FCC PART 15.407

TEST REPORT

For

Iconnect

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

FCC ID: 2AB878812

Report Type:	Product Type:
Original Report	802.11ac AC1200 USB adapter

Test Engineer:	Dean Liu
Report Number:	RDG140717005-00B
Report Date:	2014-08-05
Reviewed By:	Sula Huang RF Engineer
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: *AWUS036AC (FCC ID: 2AB878812) or* ("EUT") in this report is a *802.11ac AC1200 USB adapter*, which was measured approximately: 21.5 cm (L) x 2.6 cm (W) x 1.1 cm (H), rated input voltage: DC 5.0V from system.

Note: The series product, model AWUS036AC, AWUS036EAC, AWUS036AC_H, AWUS036EAC_H, WISP-UAC, Tube-UAC, UBDO-UAC are electrically identical except for appearance and model name, we selected AWUS036AC for fully testing, the details was explained in the attached declaration letter.

All measurement and test data in this report was gathered from production sample serial number: 140717005 (Assigned by BACL, Dongguan). The EUT was received on 2014-07-22.

Antenna information

Chain	Manufacturer	Model Name	Antenna Type	Max. Antenna Gain
0	Wanshih Electronic Co.,Ltd.	WSS025	Dual band dipole antenna	2.4~2.5 GHz: 2.0dBi 5.15~5.35 GHz: 2.0dBi 5.725~5.850 GHz: 2.0dBi
1	Wanshih Electronic Co.,Ltd.	WSS025	Dual band dipole antenna	2.4~2.5 GHz: 2.0dBi 5.15~5.35 GHz: 2.0dBi 5.725~5.850 GHz: 2.0dBi

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 Communication Commissions 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 DTS submissions with FCC ID: *2AB878812.*

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, 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 Communication 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 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

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, 7 channels are provided to testing:

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, 802.11ac20, Channel 36, 40 and 48 was tested, for 802.11n ht40, 802.11ac40, Channel 38, 46 were tested, for 802.11ac80, Channel 42 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 software "REALTEK 11ac 8812AU USB WLAN NIC Massproduction Kit" was used for testing, which was provided by manufacturer. The worst condition (maximum power) was setting by the software as following table:

Test Mode	Test Software Version	REALTEK 11ac 8812AU USB WLAN NIC Massproduction Kit		
802.11 a	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	6Mbps	6Mbps	6Mbps
	Power Level Setting	38	38	35
802.11n ht20	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	MCS8	MCS8	MCS8
	Power Level Setting Chain0	34	34	32
	Power Level Setting Chain1	26	27	25
802.11n ht40	Test Frequency	5190MHz	5230MHz	/
	Data Rate	MCS8	MCS8	/
	Power Level Setting Chain0	35	33	/
	Power Level Setting Chain1	28	26	/
802.11 ac20	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	NSS2MCS0	NSS2MCS0	NSS2MCS0
	Power Level Setting Chain0	32	34	31
	Power Level Setting Chain1	28	28	24

802.11 ac40	Test Frequency	5190MHz	5230MHz	/
	Data Rate	NSS2MCS0	NSS2MCS0	/
	Power Level Setting Chain0	36	35	/
	Power Level Setting Chain1	30	26	/
802.11 ac80	Test Frequency	5210MHz	/	/
	Data Rate	NSS2MCS0	/	/
	Power Level Setting Chain0	32	/	/
	Power Level Setting Chain1	26	/	/

Equipment Modifications

No modification was made to the EUT tested.

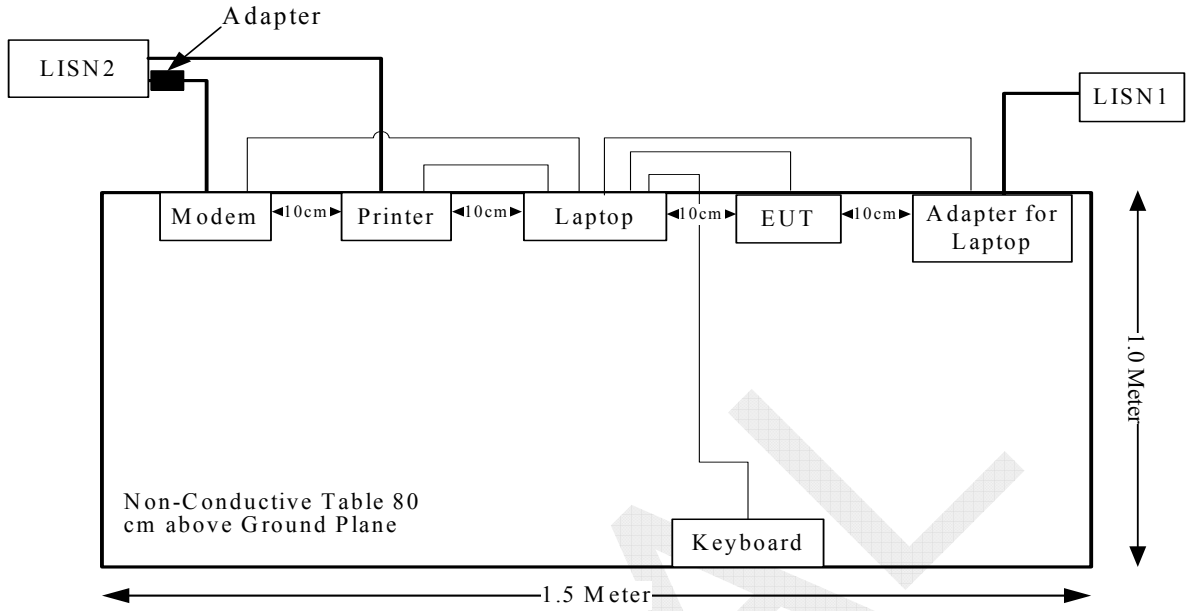
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
HP	Printer	C3941A	JPTVOB2337
DELL	Keyboard	L100	CNORH656658907BL05DC
SAST	Modem	AEM-2100	0293

External Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	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	No	1.5	USB Port of Laptop	Keyboard
USB Extension Cable	Yes	No	1.4	USB Port of Laptop	EUT

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
§15.407 (g)	Frequency Stability	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/f²)	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);

Calculated Data:

Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
802.11a	5200	2.0	1.58	14.18	26.18	20	0.0082	1.0
802.11n20	5200	2.0	1.58	13.00	19.95	20	0.0063	1.0
802.11n40	5230	2.0	1.58	12.70	18.62	20	0.0059	1.0
802.11ac20	5240	2.0	1.58	12.78	18.97	20	0.0060	1.0
802.11ac40	5190	2.0	1.58	12.76	18.88	20	0.0059	1.0
802.11ac80	5210	2.0	1.58	11.83	15.24	20	0.0048	1.0

Result: The device meet FCC MPE at 20 cm distance

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 two external detachable dual band dipole antennas and with RP-SMA female connector, the maximum gain is 2.0 dBi for 2.4G and 5G band, which 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.

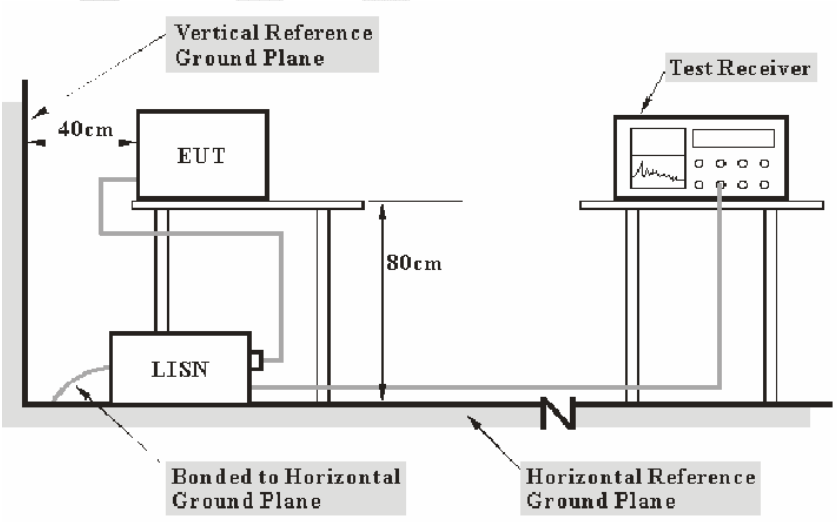
If U_{lab} is greater than U_{cispr} of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), 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 C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter of laptop 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:

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	2013-11-20	2014-11-20
R&S	L.I.S.N	ESH3-Z5	843331/015	2013-09-25	2014-09-25
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-01-22	2015-01-22
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 laptop 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:

7.6 dB at **16.122185 MHz** in the **Neutral** conducted mode

Test Data

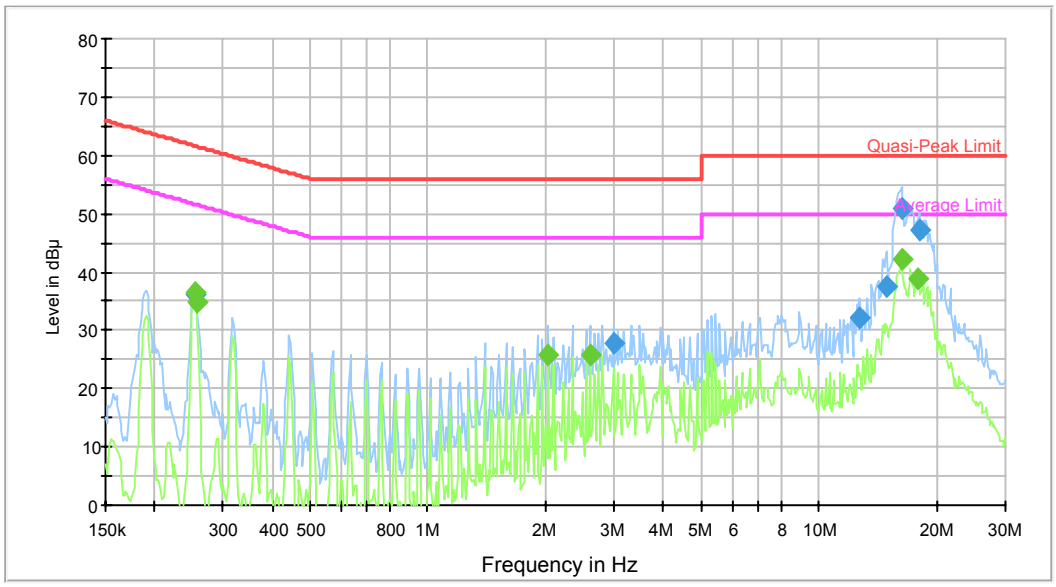
Environmental Conditions

Temperature:	28.1 °C
Relative Humidity:	51 %
ATM Pressure:	99.8 kPa

The testing was performed by Dean Liu on 2014-07-22.

Test Mode: Transmitting

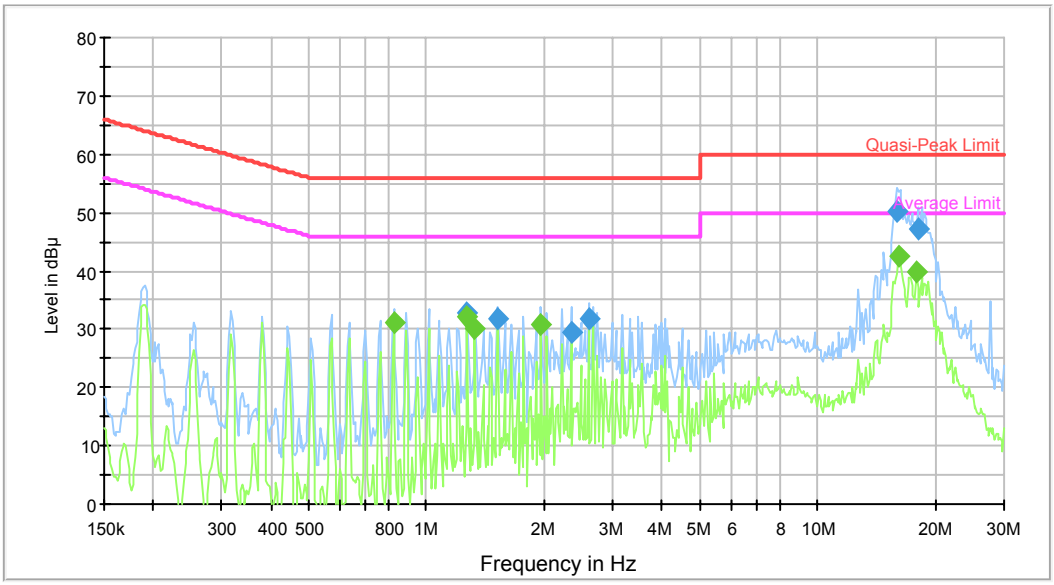
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.253797	36.2	9.000	L1	10.7	25.4	61.6	Compliance
2.977084	27.6	9.000	L1	10.6	28.4	56.0	Compliance
12.694276	32.3	9.000	L1	10.6	27.7	60.0	Compliance
14.887390	37.4	9.000	L1	10.7	22.6	60.0	Compliance
16.251162	50.8	9.000	L1	10.7	9.2	60.0	Compliance
18.024837	47.2	9.000	L1	10.9	12.8	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.253797	36.4	9.000	L1	10.7	15.2	51.6	Compliance
0.255827	34.8	9.000	L1	10.7	16.8	51.6	Compliance
2.030886	25.9	9.000	L1	10.5	20.1	46.0	Compliance
2.599932	25.6	9.000	L1	10.5	20.4	46.0	Compliance
16.251162	42.1	9.000	L1	10.7	7.9	50.0	Compliance
17.881783	39.0	9.000	L1	10.9	11.0	50.0	Compliance

AC120 V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
1.269154	32.6	9.000	N	10.5	23.4	56.0	Compliance
1.524426	31.7	9.000	N	10.5	24.3	56.0	Compliance
2.344095	29.4	9.000	N	10.5	26.6	56.0	Compliance
2.599932	31.8	9.000	N	10.5	24.2	56.0	Compliance
15.994231	50.2	9.000	N	10.7	9.8	60.0	Compliance
18.024837	47.3	9.000	N	10.9	12.7	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.825364	31.3	9.000	N	10.5	14.7	46.0	Compliance
1.269154	32.1	9.000	N	10.5	13.9	46.0	Compliance
1.331304	30.0	9.000	N	10.5	16.0	46.0	Compliance
1.967177	30.8	9.000	N	10.5	15.2	46.0	Compliance
16.122185	42.4	9.000	N	10.7	7.6	50.0	Compliance
17.881783	40.0	9.000	N	10.9	10.0	50.0	Compliance

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

Applicable Standard

FCC §15.407 (b) (1), (6), (7); §15.209; §15.205;

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 EIRP of -27 dBm/MHz.

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209.

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.

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.

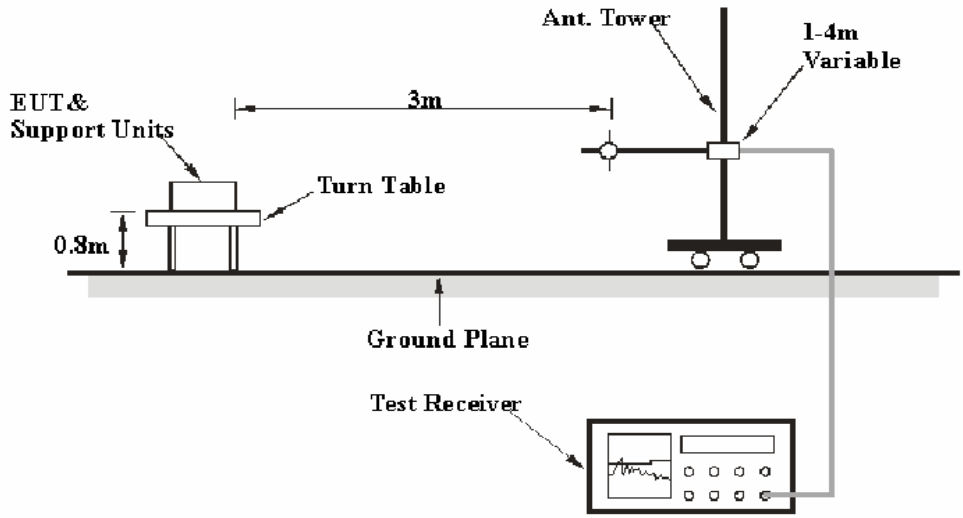
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:
30M~200MHz: 5.0 dB
200M~1GHz: 6.2 dB
1G~6GHz: 4.45 dB
6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

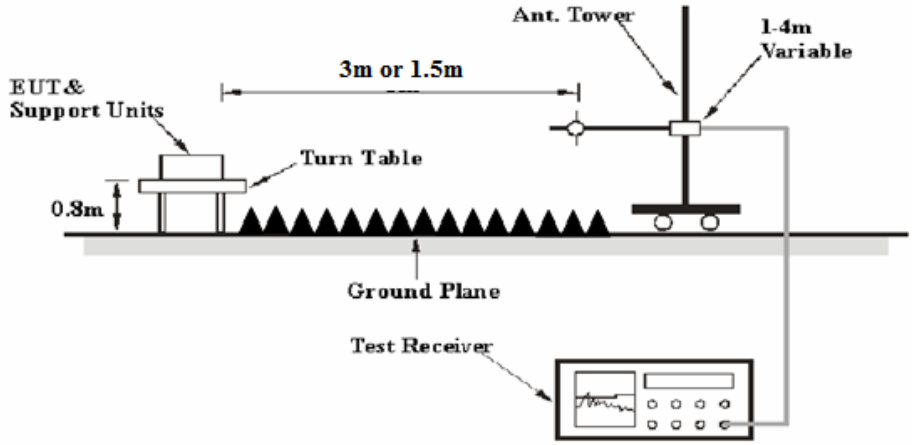
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1 G:



Above 1 G:



The radiated emission tests were performed in the 3 meters chamber, using the setup accordance with the ANSI C63.4-2003. 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 of laptop s 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 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)
or Limit line = Specific limits(dBμV) + 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	A060611-1	2011-09-06	2014-09-05
HP	Amplifier	8447E	2434A02181	2013-09-06	2014-09-06
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09
ETS LINDGREN	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2014-02-19	2015-02-19
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	2013-09-06	2014-09-06

*** 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:

1.21 dB at **5150 MHz** in the **Vertical** polarization for 802.11ac80 Mode

Test Data

Environmental Conditions

Temperature:	26.8~28 °C
Relative Humidity:	55~57 %
ATM Pressure:	100~100.1 kPa

The testing was performed by Dean Liu from 2014-07-28 to 2014-07-29.

Mode: Transmitting

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

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	69.70	PK	H	31.46	5.94	0.00	107.10	101.10	N/A	N/A
5180	61.30	AV	H	31.46	5.94	0.00	98.70	92.70	N/A	N/A
5180	75.53	PK	V	31.46	5.94	0.00	112.93	106.93	N/A	N/A
5180	68.16	AV	V	31.46	5.94	0.00	105.56	99.56	N/A	N/A
5150	27.71	PK	V	31.40	6.03	0.00	65.14	59.14	74.00	14.86
5150	16.93	AV	V	31.40	6.03	0.00	54.36	48.36	54.00	5.64
10360	35.01	PK	V	36.97	8.60	25.52	55.06	49.06	74.00	24.94
10360	26.11	AV	V	36.97	8.60	25.52	46.16	40.16	54.00	13.84
15540	31.26	PK	V	37.43	14.71	24.98	58.42	52.42	74.00	21.58
15540	18.97	AV	V	37.43	14.71	24.98	46.13	40.13	54.00	13.87
7490	29.63	PK	V	34.78	7.60	26.11	45.90	39.90	74.00	34.10
7490	18.03	AV	V	34.78	7.60	26.11	34.30	28.30	54.00	25.70
2359	35.68	PK	V	25.53	4.31	27.31	38.21	32.21	74.00	41.79
2359	24.97	AV	V	25.53	4.31	27.31	27.50	21.50	54.00	32.50
254	29.20	QP	V	12.13	1.94	21.49	21.78	/	46.00	24.22
Middle Channel:5200 MHz										
5200	70.55	PK	H	31.50	5.88	0.00	107.93	101.93	N/A	N/A
5200	61.38	AV	H	31.50	5.88	0.00	98.76	92.76	N/A	N/A
5200	75.33	PK	V	31.50	5.88	0.00	112.71	106.71	N/A	N/A
5200	66.75	AV	V	31.50	5.88	0.00	104.13	98.13	N/A	N/A
10400	34.56	PK	V	36.98	8.57	25.50	54.61	48.61	74.00	25.39
10400	25.12	AV	V	36.98	8.57	25.50	45.17	39.17	54.00	14.83
15600	31.30	PK	V	37.32	14.61	24.69	58.54	52.54	74.00	21.46
15600	18.56	AV	V	37.32	14.61	24.69	45.80	39.80	54.00	14.20
7490	29.10	PK	V	34.78	7.60	26.11	45.37	39.37	74.00	34.63
7490	18.07	AV	V	34.78	7.60	26.11	34.34	28.34	54.00	25.66
2359	35.69	PK	V	25.53	4.31	27.31	38.22	32.22	74.00	41.78
2359	25.30	AV	V	25.53	4.31	27.31	27.83	21.83	54.00	32.17
254	28.90	QP	V	12.13	1.94	21.49	21.48	/	46.00	24.52
328	30.10	QP	V	14.65	2.15	21.59	25.31	/	46.00	20.69
High Channel:5240 MHz										
5240	67.66	PK	H	31.58	5.82	0.00	105.06	99.06	N/A	N/A
5240	60.91	AV	H	31.58	5.82	0.00	98.31	92.31	N/A	N/A
5240	72.89	PK	V	31.58	5.82	0.00	110.29	104.29	N/A	N/A
5240	64.62	AV	V	31.58	5.82	0.00	102.02	96.02	N/A	N/A
5350	26.91	PK	V	31.80	6.11	0.00	64.82	58.82	74.00	15.18
5350	15.06	AV	V	31.80	6.11	0.00	52.97	46.97	54.00	7.03
10480	35.21	PK	V	37.00	8.51	26.01	54.71	48.71	74.00	25.29
10480	25.40	AV	V	37.00	8.51	26.01	44.90	38.90	54.00	15.10
15720	30.97	PK	V	37.10	14.42	24.92	57.57	51.57	74.00	22.43
15720	18.70	AV	V	37.10	14.42	24.92	45.30	39.30	54.00	14.70
7490	29.67	PK	V	34.78	7.60	26.11	45.94	39.94	74.00	34.06
7490	17.88	AV	V	34.78	7.60	26.11	34.15	28.15	54.00	25.85
2359	36.01	PK	V	25.53	4.31	27.31	38.54	32.54	74.00	41.46
2359	25.37	AV	V	25.53	4.31	27.31	27.90	21.90	54.00	32.10
254	28.94	QP	V	12.13	1.94	21.49	21.52	/	46.00	24.48

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	67.60	PK	H	31.46	5.94	0.00	105.00	99.00	N/A	N/A
5180	57.69	AV	H	31.46	5.94	0.00	95.09	89.09	N/A	N/A
5180	73.49	PK	V	31.46	5.94	0.00	110.89	104.89	N/A	N/A
5180	62.87	AV	V	31.46	5.94	0.00	100.27	94.27	N/A	N/A
5150	27.17	PK	V	31.40	6.03	0.00	64.60	58.60	74.00	15.40
5150	16.37	AV	V	31.40	6.03	0.00	53.80	47.80	54.00	6.20
10360	33.10	PK	V	36.97	8.60	25.52	53.15	47.15	74.00	26.85
10360	21.27	AV	V	36.97	8.60	25.52	41.32	35.32	54.00	18.68
15540	30.23	PK	V	37.43	14.71	24.98	57.39	51.39	74.00	22.61
15540	18.40	AV	V	37.43	14.71	24.98	45.56	39.56	54.00	14.44
7490	29.98	PK	V	34.78	7.60	26.11	46.25	40.25	74.00	33.75
7490	17.49	AV	V	34.78	7.60	26.11	33.76	27.76	54.00	26.24
2359	36.02	PK	V	25.53	4.31	27.31	38.55	32.55	74.00	41.45
2359	25.71	AV	V	25.53	4.31	27.31	28.24	22.24	54.00	31.76
254	28.70	QP	V	12.13	1.94	21.49	21.28	/	46.00	24.72
Middle Channel:5200 MHz										
5200	65.61	PK	H	31.50	5.88	0.00	102.99	96.99	N/A	N/A
5200	55.03	AV	H	31.50	5.88	0.00	92.41	86.41	N/A	N/A
5200	73.57	PK	V	31.50	5.88	0.00	110.95	104.95	N/A	N/A
5200	63.70	AV	V	31.50	5.88	0.00	101.08	95.08	N/A	N/A
10400	33.03	PK	V	36.98	8.57	25.50	53.08	47.08	74.00	26.92
10400	21.26	AV	V	36.98	8.57	25.50	41.31	35.31	54.00	18.69
15600	30.21	PK	V	37.32	14.61	24.69	57.45	51.45	74.00	22.55
15600	18.44	AV	V	37.32	14.61	24.69	45.68	39.68	54.00	14.32
3265	29.96	PK	V	28.05	6.14	27.31	36.84	30.84	74.00	43.16
3265	17.46	AV	V	28.05	6.14	27.31	24.34	18.34	54.00	35.66
2359	36.03	PK	V	25.53	4.31	27.31	38.56	32.56	74.00	41.44
2359	25.73	AV	V	25.53	4.31	27.31	28.26	22.26	54.00	31.74
254	29.10	QP	V	12.13	1.94	21.49	21.68	21.68	46.00	24.32
328	30.00	QP	V	14.65	2.15	21.59	25.21	/	46.00	20.79
High Channel:5240 MHz										
5240	64.85	PK	H	31.58	5.82	0.00	102.25	96.25	N/A	N/A
5240	54.68	AV	H	31.58	5.82	0.00	92.08	86.08	N/A	N/A
5240	73.17	PK	V	31.58	5.82	0.00	110.57	104.57	N/A	N/A
5240	62.41	AV	V	31.58	5.82	0.00	99.81	93.81	N/A	N/A
5350	26.62	PK	V	31.80	6.11	0.00	64.53	58.53	74.00	15.47
5350	16.26	AV	V	31.80	6.11	0.00	54.17	48.17	54.00	5.83
10480	33.13	PK	V	37.00	8.51	26.01	52.63	46.63	74.00	27.37
10480	21.34	AV	V	37.00	8.51	26.01	40.84	34.84	54.00	19.16
15720	30.27	PK	V	37.10	14.42	24.92	56.87	50.87	74.00	23.13
15720	18.49	AV	V	37.10	14.42	24.92	45.09	39.09	54.00	14.91
3265	30.01	PK	V	28.05	6.14	27.31	36.89	30.89	74.00	43.11
3265	17.50	AV	V	28.05	6.14	27.31	24.38	18.38	54.00	35.62
2359	36.04	PK	V	25.53	4.31	27.31	38.57	32.57	74.00	41.43
2359	25.76	AV	V	25.53	4.31	27.31	28.29	22.29	54.00	31.71
254	28.96	QP	V	12.13	1.94	21.49	21.54	/	46.00	24.46

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	62.41	PK	H	31.48	5.91	0.00	99.80	93.80	N/A	N/A
5190	51.56	AV	H	31.48	5.91	0.00	88.95	82.95	N/A	N/A
5190	71.44	PK	V	31.48	5.91	0.00	108.83	102.83	N/A	N/A
5190	60.19	AV	V	31.48	5.91	0.00	97.58	91.58	N/A	N/A
5150	27.21	PK	V	31.40	6.03	0.00	64.64	58.64	74.00	15.36
5150	16.74	AV	V	31.40	6.03	0.00	54.17	48.17	54.00	5.83
10380	33.05	PK	V	36.98	8.59	25.51	53.11	47.11	74.00	26.89
10380	20.17	AV	V	36.98	8.59	25.51	40.23	34.23	54.00	19.77
15570	31.36	PK	V	37.37	14.66	24.83	58.56	52.56	74.00	21.44
15570	20.34	AV	V	37.37	14.66	24.83	47.54	41.54	54.00	12.46
7490	31.71	PK	V	34.78	7.60	26.11	47.98	41.98	74.00	32.02
7490	20.80	AV	V	34.78	7.60	26.11	37.07	31.07	54.00	22.93
2359	35.90	PK	V	25.53	4.31	27.31	38.43	32.43	74.00	41.57
2359	26.03	AV	V	25.53	4.31	27.31	28.56	22.56	54.00	31.44
254	28.85	QP	V	12.13	1.94	21.49	21.43	/	46.00	24.57
High Channel:5230 MHz										
5230	61.12	PK	H	31.56	5.84	0.00	98.52	92.52	N/A	N/A
5230	50.87	AV	H	31.56	5.84	0.00	88.27	82.27	N/A	N/A
5230	69.30	PK	V	31.56	5.84	0.00	106.70	100.70	N/A	N/A
5230	59.61	AV	V	31.56	5.84	0.00	97.01	91.01	N/A	N/A
5350	27.03	PK	V	31.80	6.11	0.00	64.94	58.94	74.00	15.06
5350	15.67	AV	V	31.80	6.11	0.00	53.58	47.58	54.00	6.42
10460	33.00	PK	V	36.99	8.52	25.88	52.63	46.63	74.00	27.37
10460	20.11	AV	V	36.99	8.52	25.88	39.74	33.74	54.00	20.26
15690	31.26	PK	V	37.16	14.47	24.87	58.02	52.02	74.00	21.98
15690	20.26	AV	V	37.16	14.47	24.87	47.02	41.02	54.00	12.98
7490	32.69	PK	V	34.78	7.60	26.11	48.96	42.96	74.00	31.04
7490	21.72	AV	V	34.78	7.60	26.11	37.99	31.99	54.00	22.01
2359	35.81	PK	V	25.53	4.31	27.31	38.34	32.34	74.00	41.66
2359	26.02	AV	V	25.53	4.31	27.31	28.55	22.55	54.00	31.45
254	28.82	QP	V	12.13	1.94	21.49	21.4	/	46.00	24.60

802.11ac20 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	65.35	PK	H	31.46	5.94	0.00	102.75	96.75	N/A	N/A
5180	56.37	AV	H	31.46	5.94	0.00	93.77	87.77	N/A	N/A
5180	73.63	PK	V	31.46	5.94	0.00	111.03	105.03	N/A	N/A
5180	62.87	AV	V	31.46	5.94	0.00	100.27	94.27	N/A	N/A
5150	27.24	PK	V	31.40	6.03	0.00	64.67	58.67	74.00	15.33
5150	16.42	AV	V	31.40	6.03	0.00	53.85	47.85	54.00	6.15
10360	34.17	PK	V	36.97	8.60	25.52	54.22	48.22	74.00	25.78
10360	22.69	AV	V	36.97	8.60	25.52	42.74	36.74	54.00	17.26
15540	30.16	PK	V	37.43	14.71	24.98	57.32	51.32	74.00	22.68
15540	18.98	AV	V	37.43	14.71	24.98	46.14	40.14	54.00	13.86
7490	35.26	PK	V	34.78	7.60	26.11	51.53	45.53	74.00	28.47
7490	23.77	AV	V	34.78	7.60	26.11	40.04	34.04	54.00	19.96
2359	34.97	PK	V	25.53	4.31	27.31	37.50	31.50	74.00	42.50
2359	23.08	AV	V	25.53	4.31	27.31	25.61	19.61	54.00	34.39
254	29.20	QP	V	12.13	1.94	21.49	21.78	/	46.00	24.22
Middle Channel:5200 MHz										
5200	65.28	PK	H	31.50	5.88	0.00	102.66	96.66	N/A	N/A
5200	56.07	AV	H	31.50	5.88	0.00	93.45	87.45	N/A	N/A
5200	73.31	PK	V	31.50	5.88	0.00	110.69	104.69	N/A	N/A
5200	62.50	AV	V	31.50	5.88	0.00	99.88	93.88	N/A	N/A
10400	34.46	PK	V	36.98	8.57	25.50	54.51	48.51	74.00	25.49
10400	22.92	AV	V	36.98	8.57	25.50	42.97	36.97	54.00	17.03
15600	30.13	PK	V	37.32	14.61	24.69	57.37	51.37	74.00	22.63
15600	18.90	AV	V	37.32	14.61	24.69	46.14	40.14	54.00	13.86
7490	35.21	PK	V	34.78	7.60	26.11	51.48	45.48	74.00	28.52
7490	23.71	AV	V	34.78	7.60	26.11	39.98	33.98	54.00	20.02
2359	34.90	PK	V	25.53	4.31	27.31	37.43	31.43	74.00	42.57
2359	23.07	AV	V	25.53	4.31	27.31	25.60	19.60	54.00	34.40
254	28.90	QP	V	12.13	1.94	21.49	21.48	/	46.00	24.52
328	29.60	QP	V	14.65	2.15	21.59	24.81	/	46.00	21.19
High Channel:5240 MHz										
5240	65.89	PK	H	31.58	5.82	0.00	103.29	97.29	N/A	N/A
5240	56.37	AV	H	31.58	5.82	0.00	93.77	87.77	N/A	N/A
5240	72.47	PK	V	31.58	5.82	0.00	109.87	103.87	N/A	N/A
5240	61.87	AV	V	31.58	5.82	0.00	99.27	93.27	N/A	N/A
5350	27.12	PK	V	31.80	6.11	0.00	65.03	59.03	74.00	14.97
5350	17.03	AV	V	31.80	6.11	0.00	54.94	48.94	54.00	5.06
10480	34.20	PK	V	37.00	8.51	26.01	53.70	47.70	74.00	26.30
10480	22.74	AV	V	37.00	8.51	26.01	42.24	36.24	54.00	17.76
15720	30.25	PK	V	37.10	14.42	24.92	56.85	50.85	74.00	23.15
15720	19.00	AV	V	37.10	14.42	24.92	45.60	39.60	54.00	14.40
7490	34.35	PK	V	34.78	7.60	26.11	50.62	44.62	74.00	29.38
7490	22.77	AV	V	34.78	7.60	26.11	39.04	33.04	54.00	20.96
2359	35.00	PK	V	25.53	4.31	27.31	37.53	31.53	74.00	42.47
2359	23.10	AV	V	25.53	4.31	27.31	25.63	19.63	54.00	34.37
254	28.40	QP	V	12.13	1.94	21.49	20.98	/	46.00	25.02

802.11ac40 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	62.54	PK	H	31.48	5.91	0.00	99.93	93.93	N/A	N/A
5190	51.89	AV	H	31.48	5.91	0.00	89.28	83.28	N/A	N/A
5190	71.05	PK	V	31.48	5.91	0.00	108.44	102.44	N/A	N/A
5190	60.34	AV	V	31.48	5.91	0.00	97.73	91.73	N/A	N/A
5150	27.40	PK	V	31.40	6.03	0.00	64.83	58.83	74.00	15.17
5150	16.67	AV	V	31.40	6.03	0.00	54.10	48.10	54.00	5.90
10380	32.36	PK	V	36.98	8.59	25.51	52.42	46.42	74.00	27.58
10380	19.25	AV	V	36.98	8.59	25.51	39.31	33.31	54.00	20.69
15570	31.02	PK	V	37.37	14.66	24.83	58.22	52.22	74.00	21.78
15570	18.88	AV	V	37.37	14.66	24.83	46.08	40.08	54.00	13.92
7490	34.26	PK	V	34.78	7.60	26.11	50.53	44.53	74.00	29.47
7490	22.36	AV	V	34.78	7.60	26.11	38.63	32.63	54.00	21.37
2359	35.02	PK	V	25.53	4.31	27.31	37.55	31.55	74.00	42.45
2359	24.16	AV	V	25.53	4.31	27.31	26.69	20.69	54.00	33.31
254	29.40	QP	V	12.13	1.94	21.49	21.98	/	46.00	24.02
High Channel:5230 MHz										
5230	62.72	PK	H	31.56	5.84	0.00	100.12	94.12	N/A	N/A
5230	51.93	AV	H	31.56	5.84	0.00	89.33	83.33	N/A	N/A
5230	71.06	PK	V	31.56	5.84	0.00	108.46	102.46	N/A	N/A
5230	60.43	AV	V	31.56	5.84	0.00	97.83	91.83	N/A	N/A
5350	27.46	PK	V	31.80	6.11	0.00	65.37	59.37	74.00	14.63
5350	16.71	AV	V	31.80	6.11	0.00	54.62	48.62	54.00	5.38
10460	32.37	PK	V	36.99	8.52	25.88	52.00	46.00	74.00	28.00
10460	19.33	AV	V	36.99	8.52	25.88	38.96	32.96	54.00	21.04
15690	31.08	PK	V	37.16	14.47	24.87	57.84	51.84	74.00	22.16
15690	18.97	AV	V	37.16	14.47	24.87	45.73	39.73	54.00	14.27
7490	34.07	PK	V	34.78	7.60	26.11	50.34	44.34	74.00	29.66
7490	22.23	AV	V	34.78	7.60	26.11	38.50	32.50	54.00	21.50
2359	35.04	PK	V	25.53	4.31	27.31	37.57	31.57	74.00	42.43
2359	24.23	AV	V	25.53	4.31	27.31	26.76	20.76	54.00	33.24
254	28.50	QP	V	12.13	1.94	21.49	21.08	/	46.00	24.92

802.11ac80 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)						
High Channel:5210 MHz										
5210	59.98	PK	H	31.52	5.87	0.00	97.37	91.37	N/A	N/A
5210	46.23	AV	H	31.52	5.87	0.00	83.62	77.62	N/A	N/A
5210	68.88	PK	V	31.52	5.87	0.00	106.27	100.27	N/A	N/A
5210	55.26	AV	V	31.52	5.87	0.00	92.65	86.65	N/A	N/A
5150	28.93	PK	V	31.40	6.03	0.00	66.36	60.36	74.00	13.64
5150	21.36	AV	V	31.40	6.03	0.00	58.79	52.79	54.00	1.21
5350	27.03	PK	V	31.80	6.11	0.00	64.94	58.94	74.00	15.06
5350	17.46	AV	V	31.80	6.11	0.00	55.37	49.37	54.00	4.63
10420	32.03	PK	V	36.98	8.55	25.63	51.93	45.93	74.00	28.07
10420	19.63	AV	V	36.98	8.55	25.63	39.53	33.53	54.00	20.47
15630	30.14	PK	V	37.27	14.56	24.75	57.22	51.22	74.00	22.78
15630	18.60	AV	V	37.27	14.56	24.75	45.68	39.68	54.00	14.32
7490	34.97	PK	V	34.78	7.60	26.11	51.24	45.24	74.00	28.76
7490	23.56	AV	V	34.78	7.60	26.11	39.83	33.83	54.00	20.17
254	28.10	QP	V	12.13	1.94	21.49	20.68	/	46.00	25.32

*Within measurement uncertainty!

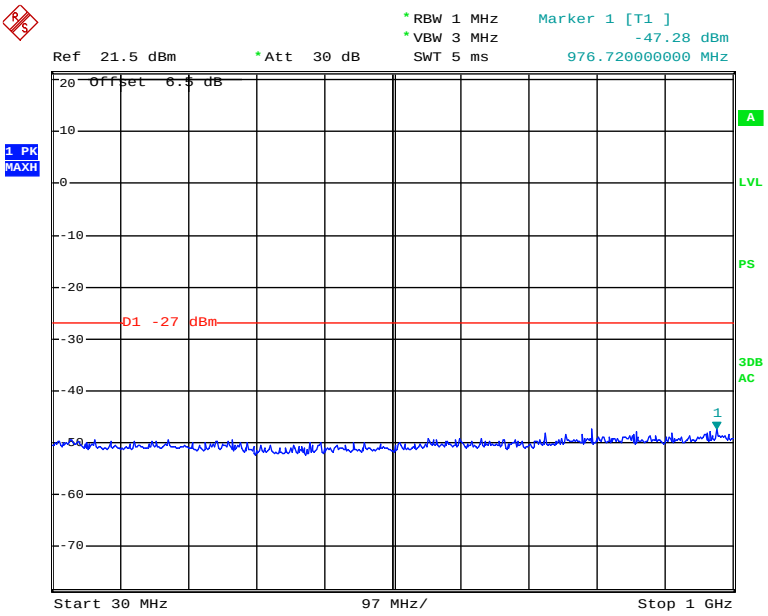
Conducted Spurious Emission at Antenna Port

Mode	Channel	Frequency	Conducted Spurious Emissions (dBm)				Result
		MHz	Chain 0	Chain 1	Total	Limits	
802.11a	Low	5180	-33.46	/	/	-27	PASS
	Middle	5200	-32.01	/	/	-27	PASS
	High	5240	-33.67	/	/	-27	PASS
802.11n ht20	Low	5180	-34.40	-33.04	-30.66	-27	PASS
	Middle	5200	-33.01	-33.00	-29.99	-27	PASS
	High	5240	-34.29	-33.82	-31.04	-27	PASS
802.11n ht40	Low	5190	-33.43	-33.51	-30.46	-27	PASS
	High	5230	-33.85	-33.68	-30.75	-27	PASS
802.11ac20	Low	5180	-32.85	-32.98	-29.90	-27	PASS
	Middle	5200	-33.02	-32.67	-29.83	-27	PASS
	High	5240	-32.6	-33.49	-30.01	-27	PASS
802.11ac40	Low	5190	-33.73	-33.60	-30.65	-27	PASS
	High	5230	-33.32	-34.07	-30.67	-27	PASS
802.11ac80	Low	5210	-34.32	-33.46	-30.86	-27	PASS

Note: Offset= Directional Antenna(dBi)+Cable loss(dB)

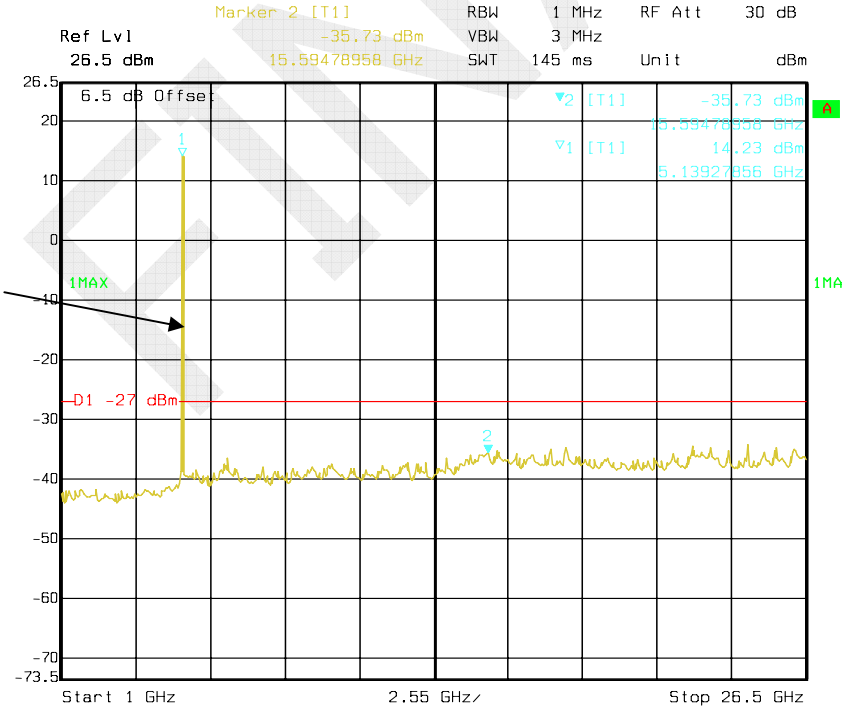
Directional Gain= G_{ANT} +10log (N_{ANT}) dBi =2.0+10log(2)= 5.0dBi

802.11a Low Channel 30MHz-1GHz



Date: 28.JUL.2014 22:41:05

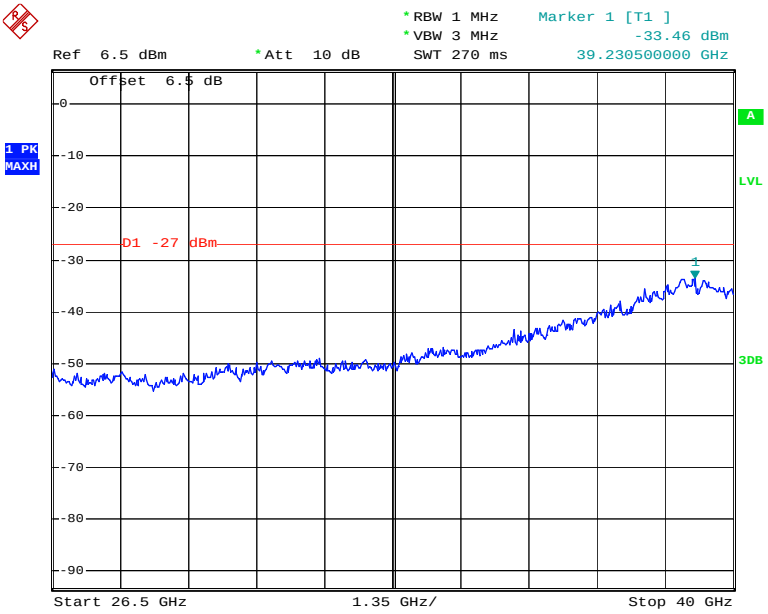
802.11a Low Channel 1GHz-26.5GHz



Fundamental

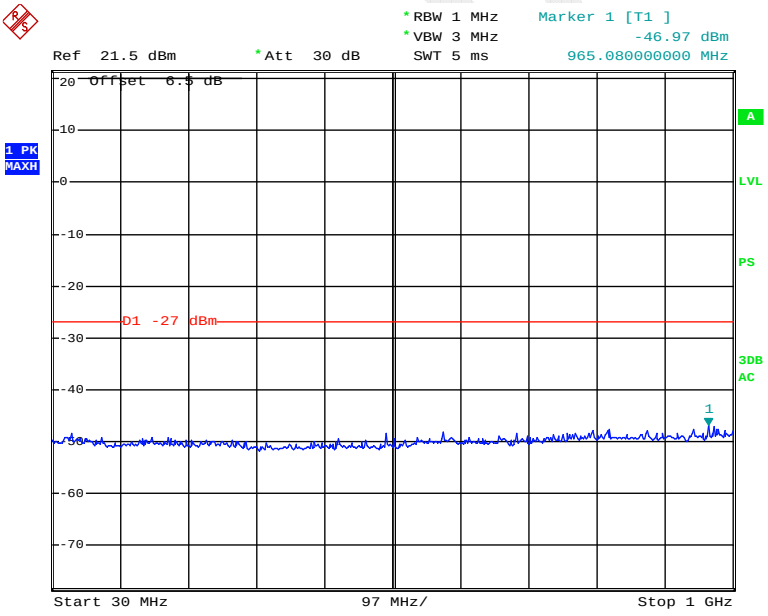
Date: 28.JUL.2014 20:25:25

802.11a Low Channel 26.5GHz-40GHz



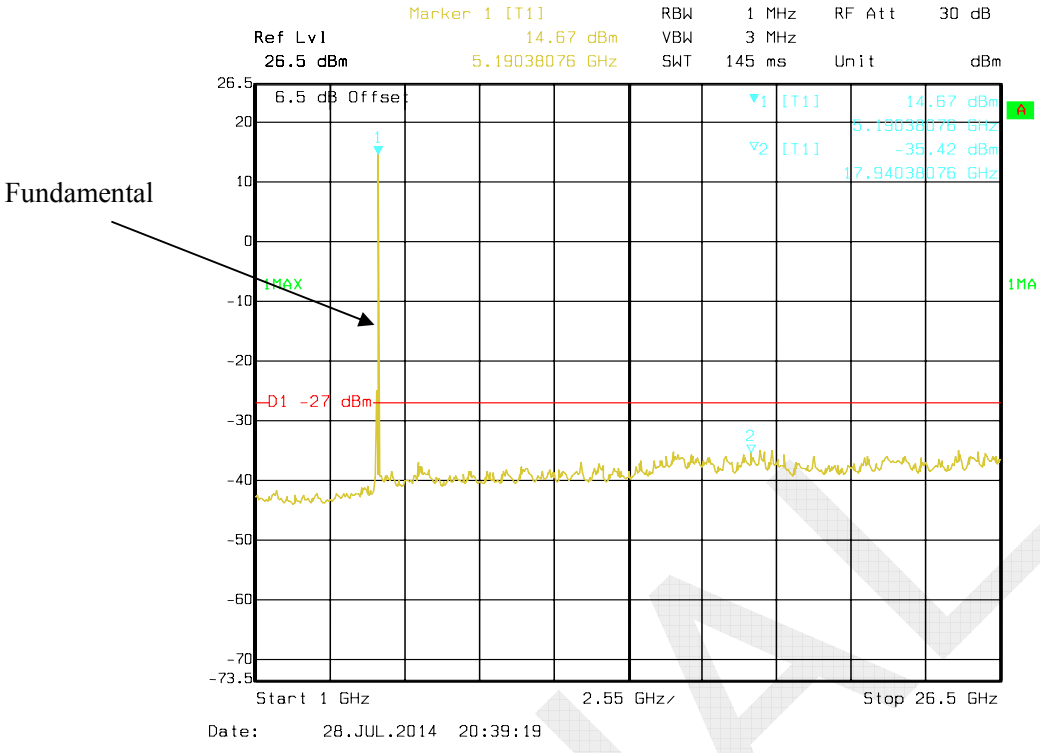
Date: 29.JUL.2014 13:40:01

802.11a Middle Channel 30MHz-1GHz

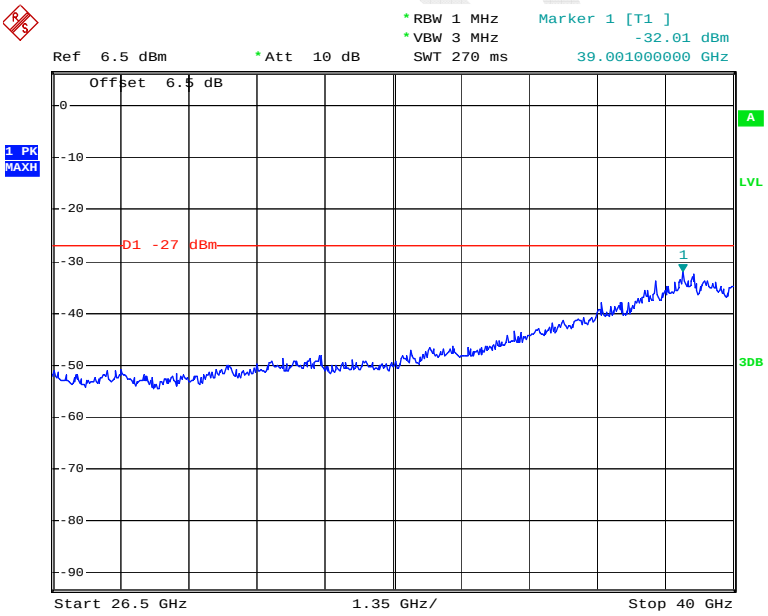


Date: 28.JUL.2014 22:41:24

802.11a Middle Channel 1GHz -26.5GHz

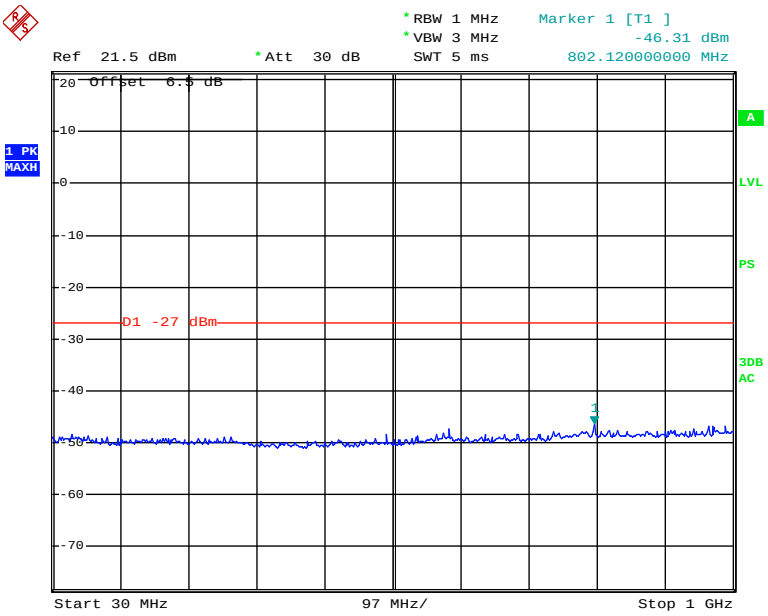


802.11a Middle Channel 26.5GHz-40GHz



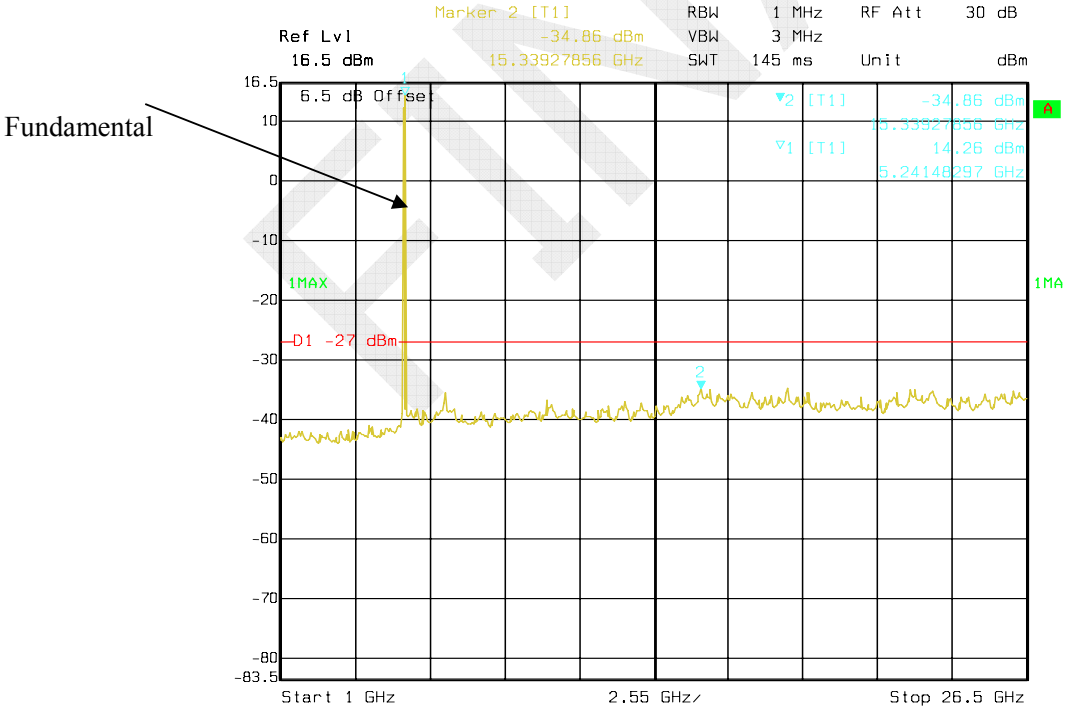
Date: 29.JUL.2014 13:41:17

802.11a High Channel 30MHz-1GHz



Date: 28.JUL.2014 22:42:24

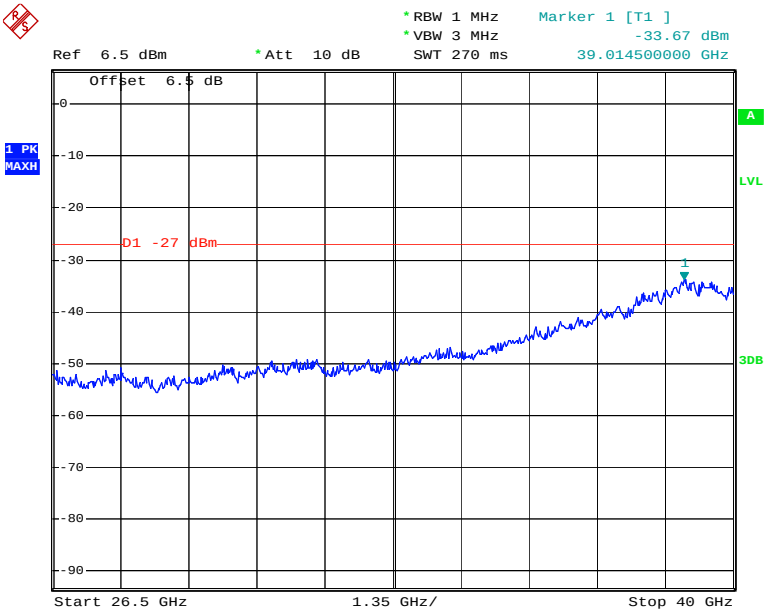
802.11a High Channel 1GHz-26.5GHz



Fundamental

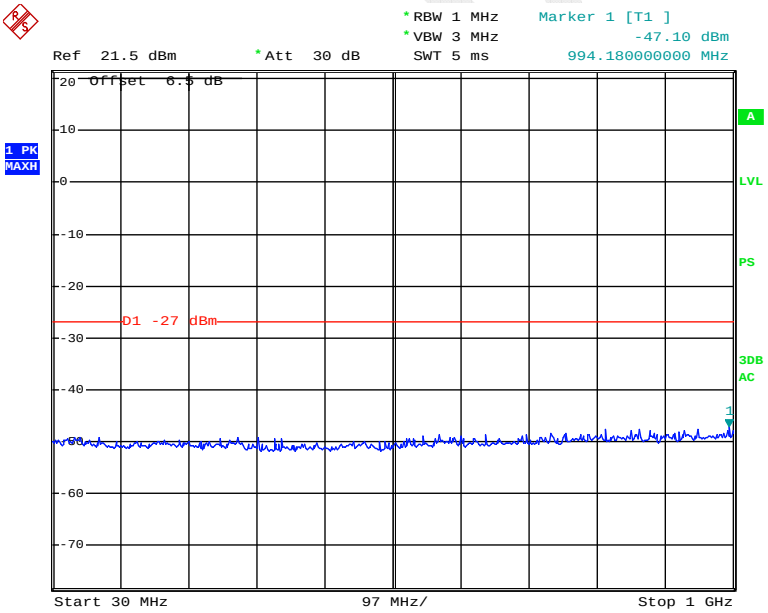
Date: 28.JUL.2014 20:45:55

802.11a High Channel 26.5GHz-40GHz



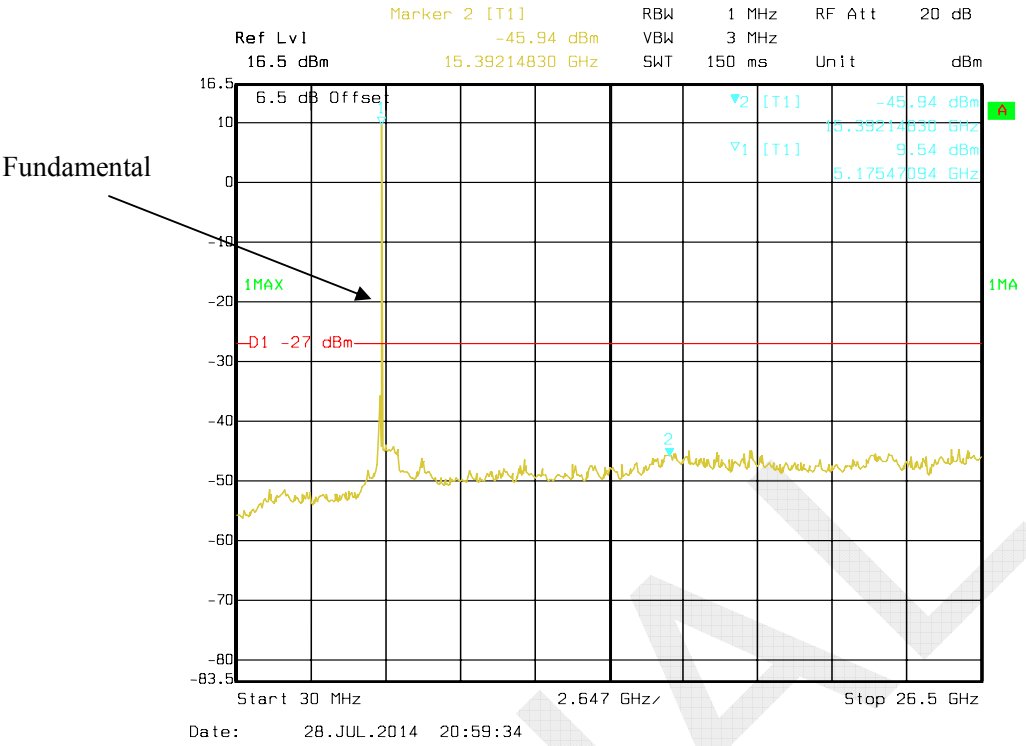
Date: 29.JUL.2014 13:42:06

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

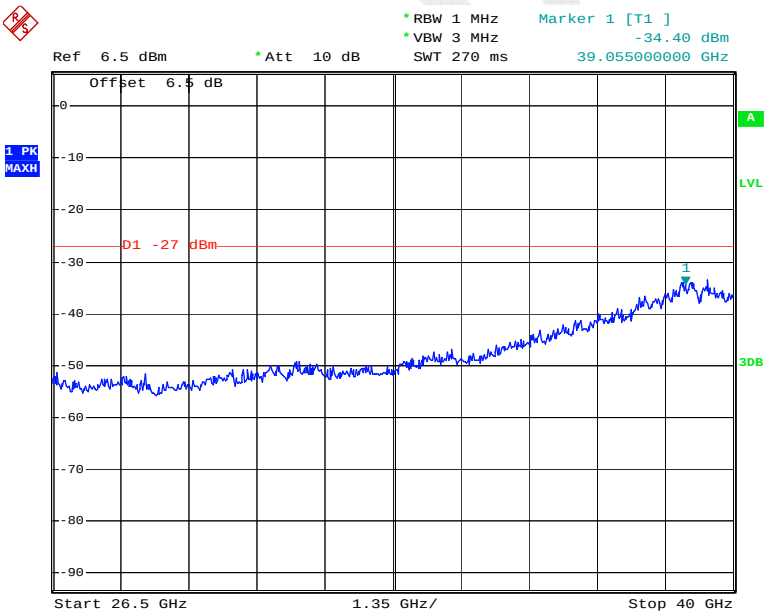


Date: 28.JUL.2014 22:45:59

Chain 0: 802.11n ht20 Low Channel 1GHz-26.5GHz

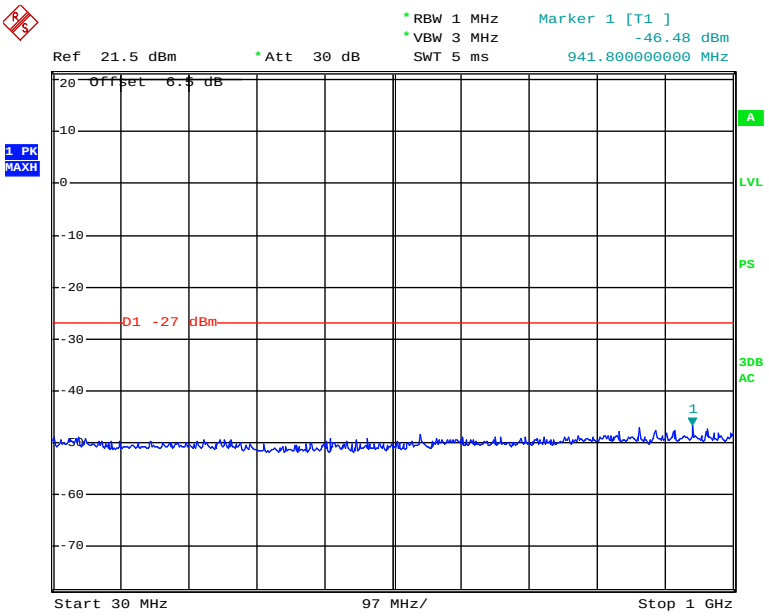


Chain 0: 802.11n ht20 Low Channel 26.5GHz-40GHz



Date: 29.JUL.2014 13:48:50

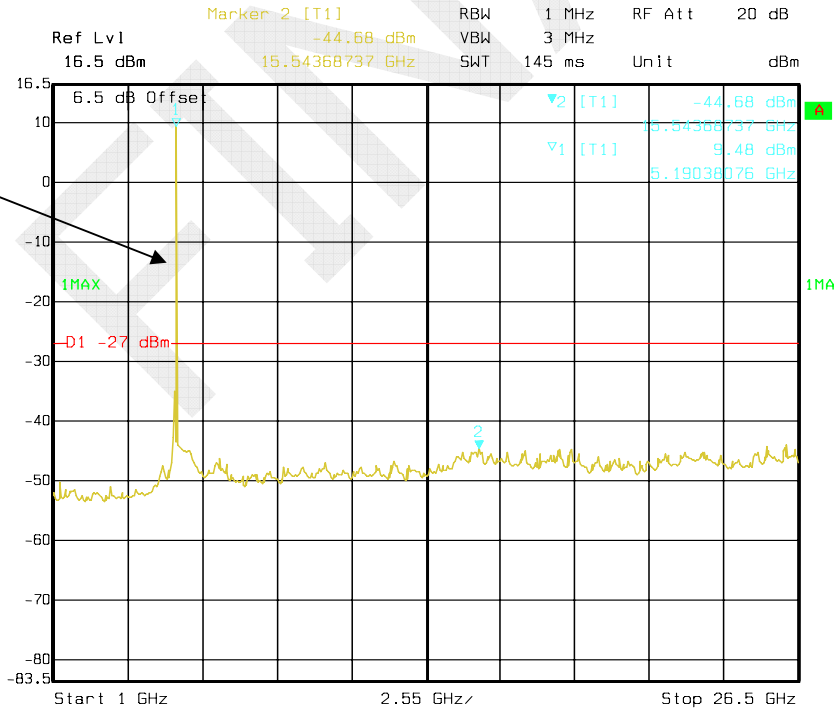
Chain 0: 802.11n ht20 Middle Channel 30MHz-1GHz



Date: 28.JUL.2014 22:46:17

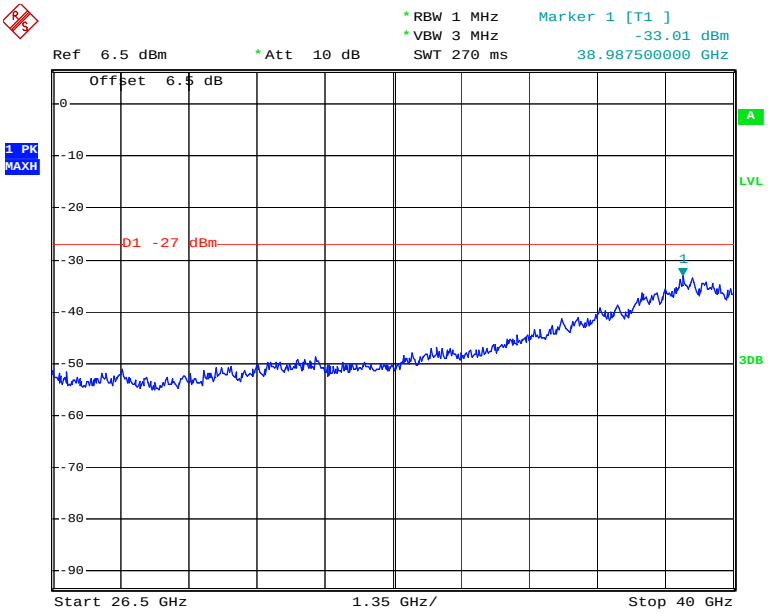
Chain 0: 802.11n ht20 Middle Channel 1GHz -26.5GHz

Fundamental



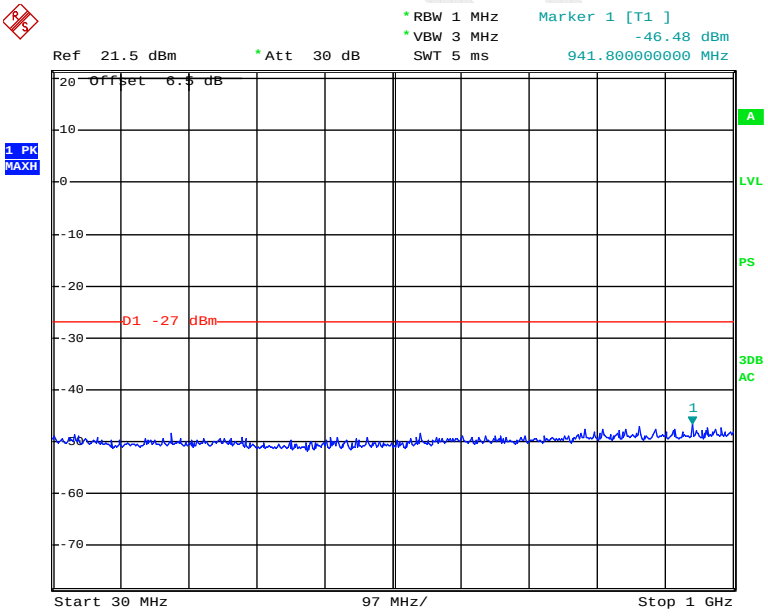
Date: 28.JUL.2014 21:09:08

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



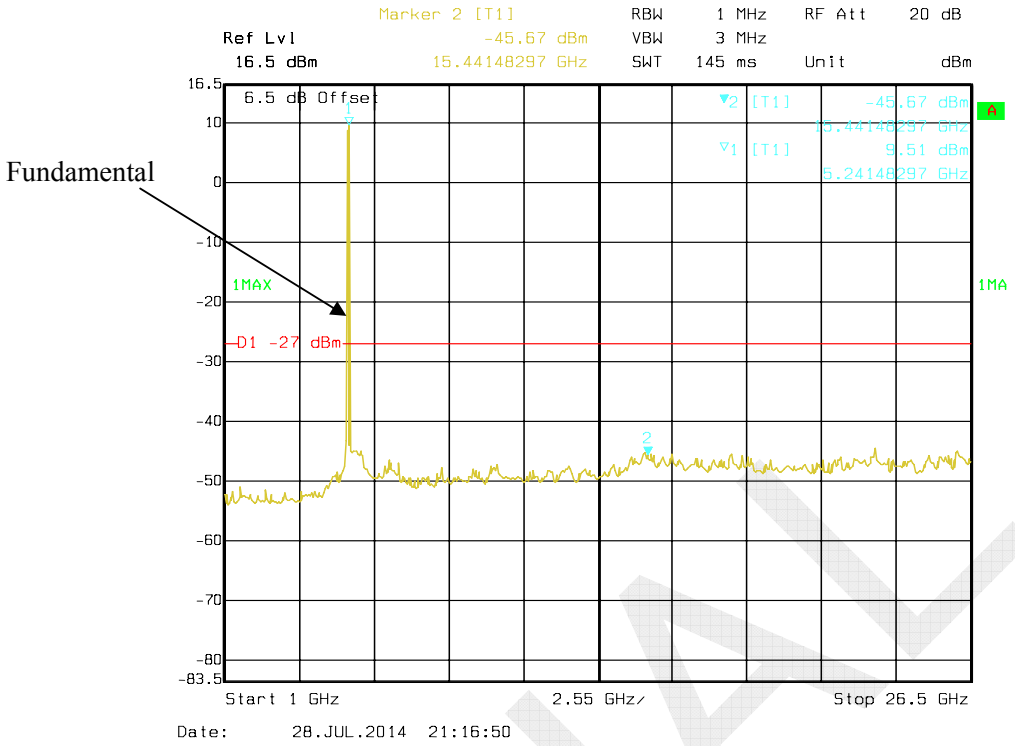
Date: 29.JUL.2014 13:49:49

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

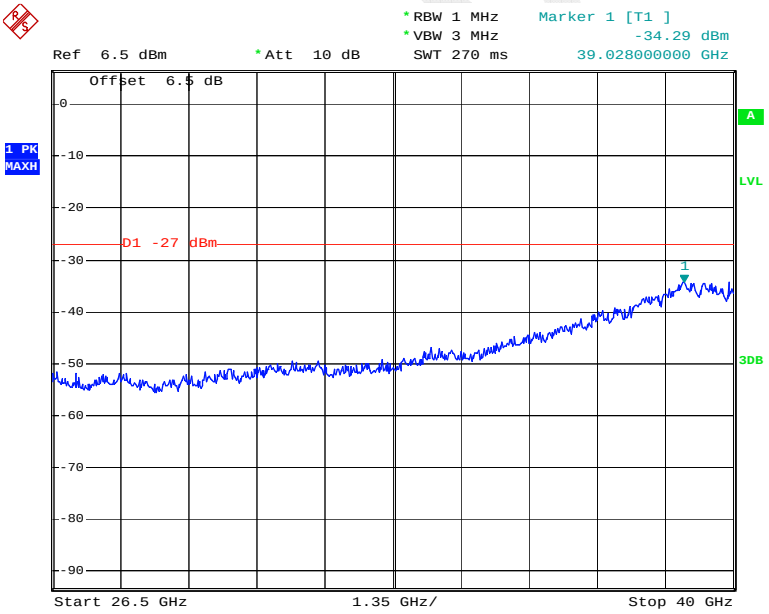


Date: 28.JUL.2014 22:46:25

Chain 0: 802.11n ht20 High Channel 1GHz-26.5GHz

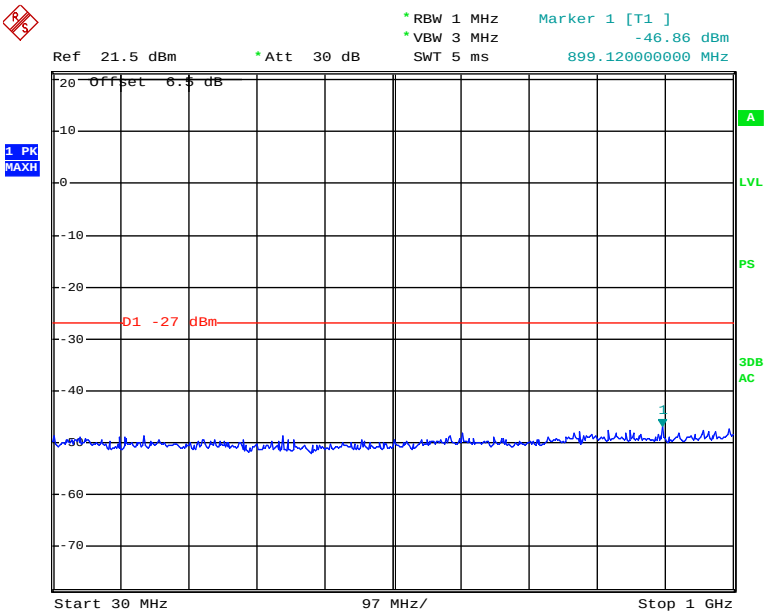


Chain 0: 802.11n ht20 High Channel 26.5GHz-40GHz



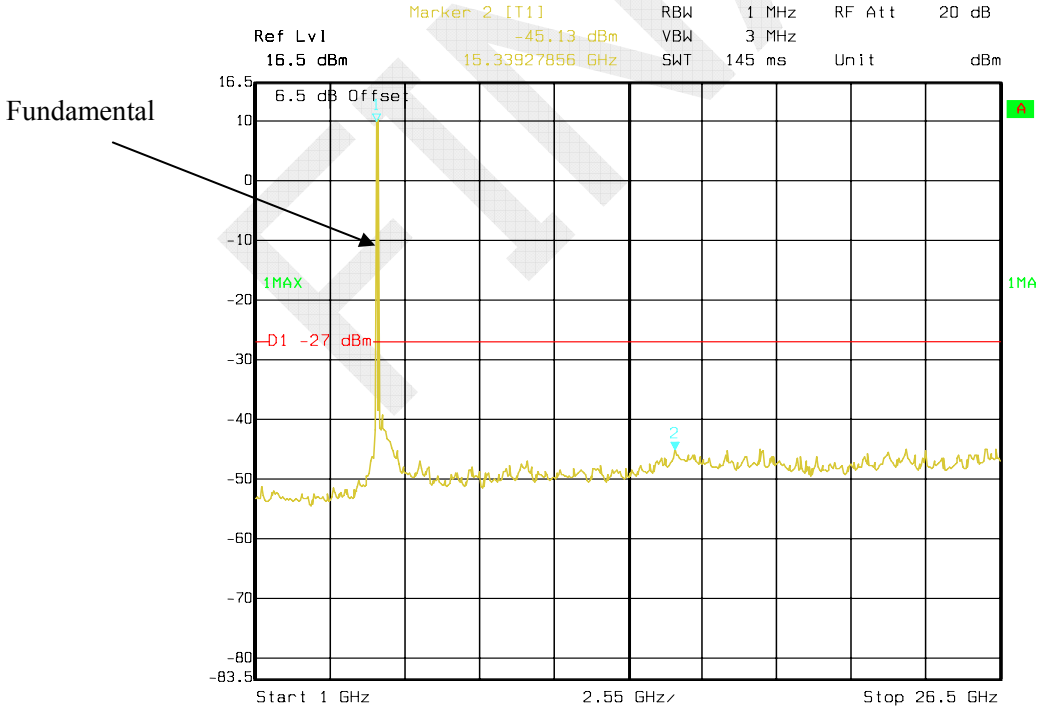
Date: 29.JUL.2014 13:52:14

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



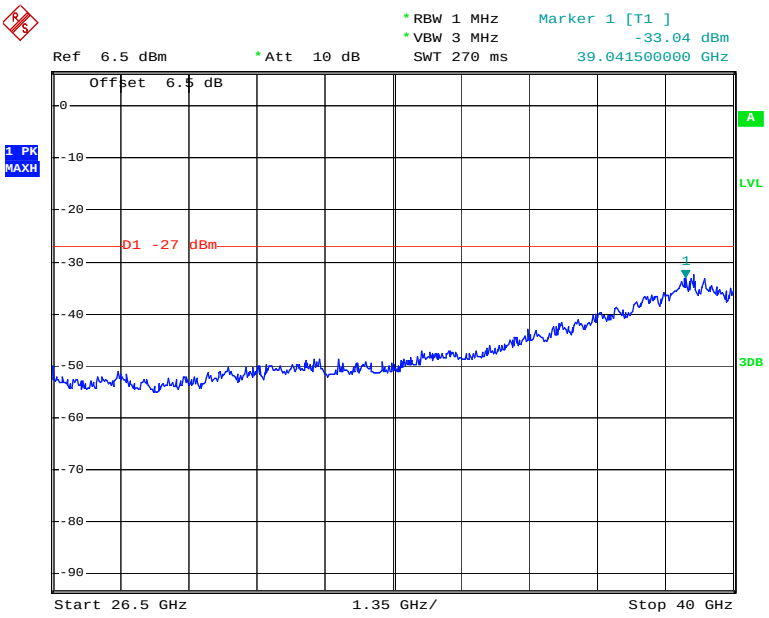
Date: 28.JUL.2014 22:46:49

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



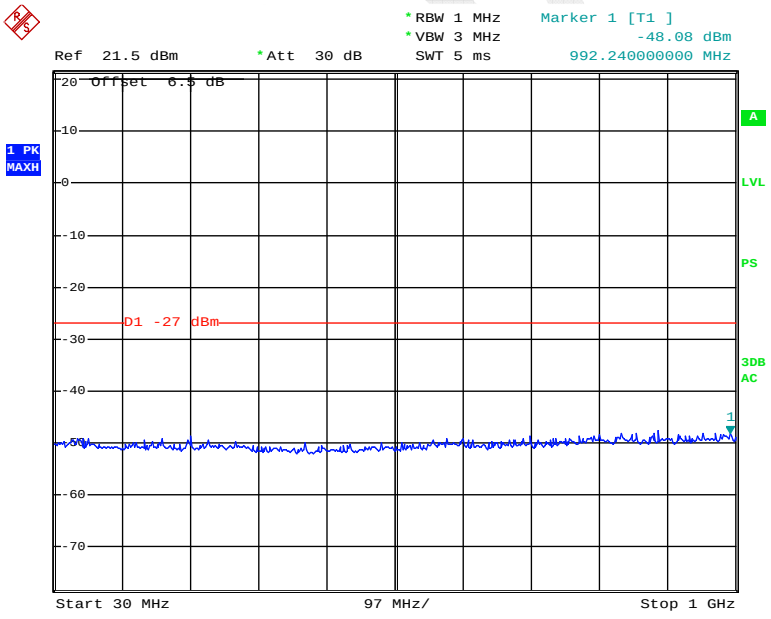
Date: 28.JUL.2014 21:25:21

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



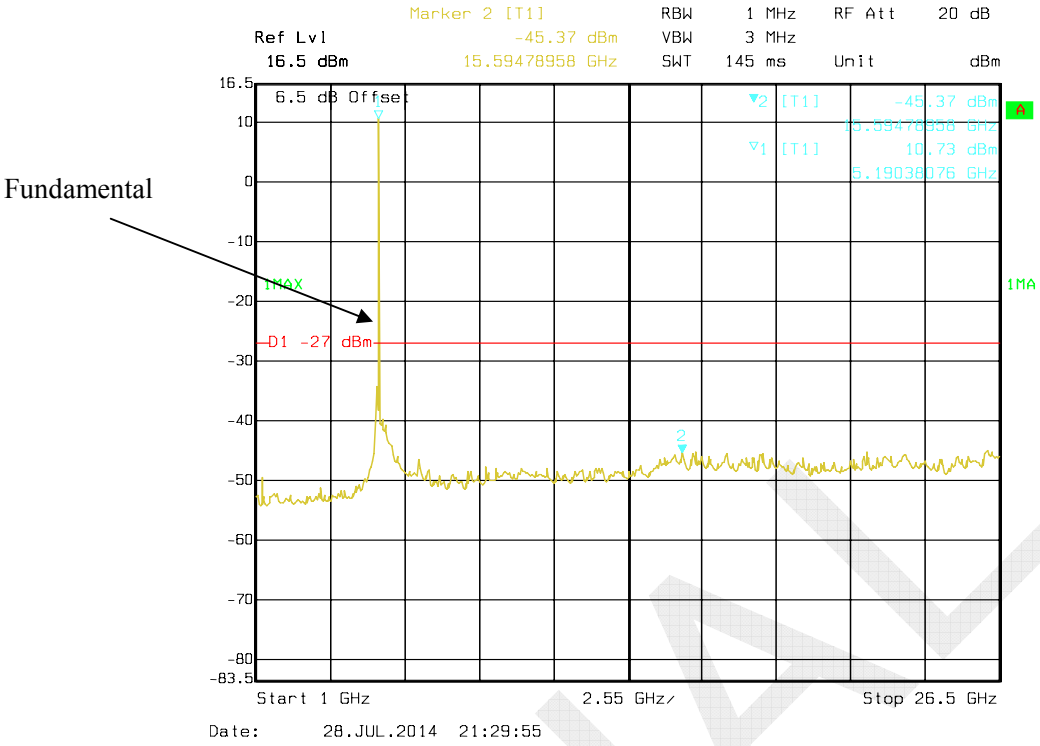
Date: 29.JUL.2014 13:43:50

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

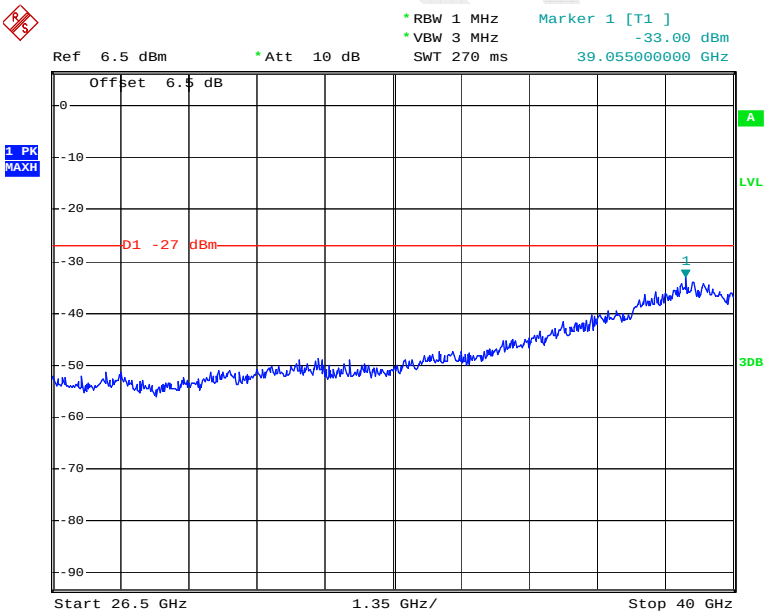


Date: 28.JUL.2014 22:50:45

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

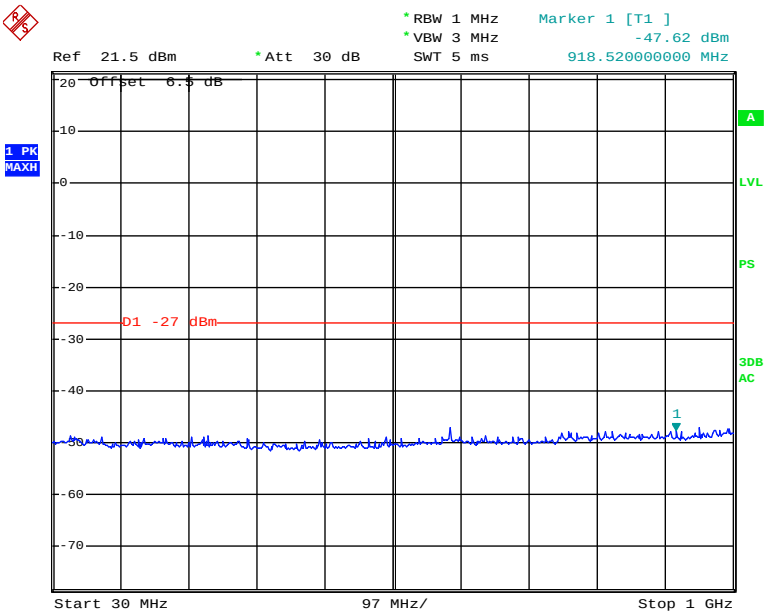


Chain 1: 802.11n ht20 Middle Channel 26.5GHz-40GHz



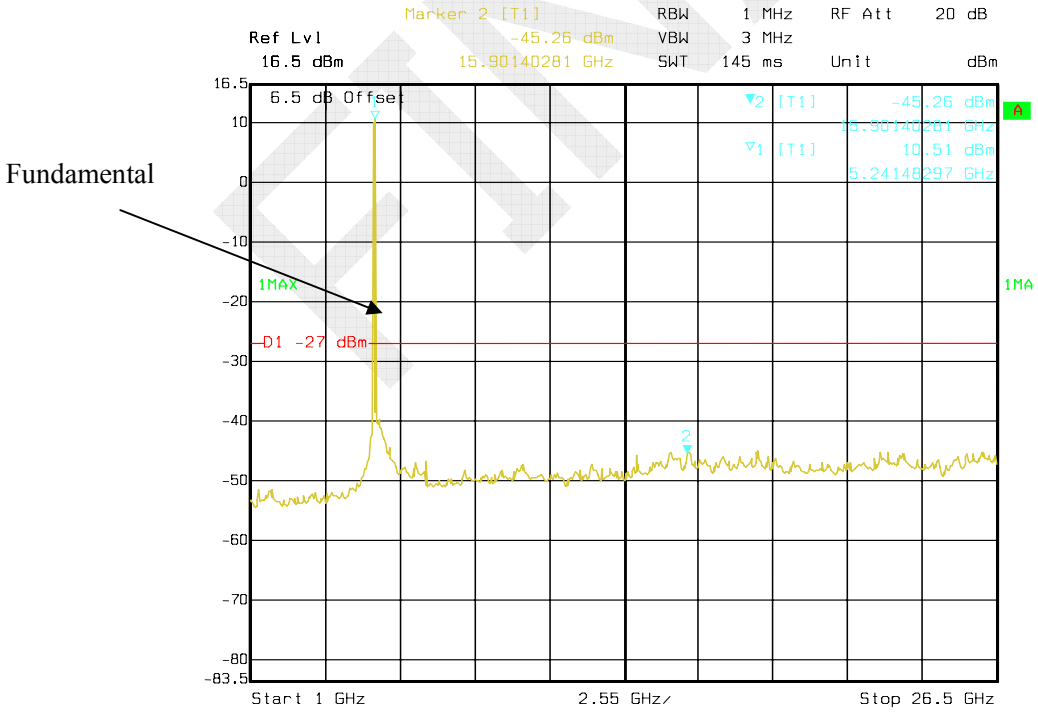
Date: 29.JUL.2014 13:44:41

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



Date: 28.JUL.2014 22:51:08

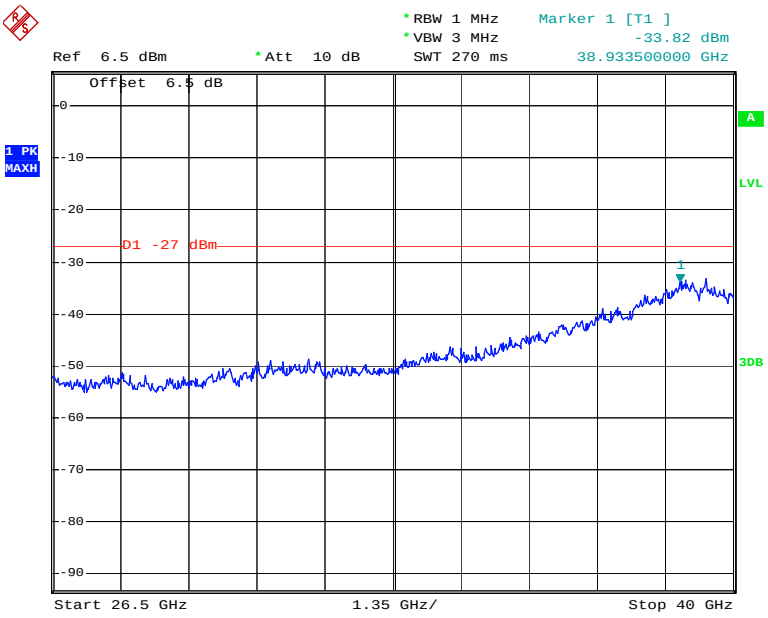
Chain 1: 802.11n ht20 High Channel 1GHz-26.5GHz



Fundamental

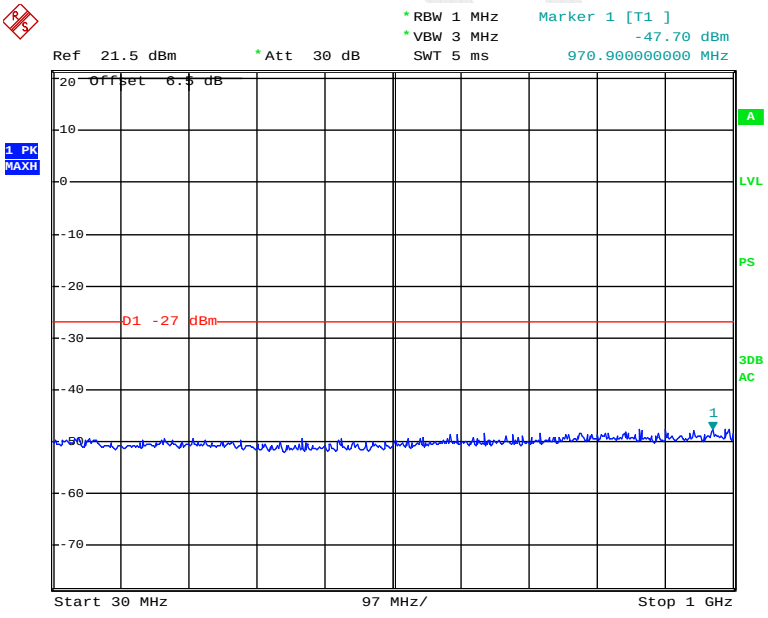
Date: 28.JUL.2014 21:34:34

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



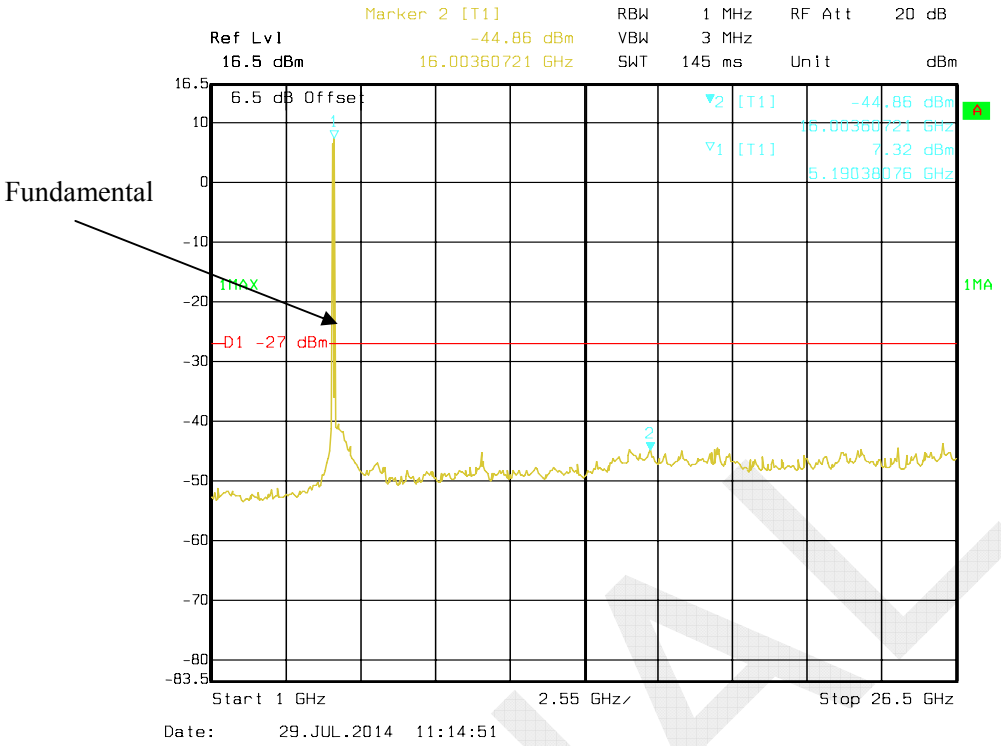
Date: 29.JUL.2014 13:46:24

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

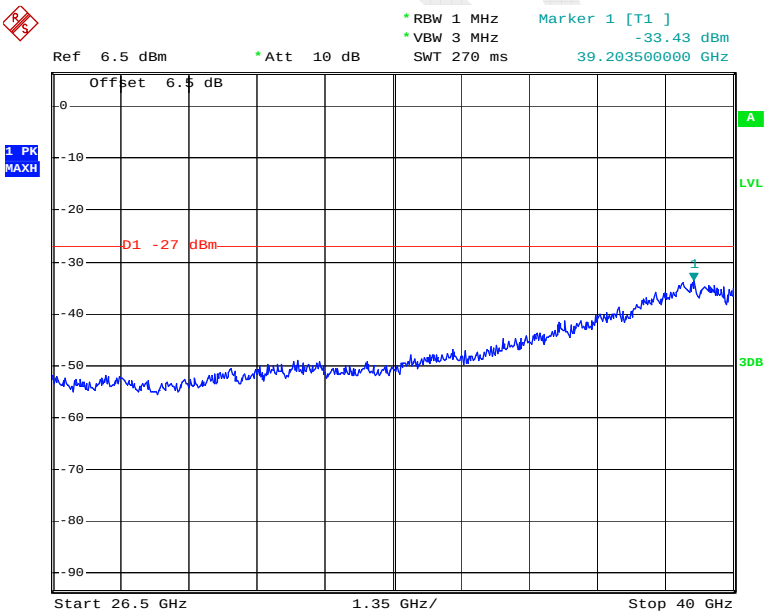


Date: 28.JUL.2014 22:51:47

Chain 0: 802.11n ht40 Low Channel 1GHz-26.5GHz

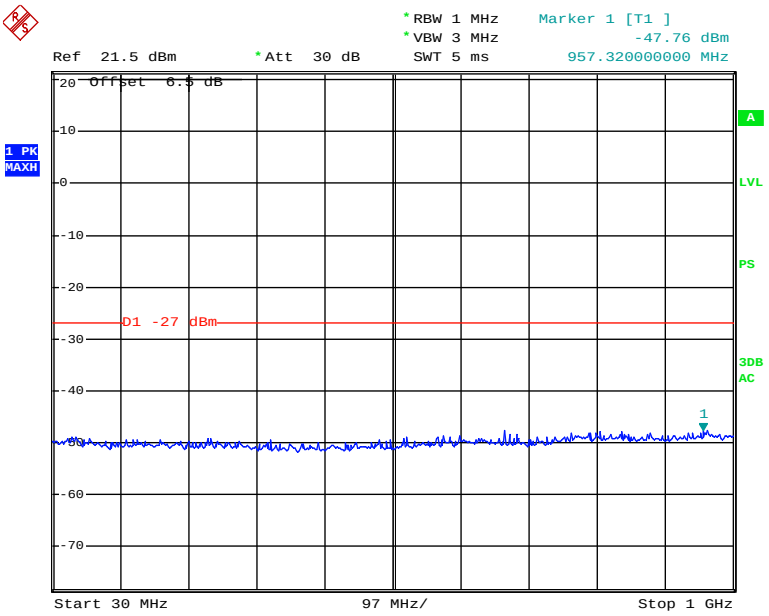


Chain 0: 802.11n ht40 Low Channel 26.5-40GHz



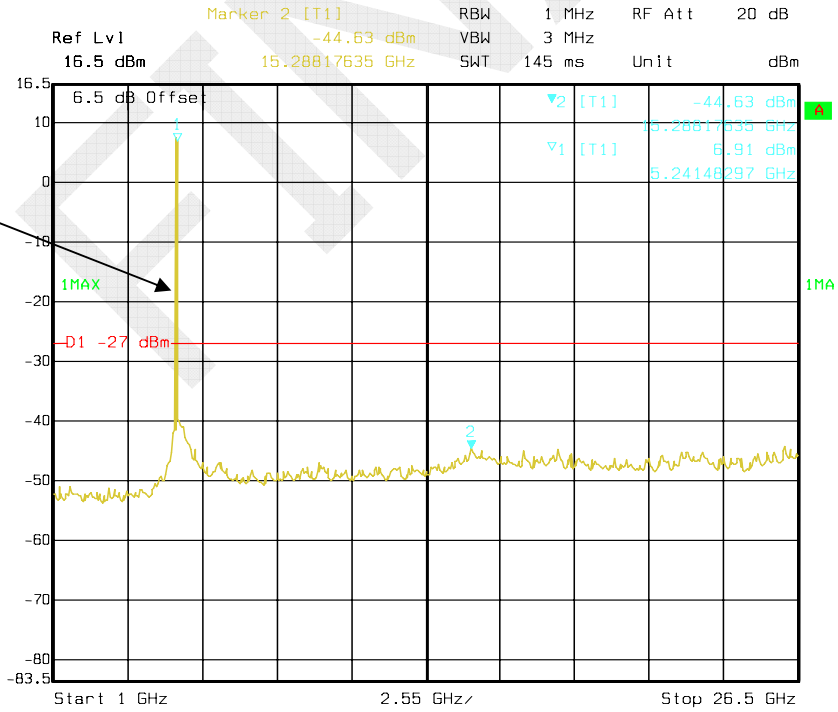
Date: 29.JUL.2014 14:11:47

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



Date: 28.JUL.2014 22:52:36

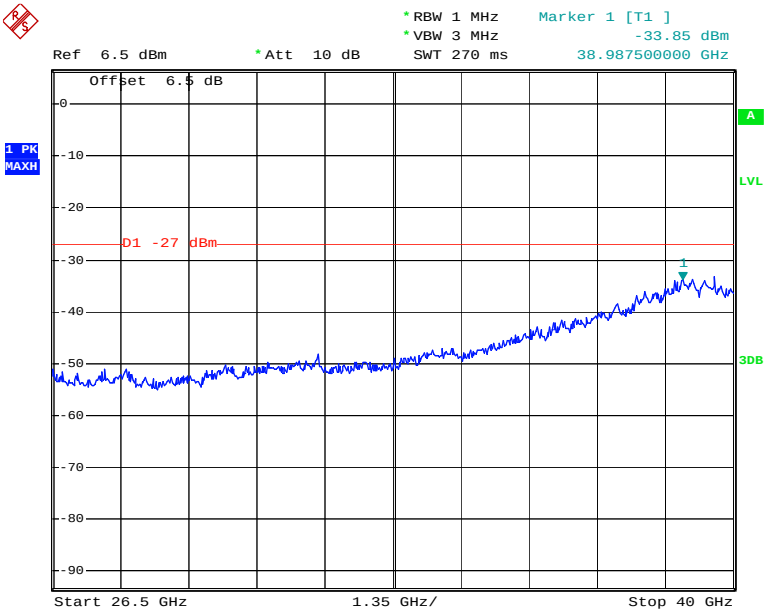
Chain 0: 802.11n ht40 High Channel 1GHz-26.5GHz



Fundamental

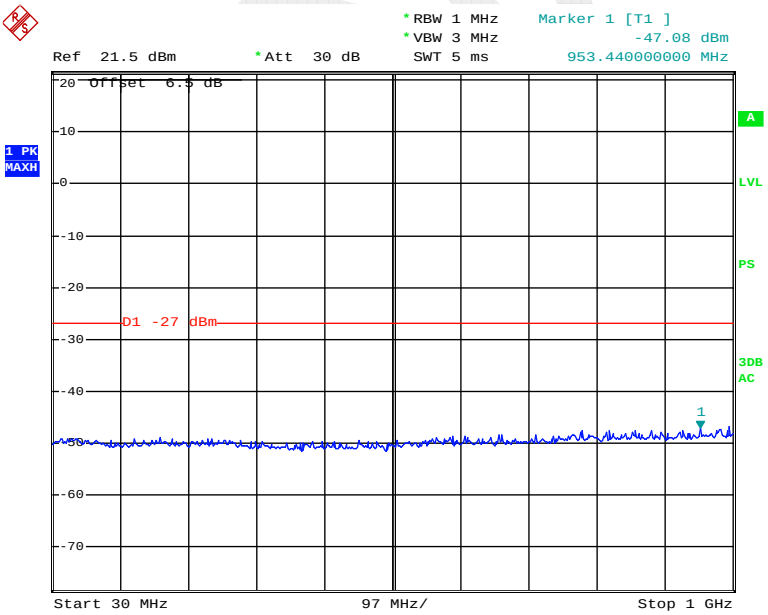
Date: 29.JUL.2014 11:07:04

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



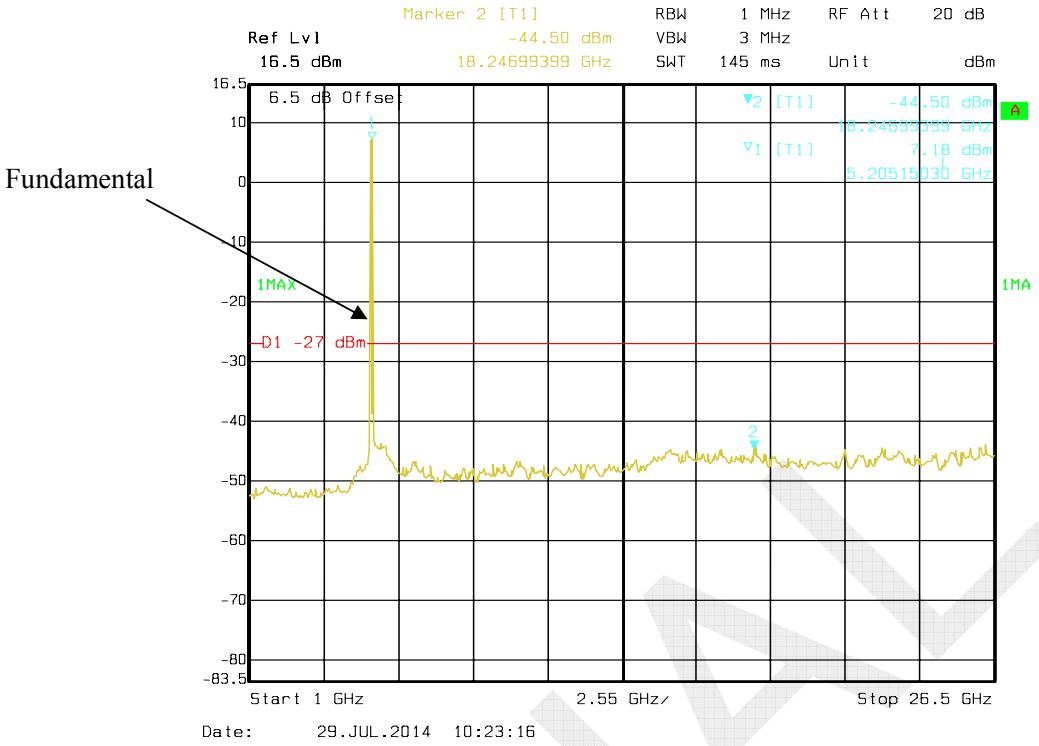
Date: 29.JUL.2014 14:11:14

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

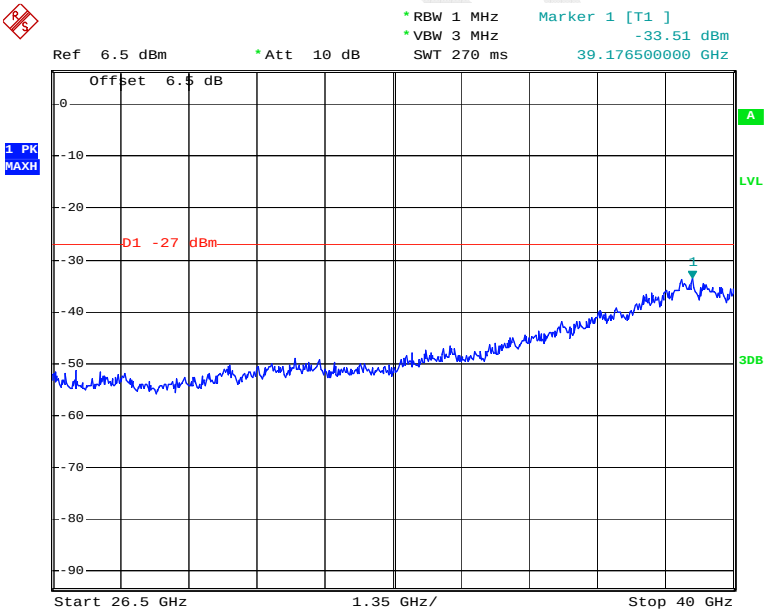


Date: 28.JUL.2014 22:53:10

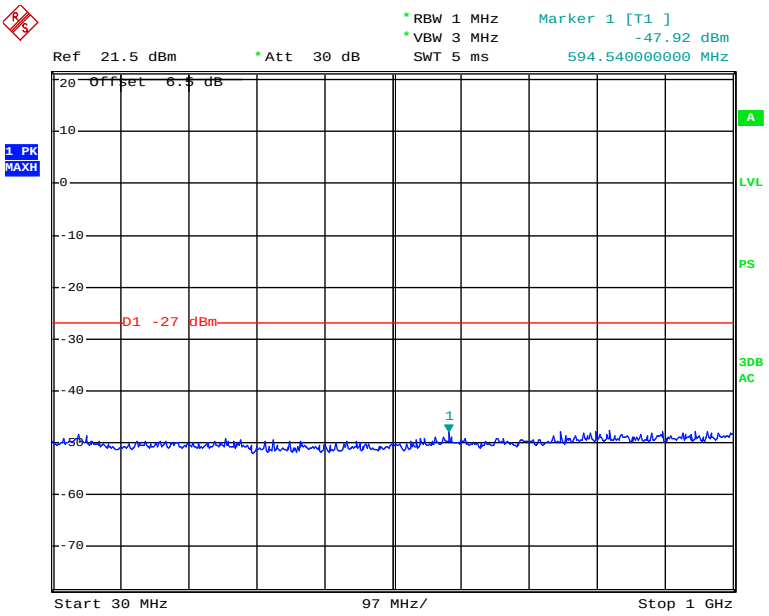
Chain 1: 802.11n ht40 Low Channel 1GHz-26.5GHz



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

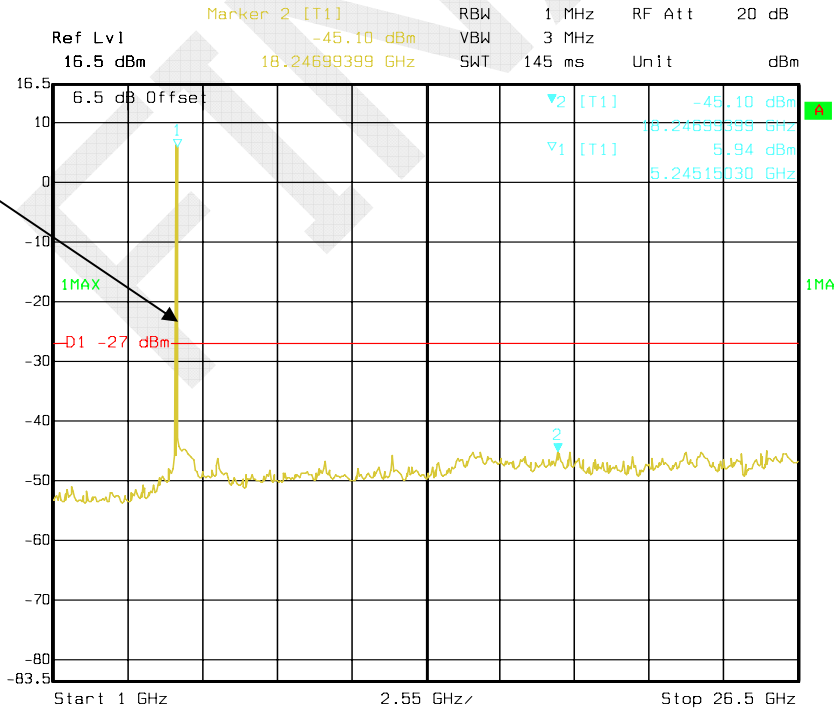


Chain 1: 802.11n ht40 High Channel 30MHz-1GHz



Date: 28.JUL.2014 22:54:51

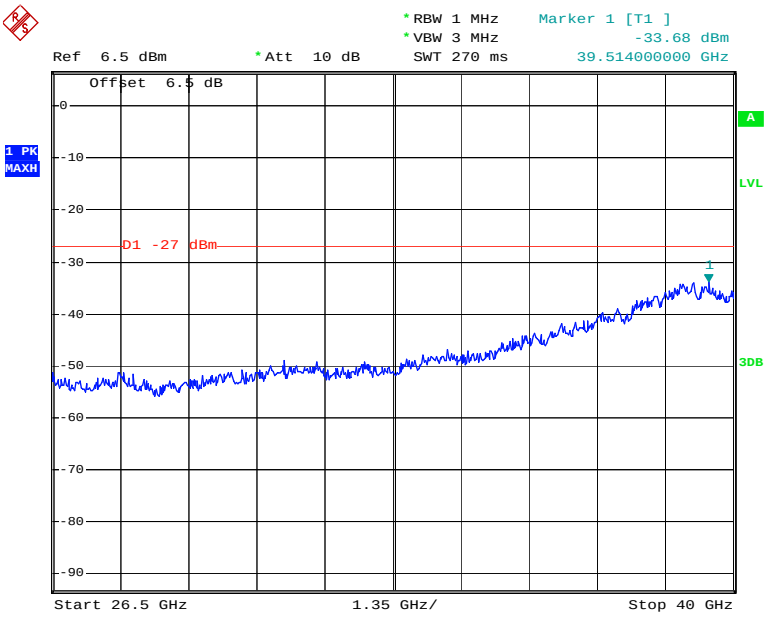
Chain 1: 802.11n ht40 High Channel 1GHz-26.5GHz



Fundamental

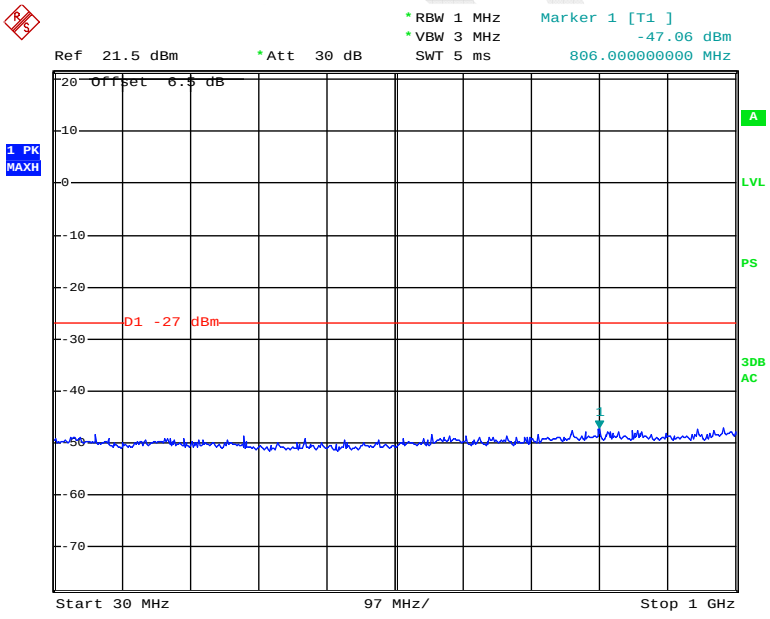
Date: 29.JUL.2014 10:58:55

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



Date: 29.JUL.2014 13:55:06

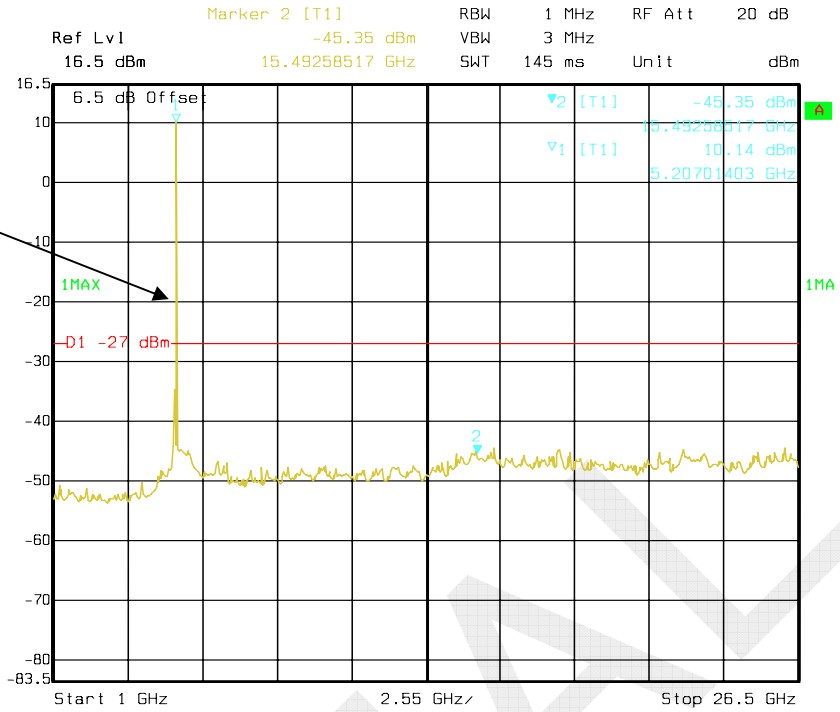
Chain 0: 802.11 ac20 Low Channel 30MHz-1GHz



Date: 28.JUL.2014 22:55:20

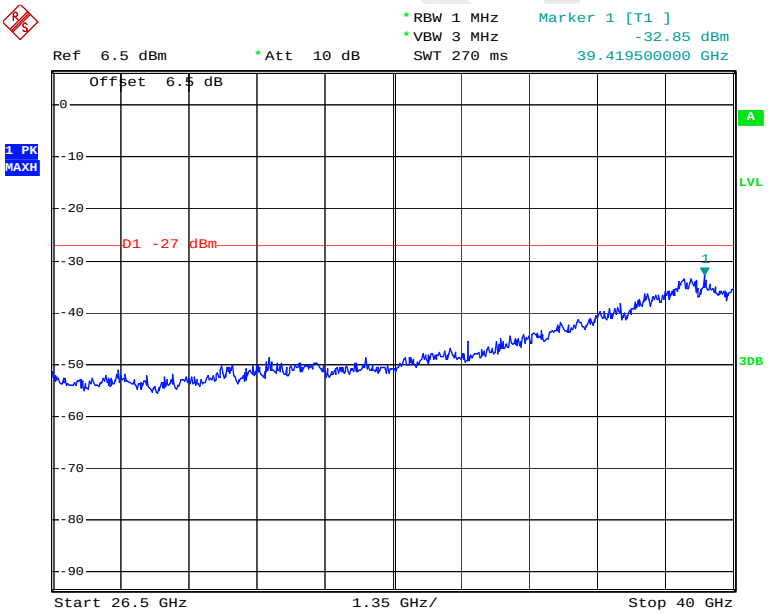
Chain 0: 802.11 ac20 Low Channel 1GHz-26.5GHz

Fundamental



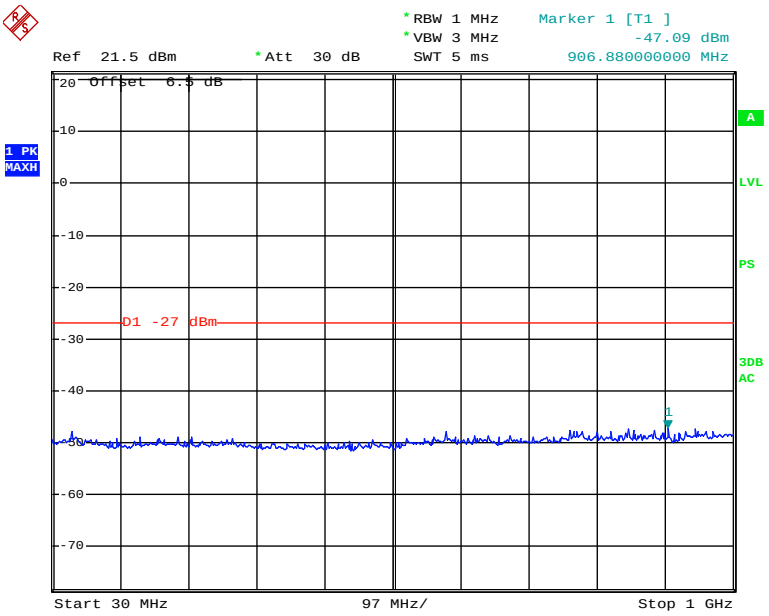
Date: 29.JUL.2014 13:40:03

Chain 0: 802.11 ac20 Low Channel 26.5GHz-40GHz



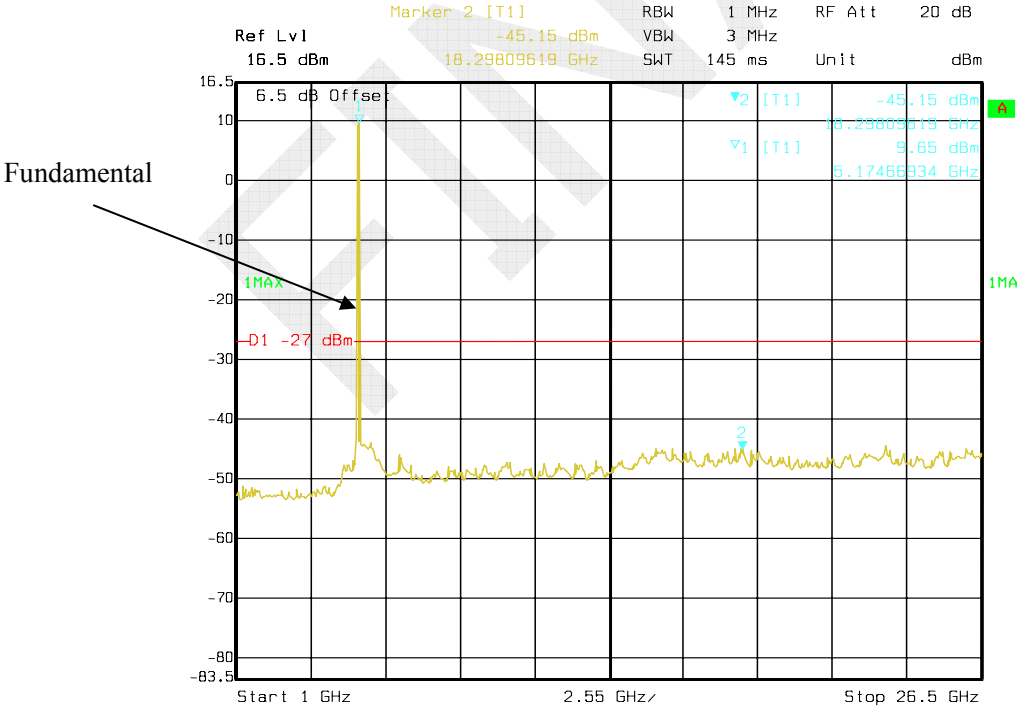
Date: 29.JUL.2014 13:57:58

Chain 0: 802.11 ac20 Middle Channel 30MHz-1GHz



Date: 28.JUL.2014 22:55:59

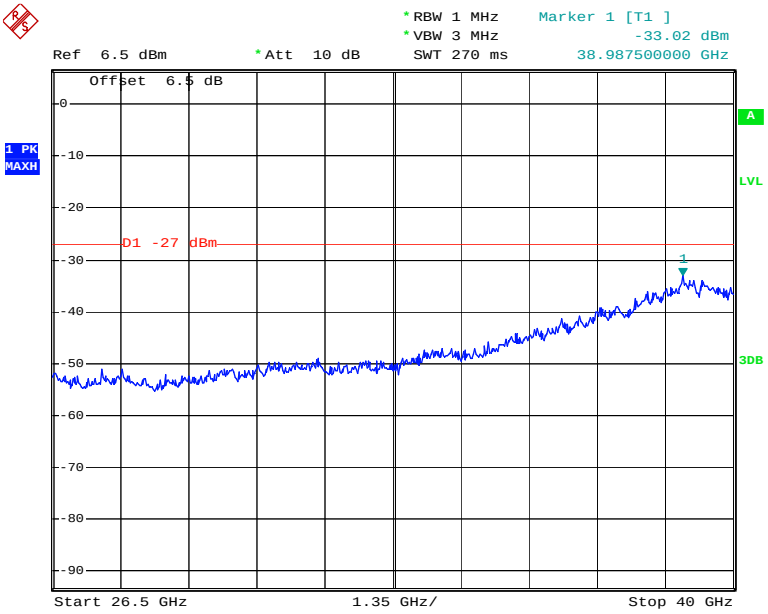
Chain 0: 802.11 ac20 Middle Channel 1GHz -26.5GHz



Fundamental

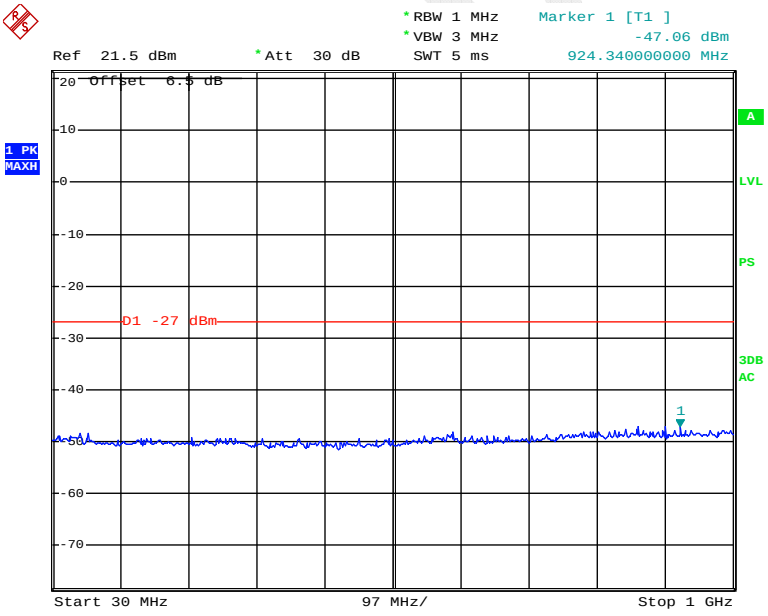
Date: 29.JUL.2014 13:33:21

Chain 0: 802.11 ac20 Middle Channel 26.5GHz-40GHz



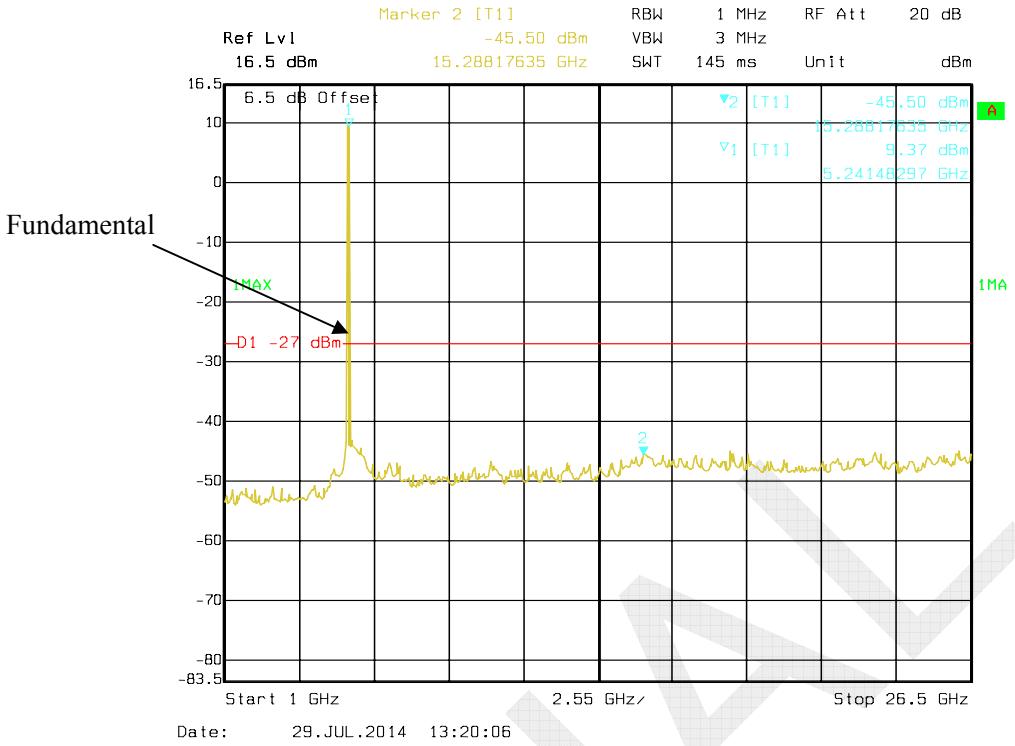
Date: 29.JUL.2014 13:58:25

Chain 0: 802.11 ac20 High Channel 30MHz-1GHz

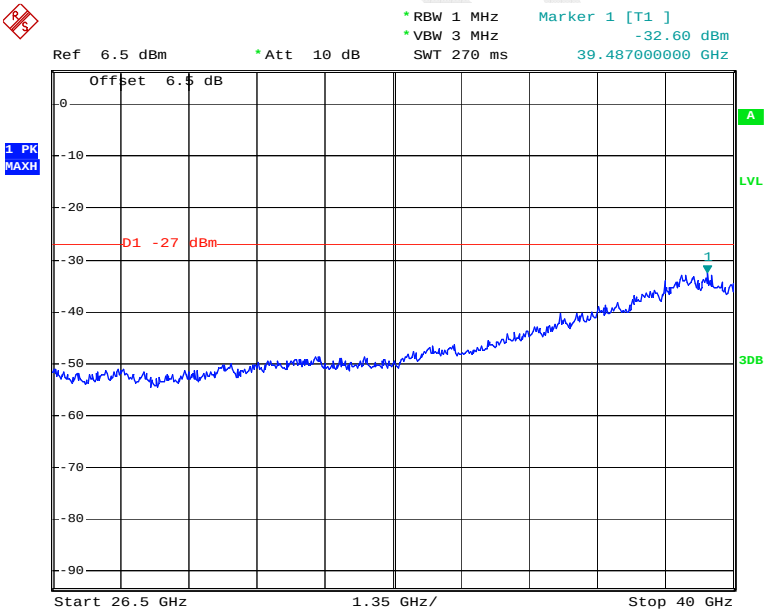


Date: 28.JUL.2014 22:56:51

Chain 0: 802.11 ac20 High Channel 1GHz-26.5GHz

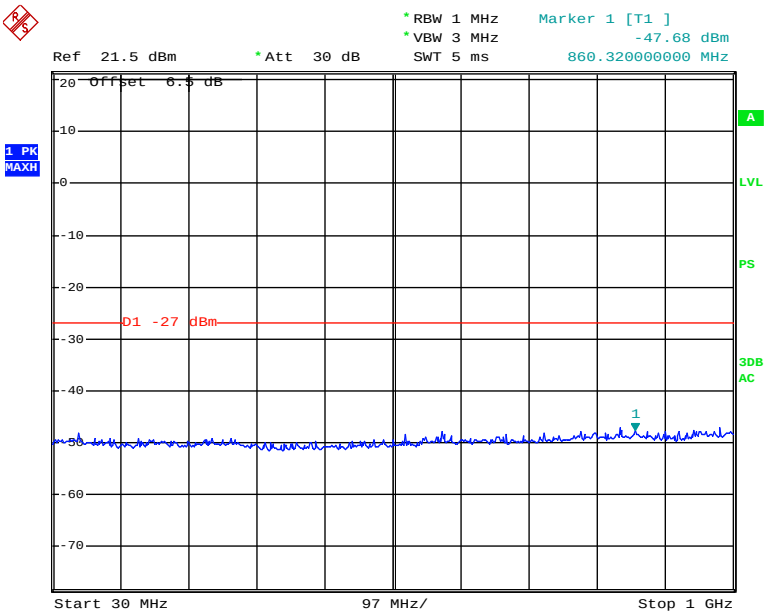


Chain 0: 802.11 ac20 High Channel 26.5GHz-40GHz



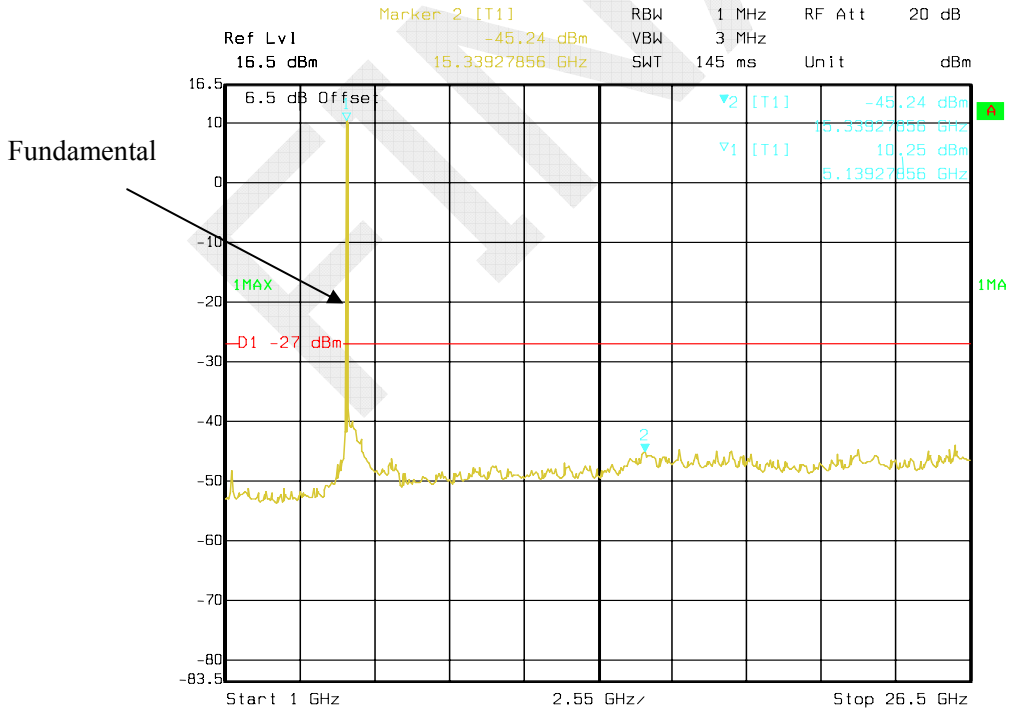
Date: 29.JUL.2014 14:01:38

Chain 1: 802.11 ac20 Low Channel 30MHz-1GHz



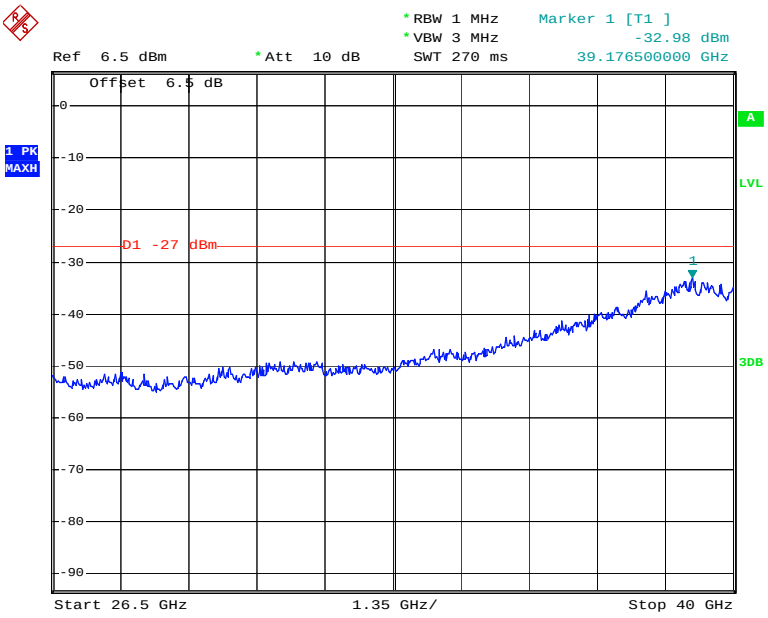
Date: 28.JUL.2014 22:57:29

Chain 1: 802.11 ac20 Low Channel 1GHz-26.5GHz



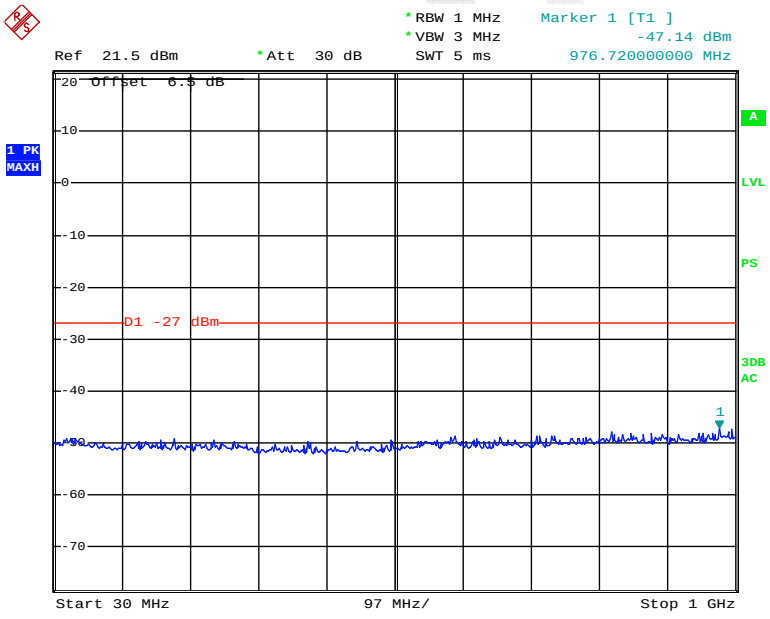
Date: 29.JUL.2014 11:34:22

Chain 1: 802.11 ac20 Low Channel 26.5GHz-40GHz



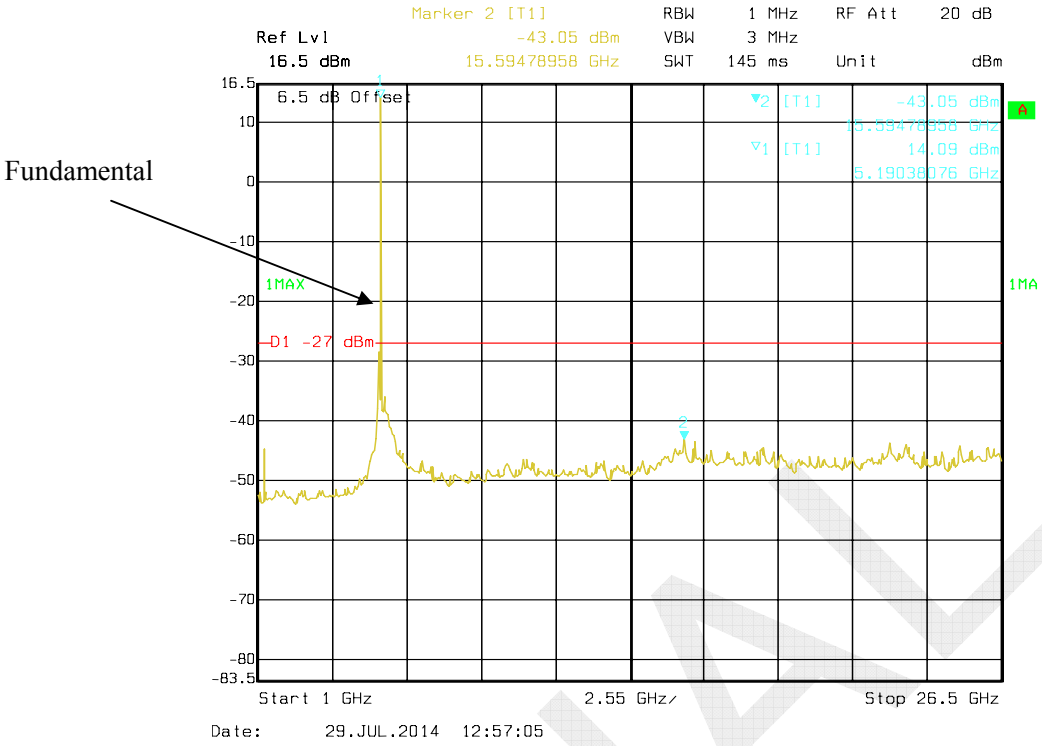
Date: 29.JUL.2014 14:02:09

Chain 1: 802.11 ac20 Middle Channel 30MHz-1GHz



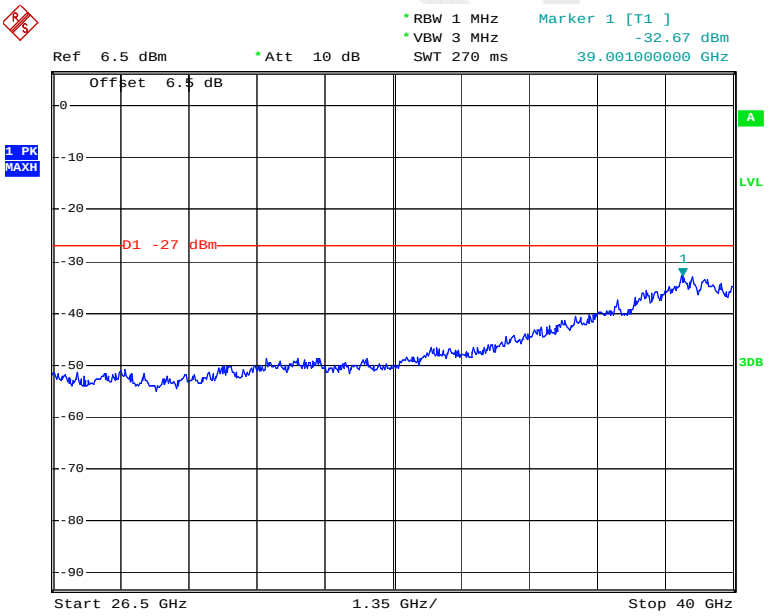
Date: 28.JUL.2014 22:58:29

Chain 1: 802.11 ac20 Middle Channel 1GHz -26.5GHz



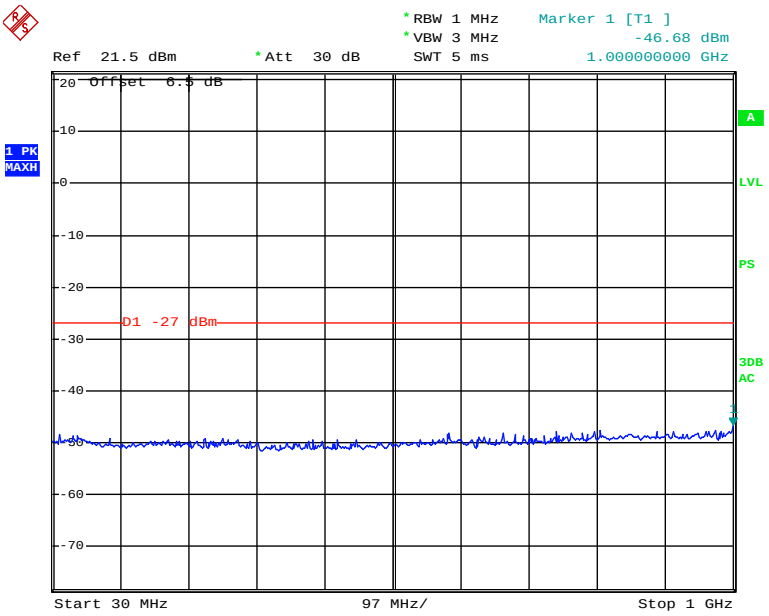
Fundamental

Chain 1: 802.11 ac20 Middle Channel 26.5GHz-40GHz



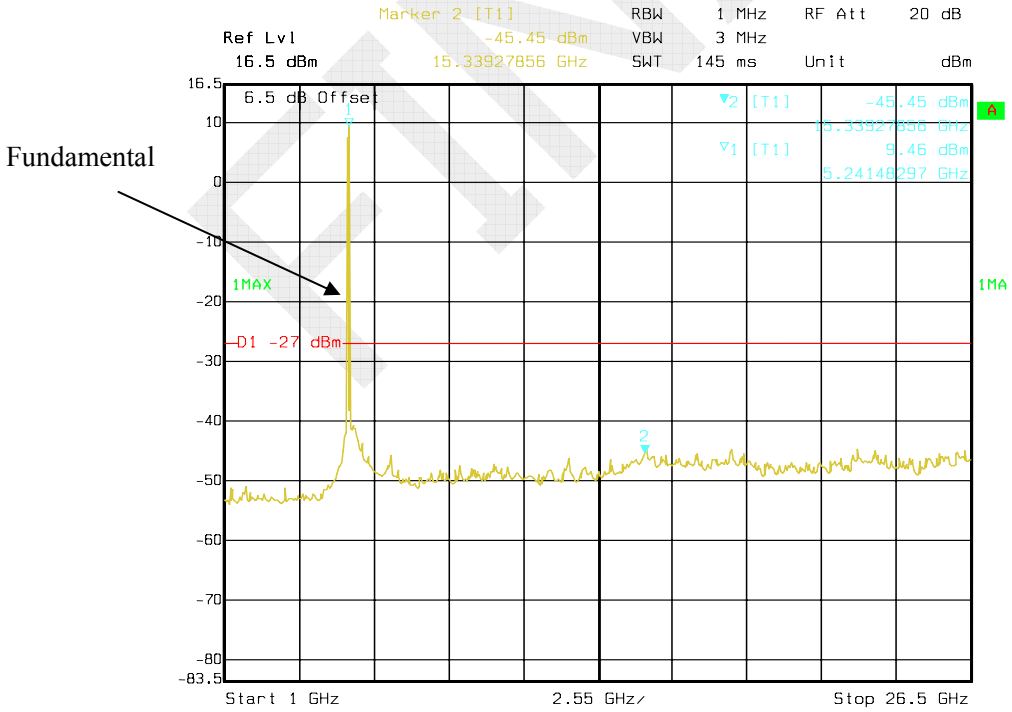
Date: 29.JUL.2014 14:03:15

Chain 1: 802.11 ac20 High Channel 30MHz-1GHz



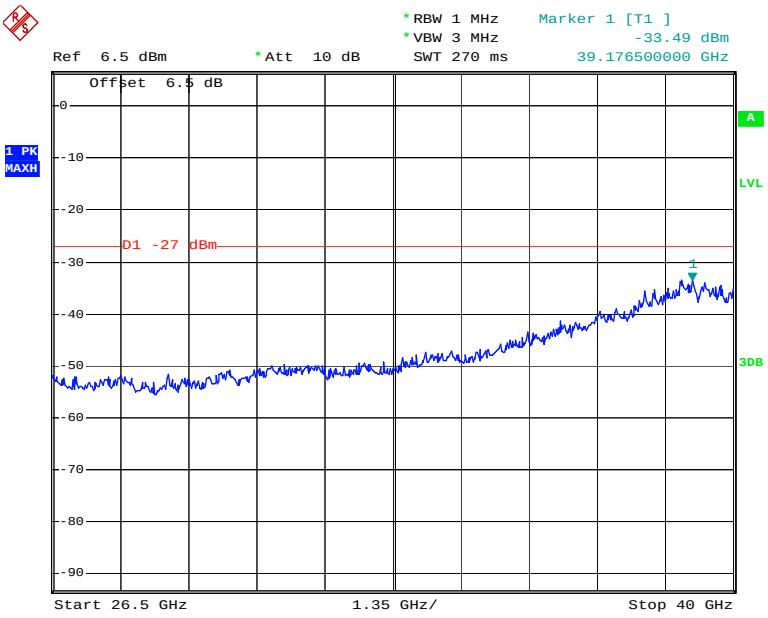
Date: 28.JUL.2014 22:59:05

Chain 1: 802.11 ac20 High Channel 1GHz-26.5GHz



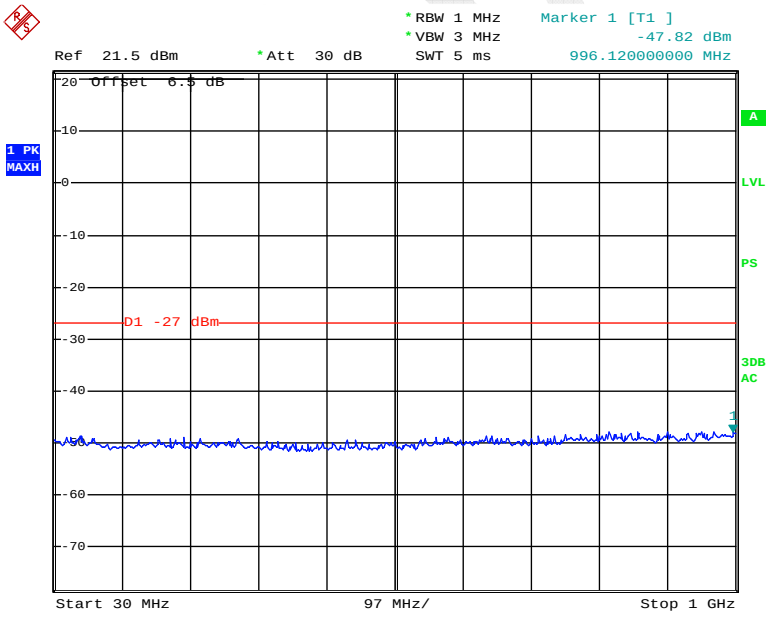
Date: 29.JUL.2014 13:10:29

Chain 1: 802.11 ac20 High Channel 26.5GHz-40GHz



Date: 29.JUL.2014 14:03:31

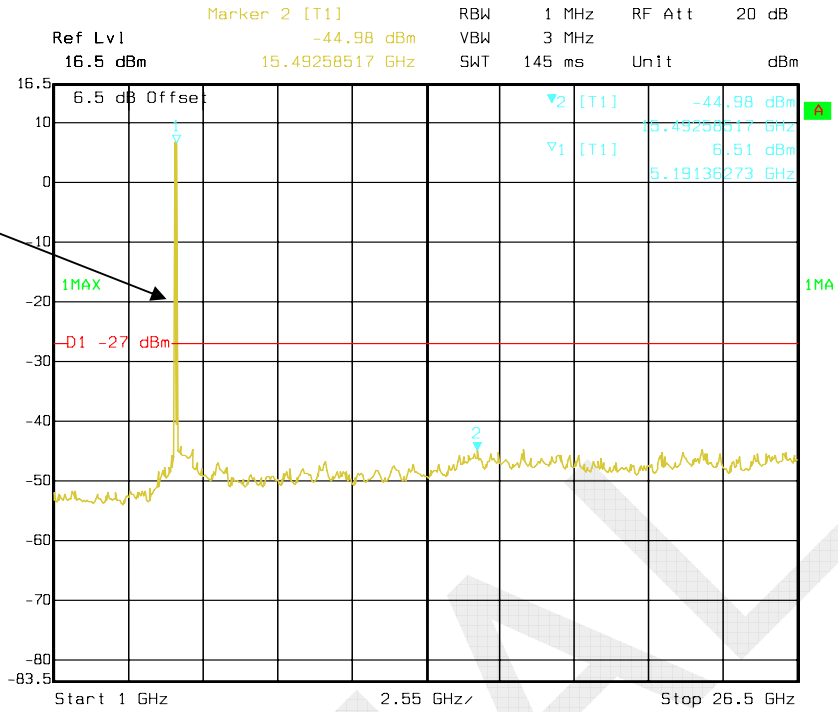
Chain 0: 802.11 ac40 Low Channel 30MHz-1GHz



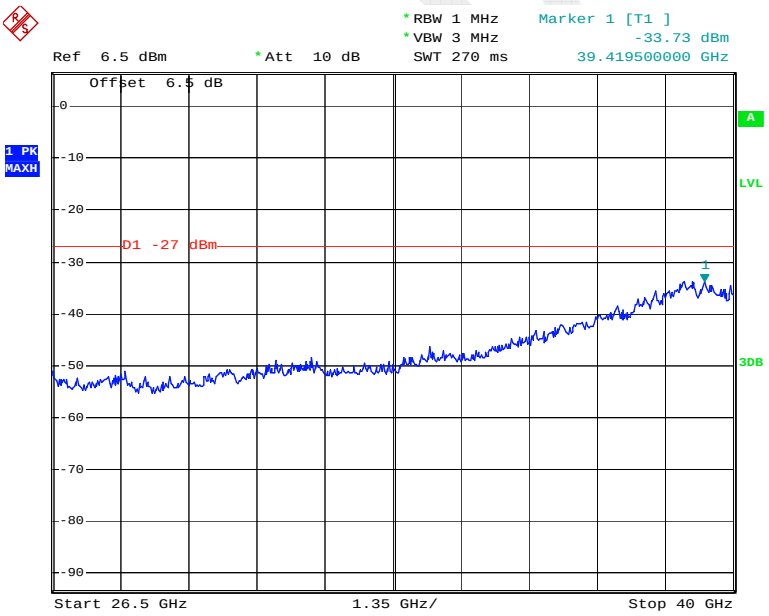
Date: 28.JUL.2014 23:00:19

Chain 0: 802.11 ac40 Low Channel 1GHz-26.5GHz

Fundamental

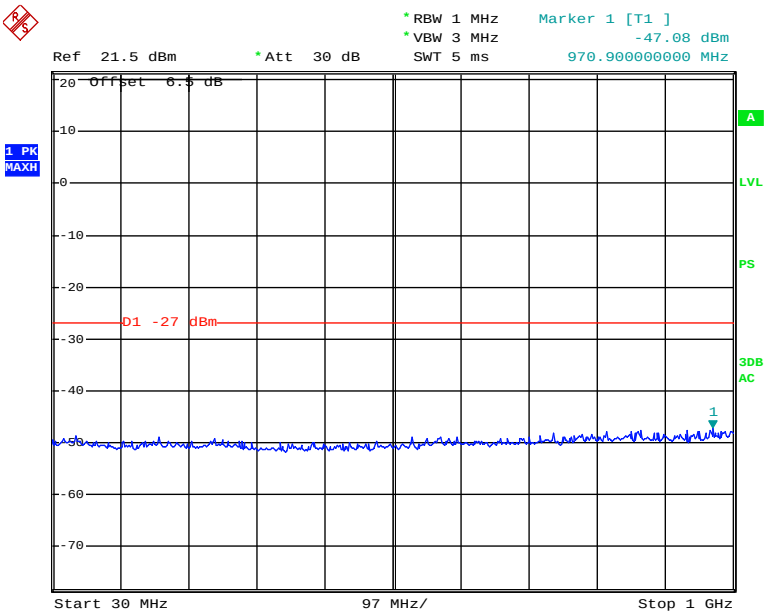


Chain 0: 802.11 ac40 Low Channel 26.5-40GHz



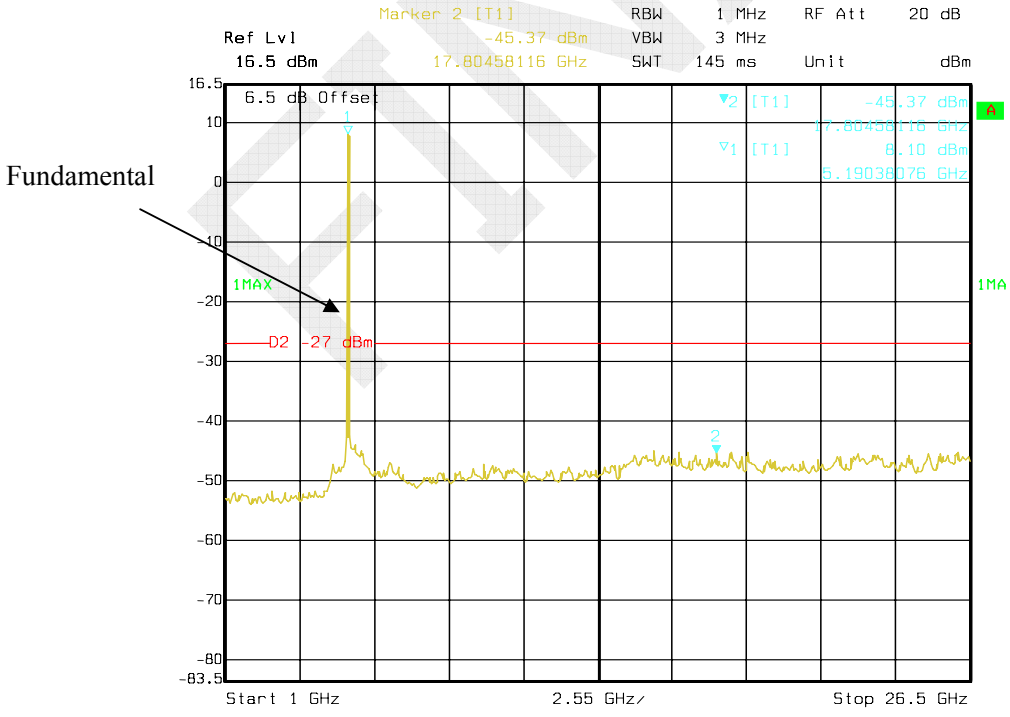
Date: 29.JUL.2014 14:04:21

Chain 0: 802.11 ac40 High Channel 30MHz-1GHz



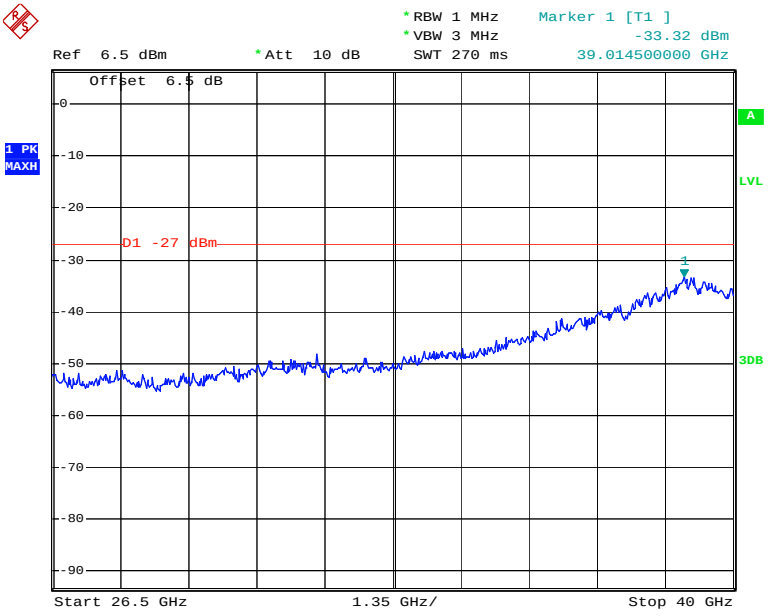
Date: 28.JUL.2014 23:01:10

Chain 0: 802.11 ac40 High Channel 1GHz-26.5GHz



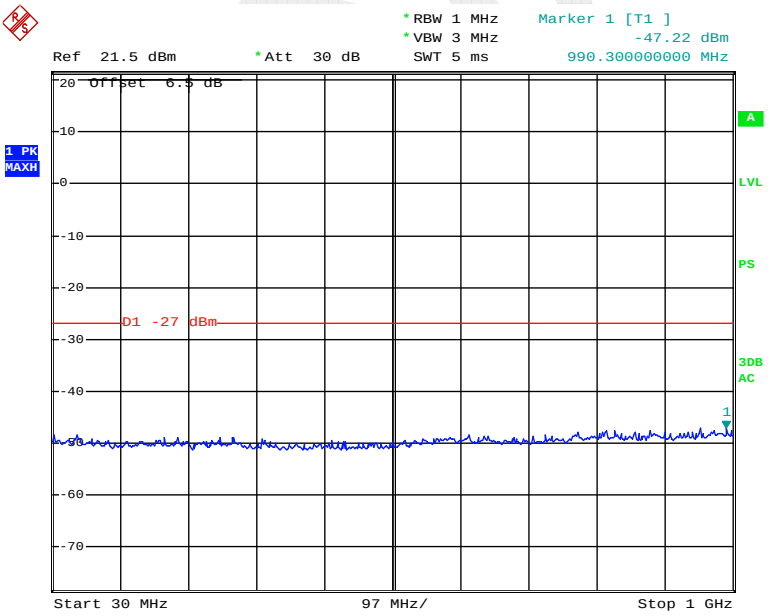
Date: 29.JUL.2014 13:56:02

Chain 0: 802.11 ac40 High Channel 26.5GHz-40GHz



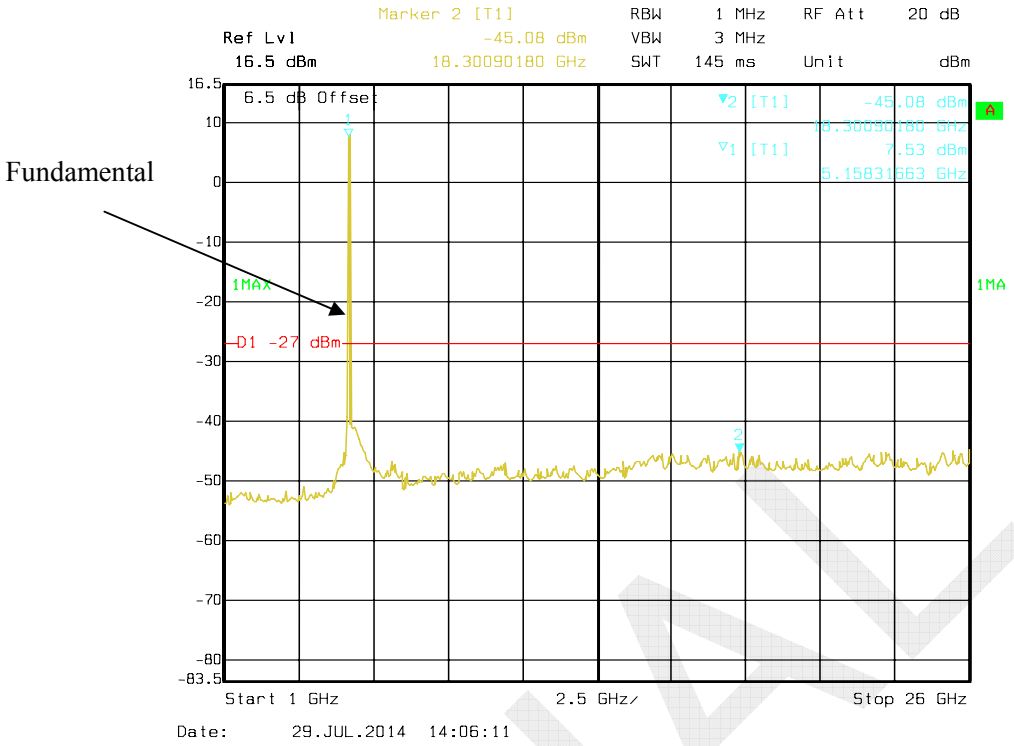
Date: 29.JUL.2014 14:05:03

Chain 1: 802.11 ac40 Low Channel 30MHz-1GHz

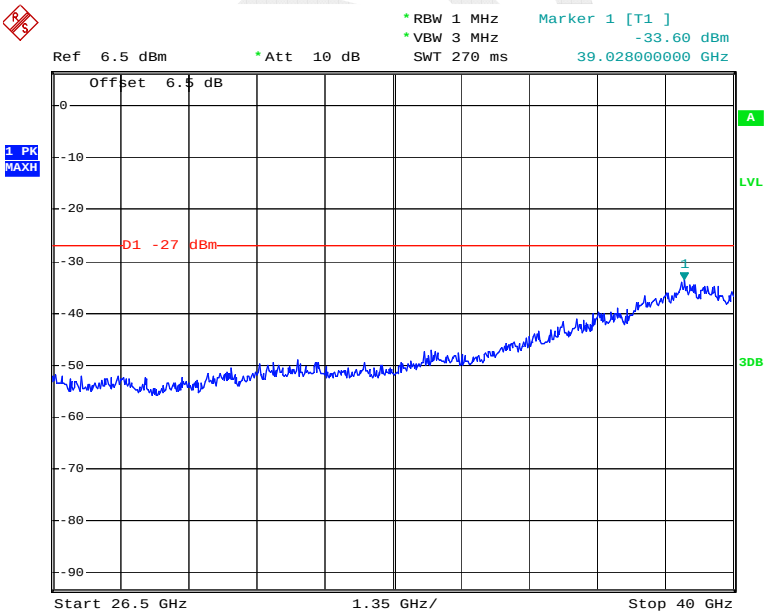


Date: 28.JUL.2014 23:01:47

Chain 1: 802.11 ac40 Low Channel 1GHz-26.5GHz

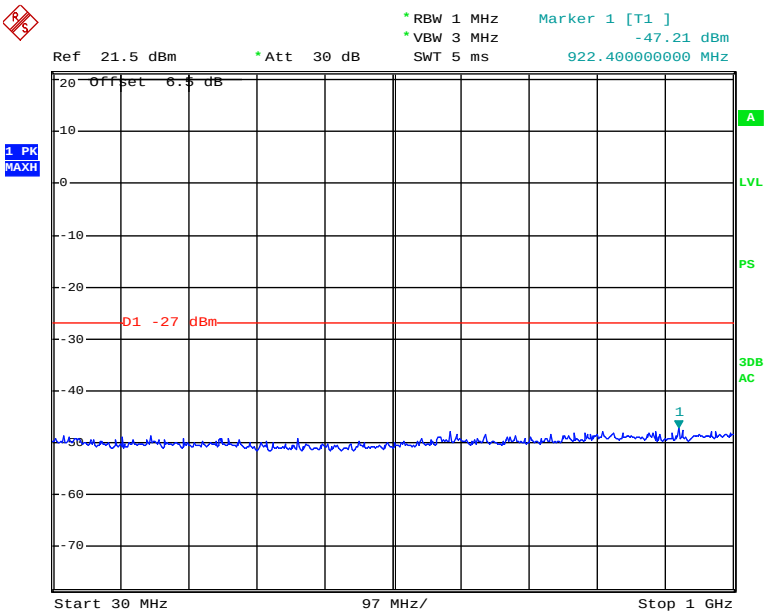


Chain 1: 802.11 ac40 Low Channel 26.5GHz-40GHz



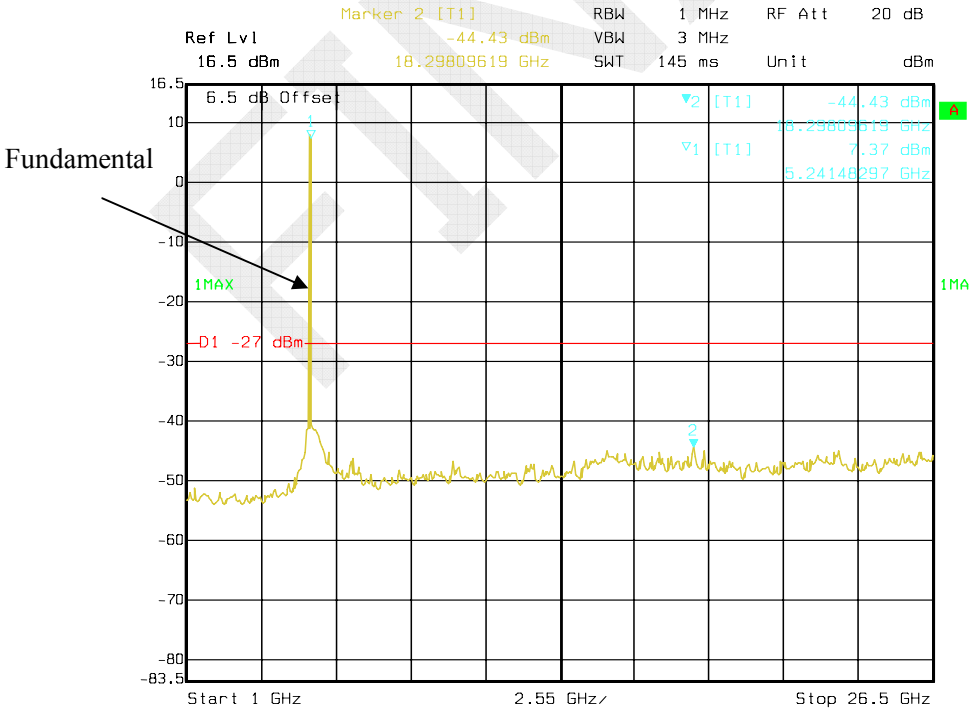
Date: 29.JUL.2014 14:05:52

Chain 1: 802.11 ac40 High Channel 30MHz-1GHz



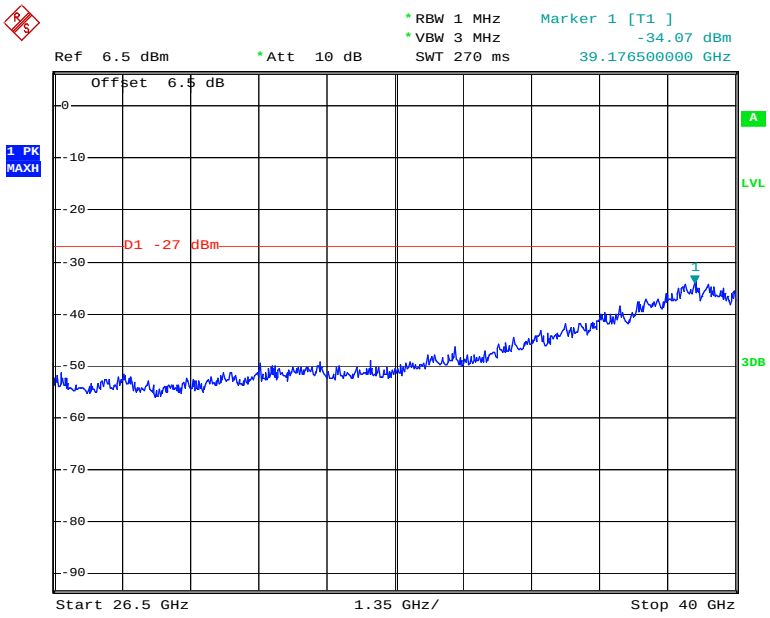
Date: 28.JUL.2014 23:02:19

Chain 1: 802.11ac40 High Channel 1GHz-26.5GHz



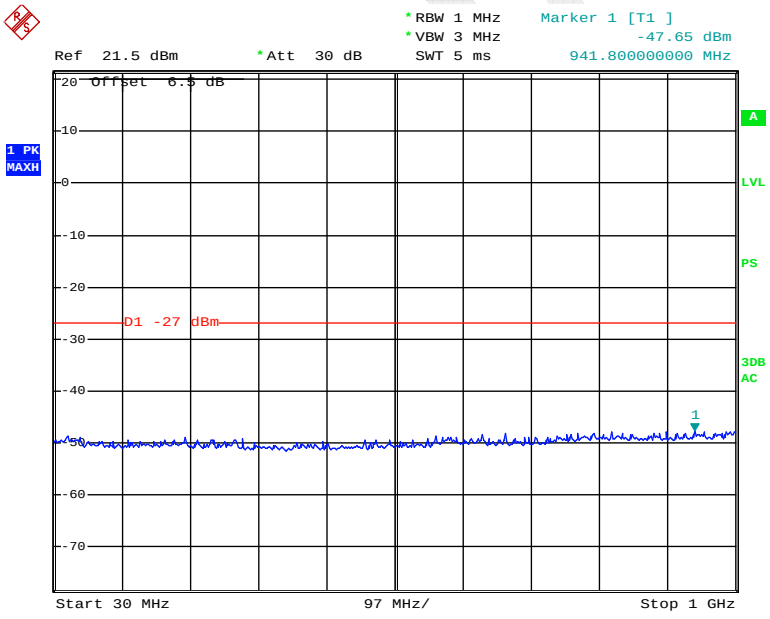
Date: 29.JUL.2014 14:01:40

Chain 1: 802.11ac40 High Channel 26.5GHz-40GHz



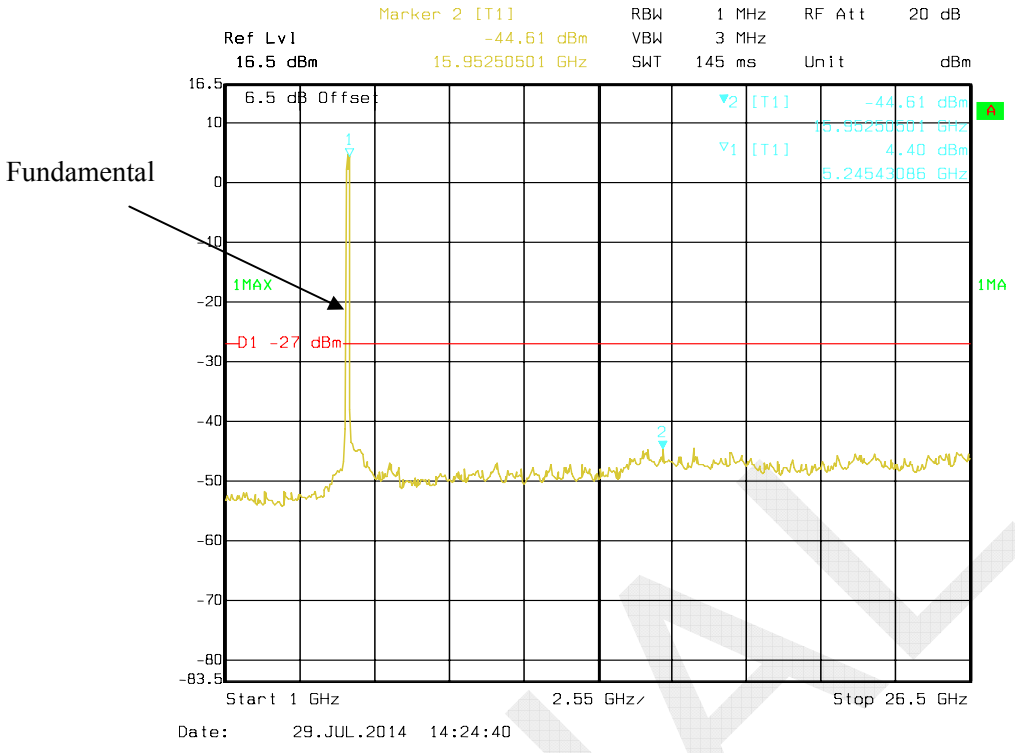
Date: 29.JUL.2014 14:09:13

Chain 0: 802.11 ac80 Low Channel 30MHz-1GHz

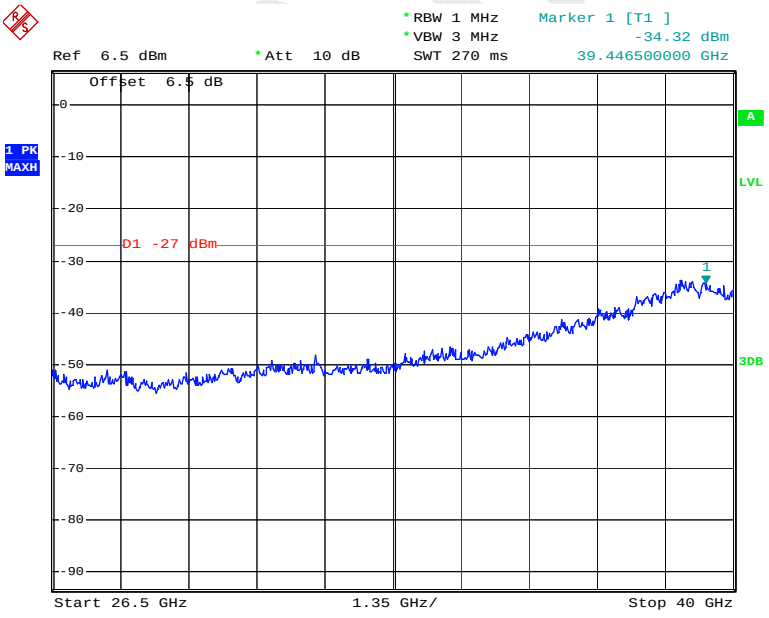


Date: 28.JUL.2014 23:02:54

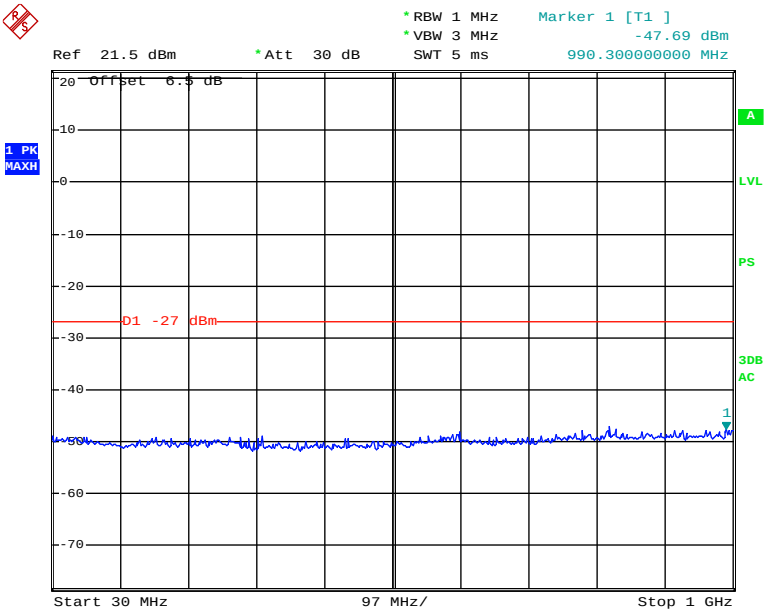
Chain 0: 802.11 ac80 Low Channel 1GHz-26.5GHz



Chain 0: 802.11 ac80 Low Channel 26.5GHz-40GHz

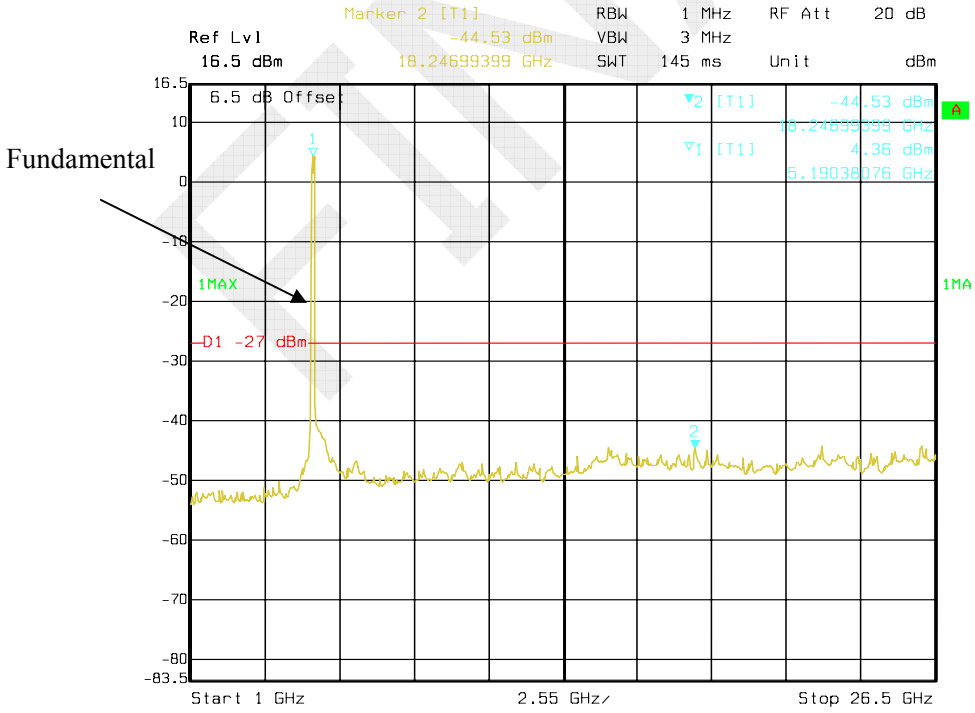


Chain 1: 802.11 ac80 Low Channel 30MHz-1GHz



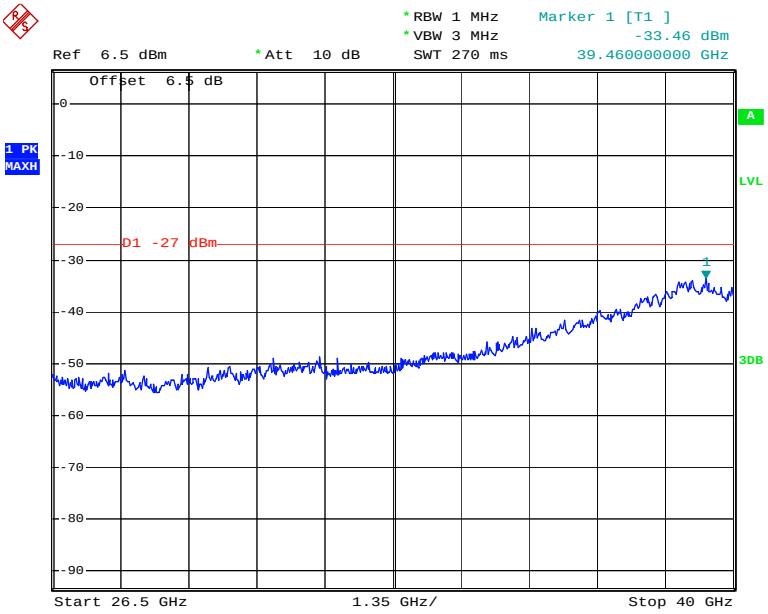
Date: 28.JUL.2014 23:03:15

Chain 1: 802.11 ac80 Low Channel 1GHz-26.5GHz



Date: 29.JUL.2014 14:17:31

Chain 1: 802.11 ac80 Low Channel 26.5GHz-40GHz



Date: 29.JUL.2014 14:10:41

FCC §15.407(b) (1) –BAND EDGE

Applicable Standard

FCC §15.407 (b) (1), (2), (3), (4);

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 EIRP of -27 dBm/MHz.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01 and KDB 662911 D01 Multiple Transmitter Output v02r01.

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:	30.4~31.5 °C
Relative Humidity:	56~57 %
ATM Pressure:	100~100.1 kPa

The testing was performed by Dean Liu from 2014-07-28 to 2014-07-29.

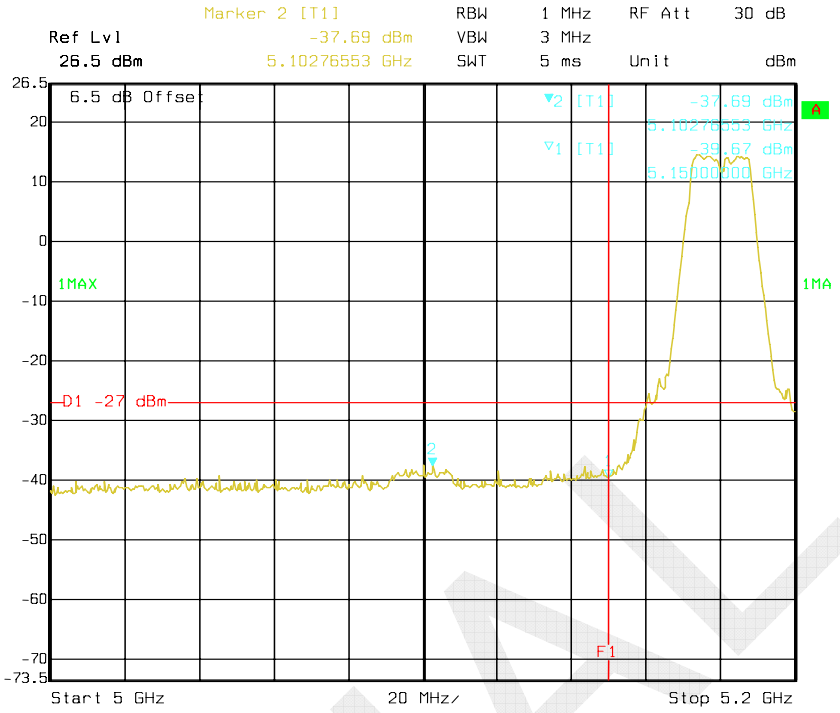
Please refer to the following table and plots.

Test mode	Band Edge	Worst Reading Level (dBm)			Limit (dBm)	Result
		Chain0	Chain1	Total		
802.11a	Left	-37.69	/	/	-27	PASS
	Right	-39.03	/	/	-27	PASS
802.11n ht20	Left	-42.07	-40.31	-38.09	-27	PASS
	Right	-43.05	-37.98	-36.80	-27	PASS
802.11n ht40	Left	-39.24	-40.43	-36.05	-27	PASS
	Right	-43.64	-38.86	-37.61	-27	PASS
802.11ac20	Left	-42.71	-40.80	-38.64	-27	PASS
	Right	-43.06	-38.72	-37.36	-27	PASS
802.11ac40	Left	-36.90	-36.05	-33.44	-27	PASS
	Right	-42.21	-39.38	-37.56	-27	PASS
802.11ac80	Left	-39.08	-37.76	-34.92	-27	PASS
	Right	-43.49	-40.10	-38.46	-27	PASS

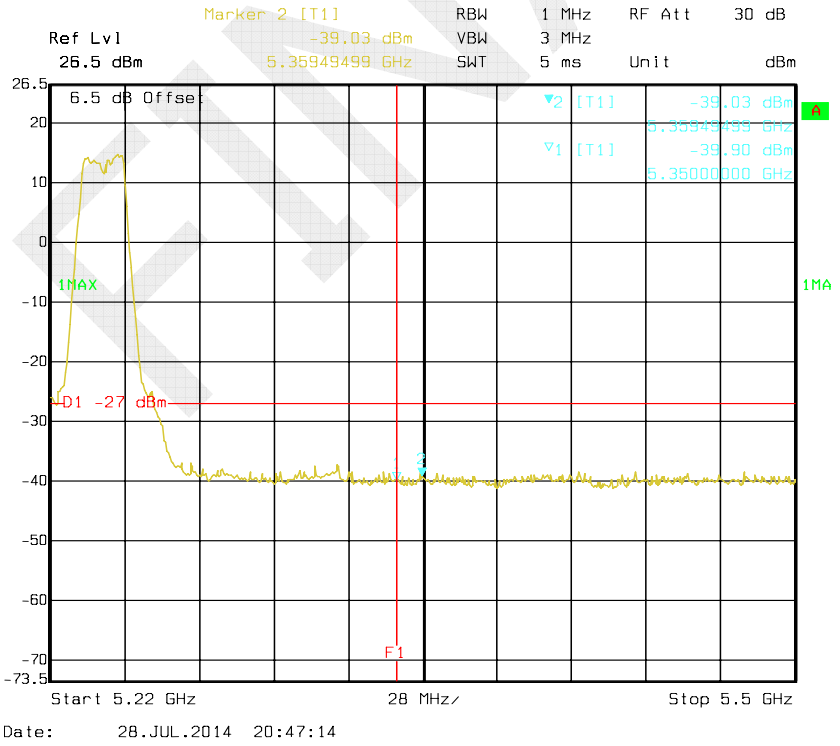
Note: Offset= Directional Antenna(dBi)+Cable loss(dB)

Directional Gain= G_{ANT} +10log (N_{ANT}) dBi =2.0+10log(2)= 5.0dBi

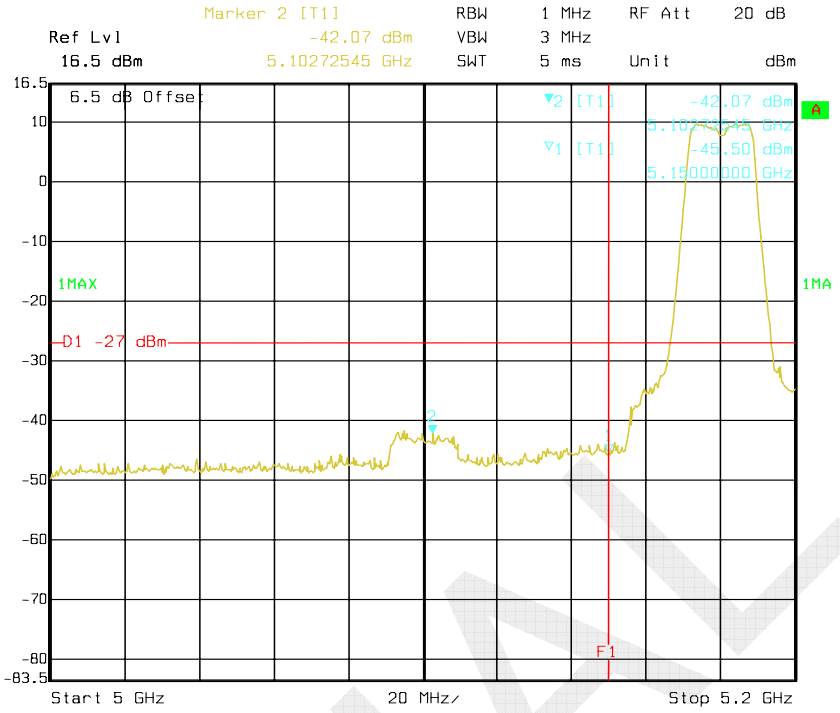
802.11a Band Edge, Left Side



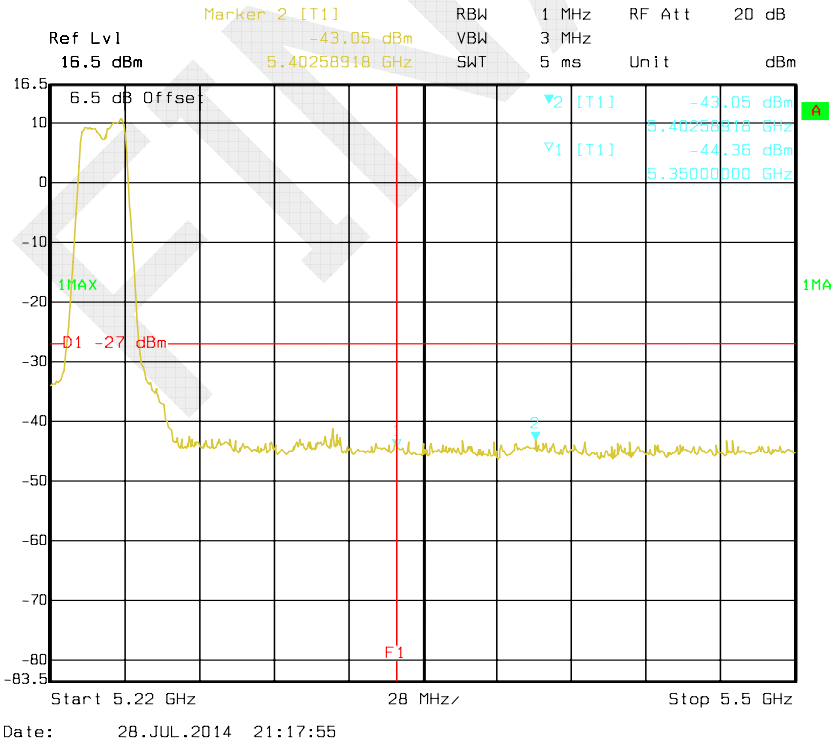
802.11a Band Edge, Right Side



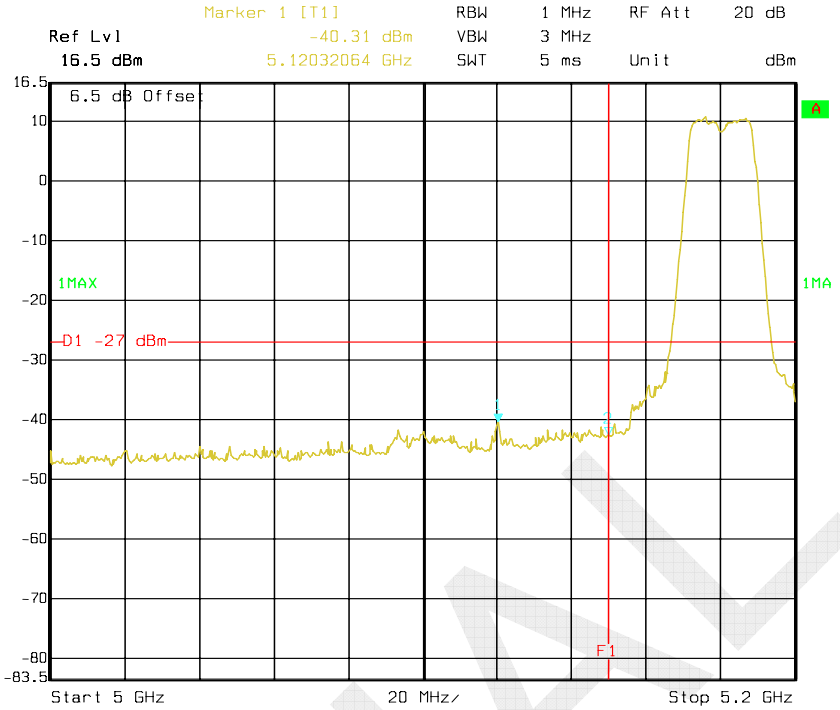
Chain 0: 802.11n ht20 Band Edge, Left Side



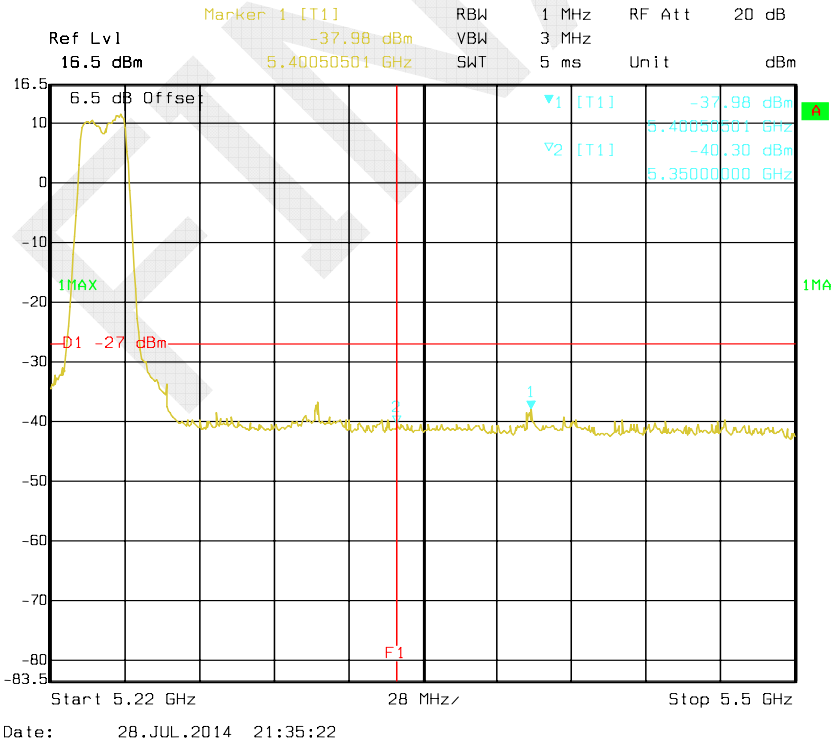
Chain 0: 802.11n ht20 Band Edge, Right Side



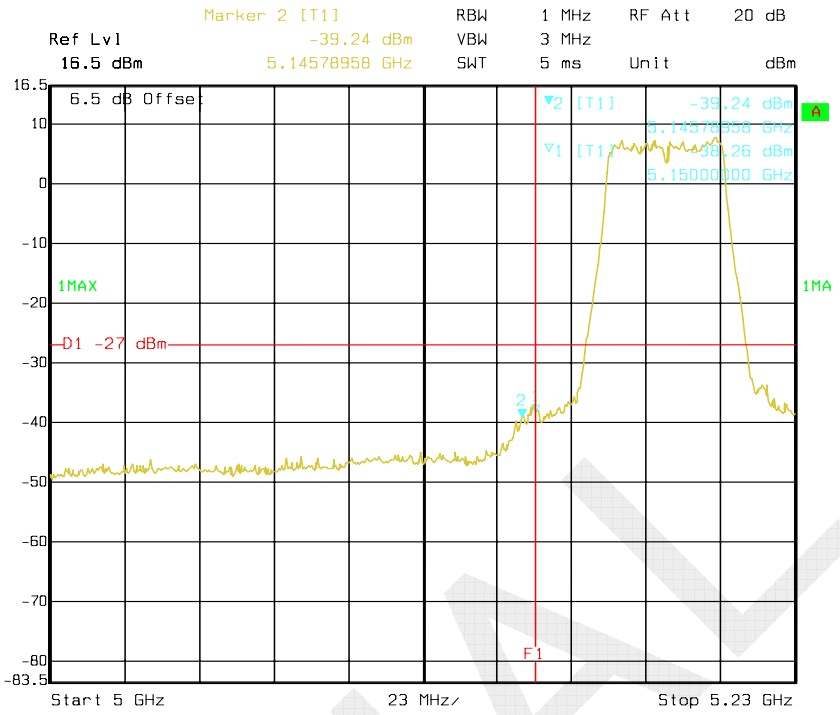
Chain 1: 802.11n ht20 Band Edge, Left Side



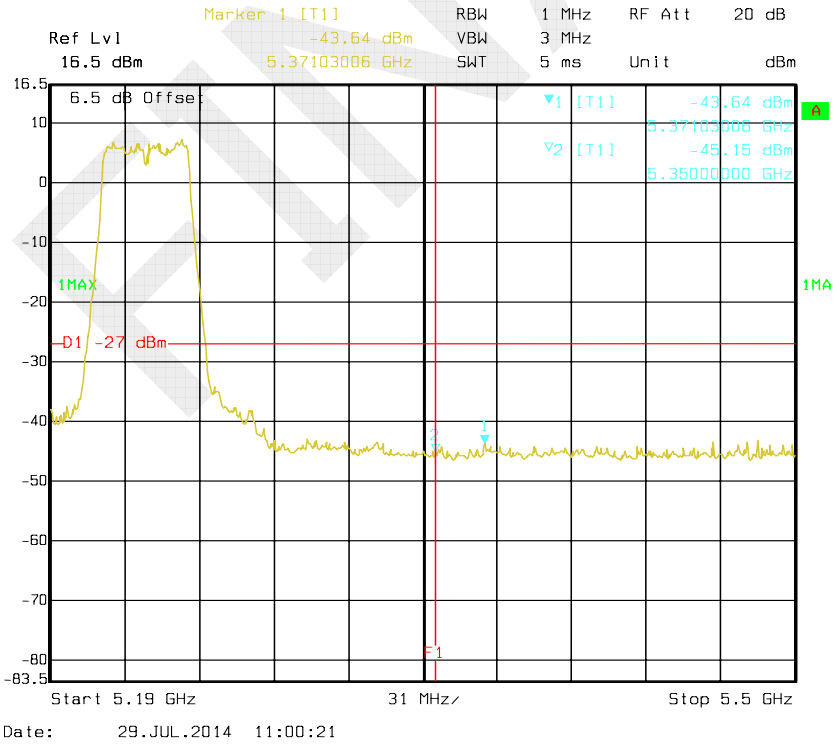
Chain 1: 802.11n ht20 Band Edge, Right Side



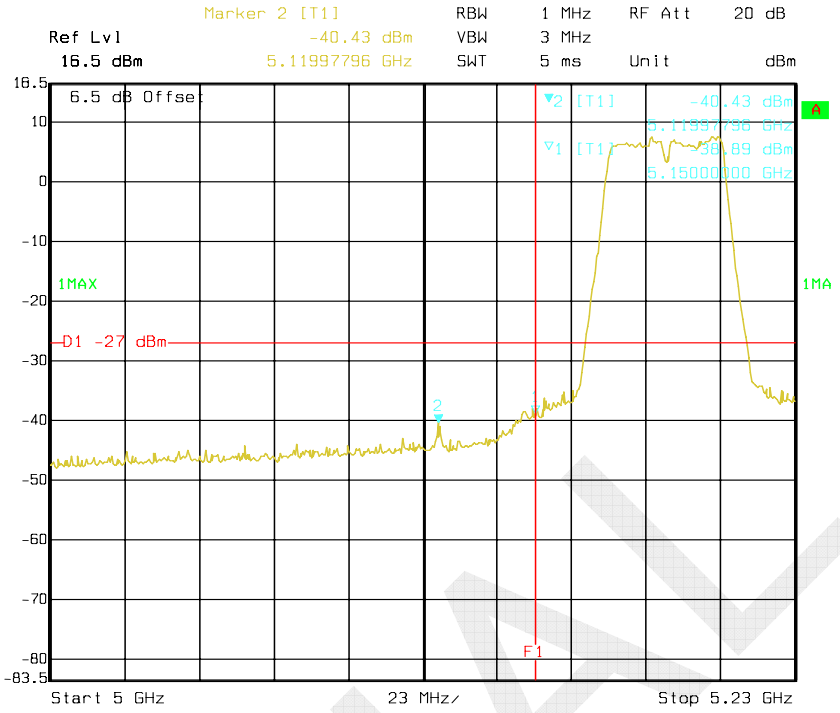
Chain 0: 802.11n ht40 Band Edge, Left Side



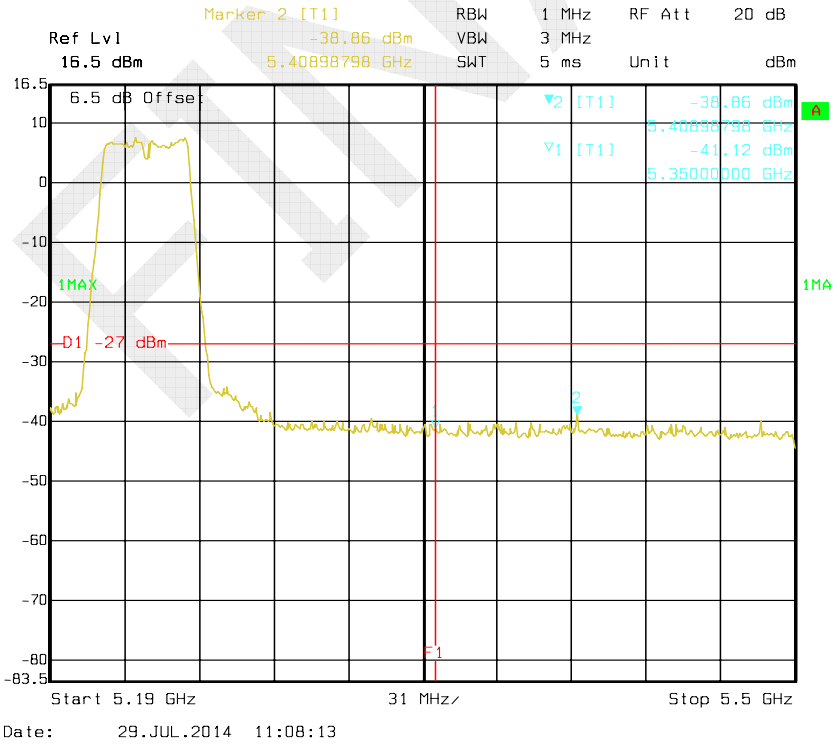
Chain 0: 802.11n ht40 Band Edge, Right Side



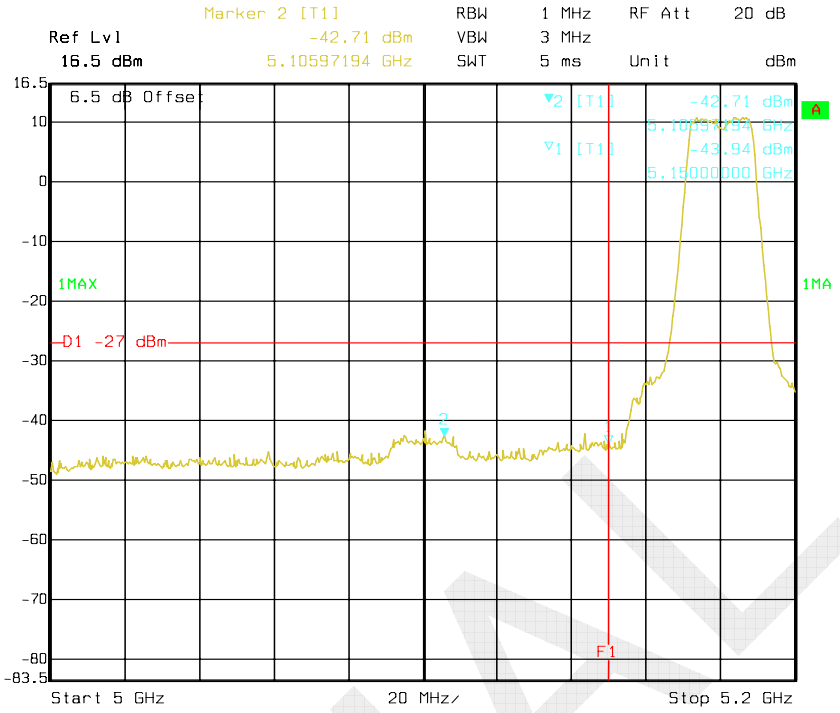
Chain 1: 802.11n ht40 Band Edge, Left Side



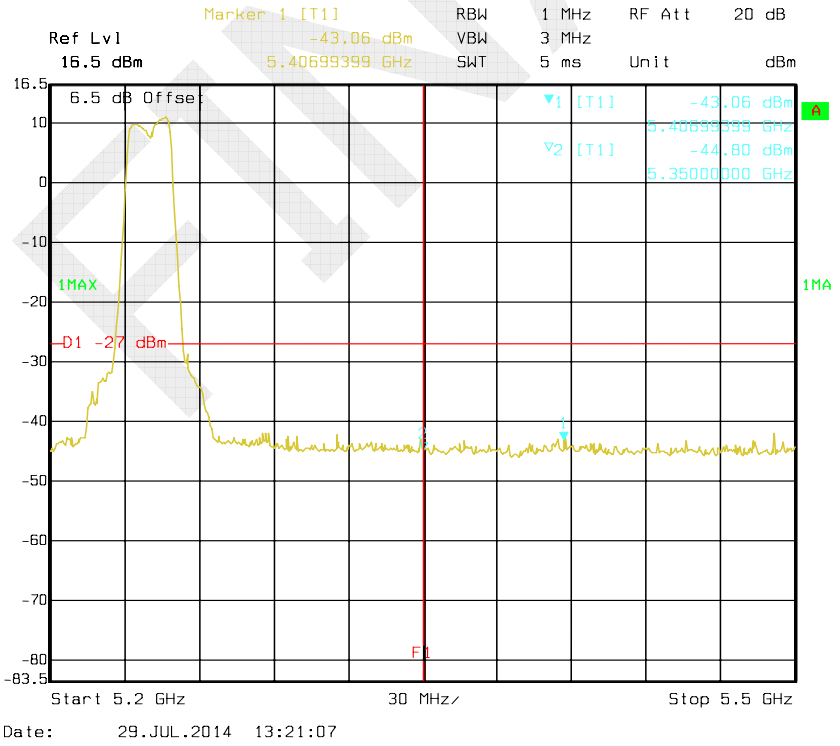
Chain 1: 802.11n ht40 Band Edge, Right Side



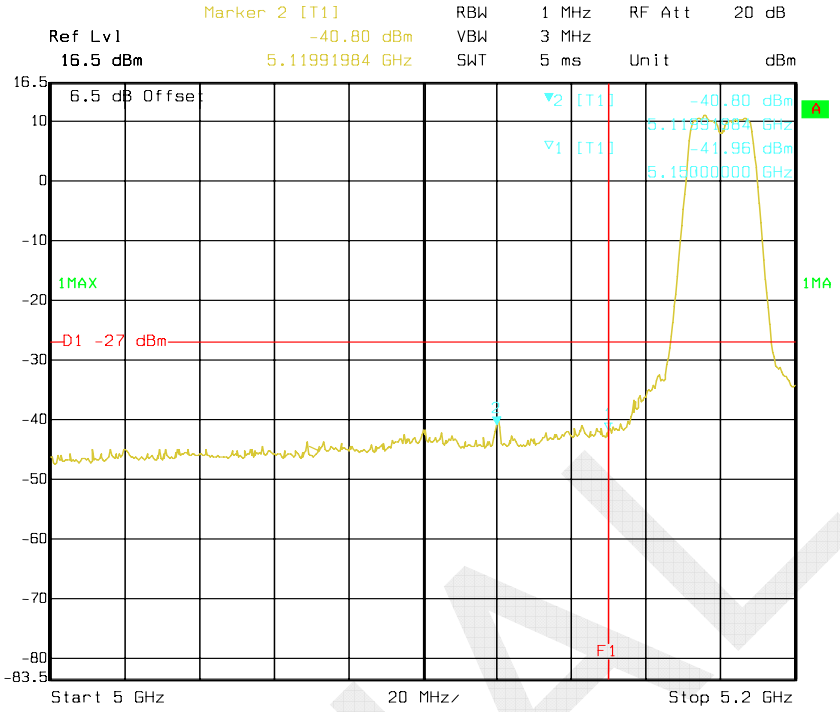
Chain 0: 802.11ac20 Band Edge, Left Side



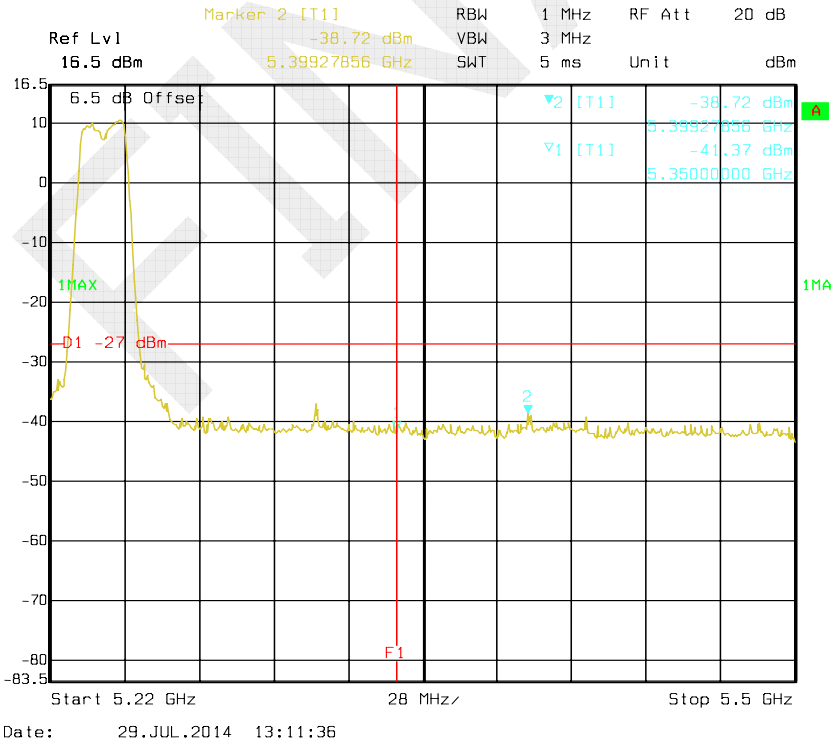
Chain 0: 802.11ac20 Band Edge, Right Side



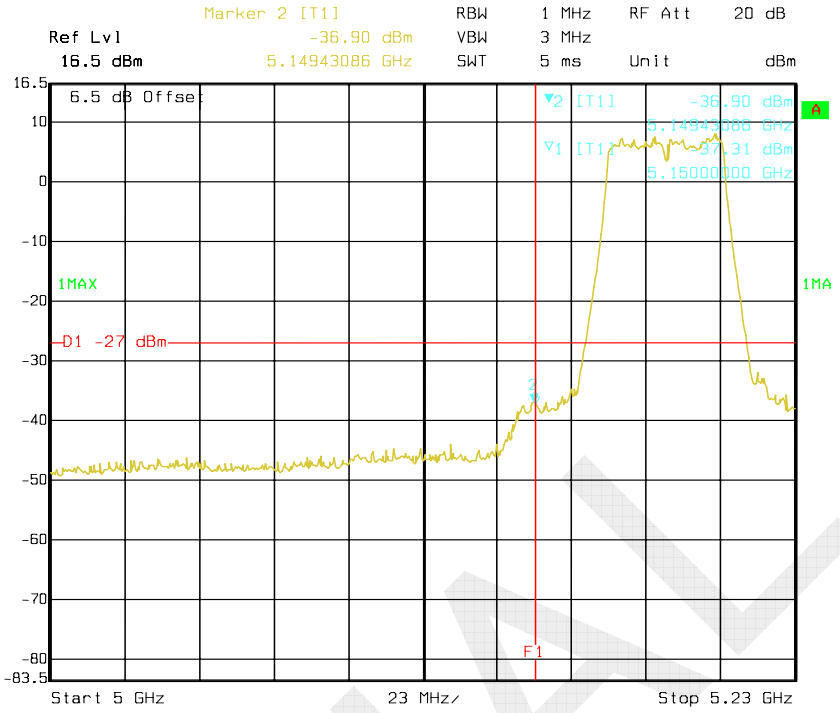
Chain 1: 802.11ac20 Band Edge, Left Side



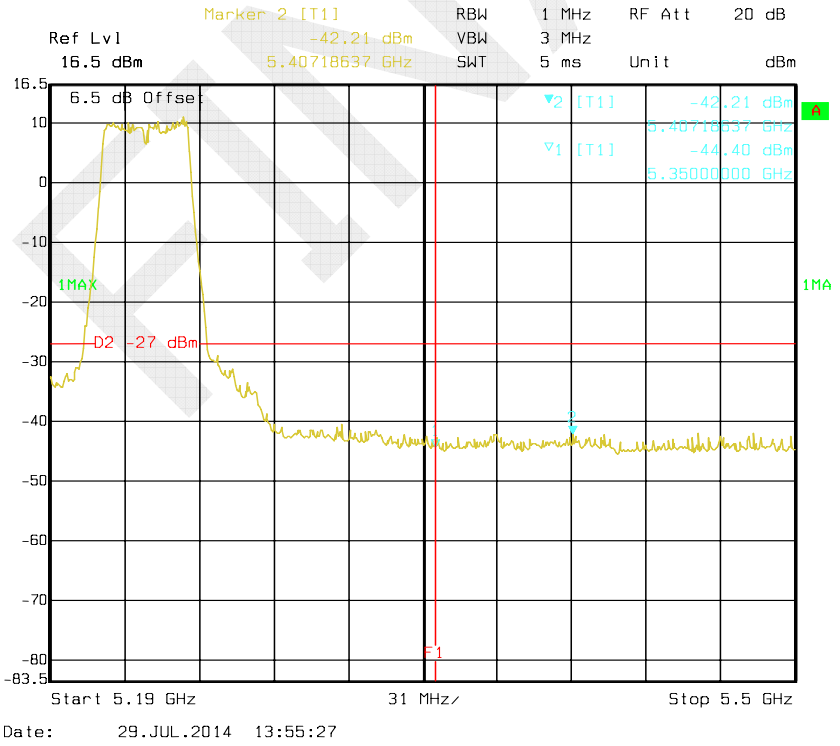
Chain 1: 802.11ac20 Band Edge, Right Side



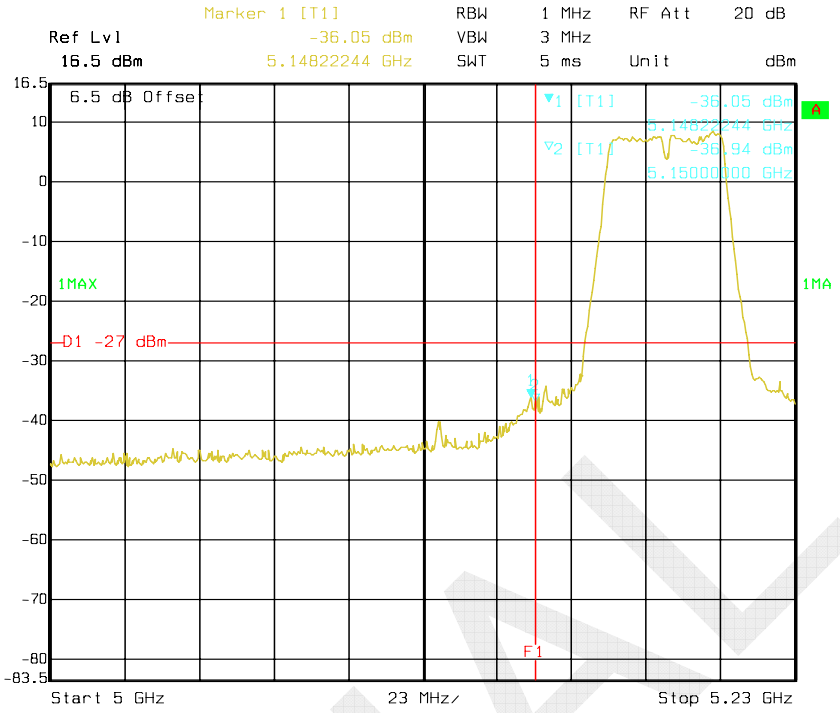
Chain 0: 802.11ac40 Band Edge, Left Side



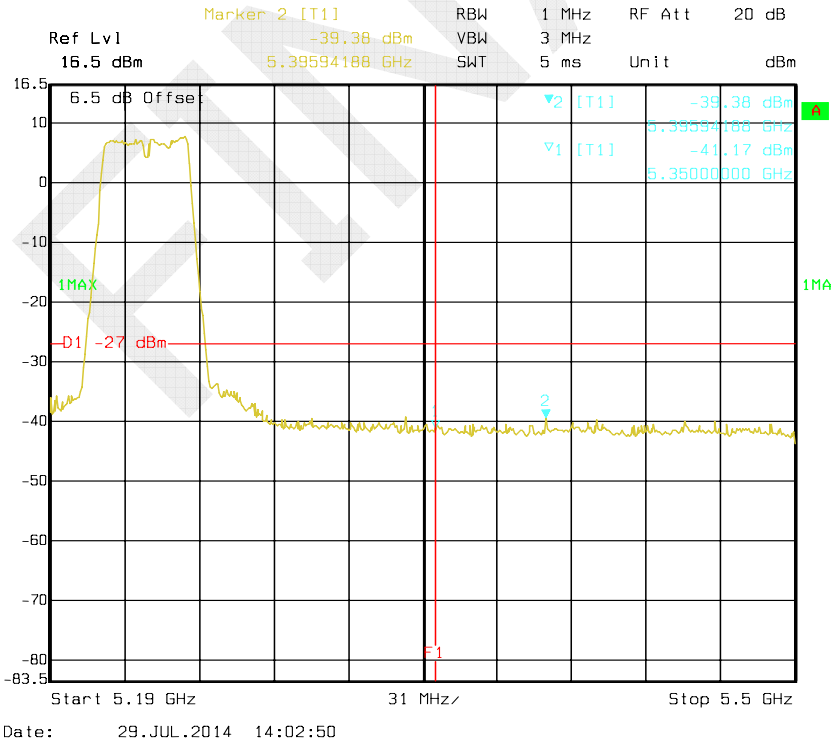
Chain 0: 802.11ac40 Band Edge, Right Side



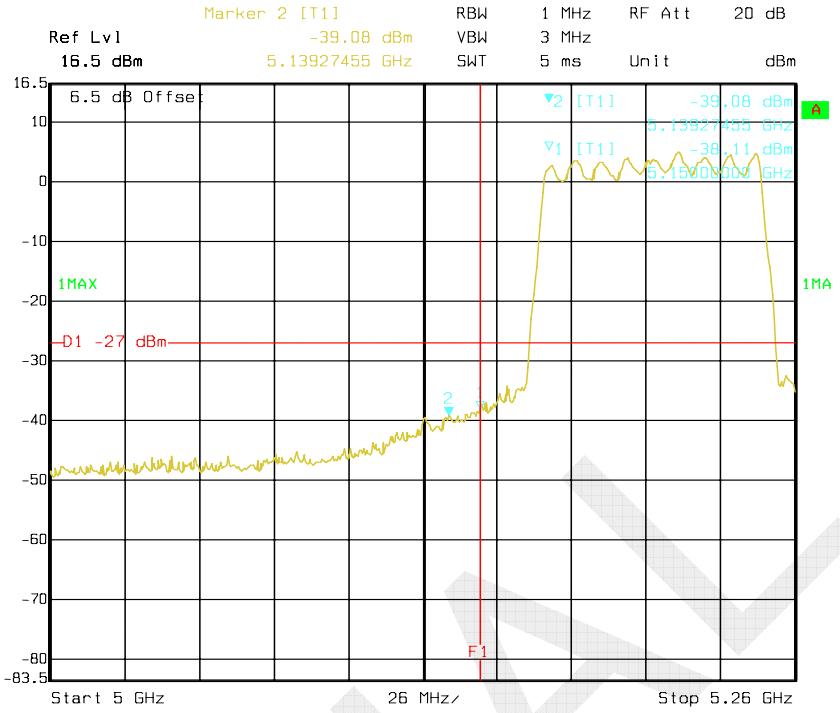
Chain 1: 802.11ac40 Band Edge, Left Side



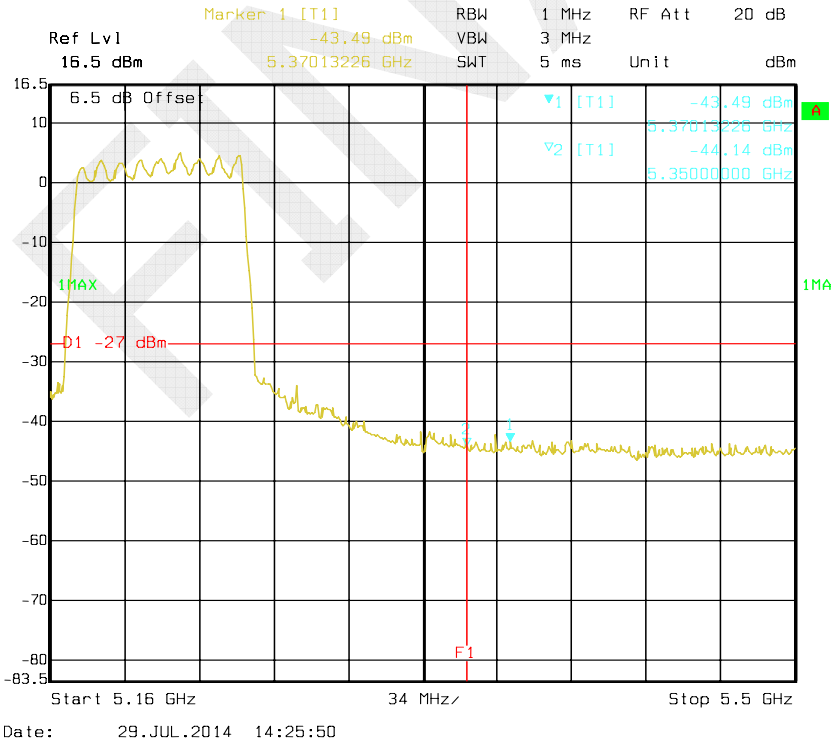
Chain 1: 802.11ac40 Band Edge, Right Side



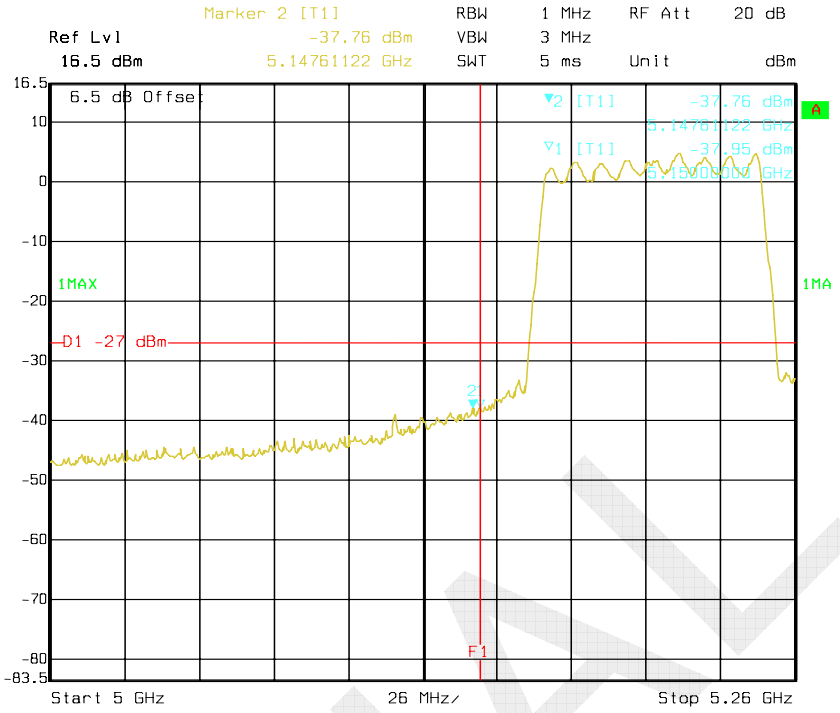
Chain 0: 802.11ac80 Band Edge, Left Side



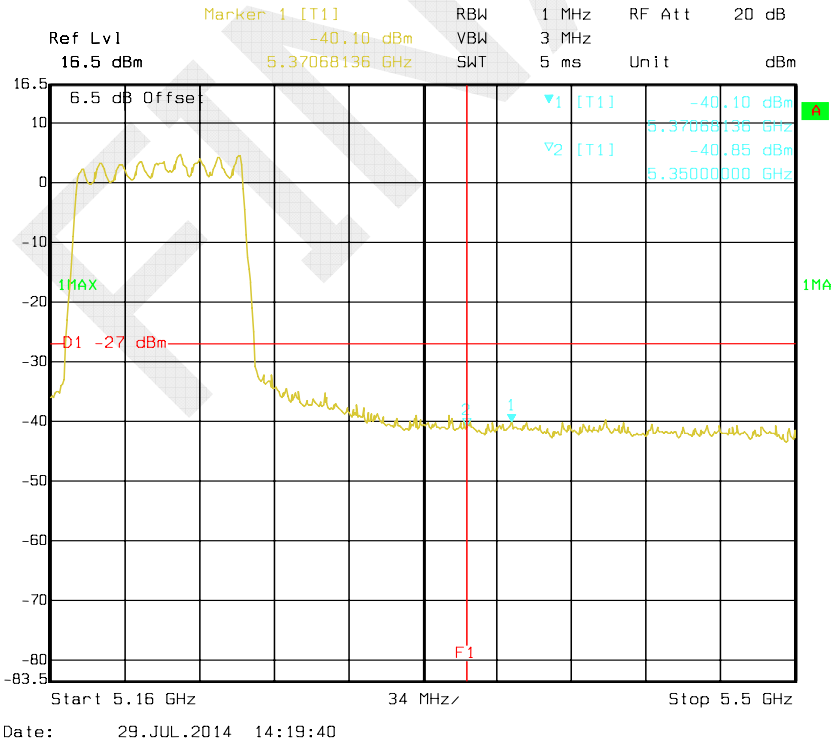
Chain 0: 802.11ac80 Band Edge, Right Side



Chain 1: 802.11ac80 Band Edge, Left Side



Chain 1: 802.11ac80 Band Edge, Right Side



FCC §15.407(a) (5) –EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH

Applicable Standard

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Test Equipment List and Details

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

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

Test Procedure

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

Test Data

Environmental Conditions

Temperature:	30.4~31.5 °C
Relative Humidity:	56~57 %
ATM Pressure:	100~100.1 kPa

The testing was performed by Dean Liu from 2014-07-28 to 2014-07-29.

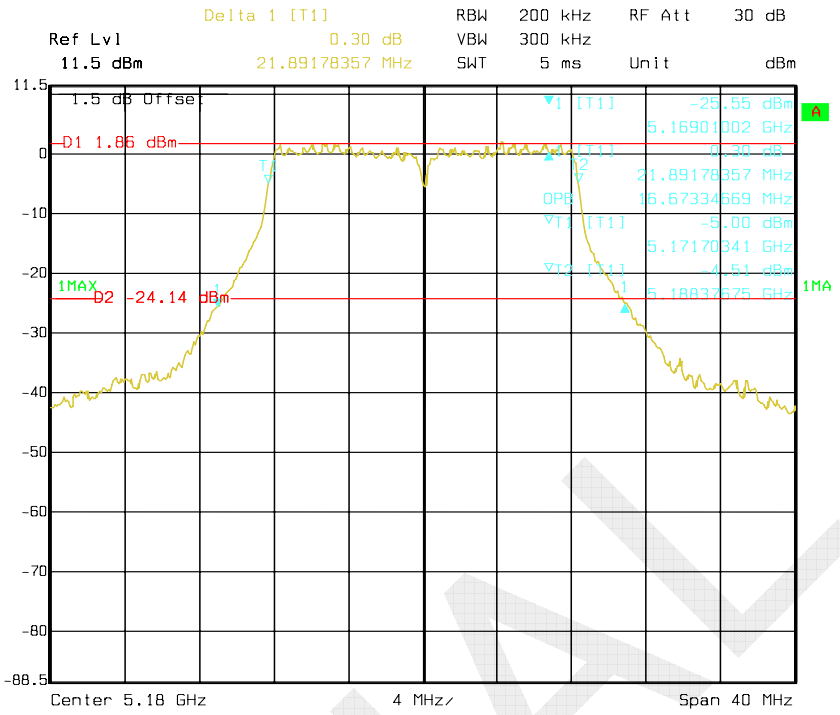
Test Result: Pass.

Please refer to the following tables and plots.

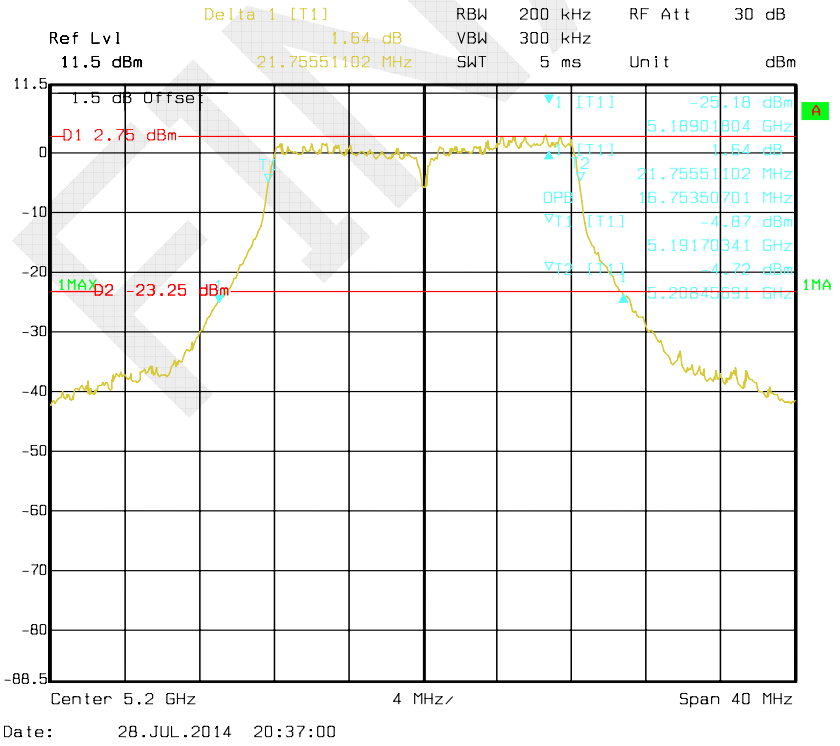
Test mode: Transmitting

Test mode	Channel	Frequency	26 dB Bandwidth(MHz)		99% Occupied Bandwidth (MHz)	
		(MHz)	Chain0	Chain1	Chain0	Chain1
802.11a	Low	5180	21.89	/	16.67	/
	Middle	5200	21.76	/	16.75	/
	High	5240	21.68	/	16.75	/
802.11n ht20	Low	5180	21.43	21.36	17.72	17.80
	Middle	5200	21.28	21.43	17.80	17.88
	High	5240	21.20	21.60	17.80	17.88
802.11n ht40	Low	5190	43.49	44.15	36.55	36.87
	High	5230	43.51	44.31	36.55	37.03
802.11ac20	Low	5180	21.43	21.36	17.71	17.80
	Middle	5200	21.43	21.52	17.80	17.88
	High	5240	21.43	21.76	17.80	17.88
802.11ac40	Low	5190	43.40	43.99	36.55	36.87
	High	5230	43.83	44.31	36.55	37.03
802.11ac80	Low	5210	84.81	84.81	76.31	76.63

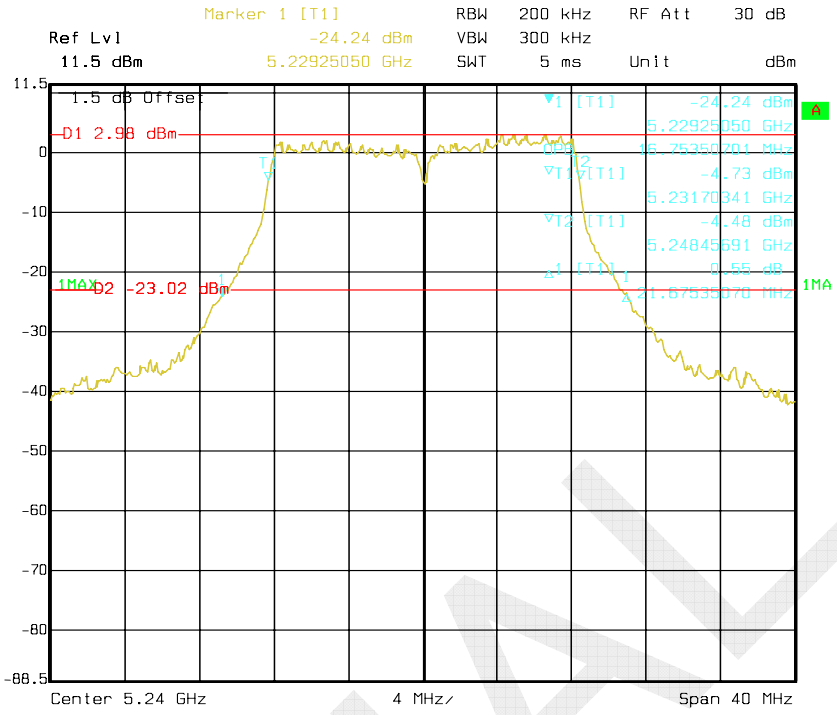
802.11a Low Channel



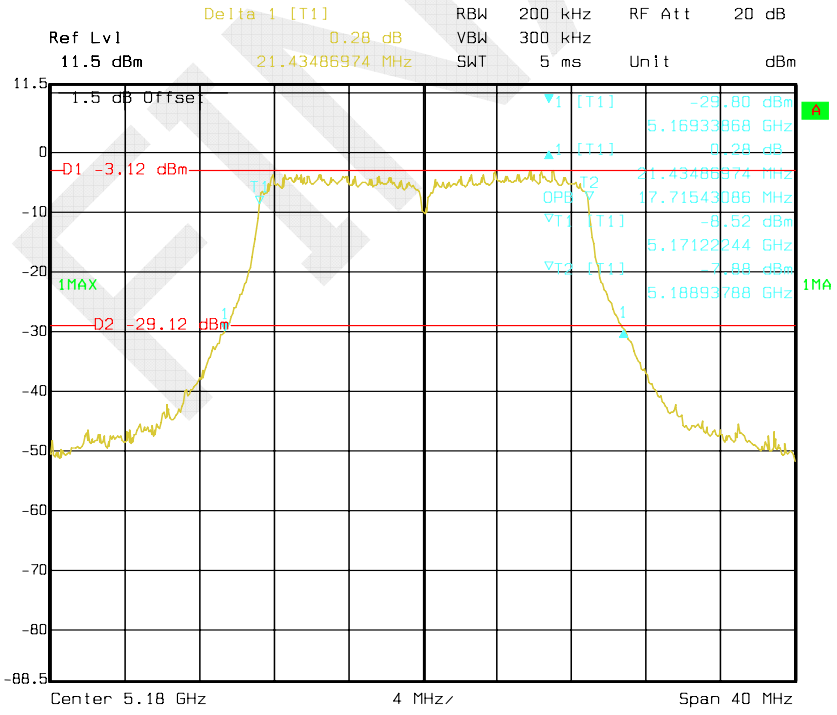
802.11a Middle Channel



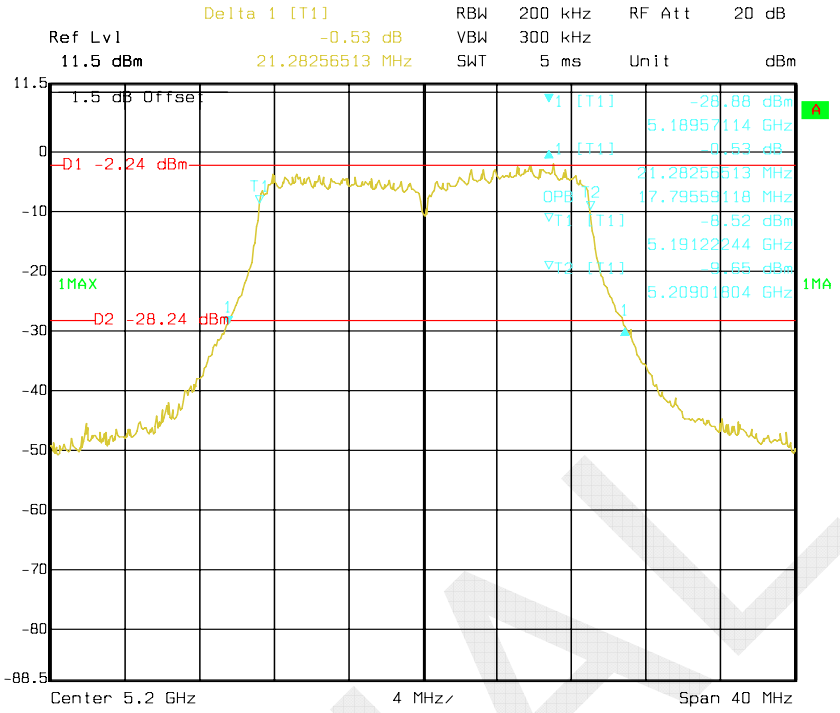
802.11a High Channel



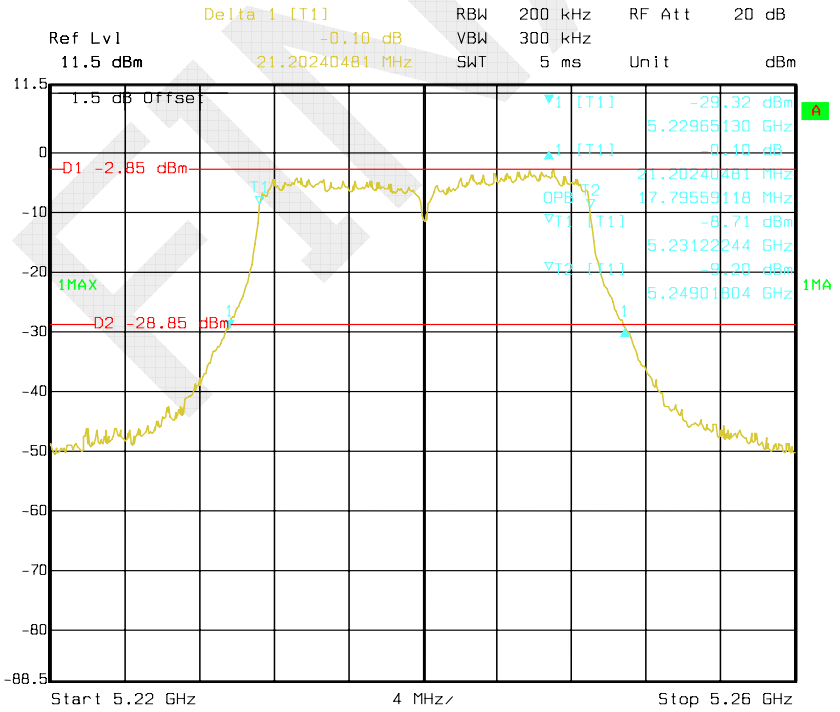
Chain 0:802.11n ht20 Low Channel



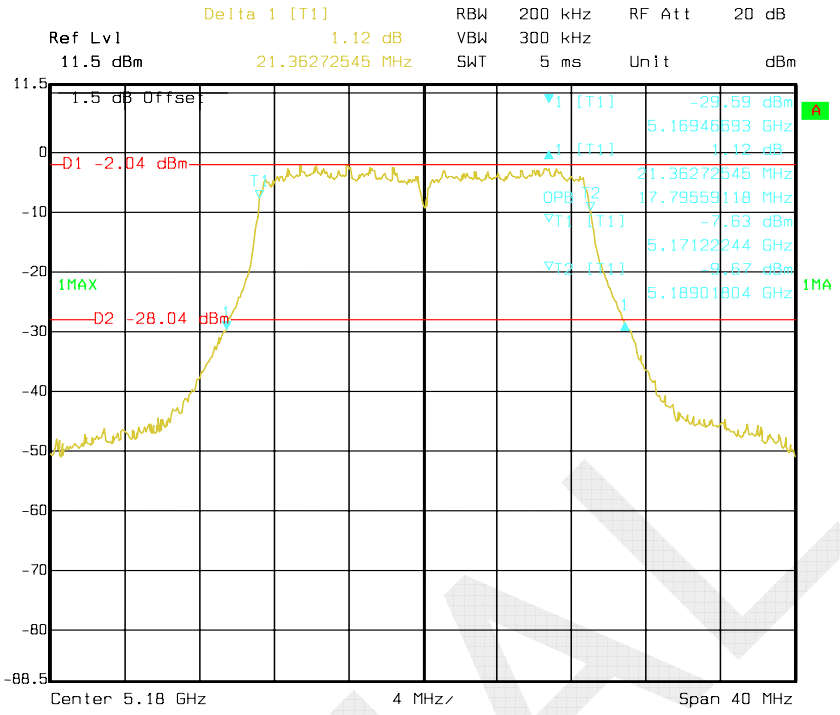
Chain 0:802.11n ht20 Middle Channel



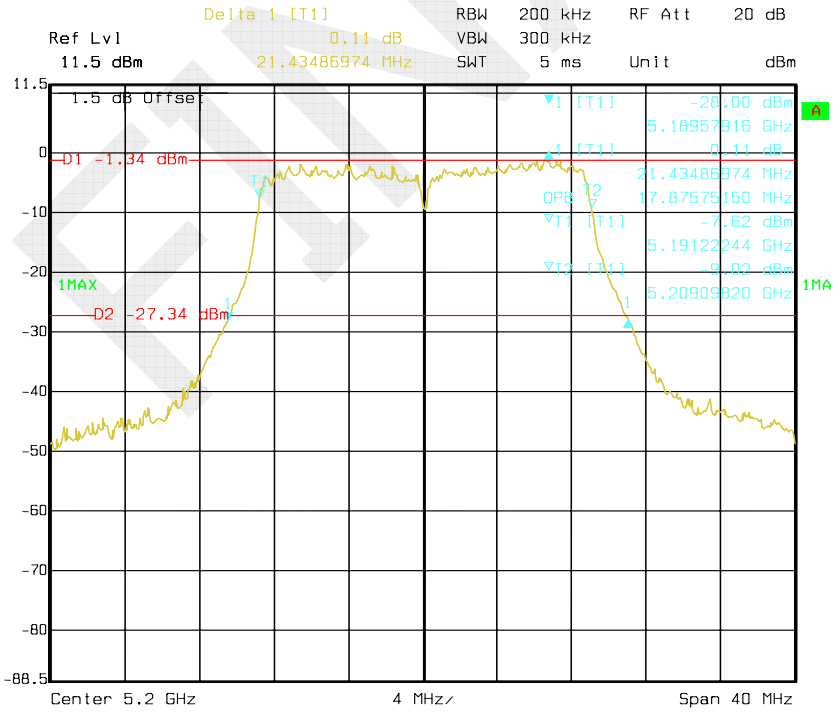
Chain 0:802.11n ht20 High Channel



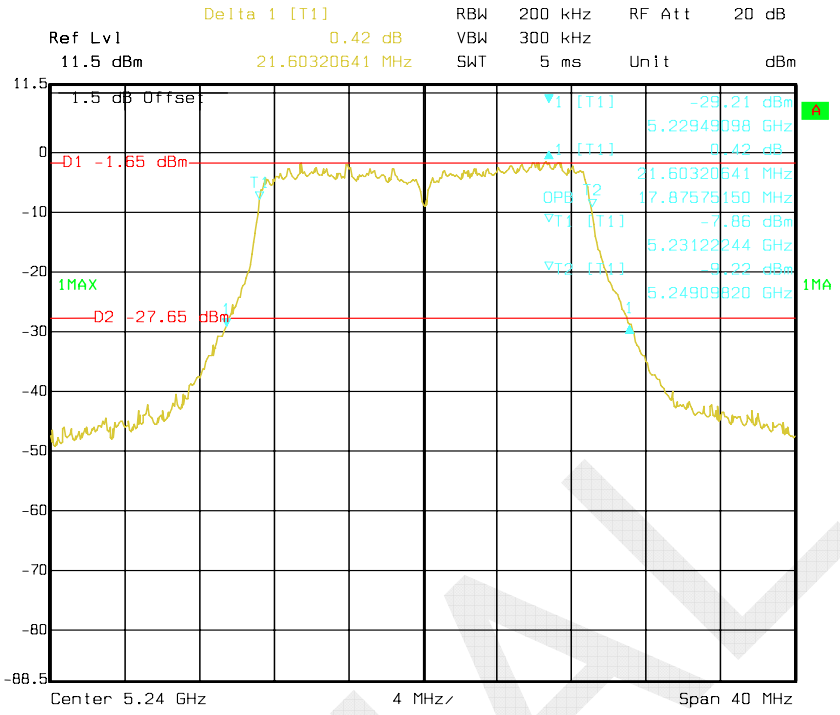
Chain 1:802.11n ht20 Low Channel



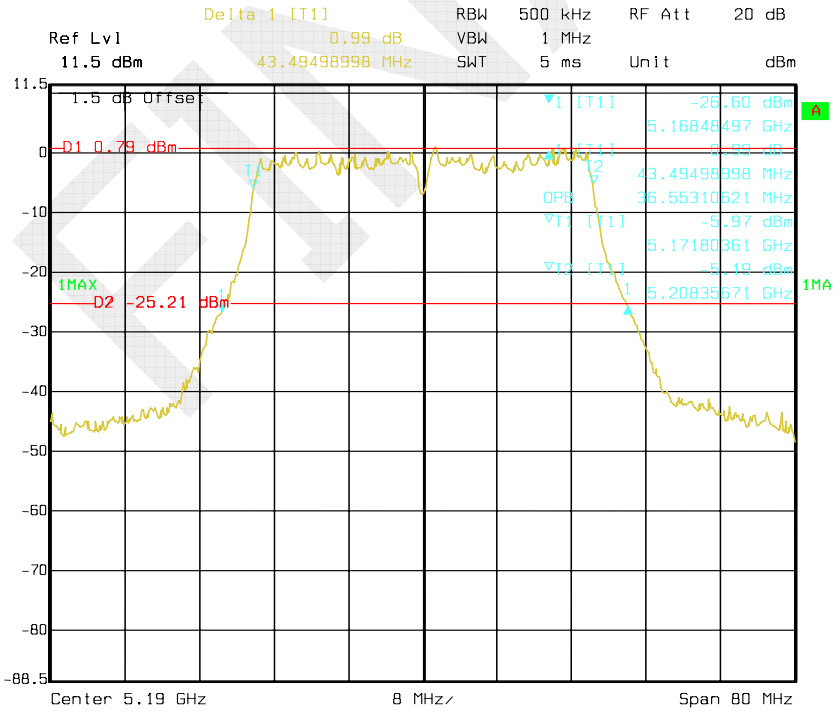
Chain 1:802.11n ht20 Middle Channel



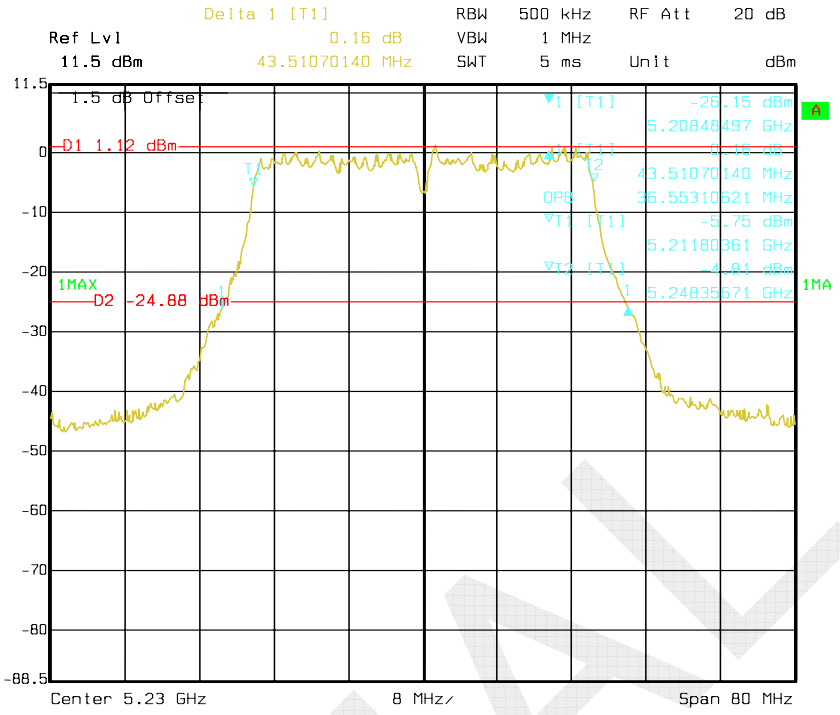
Chain 1:802.11n ht20 High Channel



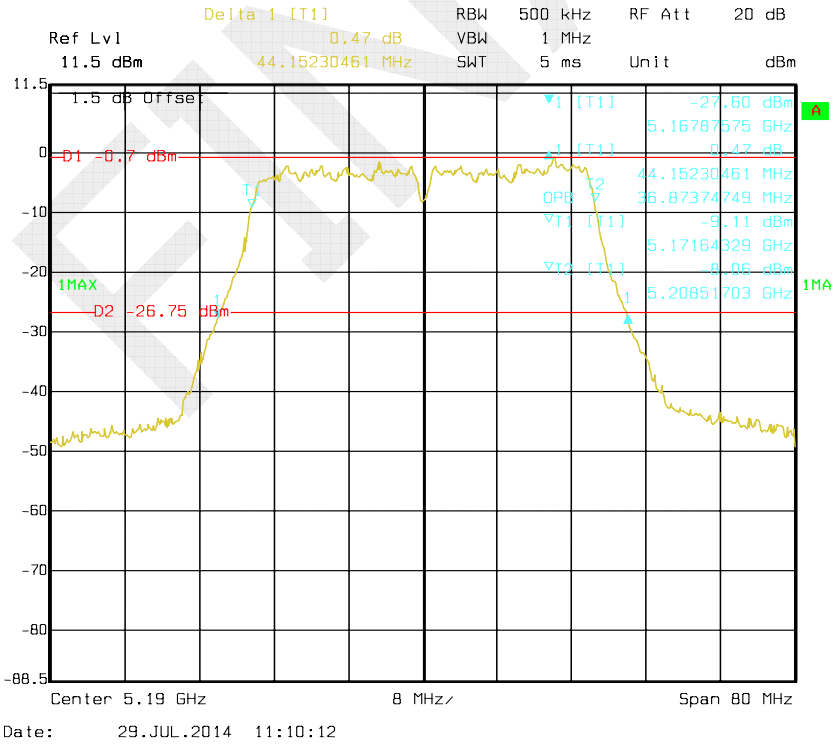
Chain 0:802.11n ht40 Low Channel



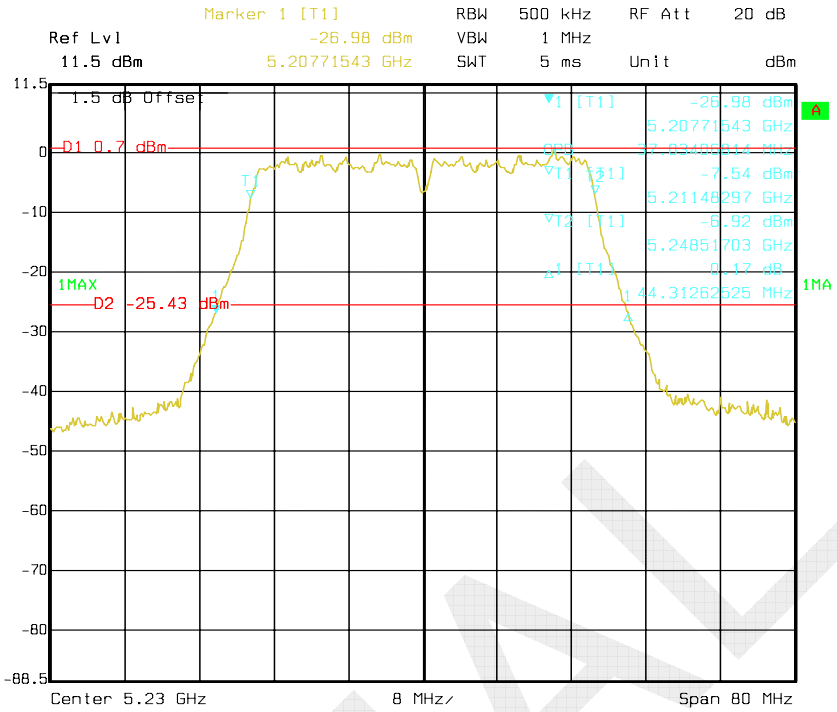
Chain 0:802.11n ht40 High Channel



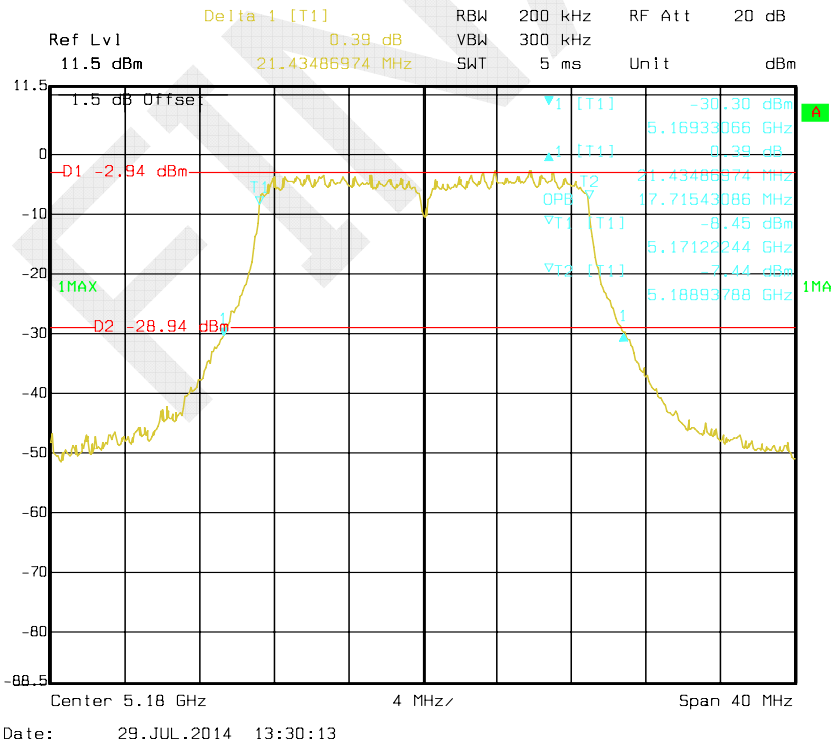
Chain 1:802.11n ht40 Low Channel



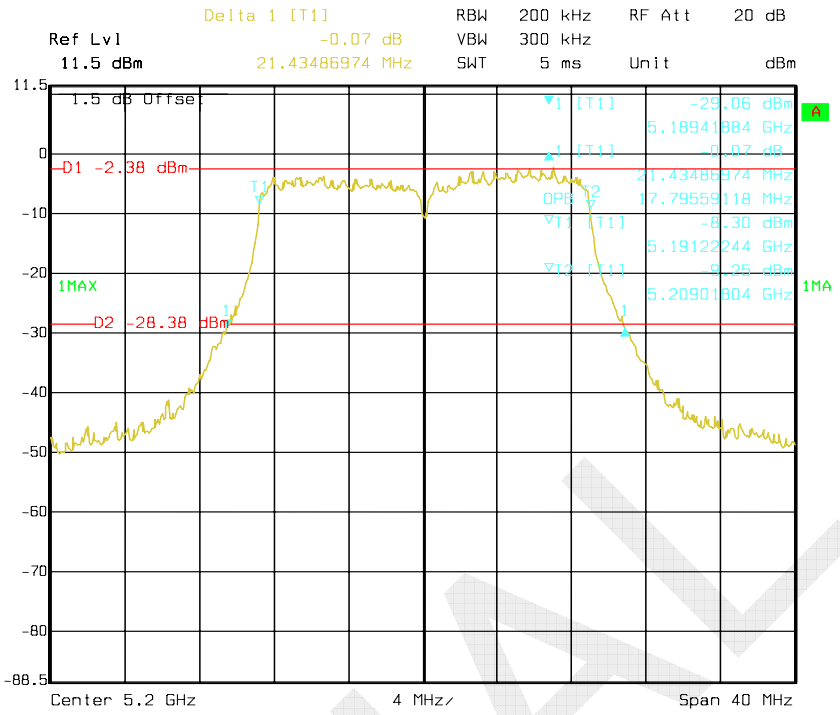
Chain 1:802.11n ht40 High Channel



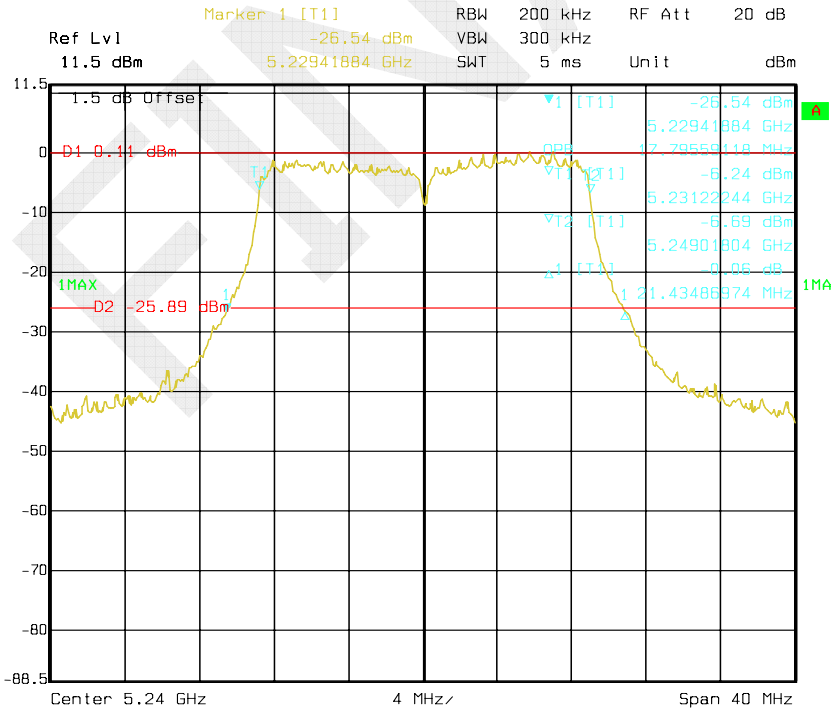
Chain 0:802.11ac20 Low Channel



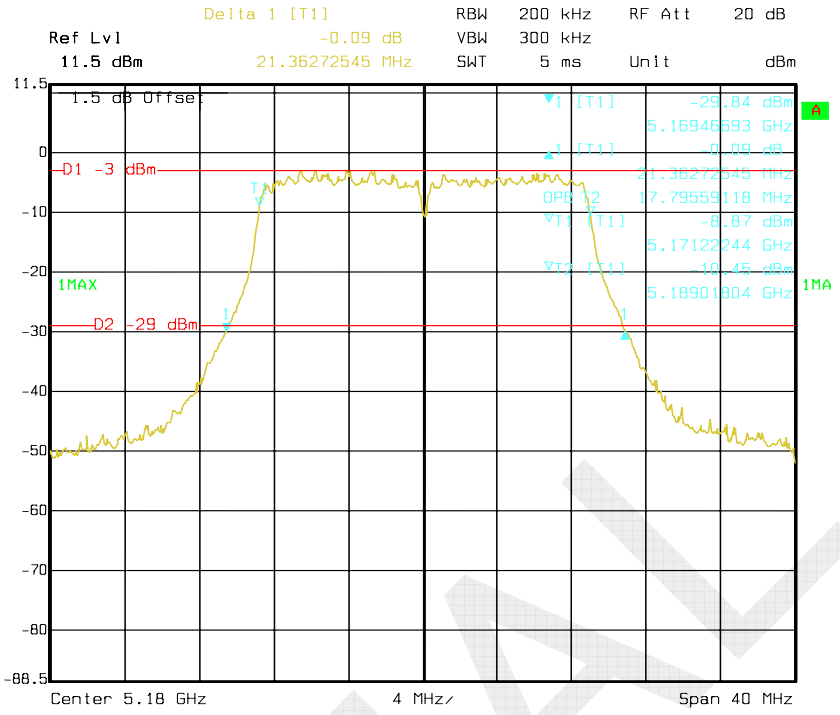
Chain 0:802.11ac20 Middle Channel



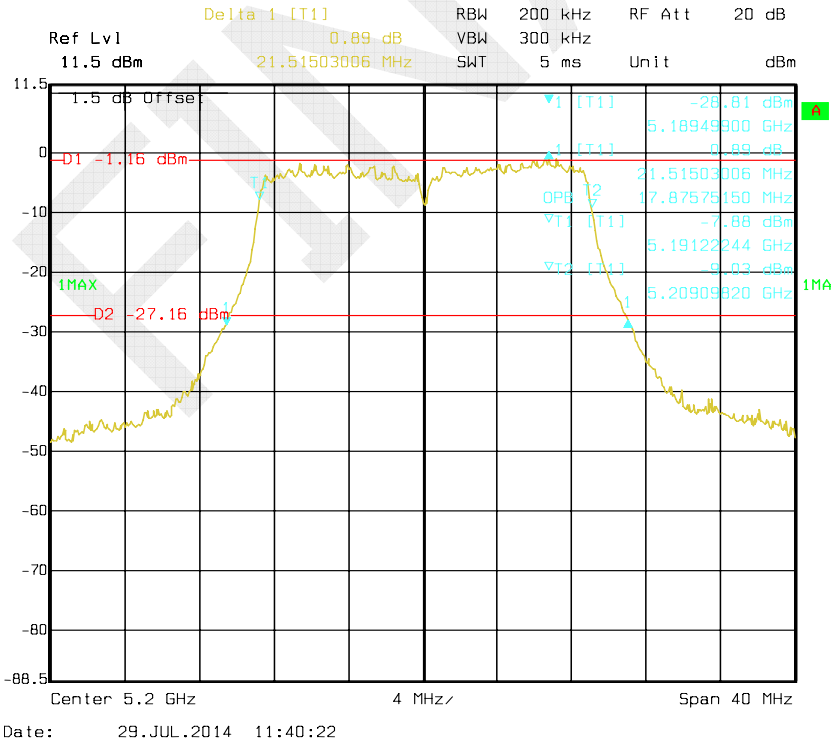
Chain 0:802.11ac20 High Channel



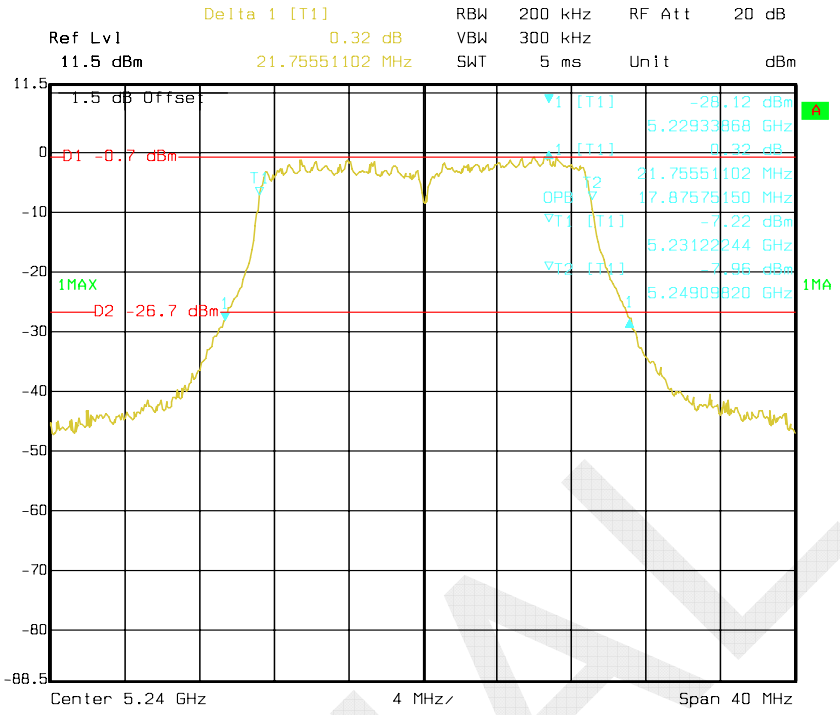
Chain 1:802.11ac20 Low Channel



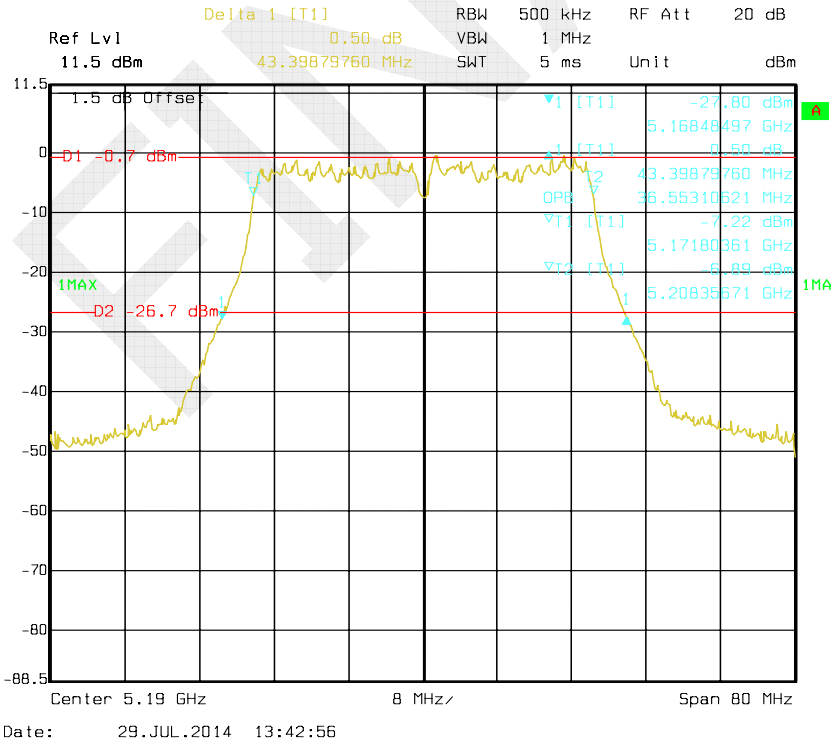
Chain 1:802.11ac20 Middle Channel



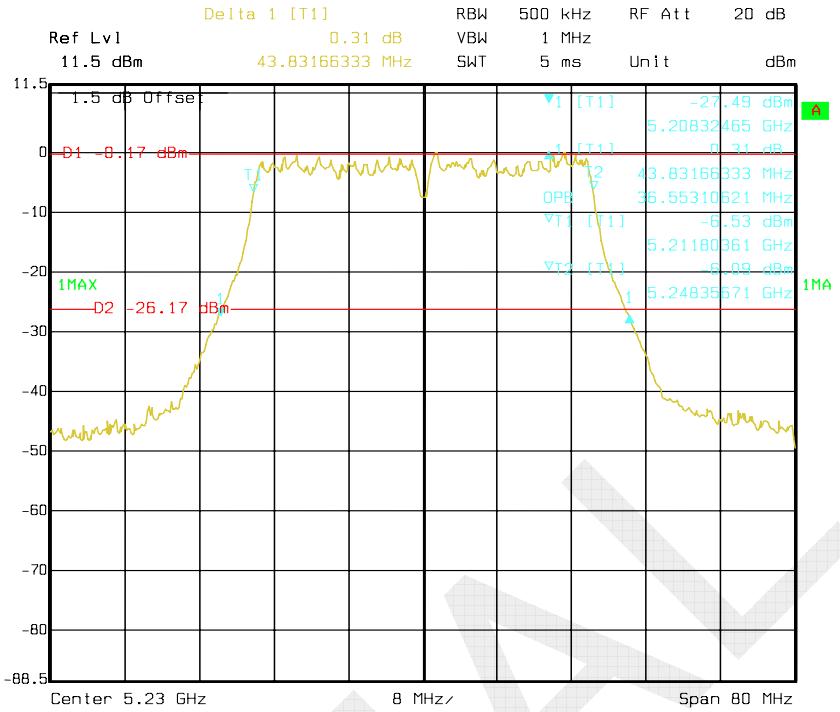
Chain 1:802.11ac20 High Channel



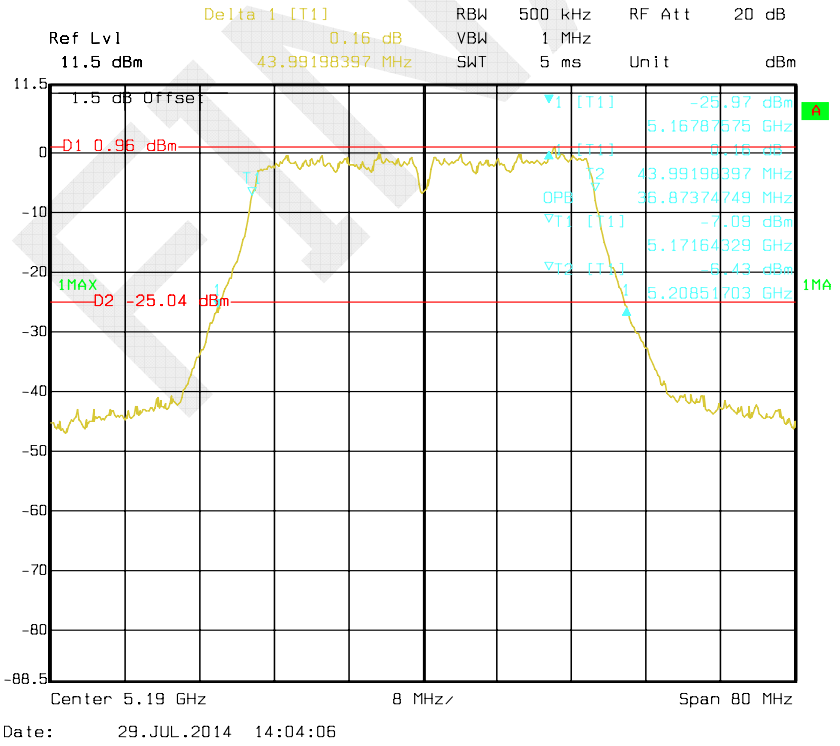
Chain 0:802.11ac40 Low Channel



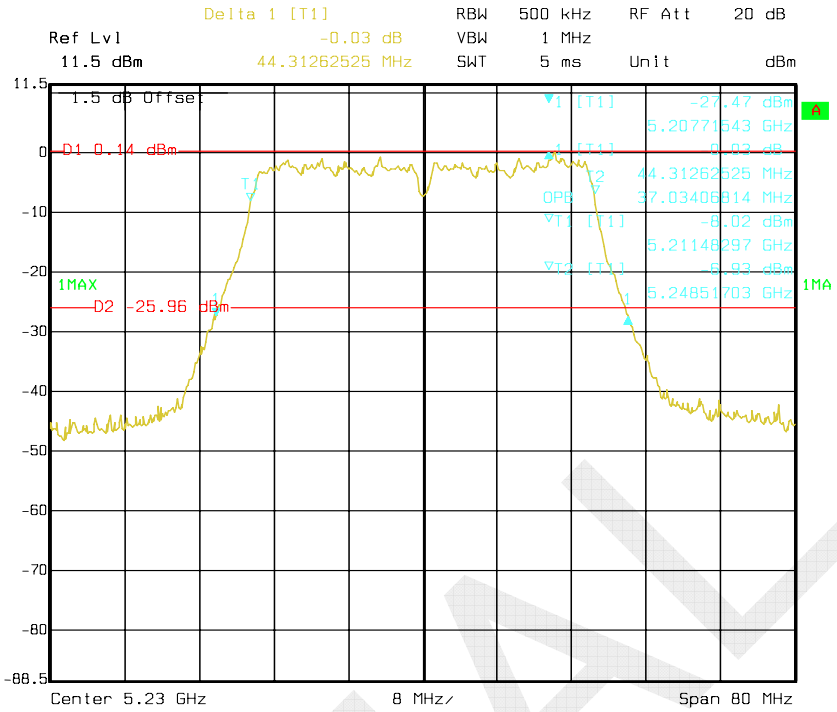
Chain 0:802.11ac40 High Channel



Chain 1:802.11ac40 Low Channel

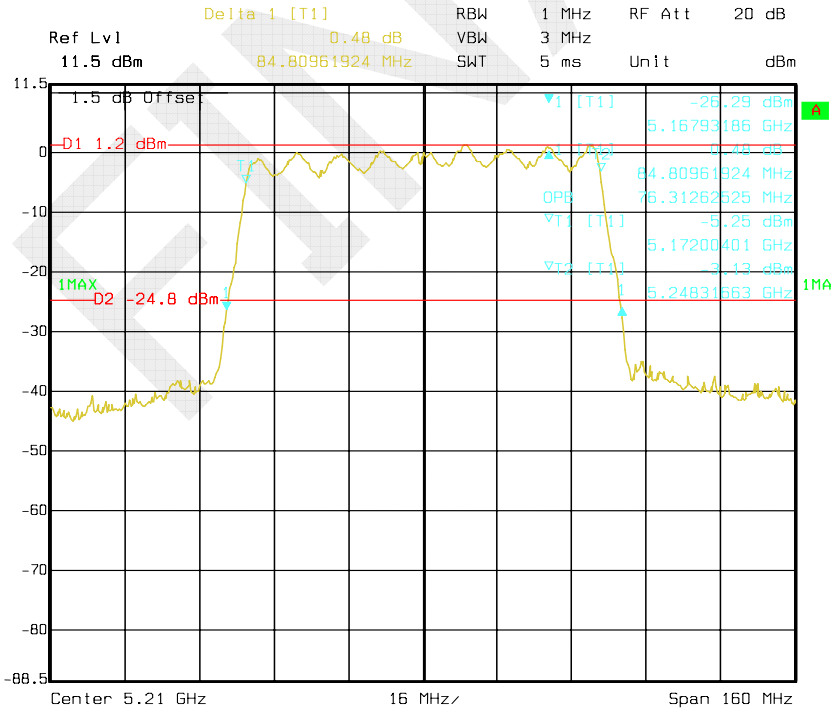


Chain 1:802.11ac40 High Channel



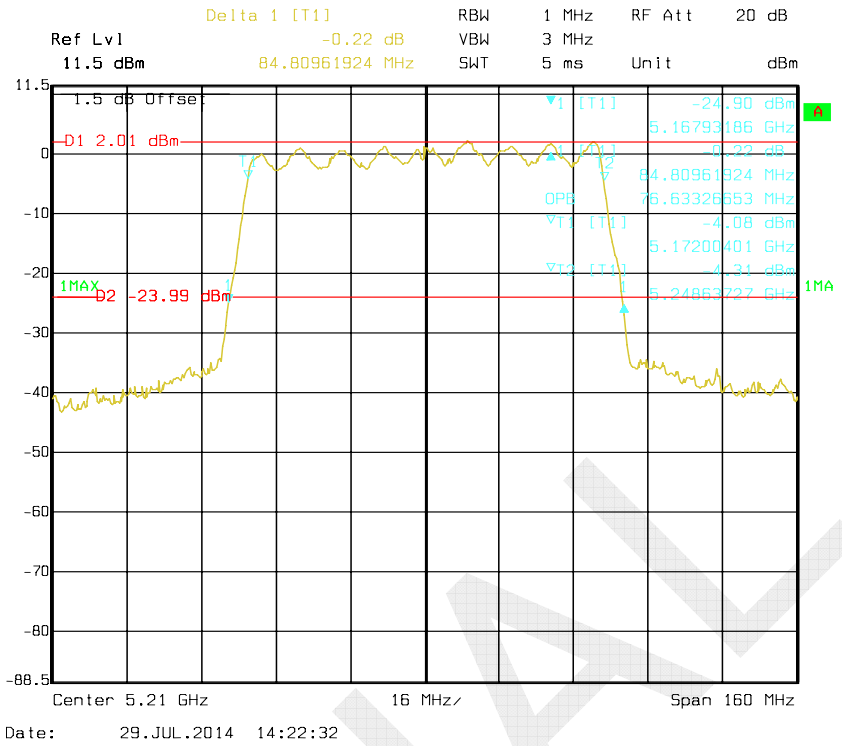
Date: 29.JUL.2014 14:00:05

Chain 0:802.11ac80 Low Channel



Date: 29.JUL.2014 14:14:50

Chain 1:802.11ac80 Low Channel



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.
(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.

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

Test Equipment List and Details

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

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

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01 and KDB 662911 D01Multiple Transmitter Output v02r01.

Test Data

Environmental Conditions

Temperature:	30.4~31.5 °C
Relative Humidity:	56~57 %
ATM Pressure:	100~100.1 kPa

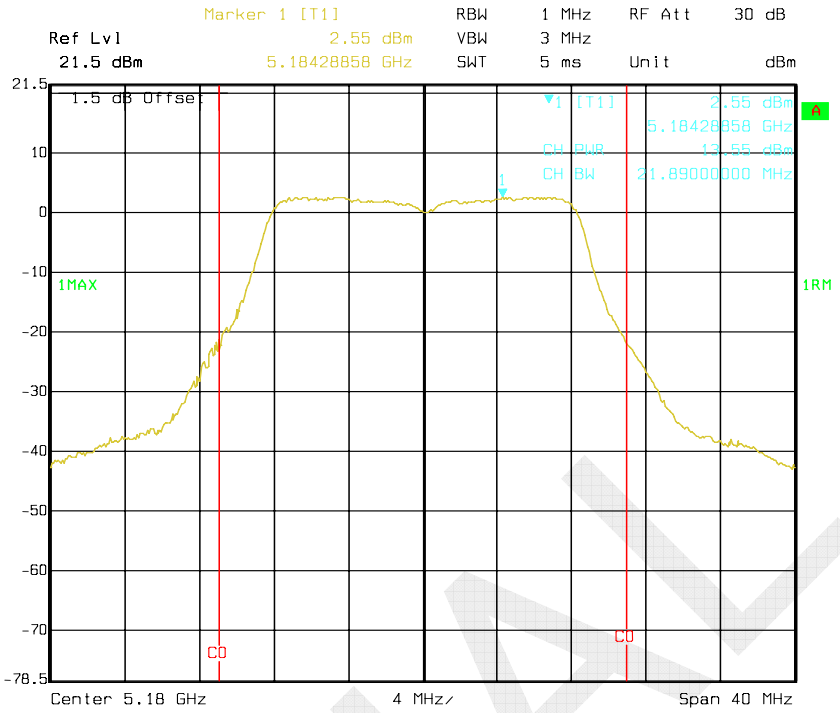
The testing was performed by Dean Liu from 2014-07-28 to 2014-07-29.

Test Mode: Transmitting

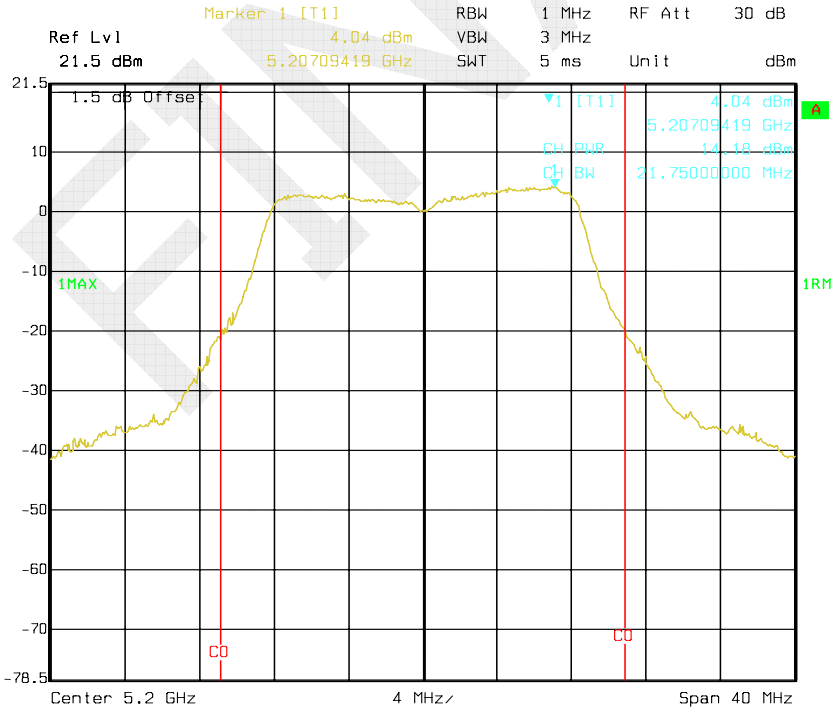
Test mode	Channel	Frequency	Maximum Conducted Output Power (dBm)			Limit	Result
		(MHz)	Chain0	Chain1	Total	(dBm)	
802.11a	Low	5180	13.55	/	/	30	PASS
	Middle	5200	14.18	/	/	30	PASS
	High	5240	13.58	/	/	30	PASS
802.11n ht20	Low	5180	9.68	9.63	12.67	30	PASS
	Middle	5200	9.79	10.18	13.00	30	PASS
	High	5240	9.33	9.74	12.55	30	PASS
802.11n ht40	Low	5190	9.61	9.64	12.64	30	PASS
	High	5230	9.80	9.57	12.70	30	PASS
802.11ac20	Low	5180	9.29	9.30	12.31	30	PASS
	Middle	5200	9.66	9.83	12.76	30	PASS
	High	5240	9.88	9.66	12.78	30	PASS
802.11ac40	Low	5190	9.69	9.80	12.76	30	PASS
	High	5230	9.55	9.71	12.64	30	PASS
802.11ac80	Low	5210	8.96	8.68	11.83	30	PASS

Note: The duty cycle is 100%.

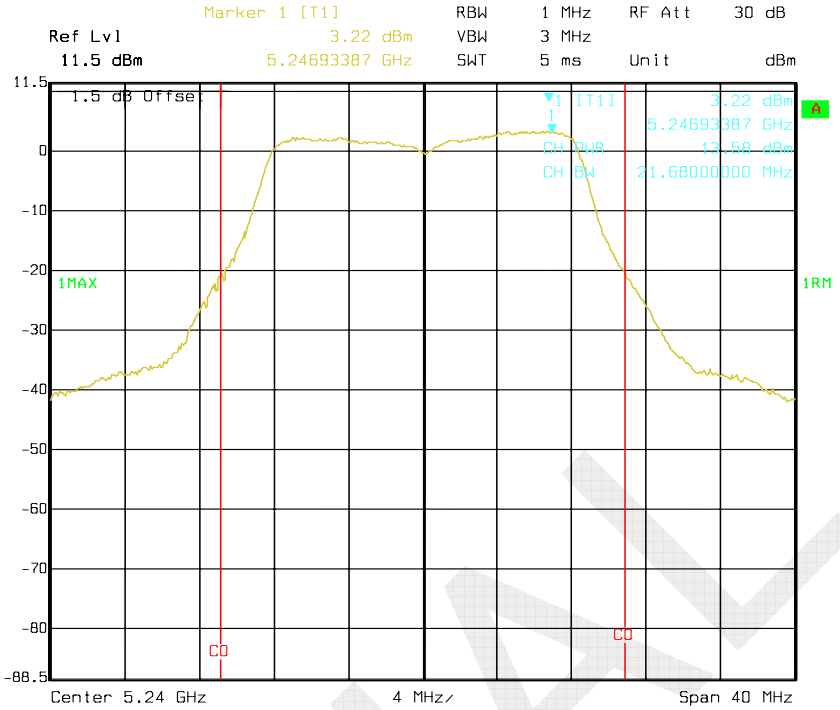
802.11a RF Output Power, Low Channel



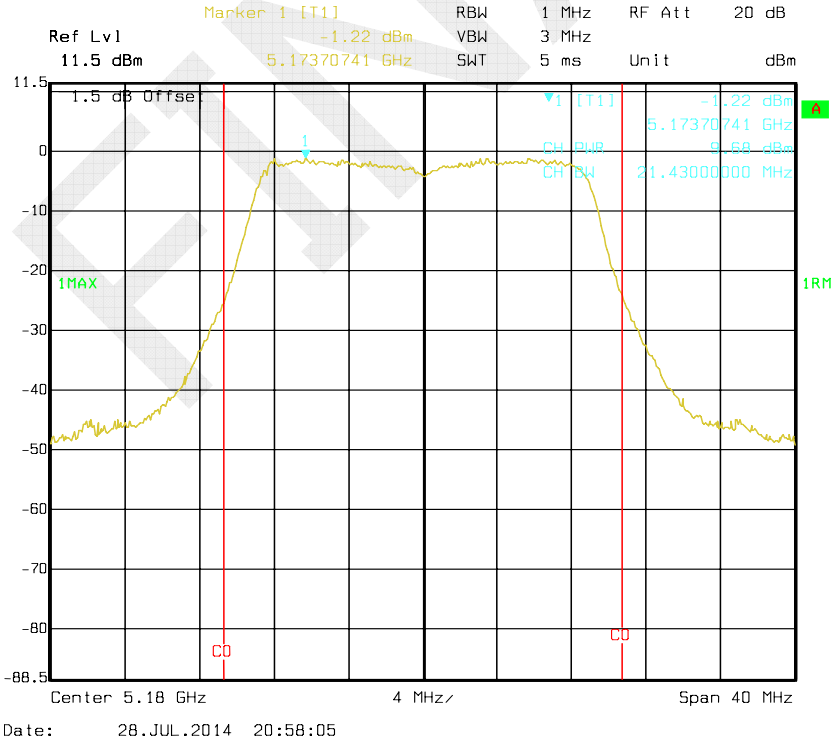
802.11a RF Output Power, Middle Channel



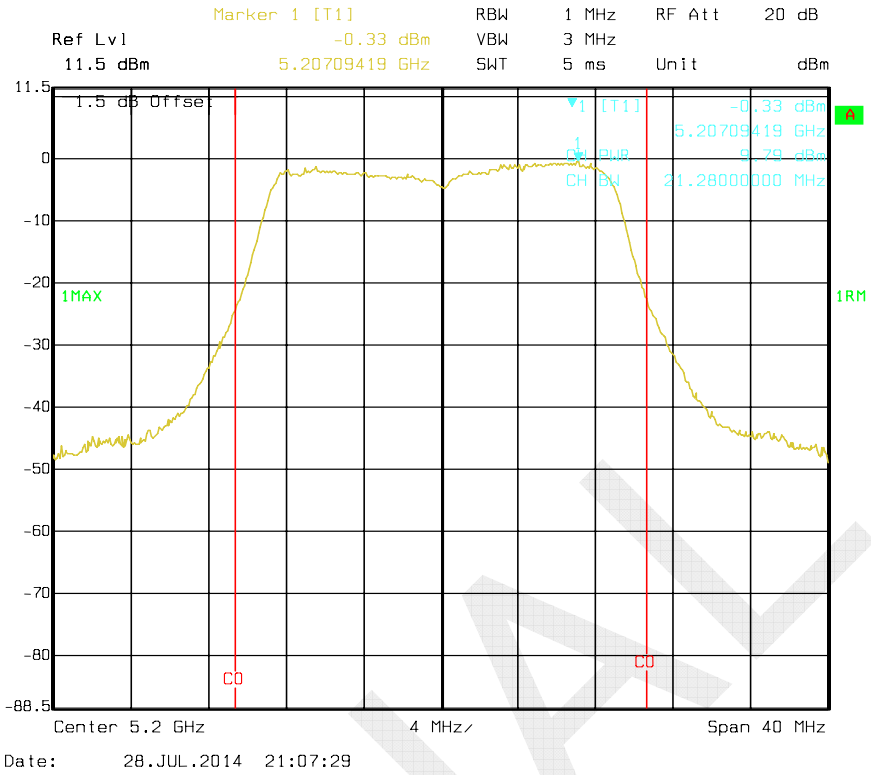
802.11a RF Output Power, High Channel



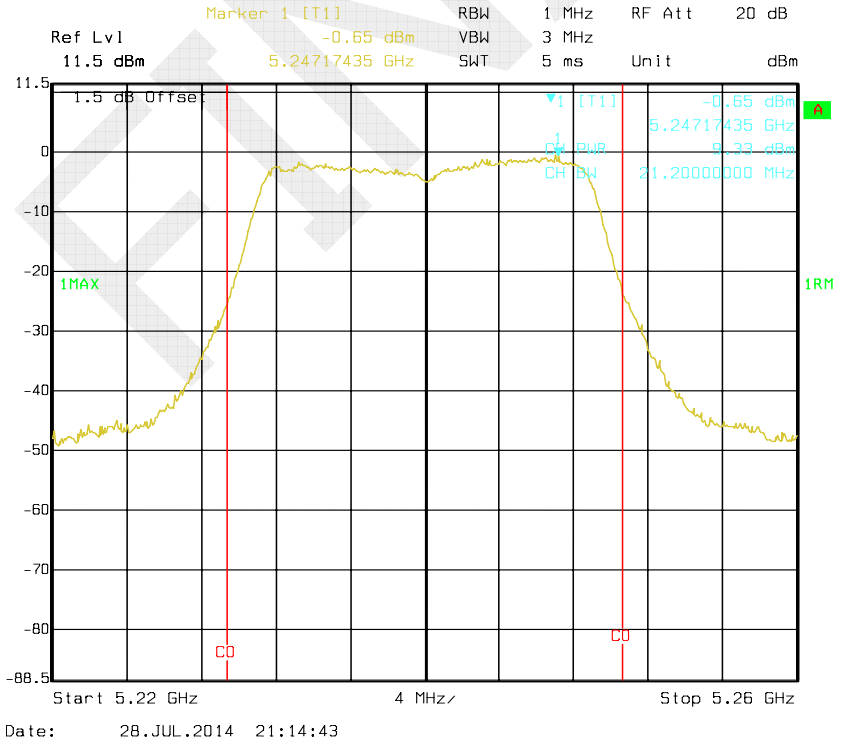
Chain 0:802.11n ht20 RF Output Power, Low Channel



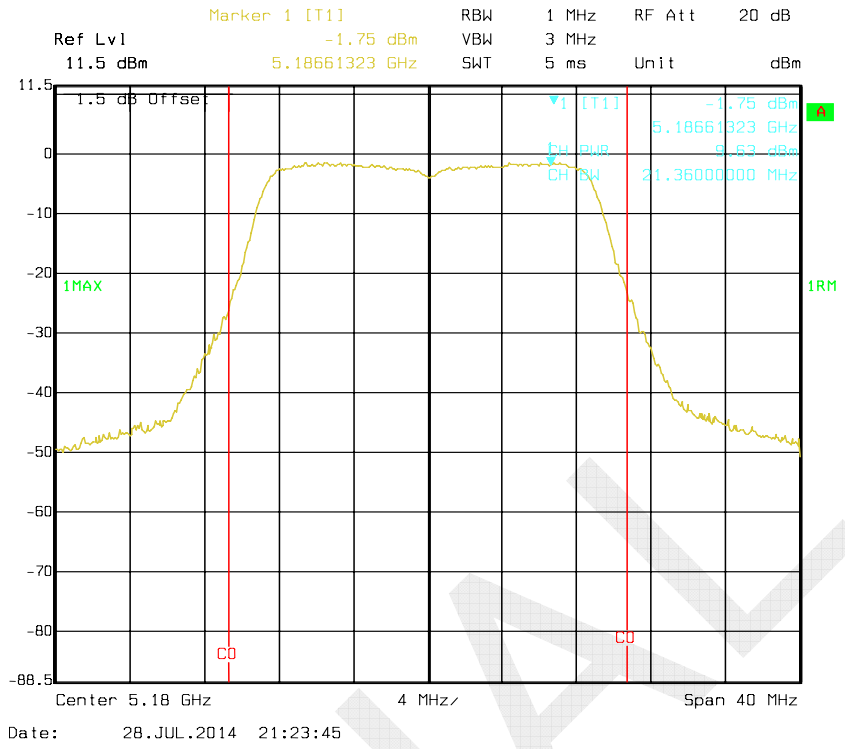
Chain 0:802.11n ht20 RF Output Power, Middle Channel



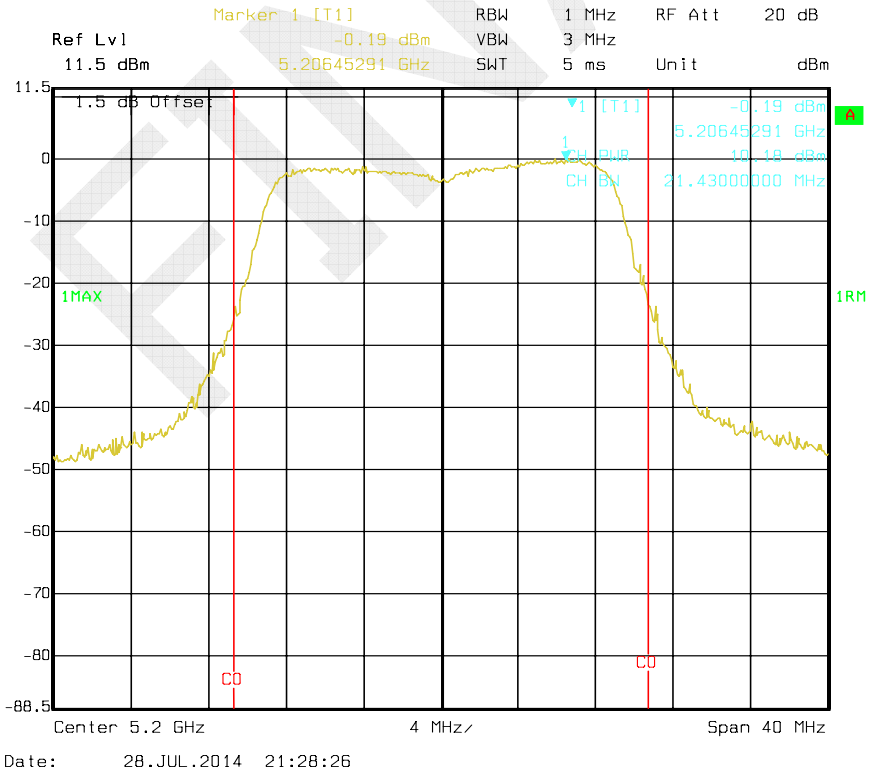
Chain 0:802.11n ht20 RF Output Power, High Channel



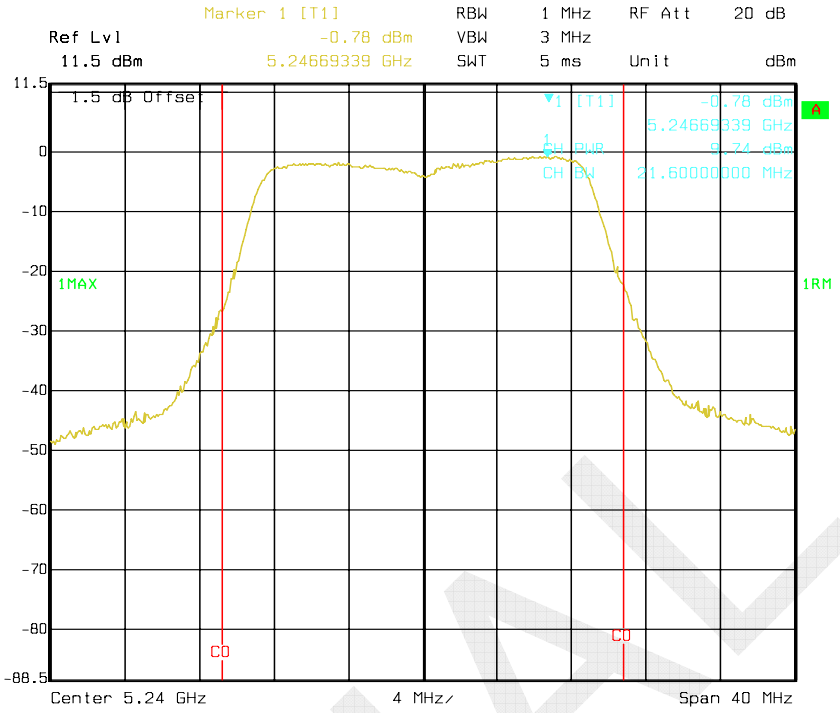
Chain 1:802.11n ht20 RF Output Power, Low Channel



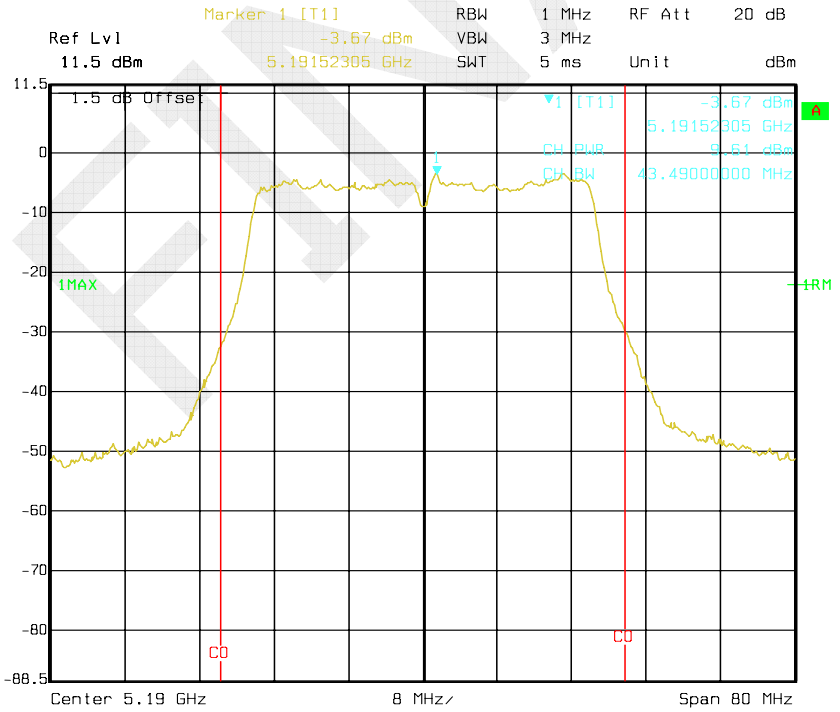
Chain 1:802.11n ht20 RF Output Power, Middle Channel



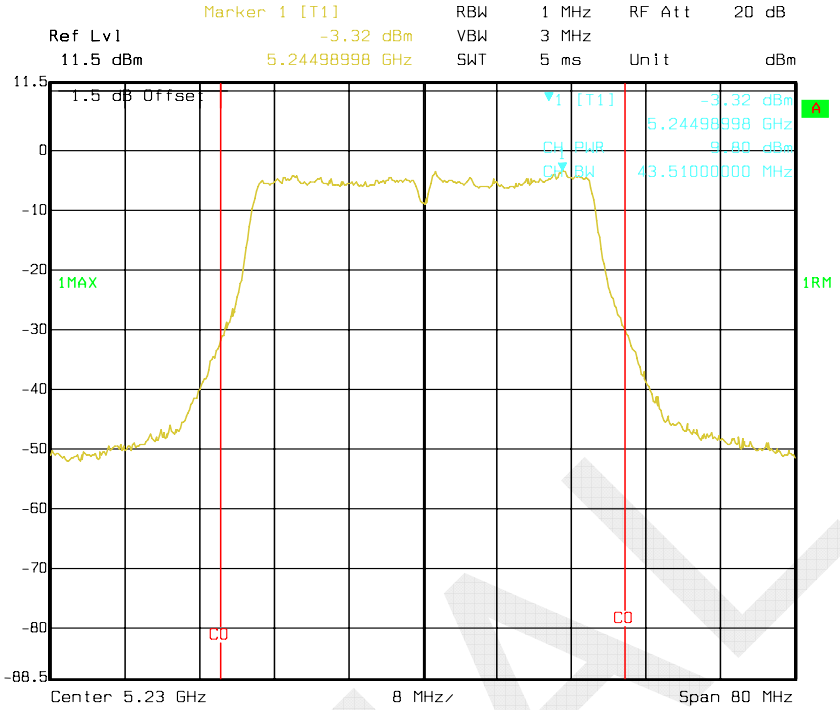
Chain 1:802.11n ht20 RF Output Power, High Channel



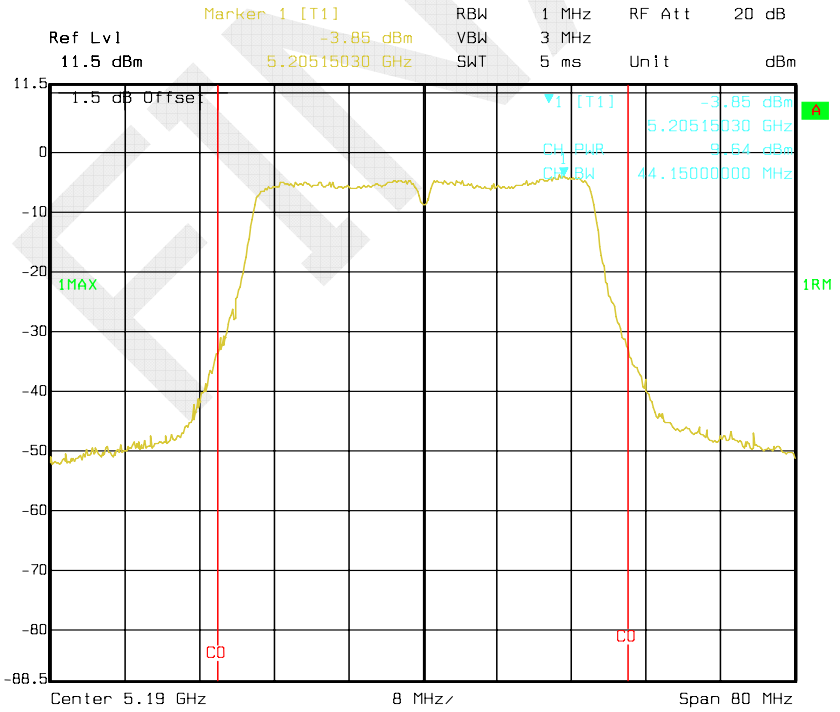
Chain 0:802.11n ht40 RF Output Power, Low Channel



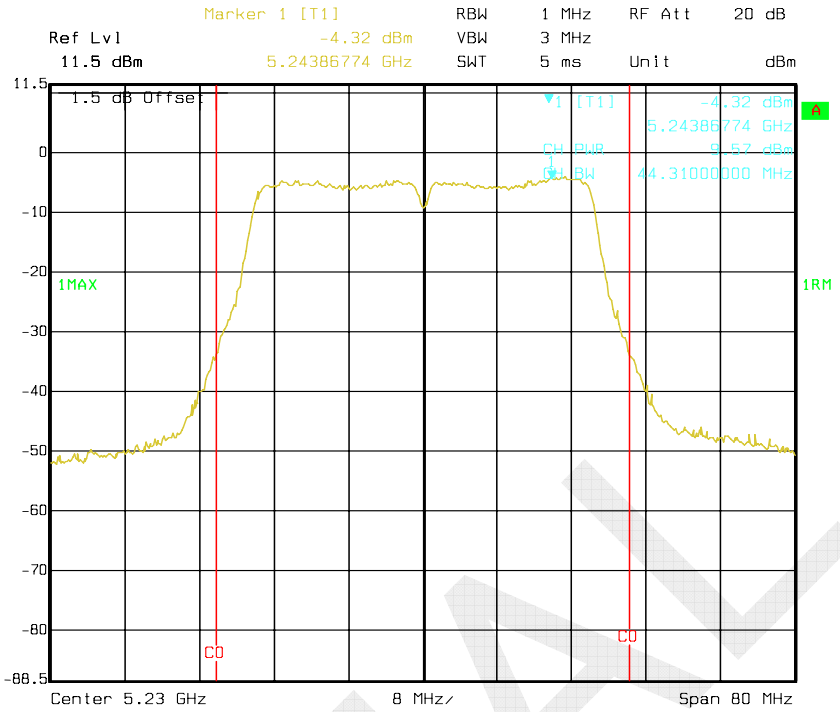
Chain 0:802.11n ht40 RF Output Power, High Channel



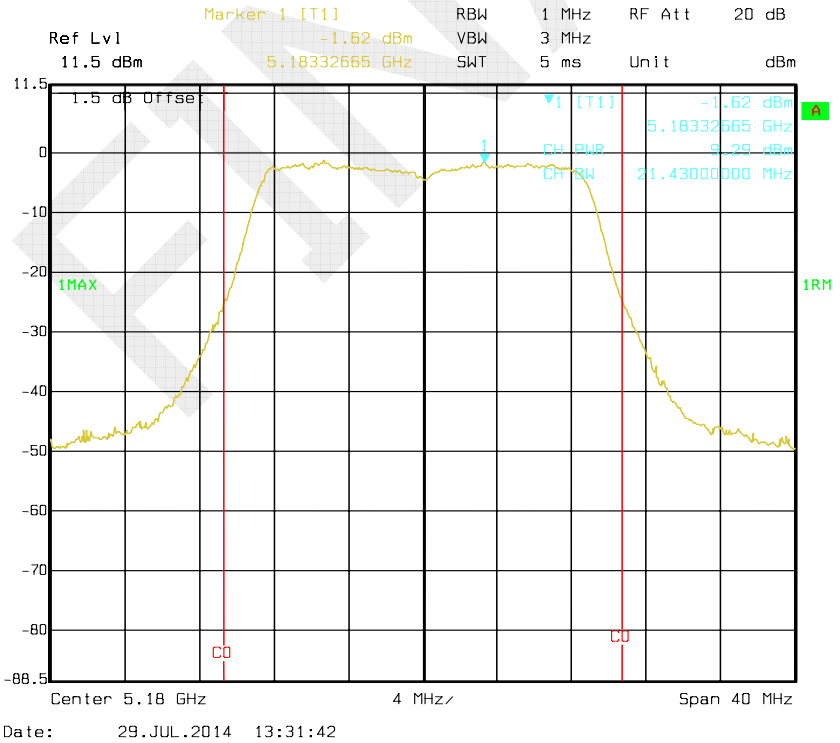
Chain 1:802.11n ht40 RF Output Power, Low Channel



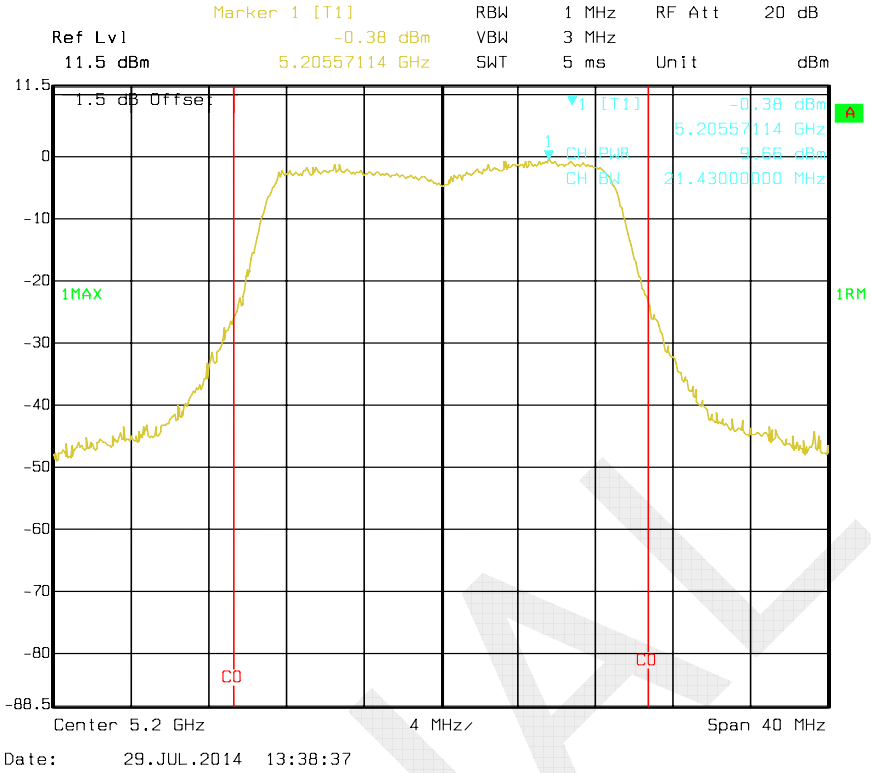
Chain 1:802.11n ht40 RF Output Power, High Channel



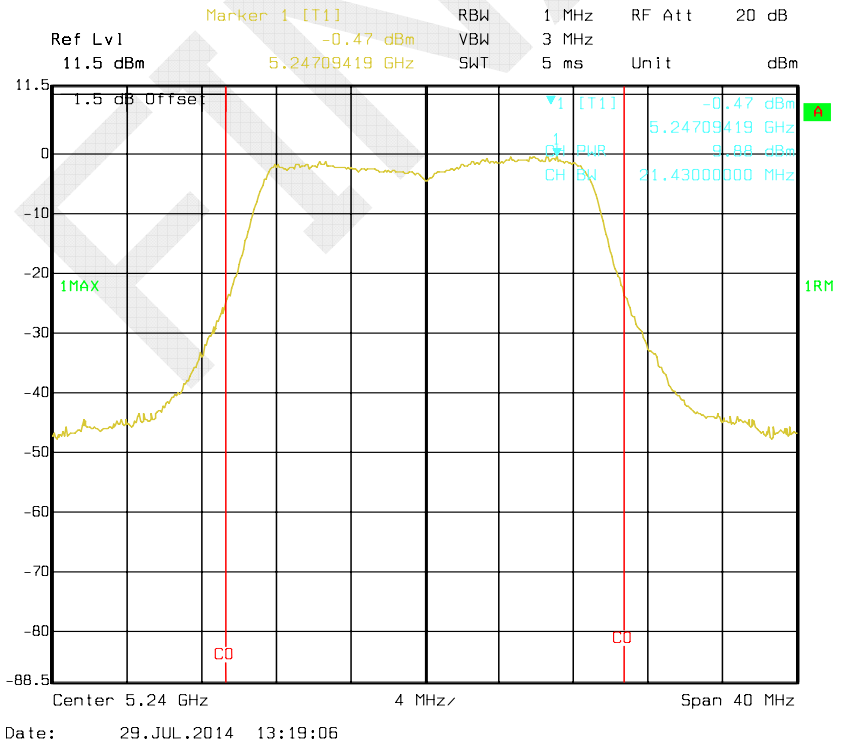
Chain 0:802.11ac20 RF Output Power, Low Channel



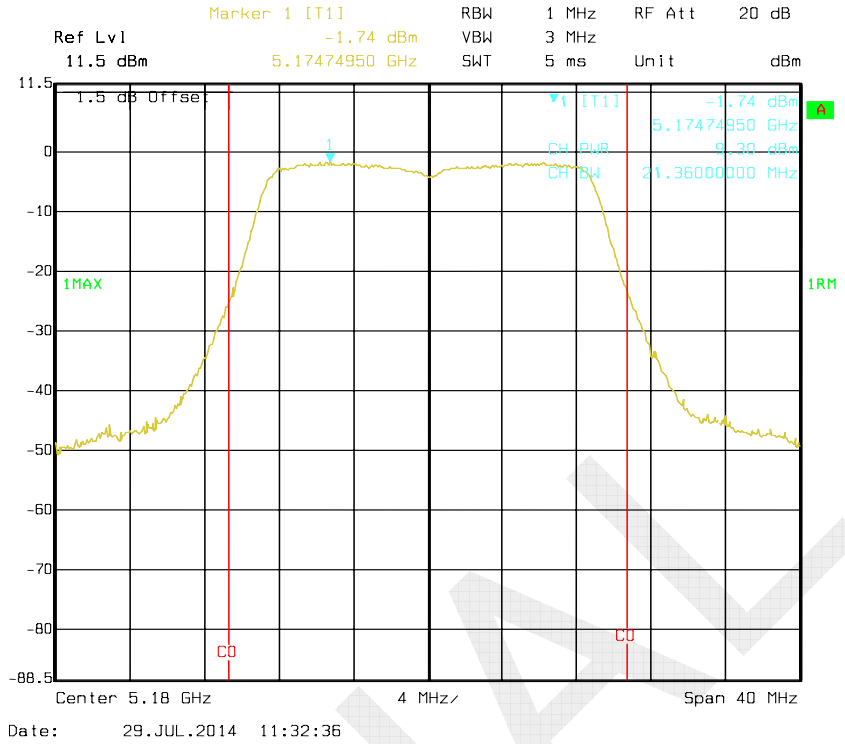
Chain 0:802.11ac20 RF Output Power, Middle Channel



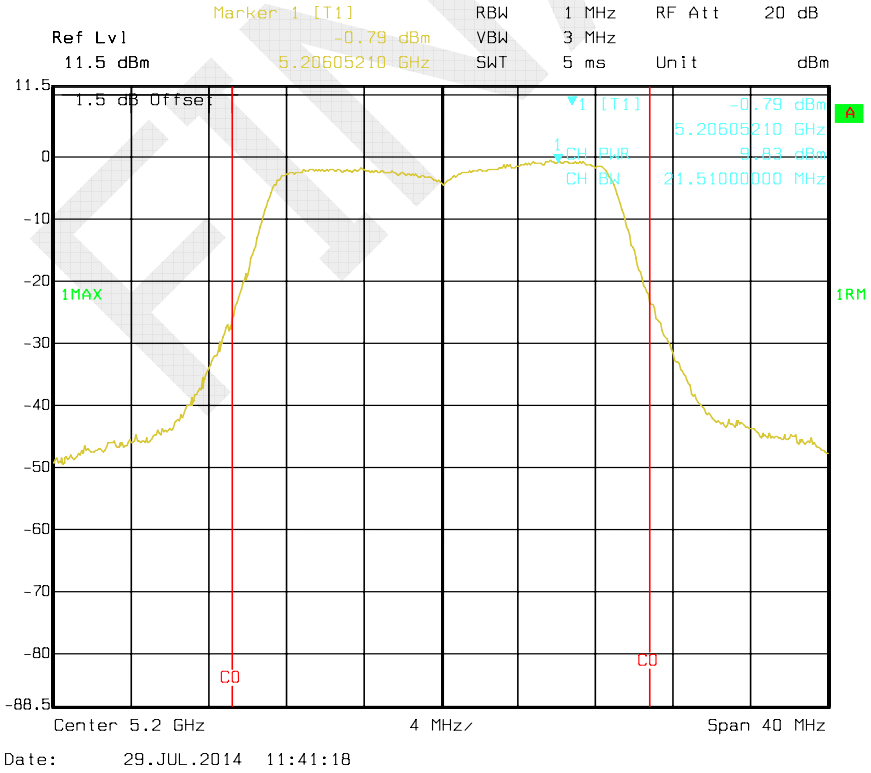
Chain 0:802.11ac20 RF Output Power, High Channel



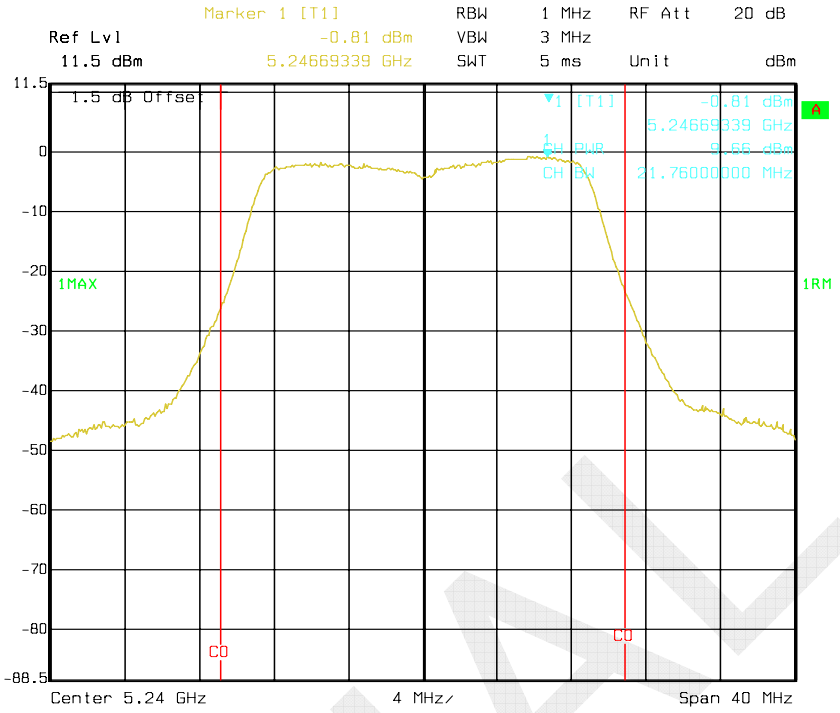
Chain 1:802.11ac20 RF Output Power, Low Channel



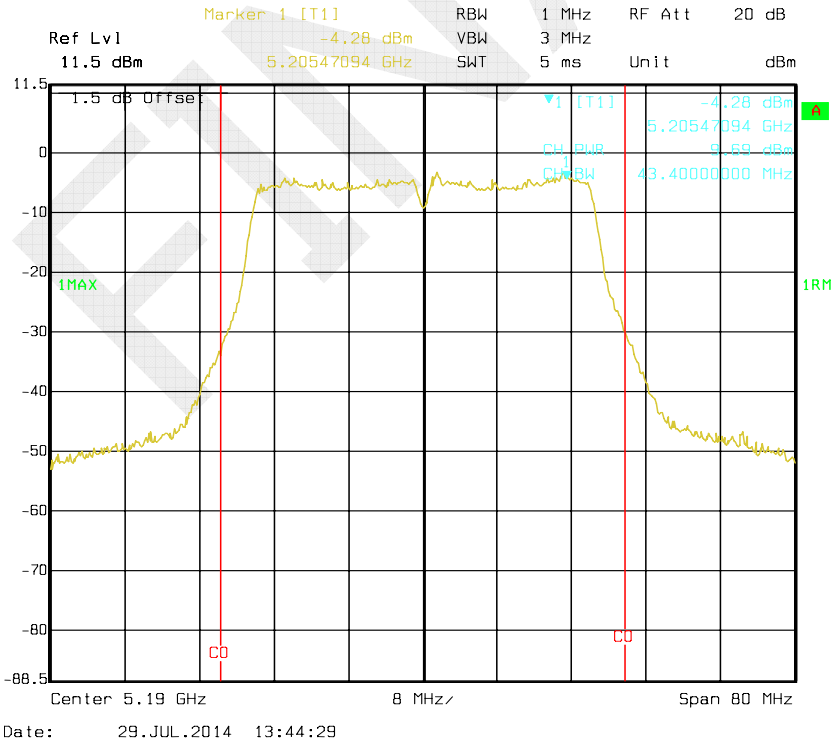
Chain 1:802.11ac20 RF Output Power, Middle Channel



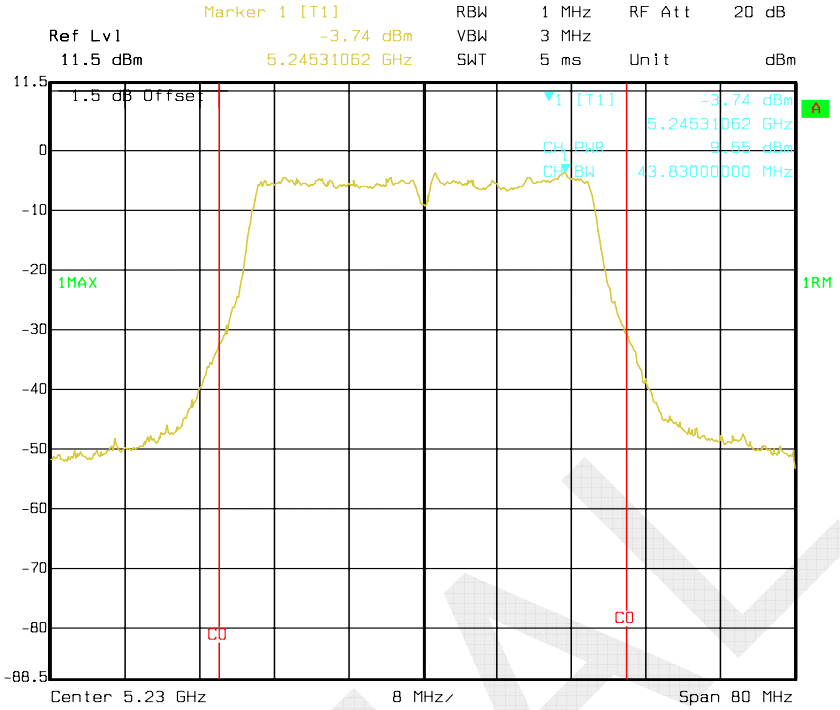
Chain 1:802.11ac20 RF Output Power, High Channel



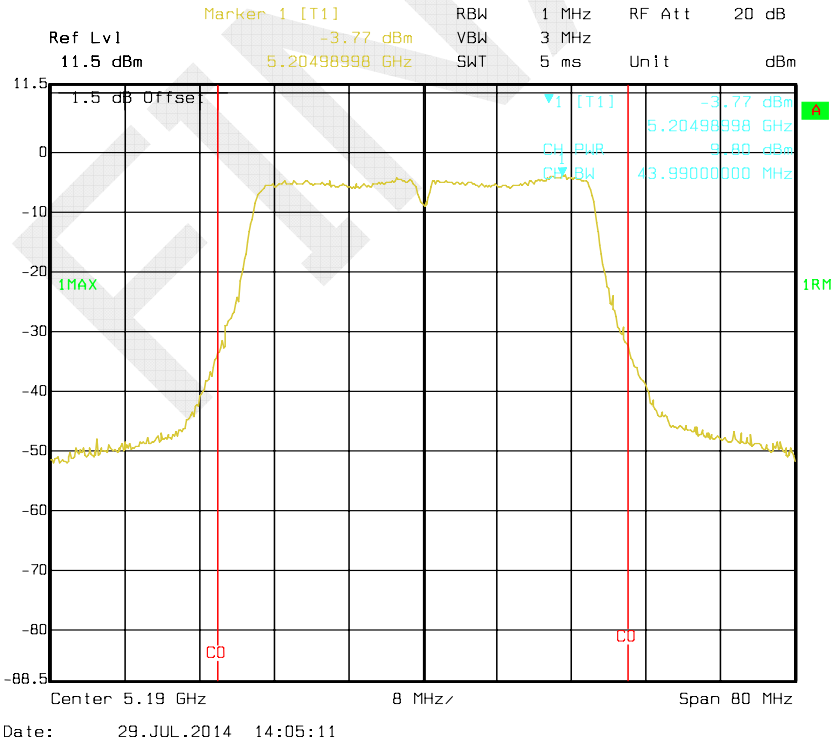
Chain 0:802.11ac40 RF Output Power, Low Channel



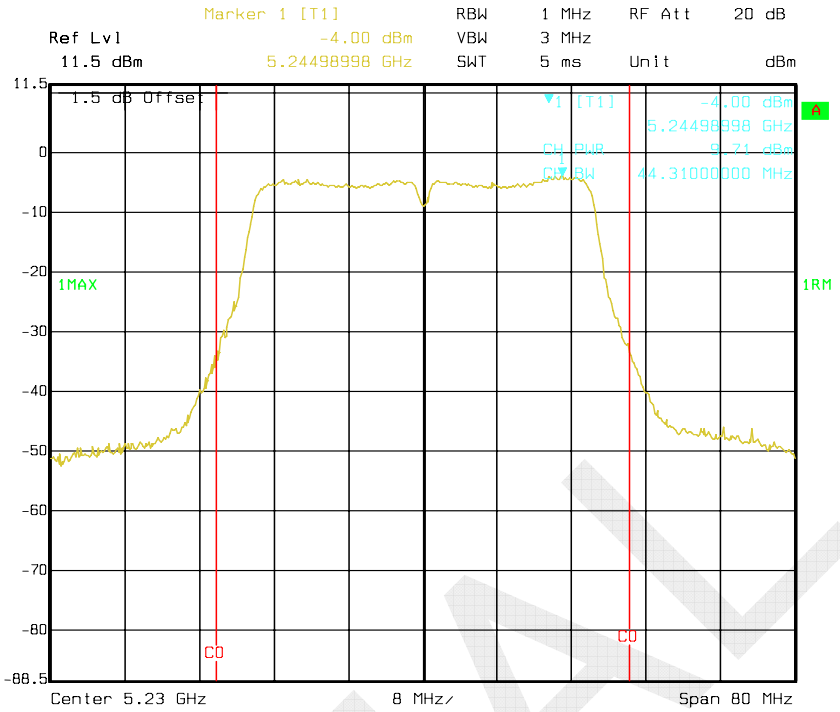
Chain 0:802.11ac40 RF Output Power, High Channel



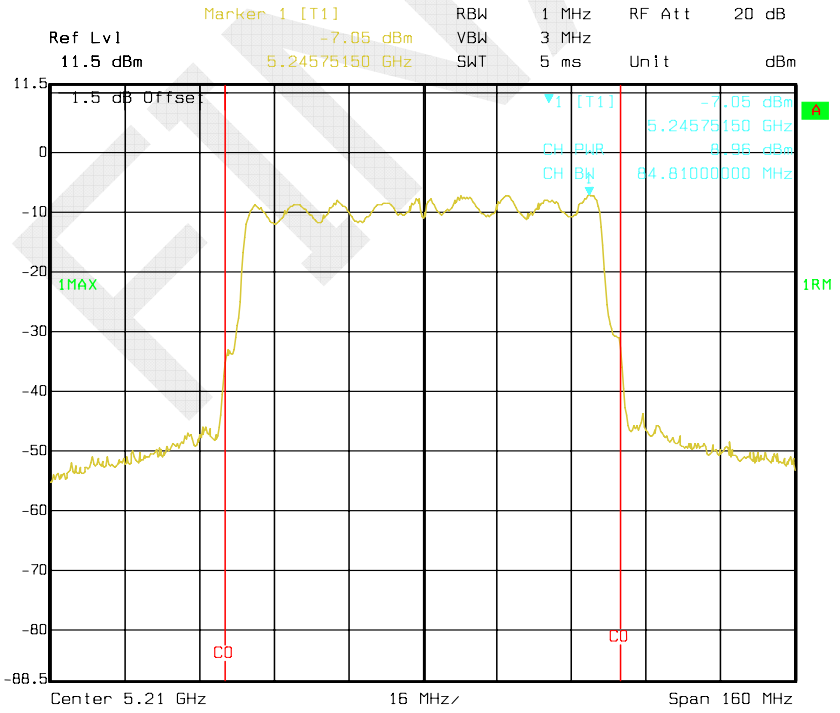
Chain 1:802.11ac40 RF Output Power, Low Channel



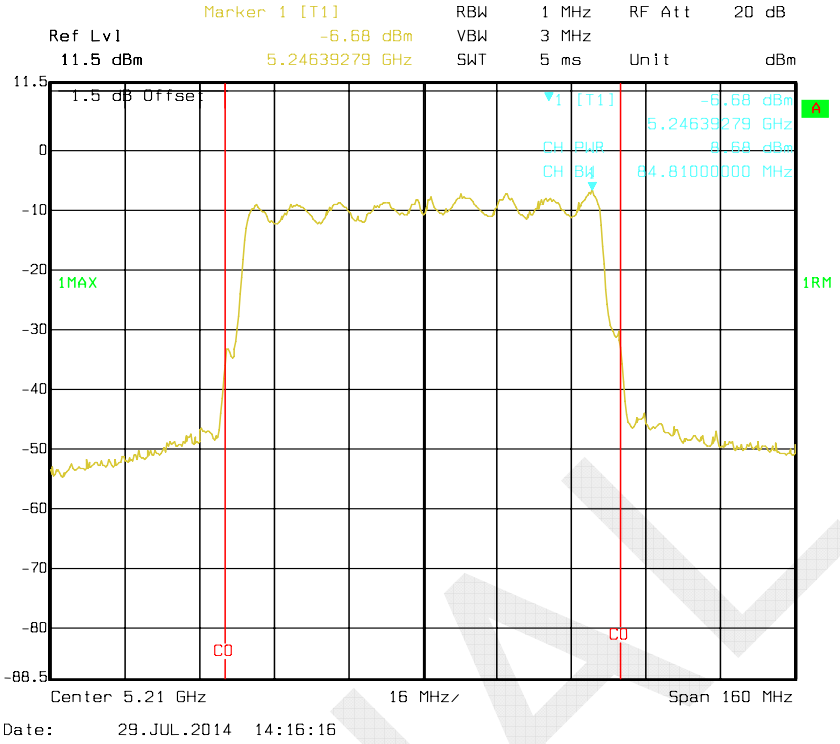
Chain 1:802.11ac40 RF Output Power, High Channel



Chain 0:802.11ac80 RF Output Power, Low Channel



Chain 1:802.11ac80 RF Output Power, Low Channel



FCC §15.407(a) (1) (ii) (5) - POWER SPECTRAL DENSITY

Applicable Standard

(1) For the band 5.15-5.25 GHz.

(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.

(5) The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v01 and KDB 662911 D01 Multiple Transmitter Output v02r01.

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:	30.4~31.5 °C
Relative Humidity:	56~57 %
ATM Pressure:	100~100.1 kPa

The testing was performed by Dean Liu from 2014-07-28 to 2014-07-29.

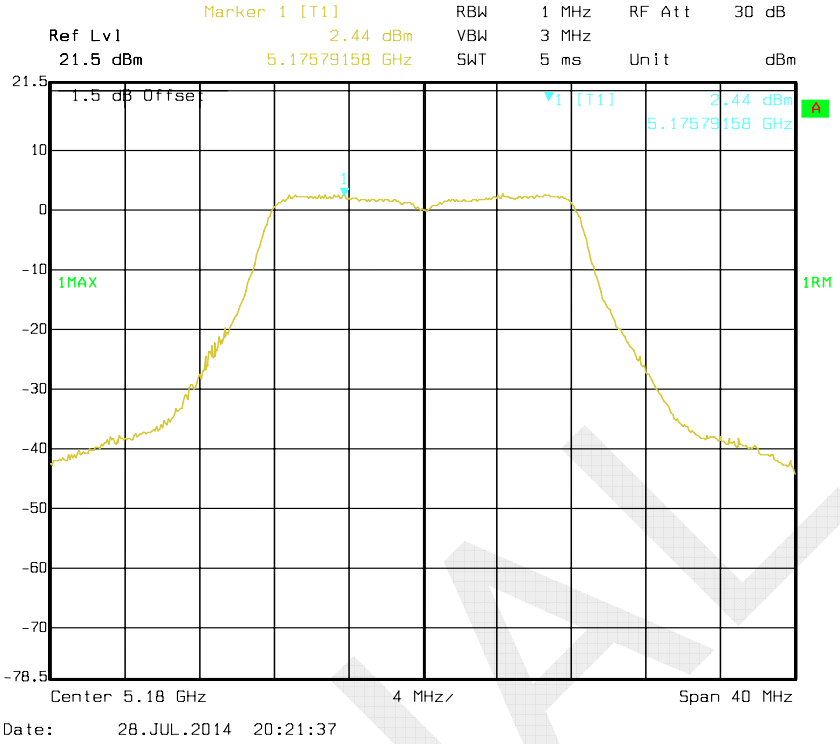
Test Mode: Transmitting

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

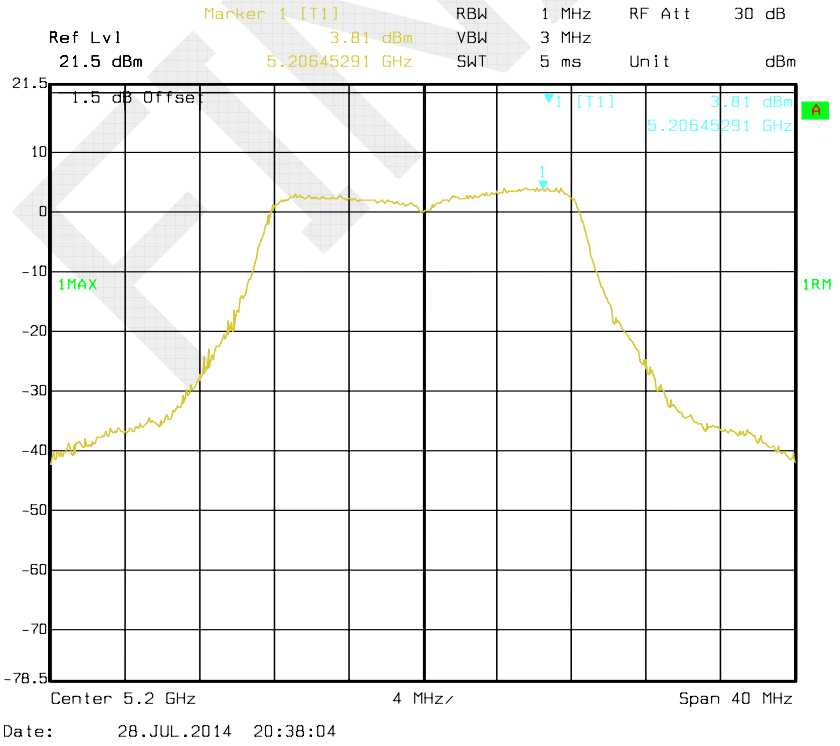
Test mode	Channel	Frequency	PSD (dBm/1MHz)			Limit (dBm/1MHz)	Result
		(MHz)	Chain0	Chain1	Chain0+1		
802.11a	Low	5180	2.44	/	/	17	Pass
	Middle	5200	3.81	/	/	17	Pass
	High	5240	3.04	/	/	17	Pass
802.11n ht20	Low	5180	-1.71	-1.59	1.36	17	Pass
	Middle	5200	-0.70	-0.53	2.40	17	Pass
	High	5240	-1.09	-0.85	2.04	17	Pass
802.11n ht40	Low	5190	-3.81	-4.41	-1.09	17	Pass
	High	5230	-4.55	-4.37	-1.45	17	Pass
802.11ac20	Low	5180	-1.76	-2.30	0.99	17	Pass
	Middle	5200	-0.45	-0.84	2.37	17	Pass
	High	5240	-1.22	-1.82	1.50	17	Pass
802.11ac40	Low	5190	-3.85	-3.88	-0.85	17	Pass
	High	5230	-3.91	-4.0	-0.94	17	Pass
802.11ac80	Low	5210	-7.37	-7.57	-4.46	17	Pass

Note: the duty cycle is 100%.

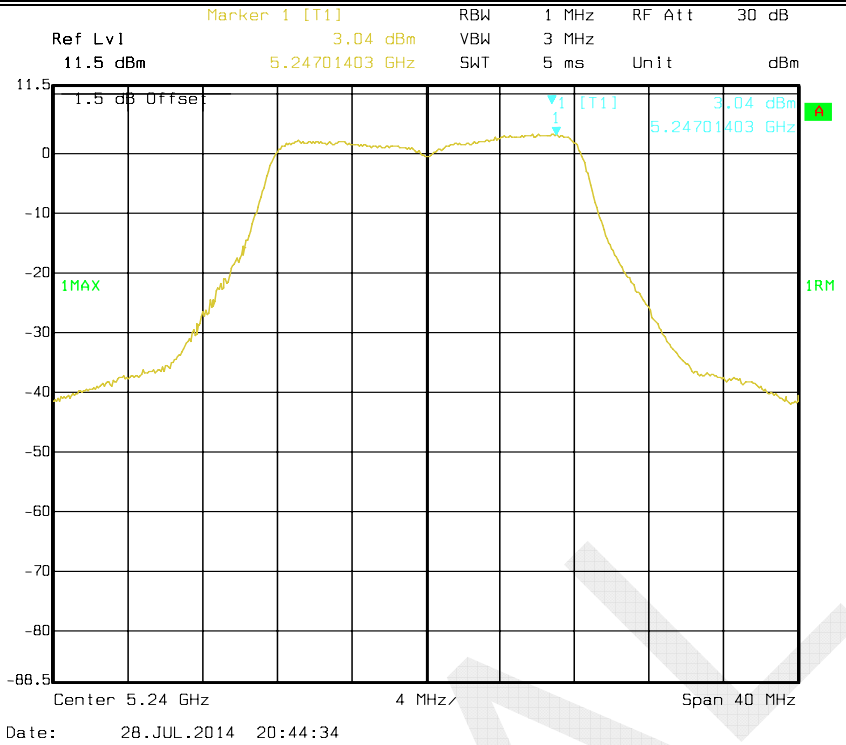
Power Spectral Density, 802.11a Low Channel



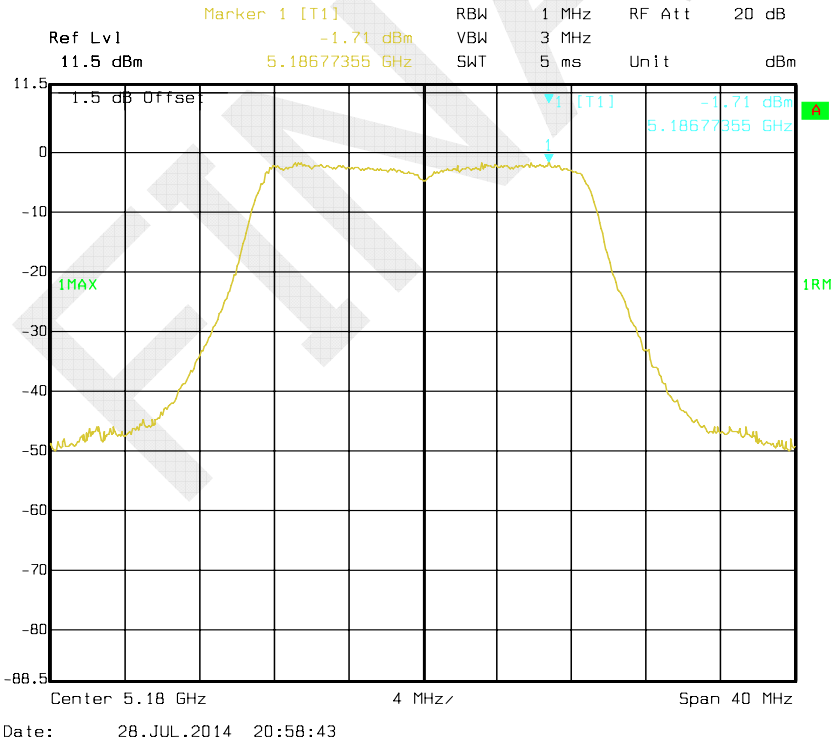
Power Spectral Density, 802.11a Middle Channel



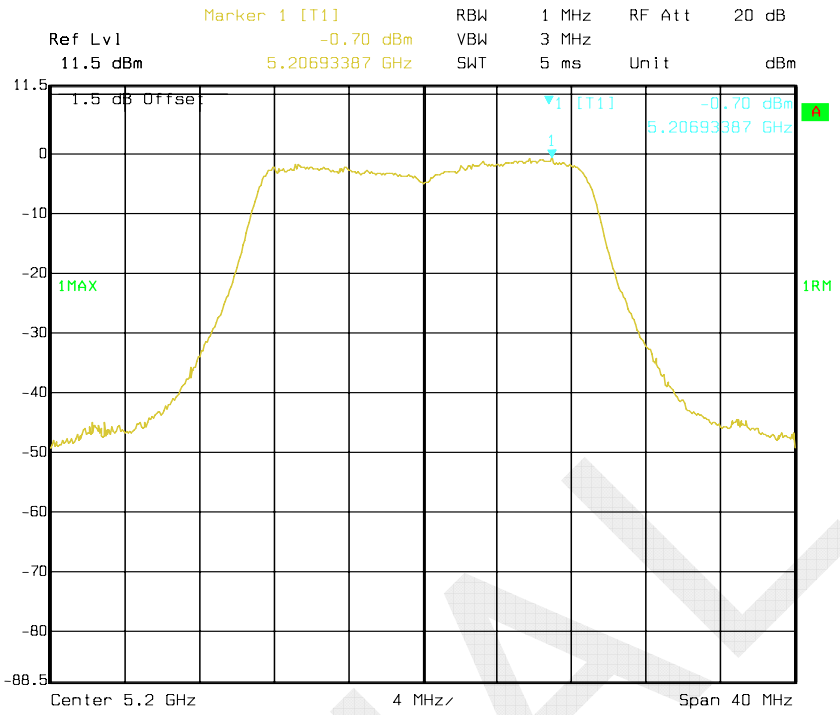
Power Spectral Density, 802.11a High Channel



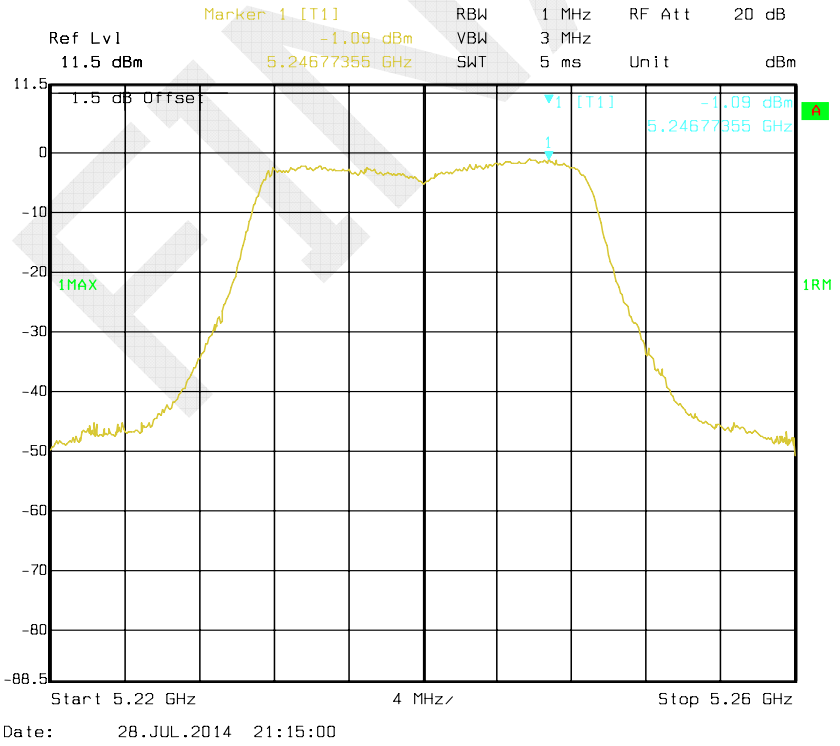
Chain 0:Power Spectral Density, 802.11n ht20 Low Channel



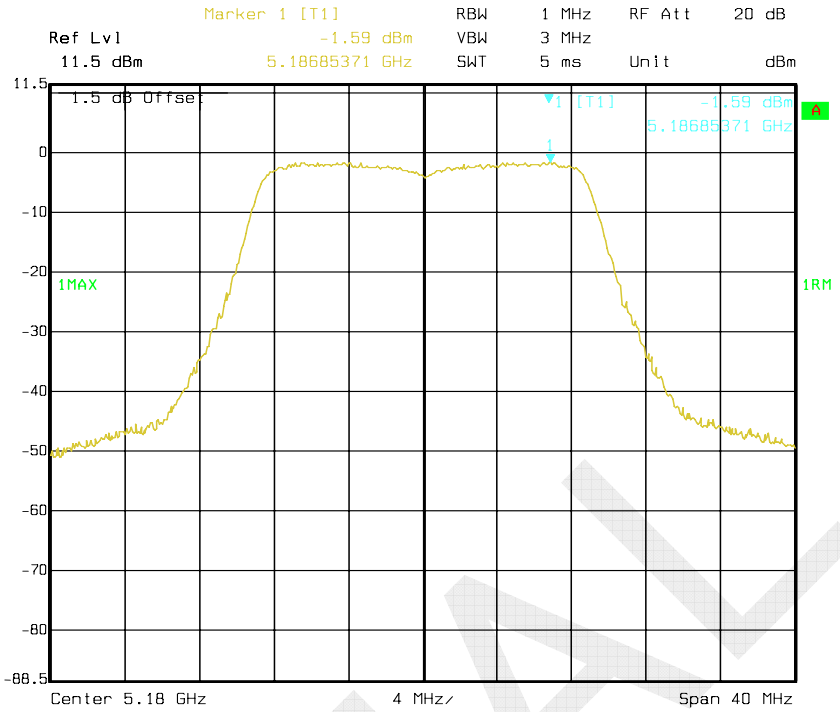
Chain 0:Power Spectral Density, 802.11n ht20 Middle Channel



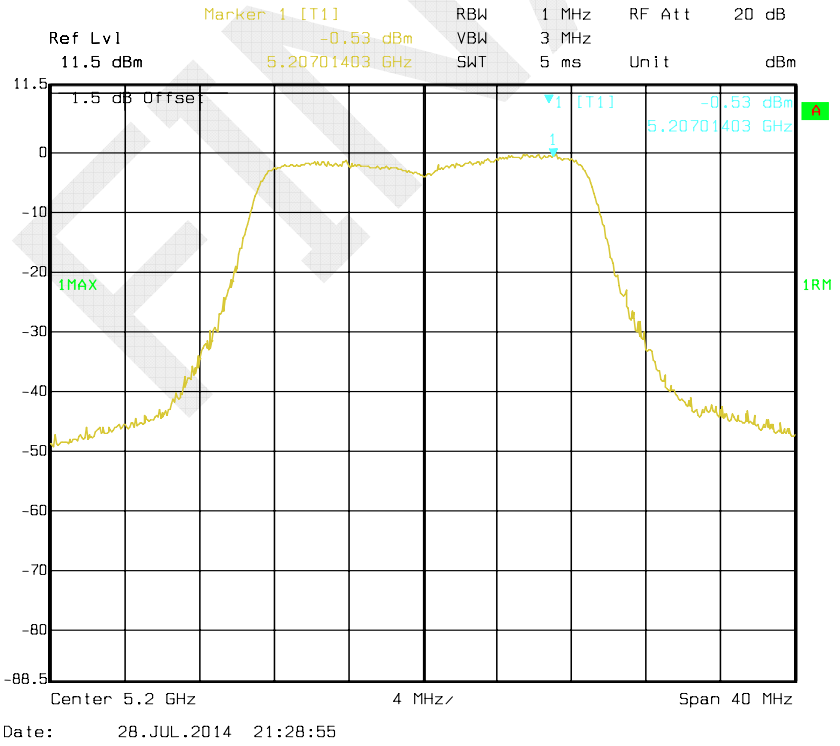
Chain 0:Power Spectral Density, 802.11n ht20 High Channel



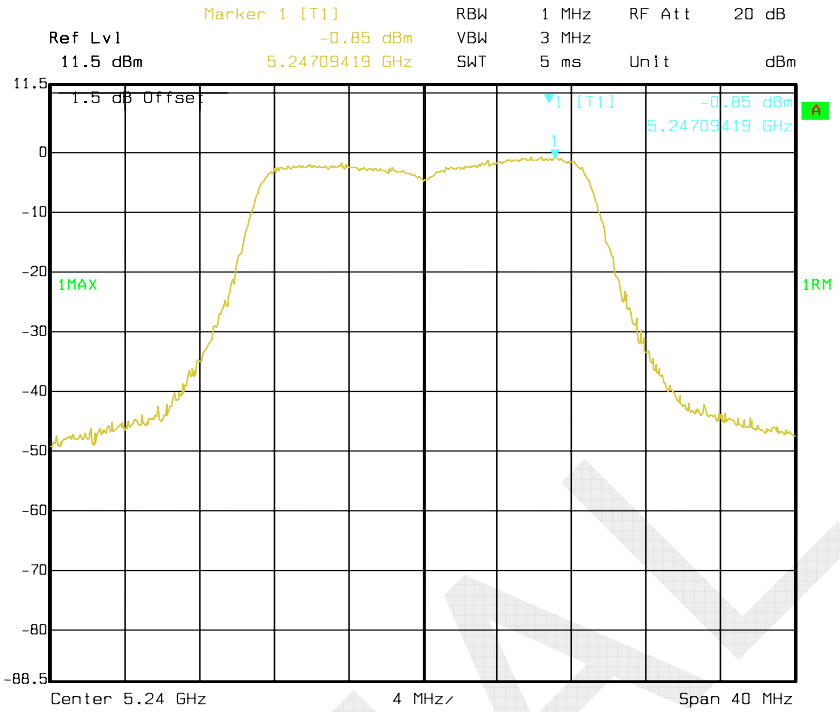
Chain 1:Power Spectral Density, 802.11 n ht20 Low Channel



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

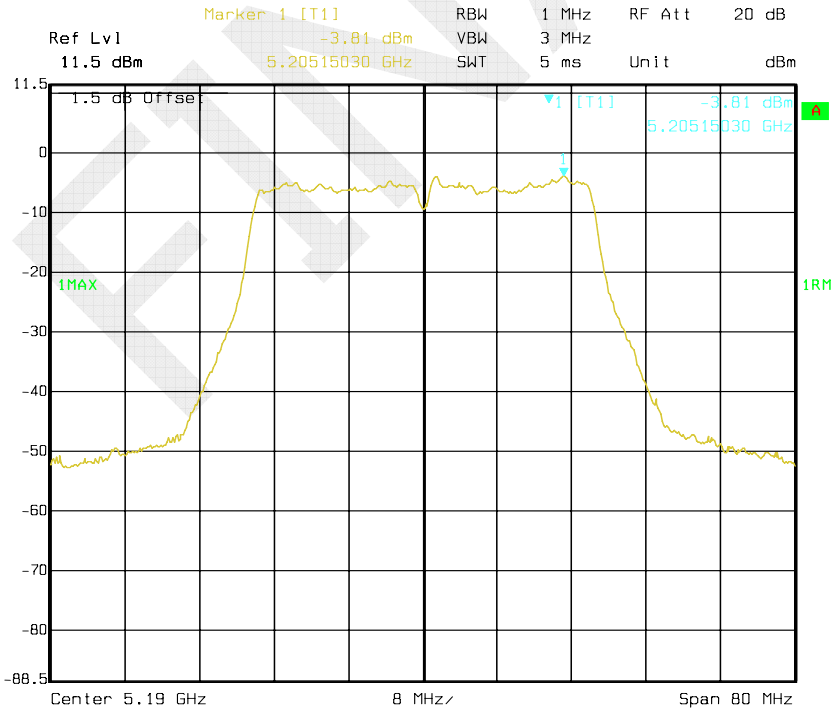


Chain 1:Power Spectral Density, 802.11n ht20 High Channel



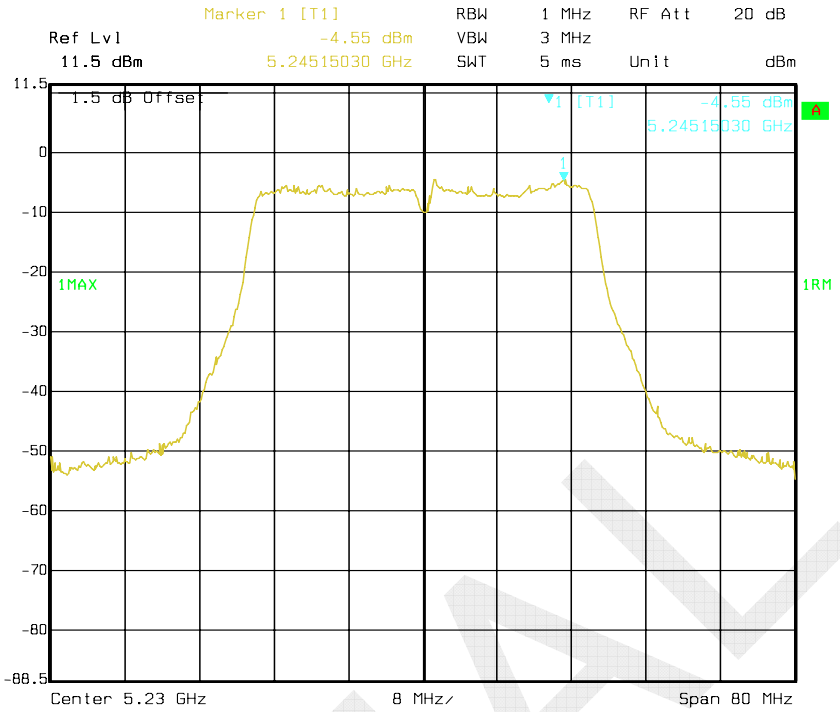
Date: 28.JUL.2014 21:33:35

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

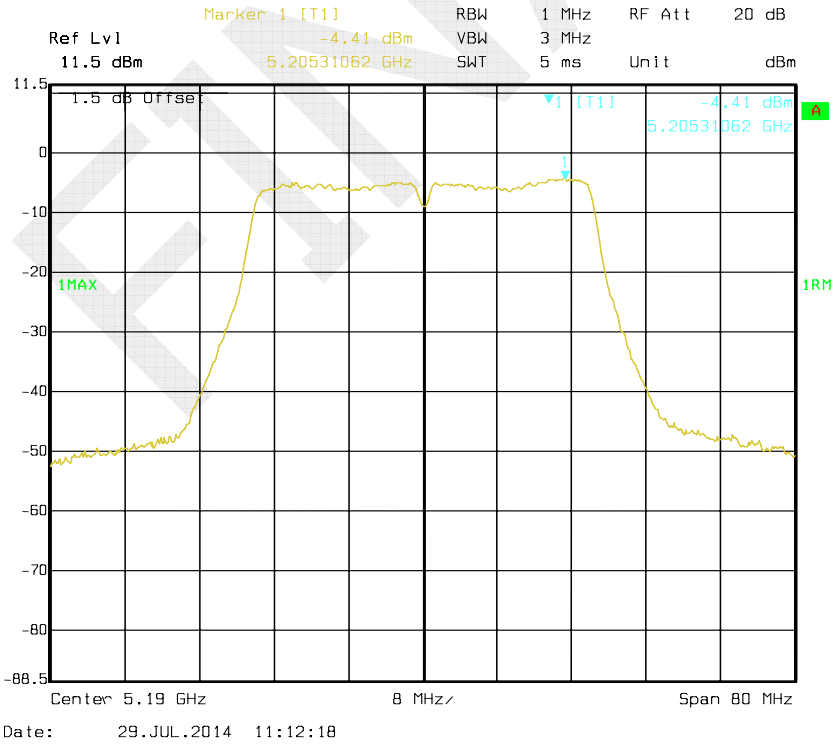


Date: 29.JUL.2014 10:20:15

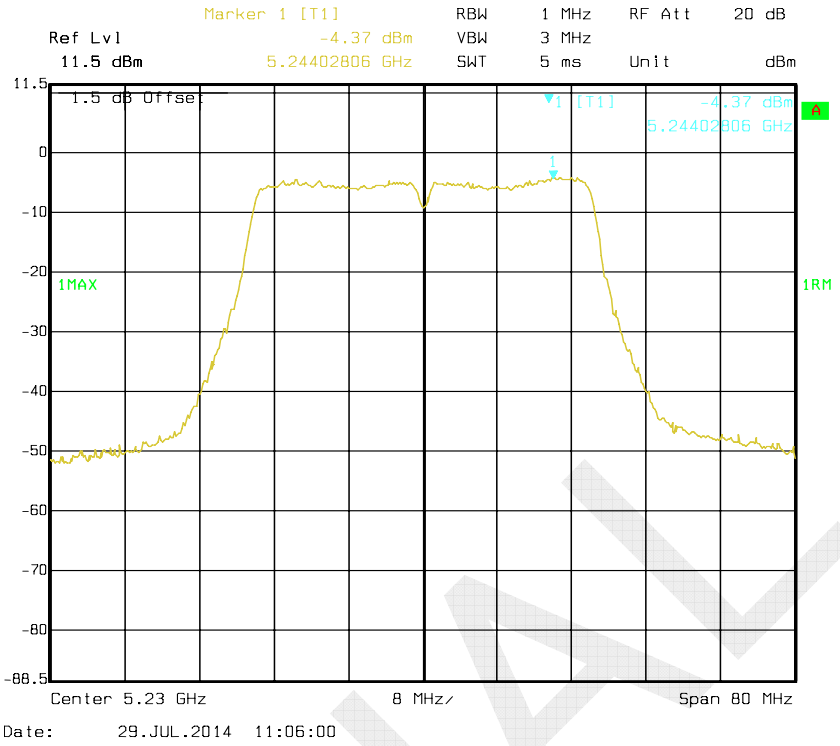
Chain 0:Power Spectral Density, 802.11n ht40 High Channel



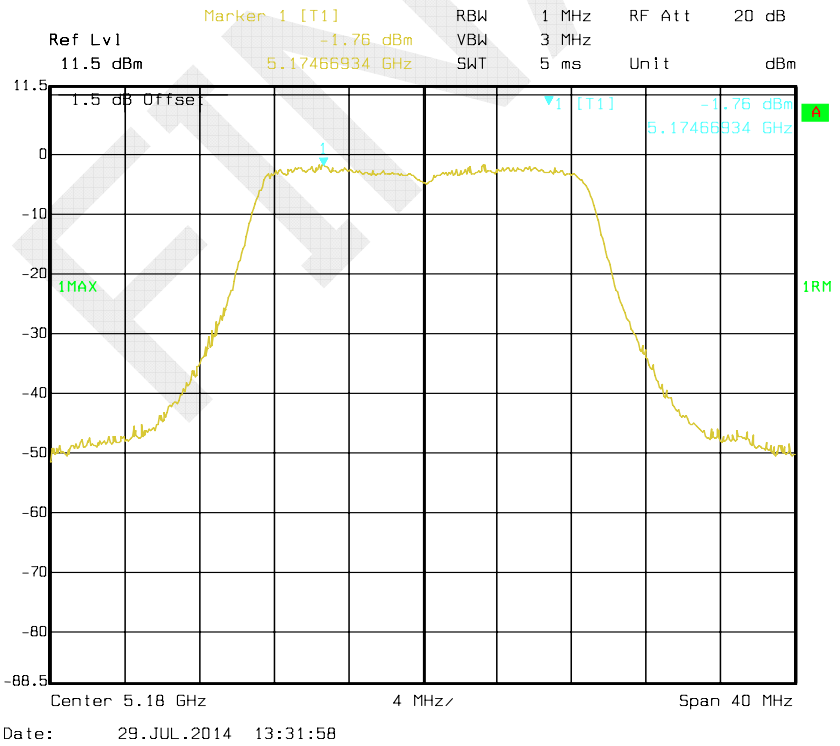
Chain 1:Power Spectral Density, 802.11n ht40 Low Channel



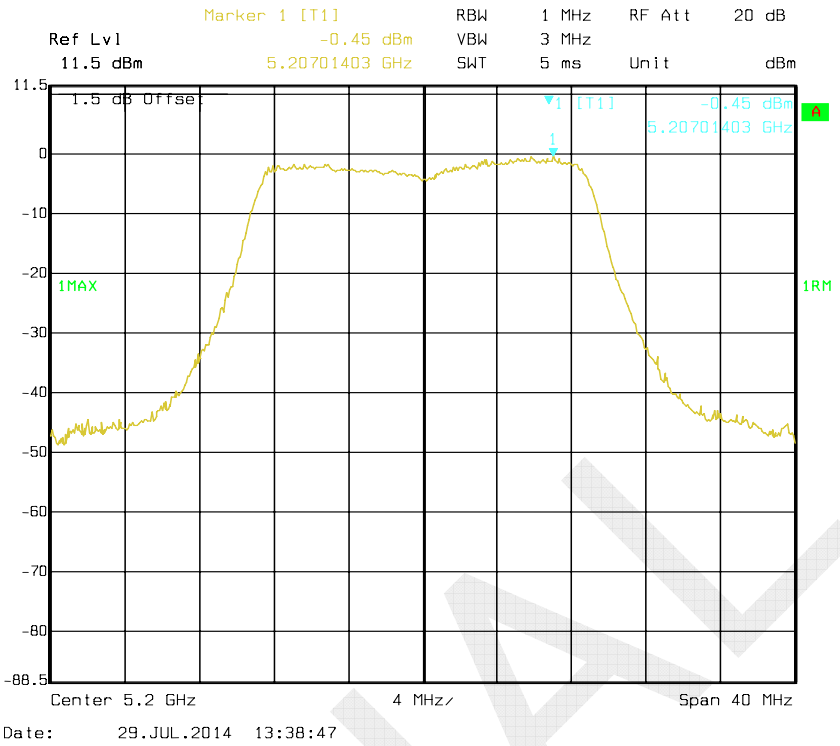
Chain 1:Power Spectral Density, 802.11n ht40 High Channel



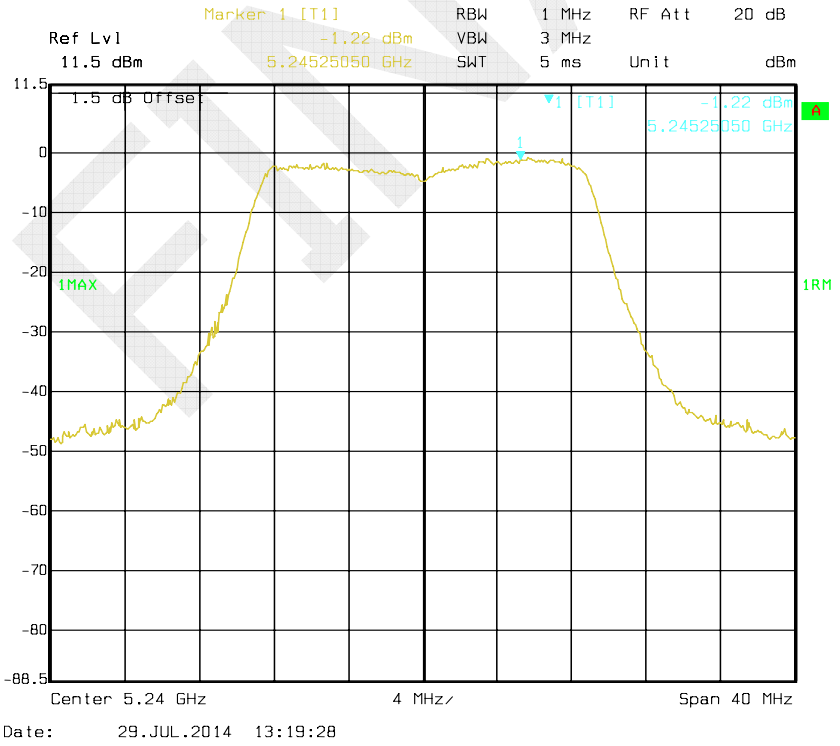
Chain 0:Power Spectral Density, 802.11ac20 Low Channel



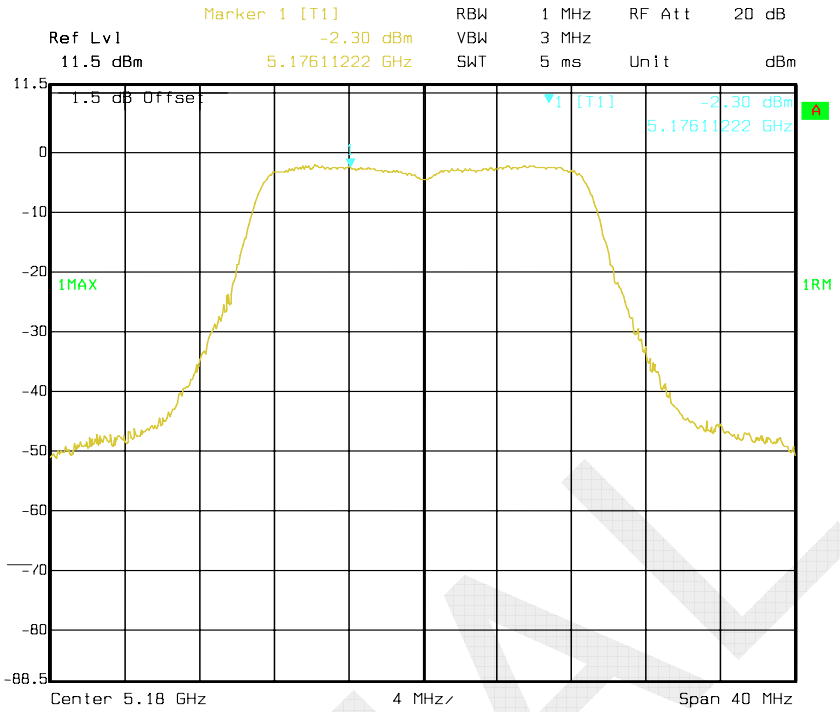
Chain 0:Power Spectral Density, 802.11ac20 Middle Channel



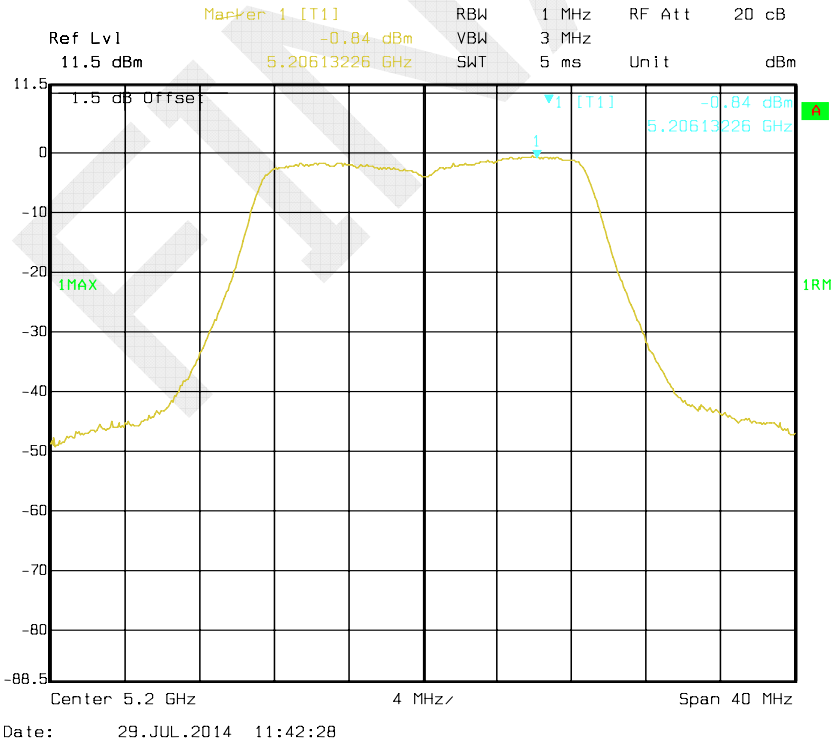
Chain 0:Power Spectral Density, 802.11ac20 High Channel



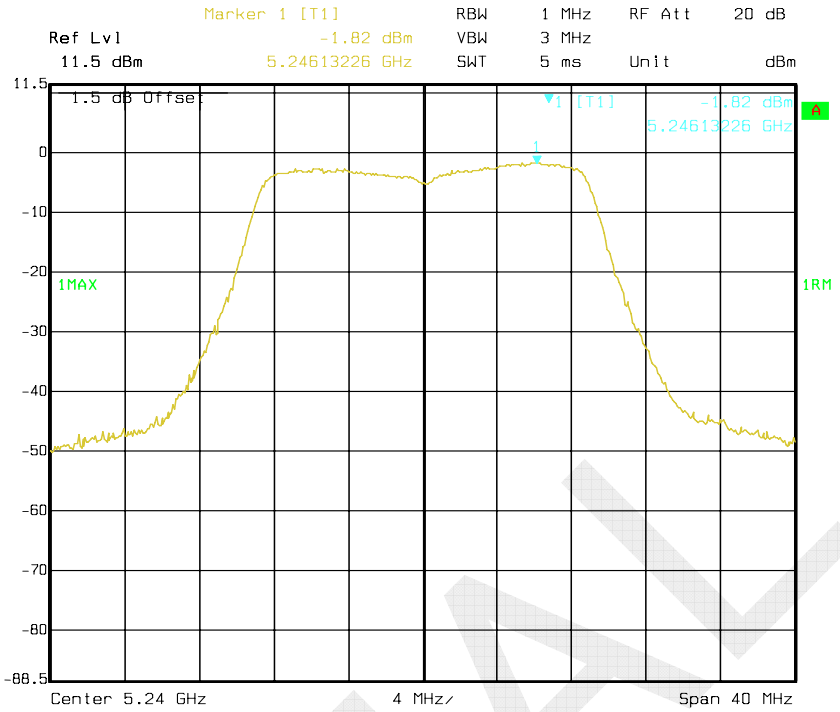
Chain 1:Power Spectral Density, 802.11 ac20 Low Channel



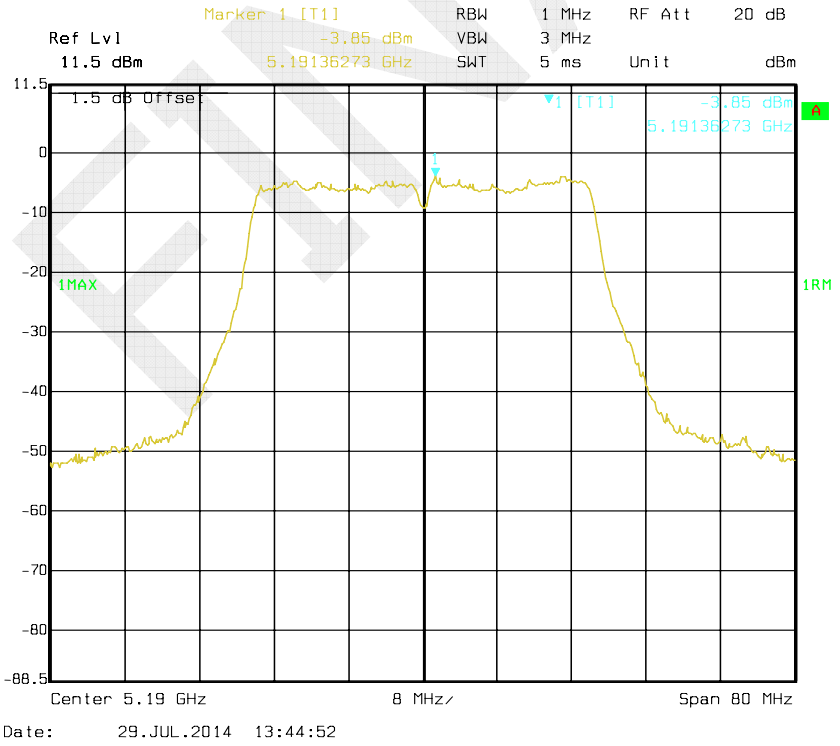
Chain 1:Power Spectral Density, 802.11ac20 Middle Channel



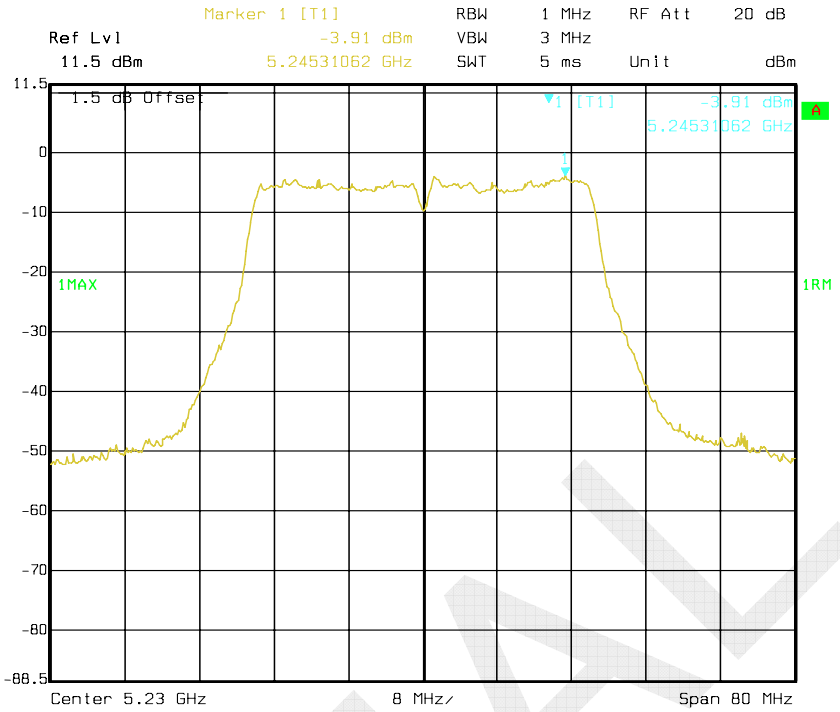
Chain 1:Power Spectral Density, 802.11ac20 High Channel



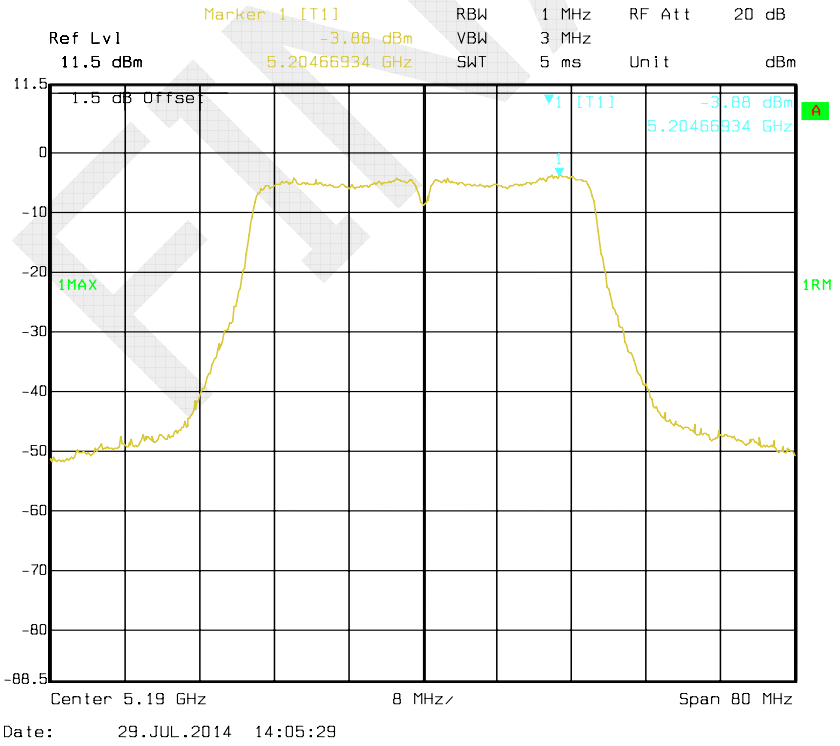
Chain 0:Power Spectral Density, 802.11ac40 Low Channel



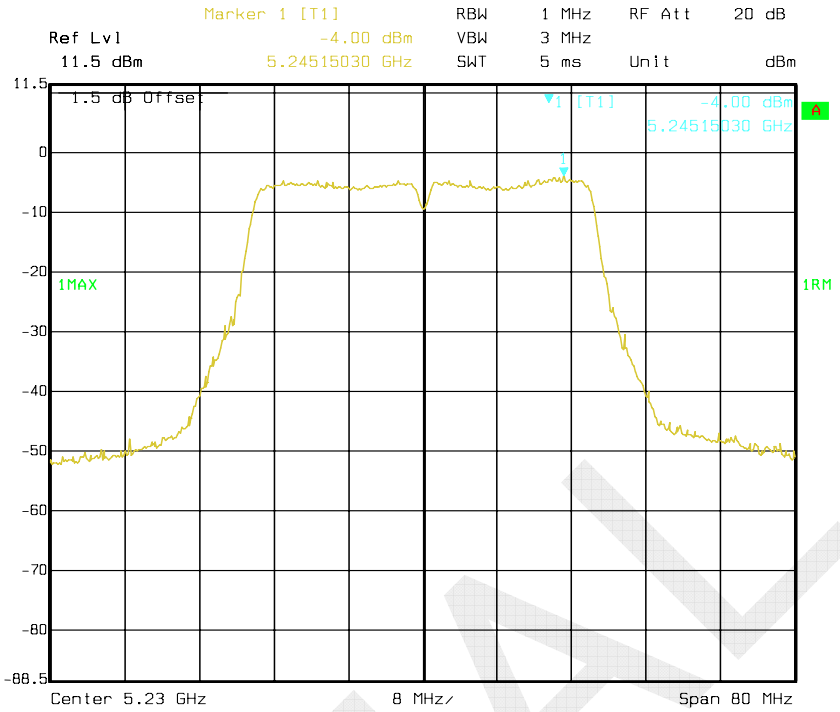
Chain 0:Power Spectral Density, 802.11ac40 High Channel



Chain 1:Power Spectral Density, 802.11ac40 Low Channel

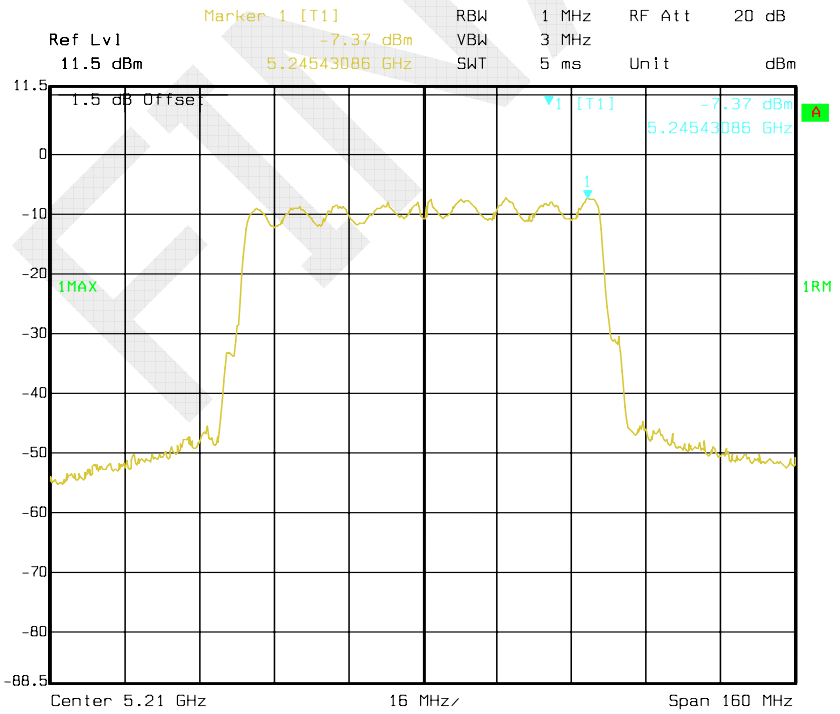


Chain 1:Power Spectral Density, 802.11ac40 High Channel



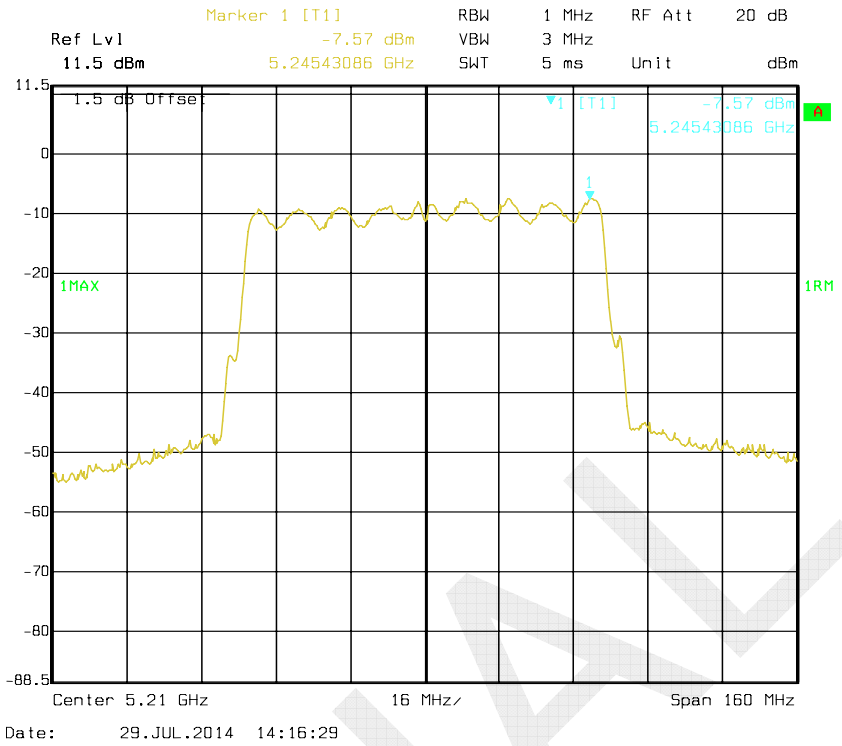
Date: 29.JUL.2014 14:01:03

Chain 0:Power Spectral Density, 802.11ac80 Low Channel



Date: 29.JUL.2014 14:23:37

Chain 1:Power Spectral Density, 802.11ac80 Low Channel



FCC §15.407(g)- FREQUENCY STABILITY

Applicable Standard

FCC §15.407(g)

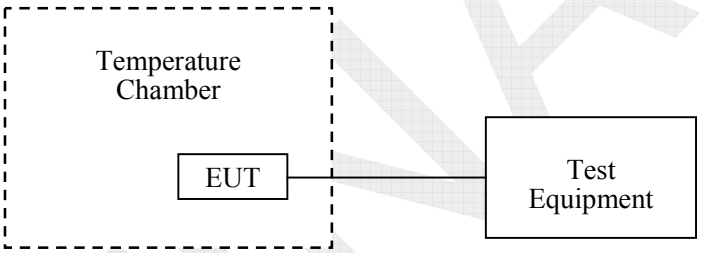
Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to one laptop and the RF output was connected to SA via feed-through attenuators. The EUT was placed inside the temperature chamber.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: An external variable AC power supply was connected to the laptop. The voltage was set to 85% and 115% of the nominal value.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-3	2014-7-31	2015-8-1
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 in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26.8~28 °C
Relative Humidity:	55~57 %
ATM Pressure:	100~100.1 kPa

The testing was performed by Dean Liu from 2014-08-03.

Test Mode: Transmitting

Channel, f_o =5210 MHz			
Temperature (℃)	**Power Supplied (V_{AC})**	**Measure Frequency (MHz)**	**Result**
-30	120	5210.00367	maintained within the band (5150-5250)MHz
-20		5210.00394	
-10		5210.00411	
0		5210.00365	
10		5210.00165	
20		5210.00419	
30		5210.00436	
40		5210.00409	
50		5210.00452	
25	$V_{min.}$= 102	5210.00416	
25	$V_{max.}$= 138	5210.00406	

DECLARATION OF SIMILARITY

Iconnect
Add: No.9, Aly. 58, Ln. 112, Ruiguang Rd., Neihu Dist., Taipei City,Taiwan
Tel: +886-2-27968477 Fax: +886-2-27968478

DECLARATION OF SIMILARITY

Date: 2014-7-25

Dear Sir or Madam:

We, Iconnect, hereby declare that product: 802.11ac AC1200 USB adapter, model: AWUS036EAC, AWUS036AC_H, AWUS036EAC_H, WISP-UAC, Tube-UAC, UBDO-UAC is electrically identical with the model: AWUS036AC which was tested by BACL with the same electromagnetic emissions and electromagnetic compatibility characteristics. The results of which are featured in BACL projects: RDG140717005.

A description of the difference between all the models as follows:
They are the same product, and just have the different model name.

Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature:

Johnson Wang
Manager

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