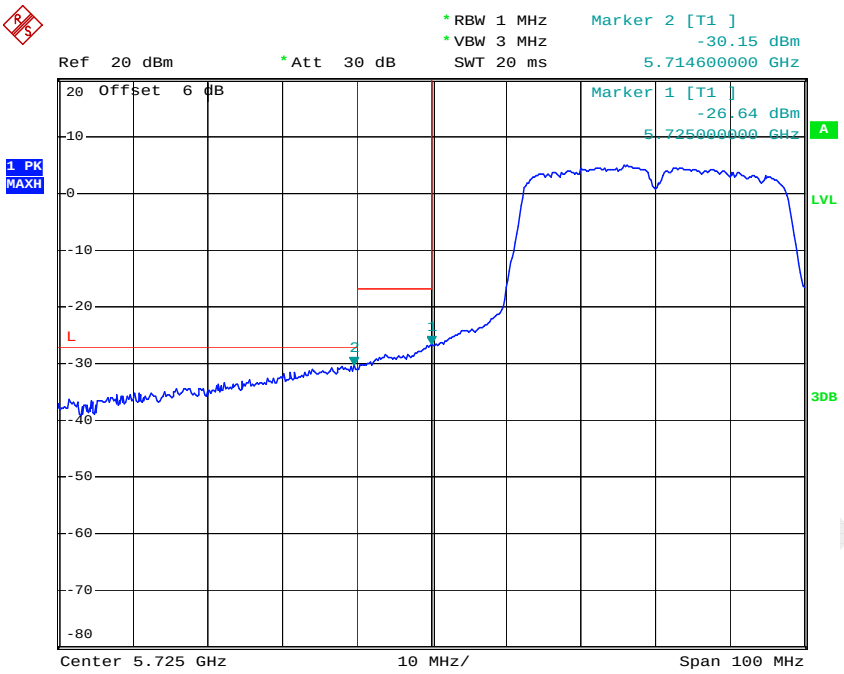
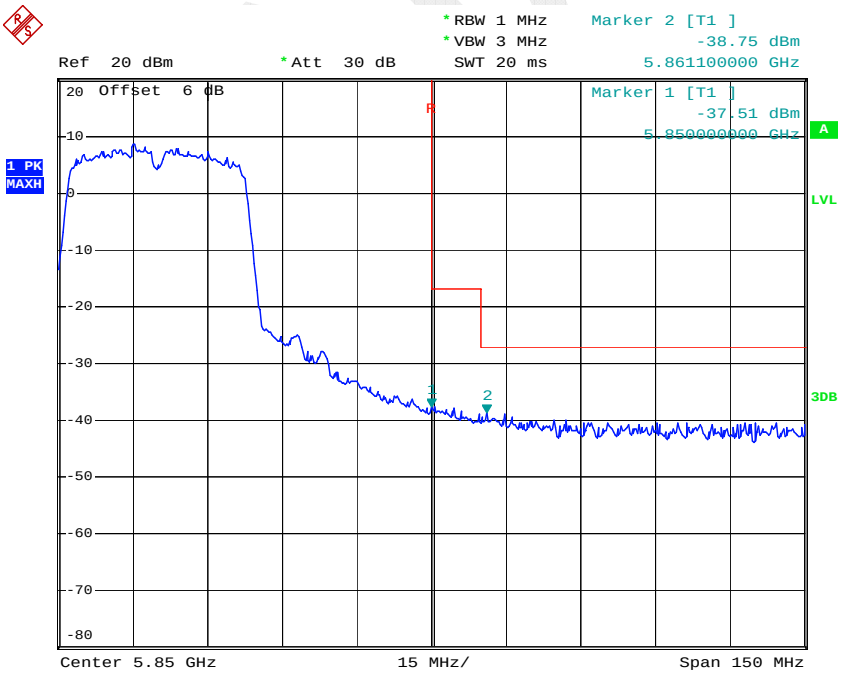
802.11n ht40 Band Edge, Left Side– Chain1



Date: 25.MAY.2015 12:48:54

802.11n ht40 Band Edge, Right Side– Chain1



Date: 25.MAY.2015 14:09:56

FCC §15.407(a) –EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

Applicable Standard

15.407(a) (e)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

*** 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:	25.3 °C
Relative Humidity:	56 %
ATM Pressure:	100.1 kPa

The testing was performed by Dean Liu on 2015-05-25.

Test Result: Pass.

Please refer to the following tables and plots.

Test mode: Transmitting

5150MHz-5250MHz:

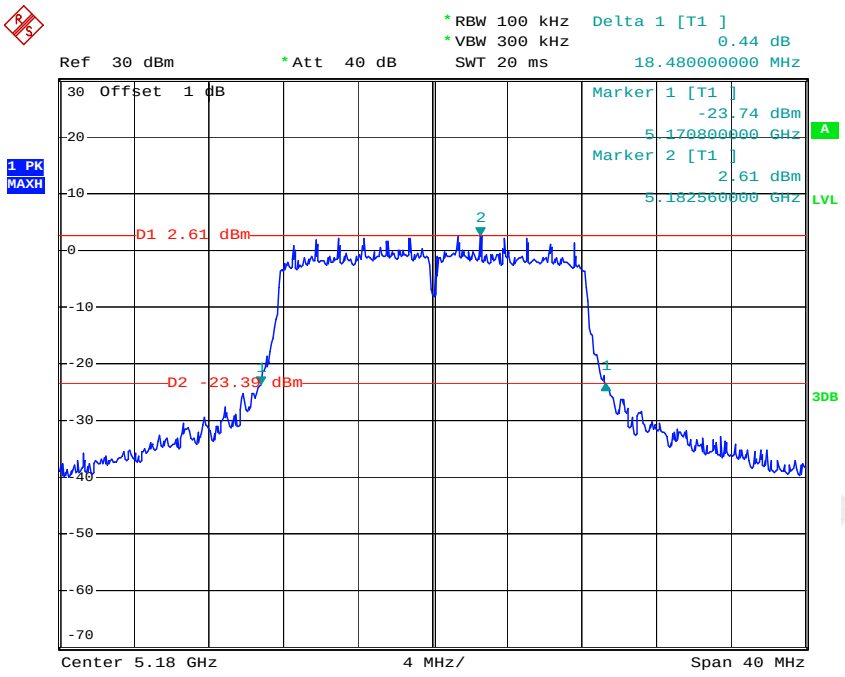
Mode	Channel	Frequency MHz	26 dB Bandwidth (MHz)		99% occupied bandwidth (MHz)		Result
			Chain0	Chain1	Chain0	Chain1	
802.11a	Low	5180	18.48	18.48	16.4	16.4	PASS
	Middle	5200	18.48	18.48	16.4	16.4	PASS
	High	5240	18.48	18.48	16.4	16.4	PASS
802.11n20	Low	5180	19.20	18.96	17.36	17.36	PASS
	Middle	5200	19.12	19.12	17.44	17.44	PASS
	High	5240	19.12	19.2	17.36	17.44	PASS
802.11n40	Low	5190	37.92	37.92	35.68	35.84	PASS
	High	5230	38.08	37.92	35.84	35.68	PASS

5725MHz-5850MHz:

Mode	Channel	Frequency MHz	26 dB Bandwidth (MHz)		6dB Bandwidth (MHz)		99% occupied bandwidth (MHz)		Result
			Chain0	Chain1	Chain0	Chain1	Chain0	Chain1	
802.11a	Low	5745	18.64	18.48	15.92	15.52	16.4	16.4	PASS
	Middle	5785	18.56	18.48	15.92	15.92	16.4	16.4	PASS
	High	5825	18.56	18.64	15.92	15.6	16.4	16.4	PASS
802.11n20	Low	5745	19.04	19.12	16.16	16.32	17.36	17.36	PASS
	Middle	5785	19.12	19.2	16.24	16.32	17.52	17.44	PASS
	High	5825	19.12	19.2	16.32	15.48	17.36	17.36	PASS
802.11n40	Low	5755	38.24	38.4	35.2	35.68	35.52	35.84	PASS
	High	5795	37.92	37.92	35.36	35.2	35.68	35.52	PASS

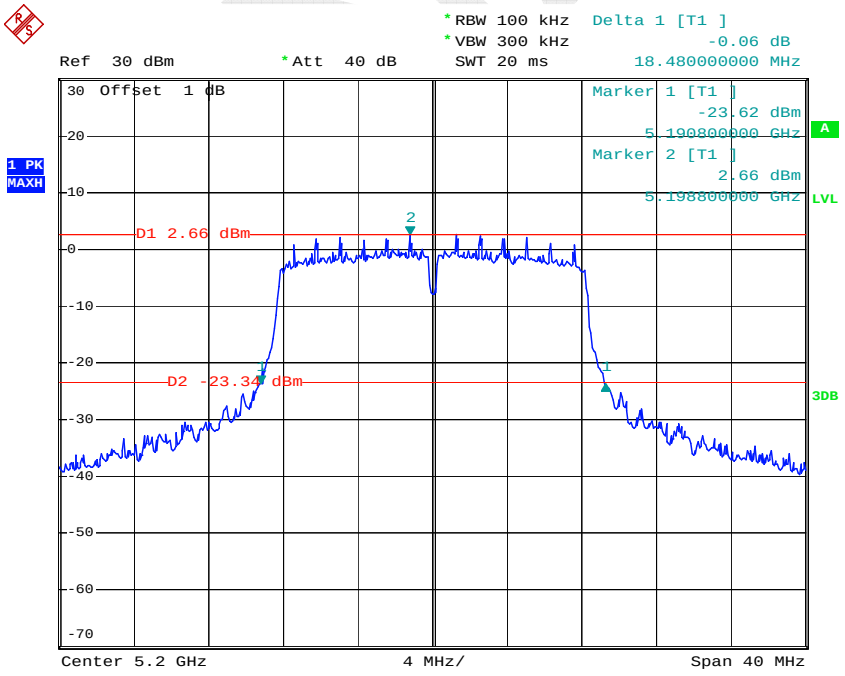
5150MHz-5250MHz: 26 dB Bandwidth

802.11a Low Channel – Chain0



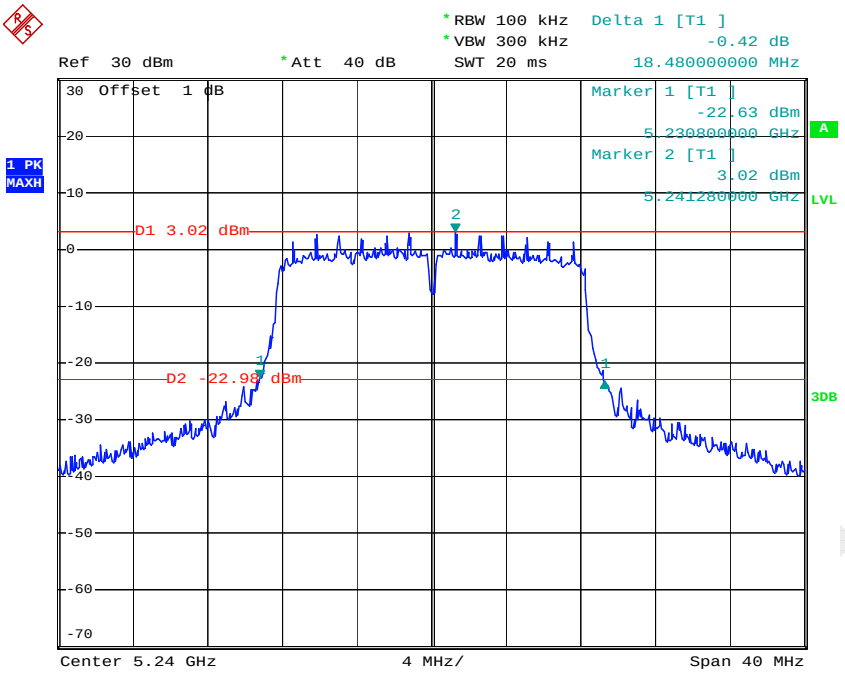
Date: 25.MAY.2015 14:44:29

802.11a Middle Channel – Chain0



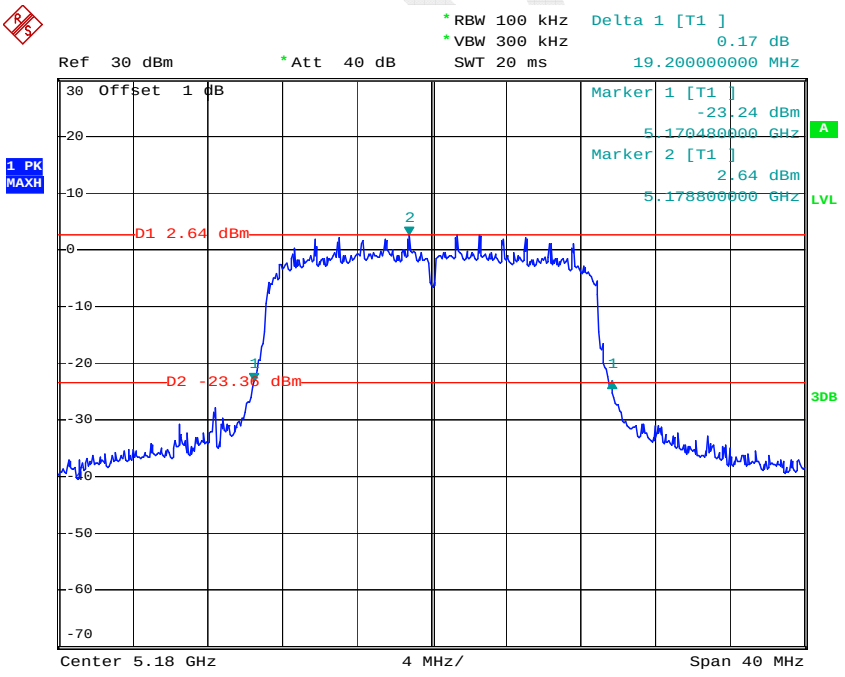
Date: 25.MAY.2015 14:49:38

802.11a High Channel – Chain0



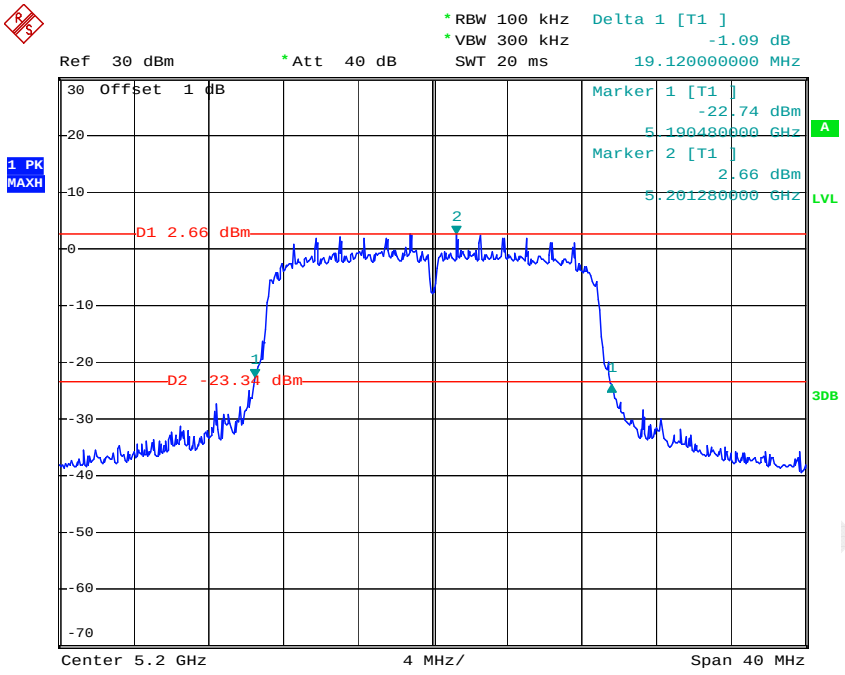
Date: 25.MAY.2015 14:51:41

802.11n ht20 Low Channel – Chain0



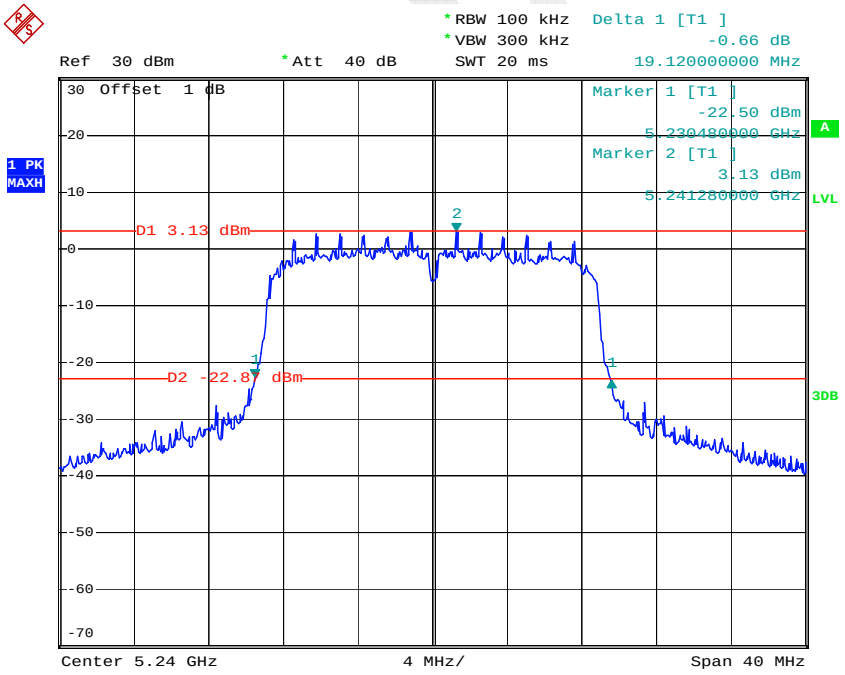
Date: 25.MAY.2015 15:01:23

802.11n ht20 Middle Channel – Chain0



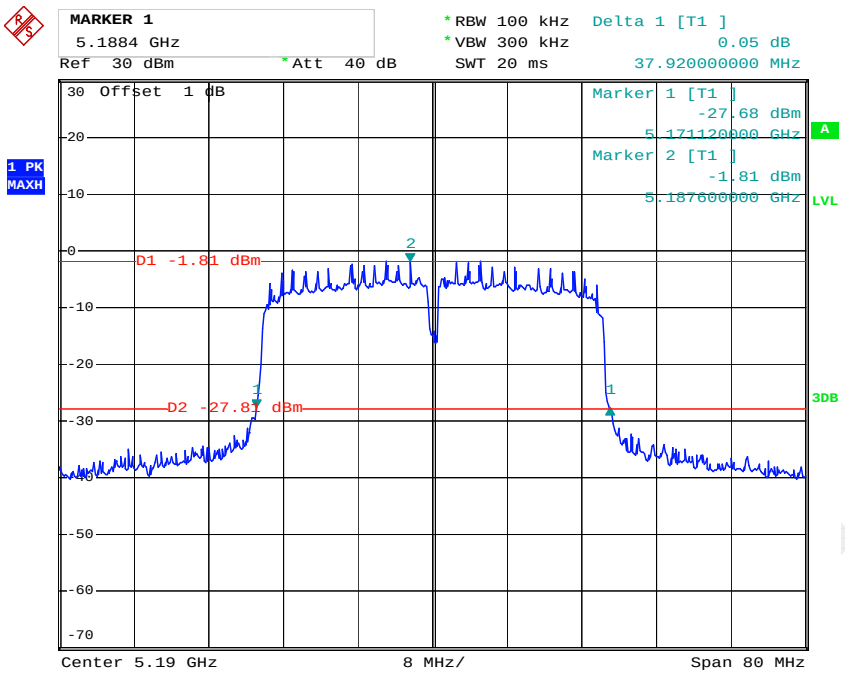
Date: 25.MAY.2015 14:59:33

802.11n ht20 High Channel – Chain0



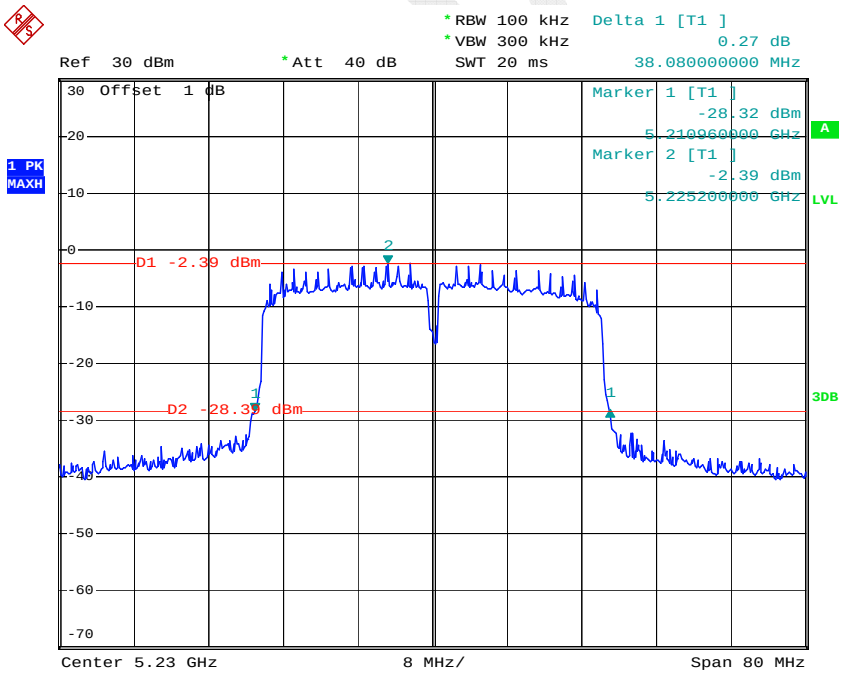
Date: 25.MAY.2015 14:57:16

802.11n ht40 Low Channel – Chain0



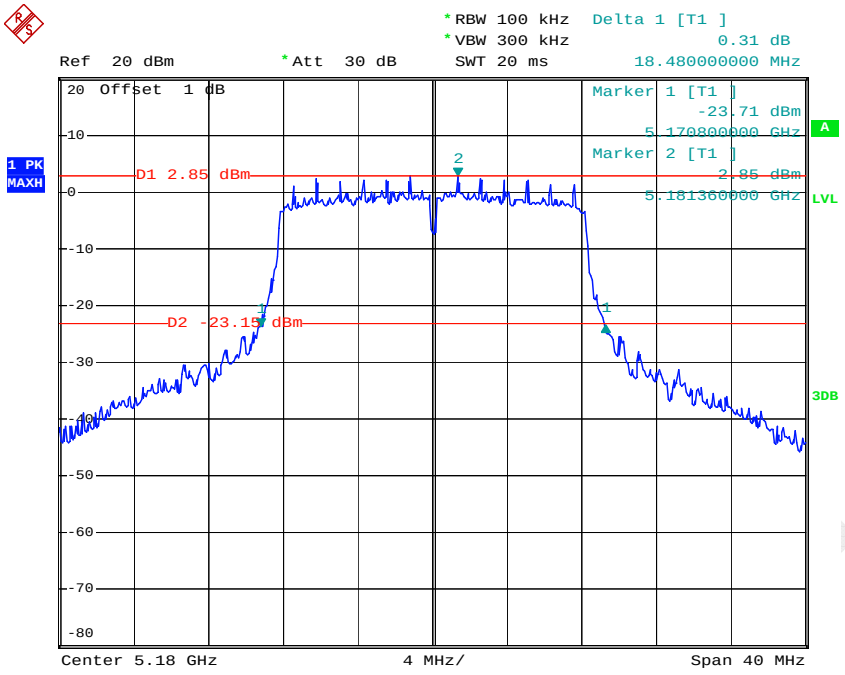
Date: 25.MAY.2015 15:17:20

802.11n ht40 High Channel – Chain0



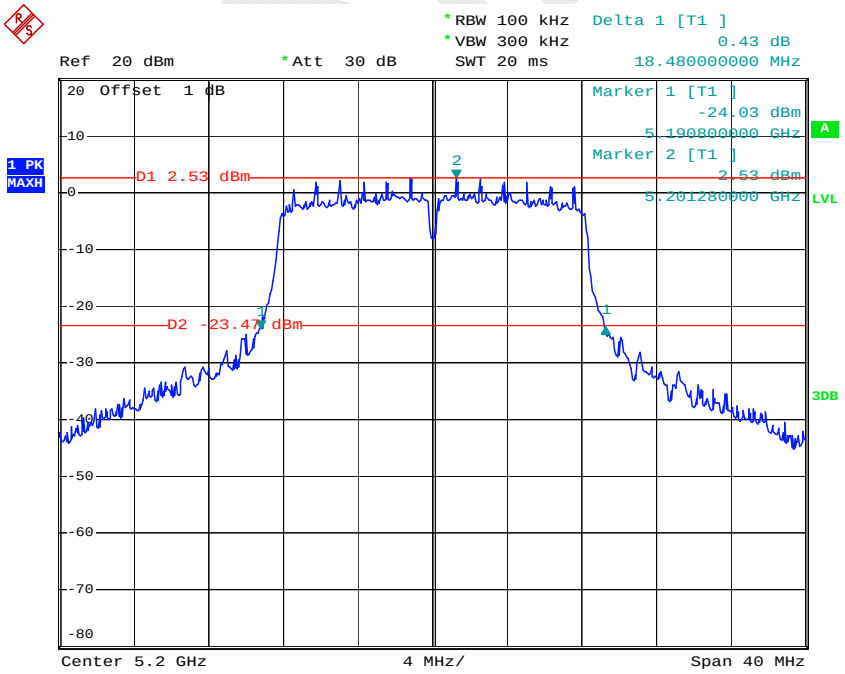
Date: 25.MAY.2015 15:19:57

802.11a Low Channel – Chain1



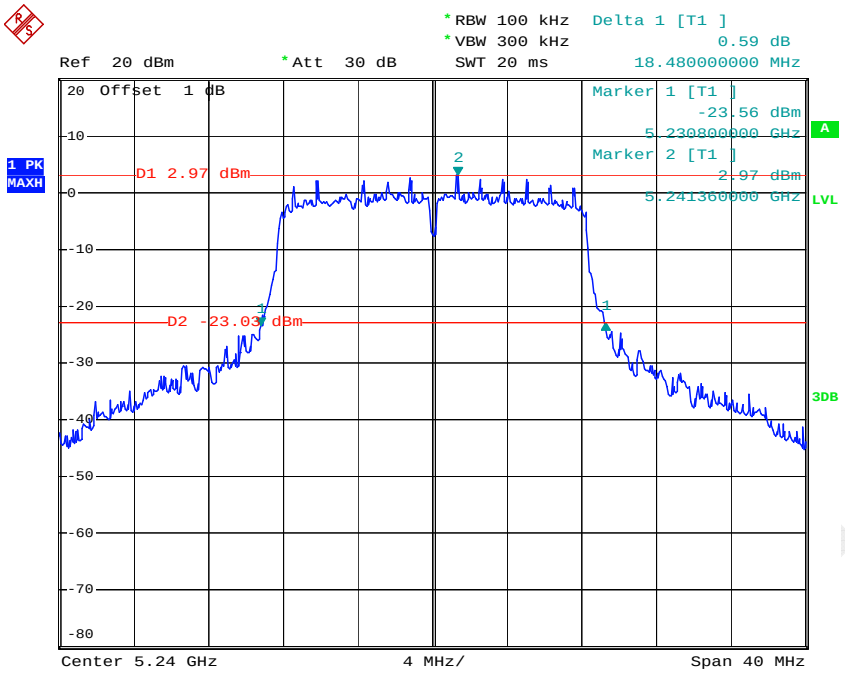
Date: 25.MAY.2015 11:11:55

802.11a Middle Channel – Chain1



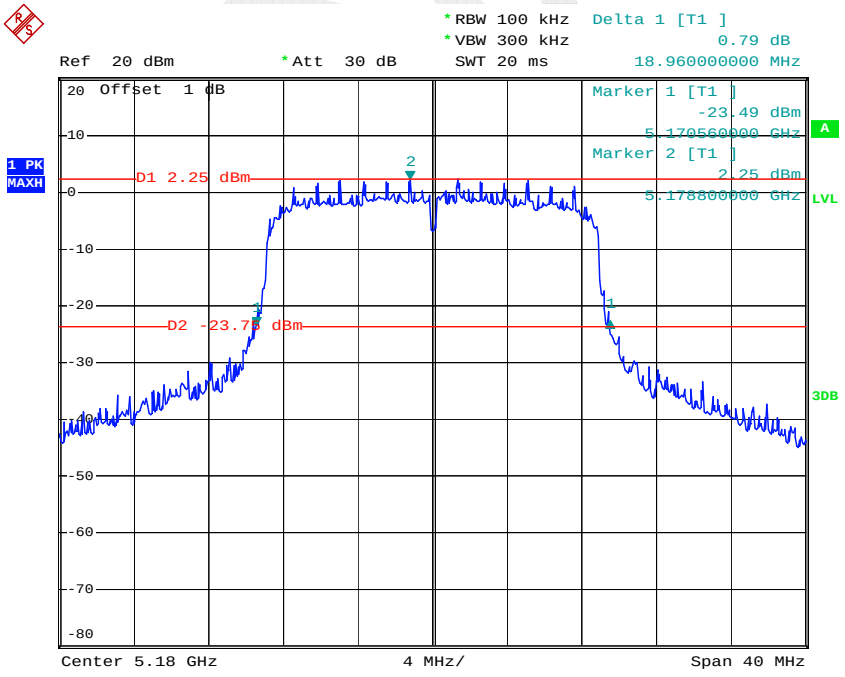
Date: 25.MAY.2015 11:14:19

802.11a High Channel – Chain1



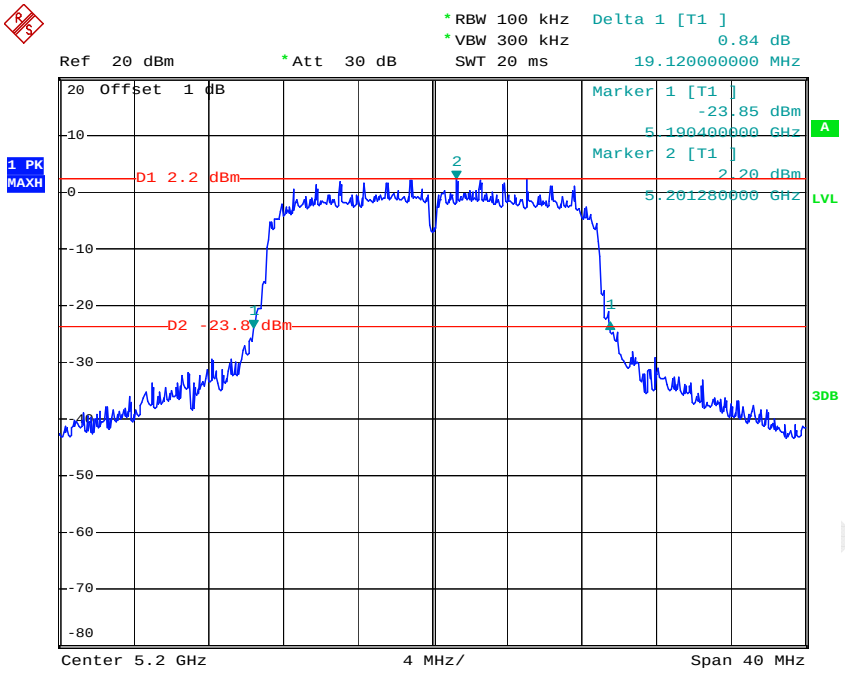
Date: 25.MAY.2015 11:16:06

802.11n ht20 Low Channel – Chain1



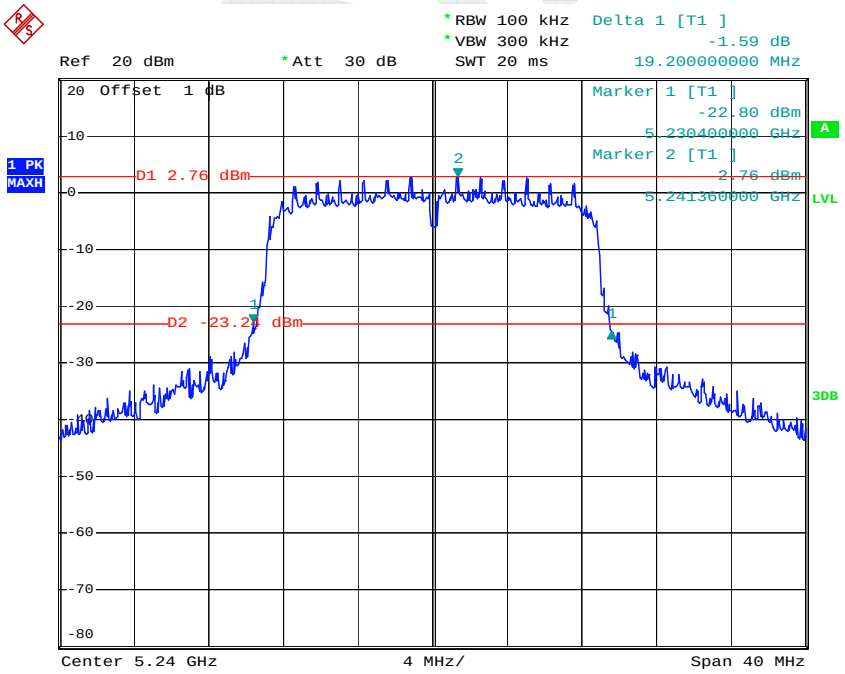
Date: 25.MAY.2015 11:22:55

802.11n ht20 Middle Channel – Chain1



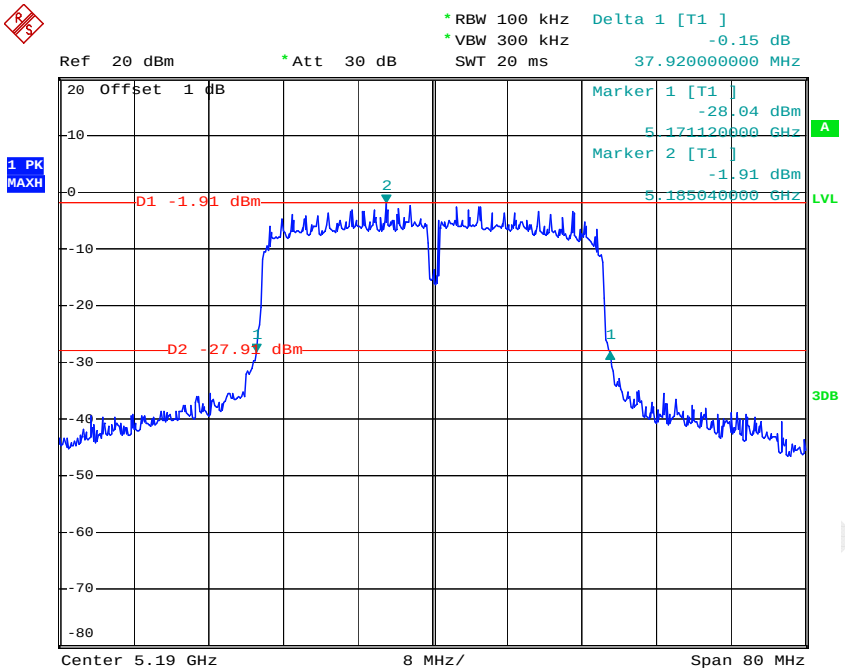
Date: 25.MAY.2015 11:21:10

802.11n ht20 High Channel – Chain1



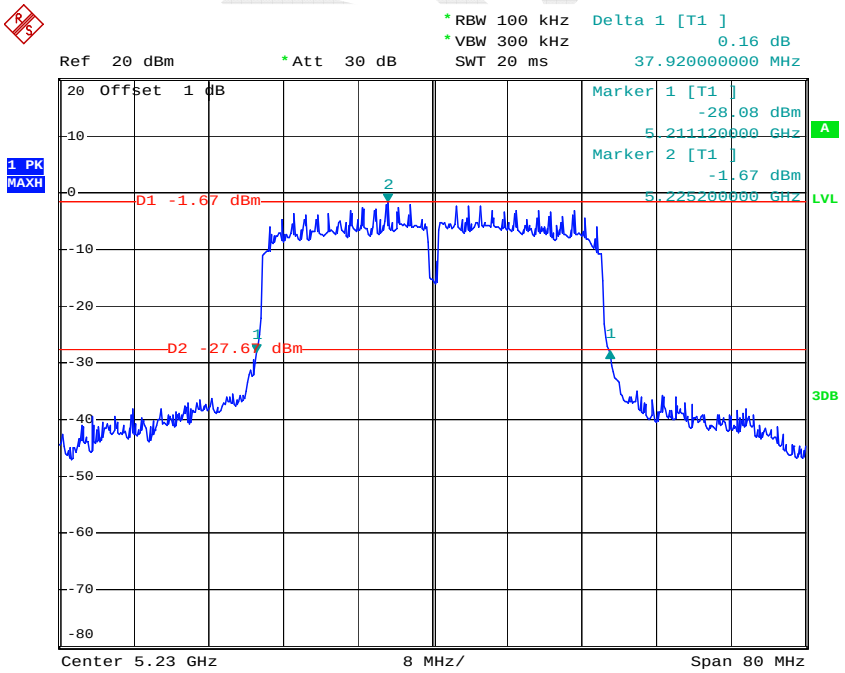
Date: 25.MAY.2015 11:18:54

802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 11:04:43

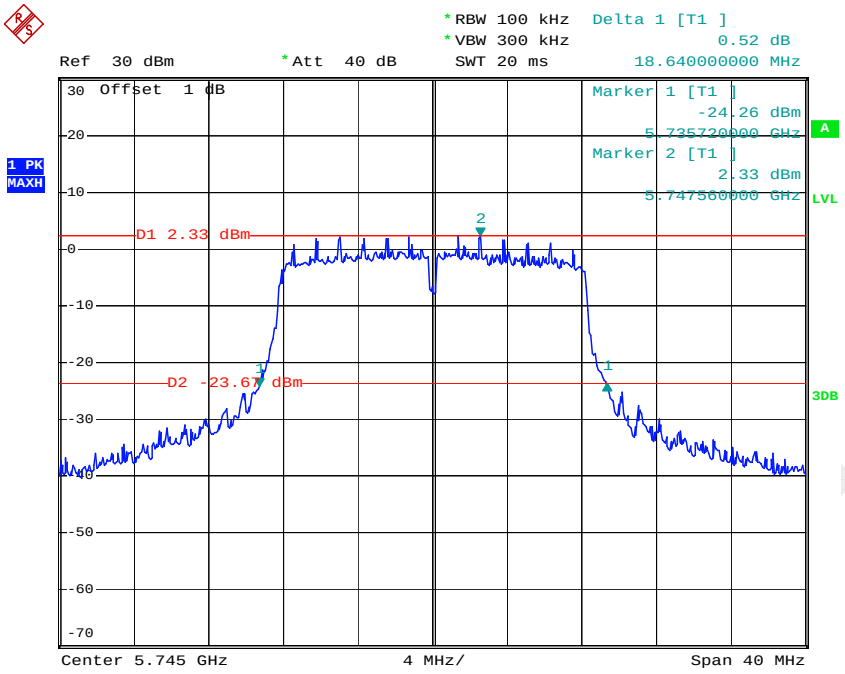
802.11n ht40 High Channel – Chain1



Date: 25.MAY.2015 11:08:02

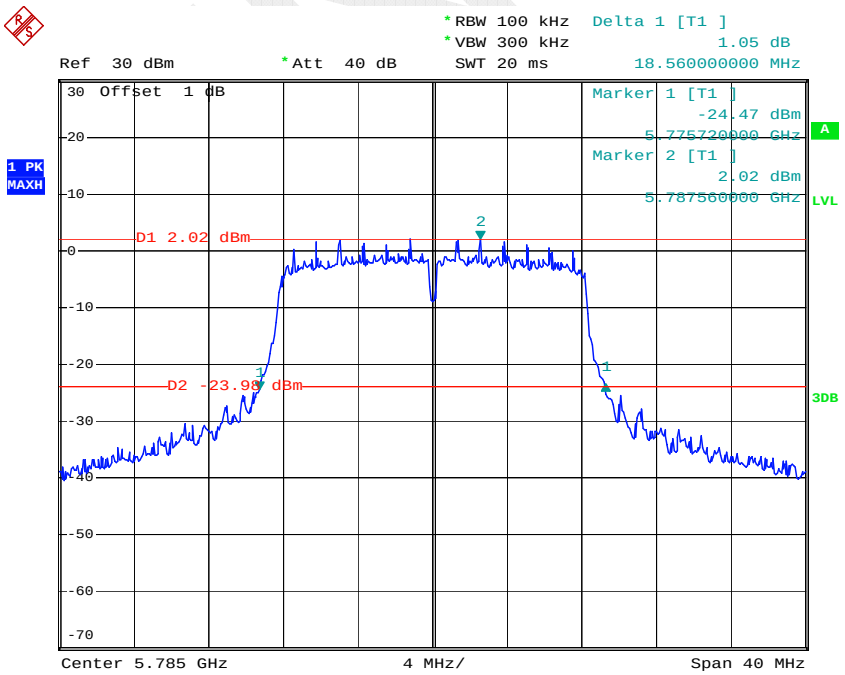
5725MHz-5850MHz: 26 dB Bandwidth

802.11a Low Channel – Chain0



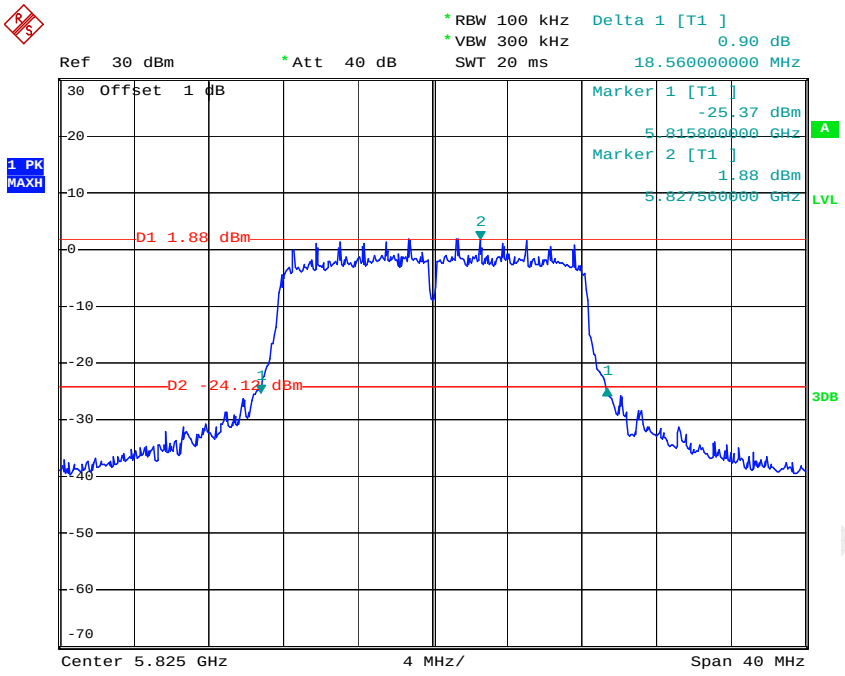
Date: 25.MAY.2015 15:25:47

802.11a Middle Channel – Chain0



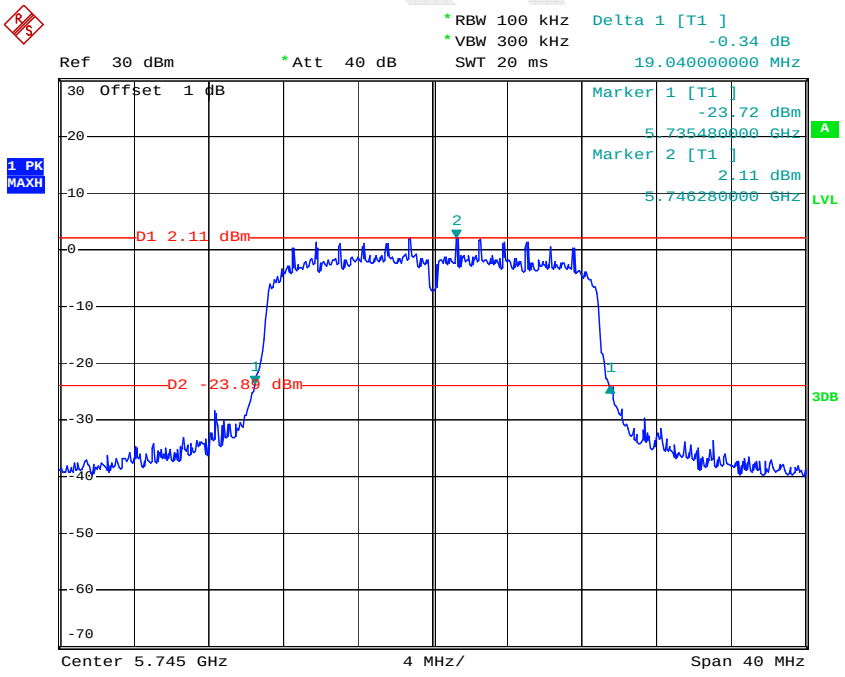
Date: 25.MAY.2015 15:28:46

802.11a High Channel – Chain0



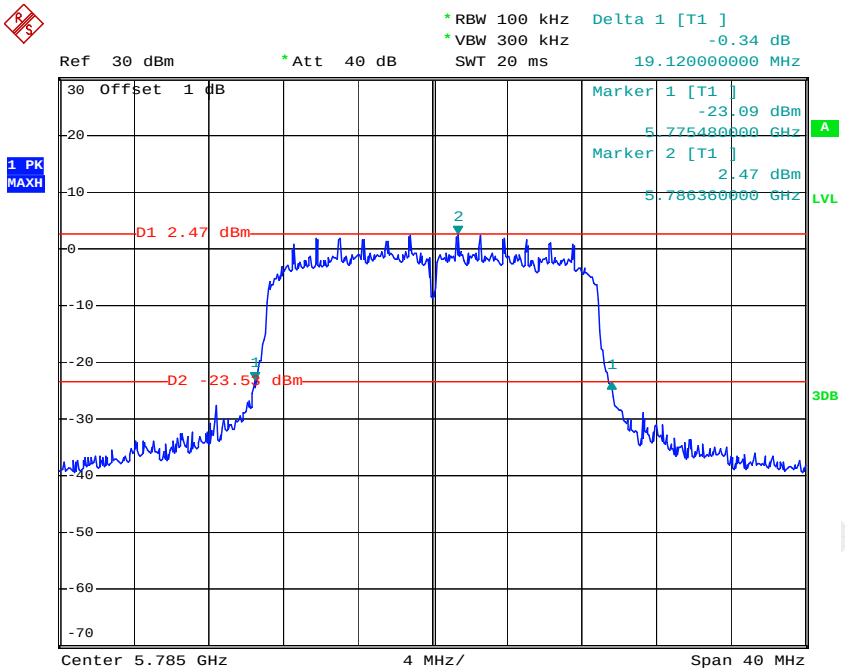
Date: 25.MAY.2015 15:34:59

802.11n ht20 Low Channel – Chain0



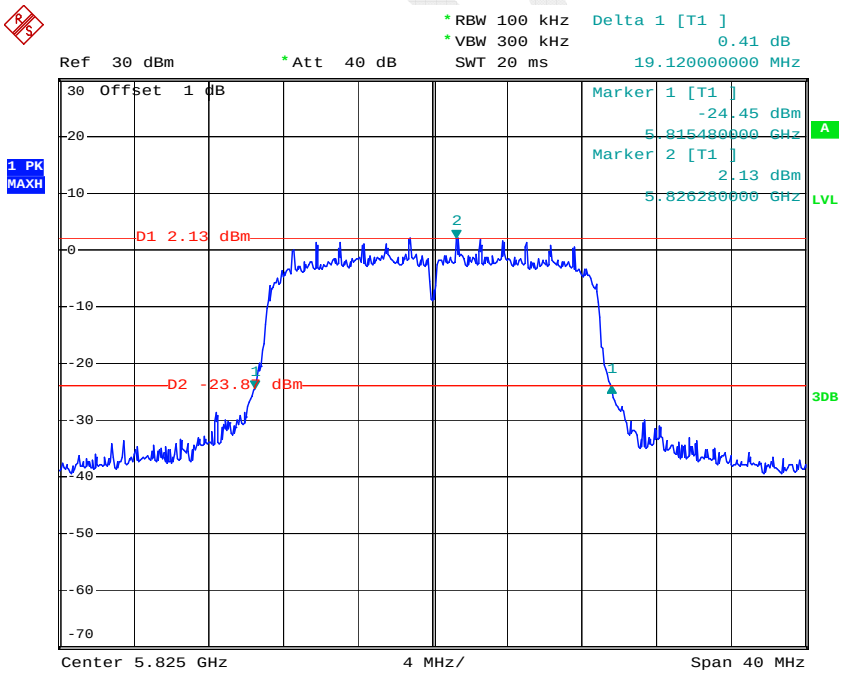
Date: 25.MAY.2015 15:41:45

802.11n ht20 Middle Channel – Chain0



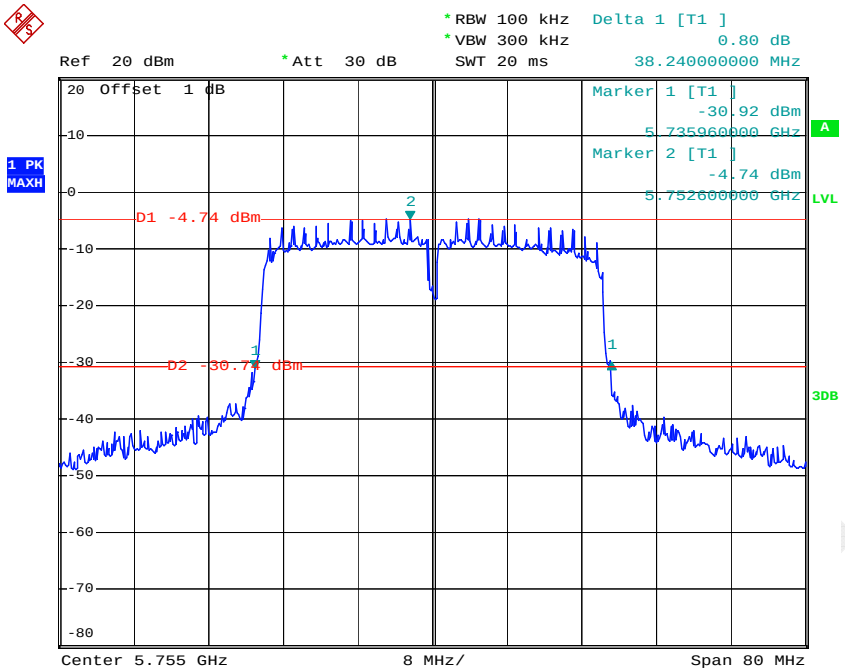
Date: 25.MAY.2015 15:44:32

802.11n ht20 High Channel – Chain0



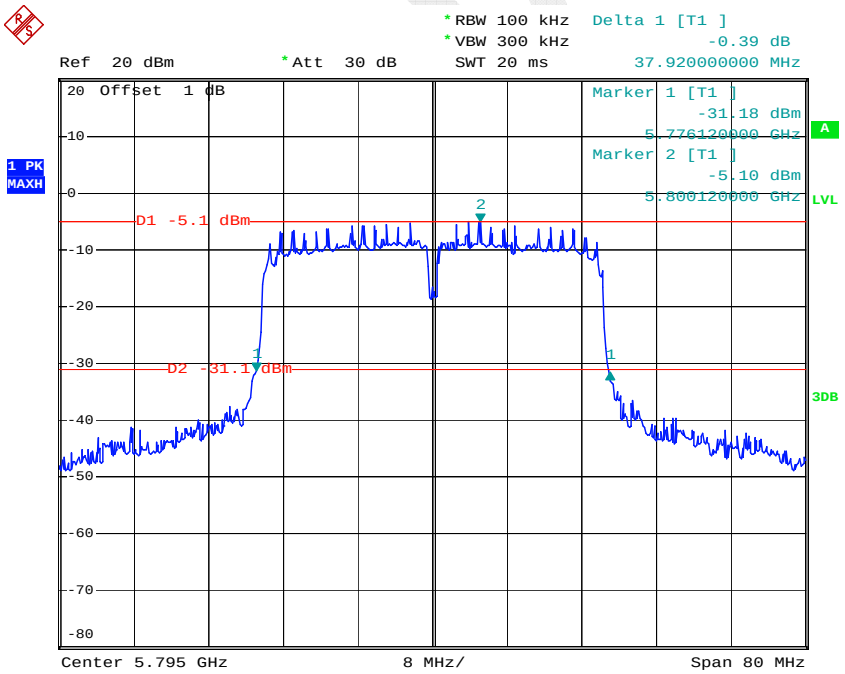
Date: 25.MAY.2015 15:46:41

802.11n ht40 Low Channel – Chain0



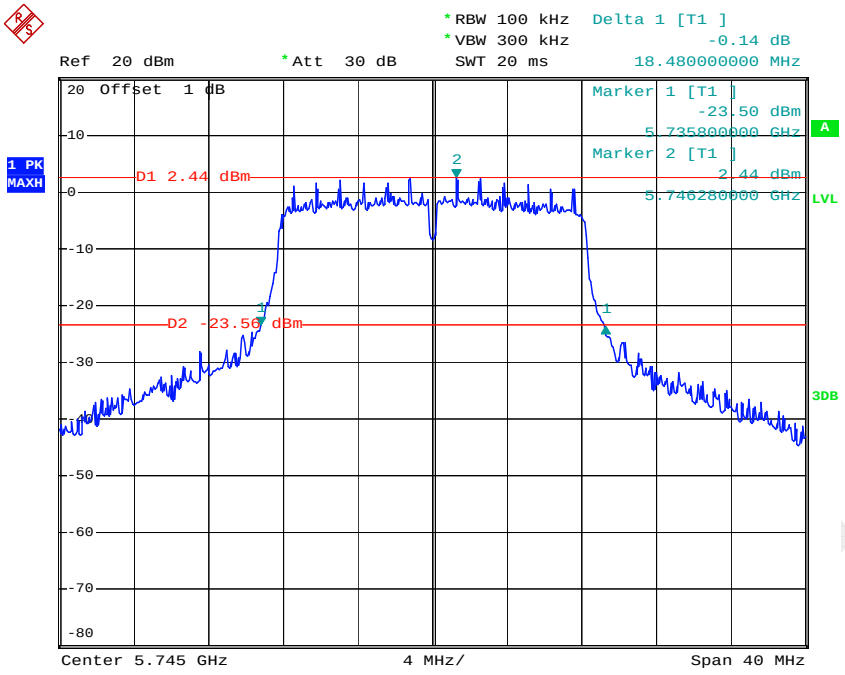
Date: 25.MAY.2015 14:29:53

802.11n ht40 High Channel – Chain0



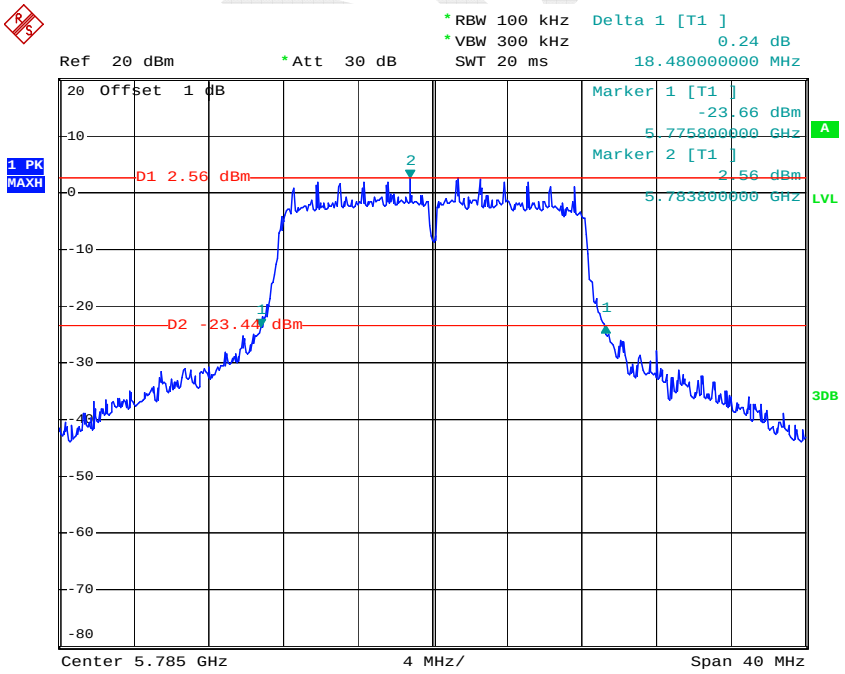
Date: 25.MAY.2015 14:24:11

802.11a Low Channel – Chain1



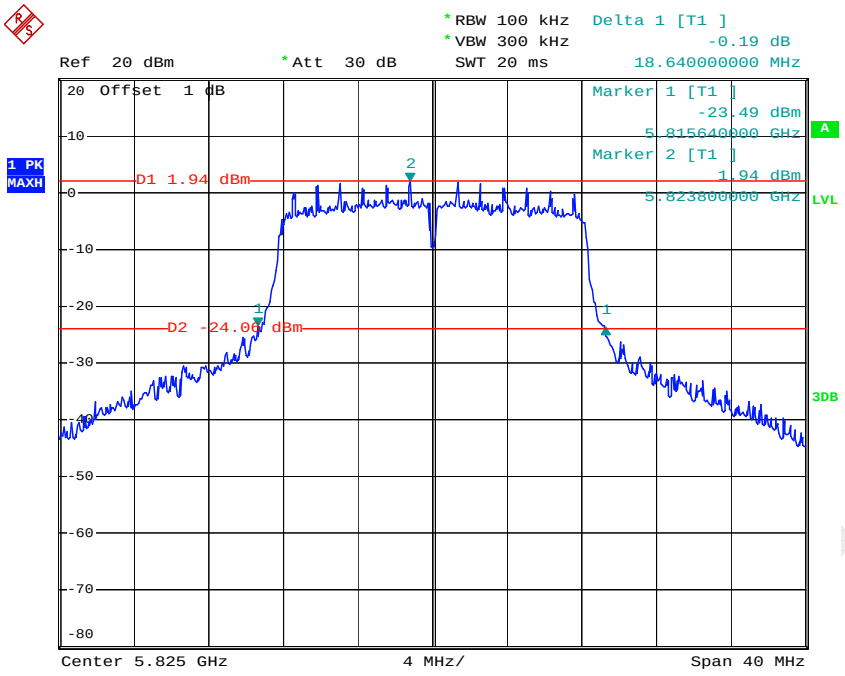
Date: 25.MAY.2015 11:26:30

802.11a Middle Channel – Chain1



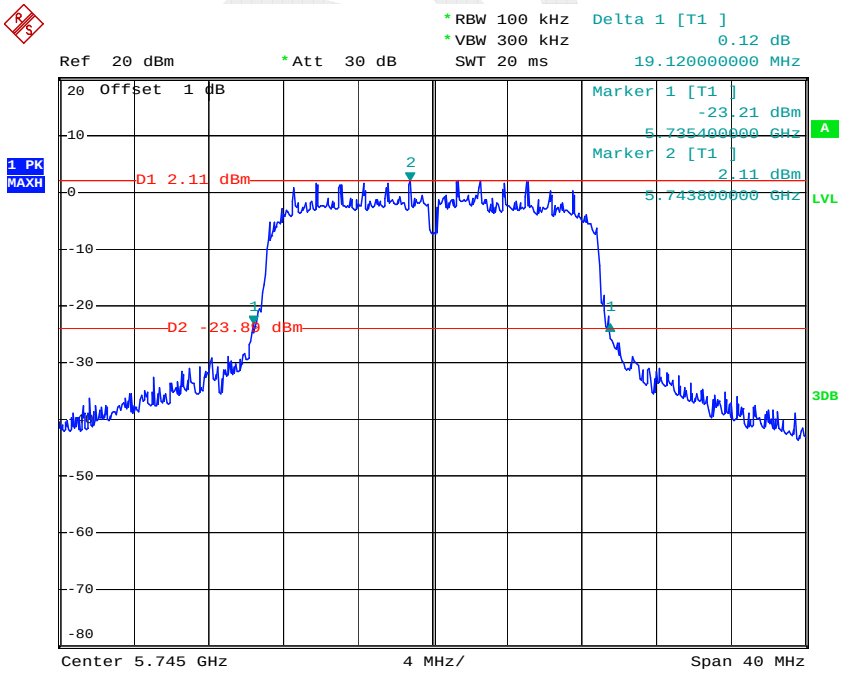
Date: 25.MAY.2015 11:30:30

802.11a High Channel – Chain1



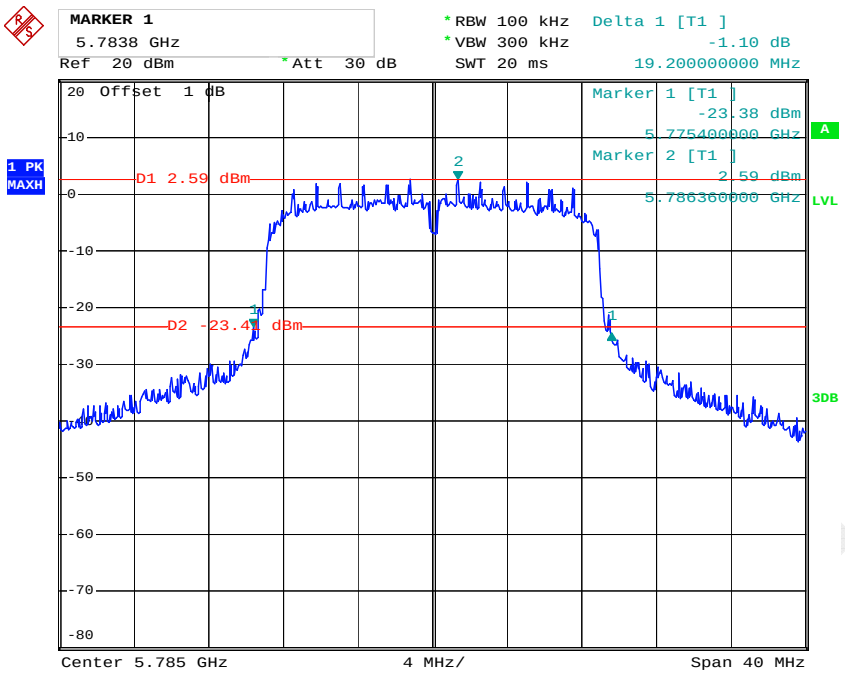
Date: 25.MAY.2015 11:37:17

802.11n ht20 Low Channel – Chain1



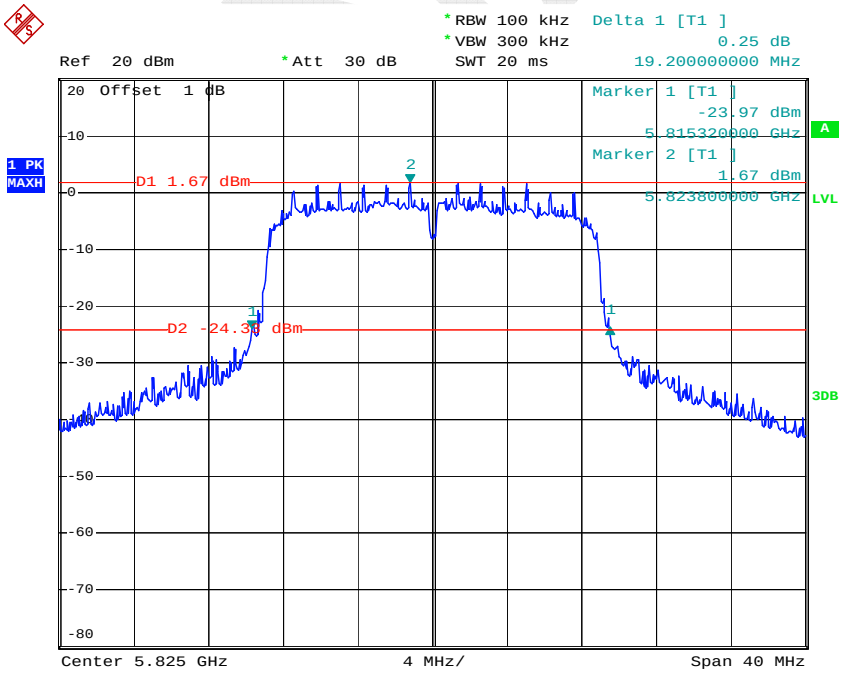
Date: 25.MAY.2015 11:42:09

802.11n ht20 Middle Channel – Chain1



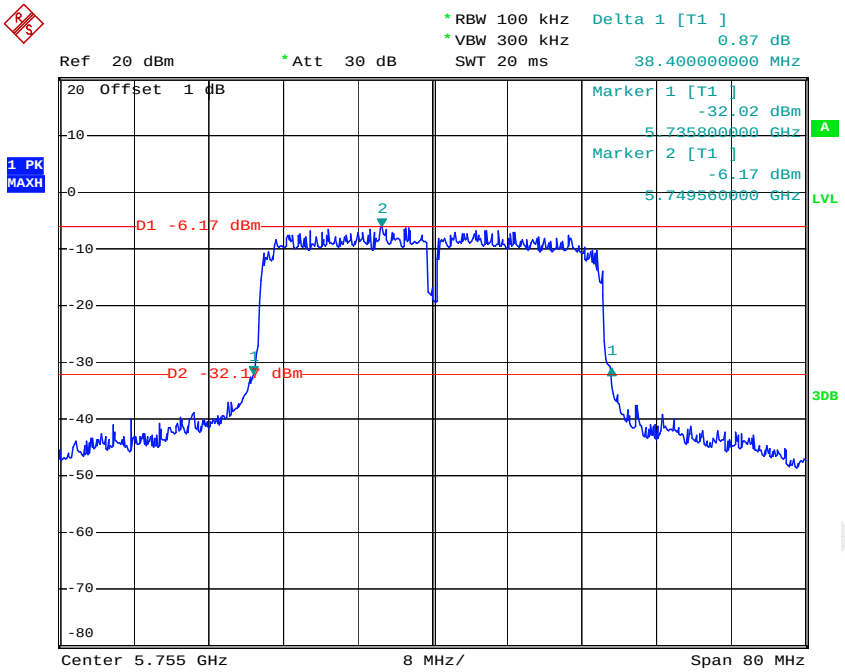
Date: 25.MAY.2015 11:52:43

802.11n ht20 High Channel – Chain1



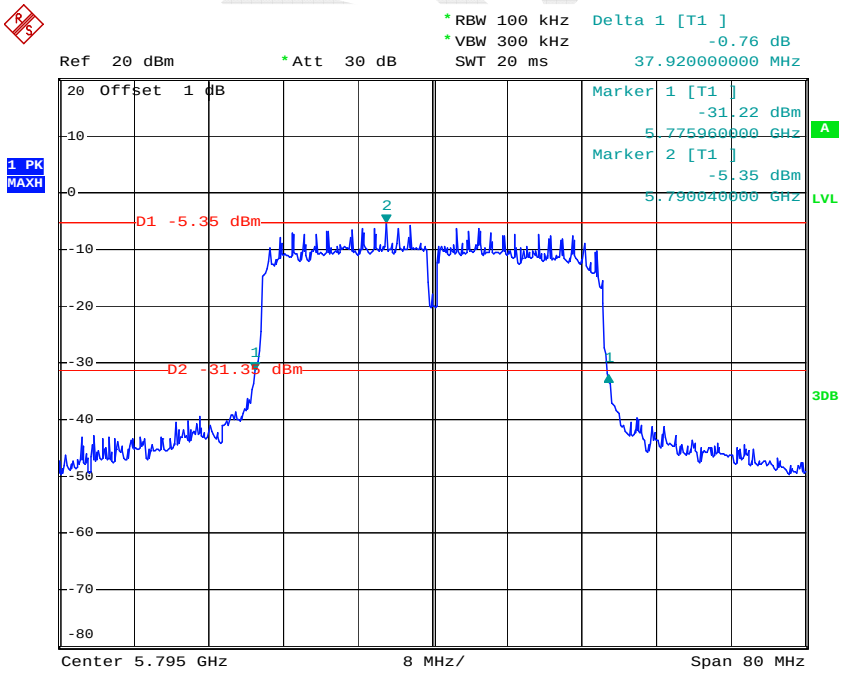
Date: 25.MAY.2015 11:54:39

802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 14:06:00

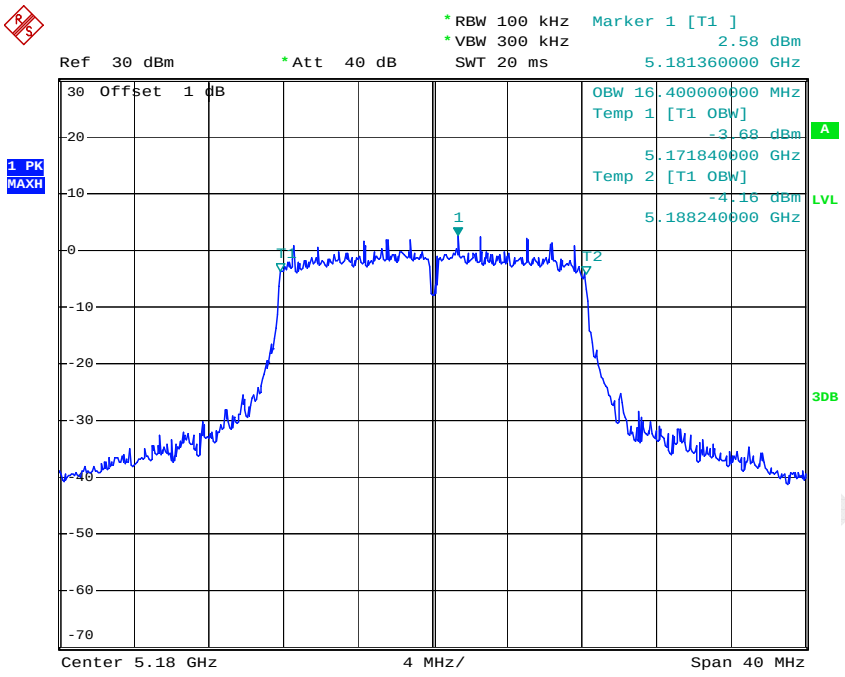
802.11n ht40 High Channel – Chain1



Date: 25.MAY.2015 14:08:36

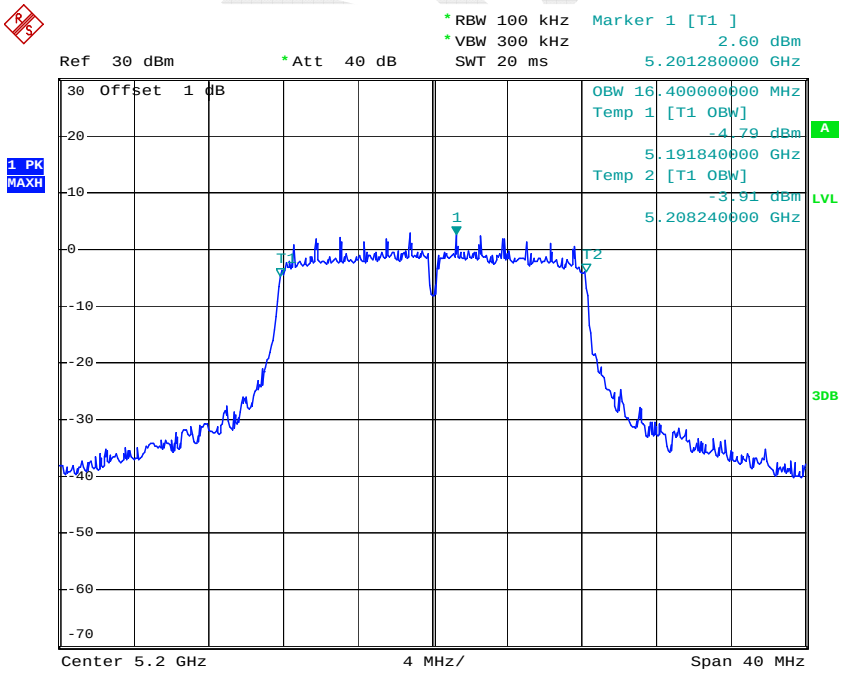
5150MHz-5250MHz: 99% occupied bandwidth

802.11a Low Channel – Chain0



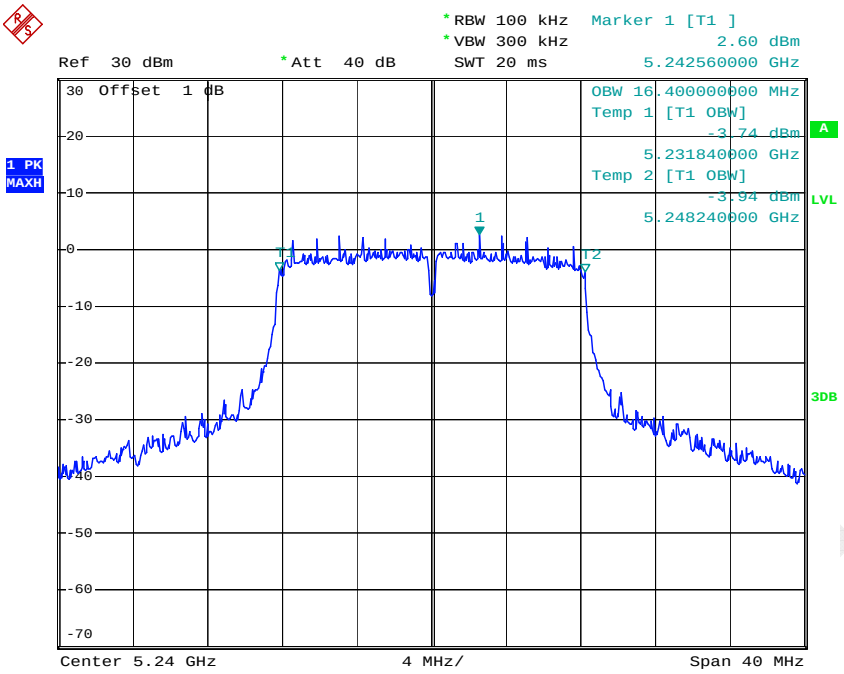
Date: 25.MAY.2015 14:44:41

802.11a Middle Channel – Chain0



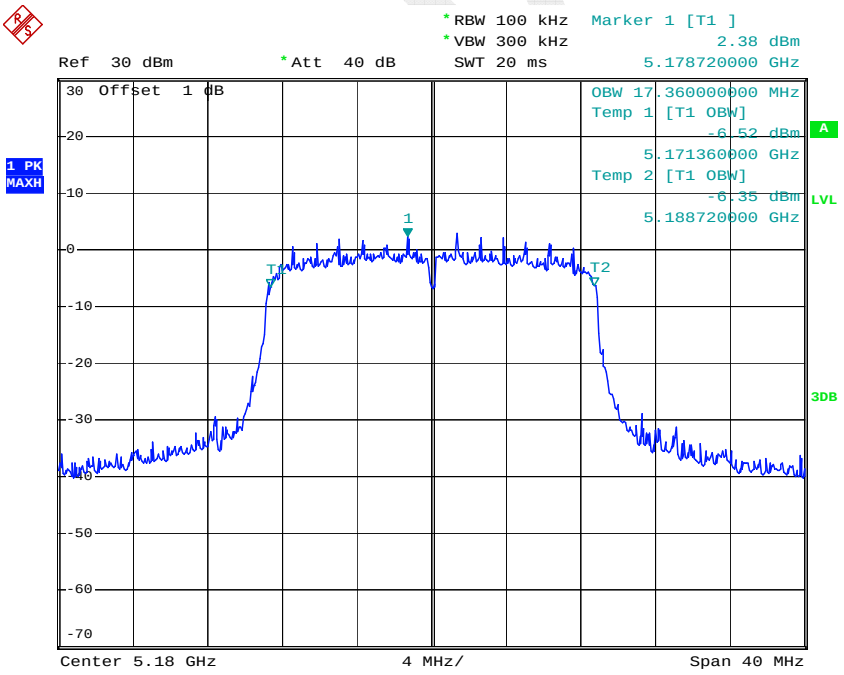
Date: 25.MAY.2015 14:49:51

802.11a High Channel – Chain0



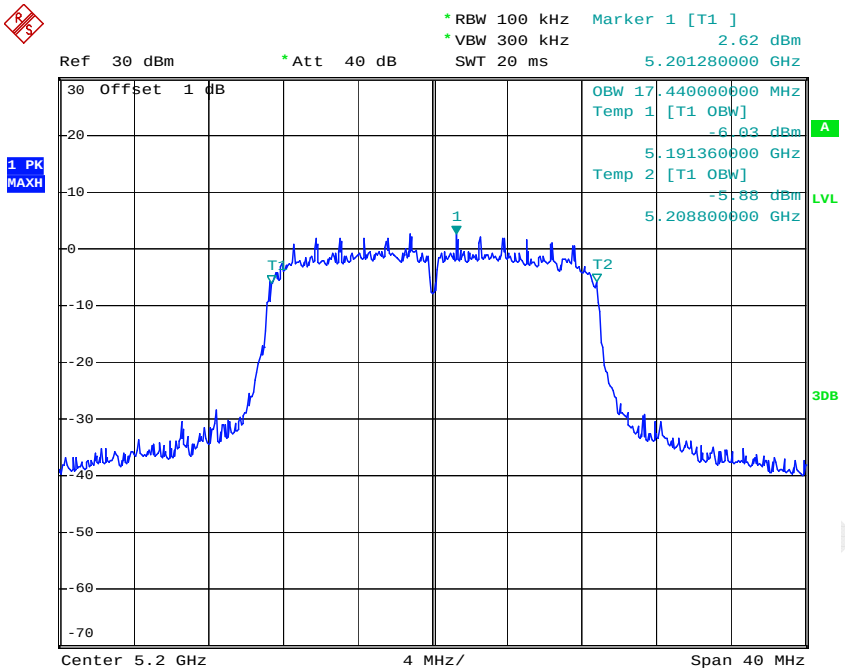
Date: 25.MAY.2015 14:51:55

802.11n ht20 Low Channel – Chain0



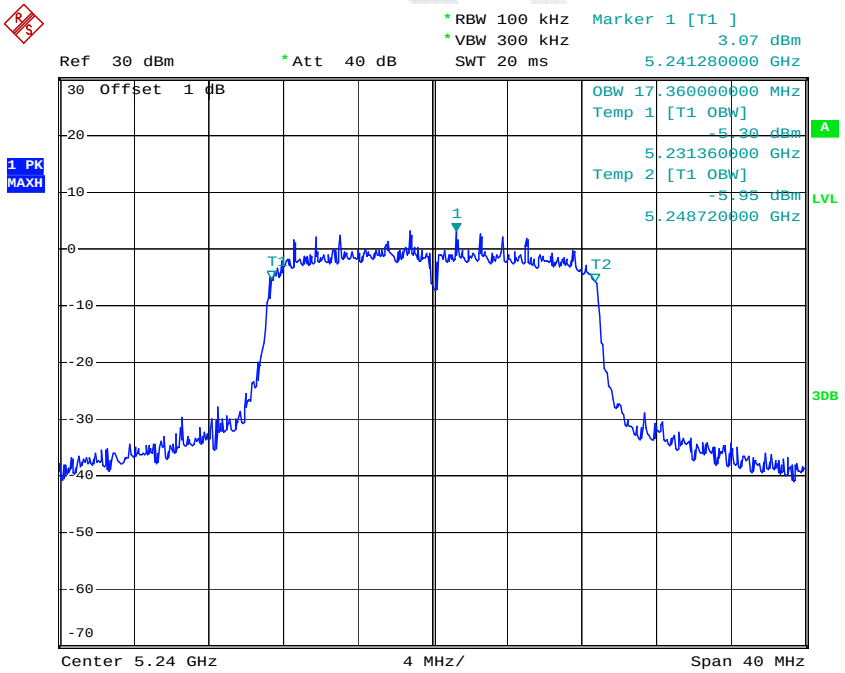
Date: 25.MAY.2015 15:01:36

802.11n ht20 Middle Channel – Chain0



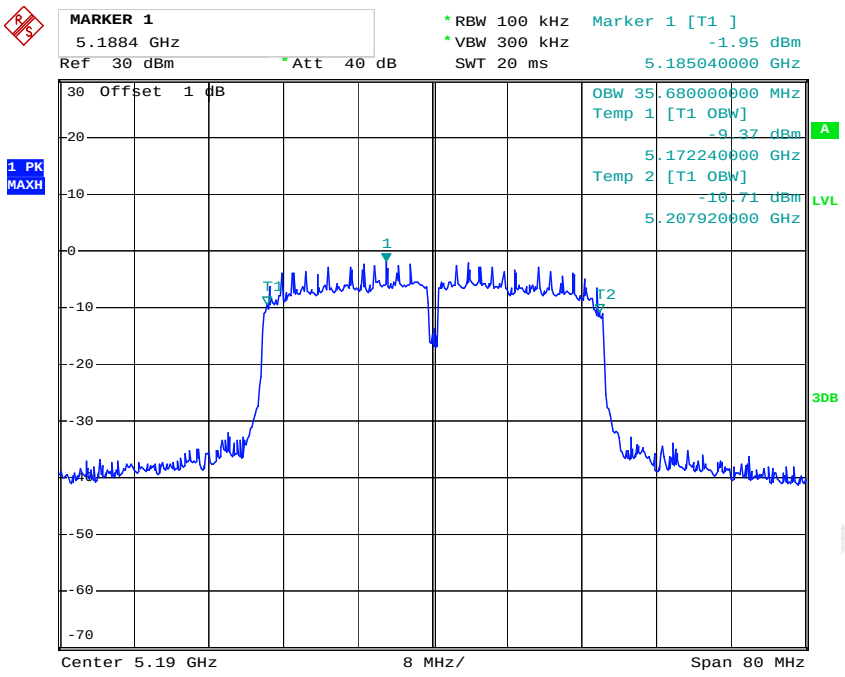
Date: 25.MAY.2015 14:59:47

802.11n ht20 High Channel – Chain0



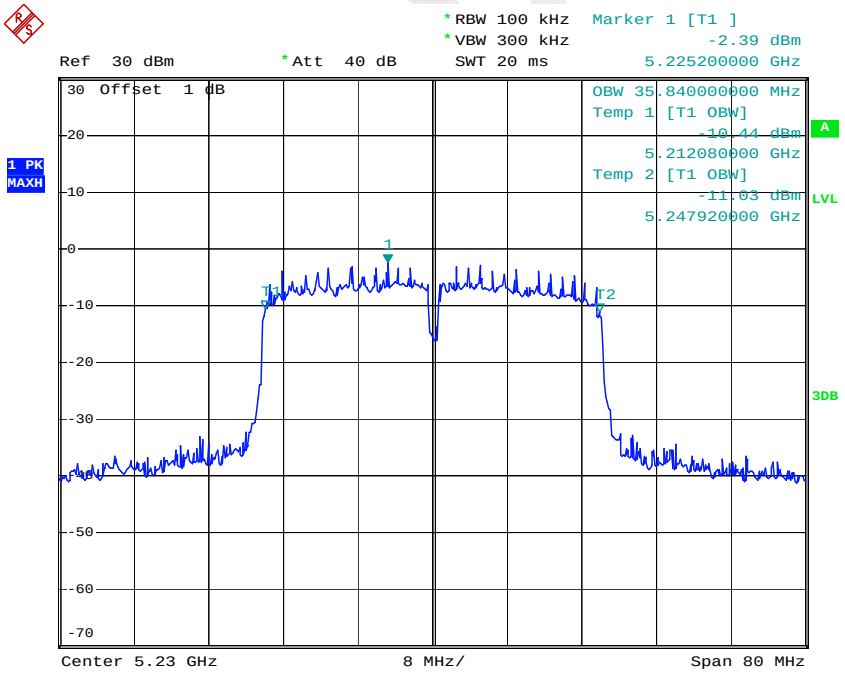
Date: 25.MAY.2015 14:57:29

802.11n ht40 Low Channel – Chain0



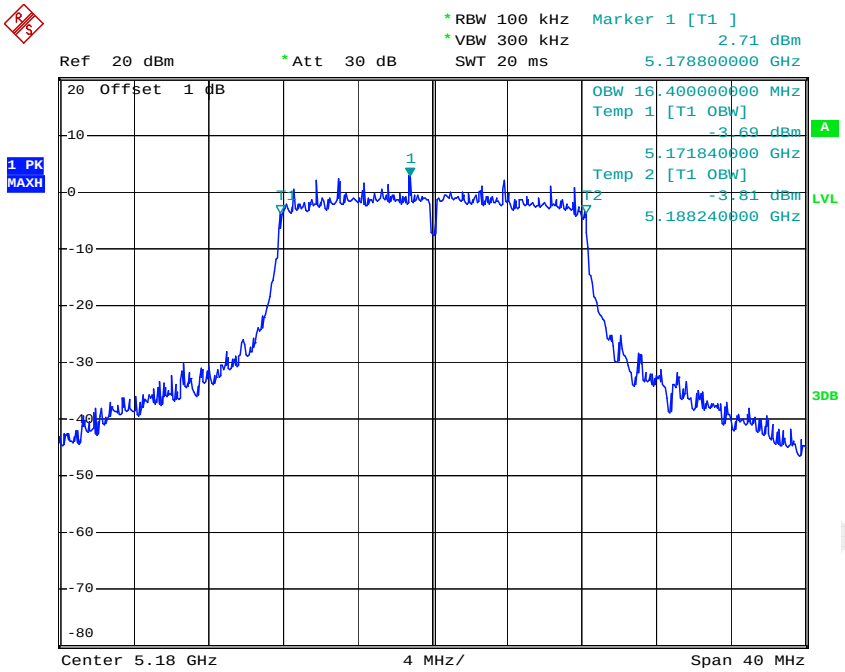
Date: 25.MAY.2015 15:17:39

802.11n ht40 High Channel – Chain0



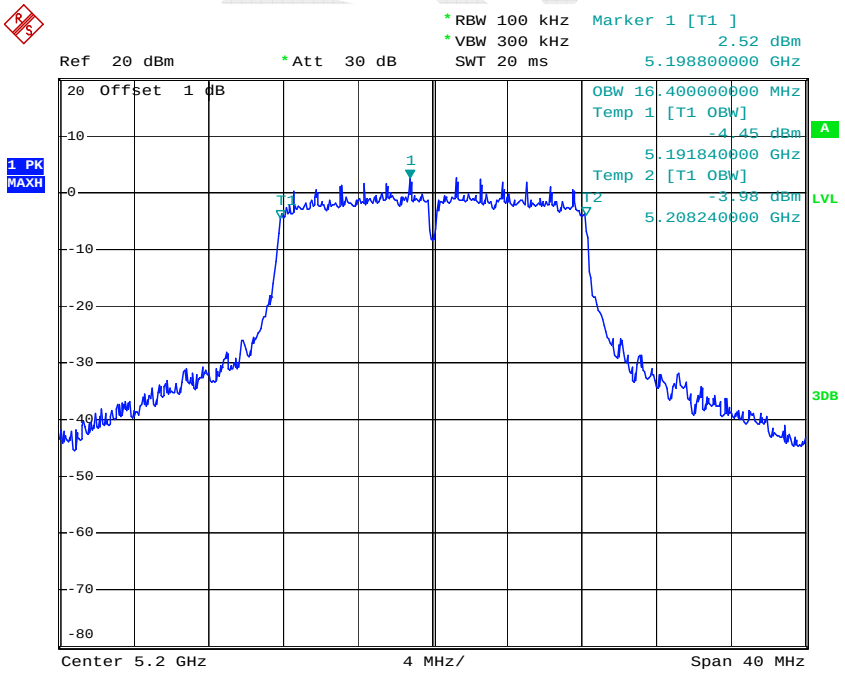
Date: 25.MAY.2015 15:20:10

802.11a Low Channel – Chain1



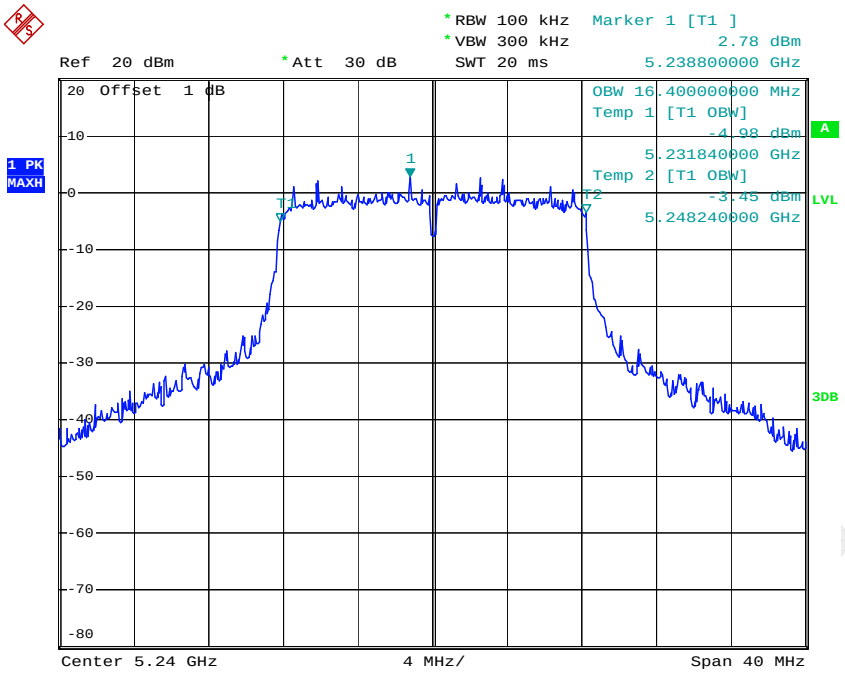
Date: 25.MAY.2015 11:12:09

802.11a Middle Channel – Chain1



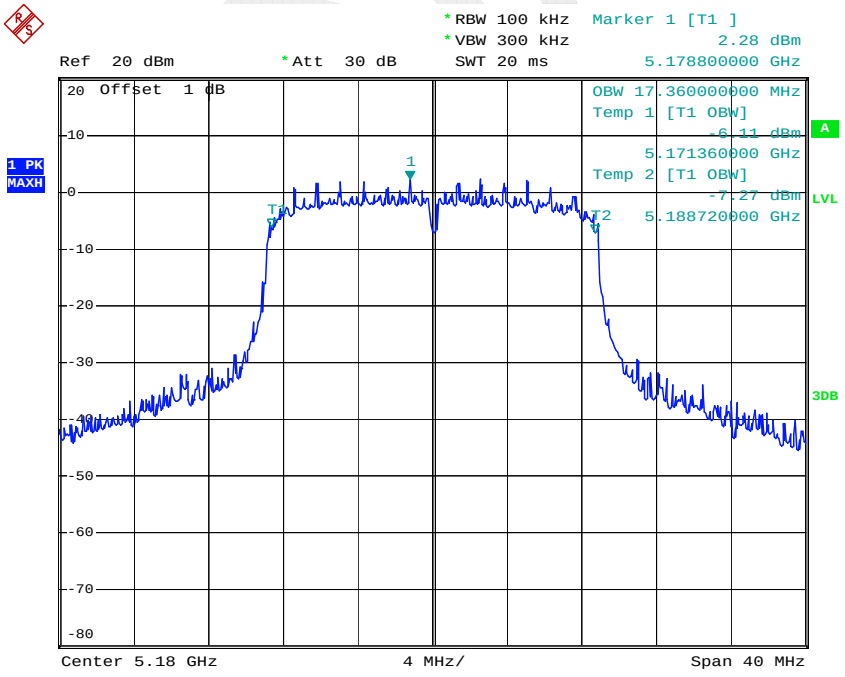
Date: 25.MAY.2015 11:14:33

802.11a High Channel – Chain1



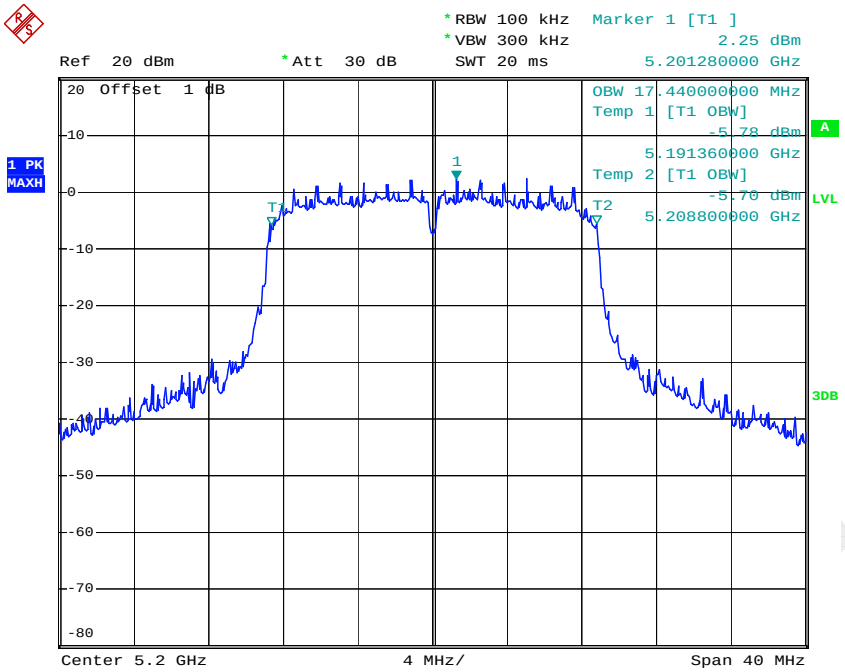
Date: 25.MAY.2015 11:16:21

802.11n ht20 Low Channel – Chain1



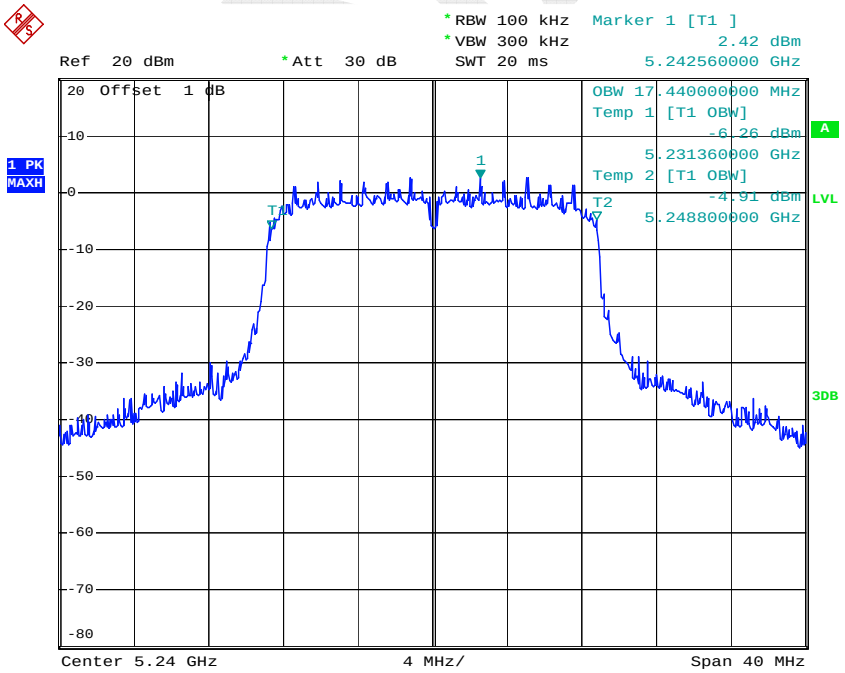
Date: 25.MAY.2015 11:23:09

802.11n ht20 Middle Channel – Chain1



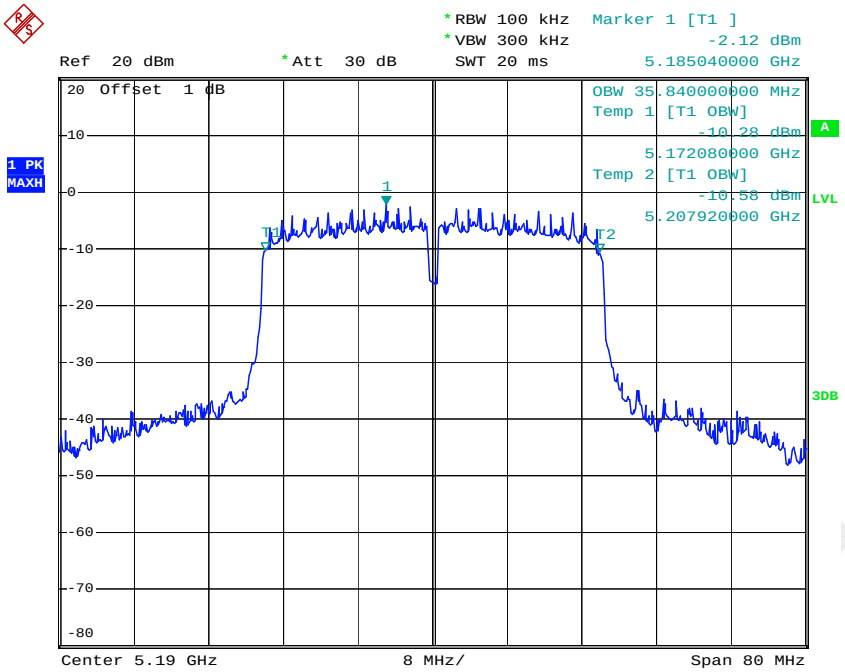
Date: 25.MAY.2015 11:21:23

802.11n ht20 High Channel – Chain1



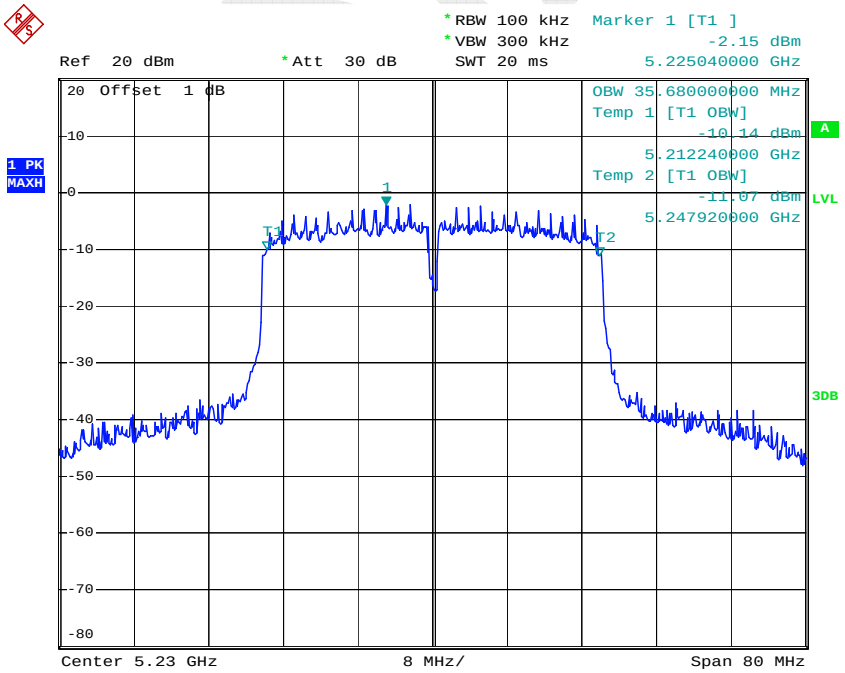
Date: 25.MAY.2015 11:19:07

802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 11:04:57

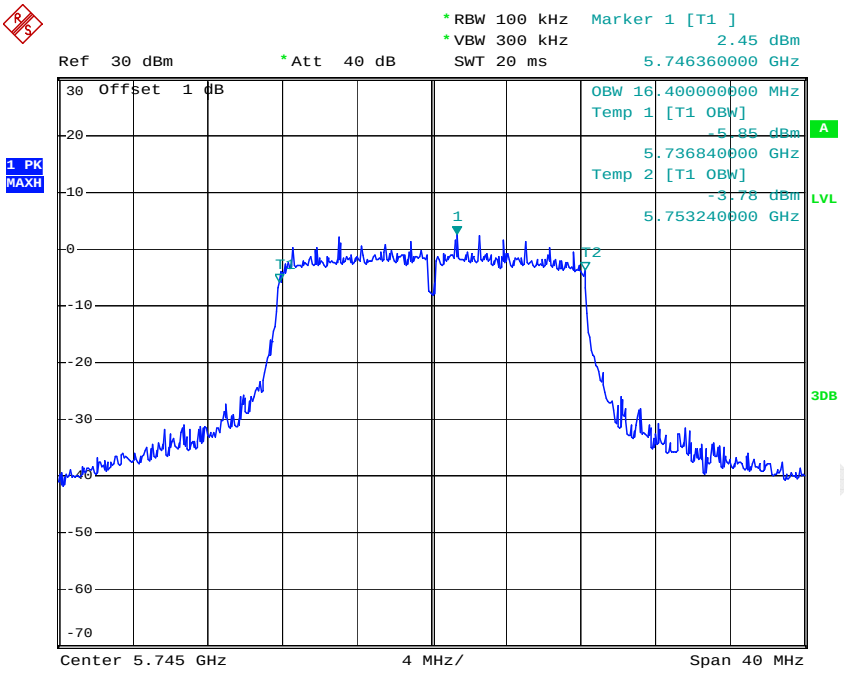
802.11n ht40 High Channel – Chain1



Date: 25.MAY.2015 11:08:15

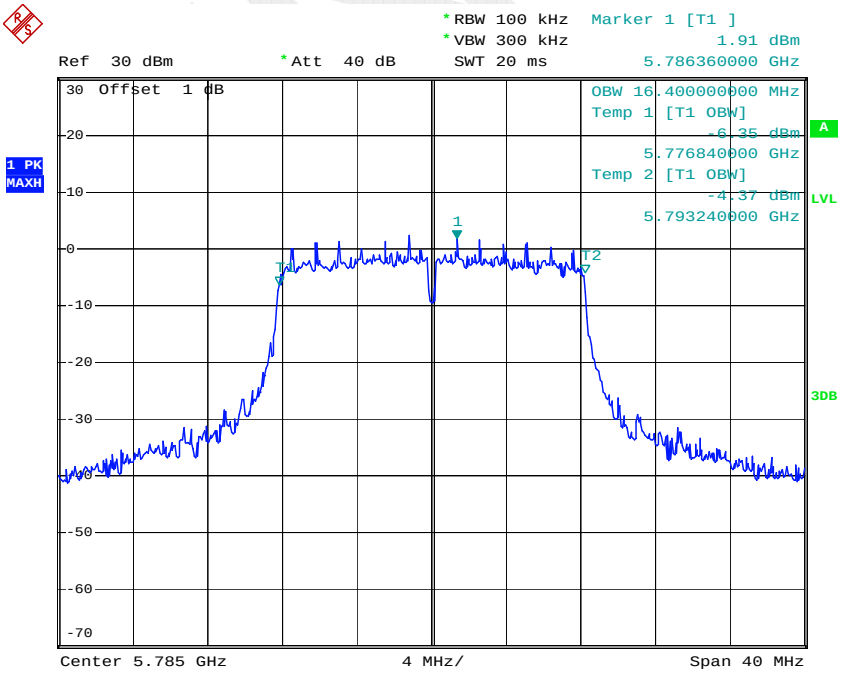
5725MHz-5850MHz: 99% occupied bandwidth

802.11a Low Channel – Chain0



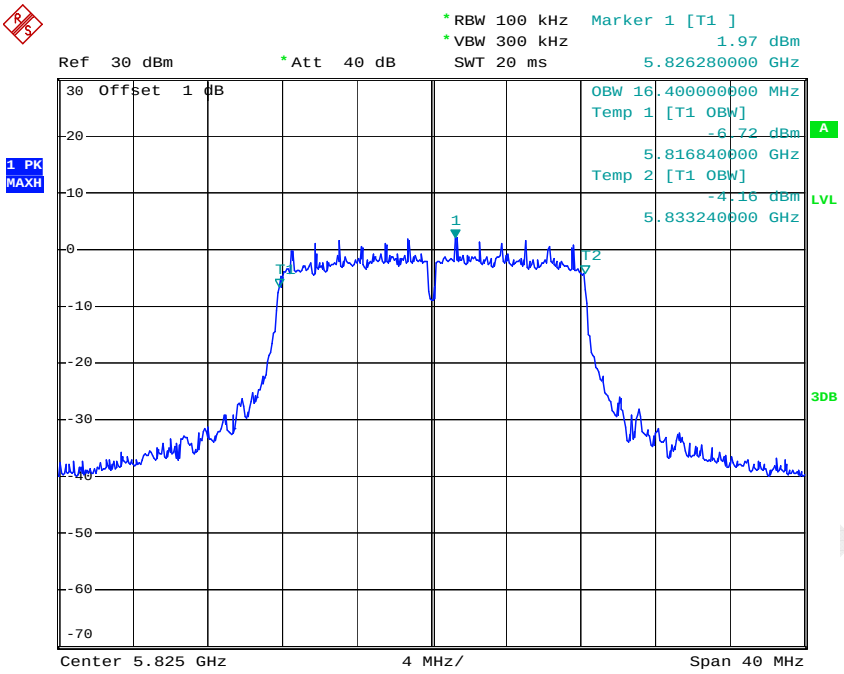
Date: 25.MAY.2015 15:26:23

802.11a Middle Channel – Chain0



Date: 25.MAY.2015 15:29:20

802.11a High Channel – Chain0



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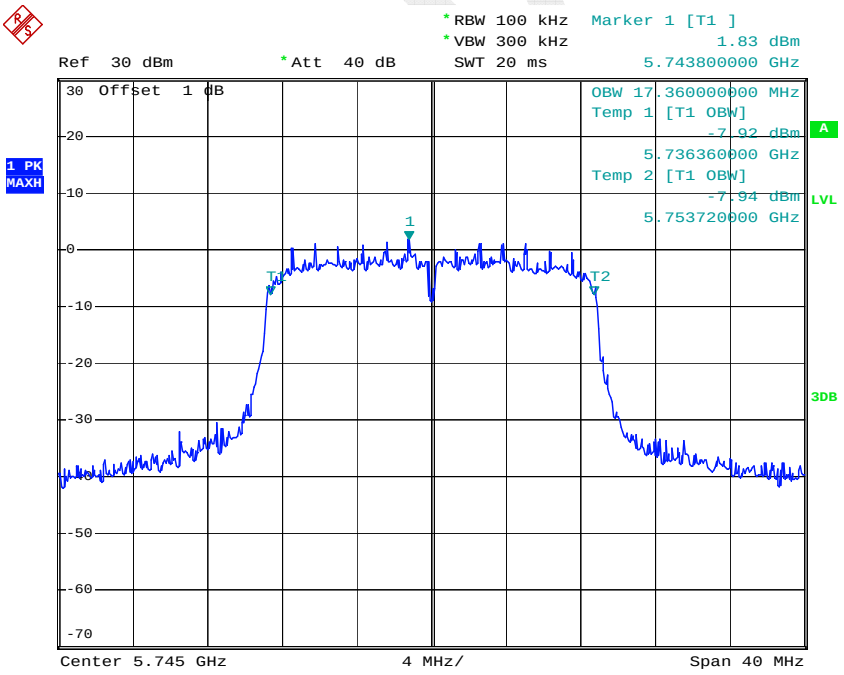
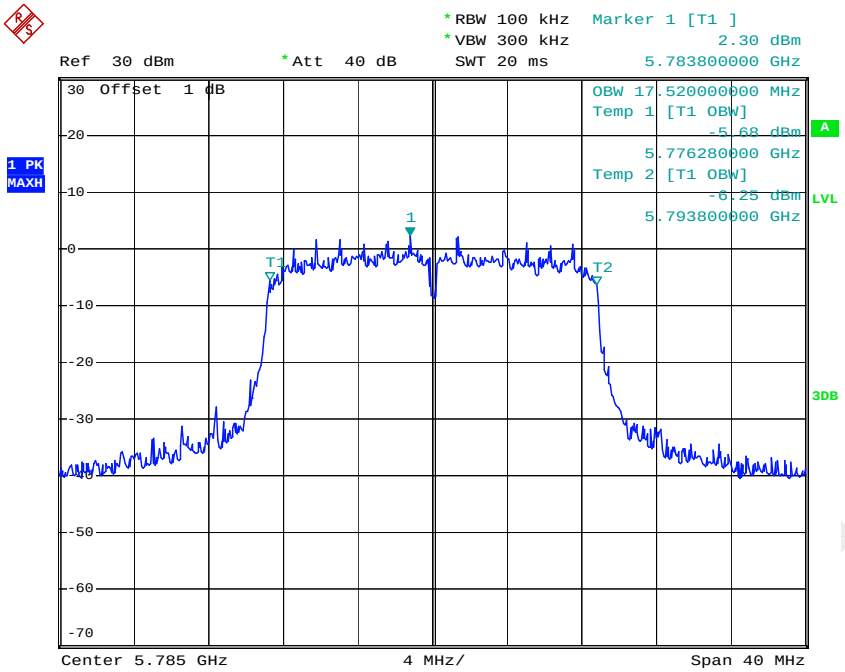
802.11n ht20 Low Channel – Chain0



Date: 25.MAY.2015 15:42:19

802.11n ht20 Middle Channel – Chain0



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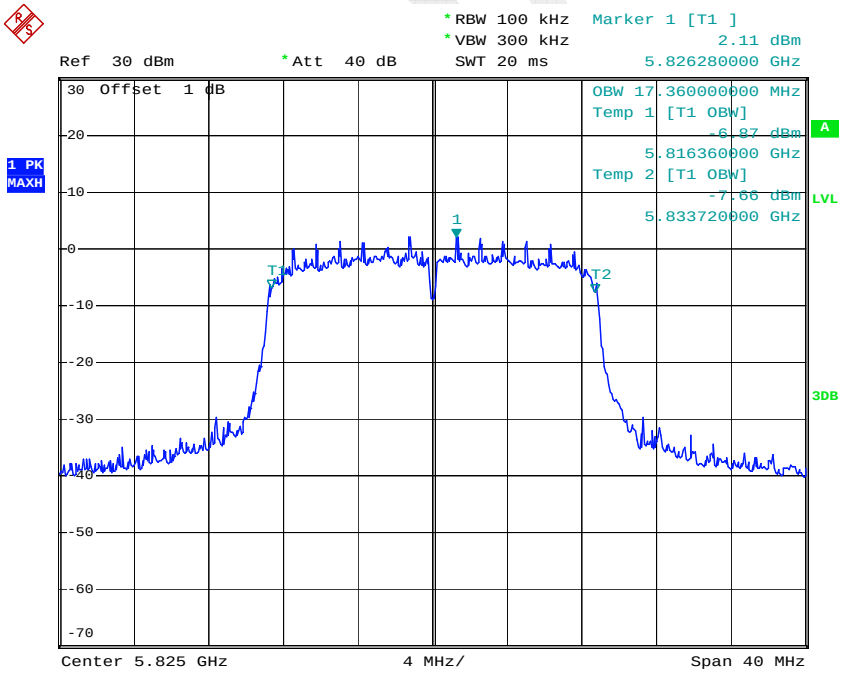
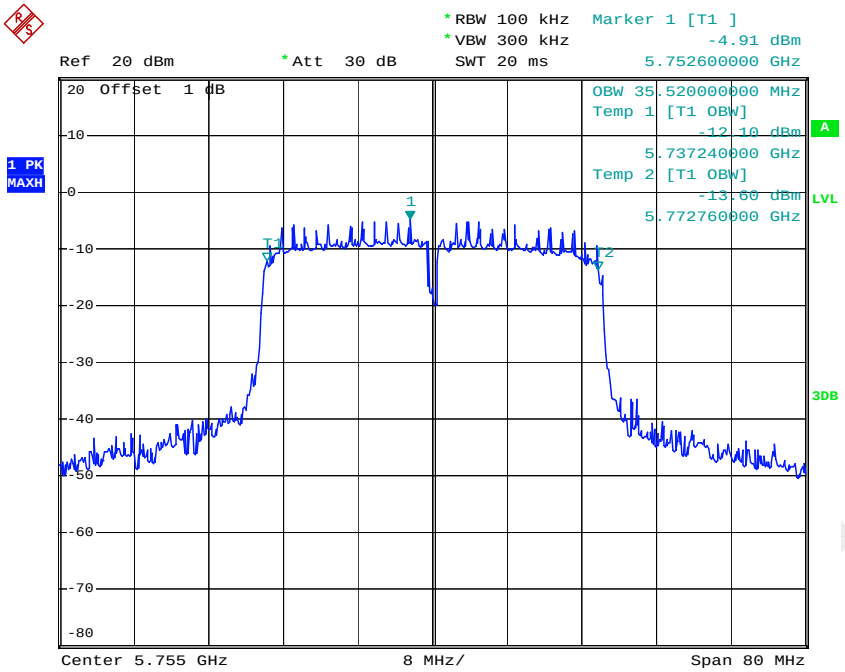
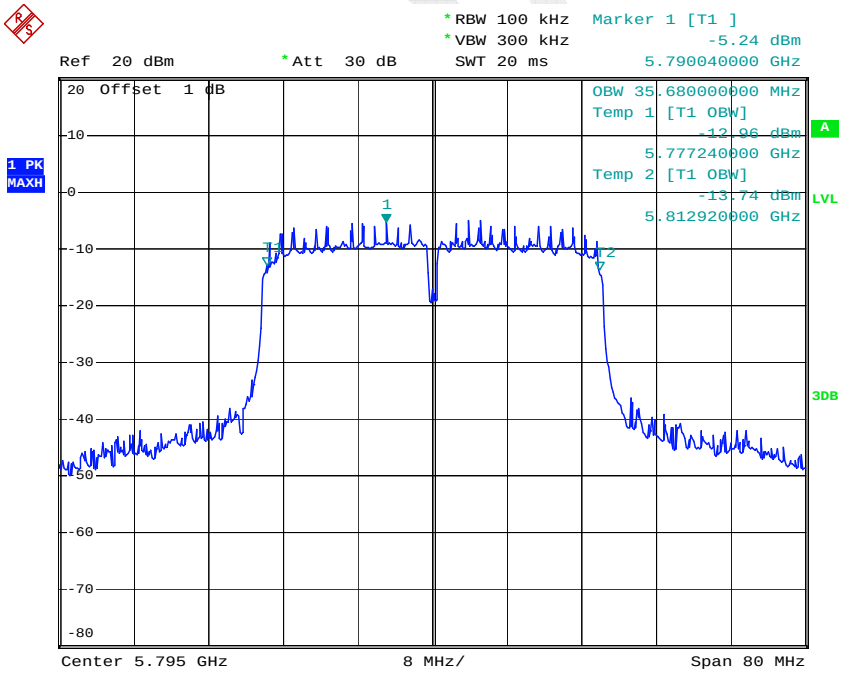


802.11n ht40 Low Channel – Chain0



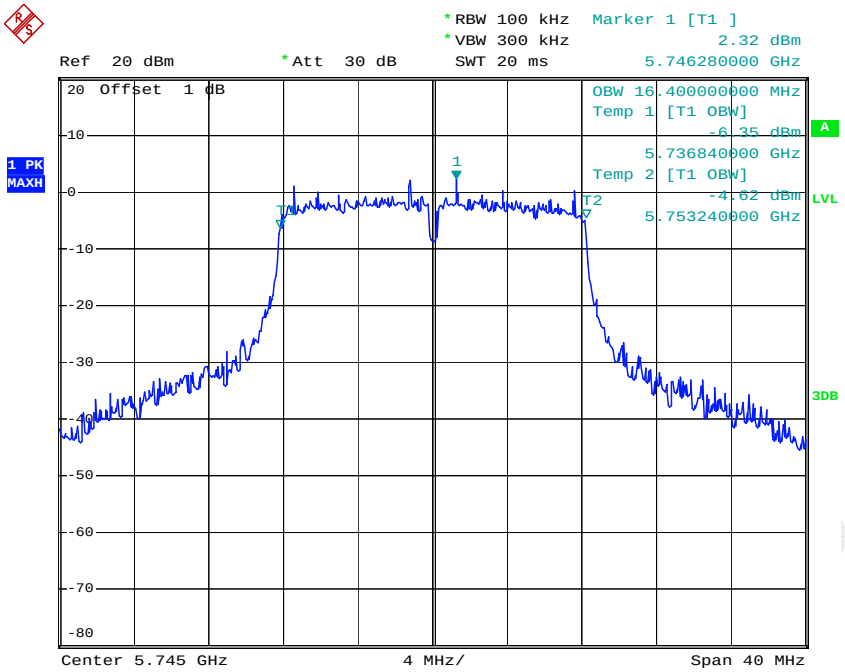
Date: 25.MAY.2015 14:30:26

802.11n ht40 High Channel – Chain0



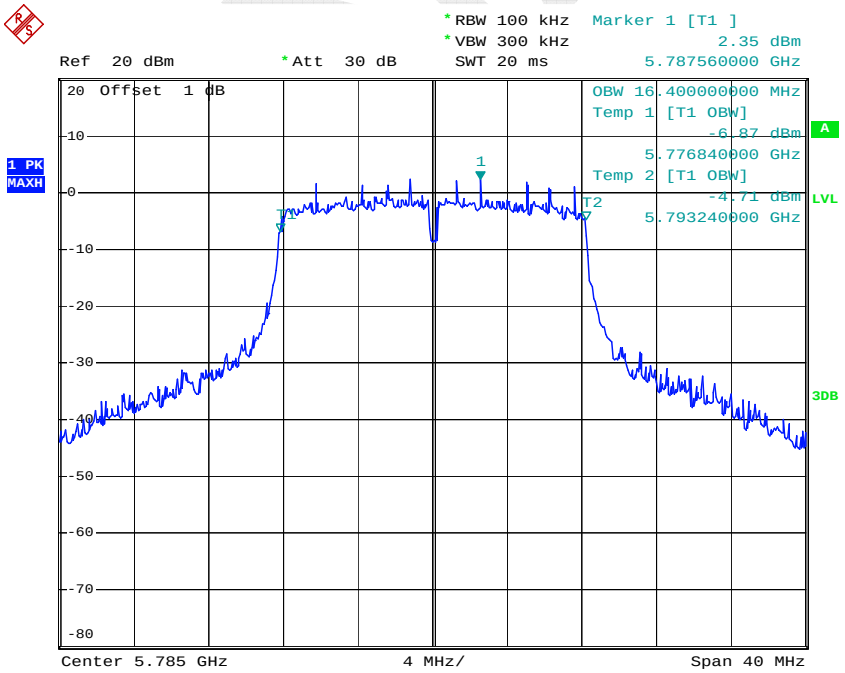
Date: 25.MAY.2015 14:24:46

802.11a Low Channel – Chain1



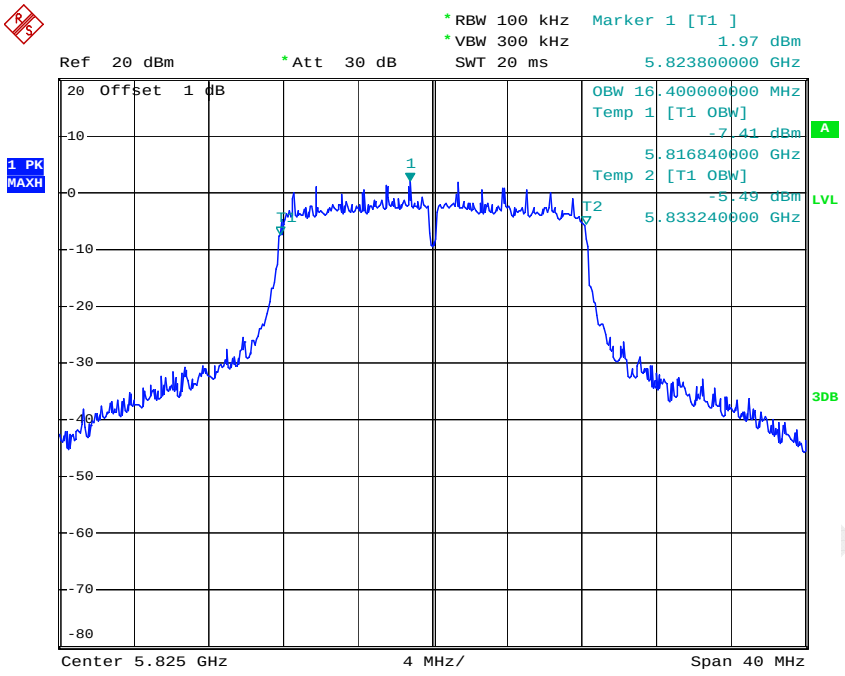
Date: 25.MAY.2015 11:27:05

802.11a Middle Channel – Chain1



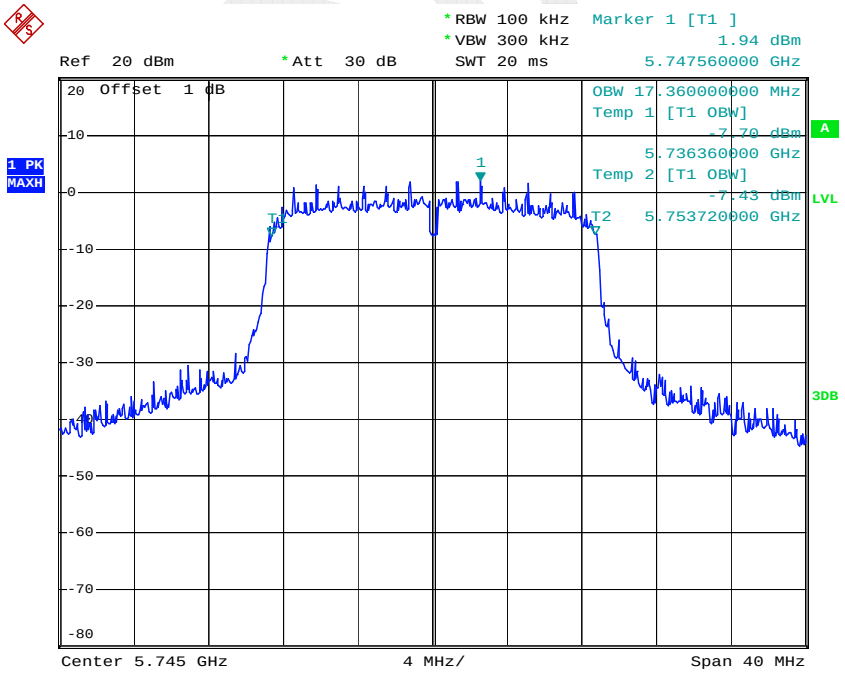
Date: 25.MAY.2015 11:31:08

802.11a High Channel – Chain1



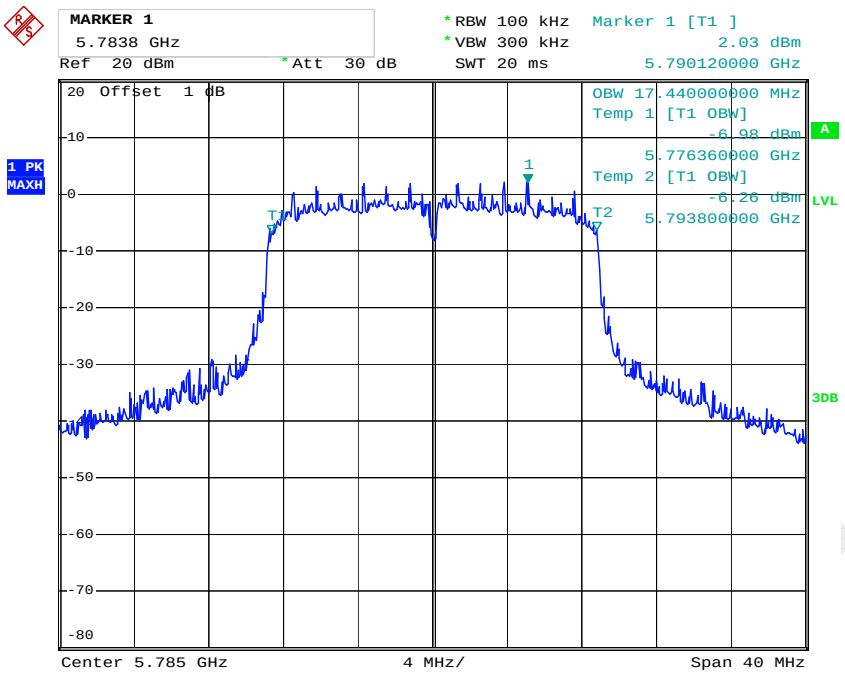
Date: 25.MAY.2015 11:37:50

802.11n ht20 Low Channel – Chain1



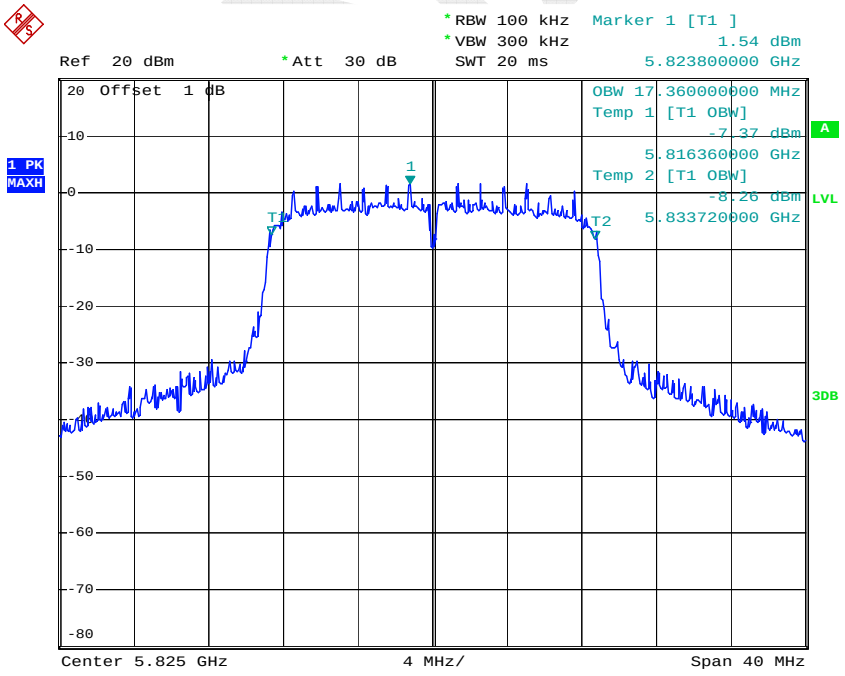
Date: 25.MAY.2015 11:42:43

802.11n ht20 Middle Channel – Chain1



Date: 25.MAY.2015 11:52:06

802.11n ht20 High Channel – Chain1



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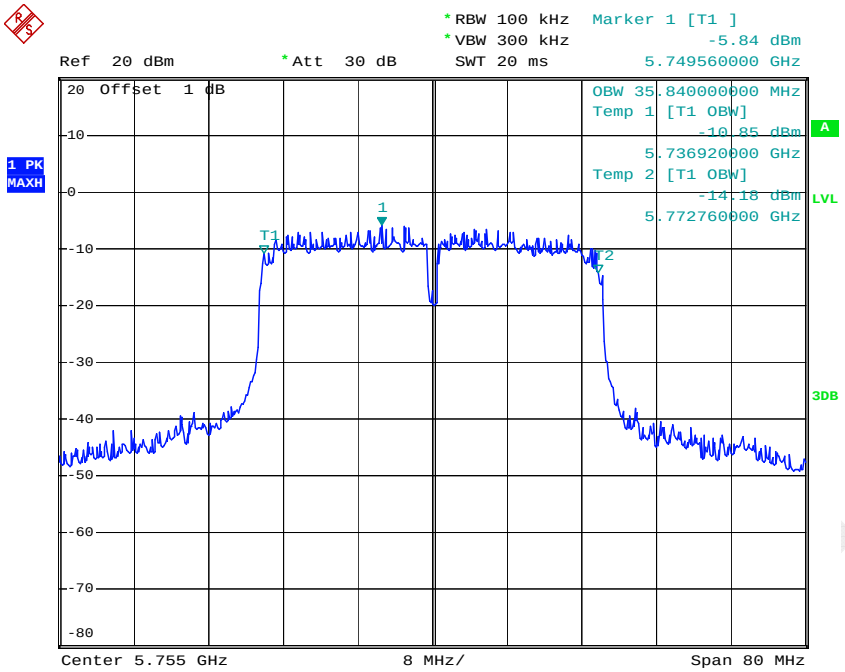
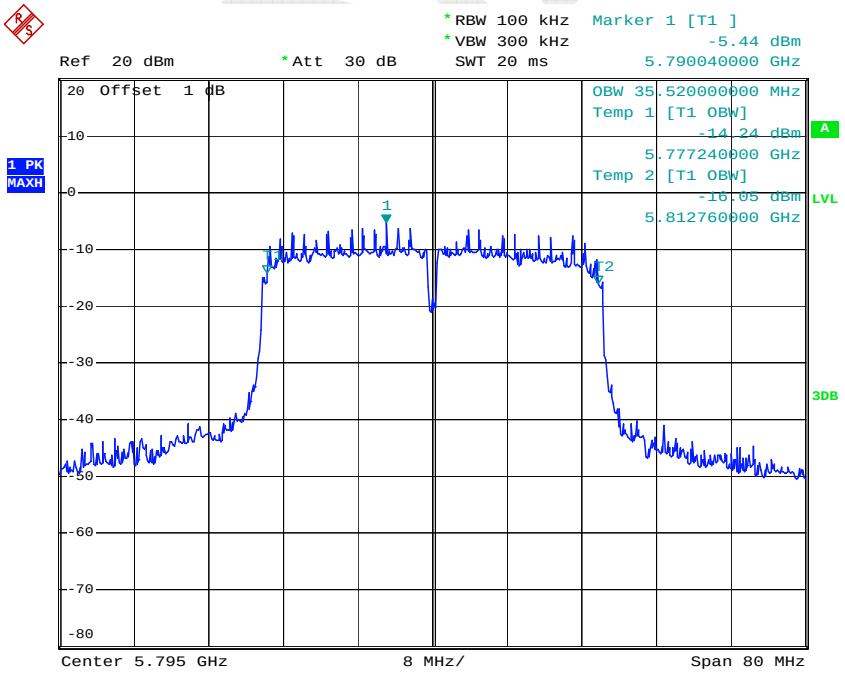
802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 14:06:34

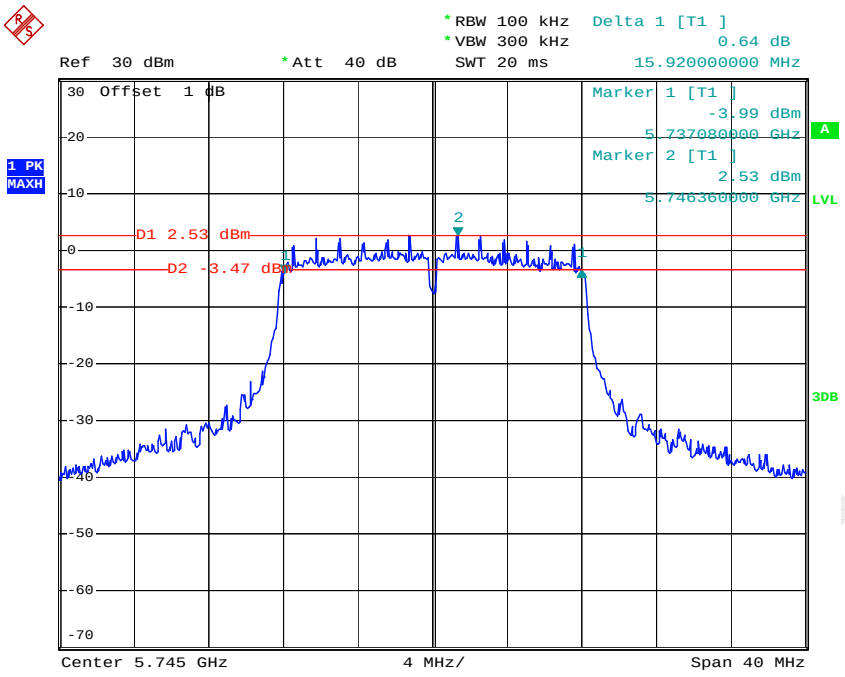
802.11n ht40 High Channel – Chain1



Date: 25.MAY.2015 14:09:08

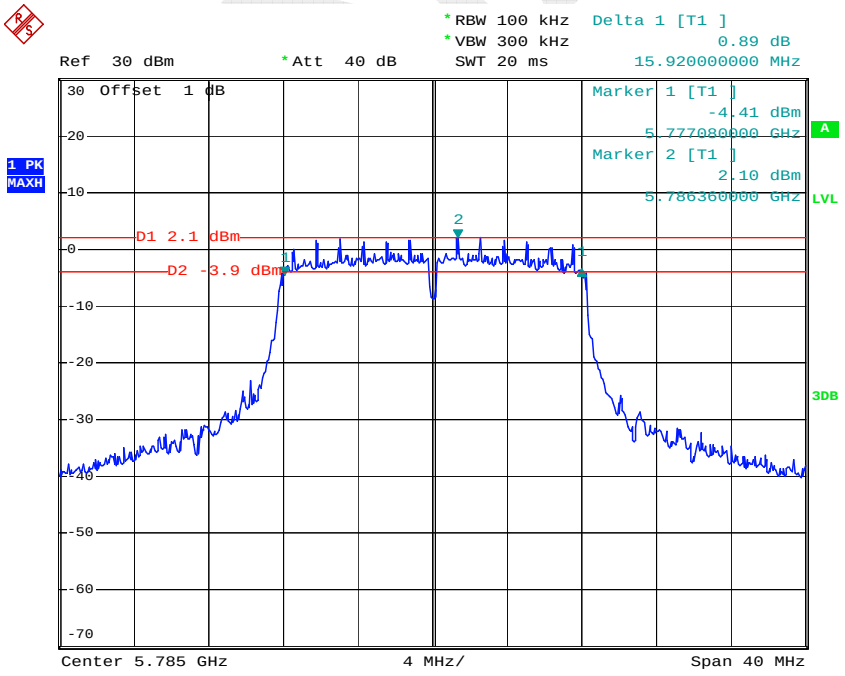
6 dB Bandwidth

802.11a Low Channel – Chain0



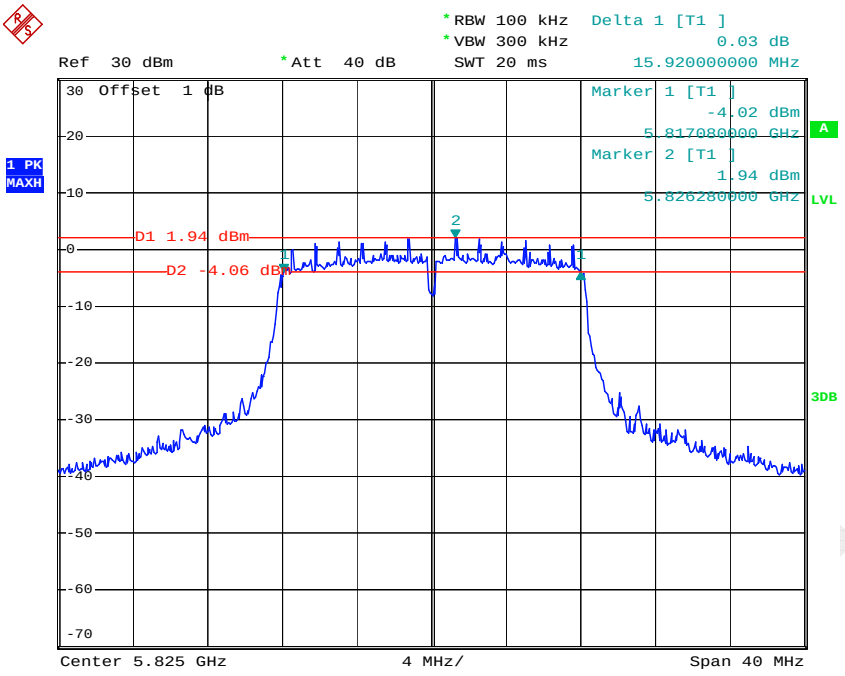
Date: 25.MAY.2015 15:26:10

802.11a Middle Channel – Chain0



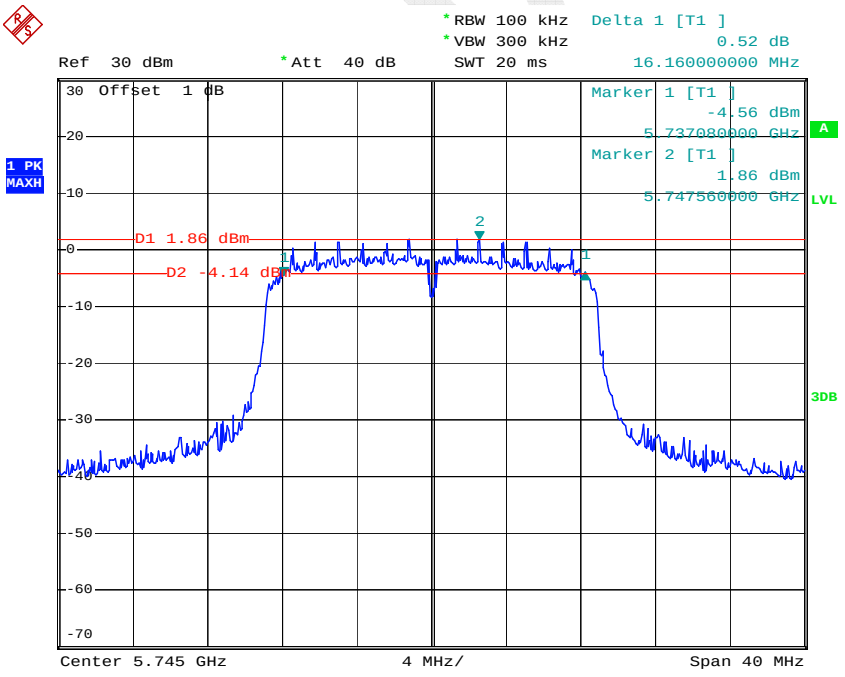
Date: 25.MAY.2015 15:29:07

802.11a High Channel – Chain0



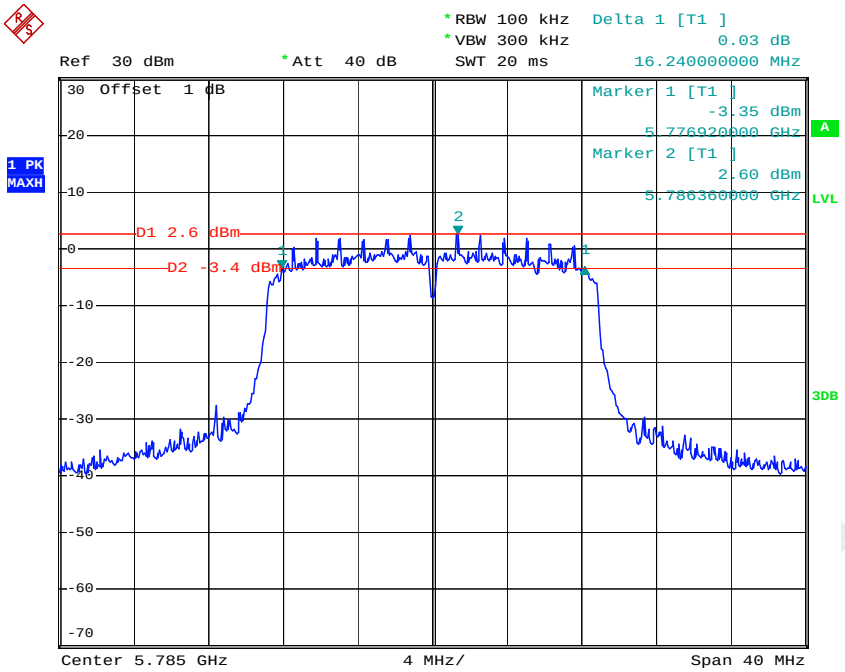
Date: 25.MAY.2015 15:35:19

802.11n ht20 Low Channel – Chain0



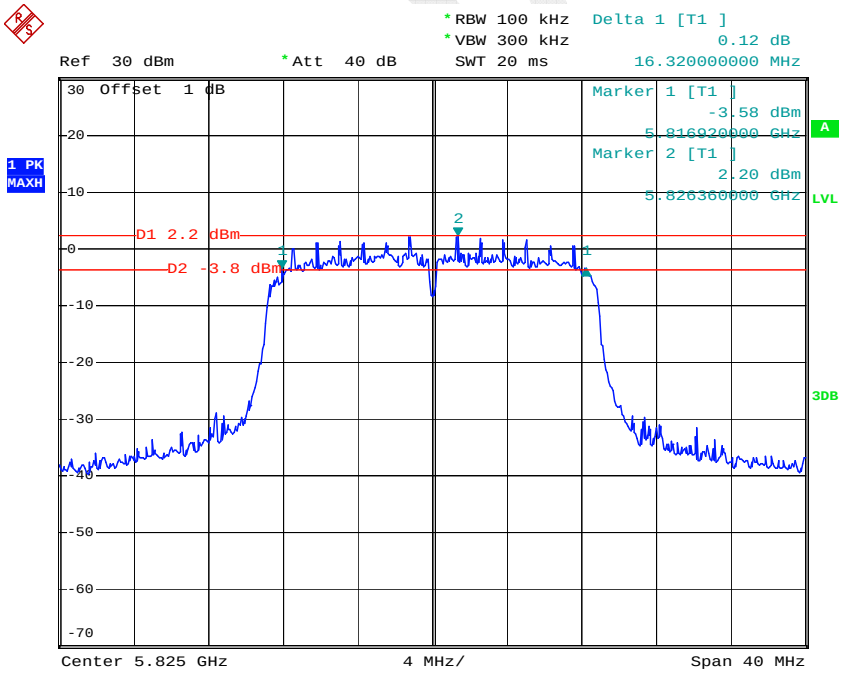
Date: 25.MAY.2015 15:42:05

802.11n ht20 Middle Channel – Chain0



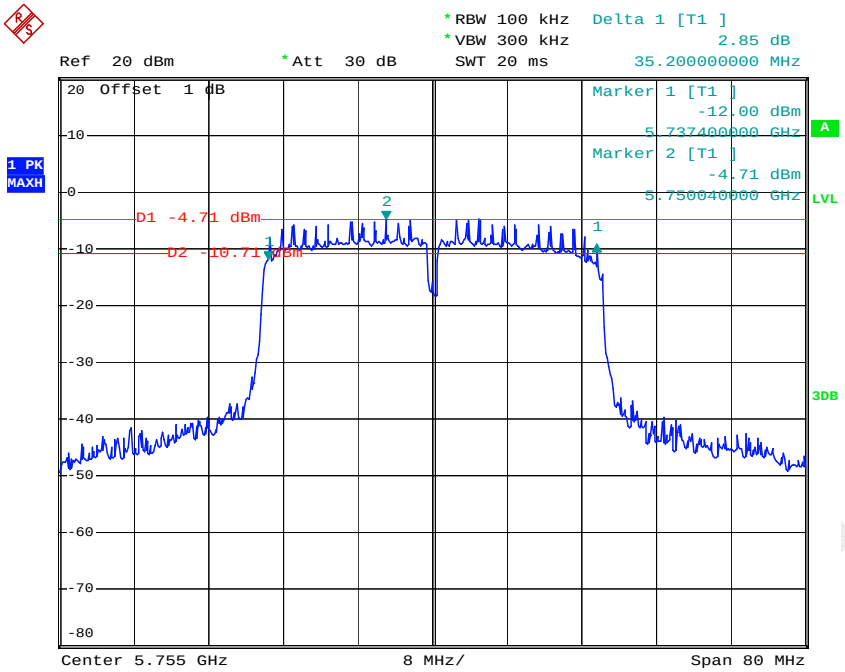
Date: 25.MAY.2015 15:44:53

802.11n ht20 High Channel – Chain0



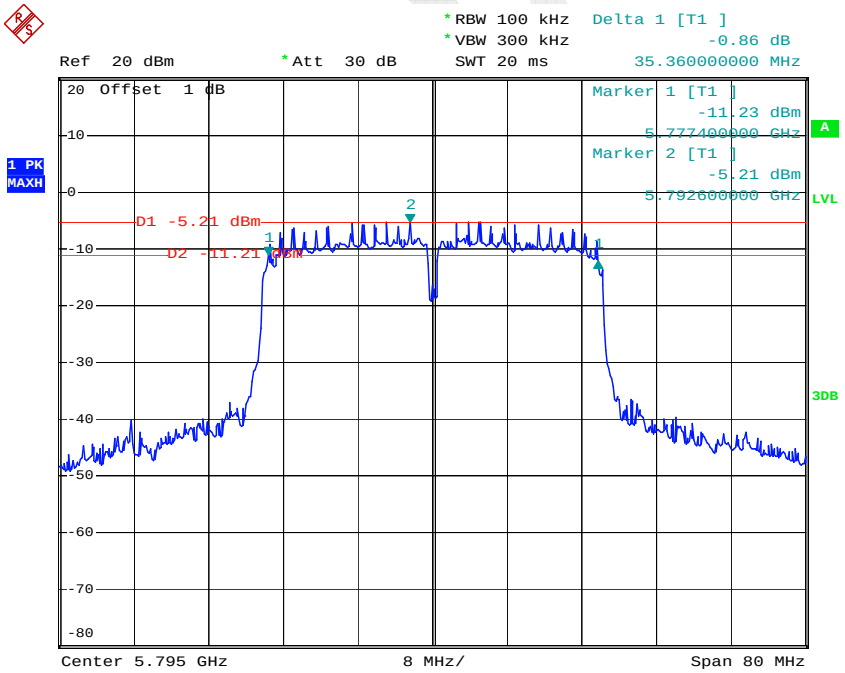
Date: 25.MAY.2015 15:46:58

802.11n ht40 Low Channel – Chain0



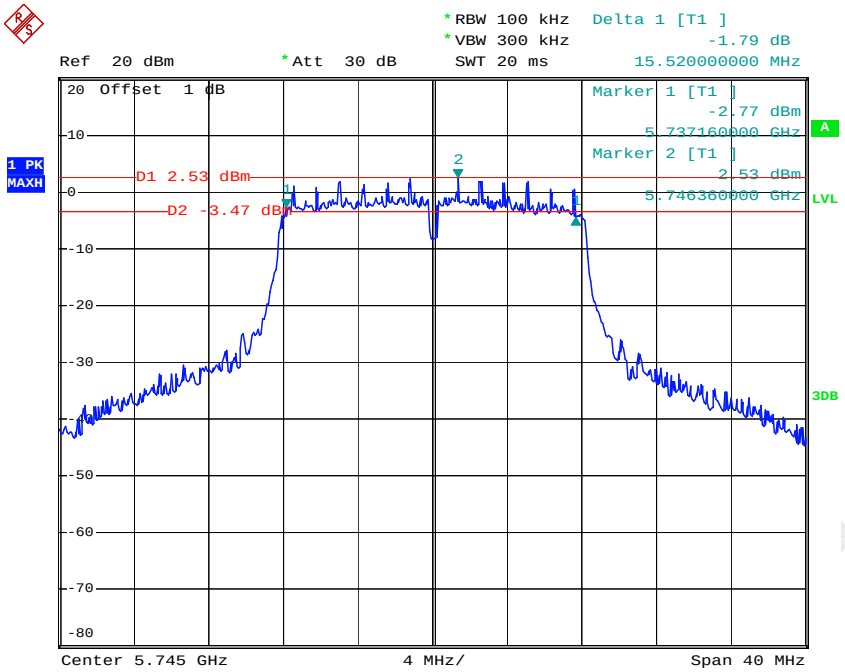
Date: 25.MAY.2015 14:30:14

802.11n ht40 High Channel – Chain0



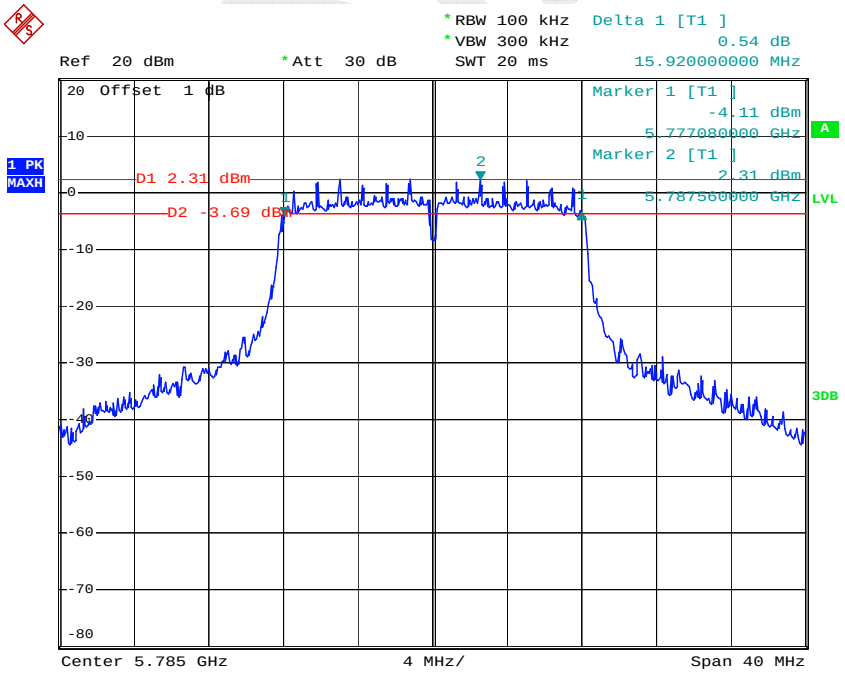
Date: 25.MAY.2015 14:24:31

802.11a Low Channel – Chain1



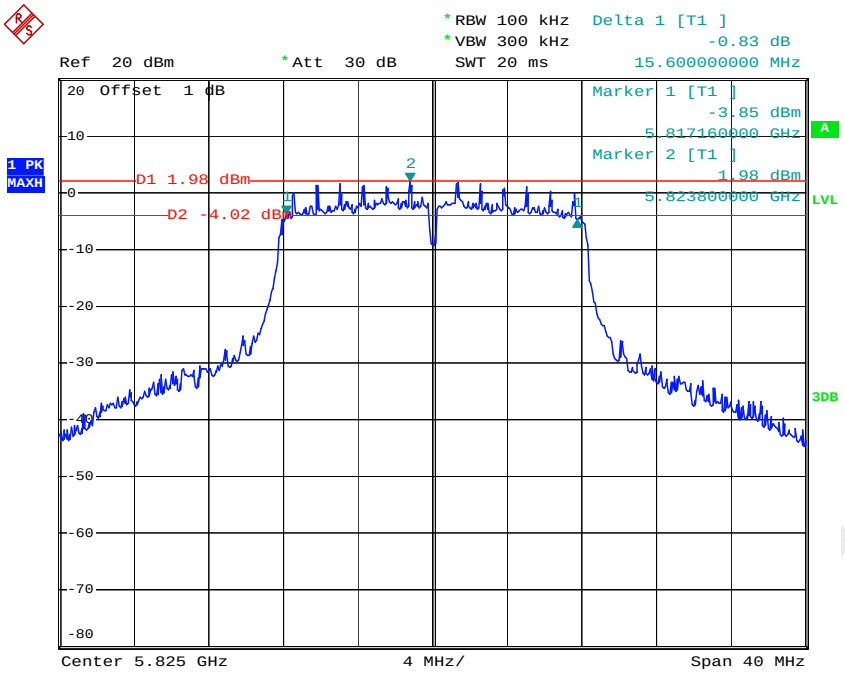
Date: 25.MAY.2015 11:26:51

802.11a Middle Channel – Chain1



Date: 25.MAY.2015 11:30:54

802.11a High Channel – Chain1



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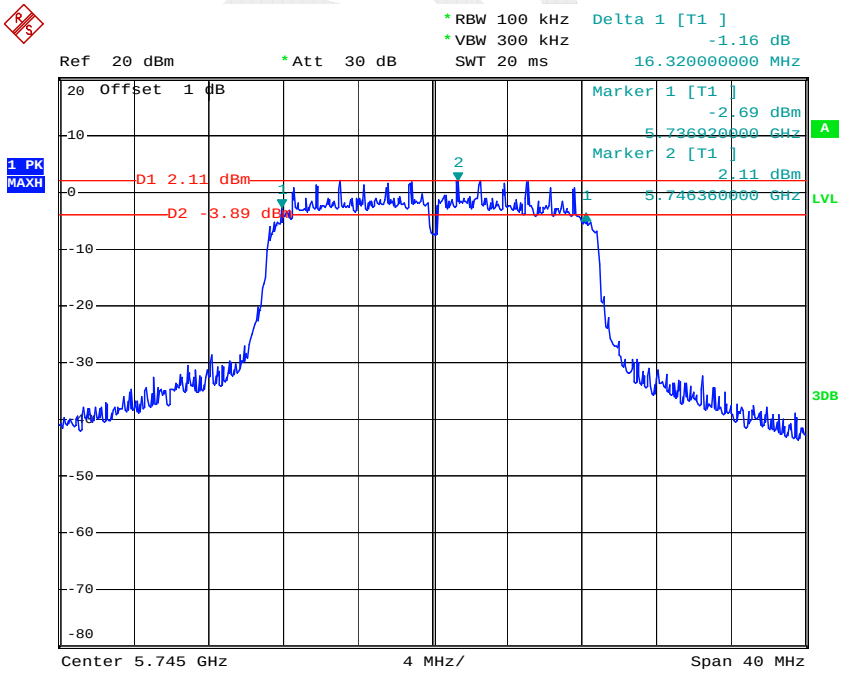
802.11n ht20 Low Channel – Chain1



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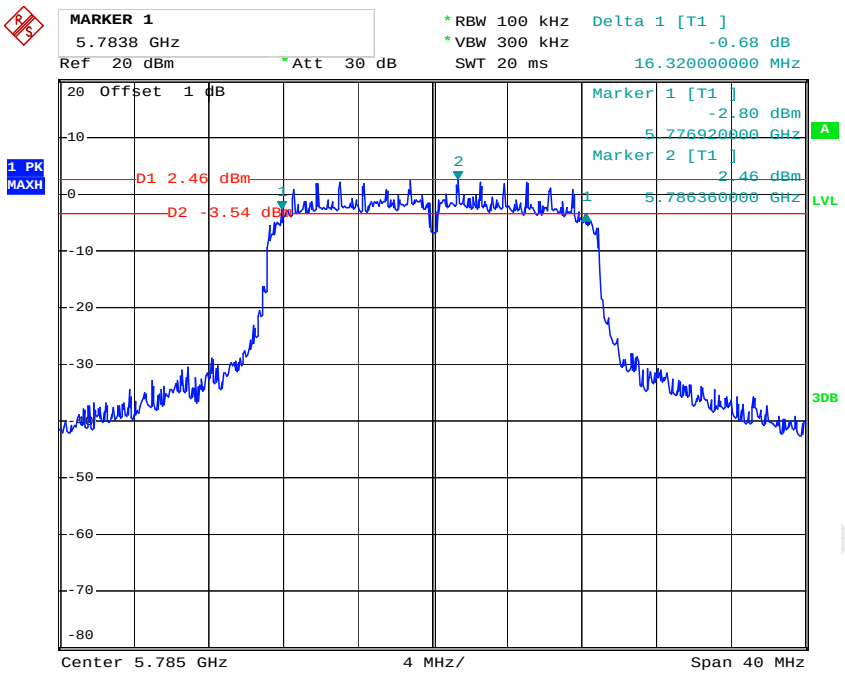
802.11n ht20 Middle Channel – Chain1



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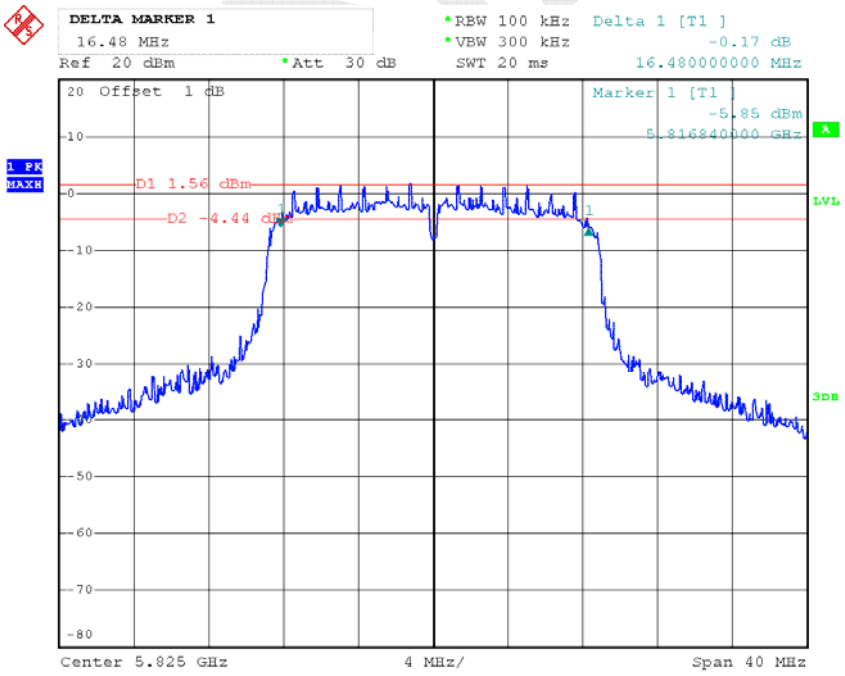
802.11n ht20 High Channel – Chain1



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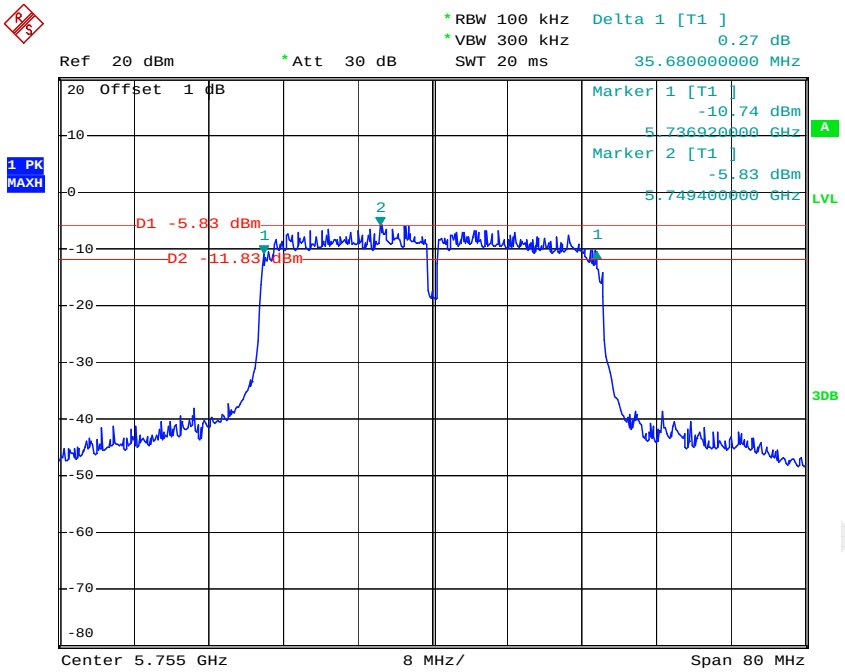
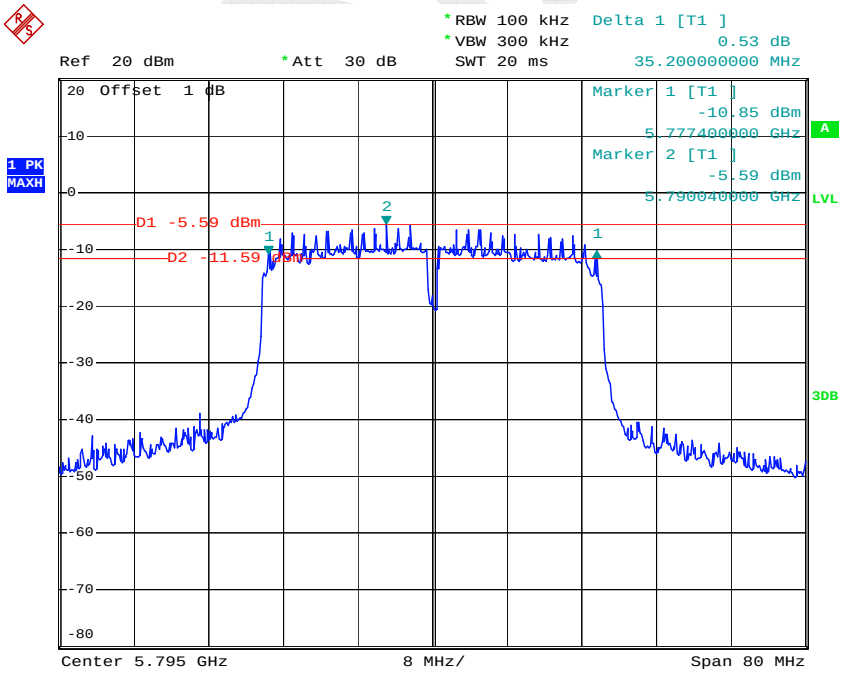
802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 14:06:21

802.11n ht40 High Channel – Chain1



Date: 25.MAY.2015 14:08:54

FCC §15.407(a) (1) (ii) (4) –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	2015-05-09	2016-05-09

*** 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:	25.3-25.7 °C
Relative Humidity:	55-56 %
ATM Pressure:	100.1 kPa

The testing was performed by Dean Liu on 2015-05-25 and 2015-06-01.

Test Mode: Transmitting

5150-5250 MHz band

Mode	Channel	Frequency	Maximum Conducted Output Power (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5180	14.98	15.05	18.03	30	PASS
	Middle	5200	14.97	14.88	17.94	30	PASS
	High	5240	15.18	15.08	18.14	30	PASS
802.11n20	Low	5180	15.02	14.99	18.02	30	PASS
	Middle	5200	15.04	15.03	18.05	30	PASS
	High	5240	15.31	15.27	18.30	30	PASS
802.11n40	Low	5190	12.47	12.63	15.56	30	PASS
	High	5230	11.98	12.57	15.30	30	PASS

5725-5850 MHz band

Mode	Channel	Frequency	Maximum Conducted Output Power (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5745	14.74	14.28	17.53	30	PASS
	Middle	5785	14.39	14.45	17.43	30	PASS
	High	5825	14.30	13.71	17.03	30	PASS
802.11n20	Low	5745	14.29	14.34	17.33	30	PASS
	Middle	5785	14.70	14.47	17.60	30	PASS
	High	5825	14.44	13.81	17.15	30	PASS
802.11n40	Low	5755	9.49	9.57	12.54	30	PASS
	High	5795	9.42	9.04	12.24	30	PASS

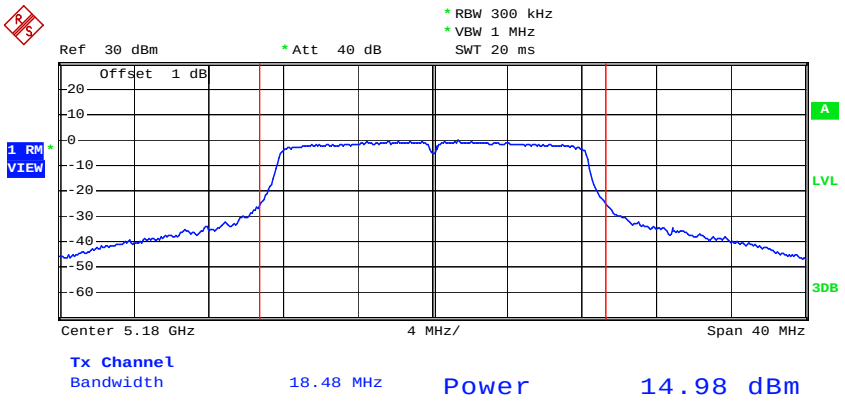
Note: 1. Directional gain = *GANT* + 10 log(*NANT*) dBi
= 5＜6dBi , so tno limit reduced.

2. Duty cycle is 100%.

3. The EUT is only for indoor use.

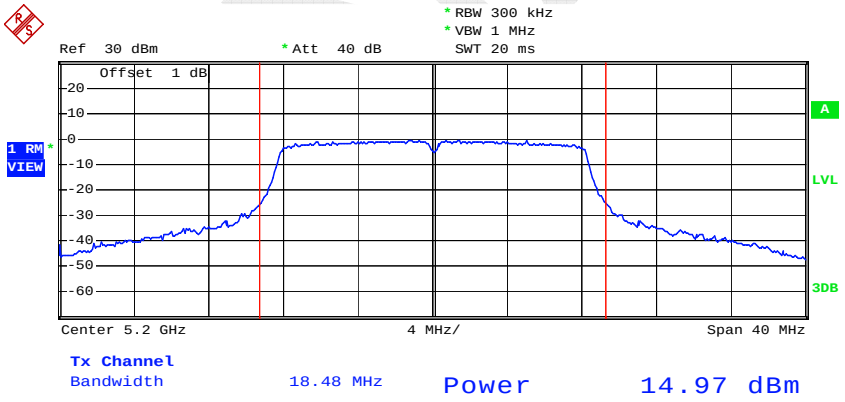
5150MHz-5250MHz:

802.11a Low Channel – Chain0



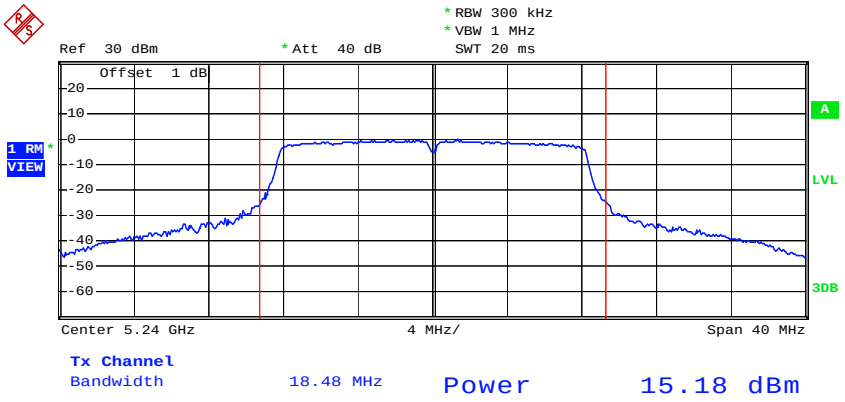
Date: 25.MAY.2015 14:44:54

802.11a Middle Channel – Chain0



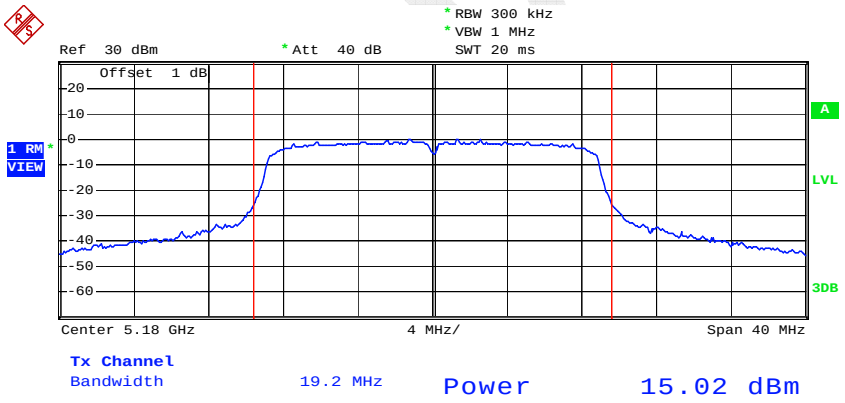
Date: 25.MAY.2015 14:50:03

802.11a High Channel – Chain0



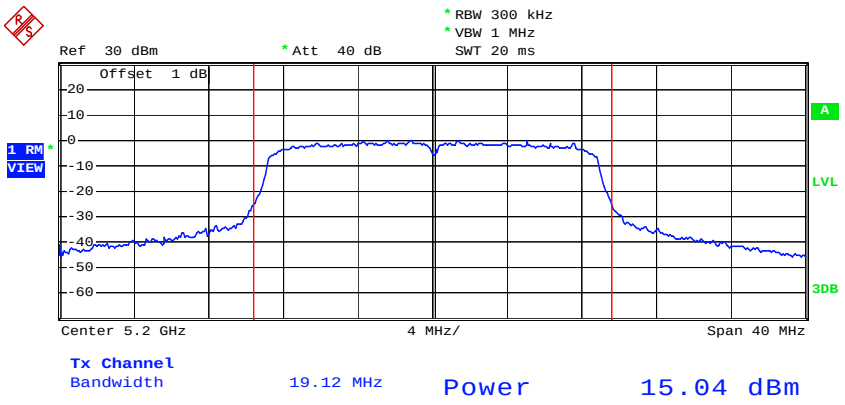
Date: 25.MAY.2015 14:52:07

802.11n ht20 Low Channel – Chain0



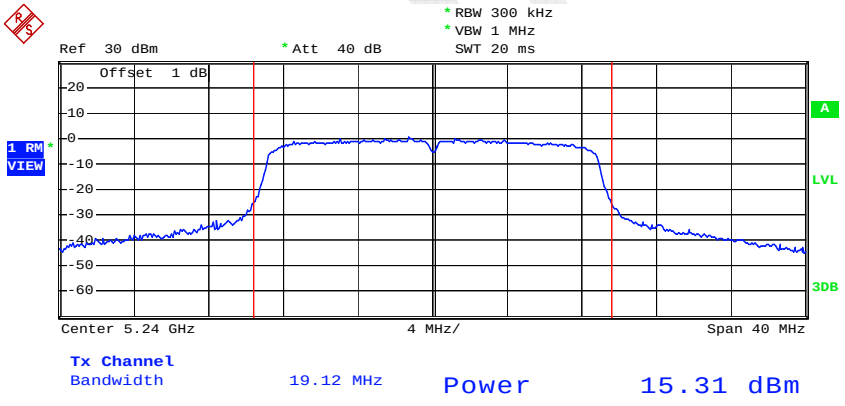
Date: 25.MAY.2015 15:01:48

802.11n ht20 Middle Channel – Chain0



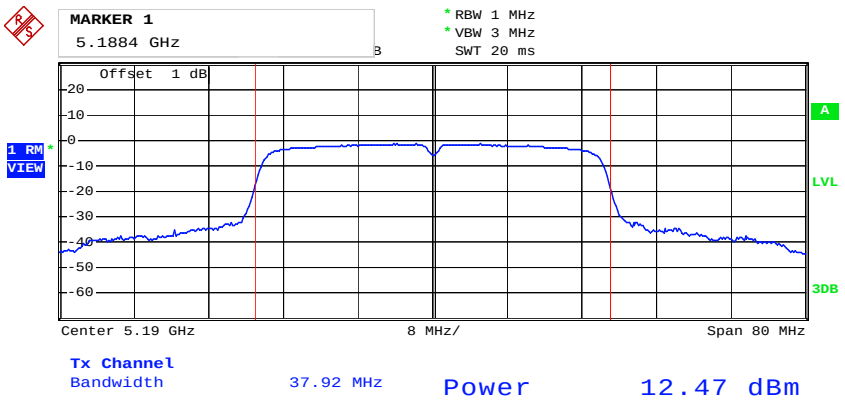
Date: 25.MAY.2015 15:00:00

802.11n ht20 High Channel – Chain0



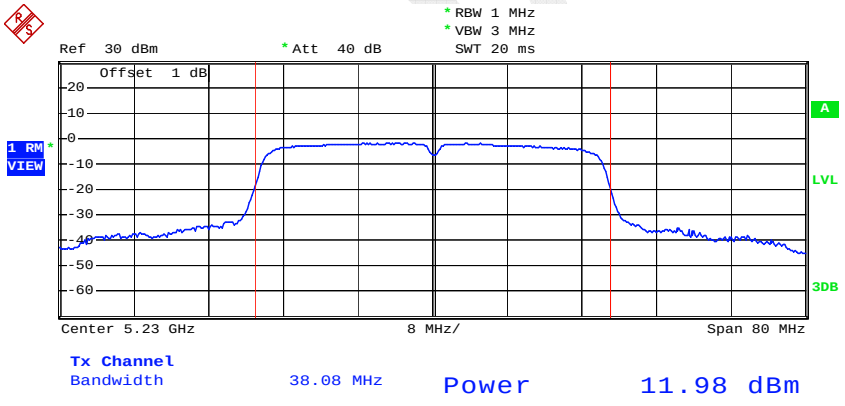
Date: 25.MAY.2015 14:57:41

802.11n ht40 Low Channel – Chain0



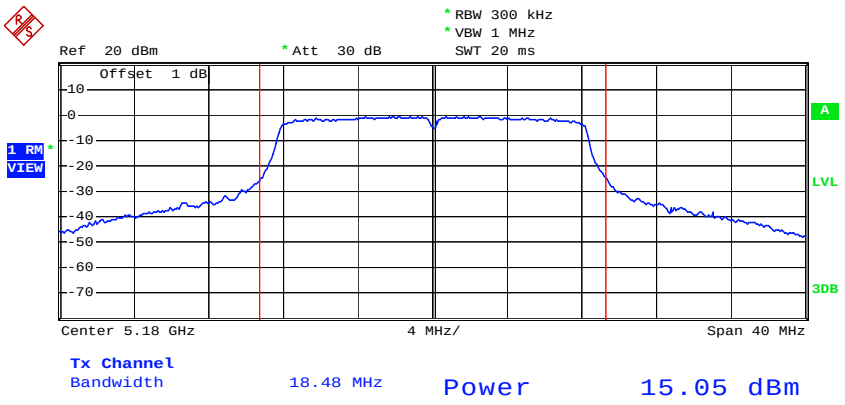
Date: 25.MAY.2015 15:17:57

802.11n ht40 High Channel – Chain0



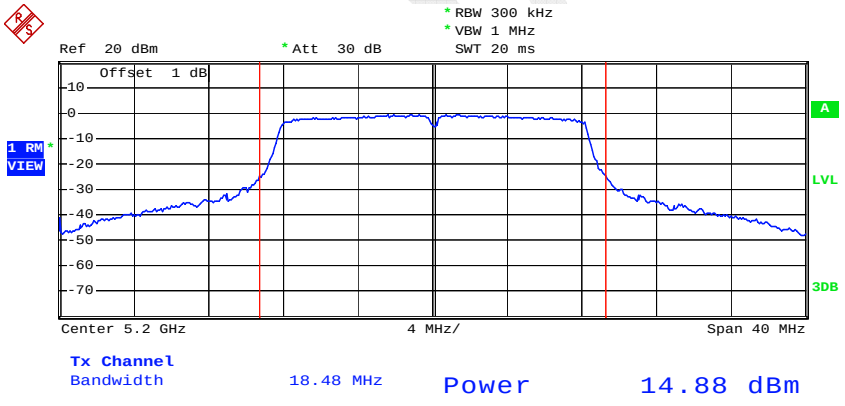
Date: 25.MAY.2015 15:20:23

802.11a Low Channel – Chain1



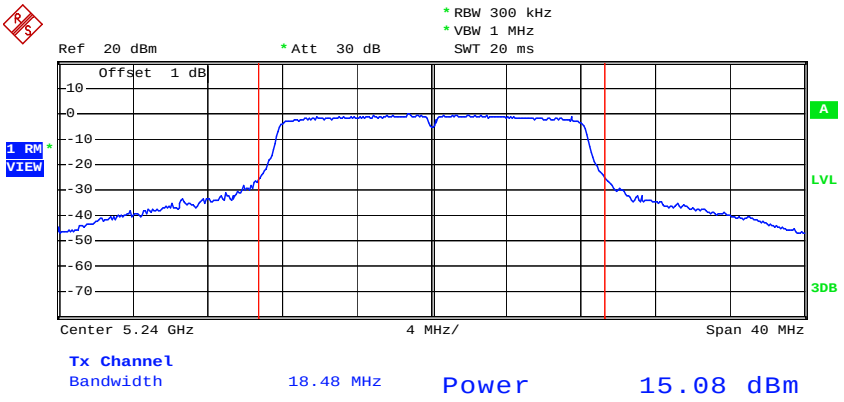
Date: 25.MAY.2015 11:12:22

802.11a Middle Channel – Chain1



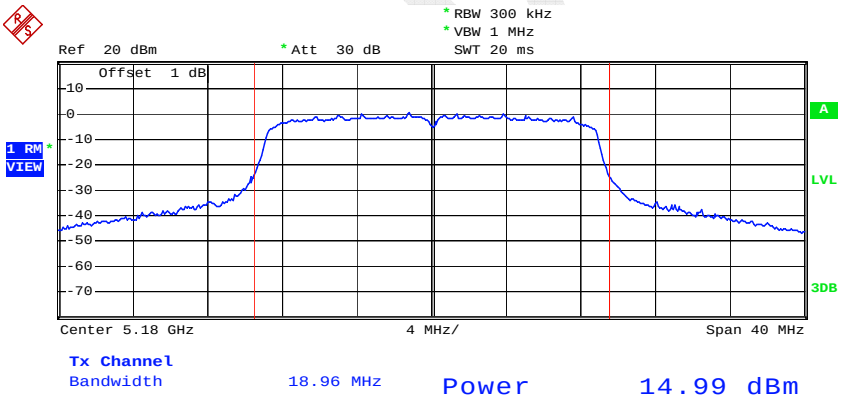
Date: 25.MAY.2015 11:14:45

802.11a High Channel – Chain1



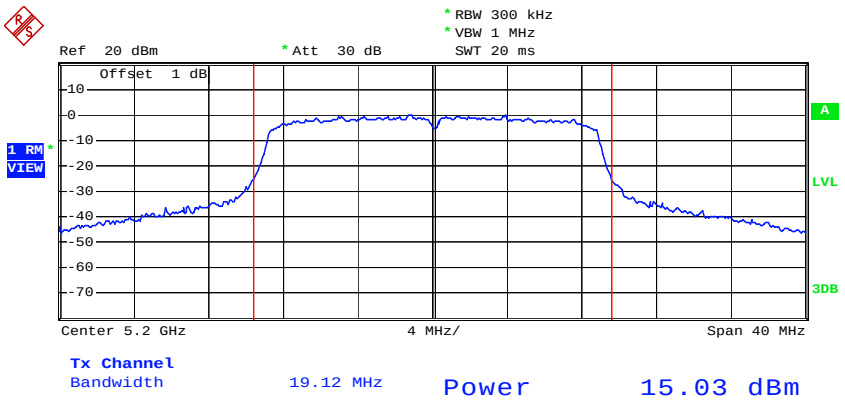
Date: 25.MAY.2015 11:16:34

802.11n ht20 Low Channel – Chain1



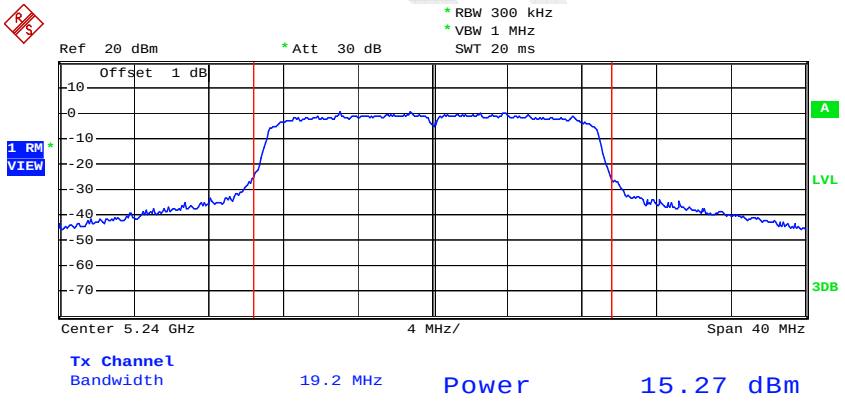
Date: 25.MAY.2015 11:23:21

802.11n ht20 Middle Channel – Chain1



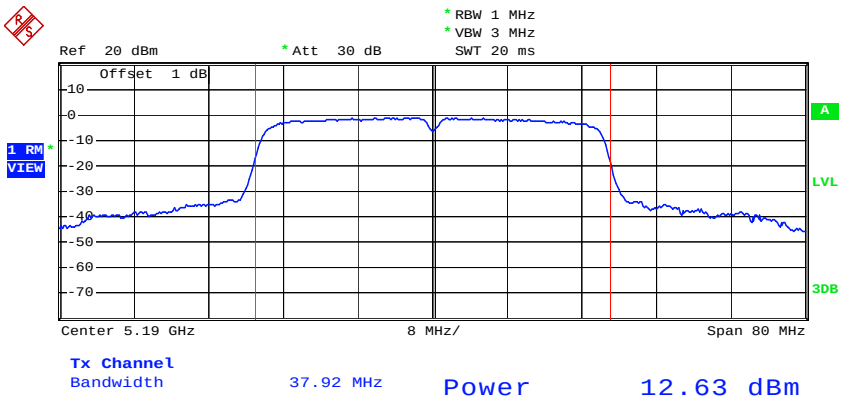
Date: 25.MAY.2015 11:21:36

802.11n ht20 High Channel – Chain1



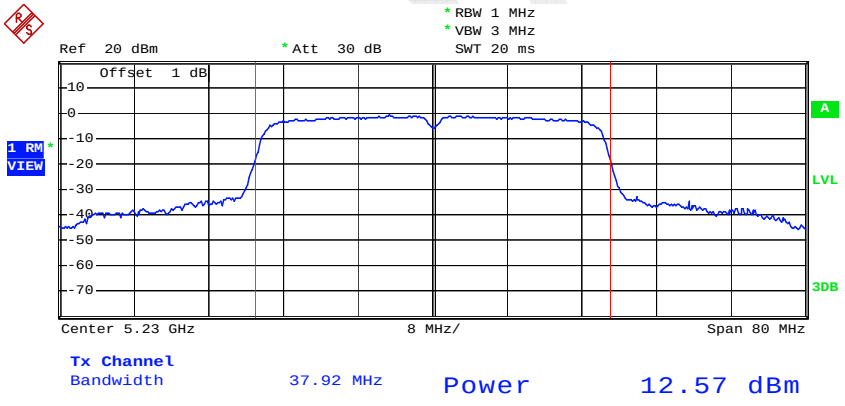
Date: 25.MAY.2015 11:19:21

802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 11:05:09

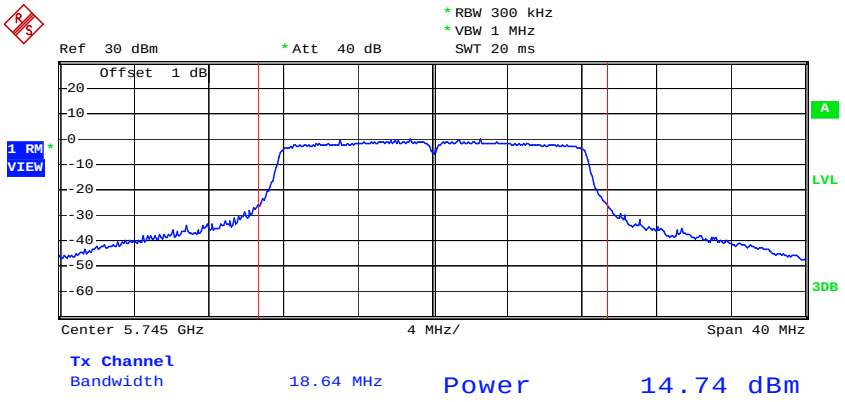
802.11n ht40 High Channel – Chain1



Date: 25.MAY.2015 11:08:28

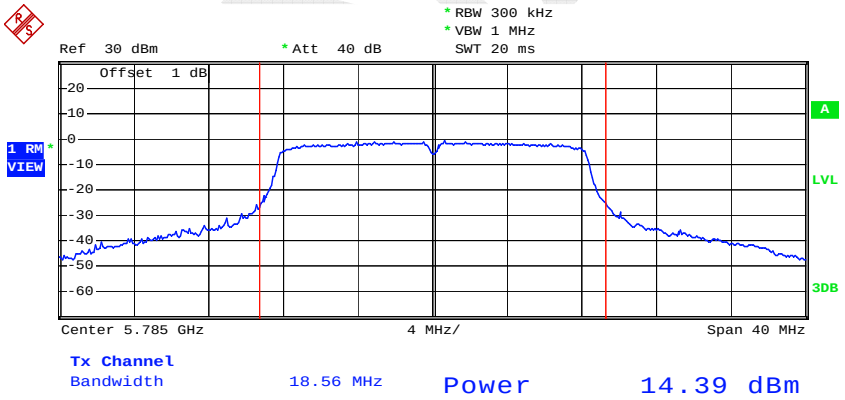
5725MHz-5850MHz:

802.11a Low Channel – Chain0



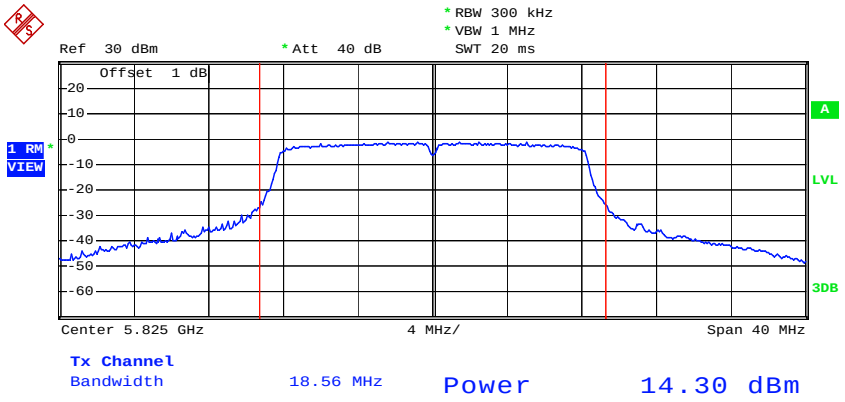
Date: 25.MAY.2015 15:26:35

802.11a Middle Channel – Chain0



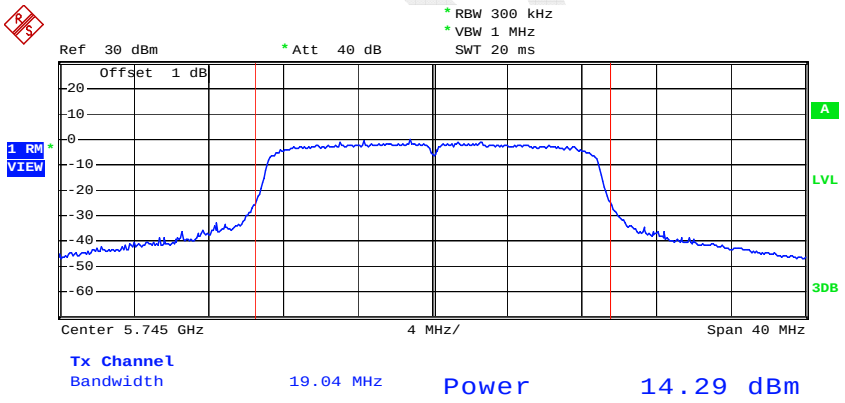
Date: 25.MAY.2015 15:29:33

802.11a High Channel – Chain0



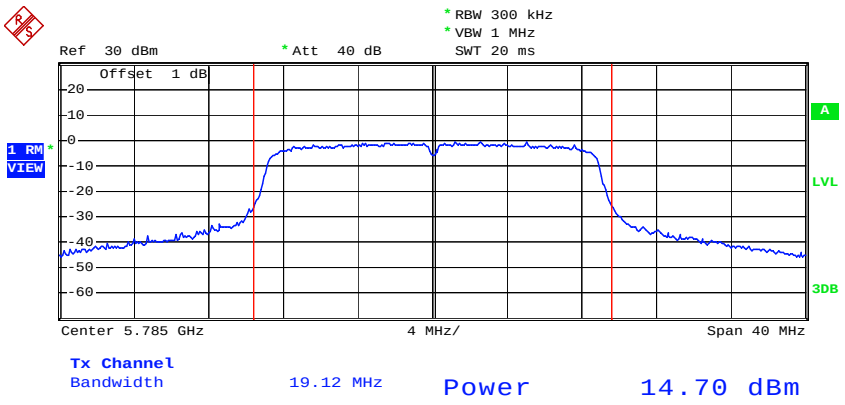
Date: 25.MAY.2015 15:35:45

802.11n ht20 Low Channel – Chain0



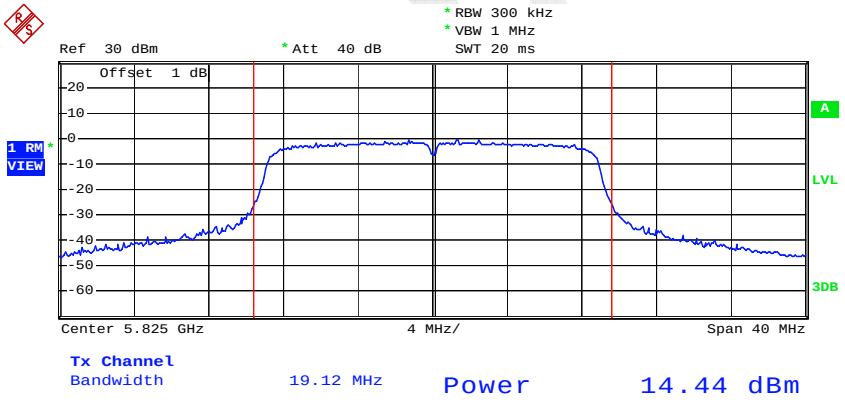
Date: 25.MAY.2015 15:42:34

802.11n ht20 Middle Channel – Chain0



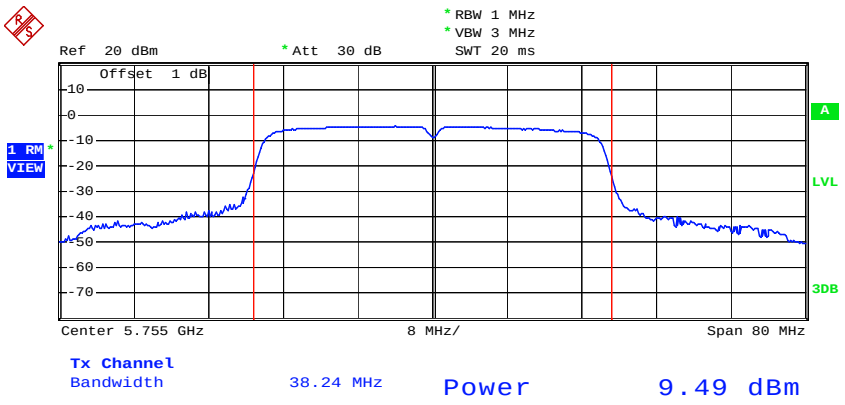
Date: 25.MAY.2015 15:45:20

802.11n ht20 High Channel – Chain0



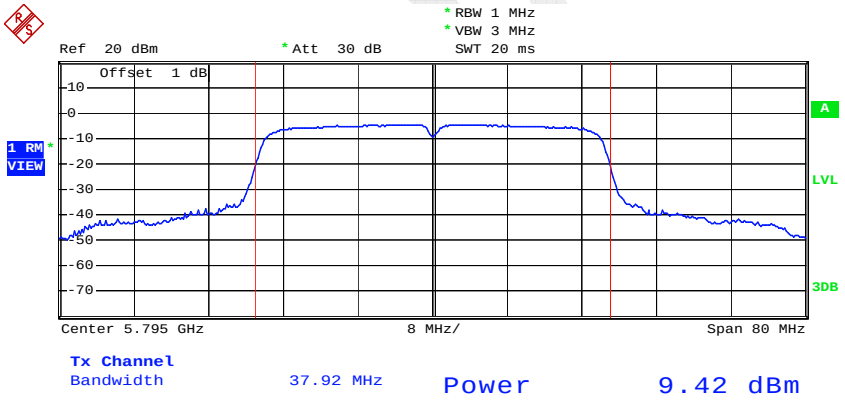
Date: 25.MAY.2015 15:47:24

802.11n ht40 Low Channel – Chain0



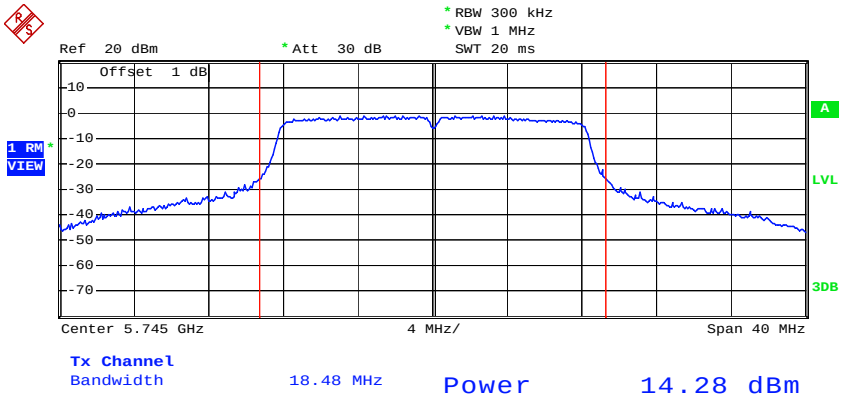
Date: 25.MAY.2015 14:30:39

802.11n ht40 High Channel – Chain0



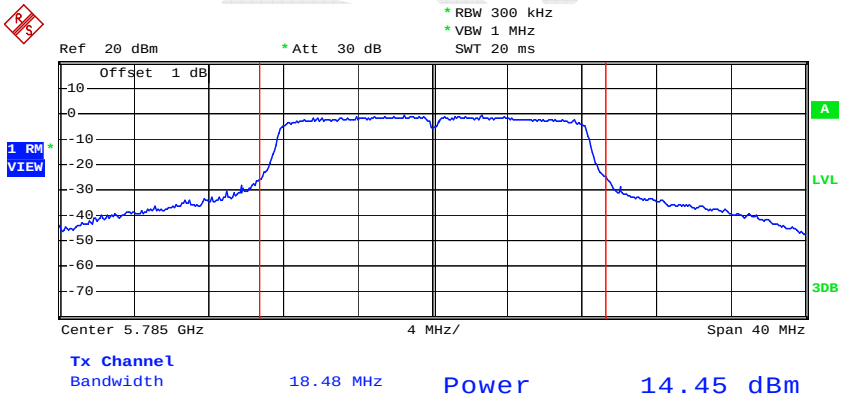
Date: 25.MAY.2015 14:24:58

802.11a Low Channel – Chain1



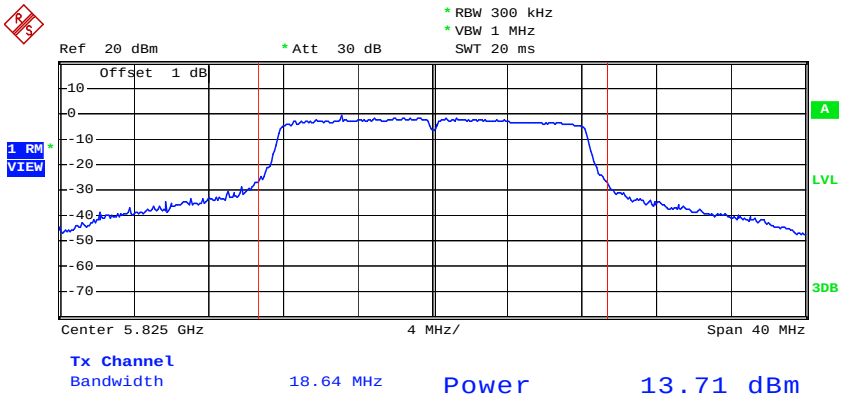
Date: 25.MAY.2015 11:27:17

802.11a Middle Channel – Chain1



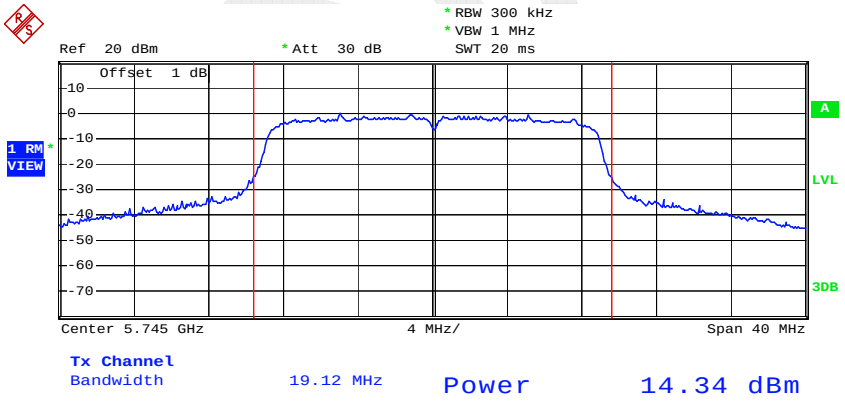
Date: 25.MAY.2015 11:31:20

802.11a High Channel – Chain1



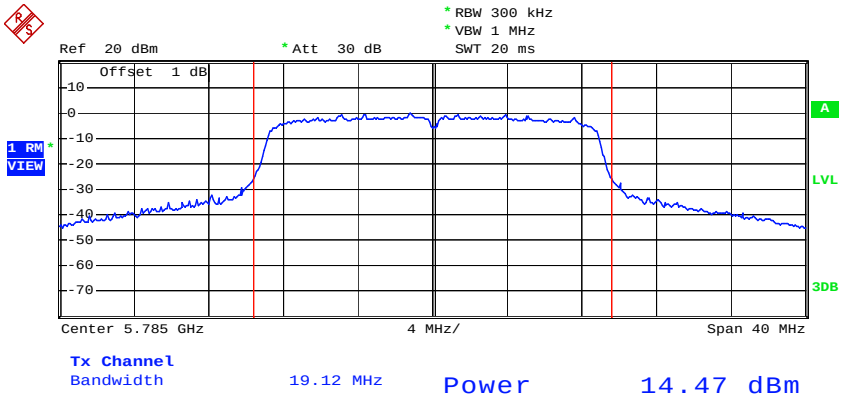
Date: 25.MAY.2015 11:38:03

802.11n ht20 Low Channel – Chain1



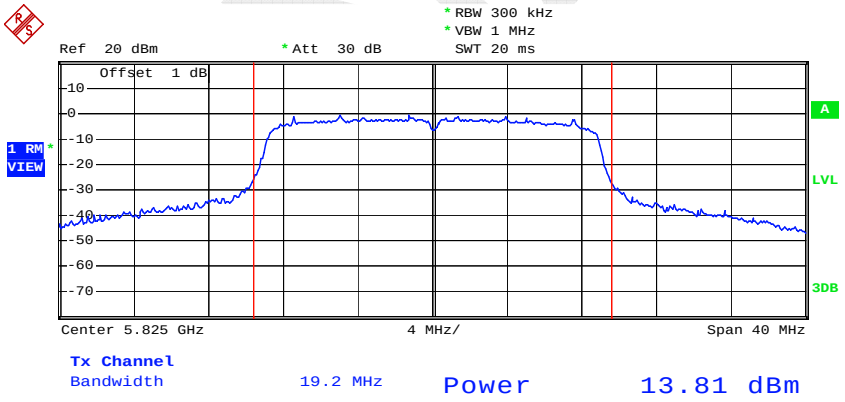
Date: 25.MAY.2015 11:45:32

802.11n ht20 Middle Channel – Chain1



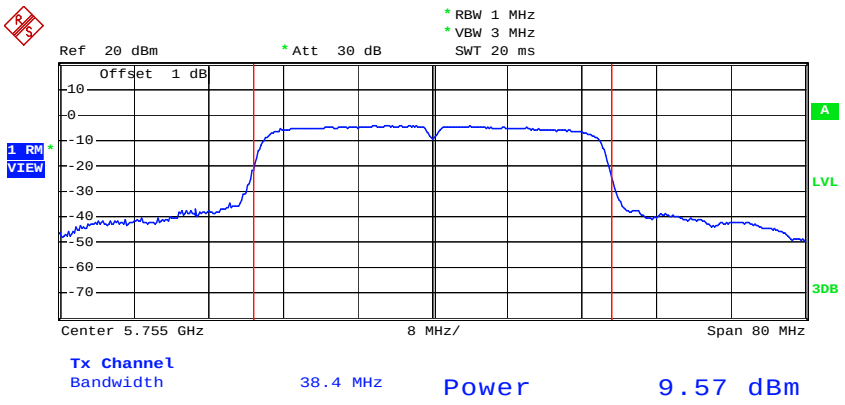
Date: 25.MAY.2015 11:47:44

802.11n ht20 High Channel – Chain1



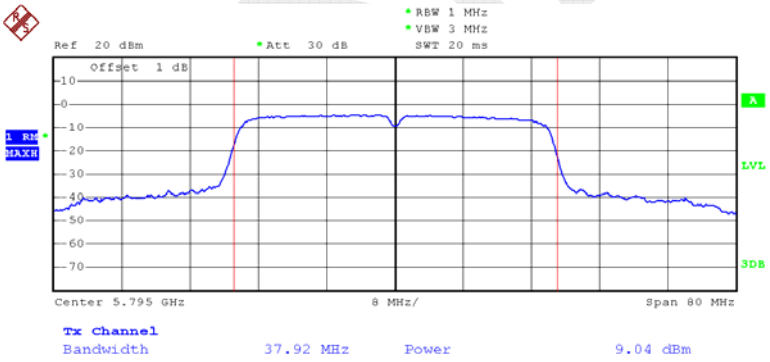
Date: 25.MAY.2015 11:55:23

802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 14:06:46

802.11n ht40 High Channel – Chain1



Date: 1.JUN.2015 15:44:34

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	2015-05-09	2016-05-09

*** 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:	25.3 °C
Relative Humidity:	56 %
ATM Pressure:	100.1 kPa

The testing was performed by Dean Liu on 2015-05-25.

Test Mode: Transmitting

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

5150MHz-5250MHz:

Mode	Channel	Frequency MHz	PSD (dBm/MHz)			Limit (dBm/MHz)	Result
			Chain0	Chain1	Total		
802.11a	Low	5180	3.38	3.5	6.45	17	PASS
	Middle	5200	3.62	3.22	6.43	17	PASS
	High	5240	3.68	3.5	6.6	17	PASS
802.11n20	Low	5180	3.09	3.19	6.15	17	PASS
	Middle	5200	3.05	3.47	6.28	17	PASS
	High	5240	3.43	3.58	6.52	17	PASS
802.11n40	Low	5190	-1.35	-0.96	1.86	17	PASS
	High	5230	-1.87	-1.08	1.55	17	PASS

Note: 1. Directional gain = *GANT* + 10 log(*NANT*) dBi
= 5＜6dBi , so tno limit reduced.

2. Duty cycle is 100%.

3. The EUT is only for indoor use.

5725MHz-5850MHz:

Mode	Channel	Frequency	Power Spectral Density (dBm/300kHz)		Power Spectral Density (dBm/500kHz)			Limits (dBm/500kHz)
		MHz	Chain 0	Chain 1	Chain0 Integrated Value	Chain 1 Integrated Value	Total	
802.11a	Low	5745	-0.14	-0.25	2.08	1.97	5.04	30
	Middle	5785	-0.64	-0.37	1.58	1.85	4.73	30
	High	5825	-0.33	-0.85	1.89	1.37	4.65	30
802.11n20	Low	5745	-0.45	-0.11	1.77	2.11	4.95	30
	Middle	5785	-0.46	-0.63	1.76	1.59	4.69	30
	High	5825	-0.69	-0.72	1.53	1.50	4.53	30
802.11n40	Low	5755	-7.26	-8.11	-5.04	-5.89	-2.43	30
	High	5795	-8.17	-8.34	-5.95	-6.12	-3.02	30

Note: If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

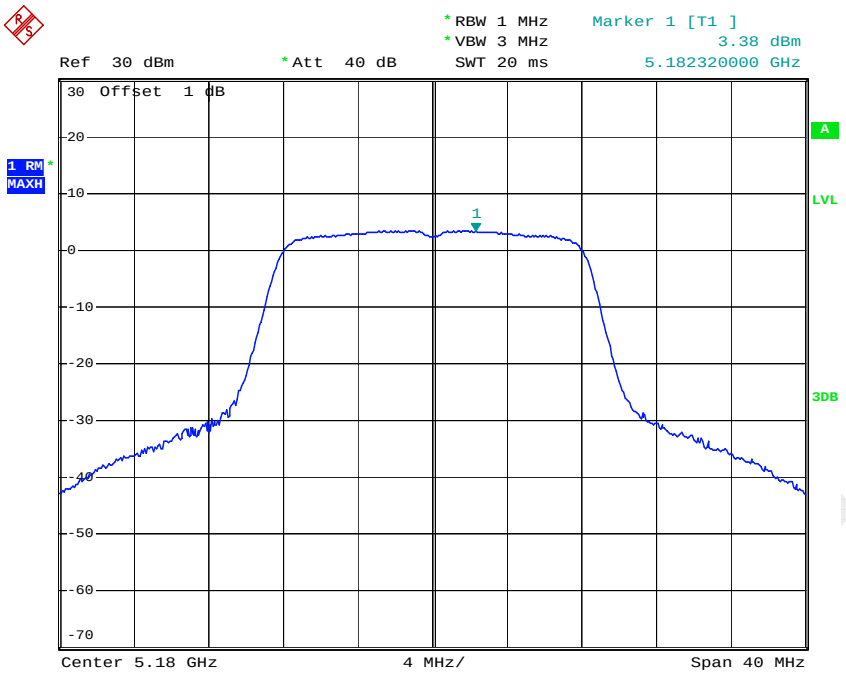
Note: 1. Directional gain = *GANT* + 10 log(*NANT*) dBi
= 5＜6dBi , so tno limit reduced.

2. Duty cycle is 100%.

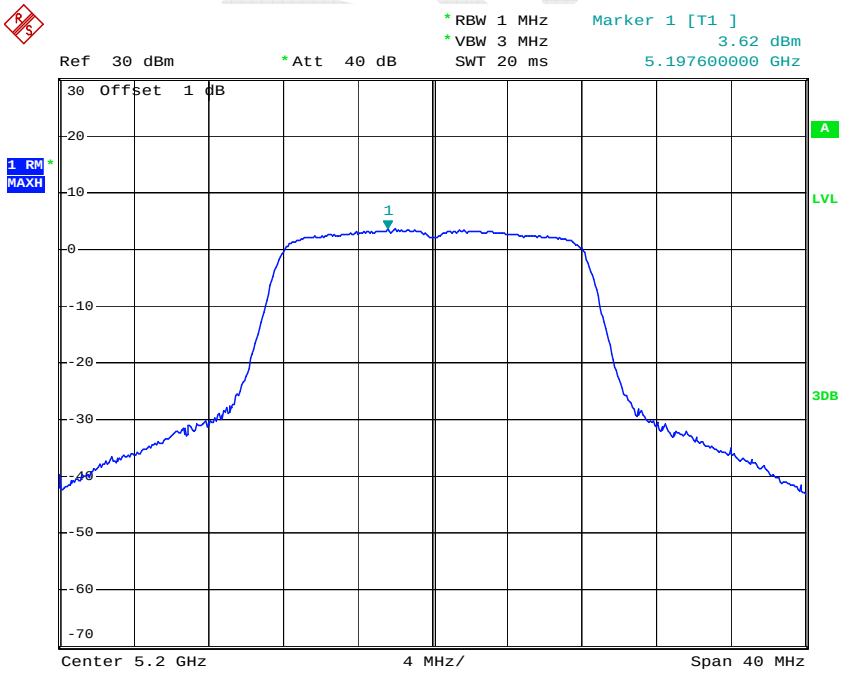
3. The EUT is only for indoor use.

5150MHz-5250MHz:

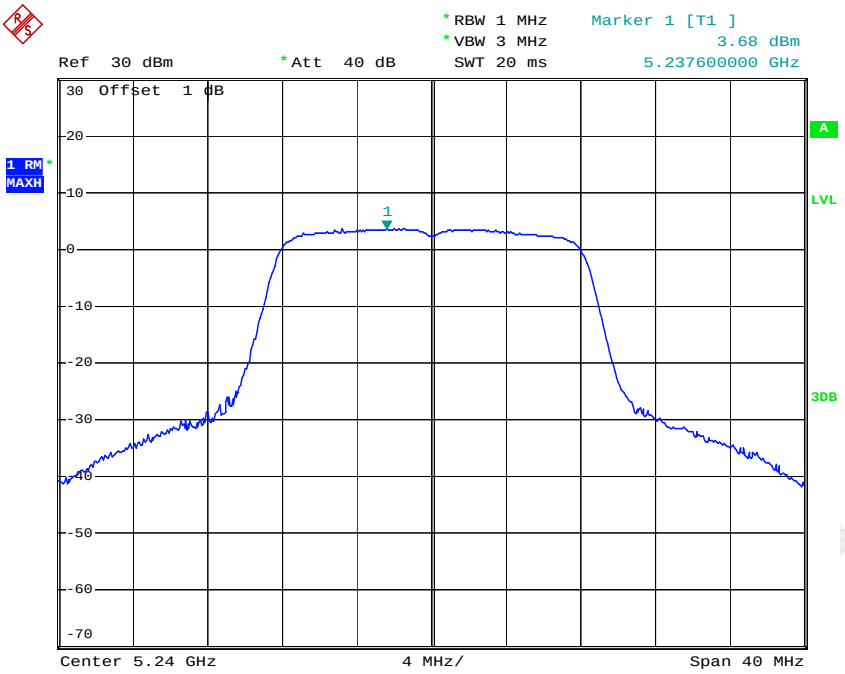
802.11a Low Channel – Chain0



802.11a Middle Channel – Chain0

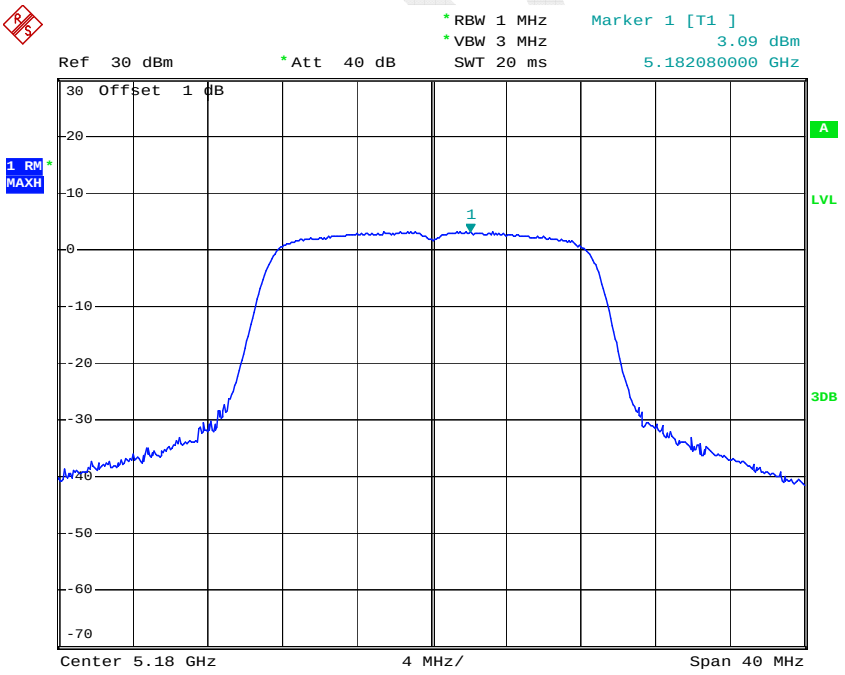


802.11a High Channel – Chain0



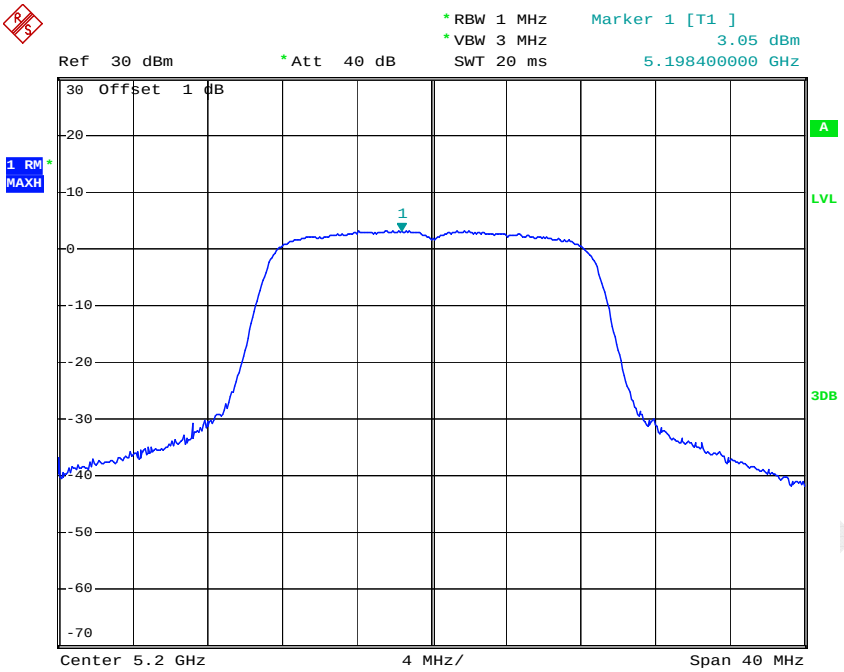
Date: 25.MAY.2015 14:52:20

802.11n ht20 Low Channel – Chain0



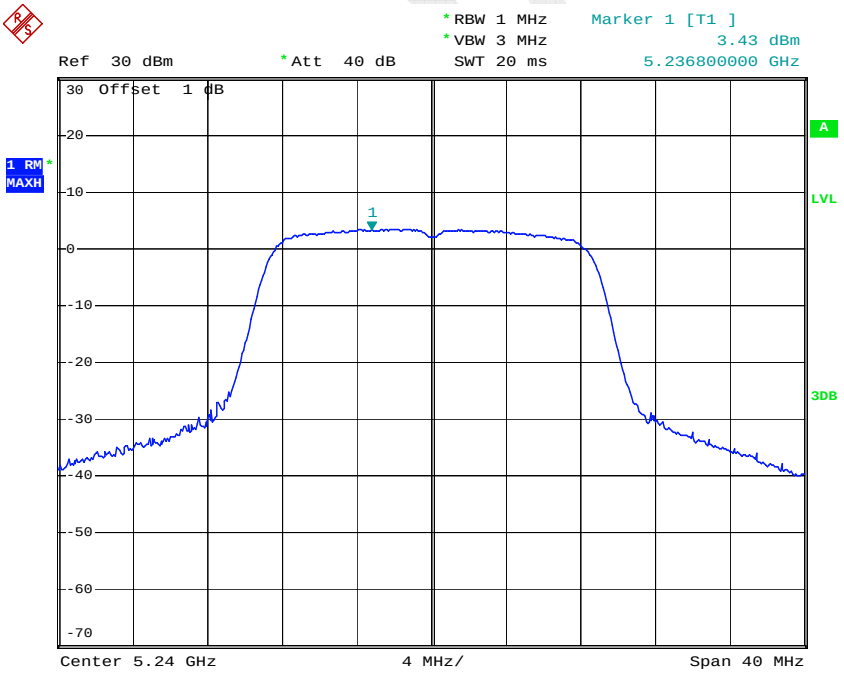
Date: 25.MAY.2015 15:02:01

802.11n ht20 Middle Channel – Chain0



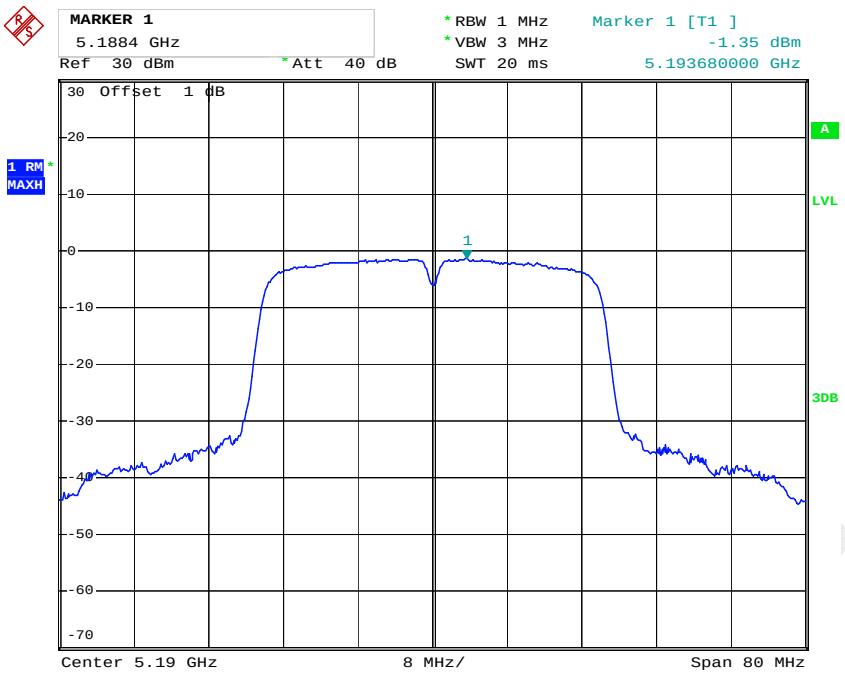
Date: 25.MAY.2015 15:00:13

802.11n ht20 High Channel – Chain0



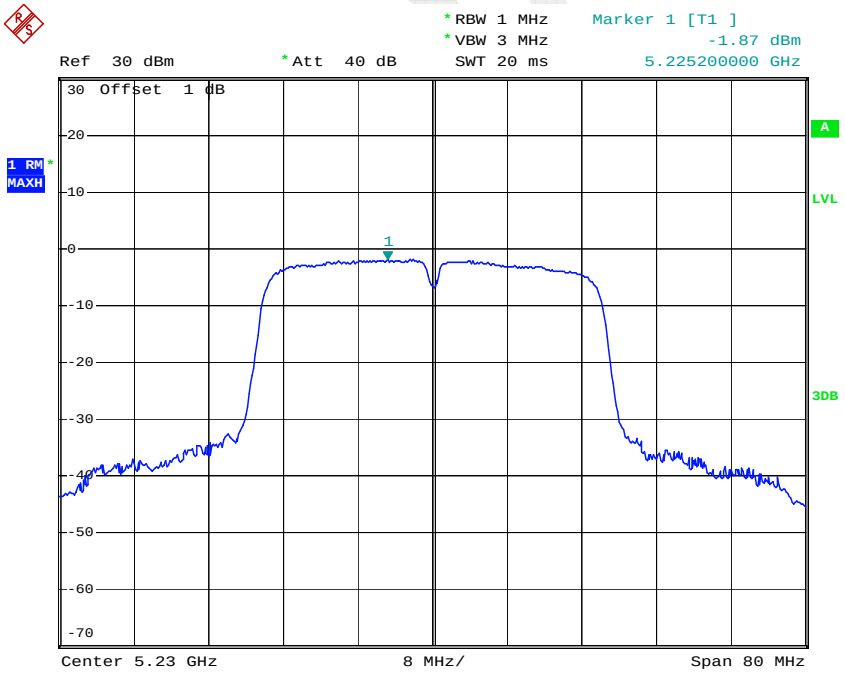
Date: 25.MAY.2015 14:57:56

802.11n ht40 Low Channel – Chain0



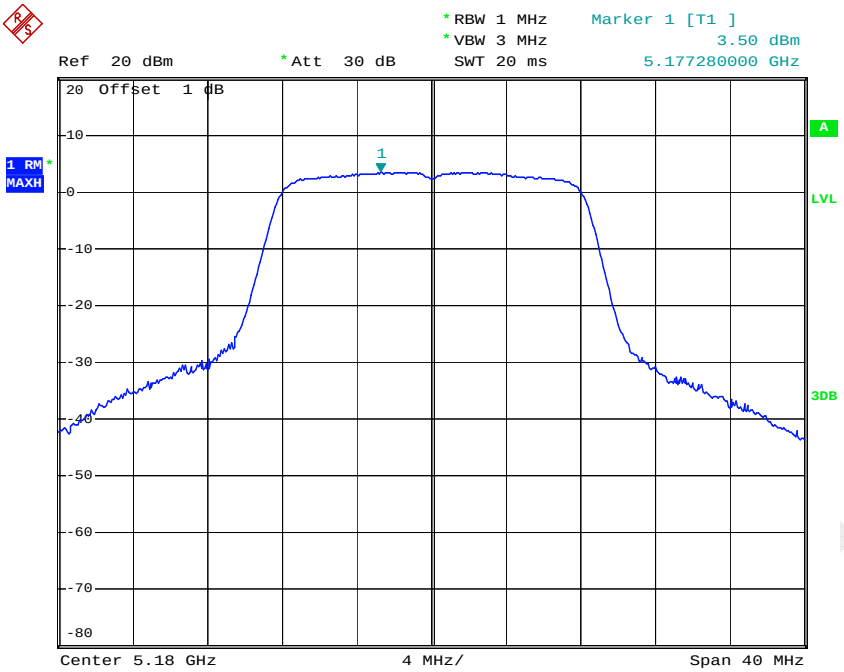
Date: 25.MAY.2015 15:18:16

802.11n ht40 High Channel – Chain0



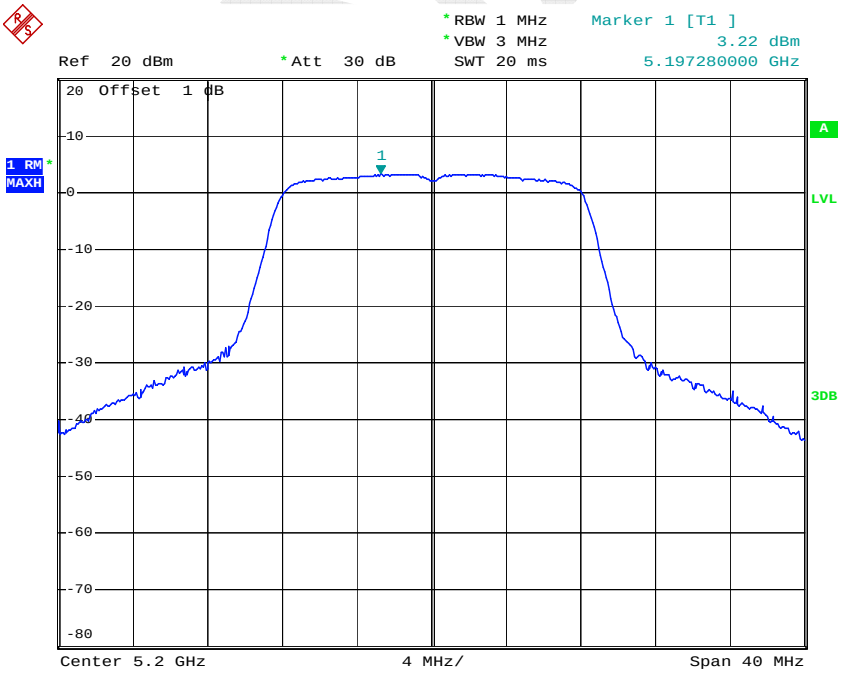
Date: 25.MAY.2015 15:20:36

802.11a Low Channel – Chain1



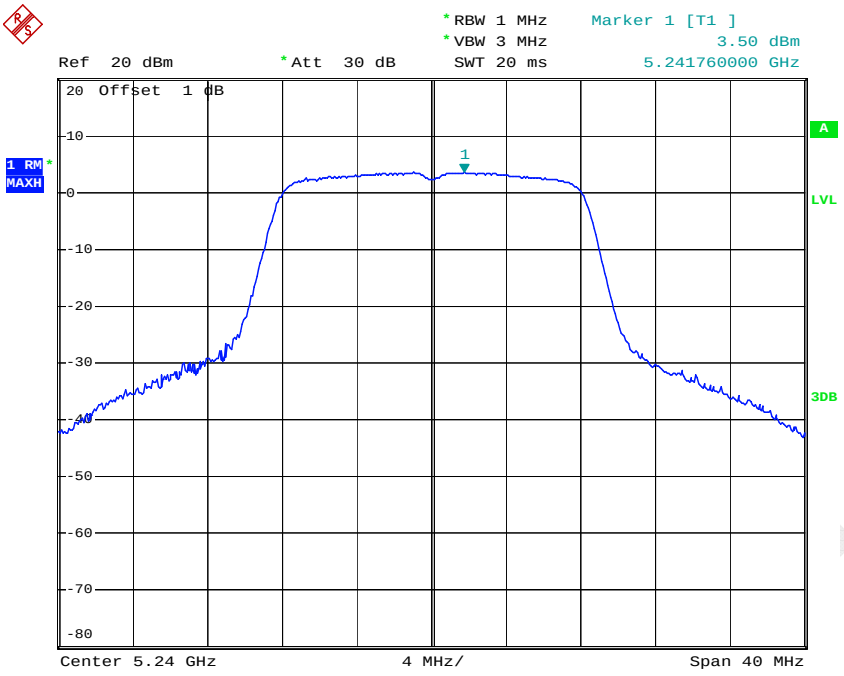
Date: 25.MAY.2015 11:12:35

802.11a Middle Channel – Chain1



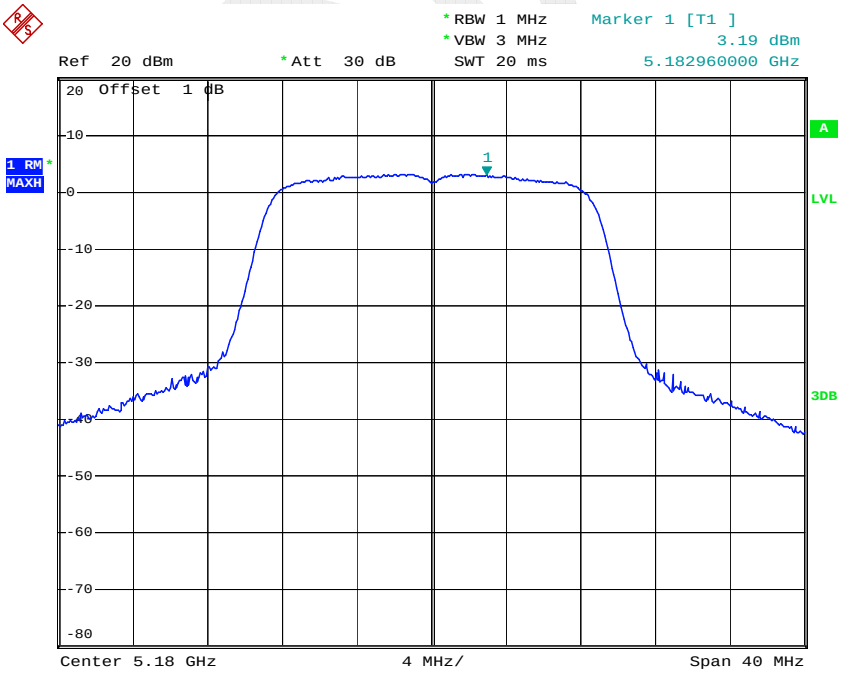
Date: 25.MAY.2015 11:14:59

802.11a High Channel – Chain1



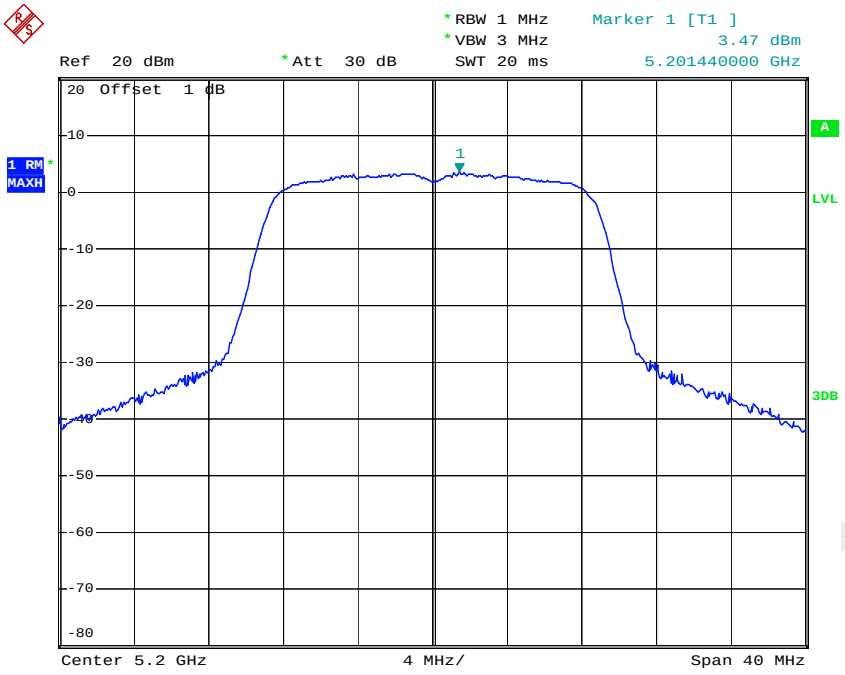
Date: 25.MAY.2015 11:16:47

802.11n ht20 Low Channel – Chain1



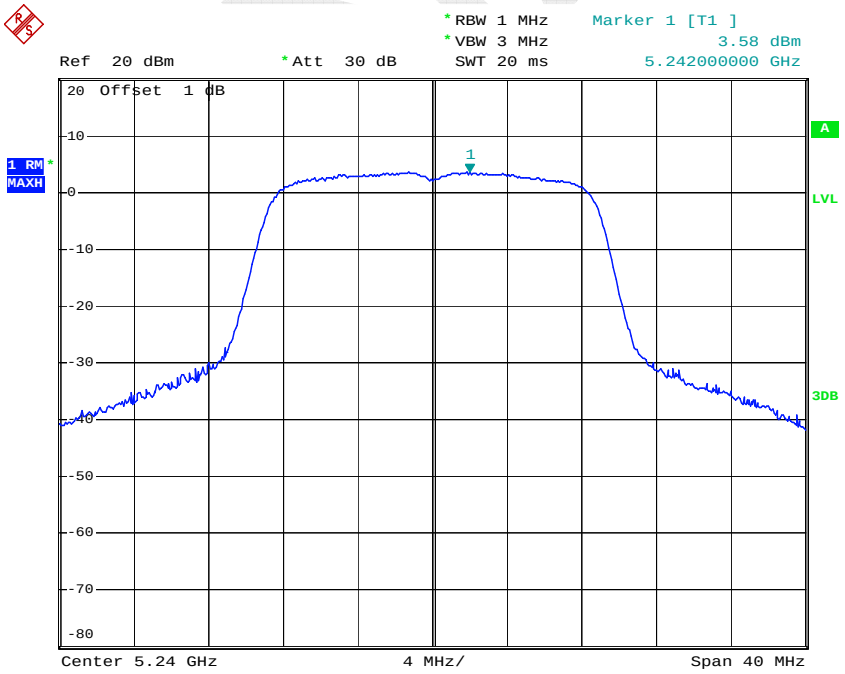
Date: 25.MAY.2015 11:23:35

802.11n ht20 Middle Channel – Chain1



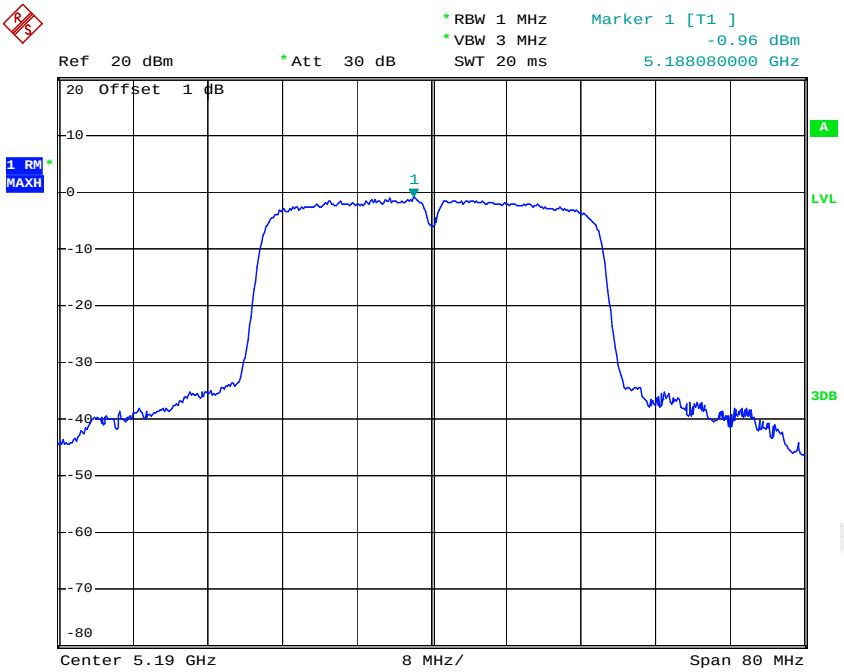
Date: 25.MAY.2015 11:21:49

802.11n ht20 High Channel – Chain1



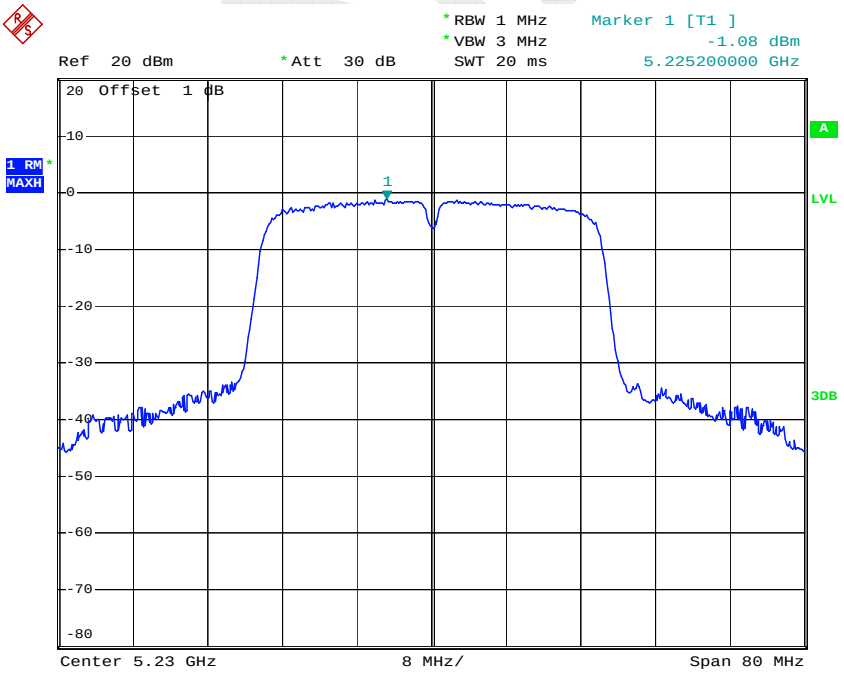
Date: 25.MAY.2015 11:19:34

802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 11:05:24

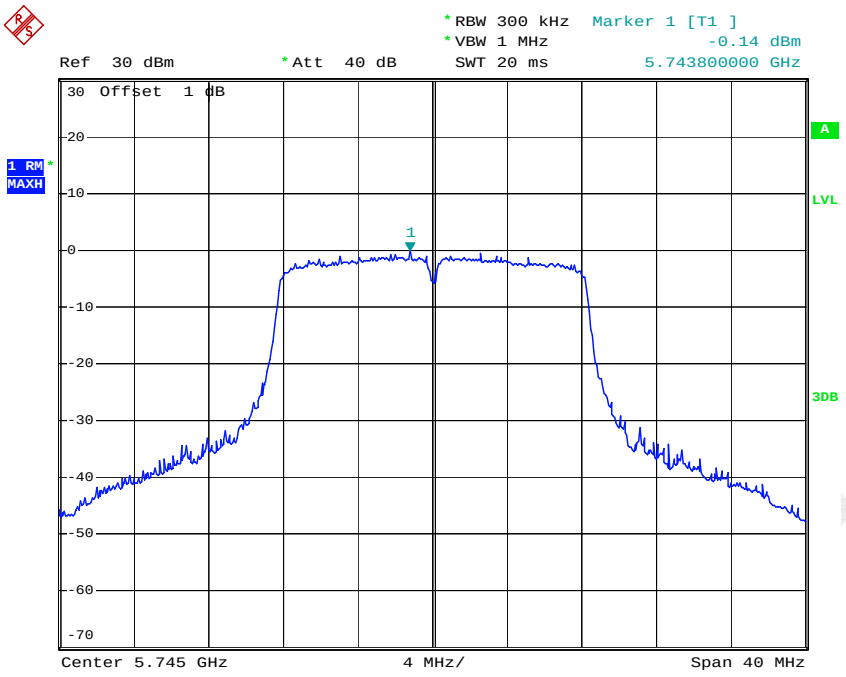
802.11n ht40 High Channel – Chain1



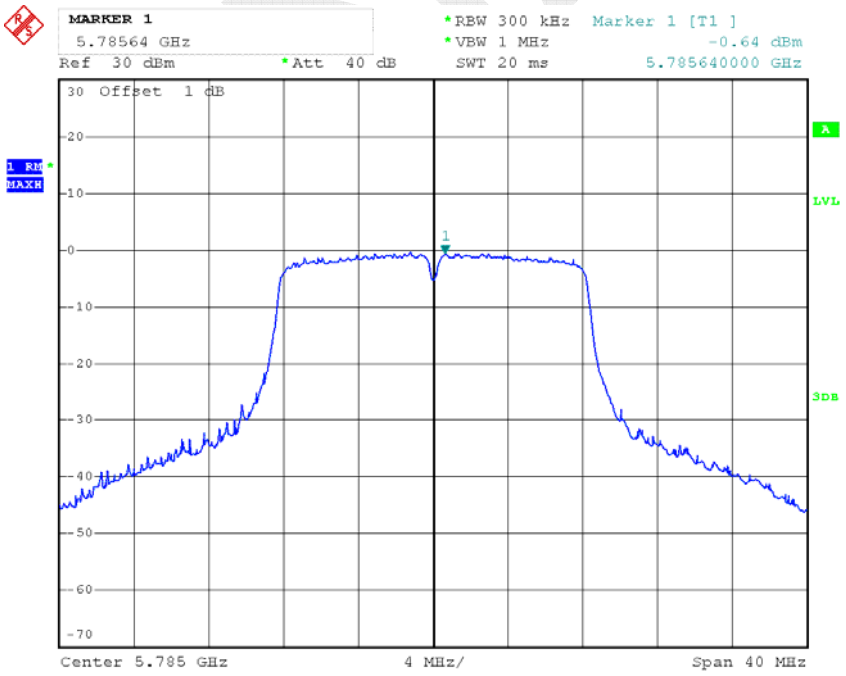
Date: 25.MAY.2015 11:08:42

5725MHz-5850MHz:

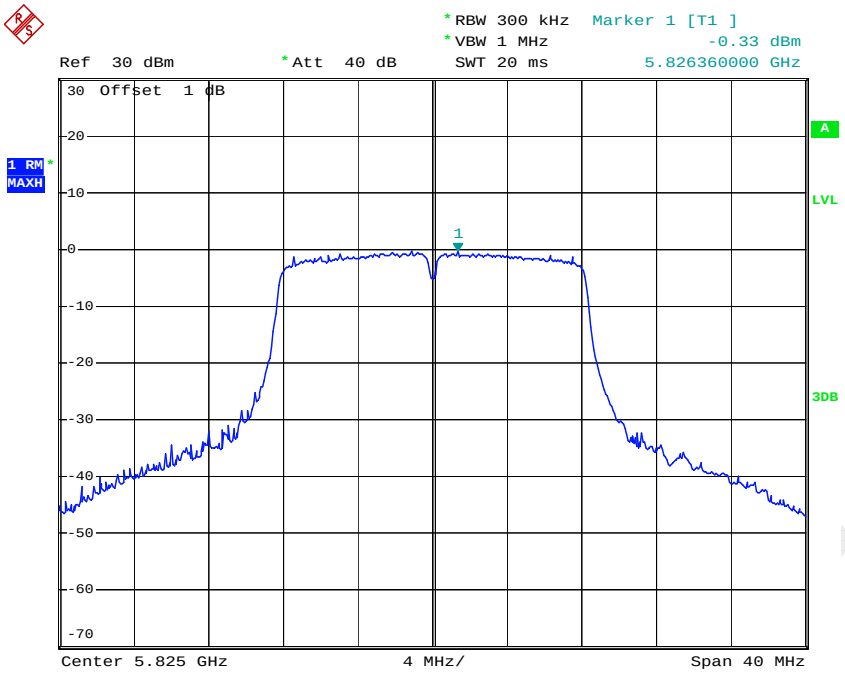
802.11a Low Channel – Chain0



802.11a Middle Channel – Chain0

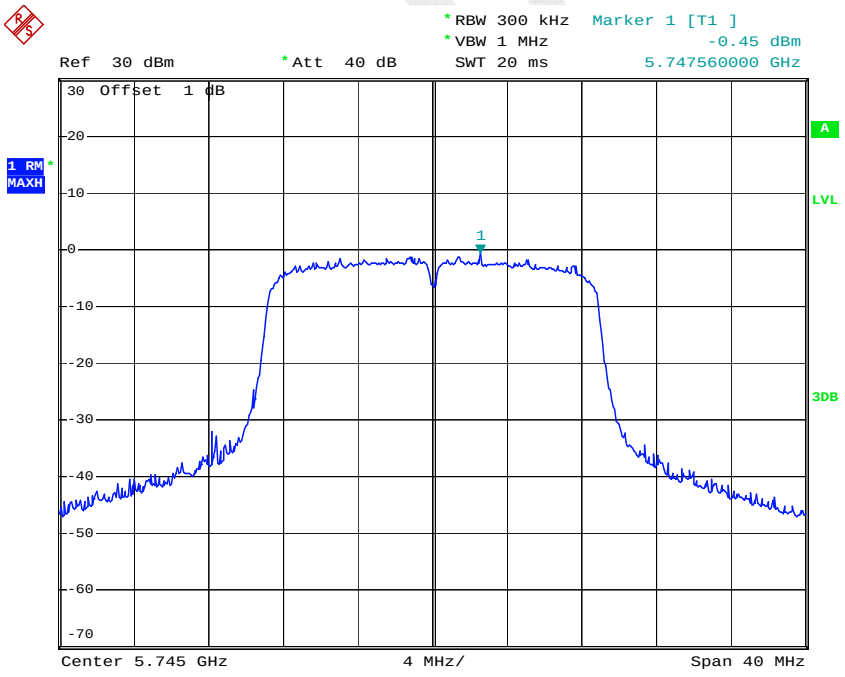


802.11a High Channel – Chain0



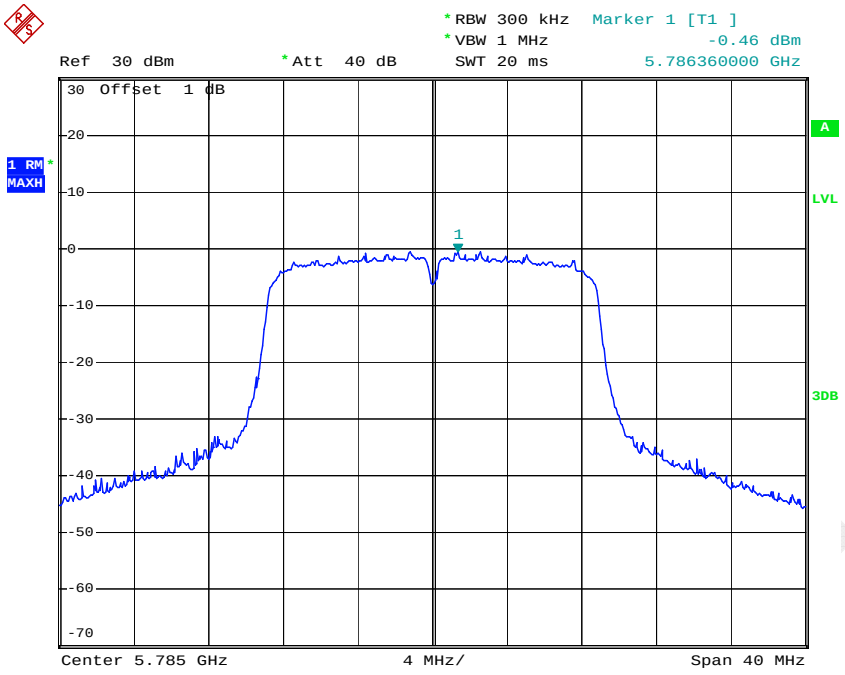
Date: 25.MAY.2015 15:39:46

802.11n ht20 Low Channel – Chain0



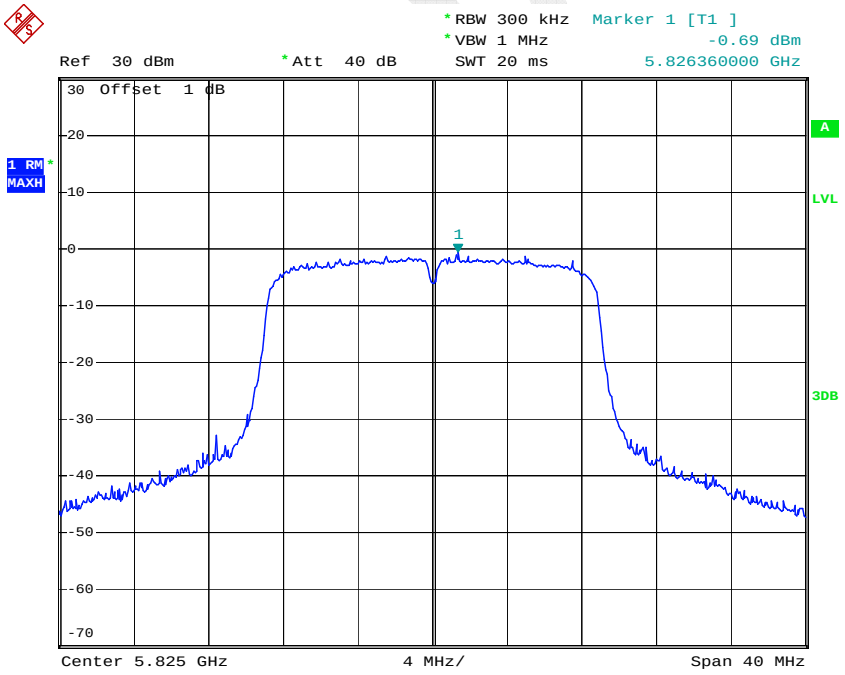
Date: 25.MAY.2015 15:42:47

802.11n ht20 Middle Channel – Chain0



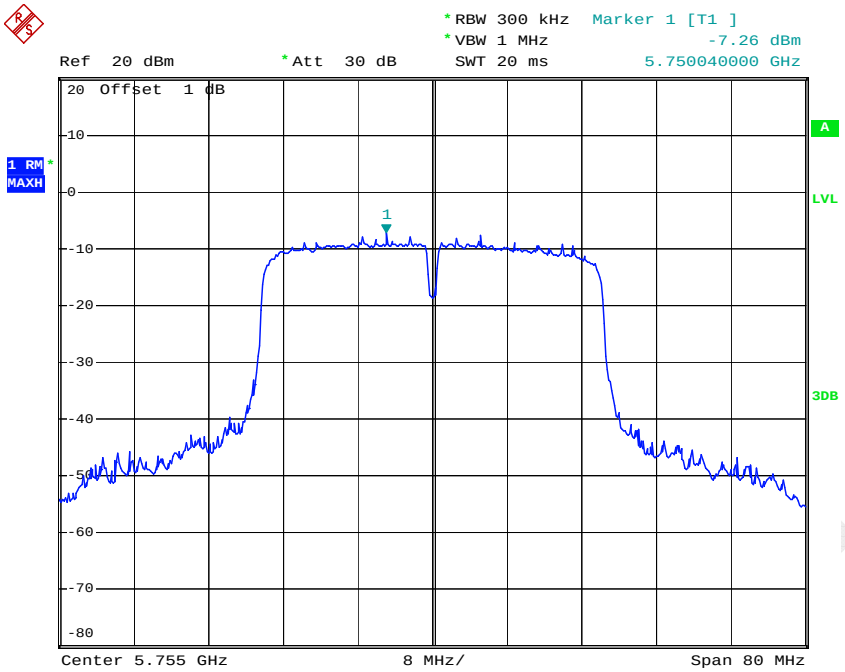
Date: 25.MAY.2015 15:45:35

802.11n ht20 High Channel – Chain0



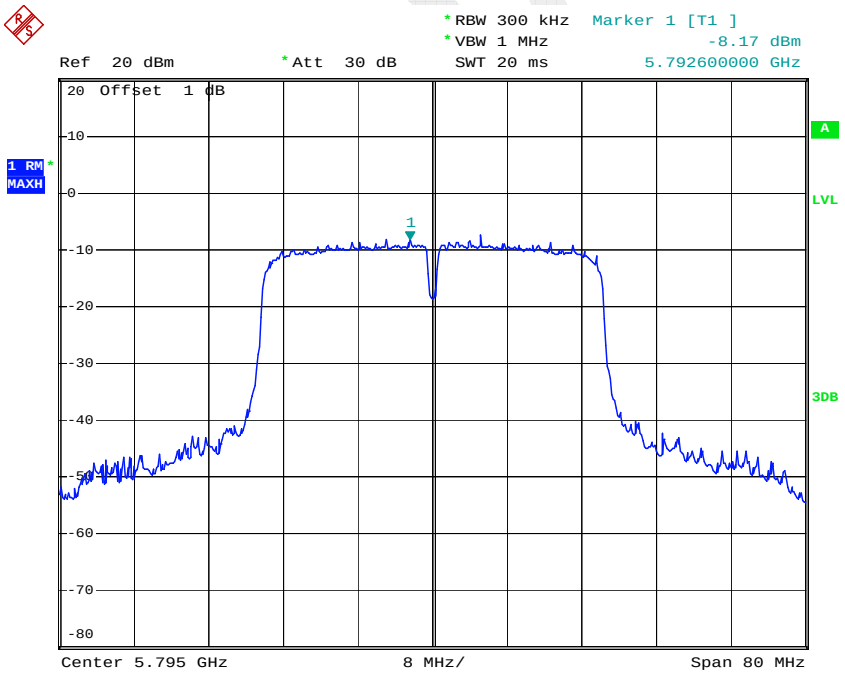
Date: 25.MAY.2015 15:47:37

802.11n ht40 Low Channel – Chain0



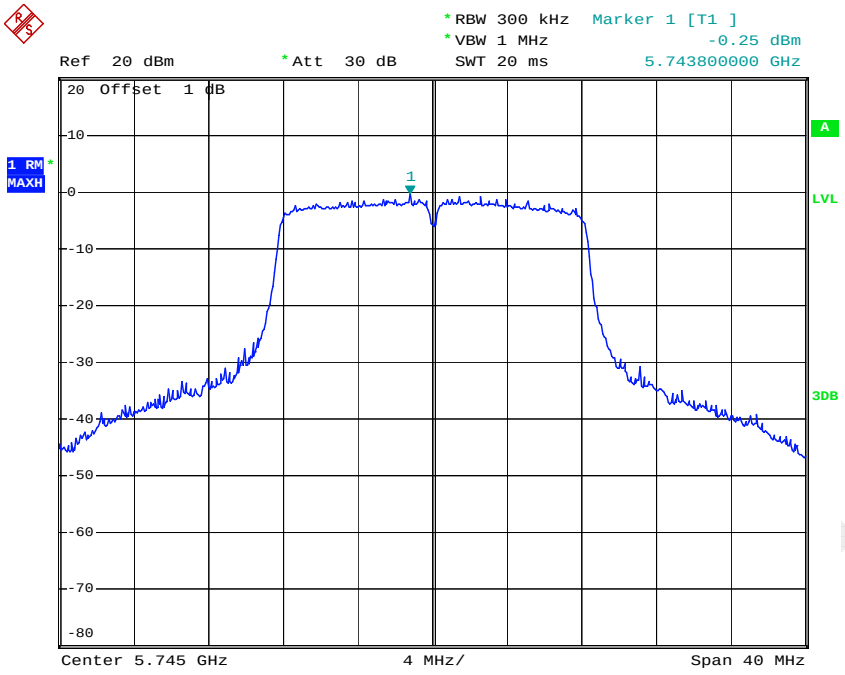
Date: 25.MAY.2015 14:30:52

802.11n ht40 High Channel – Chain0



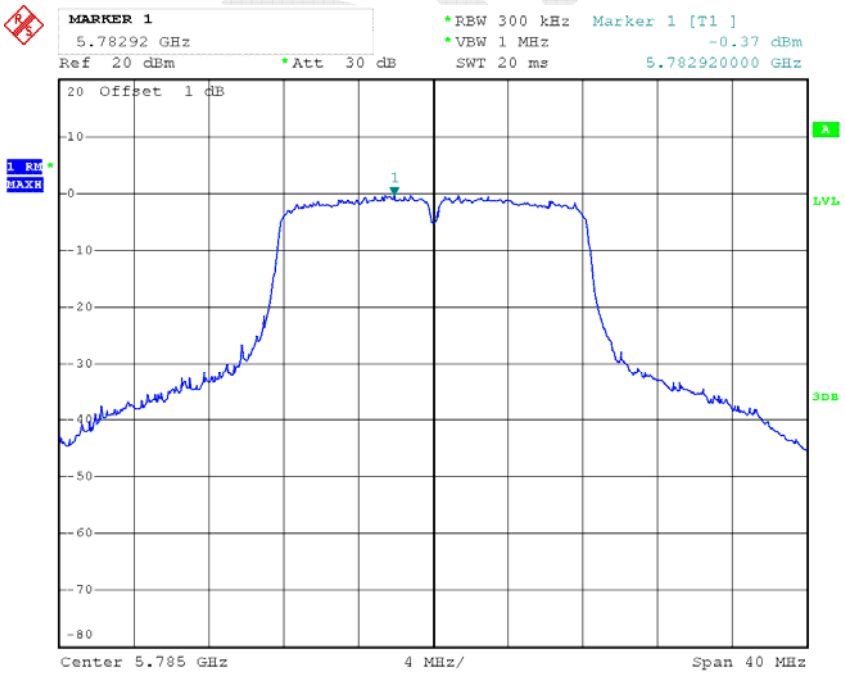
Date: 25.MAY.2015 14:27:08

802.11a Low Channel – Chain1



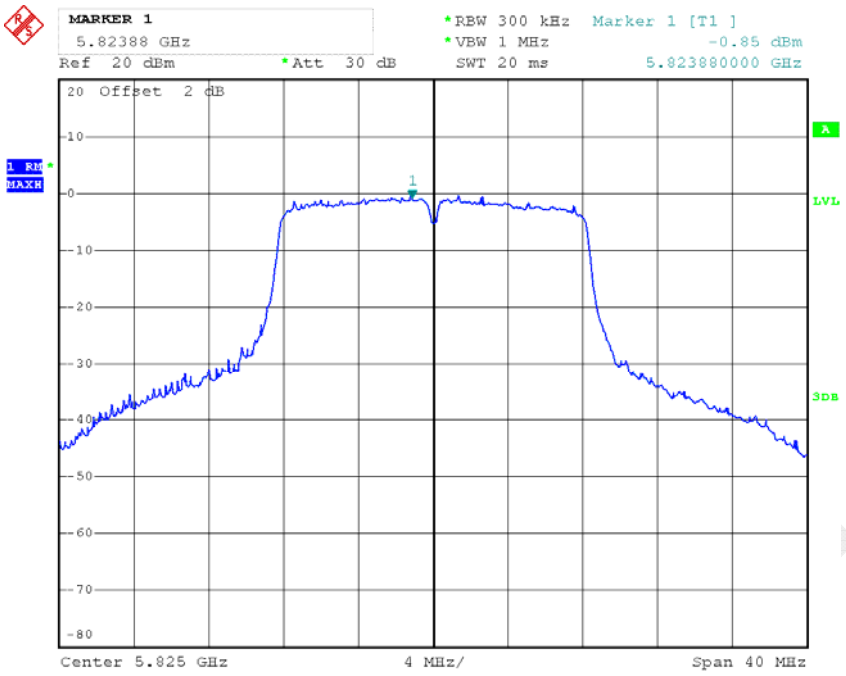
Date: 25.MAY.2015 11:27:32

802.11a Middle Channel – Chain1



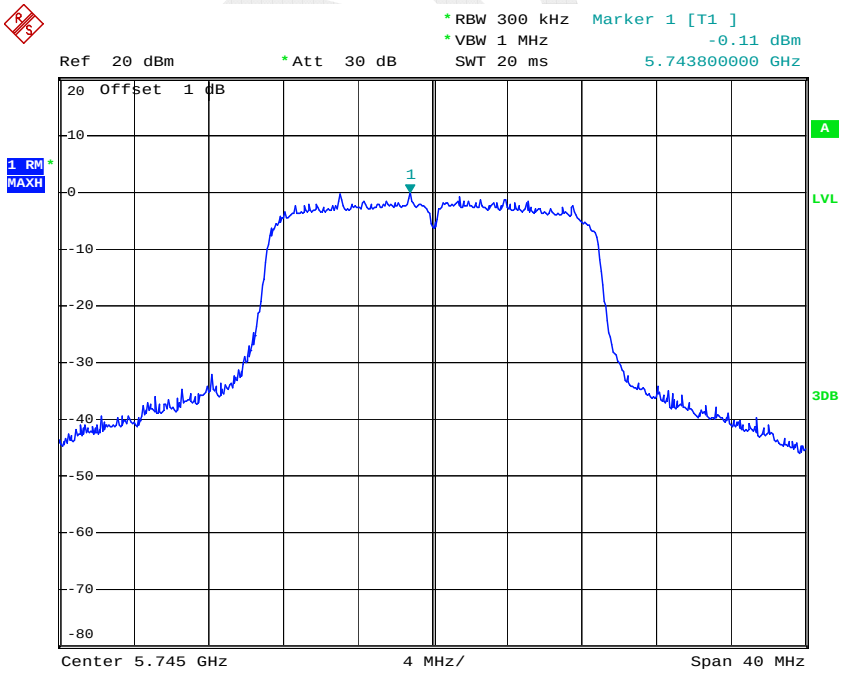
Date: 25.MAY.2015 11:32:40

802.11a High Channel – Chain1



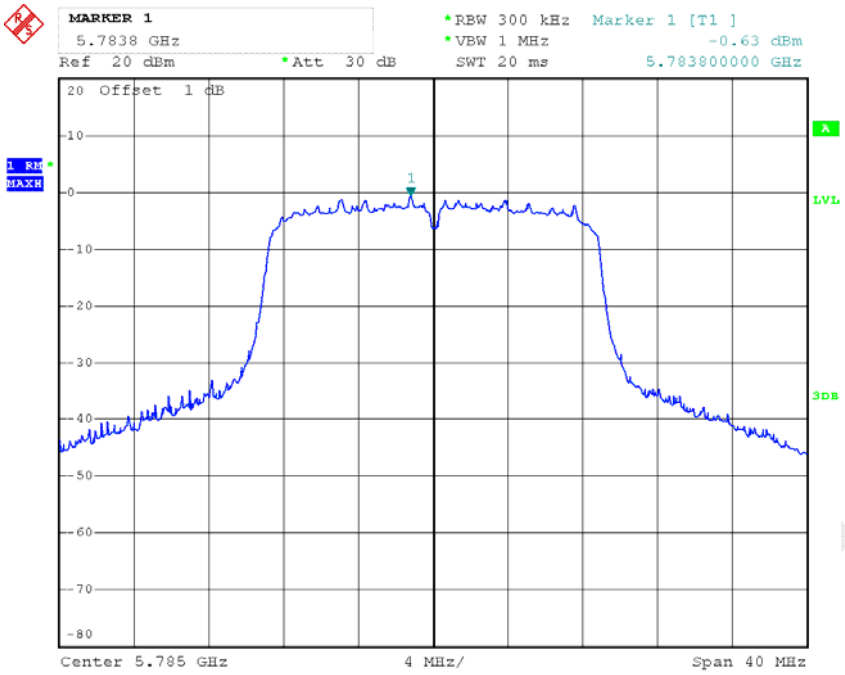
Date: 25.MAY.2015 11:40:19

802.11n ht20 Low Channel – Chain1



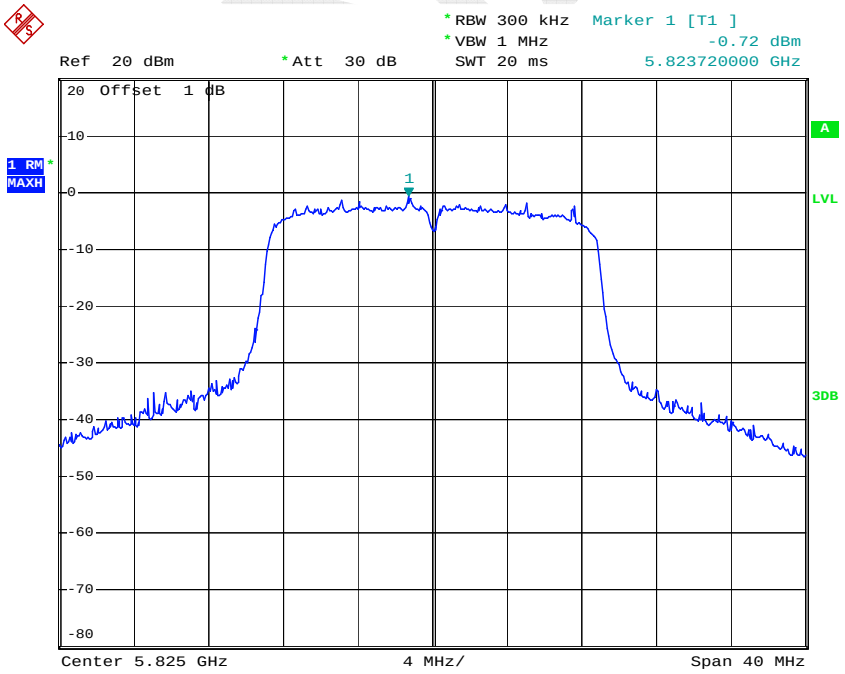
Date: 25.MAY.2015 11:45:45

802.11n ht20 Middle Channel – Chain1



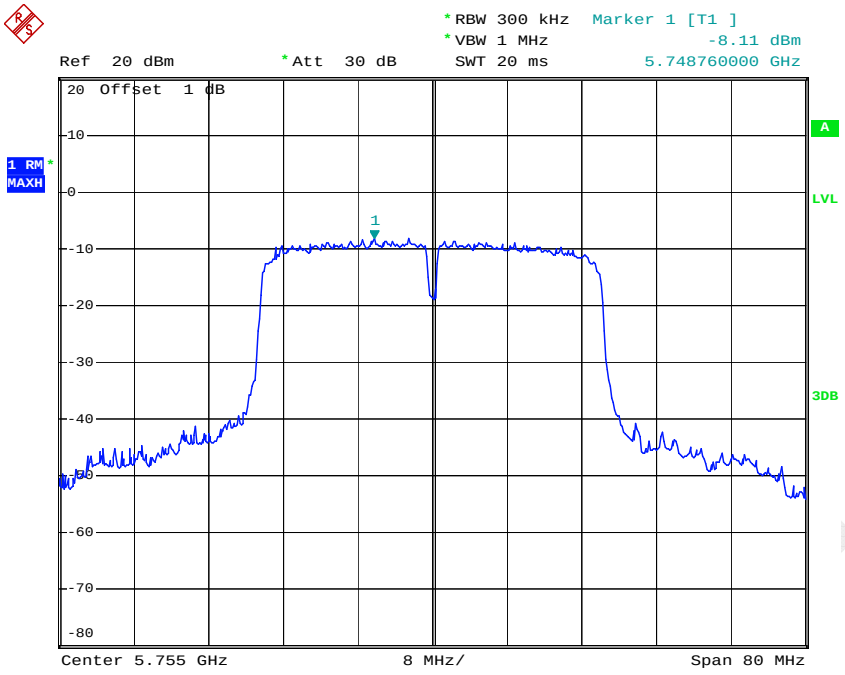
Date: 25.MAY.2015 11:50:06

802.11n ht20 High Channel – Chain1



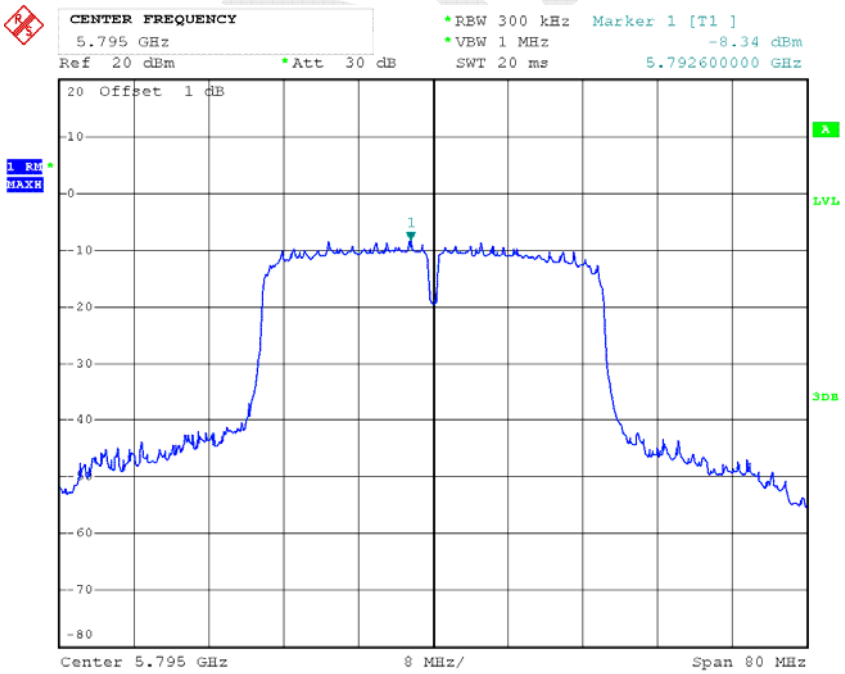
Date: 25.MAY.2015 11:55:37

802.11n ht40 Low Channel – Chain1



Date: 25.MAY.2015 14:07:01

802.11n ht40 High Channel – Chain1



Date: 25.MAY.2015 14:16:37

DECLARATION LETTER

Declaration of Alteration

To Whom It May Concern,

We, Iconnect, hereby declare that there are some differences between our Multiple Models and testing products. Details as below:

(This is for your reference only.)

Products Description	Name	802.11abgn Long-Range USB Adapter Dual-Band 2.4GHz/5GHz
	Brand	ALFA
	Manufacturer	Iconnect
	Project No.	RDG150512002

Differences Description			
Testing Products	Multiple Models	Differences Items	Details
AWUS052NH	AWUS051NH V2,AWUS052NH V2, AWUS052NHS,AWUS052NHS V2, AWUS053NH,AWUS053NH V2, AWUS053NHS,AWUS053NHS V2, AWUS054NH,AWUS054NH V2, AWUS054NHS,AWUS054NHS V2, AWUS036ACH,AWUS036ACH V2, NU52,NU52 V2,NU52S,NU52S V2, NU53,NU53 V2,NU53S,NU53S V2, NU52AC,NU52AC V2,NU52ACS, NU52ACS V2,UBDO-25,UBDO-25 V2, UBDO-25t,UBDO-25t V2,UBDO-25M, UBDO-25M V2,UBDO-25Mt,UBDO-25Mt V2,Tube-U52,Tube-U52 V2,UBDO-AC, UBDO-AC V2,Tube-AC,Tube-AC V2,UBDO-ACT,UBDO-ACT V2	Model name	They are the same product, and just have the different model name.

Notes: Testing products-the products tested by BACL
Multiple Model- have the same or similar appearance, structure, PCB, Material and function to the testing products, and only are different for little parameters.

Besides the differences in the table above, we declare the products are identical
We guarantee all the information provided above is true, and notice that we'll bear all the consequences caused by any false information or concealing

Best Regards,

Signature:

Print Name: Johnson Wang
Title: Manager

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