FCC PART 15.407

TEST REPORT

For

Iconnect

No.9, Aly. 58, Ln. 112, Ruiguang Rd., Neihu Dist.,Taipei City,Taiwan

FCC ID: 2AB87197D

Report Type:	Product Type:
Original Report	802.11ac AC1200 Wide-Range Wi Fi Router

Test Engineer:	Allen Qiao
Report Number:	RDG150401003-00B
Report Date:	2015-04-23
Reviewed By:	Sula Huang RF Leader
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Iconnect*'s product, model number: *AC1200R (FCC ID: 2AB87197D) or* ("EUT") in this report is a *802.11ac AC1200 Wide-Range Wi Fi Router,* which was measured approximately: 17 cm (L) x 11.4 cm (W) x3.2 cm (H), rated input voltage: DC 12V from adapter.

Adapter Information: Sunny
Model: SYS1308-2412-W2
Input: AC 100-240V, 50/60Hz, MAX 1.0A
Output: DC 12V, 2.0A

Note: The series product, model AC1200R, AC1200RV2, AC1200RU, AC1200RU2, AC1200RI, AC1200RUI, C1200RIV2,AC1200RUIV2,AC1200RG,AC600R,AC600RV2,AC600RU,AC600RUV2,AC600RI,AC600RIV2 are electrically identical, the difference between them is just the model name, we selected AC1200R for fully testing, the details was explained in the attached

** All measurement and test data in this report was gathered from production sample serial number: 154AAC12R0004 (Assigned by applicant). The EUT was received on 2015-04-03.*

Objective

This type approval report is prepared on behalf of *Iconnect* 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 Part 15C JBP submissions with FCC ID: 2AB87197D.
FCC Part 15C DTS submissions with FCC ID: 2AB87197D.

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.

For 5150~5250 MHz band, channels are provided to test as follows:

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 5725~5850 MHz band, channels are provided to test as follows:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	159	5795
151	5755	161	5805
153	5765	163	5815
155	5775	165	5825
157	5785	/	/

For 802.11a, 802.11n ht20, Channel 149, 157 and 165 were tested, for 802.11n ht40, Channel 151, 159 were 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 software "MP-TEST" was used for testing, and the commands were provided by manufacturer. The worst condition (maximum power) was setting by the software as following table:

5150¬5250MHz Band:

Chain 0:

Test Mode	Test Software Version	MP-TEST		
802.11a	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	60	60	60
802.11n ht20	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	(HT Mixmode) MCS0	(HT Mixmode) MCS0	(HT Mixmode) MCS0
	Power Level Setting	60	60	60
802.11n ht40	Test Frequency	5190MHz	5230MHz	/
	Data Rate	(HT Mix mode) MCS0	(HT Mix mode) MCS0	/
	Power Level Setting	53	53	/
802.11n ac80	Test Frequency	5210MHz	/	/
	Data Rate	(VHT Mode)MCS0	/	/
	Power Level Setting	49	/	/

Chain 1:

Test Mode	Test Software Version	MP-TEST		
802.11a	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	55	55	54
802.11n ht20	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	(HT Mixmode) MCS0	(HT Mixmode) MCS0	(HT Mixmode) MCS0
	Power Level Setting	54	53	54
802.11n ht40	Test Frequency	5190MHz	5230MHz	/
	Data Rate	(HT Mix mode) MCS0	(HT Mix mode) MCS0	/
	Power Level Setting	53	53	/
802.11n ac80	Test Frequency	5210MHz	/	/
	Data Rate	(VHT Mode)MCS0	/	/
	Power Level Setting	51	/	/

5725¬5850MHz Band:

Chain 0:

Test Mode	Test Software Version	MP-TEST		
802.11a	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	58	54	50
802.11n ht20	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	(HT Mix mode) MCS0	(HT Mix mode) MCS0	(HT Mix mode) MCS0
	Power Level Setting	55	50	47
802.11n ht40	Test Frequency	5755MHz	5795MHz	/
	Data Rate	(HT Mix mode) MCS0	(HT Mix mode) MCS0	/
	Power Level Setting	56	53	/
802.11n ac80	Test Frequency	5775MHz	/	/
	Data Rate	(VHT Mode)MCS0	/	/
	Power Level Setting	56	/	/

Chain 1:

Test Mode	Test Software Version	MP-TEST		
802.11a	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	58	59	60
802.11n ht20	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	(HT Mix mode) MCS0	(HT Mix mode) MCS0	(HT Mix mode) MCS0
	Power Level Setting	55	56	58
802.11n ht40	Test Frequency	5755MHz	5795MHz	/
	Data Rate	(HT Mix mode) MCS0	(HT Mix mode) MCS0	/
	Power Level Setting	59	60	/
802.11n ac80	Test Frequency	5775MHz	/	/
	Data Rate	(VHT Mode)MCS0	/	/
	Power Level Setting	60	/	/

Equipment Modifications

No modification was made to the EUT.

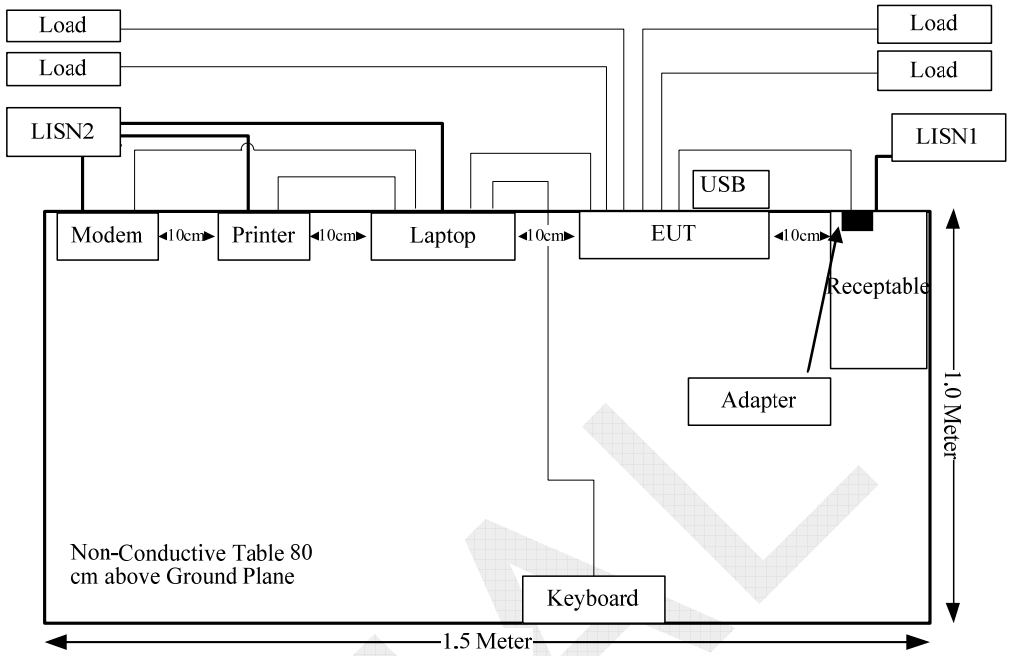
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
HP	Printer	C3941A	JPTVOB2337
DELL	Keyboard	L100	CNORH656658907BL05DC
SAST	Modem	AEM-2100	0293
DELL	Laptop	PP11L	1CVM0C1
Kingston	USB storage	/	/

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From	To
Serial Cable	Yes	No	1.2	Serial Port of Laptop	Modem
Parallel Cable	Yes	No	1.2	Parallel Port of Laptop	Printer
Keyboard Cable	Yes	Yes	1.8	USB Port of Laptop	Keyboard
RJ45 Cable*1	No	No	1.0	EUT	Laptop
RJ45 Cable*4	No	No	10	EUT	Load

Configuration 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

FCC §15.407(f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.407(f)and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*($180/f^2$)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:
MPE evaluation for single transmission:

Frequency Range (MHz)	Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
			(dBi)	(numeric)	(dBm)	(mW)			
2412-2462	2.4G-802.11b	2412	5.0	3.16	17.09	51.17	20	0.032	1.0
	2.4G-802.11g	2462	5.0	3.16	16.98	49.89	20	0.031	1.0
	2.4G-802.11n HT20	2462	5.0	3.16	16.82	48.08	20	0.030	1.0
	2.4G-802.11n HT40	2452	5.0	3.16	16.70	46.77	20	0.029	1.0
5150-5250	5G-802.11a	5180	5.0	3.16	18.03	63.53	20	0.040	1.0
	5G-802.11n HT20	5240	5.0	3.16	18.16	65.46	20	0.041	1.0
	5G-802.11n HT40	5230	5.0	3.16	15.08	32.21	20	0.020	1.0
	802.11ac80	5210	5.0	3.16	12.69	18.58	20	0.012	1.0
5725-5850	802.11a	5745	5.0	3.16	16.92	49.20	20	0.031	1.0
	5G-802.11n HT20	5825	5.0	3.16	15.14	32.66	20	0.021	1.0
	5G-802.11n HT40	5755	5.0	3.16	16.44	44.06	20	0.028	1.0
	802.11ac80	5775	5.0	3.16	17.30	53.70	20	0.034	1.0

MPE evaluation for simultaneous transmission:

2.4 G and 5G can transmit at the same time, MPE evaluation is as below formula:

PD1/Limit1+PD2/Limit2+……＜1, PD (Power Density)

MPE evaluation= Max MPE of 2.4G + Max MPE of 5G = 0.032/1+0.041/1=0.073＜1

Result: MPE evaluation of single and simultaneous transmission meet the requirement of standard.

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

This product used 4 x external detachable high gain dual band antenna and with RP-SMA female connector, two of them is for 2.4G band and the maximum gain is 5 dBi, the other two is for 5.0 G band and the maximum gain is 5 dBi, which fulfill the requirement of this section, and 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.

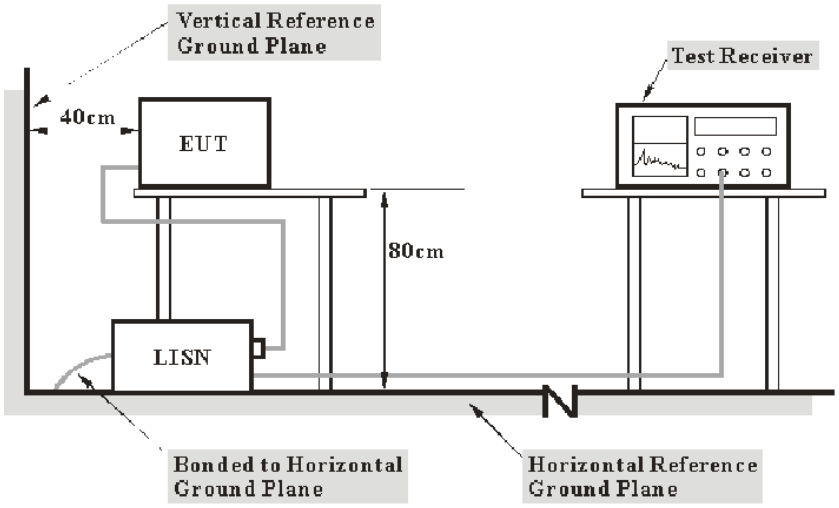
If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), 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 adapter was connected to a 120 VAC/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:

Margin = Limit – 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 adapter was connected to thefirst LISN and the other support equipments were connected to the outlet of the second 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:

2.3 dB at **0.409372 MHz** in the **Neutral** conducted mode

Test Data

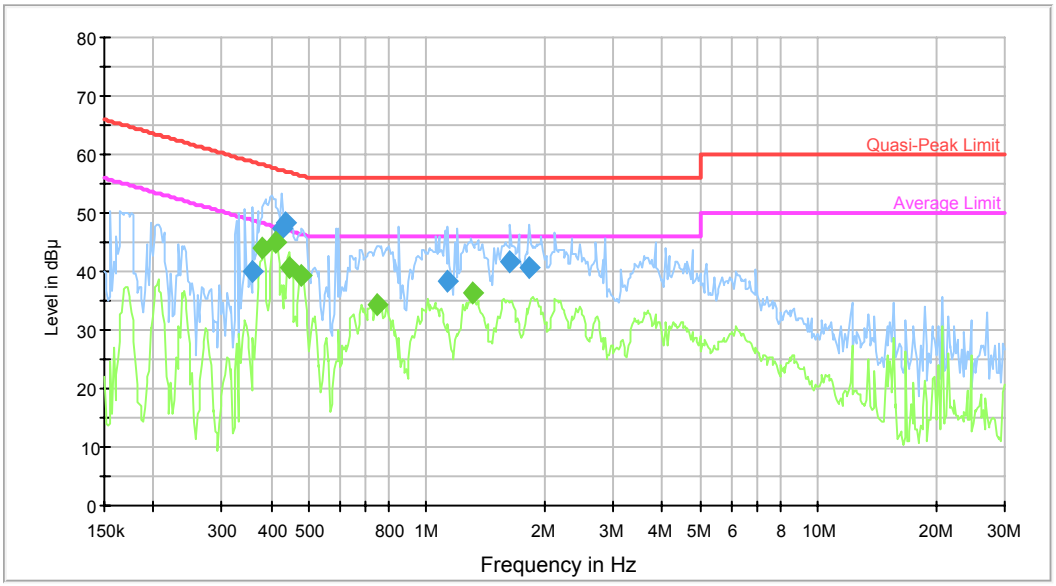
Environmental Conditions

Temperature:	26.2 °C
Relative Humidity:	64 %
ATM Pressure:	100.1 kPa

The testing was performed by Allen Qiao on 2015-04-03.

Test Mode: Transmitting

AC120 V, 60 Hz, Line:

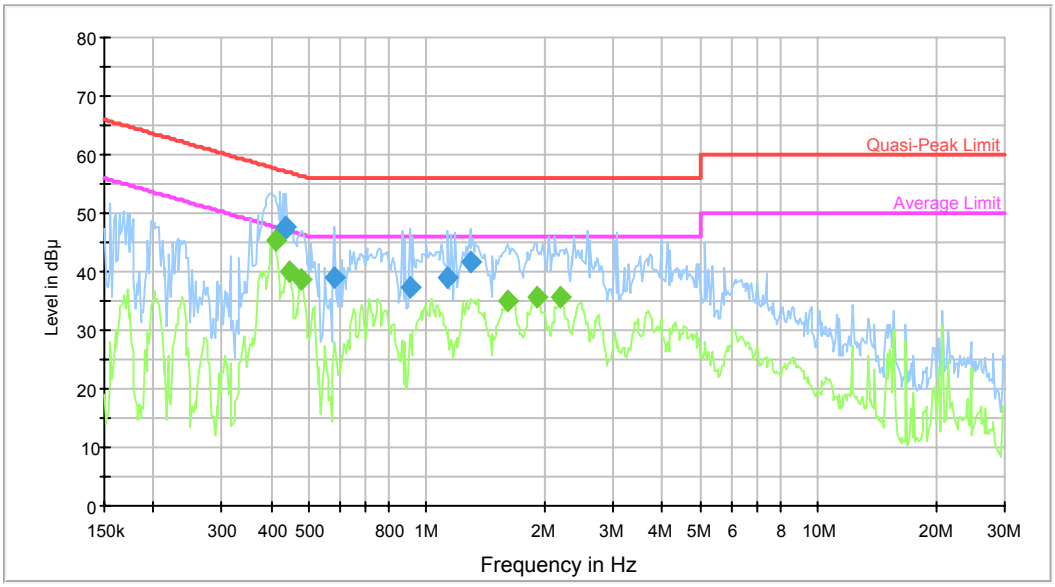


Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.360371	39.8	9.000	L1	10.3	18.9	58.7	Compliance
0.426011	47.3	9.000	L1	10.2	10.0	57.3	Compliance
0.436318	48.4	9.000	L1	10.2	8.7	57.1	Compliance
1.135185	38.5	9.000	L1	10.4	17.5	56.0	Compliance
1.637763	41.7	9.000	L1	10.4	14.3	56.0	Compliance
1.831043	40.8	9.000	L1	10.4	15.2	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.381043	44.1	9.000	L1	10.3	4.2	48.3	Compliance
0.409372	45.1	9.000	L1	10.2	2.6*	47.7	Compliance
0.446873	40.7	9.000	L1	10.2	6.2	46.9	Compliance
0.480097	39.3	9.000	L1	10.1	7.0	46.3	Compliance
0.750100	34.2	9.000	L1	10.4	11.8	46.0	Compliance
1.310256	36.3	9.000	L1	10.4	9.7	46.0	Compliance

**Within measurement uncertainty!*

AC120 V, 60 Hz, Neutral:



requency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.429420	47.1	9.000	N	10.2	10.2	57.3	Compliance
0.436318	47.8	9.000	N	10.2	9.3	57.1	Compliance
0.581275	38.8	9.000	N	10.2	17.2	56.0	Compliance
0.908180	37.4	9.000	N	10.4	18.6	56.0	Compliance
1.135185	38.9	9.000	N	10.4	17.1	56.0	Compliance
1.289541	41.8	9.000	N	10.4	14.2	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.409372	45.4	9.000	N	10.2	2.3*	47.7	Compliance
0.446873	40.1	9.000	N	10.2	6.8	46.9	Compliance
0.476287	38.6	9.000	N	10.1	7.8	46.4	Compliance
1.611870	35.1	9.000	N	10.4	10.9	46.0	Compliance
1.905466	35.6	9.000	N	10.4	10.4	46.0	Compliance
2.199332	35.5	9.000	N	10.4	10.5	46.0	Compliance

**Within measurement uncertainty!*

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.

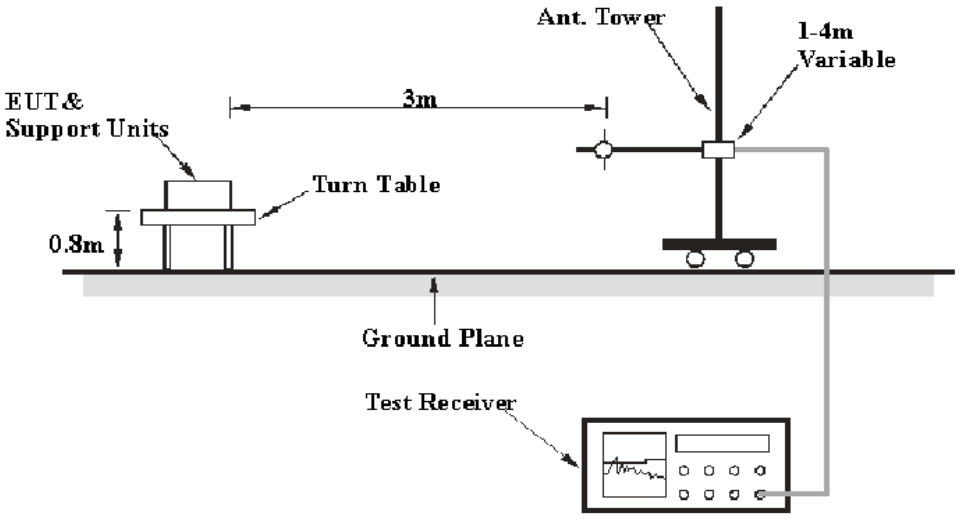
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:
30M~200MHz: 5.0 dB
200M~1GHz: 6.2 dB
1G~6GHz: 4.45 dB
6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

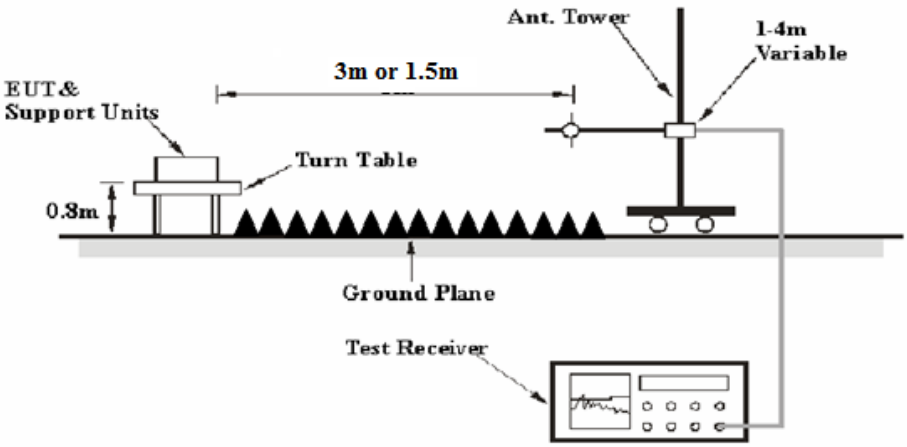
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

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 adapter was 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 adapter was connected to the first AC floor outlet and the other support equipments were connected to the second 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 [dBμV/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 (specific distance [3m]/test distance [1.5m]) dB
Extrapolation result = Corrected Amplitude (dBμV/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:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - 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:

Margin = Limit –Extrapolation result

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2014-05-09	2015-05-09
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	2014-05-09	2015-05-09
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	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:

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

Test Data

Environmental Conditions

Temperature:	25.3°C
Relative Humidity:	54%
ATM Pressure:	100.2 kPa

The testing was performed by Allen Qiao on 2015-04-19.

Test Mode: Transmitting

Note: Pre-scan with single (5G band) and simultaneously(2.4G & 5G band) transmit respectively, the worst case is as follows:

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

5150MHz-5250MHz: 802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	57.46	PK	H	31.46	5.40	0.00	94.32	88.32	N/A	N/A
5180	67.69	AV	H	31.46	5.40	0.00	104.55	98.55	N/A	N/A
5180	81.83	PK	V	31.46	5.40	0.00	118.69	112.69	N/A	N/A
5180	72.81	AV	V	31.46	5.40	0.00	109.67	103.67	N/A	N/A
5150	29.33	PK	V	31.40	5.26	0.00	65.99	59.99	74.00	14.01
5150	16.25	AV	V	31.40	5.26	0.00	52.91	46.91	54.00	7.09
10360	43.26	PK	V	36.97	8.36	25.52	63.07	57.07	74.00	16.93
10360	30.64	AV	V	36.97	8.36	25.52	50.45	44.45	54.00	9.55
15540	33.25	PK	V	37.43	14.94	24.98	60.64	54.64	74.00	19.36
15540	18.95	AV	V	37.43	14.94	24.98	46.34	40.34	54.00	13.66
1500	35.63	PK	V	23.60	2.58	27.41	34.40	28.40	74.00	45.60
1500	21.14	AV	V	23.60	2.58	27.41	19.91	13.91	54.00	40.09
1626	36.37	PK	V	23.85	2.73	27.77	35.18	29.18	74.00	44.82
1626	22.04	AV	V	23.85	2.73	27.77	20.85	14.85	54.00	39.15
500.45	41.36	QP	H	18.10	2.72	22.02	40.16	40.16	46.00	5.84*
Middle Channel:5200 MHz										
5200	57.91	PK	H	31.50	5.49	0.00	94.90	88.90	N/A	N/A
5200	67.25	AV	H	31.50	5.49	0.00	104.24	98.24	N/A	N/A
5200	82.32	PK	V	31.50	5.49	0.00	119.31	113.31	N/A	N/A
5200	73.17	AV	V	31.50	5.49	0.00	110.16	104.16	N/A	N/A
10400	43.70	PK	V	36.98	8.32	25.50	63.50	57.50	74.00	16.50
10400	30.90	AV	V	36.98	8.32	25.50	50.70	44.70	54.00	9.30
15600	33.53	PK	V	37.32	14.69	24.69	60.85	54.85	74.00	19.15
15600	19.38	AV	V	37.32	14.69	24.69	46.70	40.70	54.00	13.30
1500	35.88	PK	V	23.60	2.58	27.41	34.65	28.65	74.00	45.35
1500	21.36	AV	V	23.60	2.58	27.41	20.13	14.13	54.00	39.87
1626	36.75	PK	V	23.85	2.73	27.77	35.56	29.56	74.00	44.44
1626	22.28	AV	V	23.85	2.73	27.77	21.09	15.09	54.00	38.91
500.45	42.58	QP	H	18.10	2.72	22.02	41.38	41.38	46.00	4.62*
625.58	39.28	QP	H	19.90	3.06	22.28	39.96	39.96	46.00	6.04
High Channel:5240 MHz										
5240	58.29	PK	H	31.58	5.28	0.00	95.15	89.15	N/A	N/A
5240	67.57	AV	H	31.58	5.28	0.00	104.43	98.43	N/A	N/A
5240	82.57	PK	V	31.58	5.28	0.00	119.43	113.43	N/A	N/A
5240	73.54	AV	V	31.58	5.28	0.00	110.40	104.40	N/A	N/A
5350	28.38	PK	V	31.80	5.61	0.00	65.79	59.79	74.00	14.21
5350	16.33	AV	V	31.80	5.61	0.00	53.74	47.74	54.00	6.26
10480	43.65	PK	V	37.00	8.23	26.01	62.87	56.87	74.00	17.13
10480	27.36	AV	V	37.00	8.23	26.01	46.58	40.58	54.00	13.42
15720	31.25	PK	V	37.10	14.20	24.92	57.63	51.63	74.00	22.37
15720	19.47	AV	V	37.10	14.20	24.92	45.85	39.85	54.00	14.15
1500	36.22	PK	V	23.60	2.58	27.41	34.99	28.99	74.00	45.01
1500	21.78	AV	V	23.60	2.58	27.41	20.55	14.55	54.00	39.45
1626	35.13	PK	V	23.85	2.73	27.77	33.94	27.94	74.00	46.06
1626	22.77	AV	V	23.85	2.73	27.77	21.58	15.58	54.00	38.42
500.45	42.67	QP	H	18.10	2.72	22.02	41.47	41.47	46.00	4.53*

**Within measurement uncertainty!*

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	57.13	PK	H	31.46	5.40	0.00	93.99	87.99	N/A	N/A
5180	66.54	AV	H	31.46	5.40	0.00	103.40	97.40	N/A	N/A
5180	81.16	PK	V	31.46	5.40	0.00	118.02	112.02	N/A	N/A
5180	72.13	AV	V	31.46	5.40	0.00	108.99	102.99	N/A	N/A
5150	30.36	PK	H	31.40	5.26	0.00	67.02	61.02	74.00	12.98
5150	17.14	AV	H	31.40	5.26	0.00	53.80	47.80	54.00	6.20
10360	43.25	PK	H	36.97	8.36	25.52	63.06	57.06	74.00	16.94
10360	25.12	AV	H	36.97	8.36	25.52	44.93	38.93	54.00	15.07
15540	32.84	PK	H	37.43	14.94	24.98	60.23	54.23	74.00	19.77
15540	18.37	AV	H	37.43	14.94	24.98	45.76	39.76	54.00	14.24
1500	35.26	PK	H	23.60	2.58	27.41	34.03	28.03	74.00	45.97
1500	20.57	AV	H	23.60	2.58	27.41	19.34	13.34	54.00	40.66
1626	36.00	PK	H	23.85	2.73	27.77	34.81	28.81	74.00	45.19
1626	21.68	AV	H	23.85	2.73	27.77	20.49	14.49	54.00	39.51
500.45	42.85	QP	H	18.10	2.72	22.02	41.65	41.65	46.00	4.35*
Middle Channel:5200 MHz										
5200	57.44	PK	H	31.50	5.49	0.00	94.43	88.43	N/A	N/A
5200	66.99	AV	H	31.50	5.49	0.00	103.98	97.98	N/A	N/A
5200	80.29	PK	V	31.50	5.49	0.00	117.28	111.28	N/A	N/A
5200	70.68	AV	V	31.50	5.49	0.00	107.67	101.67	N/A	N/A
10400	43.36	PK	H	36.98	8.32	25.50	63.16	57.16	74.00	16.84
10400	30.31	AV	H	36.98	8.32	25.50	50.11	44.11	54.00	9.89
15600	33.06	PK	H	37.32	14.69	24.69	60.38	54.38	74.00	19.62
15600	18.85	AV	H	37.32	14.69	24.69	46.17	40.17	54.00	13.83
1500	35.31	PK	H	23.60	2.58	27.41	34.08	28.08	74.00	45.92
1500	20.78	AV	H	23.60	2.58	27.41	19.55	13.55	54.00	40.45
1626	36.24	PK	H	23.85	2.73	27.77	35.05	29.05	74.00	44.95
1626	21.97	AV	H	23.85	2.73	27.77	20.78	14.78	54.00	39.22
500.45	42.57	QP	H	18.10	2.72	22.02	41.37	41.37	46.00	4.63*
625.58	39.82	QP	H	19.90	3.06	22.28	40.50	40.50	46.00	5.50*
High Channel:5240 MHz										
5240	58.52	PK	H	31.58	5.28	0.00	95.38	89.38	N/A	N/A
5240	67.86	AV	H	31.58	5.28	0.00	104.72	98.72	N/A	N/A
5240	80.12	PK	V	31.58	5.28	0.00	116.98	110.98	N/A	N/A
5240	71.15	AV	V	31.58	5.28	0.00	108.01	102.01	N/A	N/A
5350	28.36	PK	V	31.80	5.61	0.00	65.77	59.77	74.00	14.23
5350	16.02	AV	V	31.80	5.61	0.00	53.43	47.43	54.00	6.57
10480	43.13	PK	V	37.00	8.23	26.01	62.35	56.35	74.00	17.65
10480	26.85	AV	V	37.00	8.23	26.01	46.07	40.07	54.00	13.93
15720	30.66	PK	V	37.10	14.20	24.92	57.04	51.04	74.00	22.96
15720	19.15	AV	V	37.10	14.20	24.92	45.53	39.53	54.00	14.47
1500	35.63	PK	V	23.60	2.58	27.41	34.40	28.40	74.00	45.60
1500	21.28	AV	V	23.60	2.58	27.41	20.05	14.05	54.00	39.95
1626	34.81	PK	V	23.85	2.73	27.77	33.62	27.62	74.00	46.38
1626	21.35	AV	V	23.85	2.73	27.77	20.16	14.16	54.00	39.84
500.45	42.81	QP	H	18.10	2.72	22.02	41.61	41.61	46.00	4.39*

**Within measurement uncertainty!*

802.11n ht40 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5190 MHz										
5190	63.48	PK	H	31.48	5.44	0.00	100.40	94.40	N/A	N/A
5190	53.51	AV	H	31.48	5.44	0.00	90.43	84.43	N/A	N/A
5190	76.18	PK	V	31.48	5.44	0.00	113.10	107.10	N/A	N/A
5190	66.28	AV	V	31.48	5.44	0.00	103.20	97.20	N/A	N/A
5150	32.71	PK	V	31.40	5.26	0.00	69.37	63.37	74.00	10.63
5150	20.35	AV	V	31.40	5.26	0.00	57.01	51.01	54.00	2.99
10380	40.85	PK	V	36.98	8.34	25.51	60.66	54.66	74.00	19.34
10380	24.82	AV	V	36.98	8.34	25.51	44.63	38.63	54.00	15.37
15570	32.49	PK	V	37.37	14.81	24.83	59.84	53.84	74.00	20.16
15570	17.83	AV	V	37.37	14.81	24.83	45.18	39.18	54.00	14.82
1500	34.75	PK	V	23.60	2.58	27.41	33.52	27.52	74.00	46.48
1500	20.25	AV	V	23.60	2.58	27.41	19.02	13.02	54.00	40.98
1626	35.68	PK	V	23.85	2.73	27.77	34.49	28.49	74.00	45.51
1626	21.30	AV	V	23.85	2.73	27.77	20.11	14.11	54.00	39.89
500.45	43.05	QP	H	18.10	2.72	22.02	41.85	41.85	46.00	4.15*
High Channel:5230 MHz										
5230	64.25	PK	H	31.56	5.33	0.00	101.14	95.14	N/A	N/A
5230	54.28	AV	H	31.56	5.33	0.00	91.17	85.17	N/A	N/A
5230	79.41	PK	V	31.56	5.33	0.00	116.30	110.30	N/A	N/A
5230	70.56	AV	V	31.56	5.33	0.00	107.45	101.45	N/A	N/A
5350	28.32	AV	V	31.80	5.61	0.00	65.73	59.73	74.00	14.27
5350	16.36	AV	V	31.80	5.61	0.00	53.77	47.77	54.00	6.23
10460	41.77	PK	V	36.99	8.25	25.88	61.13	55.13	74.00	18.87
10460	29.72	AV	V	36.99	8.25	25.88	49.08	43.08	54.00	10.92
15690	32.61	PK	V	37.16	14.32	24.87	59.22	53.22	74.00	20.78
15690	18.35	AV	V	37.16	14.32	24.87	44.96	38.96	54.00	15.04
1500	34.90	PK	V	23.60	2.58	27.41	33.67	27.67	74.00	46.33
1500	20.20	AV	V	23.60	2.58	27.41	18.97	12.97	54.00	41.03
1626	35.79	PK	V	23.85	2.73	27.77	34.60	28.60	74.00	45.40
1626	21.60	AV	V	23.85	2.73	27.77	20.41	14.41	54.00	39.59
500.45	43.15	QP	H	18.10	2.72	22.02	41.95	41.95	46.00	4.05*

**Within measurement uncertainty!*

802.11n ac80 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Channel:5210 MHz										
5210	59.80	PK	H	31.52	5.44	0.00	96.76	90.76	N/A	N/A
5210	50.12	AV	H	31.52	5.44	0.00	87.08	81.08	N/A	N/A
5210	72.81	PK	V	31.52	5.44	0.00	109.77	103.77	N/A	N/A
5210	64.66	AV	V	31.52	5.44	0.00	101.62	95.62	N/A	N/A
5150	32.24	PK	V	31.40	5.26	0.00	68.90	62.90	74.00	11.10
5150	20.82	AV	V	31.40	5.26	0.00	57.48	51.48	54.00	2.52*
5350	20.88	PK	V	31.80	5.61	1.00	57.29	51.29	74.00	22.71
5350	19.32	AV	V	31.80	5.61	2.00	54.73	48.73	54.00	5.27
10420	38.92	PK	V	36.98	8.30	25.63	58.57	52.57	74.00	21.43
10420	24.75	AV	V	36.98	8.30	25.63	44.40	38.40	54.00	15.60
15630	32.34	PK	V	37.27	14.57	24.75	59.43	53.43	74.00	20.57
15630	18.02	AV	V	37.27	14.57	24.75	45.11	39.11	54.00	14.89
1125	34.89	PK	V	22.63	3.01	26.69	33.84	27.84	74.00	46.16
1125	20.09	AV	V	22.63	3.01	26.69	19.04	13.04	54.00	40.96
1626	35.62	PK	V	23.85	2.73	27.77	34.43	28.43	74.00	45.57
1626	21.14	AV	V	23.85	2.73	27.77	19.95	13.95	54.00	40.05
500.45	43.27	QP	H	18.10	2.72	22.02	42.07	42.07	46.00	3.93*

**Within measurement uncertainty!*

5725MHz-5850MHz:
802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	63.87	PK	H	32.15	5.53	0.00	101.55	95.55	N/A	N/A
5745	53.22	AV	H	32.15	5.53	0.00	90.90	84.90	N/A	N/A
5745	79.41	PK	V	32.15	5.53	0.00	117.09	111.09	N/A	N/A
5745	69.34	AV	V	32.15	5.53	0.00	107.02	101.02	N/A	N/A
5725	34.25	PK	V	32.15	5.60	0.00	72.00	66.00	74.00	8.00
5725	18.88	AV	V	32.15	5.60	0.00	56.63	50.63	54.00	3.37*
11490	37.64	PK	V	37.89	8.94	26.14	58.33	52.33	74.00	21.67
11490	21.46	AV	V	37.89	8.94	26.14	42.15	36.15	54.00	17.85
17235	32.14	PK	V	40.91	13.69	25.63	61.11	55.11	74.00	18.89
17235	18.25	AV	V	40.91	13.69	25.63	47.22	41.22	54.00	12.78
1493	38.23	PK	V	23.58	2.63	27.38	37.06	31.06	74.00	42.94
1493	22.16	AV	V	23.58	2.63	27.38	20.99	14.99	54.00	39.01
1627	35.26	PK	V	23.85	2.74	27.77	34.08	28.08	74.00	45.92
1627	21.75	AV	V	23.85	2.74	27.77	20.57	14.57	54.00	39.43
500.45	43.25	QP	H	18.10	2.72	22.02	42.05	42.05	46.00	3.95*
Middle Channel:5785 MHz										
5785	64.12	PK	H	32.16	5.47	0.00	101.75	95.75	N/A	N/A
5785	53.36	AV	H	32.16	5.47	0.00	90.99	84.99	N/A	N/A
5785	79.33	PK	V	32.16	5.47	0.00	116.96	110.96	N/A	N/A
5785	69.97	AV	V	32.16	5.47	0.00	107.60	101.60	N/A	N/A
11570	38.47	PK	V	37.90	8.92	26.07	59.22	53.22	74.00	20.78
11570	22.51	AV	V	37.90	8.92	26.07	43.26	37.26	54.00	16.74
17355	35.67	PK	V	41.63	12.99	25.63	64.66	58.66	74.00	15.34
17355	21.98	AV	V	41.63	12.99	25.63	50.97	44.97	54.00	9.03
1493	38.63	PK	V	23.58	2.63	27.38	37.46	31.46	74.00	42.54
1493	22.40	AV	V	23.58	2.63	27.38	21.23	15.23	54.00	38.77
1627	35.49	PK	V	23.85	2.74	27.77	34.31	28.31	74.00	45.69
1627	22.18	AV	V	23.85	2.74	27.77	21.00	15.00	54.00	39.00
500.45	42.95	QP	H	18.10	2.72	22.02	41.75	41.75	46.00	4.25*
625.58	40.36	QP	H	19.90	3.06	22.28	41.04	41.04	46.00	4.96*
High Channel:5825 MHz										
5825	64.27	PK	H	32.17	5.75	0.00	102.19	96.19	N/A	N/A
5825	53.12	AV	H	32.17	5.75	0.00	91.04	85.04	N/A	N/A
5825	78.35	PK	V	32.17	5.75	0.00	116.27	110.27	N/A	N/A
5825	69.29	AV	V	32.17	5.75	0.00	107.21	101.21	N/A	N/A
5850	27.93	PK	V	32.17	6.05	0.00	66.15	60.15	74.00	13.85
5850	16.87	AV	V	32.17	6.05	0.00	55.09	49.09	54.00	4.91*
11650	40.78	PK	V	37.90	8.90	25.75	61.83	55.83	74.00	18.17
11650	24.49	AV	V	37.90	8.90	25.75	45.54	39.54	54.00	14.46
17475	35.28	PK	V	42.35	12.30	25.39	64.54	58.54	74.00	15.46
17475	20.13	AV	V	42.35	12.30	25.39	49.39	43.39	54.00	10.61
1493	38.86	PK	V	23.58	2.63	27.38	37.69	31.69	74.00	42.31
1493	22.78	AV	V	23.58	2.63	27.38	21.61	15.61	54.00	38.39
1627	35.95	PK	V	23.85	2.74	27.77	34.77	28.77	74.00	45.23
1627	22.30	AV	V	23.85	2.74	27.77	21.12	15.12	54.00	38.88
500.45	42.76	QP	H	18.10	2.72	22.02	41.56	41.56	46.00	4.44*

802.11n ht20 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	60.55	PK	H	32.15	5.53	0.00	98.23	92.23	N/A	N/A
5745	50.41	AV	H	32.15	5.53	0.00	88.09	82.09	N/A	N/A
5745	79.08	PK	V	32.15	5.53	0.00	116.76	110.76	N/A	N/A
5745	68.66	AV	V	32.15	5.53	0.00	116.76	110.76	N/A	N/A
5725	35.36	PK	V	32.15	5.60	0.00	73.11	67.11	74.00	6.89
5725	19.42	AV	V	32.15	5.60	0.00	57.17	51.17	54.00	2.83*
11490	34.34	PK	V	37.89	8.94	26.14	55.03	49.03	74.00	24.97
11490	21.08	AV	V	37.89	8.94	26.14	41.77	35.77	54.00	18.23
17235	31.72	PK	V	40.91	13.69	25.63	60.69	54.69	74.00	19.31
17235	17.84	AV	V	40.91	13.69	25.63	46.81	40.81	54.00	13.19
1493	37.76	PK	V	23.58	2.63	27.38	36.59	30.59	74.00	43.41
1493	21.81	AV	V	23.58	2.63	27.38	20.64	14.64	54.00	39.36
1627	34.95	PK	V	23.85	2.74	27.77	33.77	27.77	74.00	46.23
1627	21.48	AV	V	23.85	2.74	27.77	20.30	14.30	54.00	39.70
500.45	43.12	QP	H	18.10	2.72	22.02	41.92	41.92	46.00	4.08*
Middle Channel:5785 MHz										
5785	60.94	PK	H	32.16	5.47	0.00	98.57	92.57	N/A	N/A
5785	50.65	AV	H	32.16	5.47	0.00	88.28	82.28	N/A	N/A
5785	77.51	PK	V	32.16	5.47	0.00	115.14	109.14	N/A	N/A
5785	67.64	AV	V	32.16	5.47	0.00	105.27	99.27	N/A	N/A
11570	34.92	PK	V	37.90	8.92	26.07	55.67	49.67	74.00	24.33
11570	20.67	AV	V	37.90	8.92	26.07	41.42	35.42	54.00	18.58
17355	31.25	PK	V	41.63	12.99	25.63	60.24	54.24	74.00	19.76
17355	17.46	AV	V	41.63	12.99	25.63	46.45	40.45	54.00	13.55
1493	37.47	PK	V	23.58	2.63	27.38	36.30	30.30	74.00	43.70
1493	21.46	AV	V	23.58	2.63	27.38	20.29	14.29	54.00	39.71
1627	34.50	PK	V	23.85	2.74	27.77	33.32	27.32	74.00	46.68
1627	21.18	AV	V	23.85	2.74	27.77	20.00	14.00	54.00	40.00
500.45	42.96	QP	H	18.10	2.72	22.02	41.76	41.76	46.00	4.24*
625.58	40.47	QP	H	19.90	3.06	22.28	41.15	41.15	46.00	4.85*
High Channel:5825 MHz										
5825	61.38	PK	H	32.17	5.75	0.00	99.30	93.30	N/A	N/A
5825	51.06	AV	H	32.17	5.75	0.00	88.98	82.98	N/A	N/A
5825	78.71	PK	V	32.17	5.75	0.00	116.63	110.63	N/A	N/A
5825	68.31	AV	V	32.17	5.75	0.00	106.23	100.23	N/A	N/A
5850	28.36	PK	V	32.17	6.05	0.00	66.58	60.58	74.00	13.42
5850	16.54	AV	V	32.17	6.05	0.00	54.76	48.76	54.00	5.24
11650	35.34	PK	V	37.90	8.90	25.75	56.39	50.39	74.00	23.61
11650	21.08	AV	V	37.90	8.90	25.75	42.13	36.13	54.00	17.87
17475	31.72	PK	V	42.35	12.30	25.39	60.98	54.98	74.00	19.02
17475	17.84	AV	V	42.35	12.30	25.39	47.10	41.10	54.00	12.90
1493	37.76	PK	V	23.58	2.63	27.38	36.59	30.59	74.00	43.41
1493	21.81	AV	V	23.58	2.63	27.38	20.64	14.64	54.00	39.36
1627	34.95	PK	V	23.85	2.74	27.77	33.77	27.77	74.00	46.23
1627	21.48	AV	V	23.85	2.74	27.77	20.30	14.30	54.00	39.70
500.45	42.64	QP	H	18.10	2.72	22.02	41.44	41.44	46.00	4.56*

**Within measurement uncertainty!*

802.11n ht40 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5755 MHz										
5755	58.34	PK	H	32.15	5.50	0.00	95.99	89.99	N/A	N/A
5755	49.25	AV	H	32.15	5.50	0.00	86.90	80.90	N/A	N/A
5755	73.69	PK	V	32.15	5.50	0.00	111.34	105.34	N/A	N/A
5755	64.75	AV	V	32.15	5.50	0.00	102.40	96.40	N/A	N/A
5725	33.80	PK	V	32.15	5.60	0.00	71.55	65.55	74.00	8.45
5725	19.77	AV	V	32.15	5.60	0.00	57.52	51.52	54.00	2.48*
11510	34.07	PK	V	37.90	8.95	26.12	54.80	48.80	74.00	25.20
11510	20.83	AV	V	37.90	8.95	26.12	41.56	35.56	54.00	18.44
17265	31.22	PK	V	41.09	13.51	25.63	60.19	54.19	74.00	19.81
17265	17.57	AV	V	41.09	13.51	25.63	46.54	40.54	54.00	13.46
1120	37.40	PK	V	22.61	2.99	26.68	36.32	30.32	74.00	43.68
1120	21.61	AV	V	22.61	2.99	26.68	20.53	14.53	54.00	39.47
1253	34.58	PK	V	22.96	2.89	26.86	33.57	27.57	74.00	46.43
1253	21.22	AV	V	22.96	2.89	26.86	20.21	14.21	54.00	39.79
500.45	42.81	QP	H	18.10	2.72	22.02	41.61	41.61	46.00	4.39*
High Channel:5795 MHz										
5795	61.24	PK	H	32.16	5.46	0.00	98.86	92.86	N/A	N/A
5795	51.33	AV	H	32.16	5.46	0.00	88.95	82.95	N/A	N/A
5795	76.32	PK	V	32.16	5.46	0.00	113.94	107.94	N/A	N/A
5795	67.45	AV	V	32.16	5.46	0.00	105.07	99.07	N/A	N/A
5850	28.82	PK	V	32.17	6.05	0.00	67.04	61.04	74.00	12.96
5850	17.36	AV	V	32.17	6.05	0.00	55.58	49.58	54.00	4.42*
11590	35.12	PK	V	37.90	8.92	26.06	55.88	49.88	74.00	24.12
11590	20.74	AV	V	37.90	8.92	26.06	41.50	35.50	54.00	18.50
17385	31.26	PK	V	41.81	12.82	25.63	60.26	54.26	74.00	19.74
17385	17.55	AV	V	41.81	12.82	25.63	46.55	40.55	54.00	13.45
1120	37.37	PK	V	22.61	2.99	26.68	36.29	30.29	74.00	43.71
1120	21.32	AV	V	22.61	2.99	26.68	20.24	14.24	54.00	39.76
1253	34.50	PK	V	22.96	2.89	26.86	33.49	27.49	74.00	46.51
1253	21.17	AV	V	22.96	2.89	26.86	20.16	14.16	54.00	39.84
500.45	42.86	QP	H	18.10	2.72	22.02	41.66	41.66	46.00	4.34*

**Within measurement uncertainty!*

802.11n ac80 mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Channel:5775 MHz										
5775	57.31	PK	H	32.16	5.48	0.00	94.95	88.95	N/A	N/A
5775	48.38	AV	H	32.16	5.48	0.00	86.02	80.02	N/A	N/A
5775	63.16	PK	V	32.16	5.48	0.00	100.80	94.80	N/A	N/A
5775	54.14	AV	V	32.16	5.48	0.00	91.78	85.78	N/A	N/A
5725	31.25	PK	V	32.15	5.60	0.00	69.00	63.00	74.00	11.00
5725	19.33	AV	V	32.15	5.60	0.00	57.08	51.08	54.00	2.92*
5850	28.62	PK	V	32.17	6.05	26.68	40.16	34.16	74.00	39.84
5850	16.44	AV	V	32.17	6.05	26.68	27.98	21.98	54.00	32.02
11550	32.26	PK	V	37.90	8.93	26.09	53.00	47.00	74.00	27.00
11550	19.37	AV	V	37.90	8.93	26.09	40.11	34.11	54.00	19.89
17325	30.99	PK	V	41.45	13.17	25.63	59.98	53.98	74.00	20.02
17325	17.15	AV	V	41.45	13.17	25.63	46.14	40.14	54.00	13.86
1120	37.00	PK	V	22.61	2.99	26.68	35.92	29.92	74.00	44.08
1120	21.21	AV	V	22.61	2.99	26.68	20.13	14.13	54.00	39.87
500.45	42.76	QP	H	18.10	2.72	22.02	41.56	41.56	46.00	4.44*

**Within measurement uncertainty!*

Co-location Radiated Emission (The test distance is 3m.)

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
1125	42.13	PK	H	22.63	3.01	26.69	41.08	74.00	32.92
1125	29.67	AV	H	22.63	3.01	26.69	28.62	54.00	25.38
1632.5	44.24	PK	H	23.87	2.78	27.76	43.13	74.00	30.87
1632.5	33.16	AV	H	23.87	2.78	27.76	32.05	54.00	21.95
1947.5	44.56	PK	H	24.50	2.97	27.49	44.54	74.00	29.46
1947.5	31.87	AV	H	24.50	2.97	27.49	31.85	54.00	22.15
1125	42.92	PK	V	22.63	3.01	26.69	41.87	74.00	32.13
1125	30.43	AV	V	22.63	3.01	26.69	29.38	54.00	24.62
1947.5	41.65	PK	V	24.50	2.97	27.49	41.63	74.00	32.37
1947.5	28.74	AV	V	24.50	2.97	27.49	28.72	54.00	25.28
2962.5	40.69	PK	V	27.10	6.66	27.54	46.91	74.00	27.09
2962.5	27.25	AV	V	27.10	6.66	27.54	33.47	54.00	20.53
125.06	44.83	QP	V	14.30	1.35	21.42	39.06	43.50	4.44

Conducted Spurious Emission at Antenna Port

5150-5250 MHz band

Mode	Channel	Frequency	Conducted Spurious Emissions (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5180	-33.33	-32.6	-29.94	-27	PASS
	Middle	5200	-33.22	-32.95	-30.07	-27	PASS
	High	5240	-32.52	-32.9	-29.70	-27	PASS
802.11n20	Low	5180	-32.77	-32.96	-29.85	-27	PASS
	Middle	5200	-32.37	-32.5	-29.42	-27	PASS
	High	5240	-31.58	-32.44	-28.98	-27	PASS
802.11n40	Low	5190	-33.57	-32.9	-30.21	-27	PASS
	High	5230	-33.44	-32.78	-30.09	-27	PASS
802.11ac80	/	5775	-32.22	-33.2	-29.67	-27	PASS

5725-5850 MHz band

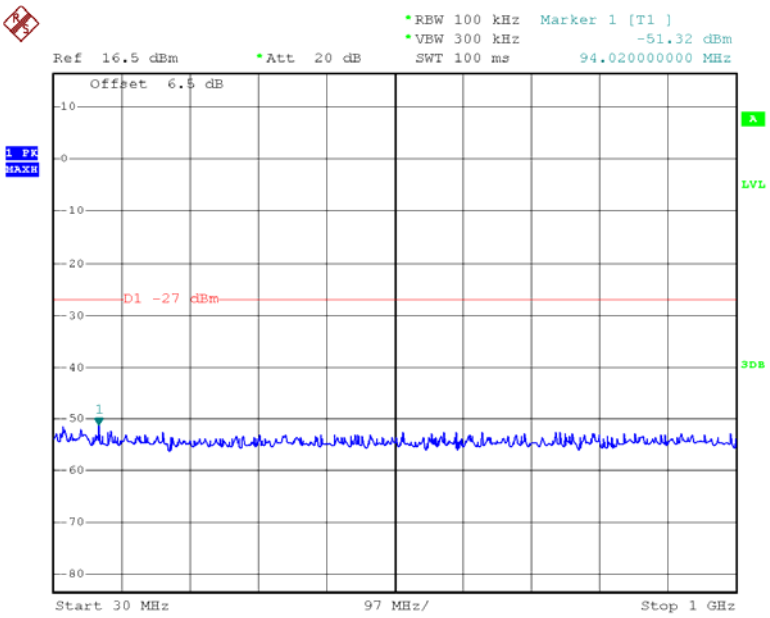
Mode	Channel	Frequency	Conducted Spurious Emissions (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5745	-32.88	-32.82	-29.84	-27	PASS
	Middle	5785	-32.86	-33.18	-30.01	-27	PASS
	High	5825	-32.98	-32.86	-29.91	-27	PASS
802.11n20	Low	5745	-33.15	-31.89	-29.46	-27	PASS
	Middle	5785	-33.21	-31.93	-29.51	-27	PASS
	High	5825	-33.06	-32.81	-29.92	-27	PASS
802.11n40	Low	5755	-33.16	-33.18	-30.16	-27	PASS
	High	5795	-32.19	-32.64	-29.40	-27	PASS
802.11ac80	/	5775	-33.47	-33.44	-30.44	-27	PASS

Note: 1.Offset=Cable loss + Directional Antenna Gain (dBi)

2. Directional gain = G_{ANT} + 10 log(N_{ANT}) dBi

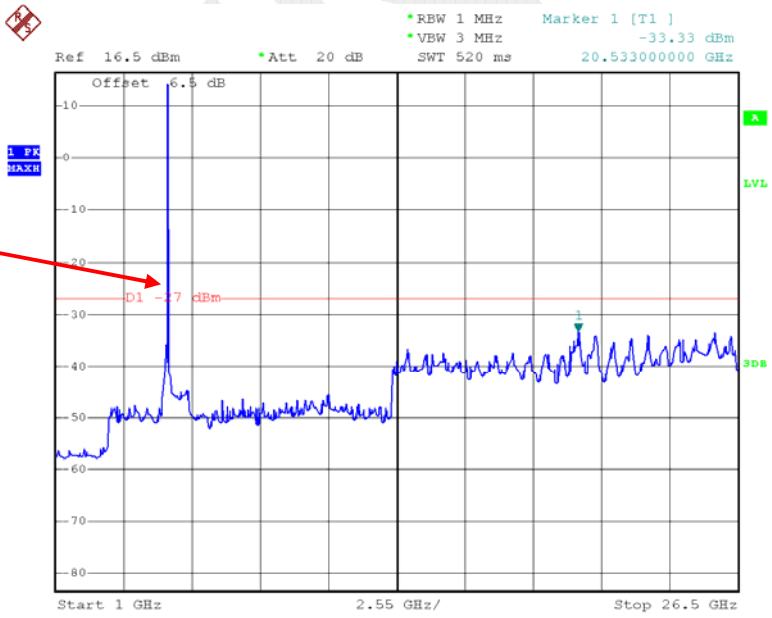
Please refer to the following plots:
5150MHz-5250MHz:

802.11a Low Channel 30MHz-1GHz – Chain0

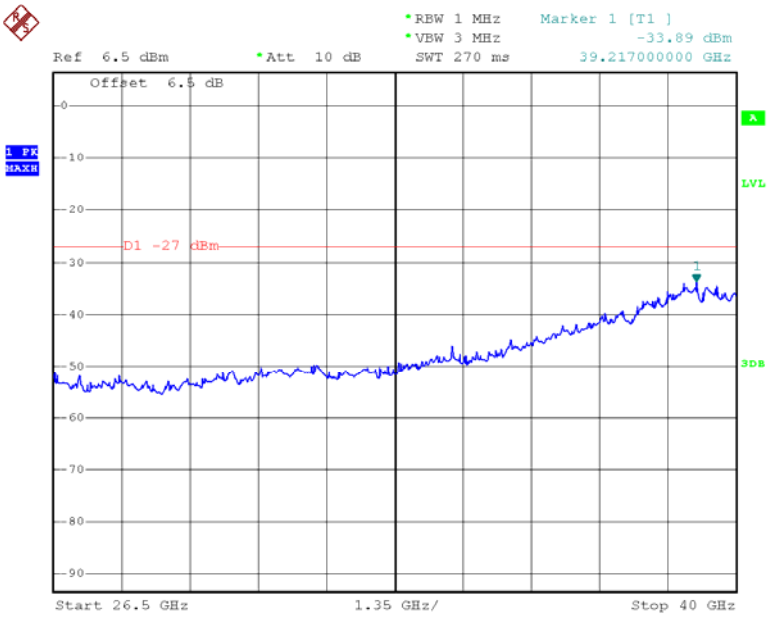


802.11a Low Channel 1GHz-26.5GHz – Chain0

Fundamental

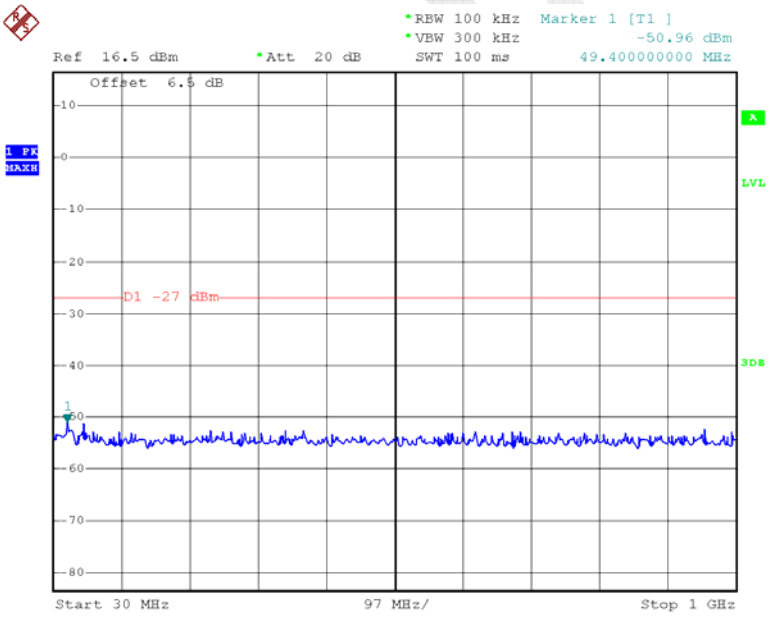


802.11a Low Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:10:37

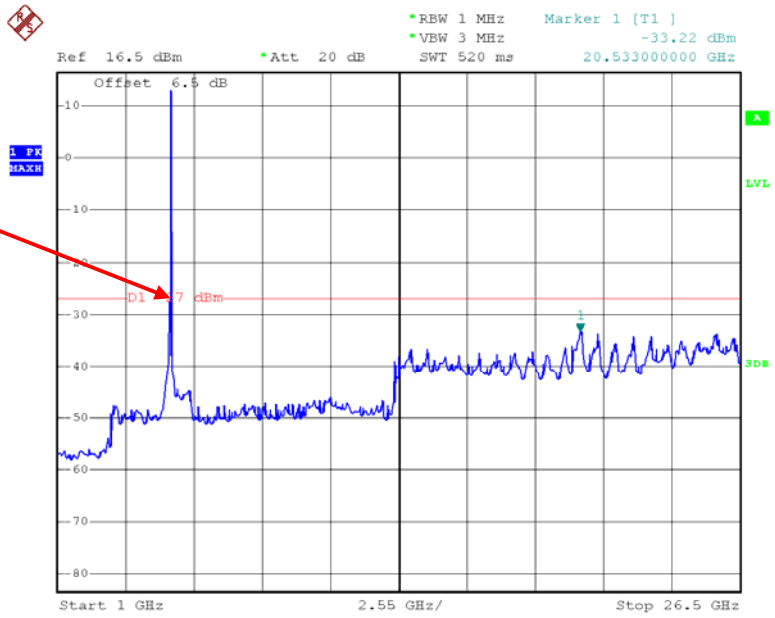
802.11a Middle Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:03:03

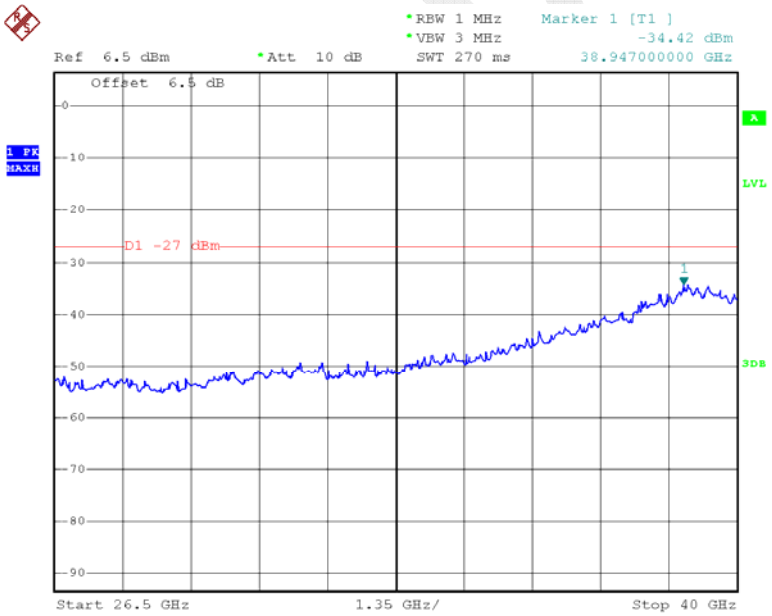
802.11a Middle Channel 1GHz -26.5GHz – Chain0

Fundamental



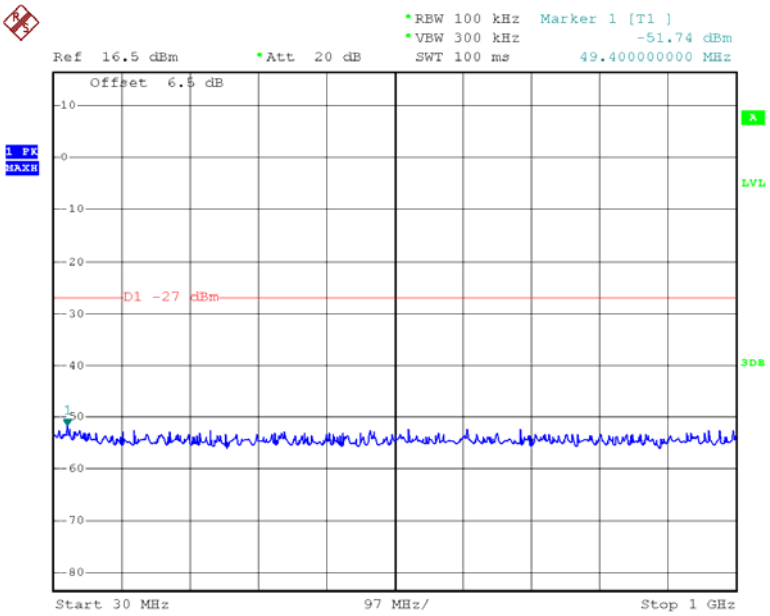
Date: 19.APR.2015 16:51:43

802.11a Middle Channel 26.5GHz-40GHz – Chain0



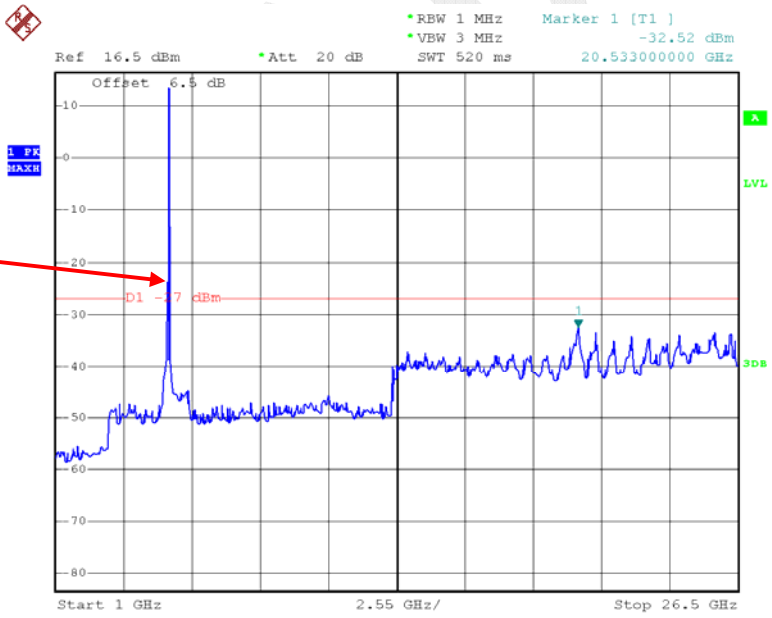
Date: 19.APR.2015 17:10:45

802.11a High Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:03:12

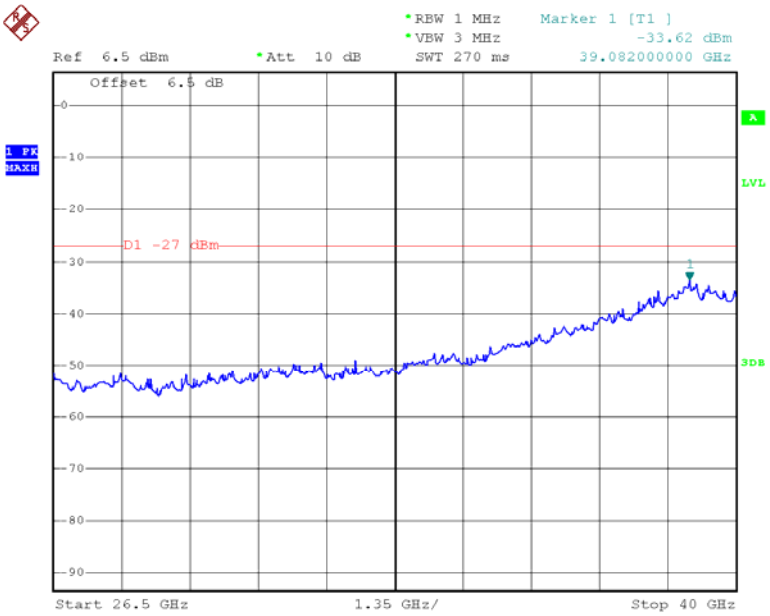
802.11a High Channel 1GHz-26.5GHz – Chain0



Fundamental

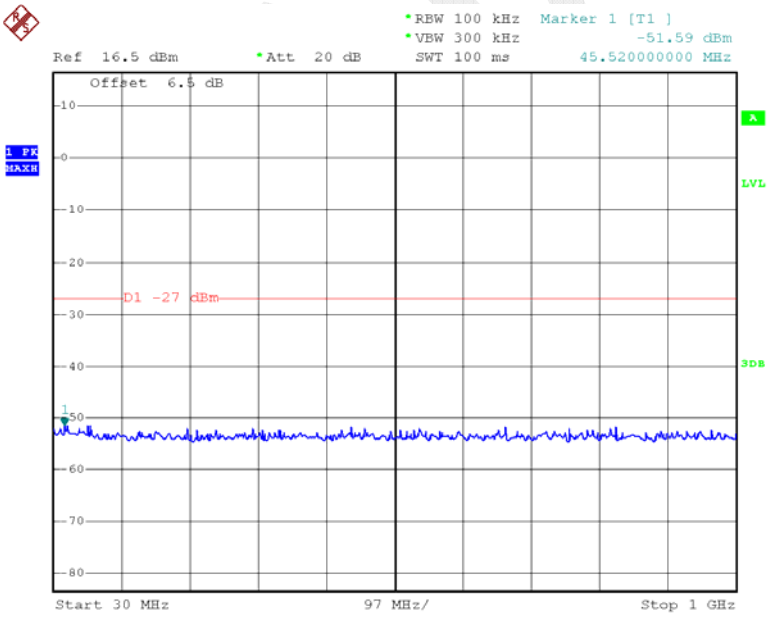
Date: 19.APR.2015 16:51:26

802.11a High Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:11:05

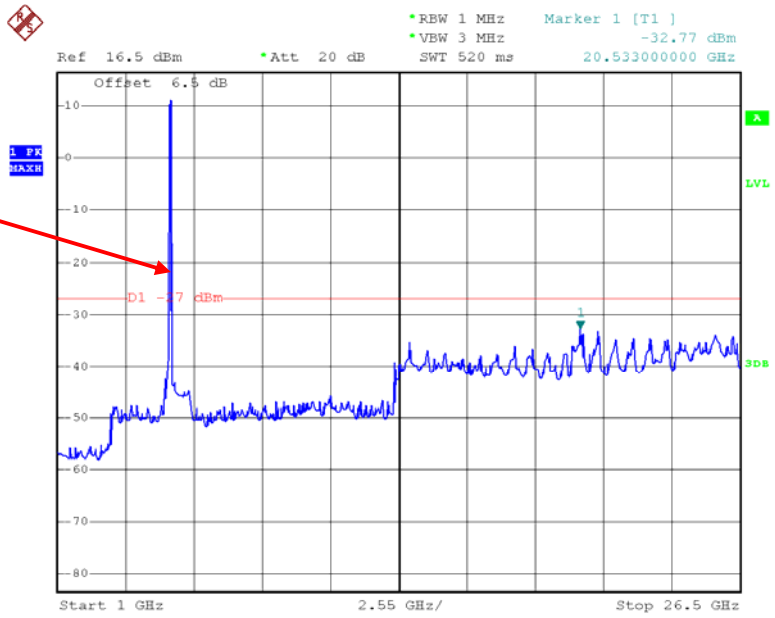
802.11n ht20 Low Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:04:01

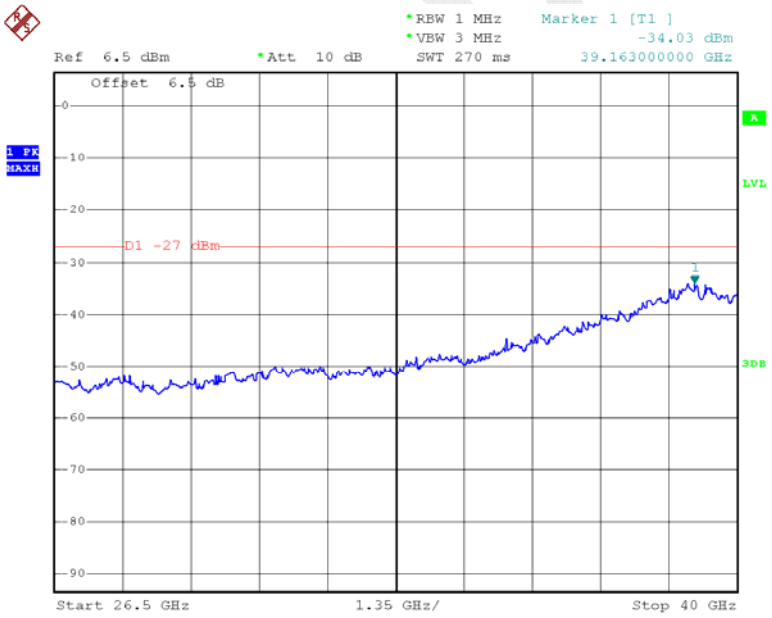
802.11n ht20 Low Channel 1GHz-26.5GHz – Chain0

Fundamental



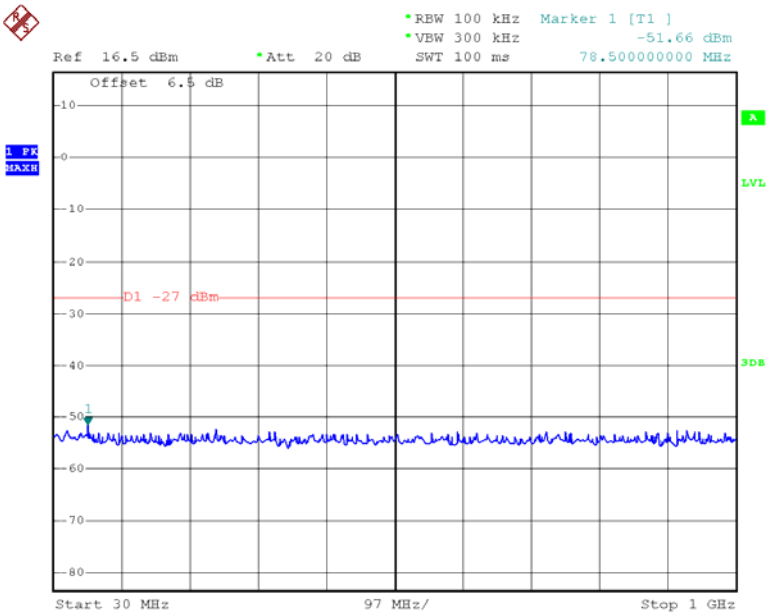
Date: 19.APR.2015 16:50:15

802.11n ht20 Low Channel 26.5GHz-40GHz – Chain0



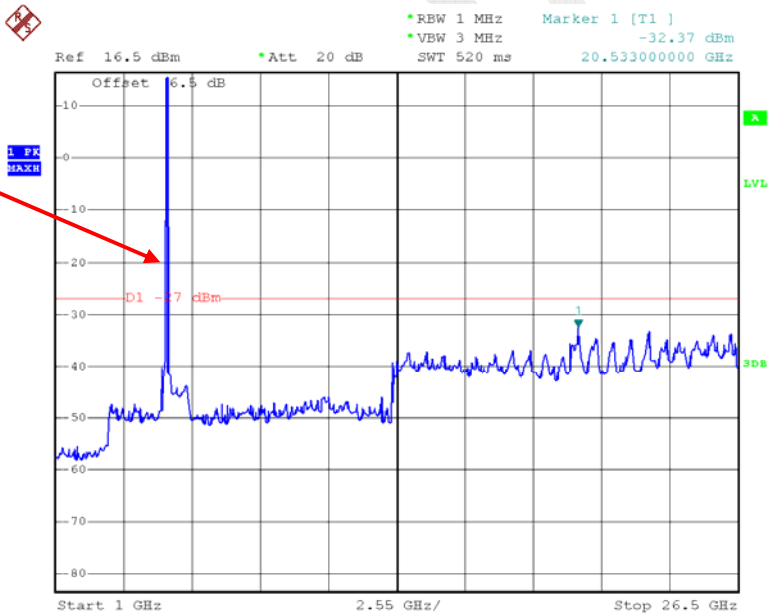
Date: 19.APR.2015 17:11:29

802.11n ht20 Middle Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:03:30

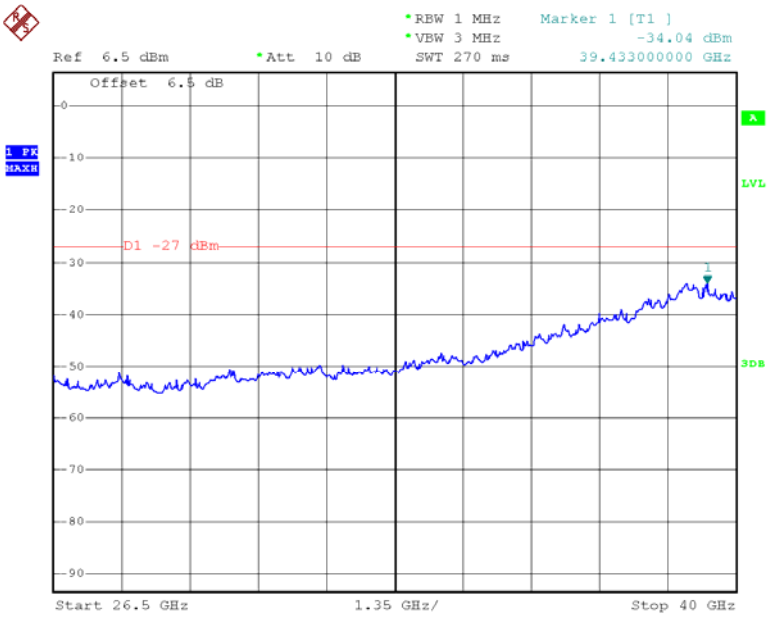
802.11n ht20 Middle Channel 1GHz -26.5GHz – Chain0



Fundamental

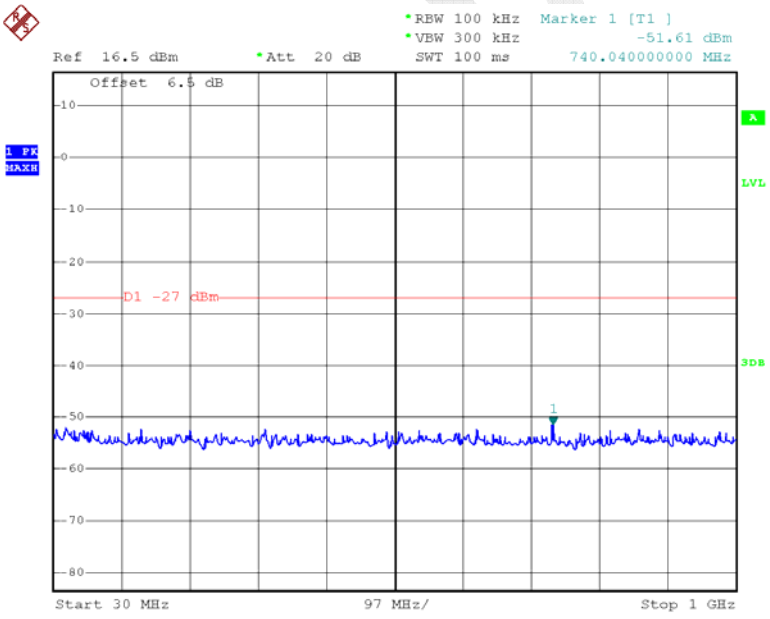
Date: 19.APR.2015 16:50:56

802.11n ht20 Middle Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:11:21

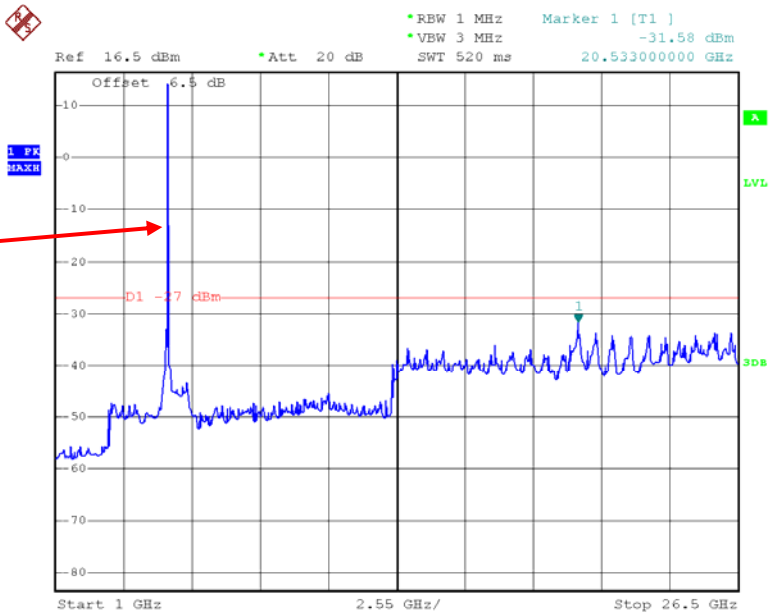
802.11n ht20 High Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:03:20

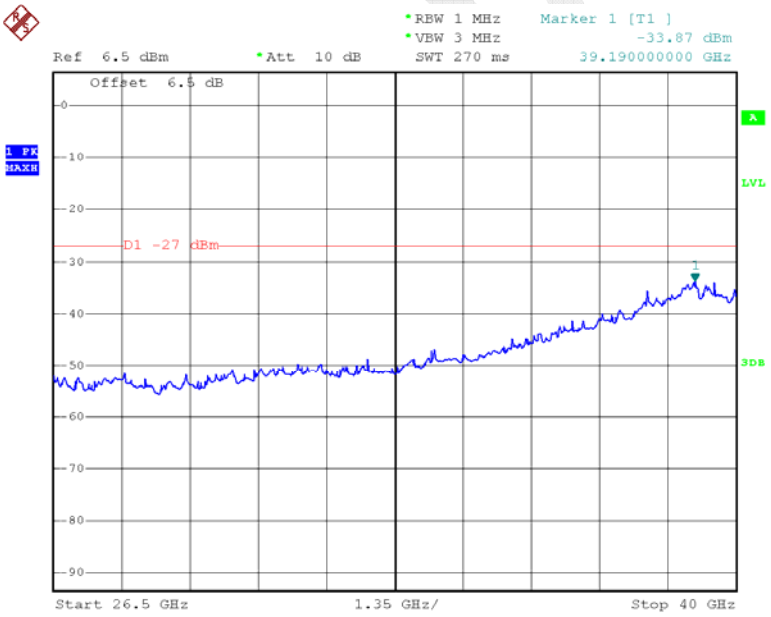
802.11n ht20 High Channel 1GHz-26.5GHz – Chain0

Fundamental



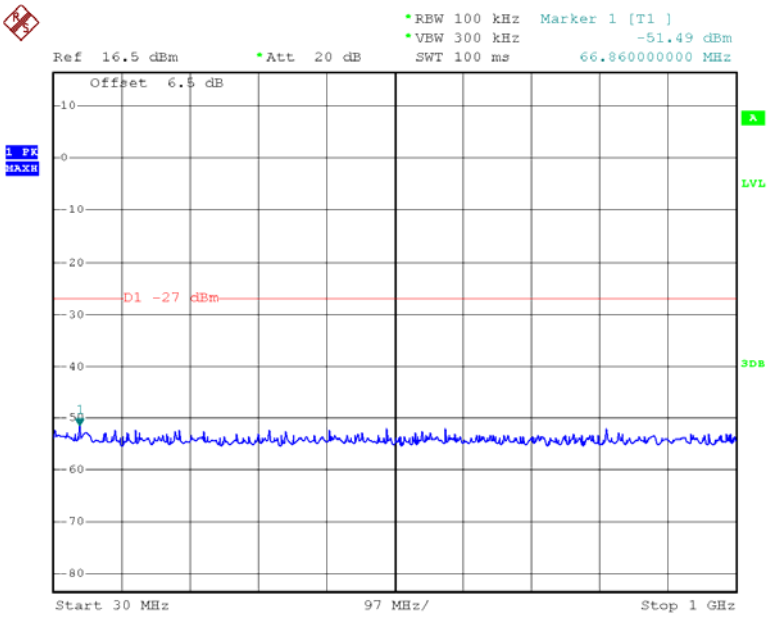
Date: 19.APR.2015 16:51:11

802.11n ht20 High Channel 26.5GHz-40GHz – Chain0



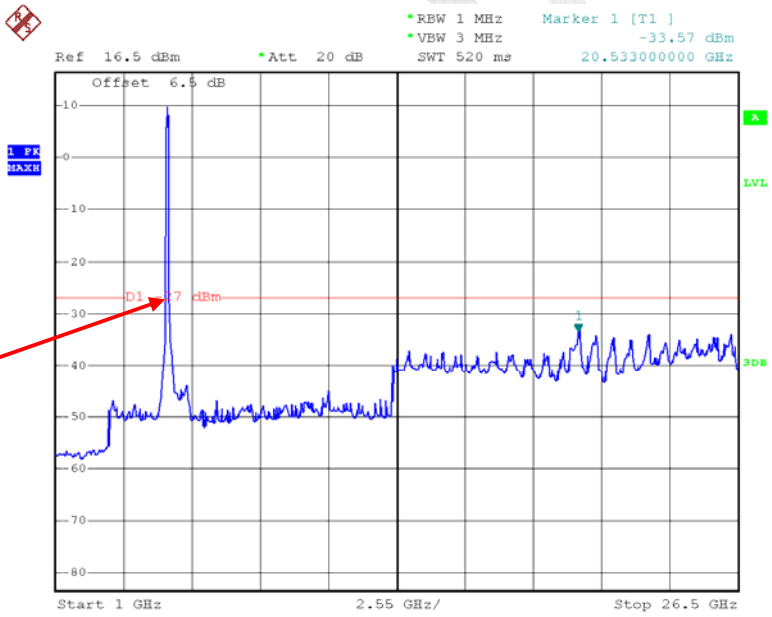
Date: 19.APR.2015 17:11:13

802.11n ht40 Low Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:04:14

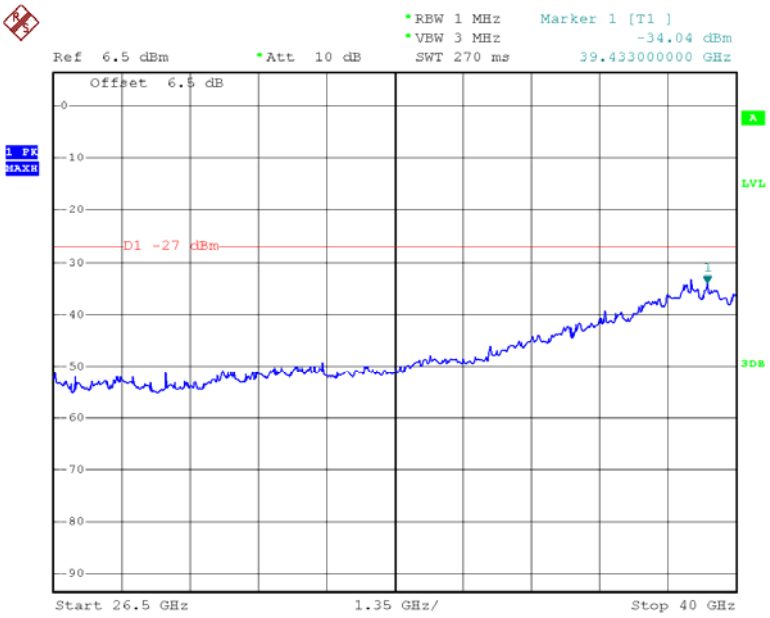
802.11n ht40 Low Channel 1GHz-26.5GHz – Chain0



Fundamental

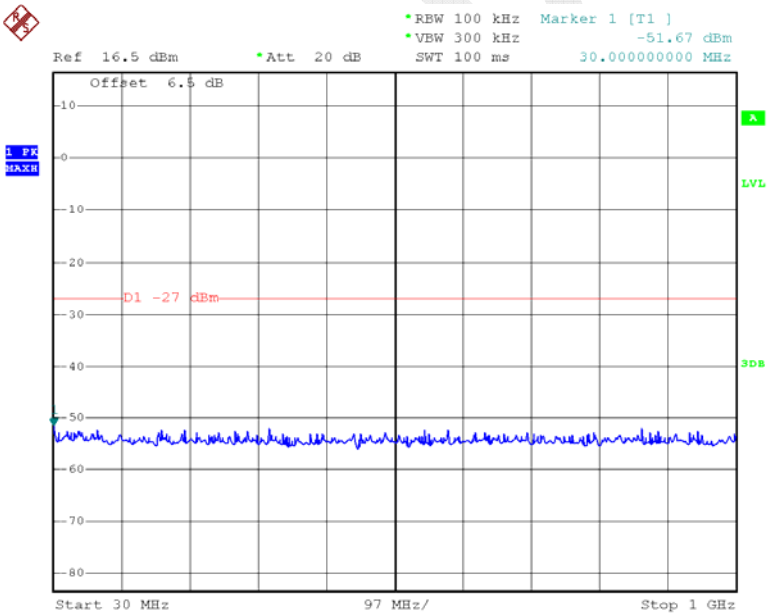
Date: 19.APR.2015 16:49:34

802.11n ht40 Low Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:11:38

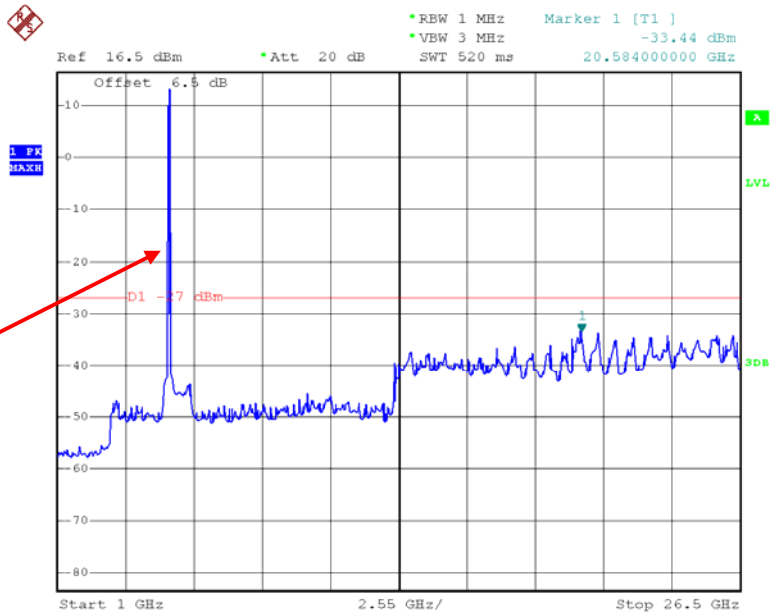
802.11n ht40 High Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:04:25

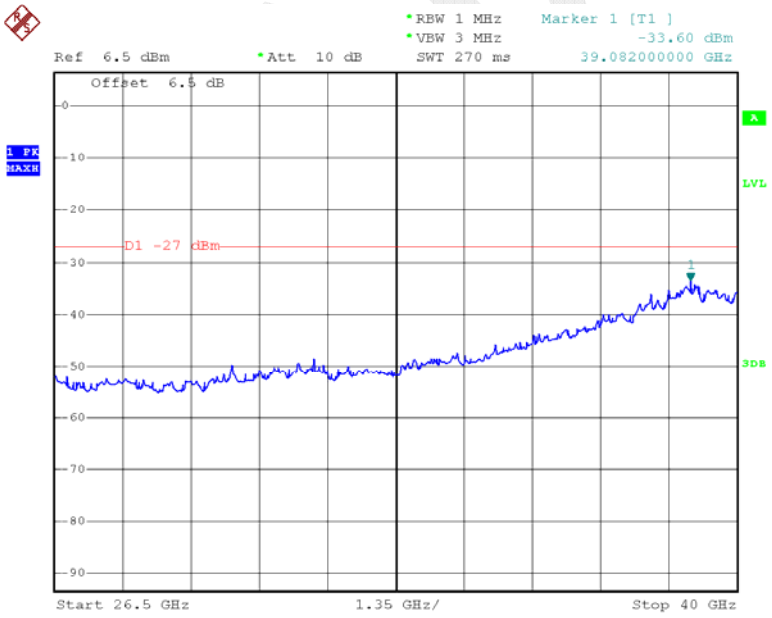
802.11n ht40 High Channel 1GHz-26.5GHz – Chain0

Fundamental



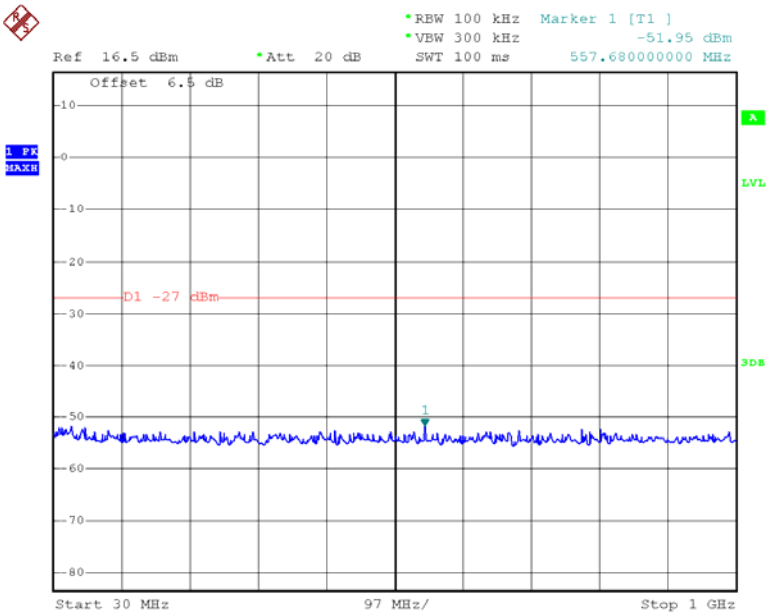
Date: 19.APR.2015 16:49:57

802.11n ht40 High Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:11:45

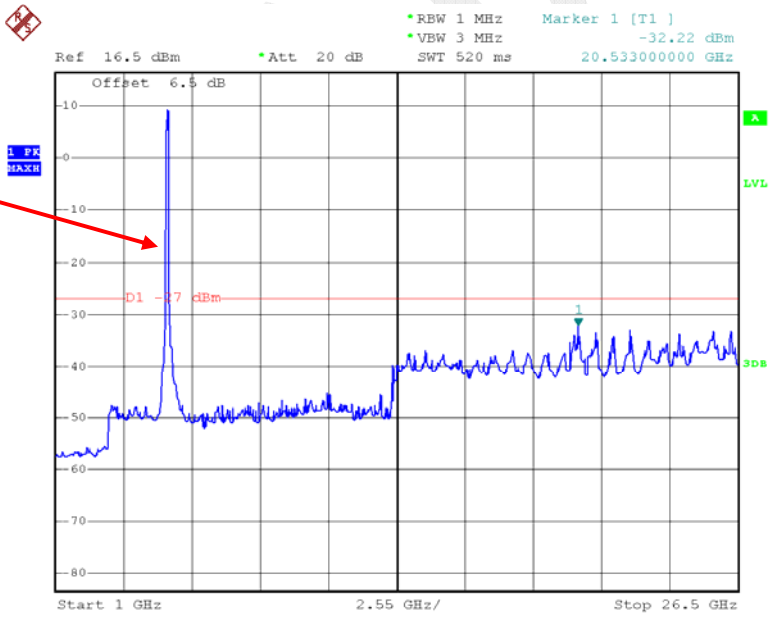
802.11n ac80 Low Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:04:38

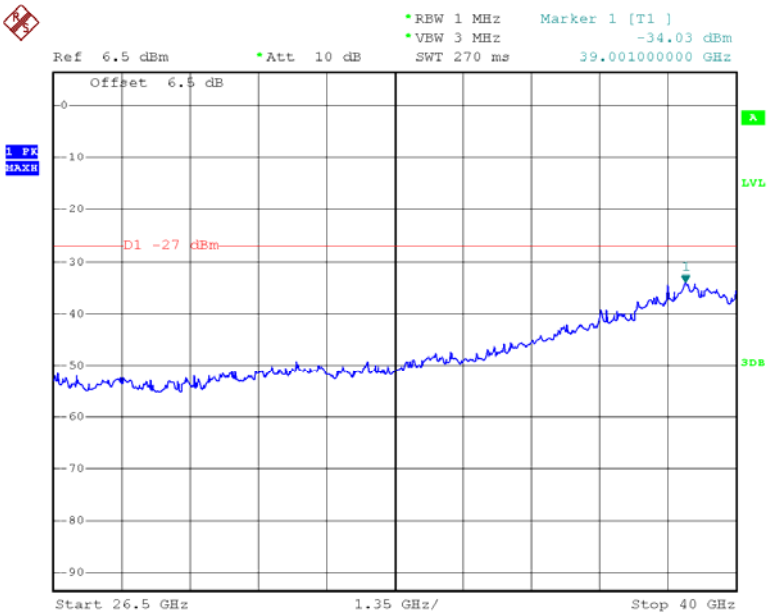
802.11n ac80 Low Channel 1GHz-26.5GHz – Chain0

Fundamental



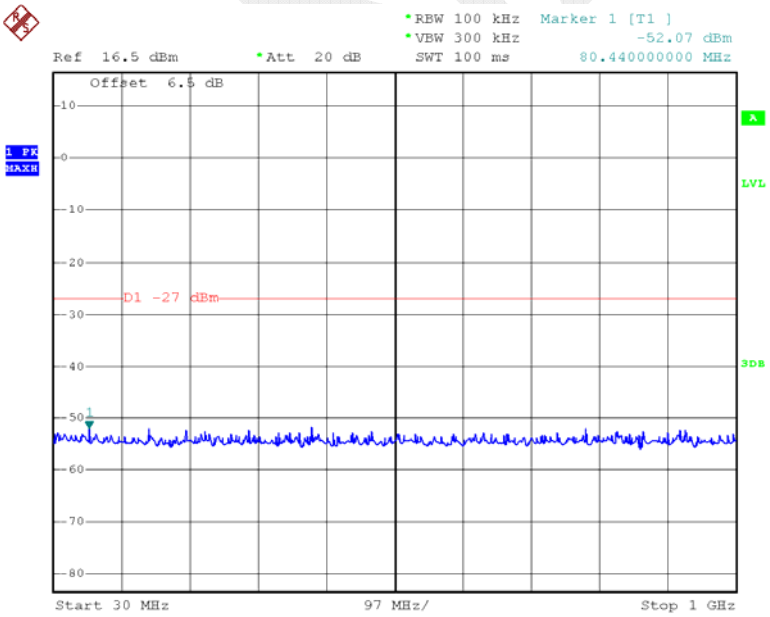
Date: 19.APR.2015 16:48:55

802.11n ac80 Low Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:11:53

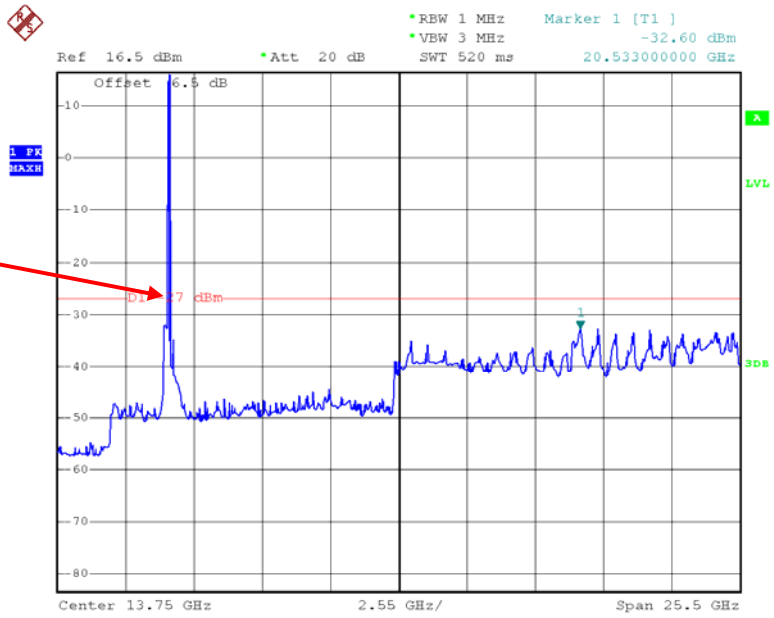
802.11a Low Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:01:49

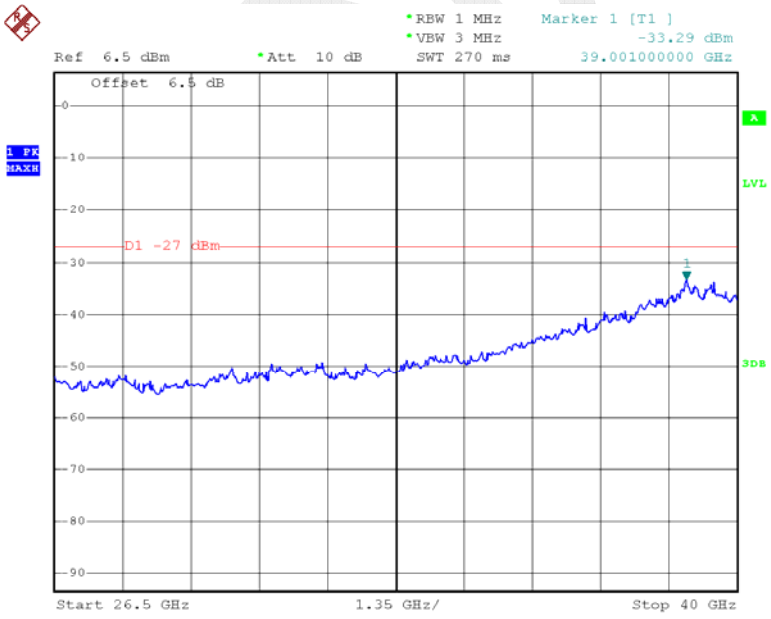
802.11a Low Channel 1GHz-26.5GHz – Chain1

Fundamental



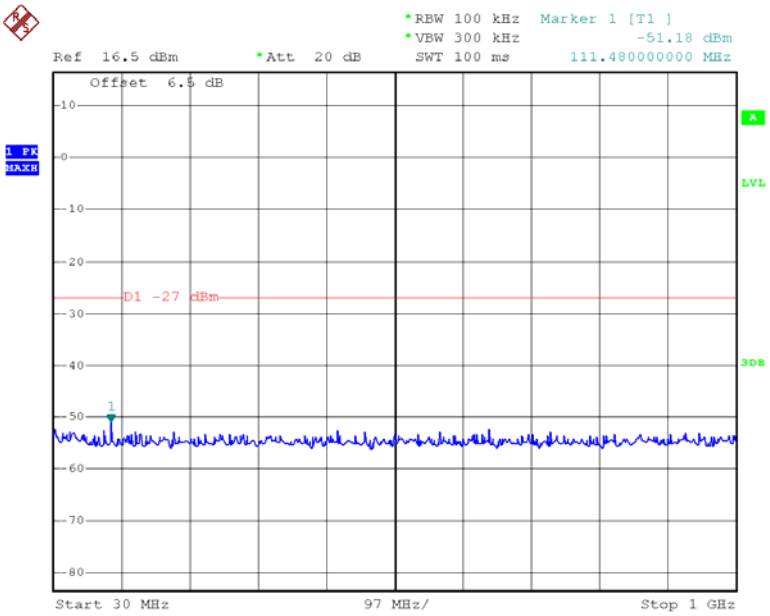
Date: 19.APR.2015 16:40:21

802.11a Low Channel 26.5GHz-40GHz – Chain1



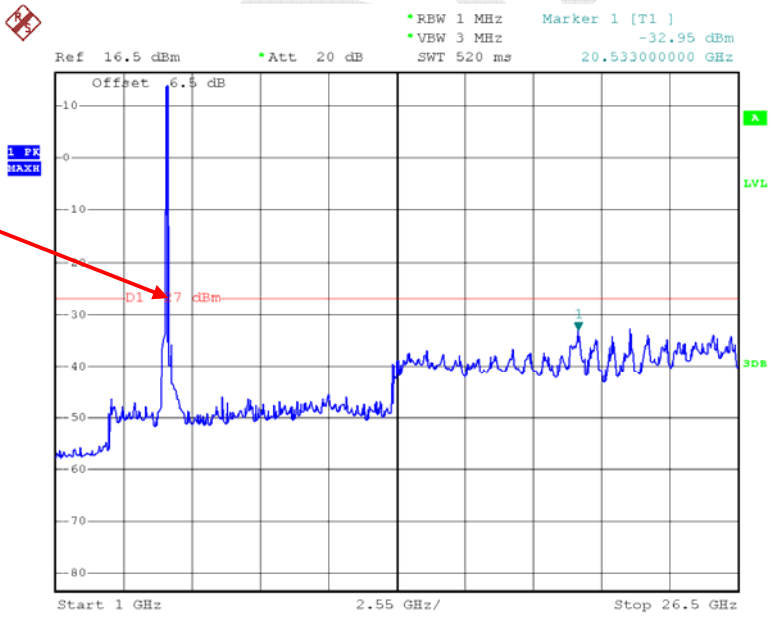
Date: 19.APR.2015 17:09:11

802.11a Middle Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:01:57

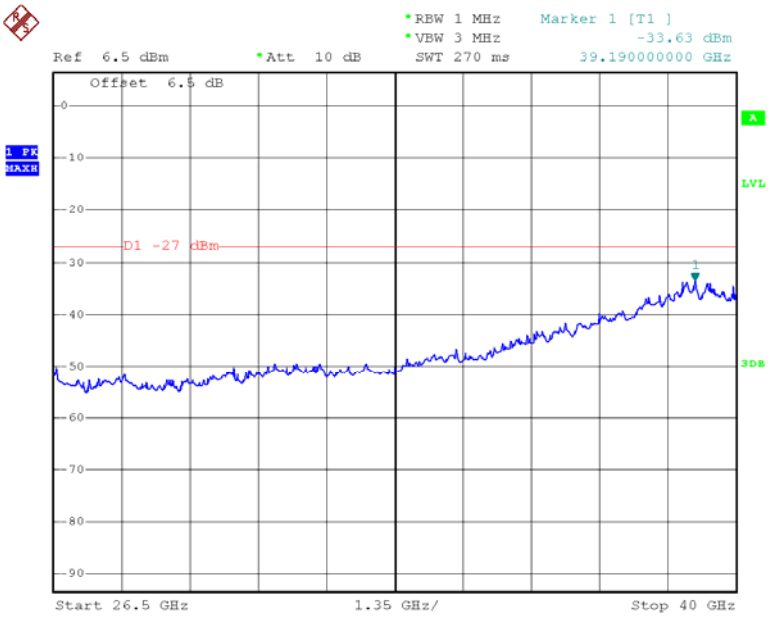
802.11a Middle Channel 1GHz -26.5GHz – Chain1



Fundamental

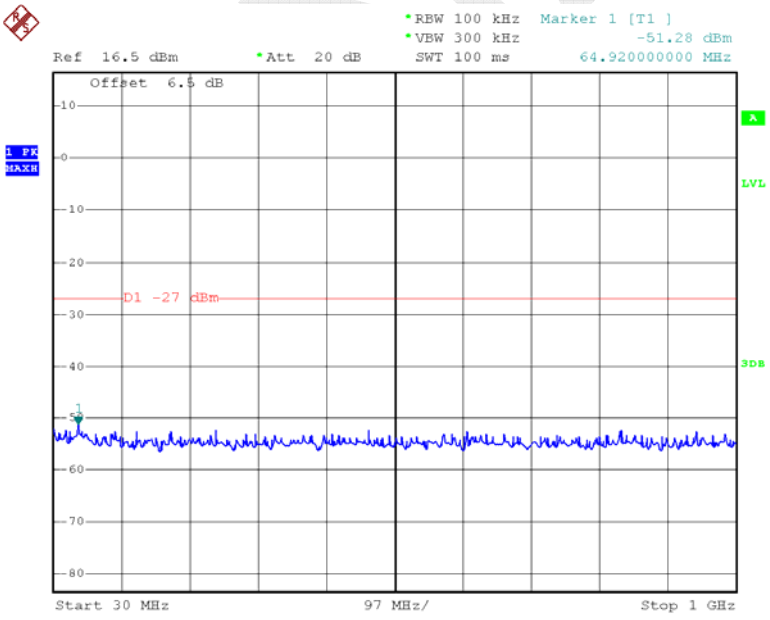
Date: 19.APR.2015 16:44:24

802.11a Middle Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:09:25

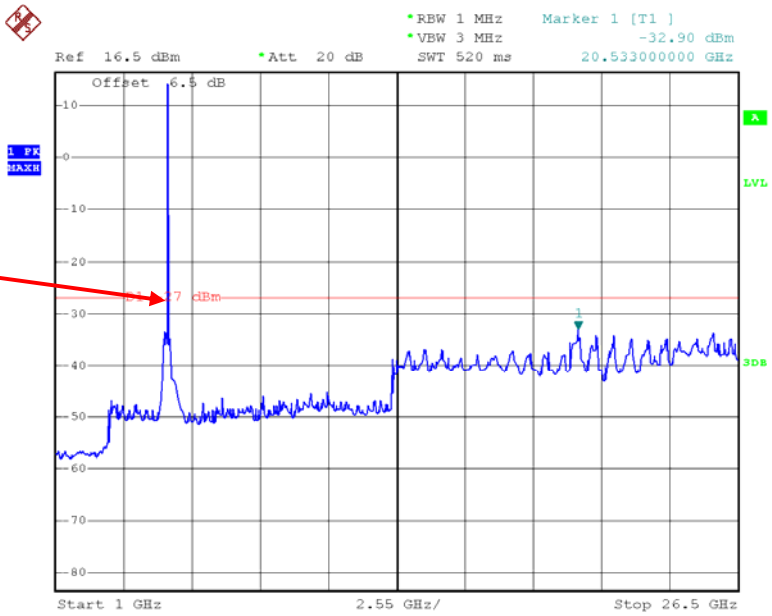
802.11a High Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:02:04

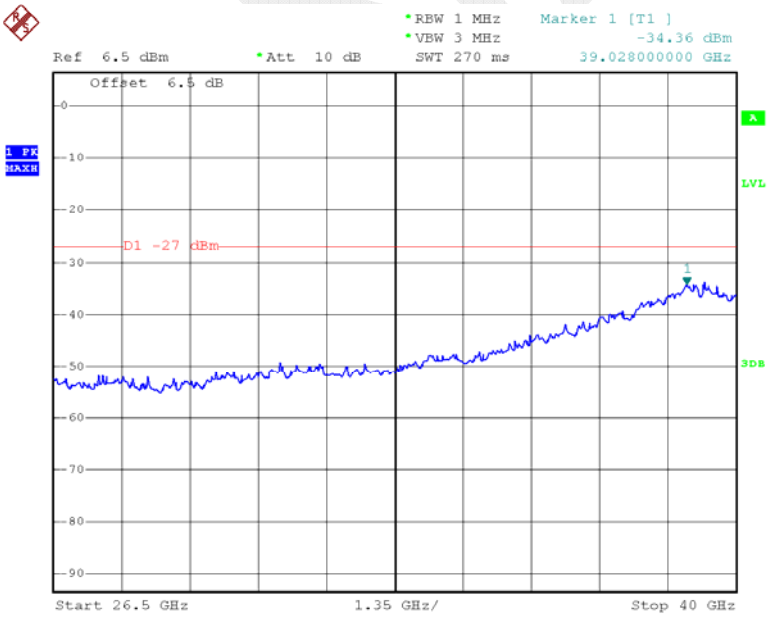
802.11a High Channel 1GHz-26.5GHz – Chain1

Fundamental



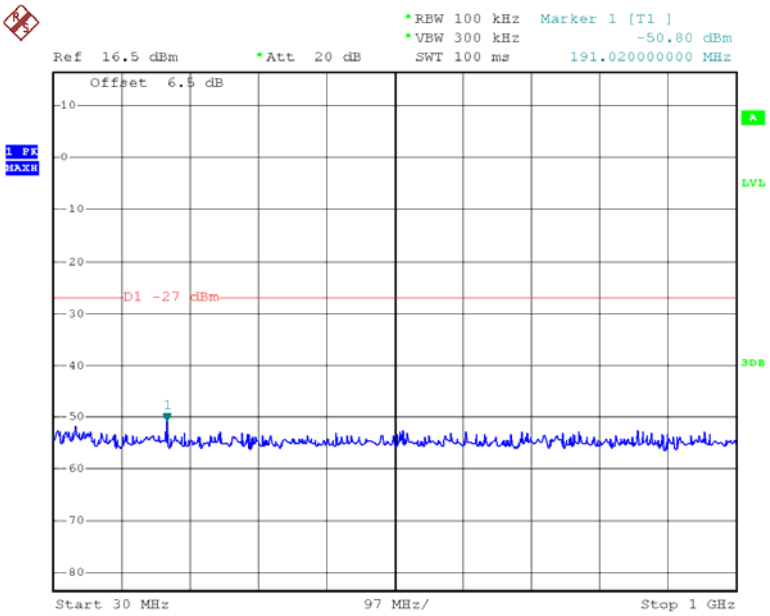
Date: 19.APR.2015 16:44:41

802.11a High Channel 26.5GHz-40GHz – Chain1



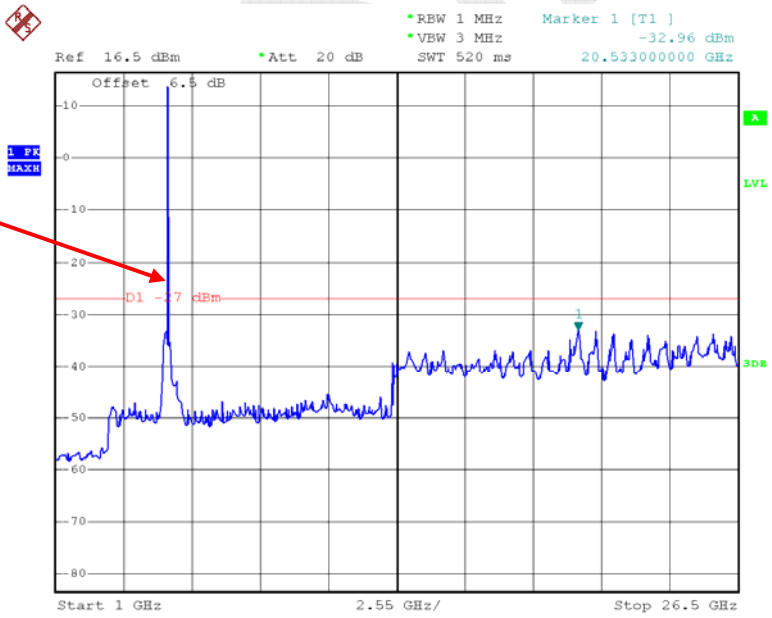
Date: 19.APR.2015 17:09:38

802.11n ht20 Low Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:02:23

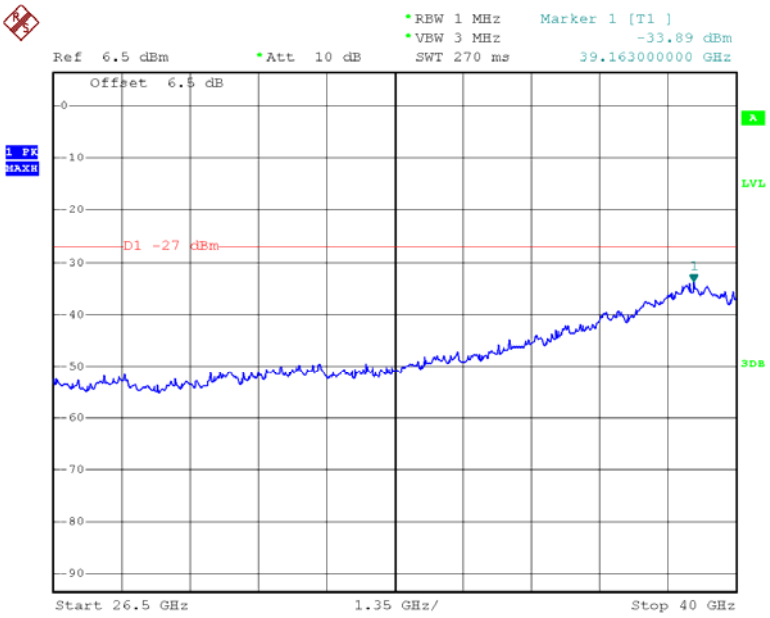
802.11n ht20 Low Channel 1GHz-26.5GHz – Chain1



Fundamental

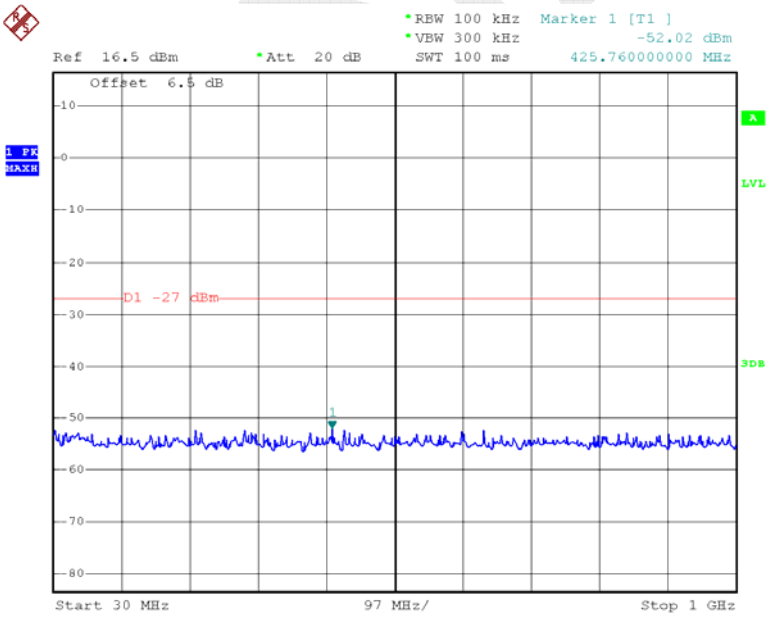
Date: 19.APR.2015 16:45:58

802.11n ht20 Low Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:10:04

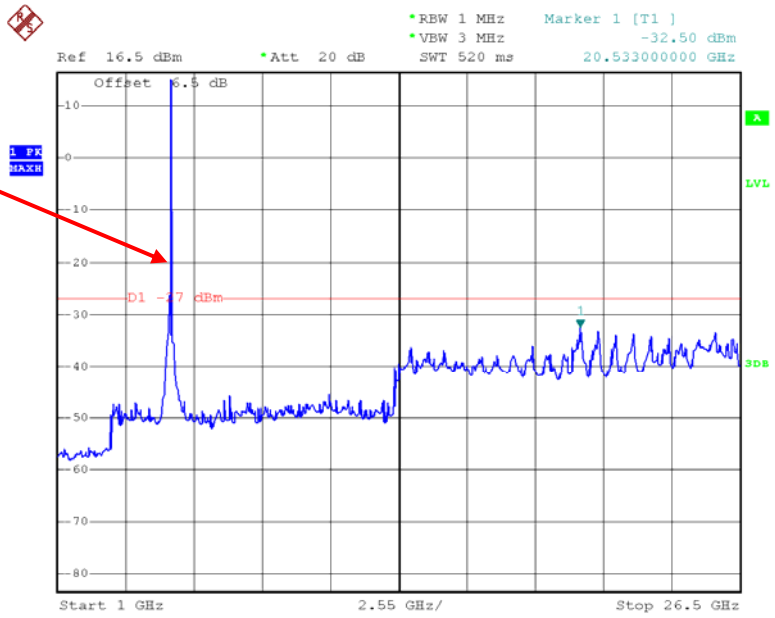
802.11n ht20 Middle Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:02:17

802.11n ht20 Middle Channel 1GHz -26.5GHz – Chain1

Fundamental



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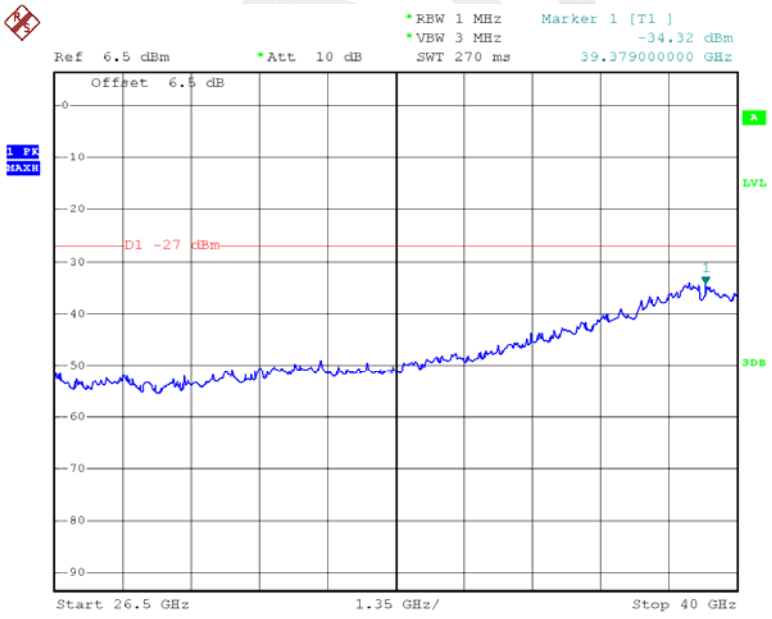
802.11n ht20 Middle Channel 26.5GHz-40GHz – Chain1



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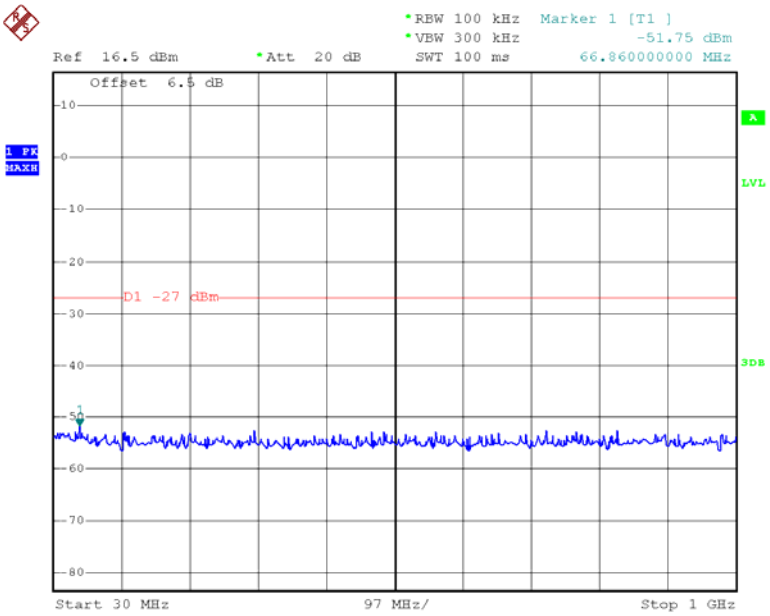
802.11n ht20 High Channel 30MHz-1GHz – Chain1



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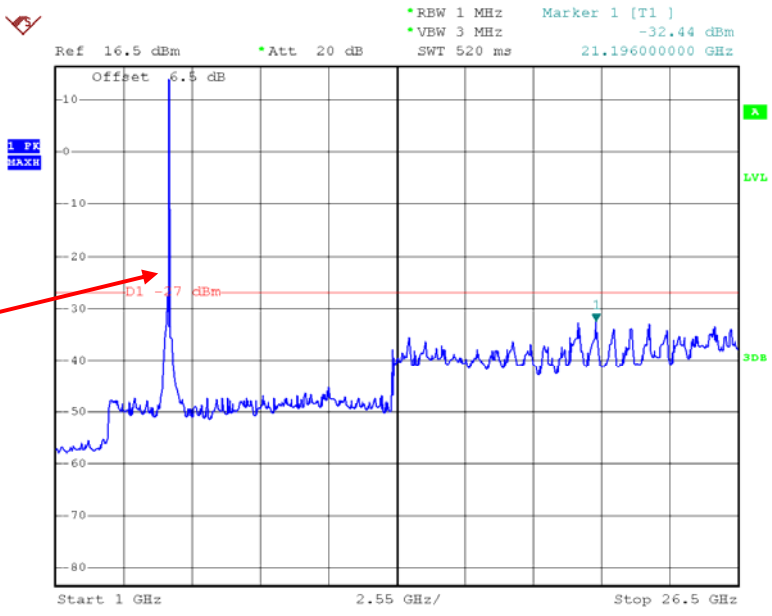
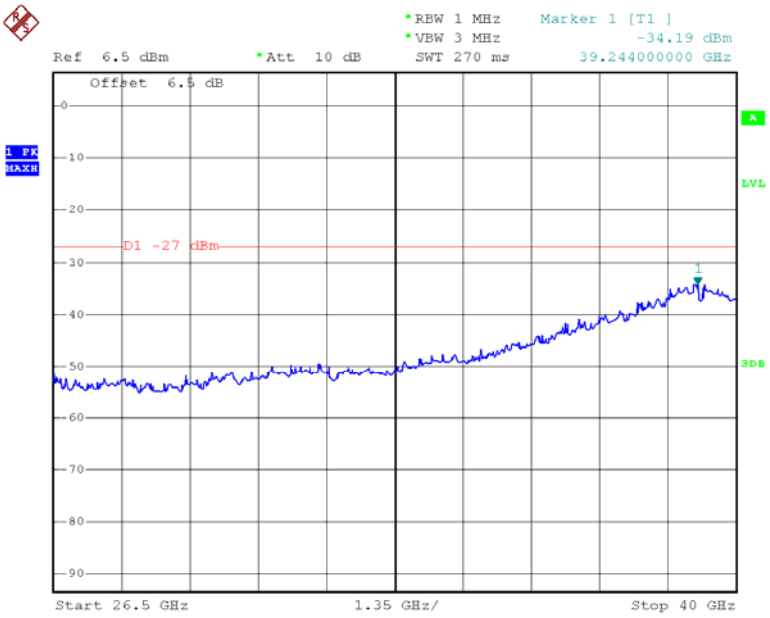
802.11n ht20 High Channel 1GHz-26.5GHz – Chain1



Fundamental

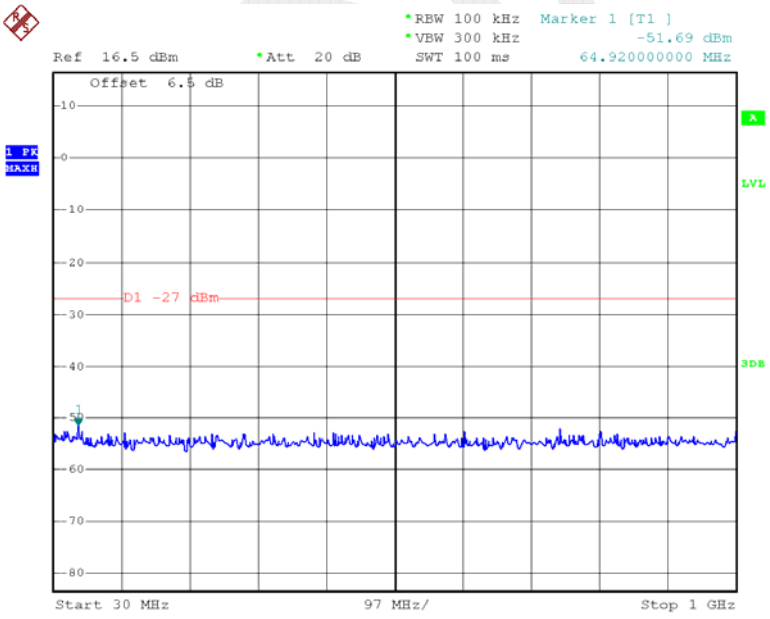
Date: 19.APR.2015 16:44:59

802.11n ht20 High Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:09:46

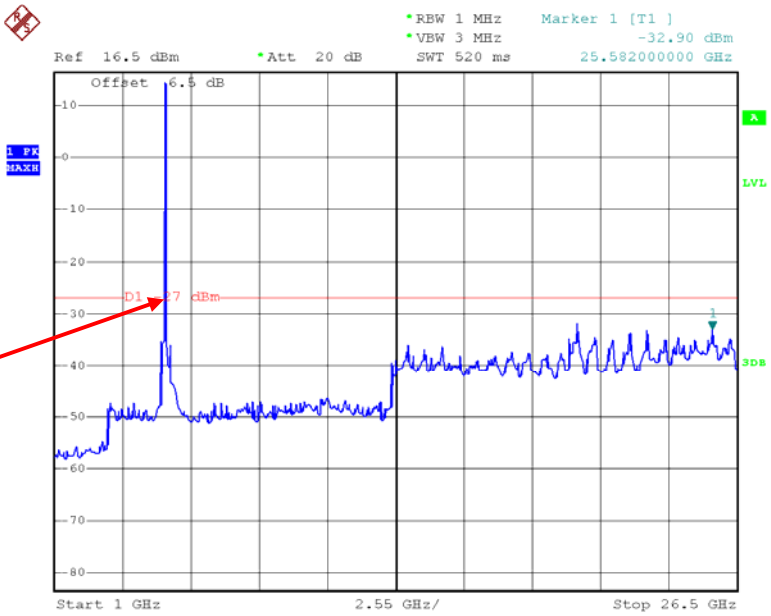
802.11n ht40 Low Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:02:30

802.11n ht40 Low Channel 1GHz-26.5GHz – Chain1

Fundamental



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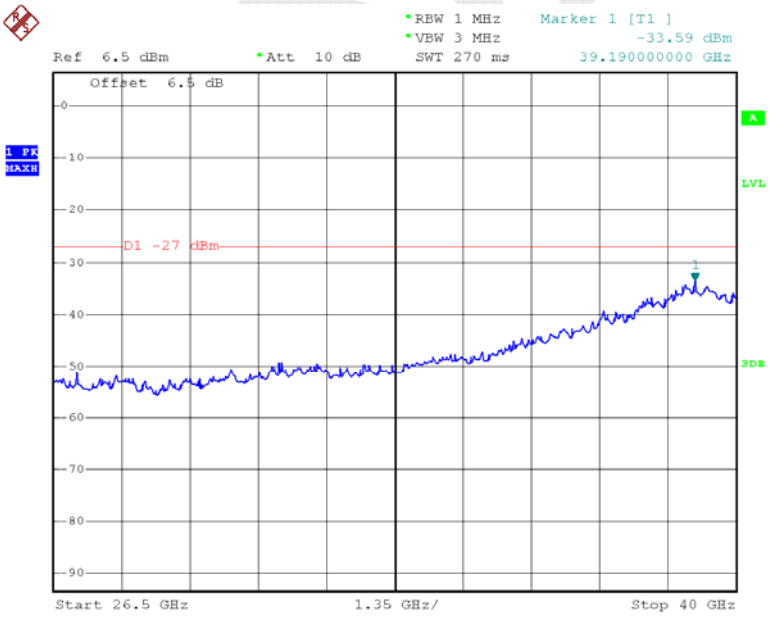
802.11n ht40 Low Channel 26.5GHz-40GHz – Chain1



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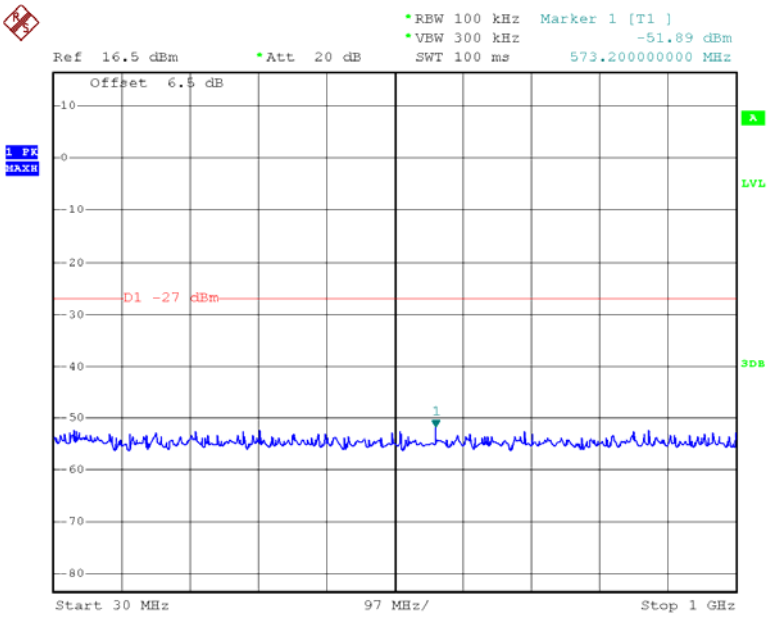
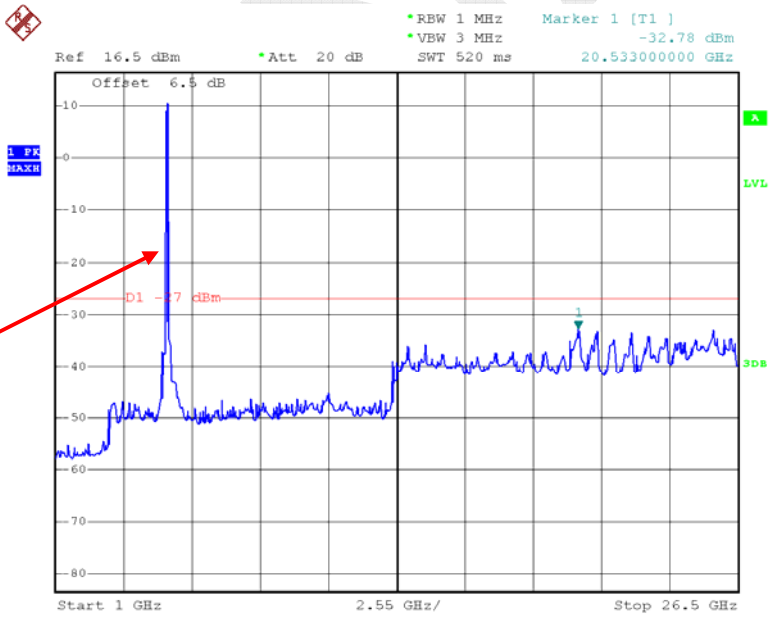
802.11n ht40 High Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:02:37

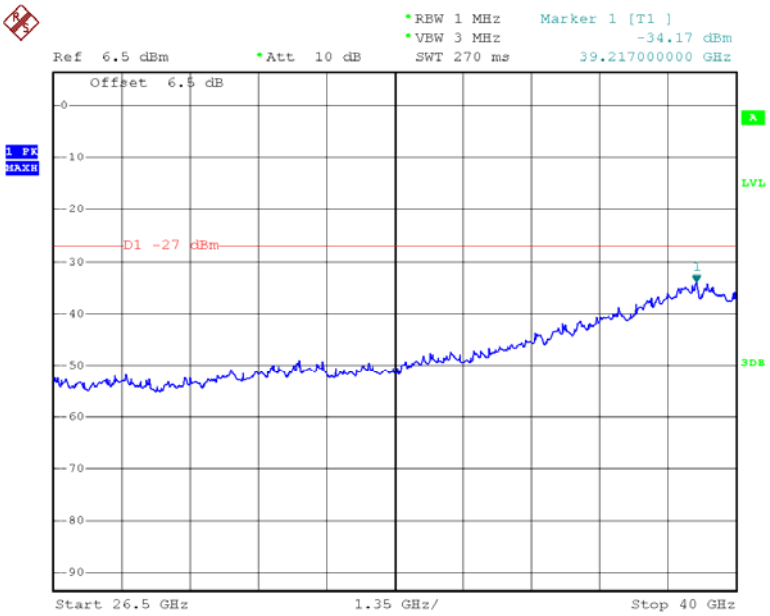
802.11n ht40 High Channel 1GHz-26.5GHz – Chain1



Fundamental

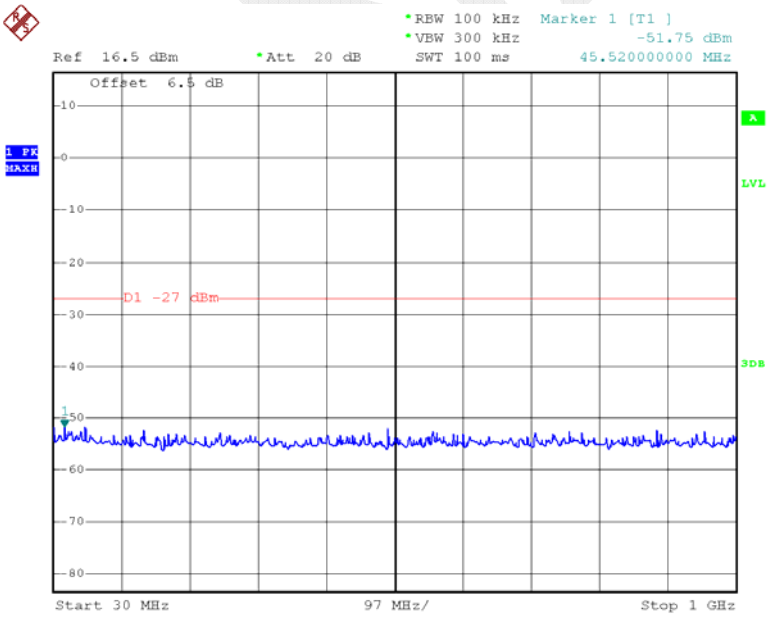
Date: 19.APR.2015 16:48:07

802.11n ht40 High Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:10:21

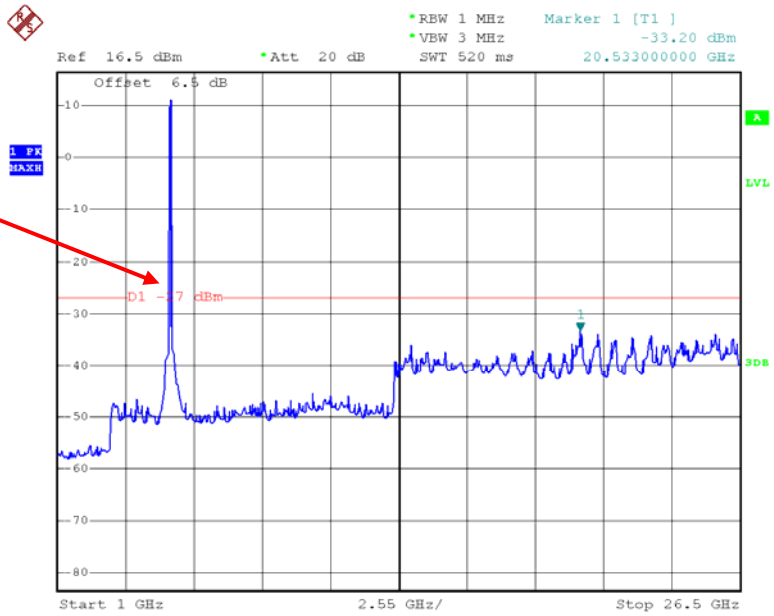
802.11n ac80 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:02:44

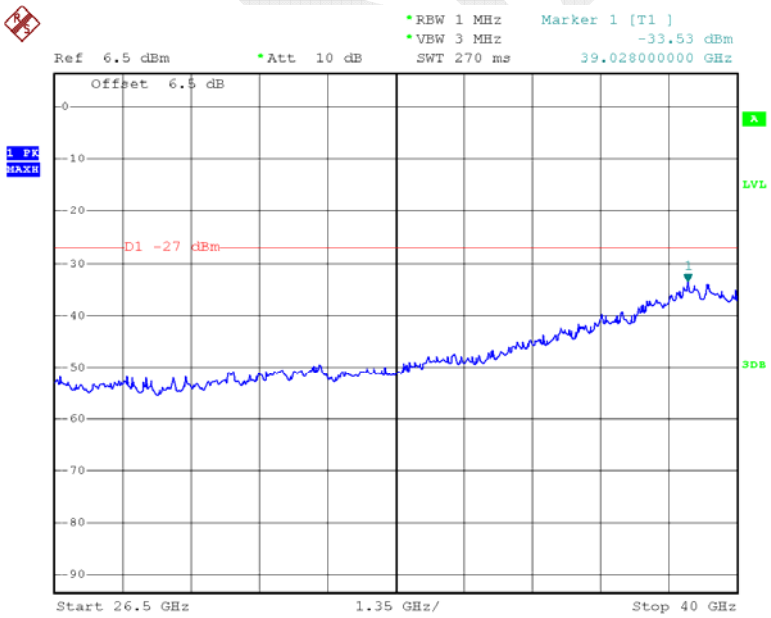
802.11n ac80 1GHz-26.5GHz – Chain1

Fundamental



Date: 19.APR.2015 16:48:27

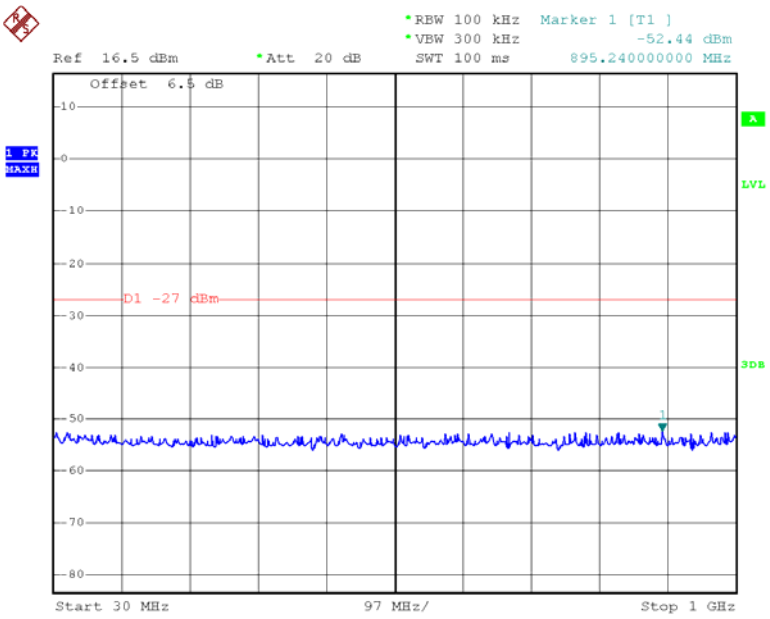
802.11n ac80 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:10:30

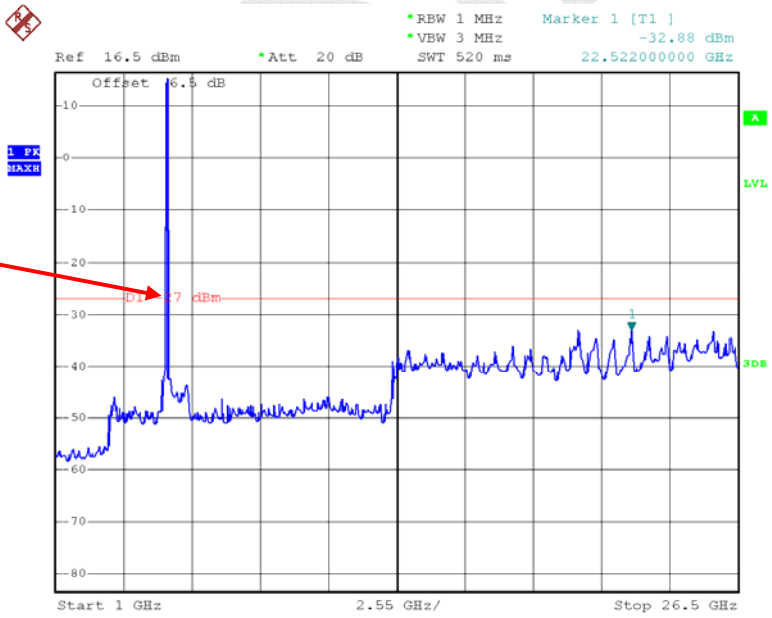
5725MHz-5850MHz:

802.11a Low Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:08:25

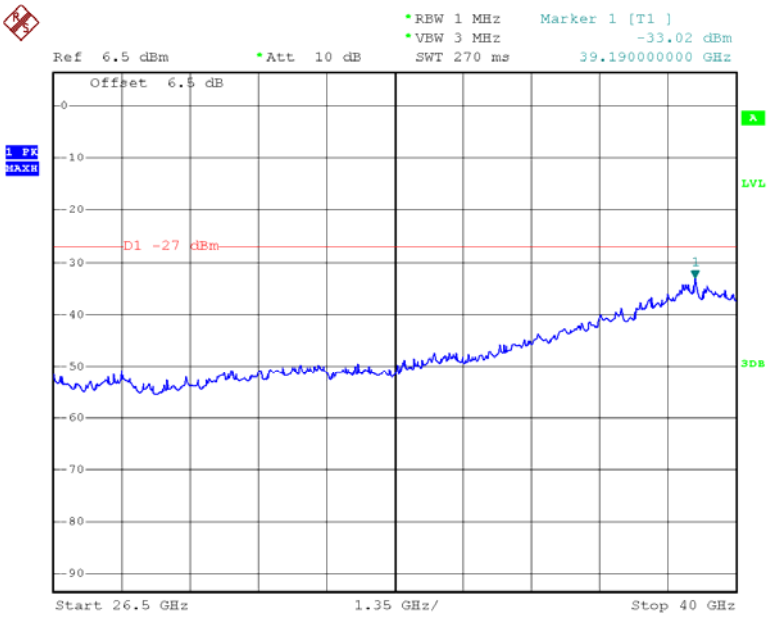
802.11a Low Channel 1GHz-26.5GHz – Chain0



Fundamental

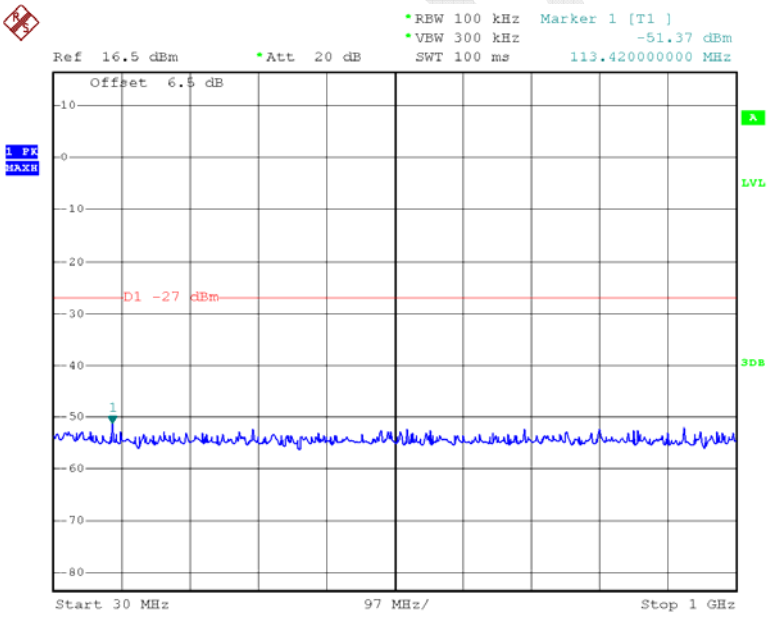
Date: 19.APR.2015 16:52:15

802.11a Low Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:12:17

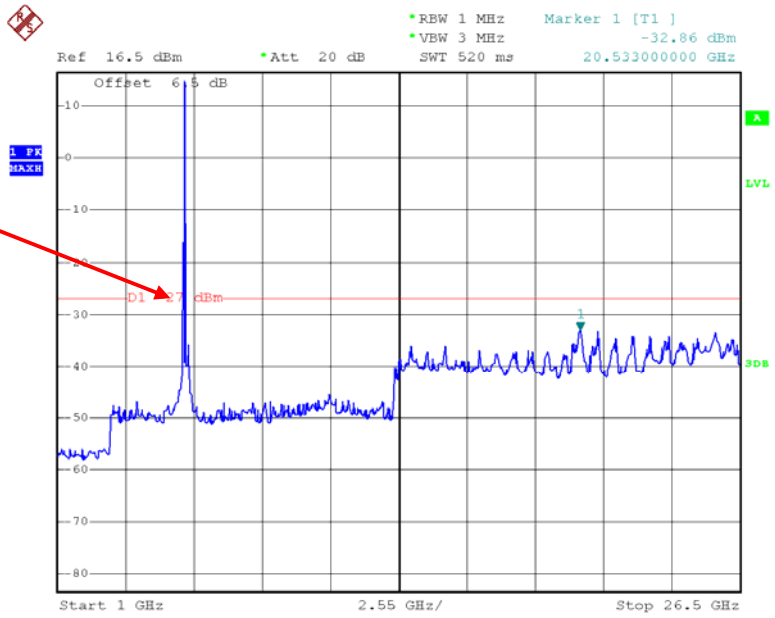
802.11a Middle Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:08:16

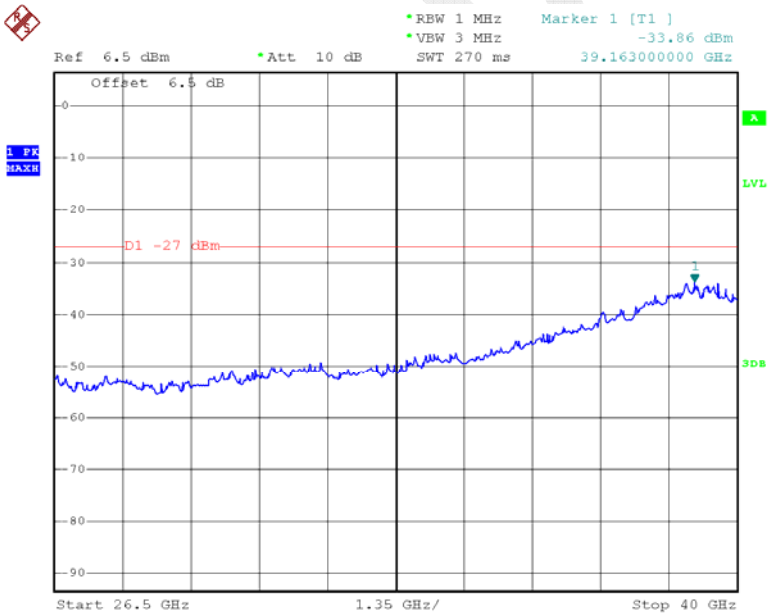
802.11a Middle Channel 1GHz -26.5GHz – Chain0

Fundamental



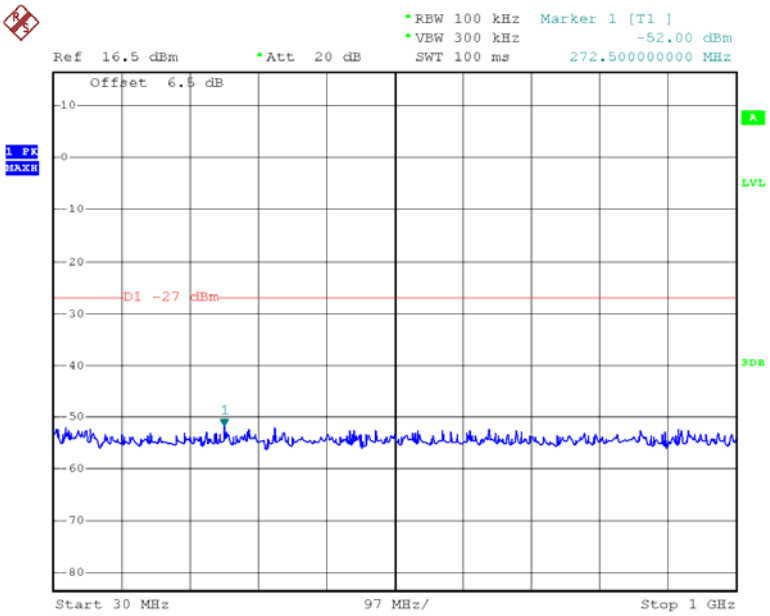
Date: 19.APR.2015 16:53:07

802.11a Middle Channel 26.5GHz-40GHz – Chain0



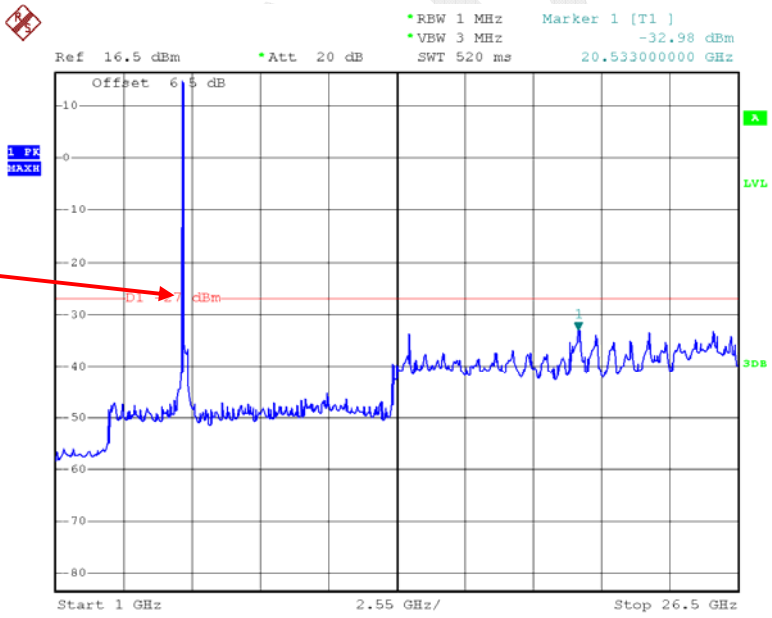
Date: 19.APR.2015 17:12:09

802.11a High Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:08:06

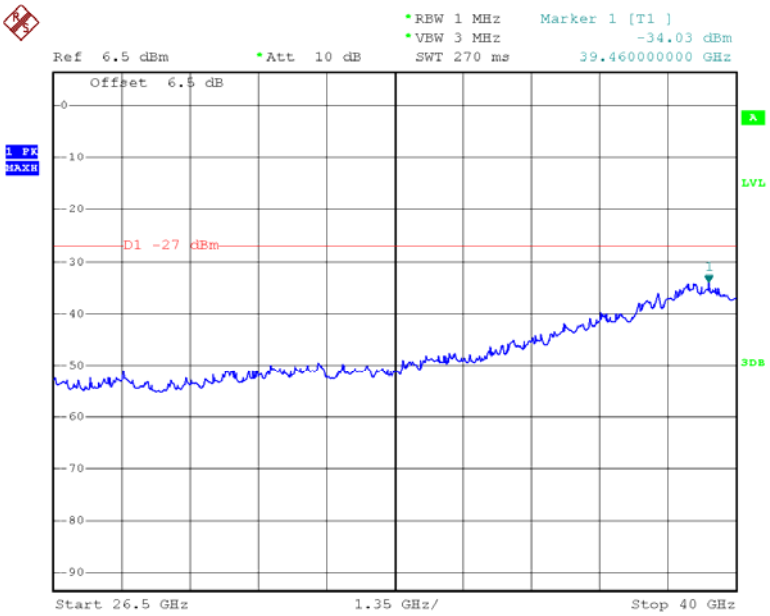
802.11a High Channel 1GHz-26.5GHz – Chain0



Fundamental

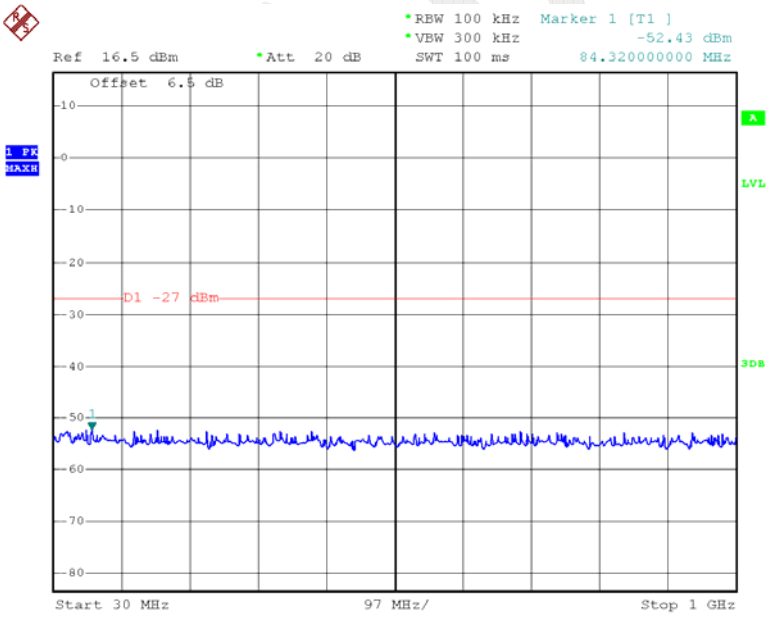
Date: 19.APR.2015 16:54:11

802.11a High Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:12:00

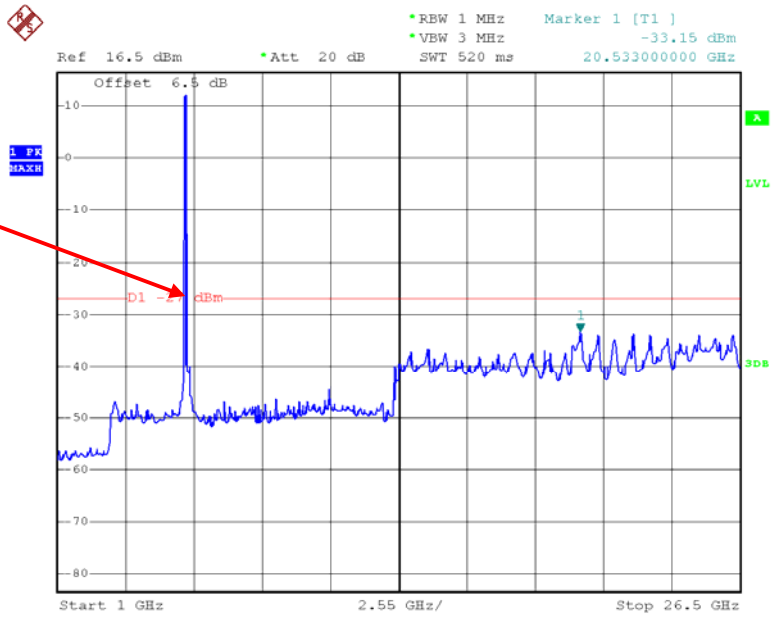
802.11n ht20 Low Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:07:32

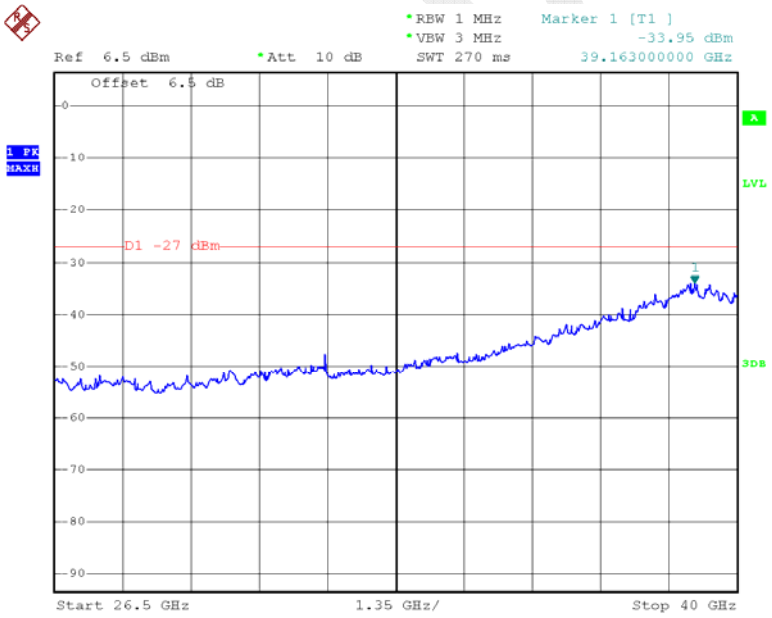
802.11n ht20 Low Channel 1GHz-26.5GHz – Chain0

Fundamental



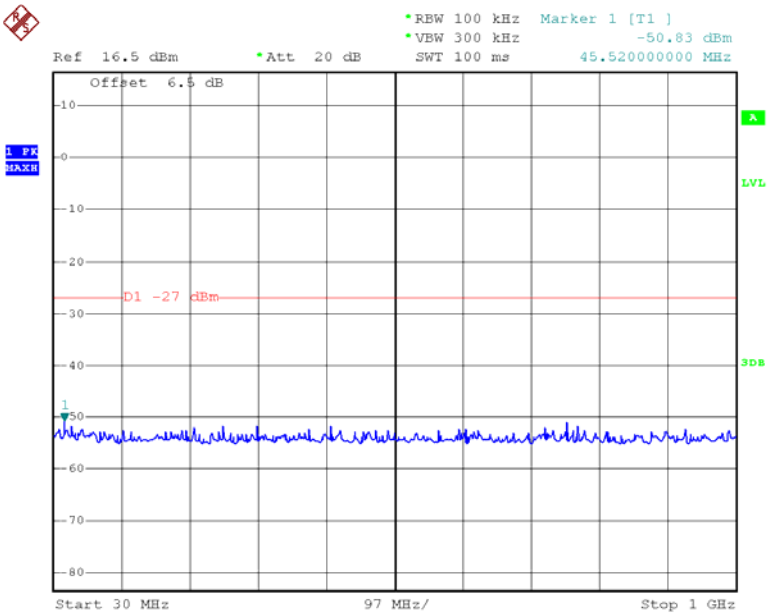
Date: 19.APR.2015 16:55:19

802.11n ht20 Low Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:12:26

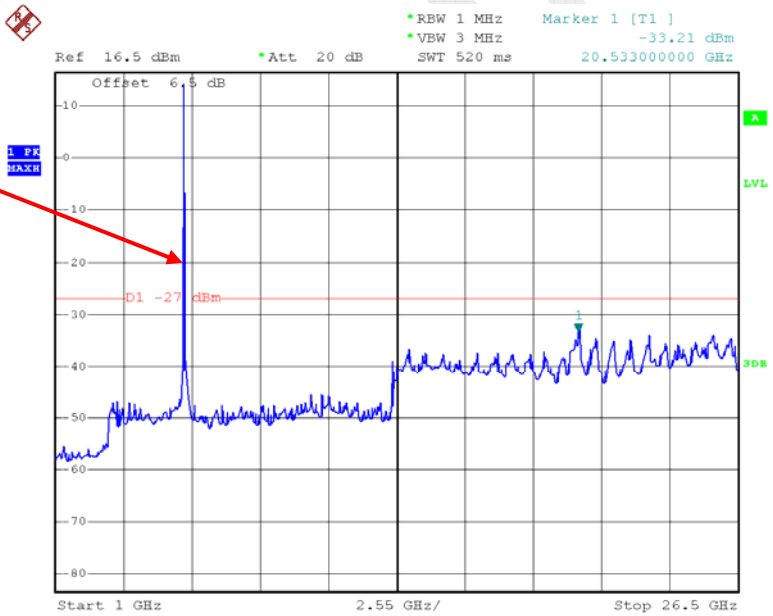
802.11n ht20 Middle Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:07:47

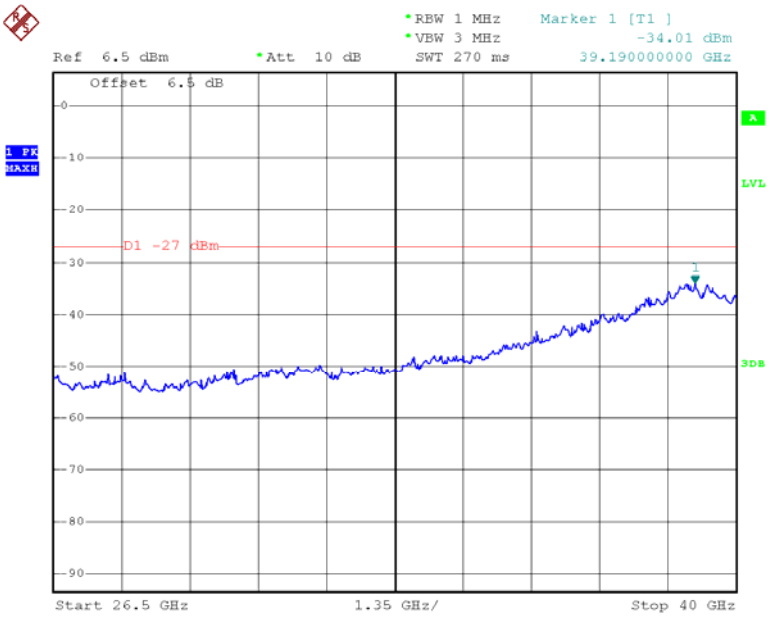
802.11n ht20 Middle Channel 1GHz -26.5GHz – Chain0

Fundamental



Date: 19.APR.2015 16:55:04

802.11n ht20 Middle Channel 26.5GHz-40GHz – Chain0



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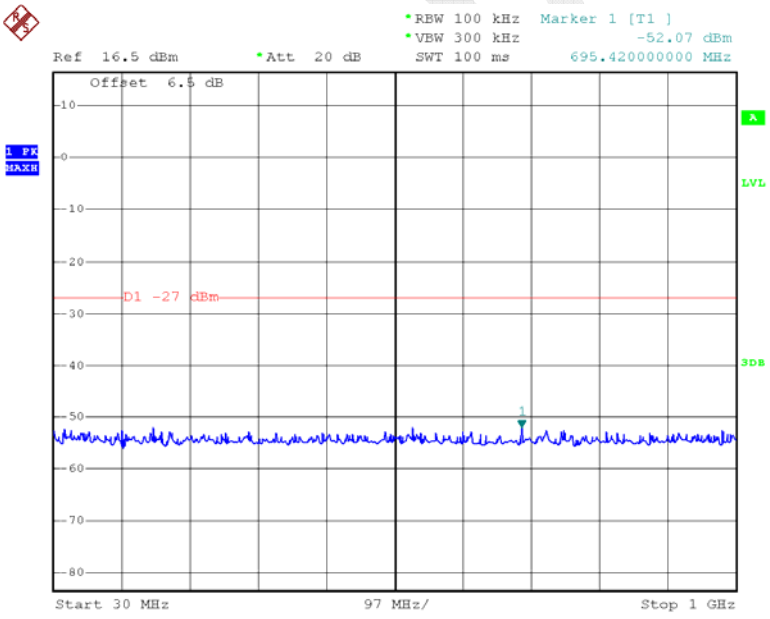
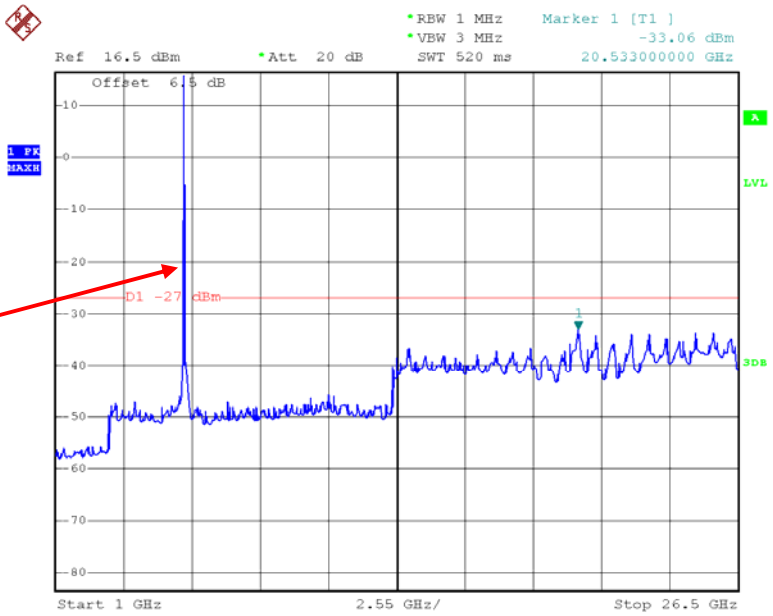
802.11n ht20 High Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:07:57

802.11n ht20 High Channel 1GHz-26.5GHz – Chain0

Fundamental



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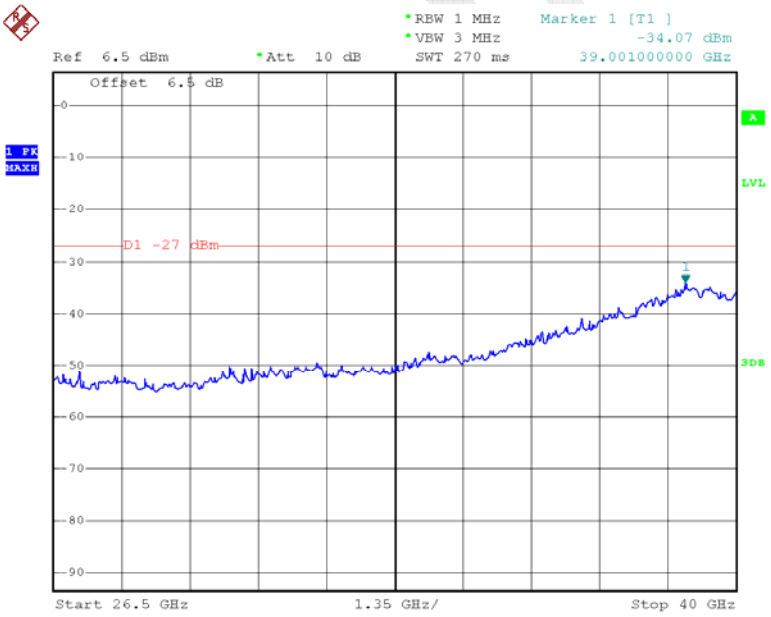
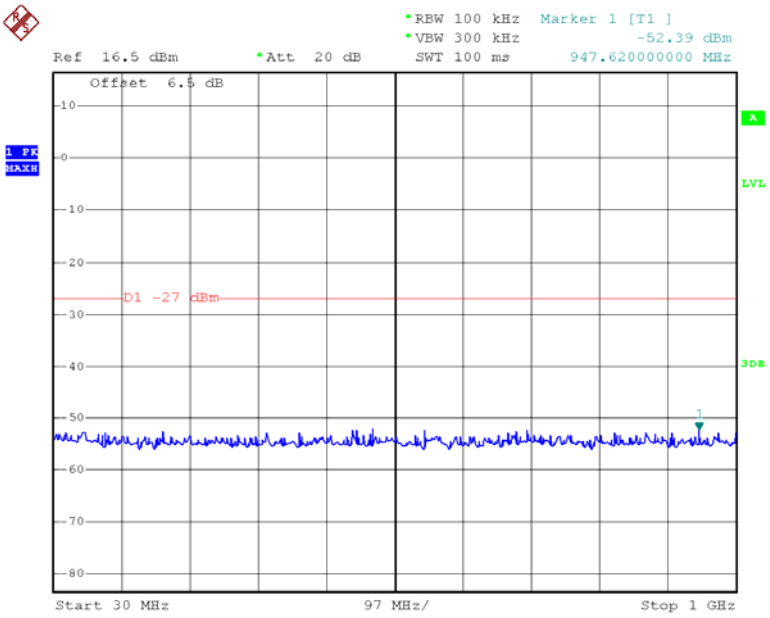
802.11n ht20 High Channel 26.5GHz-40GHz – Chain0



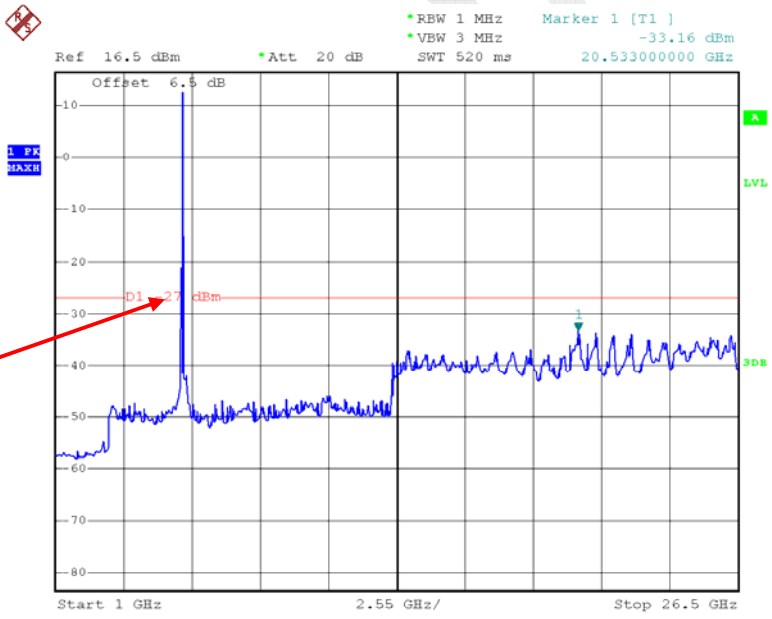
Date: 19.APR.2015 17:12:45

802.11n ht40 Low Channel 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:06:42

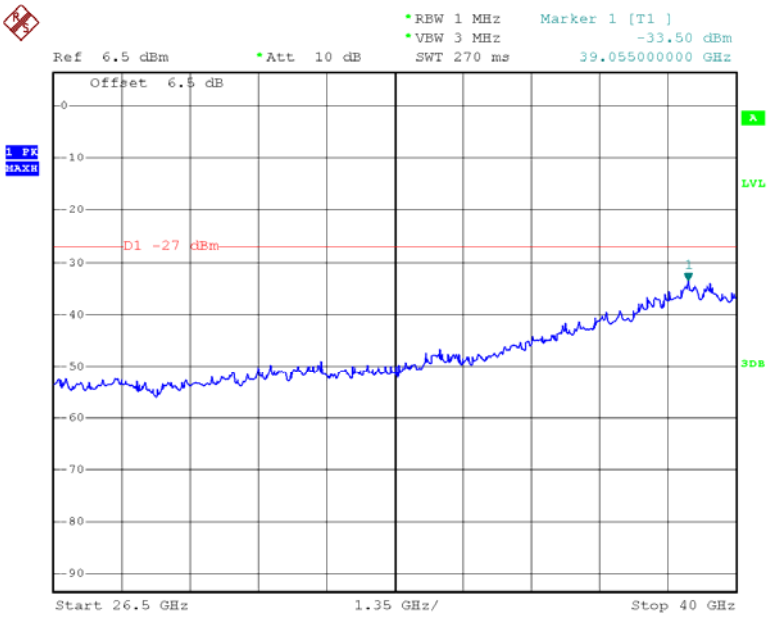
802.11n ht40 Low Channel 1GHz-26.5GHz – Chain0



Fundamental

Date: 19.APR.2015 16:55:35

802.11n ht40 Low Channel 26.5GHz-40GHz – Chain0



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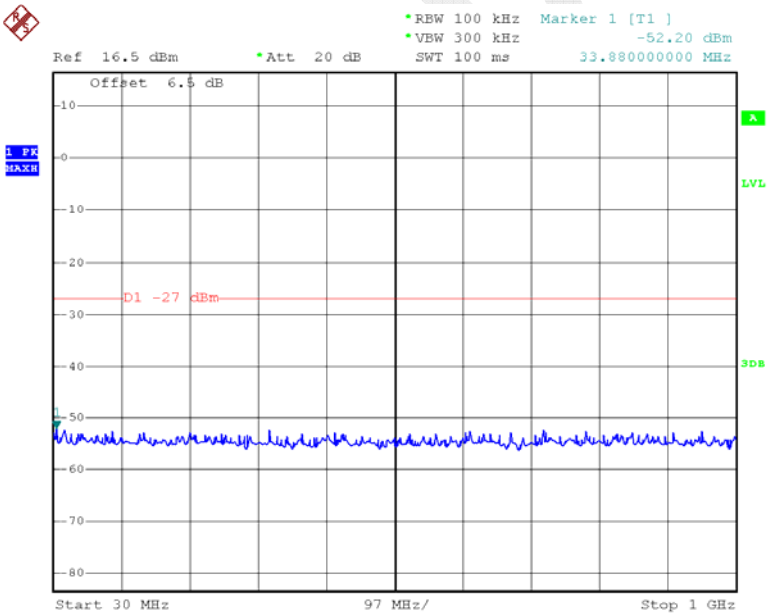
802.11n ht40 High Channel 30MHz-1GHz – Chain0



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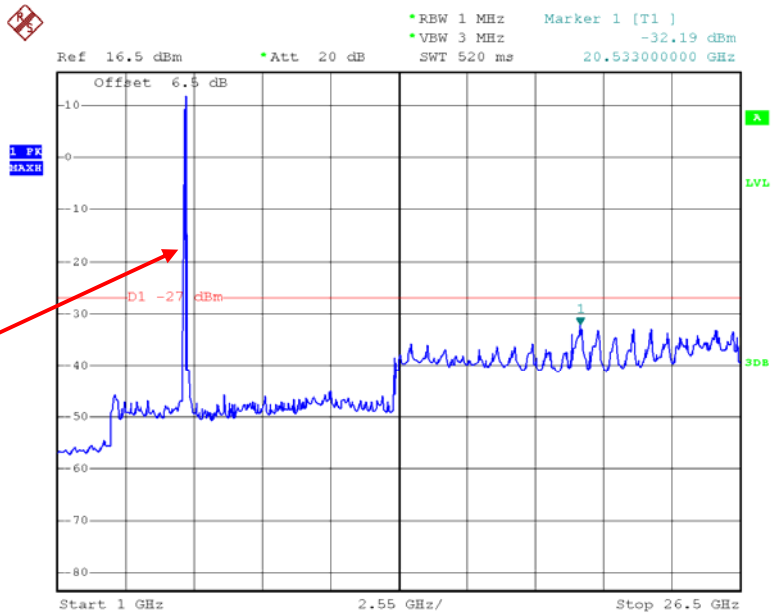
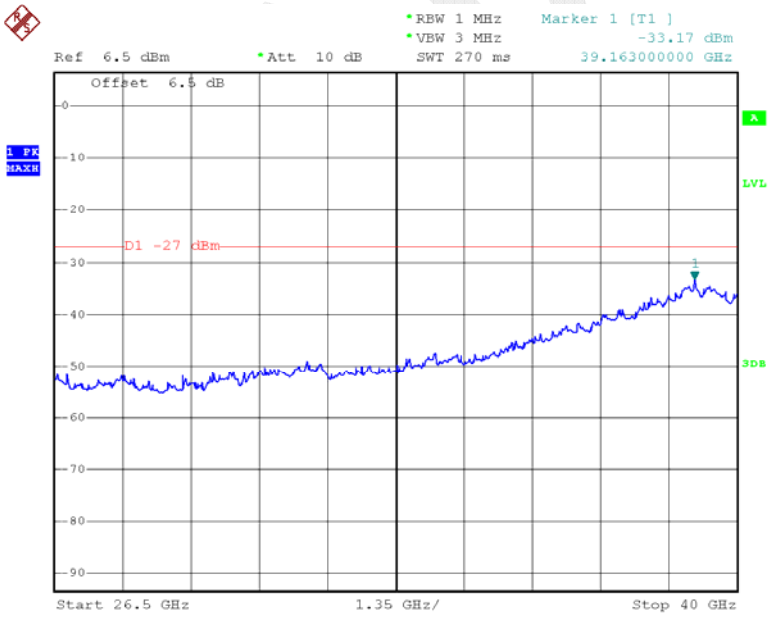
802.11n ht40 High Channel 1GHz-26.5GHz – Chain0

Fundamental



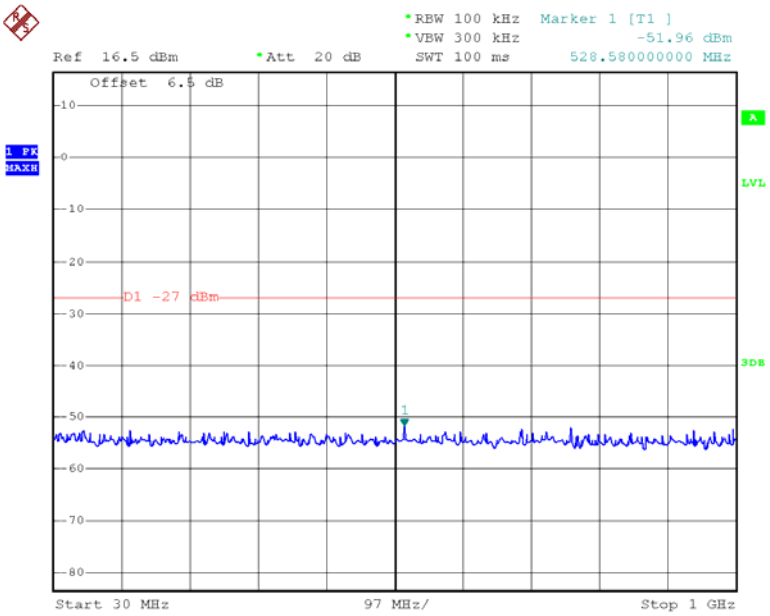
Date: 19.APR.2015 16:57:11

802.11n ht40 High Channel 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:13:02

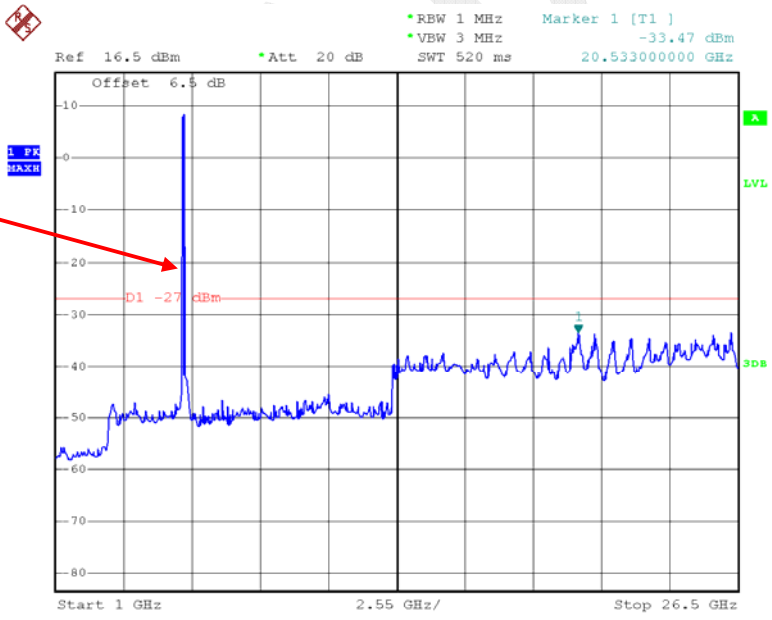
802.11n ac80 30MHz-1GHz – Chain0



Date: 19.APR.2015 17:06:34

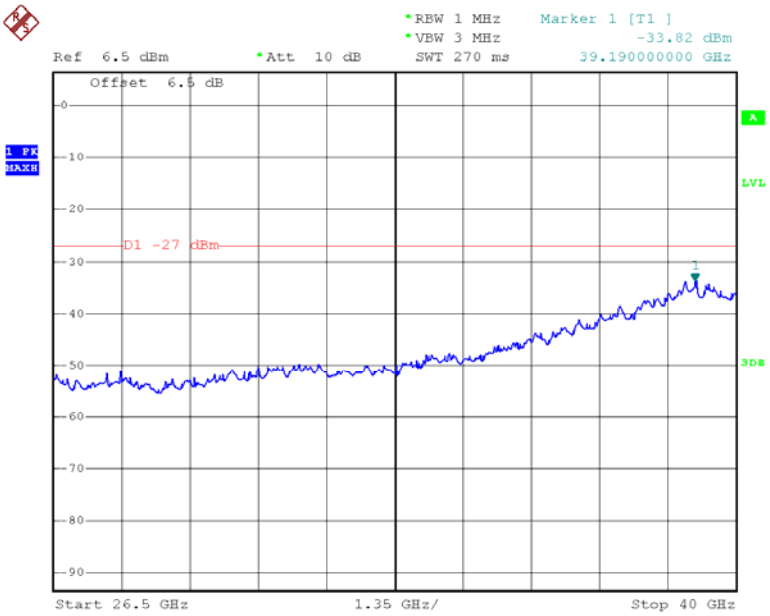
802.11n ac80 1GHz-26.5GHz – Chain0

Fundamental



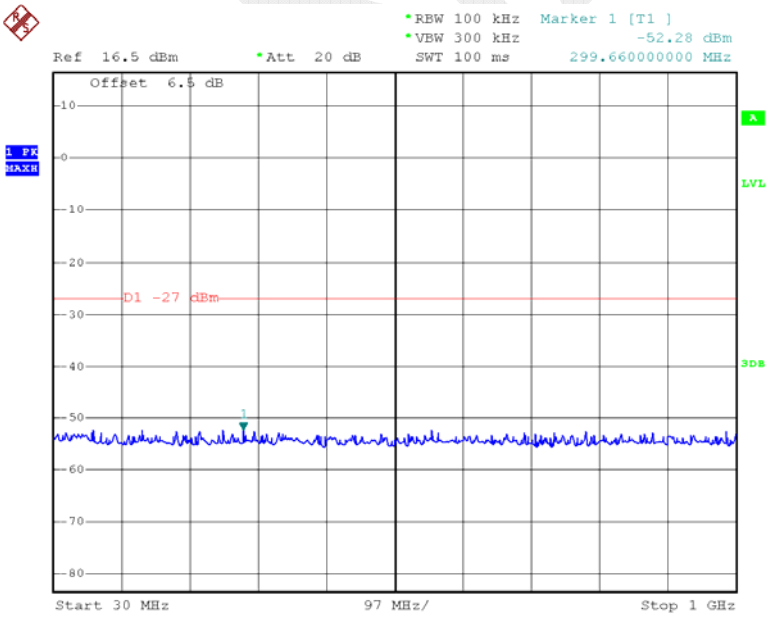
Date: 19.APR.2015 16:57:25

802.11n ac80 26.5GHz-40GHz – Chain0



Date: 19.APR.2015 17:13:11

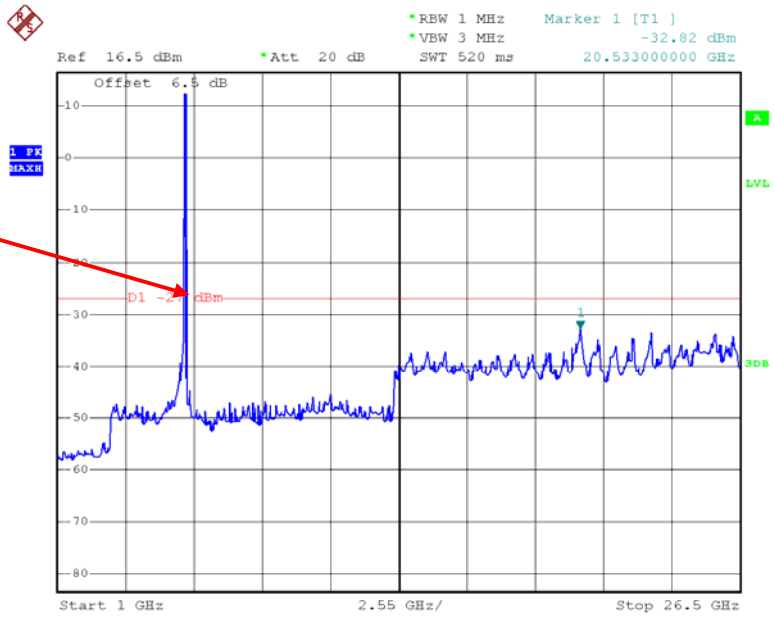
802.11a Low Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:05:07

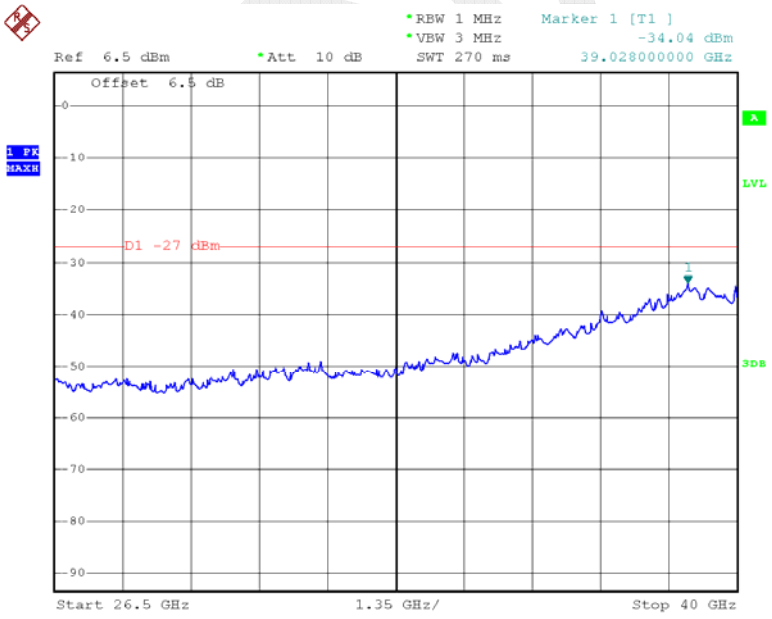
802.11a Low Channel 1GHz-26.5GHz – Chain1

Fundamental



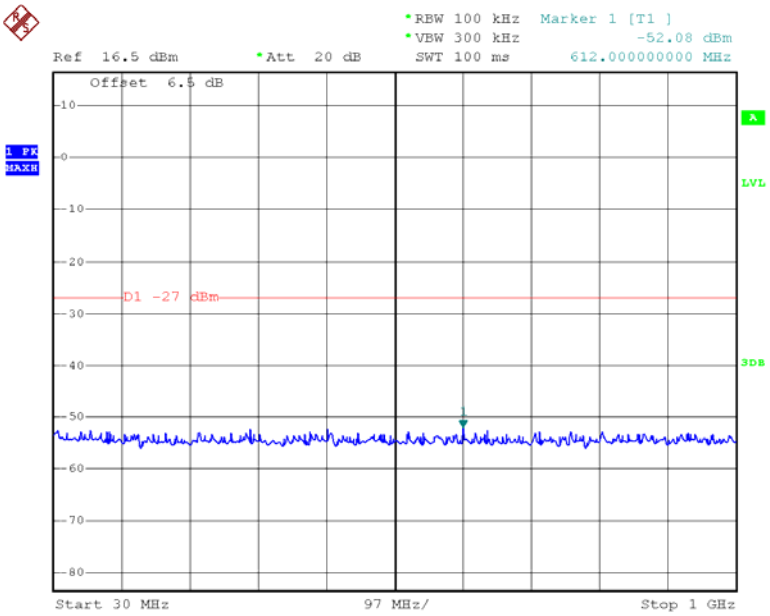
Date: 19.APR.2015 17:01:13

802.11a Low Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:14:30

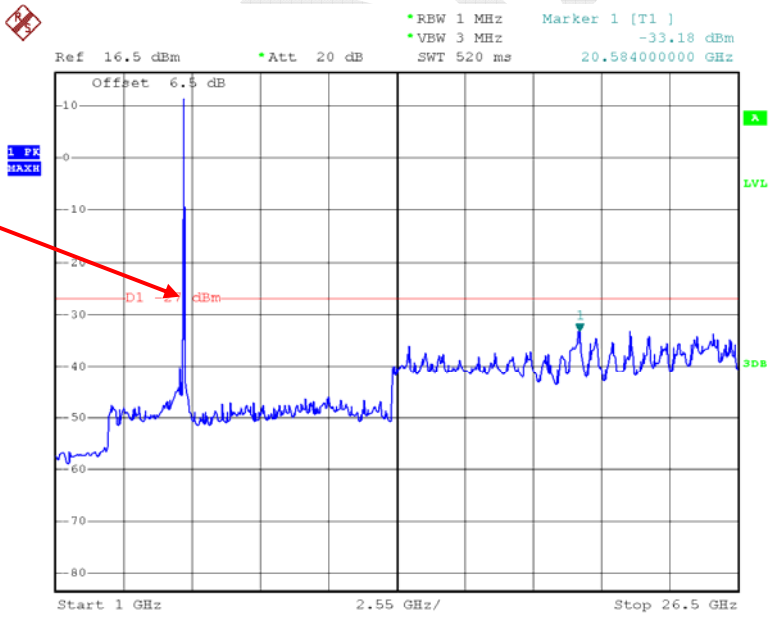
802.11a Middle Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:04:57

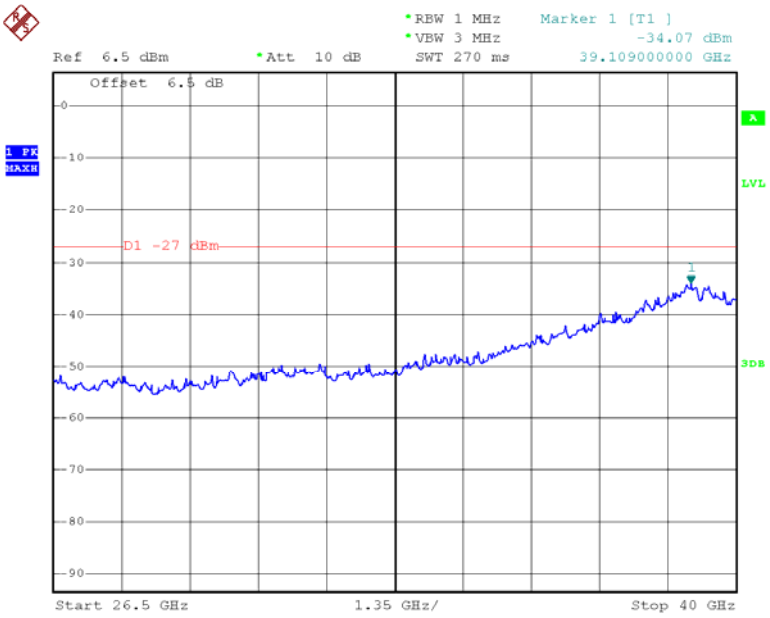
802.11a Middle Channel 1GHz -26.5GHz – Chain1

Fundamental



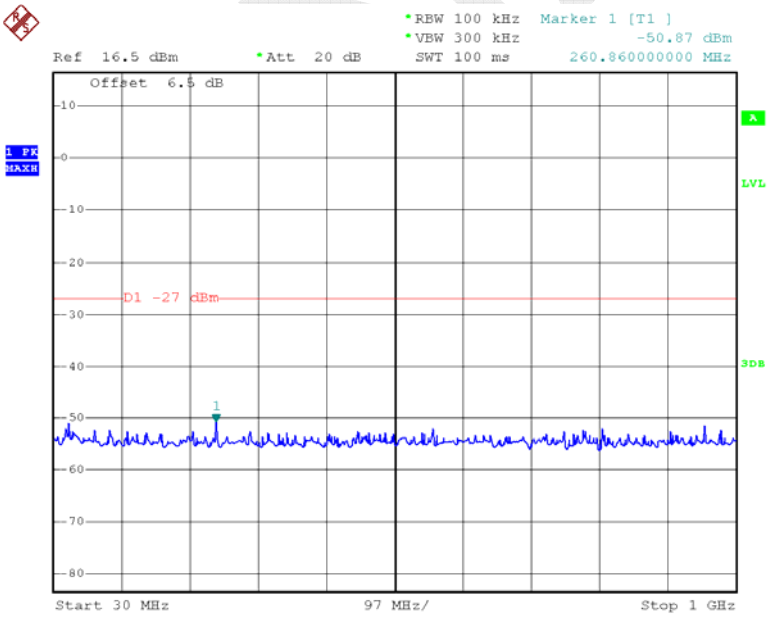
Date: 19.APR.2015 17:01:00

802.11a Middle Channel 26.5GHz-40GHz – Chain1



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

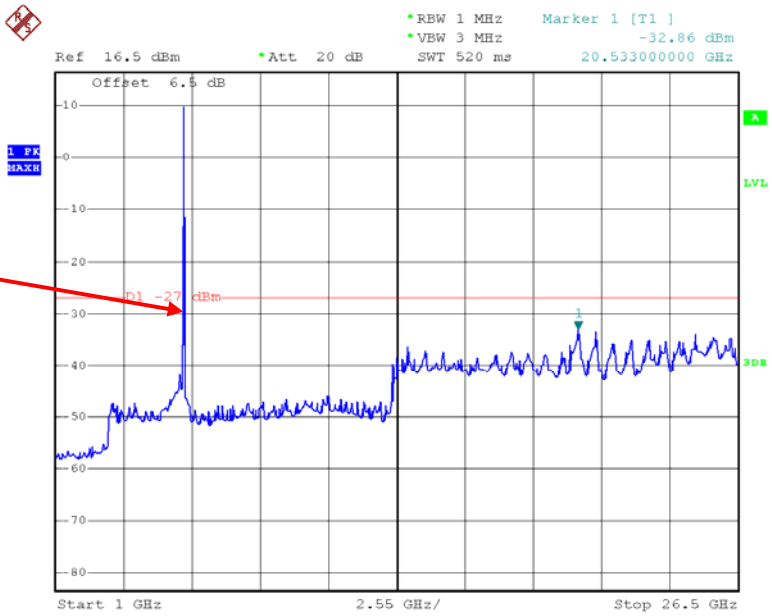
802.11a High Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:04:47

802.11a High Channel 1GHz-26.5GHz – Chain1

Fundamental



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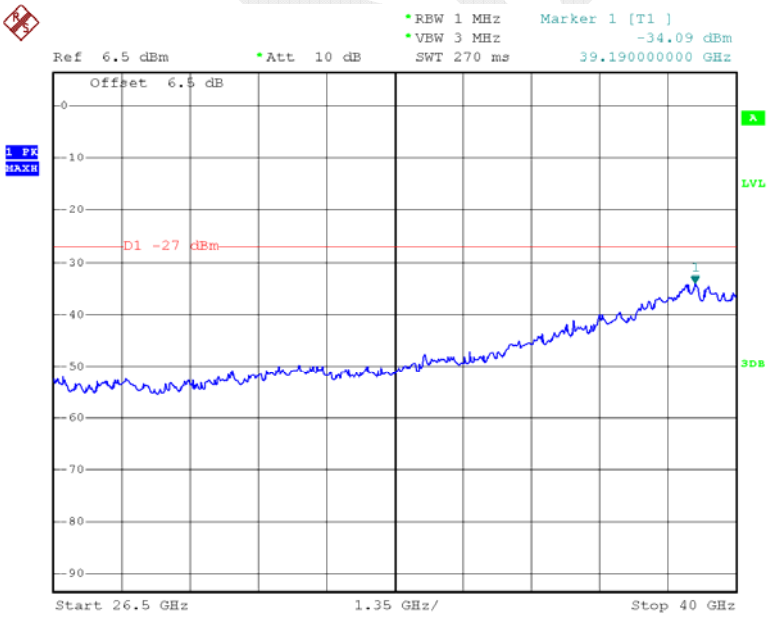
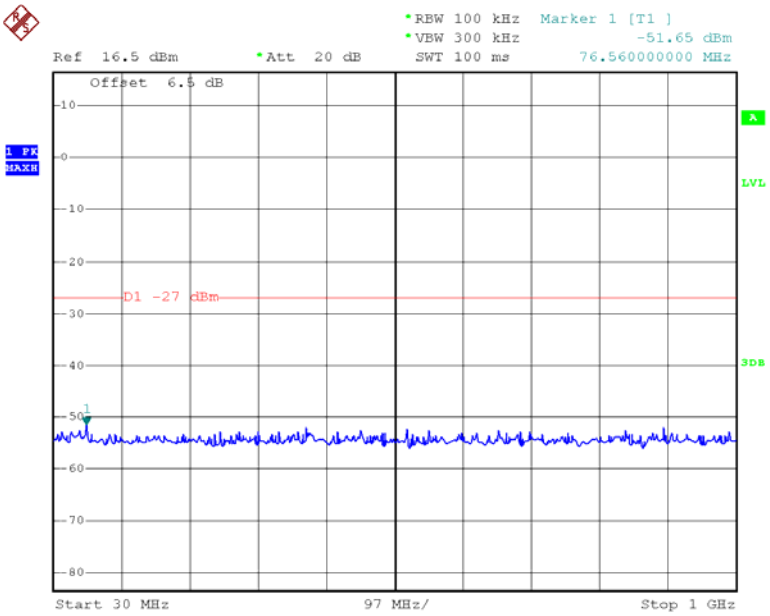
802.11a High Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:14:17

802.11n ht20 Low Channel 30MHz-1GHz – Chain1



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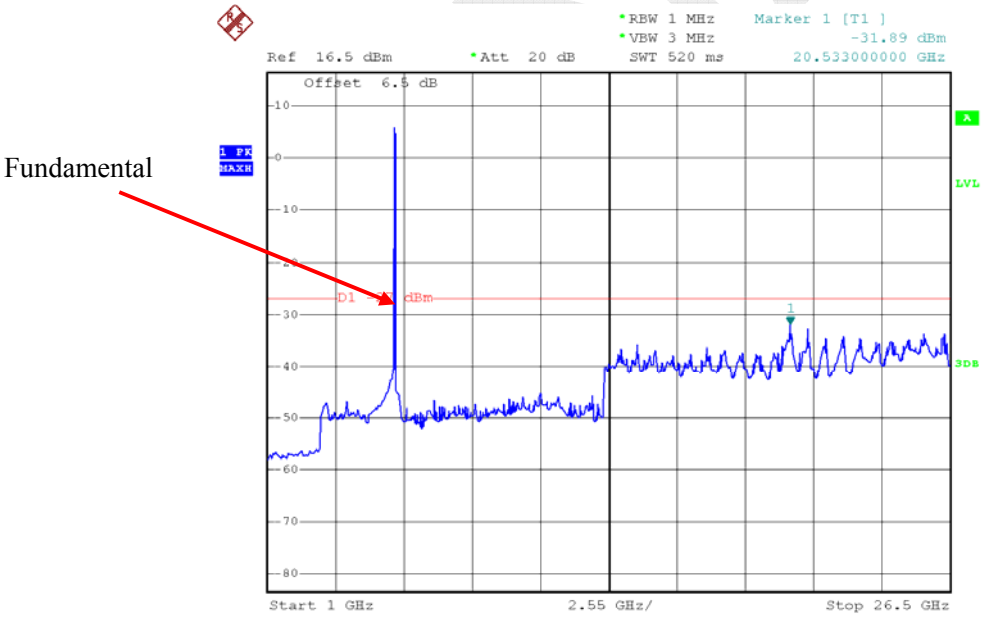
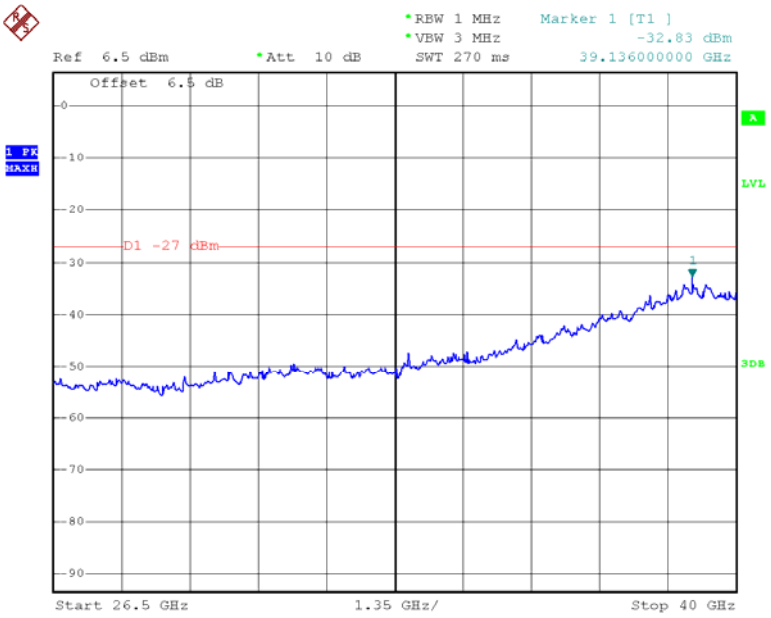
802.11n ht20 Low Channel 1GHz-26.5GHz – Chain1



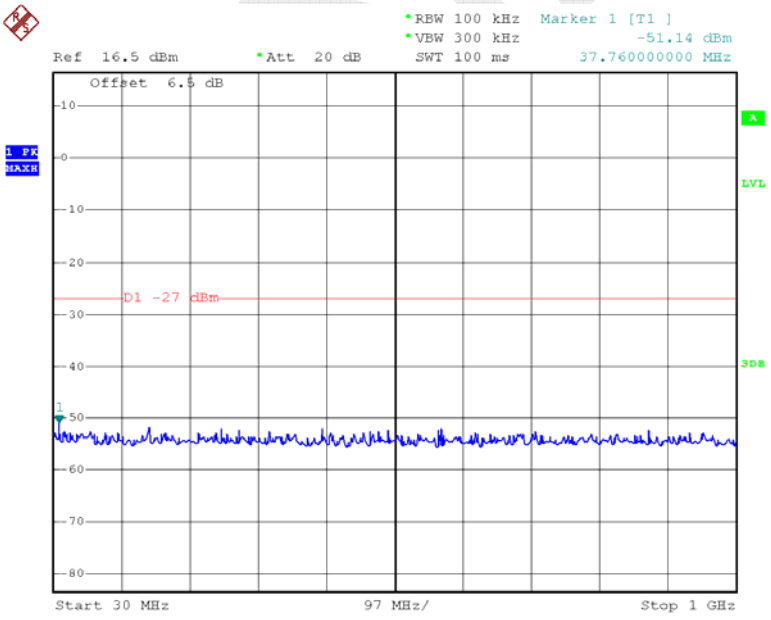
Date: 19.APR.2015 16:59:19

802.11n ht20 Low Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:13:55

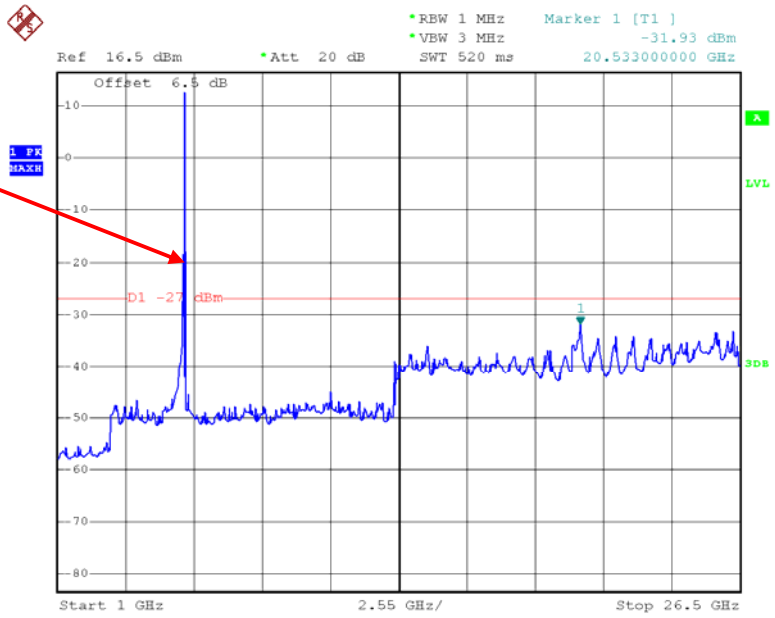
802.11n ht20 Middle Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:05:48

802.11n ht20 Middle Channel 1GHz -26.5GHz – Chain1

Fundamental



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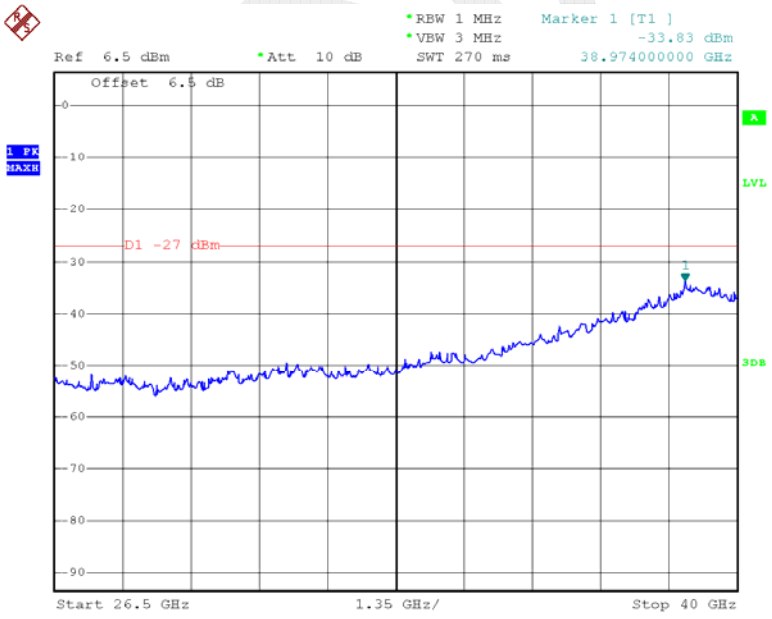
802.11n ht20 Middle Channel 26.5GHz-40GHz – Chain1



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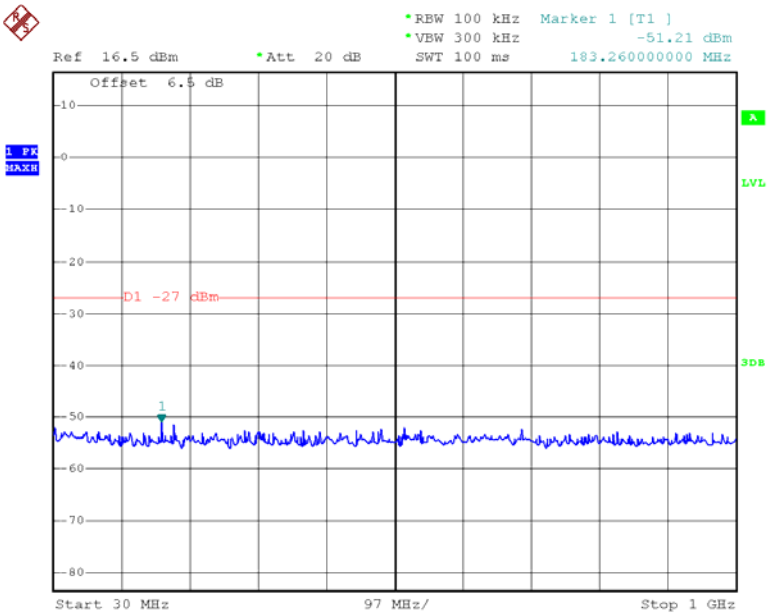
802.11n ht20 High Channel 30MHz-1GHz – Chain1



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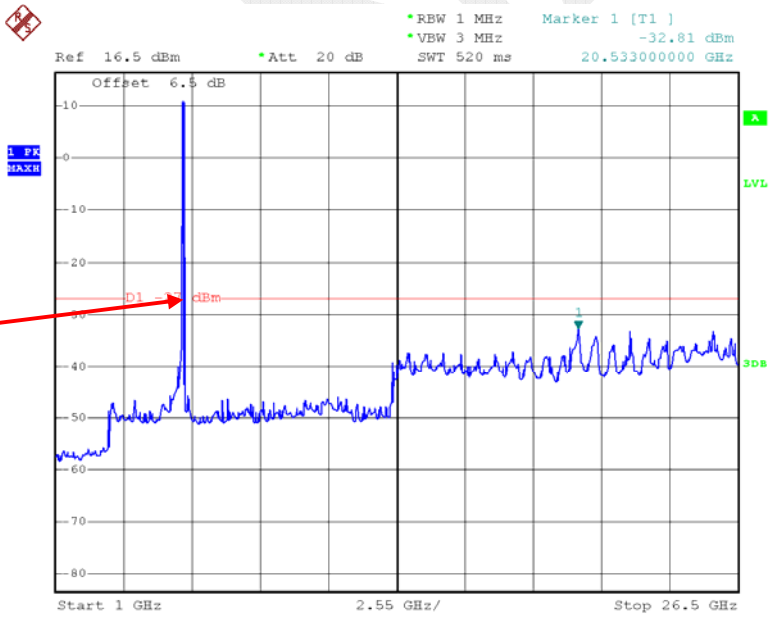
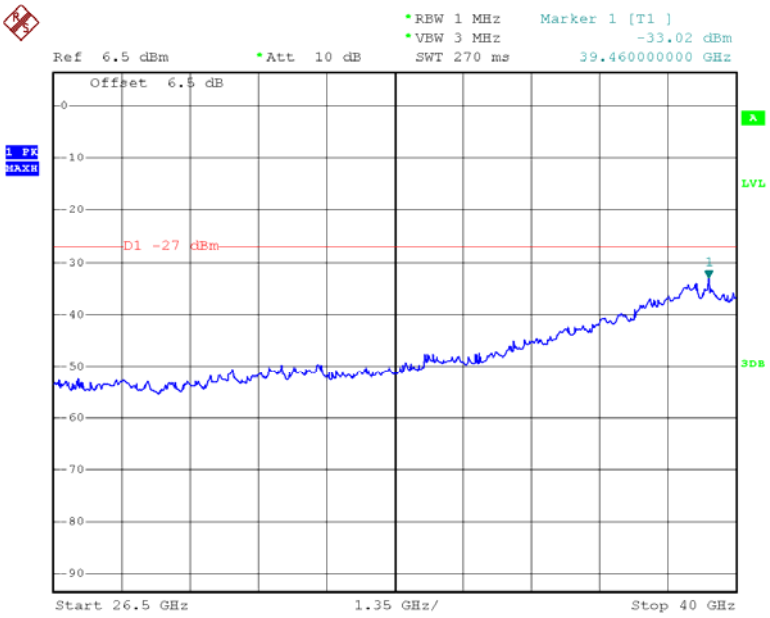
802.11n ht20 High Channel 1GHz-26.5GHz – Chain1



Fundamental

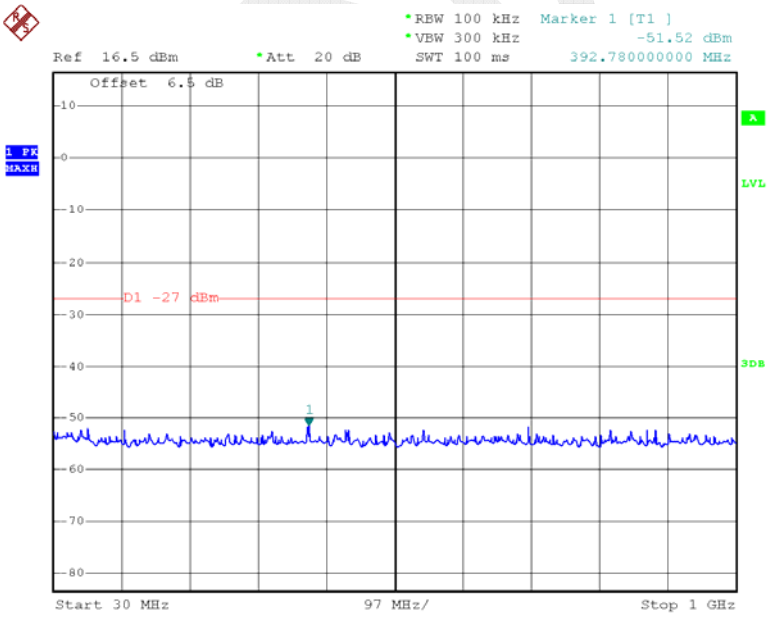
Date: 19.APR.2015 17:00:04

802.11n ht20 High Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:14:09

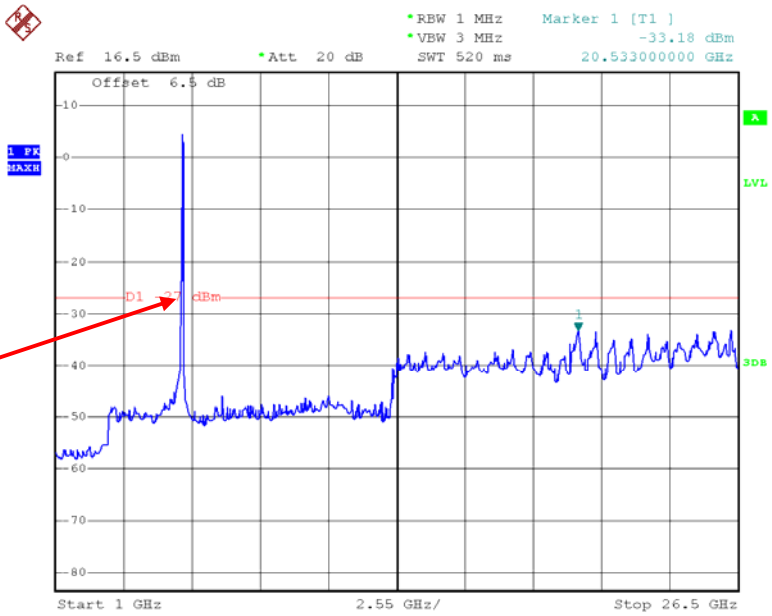
802.11n ht40 Low Channel 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:06:07

802.11n ht40 Low Channel 1GHz-26.5GHz – Chain1

Fundamental



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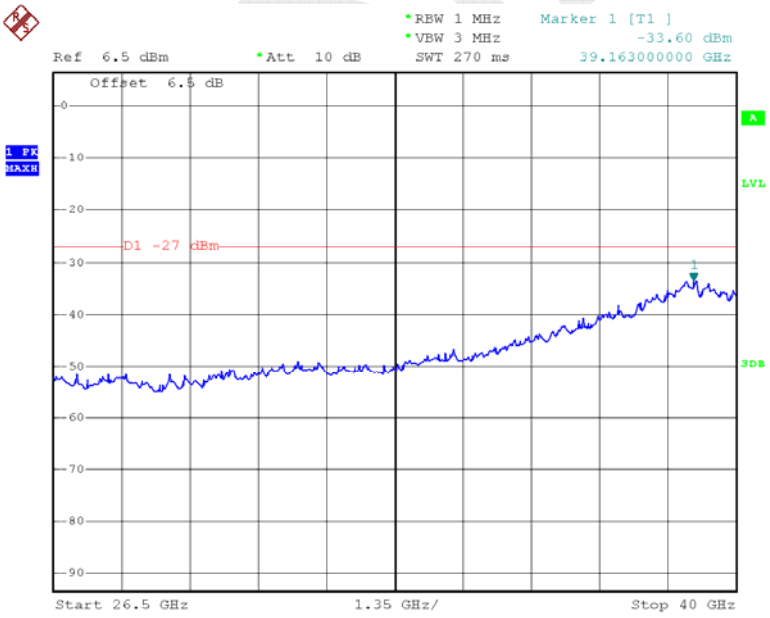
802.11n ht40 Low Channel 26.5GHz-40GHz – Chain1



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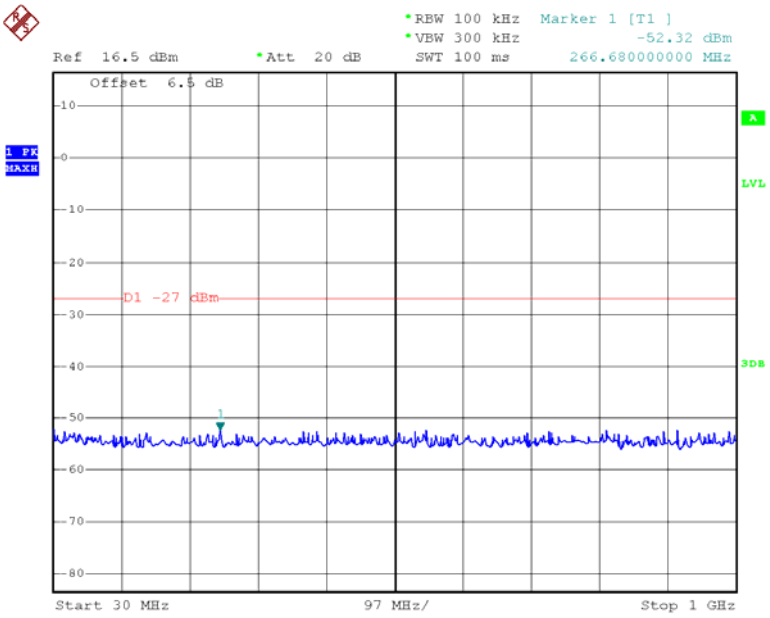
802.11n ht40 High Channel 30MHz-1GHz – Chain1



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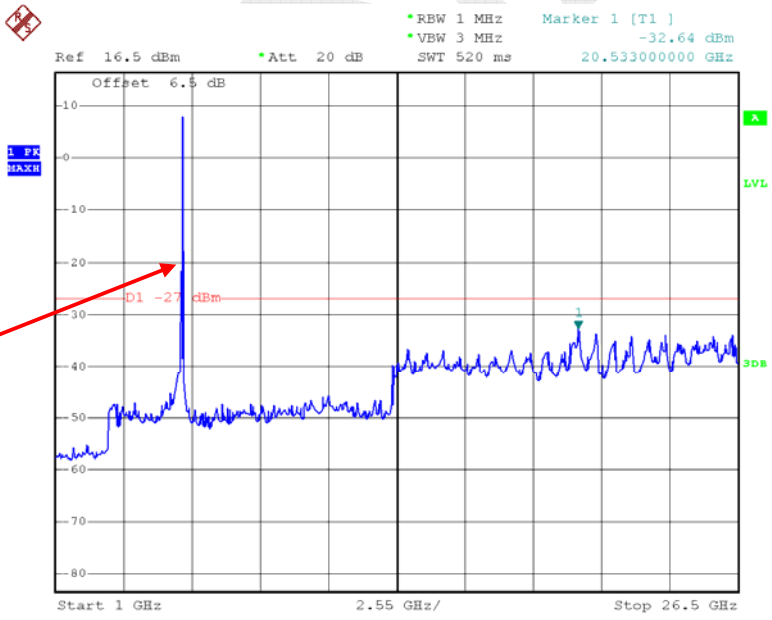
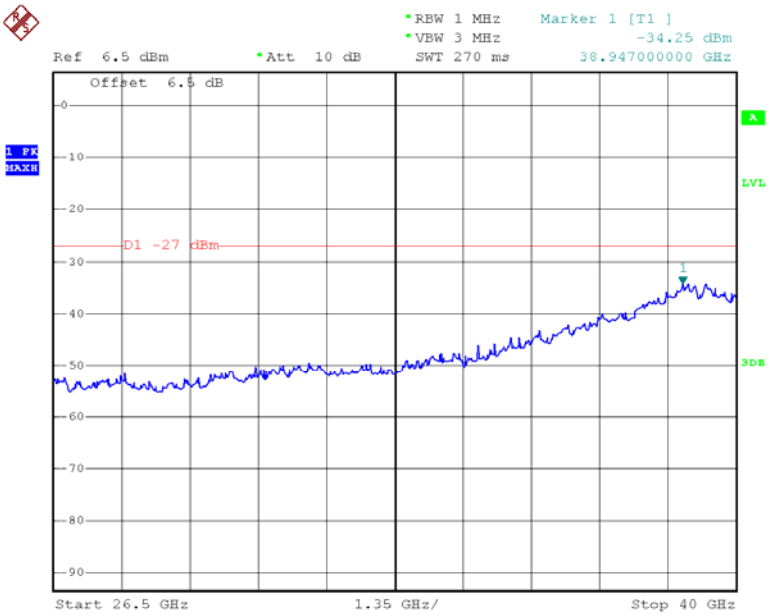
802.11n ht40 High Channel 1GHz-26.5GHz – Chain1



Fundamental

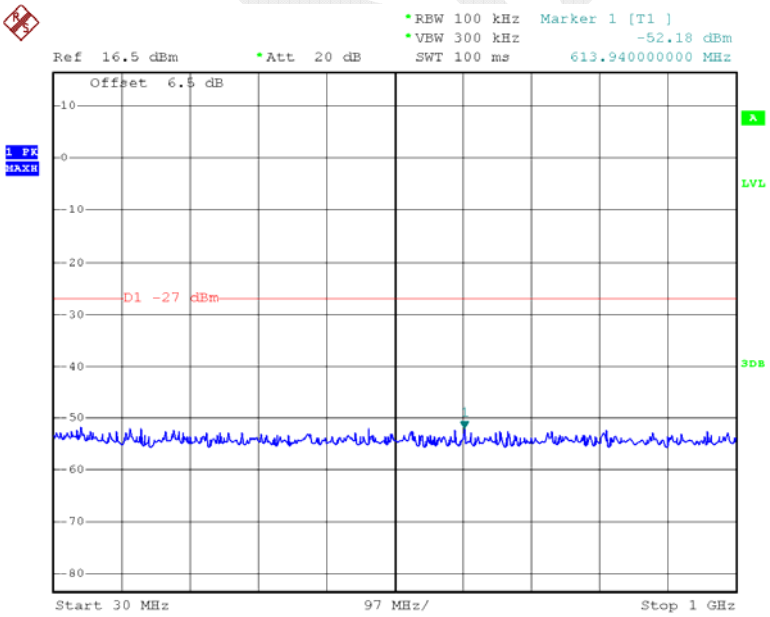
Date: 19.APR.2015 16:59:01

802.11n ht40 High Channel 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:13:47

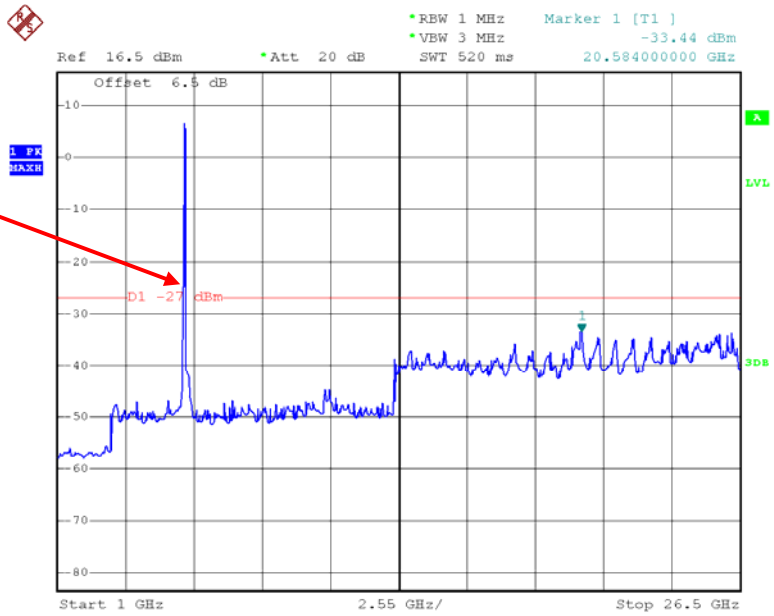
802.11n ac80 30MHz-1GHz – Chain1



Date: 19.APR.2015 17:06:26

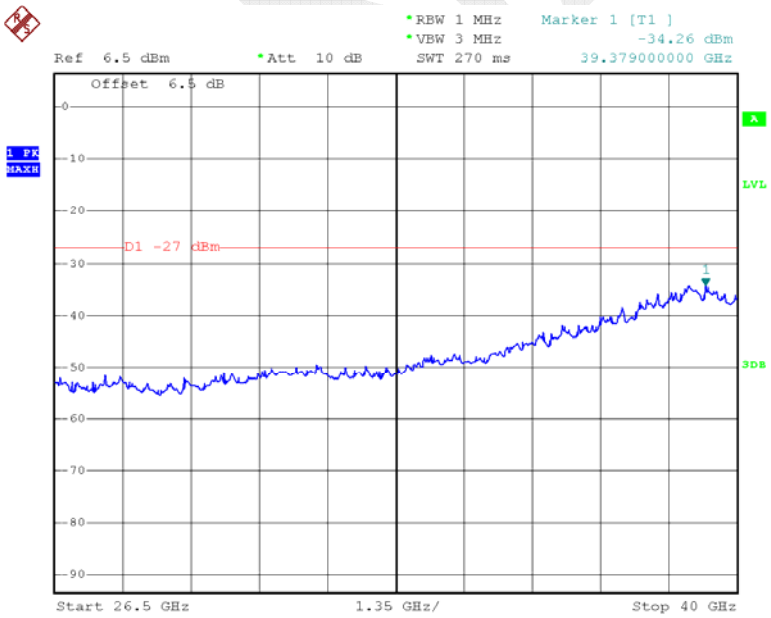
802.11n ac80 1GHz-26.5GHz – Chain1

Fundamental



Date: 19.APR.2015 16:57:45

802.11n ac80 26.5GHz-40GHz – Chain1



Date: 19.APR.2015 17:13:18

FCC §15.407(b) (1) –BAND EDGE

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (4);

(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.

Test Procedure

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

Test Equipment List and Details

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

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

Test Data

Environmental Conditions

Temperature:	22.9~24.3 °C
Relative Humidity:	47~57 %
ATM Pressure:	100.7~101.5 kPa

The testing was performed by Allen Qiao from 2015-04-12 to 2015-04-17.

Please refer to the following table and plots:

5150-5250 MHz band

Mode	Channel	Frequency	Band edge Emissions (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5180	-33.51	-33.25	-30.37	-27	PASS
	High	5240	-37.2	-32.17	-30.98	-27	PASS
802.11n20	Low	5180	-32.5	-32.5	-29.49	-27	PASS
	High	5240	-38.14	-31.11	-30.32	-27	PASS
802.11n40	Low	5190	-35.5	-32.48	-30.72	-27	PASS
	High	5230	-37.17	-32.83	-31.47	-27	PASS
802.11ac80	/	5210	-37.19	-31.57	-30.52	-27	PASS
			-38.46	-34.66	-33.15	-27	PASS

5725-5850 MHz band

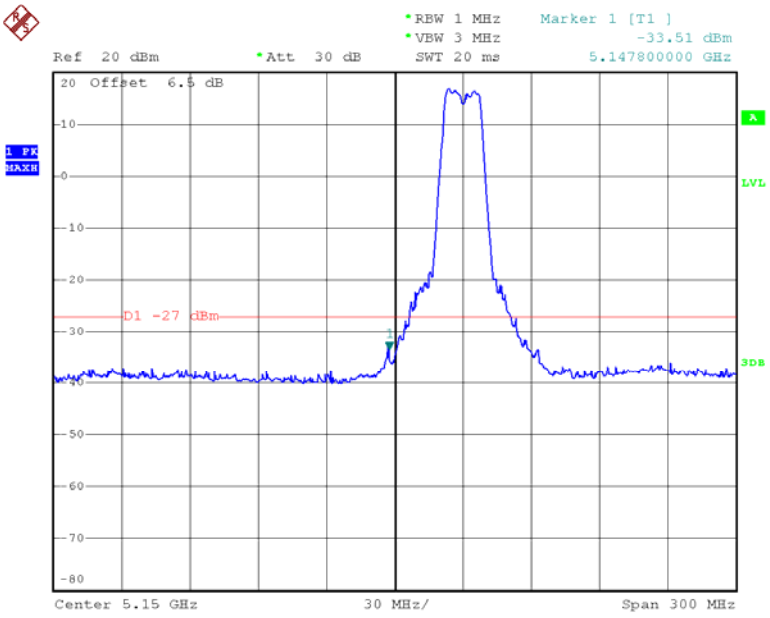
Mode	Channel	Frequency	Band edge Emissions (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5745	-33.35	-31.35	-29.23	-17	PASS
	High	5825	-35.03	-38.17	-33.31	-17	PASS
802.11n20	Low	5745	-32.23	-28.67	-27.08	-17	PASS
	High	5785	-36.54	-37.38	-33.93	-17	PASS
802.11n40	Low	5755	-34.2	-30.51	-28.96	-17	PASS
	High	5795	-35.4	-37.33	-33.25	-17	PASS
802.11ac80	/	5775	-34.48	-30.46	-29.01	-17	PASS
			-32.93	-36.1	-31.22	-17	PASS

Note: 1.Offset=Cable loss + Directional Antenna Gain (dBi)

2. Directional gain = G_{ANT} + 10 log(N_{ANT}) dBi

5150MHz-5250MHz:

802.11a Band Edge, Left Side – Chain0



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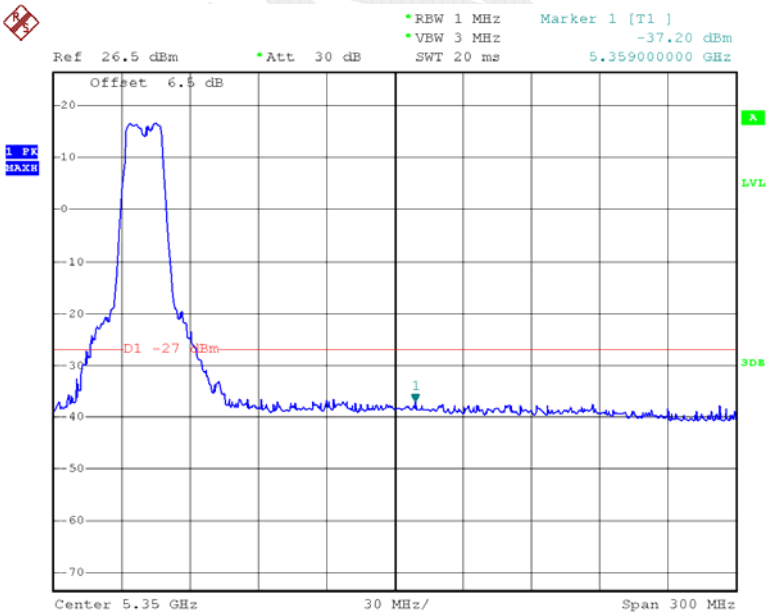
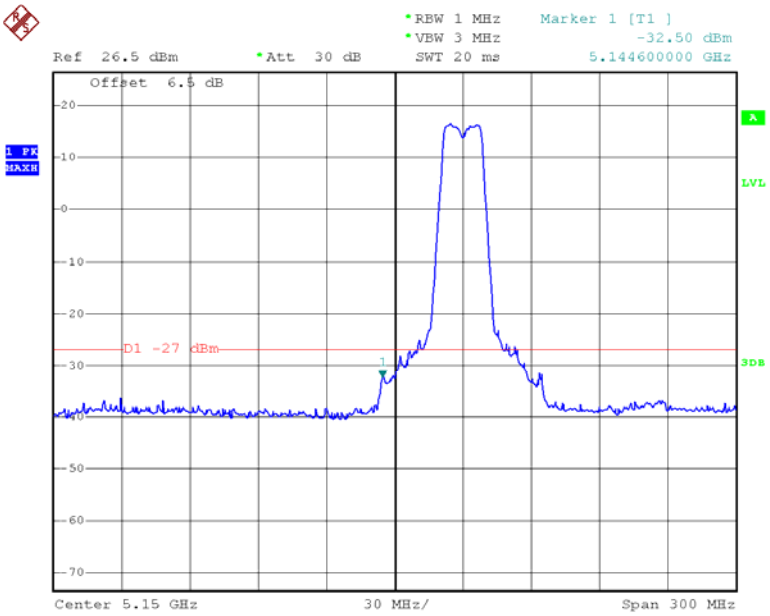
802.11a Band Edge, Right Side – Chain0



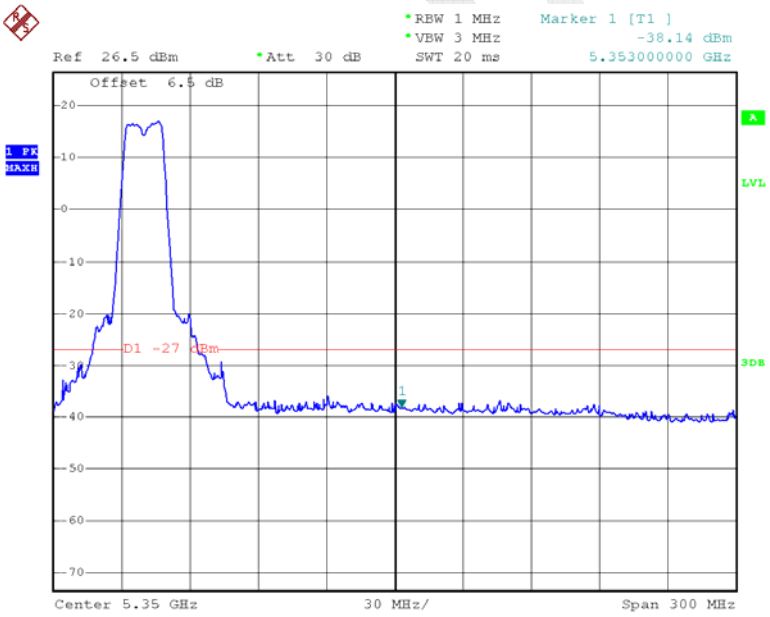
Date: 12.APR.2015 08:57:22

802.11n ht20 Band Edge, Left Side – Chain0



Date: 12.APR.2015 08:58:11

802.11n ht20 Band Edge, Right Side – Chain0



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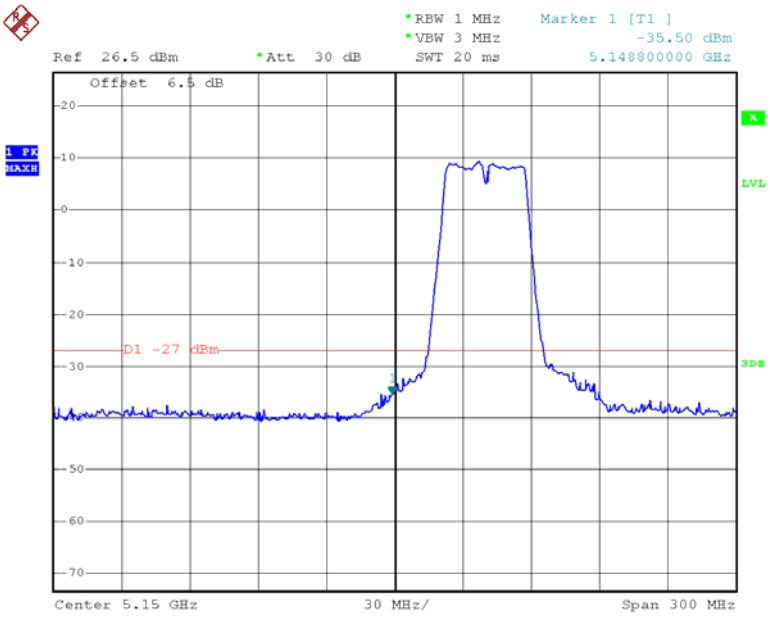
802.11n ht40 Band Edge, Left Side – Chain0



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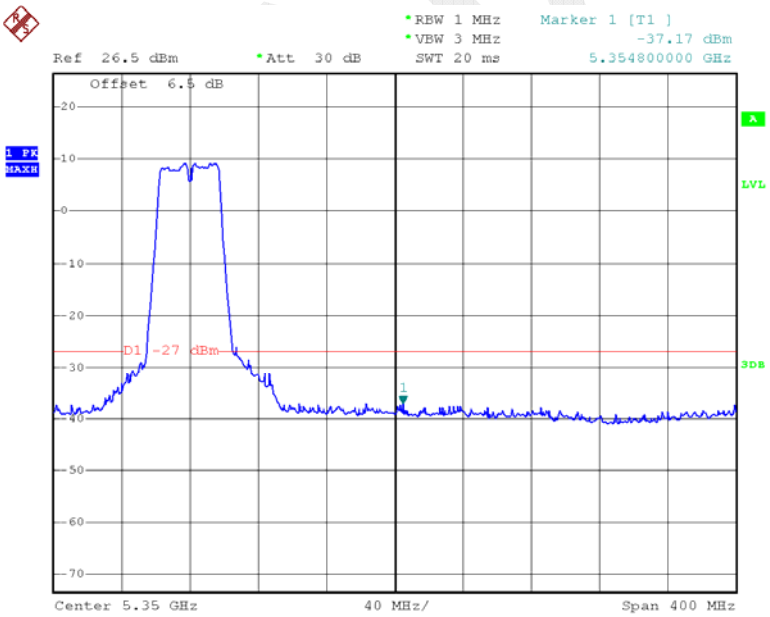
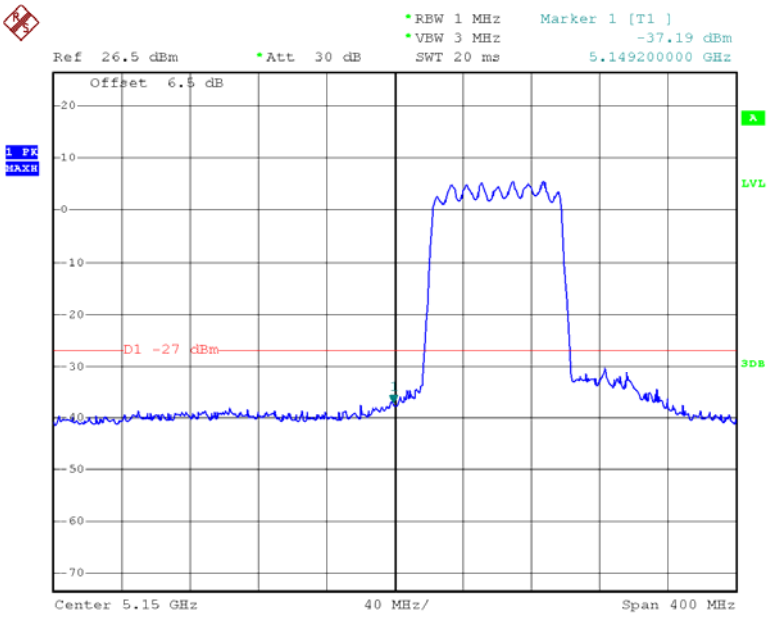
802.11n ht40 Band Edge, Right Side – Chain0



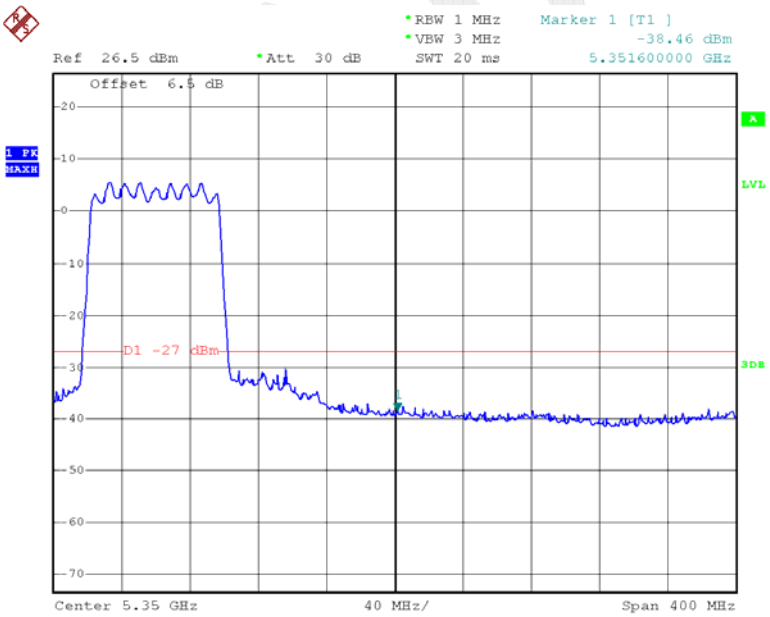
Date: 12.APR.2015 08:59:21

802.11ac80 Band Edge, Left Side – Chain0



Date: 12.APR.2015 09:00:07

802.11ac80 Band Edge, Right Side – Chain0



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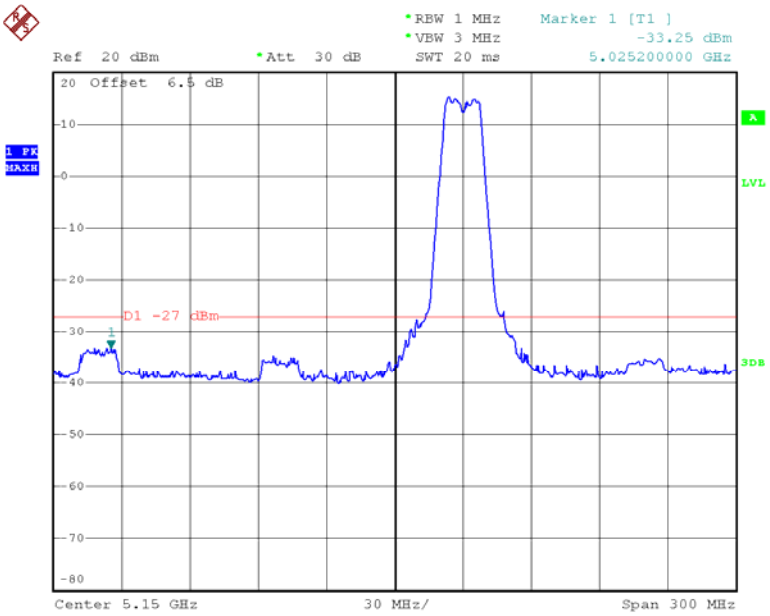
802.11a Band Edge, Left Side – Chain1



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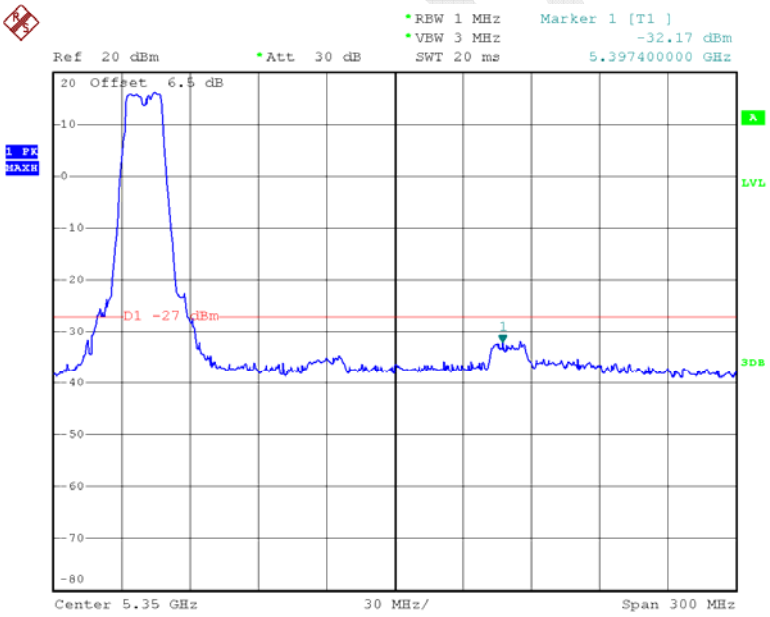
802.11a Band Edge, Right Side – Chain1



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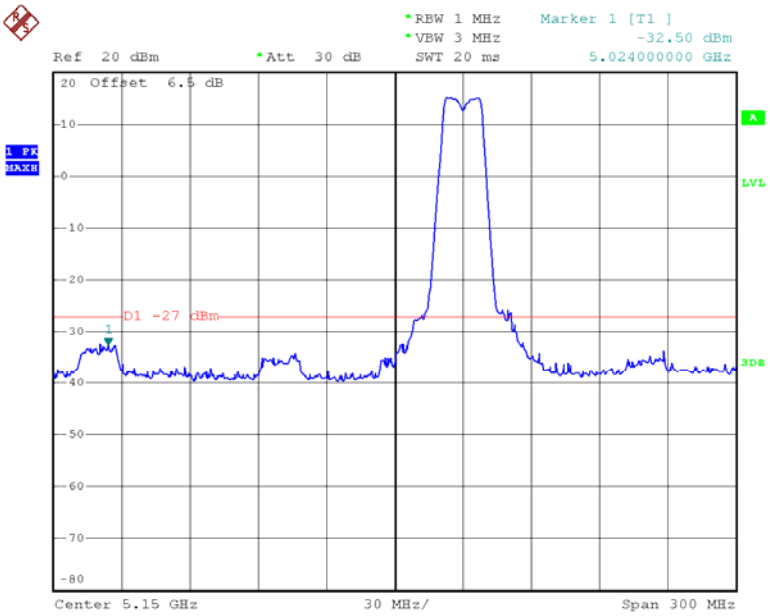
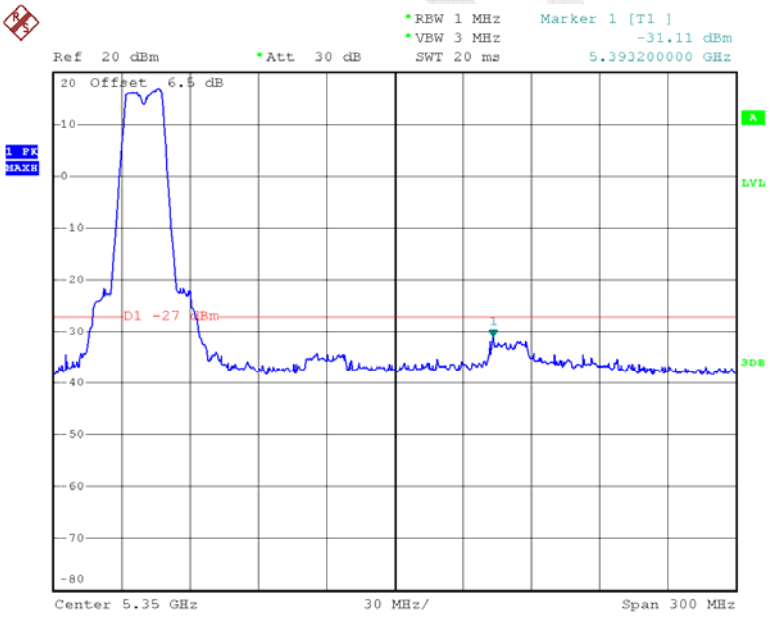
802.11n ht20 Band Edge, Left Side – Chain1



Date: 12.APR.2015 09:44:22

802.11n ht20 Band Edge, Right Side – Chain1



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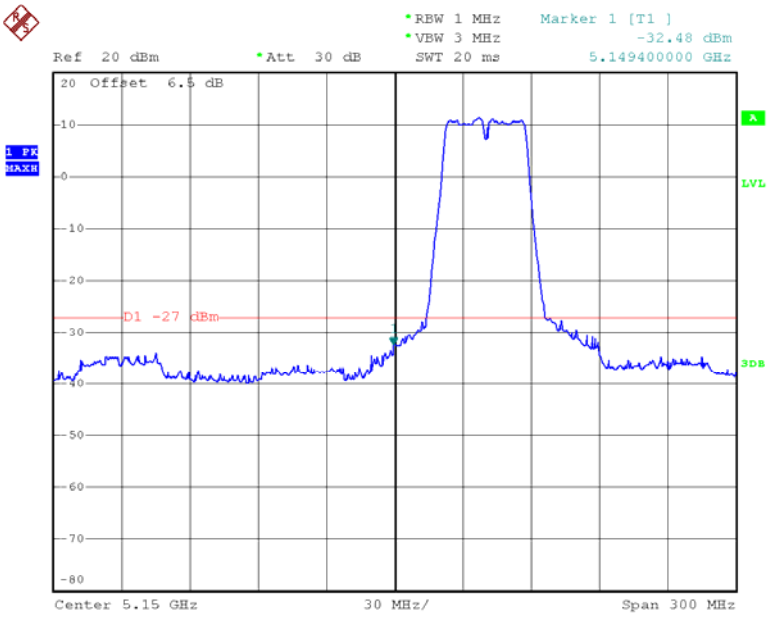
802.11n ht40 Band Edge, Left Side – Chain1



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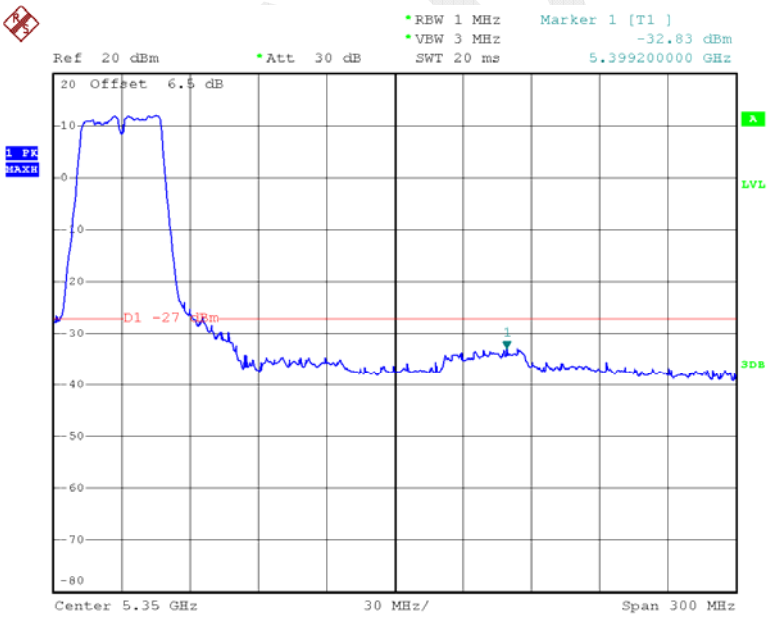
802.11n ht40 Band Edge, Right Side – Chain1



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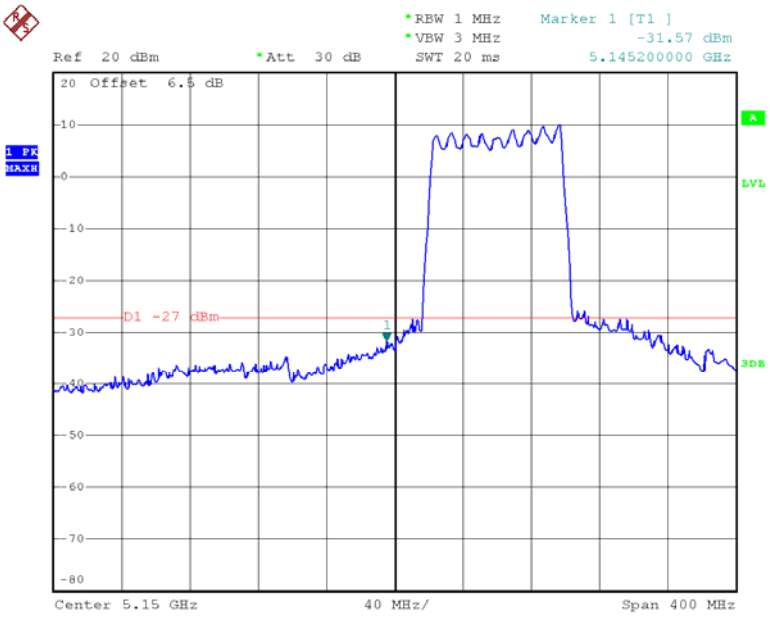
802.11ac80 Band Edge, Left Side – Chain1



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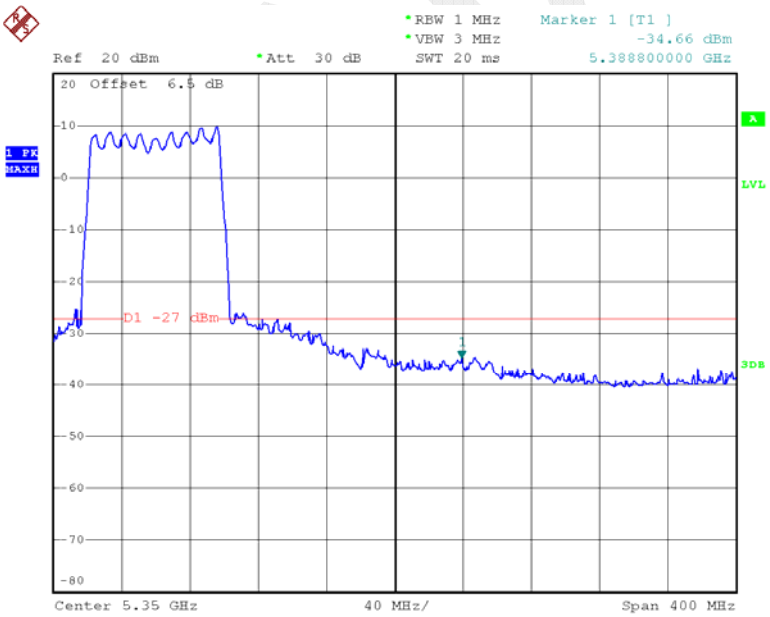
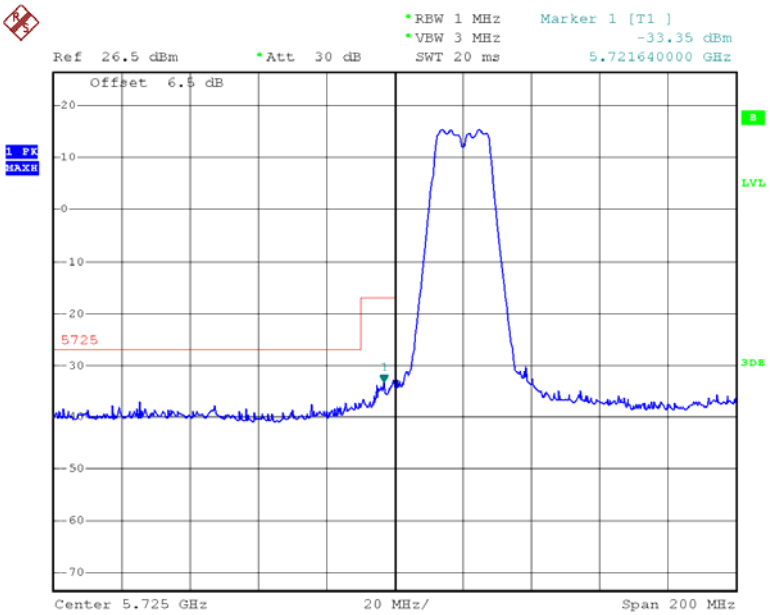
802.11ac80 Band Edge, Right Side – Chain1



Date: 12.APR.2015 09:46:02

5725MHz-5850MHz:

802.11a Band Edge, Left Side – Chain0



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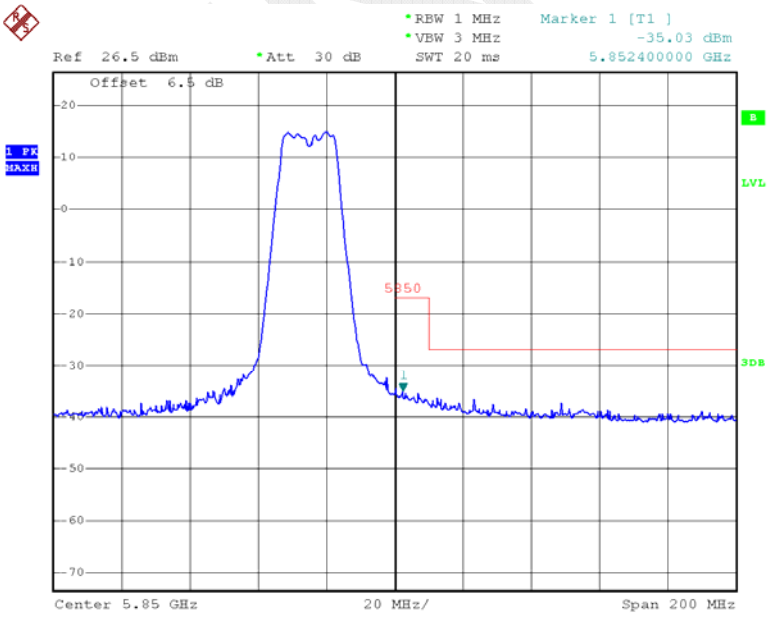
802.11a Band Edge, Right Side– Chain0



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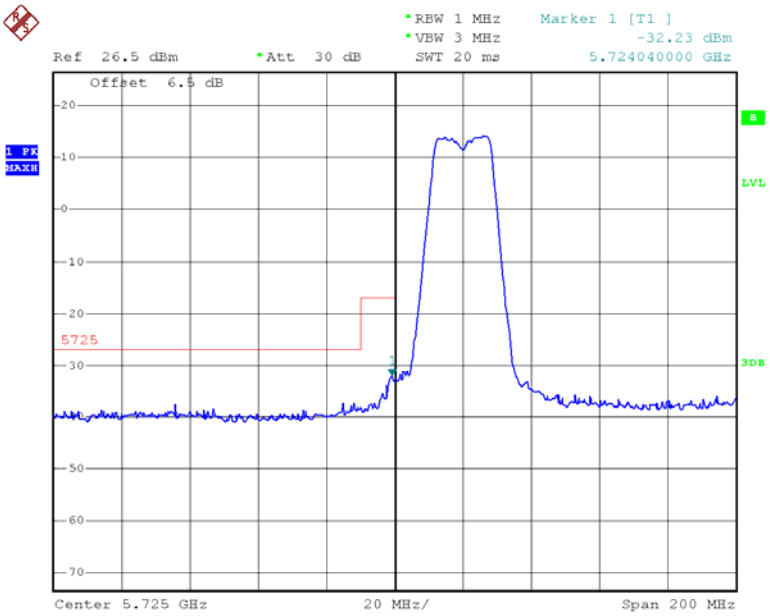
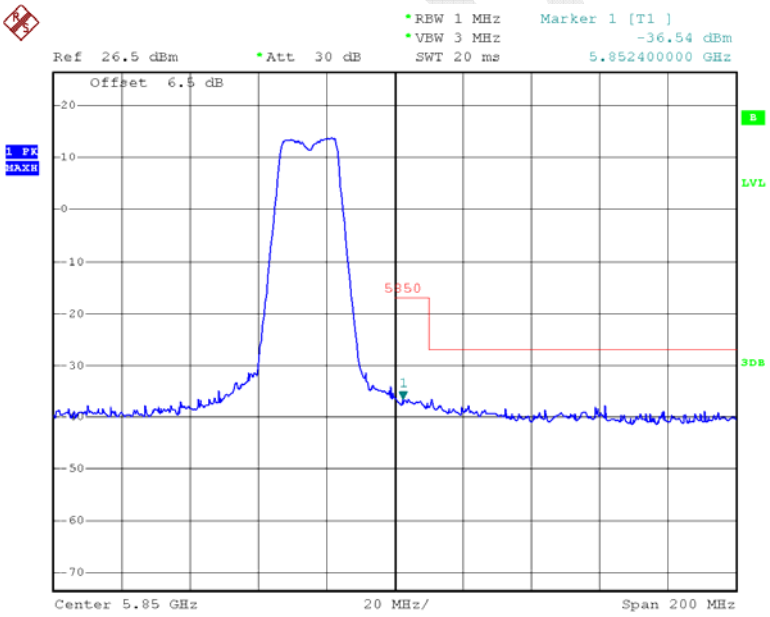
802.11n ht20 Band Edge, Left Side– Chain0



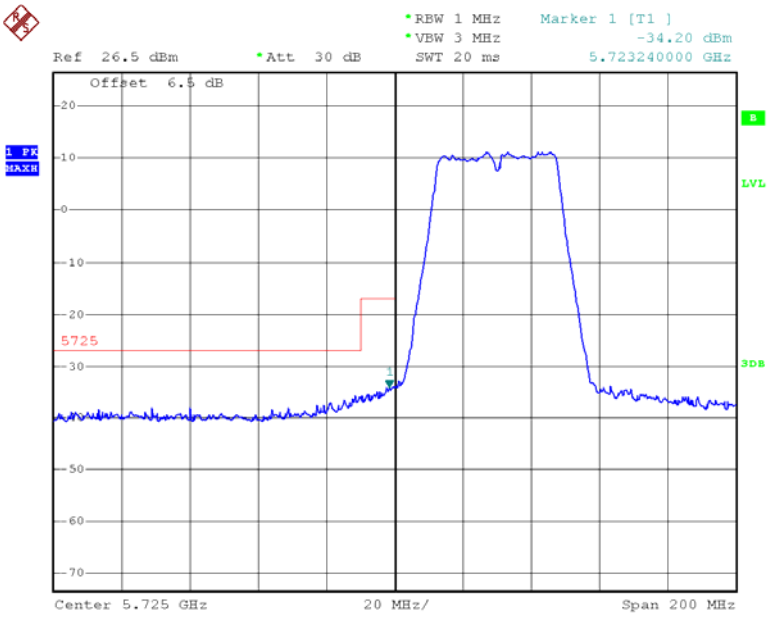
Date: 12.APR.2015 07:00:40

802.11n ht20 Band Edge, Right Side– Chain0



Date: 12.APR.2015 07:02:17

802.11n ht40 Band Edge, Left Side– Chain0



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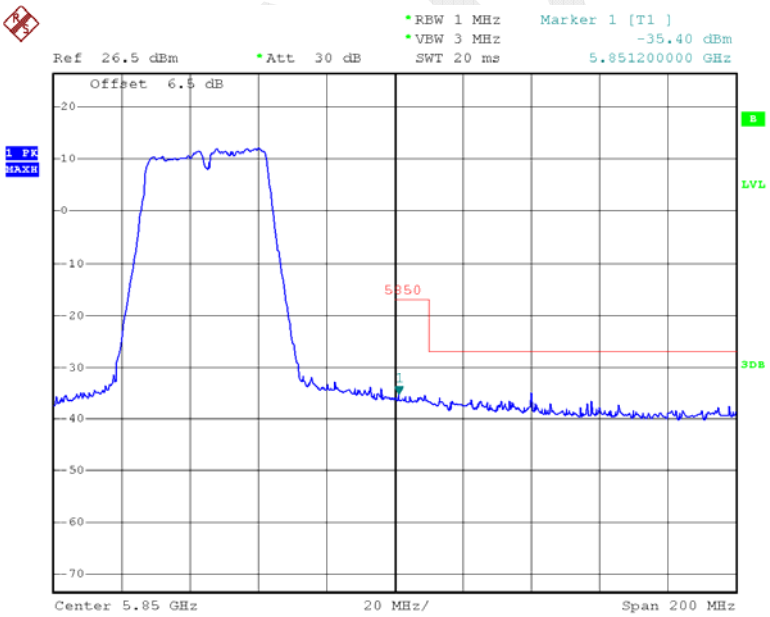
802.11n ht40 Band Edge, Right Side– Chain0



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