FCC PART 15C
TEST REPORT
No. 2013EEB00584-WLAN

For

Shenzhen Sang Fei Consumer Communications Co., Ltd.

WCDMA digital mobile phone

Model Name: Philips W8555

Marketing Name: Philips W8555

With

Hardware Version: W8555_V01

Software Version: Philips_W8555_V01

FCC ID: VQRCTW8555

Issued Date: Dec 13th, 2013

Test Laboratory:
FCC 2.948 Listed: No.310359
IC O.A.T.S listed: No.6629C-1

Note:

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CONTENTS

1. Test Laboratory

1.1. Testing Location

Company Name:	TMC Shenzhen, Telecommunication Metrology Center of MIIT
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1.2. Testing Environment

Normal Temperature:	15℃-30℃
Extreme Temperature:	-20℃/+55℃
Relative Humidity:	30%-60%

1.3. Project data

Project Leader:	Zhang Bojun
Test Engineer:	Tang Weisheng
Testing Start Date:	Dec 2nd, 2013
Testing End Date:	Dec 11th, 2013

1.4. Signature

Tang Weisheng
(Prepared this test report)

Zhang Bojun
(Reviewed this test report)

Lu Minniu
Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Shenzhen Sang Fei Consumer Communications Co., Ltd.
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2.2. Manufacturer Information

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

3.1. About EUT

Description	WCDMA digital mobile phone
Model Name	Philips W8555
Market Name	Philips W8555
RF Protocol	IEEE 802.11b/g/n20/n40
Operating Frequency	2412MHz~2462MHz
FCC ID	VQRCTW8555

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	/	W8555_V01	Philips_W8555_V01

3.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Li-ion Battery	AB3300BWMC	/
AE2	Travel Charger	A31-500650	/
AE3	Travel Charger	3208SF	

*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, 2012 Edition
ANSI C63.4	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, 2013

5. Laboratory Environment

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

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 0.5 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:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 0.5 Ω
VSWR	Between 0 and 6 dB, from 30MHz to 18 000 MHz

Conduction Lab did not exceed following limits:

Temperature	Min.=15 ℃, Max.=30 ℃
Relative humidity	Min.=30 %, Max.= 60 %
Shielding effectiveness	> 80 dB
Electrical insulation	> 2M Ω
Ground system resistance	< 0.5 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 (b)	**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, 15.205, 15.209	**P**
7	AC Powerline Conducted Emission	15.207	**P**

6.2. Statements

TMC has evaluated the test cases requested by the applicant/manufacturer 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	Calibration Period
1	Vector Signal Analyzer	FSV40	100903	Rohde & Schwarz	2014-04-23	1 year

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date	Calibration Period
1	Chamber	FACT5-2.0	4166	ETS-Lindgren	2016-05-29	3 years
2	Test Receiver	ESCI	100701	Rohde & Schwarz	2014-07-31	1 year
3	Spectrum Analyzer	FSP40	100378	Rohde & Schwarz	2013-12-21	1 year
4	BiLog Antenna	VULB9163	9163-330	Schwarzbeck	2014-02-24	3 years
5	Dual-Ridge Waveguide Horn Antenna	3164-05	00085724	ETS-Lindgren	2014-02-17	3 years
6	Test Receiver	ESCI	100702	Rohde & Schwarz	2014-07-31	1 year
7	LISN	ESH2-Z5	100196	Rohde & Schwarz	2014-01-23	1 year
8	Signal Generator	SMR40	100541	Rohde & Schwarz	2014-01-10	1 year
9	Dual-Ridge Waveguide Horn Antenna	3117	00066577	ETS-Lindgren	2016-04-01	3 years
10	Loop Antenna	HLA6120	35779	TESEQ	2016-02-25	3 years

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

Pic A-5 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 3.0 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)(1)	< 30

Test Condition:

RF Protocol	RBW	VBW	SPAN	Sweeptime
IEEE 802.11b/g/n20	1MHz	3MHz	30MHz	Auto
IEEE 802.11n40	1MHz	3MHz	60MHz	Auto

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	14.52	15.46	16.49
	2	14.49	15.43	16.70
	5.5	14.75	15.53	16.83
	11	14.67	15.48	16.77
802.11g	6	11.66	12.70	13.98
	9	11.65	12.71	13.98
	12	11.63	12.72	13.98
	18	11.58	12.75	14.22
	24	11.38	12.66	14.10
	36	11.56	12.60	14.08
	48	11.60	12.66	14.12
	54	11.57	12.42	14.10

802.11n mode

Mode	Data Rate (MCS Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n (20MHz BW)	MCS0	11.88	12.85	13.77
	MCS1	11.85	12.85	13.72
	MCS2	11.83	12.87	13.74
	MCS3	11.78	12.84	13.72
	MCS4	10.93	11.94	12.83
	MCS5	10.93	11.98	12.83
	MCS6	10.93	11.97	12.85
	MCS7	10.90	11.95	12.89

Mode	Data Rate (MCS Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n (40MHz BW)	MCS0	10.17	10.30	10.50
	MCS1	10.12	10.28	10.43
	MCS2	10.15	10.28	10.41
	MCS3	10.12	10.23	10.39
	MCS4	10.13	10.26	10.40
	MCS5	10.10	10.22	10.39
	MCS6	10.13	10.24	10.33
	MCS7	10.08	10.20	10.35

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（dBm）		Conclusion
802.11b	1	Fig.1	-16.93	P
	6	Fig.2	-16.61	P
	11	Fig.3	-16.44	P
802.11g	1	Fig.4	-22.58	P
	6	Fig.5	-21.39	P
	11	Fig.6	-20.47	P

802.11n mode

Mode	Channel	Peak Power Spectral Density(dBm)		Conclusion
802.11n-20M	1	Fig.7	-20.76	P
	6	Fig.8	-19.50	P
	11	Fig.9	-18.69	P
802.11n-40M	3	Fig.10	-24.98	P
	6	Fig.11	-24.01	P
	9	Fig.12	-23.39	P

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.13	9161	P
	6	Fig.14	9161	P
	11	Fig.15	9161	P
802.11g	1	Fig.16	16585	P
	6	Fig.17	16671	P
	11	Fig.18	16585	P

802.11n mode

Mode	Channel	Test Results (kHz)		conclusion
802.11n (20MHz)	1	Fig.19	17844	P
	6	Fig.20	17844	P
	11	Fig.21	17844	P
802.11n (40MHz)	3	Fig.22	36556	P
	6	Fig.23	36556	P
	9	Fig.24	36556	P

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.25	P
	11	Fig.26	P
802.11g	1	Fig.27	P
	11	Fig.28	P

802.11n mode

Mode	Channel	Test Results	Conclusion
802.11n (20MHz)	1	Fig.29	P
	11	Fig.30	P
802.11n (40MHz)	3	Fig.31	P
	9	Fig.32	P

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.33	P
		30 MHz-3 GHz	Fig.34	P
		3GHz-18GHz	Fig.35	P
	6	2.437 GHz	Fig.36	P
		30 MHz-3 GHz	Fig.37	P
		3GHz-18GHz	Fig.38	P
	11	2.462 GHz	Fig.39	P
		30 MHz-3 GHz	Fig.40	P
		3GHz-18GHz	Fig.41	P
802.11g	1	2.412 GHz	Fig.42	P
		30 MHz-3 GHz	Fig.43	P
		3GHz-18GHz	Fig.44	P
	6	2.437 GHz	Fig.45	P
		30 MHz-3 GHz	Fig.46	P
		3GHz-18GHz	Fig.47	P
	11	2.462 GHz	Fig.48	P
		30 MHz-3 GHz	Fig.49	P
		3GHz-18GHz	Fig.50	P

802.11n mode

802.11n (20MHz)	1	2.412 GHz	Fig.51	P
		30 MHz-3 GHz	Fig.52	P
		3GHz-18GHz	Fig.53	P
	6	2.437 GHz	Fig.54	P
		30 MHz-3 GHz	Fig.55	P
		3GHz-18GHz	Fig.56	P
	11	2.462 GHz	Fig.57	P
		30 MHz-3 GHz	Fig.58	P
		3GHz-18GHz	Fig.59	P
802.11n (40MHz)	3	2.422 GHz	Fig.60	P
		30 MHz-3 GHz	Fig.61	P
		3GHz-18GHz	Fig.62	P
	6	2.437 GHz	Fig.63	P
		30 MHz-3 GHz	Fig.64	P
		3GHz-18GHz	Fig.65	P
	9	2.452 GHz	Fig.66	P
		30 MHz-3 GHz	Fig.67	P
		3GHz-18GHz	Fig.68	P
/	All channels	18GHz-26GHz	Fig.69	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(μV/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.

The measurement results include the horizontal polarization and vertical polarization measurements.

Measurement Results:

802.11b/g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	30 MHz ~1 GHz	Fig.70	P
		1 GHz ~ 3 GHz	Fig.71	P
		3 GHz ~ 18 GHz	Fig.72	P
	6	30 MHz ~1 GHz	Fig.73	P
		1 GHz ~ 3 GHz	Fig.74	P
		3 GHz ~ 18 GHz	Fig.75	P
	11	30 MHz ~1 GHz	Fig.76	P
		1 GHz ~ 3 GHz	Fig.77	P
		3 GHz ~ 18 GHz	Fig.78	P
802.11g	1	30 MHz ~1 GHz	Fig.79	P
		1 GHz ~ 3 GHz	Fig.80	P
		3 GHz ~ 18 GHz	Fig.81	P
	6	30 MHz ~1 GHz	Fig.82	P
		1 GHz ~ 3 GHz	Fig.83	P
		3 GHz ~ 18 GHz	Fig.84	P
	11	30 MHz ~1 GHz	Fig.85	P
		1 GHz ~ 3 GHz	Fig.86	P
		3 GHz ~ 18 GHz	Fig.87	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (20M)	1	30 MHz ~1 GHz	Fig.88	P
		1 GHz ~ 3 GHz	Fig.89	P
		3 GHz ~ 18 GHz	Fig.90	P
	6	30 MHz ~1 GHz	Fig.91	P
		1 GHz ~ 3 GHz	Fig.92	P
		3 GHz ~ 18 GHz	Fig.93	P
	11	30 MHz ~1 GHz	Fig.94	P
		1 GHz ~ 3 GHz	Fig.95	P
		3 GHz ~ 18 GHz	Fig.96	P
802.11n (40M)	3	30 MHz ~1 GHz	Fig.97	P
		1 GHz ~ 3 GHz	Fig.98	P
		3 GHz ~ 18 GHz	Fig.99	P
	6	30 MHz ~1 GHz	Fig.100	P
		1 GHz ~ 3 GHz	Fig.101	P
		3 GHz ~ 18 GHz	Fig.102	P
	9	30 MHz ~1 GHz	Fig.103	P
		1 GHz ~ 3 GHz	Fig.104	P
		3 GHz ~ 18 GHz	Fig.105	P
/	All channels	18 GHz~ 26.5 GHz	Fig.106	P

802.11b CH1 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	37.7	V	90.0	1.7	16.2	53.9
4823.500000	47.8	H	0.0	5.8	6.1	53.9
7557.875000	36.7	V	90.0	6.9	17.2	53.9
10086.000000	39.4	H	90.0	9.5	14.5	53.9
13446.000000	42.4	V	0.0	11.4	11.5	53.9
16779.000000	48.3	V	0.0	14.3	5.6	53.9

802.11b CH 6(1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	37.2	V	0.0	1.7	16.7	53.9
4874.250000	39.7	V	0.0	5.9	14.2	53.9
7555.250000	36.1	V	90.0	6.9	17.8	53.9
10027.000000	39.2	H	0.0	9.4	14.7	53.9
13081.000000	41.4	V	0.0	11.4	12.5	53.9
16749.000000	46.9	V	0.0	14.3	7.0	53.9

802.11b CH11 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	37.1	V	90.0	1.7	16.8	53.9
4924.125000	46.8	H	0.0	5.9	7.1	53.9
7457.250000	36.5	H	0.0	6.9	17.4	53.9
10035.000000	39.0	V	0.0	9.4	14.9	53.9
13446.000000	41.7	V	90.0	11.4	12.2	53.9
16779.000000	47.5	V	90.0	14.3	6.4	53.9

802.11g CH1 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	36.9	V	0.0	1.7	17.0	53.9
4824.375000	36.3	H	0.0	5.8	17.6	53.9
7551.750000	36.2	V	0.0	6.9	17.7	53.9
10029.000000	39.0	V	0.0	9.4	14.9	53.9
13193.000000	41.4	V	0.0	11.5	12.5	53.9
16787.000000	47.1	V	0.0	14.3	6.8	53.9

802.11g CH6 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	36.7	V	0.0	1.7	17.2	53.9
5663.500000	34.4	H	0.0	6.8	19.5	53.9
7461.625000	36.2	V	0.0	6.9	17.7	53.9
10026.000000	38.9	V	90.0	9.4	15.0	53.9
12148.000000	41.2	V	0.0	10.9	12.7	53.9
16785.000000	46.8	V	0.0	14.3	7.1	53.9

802.11g CH11 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	36.9	V	90.0	1.7	17.0	53.9
4925.000000	35.3	V	0.0	5.9	18.6	53.9
7549.125000	36.1	V	0.0	6.9	17.8	53.9
10033.000000	39.1	H	0.0	9.4	14.8	53.9
12654.000000	41.1	V	0.0	11.2	12.8	53.9
16769.000000	46.6	V	90.0	14.3	7.3	53.9

802.11n-20MHz CH1 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2380.000000	37.5	H	0.0	1.7	16.4	53.9
4826.125000	37.6	H	0.0	5.8	16.3	53.9
7510.625000	35.9	V	0.0	6.9	18.0	53.9
10025.000000	38.9	H	90.0	9.4	15.0	53.9
12166.000000	40.6	V	90.0	11.0	13.3	53.9
16779.000000	46.4	V	0.0	14.3	7.5	53.9

802.11n-20MHz CH6 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	36.8	V	0.0	1.7	17.1	53.9
5664.375000	34.4	V	90.0	6.8	19.5	53.9
7557.000000	35.9	H	90.0	6.9	18.0	53.9
10001.000000	39.0	H	0.0	9.4	14.9	53.9
12169.000000	40.7	H	0.0	11.0	13.2	53.9
16790.000000	46.3	V	0.0	14.3	7.6	53.9

802.11n-20MHz CH11 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	36.7	V	0.0	1.7	17.2	53.9
4922.375000	34.9	V	0.0	5.9	19.0	53.9
7559.625000	35.8	H	0.0	6.9	18.1	53.9
10027.000000	38.9	H	0.0	9.4	15.0	53.9
12161.000000	40.6	V	0.0	11.0	13.3	53.9
16785.000000	46.2	V	0.0	14.3	7.7	53.9

802.11n-40MHz CH3 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2380.000000	37.2	H	0.0	1.7	16.7	53.9
5663.500000	34.4	V	0.0	6.8	19.5	53.9
7559.625000	35.9	H	90.0	6.9	18.0	53.9
10034.000000	39.0	H	0.0	9.4	14.9	53.9
12156.000000	40.8	H	90.0	10.9	13.1	53.9
16766.000000	46.2	V	90.0	14.3	7.7	53.9

802.11n-40MHz CH6 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	36.6	V	0.0	1.7	17.3	53.9
5657.375000	34.3	V	90.0	6.8	19.6	53.9
7559.625000	35.8	H	0.0	6.9	18.1	53.9
10018.000000	39.0	H	0.0	9.4	14.9	53.9
12143.000000	40.9	V	0.0	10.9	13.0	53.9
16821.000000	46.6	V	0.0	14.3	7.3	53.9

802.11n-40MHz CH9 (1-18GHz)

Frequency (MHz)	Peak (dBμV/m)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBμV/m)
2357.000000	36.8	V	0.0	1.7	17.1	53.9
5661.750000	34.4	V	0.0	6.8	19.5	53.9
6538.500000	35.9	H	90.0	7.0	18.0	53.9
10020.000000	39.0	H	90.0	9.4	14.9	53.9
13165.000000	40.6	H	90.0	11.5	13.3	53.9
16833.000000	46.3	H	90.0	14.3	7.6	53.9

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)-AE2

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	66 to 56	Fig.107	Fig.108	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)-AE2

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig.107	Fig.108	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.				

WLAN (Quasi-peak Limit)-AE3

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	67 to 56	Fig.109	Fig.110	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)-AE3

Frequency range (MHz)	Average-peak Limit (dBμV)	Result (dBμV)		Conclusion
		Traffic	Idle	
0.15 to 0.5	56 to 46	Fig.109	Fig.110	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.				

Note: The measurement results include the L1 and N measurements.

See ANNEX C for test graphs.

Conclusion: Pass

ANNEX C: TEST FIGURE LIST

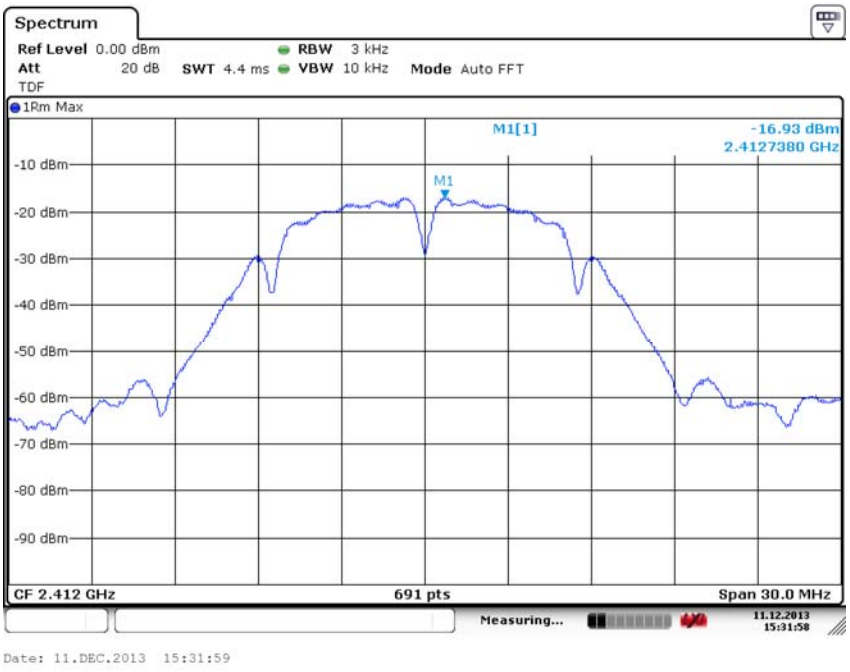

Fig. 1 Power Spectral Density (802.11b, Ch 1)

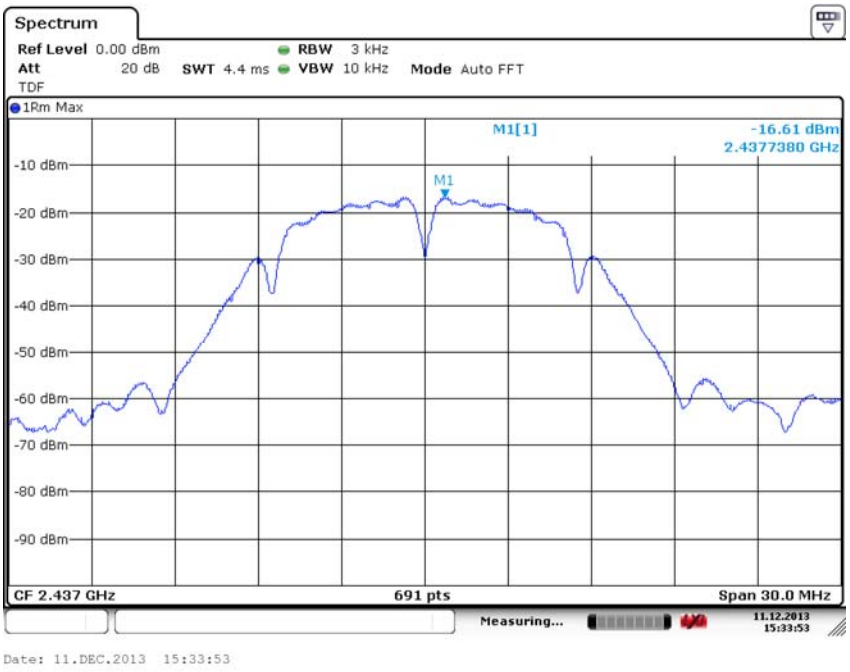

Fig. 2 Power Spectral Density (802.11b, Ch 6)

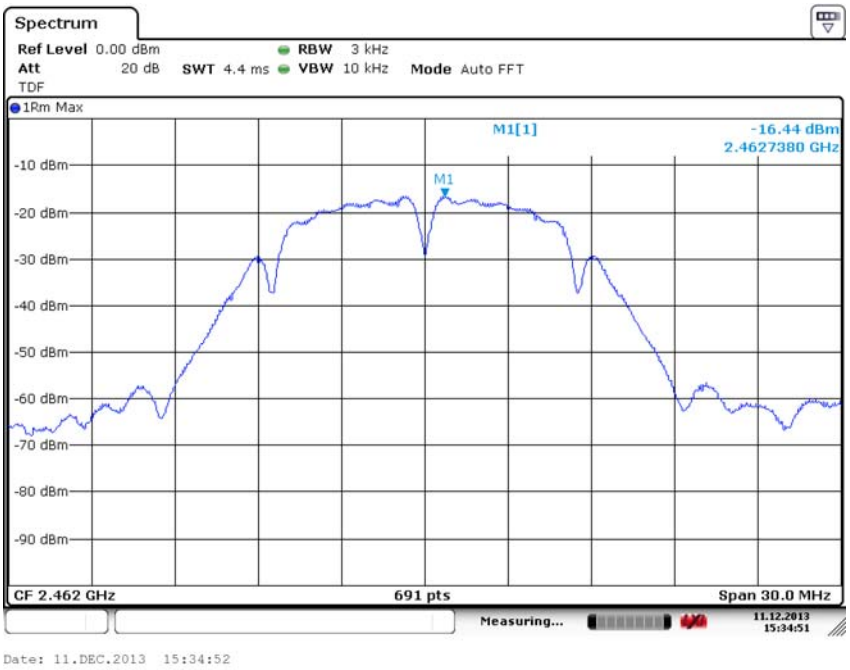

Fig. 3 Power Spectral Density (802.11b, Ch 11)

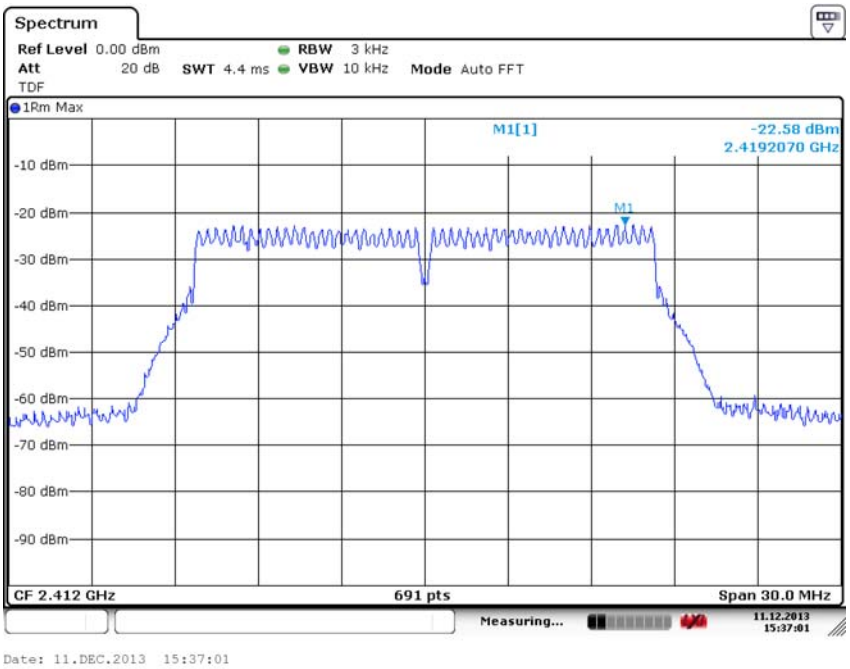

Fig. 4 Power Spectral Density (802.11g, Ch 1)

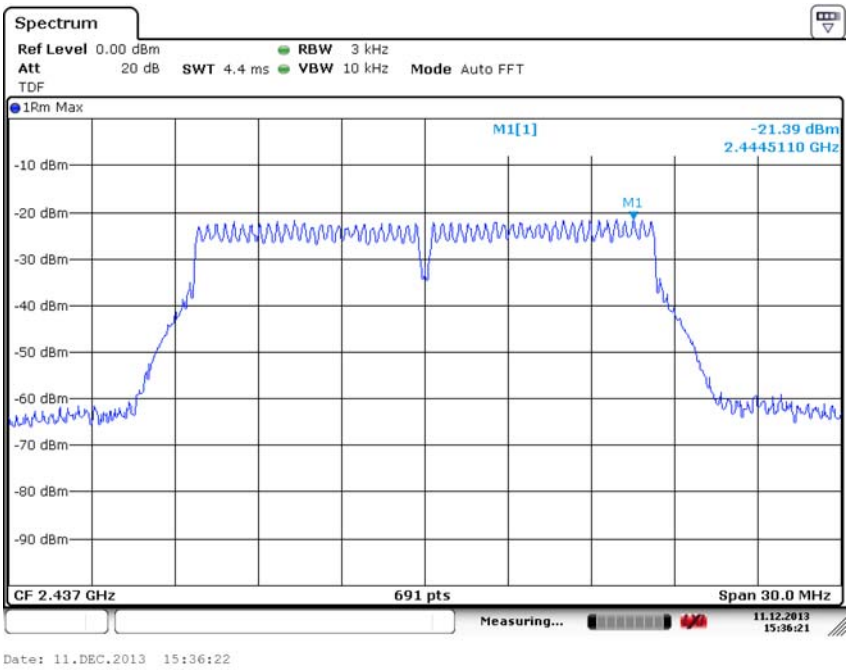

Fig. 5 Power Spectral Density (802.11g, Ch 6)

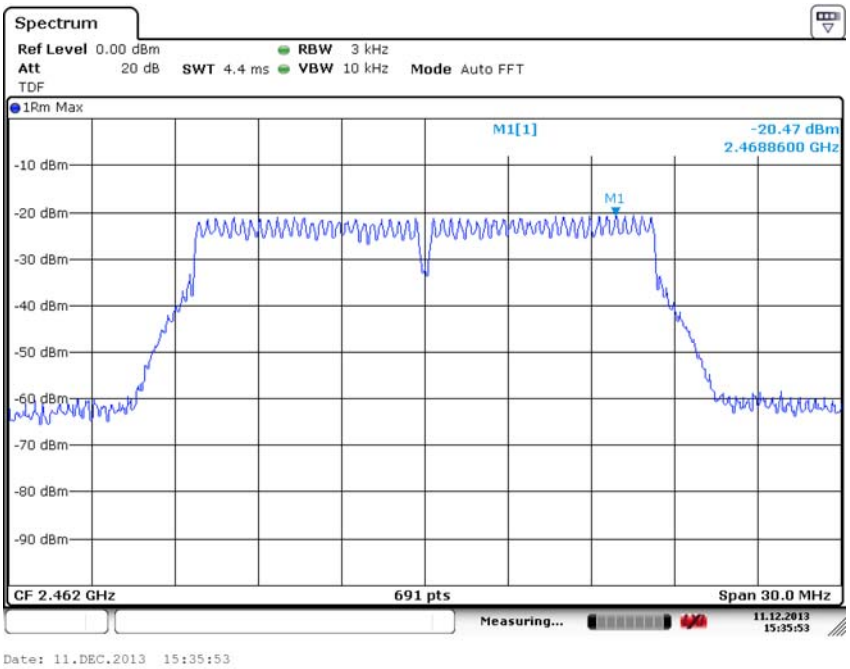

Fig. 6 Power Spectral Density (802.11g, Ch 11)

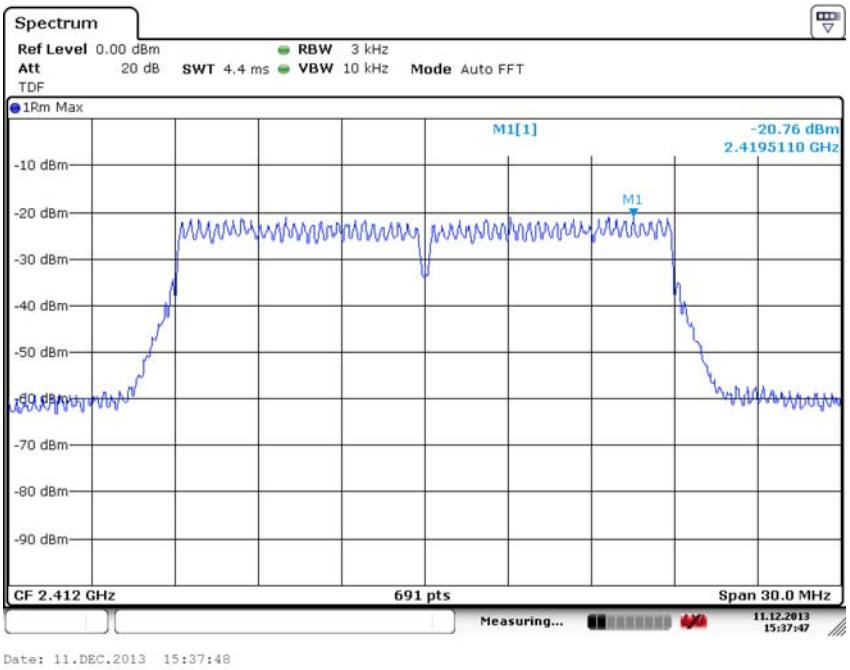

Fig. 7 Power Spectral Density (802.11n-20MHz, Ch 1)

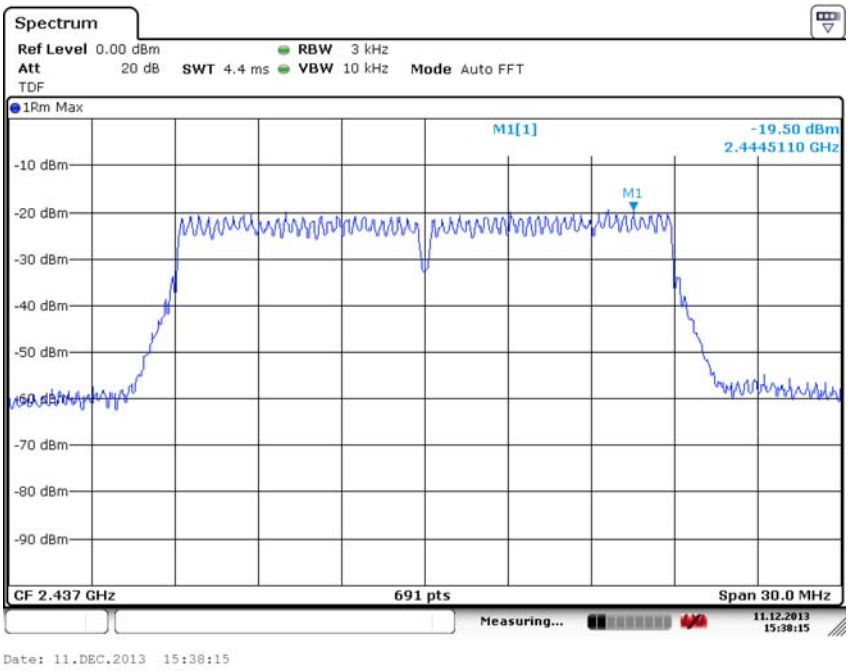

Fig. 8 Power Spectral Density (802.11n-20MHz, Ch 6)

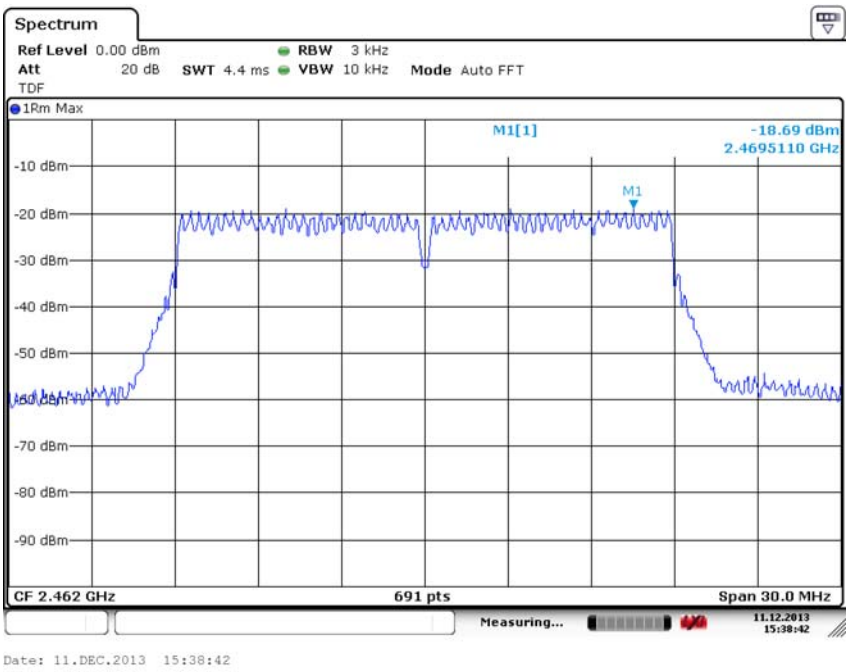

Fig. 9 Power Spectral Density (802.11n-20MHz, Ch 11)

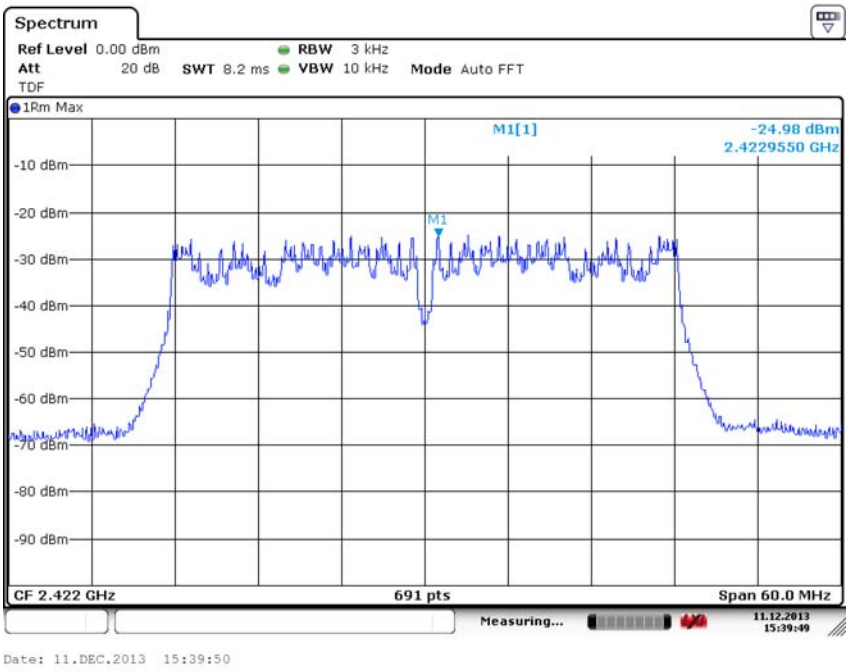

Fig. 10 Power Spectral Density (802.11n-40MHz, Ch 3)

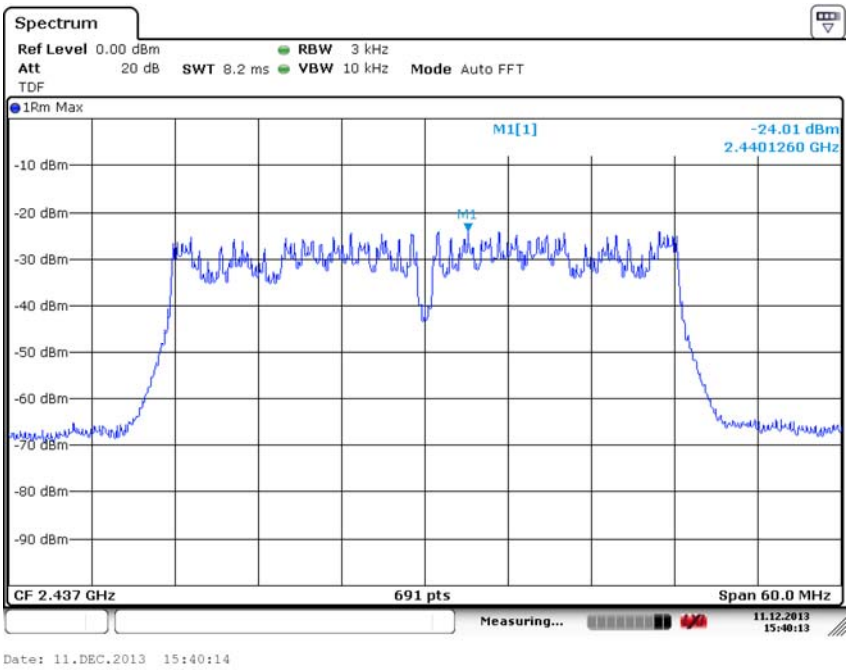

Fig. 11 Power Spectral Density (802.11n-40MHz, Ch 6)

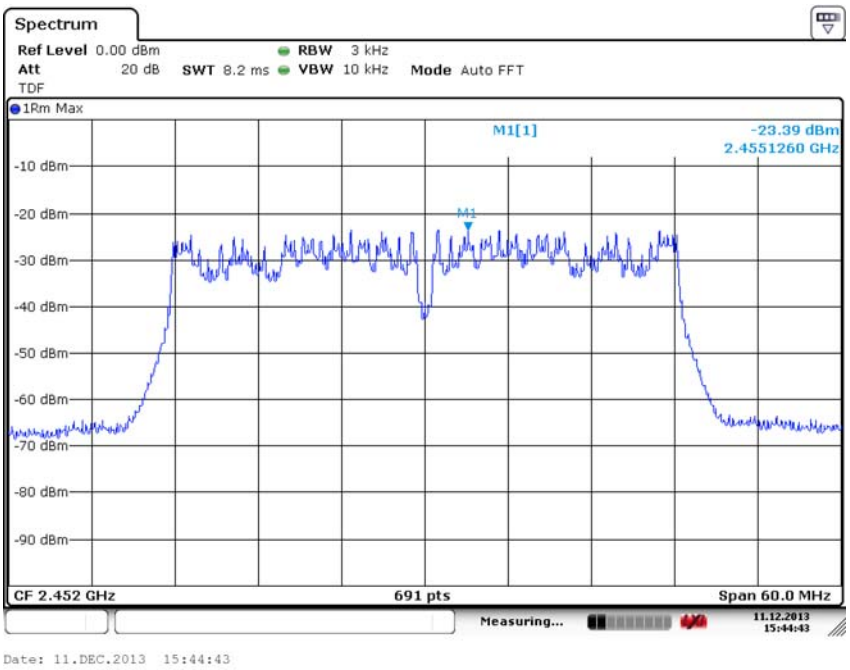

Fig. 12 Power Spectral Density (802.11n-40MHz, Ch 9)

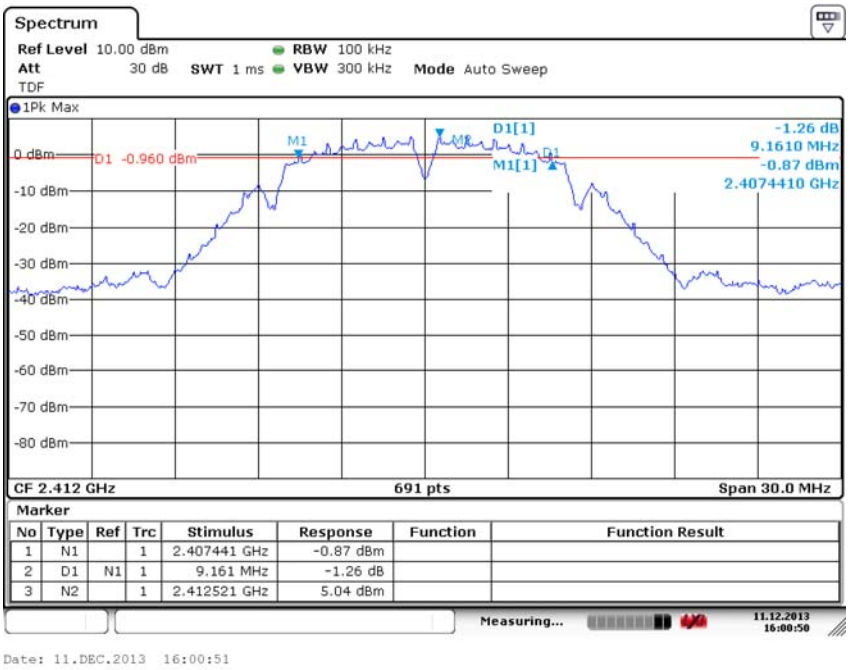

Fig. 13 Occupied 6dB Bandwidth (802.11b, Ch 1)

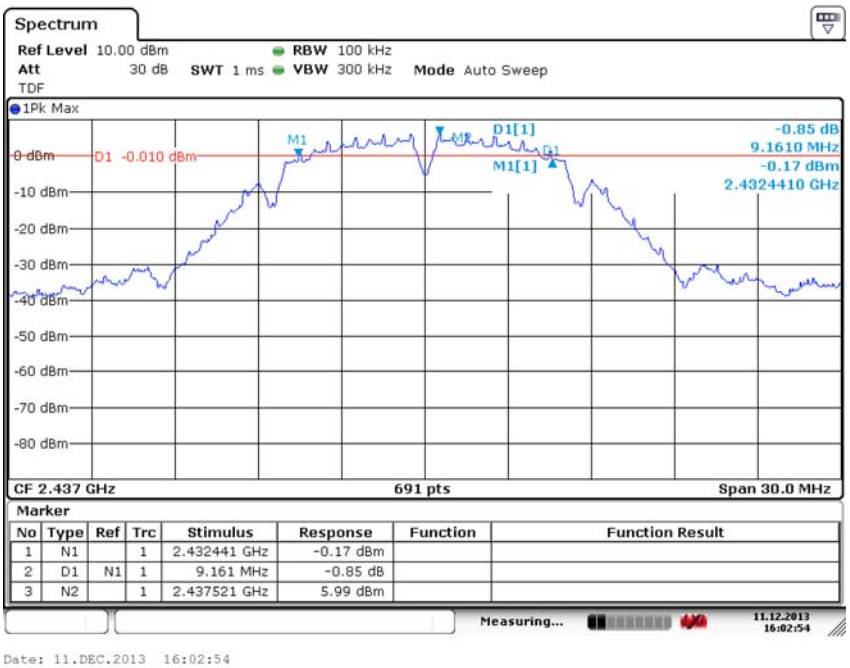

Fig. 14 Occupied 6dB Bandwidth (802.11b, Ch 6)

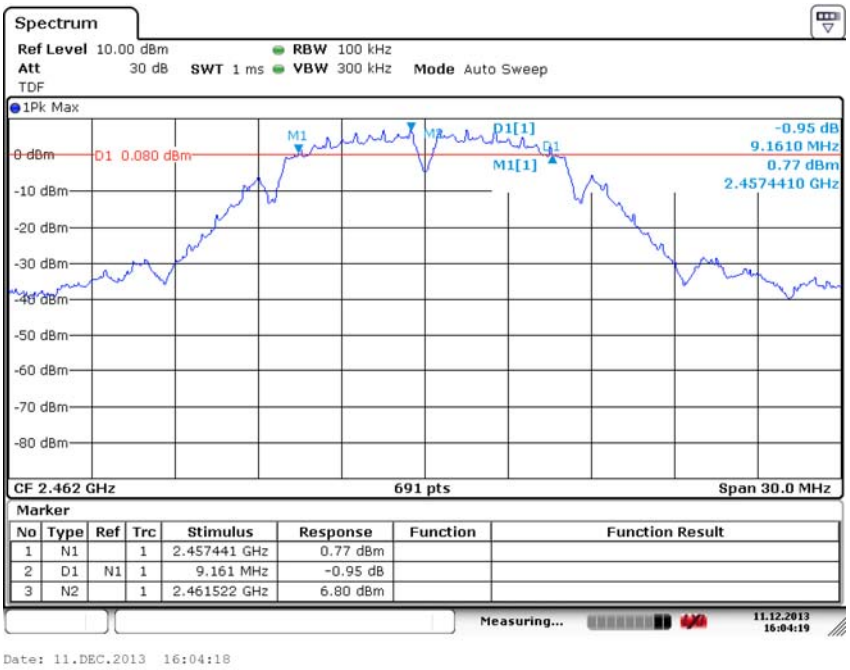

Fig. 15 Occupied 6dB Bandwidth (802.11b, Ch 11)

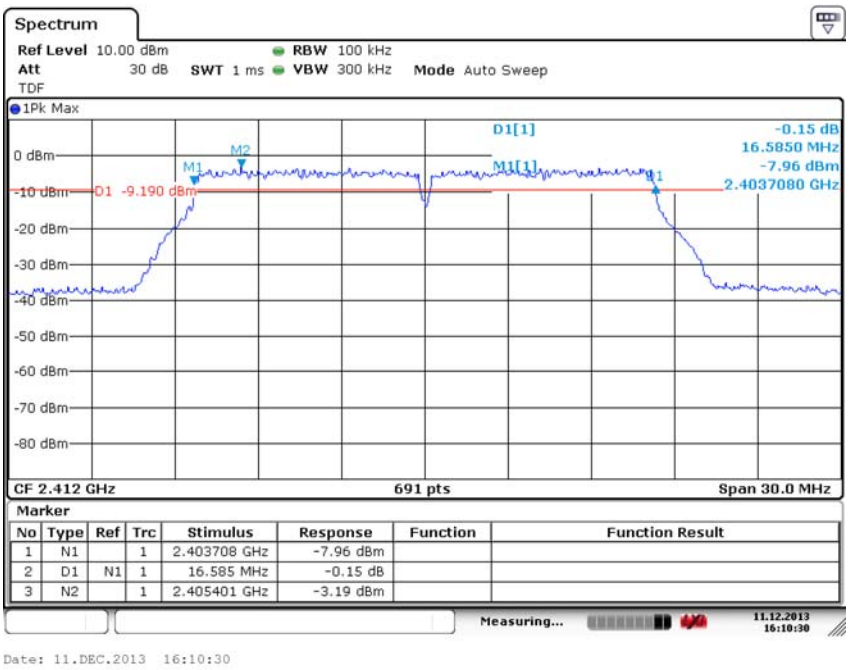

Fig. 16 Occupied 6dB Bandwidth (802.11g, Ch 1)

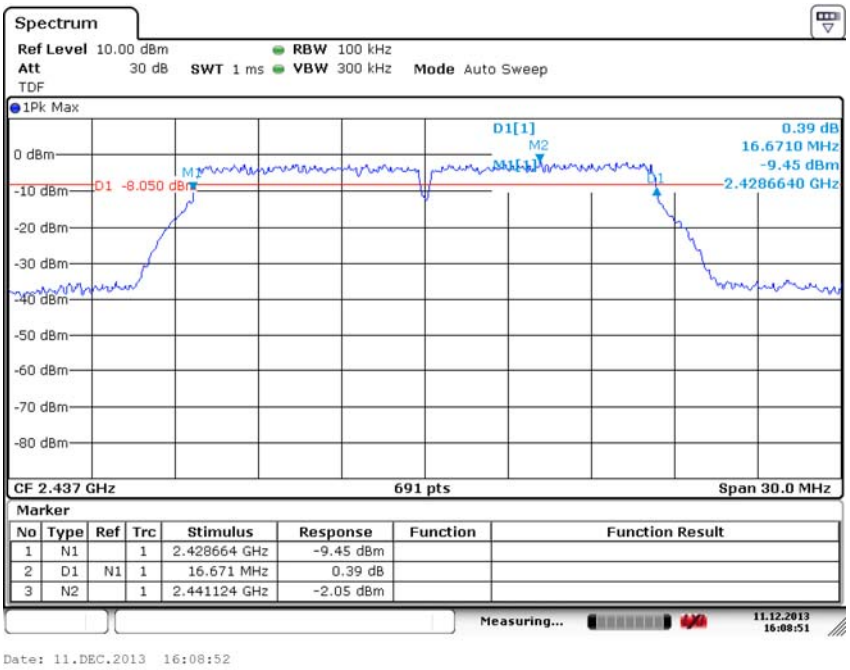

Fig. 17 Occupied 6dB Bandwidth (802.11g, Ch 6)

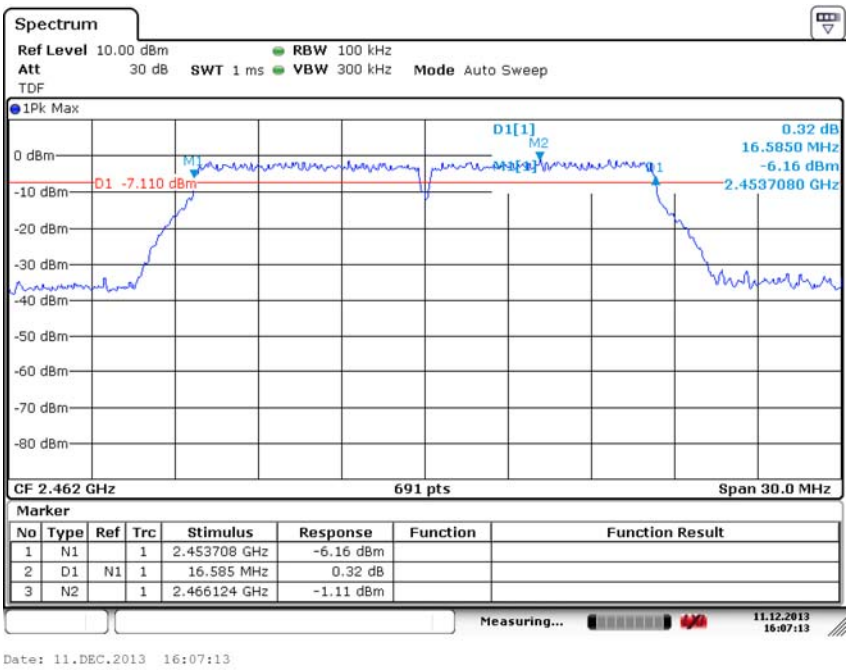

Fig. 18 Occupied 6dB Bandwidth (802.11g, Ch 11)

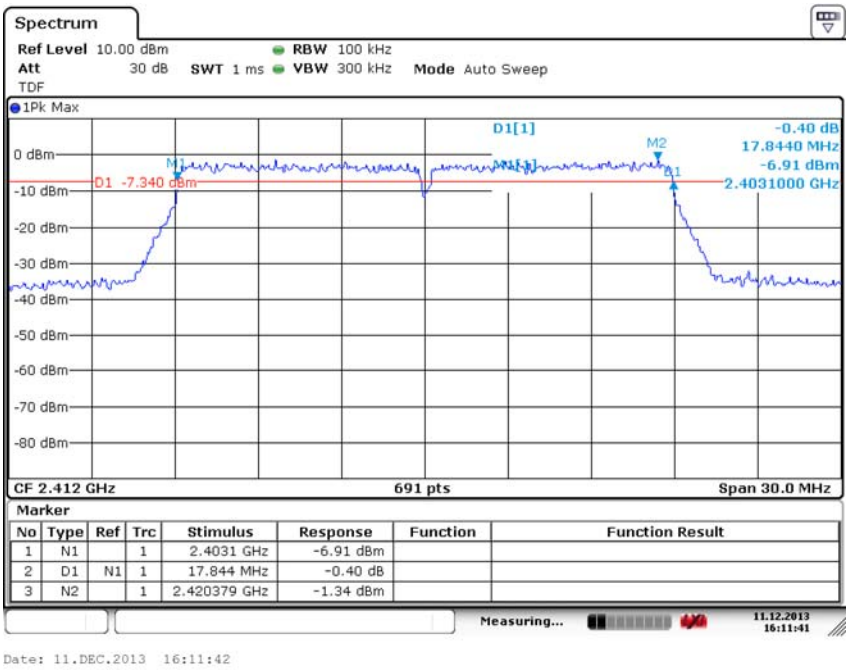

Fig. 19 Occupied 6dB Bandwidth (802.11 n-20MHz, Ch 1)

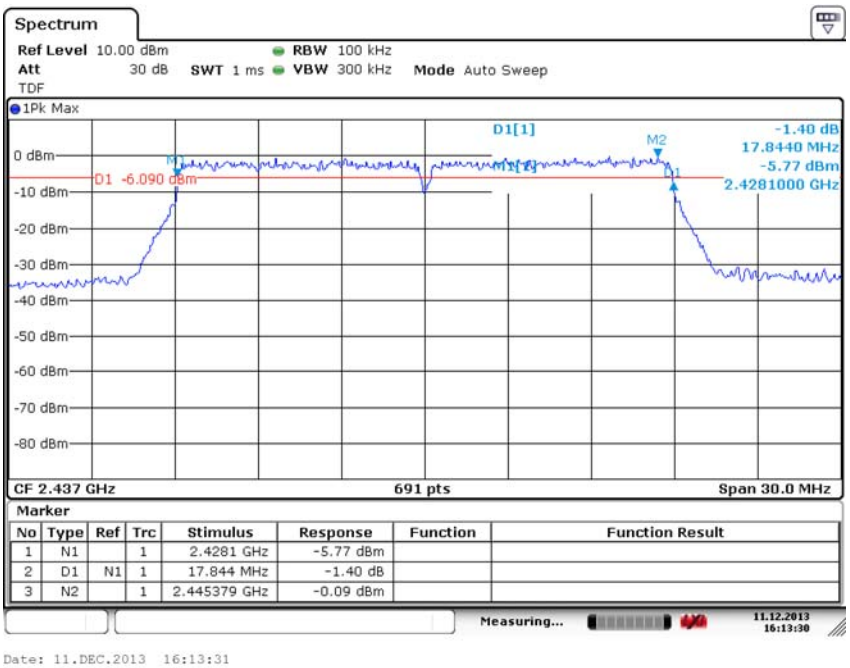

Fig. 20 Occupied 6dB Bandwidth (802.11 n-20MHz, Ch 6)

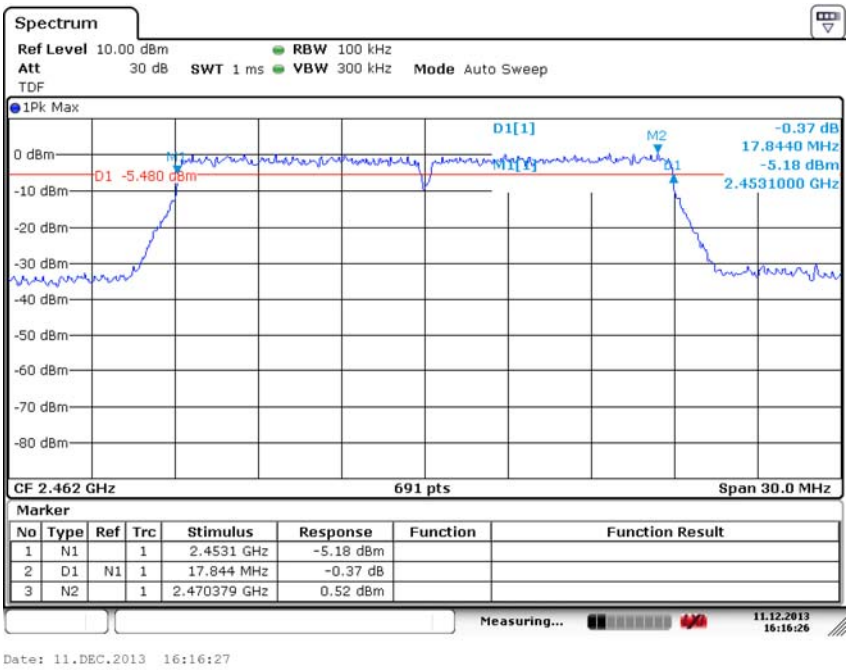

Fig. 21 Occupied 6dB Bandwidth (802.11n-20MHz, Ch 11)

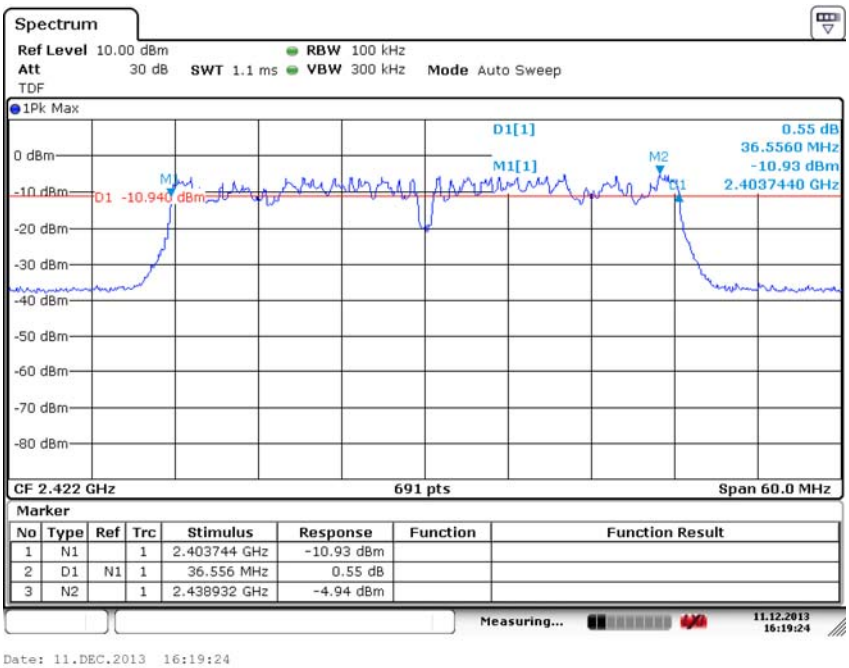

Fig. 22 Occupied 6dB Bandwidth (802.11n-40MHz, Ch 3)

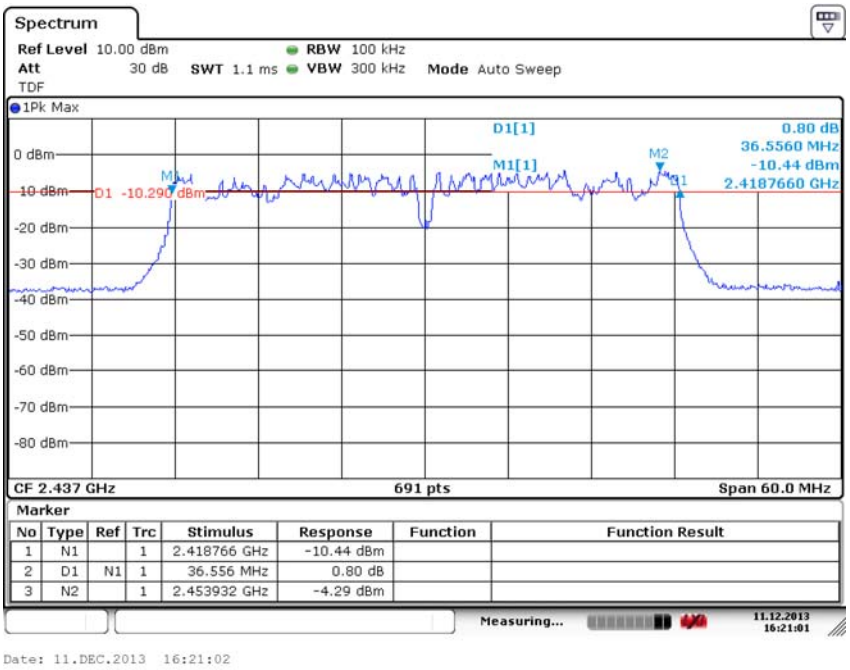

Fig. 23 Occupied 6dB Bandwidth (802.11n-40MHz, Ch 6)

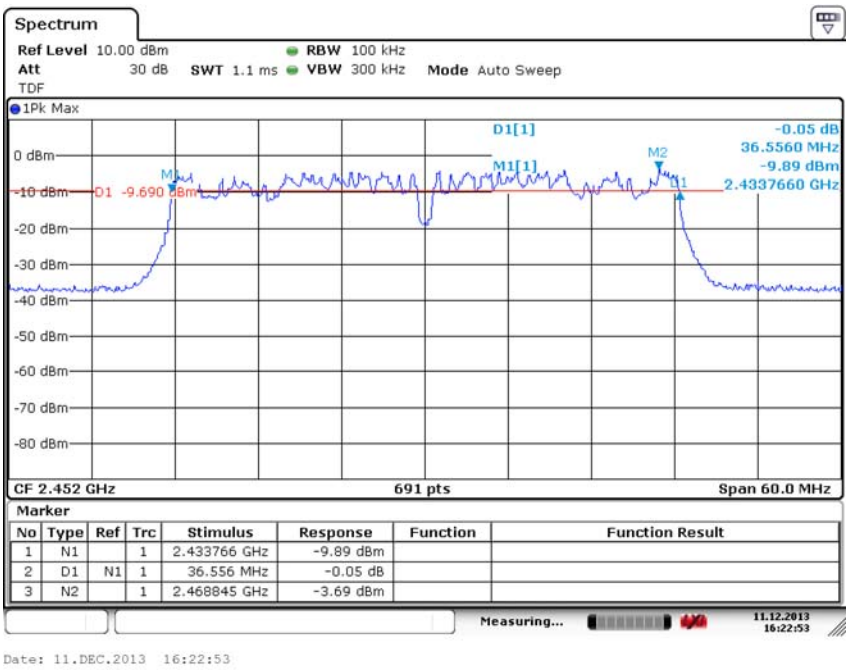

Fig. 24 Occupied 6dB Bandwidth (802.11n-40MHz, Ch 9)

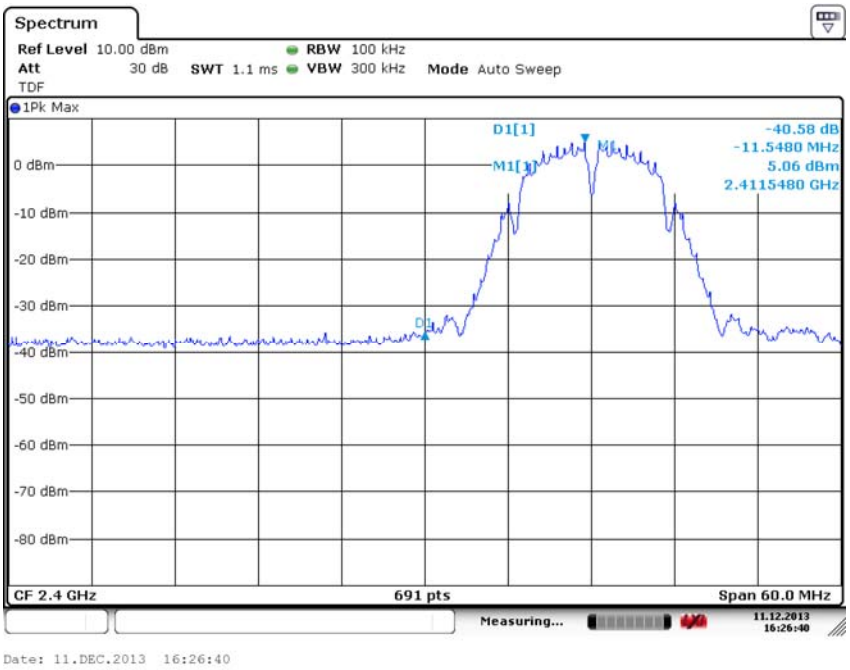

Fig. 25 Band Edges (802.11b, Ch 1)

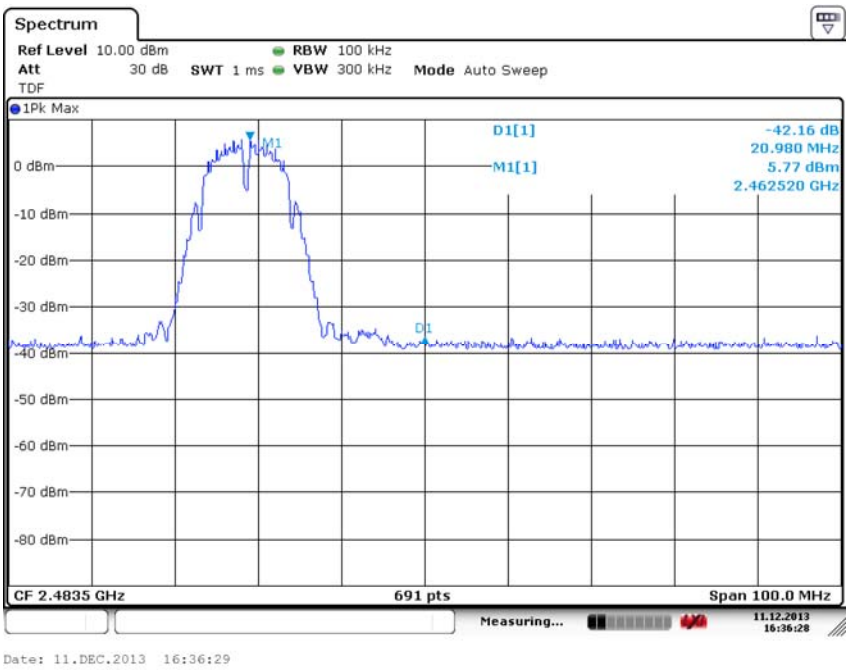

Fig. 26 Band Edges (802.11b, Ch 11)

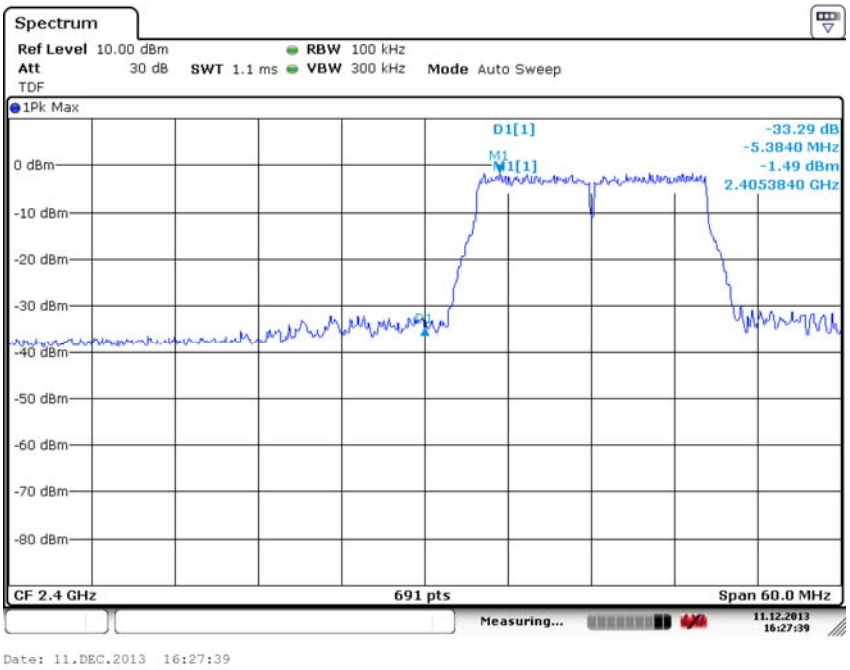

Fig. 27 Band Edges (802.11g, Ch 1)

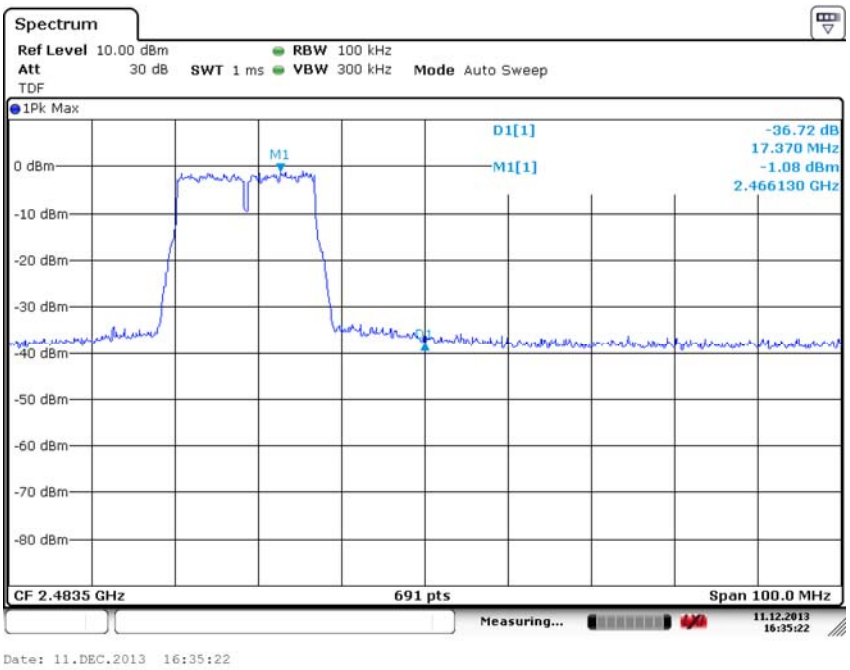

Fig. 28 Band Edges (802.11g, Ch 11)

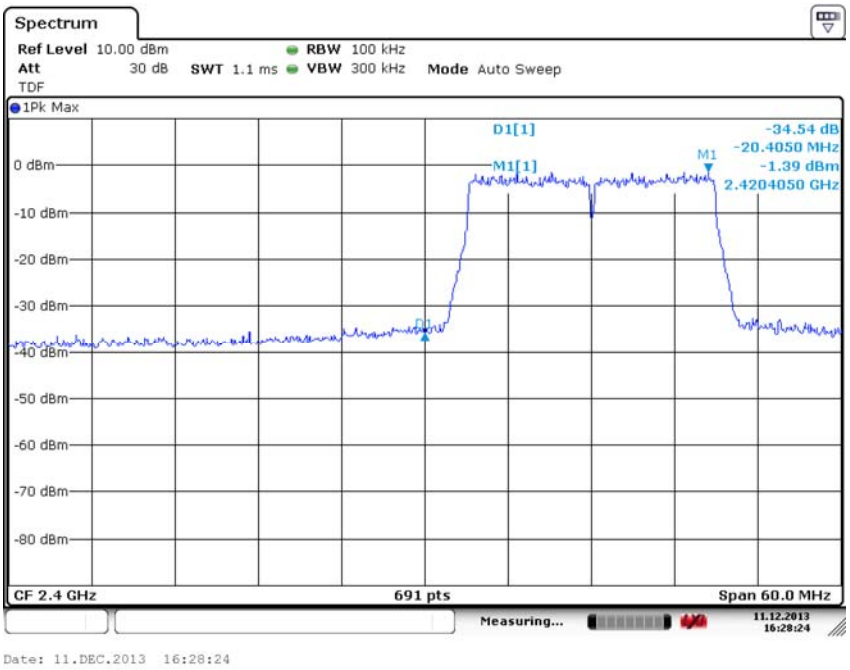

Fig. 29 Band Edges (802.11 n-20MHz, Ch 1)

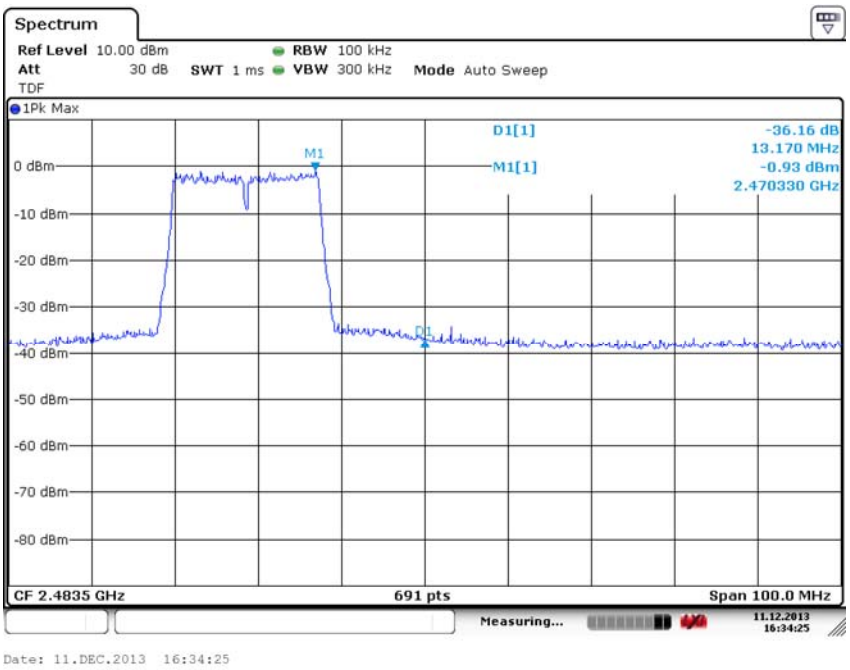

Fig. 30 Band Edges (802.11 n-20MHz, Ch 11)

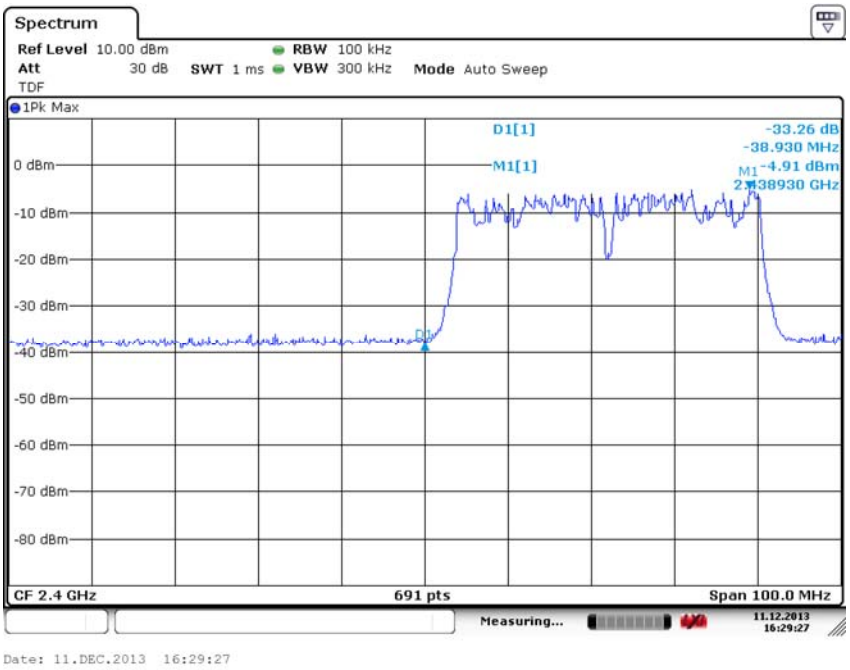

Fig. 31 Band Edges (802.11 n-40MHz, Ch 3)

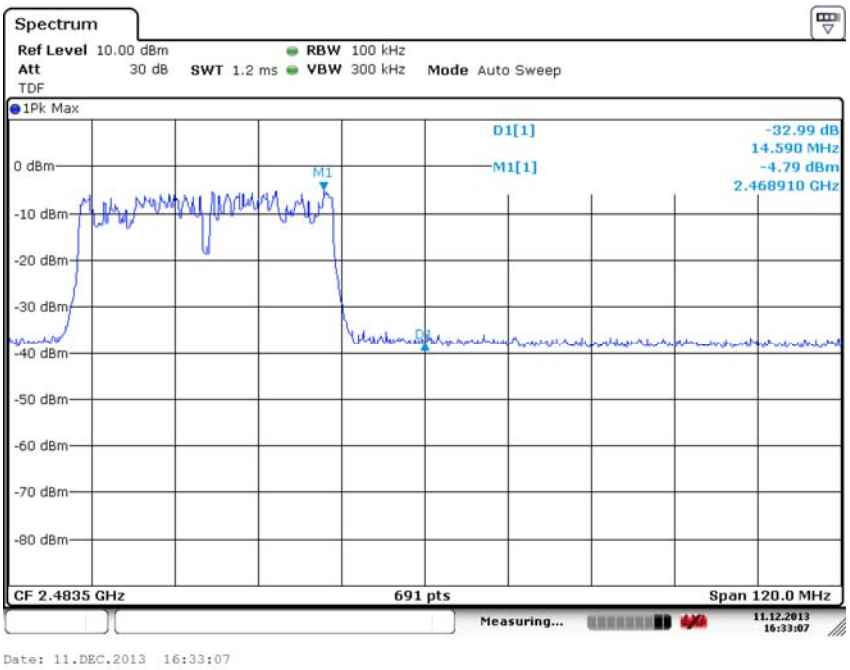

Fig. 32 Band Edges (802.11 n-40MHz, Ch 9)

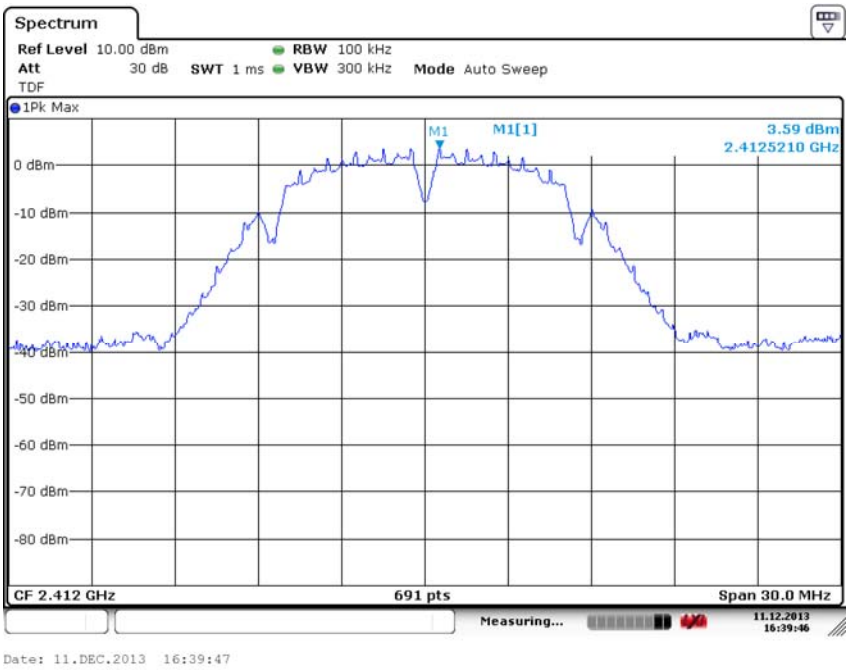

Fig. 33 Conducted Spurious Emission (802.11b, Ch1, Center Frequency)

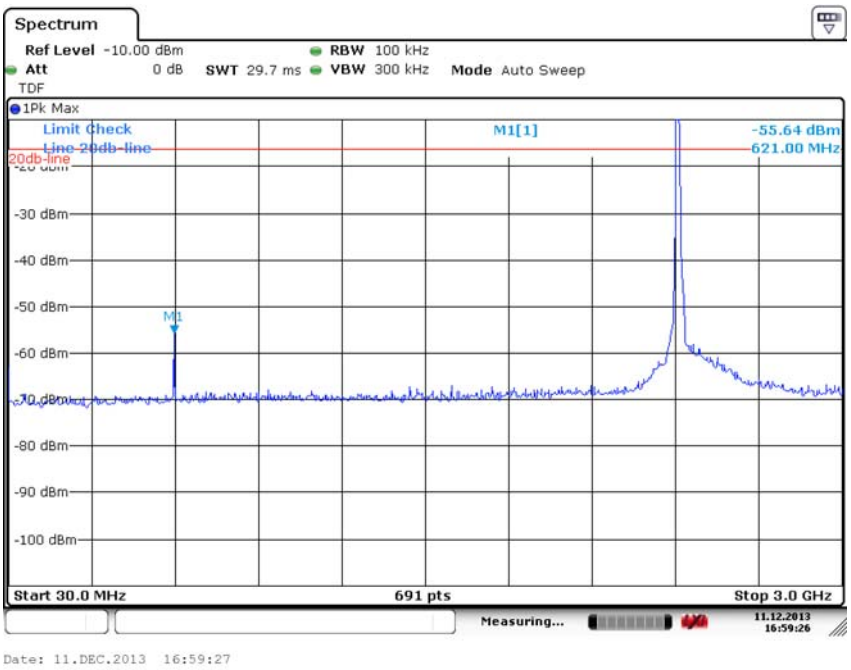

Fig. 34 Conducted Spurious Emission (802.11b, Ch1, 30 MHz-3 GHz)

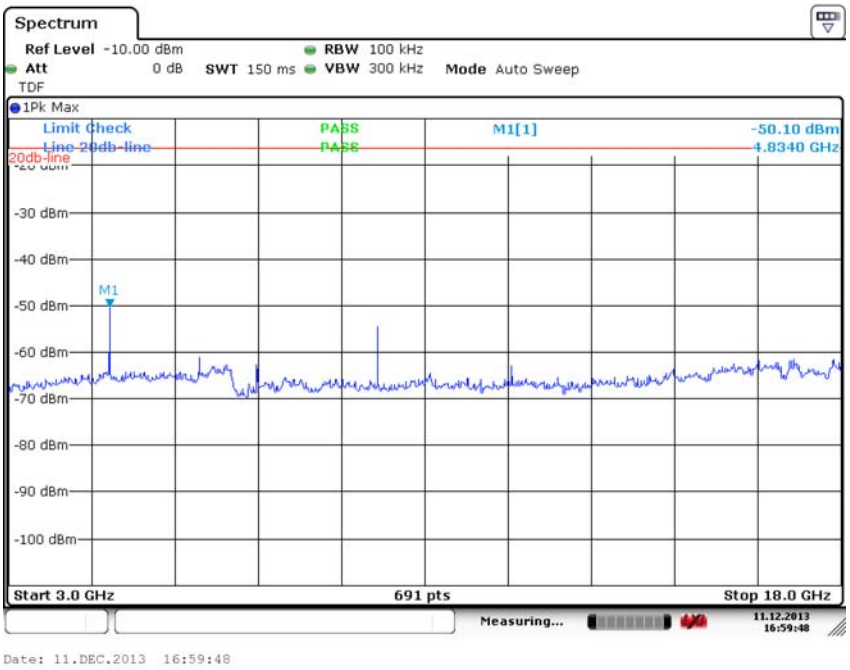

Fig. 35 Conducted Spurious Emission (802.11b, Ch1, 3 GHz-18 GHz)

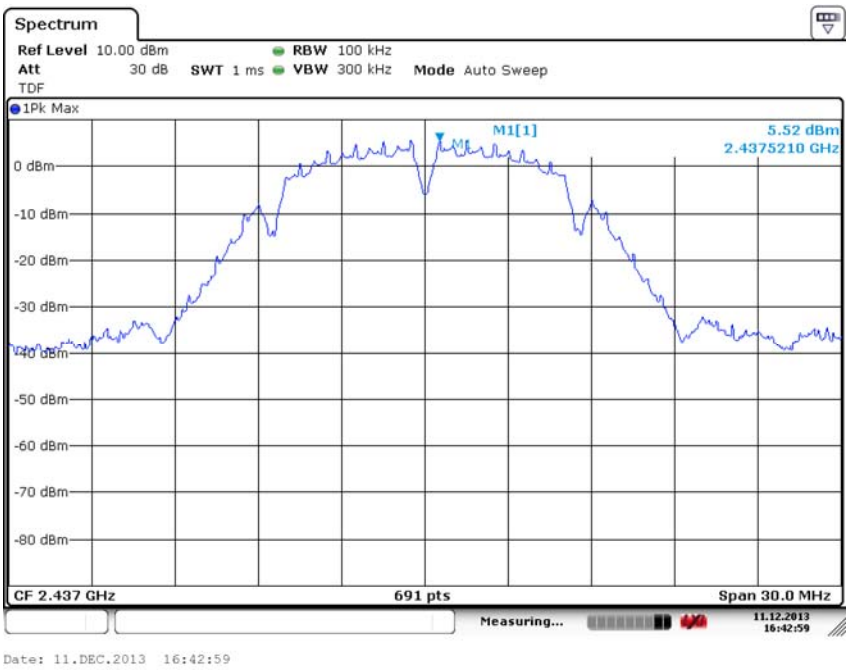

Fig. 36 Conducted Spurious Emission (802.11b, Ch6, Center Frequency)

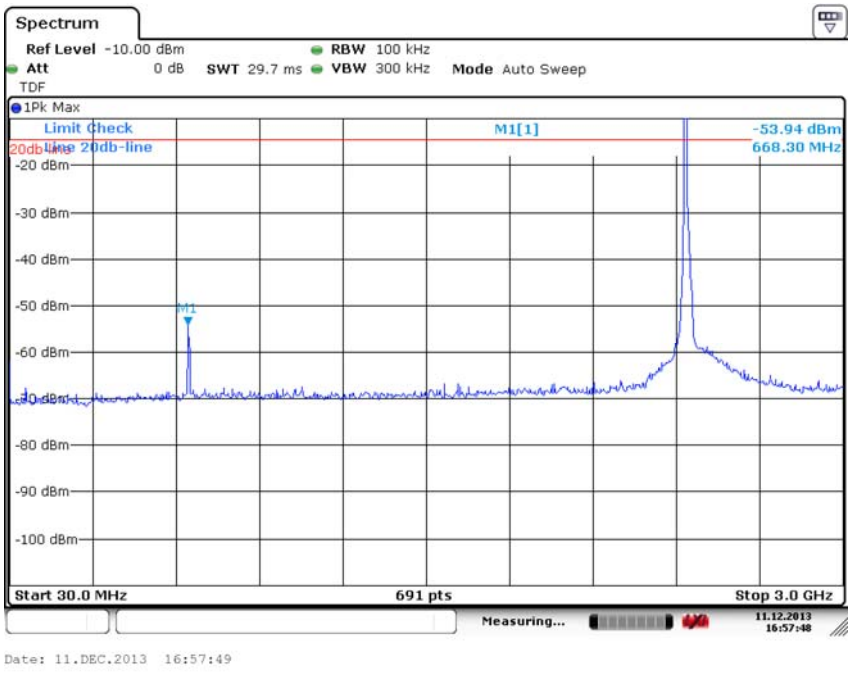

Fig. 37 Conducted Spurious Emission (802.11b, Ch6, 30 MHz-3 GHz)

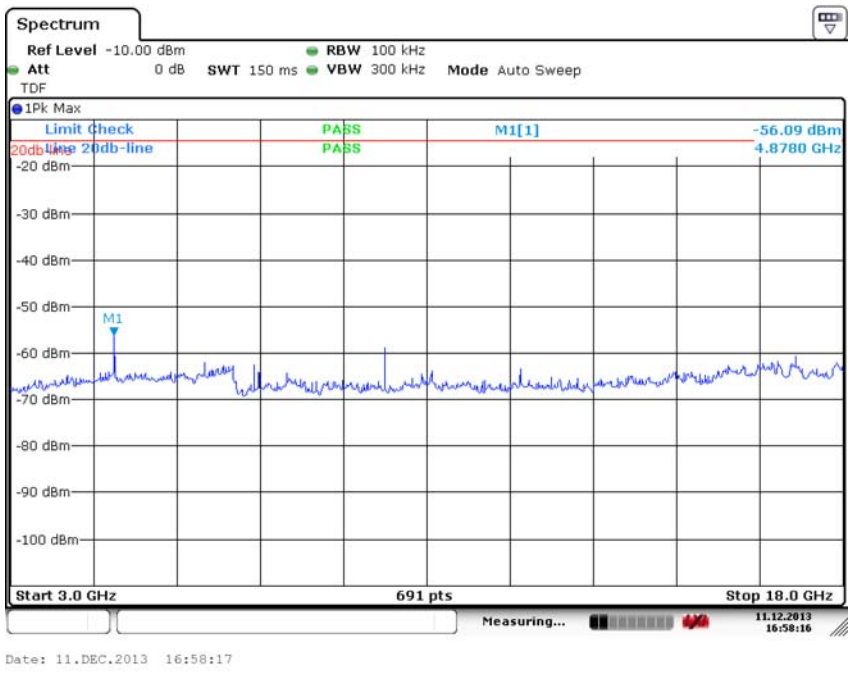

Fig. 38 Conducted Spurious Emission (802.11b, Ch6, 3 GHz-18 GHz)

Fig. 39 Conducted Spurious Emission (802.11b, Ch11, Center Frequency)

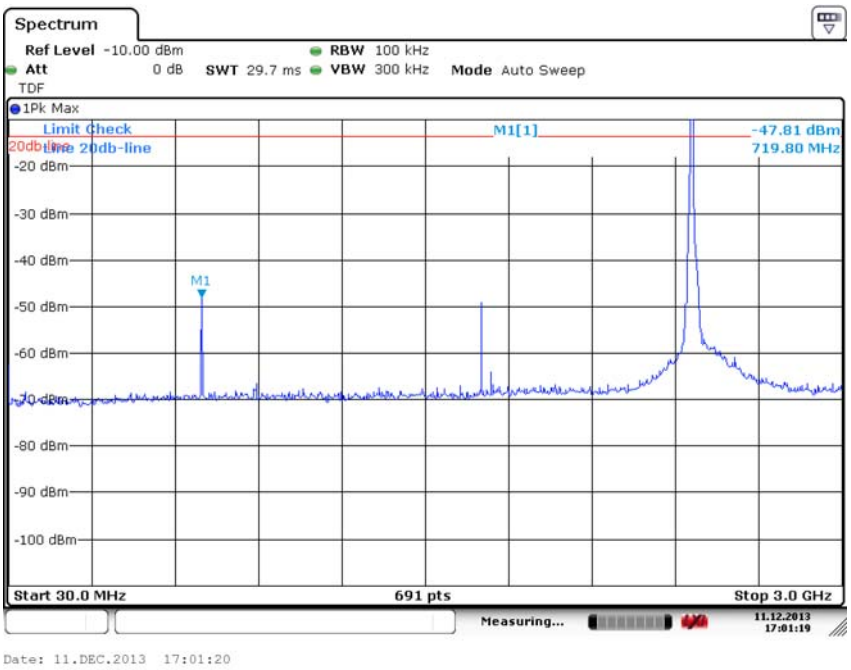

Fig. 40 Conducted Spurious Emission (802.11b, Ch11, 30 MHz-3 GHz)

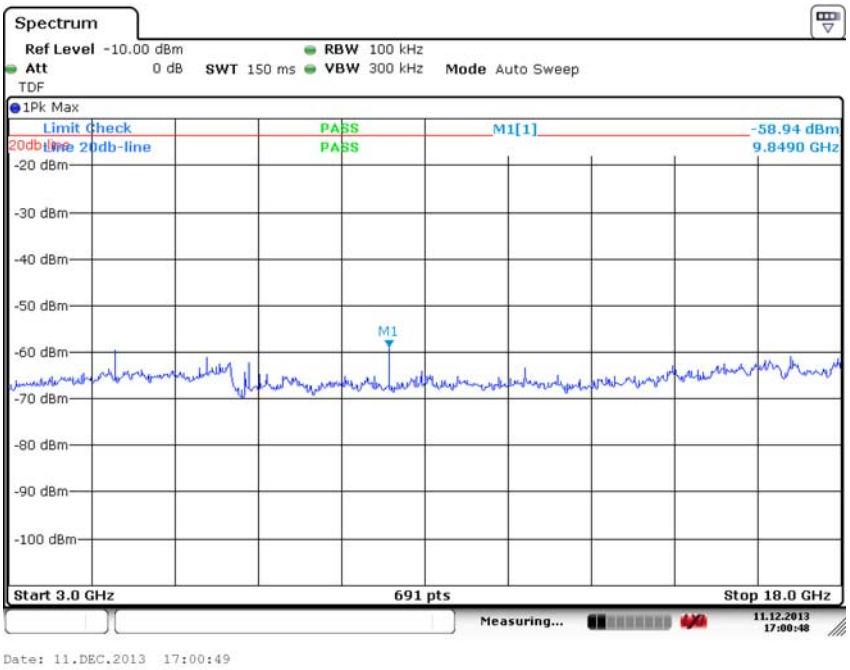

Fig. 41 Conducted Spurious Emission (802.11b, Ch11, 3 GHz-18 GHz)

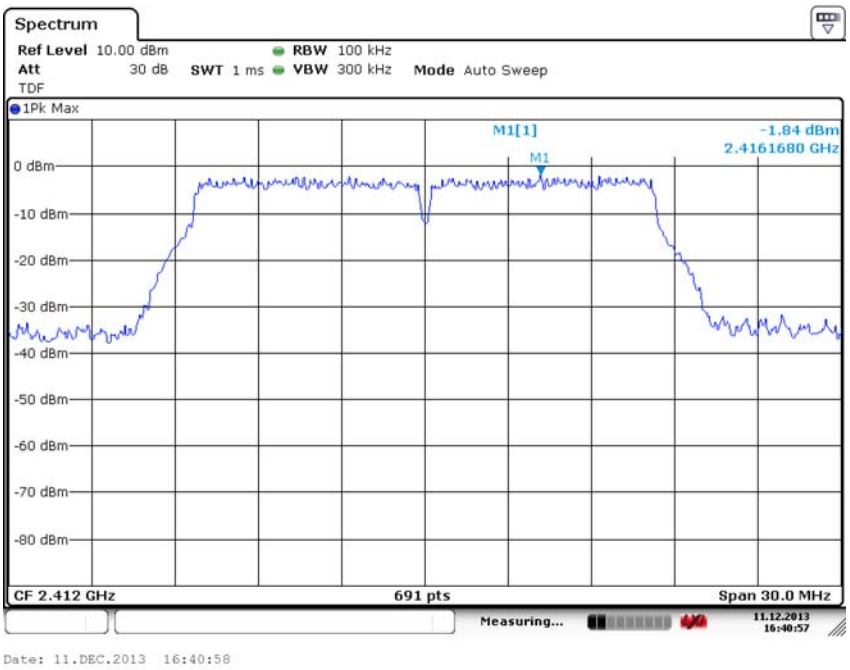

Fig. 42 Conducted Spurious Emission (802.11g, Ch1, Center Frequency)

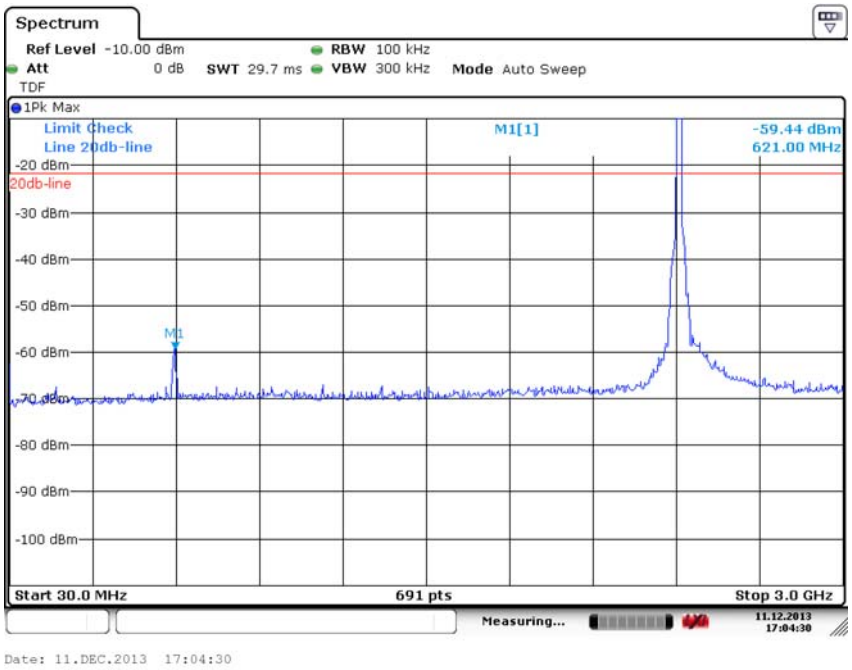

Fig. 43 Conducted Spurious Emission (802.11g, Ch1, 30 MHz-3 GHz)

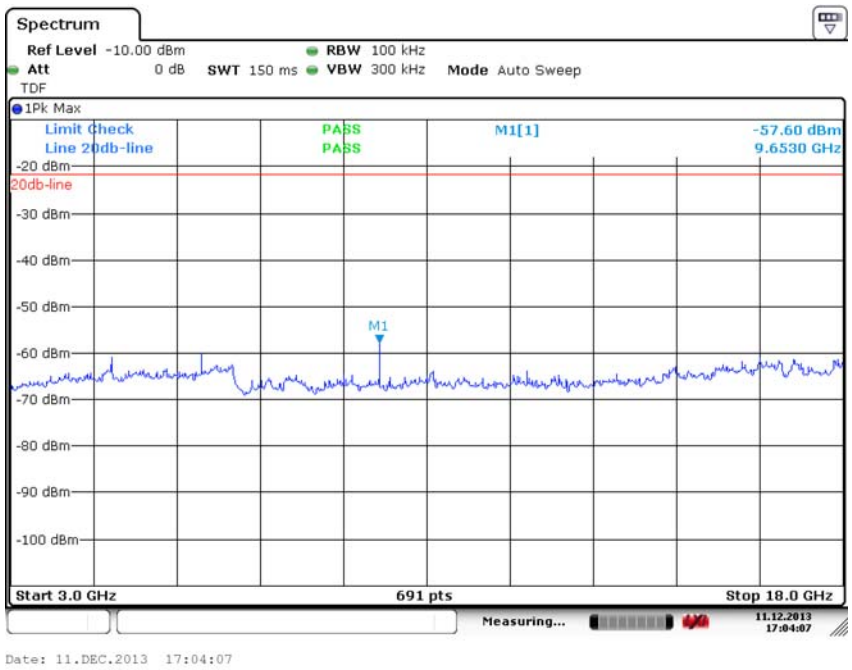

Fig. 44 Conducted Spurious Emission (802.11g, Ch1, 3 GHz-18 GHz)

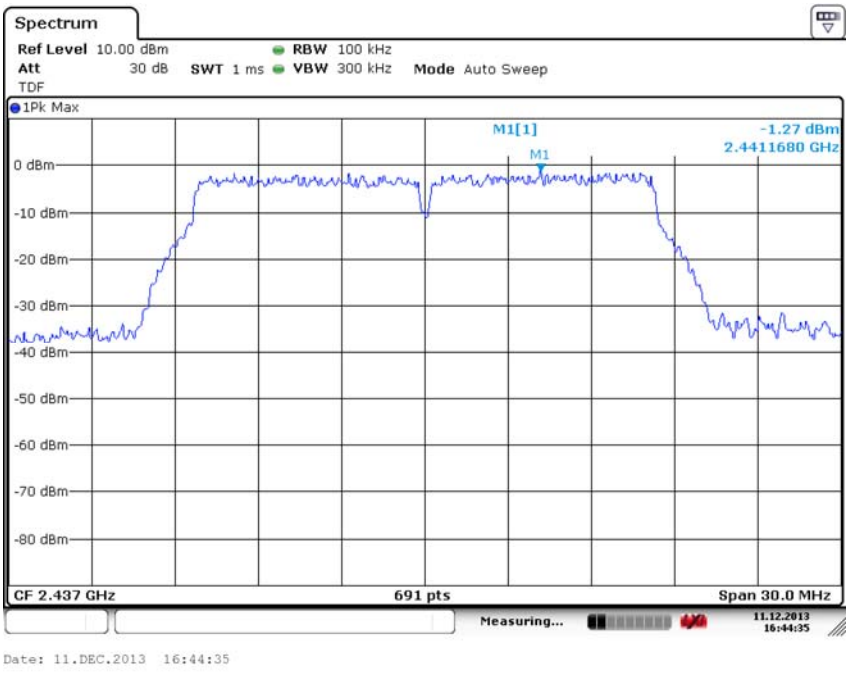

Fig. 45 Conducted Spurious Emission (802.11g, Ch6, Center Frequency)

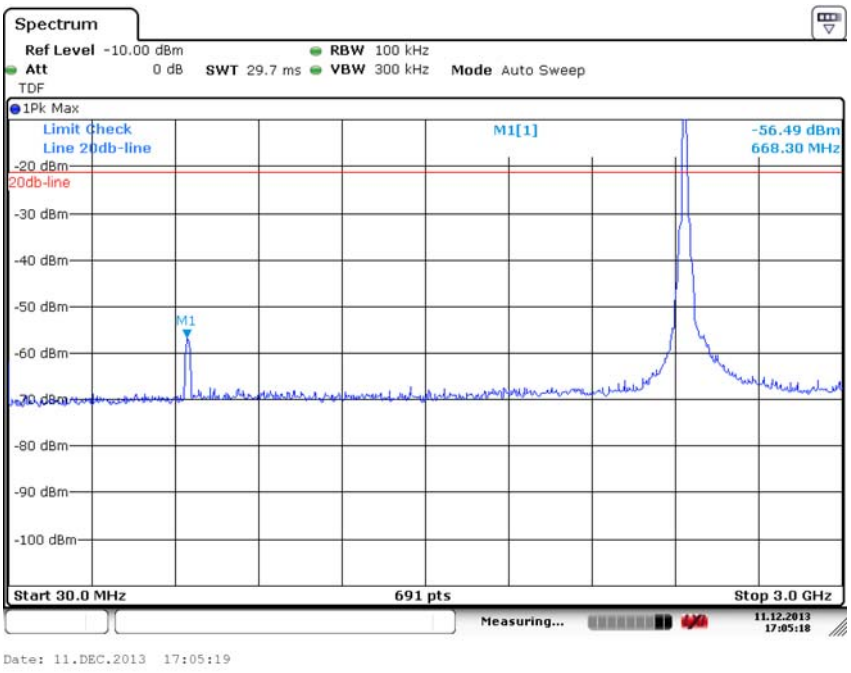

Fig. 46 Conducted Spurious Emission (802.11g, Ch6, 30 MHz-3 GHz)

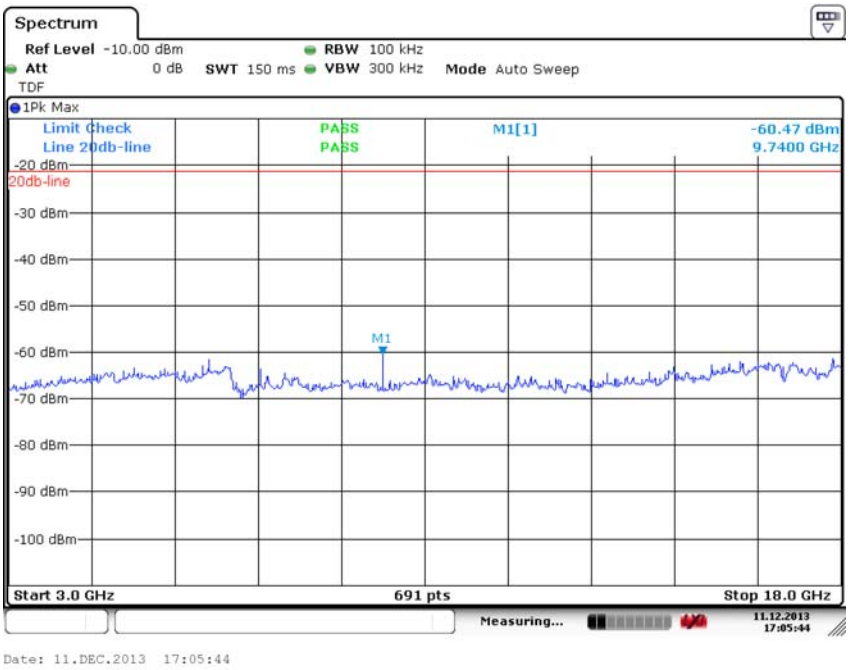

Fig. 47 Conducted Spurious Emission (802.11g, Ch6, 3 GHz-18 GHz)

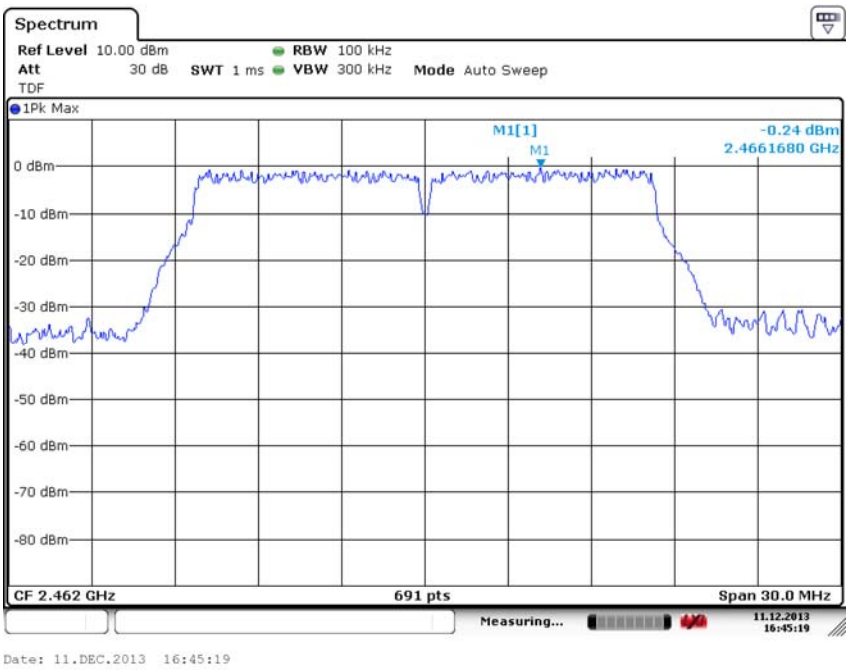

Fig. 48 Conducted Spurious Emission (802.11g, Ch11, Center Frequency)

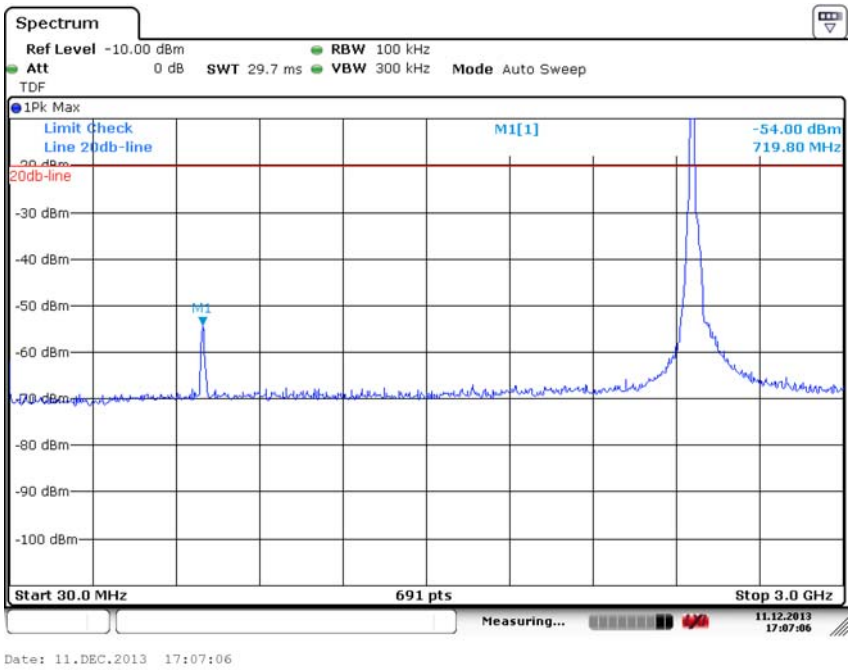

Fig. 49 Conducted Spurious Emission (802.11g, Ch11, 30 MHz-3 GHz)

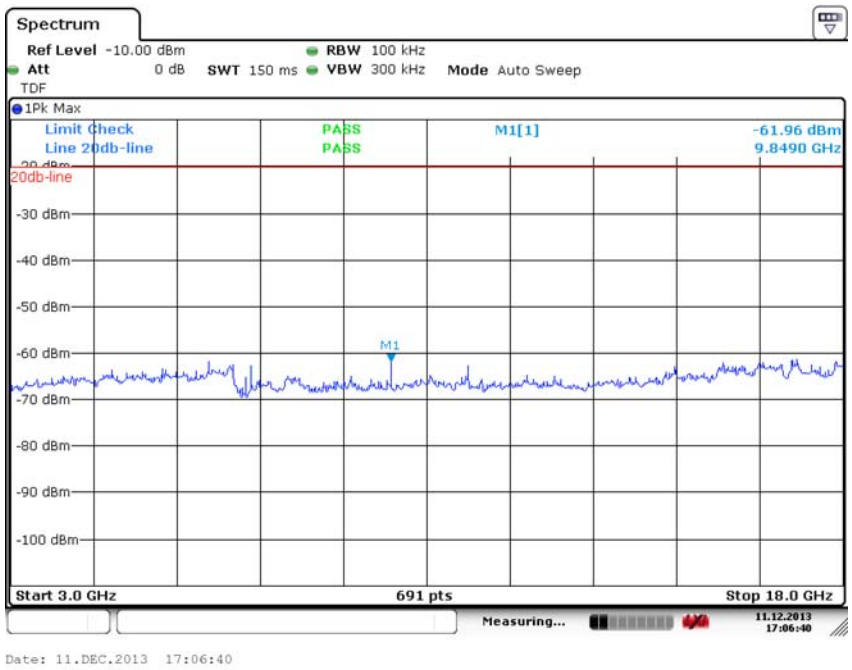

Fig. 50 Conducted Spurious Emission (802.11g, Ch11, 3 GHz-18 GHz)

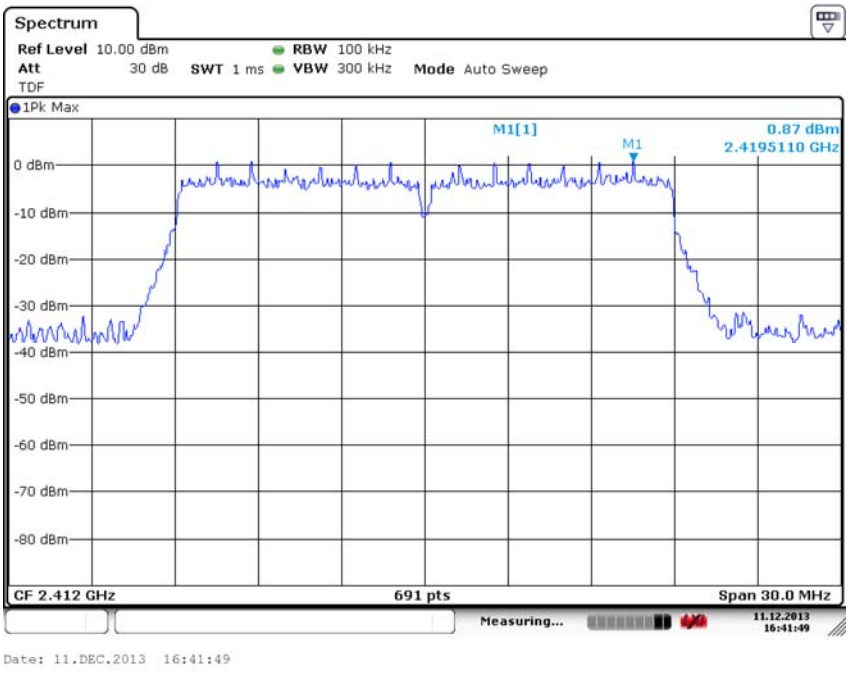

Fig. 51 Conducted Spurious Emission (802.11n-20M, Ch1, Center Frequency)

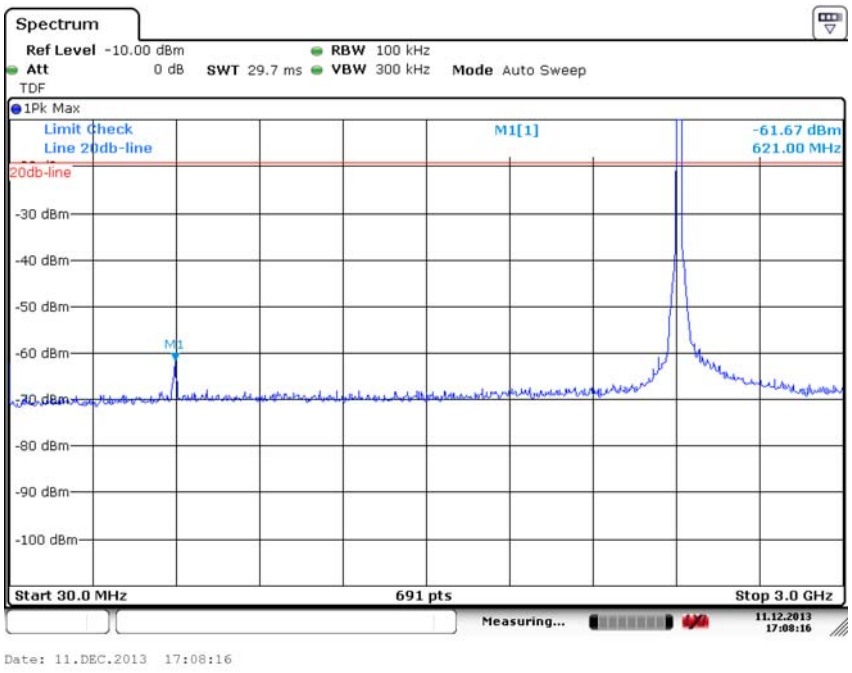

Fig. 52 Conducted Spurious Emission (802.11n-20M, Ch1, 30 MHz-3 GHz)

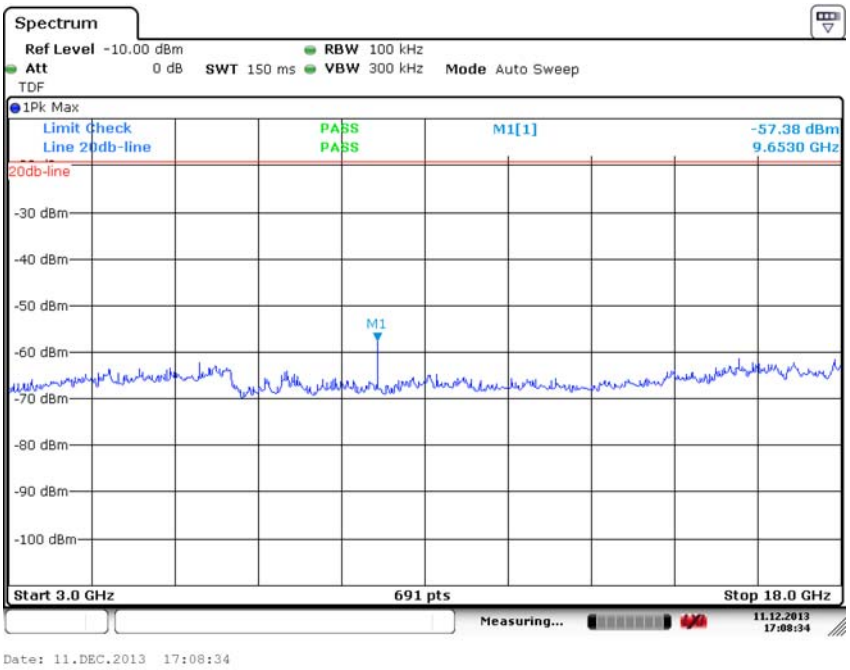

Fig. 53 Conducted Spurious Emission (802.11n-20M, Ch1, 3 GHz-18 GHz)

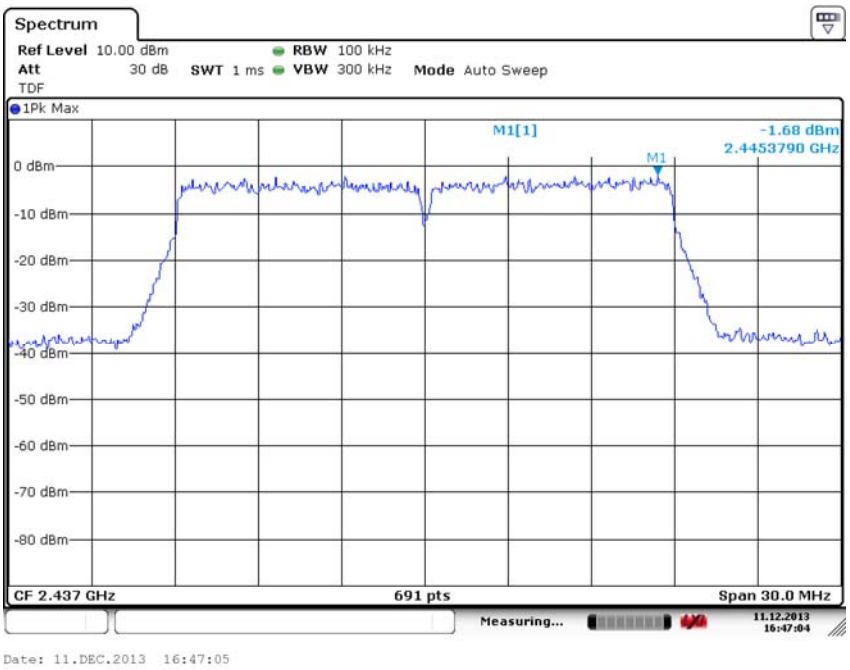

Fig. 54 Conducted Spurious Emission (802.11n-20M, Ch6, Center Frequency)

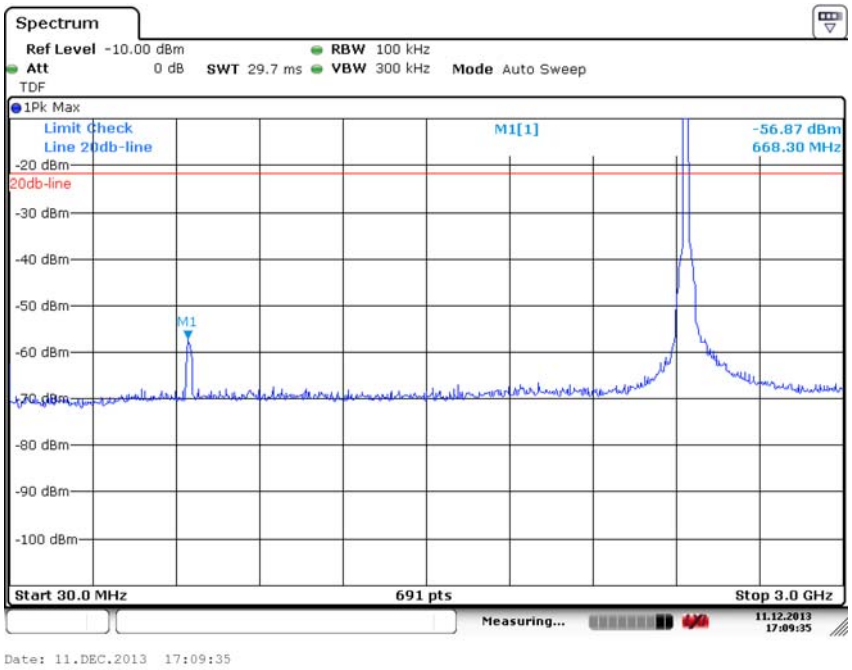

Fig. 55 Conducted Spurious Emission (802.11n-20M, Ch6, 30 MHz-3 GHz)

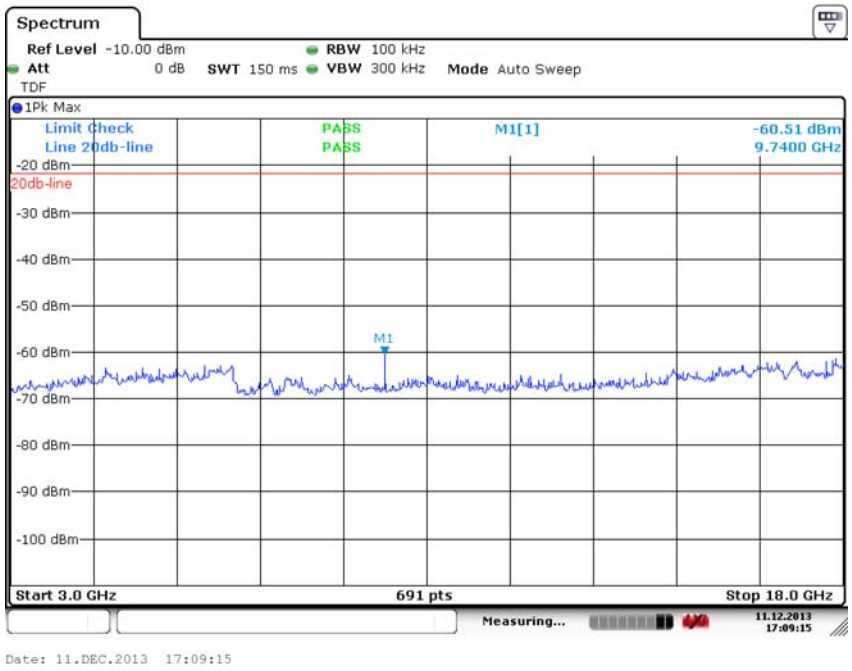

Fig. 56 Conducted Spurious Emission (802.11n-20M, Ch6, 3 GHz-18 GHz)

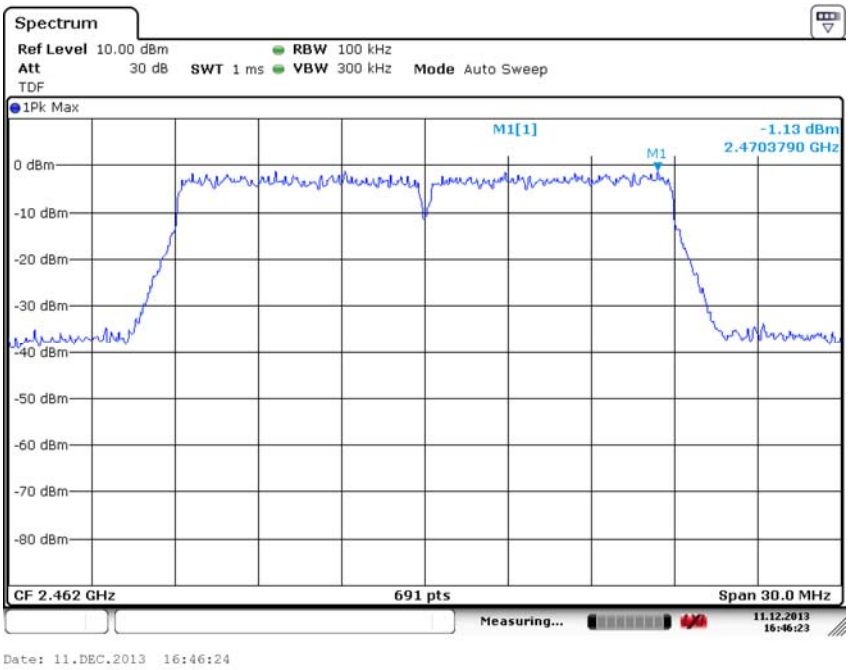

Fig. 57 Conducted Spurious Emission (802.11n-20M, Ch11, Center Frequency)

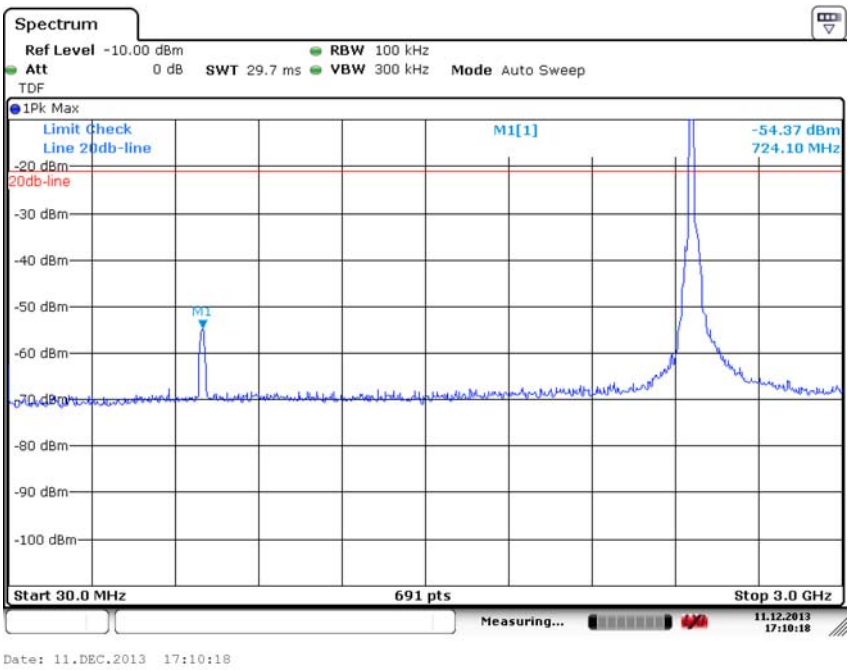

Fig. 58 Conducted Spurious Emission (802.11n-20M, Ch11, 30 MHz-3 GHz)

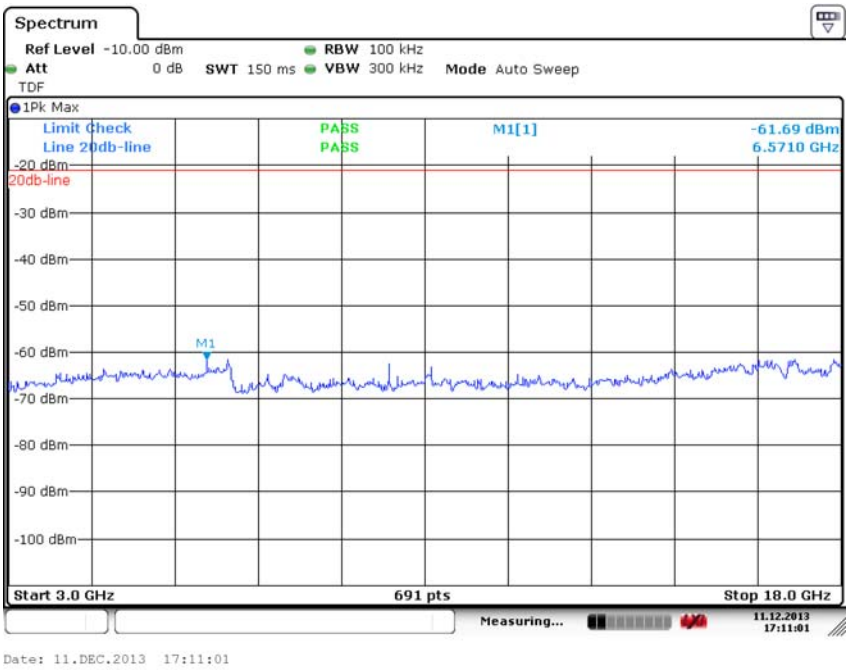

Fig. 59 Conducted Spurious Emission (802.11n-20M, Ch11, 3 GHz-18 GHz)

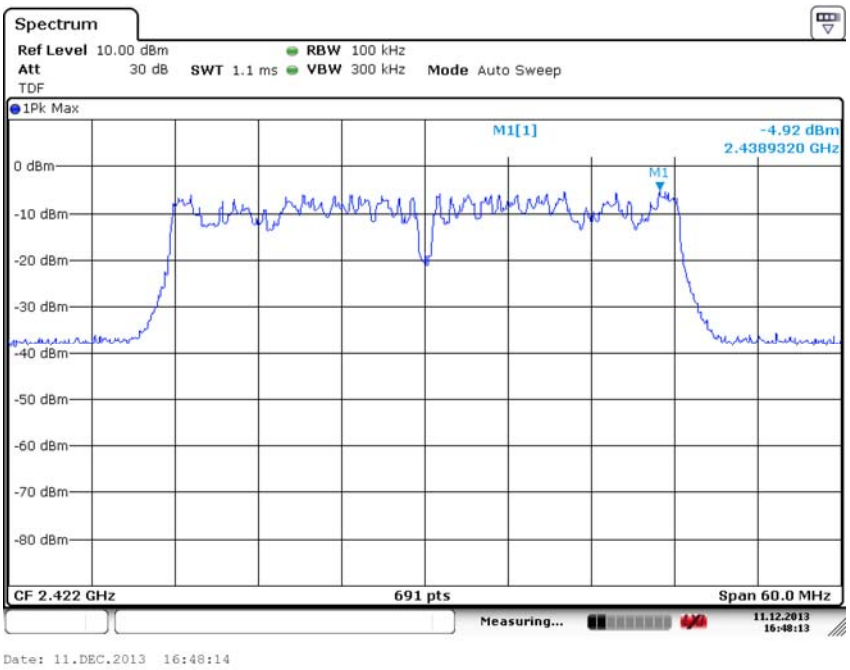

Fig. 60 Conducted Spurious Emission (802.11n-40M, Ch3, Center Frequency)

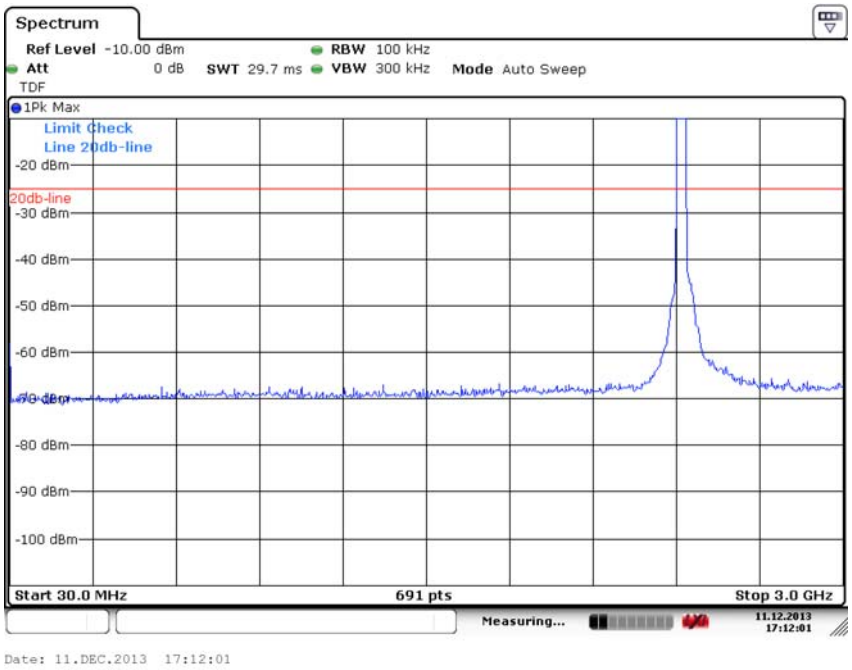

Fig. 61 Conducted Spurious Emission (802.11n-40M, Ch3, 30 MHz-3 GHz)

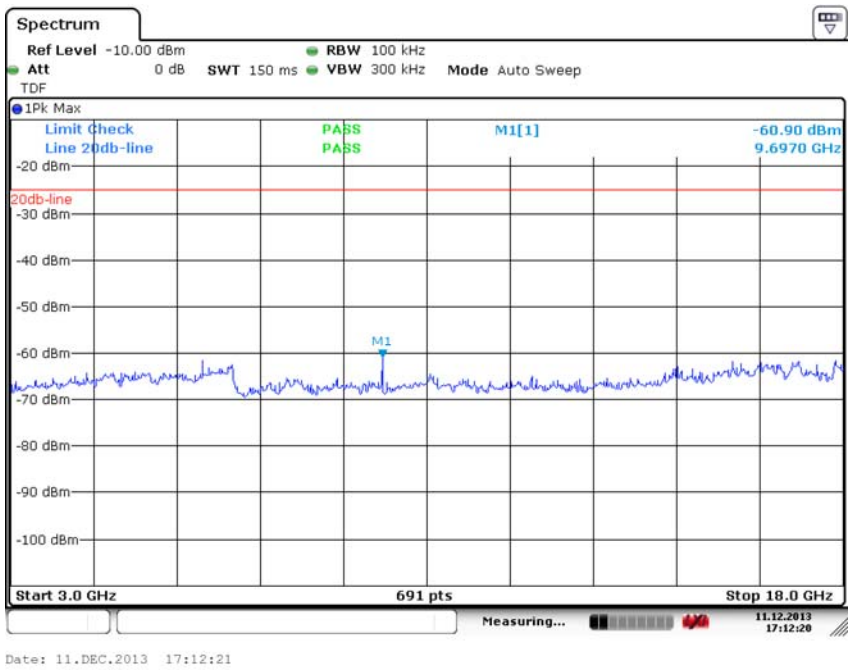

Fig. 62 Conducted Spurious Emission (802.11n-40M, Ch3, 3 GHz-18 GHz)

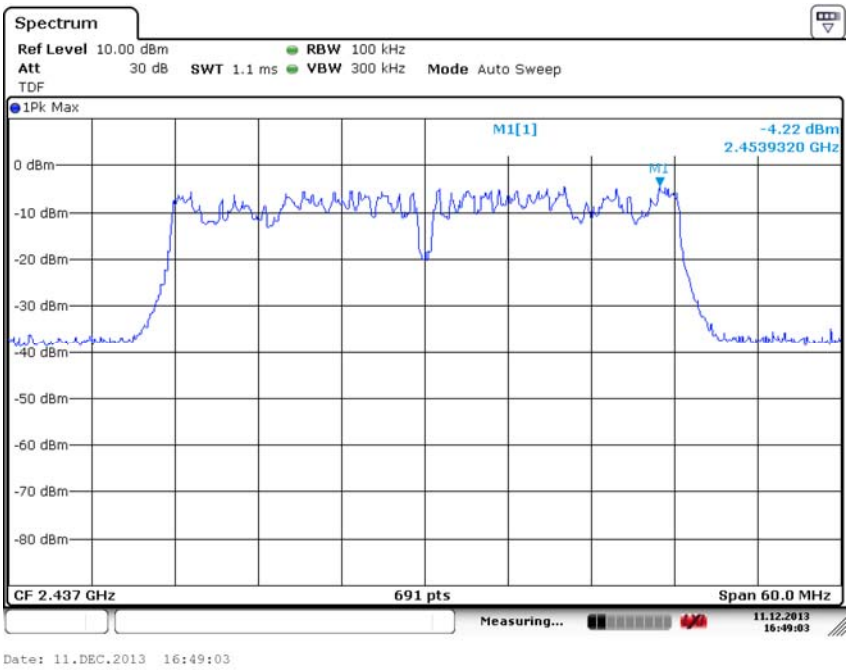

Fig. 63 Conducted Spurious Emission (802.11n-40M, Ch6, Center Frequency)

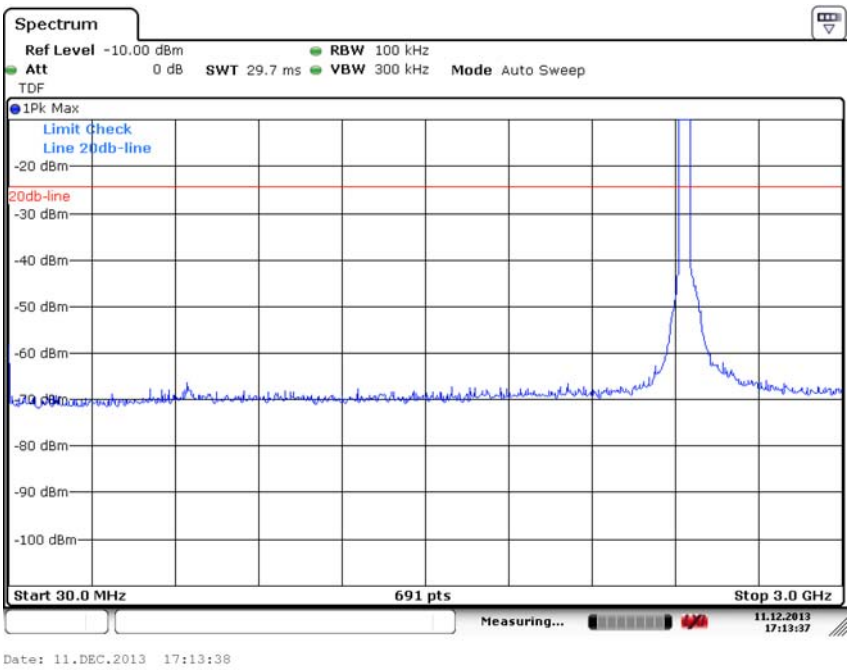

Fig. 64 Conducted Spurious Emission (802.11n-40M, Ch6, 30 MHz-3 GHz)

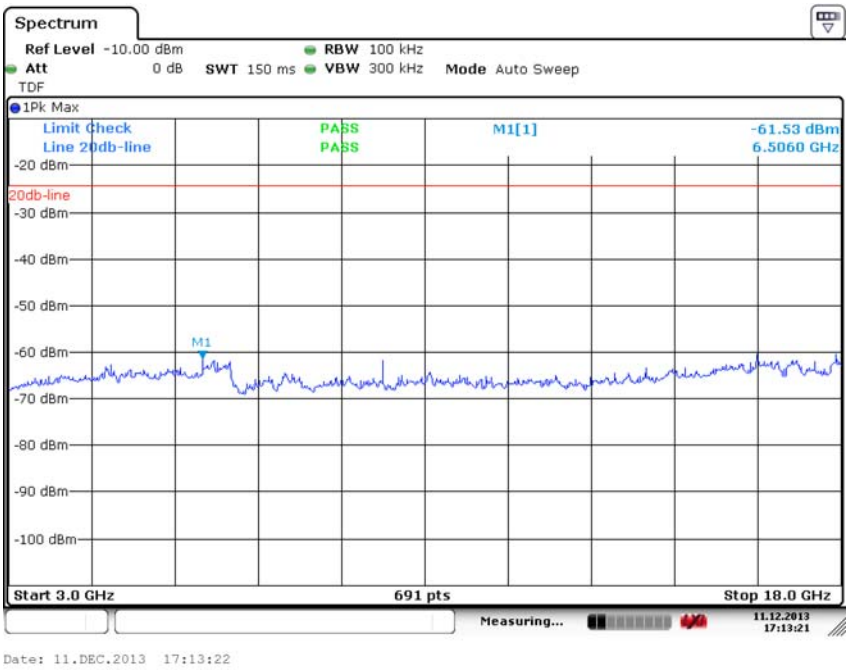

Fig. 65 Conducted Spurious Emission (802.11n-40M, Ch6, 3 GHz-18 GHz)

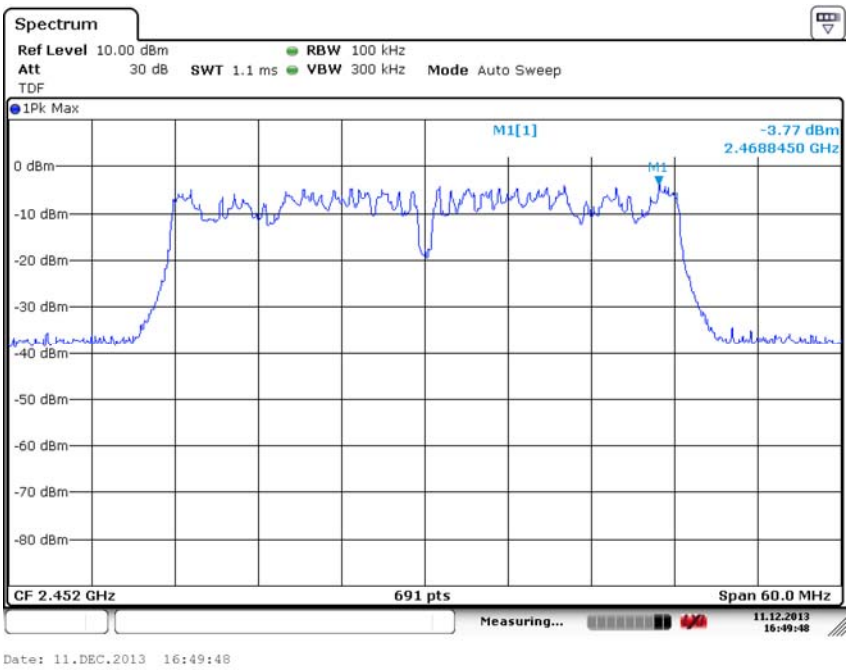

Fig. 66 Conducted Spurious Emission (802.11n-40M, Ch9, Center Frequency)

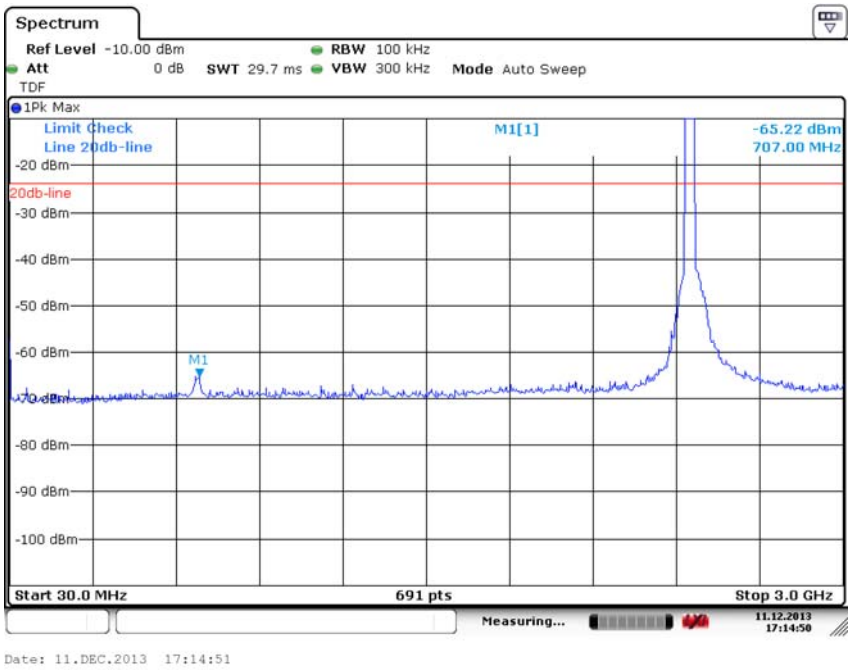

Fig. 67 Conducted Spurious Emission (802.11n-40M, Ch9, 30 MHz-3 GHz)

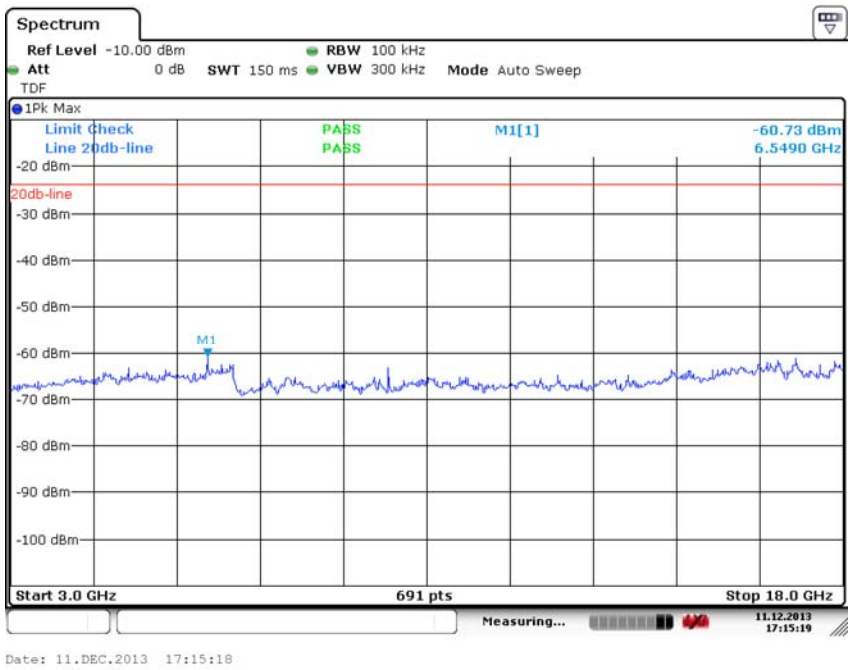

Fig. 68 Conducted Spurious Emission (802.11n-40M, Ch9, 3 GHz-18 GHz)

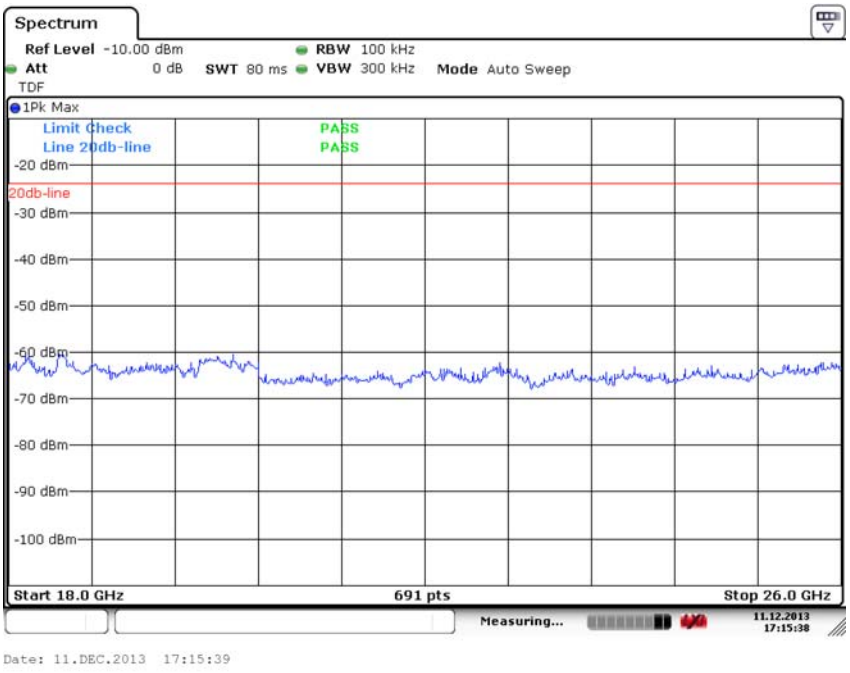

Fig. 69 Conducted Spurious Emission (All channels, 18 GHz-26 GHz)

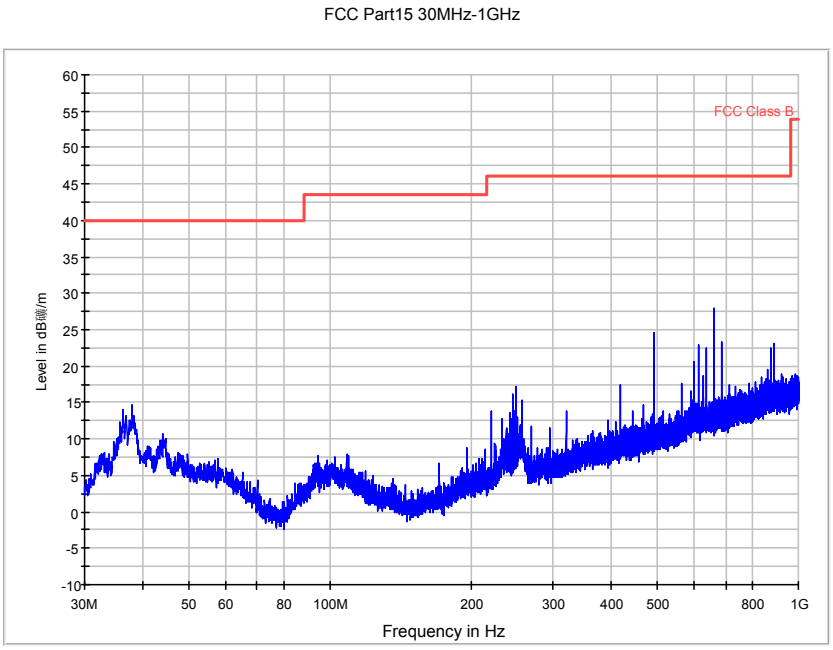

Fig. 70 Radiated Spurious Emission (802.11b, Ch1, 30MHz-1 GHz)

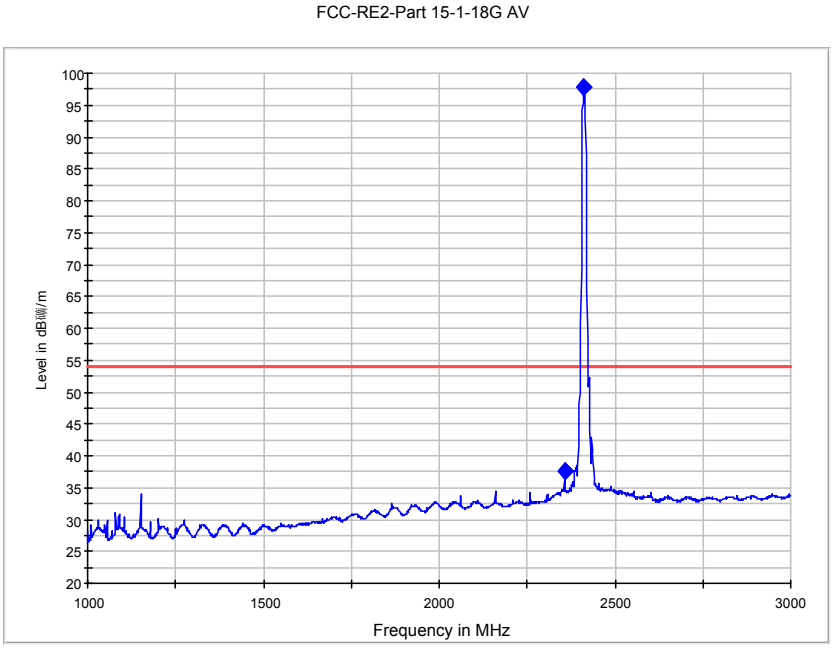

Fig. 71 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-3 GHz)

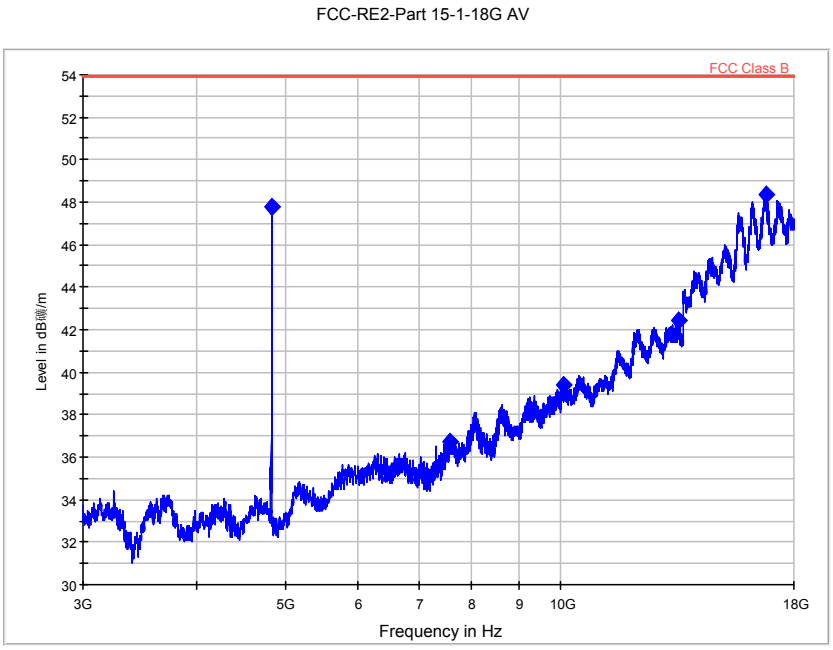

Fig. 72 Radiated Spurious Emission (802.11b, Ch1, 3 GHz-18 GHz)

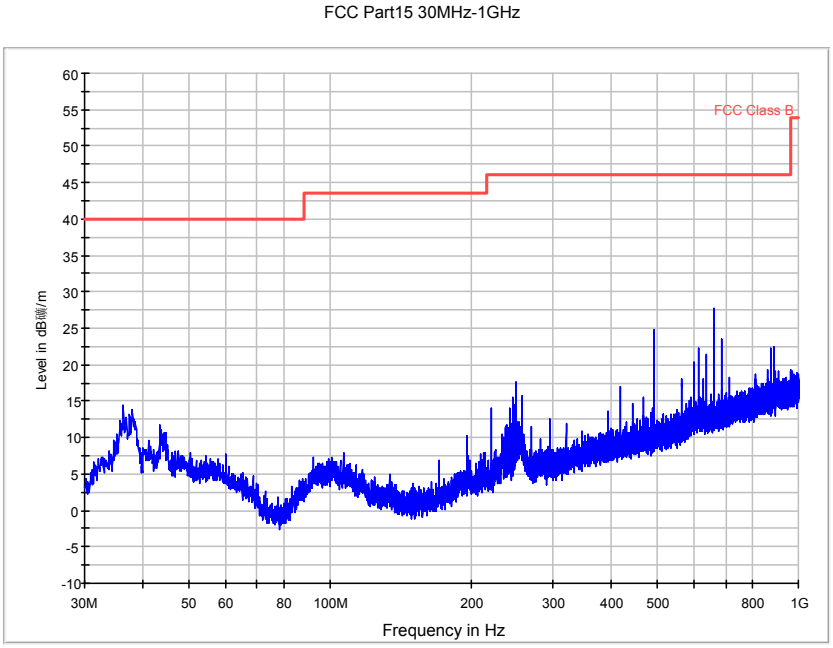

Fig. 73 Radiated Spurious Emission (802.11b, Ch6, 30MHz-1 GHz)

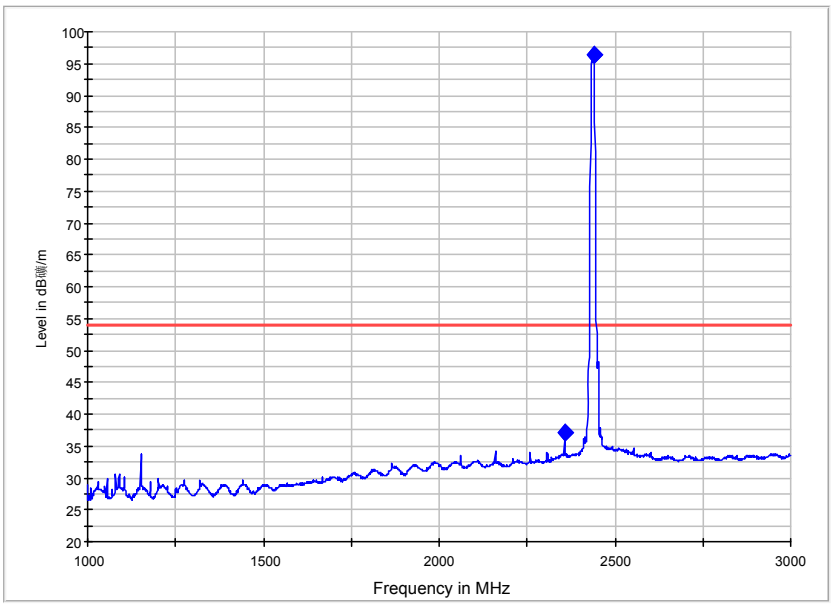

Fig. 74 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-3 GHz)

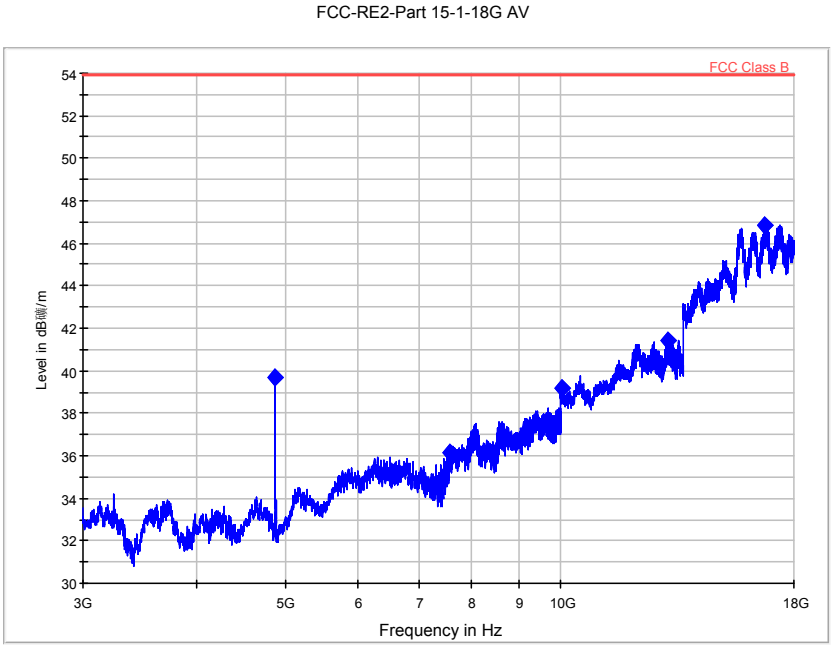

Fig. 75 Radiated Spurious Emission (802.11b, Ch6, 3 GHz-18 GHz)

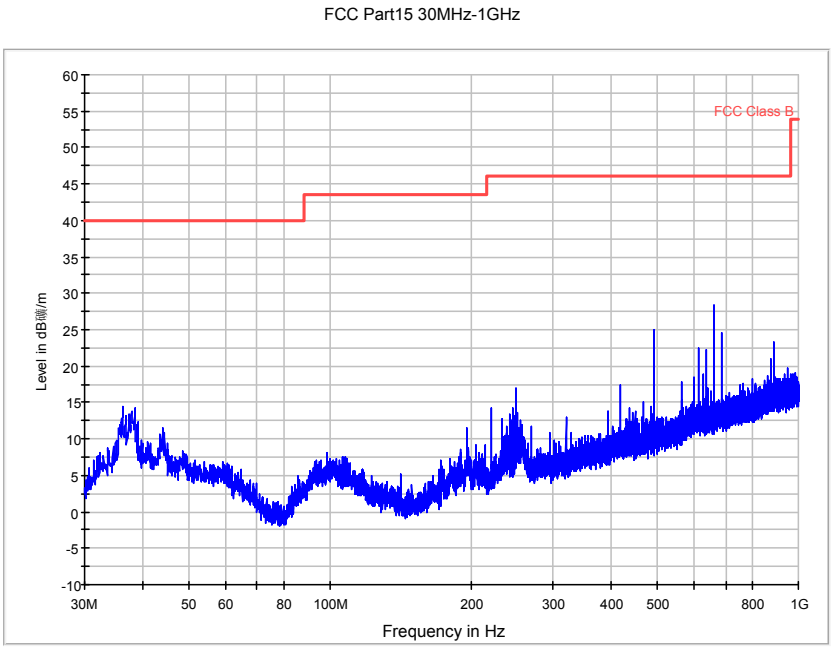

Fig. 76 Radiated Spurious Emission (802.11b, Ch11, 30MHz-1 GHz)

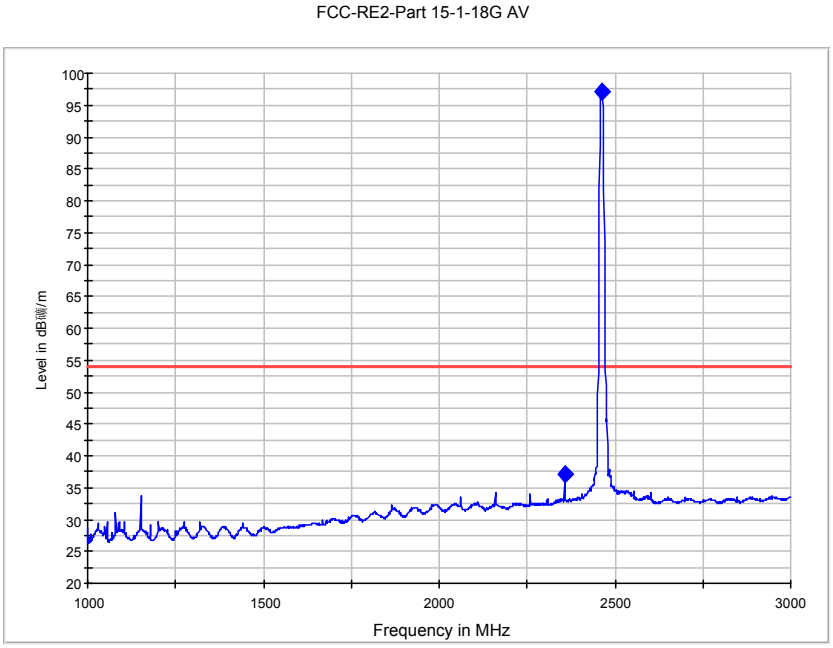

Fig. 77 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-3 GHz)

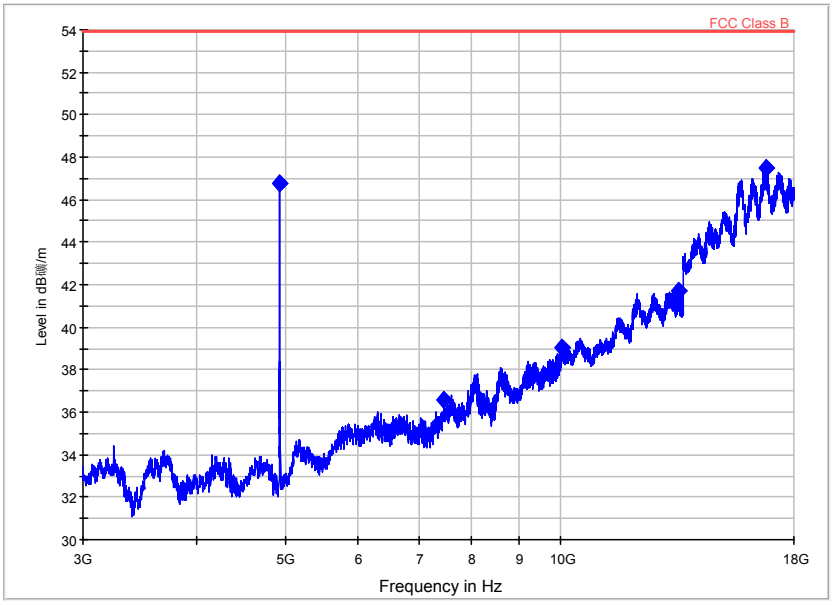

Fig. 78 Radiated Spurious Emission (802.11b, Ch11, 3 GHz-18 GHz)

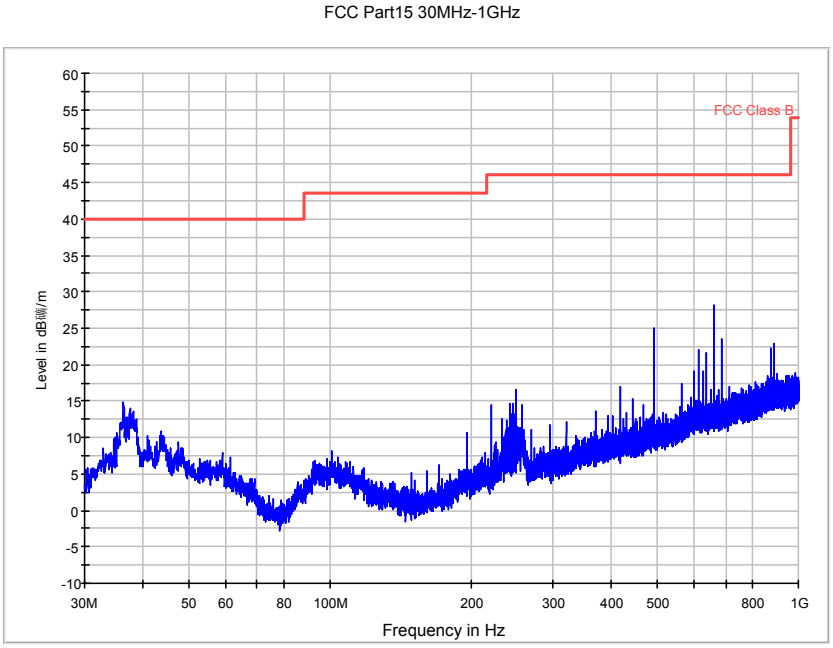

Fig. 79 Radiated Spurious Emission (802.11g, Ch1,30MHz-1 GHz)

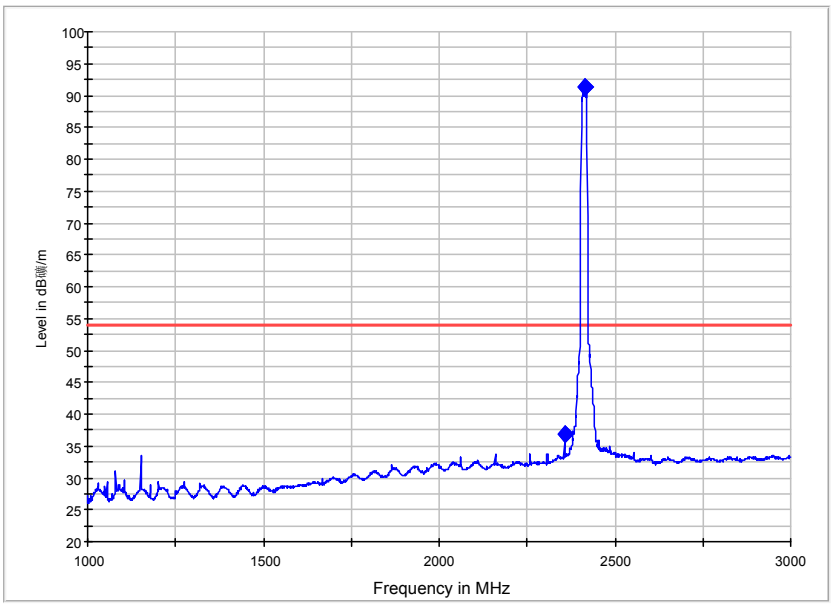

Fig. 80 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-3 GHz)

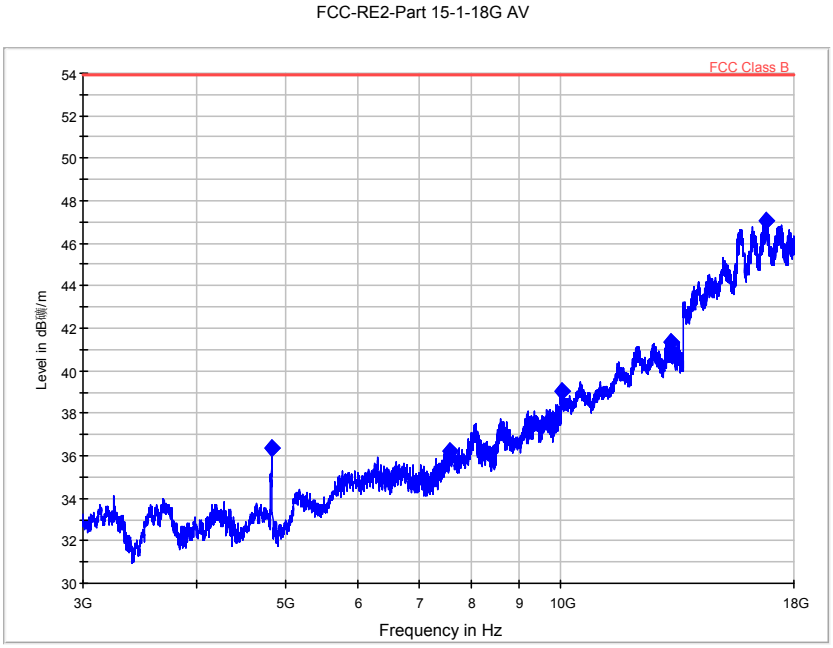

Fig. 81 Radiated Spurious Emission (802.11g, Ch1, 3 GHz-18 GHz)

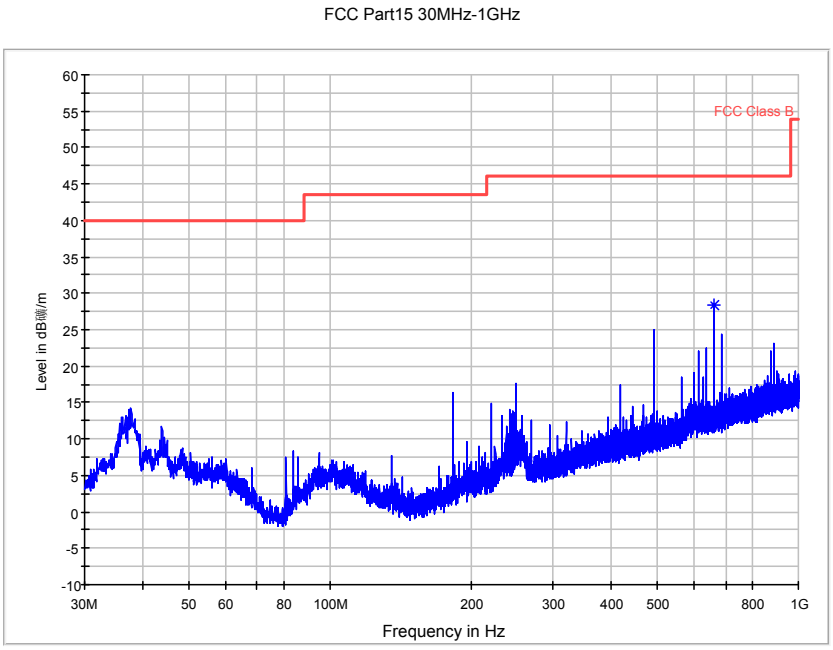

Fig. 82 Radiated Spurious Emission (802.11g, Ch6, 30MHz-1 GHz)

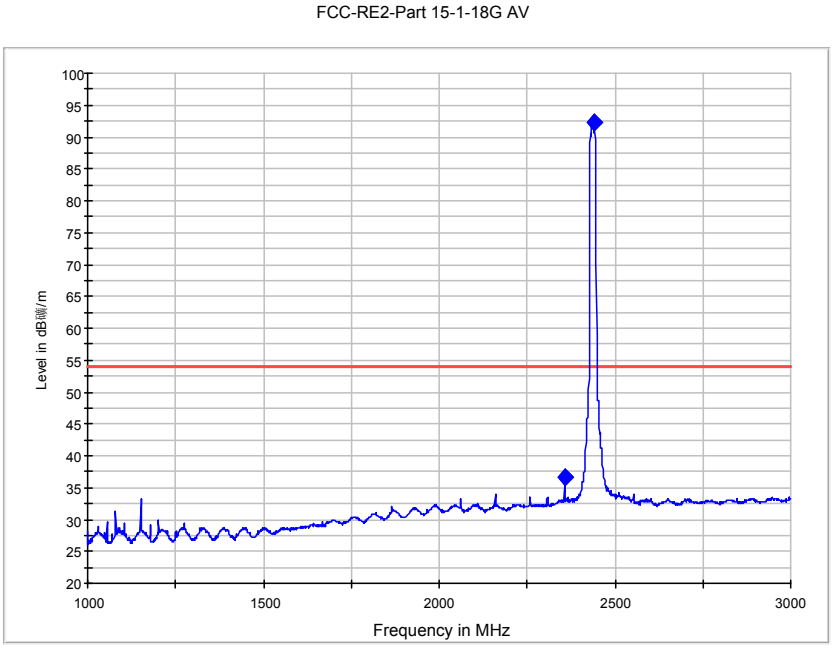

Fig. 83 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-3 GHz)

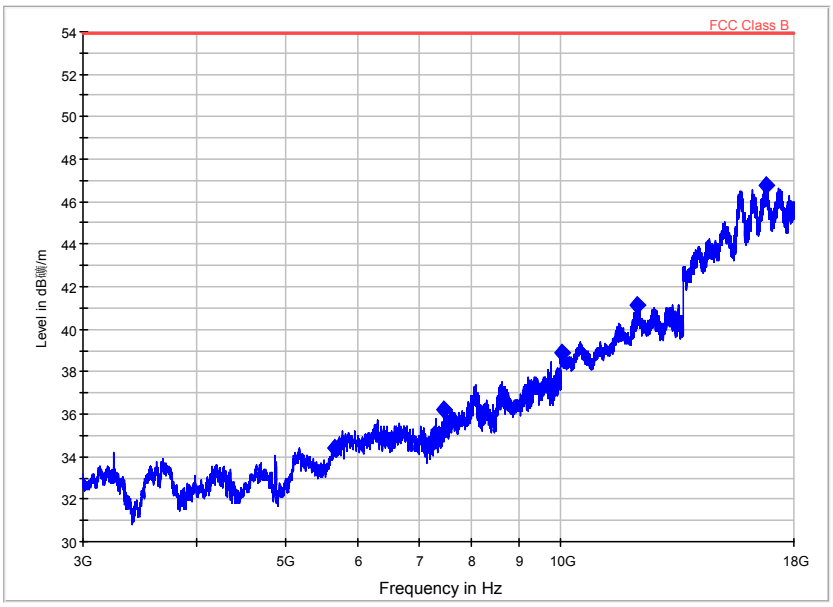

Fig. 84 Radiated Spurious Emission (802.11g, Ch6, 3 GHz-18 GHz)

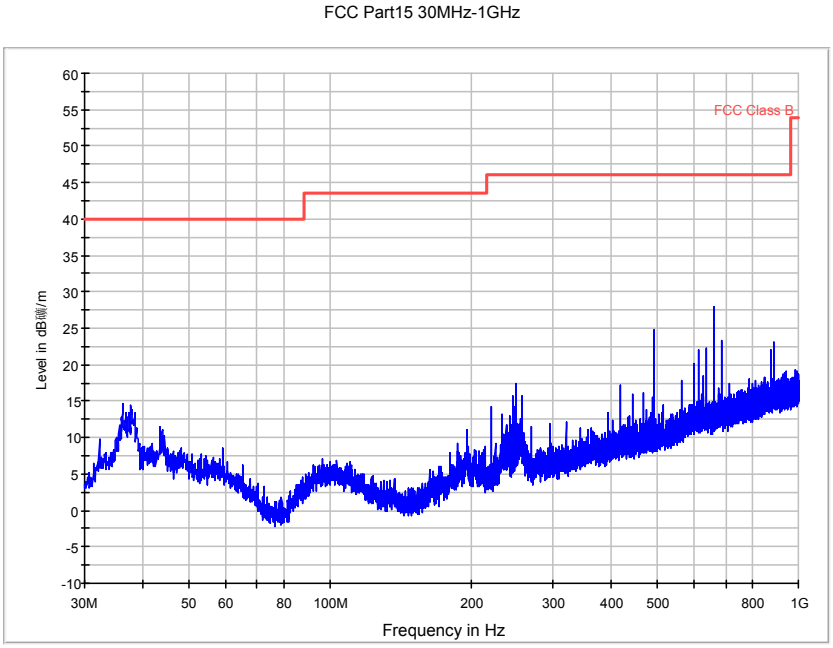

Fig. 85 Radiated Spurious Emission (802.11g, Ch11, 30MHz-1 GHz)

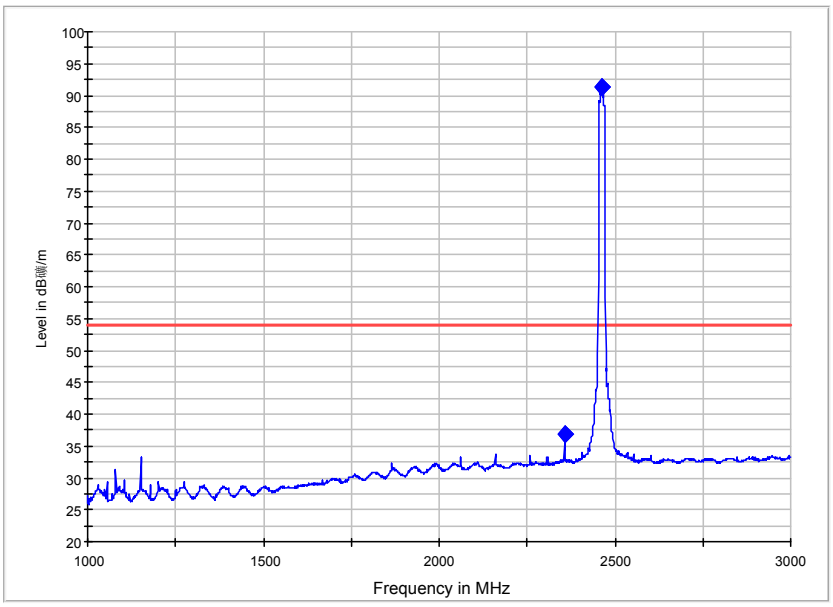

Fig. 86 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-3 GHz)

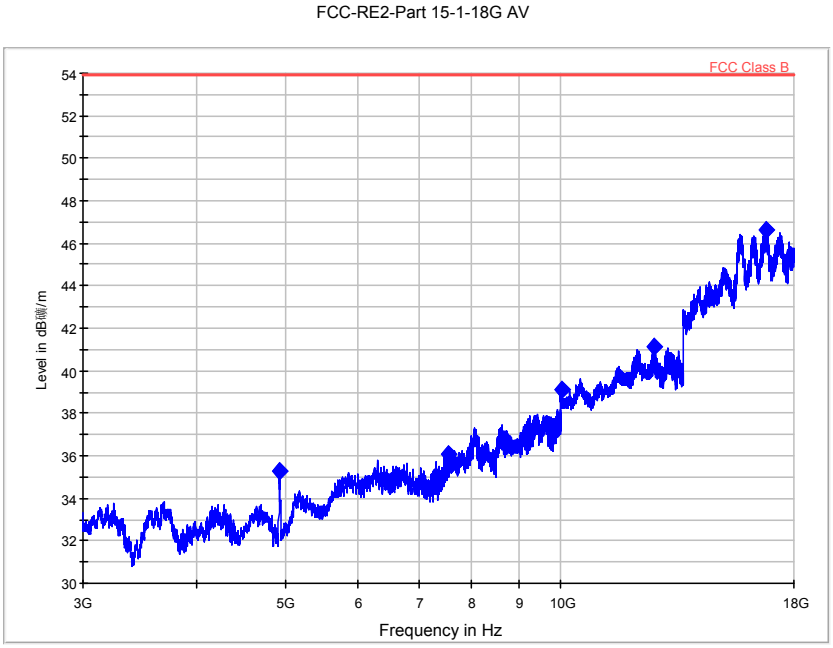

Fig. 87 Radiated Spurious Emission (802.11g, Ch11, 3 GHz-18 GHz)

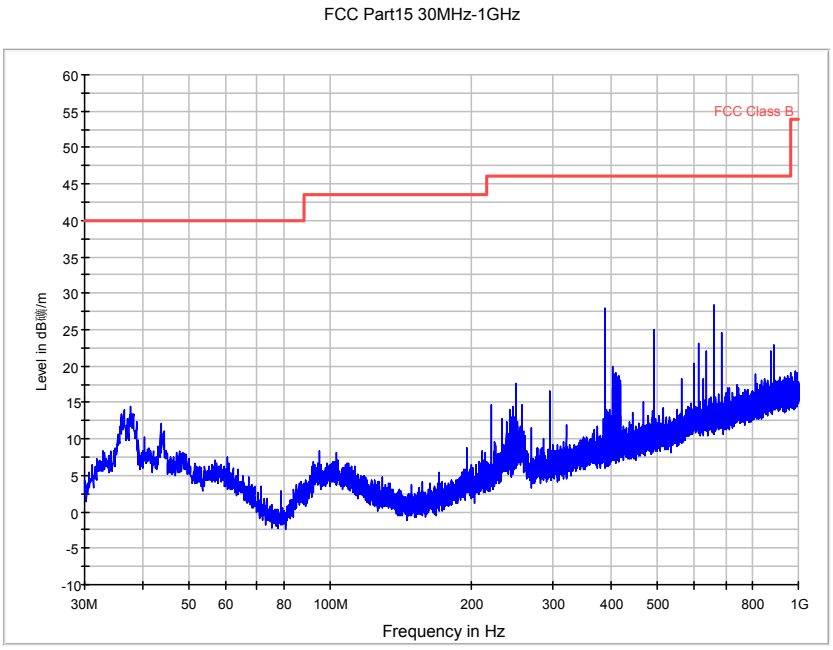

Fig. 88 Radiated Spurious Emission (802.11n-20M, Ch1, 30MHz-1 GHz)

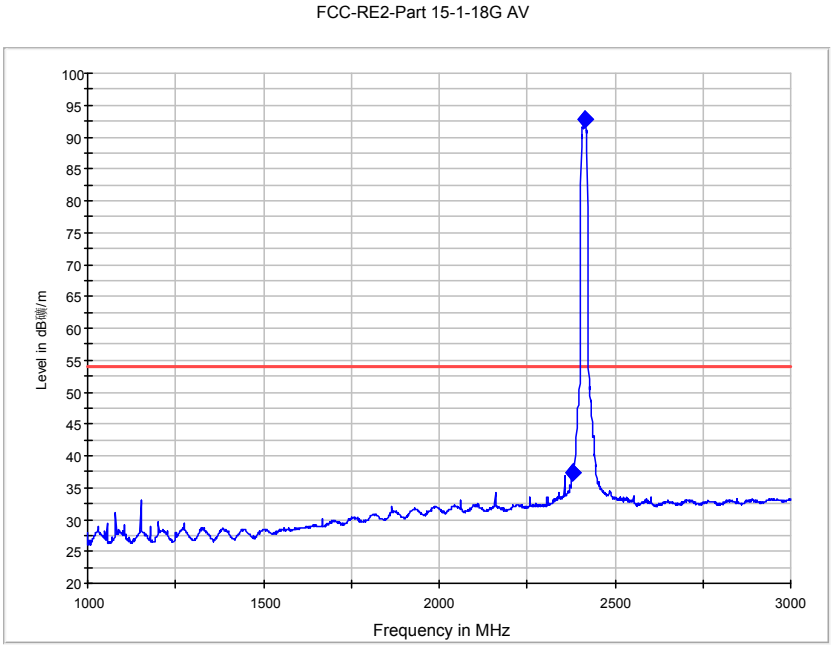

Fig. 89 Radiated Spurious Emission (802.11n-20M, Ch1, 1 GHz-3 GHz)

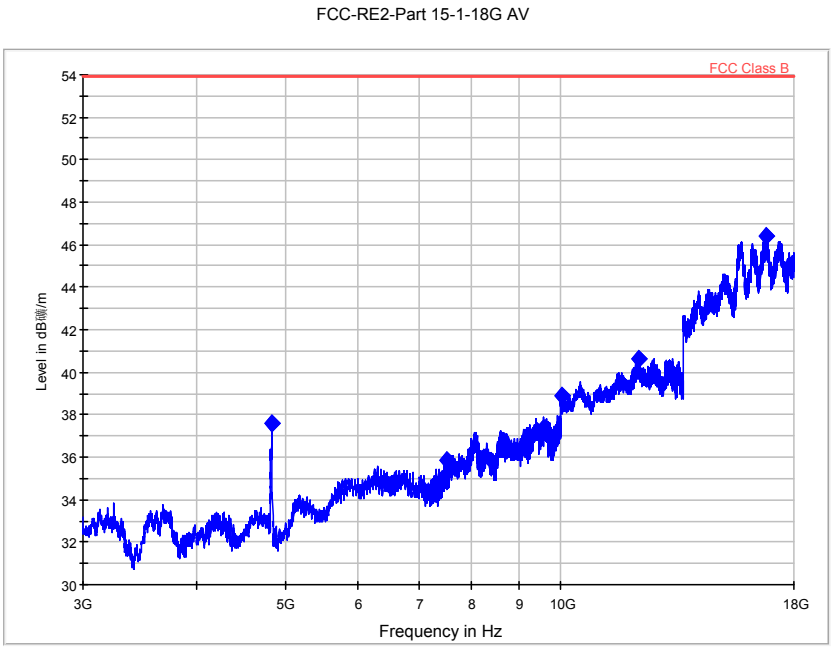

Fig. 90 Radiated Spurious Emission (802.11n-20M, Ch1, 3 GHz-18 GHz)

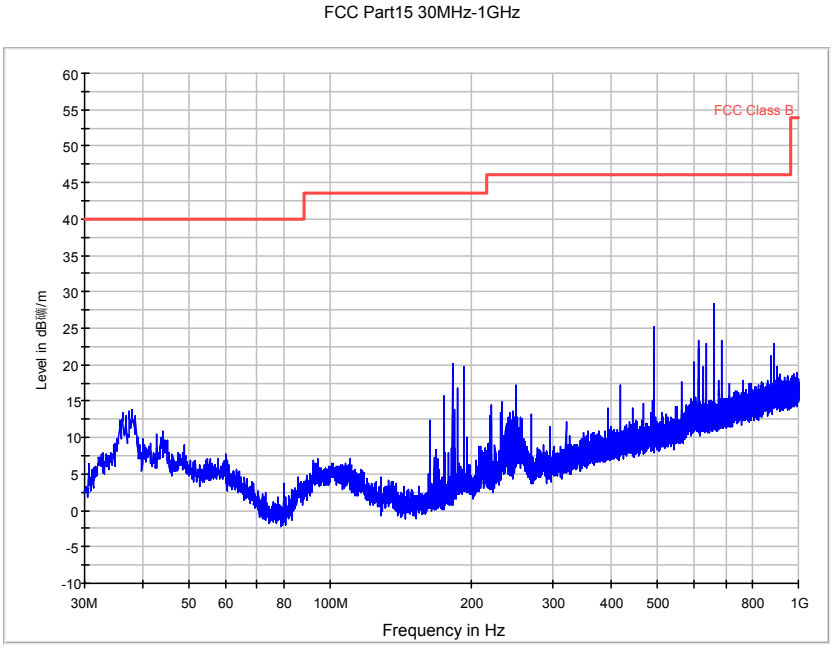

Fig. 91 Radiated Spurious Emission (802.11n-20M, Ch6, 30MHz-1 GHz)

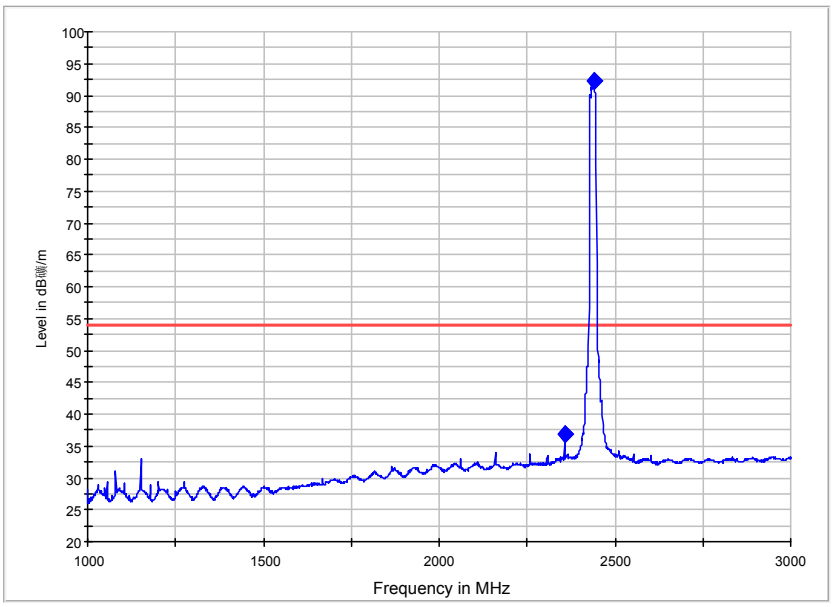

Fig. 92 Radiated Spurious Emission (802.11n-20M, Ch6, 1 GHz-3 GHz)

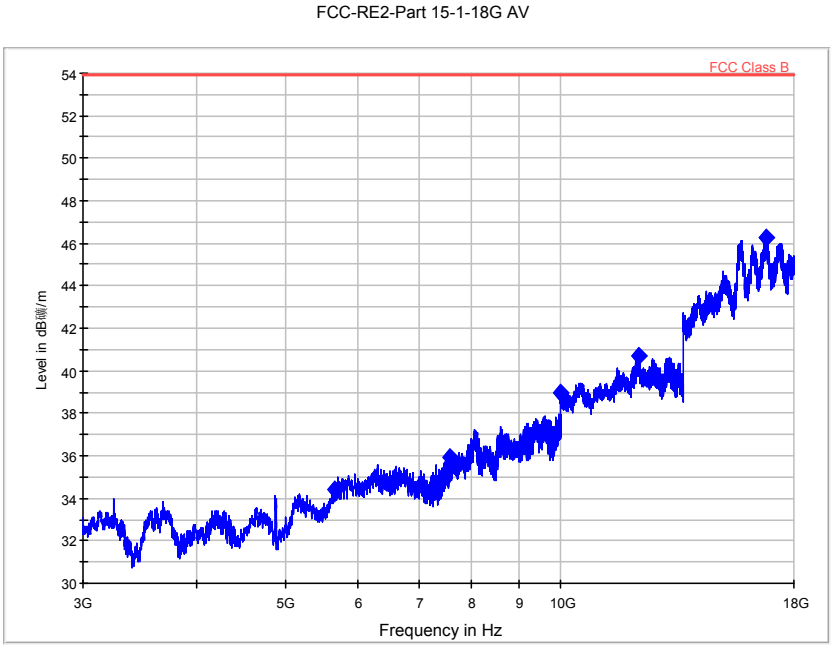

Fig. 93 Radiated Spurious Emission (802.11n-20M, Ch6, 3 GHz-18 GHz)

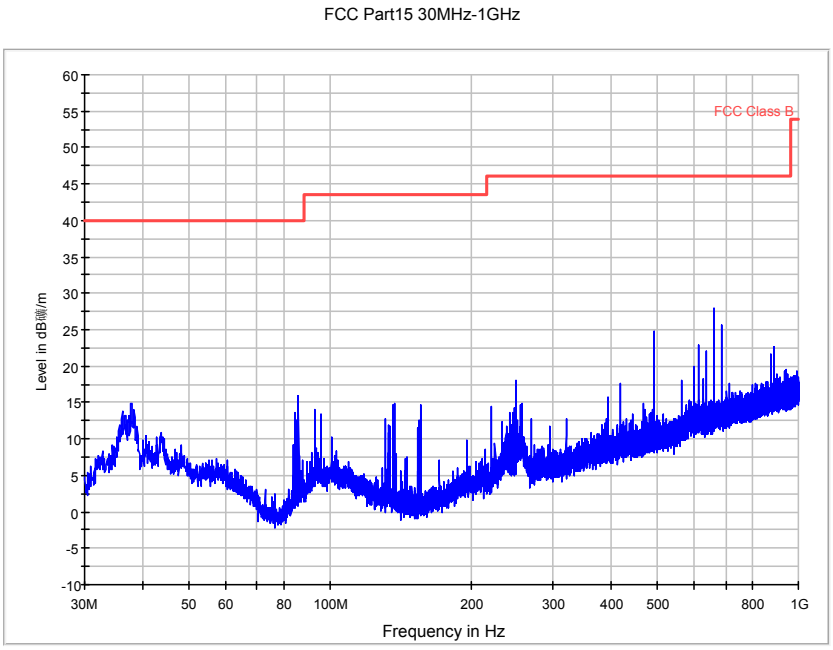

Fig. 94 Radiated Spurious Emission (802.11n-20M, Ch11, 30MHz-1 GHz)

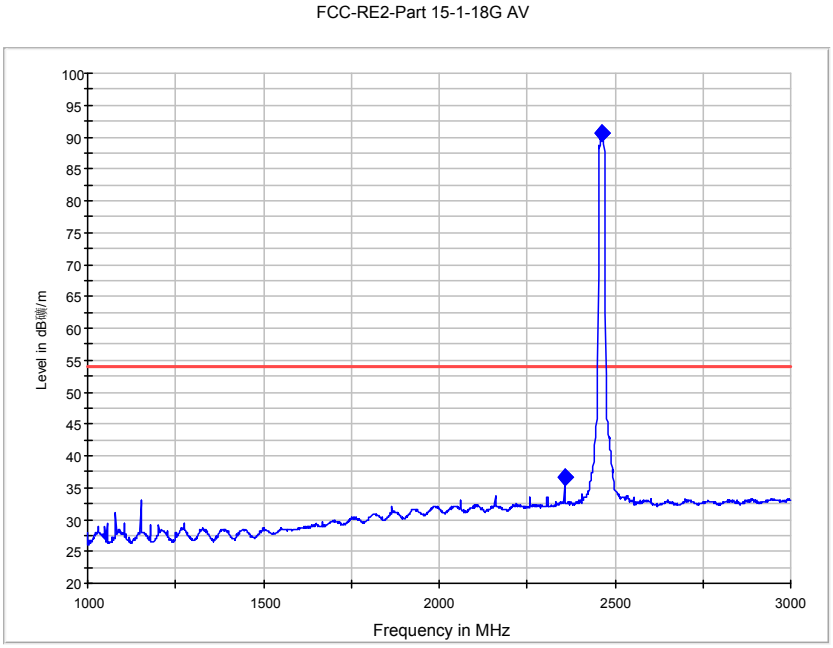

Fig. 95 Radiated Spurious Emission (802.11n-20M, Ch11, 1 GHz-3 GHz)

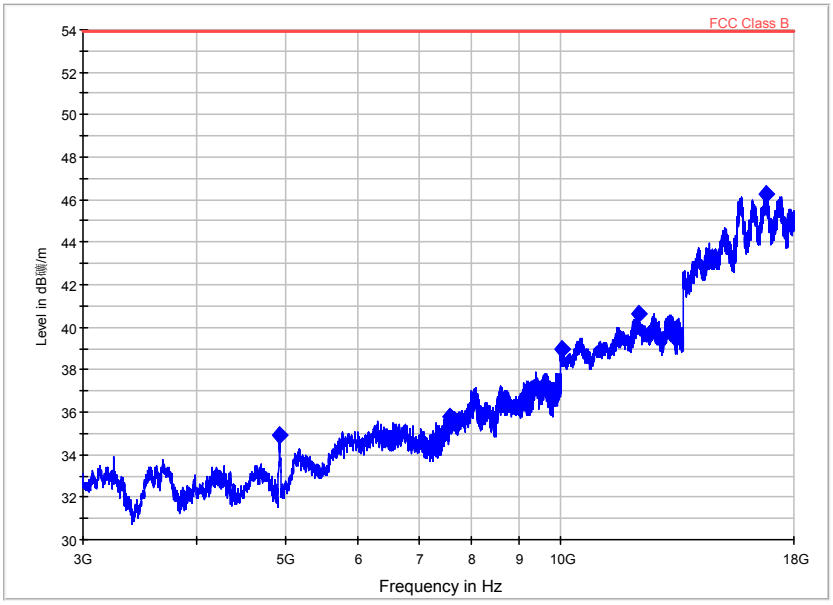

Fig. 96 Radiated Spurious Emission (802.11n-20M, Ch11, 3 GHz-18 GHz)

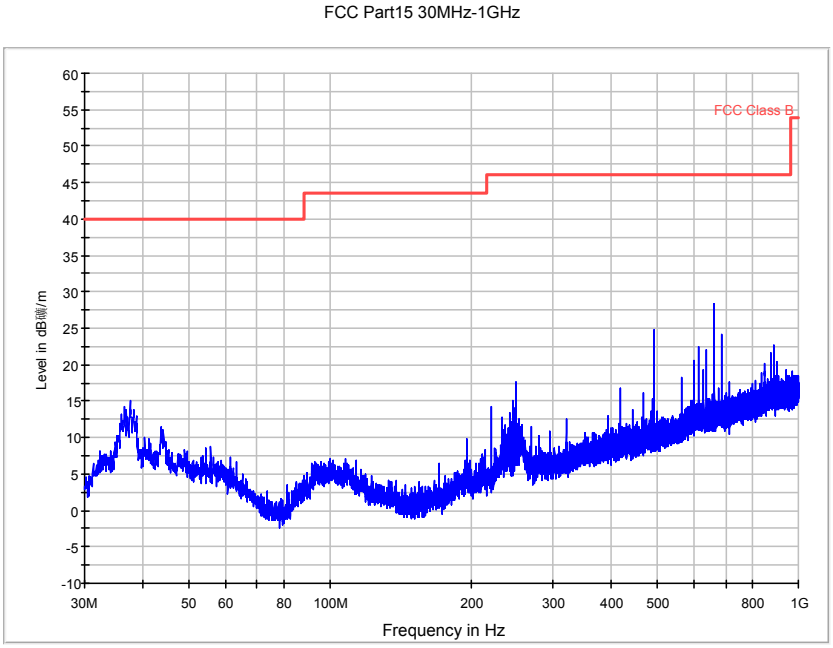

Fig. 97 Radiated Spurious Emission (802.11n-40M, Ch3, 30MHz-1 GHz)

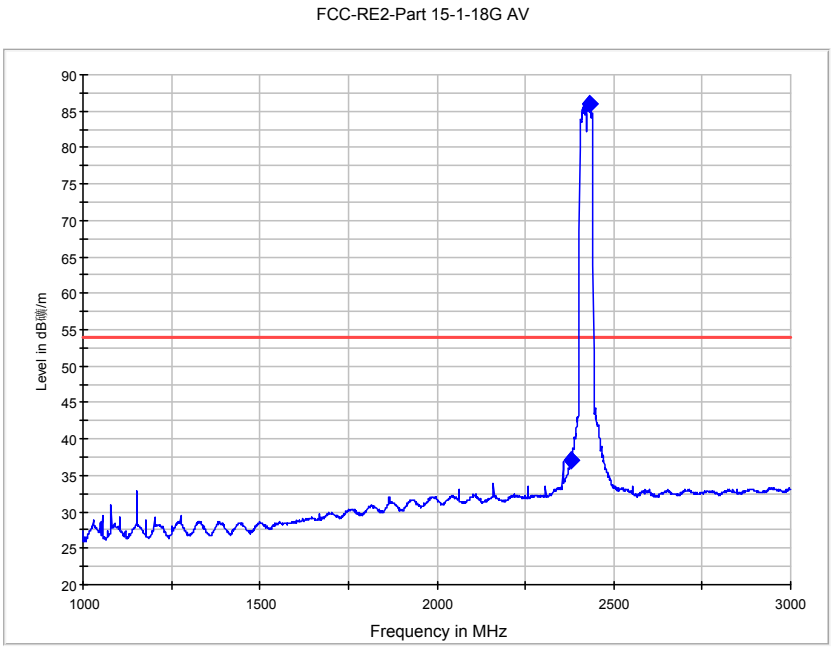

Fig. 98 Radiated Spurious Emission (802.11n-40M, Ch3, 1 GHz-3 GHz)

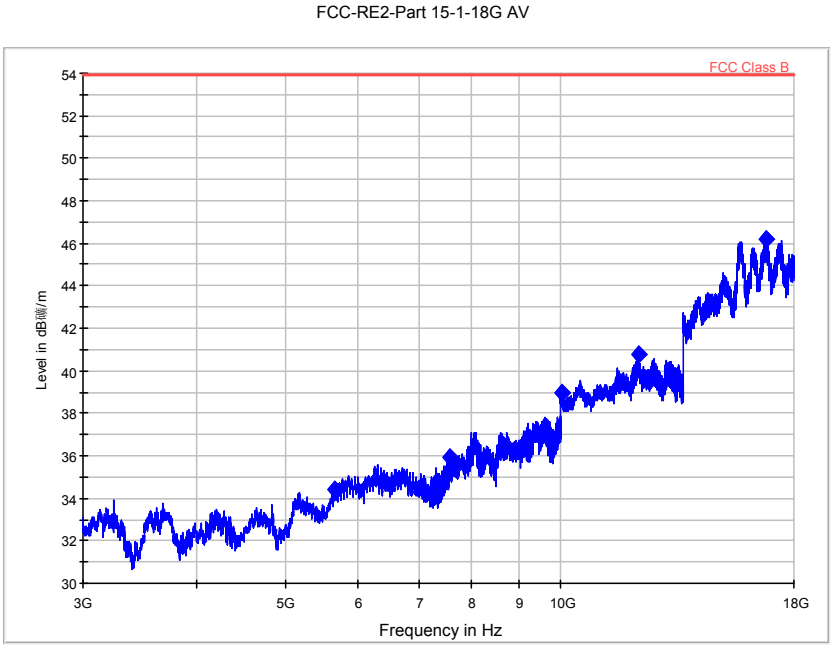

Fig. 99 Radiated Spurious Emission (802.11n-40M, Ch3, 3 GHz-18 GHz)

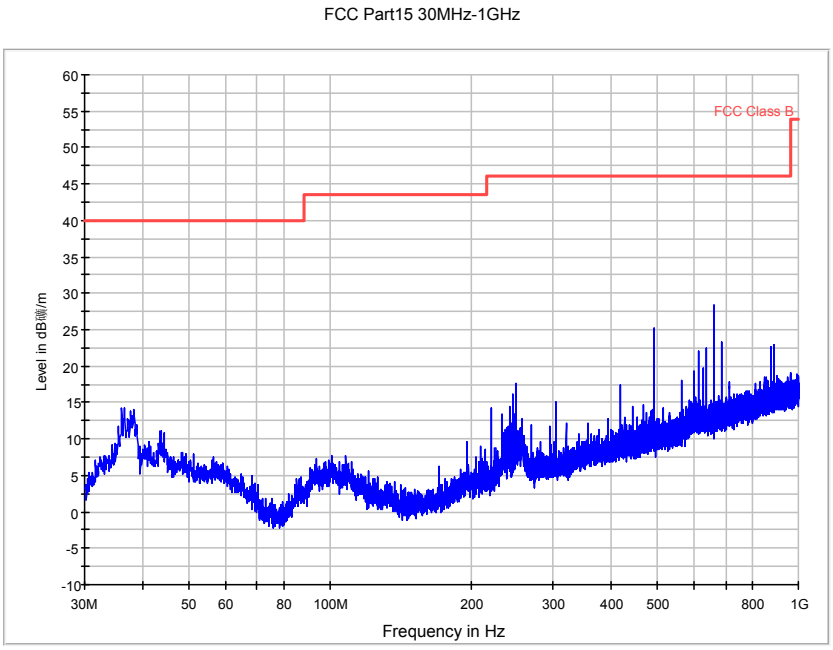

Fig. 100 Radiated Spurious Emission (802.11n-40M, Ch6, 30MHz-1 GHz)

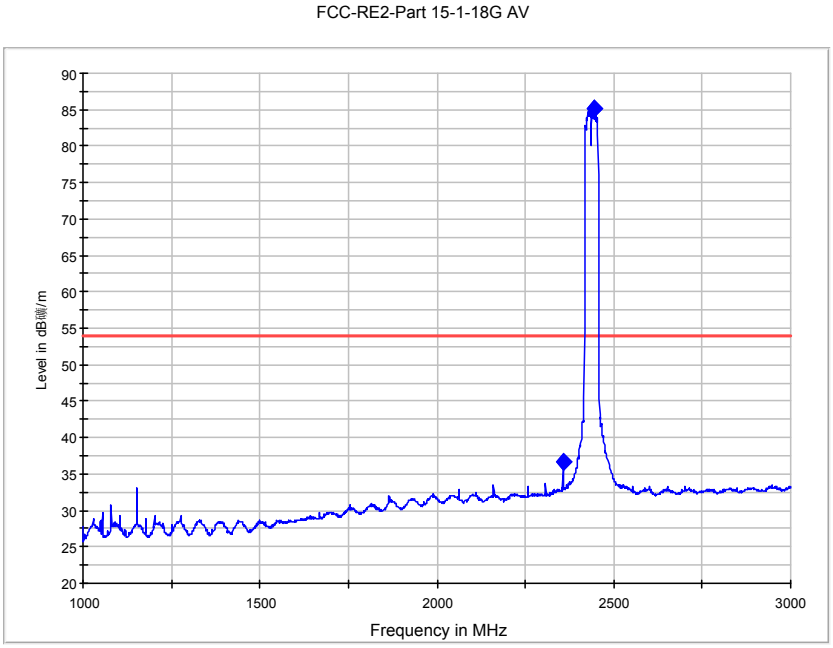

Fig. 101 Radiated Spurious Emission (802.11n-40M, Ch6, 1 GHz-3 GHz)

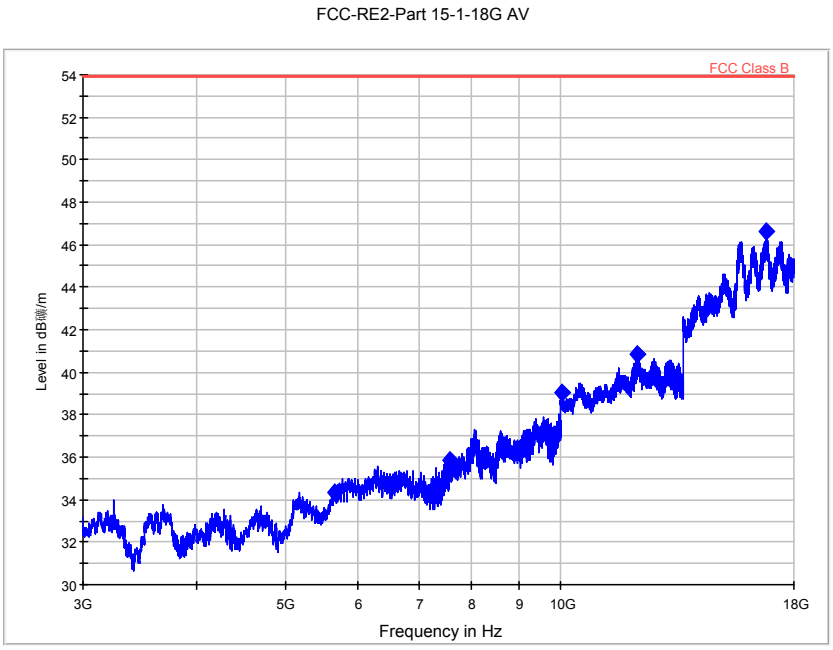

Fig. 102 Radiated Spurious Emission (802.11n-40M, Ch6, 3 GHz-18 GHz)

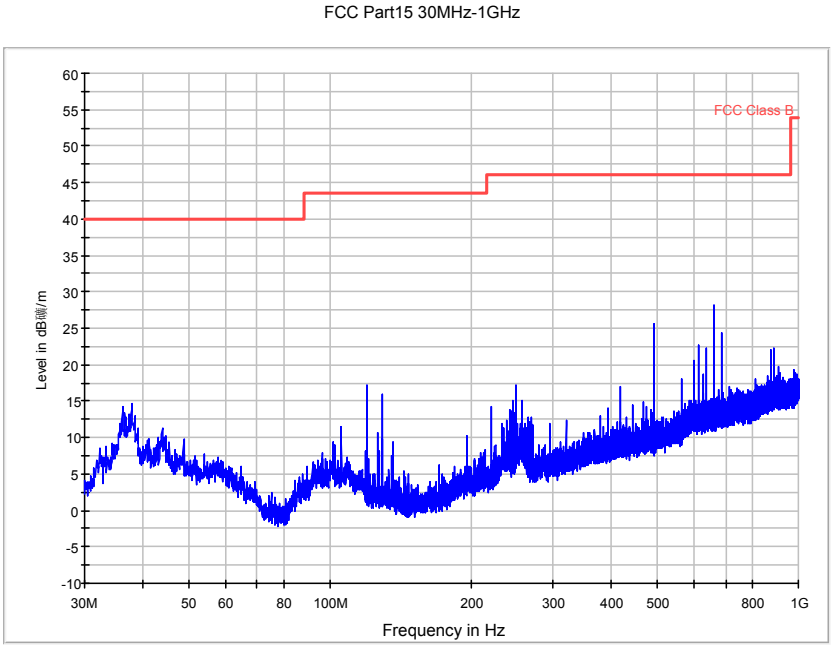

Fig. 103 Radiated Spurious Emission (802.11n-40M, Ch9, 30MHz-1 GHz)

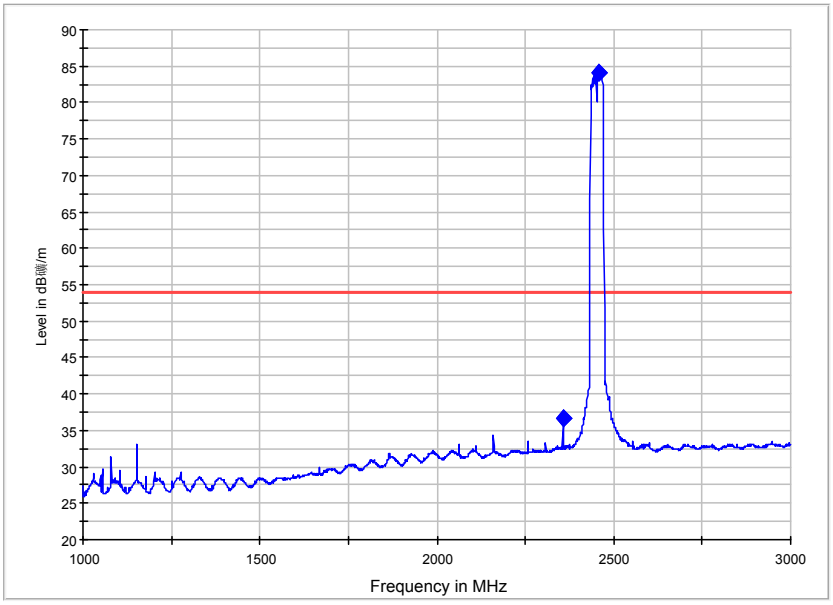

Fig. 104 Radiated Spurious Emission (802.11n-40M, Ch9, 1 GHz-3 GHz)

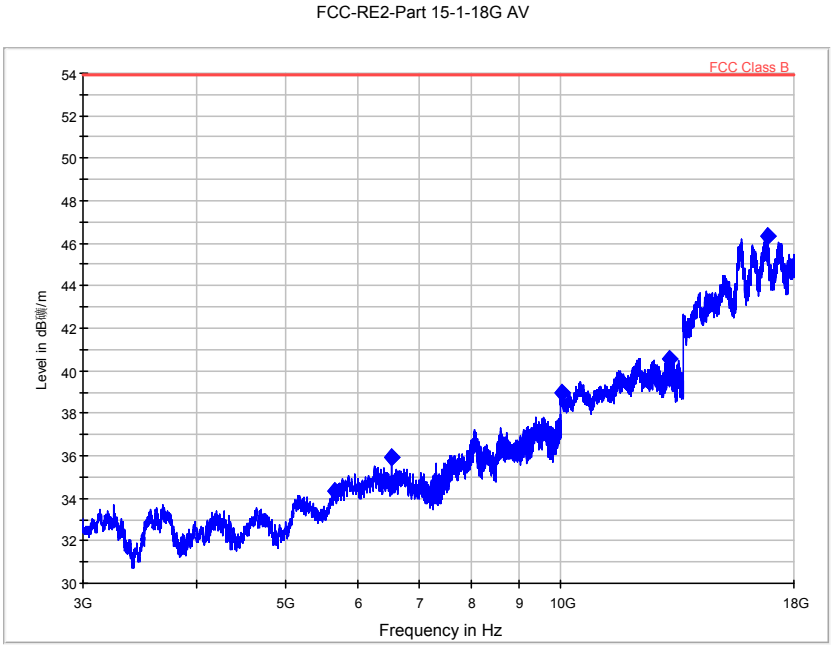

Fig. 105 Radiated Spurious Emission (802.11n-40M, Ch9, 3 GHz-18 GHz)

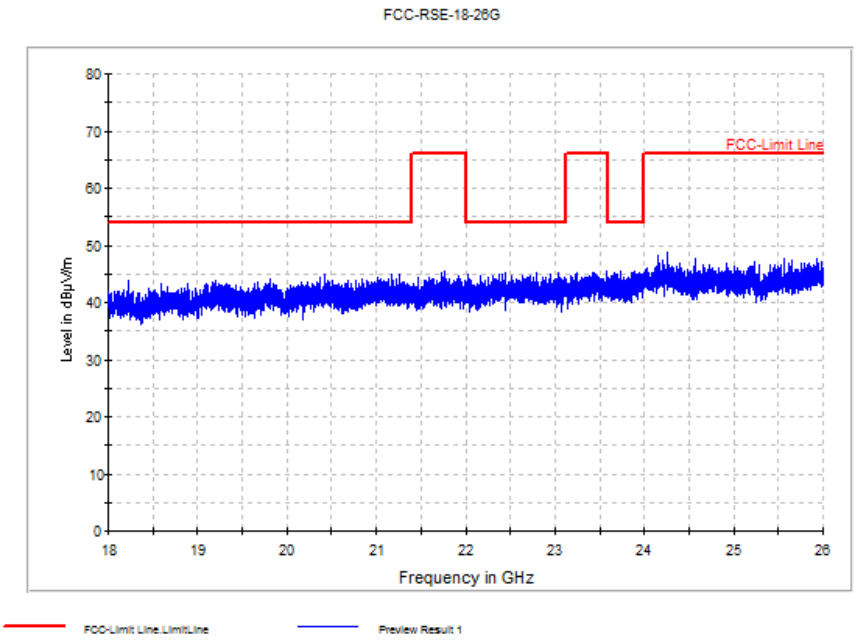

Fig. 106 Radiated emission: 18 GHz - 26 GHz

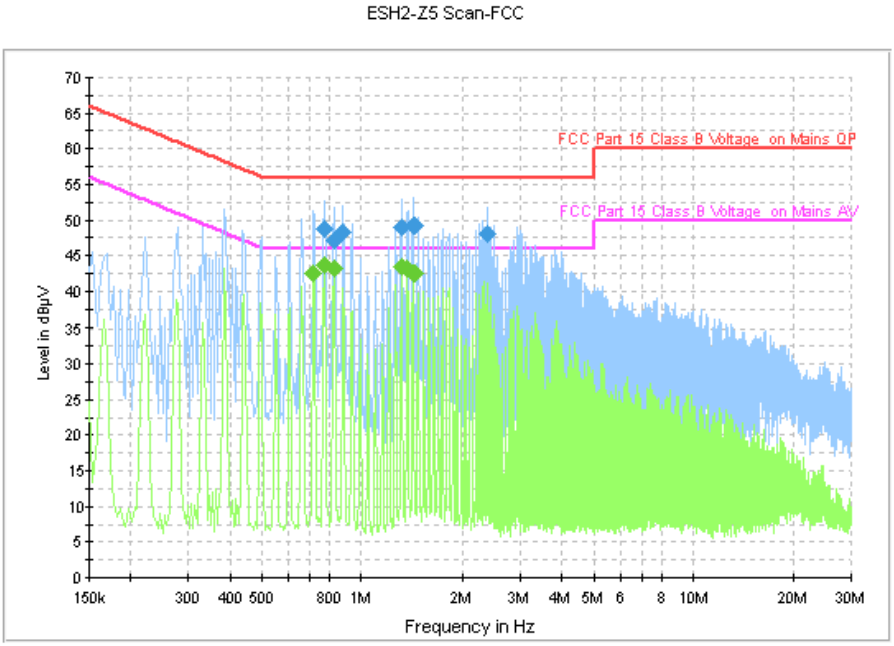

Fig. 107 AC Powerline Conducted Emission (Traffic, AE2)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.774000	48.7	FLO	N	10.1	7.3	56.0
0.830000	47.1	FLO	N	10.0	8.9	56.0
0.882000	48.2	FLO	N	10.1	7.8	56.0
1.322000	48.9	FLO	N	10.1	7.1	56.0
1.434000	49.2	FLO	N	10.1	6.8	56.0
2.370000	48.2	FLO	N	10.2	7.8	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.714000	42.5	FLO	L1	10.0	3.5	46.0
0.770000	43.7	FLO	L1	10.1	2.3	46.0
0.826000	43.1	FLO	L1	10.0	2.9	46.0
1.322000	43.5	FLO	L1	10.1	2.5	46.0
1.378000	43.3	FLO	L1	10.1	2.7	46.0
1.430000	42.4	FLO	L1	10.1	3.6	46.0

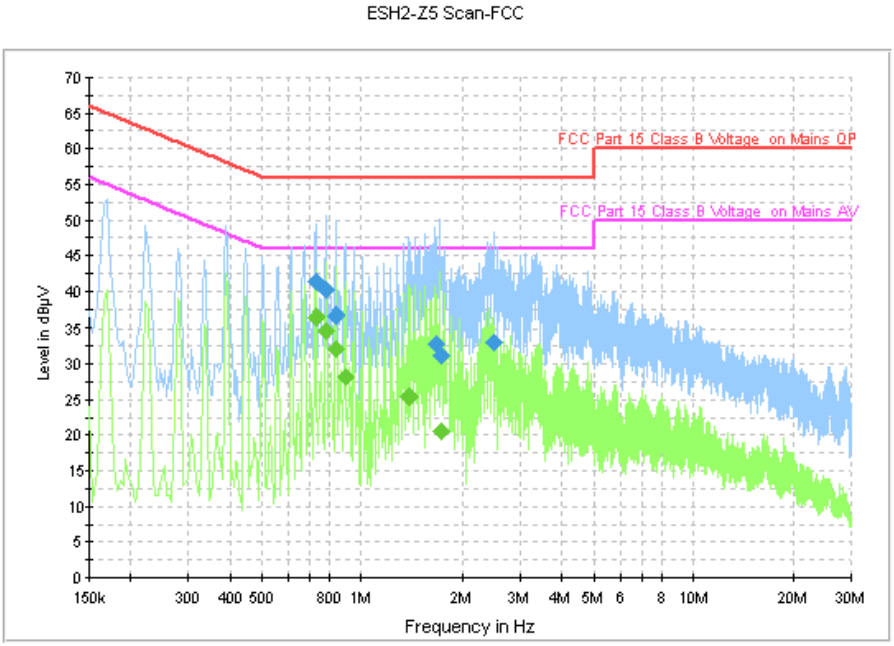

Fig. 108 AC Powerline Conducted Emission (Idle, AE2)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.726000	41.4	FLO	L1	10.0	14.6	56.0
0.782000	40.2	FLO	L1	10.1	15.8	56.0
0.838000	36.8	FLO	L1	10.0	19.2	56.0
1.674000	32.8	FLO	L1	10.1	23.2	56.0
1.730000	31.1	FLO	L1	10.1	24.9	56.0
2.478000	33.0	FLO	N	10.2	23.0	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.726000	36.5	FLO	L1	10.0	9.5	46.0
0.782000	34.7	FLO	L1	10.1	11.4	46.0
0.838000	32.0	FLO	L1	10.0	14.0	46.0
0.894000	28.1	FLO	L1	10.1	17.9	46.0
1.394000	25.4	FLO	L1	10.1	20.6	46.0
1.730000	20.5	FLO	L1	10.1	25.5	46.0

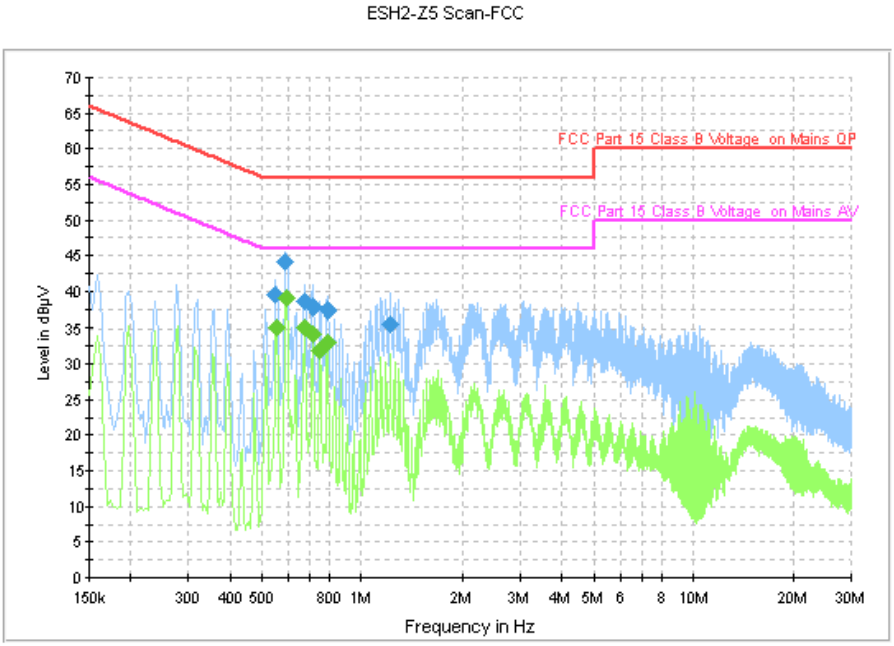

Fig. 109 AC Powerline Conducted Emission (Traffic, AE3)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.550000	39.6	FLO	L1	10.1	16.4	56.0
0.590000	44.0	FLO	L1	10.1	12.0	56.0
0.674000	38.5	FLO	L1	10.0	17.5	56.0
0.710000	37.9	FLO	N	10.0	18.1	56.0
0.790000	37.5	FLO	L1	10.1	18.5	56.0
1.222000	35.5	FLO	N	10.1	20.5	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.554000	35.0	FLO	L1	10.1	11.0	46.0
0.594000	39.0	FLO	L1	10.1	7.0	46.0
0.670000	35.0	FLO	L1	10.0	11.0	46.0
0.710000	34.1	FLO	L1	10.0	11.9	46.0
0.750000	31.8	FLO	L1	10.0	14.2	46.0
0.790000	33.0	FLO	L1	10.1	13.0	46.0

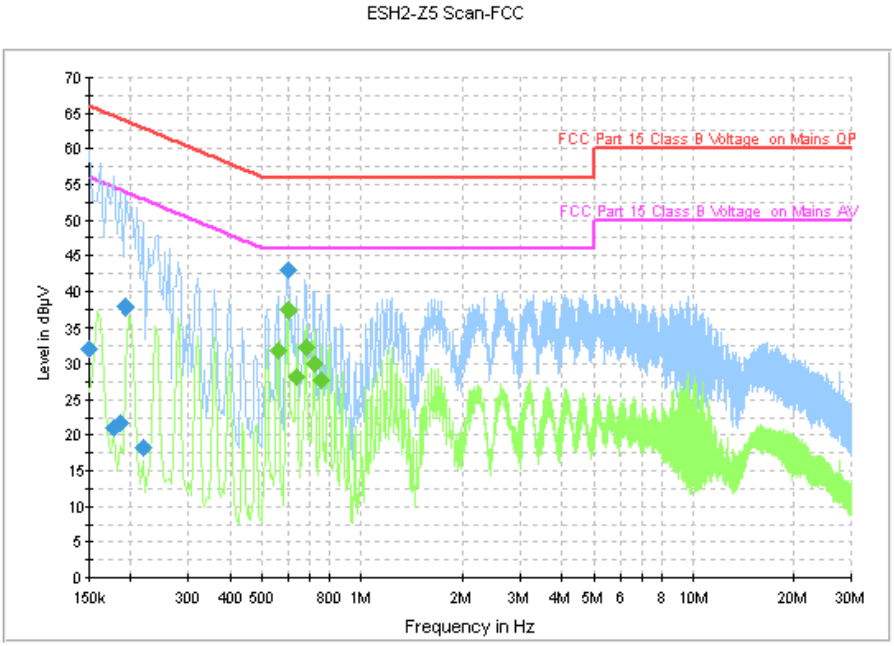

Fig. 110 AC Powerline Conducted Emission (Idle, AE3)

MEASUREMENT RESULT: " QuasiPeak "

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	32.1	FLO	N	10.1	33.9	66.0
0.178000	21.0	FLO	N	10.1	43.6	64.6
0.186000	21.8	FLO	N	10.1	42.4	64.2
0.194000	37.8	FLO	N	10.1	26.1	63.9
0.218000	18.2	FLO	N	10.0	44.7	62.9
0.598000	43.0	FLO	L1	10.1	13.0	56.0

MEASUREMENT RESULT: " Average "

Frequency (MHz)	CAverage (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.558000	31.9	FLO	L1	10.1	14.1	46.0
0.598000	37.4	FLO	L1	10.1	8.6	46.0
0.638000	28.2	FLO	L1	10.0	17.8	46.0
0.678000	32.4	FLO	L1	10.0	13.6	46.0
0.718000	30.0	FLO	L1	10.0	16.0	46.0
0.758000	27.7	FLO	L1	10.1	18.3	46.0

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