



**FCC PART 15C  
TEST REPORT  
No. 2011WLN0205**

for

**TCT Mobile Limited**

**Quadband GSM/GPRS/EDGE mobile phone**

**Type: Baby D Single SIM**

**Marketing Name: one touch 890**

With

**FCC ID: RAD165**

**Hardware Version: PIO**

**Software Version: V129**

**Issued Date: 2011-03-16**



Deutscher  
Akkreditierungs  
Rat

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

**FCC 2.948 Listed: No.733176**

**No. DGA-PL-114/01-02**

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

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

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## 1. Test Laboratory

### 1.1. Testing Location

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

### 1.2. Testing Environment

Normal Temperature: 15-30°C  
Extreme Temperature: -20/+55°C  
Relative Humidity: 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: 2011-02-28

### 1.4. Signature



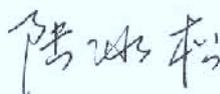
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**Sun Zhenyu**  
(Prepared this test report)



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**Gao Hong**  
(Reviewed this test report)



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

## **2. Client Information**

### **2.1. Applicant Information**

Company Name: TCT Mobile Limited  
Address: 5F, E building, No. 232, Liang Jing Road  
Address /Post: ZhangJiang High-Tech Park, Pudong Area  
Shanghai, P.R. China. 201203  
City: Shanghai  
Postal Code: 201203  
Country: China  
Contact Gong Zhizhou  
Email zhizhou.gong@jrdcom.com  
Telephone: 0086-21-61460890  
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### **2.2. Manufacturer Information**

Company Name: TCT Mobile Limited  
Address: 5F, E building, No. 232, Liang Jing Road  
Address /Post: ZhangJiang High-Tech Park, Pudong Area  
Shanghai, P.R. China. 201203  
City: Shanghai  
Postal Code: 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	Quadband GSM/GPRS/EDGE mobile phone
Type	Baby D Single SIM
Marketing Name	one touch 890
FCC ID	RAD165
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	20.53dBm(OFDM)
Power Supply	3.8V 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	359190040007070	PIO	V129
EUT2	355190040018769	PIO	V129

\*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	Traveler Adapter	CBA3120AG0C2	/
AE2	Traveler Adapter	CBA3001AG0C1	/
AE3	Battery	CAB31L0000C1	/
AE4	Battery	CAB31L0000C2	/

\*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 Quadband GSM/GPRS/EDGE mobile phone with integrated antenna. It consists of normal options: Lithium Battery and Travel 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 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 C63.4	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz	2009
KDB558074	Measurement of Digital Transmission Systems Operating under Section 15.247	March 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

**Fully-anechoic chamber** (6.8 meters×3.08 meters×3.53 meters) 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
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	2011-03-15
3	Dual-Ridge Waveguide Horn Antenna	3115	9906-5827	EMCO	2011-12-25

### Anechoic chamber

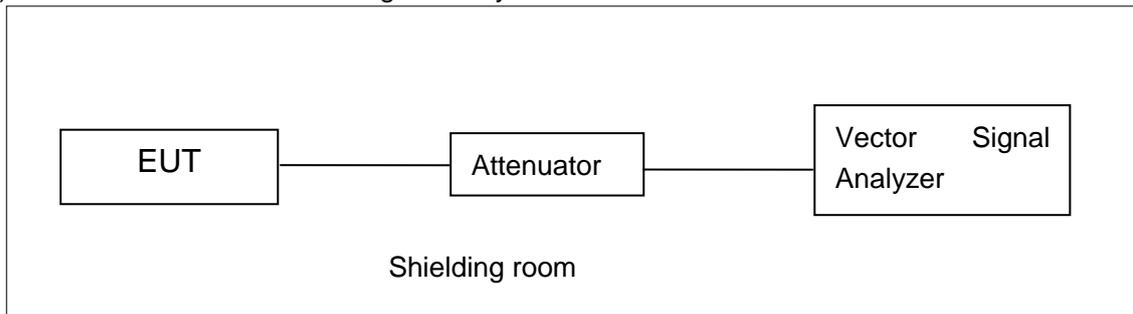
Anechoic chamber by Frankonia German.

## 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

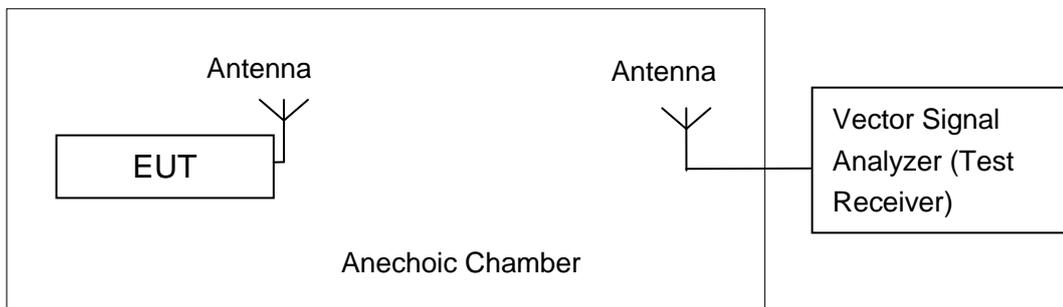


#### A.1.2. Radiated Emission Measurements

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) IC A8.4	< 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
-------------------------	--------

### A.2.1. Maximum Peak Output Power

#### Measurement Results:

Mode	Data Rate (Mbps)	Test Result (dBm)		
		2412MHz (Ch1)	2437MHz (Ch6)	2462 MHz (Ch11)
802.11b	1	16.36	/	/
	2	16.35	/	/
	5.5	17.66	/	/
	11	19.01	19.79	20.11
802.11g	6	19.35	/	/
	9	19.33	/	/
	12	19.20	/	/
	18	19.19	/	/
	24	19.57	20.11	20.53
	36	19.51	/	/
	48	19.52	/	/
54	19.55	/	/	

The data rate 11Mbps and 24Mbps are 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) IC A8.2, A8.3	< 8 dBm/3 kHz

The measurement is made according to ANSI C63.4 and KDB558074

#### Measurement Uncertainty:

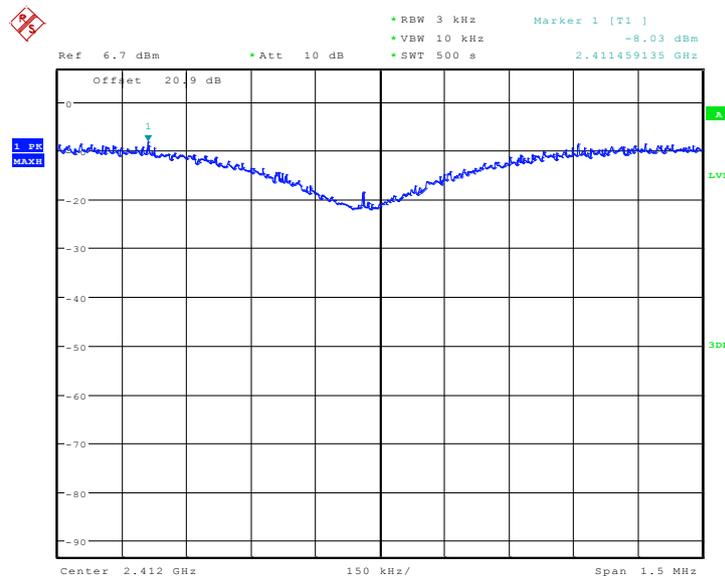
Measurement Uncertainty	0.75dB
-------------------------	--------

#### Measurement Results:

Mode	Channel	Power Spectral Density ( dBm/3 kHz )		Conclusion
		Fig.	Value	
802.11b	1	Fig.1	-8.03	P
	6	Fig.2	-7.42	P
	11	Fig.3	-5.77	P
802.11g	1	Fig.4	-9.44	P
	6	Fig.5	-8.91	P
	11	Fig.6	-9.24	P

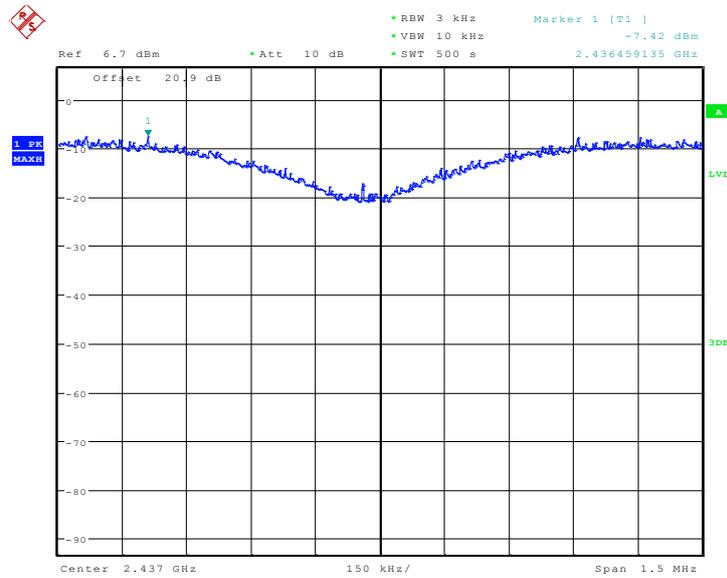
**Conclusion: PASS**

Test graphs as below:



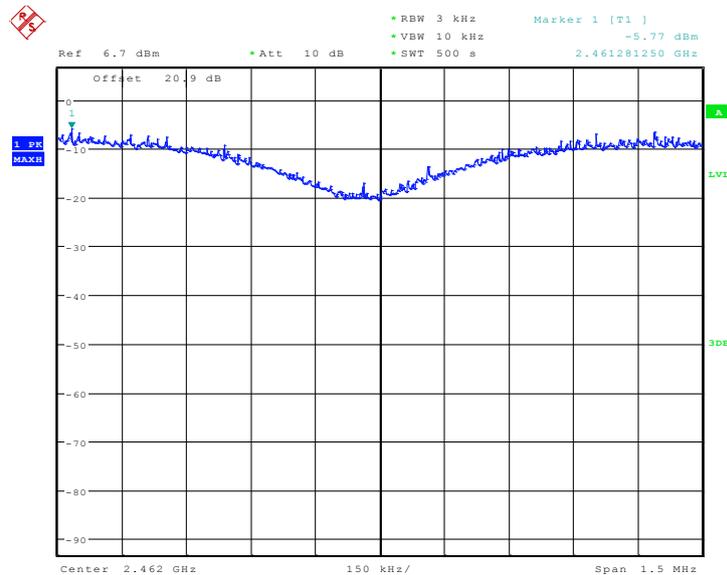
Date: 12.FEB.2011 00:10:34

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



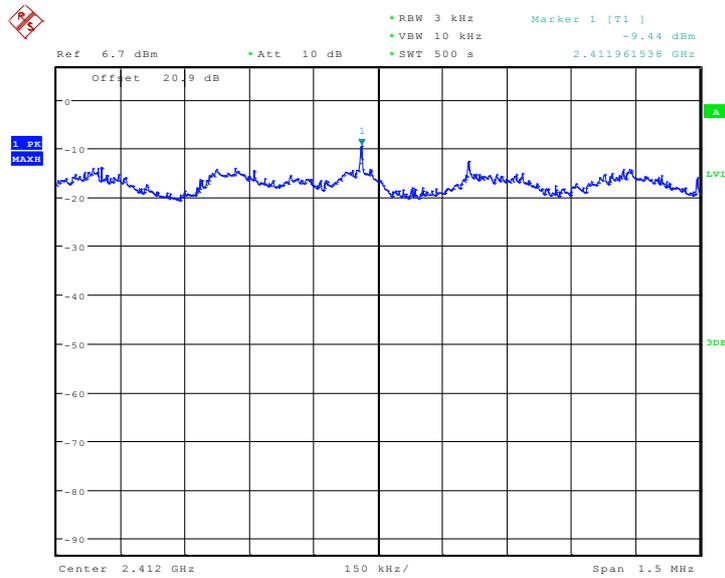
Date: 12.FEB.2011 14:49:34

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



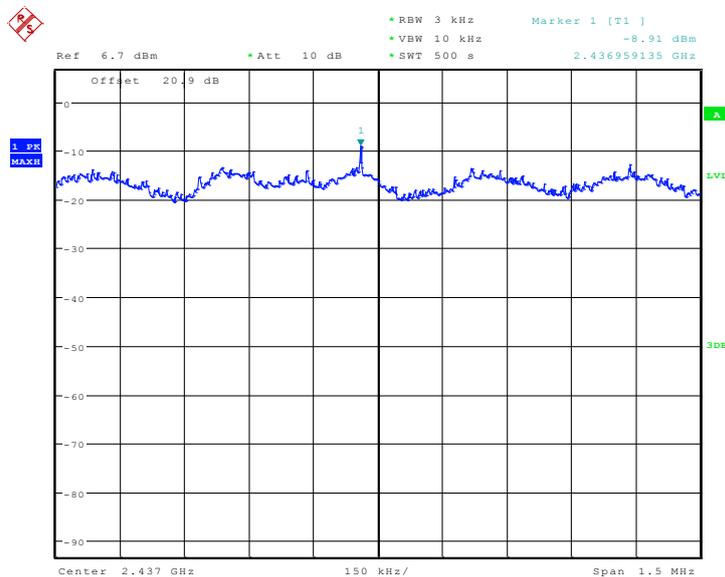
Date: 12.FEB.2011 17:15:01

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



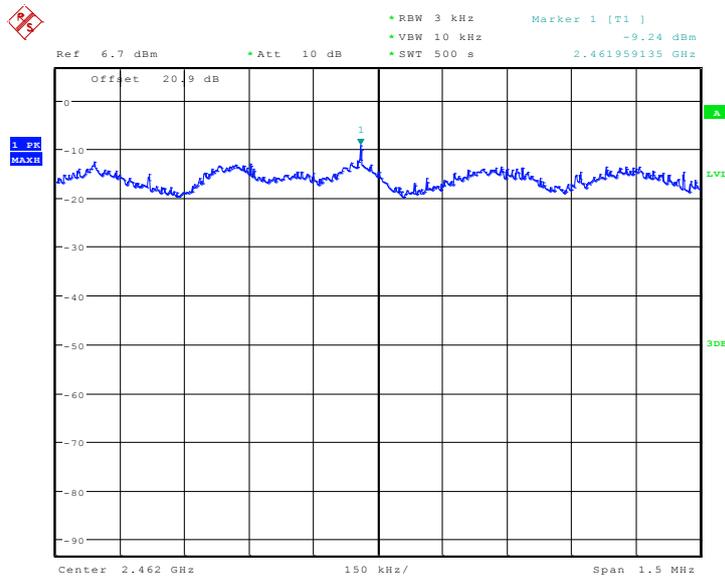
Date: 12.FEB.2011 18:57:03

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



Date: 12.FEB.2011 18:47:21

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



Date: 12.FEB.2011 18:12:16

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

### A.4. Occupied 6dB Bandwidth

#### Measurement Limit:

Standard	Limit (kHz)
FCC 47 CFR Part 15.247 (a) IC A8.2	≥ 500

The measurement is made according to ANSI C63.4 and KDB558074

#### Measurement Uncertainty:

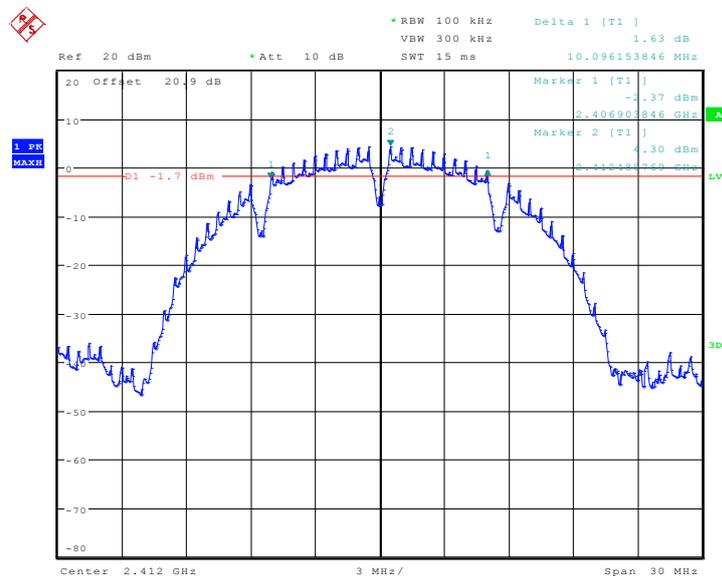
Measurement Uncertainty	60.80Hz
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#### Measurement Result:

Mode	Channel	Occupied 6dB Bandwidth ( kHz)		conclusion
802.11b	1	Fig.7	10096	P
	6	Fig.8	10096	P
	11	Fig.9	10096	P
802.11g	1	Fig.10	16106	P
	6	Fig.11	16250	P
	11	Fig.12	16298	P

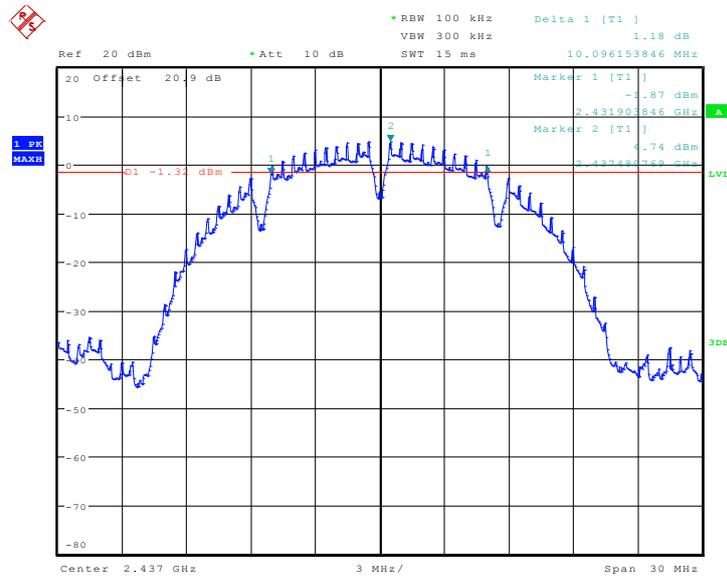
**Conclusion: PASS**

Test graphs as below:



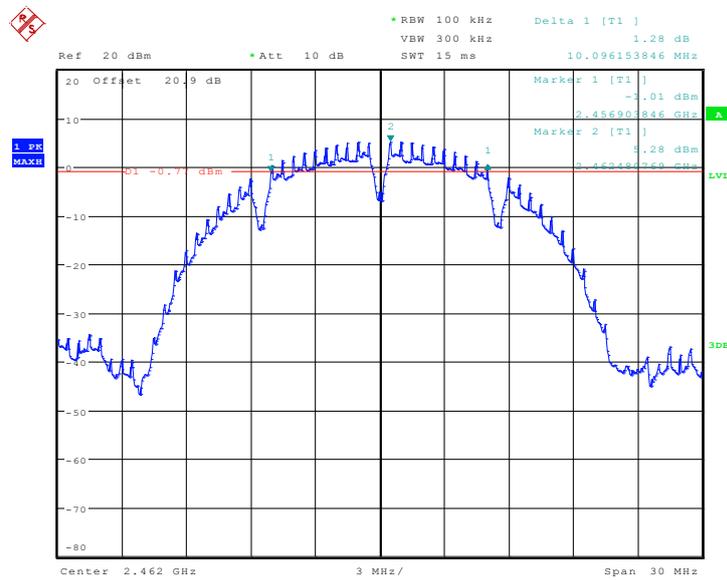
Date: 12.FEB.2011 19:11:57

**Fig. 7 Occupied 6dB Bandwidth (802.11b, Ch 1)**



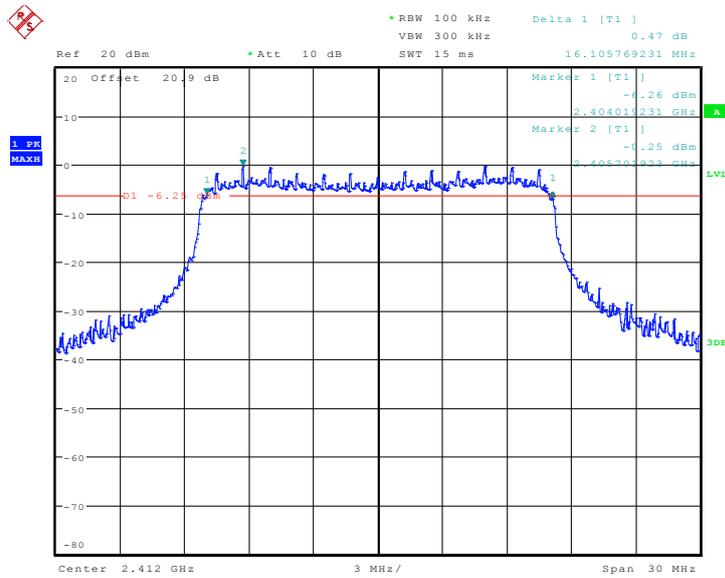
Date: 12.FEB.2011 19:10:33

**Fig. 8 Occupied 6dB Bandwidth (802.11b, Ch 6)**



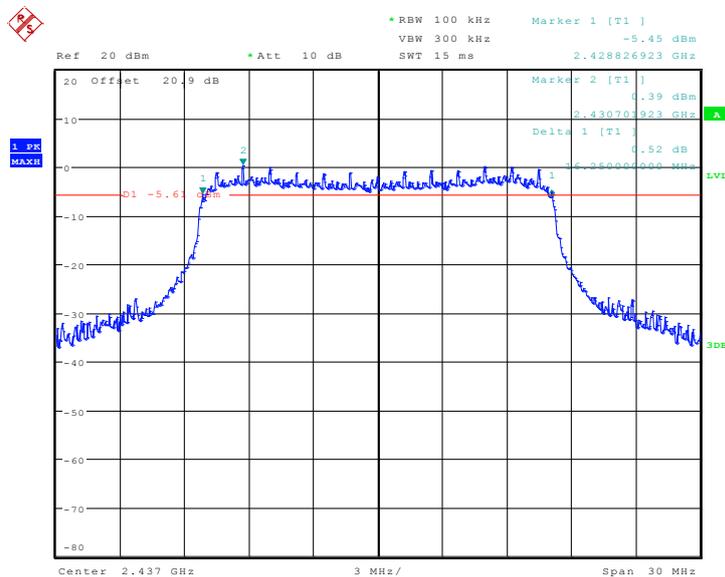
Date: 12.FEB.2011 19:09:03

**Fig. 9 Occupied 6dB Bandwidth (802.11b, Ch 11)**



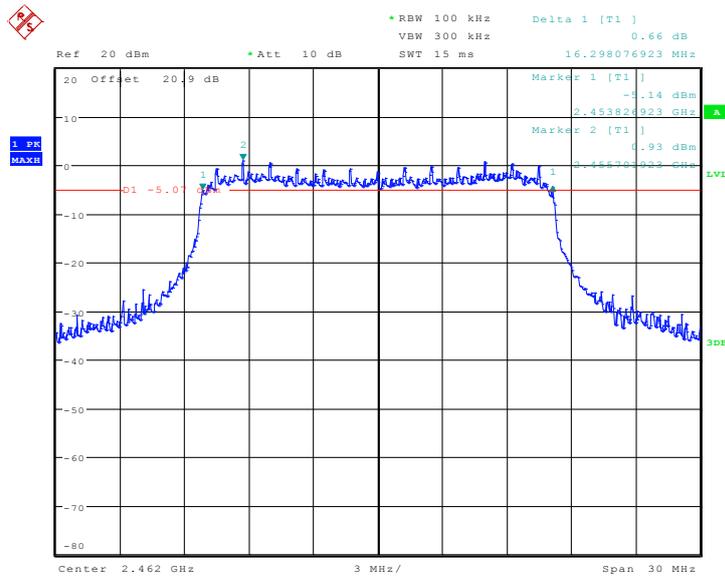
Date: 12.FEB.2011 19:02:04

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



Date: 12.FEB.2011 19:04:58

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



Date: 12.FEB.2011 19:06:30

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

### A.5. Band Edges Compliance

**Measurement Limit:**

Standard	Limit (dBc)
FCC 47 CFR Part 15.247 (d) IC A8.5	> 20

The measurement is made according to ANSI C63.4 and KDB558074

**Measurement Uncertainty:**

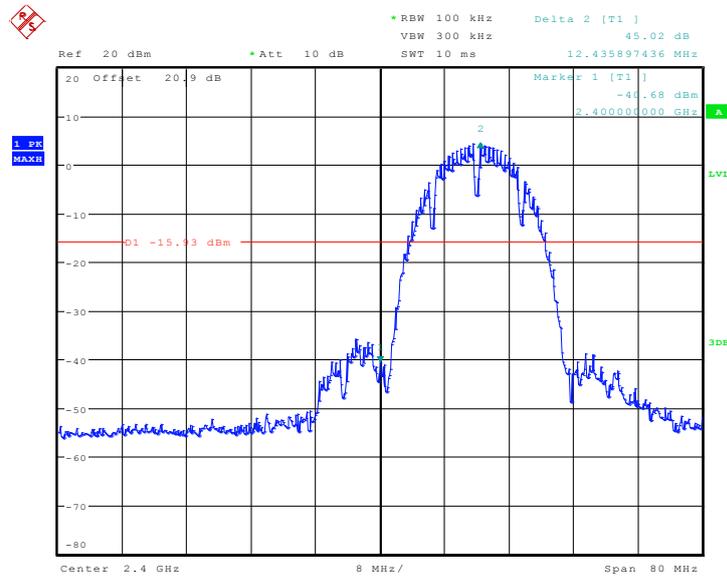
Measurement Uncertainty	0.75dB
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**Measurement Result:**

Mode	Channel	Test Results	Conclusion
802.11b	1	Fig.13	P
	11	Fig.14	P
802.11g	1	Fig.15	P
	11	Fig.16	P

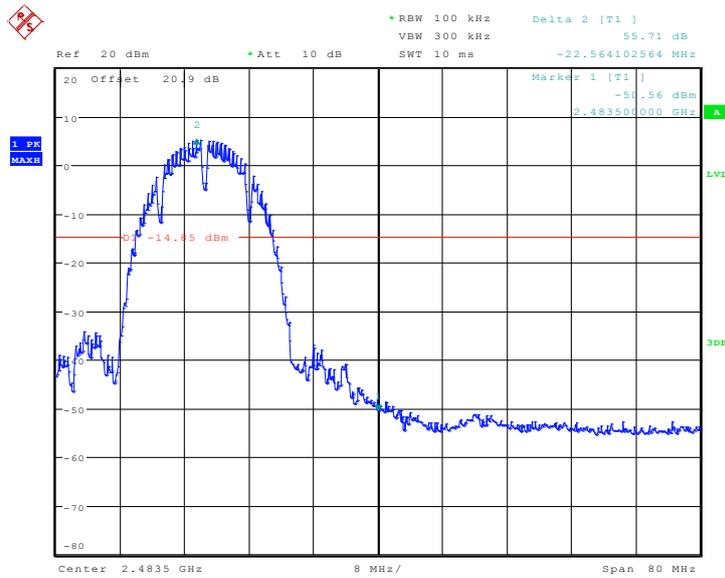
**Conclusion: PASS**

Test graphs as below:



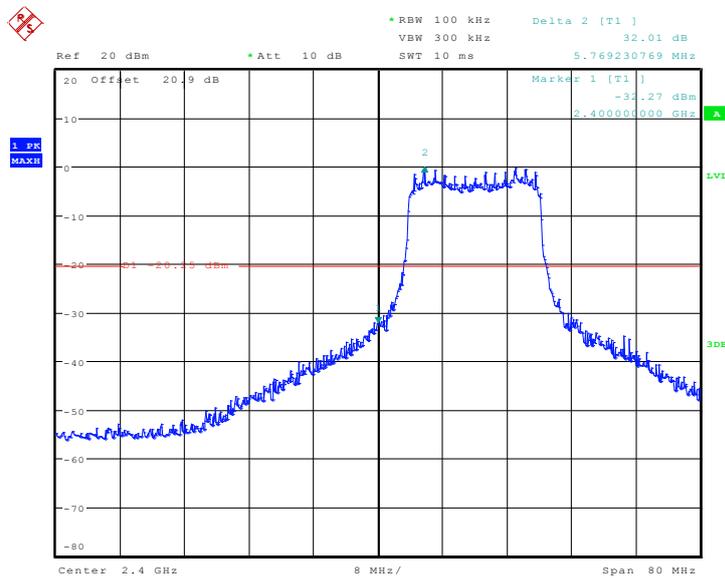
Date: 12.FEB.2011 19:14:06

**Fig. 13 Band Edges (802.11b, Ch 1)**



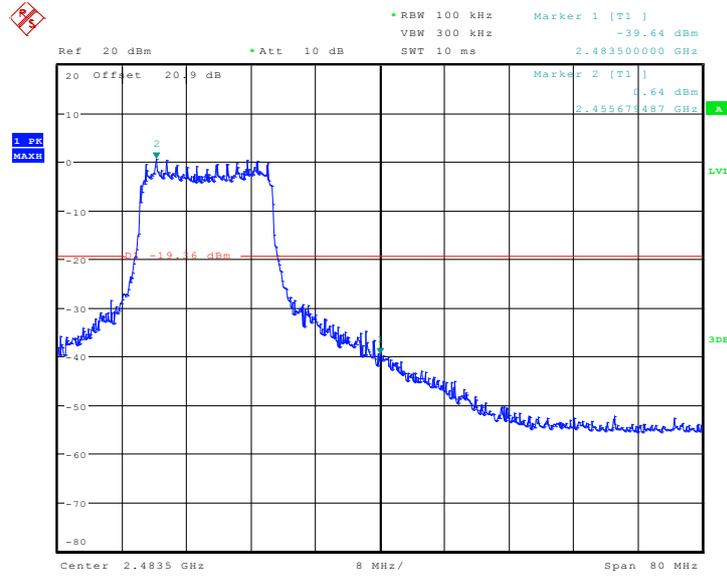
Date: 12.FEB.2011 19:19:29

**Fig. 14 Band Edges (802.11b, Ch 11)**



Date: 12.FEB.2011 19:15:38

**Fig. 15 Band Edges (802.11g, Ch 1)**



Date: 12.FEB.2011 19:17:34

**Fig. 16 Band Edges (802.11g, 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) IC A8.5	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

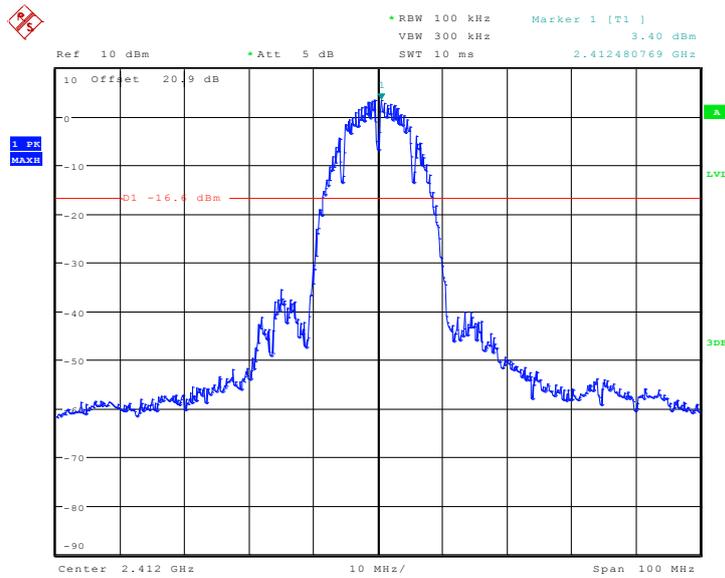
#### Measurement Results:

MODE	Channel	Frequency Range	Test Results	Conclusion
802.11b	1	2.412 GHz	Fig.17	P
		30 MHz ~ 1 GHz	Fig.18	P
		1GHz-2.5GHz	Fig.19	P
		2.5GHz-7.5GHz	Fig.20	P
		7.5GHz-10GHz	Fig.21	P
		10GHz-15GHz	Fig.22	P
		15GHz-20GHz	Fig.23	P
		20GHz-26GHz	Fig.24	P
	6	2.437 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
	11	2.472 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
802.11g	1	2.412 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
	6	2.437 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
	11	2.472 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

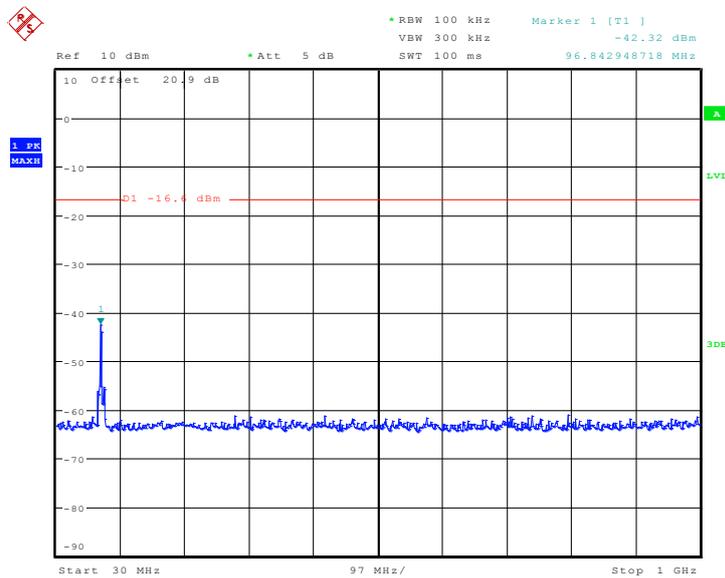
**Conclusion: PASS**

**Test graphs as below:**



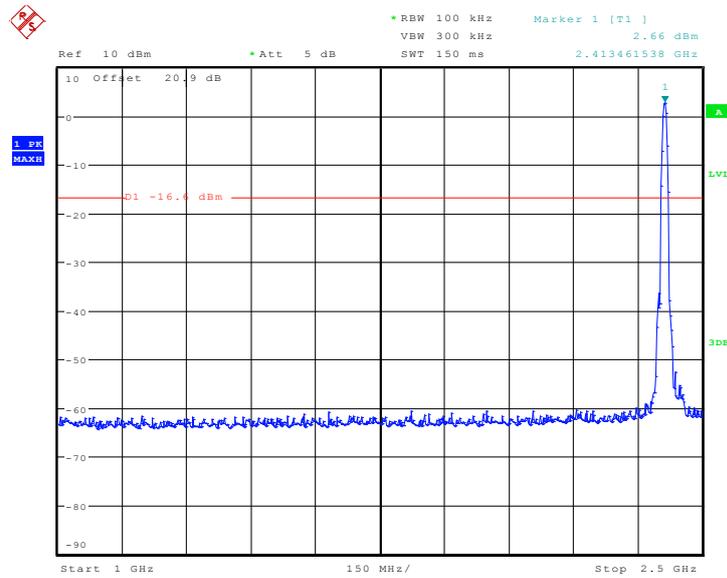
Date: 17.FEB.2011 14:36:16

**Fig. 17 Conducted Spurious Emission (802.11b, Ch1, Center Frequency)**



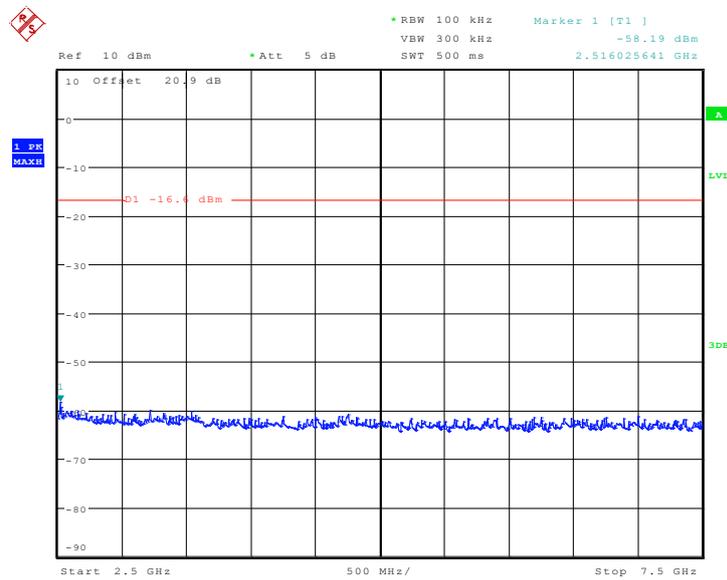
Date: 17.FEB.2011 14:36:31

**Fig. 18 Conducted Spurious Emission (802.11b, Ch1, 30 MHz-1 GHz)**



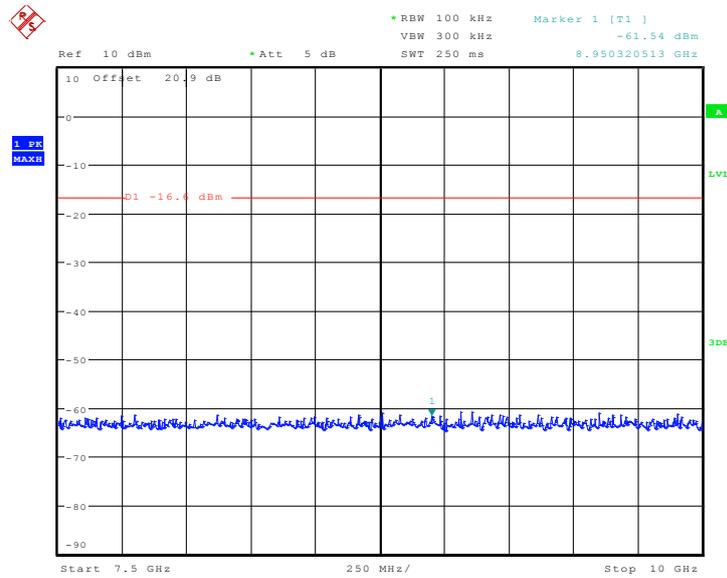
Date: 17.FEB.2011 14:36:52

**Fig. 19 Conducted Spurious Emission (802.11b, Ch1, 1 GHz-2.5 GHz)**



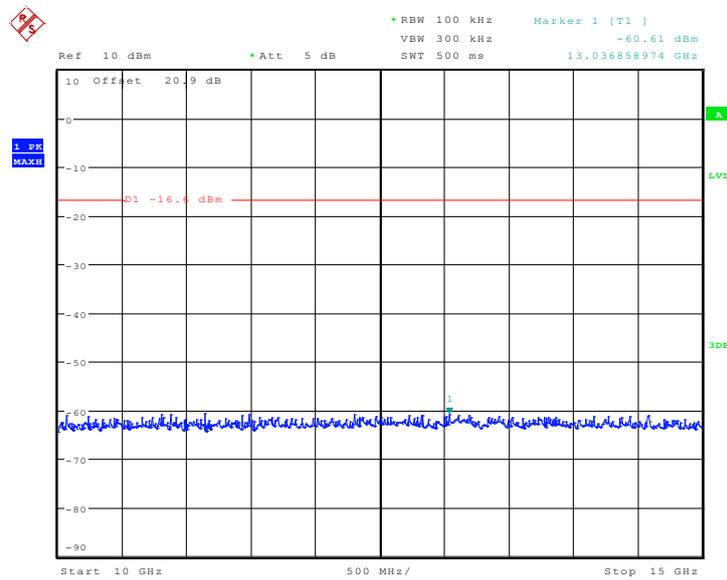
Date: 17.FEB.2011 14:37:20

**Fig. 20 Conducted Spurious Emission (802.11b, Ch1, 2.5 GHz-7.5 GHz)**



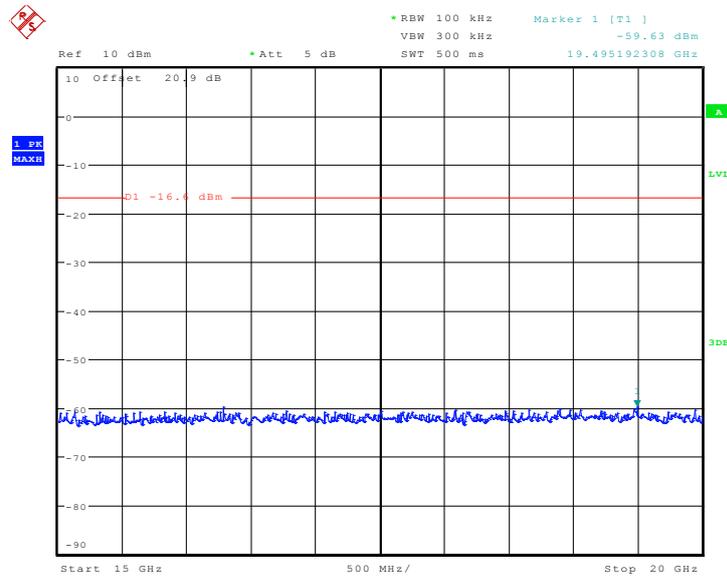
Date: 17.FEB.2011 14:37:40

**Fig. 21 Conducted Spurious Emission (802.11b, Ch1, 7.5 GHz-10 GHz)**



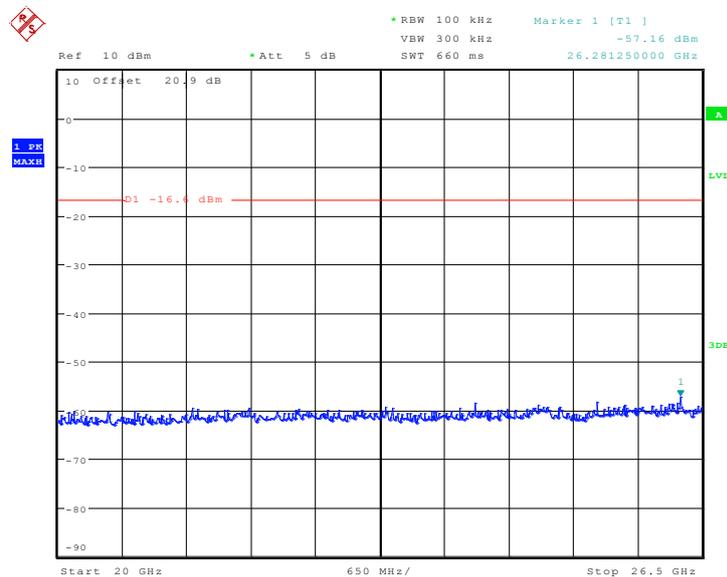
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**Fig. 22 Conducted Spurious Emission (802.11b, Ch1, 10 GHz-15 GHz)**



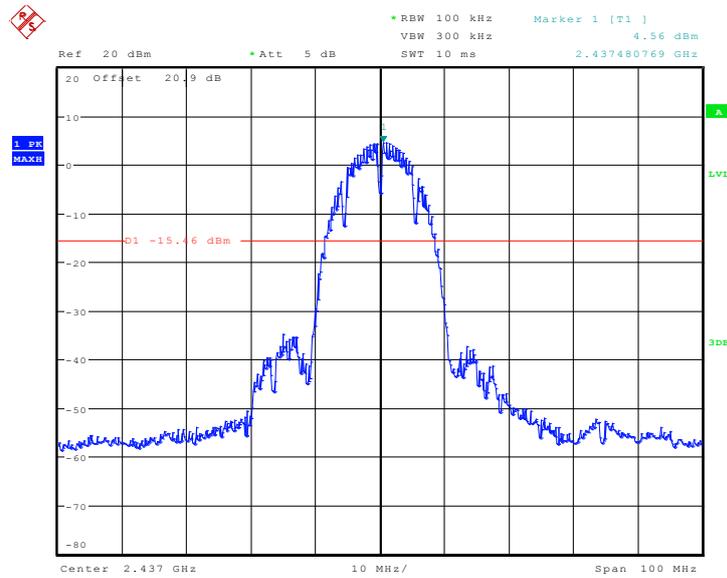
Date: 17.FEB.2011 14:38:34

**Fig. 23 Conducted Spurious Emission (802.11b, Ch1, 15 GHz-20 GHz)**



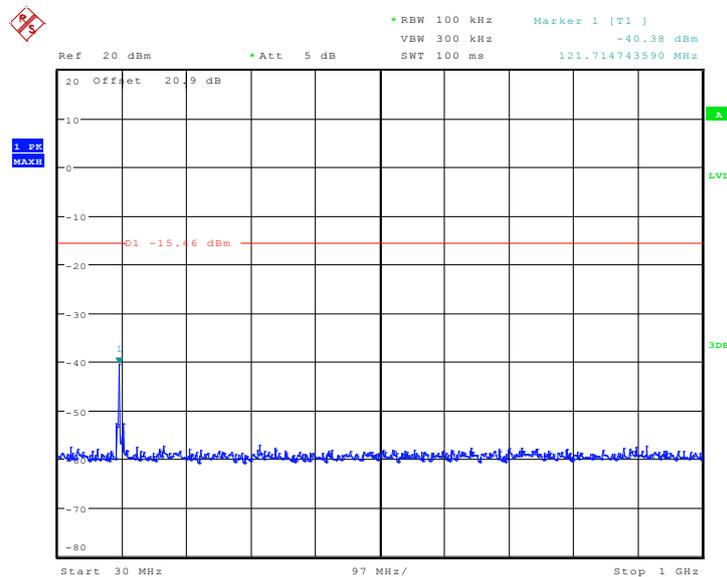
Date: 17.FEB.2011 14:38:56

**Fig. 24 Conducted Spurious Emission (802.11b, Ch1, 20 GHz-26 GHz)**



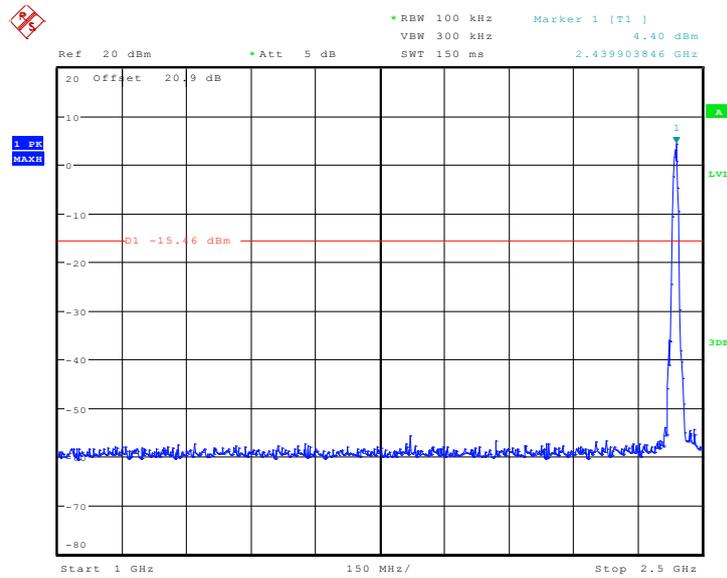
Date: 17.FEB.2011 17:53:24

**Fig. 25 Conducted Spurious Emission (802.11b, Ch6, Center Frequency)**



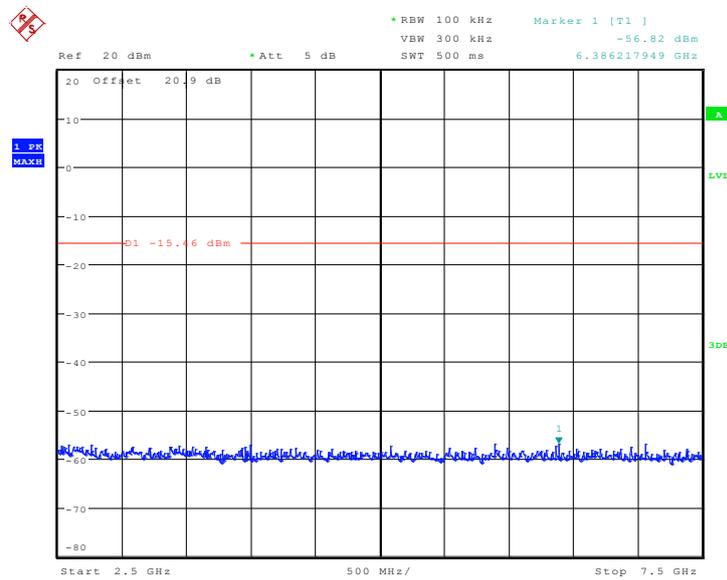
Date: 17.FEB.2011 17:55:15

**Fig. 26 Conducted Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)**



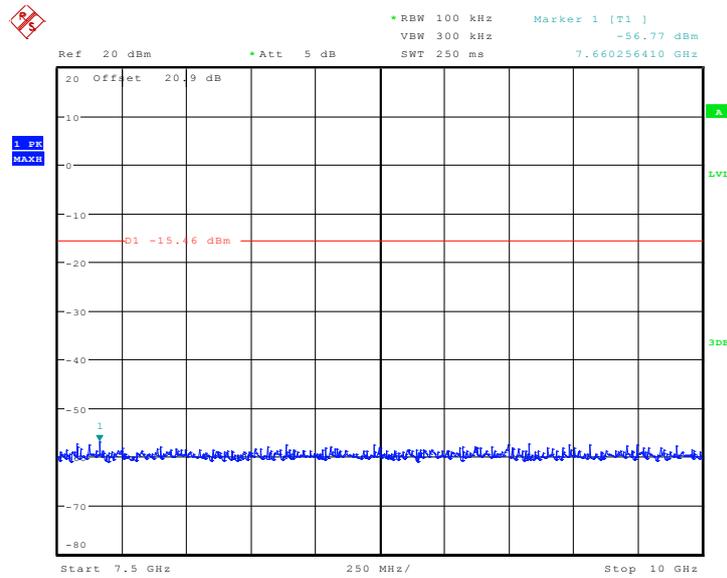
Date: 17.FEB.2011 17:55:34

**Fig. 27 Conducted Spurious Emission (802.11b, Ch6, 1 GHz-2.5 GHz)**



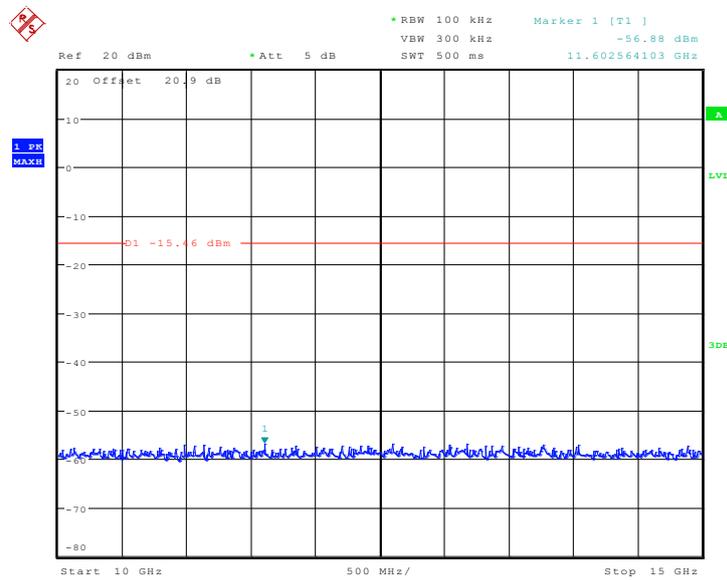
Date: 17.FEB.2011 17:56:04

**Fig. 28 Conducted Spurious Emission (802.11b, Ch6, 2.5 GHz-7.5 GHz)**



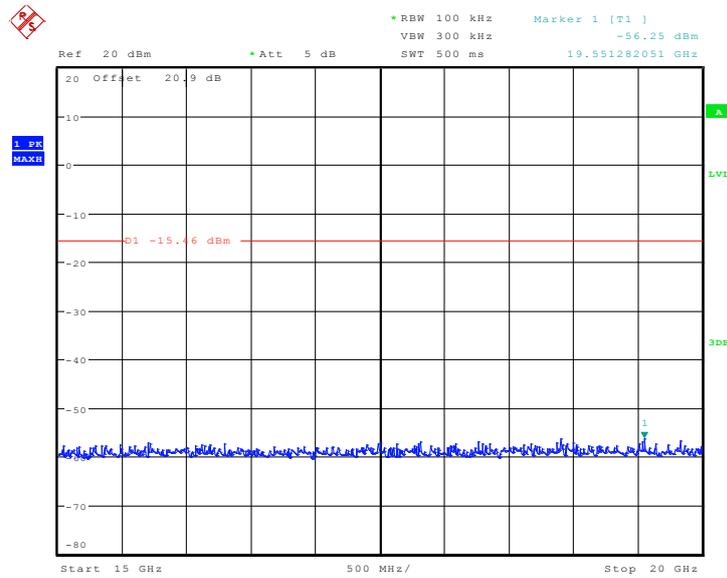
Date: 17.FEB.2011 17:56:20

**Fig. 29 Conducted Spurious Emission (802.11b, Ch6, 7.5 GHz-10 GHz)**



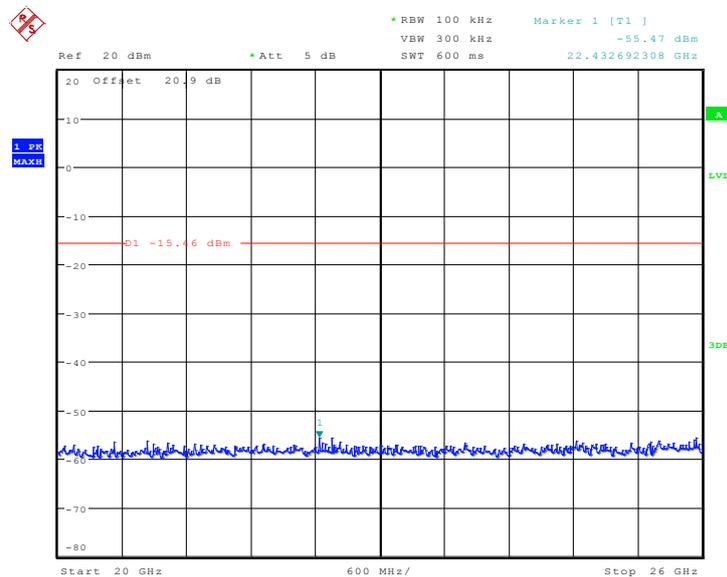
Date: 17.FEB.2011 17:56:42

**Fig. 30 Conducted Spurious Emission (802.11b, Ch6, 10 GHz-15 GHz)**



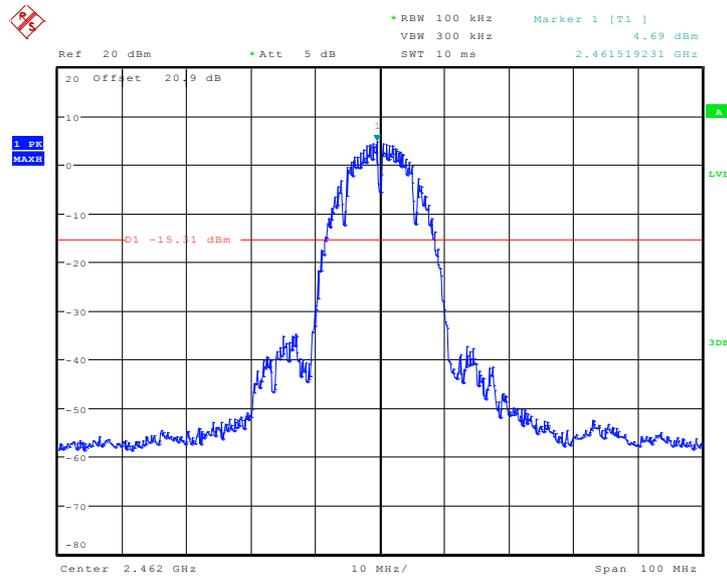
Date: 17.FEB.2011 17:56:58

**Fig. 31 Conducted Spurious Emission (802.11b, Ch6, 15 GHz-20 GHz)**



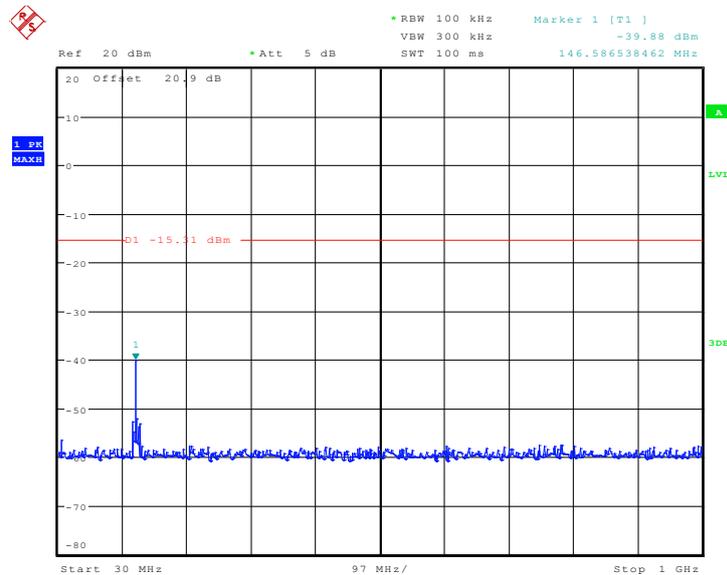
Date: 17.FEB.2011 17:57:18

**Fig. 32 Conducted Spurious Emission (802.11b, Ch6, 20 GHz-26 GHz)**



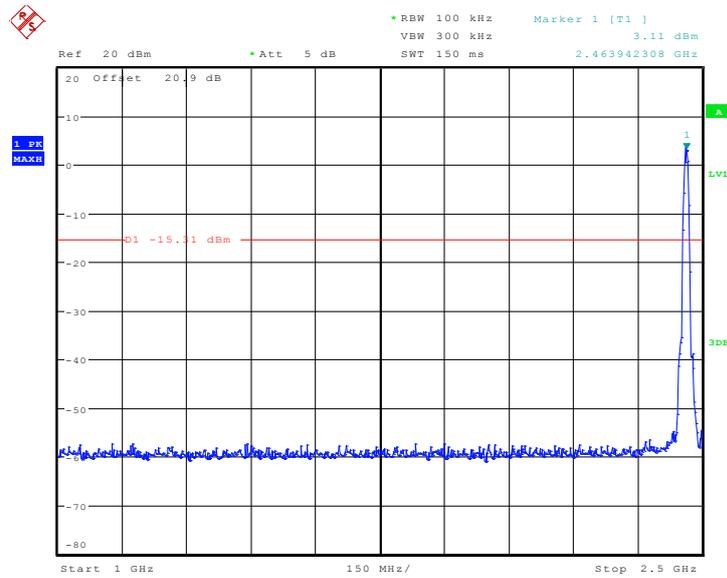
Date: 17.FEB.2011 17:59:29

**Fig. 33 Conducted Spurious Emission (802.11b, Ch11, Center Frequency)**



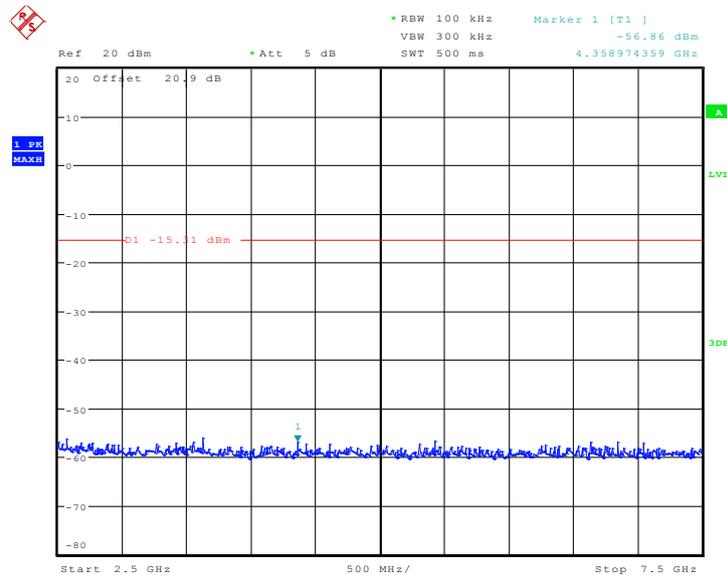
Date: 17.FEB.2011 17:59:44

**Fig. 34 Conducted Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)**



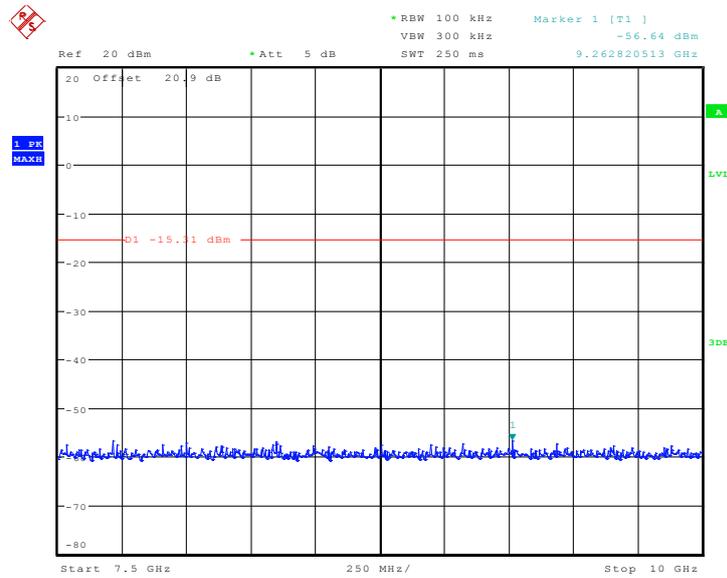
Date: 17.FEB.2011 17:59:59

**Fig. 35 Conducted Spurious Emission (802.11b, Ch11, 1 GHz-2.5 GHz)**



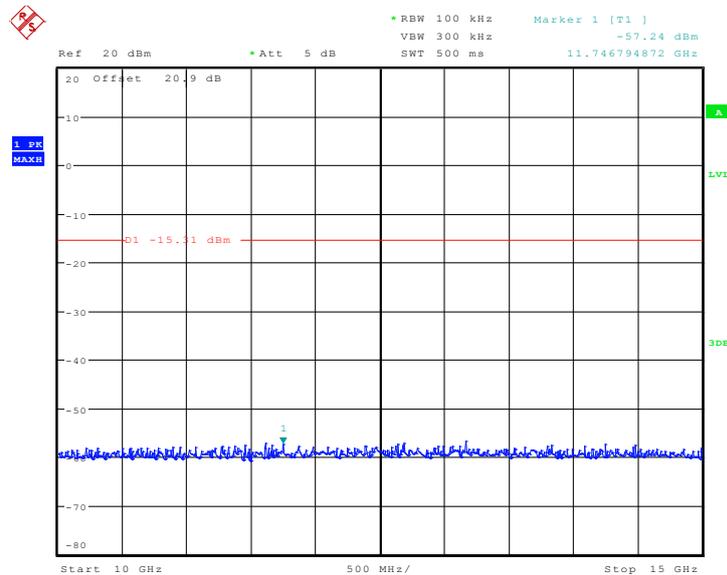
Date: 17.FEB.2011 18:00:28

**Fig. 36 Conducted Spurious Emission (802.11b, Ch11, 2.5 GHz-7.5 GHz)**



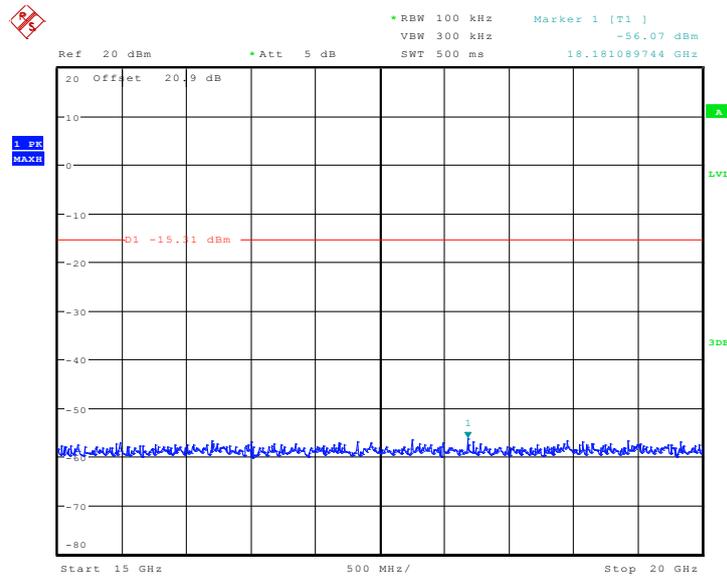
Date: 17.FEB.2011 18:00:54

**Fig. 37 Conducted Spurious Emission (802.11b, Ch11, 7.5 GHz-10 GHz)**



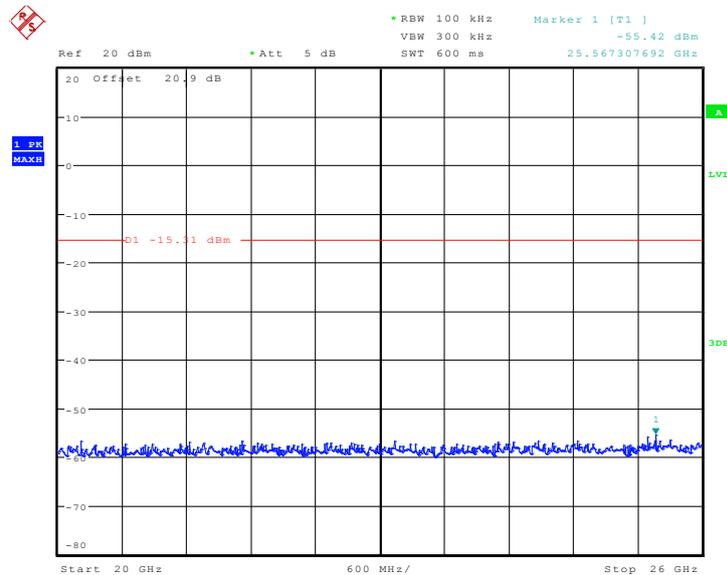
Date: 17.FEB.2011 18:01:13

**Fig. 38 Conducted Spurious Emission (802.11b, Ch11, 10 GHz-15 GHz)**



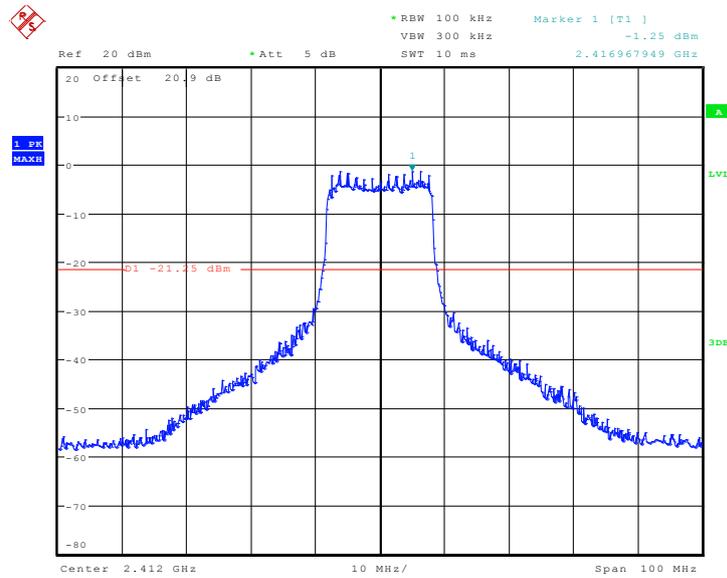
Date: 17.FEB.2011 18:01:36

**Fig. 39 Conducted Spurious Emission (802.11b, Ch11, 15 GHz-20 GHz)**



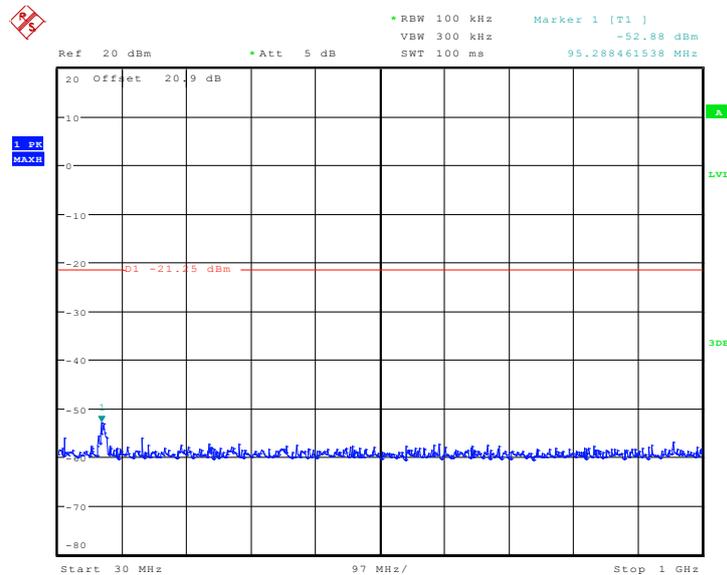
Date: 17.FEB.2011 18:01:51

**Fig. 40 Conducted Spurious Emission (802.11b, Ch11, 20 GHz-26 GHz)**



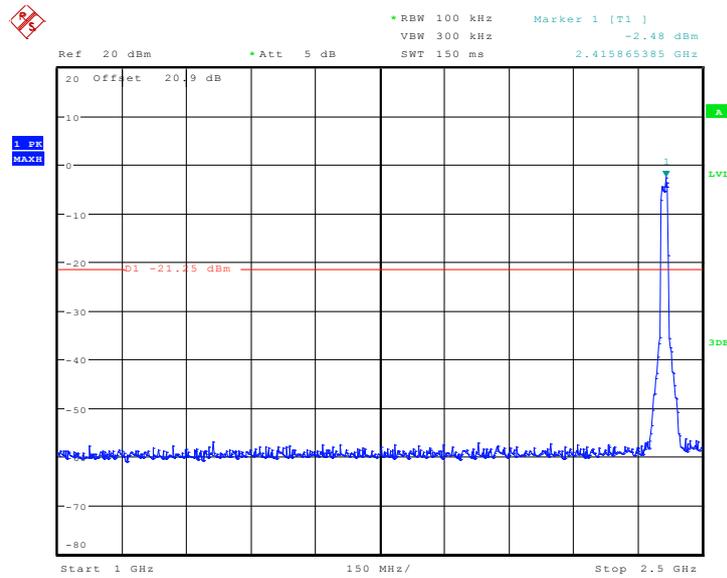
Date: 17.FEB.2011 18:04:07

**Fig. 41 Conducted Spurious Emission (802.11g, Ch1, Center Frequency)**



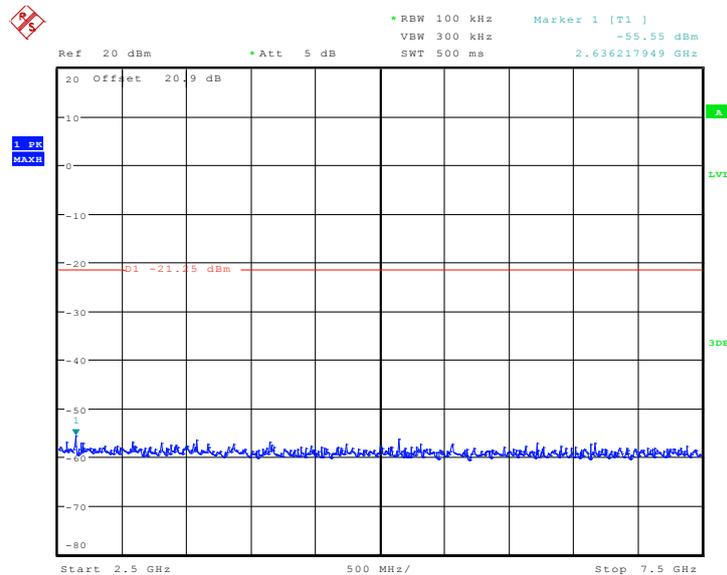
Date: 17.FEB.2011 18:04:25

**Fig. 42 Conducted Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)**



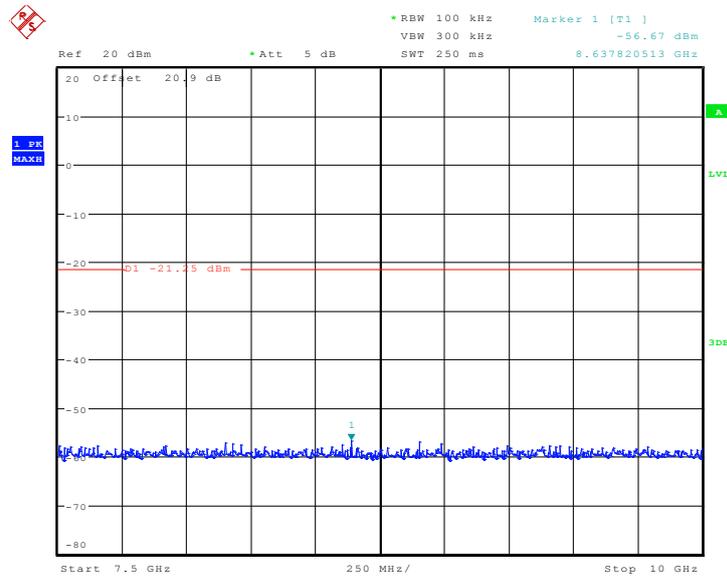
Date: 17.FEB.2011 18:04:37

**Fig. 43 Conducted Spurious Emission ((802.11g, Ch1, 1 GHz-2.5 GHz)**



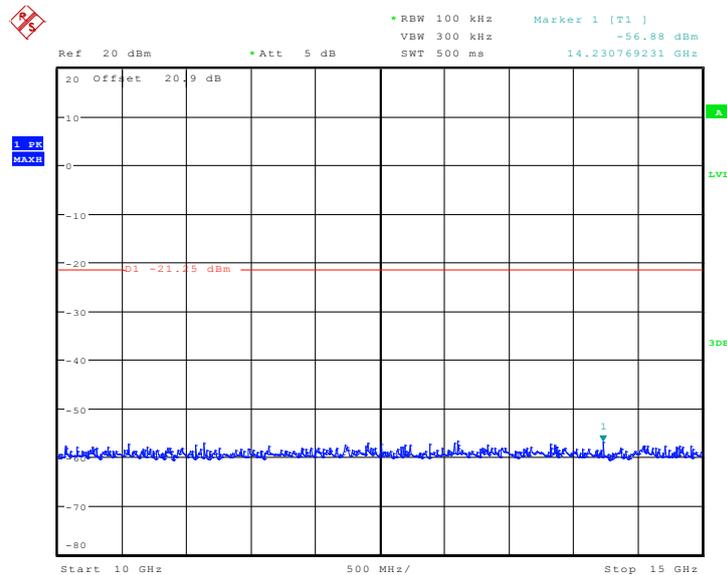
Date: 17.FEB.2011 18:05:06

**Fig. 44 Conducted Spurious Emission ((802.11g, Ch1, 2.5 GHz-7.5 GHz)**



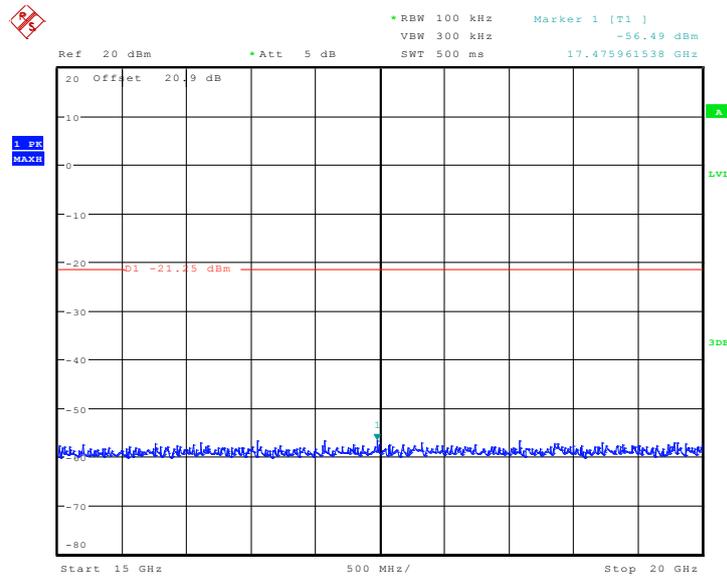
Date: 17.FEB.2011 18:05:27

**Fig. 45 Conducted Spurious Emission ((802.11g, Ch1, 7.5 GHz-10 GHz)**



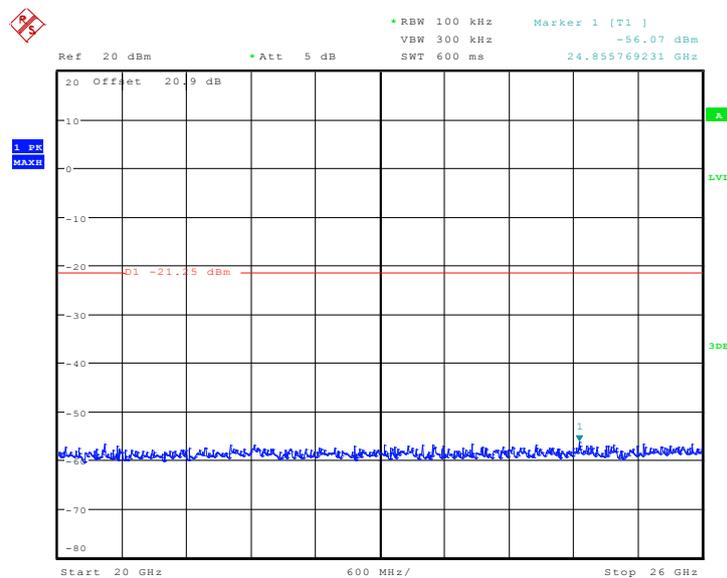
Date: 17.FEB.2011 18:06:02

**Fig. 46 Conducted Spurious Emission ((802.11g, Ch1, 10 GHz-15 GHz)**



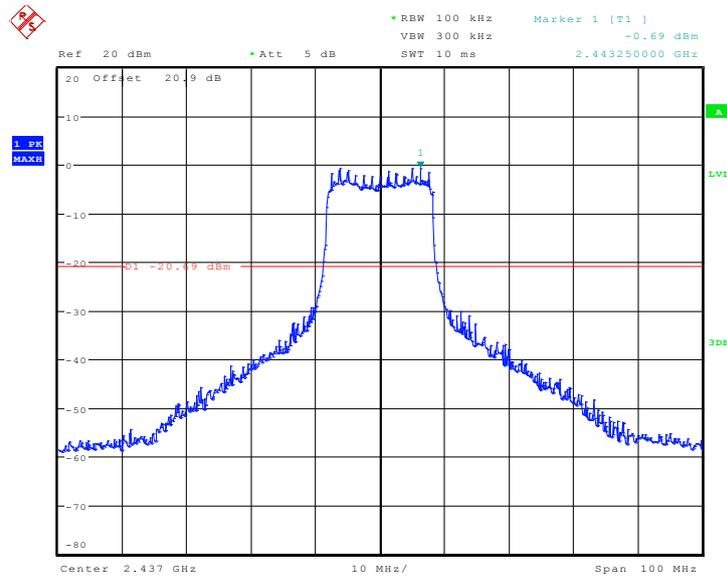
Date: 17.FEB.2011 18:06:19

**Fig. 47 Conducted Spurious Emission ((802.11g, Ch1, 15 GHz-20 GHz)**



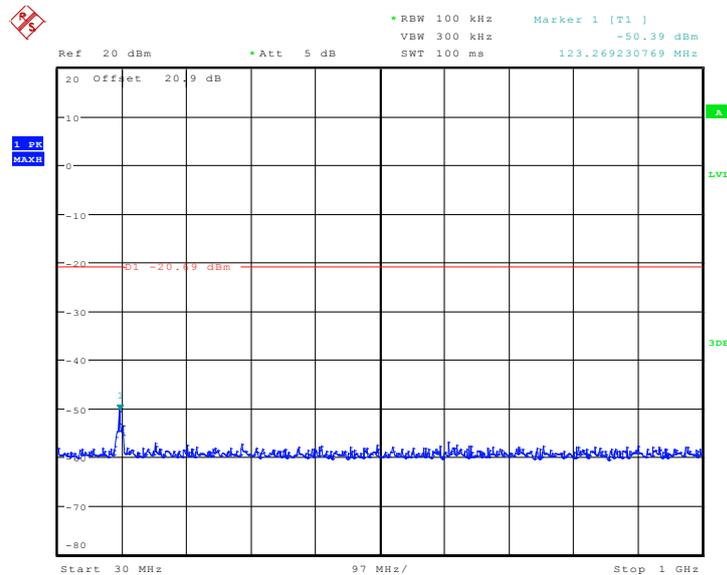
Date: 17.FEB.2011 18:06:32

**Fig. 48 Conducted Spurious Emission ((802.11g, Ch1, 20 GHz-26 GHz)**



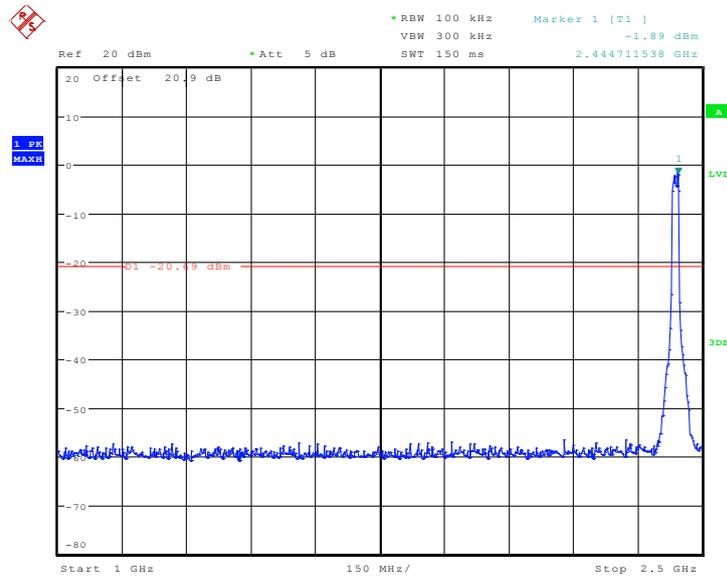
Date: 17.FEB.2011 18:09:22

**Fig. 49 Conducted Spurious Emission ((802.11g, Ch6, Center Frequency)**



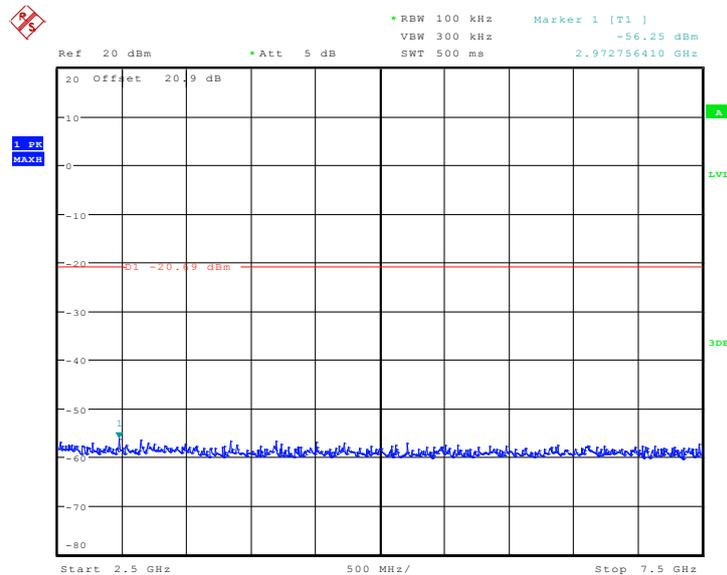
Date: 17.FEB.2011 18:09:37

**Fig. 50 Conducted Spurious Emission ((802.11g, Ch6, 30 MHz-1 GHz)**



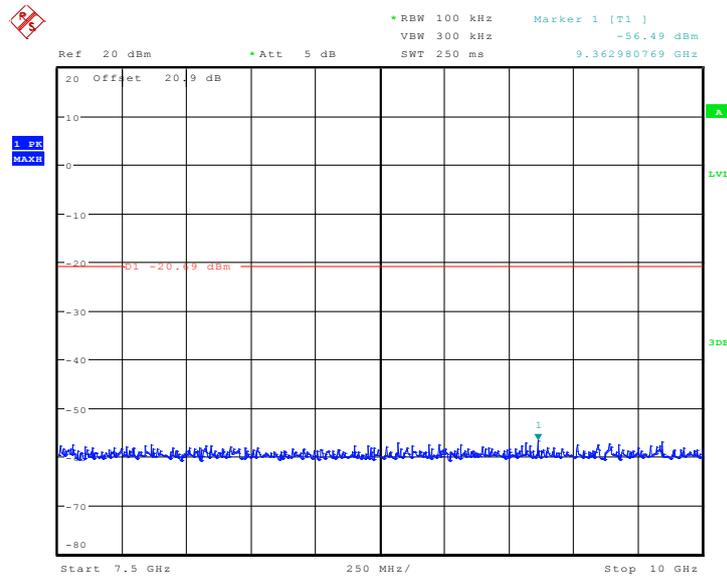
Date: 17.FEB.2011 18:09:49

**Fig. 51 Conducted Spurious Emission ((802.11g, Ch6, 1 GHz-2.5 GHz)**



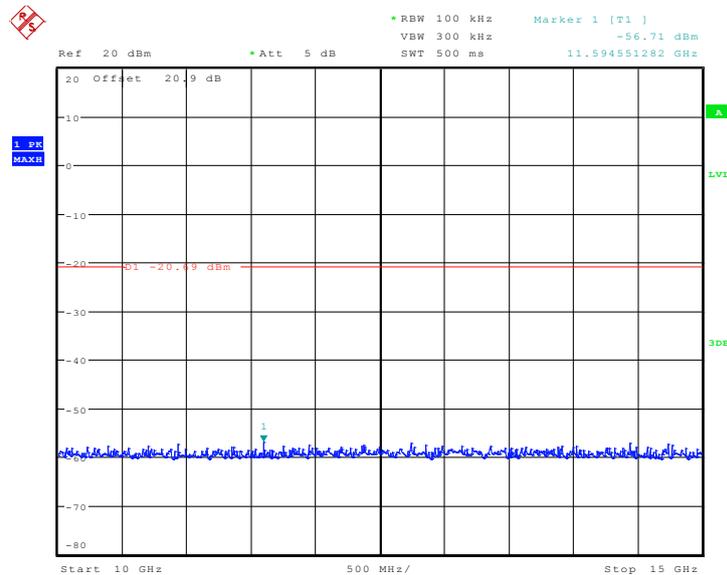
Date: 17.FEB.2011 18:10:19

**Fig. 52 Conducted Spurious Emission ((802.11g, Ch6, 2.5 GHz-7.5 GHz)**



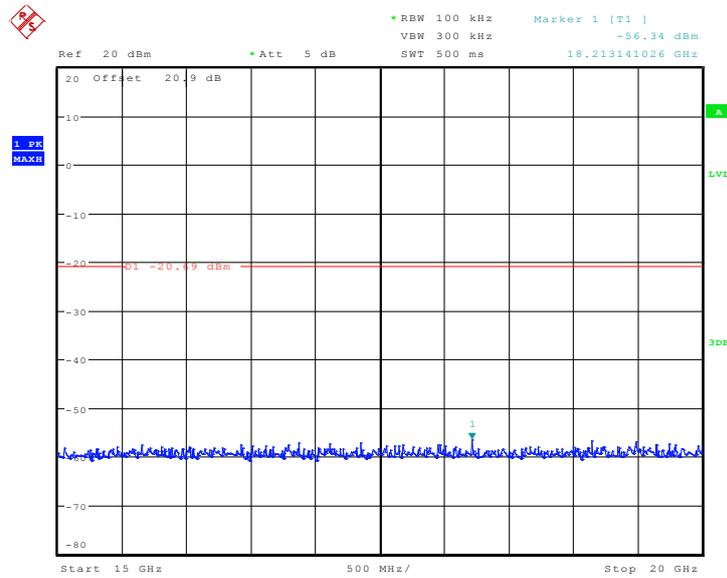
Date: 17.FEB.2011 18:10:38

**Fig. 53 Conducted Spurious Emission ((802.11g, Ch6, 7.5 GHz-10 GHz)**



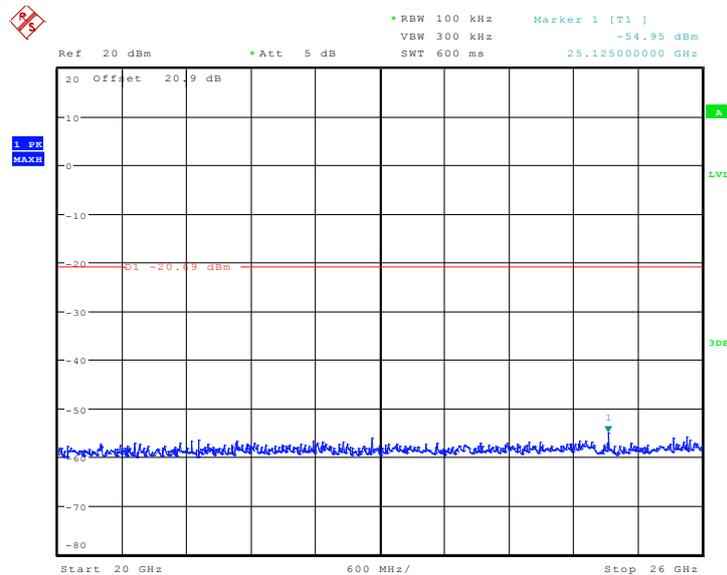
Date: 17.FEB.2011 18:10:55

**Fig. 54 Conducted Spurious Emission ((802.11g, Ch6, 10 GHz-15 GHz)**



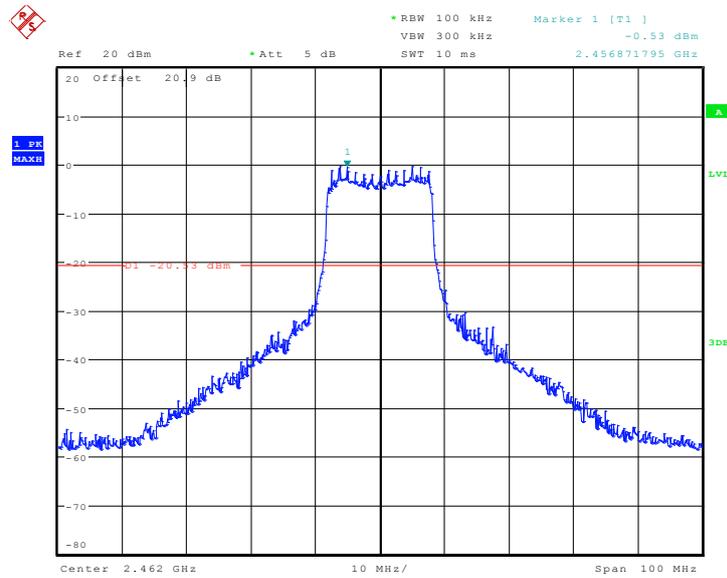
Date: 17.FEB.2011 18:11:08

**Fig. 55 Conducted Spurious Emission ((802.11g, Ch6, 15 GHz-20 GHz)**



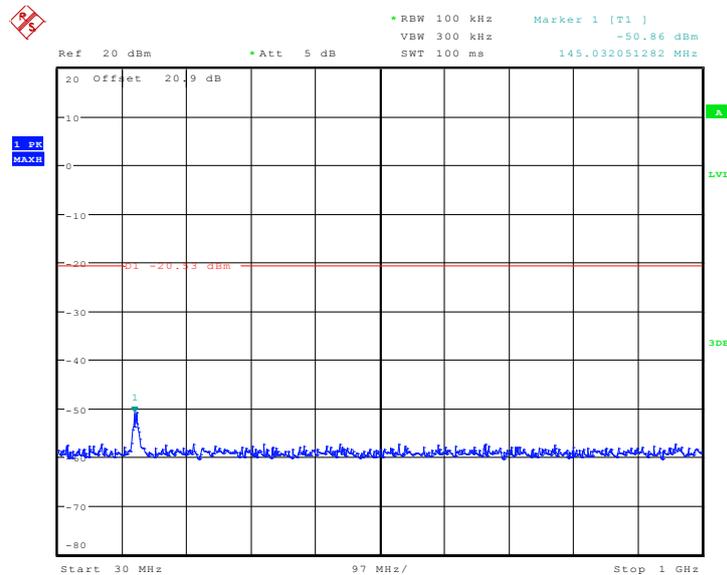
Date: 17.FEB.2011 18:11:21

**Fig. 56 Conducted Spurious Emission ((802.11g, Ch6, 20 GHz-26 GHz)**



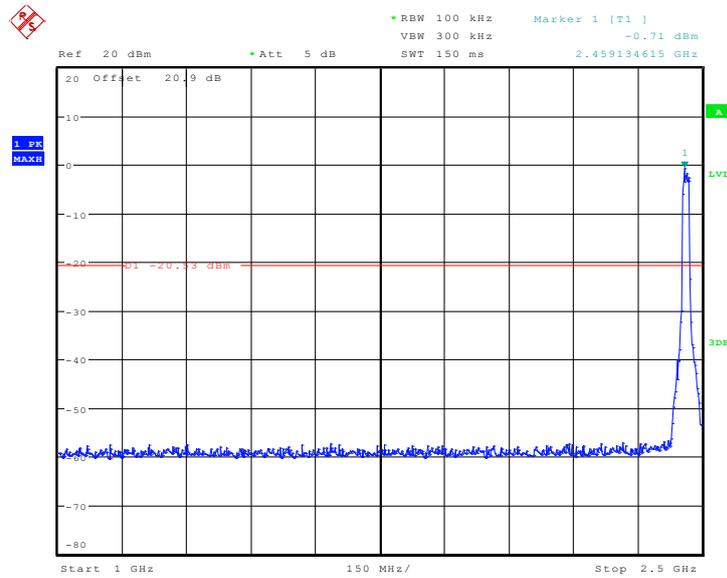
Date: 17.FEB.2011 18:13:07

**Fig. 57 Conducted Spurious Emission ((802.11g, Ch11, Center Frequency)**



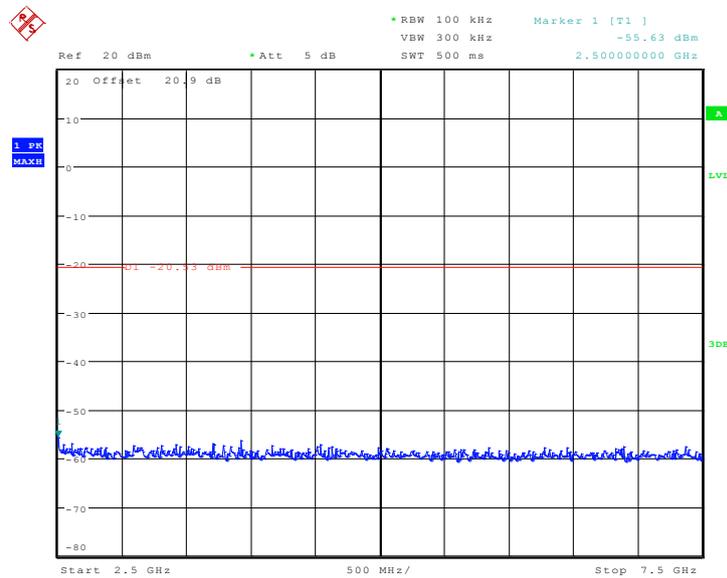
Date: 17.FEB.2011 18:13:24

**Fig. 58 Conducted Spurious Emission ((802.11g, Ch11, 30 MHz-1 GHz)**



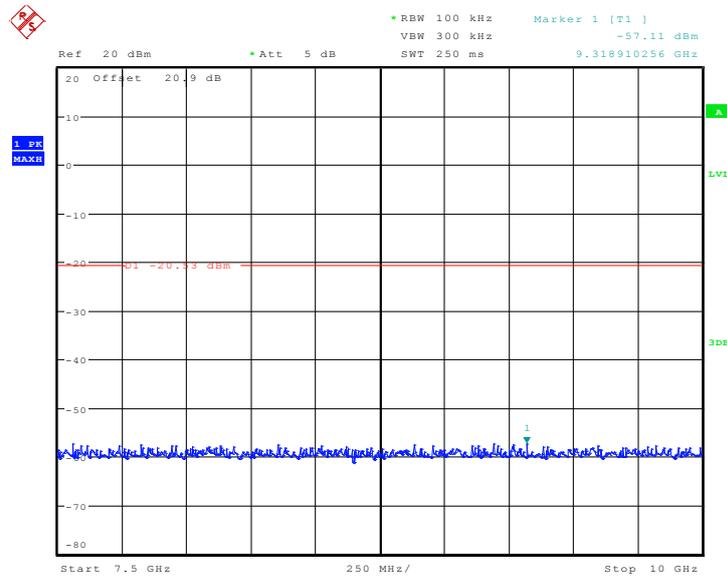
Date: 17.FEB.2011 18:13:41

**Fig. 59 Conducted Spurious Emission ((802.11g, Ch11, 1 GHz-2.5 GHz)**



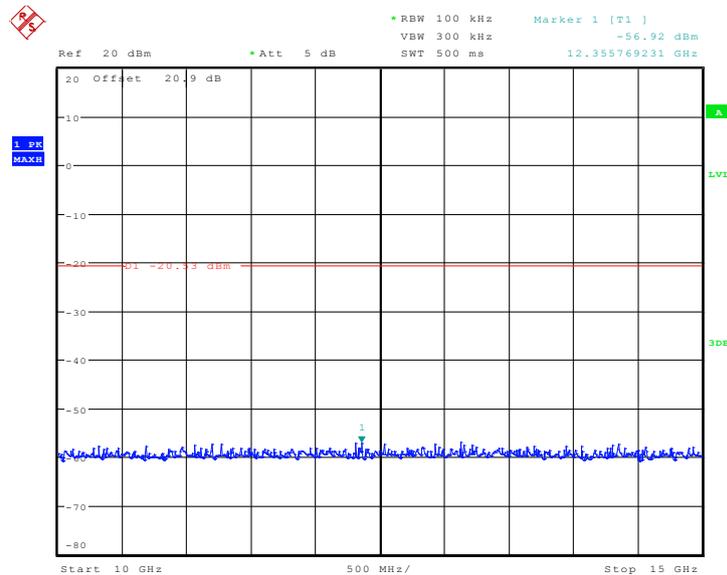
Date: 17.FEB.2011 18:14:00

**Fig. 60 Conducted Spurious Emission ((802.11g, Ch11, 2.5 GHz-7.5 GHz)**



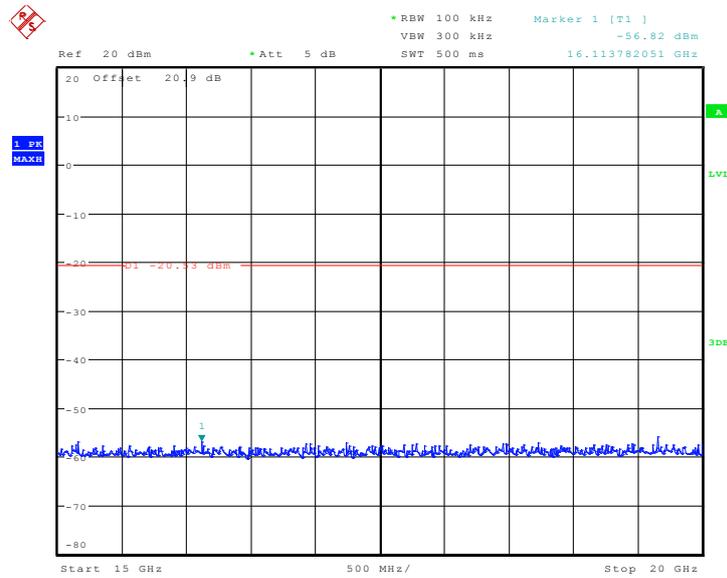
Date: 17.FEB.2011 18:14:27

**Fig. 61 Conducted Spurious Emission ((802.11g, Ch11, 7.5 GHz-10 GHz)**



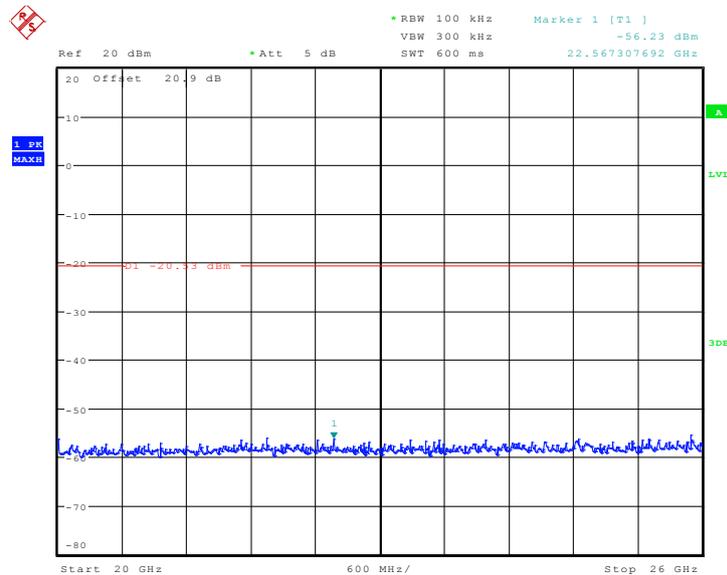
Date: 17.FEB.2011 18:14:40

**Fig. 62 Conducted Spurious Emission ((802.11g, Ch11, 10 GHz-15 GHz)**



Date: 17.FEB.2011 18:14:58

**Fig. 63 Conducted Spurious Emission ((802.11g, Ch11, 15 GHz-20 GHz)**



Date: 17.FEB.2011 18:15:17

**Fig. 64 Conducted Spurious Emission ((802.11g, 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 IC A8.5	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:**

Mode	Channel	Frequency Range	Test Results	Conclusion
802.11b	Power	2.38GHz ~2.43GHz	Fig.65	P
	1	30 MHz ~1 GHz	Fig.66	P
		1 GHz ~ 4 GHz	Fig.67	P
		4 GHz ~ 18 GHz	Fig.68	P
	6	30 MHz ~1 GHz	Fig.69	P
		1 GHz ~ 4 GHz	Fig.70	P
		4 GHz ~ 18 GHz	Fig.71	P
	Power	2.45GHz ~2.5GHz	Fig.72	P
	11	30 MHz ~1 GHz	Fig.73	P
		1 GHz ~ 4 GHz	Fig.74	P
		4 GHz ~ 18 GHz	Fig.75	P
	802.11g	Power	2.38GHz ~2.43GHz	Fig.76
1		30 MHz ~1 GHz	Fig.77	P
		1 GHz ~ 4 GHz	Fig.78	P
		4 GHz ~ 18 GHz	Fig.79	P
6		30 MHz ~1 GHz	Fig.80	P
		1 GHz ~ 4 GHz	Fig.81	P
		4 GHz ~ 18 GHz	Fig.82	P
Power		2.45GHz ~2.5GHz	Fig.83	P
11		30 MHz ~1 GHz	Fig.84	P
		1 GHz ~ 4 GHz	Fig.85	P
		4 GHz ~ 18 GHz	Fig.86	P
/		All channels	18 GHz~ 26 GHz	Fig.87

**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:

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

**802.11b**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Gain	P <sub>Mea</sub> (dBuV/m)	Polarization
2398.798	54.41	-18.8	27.5	45.71	HORIZONTAL
2430.862	52.34	-18.9	27.5	43.74	HORIZONTAL
3809.619	51.53	-19.2	33.4	37.33	VERTICAL
2394.79	51.42	-18.8	27.5	42.72	HORIZONTAL
3515.03	51.37	-19	33.4	36.97	HORIZONTAL
3462.926	51.27	-19.3	31.2	39.37	VERTICAL

Ch6

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Gain	P <sub>Mea</sub> (dBuV/m)	Polarization
3967.936	50.92	-19	33.4	36.52	HORIZONTAL
3699.399	50.89	-19.2	33.4	36.69	VERTICAL
3501.002	50.87	-18.9	33.4	36.37	HORIZONTAL
3553.106	50.86	-19.1	33.4	36.56	HORIZONTAL
3985.972	50.76	-18.8	33.4	36.16	VERTICAL
3837.675	50.66	-19.4	33.4	36.66	HORIZONTAL

Ch11

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Gain	P <sub>Mea</sub> (dBuV/m)	Polarization
3535.07	51.47	-19.1	33.4	37.17	VERTICAL
3985.972	51.41	-18.8	33.4	36.81	VERTICAL
3585.17	51.22	-19.2	33.4	37.02	VERTICAL
3505.01	51.02	-18.9	33.4	36.52	VERTICAL
3631.263	50.94	-19.3	33.4	36.84	HORIZONTAL
3529.058	50.84	-19.2	33.4	36.64	HORIZONTAL

**802.11g**

Ch1

Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Gain	P <sub>Mea</sub> (dBuV/m)	Polarization
2398.798	71.64	-18.8	27.5	62.94	VERTICAL
2430.862	67.25	-18.9	27.5	58.65	VERTICAL
2394.79	65.3	-18.8	27.5	56.6	HORIZONTAL
2390.782	61.67	-18.8	27.5	52.97	VERTICAL
2434.87	61.03	-18.9	27.5	52.43	VERTICAL
2438.878	57.95	-18.9	27.5	49.35	VERTICAL

Ch6

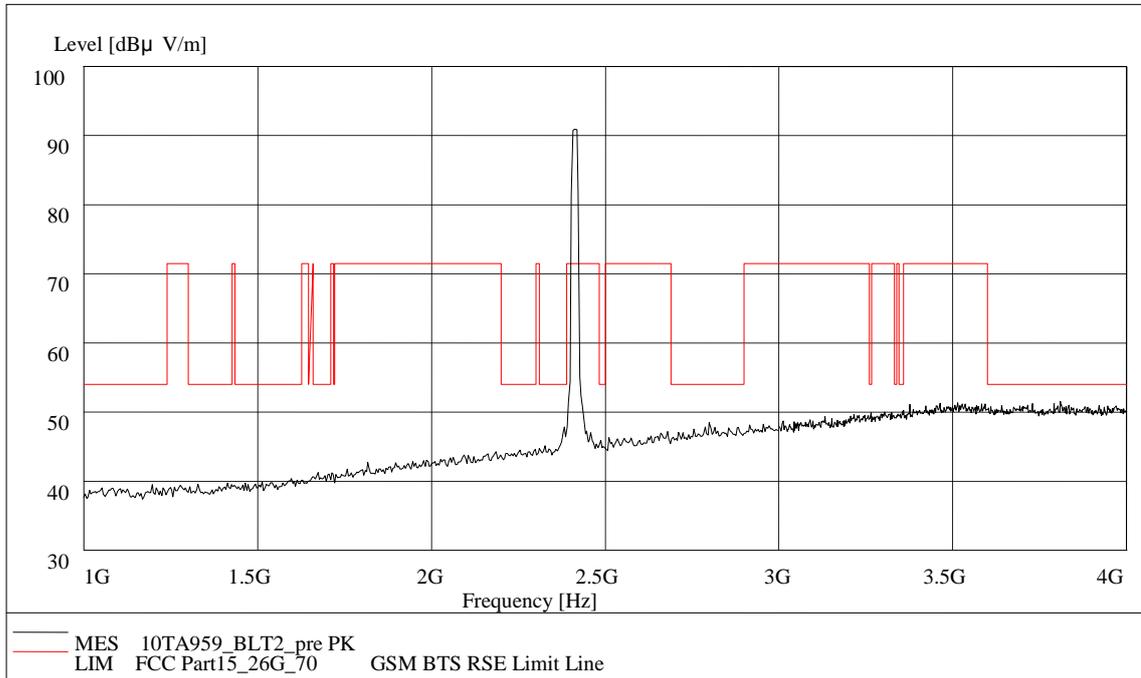
Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Gain	P <sub>Mea</sub> (dBuV/m)	Polarization
3949.9	50.97	-19.3	33.4	36.87	VERTICAL
3482.966	50.91	-19	31.2	38.71	HORIZONTAL
3693.387	50.87	-19.2	33.4	36.67	HORIZONTAL
3893.788	50.82	-19	33.4	36.42	HORIZONTAL
3490.982	50.79	-18.9	31.2	38.49	HORIZONTAL
3533.066	50.77	-19.1	33.4	36.47	HORIZONTAL

Ch11

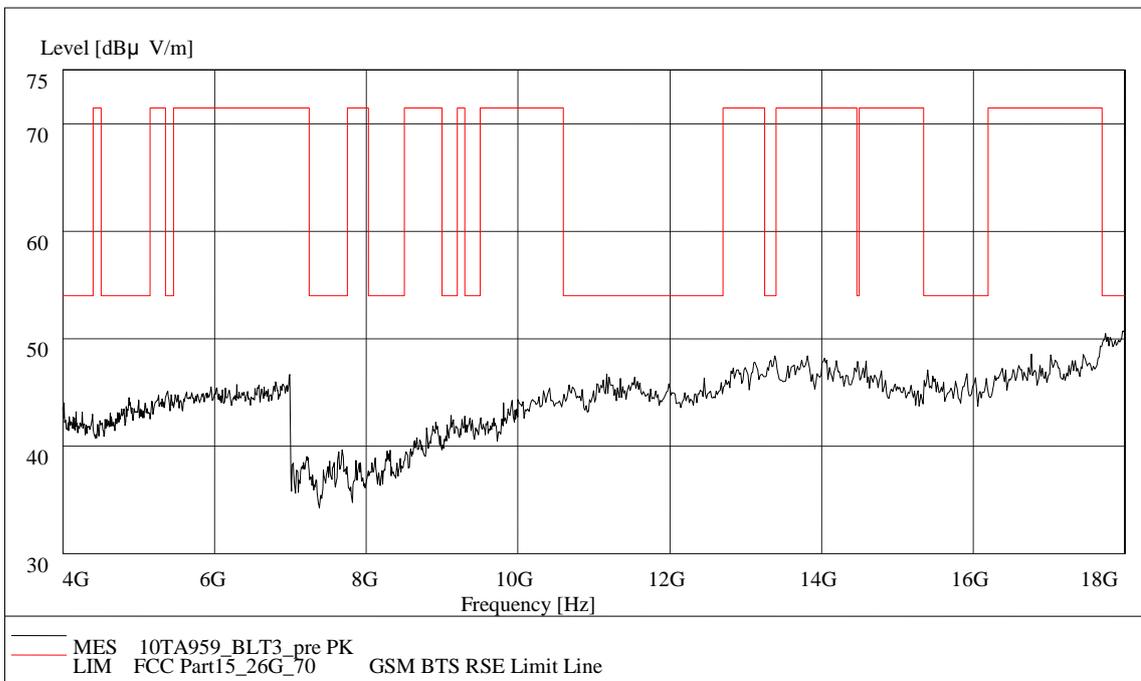
Frequency(MHz)	Result (dBuV/m)	Cable Loss	Antenna Gain	P <sub>Mea</sub> (dBuV/m)	Polarization
2503.006	56.96	-18.3	29.2	46.06	VERTICAL
2430.862	56.58	-18.9	27.5	47.98	VERTICAL
2498.998	53.9	-18.4	27.5	44.8	HORIZONTAL
2426.854	52.22	-18.8	27.5	43.52	HORIZONTAL
2507.014	51.73	-18.3	29.2	40.83	VERTICAL
3509.018	51.41	-18.9	33.4	36.91	HORIZONTAL

**Test graphs as below:**

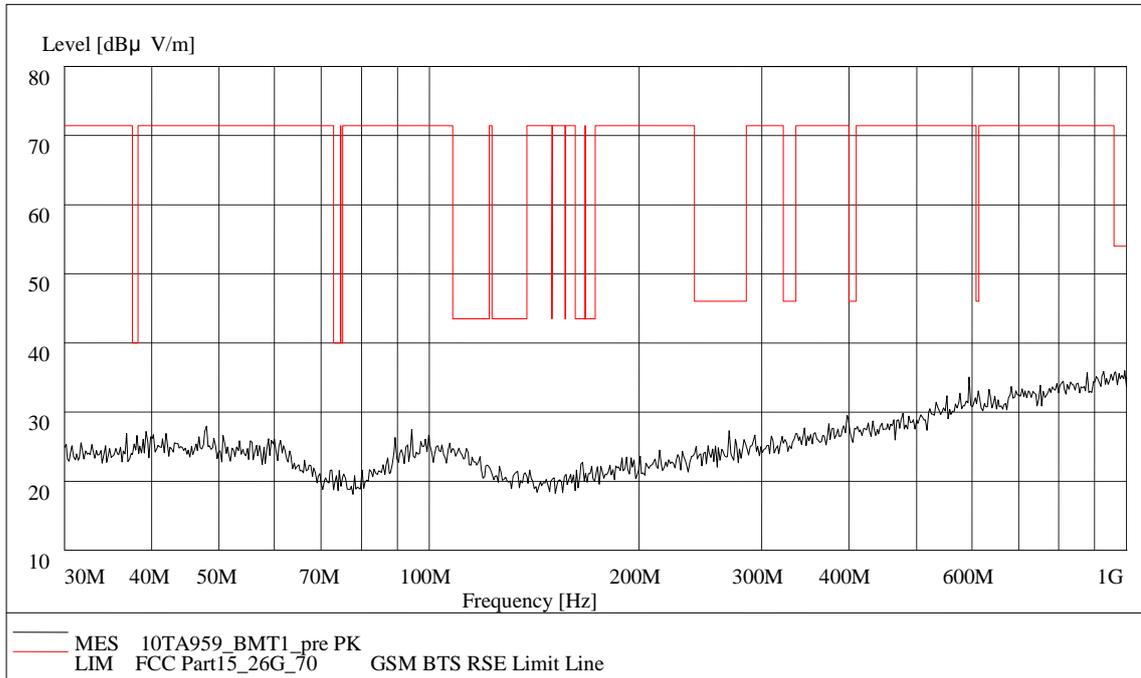




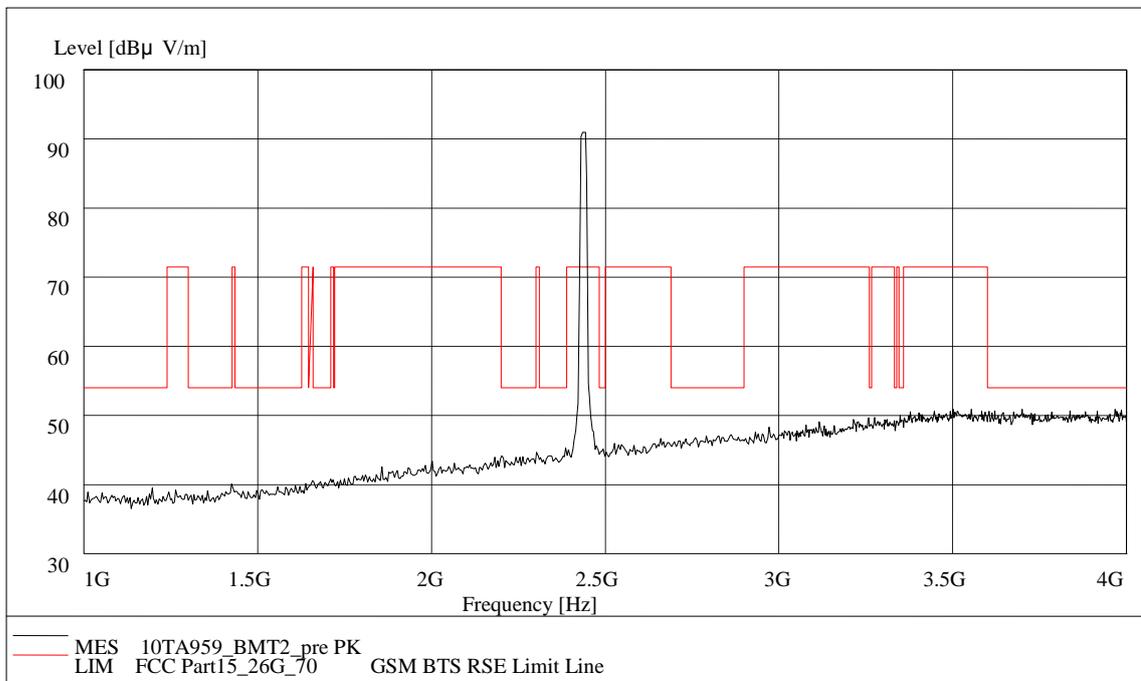
**Fig. 67 Radiated Spurious Emission (802.11b, Ch1, 1 GHz-4 GHz)**



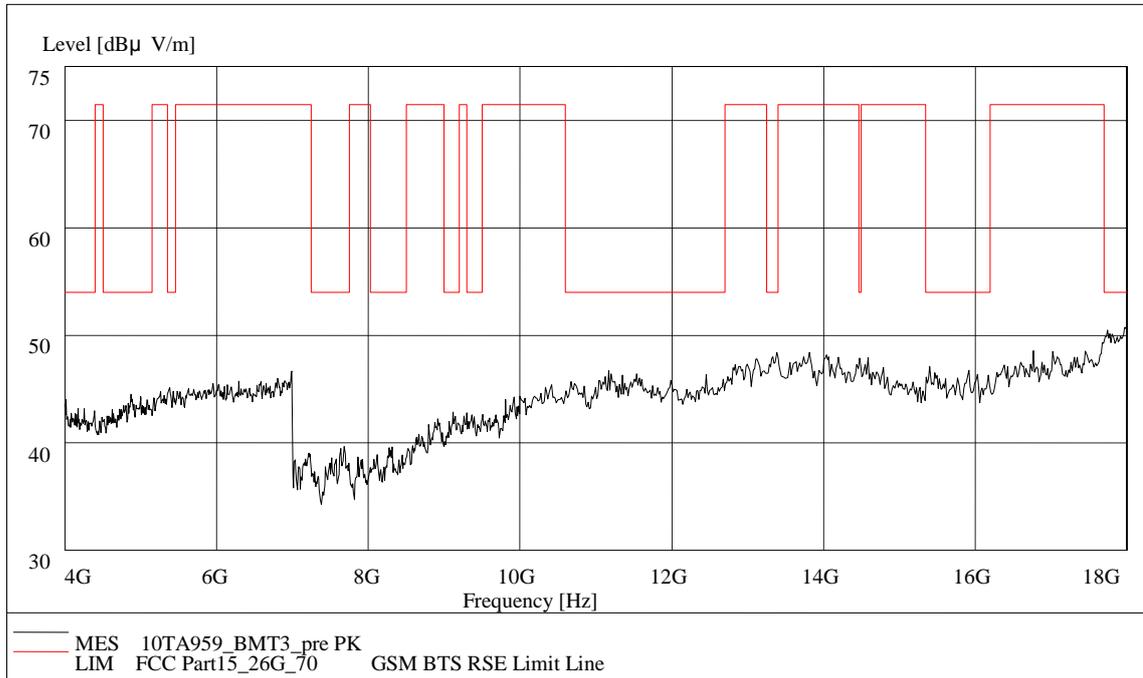
**Fig. 68 Radiated Spurious Emission (802.11b, Ch1, 4 GHz-18 GHz)**



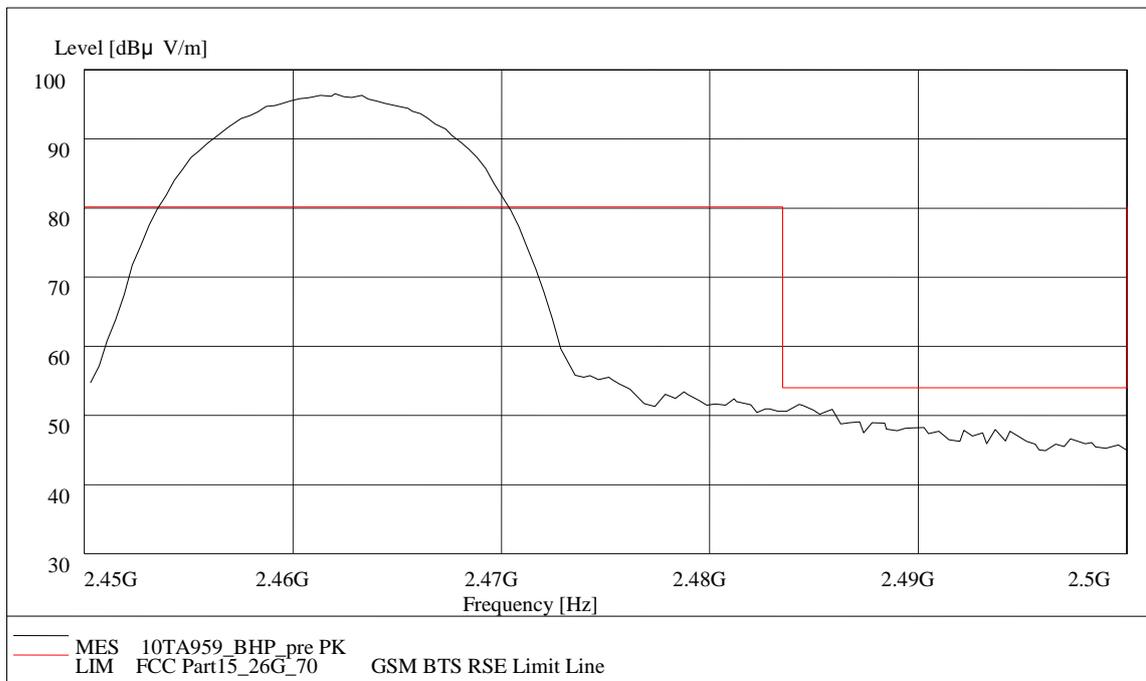
**Fig. 69 Radiated Spurious Emission (802.11b, Ch6, 30 MHz-1 GHz)**



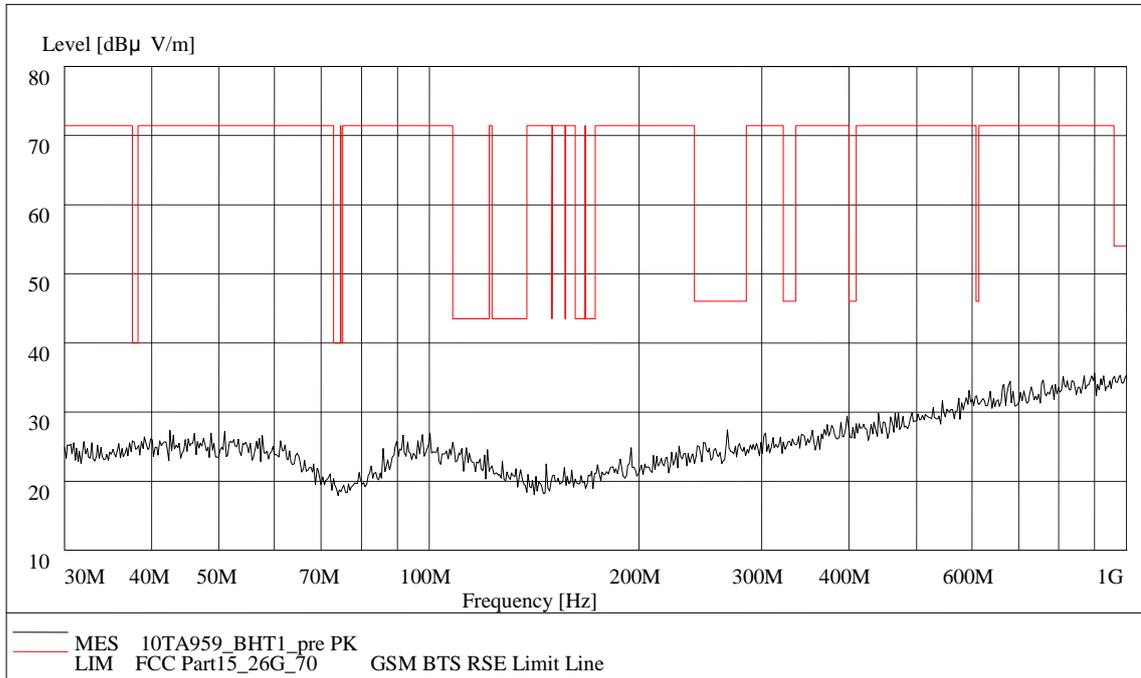
**Fig. 70 Radiated Spurious Emission (802.11b, Ch6, 1 GHz-4 GHz)**



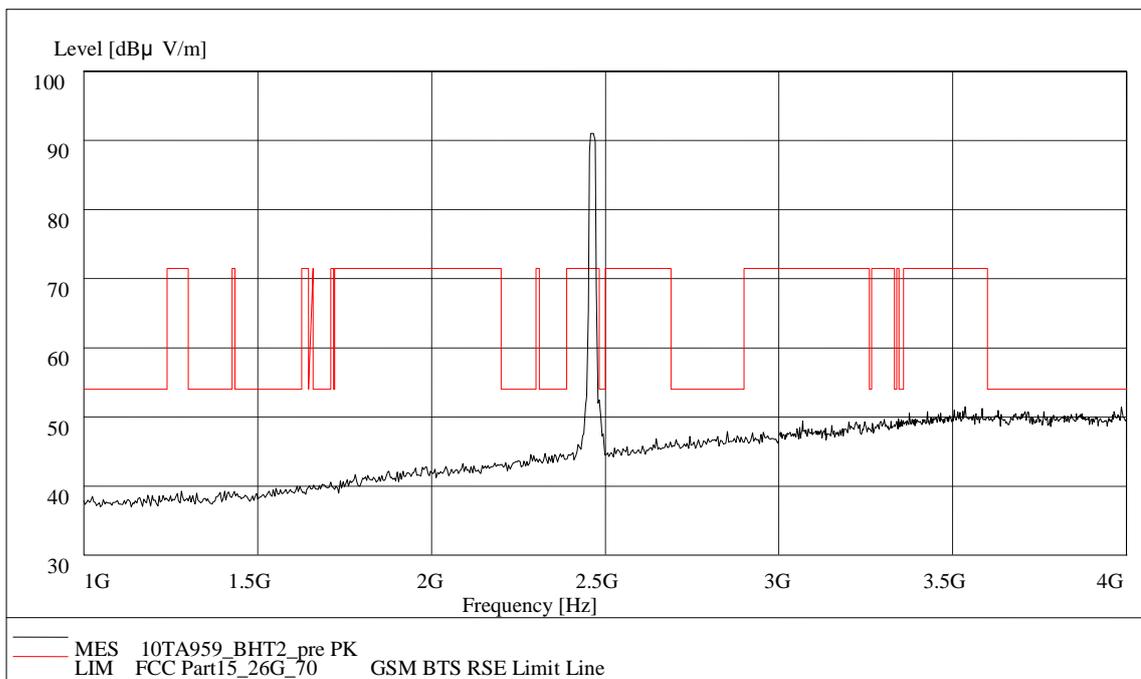
**Fig. 71 Radiated Spurious Emission (802.11b, Ch6, 4 GHz-18 GHz)**



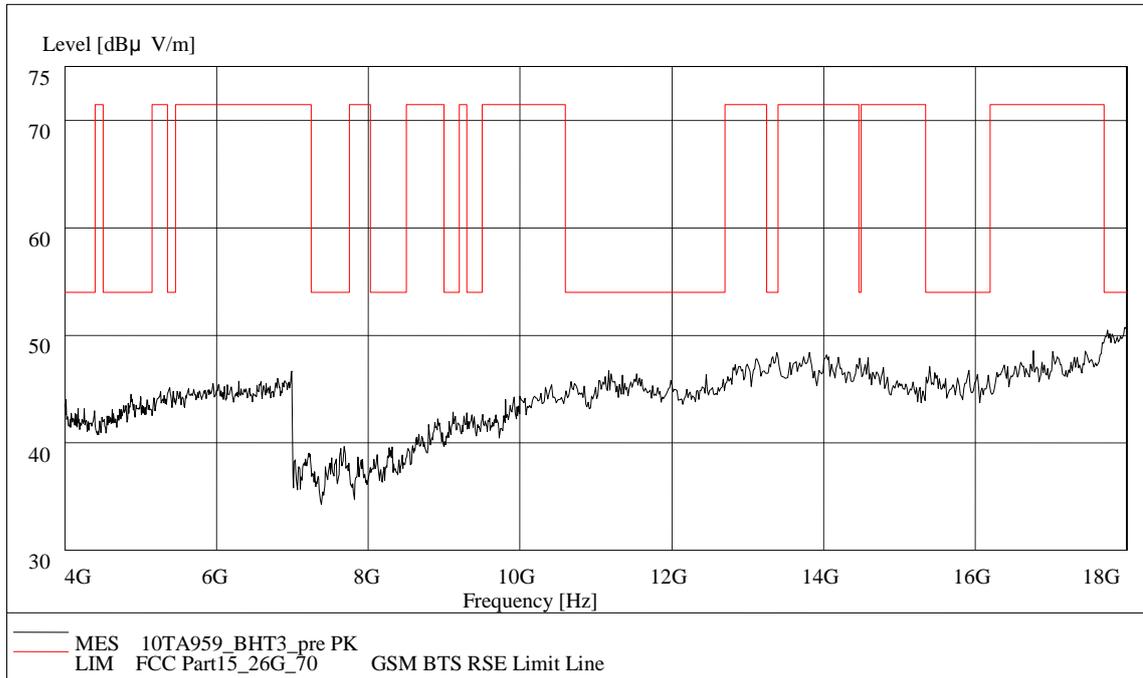
**Fig. 72 Radiated Spurious Emission (Power): 802.11b, ch11, 2.45 GHz - 2.50GHz**



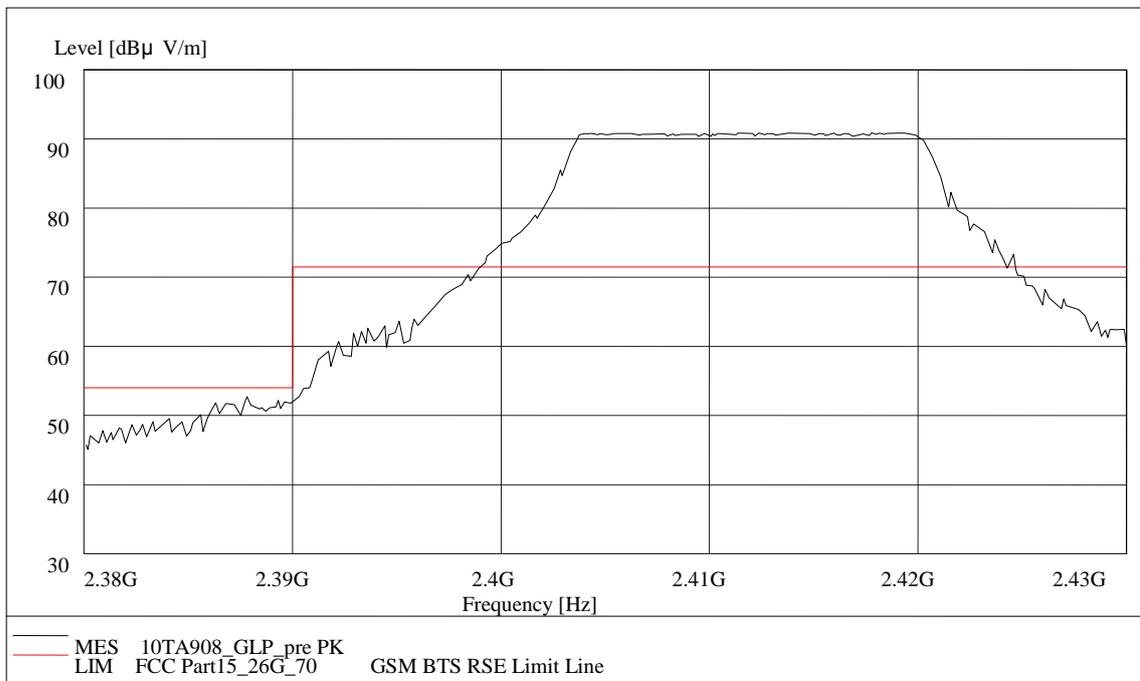
**Fig. 73 Radiated Spurious Emission (802.11b, Ch11, 30 MHz-1 GHz)**



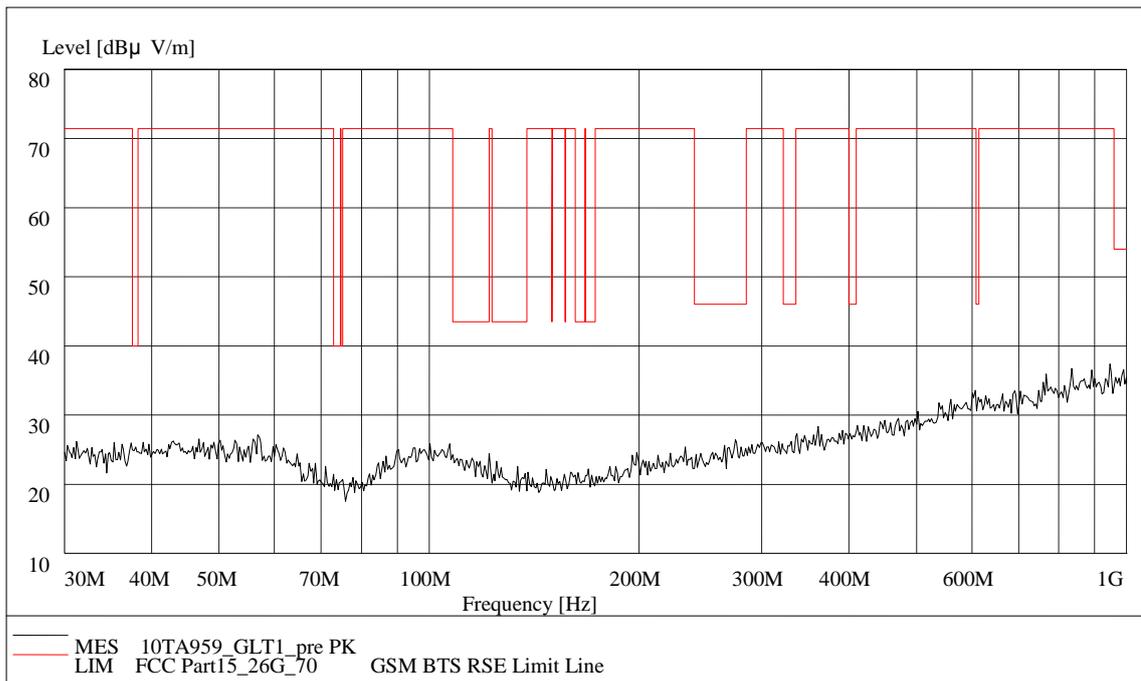
**Fig. 74 Radiated Spurious Emission (802.11b, Ch11, 1 GHz-4 GHz)**



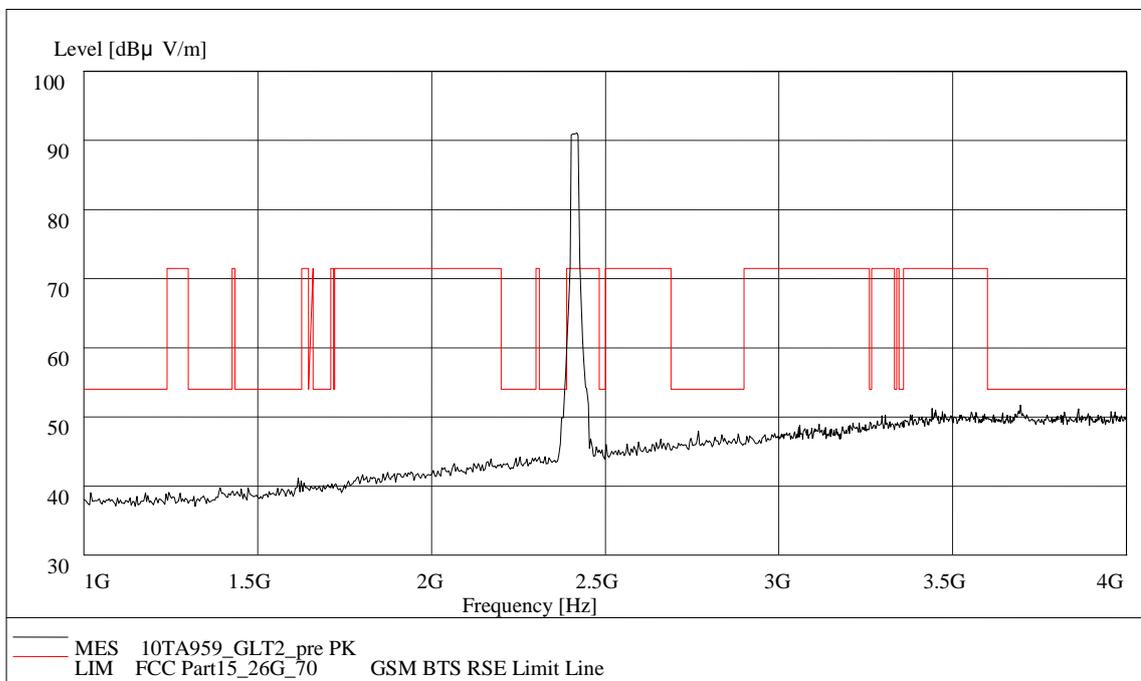
**Fig. 75 Radiated Spurious Emission (802.11b, Ch11, 4 GHz-18 GHz)**



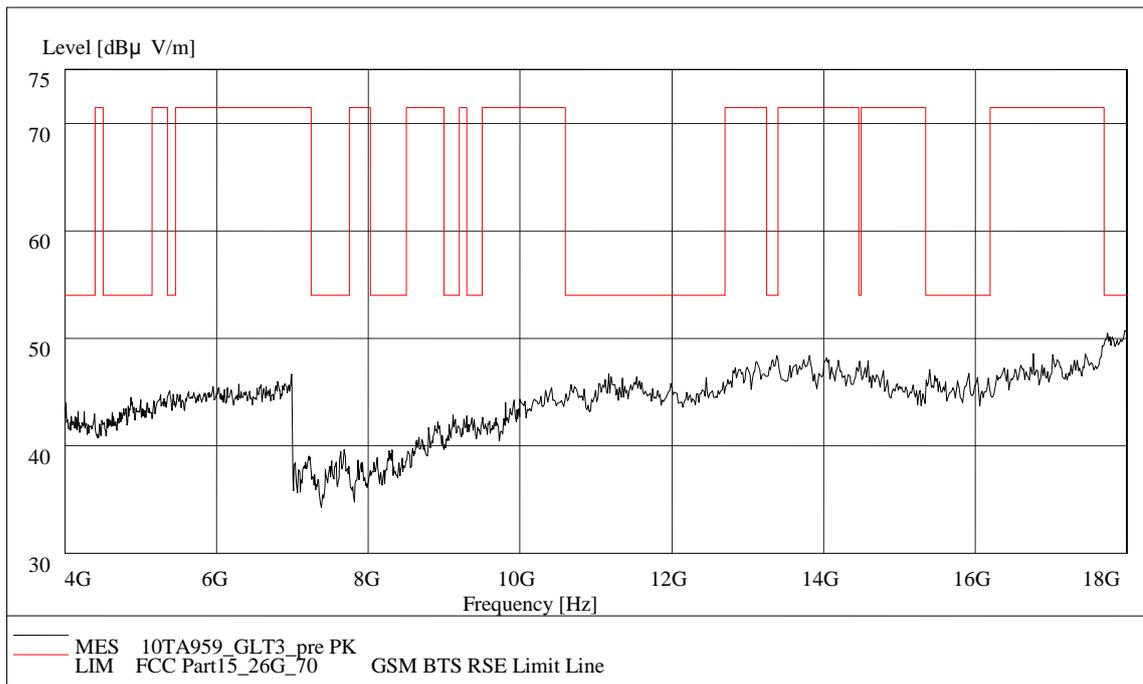
**Fig. 76 Radiated Spurious Emission (Power): 802.11g, ch1, 2.38 GHz - 2.43GHz**



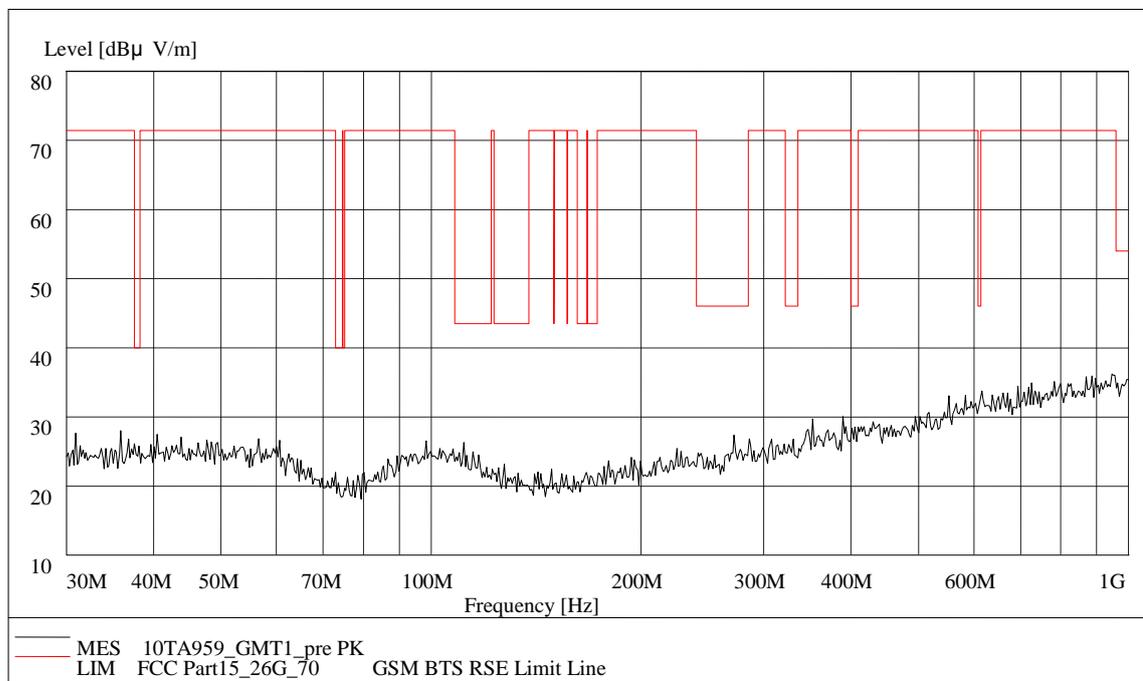
**Fig. 77 Radiated Spurious Emission (802.11g, Ch1, 30 MHz-1 GHz)**



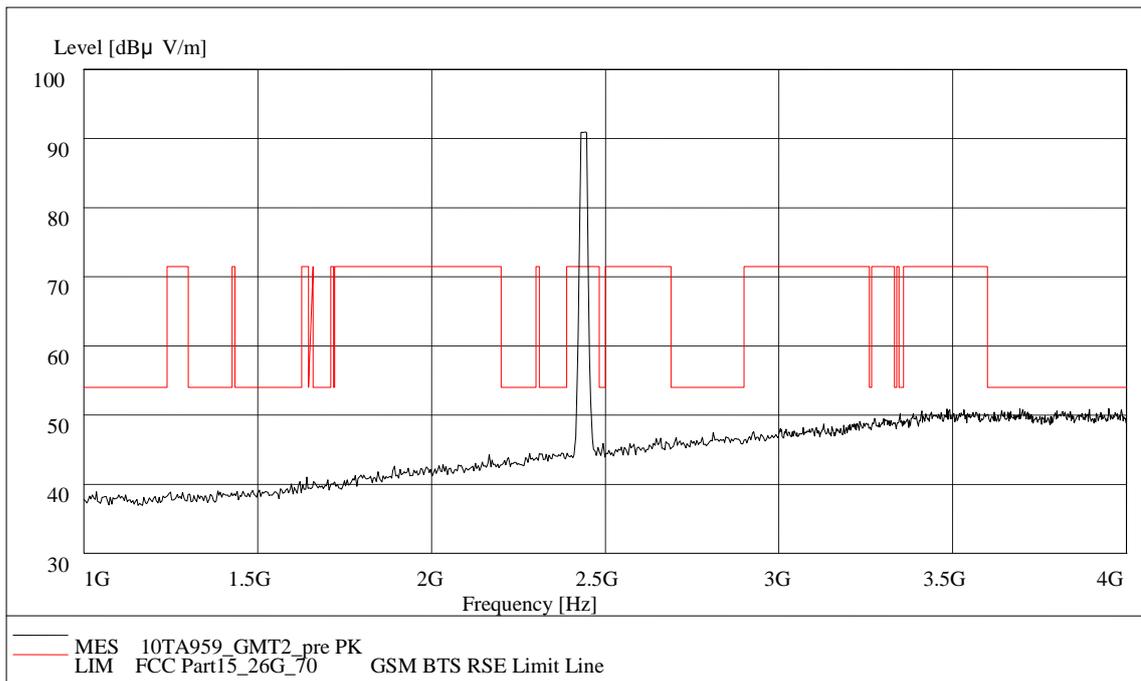
**Fig. 78 Radiated Spurious Emission (802.11g, Ch1, 1 GHz-4 GHz)**



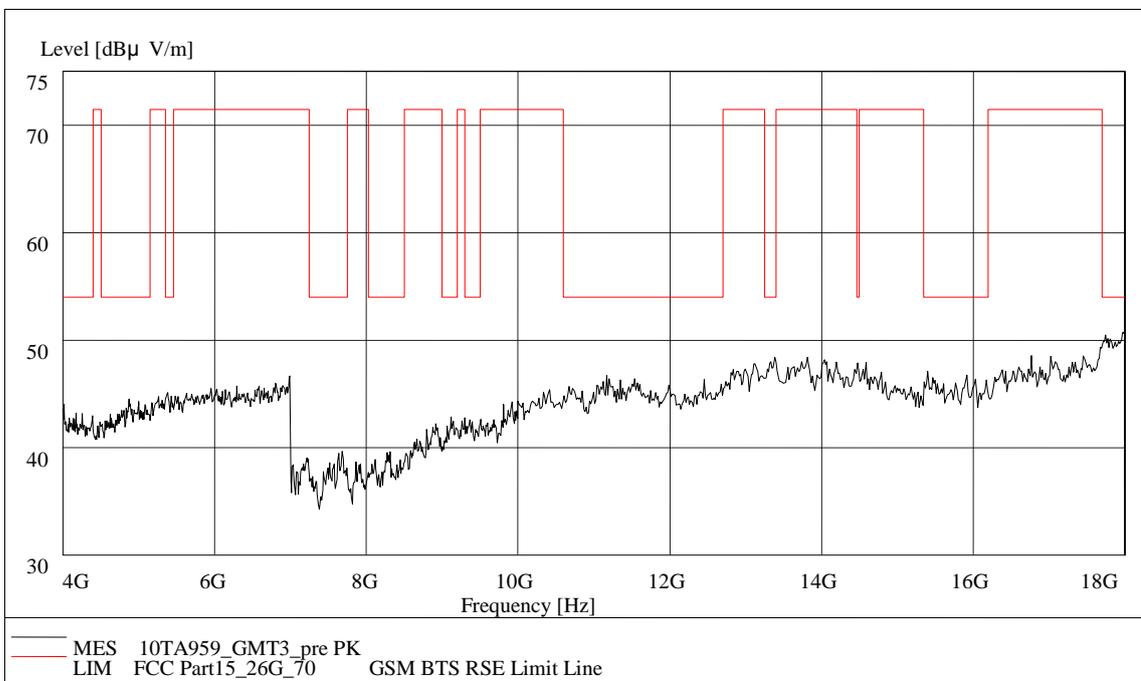
**Fig. 79 Radiated Spurious Emission (802.11g, Ch1, 4 GHz-18 GHz)**



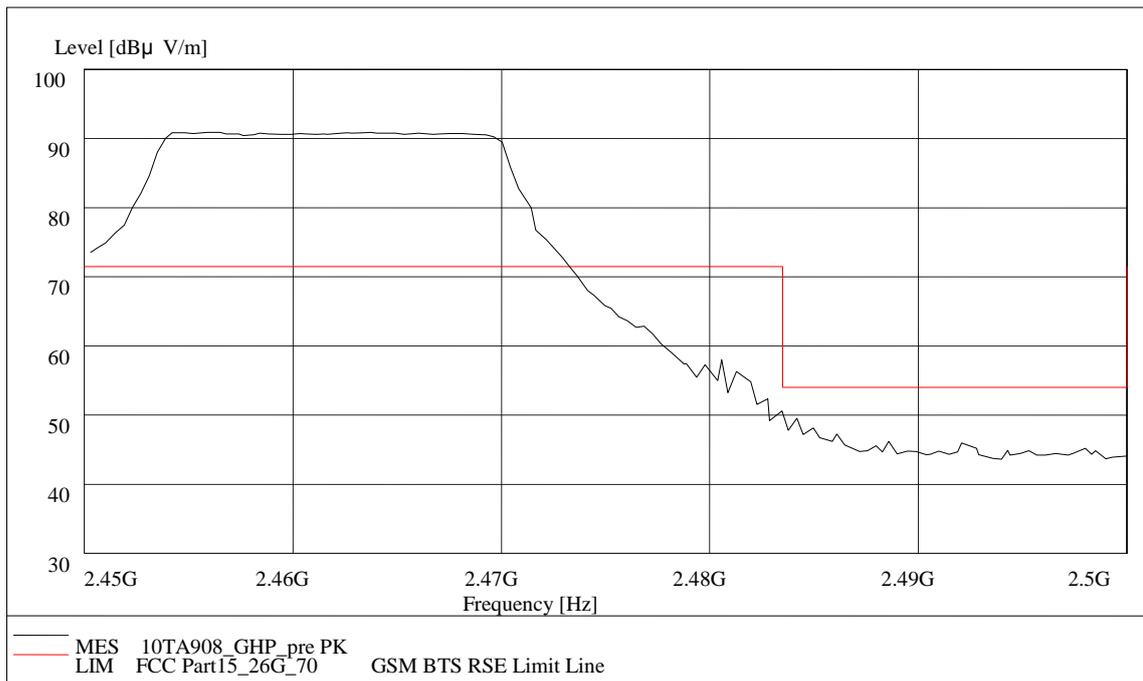
**Fig. 80 Radiated Spurious Emission (802.11g, Ch6, 30 MHz-1 GHz)**



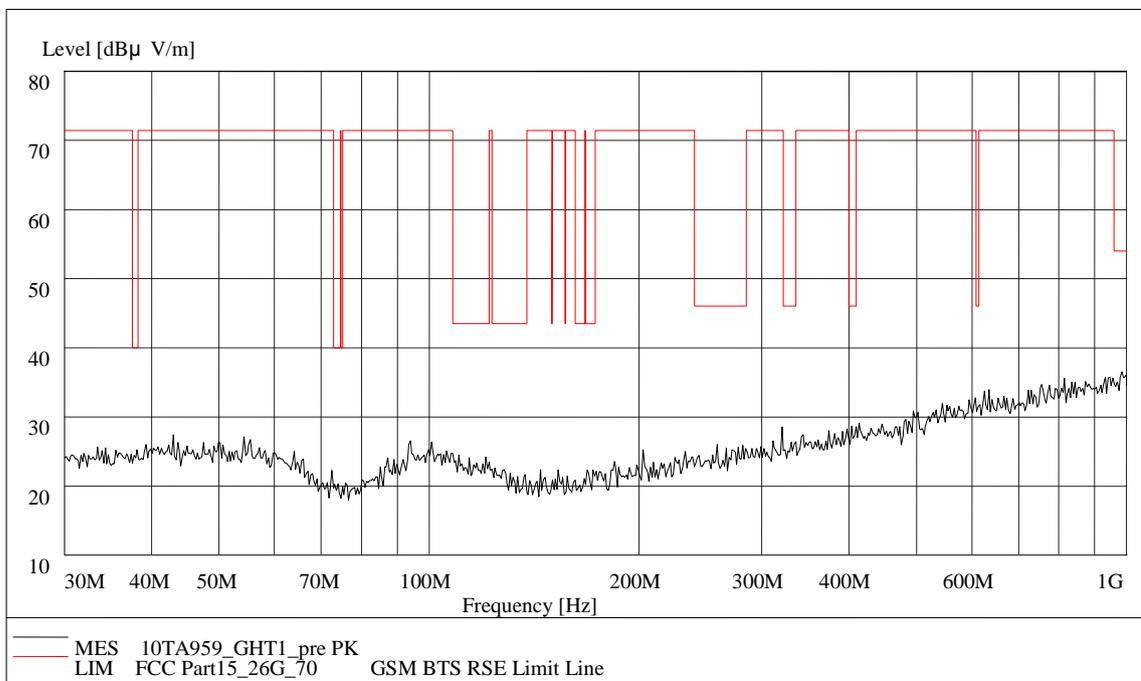
**Fig. 81 Radiated Spurious Emission (802.11g, Ch6, 1 GHz-4 GHz)**



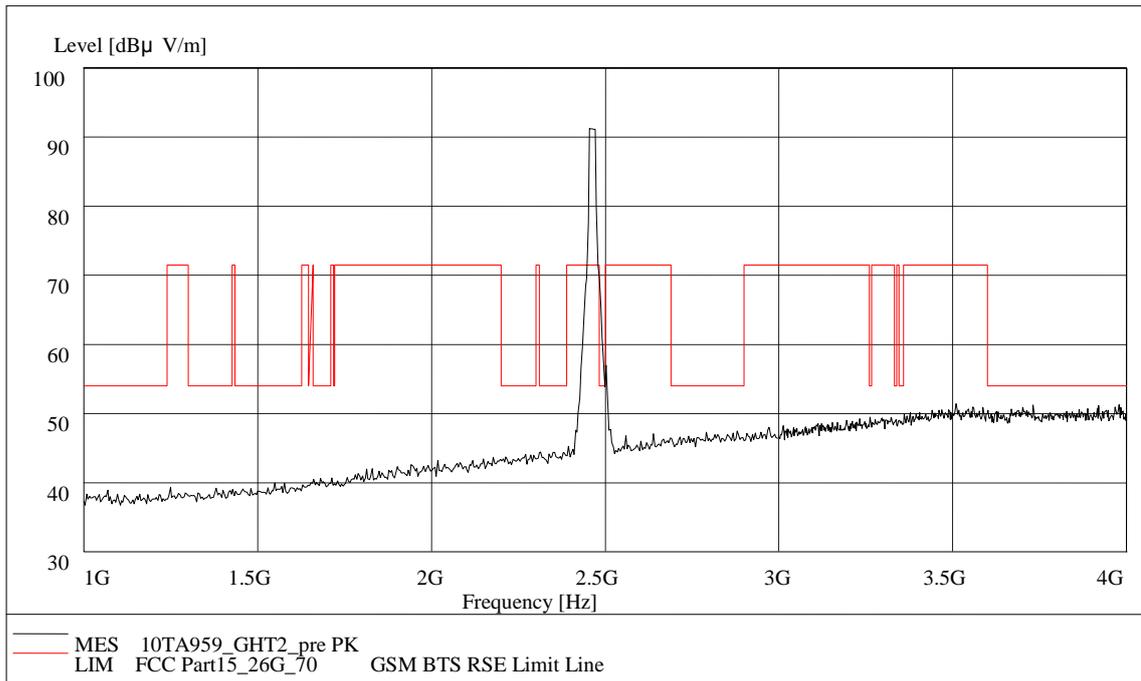
**Fig. 82 Radiated Spurious Emission (802.11g, Ch6, 4 GHz-18 GHz)**



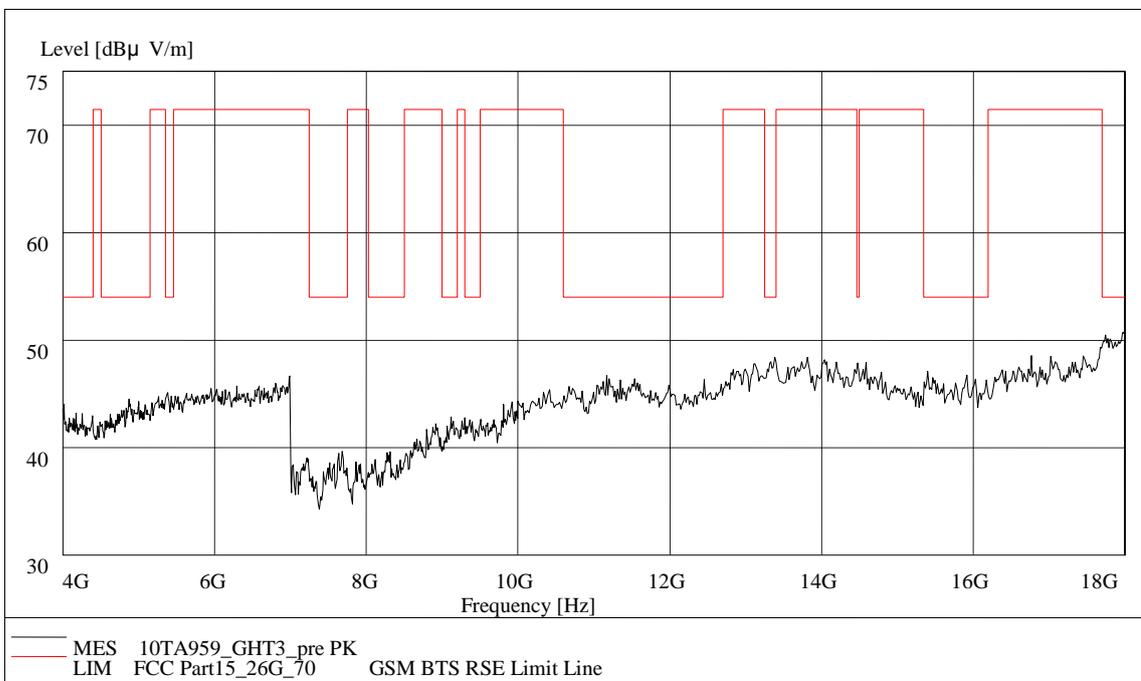
**Fig. 83 Radiated Spurious Emission (Power): 802.11g, ch11, 2.45 GHz - 2.50GHz**



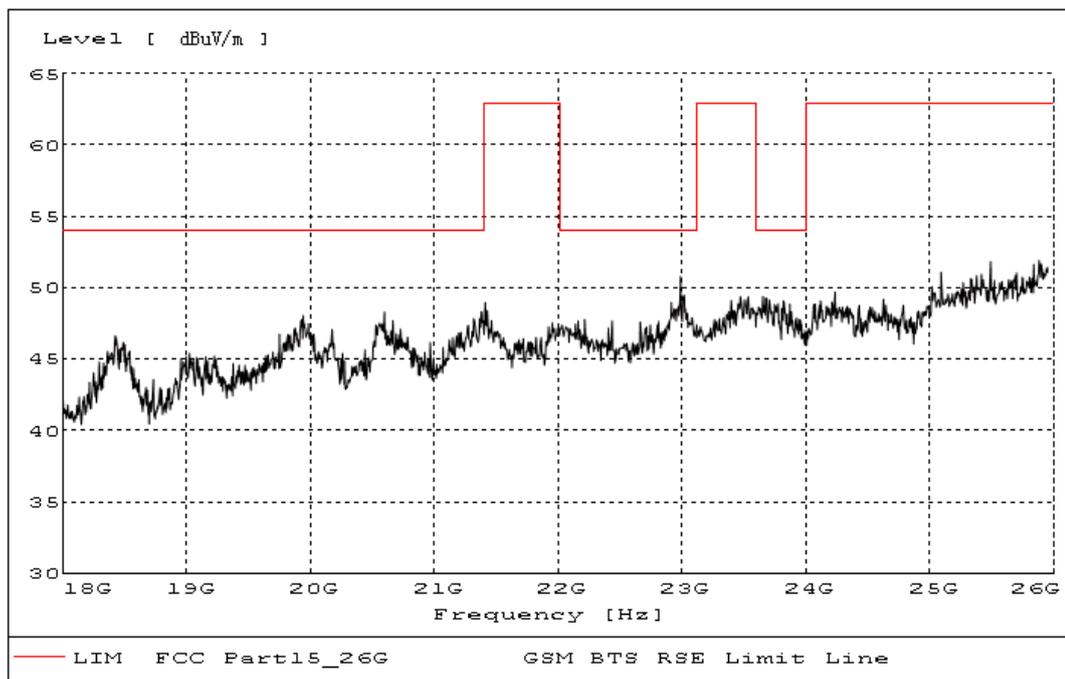
**Fig. 84 Radiated Spurious Emission (802.11g, Ch11, 30 MHz-1 GHz)**



**Fig. 85 Radiated Spurious Emission (802.11g, Ch11, 1 GHz-4 GHz)**



**Fig. 86 Radiated Spurious Emission (802.11g, Ch11, 4 GHz-18 GHz)**



**Fig. 87 Radiated emission: 18 GHz - 26 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 $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	802.11g	
0.15 to 0.5	66 to 56	Fig. 88	Fig.89	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)

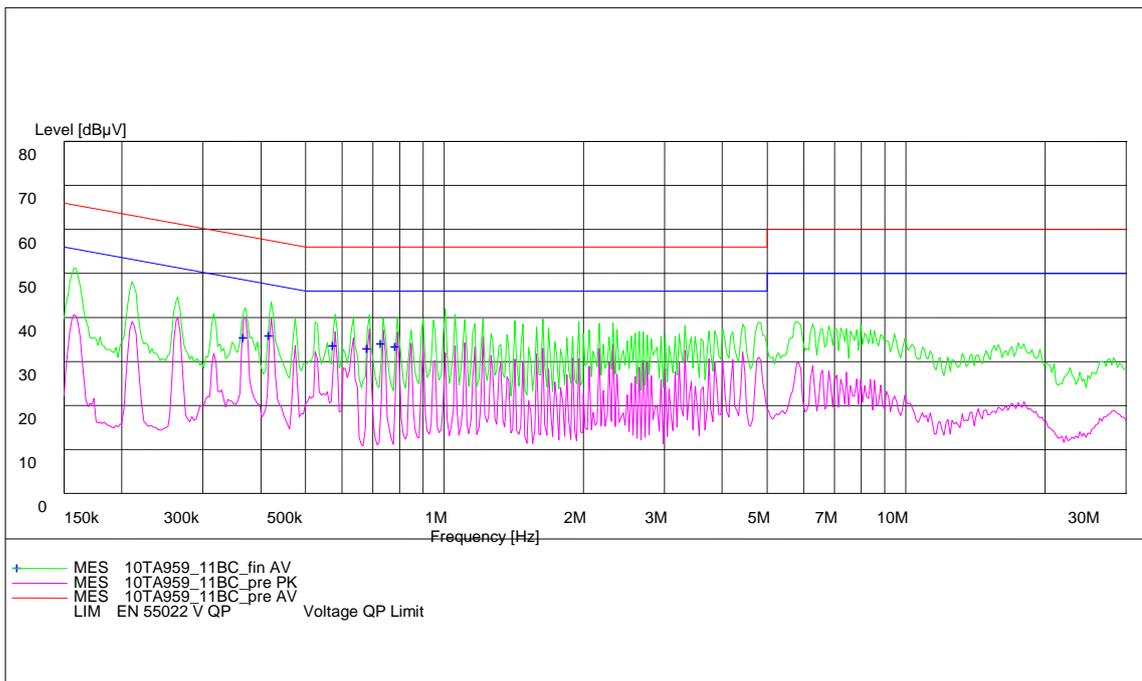
Frequency range (MHz)	Average Limit (dB $\mu$ V)	Result (dB $\mu$ V)		Conclusion
		With charger		
		802.11b	802.11g	
0.15 to 0.5	56 to 46	Fig.88	Fig.89	P
0.5 to 5	46			
5 to 30	50			

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

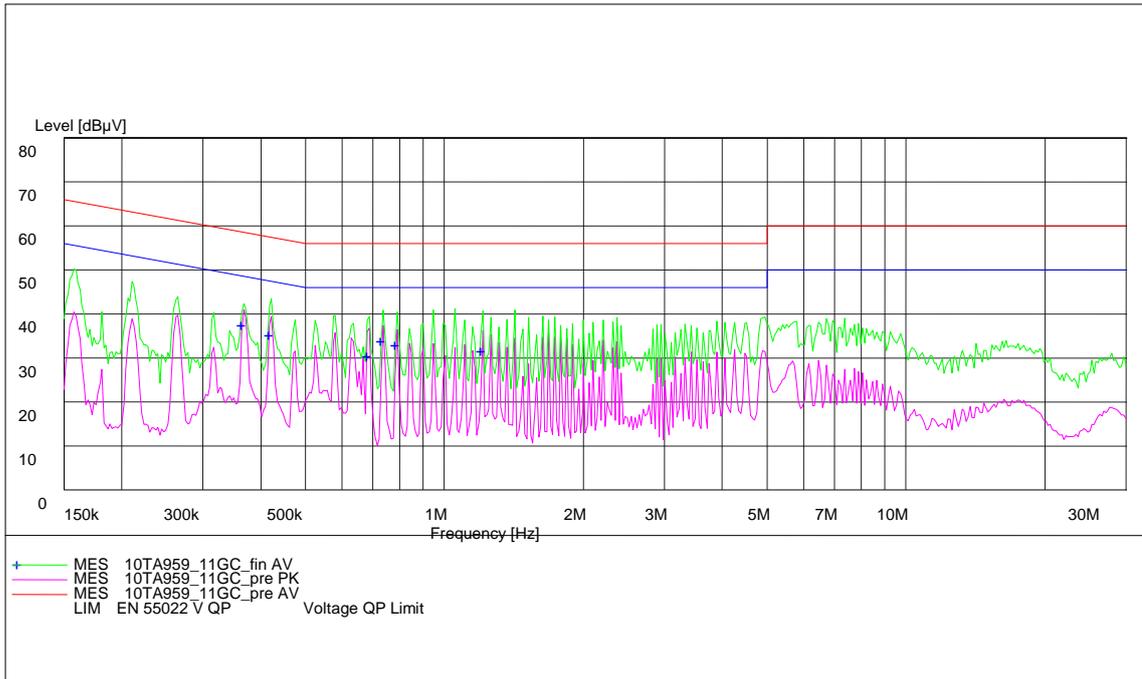
**Conclusion: PASS**

**Test graphs as below:**



**Fig. 88 AC Powerline Conducted Emission-802.11b**

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.370968	38.70	10.1	49	9.8	L1	FLO
0.422196	39.00	10.1	47	8.4	L1	FLO
0.580494	36.90	10.1	46	9.1	L1	FLO
0.687482	36.10	10.1	46	9.9	N	GND
0.737074	37.30	10.1	46	8.7	N	GND
0.790243	36.60	10.1	46	9.4	N	GND



**Fig. 89 AC Powerline Conducted Emission-802.11g**

Frequency (MHz)	Level (dBµV)	Transd (dB)	Limit (dBµV)	Margin (dB)	Line	PE
0.367295	40.50	10.1	49	8.1	L1	GND
0.422196	38.40	10.1	47	9.0	L1	FLO
0.687482	33.60	10.1	46	12.4	L1	FLO
0.737074	37.00	10.1	46	9.0	N	GND
0.790243	36.10	10.1	46	9.9	N	GND
1.212215	34.70	10.1	46	11.3	N	GND

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