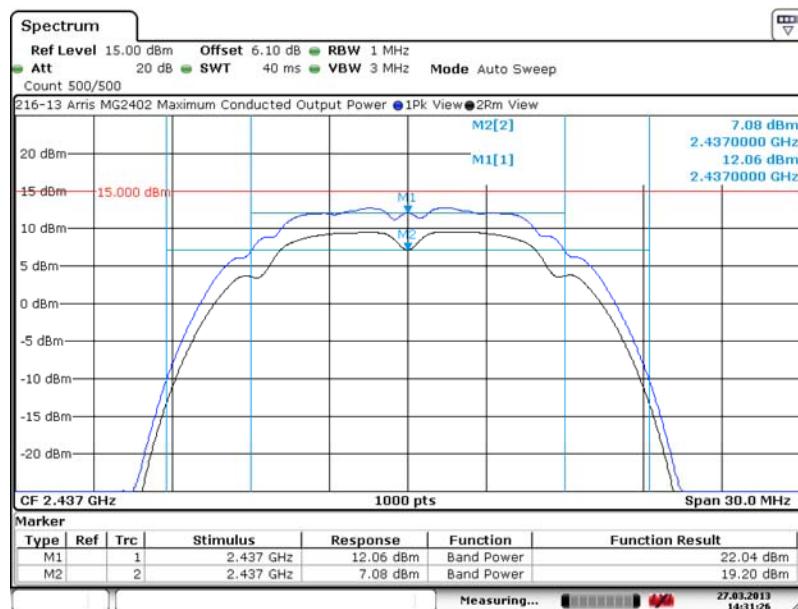
Test Number: 216-13R2

Issue Date: 6/18/2013

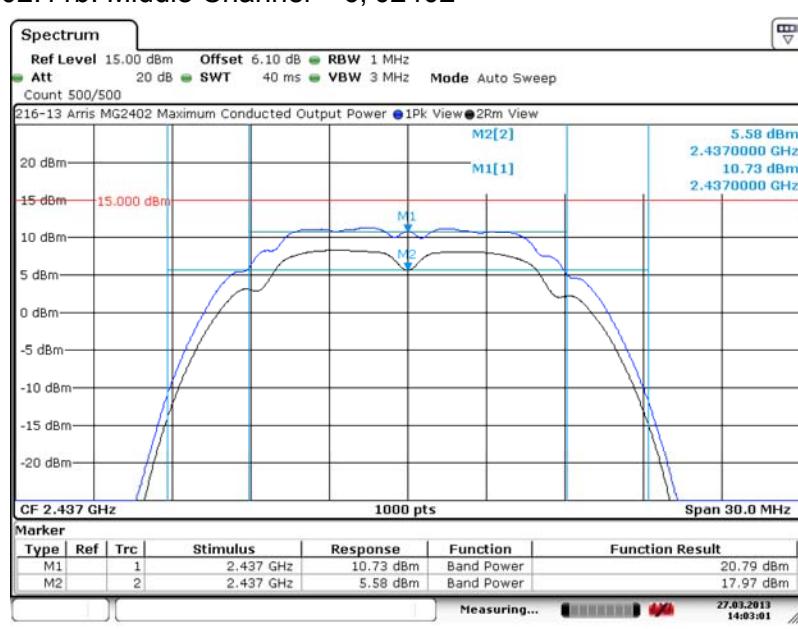
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.5. 802.11b: Middle Channel – 6, J2401



7.4.6. 802.11b: Middle Channel – 6, J2402

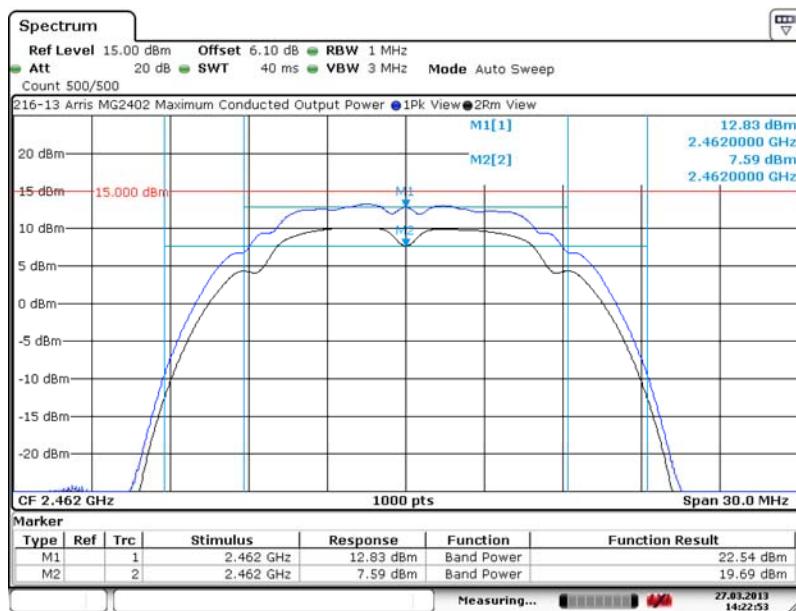


Test Number: 216-13R2
Issue Date: 6/18/2013

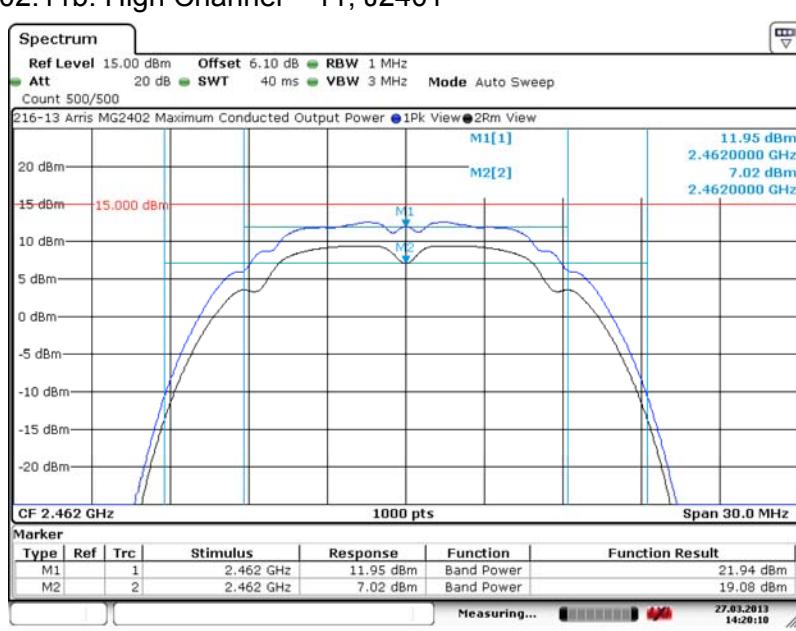
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.7. 802.11b: High Channel – 11, J2400



7.4.8. 802.11b: High Channel – 11, J2401

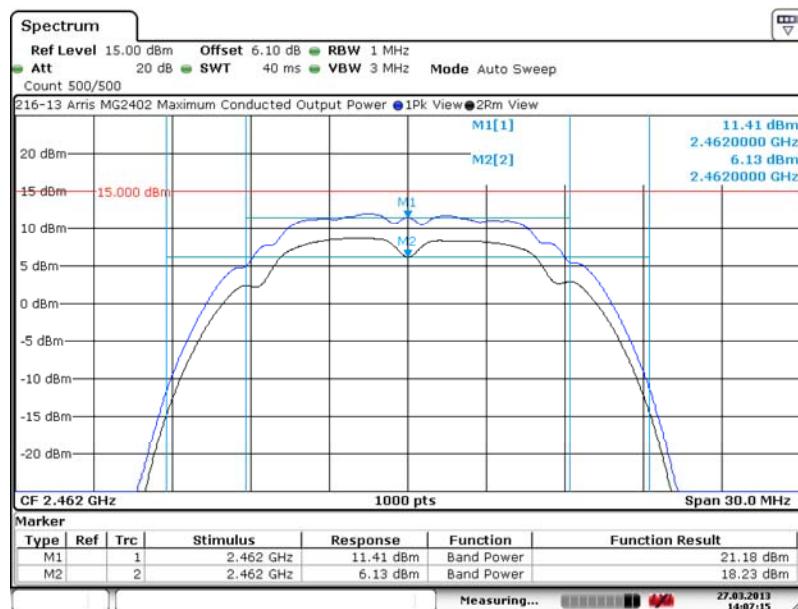


Test Number: 216-13R2
Issue Date: 6/18/2013

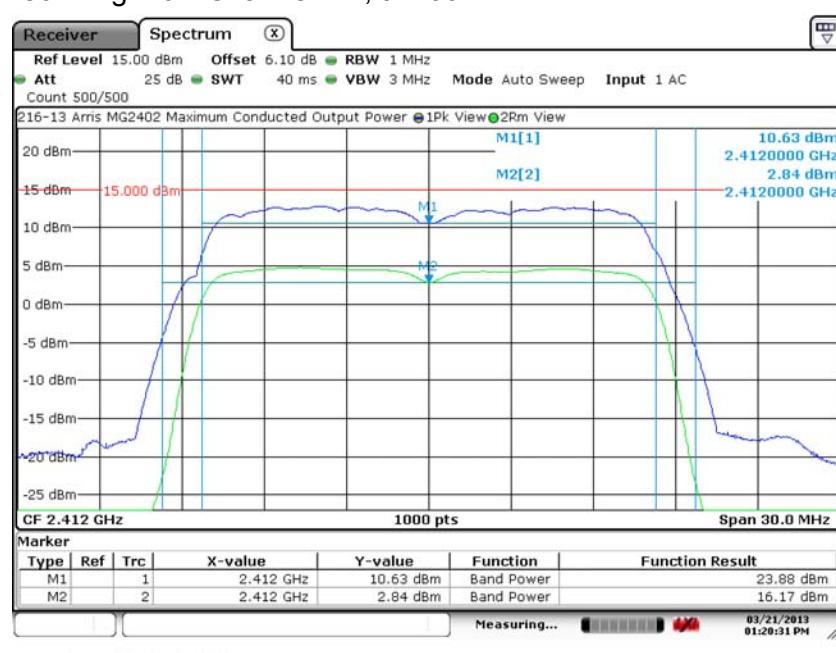
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.9. 802.11b: High Channel – 11, J2402



7.4.10. 802.11g: Low Channel – 1, J2400

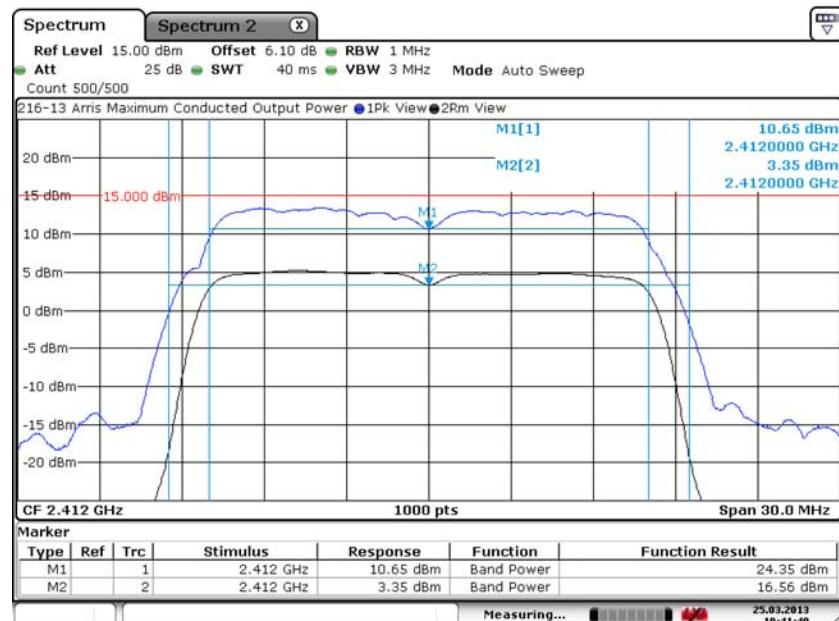


Test Number: 216-13R2
Issue Date: 6/18/2013

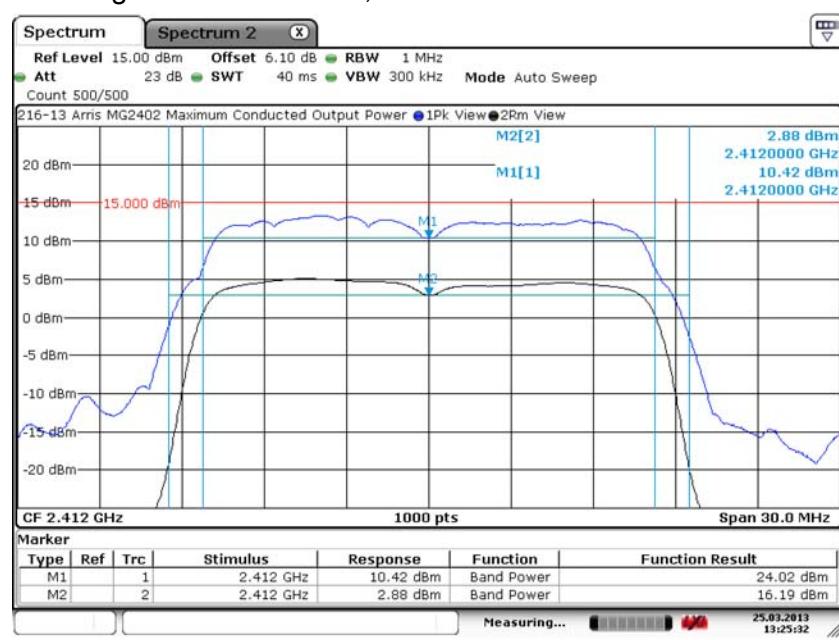
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.11. 802.11g: Low Channel – 1, J2401



7.4.12. 802.11g: Low Channel – 1, J2402



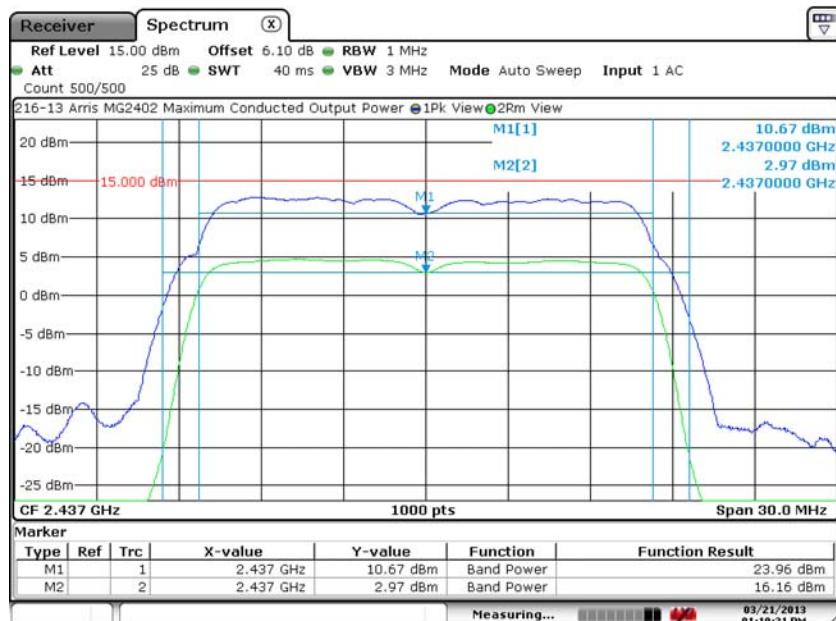
Test Number: 216-13R2

Issue Date: 6/18/2013

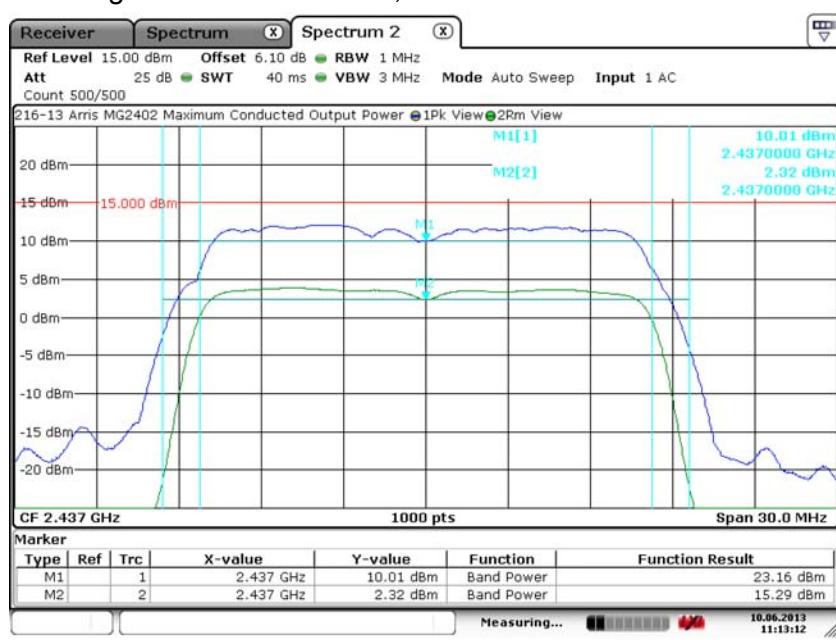
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.13. 802.11g: Middle Channel – 6, J2400



7.4.14. 802.11g: Middle Channel – 6, J2401



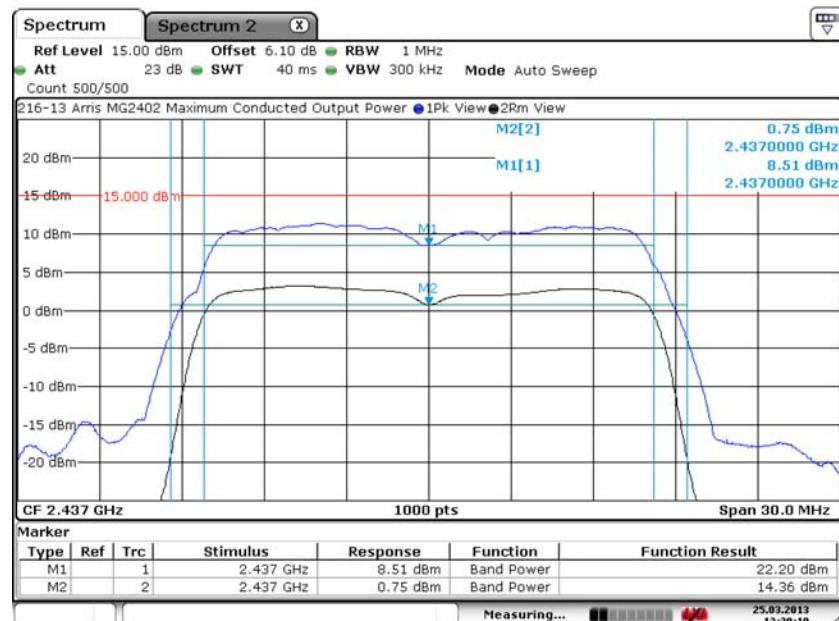
Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data

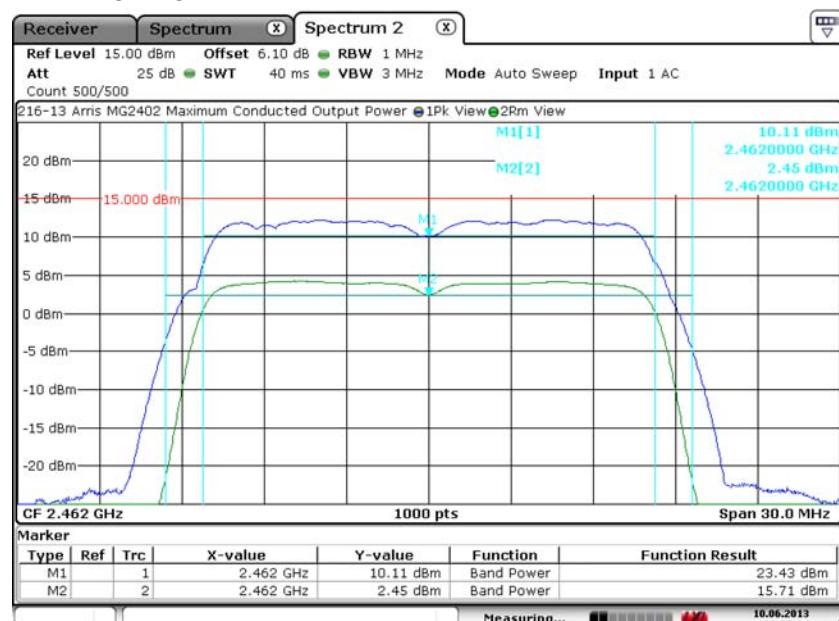
7.4. Maximum Peak Conducted Output Power (continued)

7.4.15. 802.11g: Middle Channel – 6, J2402



Date: 25.MAR.2013 13:30:18

7.4.16. 802.11g: High Channel – 11, J2400



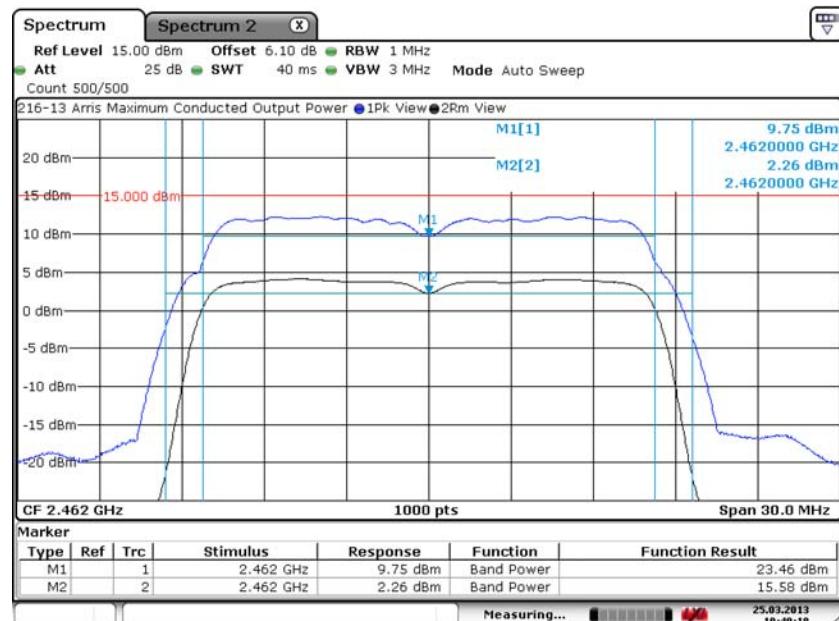
Date: 10.JUN.2013 11:26:04

Test Number: 216-13R2
Issue Date: 6/18/2013

7. Measurement Data

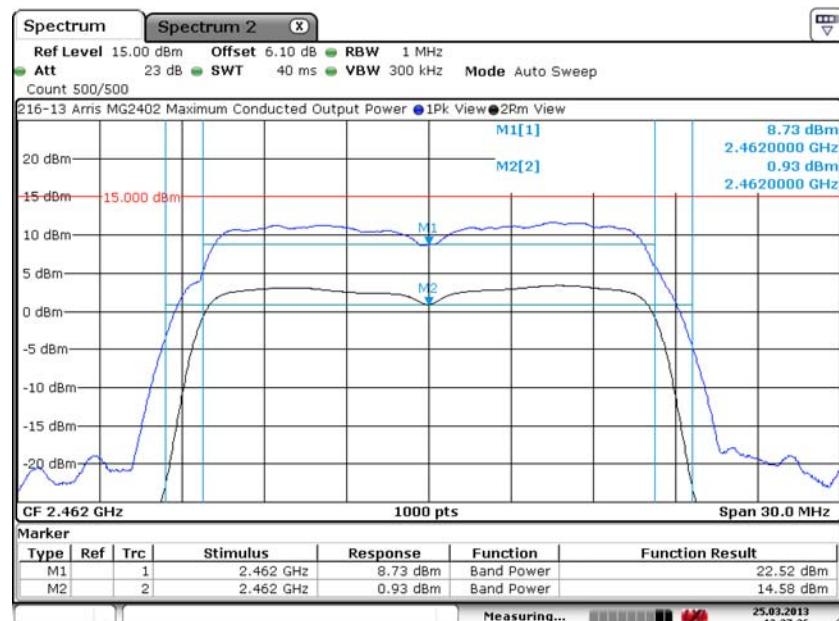
7.4. Maximum Peak Conducted Output Power (continued)

7.4.17. 802.11g: High Channel – 11, J2401



Date: 25.MAR.2013 10:49:18

7.4.18. 802.11g: High Channel – 11, J2402



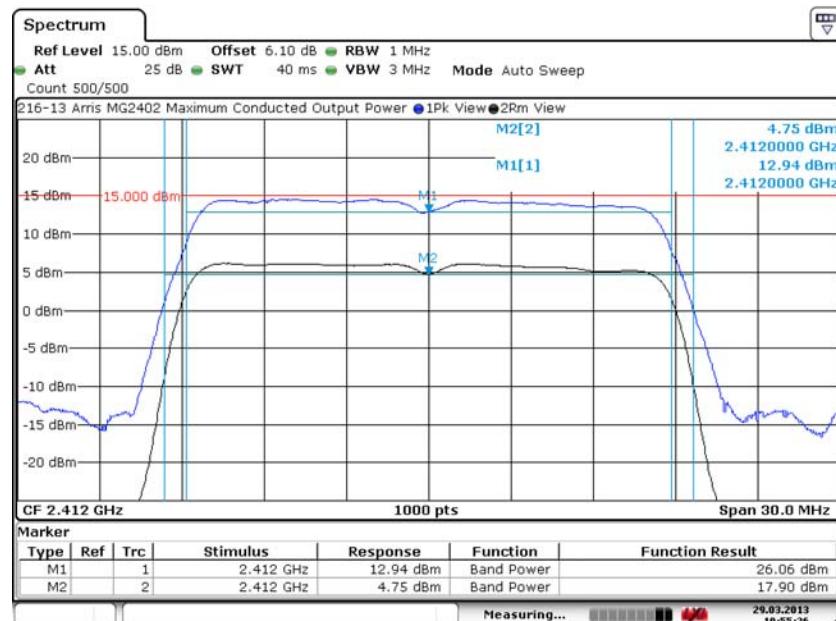
Date: 25.MAR.2013 13:37:36

Test Number: 216-13R2
Issue Date: 6/18/2013

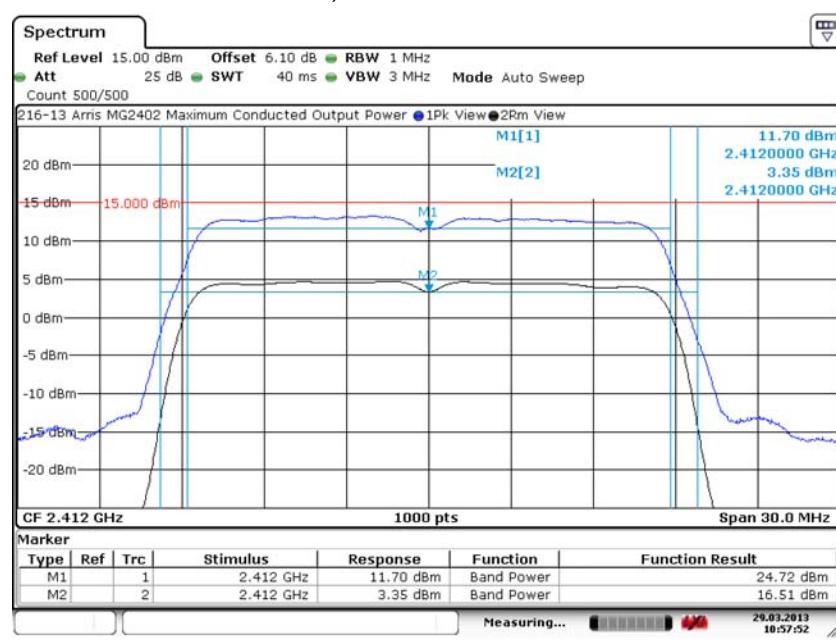
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.19. HT20: Low Channel – 1, J2400



7.4.20. HT20: Low Channel – 1, J2401



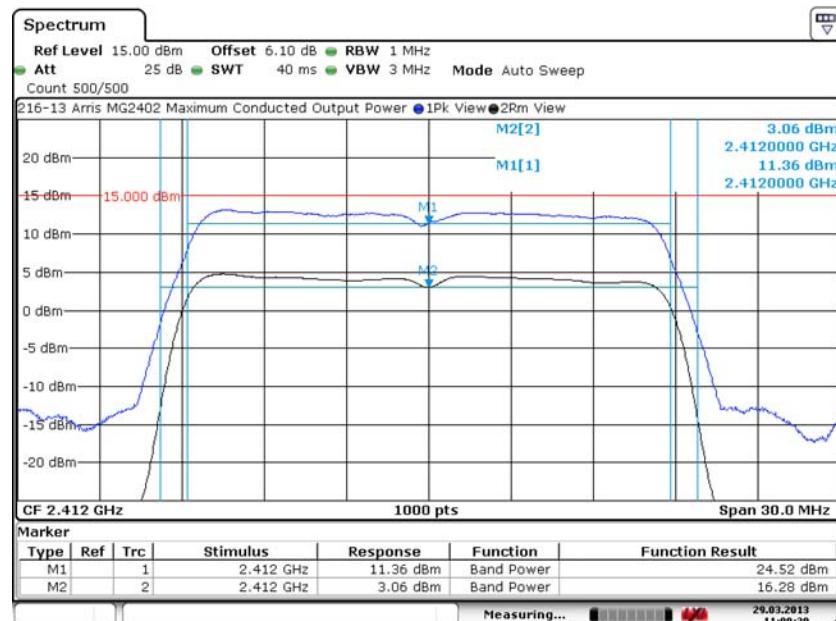
Test Number: 216-13R2

Issue Date: 6/18/2013

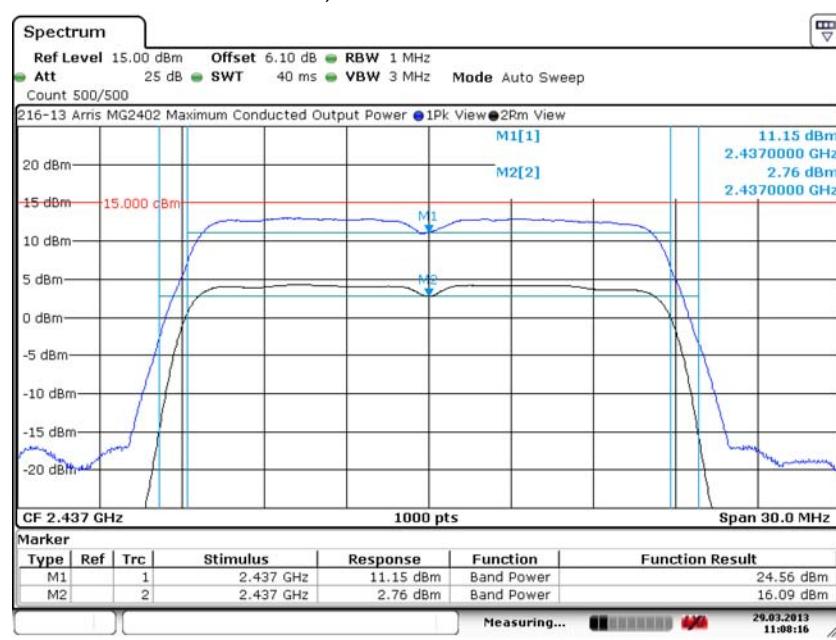
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.21. HT20: Low Channel – 1, J2402



7.4.22. HT20: Mid Channel – 6, J2400

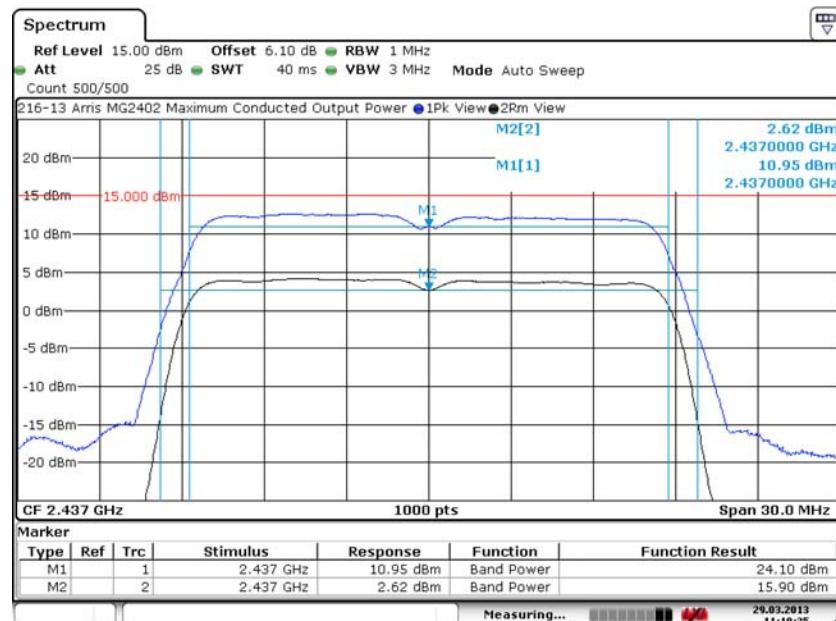


Test Number: 216-13R2
Issue Date: 6/18/2013

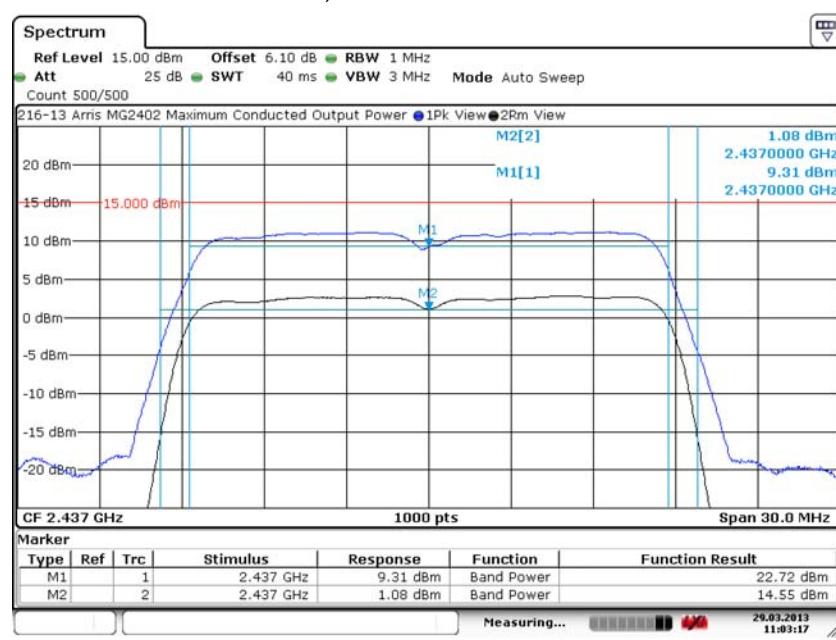
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.23. HT20: Mid Channel – 6, J2401



7.4.24. HT20: Mid Channel – 6, J2402



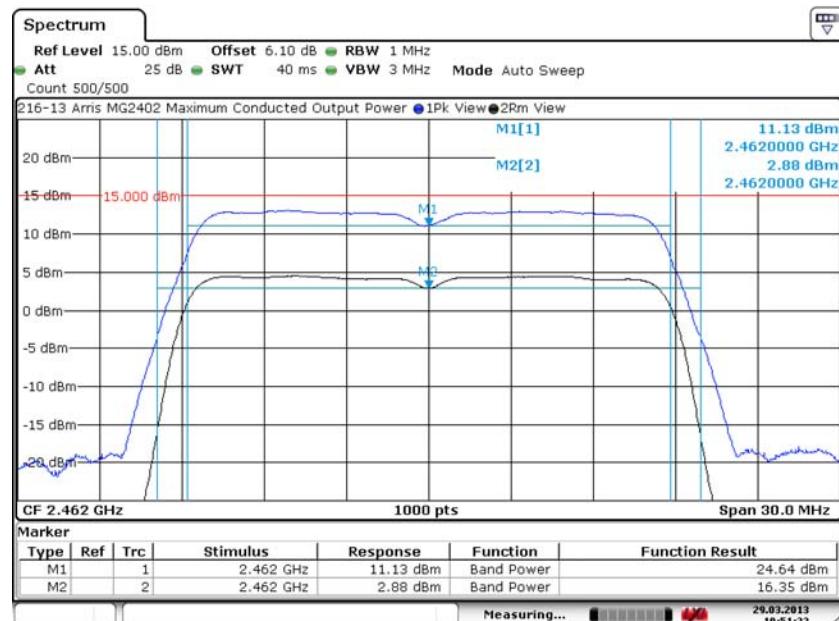
Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data

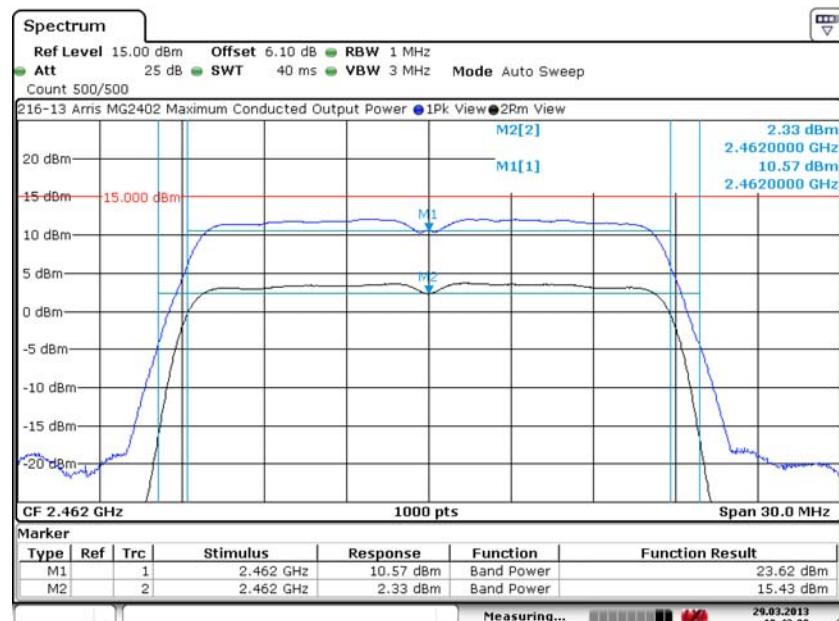
7.4. Maximum Peak Conducted Output Power (continued)

7.4.25. HT20: High Channel – 11, J2400



Date: 29.MAR.2013 10:51:22

7.4.26. HT20: High Channel – 11, J2401



Date: 29.MAR.2013 10:43:08

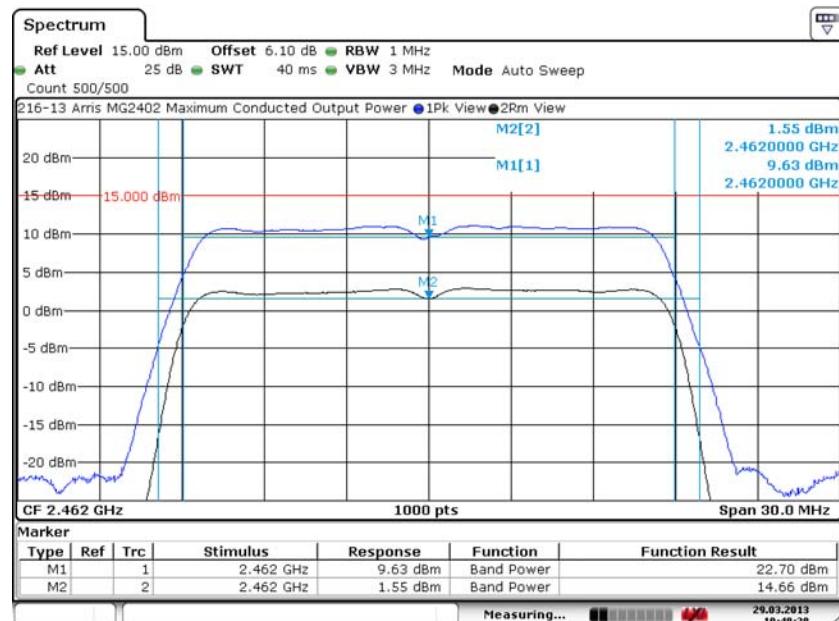
Test Number: 216-13R2

Issue Date: 6/18/2013

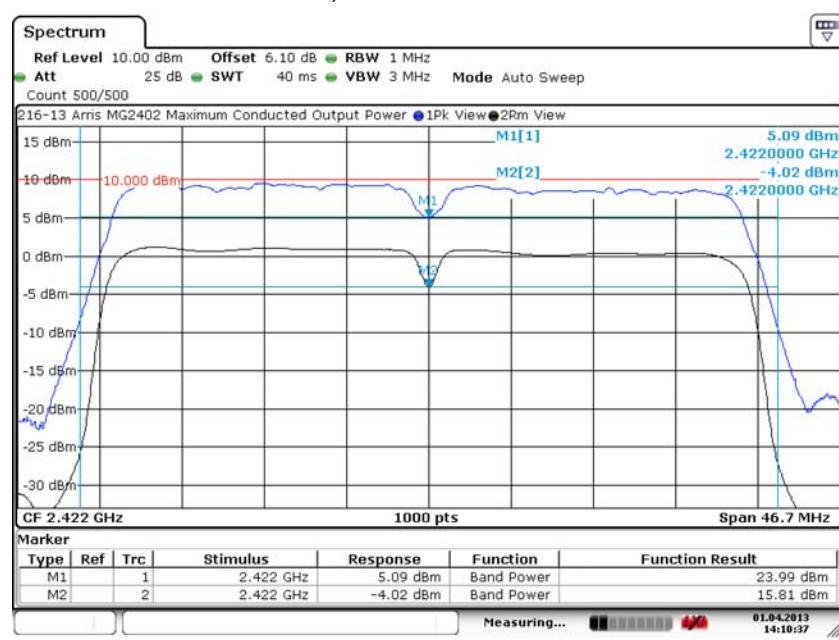
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.27. HT20: High Channel – 11, J2402



7.4.28. HT40: Low Channel – 3, J2400

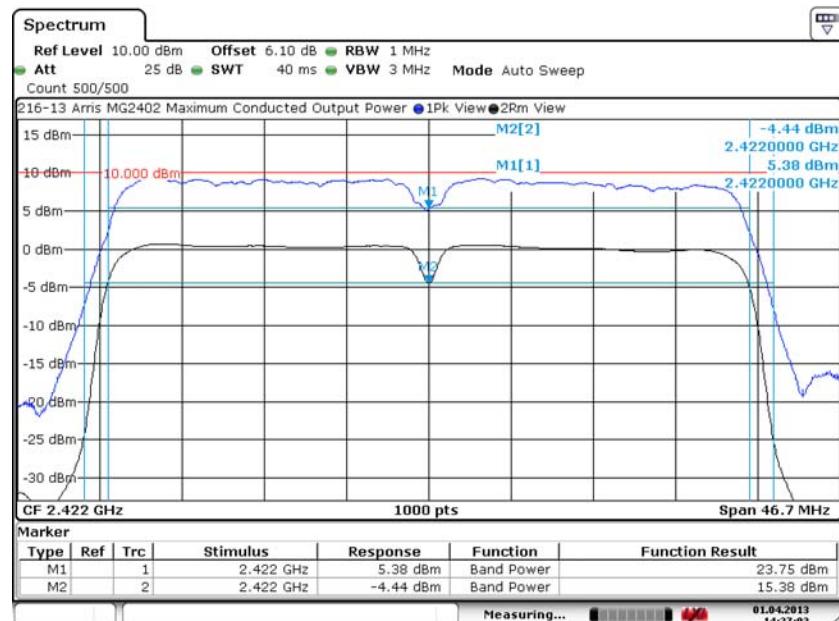


Test Number: 216-13R2
Issue Date: 6/18/2013

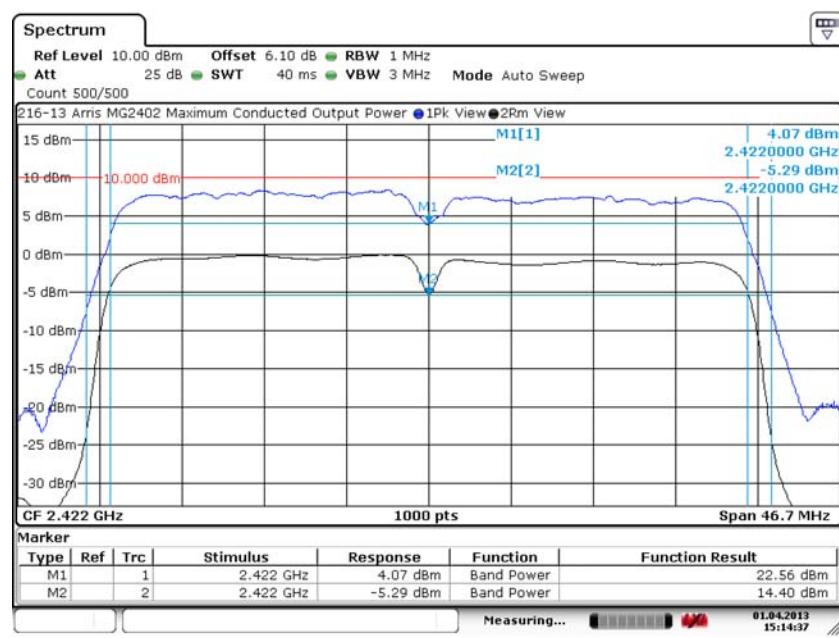
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.29. HT40: Low Channel – 3, J2401



7.4.30. HT40: Low Channel – 3, J2402



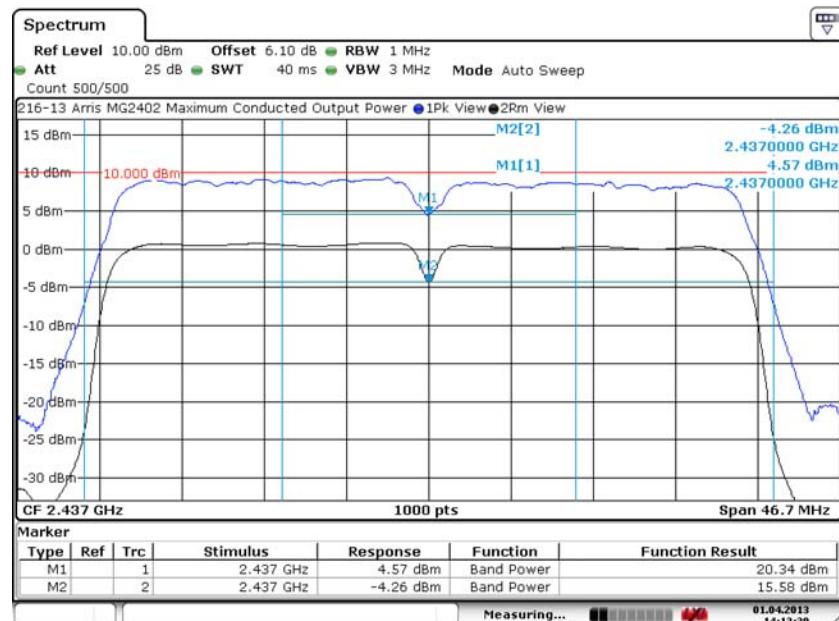
Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data

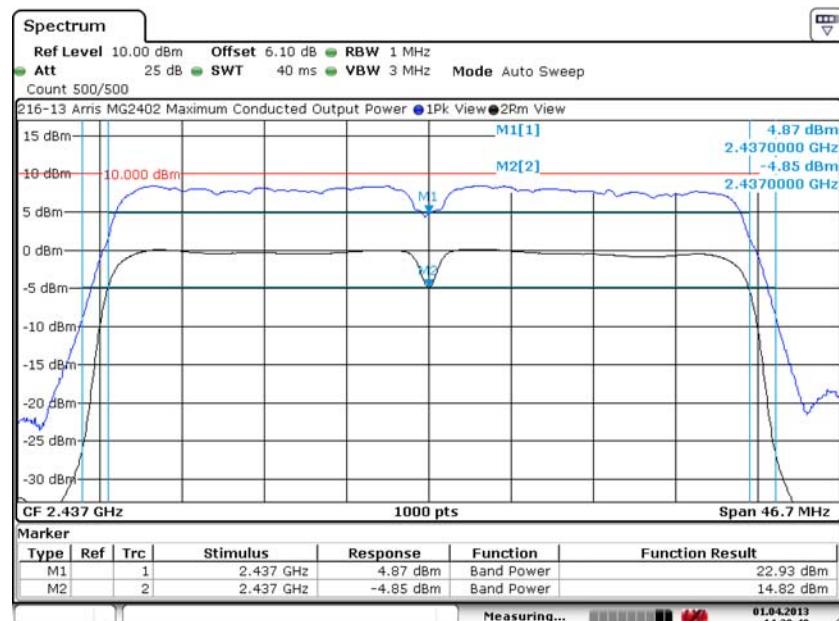
7.4. Maximum Peak Conducted Output Power (continued)

7.4.31. HT40: Mid Channel – 6, J2400



Date: 1.APR.2013 14:13:38

7.4.32. HT40: Mid Channel – 6, J2401



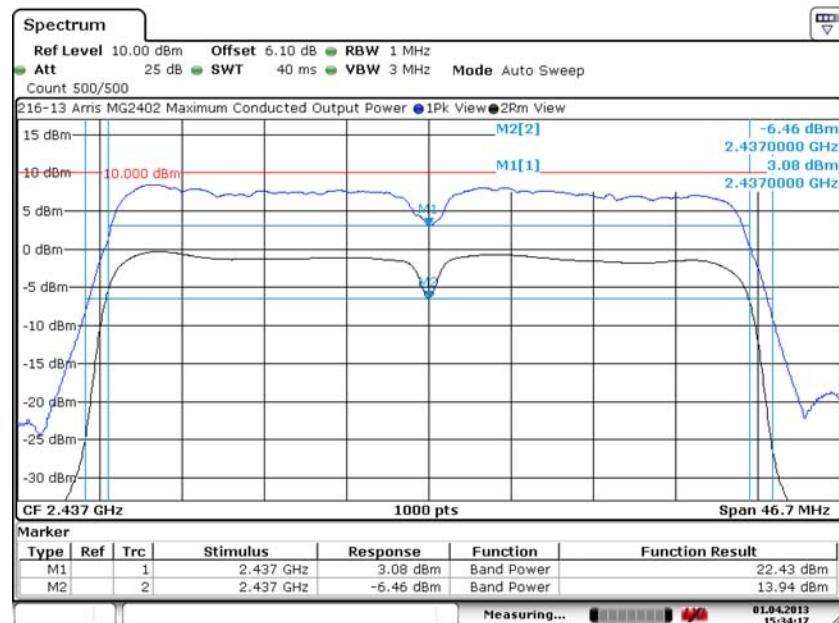
Date: 1.APR.2013 14:30:48

Test Number: 216-13R2
Issue Date: 6/18/2013

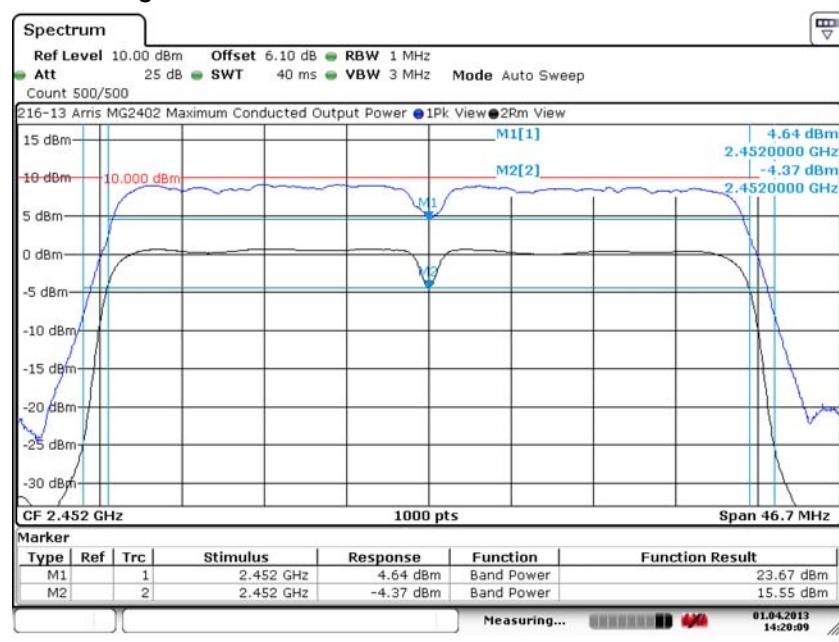
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.33. HT40: Mid Channel – 6, J2402



7.4.34. HT40: High Channel – 9, J2400

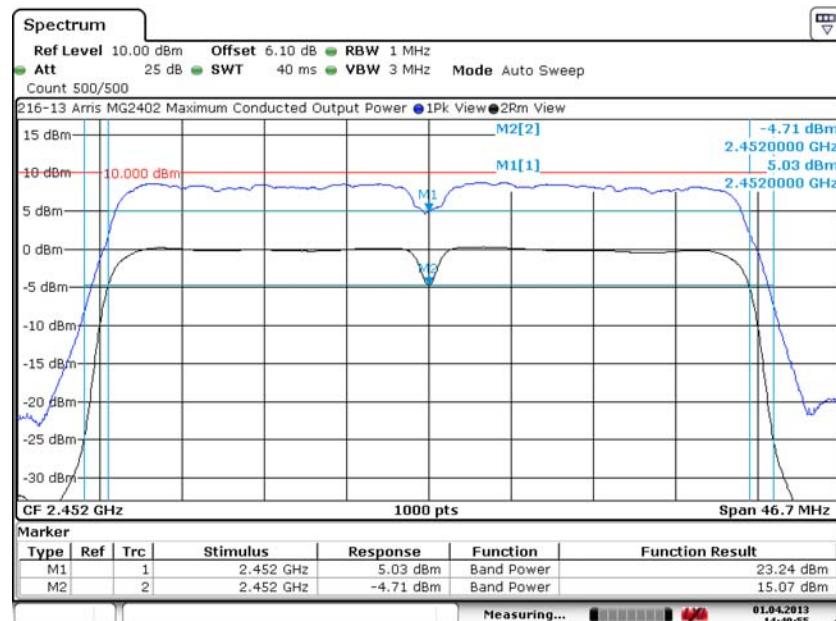


Test Number: 216-13R2
Issue Date: 6/18/2013

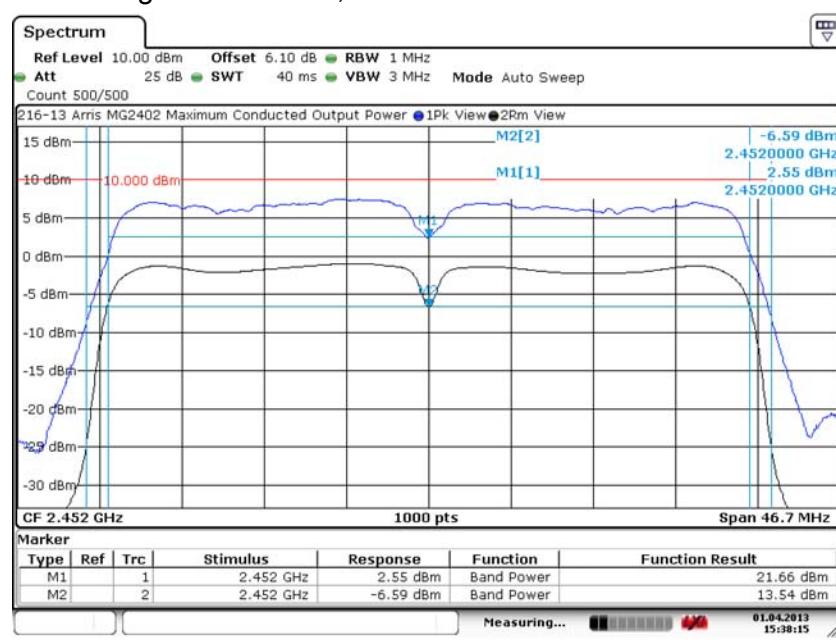
7. Measurement Data

7.4. Maximum Peak Conducted Output Power (continued)

7.4.35. HT40: High Channel – 9, J2401



7.4.36. HT40: High Channel – 9, J2402



Test Number: 216-13R2
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power

7.4.14 Measurement Results for 5725 to 5850 MHz Band

802.11a Mode Channel	Frequency (MHz)	Maximum Conducted Output Power			Total Max Conducted Output Power (dBm)	Limit (dBm)	Result
		J5000	J5001	J5002			
		(dBm)					
Low	5745	18.07	18.77	18.07	23.09	30.00	Compliant
Middle	5785	15.79	16.93	17.30	21.49	30.00	Compliant
High	5825	13.01	15.12	14.69	19.14	30.00	Compliant

HT20 Mode Channel	Frequency (MHz)	Maximum Conducted Output Power			Total Max Conducted Output Power (dBm)	Limit (dBm)	Result
		J5000	J5001	J5002			
		(dBm)					
Low	5745	18.58	19.20	18.66	23.59	30.00	Compliant
Middle	5785	16.22	17.34	17.46	21.81	30.00	Compliant
High	5825	13.61	15.65	15.79	19.90	30.00	Compliant

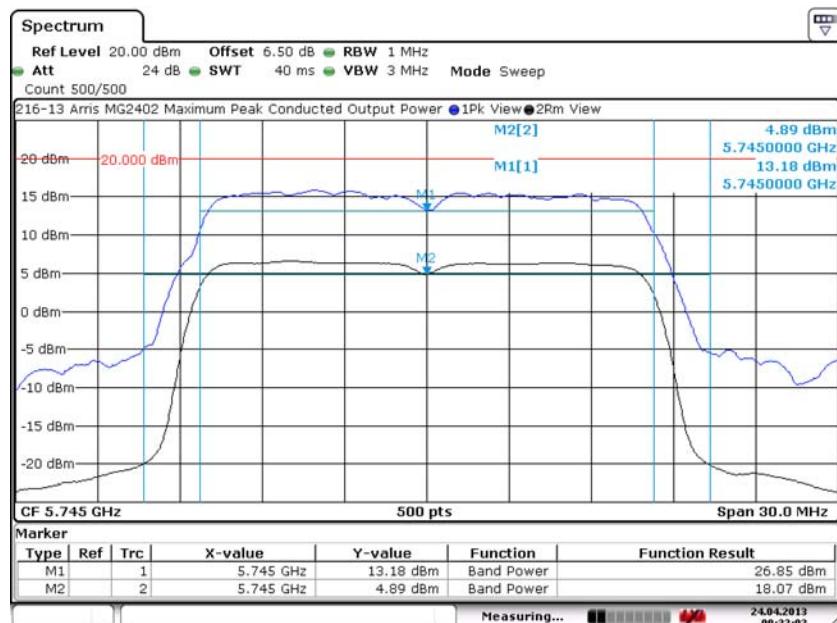
HT40 Mode Channel	Frequency (MHz)	Maximum Conducted Output Power			Total Max Conducted Output Power (dBm)	Limit (dBm)	Result
		J5000	J5001	J5002			
		(dBm)					
Low	5755	18.37	18.92	18.99	23.54	30.00	Compliant
High	5795	16.16	17.63	18.66	22.37	30.00	Compliant

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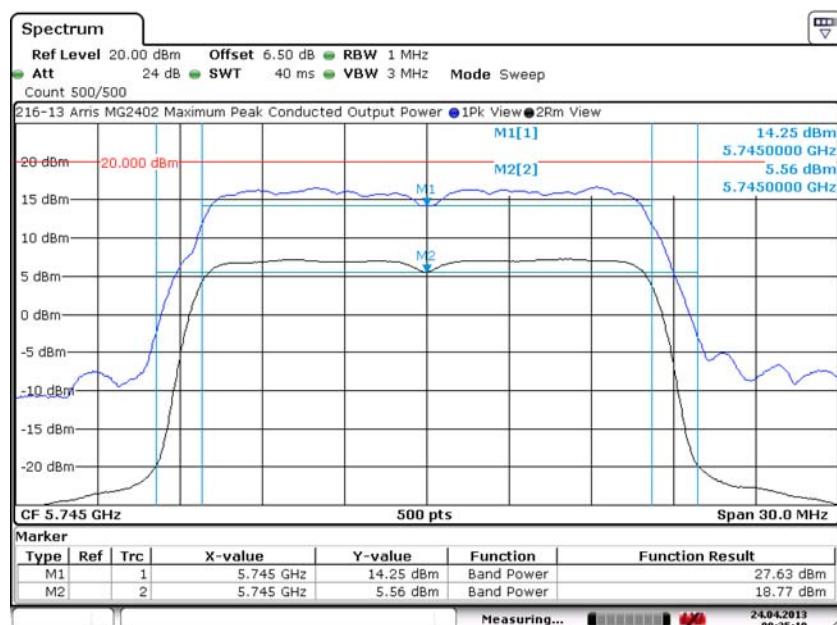
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.37. 802.11/a: Low Channel – 149, J5000



7.4.38. 802.11/a: Low Channel – 149, J5001

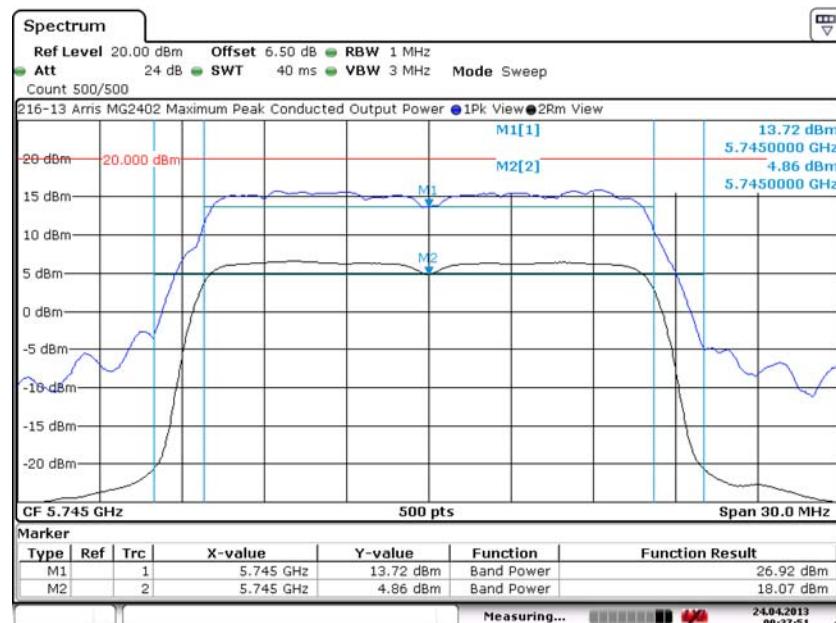


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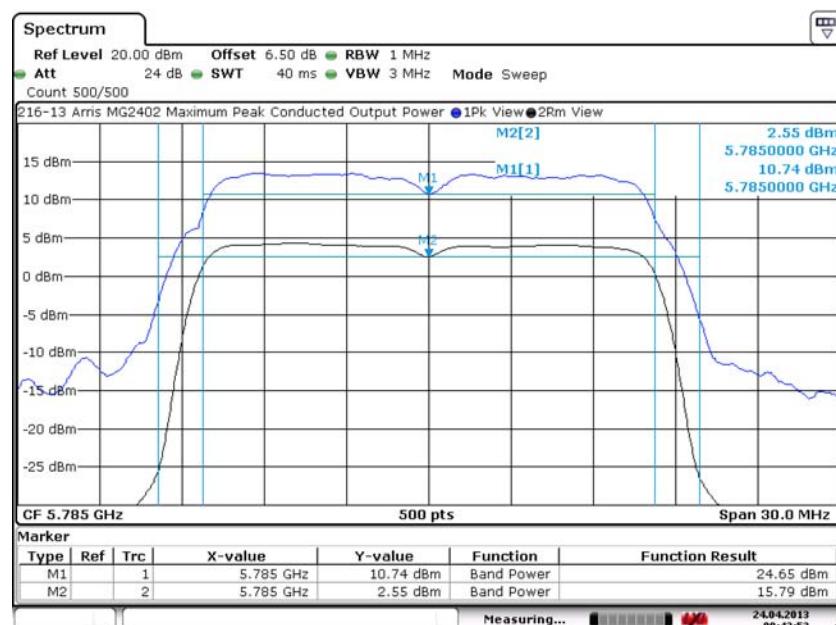
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.39. 802.11/a: Low Channel – 149, J5002



7.4.40. 802.11/a: Middle Channel – 157, J5000

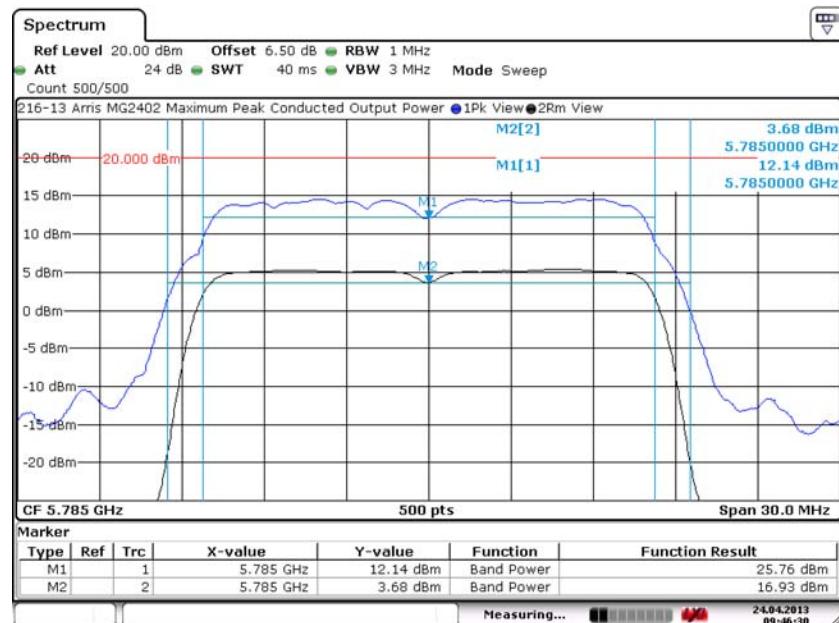


Test Number: 216-13R2
Issue Date: 6/18/2013

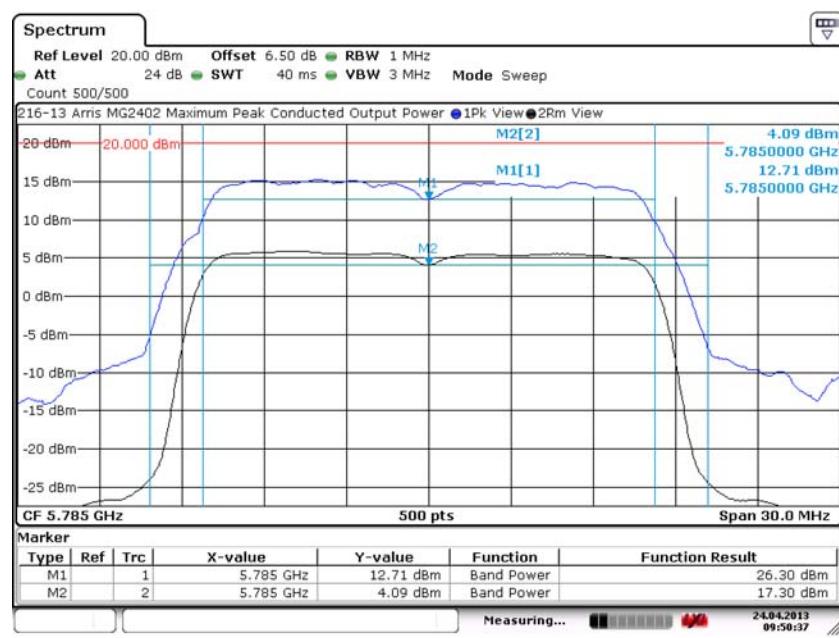
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1))

7.4.41. 802.11/a: Middle Channel – 157, J5001



7.4.42. 802.11/a: Middle Channel – 157, J5002

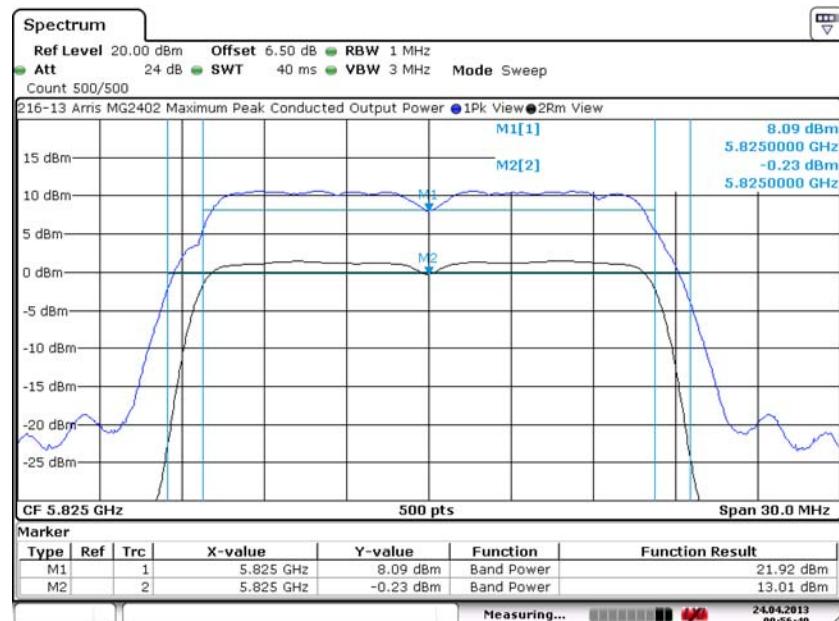


Test Number: 216-13R2
Issue Date: 6/18/2013

7. Measurement Data (continued)

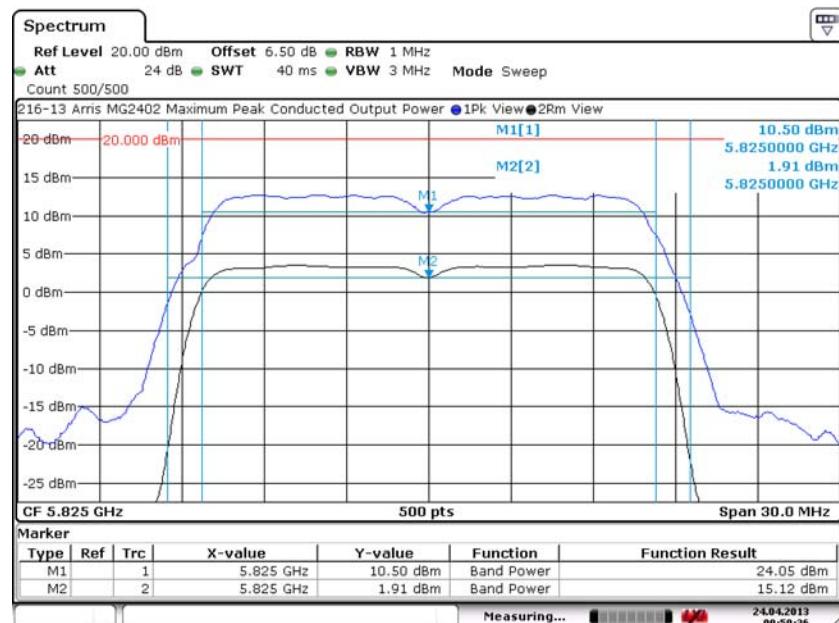
7.4. Maximum Peak Conducted Output Power (15.247 (b) (1))

7.4.43. 802.11/a: High Channel – 165, J5000



Date: 24.APR.2013 09:56:49

7.4.44. 802.11/a: High Channel – 165, J5001



Date: 24.APR.2013 09:59:36

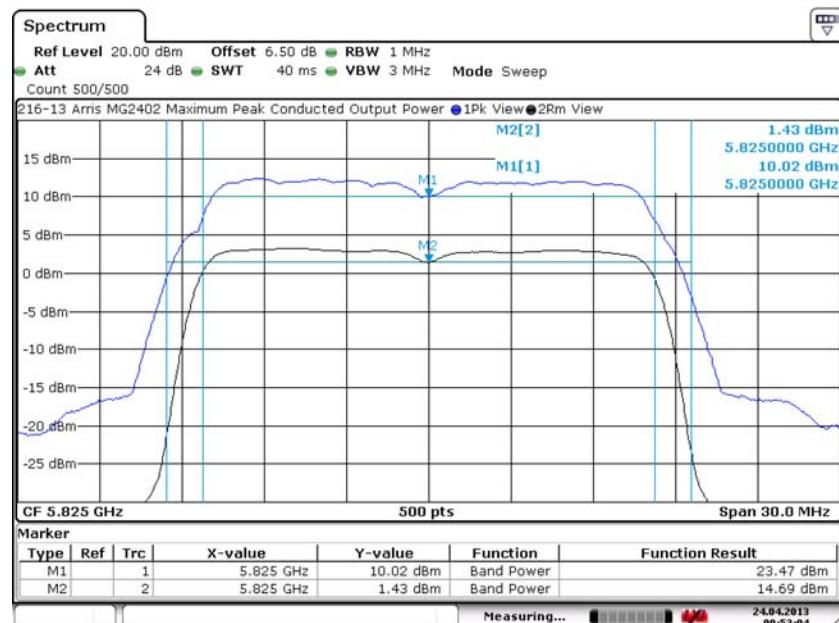
Test Number: 216-13R2

Issue Date: 6/18/2013

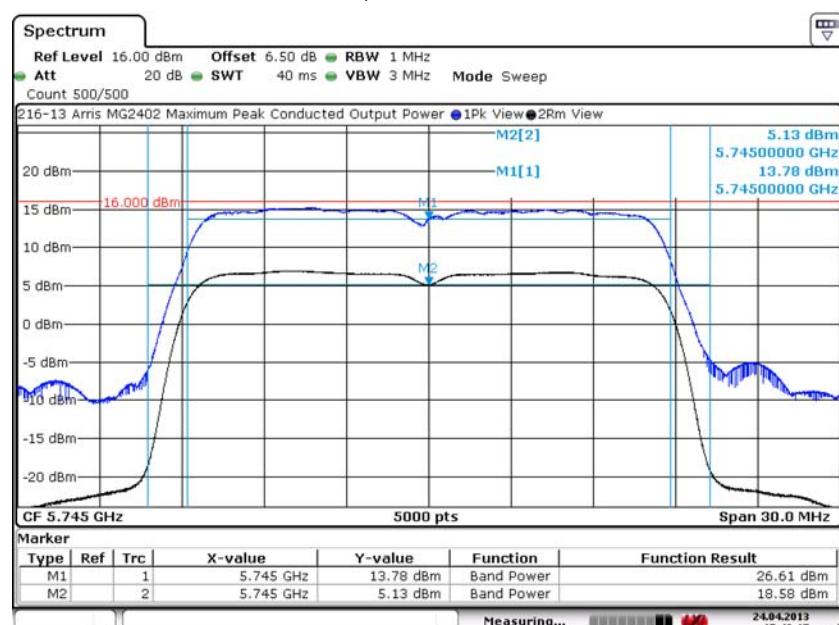
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.45. 802.11/a: High Channel – 165, J5002



7.4.46. HT20: Low Channel – 149, J5000



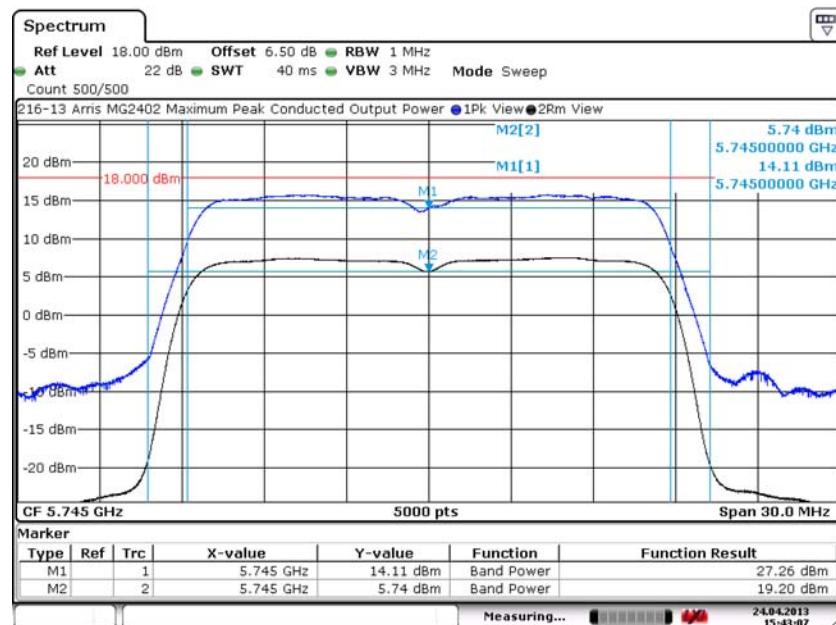
Test Number: 216-13R2

Issue Date: 6/18/2013

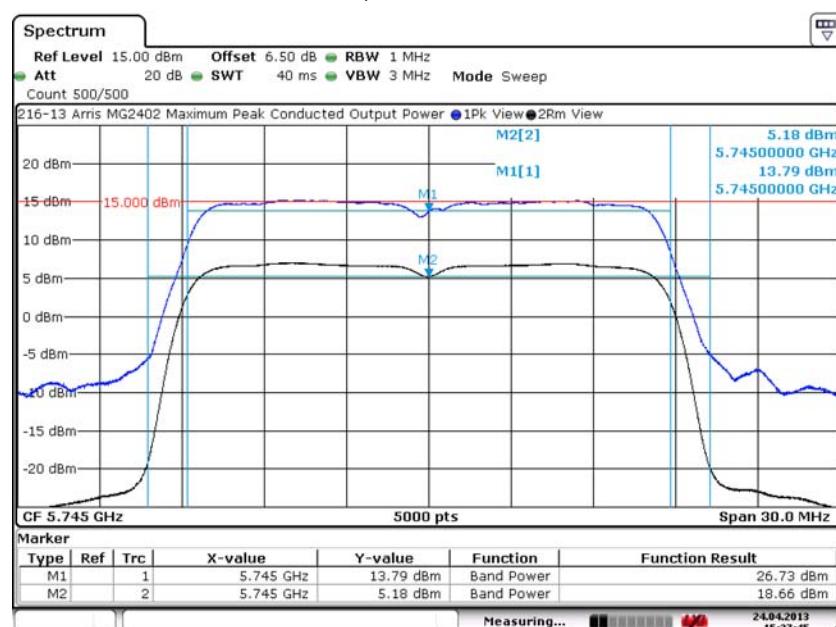
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.47. HT20: Low Channel – 149, J5001



7.4.48. HT20: Low Channel – 149, J5002



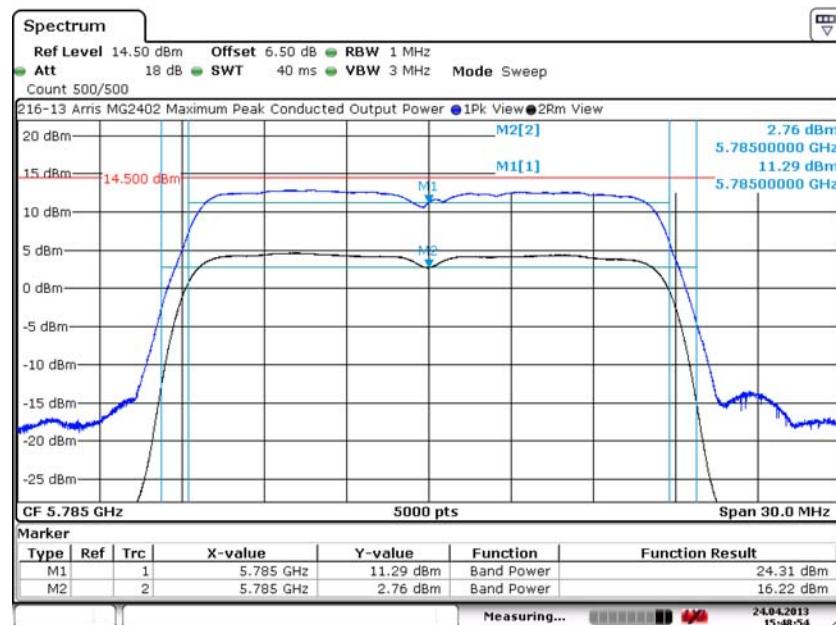
Test Number: 216-13R2

Issue Date: 6/18/2013

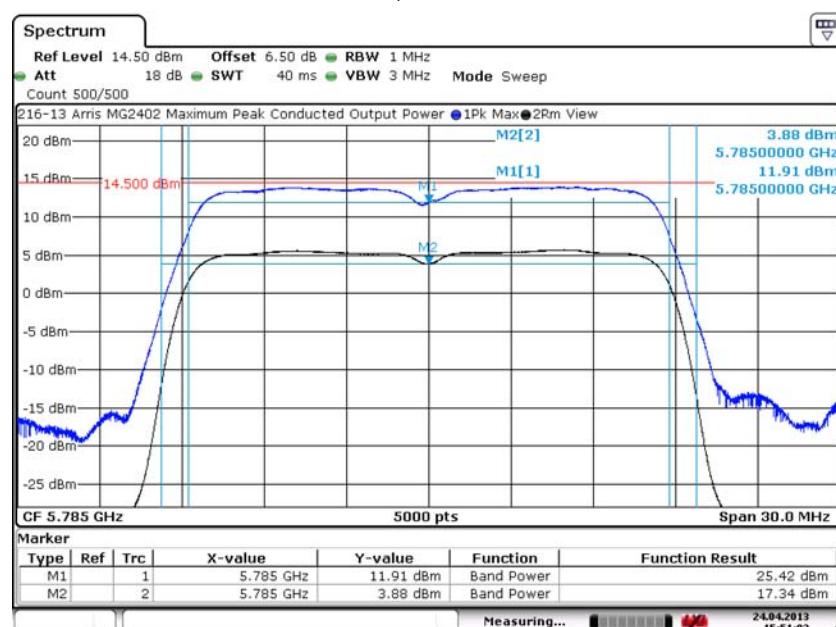
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.49. HT20: Middle Channel – 157, J5000



7.4.50. HT20: Middle Channel – 157, J5001



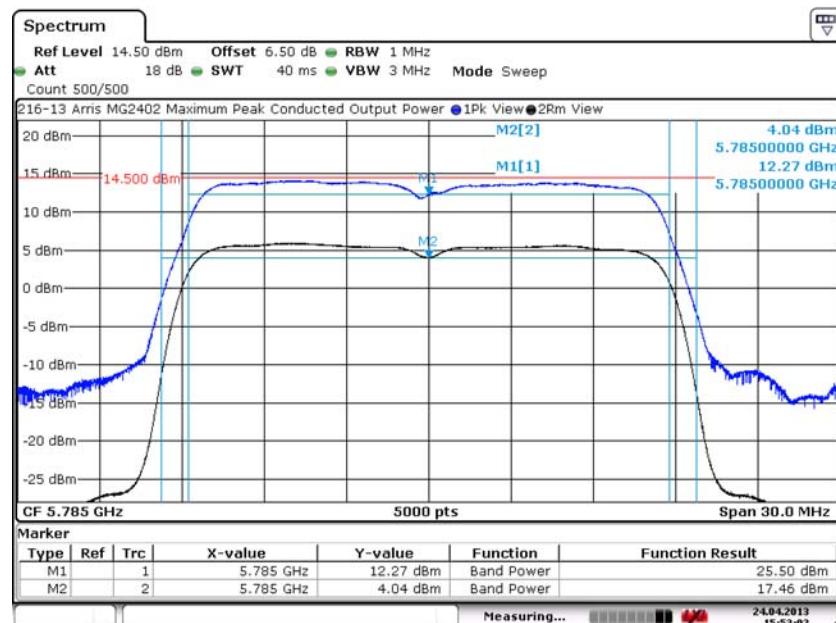
Test Number: 216-13R2

Issue Date: 6/18/2013

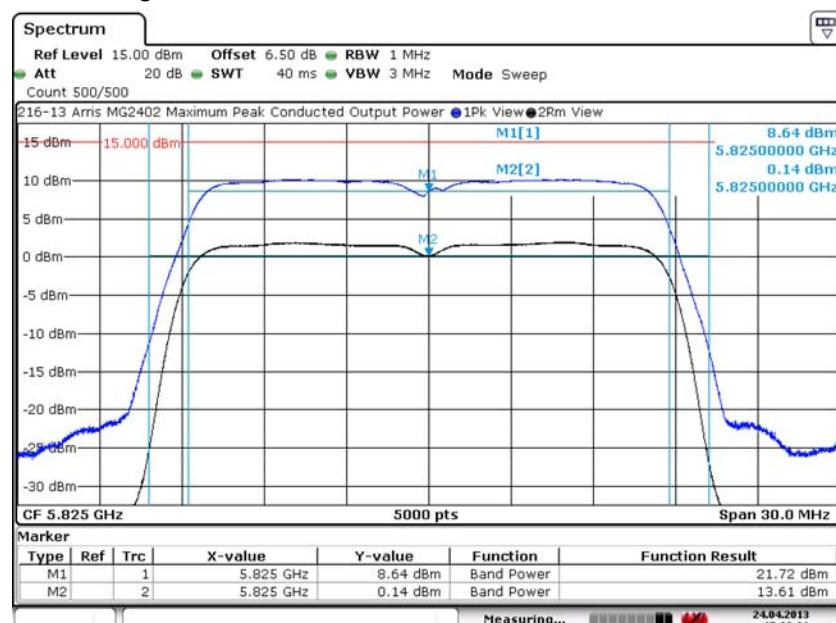
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.51. HT20: Middle Channel – 157, J5002



7.4.52. HT20: High Channel – 165, J5000

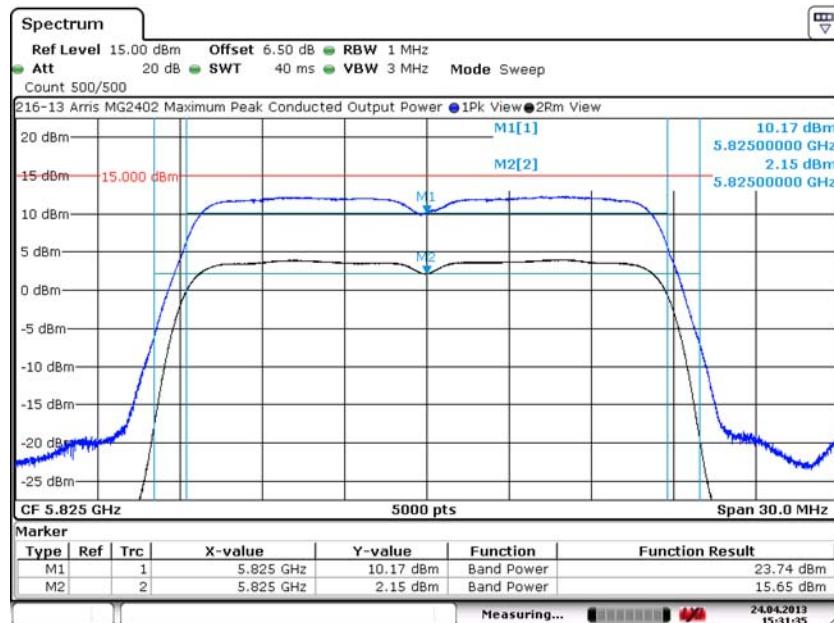


Test Number: 216-13R2
Issue Date: 6/18/2013

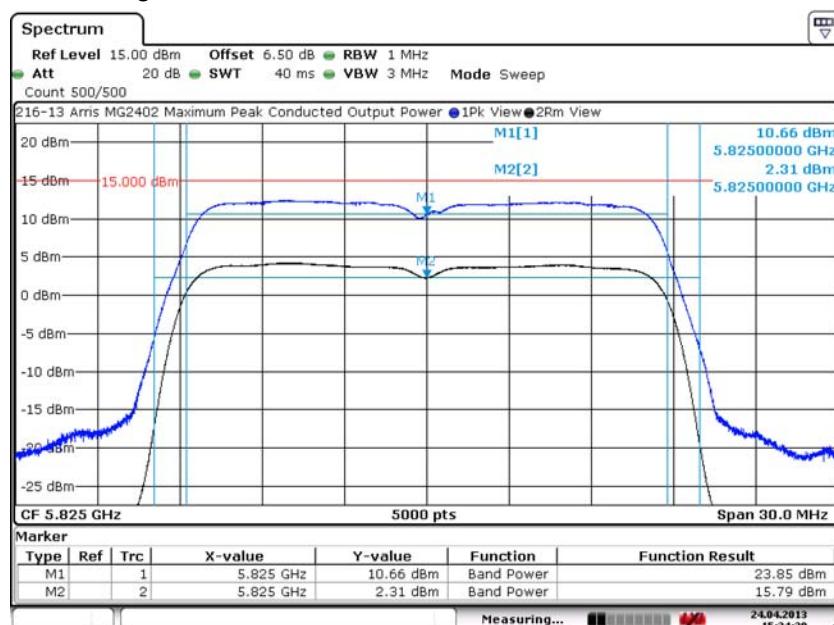
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.53. HT20: High Channel – 165, J5001



7.4.54. HT20: High Channel – 165, J5002



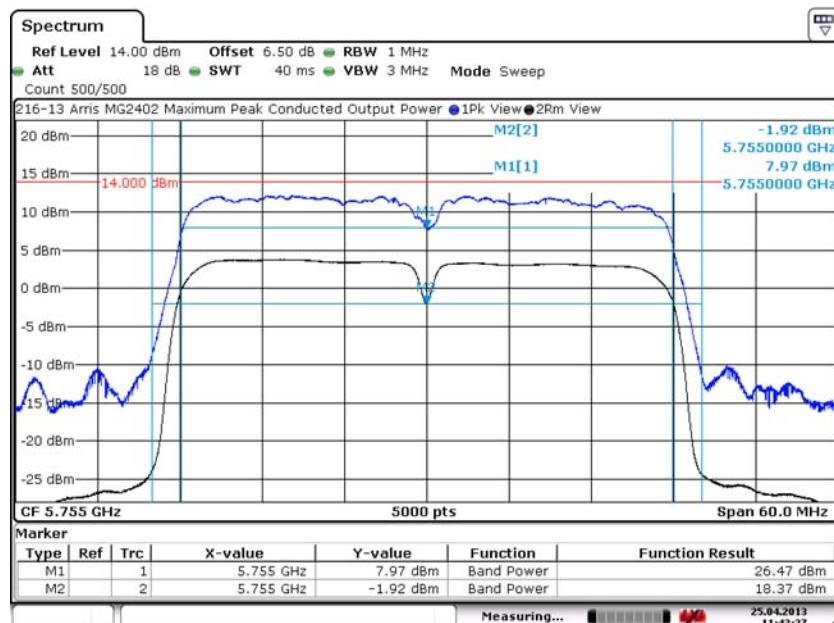
Test Number: 216-13R2

Issue Date: 6/18/2013

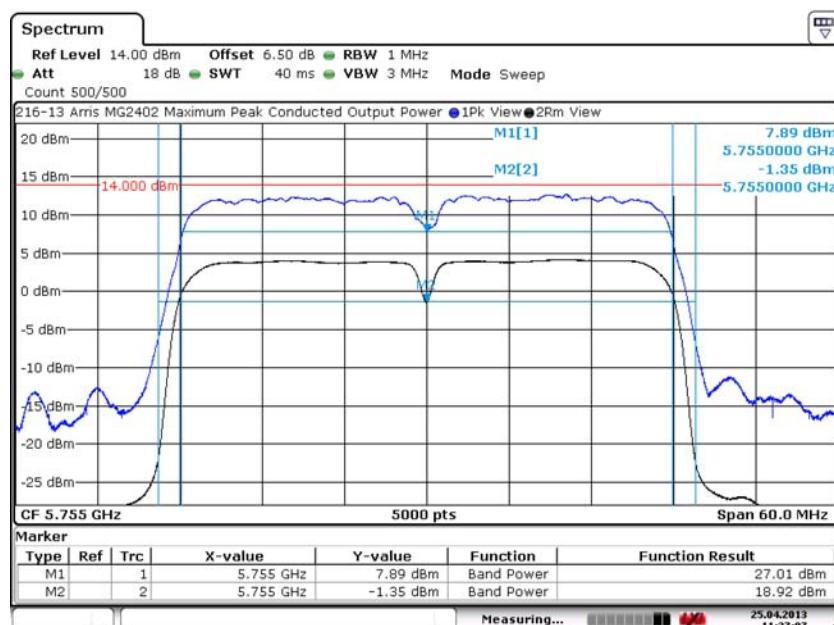
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.55. HT40: Low Channel – 151, J5000



7.4.56. HT40: Low Channel – 151, J5001



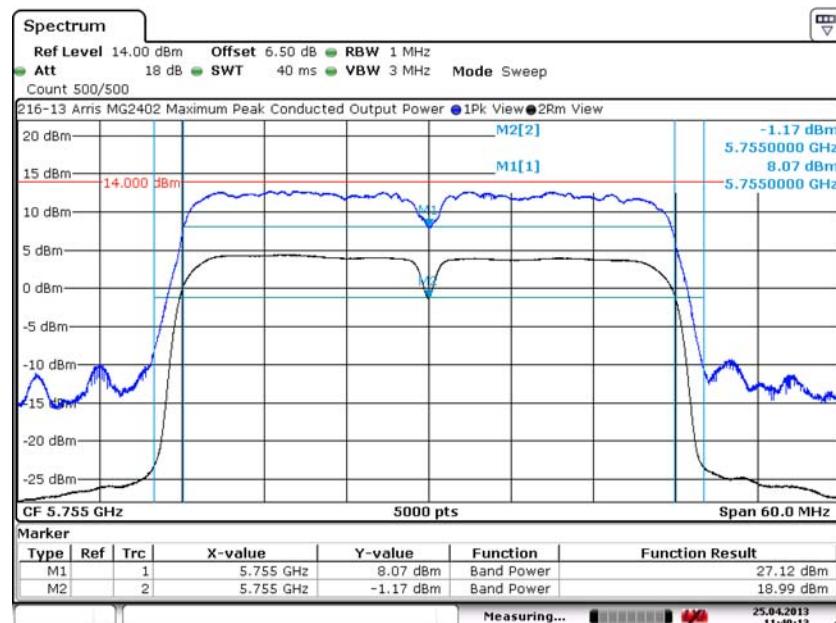
Test Number: 216-13R2

Issue Date: 6/18/2013

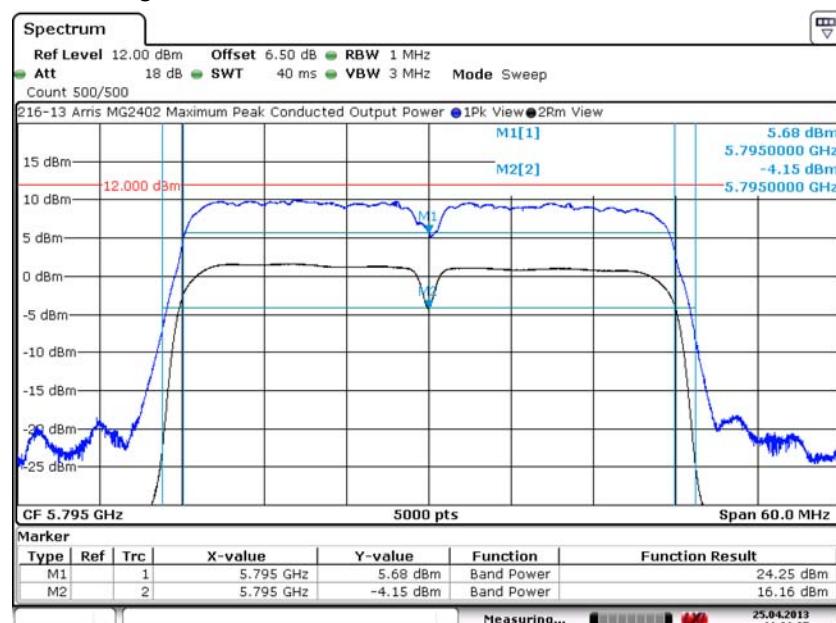
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.57. HT40: Low Channel – 151, J5002



7.4.58. HT40: High Channel – 159, J5000



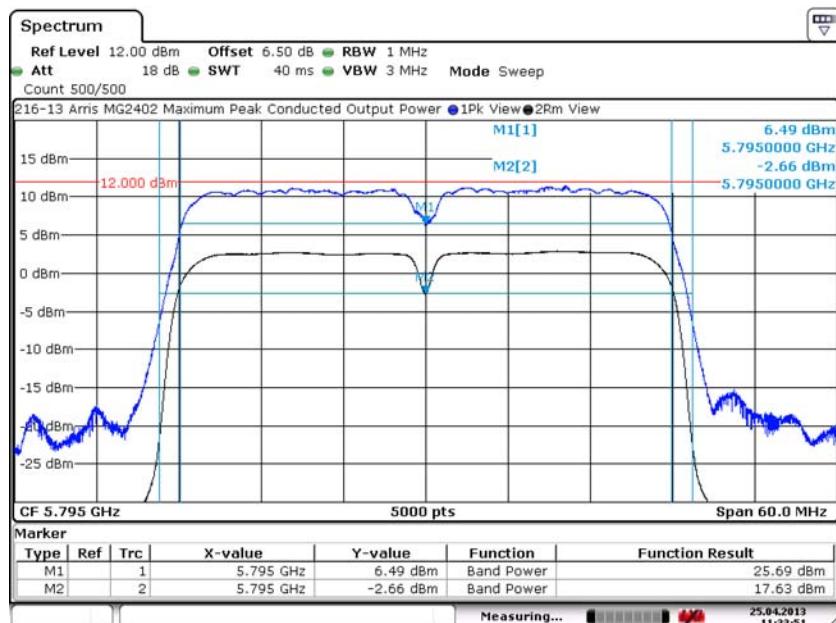
Test Number: 216-13R2

Issue Date: 6/18/2013

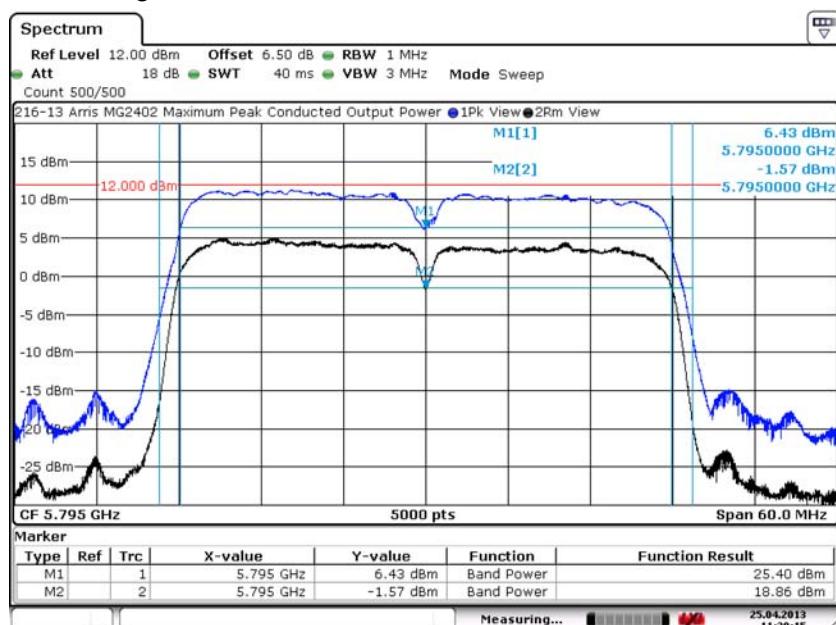
7. Measurement Data (continued)

7.4. Maximum Peak Conducted Output Power (15.247 (b) (1)) (continued)

7.4.59. HT40: High Channel – 159, J5001



7.4.60. HT40: High Channel – 159, J5002



Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data (continued)

7.5. Operation with directional antenna gains greater than 6 dBi (15.247 (b)(4))

Requirement: If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of FCC Part 15.247, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 2400 – 2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 5725 – 5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

Procedure: FCC KDB 557074 Section 4.0 provides the formulas for calculating the reduction of power.

$$P_{out} = 30 - \text{Floor} |(G_{tx} - 6 / 3)|$$

DUT Status: The DUT utilizes antennas with a 2.5 dBi gain and therefore is exempt from this requirement.

Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (12 MHz to 40 GHz)

Requirement: (15.209) The Emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency Range (MHz)	Distance (Meters)	Limit (dB μ V/m) ¹
0.009 to 0.490	3	128.5 to 93.8
0.490 to 1.705	3	73.8 to 63.0
1.705 to 30	3	69.5
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
>960	3	54.0

¹ Measurements in the 9 to 90 kHz, 110 to 490 kHz and above 1000 MHz ranges employ an average detector. Otherwise a quasi-peak detector is used.

Procedure: This test was performed in accordance with the procedure detailed in FCC OET publication number 558074, Section 5.4: Maximum Unwanted Emissions Levels and FCC 47CFRPart 15.209: Radiated Emission Limits; General Requirements.

Test measurements were made in accordance with ANSI C63.4-2009, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

Test Notes: Measurements were made from the lowest oscillator frequency stated by the manufacturer (12 MHz) to the 10th harmonic of the highest transmitter frequency or 40 MHz.

Each of the test modes documented within the test report were evaluated and the worst case of each of the test modes is documented on the following pages.

Conclusion: The Emissions from the DUT did not exceed the field strength levels specified in the above table.

Test Number: 216-13R2

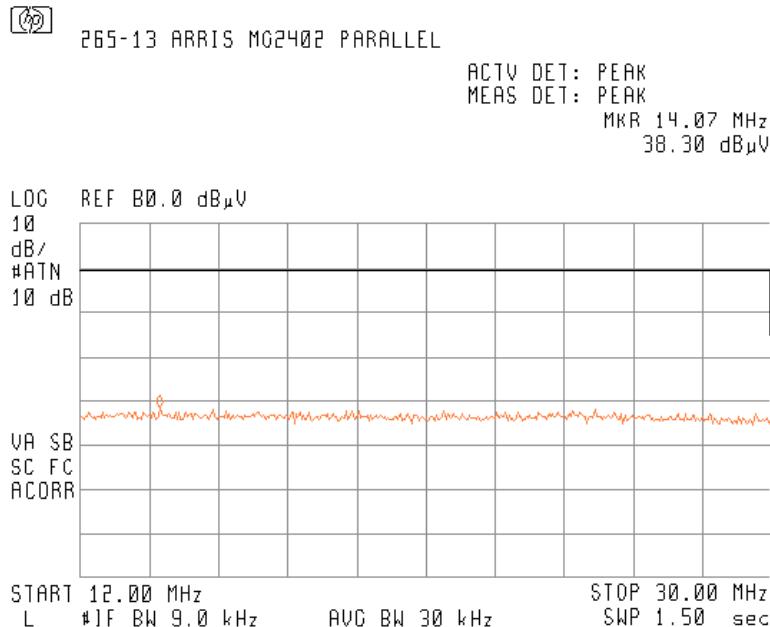
Issue Date: 6/18/2013

7. Measurement Data (continued)

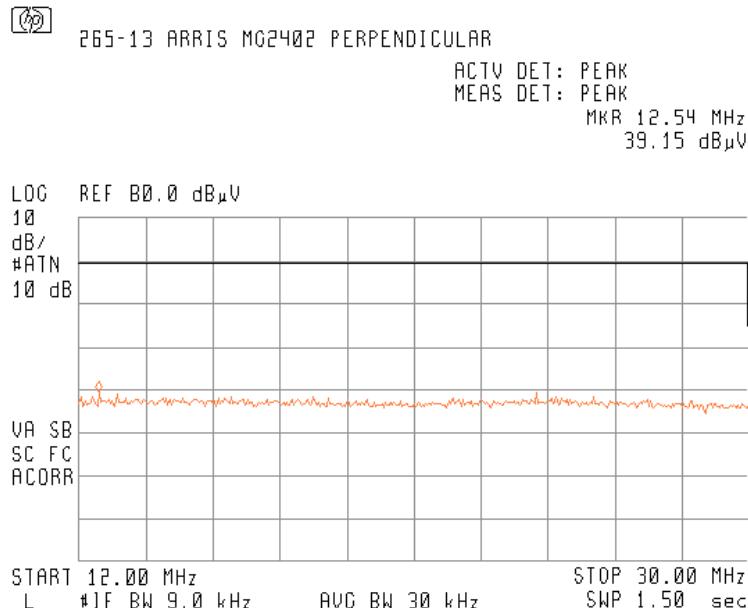
7.6. Transmitter Spurious Radiated Emissions (12 MHz to 40 GHz)

7.6.1. Spurious Radiated Emissions (12 MHz – 30 MHz) Test Results

7.6.1.1. Measurement Results – Parallel Antenna



7.6.1.2. Measurement Results – Perpendicular Antenna



Test Number: 216-13R2
Issue Date: 6/18/2013

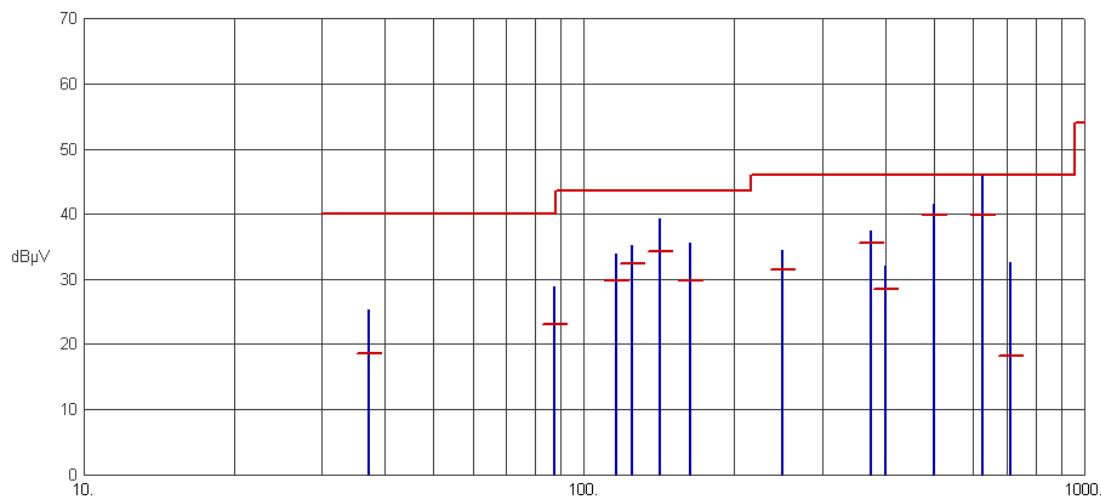
7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (12 MHz to 40 GHz)

7.6.2. Spurious Radiated Emissions (30 MHz – 1 GHz) Test Results

7.6.2.1. Horizontal Polarity

Test No.: 265-13, Radiated Emissions - Horizontal Polarity FCC, Class B



Frequency (MHz)	Pk Amp (dB μ V/m)	QP Amp (dB μ V/m)	QP Limit (dB μ V/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
37.1977	25.35	18.55	40.00	-21.45	N/A	N/A	
87.4518	28.83	23.08	40.00	-16.92	N/A	N/A	
116.1875	33.94	29.74	43.50	-13.76	N/A	N/A	
124.9797	35.22	32.33	43.50	-11.17	N/A	N/A	
142.3726	39.34	34.29	43.50	-9.21	N/A	N/A	
163.3096	35.60	29.81	43.50	-13.69	N/A	N/A	
249.9950	34.35	31.52	46.00	-14.48	N/A	N/A	
374.9881	37.41	35.54	46.00	-10.46	N/A	N/A	
399.9931	32.03	28.47	46.00	-17.53	N/A	N/A	
499.9979	41.45	39.79	46.00	-6.21	N/A	N/A	
624.9822	45.84	39.91	46.00	-6.09	N/A	N/A	
710.6422	32.51	18.27	46.00	-27.73	N/A	N/A	

Test Number: 216-13R2
Issue Date: 6/18/2013

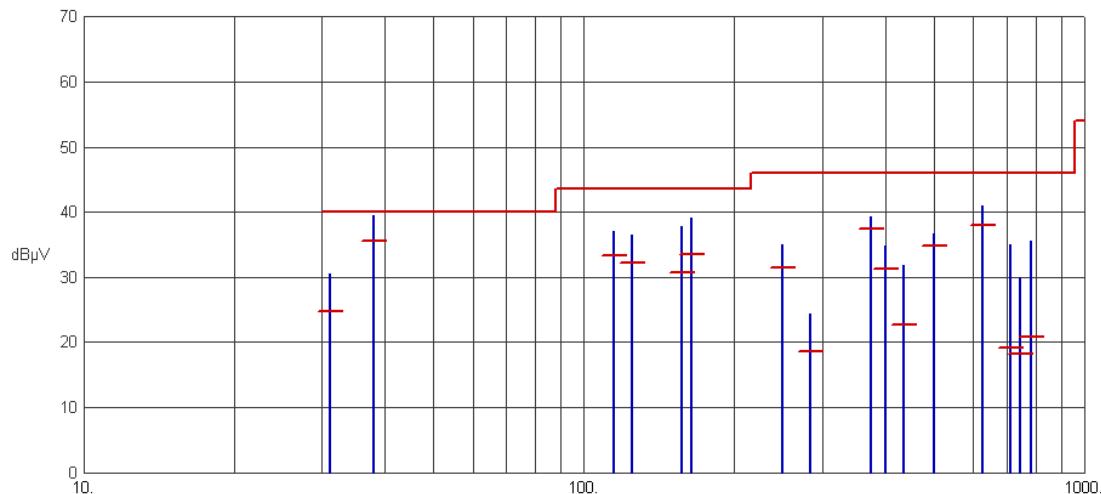
7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (12 MHz to 40 GHz)

7.6.2. Spurious Radiated Emissions (30 MHz – 1 GHz) Test Results

7.6.2.2. Vertical Polarity

Test No.: 265-13, Radiated Emissions - Vertical Polarity FCC, Class B



Frequency (MHz)	Pk Amp (dB μ V/m)	QP Amp (dB μ V/m)	QP Limit (dB μ V/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
31.1547	30.58	24.74	40.00	-15.26	N/A	N/A	
37.9679	39.40	35.49	40.00	-4.51	N/A	N/A	
115.0877	37.12	33.36	43.50	-10.14	N/A	N/A	
124.9868	36.43	32.23	43.50	-11.27	N/A	N/A	
157.3802	37.83	30.76	43.50	-12.74	N/A	N/A	
163.7327	39.09	33.53	43.50	-9.97	N/A	N/A	
249.9959	35.03	31.40	46.00	-14.60	N/A	N/A	
283.5072	24.29	18.50	46.00	-27.50	N/A	N/A	
374.9921	39.28	37.32	46.00	-8.68	N/A	N/A	
400.0082	34.86	31.32	46.00	-14.68	N/A	N/A	
436.3264	31.81	22.62	46.00	-23.38	N/A	N/A	
499.9860	36.75	34.73	46.00	-11.27	N/A	N/A	
624.9862	40.93	37.98	46.00	-8.02	N/A	N/A	
713.7266	35.00	19.18	46.00	-26.82	N/A	N/A	
745.3087	29.92	18.22	46.00	-27.78	N/A	N/A	
785.0416	35.50	20.74	46.00	-25.26	N/A	N/A	

Test Number: 216-13R2

Issue Date: 6/18/2013

7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (12 MHz to 40 GHz)

7.6.3. Spurious Radiated Emissions (1 GHz – 40 GHz) Test Results

This table documents the worse case emissions for each mode of operation of the EUT documented within this test report.

Freq. (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)	Margin (dB)	Antenna Polarity (H/V)	Result
	Peak	Average				
2124.98	47.37	37.75	54.00	-16.25	V	Compliant
3856.00	48.37	36.78	54.00	-17.22	V	Compliant
5742.80	58.89	39.96	54.00	-14.04	V	Compliant
16720.00	53.72	43.48	54.00	-10.52	V	Compliant
1500.00	47.92	36.25	54.00	-17.75	H	Compliant
2125.00	46.96	36.00	54.00	-18.00	H	Compliant
3856.00	48.39	36.65	54.00	-17.35	H	Compliant
4783.00	50.61	39.05	54.00	-14.95	H	Compliant
7231.00	57.78	39.94	54.00	-14.06	H	Compliant
17716.00	54.41	43.39	54.00	-10.61	H	Compliant

Note: There were no measurable spurious emissions within 6 dB of the limits from 1 to 40 GHz other then the harmonics documented within the next sections of this report.

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Issue Date: 6/18/2013

7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (150 kHz to 40 GHz)

7.6.4. Transmitter Spurious Radiated Emissions (Harmonic Meas.) Test Results

Note: Measurement of Harmonics that fall into the restricted bands.

7.6.4.1. 2.4 GHz, 802.11b

Frequency (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Antenna Polarity (H/V)	Antenna Height (cm)	Table Position (deg)
	Peak	Average	Peak	Avg	Peak	Average			
4824	52.58	45.76	74.00	54.00	-21.42	-8.24	H	101	85
4874	52.02	44.84	74.00	54.00	-21.98	-9.16	H	127	93
4924	51.84	43.35	74.00	54.00	-22.16	-10.65	H	150	100
7311	53.21	43.23	74.00	54.00	-20.79	-10.77	V	100	115
7386	51.11	40.88	74.00	54.00	-22.89	-13.12	V	138	107
12060	55.22	52.97	74.00	54.00	-18.78	-1.03	H	100	85
12185	55.79	43.57	74.00	54.00	-18.21	-10.43	H	100	0
12310	52.78	37.90	74.00	54.00	-21.22	-16.10	H	150	360
14472	57.89	45.38	74.00	54.00	-16.11	-8.62	V	100	0
19296	57.24	44.03	74.00	54.00	-16.76	-9.97	V	100	0
19496	57.24	44.03	74.00	54.00	-16.76	-9.97	V	100	0
19696	57.61	43.43	74.00	54.00	-16.39	-10.57	H	100	0
22158	58.73	45.33	74.00	54.00	-15.27	-8.67	V	100	0

7.6.4.2. 2.4 GHz, 802.11g

Frequency (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Antenna Polarity (H/V)	Antenna Height (cm)	Table Position (deg)
	Peak	Average	Peak	Avg	Peak	Average			
4824	50.04	36.20	74.00	54.00	-23.96	-17.80	H	102	160
4874	50.14	35.90	74.00	54.00	-23.86	-18.10	H	101	0
4924	49.25	36.00	74.00	54.00	-24.75	-18.00	H	100	0
7311	51.15	38.20	74.00	54.00	-22.85	-15.80	V	100	150
7386	51.17	38.17	74.00	54.00	-22.83	-15.83	V	100	0
12060	56.61	43.10	74.00	54.00	-17.39	-10.90	V	100	0
12185	56.12	43.60	74.00	54.00	-17.88	-10.40	H	100	0
12310	56.77	43.94	74.00	54.00	-17.23	-10.06	V	100	0
14472	59.06	45.79	74.00	54.00	-14.94	-8.21	V	100	0
19296	57.19	44.70	74.00	54.00	-16.81	-9.30	H	100	0
19496	57.91	44.70	74.00	54.00	-16.09	-9.30	V	100	0
19696	58.53	45.90	74.00	54.00	-15.47	-8.10	V	100	0
22158	57.55	45.50	74.00	54.00	-16.45	-8.50	H	100	0

¹ All correction factors are stored in the spectrum analyzer and applied to this column entry. Measurements at 14.472 GHz were made at 1 meter. All other measurements were made at 3 meters.

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Issue Date: 6/18/2013

7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (150 kHz to 40 GHz)

7.6.4. Transmitter Spurious Radiated Emissions (Harmonic Meas.) Test Results

Note: Measurement of Harmonics that fall into the restricted bands.

7.6.4.3. 2.4 GHz, HT20

Frequency (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Antenna Polarity (H/V)	Antenna Height (cm)	Table Position (deg)
	Peak	Average	Peak	Avg	Peak	Average			
4824	49.22	37.14	74.00	54.00	-24.78	-16.86	H	135	109
4874	50.88	36.90	74.00	54.00	-23.12	-17.10	H	100	165
4924	49.35	35.70	74.00	54.00	-24.65	-18.30	V	100	0
7311	50.22	38.60	74.00	54.00	-23.78	-15.40	H	100	103
7386	49.91	37.34	74.00	54.00	-24.09	-16.66	V	100	0
12060	55.39	43.03	74.00	54.00	-18.61	-10.97	V	100	0
12185	55.38	43.06	74.00	54.00	-18.62	-10.94	H	107	0
12310	56.65	43.73	74.00	54.00	-17.35	-10.27	V	100	0
14472	59.90	46.03	74.00	54.00	-14.10	-7.97	H	100	0
19296	57.07	44.73	74.00	54.00	-16.93	-9.27	V	100	0
19496	56.51	44.70	74.00	54.00	-17.49	-9.30	V	100	0
19696	59.22	46.30	74.00	54.00	-14.78	-7.70	H	100	0
22158	57.98	45.40	74.00	54.00	-16.02	-8.60	H	100	0

7.6.4.4. 2.4 GHz, HT40

Frequency (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Antenna Polarity (H/V)	Antenna Height (cm)	Table Position (deg)
	Peak	Average	Peak	Avg	Peak	Average			
4844	48.40	35.10	74.00	54.00	-25.60	-18.90	H	100	0
4874	48.71	35.40	74.00	54.00	-25.29	-18.60	H	100	0
4904	49.26	36.02	74.00	54.00	-24.74	-17.98	H	100	111
7266	52.09	38.92	74.00	54.00	-21.91	-15.08	H	100	0
7311	50.19	37.38	74.00	54.00	-23.81	-16.62	V	112	0
7356	50.44	37.20	74.00	54.00	-23.56	-16.80	H	100	0
12110	55.10	42.50	74.00	54.00	-18.90	-11.50	V	100	0
12185	56.05	42.96	74.00	54.00	-17.95	-11.04	V	100	0
12260	55.48	43.30	74.00	54.00	-18.52	-10.70	H	100	0
19376	57.39	44.70	74.00	54.00	-16.61	-9.30	V	100	0
19496	56.26	44.80	74.00	54.00	-17.74	-9.20	H	100	0
19616	58.79	46.00	74.00	54.00	-15.21	-8.00	H	100	0
22068	58.57	45.50	74.00	54.00	-15.43	-8.50	V	100	0

¹ All correction factors are stored in the spectrum analyzer and applied to this column entry. Measurements at 14.472 GHz were made at 1 meter. All other measurements were made at 3 meters.

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7. Measurement Data (continued)

7.6. Transmitter Spurious Radiated Emissions (150 kHz to 40 GHz)

7.6.4. Transmitter Spurious Radiated Emissions (Harmonic Meas.) Test Results

Note: Measurement of Harmonics that fall into the restricted bands.

7.6.4.5. 5 GHz, 802.11a

Frequency (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Antenna Polarity (H/V)	Antenna Height (cm)	Table Position (deg)
	Peak	Average	Peak	Avg	Peak	Average			
11490	53.95	41.80	74.00	54.00	-20.05	-12.20	H	100	0
11570	53.80	41.70	74.00	54.00	-20.20	-12.30	H	100	0
11650	53.94	41.92	74.00	54.00	-20.06	-12.08	H	100	0
22980	58.22	46.02	74.00	54.00	-15.78	-7.98	V	100	0

7.6.4.6. 5 GHz, HT20

Frequency (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Antenna Polarity (H/V)	Antenna Height (cm)	Table Position (deg)
	Peak	Average	Peak	Avg	Peak	Average			
11490	56.69	43.60	74.00	54.00	-17.31	-10.40	H	149	298
11570	54.02	41.20	74.00	54.00	-19.98	-12.80	H	100	0
11650	53.41	41.70	74.00	54.00	-20.59	-12.30	H	100	0
22980	-9.54	-9.54	74.00	54.00	-83.54	-63.54	H	100	0

7.6.4.7. 5 GHz, HT40

Frequency (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		Antenna Polarity (H/V)	Antenna Height (cm)	Table Position (deg)
	Peak	Average	Peak	Avg	Peak	Average			
11510	55.40	41.60	74.00	54.00	-18.60	-12.40	H	100	0
11590	54.92	42.60	74.00	54.00	-19.08	-11.40	H	141	294
23020	-9.54	-9.54	74.00	54.00	-83.54	-63.54	H	100	0

¹ All correction factors are stored in the spectrum analyzer and applied to this column entry. Measurements at 14.472 GHz were made at 1 meter. All other measurements were made at 3 meters.

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7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements

Requirement: 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Procedure: For the lower band edge, this test was performed in accordance with the procedure detailed in FCC OET publication number 558074, Section 10.1: Unwanted Emissions into Non-Restricted Frequency Bands.

For the upper band edge, this test was performed in accordance with the procedure detailed in FCC OET publication number 558074, Section 10.2: Unwanted Emissions into Restricted Frequency Bands.

Test measurements were made in accordance with ANSI C63.4-2009, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

Test Note: The lowest (worst case) offset for a given operation mode was used for all out of band measurements for that mode.

Conclusion: The DUT met the 30 dB requirement at the lower band edge and the Part 15.209 requirements at the upper band edge.

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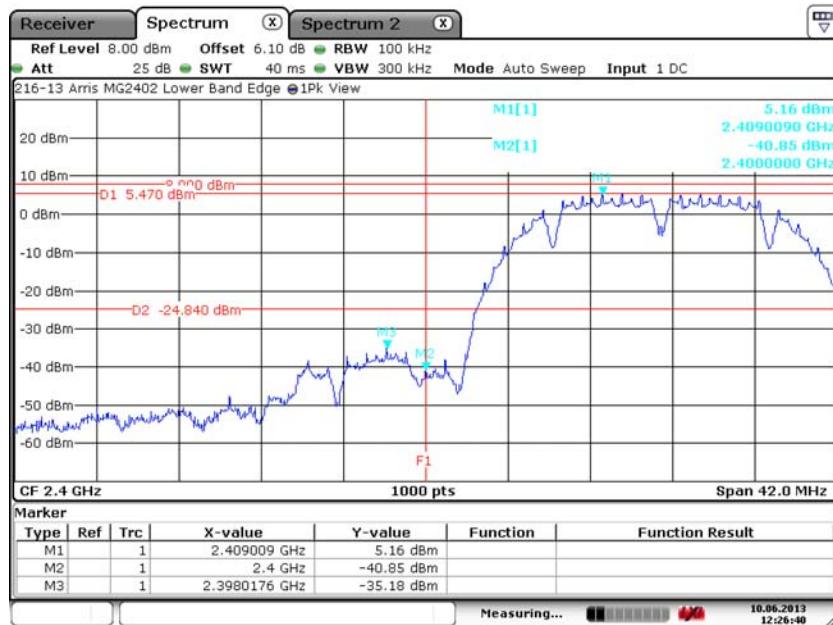
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

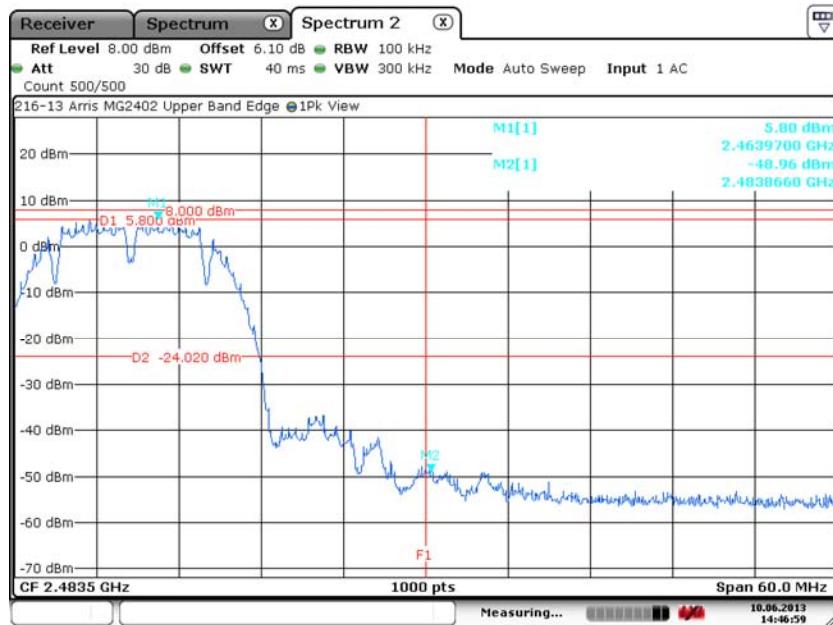
7.7.1.2.4 GHz, 802.11b:

Lower Band Edge, Low Channel – 1, J2400



Date: 10.JUN.2013 12:26:40

Upper Band Edge, High Channel – 11, J2400



Date: 10.JUN.2013 14:46:59

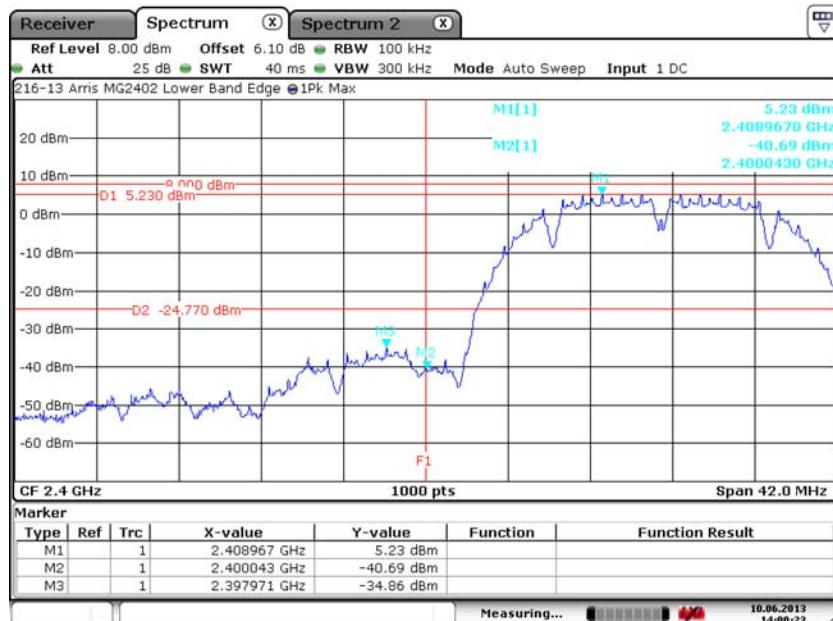
Test Number: 216-13R2
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

7.7.1.2 2.4 GHz, 802.11b:

Lower Band Edge, Low Channel – 1, J2401



Upper Band Edge, High Channel – 11, J2401



Test Number: 216-13R2

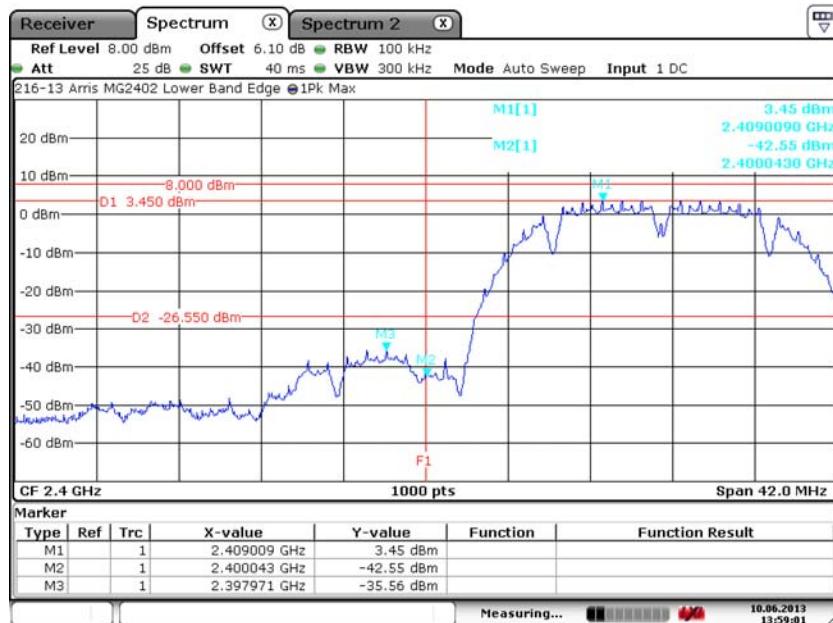
Issue Date: 6/18/2013

7. Measurement Data (continued)

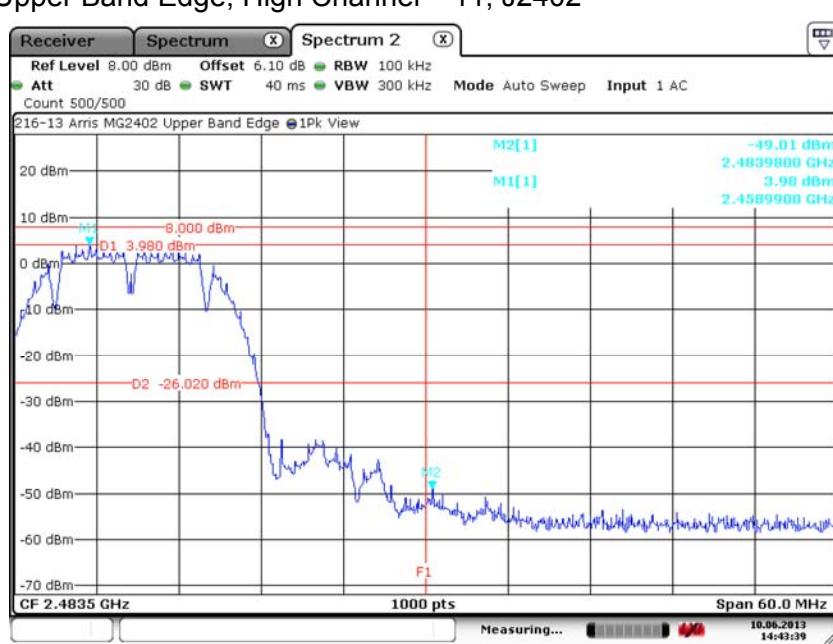
7.7. Band Edge and Out of Band Measurements (continued)

7.7.1.3 2.4 GHz, 802.11b:

Lower Band Edge, Low Channel – 1, J2402



Upper Band Edge, High Channel – 11, J2402



Test Number: 216-13R2

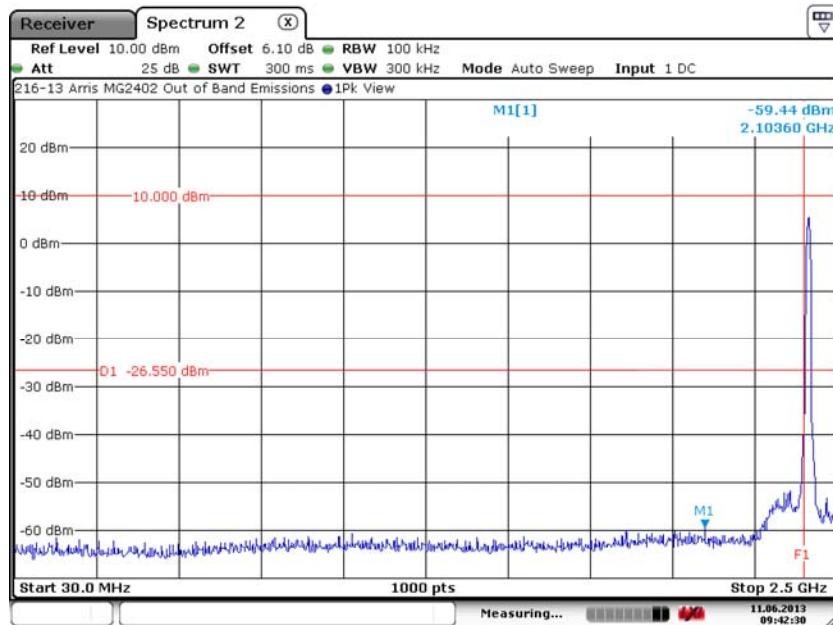
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

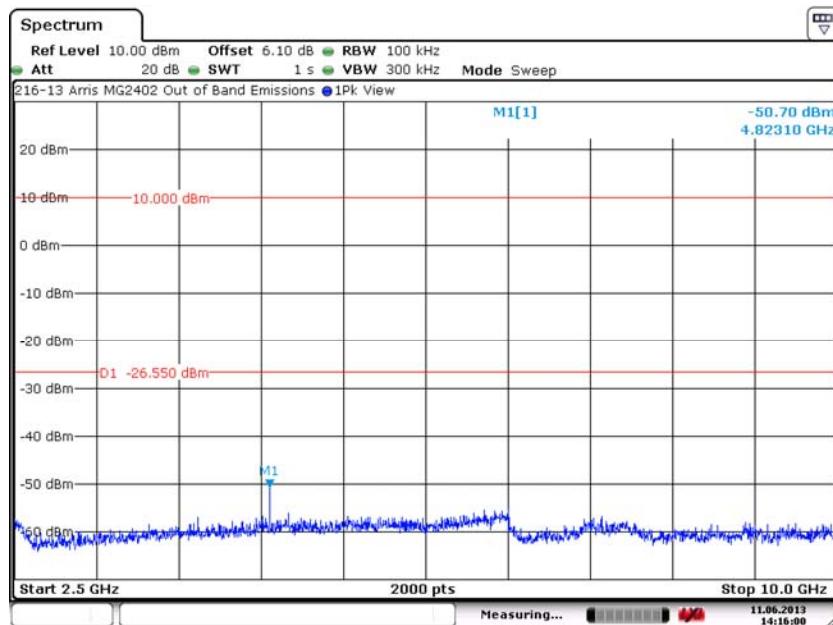
7.7.1.4 2.4 GHz, 802.11b:

Out of Band, Low Channel – 1, J2400, 30 MHz to 2.5 GHz



Date: 11.JUN.2013 09:42:31

Out of Band, Low Channel – 1, J2400, 2.5 GHz to 10 GHz



Date: 11.JUN.2013 14:16:00

Test Number: 216-13R2

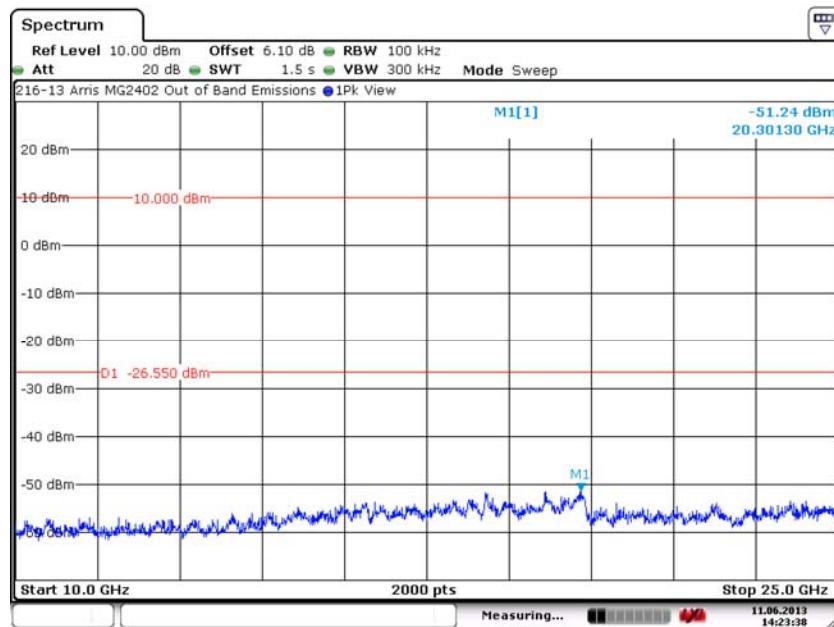
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

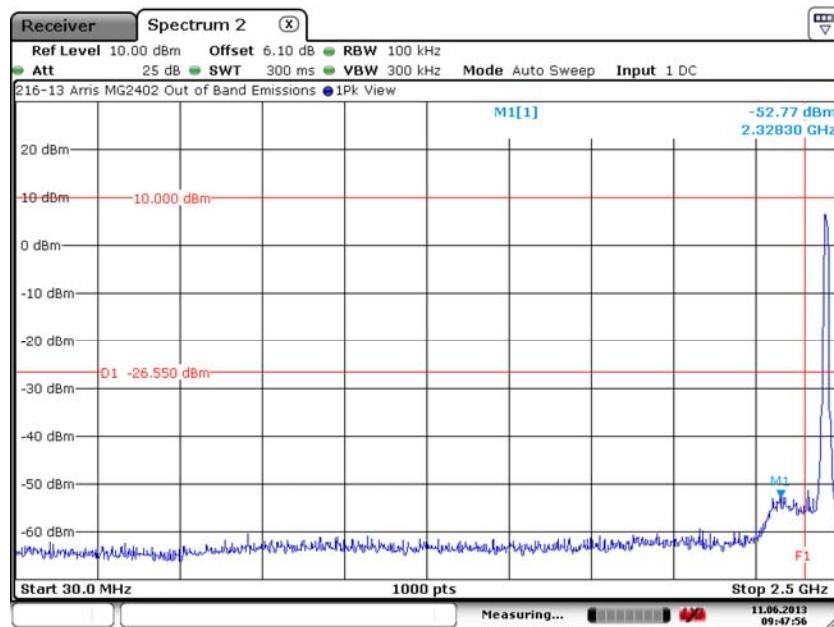
7.7.1.5 2.4 GHz, 802.11b:

Out of Band, Low Channel – 1, J2400, 10 GHz to 25 GHz



Date: 11.JUN.2013 14:23:38

Out of Band, High Channel – 11, J2400, 30 MHz to 2.5 GHz



Date: 11.JUN.2013 09:47:56

Test Number: 216-13R2

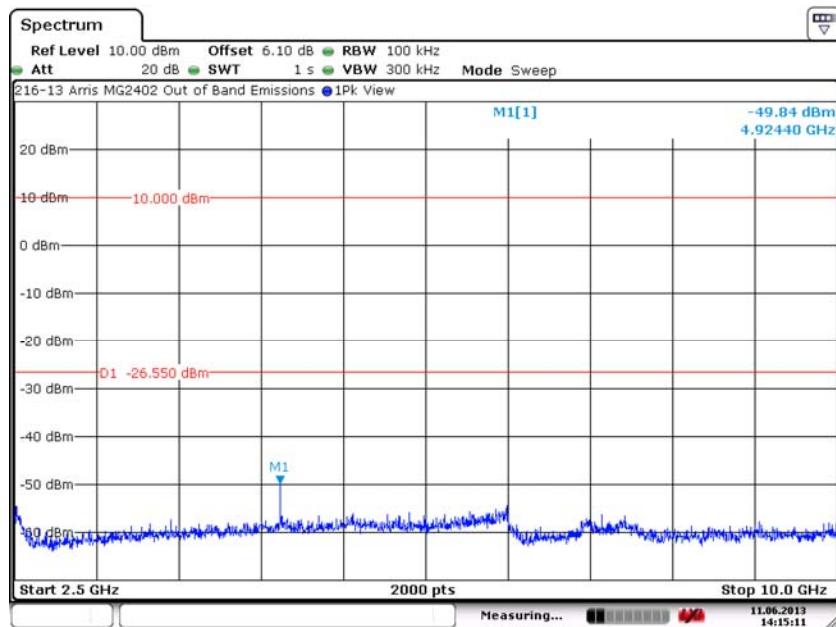
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

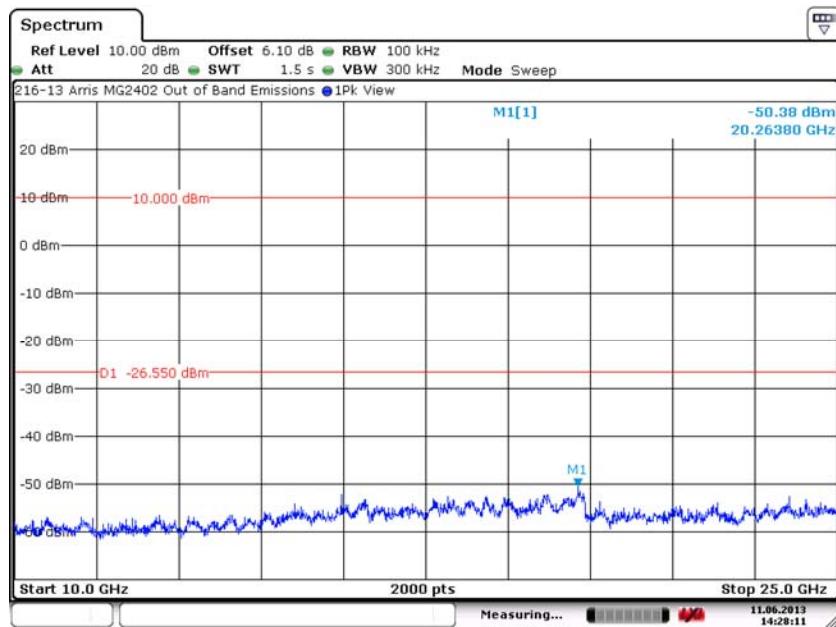
7.7.1.6 2.4 GHz, 802.11b:

Out of Band, High Channel – 11, J2400, 2.5 GHz to 10 GHz



Date: 11.JUN.2013 14:15:10

Out of Band, High Channel – 11, J2400, 10 GHz to 25 GHz



Date: 11.JUN.2013 14:28:10

Test Number: 216-13R2

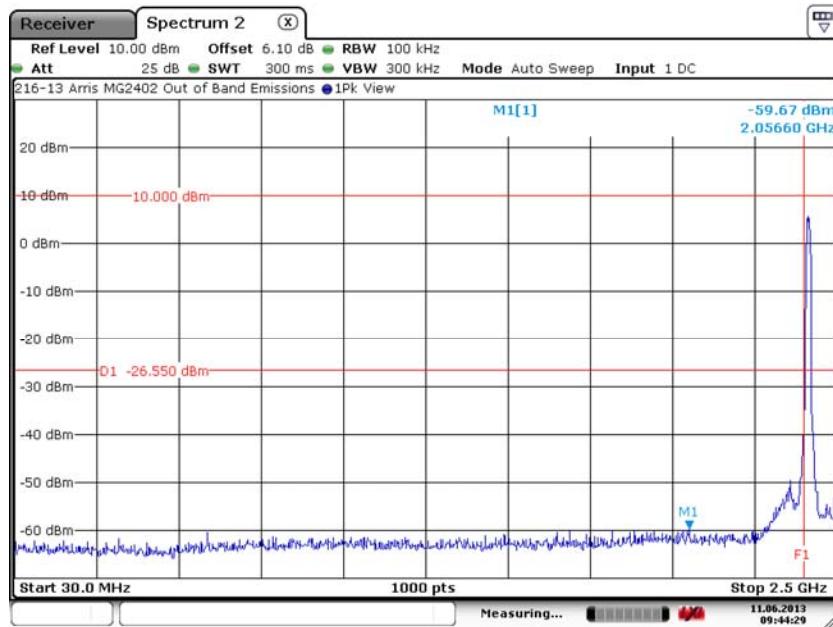
Issue Date: 6/18/2013

7. Measurement Data (continued)

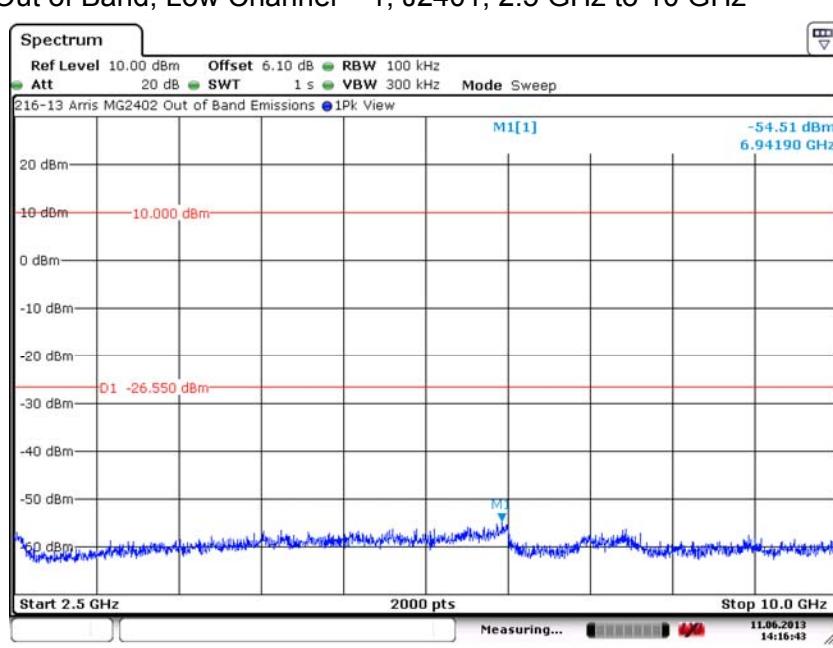
7.7. Band Edge and Out of Band Measurements (continued)

7.7.1.7 2.4 GHz, 802.11b:

Out of Band, Low Channel – 1, J2401, 30 MHz to 2.5 GHz



Out of Band, Low Channel – 1, J2401, 2.5 GHz to 10 GHz



Test Number: 216-13R2

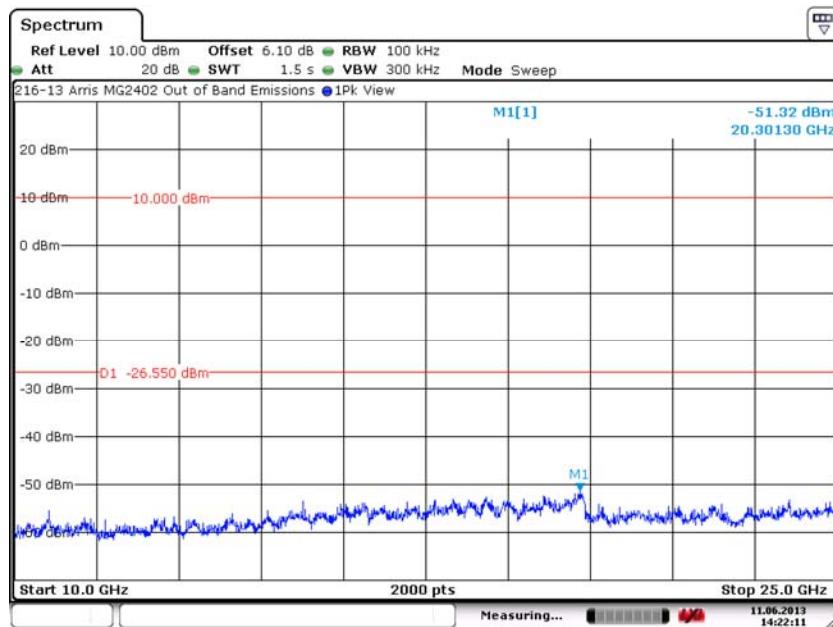
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

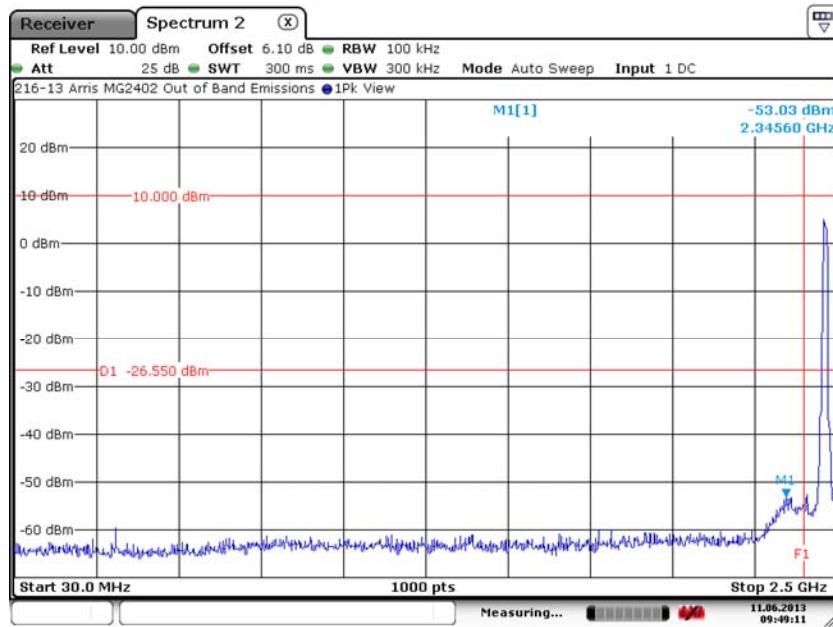
7.7.1.8 2.4 GHz, 802.11b:

Out of Band, Low Channel – 1, J2401, 10 GHz to 25 GHz



Date: 11.JUN.2013 14:22:11

Out of Band, High Channel – 11, J2401, 30 MHz to 2.5 GHz



Date: 11.JUN.2013 09:49:11

Test Number: 216-13R2

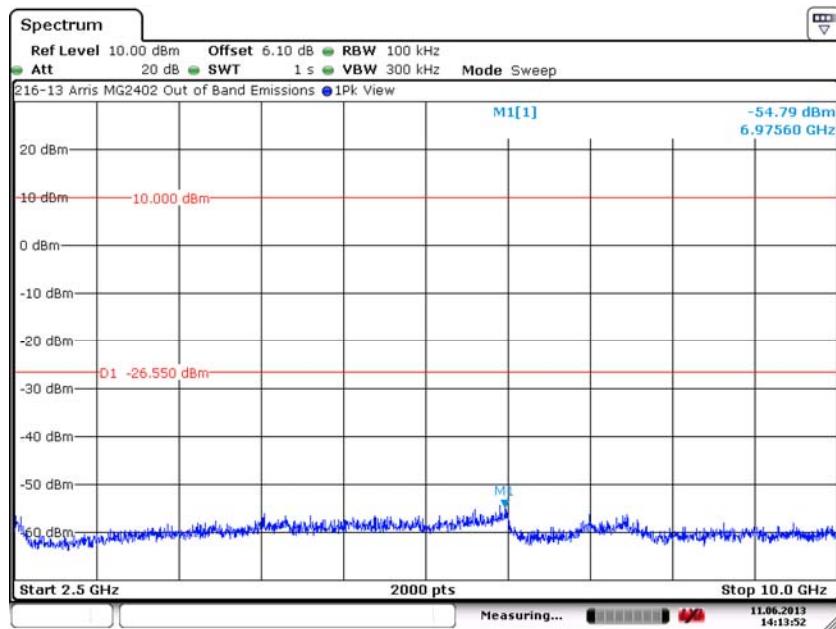
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

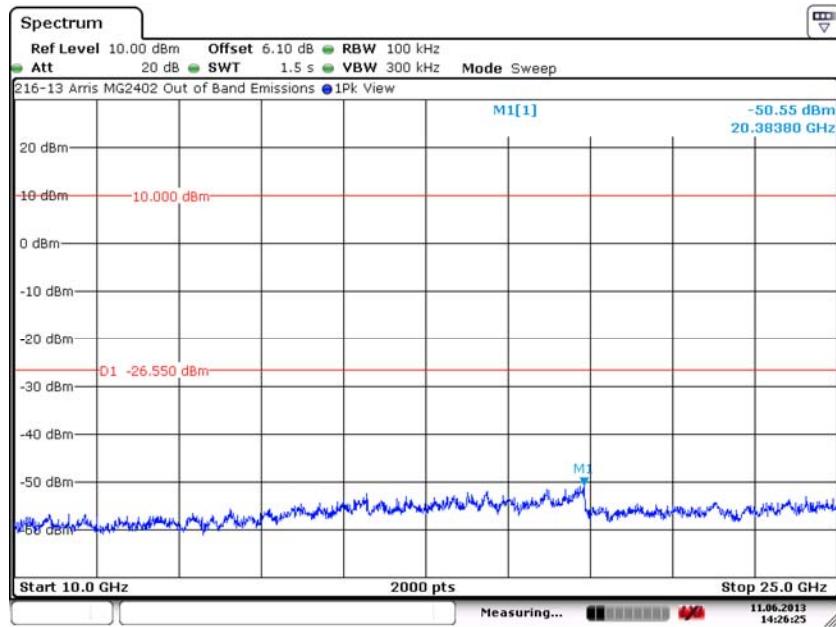
7.7.1.9 2.4 GHz, 802.11b:

Out of Band, High Channel – 11, J2401, 2.5 GHz to 10 GHz



Date: 11.JUN.2013 14:13:52

Out of Band, High Channel – 11, J2401, 10 GHz to 25 GHz



Date: 11.JUN.2013 14:26:25

Test Number: 216-13R2

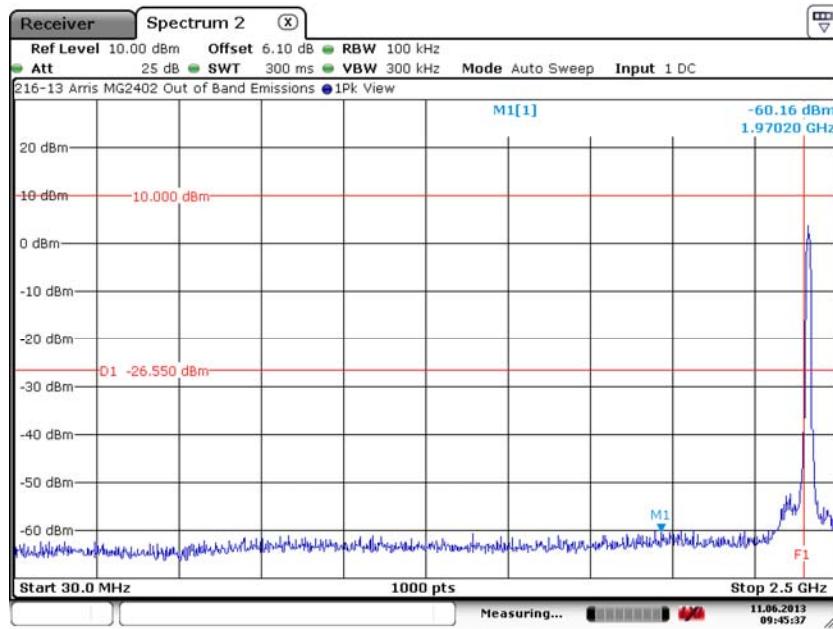
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

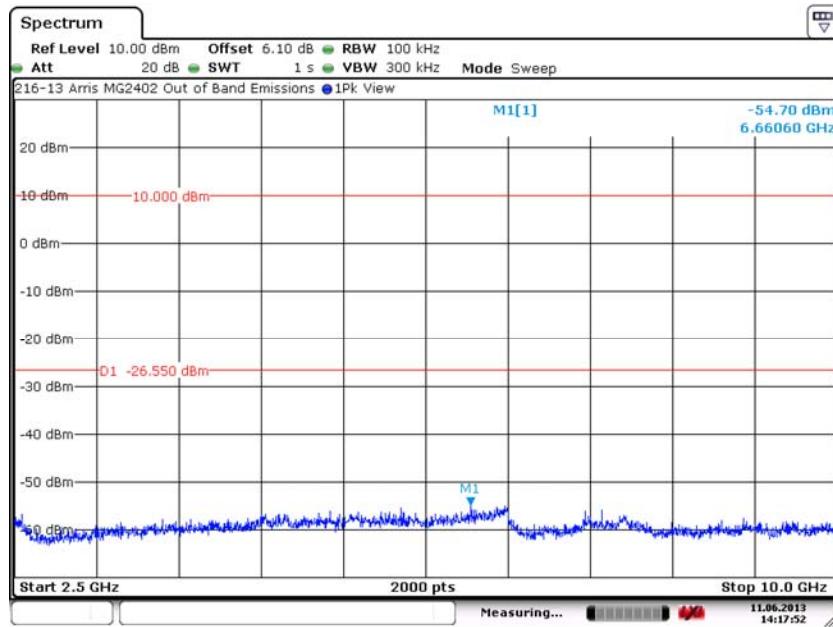
7.7.1.10 2.4 GHz, 802.11b:

Out of Band, Low Channel – 1, J2402, 30 MHz to 2.5 GHz



Date: 11.JUN.2013 09:45:37

Out of Band, Low Channel – 1, J2402, 2.5 GHz to 10 GHz



Date: 11.JUN.2013 14:17:52

Test Number: 216-13R2

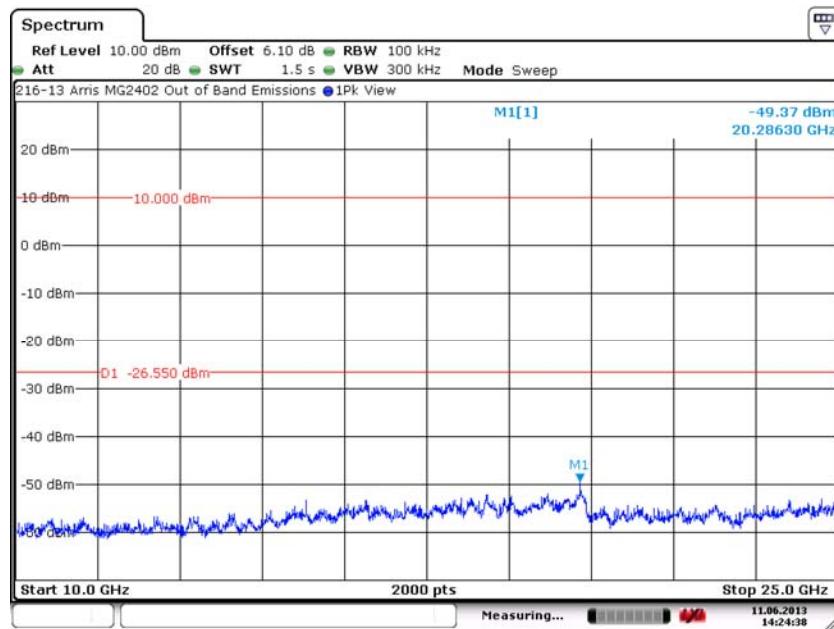
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

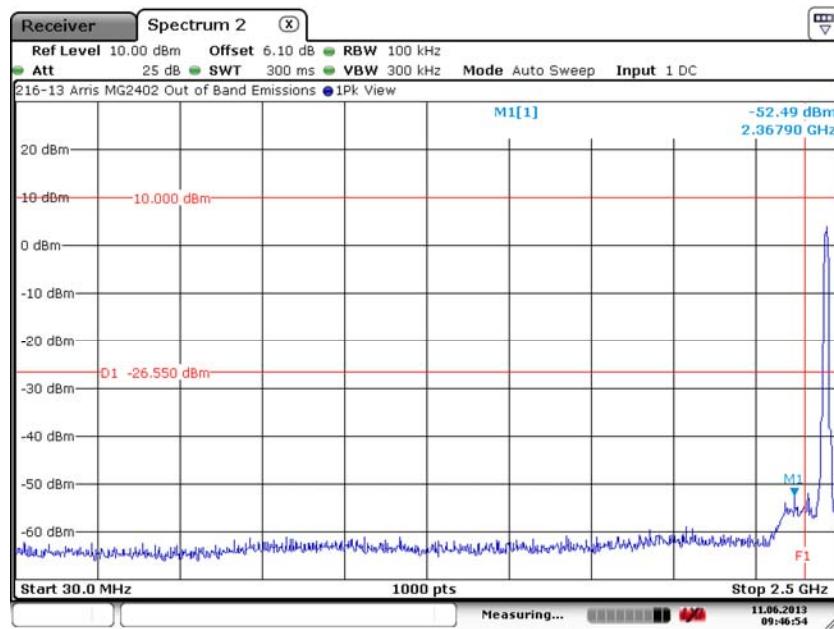
7.7.1.11 2.4 GHz, 802.11b:

Out of Band, Low Channel – 1, J2402, 10 GHz to 25 GHz



Date: 11.JUN.2013 14:24:38

Out of Band, High Channel – 11, J2402, 30 MHz to 2.5 GHz



Date: 11.JUN.2013 09:46:54

Test Number: 216-13R2

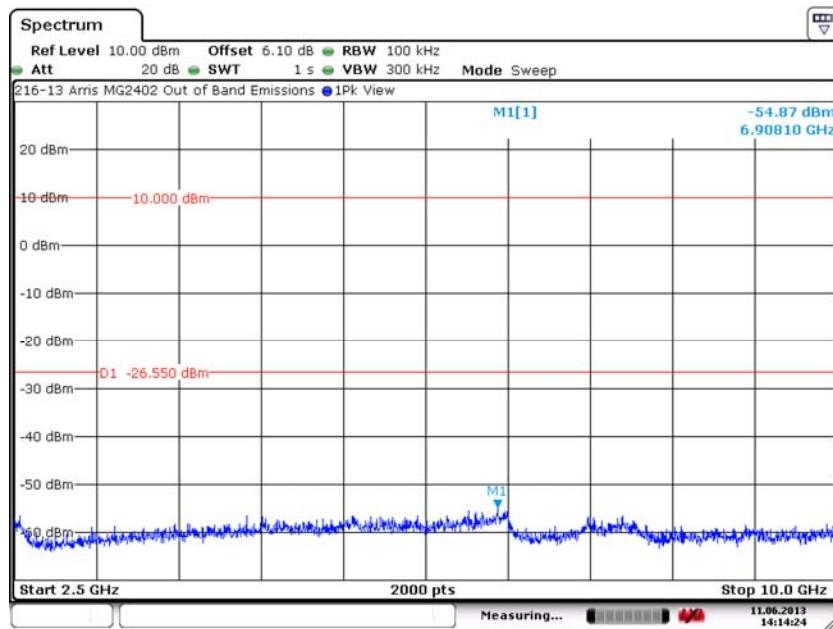
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

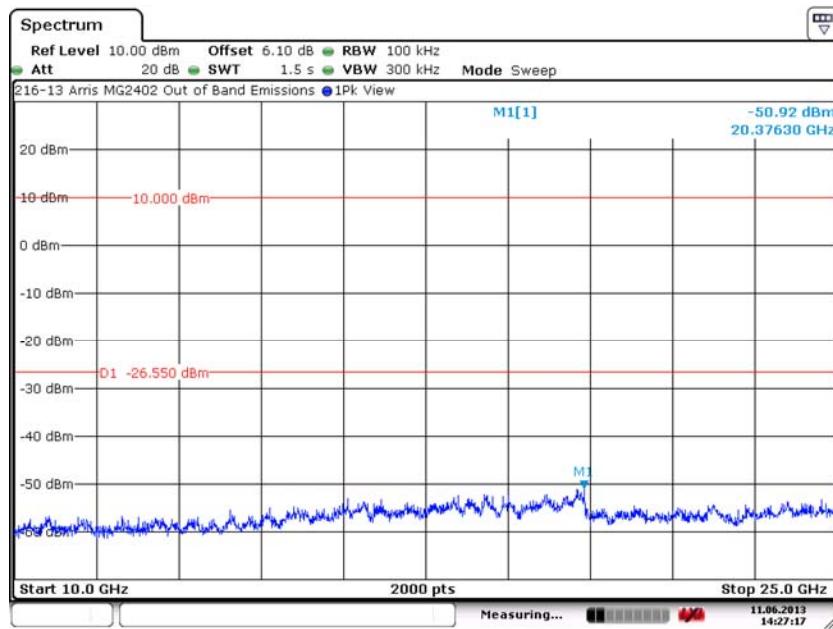
7.7.1.12 2.4 GHz, 802.11b:

Out of Band, High Channel – 11, J2402, 2.5 GHz to 10 GHz



Date: 11.JUN.2013 14:14:24

Out of Band, High Channel – 11, J2402, 10 GHz to 25 GHz



Date: 11.JUN.2013 14:27:17

Test Number: 216-13R2

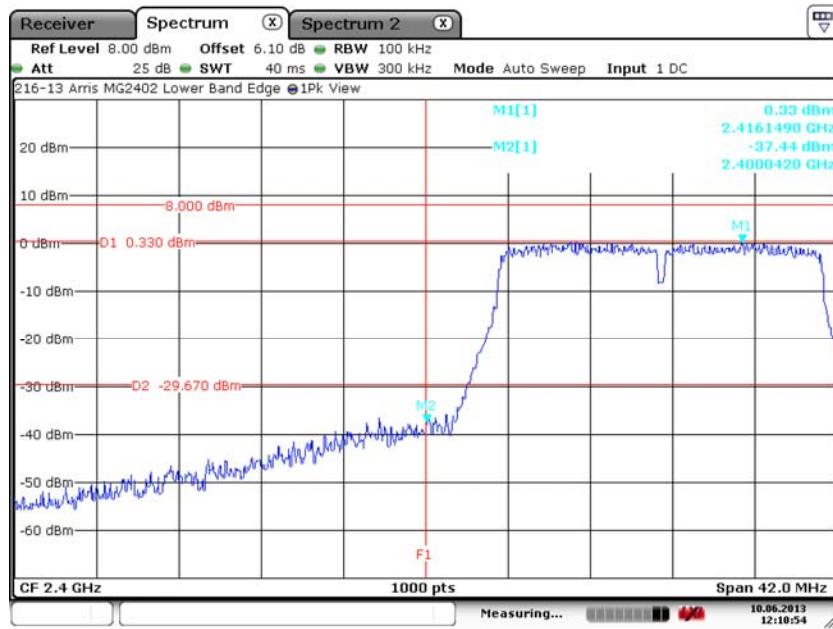
Issue Date: 6/18/2013

7. Measurement Data (continued)

7.7. Band Edge and Out of Band Measurements (continued)

7.7.2.1 2.4 GHz, 802.11g:

Lower Band Edge, Low Channel – 1, J2400



Upper Band Edge, Low Channel – 11, J2400

