FCC PART 15C
TEST REPORT
No. 2012WLN0452

for

TCT Mobile Limited

GSM quad bands mobile phone

Type: Beetle Lite Edge 2SIM

Market Name: ONE TOUCH 4005D

With

FCC ID: RAD320

Hardware Version: Proto

Software Version: vD15

Issued Date: 2013-03-01

DAkkS Deutsche Akkreditierungsstelle D-PL-12123-01-01

DAR accreditation (DIN EN ISO/IEC 17025): No. D-PL-12123-01-01
FCC 2.948 Listed: No.733176
IC O.A.T.S listed: No.6629B

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.

Test Laboratory:
TMC Beijing, Telecommunication Metrology Center of Ministry of Industry and Information Technology
No. 52, Huayuan Bei Road, Haidian District, Beijing, P. R. China, 100191
Tel:+86(0)10-62304633-2561, Fax:+86(0)10-62304633-2504 Email:welcome@emcite.com. www.emcite.com

CONTENTS

1. TEST LABORATORY

1.1. Testing Location

Company Name:	TMC Beijing, Telecommunication Metrology Center of MIIT
Address:	No 52 Hua Yuanbei Road, Haidian District, Beijing, P.R.China
Postal Code:	100191
Telephone:	008610623046332561
Fax:	008610623046332504

1.2. Testing Environment

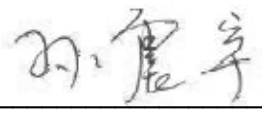
Normal Temperature:	15-35℃
Extreme Temperature:	-20/+55℃
Relative Humidity:	30-60%
Air Pressure	990hPa-1040hPa

Note: The climatic requirements above are general exclude the special requirements for dedicated test environments listed in section 5 and some specific test cases in other parts of this report.

1.3. Project data

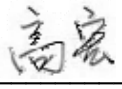
Testing Start Date:	2012-12-27
Testing End Date:	2013-01-17

1.4. Signature



Sun Zhenyu

(Prepared this test report)



Gao Hong

(Reviewed this test report)

Xiao Li

Deputy Director of the laboratory

(Approved this test report)

2. CLIENT INFORMATION

2.1. Applicant Information

Company Name:	TCT Mobile Limited
Address /Post:	5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
Country:	China
Contact	Gong Zhizhou
Email	zhizhou.gong@jrdcom.com
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

2.2. Manufacturer Information

Company Name:	TCT Mobile Limited
Address /Post:	5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
Country:	China
Contact	Gong Zhizhou
Email	zhizhou.gong@jrdcom.com
Telephone:	0086-21-61460890
Fax:	0086-21-61460602

3. EQUIPMENT UNDER TEST(EUT) AND ANCILLARY EQUIPMENT(AE)

3.1. About EUT

Description	GSM quad bands mobile phone
Type	Beetle Lite Edge 2SIM
Market name	ONE TOUCH 4005D
FCC ID	RAD320
IC ID	/
With WLAN Function	Yes
Frequency Range	ISM 2400MHz~2483.5MHz
Type of Modulation	DSSS/CCK/OFDM
Number of Channels	11
Antenna	Integral Antenna
MAX Conducted Power	23.48dBm(CCK)
GPRS Class	Class 12
GPRS operation mode	Class B
Power Supply	3.7V DC by Battery

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

3.2. Internal Identification of EUT used during the test

EUT ID*	IMEI	HW Version	SW Version
EUT1	869315010053827	Proto	vD15
EUT2	869315010053850	Proto	vD15

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description	Type	SN
AE1	Battery	TLi014A1	/
AE2	Battery	TLiB50B	/
AE3	Charger	CBA3007AG0C1	/
AE4	Charger	CBA3007AG0C3	/

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

3.4. General Description

Equipment Under Test (EUT) is a model of GSM quad bands mobile phone with integrated antenna. It consists of normal options: Battery and Charger.

Manual and specifications of the EUT were provided to fulfil the test.

Samples undergoing test were selected by the Client.

Normal Accessory setting:

1. A microSD card was being installed in the device during the test;
2. Fully charged battery should be used during the test.

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.

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, 2009 Edition
ANSI C63.10	Procedures for testing compliance of a wide variety of unlicensed wireless devices	2009

5. LABORATORY ENVIRONMENT

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

Semi-anechoic chamber (10 meters×6.7meters×6.15meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 2 M ohm
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.5 dB, 3 m distance
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 3000 MHz

Shielding Room2 (7.30 meters×4.00 meters×3.80 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ℃, Max. = 30 ℃
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Uniformity of field strength	Between 0 and 6 dB, from 80MHz to 3000 MHz

6. SUMMARY OF TEST RESULTS

6.1. Summary of Test Results

SUMMARY OF MEASUREMENT RESULTS	Sub-clause of Part15C	Sub-clause of IC	Verdict
Maximum Peak Output Power	15.247 (a)	/	P
Peak Power Spectral Density	15.247 (d)	/	P
Occupied 6dB Bandwidth	15.247 (d)	/	P
Band Edges Compliance	15.247 (b)	/	P
Transmitter Spurious Emission - Conducted	15.247	/	P
Transmitter Spurious Emission - Radiated	15.247, 15.205, 15.209	/	P
AC Powerline Conducted Emission	15.107, 15.207	/	P

Please refer to **ANNEX A** for detail.

The measurement is made according to ANSI C63.10.

Terms used in Verdict column

P	Pass, The EUT complies with the essential requirements in the standard.
NP	Not Perform, The test was not performed by TMC
NA	Not Applicable, The test was not applicable
F	Fail, The EUT does not comply with the essential requirements in the standard

6.2. Statements

TMC has evaluated the test cases requested by the client/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 4.1.

This report only deals with the WLAN function among the features described in section 3.

Test Conditions

T nom	Normal Temperature
T min	Low Temperature
T max	High Temperature
V nom	Normal Voltage
V min	Low Voltage
V max	High Voltage
H nom	Norm Humidity
A nom	Norm Air Pressure

For this report, all the test cases listed above are tested under Normal Temperature and Normal Voltage which is using a new battery, and also under norm humidity, the specific conditions as following:

Temperature	T nom	26℃
Voltage	V nom	3.8V(By battery)
Humidity	H nom	44%
Air Pressure	A nom	1010hPa

7. TEST EQUIPMENTS UTILIZED

Conducted test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Vector Signal Analyzer	FSQ40	200089	Rohde & Schwarz	2013-07-19
2	Test Receiver	ESS	847151/015	Rohde & Schwarz	2013-10-30
3	LISN	ESH2-Z5	829991/012	Rohde & Schwarz	2013-08-12

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Test Receiver	ESI40	831564/002	Rohde & Schwarz	2013-08-11
2	BiLog Antenna	3142B	9908-1403	EMCO	2013-03-15
3	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2013-12-25
4	Dual-Ridge Waveguide Horn Antenna	3116	2661	EMCO	2013-06-30

Anechoic chamber

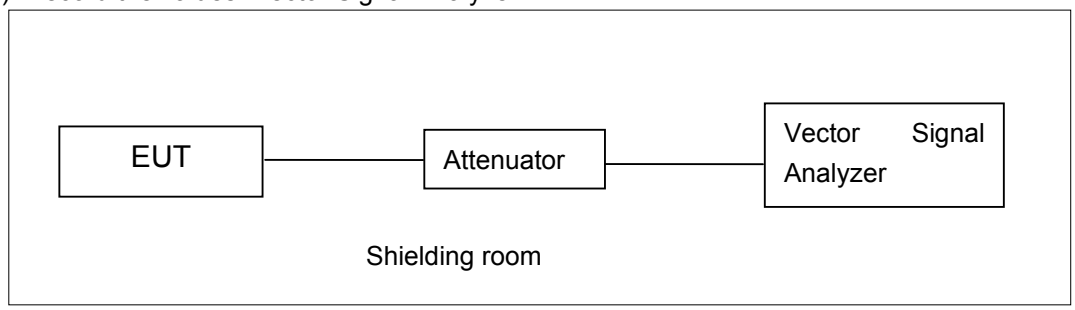
Anechoic chamber by Frankonia German.

ANNEX A: MEASUREMENT RESULTS

A.1. Measurement Method

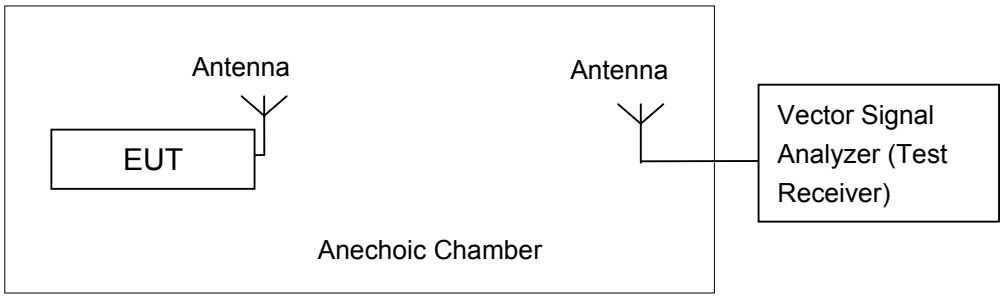
A.1.1. Conducted Measurements

1). Connect the EUT to the test system correctly.
2). Set the EUT to the required work mode.
3). Set the EUT to the required channel.
4). Set the spectrum analyzer to start measurement.
5). Record the values. Vector Signal Analyzer



A.1.2. Radiated Emission Measurements

In the case of radiated emission, the used settings are as follows,
Sweep frequency from 30 MHz to 1GHz, RBW = 100 kHz, VBW = 300 kHz;
Sweep frequency from 1 GHz to 26GHz, RBW = 1MHz, VBW = 10Hz;



The measurement is made according to ANSI C63.10

A.2. Maximum Output Power

Measurement Limit and Method:

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

The measurement is made according to ANSI C63.10, and EUT is operating in continuous transmitting mode.

Measurement Uncertainty:

Measurement Uncertainty	0.75dB

A.2.1. Maximum Peak Output Power-conducted

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	20.11	/	/
	2	20.50	/	/
	5.5	21.90	/	/
	11	23.48	22.87	22.55
802.11g	6	22.13	/	/
	9	22.17	/	/
	12	21.91	/	/
	18	21.93	/	/
	24	22.49	22.32	21.94
	36	22.47	/	/
	48	22.34	/	/
	54	22.37	/	/

The data rate 11Mbps and 24Mbps are selected as worse condition, and the following cases are performed with this condition.

802.11n-HT20 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n (20MHz)	MCS0	20.34	/	/
	MCS1	20.16	/	/
	MCS2	20.11	/	/
	MCS3	20.68	20.17	19.97
	MCS4	20.43	/	/
	MCS5	20.45	/	/
	MCS6	20.51	/	/

	MCS7	20.48	/	/

The data rate MCS3 is selected as worse condition, and the following cases are performed with this condition.

802.11n-HT40 mode

Mode	Data Rate (Index)	Test Result (dBm)		
		2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n (40MHz)	MCS0	18.95	/	/
	MCS1	18.56	/	/
	MCS2	18.60	/	/
	MCS3	18.97	/	/
	MCS4	18.99	/	/
	MCS5	19.05	18.60	18.39
	MCS6	18.83	/	/
	MCS7	18.73	/	/

The data rate MCS5 is selected as worse condition, and the following cases are performed with this condition.

Conclusion: PASS

A.2.2. Maximum Average Output Power-conducted

802.11b/g mode

Mode	Test Result (dBm)		
	2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	16.70	16.20	15.99
802.11g	13.55	13.14	12.97

802.11n-HT20 mode

Mode	Test Result (dBm)		
	2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n (20MHz)	11.45	11.05	10.96

802.11n-HT40 mode

Mode	Test Result (dBm)		
	2422MHz (Ch3)	2437MHz (Ch6)	2452 MHz (Ch9)
802.11n (40MHz)	9.88	9.60	9.48

Conclusion: PASS

A.3. Peak Power Spectral Density

Measurement Limit:

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

The measurement is made according to ANSI C63.10

Measurement Uncertainty:

Measurement Uncertainty	0.75dB

Measurement Results:

802.11b/g mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11b	1	Fig.1	-5.07	P
	6	Fig.2	-5.40	P
	11	Fig.3	-5.98	P
802.11g	1	Fig.4	-10.51	P
	6	Fig.5	-11.13	P
	11	Fig.6	-11.83	P

802.11n-HT20 mode

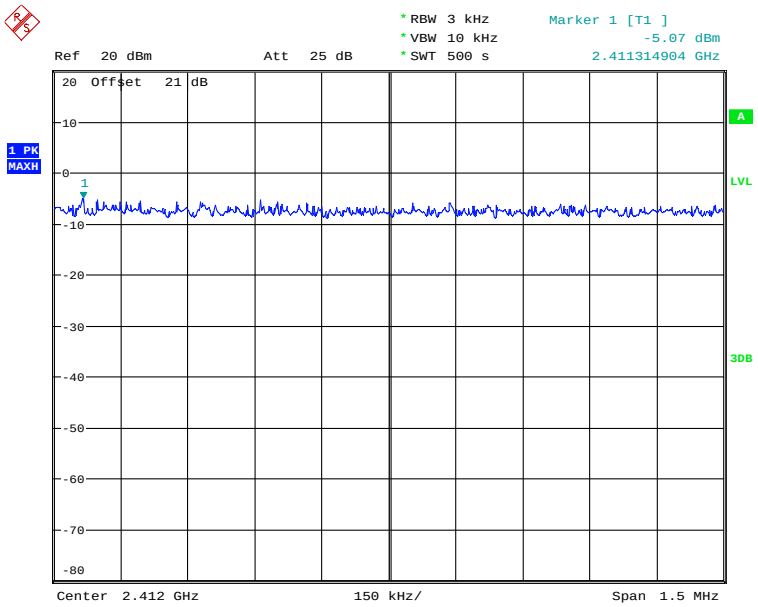
Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (20MHz)	1	Fig.7	-13.03	P
	6	Fig.8	-13.94	P
	11	Fig.9	-13.00	P

802.11n-HT40 mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
802.11n (40MHz)	3	Fig.10	-20.96	P
	6	Fig.11	-19.94	P
	9	Fig.12	-21.23	P

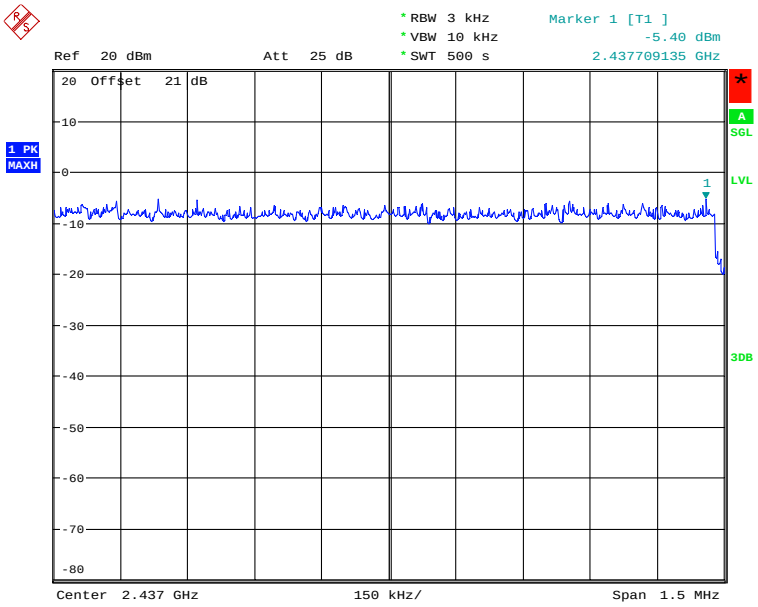
Conclusion: PASS

Test graphs as below:



Date: 5.JAN.2013 11:12:11

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



Date: 5.JAN.2013 13:40:31

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

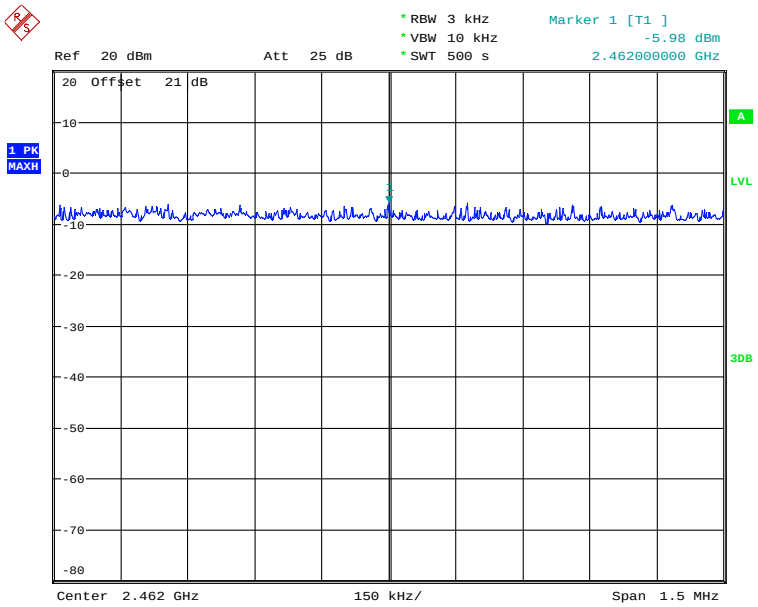


Fig. 3 Power Spectral Density (802.11b, Ch 11)

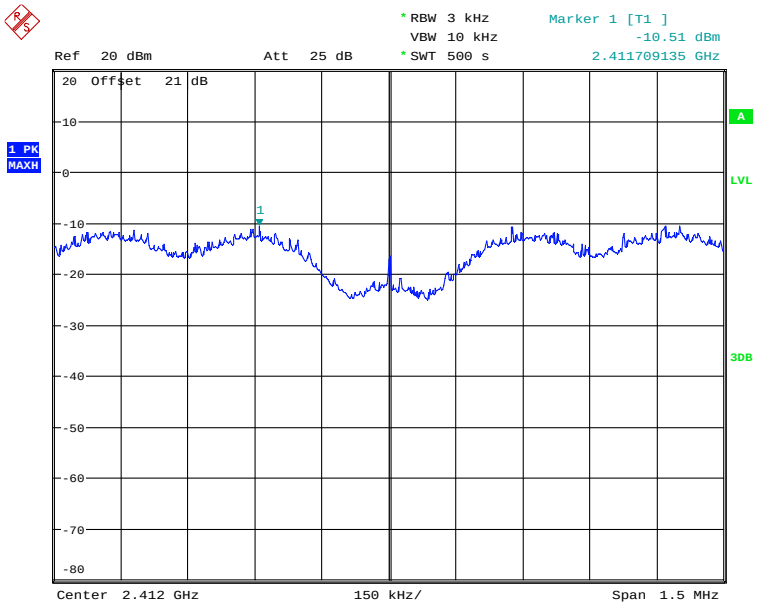


Fig. 4 Power Spectral Density (802.11g, Ch 1)

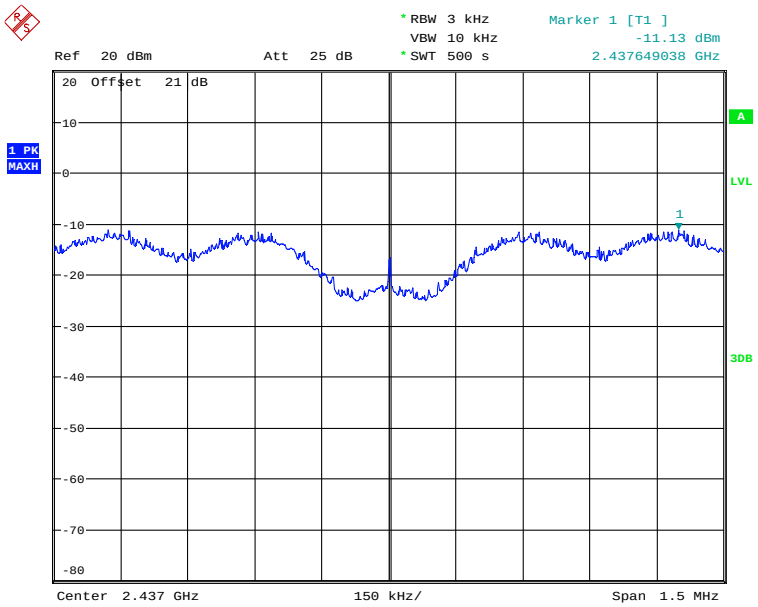


Fig. 5 Power Spectral Density (802.11g, Ch 6)

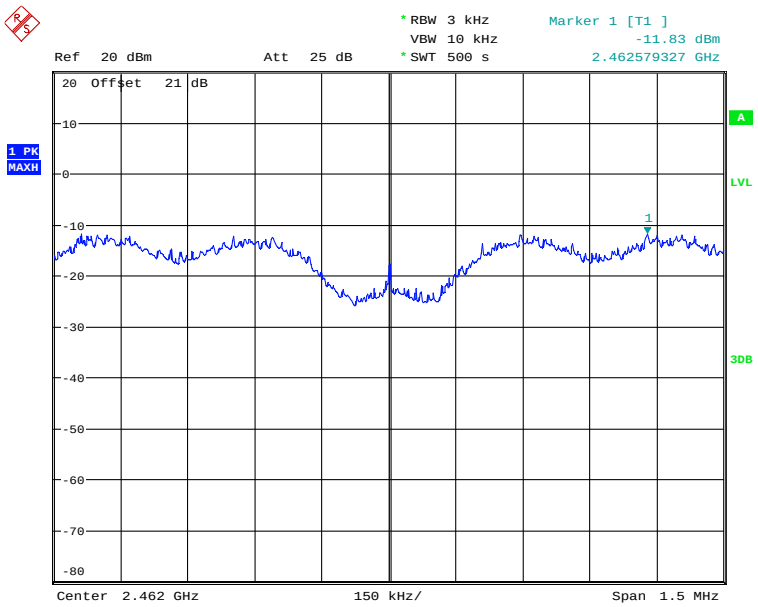


Fig. 6 Power Spectral Density (802.11g, Ch 11)

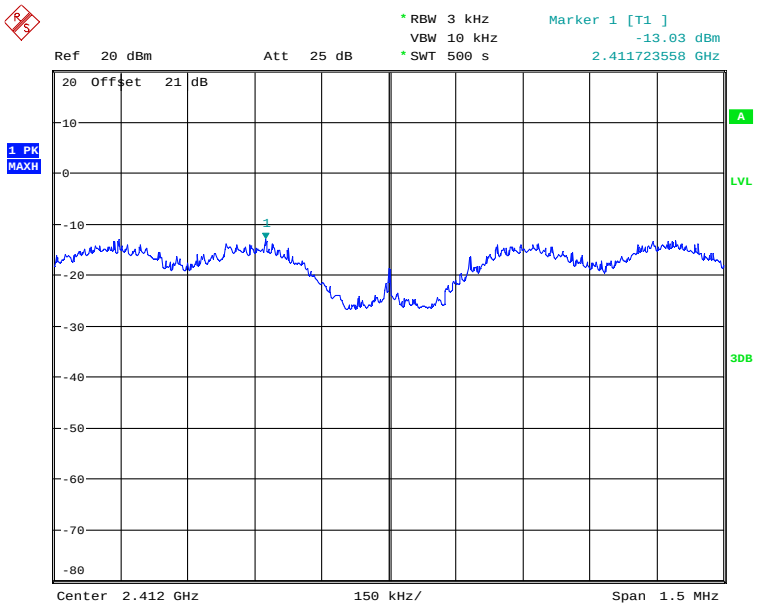


Fig. 7 Power Spectral Density (802.11n-20MHz, Ch 1)

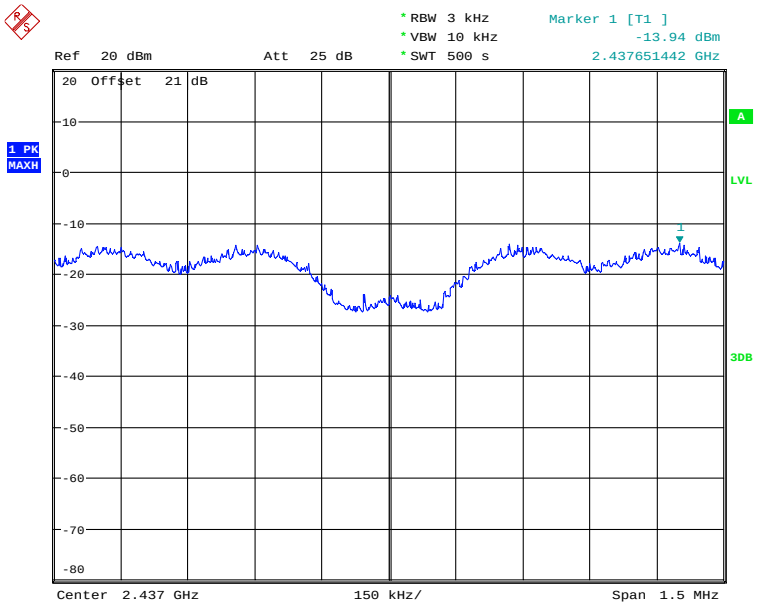


Fig. 8 Power Spectral Density (802.11n-20MHz, Ch 6)

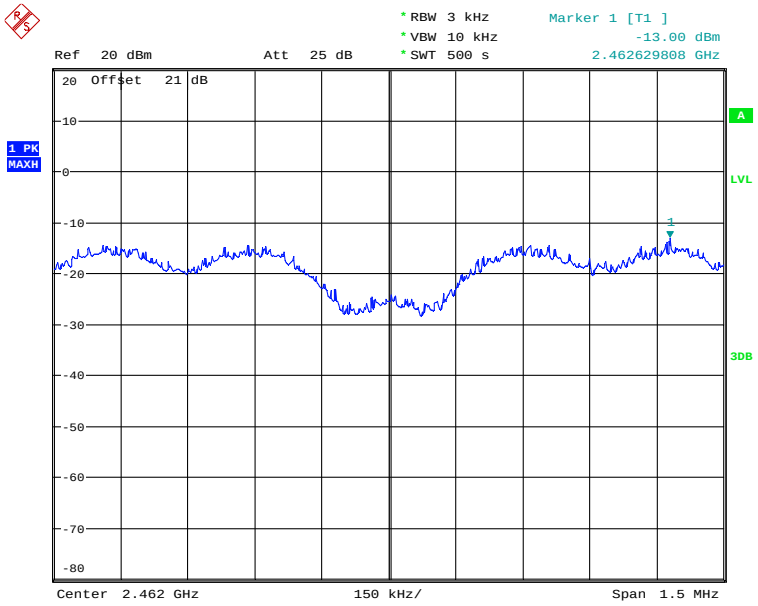


Fig. 9 Power Spectral Density (802.11n-20MHz, Ch 11)

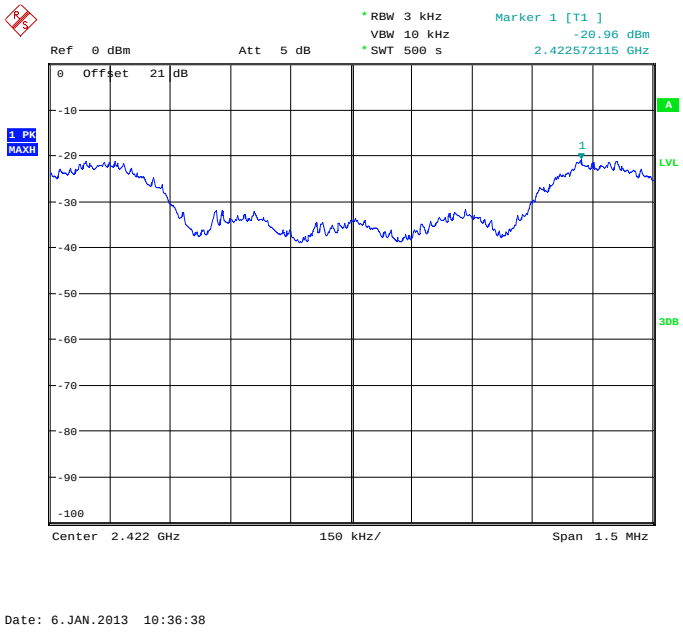


Fig. 10 Power Spectral Density (802.11n-40MHz, Ch 3)

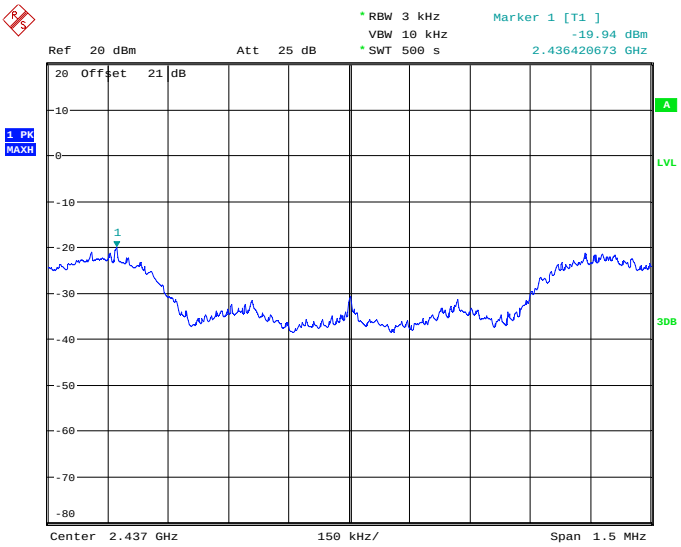


Fig. 11 Power Spectral Density (802.11n-40MHz, Ch 6)

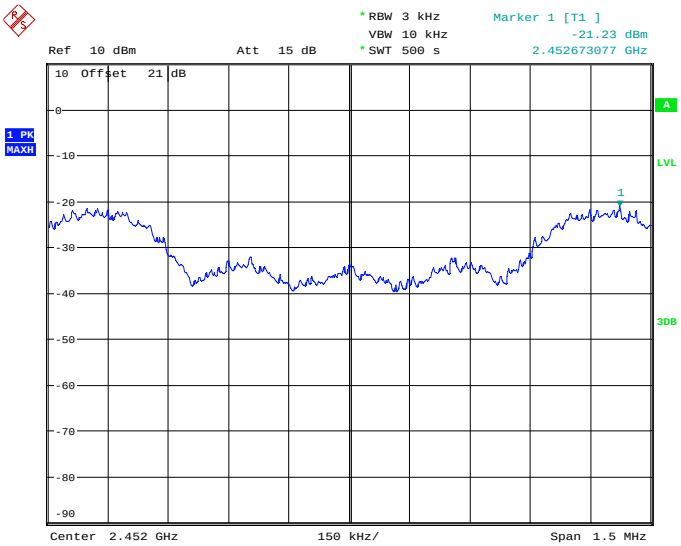


Fig. 12 Power Spectral Density (802.11n-40MHz, Ch 9)

A.4. Occupied 6dB Bandwidth

Measurement Limit:

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

The measurement is made according to ANSI C63.10

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz

Measurement Result:

802.11b/g mode

Mode	Channel	Occupied 6dB Bandwidth (kHz)		conclusion
802.11b	1	Fig.13	9856	P
	6	Fig.14	10256	P
	11	Fig.15	10096	P
802.11g	1	Fig.16	16699	P
	6	Fig.17	16683	P
	11	Fig.18	16635	P

802.11n-HT20 mode

Mode	Channel	Occupied 6dB Bandwidth (kHz)		conclusion
802.11n (20MHz)	1	Fig.19	17837	P
	6	Fig.20	17885	P
	11	Fig.21	17788	P

802.11n-HT40 mode

Mode	Channel	Occupied 6dB Bandwidth (kHz)		conclusion
802.11n (40MHz)	3	Fig.22	35897	P
	6	Fig.23	36154	P
	9	Fig.24	35897	P

Conclusion: PASS

Test graphs as below:

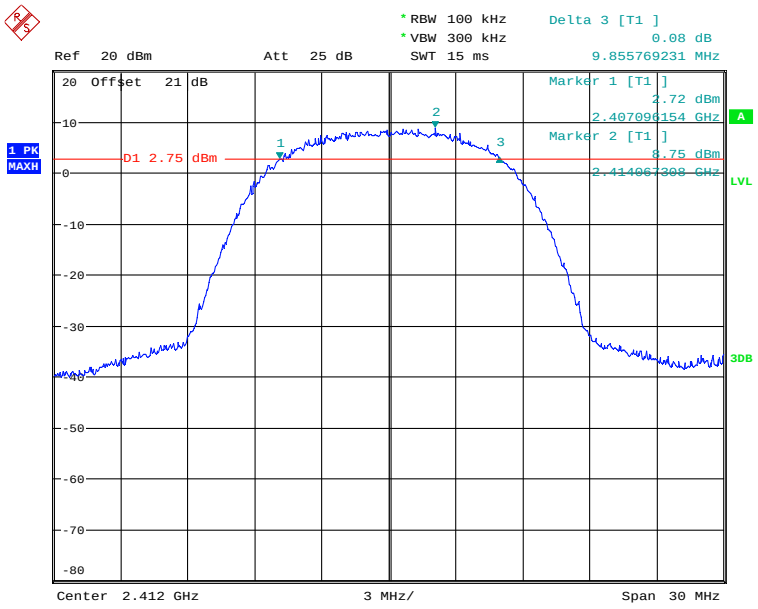


Fig. 13 Occupied 6dB Bandwidth (802.11b, Ch 1)

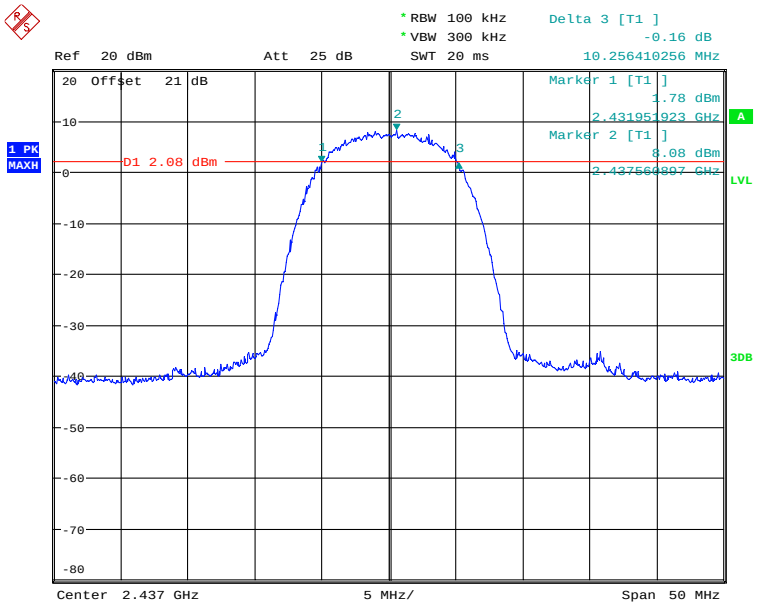


Fig. 14 Occupied 6dB Bandwidth (802.11b, Ch 6)

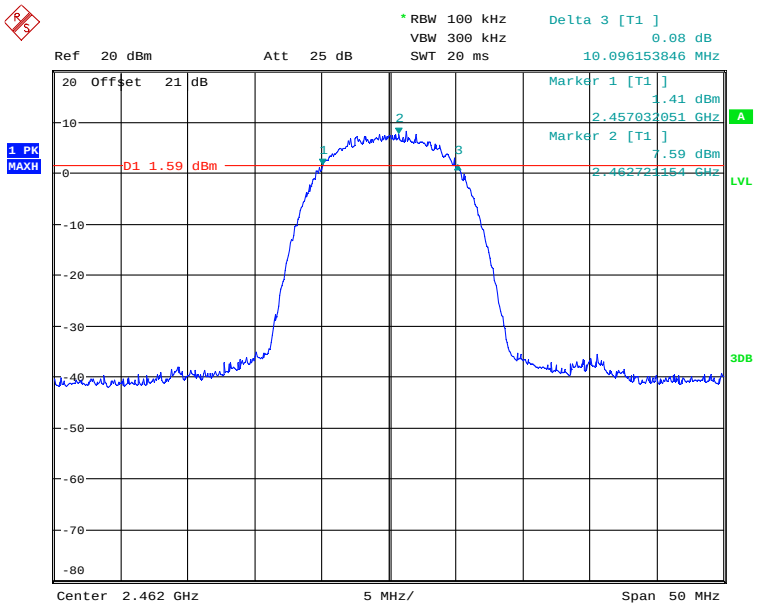


Fig. 15 Occupied 6dB Bandwidth (802.11b, Ch 11)

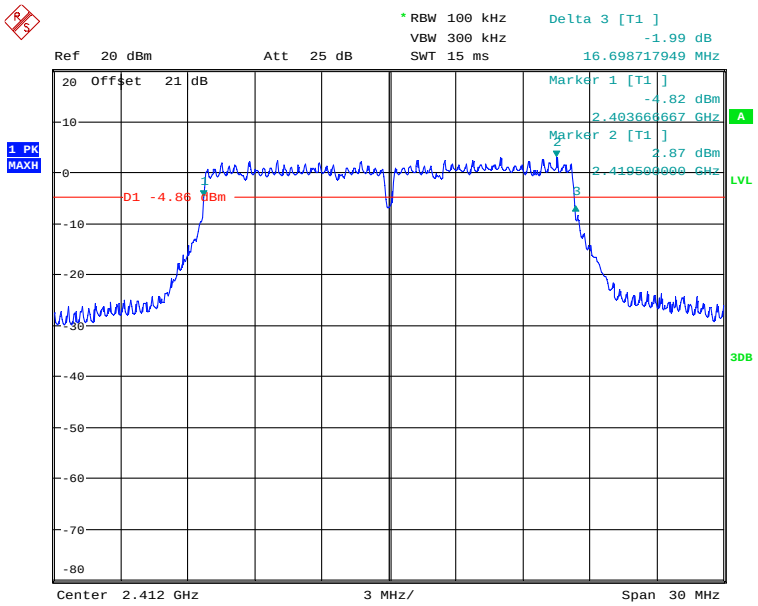


Fig. 16 Occupied 6dB Bandwidth (802.11g, Ch 1)

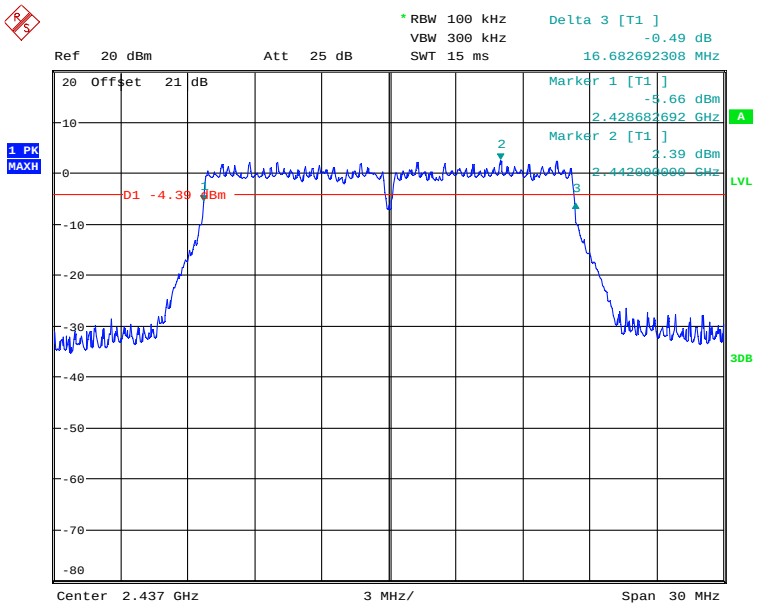


Fig. 17 Occupied 6dB Bandwidth (802.11g, Ch 6)

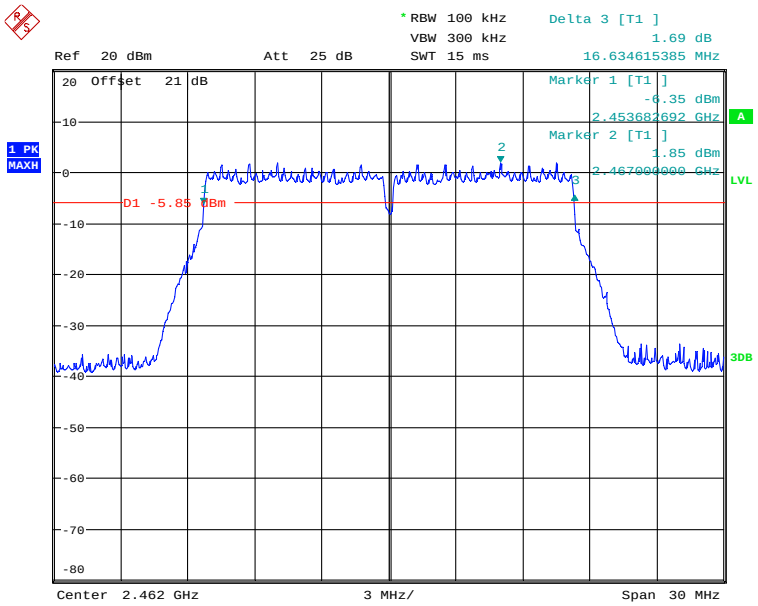
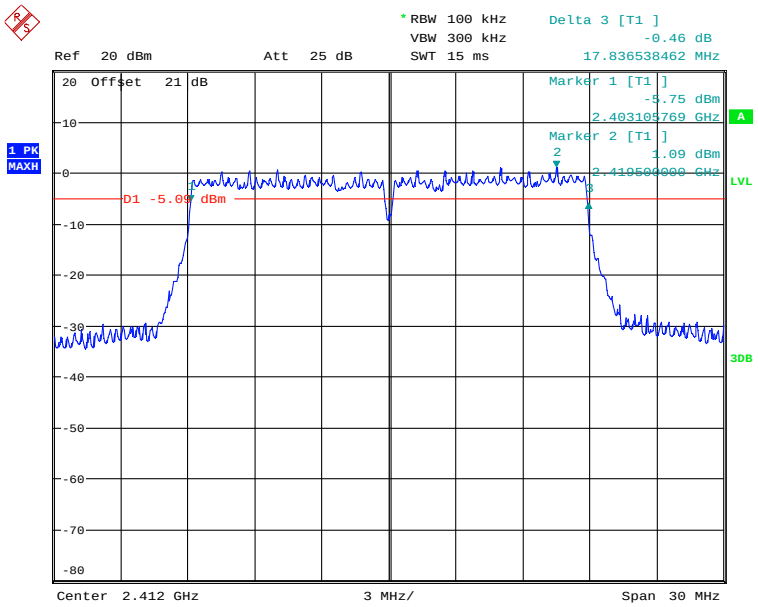
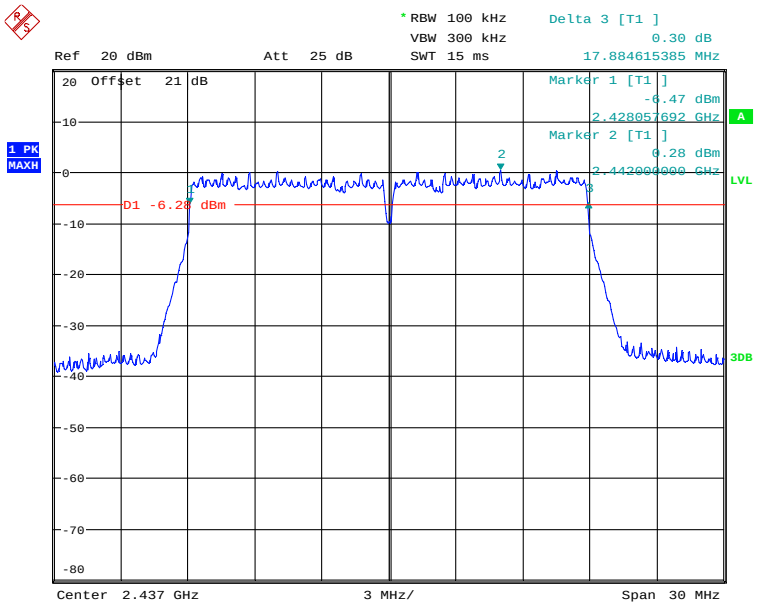


Fig. 18 Occupied 6dB Bandwidth (802.11g, Ch 11)



Date: 5.JAN.2013 15:28:46

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



Date: 5.JAN.2013 15:42:23

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

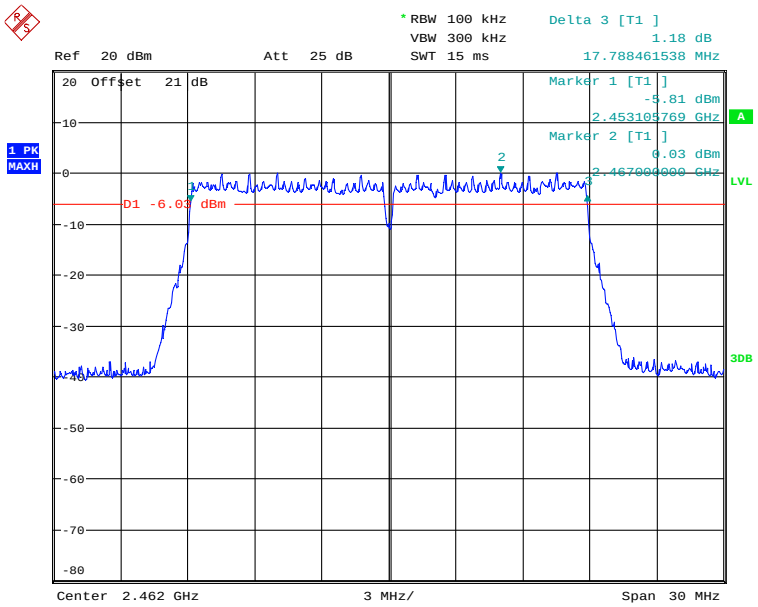


Fig. 21 Occupied 6dB Bandwidth (802.11n-20MHz, Ch 11)

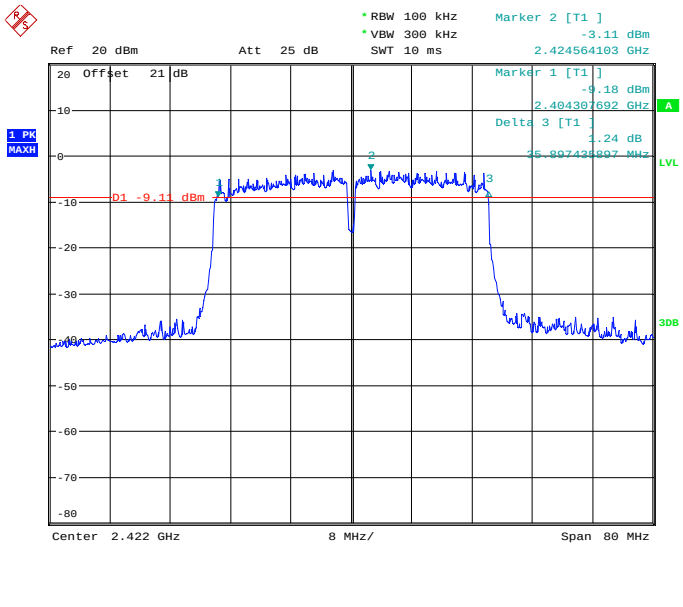


Fig. 22 Occupied 6dB Bandwidth (802.11n-40MHz, Ch 3)

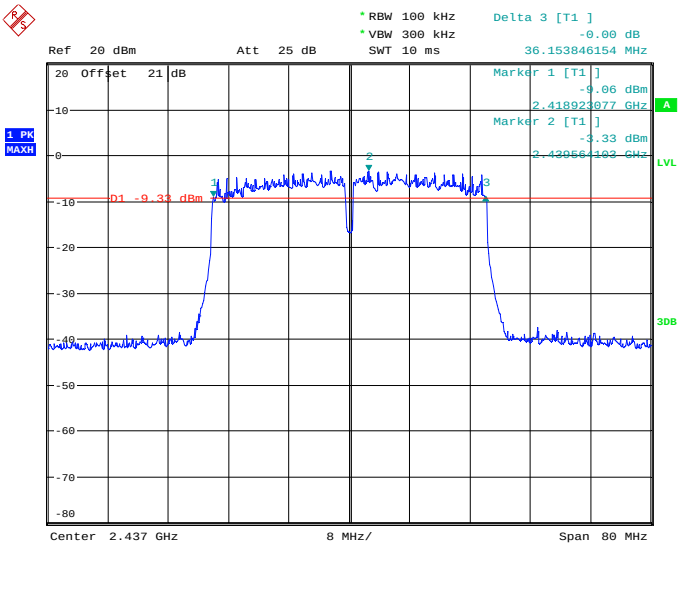


Fig. 23 Occupied 6dB Bandwidth (802.11n-40MHz, Ch 6)

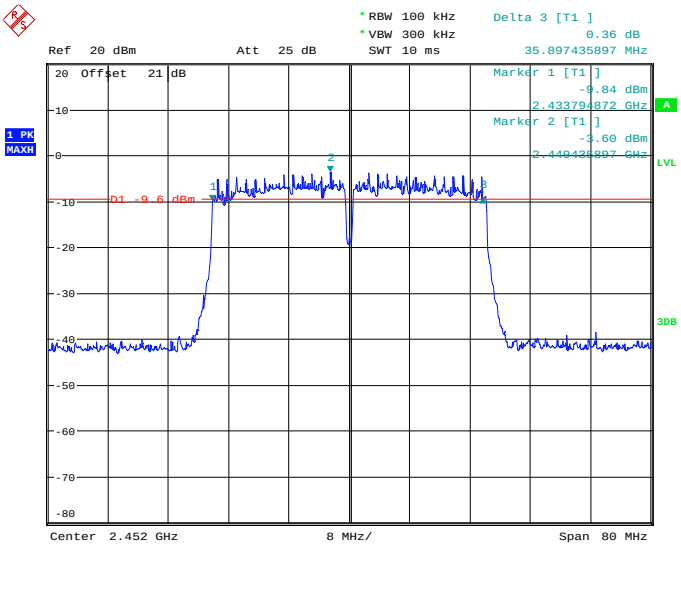


Fig. 24 Occupied 6dB Bandwidth (802.11n-40MHz, Ch 9)

A.5. Band Edges Compliance

Measurement Limit:

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

The measurement is made according to ANSI C63.10

Measurement Uncertainty:

Measurement Uncertainty	0.75dB

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-HT20 mode

Mode	Channel	Test Results	Conclusion
802.11n (20MHz)	1	Fig.29	P
	11	Fig.30	P

802.11n-HT40 mode

Mode	Channel	Test Results	Conclusion
802.11n (40MHz)	3	Fig.31	P
	9	Fig.32	P

Conclusion: PASS

Test graphs as below:

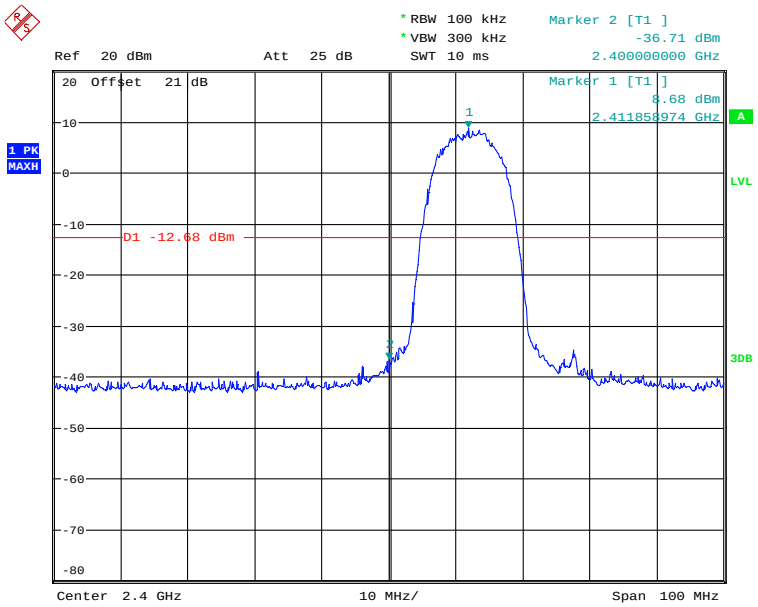


Fig. 25 Band Edges (802.11b, Ch 1)

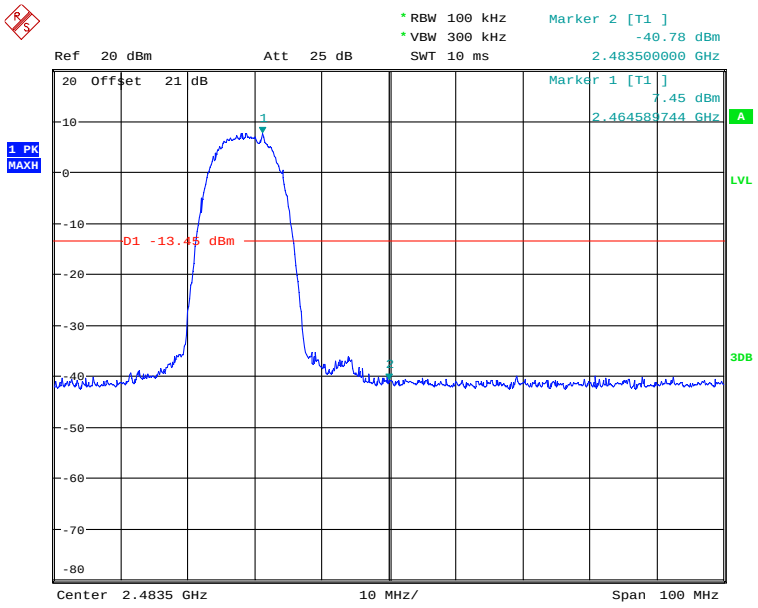


Fig. 26 Band Edges (802.11b, Ch 11)

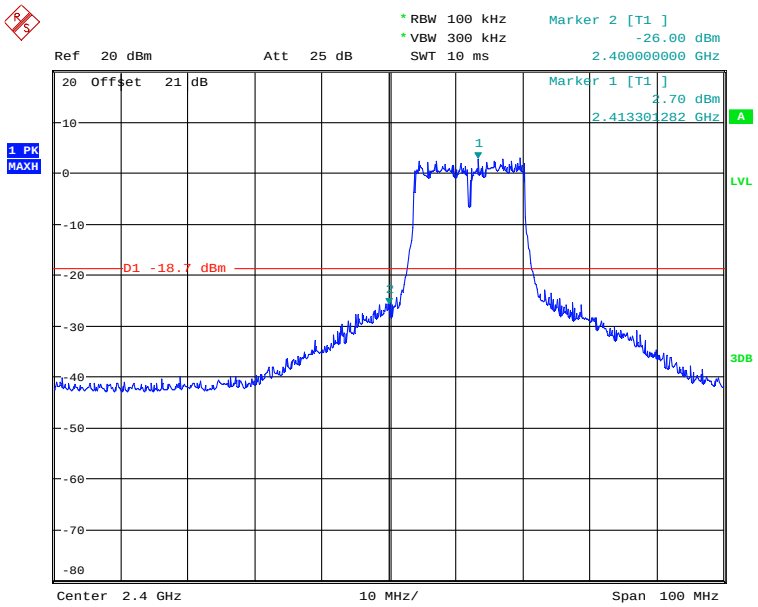


Fig. 27 Band Edges (802.11g, Ch 1)

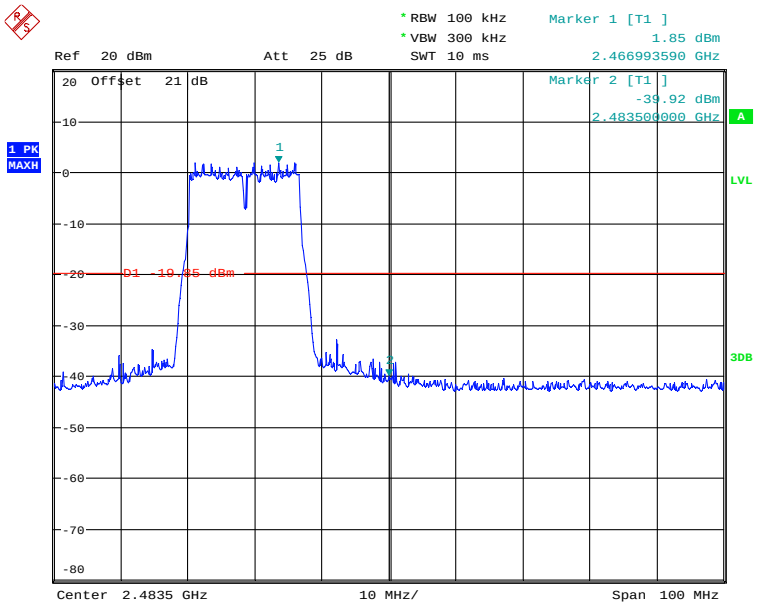
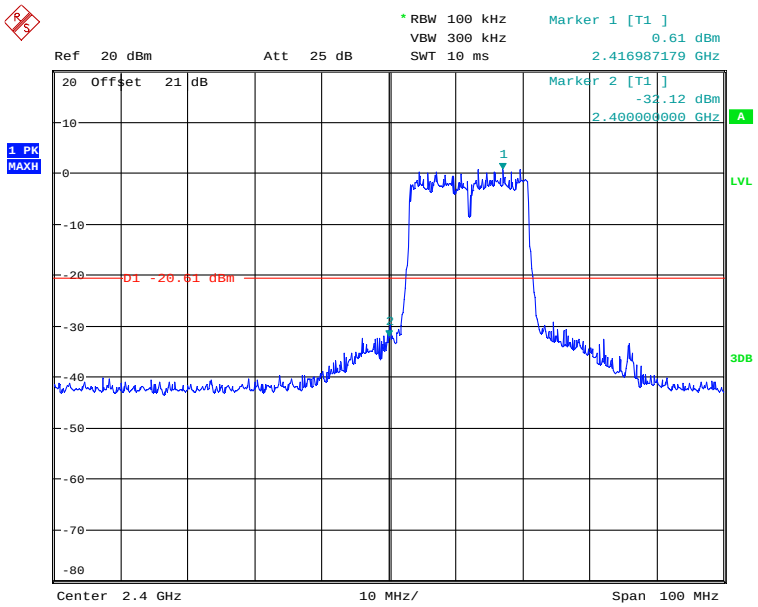
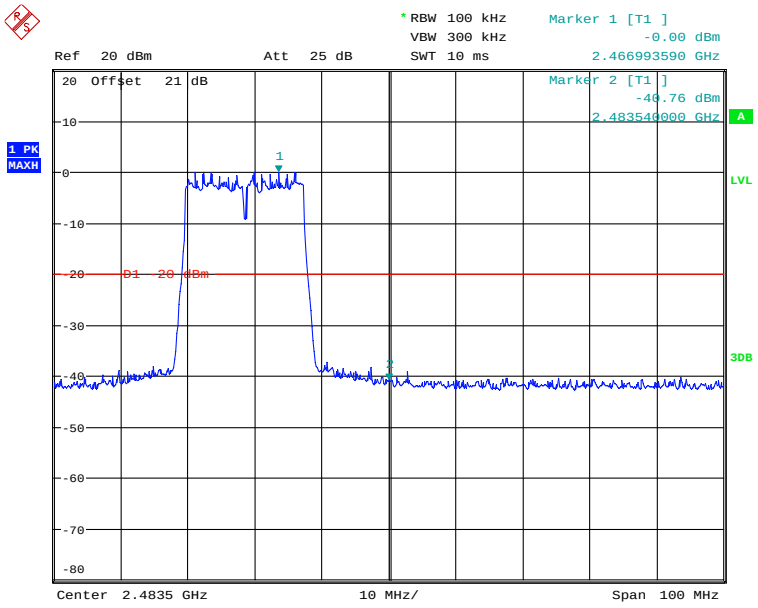


Fig. 28 Band Edges (802.11g, Ch 11)



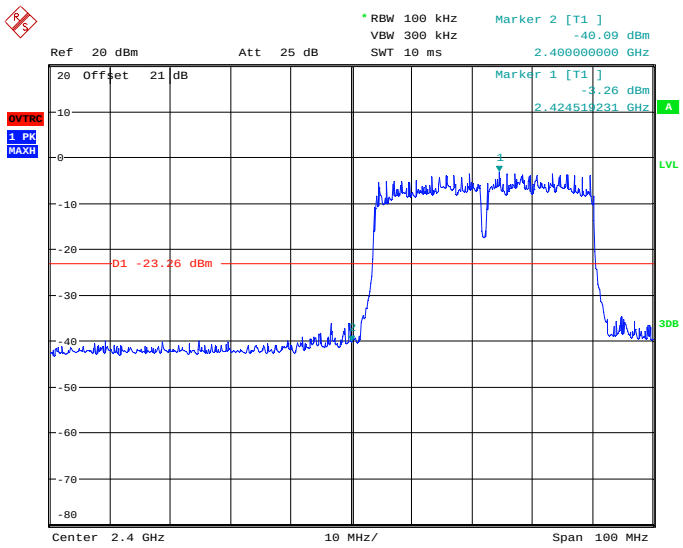
Date: 6.JAN.2013 14:22:25

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



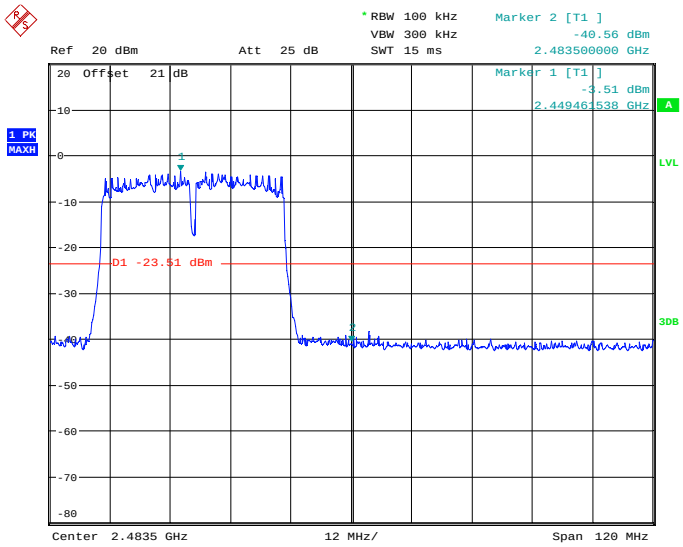
Date: 6.JAN.2013 14:27:31

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



Date: 6.JAN.2013 14:32:00

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



Date: 6.JAN.2013 14:35:28

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

A.6. Transmitter Spurious Emission

A.6.1 Transmitter Spurious Emission - Conducted

Measurement Limit:

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

The measurement is made according to ANSI C63.10

Measurement Uncertainty:

Frequency Range	Uncertainty
30MHz ≤ f ≤ 2GHz	0.63
2GHz ≤ f ≤3.6GHz	0.82
3.6GHz ≤ f ≤8GHz	1.55
8GHz ≤ f ≤20GHz	1.86
20GHz ≤ f ≤22GHz	1.90
22GHz ≤ f ≤26GHz	2.20

Measurement Results:

802.11b/g mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.33	P
		30 MHz ~ 1 GHz	Fig.34	P
		1 GHz ~ 2.5 GHz	Fig.35	P
		2.5 GHz ~ 7.5 GHz	Fig.36	P
		7.5 GHz ~ 10 GHz	Fig.37	P
		10 GHz ~ 15 GHz	Fig.38	P
		15 GHz ~ 20 GHz	Fig.39	P
		20 GHz ~ 26 GHz	Fig.40	P
	6	2.437 GHz	Fig.41	P
		30 MHz ~ 1 GHz	Fig.42	P
		1 GHz ~ 2.5 GHz	Fig.43	P
		2.5 GHz ~ 7.5 GHz	Fig.44	P
		7.5 GHz ~ 10 GHz	Fig.45	P
		10 GHz ~ 15 GHz	Fig.46	P
		15 GHz ~ 20 GHz	Fig.47	P
		20 GHz ~ 26 GHz	Fig.48	P
	11	2.462 GHz	Fig.49	P
		30 MHz ~ 1 GHz	Fig.50	P
		1 GHz ~ 2.5 GHz	Fig.51	P
		2.5 GHz ~ 7.5 GHz	Fig.52	P

		7.5 GHz ~ 10 GHz	Fig.53	P
		10 GHz ~ 15 GHz	Fig.54	P
		15 GHz ~ 20 GHz	Fig.55	P
		20 GHz ~ 26 GHz	Fig.56	P
802.11g	1	2.412 GHz	Fig.57	P
		30 MHz ~ 1 GHz	Fig.58	P
		1 GHz ~ 2.5 GHz	Fig.59	P
		2.5 GHz ~ 7.5 GHz	Fig.60	P
		7.5 GHz ~ 10 GHz	Fig.61	P
		10 GHz ~ 15 GHz	Fig.62	P
		15 GHz ~ 20 GHz	Fig.63	P
		20 GHz ~ 26 GHz	Fig.64	P
	6	2.437 GHz	Fig.65	P
		30 MHz ~ 1 GHz	Fig.66	P
		1 GHz ~ 2.5 GHz	Fig.67	P
		2.5 GHz ~ 7.5 GHz	Fig.68	P
		7.5 GHz ~ 10 GHz	Fig.69	P
		10 GHz ~ 15 GHz	Fig.70	P
		15 GHz ~ 20 GHz	Fig.71	P
		20 GHz ~ 26 GHz	Fig.72	P
	11	2.462 GHz	Fig.73	P
		30 MHz ~ 1 GHz	Fig.74	P
		1 GHz ~ 2.5 GHz	Fig.75	P
		2.5 GHz ~ 7.5 GHz	Fig.76	P
		7.5 GHz ~ 10 GHz	Fig.77	P
		10 GHz ~ 15 GHz	Fig.78	P
		15 GHz ~ 20 GHz	Fig.79	P
		20 GHz ~ 26 GHz	Fig.80	P

802.11n-HT20 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11n (20MHz)	1	2.412 GHz	Fig.81	P
		30 MHz ~ 1 GHz	Fig.82	P
		1 GHz ~ 2.5 GHz	Fig.83	P
		2.5 GHz ~ 7.5 GHz	Fig.84	P
		7.5 GHz ~ 10 GHz	Fig.85	P
		10 GHz ~ 15 GHz	Fig.86	P
		15 GHz ~ 20 GHz	Fig.87	P
		20 GHz ~ 26 GHz	Fig.88	P
	6	2.437 GHz	Fig.89	P
		30 MHz ~ 1 GHz	Fig.90	P
		1 GHz ~ 2.5 GHz	Fig.91	P
		2.5 GHz ~ 7.5 GHz	Fig.92	P
		7.5 GHz ~ 10 GHz	Fig.93	P
		10 GHz ~ 15 GHz	Fig.94	P
		15 GHz ~ 20 GHz	Fig.95	P
		20 GHz ~ 26 GHz	Fig.96	P
	11	2.462 GHz	Fig.97	P
		30 MHz ~ 1 GHz	Fig.98	P
		1 GHz ~ 2.5 GHz	Fig.99	P
		2.5 GHz ~ 7.5 GHz	Fig.100	P
		7.5 GHz ~ 10 GHz	Fig.101	P
		10 GHz ~ 15 GHz	Fig.102	P
		15 GHz ~ 20 GHz	Fig.103	P
		20 GHz ~ 26 GHz	Fig.104	P

802.11n-HT40 mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11n (40MHz)	3	2.422 GHz	Fig.105	P
		30 MHz ~ 1 GHz	Fig.106	P
		1 GHz ~ 2.5 GHz	Fig.107	P
		2.5 GHz ~ 7.5 GHz	Fig.108	P
		7.5 GHz ~ 10 GHz	Fig.109	P
		10 GHz ~ 15 GHz	Fig.110	P
		15 GHz ~ 20 GHz	Fig.111	P
		20 GHz ~ 26 GHz	Fig.112	P
	6	2.437 GHz	Fig.113	P
		30 MHz ~ 1 GHz	Fig.114	P
		1 GHz ~ 2.5 GHz	Fig.115	P
		2.5 GHz ~ 7.5 GHz	Fig.116	P
		7.5 GHz ~ 10 GHz	Fig.117	P
		10 GHz ~ 15 GHz	Fig.118	P

		15 GHz ~ 20 GHz	Fig.119	P
		20 GHz ~ 26 GHz	Fig.120	P
	9	2.452 GHz	Fig.121	P
		30 MHz ~ 1 GHz	Fig.122	P
		1 GHz ~ 2.5 GHz	Fig.123	P
		2.5 GHz ~ 7.5 GHz	Fig.124	P
		7.5 GHz ~ 10 GHz	Fig.125	P
		10 GHz ~ 15 GHz	Fig.126	P
		15 GHz ~ 20 GHz	Fig.127	P
		20 GHz ~ 26 GHz	Fig.128	P

Conclusion: PASS

Test graphs as below:

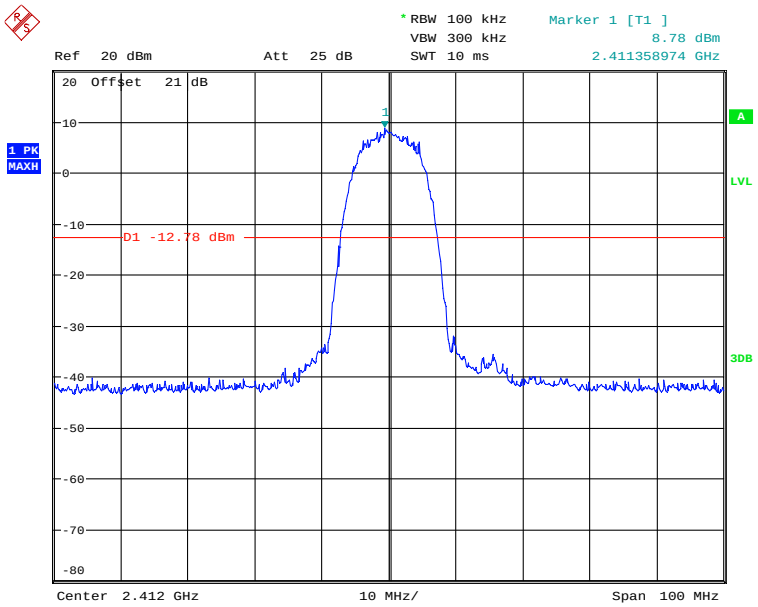


Fig. 33 Conducted Spurious Emission (802.11b, Ch1, Center Frequency)

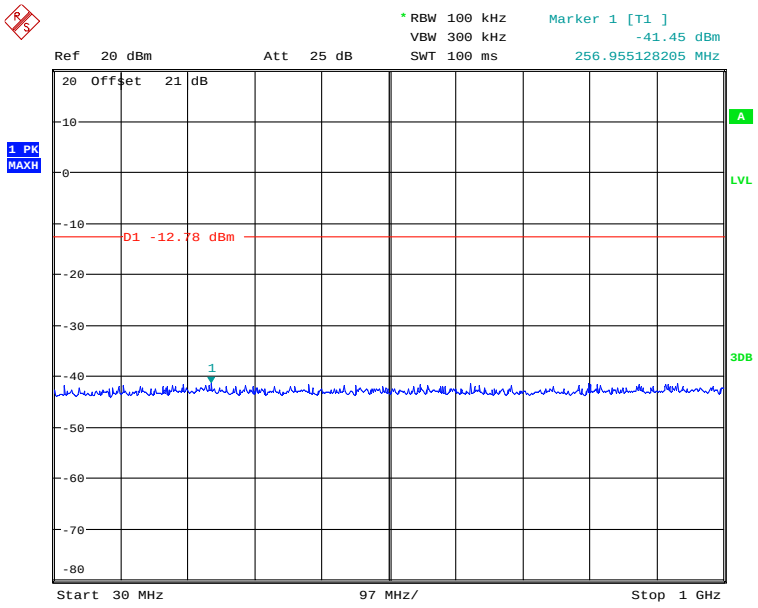


Fig. 34 Conducted Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)

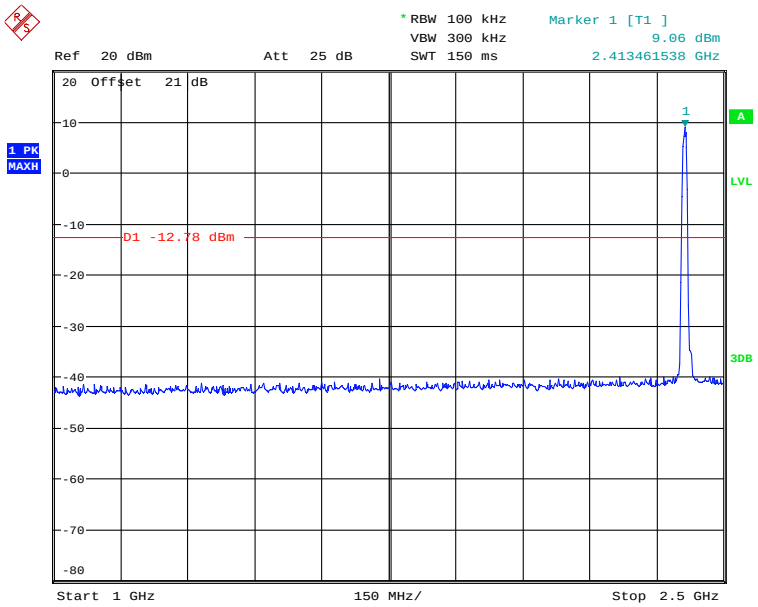


Fig. 35 Conducted Spurious Emission (802.11b, Ch1, 1 GHz-2.5 GHz)

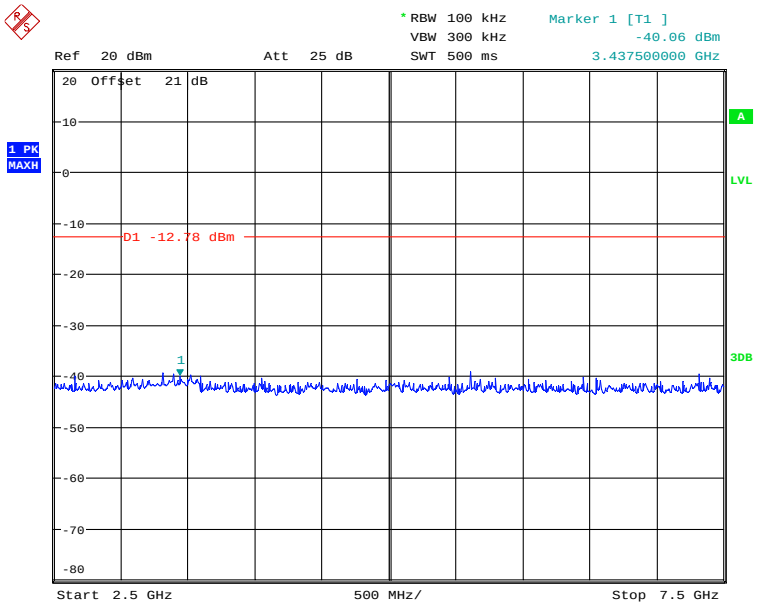


Fig. 36 Conducted Spurious Emission (802.11b, Ch1, 2.5 GHz-7.5 GHz)

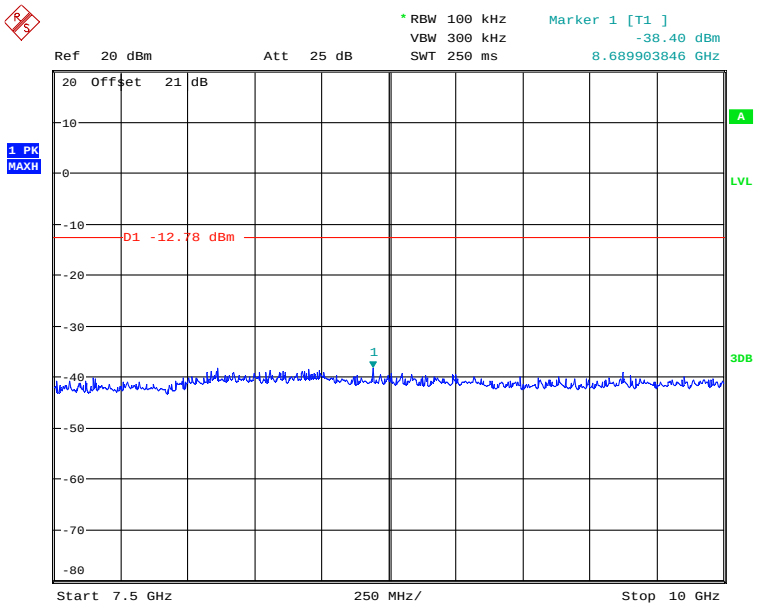


Fig. 37 Conducted Spurious Emission (802.11b, Ch1, 7.5 GHz-10 GHz)

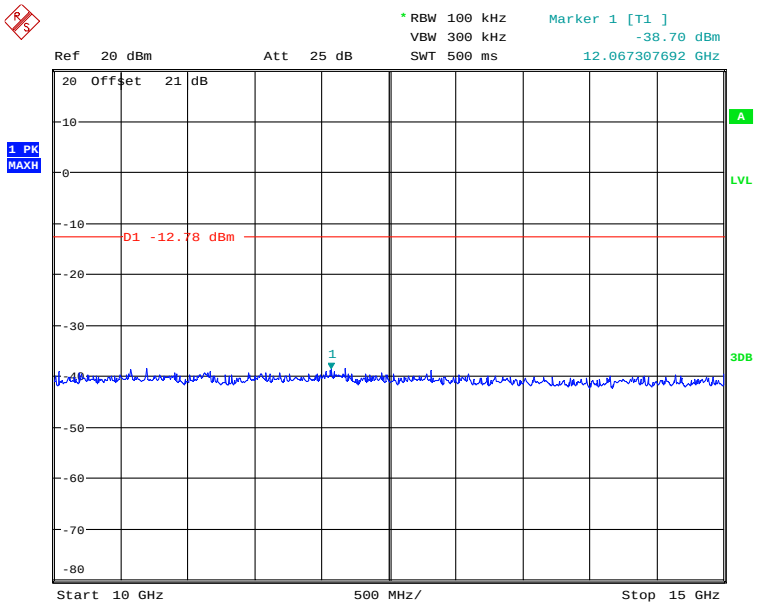


Fig. 38 Conducted Spurious Emission (802.11b, Ch1, 10 GHz-15 GHz)

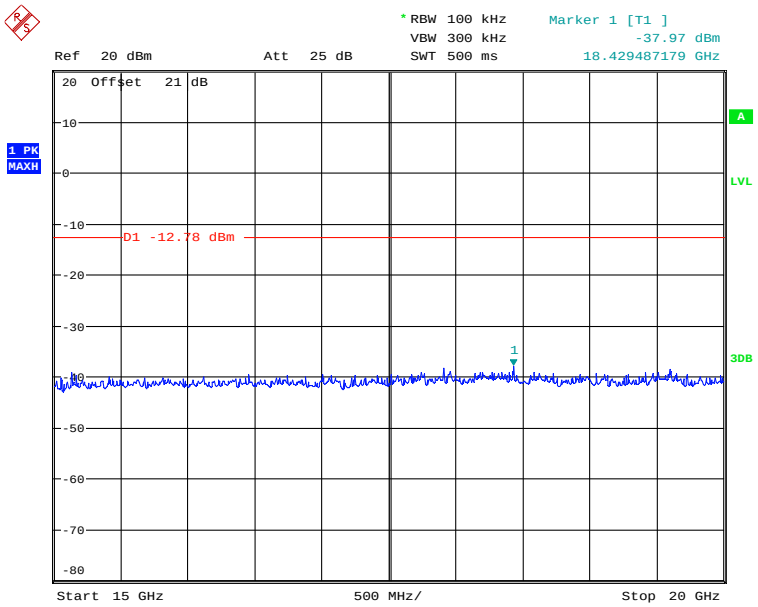


Fig. 39 Conducted Spurious Emission (802.11b, Ch1, 15 GHz-20 GHz)

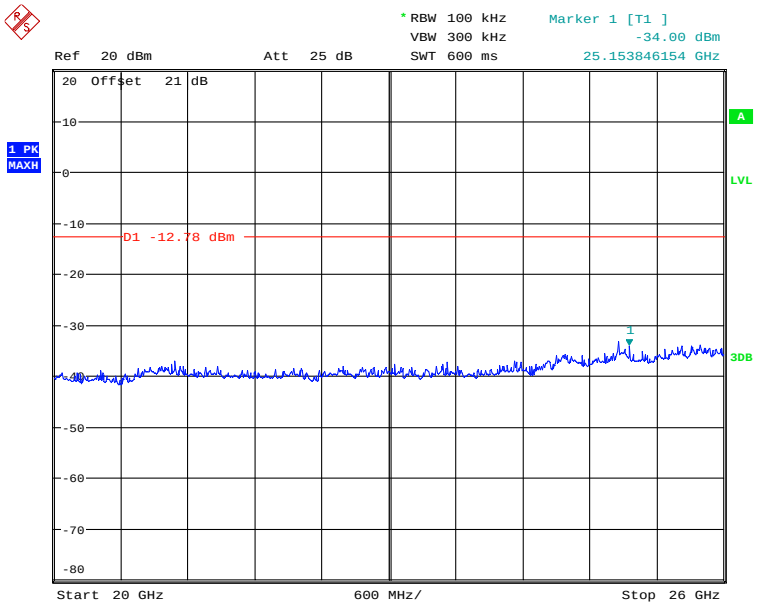


Fig. 40 Conducted Spurious Emission (802.11b, Ch1, 20 GHz-26 GHz)

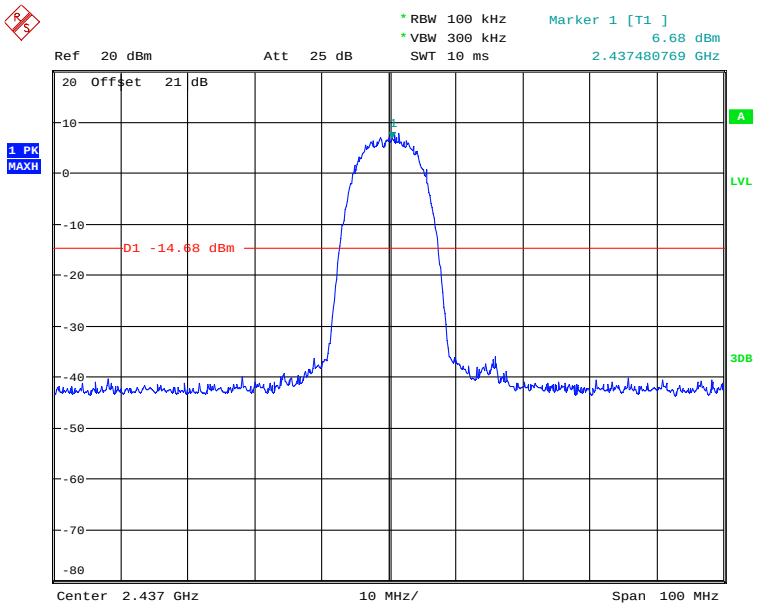


Fig. 41 Conducted Spurious Emission (802.11b, Ch6, Center Frequency)

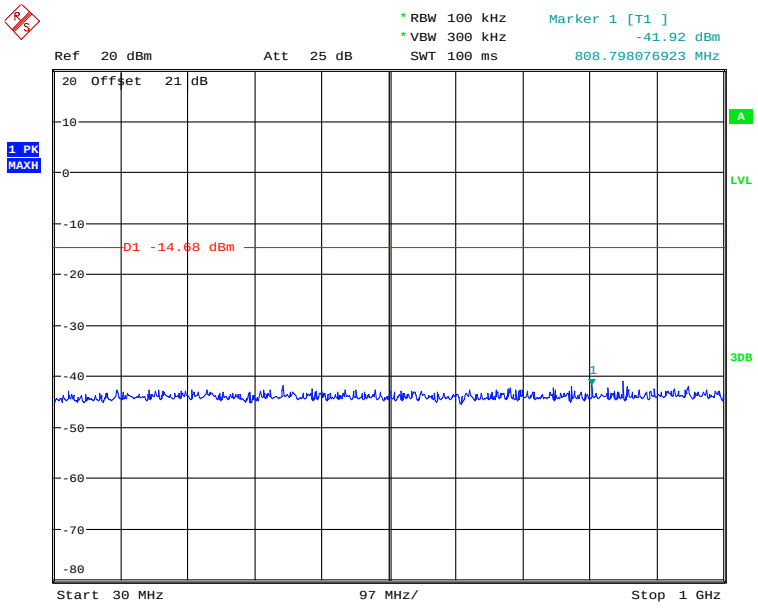


Fig. 42 Conducted Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)

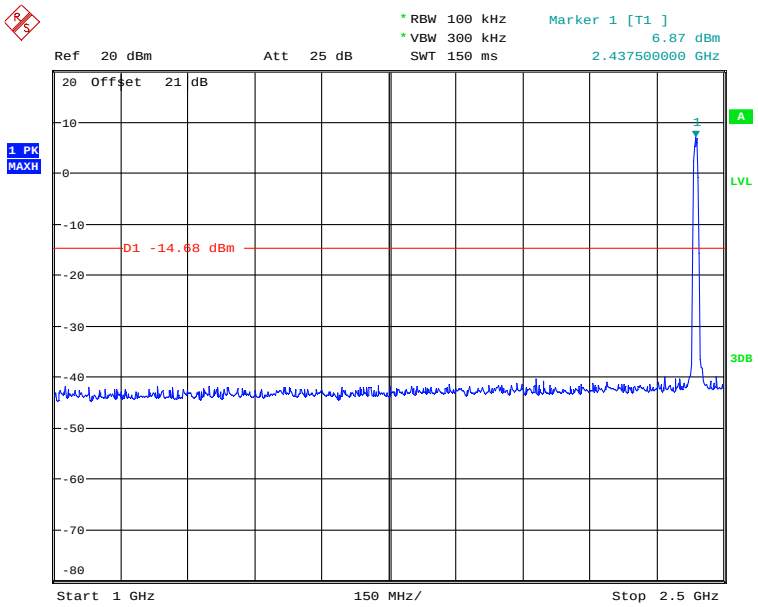


Fig. 43 Conducted Spurious Emission (802.11b, Ch6, 1 GHz-2.5 GHz)

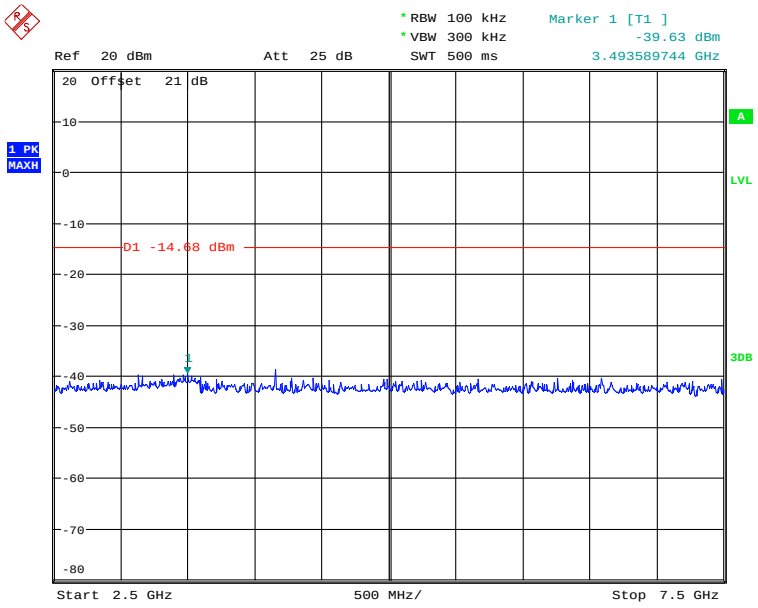


Fig. 44 Conducted Spurious Emission (802.11b, Ch6, 2.5 GHz-7.5 GHz)

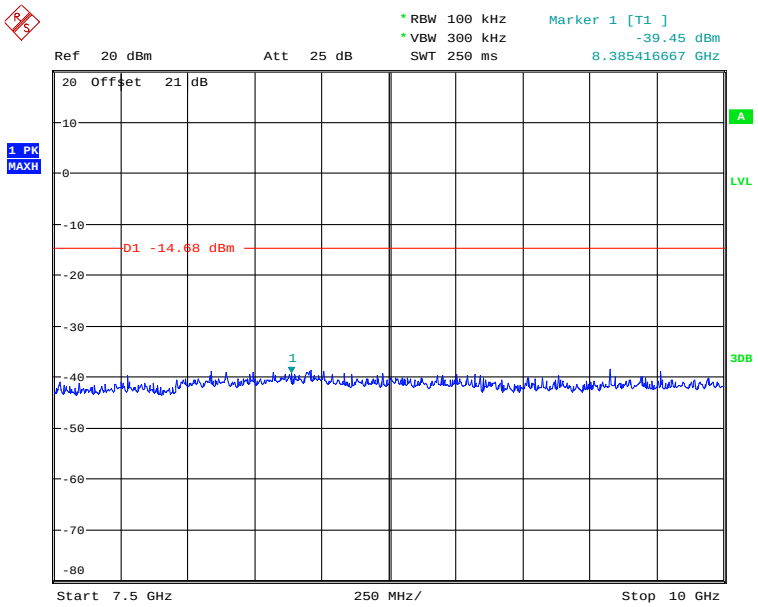


Fig. 45 Conducted Spurious Emission (802.11b, Ch6, 7.5 GHz-10 GHz)

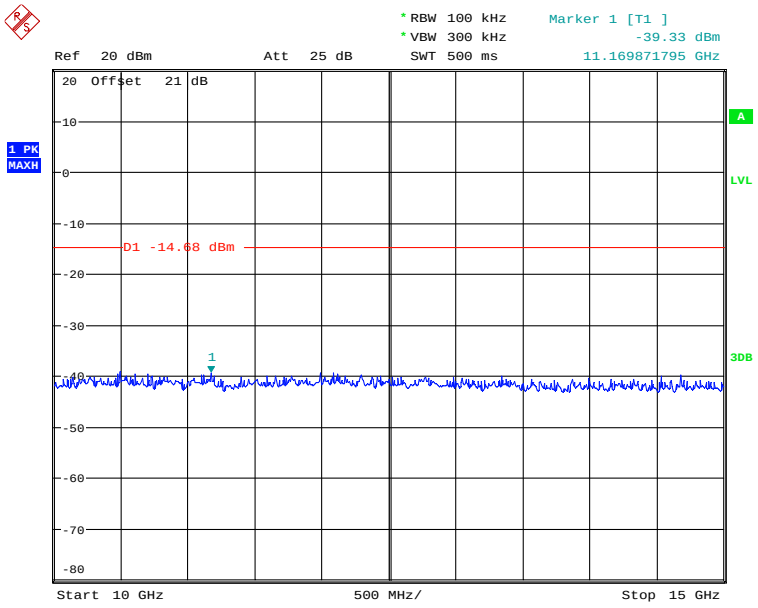


Fig. 46 Conducted Spurious Emission (802.11b, Ch6, 10 GHz-15 GHz)

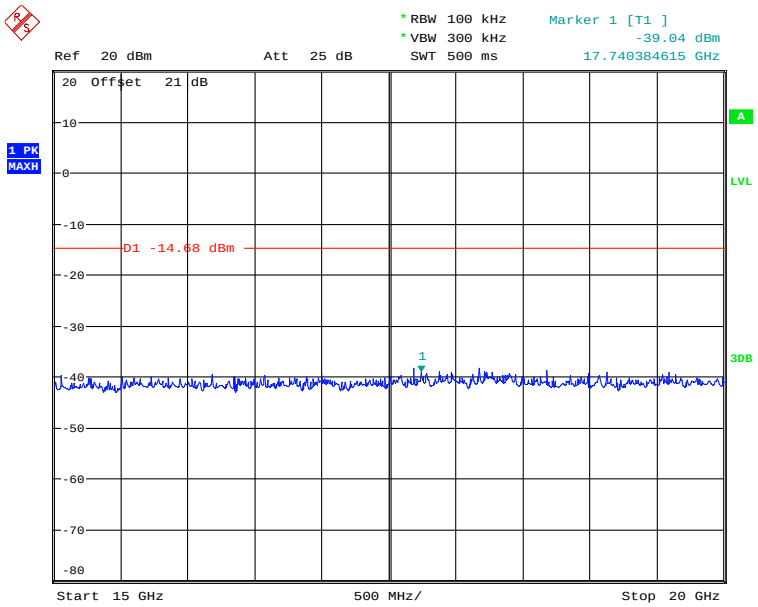


Fig. 47 Conducted Spurious Emission (802.11b, Ch6, 15 GHz-20 GHz)

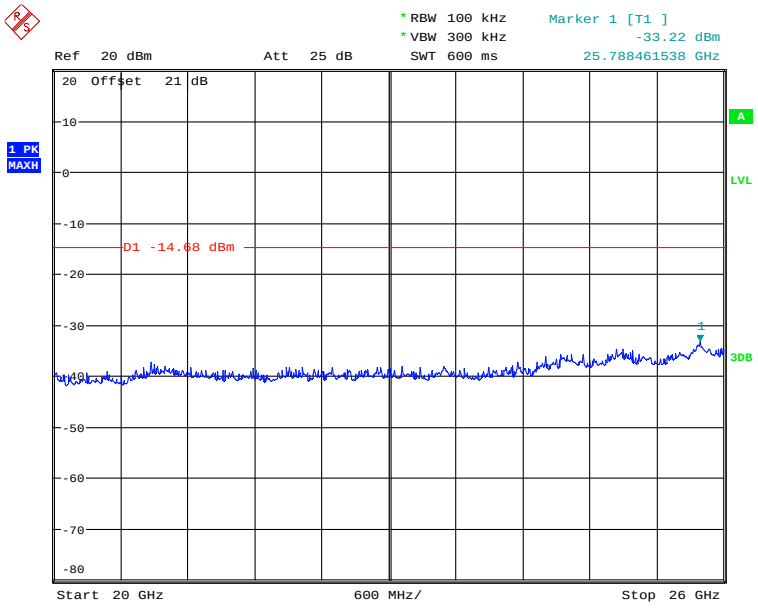


Fig. 48 Conducted Spurious Emission (802.11b, Ch6, 20 GHz-26 GHz)

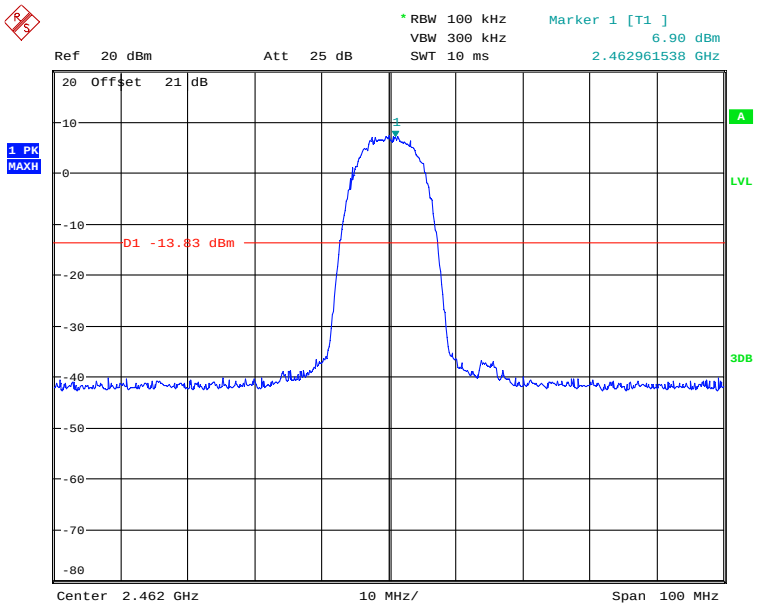


Fig. 49 Conducted Spurious Emission (802.11b, Ch11, Center Frequency)

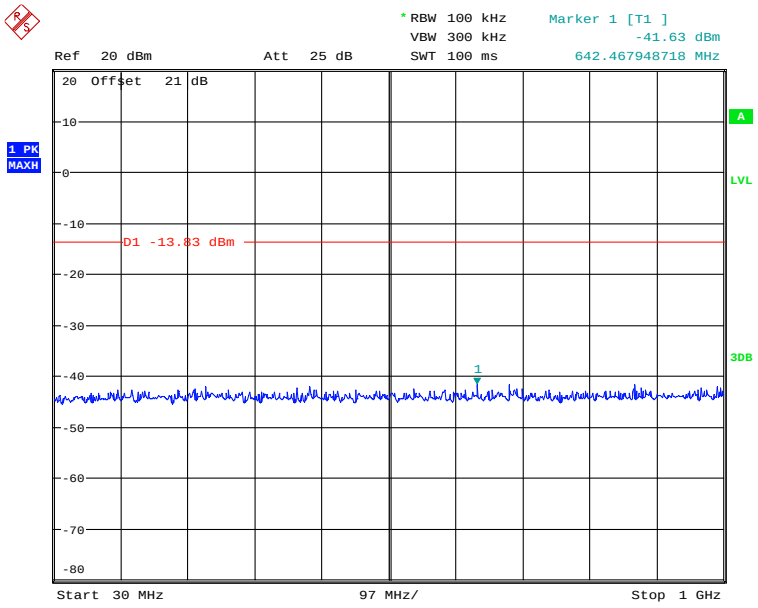


Fig. 50 Conducted Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)

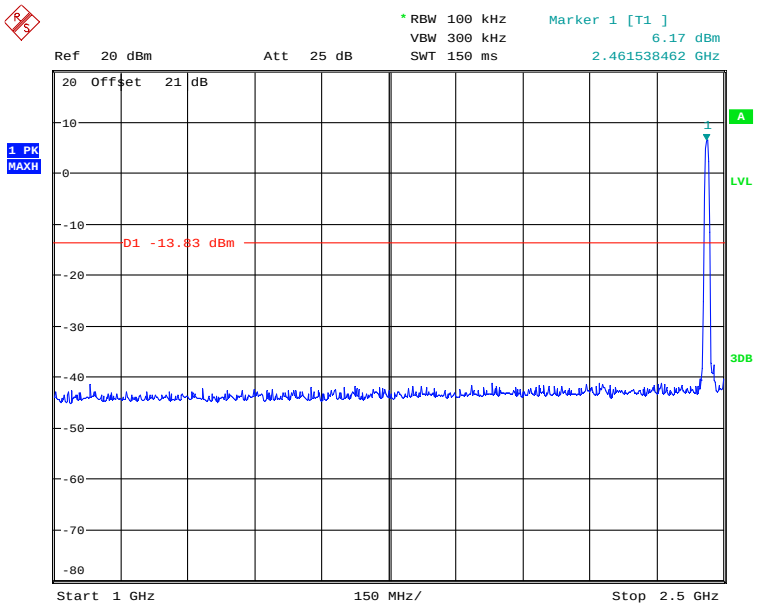


Fig. 51 Conducted Spurious Emission (802.11b, Ch11, 1 GHz-2.5 GHz)

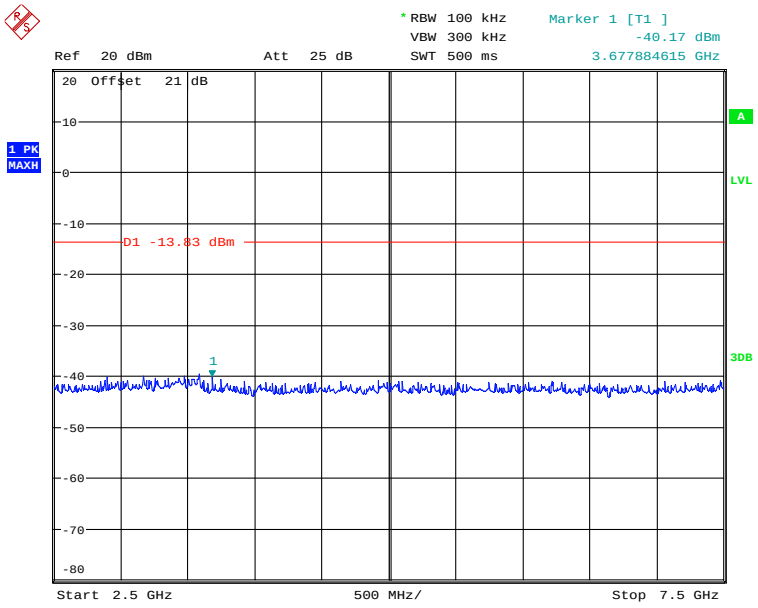


Fig. 52 Conducted Spurious Emission (802.11b, Ch11, 2.5 GHz-7.5 GHz)

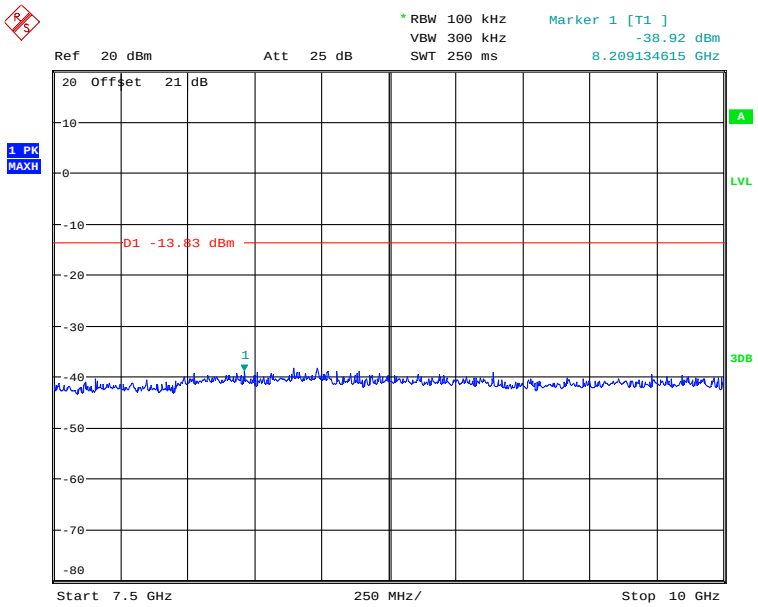


Fig. 53 Conducted Spurious Emission (802.11b, Ch11, 7.5 GHz-10 GHz)

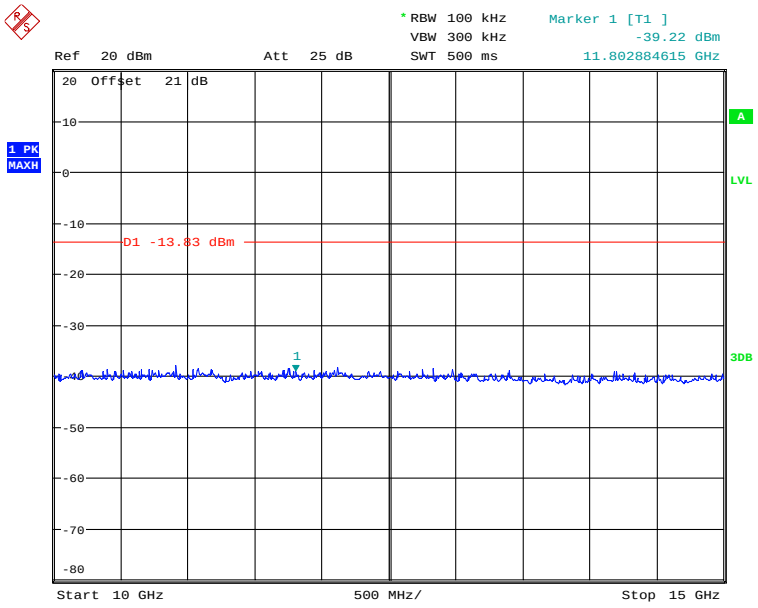


Fig. 54 Conducted Spurious Emission (802.11b, Ch11, 10 GHz-15 GHz)

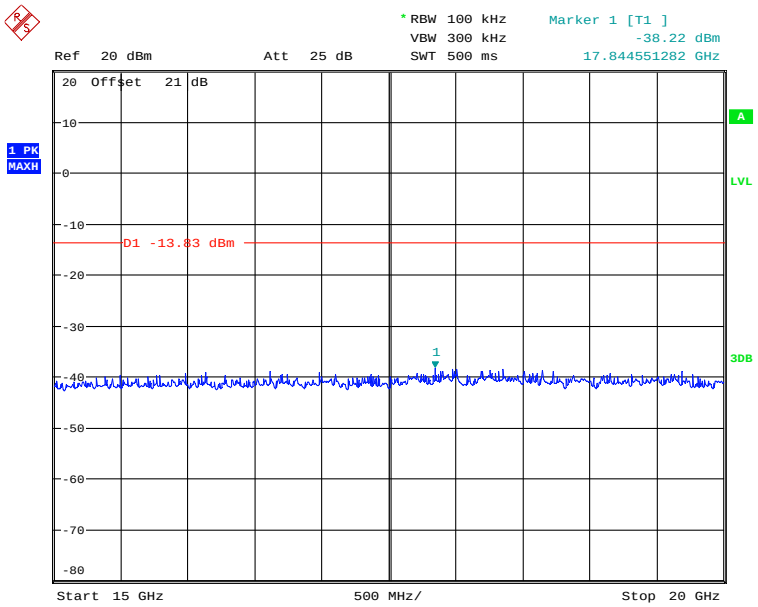


Fig. 55 Conducted Spurious Emission (802.11b, Ch11, 15 GHz-20 GHz)

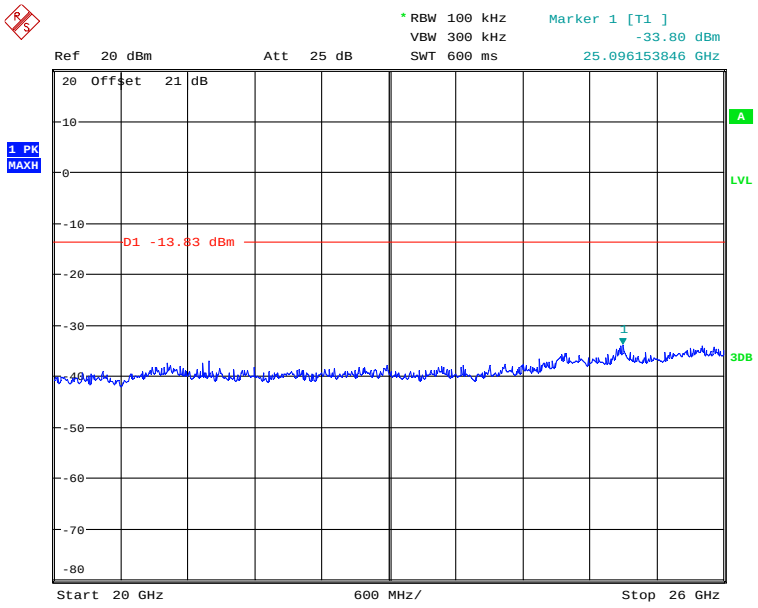


Fig. 56 Conducted Spurious Emission (802.11b, Ch11, 20 GHz-26 GHz)

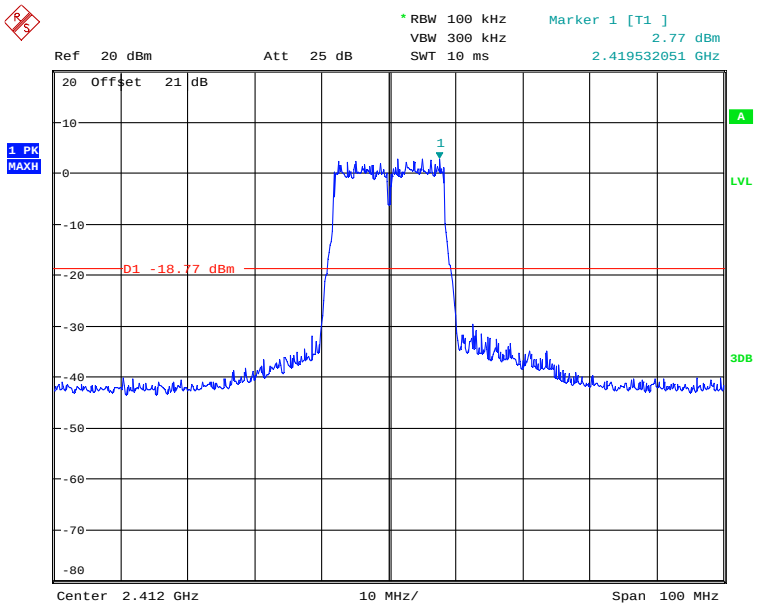


Fig. 57 Conducted Spurious Emission (802.11g, Ch1, Center Frequency)

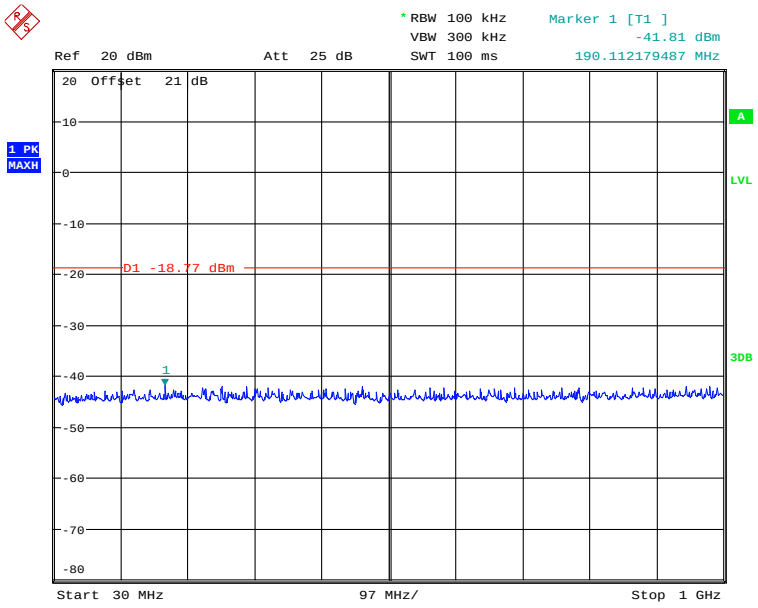


Fig. 58 Conducted Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)

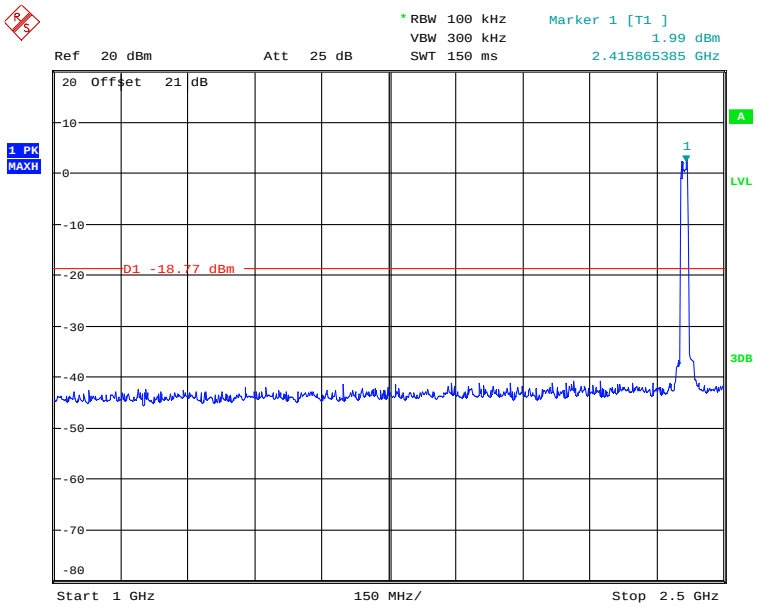


Fig. 59 Conducted Spurious Emission (802.11g, Ch1, 1 GHz-2.5 GHz)

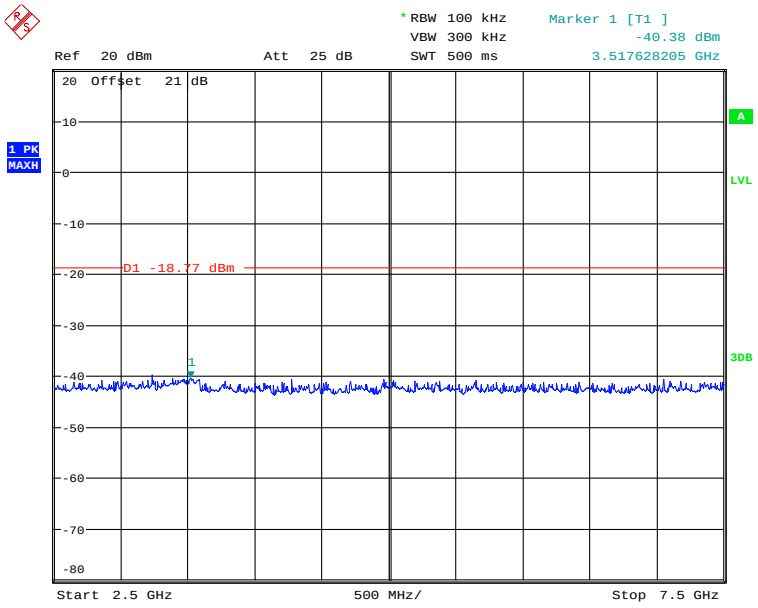


Fig. 60 Conducted Spurious Emission (802.11g, Ch1, 2.5 GHz-7.5 GHz)

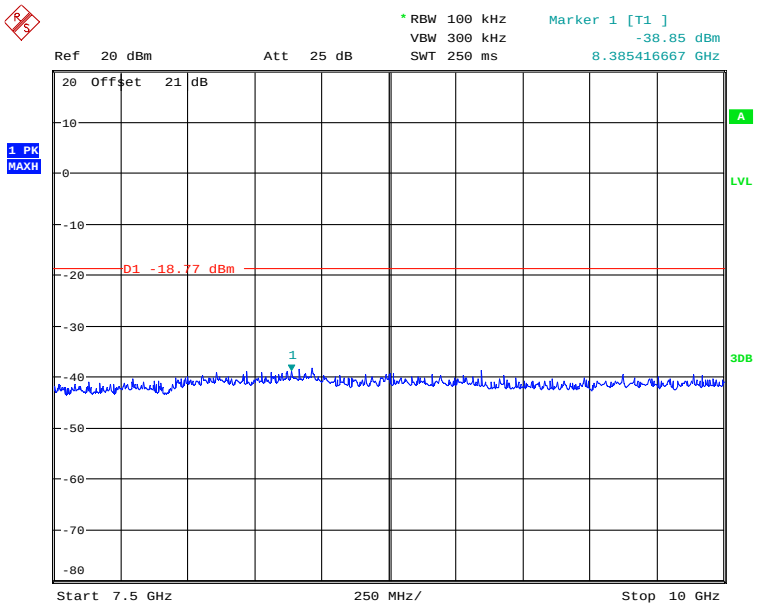


Fig. 61 Conducted Spurious Emission (802.11g, Ch1, 7.5 GHz-10 GHz)

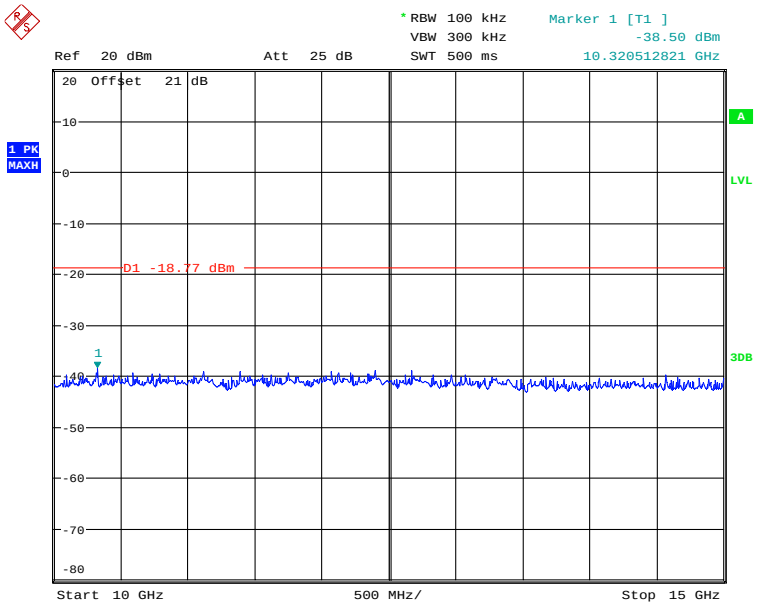


Fig. 62 Conducted Spurious Emission (802.11g, Ch1, 10 GHz-15 GHz)

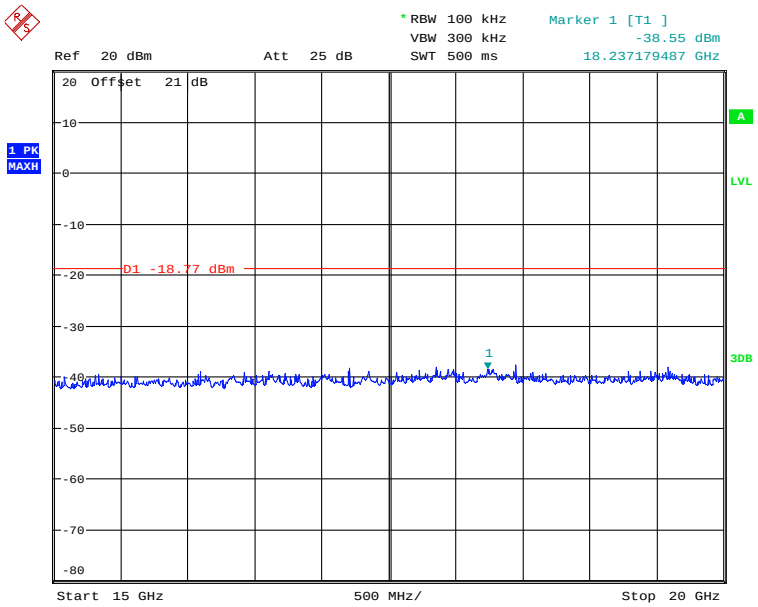


Fig. 63 Conducted Spurious Emission (802.11g, Ch1, 15 GHz-20 GHz)

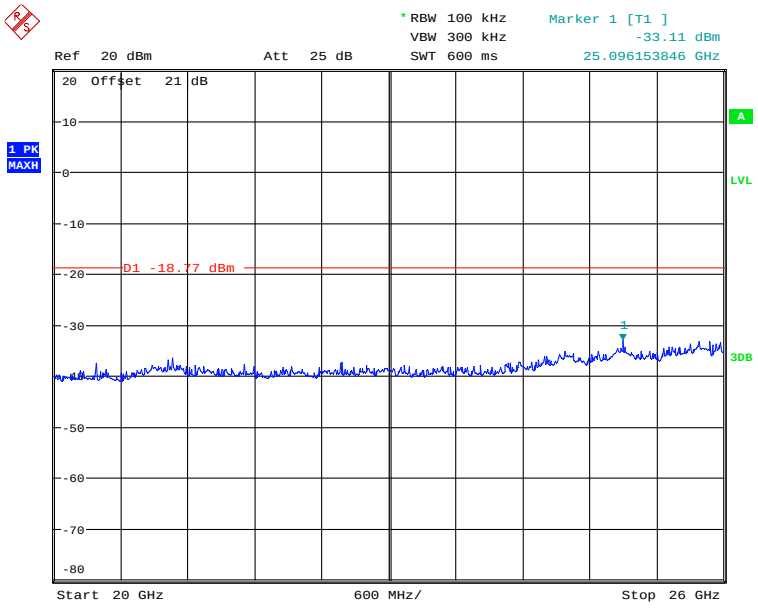


Fig. 64 Conducted Spurious Emission (802.11g, Ch1, 20 GHz-26 GHz)

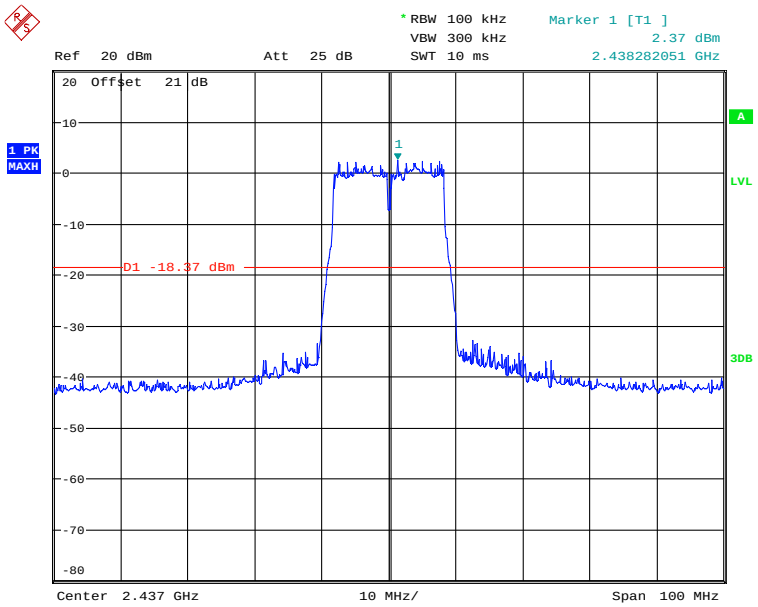


Fig. 65 Conducted Spurious Emission (802.11g, Ch6, Center Frequency)

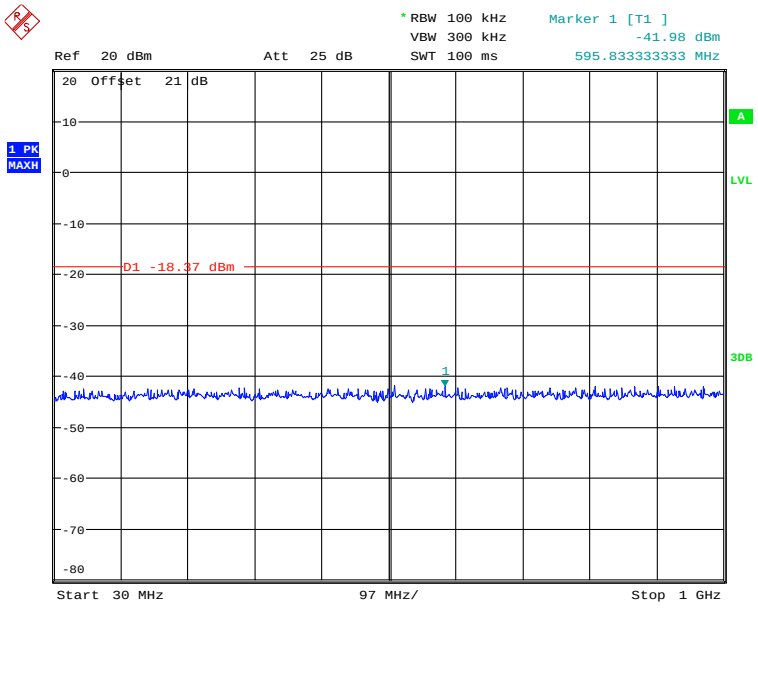


Fig. 66 Conducted Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)

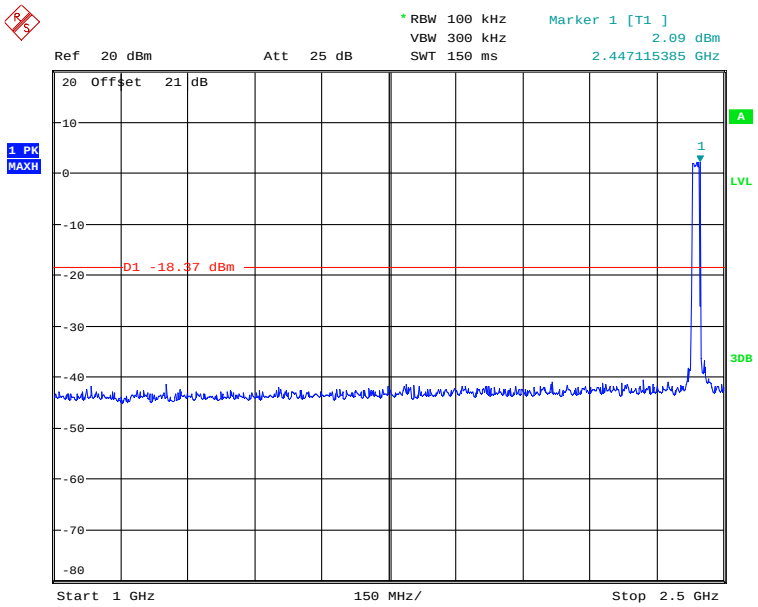


Fig. 67 Conducted Spurious Emission (802.11g, Ch6, 1 GHz-2.5 GHz)

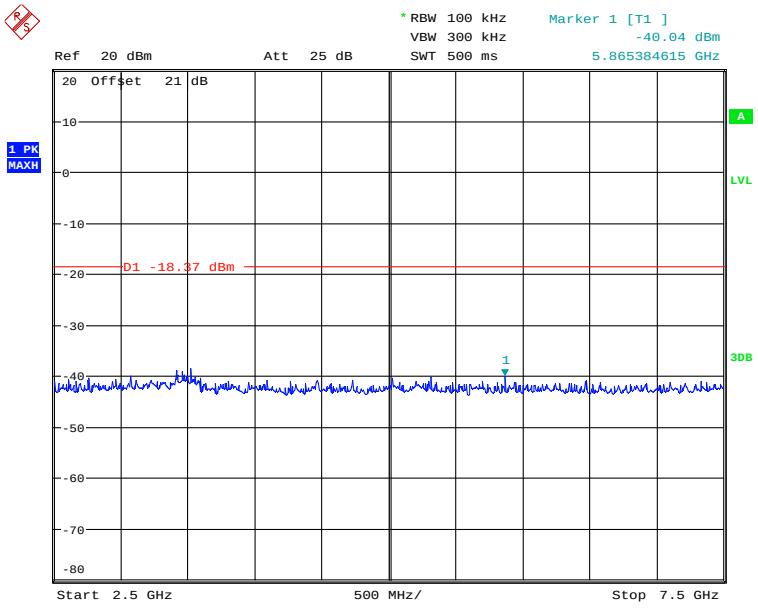


Fig. 68 Conducted Spurious Emission (802.11g, Ch6, 2.5 GHz-7.5 GHz)

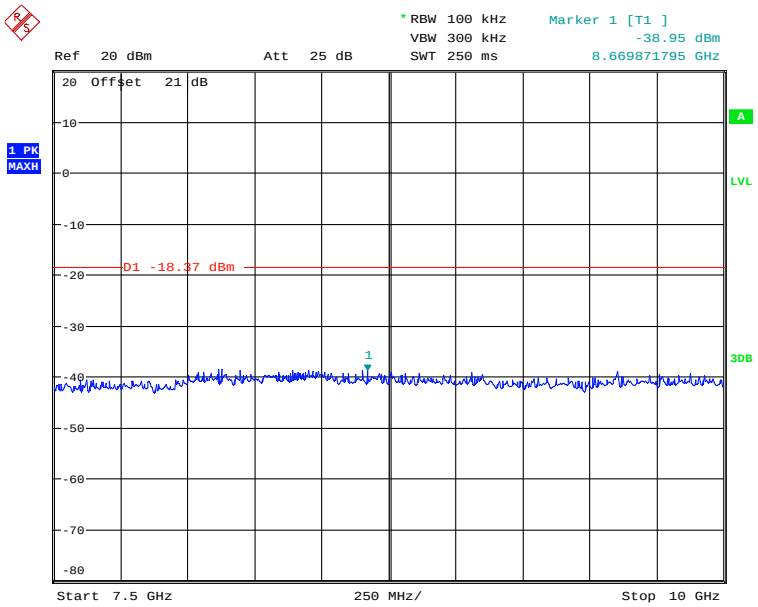


Fig. 69 Conducted Spurious Emission (802.11g, Ch6, 7.5 GHz-10 GHz)

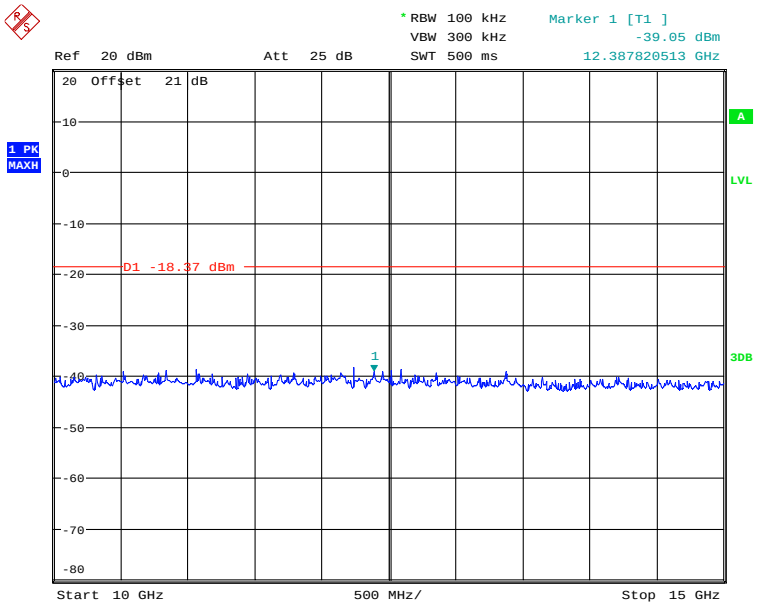


Fig. 70 Conducted Spurious Emission (802.11g, Ch6, 10 GHz-15 GHz)

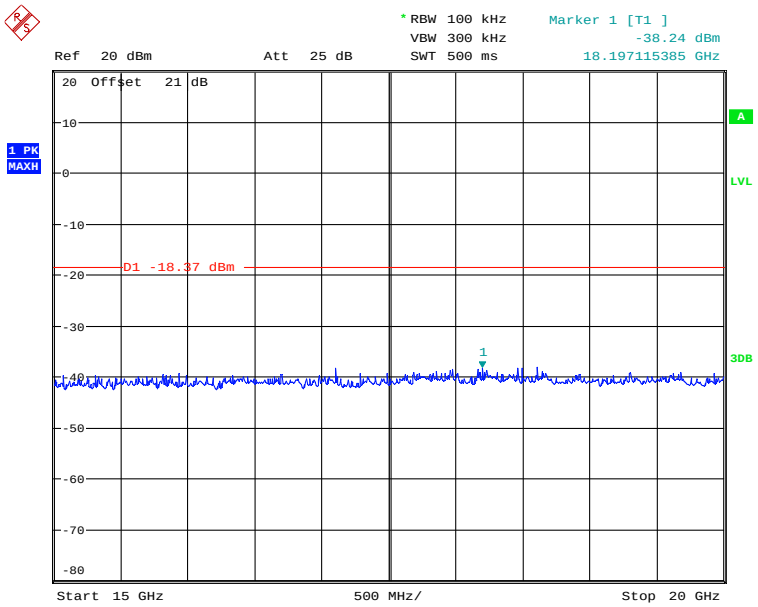


Fig. 71 Conducted Spurious Emission (802.11g, Ch6, 15 GHz-20 GHz)

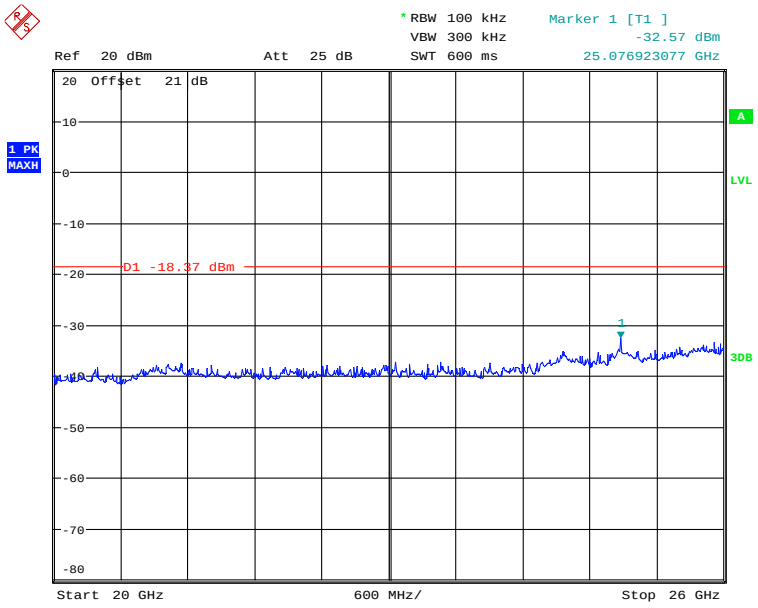


Fig. 72 Conducted Spurious Emission (802.11g, Ch6, 20 GHz-26 GHz)

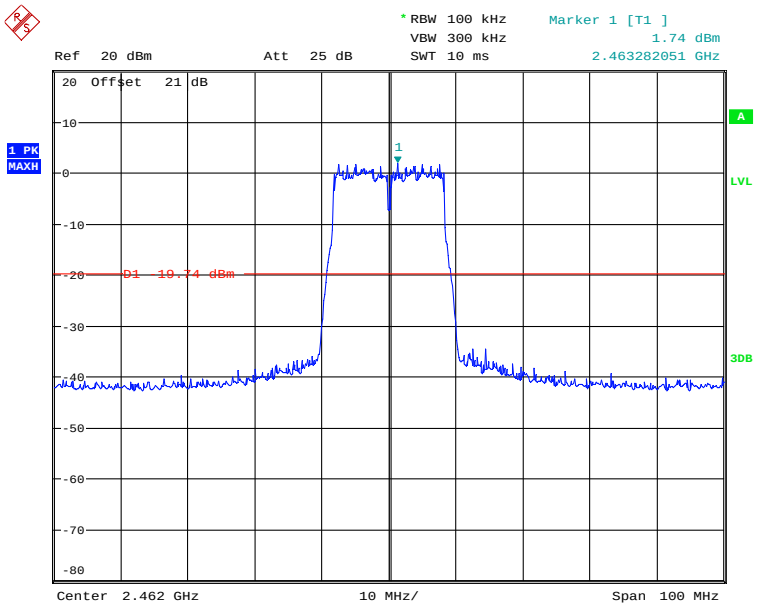


Fig. 73 Conducted Spurious Emission (802.11g, Ch11, Center Frequency)

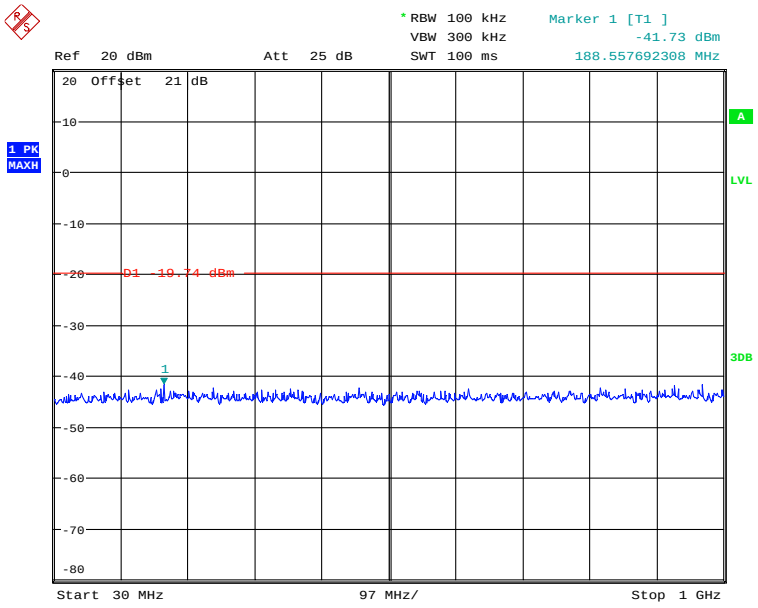


Fig. 74 Conducted Spurious Emission (802.11g, Ch11, 30 MHz-1 GHz)

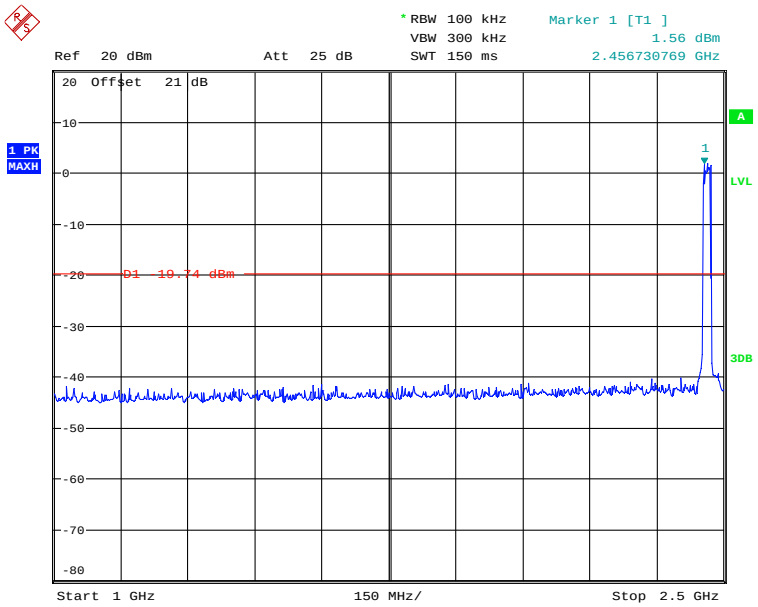


Fig. 75 Conducted Spurious Emission (802.11g, Ch11, 1 GHz-2.5 GHz)

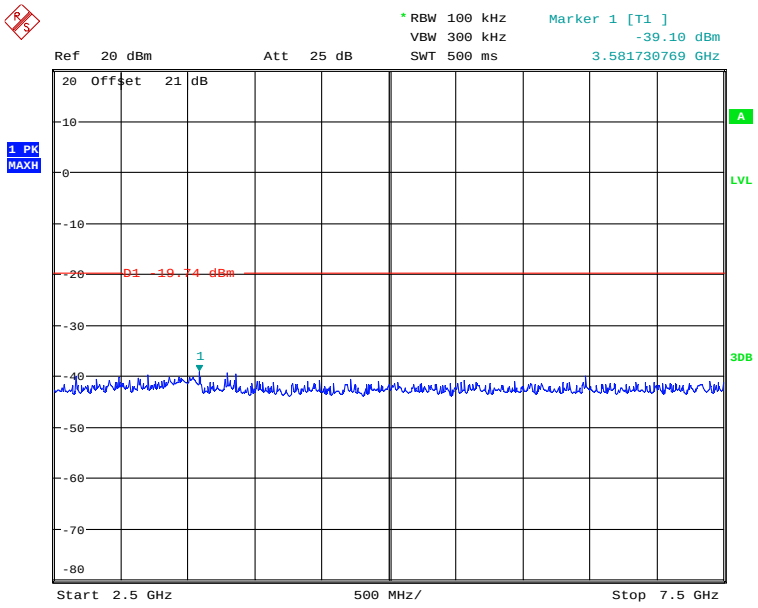


Fig. 76 Conducted Spurious Emission (802.11g, Ch11, 2.5 GHz-7.5 GHz)

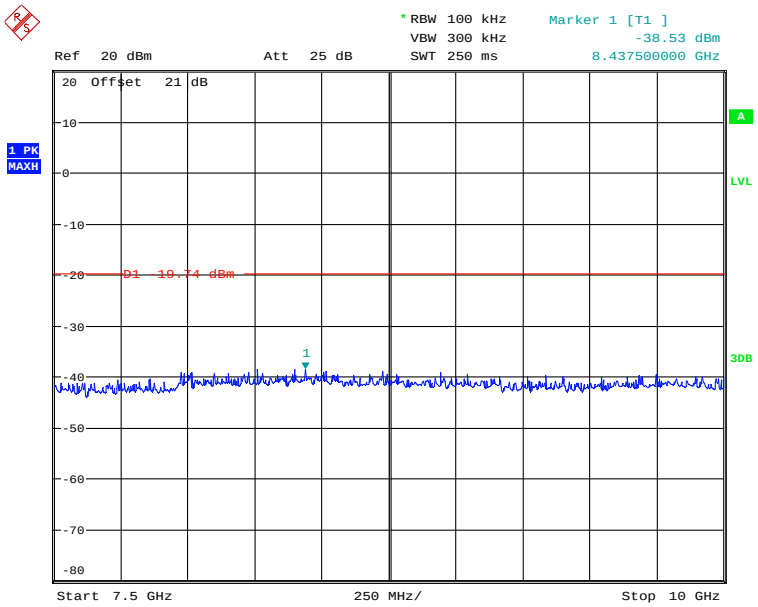


Fig. 77 Conducted Spurious Emission (802.11g, Ch11, 7.5 GHz-10 GHz)

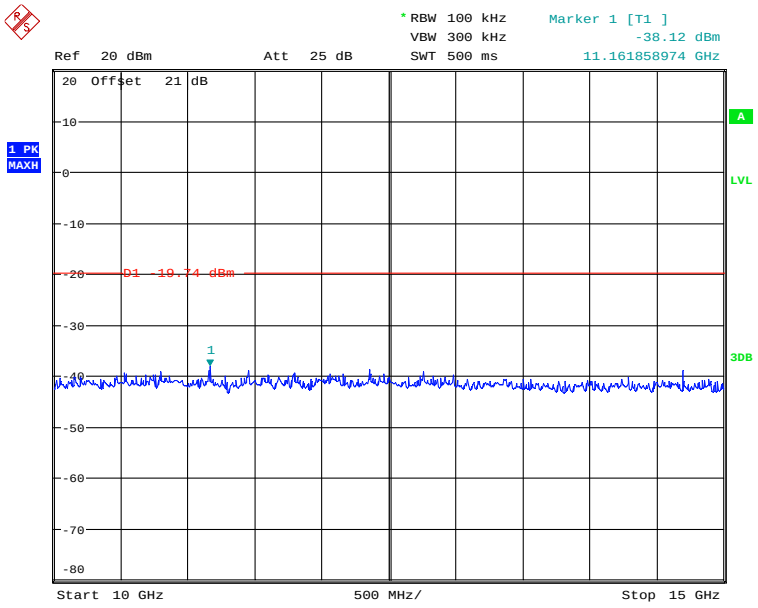


Fig. 78 Conducted Spurious Emission (802.11g, Ch11, 10 GHz-15 GHz)

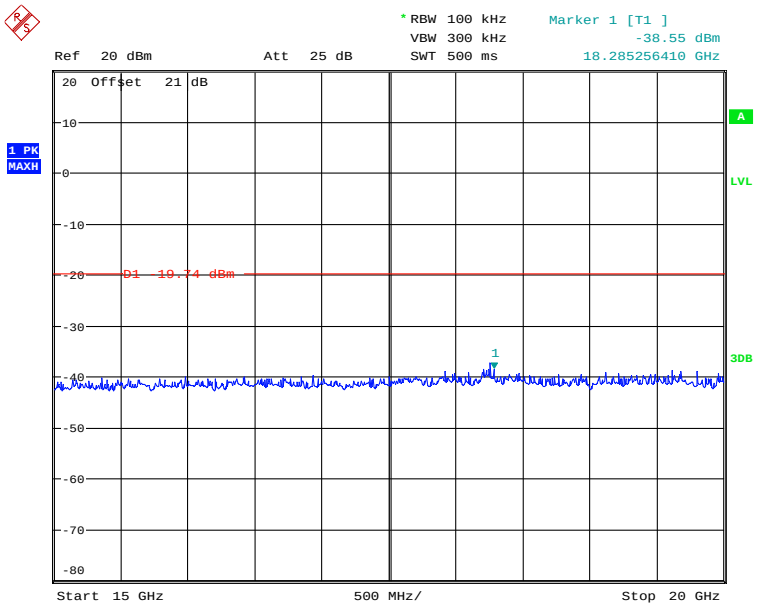


Fig. 79 Conducted Spurious Emission (802.11g, Ch11, 15 GHz-20 GHz)

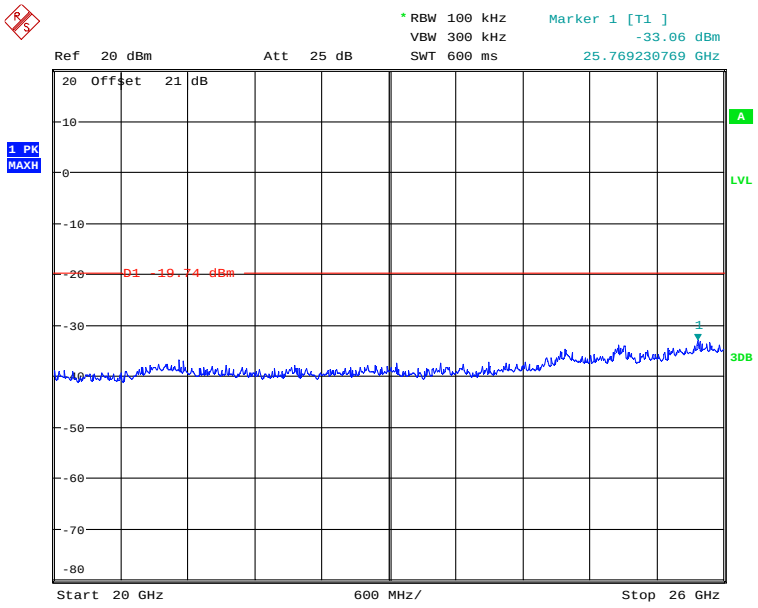


Fig. 80 Conducted Spurious Emission (802.11g, Ch11, 20 GHz-26 GHz)

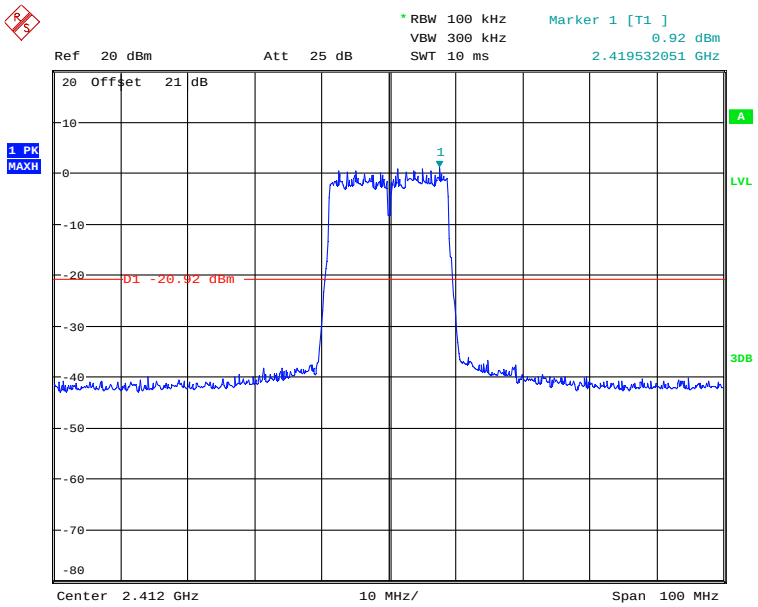


Fig. 81 Conducted Spurious Emission (802.11n-HT20, Ch1, Center Frequency)

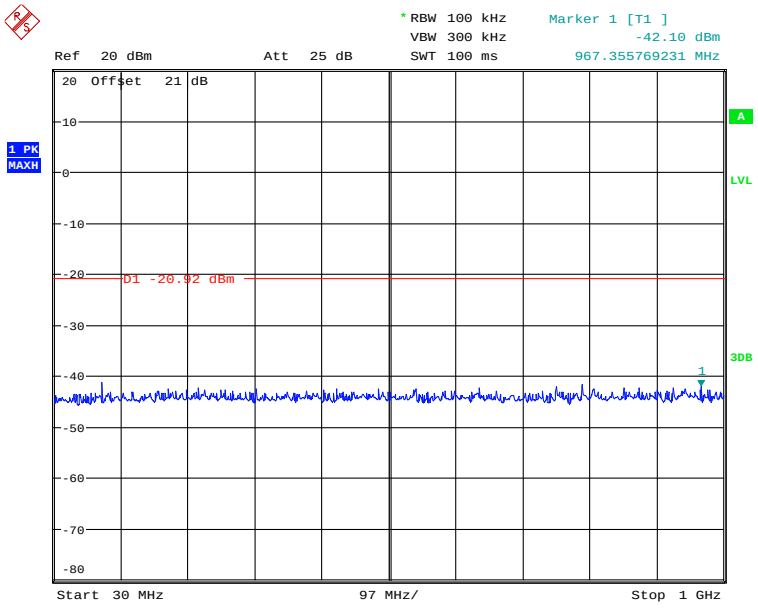


Fig. 82 Conducted Spurious Emission (802.11n-HT20, Ch1, 30 MHz-1 GHz)

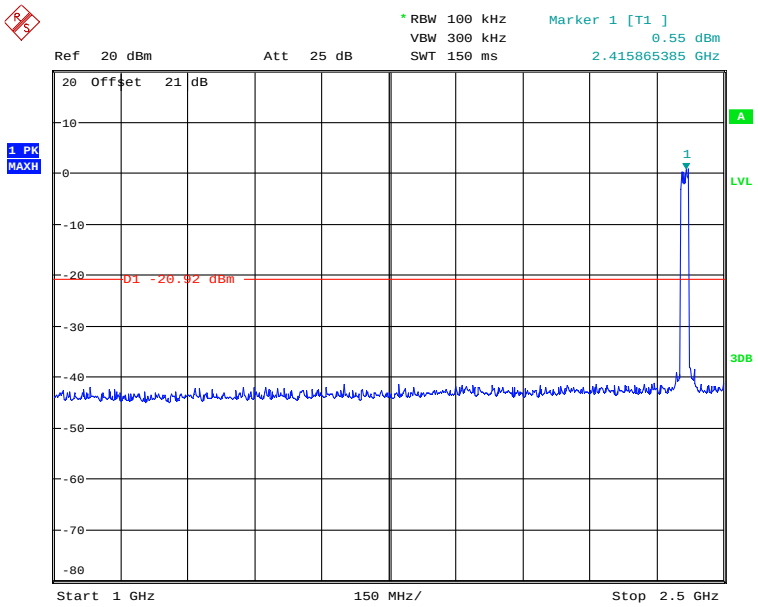


Fig. 83 Conducted Spurious Emission (802.11n-HT20, Ch1, 1 GHz-2.5 GHz)

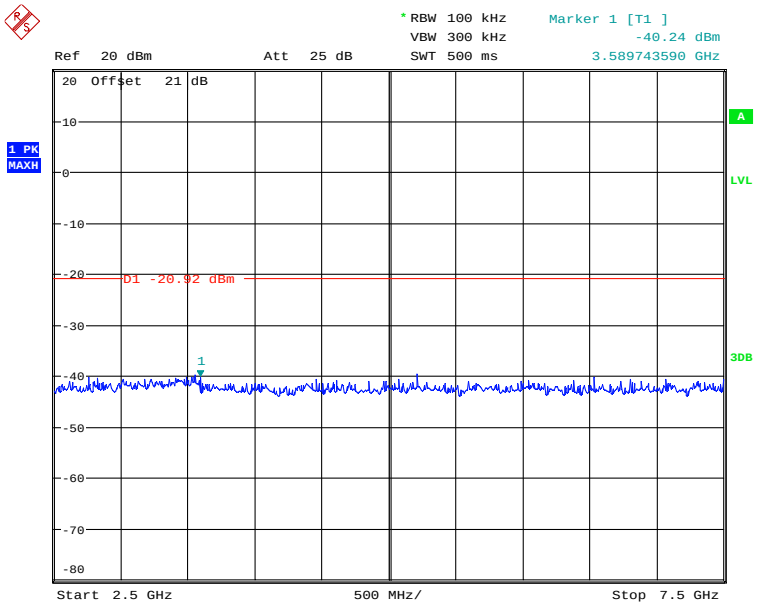


Fig. 84 Conducted Spurious Emission (802.11n-HT20, Ch1, 2.5 GHz-7.5 GHz)

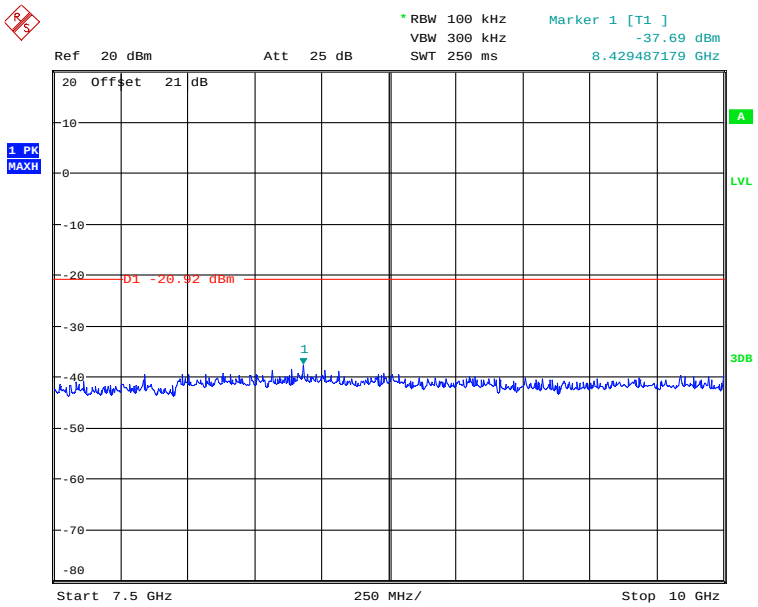


Fig. 85 Conducted Spurious Emission (802.11n-HT20, Ch1, 7.5 GHz-10 GHz)

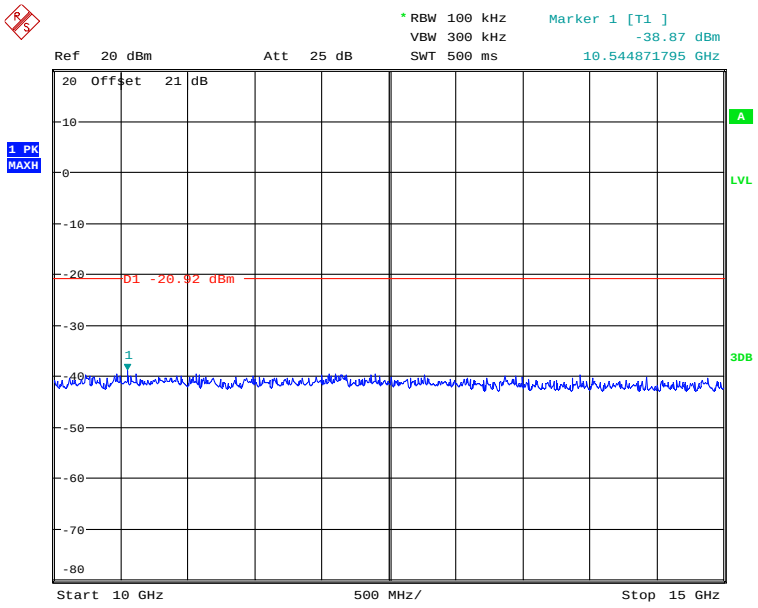


Fig. 86 Conducted Spurious Emission (802.11n-HT20, Ch1, 10 GHz-15 GHz)

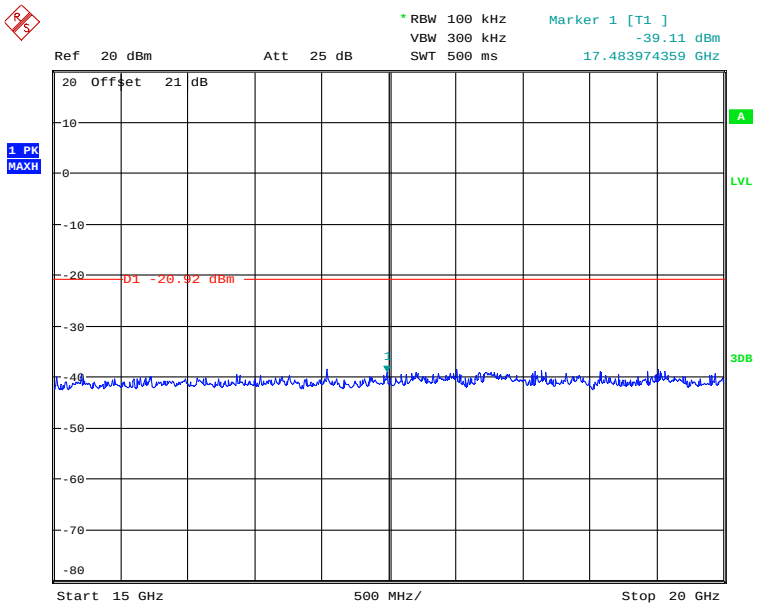


Fig. 87 Conducted Spurious Emission (802.11n-HT20, Ch1, 15 GHz-20 GHz)

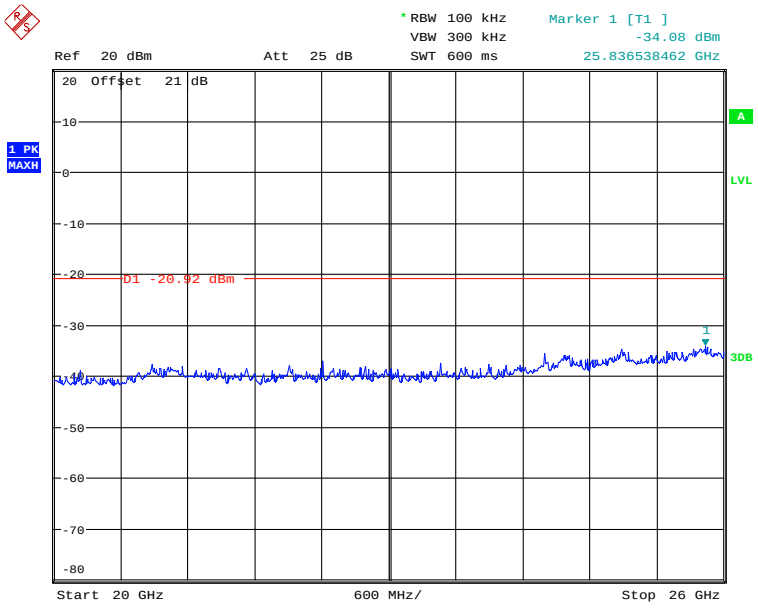


Fig. 88 Conducted Spurious Emission (802.11n-HT20, Ch1, 20 GHz-26 GHz)

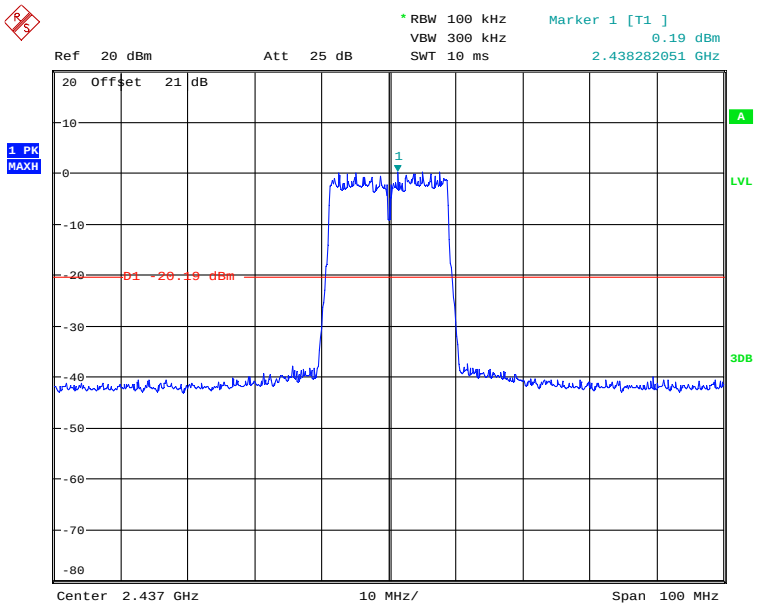


Fig. 89 Conducted Spurious Emission (802.11n-HT20, Ch6, Center Frequency)

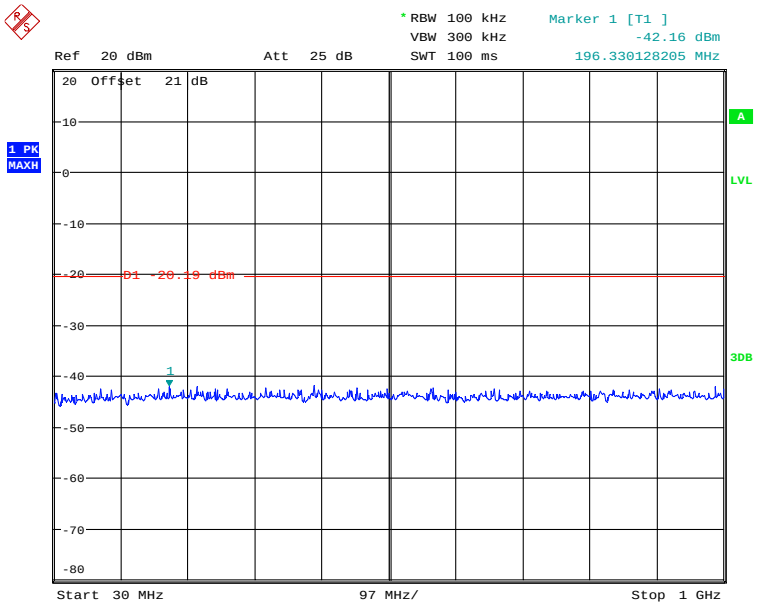


Fig. 90 Conducted Spurious Emission (802.11n-HT20, Ch6, 30 MHz-1 GHz)

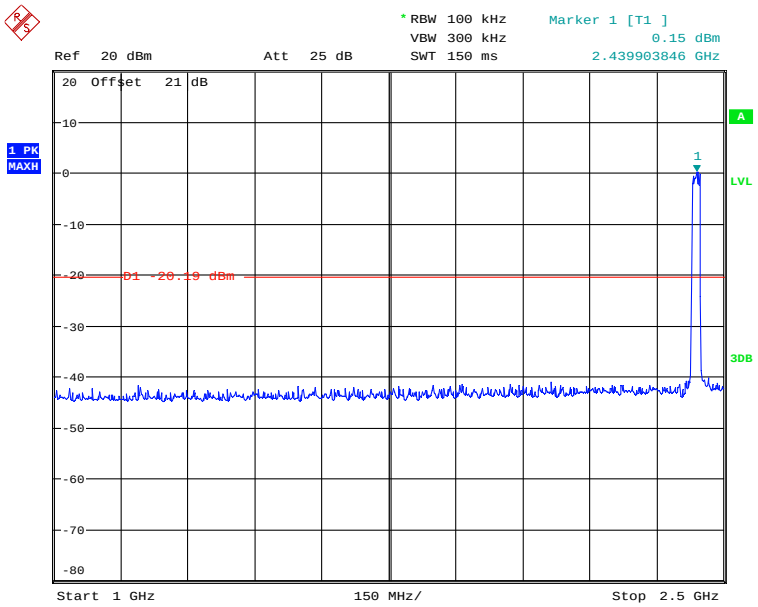


Fig. 91 Conducted Spurious Emission (802.11n-HT20, Ch6, 1 GHz-2.5 GHz)

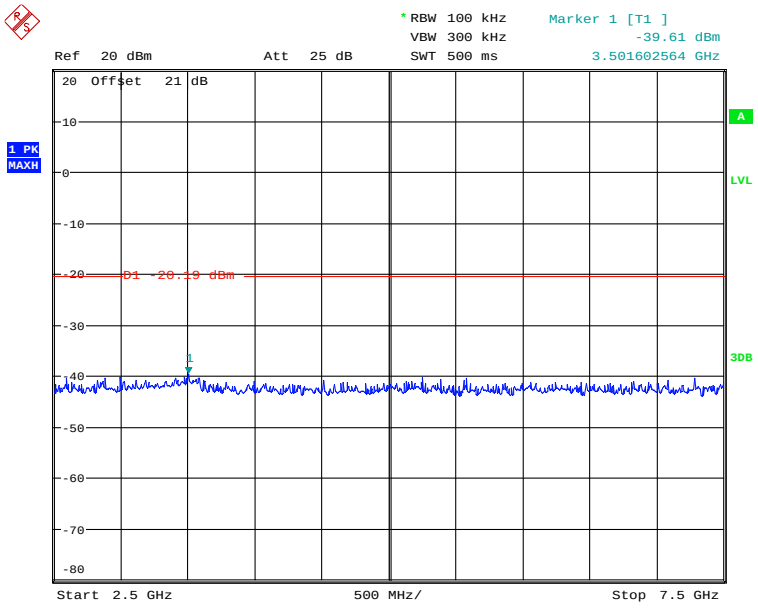


Fig. 92 Conducted Spurious Emission (802.11n-HT20, Ch6, 2.5 GHz-7.5 GHz)

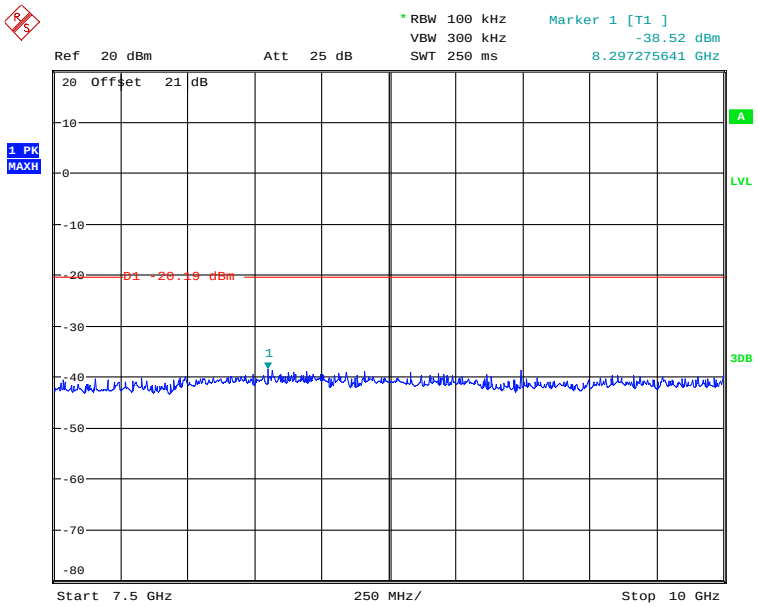


Fig. 93 Conducted Spurious Emission (802.11n-HT20, Ch6, 7.5 GHz-10 GHz)

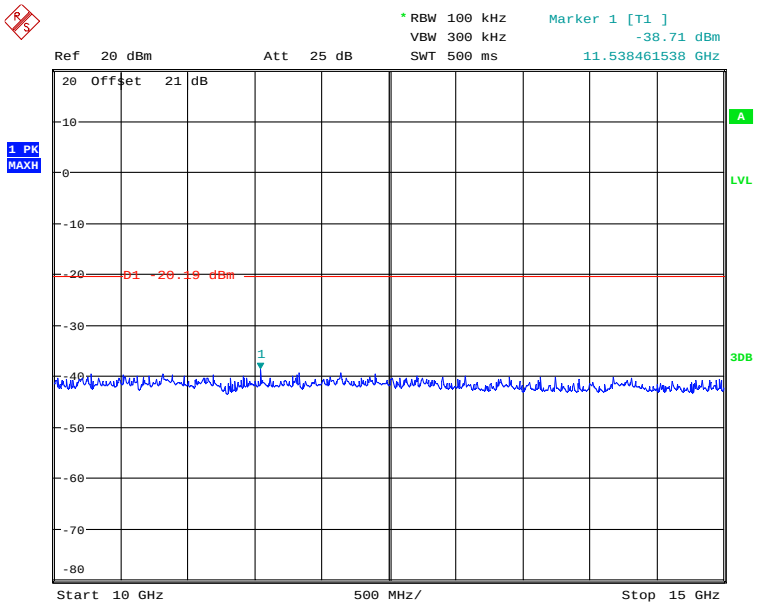


Fig. 94 Conducted Spurious Emission (802.11n-HT20, Ch6, 10 GHz-15 GHz)

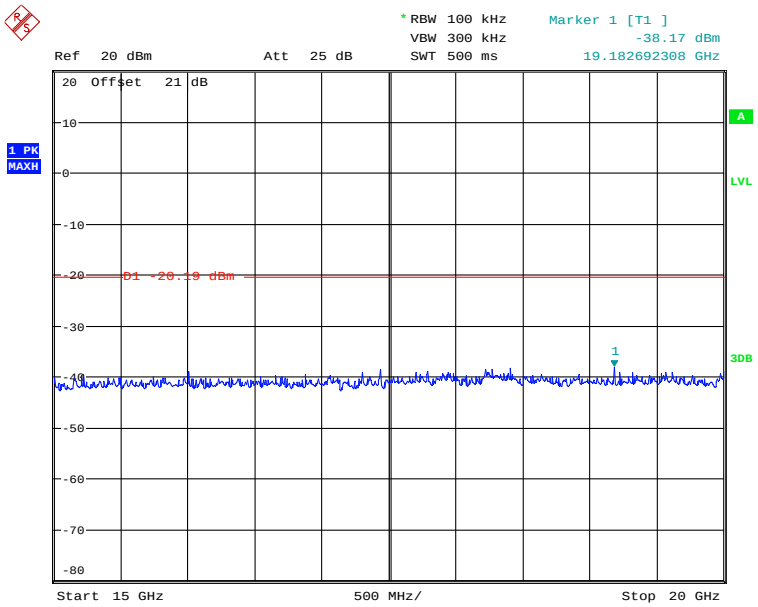


Fig. 95 Conducted Spurious Emission (802.11n-HT20, Ch6, 15 GHz-20 GHz)

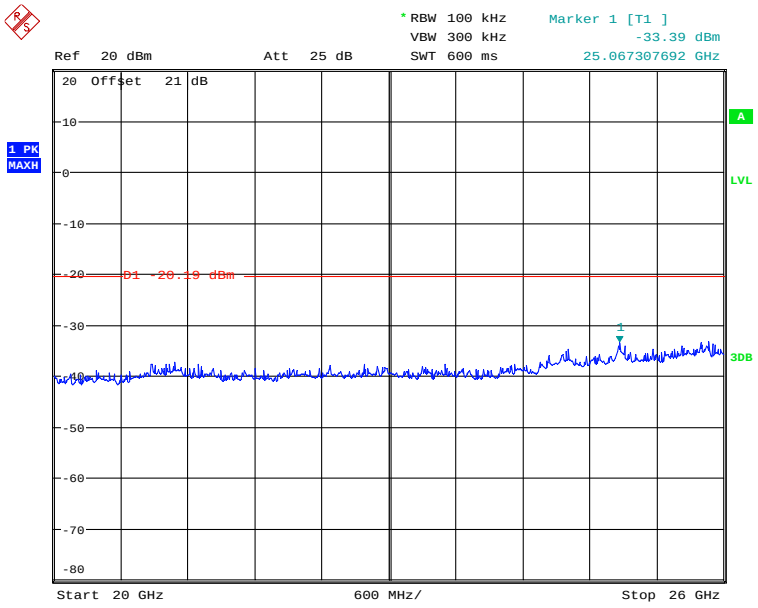


Fig. 96 Conducted Spurious Emission (802.11n-HT20, Ch6, 20 GHz-26 GHz)

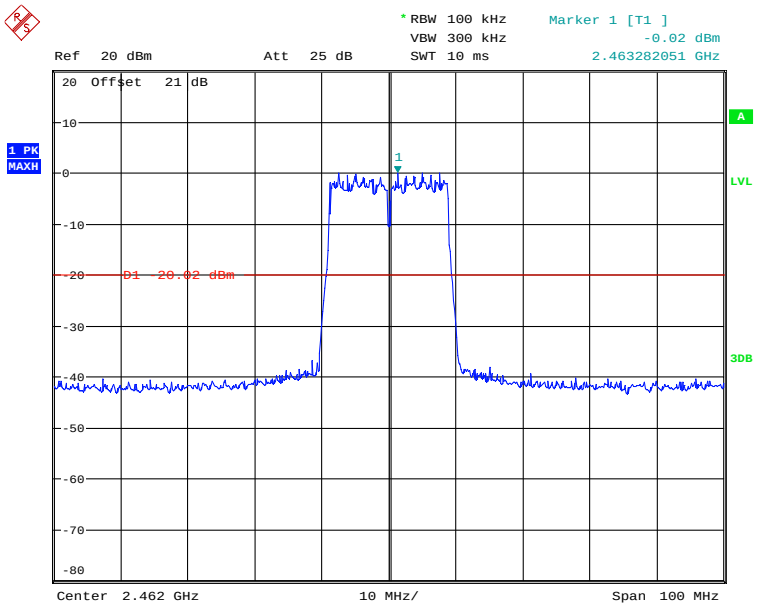


Fig. 97 Conducted Spurious Emission (802.11n-HT20, Ch11, Center Frequency)

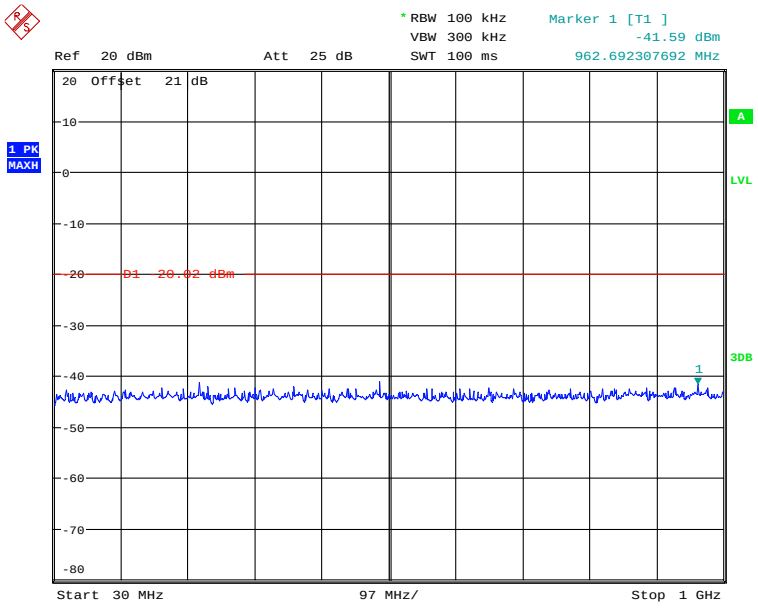


Fig. 98 Conducted Spurious Emission (802.11n-HT20, Ch11, 30 MHz-1 GHz)

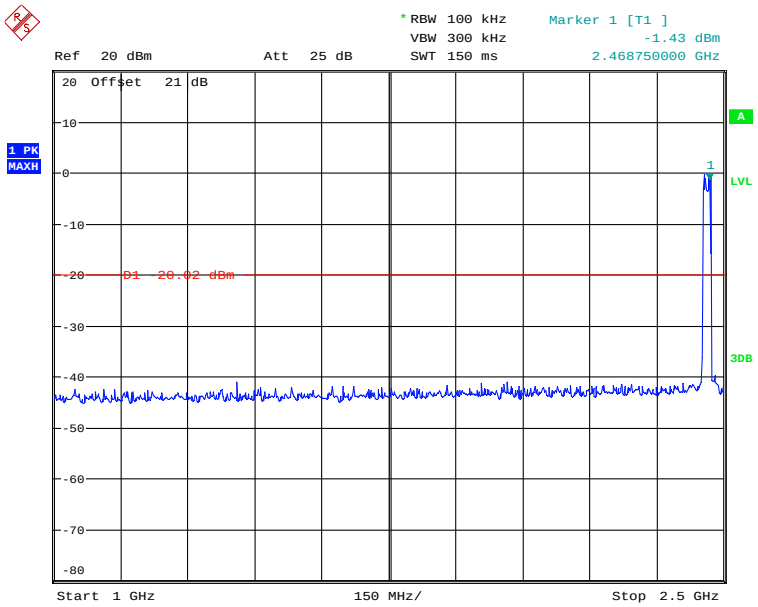


Fig. 99 Conducted Spurious Emission (802.11n-HT20, Ch11, 1 GHz-2.5 GHz)

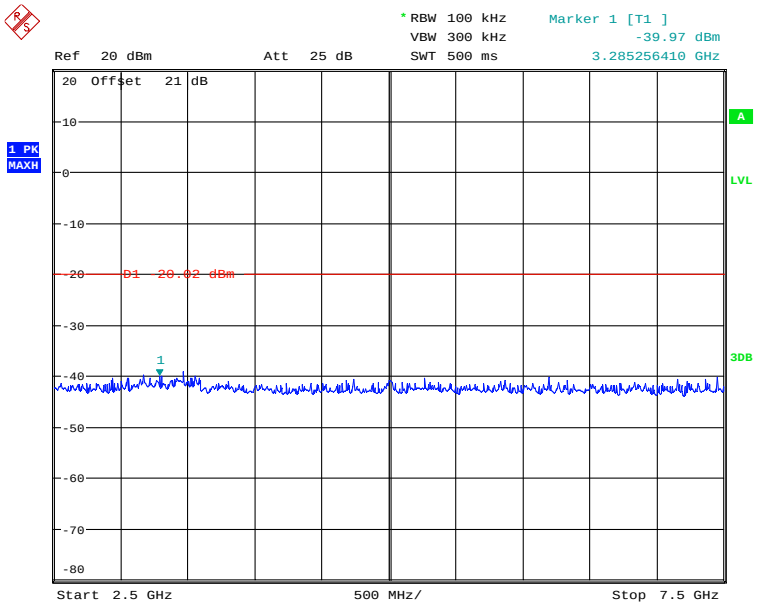


Fig. 100 Conducted Spurious Emission (802.11n-HT20, Ch11, 2.5 GHz-7.5 GHz)

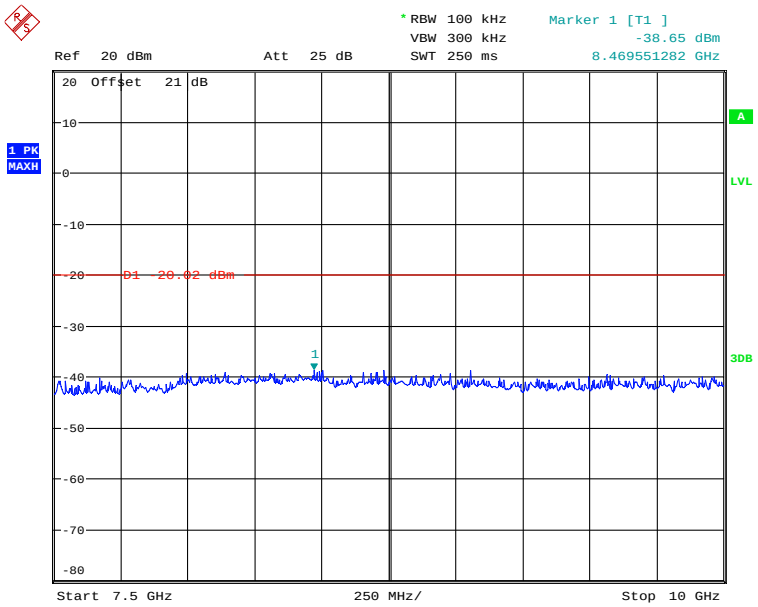


Fig. 101 Conducted Spurious Emission (802.11n-HT20, Ch11, 7.5 GHz-10 GHz)

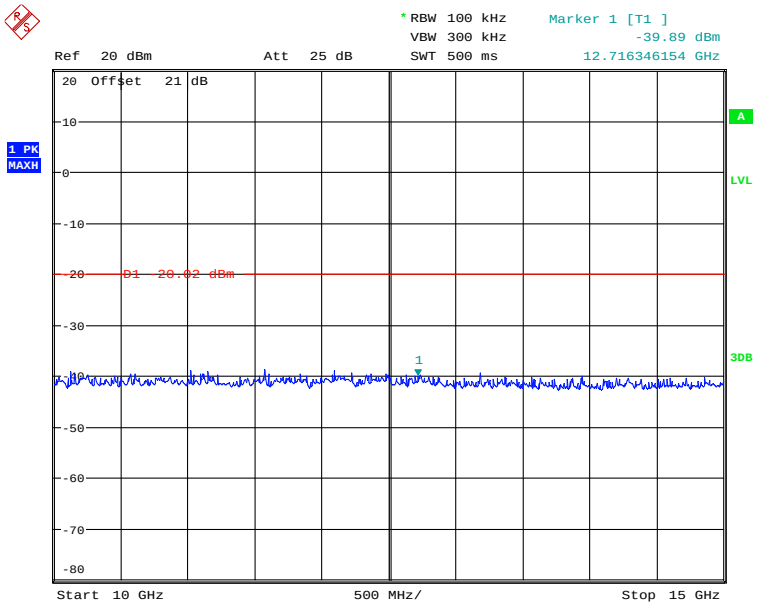


Fig. 102 Conducted Spurious Emission (802.11n-HT20, Ch11, 10 GHz-15 GHz)

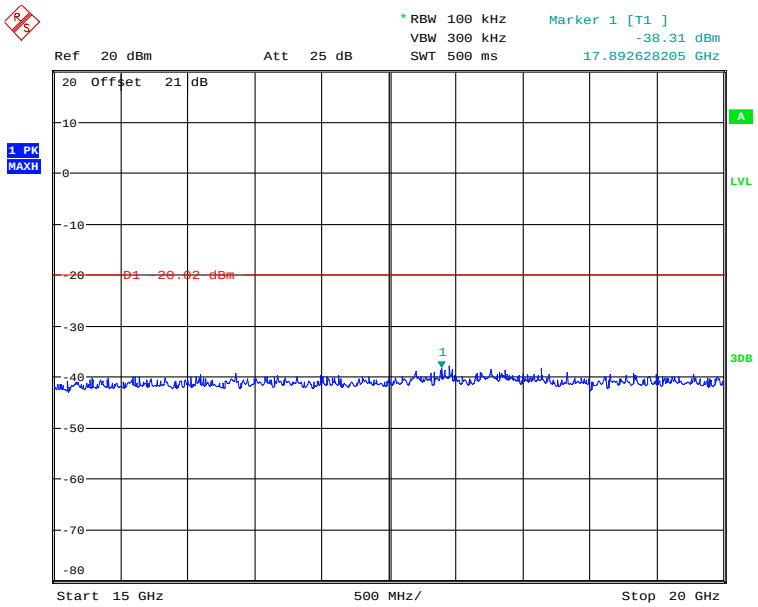


Fig. 103 Conducted Spurious Emission (802.11n-HT20, Ch11, 15 GHz-20 GHz)

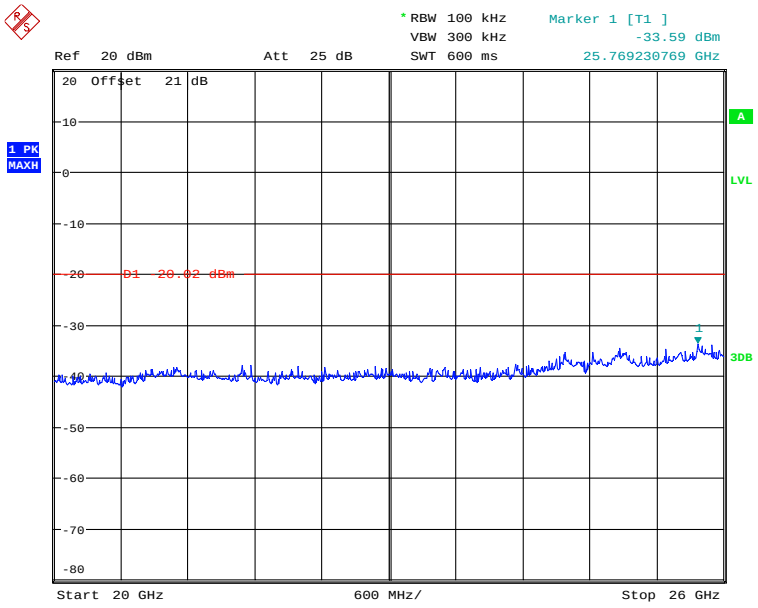


Fig. 104 Conducted Spurious Emission (802.11n-HT20, Ch11, 20 GHz-26 GHz)

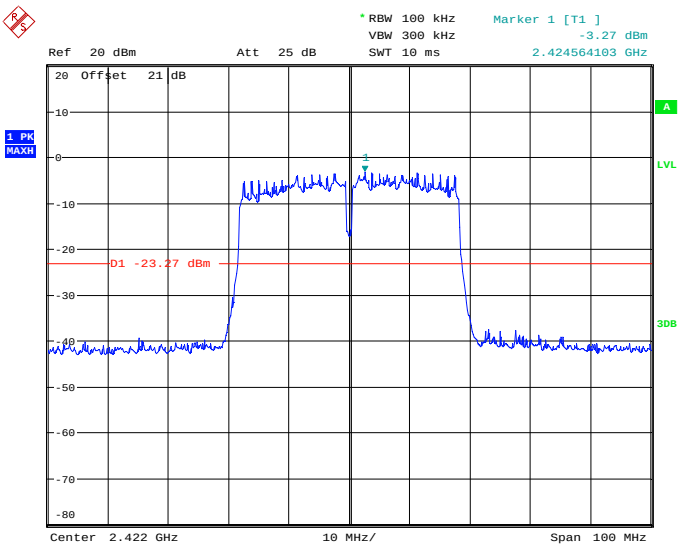


Fig. 105 Conducted Spurious Emission (802.11n-HT40, Ch3, Center Frequency)

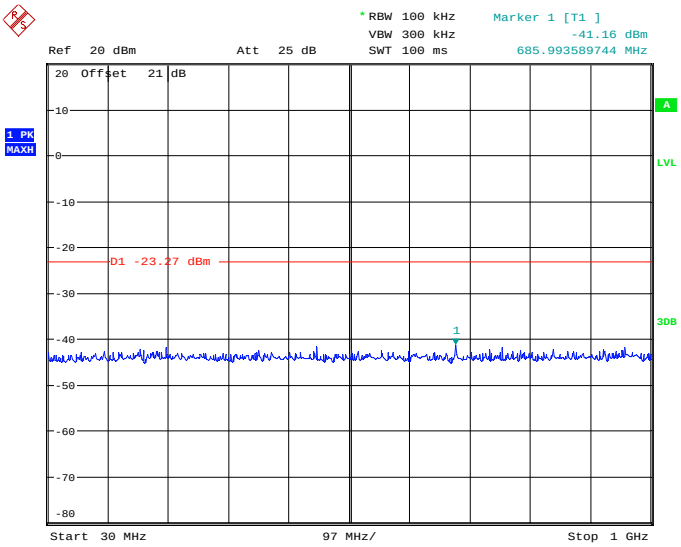


Fig. 106 Conducted Spurious Emission (802.11n-HT40, Ch3, 30 MHz-1 GHz)

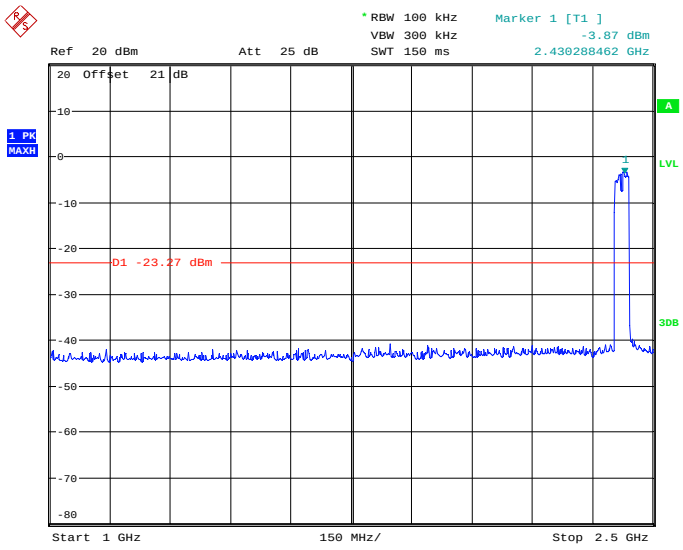


Fig. 107 Conducted Spurious Emission (802.11n-HT40, Ch3, 1 GHz-2.5 GHz)

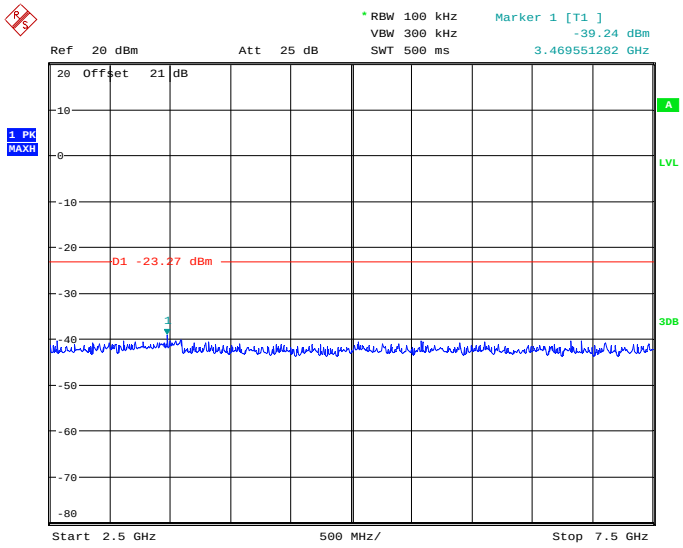


Fig. 108 Conducted Spurious Emission (802.11n-HT40, Ch3, 2.5 GHz-7.5 GHz)

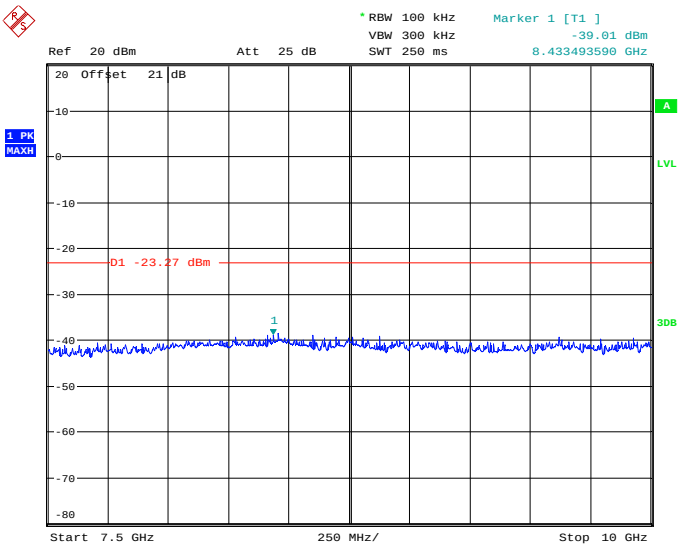


Fig. 109 Conducted Spurious Emission (802.11n-HT40, Ch3, 7.5 GHz-10 GHz)

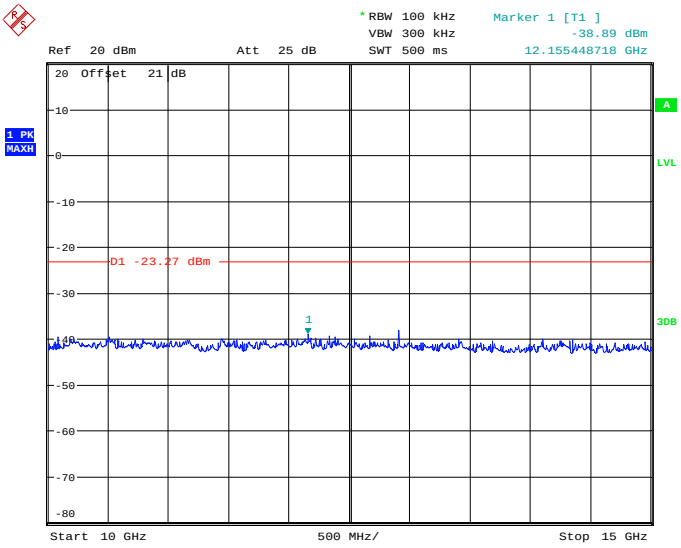


Fig. 110 Conducted Spurious Emission (802.11n-HT40, Ch3, 10 GHz-15 GHz)

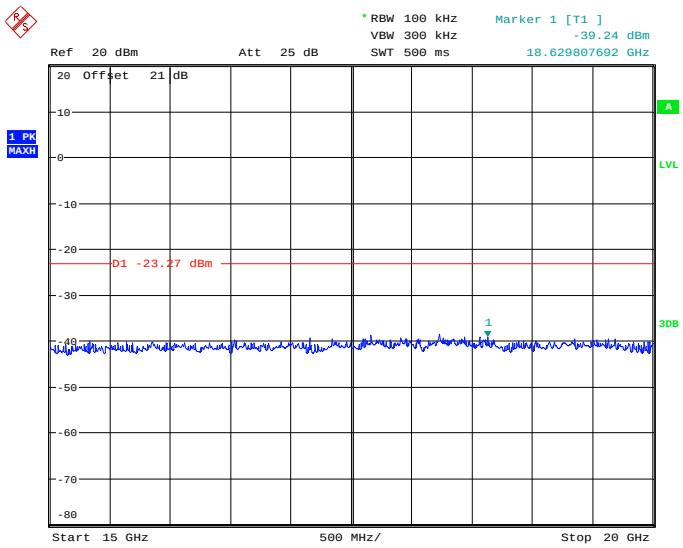


Fig. 111 Conducted Spurious Emission (802.11n-HT40, Ch3, 15 GHz-20 GHz)

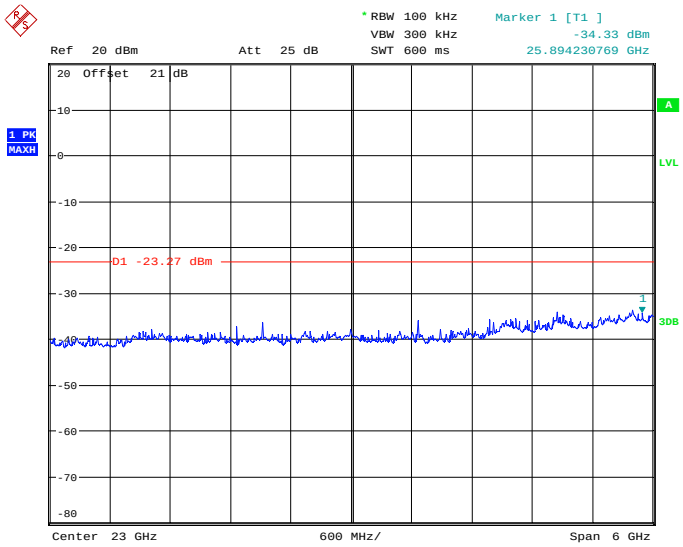


Fig. 112 Conducted Spurious Emission (802.11n-HT40, Ch3, 20 GHz-26 GHz)

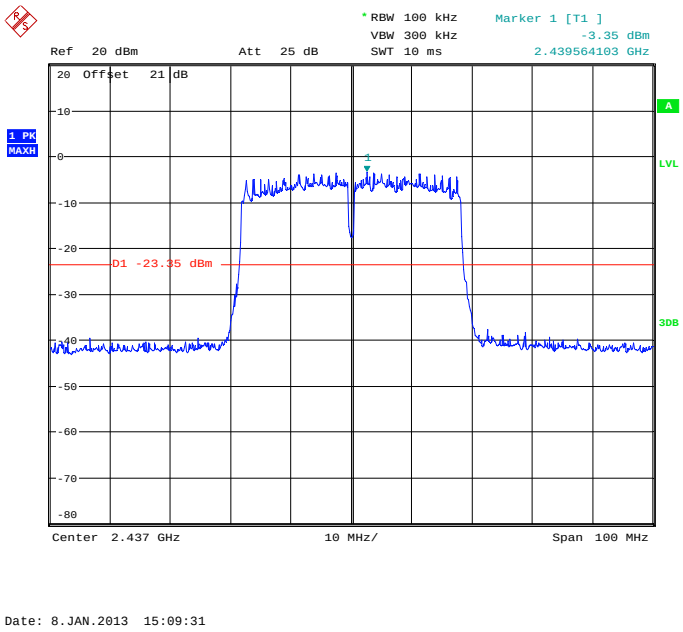


Fig. 113 Conducted Spurious Emission (802.11n-HT40, Ch6, Center Frequency)

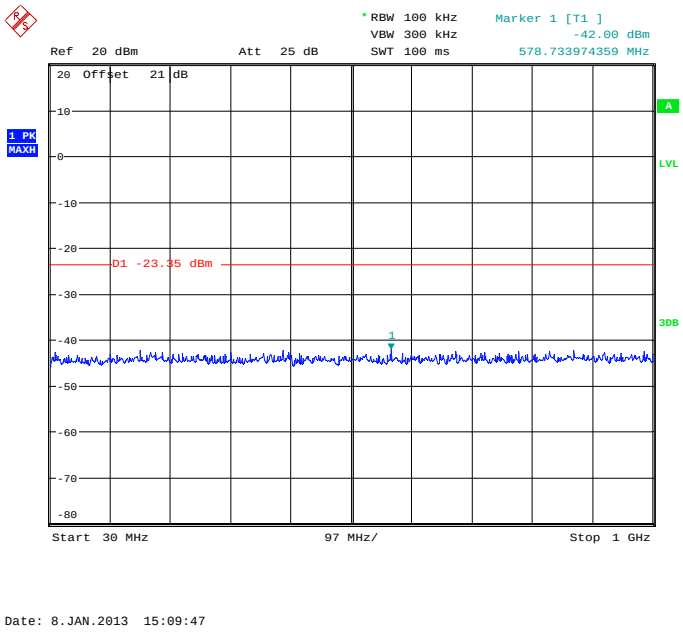


Fig. 114 Conducted Spurious Emission (802.11n-HT40, Ch6, 30 MHz-1 GHz)

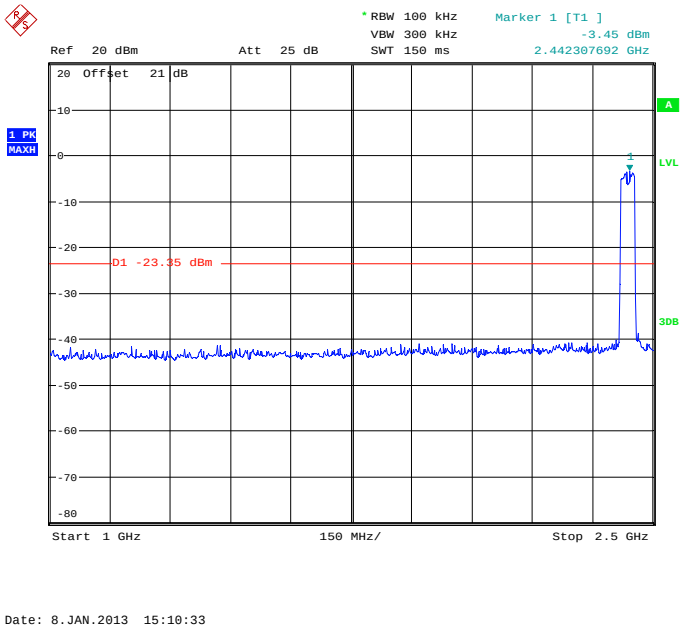


Fig. 115 Conducted Spurious Emission (802.11n-HT40, Ch6, 1 GHz-2.5 GHz)

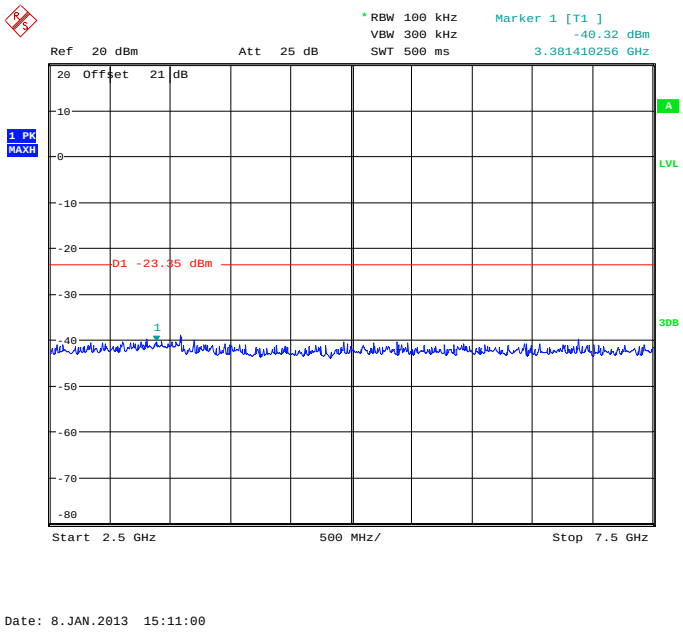


Fig. 116 Conducted Spurious Emission (802.11n-HT40, Ch6, 2.5 GHz-7.5 GHz)

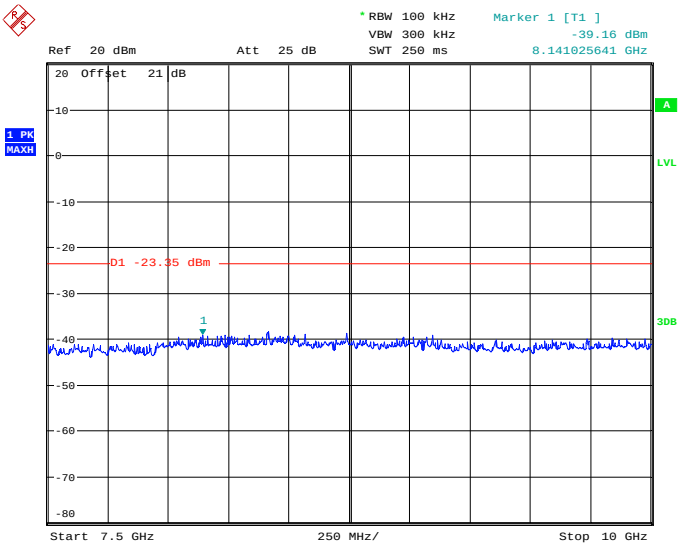


Fig. 117 Conducted Spurious Emission (802.11n-HT40, Ch6, 7.5 GHz-10 GHz)

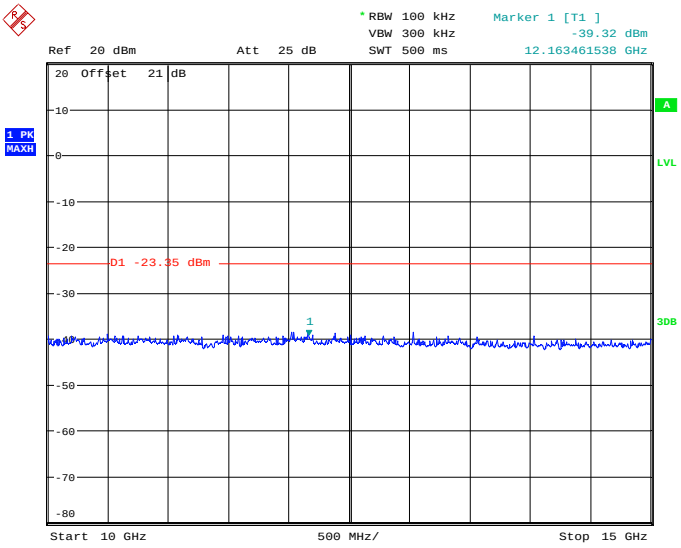


Fig. 118 Conducted Spurious Emission (802.11n-HT40, Ch6, 10 GHz-15 GHz)

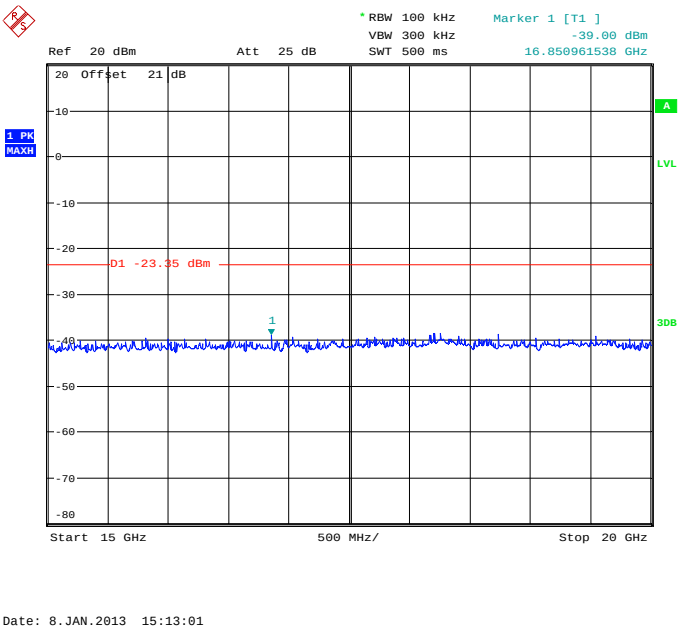


Fig. 119 Conducted Spurious Emission (802.11n-HT40, Ch6, 15 GHz-20 GHz)

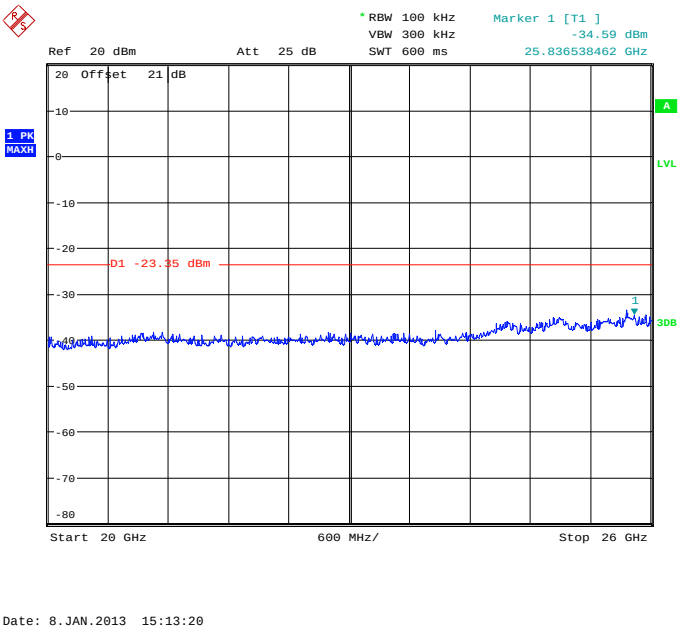


Fig. 120 Conducted Spurious Emission (802.11n-HT40, Ch6, 20 GHz-26 GHz)

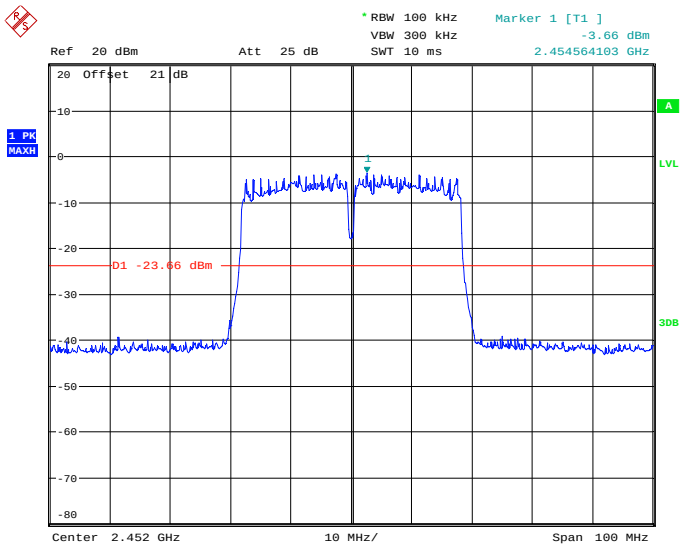


Fig. 121 Conducted Spurious Emission (802.11n-HT40, Ch9, Center Frequency)

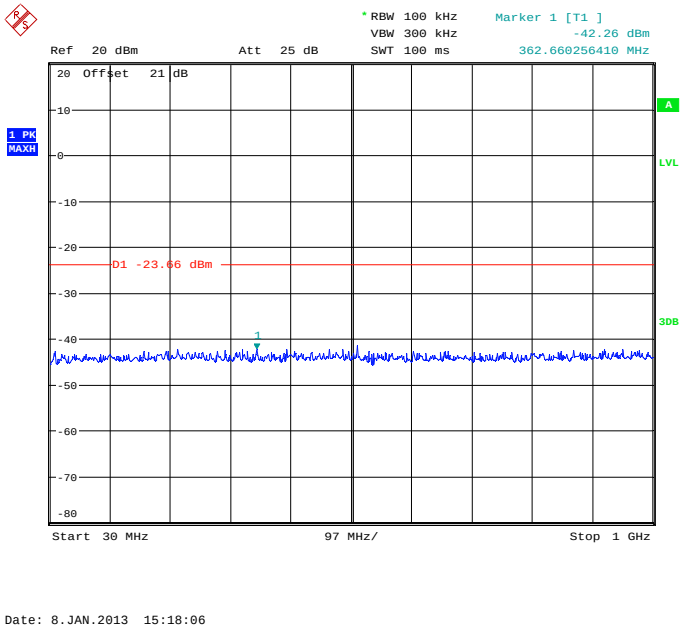


Fig. 122 Conducted Spurious Emission (802.11n-HT40, Ch9, 30 MHz-1 GHz)

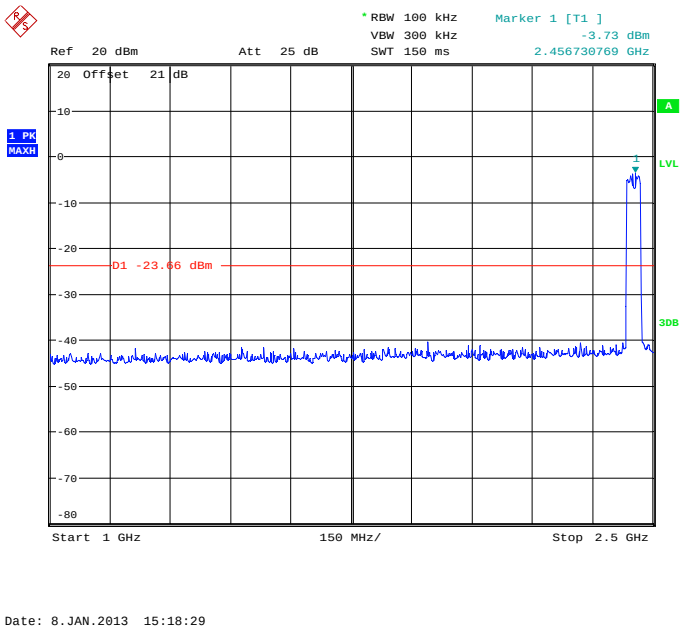


Fig. 123 Conducted Spurious Emission (802.11n-HT40, Ch9, 1 GHz-2.5 GHz)

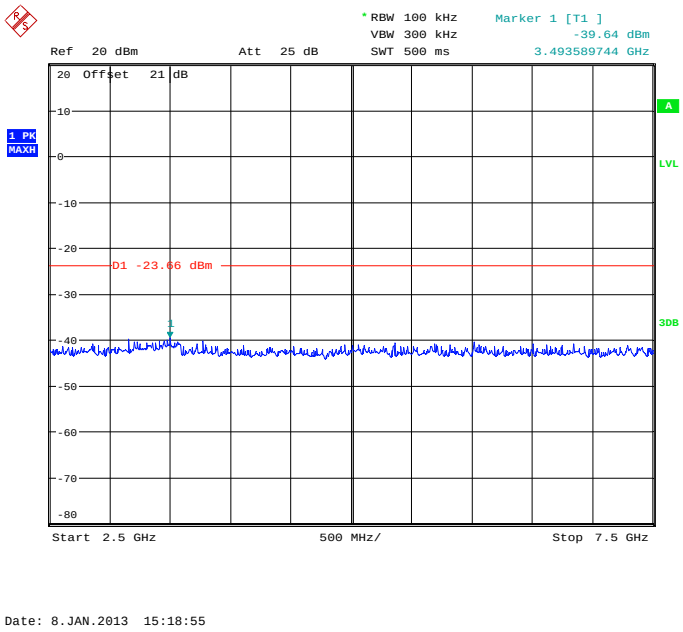


Fig. 124 Conducted Spurious Emission (802.11n-HT40, Ch9, 2.5 GHz-7.5 GHz)

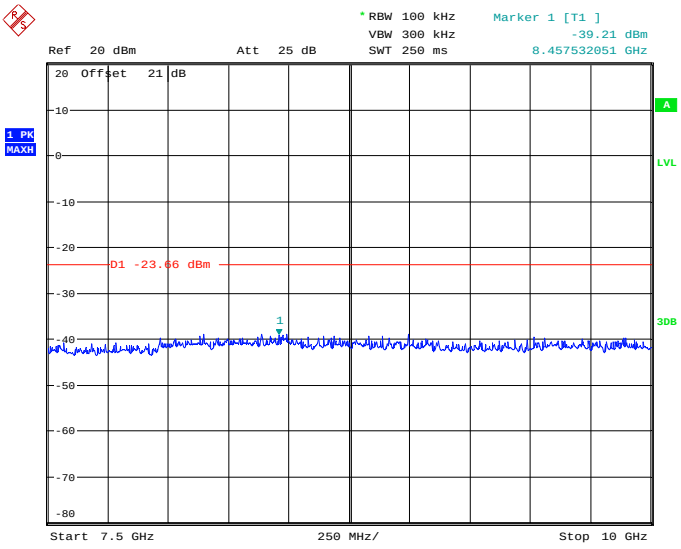


Fig. 125 Conducted Spurious Emission (802.11n-HT40, Ch9, 7.5 GHz-10 GHz)

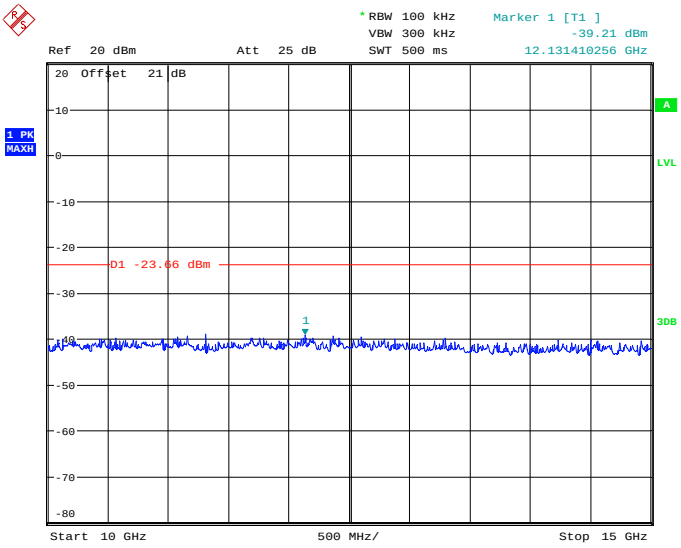


Fig. 126 Conducted Spurious Emission (802.11n-HT40, Ch9, 10 GHz-15 GHz)

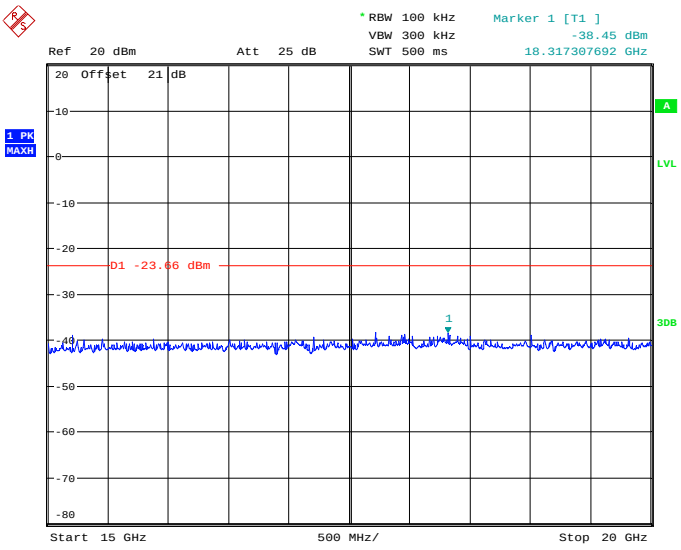


Fig. 127 Conducted Spurious Emission (802.11n-HT40, Ch9, 15 GHz-20 GHz)

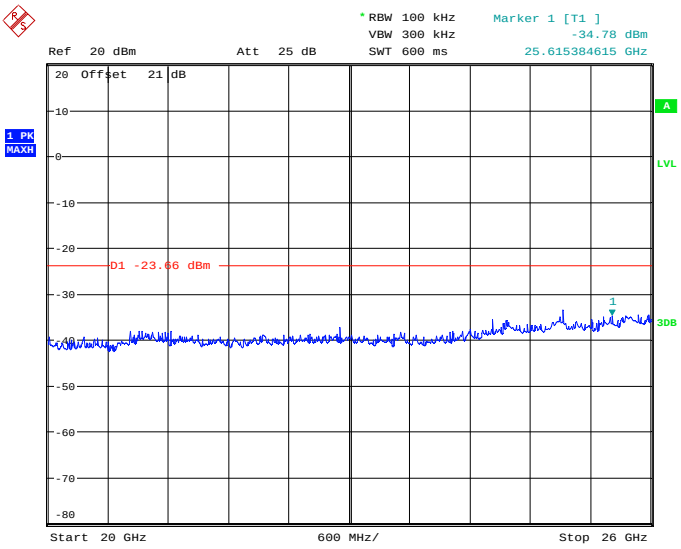


Fig. 128 Conducted Spurious Emission (802.11n-HT40, Ch9, 20 GHz-26 GHz)

A.6.2 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)).

The measurement is made according to ANSI C63.10.

Limit in restricted band:

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

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

Measurement Results:

802.11b/g mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz ~2.45GHz	Fig.129	P
	1	30 MHz ~1 GHz	Fig.130	P
		1 GHz ~ 3 GHz	Fig.131	P
		3 GHz ~ 18 GHz	Fig.132	P
	6	30 MHz ~1 GHz	Fig.133	P
		1 GHz ~ 3 GHz	Fig.134	P
		3 GHz ~ 18 GHz	Fig.135	P
	Power	2.45GHz ~2.5GHz	Fig.136	P
	11	30 MHz ~1 GHz	Fig.137	P
		1 GHz ~ 3 GHz	Fig.138	P
		3 GHz ~ 18 GHz	Fig.139	P
802.11g	Power	2.38GHz ~2.43GHz	Fig.140	P
	1	30 MHz ~1 GHz	Fig.141	P
		1 GHz ~ 3 GHz	Fig.142	P
		3 GHz ~ 18 GHz	Fig.143	P
	6	30 MHz ~1 GHz	Fig.144	P
		1 GHz ~ 3 GHz	Fig.145	P
		3 GHz ~ 18 GHz	Fig.146	P
	Power	2.45GHz ~2.5GHz	Fig.147	P
	11	30 MHz ~1 GHz	Fig.148	P
		1 GHz ~ 3 GHz	Fig.149	P
		3 GHz ~ 18 GHz	Fig.150	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (20MHz)	Power	2.38GHz ~2.45GHz	Fig.151	P
	1	30 MHz ~1 GHz	Fig.152	P
		1 GHz ~ 3 GHz	Fig.153	P
		3 GHz ~ 18 GHz	Fig.154	P
	6	30 MHz ~1 GHz	Fig.155	P
		1 GHz ~ 3 GHz	Fig.156	P
		3 GHz ~ 18 GHz	Fig.157	P
	Power	2.45GHz ~2.5GHz	Fig.158	P
	11	30 MHz ~1 GHz	Fig.159	P
		1 GHz ~ 3 GHz	Fig.160	P
		3 GHz ~ 18 GHz	Fig.161	P
802.11n (40MHz)	Power	2.38GHz ~2.45GHz	Fig.162	P
	3	30 MHz ~1 GHz	Fig.163	P
		1 GHz ~ 3 GHz	Fig.164	P

		3 GHz ~ 18 GHz	Fig.165	P
	6	30 MHz ~1 GHz	Fig.166	P
		1 GHz ~ 3 GHz	Fig.167	P
		3 GHz ~ 18 GHz	Fig.168	P
	Power	2.45GHz ~2.5GHz	Fig.169	P
	9	30 MHz ~1 GHz	Fig.170	P
		1 GHz ~ 3 GHz	Fig.171	P
		3 GHz ~ 18 GHz	Fig.172	P
/	All channels	18 GHz~ 26.5 GHz	Fig.173	P

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

802.11b

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17535.000	44.0	-25.3	42.9	26.367	V
17483.250	43.8	-25.3	43.0	26.057	H
17517.750	43.8	-25.3	42.8	26.327	H
17500.500	43.8	-25.3	42.8	26.327	V
17474.250	43.7	-25.3	42.6	26.397	H
17495.250	43.7	-25.3	43.0	25.957	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17481.000	43.8	-25.3	43.0	26.057	V
17529.750	43.8	-25.3	42.9	26.167	V
17509.500	43.8	-25.3	42.8	26.327	H
17514.750	43.7	-25.3	42.8	26.227	V
17487.750	43.7	-25.3	43.0	25.957	H
17505.000	43.7	-25.3	42.8	26.227	H

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17501.250	43.8	-25.3	42.8	26.327	V
17503.500	43.8	-25.3	42.8	26.327	H
17993.250	43.8	-24.7	42.3	26.254	H
17548.500	43.8	-25.3	42.9	26.167	H
17476.500	43.7	-25.3	43.0	25.957	V
17502.750	43.7	-25.3	42.8	26.227	V

802.11g

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17532.000	43.8	-25.3	42.9	26.167	V
17493.000	43.8	-25.3	43.0	26.057	H
17479.500	43.7	-25.3	43.0	25.957	V
17477.250	43.7	-25.3	43.0	25.957	V
17503.500	43.7	-25.3	42.8	26.227	V
17492.250	43.7	-25.3	43.0	25.957	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17529.750	43.8	-25.3	42.9	26.167	V
17502.000	43.8	-25.3	42.8	26.327	V
17999.250	43.7	-24.7	42.3	26.154	H
17477.250	43.7	-25.3	43.0	25.957	H
17469.750	43.7	-25.3	42.6	26.397	H
17499.750	43.7	-25.3	43.0	25.957	V

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17494.500	44.0	-25.3	43.0	26.257	V
17509.500	43.8	-25.3	42.8	26.327	H
17514.750	43.8	-25.3	42.8	26.327	H
17473.500	43.7	-25.3	42.6	26.397	V
17484.000	43.7	-25.3	43.0	25.957	H
17508.000	43.7	-25.3	42.8	26.227	H

802.11n-HT20

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17503.500	43.8	-25.3	42.8	26.327	V
17520.000	43.7	-25.3	42.8	26.227	H
17466.750	43.7	-25.3	42.6	26.397	V
17534.250	43.7	-25.3	42.9	26.067	H
17529.000	43.7	-25.3	42.9	26.067	H
17543.250	43.7	-25.3	42.9	26.067	V

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17518.500	44.0	-25.3	42.8	26.527	V
17491.500	43.8	-25.3	43.0	26.057	H
17992.500	43.8	-24.7	42.3	26.254	H
17504.250	43.8	-25.3	42.8	26.327	H
17999.250	43.7	-24.7	42.3	26.154	H
17998.500	43.7	-24.7	42.3	26.154	V

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17523.750	43.7	-25.3	42.8	26.227	V
17505.000	43.7	-25.3	42.8	26.227	V
17537.250	43.7	-25.3	42.9	26.067	V
17457.750	43.7	-26.3	42.6	27.417	H
17973.750	43.6	-25.2	42.7	26.128	V
17486.250	43.6	-25.3	43.0	25.857	V

802.11n-HT40

Ch3

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17529.750	43.7	-25.3	42.9	26.067	V
17499.000	43.7	-25.3	43.0	25.957	V
17513.250	43.7	-25.3	42.8	26.227	H
17499.750	43.7	-25.3	43.0	25.957	H
17485.500	43.7	-25.3	43.0	25.957	V
17510.250	43.7	-25.3	42.8	26.227	H

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17500.500	43.9	-25.3	42.8	26.427	V
17490.000	43.8	-25.3	43.0	26.057	H
17493.000	43.8	-25.3	43.0	26.057	H
17516.250	43.8	-25.3	42.8	26.327	V
17505.000	43.7	-25.3	42.8	26.227	H
17534.250	43.7	-25.3	42.9	26.067	H

Ch9

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P_{Mea} (dBuV/m)	Polarization
17496.000	43.9	-25.3	43.0	26.157	V
17505.750	43.8	-25.3	42.8	26.327	V
17523.000	43.8	-25.3	42.8	26.327	H
17999.250	43.7	-24.7	42.3	26.154	H
17513.250	43.7	-25.3	42.8	26.227	H
17499.750	43.7	-25.3	43.0	25.957	H

Test graphs as below:

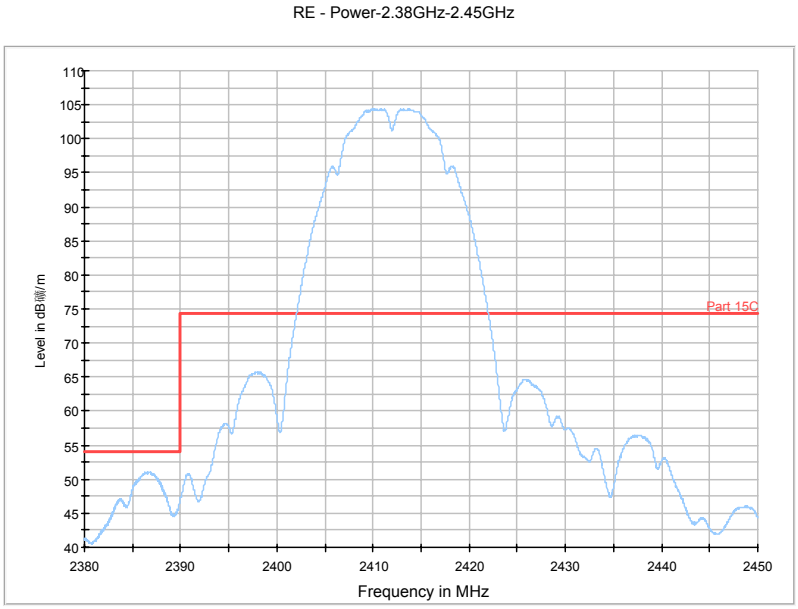


Fig. 129 Radiated Spurious Emission (Power): 802.11b, ch1, 2.38 GHz - 245GHz

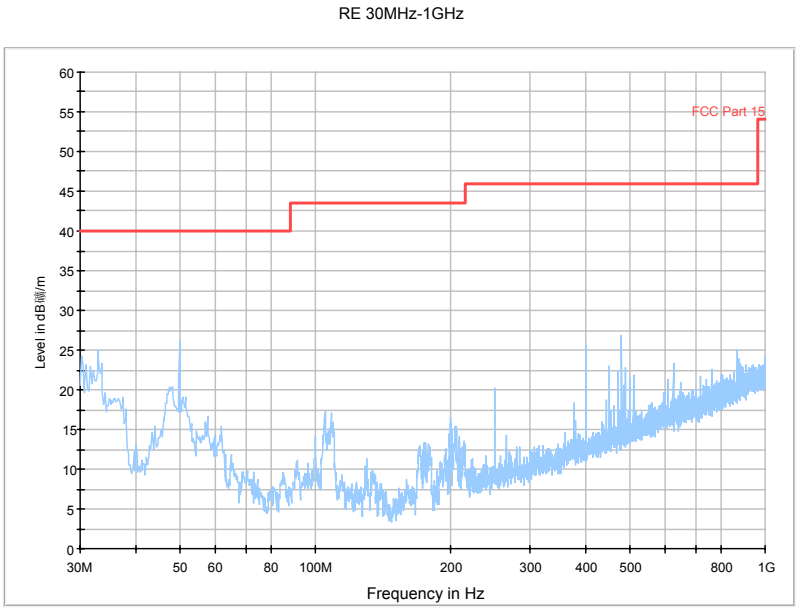


Fig. 130 Radiated Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)

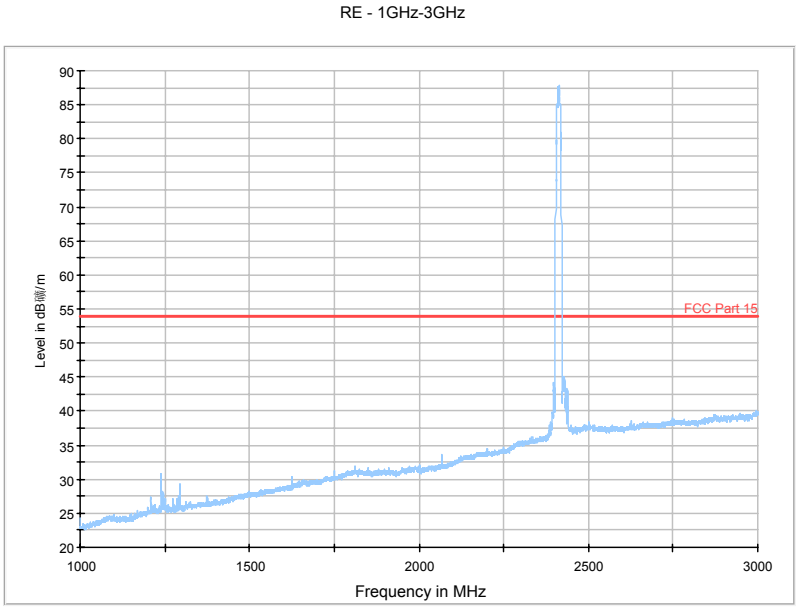


Fig. 131 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-3 GHz)

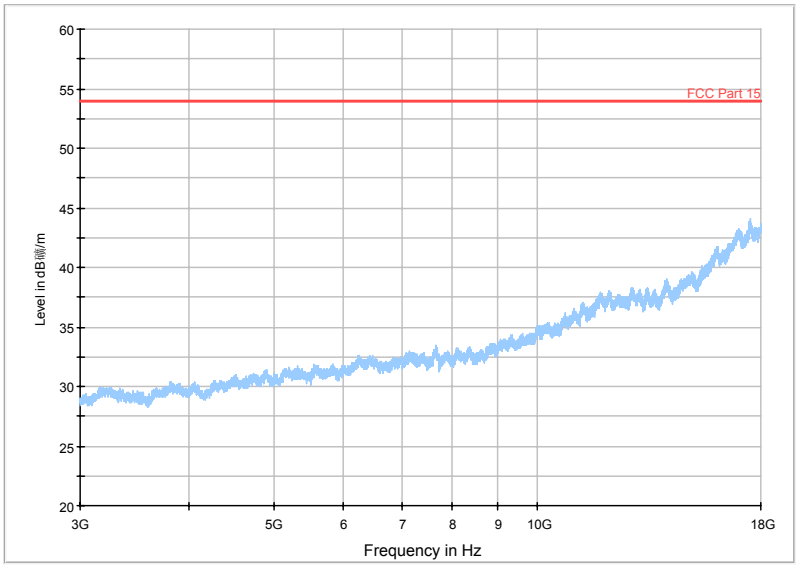


Fig. 132 Radiated Spurious Emission (802.11b, Ch1, 3 GHz-18 GHz)

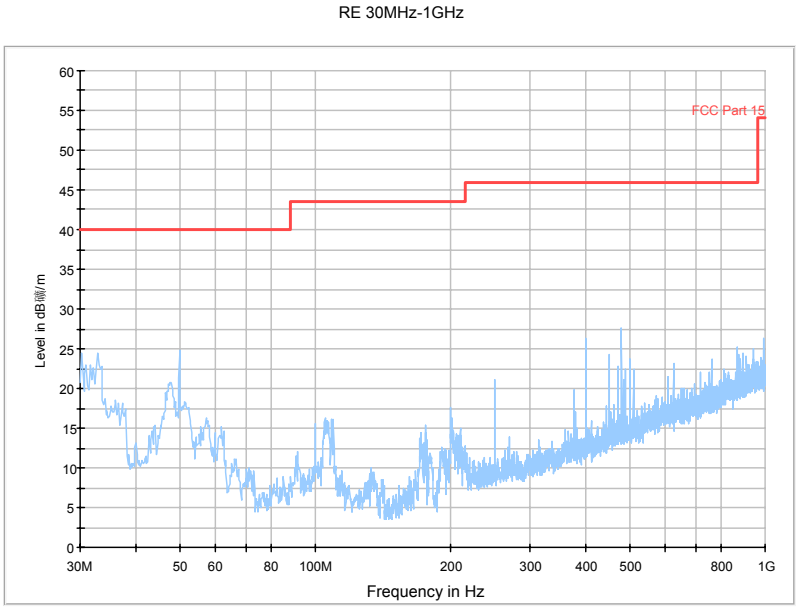


Fig. 133 Radiated Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)

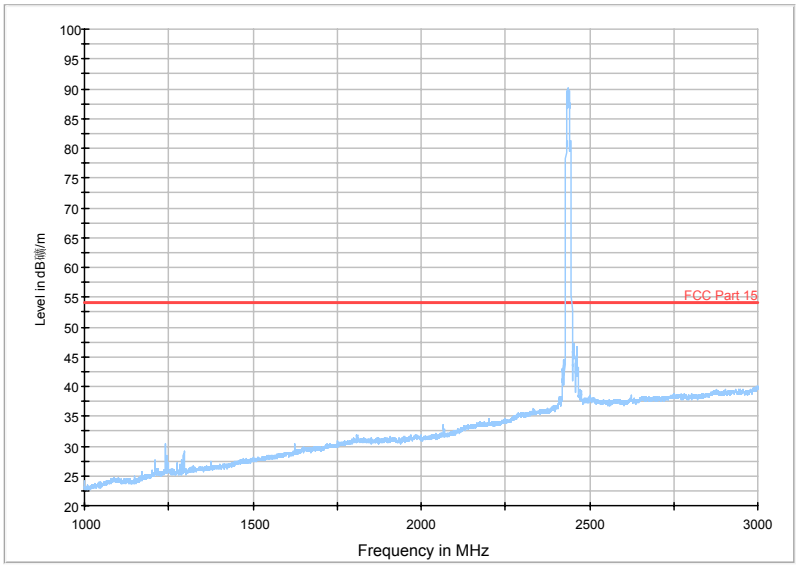


Fig. 134 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-3 GHz)

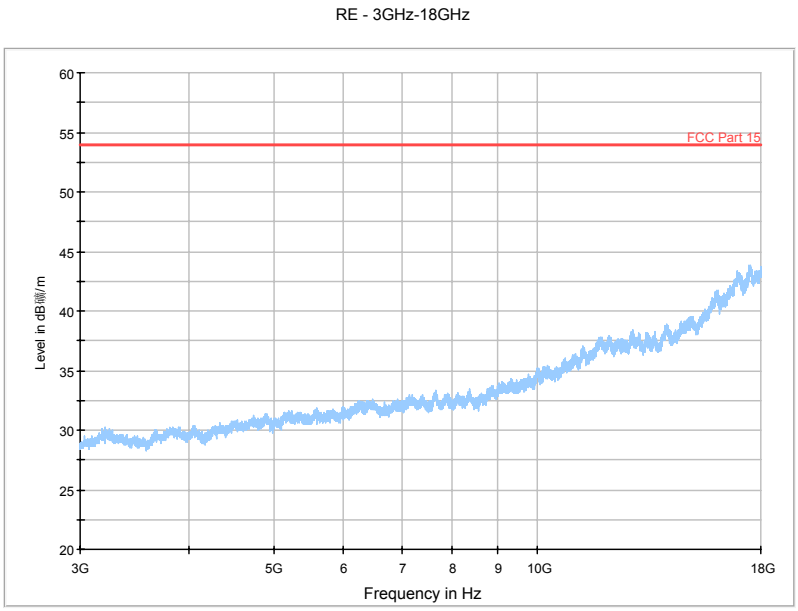


Fig. 135 Radiated Spurious Emission (802.11b, Ch6, 3 GHz-18 GHz)

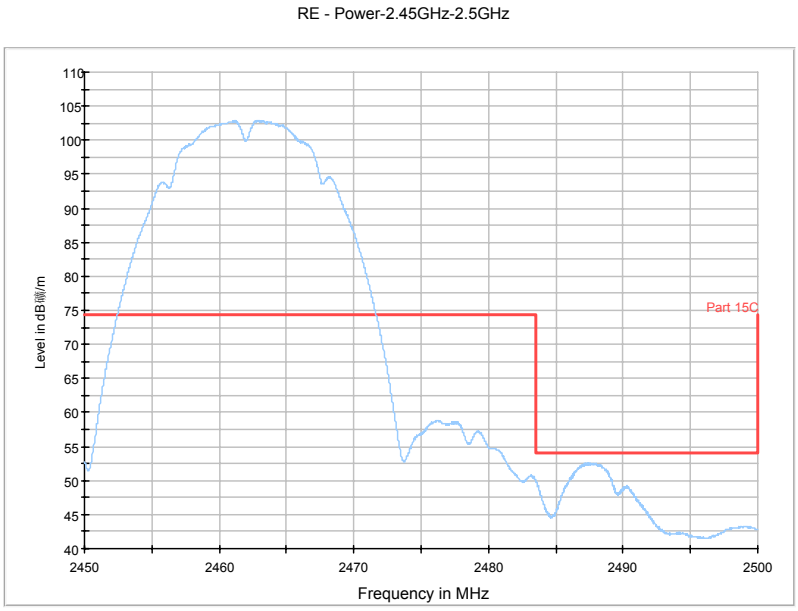


Fig. 136 Radiated Spurious Emission (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

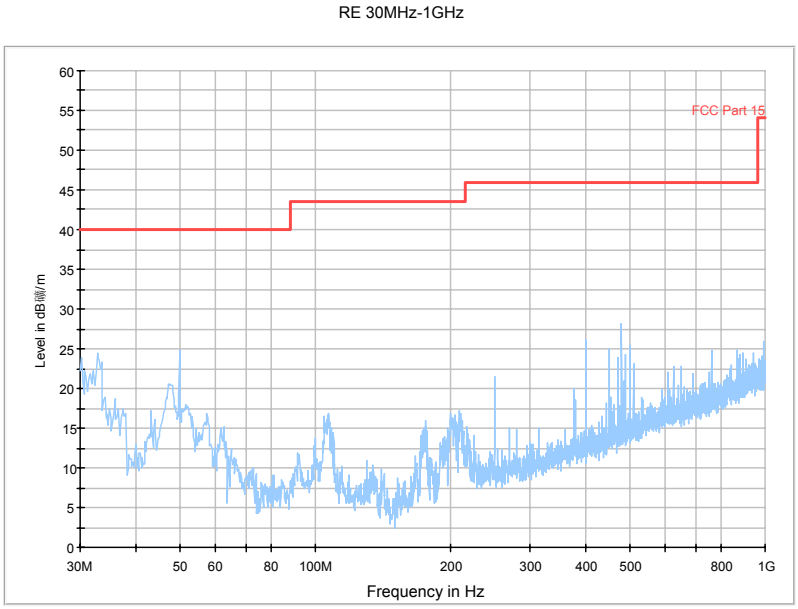


Fig. 137 Radiated Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)

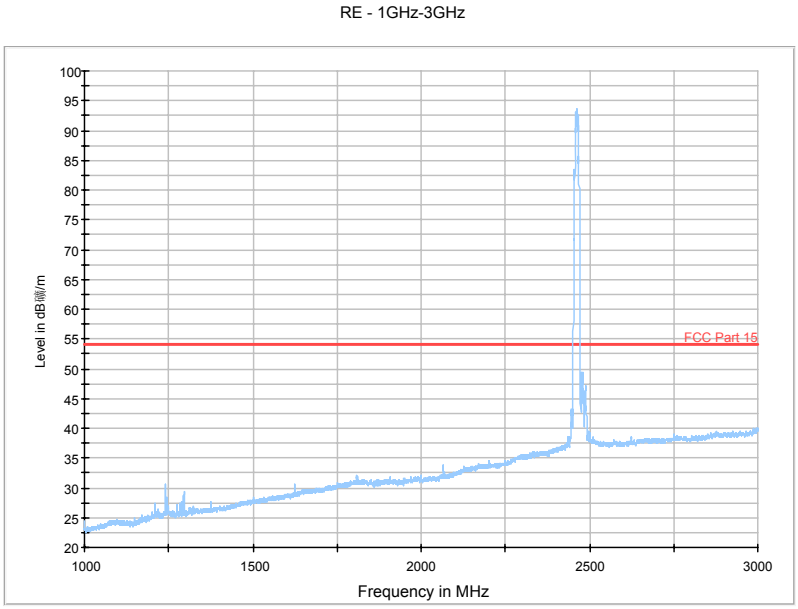


Fig. 138 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-3 GHz)

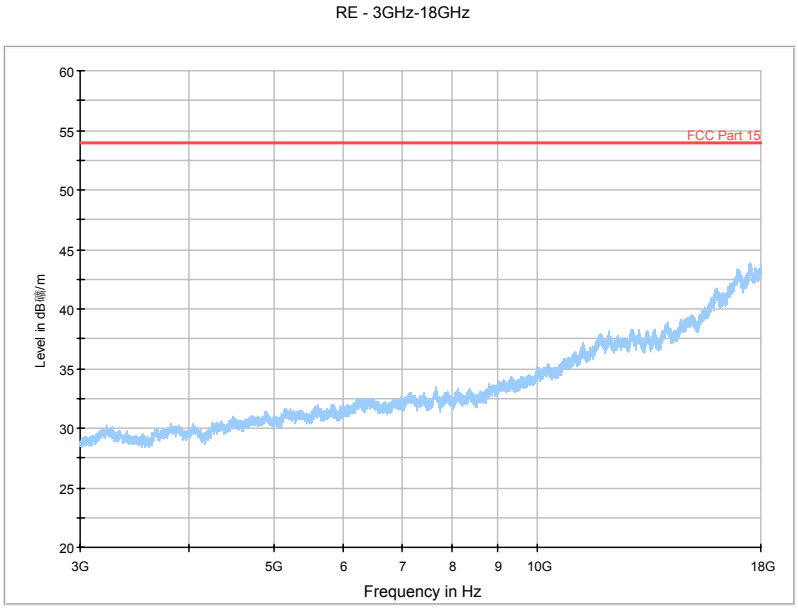


Fig. 139 Radiated Spurious Emission (802.11b, Ch11, 3 GHz-18 GHz)

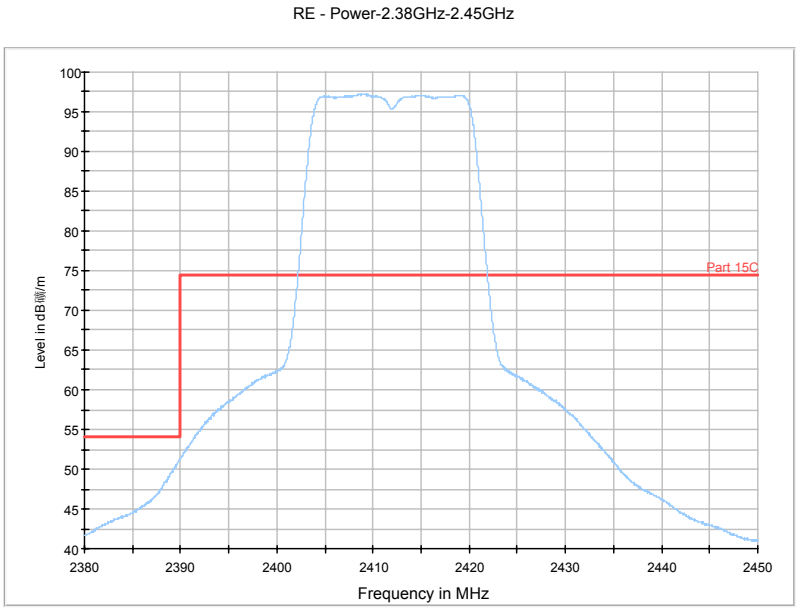


Fig. 140 Radiated Spurious Emission (Power): 802.11g, ch1, 2.38 GHz - 2.45GHz

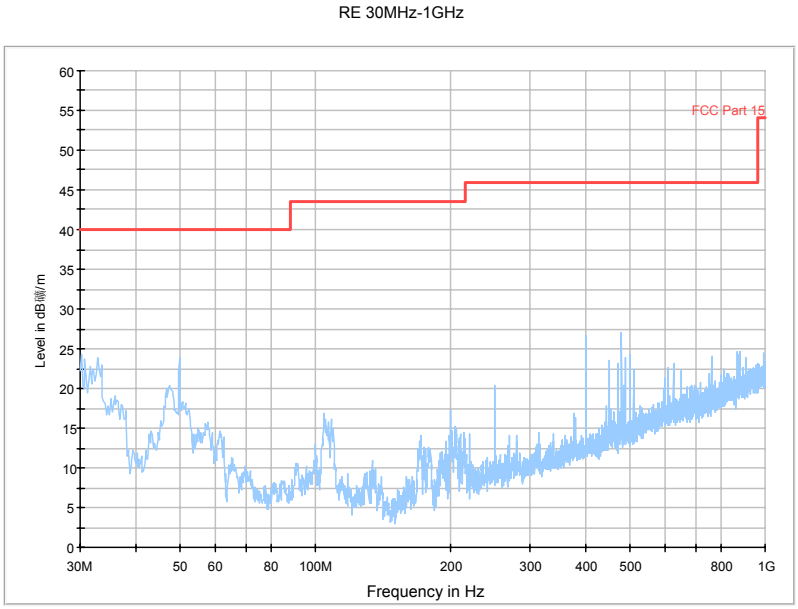


Fig. 141 Radiated Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)

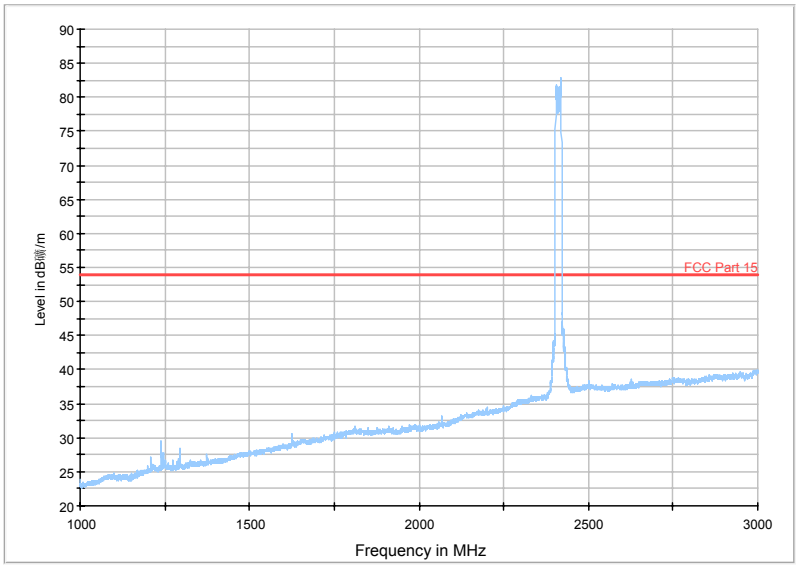


Fig. 142 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-3 GHz)

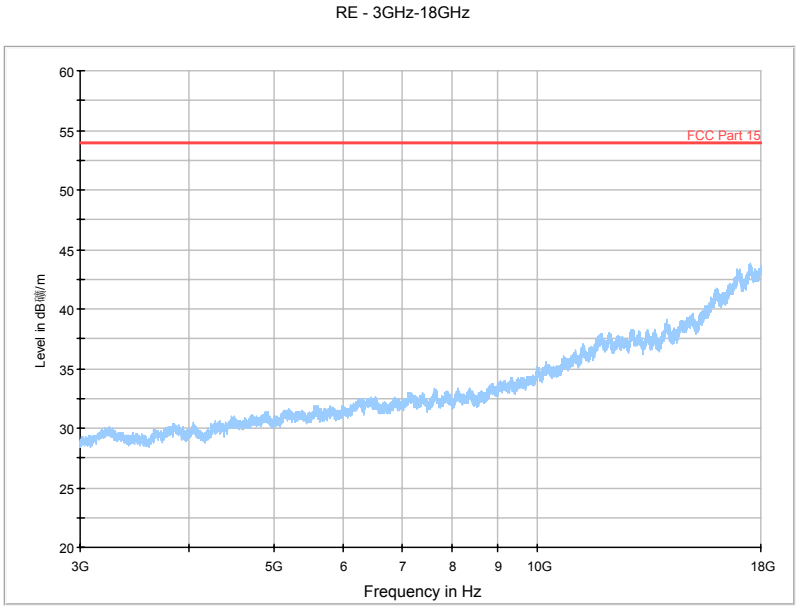


Fig. 143 Radiated Spurious Emission (802.11g, Ch1, 3 GHz-18 GHz)

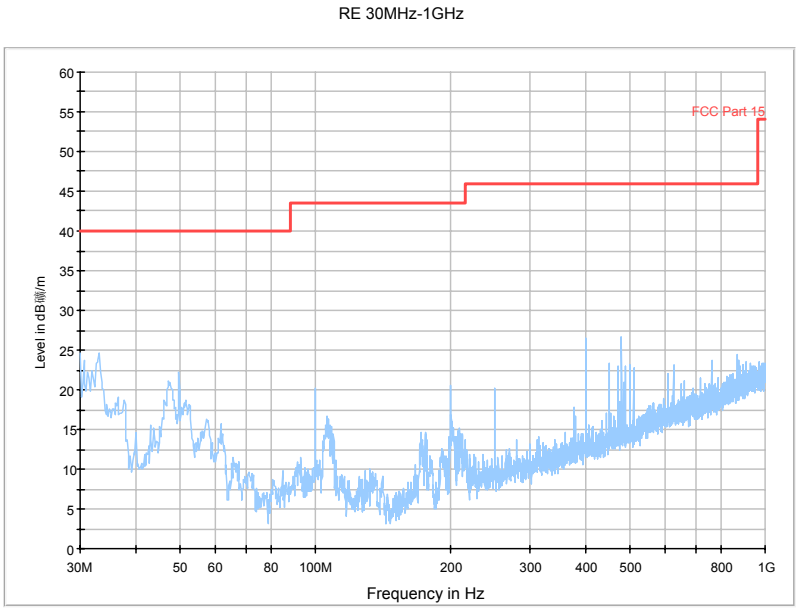


Fig. 144 Radiated Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)

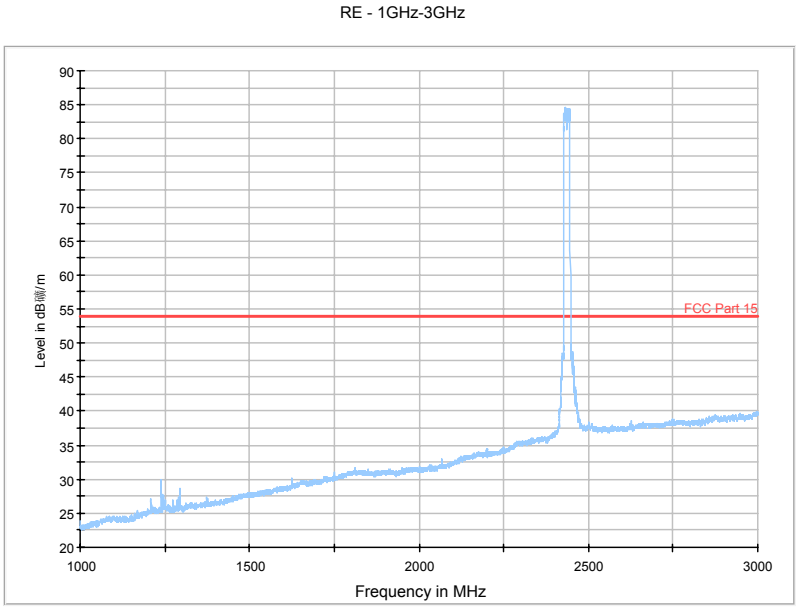


Fig. 145 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-3 GHz)

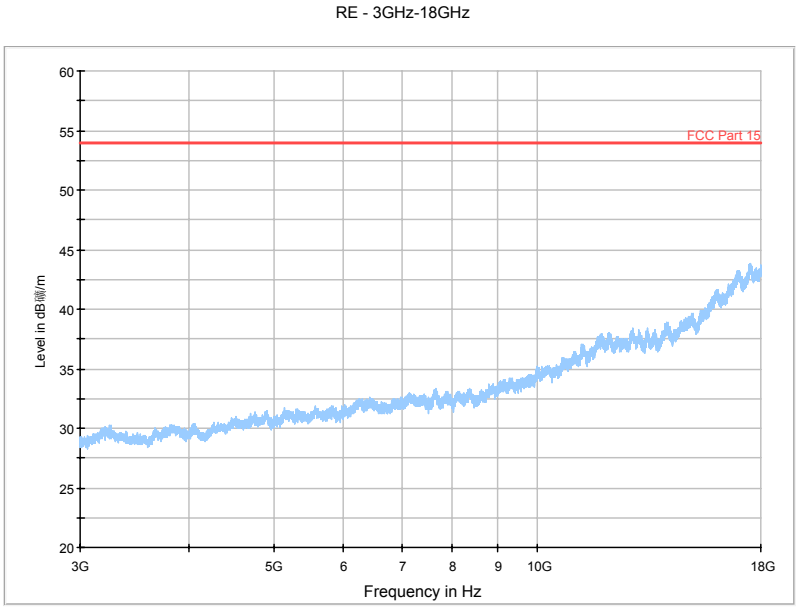


Fig. 146 Radiated Spurious Emission (802.11g, Ch6, 3 GHz-18 GHz)

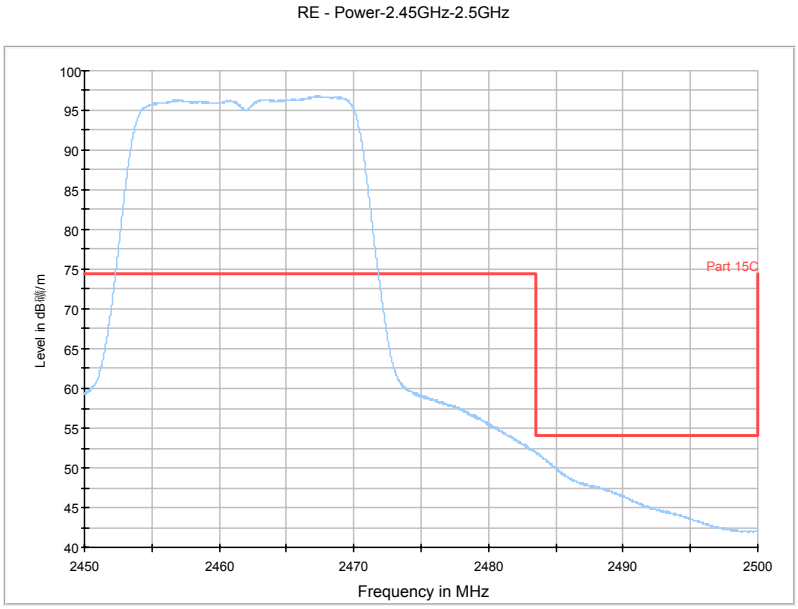


Fig. 147 Radiated Spurious Emission (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

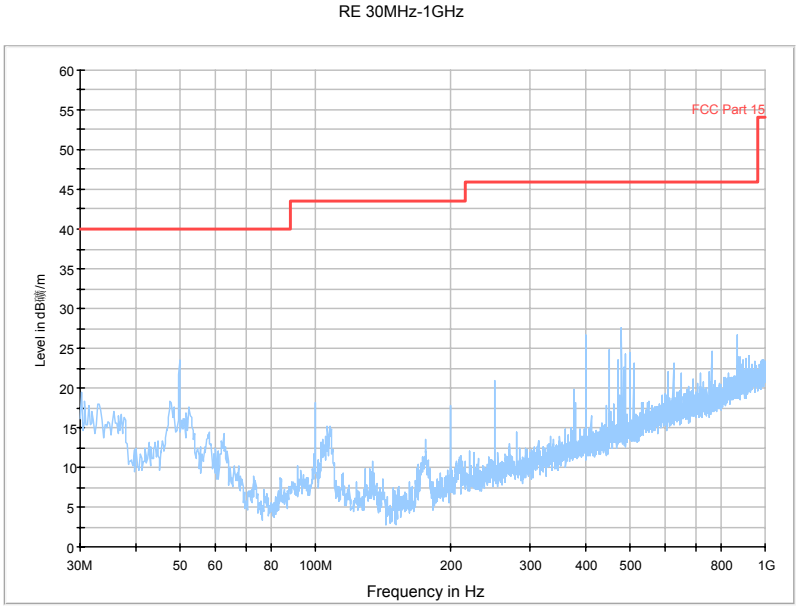


Fig. 148 Radiated Spurious Emission (802.11g, Ch11, 30 MHz-1 GHz)

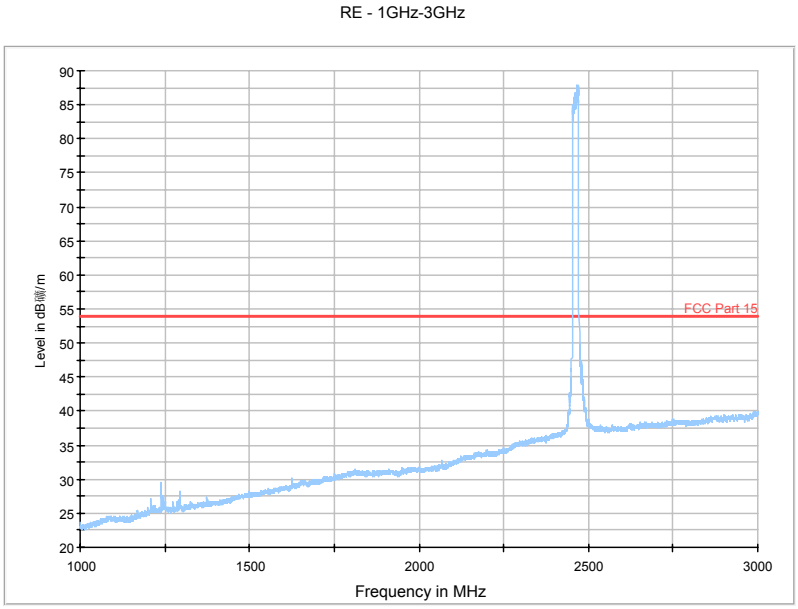


Fig. 149 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-3 GHz)

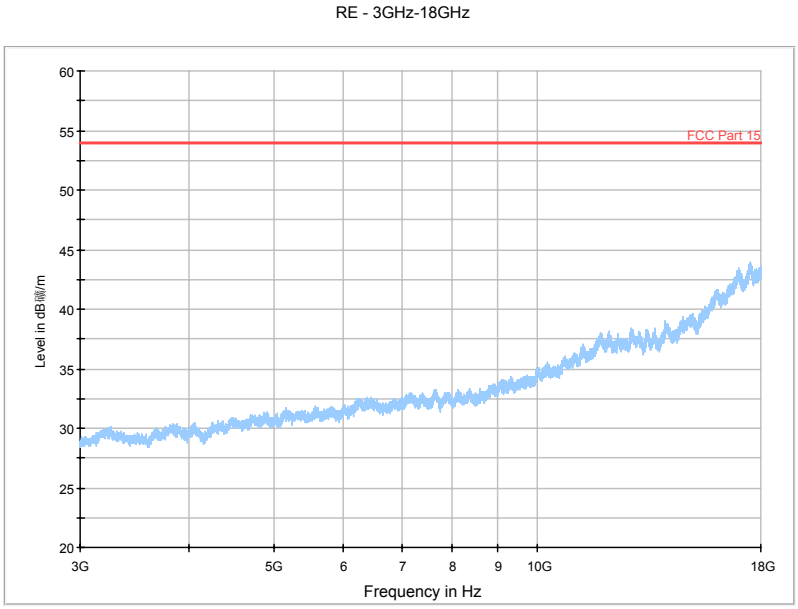


Fig. 150 Radiated Spurious Emission (802.11g, Ch11, 3 GHz-18 GHz)

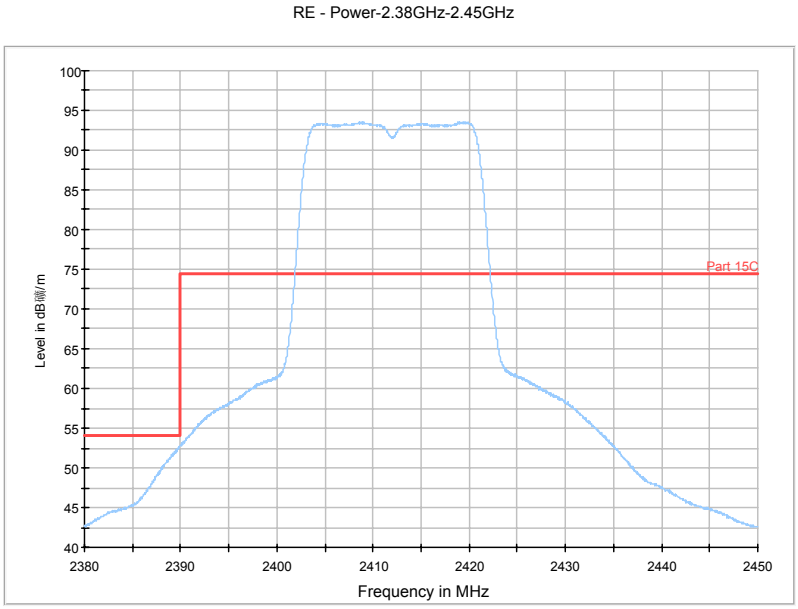


Fig. 151 Radiated Spurious Emission (Power): 802.11n-20MHz, ch1, 2.38 GHz - 2.45GHz

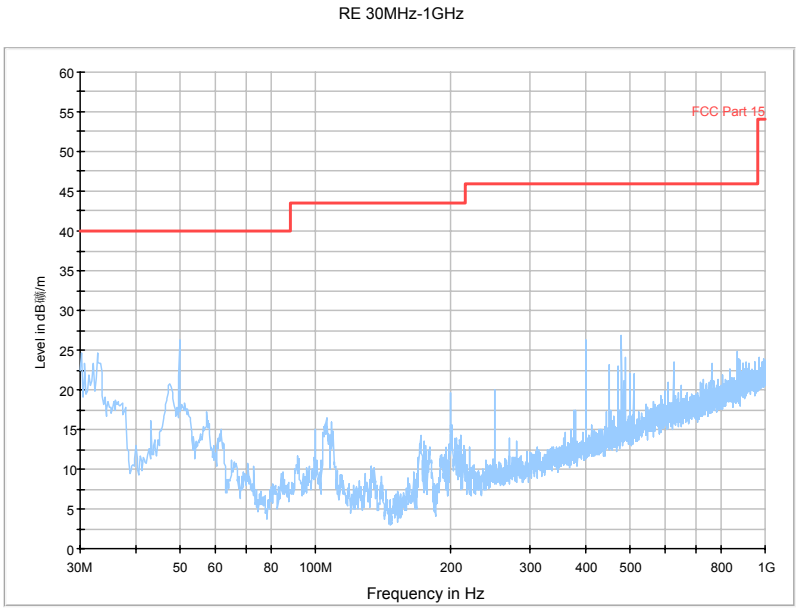


Fig. 152 Radiated Spurious Emission (802.11n-20MHz, Ch1, 30 MHz-1 GHz)

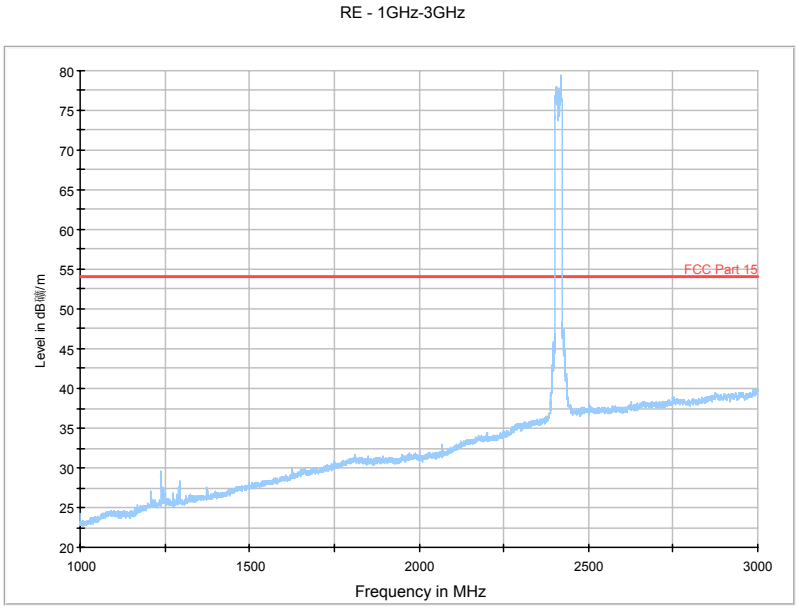


Fig. 153 Radiated Spurious Emission (802.11n-20MHz, Ch1, 1 GHz-3 GHz)

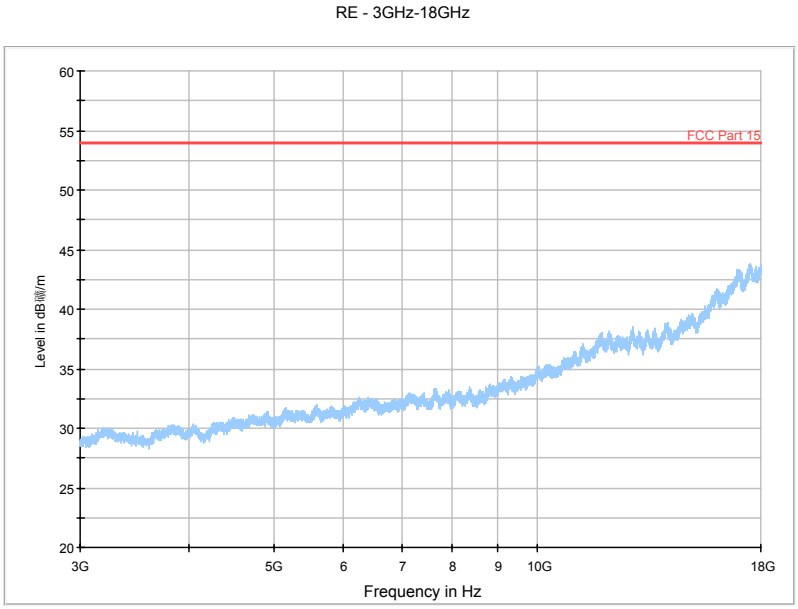


Fig. 154 Radiated Spurious Emission (802.11n-20MHz, Ch1, 3 GHz-18 GHz)

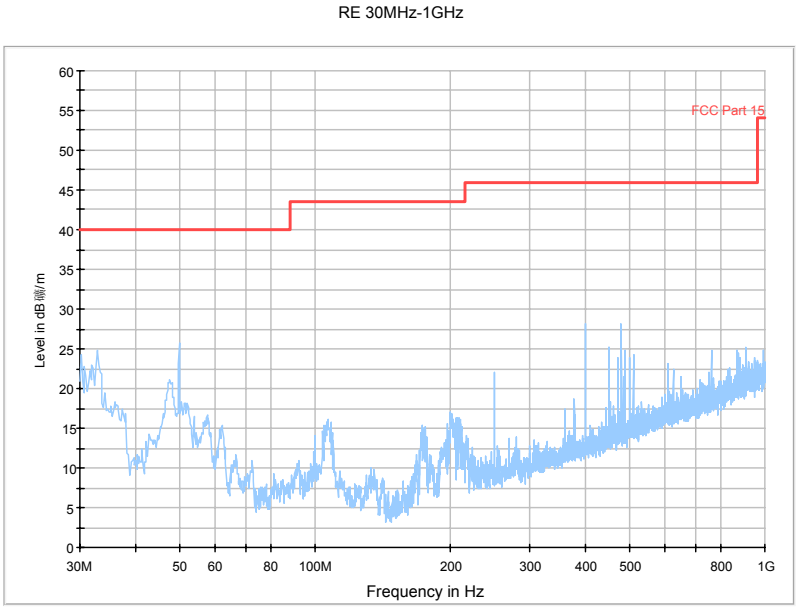


Fig. 155 Radiated Spurious Emission (802.11n-20MHz, Ch6, 30 MHz-1 GHz)

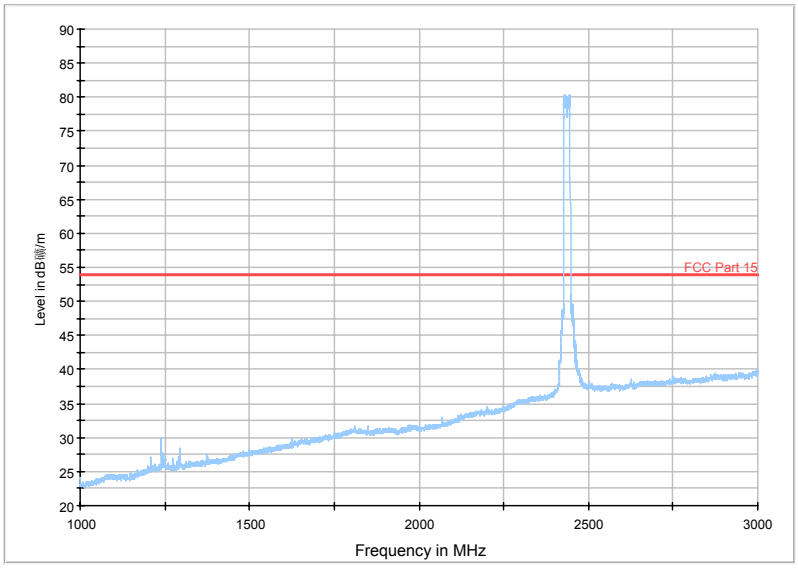


Fig. 156 Radiated Spurious Emission (802.11n-20MHz, Ch6, 1 GHz-3 GHz)

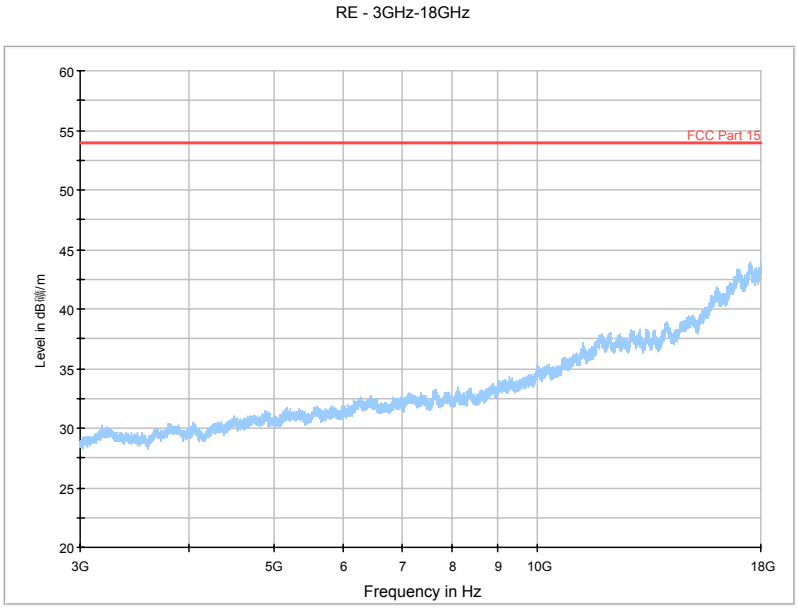


Fig. 157 Radiated Spurious Emission (802.11n-20MHz, Ch6, 3 GHz-18 GHz)

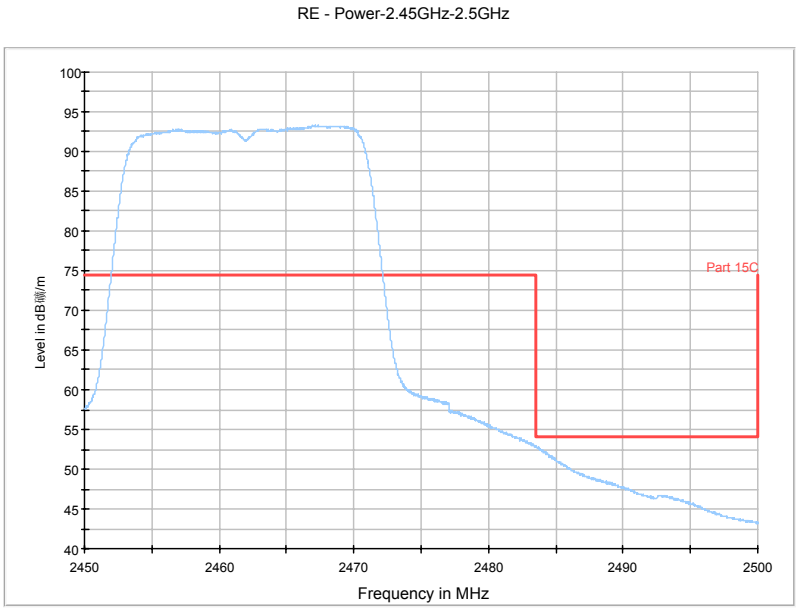


Fig. 158 Radiated Spurious Emission (Power): 802.11n-20MHz, ch11, 2.45 GHz - 2.50GHz

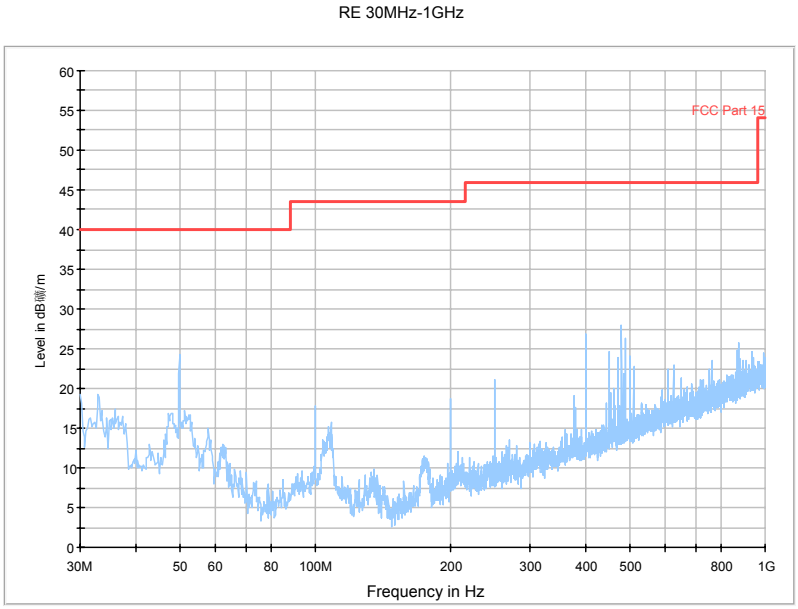


Fig. 159 Radiated Spurious Emission (802.11n-20MHz, Ch11, 30 MHz-1 GHz)

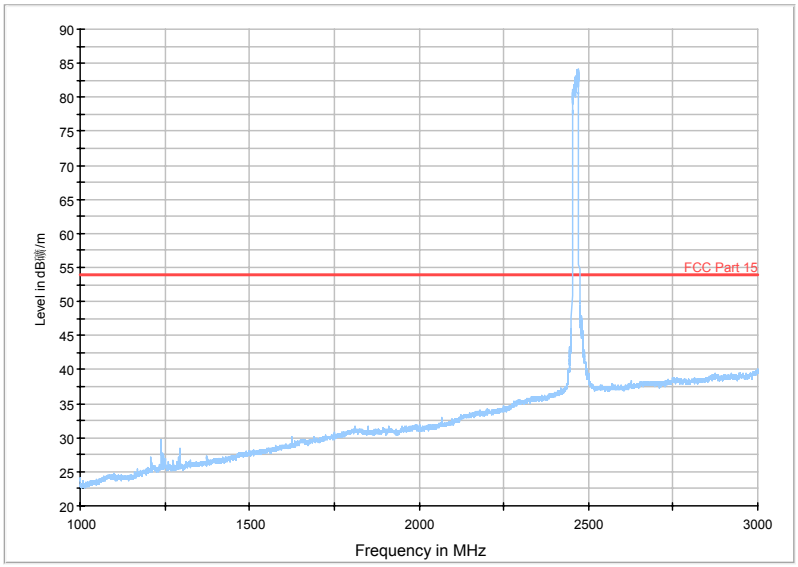


Fig. 160 Radiated Spurious Emission (802.11n-20MHz, Ch11, 1 GHz-3 GHz)

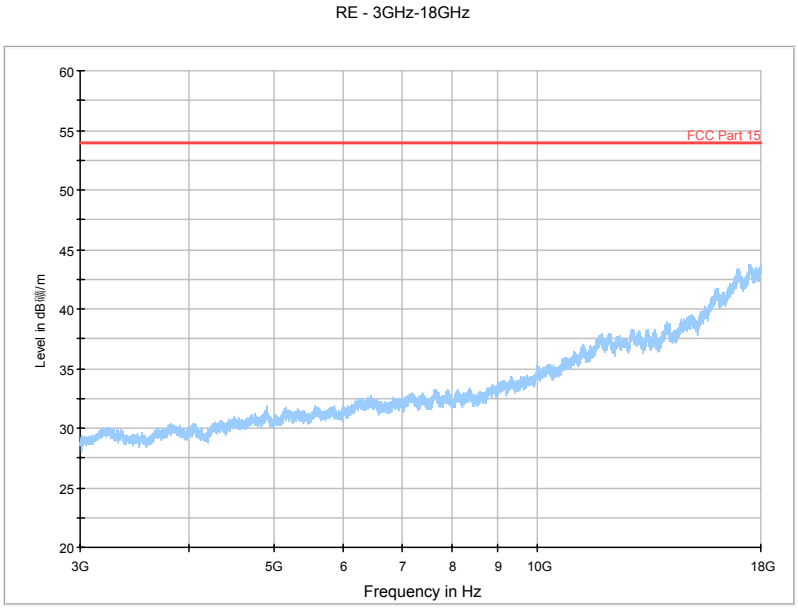


Fig. 161 Radiated Spurious Emission (802.11n-20MHz, Ch11, 3 GHz-18 GHz)

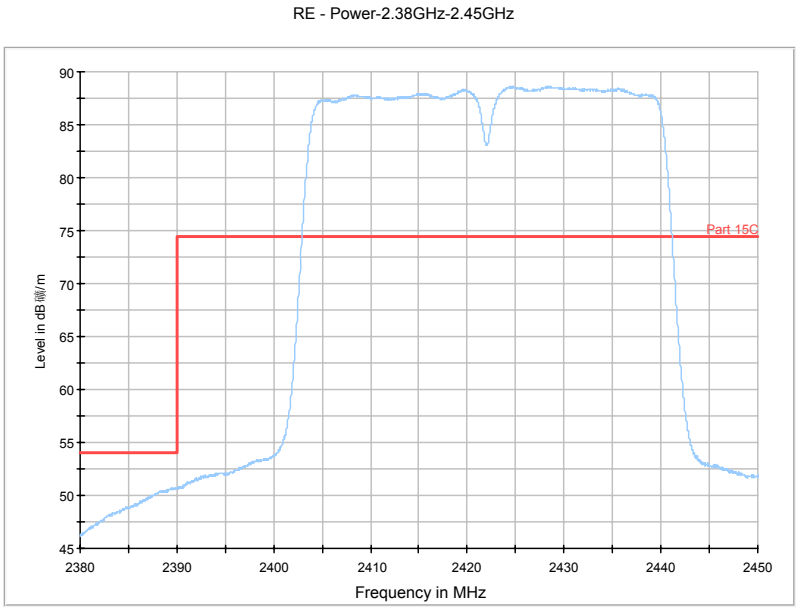


Fig. 162 Radiated Spurious Emission (Power): 802.11n-40MHz, ch3, 2.38 GHz - 2.45GHz

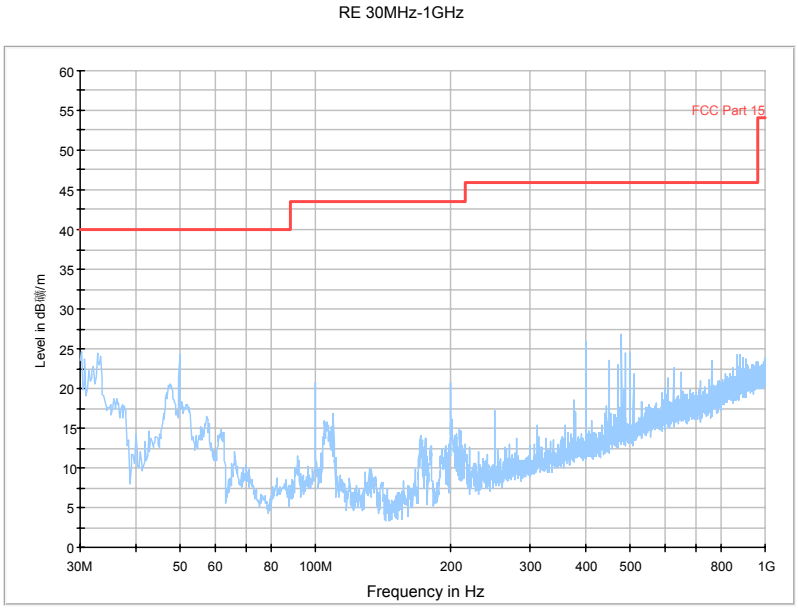


Fig. 163 Radiated Spurious Emission (802.11n-40MHz, Ch3, 30 MHz-1 GHz)

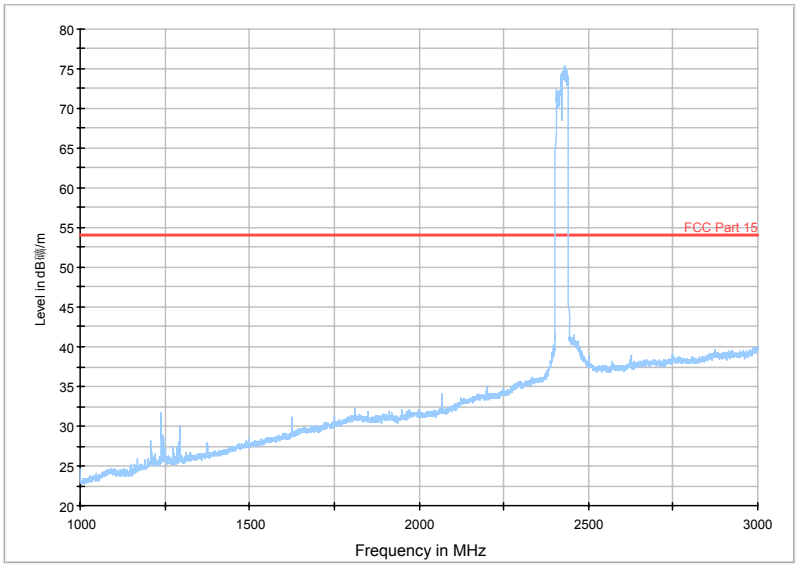


Fig. 164 Radiated Spurious Emission (802.11n-40MHz, Ch3, 1 GHz-3 GHz)

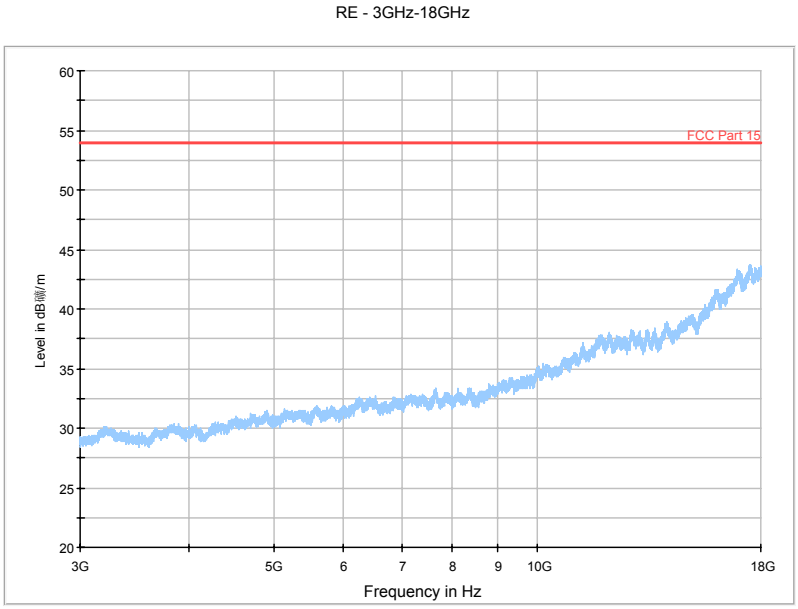


Fig. 165 Radiated Spurious Emission (802.11n-40MHz, Ch3, 3 GHz-18 GHz)

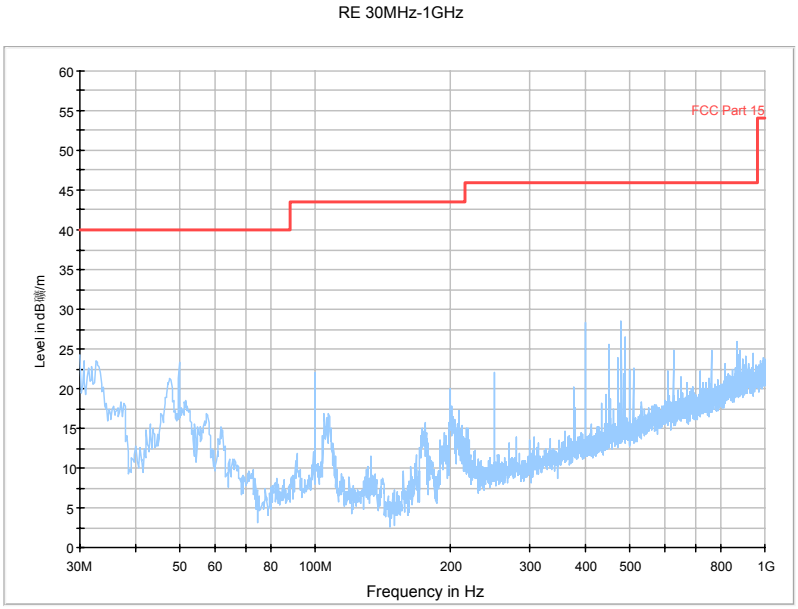


Fig. 166 Radiated Spurious Emission (802.11n-40MHz, Ch6, 30 MHz-1 GHz)

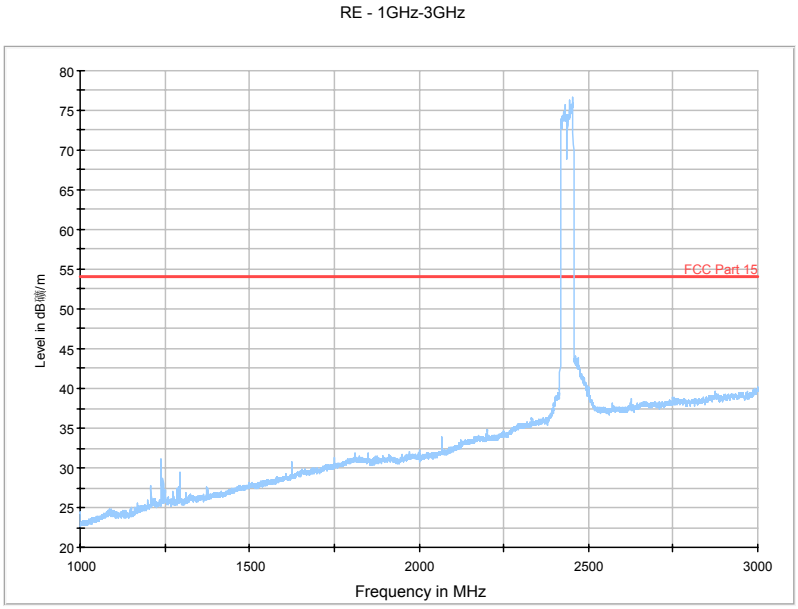


Fig. 167 Radiated Spurious Emission (802.11n-40MHz, Ch6, 1 GHz-3 GHz)

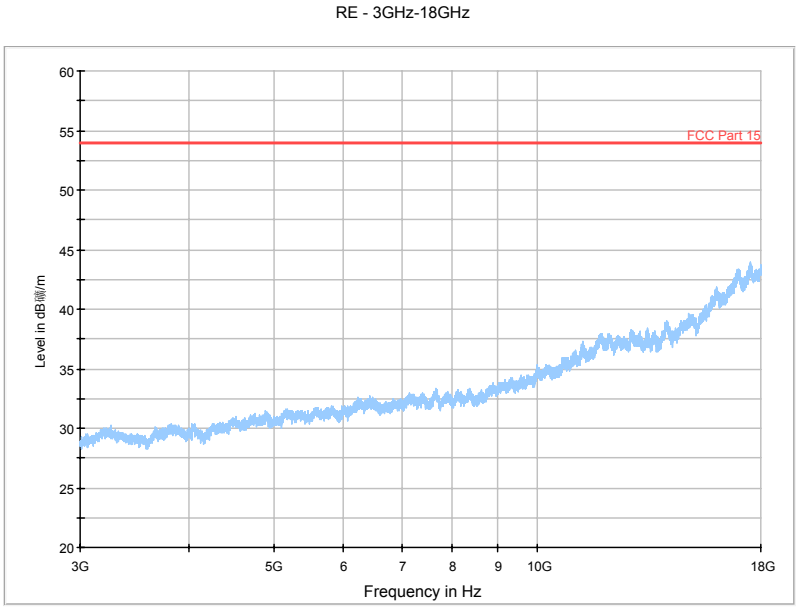


Fig. 168 Radiated Spurious Emission (802.11n-40MHz, Ch6, 3 GHz-18 GHz)

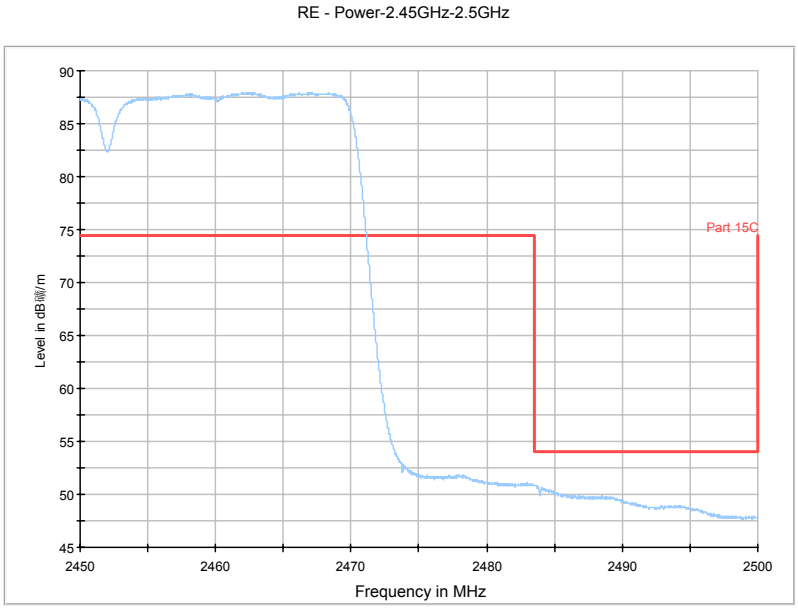


Fig. 169 Radiated Spurious Emission (Power): 802.11n-40MHz, ch9, 2.45 GHz - 2.50GHz

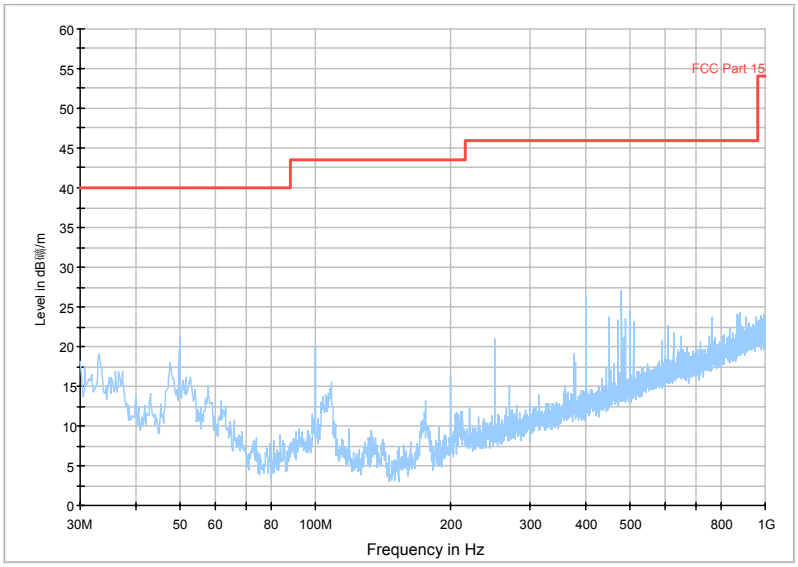


Fig. 170 Radiated Spurious Emission (802.11n-40MHz, Ch9, 30 MHz-1 GHz)

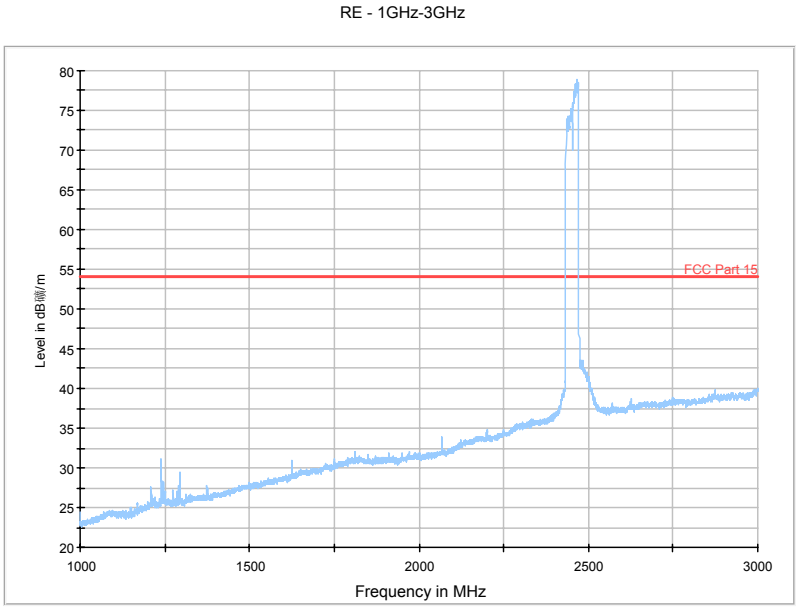


Fig. 171 Radiated Spurious Emission (802.11n-40MHz, Ch9, 1 GHz-3 GHz)

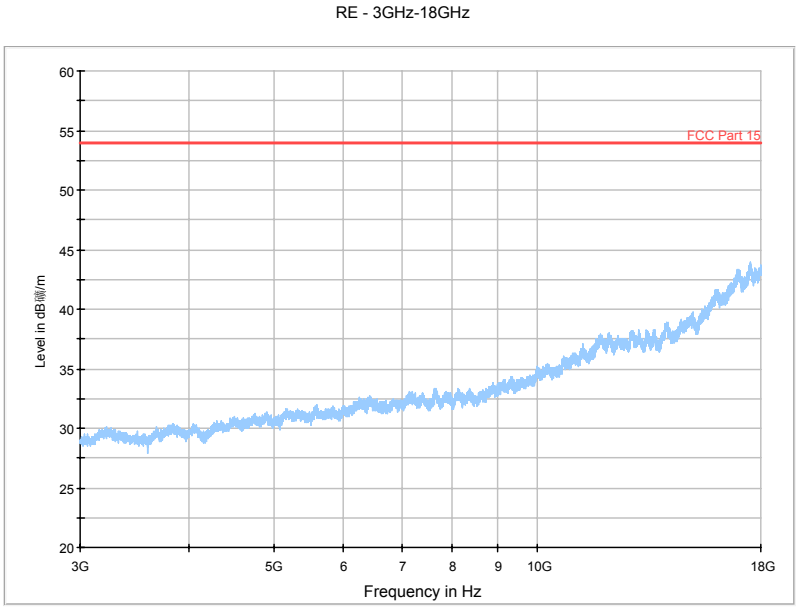


Fig. 172 Radiated Spurious Emission (802.11n-40MHz, Ch9, 3 GHz-18 GHz)

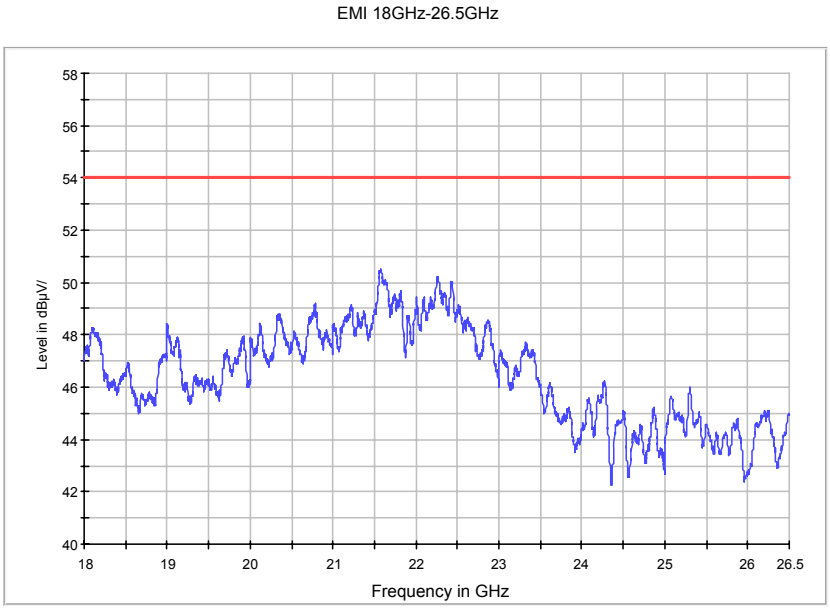


Fig. 173 Radiated Spurious Emission (All channels): 18GHz - 26.5GHz

A.7. 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 1		
		802.11b	IDLE	
0.15 to 0.5	66 to 56	Fig.174	Fig. 175	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 1		
		802.11b	IDLE	
0.15 to 0.5	56 to 46	Fig.174	Fig.175	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)

Frequency range (MHz)	Quasi-peak Limit (dBμV)	Result (dBμV)		Conclusion
		With charger 2		
		802.11b	IDLE	
0.15 to 0.5	67 to 56	Fig. 176	Fig. 177	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 2		
		802.11b	IDLE	
0.15 to 0.5	56 to 46	Fig.176	Fig.177	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.				

The measurement is made according to ANSI C63.10

Conclusion: PASS

Test graphs as below:

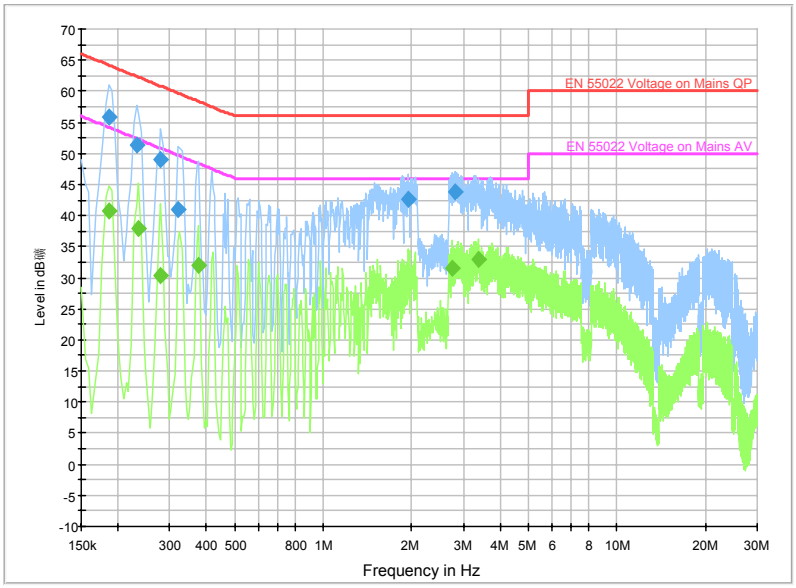


Fig. 174 AC Powerline Conducted Emission-802.11b (charger 1)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.186000	55.8	GND	L1	10.0	8.4	64.2
0.231000	51.3	GND	L1	10.0	11.2	62.4
0.280500	48.9	GND	L1	10.0	11.9	60.8
0.321000	40.9	GND	L1	10.0	18.8	59.7
1.950000	42.6	GND	L1	10.0	13.4	56.0
2.823000	43.7	GND	L1	10.0	12.3	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.186000	40.8	GND	N	10.0	13.4	54.2
0.235500	38.0	GND	N	10.0	14.3	52.3
0.280500	30.4	GND	L1	10.0	20.4	50.8
0.375000	31.9	GND	N	10.0	16.5	48.4
2.746500	31.5	GND	L1	10.0	14.5	46.0
3.363000	33.0	GND	L1	10.0	13.0	46.0

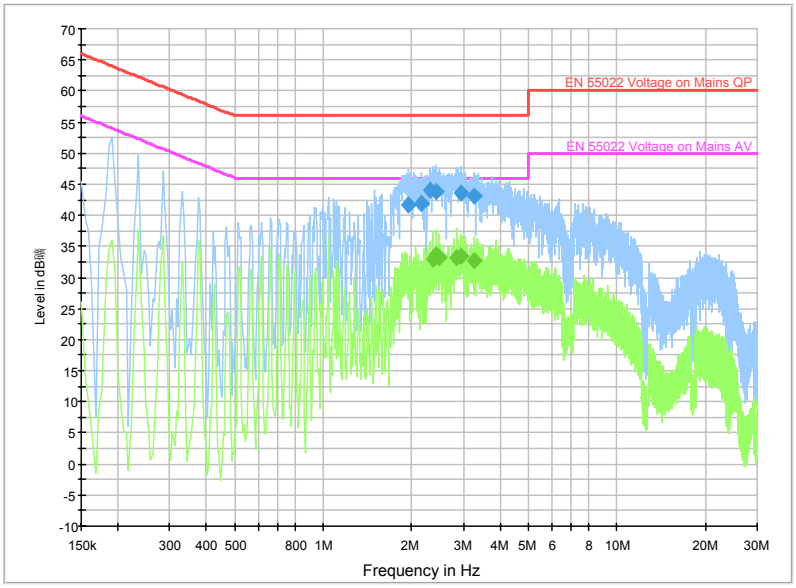


Fig. 175 AC Powerline Conducted Emission-IDLE (charger 1)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.954500	41.6	GND	L1	10.0	14.4	56.0
2.166000	42.0	GND	L1	10.0	14.0	56.0
2.314500	44.1	GND	L1	10.0	11.9	56.0
2.413500	43.9	GND	L1	10.0	12.1	56.0
2.940000	43.7	GND	L1	10.0	12.3	56.0
3.268500	43.0	GND	L1	10.0	13.0	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
2.368500	32.9	GND	L1	10.0	13.1	46.0
2.413500	33.8	GND	L1	10.0	12.2	46.0
2.467500	33.2	GND	L1	10.0	12.8	46.0
2.841000	33.1	GND	L1	10.0	12.9	46.0
2.940000	33.4	GND	L1	10.0	12.6	46.0
3.282000	32.8	GND	L1	10.0	13.2	46.0

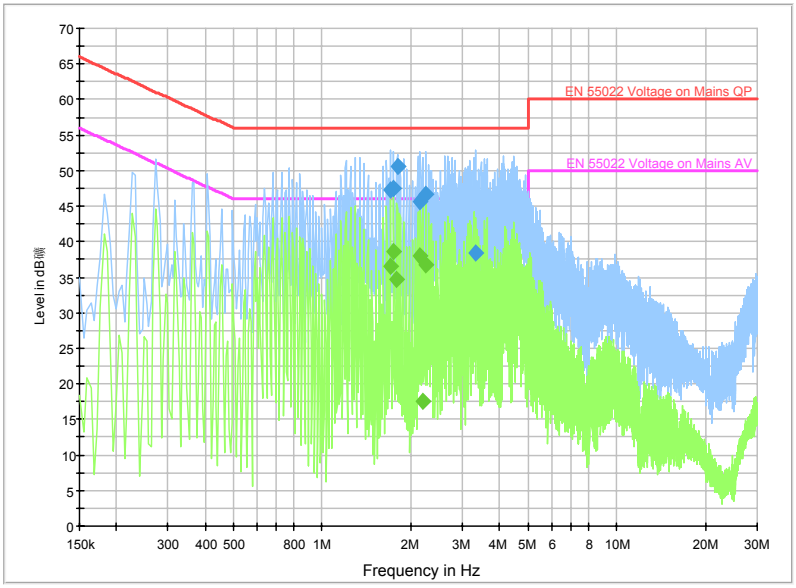


Fig. 176 AC Powerline Conducted Emission-802.11b (charger 2)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.702500	47.3	GND	L1	10.0	8.7	56.0
1.747500	47.6	GND	L1	10.0	8.4	56.0
1.797000	50.6	GND	L1	10.0	5.4	56.0
2.157000	45.6	GND	L1	10.0	10.4	56.0
2.247000	46.7	GND	L1	10.0	9.3	56.0
3.318000	38.4	GND	L1	10.0	17.6	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.702500	36.6	GND	L1	10.0	9.4	46.0
1.747500	38.5	GND	L1	10.0	7.5	46.0
1.792500	34.7	GND	L1	10.0	11.3	46.0
2.157000	37.9	GND	L1	10.0	8.1	46.0
2.202000	17.6	GND	L1	10.0	28.4	46.0
2.247000	36.9	GND	L1	10.0	9.1	46.0

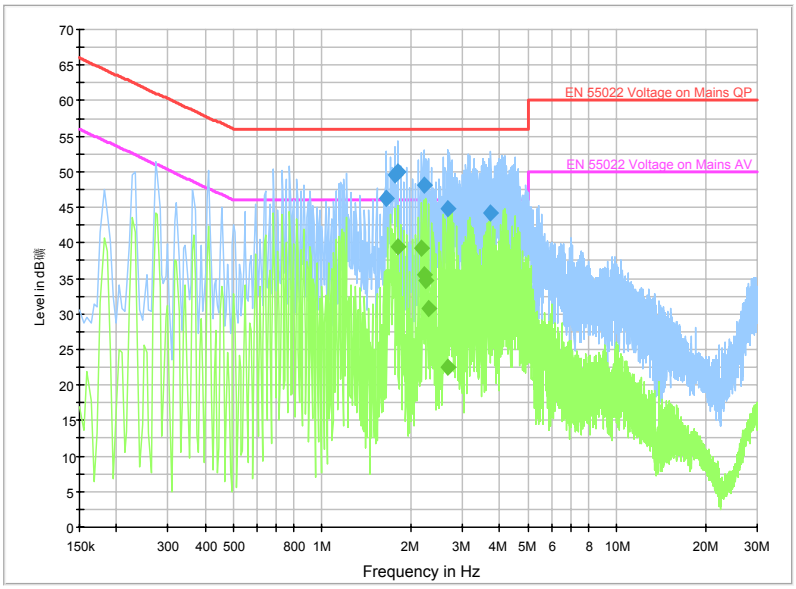


Fig. 177 AC Powerline Conducted Emission-IDLE (charger 2)

Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.644000	46.2	GND	L1	10.0	9.8	56.0
1.761000	49.6	GND	L1	10.0	6.4	56.0
1.806000	50.0	GND	L1	10.0	6.0	56.0
2.211000	48.2	GND	L1	10.0	7.8	56.0
2.665500	44.8	GND	L1	10.0	11.2	56.0
3.741000	44.1	GND	L1	10.0	11.9	56.0

Final Result 2

Frequency (MHz)	Average (dBµV)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
1.806000	39.4	GND	L1	10.0	6.6	46.0
2.166000	39.3	GND	L1	10.0	6.7	46.0
2.211000	35.5	GND	L1	10.0	10.5	46.0
2.256000	34.6	GND	L1	10.0	11.4	46.0
2.301000	30.7	GND	L1	10.0	15.3	46.0
2.665500	22.4	GND	L1	10.0	23.6	46.0

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