



FCC PART 15C TEST REPORT No. 2012EEB00234-WLAN

For

Cellon Communications Technology(ShenZhen)Co., Ltd.

GSM QUAD Band and UMTS 850/1900 Mobile Phone

Model Name: A8660

**Market Name: A8660, ADR21, ADR21PE, ADR21AL, ADR21CL,
ADR21EC, ADR21MV, ADR21OM, ADR21MX, ADR21CR,
ADR21CA, ADR21EN, ADR21BR.**

With

Hardware Version: A8660_MB_P2C

Software Version: ADR21_Claro_CA_2.7

FCC ID: T38PCD8660

Issued Date: May 31th, 2012

Test Laboratory:

FCC 2.948 Listed: No.733176

IC O.A.T.S listed: No.6629A-1

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of TMC Beijing.

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1. Test Laboratory

1.1. Testing Location

Company Name: TMC Beijing, Telecommunication Metrology Center of MIIT
Address: No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China
Postal Code: 100191
Telephone: 00861062304633
Fax: 00861062304793

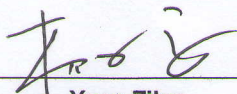
1.2. Testing Environment

Normal Temperature: 15-30°C
Extreme Temperature: -20/+55°C
Relative Humidity: 20-75%

1.3. Project data

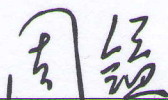
Project Leader: Zhou Yi
Test Engineer: Yang Zi'an
Testing End Date: 2012-5-31

1.4. Signature



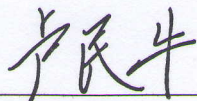
Yang Zi'an

(Prepared this test report)



Zhou Yi

(Reviewed this test report)



Lu Minniu

Director of the laboratory

(Approved this test report)

2. Client Information

2.1. Applicant Information

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2.2. Manufacturer Information

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Postal Code:	518000
Country:	China
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Email	maggie.xu@cellon.com
Telephone:	0755-86365704
Fax:	0755-86365686

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	GSM QUAD Band and UMTS 850/1900 Mobile Phone
Type	A8660
Market Name	A8660, ADR21, ADR21PE, ADR21AL, ADR21CL, ADR21EC, ADR21MV, ADR21OM, ADR21MX, ADR21CR, ADR21CA, ADR21EN, ADR21BR
FCC ID	T38PCD8660

Note: Photographs of EUT are shown in ANNEX A of this test report.

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version
EUT1	357428021084795	A8660_MB_P2C	ADR21_Claro_CA_2.7

3.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Charger	SPS-015757	/
AE2	Li-ion Battery	BTR8093	/

*AE ID: is used to identify the test accessory in the lab internally.

4. Reference Documents

4.1. Documents supplied by applicant

EUT feature information is supplied by the applicant or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part15	FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; 15.247 Operation within the bands 902–928MHz, 2400–2483.5 MHz, and 5725–5850 MHz.	Oct, 2011 Edition
ANSI C63.10	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2009
KDB558074	Measurement of Digital Transmission Systems Operating under Section 15.247	April, 2012

5. Laboratory Environment

Half-anechoic chamber (11.20 meters×6.10 meters×5.60 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 70 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 1 Ω
Normalized Site Attenuation (NSA)	< ±3.5dB, with 3m of Measuring distance, 30MHz 1000MHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Fully-anechoic chamber (11.20 meters×6.10 meters×6.60 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 35 %, Max. = 70 %
Shielding effectiveness	> 100 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 1 Ω
VSWR	Between 0 and 6 dB, from 30MHz to 18 000 MHz

Control room & Conduction Lab did not exceed following limits along the EMC testing:

Items	Control room	Conduction Lab
Temperature	Min.= 15 °C, Max.= 30 °C	Min.=15 °C, Max.=30 °C
Relative humidity	Min.=35 %, Max.= 80 %	Min.=35 %, Max.= 80 %
Shielding effectiveness	> 100 dB	> 100 dB
Electrical insulation	> 2M Ω	> 2M Ω
Ground system resistance	< 1 Ω	< 1 Ω

6. Summary of Test Results

6.1. Summary of Test Results

No	Test cases	Sub-clause of Part15C	Verdict
0	Antenna Requirement	15.203	P
1	Maximum Peak Output Power	15.247 (a)	P
2	Peak Power Spectral Density	15.247 (e)	P
3	Occupied 6dB Bandwidth	15.247 (a)	P
4	Band Edges Compliance	15.247 (d)	P
5	Transmitter Spurious Emission - Conducted	15.247(d)	P
6	Transmitter Spurious Emission - Radiated	15.247, 15.209, 15.209	P
7	AC Powerline Conducted Emission	15.107, 15.207	P

6.2. Statements

TMC has evaluated the test cases requested by the applicant/manufacture as listed in section 6.1 of this report, for the EUT specified in section 3, according to the standards or reference documents listed in section 4.2

6.3. Terms used in the result table

Terms used in Verdict column

P	Pass
NA	Not Available
F	Fail

Abbreviations

AC	Alternating Current
AFH	Adaptive Frequency Hopping
BW	Band Width
E.I.R.P.	equivalent isotropical radiated power
ISM	Industrial, Scientific and Medical
R&TTE	Radio and Telecommunications Terminal Equipment
RF	Radio Frequency
Tx	Transmitter

7. Test Equipments Utilized

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Spectrum Analyzer	FSP40	100378	Rohde & Schwarz	2012-12-22
2	Bluetooth Tester	CBT32	100584	Rohde & Schwarz	2013-01-12

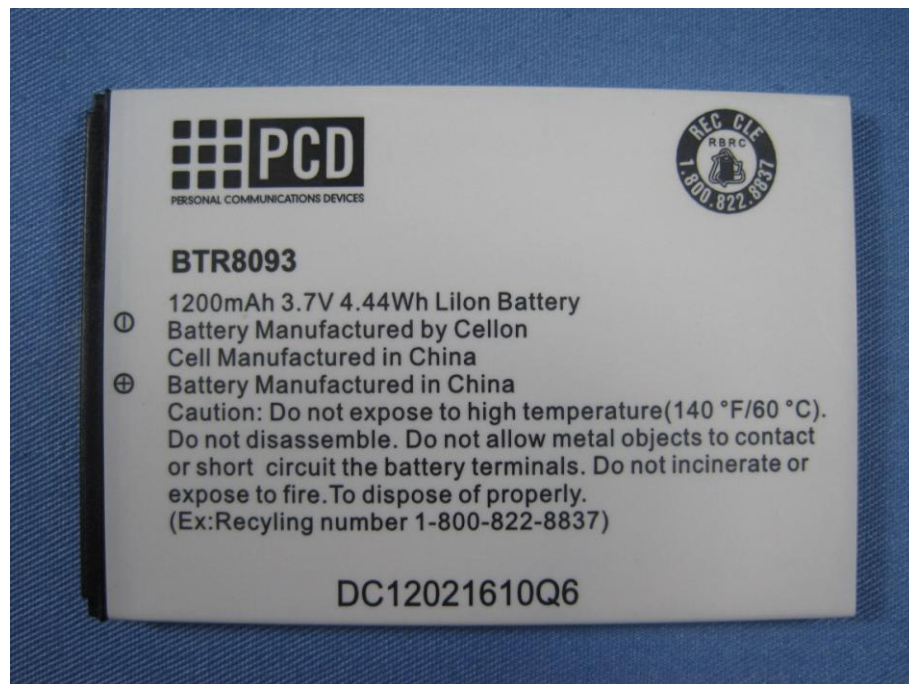
Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Chamber	FACT5-2.0	4166	ETS-Lindgren	2013-11-21
2	Test Receiver	ESCI	100701	Rohde & Schwarz	2012-08-04
3	Spectrum Analyzer	FSP40	100378	Rohde & Schwarz	2012-12-22
4	BiLog Antenna	VULB9163	9163-330	Schwarzbeck	2014-02-24
5	Dual-Ridge Waveguide Horn Antenna	3164-05	00085724	ETS-Lindgren	2014-02-17
6	Test Receiver	ESCI	100702	Rohde & Schwarz	2012-08-04
7	LISN	ESH2-Z5	100196	Rohde & Schwarz	2013-01-25
8	Signal Generator	SMR40	100541	Rohde & Schwarz	2013-01-11
9	Dual-Ridge Waveguide Horn Antenna	3117	00066585	ETS-Lindgren	2013-03-31

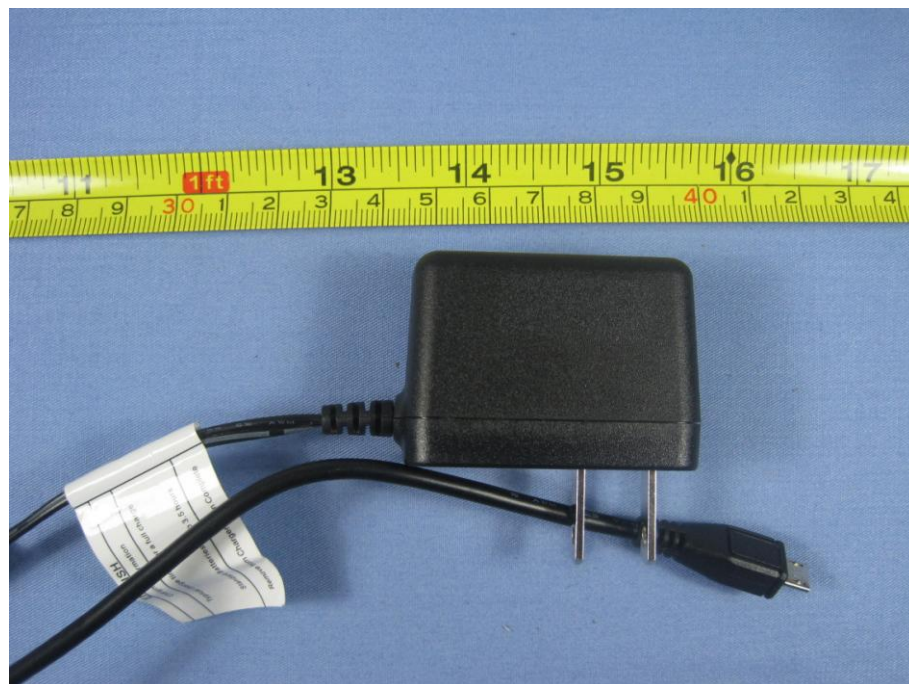
Anechoic chamber

Fully anechoic chamber by ETS-Lindgren.

ANNEX A: EUT photograph**Pic A-1 Mobile phone****Pic A-2 Mobile phone**



Pic A-3 Battery



Pic A-4 Charger

ANNEX B: MEASUREMENT RESULTS

B.0 Antenna requirement

Measurement Limit:

Standard	Requirement
FCC CRF Part 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. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, § 15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

**Conclusion: The Directional gains of antenna used for transmitting is 1.3 dBi.
The RF transmitter uses an integrate antenna without connector.**

B.1 Maximum Peak Output Power

Measurement Limit and Method:

Standard	Limit (dBm)
FCC CRF Part 15.247(b)	< 30

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	17.63	17.18	16.28
	2	17.55	17.15	16.10
	5.5	18.46	18.13	17.03
	11	18.83	18.41	17.40
802.11g	6	20.83	20.18	19.84
	9	20.85	20.21	19.44
	12	20.99	20.43	20.02
	18	21.17	20.58	19.71
	24	22.08	21.59	20.89
	36	22.11	21.14	20.27
	48	21.92	21.04	20.12
	54	21.78	21.22	20.59

802.11n mode

Mode	Data Rate (MCS Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n (20MHz BW)	MCS0	20.21	19.34	18.32
	MCS1	20.55	19.58	19.07
	MCS2	20.70	19.81	19.25
	MCS3	17.07	16.65	16.21
	MCS4	17.22	16.77	16.25
	MCS5	17.20	16.85	16.48
	MCS6	17.37	16.88	16.38
	MCS7	16.29	15.91	15.55

Mode	Data Rate (MCS Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n (40MHz BW)	MCS0	/	/	/
	MCS1	/	/	/
	MCS2	/	/	/
	MCS3	/	/	/
	MCS4	/	/	/
	MCS5	/	/	/
	MCS6	/	/	/
	MCS7	/	/	/

Conclusion: Pass

B.2 Peak Power Spectral Density

Measurement Limit:

Standard	Limit
FCC CRF Part 15.247(d)	< 8 dBm/3 kHz

Measurement Results:

802.11b/g mode

Mode	Channel	Peak Power Spectral Density			Conclusion
		Graphs	PMea(dBm)	Result(dBm)	
802.11b	1	Fig.1	1.67	-13.53	P
	6	Fig.2	0.81	-14.39	P
	11	Fig.3	0.23	-14.97	P
802.11g	1	Fig.4	2.22	-12.98	P
	6	Fig.5	2.33	-12.87	P
	11	Fig.6	1.76	-13.44	P

802.11n mode

Mode	Channel	Peak Power Spectral Density			Conclusion
		Graphs	PMea(dBm)	Result(dBm)	
802.11n-20M	1	Fig.7	2.10	-13.10	P
	6	Fig.8	1.25	-13.95	P
	11	Fig.9	0.73	-14.47	P
802.11n-40M	3	/	/	/	/
	6	/	/	/	/
	9	/	/	/	/

Note:

PMea is the value recorded from the instrument.

The measurement results are obtained as described below:

Result=PMea + BWCF. (BWCF= $10\log(3\text{kHz}/100\text{kHz})=-15.2\text{ dB}$)

See ANNEX C for test graphs.

Conclusion: Pass

B.3 Occupied 6dB Bandwidth

Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a)	≥ 500

Measurement Result:

802.11b/g mode

Mode	Channel	Test Results (kHz)		conclusion
802.11b	1	Fig.10	10058	P
	6	Fig.11	10095	P
	11	Fig.12	10021	P
802.11g	1	Fig.13	16208	P
	6	Fig.14	16172	P
	11	Fig.15	16028	P

802.11n mode

Mode	Channel	Test Results (kHz)		conclusion
802.11n (20MHz)	1	Fig.16	17366	P
	6	Fig.17	16968	P
	11	Fig.18	17221	P
802.11n (40MHz)	3	/	/	/
	6	/	/	/
	9	/	/	/

See ANNEX C for test graphs.

Conclusion: Pass

B.4 Band Edges Compliance

Measurement Limit:

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d)	> 20

Measurement Result:

802.11b/g mode

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.19	P
	11	Fig.20	P
802.11g	1	Fig.21	P
	11	Fig.22	P

802.11n mode

Mode	Channel	Test Results	Conclusion
802.11n (20MHz)	1	Fig.23	P
	11	Fig.24	P
802.11n (40MHz)	3	/	/
	9	/	/

See ANNEX C for test graphs.

Conclusion: Pass

B.5 Transmitter Spurious Emission

B.5.1 Transmitter Spurious Emission - Conducted

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247 (d)	20dB below peak output power in 100 kHz bandwidth

Measurement Results:

802.11b/g mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.25	P
		30 MHz-3 GHz	Fig.26	P
		3GHz-18GHz	Fig.27	P
	6	2.437 GHz	Fig.28	P
		30 MHz-3 GHz	Fig.29	P
		3GHz-18GHz	Fig.30	P
	11	2.462 GHz	Fig.31	P
		30 MHz-3 GHz	Fig.32	P
		3GHz-18GHz	Fig.33	P
802.11g	1	2.412 GHz	Fig.34	P
		30 MHz-3 GHz	Fig.35	P
		3GHz-18GHz	Fig.36	P
	6	2.437 GHz	Fig.37	P
		30 MHz-3 GHz	Fig.38	P
		3GHz-18GHz	Fig.39	P
	11	2.462 GHz	Fig.40	P
		30 MHz-3 GHz	Fig.41	P
		3GHz-18GHz	Fig.42	P

802.11n mode

802.11n (20MHz)	1	2.412 GHz	Fig.43	P
		30 MHz-3 GHz	Fig.44	P
		3GHz-18GHz	Fig.45	P
	6	2.437 GHz	Fig.46	P
		30 MHz-3 GHz	Fig.47	P
		3GHz-18GHz	Fig.48	P
	11	2.462 GHz	Fig.49	P
		30 MHz-3 GHz	Fig.50	P
		3GHz-18GHz	Fig.51	P
802.11n (40MHz)	3	2.422 GHz	/	/
		30 MHz-3 GHz	/	/
		3GHz-18GHz	/	/
	6	2.437 GHz	/	/
		30 MHz-3 GHz	/	/
		3GHz-18GHz	/	/
	9	2.452 GHz	/	/
		30 MHz-3 GHz	/	/
		3GHz-18GHz	/	/
/	All channels	18GHz-26GHz	Fig.52	P

See ANNEX C for test graphs.

Conclusion: Pass

B.5.2 Transmitter Spurious Emission - Radiated

Measurement Limit:

Standard	Limit
FCC 47 CFR Part 15.247, 15.205, 15.209	20dB below peak output power

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

Limit in restricted band:

Frequency of emission (MHz)	Field strength(μ V/m)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Condition

The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

Frequency of emission (MHz)	RBW/VBW	Sweep Time(s)
30-1000	100KHz/300KHz	5
1000-4000	1MHz/1MHz	15
4000-18000	1MHz/1MHz	40
18000-26500	1MHz/1MHz	20

Note:

According to the performance evaluation, the radiated emission margin of EUT is over 20dB in the band below 30MHz. Therefore, the measurement starts from 30MHz to tenth harmonic..

Measurement Results:

802.11b/g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	30 MHz ~1 GHz	Fig.53	P
		1 GHz ~ 3 GHz	Fig.54	P
		3 GHz ~ 18 GHz	Fig.55	P
	6	30 MHz ~1 GHz	Fig.56	P
		1 GHz ~ 3 GHz	Fig.57	P
		3 GHz ~ 18 GHz	Fig.58	P
	11	30 MHz ~1 GHz	Fig.59	P
		1 GHz ~ 3 GHz	Fig.60	P
		3 GHz ~ 18 GHz	Fig.61	P
802.11g	1	30 MHz ~1 GHz	Fig.62	P
		1 GHz ~ 3 GHz	Fig.63	P
		3 GHz ~ 18 GHz	Fig.64	P
	6	30 MHz ~1 GHz	Fig.65	P
		1 GHz ~ 3 GHz	Fig.66	P
		3 GHz ~ 18 GHz	Fig.67	P
	11	30 MHz ~1 GHz	Fig.68	P
		1 GHz ~ 3 GHz	Fig.69	P
		3 GHz ~ 18 GHz	Fig.70	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (20M)	1	30 MHz ~1 GHz	Fig.71	P
		1 GHz ~ 3 GHz	Fig.72	P
		3 GHz ~ 18 GHz	Fig.73	P
	6	30 MHz ~1 GHz	Fig.74	P
		1 GHz ~ 3 GHz	Fig.75	P
		3 GHz ~ 18 GHz	Fig.76	P
	11	30 MHz ~1 GHz	Fig.77	P
		1 GHz ~ 3 GHz	Fig.78	P
		3 GHz ~ 18 GHz	Fig.79	P
802.11n (40M)	3	30 MHz ~1 GHz	/	/
		1 GHz ~ 3 GHz	/	/
		3 GHz ~ 18 GHz	/	/
	6	30 MHz ~1 GHz	/	/
		1 GHz ~ 3 GHz	/	/
		3 GHz ~ 18 GHz	/	/
	9	30 MHz ~1 GHz	/	/
		1 GHz ~ 3 GHz	/	/
		3 GHz ~ 18 GHz	/	/
/	All channels	18 GHz~ 26.5 GHz	Fig.80	P

See ANNEX C for test graphs.

Conclusion: Pass

Note:

A "reference path loss" is established and the A_{Rpl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

The measurement results are obtained as described below:

Result= $P_{Mea}+A_{Rpl}= P_{Mea}+Cable\ Loss+Antenna\ Factor$

B.6 AC Powerline Conducted Emission

Test Condition:

Voltage (V)	Frequency (Hz)
120	60

Measurement Result and limit:

WLAN (Quasi-peak Limit)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)				Conclusion
		With charger				
		11b	11g	11n-20M	11n-40M	
0.15 to 0.5	66 to 56	Fig.81	Fig.82	Fig.83	/	P
0.5 to 5	56					
5 to 30	60					

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

WLAN (Average Limit)

Frequency range (MHz)	Average Limit (dBμV)	Result (dBμV)				Conclusion
		With charger				
		11b	11g	11n-20M	11n-40M	
0.15 to 0.5	56 to 46	Fig.81	Fig.82	Fig.83	/	P
0.5 to 5	46					
5 to 30	50					

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

See ANNEX C for test graphs.

Conclusion: Pass

ANNEX C: TEST FIGURE LIST

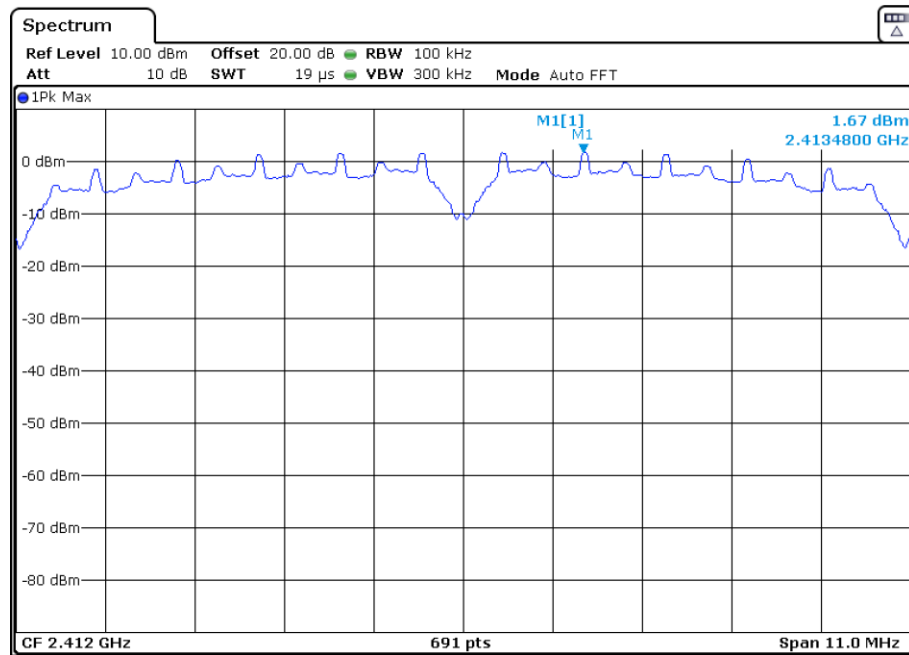


Fig. 1 Power Spectral Density (802.11b, Ch 1)

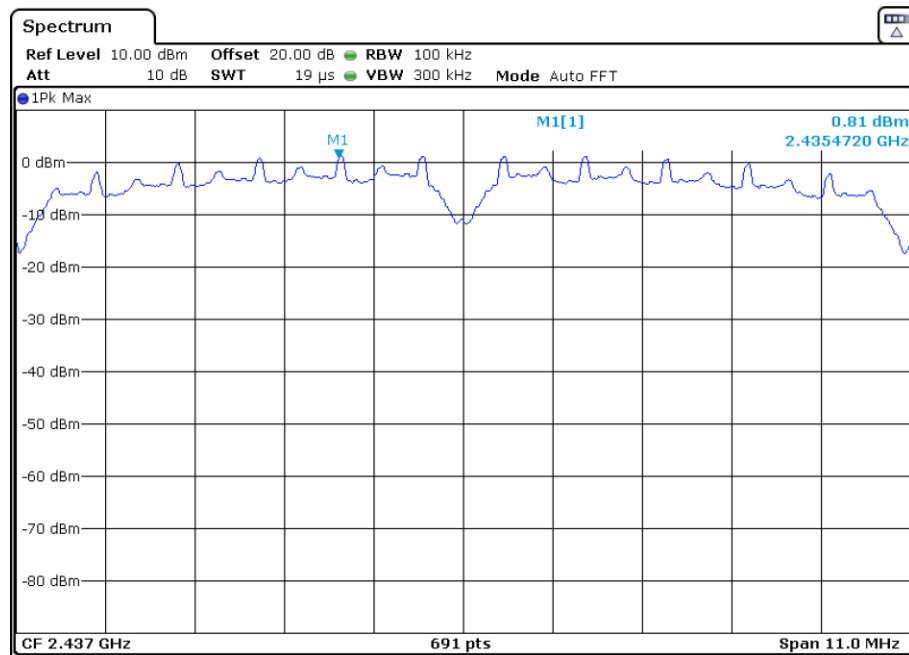


Fig. 2 Power Spectral Density (802.11b, Ch 6)

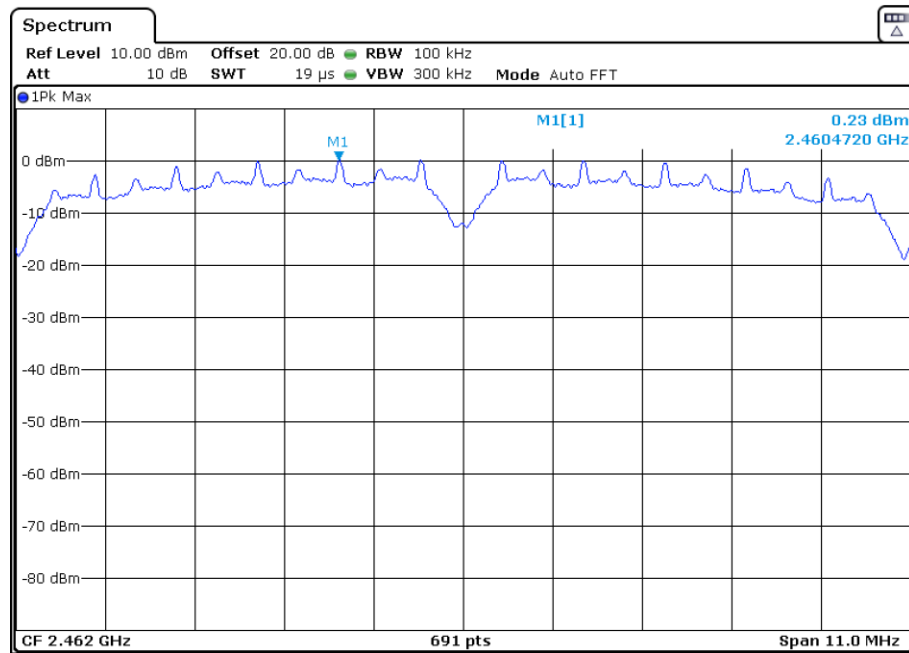


Fig. 3 Power Spectral Density (802.11b, Ch 11)

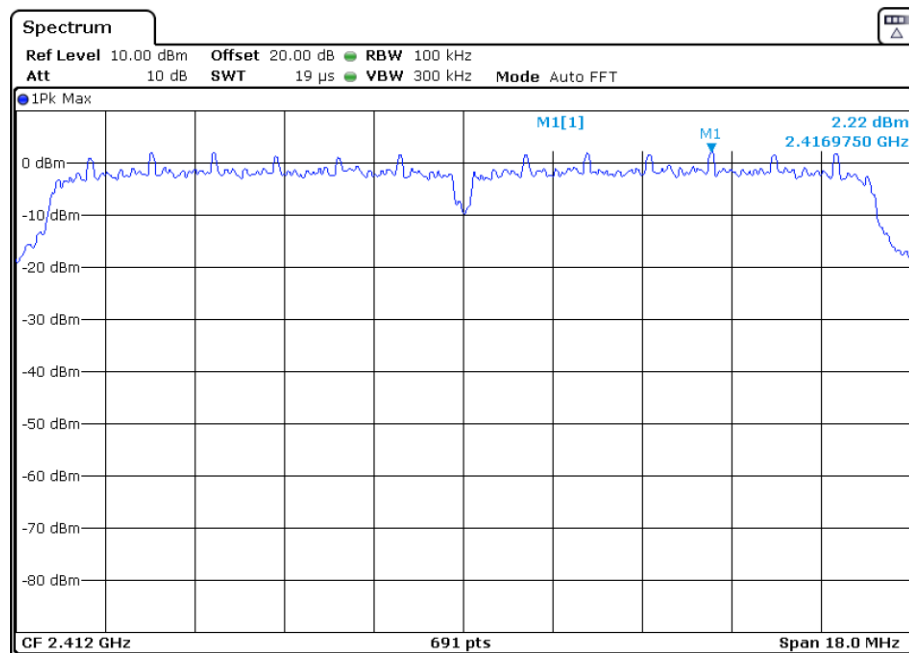


Fig. 4 Power Spectral Density (802.11g, Ch 1)

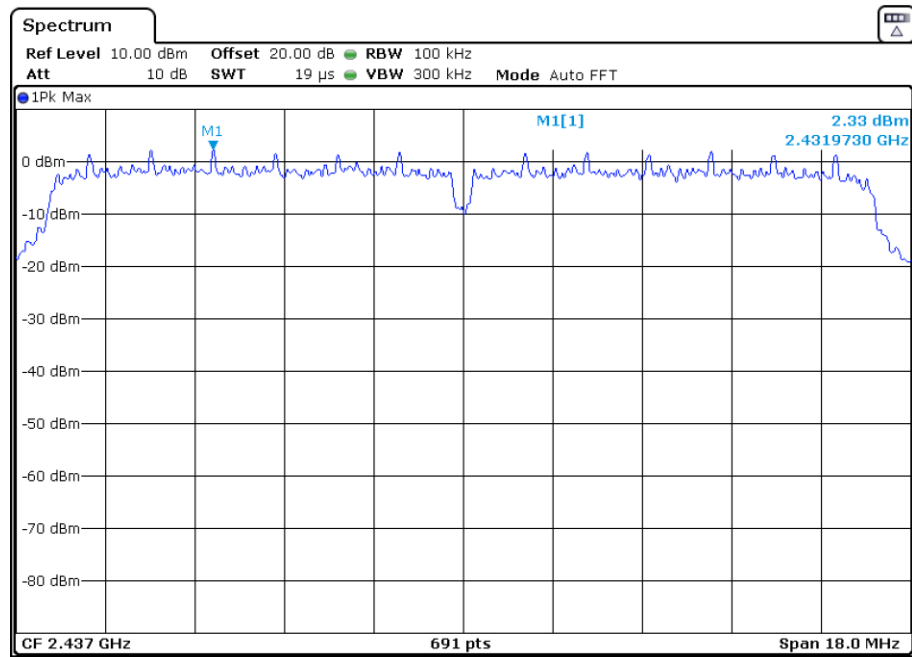


Fig. 5 Power Spectral Density (802.11g, Ch 6)

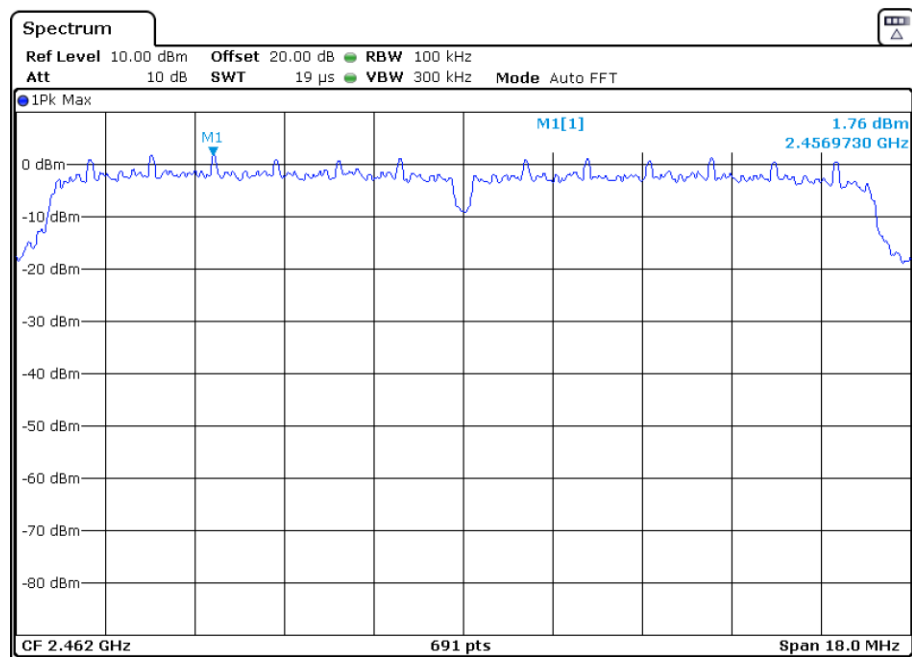


Fig. 6 Power Spectral Density (802.11g, Ch 11)

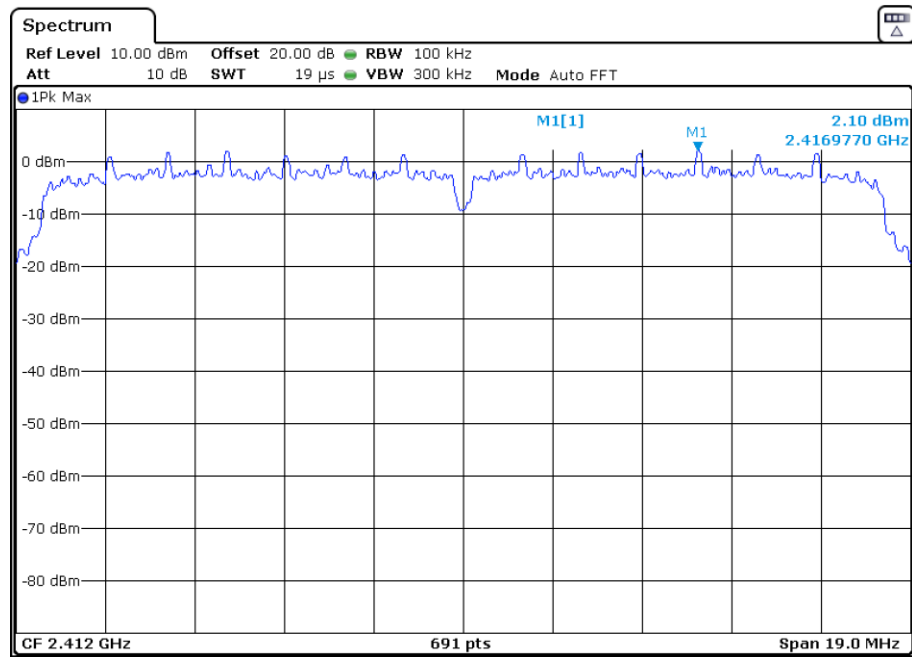


Fig. 7 Power Spectral Density (802.11n-20MHz, Ch 1)

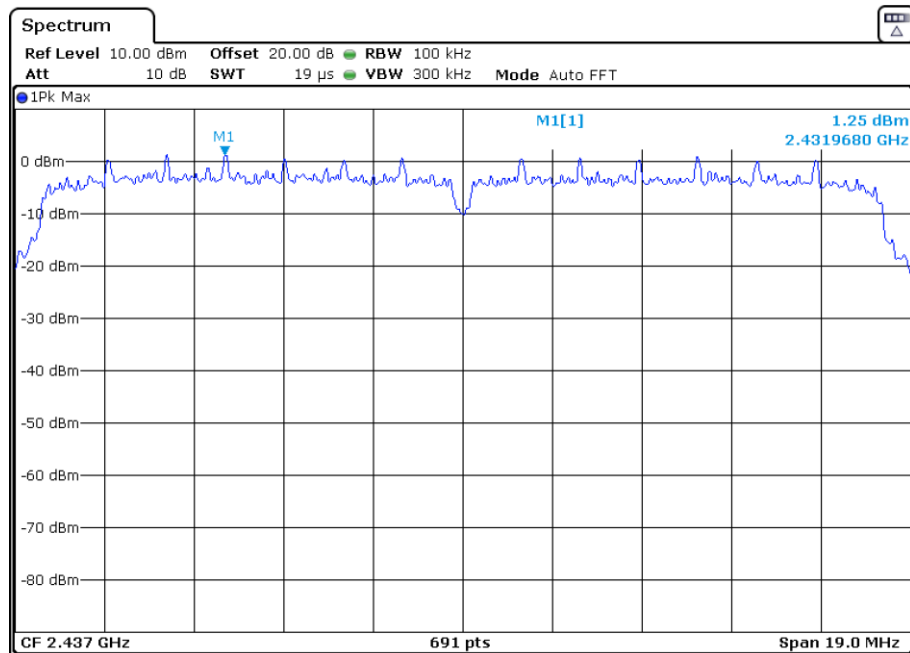


Fig. 8 Power Spectral Density (802.11n-20MHz, Ch 6)

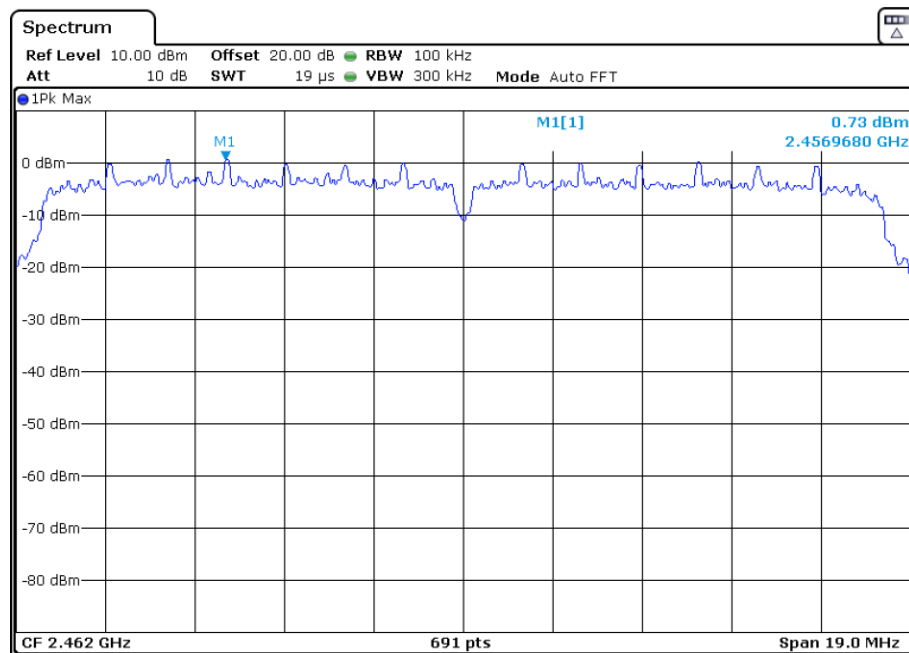
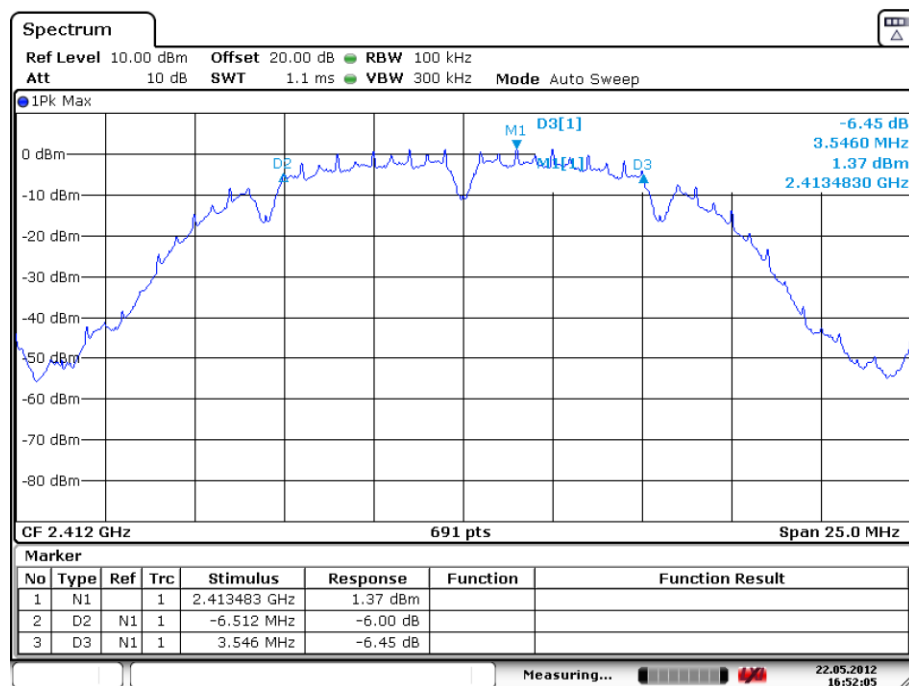


Fig. 9 Power Spectral Density (802.11n-20MHz, Ch 11)



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Fig. 10 Occupied 6dB Bandwidth (802.11b, Ch 1)

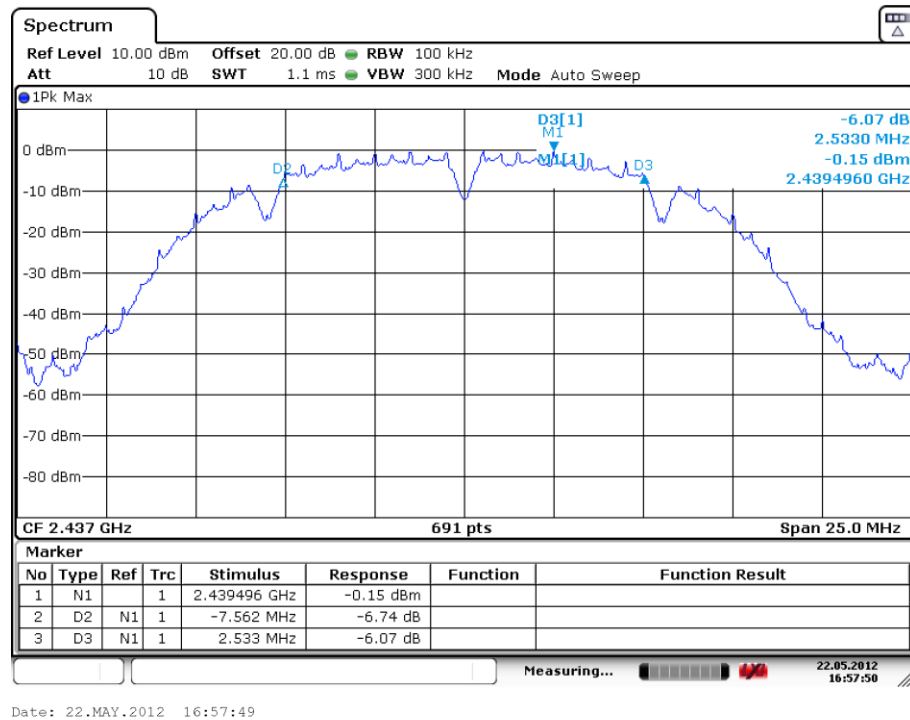


Fig. 11 Occupied 6dB Bandwidth (802.11b, Ch 6)

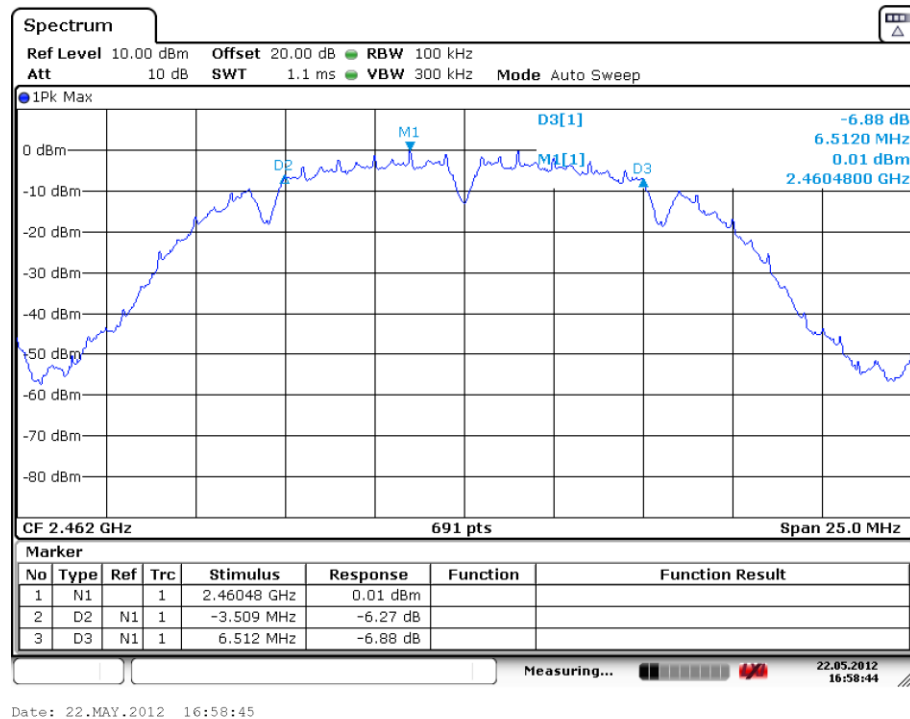


Fig. 12 Occupied 6dB Bandwidth (802.11b, Ch 11)

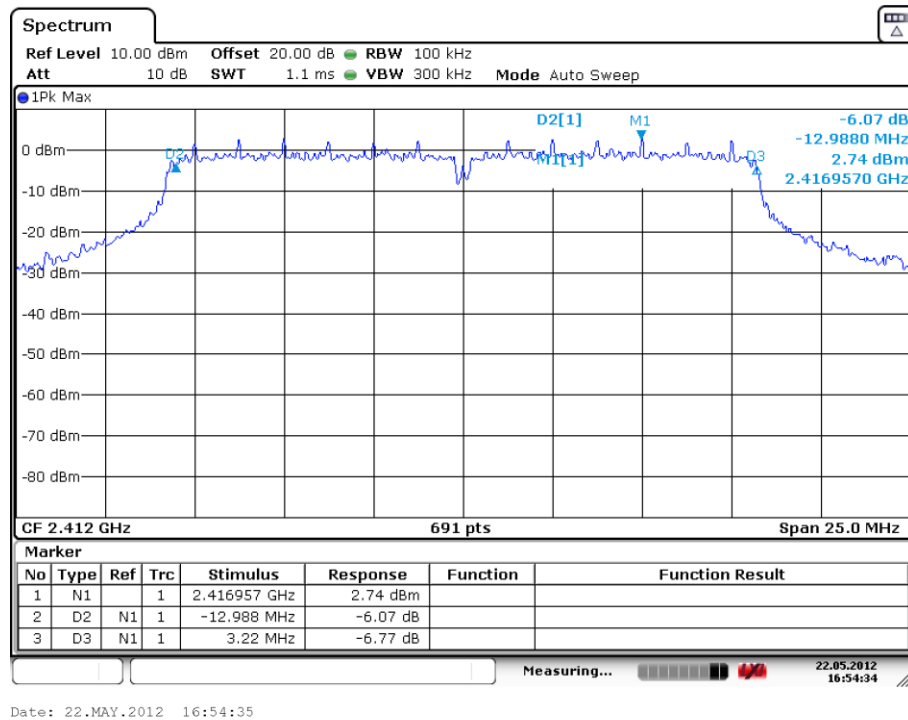


Fig. 13 Occupied 6dB Bandwidth (802.11g, Ch 1)

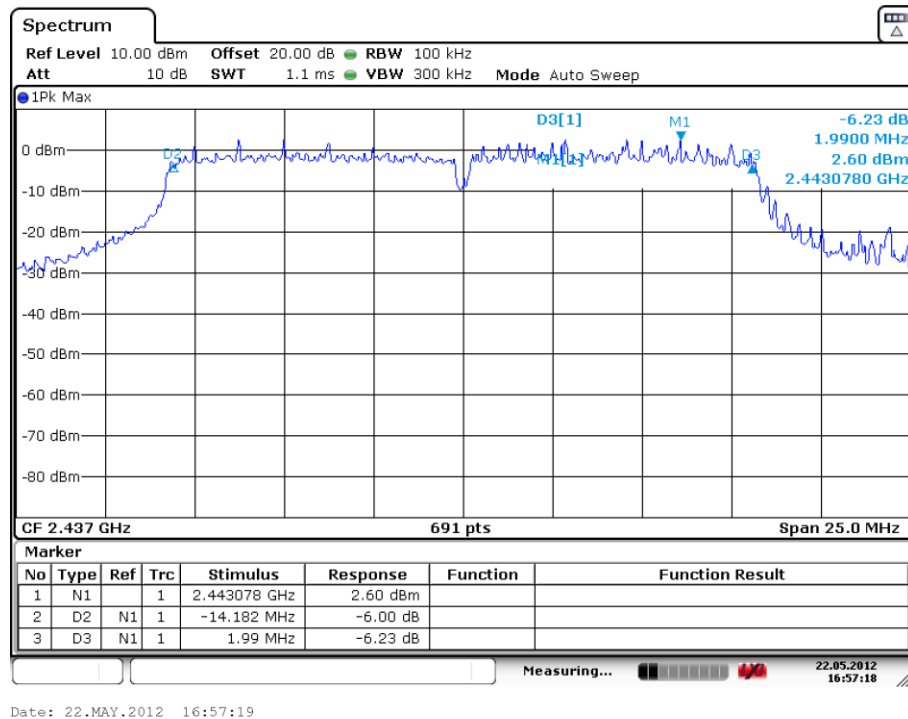


Fig. 14 Occupied 6dB Bandwidth (802.11g, Ch 6)

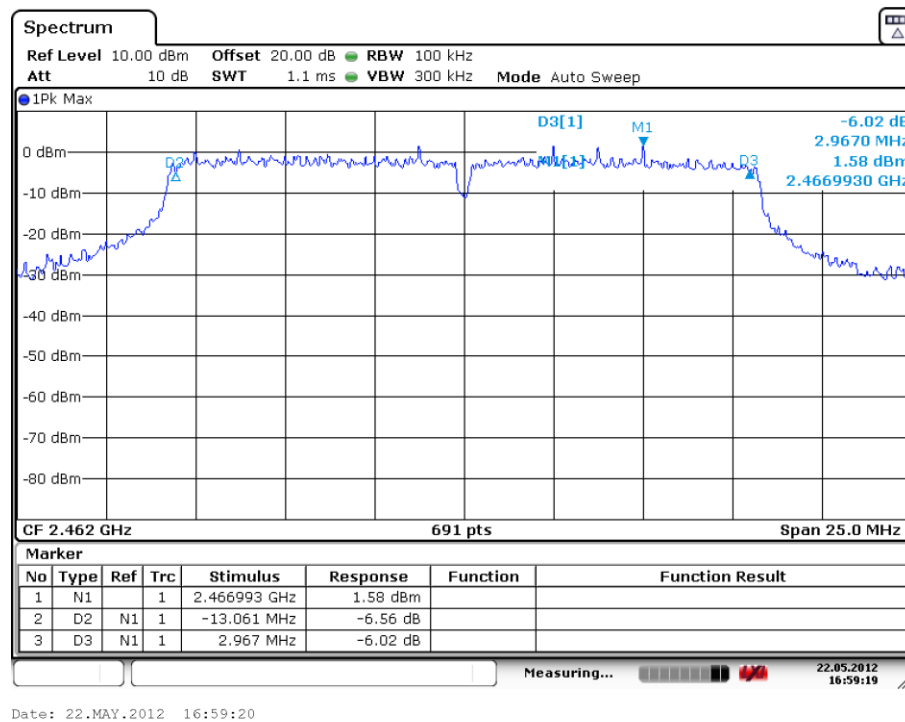


Fig. 15 Occupied 6dB Bandwidth (802.11g, Ch 11)

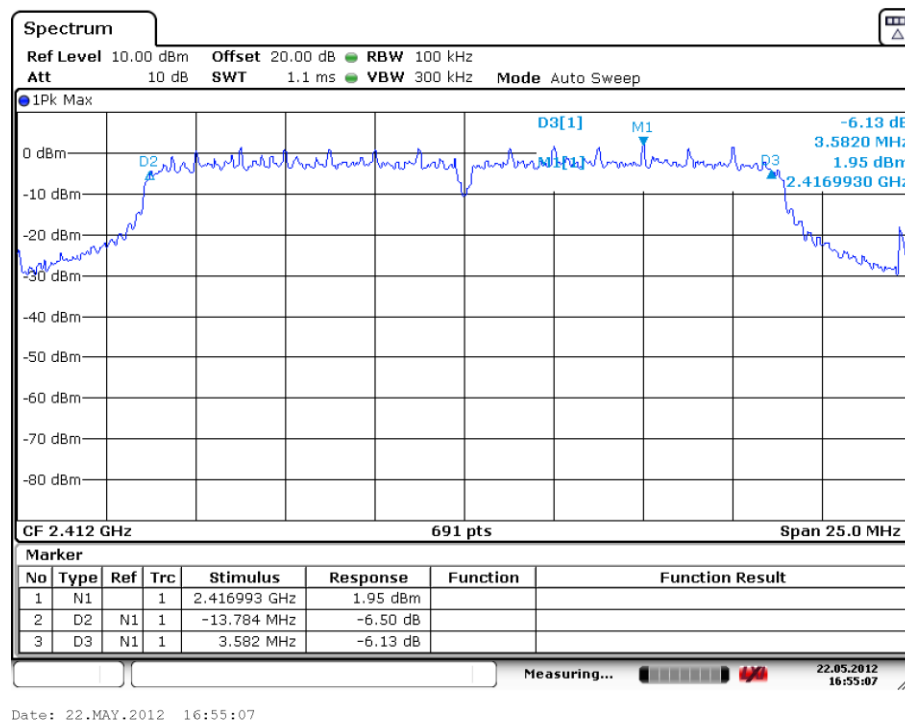


Fig. 16 Occupied 6dB Bandwidth (802.11 n-20MHz, Ch 1)

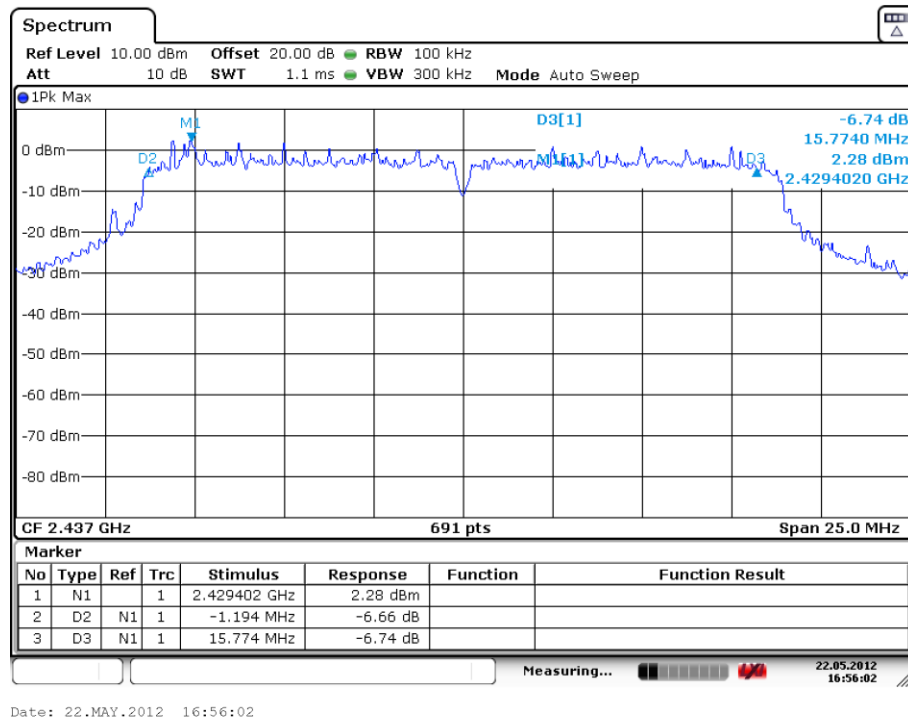


Fig. 17 Occupied 6dB Bandwidth (802.11 n-20MHz, Ch 6)

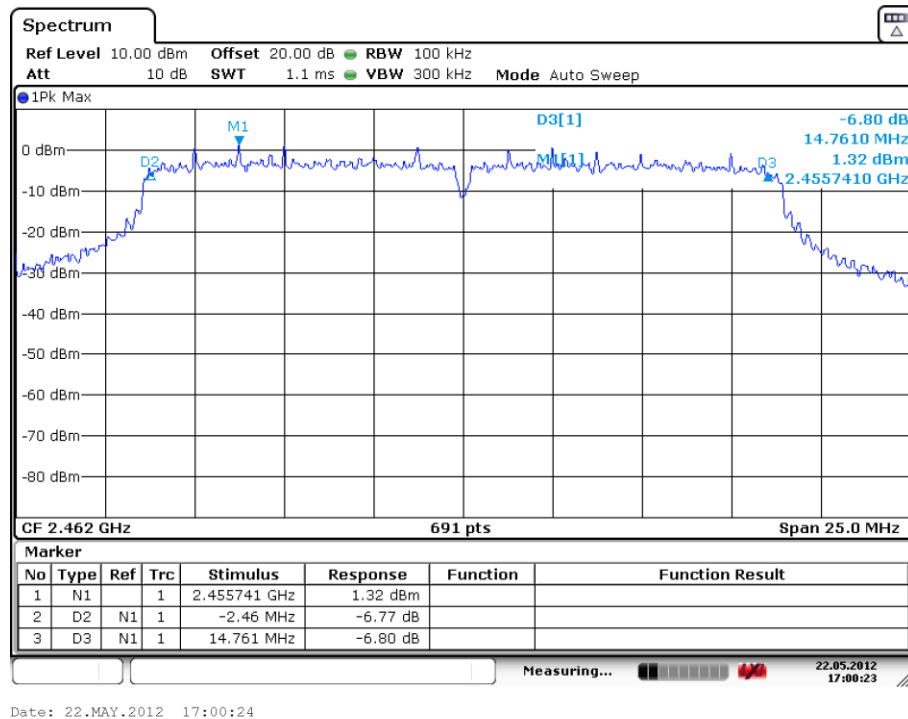


Fig. 18 Occupied 6dB Bandwidth (802.11n-20MHz, Ch 11)

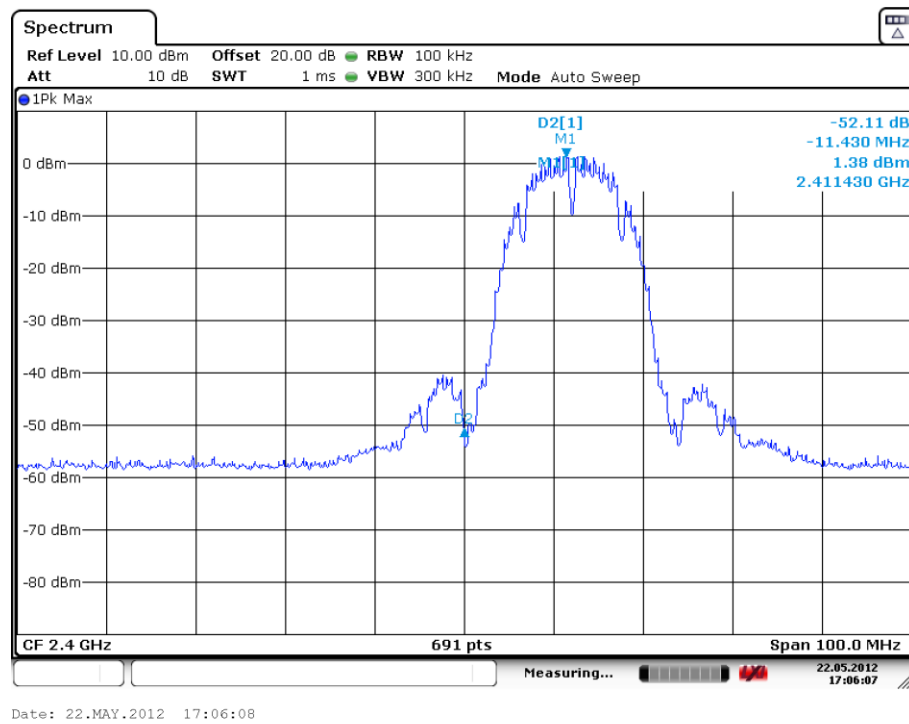


Fig. 19 Band Edges (802.11b, Ch 1)

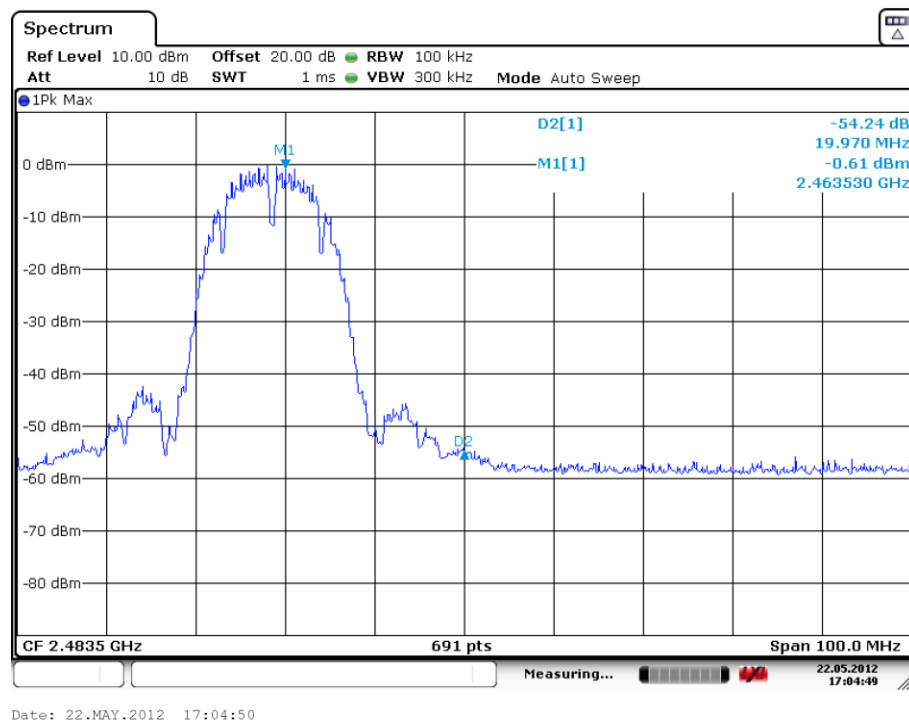


Fig. 20 Band Edges (802.11b, Ch 11)

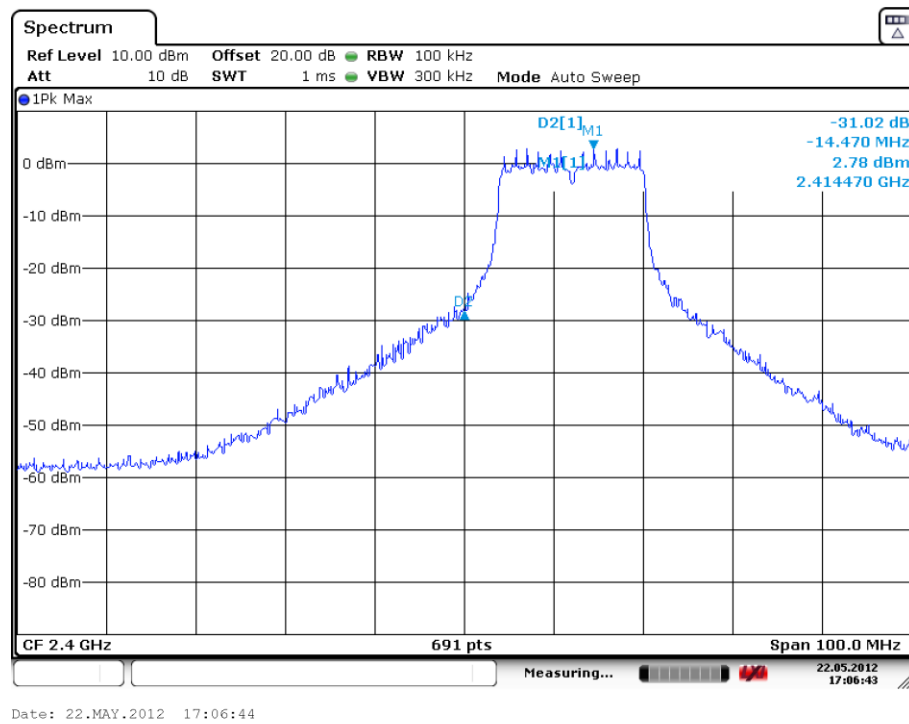


Fig. 21 Band Edges (802.11g, Ch 1)

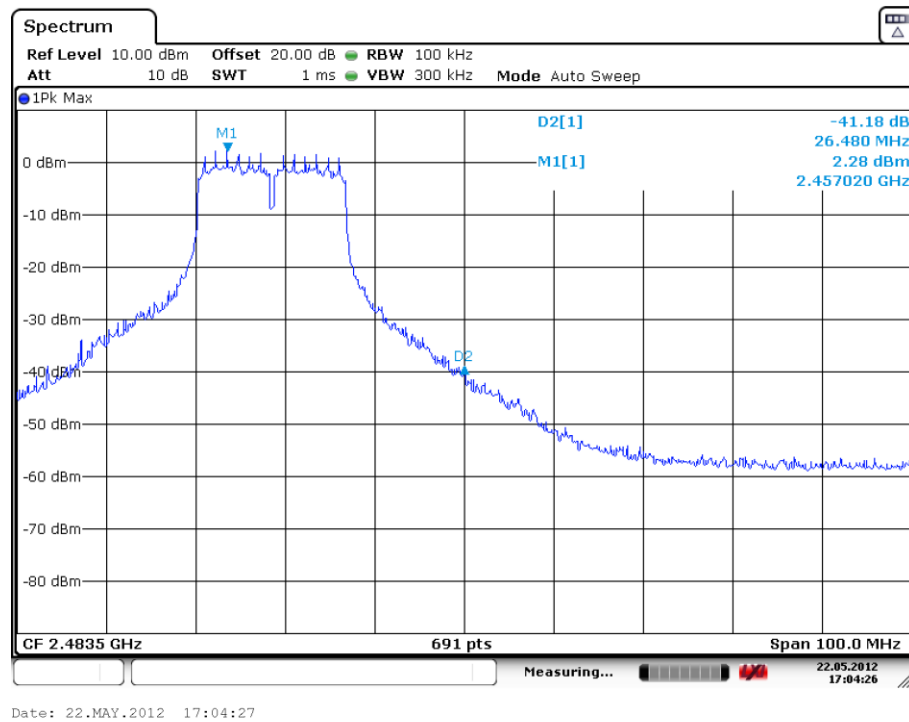


Fig. 22 Band Edges (802.11g, Ch 11)

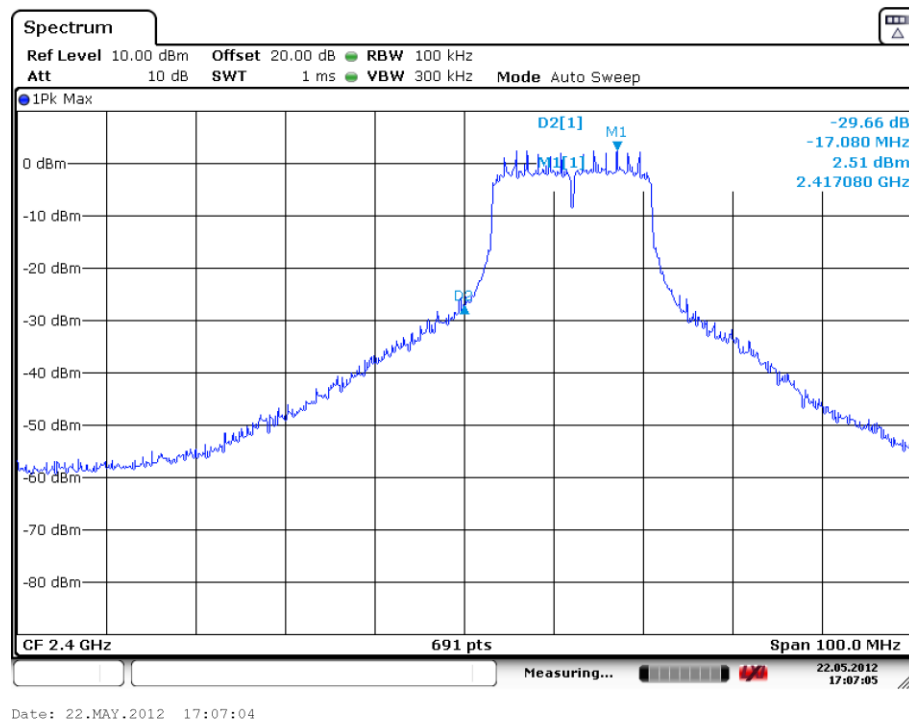


Fig. 23 Band Edges (802.11 n-20MHz, Ch 1)

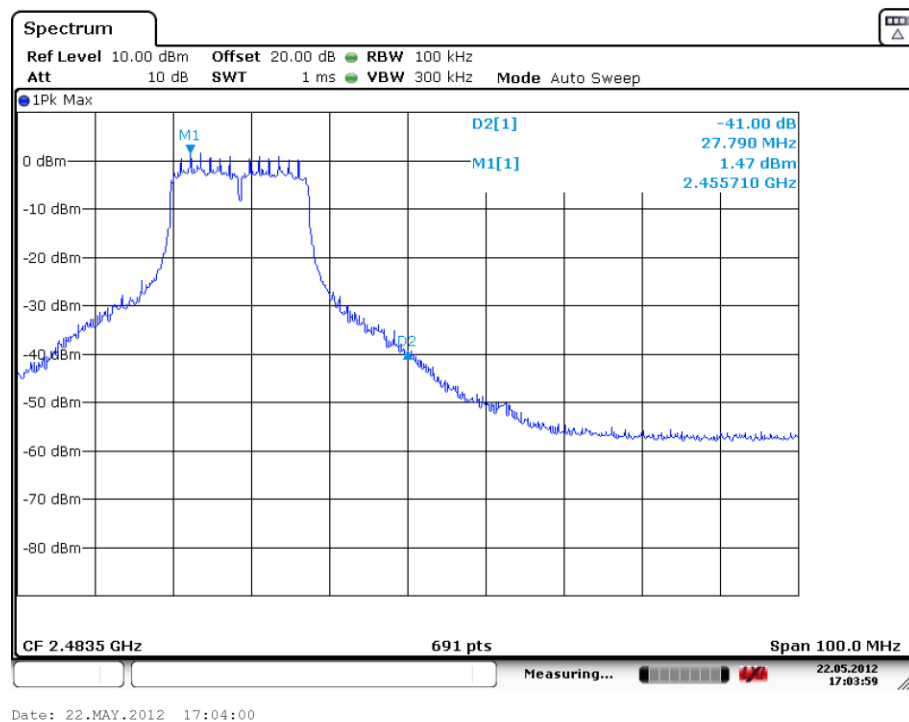


Fig. 24 Band Edges (802.11 n-20MHz, Ch 11)

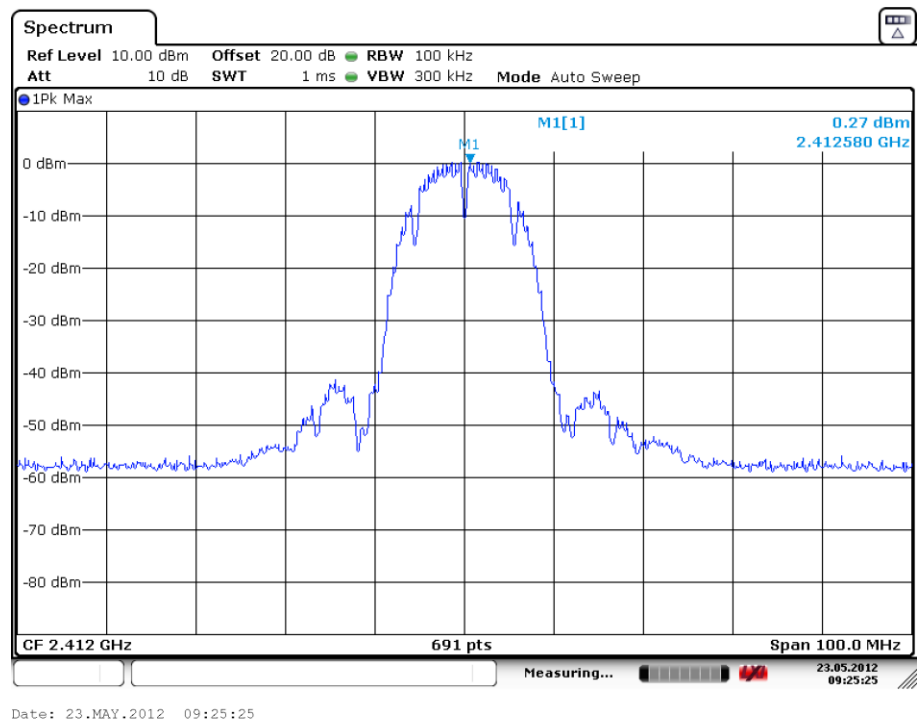


Fig. 25 Conducted Spurious Emission (802.11b, Ch1, Center Frequency)

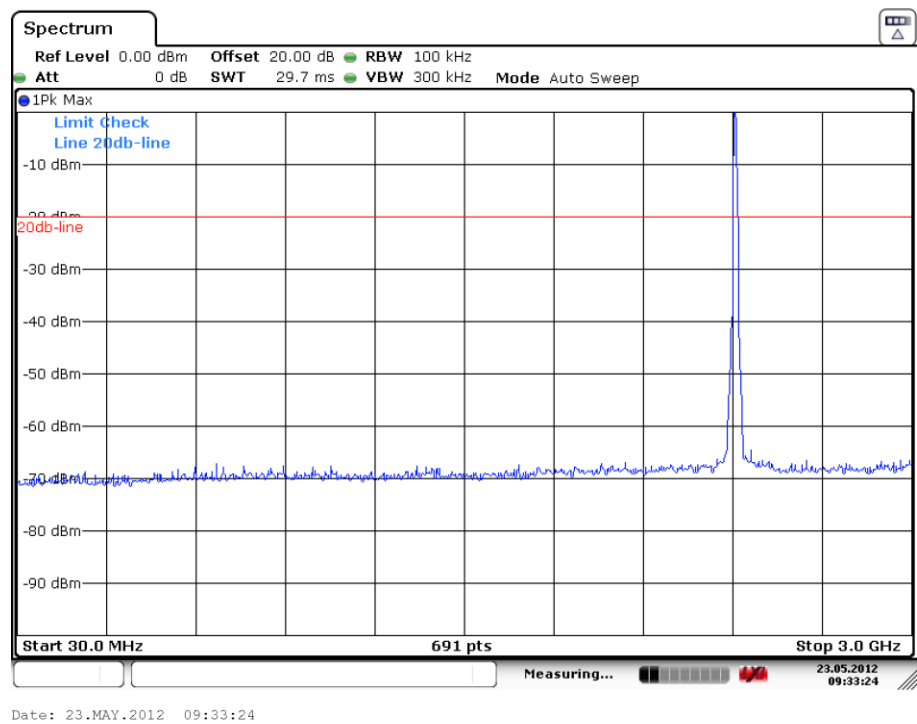


Fig. 26 Conducted Spurious Emission (802.11b, Ch1, 30 MHz-3 GHz)

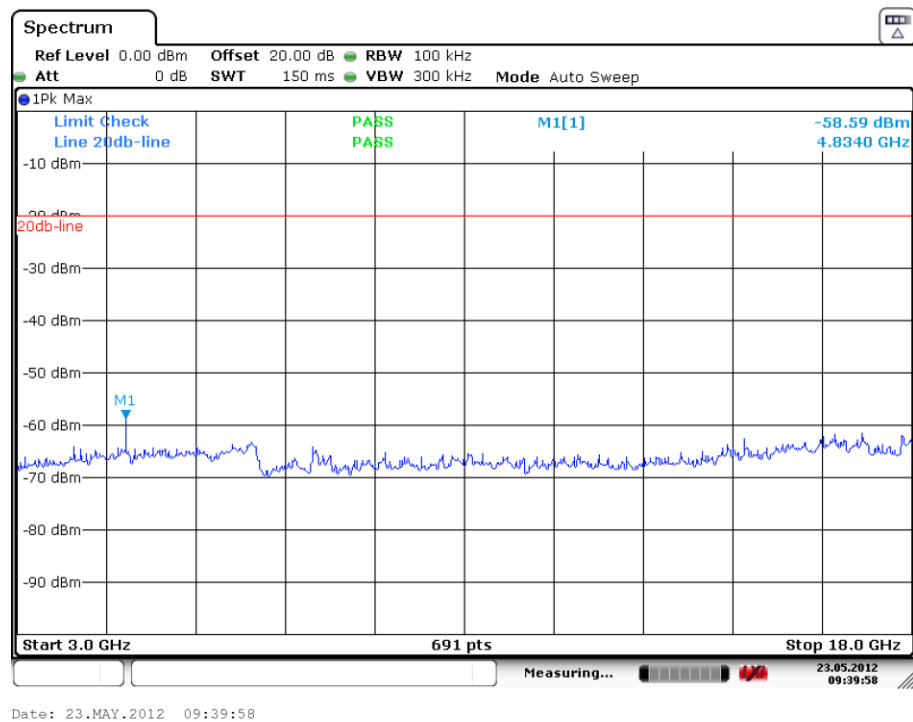


Fig. 27 Conducted Spurious Emission (802.11b, Ch1, 3 GHz-18 GHz)

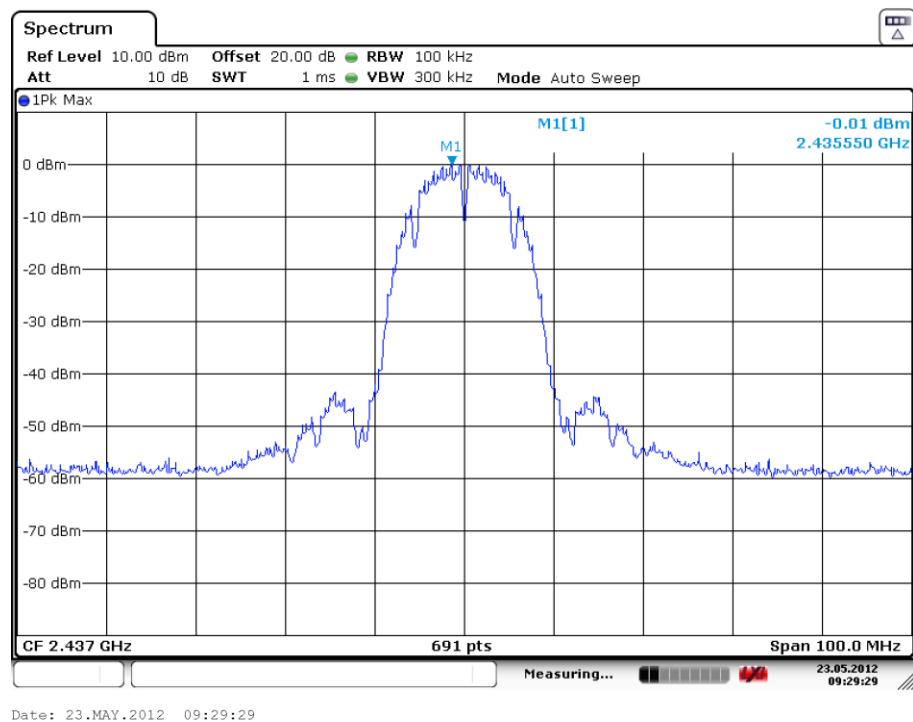


Fig. 28 Conducted Spurious Emission (802.11b, Ch6, Center Frequency)

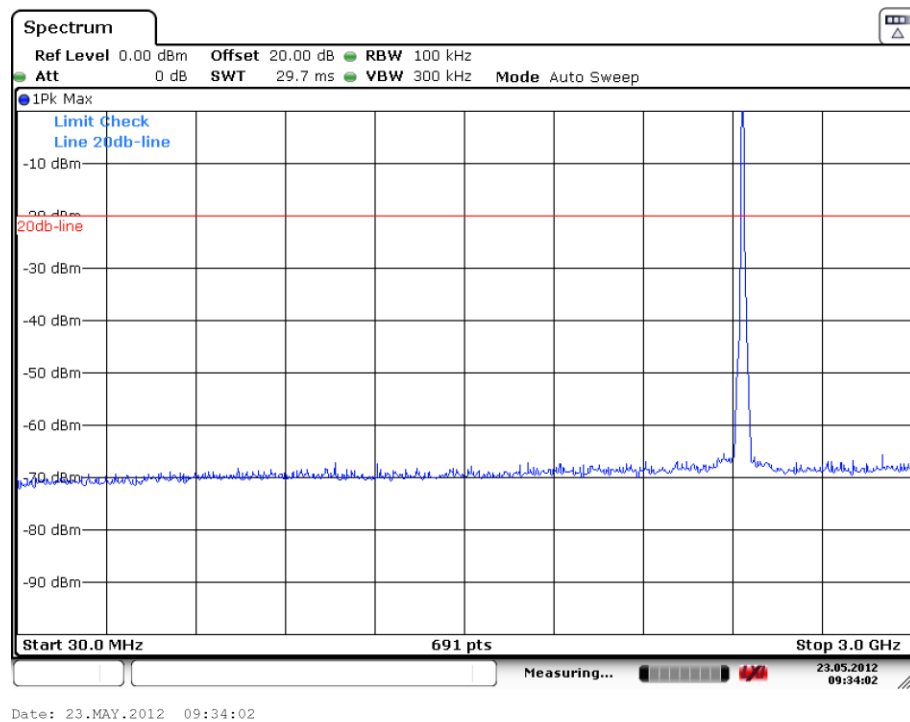


Fig. 29 Conducted Spurious Emission (802.11b, Ch6, 30 MHz-3 GHz)

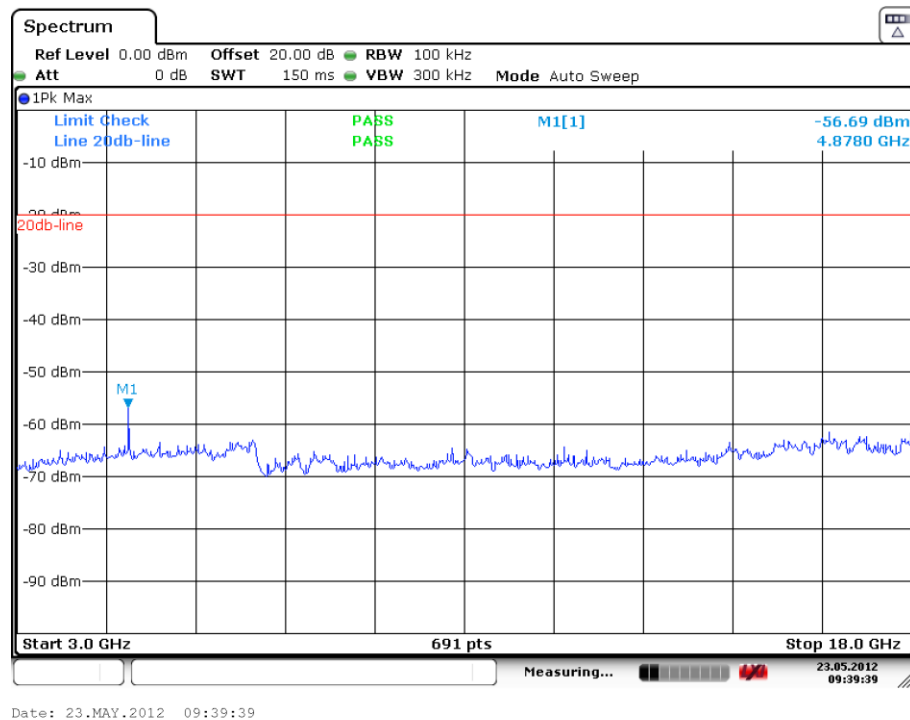


Fig. 30 Conducted Spurious Emission (802.11b, Ch6, 3 GHz-18 GHz)

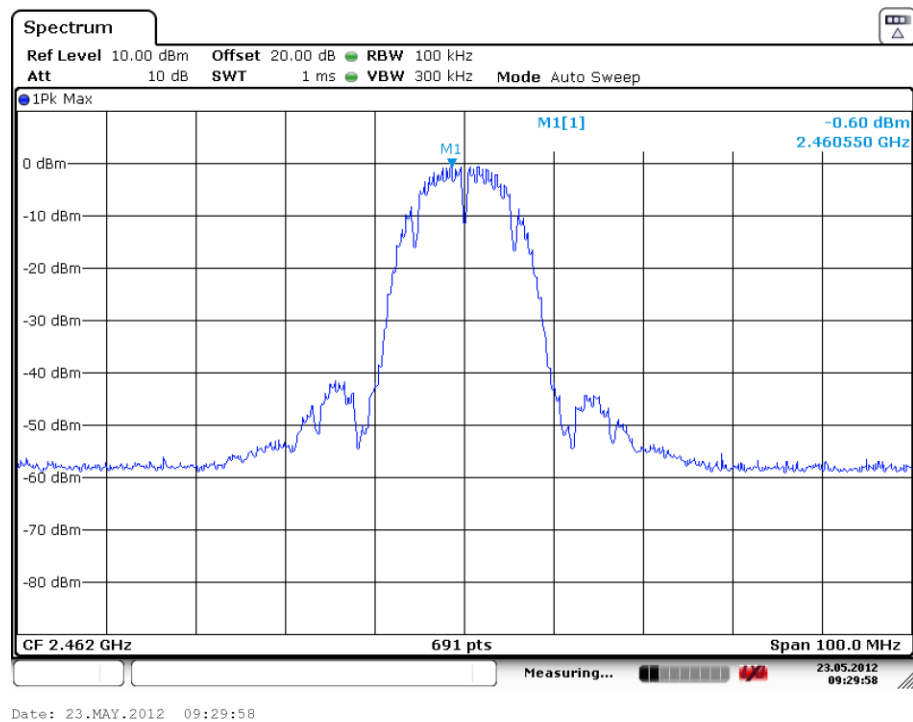


Fig. 31 Conducted Spurious Emission (802.11b, Ch11, Center Frequency)

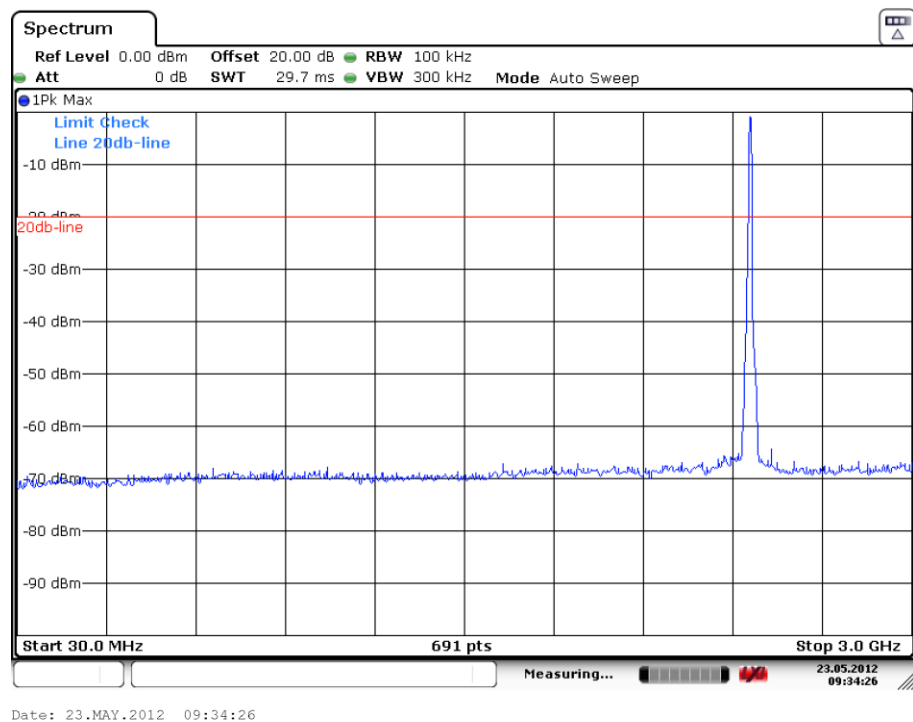


Fig. 32 Conducted Spurious Emission (802.11b, Ch11, 30 MHz-3 GHz)

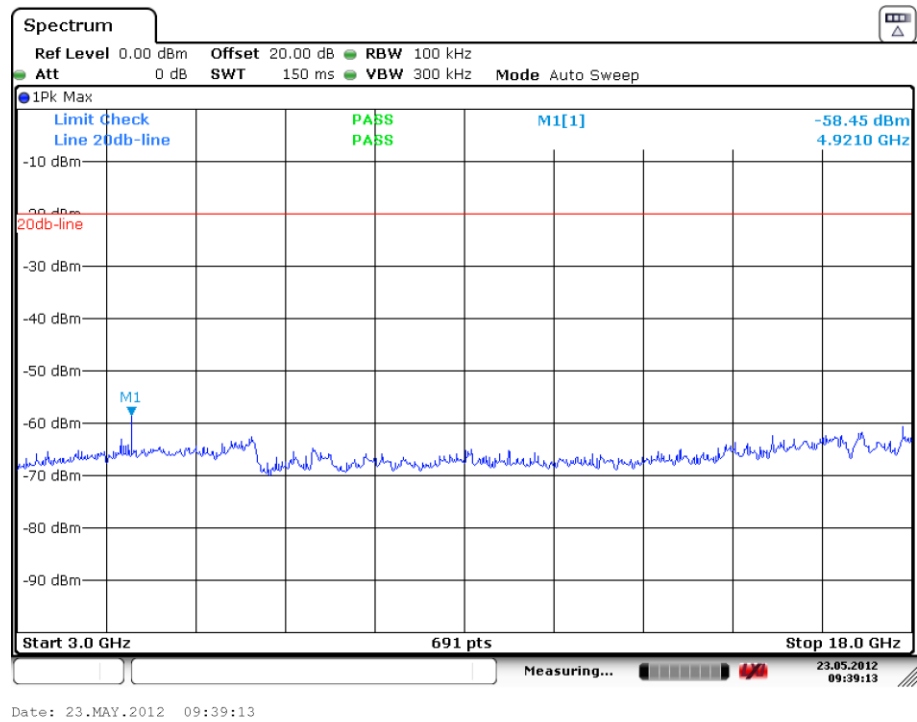


Fig. 33 Conducted Spurious Emission (802.11b, Ch11, 3 GHz-18 GHz)

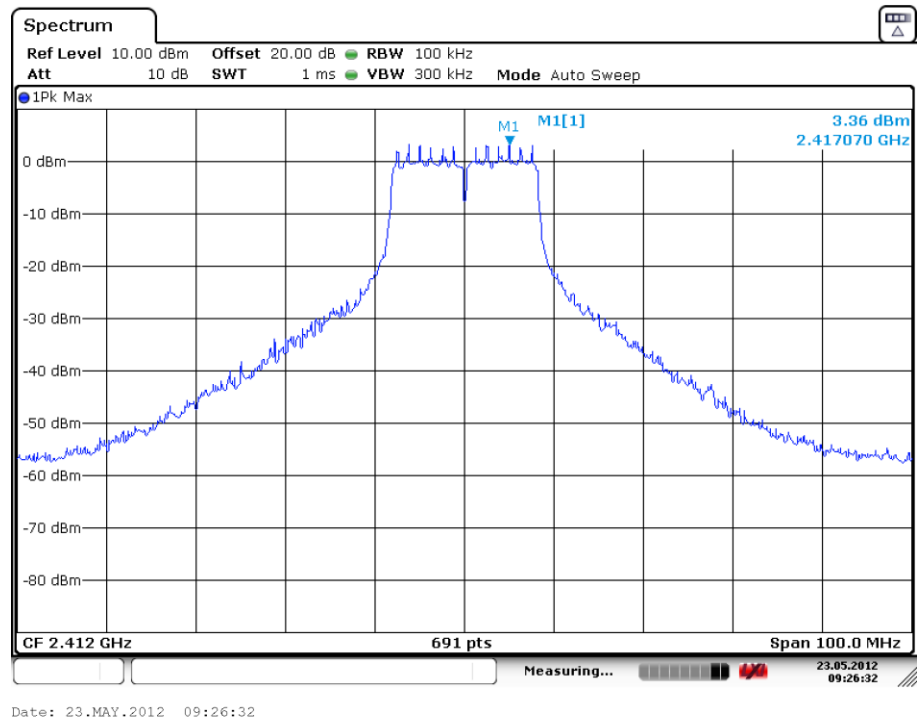


Fig. 34 Conducted Spurious Emission (802.11g, Ch1, Center Frequency)

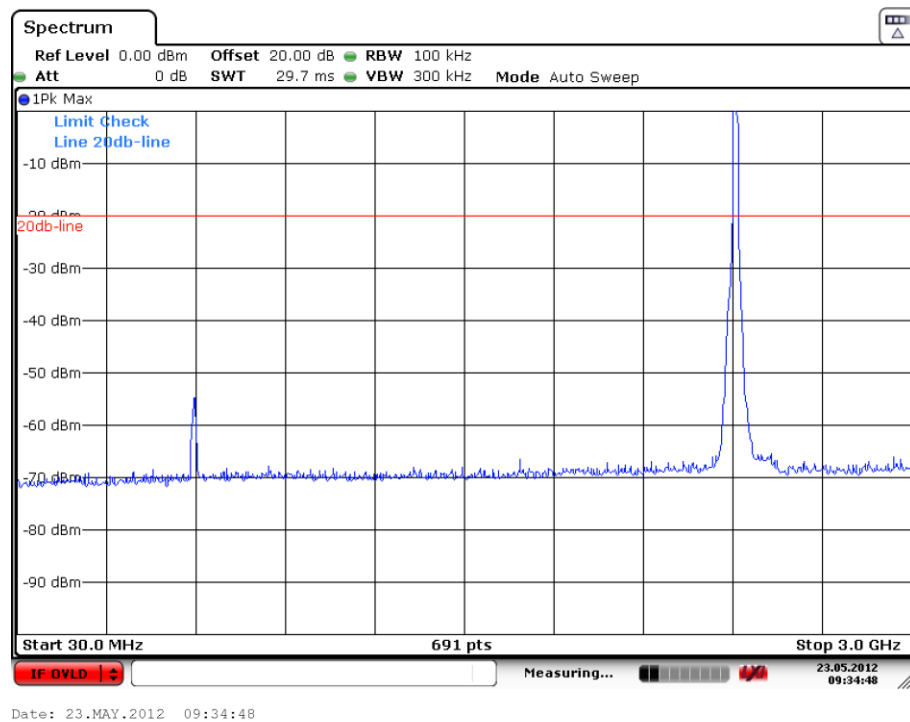


Fig. 35 Conducted Spurious Emission (802.11g, Ch1, 30 MHz-3 GHz)

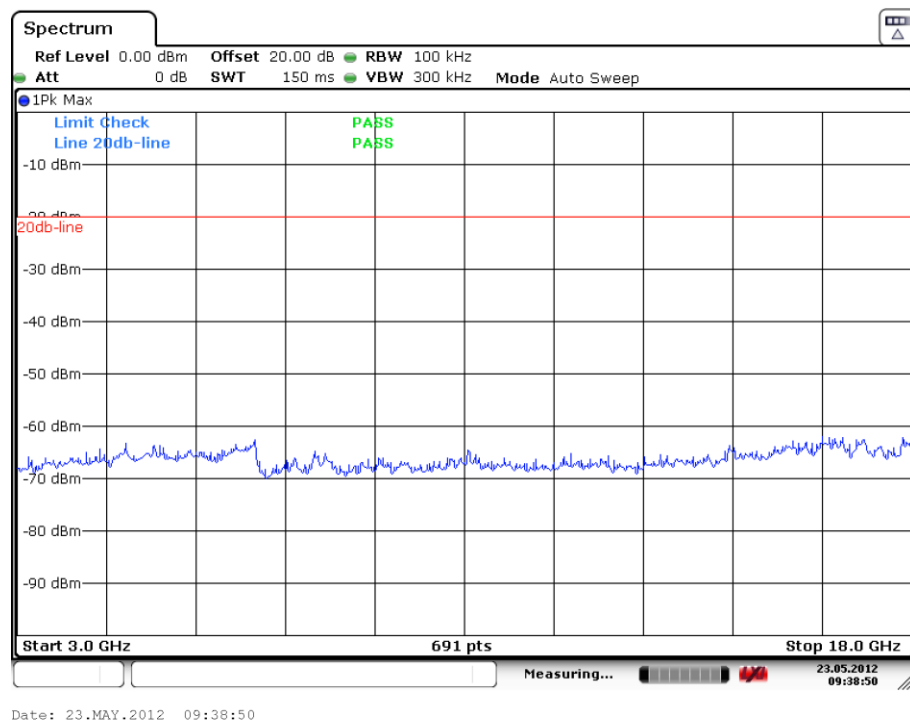


Fig. 36 Conducted Spurious Emission (802.11g, Ch1, 3 GHz-18 GHz)

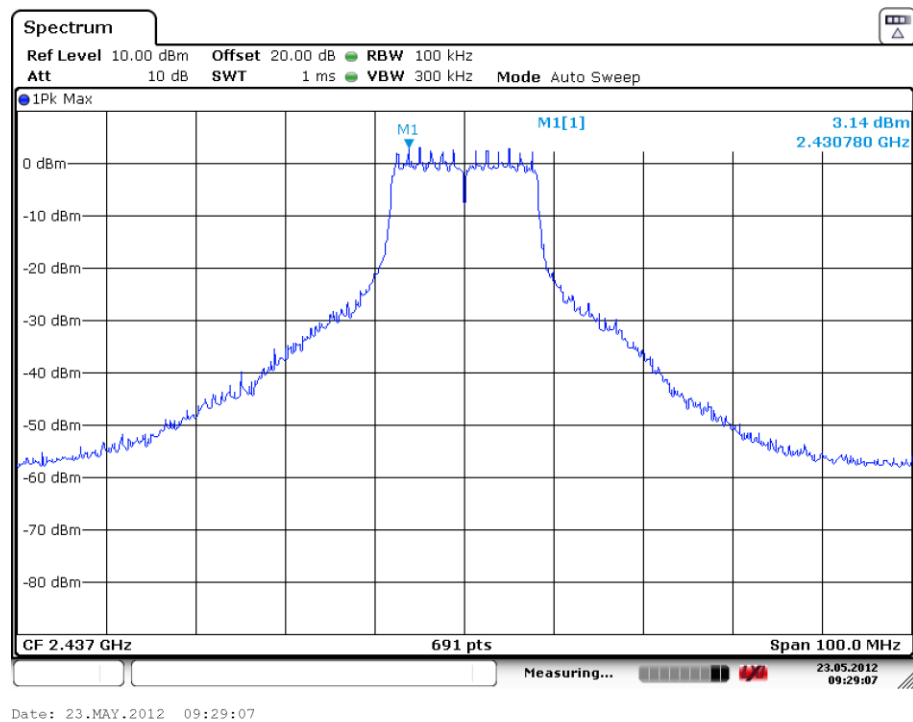


Fig. 37 Conducted Spurious Emission (802.11g, Ch6, Center Frequency)

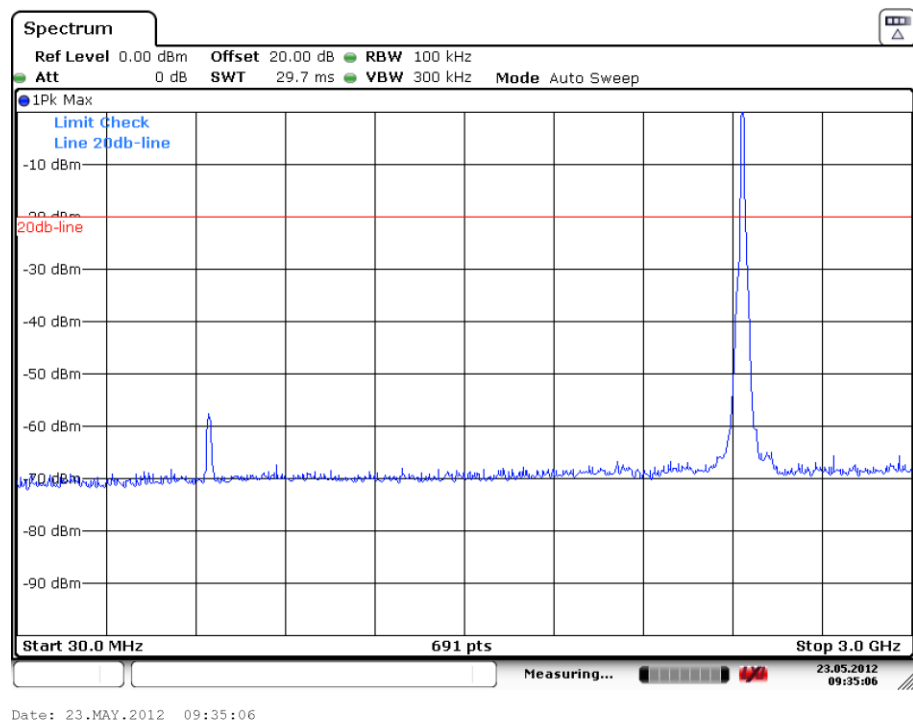


Fig. 38 Conducted Spurious Emission (802.11g, Ch6, 30 MHz-3 GHz)

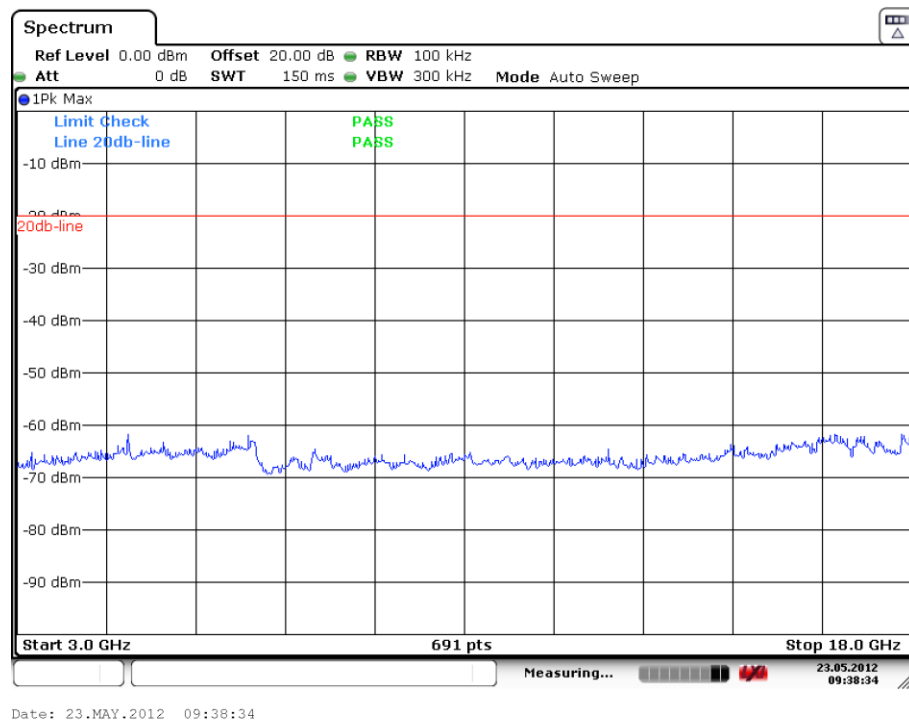


Fig. 39 Conducted Spurious Emission (802.11g, Ch6, 3 GHz-18 GHz)

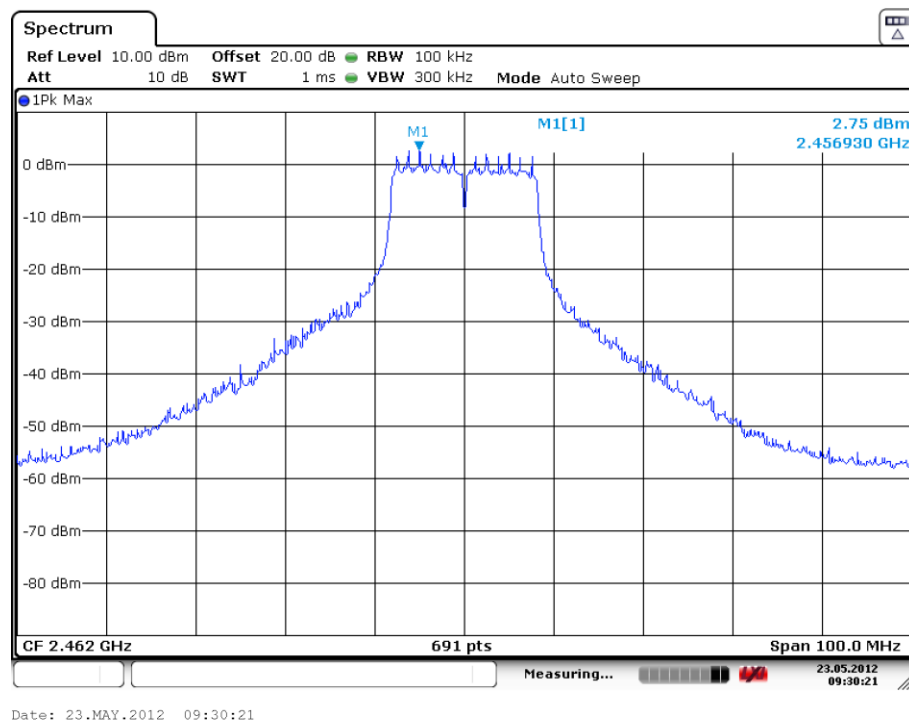


Fig. 40 Conducted Spurious Emission (802.11g, Ch11, Center Frequency)

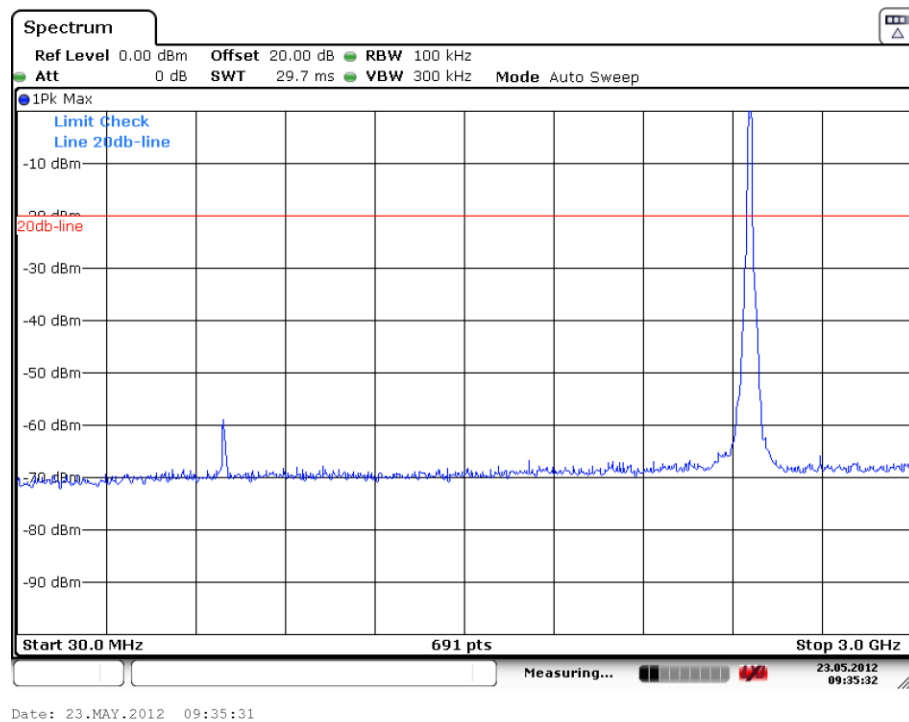


Fig. 41 Conducted Spurious Emission (802.11g, Ch11, 30 MHz-3 GHz)

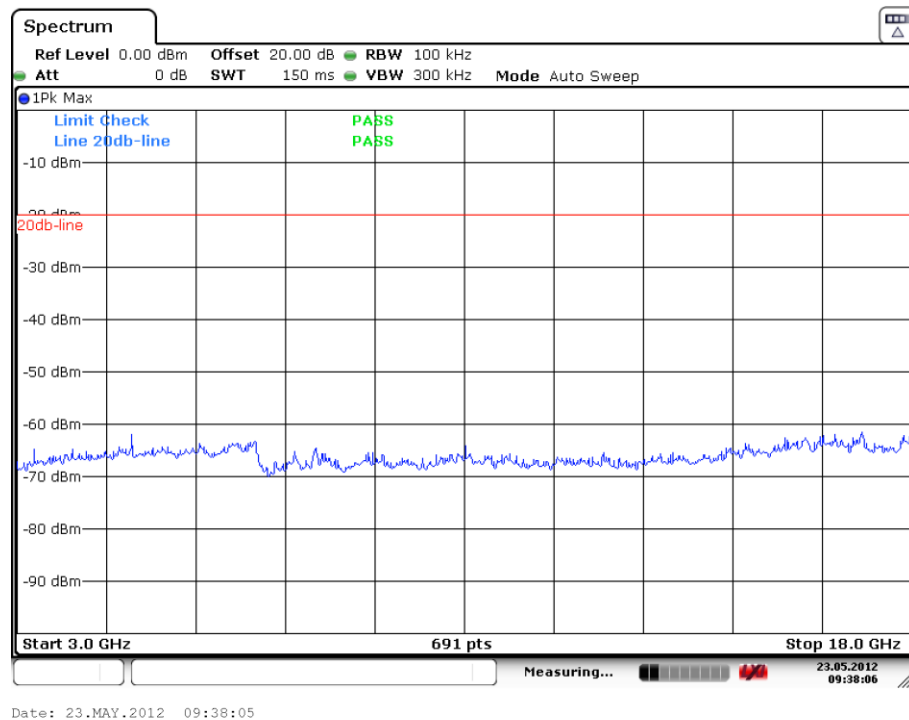


Fig. 42 Conducted Spurious Emission (802.11g, Ch11, 3 GHz-18 GHz)

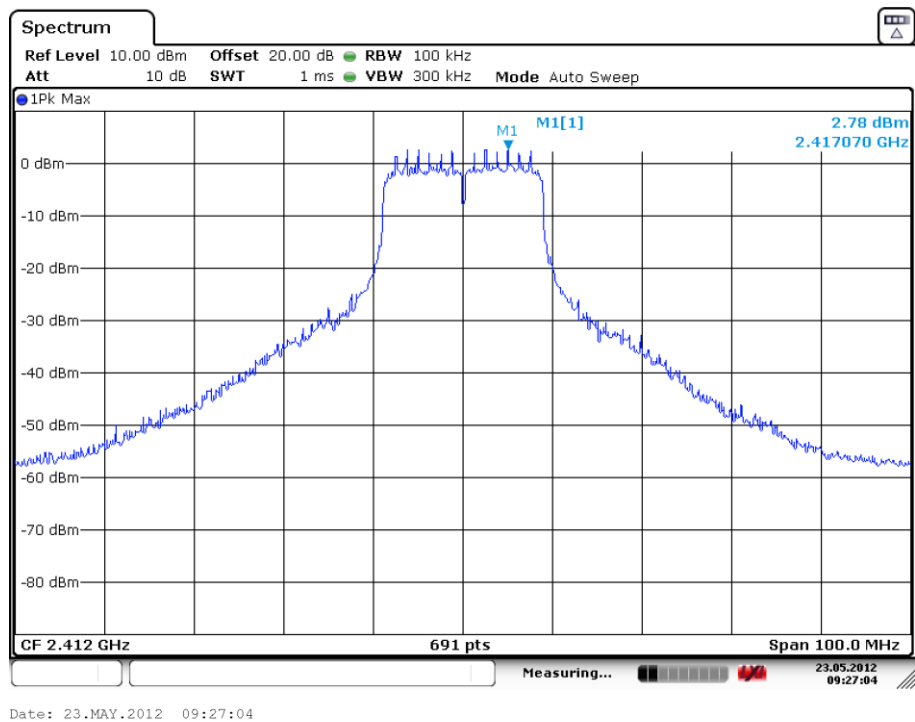


Fig. 43 Conducted Spurious Emission (802.11n-20M, Ch1, Center Frequency)

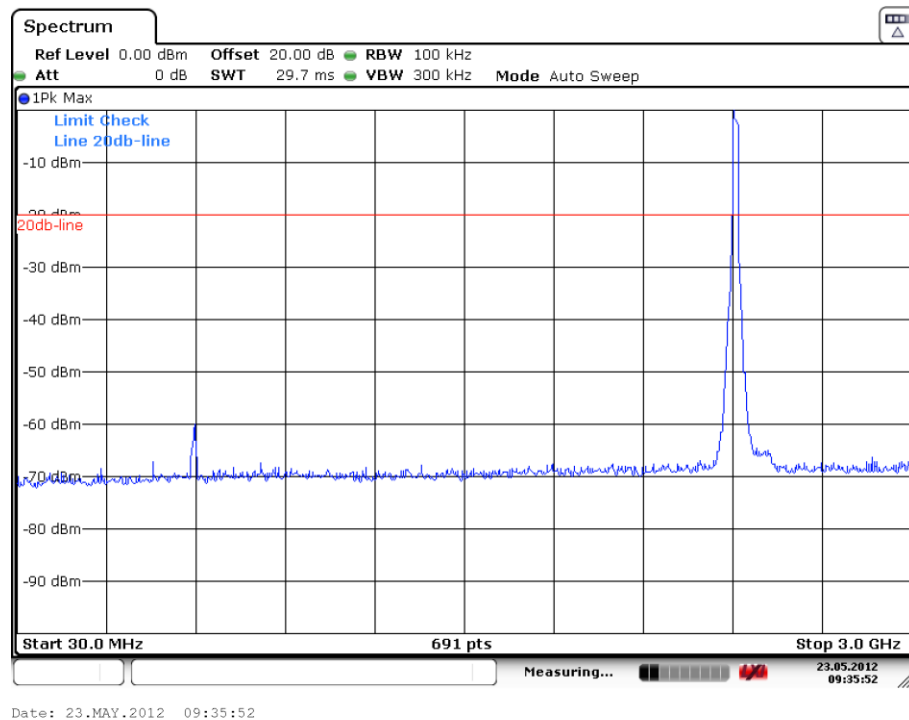


Fig. 44 Conducted Spurious Emission (802.11n-20M, Ch1, 30 MHz-3 GHz)

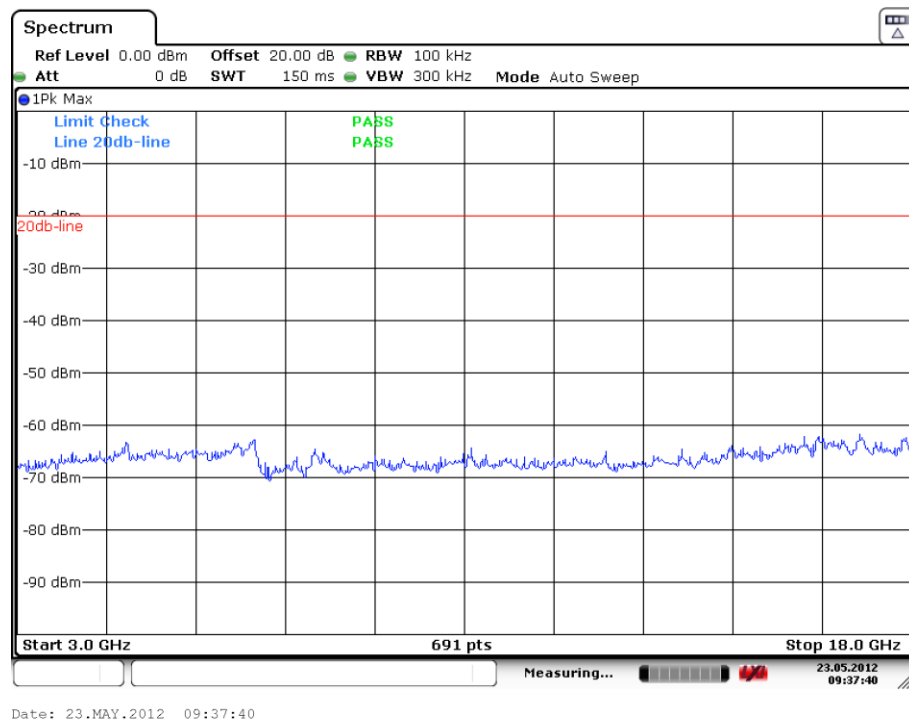


Fig. 45 Conducted Spurious Emission (802.11n-20M, Ch1, 3 GHz-18 GHz)

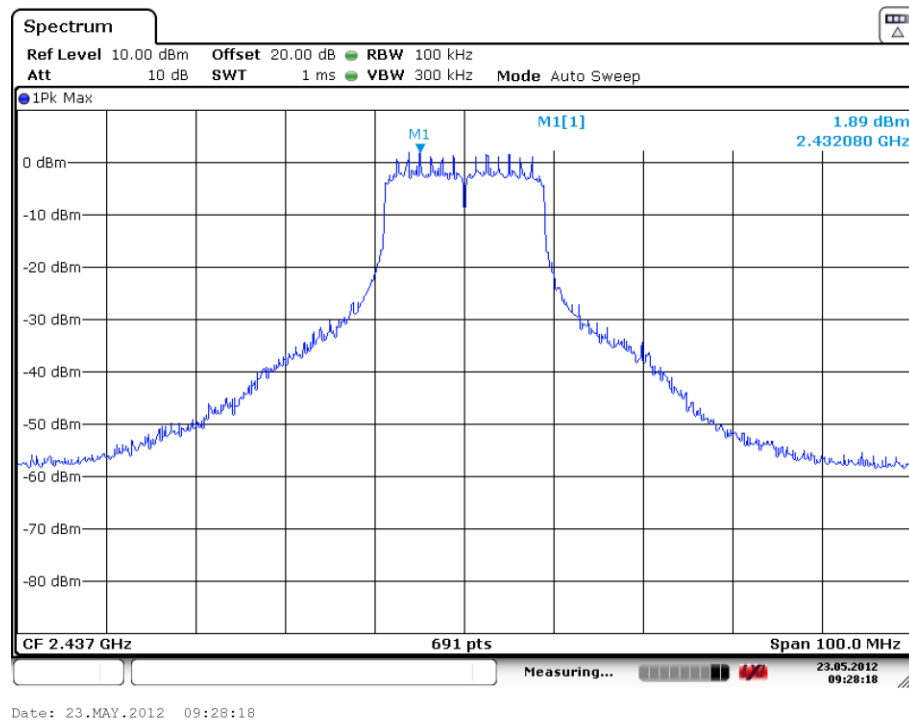


Fig. 46 Conducted Spurious Emission (802.11n-20M, Ch6, Center Frequency)

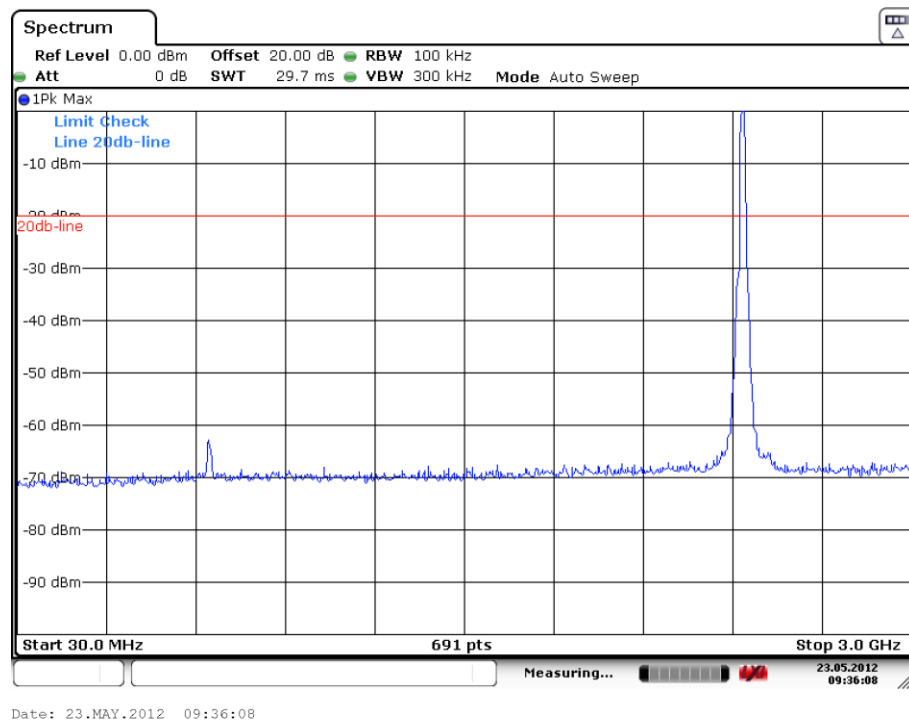


Fig. 47 Conducted Spurious Emission (802.11n-20M, Ch6, 30 MHz-3 GHz)

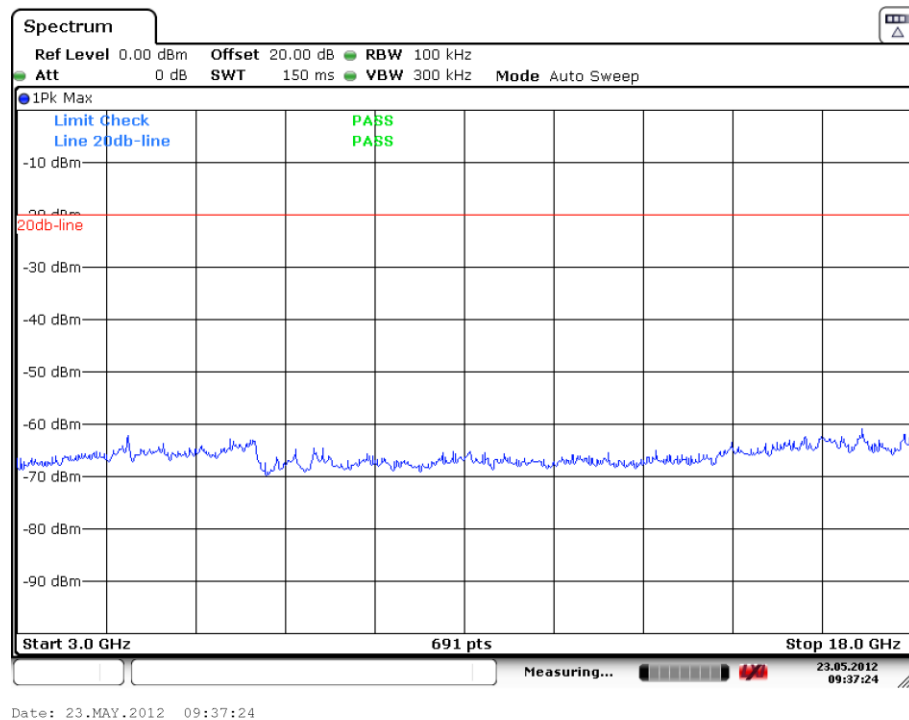


Fig. 48 Conducted Spurious Emission (802.11n-20M, Ch6, 3 GHz-18 GHz)

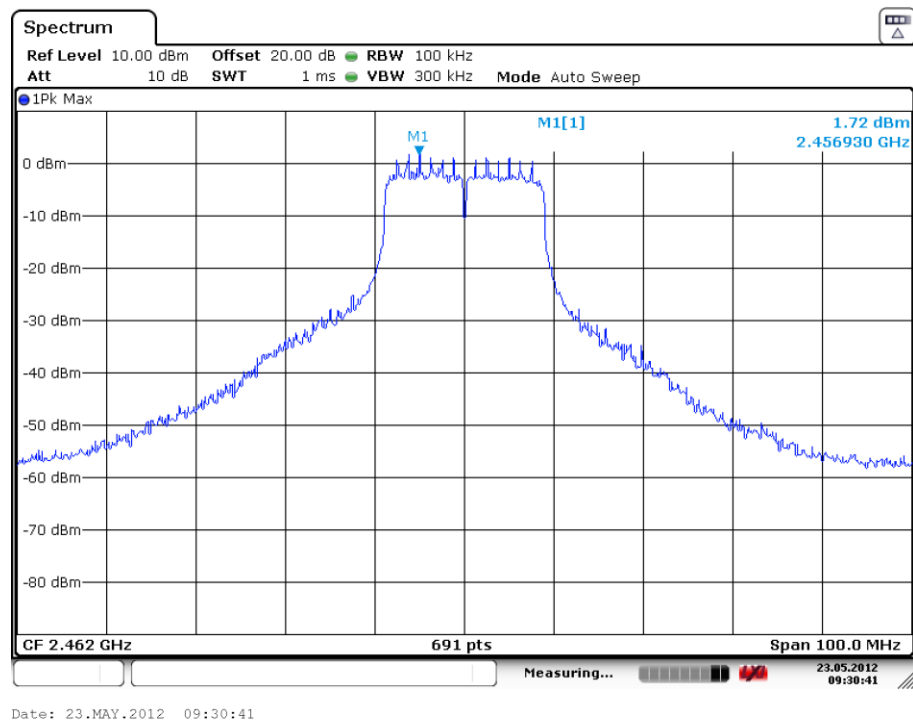


Fig. 49 Conducted Spurious Emission (802.11n-20M, Ch11, Center Frequency)

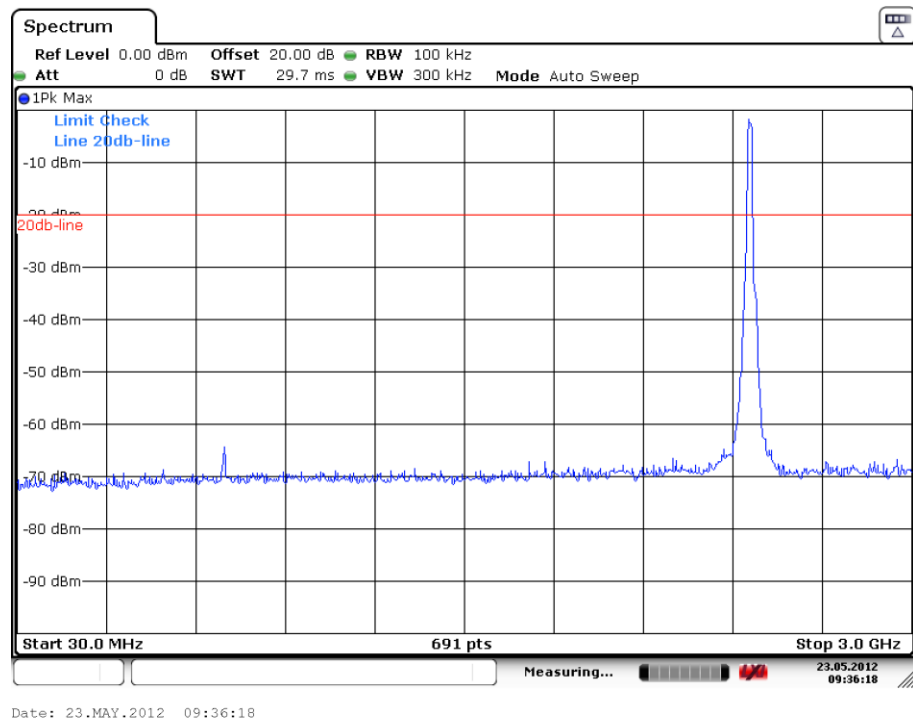


Fig. 50 Conducted Spurious Emission (802.11n-20M, Ch11, 30 MHz-3 GHz)

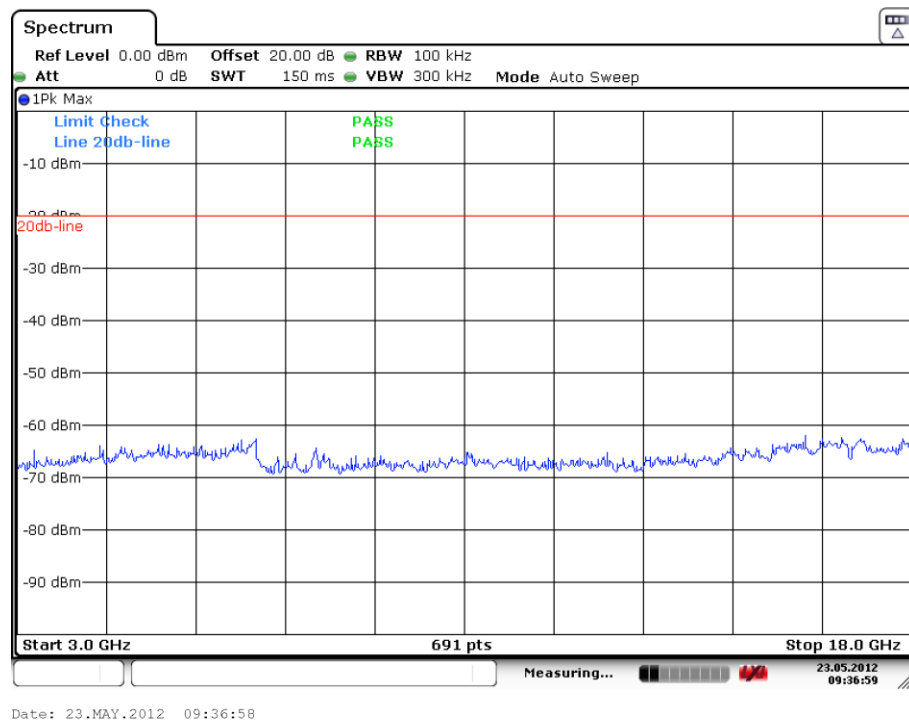


Fig. 51 Conducted Spurious Emission (802.11n-20M, Ch11, 3 GHz-18 GHz)

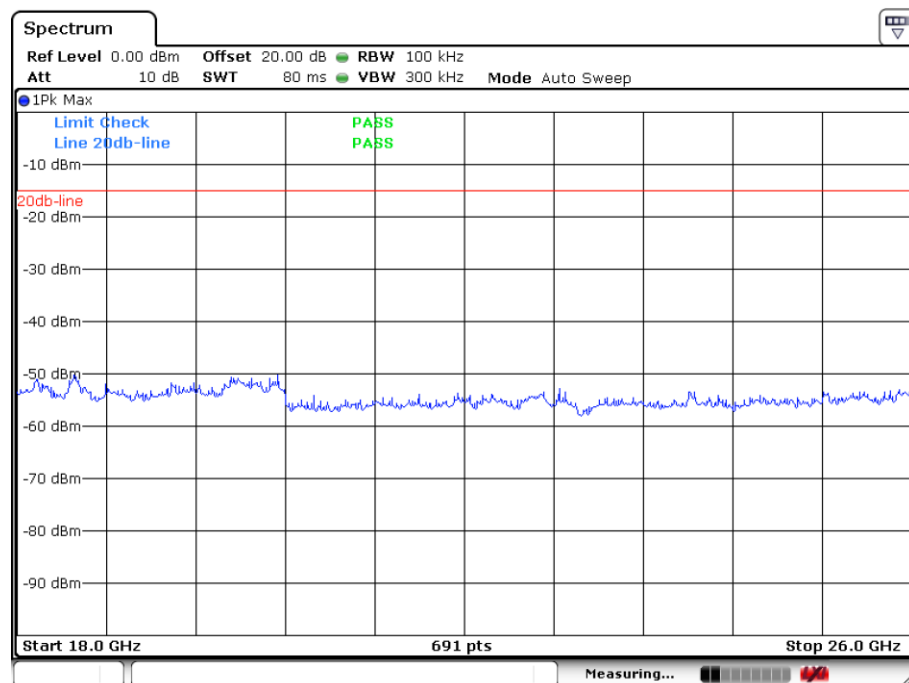


Fig. 52 Conducted Spurious Emission (All channels, 18 GHz-26 GHz)

802.11b
Ch1

Frequency(MHz)	Result (dB μ V/m)	Cable Loss + Antenna Factor	P _{Mea} (dB μ V/m)	Polarization
2402	47.96	1.80	46.16	H
2406	79.69	1.80	77.89	V
2410	87.91	1.80	86.11	V
2414	87.46	1.80	85.66	V
2418	78.40	1.80	76.60	V
2422	48.09	1.80	46.29	V

Ch6

Frequency(MHz)	Result (dB μ V/m)	Cable Loss + Antenna Factor	P _{Mea} (dB μ V/m)	Polarization
2427	47.75	1.80	45.95	H
2431	78.17	1.82	76.35	V
2435	84.04	1.83	82.21	V
2439	87.31	1.84	85.47	V
2443	78.98	1.85	77.13	V
2447	49.57	1.86	47.71	H

Ch11

Frequency(MHz)	Result (dB μ V/m)	Cable Loss + Antenna Factor	P _{Mea} (dB μ V/m)	Polarization
2452	47.35	1.87	45.48	V
2456	77.65	1.87	75.78	V
2460	85.17	1.87	83.3	V
2464	83.29	1.87	81.42	H
2468	73.02	1.88	71.14	V
2472	42.82	1.88	40.94	V

802.11g
Ch1

Frequency(MHz)	Result (dBμV/m)	Cable Loss + Antenna Factor	P _{Mea} (dBμV/m)	Polarization
2402	65.09	1.80	63.29	V
2406	89.72	1.80	87.92	V
2410	88.97	1.80	87.17	V
2414	89.13	1.80	87.33	H
2418	88.54	1.80	86.74	H
2422	65.33	1.80	63.53	V

Ch6

Frequency(MHz)	Result (dBμV/m)	Cable Loss + Antenna Factor	P _{Mea} (dBμV/m)	Polarization
2427	63.23	1.80	61.43	H
2431	86.61	1.82	84.79	H
2435	86.92	1.83	85.09	V
2439	86.88	1.84	85.04	V
2443	87.20	1.85	85.35	V
2447	63.72	1.86	61.86	V

Ch11

Frequency(MHz)	Result (dBμV/m)	Cable Loss + Antenna Factor	P _{Mea} (dBμV/m)	Polarization
2452	62.31	1.87	60.44	V
2456	86.03	1.87	84.16	H
2460	84.64	1.87	82.77	V
2464	83.09	1.87	81.22	V
2468	81.32	1.88	79.44	H
2472	57.11	1.88	55.23	V

802.11n-20M
Ch1

Frequency(MHz)	Result (dB μ V/m)	Cable Loss + Antenna Factor	P _{Mea} (dB μ V/m)	Polarization
2402	69.44	1.80	67.64	V
2406	87.46	1.80	85.66	V
2410	86.96	1.80	85.16	H
2414	86.86	1.80	85.06	V
2418	86.74	1.80	84.94	V
2422	69.60	1.80	67.80	V

Ch6

Frequency(MHz)	Result (dB μ V/m)	Cable Loss + Antenna Factor	P _{Mea} (dB μ V/m)	Polarization
2427	67.49	1.80	65.69	V
2431	84.62	1.82	82.80	H
2435	84.81	1.83	82.98	V
2439	85.17	1.84	83.33	V
2443	85.50	1.85	83.65	V
2447	68.54	1.86	66.68	V

Ch11

Frequency(MHz)	Result (dB μ V/m)	Cable Loss + Antenna Factor	P _{Mea} (dB μ V/m)	Polarization
2452	66.66	1.87	64.79	V
2456	84.26	1.87	82.39	H
2460	82.81	1.87	80.94	H
2464	80.82	1.87	78.95	V
2468	79.53	1.88	77.65	V
2472	63.29	1.88	61.41	V

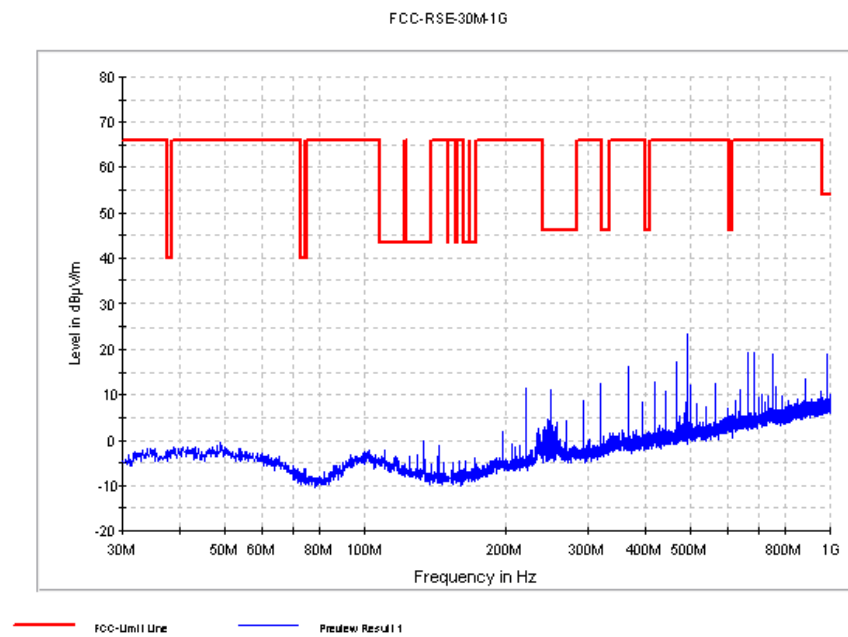


Fig. 53 Radiated Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)

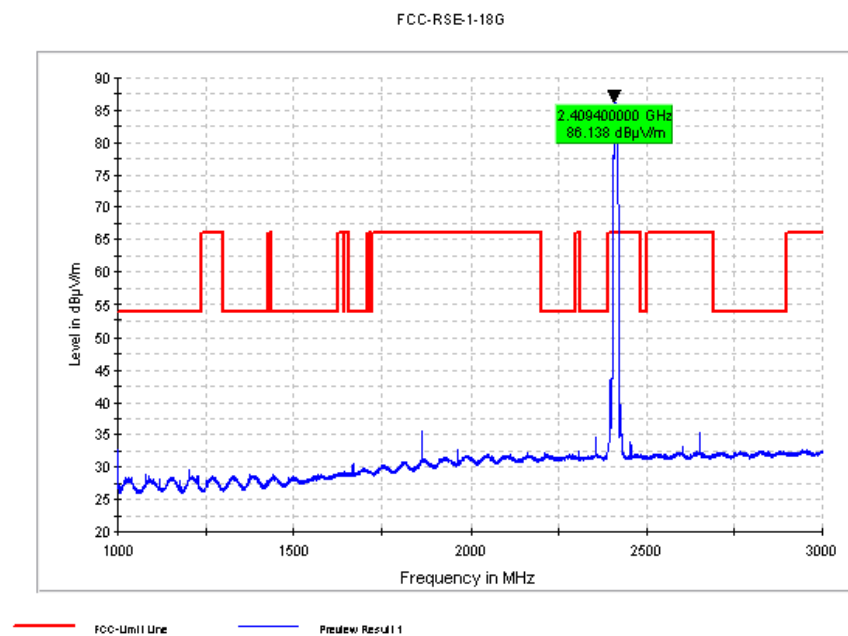


Fig. 54 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-3 GHz)

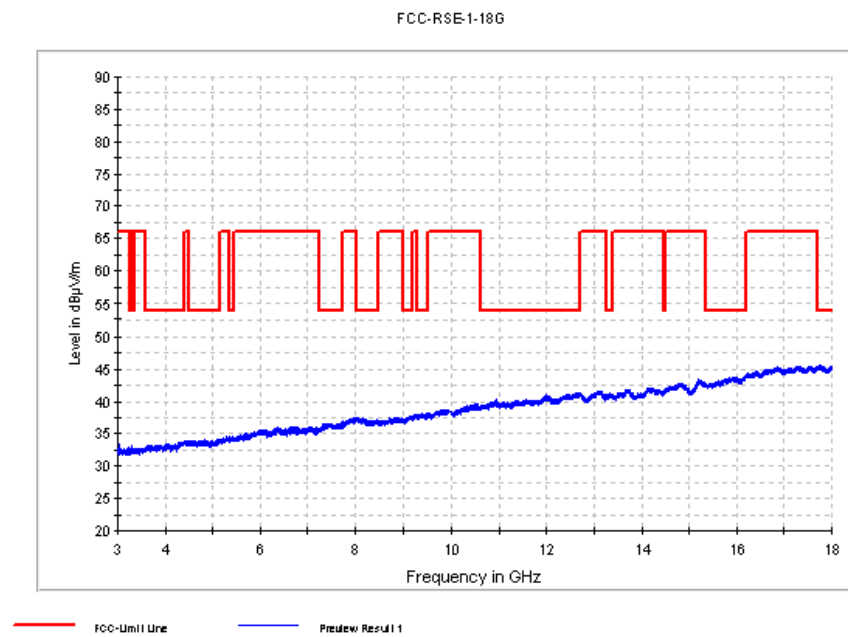


Fig. 55 Radiated Spurious Emission (802.11b, Ch1, 3 GHz-18 GHz)

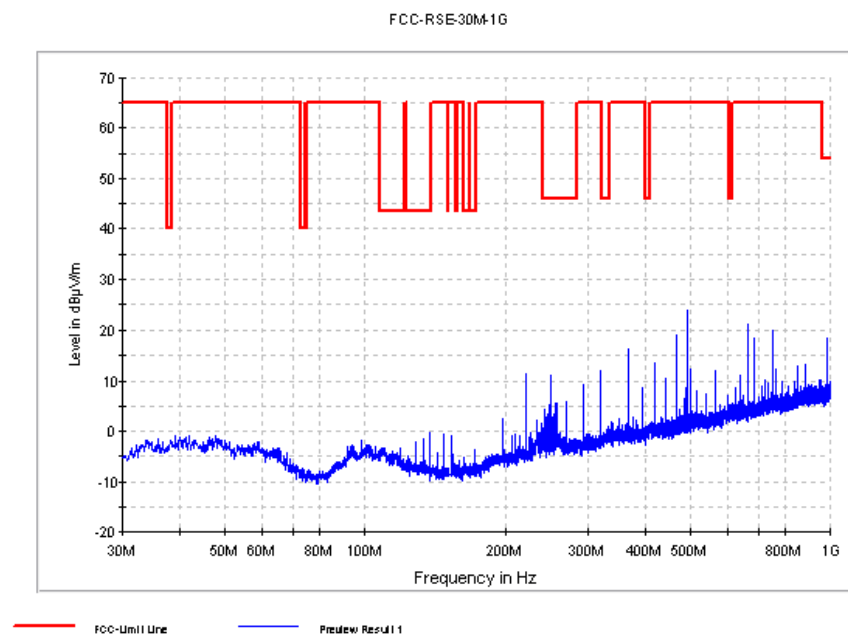


Fig. 56 Radiated Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)

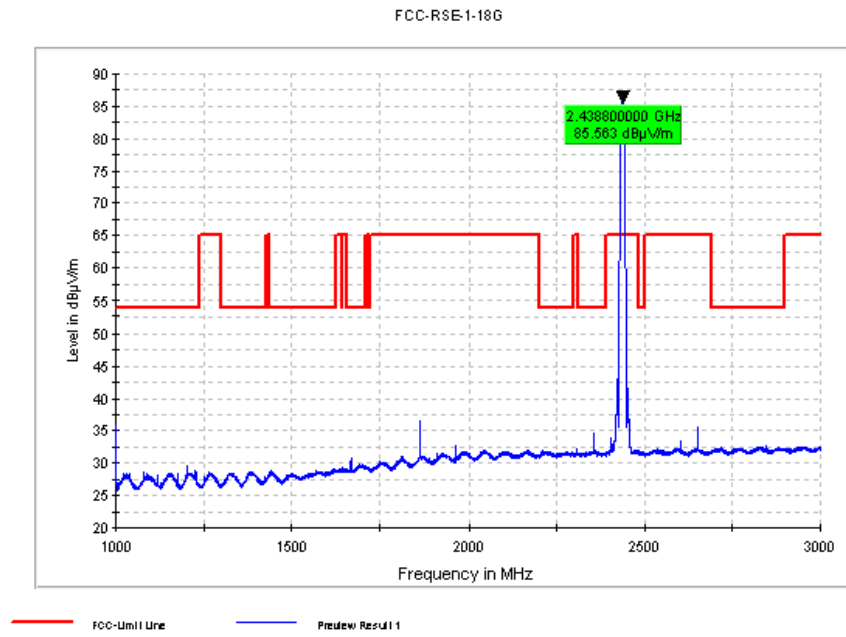


Fig. 57 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-3 GHz)

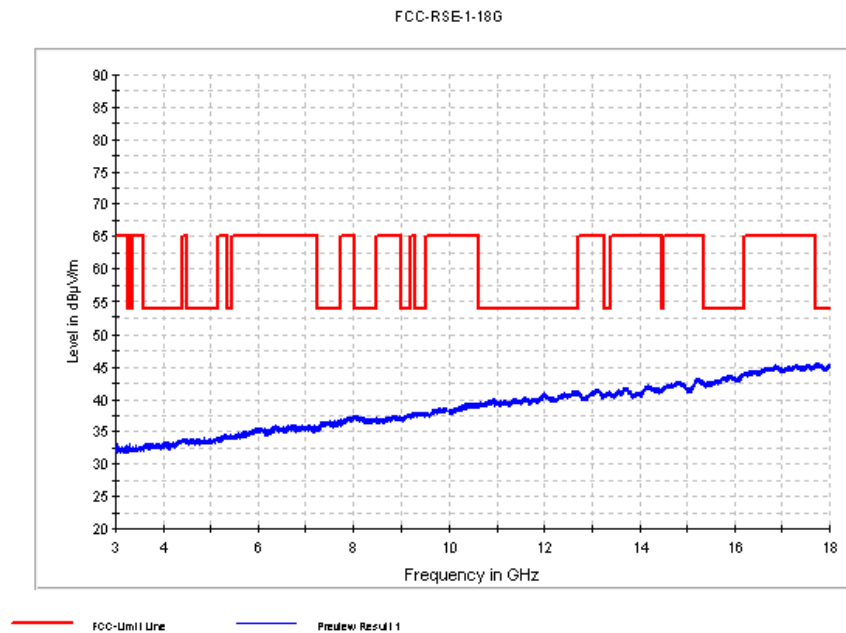


Fig. 58 Radiated Spurious Emission (802.11b, Ch6, 3 GHz-18 GHz)

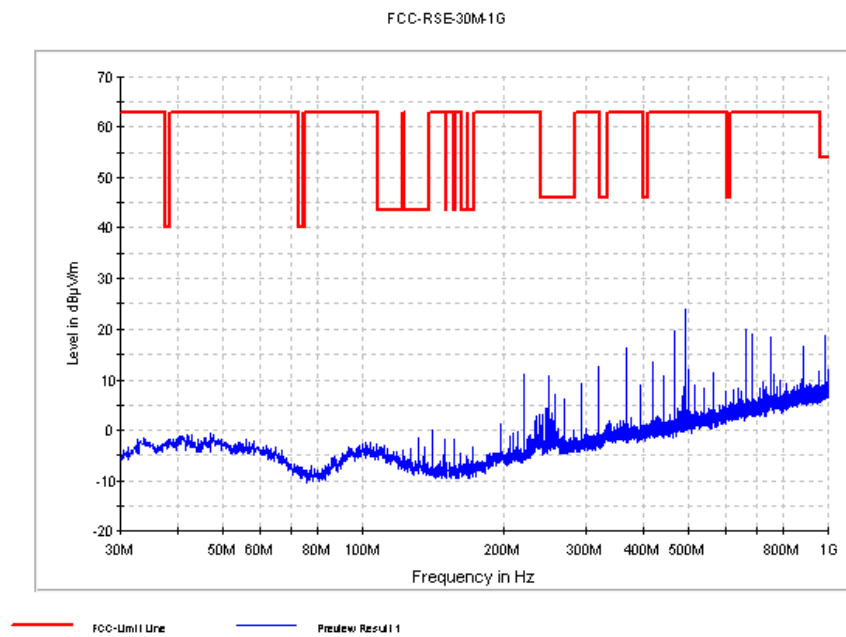


Fig. 59 Radiated Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)

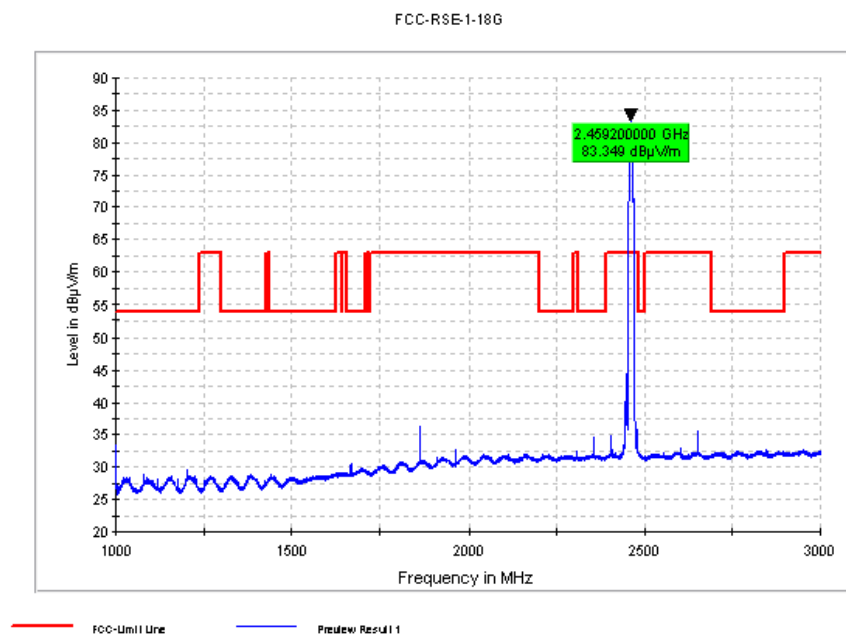


Fig. 60 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-3 GHz)

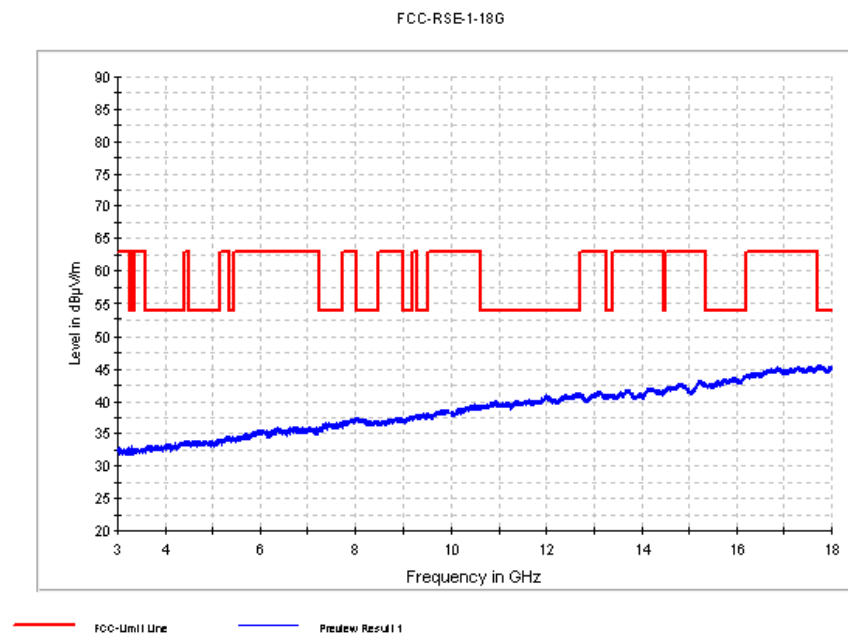


Fig. 61 Radiated Spurious Emission (802.11b, Ch11, 3 GHz-18 GHz)

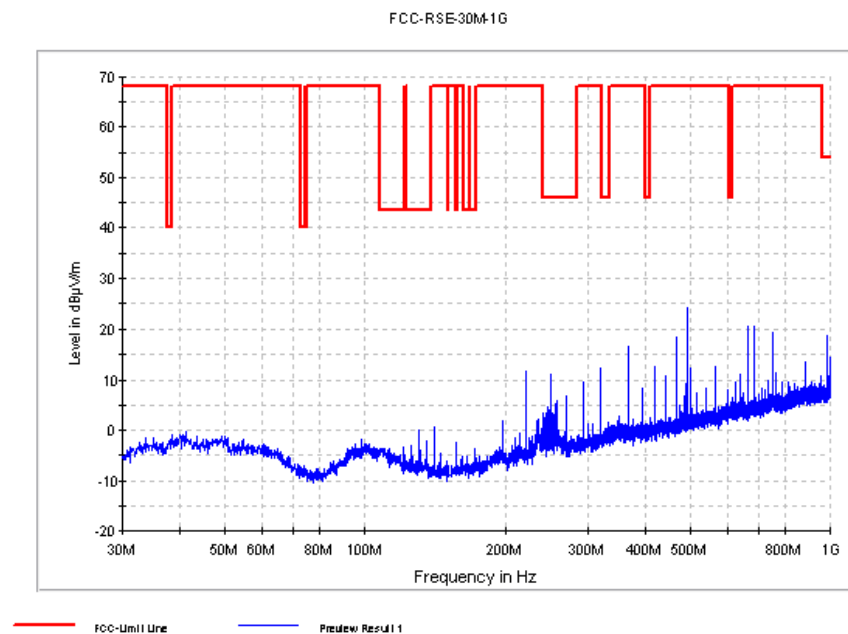


Fig. 62 Radiated Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)

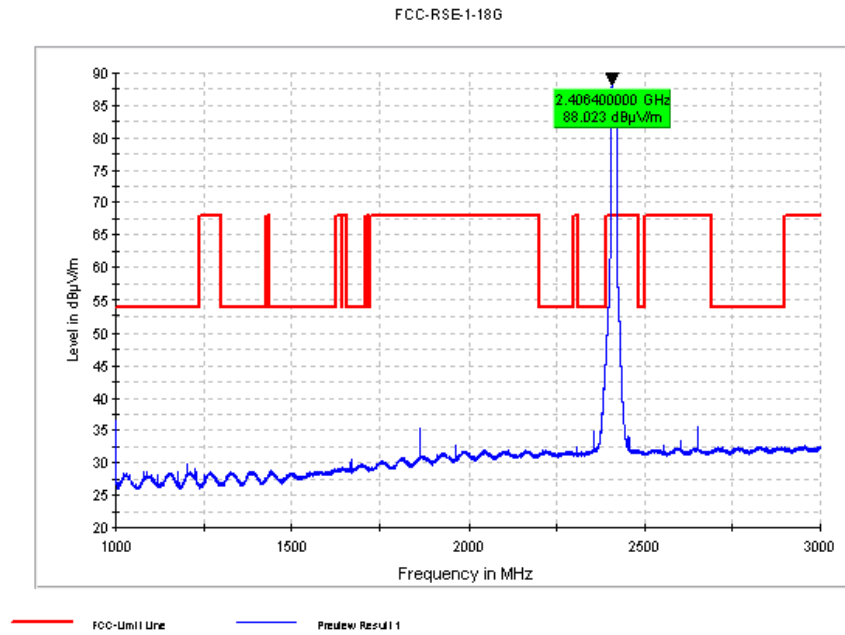


Fig. 63 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-3 GHz)

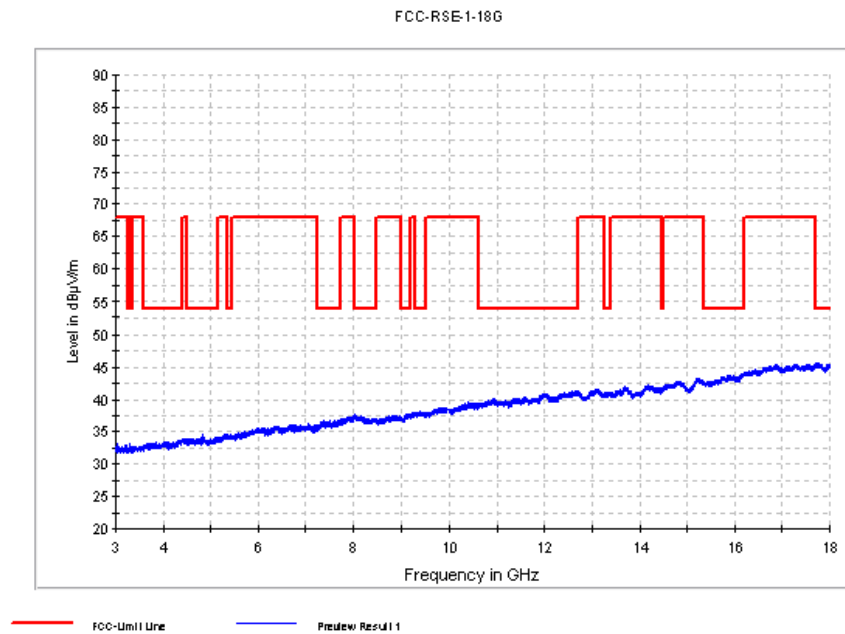


Fig. 64 Radiated Spurious Emission (802.11g, Ch1, 3 GHz-18 GHz)

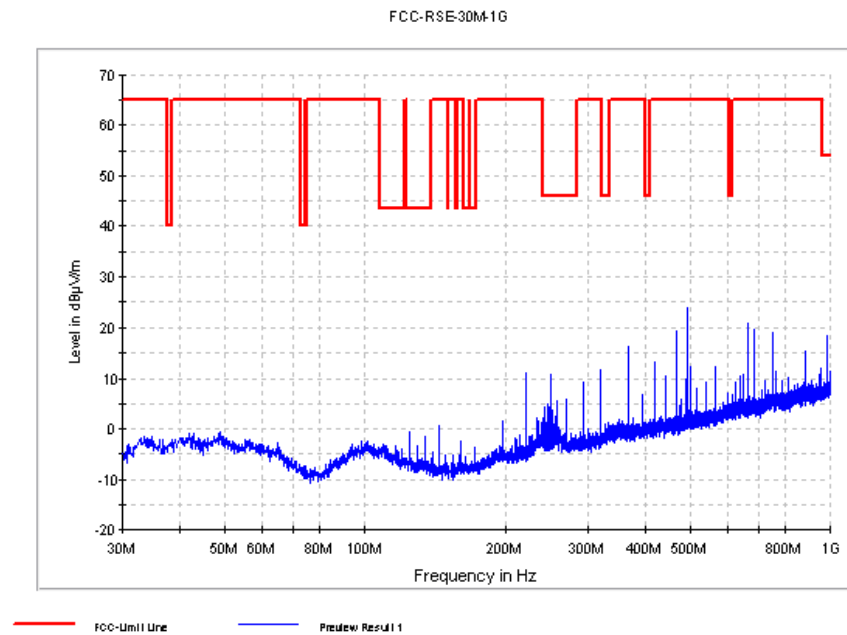


Fig. 65 Radiated Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)

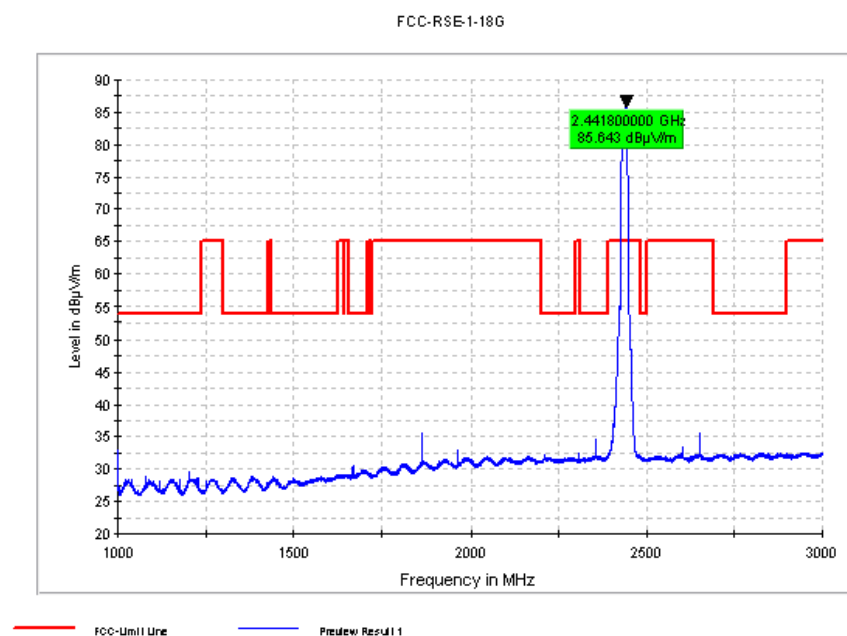


Fig. 66 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-3 GHz)

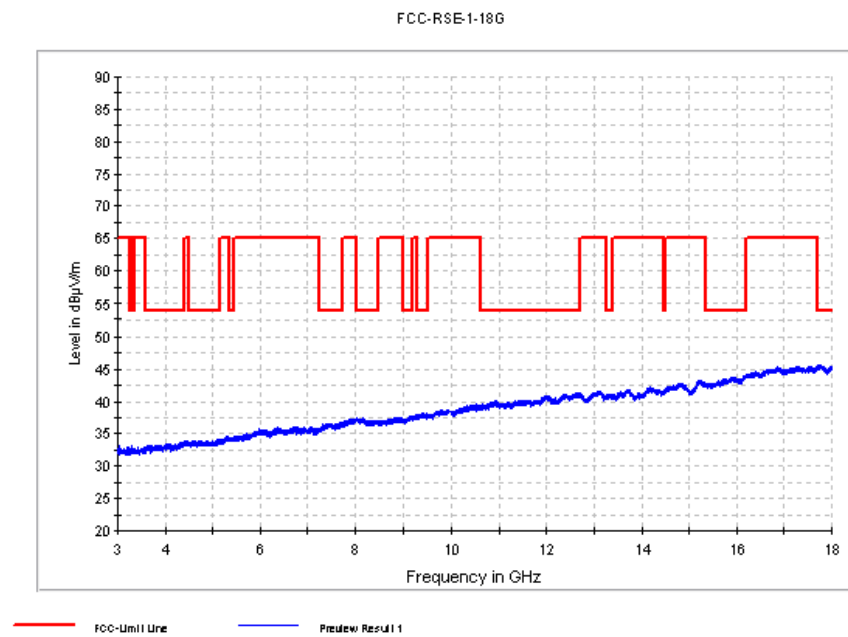


Fig. 67 Radiated Spurious Emission (802.11g, Ch6, 3 GHz-18 GHz)

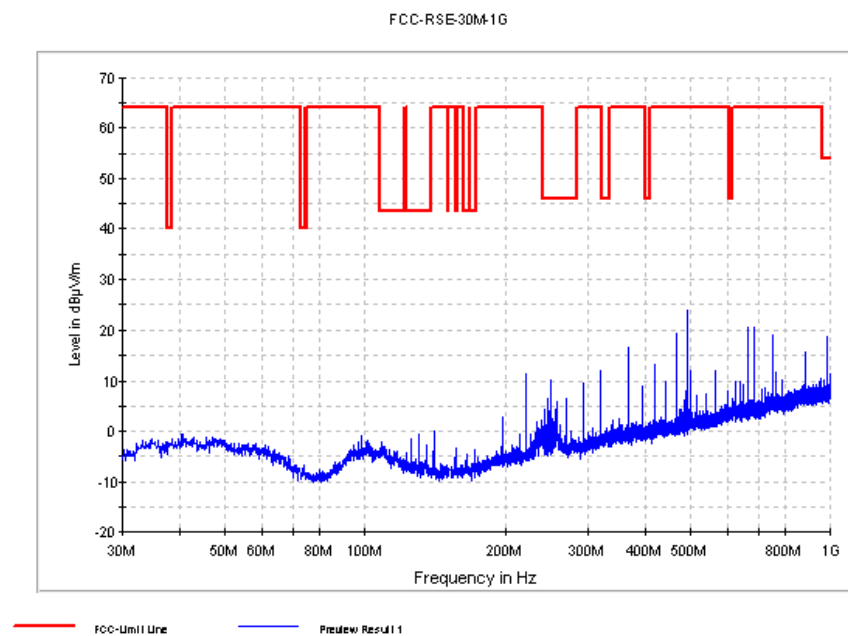


Fig. 68 Radiated Spurious Emission (802.11g, Ch11, 30 MHz-1 GHz)

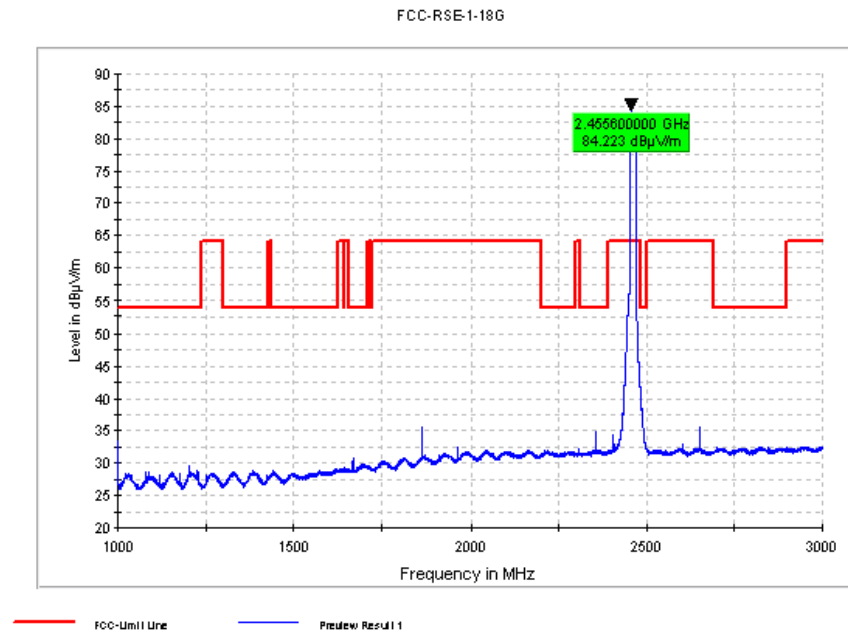


Fig. 69 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-3 GHz)

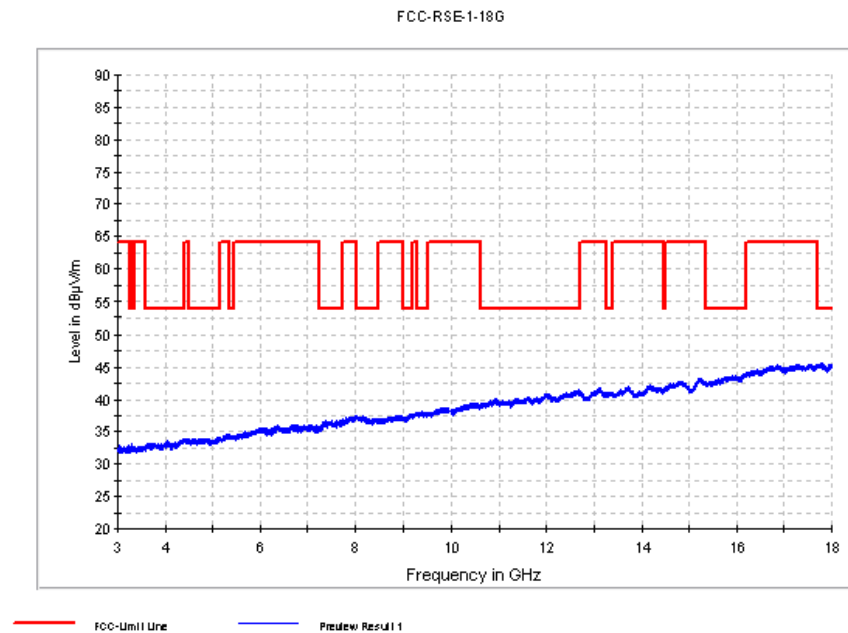


Fig. 70 Radiated Spurious Emission (802.11g, Ch11, 3 GHz-18 GHz)

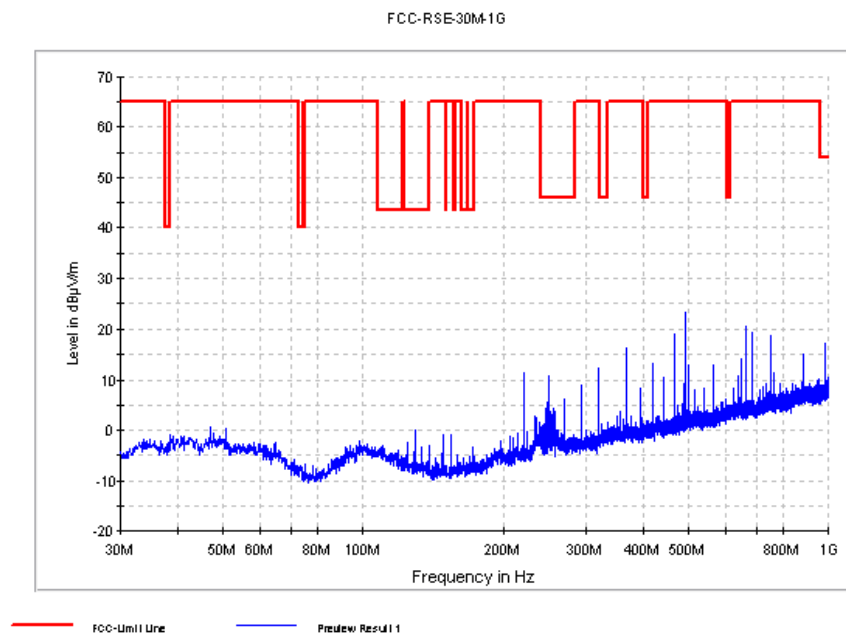


Fig. 71 Radiated Spurious Emission (802.11n-20M, Ch1, 30 MHz-1 GHz)

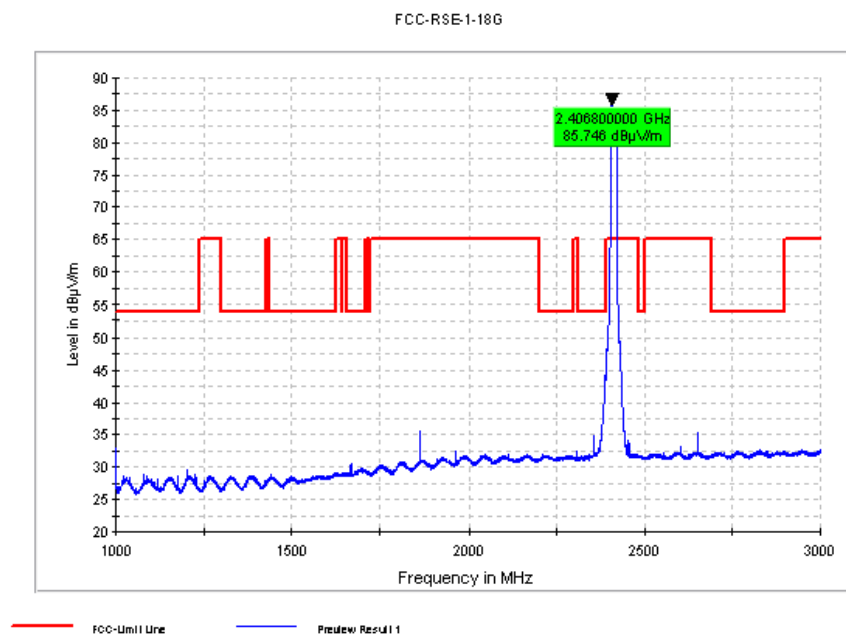


Fig. 72 Radiated Spurious Emission (802.11n-20M, Ch1, 1 GHz-3 GHz)

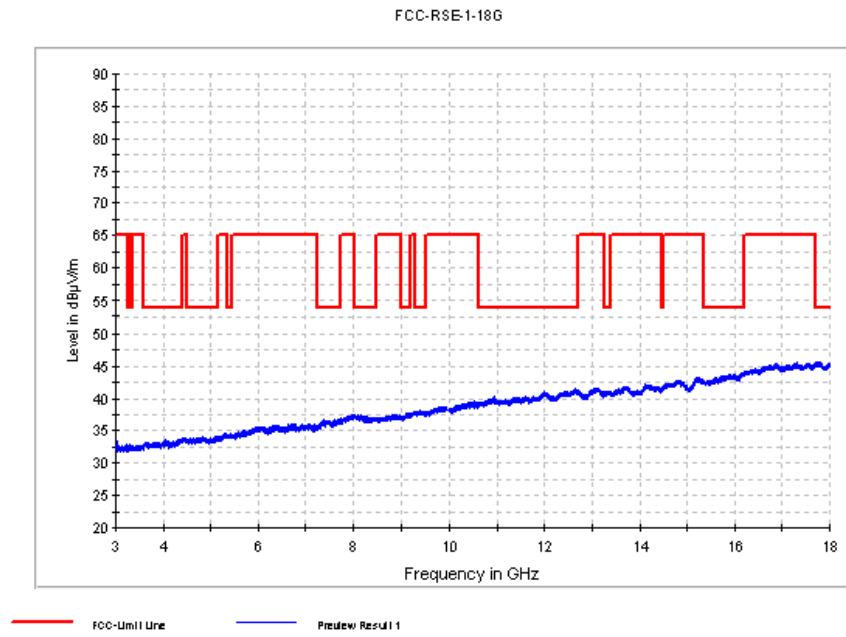


Fig. 73 Radiated Spurious Emission (802.11n-20M, Ch1, 3 GHz-18 GHz)

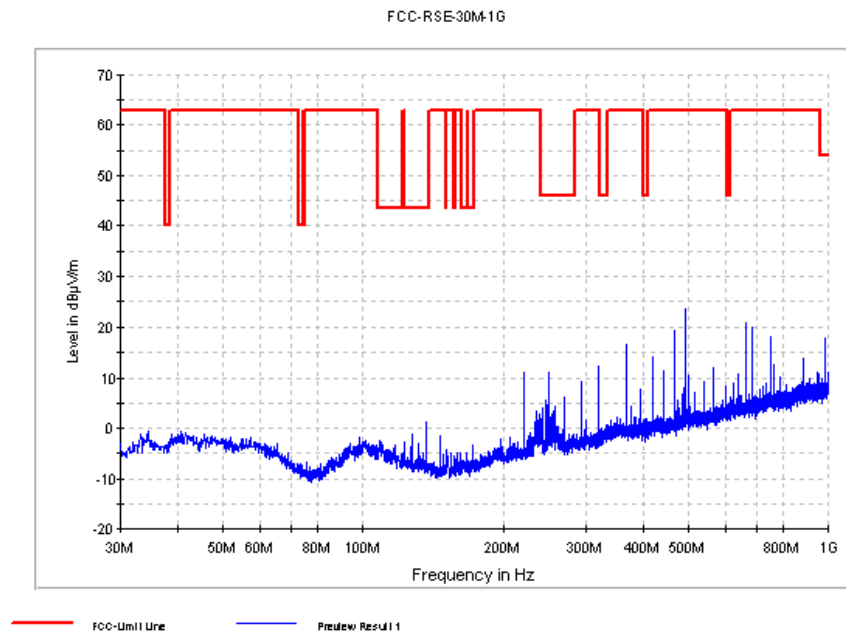


Fig. 74 Radiated Spurious Emission (802.11n-20M, Ch6, 30 MHz-1 GHz)

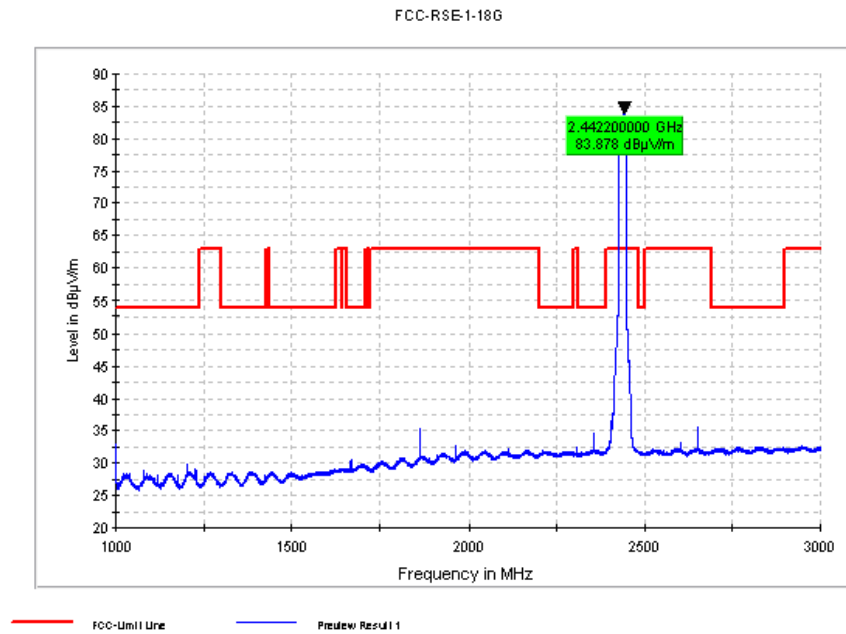


Fig. 75 Radiated Spurious Emission (802.11n-20M, Ch6, 1 GHz-3 GHz)

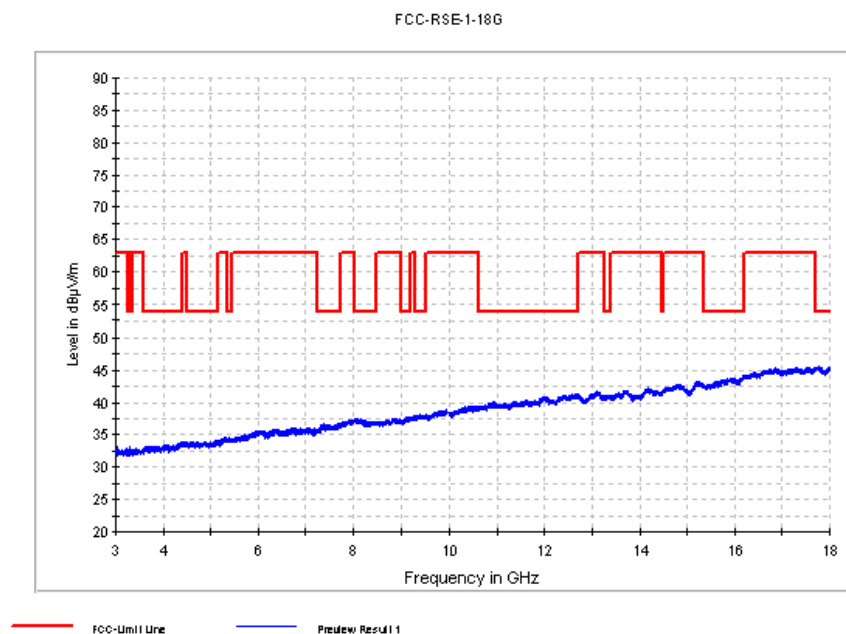


Fig. 76 Radiated Spurious Emission (802.11n-20M, Ch6, 3 GHz-18 GHz)

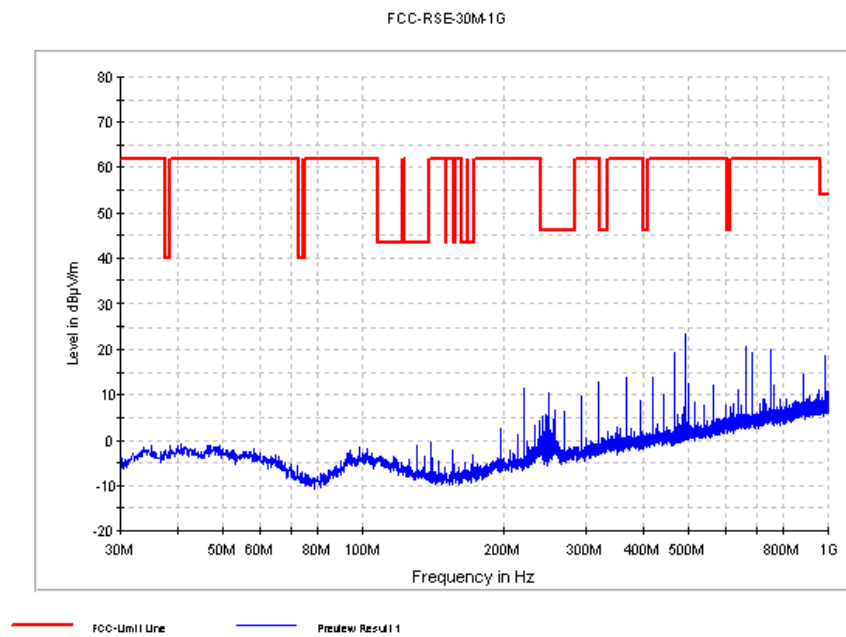


Fig. 77 Radiated Spurious Emission (802.11n-20M, Ch11, 30 MHz-1 GHz)

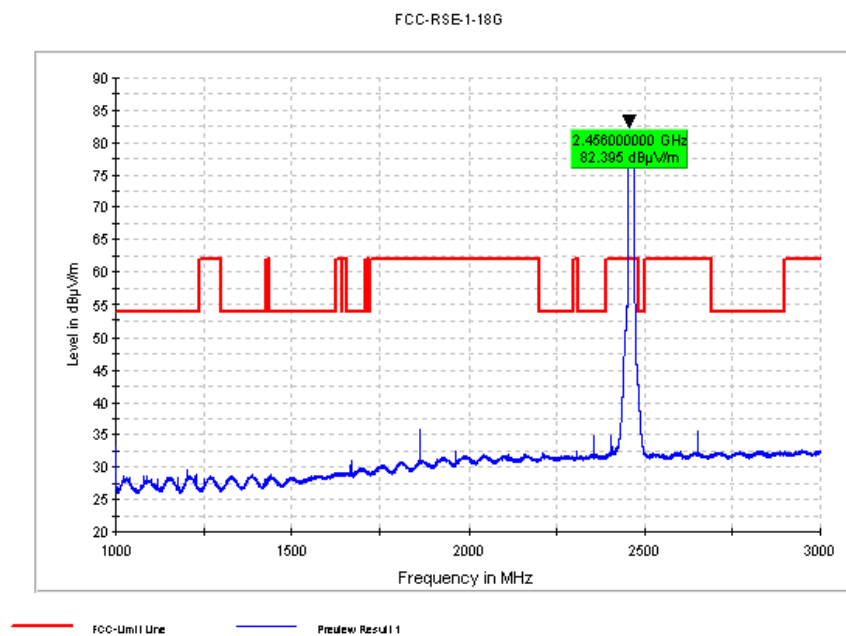


Fig. 78 Radiated Spurious Emission (802.11n-20M, Ch11, 1 GHz-3 GHz)

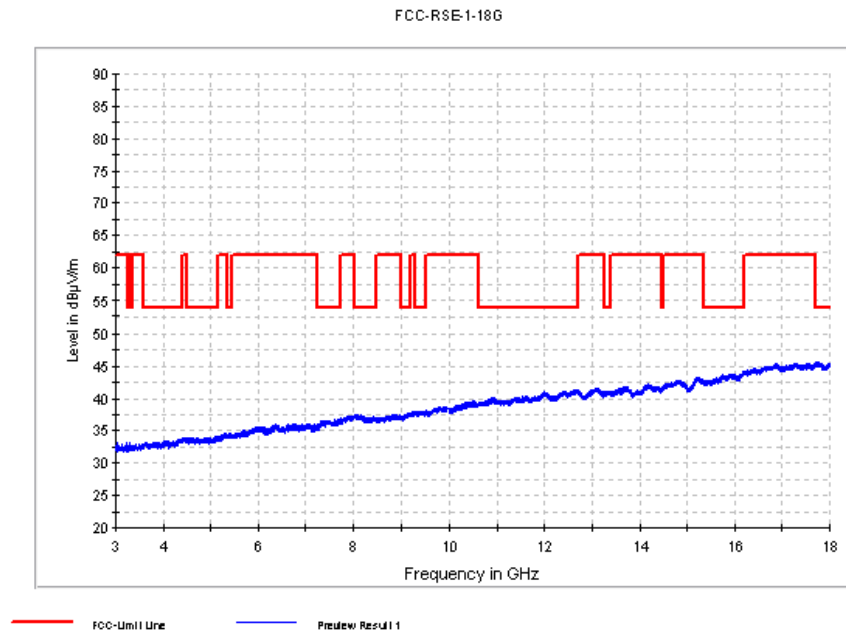


Fig. 79 Radiated Spurious Emission (802.11n-20M, Ch11, 3 GHz-18 GHz)

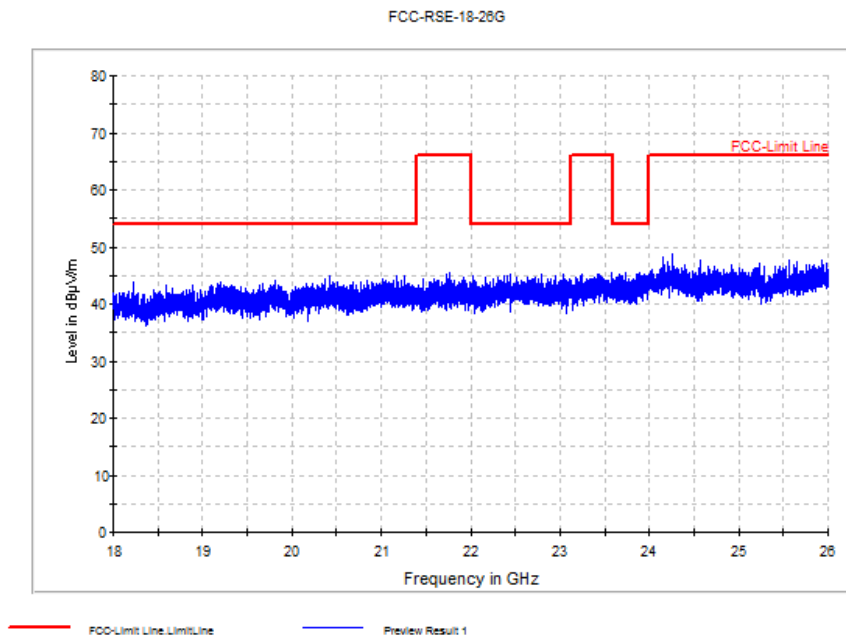


Fig. 80 Radiated emission: 18 GHz - 26.5 GHz

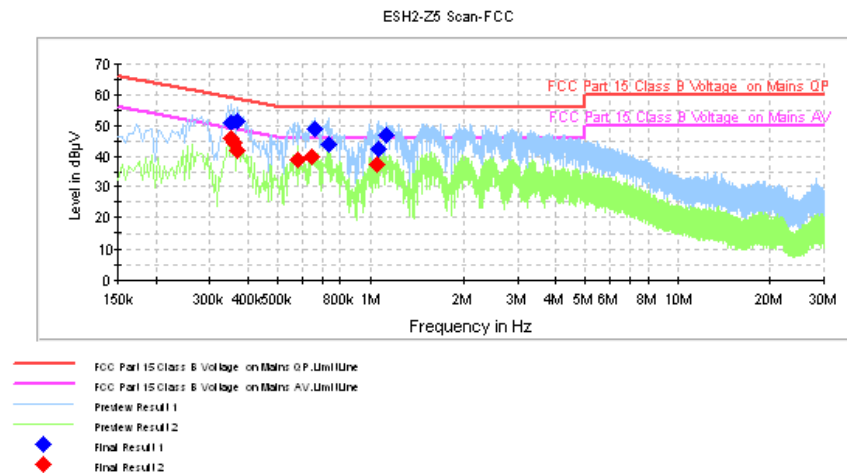


Fig. 81 AC Powerline Conducted Emission-802.11b

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.352500	51.1	FLO	N	10.1	7.8	58.9
0.370500	51.3	FLO	L1	10.0	7.2	58.5
0.658500	48.9	FLO	L1	10.0	7.1	56.0
0.735000	43.9	FLO	N	10.0	12.1	56.0
1.068000	42.2	FLO	N	10.1	13.8	56.0
1.126500	46.6	FLO	L1	10.1	9.4	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.352500	45.8	FLO	L1	10.0	3.1	48.9
0.361500	44.2	FLO	L1	10.0	4.5	48.7
0.370500	41.8	FLO	L1	10.0	6.7	48.5
0.577500	38.5	FLO	L1	10.1	7.5	46.0
0.645000	39.6	FLO	L1	10.0	6.4	46.0
1.059000	37.4	FLO	L1	10.1	8.6	46.0

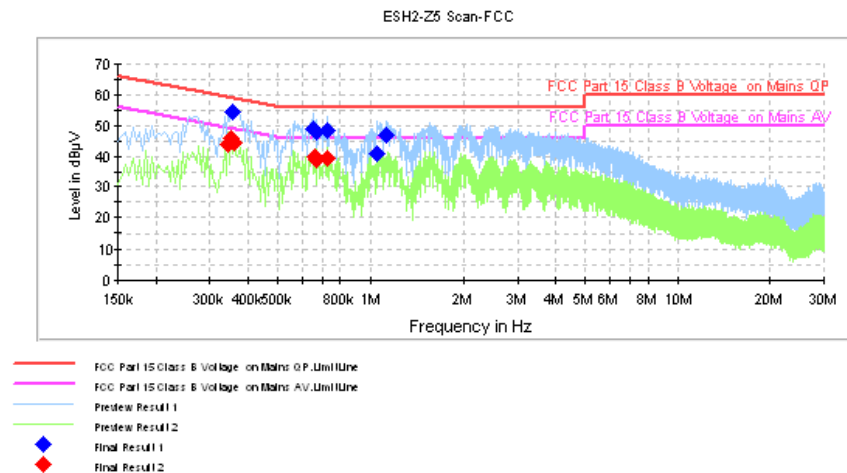


Fig. 82 AC Powerline Conducted Emission-802.11g

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.357000	54.3	FLO	L1	10.0	4.5	58.8
0.649500	49.0	FLO	L1	10.0	7.0	56.0
0.667500	48.0	FLO	L1	10.0	8.0	56.0
0.726000	48.1	FLO	L1	10.0	7.9	56.0
1.059000	40.9	FLO	N	10.1	15.1	56.0
1.131000	46.6	FLO	L1	10.1	9.4	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.343500	43.9	FLO	L1	10.0	5.2	49.1
0.352500	45.8	FLO	L1	10.0	3.1	48.9
0.361500	44.3	FLO	L1	10.0	4.4	48.7
0.658500	39.8	FLO	L1	10.0	6.2	46.0
0.667500	39.0	FLO	L1	10.0	7.0	46.0
0.726000	39.2	FLO	L1	10.0	6.8	46.0

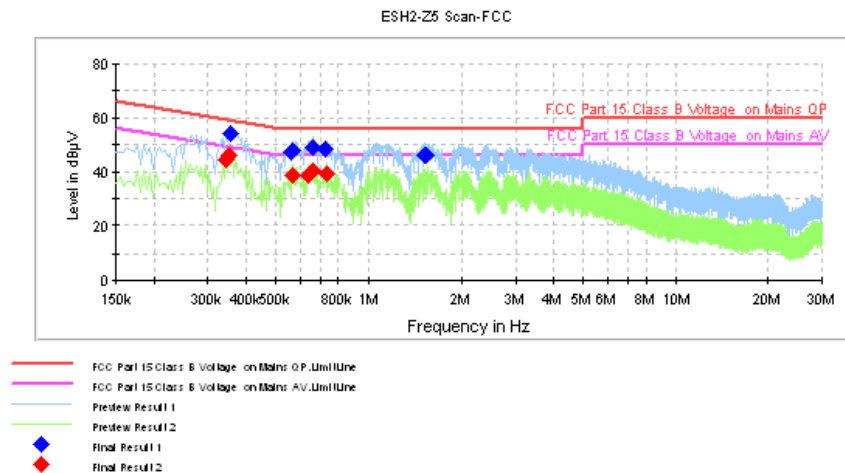


Fig. 83 AC Powerline Conducted Emission-802.11n-20M

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.357000	54.3	FLO	L1	10.0	4.5	58.8
0.559500	47.1	FLO	L1	10.1	8.9	56.0
0.568500	47.9	FLO	L1	10.1	8.1	56.0
0.658500	49.1	FLO	L1	10.0	6.9	56.0
0.721500	48.1	FLO	L1	10.0	7.9	56.0
1.527000	46.3	FLO	L1	10.1	9.7	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	CAverage (dBμV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.343500	44.1	FLO	L1	10.0	5.0	49.1
0.352500	46.0	FLO	L1	10.0	2.9	48.9
0.568500	38.7	FLO	L1	10.1	7.3	46.0
0.636000	38.8	FLO	L1	10.0	7.2	46.0
0.658500	40.1	FLO	L1	10.0	5.9	46.0
0.735000	39.0	FLO	L1	10.0	7.0	46.0

*** END OF REPORT BODY ***