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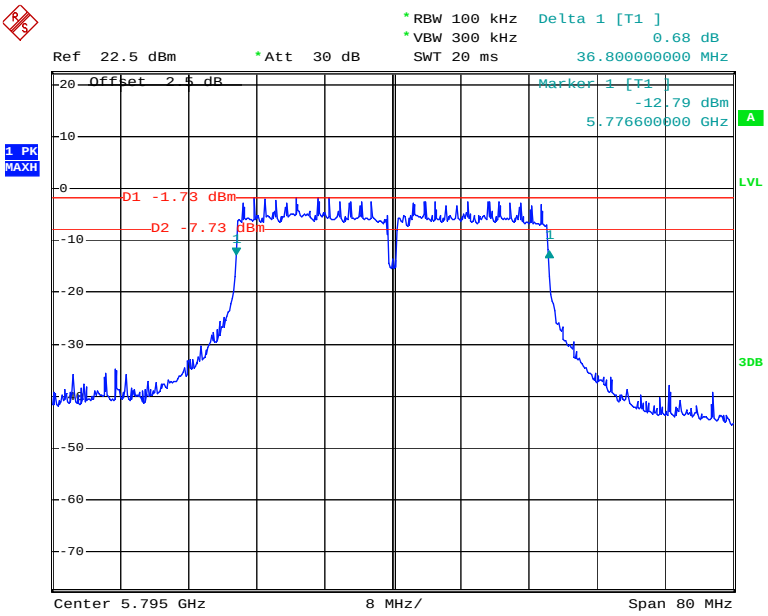
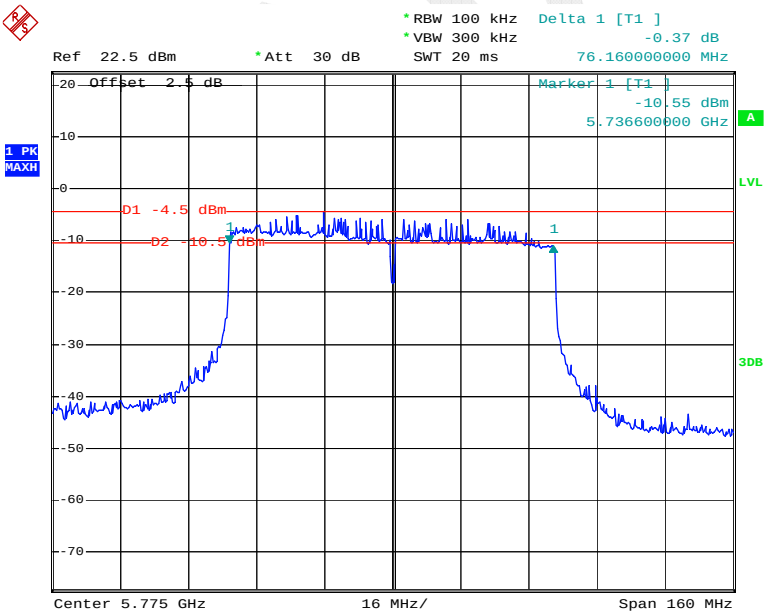


Date: 17.NOV.2014 17:09:42

Antenna1 802.11n ac80 Low Channel



Date: 17.NOV.2014 17:11:38

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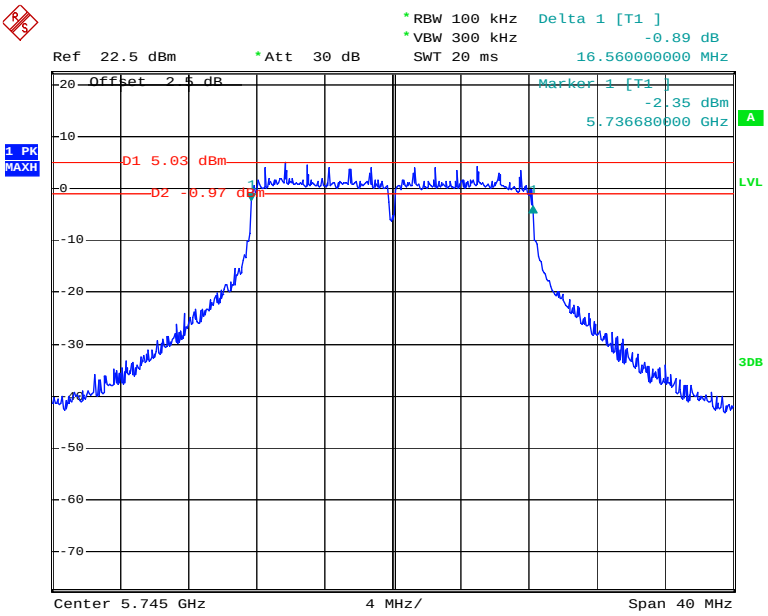

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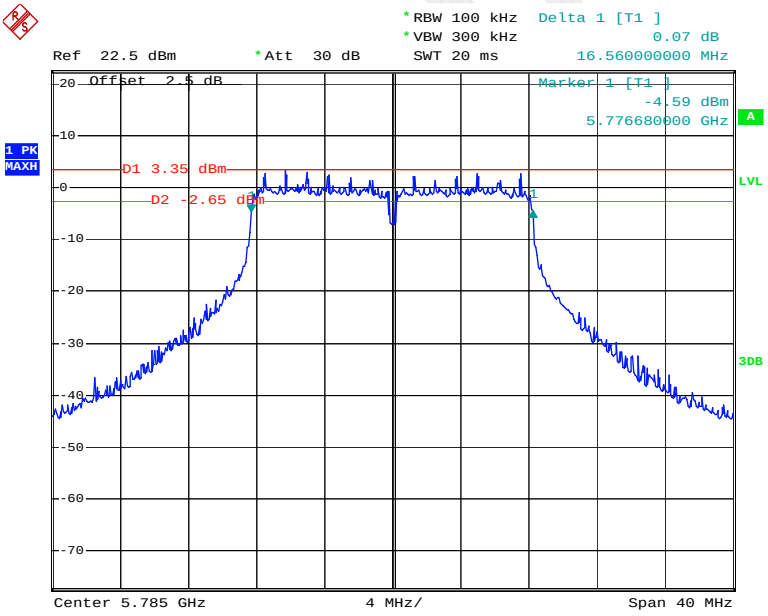

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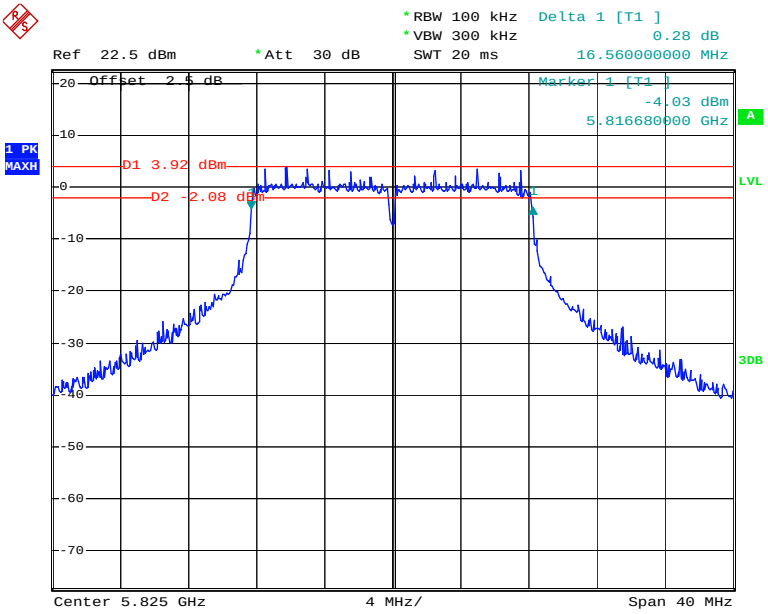

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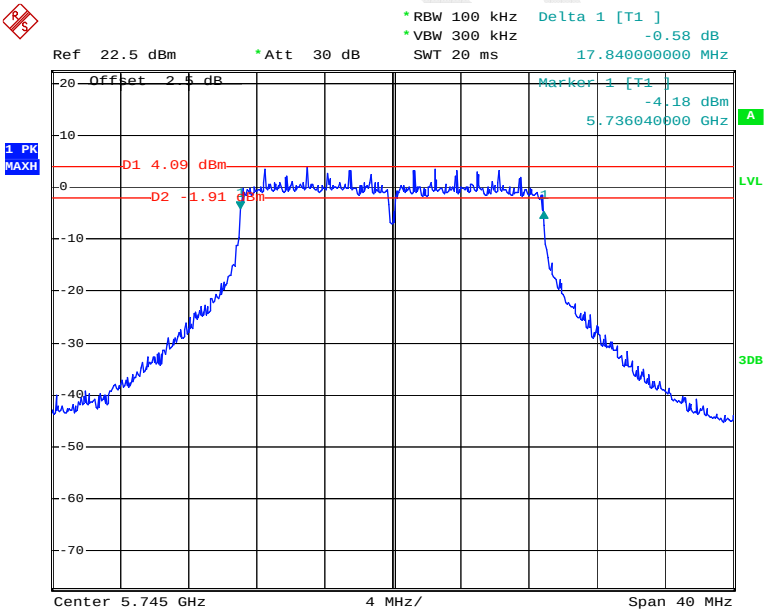

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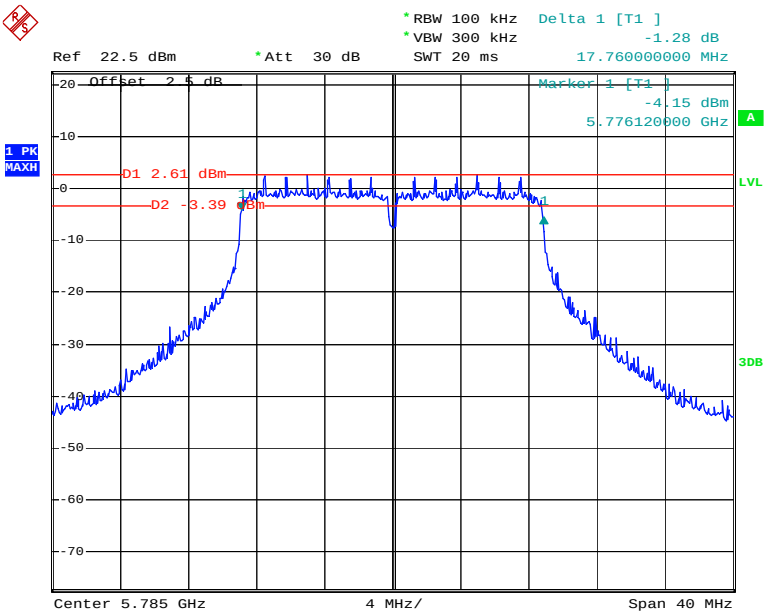

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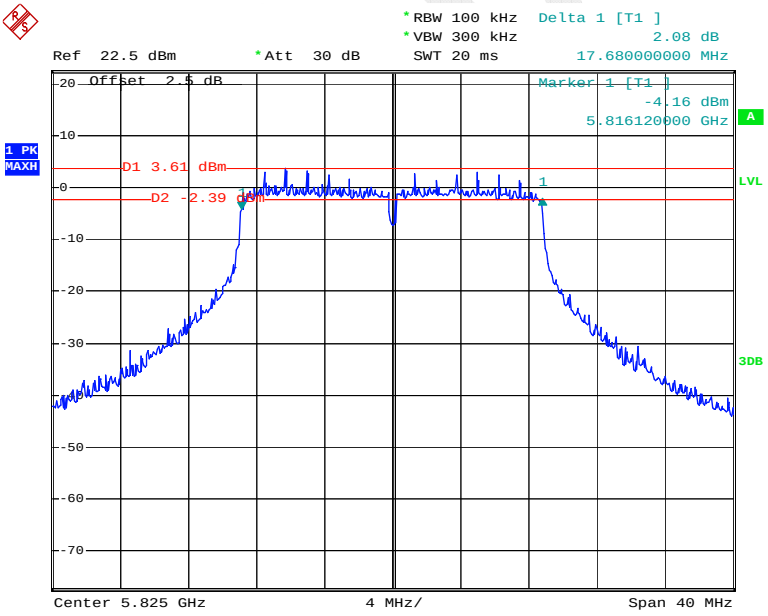

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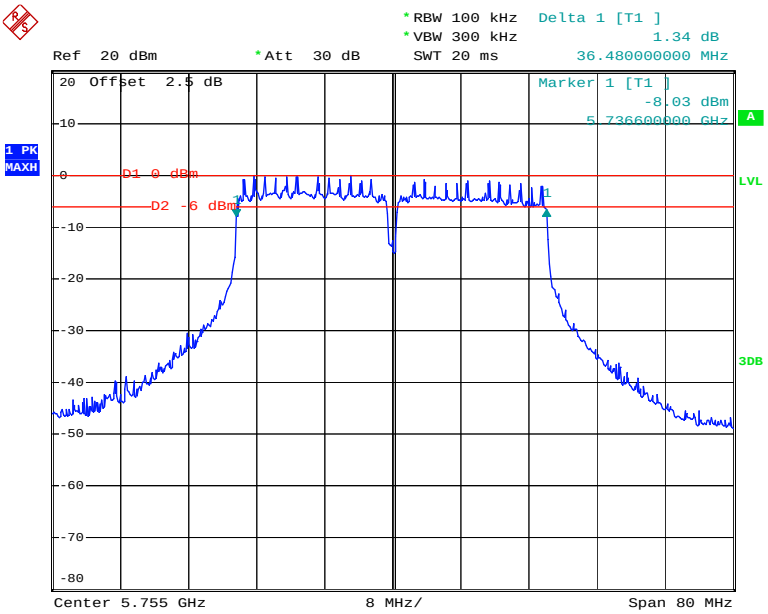

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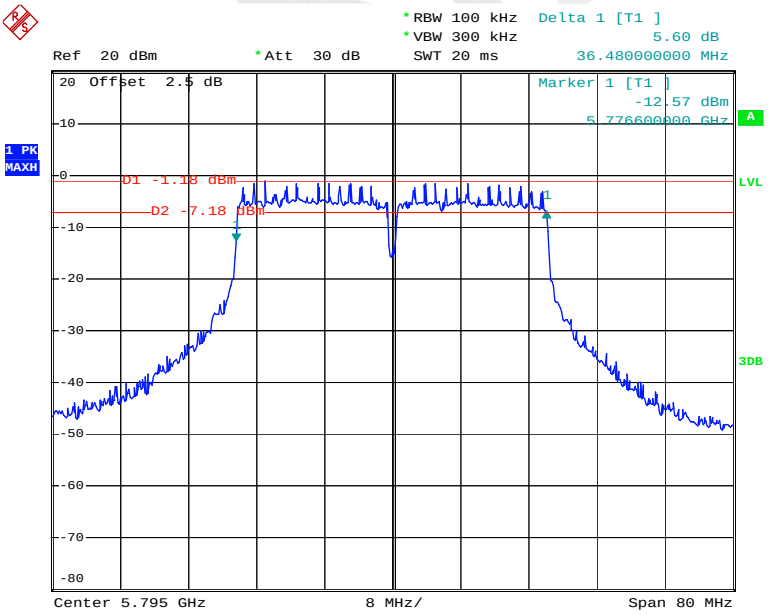

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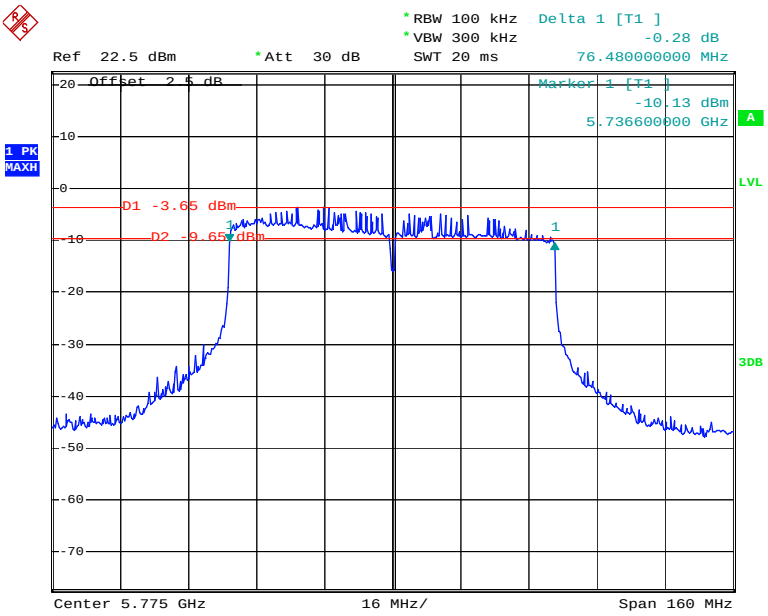


Date: 14.NOV.2014 15:07:30

FCC §15.407(a) (1) –MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01.

Test Data

Environmental Conditions

Temperature:	25.4°C ~26.1 °C
Relative Humidity:	44%~50 %
ATM Pressure:	101.2 kPa ~101.7 kPa

The testing was performed by Sevin Liu from 2014-11-14 to 2014-11-18.

Test Mode: Transmitting

5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)					Result
			Chain 0	Chain 1	Chain 2	Total	Limits	
802.11 a	Low	5180	16.80	16.77	16.74	21.54	30	PASS
	Middle	5200	16.55	16.35	16.35	21.19	30	PASS
	High	5240	15.03	15.34	15.25	19.98	30	PASS
802.11n20	Low	5180	16.26	16.75	16.34	21.21	30	PASS
	Middle	5200	15.87	16.14	16.91	21.10	30	PASS
	High	5240	15.05	15.32	15.05	19.91	30	PASS
802.11n40	Low	5190	13.59	13.17	12.41	17.85	30	PASS
	High	5230	12.95	12.62	11.91	17.29	30	PASS
802.11ac80	Low	5210	14.27	14.61	14.43	19.21	30	PASS

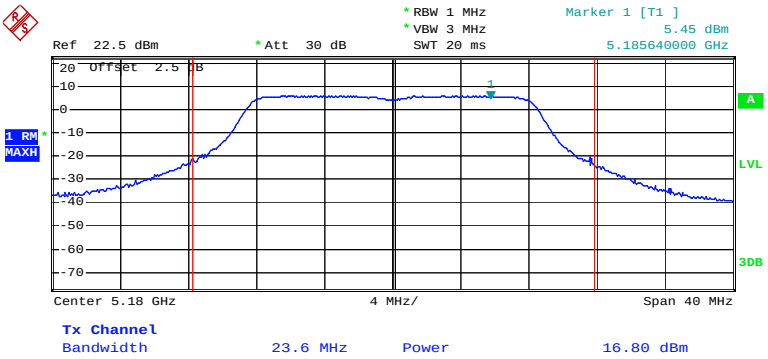
5725MHz-5850MHz:

Mode	Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)					Result
			Chain 0	Chain 1	Chain 2	Total	Limits	
802.11 a	Low	5745	16.23	16.40	16.61	21.19	30	PASS
	Middle	5785	15.31	15.23	15.57	20.14	30	PASS
	High	5825	14.95	14.84	15.13	19.75	30	PASS
802.11n20	Low	5745	15.23	15.59	16.05	20.41	30	PASS
	Middle	5785	14.65	14.55	14.46	19.33	30	PASS
	High	5825	13.88	13.80	14.65	18.90	30	PASS
802.11n40	Low	5755	13.54	13.39	14.80	18.73	30	PASS
	High	5795	12.94	12.59	13.31	17.73	30	PASS
802.11ac80	Low	5775	13.16	13.54	13.31	18.11	30	PASS

Note: The duty cycle is 100%.

5150MHz-5250MHz:

Antenna0 802.11a Low Channel



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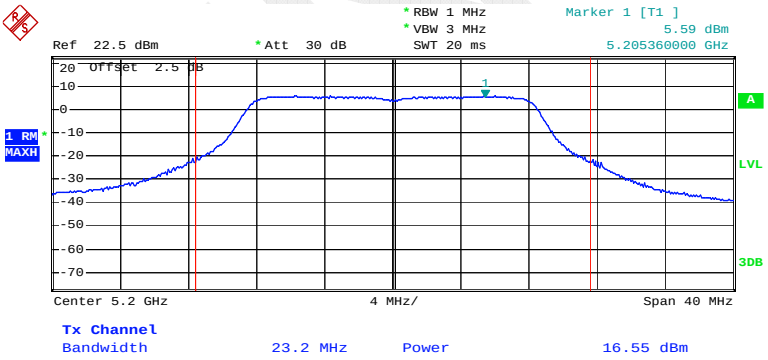

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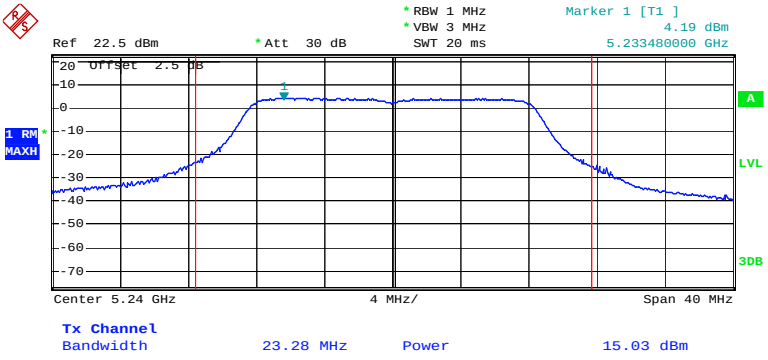

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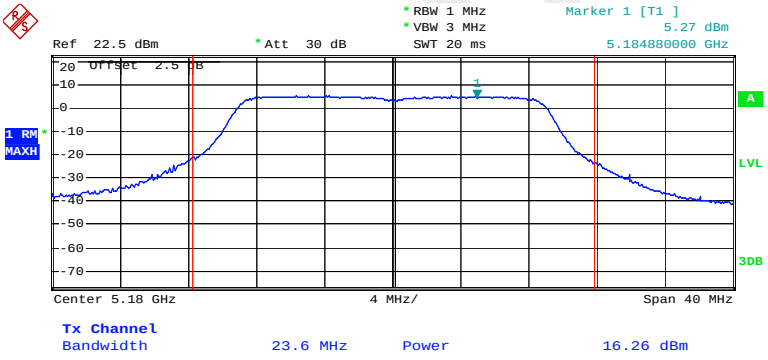

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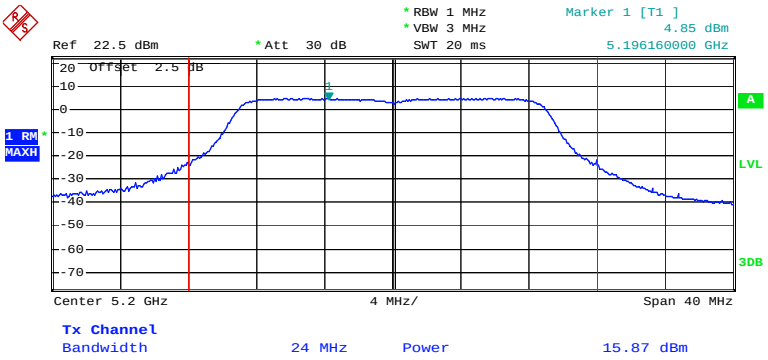

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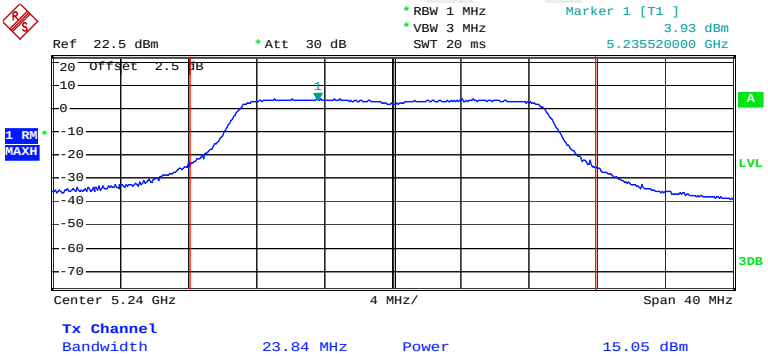

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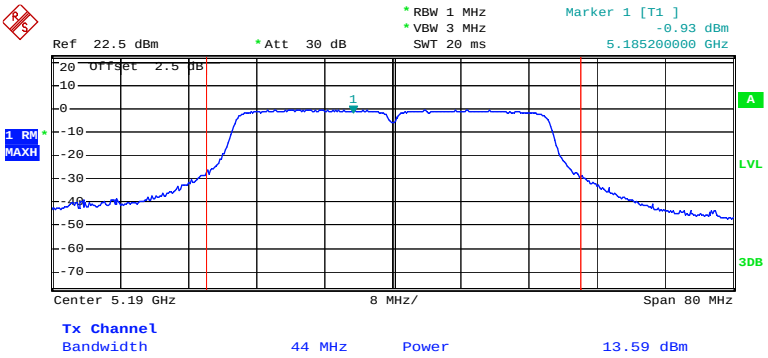

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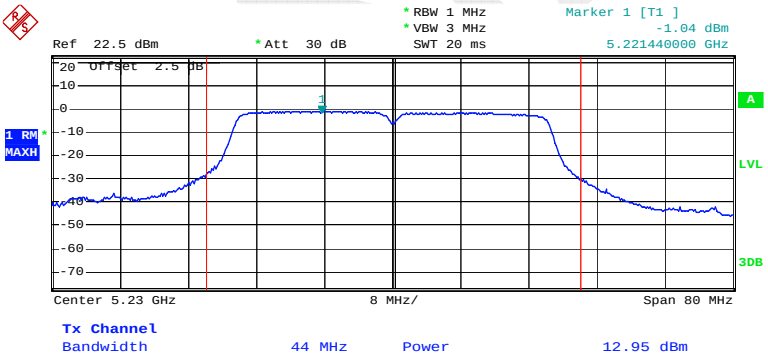

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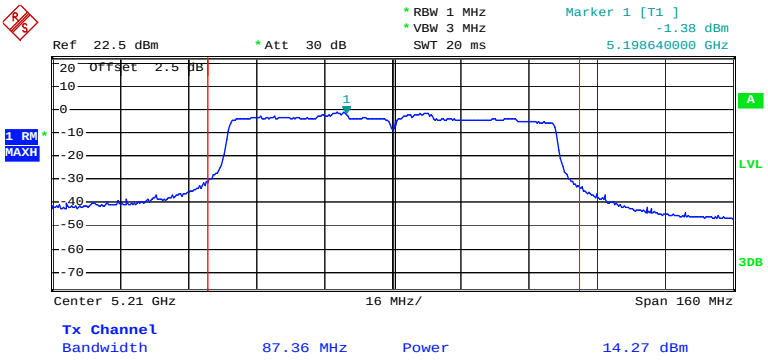

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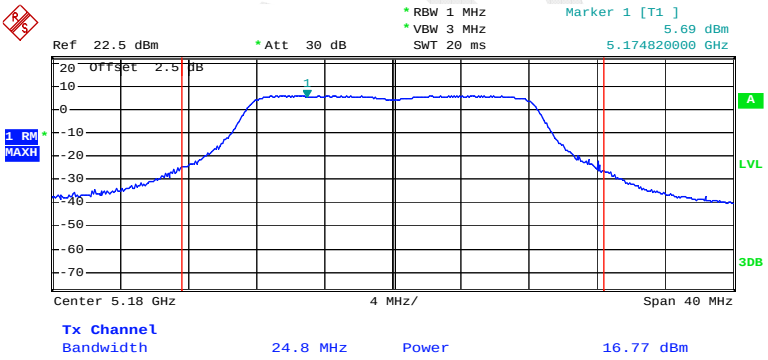

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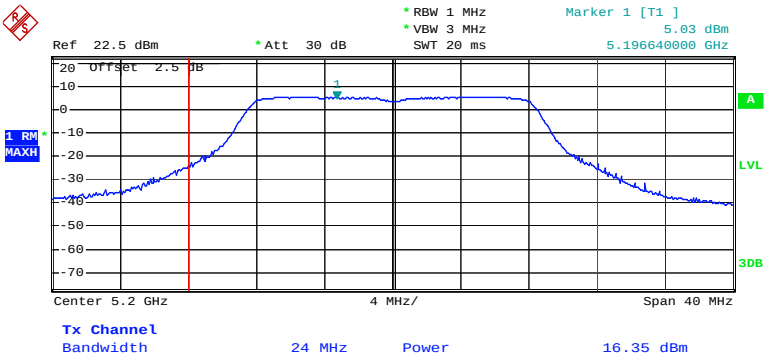

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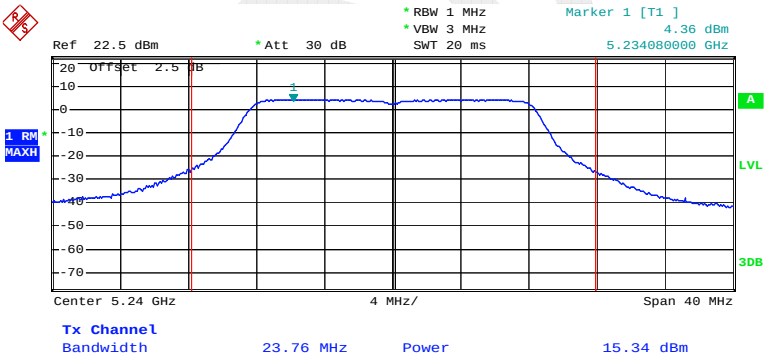

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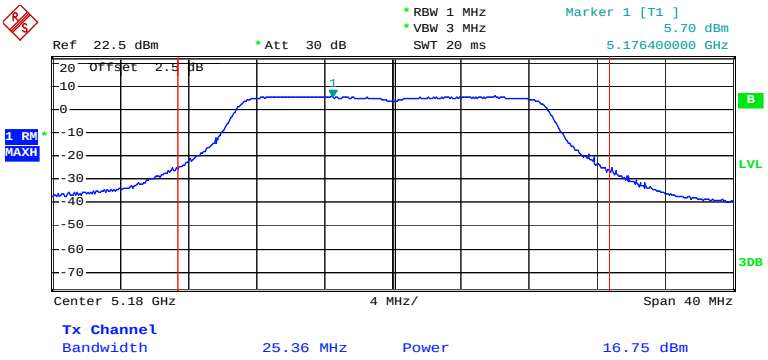

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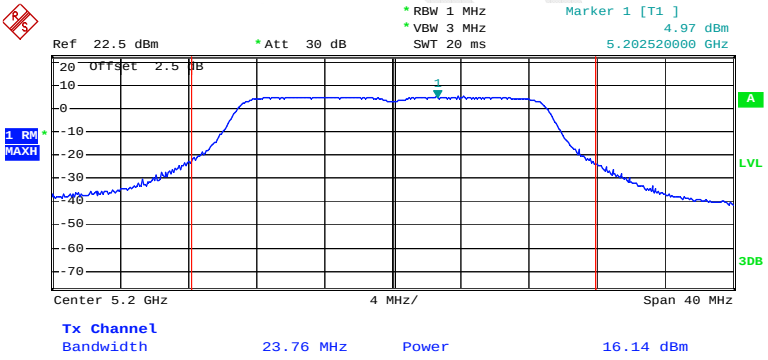

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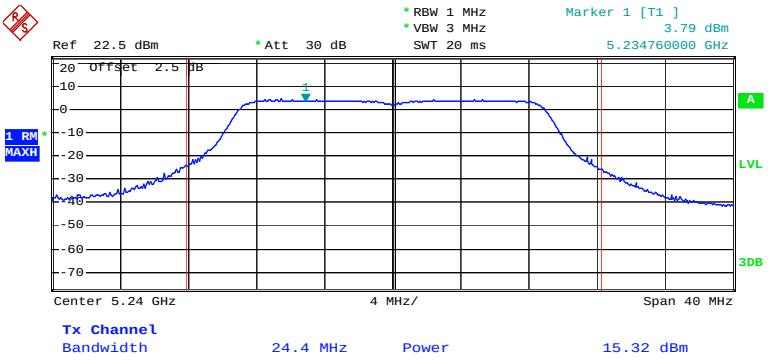
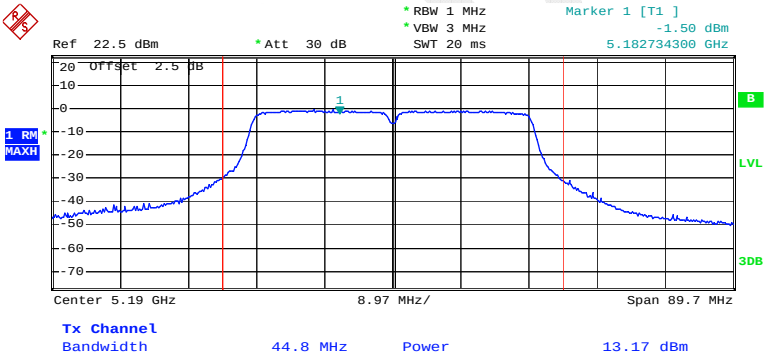


Date: 17.NOV.2014 20:55:39

Antenna1 802.11n ht40 5190 Channel



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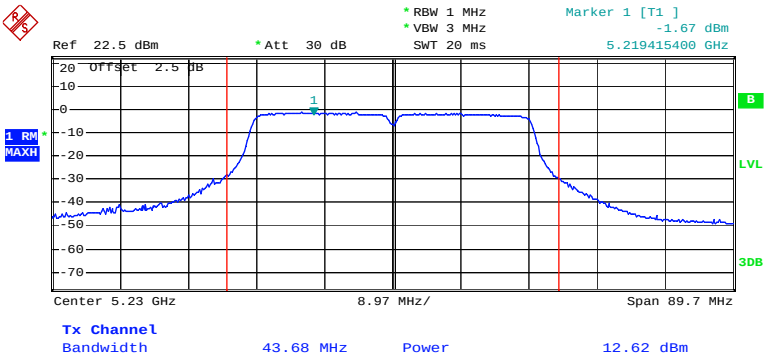
Antenna1 802.11n ht40 5230 Channel



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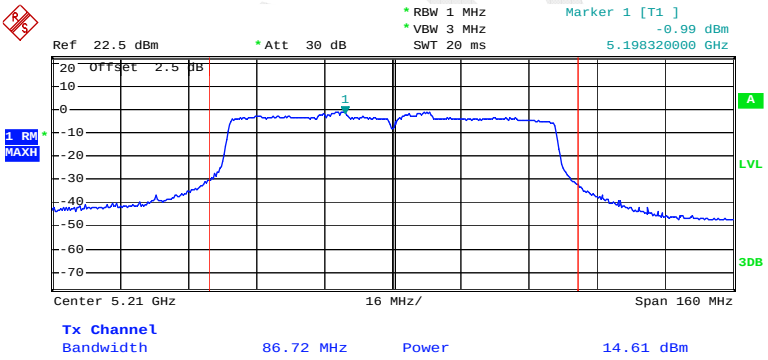
Antenna1 802.11n ac80 Low Channel



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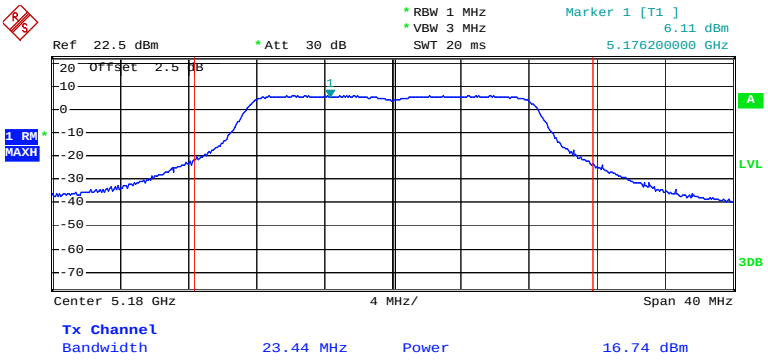
Antenna2 802.11a Low Channel



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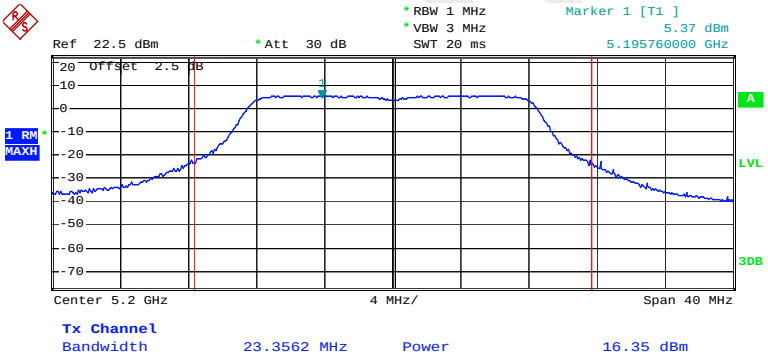
Antenna2 802.11a Middle Channel



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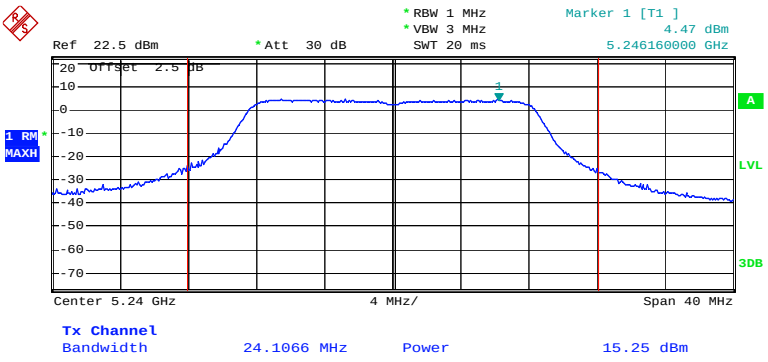
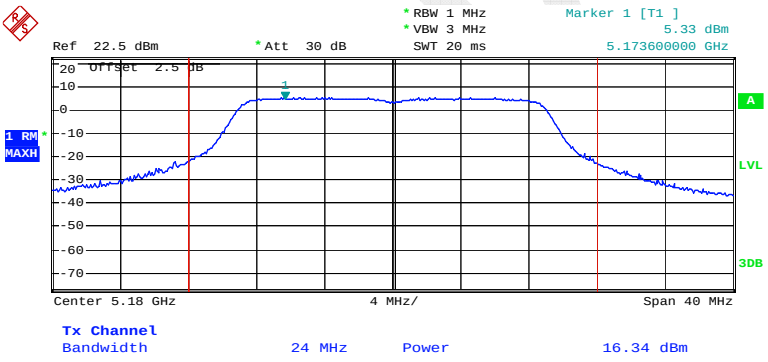
Antenna2 802.11a High Channel



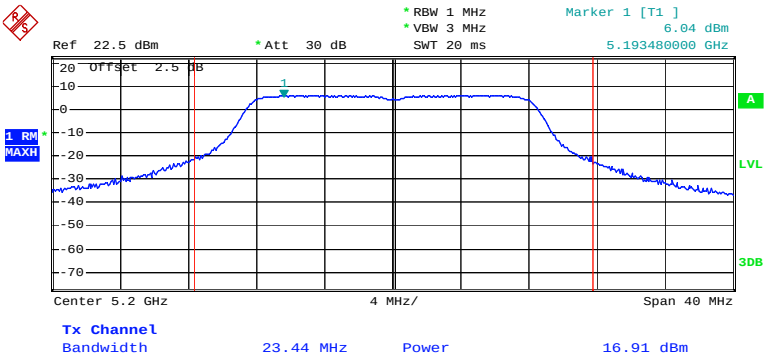
Date: 18.NOV.2014 13:03:39

Antenna2 802.11n ht20 Low Channel



Date: 13.NOV.2014 23:05:10

Antenna2 802.11n ht20 Middle Channel



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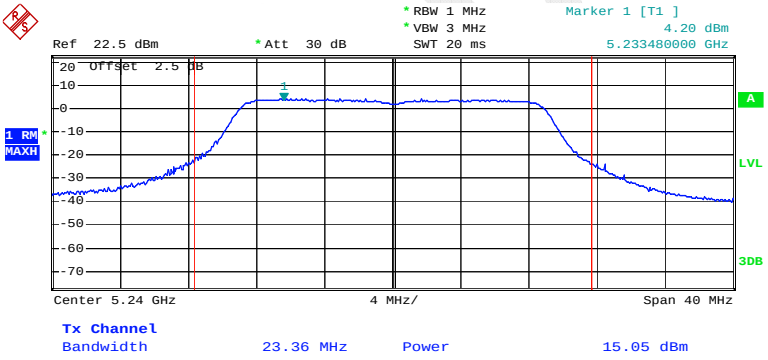

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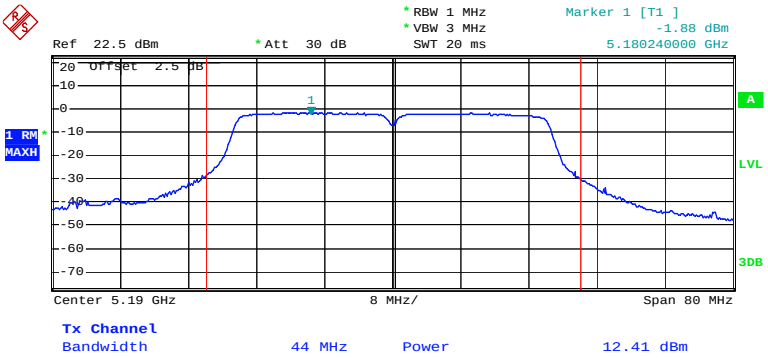
Antenna2 802.11n ht40 5190 Channel



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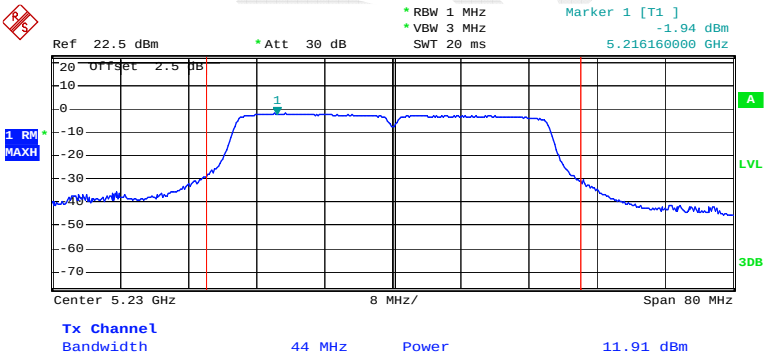
Antenna2 802.11n ht40 5230 Channel



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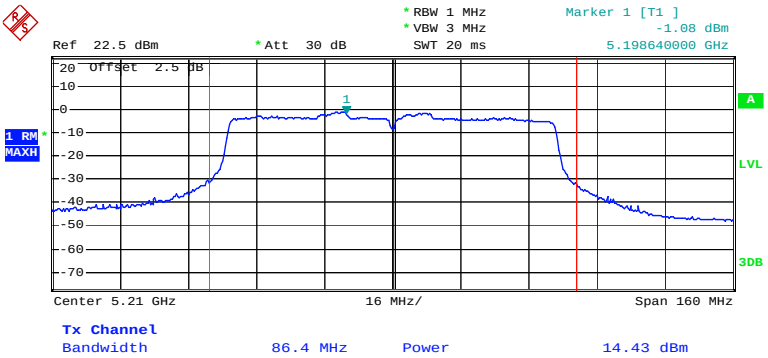
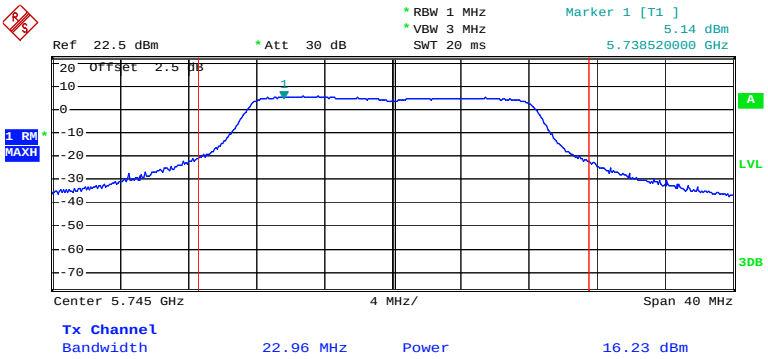
Antenna2 802.11n ac80 Low Channel



Date: 17.NOV.2014 19:31:30

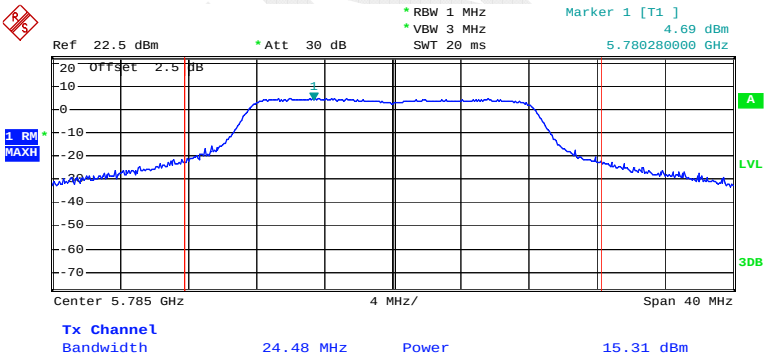
5725MHz-5850MHz:

Antenna0 802.11a Low Channel



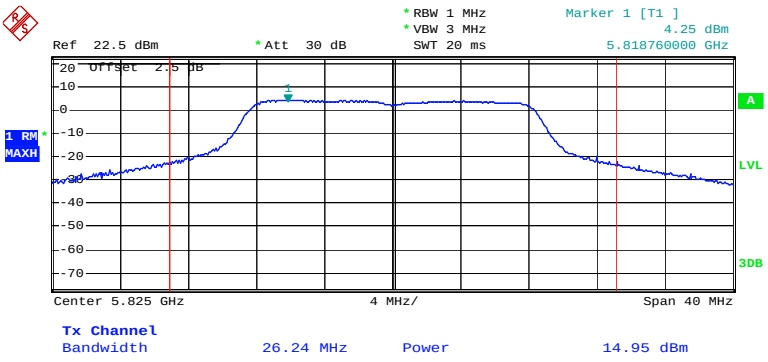
Date: 18.NOV.2014 01:06:51

Antenna0 802.11a Middle Channel



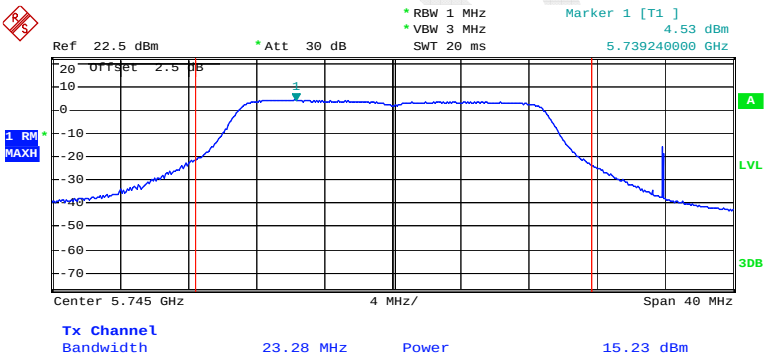
Date: 18.NOV.2014 01:13:55

Antenna0 802.11a High Channel



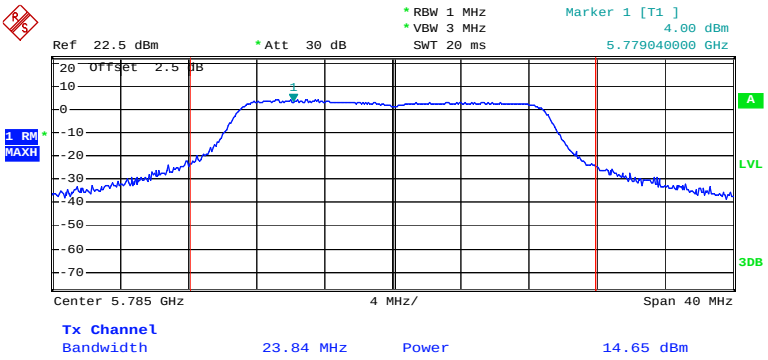
Date: 18.NOV.2014 01:10:19

Antenna0 802.11n ht20 Low Channel



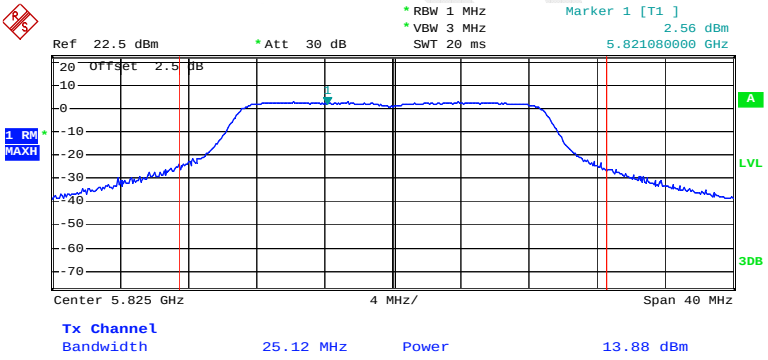
Date: 18.NOV.2014 00:59:43

Antenna0 802.11n ht20 Middle Channel



Date: 18.NOV.2014 01:01:55

Antenna0 802.11n ht20 High Channel



Date: 18.NOV.2014 01:03:39

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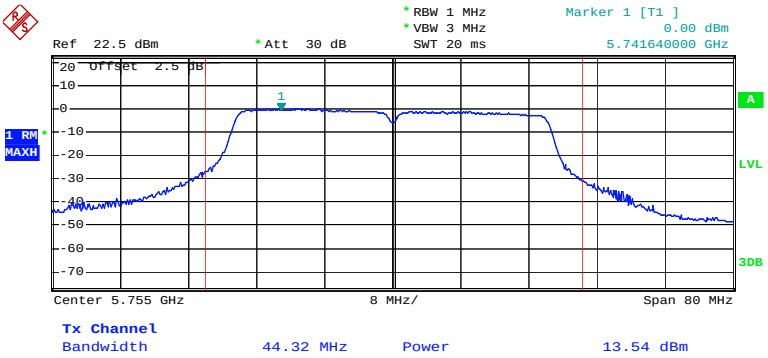

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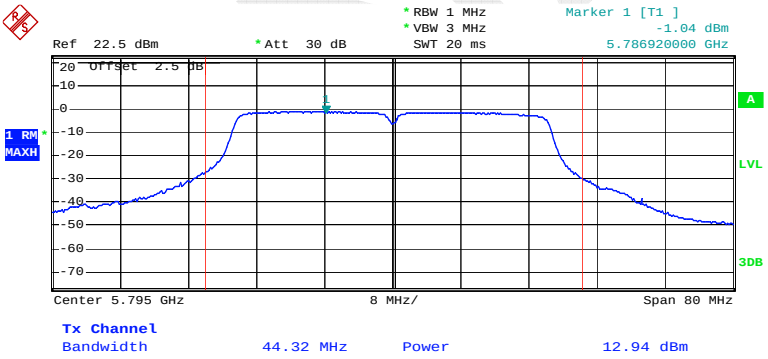

Date: 18.NOV.2014 00:54:07

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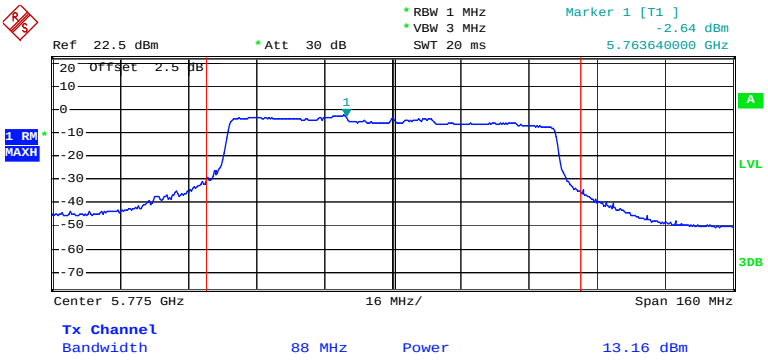
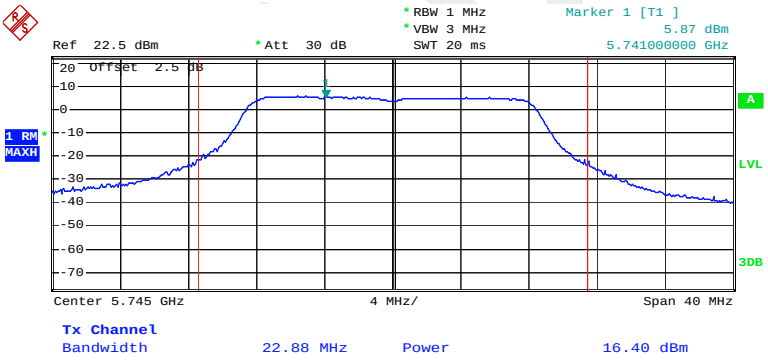


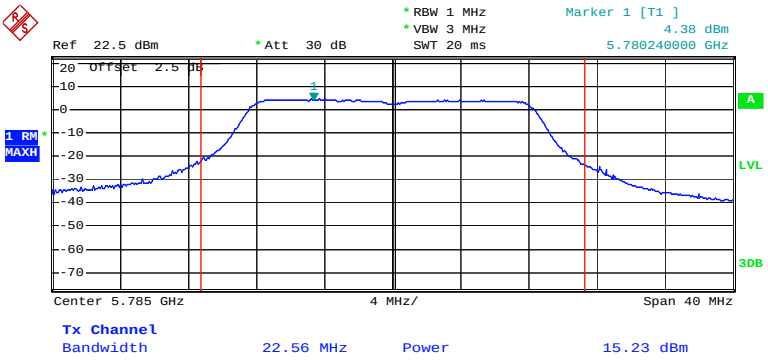
Date: 18.NOV.2014 00:34:52

Antenna1 802.11a Low Channel



Date: 17.NOV.2014 16:57:27

Antenna1 802.11a Middle Channel



Date: 17.NOV.2014 16:58:32

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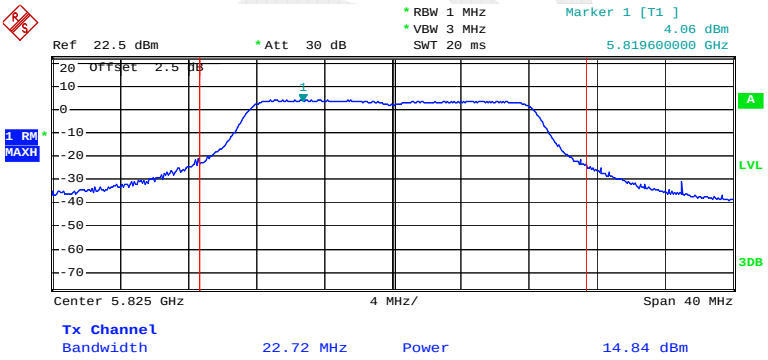
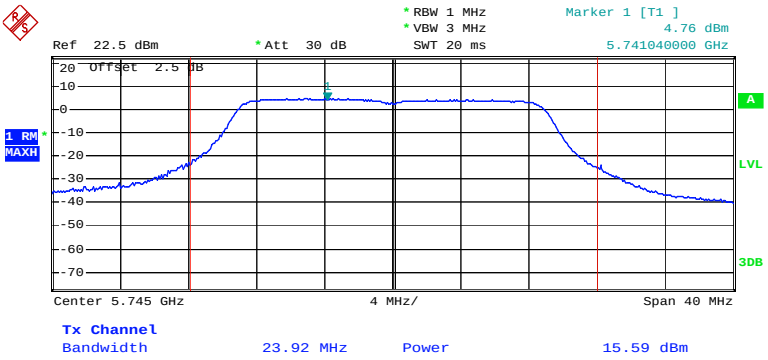


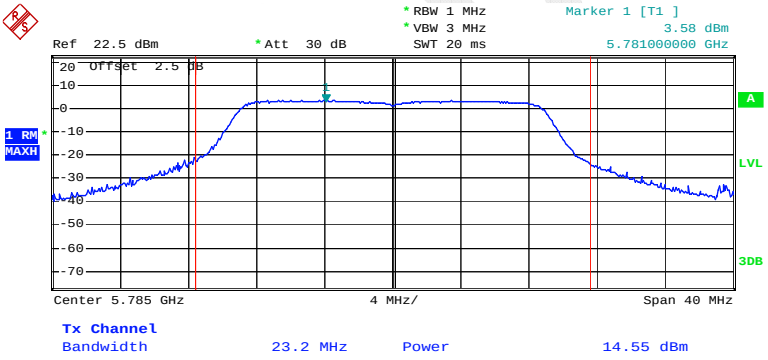
Date: 17.NOV.2014 16:59:49

Antenna1 802.11n ht20 Low Channel



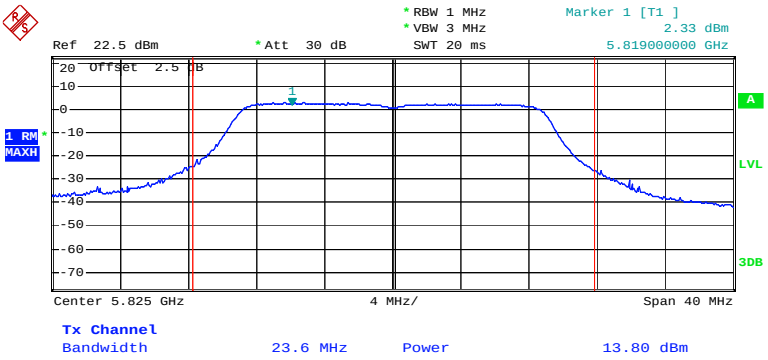
Date: 17.NOV.2014 16:49:14

Antenna1 802.11n ht20 Middle Channel



Date: 18.NOV.2014 01:00:57

Antenna1 802.11n ht20 High Channel



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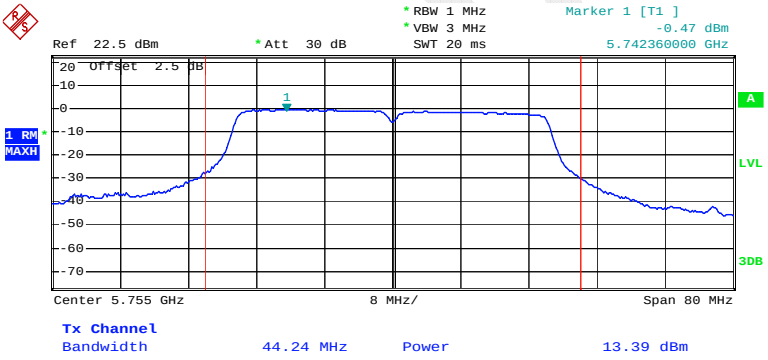
Antenna1 802.11n ht40 Low Channel



Date: 17.NOV.2014 16:42:01

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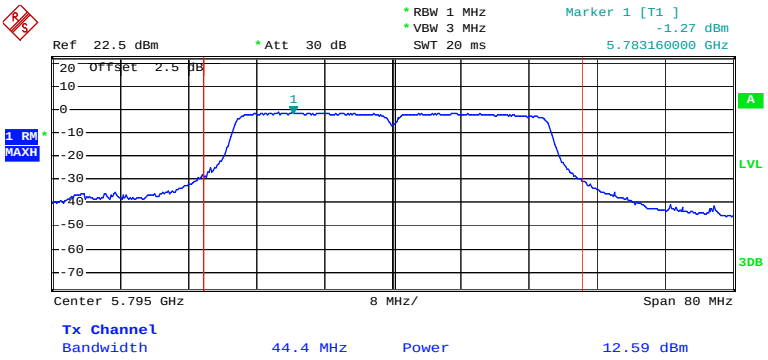

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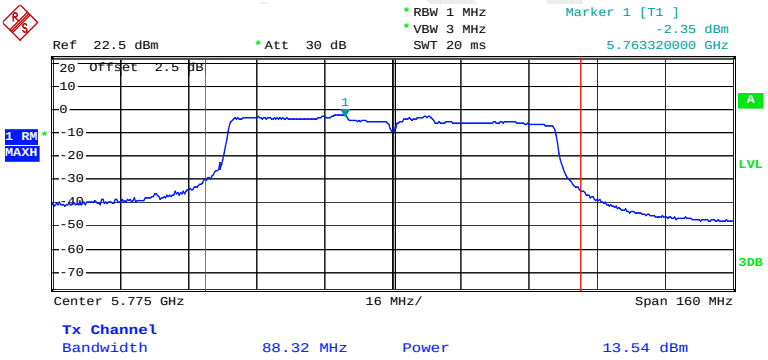
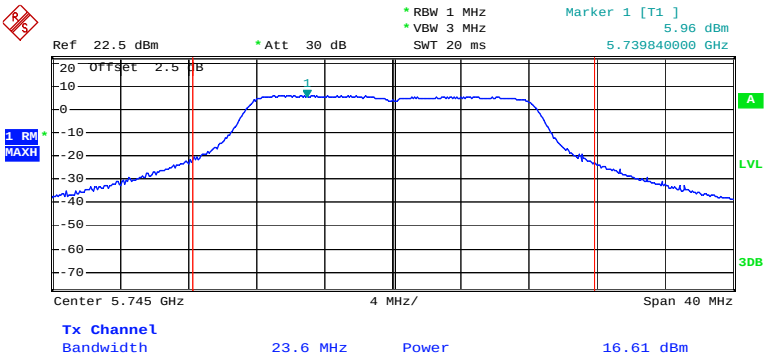
Antenna1 802.11n ac80 Low Channel



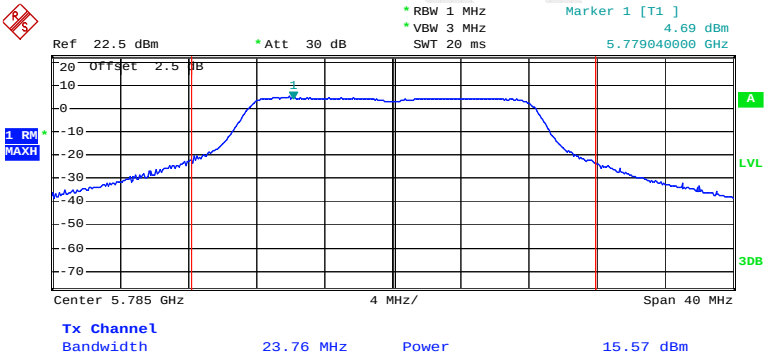
Date: 17.NOV.2014 16:33:44

Antenna2 802.11a Low Channel



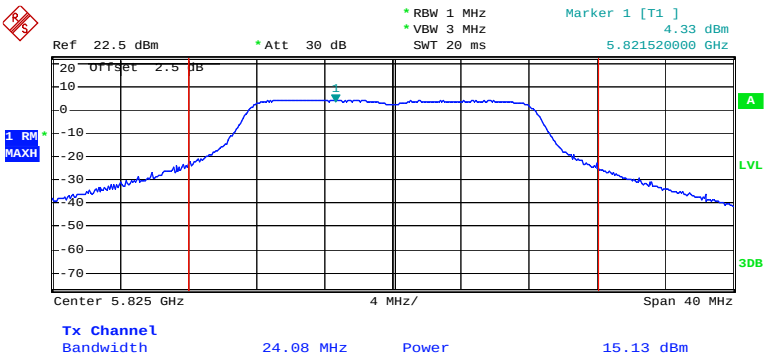
Date: 14.NOV.2014 11:52:02

Antenna2 802.11a Middle Channel



Date: 14.NOV.2014 11:52:59

Antenna2 802.11a High Channel



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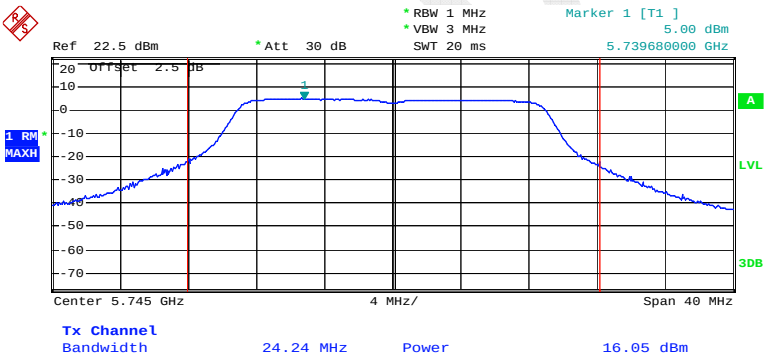
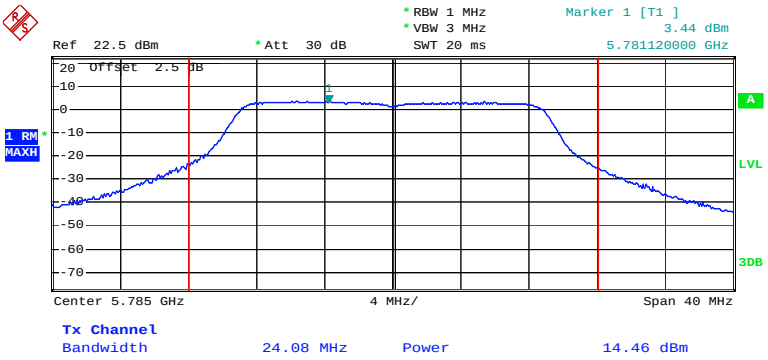


Date: 14.NOV.2014 11:45:26

Antenna2 802.11n ht20 Middle Channel



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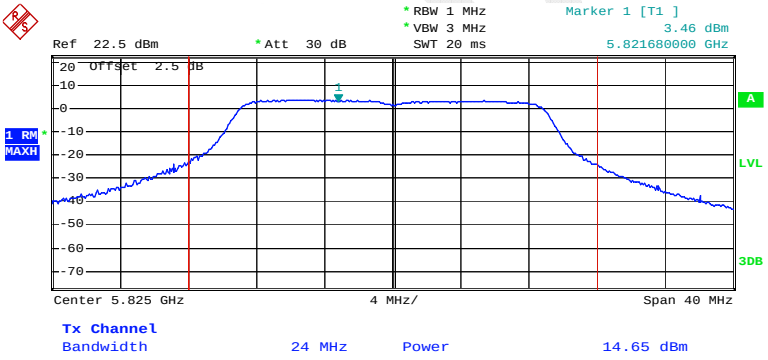

Date: 14.NOV.2014 11:47:03

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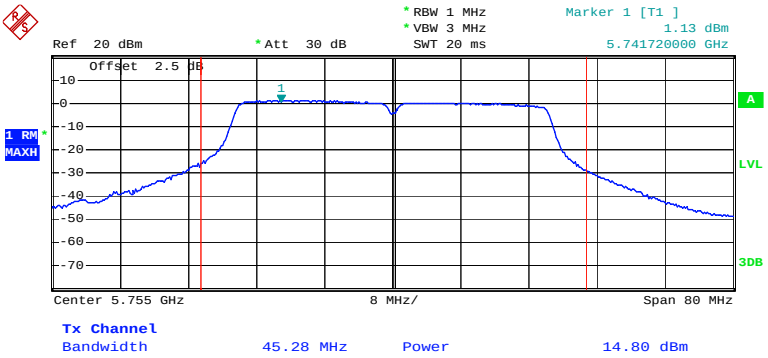

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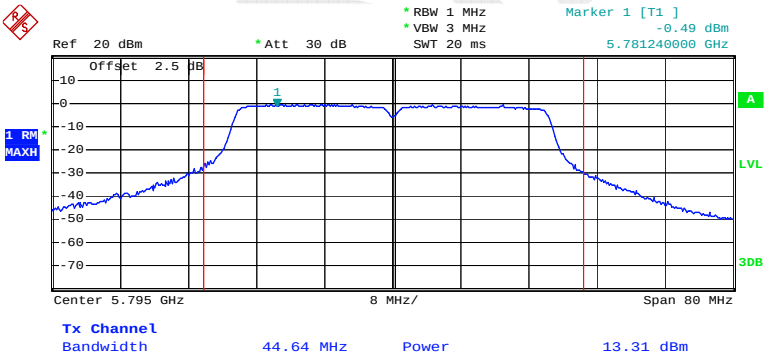
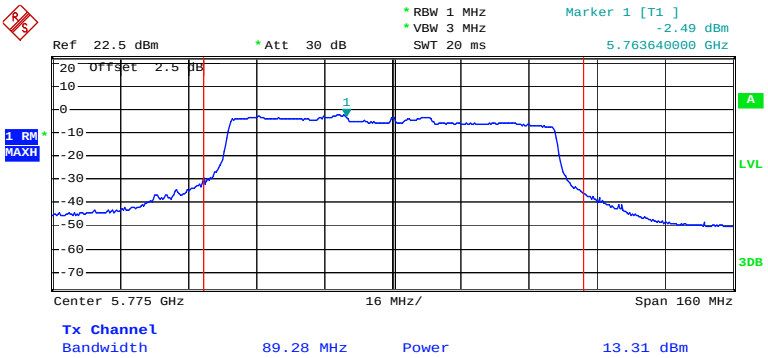
Antenna2 802.11n ht40 High Channel



Date: 14.NOV.2014 14:33:31

Antenna2 802.11n ac80 Low Channel



Date: 18.NOV.2014 00:34:21

FCC §15.407(a) - POWER SPECTRAL DENSITY

Applicable Standard

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	25.4°C ~26.1 °C
Relative Humidity:	44%~51 %
ATM Pressure:	101.2 kPa ~101.7 kPa

The testing was performed by Sevin Liu from 2014-11-13 to 2014-11-24.

Test Mode: Transmitting

Test Result:Compliance.Please refer to the following table and plot.

5150MHz-5250MHz:

Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/MHz)					Result
			Chain 0	Chain 1	Chain 2	Total	Limits	
802.11a	Low	5180	4.89	4.69	4.40	9.44	17	PASS
	Middle	5200	4.90	4.32	3.94	9.18	17	PASS
	High	5420	3.73	3.35	3.28	8.23	17	PASS
802.11n20	Low	5180	4.70	5.12	4.82	9.65	17	PASS
	Middle	5200	4.25	4.64	4.31	9.17	17	PASS
	High	5420	3.36	3.25	3.86	8.27	17	PASS
802.11n40	Low	5190	-0.11	-1.11	-1.55	3.89	17	PASS
	High	5230	-1.63	-1.77	-2.47	2.83	17	PASS
802.11ac80	Low	5210	-2.72	-2.46	-2.10	2.35	17	PASS

Note: the duty cycle is 100%.

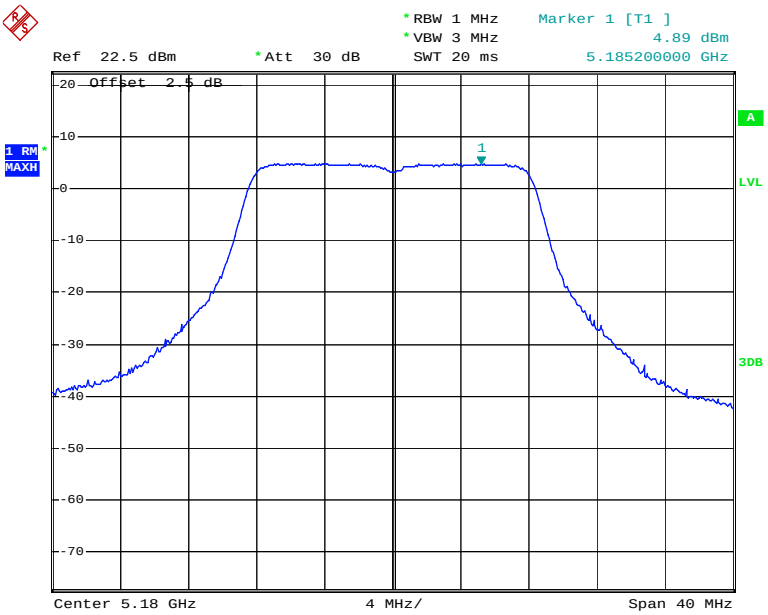
5725MHz-5850MHz:

-	Channel	Frequency	Power Spectral Density (dBm/100 kHz)			Power Spectral Density (dBm/500 kHz)					Result
		MHz	Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2	Total	Limits	
802.11 a	Low	5745	-3.93	-3.63	-3.37	3.07	3.37	3.63	8.13	30	PASS
	Middle	5785	-4.56	-4.68	-4.38	2.44	2.32	2.62	7.23	30	PASS
	High	5825	-4.87	-4.9	-5.11	2.13	2.1	1.89	6.81	30	PASS
802.11 n20	Low	5745	-3.51	-3.75	-3.63	3.49	3.25	3.37	8.14	30	PASS
	Middle	5785	-5.21	-5.31	-5.24	1.79	1.69	1.76	6.52	30	PASS
	High	5825	-5.43	-5.13	-5.75	1.57	1.87	1.25	6.34	30	PASS
802.11 n40	Low	5755	-7.67	-7.79	-8.11	-0.67	-0.79	-1.11	3.92	30	PASS
	High	5795	-9.18	-9.2	-9.13	-2.18	-2.2	-2.13	2.60	30	PASS
802.11 ac80	Low	5775	-11.94	-11.9	-11.9	-4.94	-4.9	-4.9	-0.14	30	PASS

Note:
the duty cycle is 100%.
According to 789033 D02 General UNII Test Procedures New Rules v01, added 10log(500kHz/RBW) =7dB to the measured result.

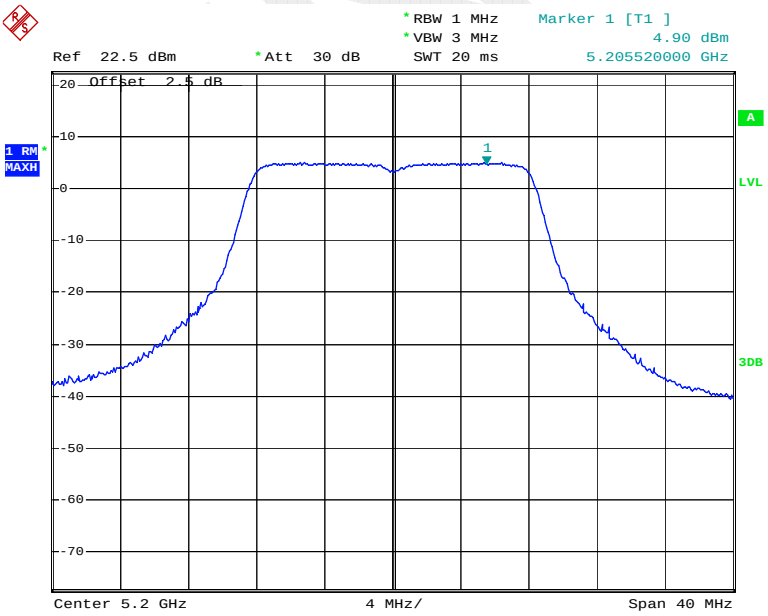
5150MHz-5250MHz:

Antenna0 802.11a Low Channel



Date: 18.NOV.2014 12:50:59

Antenna0 802.11a Middle Channel



Date: 18.NOV.2014 12:55:02

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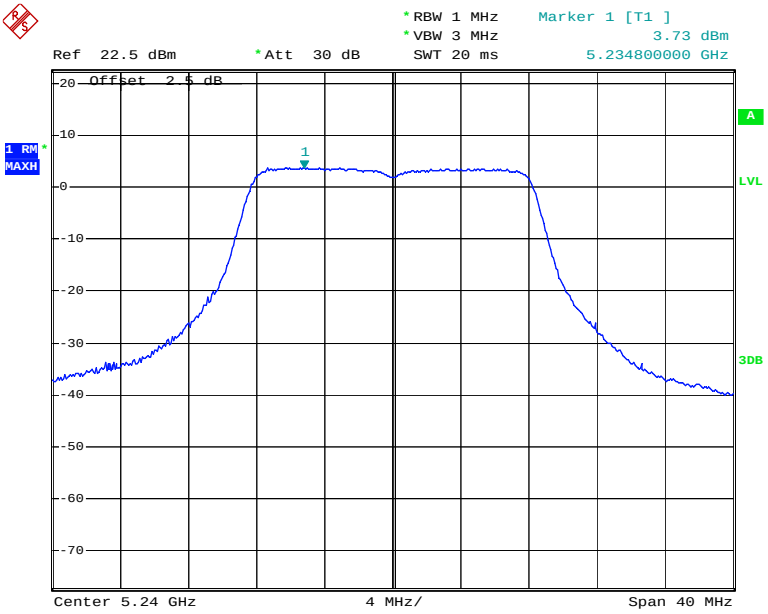

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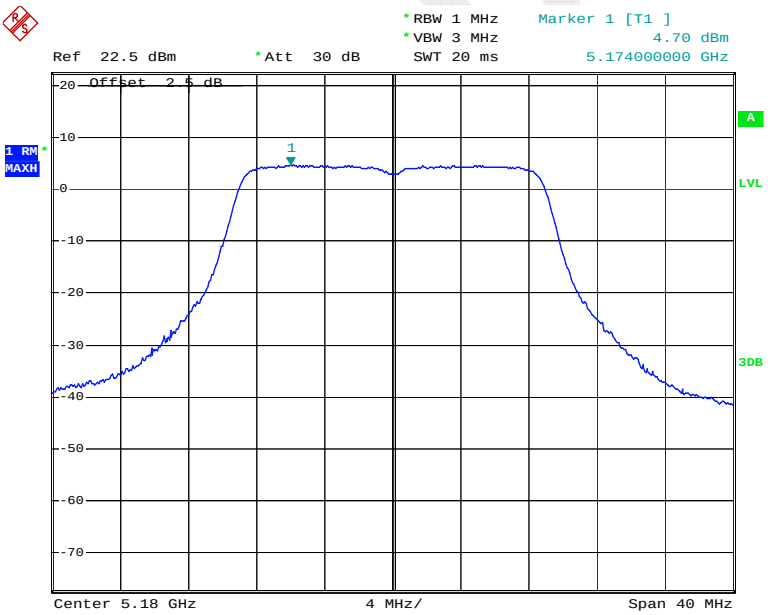
Antenna0 802.11n ht20 Low Channel



Date: 18.NOV.2014 12:41:42

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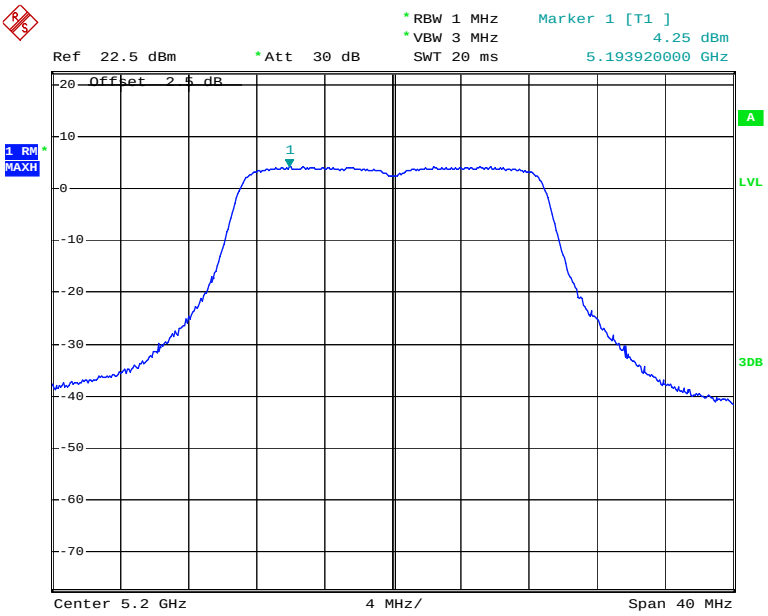

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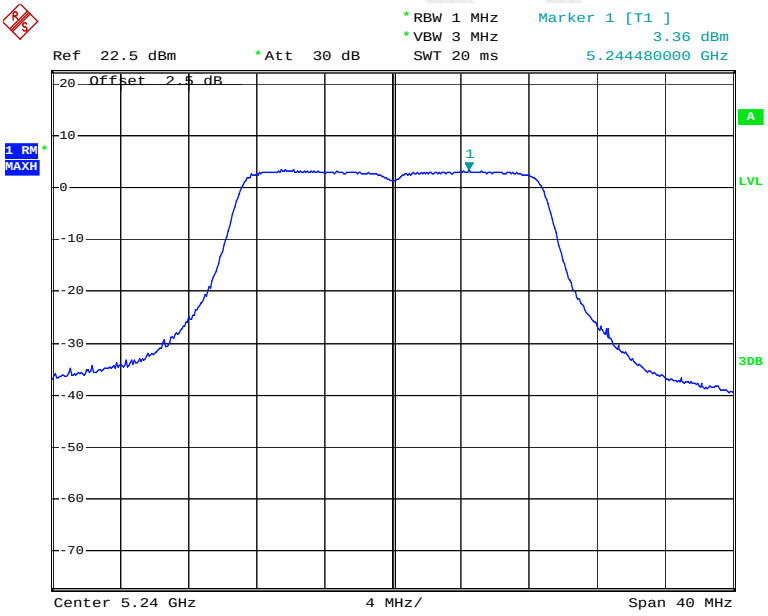
Antenna0 802.11n ht20 High Channel



Date: 18.NOV.2014 12:45:15

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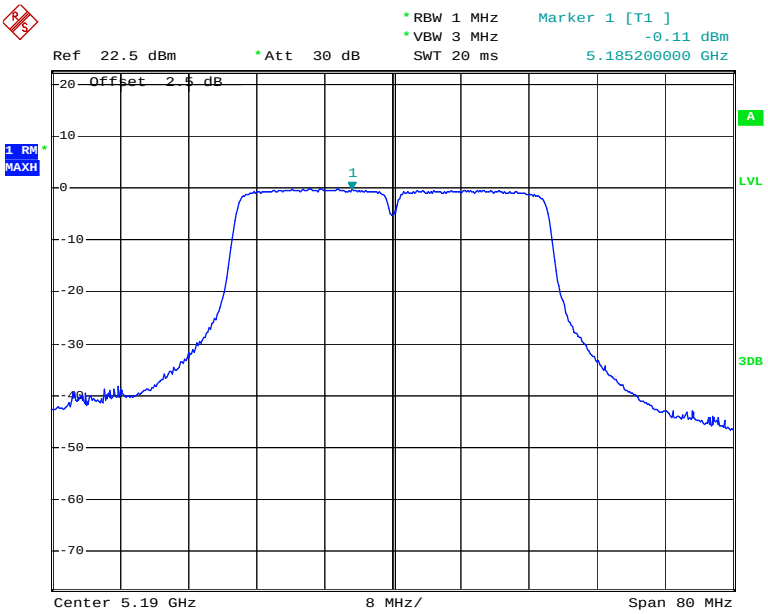
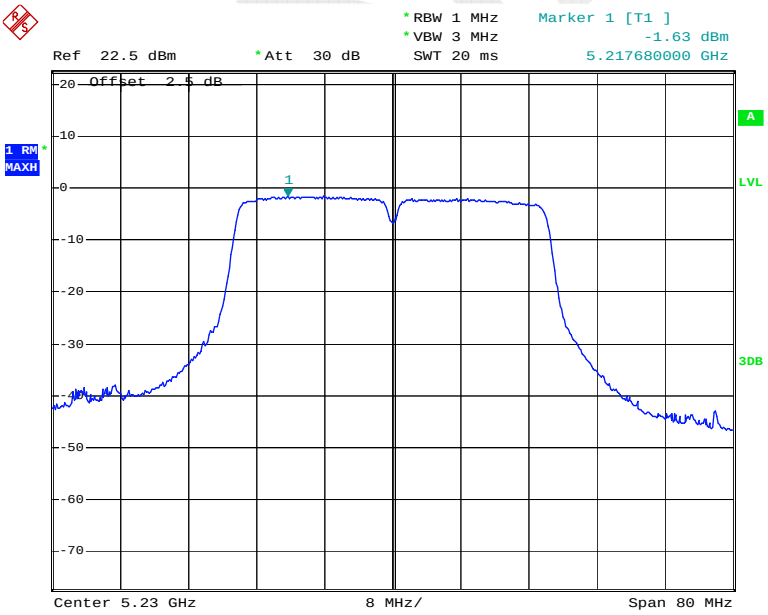


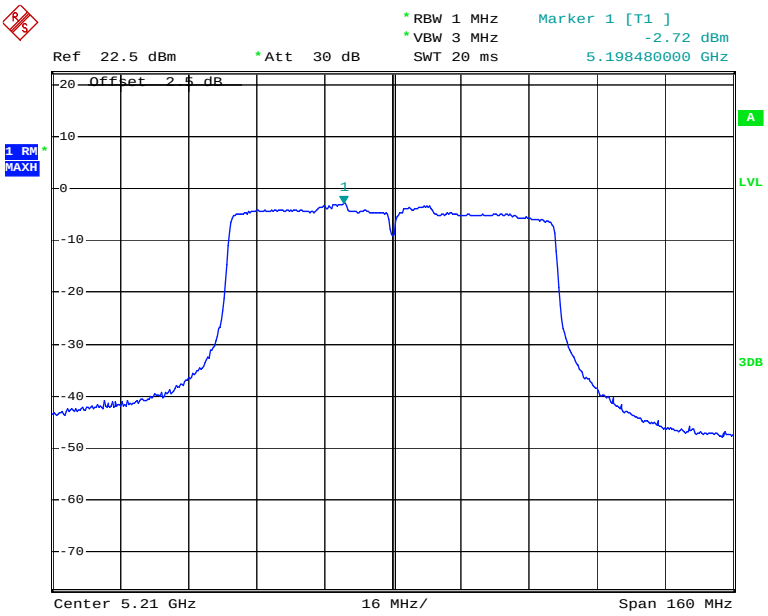
Date: 18.NOV.2014 12:36:31

Antenna0 802.11n ht40 High Channel



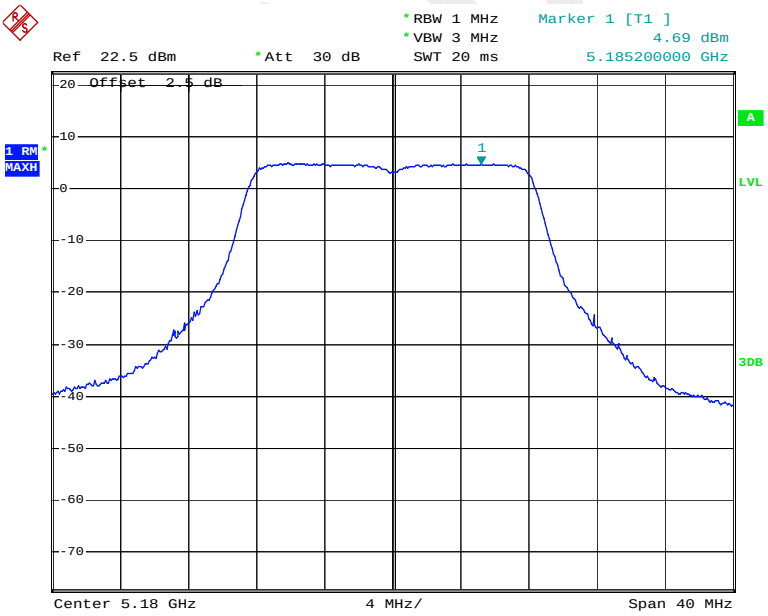
Date: 18.NOV.2014 12:38:24

Antenna0 802.11n ac80 Low Channel



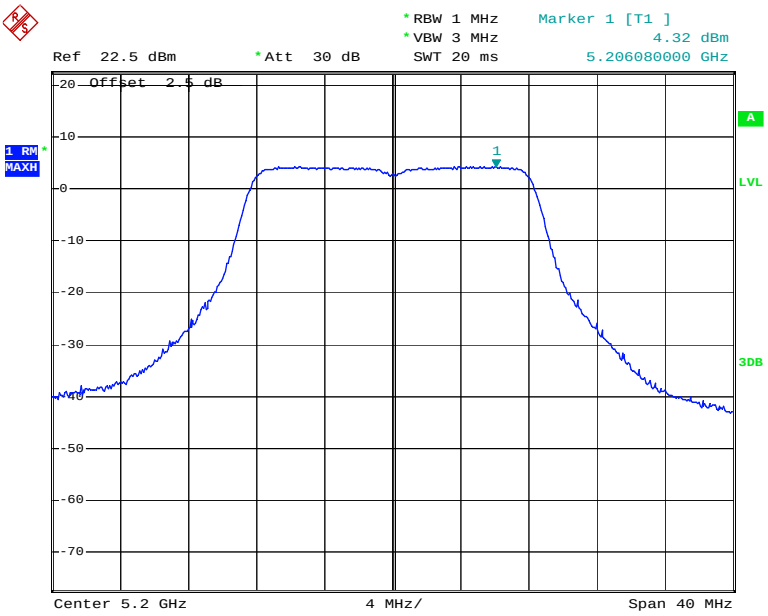
Date: 18.NOV.2014 12:34:45

Antenna1 802.11a Low Channel



Date: 17.NOV.2014 20:58:26

Antenna1 802.11a Middle Channel



Date: 17.NOV.2014 20:59:25

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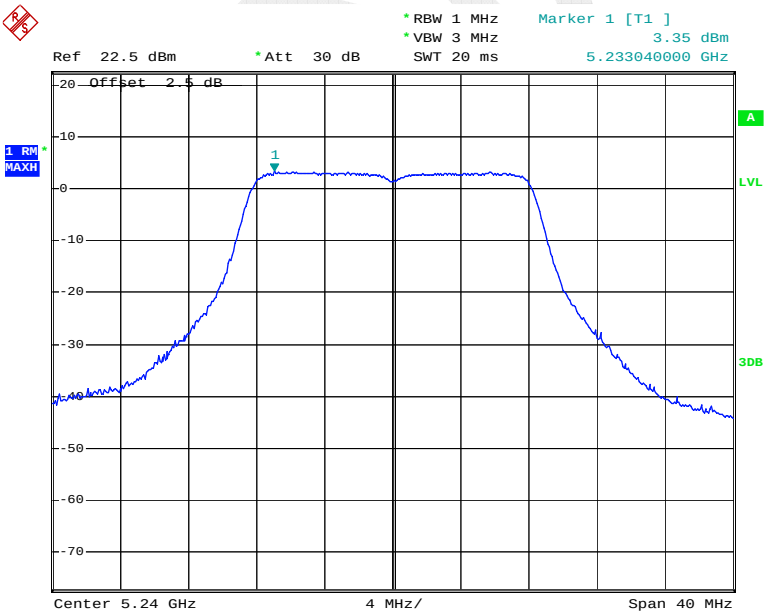

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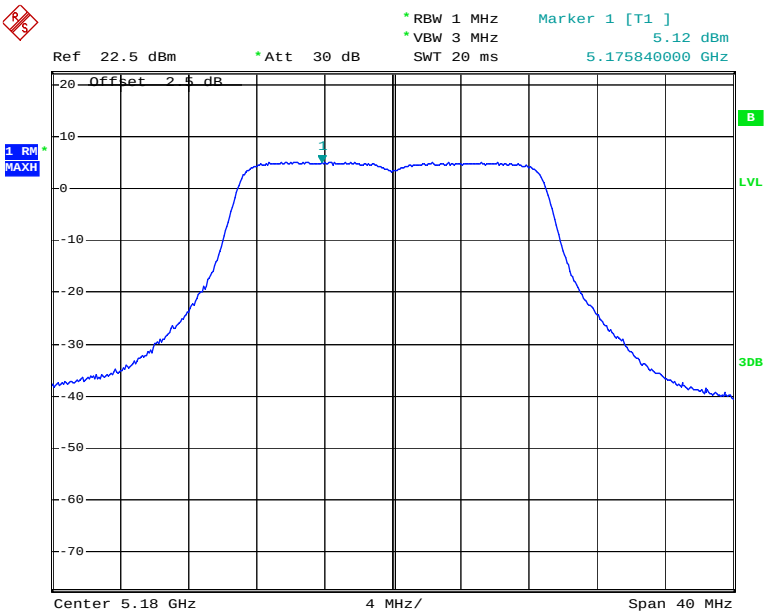

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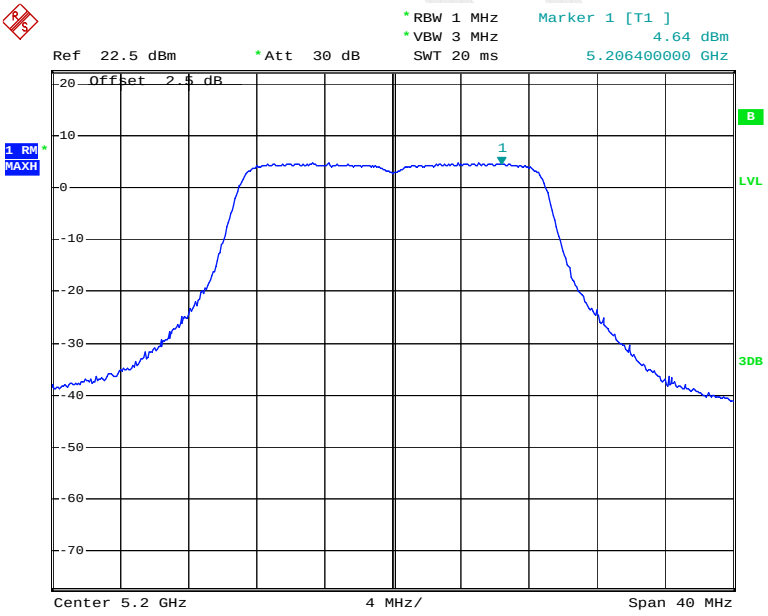
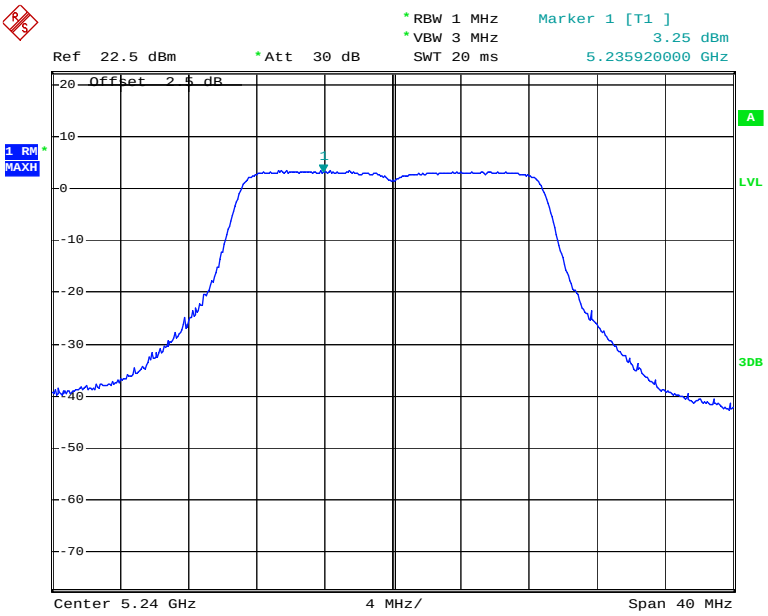
Antenna1 802.11n ht20 Middle Channel



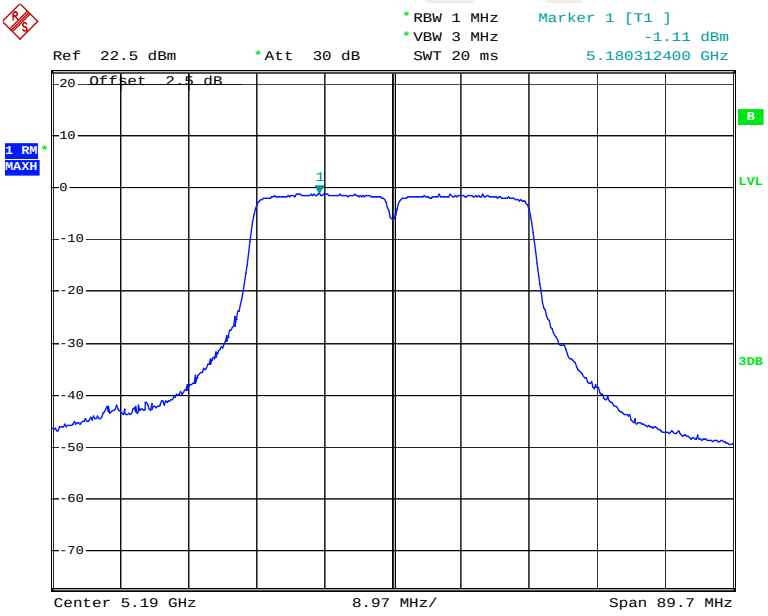
Date: 17.NOV.2014 20:51:17

Antenna1 802.11n ht20 High Channel



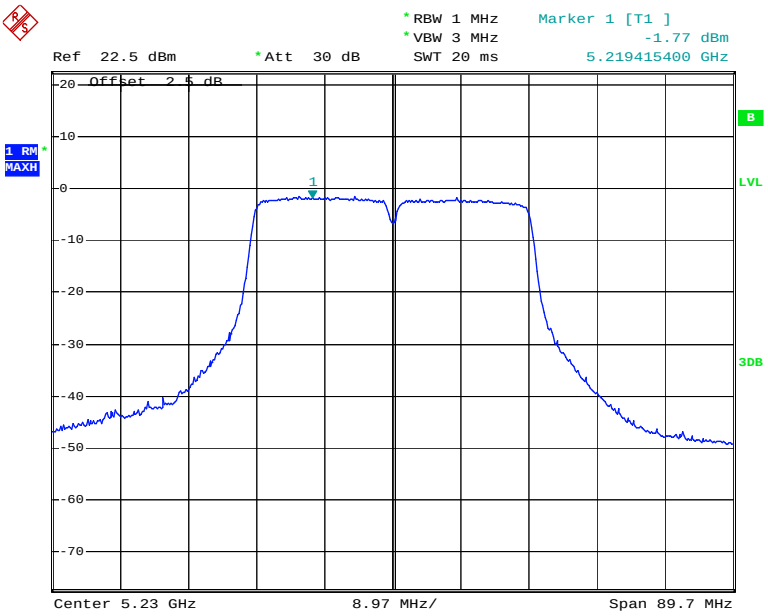
Date: 17.NOV.2014 20:53:26

Antenna1 802.11n ht40 Low Channel



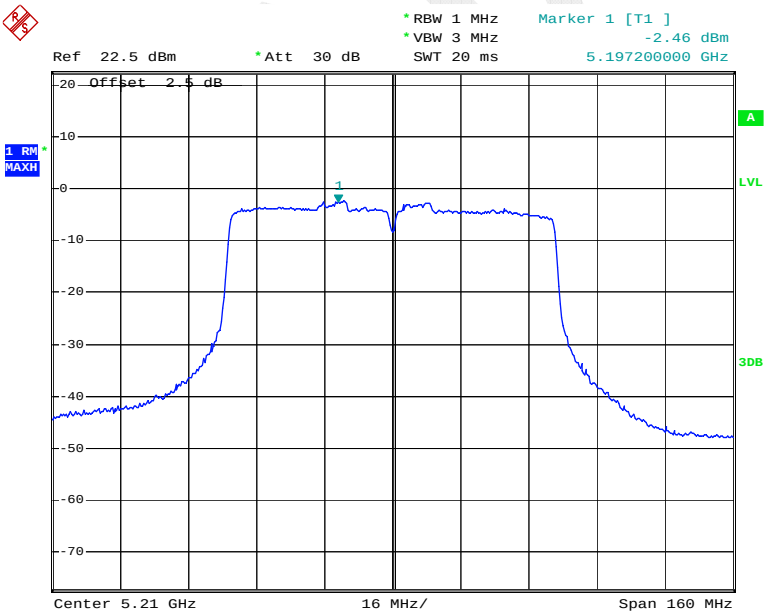
Date: 17.NOV.2014 20:43:00

Antenna1 802.11n ht40 High Channel



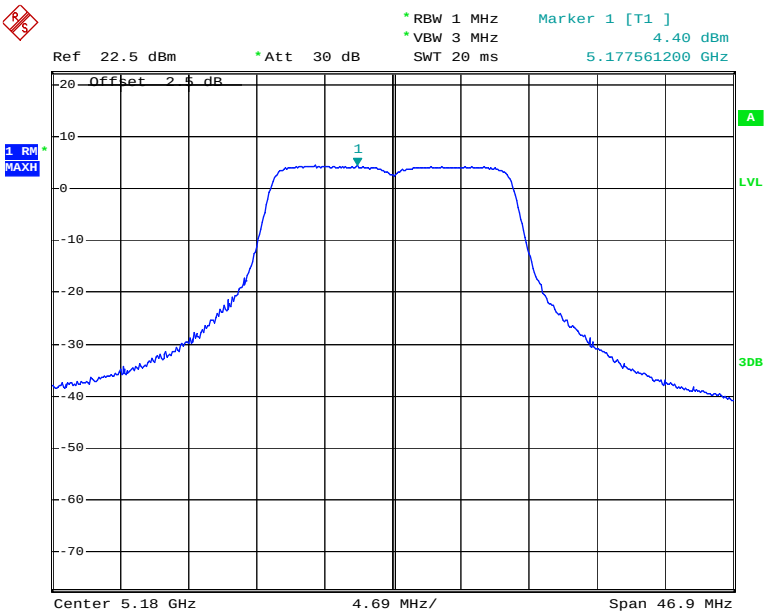
Date: 17.NOV.2014 20:43:39

Antenna1 802.11n ac80 Low Channel



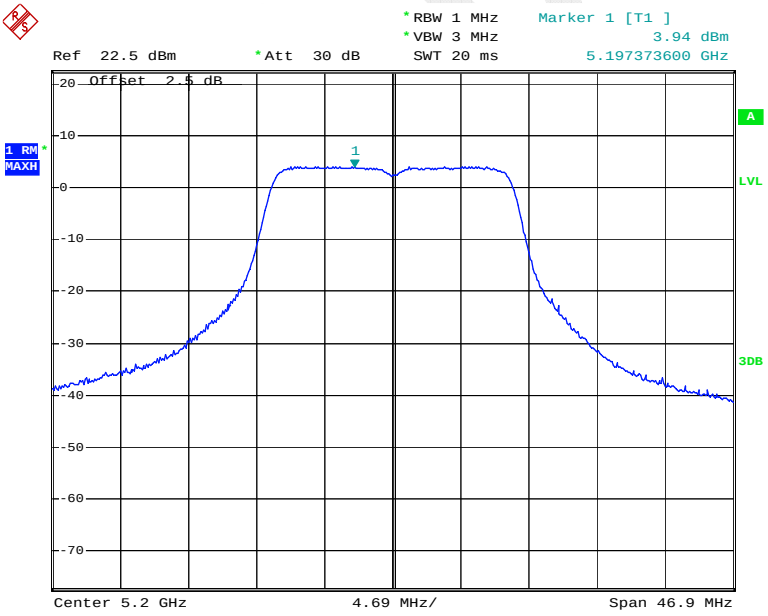
Date: 17.NOV.2014 19:27:45

Antenna2 802.11a Low Channel



Date: 13.NOV.2014 22:29:20

Antenna2 802.11a Middle Channel



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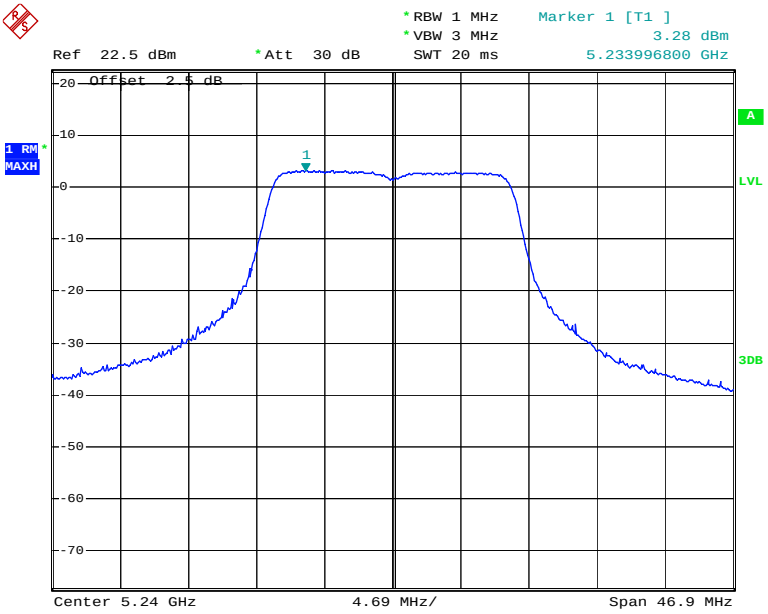
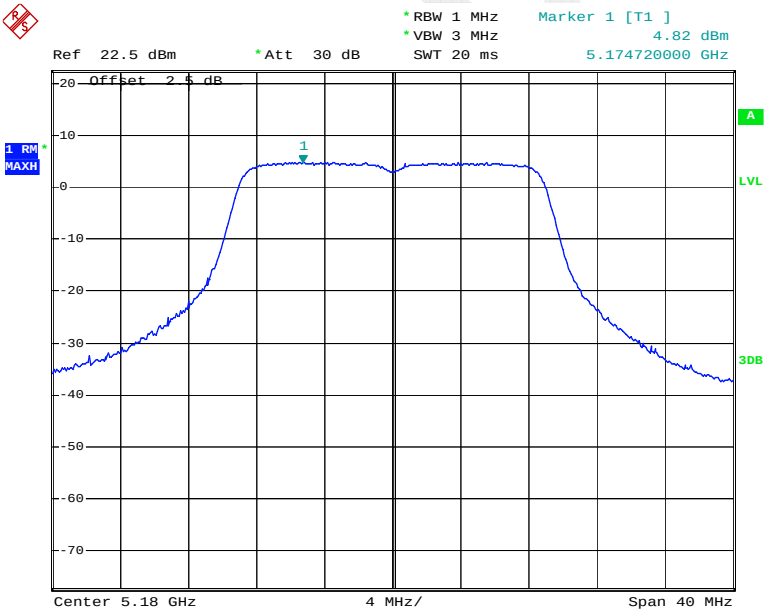
Antenna2 802.11a High Channel



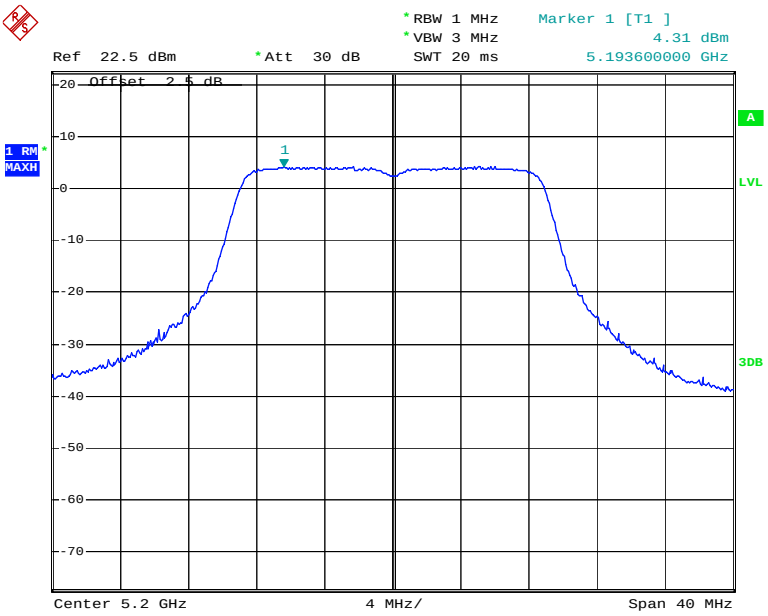
Date: 13.NOV.2014 22:28:37

Antenna2 802.11n ht20 Low Channel



Date: 13.NOV.2014 23:06:43

Antenna2 802.11n ht20 Middle Channel



Date: 13.NOV.2014 23:07:13

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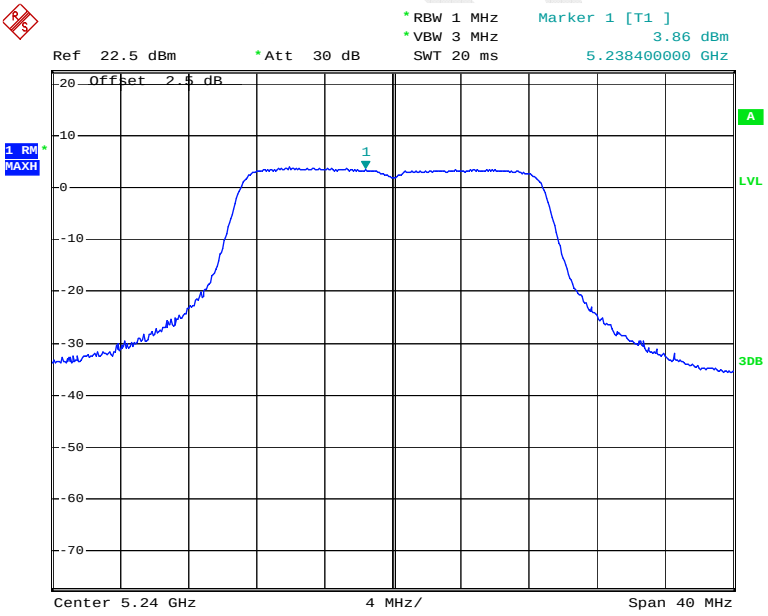
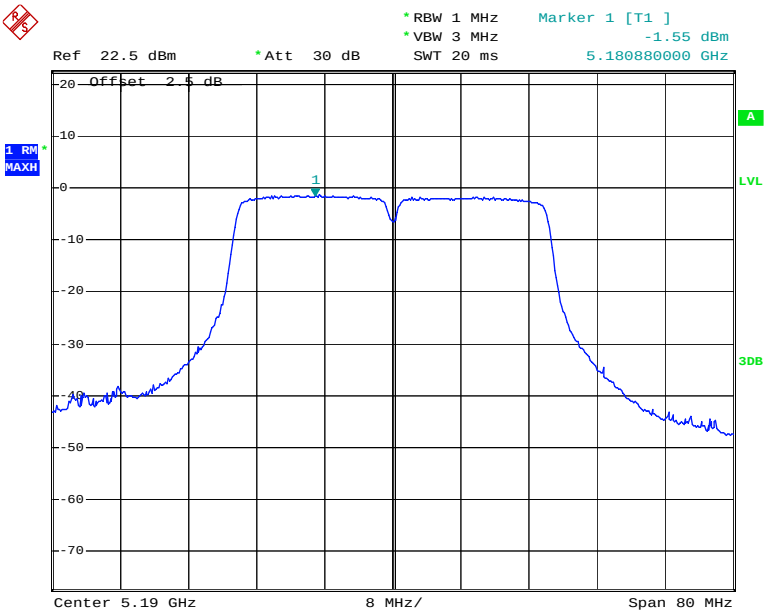


Date: 13.NOV.2014 23:07:43

Antenna2 802.11n ht40 Low Channel



Date: 13.NOV.2014 23:44:08

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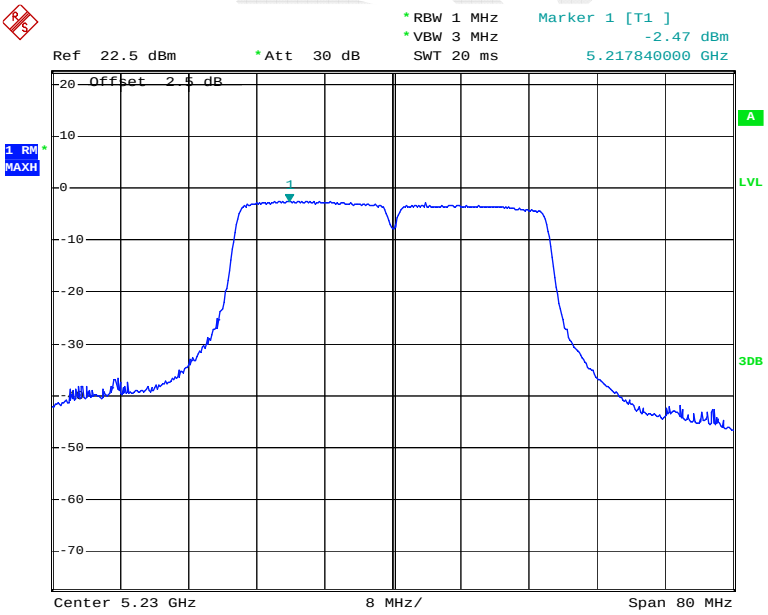
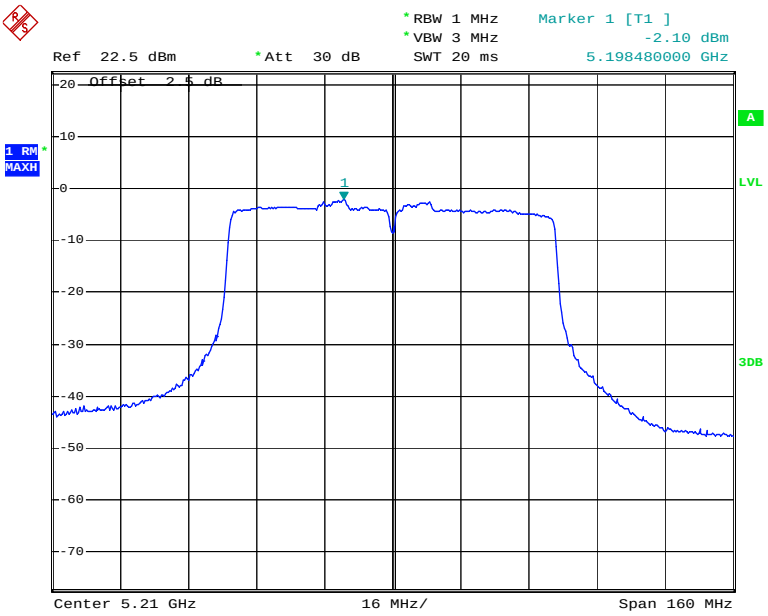


Date: 13.NOV.2014 23:43:44

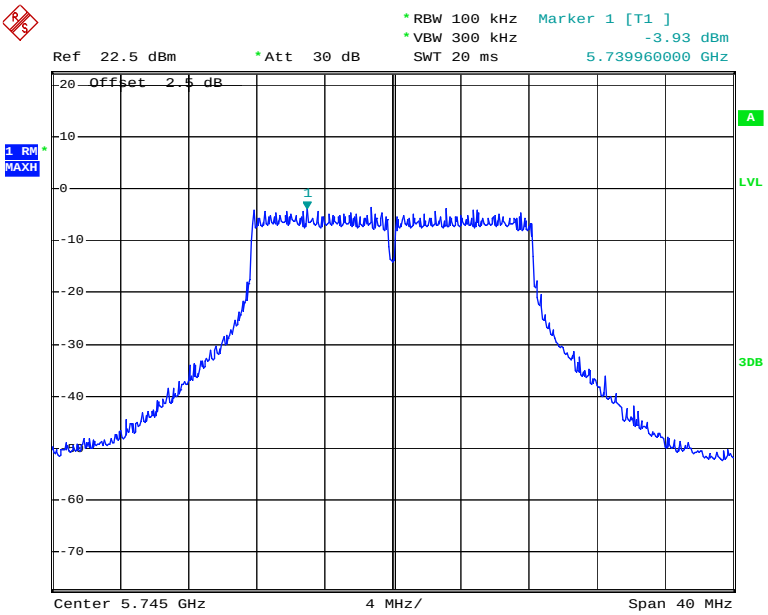
Antenna2 802.11n ac80 Low Channel



Date: 17.NOV.2014 19:31:04

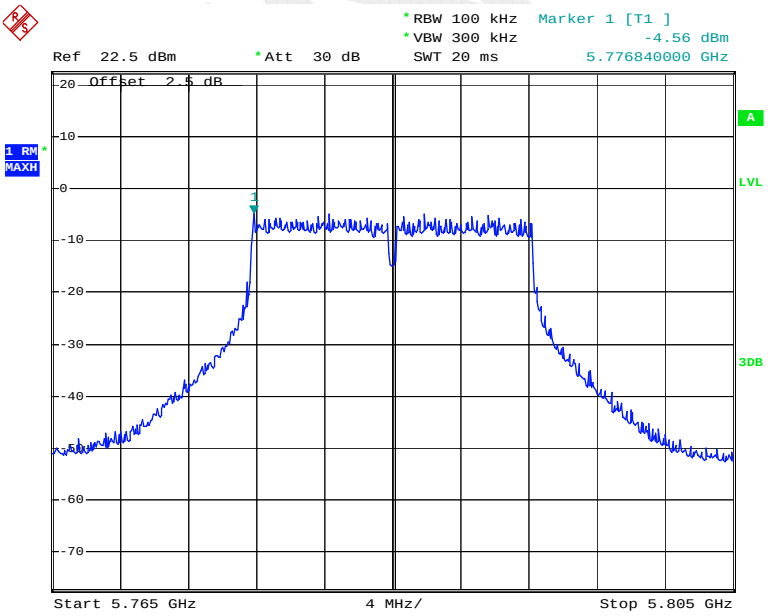
5725MHz-5850MHz:

Antenna0 802.11a Low Channel



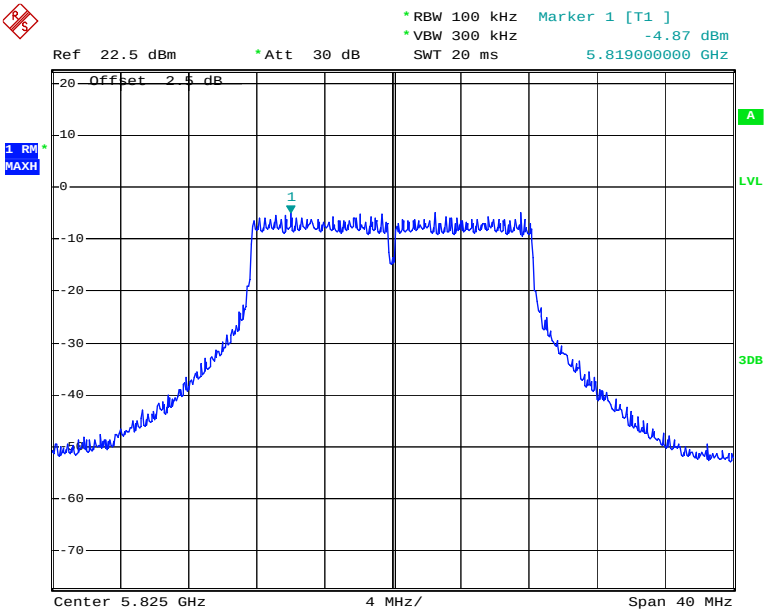
Date: 23.NOV.2014 09:04:03

Antenna0 802.11a Middle Channel



Date: 23.NOV.2014 09:08:12

Antenna0 802.11a High Channel



Date: 23.NOV.2014 09:09:49

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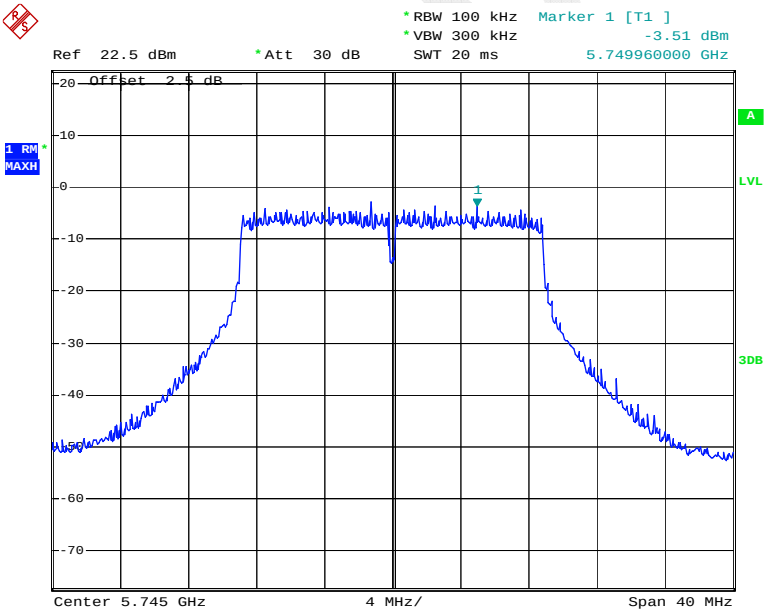
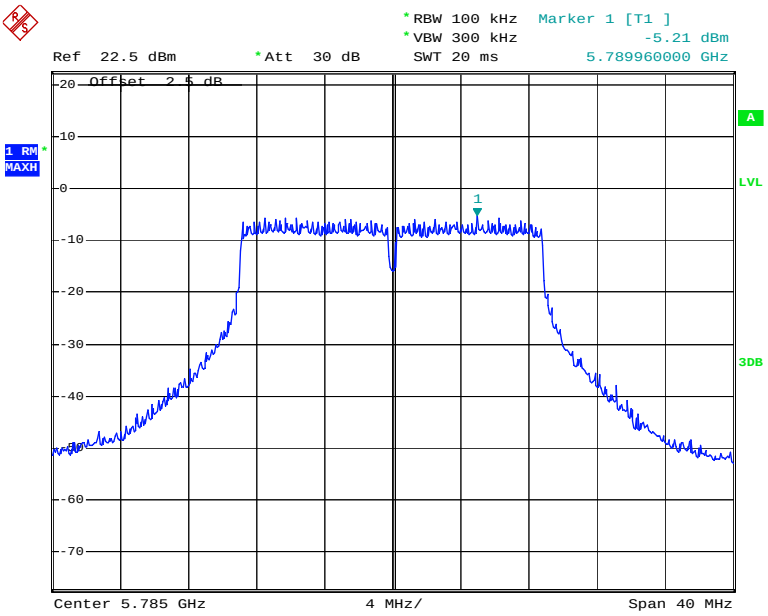


Date: 23.NOV.2014 09:33:25

Antenna0 802.11n ht20 Middle Channel



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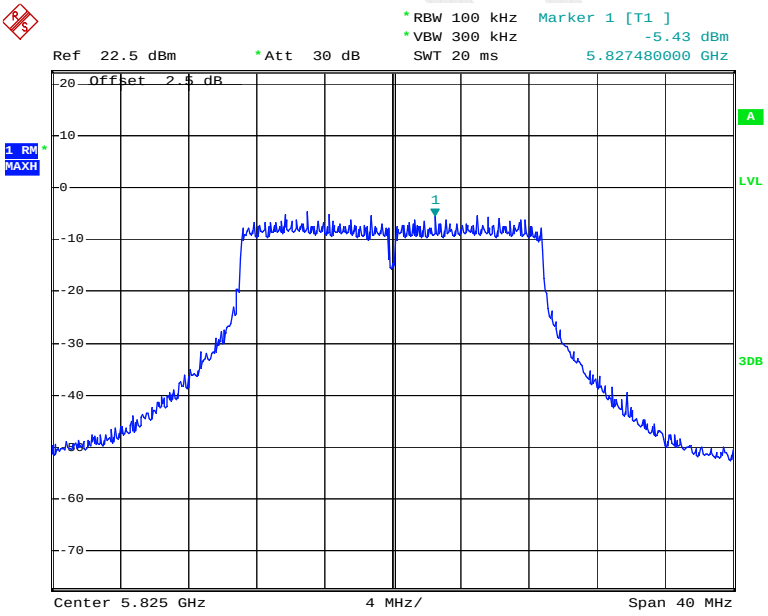
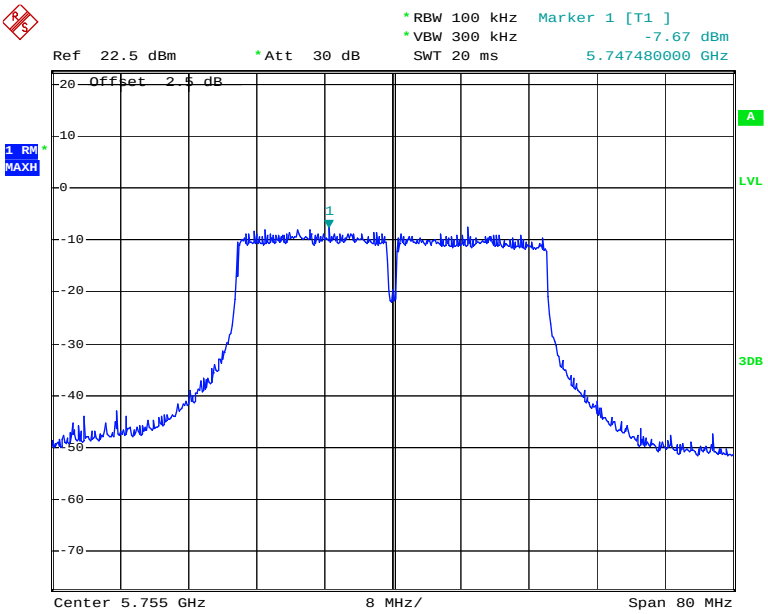


Date: 23.NOV.2014 09:29:50

Antenna0 802.11n ht40 Low Channel



Date: 23.NOV.2014 11:07:39

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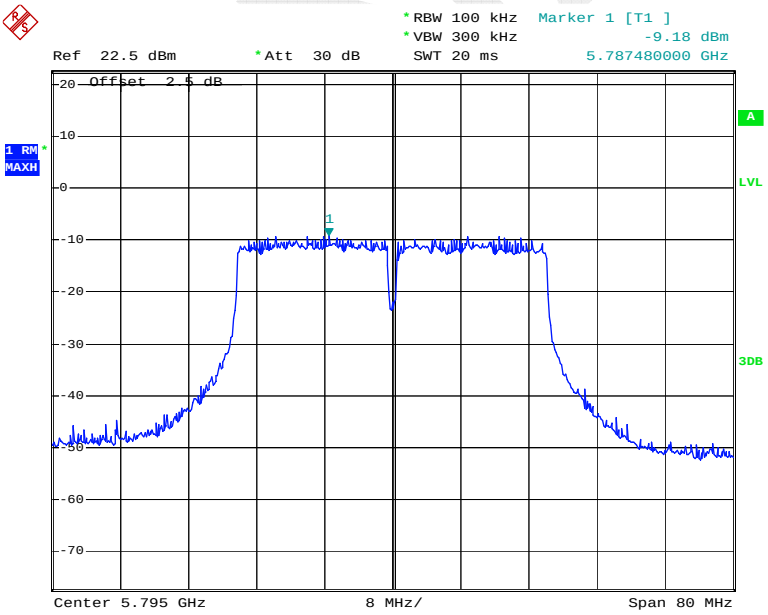

Date: 23.NOV.2014 11:09:22

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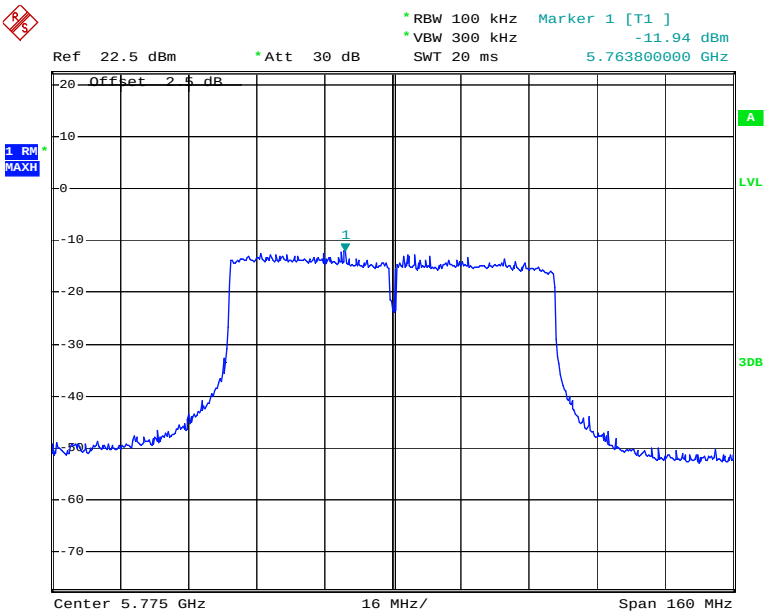
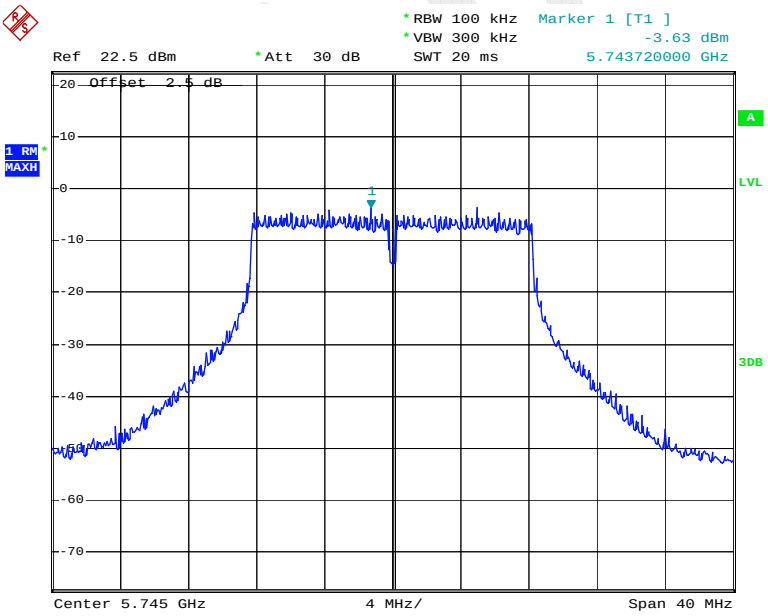


Date: 23.NOV.2014 11:24:33

Antenna1 802.11a Low Channel



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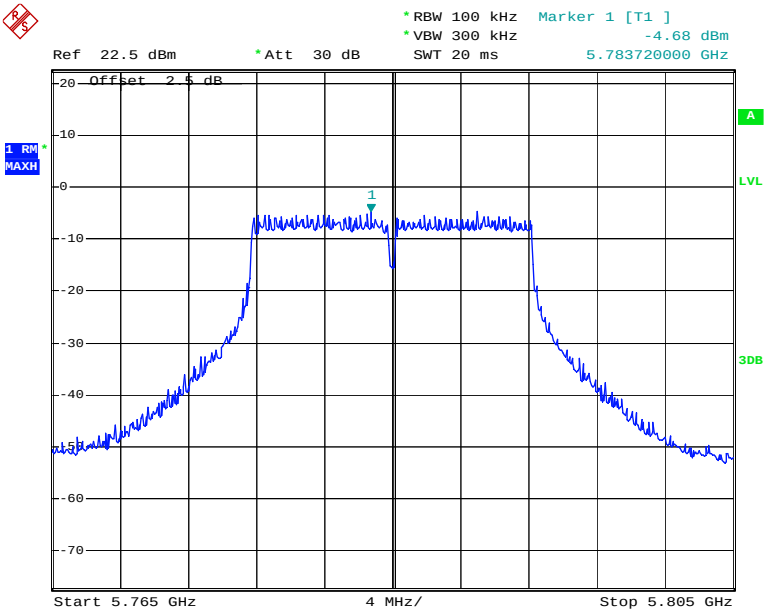
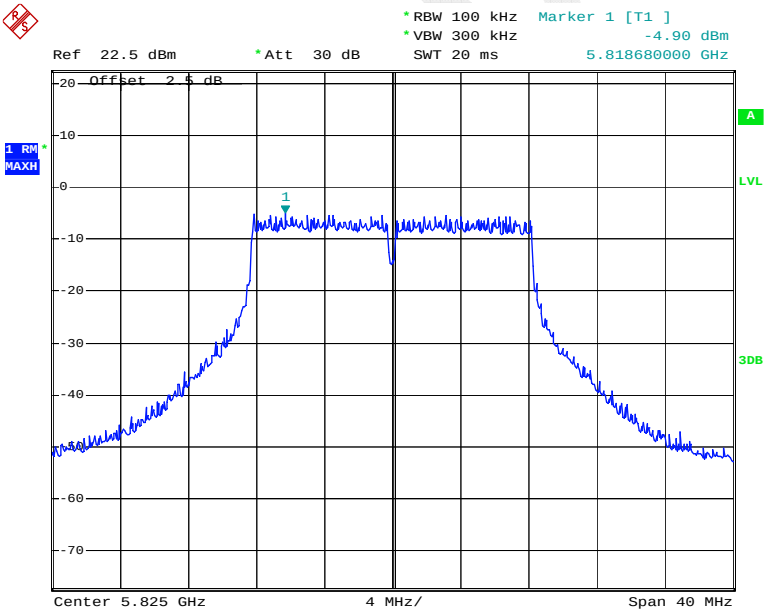


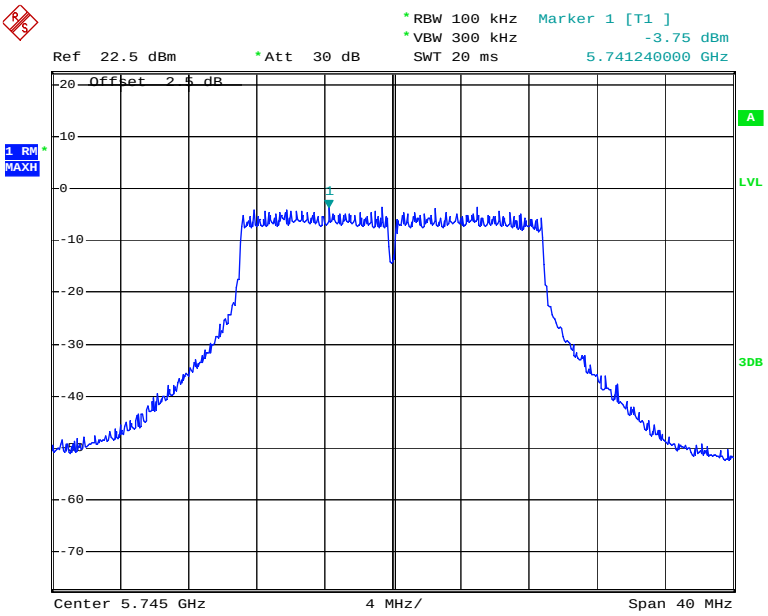
Date: 23.NOV.2014 09:17:55

Antenna1 802.11a High Channel



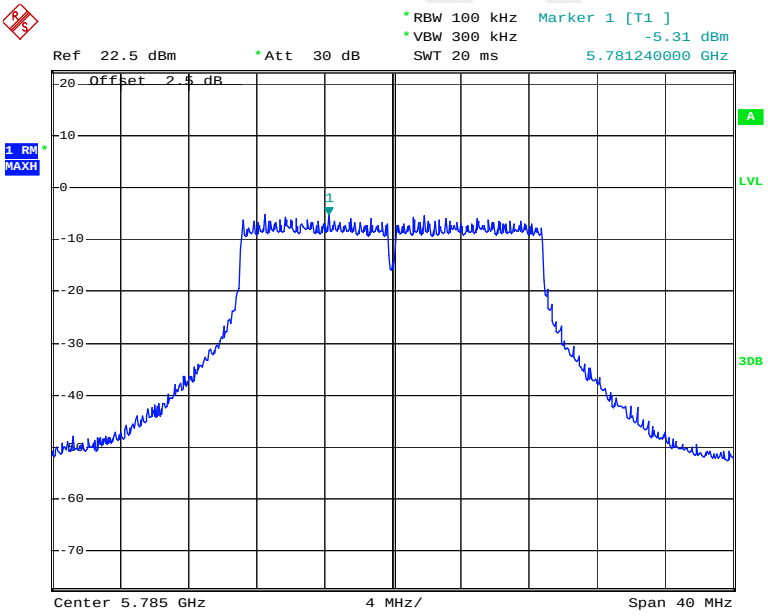
Date: 23.NOV.2014 09:21:23

Antenna1 802.11n ht20 Low Channel



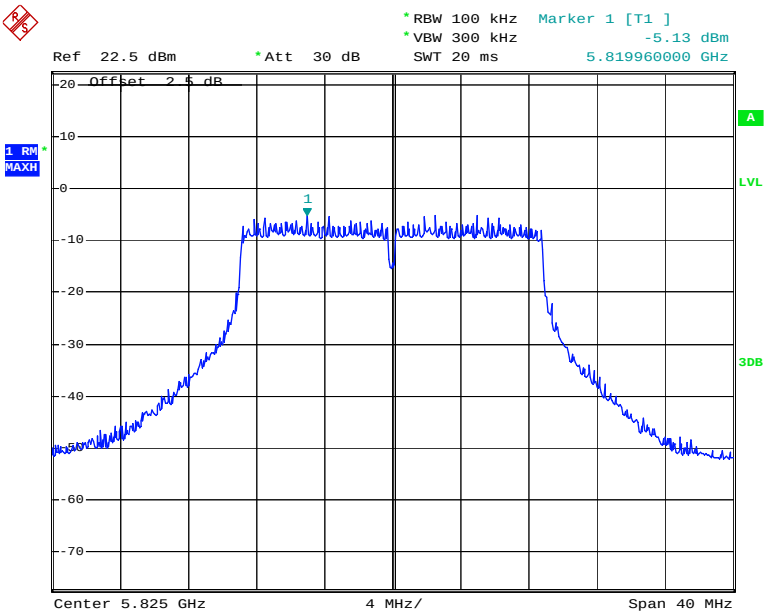
Date: 23.NOV.2014 09:43:51

Antenna1 802.11n ht20 Middle Channel



Date: 23.NOV.2014 09:41:59

Antenna1 802.11n ht20 High Channel



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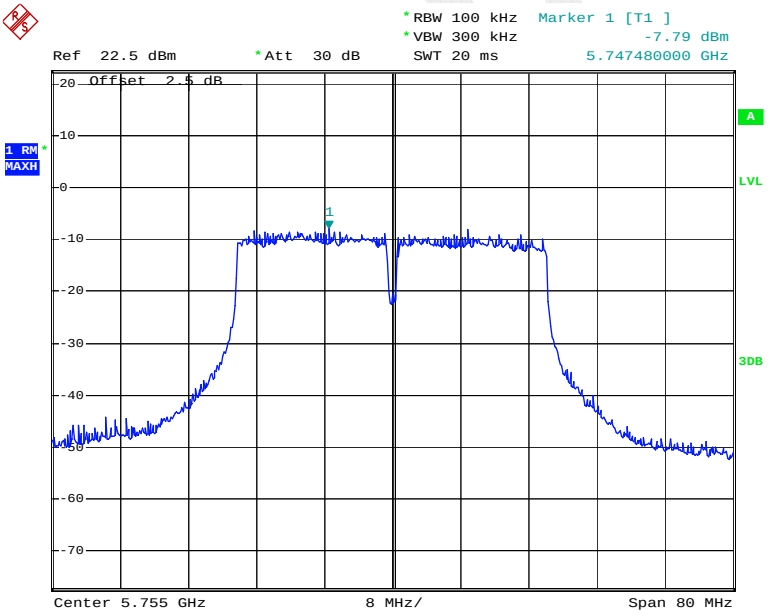
Antenna1 802.11n ht40 Low Channel



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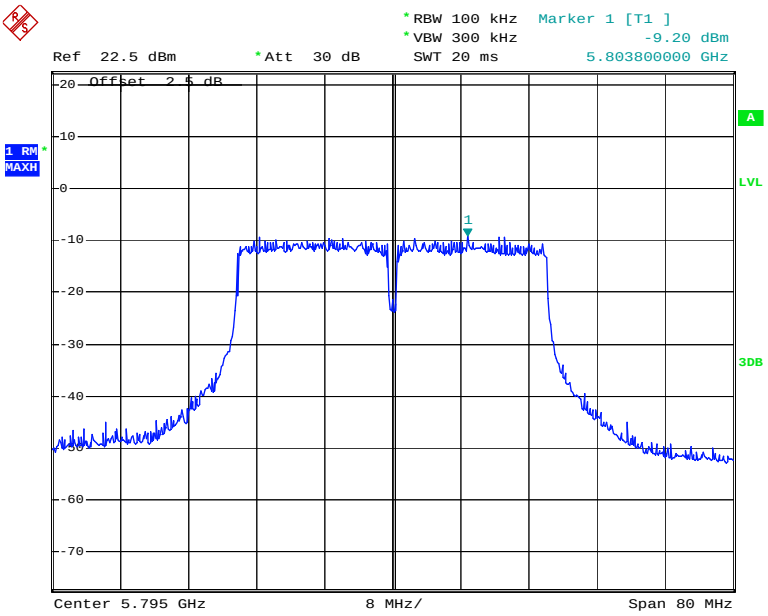
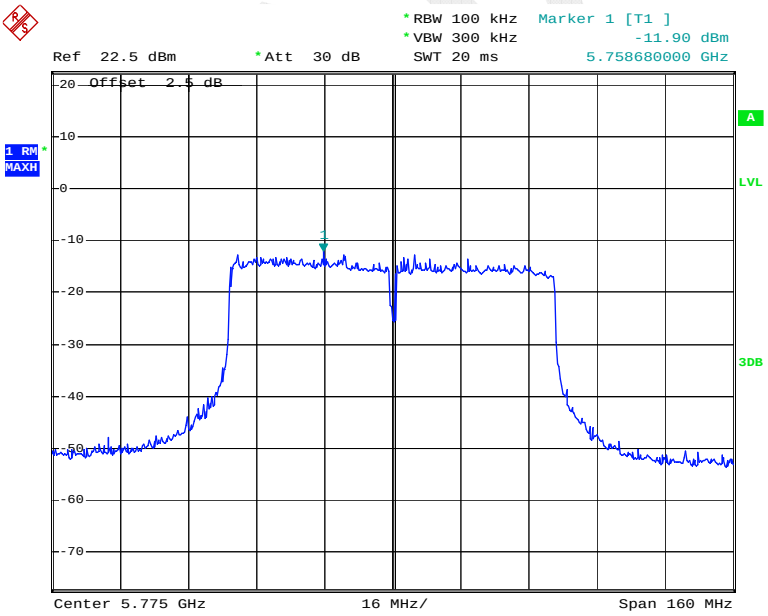
Antenna1 802.11n ht40 High Channel



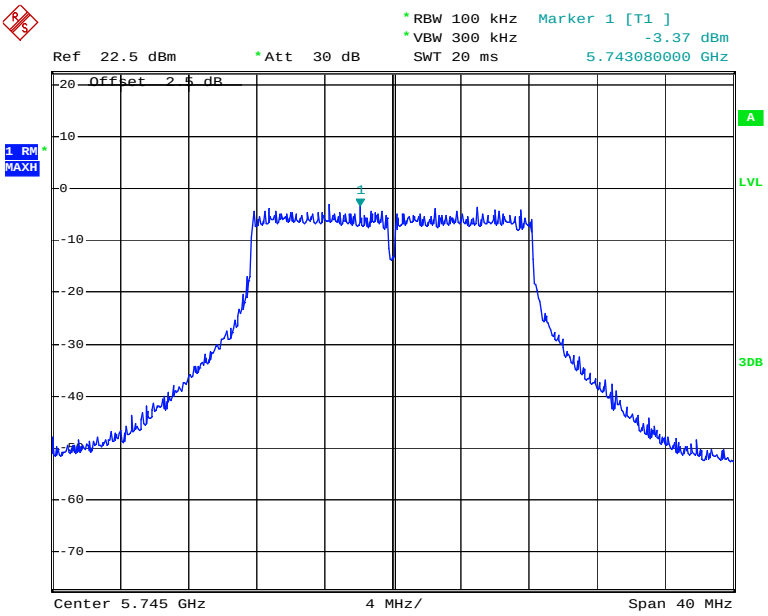
Date: 23.NOV.2014 11:14:34

Antenna1 802.11n ac80 Low Channel



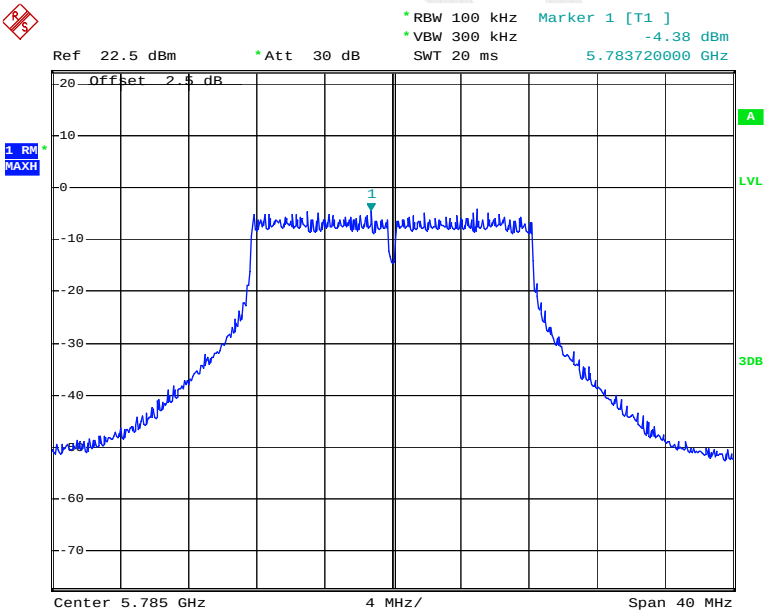
Date: 23.NOV.2014 11:25:55

Antenna2 802.11a Low Channel



Date: 23.NOV.2014 09:24:05

Antenna2 802.11a Middle Channel



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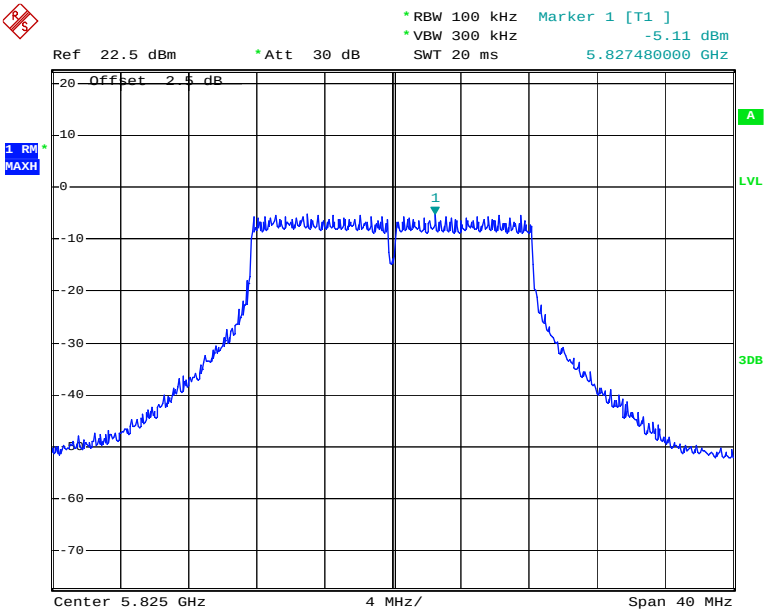

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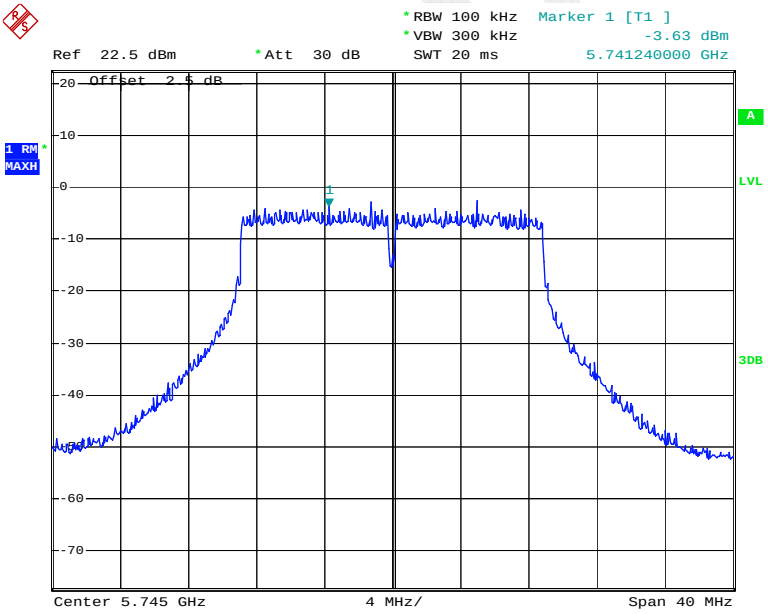
Antenna2 802.11n ht20 Low Channel



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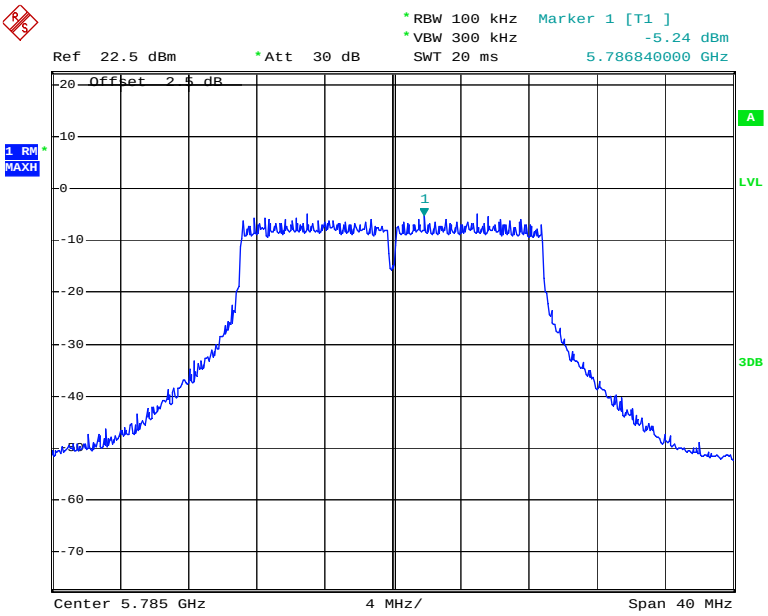
Antenna2 802.11n ht20 Middle Channel



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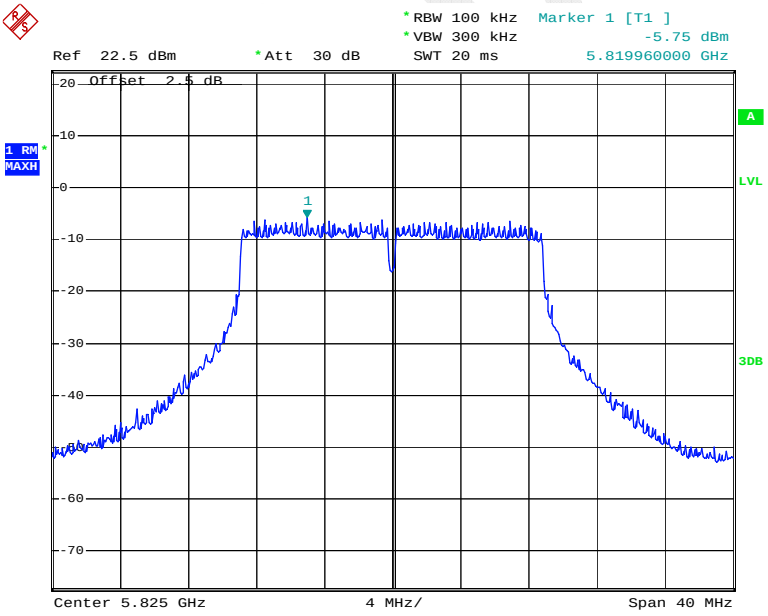
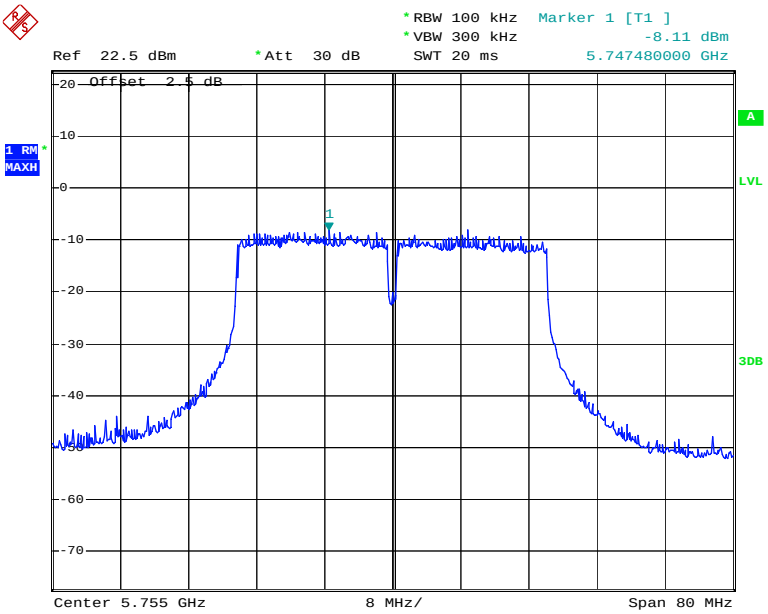
Antenna2 802.11n ht20 High Channel



Date: 23.NOV.2014 09:49:22

Antenna2 802.11n ht40 Low Channel



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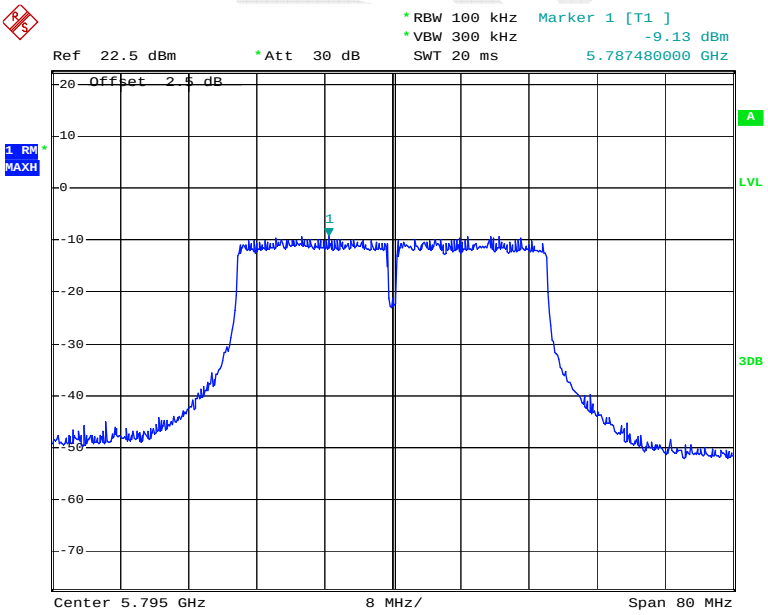
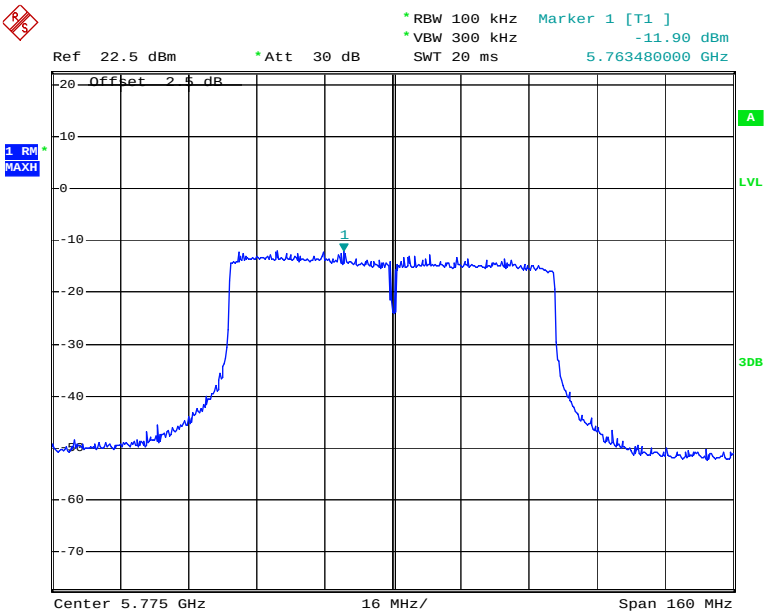


Date: 23.NOV.2014 11:19:09

Antenna2 802.11n ac80 Low Channel



Date: 23.NOV.2014 11:28:26

******* END OF REPORT *******