

FCC PART 15.407

TEST REPORT

For

Beijing Capital Online Network Technology Co.,Ltd.

16th Floor,Jian Da Building,14 East Tucheng Road Beijing,100013 China

FCC ID: OLV-S8G40

Report Type: Original Report	Product Type: iTalkBB Chinese TV
Test Engineer:	Dean Liu 
Report Number:	RBJ150121050-00B
Report Date:	2015-02-06
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

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan). This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EUT EXERCISE SOFTWARE	6
EQUIPMENT MODIFICATIONS	7
SUPPORT EQUIPMENT LIST AND DETAILS	7
EXTERNAL CABLE.....	7
BLOCK DIAGRAM OF TEST SETUP	8
SUMMARY OF TEST RESULTS	9
FCC §15.407(f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)	10
APPLICABLE STANDARD	10
FCC §15.203 – ANTENNA REQUIREMENT	11
APPLICABLE STANDARD	11
ANTENNA CONNECTOR CONSTRUCTION	11
FCC §15.407 (b) (6) §15.207 (a) – CONDUCTED EMISSIONS	12
APPLICABLE STANDARD	12
MEASUREMENT UNCERTAINTY	12
EUT SETUP	12
EMI TEST RECEIVER SETUP.....	13
CORRECTED AMPLITUDE & MARGIN CALCULATION	13
TEST EQUIPMENT LIST AND DETAILS.....	13
TEST PROCEDURE	14
TEST RESULTS SUMMARY	14
TEST DATA	14
FCC §15.209, §15.205 & §15.407(b) (1) (6) (7) –UNWANTED EMISSION.....	17
APPLICABLE STANDARD	17
MEASUREMENT UNCERTAINTY	17
EUT SETUP	18
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	19
TEST PROCEDURE	19
CORRECTED AMPLITUDE & MARGIN CALCULATION	19
TEST EQUIPMENT LIST AND DETAILS.....	20
TEST RESULTS SUMMARY	20
TEST DATA	20
FCC §15.407(b) (1) –BAND EDGE	56
APPLICABLE STANDARD	56
TEST PROCEDURE	56
TEST EQUIPMENT LIST AND DETAILS.....	56
TEST DATA	57
FCC §15.407(a) –EMISSION BANDWIDTH AND OCCUPIED BANDWIDTH	66

APPLICABLE STANDARD	66
TEST EQUIPMENT LIST AND DETAILS.....	66
TEST PROCEDURE	66
TEST DATA	66
FCC §15.407(a) (1) (ii) (4) –MAXIMUM CONDUCTED OUTPUT POWER.....	82
APPLICABLE STANDARD	82
TEST EQUIPMENT LIST AND DETAILS.....	83
TEST PROCEDURE	83
TEST DATA	83
FCC §15.407(a) - POWER SPECTRAL DENSITY	94
APPLICABLE STANDARD	94
TEST PROCEDURE	95
TEST EQUIPMENT LIST AND DETAILS.....	95
TEST DATA	95

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Beijing Capital Online Network Technology Co.,Ltd.*'s product, model number: *S8G40* (FCC ID: *OLV-S8G40*) or ("EUT") in this report is a *iTalkBB Chinese TV*, which was measured approximately: 9.0 cm (L) x 9.0 cm (W) x 1.9 cm (H), rated input voltage: DC 12.0V from adapter.

Adapter information:

Model: GSCU1000S012V15G

Input: AC 100-240V, 50/60Hz, 0.5A

Output: DC 12V, 1.0A

All measurement and test data in this report was gathered from production sample serial number: 150121050. (Assigned by BACL, Dongguan). The EUT was received on 2015-01-21.

Objective

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

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

Related Submittal(s)/Grant(s)

FCC Part 15C DTS submissions with FCC ID: OLV-S8G40.

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 Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 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, 6 channels are provided to test:

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

For 802.11a, 802.11n ht20, Channel 36, 40 and 48 were tested, for 802.11n ht40, Channel 38, 46 were tested, for 802.11n ac80, Channel 42 was tested.

For 5725~5850 MHz band, 7 channels are provided to test:

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

For 802.11a, 802.11n ht20, Channel 149, 157 and 165 were tested, for 802.11n ht40, Channel 151, 159 were tested, for 802.11n ac80, Channel 155 was tested.

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

EUT Exercise Software

The software “MP_Kit_RTL11ac_8811AU_USB” was used for testing, and the commands were provided by manufacturer. The worst condition (maximum power) was setting by the software as following table:

5150–5250MHz Band:

Test Mode	Test Software Version	MP_Kit_RTL11ac_8811AU_USB		
802.11A	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	48	48	46
802.11n ht20	Test Frequency	5180MHz	5200MHz	5240MHz
	Data Rate	(HT Mixmode)MCS0	(HT Mixmode)MCS0	(HT Mixmode)MCS0
	Power Level Setting	46	46	46
802.11n ht40	Test Frequency	5190MHz	5230MHz	
	Data Rate	(HT Mix mode)MCS0	(HT Mix mode)MCS0	
	Power Level Setting	48	48	
802.11n AC80	Test Frequency	5210MHz		
	Data Rate	(VHT Mode)MCS0		
	Power Level Setting	46		

5725–5850 MHz Band:

Test Mode	Test Software Version	MP_Kit_RTL11ac_8811AU_USB		
802.11A	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	36	40	40
802.11n ht20	Test Frequency	5745MHz	5785MHz	5825MHz
	Data Rate	(HT Mix mode)MCS0	(HT Mix mode)MCS0	(HT Mix mode)MCS0
	Power Level Setting	36	40	40
802.11n ht40	Test Frequency	5755MHz	5795MHz	
	Data Rate	(HT Mix mode)MCS0	(HT Mix mode)MCS0	
	Power Level Setting	38	42	
802.11n AC80	Test Frequency	5775MHz		
	Data Rate	(VHT Mode)MCS0		
	Power Level Setting	34		

Equipment Modifications

No modification was made to the EUT.

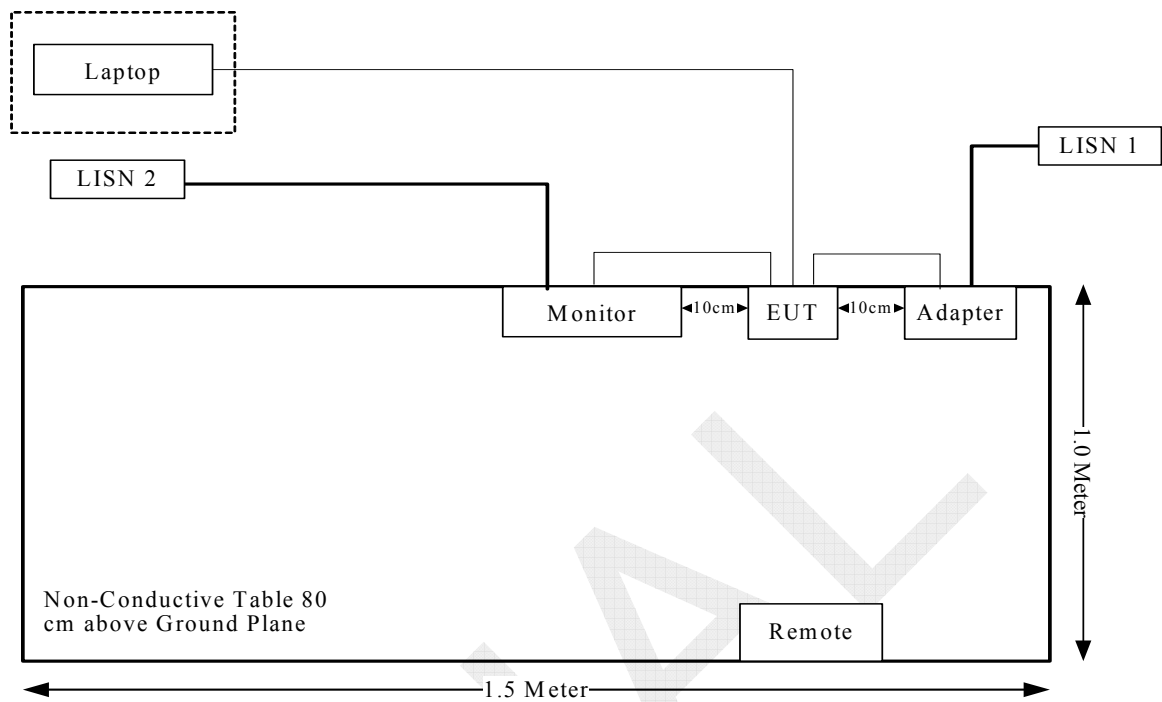
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
DELL	Monitor	U3011t	CN-OPH5NY-74445-16T-290L

External Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
HDMI Cable	Yes	No	1.5	HDMI Port of EUT	Monitor
RJ45 Cable	No	No	10	LAN port of EUT	Laptop
Adapter Cable	No	No	1.6	DC port of EUT	Adapter

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

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

Applicable Standard

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

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

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

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

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

Calculated Formulary:

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

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:

Band	Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
			(dBi)	(numeric)	(dBm)	(mW)			
5150-5250 MHz	802.11a	5200	4.4	2.75	13.23	21.04	20	0.012	1.0
	802.11n ht20	5240	4.4	2.75	12.64	18.37	20	0.010	1.0
	802.11n ht40	5230	4.4	2.75	12.17	16.48	20	0.009	1.0
	802.11ac80	5210	4.4	2.75	11.70	14.79	20	0.008	1.0
5725-5850 MHz	802.11a	5745	4.4	2.75	12.58	18.11	20	0.010	1.0
	802.11n ht20	5825	4.4	2.75	11.76	15.00	20	0.008	1.0
	802.11n ht40	5755	4.4	2.75	12.50	17.78	20	0.010	1.0
	802.11ac80	5775	4.4	2.75	10.24	10.57	20	0.006	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 one internal dual-band antenna, which was permanently attached and the antenna gain is 4.4 dBi, 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:

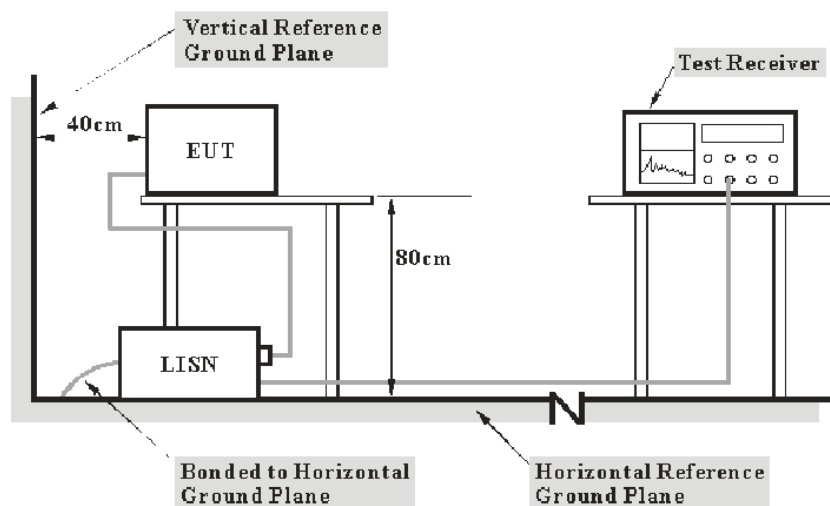
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

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 was connected to a 120 VAC/60 Hz power source

EMI Test Receiver Setup

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

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

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

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

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

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2014-10-16	2015-10-16
R&S	L.I.S.N	ESH3-Z5	843331/015	N/A	N/A
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-12-11	2015-12-11
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

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

Test Procedure

During the conducted emission test, the adapter was connected to the first 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:

6.3 dB at 0.192030 MHz in the Neutral conducted mode

Test Data

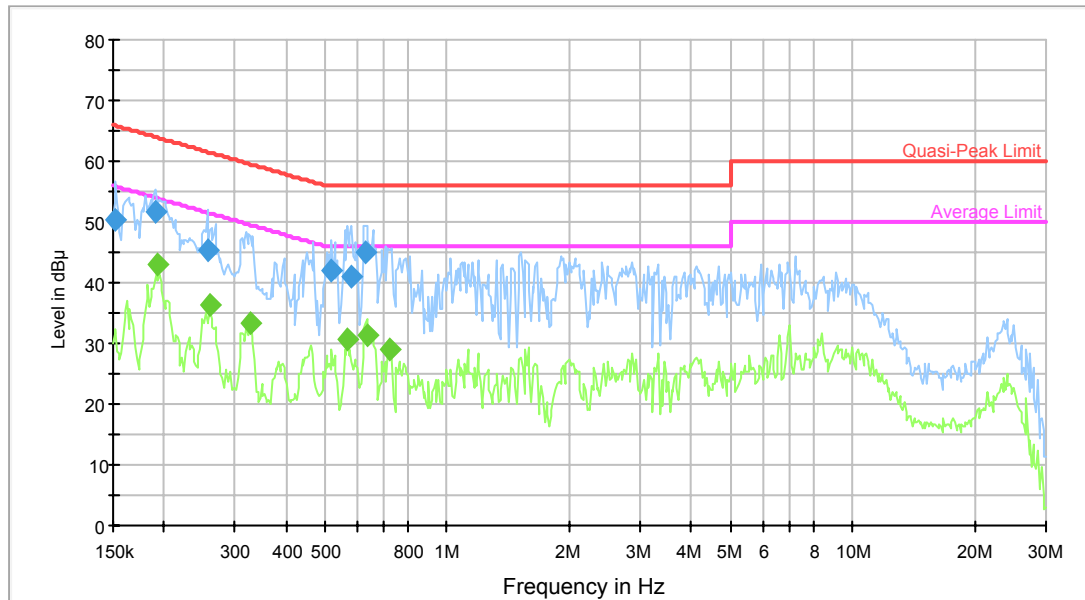
Environmental Conditions

Temperature:	20.7 °C
Relative Humidity:	36 %
ATM Pressure:	101.8 kPa

The testing was performed by Dean Liu on 2015-02-05.

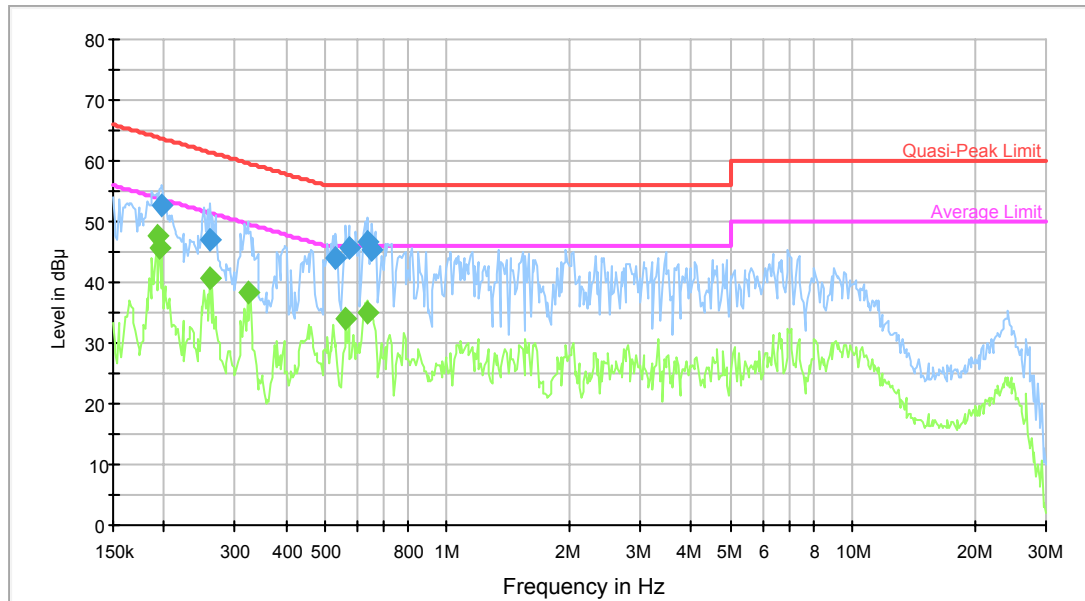
Test Mode: Transmitting

AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.152410	50.4	9.000	L1	10.1	15.5	65.9	Compliance
0.190505	51.8	9.000	L1	10.6	12.2	64.0	Compliance
0.255827	45.4	9.000	L1	10.7	16.1	61.6	Compliance
0.519918	41.9	9.000	L1	10.3	14.1	56.0	Compliance
0.581275	40.9	9.000	L1	10.4	15.1	56.0	Compliance
0.629488	44.9	9.000	L1	10.5	11.1	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.192030	43.1	9.000	L1	10.6	10.9	53.9	Compliance
0.259937	36.2	9.000	L1	10.7	15.2	51.4	Compliance
0.327509	33.2	9.000	L1	10.7	16.3	49.5	Compliance
0.567545	30.7	9.000	L1	10.4	15.3	46.0	Compliance
0.634524	31.4	9.000	L1	10.5	14.6	46.0	Compliance
0.720803	29.1	9.000	L1	10.6	16.9	46.0	Compliance

AC120 V, 60 Hz, Neutral:

Frequency (MHz)	QuasiPeak (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.198249	52.6	9.000	N	11.3	11.0	63.7	Compliance
0.259937	47.0	9.000	N	11.2	14.5	61.4	Compliance
0.532496	44.2	9.000	N	10.3	11.8	56.0	Compliance
0.572086	45.7	9.000	N	10.4	10.3	56.0	Compliance
0.639600	46.7	9.000	N	10.5	9.3	56.0	Compliance
0.649874	45.4	9.000	N	10.6	10.6	56.0	Compliance

Frequency (MHz)	Average (dB μ V)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.192030	47.6	9.000	N	11.2	6.3	53.9	Compliance
0.195114	45.7	9.000	N	11.2	8.1	53.8	Compliance
0.259937	40.8	9.000	N	11.2	10.6	51.4	Compliance
0.322331	38.2	9.000	N	11.1	11.4	49.6	Compliance
0.563041	33.9	9.000	N	10.4	12.1	46.0	Compliance
0.639600	34.9	9.000	N	10.5	11.1	46.0	Compliance

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

FCC §15.407; §15.209; §15.205;

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

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

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

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

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

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

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

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

Measurement Uncertainty

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

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

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

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

30M~200MHz: 5.0 dB

200M~1GHz: 6.2 dB

1G~6GHz: 4.45 dB

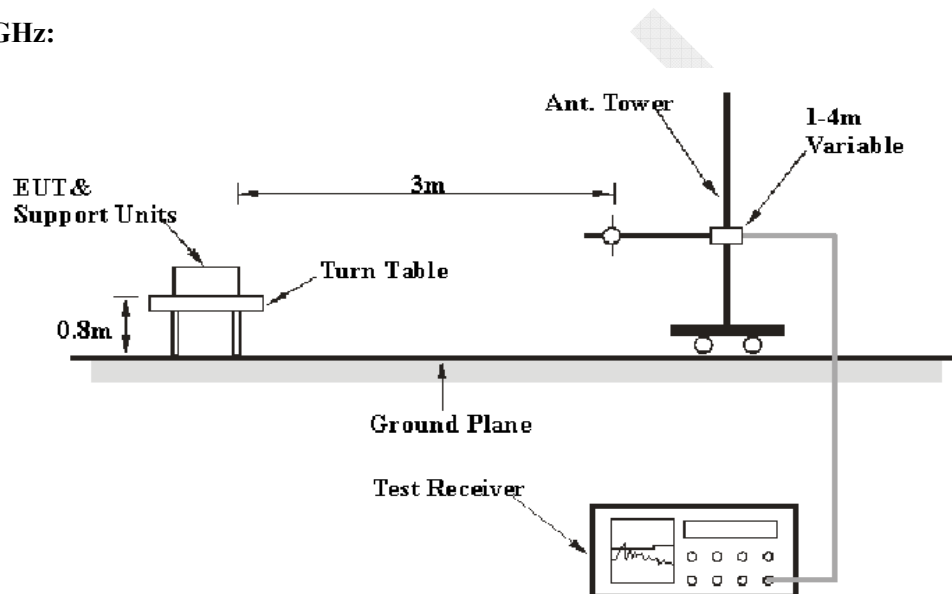
6G~18GHz: 5.23 dB

Table 1 – Values of U_{cispr}

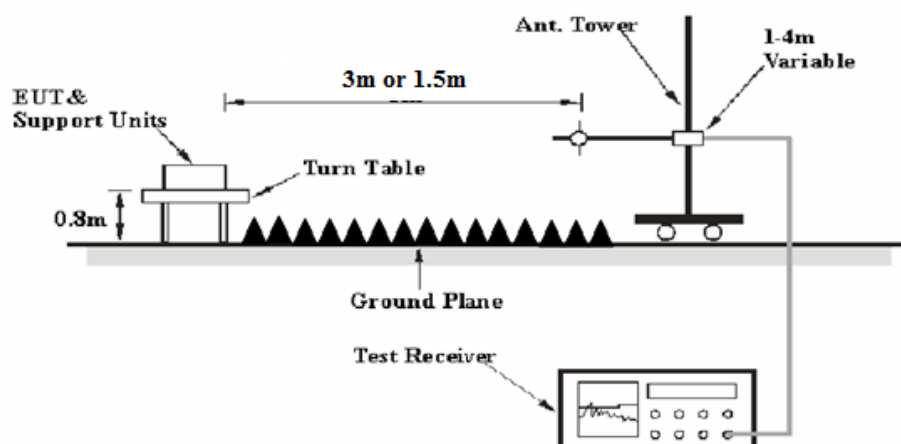
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters chamber, using the setup accordance with the ANSI C63.4-2003. 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 was connected to a 120 VAC/60 Hz power source

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

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

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

Test Procedure

During the radiated emission test, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

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

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

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

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

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

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

Corrected Amplitude & Margin Calculation

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

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

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

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2014-05-09	2015-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-07-28	2017-07-27
HP	Amplifier	8447E	2434A02181	2014-09-01	2015-09-01
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 Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-01 1302	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2014-09-06	2015-09-06

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

Test Results Summary

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

0.81 dB at 5725 MHz in the **Horizontal** polarization for 802.11n AC80 mode

Test Data**Environmental Conditions**

Temperature:	21.8 °C-22.7°C
Relative Humidity:	42 %-52%
ATM Pressure:	101.6 kPa-102 kPa

The testing was performed by Dean Liu on 2015-02-03 & 2015-02-04.

Mode: Transmitting

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

5150MHz-5250MHz: 802.11a mode:

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	71.41	PK	H	31.46	5.40	0.00	108.27	102.27	N/A	N/A
5180	62.21	AV	H	31.46	5.40	0.00	99.07	93.07	N/A	N/A
5180	70.24	PK	V	31.46	5.40	0.00	107.10	101.10	N/A	N/A
5180	61.27	AV	V	31.46	5.40	0.00	98.13	92.13	N/A	N/A
5150	27.01	PK	H	31.40	5.26	0.00	63.67	57.67	74.00	16.33
5150	15.79	AV	H	31.40	5.26	0.00	52.45	46.45	54.00	7.55
10360	44.00	PK	H	36.97	8.36	25.52	63.81	57.81	74.00	16.19
10360	31.66	AV	H	36.97	8.36	25.52	51.47	45.47	54.00	8.53
15540	33.67	PK	H	37.43	14.94	24.98	61.06	55.06	74.00	18.94
15540	21.57	AV	H	37.43	14.94	24.98	48.96	42.96	54.00	11.04
7107	33.24	PK	H	33.86	6.50	26.06	47.54	41.54	74.00	32.46
7107	21.68	AV	H	33.86	6.50	26.06	35.98	29.98	54.00	24.02
3280	32.27	PK	H	28.10	5.61	27.30	38.68	32.68	74.00	41.32
3280	20.17	AV	H	28.10	5.61	27.30	26.58	20.58	54.00	33.42
360.77	37.10	QP	H	15.61	2.31	21.67	33.35	33.35	46.00	12.65
Middle Channel:5200 MHz										
5200	68.24	PK	H	31.50	5.49	0.00	105.23	99.23	N/A	N/A
5200	59.11	AV	H	31.50	5.49	0.00	96.10	90.10	N/A	N/A
5200	67.89	PK	V	31.50	5.49	0.00	104.88	98.88	N/A	N/A
5200	58.95	AV	V	31.50	5.49	0.00	95.94	89.94	N/A	N/A
10400	42.45	PK	H	36.98	8.32	25.50	62.25	56.25	74.00	17.75
10400	31.88	AV	H	36.98	8.32	25.50	51.68	45.68	54.00	8.32
15600	33.31	PK	H	37.32	14.69	24.69	60.63	54.63	74.00	19.37
15600	21.54	AV	H	37.32	14.69	24.69	48.86	42.86	54.00	11.14
7107	33.25	PK	H	33.86	6.50	26.06	47.55	41.55	74.00	32.45
7107	21.75	AV	H	33.86	6.50	26.06	36.05	30.05	54.00	23.95
3280	32.23	PK	H	28.10	5.61	27.30	38.64	32.64	74.00	41.36
3280	20.14	AV	H	28.10	5.61	27.30	26.55	20.55	54.00	33.45
296.75	37.60	QP	H	13.97	2.07	21.52	32.12	32.12	46.00	13.88
360.77	37.20	QP	H	15.61	2.31	21.67	33.45	33.45	46.00	12.55
High Channel:5240 MHz										
5240	68.95	PK	H	31.58	5.28	0.00	105.81	99.81	N/A	N/A
5240	60.76	AV	H	31.58	5.28	0.00	97.62	91.62	N/A	N/A
5240	64.73	PK	V	31.58	5.28	0.00	101.59	95.59	N/A	N/A
5240	55.39	AV	V	31.58	5.28	0.00	92.25	86.25	N/A	N/A
5350	27.05	PK	H	31.80	5.61	0.00	64.46	58.46	74.00	15.54
5350	17.01	AV	H	31.80	5.61	0.00	54.42	48.42	54.00	5.58
10480	41.05	PK	H	37.00	8.23	26.01	60.27	54.27	74.00	19.73
10480	30.64	AV	H	37.00	8.23	26.01	49.86	43.86	54.00	10.14
15720	32.91	PK	H	37.10	14.20	24.92	59.29	53.29	74.00	20.71
15720	20.12	AV	H	37.10	14.20	24.92	46.50	40.50	54.00	13.50
7107	33.20	PK	H	33.86	6.50	26.06	47.50	41.50	74.00	32.50
7107	21.61	AV	H	33.86	6.50	26.06	35.91	29.91	54.00	24.09
3280	32.22	PK	H	28.10	5.61	27.30	38.63	32.63	74.00	41.37
3280	20.08	AV	H	28.10	5.61	27.30	26.49	20.49	54.00	33.51
360.77	37.30	QP	H	15.61	2.31	21.67	33.55	33.55	46.00	12.45

802.11n ht20 mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5180 MHz										
5180	69.41	PK	H	31.46	5.40	0.00	106.27	100.27	N/A	N/A
5180	60.43	AV	H	31.46	5.40	0.00	97.29	91.29	N/A	N/A
5180	68.34	PK	V	31.46	5.40	0.00	105.20	99.20	N/A	N/A
5180	59.02	AV	V	31.46	5.40	0.00	95.88	89.88	N/A	N/A
5150	28.16	PK	H	31.40	5.26	0.00	64.82	58.82	74.00	15.18
5150	15.92	AV	H	31.40	5.26	0.00	52.58	46.58	54.00	7.42
10360	44.07	PK	H	36.97	8.36	25.52	63.88	57.88	74.00	16.12
10360	31.70	AV	H	36.97	8.36	25.52	51.51	45.51	54.00	8.49
15540	33.58	PK	H	37.43	14.94	24.98	60.97	54.97	74.00	19.03
15540	21.53	AV	H	37.43	14.94	24.98	48.92	42.92	54.00	11.08
7513	33.34	PK	H	34.81	6.95	26.17	48.93	42.93	74.00	31.07
7513	21.69	AV	H	34.81	6.95	26.17	37.28	31.28	54.00	22.72
2786	32.18	PK	H	26.64	4.45	27.55	35.72	29.72	74.00	44.28
2786	20.19	AV	H	26.64	4.45	27.55	23.73	17.73	54.00	36.27
360.77	37.24	QP	H	15.61	2.31	21.67	33.49	33.49	46.00	12.51
Middle Channel:5200 MHz										
5200	69.27	PK	H	31.50	5.49	0.00	106.26	100.26	N/A	N/A
5200	60.37	AV	H	31.50	5.49	0.00	97.36	91.36	N/A	N/A
5200	68.46	PK	V	31.50	5.49	0.00	105.45	99.45	N/A	N/A
5200	58.28	AV	V	31.50	5.49	0.00	95.27	89.27	N/A	N/A
10400	42.48	PK	H	36.98	8.32	25.50	62.28	56.28	74.00	17.72
10400	31.88	AV	H	36.98	8.32	25.50	51.68	45.68	54.00	8.32
15600	33.25	PK	H	37.32	14.69	24.69	60.57	54.57	74.00	19.43
15600	21.55	AV	H	37.32	14.69	24.69	48.87	42.87	54.00	11.13
7513	33.26	PK	H	34.81	6.95	26.17	48.85	42.85	74.00	31.15
7513	21.82	AV	H	34.81	6.95	26.17	37.41	31.41	54.00	22.59
2786	32.30	PK	H	26.64	4.45	27.55	35.84	29.84	74.00	44.16
2786	20.18	AV	H	26.64	4.45	27.55	23.72	17.72	54.00	36.28
296.75	37.30	QP	H	13.97	2.07	21.52	31.82	31.82	46.00	14.18
360.77	37.38	QP	H	15.61	2.31	21.67	33.63	33.63	46.00	12.37
High Channel:5240 MHz										
5240	70.08	PK	H	31.58	5.28	0.00	106.94	100.94	N/A	N/A
5240	61.12	AV	H	31.58	5.28	0.00	97.98	91.98	N/A	N/A
5240	69.67	PK	V	31.58	5.28	0.00	106.53	100.53	N/A	N/A
5240	60.33	AV	V	31.58	5.28	0.00	97.19	91.19	N/A	N/A
5350	26.67	PK	H	31.80	5.61	0.00	64.08	58.08	74.00	15.92
5350	14.96	AV	H	31.80	5.61	0.00	52.37	46.37	54.00	7.63
10480	41.09	PK	H	37.00	8.23	26.01	60.31	54.31	74.00	19.69
10480	30.58	AV	H	37.00	8.23	26.01	49.80	43.80	54.00	10.20
15720	32.99	PK	H	37.10	14.20	24.92	59.37	53.37	74.00	20.63
15720	20.04	AV	H	37.10	14.20	24.92	46.42	40.42	54.00	13.58
7513	33.21	PK	H	34.81	6.95	26.17	48.80	42.80	74.00	31.20
7513	21.66	AV	H	34.81	6.95	26.17	37.25	31.25	54.00	22.75
2786	32.25	PK	H	26.64	4.45	27.55	35.79	29.79	74.00	44.21
2786	20.08	AV	H	26.64	4.45	27.55	23.62	17.62	54.00	36.38
360.77	37.40	QP	H	15.61	2.31	21.67	33.65	33.65	46.00	12.35

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	65.54	PK	H	31.48	5.44	0.00	102.46	96.46	N/A	N/A
5190	55.61	AV	H	31.48	5.44	0.00	92.53	86.53	N/A	N/A
5190	64.42	PK	V	31.48	5.44	0.00	101.34	95.34	N/A	N/A
5190	54.33	AV	V	31.48	5.44	0.00	91.25	85.25	N/A	N/A
5150	28.43	PK	H	31.40	5.26	0.00	65.09	59.09	74.00	14.91
5150	17.08	AV	H	31.40	5.26	0.00	53.74	47.74	54.00	6.26
10380	43.94	PK	H	36.98	8.34	25.51	63.75	57.75	74.00	16.25
10380	31.74	AV	H	36.98	8.34	25.51	51.55	45.55	54.00	8.45
15570	33.73	PK	H	37.37	14.81	24.83	61.08	55.08	74.00	18.92
15570	21.62	AV	H	37.37	14.81	24.83	48.97	42.97	54.00	11.03
7513	33.17	PK	H	34.81	6.95	26.17	48.76	42.76	74.00	31.24
7513	21.70	AV	H	34.81	6.95	26.17	37.29	31.29	54.00	22.71
2786	32.31	PK	H	26.64	4.45	27.55	35.85	29.85	74.00	44.15
2786	20.09	AV	H	26.64	4.45	27.55	23.63	17.63	54.00	36.37
360.77	37.43	QP	H	15.61	2.31	21.67	33.68	33.68	46.00	12.32
High Channel:5230 MHz										
5230	66.37	PK	H	31.56	5.33	0.00	103.26	97.26	N/A	N/A
5230	57.58	AV	H	31.56	5.33	0.00	94.47	88.47	N/A	N/A
5230	65.21	PK	V	31.56	5.33	0.00	102.10	96.10	N/A	N/A
5230	56.34	AV	V	31.56	5.33	0.00	93.23	87.23	N/A	N/A
5350	25.79	PK	V	31.80	5.61	0.00	63.20	57.20	74.00	16.80
5350	14.97	AV	V	31.80	5.61	0.00	52.38	46.38	54.00	7.62
10460	42.36	PK	V	36.99	8.25	25.88	61.72	55.72	74.00	18.28
10460	31.79	AV	V	36.99	8.25	25.88	51.15	45.15	54.00	8.85
15690	33.40	PK	V	37.16	14.32	24.87	60.01	54.01	74.00	19.99
15690	21.45	AV	V	37.16	14.32	24.87	48.06	42.06	54.00	11.94
7513	33.24	PK	V	34.81	6.95	26.17	48.83	42.83	74.00	31.17
7513	21.68	AV	V	34.81	6.95	26.17	37.27	31.27	54.00	22.73
2786	32.31	PK	V	26.64	4.45	27.55	35.85	29.85	74.00	44.15
2786	20.16	AV	V	26.64	4.45	27.55	23.70	17.70	54.00	36.30
360.77	37.35	QP	V	15.61	2.31	21.67	33.6	33.60	46.00	12.40

802.11n ac80 mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Extrapolation result	Limit	Margin
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)
Channel:5210 MHz										
5210	63.21	PK	H	31.52	5.44	0.00	100.17	94.17	N/A	N/A
5210	50.24	AV	H	31.52	5.44	0.00	87.20	81.20	N/A	N/A
5210	60.24	PK	V	31.52	5.44	0.00	97.20	91.20	N/A	N/A
5210	50.14	AV	V	31.52	5.44	0.00	87.10	81.10	N/A	N/A
5150	29.36	PK	H	31.40	5.26	0.00	66.02	60.02	74.00	13.98
5150	17.11	AV	H	31.40	5.26	0.00	53.77	47.77	54.00	6.23
5350	27.67	PK	H	31.80	5.61	0.00	65.08	59.08	74.00	14.92
5350	15.03	AV	H	31.80	5.61	0.00	52.44	46.44	54.00	7.56
10420	43.95	PK	H	36.98	8.30	25.63	63.60	57.60	74.00	16.40
10420	31.65	AV	H	36.98	8.30	25.63	51.30	45.30	54.00	8.70
15630	33.62	PK	H	37.27	14.57	24.75	60.71	54.71	74.00	19.29
15630	21.52	AV	H	37.27	14.57	24.75	48.61	42.61	54.00	11.39
7513	33.25	PK	H	34.81	6.95	26.17	48.84	42.84	74.00	31.16
7513	21.72	AV	H	34.81	6.95	26.17	37.31	31.31	54.00	22.69
2786	32.34	PK	H	26.64	4.45	27.55	35.88	29.88	74.00	44.12
2786	20.20	AV	H	26.64	4.45	27.55	23.74	17.74	74.00	56.26
360.77	37.47	QP	H	15.61	2.31	21.67	33.72	33.72	46.00	12.28

5725MHz-5850MHz:
802.11 ac mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)							
Low Channel:5745 MHz										
5745	72.02	PK	H	32.15	5.53	0.00	109.70	103.70	N/A	N/A
5745	62.05	AV	H	32.15	5.53	0.00	99.73	93.73	N/A	N/A
5745	70.00	PK	V	32.15	5.53	0.00	107.68	101.68	N/A	N/A
5745	58.44	AV	V	32.15	5.53	0.00	96.12	90.12	N/A	N/A
5725	36.47	PK	H	32.15	5.60	0.00	74.22	68.22	74.00	5.78
5725	20.82	AV	H	32.15	5.60	0.00	58.57	52.57	54.00	1.43*
11490	32.88	PK	H	37.89	8.94	26.14	53.57	47.57	74.00	26.43
11490	21.01	AV	H	37.89	8.94	26.14	41.70	35.70	54.00	18.30
17235	30.68	PK	H	40.91	13.69	25.63	59.65	53.65	74.00	20.35
17235	18.11	AV	H	40.91	13.69	25.63	47.08	41.08	54.00	12.92
3070	34.04	PK	H	27.42	6.72	27.47	40.71	34.71	74.00	39.29
3070	22.23	AV	H	27.42	6.72	27.47	28.90	22.90	54.00	31.10
2290	33.58	PK	H	25.35	3.40	27.30	35.03	29.03	74.00	44.97
2290	21.61	AV	H	25.35	3.40	27.30	23.06	17.06	54.00	36.94
288.02	40.17	QP	H	13.89	2.04	21.51	34.59	34.59	46.00	11.41
Middle Channel:5785 MHz										
5785	72.49	PK	H	32.16	5.47	0.00	110.12	104.12	N/A	N/A
5785	62.91	AV	H	32.16	5.47	0.00	100.54	94.54	N/A	N/A
5785	71.36	PK	V	32.16	5.47	0.00	108.99	102.99	N/A	N/A
5785	61.25	AV	V	32.16	5.47	0.00	98.88	92.88	N/A	N/A
11570	32.75	PK	H	37.90	8.92	26.07	53.50	47.50	74.00	26.50
11570	20.83	AV	H	37.90	8.92	26.07	41.58	35.58	54.00	18.42
17355	30.69	PK	H	41.63	12.99	25.63	59.68	53.68	74.00	20.32
17355	18.04	AV	H	41.63	12.99	25.63	47.03	41.03	54.00	12.97
3070	34.12	PK	H	27.42	6.72	27.47	40.79	34.79	74.00	39.21
3070	22.18	AV	H	27.42	6.72	27.47	28.85	22.85	54.00	31.15
2290	33.55	PK	H	25.35	3.40	27.30	35.00	29.00	74.00	45.00
2290	21.48	AV	H	25.35	3.40	27.30	22.93	16.93	54.00	37.07
107.6	38.60	QP	H	12.43	1.26	21.40	30.89	30.89	43.50	12.61
288.02	40.25	QP	H	13.89	2.04	21.51	34.67	34.67	46.00	11.33
High Channel:5825 MHz										
5825	73.34	PK	H	32.17	5.75	0.00	111.26	105.26	N/A	N/A
5825	65.12	AV	H	32.17	5.75	0.00	103.04	97.04	N/A	N/A
5825	72.23	PK	V	32.17	5.75	0.00	110.15	104.15	N/A	N/A
5825	64.19	AV	V	32.17	5.75	0.00	102.11	96.11	N/A	N/A
5850	30.35	PK	H	32.17	6.05	0.00	68.57	62.57	74.00	11.43
5850	18.02	AV	H	32.17	6.05	0.00	56.24	50.24	54.00	3.76*
11650	32.71	PK	H	37.90	8.90	25.75	53.76	47.76	74.00	26.24
11650	20.74	AV	H	37.90	8.90	25.75	41.79	35.79	54.00	18.21
17475	30.78	PK	H	42.35	12.30	25.39	60.04	54.04	74.00	19.96
17475	17.97	AV	H	42.35	12.30	25.39	47.23	41.23	54.00	12.77
3070	34.18	PK	H	27.42	6.72	27.47	40.85	34.85	74.00	39.15
3070	22.19	AV	H	27.42	6.72	27.47	28.86	22.86	54.00	31.14
2290	33.60	PK	H	25.35	3.40	27.30	35.05	29.05	74.00	44.95
2290	21.51	AV	H	25.35	3.40	27.30	22.96	16.96	54.00	37.04
288.02	40.20	QP	H	13.89	2.04	21.51	34.62	34.62	46.00	11.38

*Within measurement uncertainty!

802.11n ht20 mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Extrapolation result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)						
Low Channel:5745 MHz										
5745	72.68	PK	H	32.15	5.53	0.00	110.36	104.36	N/A	N/A
5745	63.76	AV	H	32.15	5.53	0.00	101.44	95.44	N/A	N/A
5745	71.29	PK	V	32.15	5.53	0.00	108.97	102.97	N/A	N/A
5745	62.55	AV	V	32.15	5.53	0.00	100.23	94.23	N/A	N/A
5725	40.43	PK	H	32.15	5.60	0.00	78.18	72.18	74.00	1.82*
5725	21.09	AV	H	32.15	5.60	0.00	58.84	52.84	54.00	1.16*
11490	32.69	PK	H	37.89	8.94	26.14	53.38	47.38	74.00	26.62
11490	20.82	AV	H	37.89	8.94	26.14	41.51	35.51	54.00	18.49
17235	30.85	PK	H	40.91	13.69	25.63	59.82	53.82	74.00	20.18
17235	17.82	AV	H	40.91	13.69	25.63	46.79	40.79	54.00	13.21
3070	34.14	PK	H	27.42	6.72	27.47	40.81	34.81	74.00	39.19
3070	22.08	AV	H	27.42	6.72	27.47	28.75	22.75	54.00	31.25
2290	33.51	PK	H	25.35	3.40	27.30	34.96	28.96	74.00	45.04
2290	21.61	AV	H	25.35	3.40	27.30	23.06	17.06	54.00	36.94
288.02	40.18	QP	H	13.89	2.04	21.51	34.60	34.60	46.00	11.40
Middle Channel:5785 MHz										
5785	72.09	PK	H	32.16	5.47	0.00	109.72	103.72	N/A	N/A
5785	65.54	AV	H	32.16	5.47	0.00	103.17	97.17	N/A	N/A
5785	71.23	PK	V	32.16	5.47	0.00	108.86	102.86	N/A	N/A
5785	64.53	AV	V	32.16	5.47	0.00	102.16	96.16	N/A	N/A
11570	32.67	PK	V	37.90	8.92	26.07	53.42	47.42	74.00	26.58
11570	20.78	AV	V	37.90	8.92	26.07	41.53	35.53	54.00	18.47
17355	30.76	PK	V	41.63	12.99	25.63	59.75	53.75	74.00	20.25
17355	17.81	AV	V	41.63	12.99	25.63	46.80	40.80	54.00	13.20
3070	34.24	PK	V	27.42	6.72	27.47	40.91	34.91	74.00	39.09
3070	22.01	AV	V	27.42	6.72	27.47	28.68	22.68	54.00	31.32
2290	33.57	PK	V	25.35	3.40	27.30	35.02	29.02	74.00	44.98
2290	21.52	AV	V	25.35	3.40	27.30	22.97	16.97	54.00	37.03
107.6	38.60	QP	V	12.43	1.26	21.40	30.89	30.89	43.50	12.61
288.02	40.33	QP	V	13.89	2.04	21.51	34.75	34.75	46.00	11.25
High Channel:5825 MHz										
5825	71.87	PK	H	32.17	5.75	0.00	109.79	103.79	N/A	N/A
5825	63.49	AV	H	32.17	5.75	0.00	101.41	95.41	N/A	N/A
5825	70.23	PK	V	32.17	5.75	0.00	108.15	102.15	N/A	N/A
5825	62.54	AV	V	32.17	5.75	0.00	100.46	94.46	N/A	N/A
5850	34.87	PK	H	32.17	6.05	0.00	73.09	67.09	74.00	6.91
5850	19.24	AV	H	32.17	6.05	0.00	57.46	51.46	54.00	2.54*
11650	32.55	PK	H	37.90	8.90	25.75	53.60	47.60	74.00	26.40
11650	20.59	AV	H	37.90	8.90	25.75	41.64	35.64	54.00	18.36
17475	30.82	PK	H	42.35	12.30	25.39	60.08	54.08	74.00	19.92
17475	17.82	AV	H	42.35	12.30	25.39	47.08	41.08	54.00	12.92
3070	34.31	PK	H	27.42	6.72	27.47	40.98	34.98	74.00	39.02
3070	21.94	AV	H	27.42	6.72	27.47	28.61	22.61	54.00	31.39
2290	33.46	PK	H	25.35	3.40	27.30	34.91	28.91	74.00	45.09
2290	21.49	AV	H	25.35	3.40	27.30	22.94	16.94	54.00	37.06
288.02	40.27	QP	H	13.89	2.04	21.51	34.69	34.69	46.00	11.31

*Within measurement uncertainty!

802.11n ht40 mode:

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Extrapolation result	Limit	Margin
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)
Low Channel:5755 MHz										
5755	66.38	PK	H	32.15	5.50	0.00	104.03	98.03	N/A	N/A
5755	57.95	AV	H	32.15	5.50	0.00	95.60	89.60	N/A	N/A
5755	65.34	PK	V	32.15	5.50	0.00	102.99	96.99	N/A	N/A
5755	56.42	AV	V	32.15	5.50	0.00	94.07	88.07	N/A	N/A
5725	39.03	PK	H	32.15	5.60	0.00	76.78	70.78	74.00	3.22*
5725	21.34	AV	H	32.15	5.60	0.00	59.09	53.09	54.00	0.91*
11510	32.46	PK	H	37.90	8.95	26.12	53.19	47.19	74.00	26.81
11510	20.42	AV	H	37.90	8.95	26.12	41.15	35.15	54.00	18.85
17265	30.67	PK	H	41.09	13.51	25.63	59.64	53.64	74.00	20.36
17265	17.84	AV	H	41.09	13.51	25.63	46.81	40.81	54.00	13.19
3070	34.16	PK	H	27.42	6.72	27.47	40.83	34.83	74.00	39.17
3070	21.98	AV	H	27.42	6.72	27.47	28.65	22.65	54.00	31.35
2290	33.38	PK	H	25.35	3.40	27.30	34.83	28.83	74.00	45.17
2290	21.31	AV	H	25.35	3.40	27.30	22.76	16.76	54.00	37.24
288.02	39.80	QP	H	13.89	2.04	21.51	34.22	34.22	46.00	11.78
High Channel:5795 MHz										
5795	68.97	PK	H	32.16	5.46	0.00	106.59	100.59	N/A	N/A
5795	60.63	AV	H	32.16	5.46	0.00	98.25	92.25	N/A	N/A
5795	67.54	PK	V	32.16	5.46	0.00	105.16	99.16	N/A	N/A
5795	58.78	AV	V	32.16	5.46	0.00	96.40	90.40	N/A	N/A
5850	29.21	PK	H	32.17	6.05	0.00	67.43	61.43	74.00	12.57
5850	16.23	AV	H	32.17	6.05	0.00	54.45	48.45	54.00	5.55
11590	32.43	PK	H	37.90	8.92	26.06	53.19	47.19	74.00	26.81
11590	20.41	AV	H	37.90	8.92	26.06	41.17	35.17	54.00	18.83
17385	30.50	PK	H	41.81	12.82	25.63	59.50	53.50	74.00	20.50
17385	17.83	AV	H	41.81	12.82	25.63	46.83	40.83	54.00	13.17
3070	34.04	PK	H	27.42	6.72	27.47	40.71	34.71	74.00	39.29
3070	21.82	AV	H	27.42	6.72	27.47	28.49	22.49	54.00	31.51
2290	33.24	PK	H	25.35	3.40	27.30	34.69	28.69	74.00	45.31
2290	21.21	AV	H	25.35	3.40	27.30	22.66	16.66	54.00	37.34
288.02	39.90	QP	H	13.89	2.04	21.51	34.32	34.32	46.00	11.68

*Within measurement uncertainty!

802.11n ac80 mode:

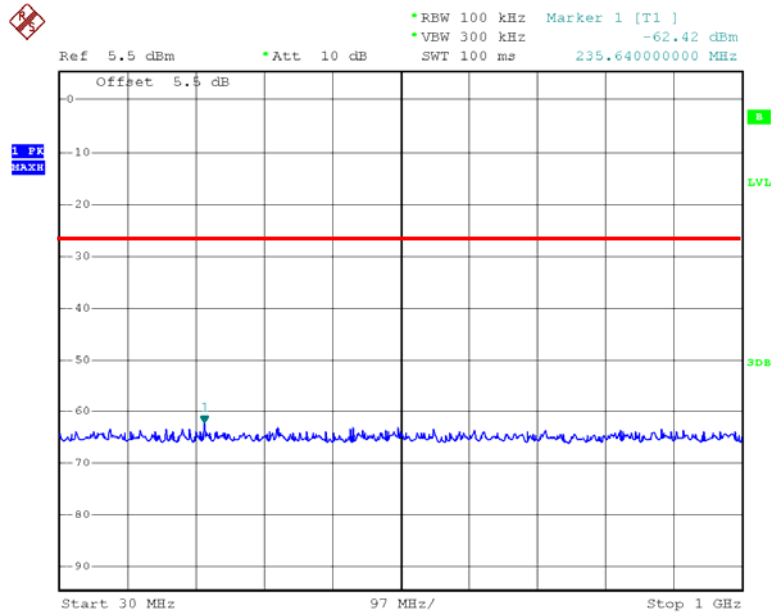
Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Extrapolation result	Limit	Margin
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)
Channel:5775 MHz										
5775	65.68	PK	H	32.16	5.48	0.00	103.32	97.32	N/A	N/A
5775	56.37	AV	H	32.16	5.48	0.00	94.01	88.01	N/A	N/A
5775	63.25	PK	V	32.16	5.48	0.00	100.89	94.89	N/A	N/A
5775	55.87	AV	V	32.16	5.48	0.00	93.51	87.51	N/A	N/A
5725	31.81	PK	H	32.15	5.60	0.00	69.56	63.56	74.00	10.44
5725	21.44	AV	H	32.15	5.60	0.00	59.19	53.19	54.00	0.81*
5850	29.82	PK	H	32.17	6.05	1.00	67.04	61.04	74.00	12.96
5850	17.04	AV	H	32.17	6.05	2.00	53.26	47.26	54.00	6.74
11550	32.98	PK	H	37.90	8.93	26.09	53.72	47.72	74.00	26.28
11550	20.94	AV	H	37.90	8.93	26.09	41.68	35.68	54.00	18.32
17325	30.72	PK	H	41.45	13.17	25.63	59.71	53.71	74.00	20.29
17325	18.24	AV	H	41.45	13.17	25.63	47.23	41.23	54.00	12.77
2385	34.22	PK	H	25.60	3.62	27.32	36.12	30.12	74.00	43.88
2385	22.14	AV	H	25.60	3.62	27.32	24.04	18.04	54.00	35.96
1367	33.67	PK	H	23.25	3.15	26.97	33.10	27.10	74.00	46.90
1367	21.57	AV	H	23.25	3.15	26.97	21.00	15.00	54.00	39.00
288.02	40.37	QP	H	13.89	2.04	21.51	34.79	34.79	46.00	11.21

*Within measurement uncertainty!

Conducted Spurious Emission at Antenna Port

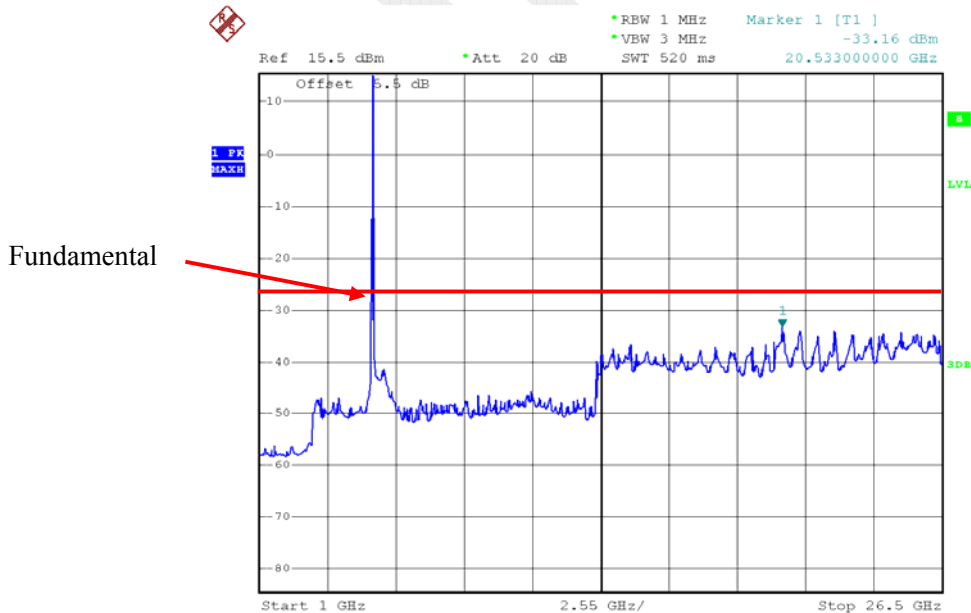
Please refer to the following plots:
5150MHz-5250MHz:

802.11a Low Channel 30 MHz-1GHz



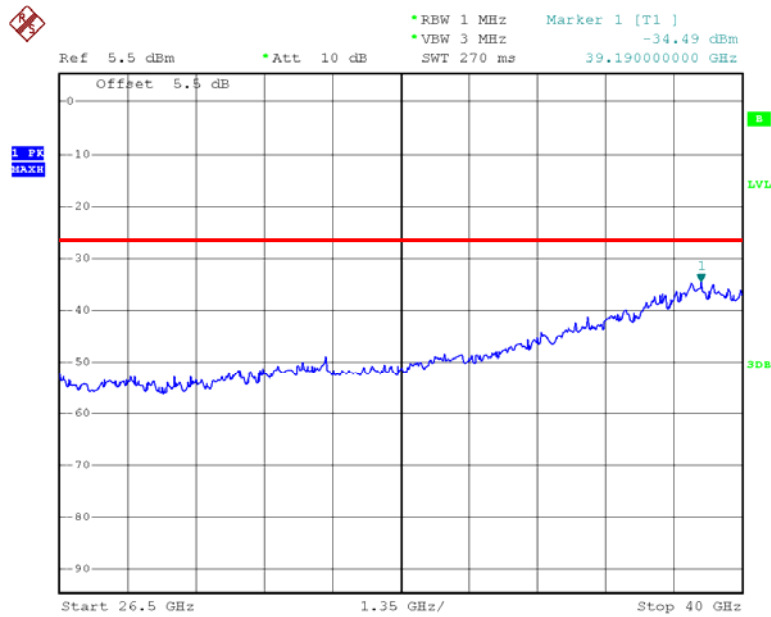
Date: 3.FEB.2015 16:29:00

802.11a Low Channel 1GHz-26.5GHz



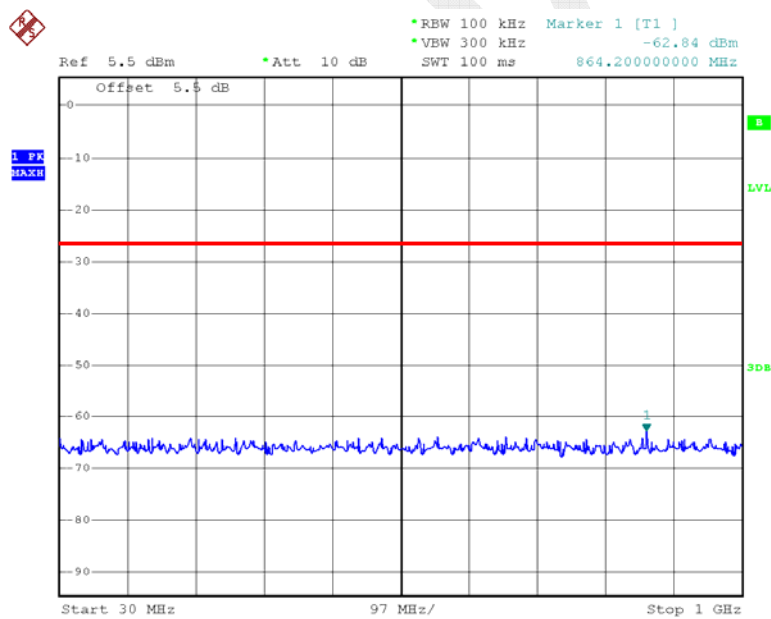
Date: 3.FEB.2015 17:00:51

802.11a Low Channel 26.5GHz-40GHz



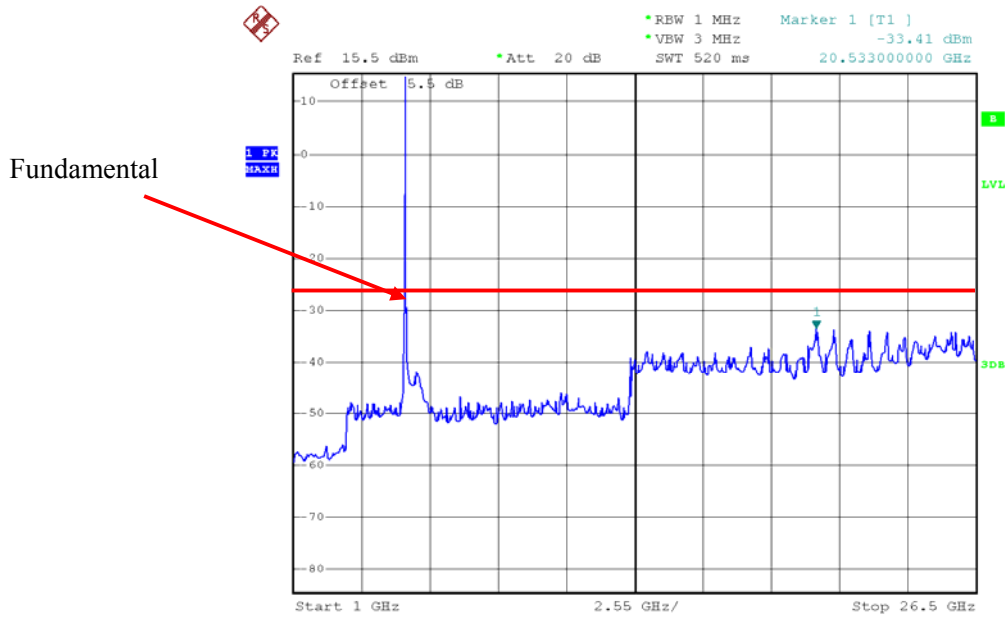
Date: 3.FEB.2015 15:09:06

802.11a Middle Channel 30MHz-1GHz



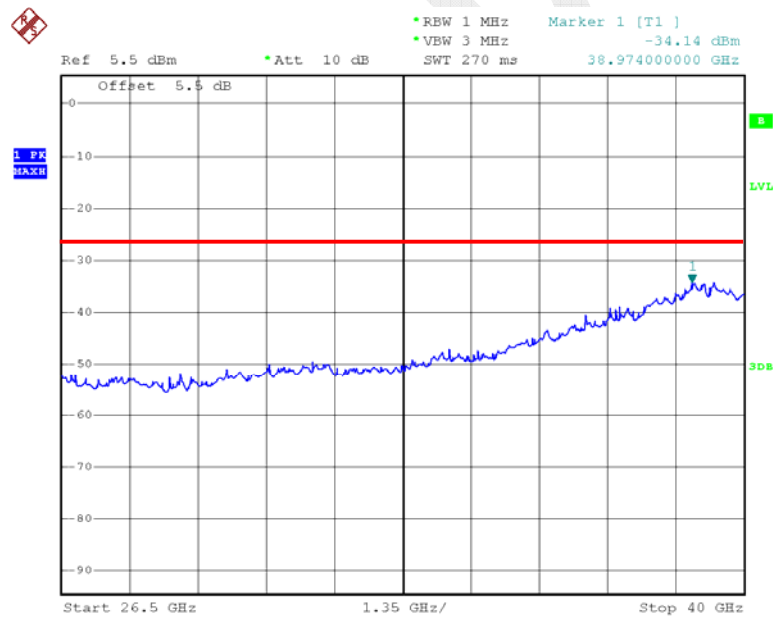
Date: 3.FEB.2015 16:33:16

802.11a Middle Channel 1GHz -26.5GHz



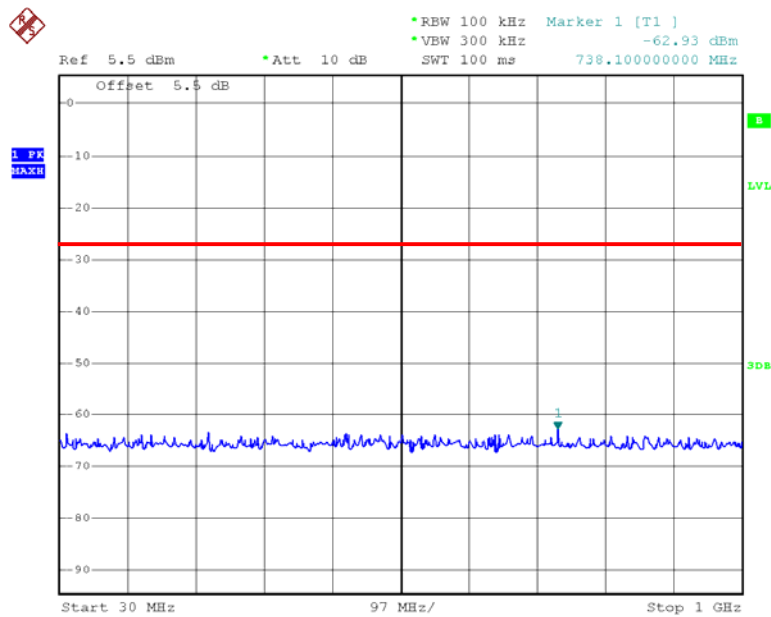
Date: 3.FEB.2015 17:01:49

802.11a Middle Channel 26.5GHz-40GHz



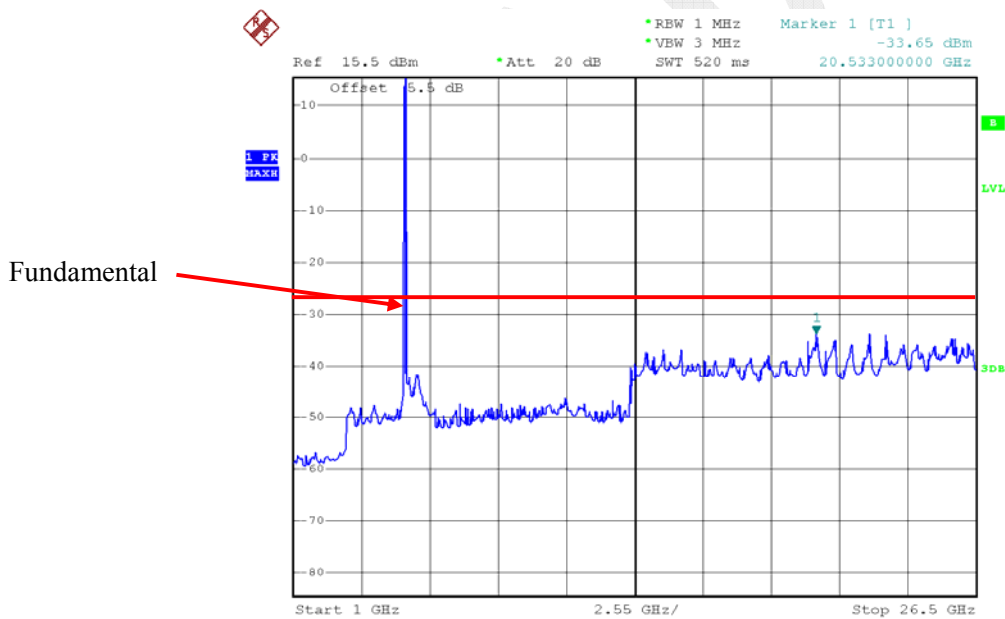
Date: 3.FEB.2015 15:34:16

802.11a High Channel 30MHz-1GHz



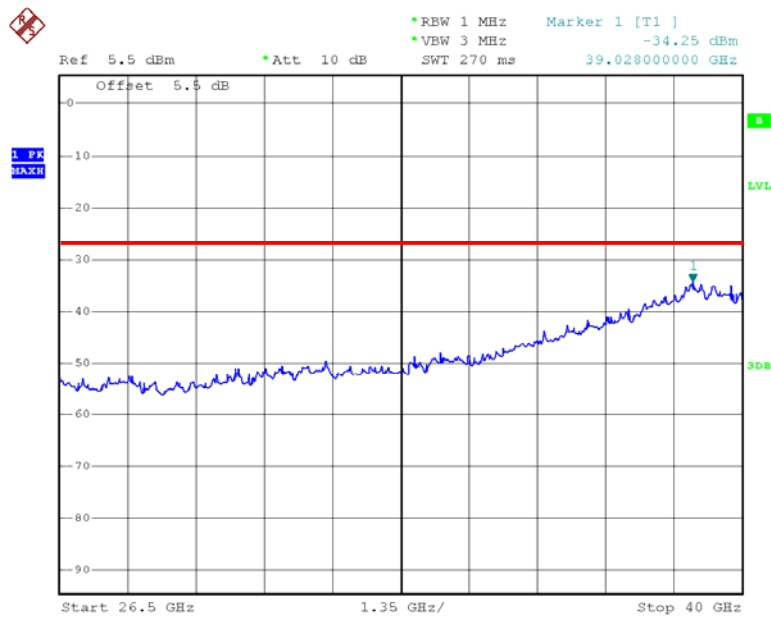
Date: 3.FEB.2015 16:39:41

802.11a High Channel 1GHz-26.5GHz



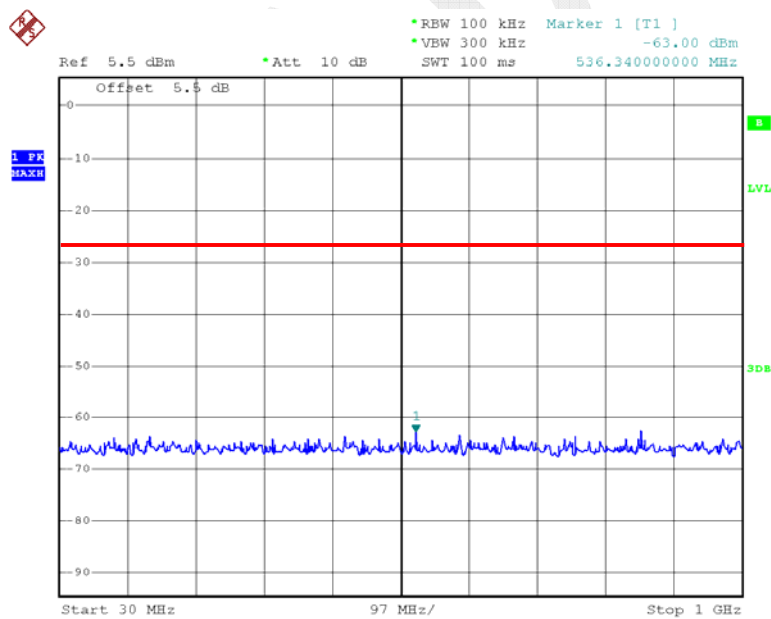
Date: 3.FEB.2015 17:02:15

802.11a High Channel 26.5GHz-40GHz



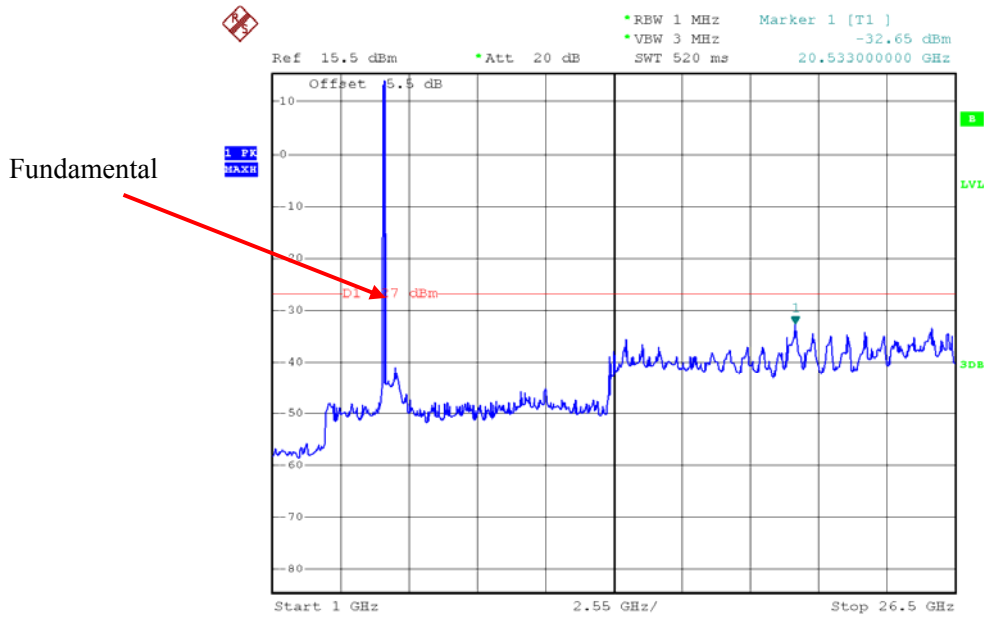
Date: 3.FEB.2015 15:37:39

802.11n ht20 Low Channel 30MHz-1GHz



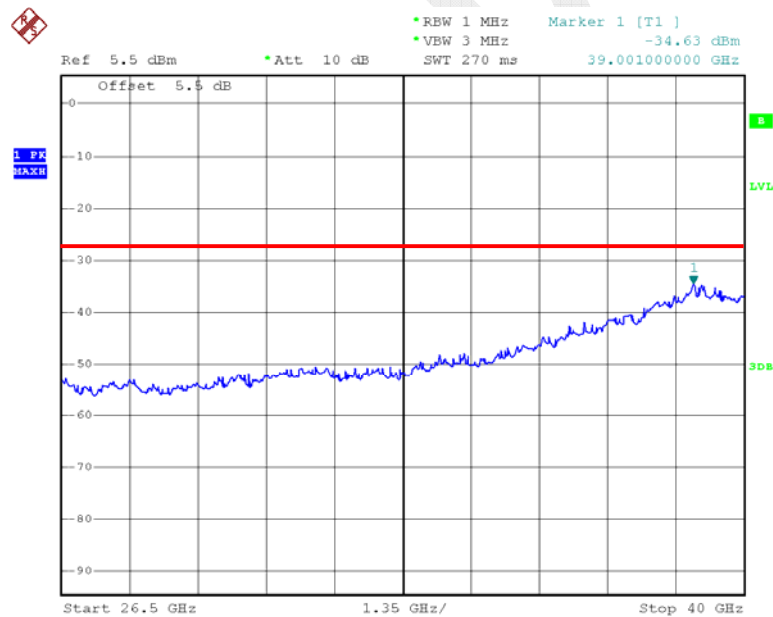
Date: 3.FEB.2015 16:44:10

802.11n ht20 Low Channel 1GHz-26.5GHz



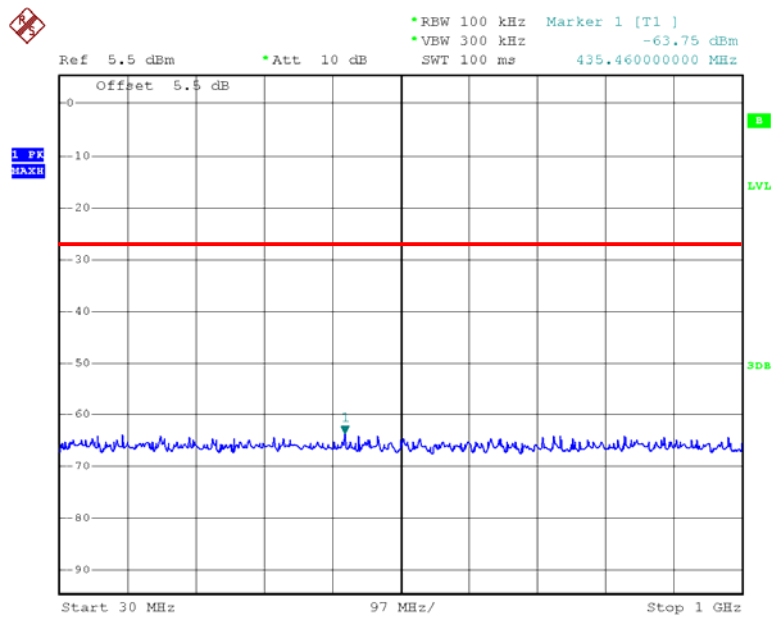
Date: 3.FEB.2015 18:21:39

802.11n ht20 Low Channel 26.5GHz-40GHz



Date: 3.FEB.2015 15:43:01

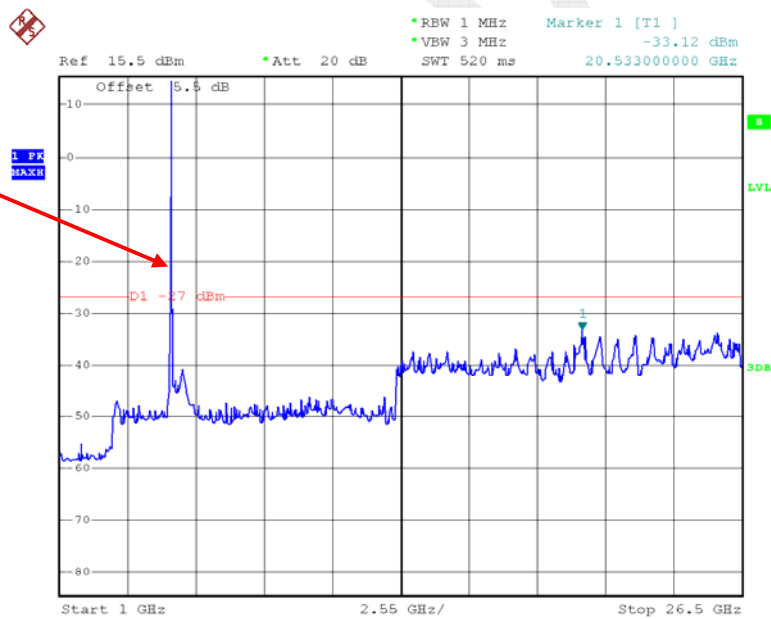
802.11n ht20 Middle Channel 30MHz-1GHz



Date: 3.FEB.2015 16:53:33

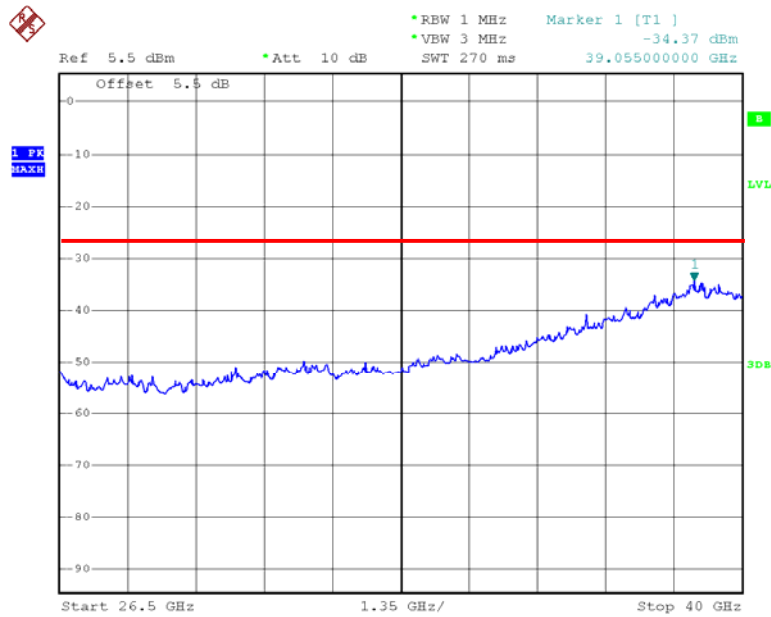
802.11n ht20 Middle Channel 1GHz-26.5GHz

Fundamental



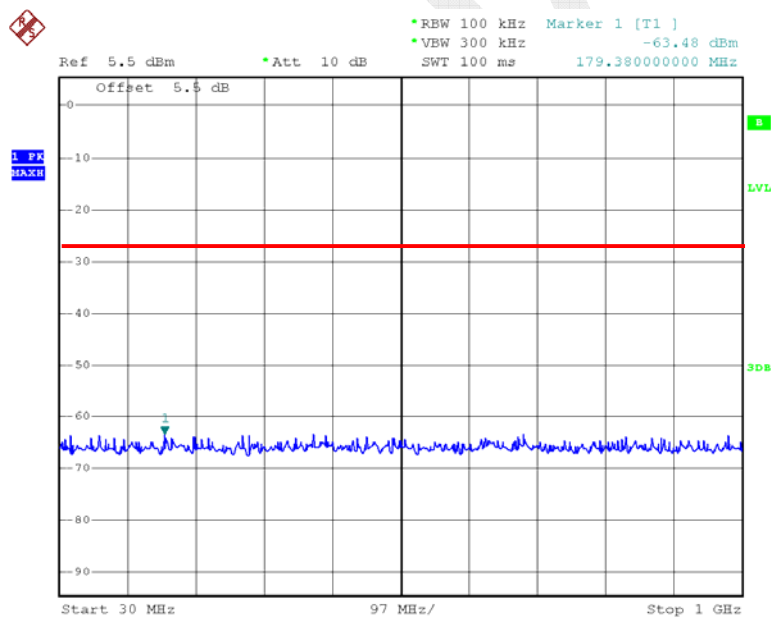
Date: 3.FEB.2015 18:31:11

802.11n ht20 Middle Channel 26.5GHz-40GHz



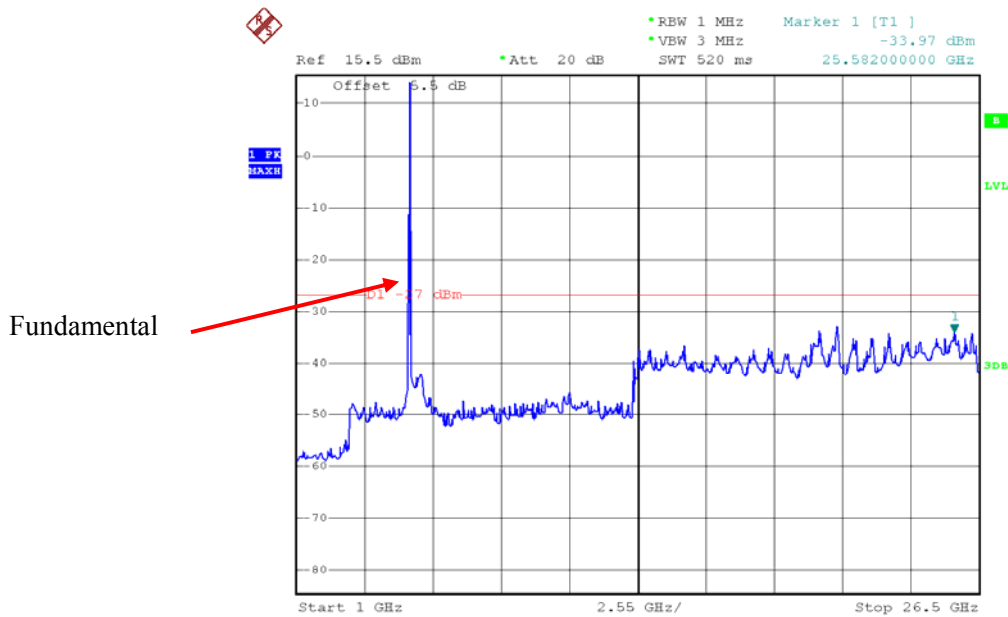
Date: 3.FEB.2015 15:47:21

802.11n ht20 High Channel 30MHz-1GHz



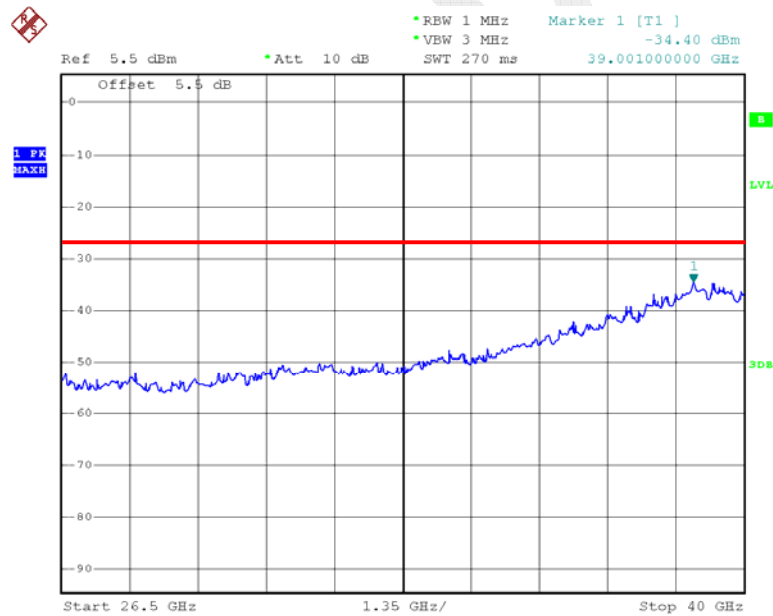
Date: 3.FEB.2015 16:56:53

802.11n ht20 High Channel 1GHz-26.5GHz



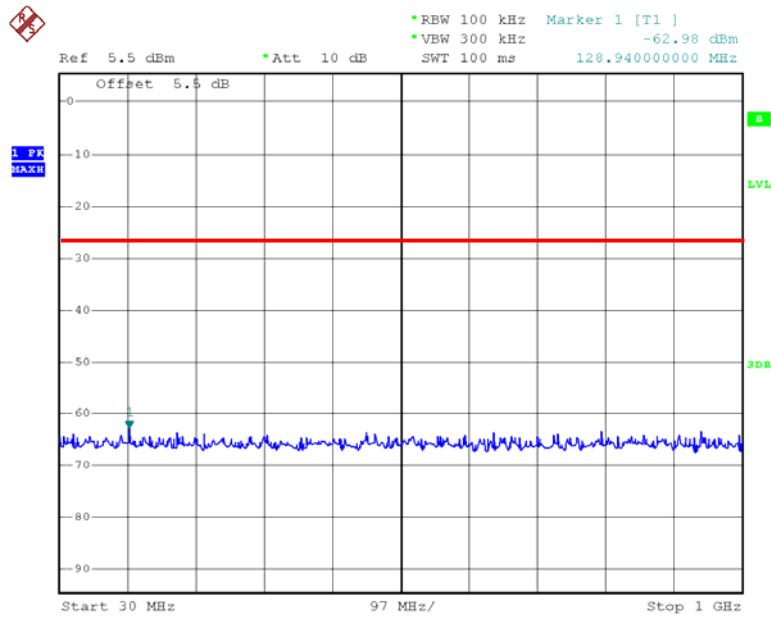
Date: 3.FEB.2015 18:32:08

802.11n ht20 High Channel 26.5GHz-40GHz



Date: 3.FEB.2015 15:53:03

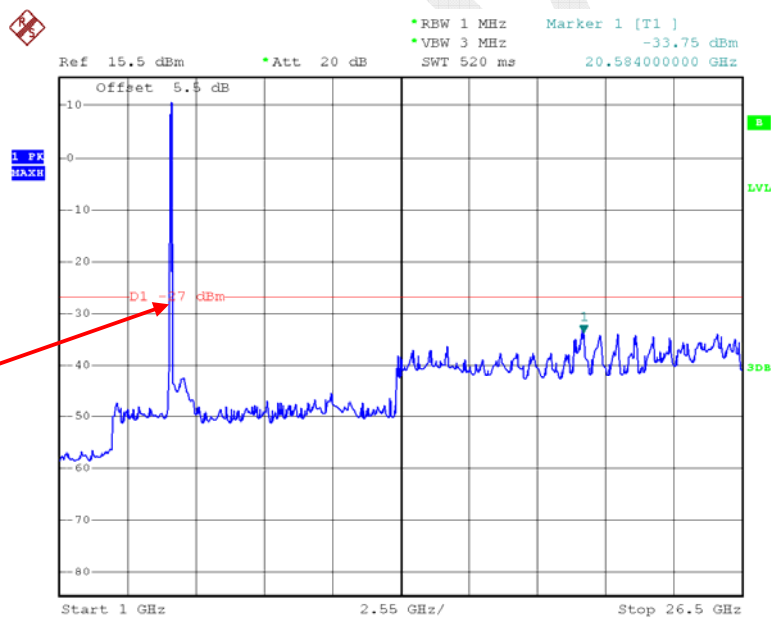
802.11n ht40 Low Channel 30MHz-1GHz



Date: 3.FEB.2015 16:59:16

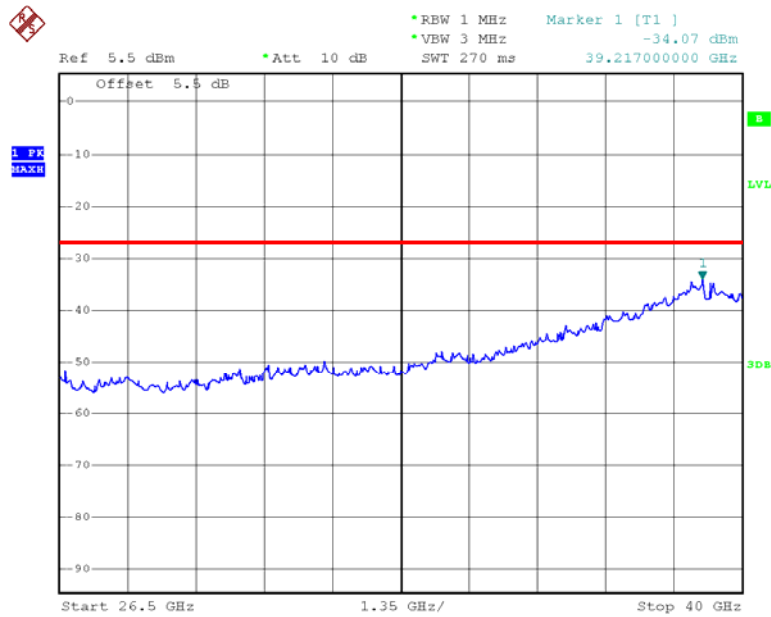
802.11n ht40 Low Channel 1GHz-26.5GHz

Fundamental



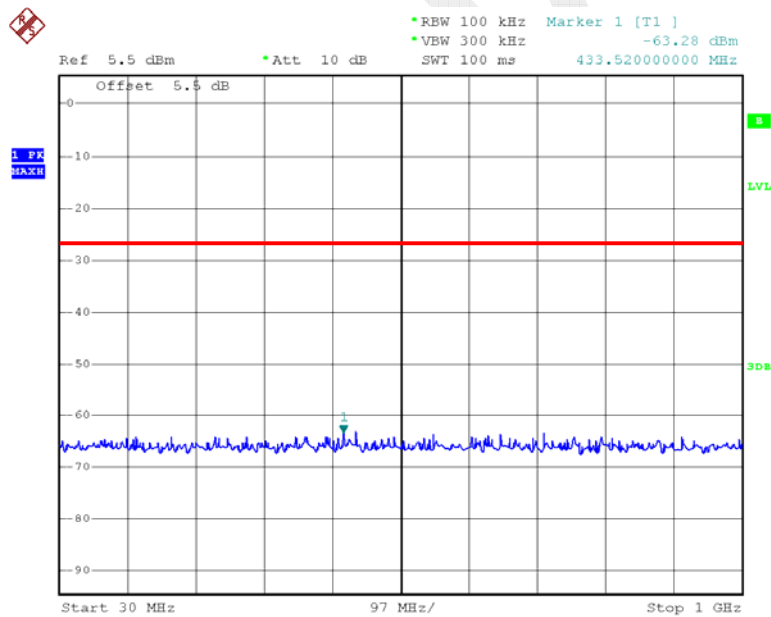
Date: 3.FEB.2015 21:34:57

802.11n ht40 Low Channel 26.5GHz-40GHz



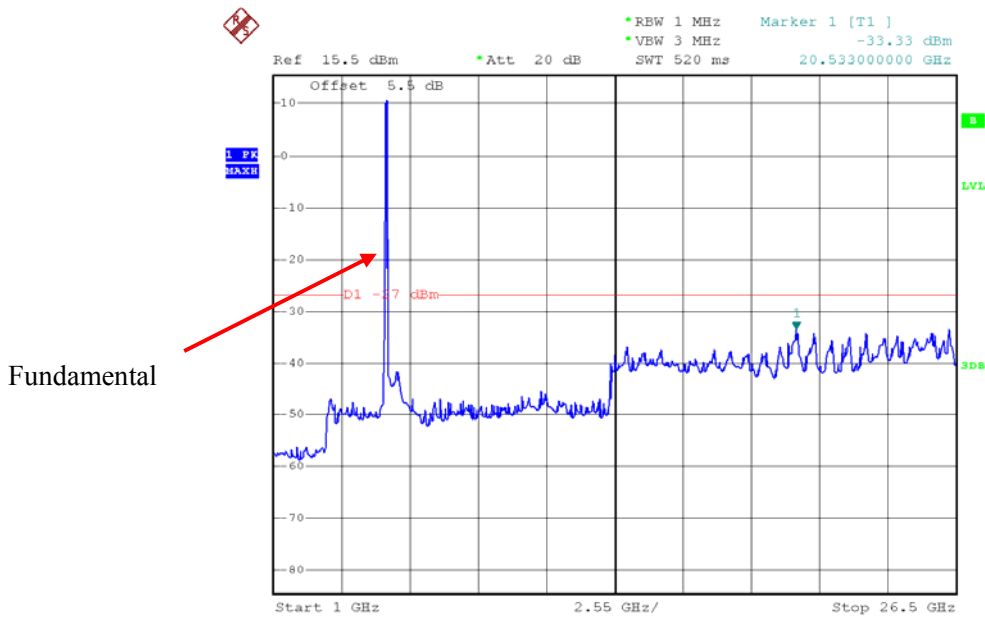
Date: 3.FEB.2015 15:55:28

802.11n ht40 High Channel 30MHz-1GHz



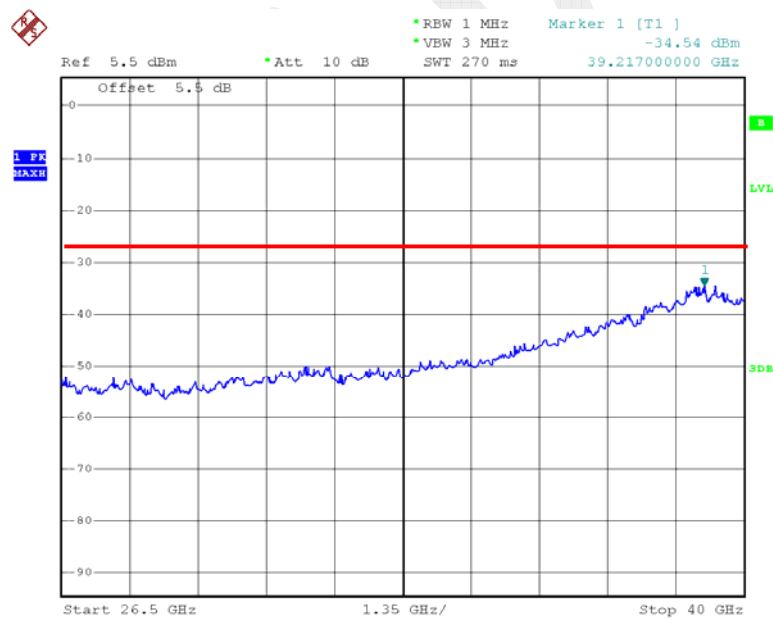
Date: 4.FEB.2015 14:22:21

802.11n ht40 High Channel 1GHz-26.5GHz



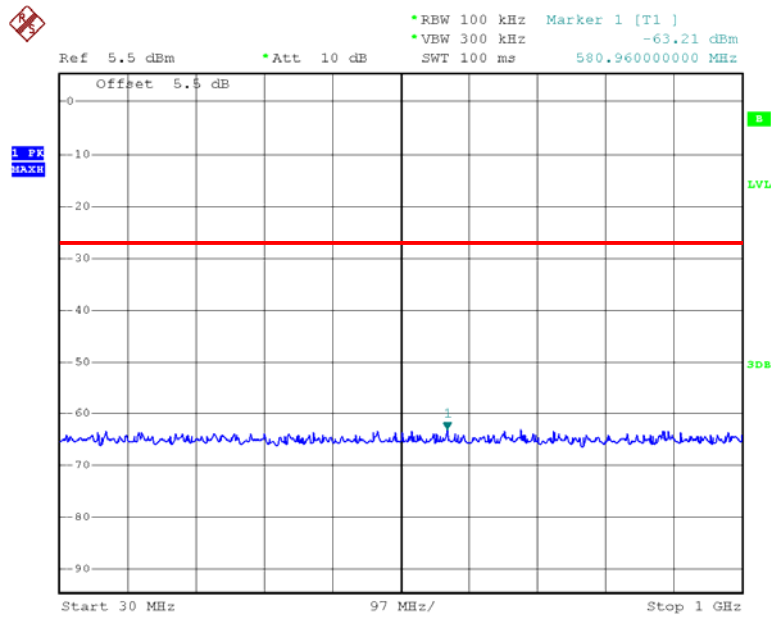
Date: 3.FEB.2015 21:35:27

802.11n ht40 High Channel 26.5GHz-40GHz



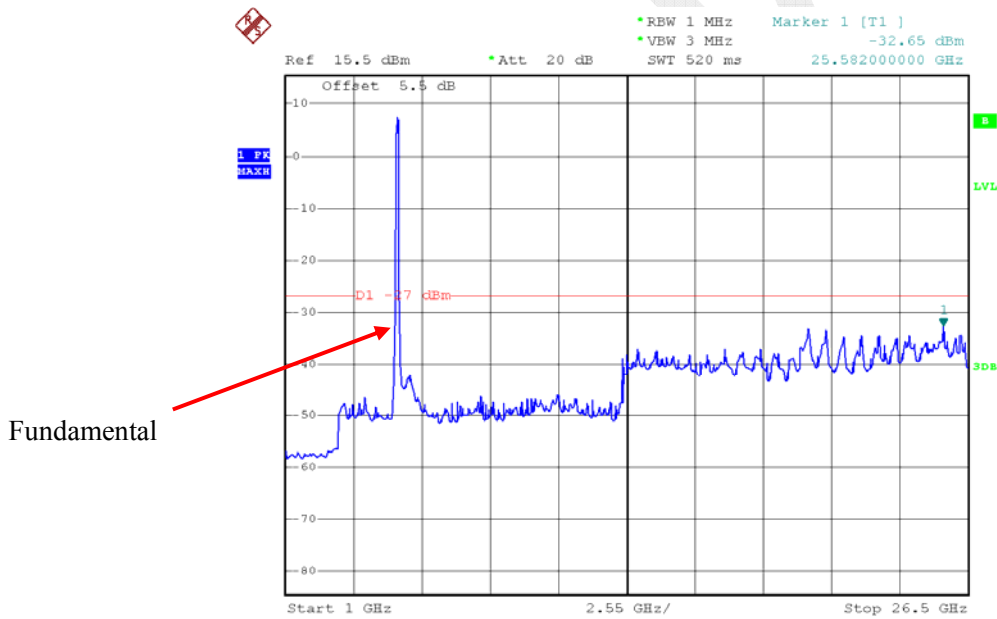
Date: 3.FEB.2015 15:59:51

802.11n ac80 Low Channel 30MHz-1GHz



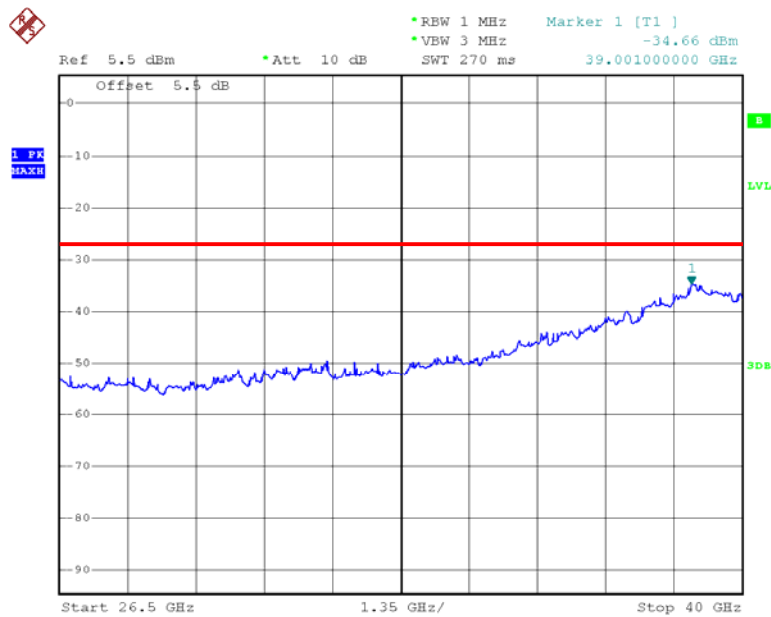
Date: 4.FEB.2015 14:15:54

802.11n ac80 Low Channel 1GHz-26.5GHz



Date: 3.FEB.2015 21:34:02

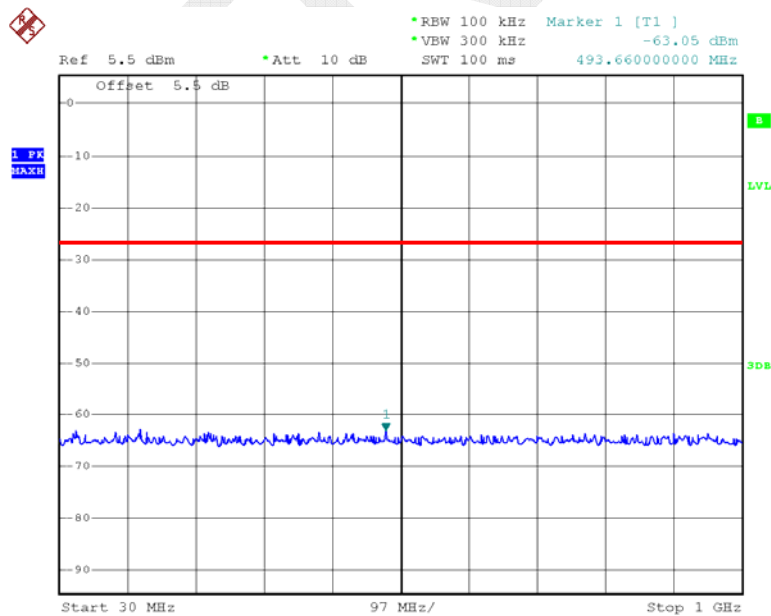
802.11n ac80 Low Channel 26.5GHz-40GHz



Date: 3.FEB.2015 16:03:14

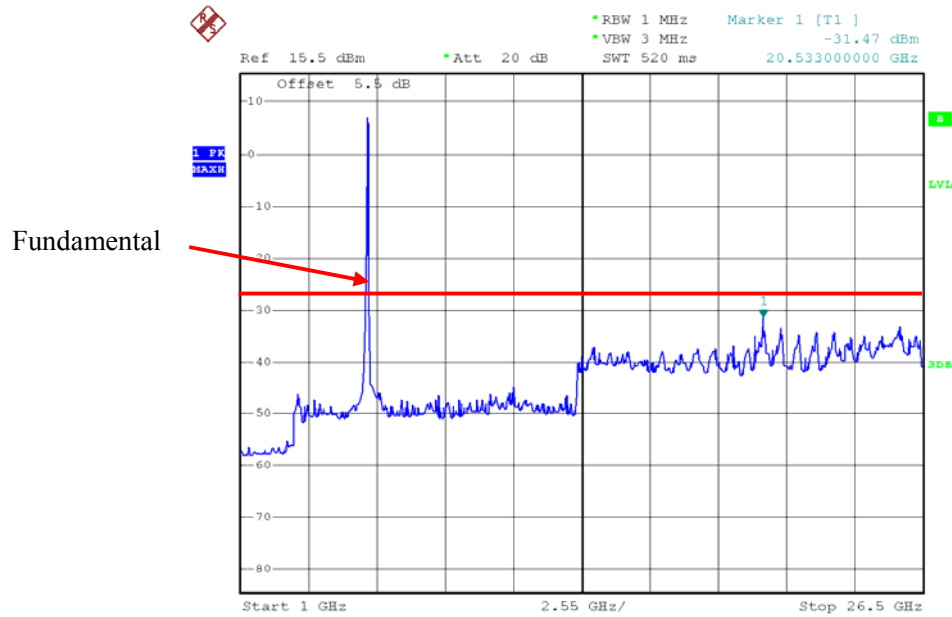
5725MHz-5850MHz:

802.11a Low Channel 30MHz-1GHz



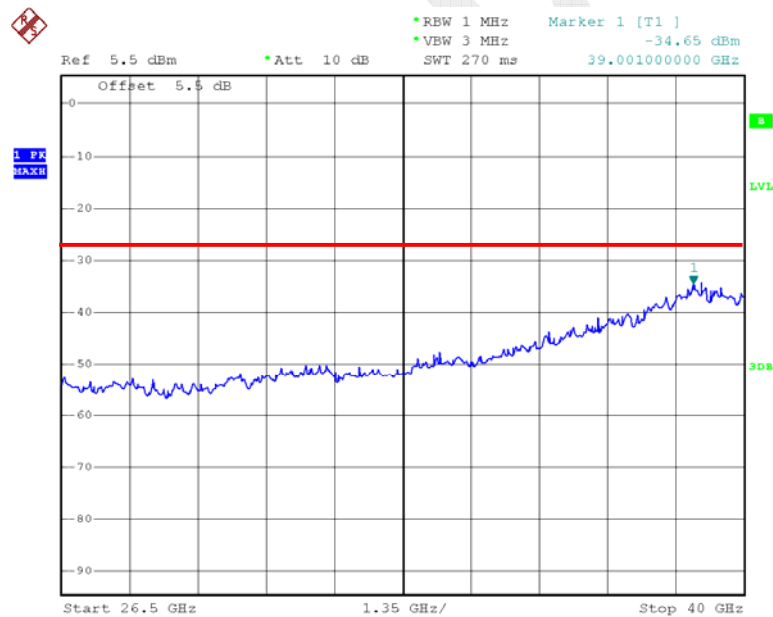
Date: 3.FEB.2015 16:04:31

802.11a Low Channel 1GHz-26.5GHz



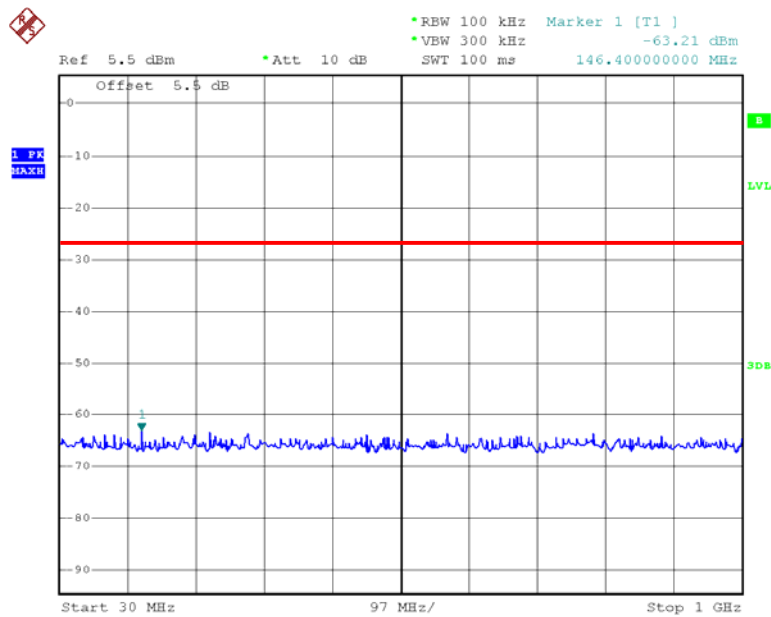
Date: 4.FEB.2015 13:33:32

802.11a Low Channel 26.5GHz-40GHz



Date: 3.FEB.2015 15:09:13

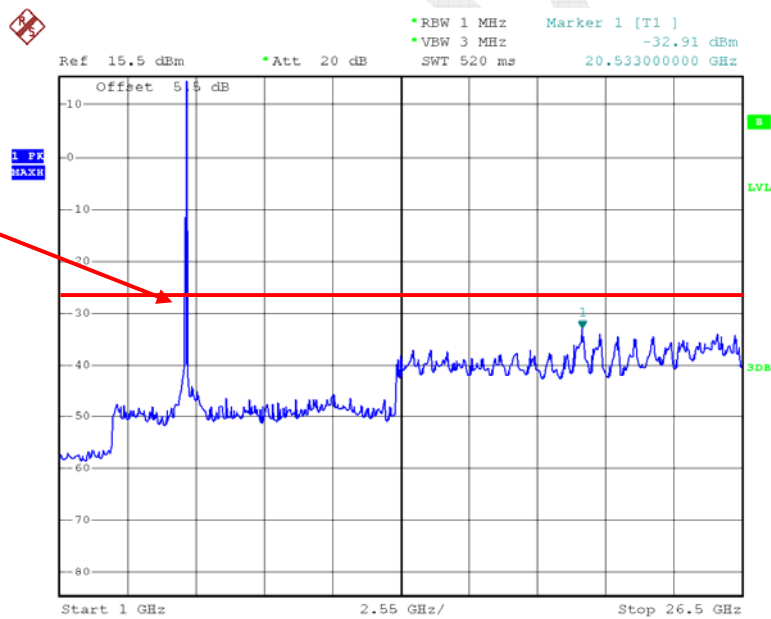
802.11a Middle Channel 30MHz-1GHz



Date: 3.FEB.2015 16:05:59

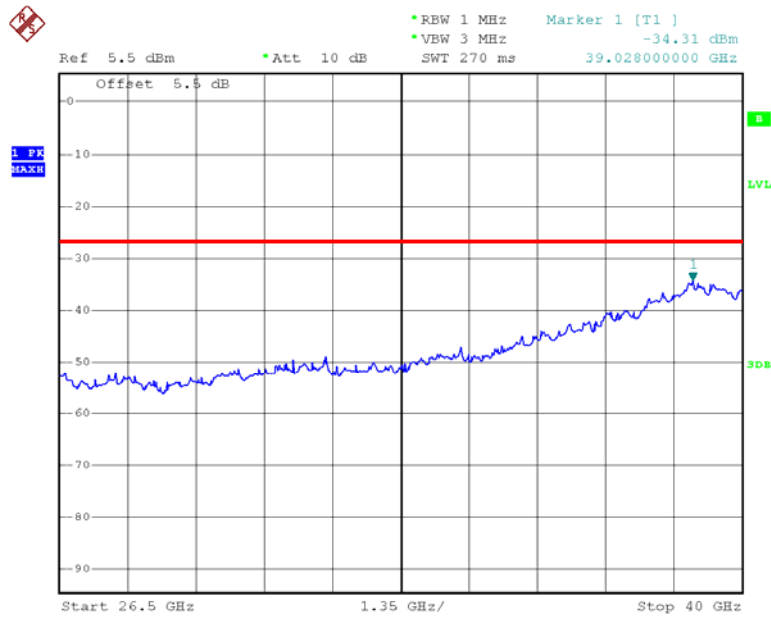
802.11a Middle Channel 1GHz -26.5GHz

Fundamental



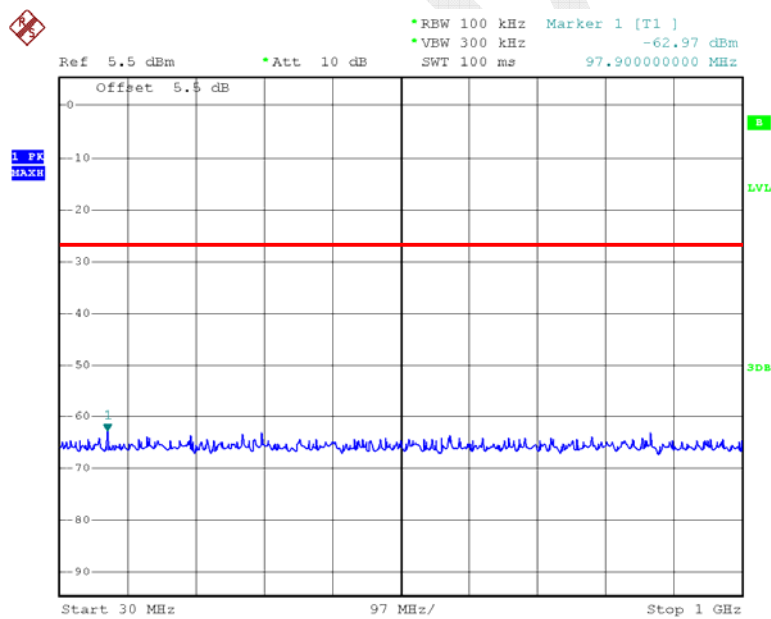
Date: 4.FEB.2015 13:54:58

802.11a Middle Channel 26.5GHz-40GHz



Date: 3.FEB.2015 15:09:33

802.11a High Channel 30MHz-1GHz



Date: 3.FEB.2015 16:08:29

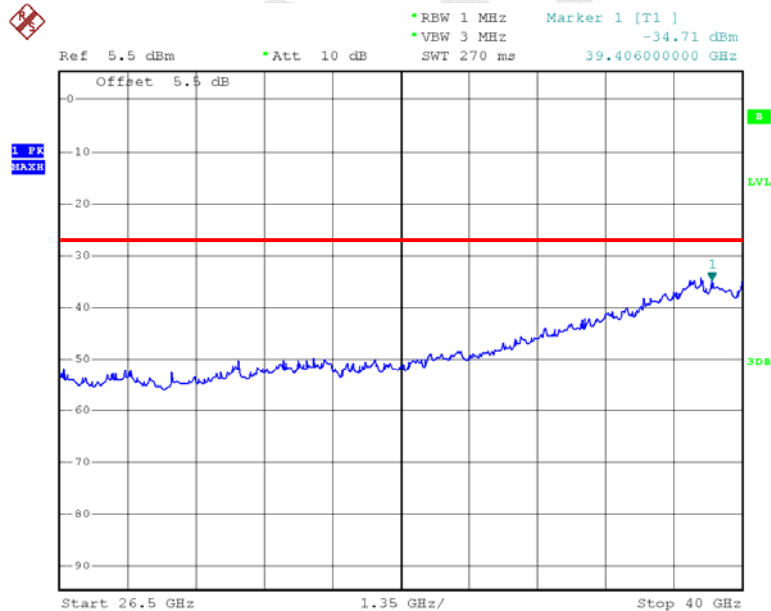
Ref 15.5 dBm *Att 20 dB *BW 1 MHz Marker 1 [T1] -32.79 dBm
 *VEW 3 MHz SWT 520 ms 20.533000000 GHz

Offset 5.5 dB

1 PK
MAXH

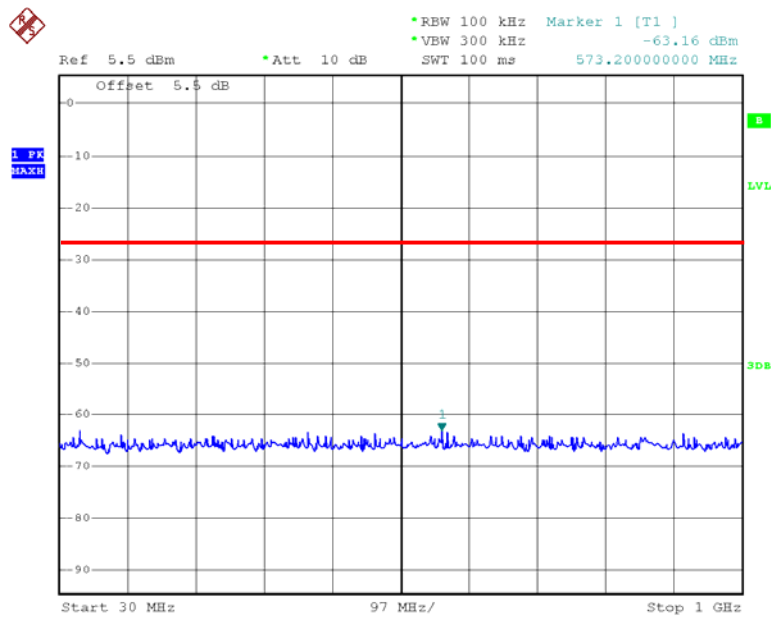
Start 1 GHz 2.55 GHz/ Stop 26.5 GHz

802.11a High Channel 26.5GHz-40GHz



Page 46 of 105

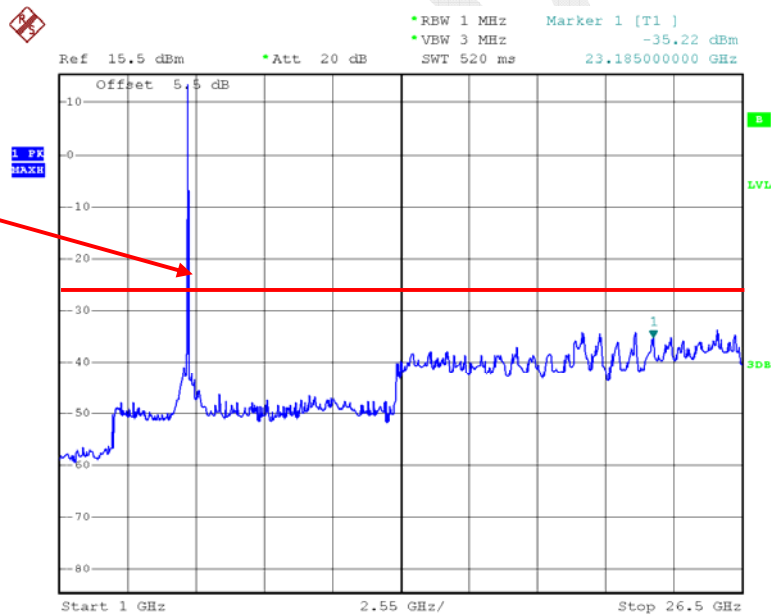
802.11n ht20 Low Channel 30MHz-1GHz



Date: 3.FEB.2015 16:11:47

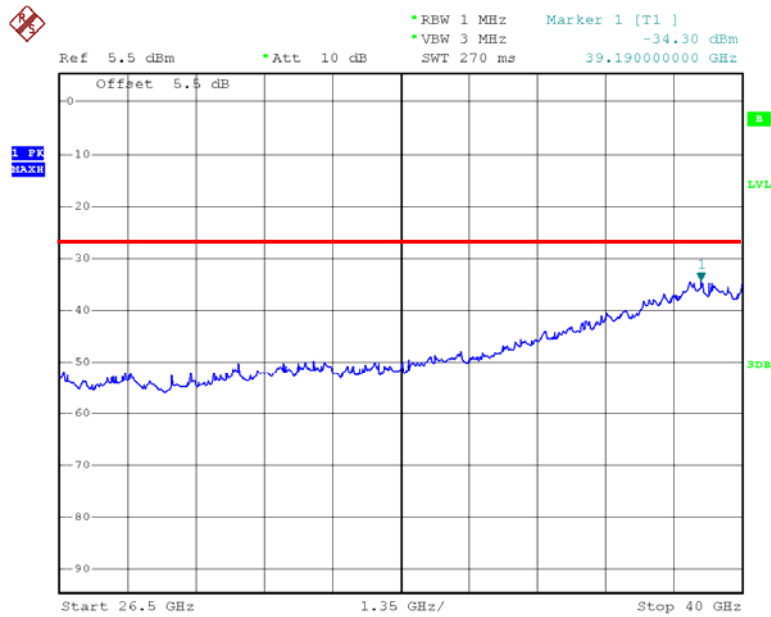
802.11n ht20 Low Channel 1GHz-26.5GHz

Fundamental



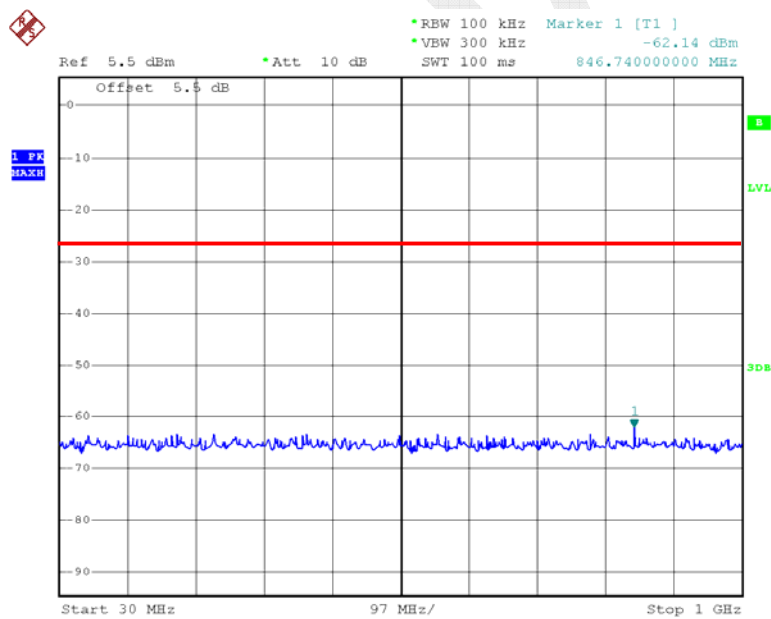
Date: 4.FEB.2015 13:56:08

802.11n ht20 Low Channel 26.5GHz-40GHz



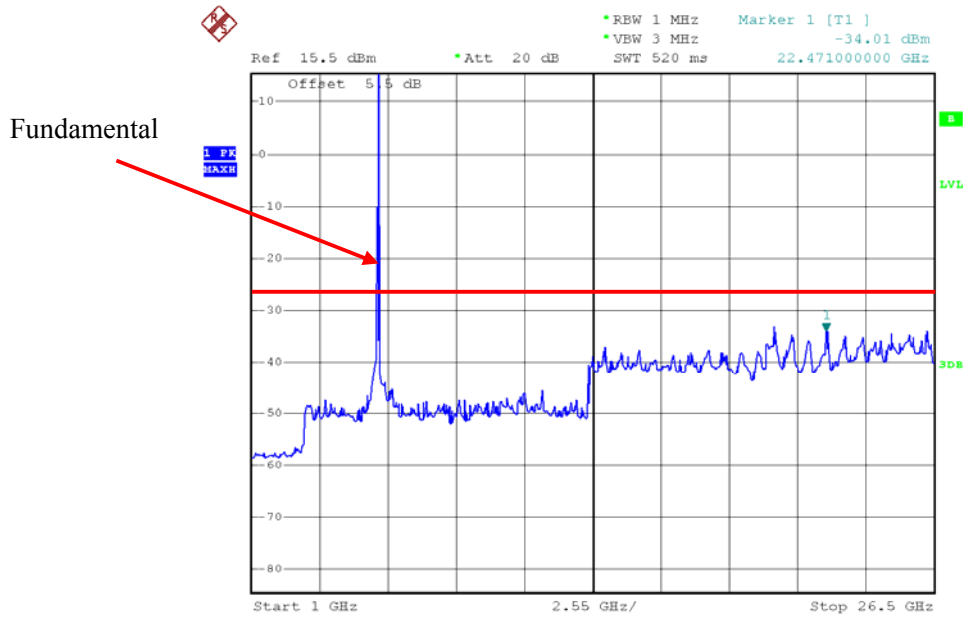
Date: 3.FEB.2015 15:13:13

802.11n ht20 Middle Channel 30MHz-1GHz



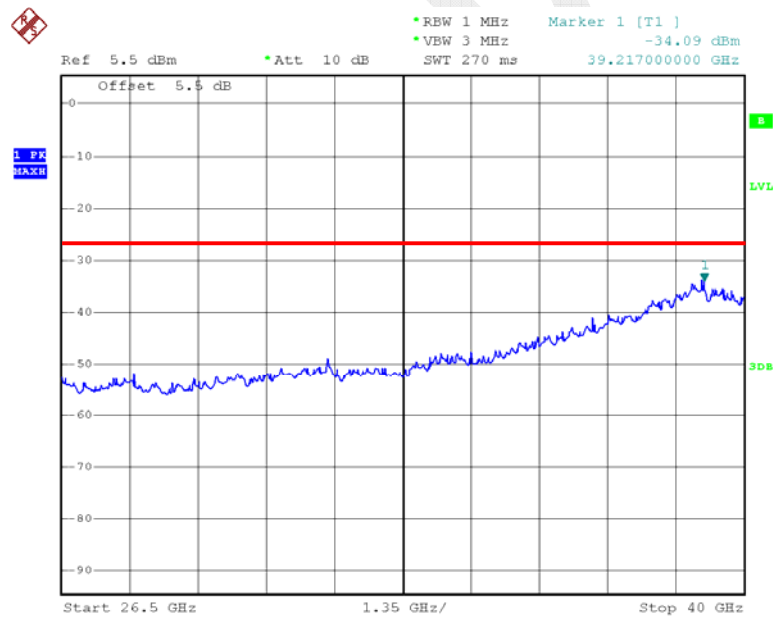
Date: 3.FEB.2015 16:14:08

802.11n ht20 Middle Channel 1GHz -26.5GHz



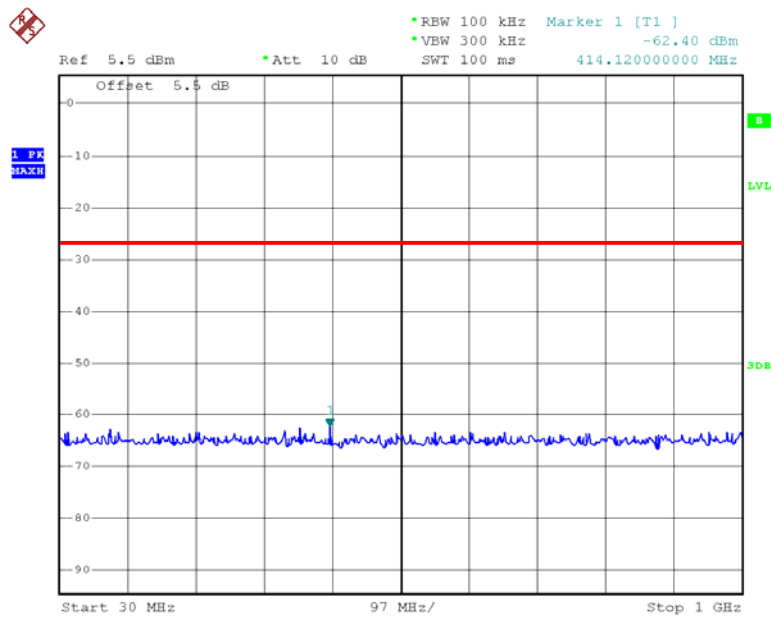
Date: 4.FEB.2015 13:56:47

802.11n ht20 Middle Channel 26.5GHz-40GHz



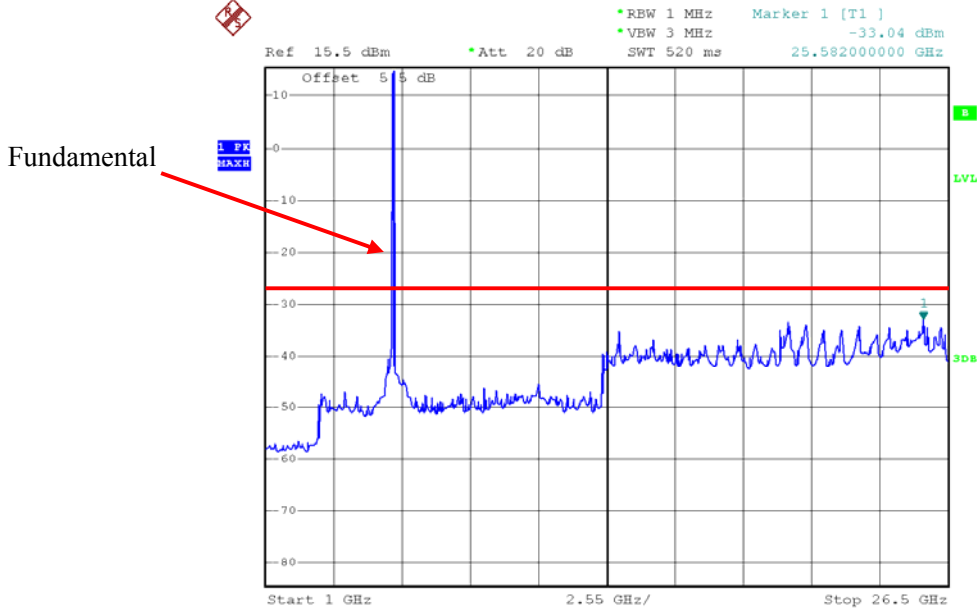
Date: 3.FEB.2015 15:17:37

802.11n ht20 High Channel 30MHz-1GHz



Date: 3.FEB.2015 16:17:30

802.11n ht20 High Channel 1GHz-26.5GHz



Date: 4.FEB.2015 13:57:08