

FCC PART 15.407

TEST REPORT

For

Huawei Technologies Co., Ltd.

Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

FCC ID: QISBTS3911B

Report Type: Original Report	Product Type: Pico BTS
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FINAL

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Huawei Technologies Co., Ltd.*'s product, model number: *BTS3911B* (FCC ID: *QISBTS3911B*) or ("EUT") in this report is a *Pico BTS*, which was measured approximately: 20.0 cm (L) x 20.0 cm (W) x 5.0 cm (H), rated input voltage: DC 48V from POE adapter.

** All measurement and test data in this report was gathered from production sample serial number: 150427001 (Assigned by BACL, Dongguan). The EUT was received on 2015-05-04*

Objective

This type approval report is prepared on behalf of *Huawei Technologies Co., Ltd.* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and E of the Federal Communications Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart E, section 15.203, 15.205, 15.207, 15.209 and 15.407 rules.

Related Submittal(s)/Grant(s)

FCC DTS submissions with FCC ID: QISBTS3911B.
FCC PCB submissions with FCC ID: QISBTS3911B.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

The device support 3 x 3 MIMO at 802.11a,n and ac system, for 5150~5250 MHz band, 7 channels are provided to test:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 802.11a, 802.11n ht20, Channel 36, 40 and 48 were tested, for 802.11n ht40, Channel 38, 46 were tested. For 802.11AC 80, channel 42 was tested.

For 5725~5850MHz band, 8 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	165	5825
155	5775	/	/
157	5785	/	/

For 802.11a, 802.11n ht20, Channel 149, 157 and 165 was tested, for 802.11n ht40, Channel 151, 159 was tested. For 802.11AC 80, channel 155 was tested.

The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all data rates bandwidths, and modulations.

EUT Exercise Software

The CMD Command was used for testing, and the commands were provided by manufacturer. The worst condition (maximum power with 100% dutycycle) was setting by the software as following table:

Software and version				CMD Command			
UNII Band	Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Power Level		
					Chain 0	Chain 1	Chain 2
5150-5250MHz	802.11 a	Low	5180	54	16	16	16
		Middle	5200	54	16	16	16
		High	5240	54	16	16	16
	802.11 n20	Low	5180	t7	16	16	16
		Middle	5200	t7	16	16	16
		High	5240	t7	16	16	16
	802.11 n40	Low	5190	f7	16	16	16
		High	5230	f7	16	16	16
	802.11 ac80	Middle	5210	ve7	14	14	14
	5725-5850MHz	802.11 a	Low	5745	54	16	16
Middle			5785	54	16	16	16
High			5825	54	16	16	16
802.11 n20		Low	5745	t7	16	16	16
		Middle	5785	t7	16	16	16
		High	5825	t7	16	16	16
802.11 n40		Low	5755	f7	16	16	16
		High	5795	f7	16	16	16
802.11 ac80		Middle	5775	ve7	14	14	14

Equipment Modifications

No modification was made to the EUT.

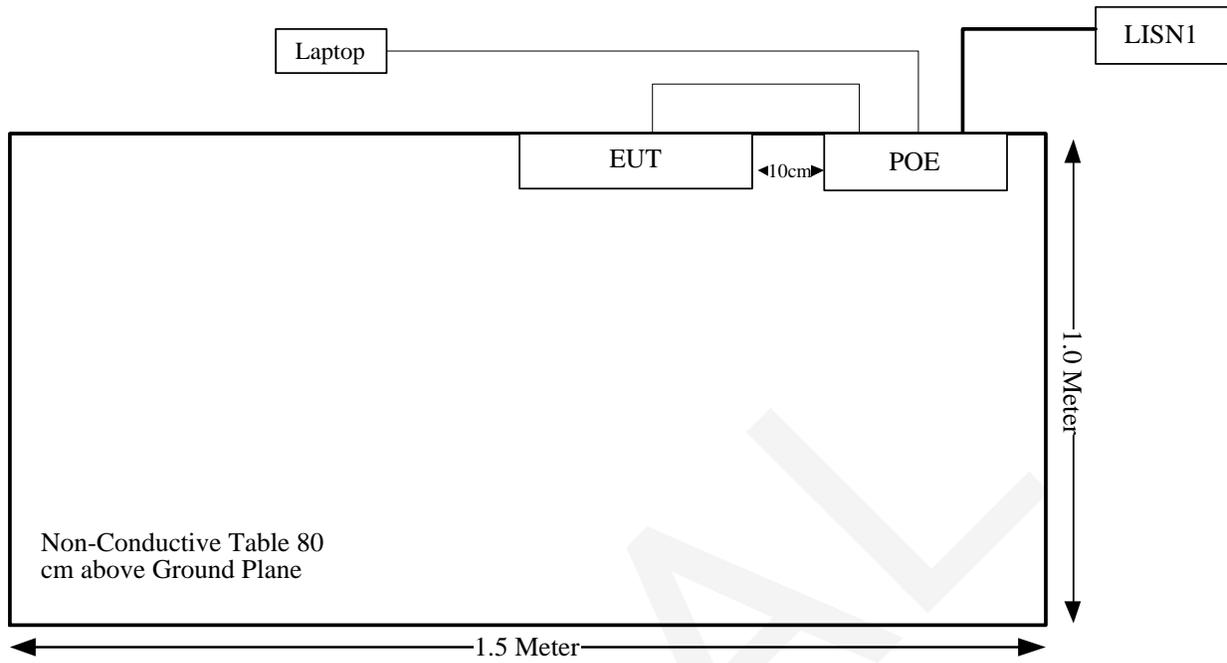
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Lenovo	Laptop	Thinkpad X230	/
Huawei	POE Adapter	POE85-56A	/

External I/O Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
RJ45 Cable	No	No	1.5	RJ45 Port of POE	EUT
RJ45 Cable	No	No	10	RJ45 Port of Laptop	POE

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.407 (f) & §1.1310 & §2.1091	Maximum Permissible Exposure	Compliance*
§15.203	Antenna Requirement	Compliance
§15.407(b)(6)& §15.207(a)	Conducted Emissions	Compliance
§15.205& §15.209 & §15.407(b) (1),(6),(7)	Undesirable Emission& Restricted Bands	Compliance
§15.407(b) (1),(2),(3),(4)	Out Of Band Emissions	Compliance
§15.407(a) (1)	26 dB Bandwidth	Compliance
§15.407(a)(1),	Conducted Transmitter Output Power	Compliance
§15.407 (a)(1),(5)	Power Spectral Density	Compliance

Compliance*: please refer to the EMF report, document No.: SYBH(R)01787709EB-3, which was provided by huawei EMC Lab.

FCC §15.203 – ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to FCC 47 CFR section 15.407 (a)(1),if transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT have 3 internal antenna and all the antenna gain is 9 dBi at 5G bands. Fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207, §15.407(b) (6)

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:

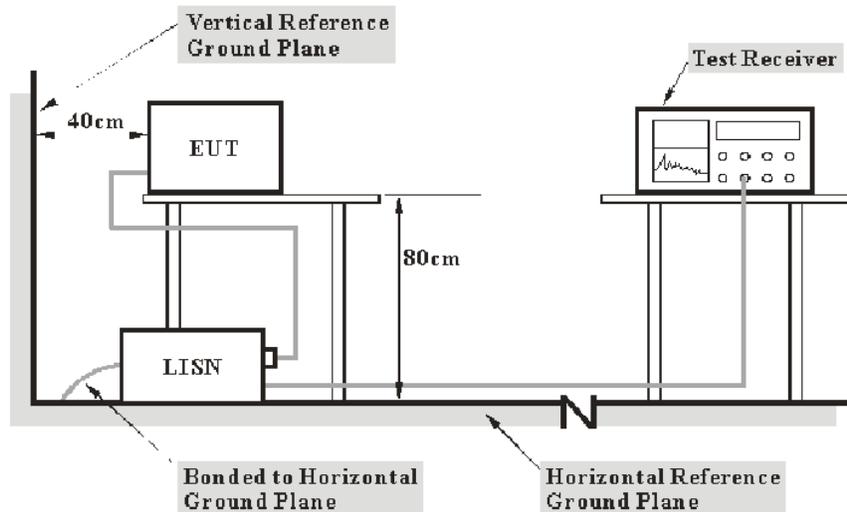
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The POE adapter was connected to a 120VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_c : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2014-10-20	2015-10-20
R&S	L.I.S.N	ESH2-Z5	892107/021	2014-06-09	2015-06-09
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-12-11	2015-12-11
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

* **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

During the conducted emission test, the POE was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207, with the worst margin reading of:

4.40 dB at 0.236234 MHz in the Neutral conducted mode

Test Data

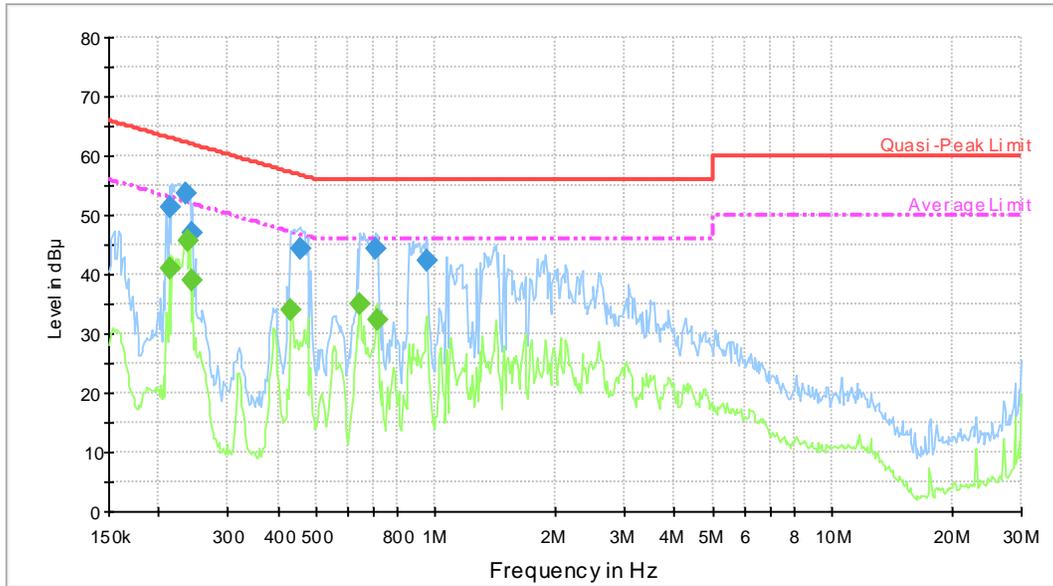
Environmental Conditions

Temperature:	29.1 °C
Relative Humidity:	60 %
ATM Pressure:	100 kPa

The testing was performed by Allen Qiao on 2015-05-29.

Test Mode: Transmitting

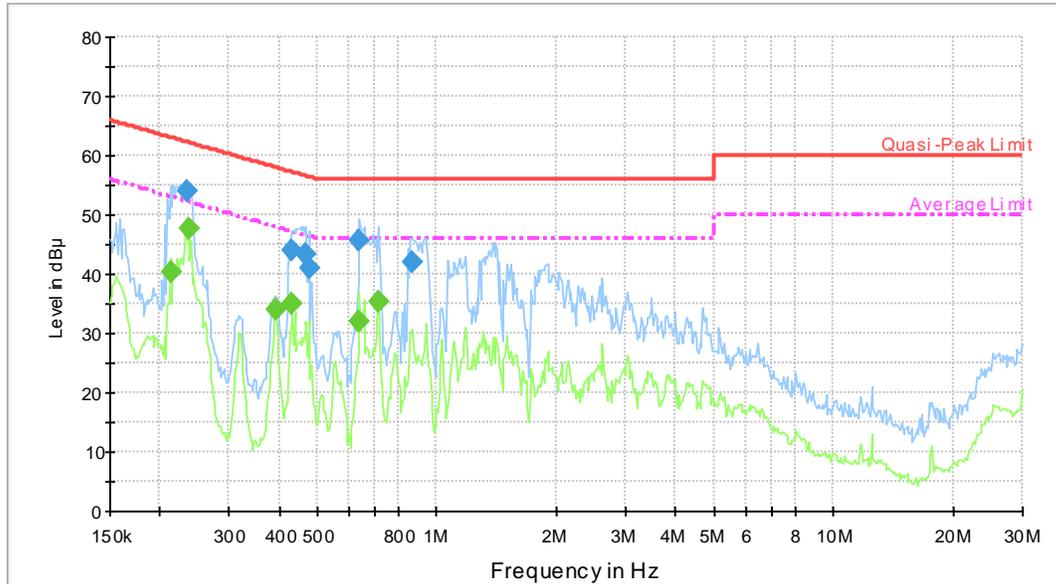
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.212988	51.3	9.000	L1	10.2	11.8	63.1	Compliance
0.234359	53.6	9.000	L1	10.2	8.7	62.3	Compliance
0.243884	47.1	9.000	L1	10.2	14.9	62.0	Compliance
0.454052	44.2	9.000	L1	10.2	12.6	56.8	Compliance
0.709407	44.3	9.000	L1	10.5	11.7	56.0	Compliance
0.952654	42.4	9.000	L1	10.4	13.6	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.212988	40.9	9.000	L1	10.2	12.2	53.1	Compliance
0.236234	45.8	9.000	L1	10.2	6.4	52.2	Compliance
0.243884	39.0	9.000	L1	10.2	13.0	52.0	Compliance
0.432855	34.1	9.000	L1	10.2	13.1	47.2	Compliance
0.644717	35.0	9.000	L1	10.4	11.0	46.0	Compliance
0.715082	32.3	9.000	L1	10.4	13.7	46.0	Compliance

AC120 V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.234359	54.1	9.000	N	10.2	8.2	62.3	Compliance
0.429420	44.1	9.000	N	10.2	13.1	57.3	Compliance
0.468757	43.3	9.000	N	10.1	13.3	56.5	Compliance
0.476287	41.0	9.000	N	10.1	15.4	56.4	Compliance
0.639600	45.7	9.000	N	10.4	10.3	56.0	Compliance
0.865782	42.1	9.000	N	10.4	13.9	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.212988	40.3	9.000	N	10.2	12.8	53.1	Compliance
0.236234	47.8	9.000	N	10.2	4.4	52.2	Compliance
0.393383	33.9	9.000	N	10.2	14.1	48.0	Compliance
0.432855	34.9	9.000	N	10.2	12.3	47.2	Compliance
0.639600	32.0	9.000	N	10.4	14.0	46.0	Compliance
0.715082	35.2	9.000	N	10.4	10.8	46.0	Compliance

FCC §15.209, §15.205 & §15.407(b) (1) (6) (7) –UNWANTED EMISSION

Applicable Standard

FCC §15.407; §15.209; §15.205;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

30M~200MHz: 5.0 dB

200M~1GHz: 6.2 dB

1G~6GHz: 4.45 dB

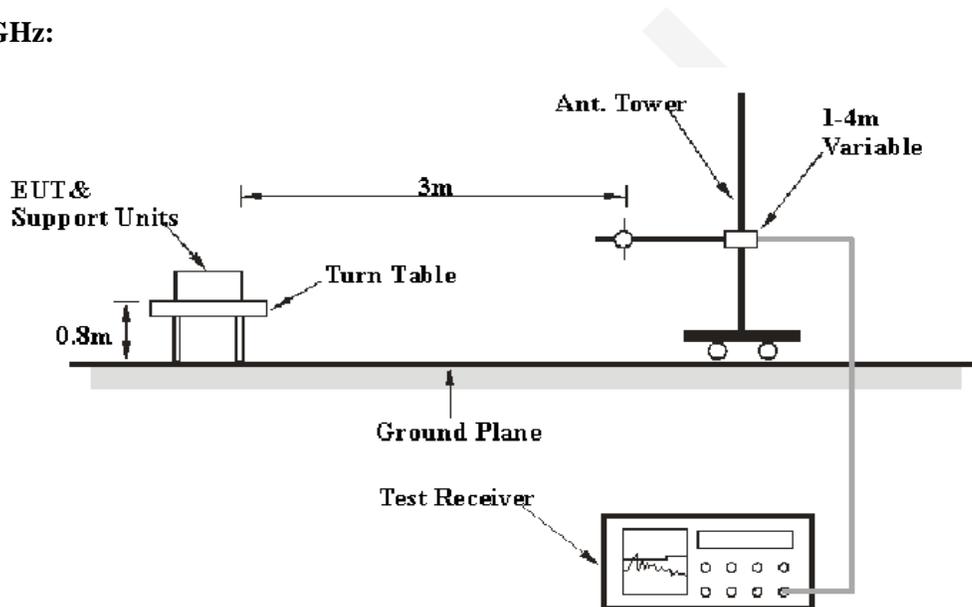
6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

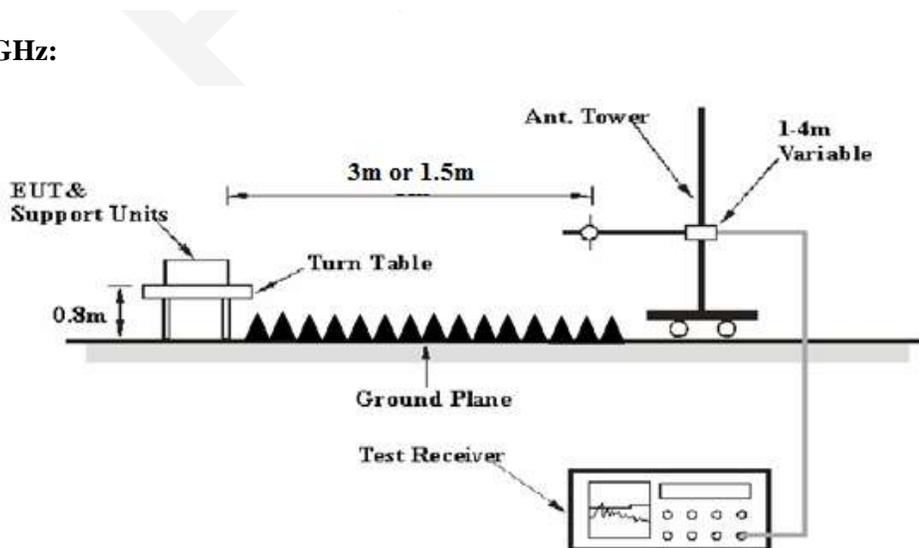
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters chamber, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC 15.209, and FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

The POE adapter connected to a 120 VAC/60 Hz power source,

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emission test, the POE was connected to the first AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

According to KDB 789033 D02 General UNII Test Procedures New Rules v01, emission shall be computed as: $E [dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ meters.

According to C63.4, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1.5m

Distance extrapolation factor = $20 \log (\text{specific distance } [3m]/\text{test distance } [1.5m])$ dB

Extrapolation result = Corrected Amplitude (dB μ V/m) - distance extrapolation factor (6dB)

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Extrapolation result}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-05-09	2016-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2014-09-01	2015-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2014-12-04	2015-12-04
ETS-Lindgren	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-01 1302	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW- 18405536-JO	15964001001	2014-09-06	2015-09-06

* **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 Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, Section 15.205, 15.209 and 15.407, with the worst margin reading of:

1.77 dB at **5725 MHz** in the **Vertical** polarization for 802.11n ht40 mode

Test Data

Environmental Conditions

Temperature:	24.1 °C-25.4 °C
Relative Humidity:	53 %-60 %
ATM Pressure:	99.7 kPa-100.2 kPa

The testing was performed by Allen Qiao from 2015-05-19 to 2015-05-28.

Result: Compliance.

Note 1: For above 1GHz, the test distance is 1.5m.

Note 2: the emission compliance 15.209 general requirements, or compliance the outside band emission limits in the un-restricted bands.

Please refer to the following tables

Mode: Transmitting

5150MHz-5250MHz: 802.11a Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	83.54	PK	H	31.46	5.40	0.00	120.40	114.40	N/A	N/A
5180	73.89	AV	H	31.46	5.40	0.00	110.75	104.75	N/A	N/A
5180	84.81	PK	V	31.46	5.40	0.00	121.67	115.67	N/A	N/A
5180	74.36	AV	V	31.46	5.40	0.00	111.22	105.22	N/A	N/A
5150	33.28	PK	V	31.40	5.26	0.00	69.94	63.94	74.00	10.06
5150	18.33	AV	V	31.40	5.26	0.00	54.99	48.99	54.00	5.01
10360	32.33	PK	V	36.97	8.36	25.52	52.14	46.14	74.00	27.86
10360	20.17	AV	V	36.97	8.36	25.52	39.98	33.98	54.00	20.02
15540	31.59	PK	V	37.43	14.94	24.98	58.98	52.98	74.00	21.02
15540	18.36	AV	V	37.43	14.94	24.98	45.75	39.75	54.00	14.25
6903	51.33	PK	V	33.35	6.33	26.45	64.56	58.56	68.20	9.64
4936	38.57	PK	V	30.93	5.35	27.43	47.42	41.42	74.00	32.58
4936	26.34	AV	V	30.93	5.35	27.43	35.19	29.19	54.00	24.81
34.85	35.1	QP	V	18.46	0.79	21.42	32.93	32.93	40.00	7.07
Middle Channel:5200 MHz										
5200	83.97	PK	H	31.50	5.49	0.00	120.96	114.96	N/A	N/A
5200	74.18	AV	H	31.50	5.49	0.00	111.17	105.17	N/A	N/A
5200	85.24	PK	V	31.50	5.49	0.00	122.23	116.23	N/A	N/A
5200	74.77	AV	V	31.50	5.49	0.00	111.76	105.76	N/A	N/A
10400	32.69	PK	V	36.98	8.32	25.50	52.49	46.49	74.00	27.51
10400	20.66	AV	V	36.98	8.32	25.50	40.46	34.46	54.00	19.54
15600	31.84	PK	V	37.32	14.69	24.69	59.16	53.16	74.00	20.84
15600	18.80	AV	V	37.32	14.69	24.69	46.12	40.12	54.00	13.88
6933	51.70	PK	V	33.43	6.34	26.38	65.09	59.09	68.20	9.11
3280	39.05	PK	V	28.10	5.61	27.30	45.46	39.46	74.00	34.54
3280	26.84	AV	V	28.10	5.61	27.30	33.25	27.25	54.00	26.75
34.85	35.3	QP	V	18.46	0.79	21.42	33.13	33.13	40.00	6.87
96.93	39.40	QP	V	9.64	1.23	21.40	28.87	28.87	43.50	14.63
High Channel:5240 MHz										
5240	84.30	PK	H	31.58	5.28	0.00	121.16	115.16	N/A	N/A
5240	74.46	AV	H	31.58	5.28	0.00	111.32	105.32	N/A	N/A
5240	85.66	PK	V	31.58	5.28	0.00	122.52	116.52	N/A	N/A
5240	75.17	AV	V	31.58	5.28	0.00	112.03	106.03	N/A	N/A
5350	27.25	PK	V	31.80	5.61	0.00	64.66	58.66	74.00	15.34
5350	14.34	AV	V	31.80	5.61	0.00	51.75	45.75	54.00	8.25
10480	32.94	PK	V	37.00	8.23	26.01	52.16	46.16	74.00	27.84
10480	20.91	AV	V	37.00	8.23	26.01	40.13	34.13	54.00	19.87
15720	32.07	PK	V	37.10	14.20	24.92	58.45	52.45	74.00	21.55
15720	19.28	AV	V	37.10	14.20	24.92	45.66	39.66	54.00	14.34
6984	51.93	PK	V	33.56	6.36	26.27	65.58	59.58	68.20	8.62
3280	39.32	PK	V	28.10	5.61	27.30	45.73	39.73	74.00	34.27
3280	27.14	AV	V	28.10	5.61	27.30	33.55	27.55	54.00	26.45
34.85	35.7	QP	V	18.46	0.79	21.42	33.53	33.53	40.00	6.47

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	82.33	PK	H	31.46	5.40	0.00	119.19	113.19	N/A	N/A
5180	71.23	AV	H	31.46	5.40	0.00	108.09	102.09	N/A	N/A
5180	83.67	PK	V	31.46	5.40	0.00	120.53	114.53	N/A	N/A
5180	73.57	AV	V	31.46	5.40	0.00	110.43	104.43	N/A	N/A
5150	39.22	PK	V	31.40	5.26	0.00	75.88	69.88	74.00	4.12
5150	18.64	AV	V	31.40	5.26	0.00	55.30	49.30	54.00	4.70
10360	31.83	PK	V	36.97	8.36	25.52	51.64	45.64	74.00	28.36
10360	19.92	AV	V	36.97	8.36	25.52	39.73	33.73	54.00	20.27
15540	31.36	PK	V	37.43	14.94	24.98	58.75	52.75	74.00	21.25
15540	17.96	AV	V	37.43	14.94	24.98	45.35	39.35	54.00	14.65
6933	51.01	PK	V	33.43	6.34	26.38	64.40	58.40	68.20	9.80
4936	38.29	PK	V	30.93	5.35	27.43	47.14	41.14	74.00	32.86
4936	25.88	AV	V	30.93	5.35	27.43	34.73	28.73	54.00	25.27
34.85	35.8	QP	V	18.46	0.79	21.42	33.63	33.63	40.00	6.37
Middle Channel:5200 MHz										
5200	82.76	PK	H	31.50	5.49	0.00	119.75	113.75	N/A	N/A
5200	71.72	AV	H	31.50	5.49	0.00	108.71	102.71	N/A	N/A
5200	83.89	PK	V	31.50	5.49	0.00	120.88	114.88	N/A	N/A
5200	73.81	AV	V	31.50	5.49	0.00	110.80	104.80	N/A	N/A
10400	32.40	PK	V	36.98	8.32	25.50	52.20	46.20	74.00	27.80
10400	20.24	AV	V	36.98	8.32	25.50	40.04	34.04	54.00	19.96
15600	31.50	PK	V	37.32	14.69	24.69	58.82	52.82	74.00	21.18
15600	18.52	AV	V	37.32	14.69	24.69	45.84	39.84	54.00	14.16
7513	51.27	PK	V	34.81	6.95	26.17	66.86	60.86	68.20	7.34
2786	38.62	PK	V	26.64	4.45	27.55	42.16	36.16	74.00	37.84
2786	26.42	AV	V	26.64	4.45	27.55	29.96	23.96	54.00	30.04
34.85	35.6	QP	V	18.46	0.79	21.42	33.43	33.43	40.00	6.57
96.93	39.50	QP	V	9.64	1.23	21.40	28.97	28.97	43.50	14.53
High Channel:5240 MHz										
5240	83.25	PK	H	31.58	5.28	0.00	120.11	114.11	N/A	N/A
5240	72.24	AV	H	31.58	5.28	0.00	109.10	103.10	N/A	N/A
5240	84.46	PK	V	31.58	5.28	0.00	121.32	115.32	N/A	N/A
5240	74.43	AV	V	31.58	5.28	0.00	111.29	105.29	N/A	N/A
5350	27.14	PK	V	31.80	5.61	0.00	64.55	58.55	74.00	15.45
5350	14.34	AV	V	31.80	5.61	0.00	51.75	45.75	54.00	8.25
10480	32.50	PK	V	37.00	8.23	26.01	51.72	45.72	74.00	28.28
10480	20.51	AV	V	37.00	8.23	26.01	39.73	33.73	54.00	20.27
15720	31.66	PK	V	37.10	14.20	24.92	58.04	52.04	74.00	21.96
15720	18.88	AV	V	37.10	14.20	24.92	45.26	39.26	54.00	14.74
6984	51.65	PK	V	33.56	6.36	26.27	65.30	59.30	68.20	8.90
2786	39.09	PK	V	26.64	4.45	27.55	42.63	36.63	74.00	37.37
2786	26.68	AV	V	26.64	4.45	27.55	30.22	24.22	54.00	29.78
34.85	35.3	QP	V	18.46	0.79	21.42	33.13	33.13	40.00	6.87

802.11n ht40 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5190 MHz										
5190	80.35	PK	H	31.48	5.44	0.00	117.27	111.27	N/A	N/A
5190	69.57	AV	H	31.48	5.44	0.00	106.49	100.49	N/A	N/A
5190	82.32	PK	V	31.48	5.44	0.00	119.24	113.24	N/A	N/A
5190	71.75	AV	V	31.48	5.44	0.00	108.67	102.67	N/A	N/A
5150	27.53	PK	V	31.40	5.26	0.00	64.19	58.19	74.00	15.81
5150	16.35	AV	V	31.40	5.26	0.00	53.01	47.01	54.00	6.99
10380	31.42	PK	V	36.98	8.34	25.51	51.23	45.23	74.00	28.77
10380	19.42	AV	V	36.98	8.34	25.51	39.23	33.23	54.00	20.77
15570	31.01	PK	V	37.37	14.81	24.83	58.36	52.36	74.00	21.64
15570	17.64	AV	V	37.37	14.81	24.83	44.99	38.99	54.00	15.01
6933	50.55	PK	V	33.43	6.34	26.38	63.94	57.94	68.20	10.26
2786	37.75	PK	V	26.64	4.45	27.55	41.29	35.29	74.00	38.71
2786	25.53	AV	V	26.64	4.45	27.55	29.07	23.07	54.00	30.93
34.85	34.9	QP	V	18.46	0.79	21.42	32.73	32.73	40.00	7.27
High Channel:5230 MHz										
5230	81.45	PK	H	31.56	5.33	0.00	118.34	112.34	N/A	N/A
5230	70.79	AV	H	31.56	5.33	0.00	107.68	101.68	N/A	N/A
5230	83.23	PK	V	31.56	5.33	0.00	120.12	114.12	N/A	N/A
5230	72.86	AV	V	31.56	5.33	0.00	109.75	103.75	N/A	N/A
5350	27.34	PK	V	31.80	5.61	0.00	64.75	58.75	74.00	15.25
5350	16.02	AV	V	31.80	5.61	0.00	53.43	47.43	54.00	6.57
10460	32.02	PK	V	36.99	8.25	25.88	51.38	45.38	74.00	28.62
10460	19.86	AV	V	36.99	8.25	25.88	39.22	33.22	54.00	20.78
15690	31.56	PK	V	37.16	14.32	24.87	58.17	52.17	74.00	21.83
15690	18.22	AV	V	37.16	14.32	24.87	44.83	38.83	54.00	15.17
6973	51.06	PK	V	33.53	6.36	26.30	64.65	58.65	68.20	9.55
2786	38.14	PK	V	26.64	4.45	27.55	41.68	35.68	74.00	38.32
2786	25.93	AV	V	26.64	4.45	27.55	29.47	23.47	54.00	30.53
34.85	34.7	QP	V	18.46	0.79	21.42	32.53	32.53	40.00	7.47

802.11n ac80 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB μ V/m)	Extrapolation result (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5210 MHz										
5210	78.50	PK	H	31.52	5.44	0.00	115.46	109.46	N/A	N/A
5210	67.54	AV	H	31.52	5.44	0.00	104.50	98.50	N/A	N/A
5210	80.63	PK	V	31.52	5.44	0.00	117.59	111.59	N/A	N/A
5210	69.96	AV	V	31.52	5.44	0.00	106.92	100.92	N/A	N/A
5150	35.64	PK	V	31.40	5.26	0.00	72.30	66.30	74.00	7.70
5150	20.96	AV	V	31.40	5.26	0.00	57.62	51.62	54.00	2.38
5350	27.03	PK	V	31.80	5.61	0.00	64.44	58.44	74.00	15.56
5350	14.36	AV	V	31.80	5.61	0.00	51.77	45.77	54.00	8.23
10420	30.92	PK	V	36.98	8.30	25.63	50.57	44.57	74.00	29.43
10420	18.97	AV	V	36.98	8.30	25.63	38.62	32.62	54.00	21.38
15630	30.69	PK	V	37.27	14.57	24.75	57.78	51.78	74.00	22.22
15630	17.12	AV	V	37.27	14.57	24.75	44.21	38.21	54.00	15.79
6946	48.25	PK	V	33.46	6.35	26.36	61.70	55.70	68.20	12.50
34.85	35.1	QP	V	18.46	0.79	21.42	32.93	32.93	40.00	7.07

5725MHz-5850MHz: 802.11a Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	81.84	PK	H	32.15	5.53	0.00	119.52	113.52	N/A	N/A
5745	71.07	AV	H	32.15	5.53	0.00	108.75	102.75	N/A	N/A
5745	83.05	PK	V	32.15	5.53	0.00	120.73	114.73	N/A	N/A
5745	73.29	AV	V	32.15	5.53	0.00	110.97	104.97	N/A	N/A
5725	38.54	PK	V	32.15	5.60	0.00	76.29	70.29	78.20	7.91
5715	32.14	PK	V	32.14	5.63	0.00	69.91	63.91	68.20	4.29
11490	33.25	PK	V	37.89	8.94	26.14	53.94	47.94	74.00	26.06
11490	20.47	AV	V	37.89	8.94	26.14	41.16	35.16	54.00	18.84
17235	32.25	PK	V	40.91	13.69	25.63	61.22	55.22	74.00	18.78
17235	19.64	AV	V	40.91	13.69	25.63	48.61	42.61	54.00	11.39
4867	35.25	PK	V	30.75	5.09	27.42	43.67	37.67	74.00	36.33
4867	21.14	AV	V	30.75	5.09	27.42	29.56	23.56	54.00	30.44
6187	34.47	PK	V	32.24	5.97	26.78	45.90	39.90	74.00	34.10
6187	20.15	AV	V	32.24	5.97	26.78	31.58	25.58	54.00	28.42
34.85	35.1	QP	V	18.46	0.79	21.42	32.93	32.93	40.00	7.07
Middle Channel:5785 MHz										
5785	82.17	PK	H	32.16	5.47	0.00	119.80	113.80	N/A	N/A
5785	71.39	AV	H	32.16	5.47	0.00	109.02	103.02	N/A	N/A
5785	83.43	PK	V	32.16	5.47	0.00	121.06	115.06	N/A	N/A
5785	73.56	AV	V	32.16	5.47	0.00	111.19	105.19	N/A	N/A
11570	33.63	PK	V	37.90	8.92	26.07	54.38	48.38	74.00	25.62
11570	20.66	AV	V	37.90	8.92	26.07	41.41	35.41	54.00	18.59
17355	32.45	PK	V	41.63	12.99	25.63	61.44	55.44	74.00	18.56
17355	19.87	AV	V	41.63	12.99	25.63	48.86	42.86	54.00	11.14
4867	35.44	PK	V	30.75	5.09	27.42	43.86	37.86	74.00	36.14
4867	21.50	AV	V	30.75	5.09	27.42	29.92	23.92	54.00	30.08
6187	34.59	PK	V	32.24	5.97	26.78	46.02	40.02	74.00	33.98
6187	20.37	AV	V	32.24	5.97	26.78	31.80	25.80	54.00	28.20
34.85	35.5	QP	V	18.46	0.79	21.42	33.33	33.33	40.00	6.67
96.93	39.30	QP	V	9.64	1.23	21.40	28.77	28.77	43.50	14.73
High Channel:5825 MHz										
5825	82.53	PK	H	32.17	5.75	0.00	120.45	114.45	N/A	N/A
5825	71.65	AV	H	32.17	5.75	0.00	109.57	103.57	N/A	N/A
5825	83.81	PK	V	32.17	5.75	0.00	121.73	115.73	N/A	N/A
5825	73.67	AV	V	32.17	5.75	0.00	111.59	105.59	N/A	N/A
5850	30.11	PK	V	32.17	6.05	0.00	68.33	62.33	78.20	15.87
5860	29.59	PK	V	32.17	6.02	0.00	67.78	61.78	68.20	6.42
11650	33.86	PK	V	37.90	8.90	25.75	54.91	48.91	74.00	25.09
11650	20.97	AV	V	37.90	8.90	25.75	42.02	36.02	54.00	17.98
17475	32.80	PK	V	42.35	12.30	25.39	62.06	56.06	74.00	17.94
17475	20.16	AV	V	42.35	12.30	25.39	49.42	43.42	54.00	10.58
4867	35.63	PK	V	30.75	5.09	27.42	44.05	38.05	74.00	35.95
4867	21.70	AV	V	30.75	5.09	27.42	30.12	24.12	54.00	29.88
6187	34.71	PK	V	32.24	5.97	26.78	46.14	40.14	74.00	33.86
6187	20.54	AV	V	32.24	5.97	26.78	31.97	25.97	54.00	28.03
34.85	35.7	QP	V	18.46	0.79	21.42	33.53	33.53	40.00	6.47

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Extrapolation result (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	80.22	PK	H	32.15	5.53	0.00	117.90	111.90	N/A	N/A
5745	70.51	AV	H	32.15	5.53	0.00	108.19	102.19	N/A	N/A
5745	82.54	PK	V	32.15	5.53	0.00	120.22	114.22	N/A	N/A
5745	72.88	AV	V	32.15	5.53	0.00	110.56	104.56	N/A	N/A
5725	40.25	PK	V	32.15	5.60	0.00	78.00	72.00	78.20	6.20
5715	32.15	PK	V	32.14	5.63	0.00	69.92	63.92	68.20	4.28
11490	33.13	PK	V	37.89	8.94	26.14	53.82	47.82	74.00	26.18
11490	20.10	AV	V	37.89	8.94	26.14	40.79	34.79	54.00	19.21
17235	32.06	PK	V	40.91	13.69	25.63	61.03	55.03	74.00	18.97
17235	19.50	AV	V	40.91	13.69	25.63	48.47	42.47	54.00	11.53
4867	34.86	PK	V	30.75	5.09	27.42	43.28	37.28	74.00	36.72
4867	20.97	AV	V	30.75	5.09	27.42	29.39	23.39	54.00	30.61
6187	34.09	PK	V	32.24	5.97	26.78	45.52	39.52	74.00	34.48
6187	20.02	AV	V	32.24	5.97	26.78	31.45	25.45	54.00	28.55
34.85	35.3	QP	V	18.46	0.79	21.42	33.13	33.13	40.00	6.87
Middle Channel:5785 MHz										
5785	80.49	PK	H	32.16	5.47	0.00	118.12	112.12	N/A	N/A
5785	70.78	AV	H	32.16	5.47	0.00	108.41	102.41	N/A	N/A
5785	82.80	PK	V	32.16	5.47	0.00	120.43	114.43	N/A	N/A
5785	73.15	AV	V	32.16	5.47	0.00	110.78	104.78	N/A	N/A
11570	33.52	PK	V	37.90	8.92	26.07	54.27	48.27	74.00	25.73
11570	20.30	AV	V	37.90	8.92	26.07	41.05	35.05	54.00	18.95
17355	32.09	PK	V	41.63	12.99	25.63	61.08	55.08	74.00	18.92
17355	19.77	AV	V	41.63	12.99	25.63	48.76	42.76	54.00	11.24
4867	35.29	PK	V	30.75	5.09	27.42	43.71	37.71	74.00	36.29
4867	21.37	AV	V	30.75	5.09	27.42	29.79	23.79	54.00	30.21
6187	34.46	PK	V	32.24	5.97	26.78	45.89	39.89	74.00	34.11
6187	20.02	AV	V	32.24	5.97	26.78	31.45	25.45	54.00	28.55
34.85	35.2	QP	V	18.46	0.79	21.42	33.03	33.03	40.00	6.97
96.93	39.70	QP	V	9.64	1.23	21.40	29.17	29.17	43.50	14.33
High Channel:5825 MHz										
5825	80.76	PK	H	32.17	5.75	0.00	118.68	112.68	N/A	N/A
5825	71.16	AV	H	32.17	5.75	0.00	109.08	103.08	N/A	N/A
5825	83.32	PK	V	32.17	5.75	0.00	121.24	115.24	N/A	N/A
5825	73.28	AV	V	32.17	5.75	0.00	111.20	105.20	N/A	N/A
5850	34.88	PK	V	32.17	6.05	0.00	73.10	67.10	78.20	11.10
5860	30.04	PK	V	32.17	6.02	0.00	68.23	62.23	68.20	5.97
11650	33.65	PK	V	37.90	8.90	25.75	54.70	48.70	74.00	25.30
11650	20.73	AV	V	37.90	8.90	25.75	41.78	35.78	54.00	18.22
17475	32.54	PK	V	42.35	12.30	25.39	61.80	55.80	74.00	18.20
17475	19.88	AV	V	42.35	12.30	25.39	49.14	43.14	54.00	10.86
4867	35.49	PK	V	30.75	5.09	27.42	43.91	37.91	74.00	36.09
4867	21.43	AV	V	30.75	5.09	27.42	29.85	23.85	54.00	30.15
6187	34.38	PK	V	32.24	5.97	26.78	45.81	39.81	74.00	34.19
6187	20.22	AV	V	32.24	5.97	26.78	31.65	25.65	54.00	28.35
34.85	35.5	QP	V	18.46	0.79	21.42	33.33	33.33	40.00	6.67

802.11n ht40 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5755 MHz										
5755	77.01	PK	H	32.15	5.50	0.00	114.66	108.66	N/A	N/A
5755	66.71	AV	H	32.15	5.50	0.00	104.36	98.36	N/A	N/A
5755	79.12	PK	V	32.15	5.50	0.00	116.77	110.77	N/A	N/A
5755	68.91	AV	V	32.15	5.50	0.00	106.56	100.56	N/A	N/A
5725	44.68	PK	V	32.15	5.60	0.00	82.43	76.43	78.20	1.77
5715	31.25	PK	V	32.14	5.63	0.00	69.02	63.02	68.20	5.18
11510	32.95	PK	V	37.90	8.95	26.12	53.68	47.68	74.00	26.32
11510	19.87	AV	V	37.90	8.95	26.12	40.60	34.60	54.00	19.40
17265	31.67	PK	V	41.09	13.51	25.63	60.64	54.64	74.00	19.36
17265	19.17	AV	V	41.09	13.51	25.63	48.14	42.14	54.00	11.86
4867	34.69	PK	V	30.75	5.09	27.42	43.11	37.11	74.00	36.89
4867	20.69	AV	V	30.75	5.09	27.42	29.11	23.11	54.00	30.89
6187	33.73	PK	V	32.24	5.97	26.78	45.16	39.16	74.00	34.84
6187	19.64	AV	V	32.24	5.97	26.78	31.07	25.07	54.00	28.93
34.85	35.5	QP	V	18.46	0.79	21.42	33.33	33.33	40.00	6.67
High Channel:5795 MHz										
5795	77.28	PK	H	32.16	5.46	0.00	114.90	108.90	N/A	N/A
5795	66.97	AV	H	32.16	5.46	0.00	104.59	98.59	N/A	N/A
5795	79.62	PK	V	32.16	5.46	0.00	117.24	111.24	N/A	N/A
5795	68.31	AV	V	32.16	5.46	0.00	105.93	99.93	N/A	N/A
5850	39.55	PK	V	32.17	6.05	0.00	77.77	71.77	78.20	6.43
5860	30.20	PK	V	32.17	6.02	0.00	68.39	63.39	68.20	5.81
11590	33.29	PK	V	37.90	8.92	26.06	54.05	48.05	74.00	25.95
11590	20.56	AV	V	37.90	8.92	26.06	41.32	35.32	54.00	18.68
17385	32.40	PK	V	41.81	12.82	25.63	61.40	55.40	74.00	18.60
17385	19.69	AV	V	41.81	12.82	25.63	48.69	42.69	54.00	11.31
4867	35.10	PK	V	30.75	5.09	27.42	43.52	37.52	74.00	36.48
4867	21.29	AV	V	30.75	5.09	27.42	29.71	23.71	54.00	30.29
6187	34.07	PK	V	32.24	5.97	26.78	45.50	39.50	74.00	34.50
6187	19.83	AV	V	32.24	5.97	26.78	31.26	25.26	54.00	28.74
34.85	35.1	QP	V	18.46	0.79	21.42	32.93	32.93	40.00	7.07

802.11n ac80 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5775 MHz										
5775	74.57	PK	H	32.16	5.48	0.00	112.21	106.21	N/A	N/A
5775	64.13	AV	H	32.16	5.48	0.00	101.77	95.77	N/A	N/A
5775	76.85	PK	V	32.16	5.48	0.00	114.49	108.49	N/A	N/A
5775	66.21	AV	V	32.16	5.48	0.00	103.85	97.85	N/A	N/A
5725	44.26	PK	V	32.15	5.60	0.00	82.01	76.01	78.20	2.19
5715	32.69	PK	V	32.14	5.63	0.00	70.46	64.46	68.20	3.74
5850	40.64	PK	V	32.17	6.05	0.00	78.86	72.86	78.20	5.34
5860	33.10	PK	V	32.17	6.02	0.00	71.29	65.29	68.20	2.91
11550	33.16	PK	V	37.90	8.93	26.09	53.90	47.90	74.00	26.10
11550	20.25	AV	V	37.90	8.93	26.09	40.99	34.99	54.00	19.01
17325	32.17	PK	V	41.45	13.17	25.63	61.16	55.16	74.00	18.84
17325	19.45	AV	V	41.45	13.17	25.63	48.44	42.44	54.00	11.56
2786	34.85	PK	V	26.64	4.45	27.55	38.39	32.39	74.00	41.61
2786	21.17	AV	V	26.64	4.45	27.55	24.71	18.71	54.00	35.29
34.85	35.3	QP	V	18.46	0.79	21.42	33.13	33.13	40.00	6.87

FCC §15.407(b) – CONDUCTED SPURIOUS EMISSION AT ANTENNA PORT

Applicable Standard

FCC §15.407;

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of -27 dBm/MHz.

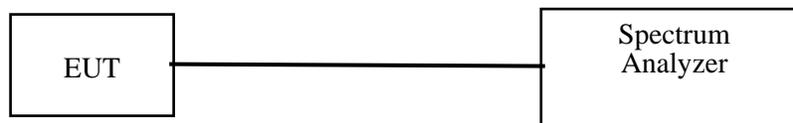
(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. The Resolution bandwidth is set to 1MHz, The Video bandwidth is set to ≥ 1 MHz, report the peak value out of the operating band. Offset the antenna gain and cable loss.
3. Repeat above procedures until all frequencies measured were complete.



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:	24.1 °C-25.4 °C
Relative Humidity:	53 %-60 %
ATM Pressure:	99.7 kPa-100.2 kPa

The testing was performed by Allen Qiao from 2015-05-19 to 2015-05-28.

Result: Compliance.

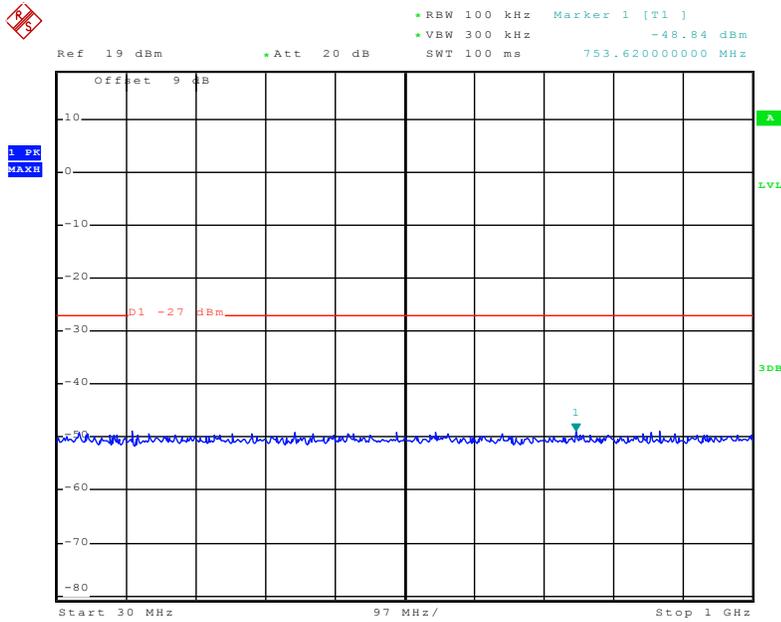
Please refer to the following table and plots.

UNII Bands	Mode	Channel	Frequency (MHz)	Conducted Spurious (dBm)			Cable Loss dB	Total (dBm)	Limit (dBm)
				Chain 0	Chain 1	Chain 2			
5150-5250MHz	802.11 a	Low	5180	-37.41	-34.61	-30.88	0.5	-28.22	-27
		Middle	5200	-39.02	-36.88	-36.88	0.5	-32.21	-27
		High	5240	-37.86	-39.45	-39.59	0.5	-33.62	-27
	802.11 n20	Low	5180	-37.41	-30.25	-33.39	0.5	-27.5	-27
		Middle	5200	-37.31	-31.78	-34.83	0.5	-28.79	-27
		High	5240	-37.8	-39.61	-36.99	0.5	-32.73	-27
	802.11 n40	Low	5190	-34.27	-31.19	-34.05	0.5	-27.66	-27
		High	5230	-36.78	-38.21	-36	0.5	-31.63	-27
	802.11 ac80	Middle	5210	-35.72	-32.01	-38.89	0.5	-29.39	-27
5725-5850MHz	802.11 a	Low	5745	-39.01	-39.77	-38.47	0.5	-33.78	-27
		Middle	5785	-39.2	-38.77	-38.76	0.5	-33.63	-27
		High	5825	-39.39	-39.65	-39.02	0.5	-34.07	-27
	802.11 n20	Low	5745	-38.55	-39.51	-39.35	0.5	-33.84	-27
		Middle	5785	-38.69	-39.73	-39.66	0.5	-34.06	-27
		High	5825	-39.93	-39.2	-38.74	0.5	-33.99	-27
	802.11 n40	Low	5755	-39.63	-39.38	-39.05	0.5	-34.08	-27
		High	5795	-39.12	-38.79	-40.1	0.5	-34.03	-27
	802.11 ac80	Middle	5775	-38.08	-39.04	-39.18	0.5	-33.47	-27

Note: Offset= Antenna Gain(dBi)

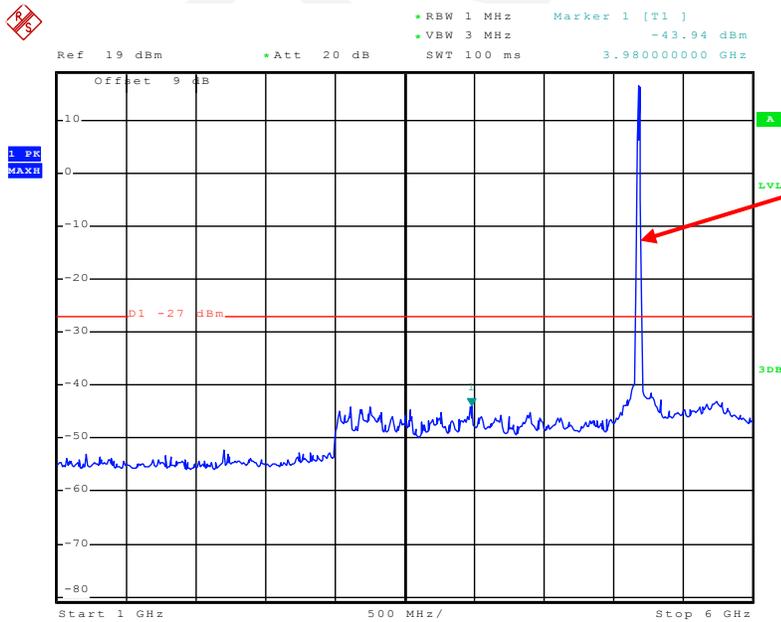
5150MHz-5250MHz:

Chain 0:802.11a Low Channel 30MHz-1GHz



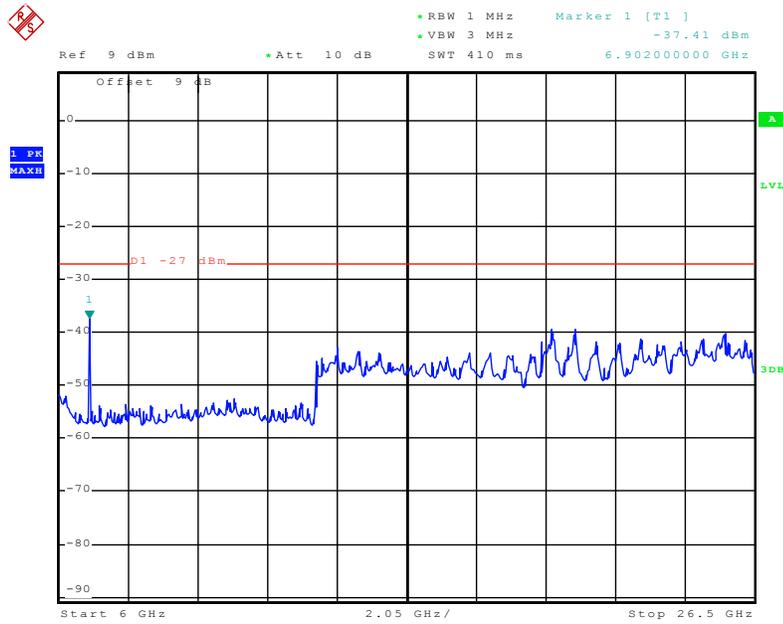
Date: 19.MAY.2015 13:59:24

Chain 0:802.11a Low Channel 1GHz-6GHz



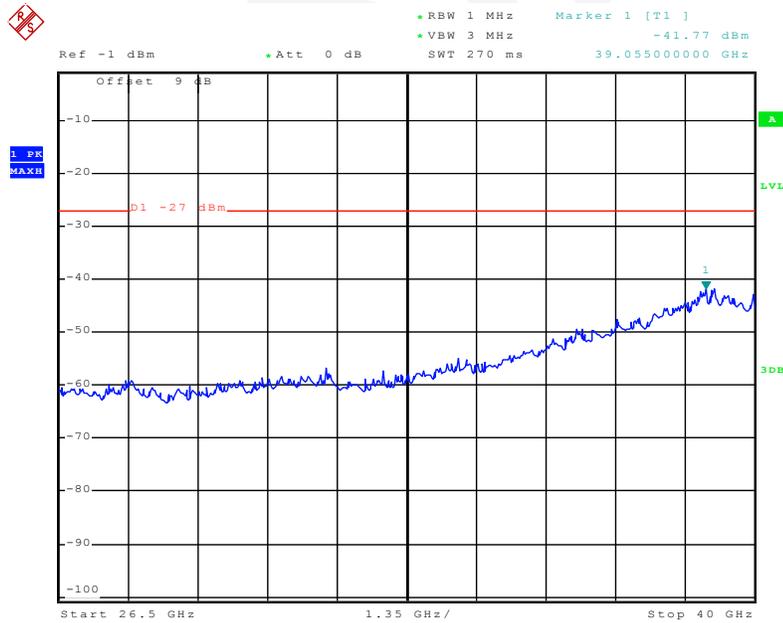
Date: 19.MAY.2015 14:00:13

Chain 0:802.11a Low Channel 6GHz-26.5GHz



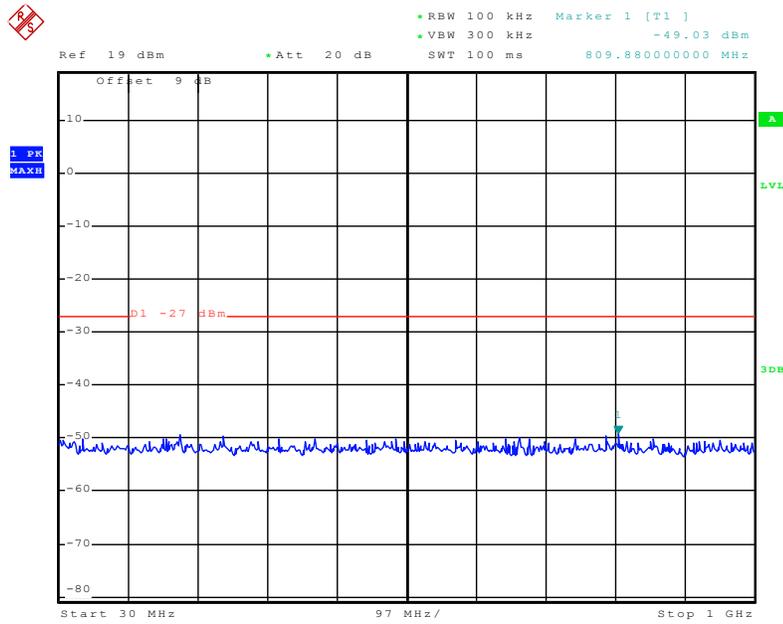
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Chain 0:802.11a Low Channel 26.5GHz-40GHz



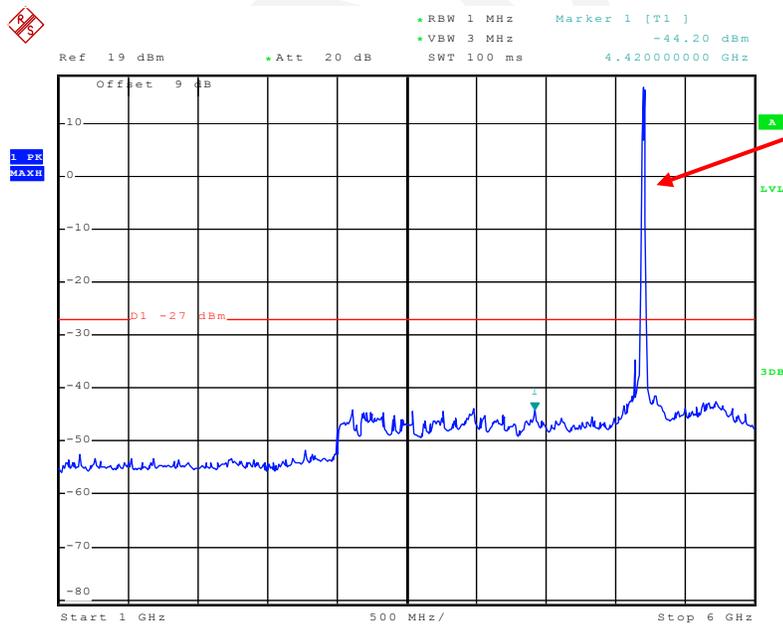
Date: 25.MAY.2015 13:55:17

Chain 0:802.11a Middle Channel 30MHz -1GHz



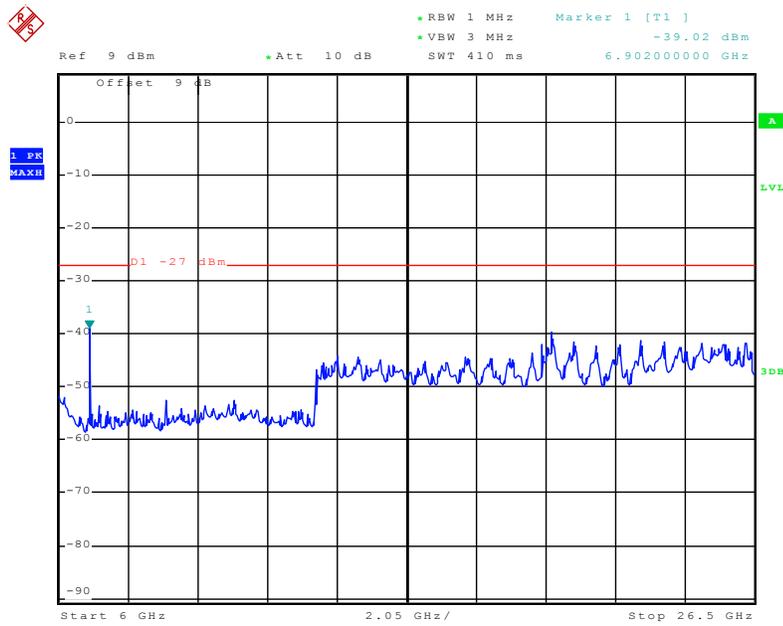
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Chain 0:802.11a Middle Channel 1GHz-6GHz



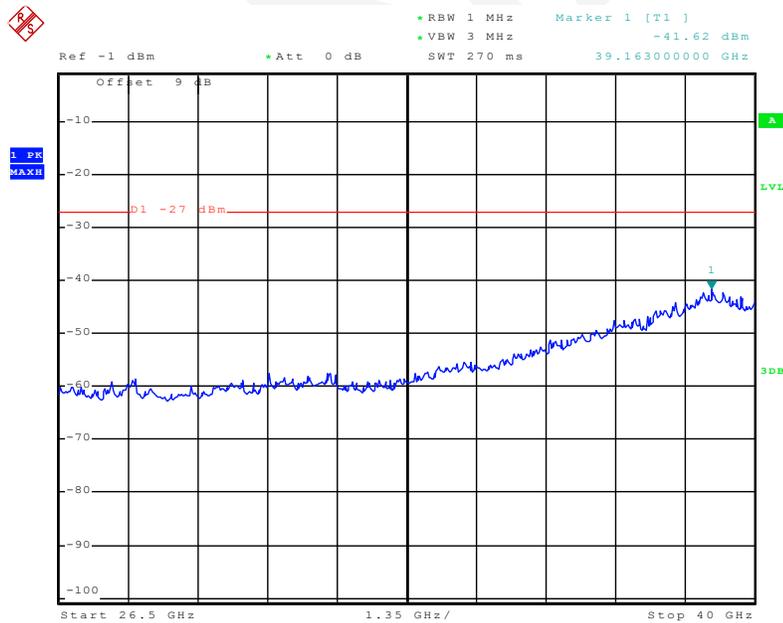
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Chain 0:802.11a Middle Channel 6GHz-26.5GHz



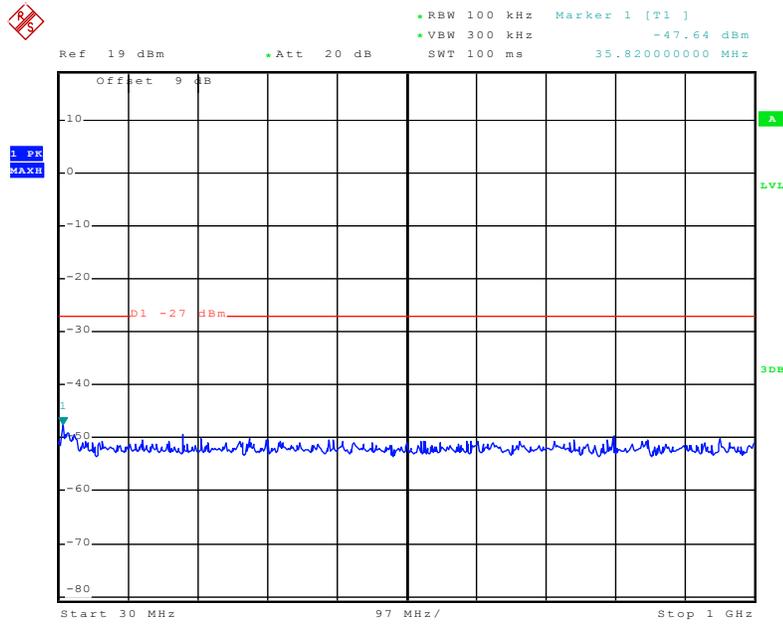
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Chain 0:802.11a Middle Channel 26.5GHz-40GHz



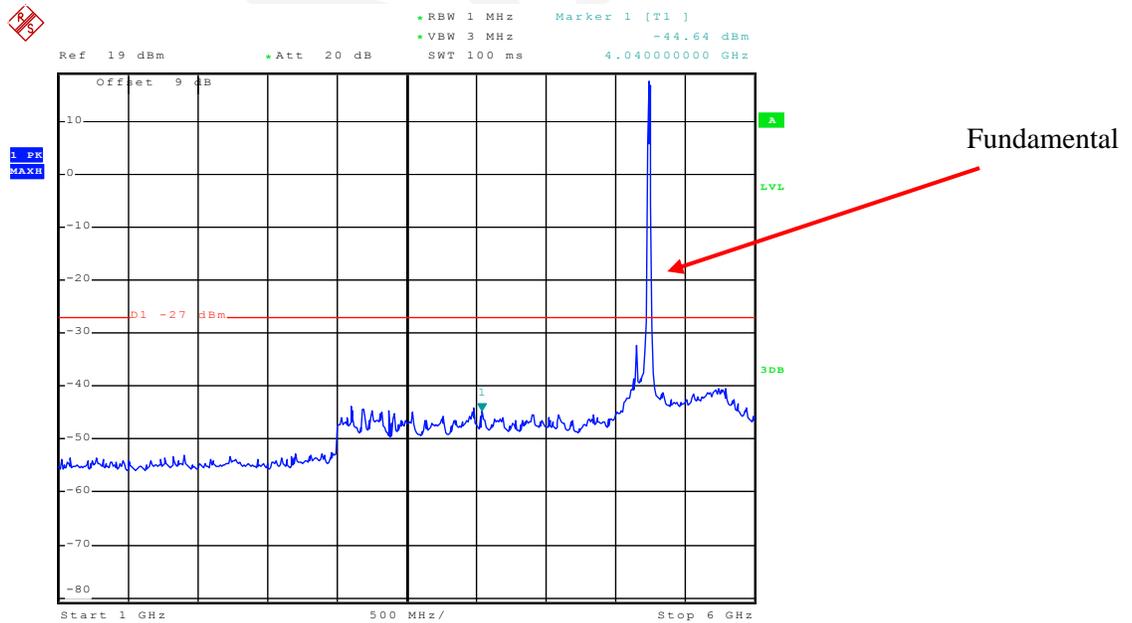
Date: 25.MAY.2015 13:55:24

Chain 0:802.11a High Channel 30MHz-1GHz



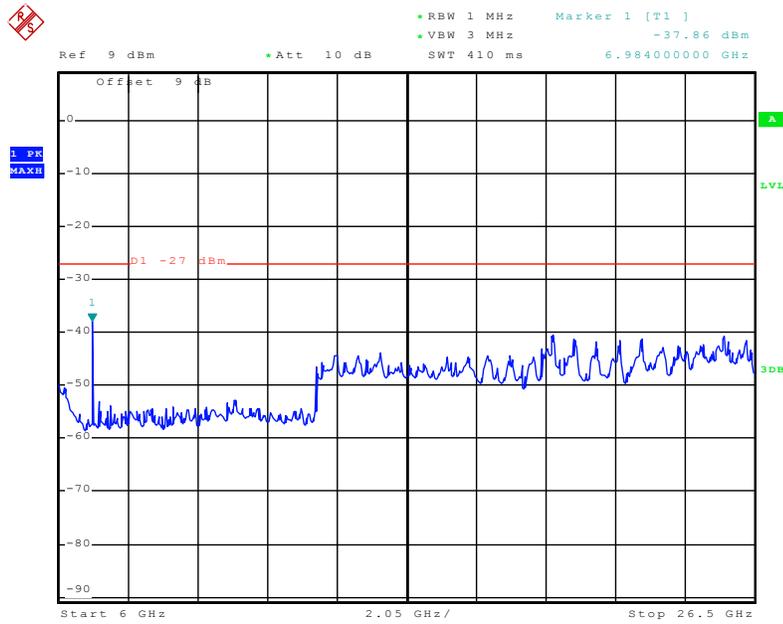
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Chain 0:802.11a High Channel 1GHz-6GHz



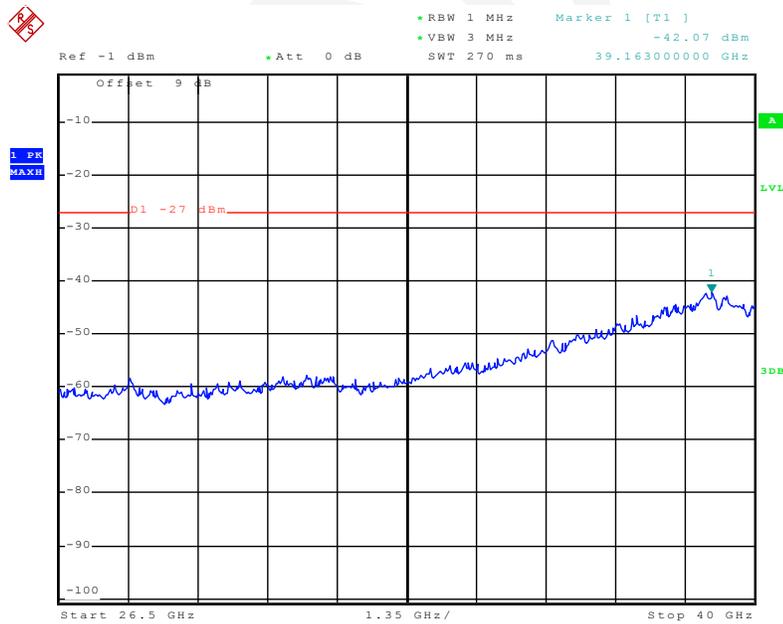
Date: 19.MAY.2015 14:05:10

Chain 0:802.11a High Channel 6GHz-26.5GHz



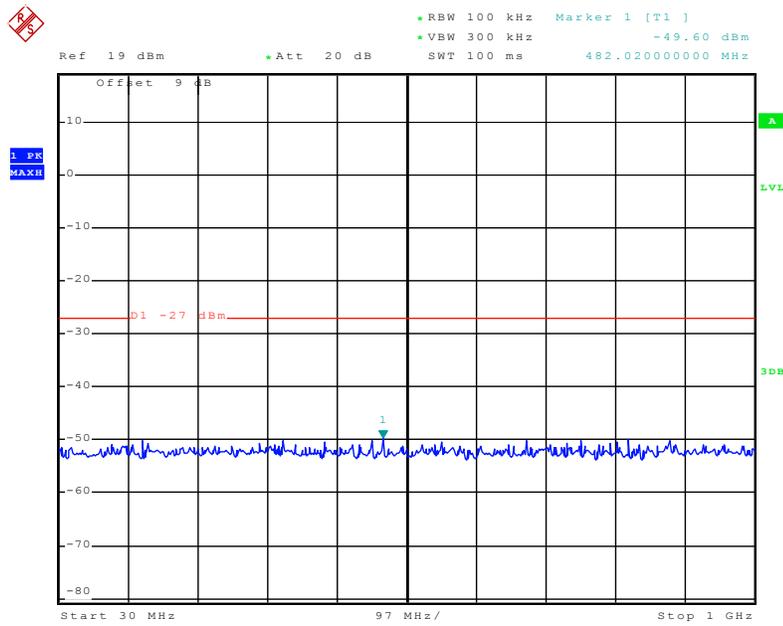
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Chain 0:802.11a High Channel 26.5GHz-40GHz



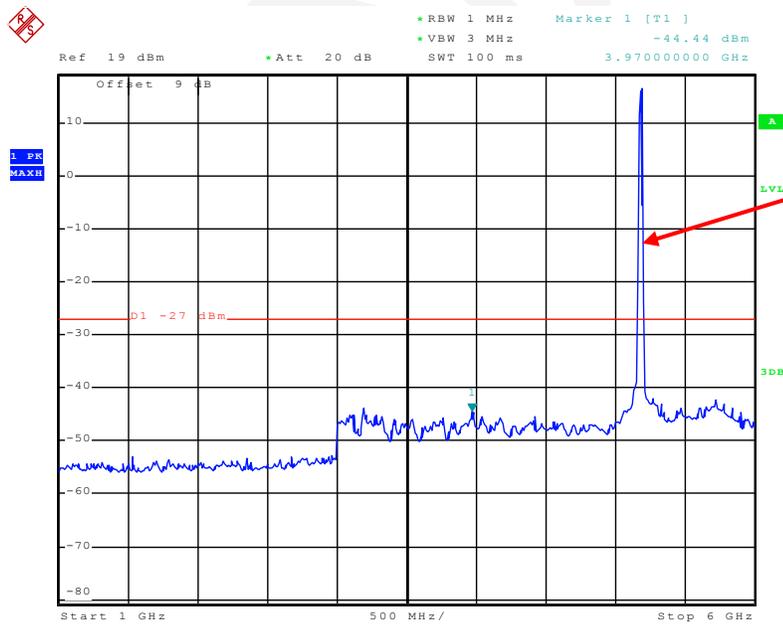
Date: 25.MAY.2015 13:55:11

Chain 0:802.11n ht20 Low Channel 30MHz-1GHz



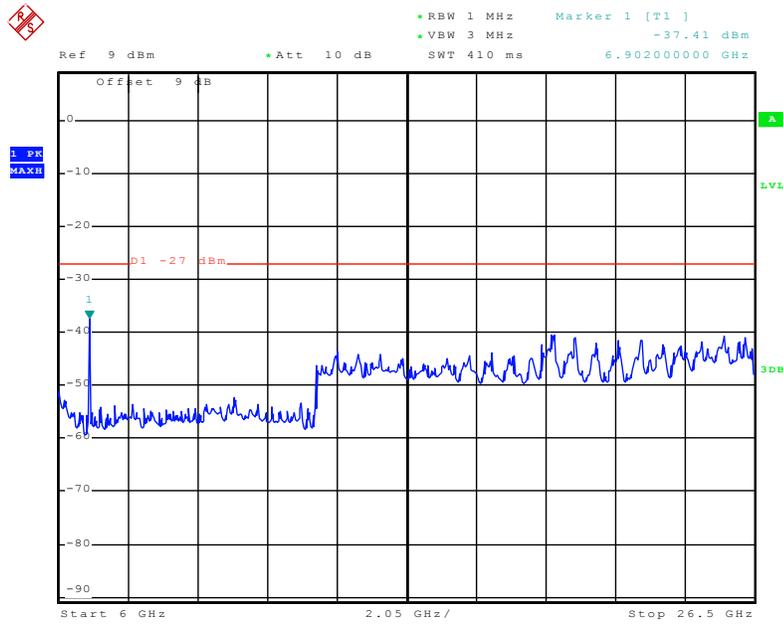
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Chain 0:802.11n ht20 Low Channel 1GHz-6GHz



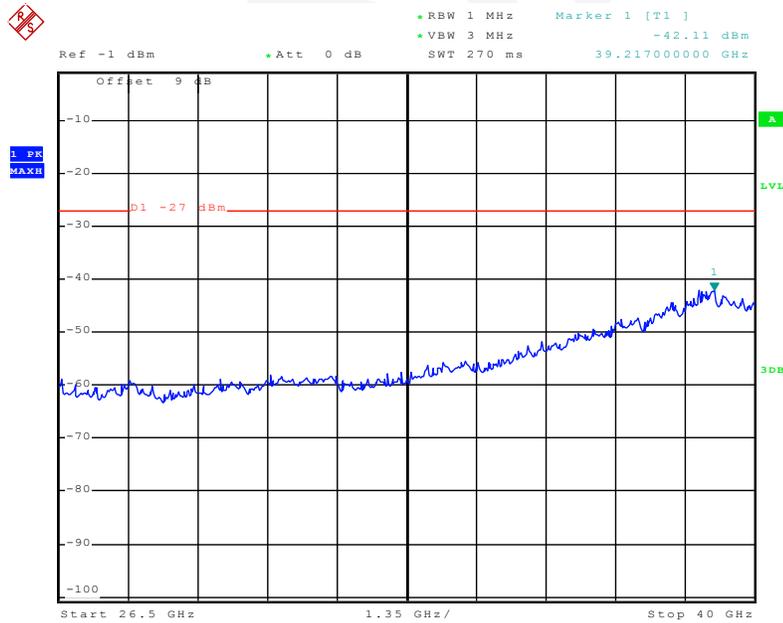
Date: 19.MAY.2015 14:10:53

Chain 0:802.11n ht20 Low Channel 6GHz-26.5GHz



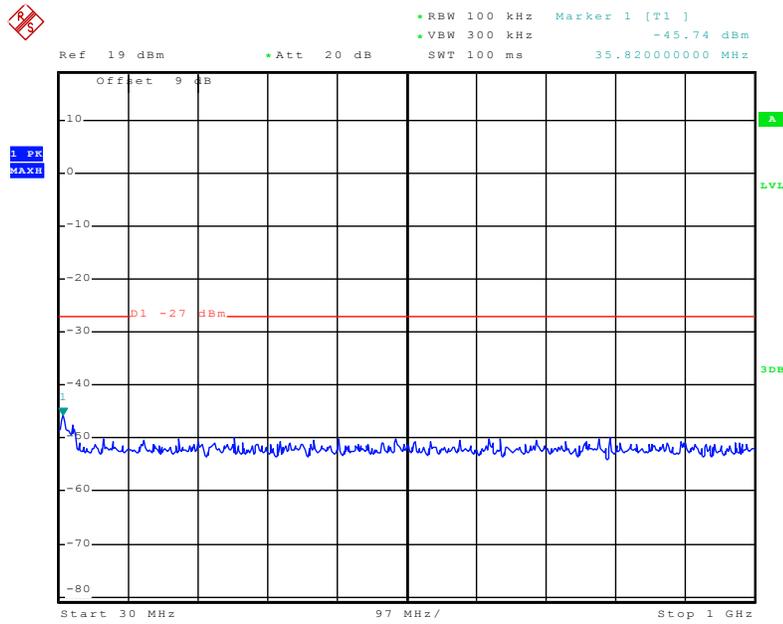
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Chain 0:802.11n ht20 Low Channel 26.5GHz-40GHz



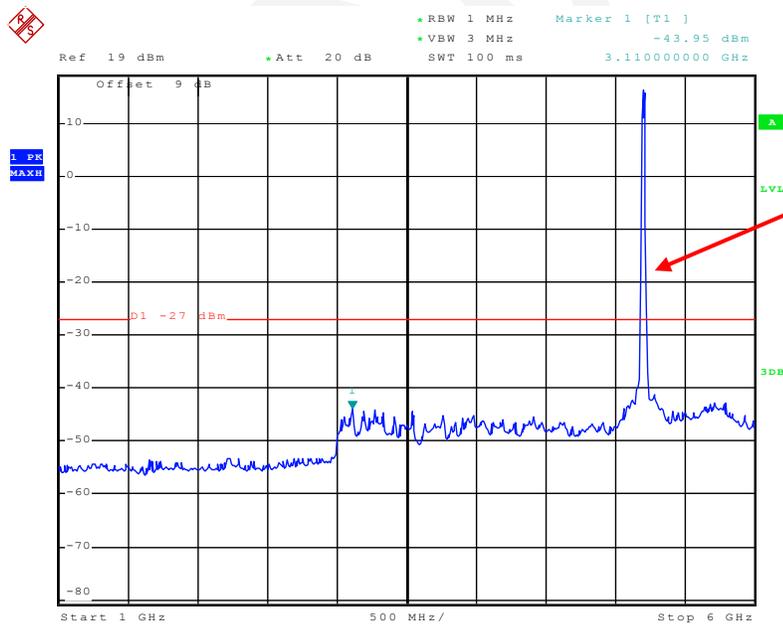
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Chain 0:802.11n ht20 Middle Channel 30MHz -1GHz



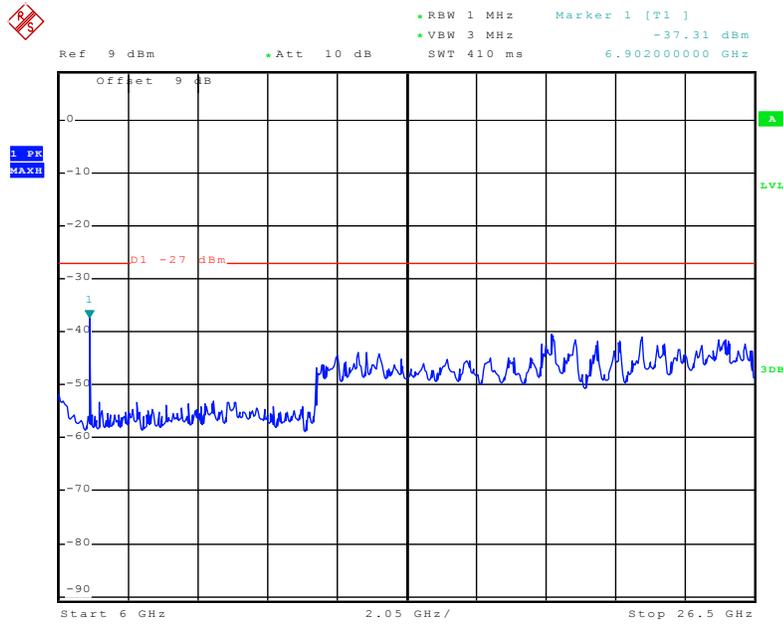
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Chain 0:802.11n ht20 Middle Channel 1GHz-6GHz



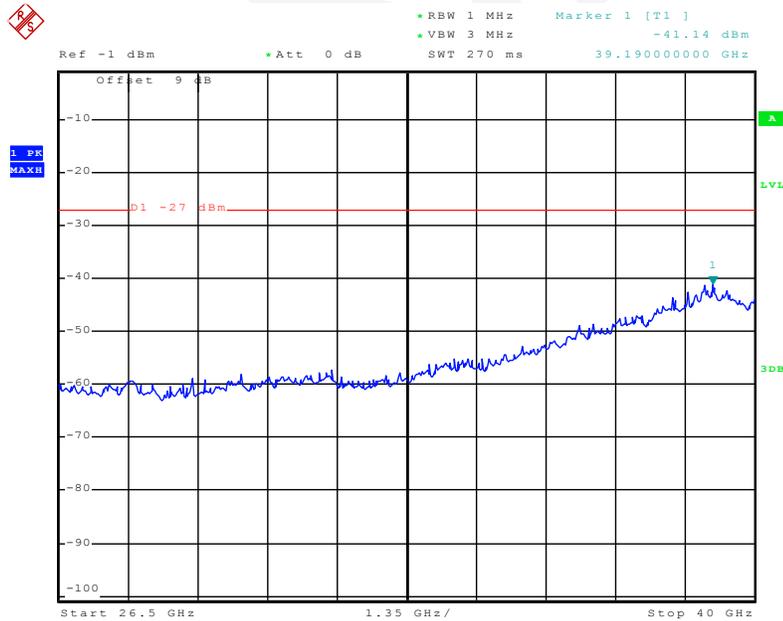
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Chain 0:802.11n ht20 Middle Channel 6GHz-26.5GHz



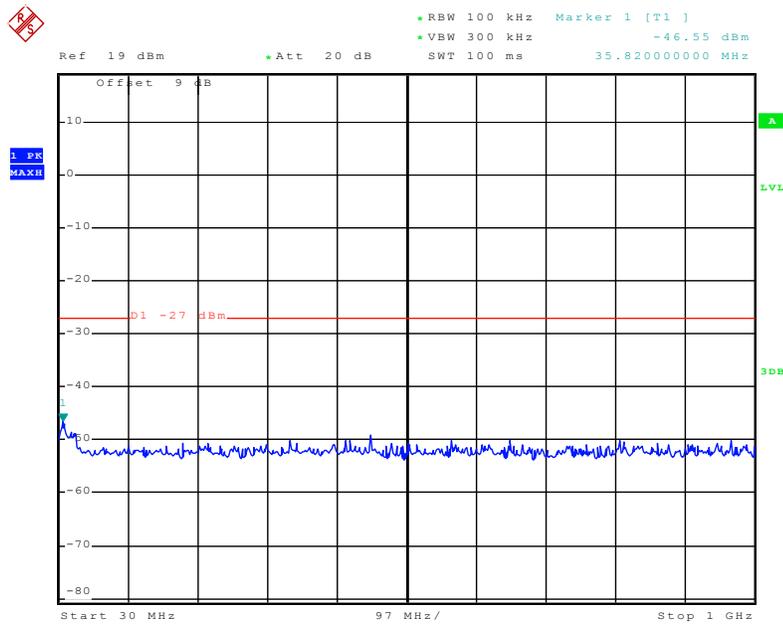
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Chain 0:802.11n ht20 Middle Channel 26.5GHz-40GHz



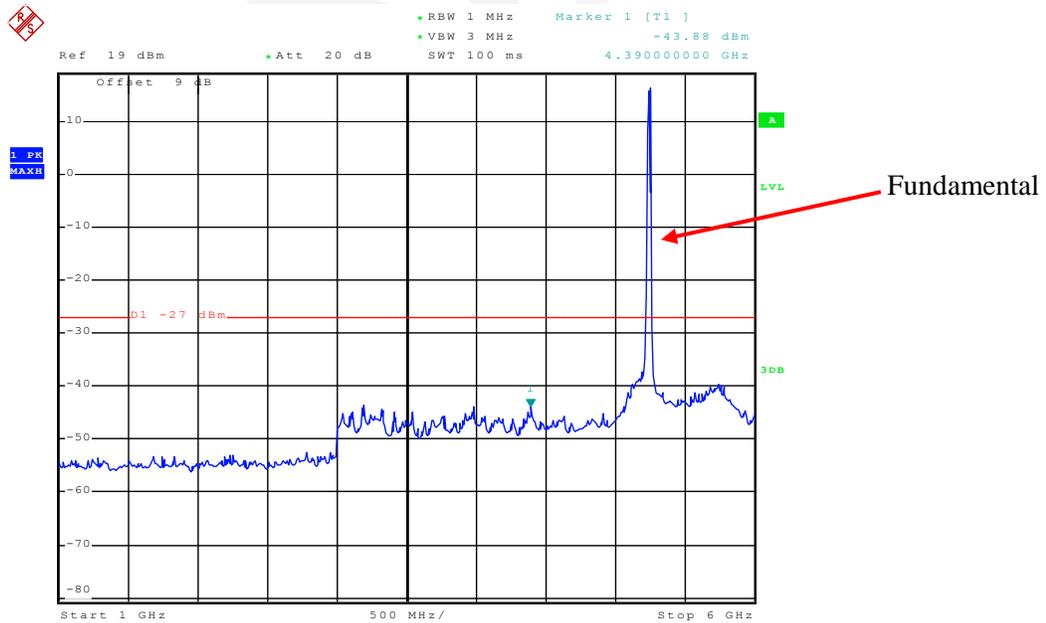
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Chain 0:802.11n ht20 High Channel 30MHz-1GHz



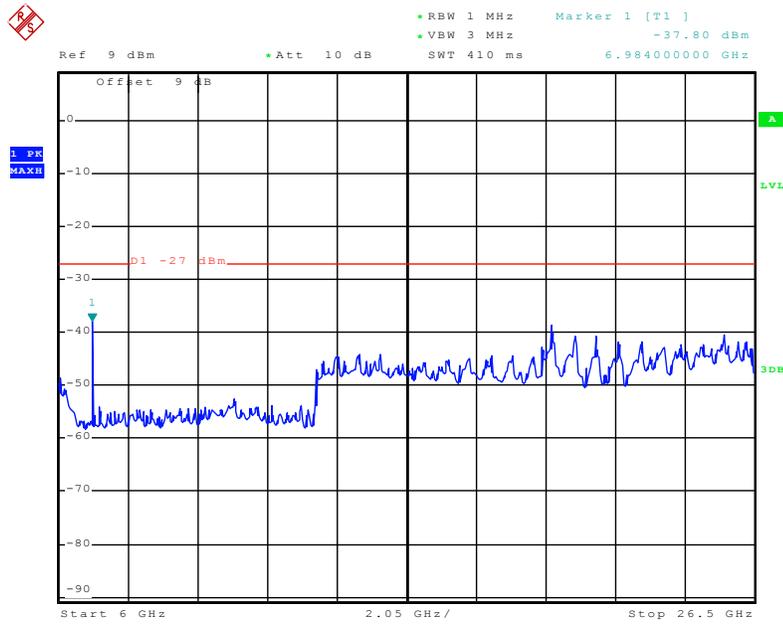
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Chain 0:802.11n ht20 High Channel 1GHz-6GHz



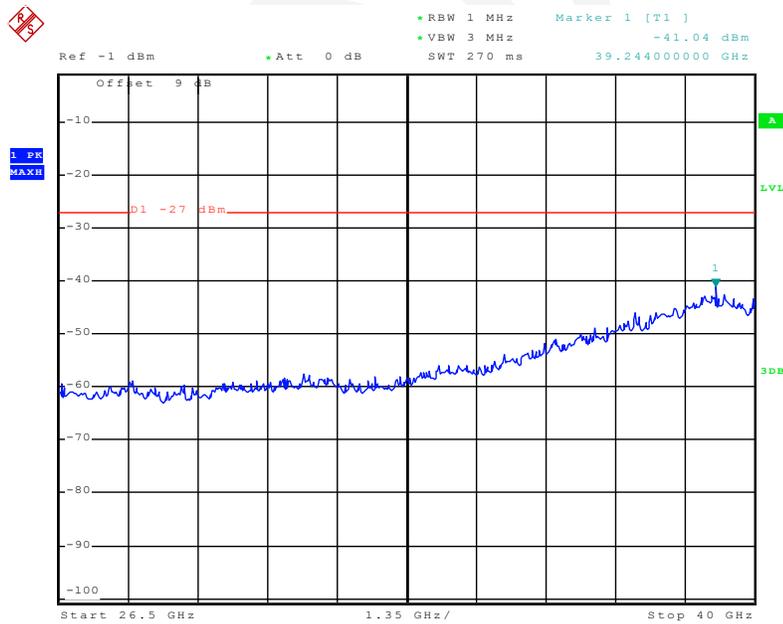
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Chain 0:802.11n ht20 High Channel 6GHz-26.5GHz



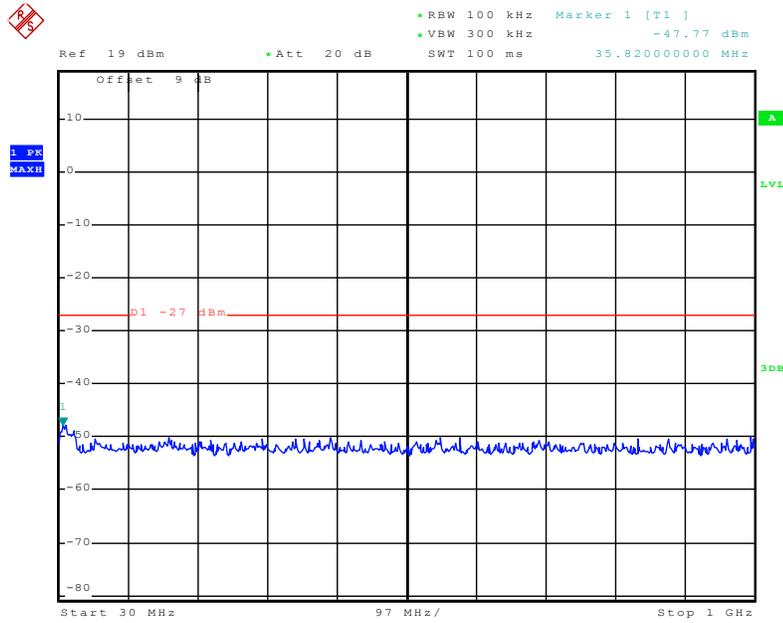
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Chain 0:802.11n ht20 High Channel 26.5GHz-40GHz



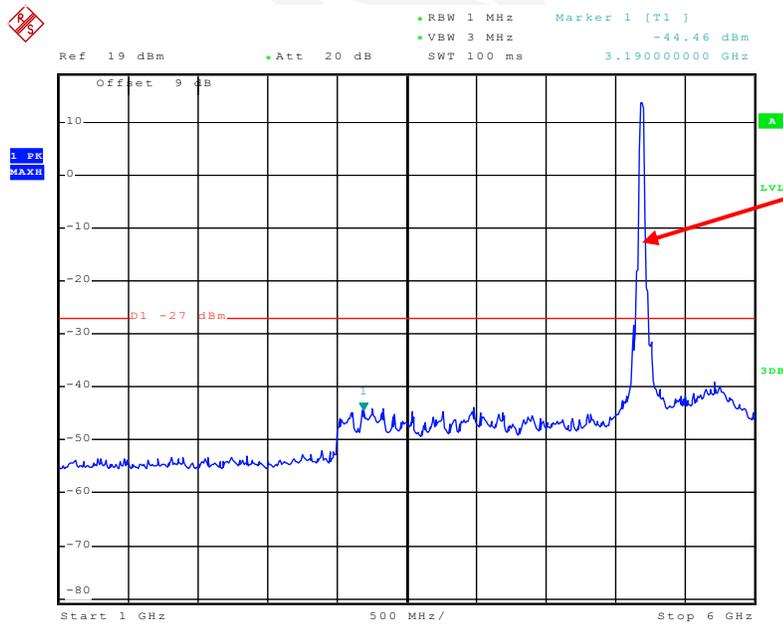
Date: 25.MAY.2015 13:55:34

Chain 0:802.11n ht40 Low Channel 30MHz-1GHz



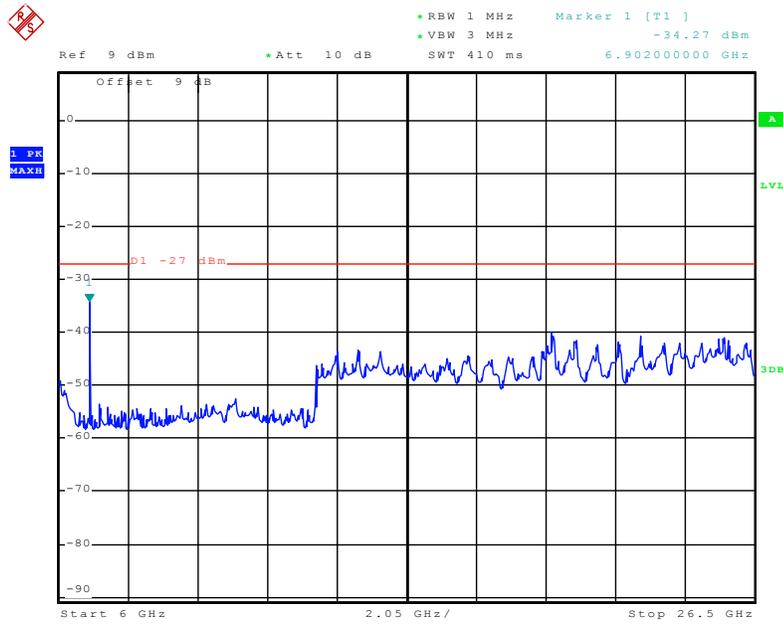
Date: 19.MAY.2015 14:11:37

Chain 0:802.11n ht40 Low Channel 1GHz-6GHz



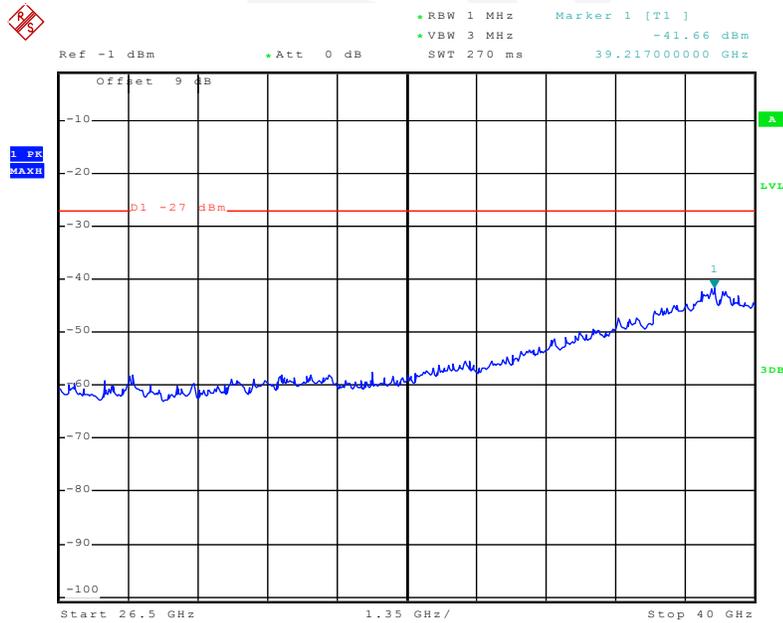
Date: 19.MAY.2015 14:12:13

Chain 0:802.11n ht40 Low Channel 6GHz-26.5GHz



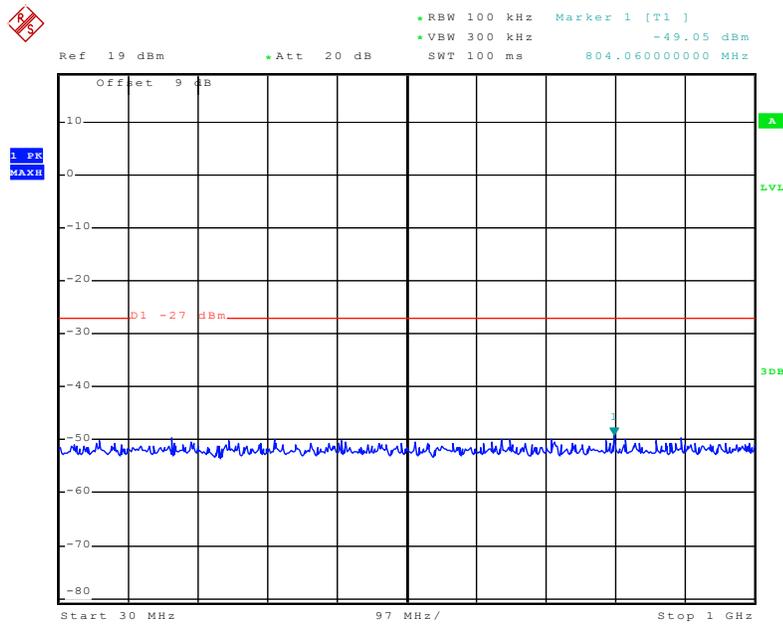
Date: 19.MAY.2015 14:12:33

Chain 0:802.11n ht40 Low Channel 26.5GHz-40GHz



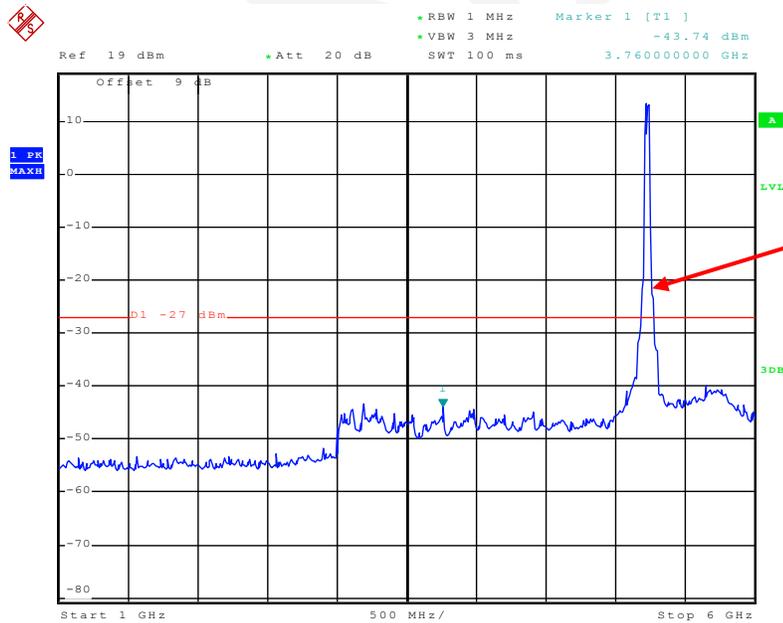
Date: 25.MAY.2015 13:55:59

Chain 0:802.11n ht40 High Channel 30MHz-1GHz



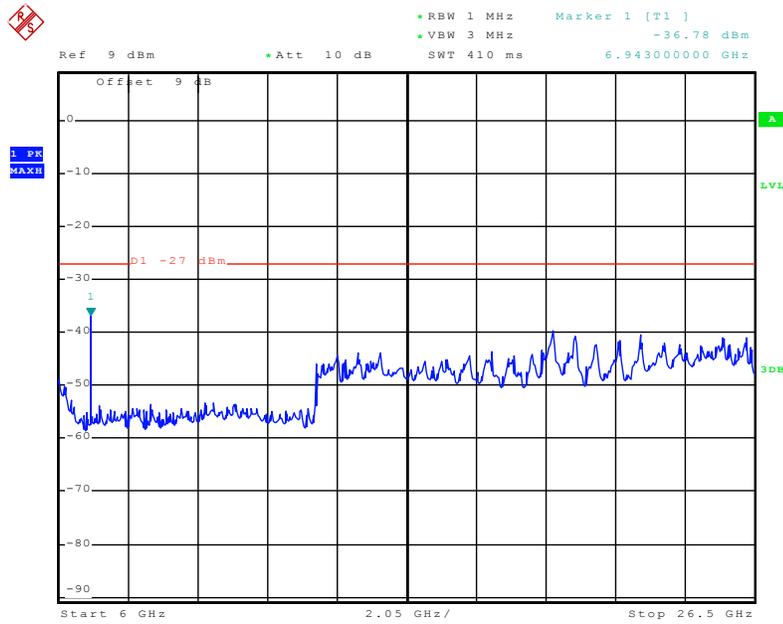
Date: 19.MAY.2015 14:13:44

Chain 0:802.11n ht40 High Channel 1GHz-6GHz



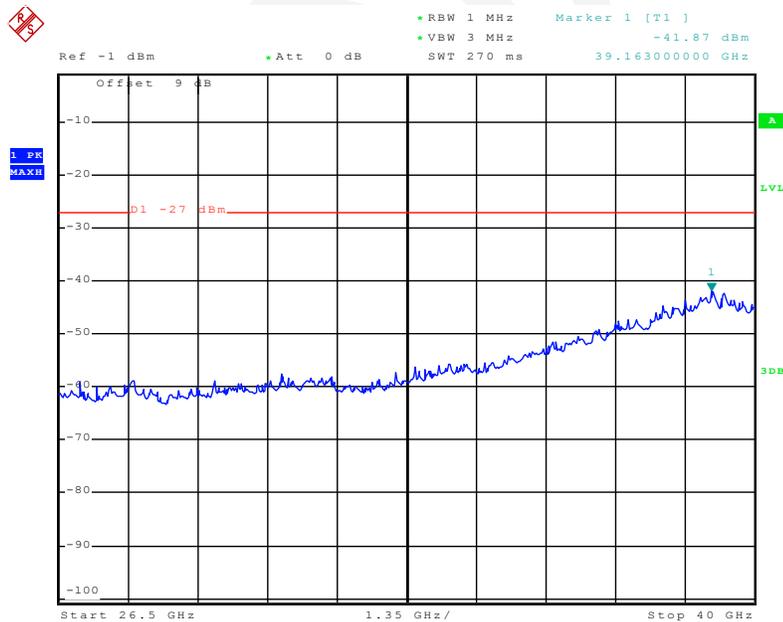
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Chain 0:802.11n ht40 High Channel 6GHz-26.5GHz



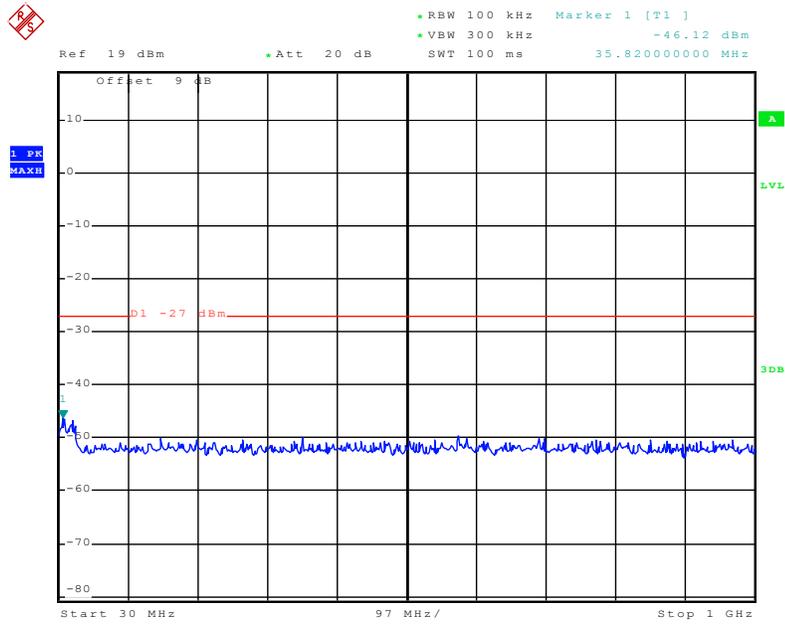
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Chain 0:802.11n ht40 High Channel 26.5GHz-40GHz



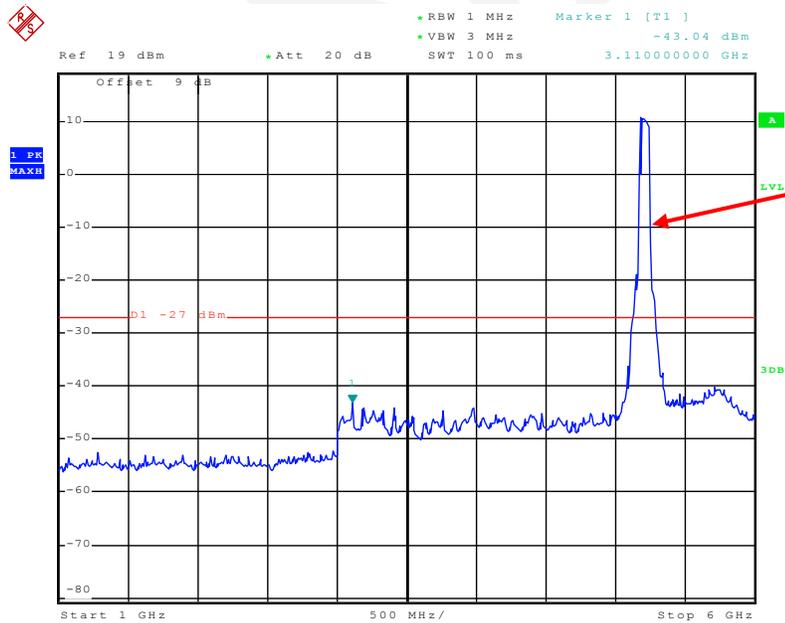
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Chain 0:802.11n ac80 Middle Channel 30MHz-1GHz



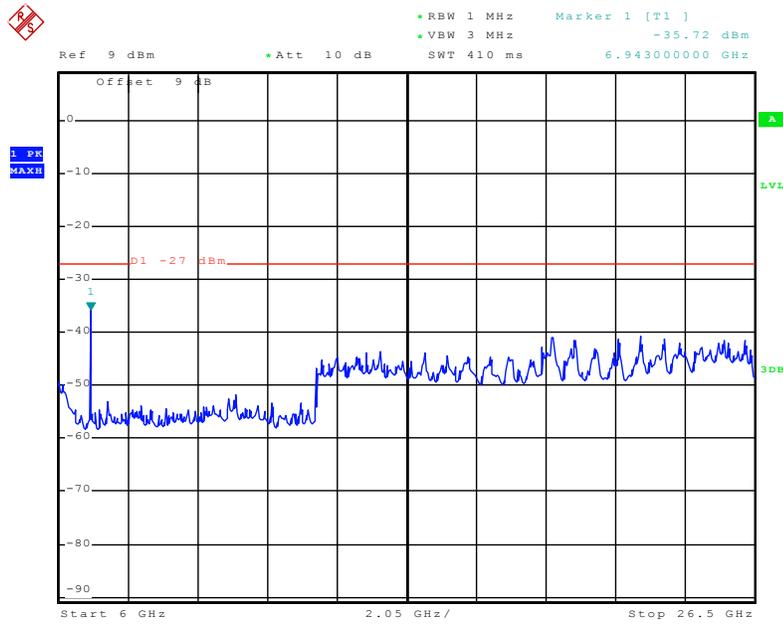
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Chain 0:802.11n ac80 Middle Channel 1GHz-6GHz



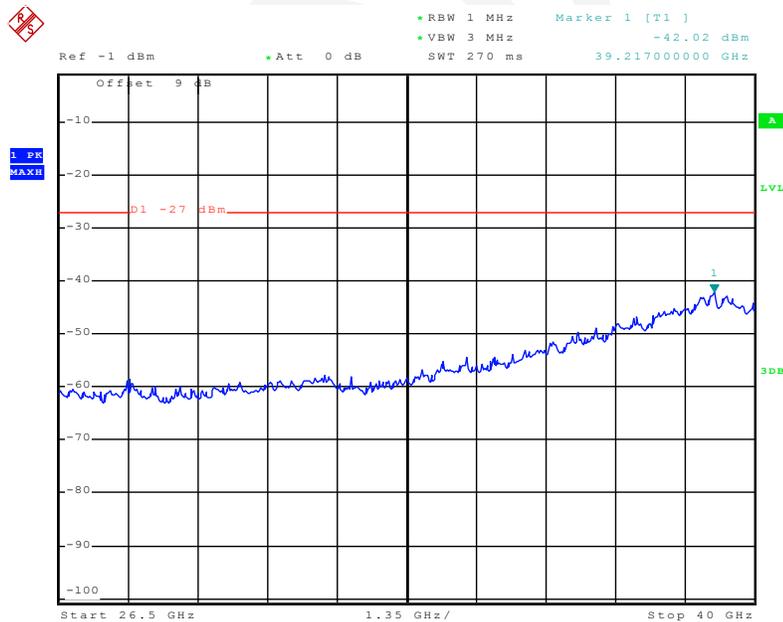
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Chain 0:802.11n ac80 Middle Channel 6GHz-26.5GHz



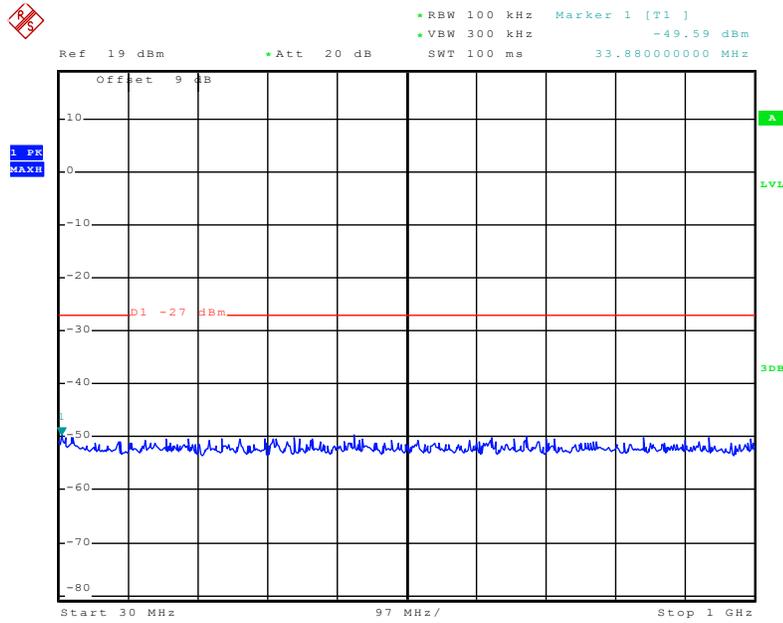
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Chain 0:802.11n ac80 Middle Channel 26.5GHz-40GHz



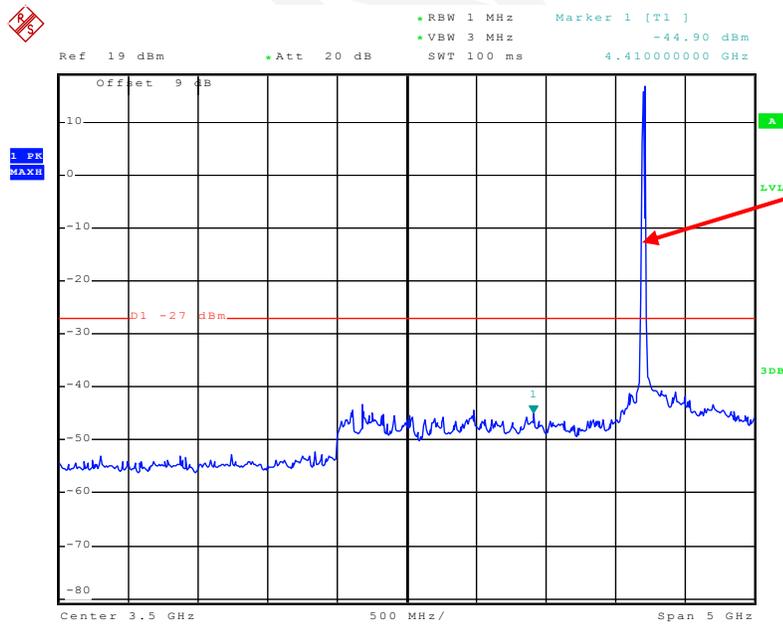
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Chain 1:802.11a Low Channel 30MHz-1GHz



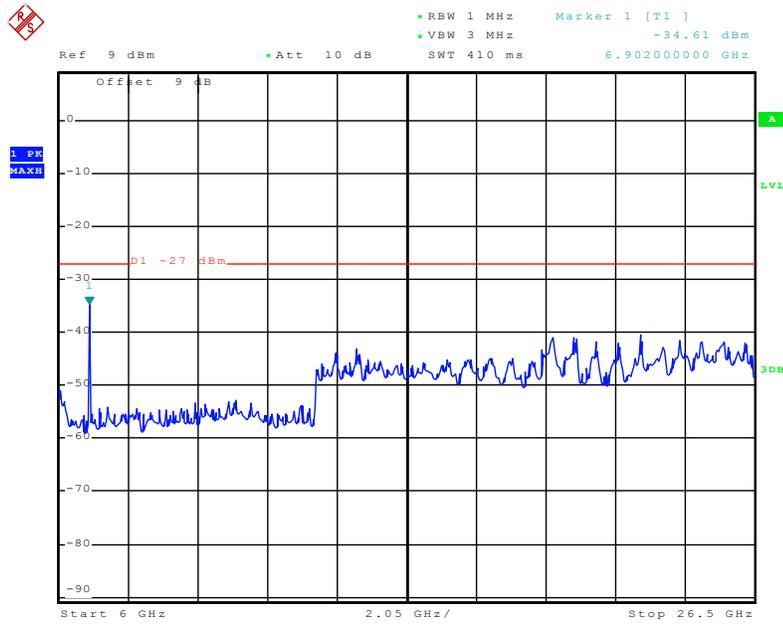
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Chain 1:802.11a Low Channel 1GHz-6GHz



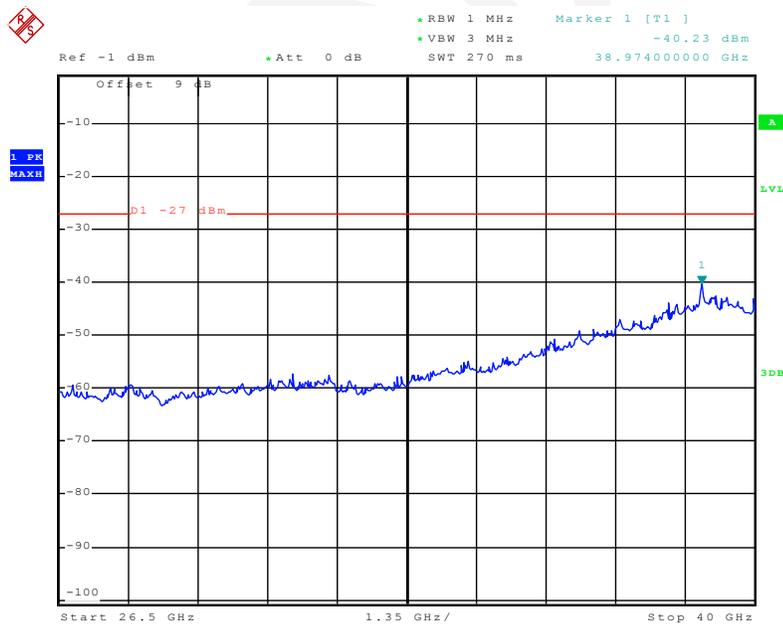
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Chain 1:802.11a Low Channel 6GHz-26.5GHz



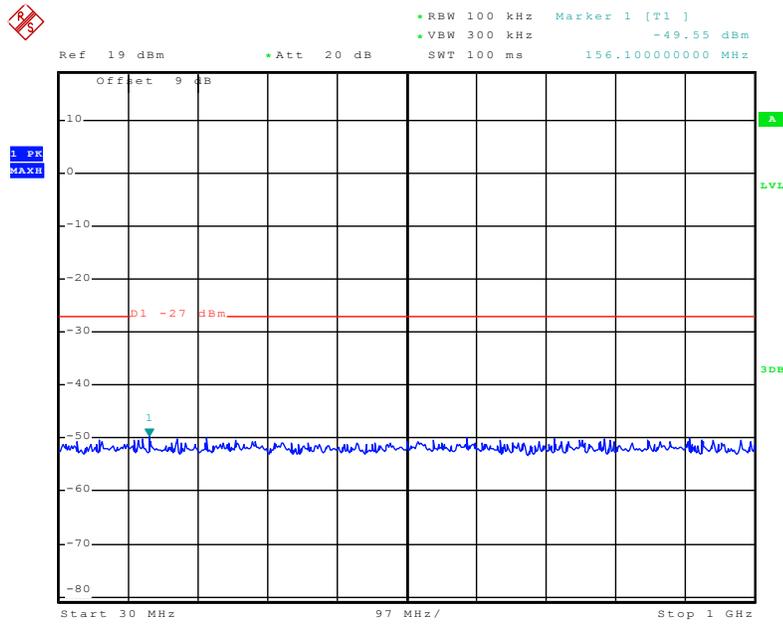
Date: 19.MAY.2015 14:25:18

Chain 1:802.11a Low Channel 26.5GHz-40GHz



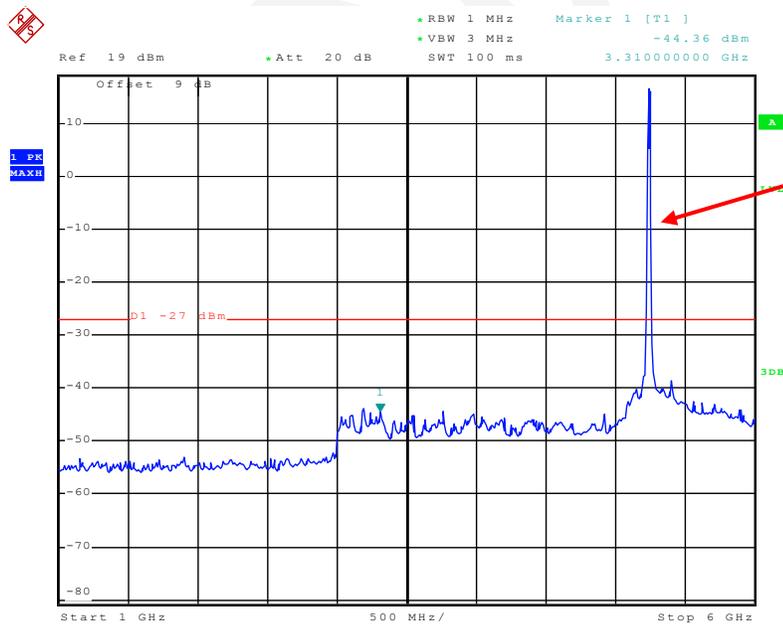
Date: 25.MAY.2015 13:56:10

Chain 1:802.11a Middle Channel 30MHz -1GHz



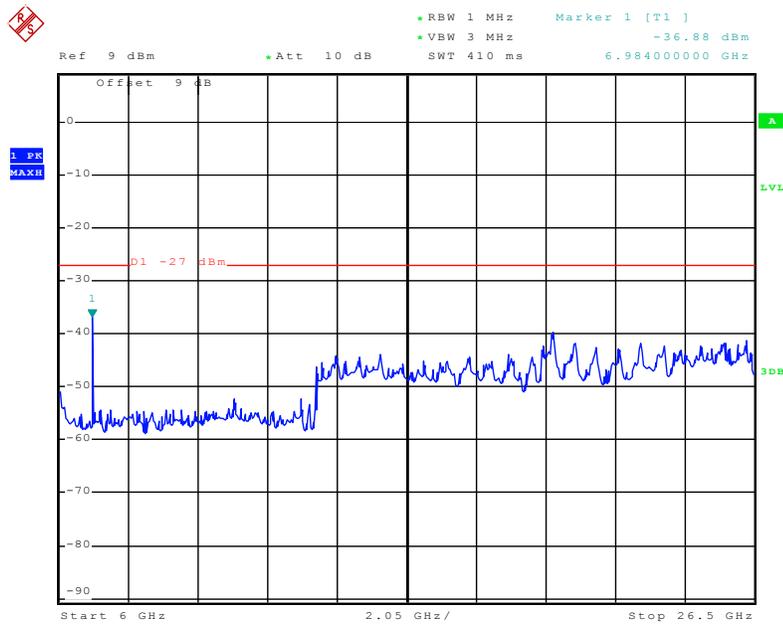
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Chain 1:802.11a Middle Channel 1GHz-6GHz



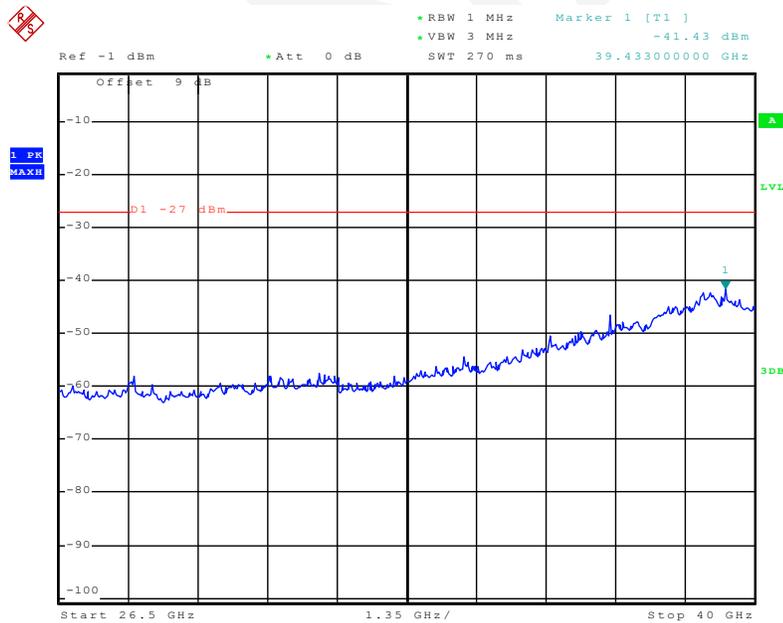
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Chain 1:802.11a Middle Channel 6GHz-26.5GHz



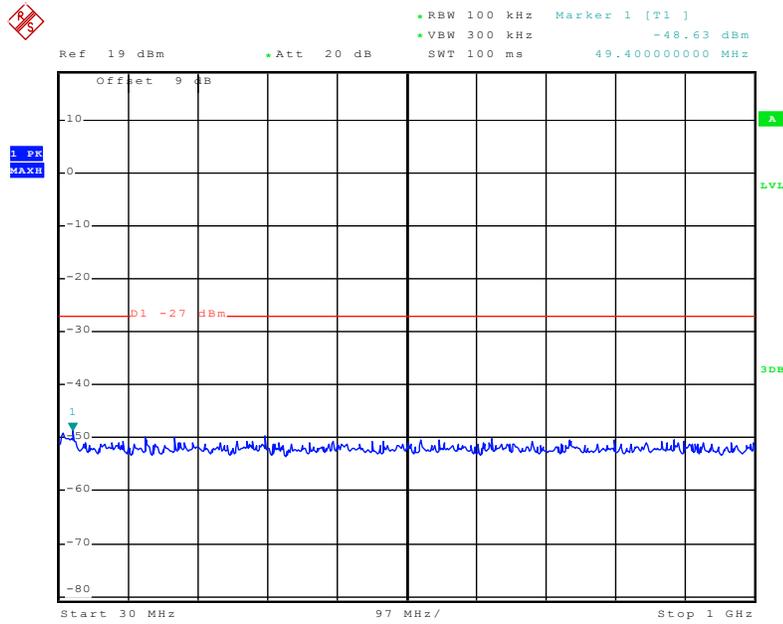
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Chain 1:802.11a Middle Channel 26.5GHz-40GHz



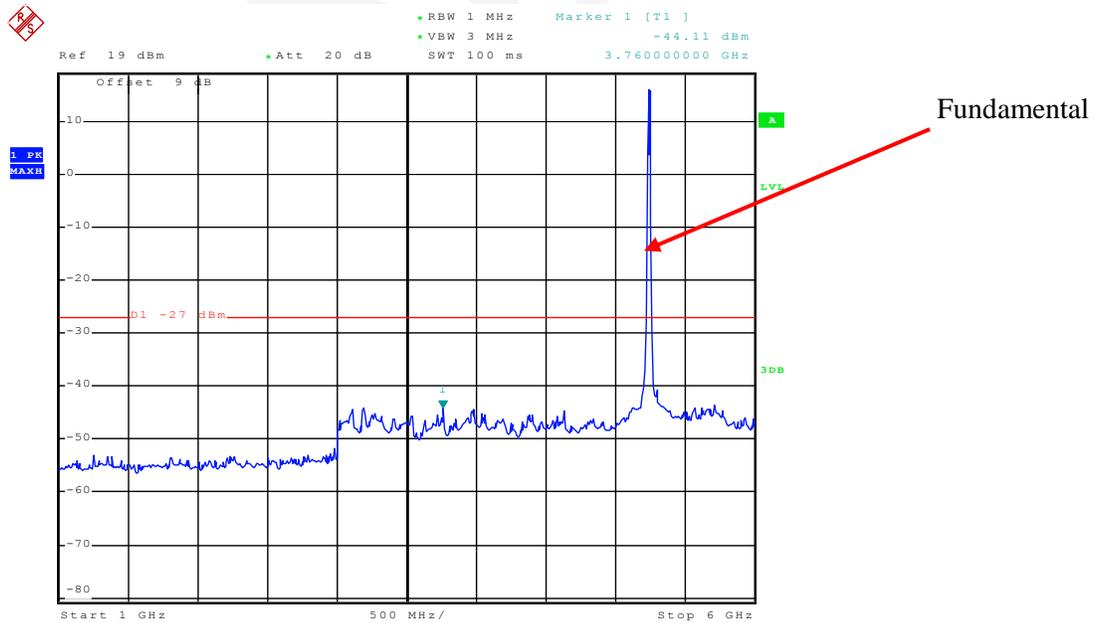
Date: 25.MAY.2015 13:56:16

Chain 1:802.11a High Channel 30MHz-1GHz



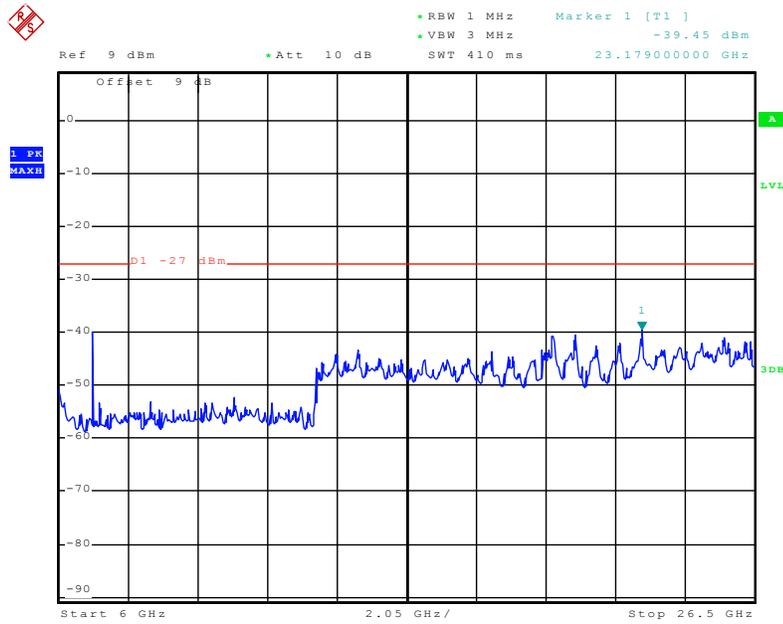
Date: 19.MAY.2015 14:23:26

Chain 1:802.11a High Channel 1GHz-6GHz



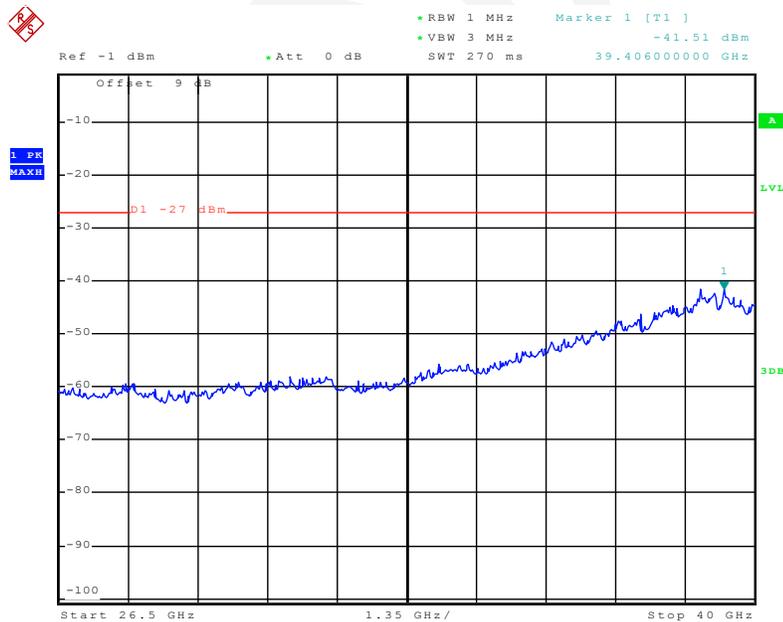
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Chain 1:802.11a High Channel 6GHz-26.5GHz



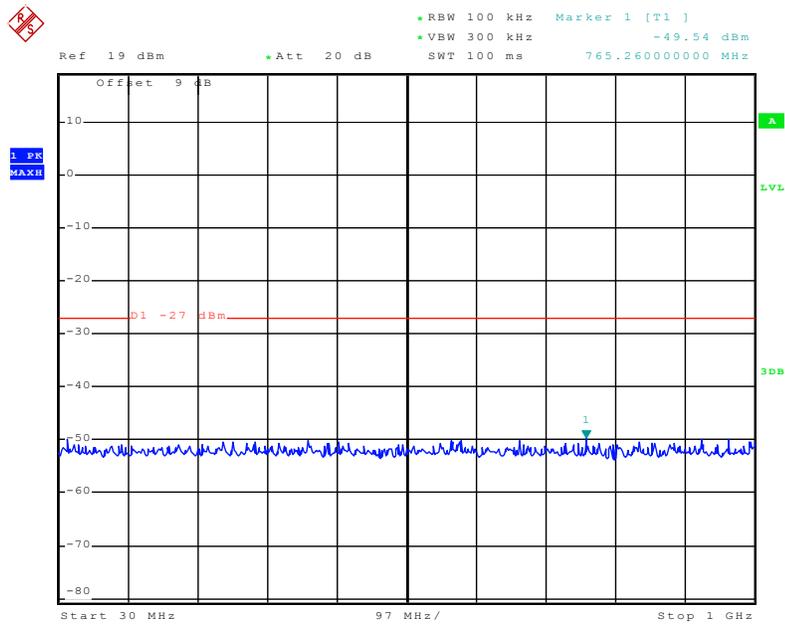
Date: 19.MAY.2015 14:22:26

Chain 1:802.11a High Channel 26.5GHz-40GHz



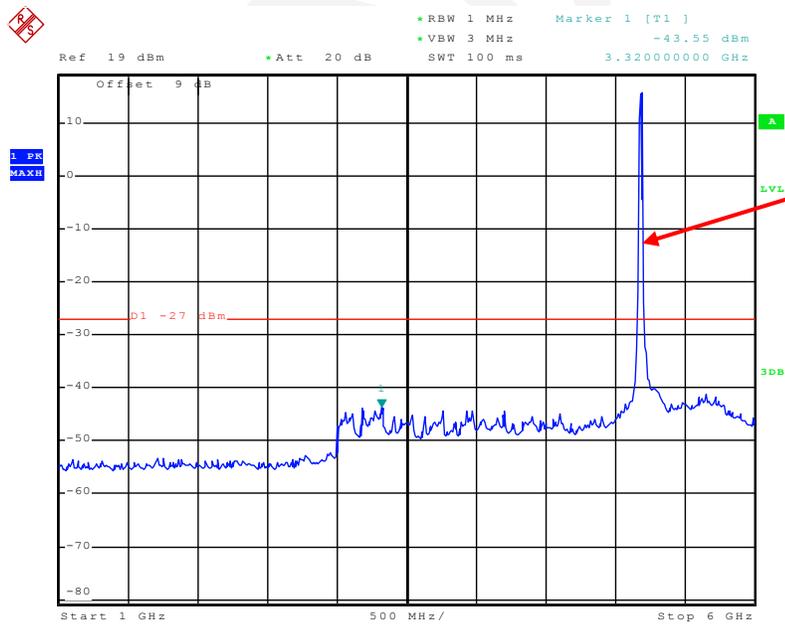
Date: 25.MAY.2015 13:56:04

Chain 1:802.11n ht20 Low Channel 30MHz-1GHz



Date: 19.MAY.2015 14:19:24

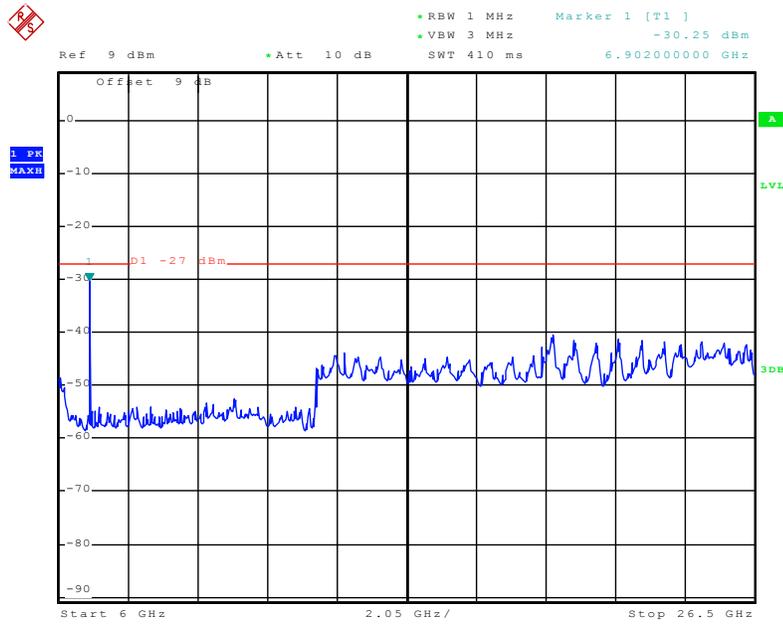
Chain 1:802.11n ht20 Low Channel 1GHz-6GHz



Fundamental

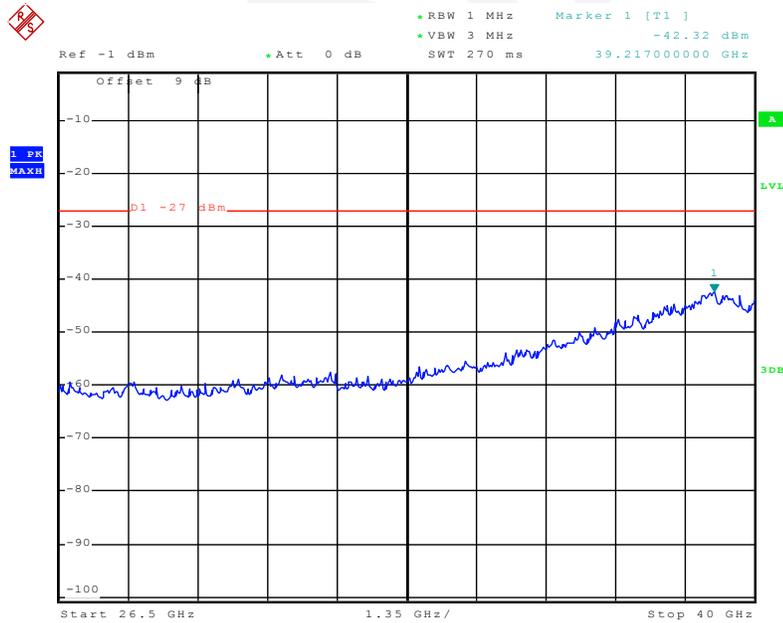
Date: 19.MAY.2015 14:19:43

Chain 1:802.11n ht20 Low Channel 6GHz-26.5GHz



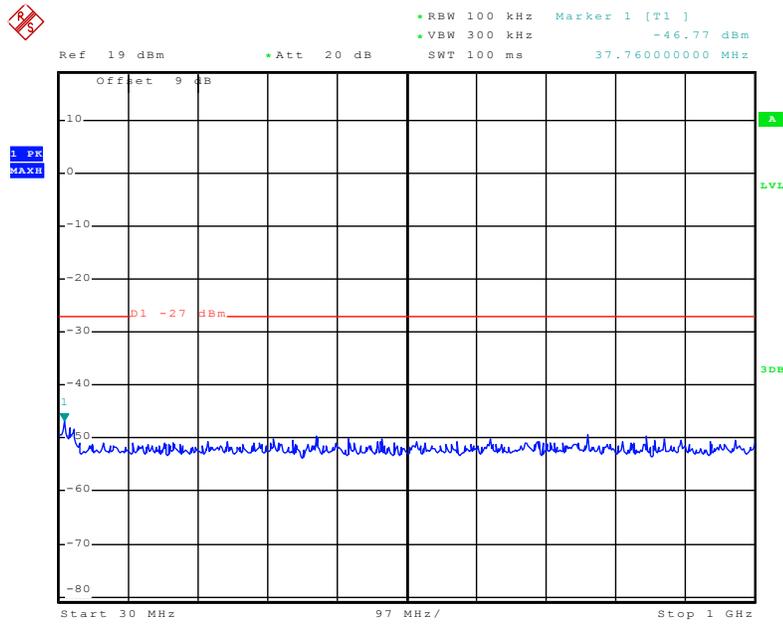
Date: 19.MAY.2015 14:20:00

Chain 1:802.11n ht20 Low Channel 26.5GHz-40GHz



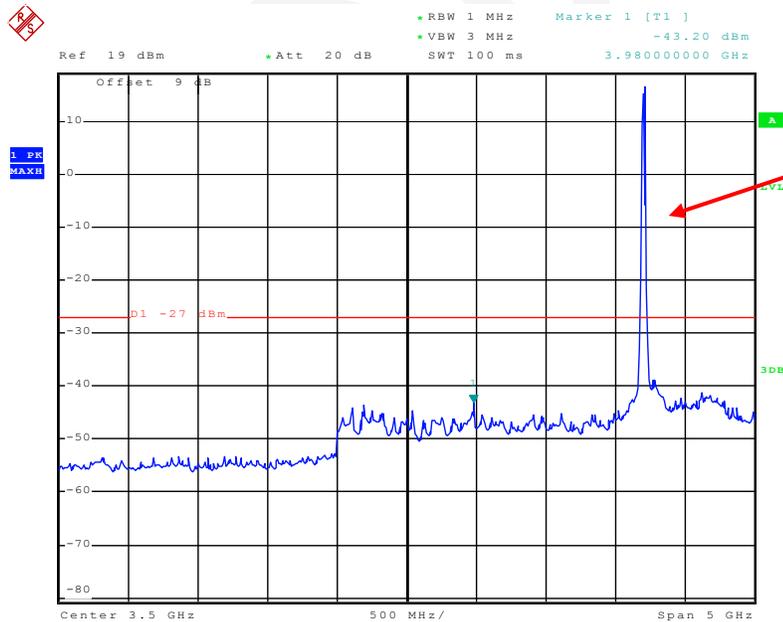
Date: 25.MAY.2015 13:56:32

Chain 1:802.11n ht20 Middle Channel 30MHz -1GHz



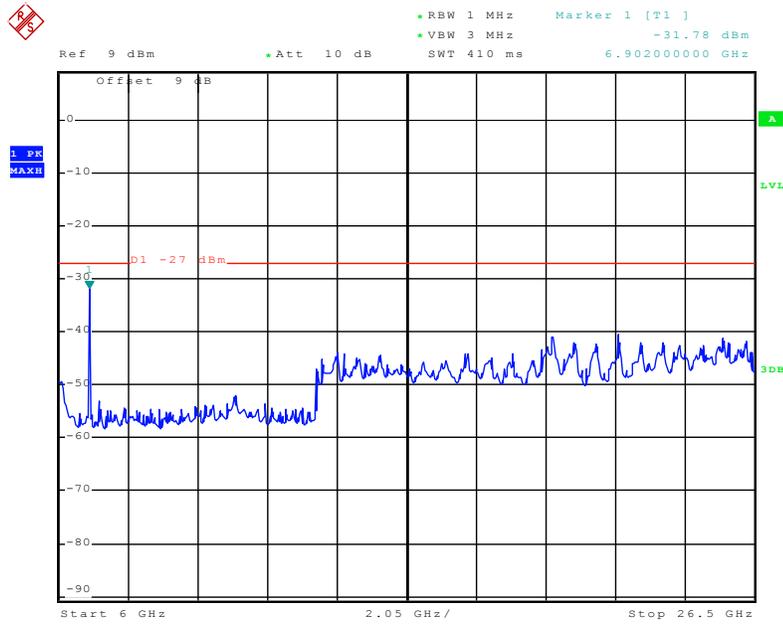
Date: 19.MAY.2015 14:20:58

Chain 1:802.11n ht20 Middle Channel 1GHz-6GHz



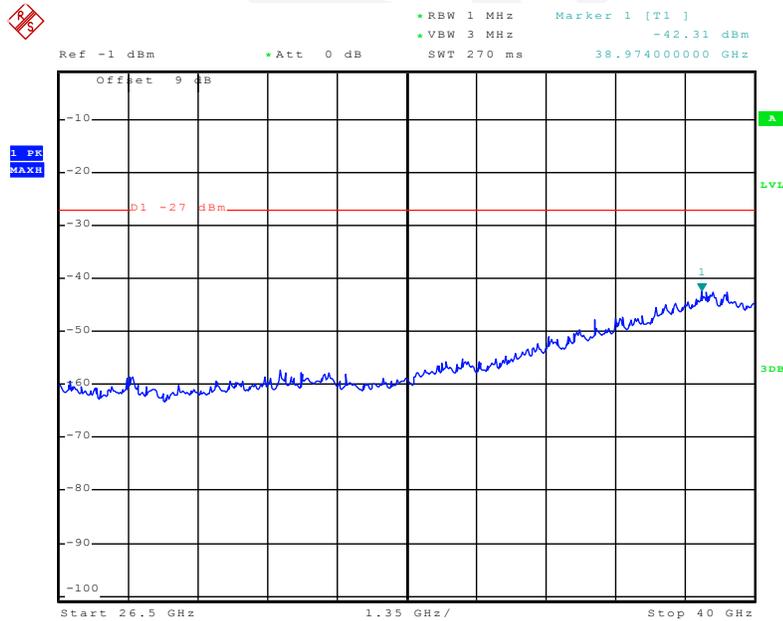
Date: 19.MAY.2015 14:20:41

Chain 1:802.11n ht20 Middle Channel 6GHz-26.5GHz



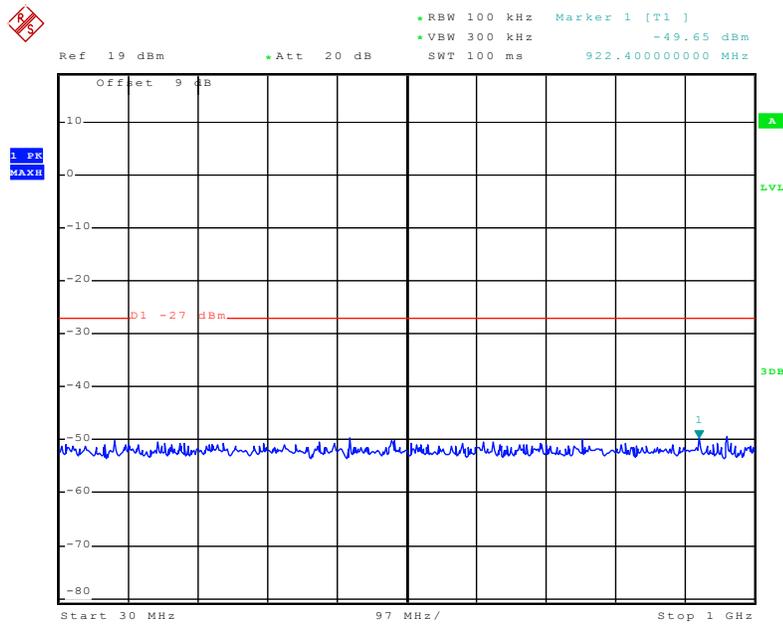
Date: 19.MAY.2015 14:20:20

Chain 1:802.11n ht20 Middle Channel 26.5GHz-40GHz



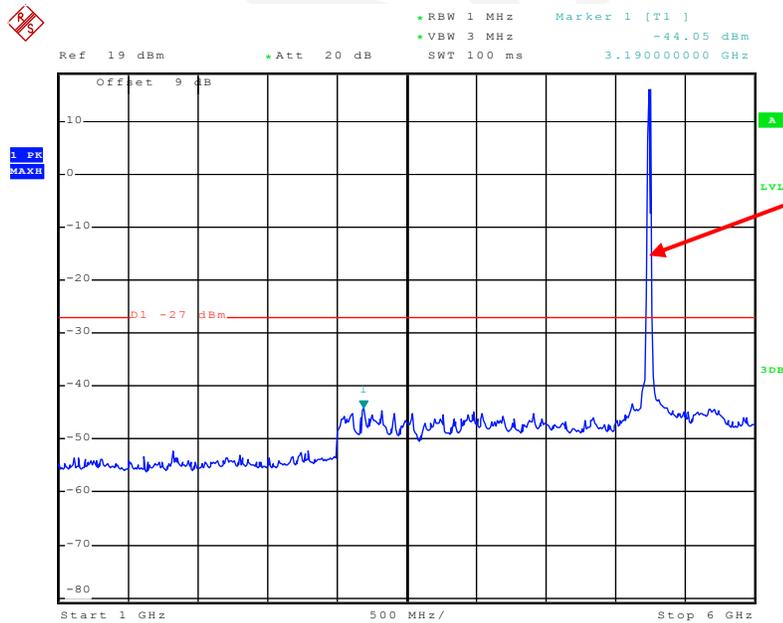
Date: 25.MAY.2015 13:56:38

Chain 1:802.11n ht20 High Channel 30MHz-1GHz



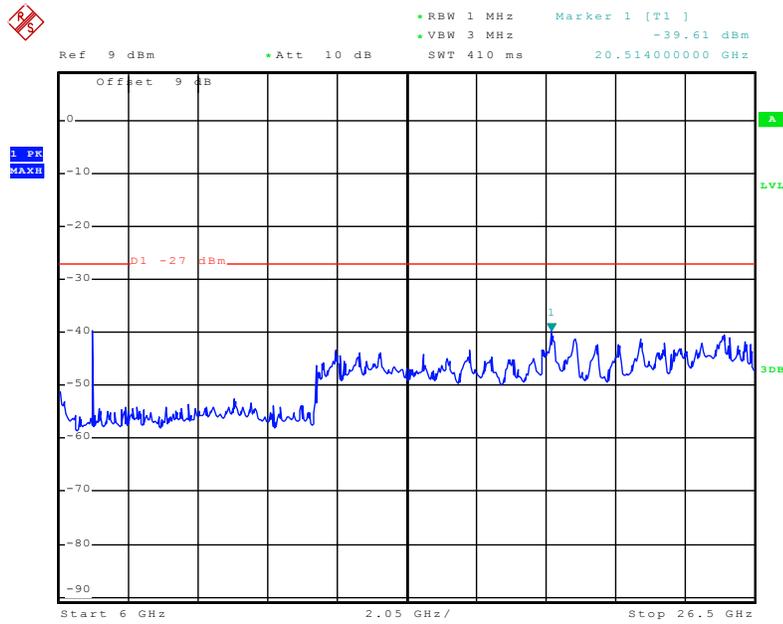
Date: 19.MAY.2015 14:21:21

Chain 1:802.11n ht20 High Channel 1GHz-6GHz



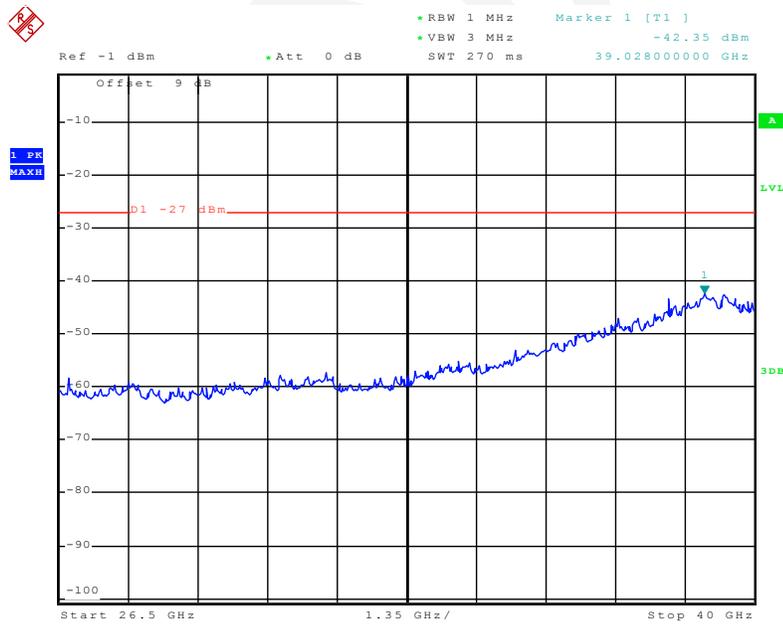
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Chain 1:802.11n ht20 High Channel 6GHz-26.5GHz



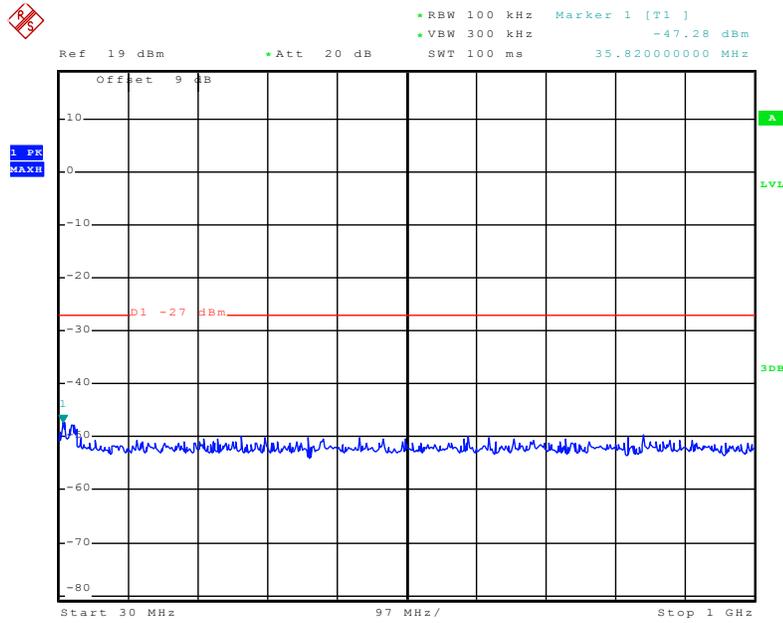
Date: 19.MAY.2015 14:22:04

Chain 1:802.11n ht20 High Channel 26.5GHz-40GHz



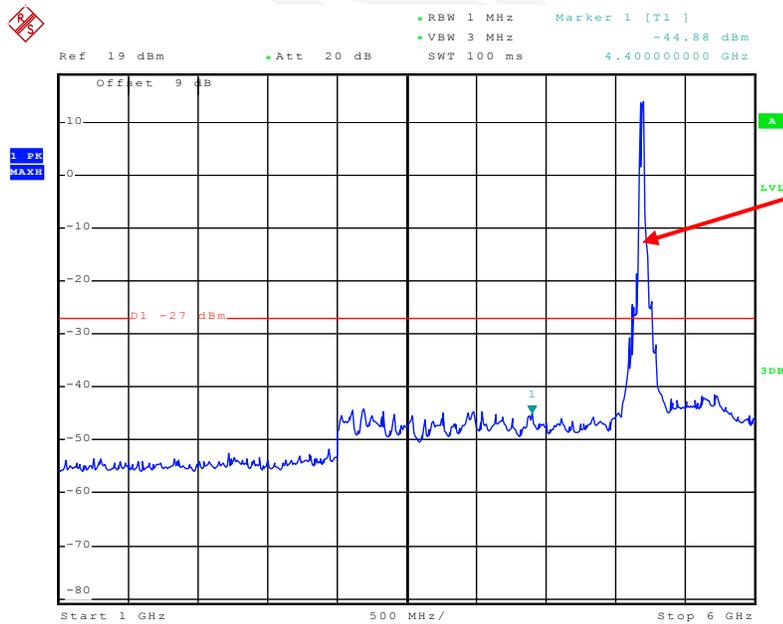
Date: 25.MAY.2015 13:56:27

Chain 1:802.11n ht40 Low Channel 30MHz-1GHz



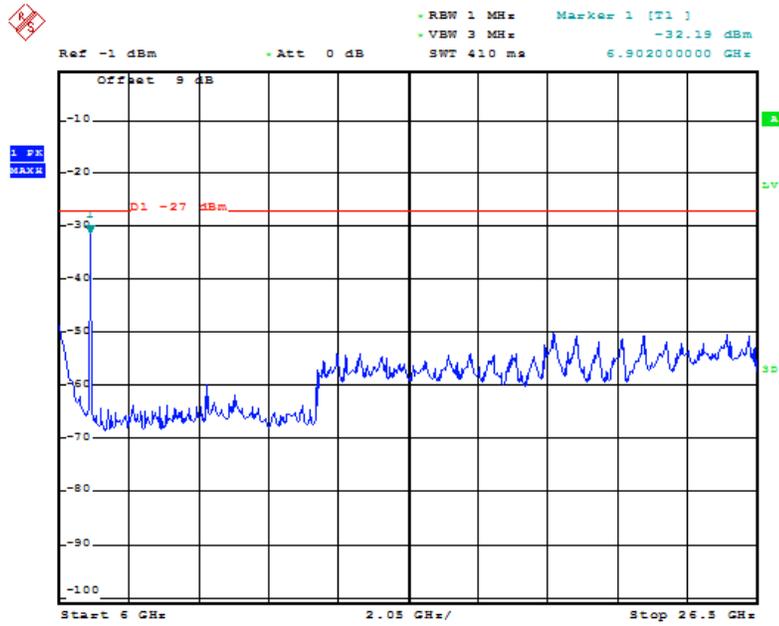
Date: 19.MAY.2015 14:18:59

Chain 1:802.11n ht40 Low Channel 1GHz-6GHz



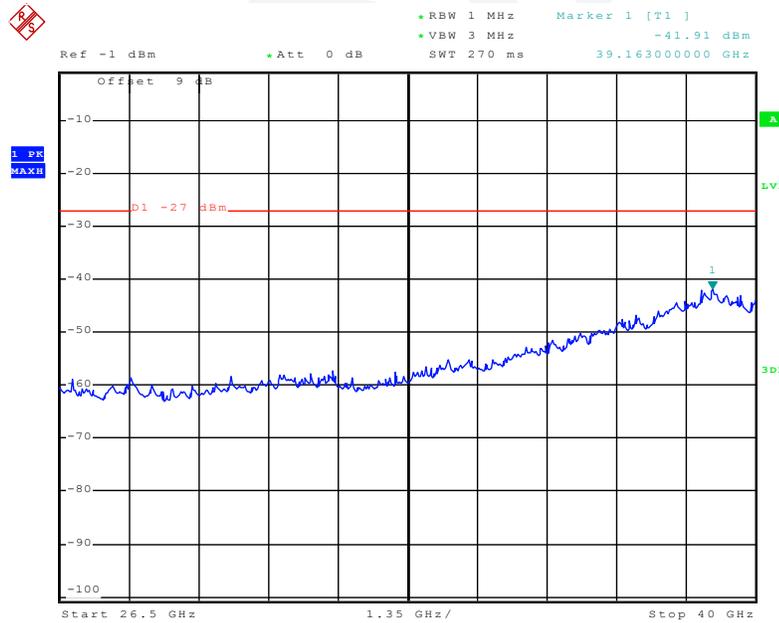
Date: 19.MAY.2015 14:18:42

Chain 1:802.11n ht40 Low Channel 6GHz-26.5GHz



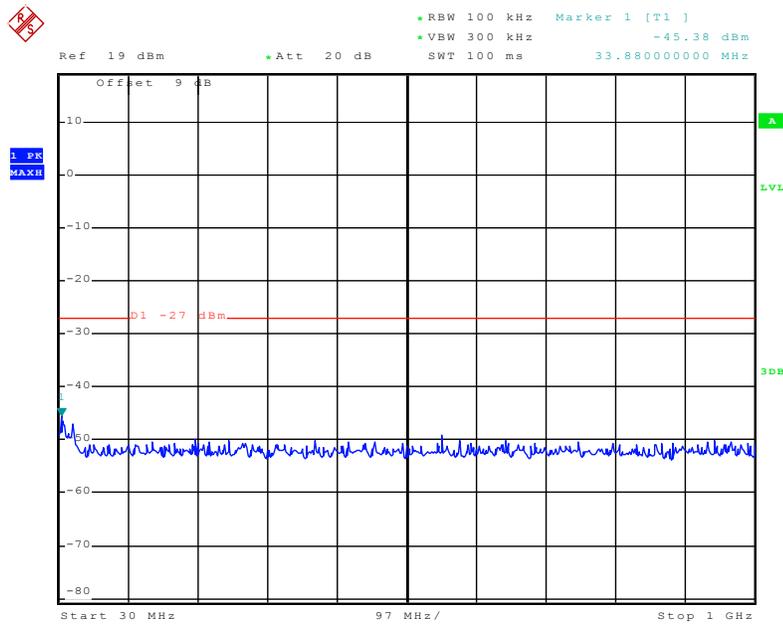
Date: 19.MAY.2015 14:18:18

Chain 1:802.11n ht40 Low Channel 26.5GHz-40GHz



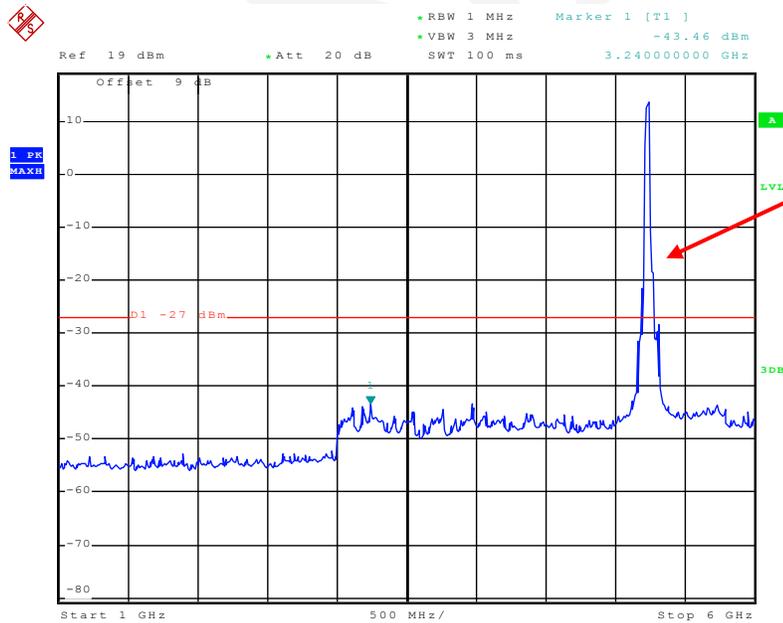
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Chain 1:802.11n ht40 High Channel 30MHz-1GHz



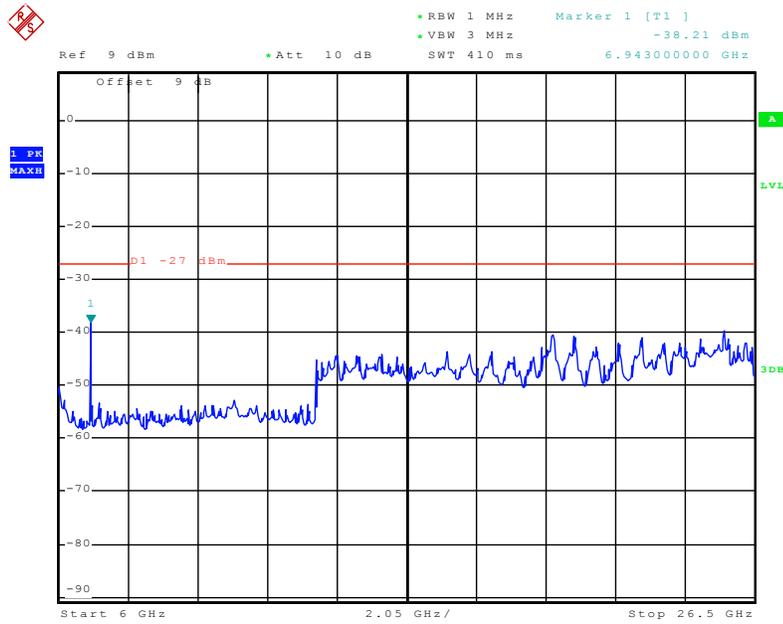
Date: 19.MAY.2015 14:16:40

Chain 1:802.11n ht40 High Channel 1GHz-6GHz



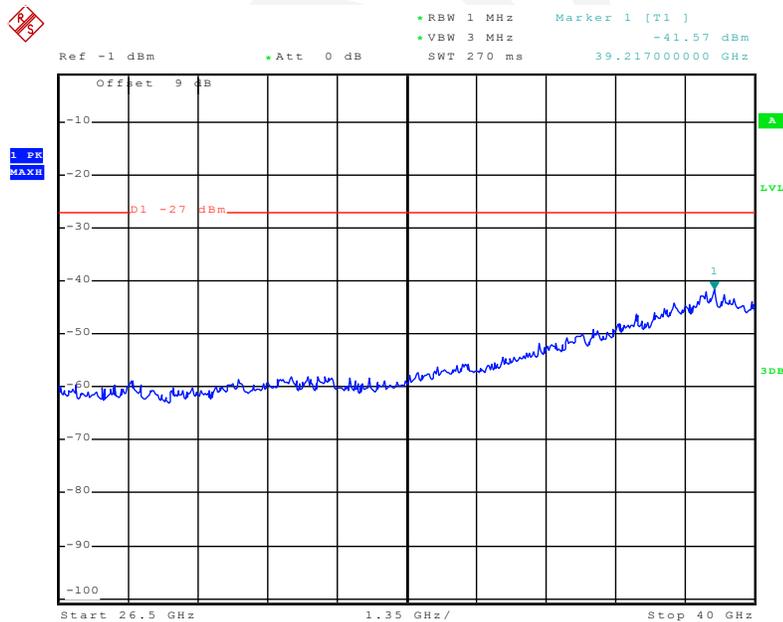
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Chain 1:802.11n ht40 High Channel 6GHz-26.5GHz



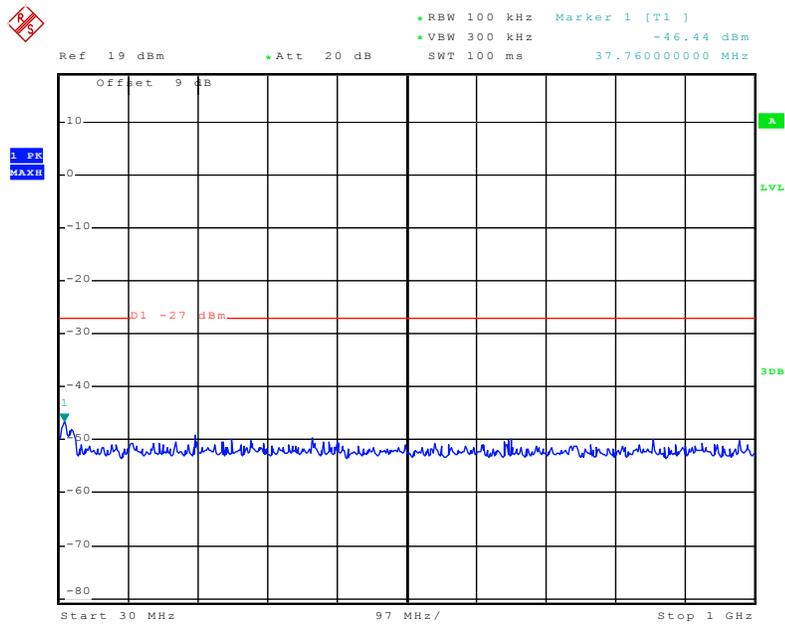
Date: 19.MAY.2015 14:17:23

Chain 1:802.11n ht40 High Channel 26.5GHz-40GHz



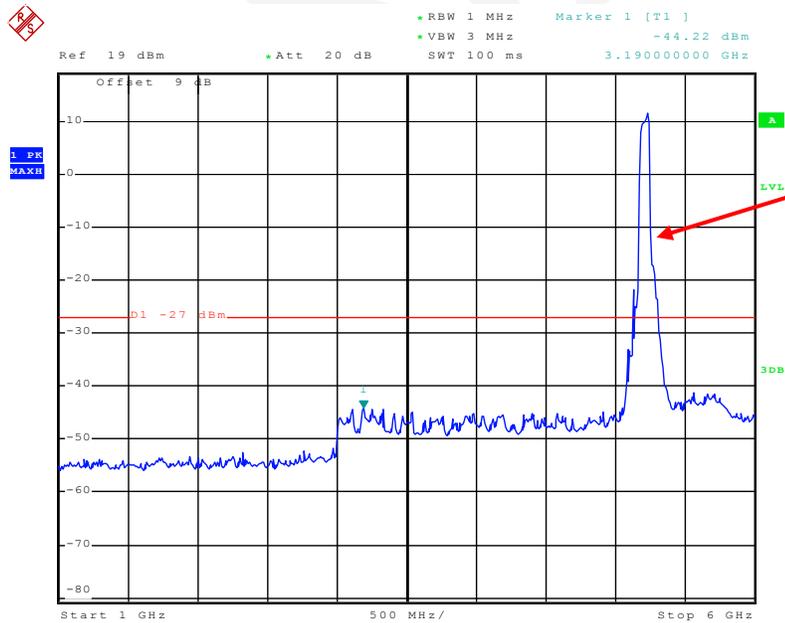
Date: 25.MAY.2015 13:56:44

Chain 1:802.11n ac80 Middle Channel 30MHz-1GHz



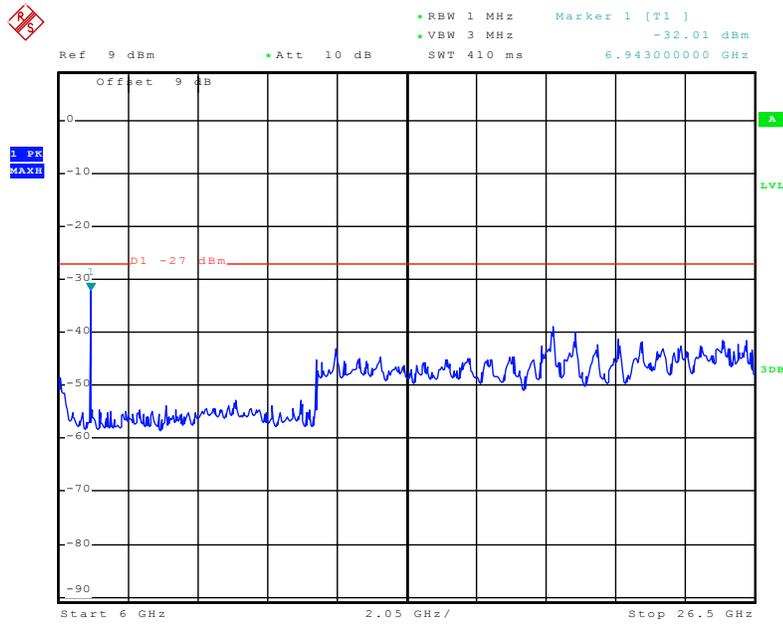
Date: 19.MAY.2015 14:16:16

Chain 1:802.11n ac80 Middle Channel 1GHz-6GHz



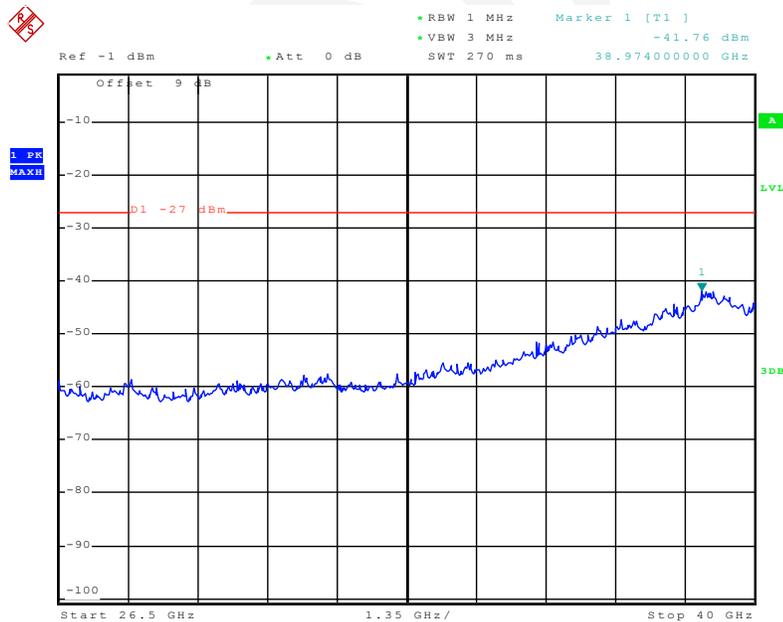
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Chain 1:802.11n ac80 Middle Channel 6GHz-26.5GHz



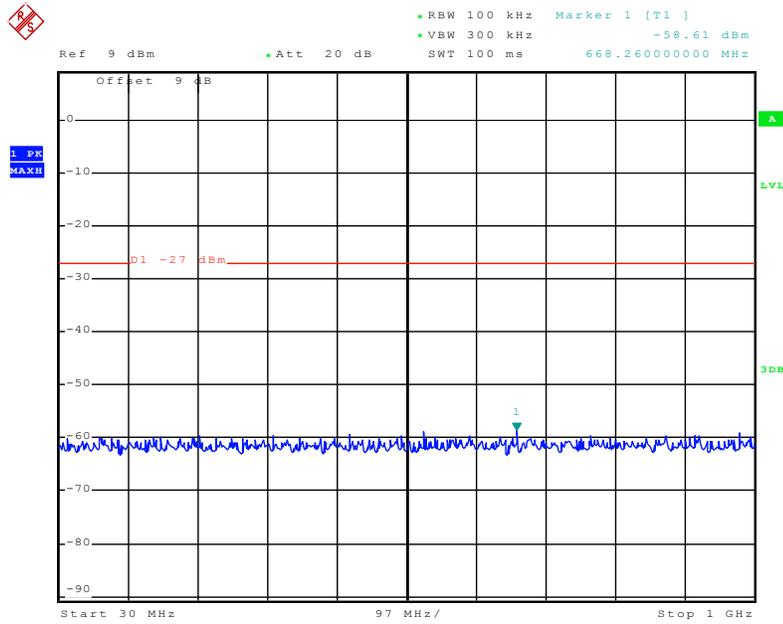
Date: 19.MAY.2015 14:15:23

Chain 1:802.11n ac80 Middle Channel 26.5GHz-40GHz



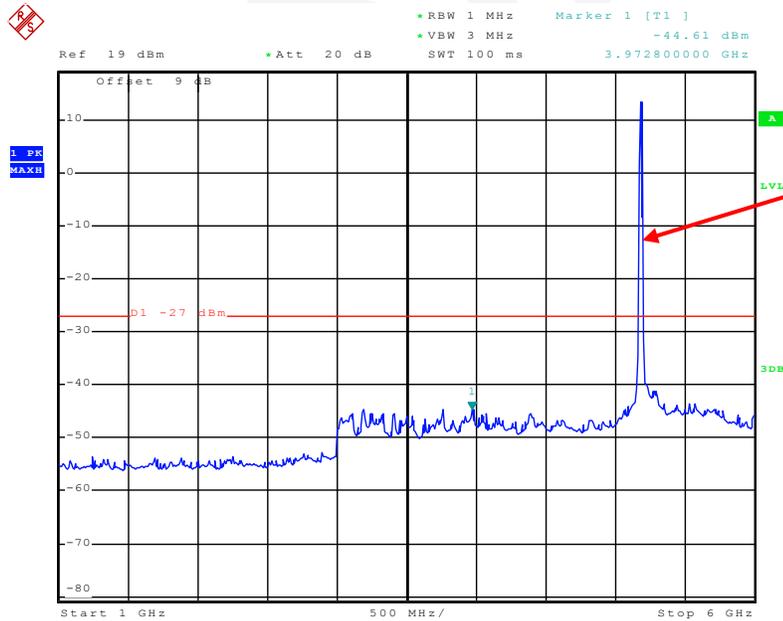
Date: 25.MAY.2015 13:56:21

Chain 2:802.11a Low Channel 30MHz-1GHz



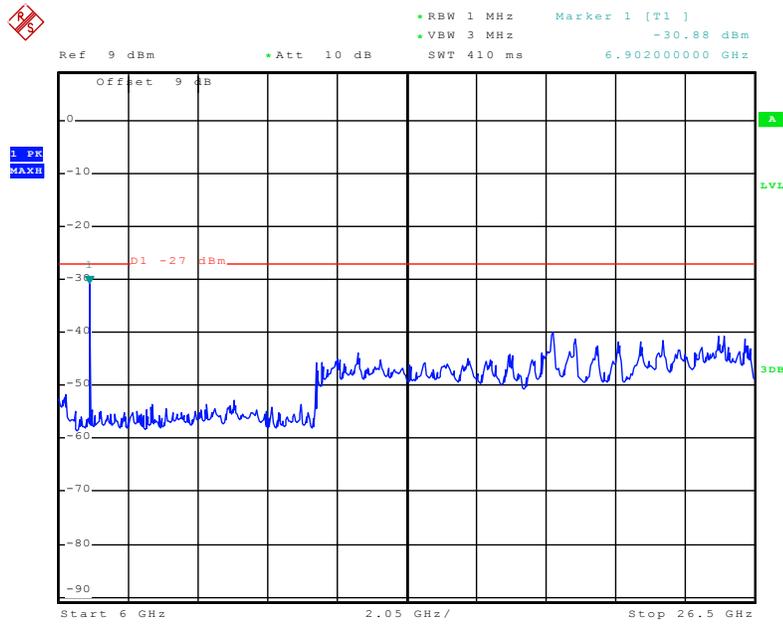
Date: 22.MAY.2015 12:04:49

Chain 2:802.11a Low Channel 1GHz-6GHz



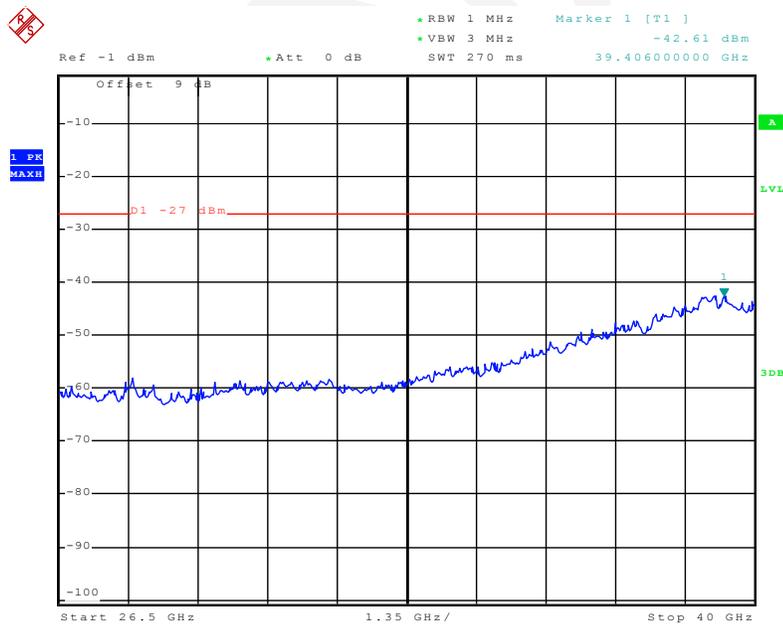
Date: 22.MAY.2015 12:03:04

Chain 2:802.11a Low Channel 6GHz-26.5GHz



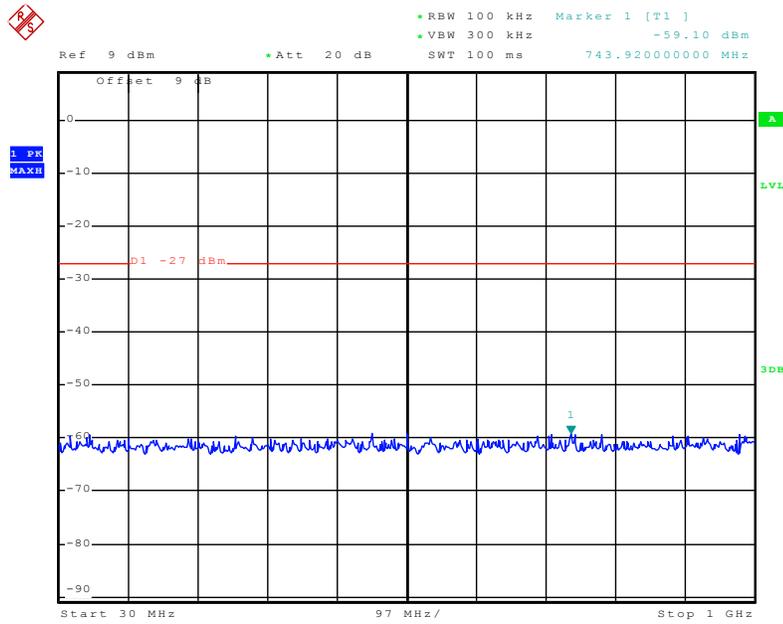
Date: 22.MAY.2015 12:03:22

Chain 2:802.11a Low Channel 26.5GHz-40GHz



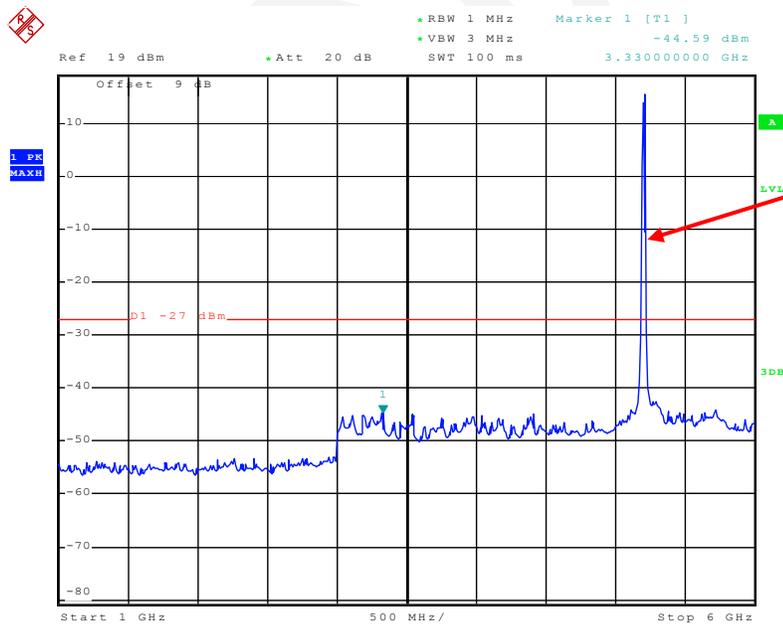
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Chain 2:802.11a Middle Channel 30MHz -1GHz



Date: 22.MAY.2015 12:04:55

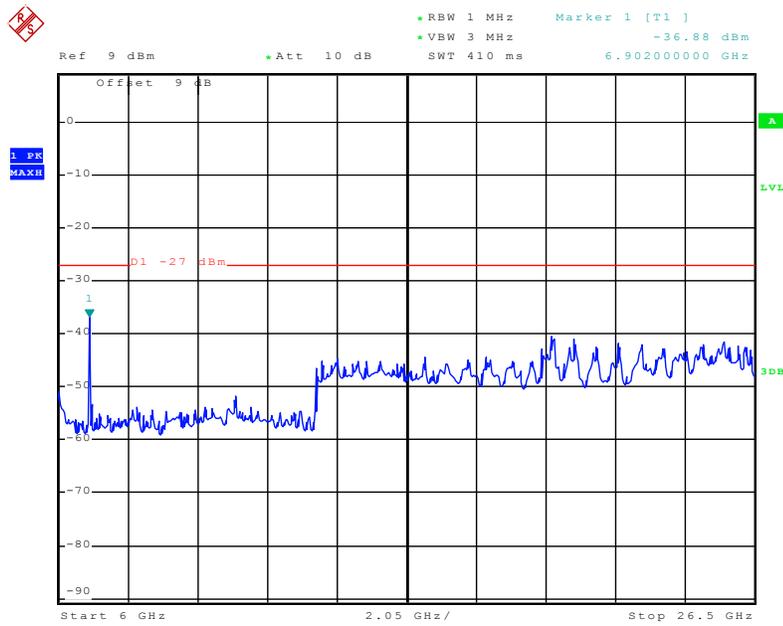
Chain 2:802.11a Middle Channel 1GHz-6GHz



Fundamental

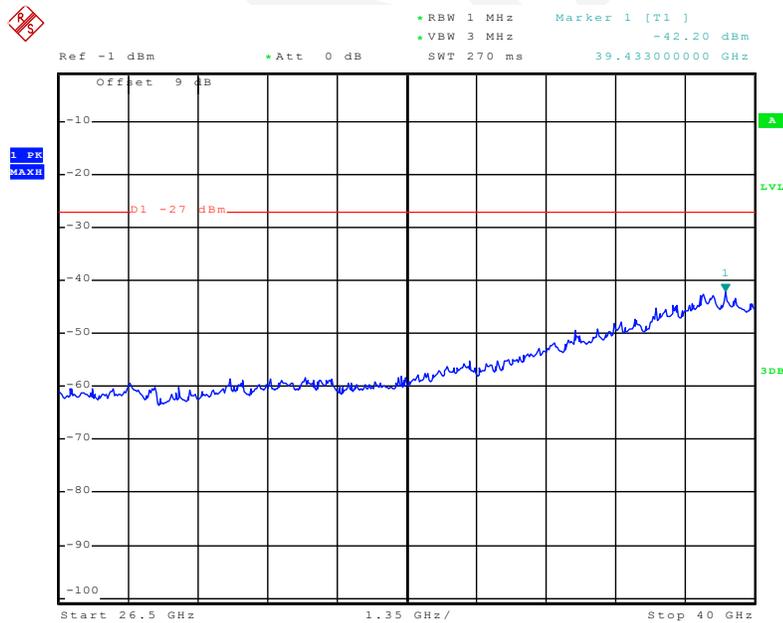
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Chain 2:802.11a Middle Channel 6GHz-26.5GHz



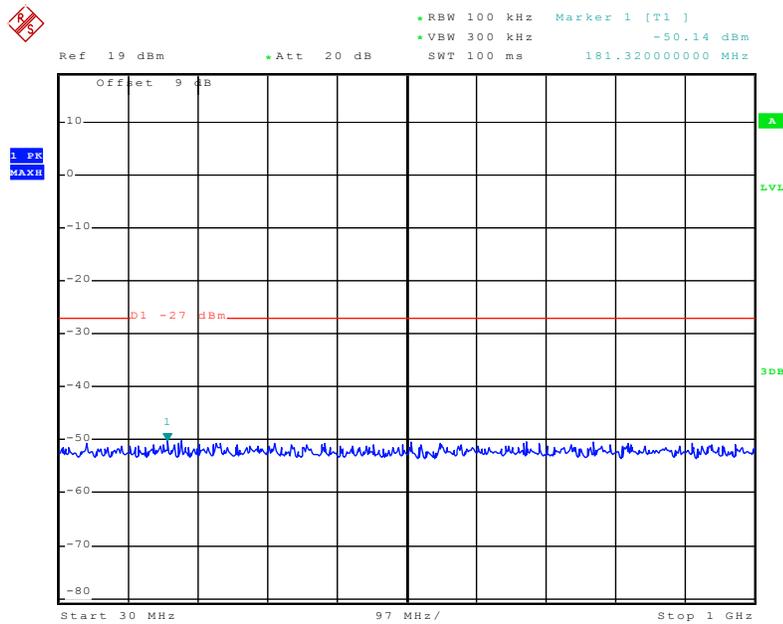
Date: 22.MAY.2015 12:05:37

Chain 2:802.11a Middle Channel 26.5GHz-40GHz



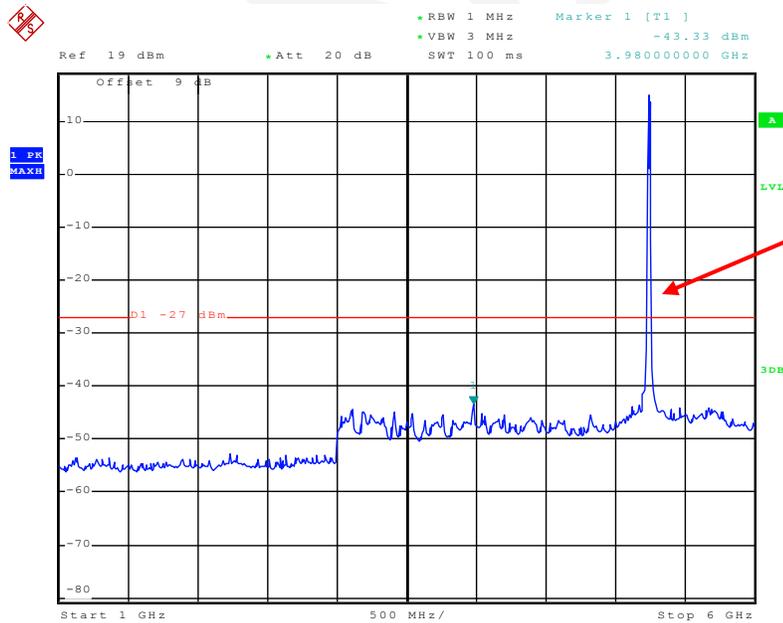
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Chain 2:802.11a High Channel 30MHz-1GHz



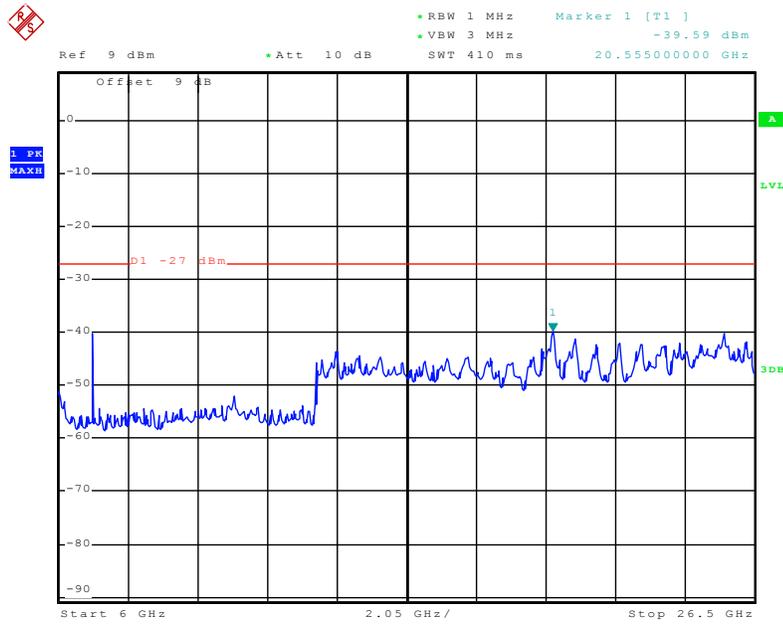
Date: 22.MAY.2015 12:06:37

Chain 2:802.11a High Channel 1GHz-6GHz



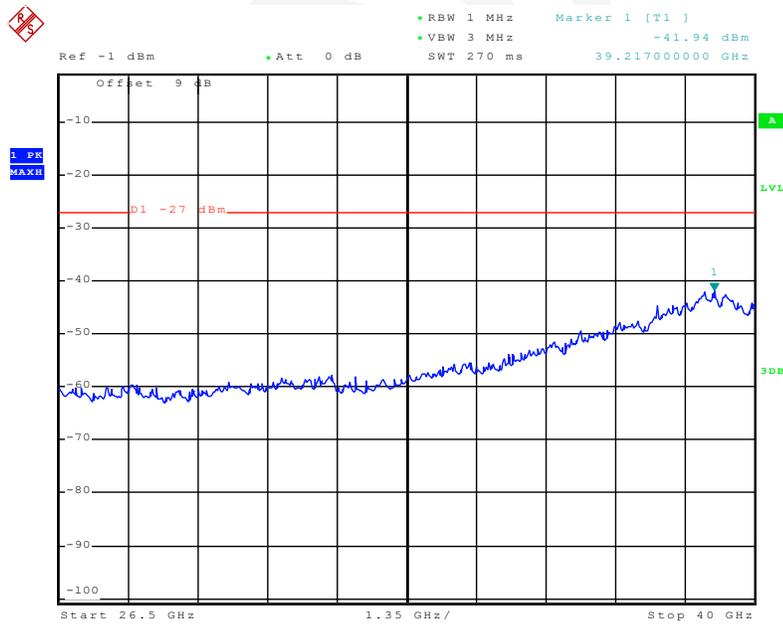
Date: 22.MAY.2015 12:06:23

Chain 2:802.11a High Channel 6GHz-26.5GHz



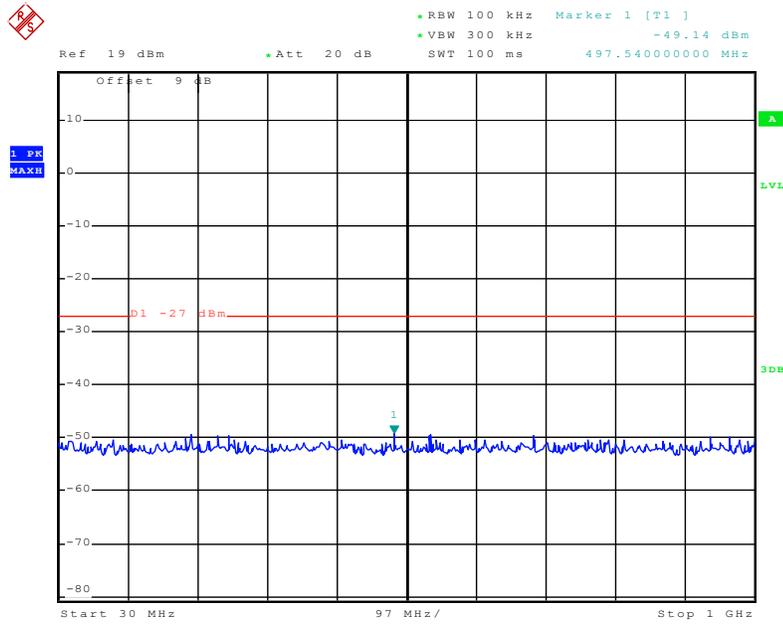
Date: 22.MAY.2015 12:06:00

Chain 2:802.11a High Channel 26.5GHz-40GHz



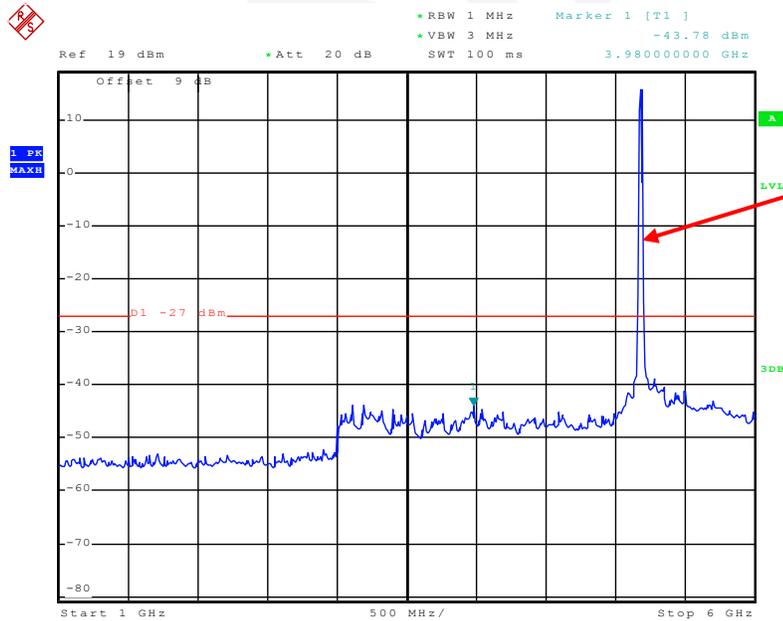
Date: 25.MAY.2015 13:56:56

Chain 2:802.11n ht20 Low Channel 30MHz-1GHz



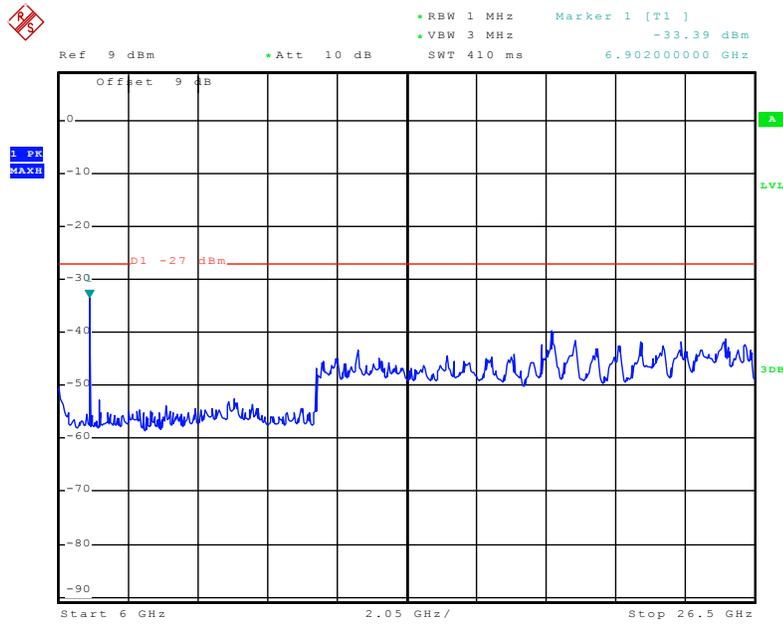
Date: 19.MAY.2015 14:31:49

Chain 2:802.11n ht20 Low Channel 1GHz-6GHz



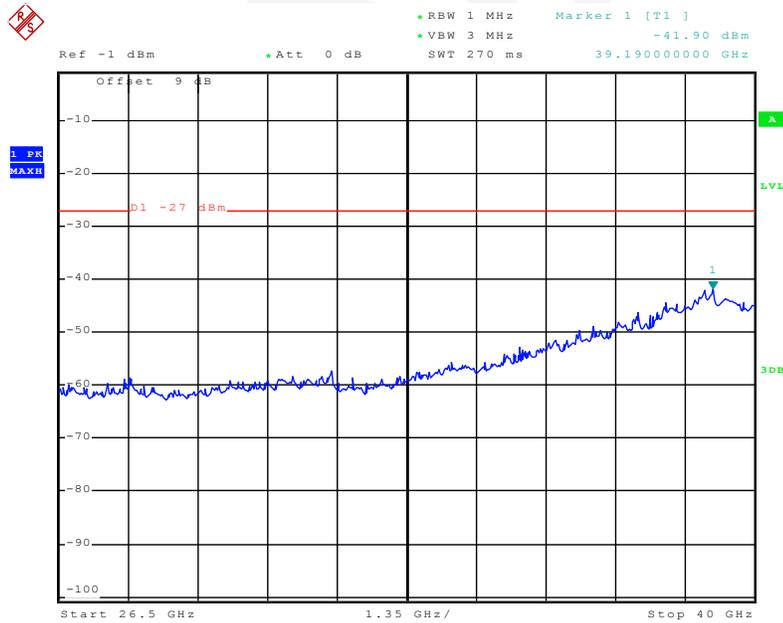
Date: 19.MAY.2015 14:27:54

Chain 2:802.11n ht20 Low Channel 6GHz-26.5GHz



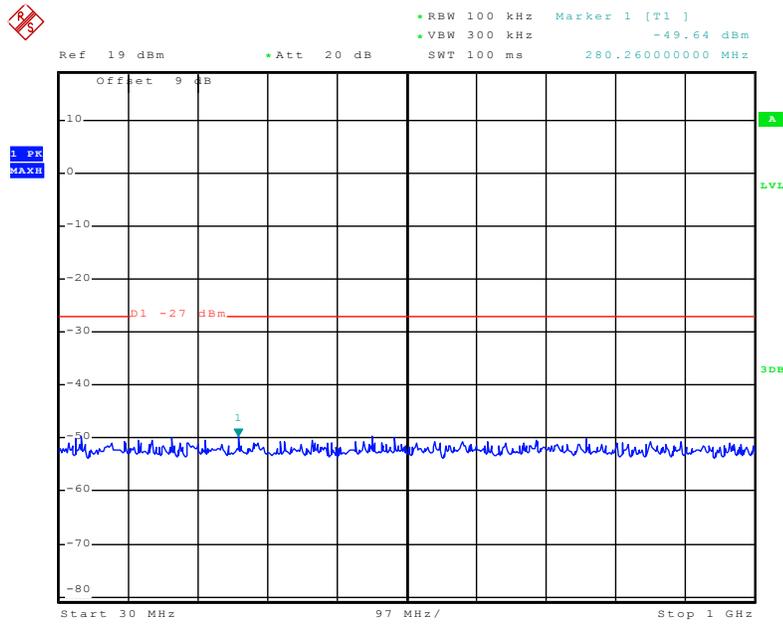
Date: 19.MAY.2015 14:27:11

Chain 2:802.11n ht20 Low Channel 26.5GHz-40GHz



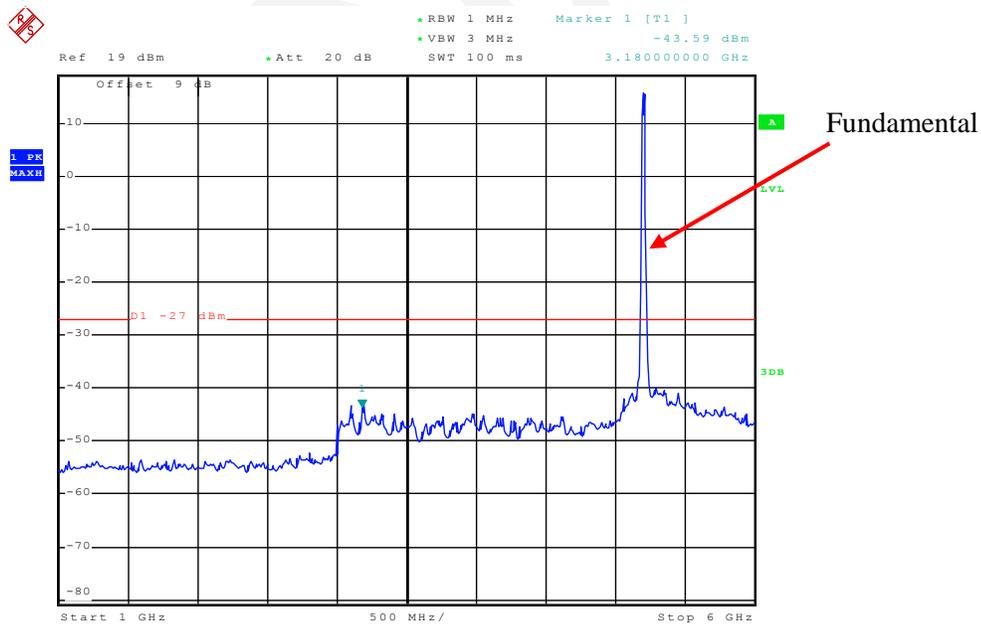
Date: 25.MAY.2015 14:09:12

Chain 2:802.11n ht20 Middle Channel 30MHz -1GHz



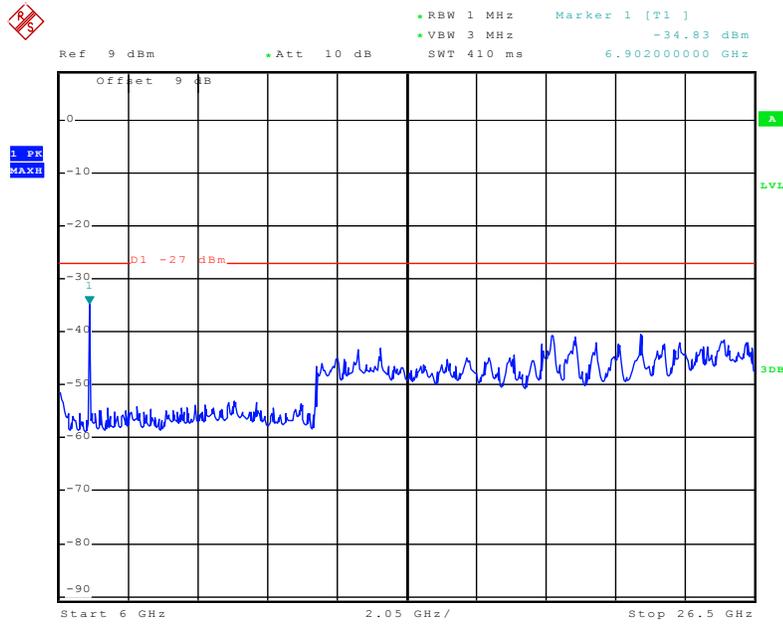
Date: 19.MAY.2015 14:32:32

Chain 2:802.11n ht20 Middle Channel 1GHz-6GHz



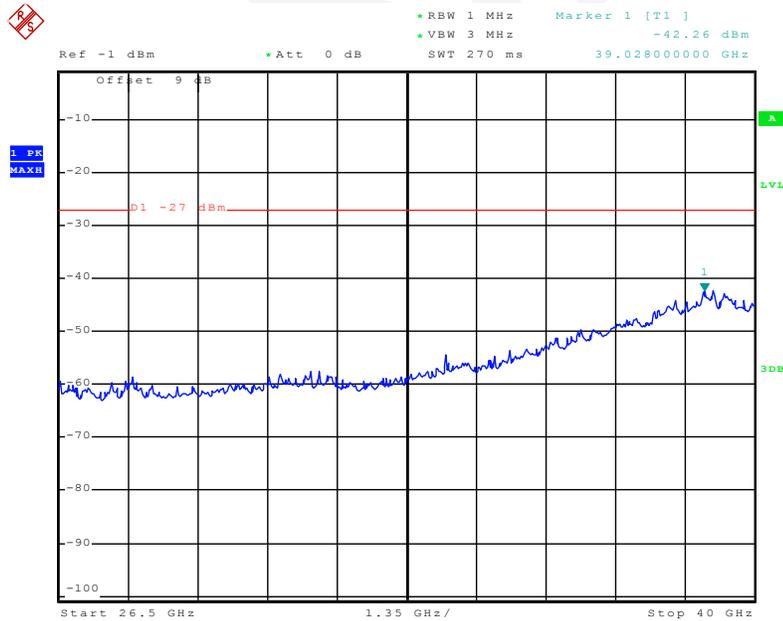
Date: 19.MAY.2015 14:32:49

Chain 2:802.11n ht20 Middle Channel 6GHz-26.5GHz



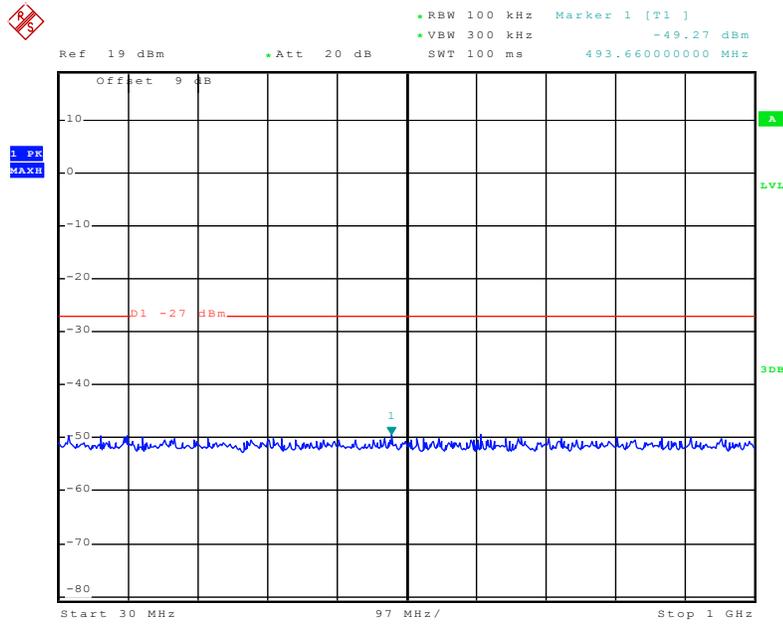
Date: 19.MAY.2015 14:33:05

Chain 2:802.11n ht20 Middle Channel 26.5GHz-40GHz



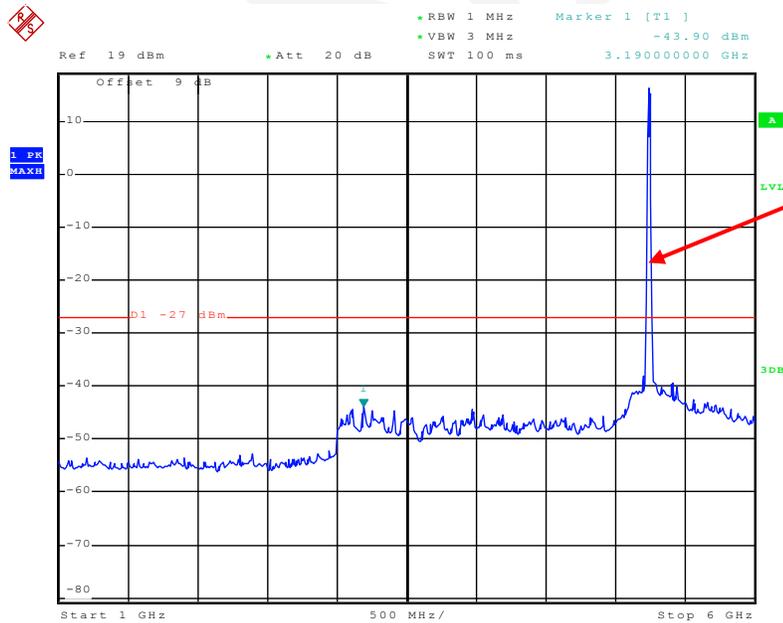
Date: 25.MAY.2015 14:09:16

Chain 2:802.11n ht20 High Channel 30MHz-1GHz



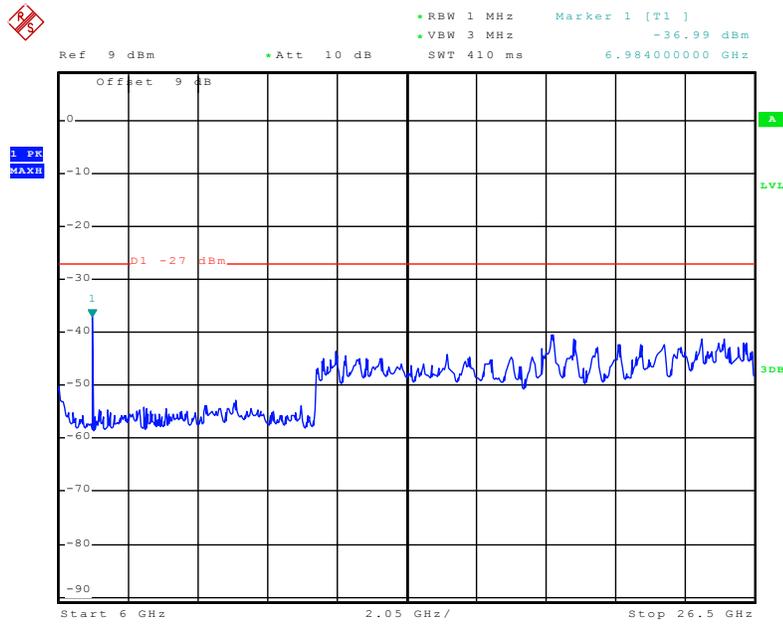
Date: 19.MAY.2015 14:36:28

Chain 2:802.11n ht20 High Channel 1GHz-6GHz



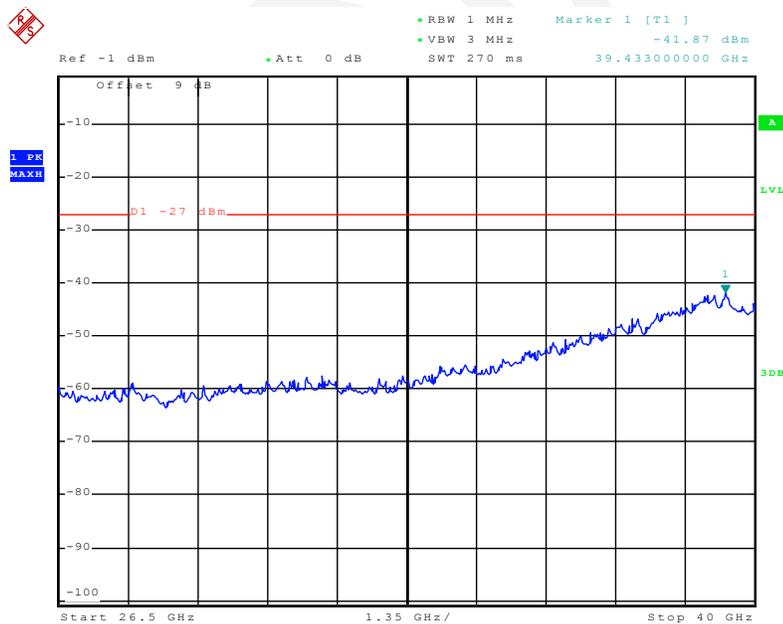
Date: 19.MAY.2015 14:34:04

Chain 2:802.11n ht20 High Channel 6GHz-26.5GHz



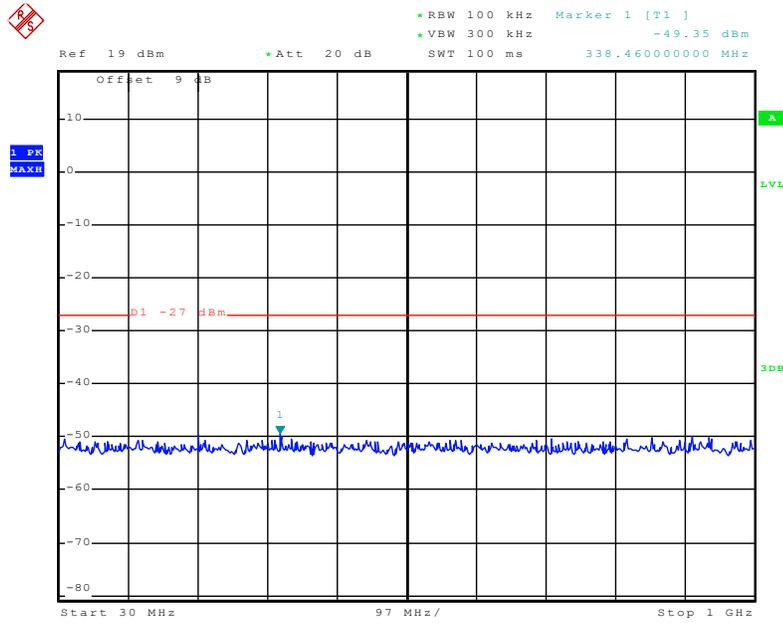
Date: 19.MAY.2015 14:33:45

Chain 2:802.11n ht20 High Channel 26.5GHz-40GHz



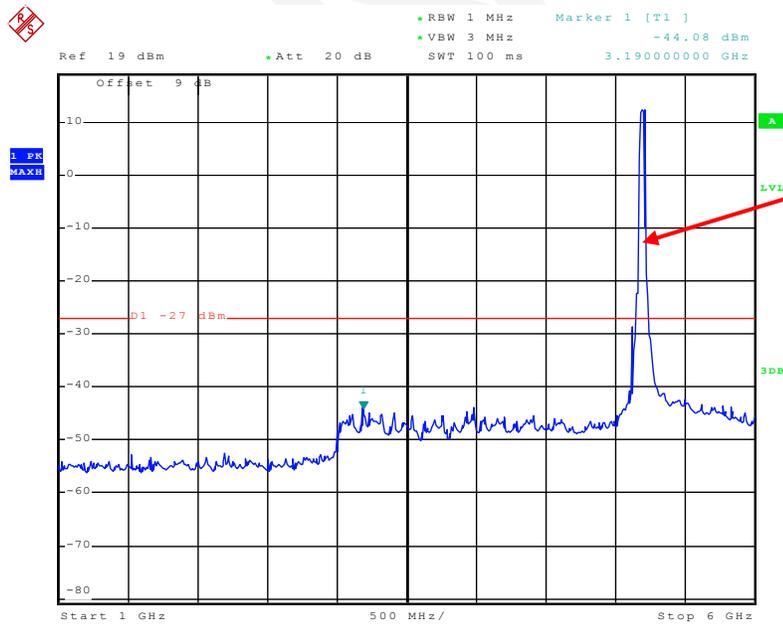
Date: 25.MAY.2015 14:09:07

Chain 2:802.11n ht40 Low Channel 30MHz-1GHz



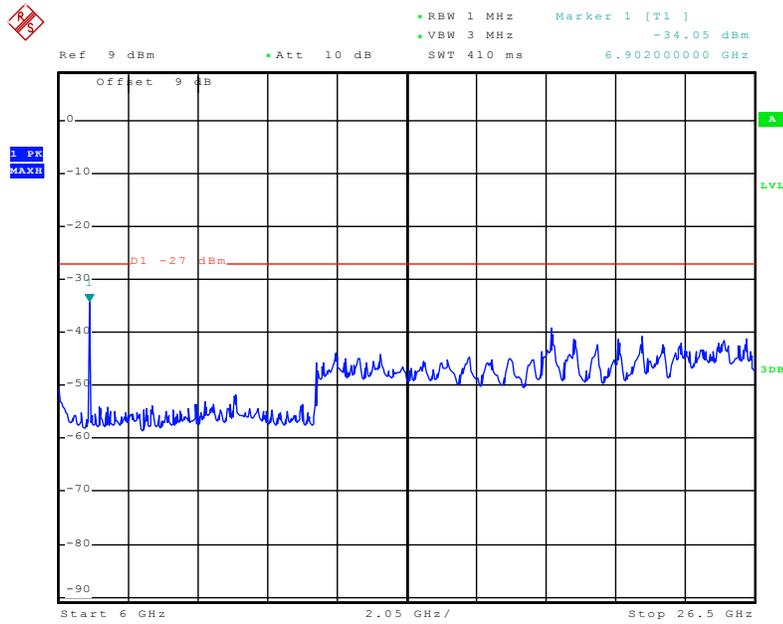
Date: 19.MAY.2015 14:38:14

Chain 2:802.11n ht40 Low Channel 1GHz-6GHz



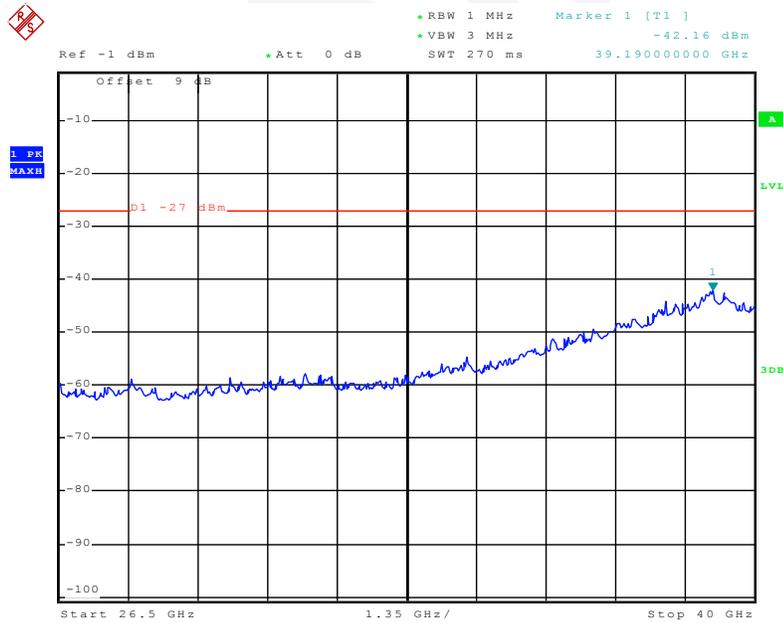
Date: 19.MAY.2015 14:37:57

Chain 2:802.11n ht40 Low Channel 6GHz-26.5GHz



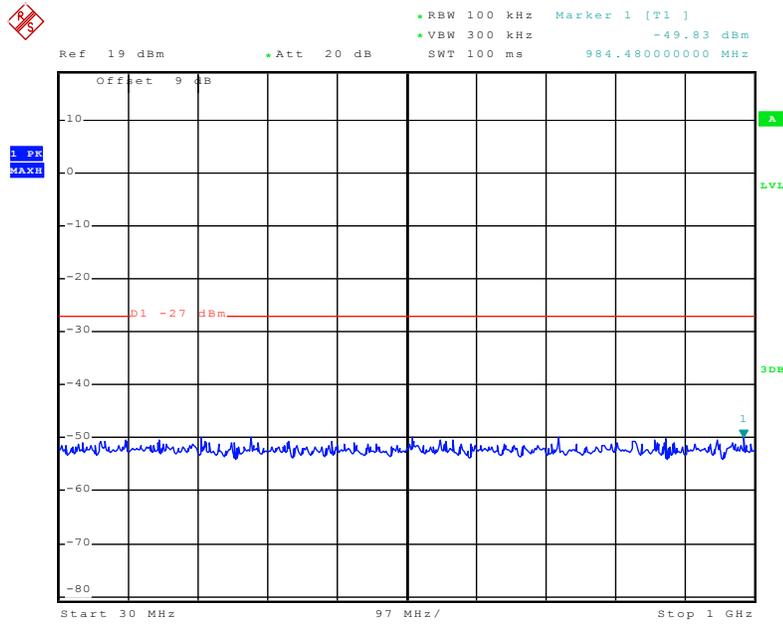
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Chain 2:802.11n ht40 Low Channel 26.5GHz-40GHz



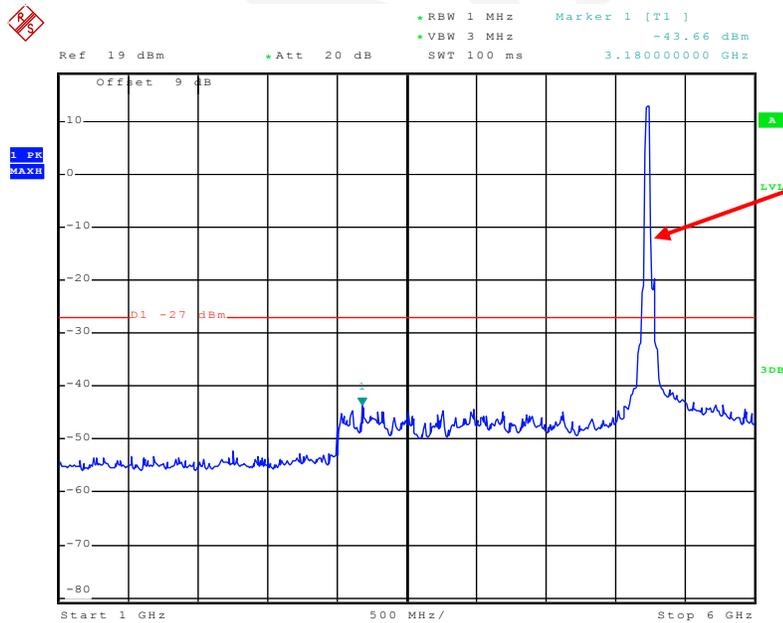
Date: 25.MAY.2015 14:09:25

Chain 2:802.11n ht40 High Channel 30MHz-1GHz



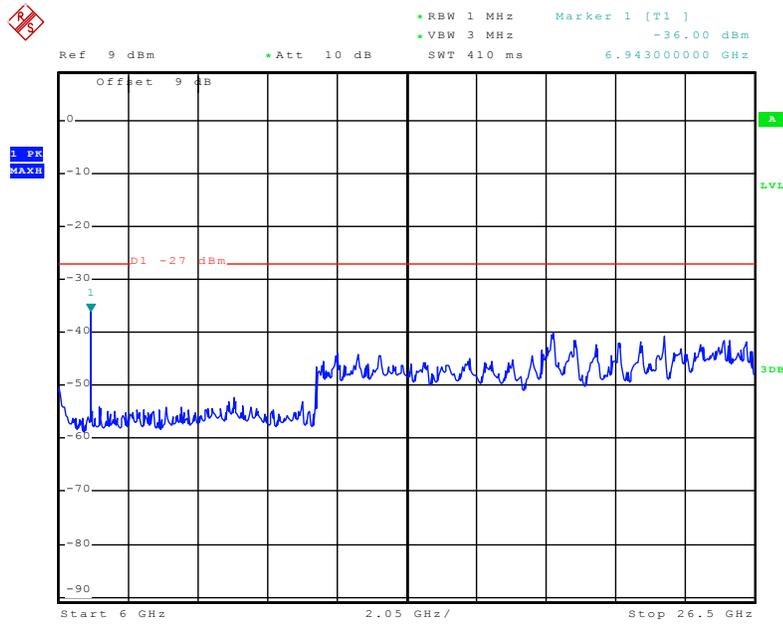
Date: 19.MAY.2015 14:36:35

Chain 2:802.11n ht40 High Channel 1GHz-6GHz



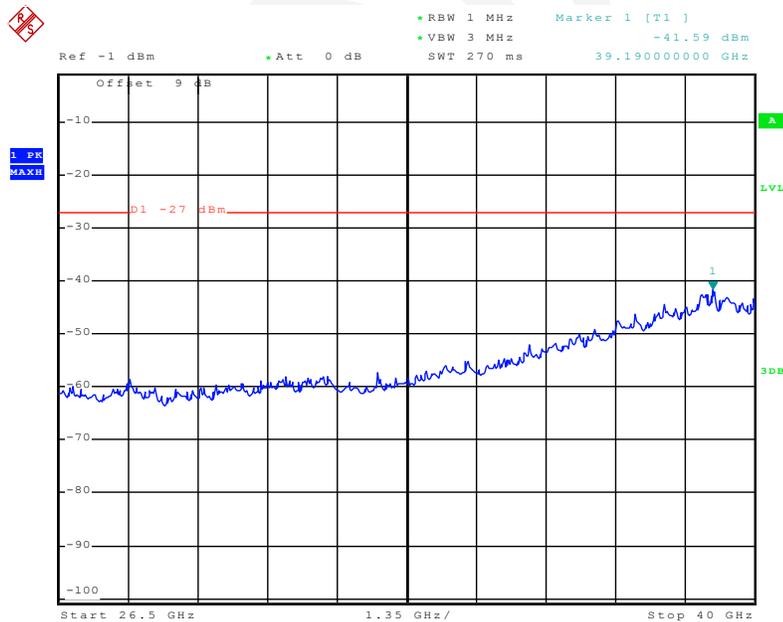
Date: 19.MAY.2015 14:36:55

Chain 2:802.11n ht40 High Channel 6GHz-26.5GHz



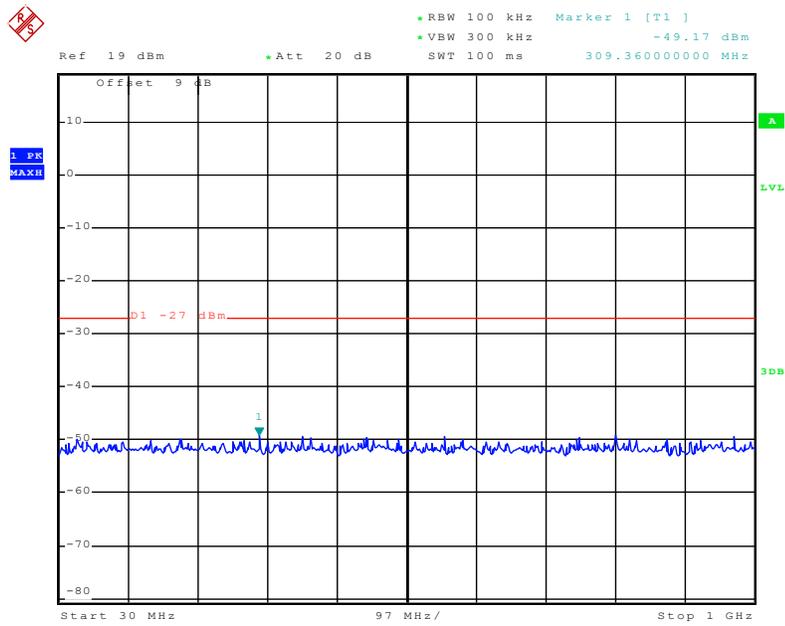
Date: 19.MAY.2015 14:37:13

Chain 2:802.11n ht40 High Channel 26.5GHz-40GHz



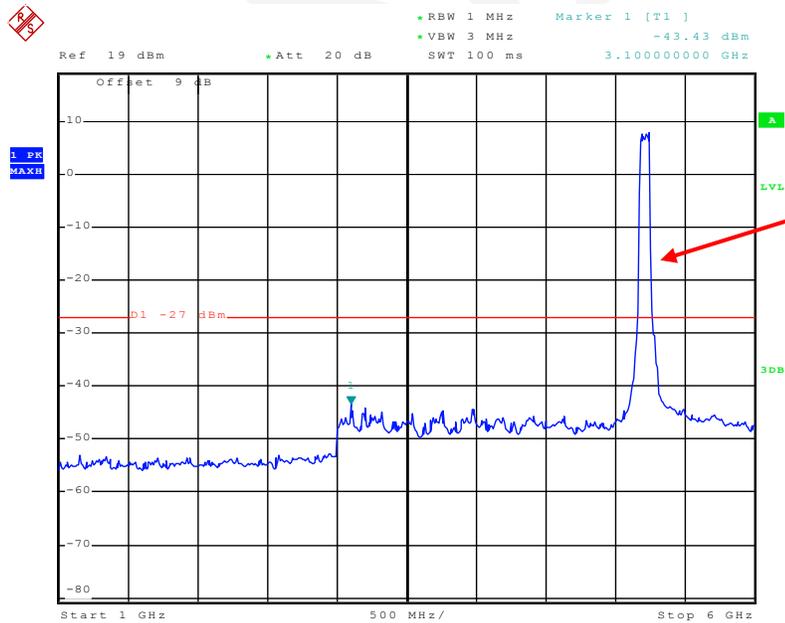
Date: 25.MAY.2015 14:09:21

Chain 2:802.11n ac80 Middle Channel 30MHz-1GHz



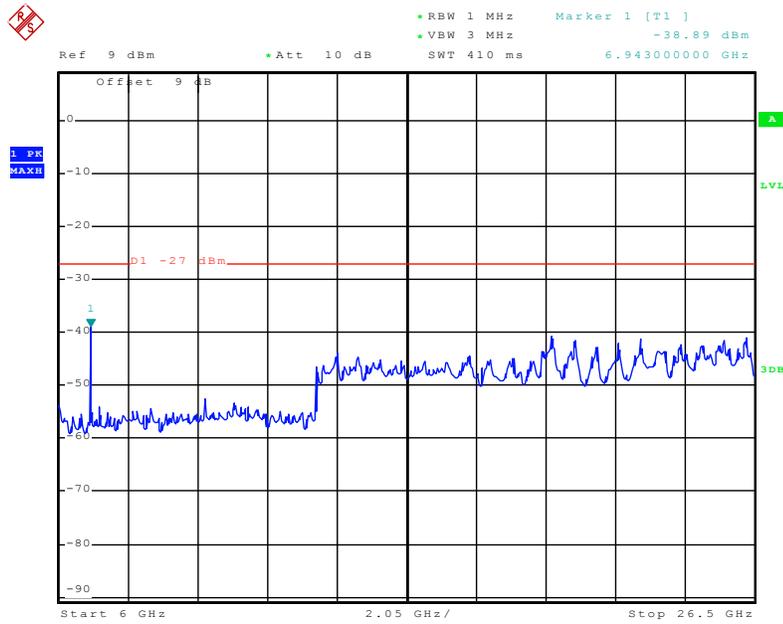
Date: 28.MAY.2015 15:41:04

Chain 2:802.11n ac80 Middle Channel 1GHz-6GHz



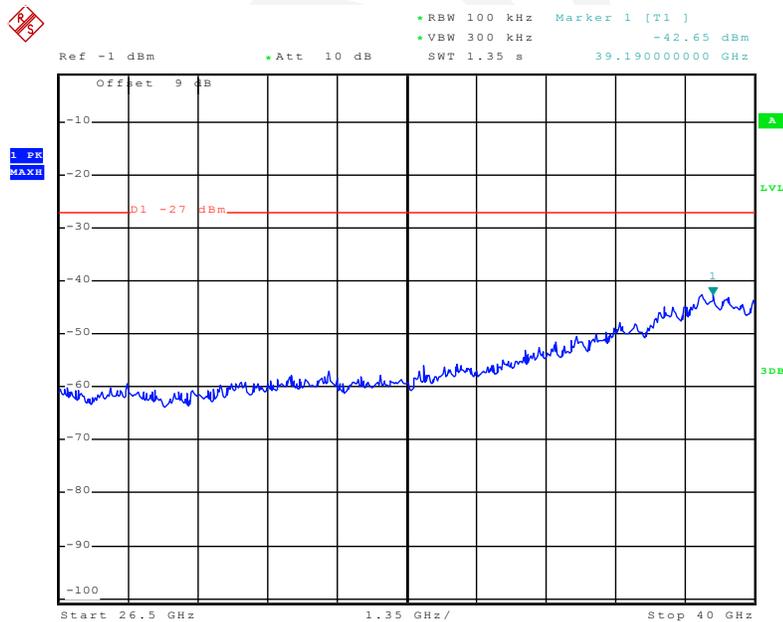
Date: 28.MAY.2015 15:41:22

Chain 2:802.11n ac80 Middle Channel 6GHz-26.5GHz



Date: 28.MAY.2015 15:41:50

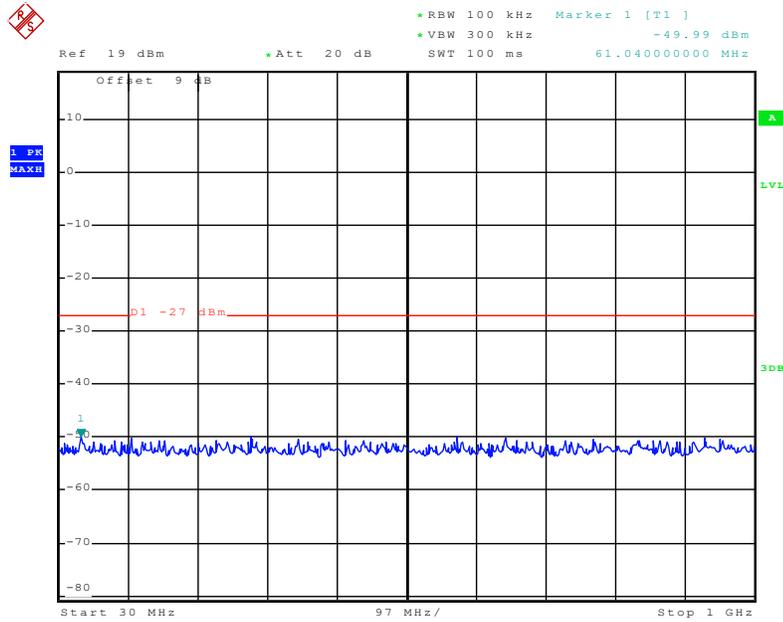
Chain 2:802.11n ac80 Middle Channel 26.5GHz-40GHz



Date: 28.MAY.2015 15:44:55

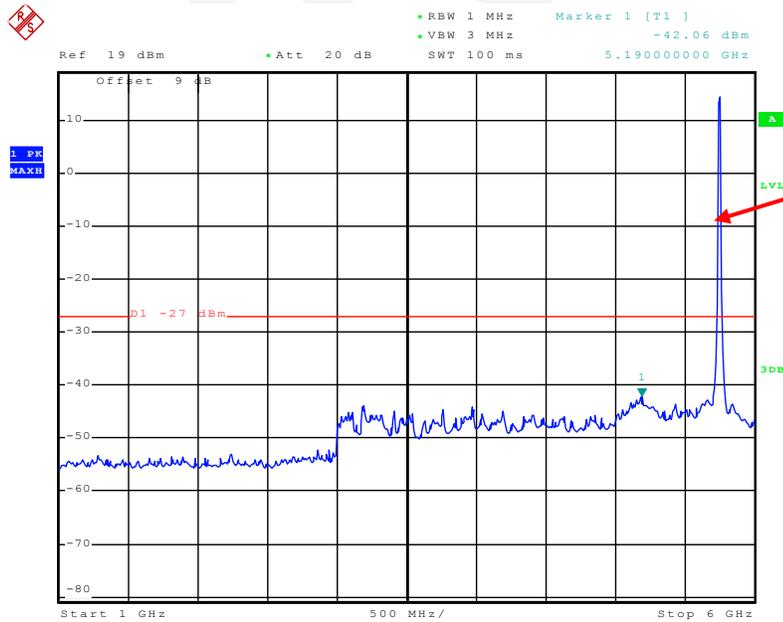
5725MHz-5850MHz:

Chain 0:802.11a Low Channel 30MHz-1GHz



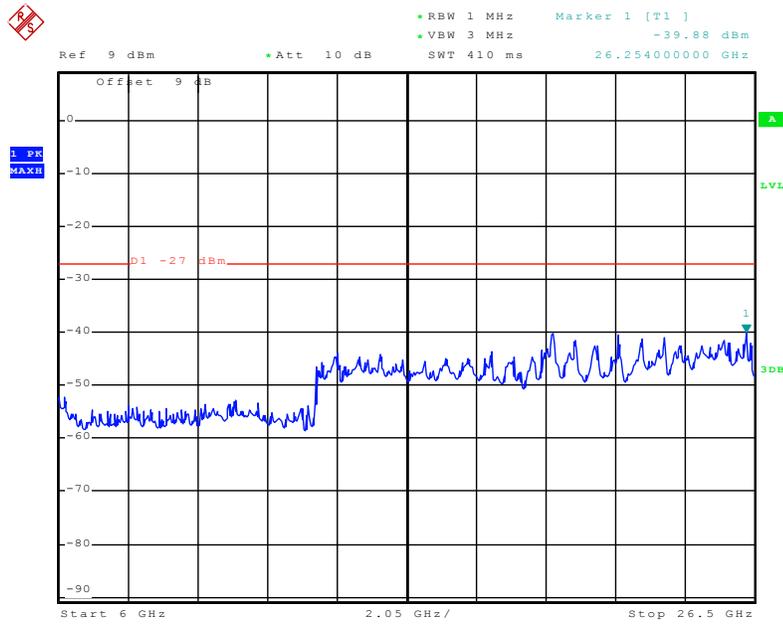
Date: 19.MAY.2015 16:57:31

Chain 0:802.11a Low Channel 1GHz-6GHz



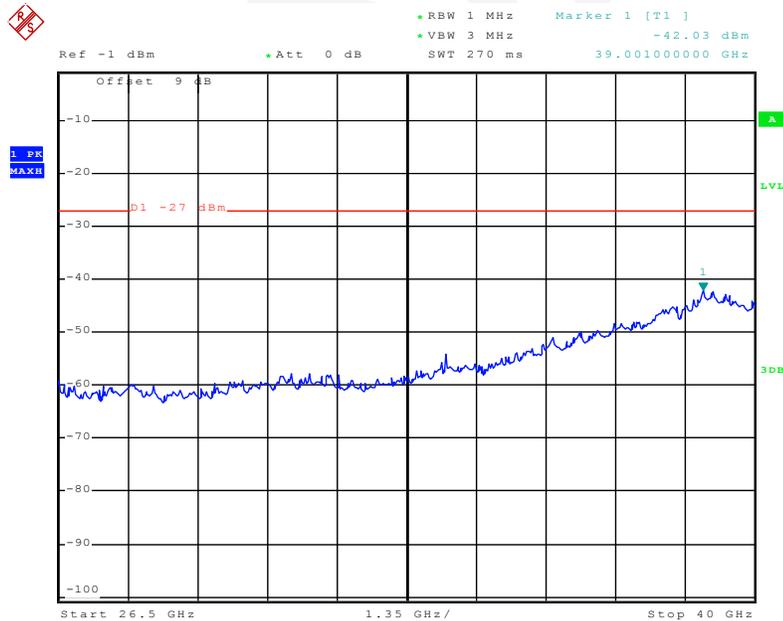
Date: 19.MAY.2015 16:57:48

Chain 0:802.11a Low Channel 6GHz-26.5GHz



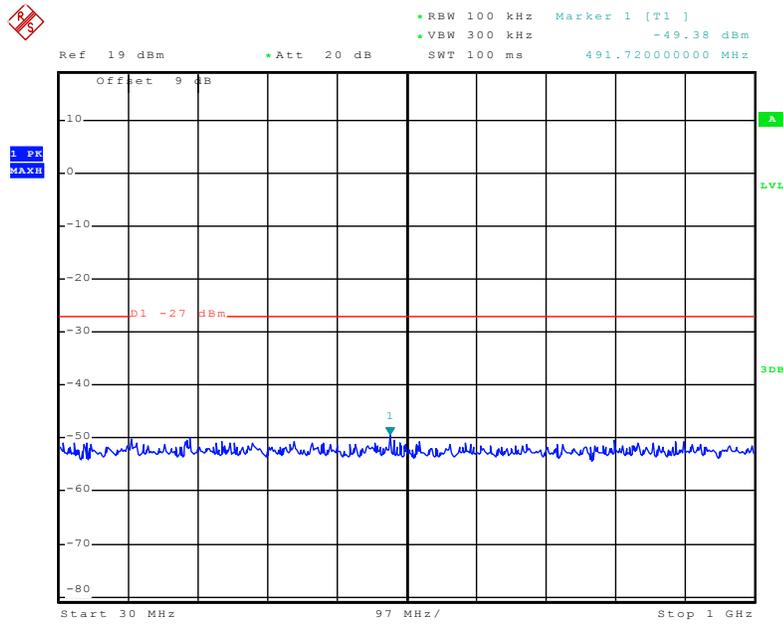
Date: 19.MAY.2015 16:58:01

Chain 0:802.11a Low Channel 26.5GHz-40GHz



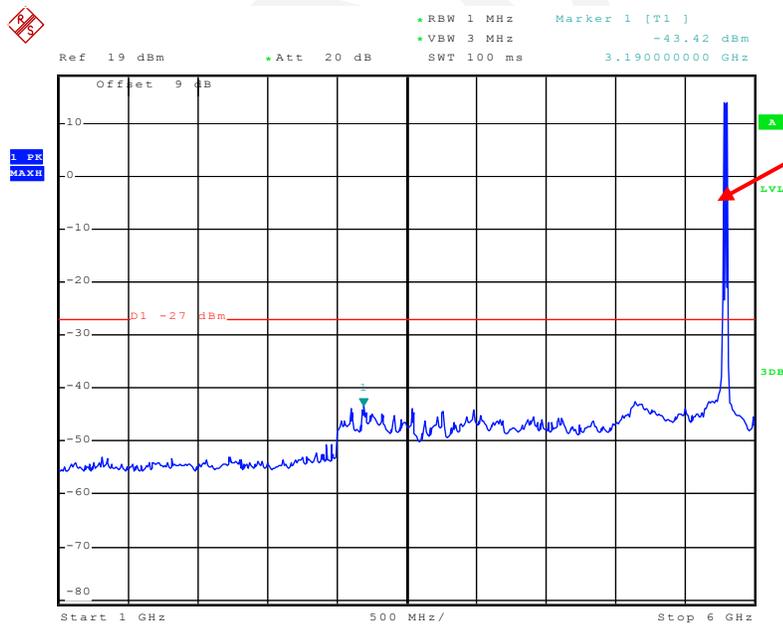
Date: 25.MAY.2015 14:09:36

Chain 0:802.11a Middle Channel 30MHz -1GHz



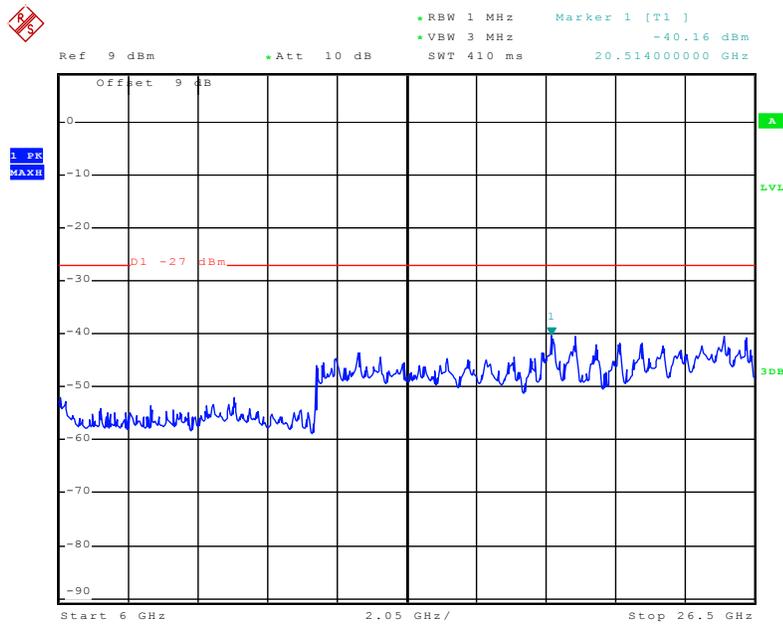
Date: 19.MAY.2015 16:53:25

Chain 0:802.11a Middle Channel 1GHz-6GHz



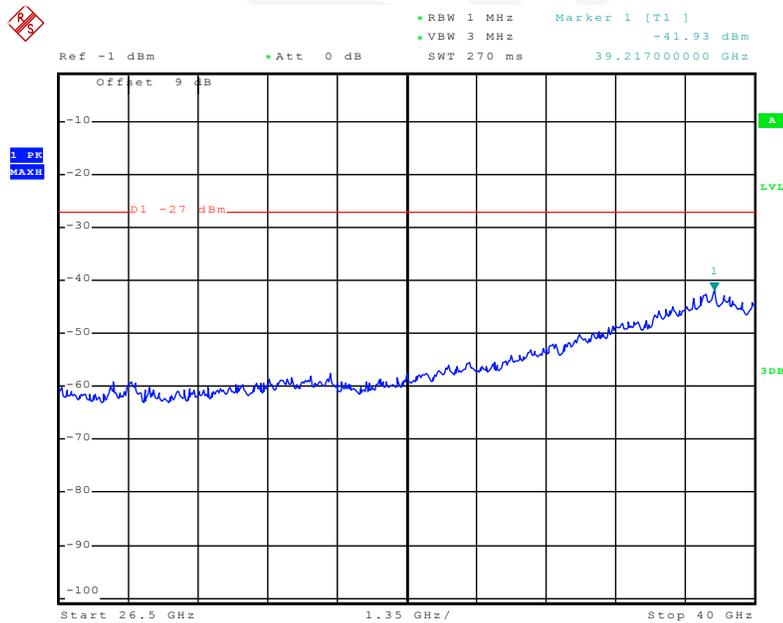
Date: 19.MAY.2015 16:54:01

Chain 0:802.11a Middle Channel 6GHz-26.5GHz



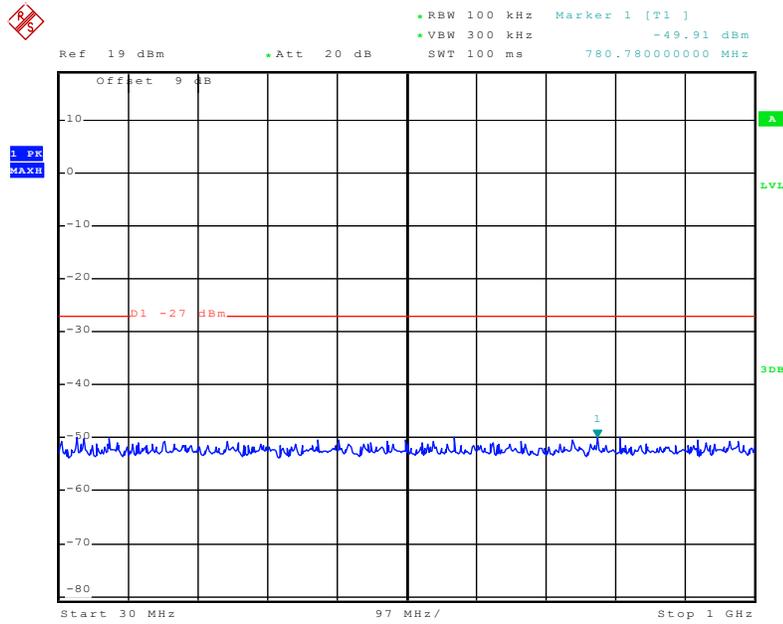
Date: 19.MAY.2015 16:54:21

Chain 0:802.11a Middle Channel 26.5GHz-40GHz



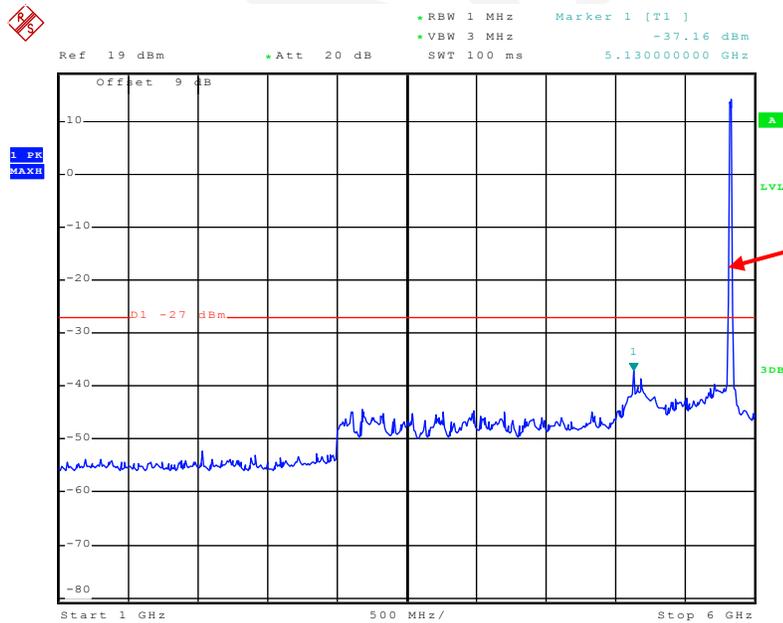
Date: 25.MAY.2015 14:09:41

Chain 0:802.11a High Channel 30MHz-1GHz



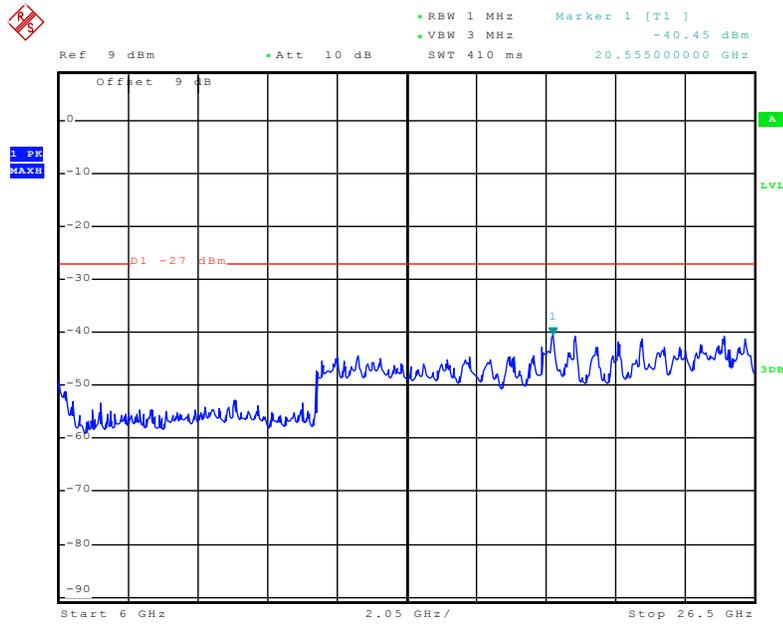
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Chain 0:802.11a High Channel 1GHz-6GHz



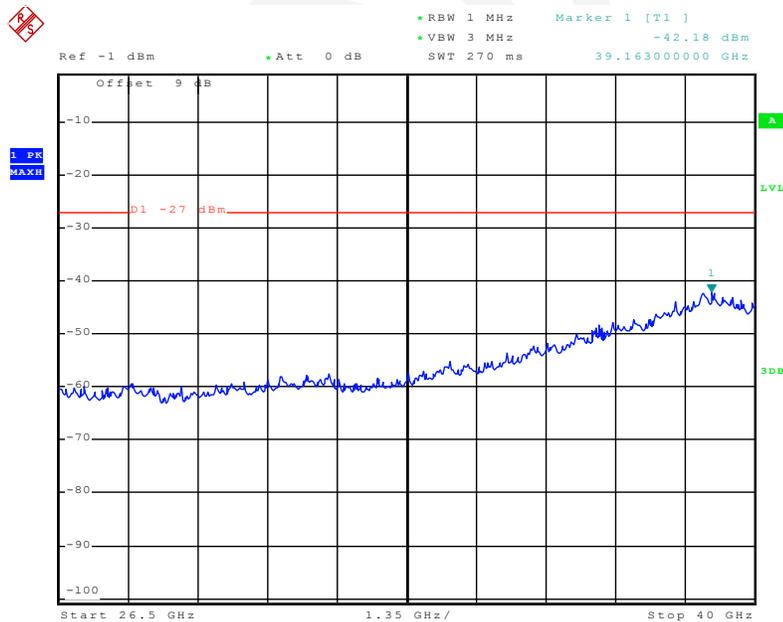
Date: 19.MAY.2015 16:55:56

Chain 0:802.11a High Channel 6GHz-26.5GHz



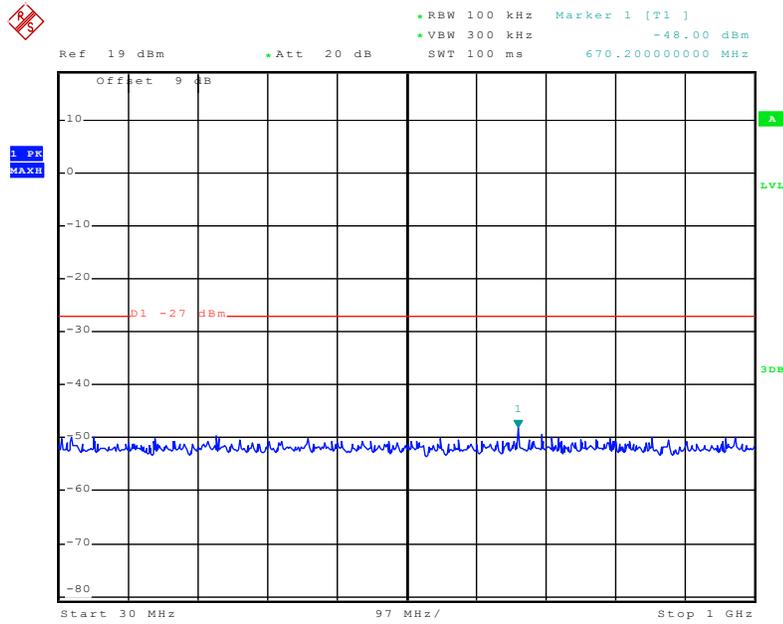
Date: 19.MAY.2015 16:56:16

Chain 0:802.11a High Channel 26.5GHz-40GHz



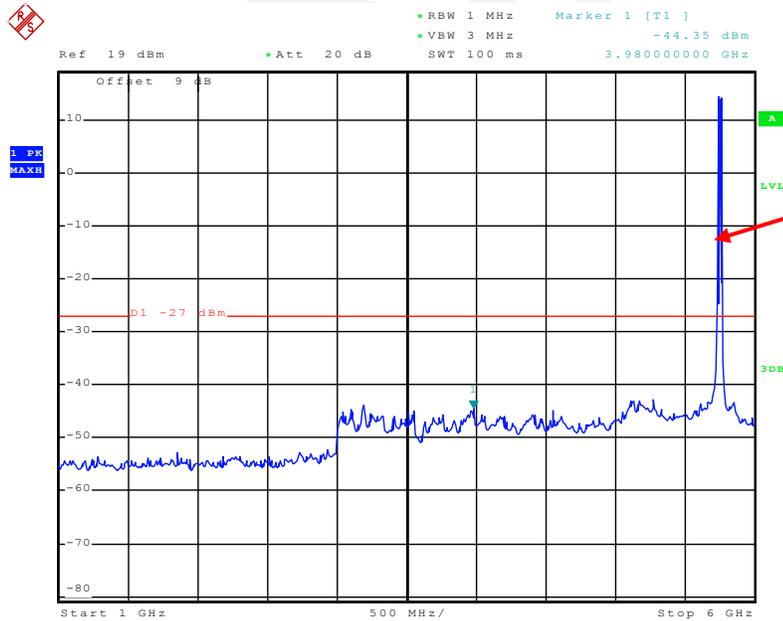
Date: 25.MAY.2015 14:09:31

Chain 0:802.11n ht20 Low Channel 30MHz-1GHz



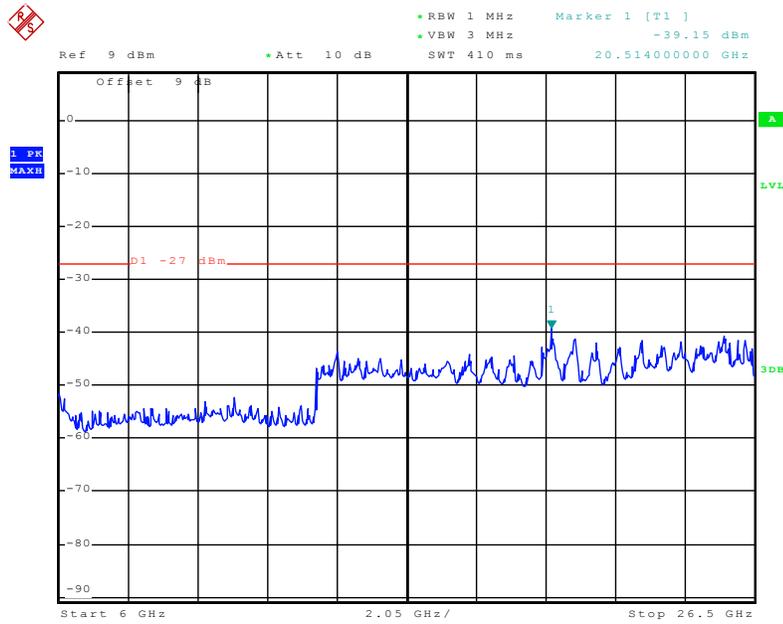
Date: 19.MAY.2015 16:52:00

Chain 0:802.11n ht20 Low Channel 1GHz-6GHz



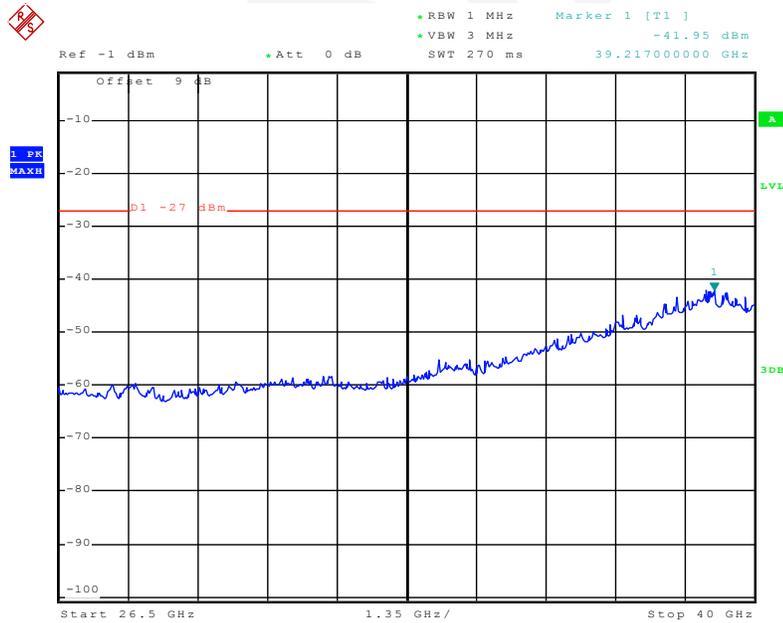
Date: 19.MAY.2015 16:51:45

Chain 0:802.11n ht20 Low Channel 6GHz-26.5GHz



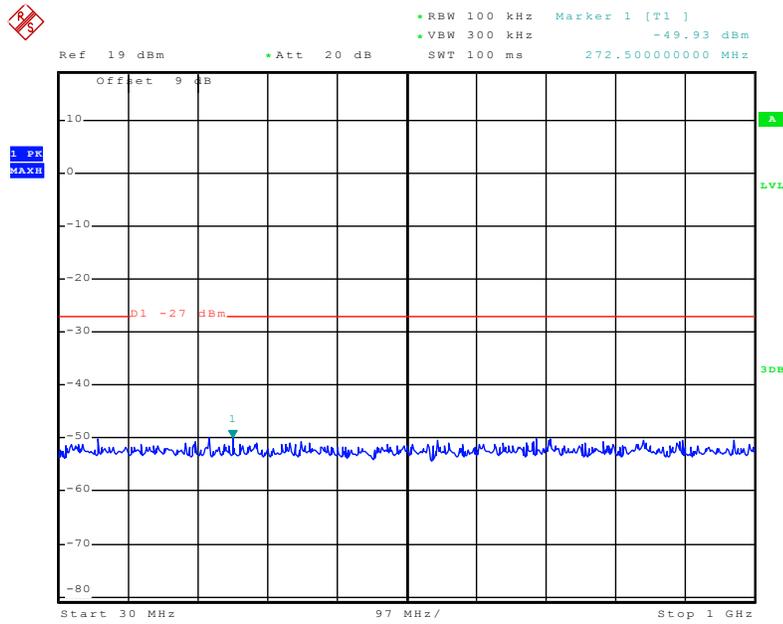
Date: 19.MAY.2015 16:51:28

Chain 0:802.11n ht20 Low Channel 26.5GHz-40GHz



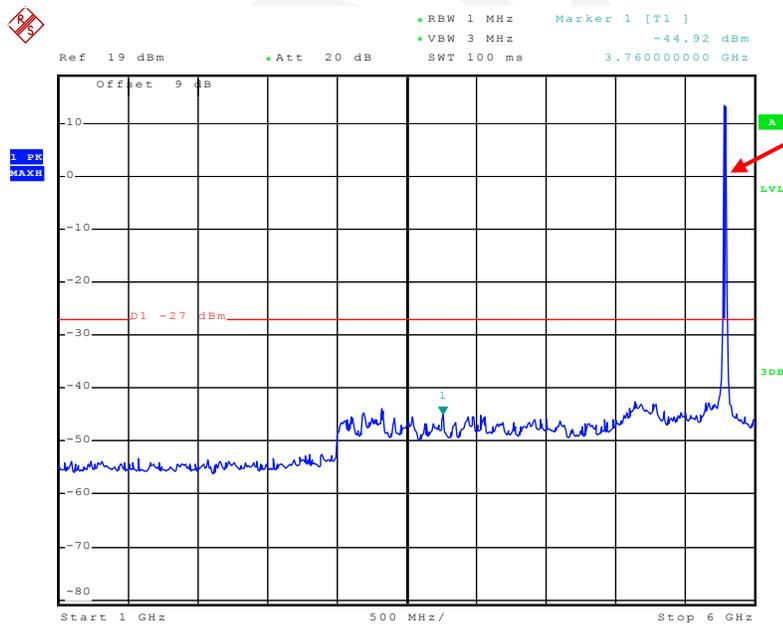
Date: 25.MAY.2015 14:09:55

Chain 0:802.11n ht20 Middle Channel 30MHz -1GHz



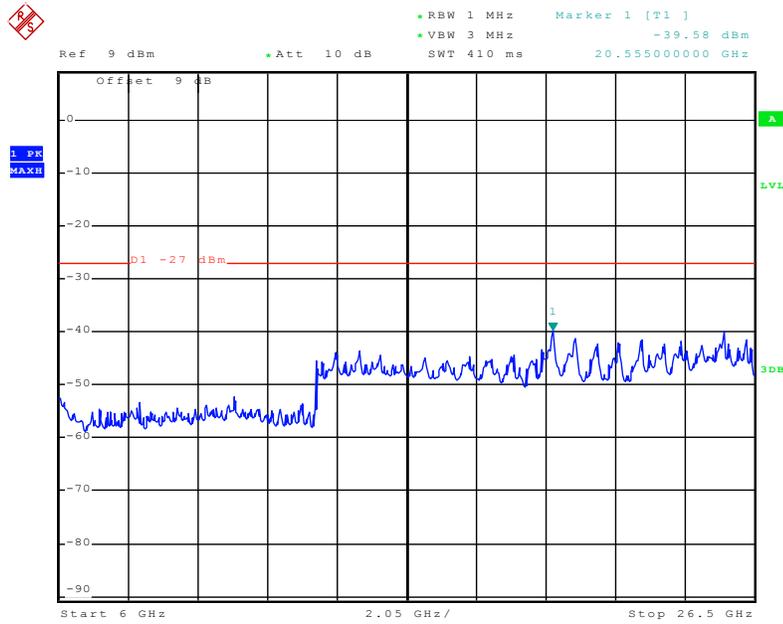
Date: 19.MAY.2015 16:57:14

Chain 0:802.11n ht20 Middle Channel 1GHz-6GHz



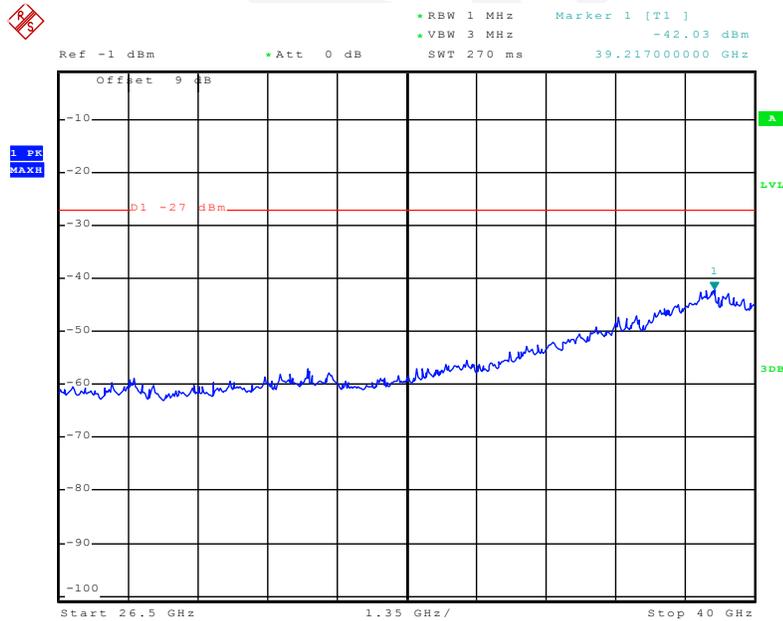
Date: 19.MAY.2015 16:57:02

Chain 0:802.11n ht20 Middle Channel 6GHz-26.5GHz



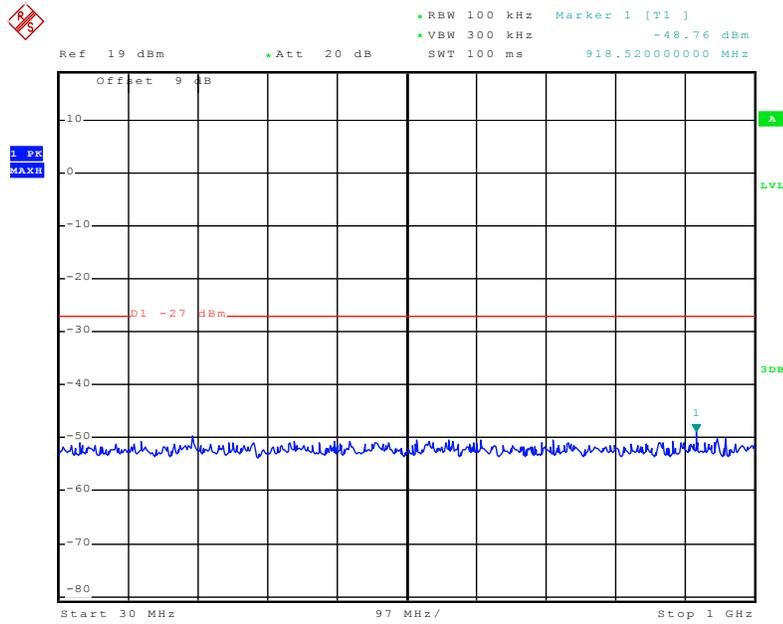
Date: 19.MAY.2015 16:56:44

Chain 0:802.11n ht20 Middle Channel 26.5GHz-40GHz



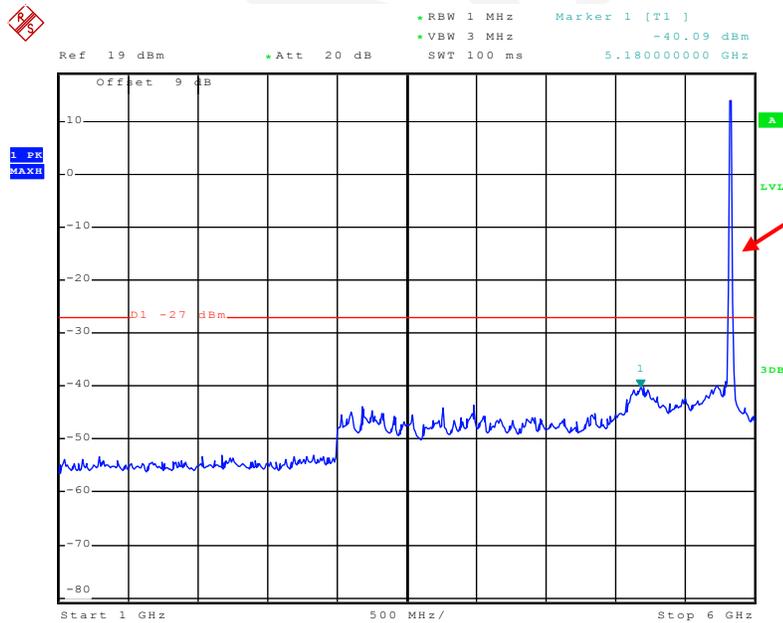
Date: 25.MAY.2015 14:10:00

Chain 0:802.11n ht20 High Channel 30MHz-1GHz



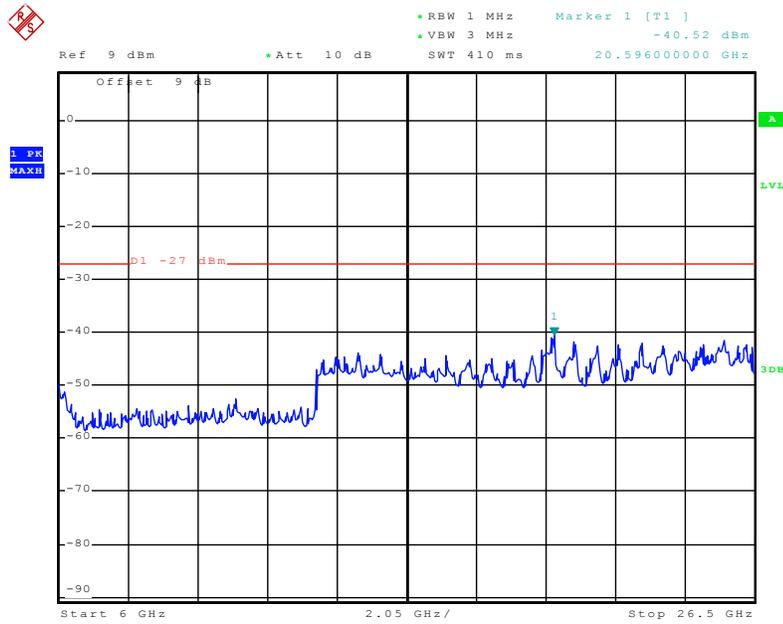
Date: 19.MAY.2015 16:55:12

Chain 0:802.11n ht20 High Channel 1GHz-6GHz



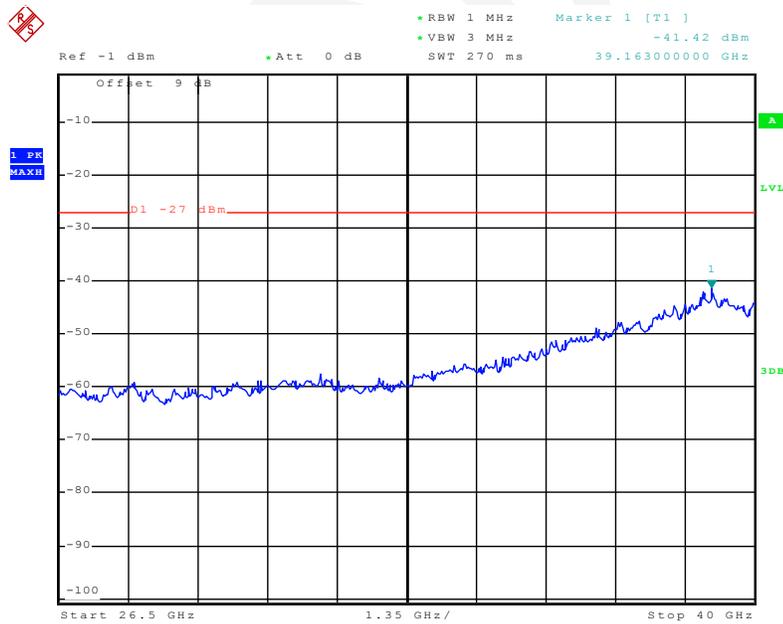
Date: 19.MAY.2015 16:54:59

Chain 0:802.11n ht20 High Channel 6GHz-26.5GHz



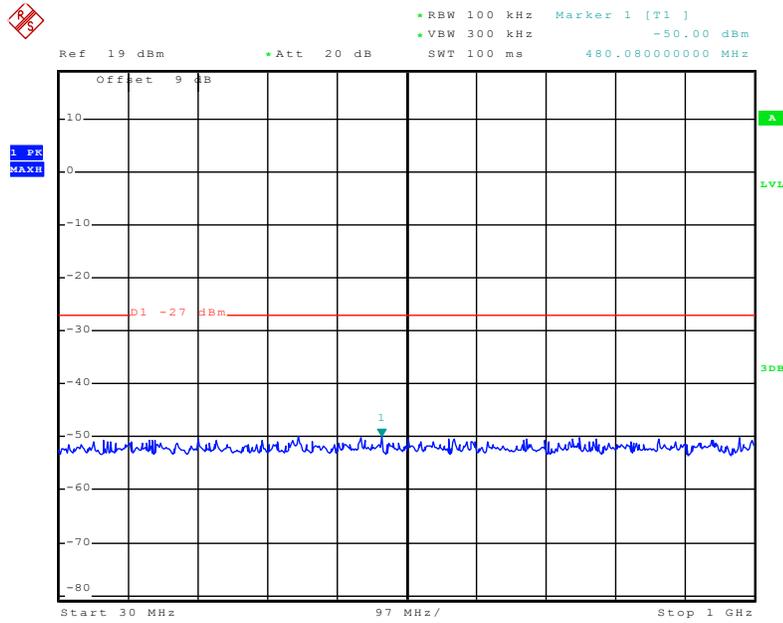
Date: 19.MAY.2015 16:54:43

Chain 0:802.11n ht20 High Channel 26.5GHz-40GHz



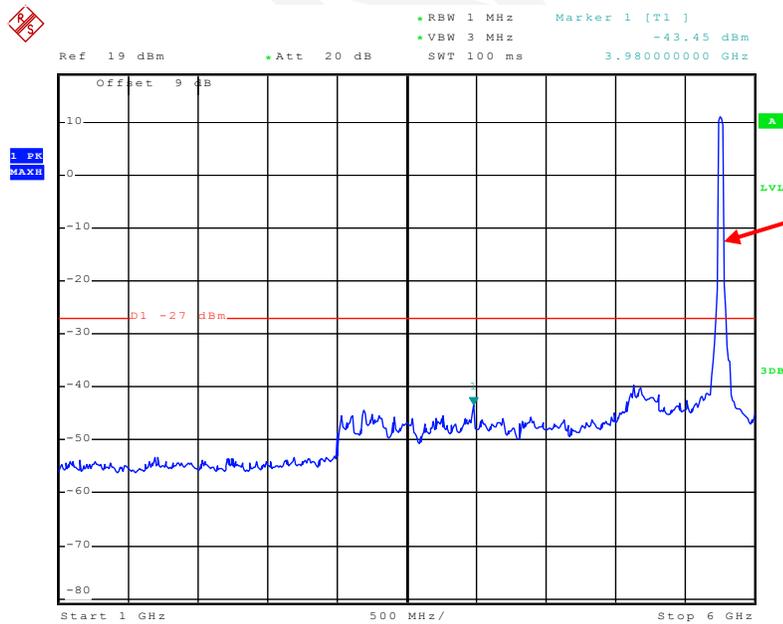
Date: 25.MAY.2015 14:09:51

Chain 0:802.11n ht40 Low Channel 30MHz-1GHz



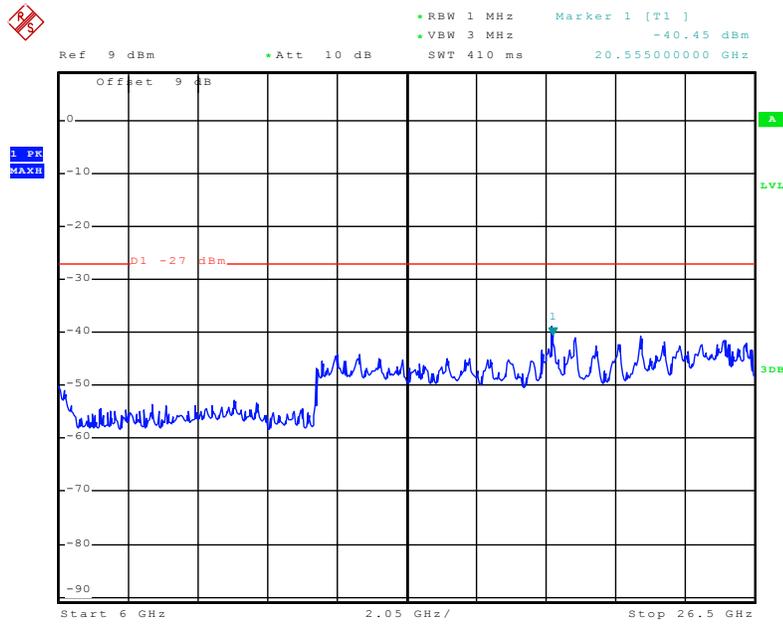
Date: 19.MAY.2015 16:50:12

Chain 0:802.11n ht40 Low Channel 1GHz-6GHz



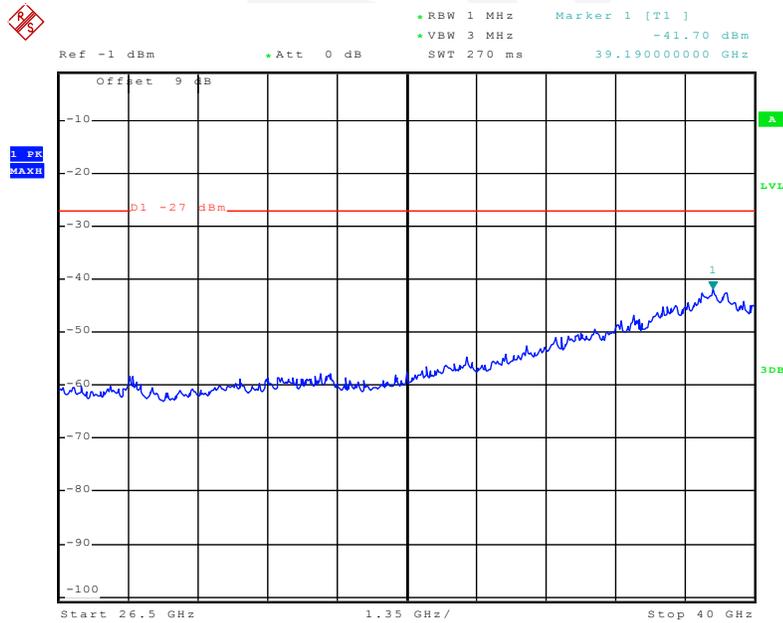
Date: 19.MAY.2015 16:49:56

Chain 0:802.11n ht40 Low Channel 6GHz-26.5GHz



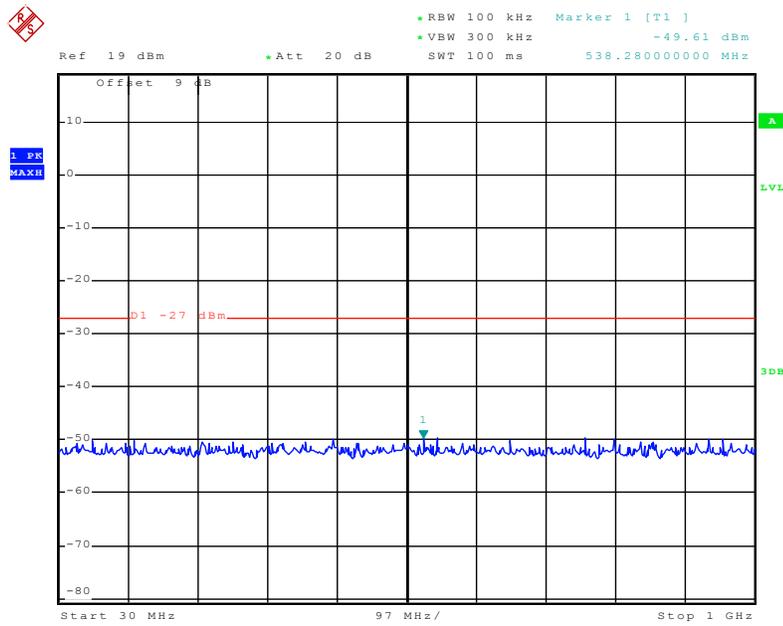
Date: 19.MAY.2015 16:49:41

Chain 0:802.11n ht40 Low Channel 26.5GHz-40GHz



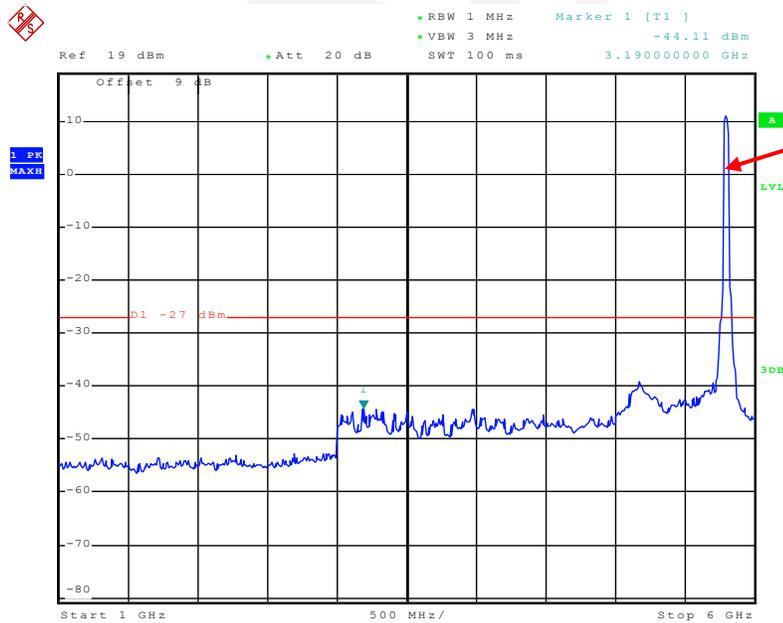
Date: 25.MAY.2015 14:10:24

Chain 0:802.11n ht40 High Channel 30MHz-1GHz



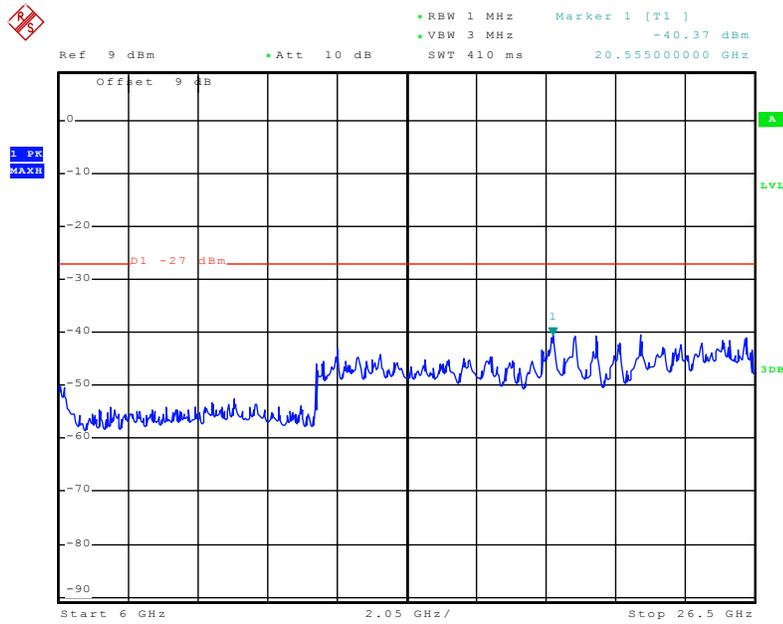
Date: 19.MAY.2015 16:50:32

Chain 0:802.11n ht40 High Channel 1GHz-6GHz



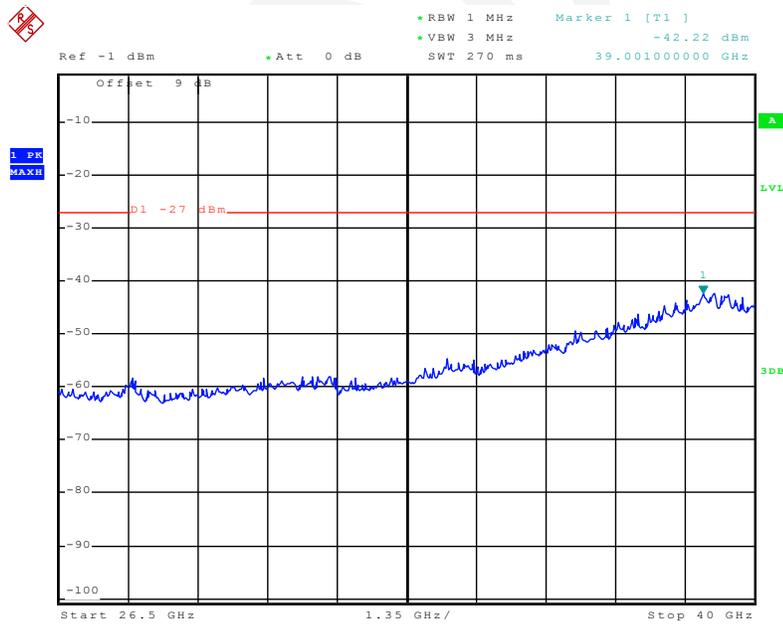
Date: 19.MAY.2015 16:50:47

Chain 0:802.11n ht40 High Channel 6GHz-26.5GHz



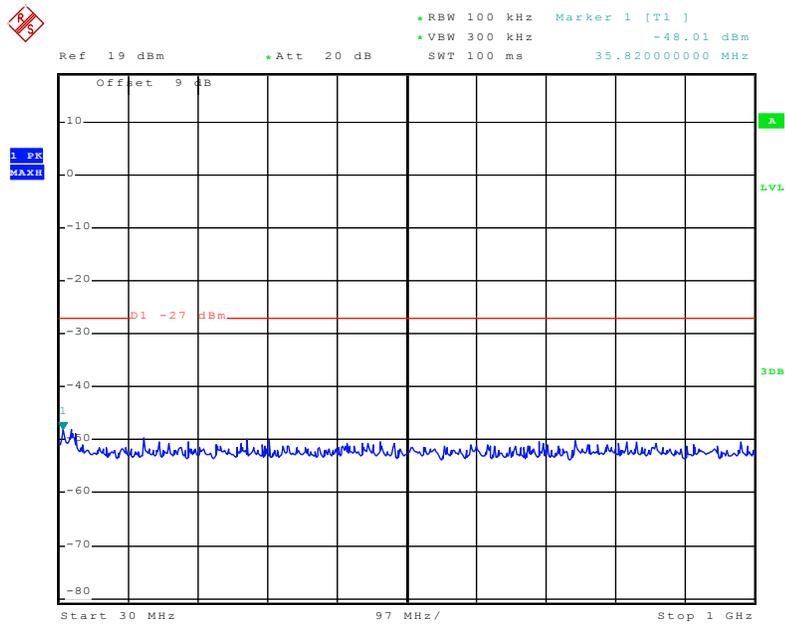
Date: 19.MAY.2015 16:51:01

Chain 0:802.11n ht40 High Channel 26.5GHz-40GHz



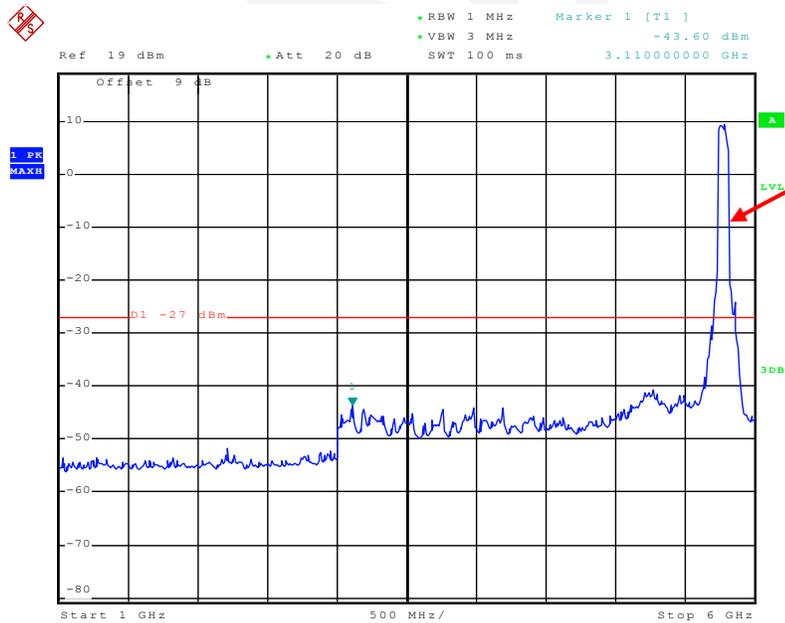
Date: 25.MAY.2015 14:10:20

Chain 0:802.11n ac80 Middle Channel 30MHz-1GHz



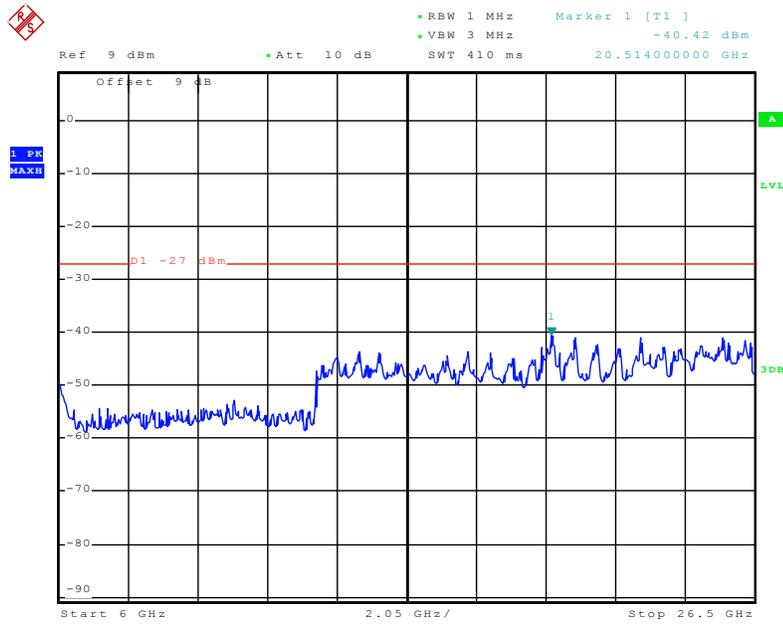
Date: 19.MAY.2015 16:36:13

Chain 0:802.11n ac80 Middle Channel 1GHz-6GHz



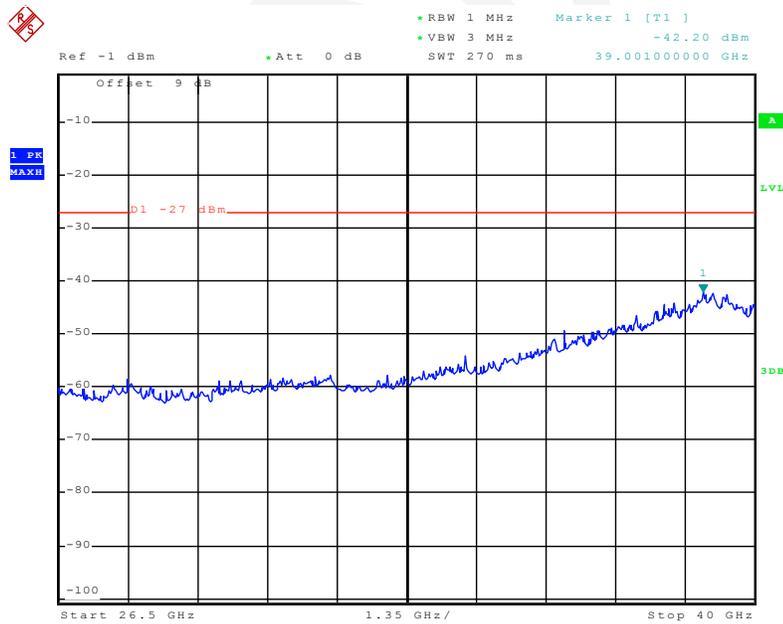
Date: 19.MAY.2015 16:36:01

Chain 0:802.11n ac80 Middle Channel 6GHz-26.5GHz



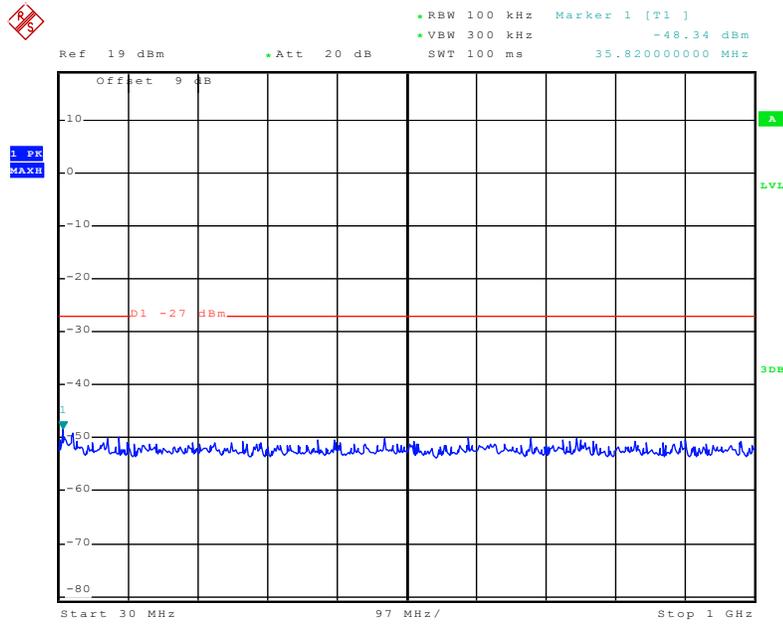
Date: 19.MAY.2015 16:34:57

Chain 0:802.11n ac80 Middle Channel 26.5GHz-40GHz



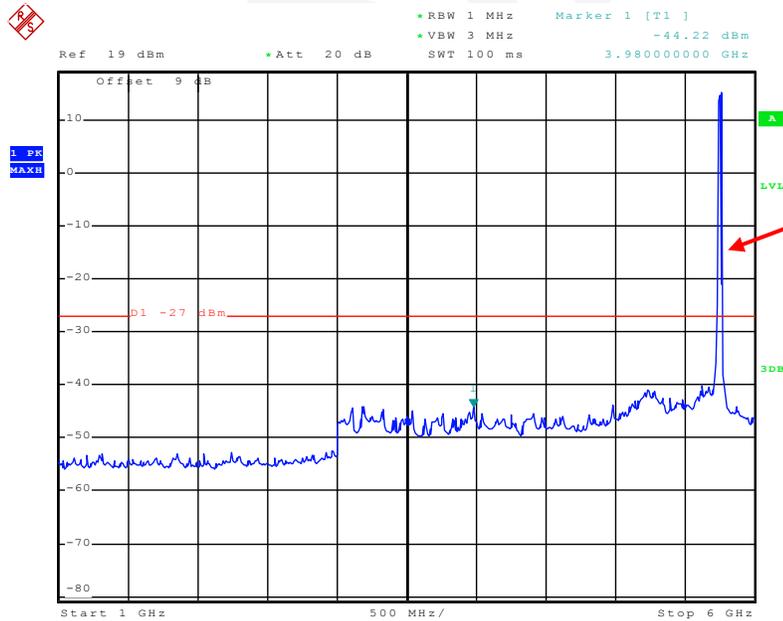
Date: 25.MAY.2015 14:09:46

Chain 1:802.11a Low Channel 30MHz-1GHz



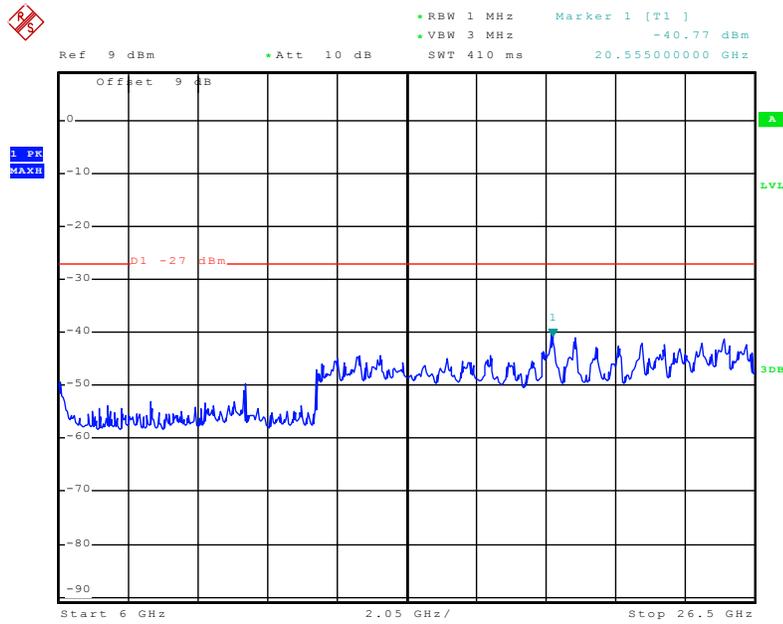
Date: 19.MAY.2015 16:27:35

Chain 1:802.11a Low Channel 1GHz-6GHz



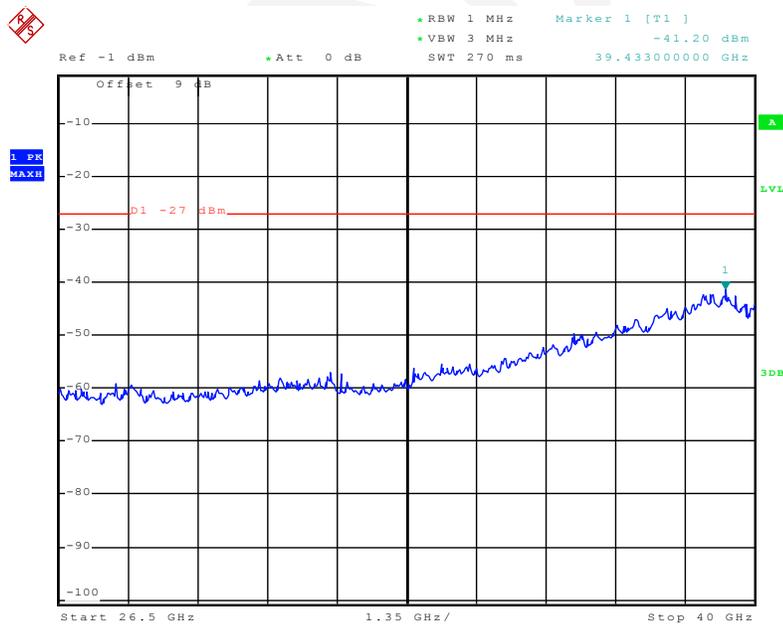
Date: 19.MAY.2015 16:27:20

Chain 1:802.11a Low Channel 6GHz-26.5GHz



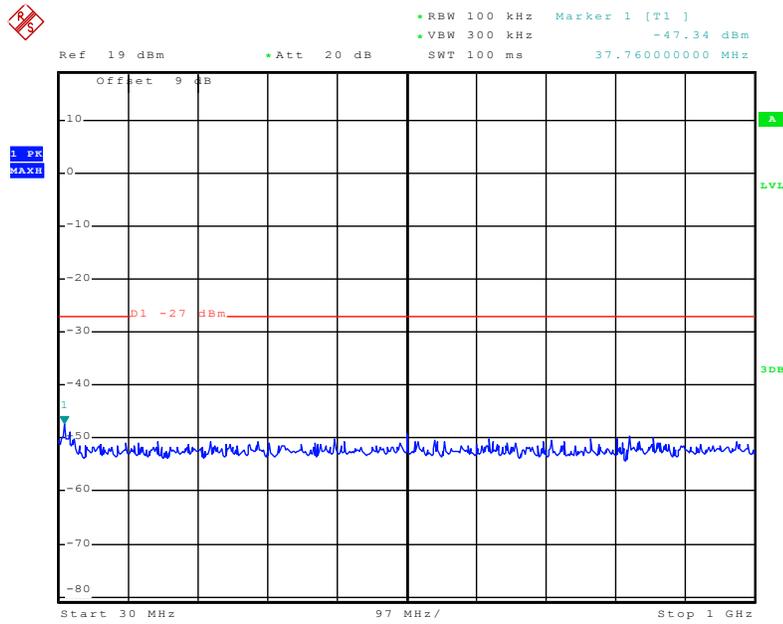
Date: 19.MAY.2015 16:26:59

Chain 1:802.11a Low Channel 26.5GHz-40GHz



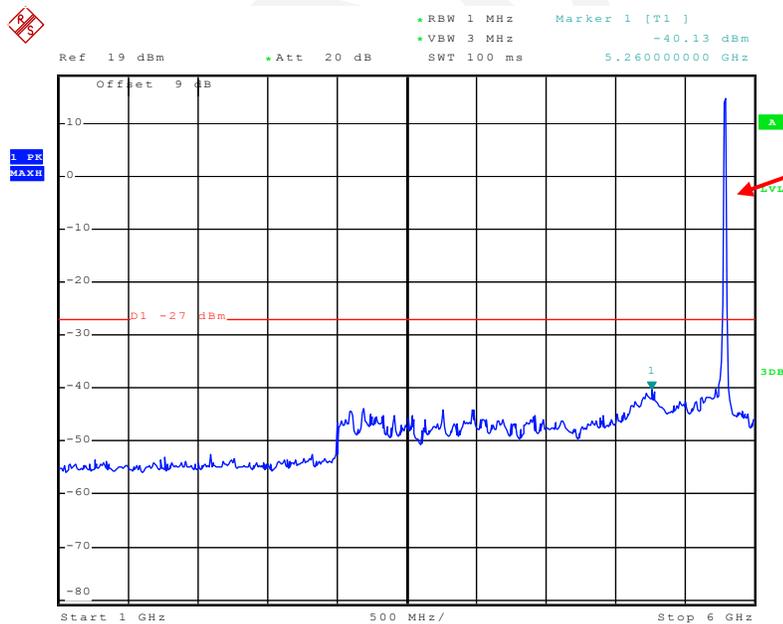
Date: 25.MAY.2015 14:10:35

Chain 1:802.11a Middle Channel 30MHz -1GHz



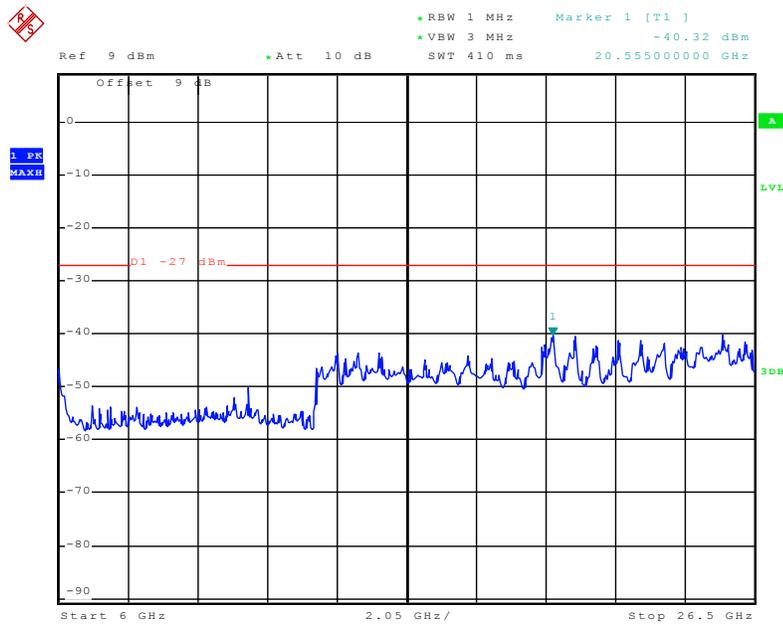
Date: 19.MAY.2015 16:27:55

Chain 1:802.11a Middle Channel 1GHz-6GHz



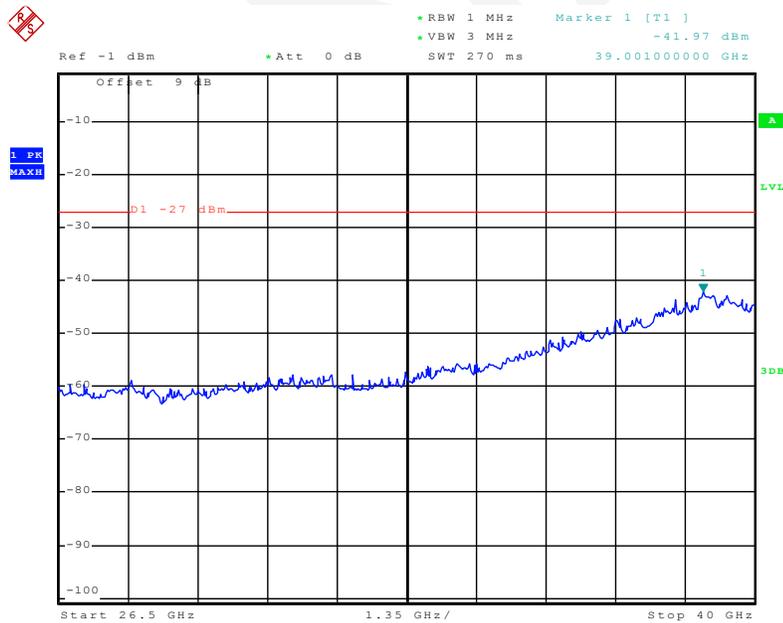
Date: 19.MAY.2015 16:28:10

Chain 1:802.11a Middle Channel 6GHz-26.5GHz



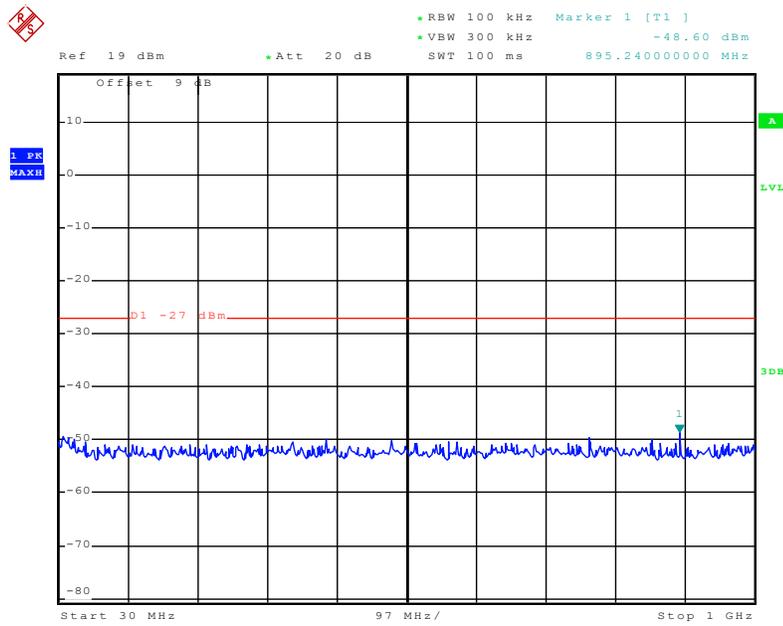
Date: 19.MAY.2015 16:28:25

Chain 1:802.11a Middle Channel 26.5GHz-40GHz



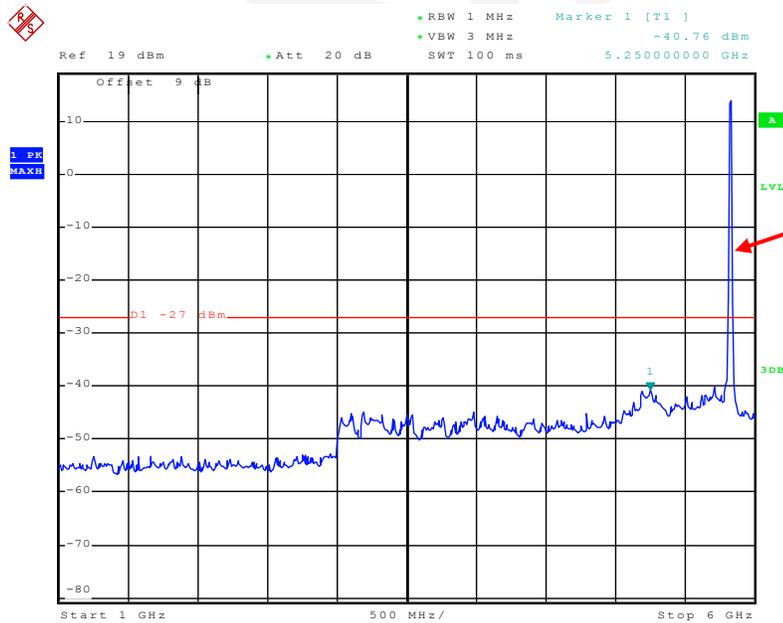
Date: 25.MAY.2015 14:10:41

Chain 1:802.11a High Channel 30MHz-1GHz



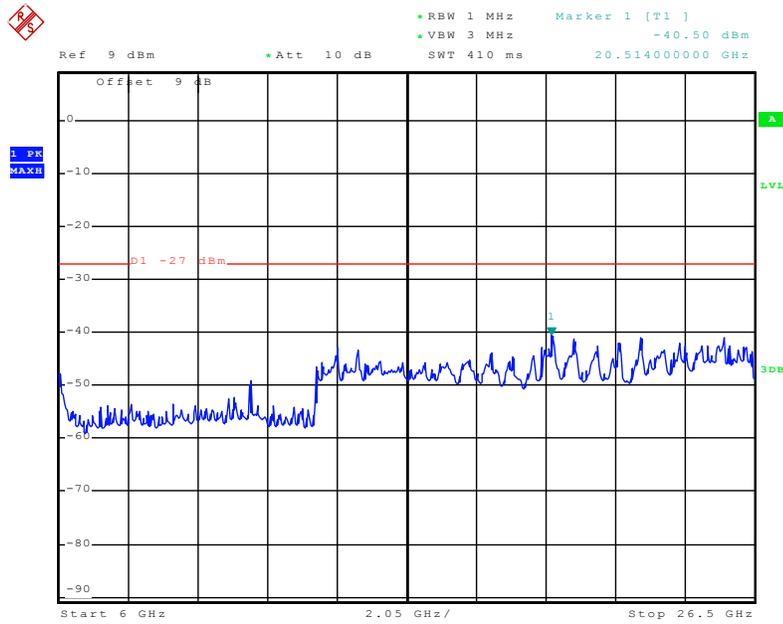
Date: 19.MAY.2015 16:29:10

Chain 1:802.11a High Channel 1GHz-6GHz



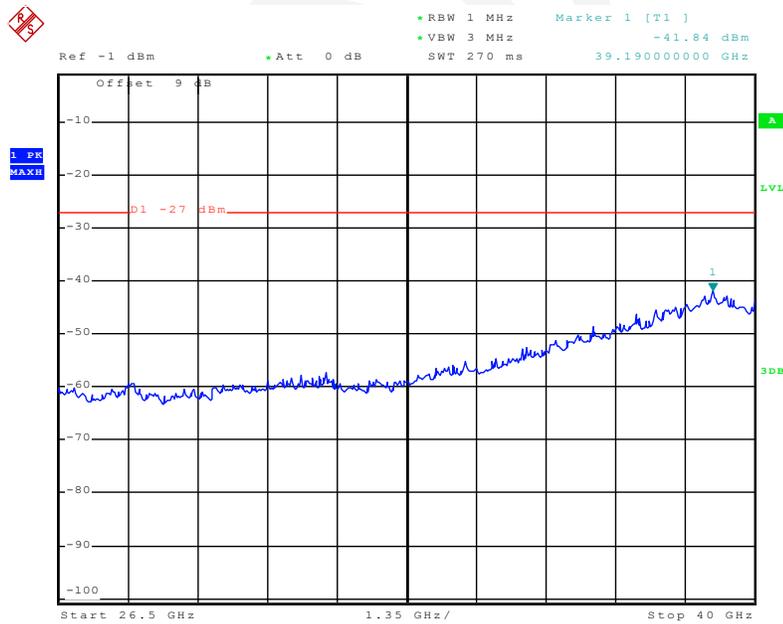
Date: 19.MAY.2015 16:28:58

Chain 1:802.11a High Channel 6GHz-26.5GHz



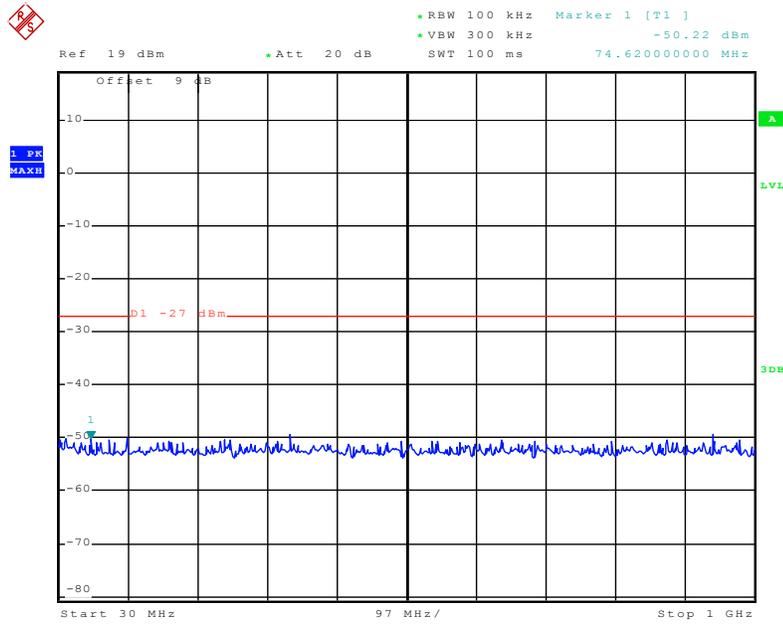
Date: 19.MAY.2015 16:28:43

Chain 1:802.11a High Channel 26.5GHz-40GHz



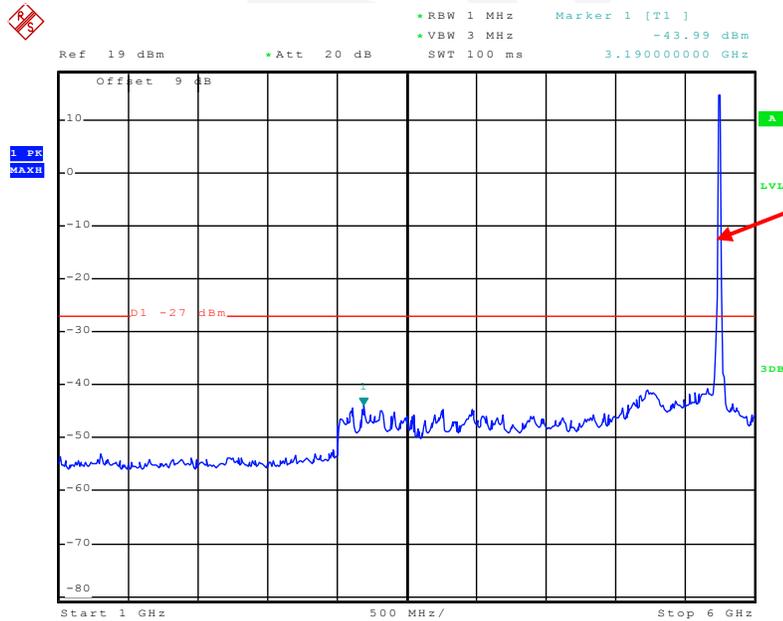
Date: 25.MAY.2015 14:10:30

Chain 1:802.11n ht20 Low Channel 30MHz-1GHz



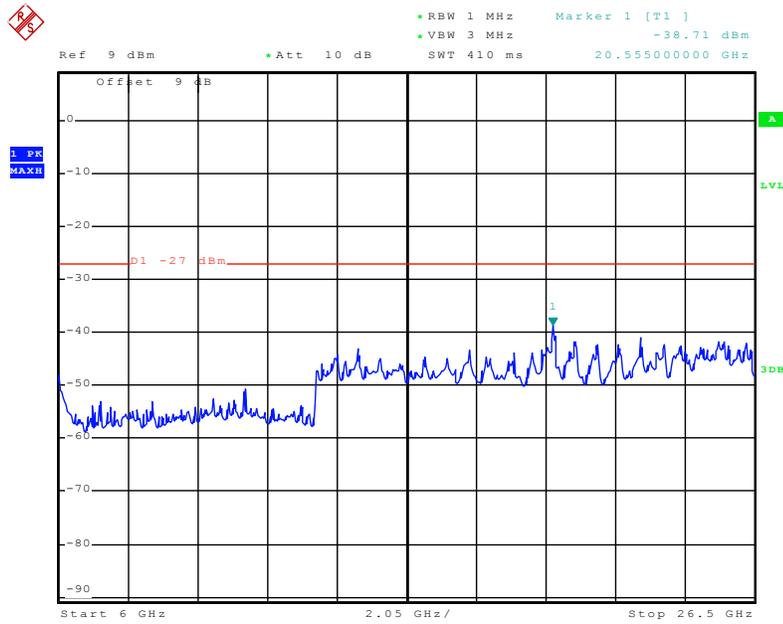
Date: 19.MAY.2015 16:31:39

Chain 1:802.11n ht20 Low Channel 1GHz-6GHz



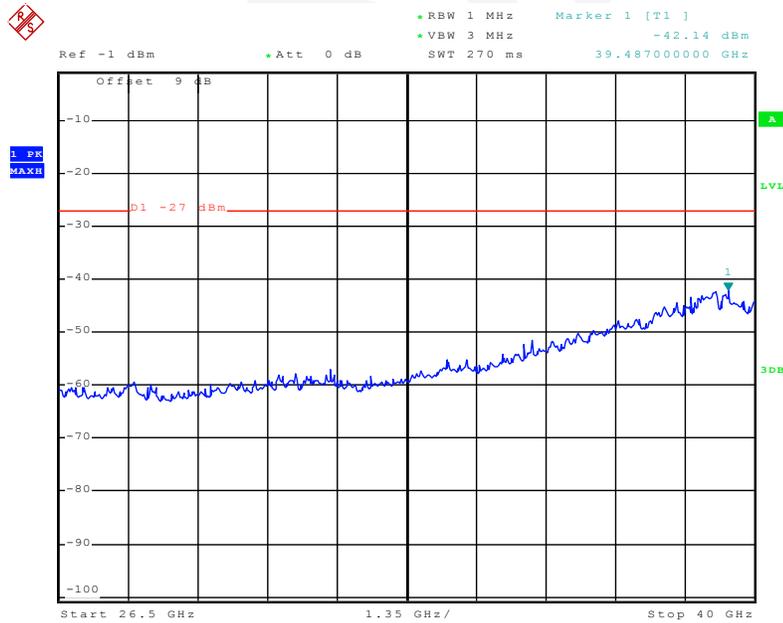
Date: 19.MAY.2015 16:31:54

Chain 1:802.11n ht20 Low Channel 6GHz-26.5GHz



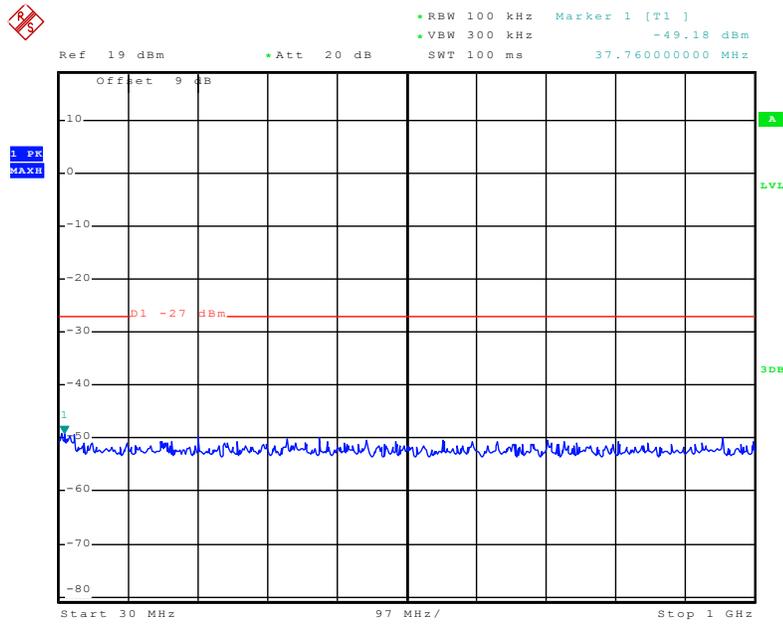
Date: 19.MAY.2015 16:32:10

Chain 1:802.11n ht20 Low Channel 26.5GHz-40GHz



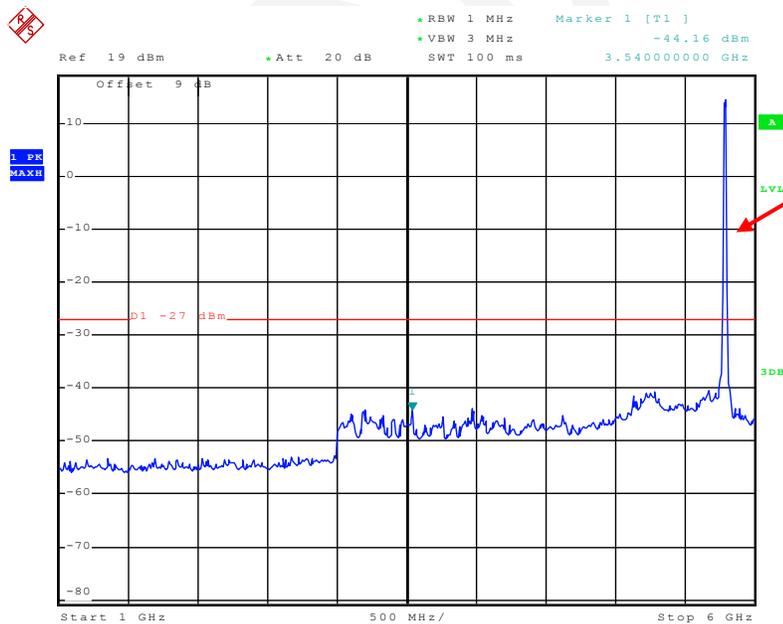
Date: 25.MAY.2015 14:10:57

Chain 1:802.11n ht20 Middle Channel 30MHz -1GHz



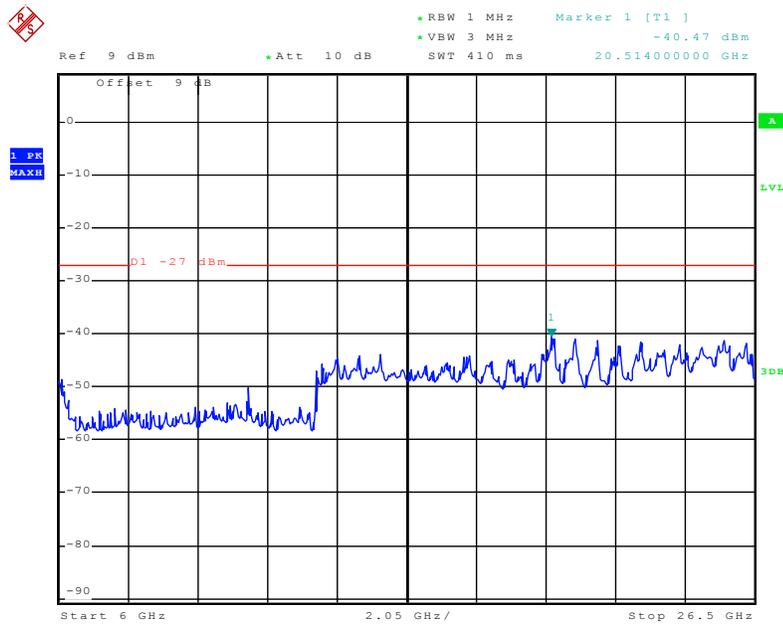
Date: 19.MAY.2015 16:31:21

Chain 1:802.11n ht20 Middle Channel 1GHz-6GHz



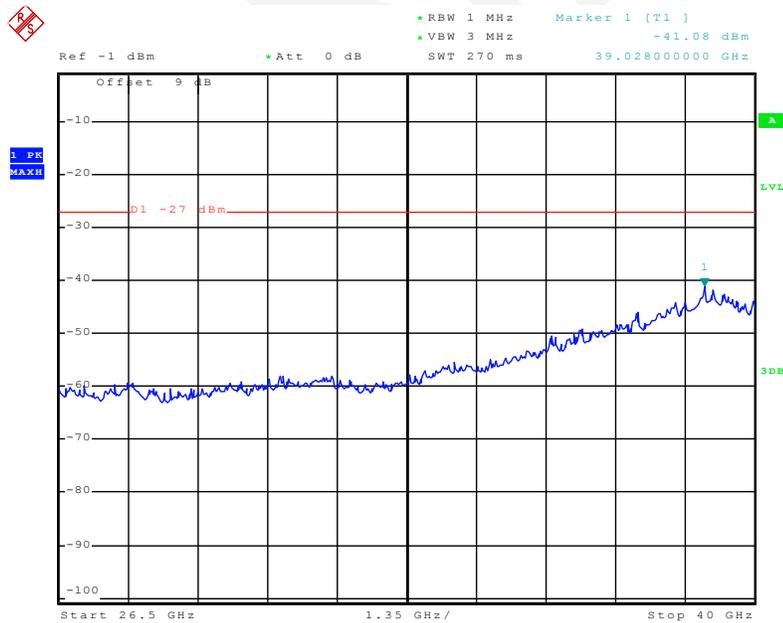
Date: 19.MAY.2015 16:31:07

Chain 1:802.11n ht20 Middle Channel 6GHz-26.5GHz



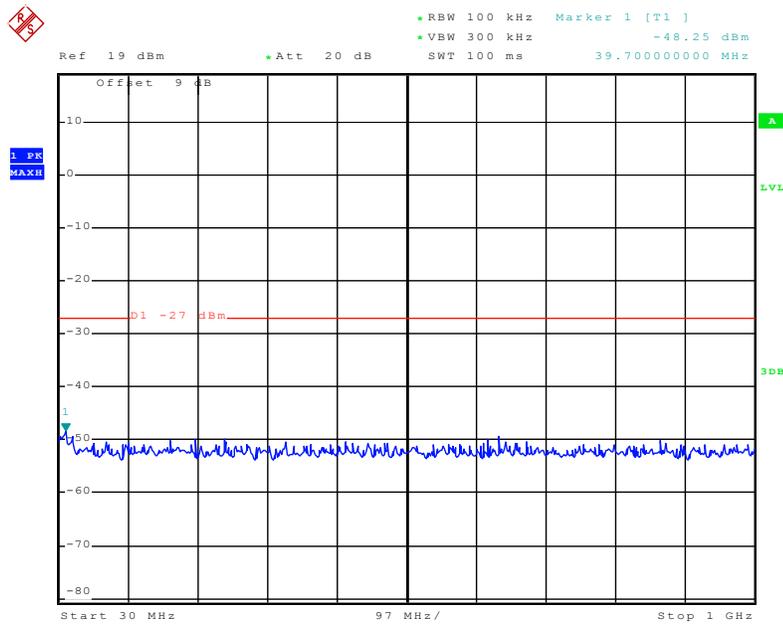
Date: 19.MAY.2015 16:30:46

Chain 1:802.11n ht20 Middle Channel 26.5GHz-40GHz



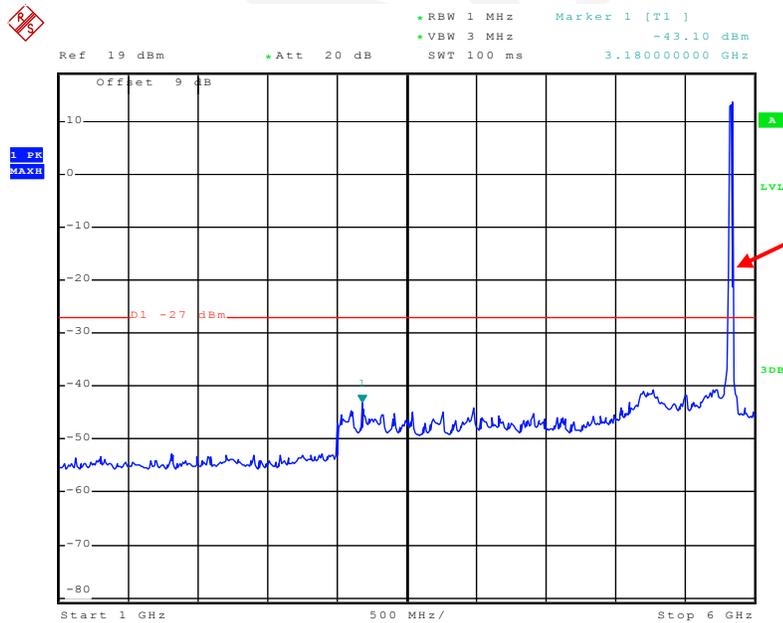
Date: 25.MAY.2015 14:11:02

Chain 1:802.11n ht20 High Channel 30MHz-1GHz



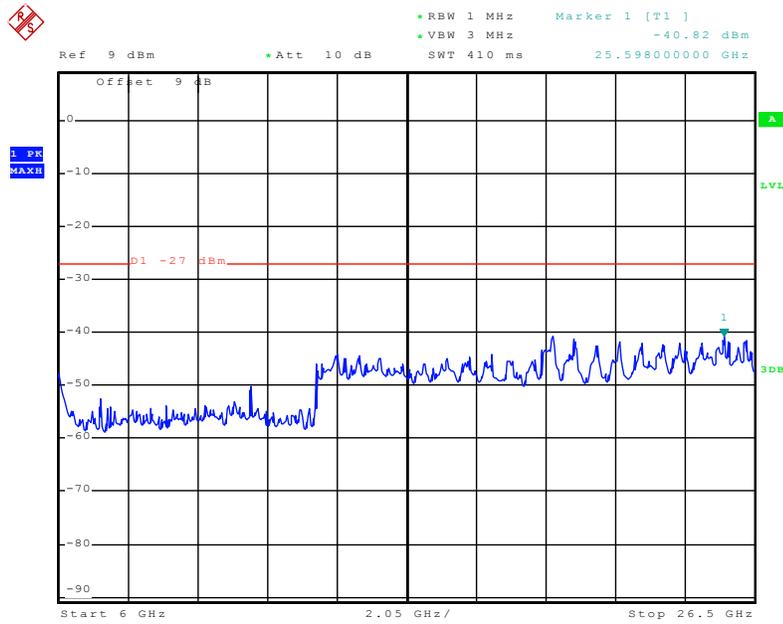
Date: 19.MAY.2015 16:29:35

Chain 1:802.11n ht20 High Channel 1GHz-6GHz



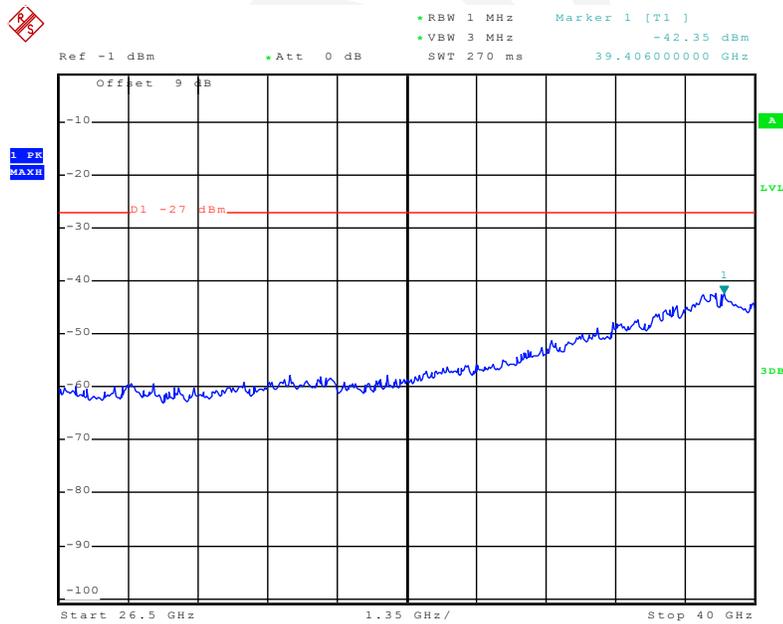
Date: 19.MAY.2015 16:29:52

Chain 1:802.11n ht20 High Channel 6GHz-26.5GHz



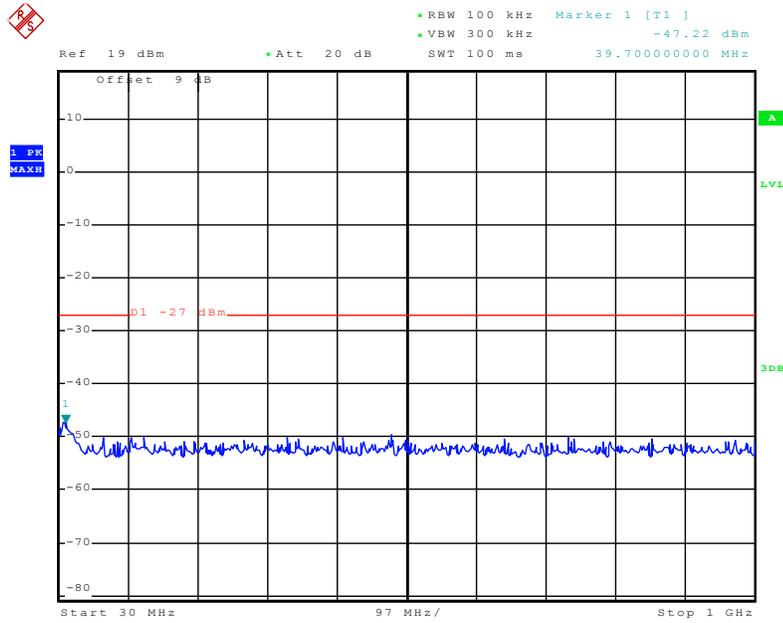
Date: 19.MAY.2015 16:30:22

Chain 1:802.11n ht20 High Channel 26.5GHz-40GHz



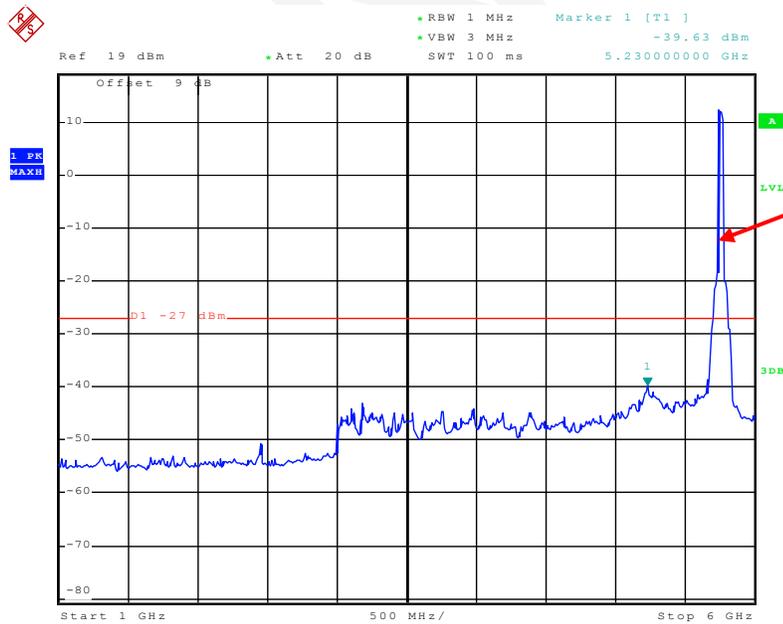
Date: 25.MAY.2015 14:10:52

Chain 1:802.11n ht40 Low Channel 30MHz-1GHz



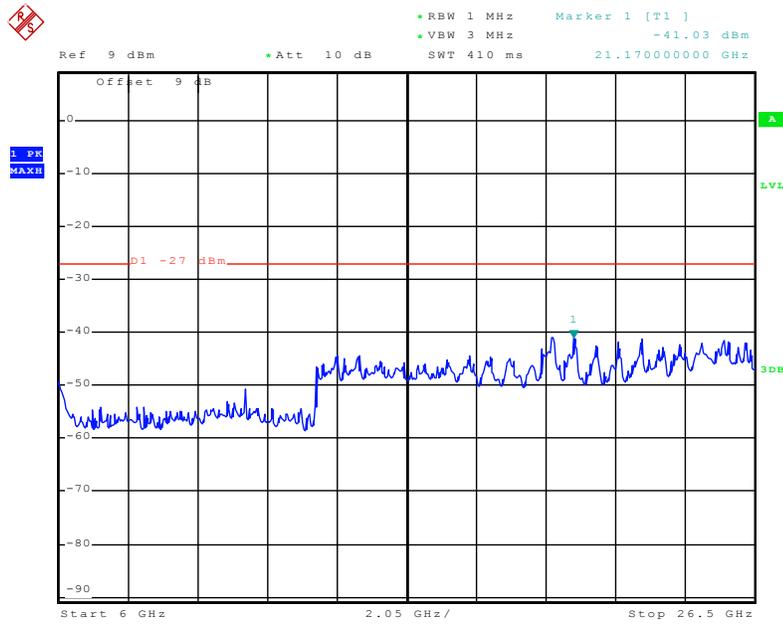
Date: 19.MAY.2015 16:33:44

Chain 1:802.11n ht40 Low Channel 1GHz-6GHz



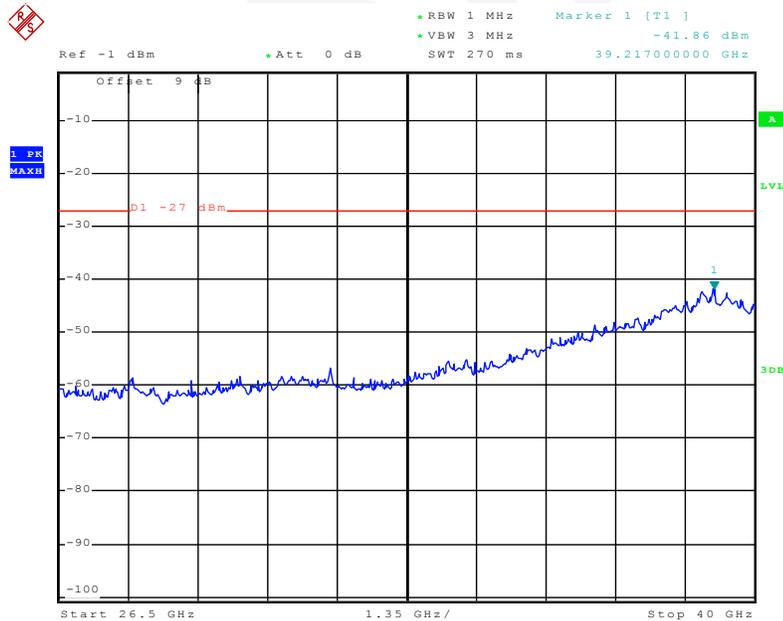
Date: 19.MAY.2015 16:33:26

Chain 1:802.11n ht40 Low Channel 6GHz-26.5GHz



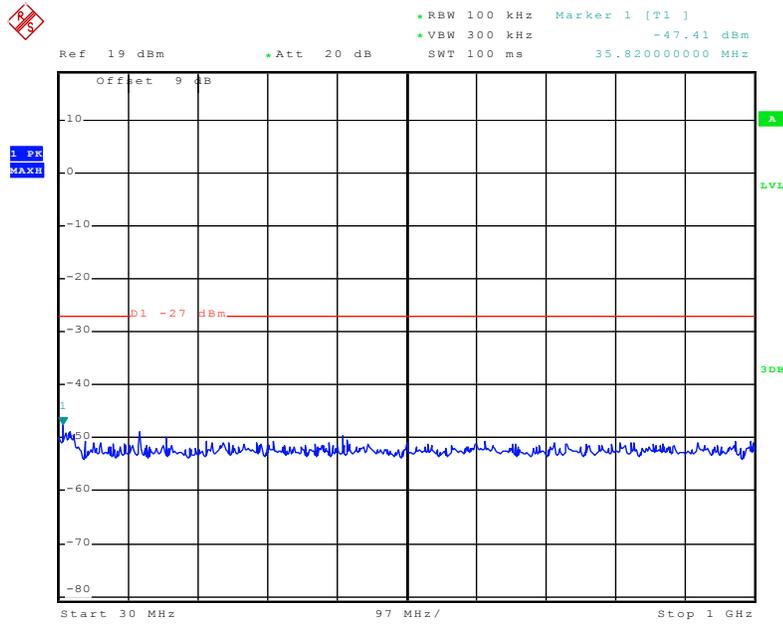
Date: 19.MAY.2015 16:32:43

Chain 1:802.11n ht40 Low Channel 26.5GHz-40GHz



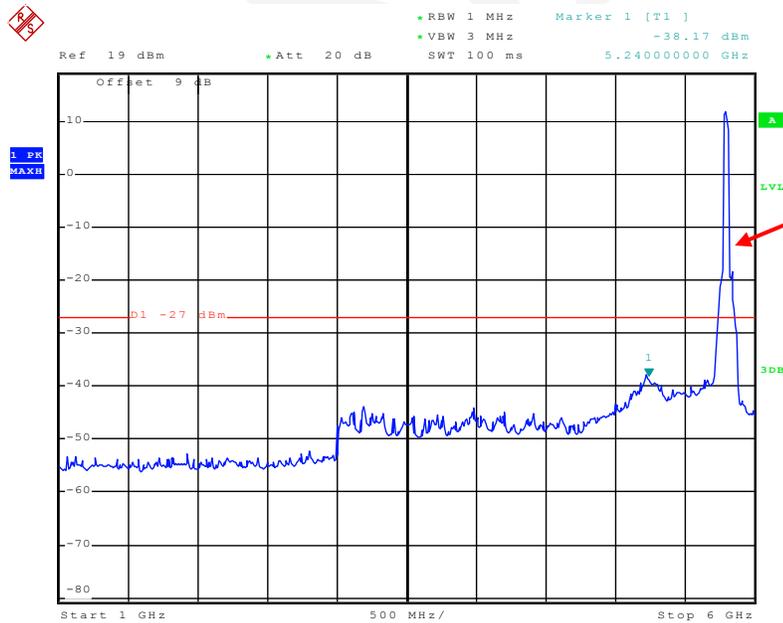
Date: 25.MAY.2015 14:11:12

Chain 1:802.11n ht40 High Channel 30MHz-1GHz



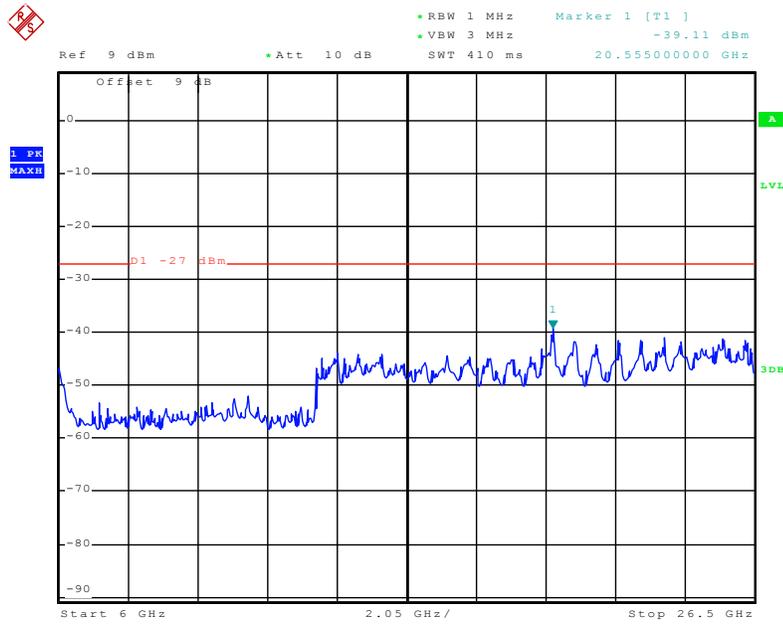
Date: 19.MAY.2015 16:34:02

Chain 1:802.11n ht40 High Channel 1GHz-6GHz



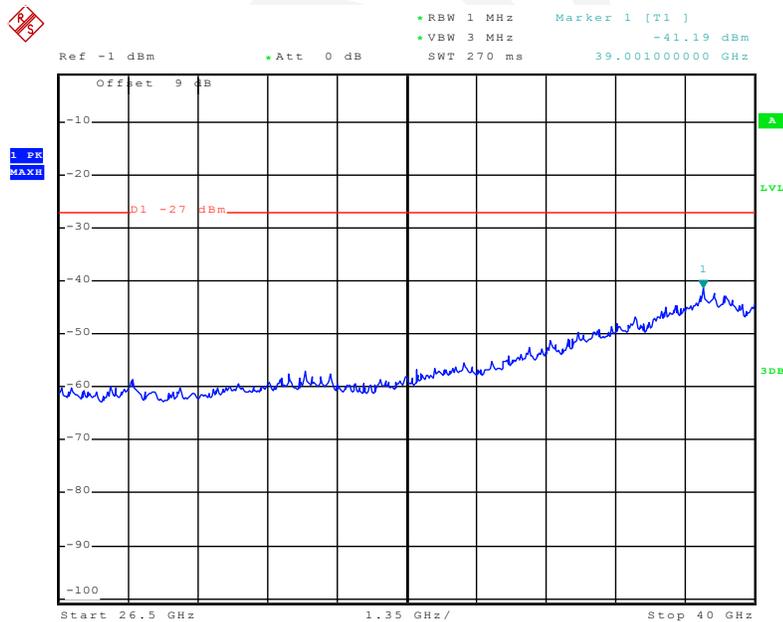
Date: 19.MAY.2015 16:34:18

Chain 1:802.11n ht40 High Channel 6GHz-26.5GHz



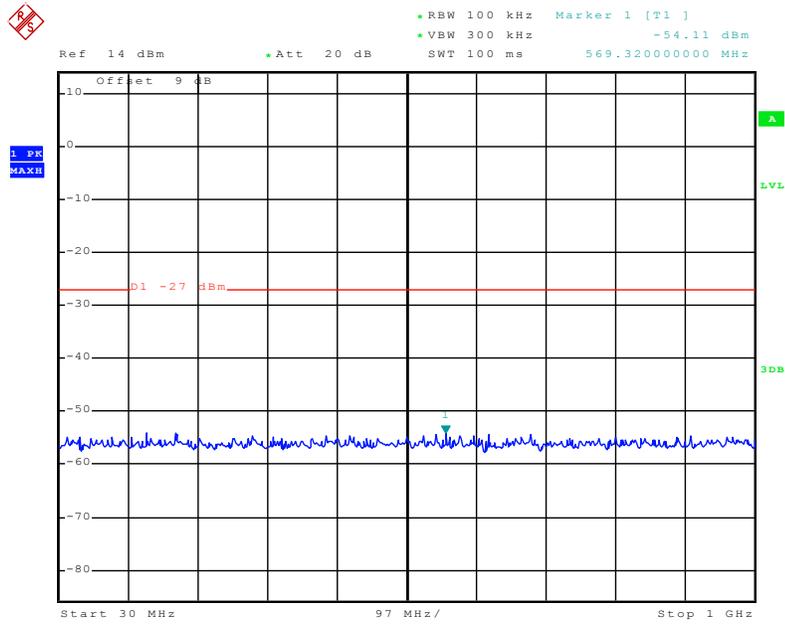
Date: 19.MAY.2015 16:34:33

Chain 1:802.11n ht40 High Channel 26.5GHz-40GHz



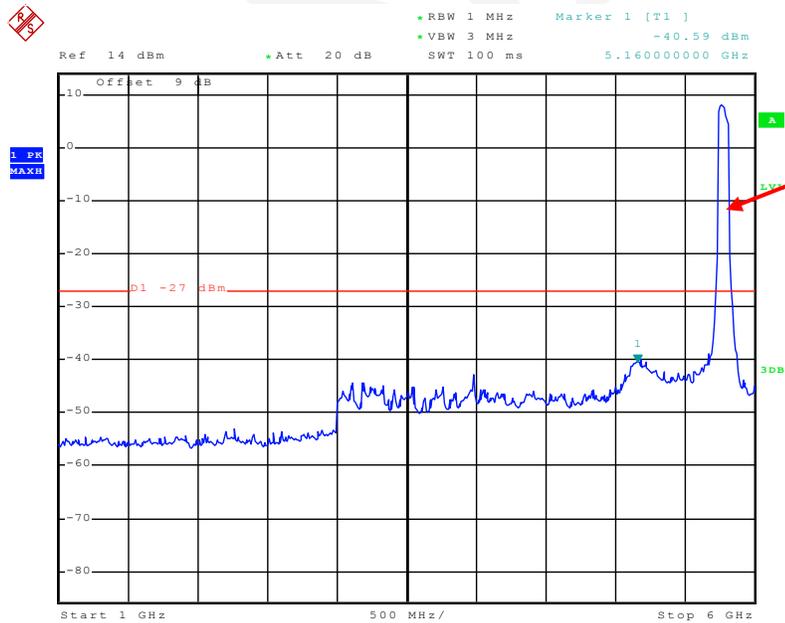
Date: 25.MAY.2015 14:11:07

Chain 1:802.11n ac80 Middle Channel 30MHz-1GHz



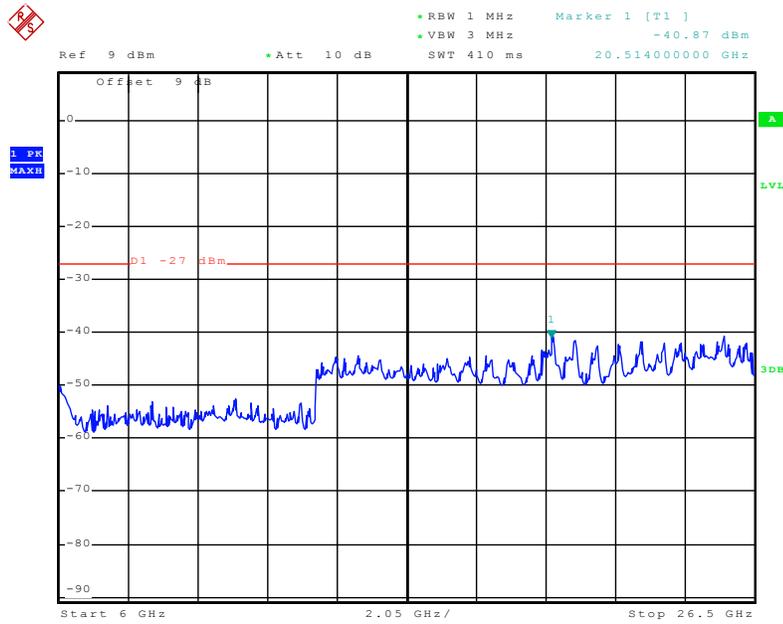
Date: 19.MAY.2015 16:48:39

Chain 1:802.11n ac80 Middle Channel 1GHz-6GHz



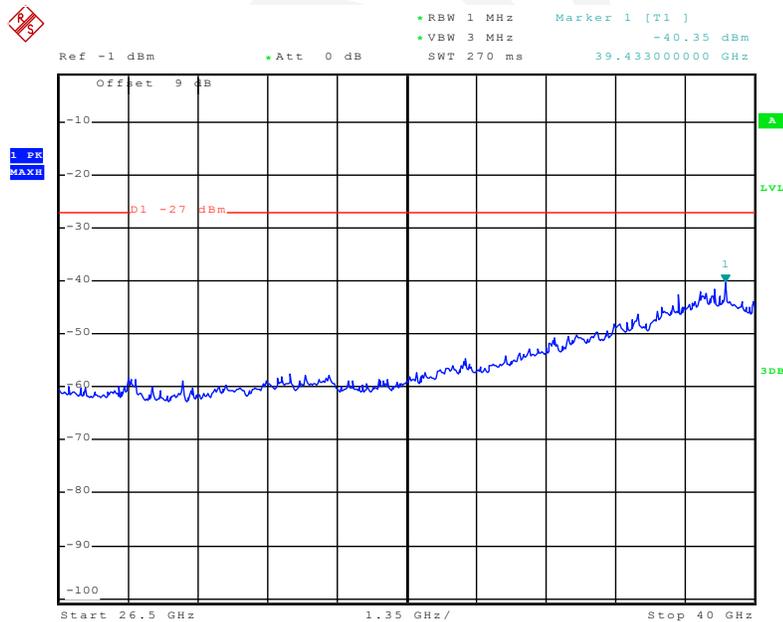
Date: 19.MAY.2015 16:49:01

Chain 1:802.11n ac80 Middle Channel 6GHz-26.5GHz



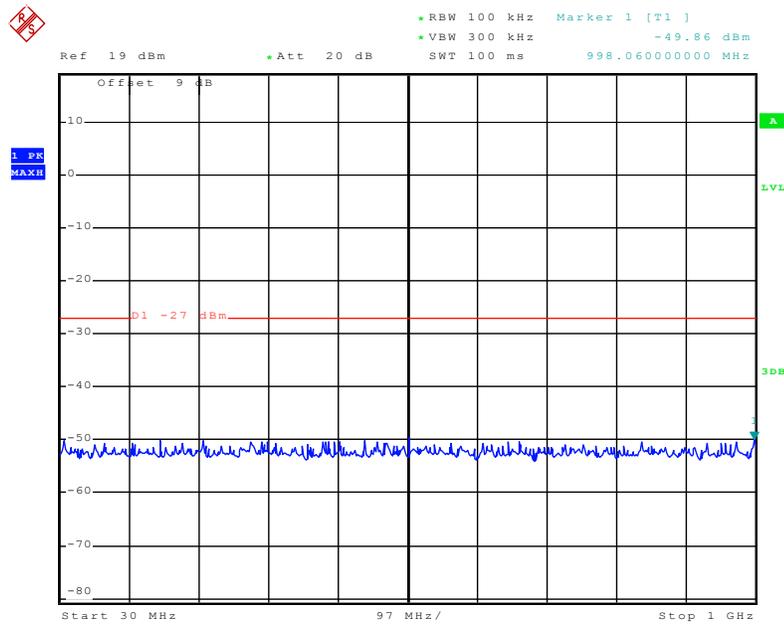
Date: 19.MAY.2015 16:49:16

Chain 1:802.11n ac80 Middle Channel 26.5GHz-40GHz



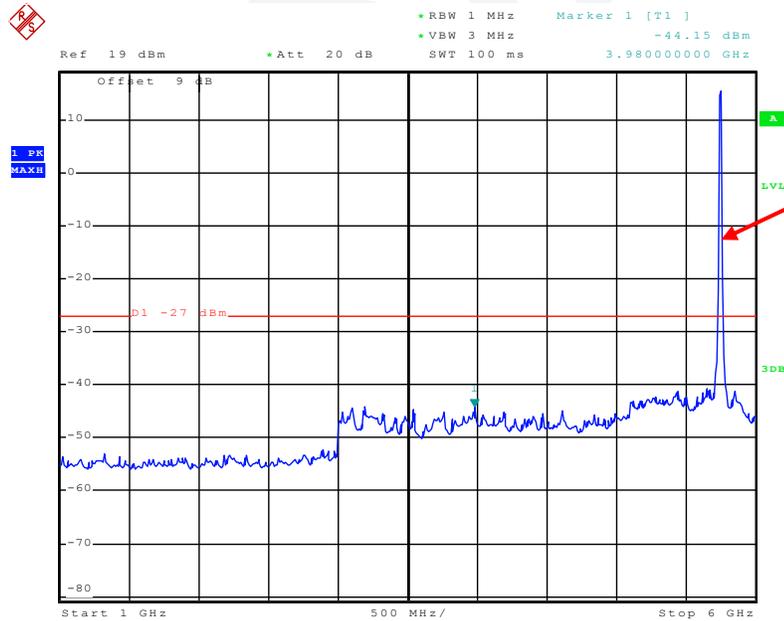
Date: 25.MAY.2015 14:10:47

Chain 2:802.11a Low Channel 30MHz-1GHz



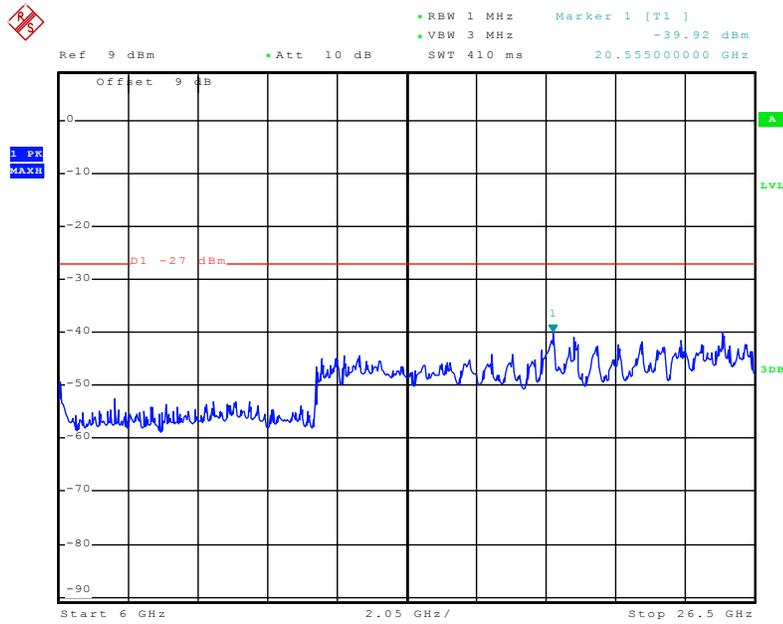
Date: 19.MAY.2015 16:26:09

Chain 2:802.11a Low Channel 1GHz-6GHz



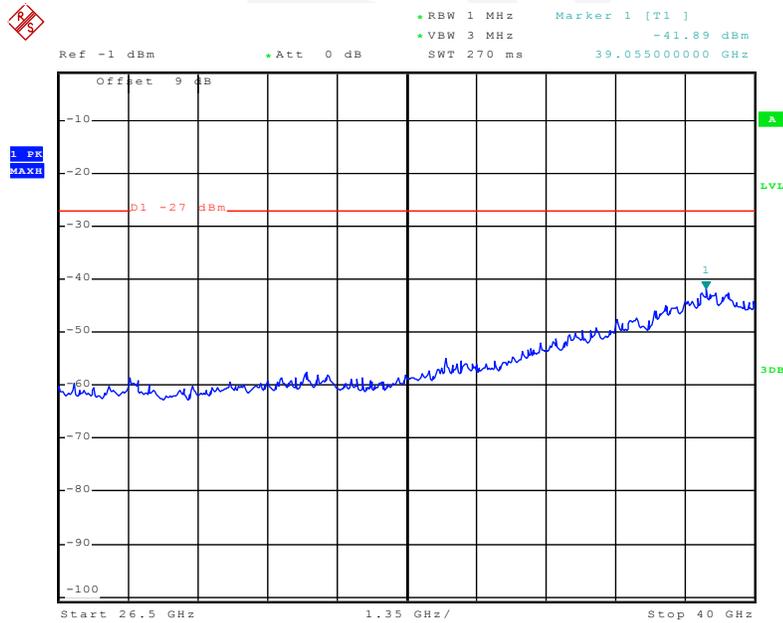
Date: 19.MAY.2015 16:26:24

Chain 2:802.11a Low Channel 6GHz-26.5GHz



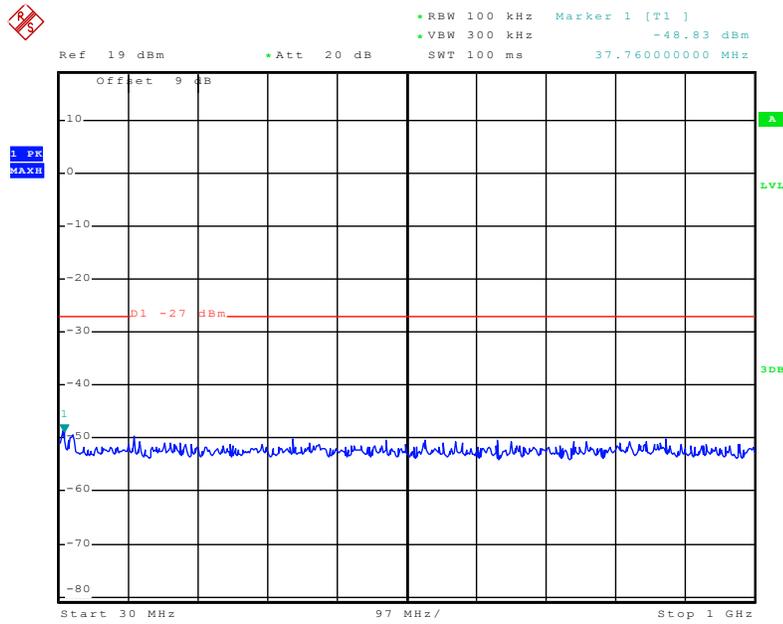
Date: 19.MAY.2015 16:26:36

Chain 2:802.11a Low Channel 26.5GHz-40GHz



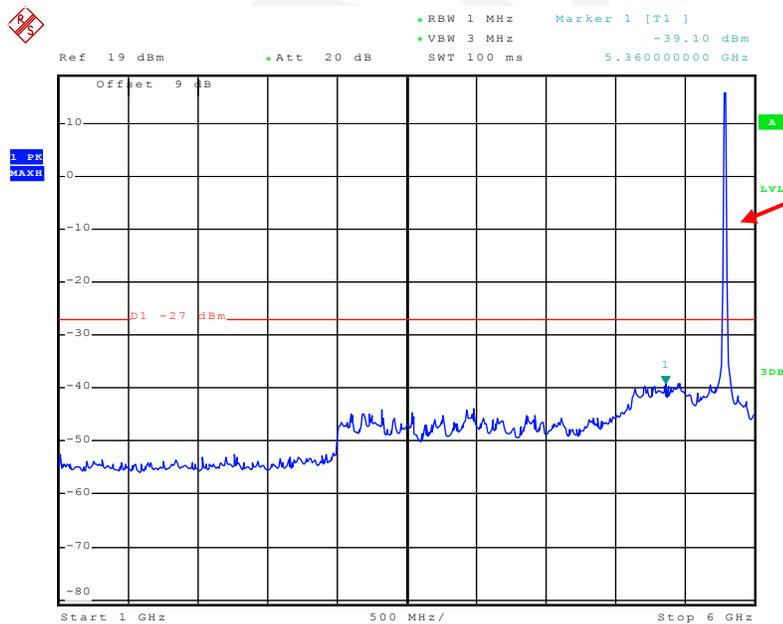
Date: 25.MAY.2015 14:11:21

Chain 2:802.11a Middle Channel 30MHz -1GHz



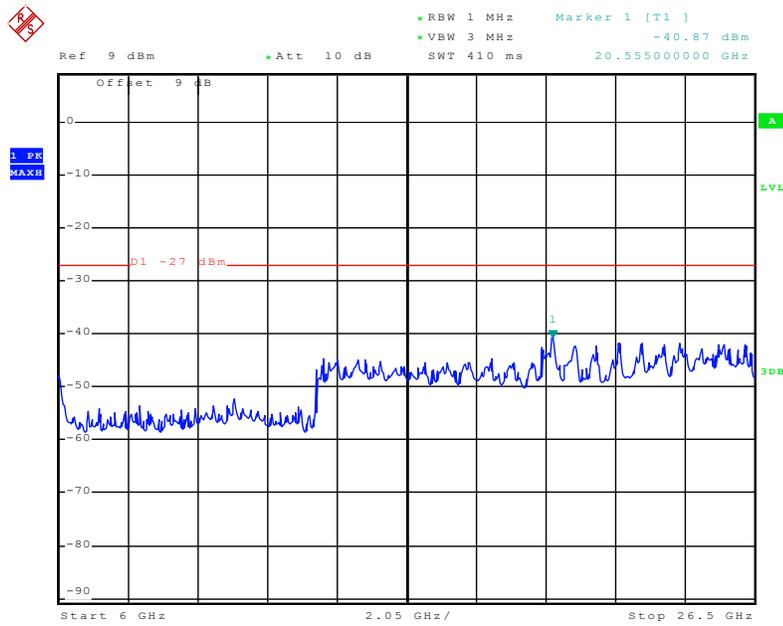
Date: 19.MAY.2015 16:25:46

Chain 2:802.11a Middle Channel 1GHz-6GHz



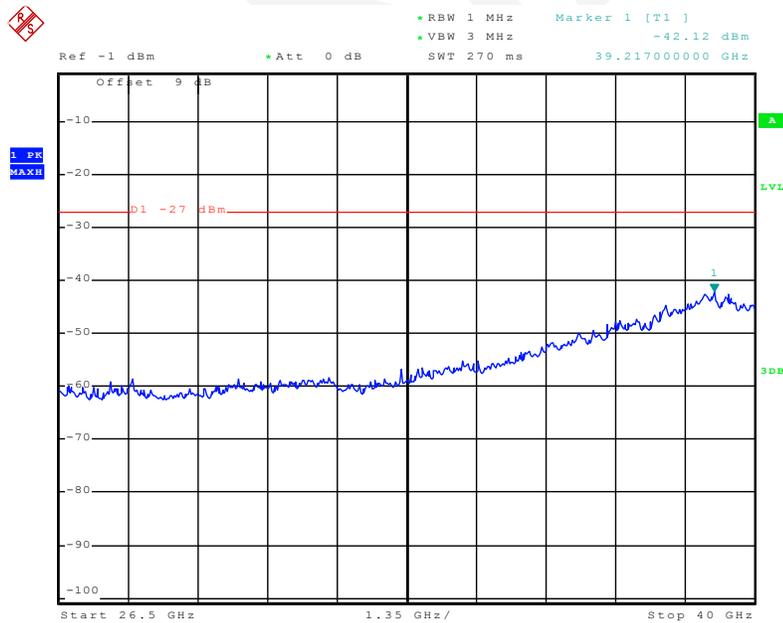
Date: 19.MAY.2015 16:25:21

Chain 2:802.11a Middle Channel 6GHz-26.5GHz



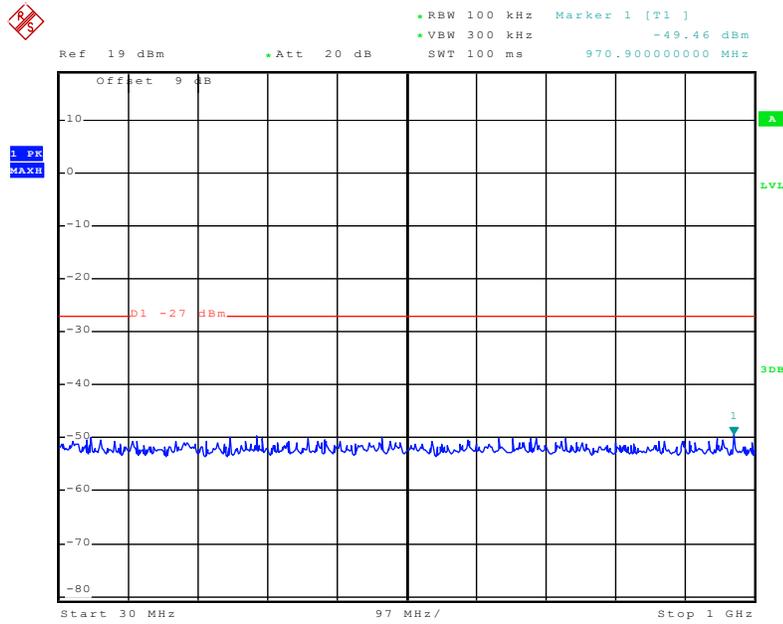
Date: 19.MAY.2015 16:25:01

Chain 2:802.11a Middle Channel 26.5GHz-40GHz



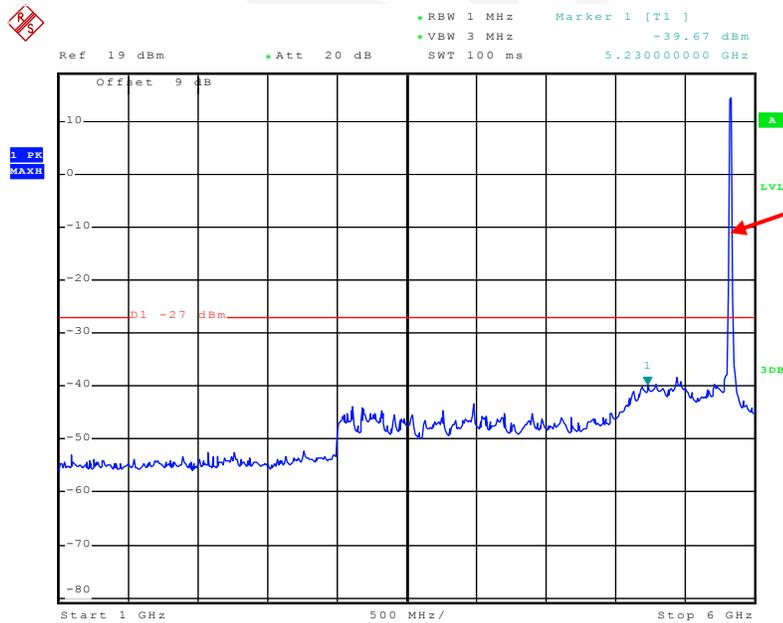
Date: 25.MAY.2015 14:11:28

Chain 2:802.11a High Channel 30MHz-1GHz



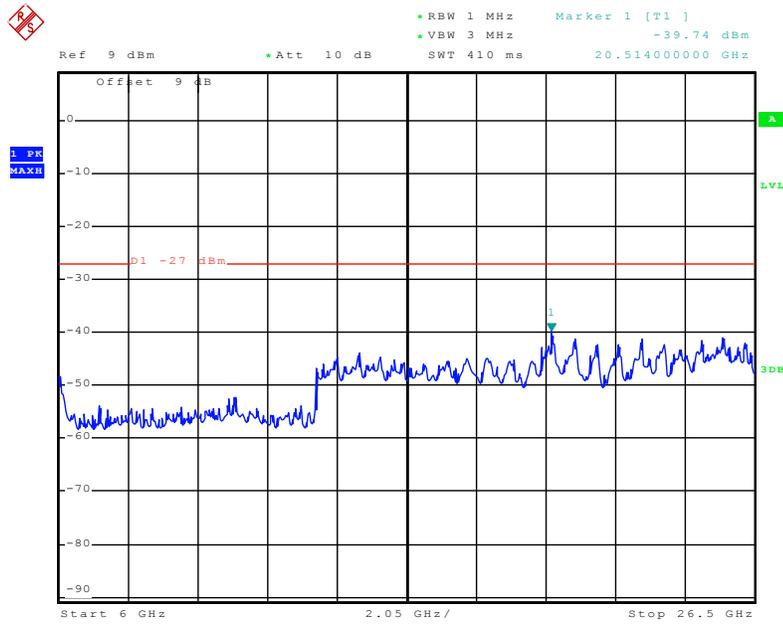
Date: 19.MAY.2015 16:24:10

Chain 2:802.11a High Channel 1GHz-6GHz



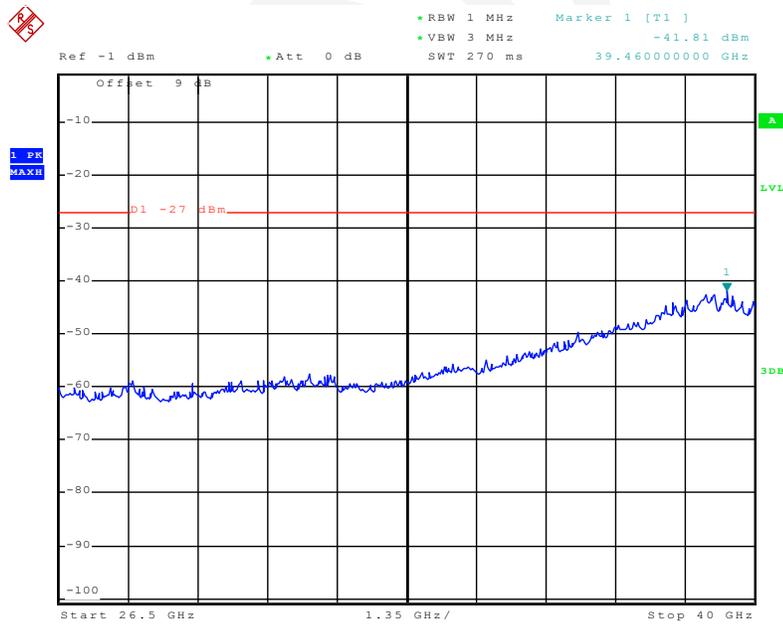
Date: 19.MAY.2015 16:24:29

Chain 2:802.11a High Channel 6GHz-26.5GHz



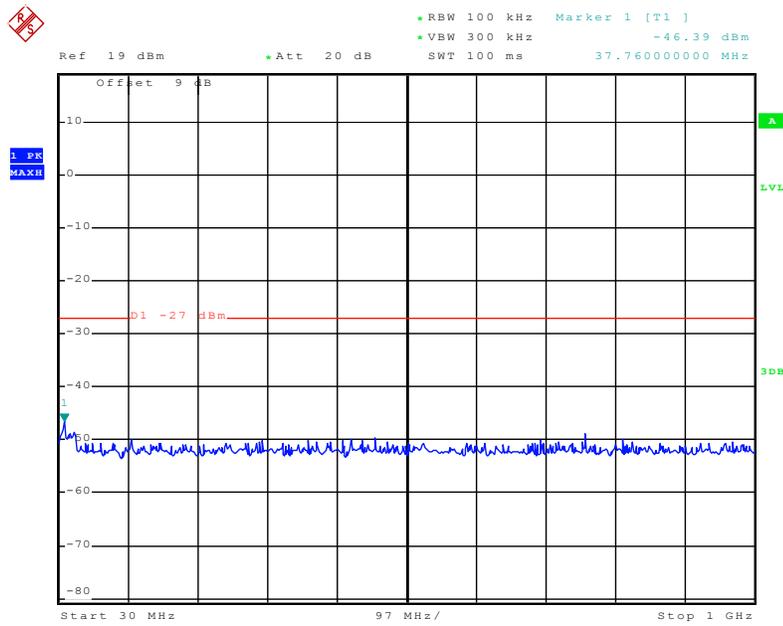
Date: 19.MAY.2015 16:24:43

Chain 2:802.11a High Channel 26.5GHz-40GHz



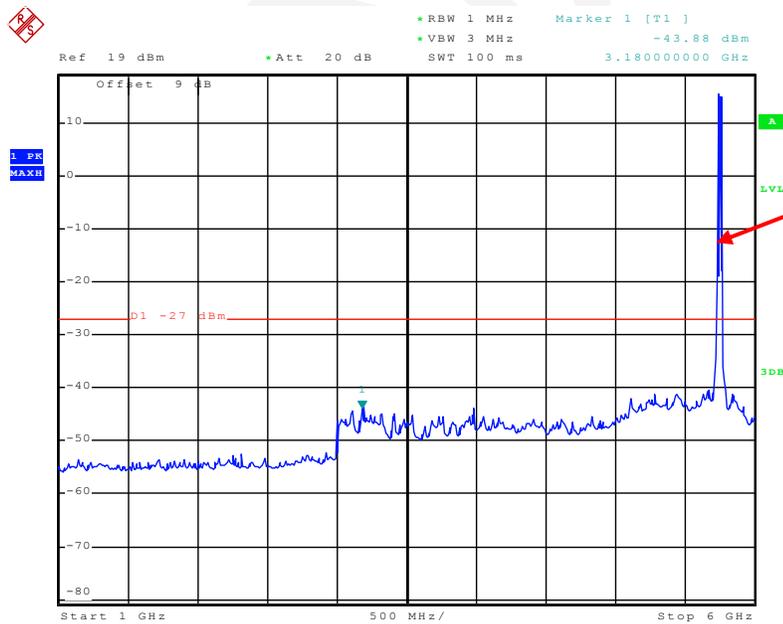
Date: 25.MAY.2015 14:11:17

Chain 2:802.11n ht20 Low Channel 30MHz-1GHz



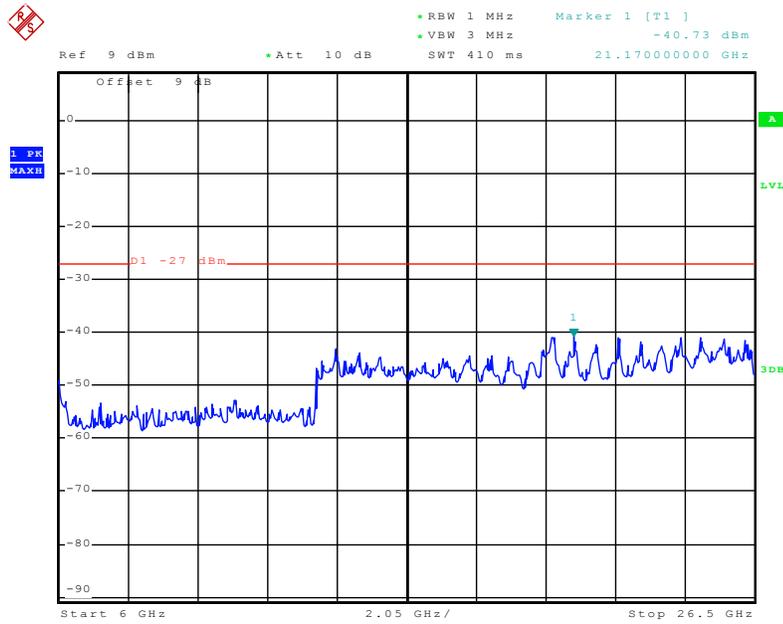
Date: 19.MAY.2015 16:21:39

Chain 2:802.11n ht20 Low Channel 1GHz-6GHz



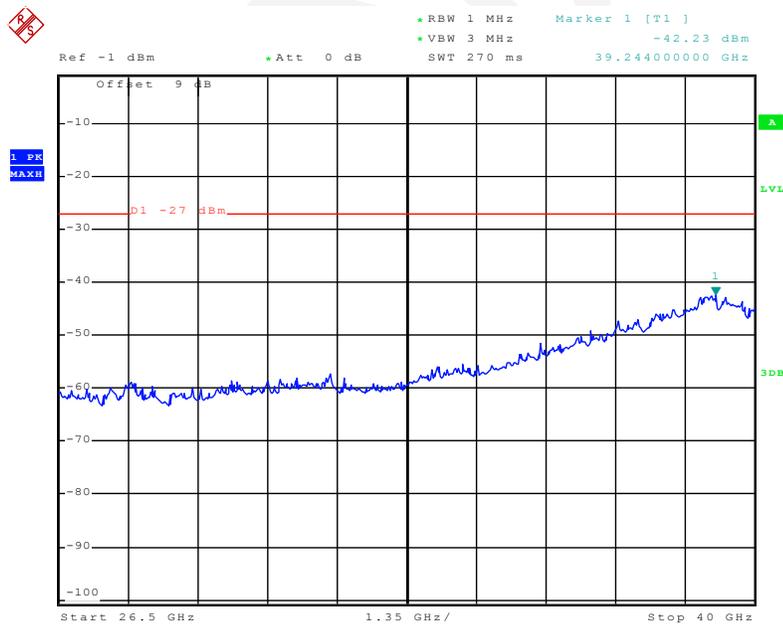
Date: 19.MAY.2015 16:21:25

Chain 2:802.11n ht20 Low Channel 6GHz-26.5GHz



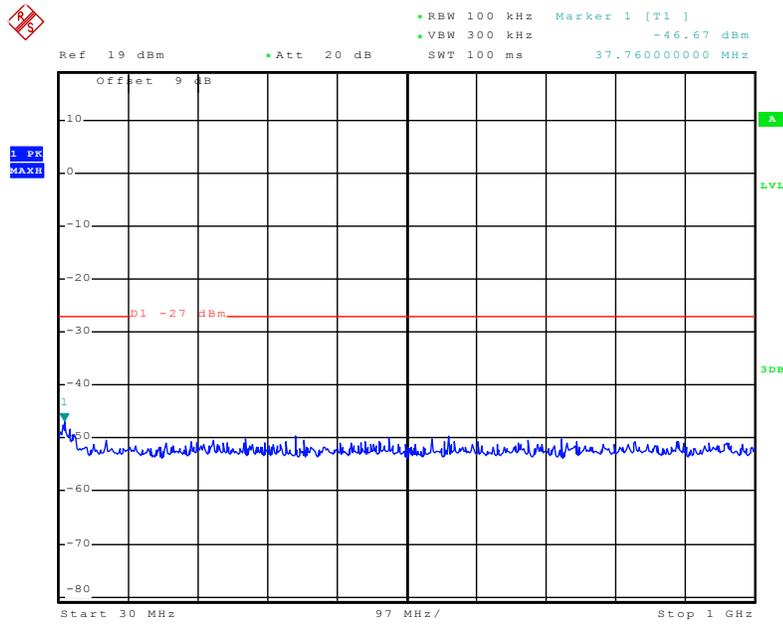
Date: 19.MAY.2015 16:21:04

Chain 2:802.11n ht20 Low Channel 26.5GHz-40GHz



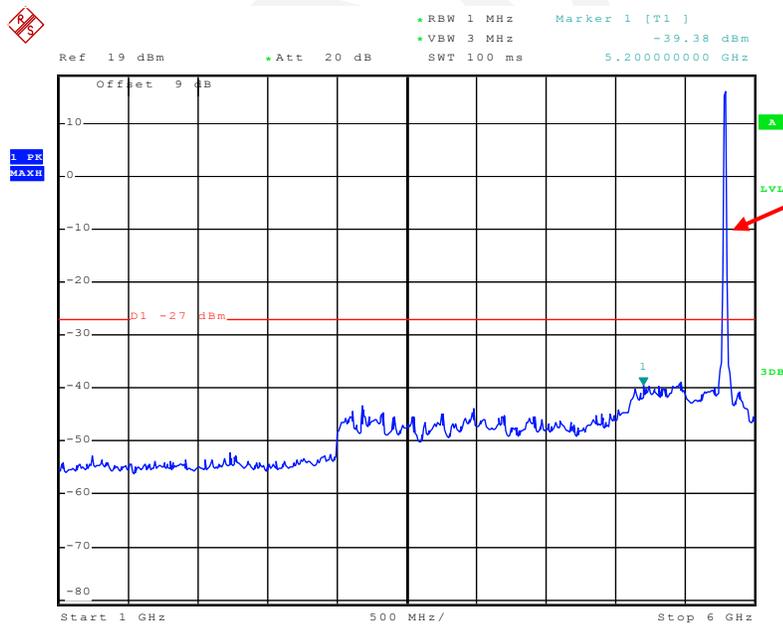
Date: 25.MAY.2015 14:11:43

Chain 2:802.11n ht20 Middle Channel 30MHz -1GHz



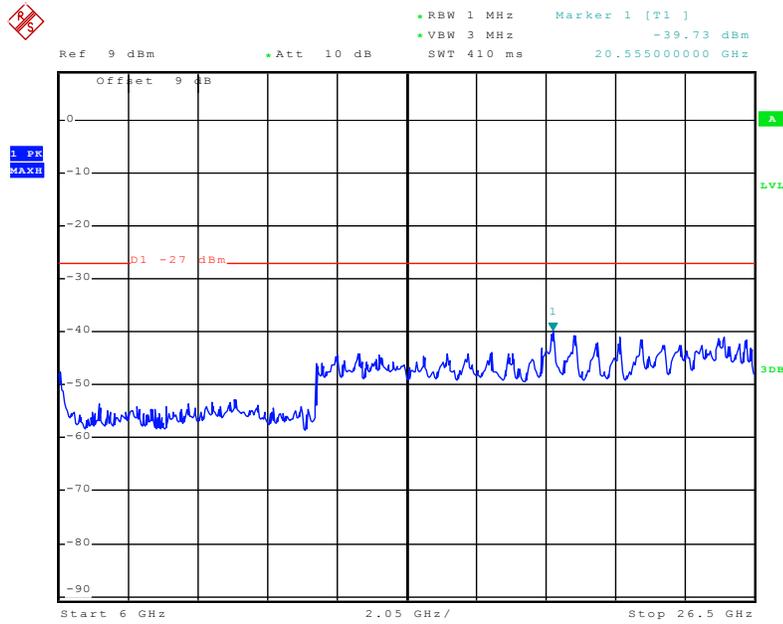
Date: 19.MAY.2015 16:22:01

Chain 2:802.11n ht20 Middle Channel 1GHz-6GHz



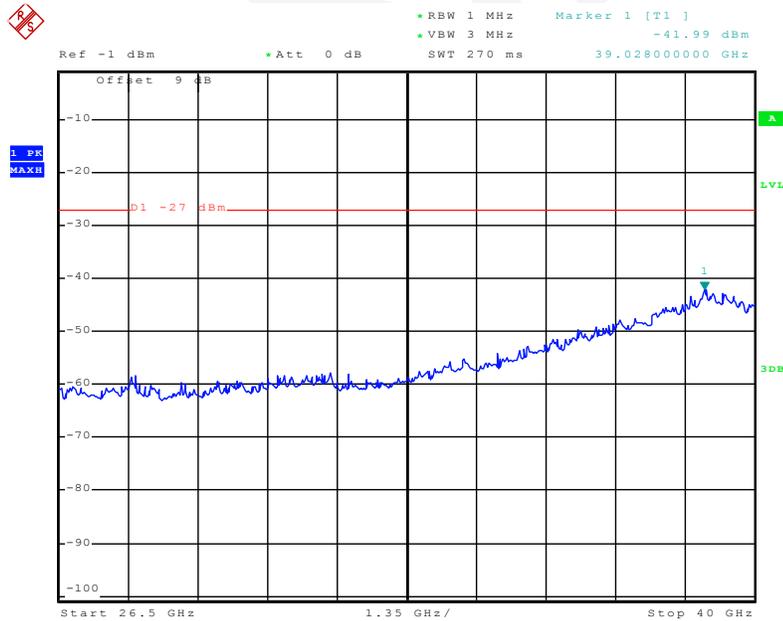
Date: 19.MAY.2015 16:22:18

Chain 2:802.11n ht20 Middle Channel 6GHz-26.5GHz



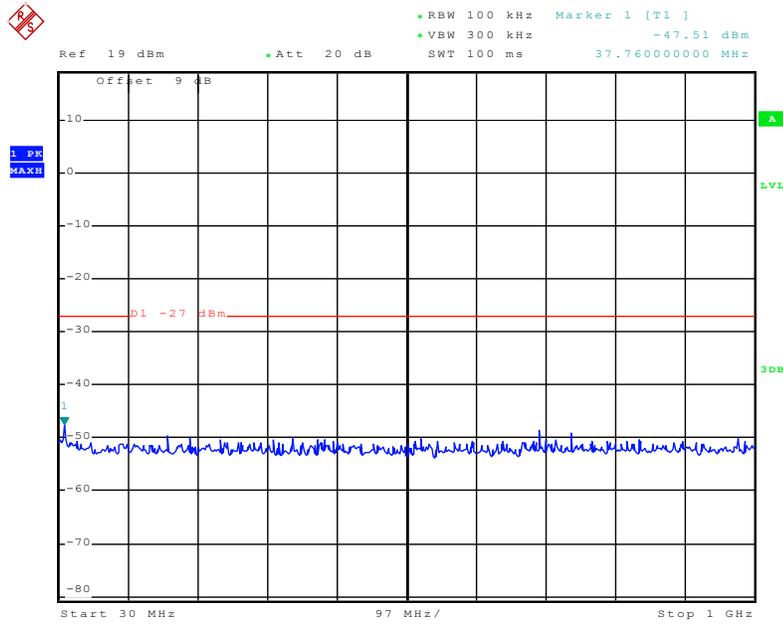
Date: 19.MAY.2015 16:22:40

Chain 2:802.11n ht20 Middle Channel 26.5GHz-40GHz



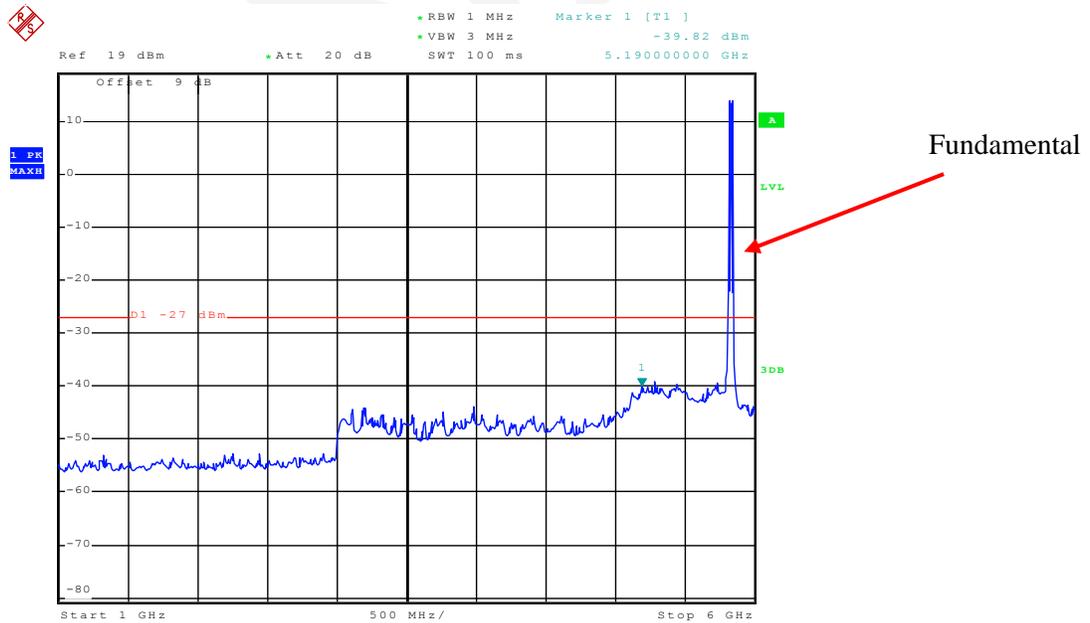
Date: 25.MAY.2015 14:11:48

Chain 2:802.11n ht20 High Channel 30MHz-1GHz



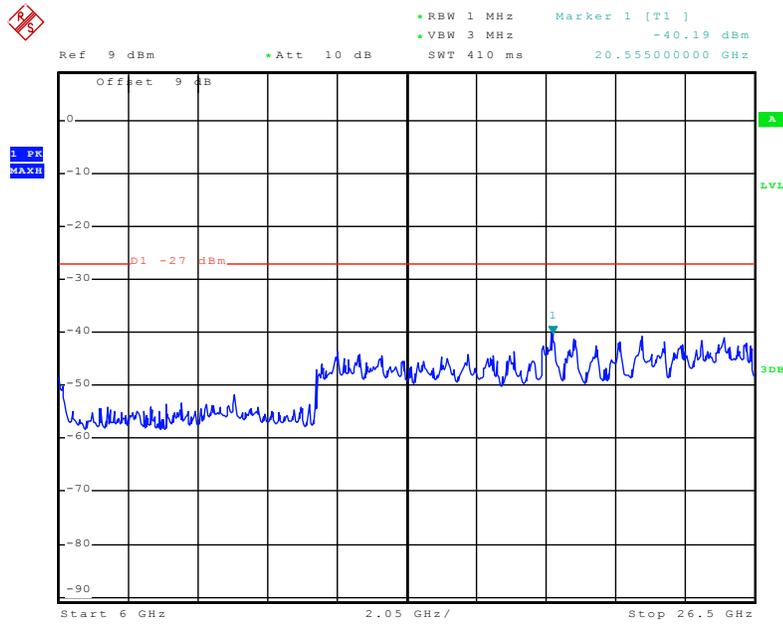
Date: 19.MAY.2015 16:23:42

Chain 2:802.11n ht20 High Channel 1GHz-6GHz



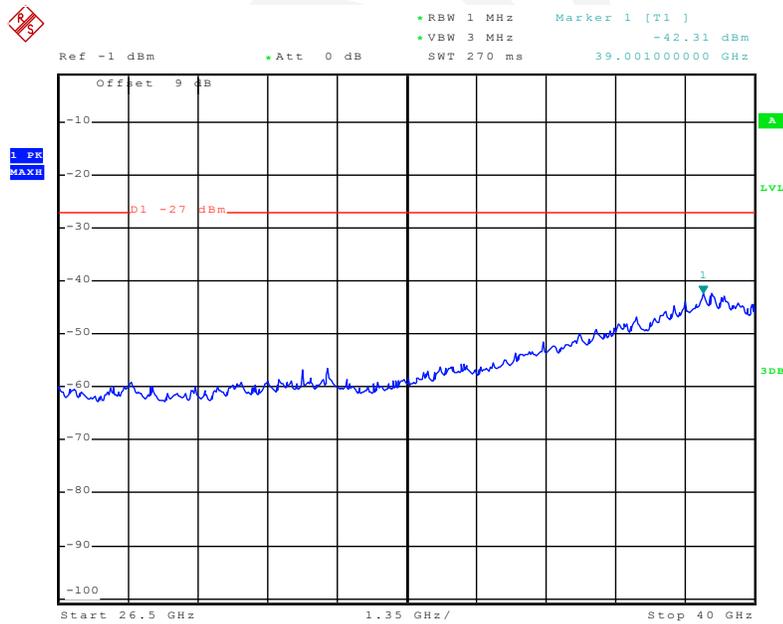
Date: 19.MAY.2015 16:23:28

Chain 2:802.11n ht20 High Channel 6GHz-26.5GHz



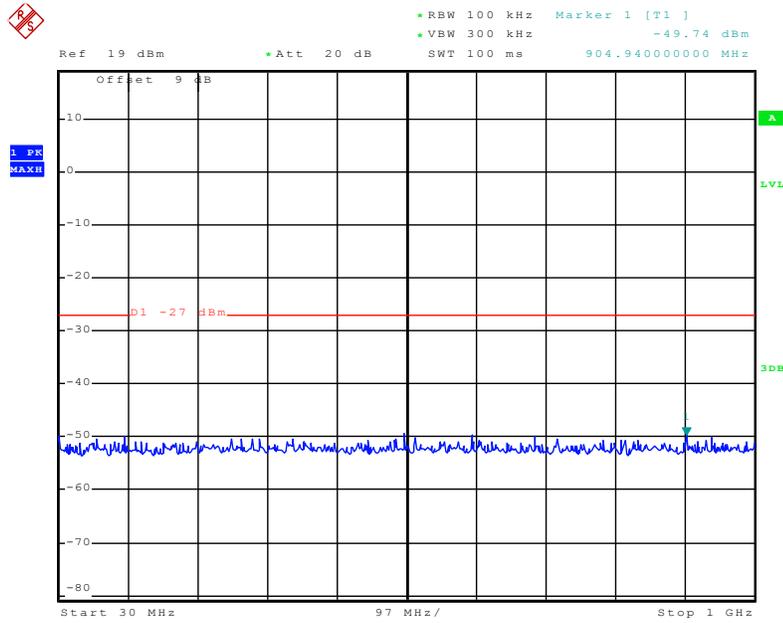
Date: 19.MAY.2015 16:23:11

Chain 2:802.11n ht20 High Channel 26.5GHz-40GHz



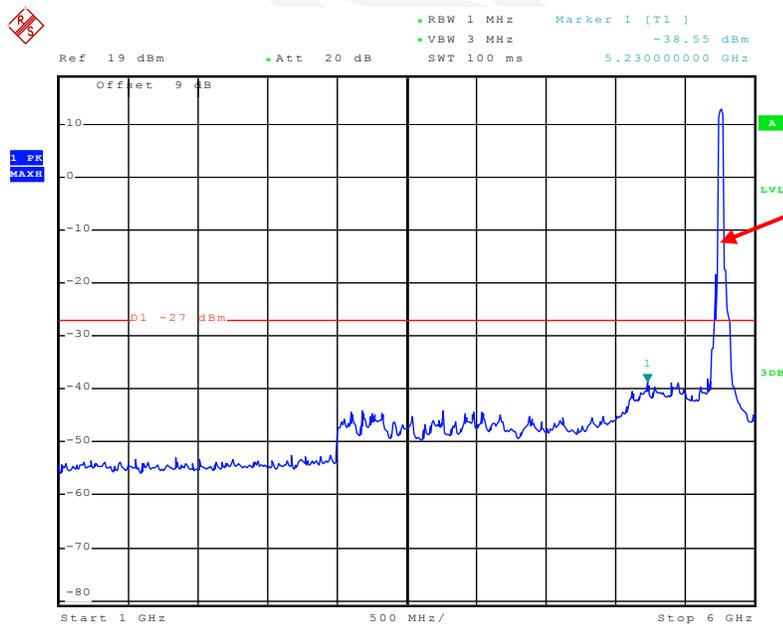
Date: 25.MAY.2015 14:11:39

Chain 2:802.11n ht40 Low Channel 30MHz-1GHz



Date: 19.MAY.2015 16:19:41

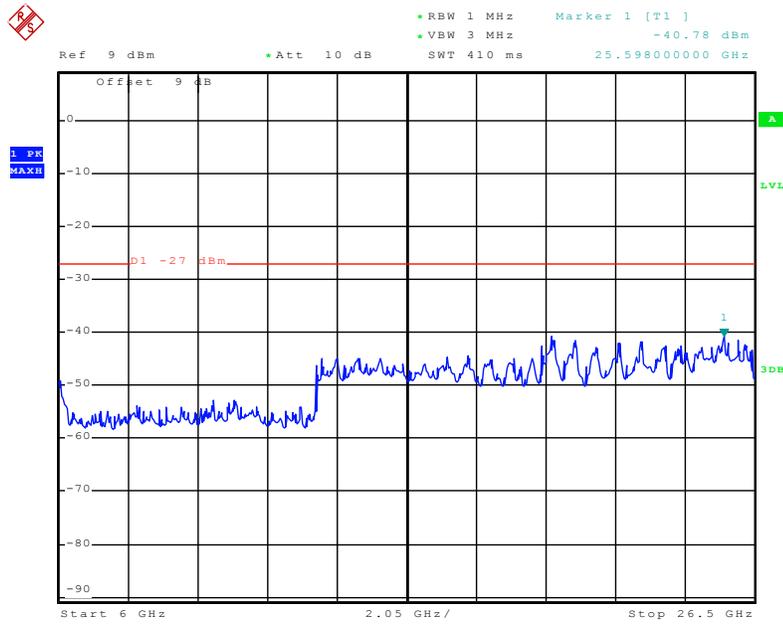
Chain 2:802.11n ht40 Low Channel 1GHz-6GHz



Fundamental

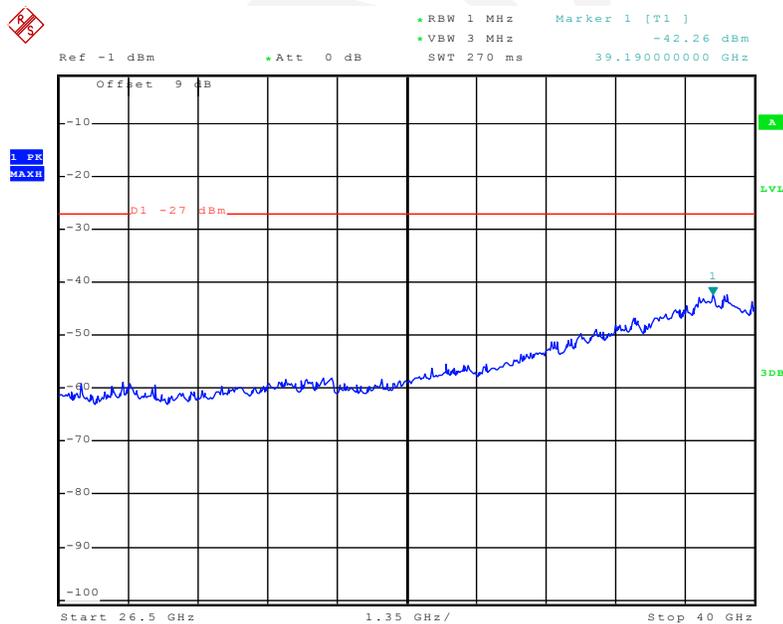
Date: 19.MAY.2015 16:19:16

Chain 2:802.11n ht40 Low Channel 6GHz-26.5GHz



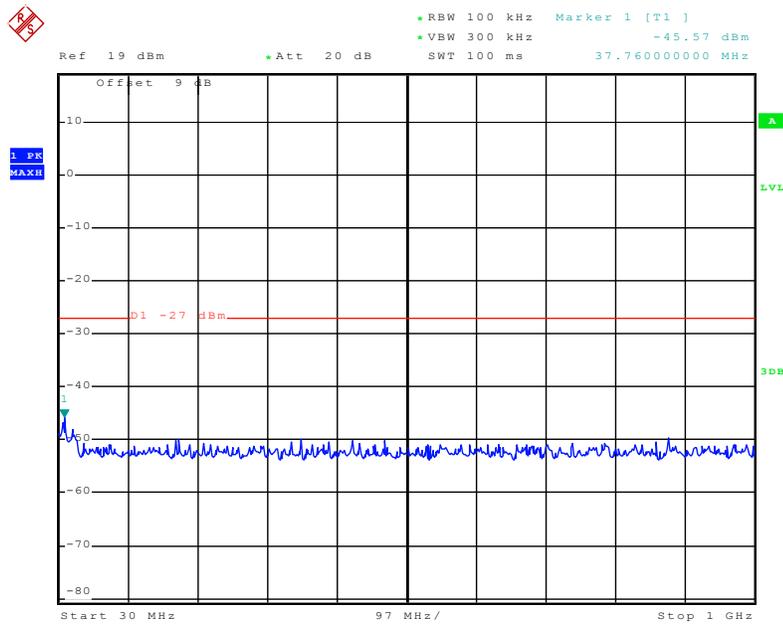
Date: 19.MAY.2015 16:18:55

Chain 2:802.11n ht40 Low Channel 26.5GHz-40GHz



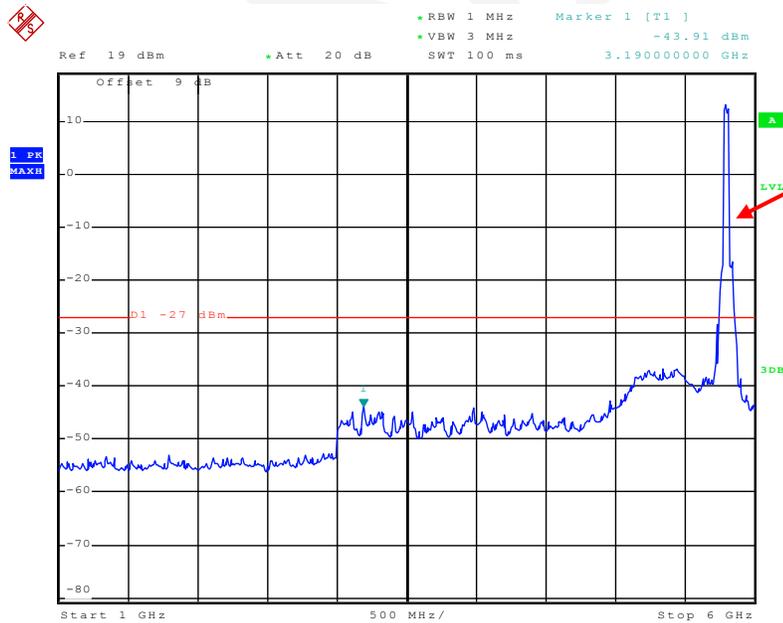
Date: 25.MAY.2015 14:11:59

Chain 2:802.11n ht40 High Channel 30MHz-1GHz



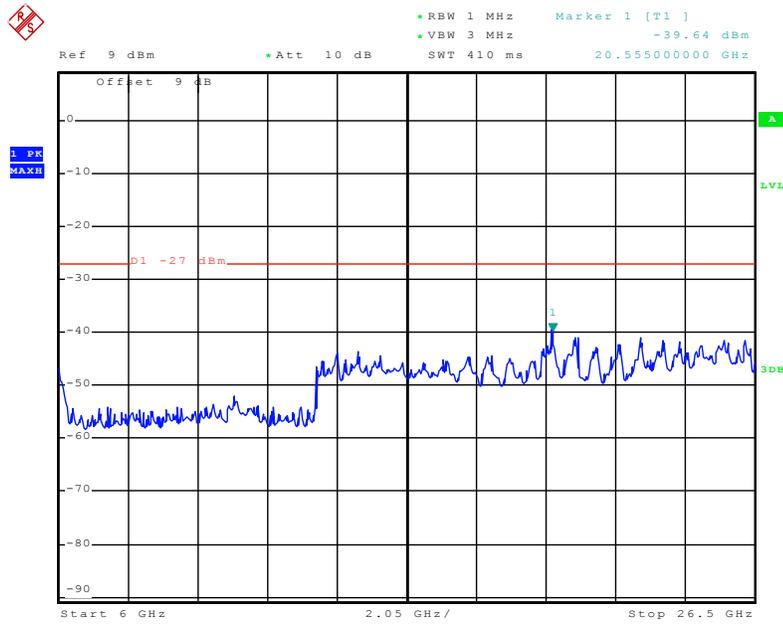
Date: 19.MAY.2015 16:20:00

Chain 2:802.11n ht40 High Channel 1GHz-6GHz



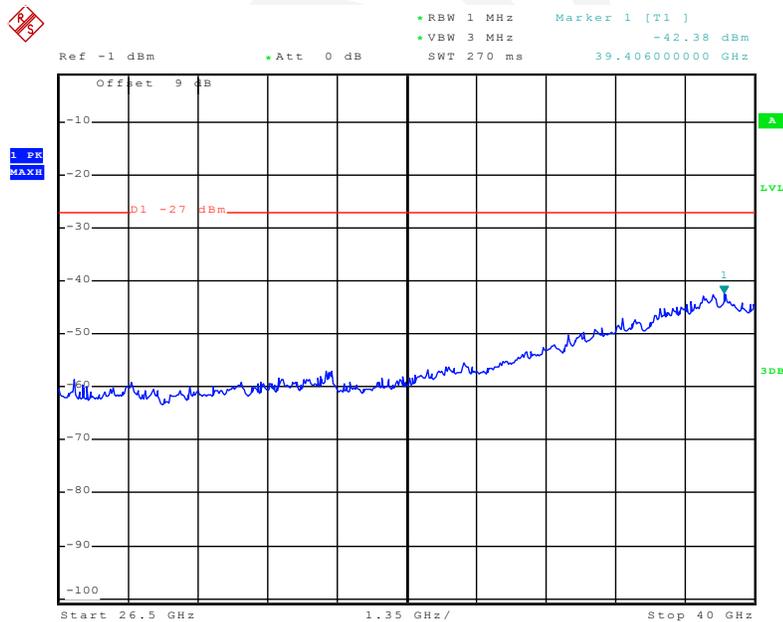
Date: 19.MAY.2015 16:20:14

Chain 2:802.11n ht40 High Channel 6GHz-26.5GHz



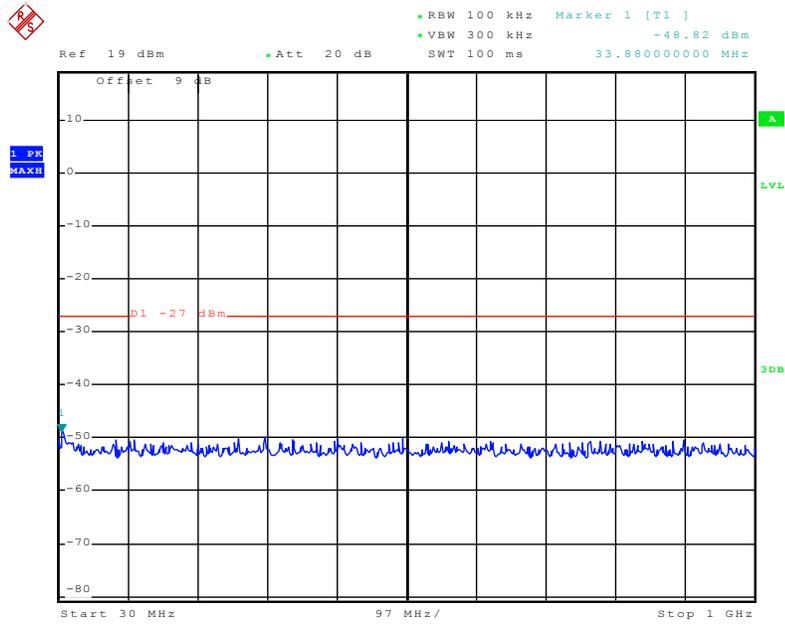
Date: 19.MAY.2015 16:20:30

Chain 2:802.11n ht40 High Channel 26.5GHz-40GHz



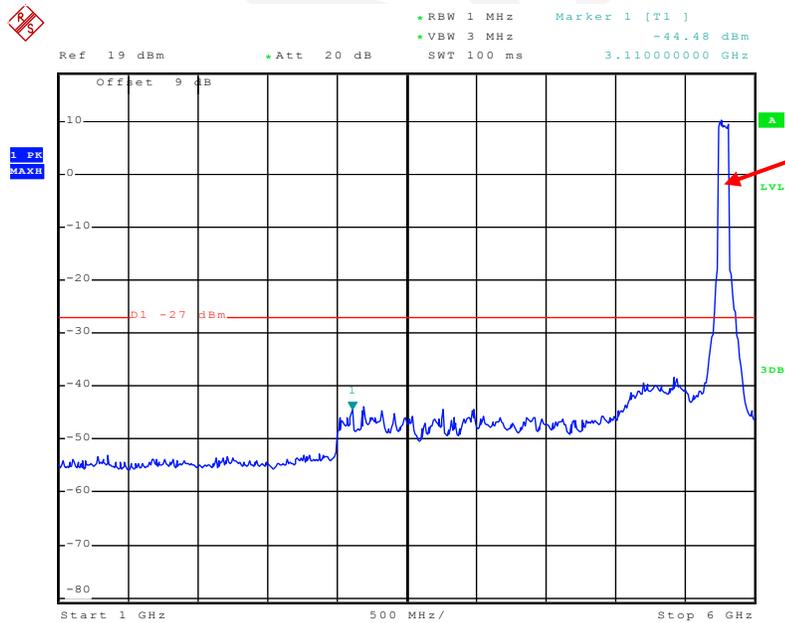
Date: 25.MAY.2015 14:11:53

Chain 2:802.11n ac80 Middle Channel 30MHz-1GHz



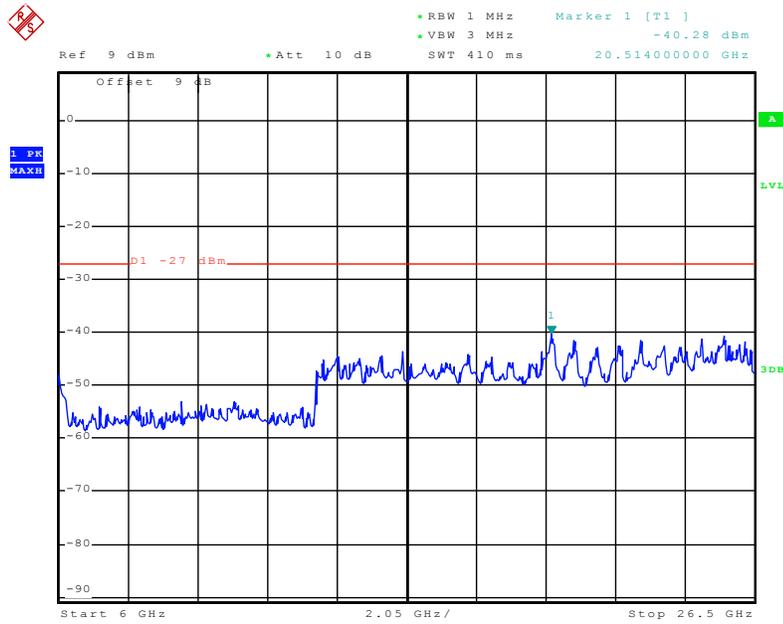
Date: 19.MAY.2015 16:17:50

Chain 2:802.11n ac80 Middle Channel 1GHz-6GHz



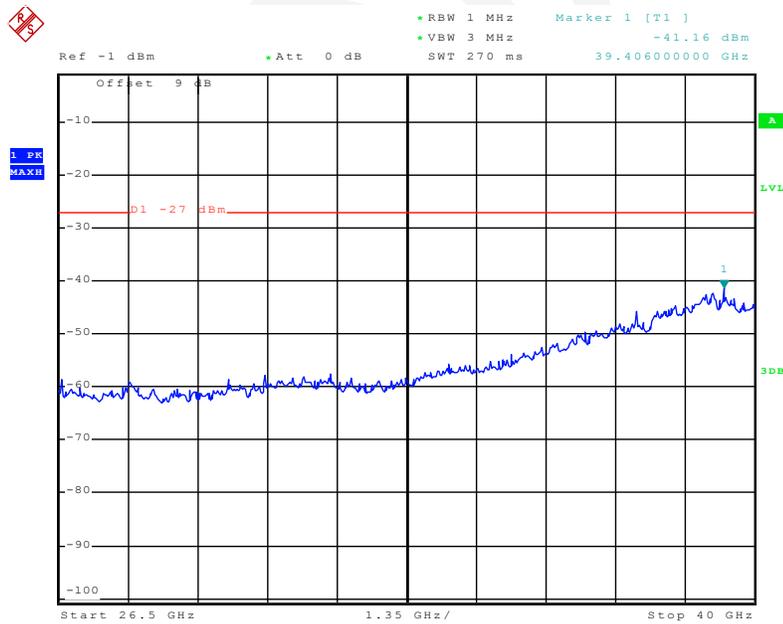
Date: 19.MAY.2015 16:18:09

Chain 2:802.11n ac80 Middle Channel 6GHz-26.5GHz



Date: 19.MAY.2015 16:18:22

Chain 2:802.11n ac80 Middle Channel 26.5GHz-40GHz



Date: 25.MAY.2015 14:11:34

FCC §15.407(a) –EMISSION BANDWIDTH**Applicable Standard**

15.407(a)

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

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

Test Data**Environmental Conditions**

Temperature:	25.1°C ~25.5 °C
Relative Humidity:	54%~57 %
ATM Pressure:	99.9 kPa ~100.2 kPa

The testing was performed by Allen Qiao from 2015-05-16 to 2015-05-18.

Test Result: Pass.

Please refer to the following tables and plots.

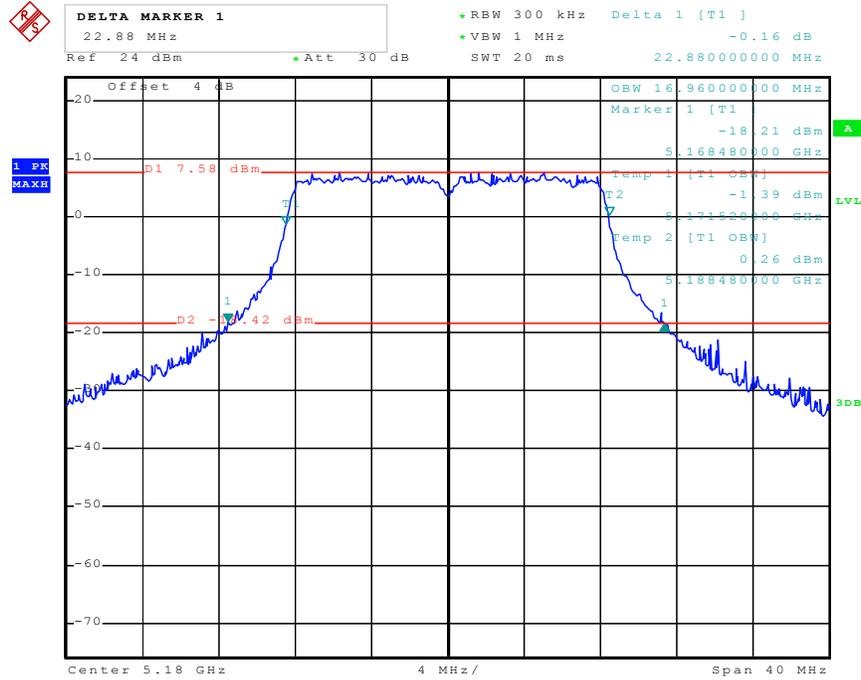
Test mode: Transmitting

UNII Band	Mode	Channel	Frequency (MHz)	26dB EBW(MHz)		
				Chain 0	Chain 1	Chain 2
5150-5250MHz	802.11 a	Low	5180	22.88	22.88	23.04
		Middle	5200	22.8	22.96	22.72
		High	5240	22.88	22.48	23.04
	802.11 n20	Low	5180	23.76	23.44	23.76
		Middle	5200	23.68	23.76	23.92
		High	5240	23.84	23.36	24.08
	802.11 n40	Low	5190	43.84	43.52	43.36
		High	5230	43.36	43.2	43.68
	802.11 ac80	Middle	5210	84.48	84.8	84.16

UNII Band	Mode	Channel	Frequency (MHz)	6dB EBW(MHz)			Limit (MHz)
				Chain 0	Chain 1	Chain 2	
5725-5850MHz	802.11 a	Low	5745	16.56	16.56	16.64	0.5
		Middle	5785	16.56	16.64	16.64	0.5
		High	5825	16.56	16.64	16.64	0.5
	802.11 n20	Low	5745	17.84	17.84	17.84	0.5
		Middle	5785	17.84	17.84	17.84	0.5
		High	5825	17.76	17.84	17.84	0.5
	802.11 n40	Low	5755	36.64	36.64	36.64	0.5
		High	5795	36.64	36.64	36.64	0.5
	802.11 ac80	Middle	5775	75.84	74.88	76.16	0.5

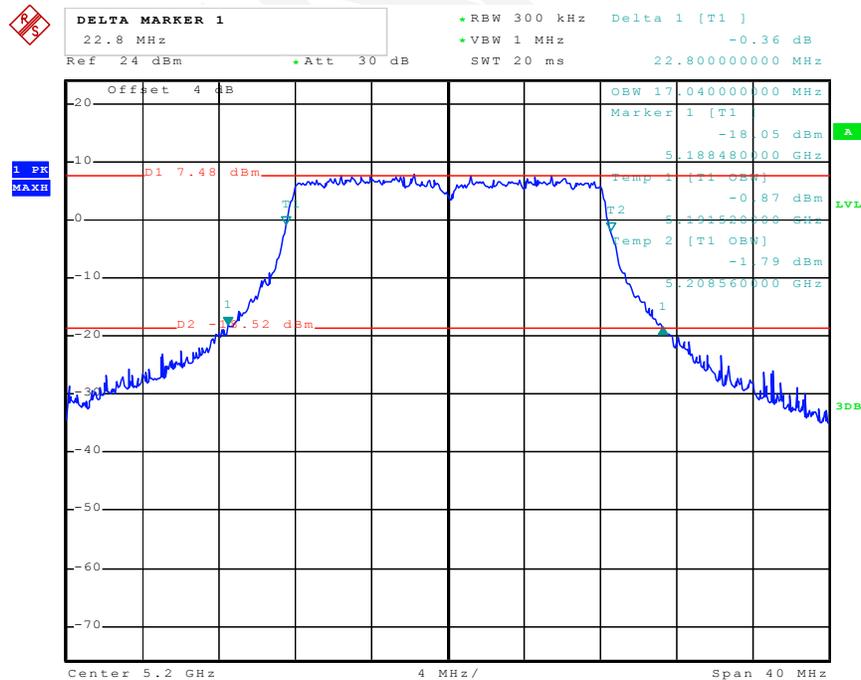
26dB EBW:
5150MHz-5250MHz:

Chain 0:802.11a Low Channel



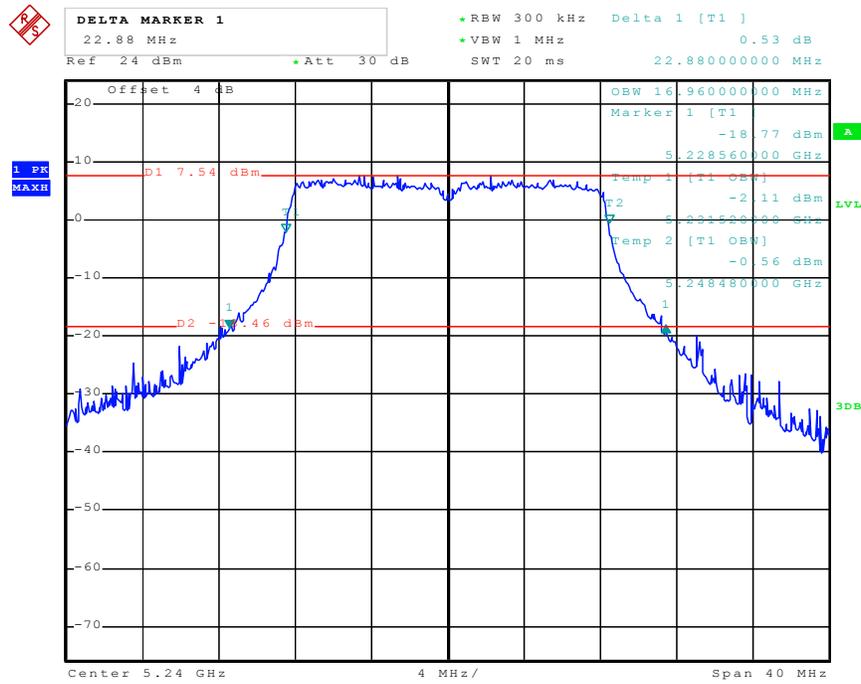
Date: 18.MAY.2015 12:38:41

Chain 0:802.11a Middle Channel



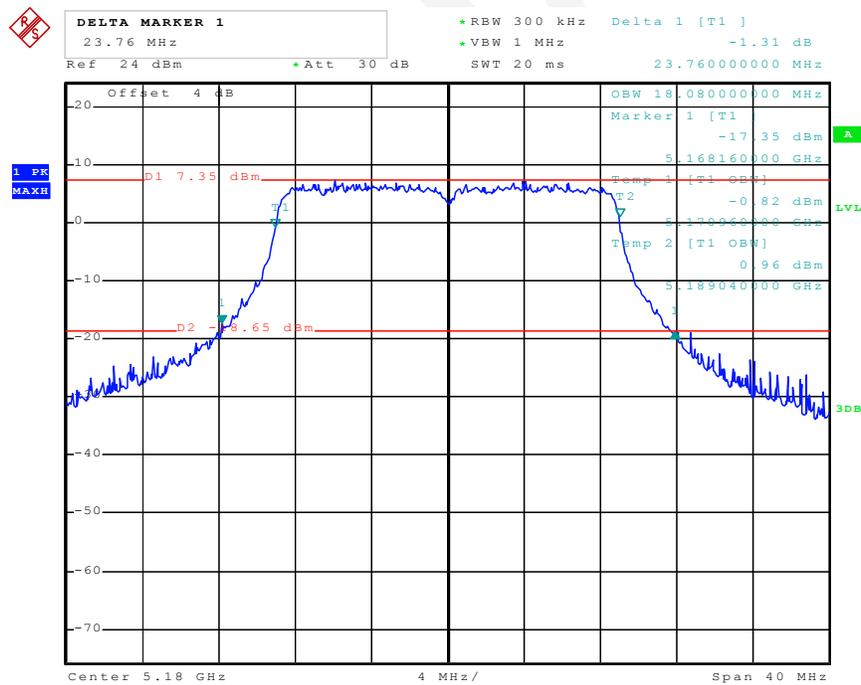
Date: 18.MAY.2015 12:39:44

Chain 0:802.11a High Channel



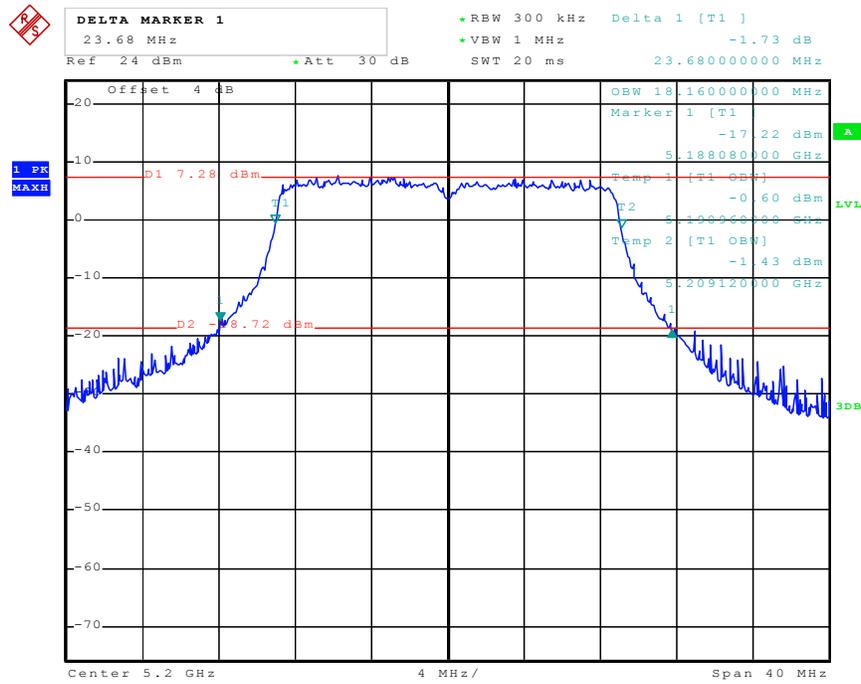
Date: 18.MAY.2015 12:40:39

Chain 0:802.11n ht20 Low Channel



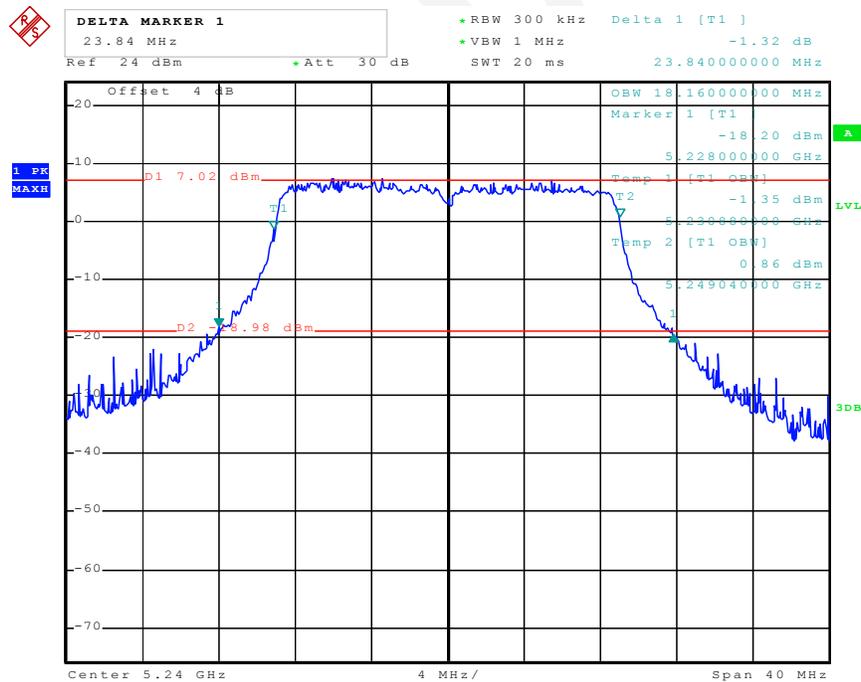
Date: 18.MAY.2015 12:44:01

Chain 0:802.11n ht20 Middle Channel



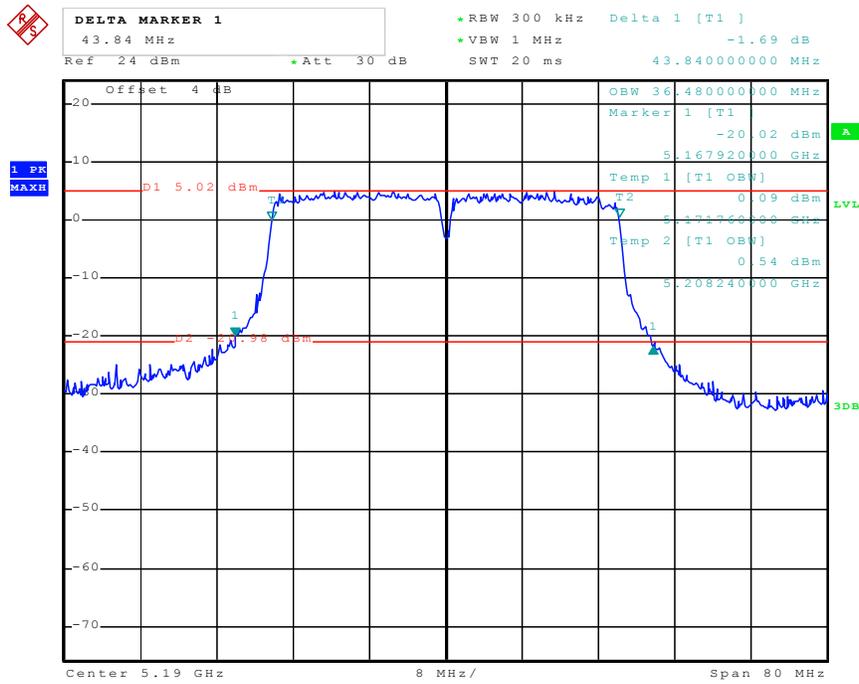
Date: 18.MAY.2015 12:42:59

Chain 0:802.11n ht20 High Channel



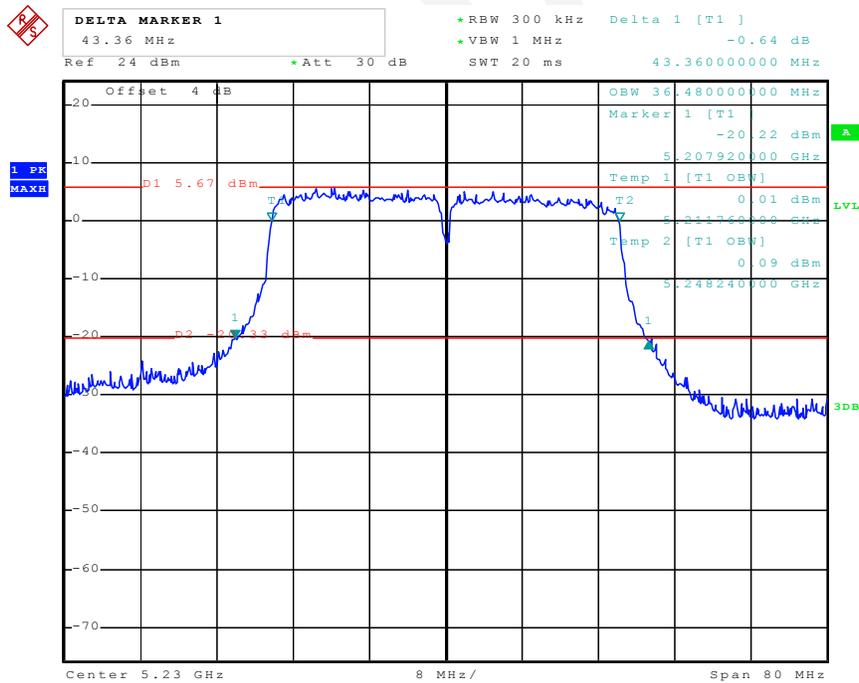
Date: 18.MAY.2015 12:42:07

Chain 0:802.11n ht40 Low Channel



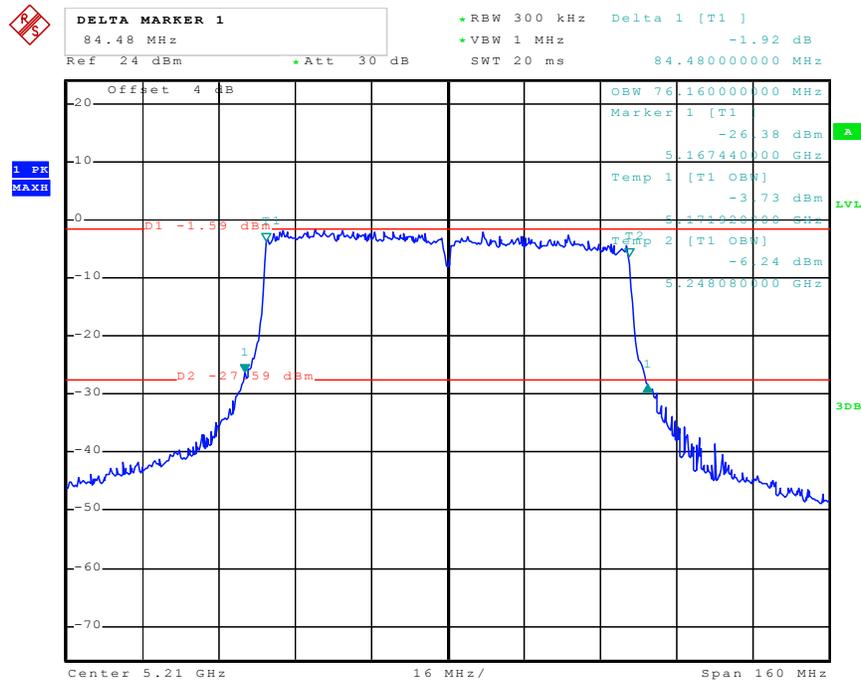
Date: 18.MAY.2015 12:45:34

Chain 0:802.11n ht40 High Channel



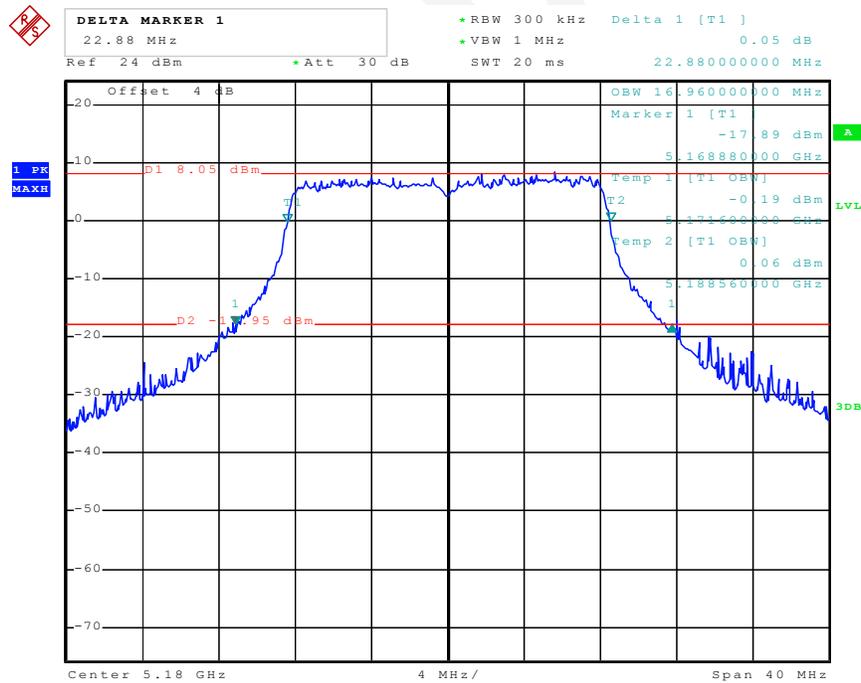
Date: 18.MAY.2015 12:47:05

Chain 0:802.11n ac80 Middle Channel



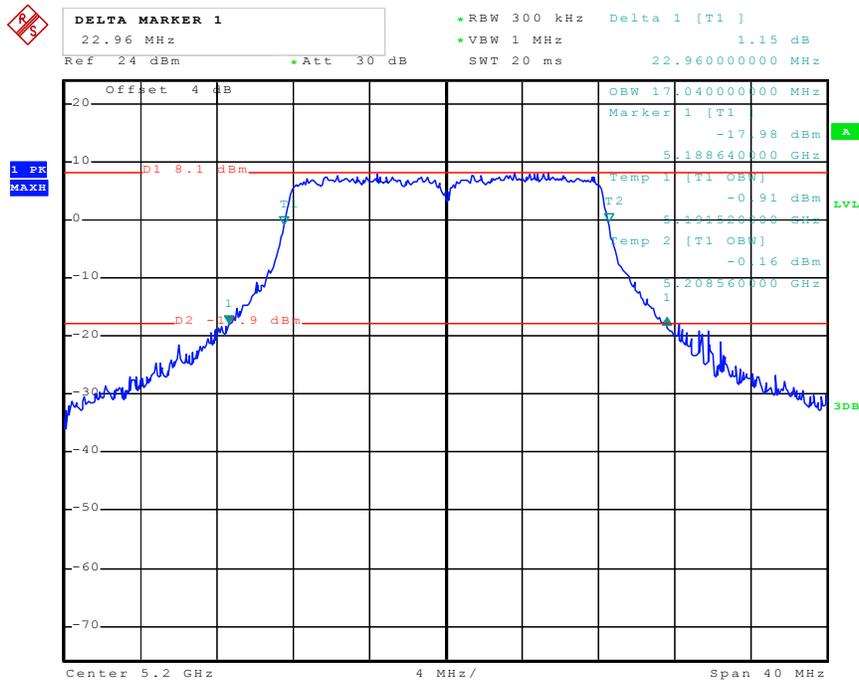
Date: 18.MAY.2015 12:48:27

Chain 1:802.11a Low Channel



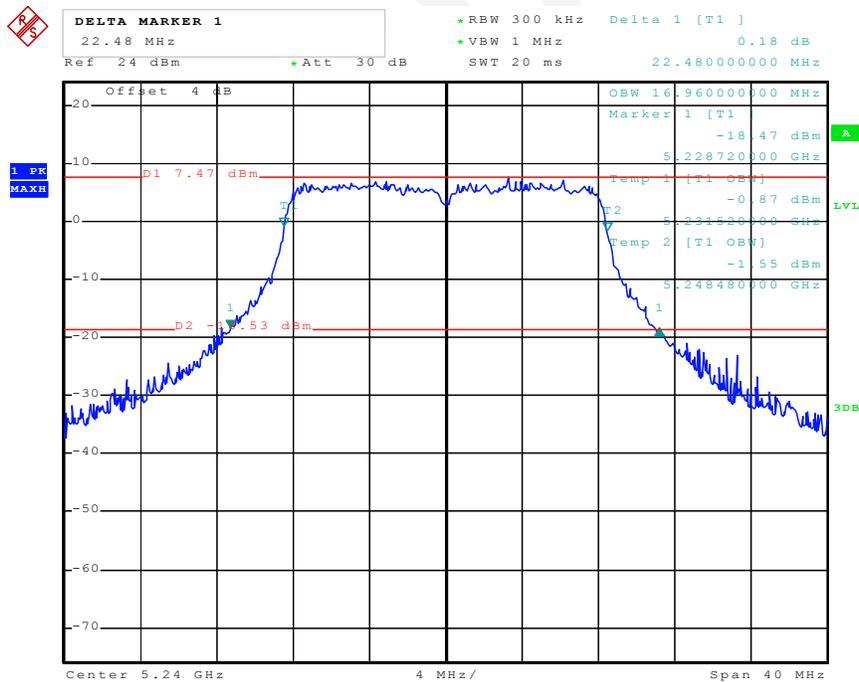
Date: 18.MAY.2015 14:05:38

Chain 1:802.11a Middle Channel



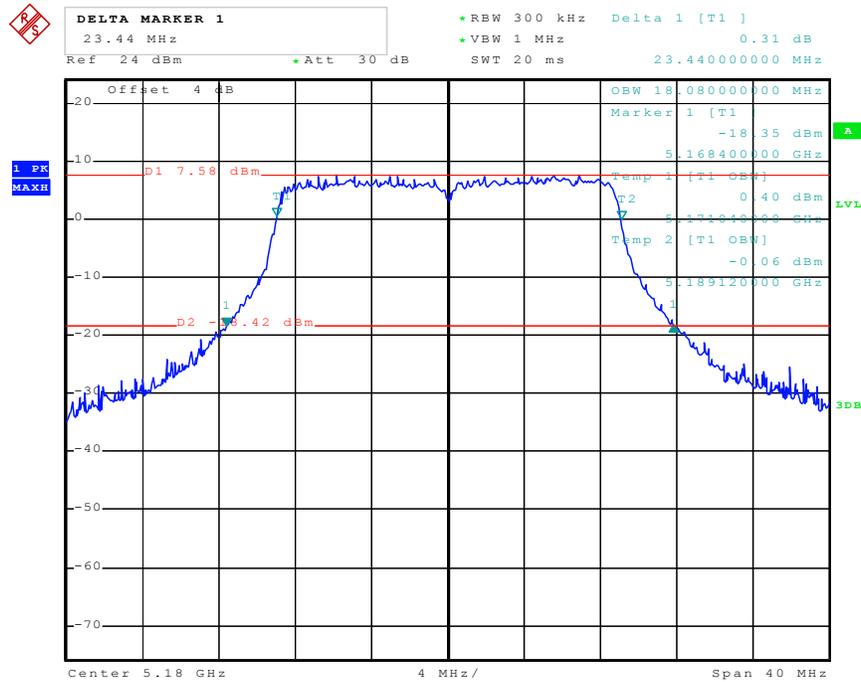
Date: 18.MAY.2015 14:06:42

Chain 1:802.11a High Channel



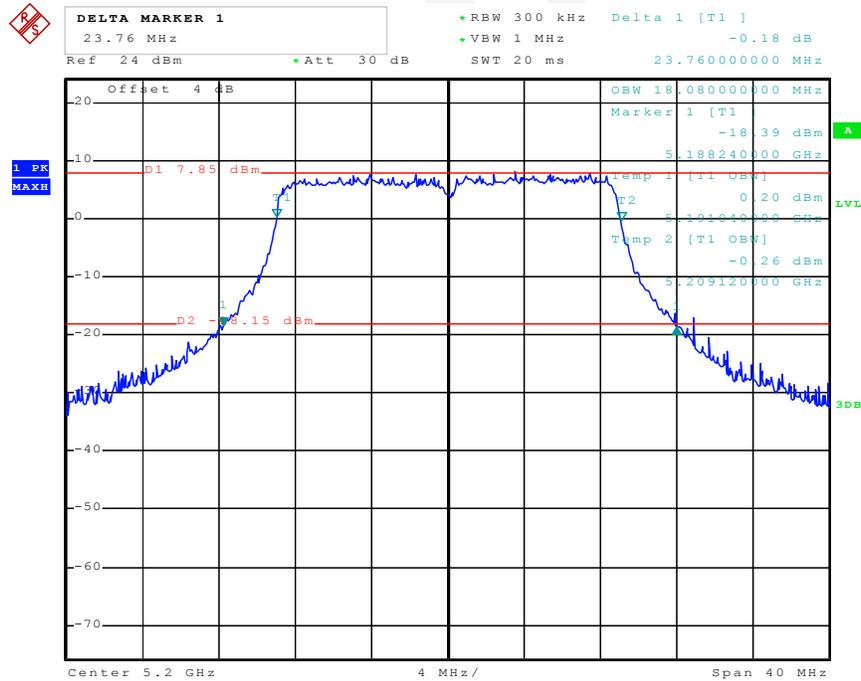
Date: 18.MAY.2015 14:07:50

Chain 1:802.11n ht20 Low Channel



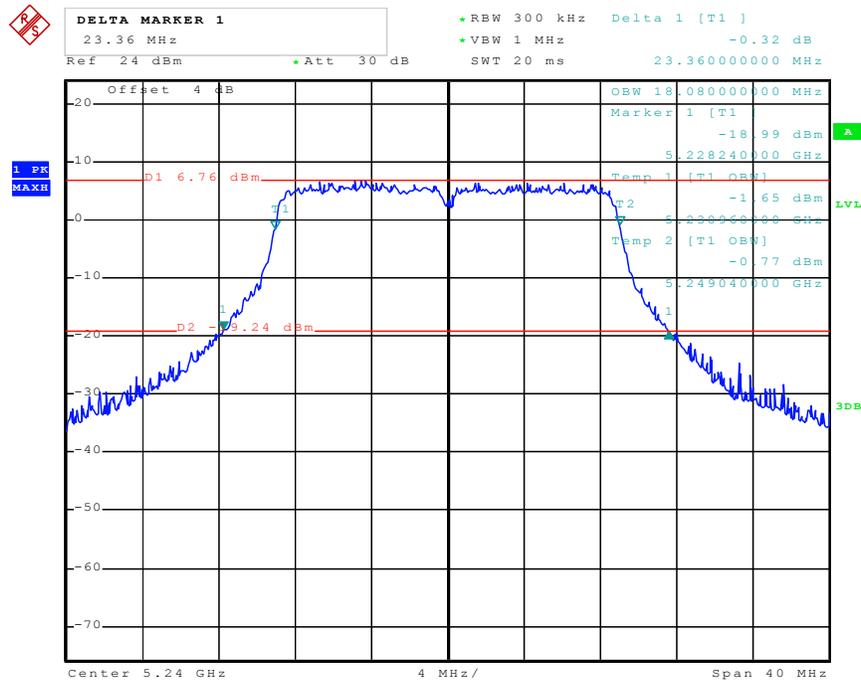
Date: 18.MAY.2015 14:10:53

Chain 1:802.11n ht20 Middle Channel



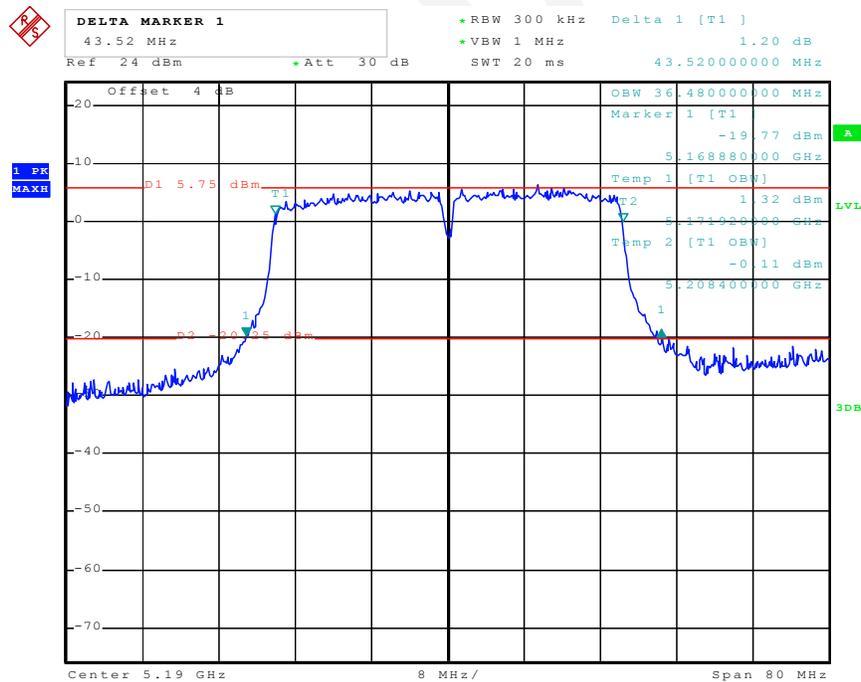
Date: 18.MAY.2015 14:09:52

Chain 1:802.11n ht20 High Channel



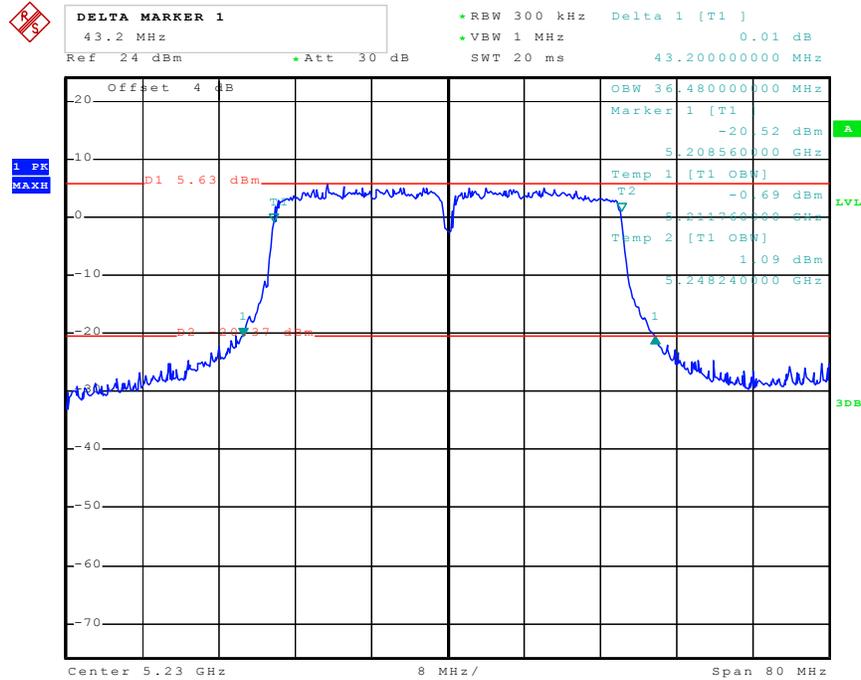
Date: 18.MAY.2015 14:08:55

Chain 1:802.11n ht40 Low Channel



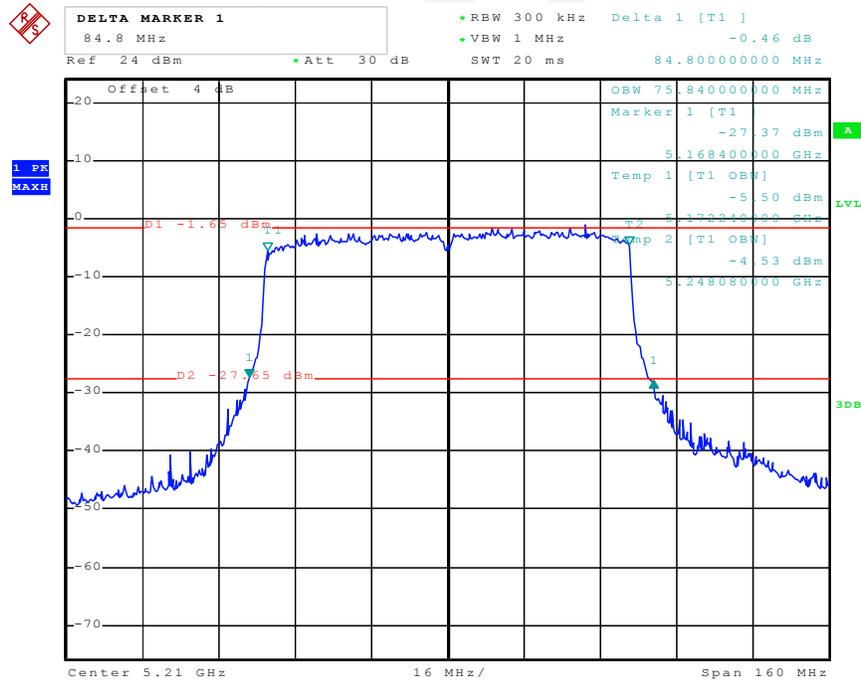
Date: 18.MAY.2015 14:12:17

Chain 1:802.11n ht40 High Channel



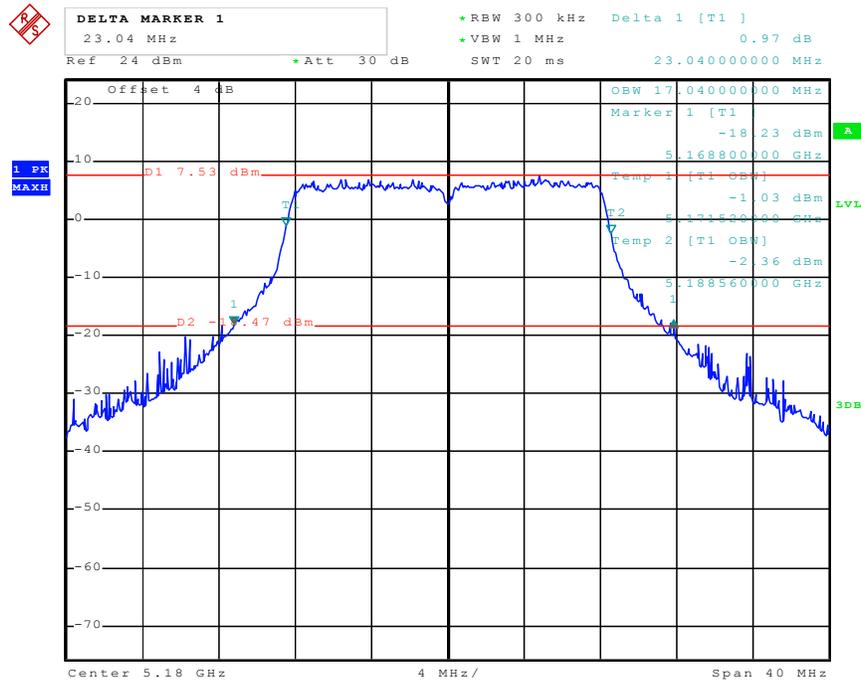
Date: 18.MAY.2015 14:14:12

Chain 1:802.11n ac80 Middle Channel



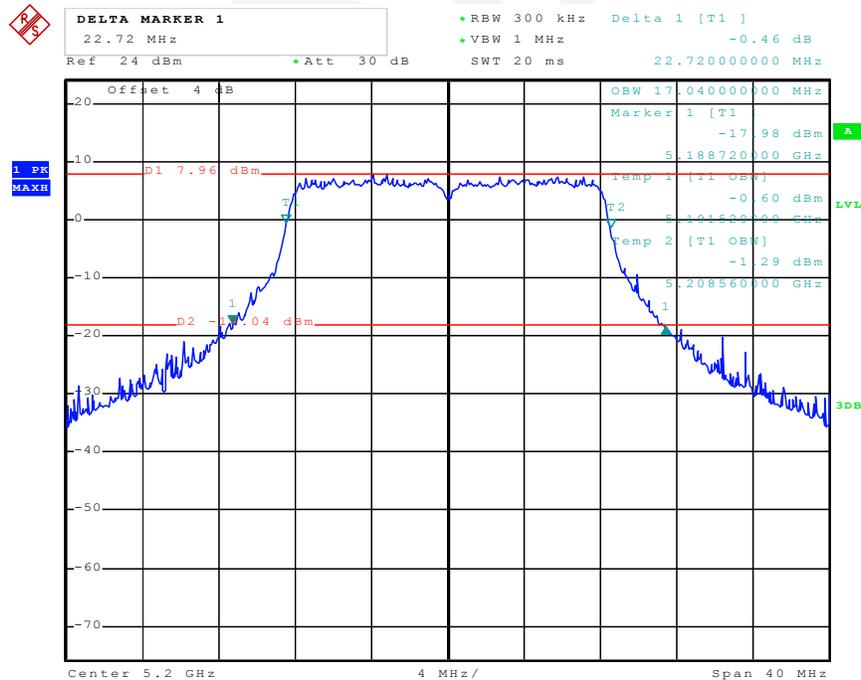
Date: 18.MAY.2015 14:15:39

Chain 2:802.11a Low Channel



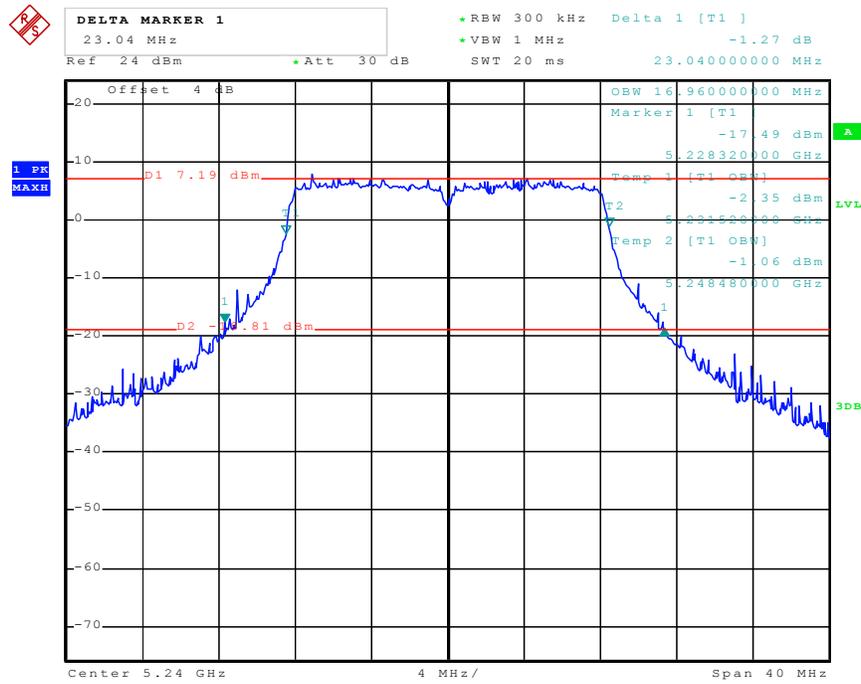
Date: 18.MAY.2015 14:25:49

Chain 2:802.11a Middle Channel



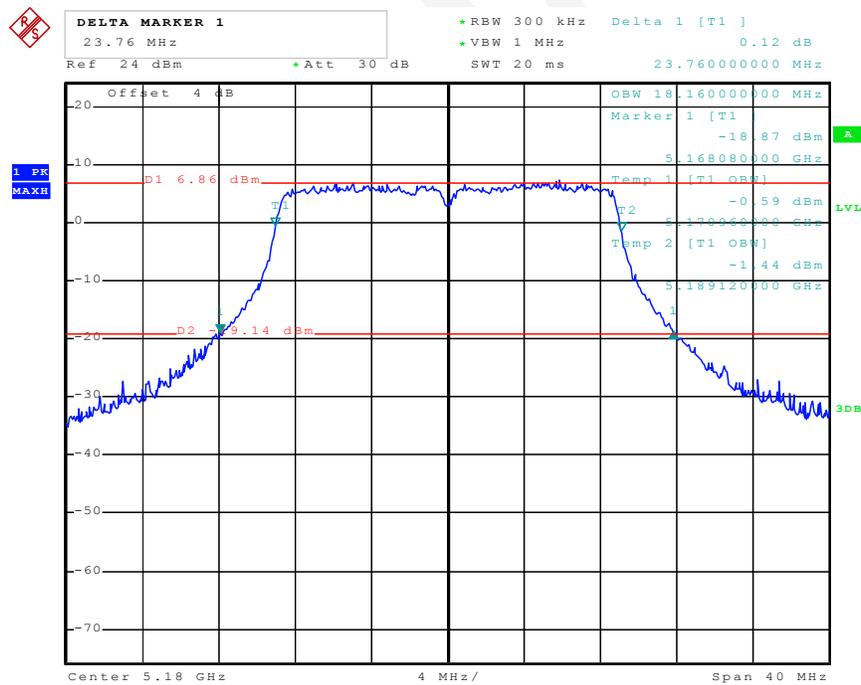
Date: 18.MAY.2015 14:24:28

Chain 2:802.11a High Channel



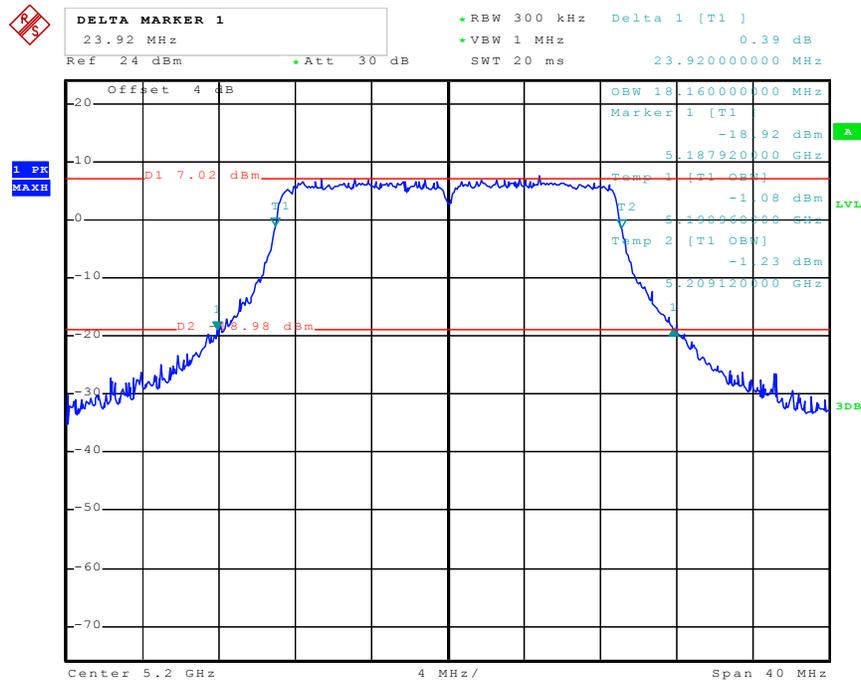
Date: 18.MAY.2015 14:23:30

Chain 2:802.11n ht20 Low Channel



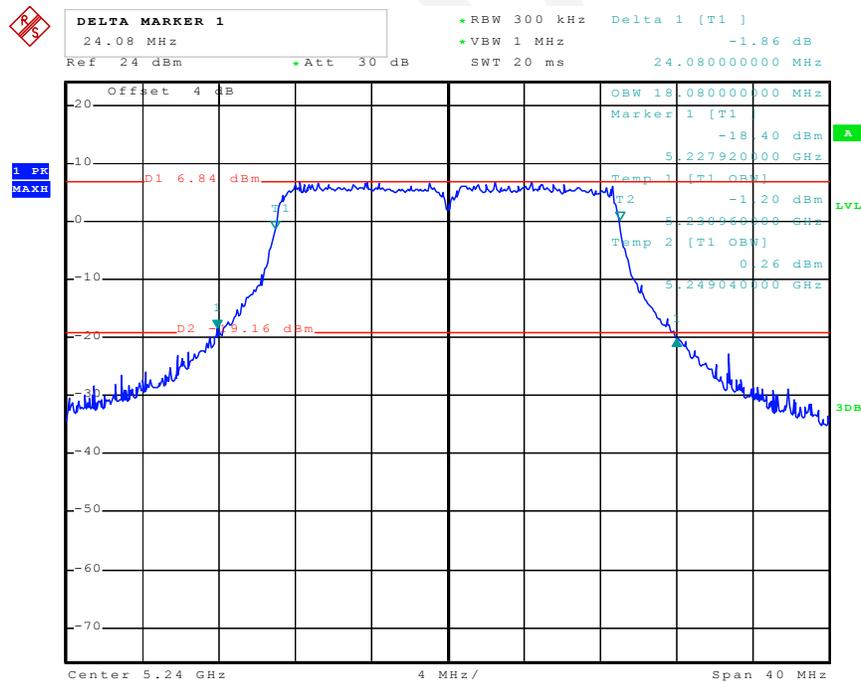
Date: 18.MAY.2015 14:20:35

Chain 2:802.11n ht20 Middle Channel



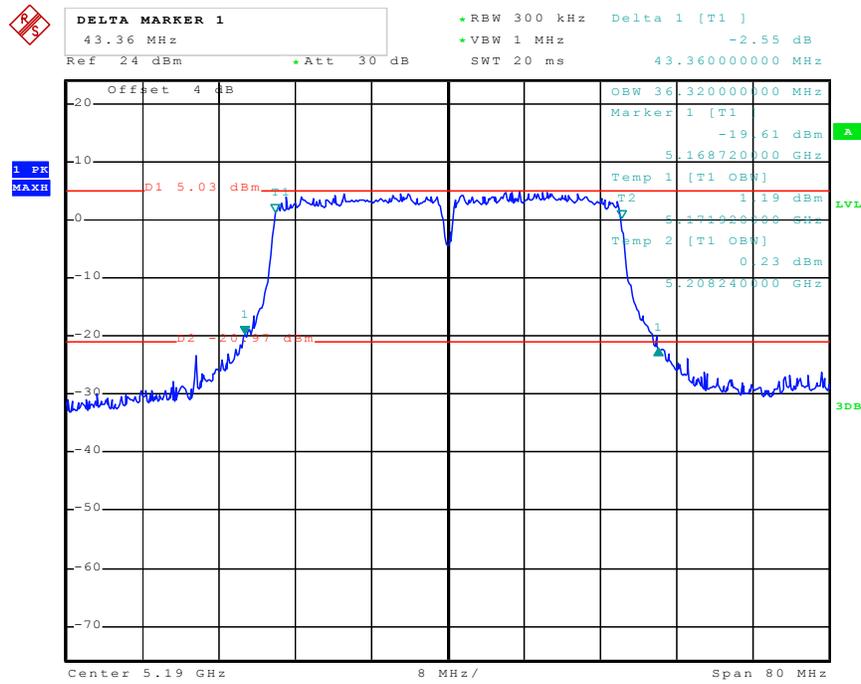
Date: 18.MAY.2015 14:21:22

Chain 2:802.11n ht20 High Channel



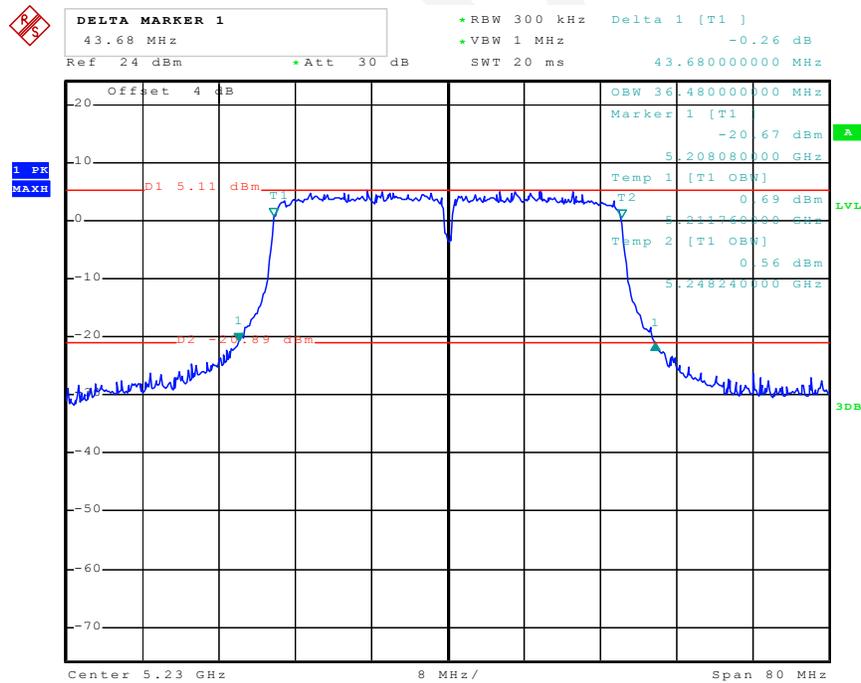
Date: 18.MAY.2015 14:22:23

Chain 2:802.11n ht40 Low Channel



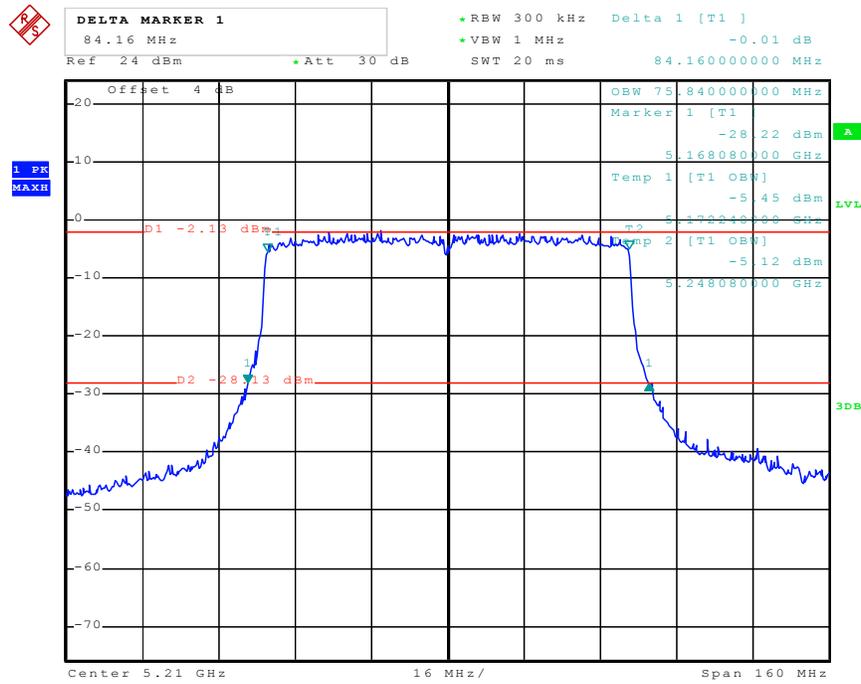
Date: 18.MAY.2015 14:18:01

Chain 2:802.11n ht40 High Channel



Date: 18.MAY.2015 14:19:15

Chain 2:802.11n ac80 Middle Channel

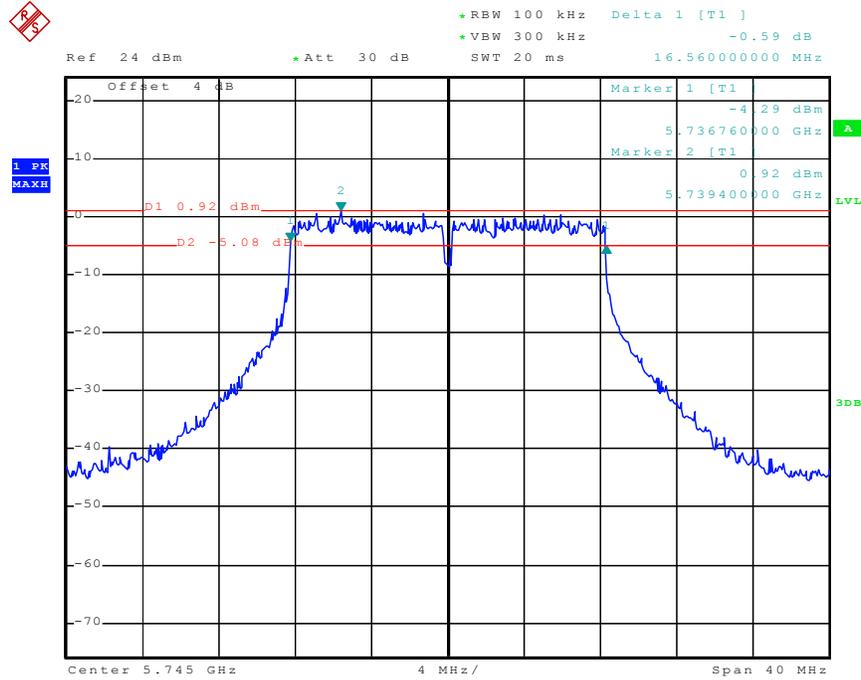


Date: 18.MAY.2015 14:16:29



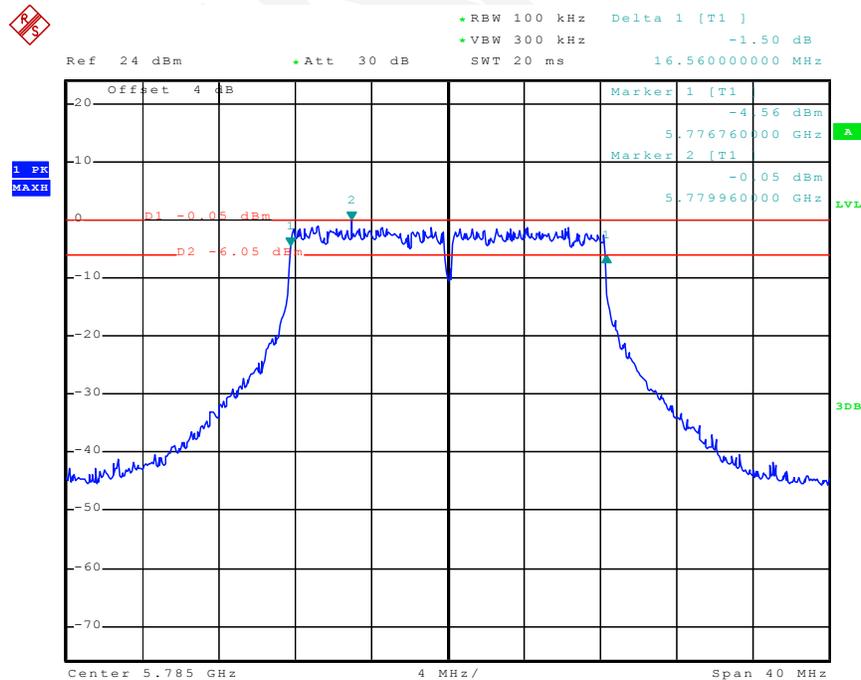
6dB EBW:
5725MHz-5850MHz:

Chain 0:802.11a Low Channel



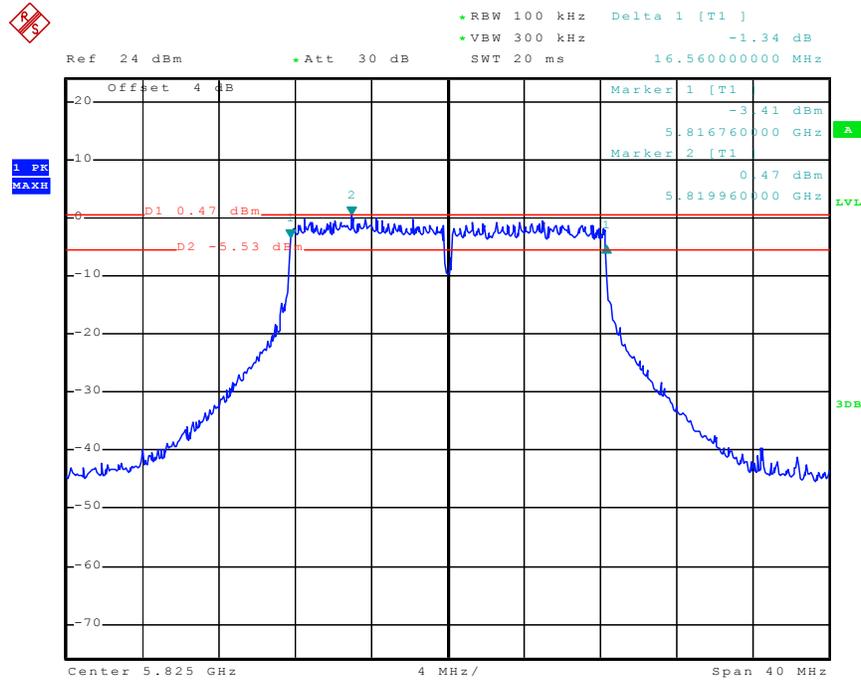
Date: 16.MAY.2015 17:20:25

Chain 0:802.11a Middle Channel



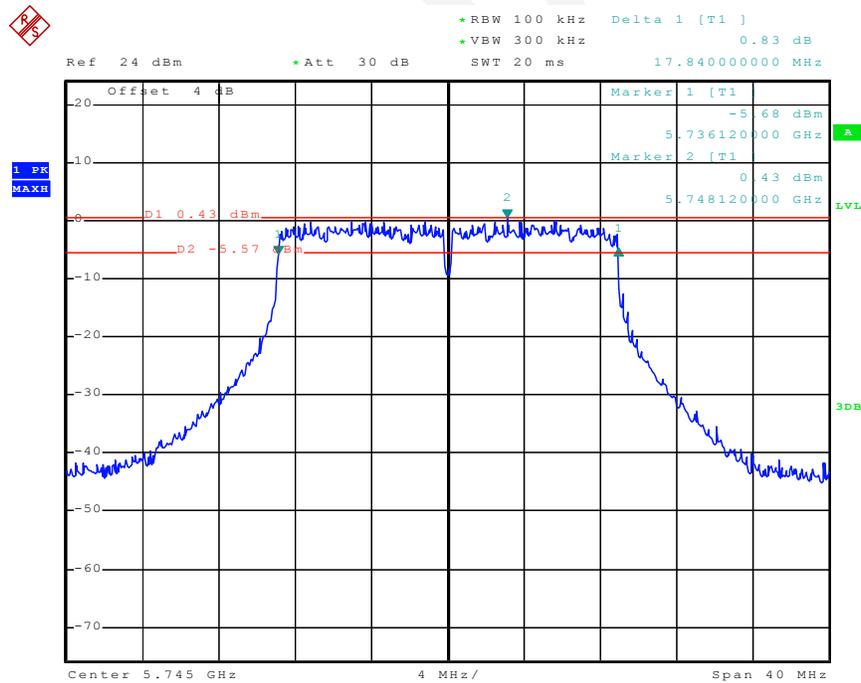
Date: 16.MAY.2015 17:31:23

Chain 0:802.11a High Channel



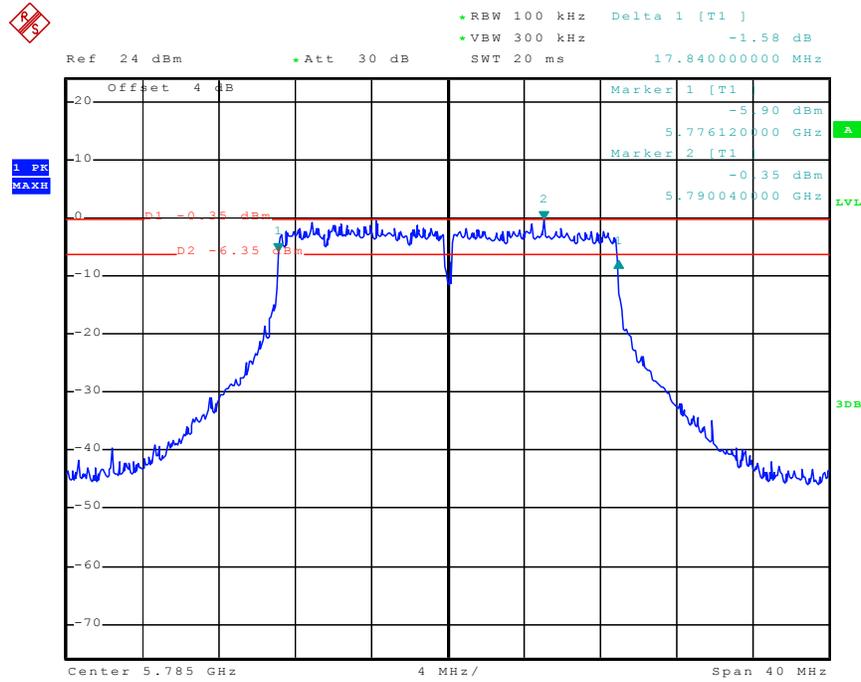
Date: 16.MAY.2015 17:33:26

Chain 0:802.11n ht20 Low Channel



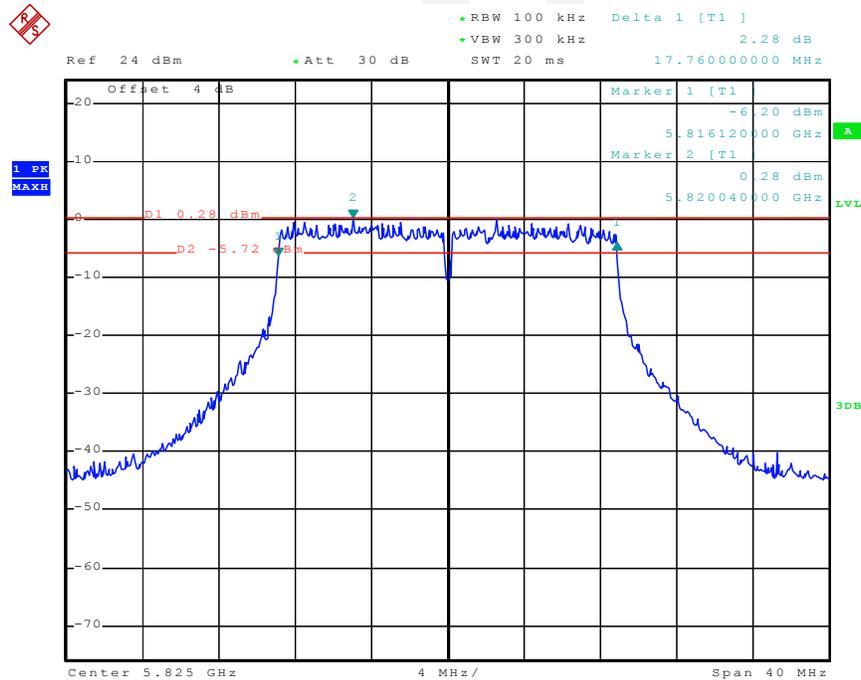
Date: 16.MAY.2015 17:58:40

Chain 0:802.11n ht20 Middle Channel



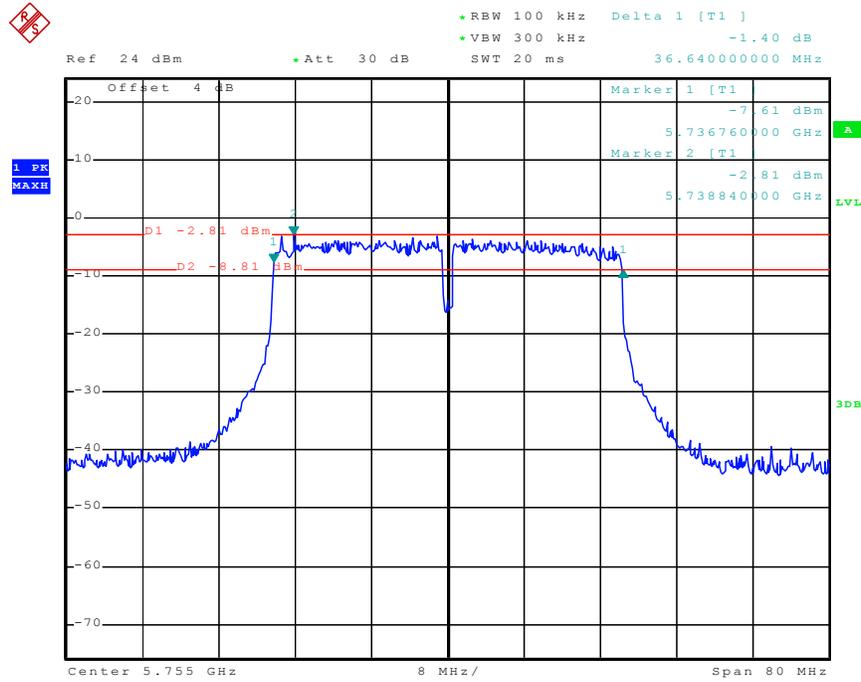
Date: 16.MAY.2015 17:48:13

Chain 0:802.11n ht20 High Channel



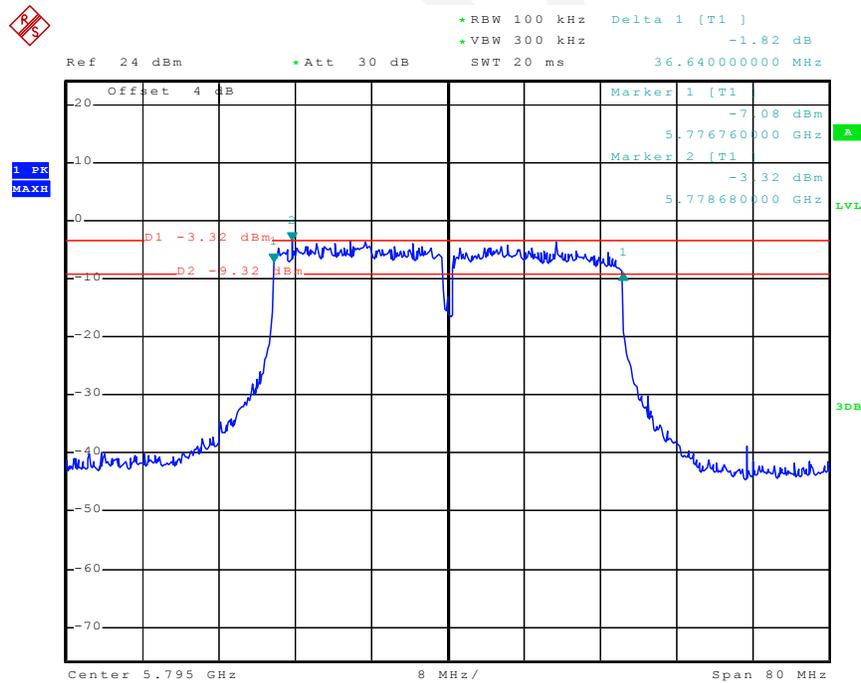
Date: 16.MAY.2015 17:45:53

Chain 0:802.11n ht40 Low Channel



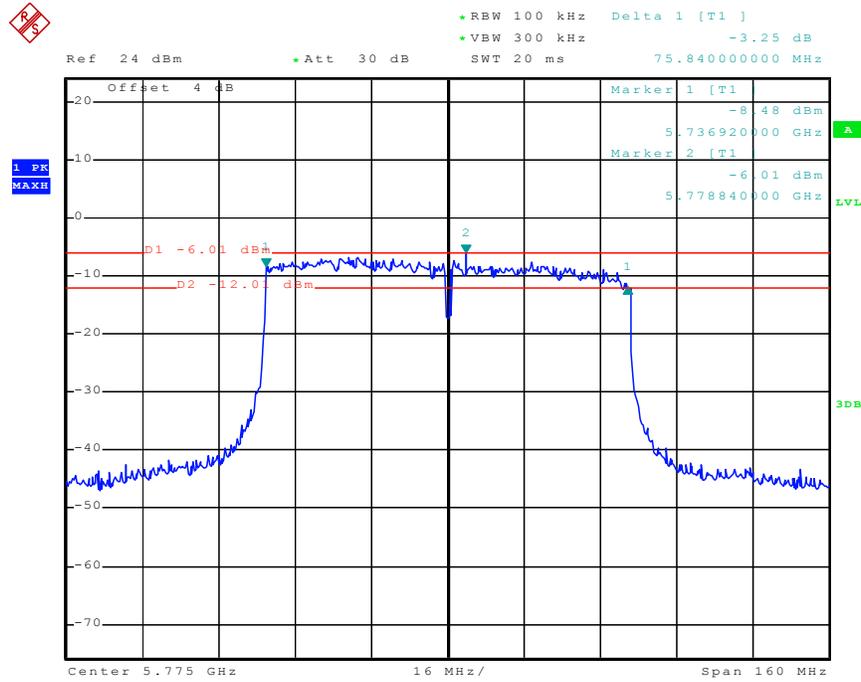
Date: 16.MAY.2015 18:02:23

Chain 0:802.11n ht40 High Channel



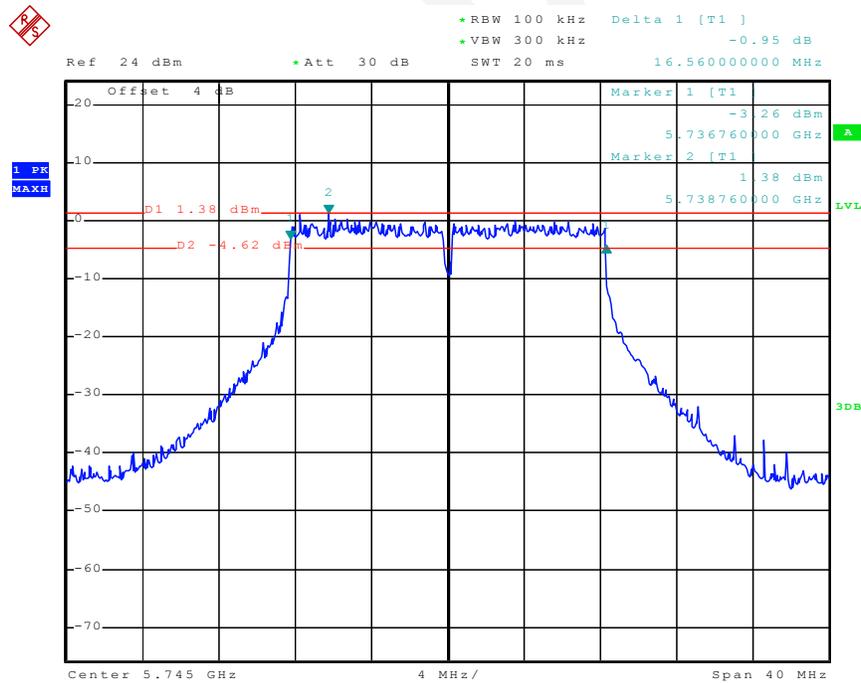
Date: 16.MAY.2015 18:35:04

Chain 0:802.11n ac80 Middle Channel



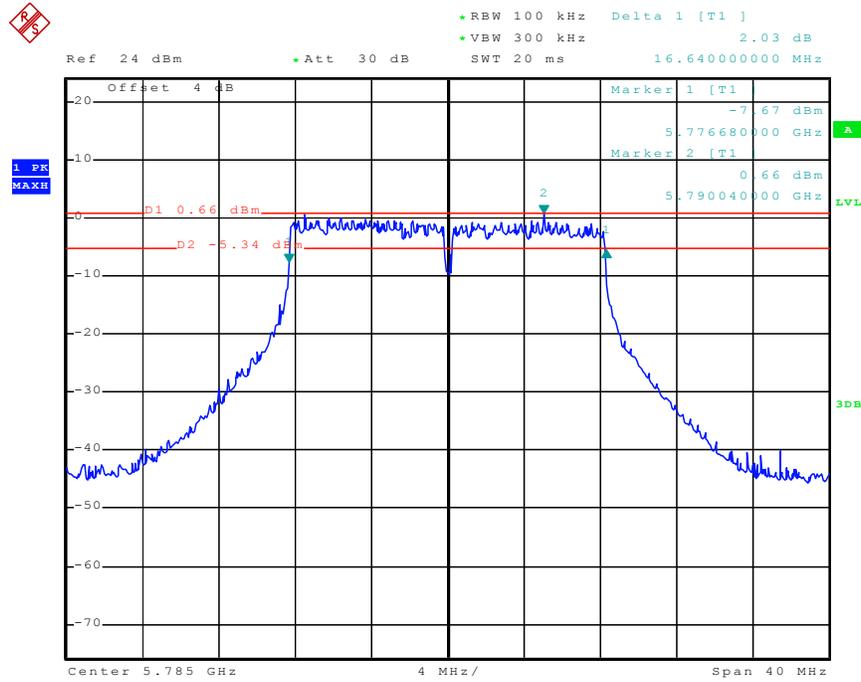
Date: 16.MAY.2015 18:26:30

Chain 1:802.11a Low Channel



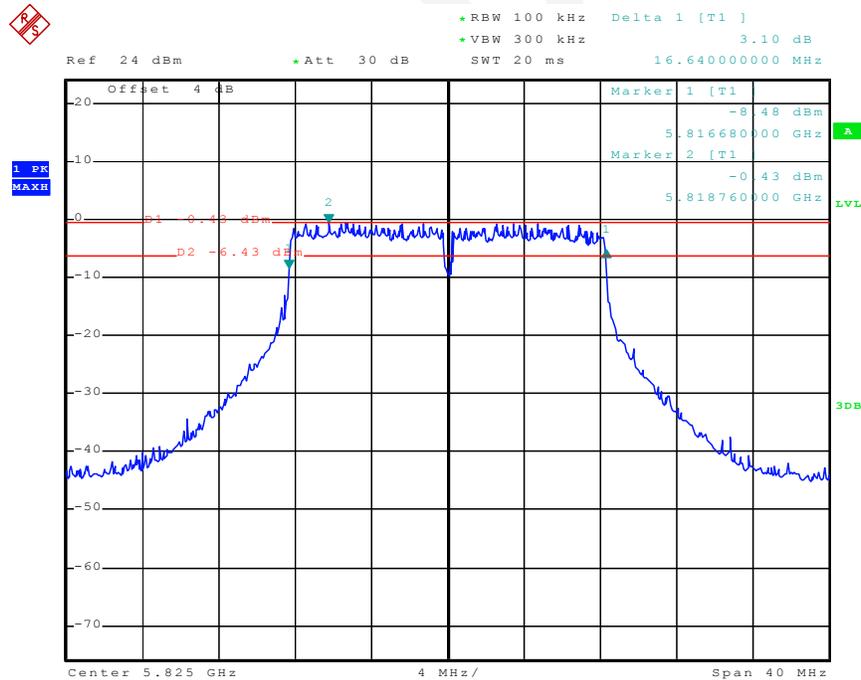
Date: 16.MAY.2015 17:22:58

Chain 1:802.11a Middle Channel



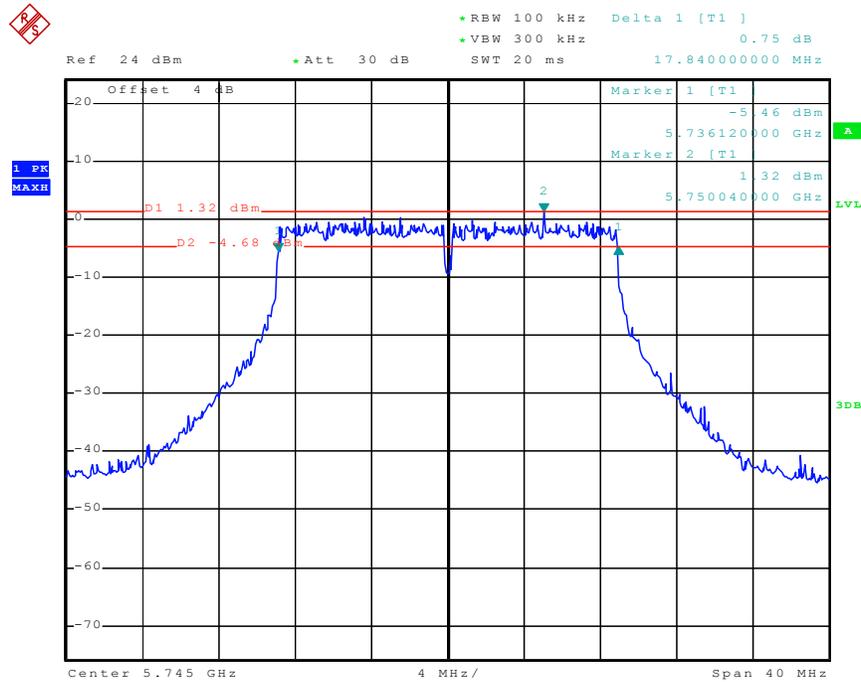
Date: 16.MAY.2015 17:29:32

Chain 1:802.11a High Channel



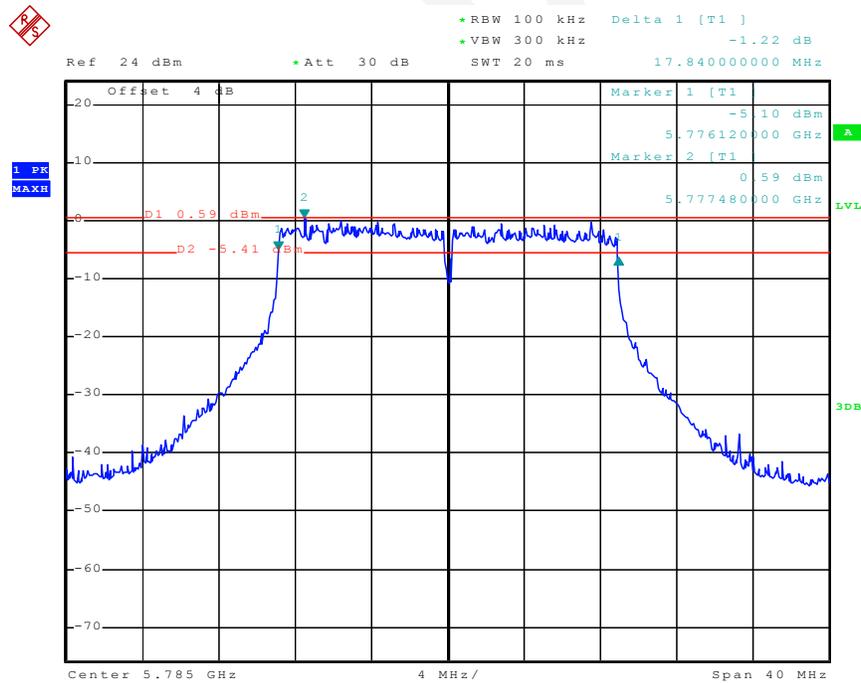
Date: 16.MAY.2015 17:36:37

Chain 1:802.11n ht20 Low Channel



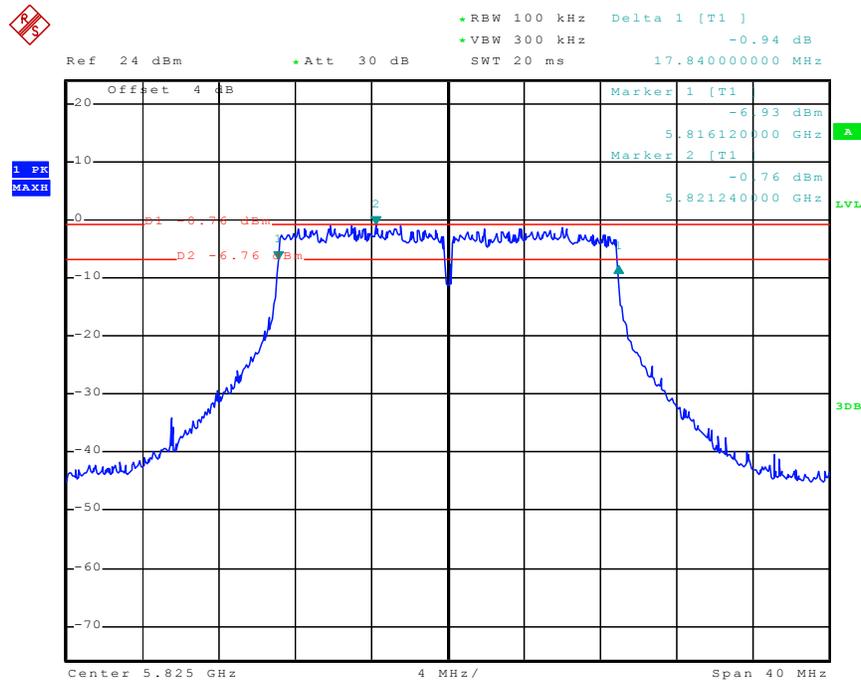
Date: 16.MAY.2015 17:56:15

Chain 1:802.11n ht20 Middle Channel



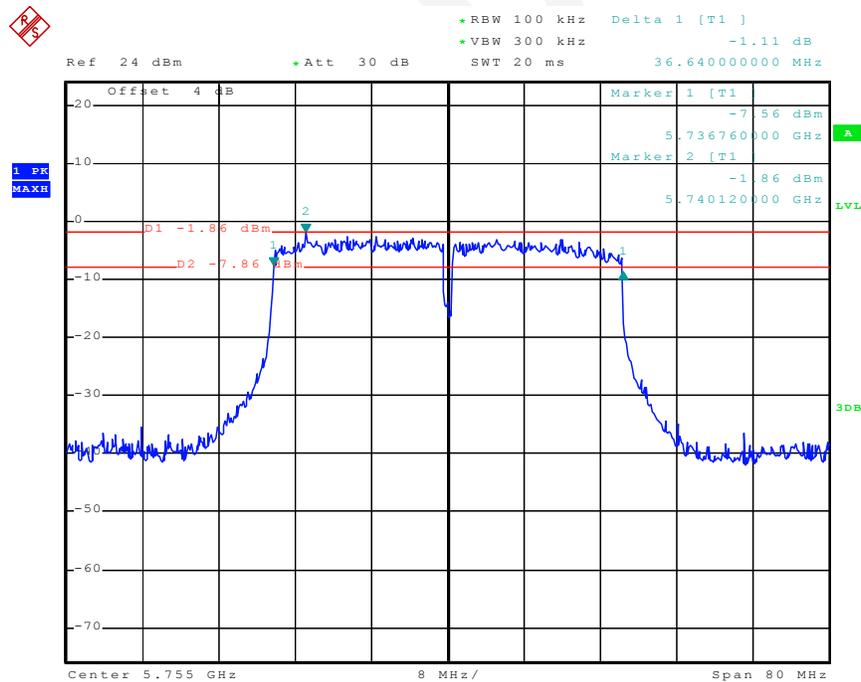
Date: 16.MAY.2015 17:50:02

Chain 1:802.11n ht20 High Channel



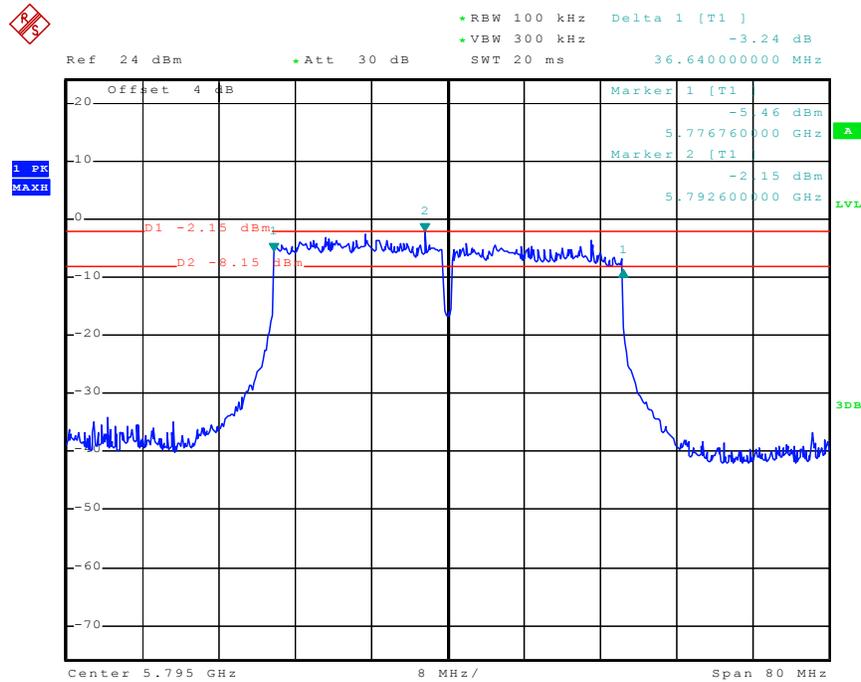
Date: 16.MAY.2015 17:43:29

Chain 1:802.11n ht40 Low Channel



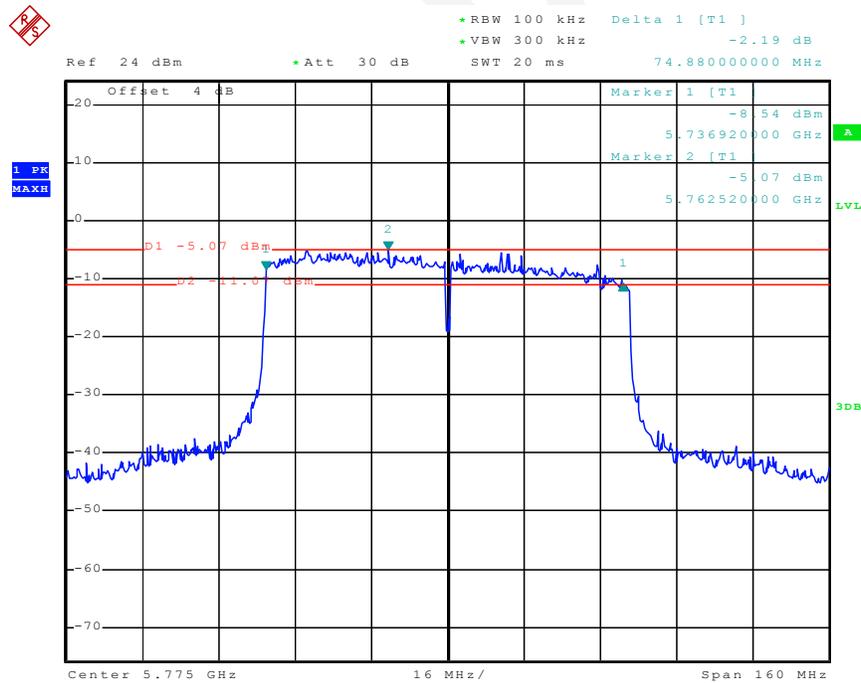
Date: 16.MAY.2015 18:10:00

Chain 1:802.11n ht40 High Channel



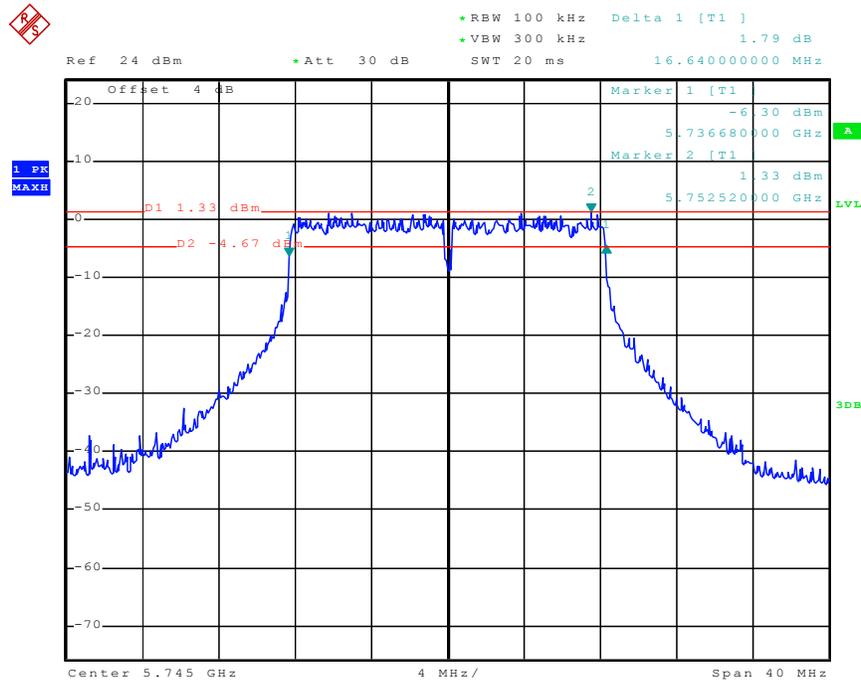
Date: 16.MAY.2015 18:17:27

Chain 1:802.11n ac80 Middle Channel



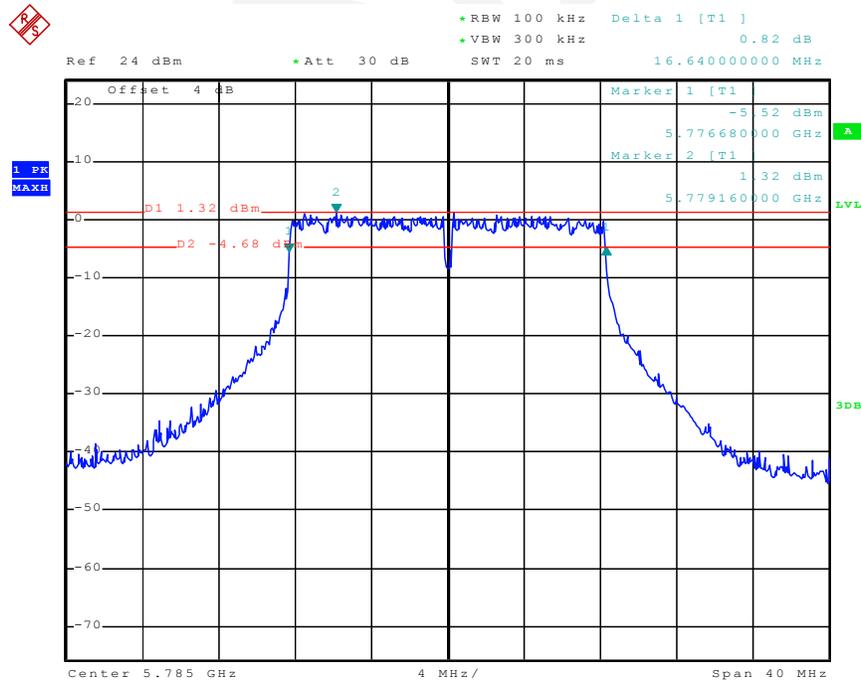
Date: 16.MAY.2015 18:28:42

Chain 2:802.11a Low Channel



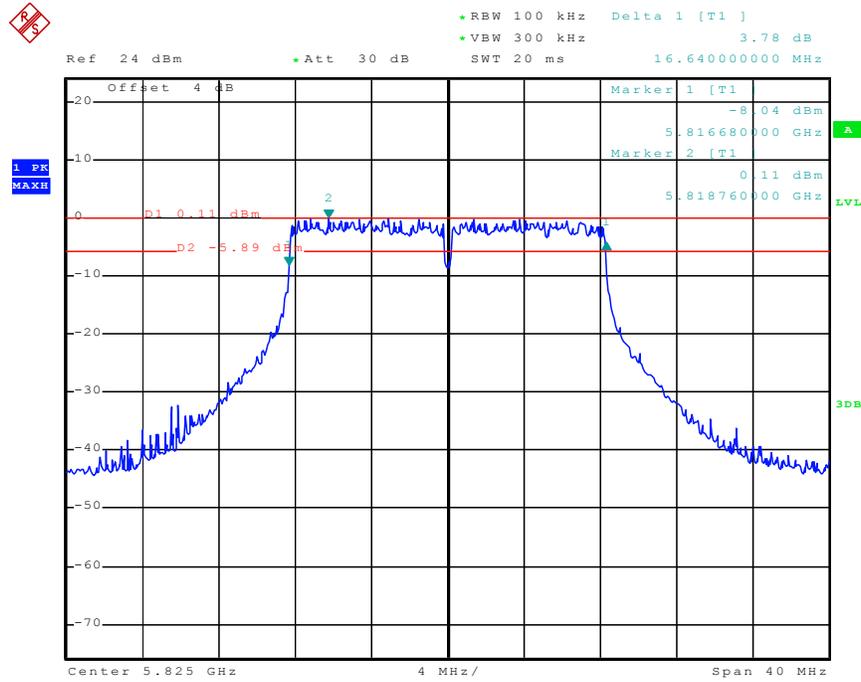
Date: 16.MAY.2015 17:25:11

Chain 2:802.11a Middle Channel



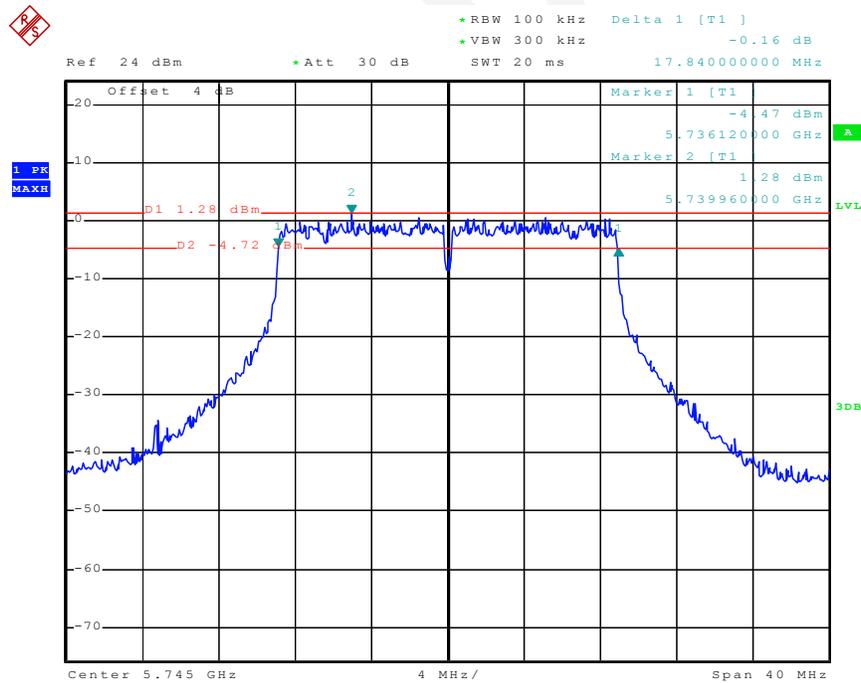
Date: 16.MAY.2015 17:27:45

Chain 2:802.11a High Channel



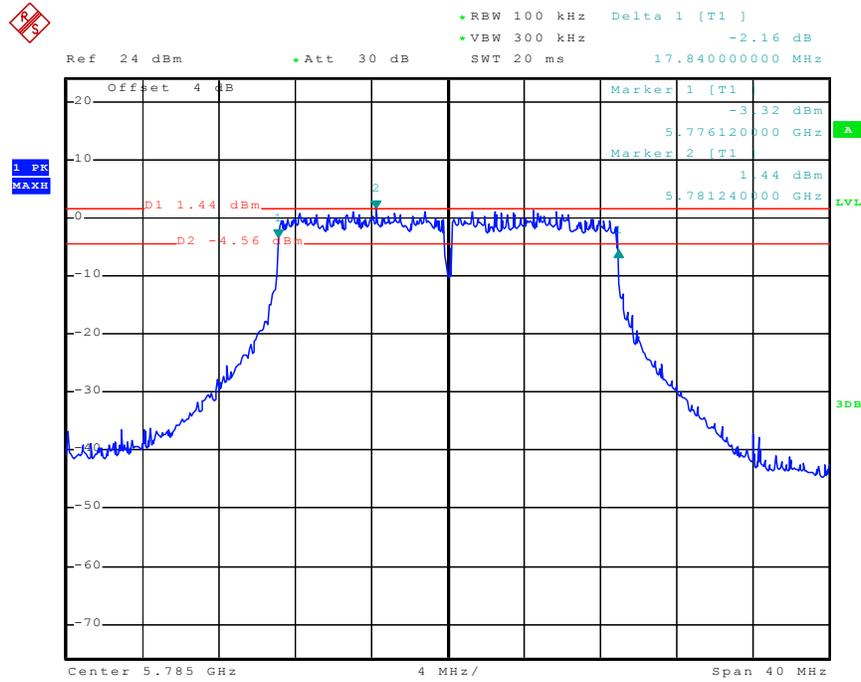
Date: 16.MAY.2015 17:38:44

Chain 2:802.11n ht20 Low Channel



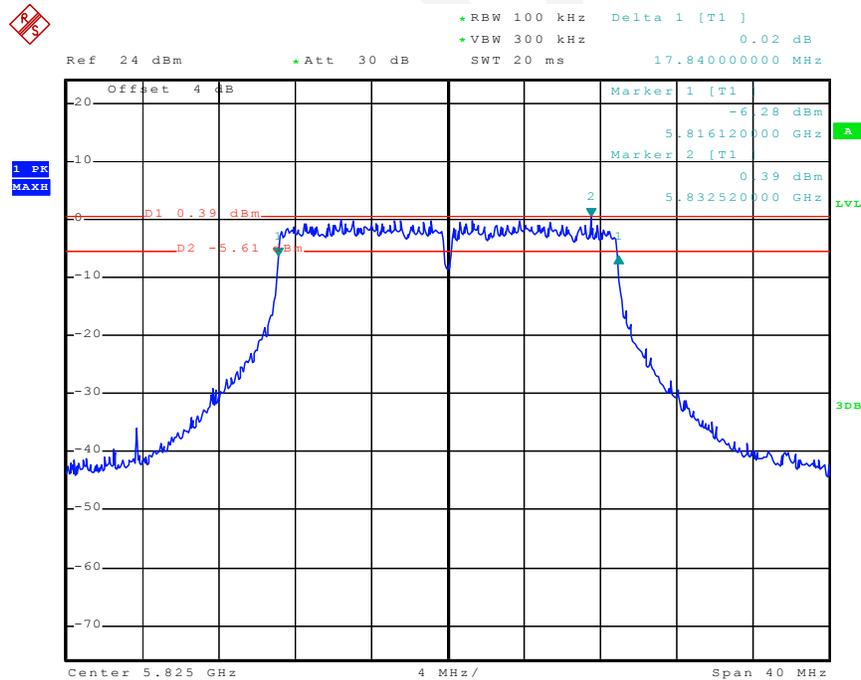
Date: 16.MAY.2015 17:53:43

Chain 2:802.11n ht20 Middle Channel



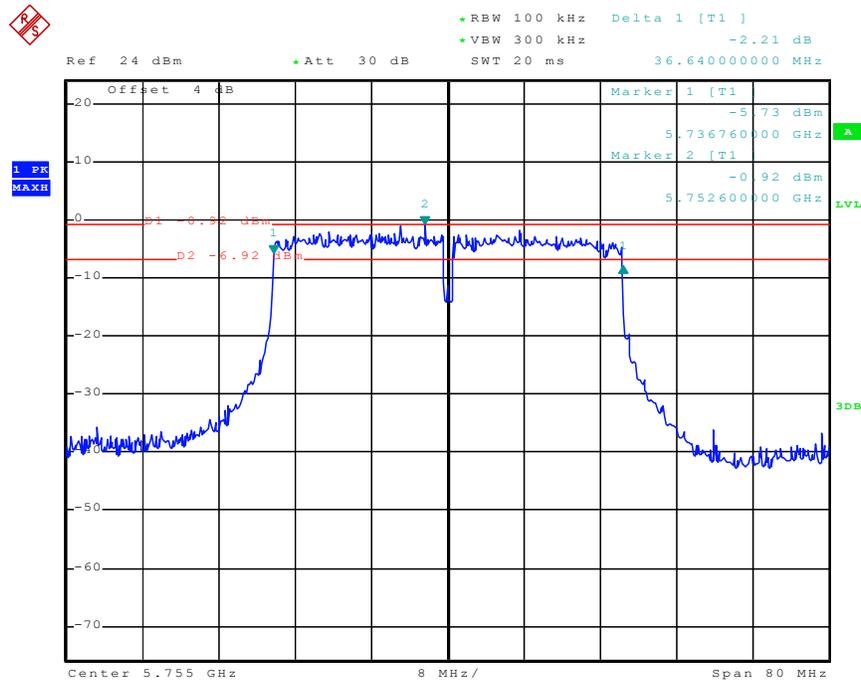
Date: 16.MAY.2015 17:51:53

Chain 2:802.11n ht20 High Channel



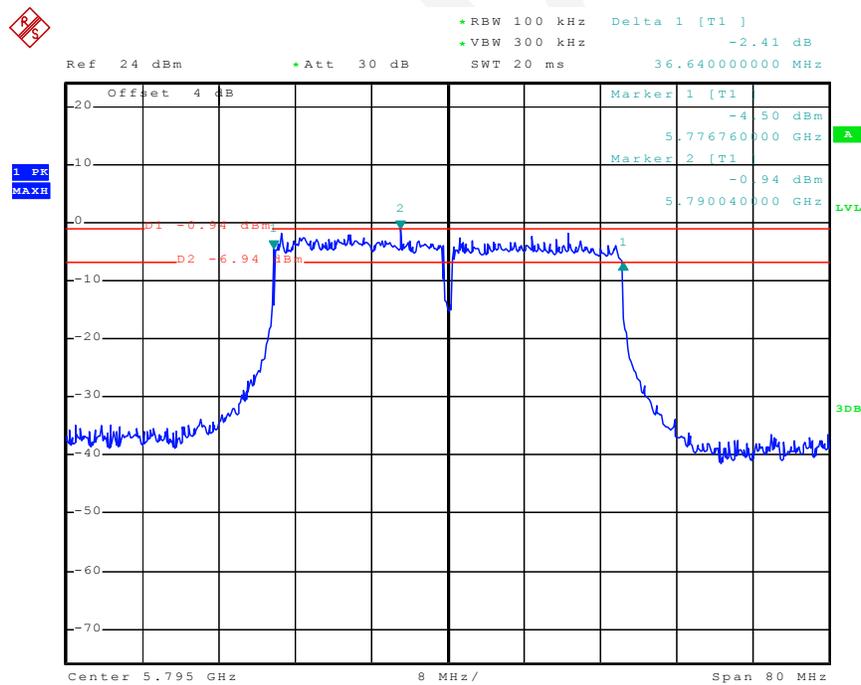
Date: 16.MAY.2015 17:41:20

Chain 2:802.11n ht40 Low Channel



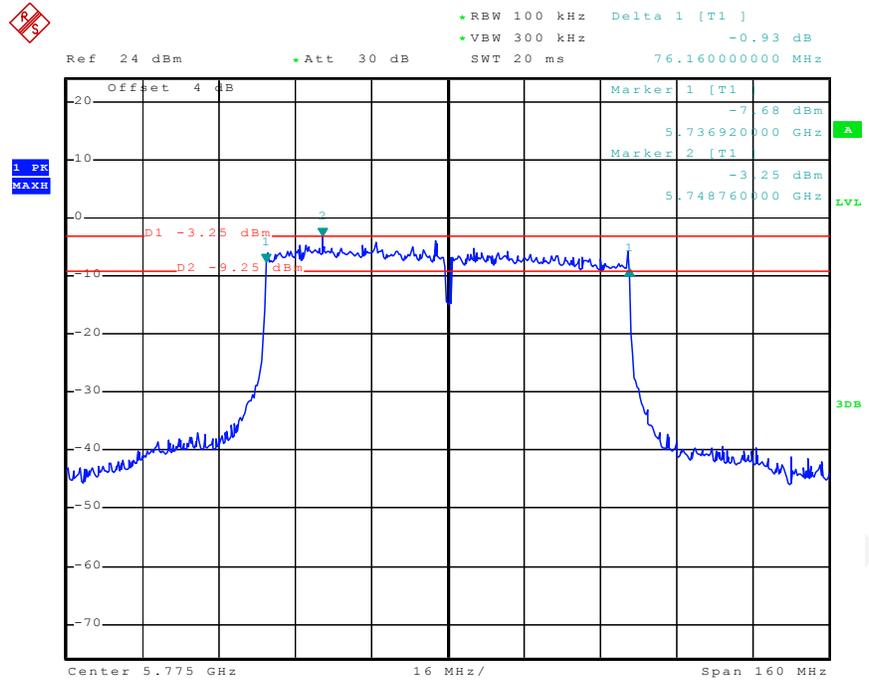
Date: 16.MAY.2015 18:12:29

Chain 2:802.11n ht40 High Channel



Date: 16.MAY.2015 18:14:51

Chain 2:802.11n ac80 Middle Channel



Date: 16.MAY.2015 18:31:02



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
Agilent	Wideband Power Sensor	N1921A	MY54210016	2014-11-03	2015-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2014-11-03	2015-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2014-11-03	2015-11-03

* **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:	25.1 °C
Relative Humidity:	54 %
ATM Pressure:	99.9 kPa

The testing was performed by Allen Qiao on 2015-05-18.

Test Mode: Transmitting

UNII Band	Mode	Channel	Frequency(MHz)	RMS Power(dBm)			Total (dBm)	Limit (dBm)
				Chain 0	Chain 1	Chain 2		
5150-5250MHz	802.11 a	Low	5180	15.94	16.32	16.03	20.87	27
		Middle	5200	16.39	16.51	15.94	21.06	27
		High	5240	16.13	15.35	15.75	20.53	27
	802.11 n20	Low	5180	15.92	16.46	16.07	20.93	27
		Middle	5200	16.35	16.51	16.01	21.07	27
		High	5240	16.15	15.36	15.67	20.51	27
	802.11 n40	Low	5190	16.07	16.51	15.79	20.9	27
		High	5230	15.79	15.56	15.83	20.5	27
	802.11 ac80	Middle	5210	14.29	13.92	13.86	18.8	27
5725-5850MHz	802.11 a	Low	5745	14.67	14.7	15.46	19.73	27
		Middle	5785	14.17	14.43	16.15	19.78	27
		High	5825	15.04	14.75	15.76	19.98	27
	802.11 n20	Low	5745	15.44	14.73	14.69	19.74	27
		Middle	5785	14.12	14.51	16.19	19.81	27
		High	5825	14.95	14.68	15.26	19.74	27
	802.11 n40	Low	5755	14.91	14.76	15.72	19.92	27
		High	5795	14.52	14.74	15.89	19.86	27
	802.11 ac80	Middle	5775	12.64	12.94	14.28	18.12	27

Note: The device is only for indoor use, employed 3 pcs 9.0dBi internal antenna, and employed Cyclic Delay Diversity (CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power measurements on IEEE 802.11 devices:

Array Gain = 0 dB (i.e., no array gain) for NANT \leq 4;

So:

Directional gain = GANT + Array Gain = 9dBi

The power limit should be reduced by 3dB.

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:	25.4 °C
Relative Humidity:	59 %
ATM Pressure:	100.6 kPa

The testing was performed by Allen Qiao on 2015-05-16.

Test Mode: Transmitting

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

UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density(dBm/MHz)			Total (dBm/MHz)	Limit (dBm/MHz)
				Chain 0	Chain 1	Chain 2		
5150-5250MHz	802.11 a	Low	5180	4.04	4.28	3.76	8.8	9
		Middle	5200	3.88	4.81	3.83	8.97	9
		High	5240	4.02	3.47	3.8	8.54	9
	802.11 n20	Low	5180	3.4	3.86	3.33	8.31	9
		Middle	5200	3.93	3.98	3.37	8.54	9
		High	5240	3.63	3.01	3.42	8.13	9
	802.11 n40	Low	5190	1.49	2.03	1.27	6.38	9
		High	5230	1.82	1.34	1.38	6.29	9
	802.11 ac80	Middle	5210	-5.06	-5.49	-5.62	-0.29	9

UNII Band	Mode	Channel	Frequency (MHz)	Power Spectral Density(dBm/300kHz)			Total (dBm/500kHz)	Limit (dBm/500kHz)
				Chain 0	Chain 1	Chain 2		
5725-5850MHz	802.11 a	Low	5745	-1.54	-1.09	-1.29	5.69	22
		Middle	5785	-2.56	-1.57	-0.62	5.48	22
		High	5825	-2.36	-2.73	-2.39	4.50	22
	802.11 n20	Low	5745	-1.81	-1.68	-1.43	5.35	22
		Middle	5785	-2.96	-1.95	-1.2	5.01	22
		High	5825	-2.41	-3.04	-1.97	4.54	22
	802.11 n40	Low	5755	-5.58	-4.83	-4.31	2.11	22
		High	5795	-5.84	-4.58	-4.23	2.16	22
	802.11 ac80	Middle	5775	-8.78	-7.63	-6.5	-0.55	22

Note 1: According to 789033 D02 General UNII Test Procedures New Rules v01, the test value for 5725-5850 MHz should add $10 \cdot \log(500\text{kHz}/\text{RBW})$ to the measured result.

Note 2: The device employed 3 pcs 9dBi internal antenna for 5G bands, and employed Cyclic Delay Diversity(CDD) for 802.11 MIMO transmitting, per KDB 662911 D01 Multiple Transmitter Output v02r01, for power spectral density (PSD) measurements on the devices :

$$\text{Array Gain} = 10 \log(N_{\text{ANT}}/\text{NSS}) \text{ dB.}$$

So:

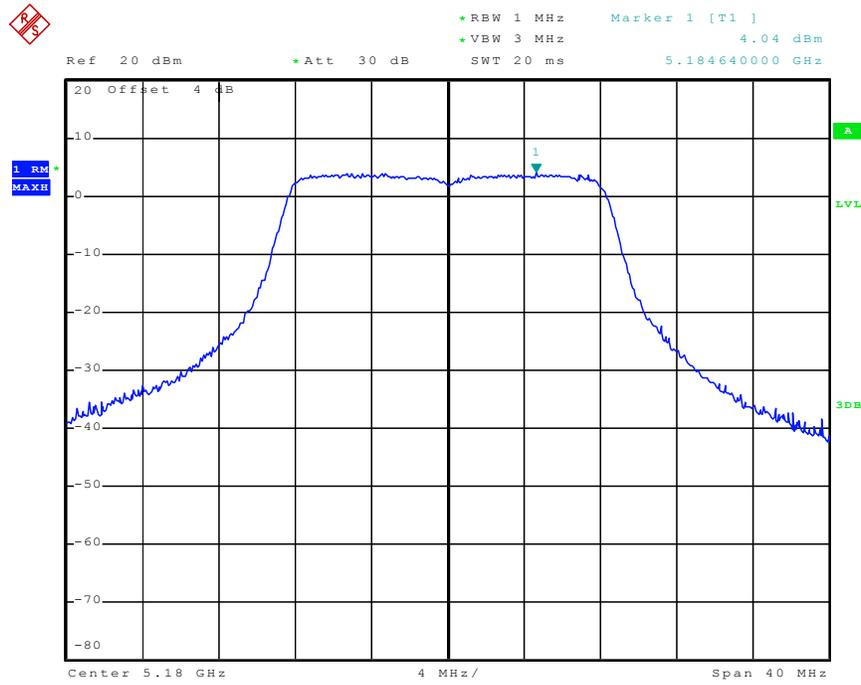
$$\text{Directional gain} = \text{GANT} + \text{Array Gain} = 9 + 10 \cdot \log(3) = 9 + 4.77 = 13.77 \text{ dBi}$$

The Power density Limits was reduce 8dB (13.77-6=7.77dB)

Please refer to the following plots

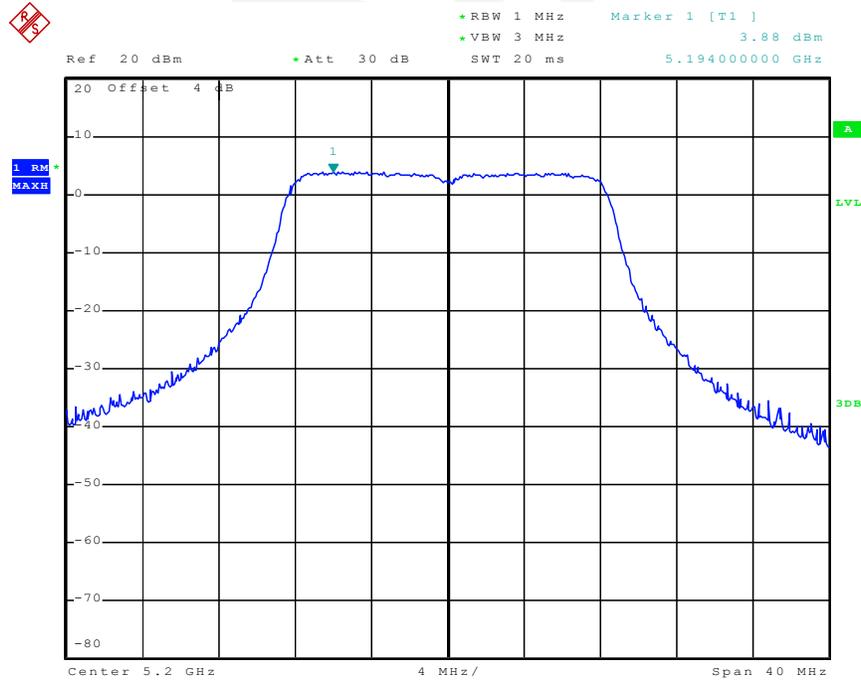
5150MHz-5250MHz:

Chain 0: Power Spectral Density, 802.11a Low Channel



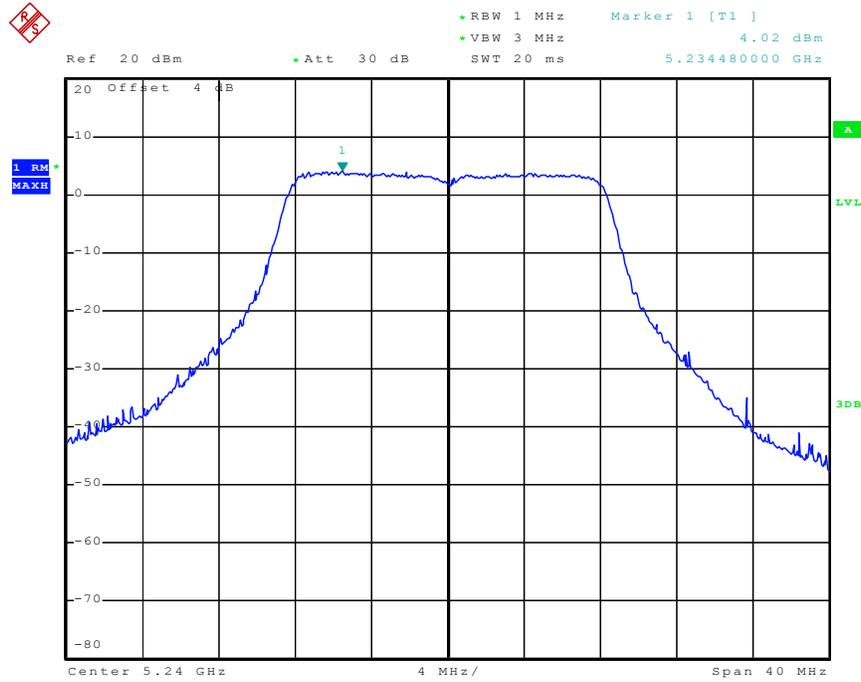
Date: 16.MAY.2015 10:46:23

Chain 0: Power Spectral Density, 802.11a Middle Channel



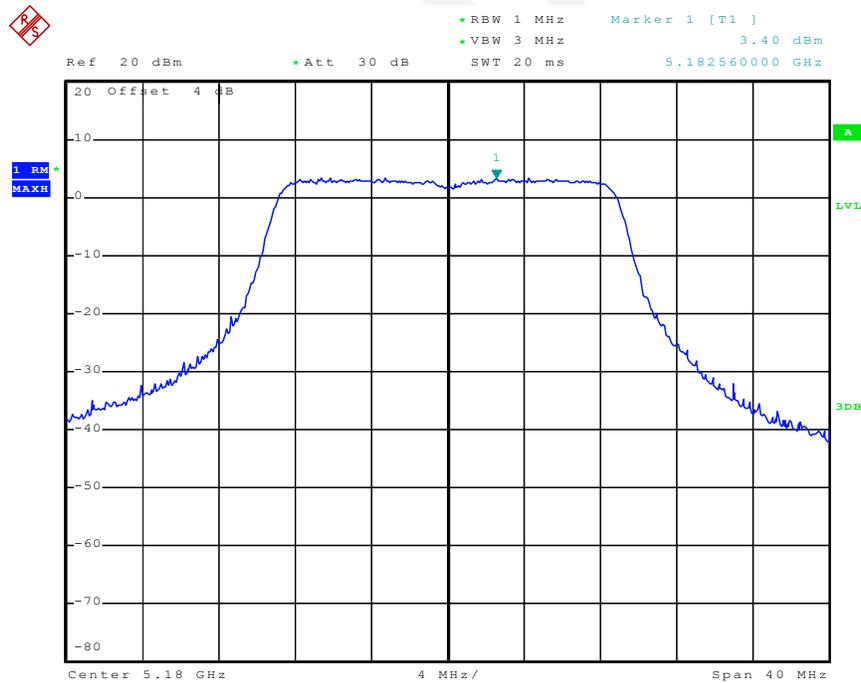
Date: 16.MAY.2015 11:04:45

Chain 0: Power Spectral Density, 802.11a High Channel



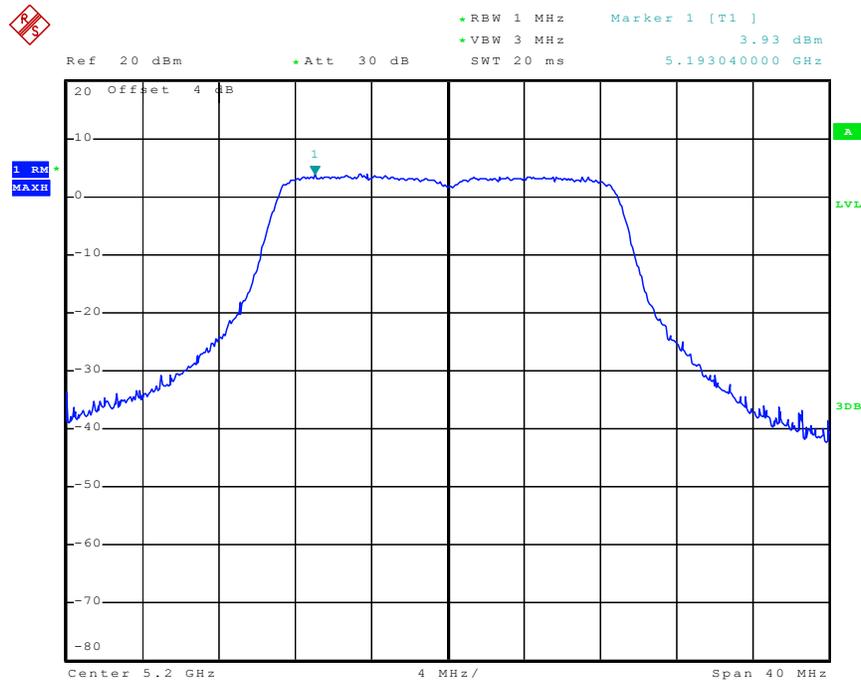
Date: 16.MAY.2015 11:07:25

Chain 0: Power Spectral Density, 802.11n ht20 Low Channel



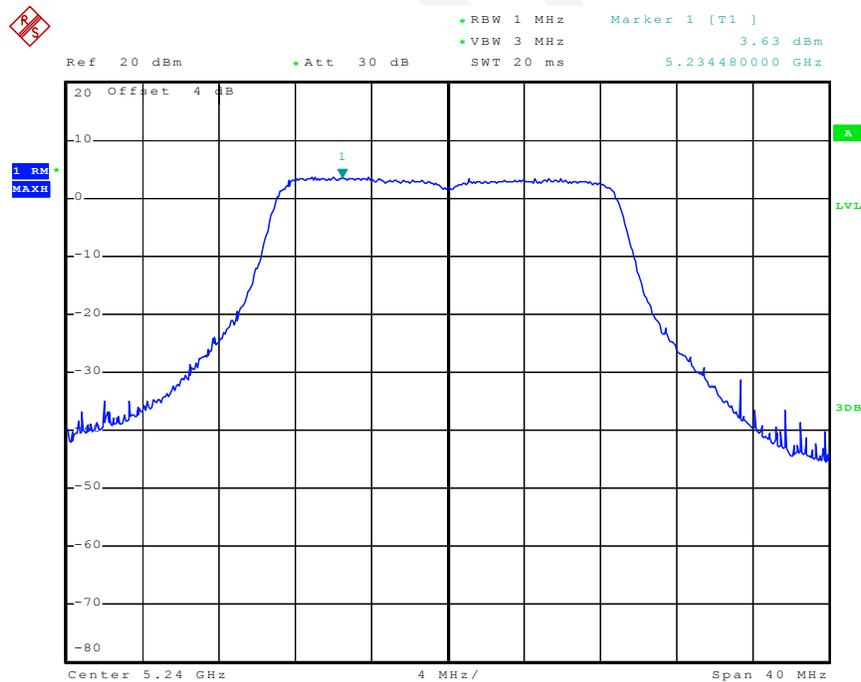
Date: 16.MAY.2015 11:19:29

Chain 0: Power Spectral Density, 802.11n ht20 Middle Channel



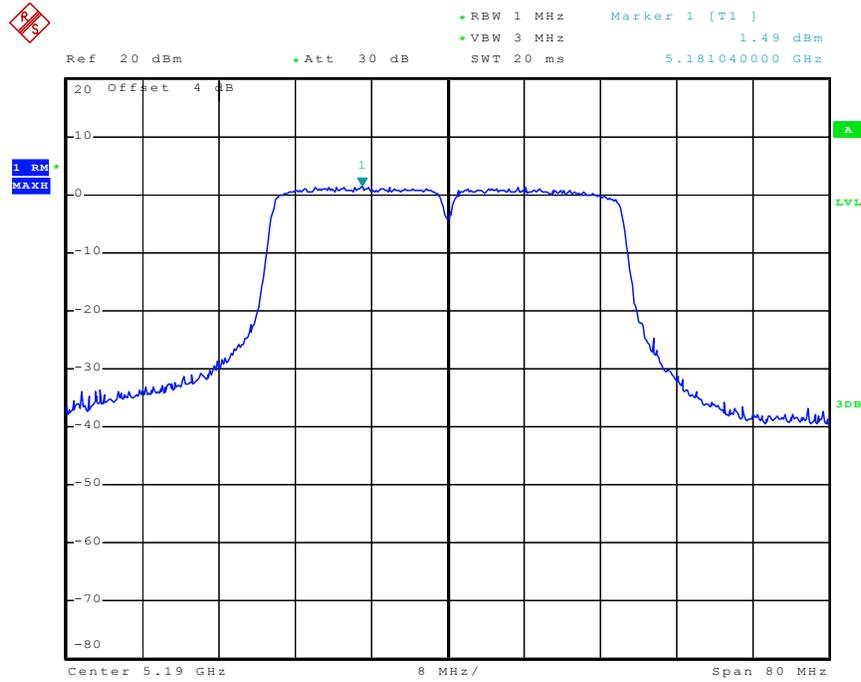
Date: 16.MAY.2015 11:21:13

Chain 0: Power Spectral Density, 802.11n ht20 High Channel



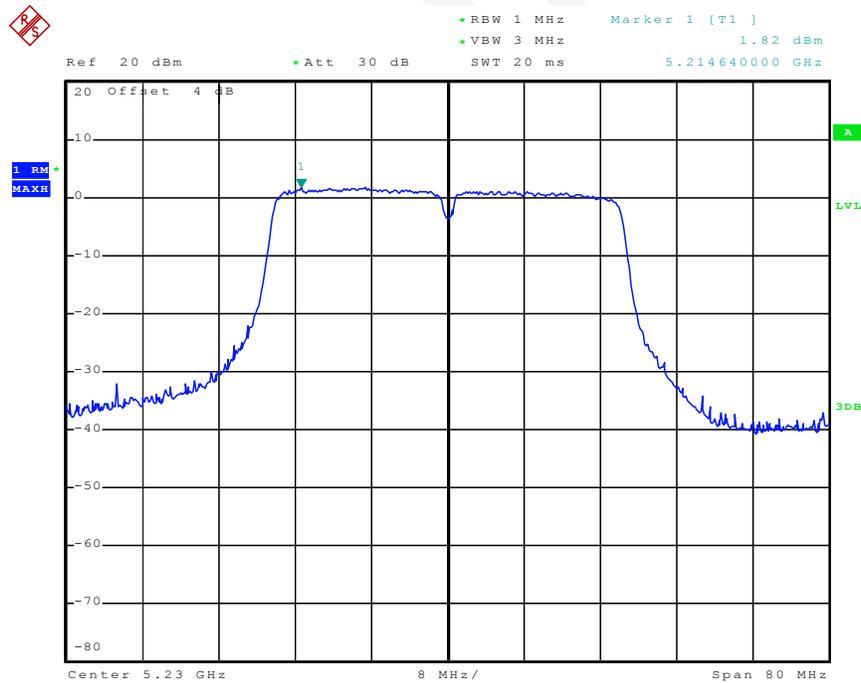
Date: 16.MAY.2015 11:33:07

Chain 0: Power Spectral Density, 802.11n ht40 Low Channel



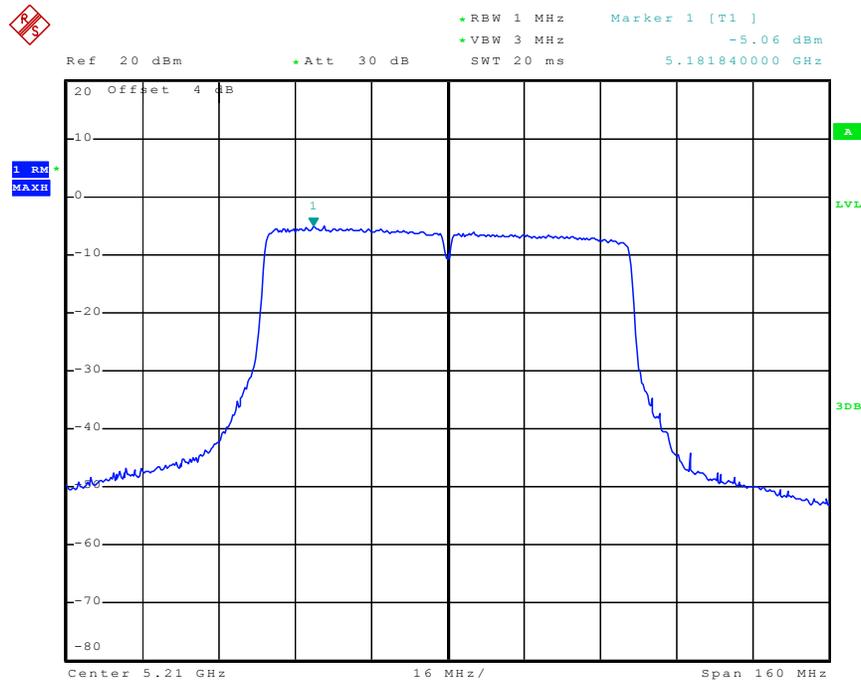
Date: 16.MAY.2015 11:37:20

Chain 0: Power Spectral Density, 802.11n ht40 High Channel



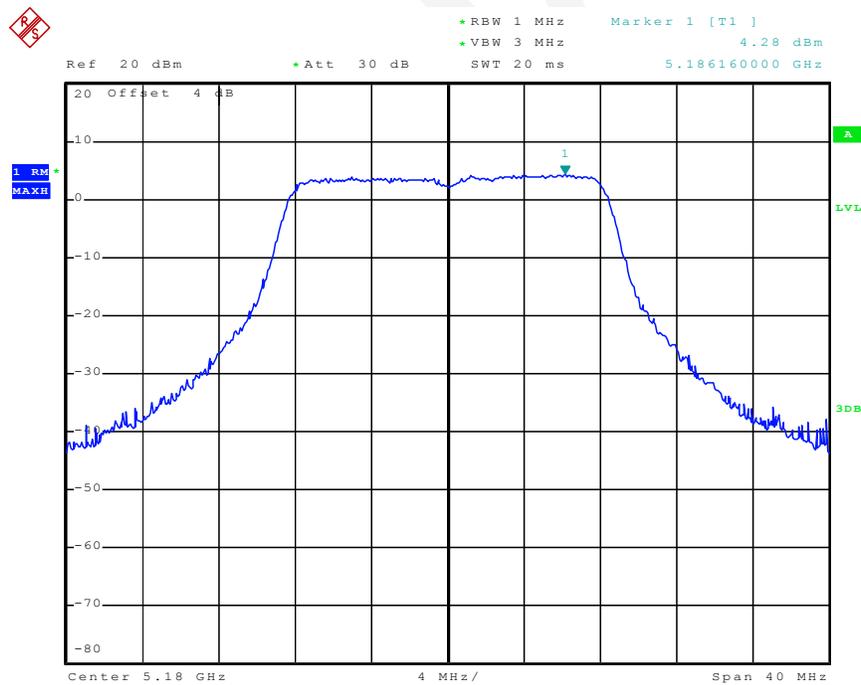
Date: 16.MAY.2015 11:45:05

Chain 0: Power Spectral Density, 802.11n ac80 Middle Channel



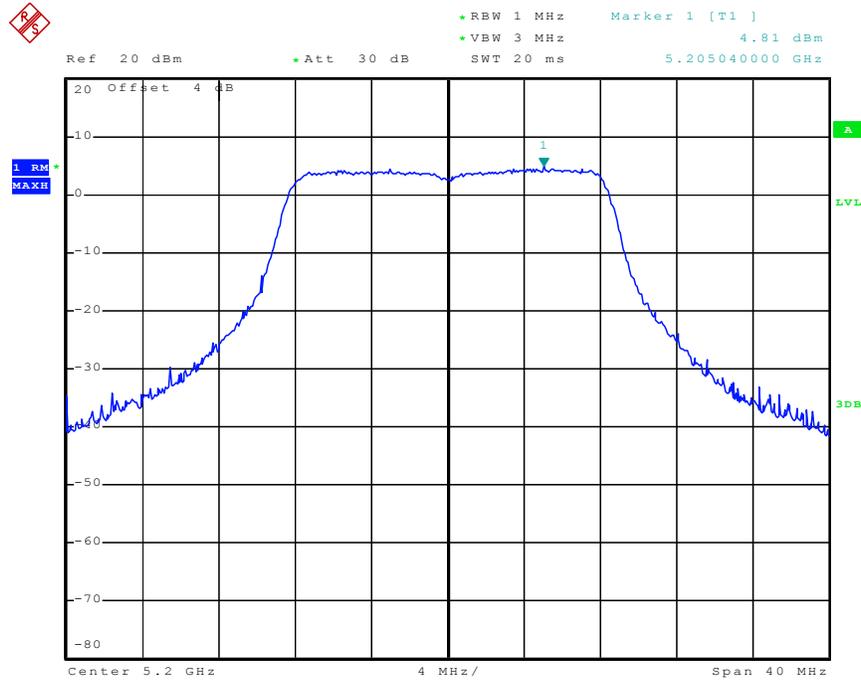
Date: 16.MAY.2015 11:47:25

Chain 1: Power Spectral Density, 802.11a Low Channel



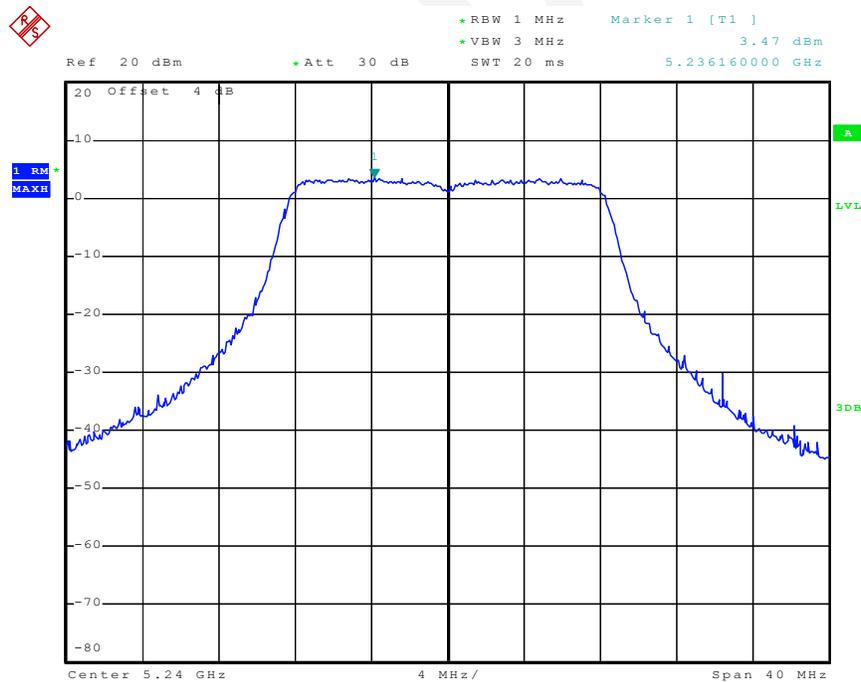
Date: 16.MAY.2015 10:57:34

Chain 1: Power Spectral Density, 802.11a Middle Channel



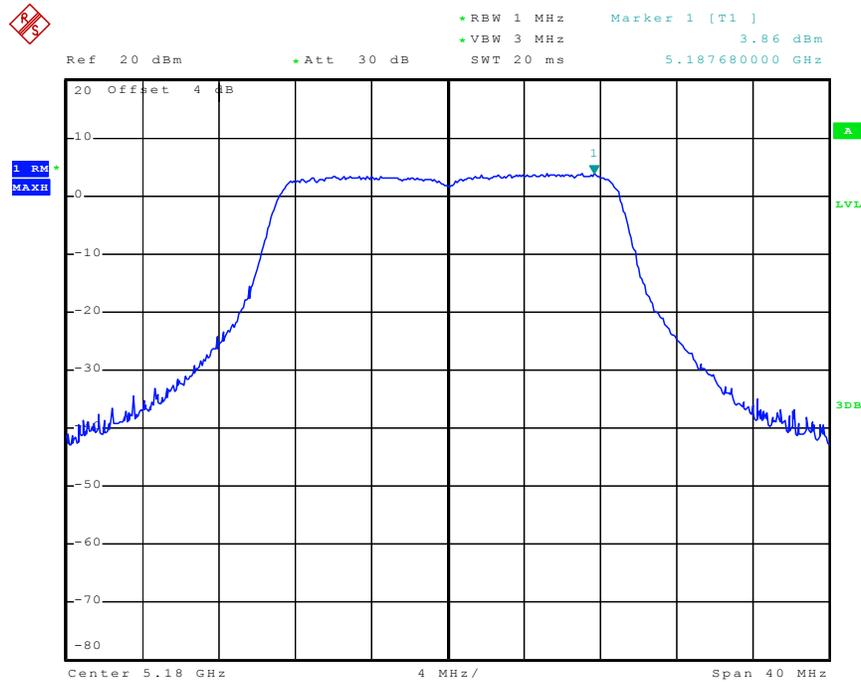
Date: 16.MAY.2015 11:03:11

Chain 1: Power Spectral Density, 802.11a High Channel



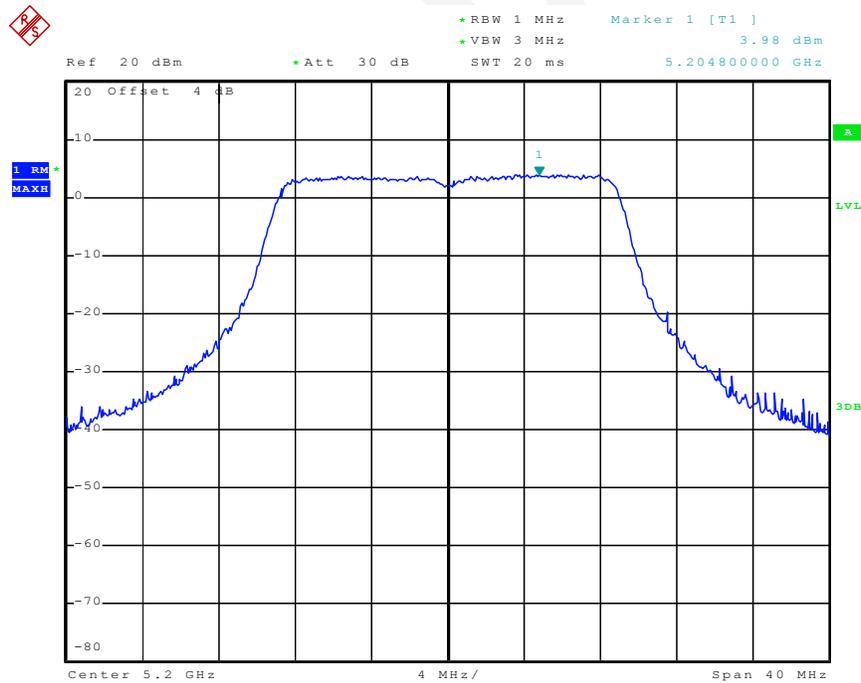
Date: 16.MAY.2015 11:09:42

Chain 1: Power Spectral Density, 802.11n ht20 Low Channel



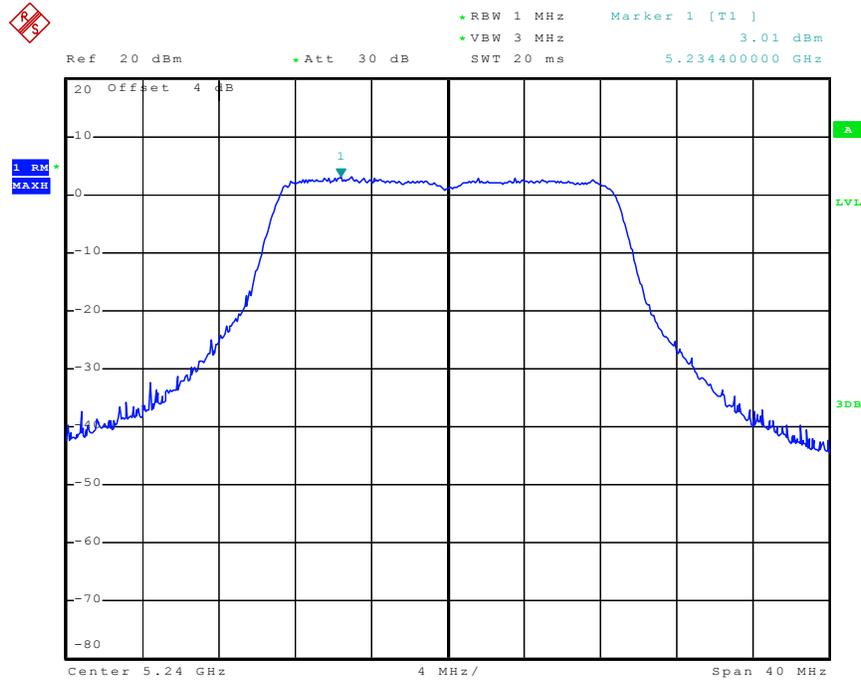
Date: 16.MAY.2015 11:17:27

Chain 1: Power Spectral Density, 802.11n ht20 Middle Channel



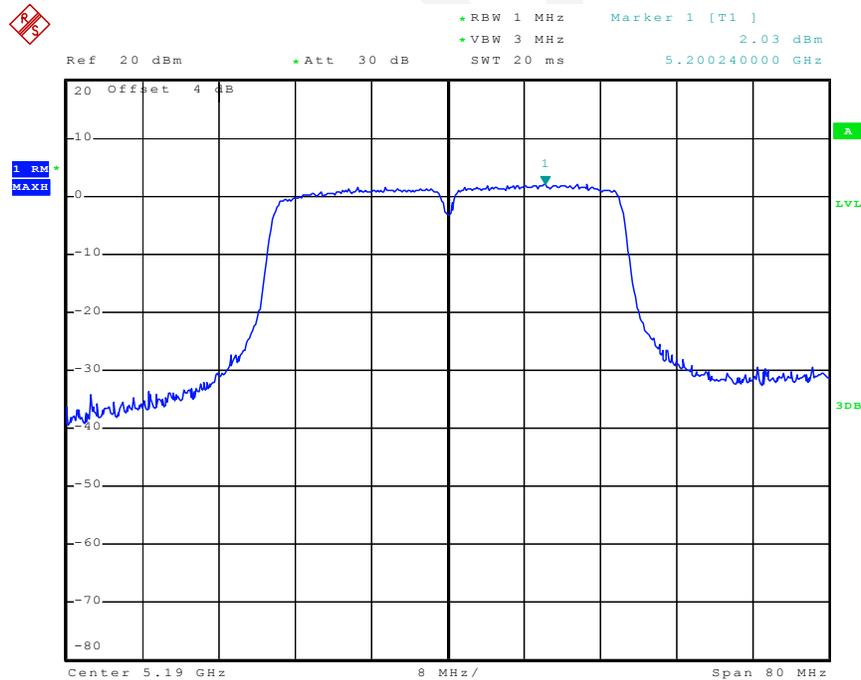
Date: 16.MAY.2015 11:22:56

Chain 1: Power Spectral Density, 802.11n ht20 High Channel



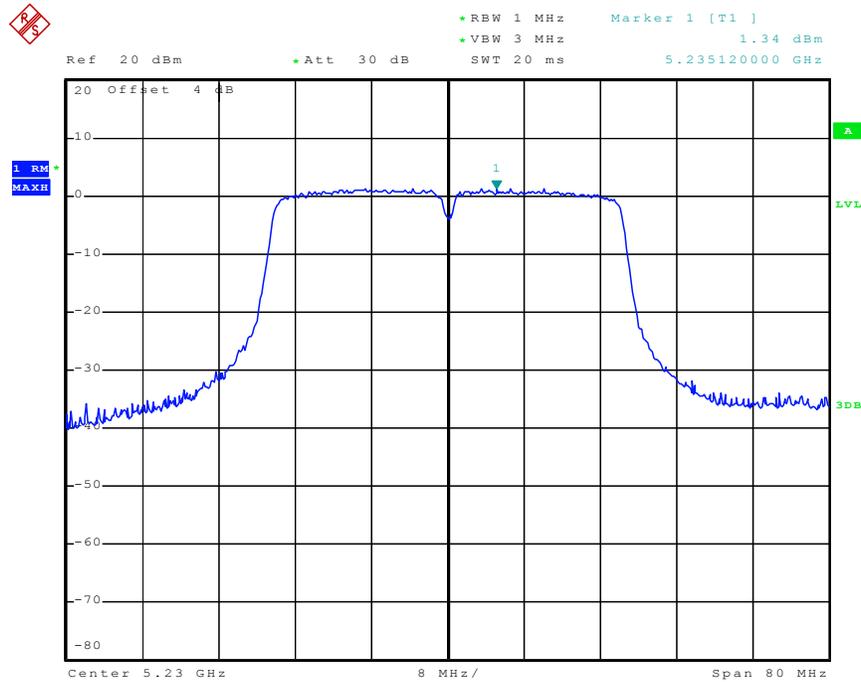
Date: 16.MAY.2015 11:31:37

Chain 1: Power Spectral Density, 802.11n ht40 Low Channel



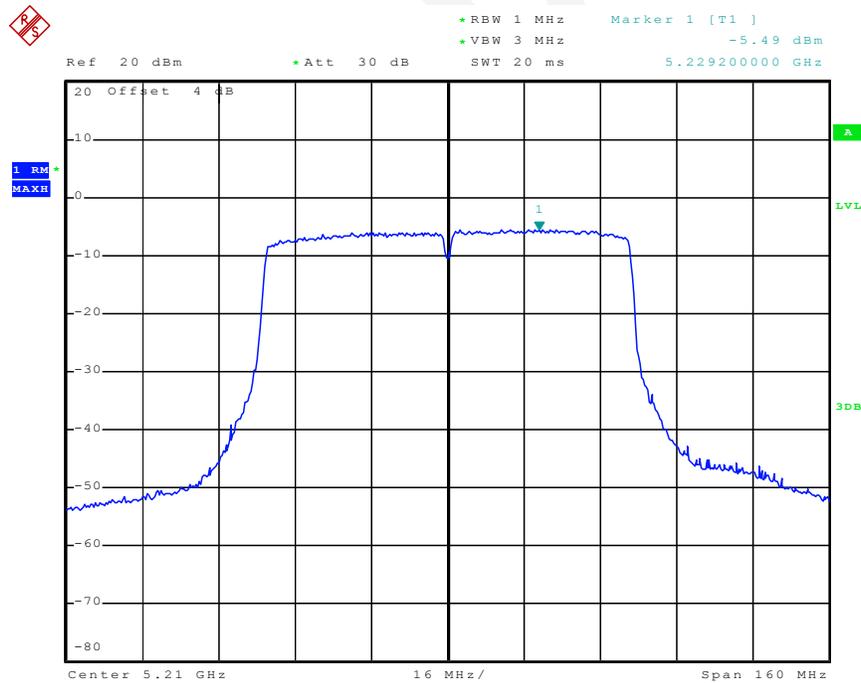
Date: 16.MAY.2015 11:38:40

Chain 1: Power Spectral Density, 802.11n ht40 High Channel



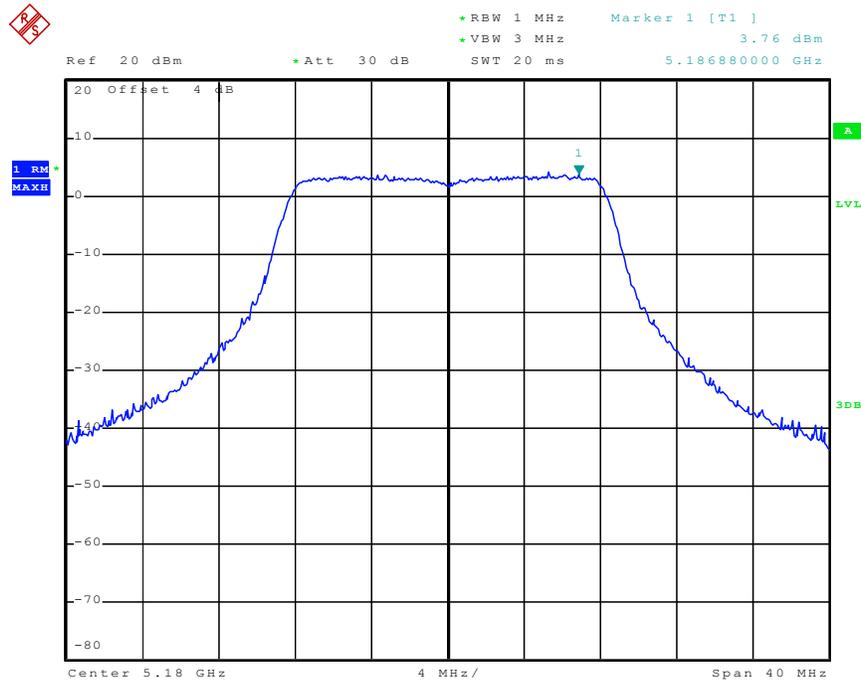
Date: 16.MAY.2015 11:43:38

Chain 1: Power Spectral Density, 802.11n ac80 Middle Channel



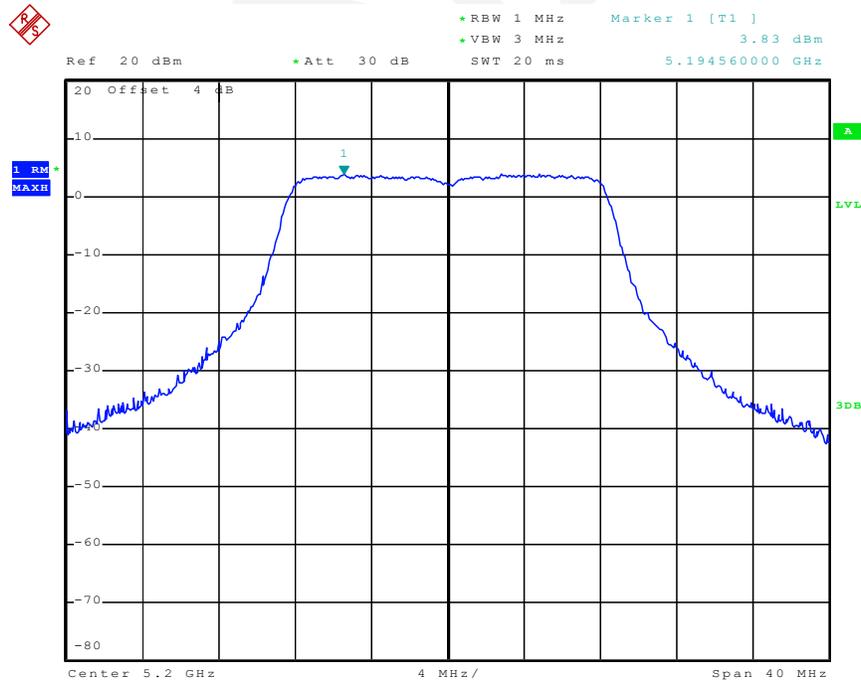
Date: 16.MAY.2015 11:49:27

Chain 2: Power Spectral Density, 802.11a Low Channel



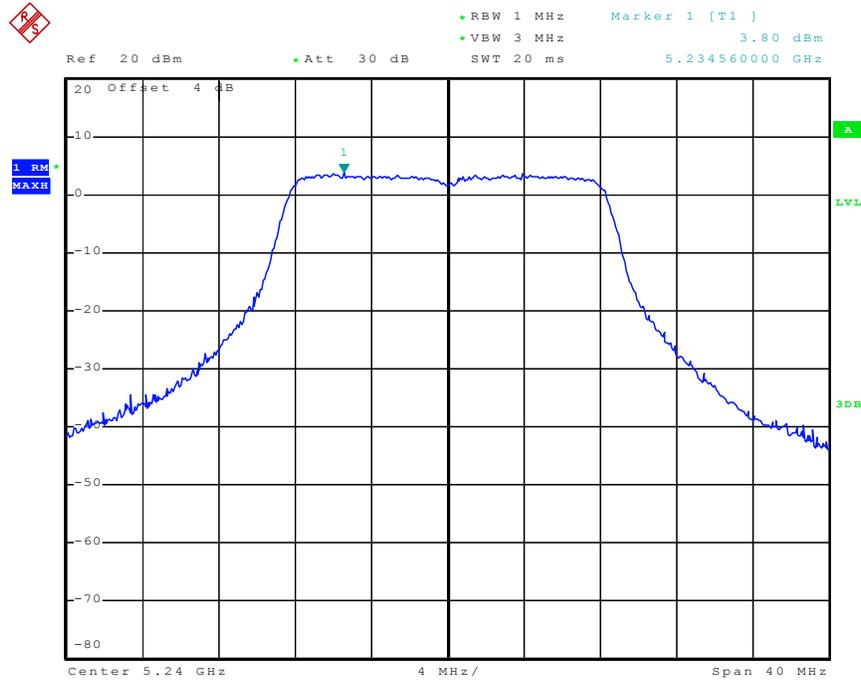
Date: 16.MAY.2015 10:59:49

Chain 2: Power Spectral Density, 802.11a Middle Channel



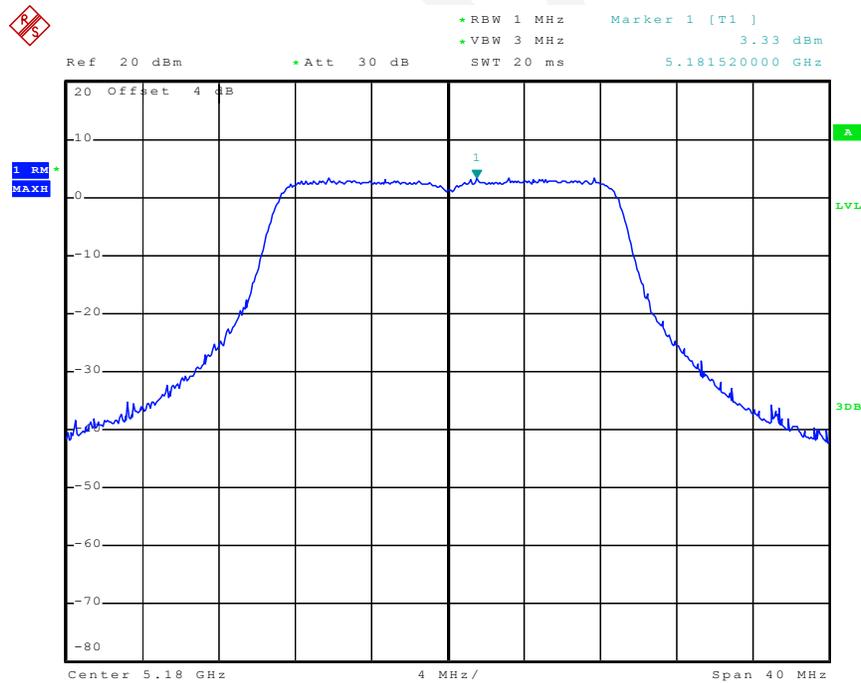
Date: 16.MAY.2015 11:01:43

Chain 2: Power Spectral Density, 802.11a High Channel



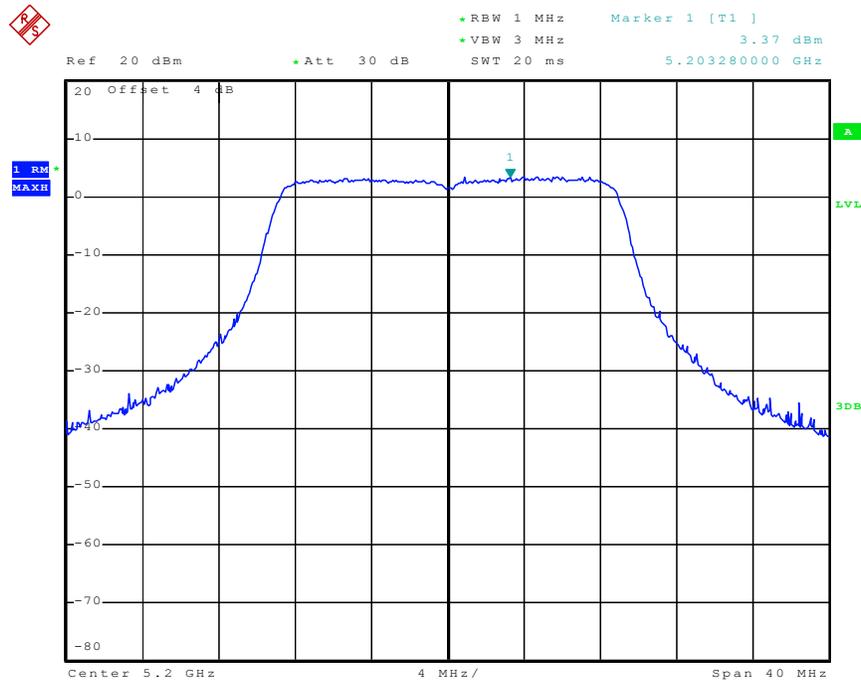
Date: 16.MAY.2015 11:11:31

Chain 2: Power Spectral Density, 802.11n ht20 Low Channel



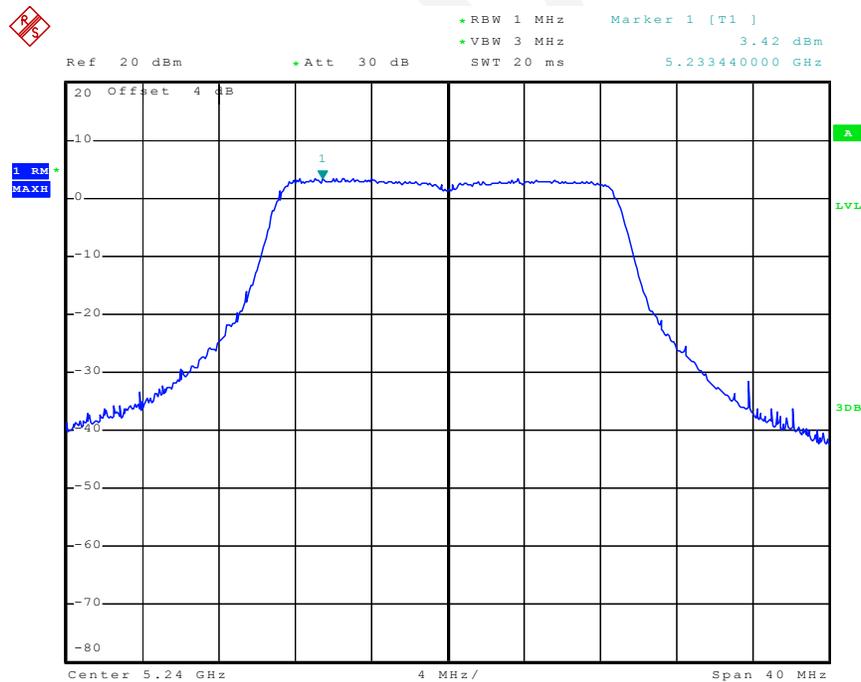
Date: 16.MAY.2015 11:15:24

Chain 2: Power Spectral Density, 802.11n ht20 Middle Channel



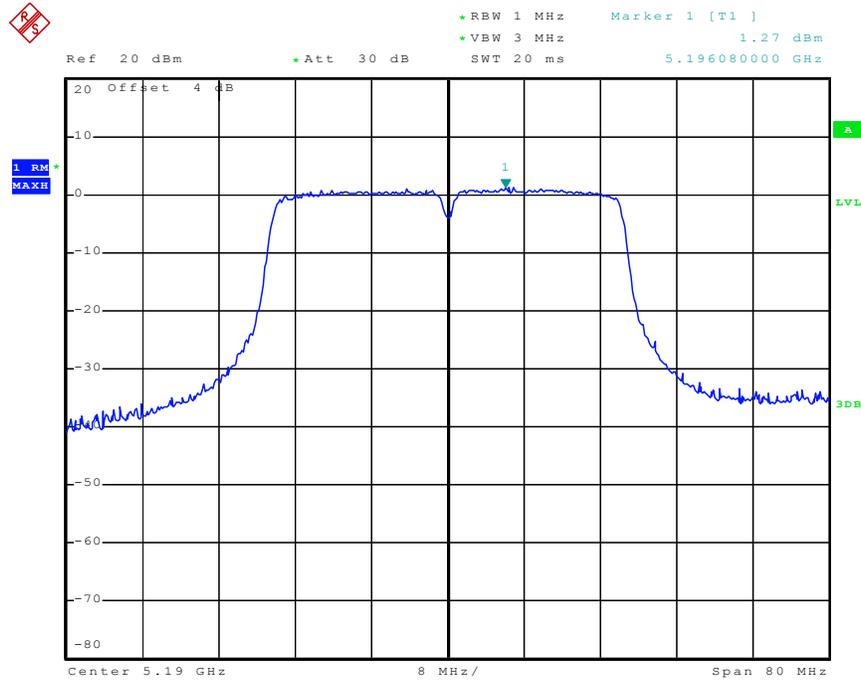
Date: 16.MAY.2015 11:24:51

Chain 2: Power Spectral Density, 802.11n ht20 High Channel



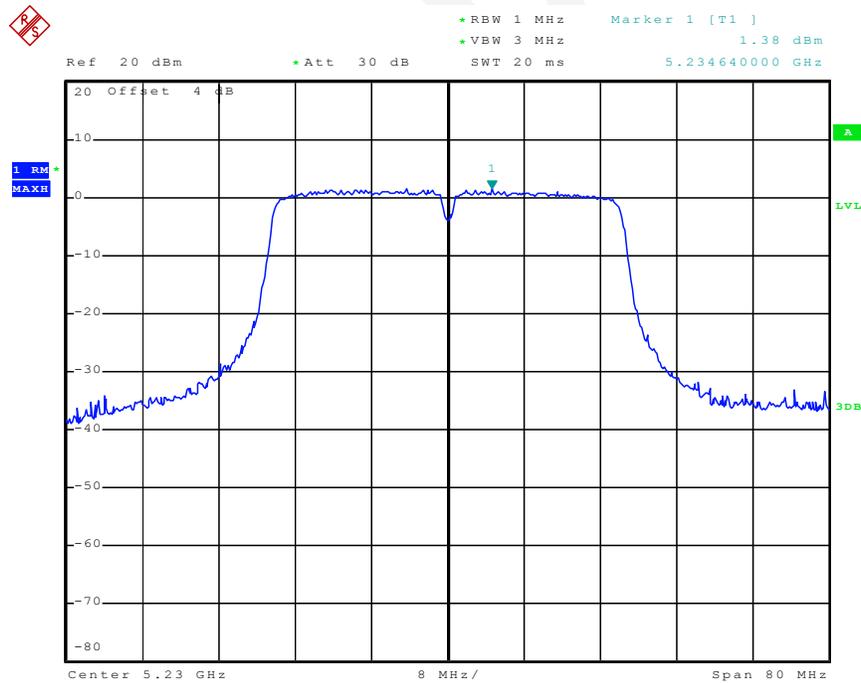
Date: 16.MAY.2015 11:26:28

Chain 2: Power Spectral Density, 802.11n ht40 Low Channel



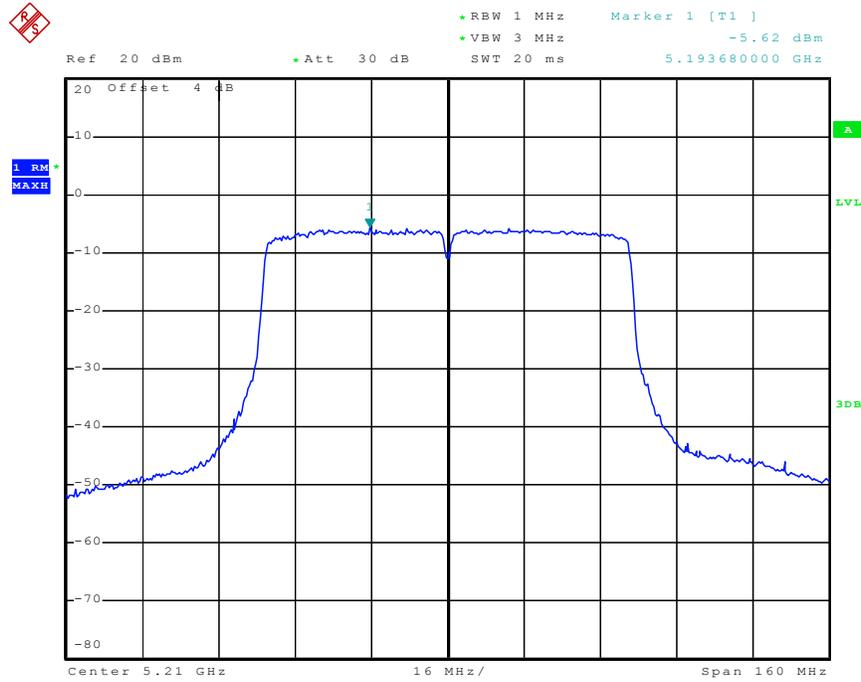
Date: 16.MAY.2015 11:40:10

Chain 2: Power Spectral Density, 802.11n ht40 High Channel



Date: 16.MAY.2015 11:42:06

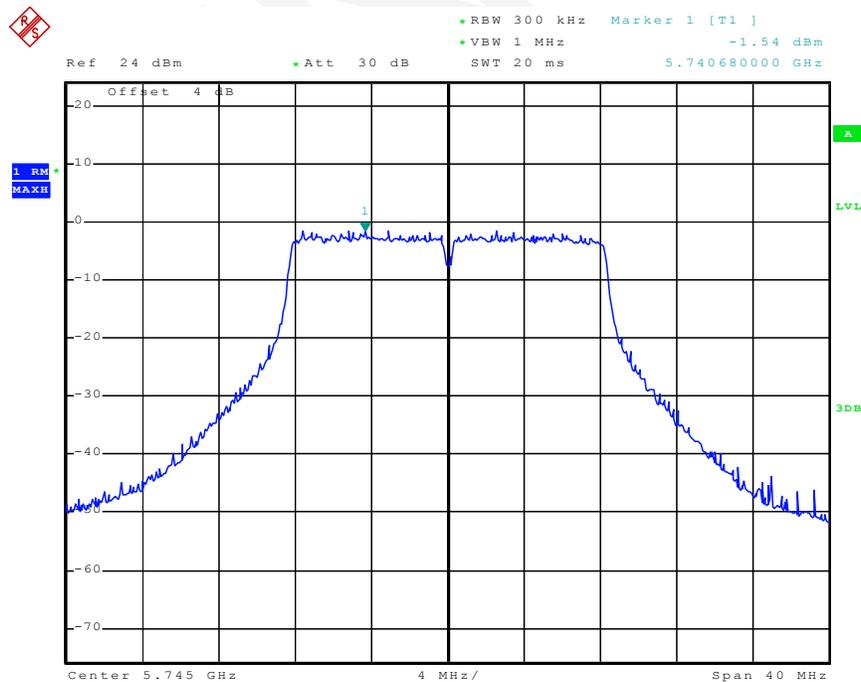
Chain 2: Power Spectral Density, 802.11n ac80 Middle Channel



Date: 16.MAY.2015 11:51:32

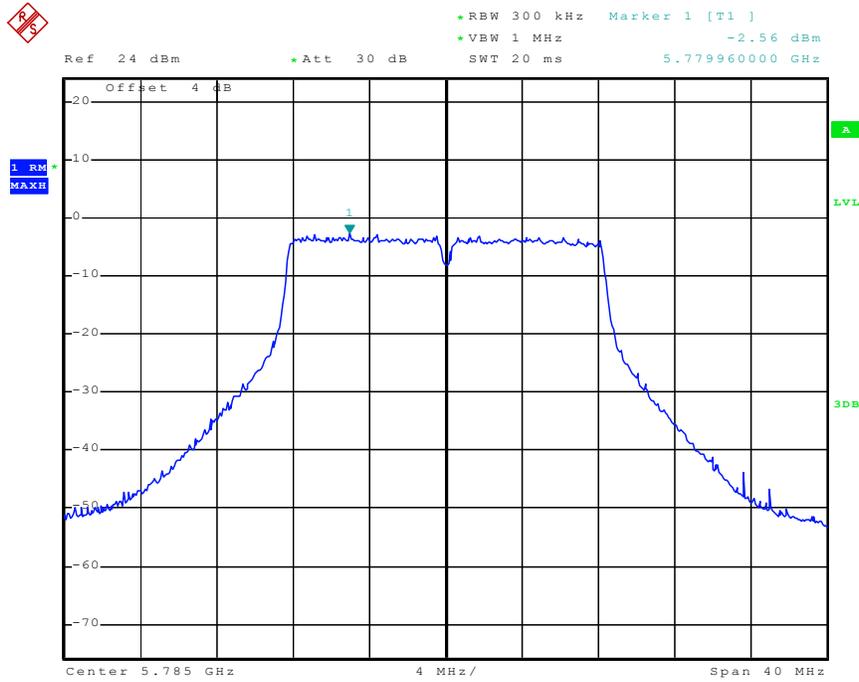
5725MHz-5850MHz:

Chain 0: Power Spectral Density, 802.11a Low Channel



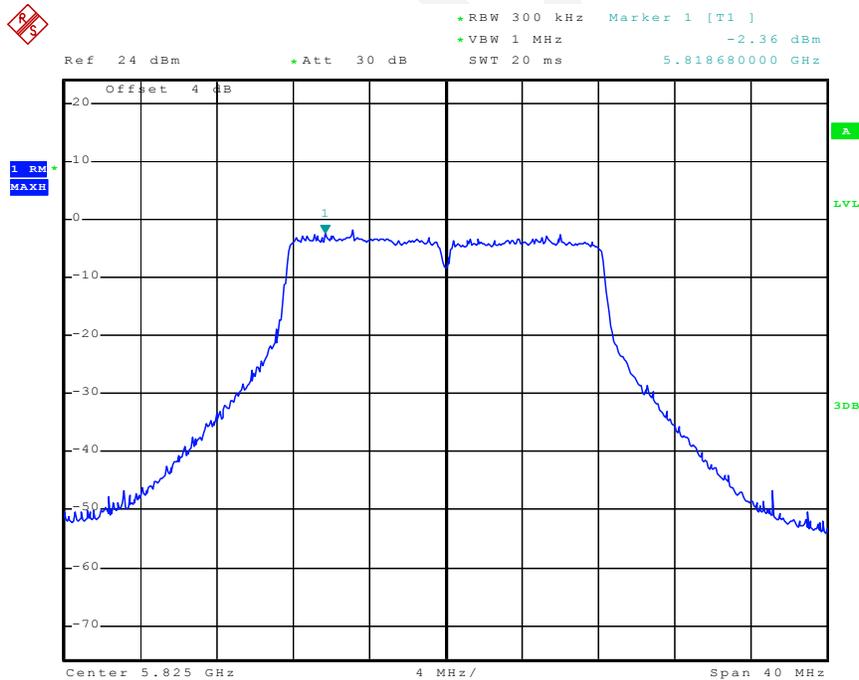
Date: 16.MAY.2015 17:21:04

Chain 0: Power Spectral Density, 802.11a Middle Channel



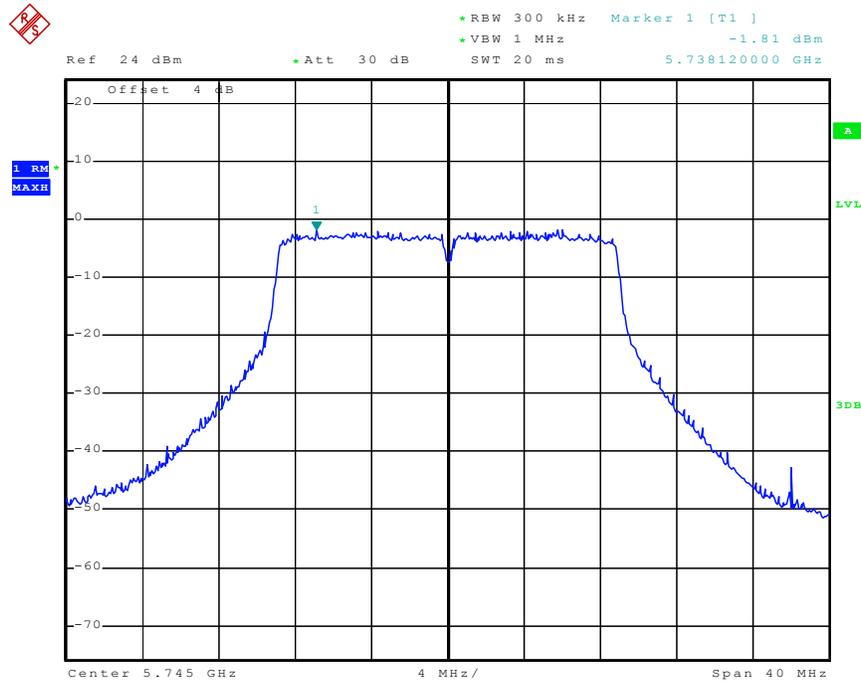
Date: 16.MAY.2015 17:32:01

Chain 0: Power Spectral Density, 802.11a High Channel



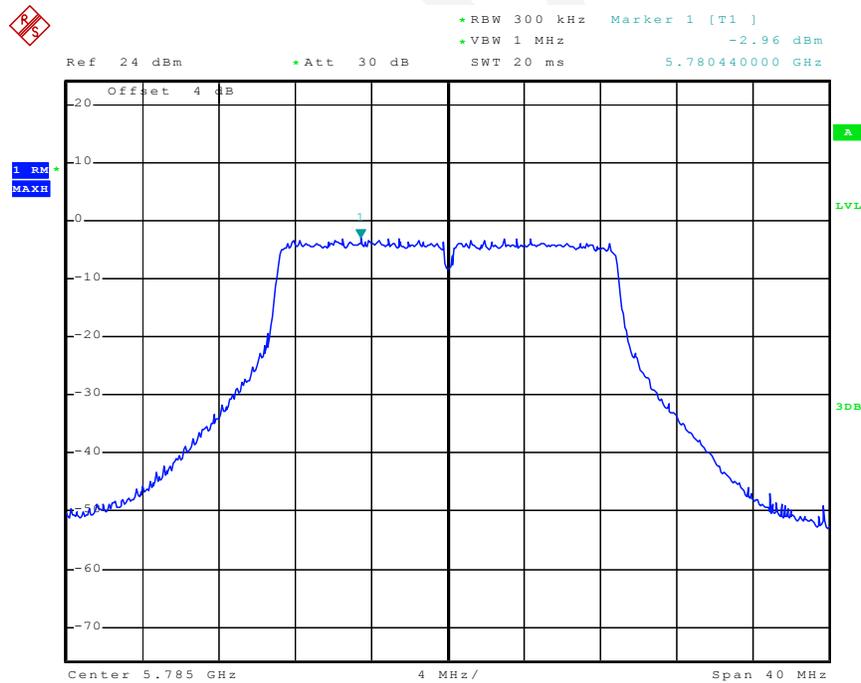
Date: 16.MAY.2015 17:34:06

Chain 0: Power Spectral Density, 802.11n ht20 Low Channel



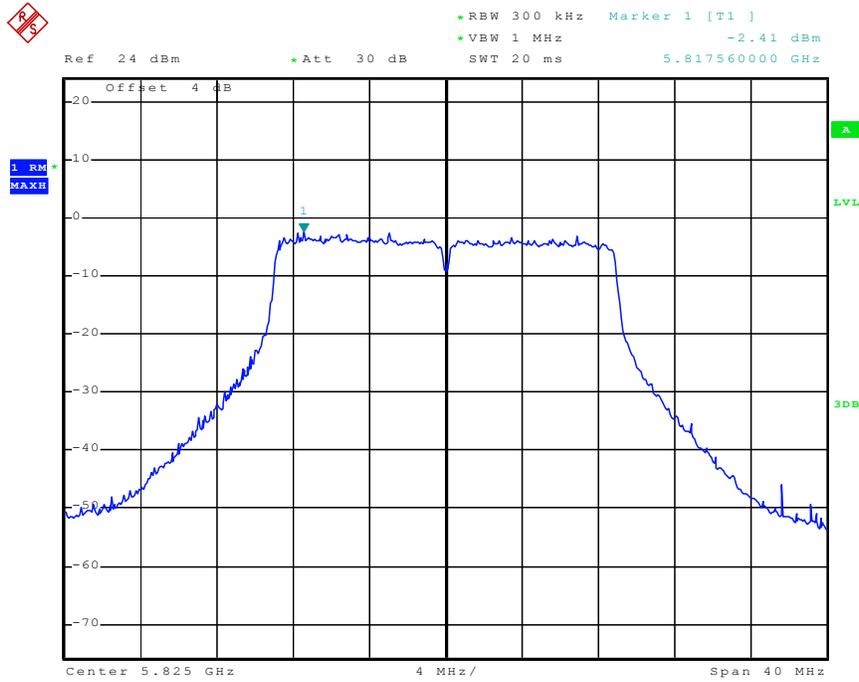
Date: 16.MAY.2015 17:59:20

Chain 0: Power Spectral Density, 802.11n ht20 Middle Channel



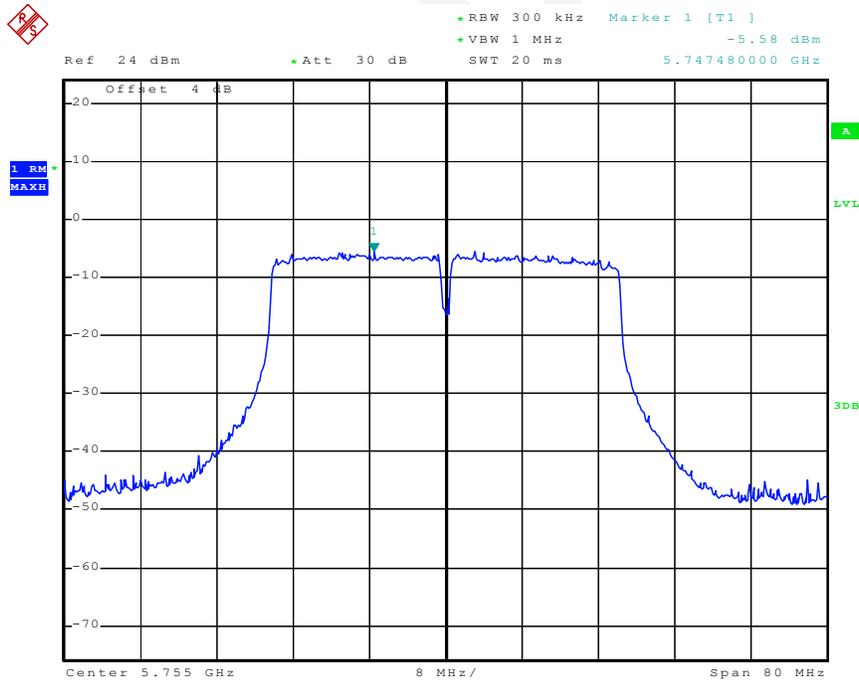
Date: 16.MAY.2015 17:48:51

Chain 0: Power Spectral Density, 802.11n ht20 High Channel



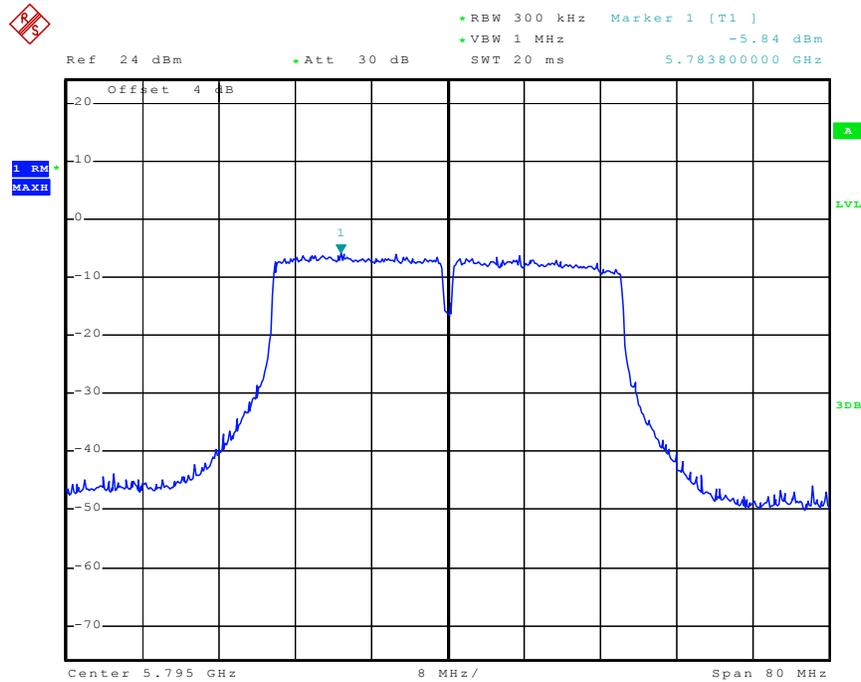
Date: 16.MAY.2015 17:46:31

Chain 0: Power Spectral Density, 802.11n ht40 Low Channel



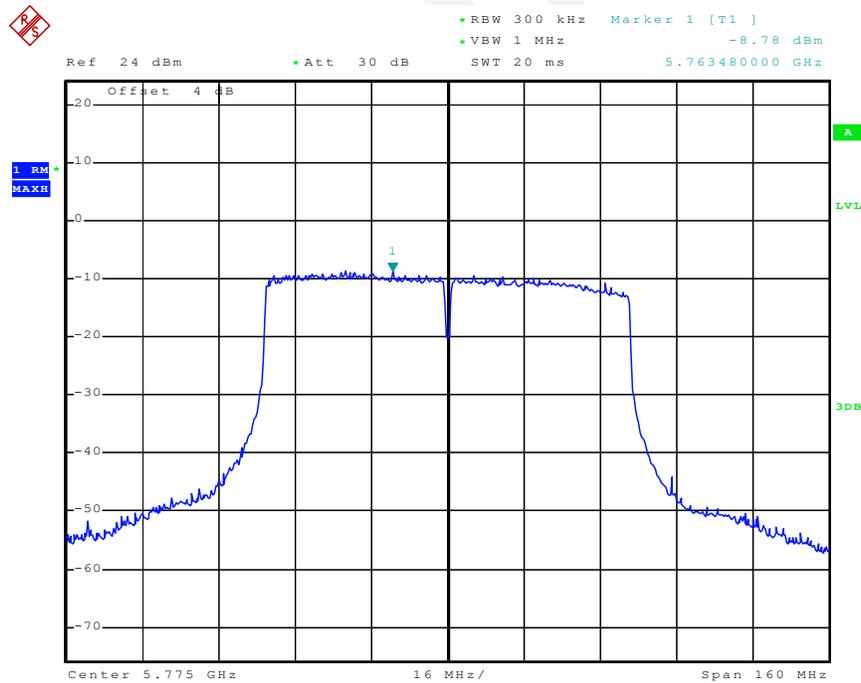
Date: 16.MAY.2015 18:03:04

Chain 0: Power Spectral Density, 802.11n ht40 High Channel



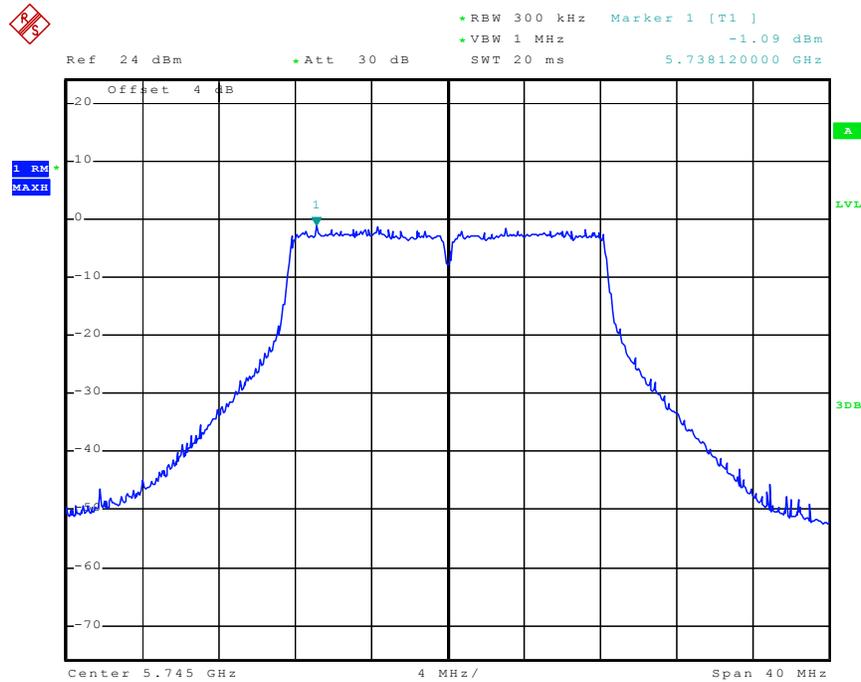
Date: 16.MAY.2015 18:35:44

Chain 0: Power Spectral Density, 802.11n ac80 Middle Channel



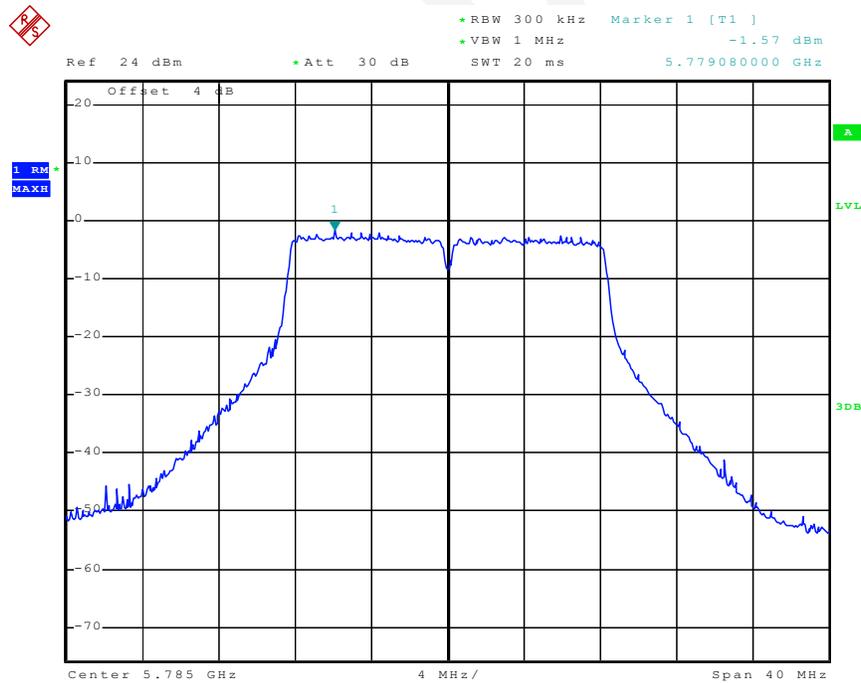
Date: 16.MAY.2015 18:27:10

Chain 1: Power Spectral Density, 802.11a Low Channel



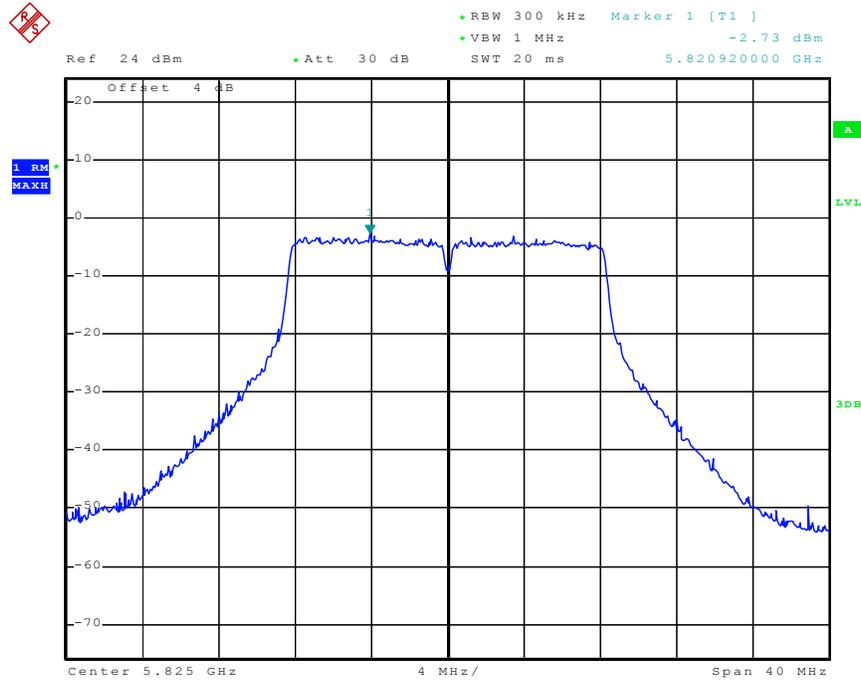
Date: 16.MAY.2015 17:23:38

Chain 1: Power Spectral Density, 802.11a Middle Channel



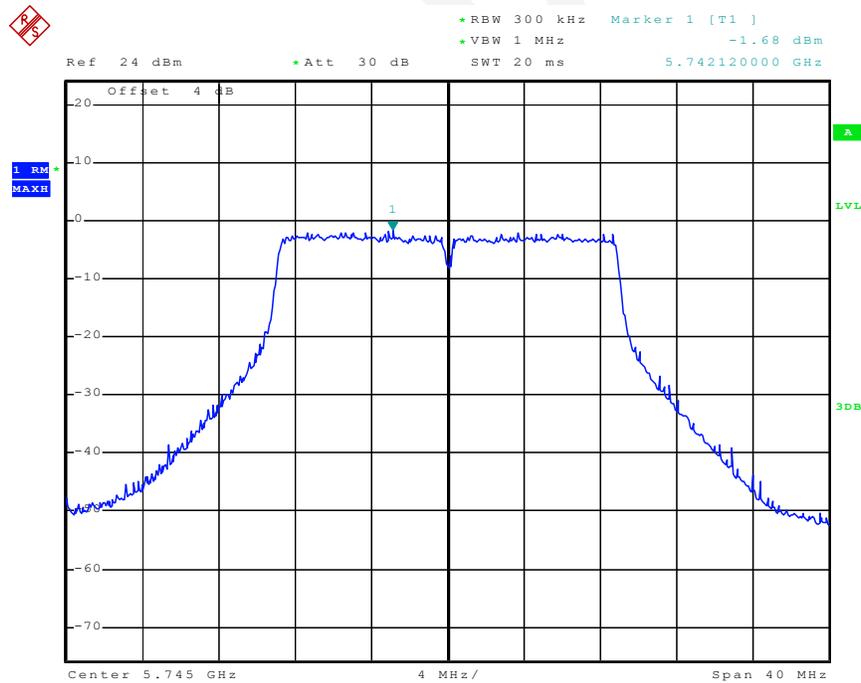
Date: 16.MAY.2015 17:30:11

Chain 1: Power Spectral Density, 802.11a High Channel



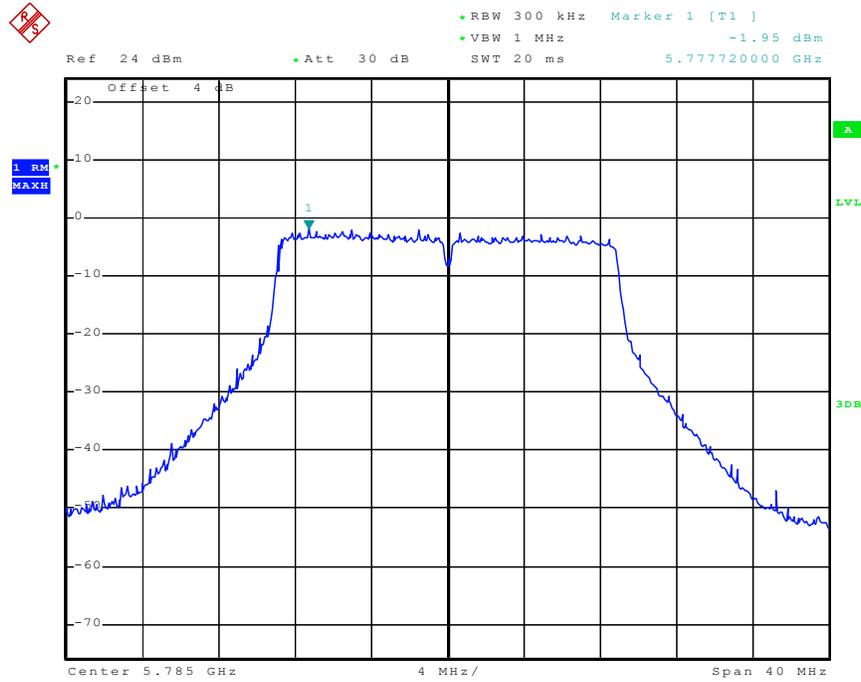
Date: 16.MAY.2015 17:37:15

Chain 1: Power Spectral Density, 802.11n ht20 Low Channel

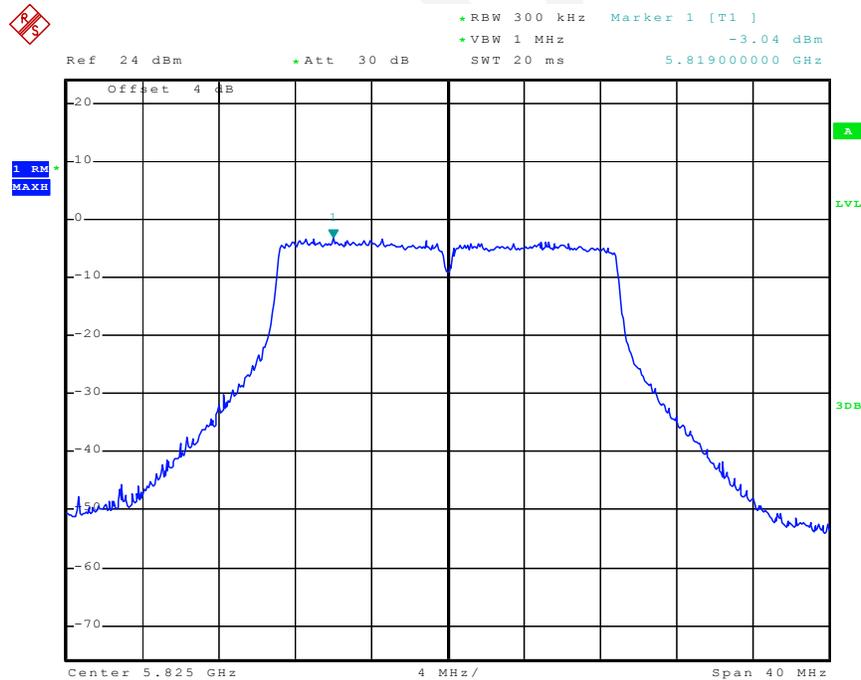


Date: 16.MAY.2015 17:56:54

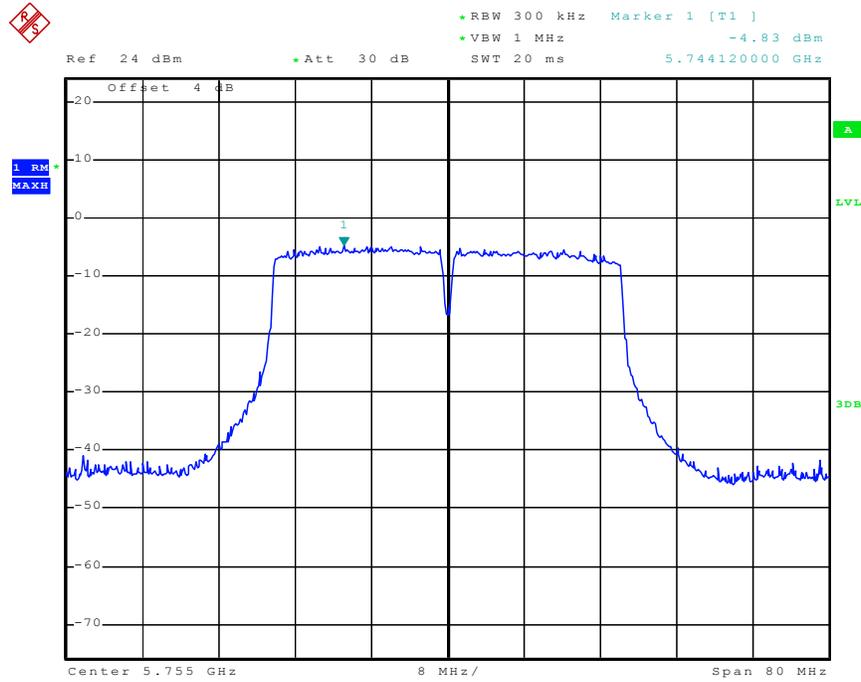
Chain 1: Power Spectral Density, 802.11n ht20 Middle Channel



Chain 1: Power Spectral Density, 802.11n ht20 High Channel

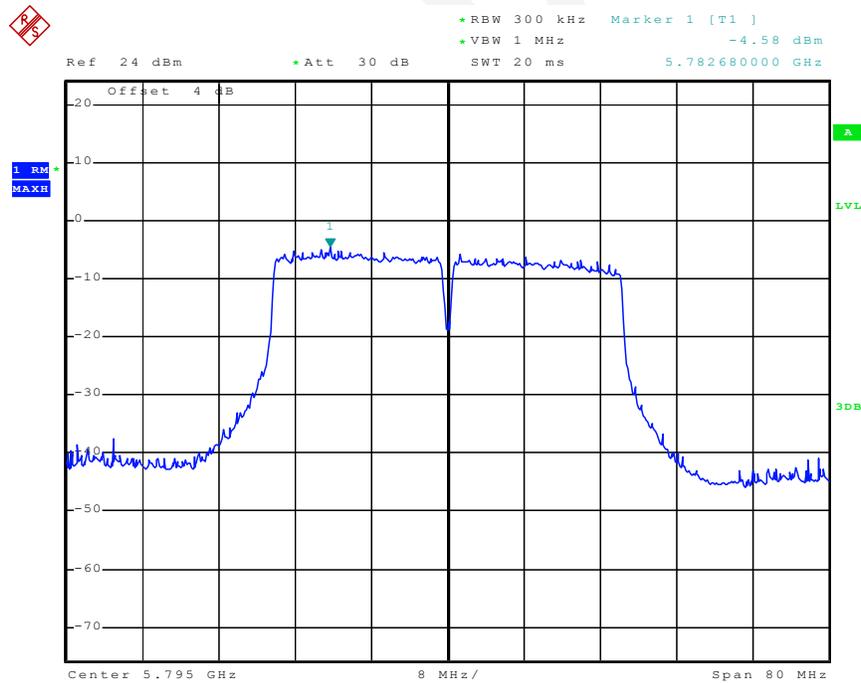


Chain 1: Power Spectral Density, 802.11n ht40 Low Channel



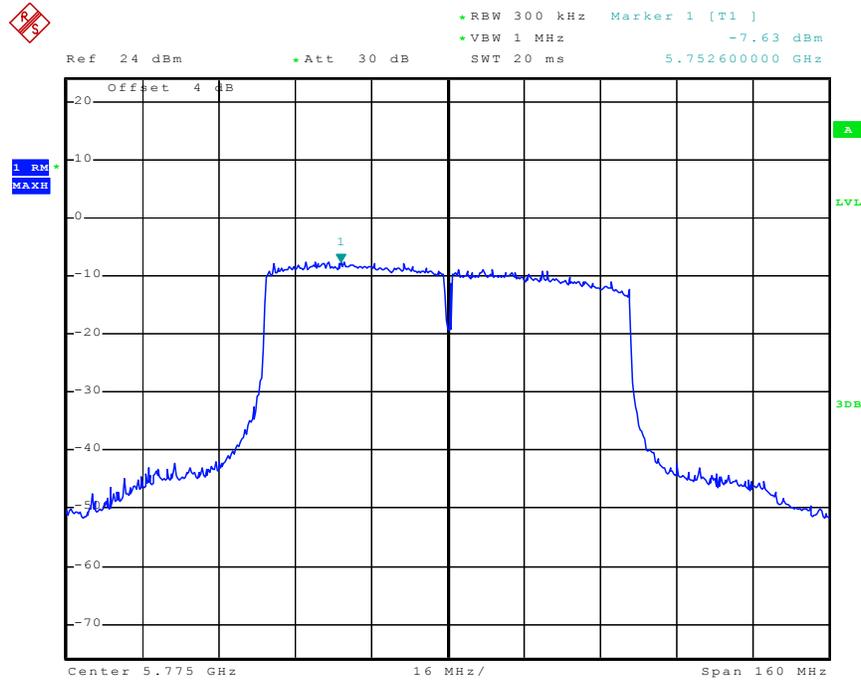
Date: 16.MAY.2015 18:10:40

Chain 1: Power Spectral Density, 802.11n ht40 High Channel



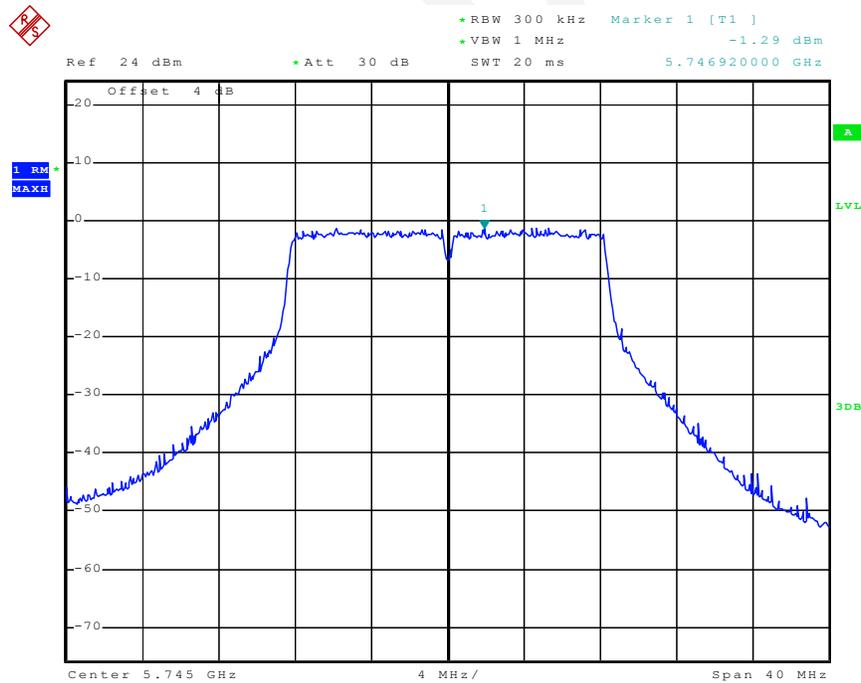
Date: 16.MAY.2015 18:18:05

Chain 1: Power Spectral Density, 802.11n ac80 Middle Channel



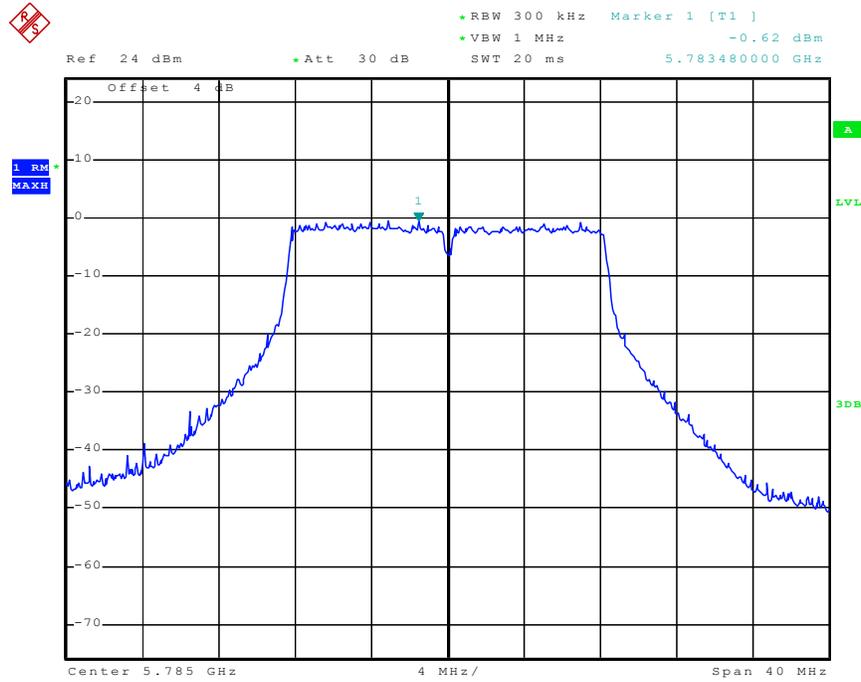
Date: 16.MAY.2015 18:29:21

Chain 2: Power Spectral Density, 802.11a Low Channel



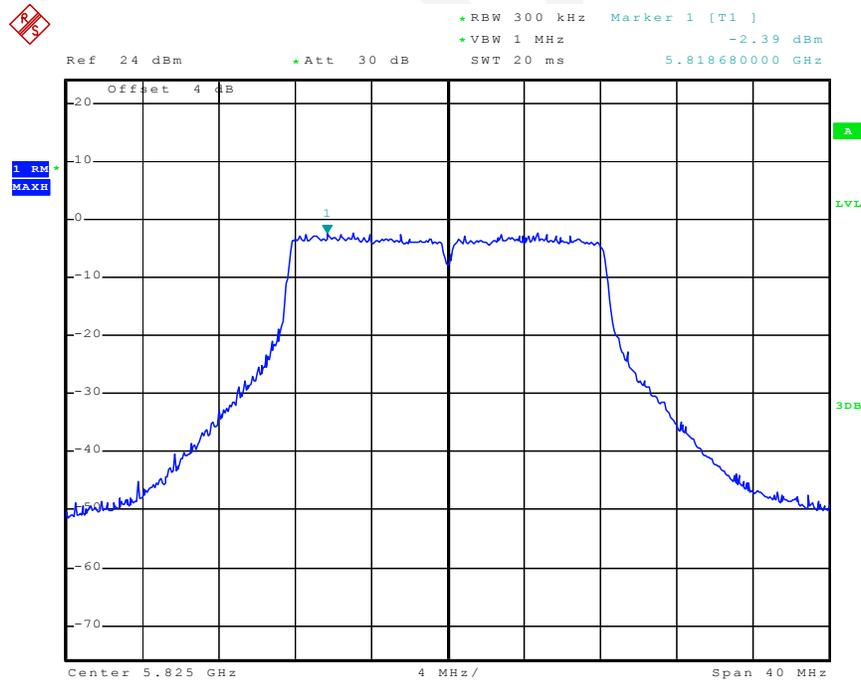
Date: 16.MAY.2015 17:25:51

Chain 2: Power Spectral Density, 802.11a Middle Channel



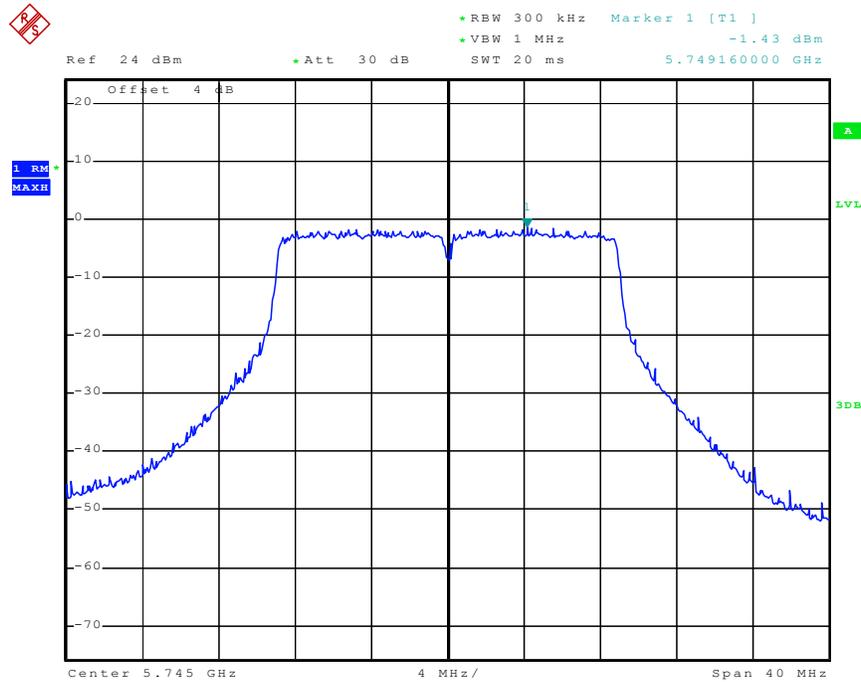
Date: 16.MAY.2015 17:28:24

Chain 2: Power Spectral Density, 802.11a High Channel



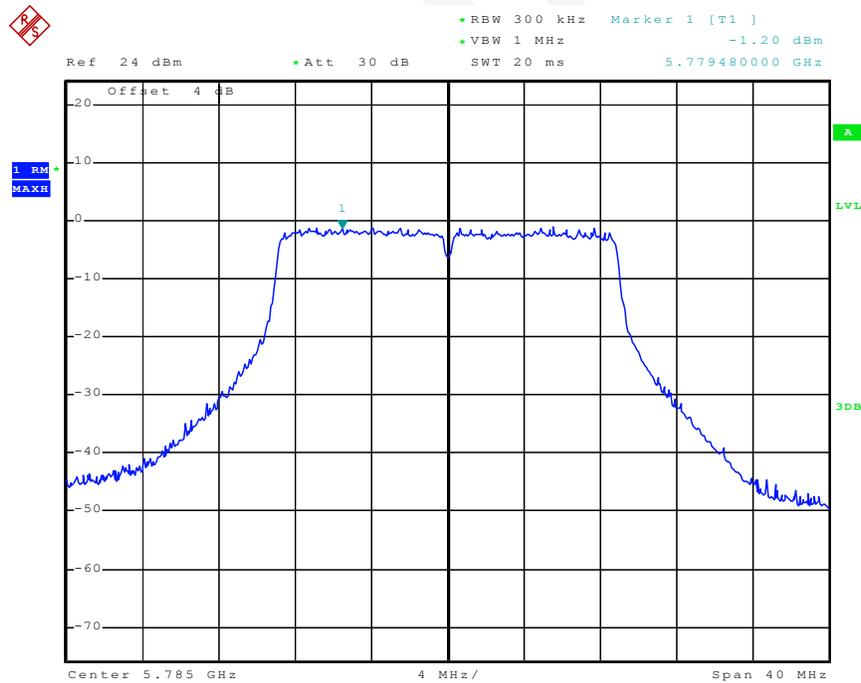
Date: 16.MAY.2015 17:39:23

Chain 2: Power Spectral Density, 802.11n ht20 Low Channel



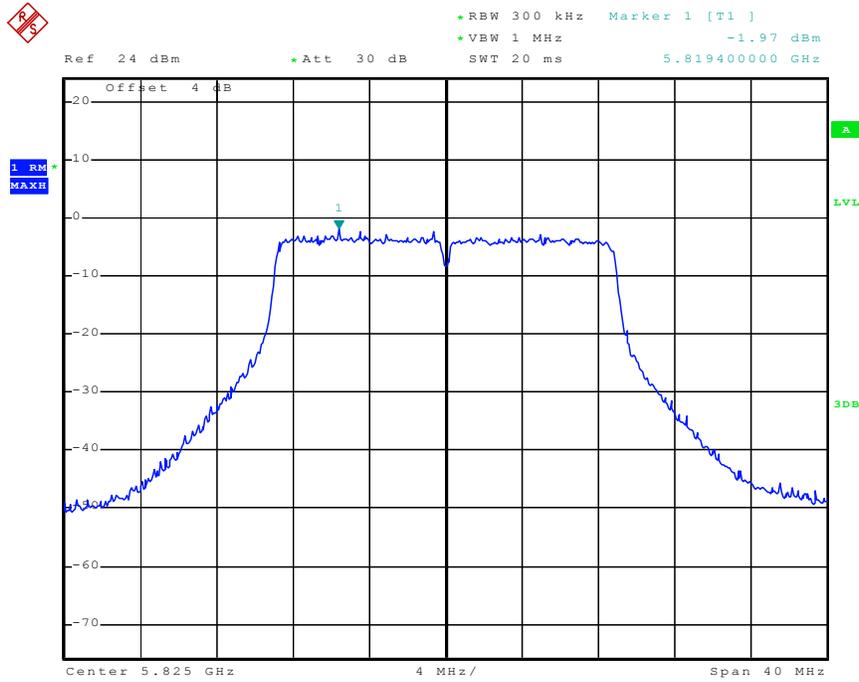
Date: 16.MAY.2015 17:54:22

Chain 2: Power Spectral Density, 802.11n ht20 Middle Channel



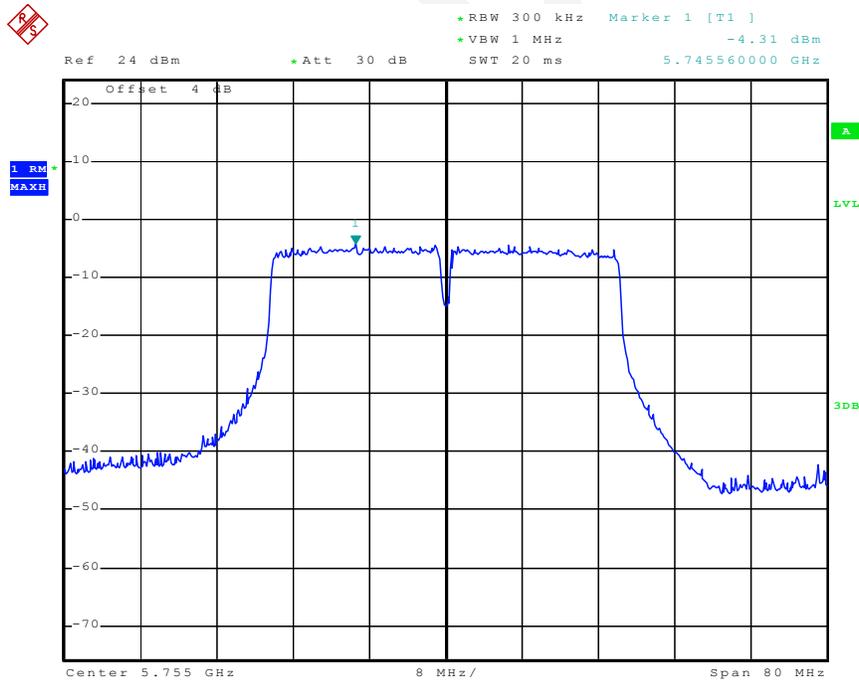
Date: 16.MAY.2015 17:52:32

Chain 2: Power Spectral Density, 802.11n ht20 High Channel



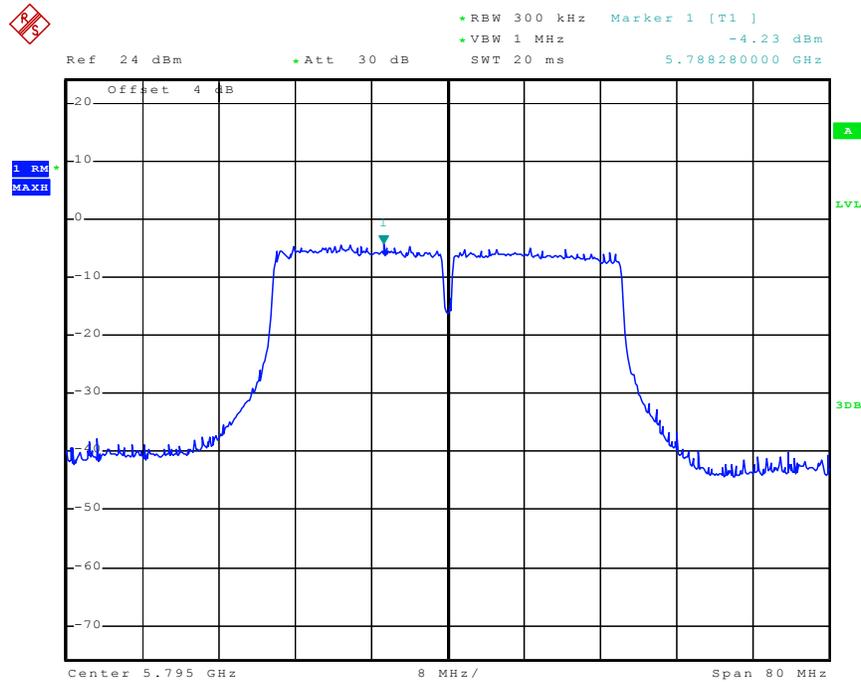
Date: 16.MAY.2015 17:41:59

Chain 2: Power Spectral Density, 802.11n ht40 Low Channel



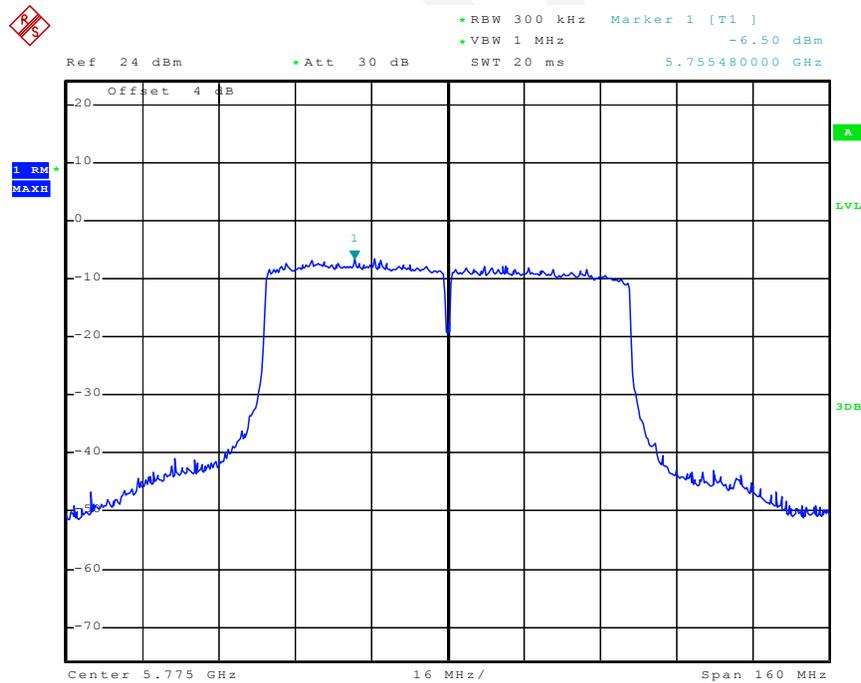
Date: 16.MAY.2015 18:13:08

Chain 2: Power Spectral Density, 802.11n ht40 High Channel



Date: 16.MAY.2015 18:15:33

Chain 2: Power Spectral Density, 802.11n ac80 Middle Channel



Date: 16.MAY.2015 18:31:41

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