



FCC PART 15C TEST REPORT No.2011WLN0211

for

ZTE CORPORATION

WCDMA/GSM (GPRS) DUAL-MODE DIGITAL MOBILE PHONE

Type: Z990

With

FCC ID: Q78-Z990

Hardware Version: p5pB

Software Version: Z990V1.0.0B01

Issued Date: 2011-04-11



No. DGA-PL-114/01-02

DAR accreditation (DIN EN ISO/IEC 17025): No. DGA-PL-114/01-02

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

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

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1. Test Laboratory

1.1. Testing Location

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

1.2. Testing Environment

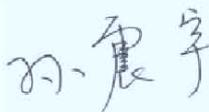
Normal Temperature: 15-30℃
Extreme Temperature: -20/+55℃
Relative Humidity: 30-60%
Air Pressure 990hPa-1040hPa

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 End Date: 2011-04-06

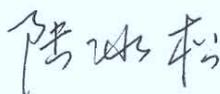
1.4. Signature



Sun Zhenyu
(Prepared this test report)



Gao Hong
(Reviewed this test report)



Lu Bingsong
Deputy Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

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2.2. Manufacturer Information

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Postal Code: 518057
Country: China
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Telephone: +86-21-68897541
Fax: +86-21-50801070

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

3.1. About EUT

Description	WCDMA/GSM (GPRS) DUAL-MODE DIGITAL MOBILE PHONE
Type	Z990
FCC ID	Q78-Z990
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	22.92dBm(OFDM)
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	/	p5pB	Z990V1.0.0B01
EUT2	/	p5pB	Z990V1.0.0B01

*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	Li3715T42P3h415266	/
AE2	Travel Adapter	STC-A22O50I700USBA-Z	/

*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 WCDMA/GSM (GPRS) DUAL-MODE DIGITAL 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.

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 CFR 47, Part 15, Subpart C:	
	15.205 Restricted bands of operation;	Oct,
FCC Part15	15.209 Radiated emission limits, general requirements;	2009
	15.247 Operation within the bands 902–928MHz,	Edition
	2400–2483.5 MHz, and 5725–5850 MHz.	
	Methods of Measurement of Radio-Noise Emissions from	
ANSI C63.4	Low-Voltage Electrical and Electronic Equipment in the	2009
	Range of 9 kHz to 40 GHz	
	Measurement of Digital Transmission Systems	March
KDB558074	Operating under Section 15.247	23, 2005

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 °C, Max. = 30 °C
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

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

Temperature	Min. = 15 °C, Max. = 35 °C
Relative humidity	Min. =30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω

Semi-anechoic chamber (23 meters×17meters×10meters) did not exceed following limits along the EMC testing::

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	> 10 kΩ
Ground system resistance	< 0.5 Ω
Normalised site attenuation (NSA)	< ±3.2 dB, 10 m distance, from 30 to 1000 MHz
Uniformity of field strength	Between 0 and 6 dB, from 80MHz 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 °C, Max. = 30 °C
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, 15.209, 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 Public notice KDB558074 and ANSI C63.4.

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 case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

Temperature	T nom	26°C
Voltage	V nom	3.6V(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	2011-07-19
2	Test Receiver	ESS	847151/015	Rohde & Schwarz	2011-10-30
3	LISN	ESH2-Z5	829991/012	Rohde & Schwarz	2011-08-12

Radiated emission test system

No.	Equipment	Model	Serial Number	Manufacturer	Calibration Due date
1	Test Receiver	ESI40	831564/002	Rohde & Schwarz	2011-08-11
2	BiLog Antenna	3142B	9908-1403	EMCO	2012-03-15
3	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2011-12-25

Anechoic chamber

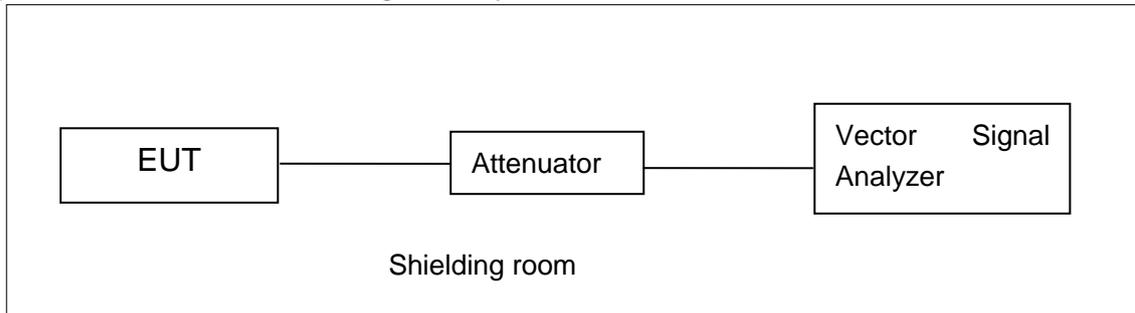
Anechoic chamber by Frankonia German.

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

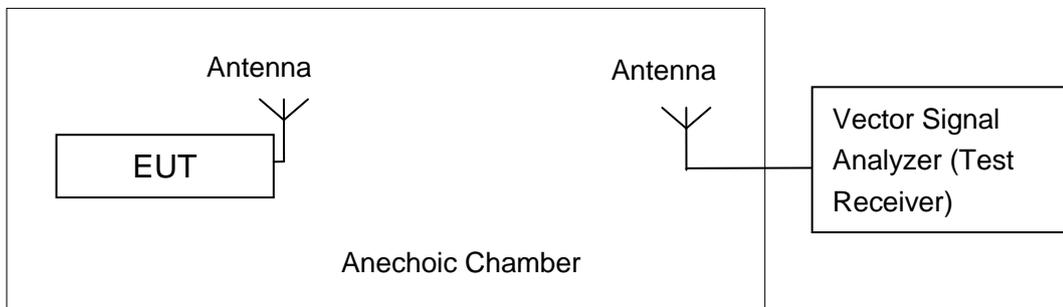


A.1.2. Radiated Emission Measurements

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 C63.4 and KDB558074

A.2. Maximum Peak Output Power

Measurement Limit and Method:

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

The measurement is made according to ANSI C63.4 and KDB558074, and power output option 1 (RBW=20MHz) in KDB558074 is used for the test. EUT is operating in continuous transmitting mode

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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A.2.1. Maximum Peak Output Power

Measurement Results:

802.11b/g mode

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	19.30	/	/
	2	19.12	/	/
	5.5	19.99	/	/
	11	21.39	21.00	20.60
802.11g	6	22.72	/	/
	9	22.86	/	/
	12	22.60	/	/
	18	22.52	/	/
	24	22.80	/	/
	36	22.90	/	/
	48	22.79	/	/
	54	22.92	22.64	22.29

The data rate 11Mbps and 54Mbps are selected as worse condition, and the following cases are performed with this condition.

802.11n mode with bandwidth (BW) 20MHz

Mode	Data Rate (MCS Index)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11n (20MHz BW)	MCS0	22.61	/	/
	MCS1	22.38	/	/
	MCS2	22.43	/	/
	MCS3	22.75	/	/
	MCS4	22.66	/	/
	MCS5	22.77	/	/

	MCS6	22.86	22.30	22.16
	MCS7	22.52	/	/

The data rate with MCS6 is selected as worse condition, and the following cases are performed with this condition.

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 C63.4 and KDB558074

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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Measurement Results:

802.11b/g mode

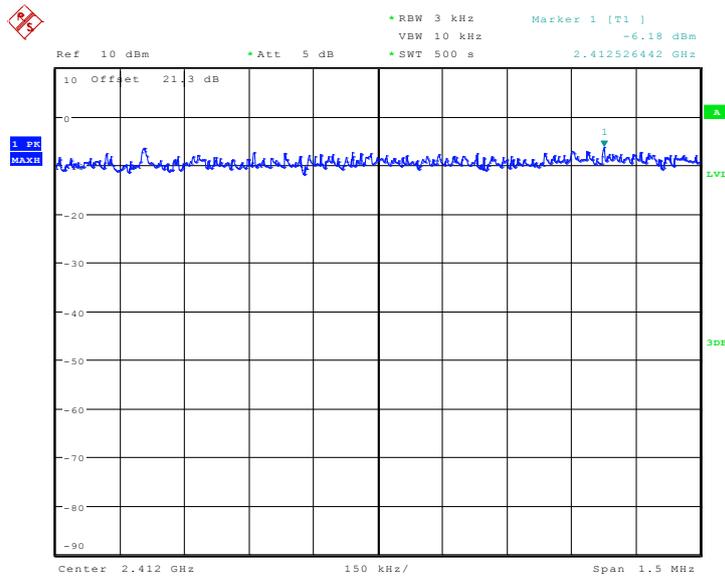
Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
		Fig.	Value	
802.11b	1	Fig.1	-6.18	P
	6	Fig.2	-6.68	P
	11	Fig.3	-6.50	P
802.11g	1	Fig.4	-7.92	P
	6	Fig.5	-8.37	P
	11	Fig.6	-8.19	P

802.11n mode

Mode	Channel	Power Spectral Density (dBm/3 kHz)		Conclusion
		Fig.	Value	
802.11n (20MHz BW)	1	Fig.7	-9.35	P
	6	Fig.8	-9.57	P
	11	Fig.9	-10.15	P

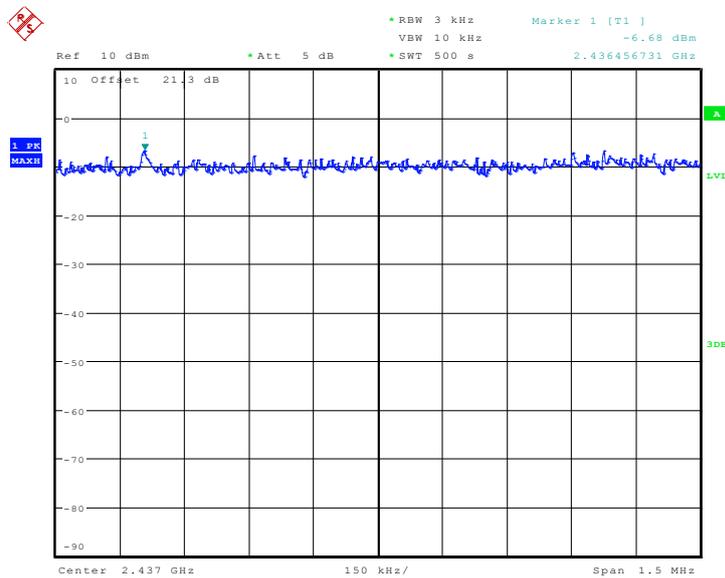
Conclusion: PASS

Test graphs as below:



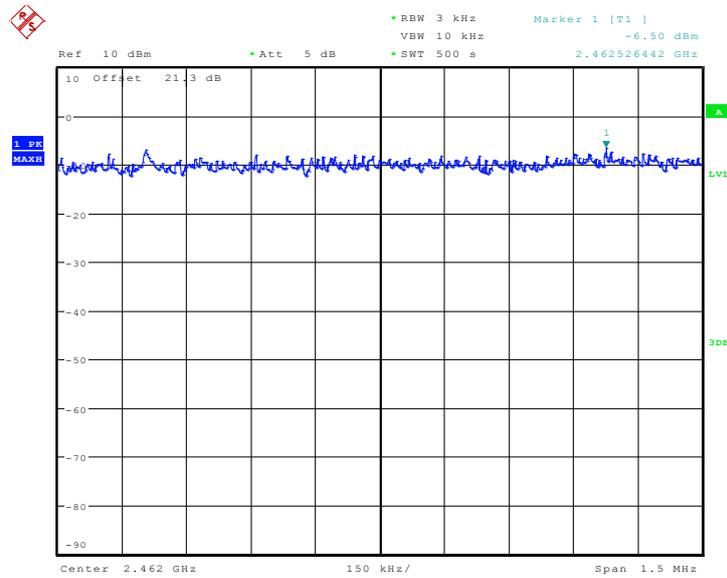
Date: 30.MAR.2011 19:36:42

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



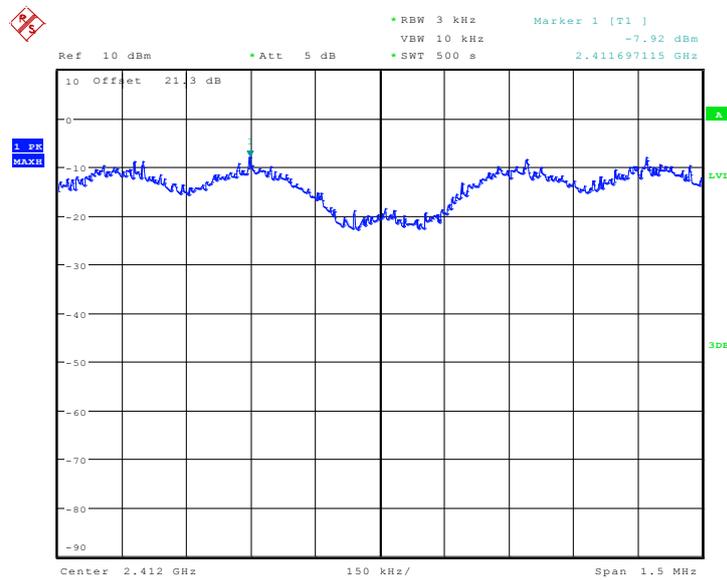
Date: 30.MAR.2011 19:24:56

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



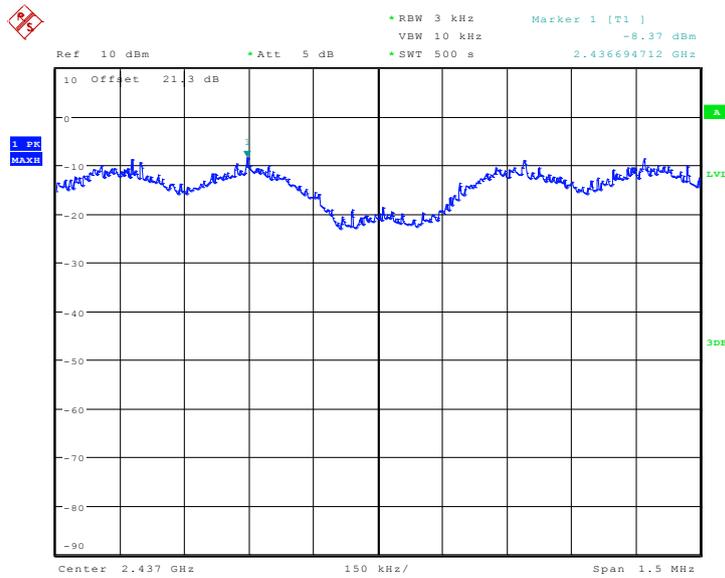
Date: 30.MAR.2011 19:03:04

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



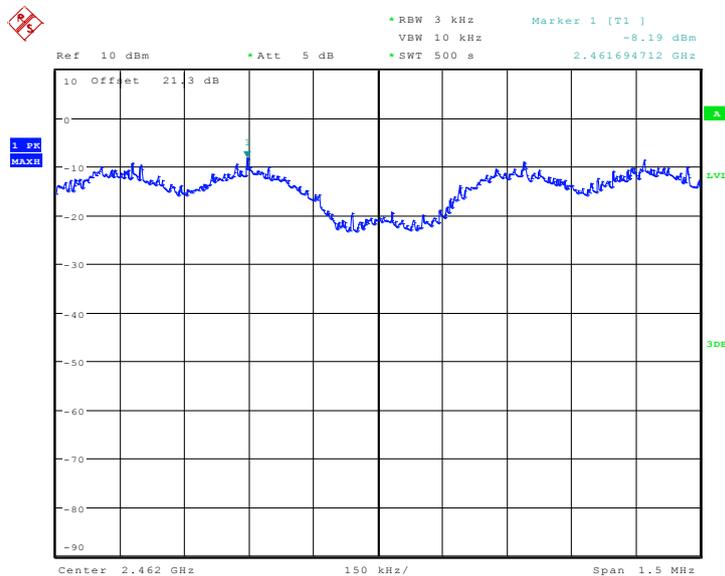
Date: 30.MAR.2011 18:54:24

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



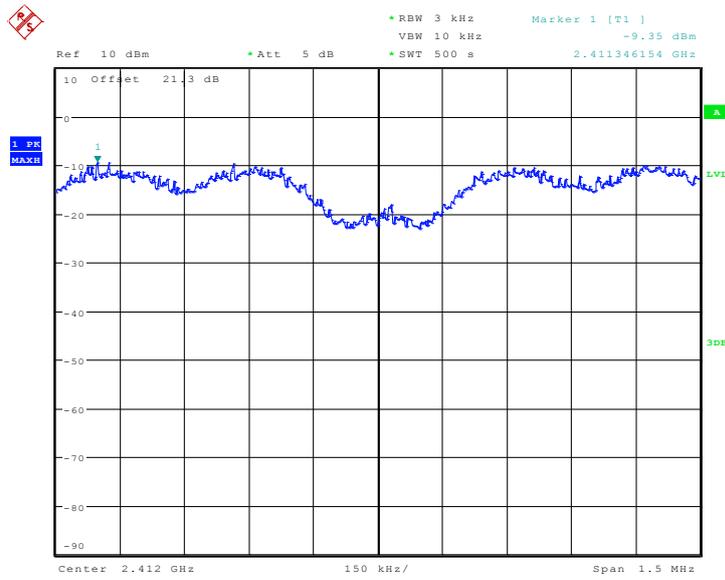
Date: 30.MAR.2011 18:45:47

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



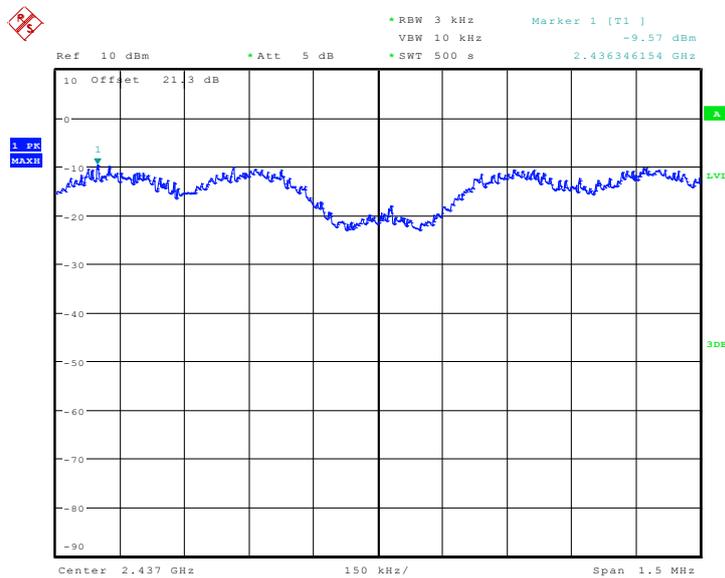
Date: 30.MAR.2011 18:34:27

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



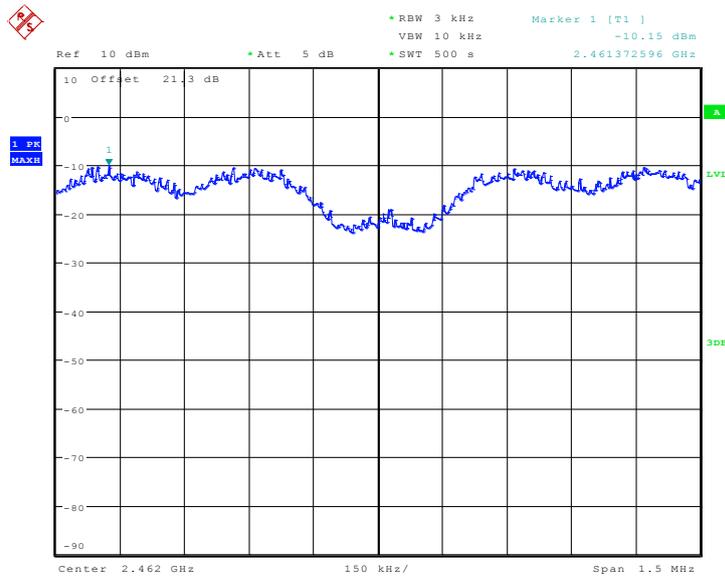
Date: 30.MAR.2011 18:12:26

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



Date: 30.MAR.2011 18:03:49

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



Date: 30.MAR.2011 18:21:02

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

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 C63.4 and KDB558074

Measurement Uncertainty:

Measurement Uncertainty	60.80Hz
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Measurement Result:

802.11b/g mode

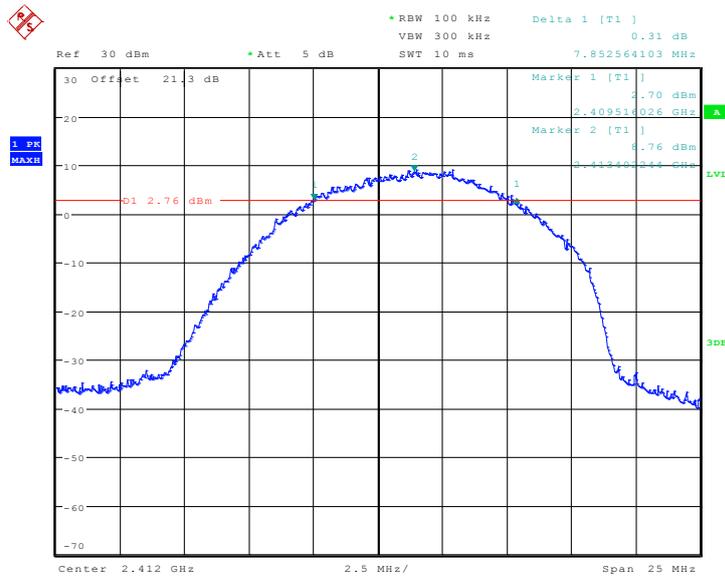
Mode	Channel	Occupied 6dB Bandwidth (kHz)		conclusion
802.11b	1	Fig.10	7853	P
	6	Fig.11	7724	P
	11	Fig.12	8013	P
802.11g	1	Fig.13	16106	P
	6	Fig.14	16066	P
	11	Fig.15	16106	P

802.11n mode

Mode	Channel	Occupied 6dB Bandwidth (kHz)		conclusion
802.11n (20MHz BW)	1	Fig.16	17027	P
	6	Fig.17	17348	P
	11	Fig.18	16988	P

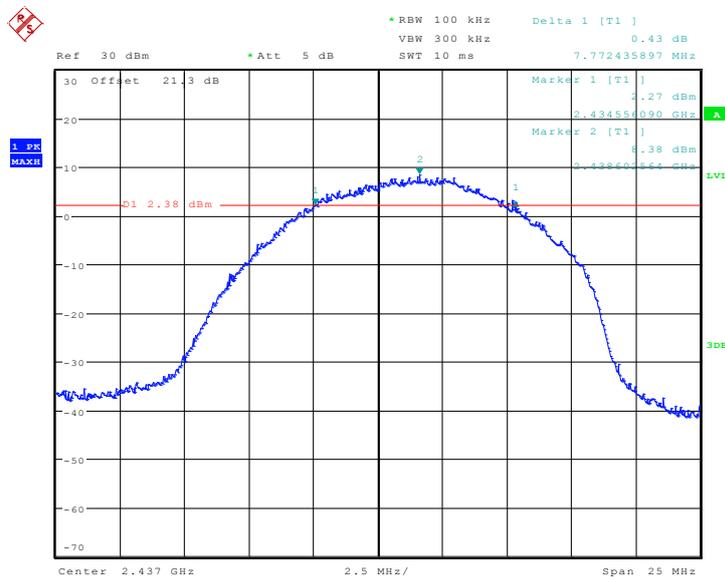
Conclusion: PASS

Test graphs as below:



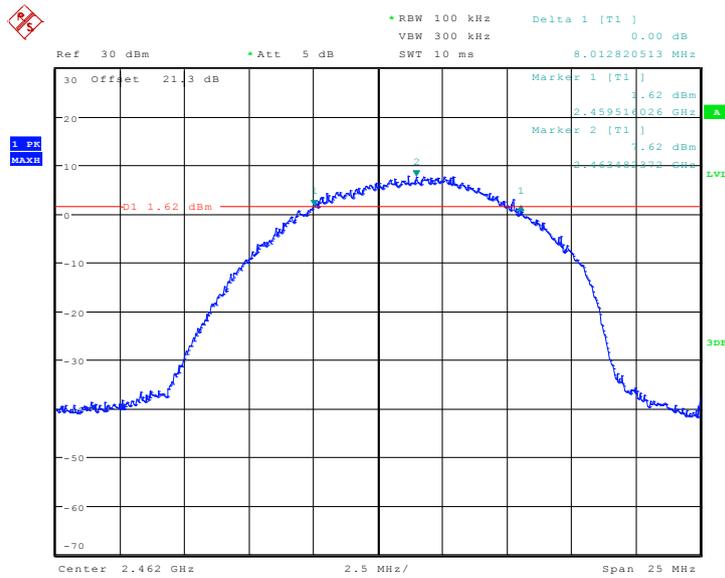
Date: 30.MAR.2011 16:05:07

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



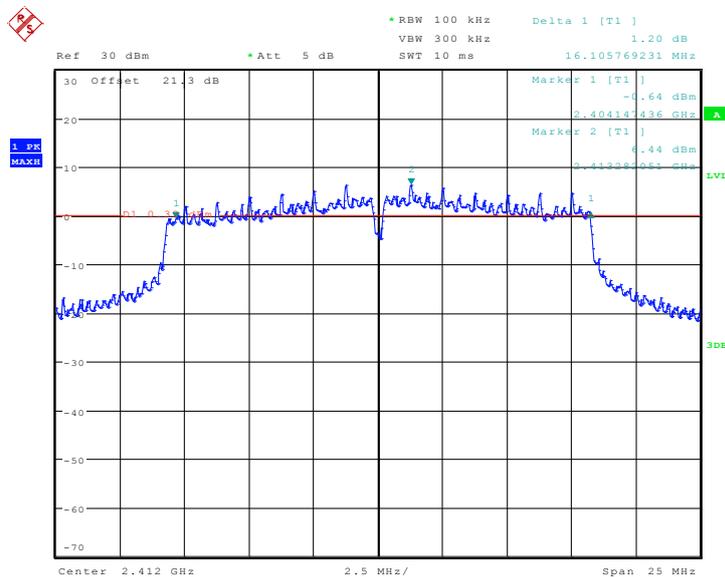
Date: 30.MAR.2011 16:10:51

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



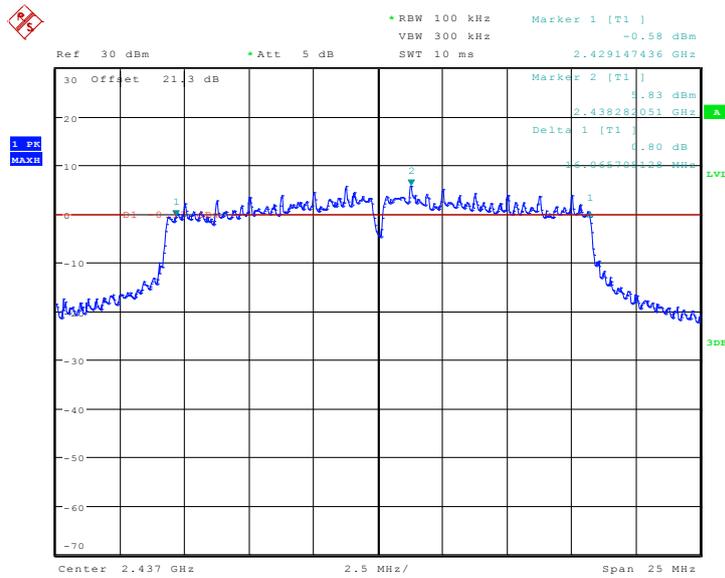
Date: 30.MAR.2011 16:13:16

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



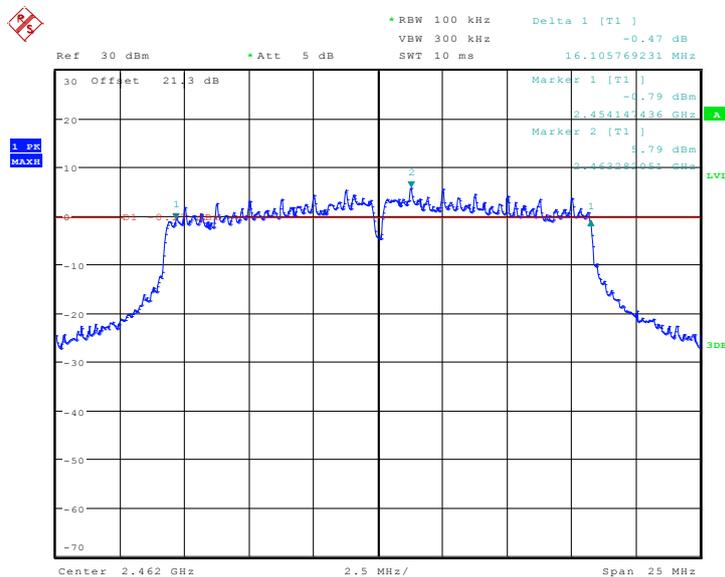
Date: 30.MAR.2011 16:22:16

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



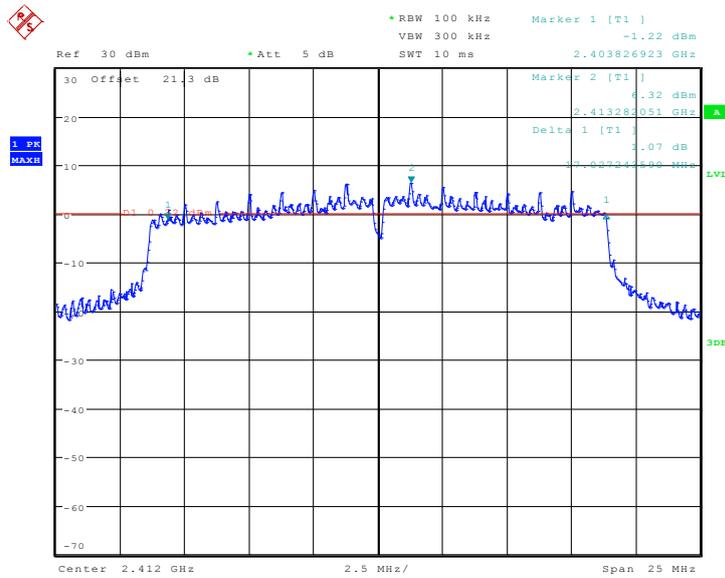
Date: 30.MAR.2011 16:19:54

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



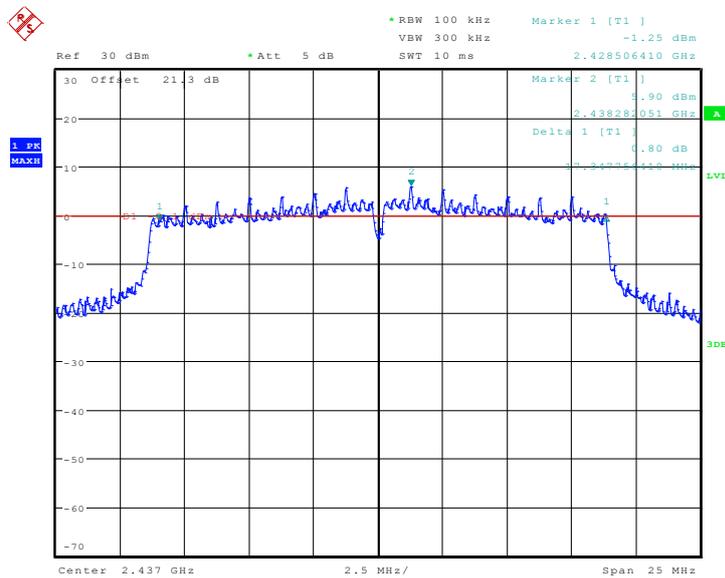
Date: 30.MAR.2011 16:27:20

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



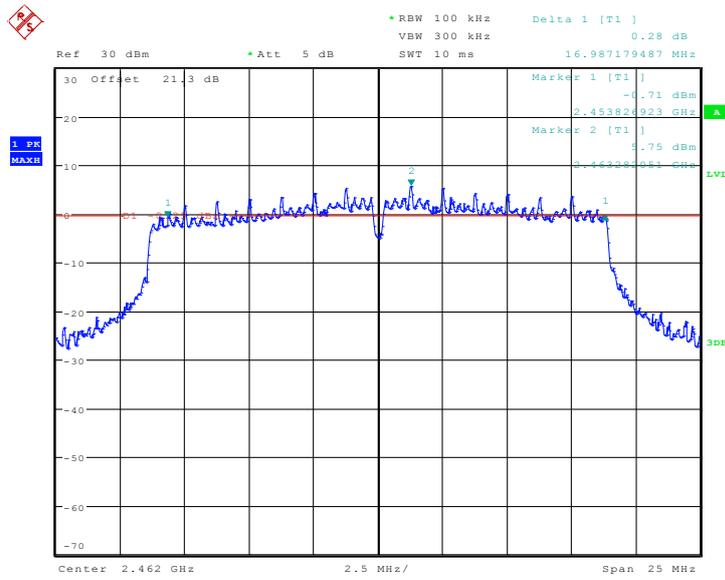
Date: 30.MAR.2011 16:36:18

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



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



Date: 30.MAR.2011 16:33:15

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

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 C63.4 and KDB558074

Measurement Uncertainty:

Measurement Uncertainty	0.75dB
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Measurement Result:

802.11b/g mode

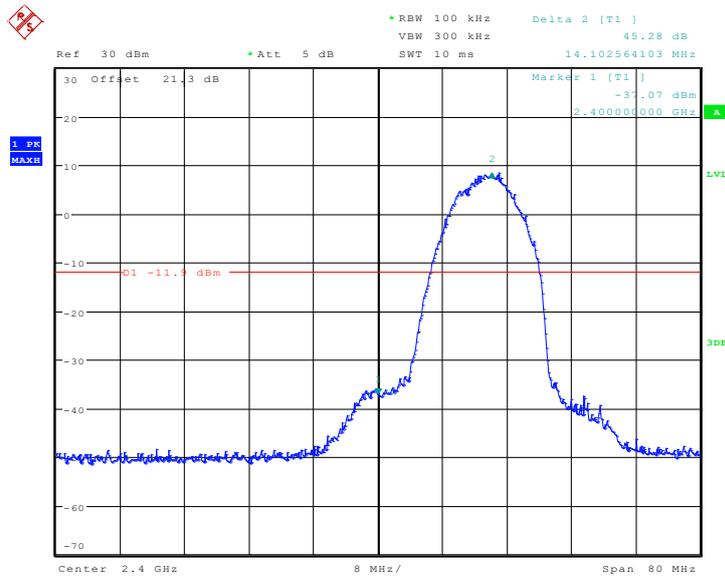
Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.19	P
	11	Fig.20	P
802.11g	1	Fig.21	P
	11	Fig.22	P

802.11n mode

Mode	Channel	Test Results	Conclusion
802.11n (20MHz BW)	1	Fig.23	P
	11	Fig.24	P

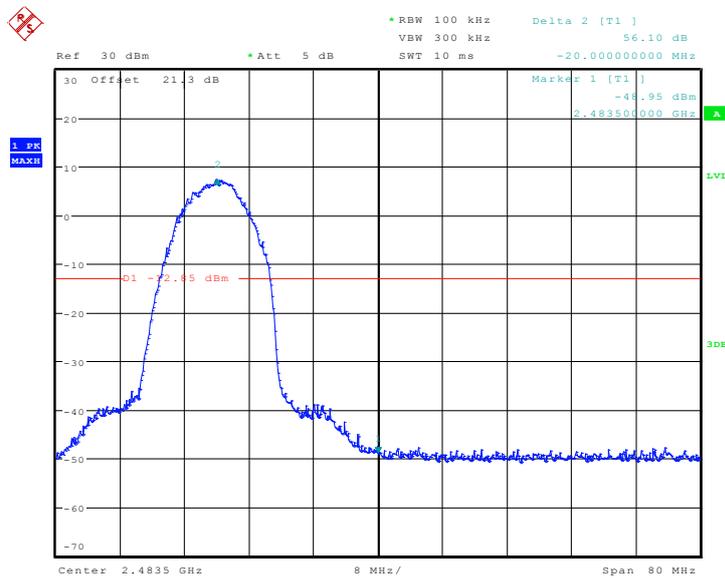
Conclusion: PASS

Test graphs as below:



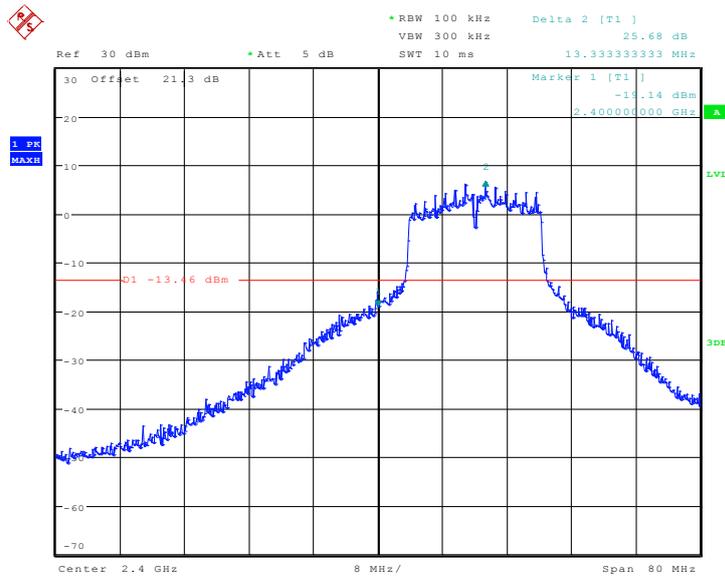
Date: 30.MAR.2011 16:43:36

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



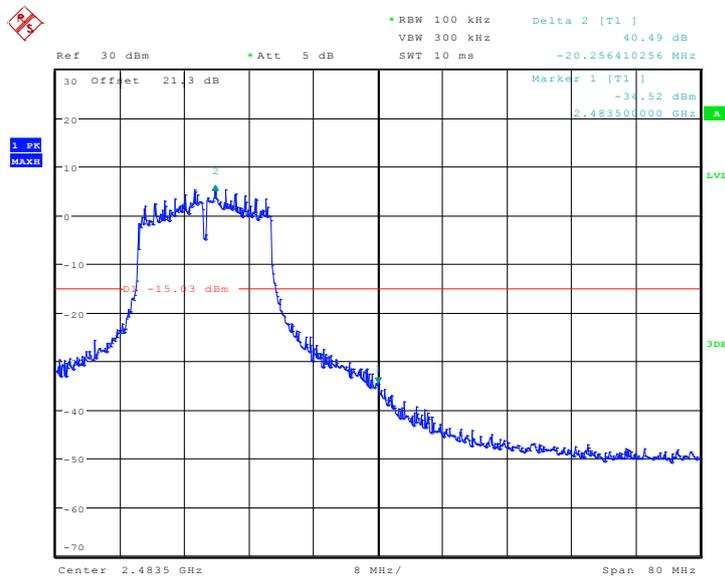
Date: 30.MAR.2011 16:44:44

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



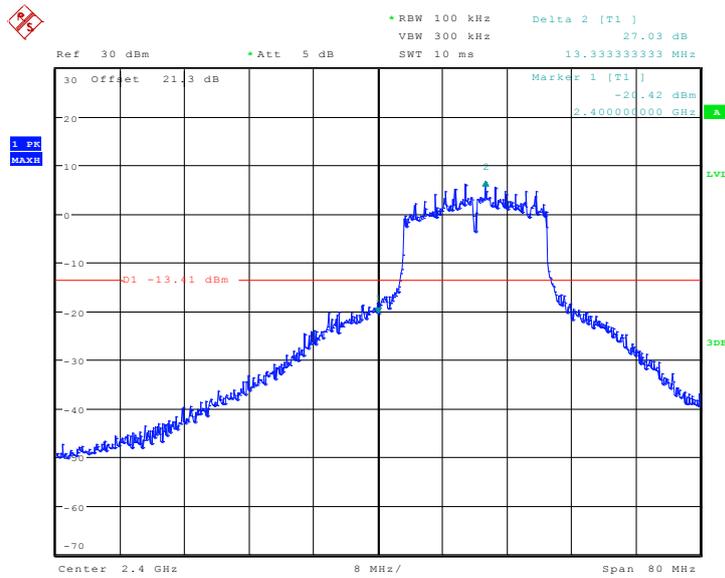
Date: 30.MAR.2011 16:42:21

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



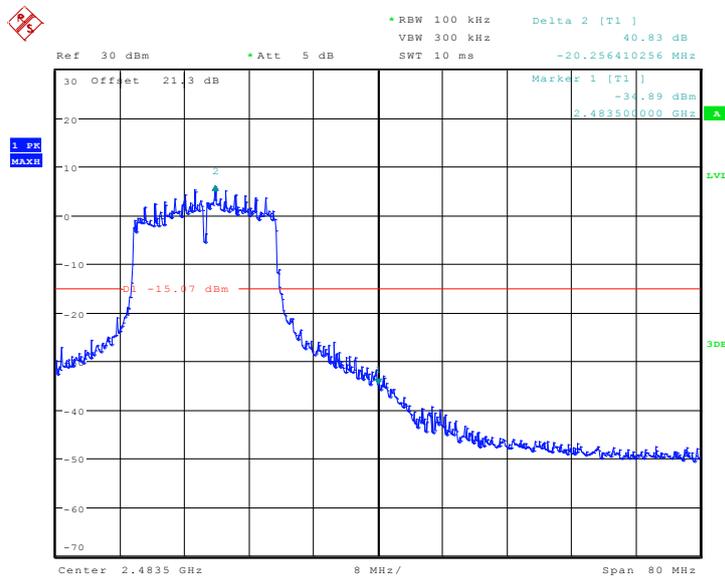
Date: 30.MAR.2011 16:41:03

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



Date: 30.MAR.2011 16:39:10

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



Date: 30.MAR.2011 16:40:14

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

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 C63.4 and KDB558074

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.25	P
		30 MHz ~ 1 GHz	Fig.26	P
		1GHz-2.5GHz	Fig.27	P
		2.5GHz-7.5GHz	Fig.28	P
		7.5GHz-10GHz	Fig.29	P
		10GHz-15GHz	Fig.30	P
		15GHz-20GHz	Fig.31	P
	20GHz-26GHz	Fig.32	P	
	6	2.437 GHz	Fig.33	P
		30 MHz ~ 1 GHz	Fig.34	P
		1GHz-2.5GHz	Fig.35	P
		2.5GHz-7.5GHz	Fig.36	P
		7.5GHz-10GHz	Fig.37	P
		10GHz-15GHz	Fig.38	P
		15GHz-20GHz	Fig.39	P
	20GHz-26GHz	Fig.40	P	
	11	2.462 GHz	Fig.41	P
		30 MHz ~ 1 GHz	Fig.42	P
		1GHz-2.5GHz	Fig.43	P
		2.5GHz-7.5GHz	Fig.44	P

		7.5GHz-10GHz	Fig.45	P
		10GHz-15GHz	Fig.46	P
		15GHz-20GHz	Fig.47	P
		20GHz-26GHz	Fig.48	P
802.11g	1	2.412 GHz	Fig.49	P
		30 MHz ~ 1 GHz	Fig.50	P
		1GHz-2.5GHz	Fig.51	P
		2.5GHz-7.5GHz	Fig.52	P
		7.5GHz-10GHz	Fig.53	P
		10GHz-15GHz	Fig.54	P
		15GHz-20GHz	Fig.55	P
		20GHz-26GHz	Fig.56	P
	6	2.437 GHz	Fig.57	P
		30 MHz ~ 1 GHz	Fig.58	P
		1GHz-2.5GHz	Fig.59	P
		2.5GHz-7.5GHz	Fig.60	P
		7.5GHz-10GHz	Fig.61	P
		10GHz-15GHz	Fig.62	P
		15GHz-20GHz	Fig.63	P
		20GHz-26GHz	Fig.64	P
	11	2.462 GHz	Fig.65	P
		30 MHz ~ 1 GHz	Fig.66	P
		1GHz-2.5GHz	Fig.67	P
		2.5GHz-7.5GHz	Fig.68	P
		7.5GHz-10GHz	Fig.69	P
		10GHz-15GHz	Fig.70	P
		15GHz-20GHz	Fig.71	P
		20GHz-26GHz	Fig.72	P

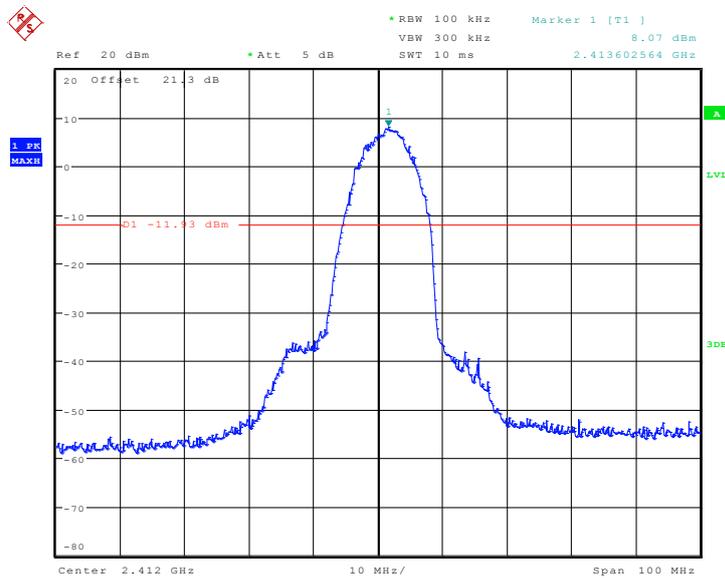
802.11n mode

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11n (20MHz BW)	1	2.412 GHz	Fig.73	P
		30 MHz ~ 1 GHz	Fig.74	P
		1GHz-2.5GHz	Fig.75	P
		2.5GHz-7.5GHz	Fig.76	P
		7.5GHz-10GHz	Fig.77	P
		10GHz-15GHz	Fig.78	P
		15GHz-20GHz	Fig.79	P
		20GHz-26GHz	Fig.80	P
	6	2.437 GHz	Fig.81	P
		30 MHz ~ 1 GHz	Fig.82	P
		1GHz-2.5GHz	Fig.83	P
		2.5GHz-7.5GHz	Fig.84	P

		7.5GHz-10GHz	Fig.85	P
		10GHz-15GHz	Fig.86	P
		15GHz-20GHz	Fig.87	P
		20GHz-26GHz	Fig.88	P
	11	2.462 GHz	Fig.89	P
		30 MHz ~ 1 GHz	Fig.90	P
		1GHz-2.5GHz	Fig.91	P
		2.5GHz-7.5GHz	Fig.92	P
		7.5GHz-10GHz	Fig.93	P
		10GHz-15GHz	Fig.94	P
		15GHz-20GHz	Fig.95	P
		20GHz-26GHz	Fig.96	P

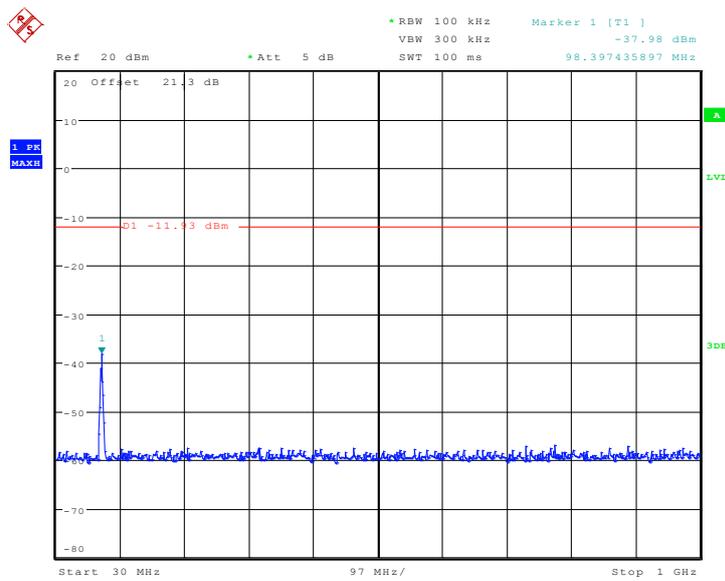
Conclusion: PASS

Test graphs as below:



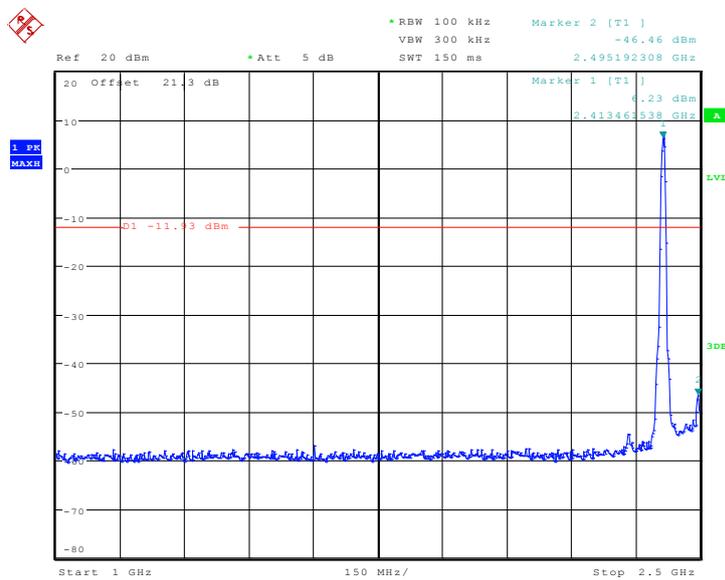
Date: 30.MAR.2011 17:13:35

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



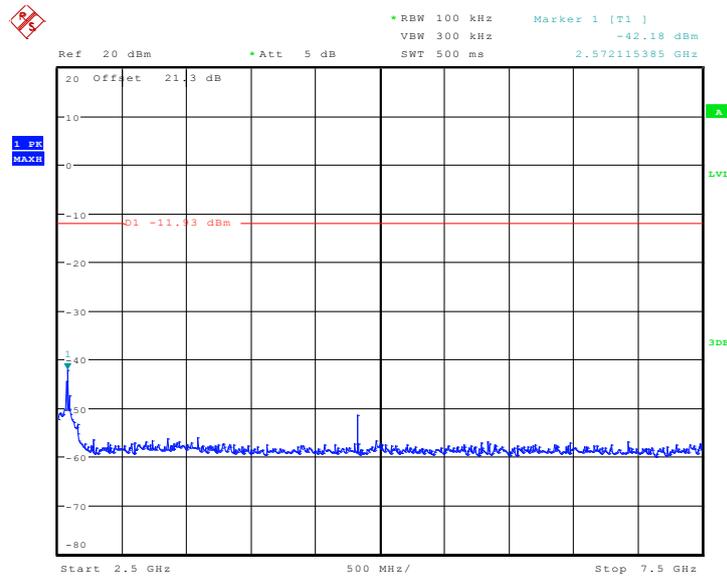
Date: 30.MAR.2011 17:13:59

Fig. 26 Conducted Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)



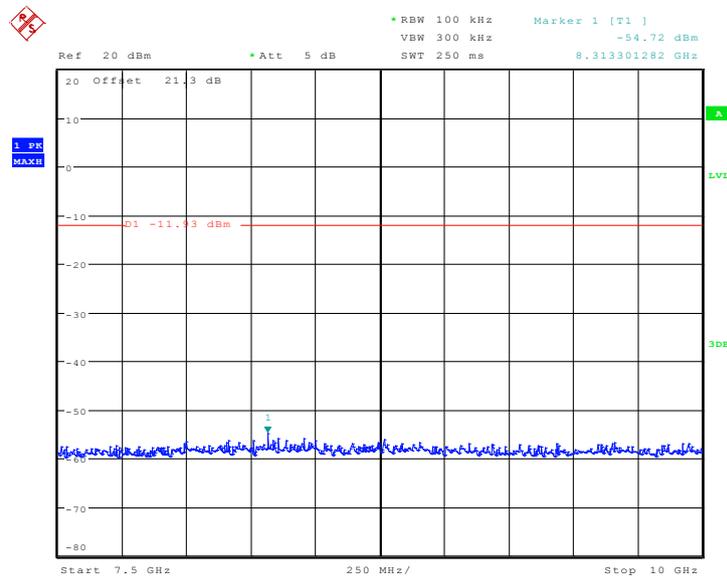
Date: 30.MAR.2011 17:14:22

Fig. 27 Conducted Spurious Emission (802.11b, Ch1, 1 GHz-2.5 GHz)



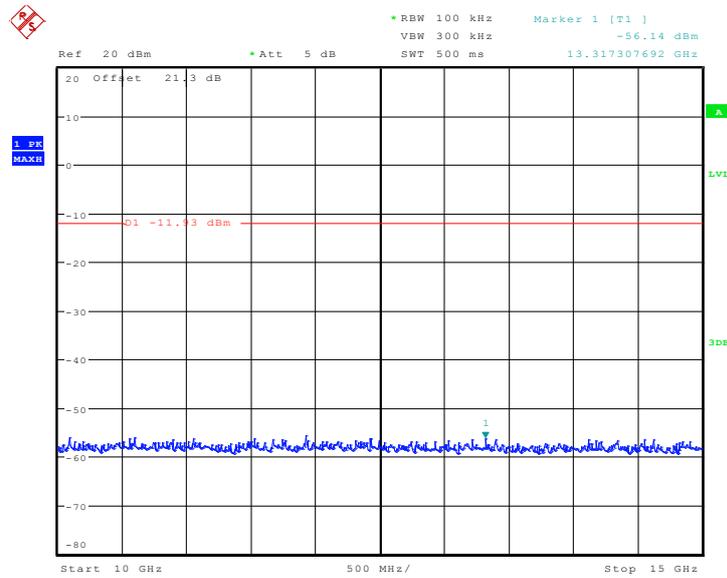
Date: 30.MAR.2011 17:15:14

Fig. 28 Conducted Spurious Emission (802.11b, Ch1, 2.5 GHz-7.5 GHz)



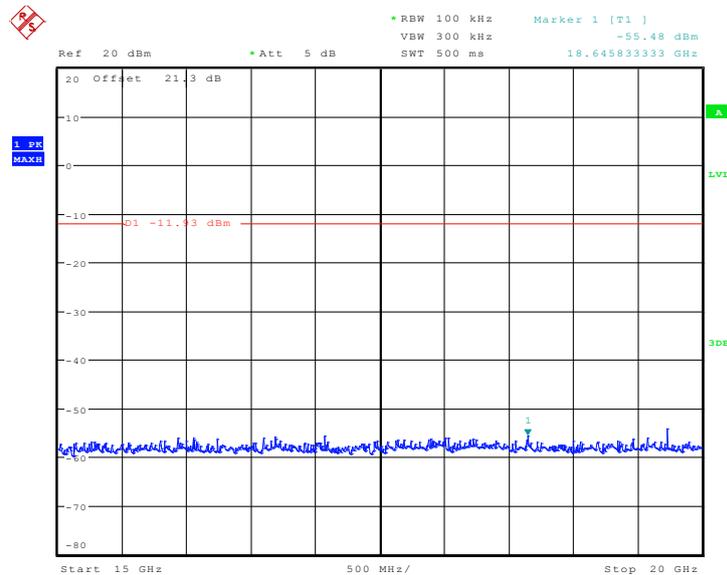
Date: 30.MAR.2011 17:15:36

Fig. 29 Conducted Spurious Emission (802.11b, Ch1, 7.5 GHz-10 GHz)



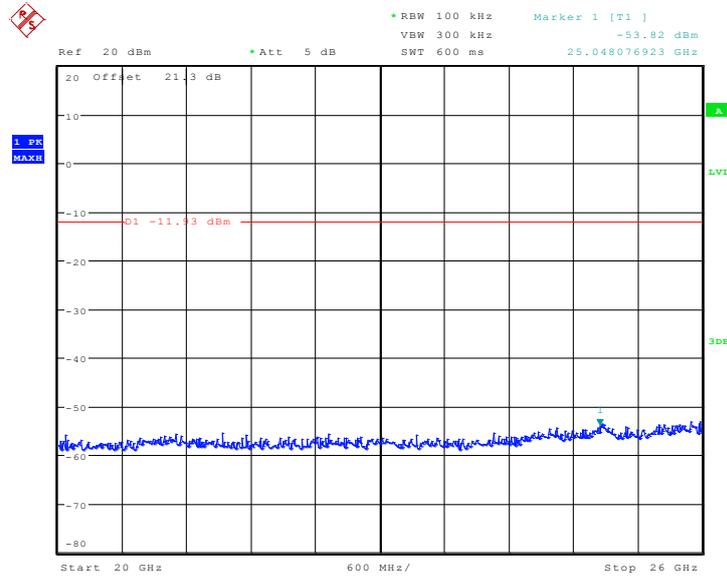
Date: 30.MAR.2011 17:16:05

Fig. 30 Conducted Spurious Emission (802.11b, Ch1, 10 GHz-15 GHz)



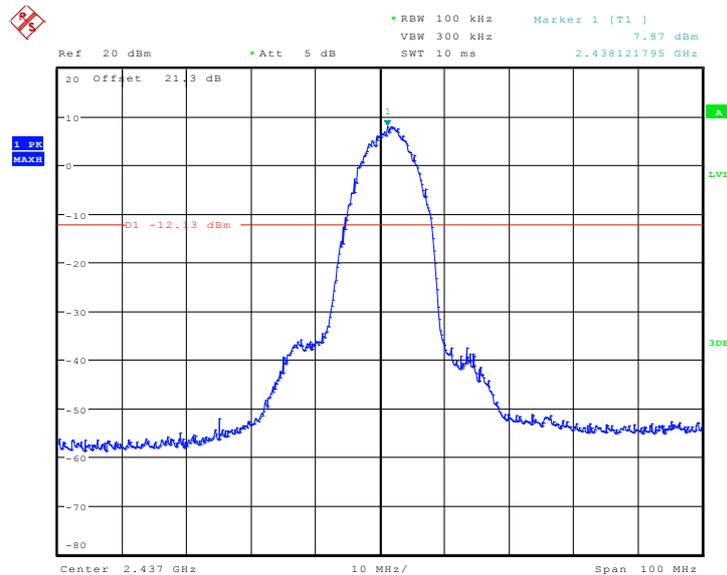
Date: 30.MAR.2011 17:16:26

Fig. 31 Conducted Spurious Emission (802.11b, Ch1, 15 GHz-20 GHz)



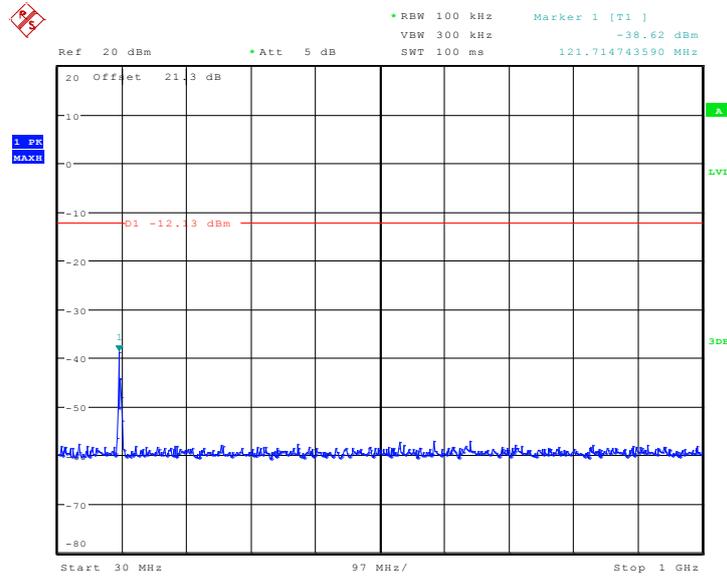
Date: 30.MAR.2011 17:16:42

Fig. 32 Conducted Spurious Emission (802.11b, Ch1, 20 GHz-26 GHz)



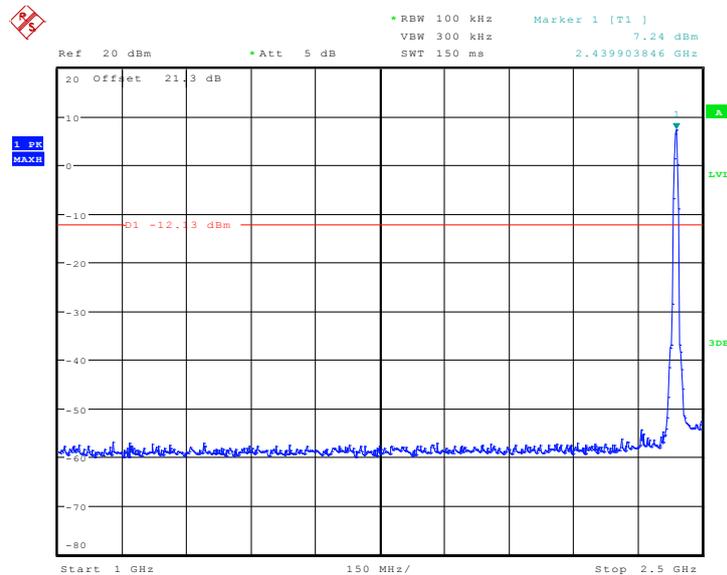
Date: 30.MAR.2011 17:17:55

Fig. 33 Conducted Spurious Emission (802.11b, Ch6, Center Frequency)



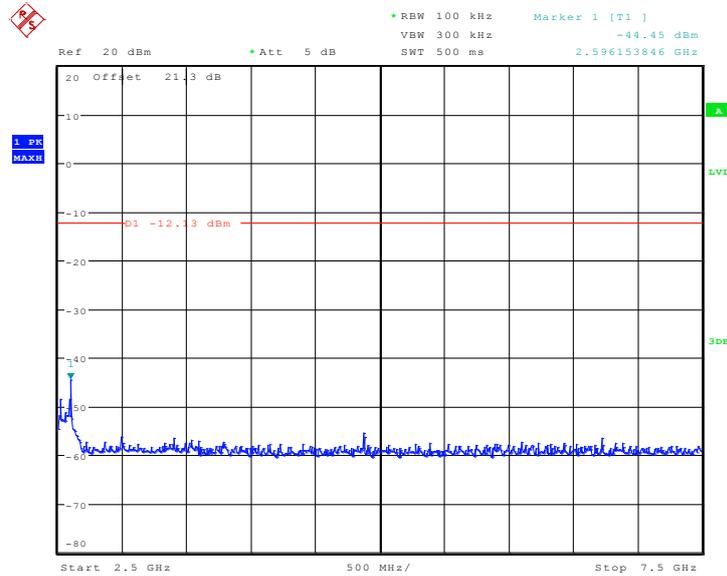
Date: 30.MAR.2011 17:18:53

Fig. 34 Conducted Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)



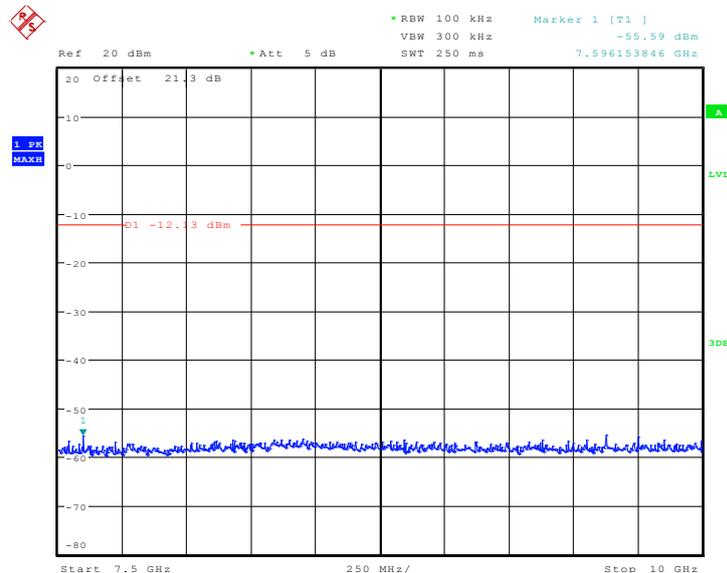
Date: 30.MAR.2011 17:19:29

Fig. 35 Conducted Spurious Emission (802.11b, Ch6, 1 GHz-2.5 GHz)



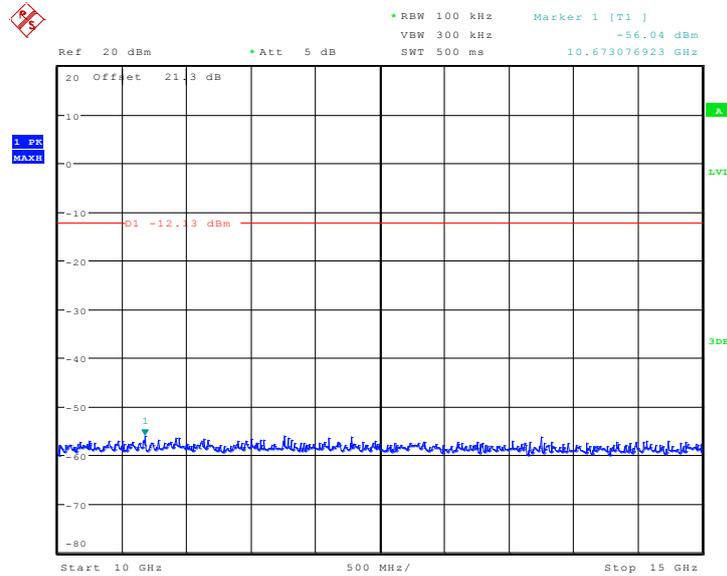
Date: 30.MAR.2011 17:19:50

Fig. 36 Conducted Spurious Emission (802.11b, Ch6, 2.5 GHz-7.5 GHz)



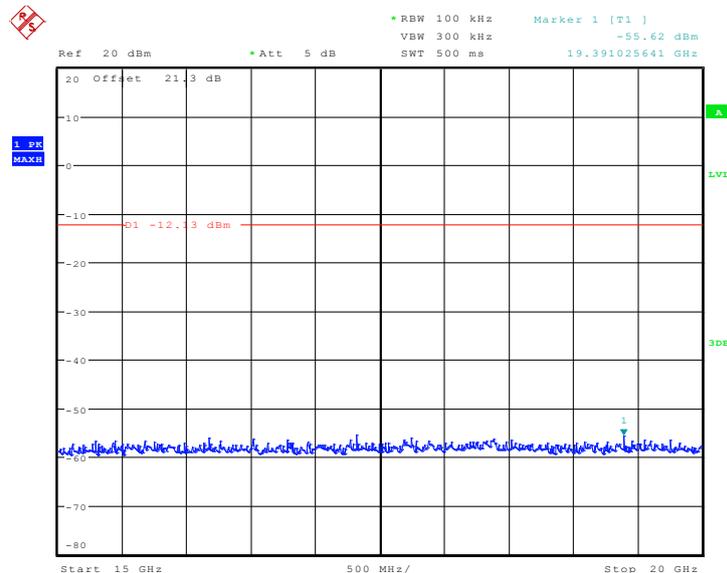
Date: 30.MAR.2011 17:20:15

Fig. 37 Conducted Spurious Emission (802.11b, Ch6, 7.5 GHz-10 GHz)



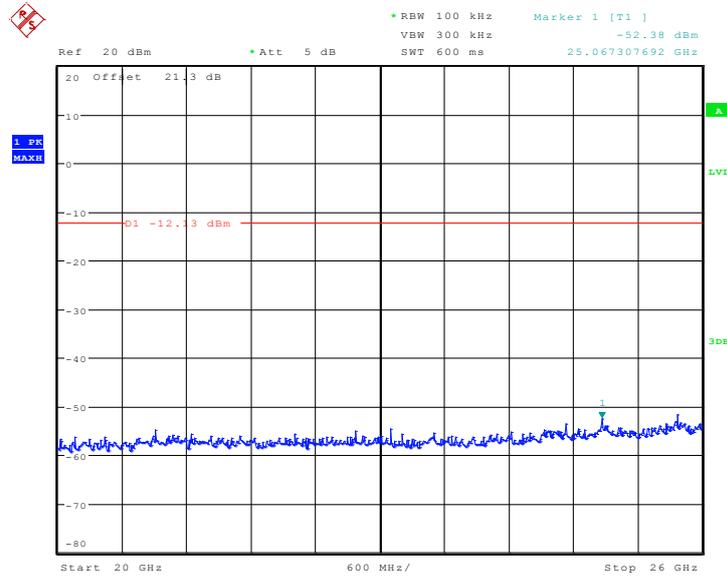
Date: 30.MAR.2011 17:20:33

Fig. 38 Conducted Spurious Emission (802.11b, Ch6, 10 GHz-15 GHz)



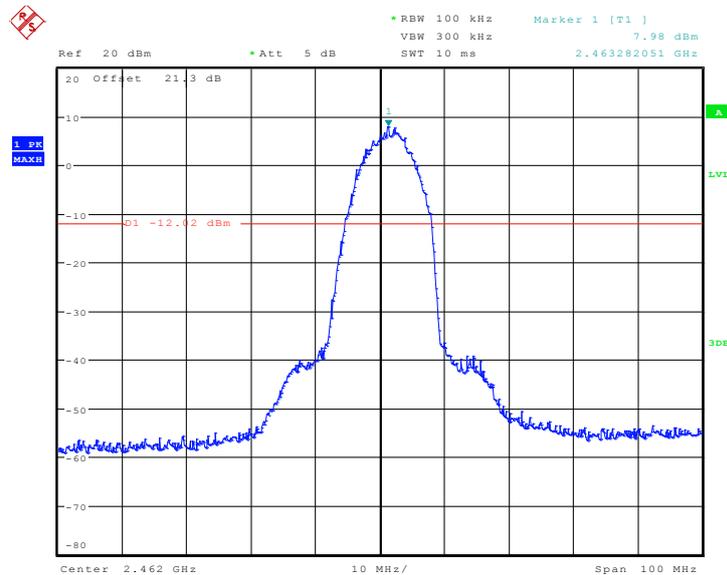
Date: 30.MAR.2011 17:20:53

Fig. 39 Conducted Spurious Emission (802.11b, Ch6, 15 GHz-20 GHz)



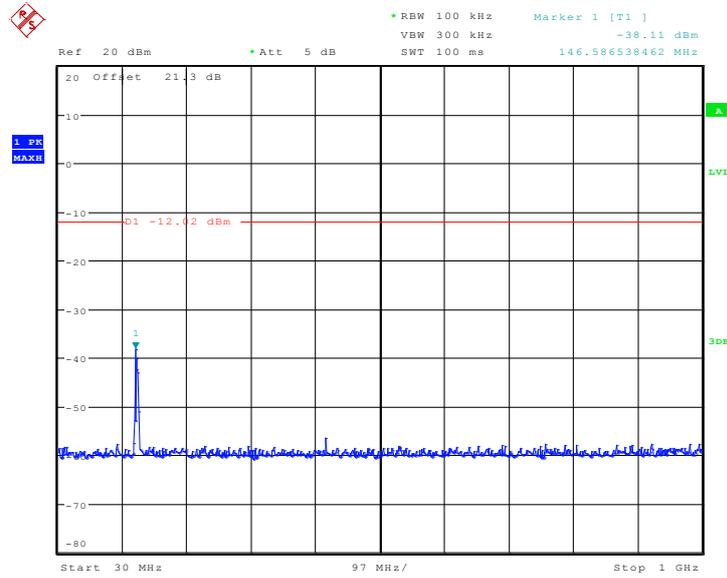
Date: 30.MAR.2011 17:21:10

Fig. 40 Conducted Spurious Emission (802.11b, Ch6, 20 GHz-26 GHz)



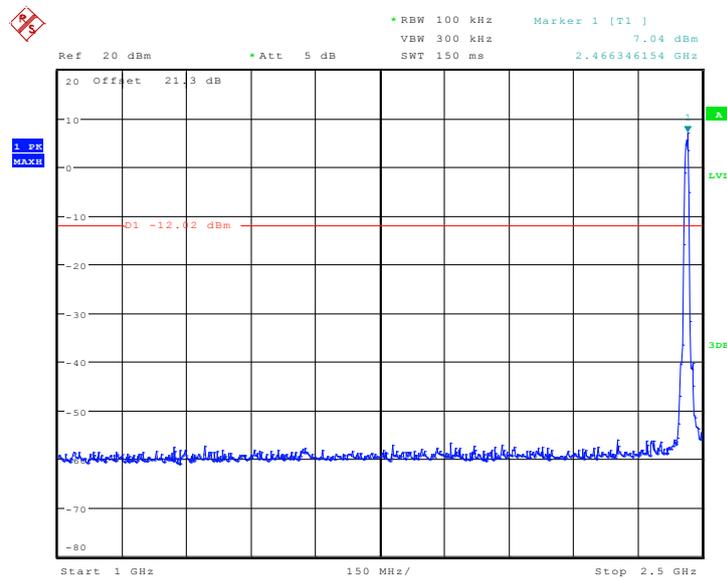
Date: 30.MAR.2011 17:21:59

Fig. 41 Conducted Spurious Emission (802.11b, Ch11, Center Frequency)



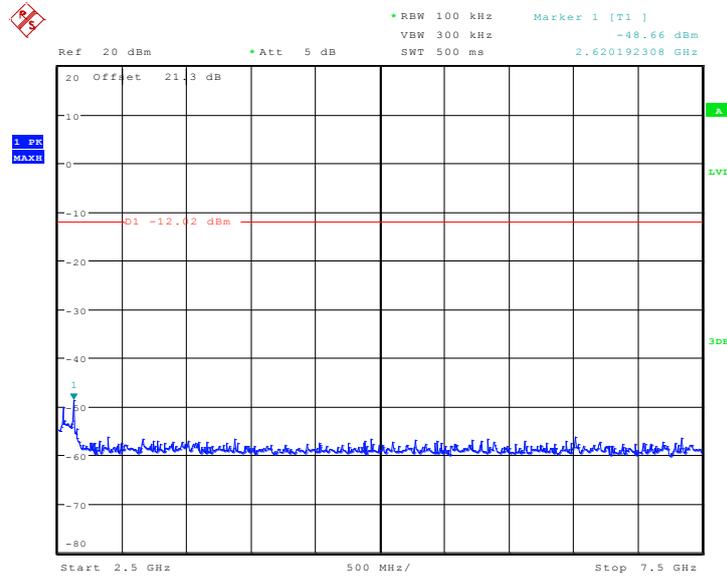
Date: 30.MAR.2011 17:22:20

Fig. 42 Conducted Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)



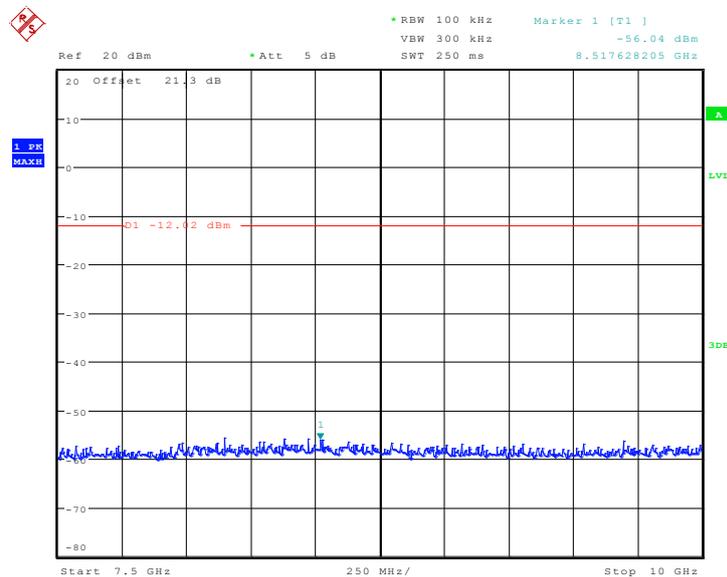
Date: 30.MAR.2011 17:22:35

Fig. 43 Conducted Spurious Emission (802.11b, Ch11, 1 GHz-2.5 GHz)



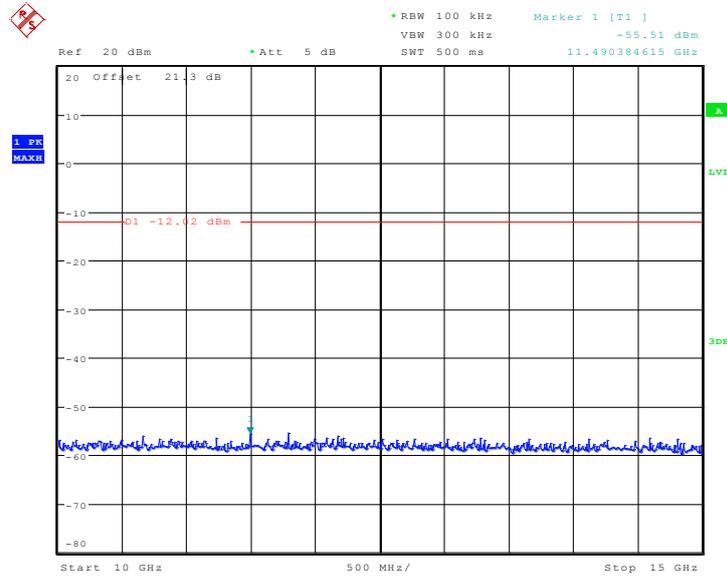
Date: 30.MAR.2011 17:23:03

Fig. 44 Conducted Spurious Emission (802.11b, Ch11, 2.5 GHz-7.5 GHz)



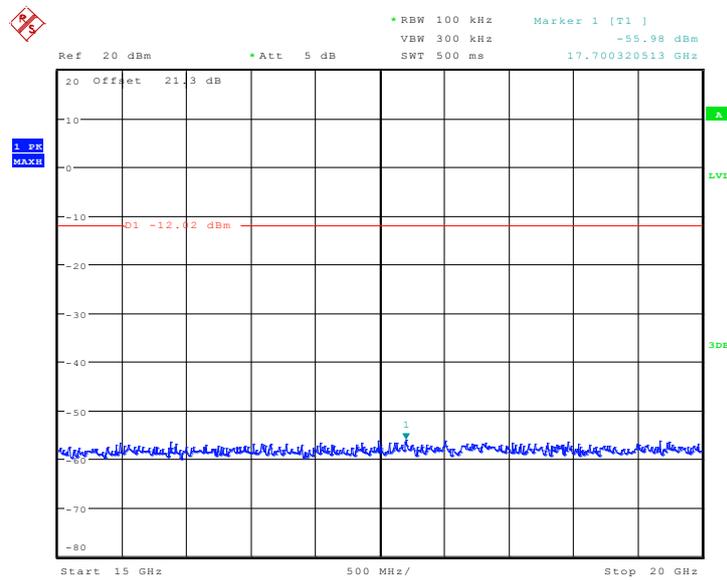
Date: 30.MAR.2011 17:23:21

Fig. 45 Conducted Spurious Emission (802.11b, Ch11, 7.5 GHz-10 GHz)



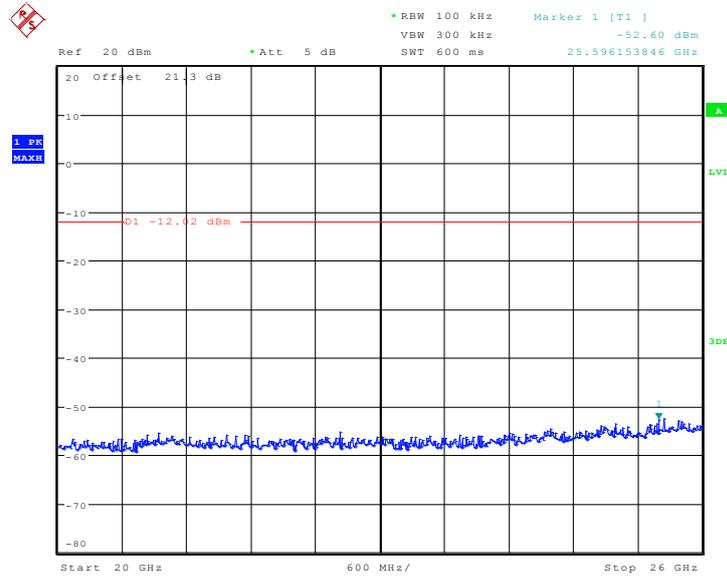
Date: 30.MAR.2011 17:23:50

Fig. 46 Conducted Spurious Emission (802.11b, Ch11, 10 GHz-15 GHz)



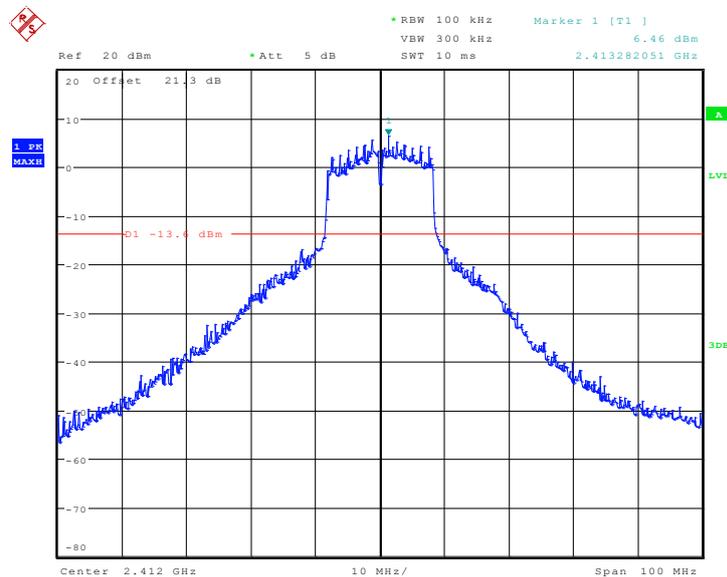
Date: 30.MAR.2011 17:24:05

Fig. 47 Conducted Spurious Emission (802.11b, Ch11, 15 GHz-20 GHz)



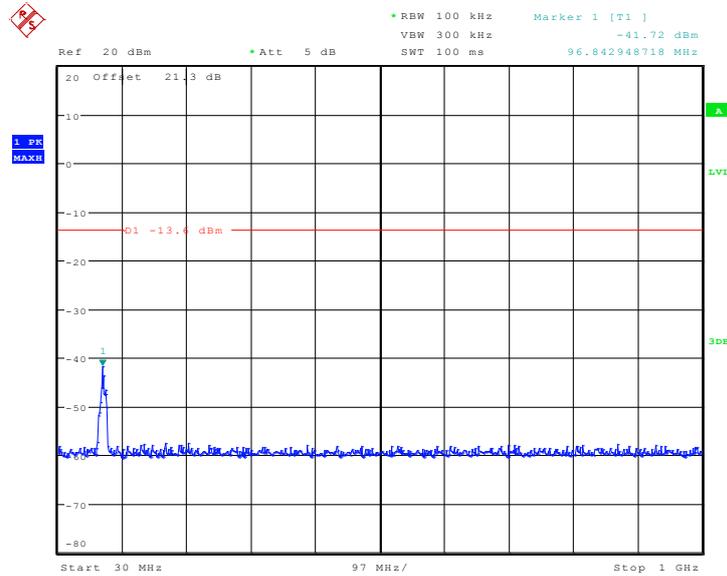
Date: 30.MAR.2011 17:24:19

Fig. 48 Conducted Spurious Emission (802.11b, Ch11, 20 GHz-26 GHz)



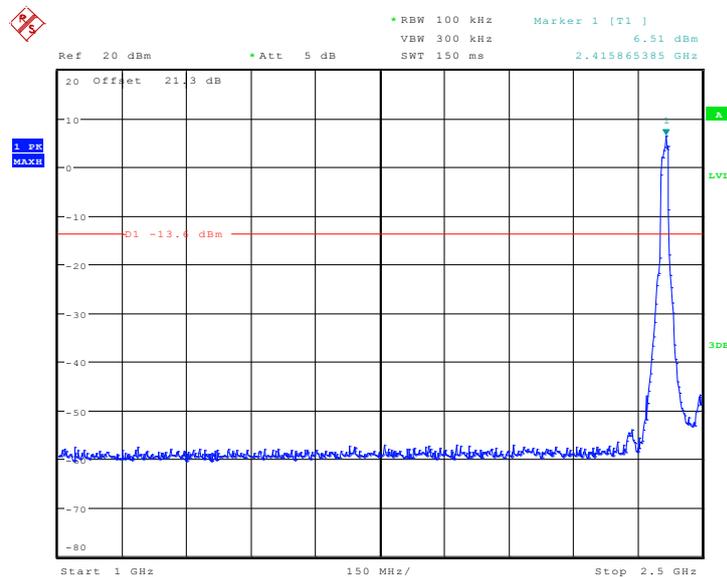
Date: 30.MAR.2011 17:25:24

Fig. 49 Conducted Spurious Emission (802.11g, Ch1, Center Frequency)



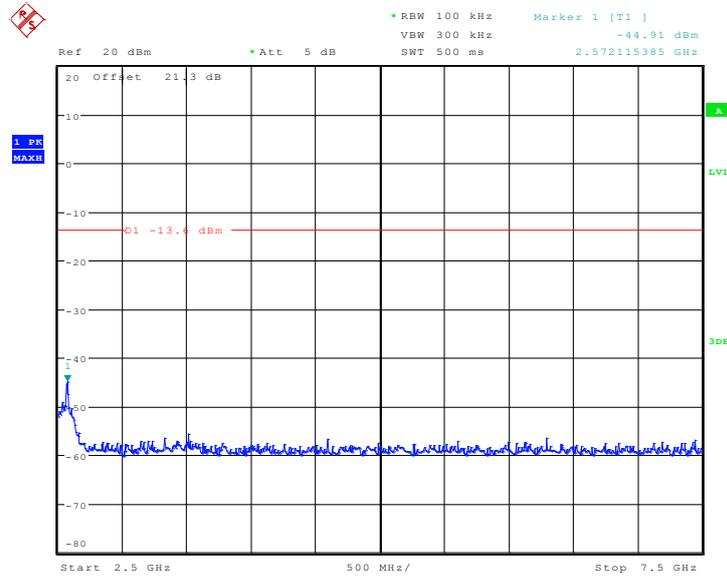
Date: 30.MAR.2011 17:25:41

Fig. 50 Conducted Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)



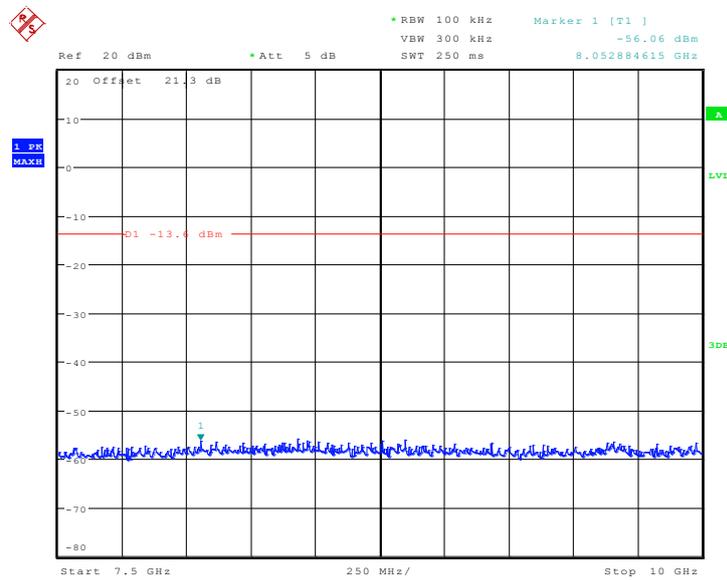
Date: 30.MAR.2011 17:26:07

Fig. 51 Conducted Spurious Emission ((802.11g, Ch1, 1 GHz-2.5 GHz)



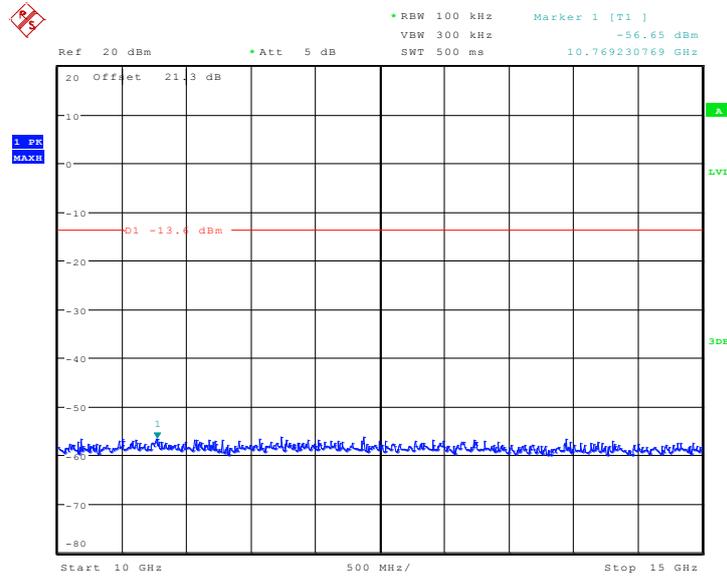
Date: 30.MAR.2011 17:26:26

Fig. 52 Conducted Spurious Emission ((802.11g, Ch1, 2.5 GHz-7.5 GHz)



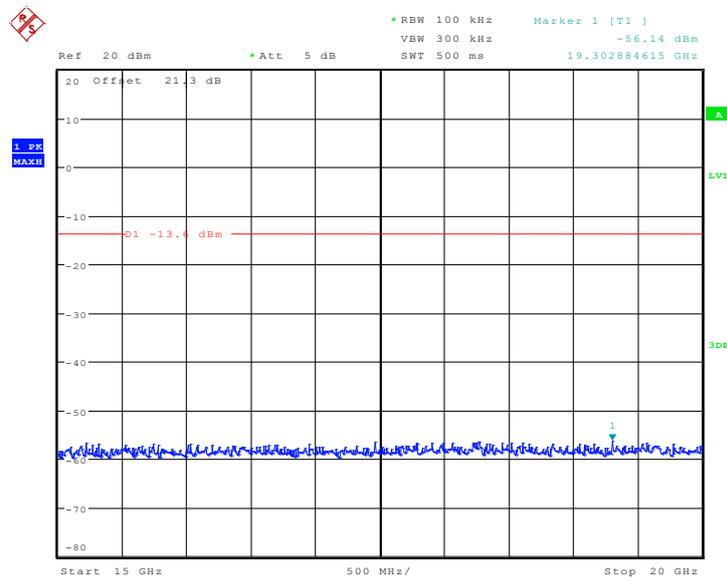
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Fig. 53 Conducted Spurious Emission ((802.11g, Ch1, 7.5 GHz-10 GHz)



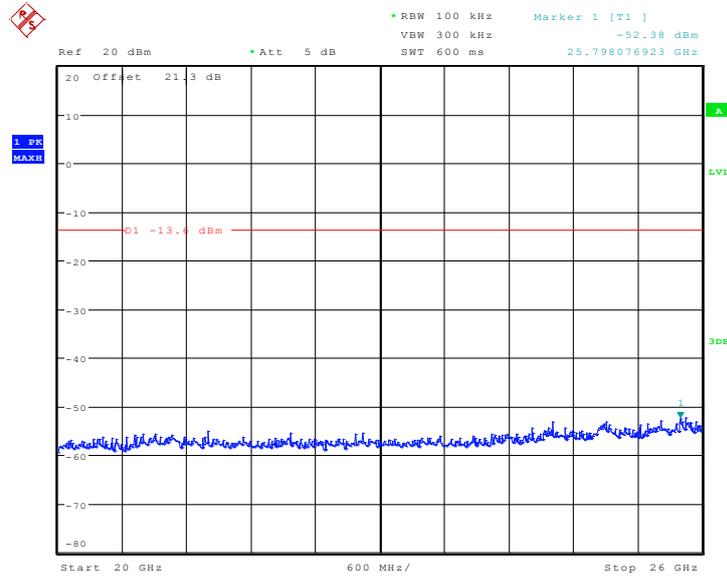
Date: 30.MAR.2011 17:27:12

Fig. 54 Conducted Spurious Emission ((802.11g, Ch1, 10 GHz-15 GHz)



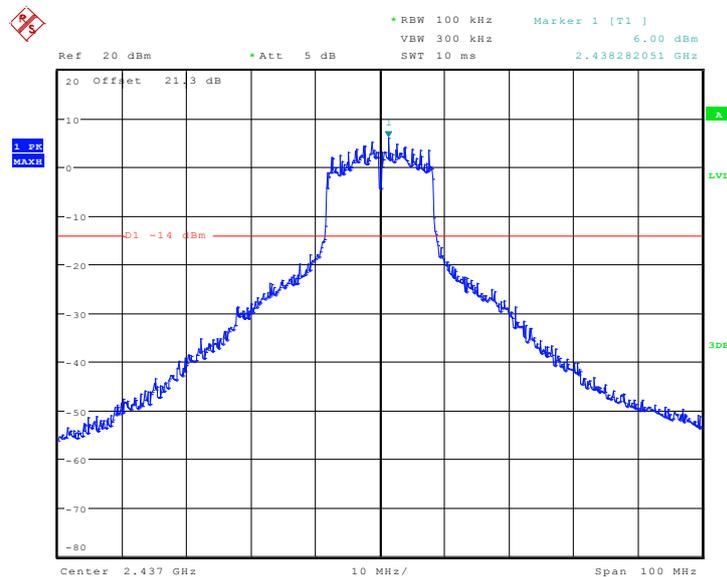
Date: 30.MAR.2011 17:27:30

Fig. 55 Conducted Spurious Emission ((802.11g, Ch1, 15 GHz-20 GHz)



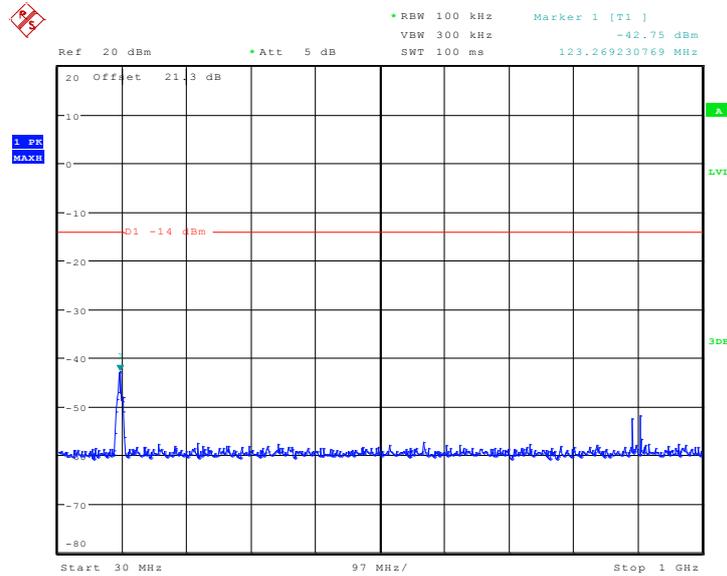
Date: 30.MAR.2011 17:27:48

Fig. 56 Conducted Spurious Emission ((802.11g, Ch1, 20 GHz-26 GHz)



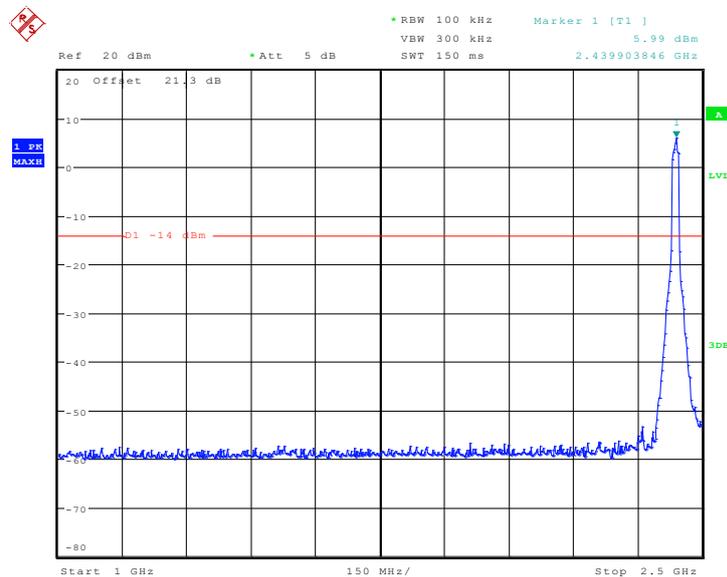
Date: 30.MAR.2011 17:28:39

Fig. 57 Conducted Spurious Emission ((802.11g, Ch6, Center Frequency)



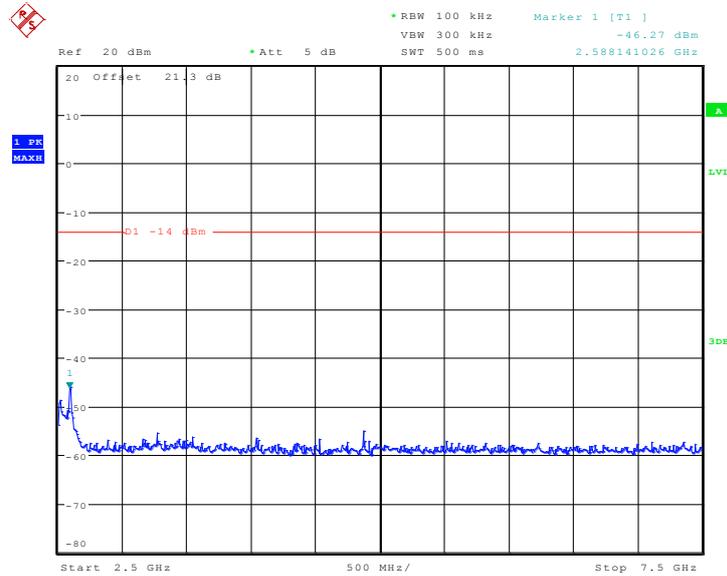
Date: 30.MAR.2011 17:28:59

Fig. 58 Conducted Spurious Emission ((802.11g, Ch6, 30 MHz-1 GHz)



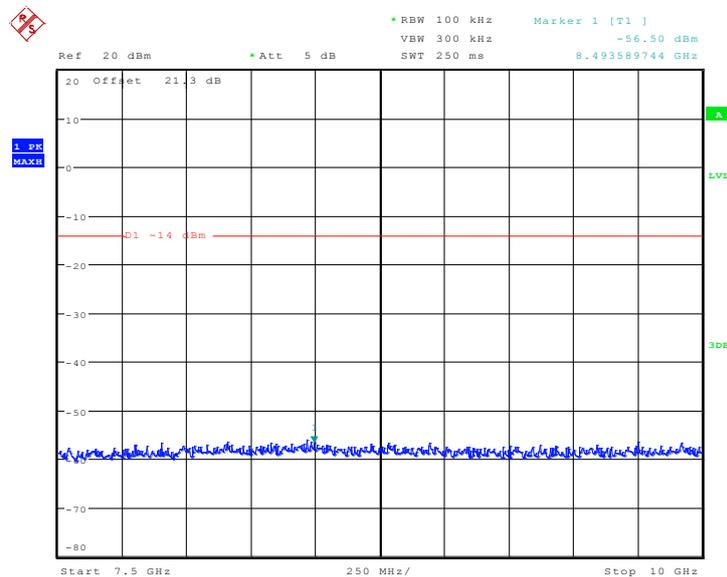
Date: 30.MAR.2011 17:29:36

Fig. 59 Conducted Spurious Emission ((802.11g, Ch6, 1 GHz-2.5 GHz)



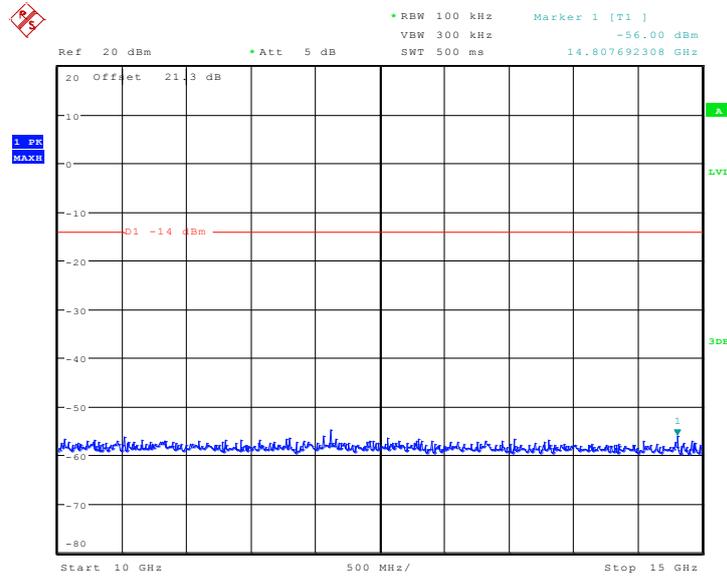
Date: 30.MAR.2011 17:30:00

Fig. 60 Conducted Spurious Emission ((802.11g, Ch6, 2.5 GHz-7.5 GHz)



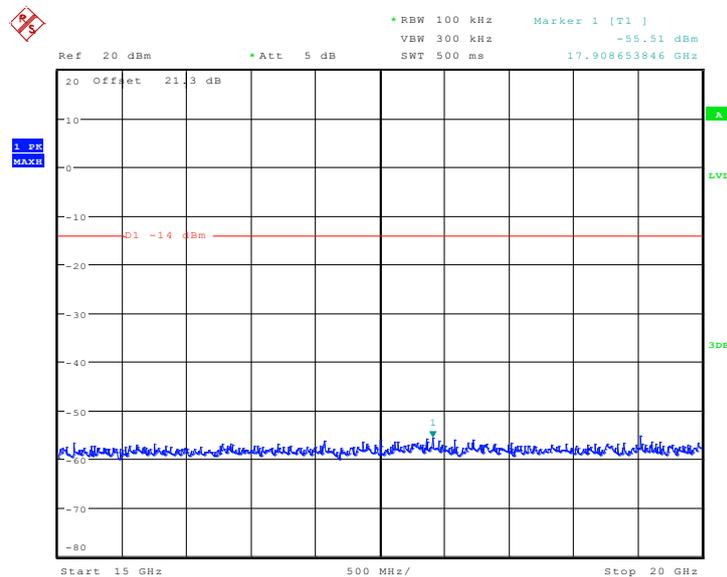
Date: 30.MAR.2011 17:30:27

Fig. 61 Conducted Spurious Emission ((802.11g, Ch6, 7.5 GHz-10 GHz)



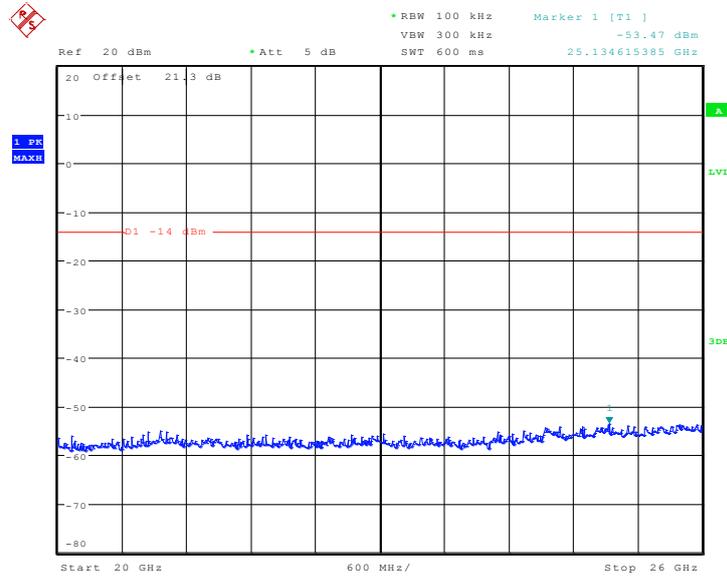
Date: 30.MAR.2011 17:30:51

Fig. 62 Conducted Spurious Emission ((802.11g, Ch6, 10 GHz-15 GHz)



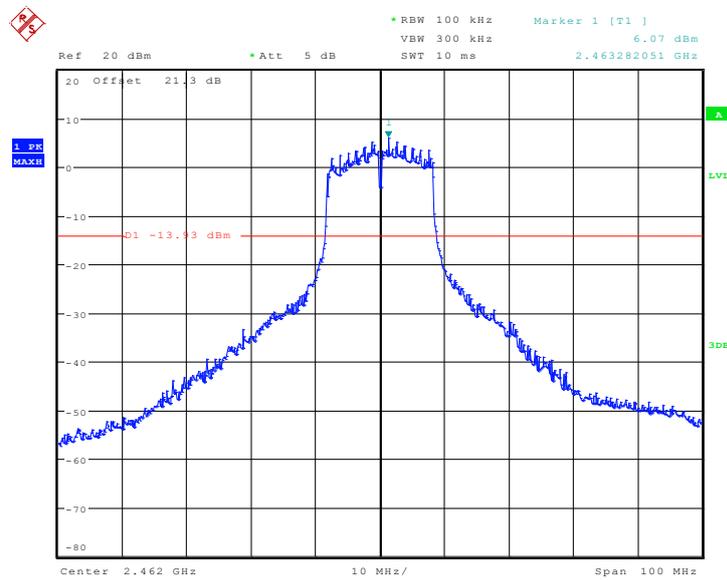
Date: 30.MAR.2011 17:31:09

Fig. 63 Conducted Spurious Emission ((802.11g, Ch6, 15 GHz-20 GHz)



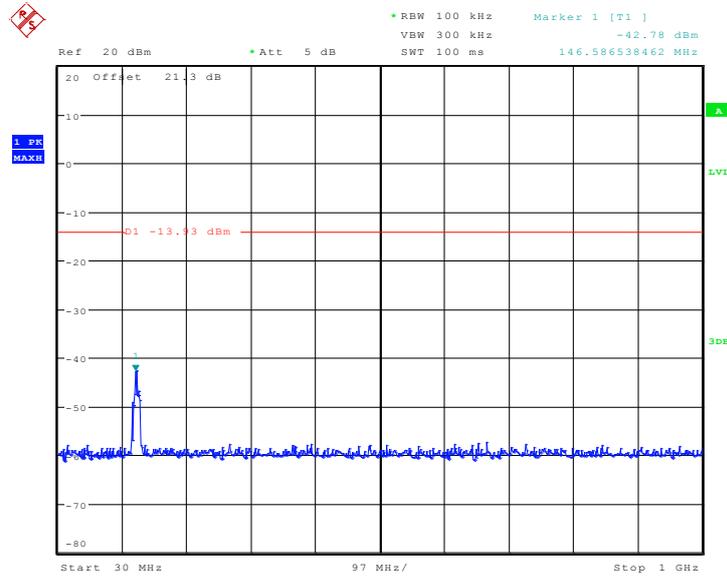
Date: 30.MAR.2011 17:31:27

Fig. 64 Conducted Spurious Emission ((802.11g, Ch6, 20 GHz-26 GHz)



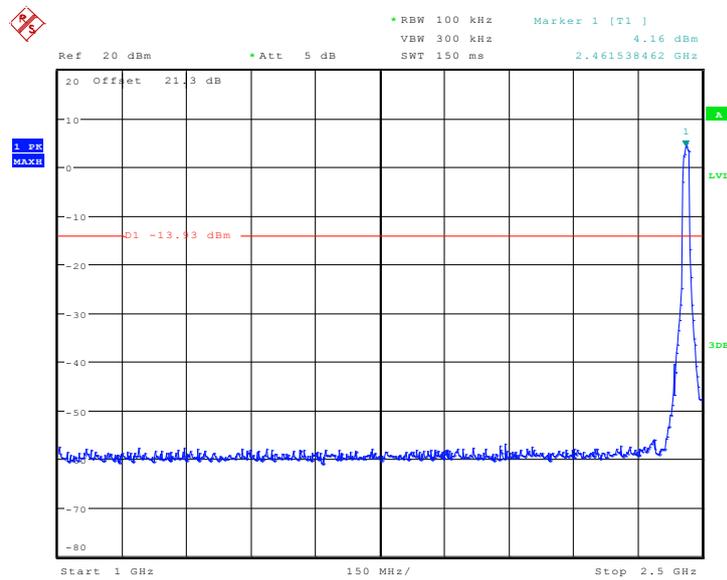
Date: 30.MAR.2011 17:33:49

Fig. 65 Conducted Spurious Emission ((802.11g, Ch11, Center Frequency)



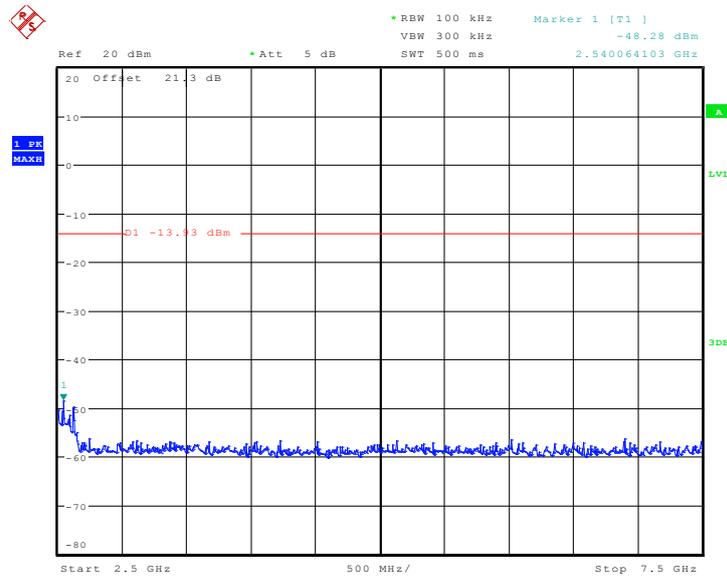
Date: 30.MAR.2011 17:34:03

Fig. 66 Conducted Spurious Emission ((802.11g, Ch11, 30 MHz-1 GHz)



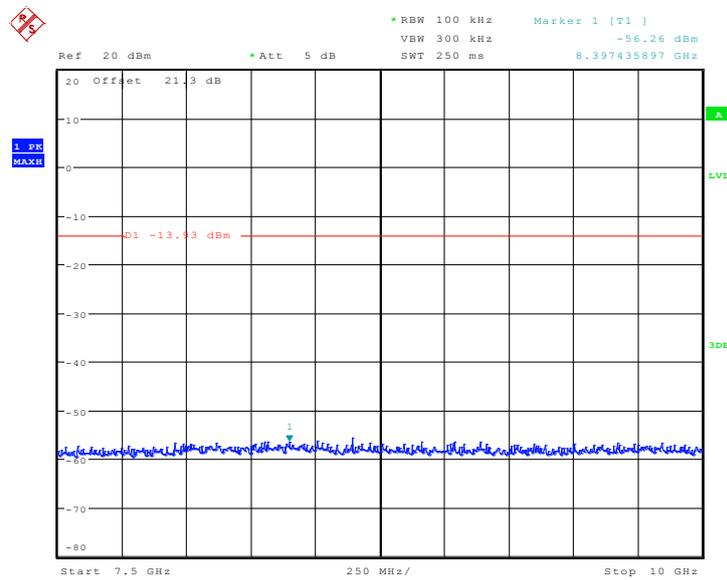
Date: 30.MAR.2011 17:34:21

Fig. 67 Conducted Spurious Emission ((802.11g, Ch11, 1 GHz-2.5 GHz)



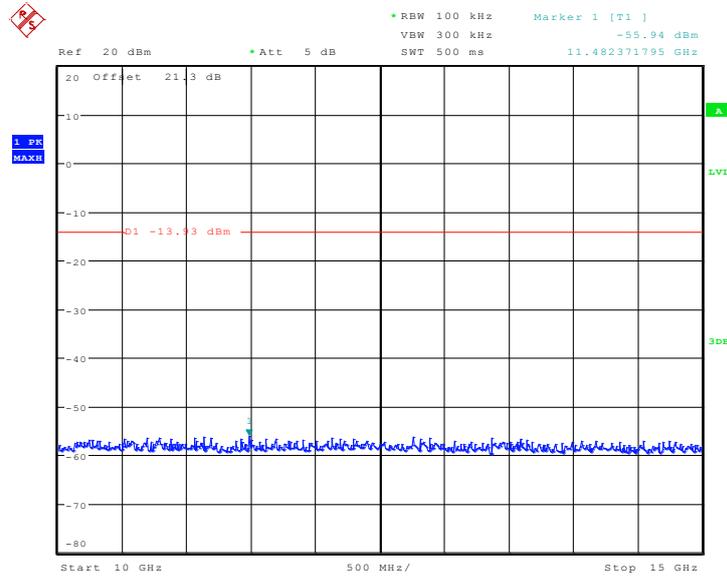
Date: 30.MAR.2011 17:34:49

Fig. 68 Conducted Spurious Emission ((802.11g, Ch11, 2.5 GHz-7.5 GHz)



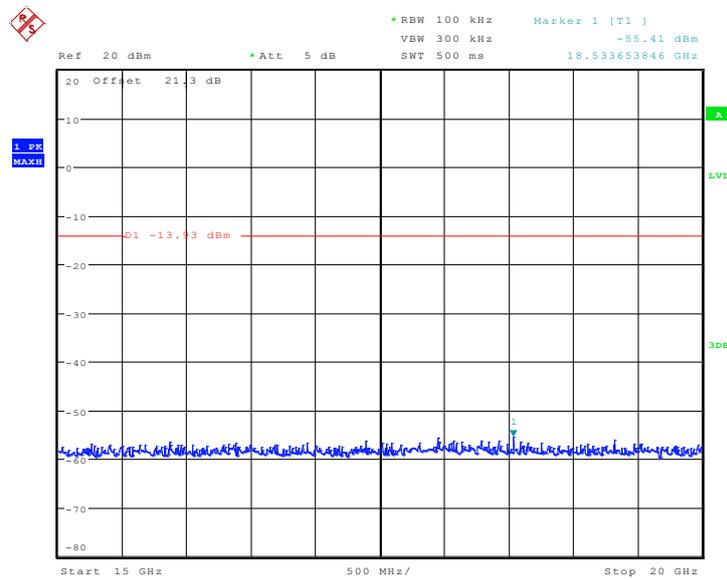
Date: 30.MAR.2011 17:35:19

Fig. 69 Conducted Spurious Emission ((802.11g, Ch11, 7.5 GHz-10 GHz)



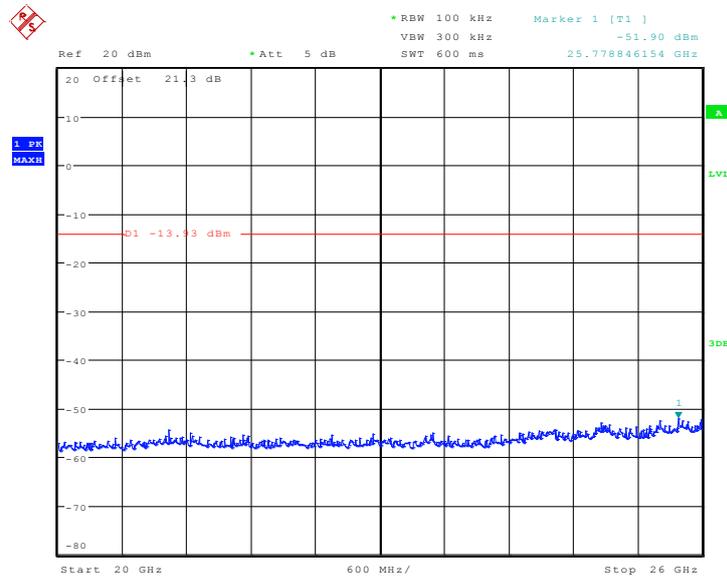
Date: 30.MAR.2011 17:35:39

Fig. 70 Conducted Spurious Emission ((802.11g, Ch11, 10 GHz-15 GHz)



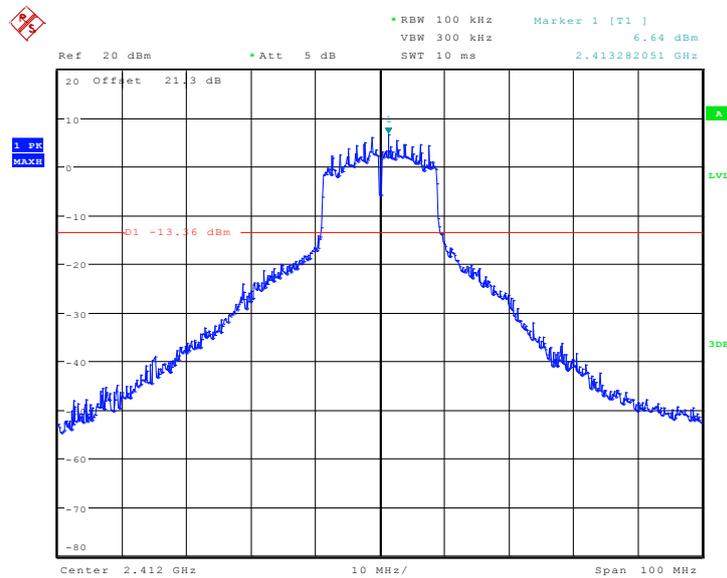
Date: 30.MAR.2011 17:36:02

Fig. 71 Conducted Spurious Emission ((802.11g, Ch11, 15 GHz-20 GHz)



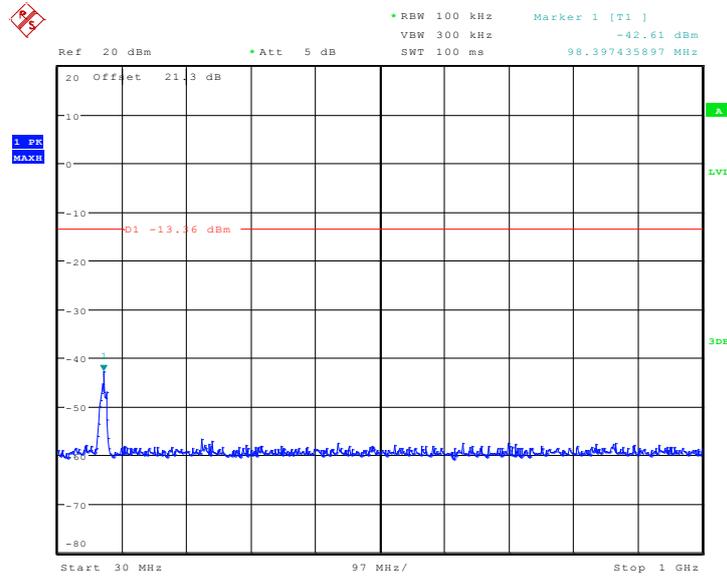
Date: 30.MAR.2011 17:36:28

Fig. 72 Conducted Spurious Emission ((802.11g, Ch11, 20 GHz-26 GHz)



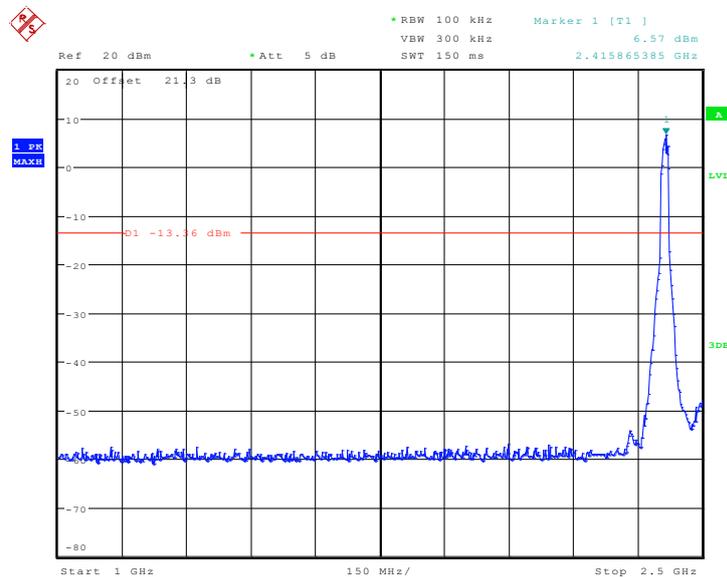
Date: 30.MAR.2011 17:37:29

Fig. 73 Conducted Spurious Emission (802.11n-20MHz, Ch1, Center Frequency)



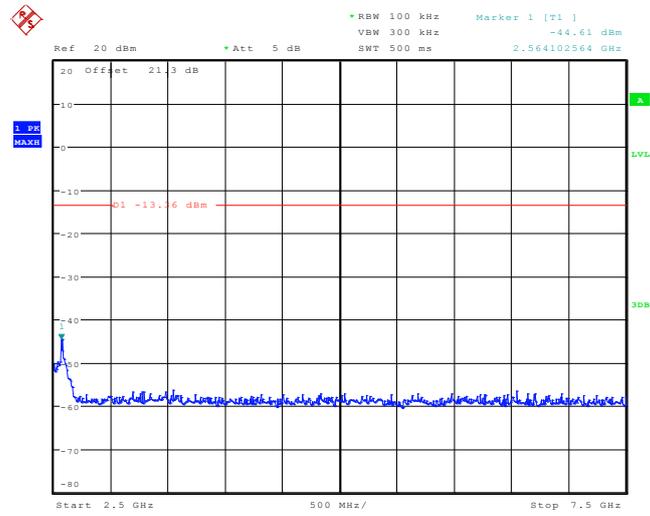
Date: 30.MAR.2011 17:37:46

Fig. 74 Conducted Spurious Emission (802.11n-20MHz, Ch1, 30 MHz-1 GHz)



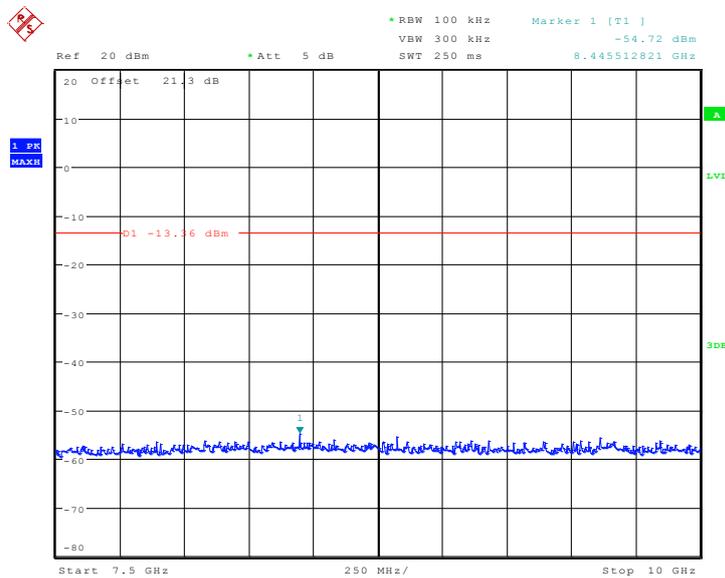
Date: 30.MAR.2011 17:38:01

Fig. 75 Conducted Spurious Emission ((802.11n-20MHz, Ch1, 1 GHz-2.5 GHz)



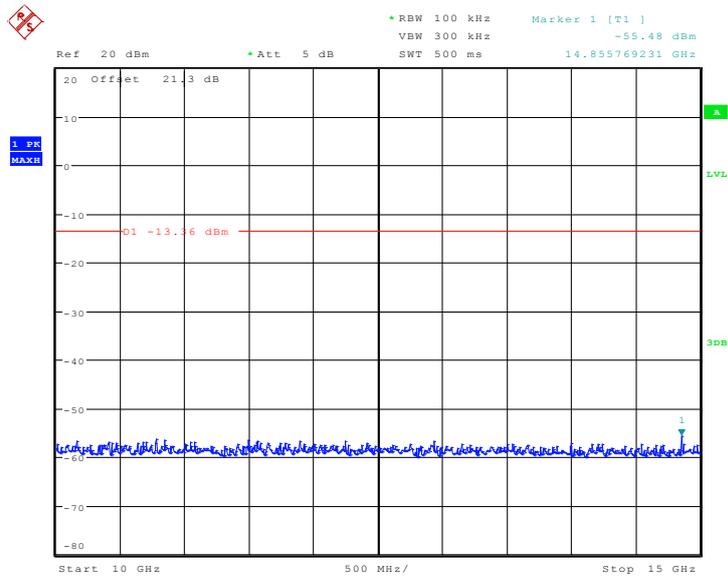
Date: 30.MAR.2011 17:38:25

Fig. 76 Conducted Spurious Emission ((802.11n-20MHz, Ch1, 2.5 GHz-7.5 GHz)



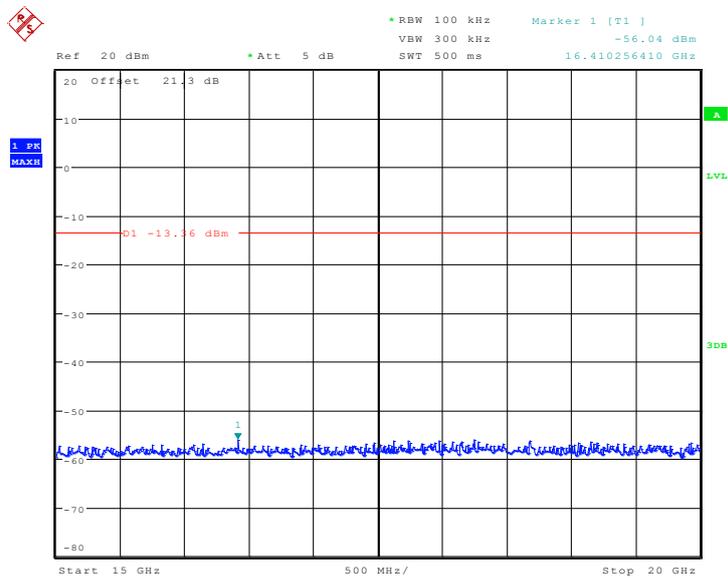
Date: 30.MAR.2011 17:39:15

Fig. 77 Conducted Spurious Emission ((802.11n-20MHz, Ch1, 7.5 GHz-10 GHz)



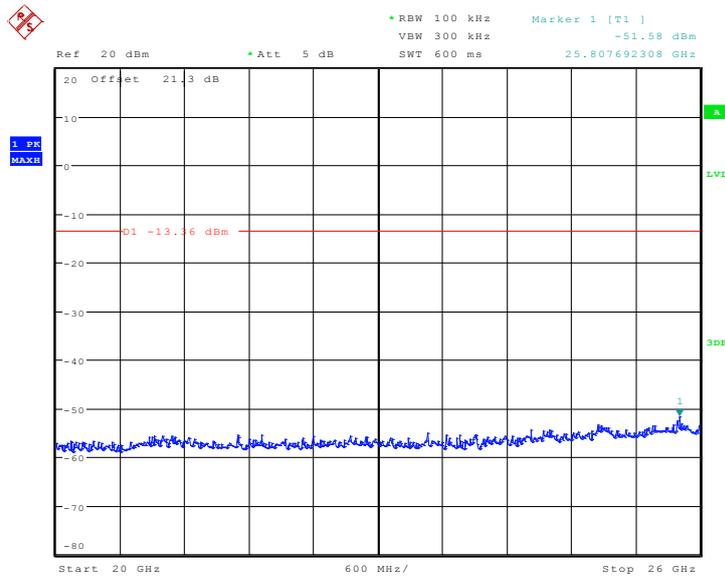
Date: 30.MAR.2011 17:39:31

Fig. 78 Conducted Spurious Emission ((802.11n-20MHz, Ch1, 10 GHz-15 GHz)



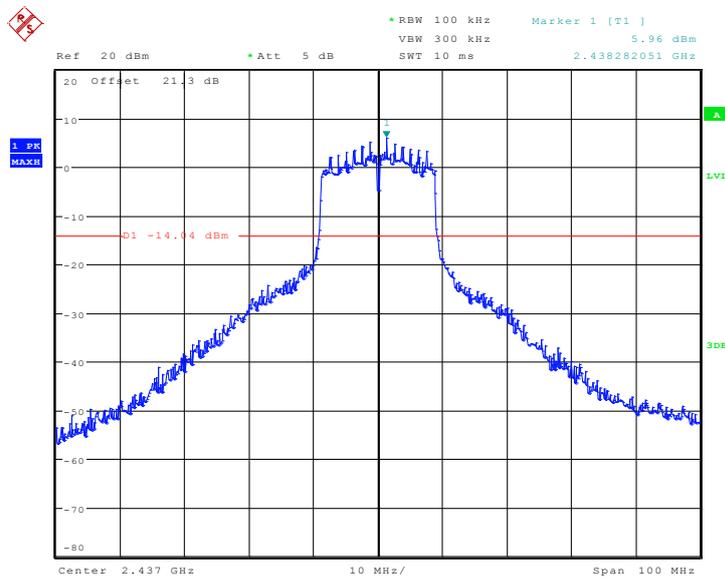
Date: 30.MAR.2011 17:39:50

Fig. 79 Conducted Spurious Emission ((802.11n-20MHz, Ch1, 15 GHz-20 GHz)



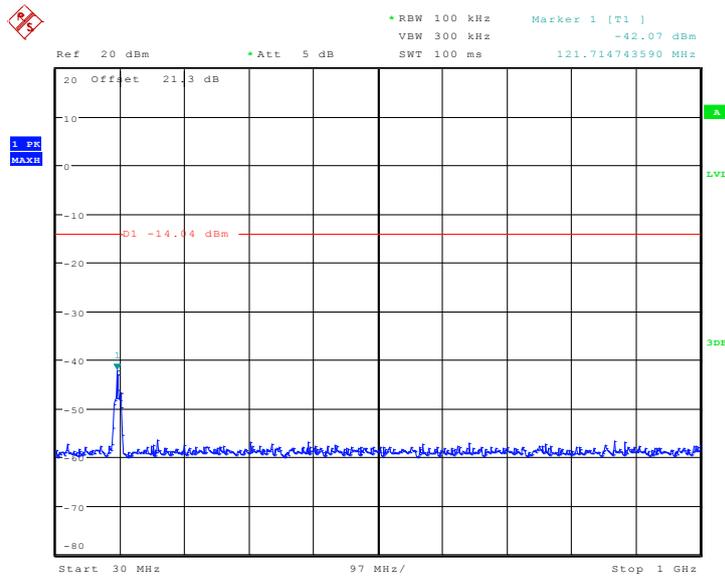
Date: 30.MAR.2011 17:40:11

Fig. 80 Conducted Spurious Emission ((802.11n-20MHz, Ch1, 20 GHz-26 GHz)



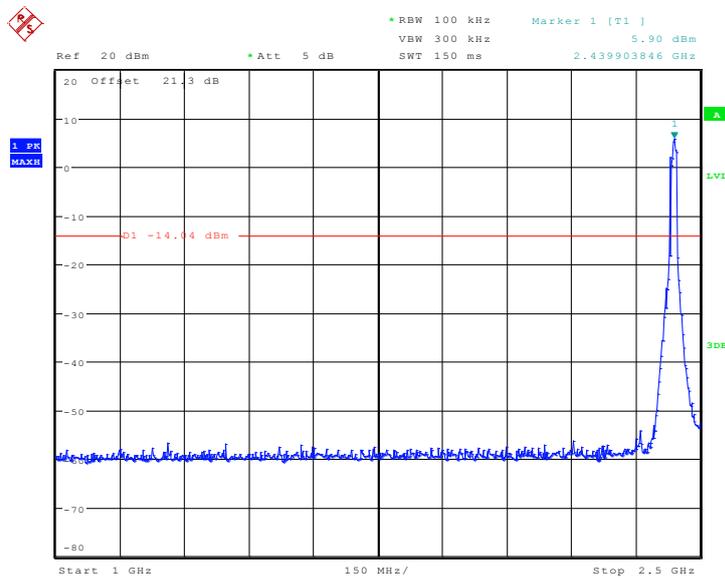
Date: 30.MAR.2011 17:43:48

Fig. 81 Conducted Spurious Emission ((802.11n-20MHz, Ch6, Center Frequency)



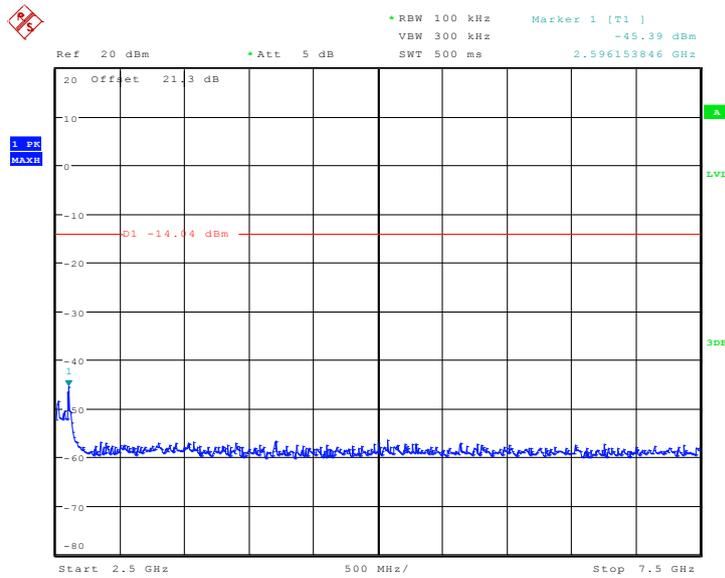
Date: 30.MAR.2011 17:44:36

Fig. 82 Conducted Spurious Emission ((802.11n-20MHz, Ch6, 30 MHz-1 GHz)



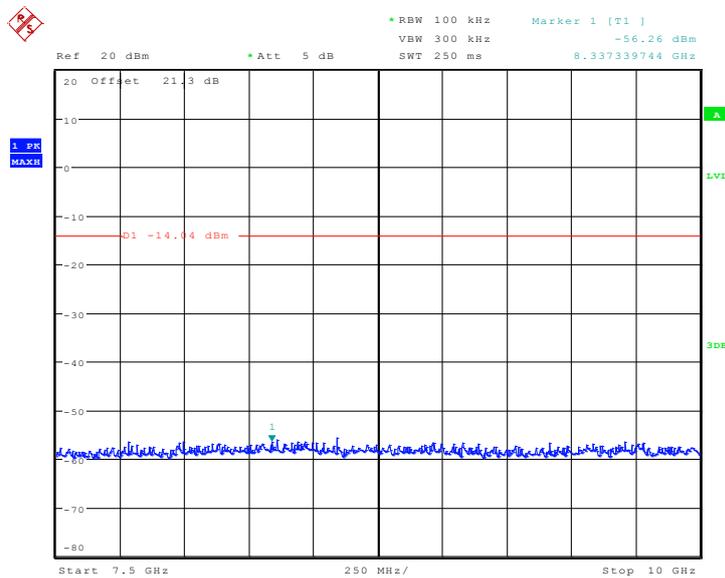
Date: 30.MAR.2011 17:44:53

Fig. 83 Conducted Spurious Emission ((802.11n-20MHz, Ch6, 1 GHz-2.5 GHz)



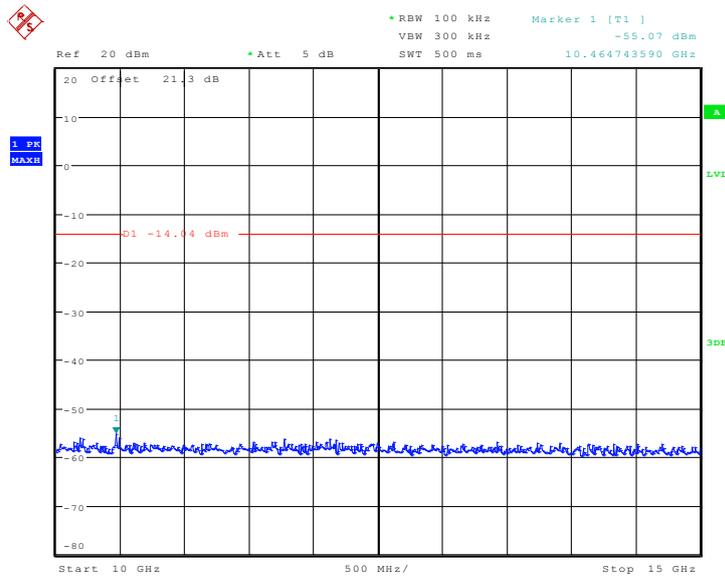
Date: 30.MAR.2011 17:45:13

Fig. 84 Conducted Spurious Emission ((802.11n-20MHz, Ch6, 2.5 GHz-7.5 GHz)



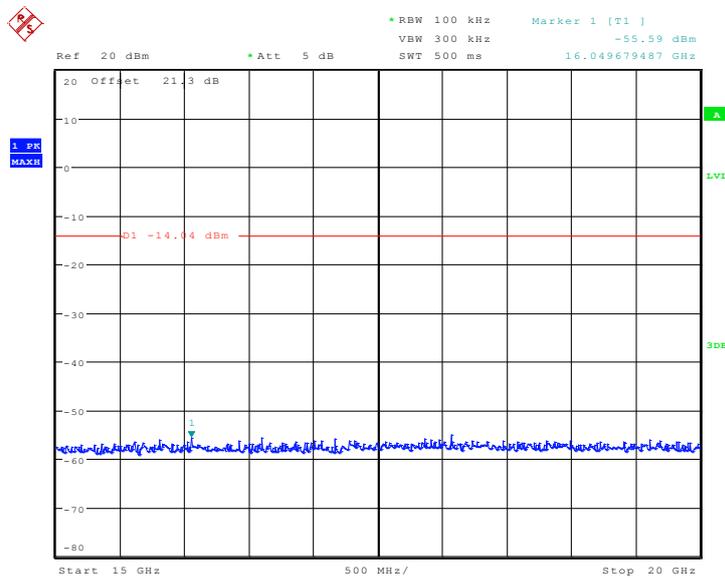
Date: 30.MAR.2011 17:45:34

Fig. 85 Conducted Spurious Emission ((802.11n-20MHz, Ch6, 7.5 GHz-10 GHz)



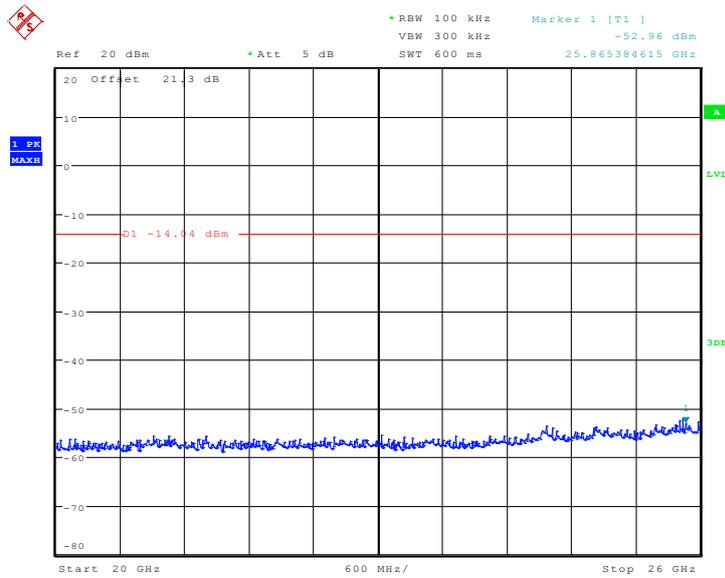
Date: 30.MAR.2011 17:46:00

Fig. 86 Conducted Spurious Emission ((802.11n-20MHz, Ch6, 10 GHz-15 GHz)



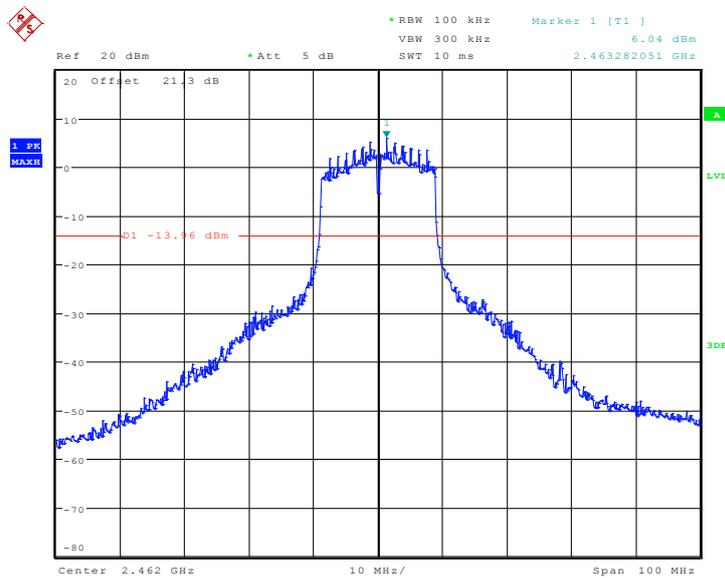
Date: 30.MAR.2011 17:46:42

Fig. 87 Conducted Spurious Emission ((802.11n-20MHz, Ch6, 15 GHz-20 GHz)



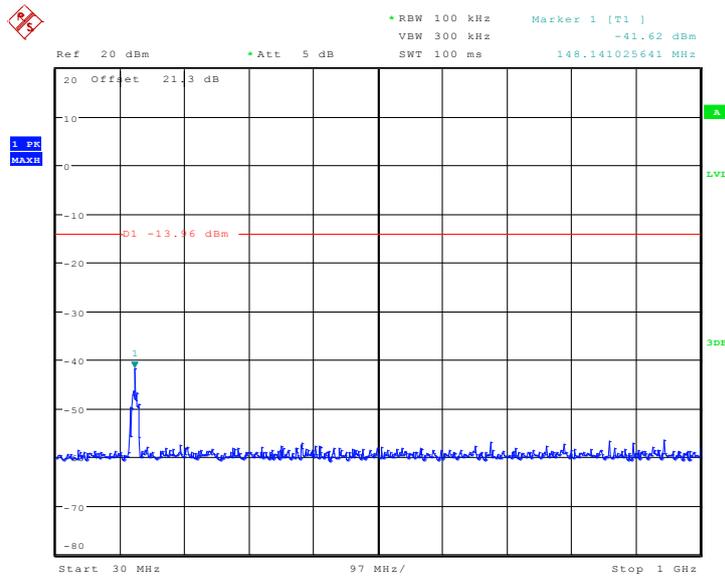
Date: 30.MAR.2011 17:47:14

Fig. 88 Conducted Spurious Emission ((802.11n-20MHz, Ch6, 20 GHz-26 GHz)



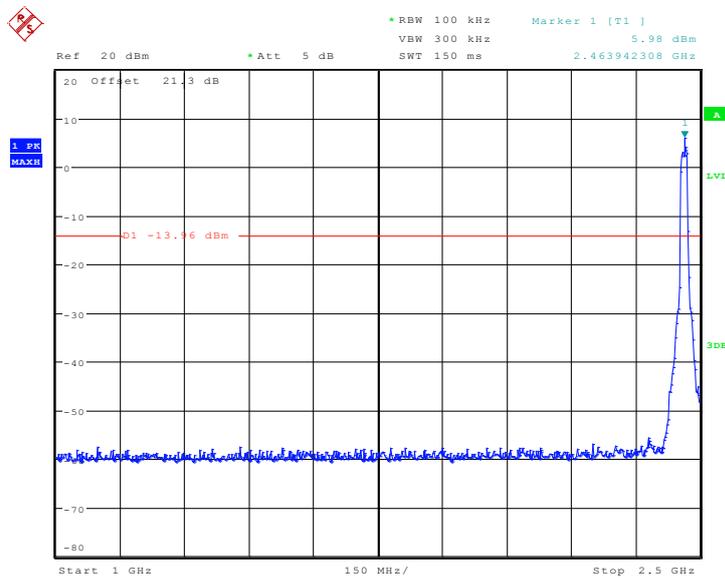
Date: 30.MAR.2011 17:49:07

Fig. 89 Conducted Spurious Emission ((802.11n-20MHz, Ch11, Center Frequency)



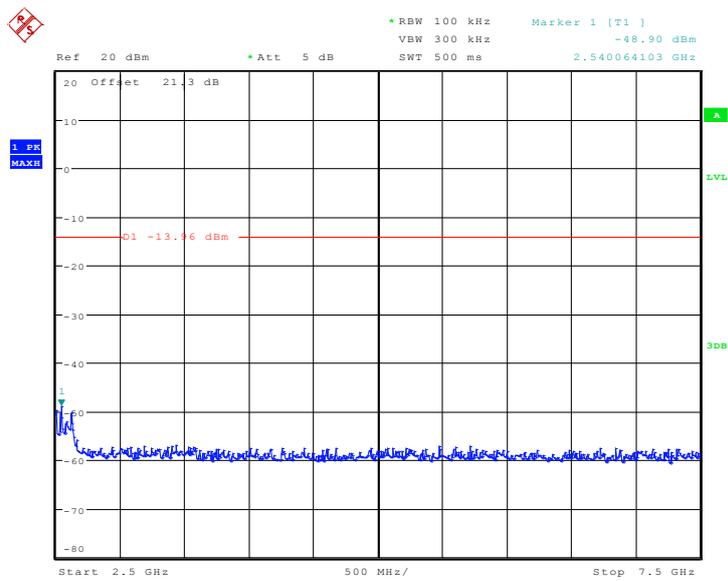
Date: 30.MAR.2011 17:49:25

Fig. 90 Conducted Spurious Emission ((802.11n-20MHz, Ch11, 30 MHz-1 GHz)



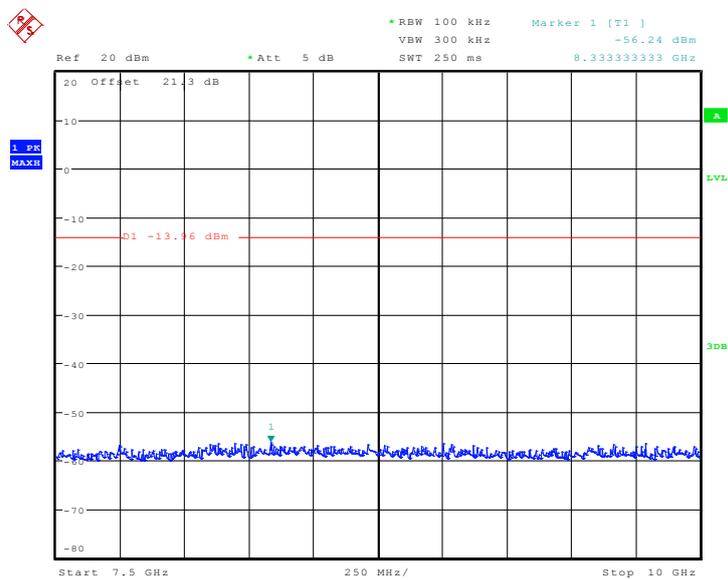
Date: 30.MAR.2011 17:49:39

Fig. 91 Conducted Spurious Emission ((802.11n-20MHz, Ch11, 1 GHz-2.5 GHz)



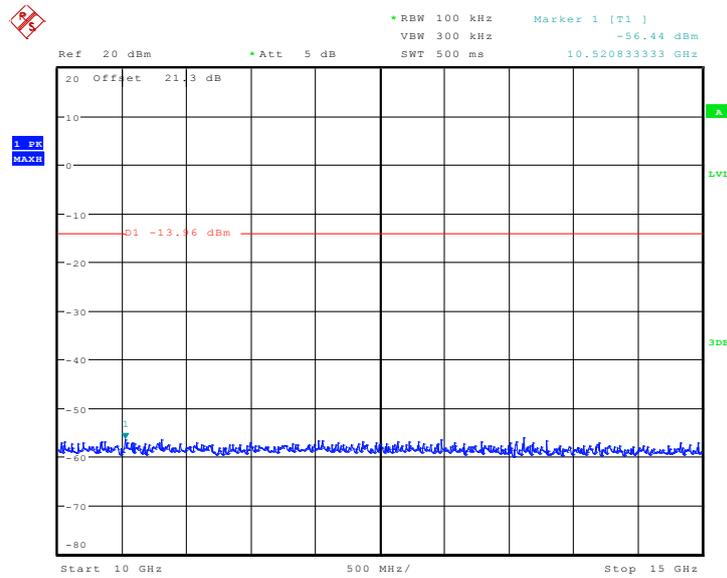
Date: 30.MAR.2011 17:49:53

Fig. 92 Conducted Spurious Emission ((802.11n-20MHz, Ch11, 2.5 GHz-7.5 GHz)



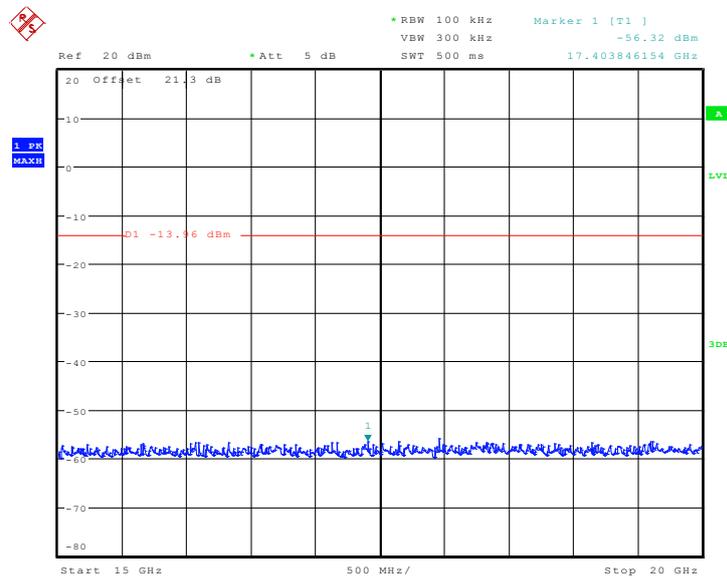
Date: 30.MAR.2011 17:50:09

Fig. 93 Conducted Spurious Emission ((802.11n-20MHz, Ch11, 7.5 GHz-10 GHz)



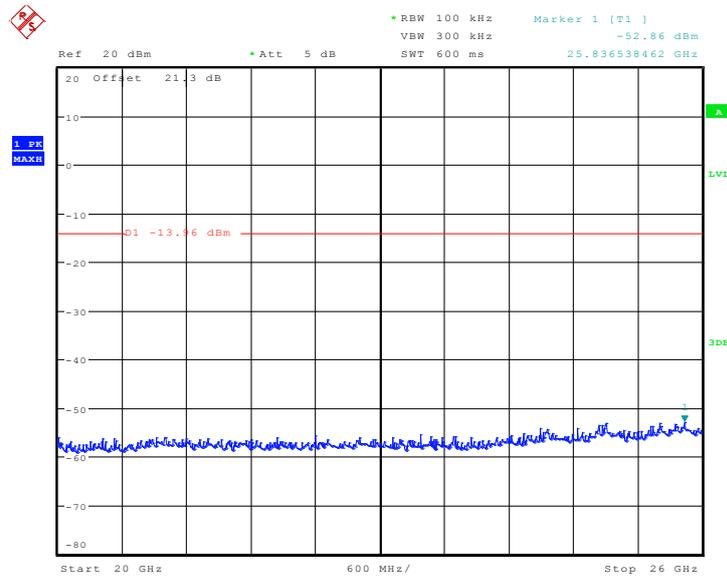
Date: 30.MAR.2011 17:50:25

Fig. 94 Conducted Spurious Emission ((802.11n-20MHz, Ch11, 10 GHz-15 GHz)



Date: 30.MAR.2011 17:50:37

Fig. 95 Conducted Spurious Emission ((802.11n-20MHz, Ch11, 15 GHz-20 GHz)



Date: 30.MAR.2011 17:50:54

Fig. 96 Conducted Spurious Emission ((802.11n-20MHz, Ch11, 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 C63.4 and KDB558074.

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 ~2.43GHz	Fig.97	P
	1	30 MHz ~1 GHz	Fig.98	P
		1 GHz ~ 4 GHz	Fig.99	P
		4 GHz ~ 18 GHz	Fig.100	P
	6	30 MHz ~1 GHz	Fig.101	P
		1 GHz ~ 4 GHz	Fig.102	P
		4 GHz ~ 18 GHz	Fig.103	P
	Power	2.45GHz ~2.5GHz	Fig.104	P

	11	30 MHz ~1 GHz	Fig.105	P
		1 GHz ~ 4 GHz	Fig.106	P
		4 GHz ~ 18 GHz	Fig.107	P
802.11g	Power	2.38GHz ~2.43GHz	Fig.108	P
	1	30 MHz ~1 GHz	Fig.109	P
		1 GHz ~ 4 GHz	Fig.110	P
		4 GHz ~ 18 GHz	Fig.111	P
	6	30 MHz ~1 GHz	Fig.112	P
		1 GHz ~ 4 GHz	Fig.113	P
		4 GHz ~ 18 GHz	Fig.114	P
	Power	2.45GHz ~2.5GHz	Fig.115	P
	11	30 MHz ~1 GHz	Fig.116	P
		1 GHz ~ 4 GHz	Fig.117	P
4 GHz ~ 18 GHz		Fig.118	P	
/	All channels	18 GHz~ 26.5 GHz	Fig.119	P

802.11n mode

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11n (20MHz BW)	Power	2.38GHz ~2.43GHz	Fig.120	P
	1	30 MHz ~1 GHz	Fig.121	P
		1 GHz ~ 4 GHz	Fig.122	P
		4 GHz ~ 18 GHz	Fig.123	P
	6	30 MHz ~1 GHz	Fig.124	P
		1 GHz ~ 4 GHz	Fig.125	P
		4 GHz ~ 18 GHz	Fig.126	P
	Power	2.45GHz ~2.5GHz	Fig.127	P
	11	30 MHz ~1 GHz	Fig.128	P
		1 GHz ~ 4 GHz	Fig.129	P
4 GHz ~ 18 GHz		Fig.130	P	
/	All channels	18 GHz~ 26.5 GHz	Fig.131	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:

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

802.11b

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
3701.403	41.42	-18.8	27.5	44.54	HORIZONTAL
3699.399	41.35	-18.7	27.5	43.22	HORIZONTAL
3715.431	41.33	-19.1	33.4	37.52	HORIZONTAL
3703.407	41.32	-18.8	27.5	43.04	HORIZONTAL
3709.419	41.32	-19	33.4	37.31	HORIZONTAL
3705.411	41.3	-19.2	33.4	37.46	VERTICAL
3701.403	41.42	-18.8	27.5	44.54	HORIZONTAL

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
3701.403	41.42	-18.8	27.5	44.54	HORIZONTAL
3699.399	41.35	-18.7	27.5	43.22	HORIZONTAL
3715.431	41.33	-19.1	33.4	37.52	HORIZONTAL
3703.407	41.32	-18.8	27.5	43.04	HORIZONTAL
3709.419	41.32	-19	33.4	37.31	HORIZONTAL
3705.411	41.3	-19.2	33.4	37.46	VERTICAL

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
3703.407	41.39	-19.3	33.4	37.54	VERTICAL
3705.411	41.37	-19	31.2	39.43	VERTICAL
3699.399	41.35	-19.2	33.4	37.41	HORIZONTAL
3707.415	41.35	-19.3	33.4	37.33	VERTICAL
3713.427	41.35	-19	33.4	36.91	VERTICAL
3701.403	41.34	-19.2	33.4	37.1	VERTICAL

802.11g

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
2390.782	47.03	-18.7	27.5	44.96	VERTICAL
2386.774	42.61	-18.8	27.5	44.23	VERTICAL
3699.399	41.35	-19	33.4	37.51	VERTICAL
3713.427	41.35	-18.9	33.4	37.13	VERTICAL
3701.403	41.34	-18.9	33.4	37	HORIZONTAL
3695.391	41.32	-18.9	31.2	39.16	HORIZONTAL

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
3701.403	41.42	-18.8	27.5	44.54	HORIZONTAL
3705.411	41.37	-18.7	27.5	43.22	HORIZONTAL
3713.427	41.35	-19.1	33.4	37.52	HORIZONTAL
3715.431	41.33	-18.8	27.5	43.04	VERTICAL
3703.407	41.32	-19	33.4	37.31	VERTICAL
3709.419	41.32	-19.2	33.4	37.46	VERTICAL

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
3705.411	41.37	-19.3	33.4	37.54	HORIZONTAL
3699.399	41.35	-19	31.2	39.43	VERTICAL
3707.415	41.35	-19.2	33.4	37.41	HORIZONTAL
3701.403	41.34	-19.3	33.4	37.33	HORIZONTAL
3697.395	41.33	-19	33.4	36.91	HORIZONTAL
3703.407	41.32	-19.2	33.4	37.1	HORIZONTAL

802.11n (20MHz Bandwidth)

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
2394.79	42.96	-18.8	27.5	34.26	VERTICAL
3703.407	41.39	-19.1	33.4	27.09	VERTICAL
3705.411	41.37	-19.1	33.4	27.07	HORIZONTAL
3699.399	41.35	-19.2	33.4	27.15	VERTICAL
3713.427	41.35	-18.9	33.4	26.85	VERTICAL
3701.403	41.34	-19.1	33.4	27.04	VERTICAL

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
3703.407	41.39	-19.1	33.4	27.09	HORIZONTAL
3705.411	41.37	-19.1	33.4	27.07	HORIZONTAL
3699.399	41.35	-19.2	33.4	27.15	HORIZONTAL
3707.415	41.35	-19.1	33.4	27.05	VERTICAL
3701.403	41.34	-19.1	33.4	27.04	HORIZONTAL
3715.431	41.33	-18.9	33.4	26.83	VERTICAL

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Factor	P _{Mea} (dBuV/m)	Polarization
3701.403	38.75	-19.1	33.4	24.45	HORIZONTAL
3699.399	38.73	-19.2	33.4	24.53	HORIZONTAL
3713.427	38.71	-18.9	33.4	24.21	HORIZONTAL
3705.411	38.68	-19.1	33.4	24.38	HORIZONTAL
3703.407	38.67	-19.1	33.4	24.37	VERTICAL
3693.387	38.65	-19.2	33.4	24.45	HORIZONTAL

Test graphs as below:

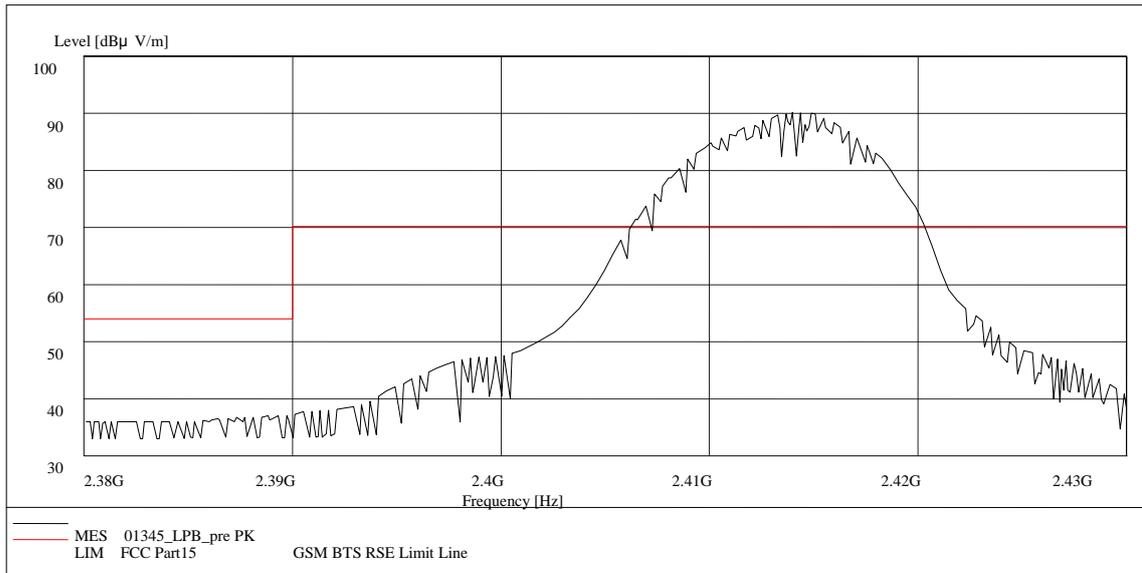


Fig. 97 Radiated Spurious Emission (Power): 802.11b, ch1, 2.38 GHz - 243GHz

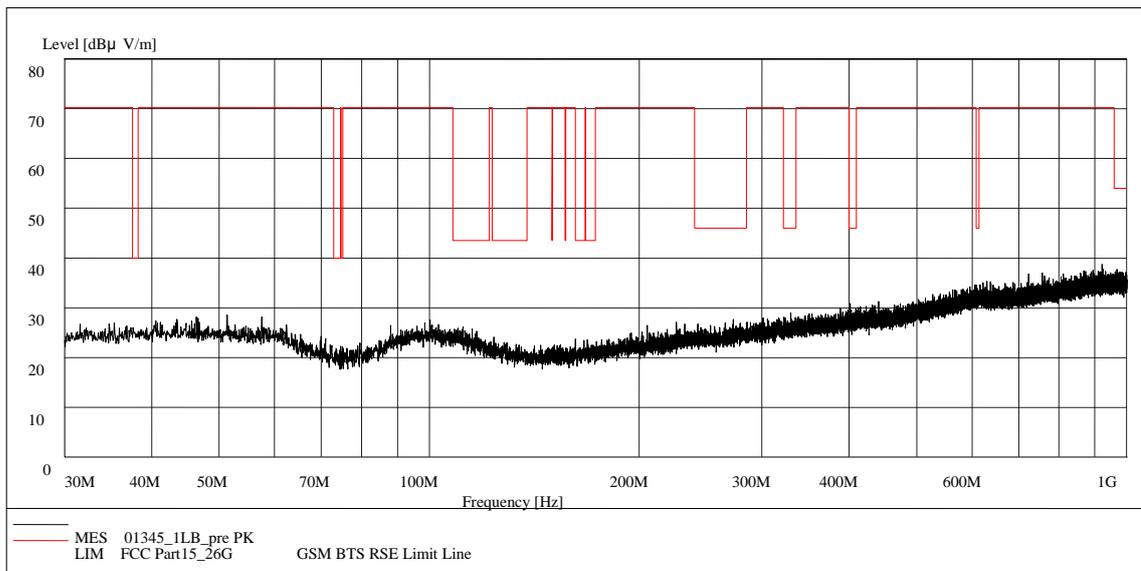


Fig. 98 Radiated Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)

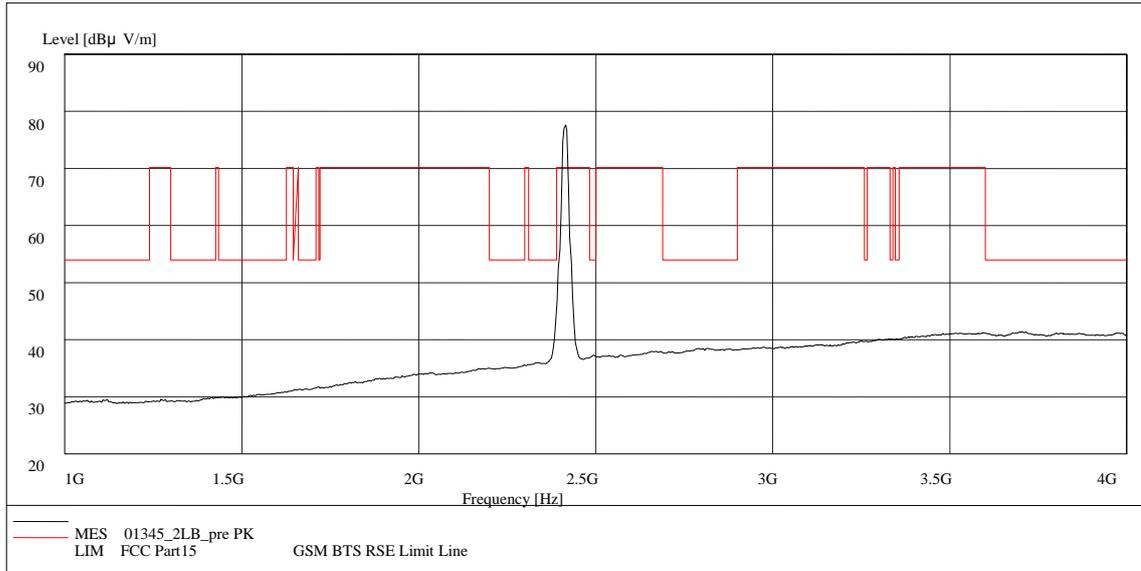


Fig. 99 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-4 GHz)

FCC 4-18G

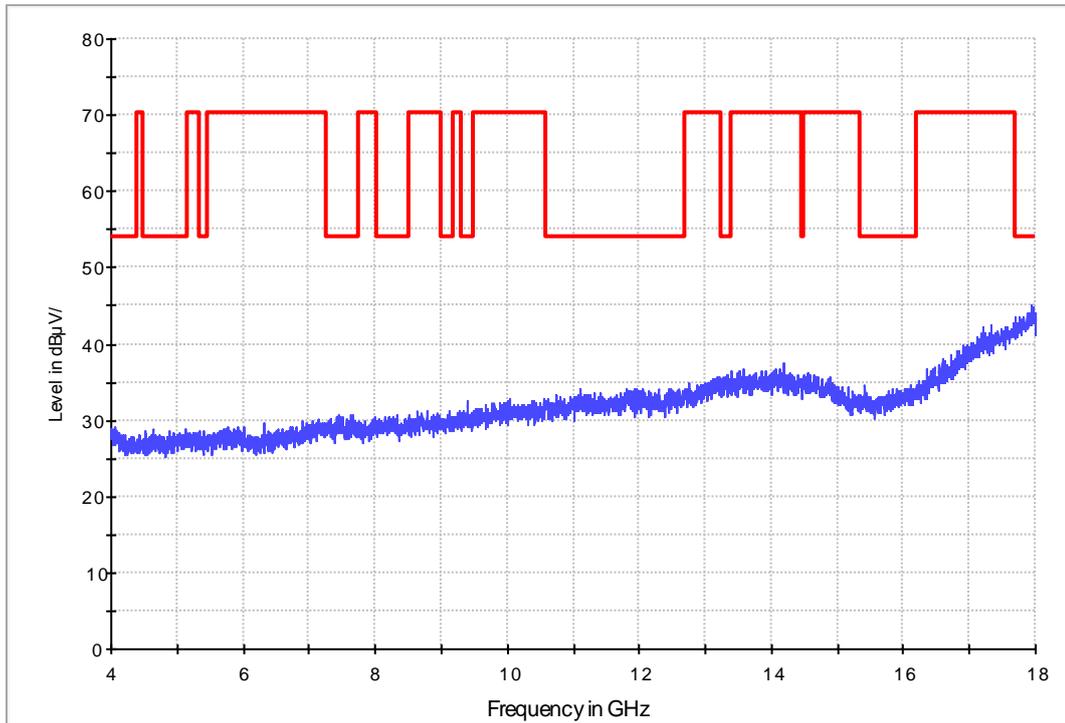


Fig. 100 Radiated Spurious Emission (802.11b, Ch1, 4 GHz-18 GHz)

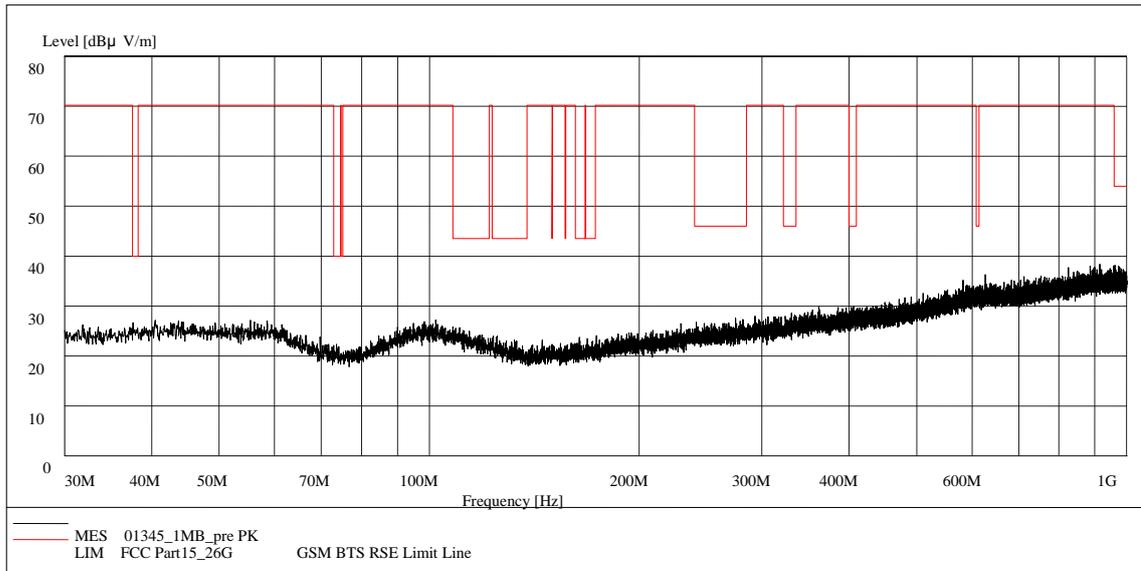


Fig. 101 Radiated Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)

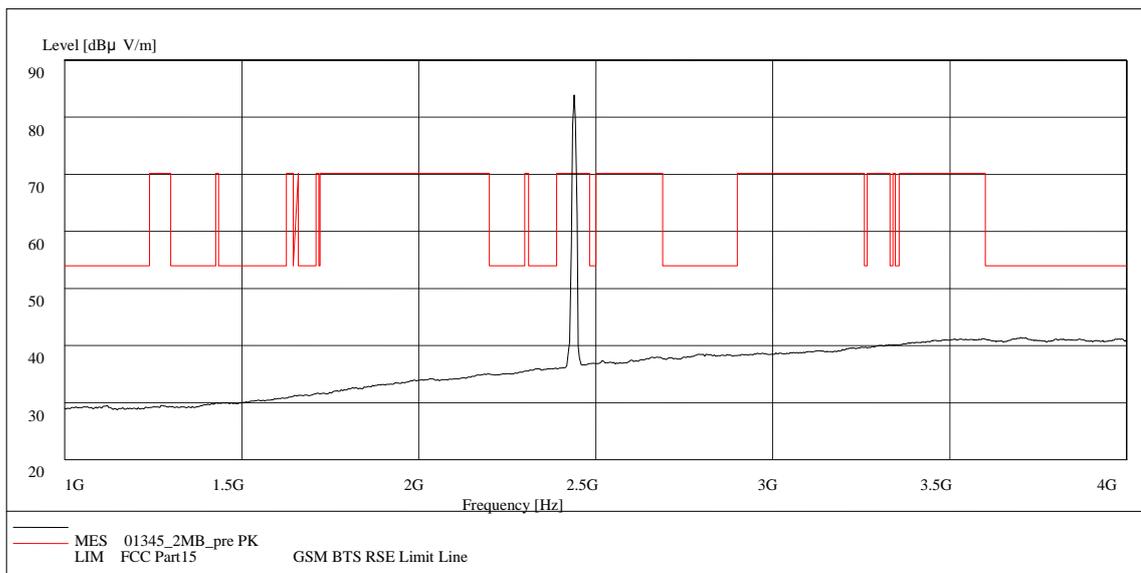


Fig. 102 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-4 GHz)

FCC 4-18G

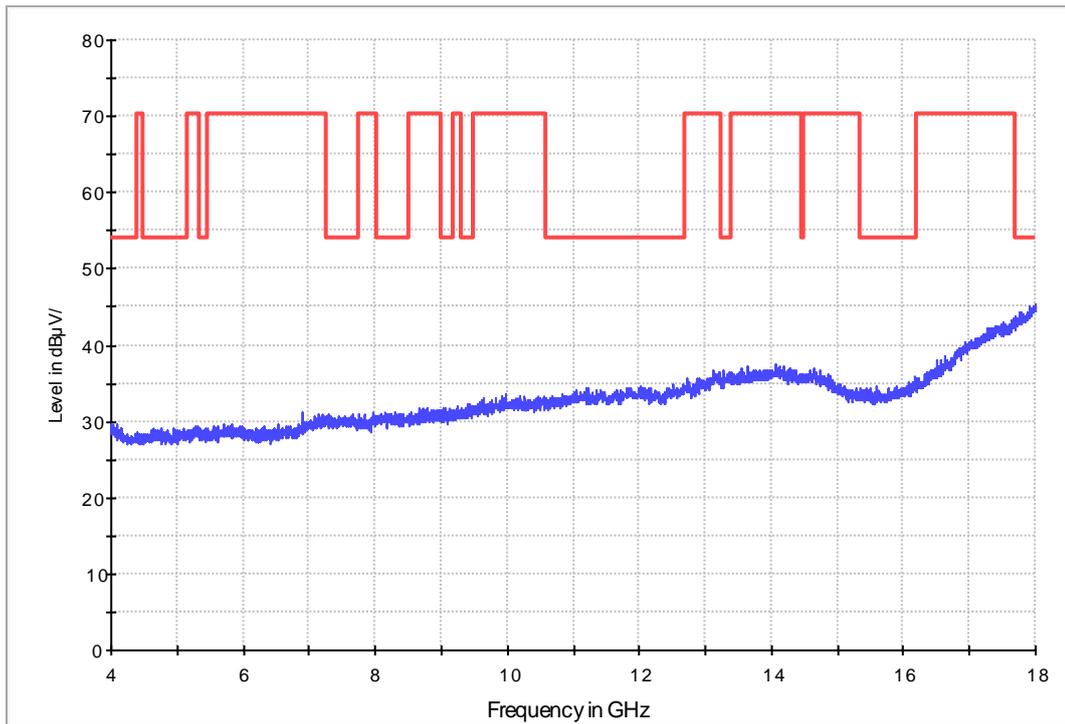


Fig. 103 Radiated Spurious Emission (802.11b, Ch6, 4 GHz-18 GHz)

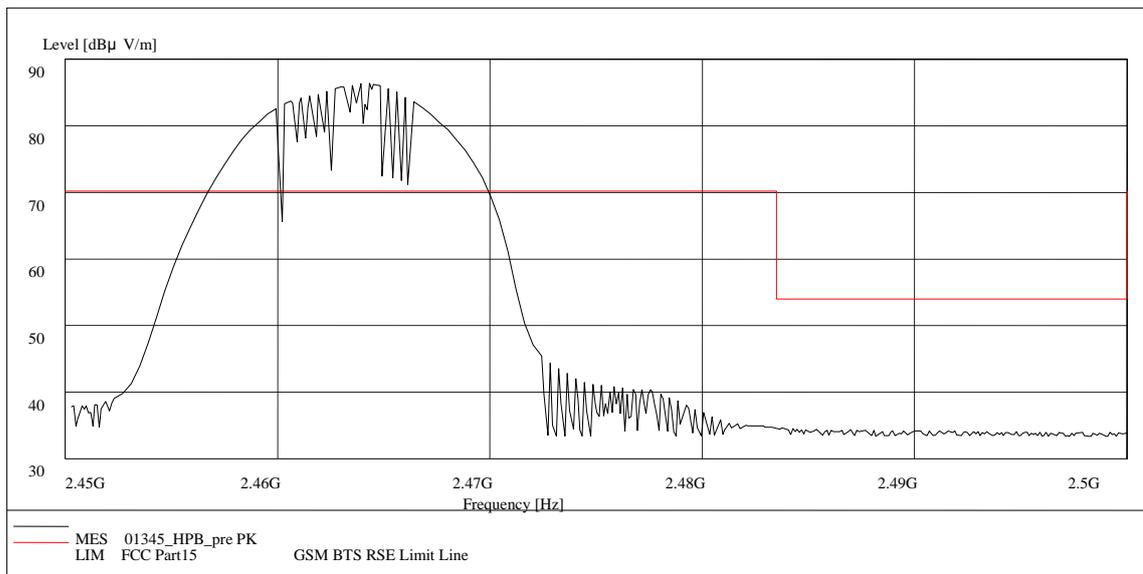


Fig. 104 Radiated Spurious Emission (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz

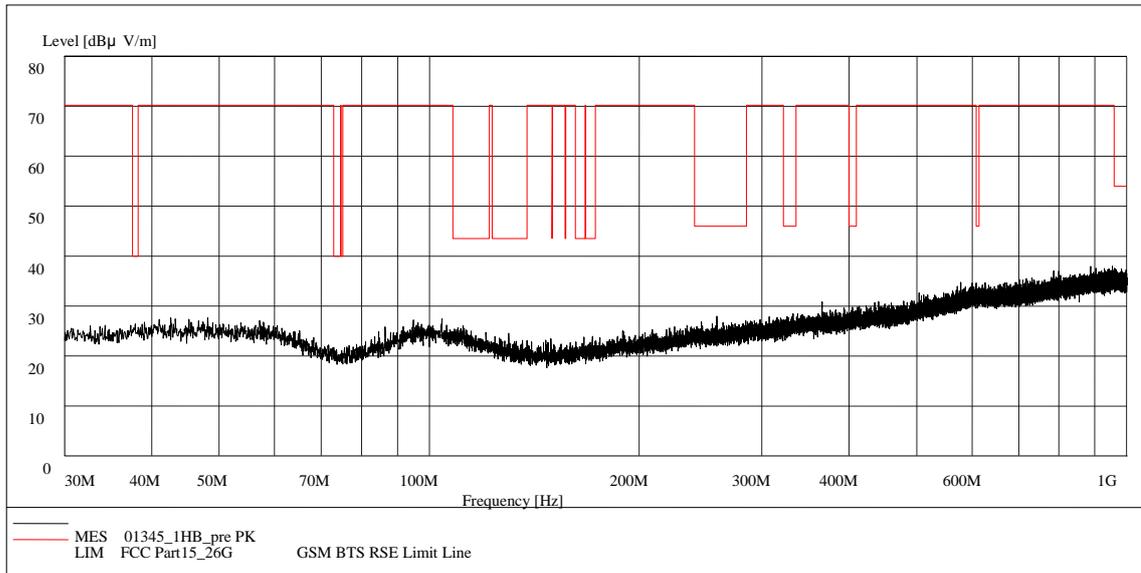


Fig. 105 Radiated Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)

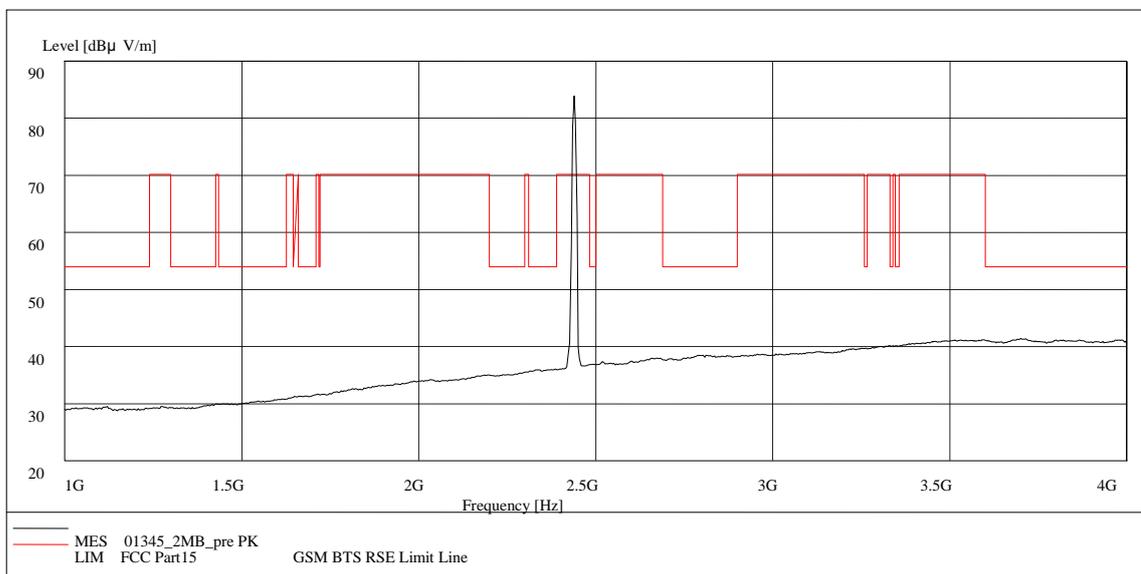


Fig. 106 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-4 GHz)

FCC 4-18G

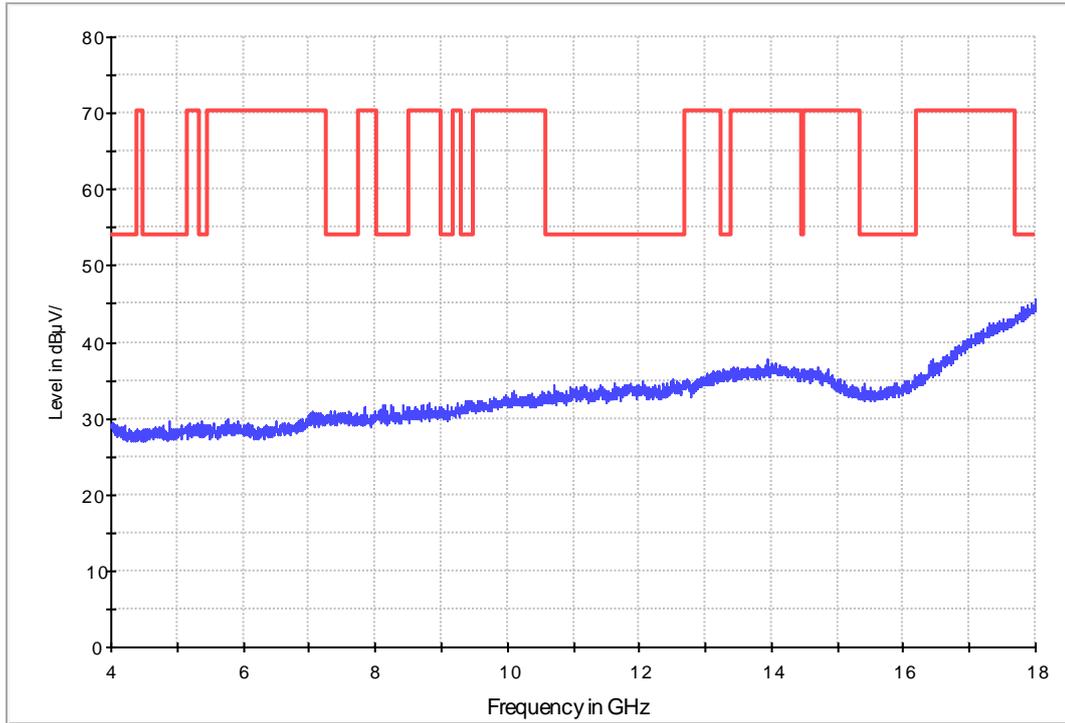


Fig. 107 Radiated Spurious Emission (802.11b, Ch11, 4 GHz-18 GHz)

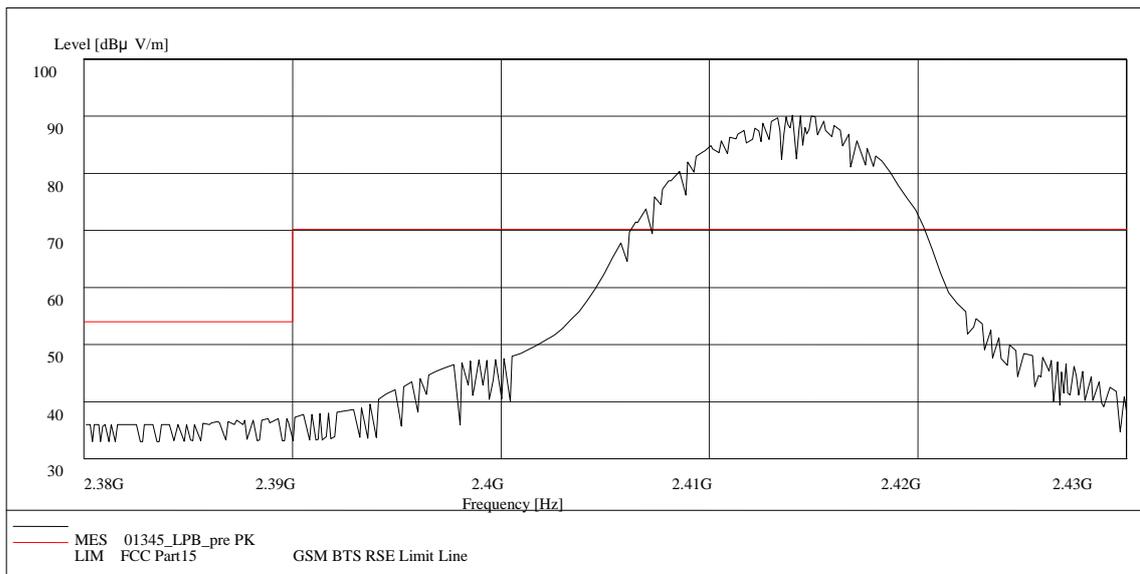


Fig. 108 Radiated Spurious Emission (Power): 802.11g, ch1, 2.38 GHz - 2.43GHz

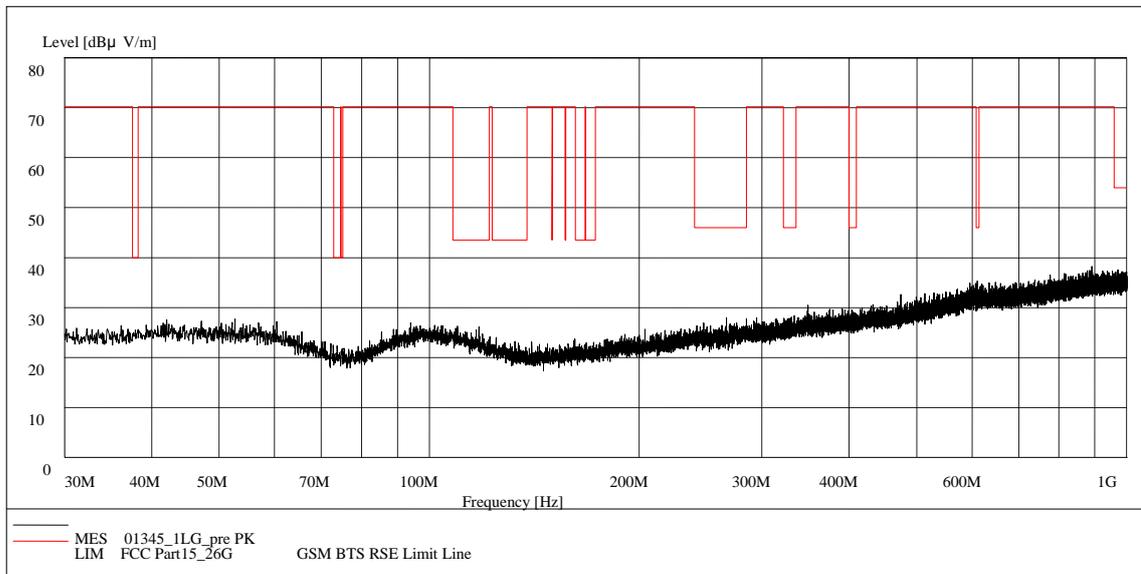


Fig. 109 Radiated Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)

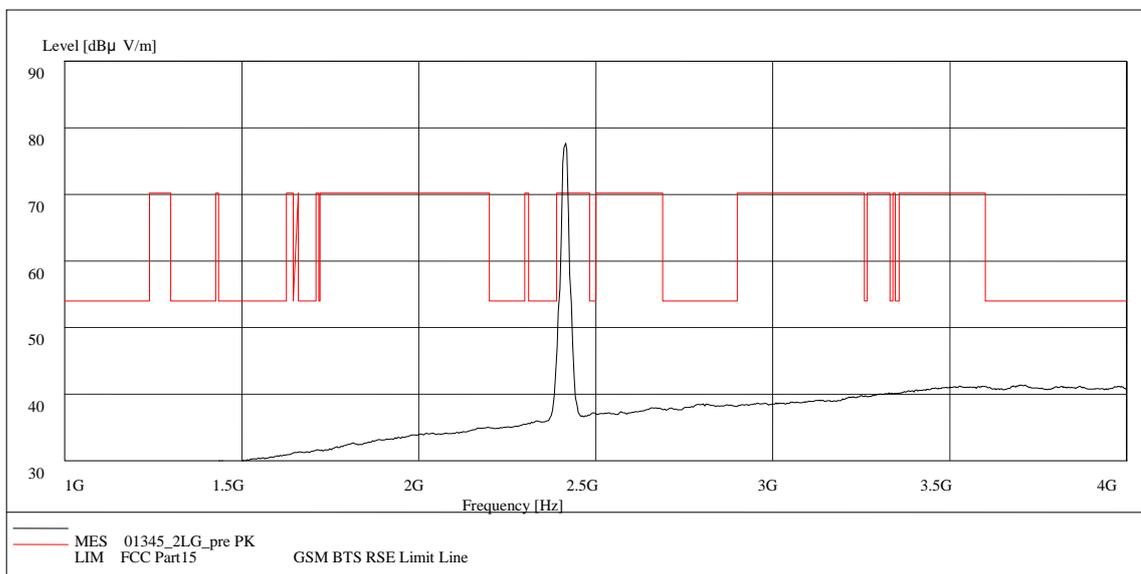


Fig. 110 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-4 GHz)

FCC 4-18G

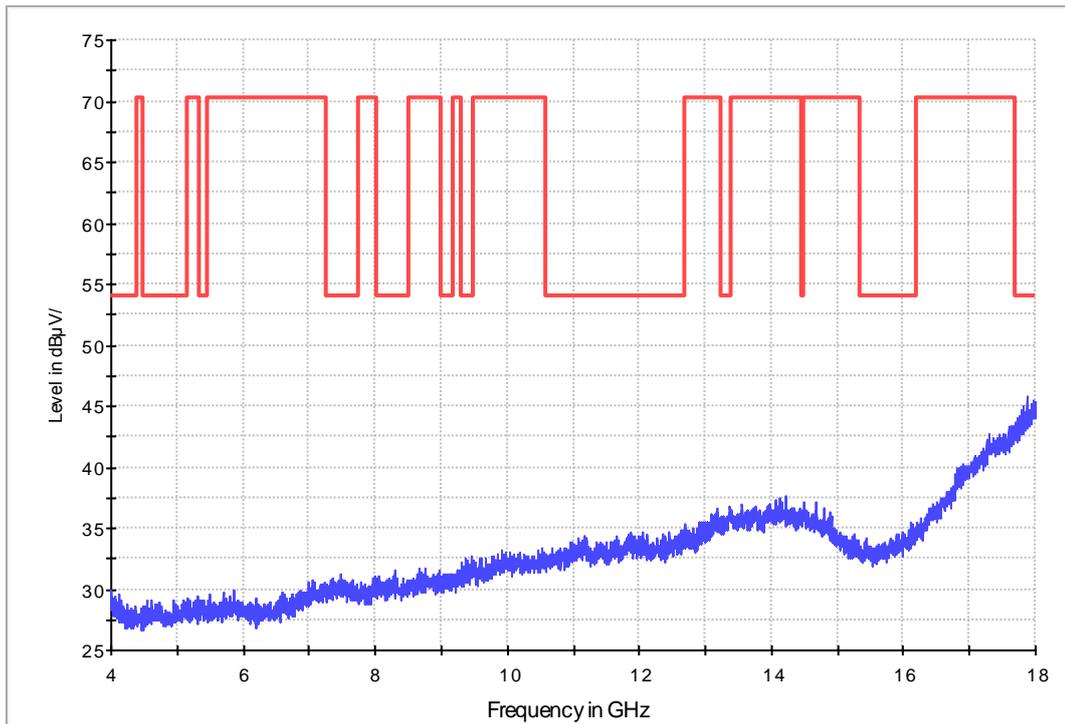


Fig. 111 Radiated Spurious Emission (802.11g, Ch1, 4 GHz-18 GHz)

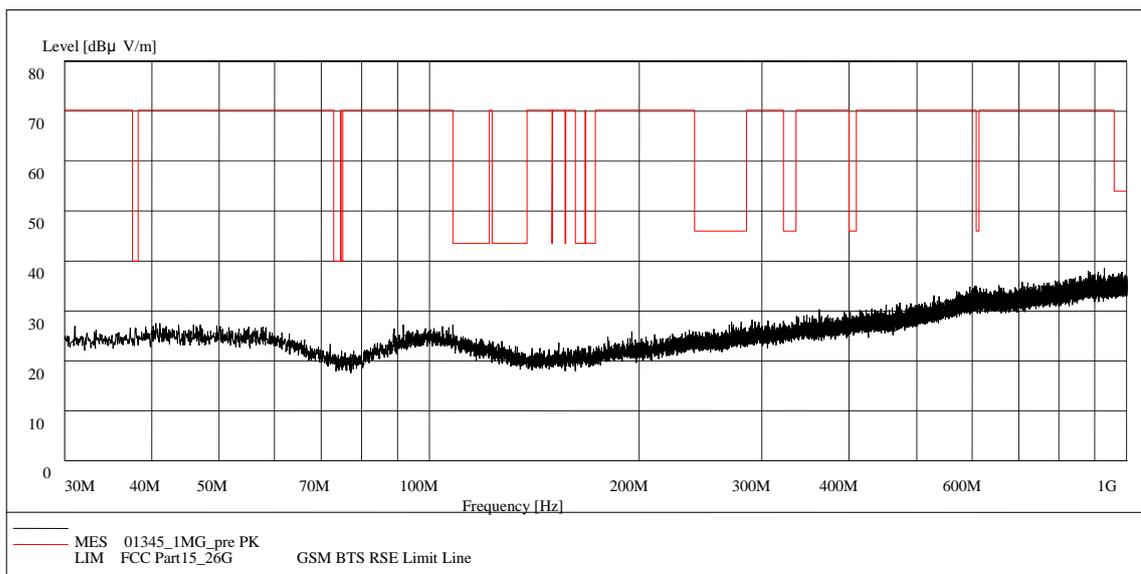


Fig. 112 Radiated Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)

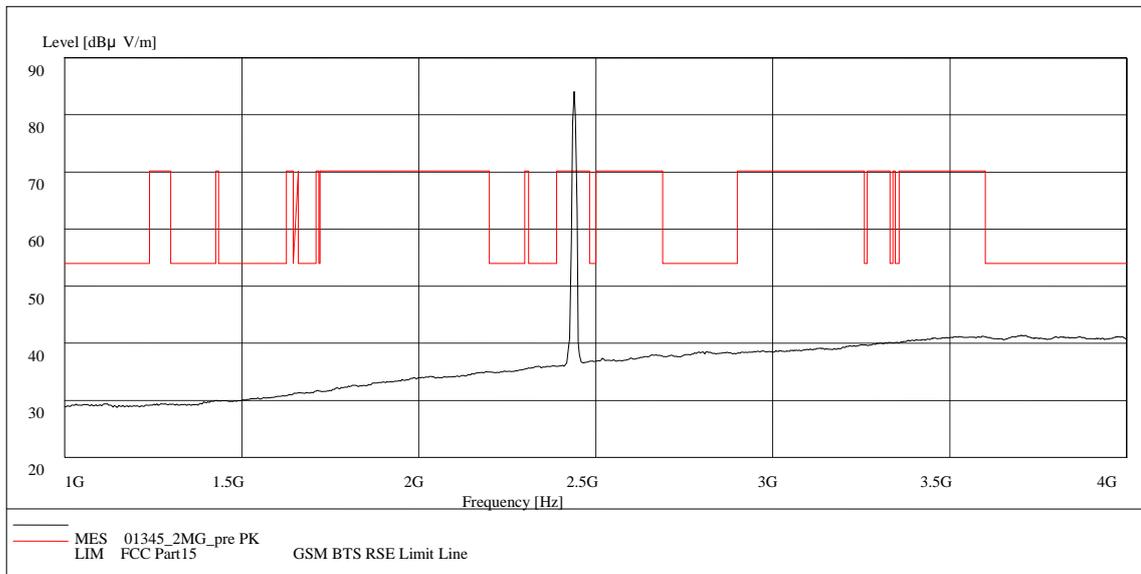


Fig. 113 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-4 GHz)

FCC 4-18G

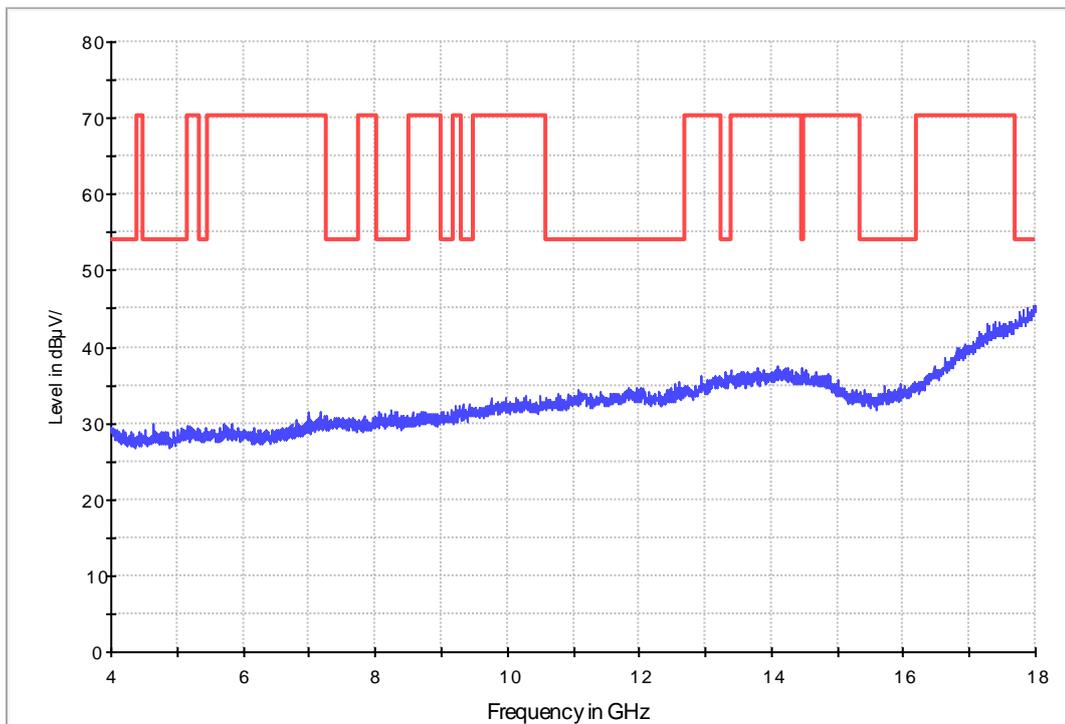


Fig. 114 Radiated Spurious Emission (802.11g, Ch6, 4 GHz-18 GHz)

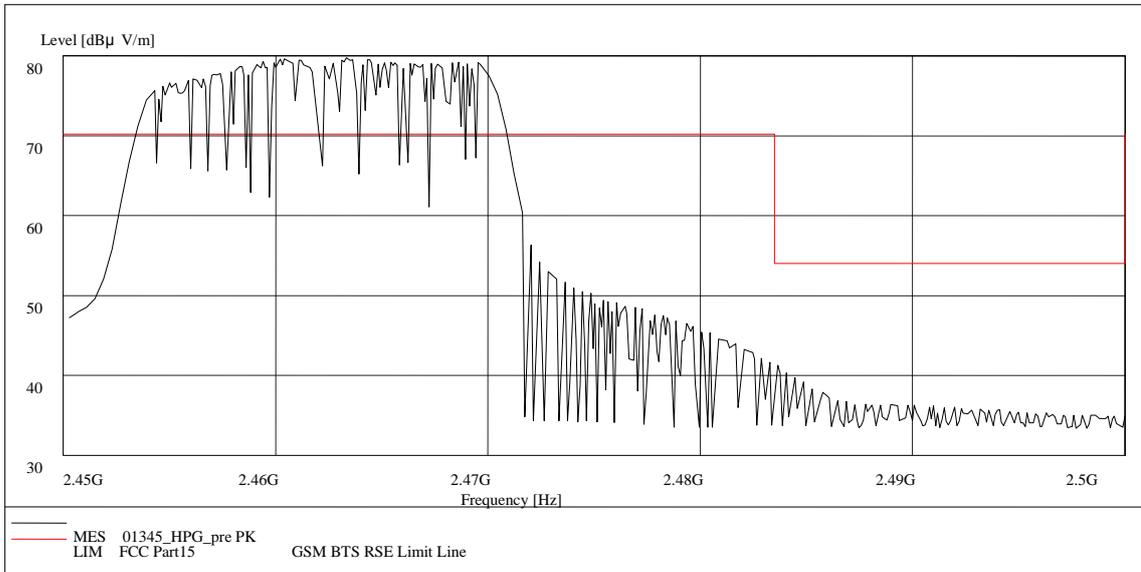


Fig. 115 Radiated Spurious Emission (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz

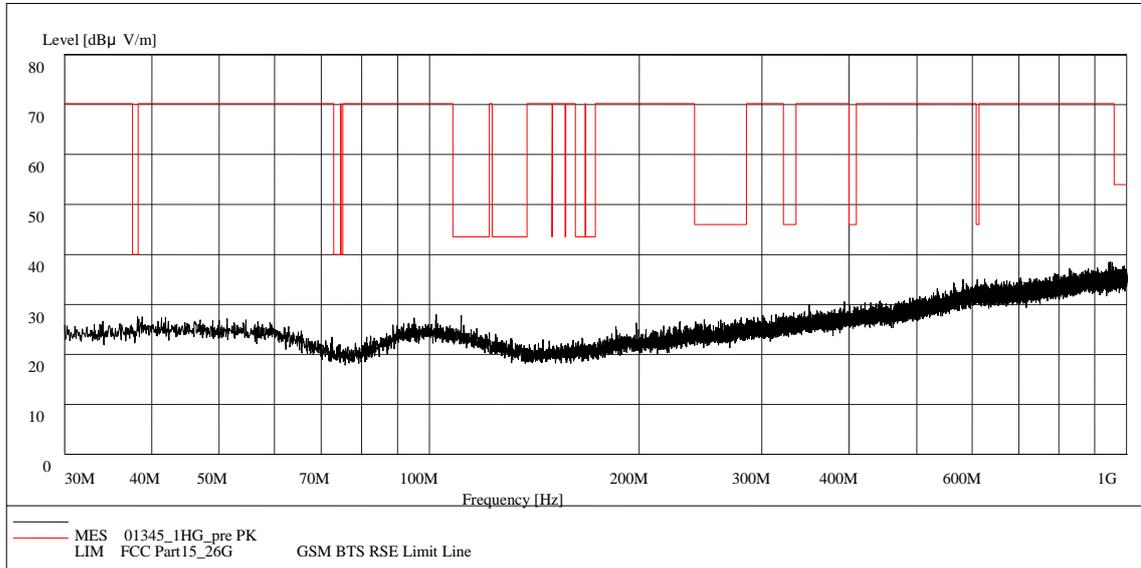


Fig. 116 Radiated Spurious Emission (802.11g, Ch11, 30 MHz-1 GHz)

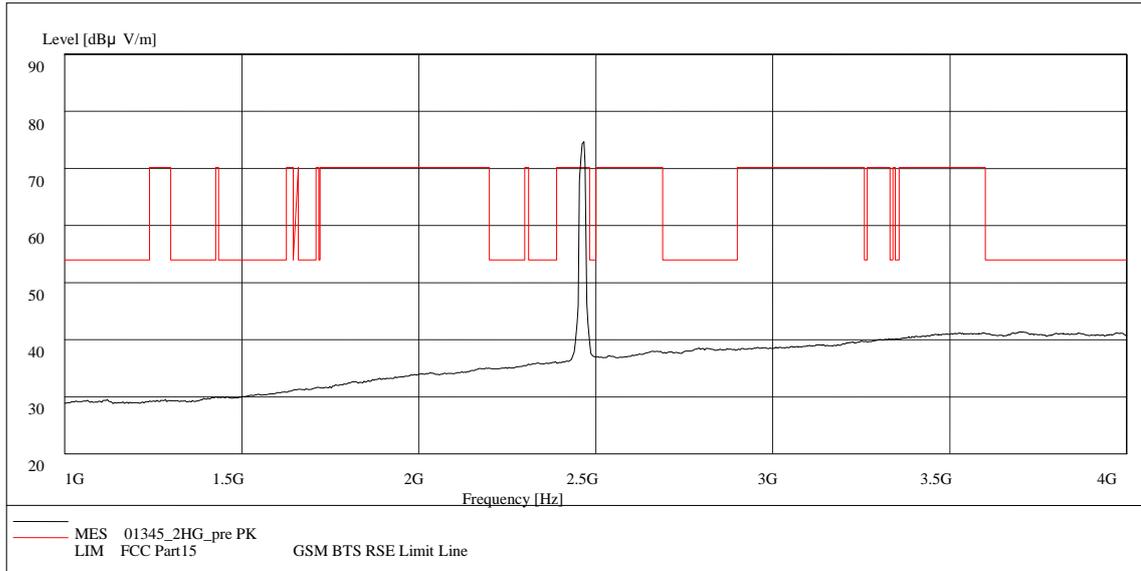


Fig. 117 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-4 GHz)

FCC 4-18G

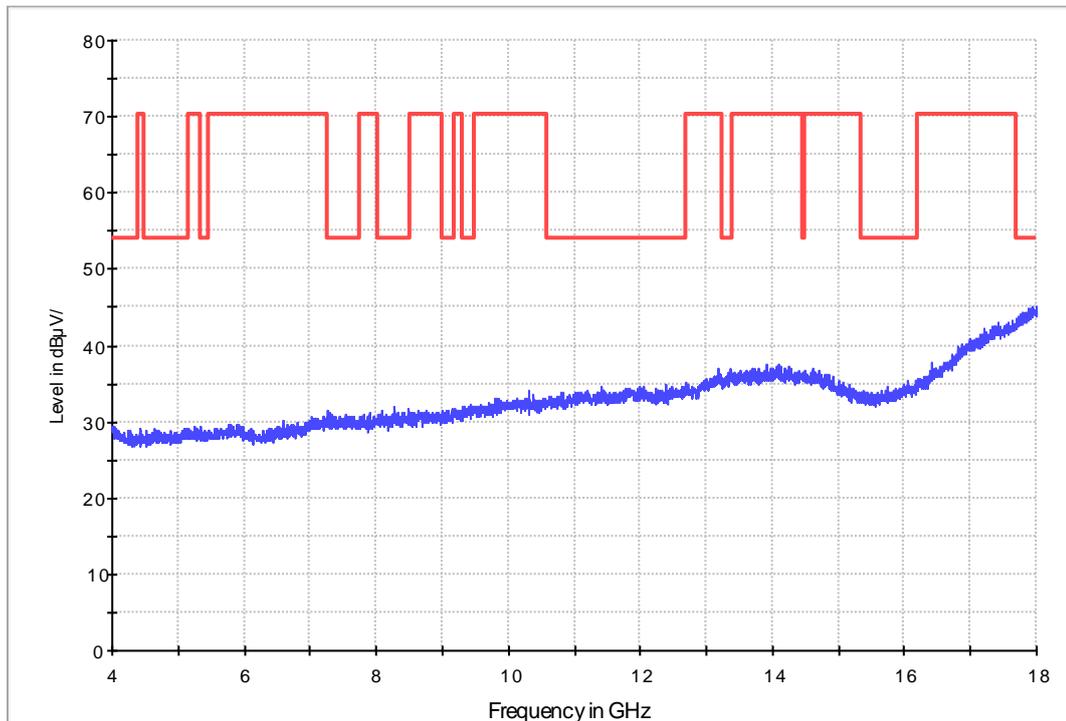


Fig. 118 Radiated Spurious Emission (802.11g, Ch11, 4 GHz-18 GHz)

FCC 18-26.5G

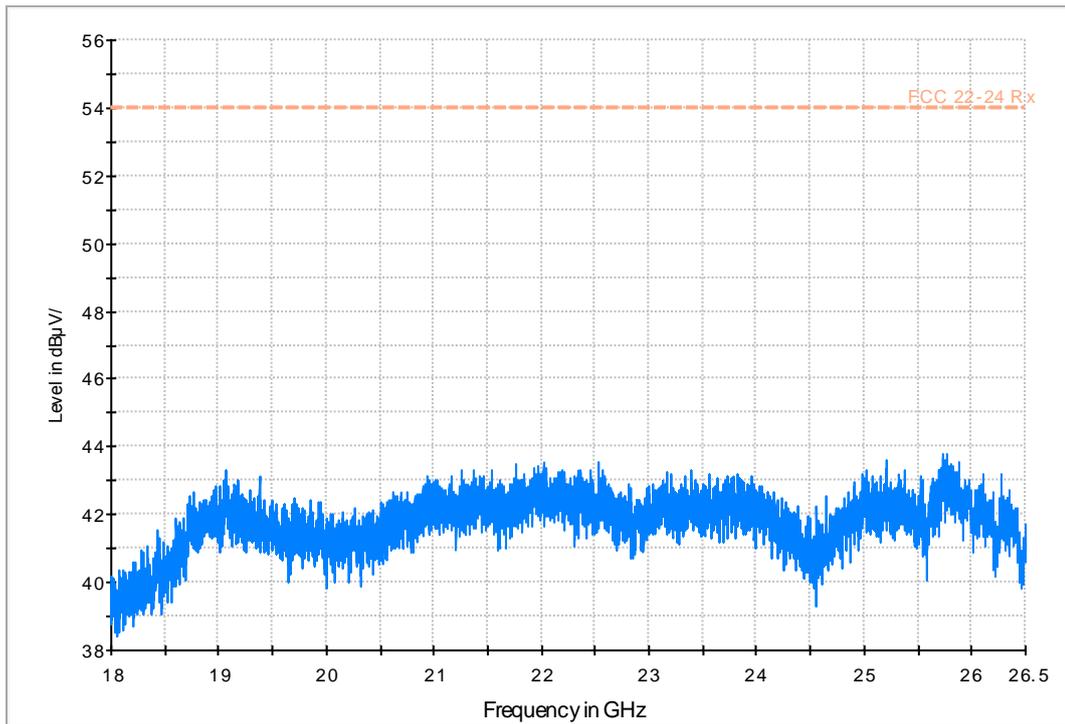


Fig. 119 Radiated emission: 18 GHz - 26.5 GHz

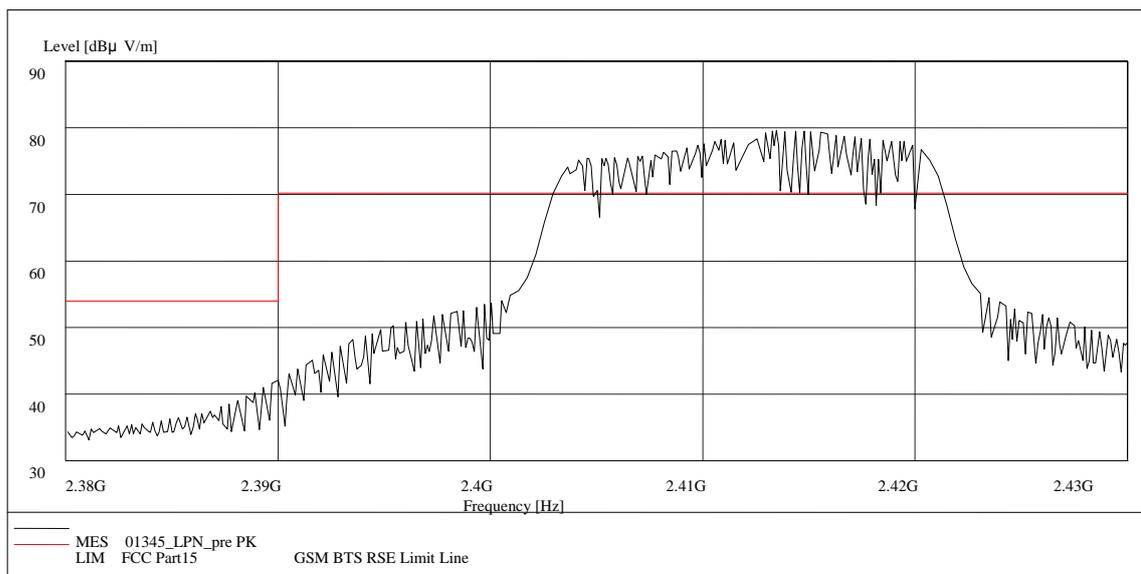


Fig. 120 Radiated Spurious Emission (Power): 802.11n-20MHz, ch1, 2.38 GHz - 2.43GHz

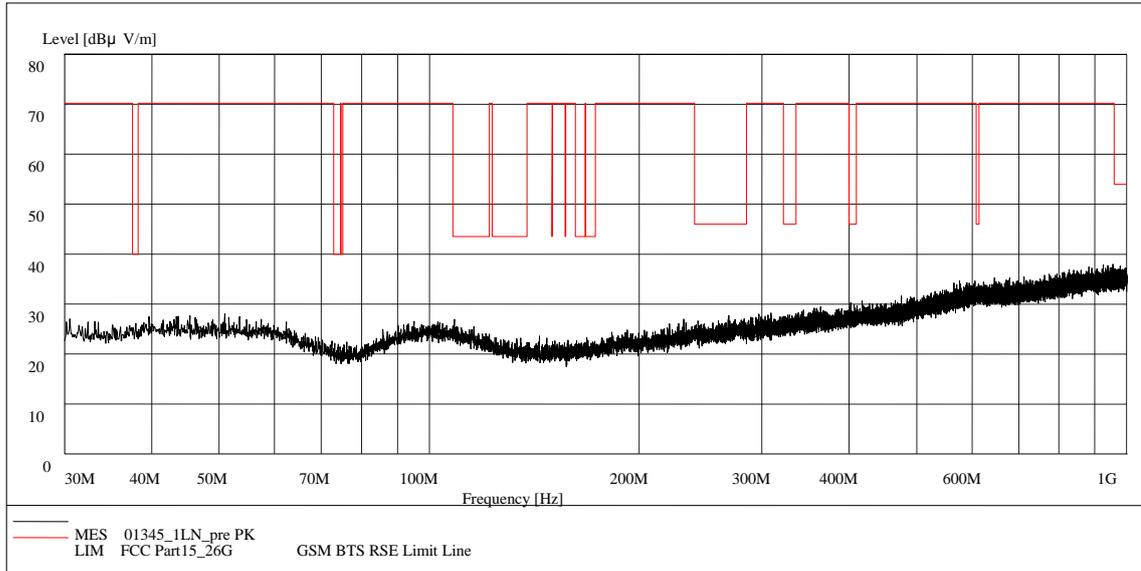


Fig. 121 Radiated Spurious Emission (802.11n-20MHz, Ch1, 30 MHz-1 GHz)

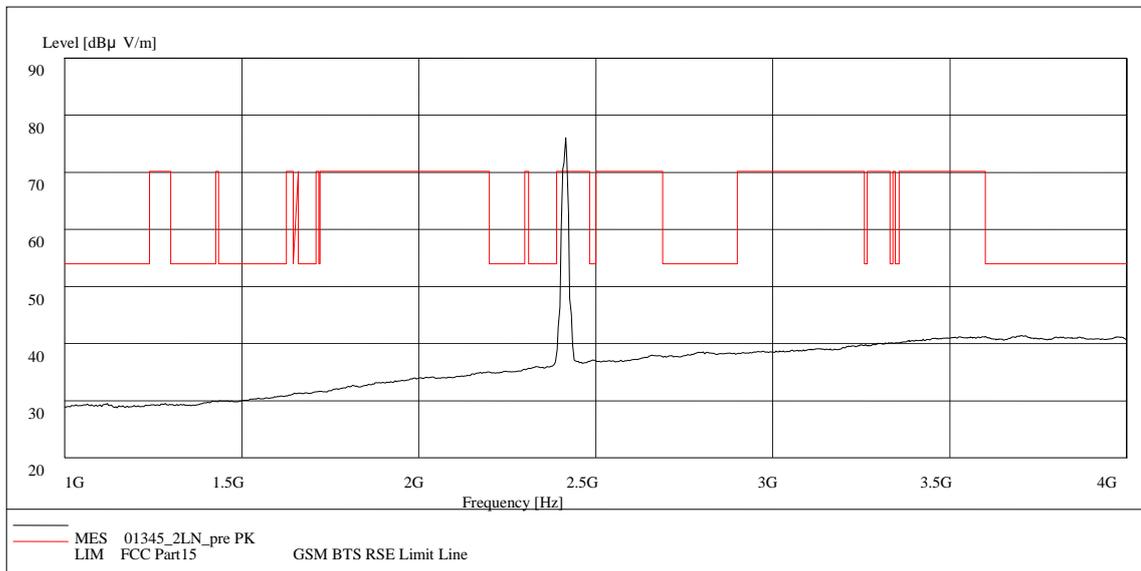


Fig. 122 Radiated Spurious Emission (802.11n-20MHz, Ch1, 1 GHz-4 GHz)

FCC 4-18G

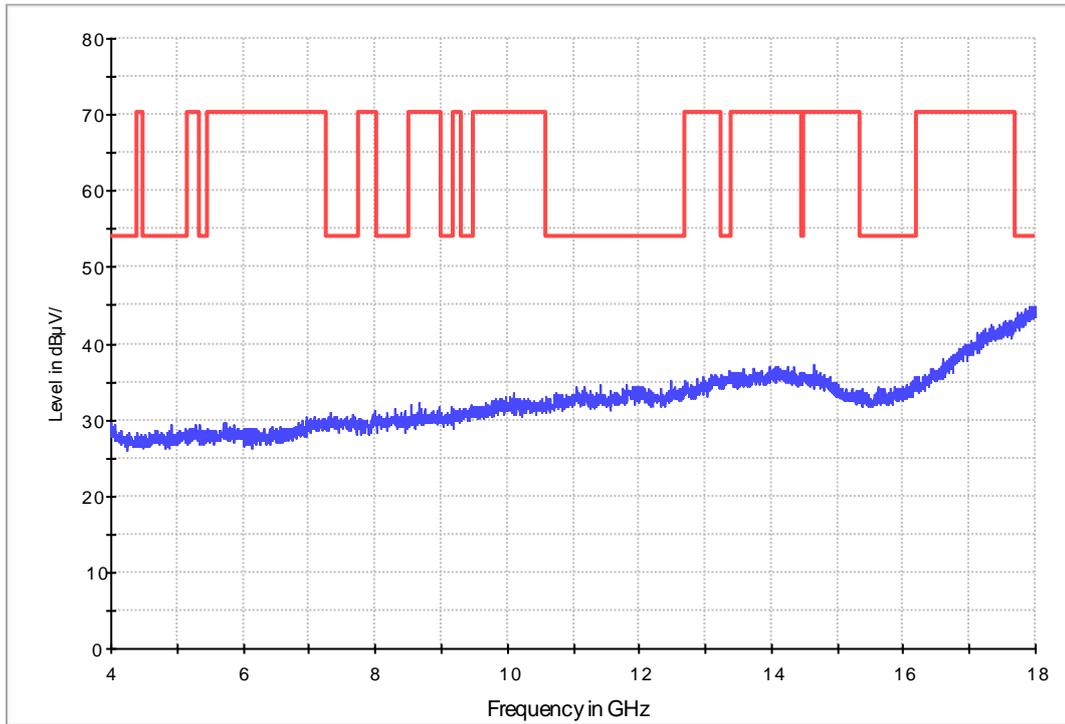


Fig. 123 Radiated Spurious Emission (802.11n-20MHz, Ch1, 4 GHz-18 GHz)

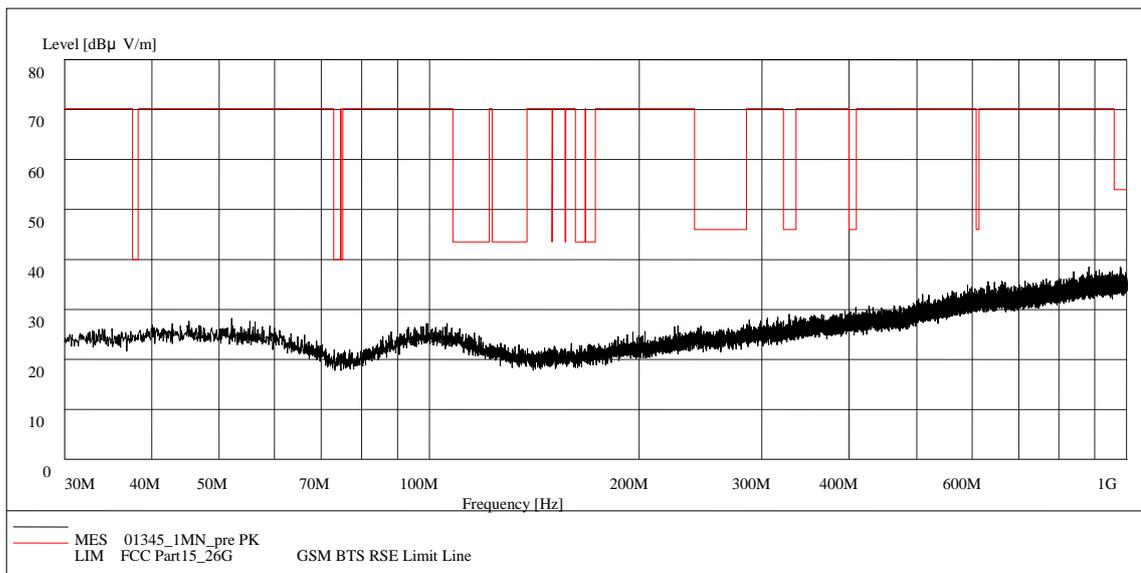


Fig. 124 Radiated Spurious Emission (802.11n-20MHz, Ch6, 30 MHz-1 GHz)

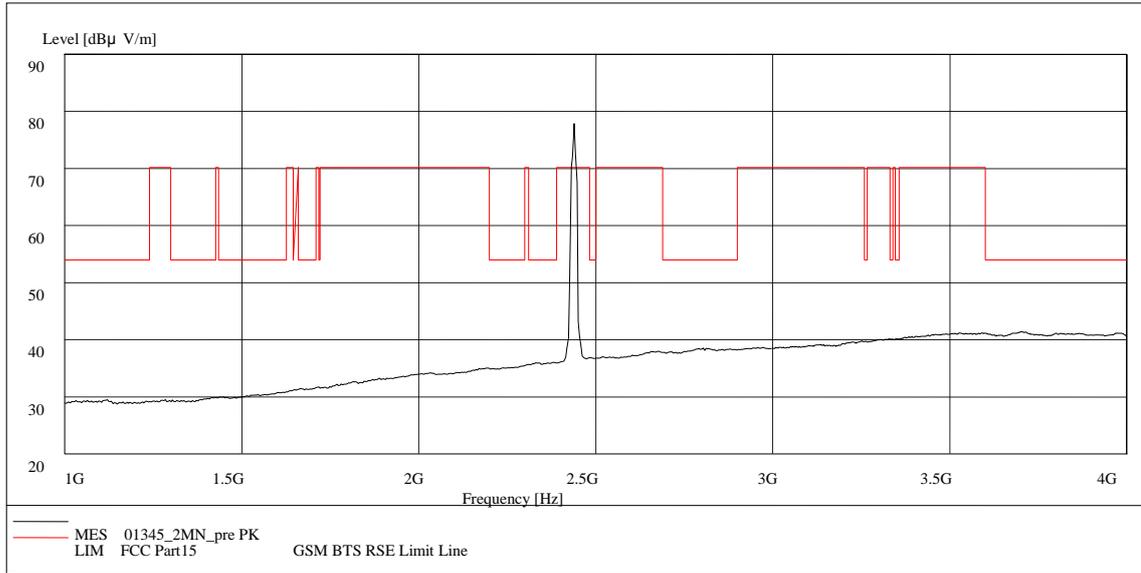


Fig. 125 Radiated Spurious Emission (802.11n-20MHz, Ch6, 1 GHz-4 GHz)

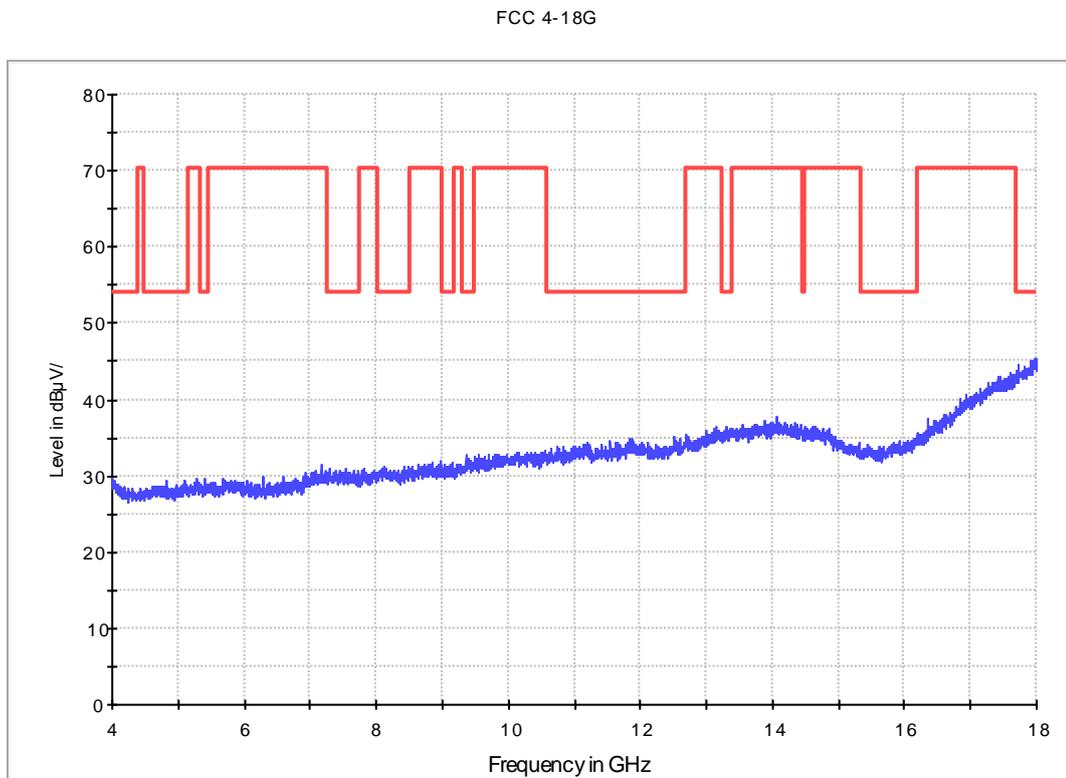


Fig. 126 Radiated Spurious Emission (802.11n-20MHz, Ch6, 4 GHz-18 GHz)

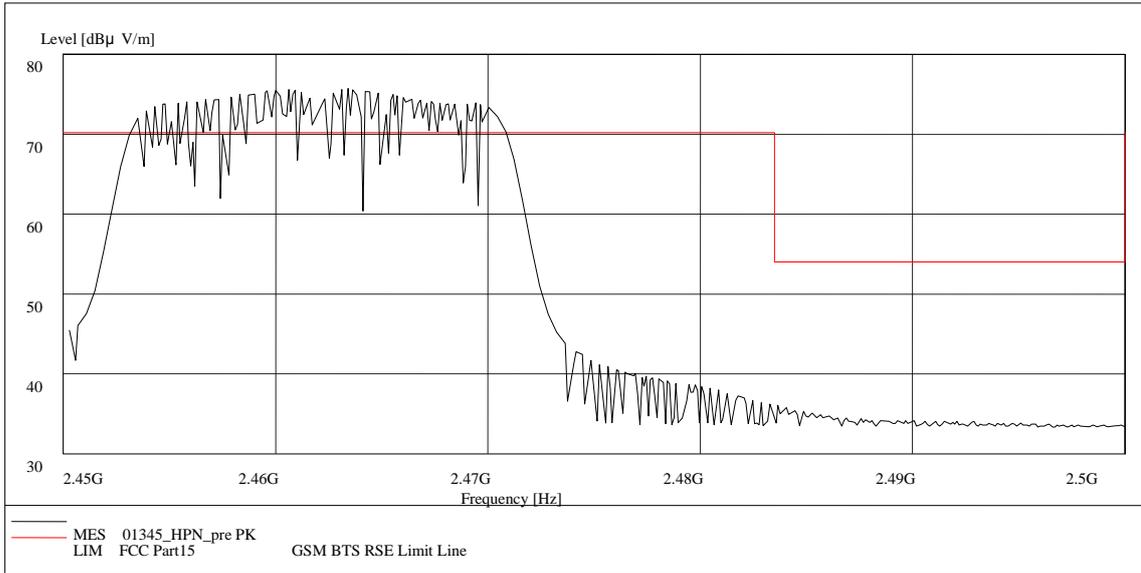


Fig. 127 Radiated Spurious Emission (Power): 802.11n-20MHz, ch11, 2.45 GHz - 2.50GHz

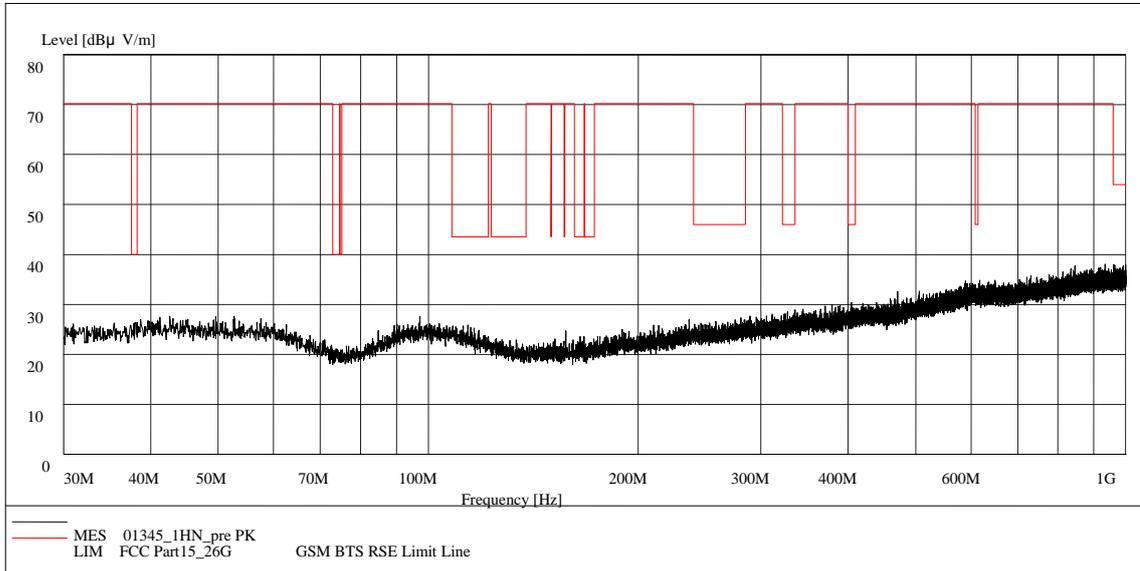


Fig. 128 Radiated Spurious Emission (802.11n-20MHz, Ch11, 30 MHz-1 GHz)

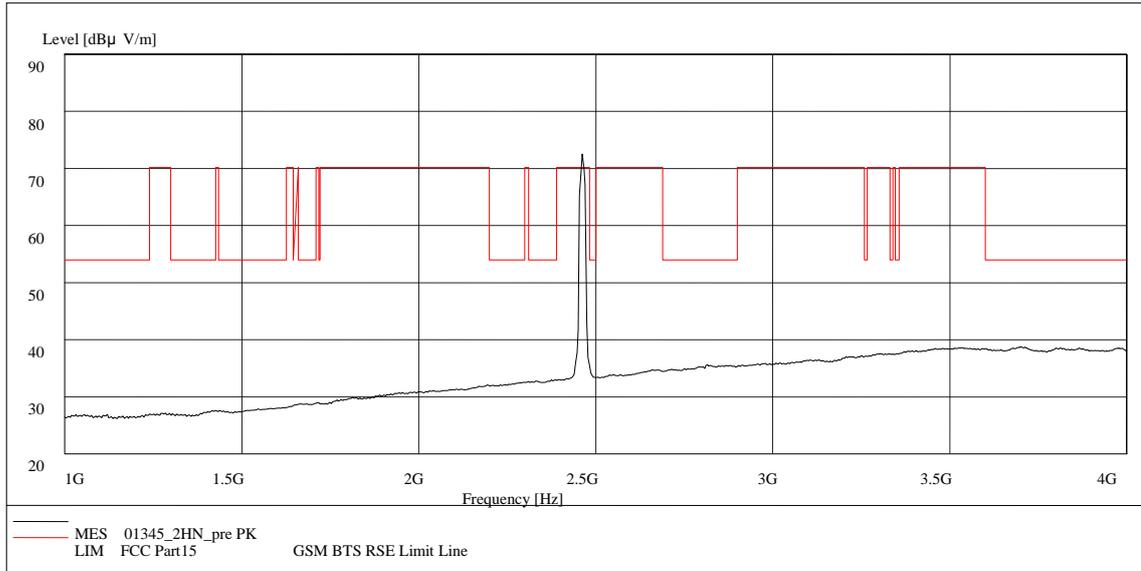


Fig. 129 Radiated Spurious Emission (802.11n-20MHz, Ch11, 1 GHz-4 GHz)

FCC 4-18G

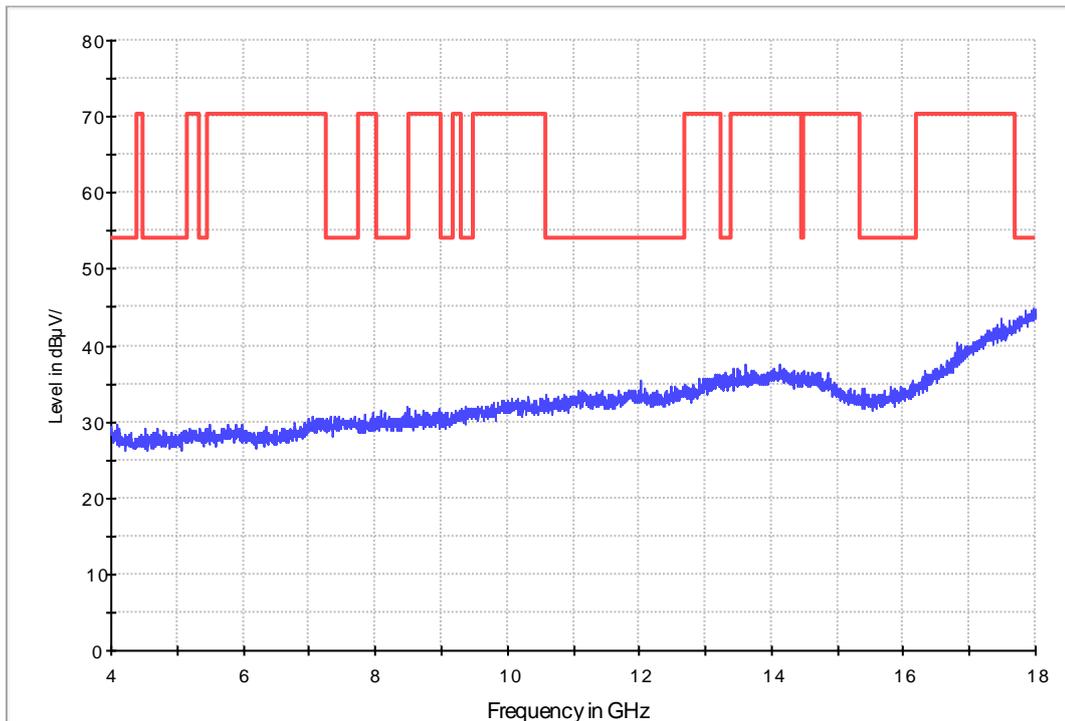


Fig. 130 Radiated Spurious Emission (802.11n-20MHz, Ch11, 4 GHz-18 GHz)

FCC 18-26.5G

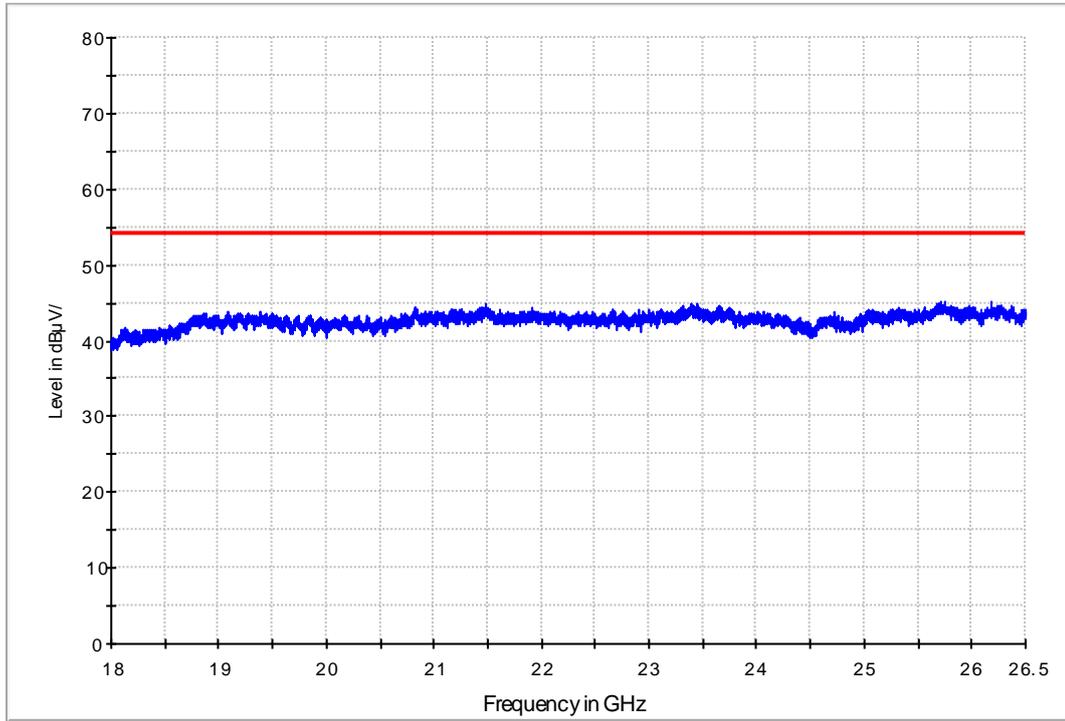


Fig. 131 Radiated emission: 18 GHz - 26.5 GHz

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 (dB μ V)	Result (dB μ V)			Conclusion
		With charger			
		802.11b	802.11g	802.11g	
0.15 to 0.5	66 o 56	Fig. 132	Fig.133	Fig.134	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 (dB μ V)	Result (dB μ V)			Conclusion
		With charger			
		802.11b	802.11g	802.11n	
0.15 to 0.5	56 to 46	Fig.132	Fig.133	Fig.134	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 C63.4 and KDB558074

Conclusion: PASS

Test graphs as below:

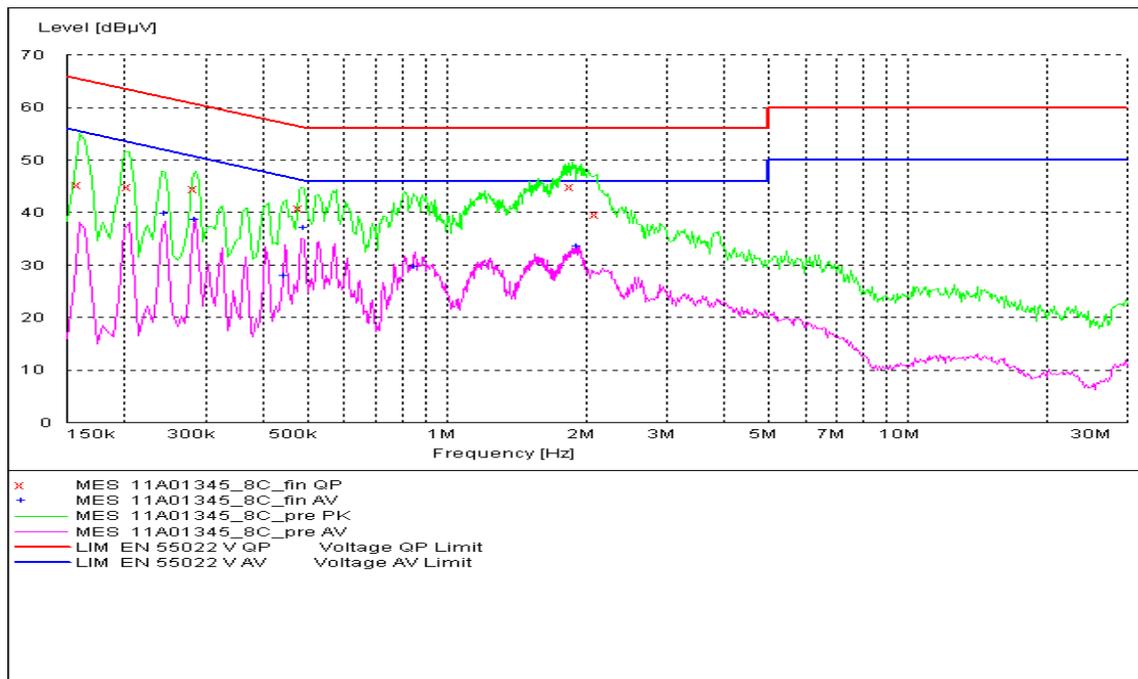


Fig. 132 AC Powerline Conducted Emission-802.11b

MEASUREMENT RESULT: "11A01073_11C_fin QP"

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.160000	45.30	10.10	66	20.2	N	GND
0.205000	44.90	10.10	63	18.6	N	GND
0.285000	44.40	10.10	61	16.3	L1	GND
0.485000	40.70	10.10	56	15.5	L1	GND
1.875000	44.80	10.10	56	11.2	L1	GND
2.131642	39.60	10.10	56	16.4	L1	GND

MEASUREMENT RESULT: "11A01073_11C_fin AV"

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.245000	39.80	10.10	52	12.2	N	GND
0.285000	38.70	10.10	51	12.0	N	GND
0.445000	27.90	10.10	47	19.1	L1	GND
0.490000	37.00	10.10	46	9.2	N	GND
0.855000	29.70	10.10	46	16.3	L1	GND
1.920000	33.60	10.10	46	12.4	L1	GND

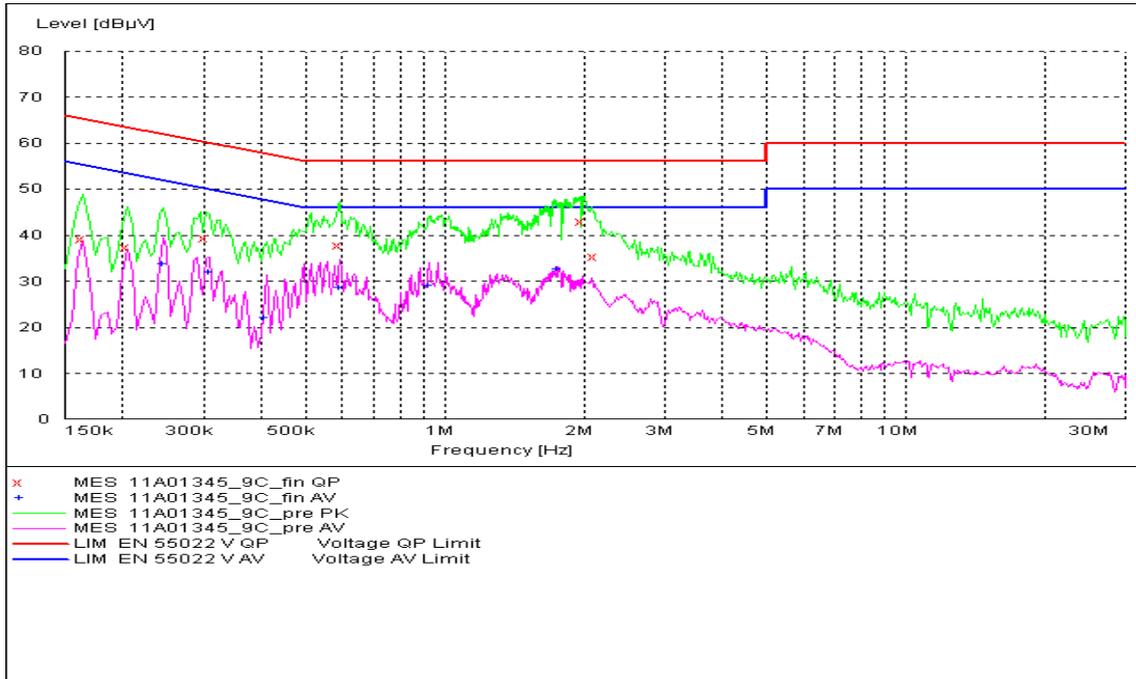


Fig. 133 AC Powerline Conducted Emission-802.11g

MEASUREMENT RESULT: "11A01073_12C_fin QP"

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.165000	39.00	10.10	65	26.2	N	GND
0.205000	37.30	10.10	63	26.1	N	GND
0.305000	39.40	10.10	60	20.7	N	GND
0.595000	37.70	10.10	56	18.4	N	GND
1.990000	43.00	10.10	56	13.0	L1	GND
2.131642	35.20	10.10	56	20.8	N	GND

MEASUREMENT RESULT: "11A01073_12C_fin AV"

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.245000	33.80	10.10	52	18.1	L1	GND
0.310000	31.90	10.10	50	18.1	N	GND
0.410000	21.90	10.10	48	25.7	L1	GND
0.595000	28.50	10.10	46	17.5	L1	GND
0.925000	28.90	10.10	46	17.1	L1	GND
1.765000	32.50	10.10	46	13.5	L1	GND

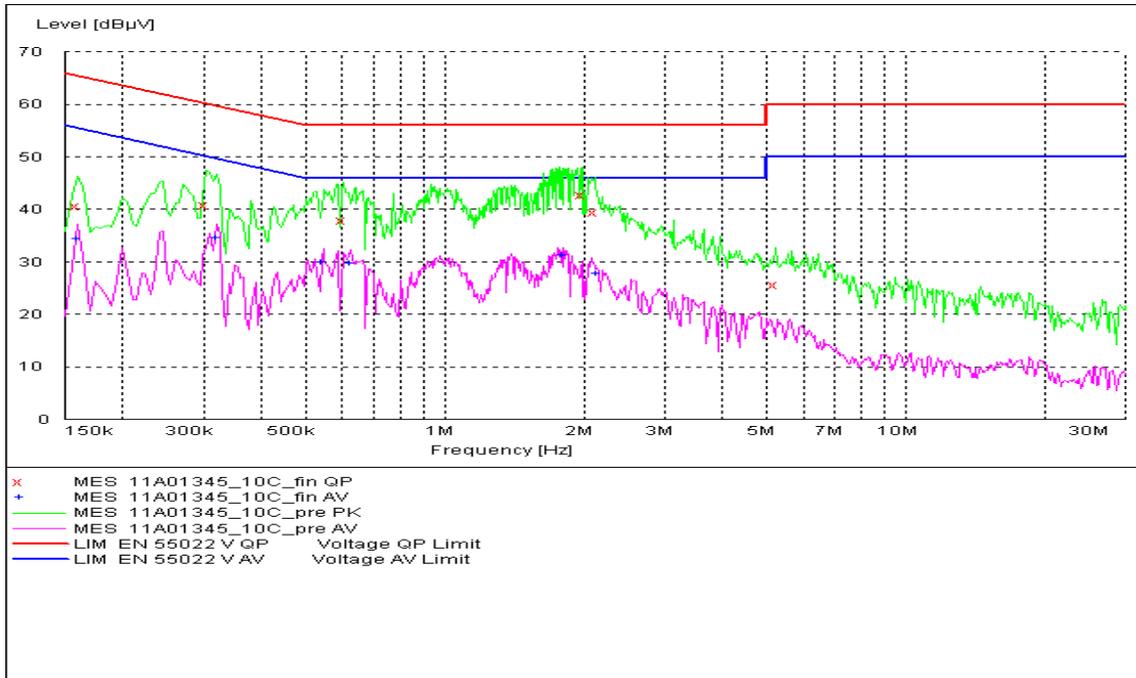


Fig. 134 AC Powerline Conducted Emission-802.11n-20MHz

MEASUREMENT RESULT: "11A01073_12C_fin QP"

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.160000	40.60	10.10	66	24.8	N	GND
0.305000	40.70	10.10	60	19.4	N	GND
0.605000	37.80	10.10	56	18.2	N	GND
2.000000	42.70	10.10	56	13.4	L1	GND
2.131642	39.40	10.10	56	16.6	L1	GND
5.245107	25.70	10.20	60	34.3	N	GND

MEASUREMENT RESULT: "11A01073_12C_fin AV"

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.160000	34.40	10.10	56	21.1	N	GND
0.320000	34.50	10.10	50	15.2	L1	GND
0.545000	29.80	10.10	46	16.2	N	GND
0.625000	29.70	10.10	46	16.3	N	GND
1.810000	31.20	10.10	46	14.8	L1	GND
2.148695	27.80	10.10	46	18.2	N	GND

*** END OF REPORT BODY ***