



## PRODUCT SAFETY AND COMPLIANCE EMC LABORATORY

### EMC TEST REPORT - Addendum

**Test Report Number** –25111-1 WLAN@5.8 GHz

**Report Date** –2012-08-21

The test results contained herein relate only to the model(s) identified. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

Signature:

Name: Hongpeng Yin

Title: EMC Project Manager

Test: 2012-07-24 to 2012-08-23

As the responsible test lab manager, I hereby declare that the model tested as specified in this report conforms to the requirements indicated.

Signature:

Name: Danny Palaniswami

Title: Test Lab Manager

Date: 2012-08-24

This report must not be reproduced, except in full, without written approval from this laboratory.

FCC Registration Number: 402854

IC Registration Number: 109AW-1

ADR Testing Service location ADR BJ  
ISO/IEC-17025:2005 accredited by UKAS



UKAS Certificate Number: 2404

**Table of Contents**

Test Report Details ..... 3  
Applicable Standards ..... 3  
Summary of Testing..... 4  
General and Special Conditions..... 4  
Equipment and Cable Configurations ..... 5  
Measuring Equipment and Calibration Information ..... 5  
Description of WLAN Transmitter ..... 5  
Measurement Procedures and Data..... 6  
    Spectrum Bandwidth..... 6  
        Measurement Procedure..... 6  
        Measurement Results ..... 6  
    Peak Output Power ..... 25  
        Measurement Procedure..... 25  
        Measurement Results ..... 25  
    Power Spectral Density..... 28  
        Measurement Procedure..... 28  
        Measurement Results ..... 28  
    Spurious RF Conducted Emissions..... 30  
        Measurement Procedure..... 30  
        Measurement Results ..... 30  
    AC Line Conducted Emissions..... 83  
        Measurement Procedure..... 83  
        Measurement Results ..... 83

**Test Report Details**

Tests Performed By: Motorola (Beijing) Mobility Technologies Co.,  
Ltd.  
Asia Global Compliance Labs  
No.1 Wang Jing East Road  
Chao Yang District  
Beijing, 100102, P. R. China  
Phone: +86 10 8499 5891  
FCC Registration Number: 402854  
IC Registration Number: 109AW-1

Tests Requested By: Motorola Mobility LLC.  
600 North US Hwy 45  
Libertyville, IL 60048  
United States

Product Type: Cellular phone

Signaling Capability: GSM 800/1900, EDGE 850/1900,  
Bluetooth+EDR,  
802.11a/802.11b/802.11g/802.11n

FCC ID: IHDT56NS6

IMID: 352524050008534  
352524050007676

Project number: 25111-1

Testing Complete Date: 2012-08-24

**Applicable Standards**

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

  X   Part 15 Subpart C – Intentional Radiators

Applicable Standards: ANSI 63.4 2003, RSS-210 Issue 8

In addition, testing was performed per FCC KDB publication number 558074.

**Summary of Testing**

Test	Test Name	Pass/Fail
1	Spectrum Bandwidth	Pass
2	Peak Power	Pass
3	Power Spectral Density	Pass
4	Spurious RF Conducted Emissions	Pass
5	AC Line Conducted Emissions	Pass

Test	Test Name	Results
1	Spectrum Bandwidth	See plots
2	Peak Power	See plots
3	Power Spectral Density	See tables
4	Spurious RF Conducted Emissions	See plots
5	AC Line Conducted Emissions	See Plots

**General and Special Conditions**

The Cellular Phone hereinafter referred to as the Equipment under Test or EUT was tested using a fully charged internal battery when applicable. Where a battery could not be used due to the need for a controlled variation of input voltage, an external power supply was utilized.

All testing was done in an indoor controlled environment. The temperature and the relative humidity were maintained within the ANSI C63.4 2003 Standard requirements during the entire duration of testing.

**Equipment and Cable Configurations**

The EUT was tested in a stand-alone configuration that is representative of typical use.

**Measuring Equipment and Calibration Information**

Manufacturer	Equipment Type	Model No.	Serial Number	Date of calibration
Rohde Schwarz	Receiver	FSU26	200353	03/13/2012
Rohde Schwarz	Receiver	ESCI	100650	03/13/2012
Agilent	Attenuator	8491A	MY39263202	NCR
Rohde Schwarz	LISN	ENV216	100055	12/19/2010

All test equipment was within their calibration date during the time of testing. When equipment went out of calibration during testing it was replaced using a similar piece of calibrated equipment. All these equipments are listed in the equipment list. All equipment is on a one-year calibration cycle.

**Description of WLAN Transmitter**

The EUT offers WLAN, operating in the 2.4GHz and 5GHz bands, as a feature. This report covers operation in the 2.4GHz band only. The WLAN antenna is mounted inside of the EUT. The antenna installation is permanent. For a more thorough description of the functionality please refer to Exhibit 6 of this package.

As a WLAN transmitter, it is designed operate with other WLAN devices as defined by the industrial standard. In this application, the device is battery operated.

**De Facto EIRP Limit – Pursuant 47 CFR 15.247(b) (4); RSS-210 Section A8.4.**

Criterion: The conducted output power limit of 1-watt is based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The antenna employed by this transmitter is intended to be omni-directional, and thus will not exhibit directional gain in excess of 6 dBi. The conducted power is less than the limits set forth (see elsewhere in this report for details).

## **Measurement Procedures and Data**

### **Spectrum Bandwidth**

CFR 47 Part 15.247

### **Measurement Procedure**

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 20db passive attenuator. A fully charged battery was used for the supply voltage.

#### **20 dB BW Test Settings**

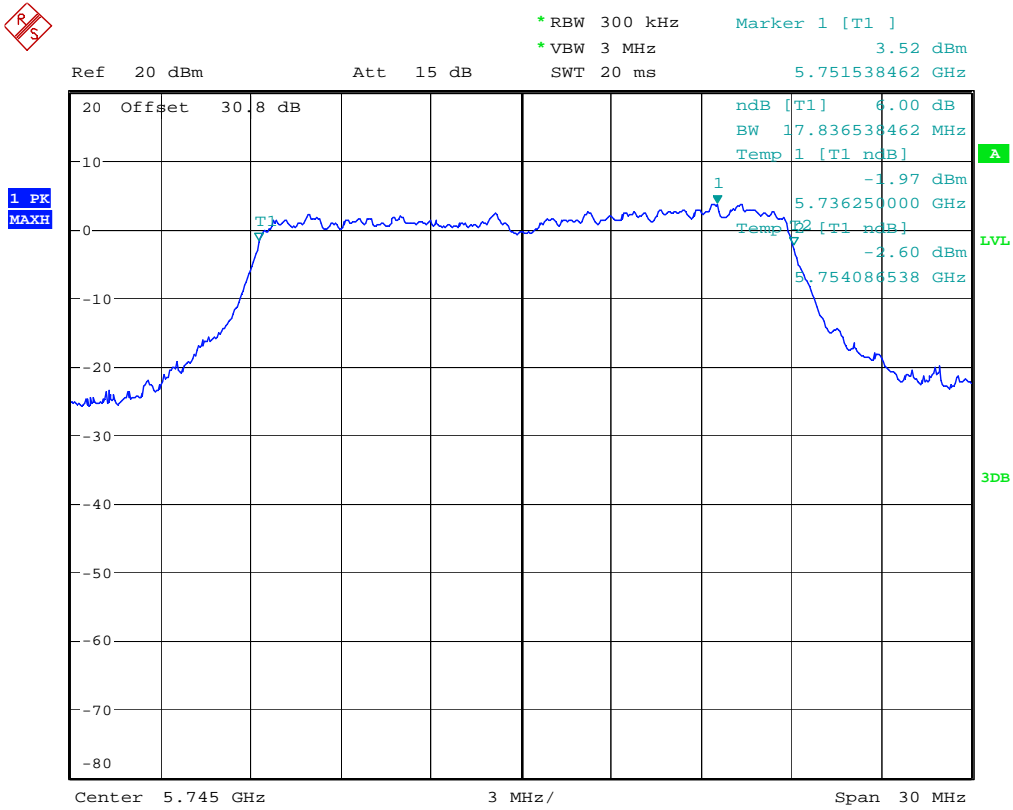
1. RBW  $\geq$  100 kHz
2. VBW  $\geq$  RBW
3. Sweep = auto
4. Detector function = peak
5. Trace = max hold

The trace was allowed to stabilize. The marker-to-peak function was used to set the marker to the peak of the emission. The marker-delta function was used to measure 6 dB down one side of the emission. The marker-delta function and marker was moved to the other side of the emission until it was even with the reference marker. The marker-delta reading at this point was the 6 dB bandwidth of the emission. The same procedure was repeated for 20 dB bandwidth.

### **Measurement Results**

See attached

**802.11 n Mode 20MHz BW@ 13 Mbps**

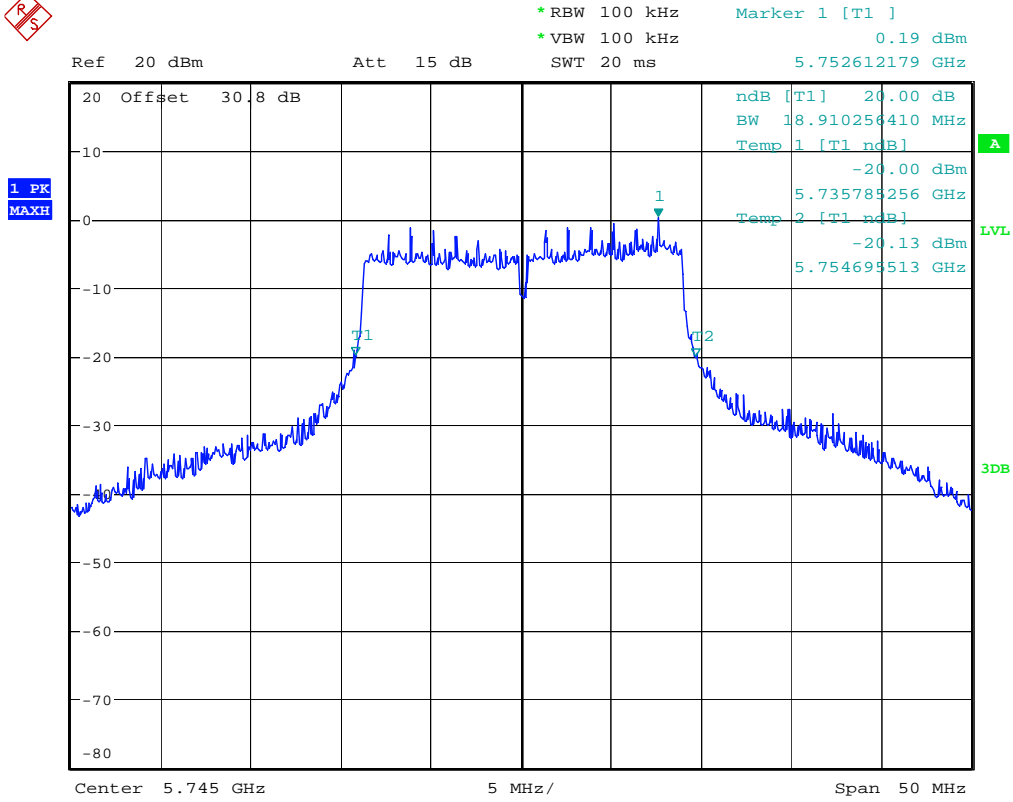


Date: 17.AUG.2012 09:45:28

**6dB Bandwidth Channel 149 @ 13 Mbps**

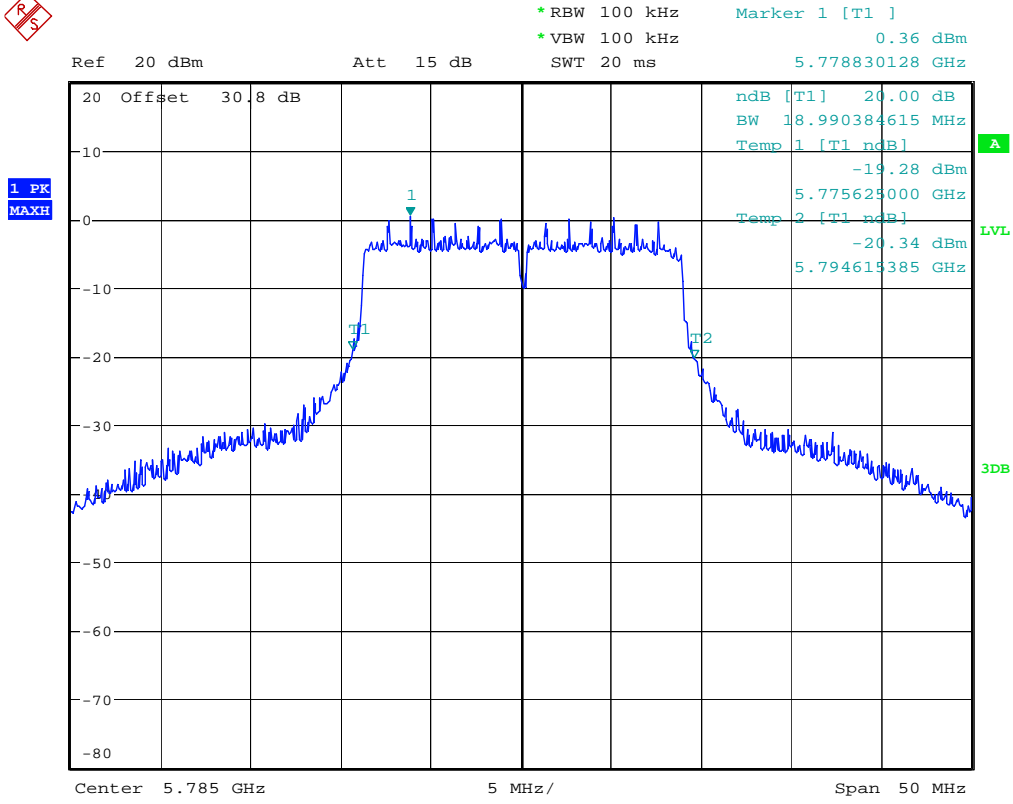






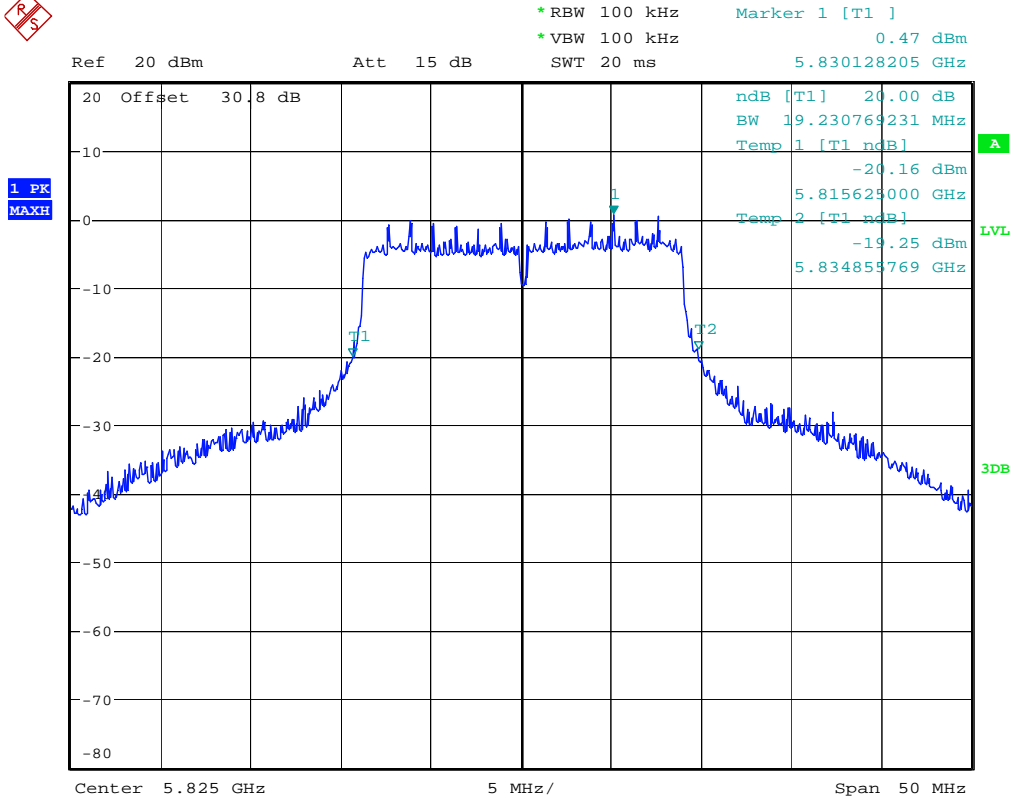
Date: 17.AUG.2012 09:49:32

**20dB Bandwidth Channel 149 @ 13 Mbps**



Date: 17.AUG.2012 09:48:52

**20dB Bandwidth Channel 157 @ 13 Mbps**



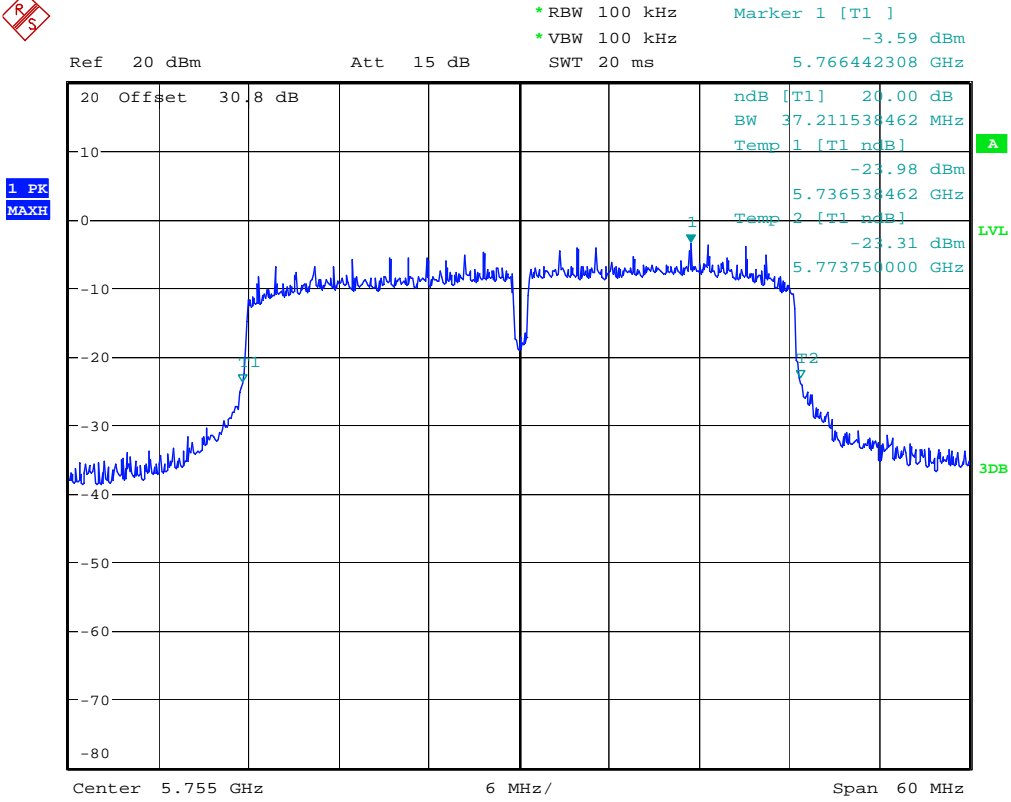
Date: 17.AUG.2012 09:48:14

**20dB Bandwidth Channel 165 @ 13 Mbps**



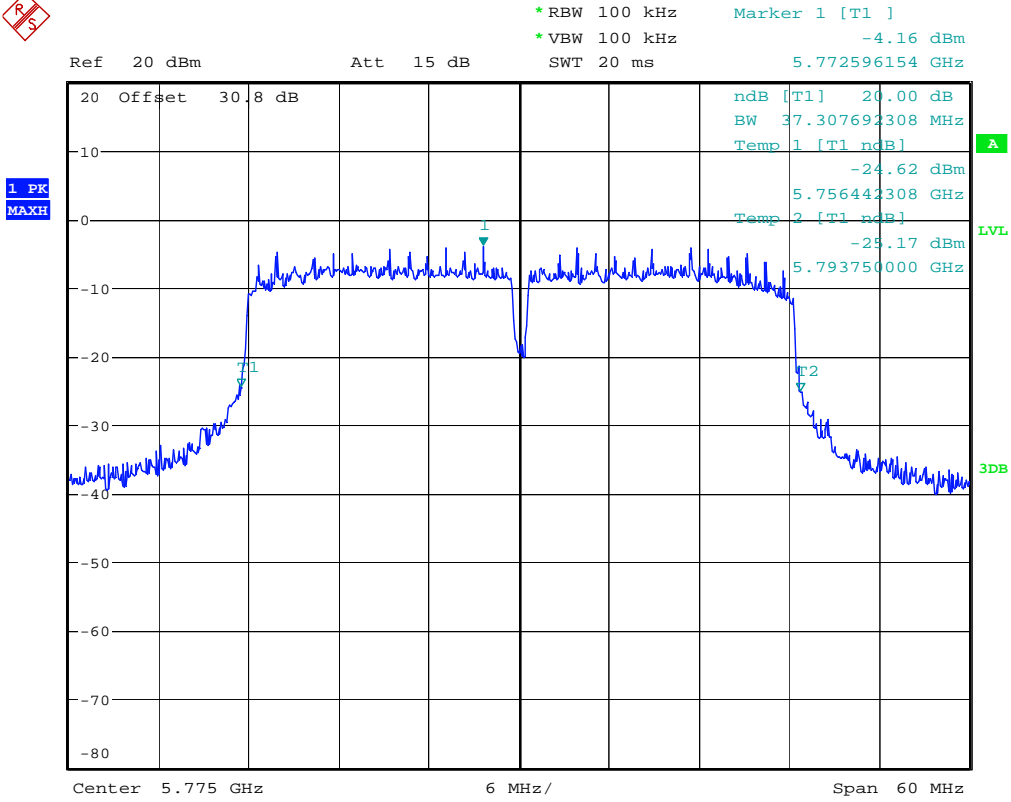






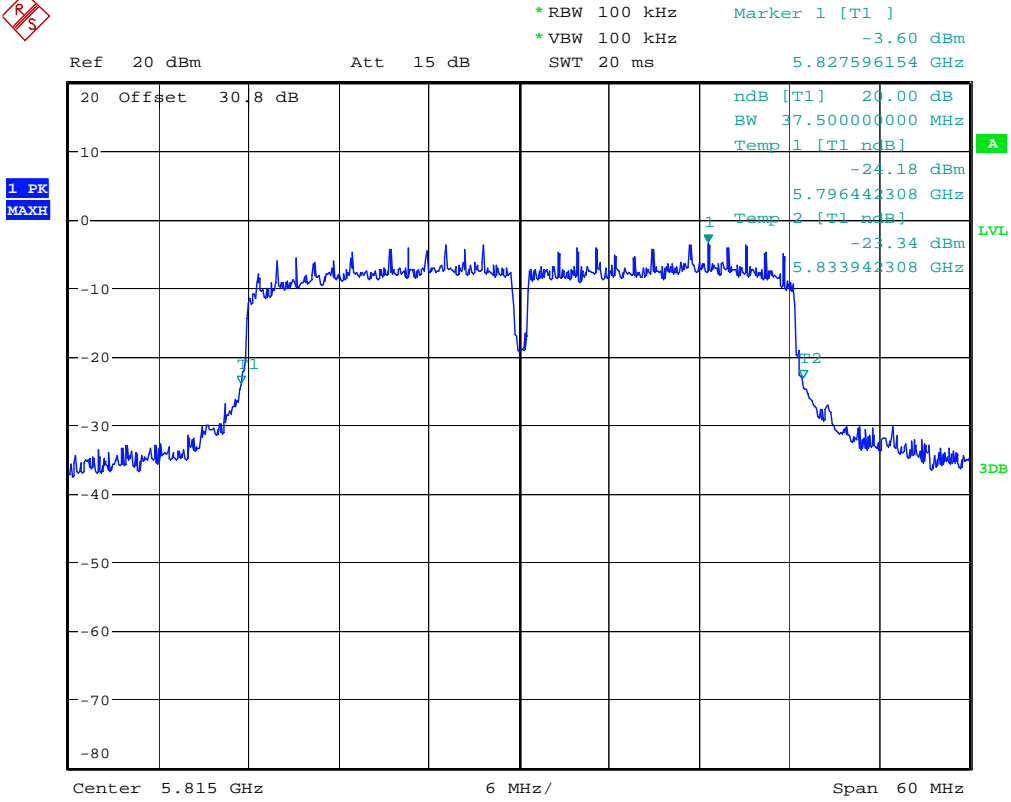
Date: 17.AUG.2012 10:06:00

**20dB Bandwidth Channel 151 @ 6.5 Mbps**



Date: 17.AUG.2012 10:05:25

**20dB Bandwidth Channel 155 @ 6.5 Mbps**



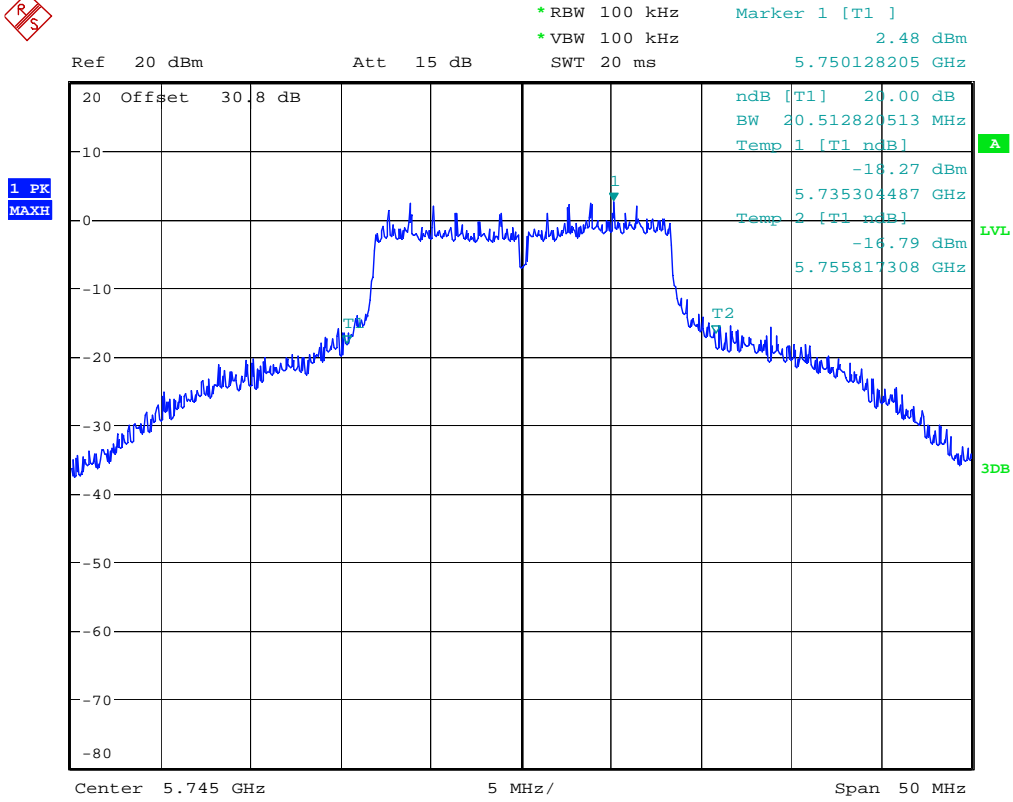
Date: 17.AUG.2012 10:04:51

**20dB Bandwidth Channel 163 @ 6.5 Mbps**



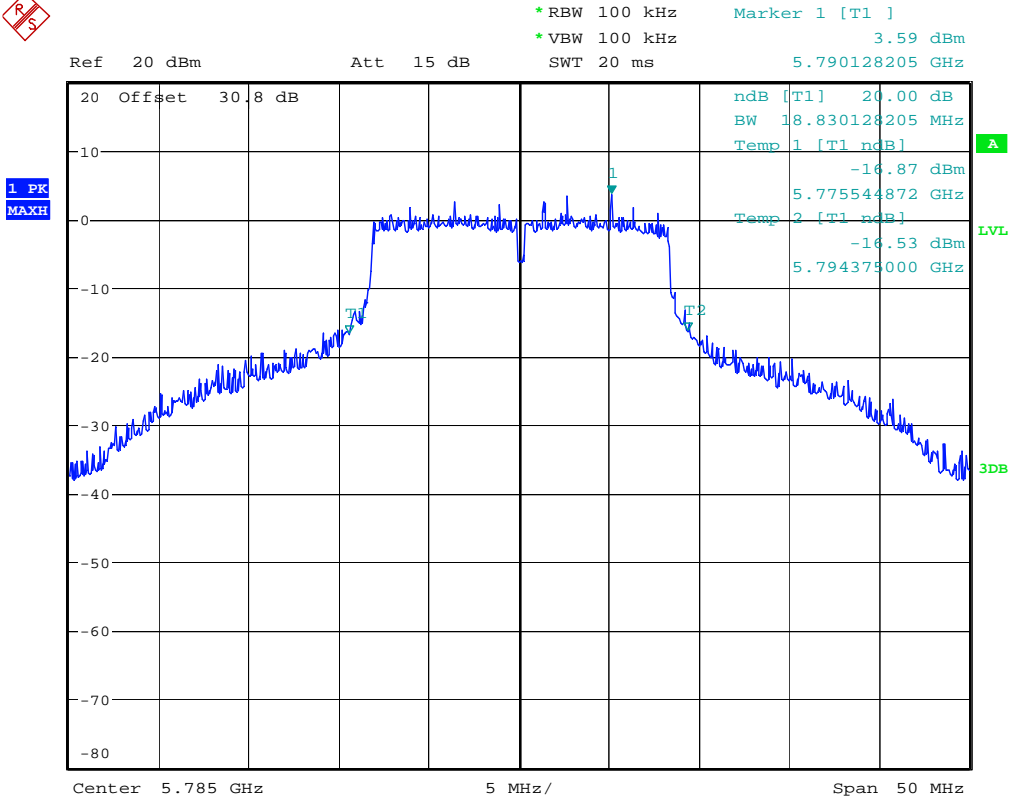






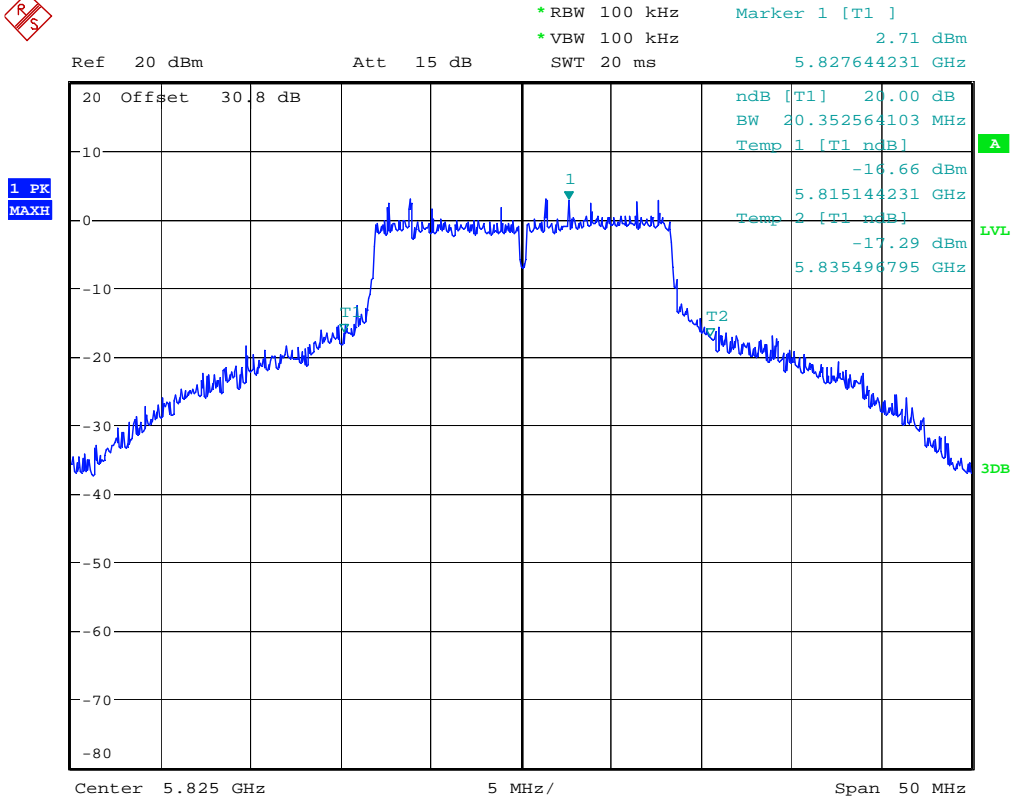
Date: 17.AUG.2012 09:50:37

**20dB Bandwidth Channel 149 @ 6 Mbps**



Date: 17.AUG.2012 09:52:29

**20dB Bandwidth Channel 157 @ 6 Mbps**



Date: 17.AUG.2012 09:53:12

**20dB Bandwidth Channel 165 @ 6 Mbps**

**PEAK OUTPUT POWER**

CFR 47 Part 15.247

**Measurement Procedure**

The RF output port of the Equipment-Under-Test is directly coupled to the input of the Spectrum analyzer through a specialized RF connector and a 20db passive attenuator. A fully charged battery was used for the supply voltage. Initially, an average detector is used to measure power in the low, middle and high channels for all data rates. The average measurements are used to determine which data rate is to be fully tested for each supported mode. Using a peak detector, the power is then measured for the applicable data rates.

**Measurement Results**

See Attached

Initial average power measurements in the 5.8GHz band

The peak power was measured using the below settings.

RBW = 1 MHz

VBW = 3 MHz

Span = 30 MHz

Detector = Peak

Trace = Max Hold

Int BW = 6 dB BW measured for each mode.

Average power (dBm) for <u>802.11n</u> in 5 GHz																	
Freq	CH	20 MHz BW, 400 ns GI								20 MHz BW, 800 ns GI							
		7.2 Mbps	14.4 Mbps	21.7 Mbps	28.9 Mbps	43.3 Mbps	6.5 Mbps	65 Mbps	72.2 Mbps	6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
5745	149	10.15	10.35	9.06	9.48	8.45	8.59	9.15	9.16	10.08	10.25	9.07	9.42	8.45	8.51	9.23	9.15
5765	153	10.94	11.01	9.62	10.25	9.19	9.62	9.85	9.77	10.94	11.1	9.74	10.21	9.19	9.32	9.96	9.93
5785	157	11.22	11.28	10.05	10.88	9.46	9.38	10.29	10.12	11.18	11.24	10.01	10.91	9.47	9.46	10.19	10.2
5805	161	11.15	11.30	10.12	10.55	9.45	9.45	10.15	10.02	11.18	<b>11.33</b>	10.02	10.45	9.45	9.51	10.25	10.14
5825	165	11.01	10.57	9.94	10.61	9.33	9.36	10.01	9.96	11.01	10.88	9.93	10.71	9.33	9.37	10.06	10.04

Average power (dBm) for <u>802.11n</u> in 5 GHz																	
Freq	CH	40 MHz BW, 400 ns GI								40 MHz BW, 800 ns GI							
		7.2 Mbps	14.4 Mbps	21.7 Mbps	28.9 Mbps	43.3 Mbps	6.5 Mbps	65 Mbps	72.2 Mbps	6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
5755	151	10.2	10.02	10.08	9.13	9.01	9.07	8.11	8.52	11.45	11.23	10.13	10.19	9.97	9.43	7.74	7.69
5775	155	10.65	10.33	10.46	9.5	9.48	9.59	8.15	8.93	11.65	11.72	10.39	10.61	10.39	9.63	8.22	8.16
5795	159	10.62	10.25	10.5	9.51	9.55	9.18	8.45	8.69	11.74	11.65	10.34	10.65	10.46	9.67	8.27	8.13
5815	163	10.76	10.58	10.58	9.66	9.57	9.23	8.51	8.68	<b>11.90</b>	11.78	10.5	10.82	10.54	9.76	8.38	8.14

Average power (dBm) for <u>802.11a</u> in 5 GHz									
Freq	CH	20 MHz BW							
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps
5745	149	13.07	12.12	12.18	9.22	10.45	10.52	10.55	7.68
5765	153	13.92	12.95	12.95	10.16	11.43	11.36	11.41	8.45
5785	157	14.06	12.94	13.22	10.17	11.41	11.44	11.61	8.54
5805	161	<b>14.07</b>	12.97	12.95	10.12	11.32	11.61	11.6	8.55
5825	165	13.92	12.92	12.97	9.96	11.21	11.22	11.37	8.36

<b>Peak power (dBm) for 802.11n in 5 GHz</b>																	
Freq	CH	20 MHz BW, 400 ns GI								20 MHz BW, 800 ns GI							
		7.2 Mbps	14.4 Mbps	21.7 Mbps	28.9 Mbps	43.3 Mbps	6.5 Mbps	65 Mbps	72.2 Mbps	6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
5745	149	16.25	16.82	15.54	15.78	14.58	14.79	16.05	16.16	16.34	16.71	15.52	15.81	14.67	14.89	16.13	16.06
5765	153	17.41	17.48	16.17	16.54	15.37	15.64	16.85	17.21	17.21	17.57	16.18	16.52	15.47	15.62	16.87	17.11
5785	157	17.44	17.69	16.44	16.71	15.34	15.82	17.13	17.25	17.42	17.71	16.42	16.91	15.32	15.79	17.09	17.3
5805	161	17.05	17.59	16.22	16.85	15.52	15.78	17.2	17.49	17.45	17.73	16.43	16.75	15.69	15.81	17.15	17.29
5825	165	17.49	17.45	16.48	16.57	15.43	15.55	16.85	17.11	17.29	17.25	16.28	16.78	15.59	15.67	16.98	17.16

<b>Peak power (dBm) for 802.11n in 5 GHz</b>																	
Freq	CH	40 MHz BW, 400 ns GI								40 MHz BW, 800 ns GI							
		7.2 Mbps	14.4 Mbps	21.7 Mbps	28.9 Mbps	43.3 Mbps	6.5 Mbps	65 Mbps	72.2 Mbps	6.5 Mbps	13 Mbps	19.5 Mbps	26 Mbps	39 Mbps	52 Mbps	58.5 Mbps	65 Mbps
5755	151	17.96	17.68	17.23	16.27	16.02	16.03	15.13	15.49	18.86	18.34	17.02	17.21	16.99	16.54	14.61	14.52
5775	155	18.43	18.01	17.59	16.62	16.55	16.56	15.27	15.85	19.06	18.84	17.51	17.64	17.47	16.72	15.11	15.01
5795	159	18.45	18.22	17.69	16.63	16.53	16.16	15.36	15.84	19.3	18.78	17.46	17.68	17.48	16.69	15.13	14.99
5815	163	18.59	15.33	17.62	16.81	16.56	16.06	15.42	15.67	19.19	18.85	17.55	17.85	17.58	16.84	15.26	15.01

<b>Peak power (dBm) for 802.11a in 5 GHz</b>										
Freq	CH	20 MHz BW								
		6 Mbps	9 Mbps	12 Mbps	18 Mbps	24 Mbps	36 Mbps	48 Mbps	54 Mbps	
5745	149	19.41	18.34	18.63	16.46	16.76	16.74	16.84	14.7	
5765	153	20.32	19.14	19.39	17.37	17.71	17.61	17.75	15.48	
5785	157	20.43	19.13	19.61	17.48	17.68	17.65	18.01	15.52	
5805	161	20.36	19.17	19.43	17.41	17.59	17.89	17.98	15.66	
5825	165	20.25	19.13	19.41	17.25	17.44	17.43	17.72	15.36	

Based on these initial measurements, it was determined that testing will be performed in the 13 Mbps data rate for the 802.11n 20M BW mode and 6.5 Mbps data rate for 802.11n 40M BW mode and 6 Mbps for the 802.11 a mode.

**Power Spectral Density**

CFR 47 Part 15.247

**Measurement Procedure**

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 20db passive attenuator. A fully charged battery was used for the supply voltage.

The WLAN DSSS function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = 30 MHz
2. VBW = 300 kHz
3. RBW= 100 kHz
4. Sweep = Auto
5. Detector function = peak
6. Trace = max hold

Bandwidth Correction factor =  $10 \text{ Log } (3 \text{ kHz}/100 \text{ kHz}) = -15.32 \text{ dB}$

The trace was allowed to stabilize. The EUT was transmitting at its maximum data rate.

**Measurement Results**

<b>5745 MHz</b>		<b>5785 MHz</b>		<b>5825 MHz</b>	
Measured PSD dBm	Corrected PSD dBm	Measured PSD dBm	Corrected PSD dBm	Measured PSD dBm	Corrected PSD dBm
0.37	-14.95	0.78	-14.54	0.81	-14.51

**802.11 n 20MHz BW @ 13 Mbps**

<b>5755 MHz</b>		<b>5775 MHz</b>		<b>5815 MHz</b>	
Measured PSD dBm	Corrected PSD dBm	Measured PSD dBm	Corrected PSD dBm	Measured PSD dBm	Corrected PSD dBm
-3.14	-18.46	-3.65	-18.97	-3.20	-18.52

**802.11 n 40MHz BW @ 6.5 Mbps**

<b>5745 MHz</b>		<b>5785 MHz</b>		<b>5825 MHz</b>	
Measured PSD dBm	Corrected PSD dBm	Measured PSD dBm	Corrected PSD dBm	Measured PSD dBm	Corrected PSD dBm
3.71	-11.61	4.09	-11.23	4.11	-11.21

**802.11 a @ 6 Mbps**

## **SPURIOUS RF CONDUCTED EMISSIONS**

CFR 47 Part 15.247

### **Measurement Procedure**

The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 20db passive attenuator. A fully charged battery was used for the supply voltage.

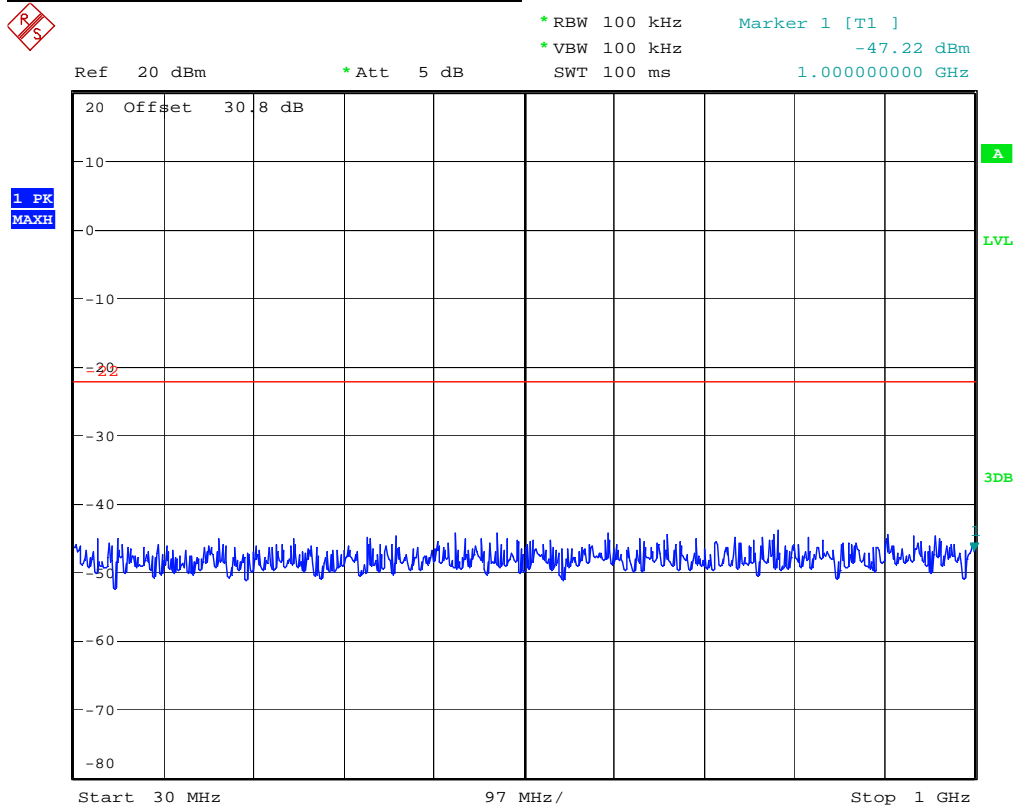
Test method from KDB 558074 was followed.

All modes of operation and data rates were investigated. The test results shown below represent the worst case condition.

### **Measurement Results**

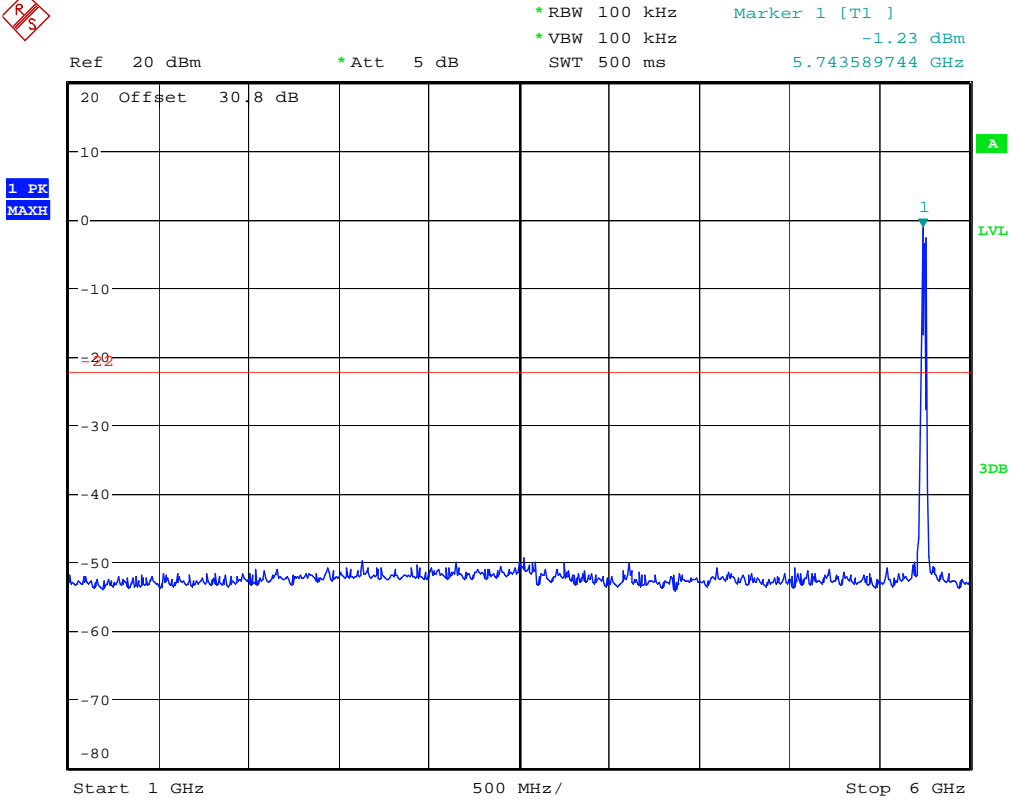
**See attached**

### 802.11 n 20MHz BW @ 13 Mbps



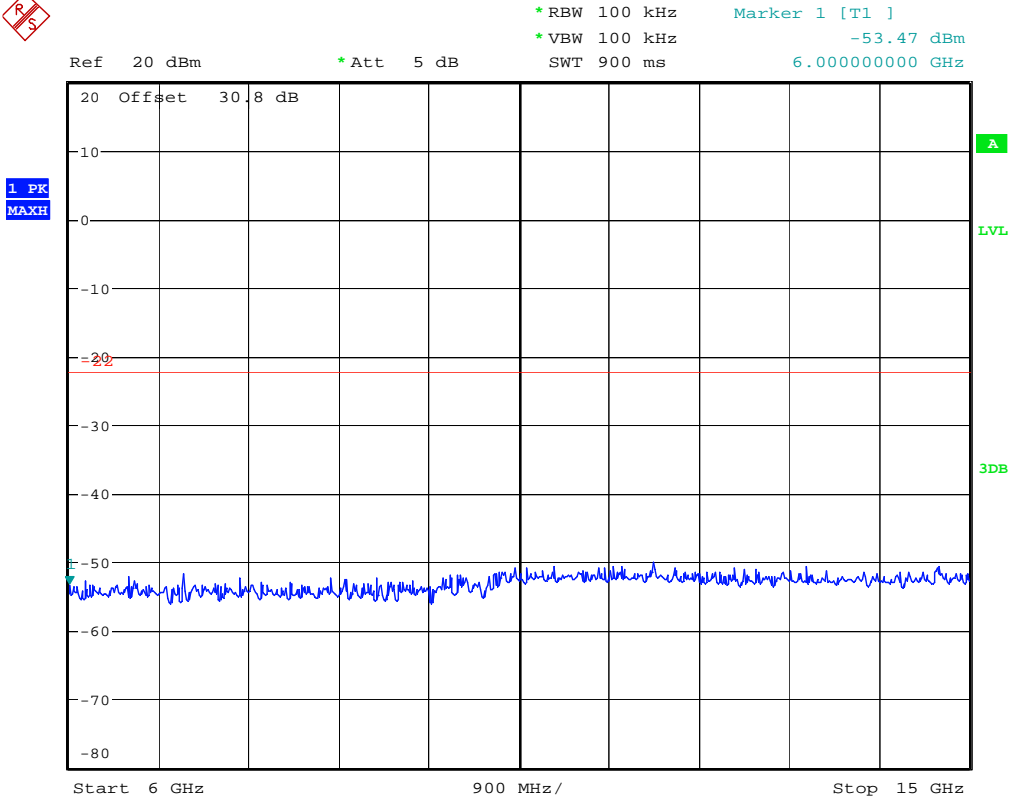
Date: 17.AUG.2012 10:19:33

### Conducted Spurious Emissions 30-1000MHz (Ch 149)



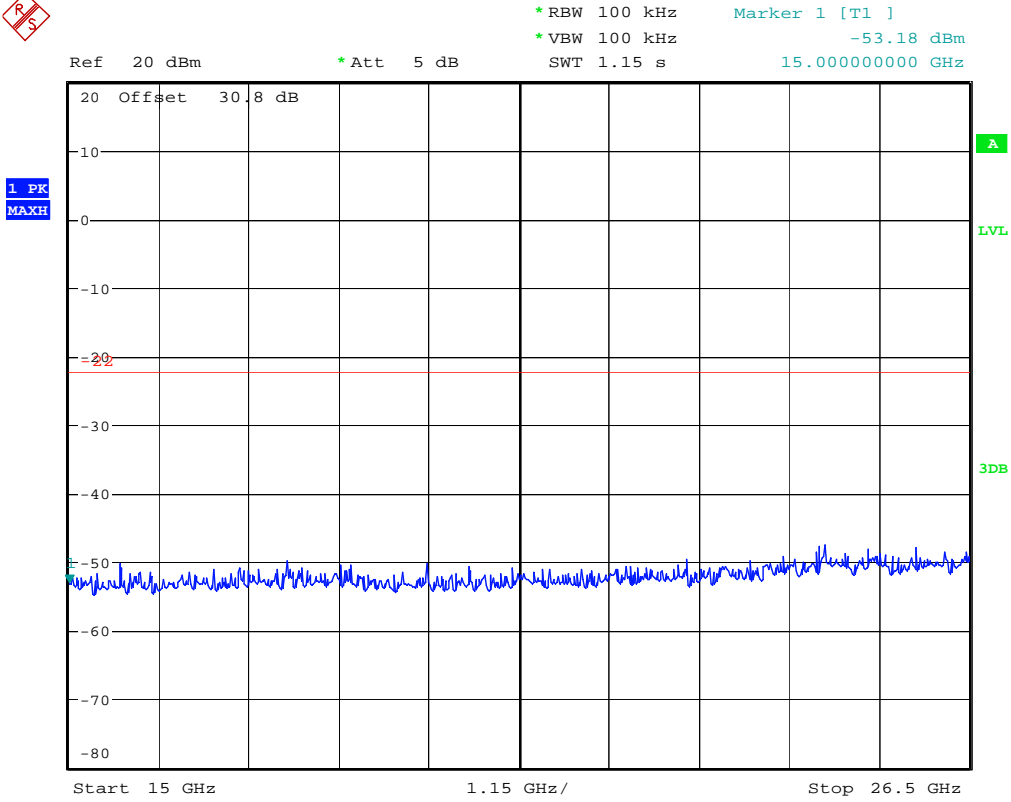
Date: 17.AUG.2012 10:20:38

### Conducted Spurious Emissions 1-6GHz (Ch 149)



Date: 17.AUG.2012 10:21:29

### Conducted Spurious Emissions 6-15GHz (Ch 149)



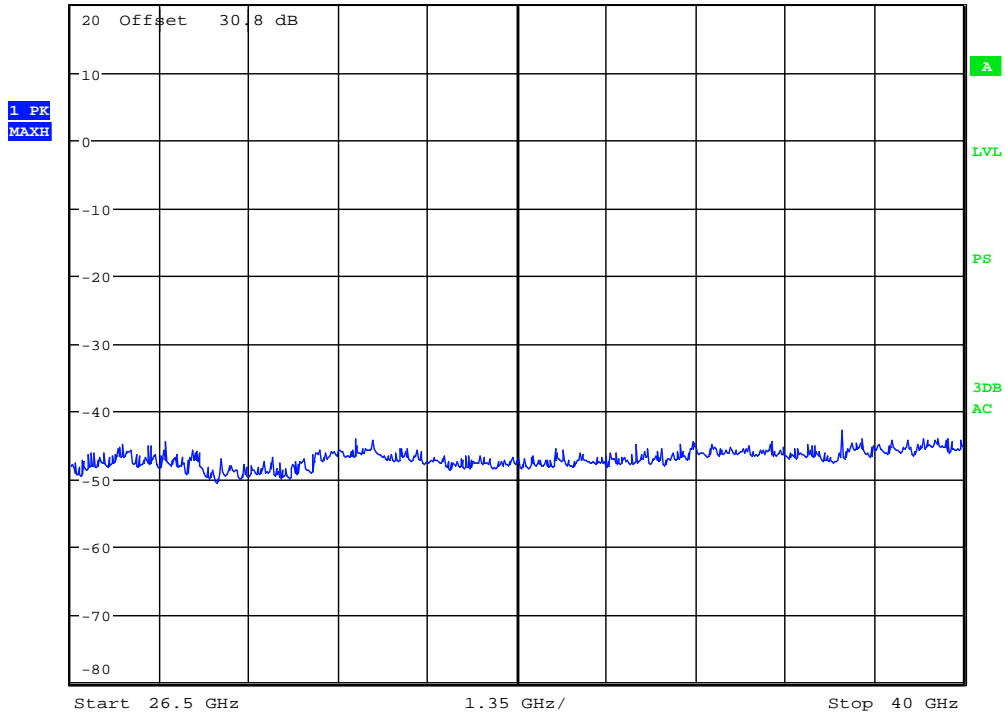
Date: 17.AUG.2012 10:21:49

### Conducted Spurious Emissions 15-26.5GHz (Ch 149)



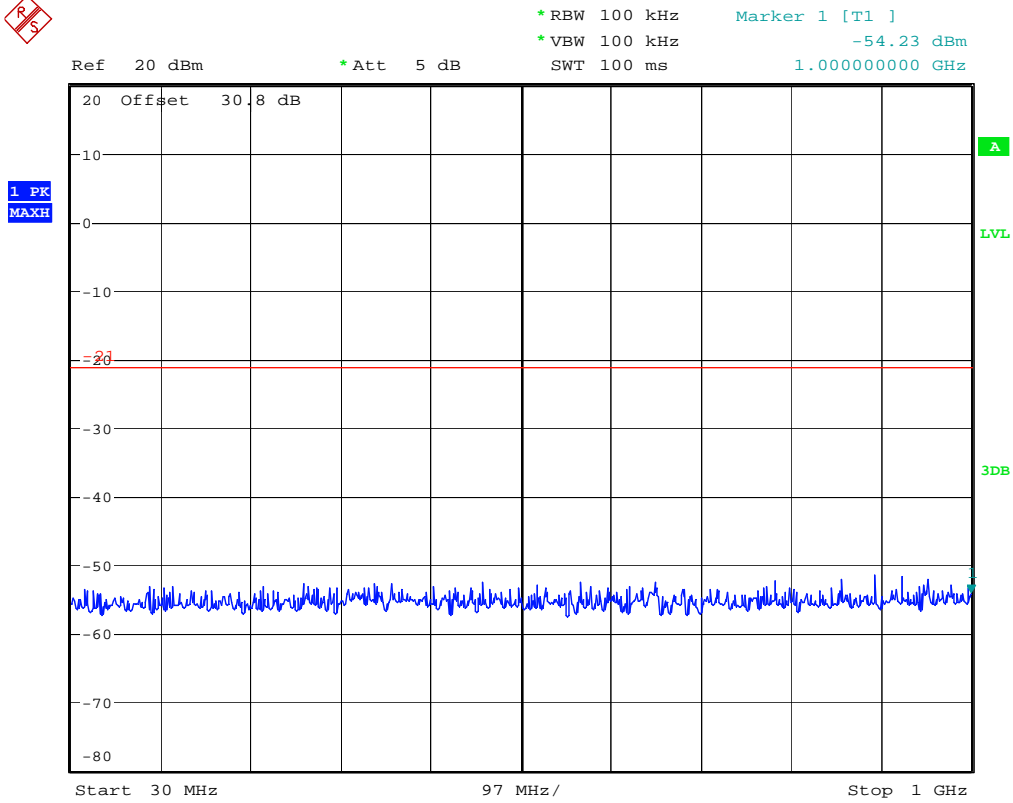
\* RBW 100 kHz  
\* VBW 100 kHz

Ref 20 dBm \* Att 5 dB SWT 1.35 s



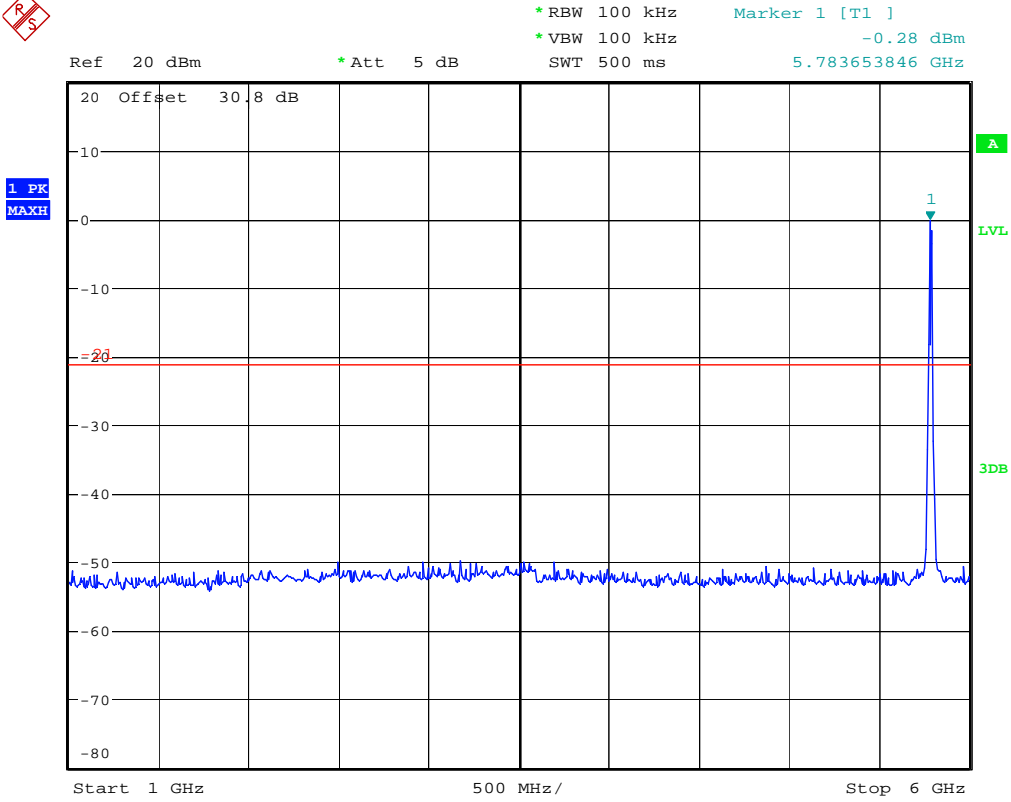
Date: 20.AUG.2012 10:59:09

### Conducted Spurious Emissions 26.5-40GHz (Ch 149)



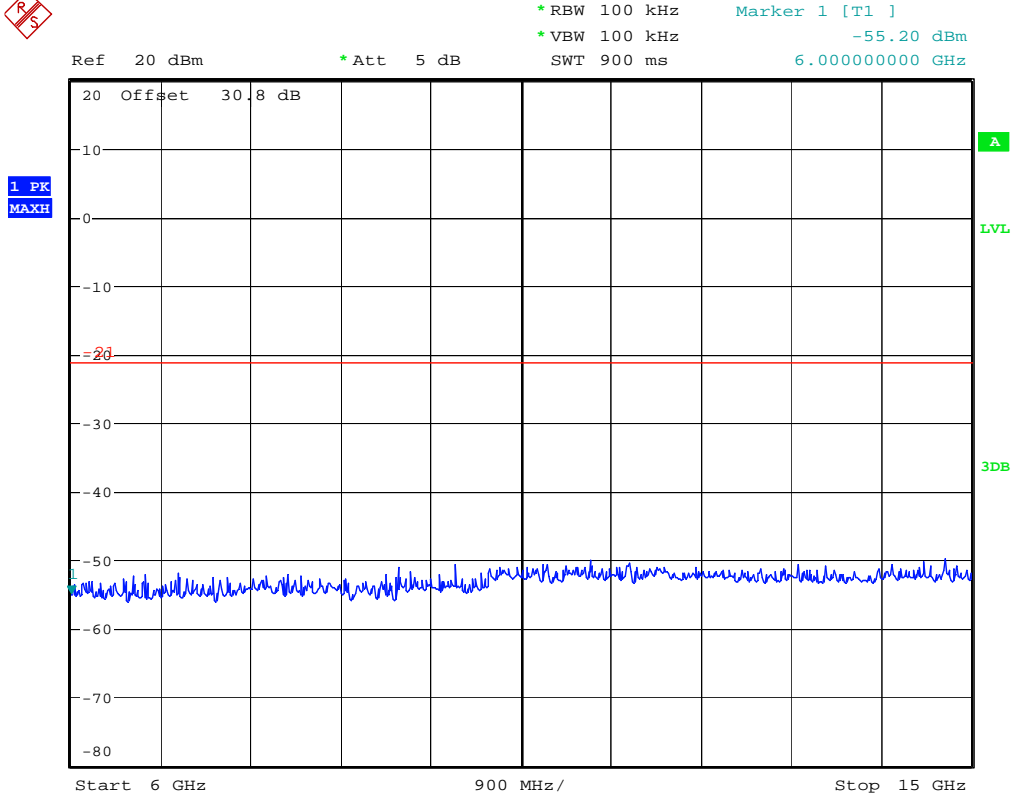
Date: 17.AUG.2012 10:23:26

### Conducted Spurious Emissions 30-1000MHz (Ch 157)



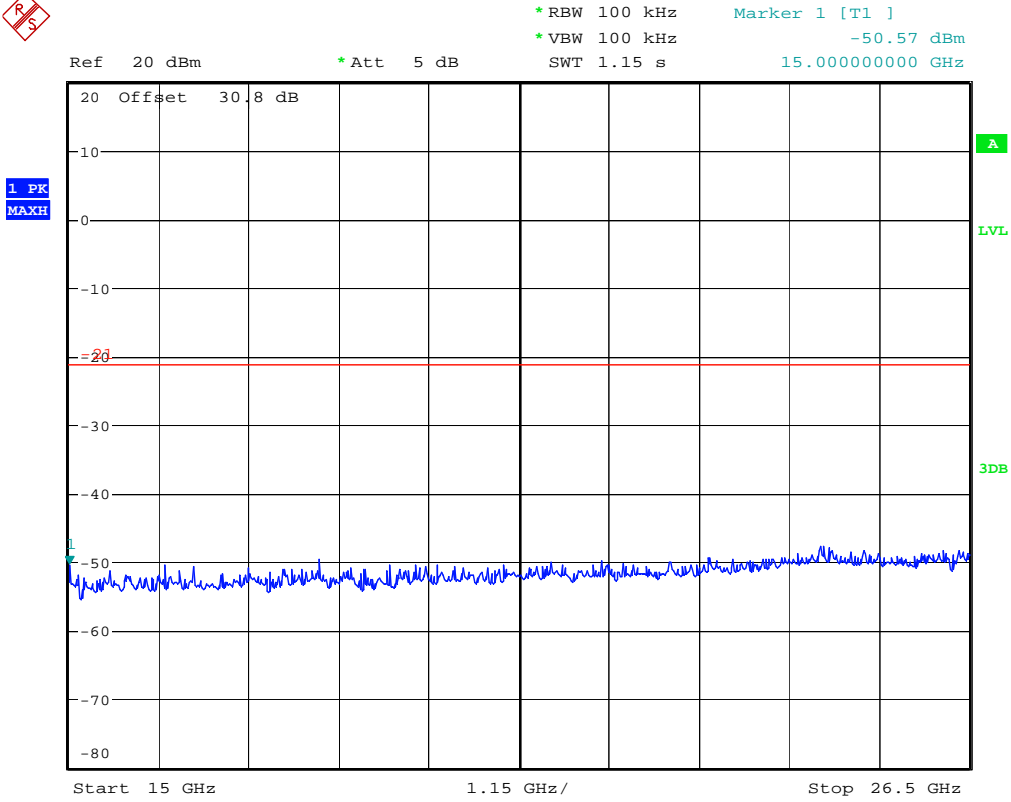
Date: 17.AUG.2012 10:23:04

### Conducted Spurious Emissions 1-6GHz (Ch 157)



Date: 17.AUG.2012 10:23:44

### Conducted Spurious Emissions 6-15GHz (Ch 157)



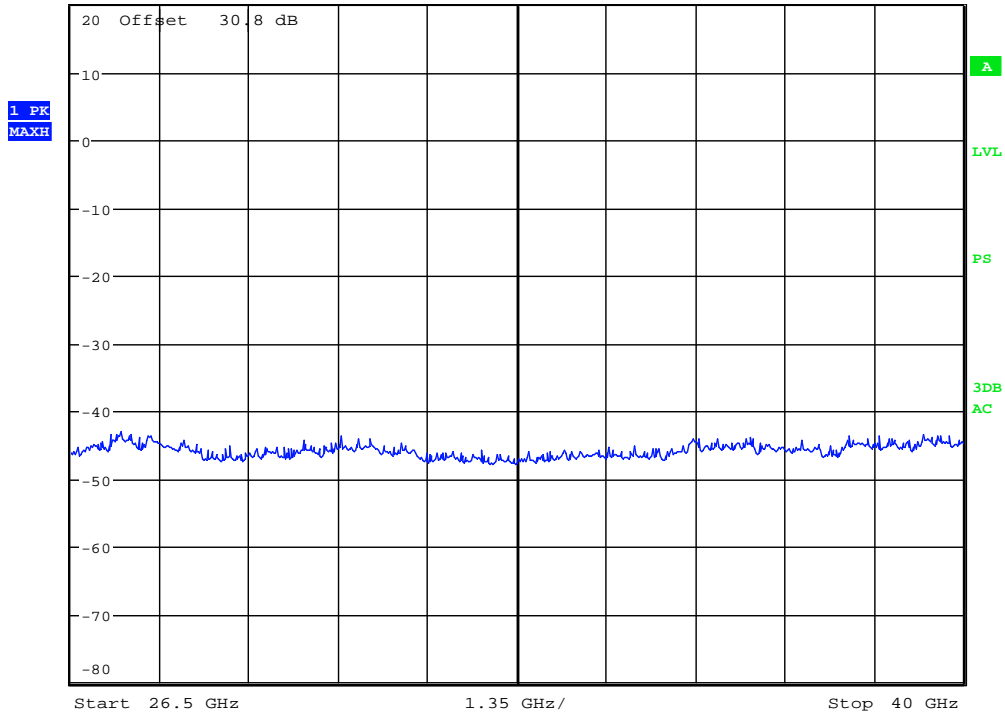
Date: 17.AUG.2012 10:24:17

### Conducted Spurious Emissions 15-26.5GHz (Ch 157)



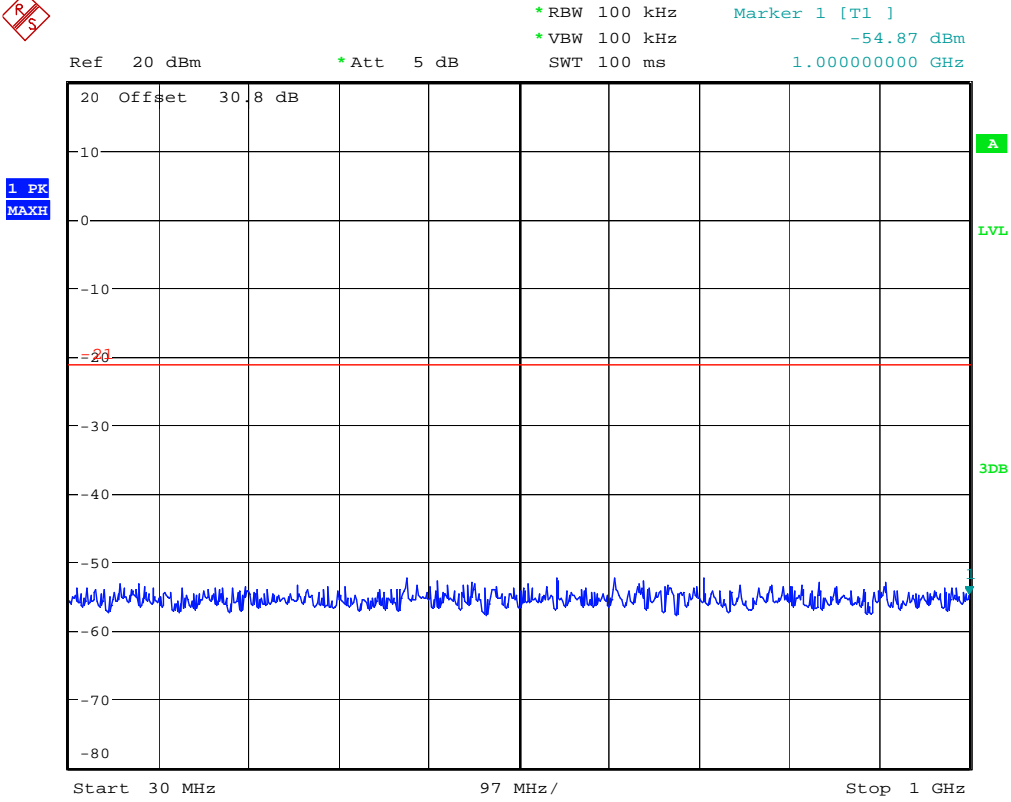
\* RBW 100 kHz  
\* VBW 100 kHz

Ref 20 dBm      \* Att 5 dB      SWT 1.35 s



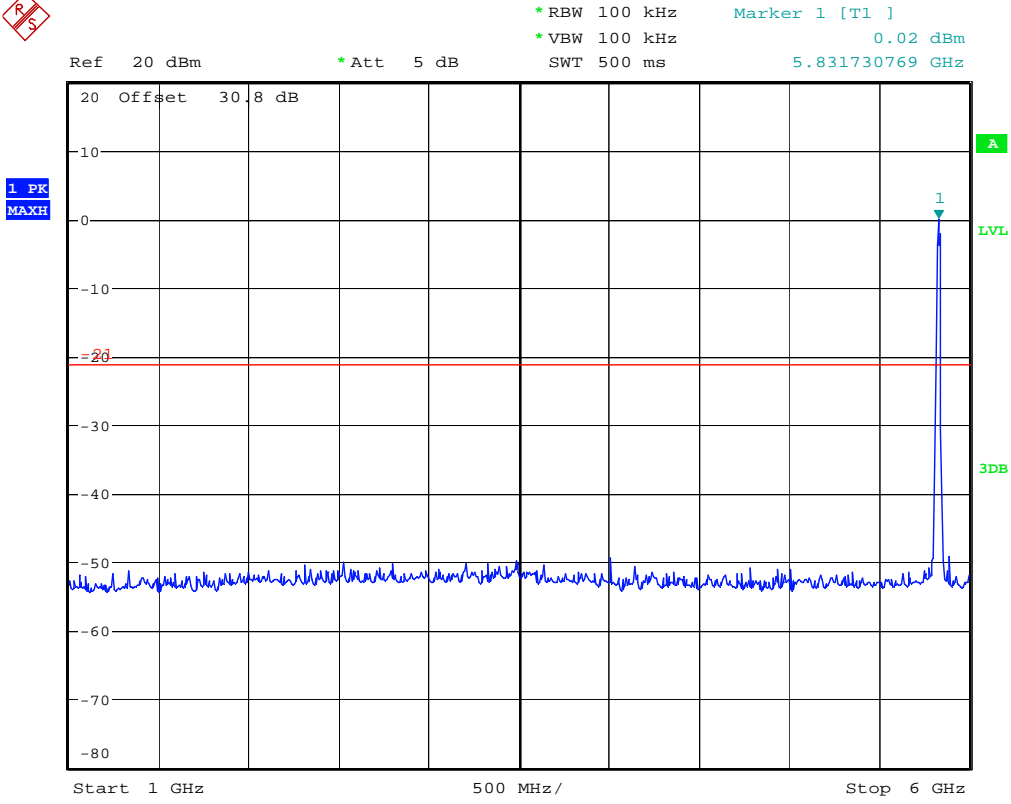
Date: 20.AUG.2012 11:01:48

### Conducted Spurious Emissions 26.5-40GHz (Ch 157)



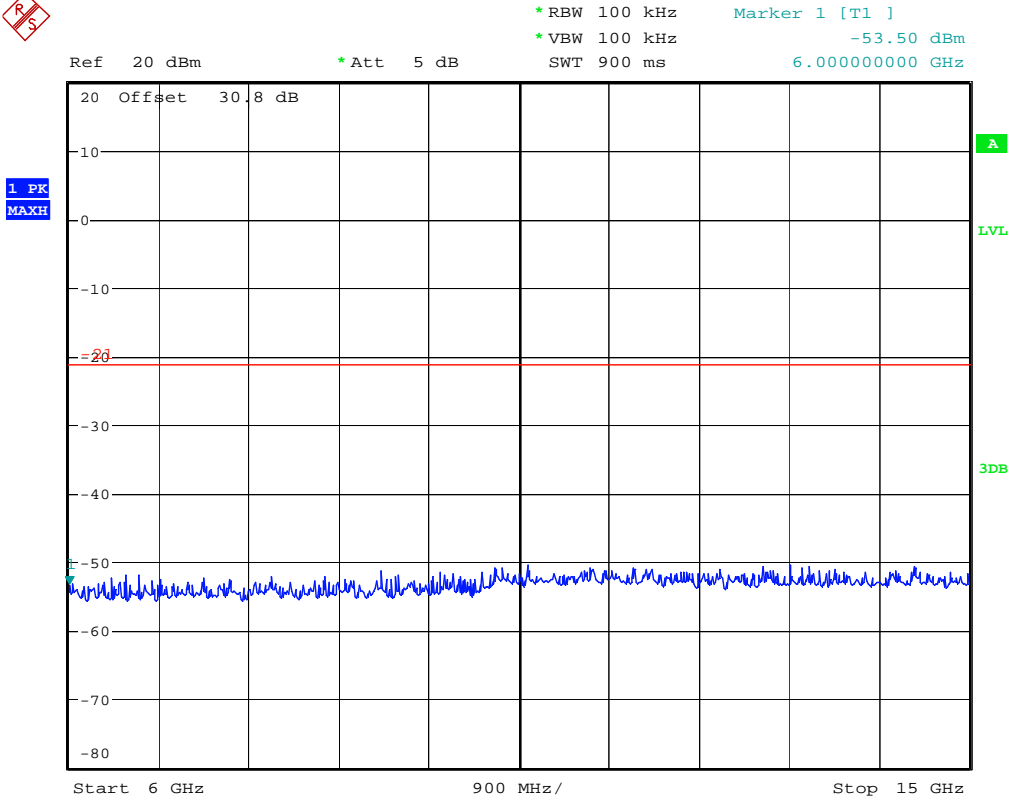
Date: 17.AUG.2012 10:25:53

### Conducted Spurious Emissions 30-1000MHz (Ch 165)



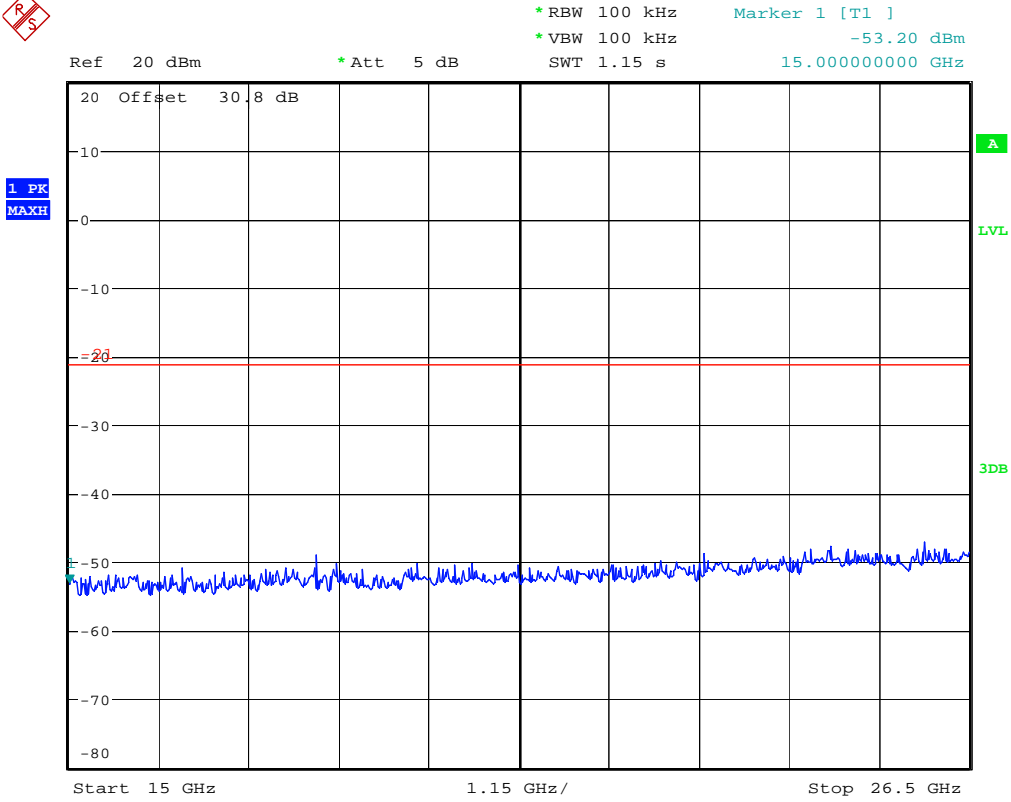
Date: 17.AUG.2012 10:25:33

### Conducted Spurious Emissions 1-6 GHz (Ch 165)



Date: 17.AUG.2012 10:26:08

### Conducted Spurious Emissions 6-15GHz (Ch 165)

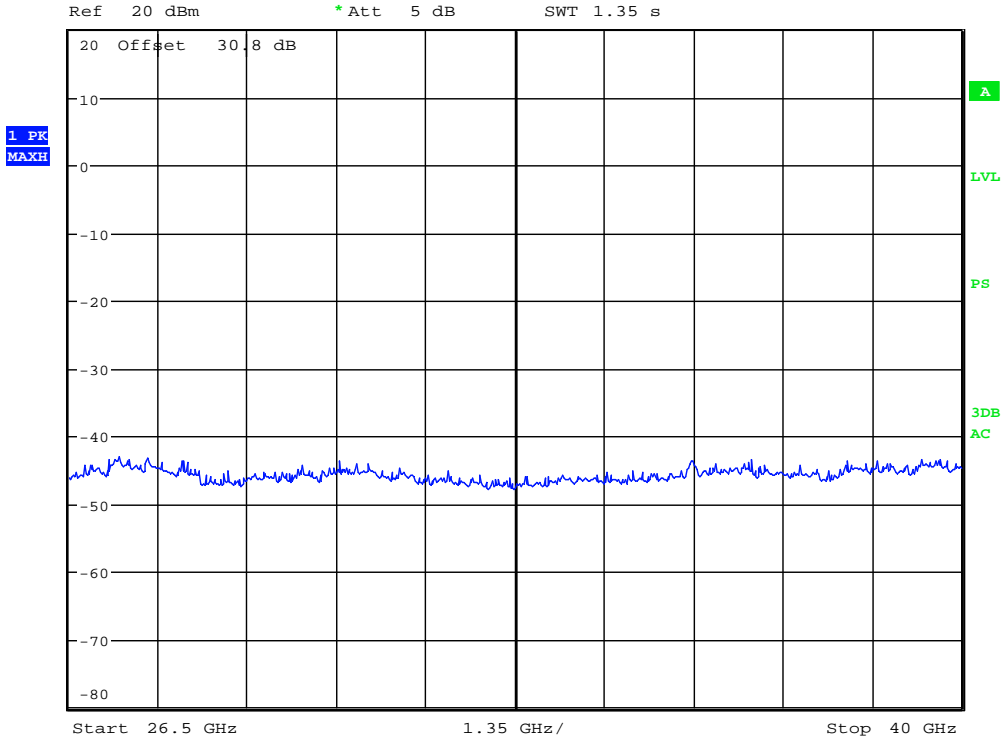


Date: 17.AUG.2012 10:26:21

### Conducted Spurious Emissions 15-26.5GHz (Ch 165)



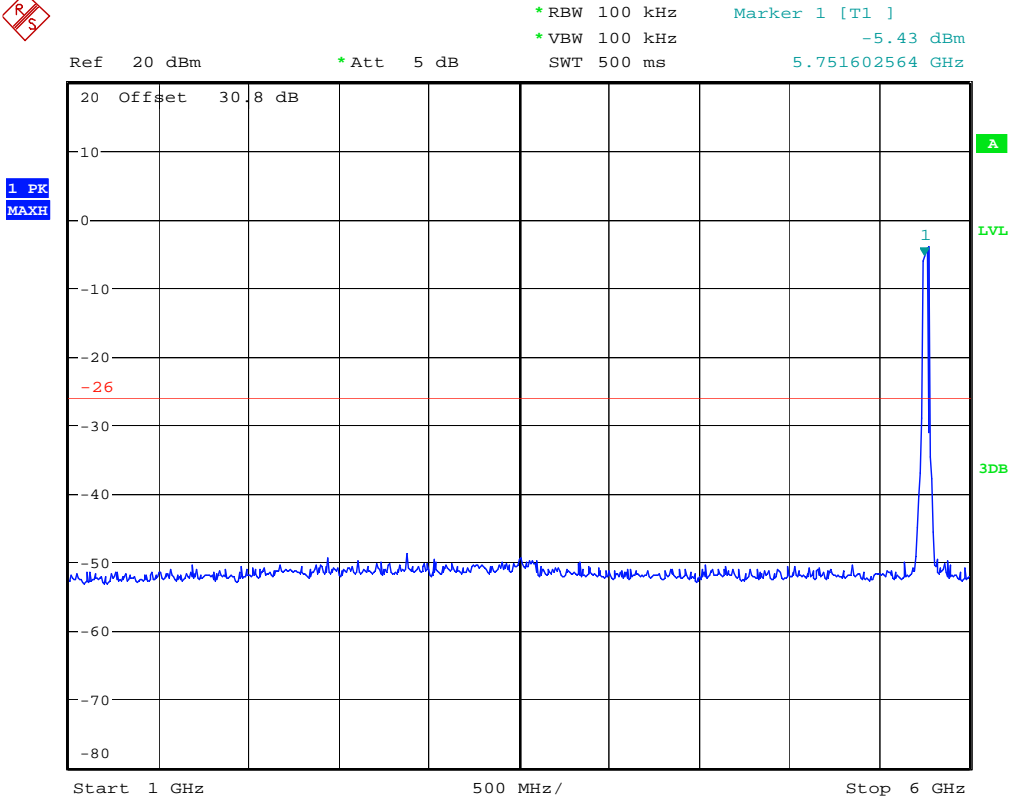
\* RBW 100 kHz  
\* VBW 100 kHz  
SWT 1.35 s



Date: 20.AUG.2012 11:02:59

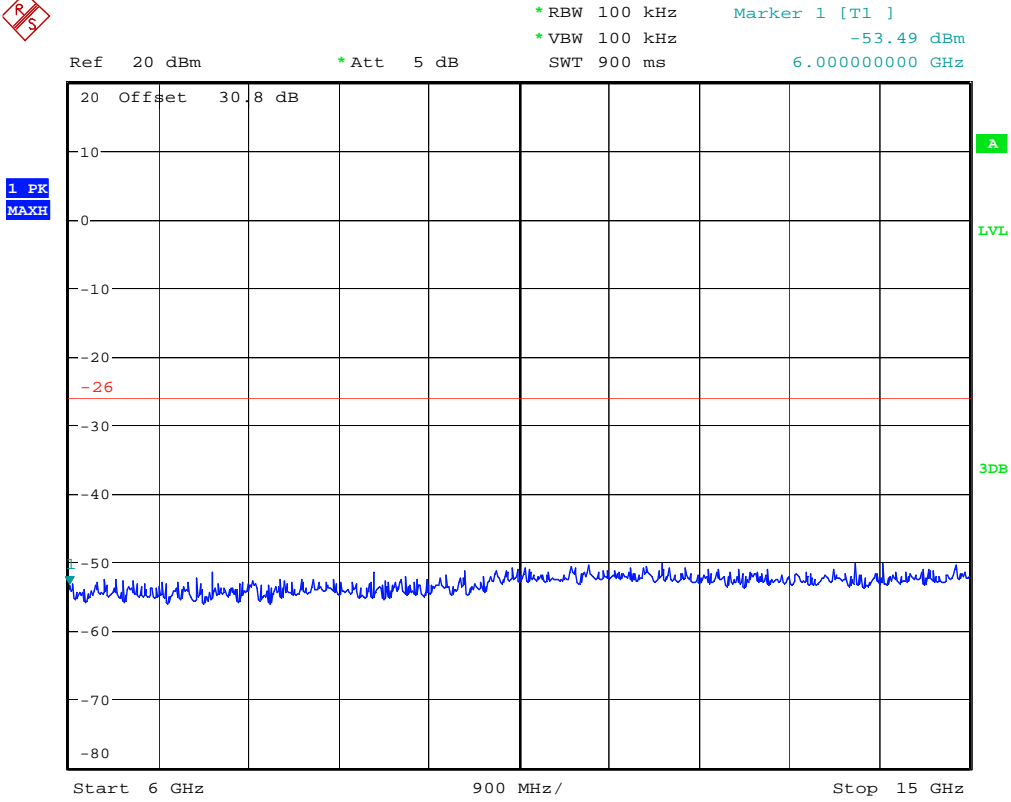
### Conducted Spurious Emissions 26.5-40GHz (Ch 165)





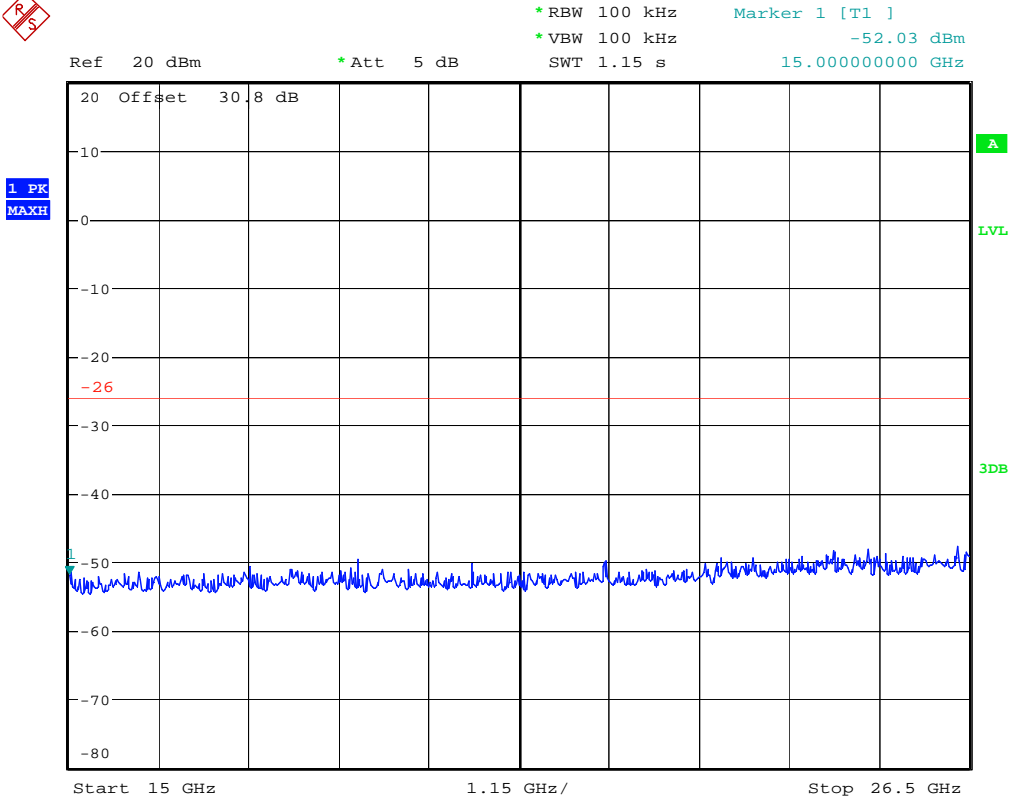
Date: 17.AUG.2012 10:38:14

### Conducted Spurious Emissions 1-6 GHz (Ch 151)



Date: 17.AUG.2012 10:38:43

### Conducted Spurious Emissions 6-15GHz (Ch 151)



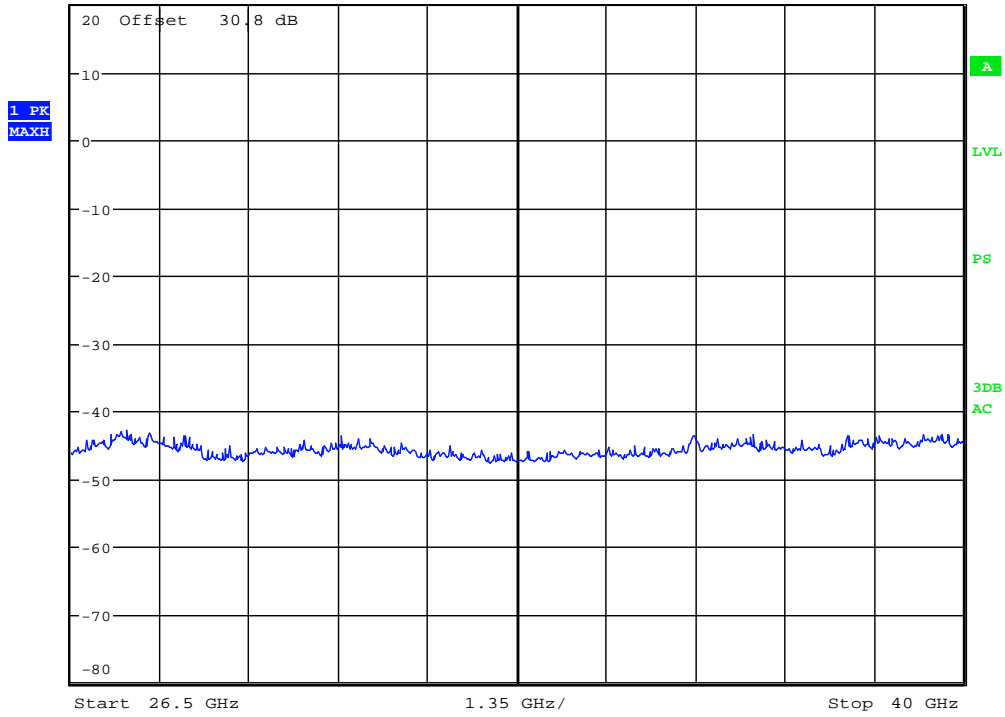
Date: 17.AUG.2012 10:38:53

### Conducted Spurious Emissions 15-26.5GHz (Ch 151)



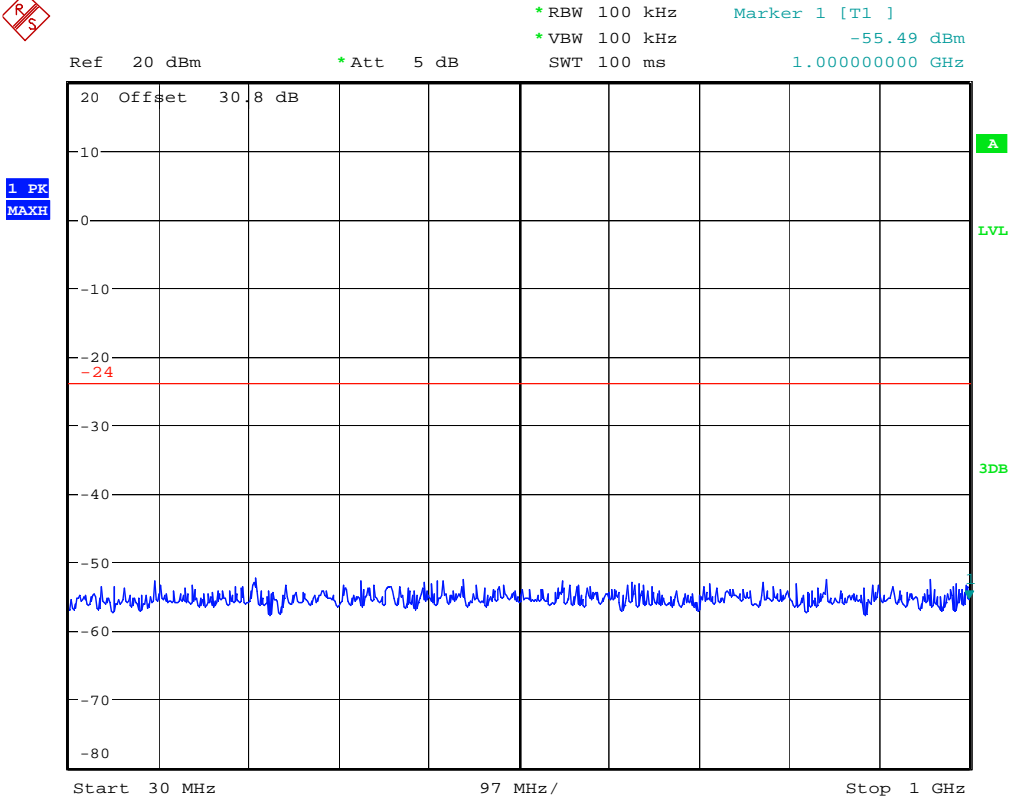
\* RBW 100 kHz  
\* VBW 100 kHz

Ref 20 dBm \* Att 5 dB SWT 1.35 s



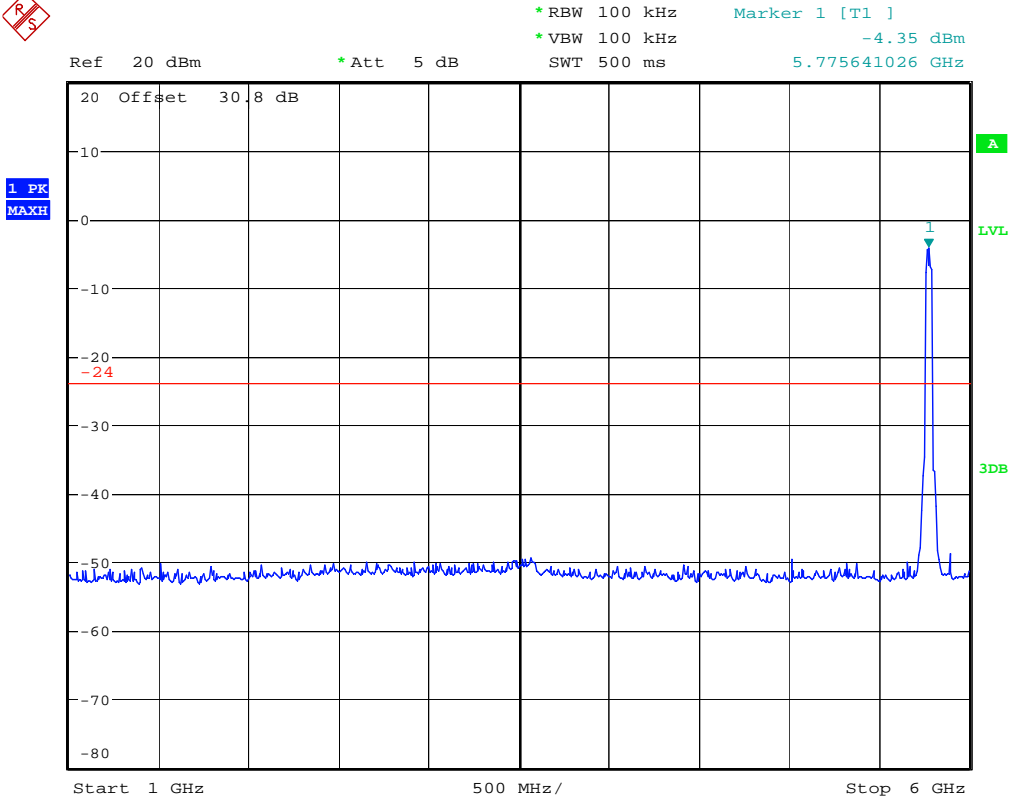
Date: 20.AUG.2012 11:03:47

### Conducted Spurious Emissions 26.5-40GHz (Ch 151)



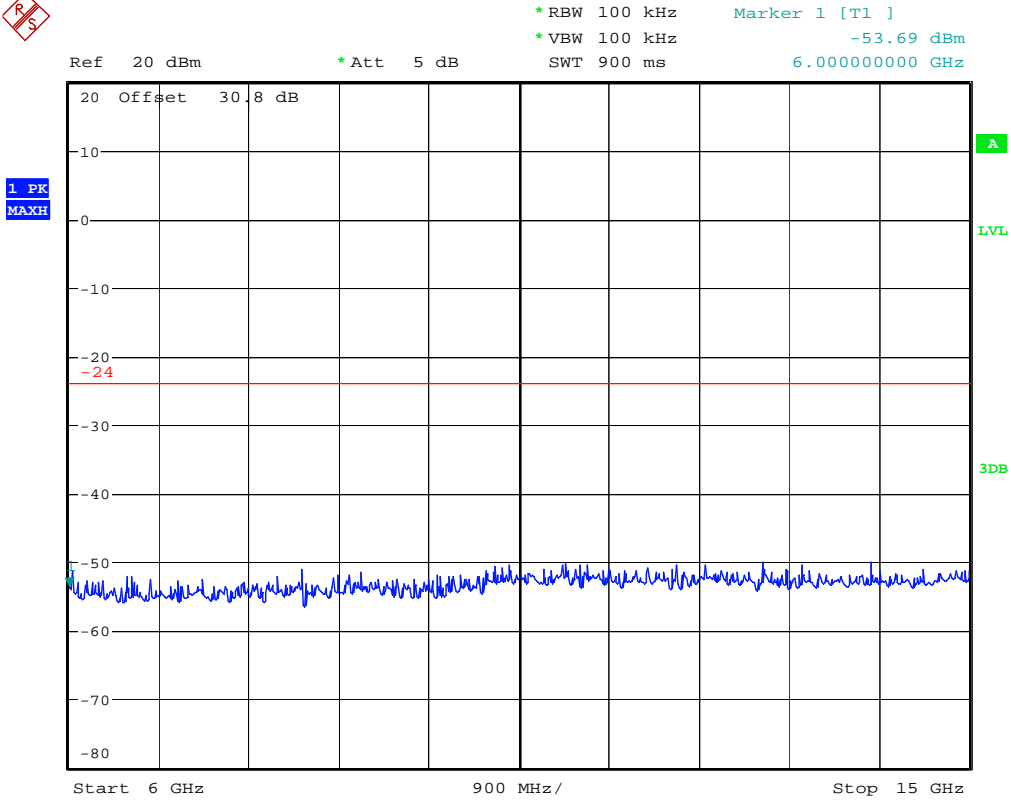
Date: 17.AUG.2012 10:40:33

### Conducted Spurious Emissions 30-1000MHz (Ch 155)



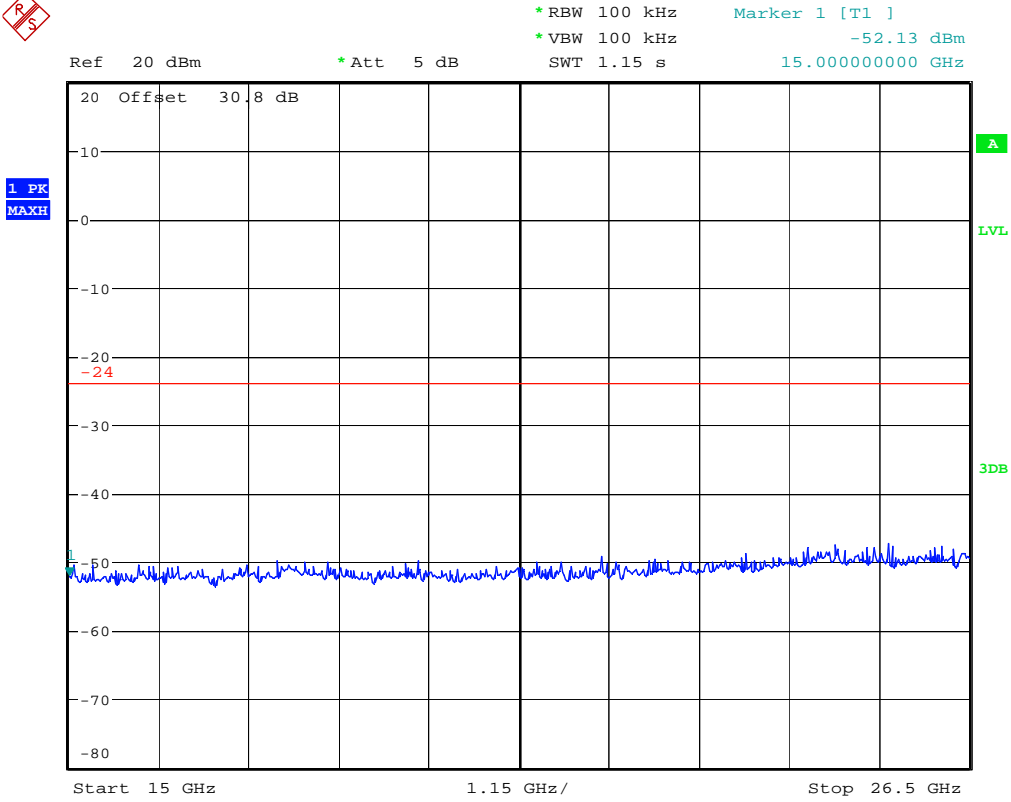
Date: 17.AUG.2012 10:40:18

### Conducted Spurious Emissions 1-6GHz (Ch 155)



Date: 17.AUG.2012 10:40:46

### Conducted Spurious Emissions 6-15GHz (Ch 155)

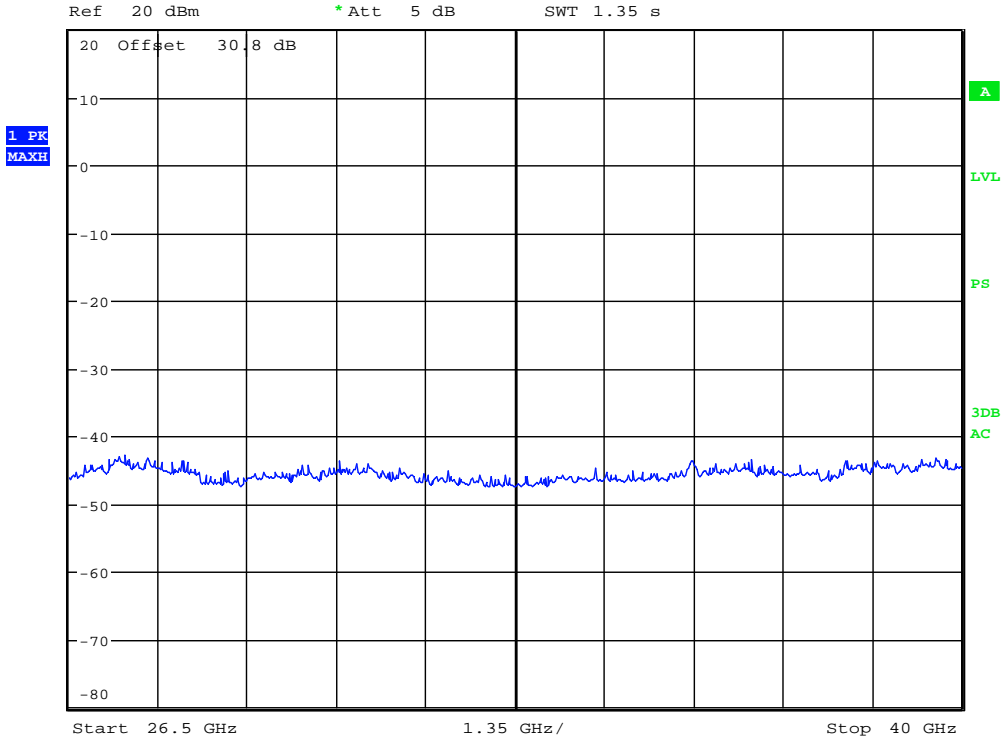


Date: 17.AUG.2012 10:41:06

### Conducted Spurious Emissions 15-26.5GHz (Ch 155)

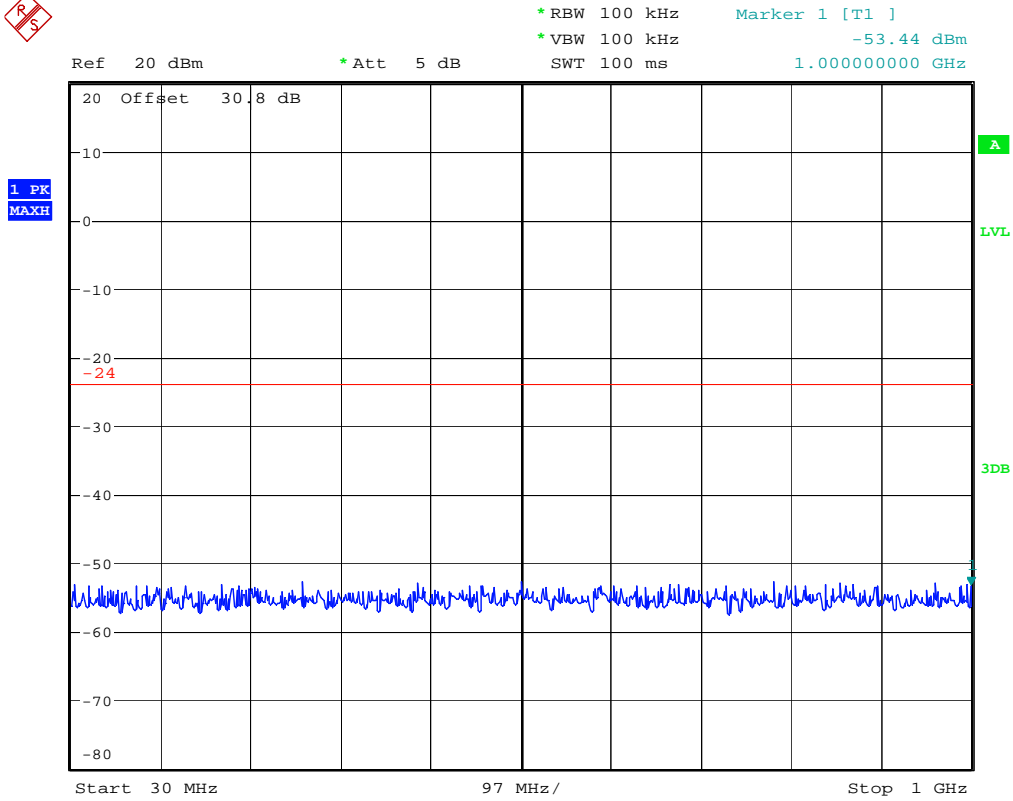


\* RBW 100 kHz  
\* VBW 100 kHz  
SWT 1.35 s



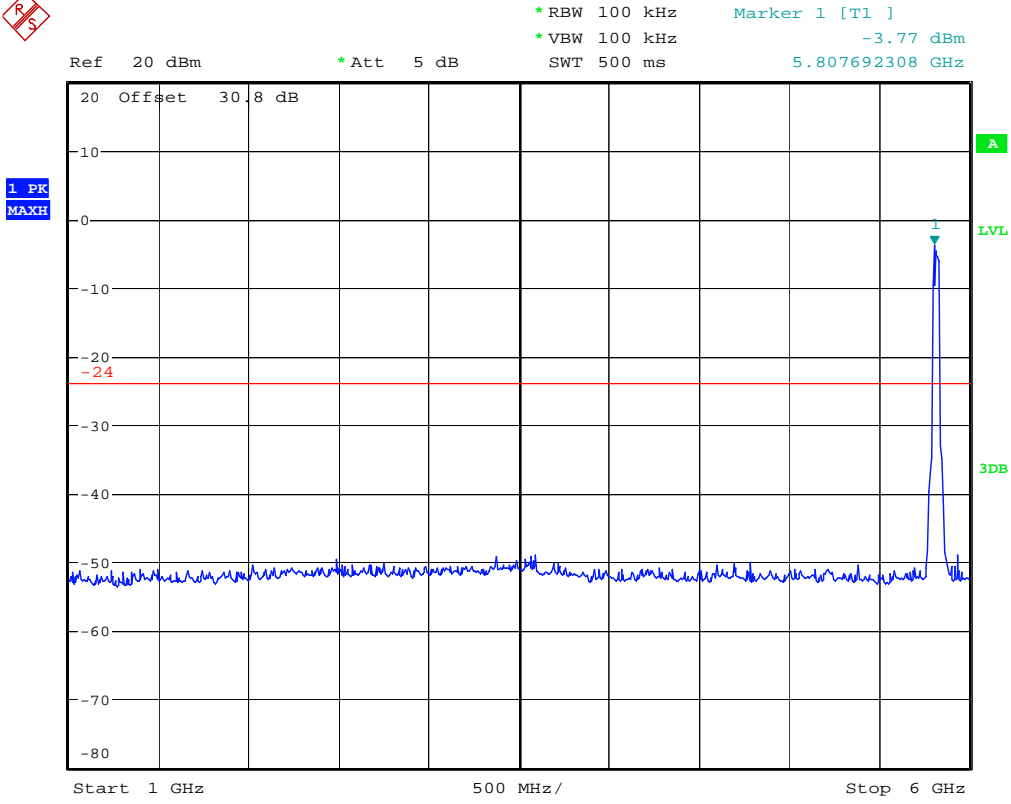
Date: 20.AUG.2012 11:04:30

### Conducted Spurious Emissions 26.5-40GHz (Ch 155)



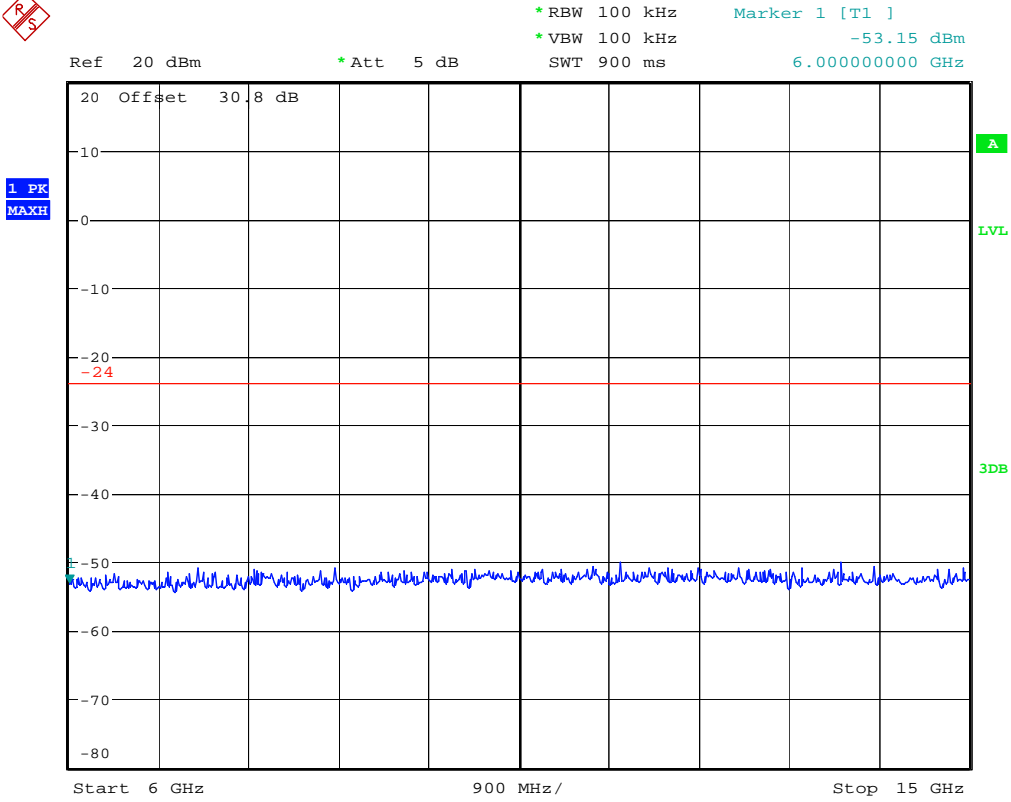
Date: 17.AUG.2012 10:42:32

### Conducted Spurious Emissions 30-1000MHz (Ch 163)



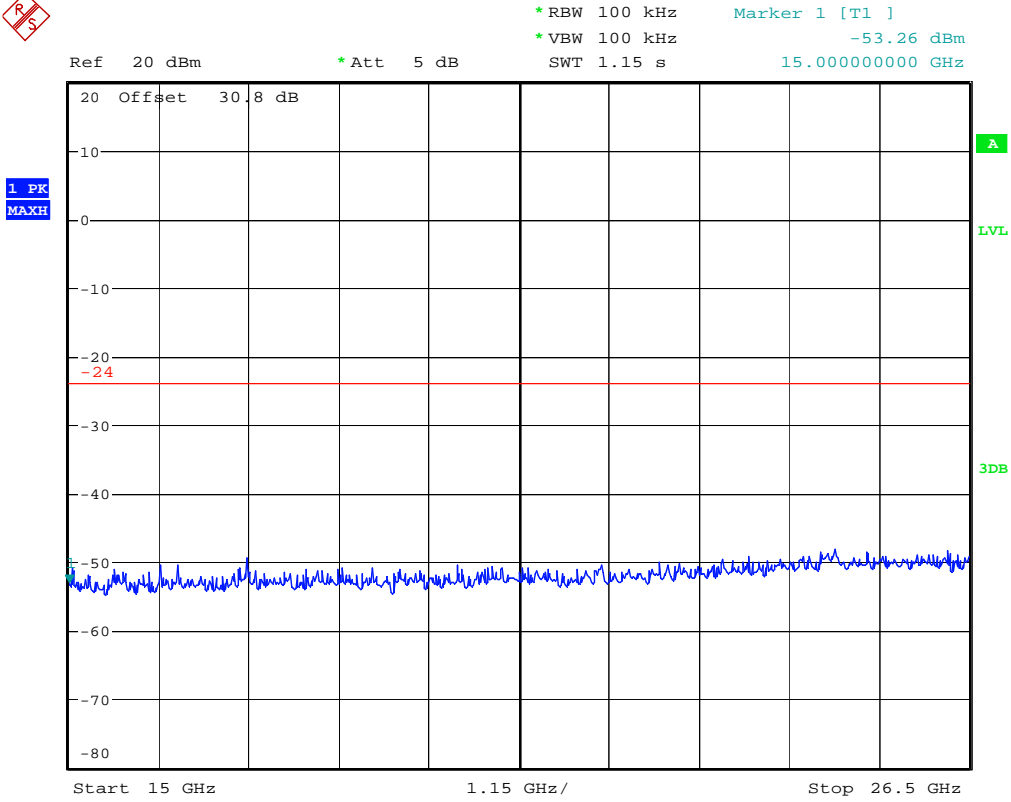
Date: 17.AUG.2012 10:43:47

### Conducted Spurious Emissions 1-6GHz (Ch 163)



Date: 17.AUG.2012 10:44:11

### Conducted Spurious Emissions 6-15GHz (Ch 163)

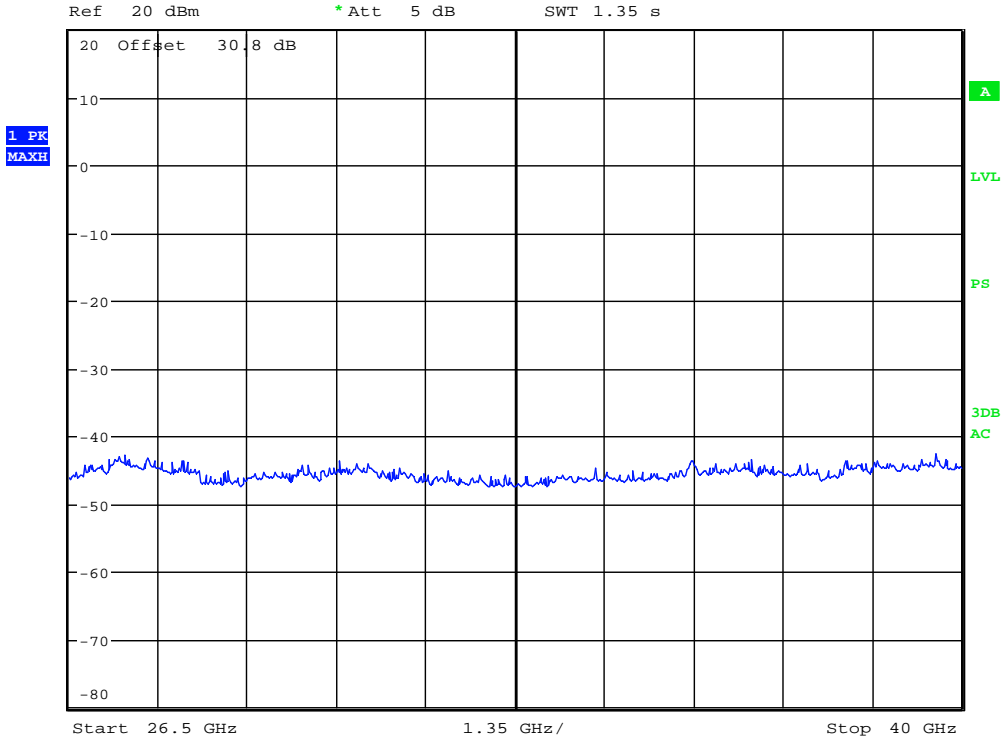


Date: 17.AUG.2012 10:44:22

### Conducted Spurious Emissions 15-26.5GHz (Ch 163)



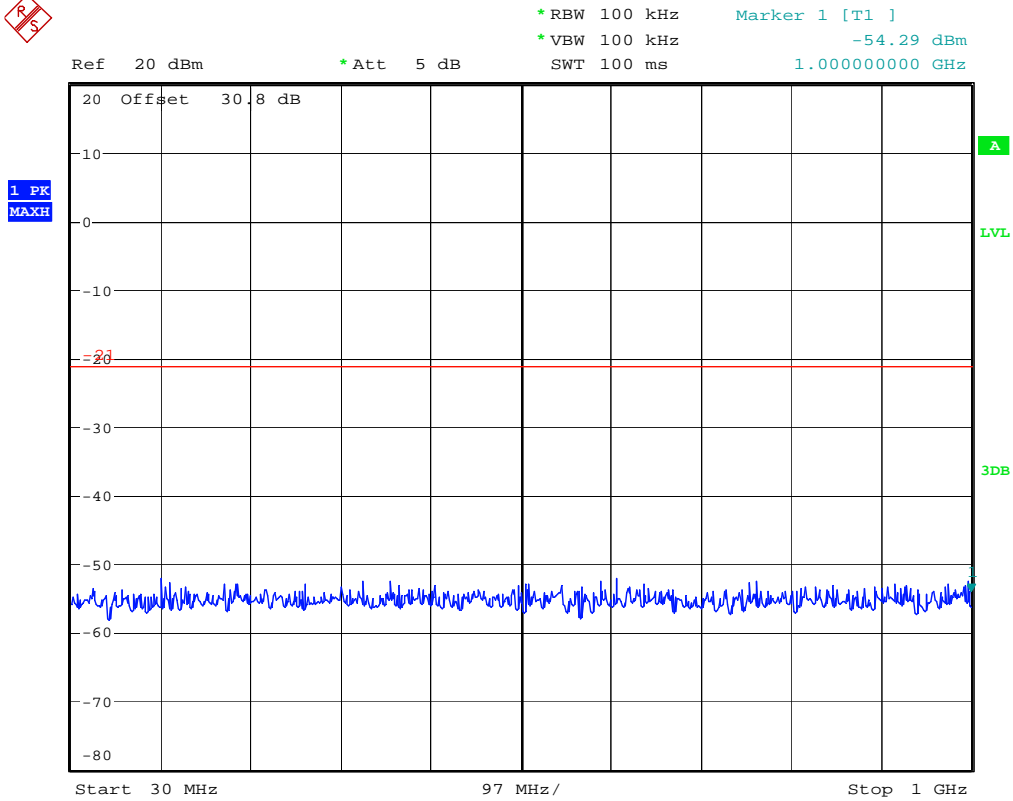
\* RBW 100 kHz  
\* VBW 100 kHz  
SWT 1.35 s



Date: 20.AUG.2012 11:04:55

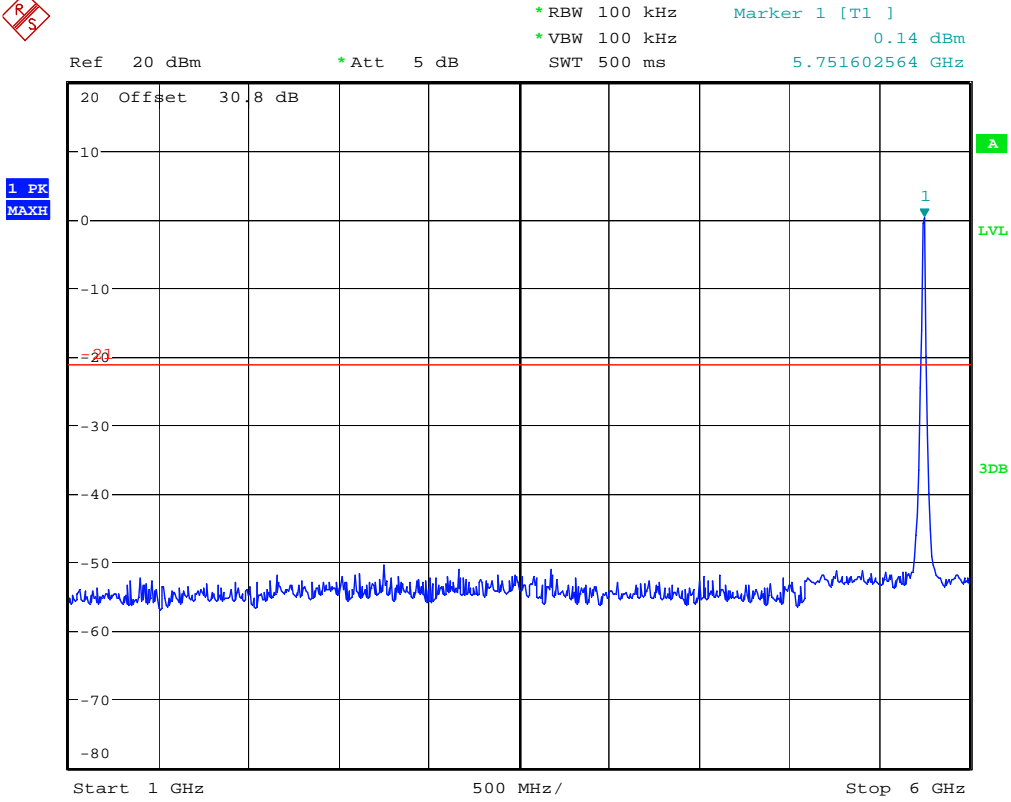
### Conducted Spurious Emissions 26.5-40GHz (Ch 163)

**802.11 a 5G @ 6 Mbps**



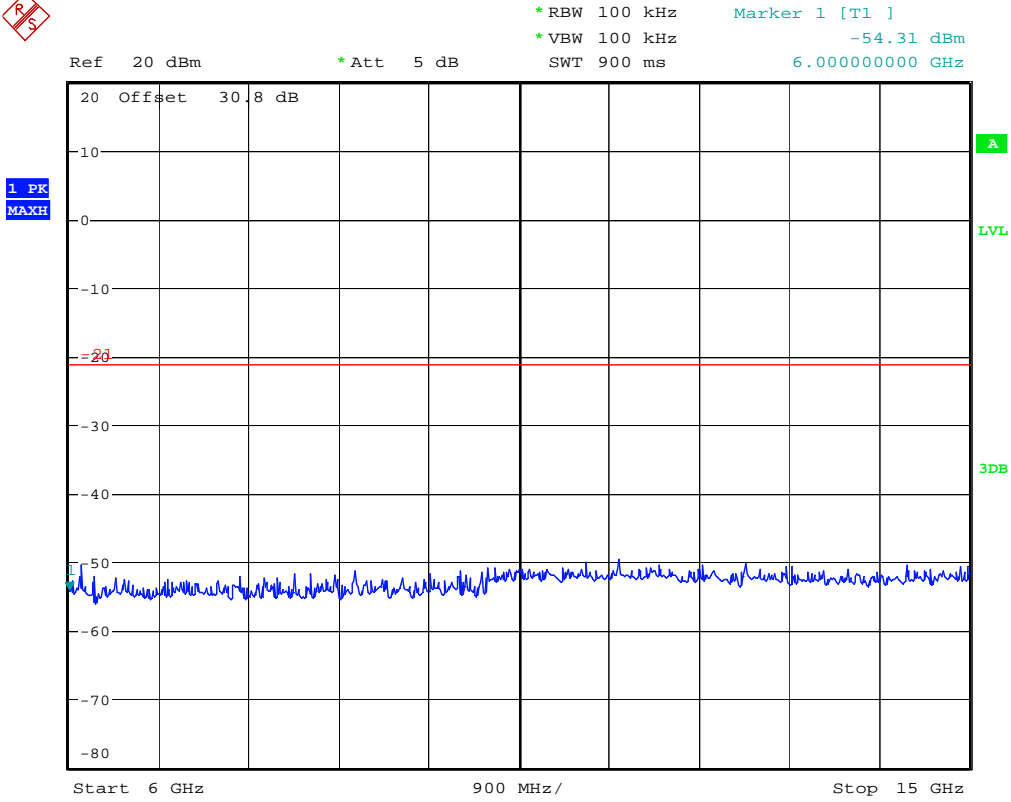
Date: 17.AUG.2012 10:30:22

**Conducted Spurious Emissions 30-1000MHz (Ch 149)**



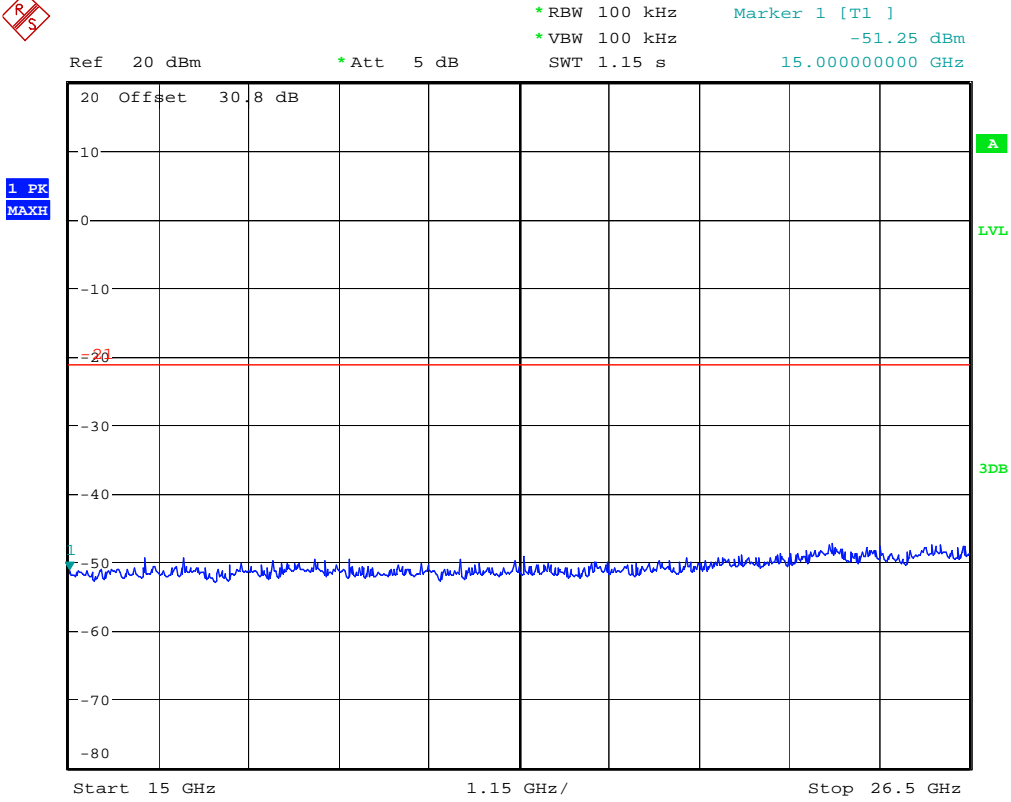
Date: 17.AUG.2012 10:29:43

### Conducted Spurious Emissions 1-6 GHz (Ch 149)



Date: 17.AUG.2012 10:30:38

### Conducted Spurious Emissions 6-15GHz (Ch 149)



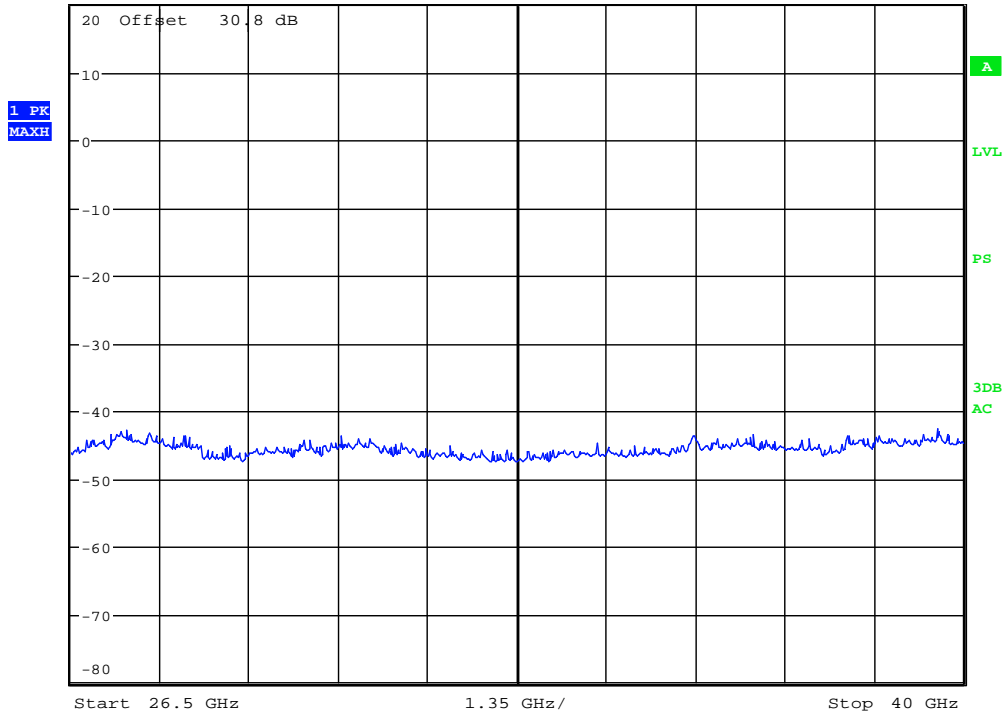
Date: 17.AUG.2012 10:31:11

### Conducted Spurious Emissions 15-26.5GHz (Ch 149)



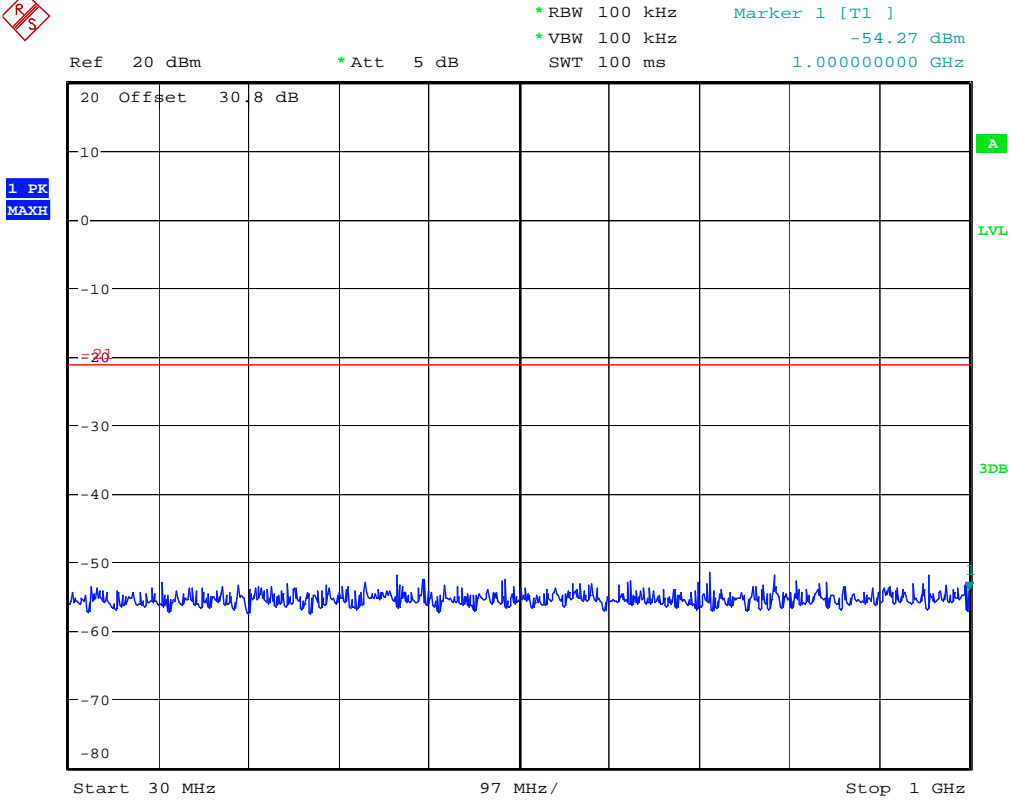
\* RBW 100 kHz  
\* VBW 100 kHz

Ref 20 dBm \* Att 5 dB SWT 1.35 s



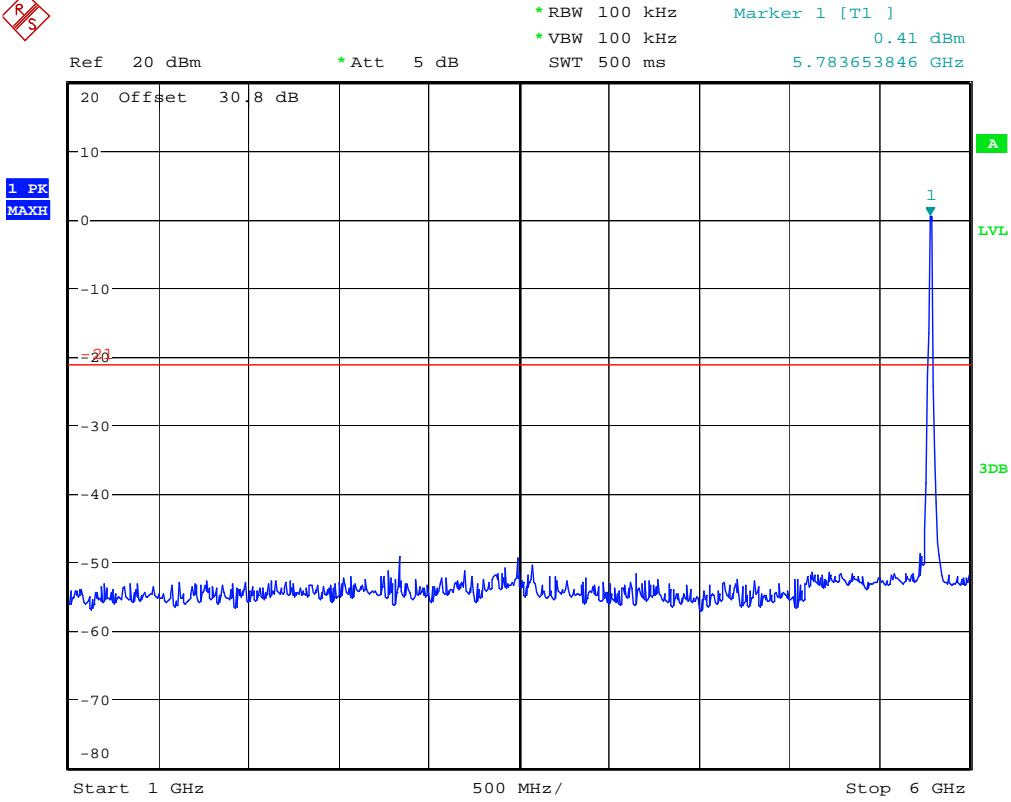
Date: 20.AUG.2012 11:05:22

### Conducted Spurious Emissions 26.5-40GHz (Ch 149)



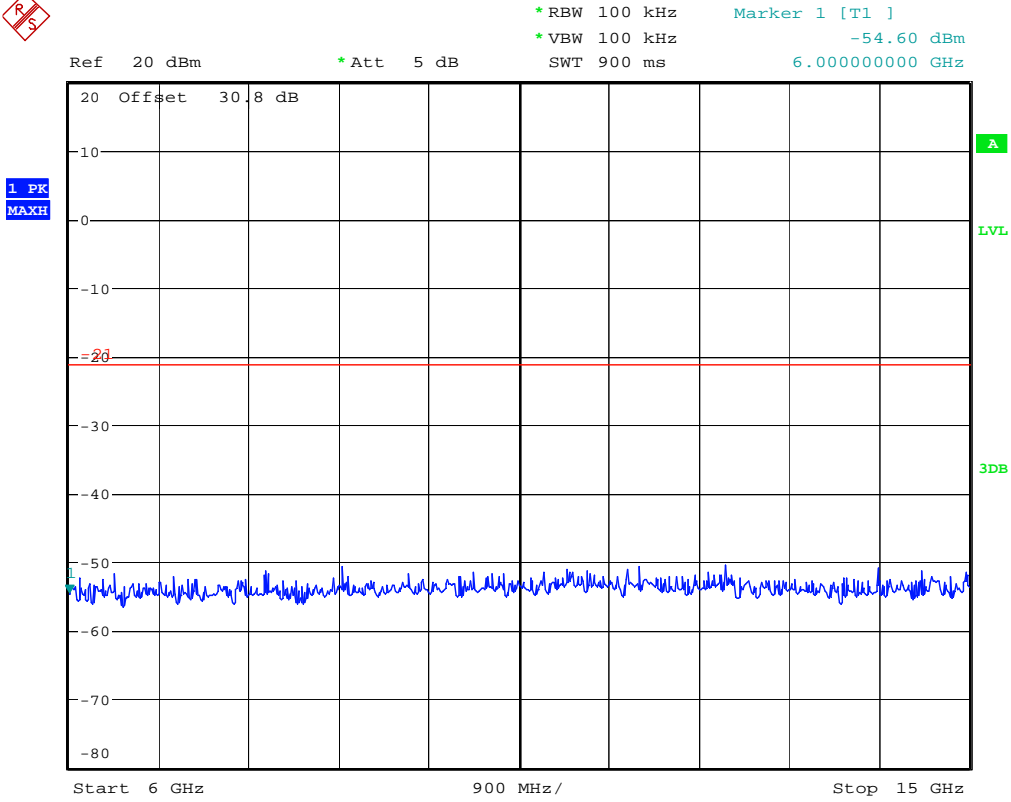
Date: 17.AUG.2012 10:33:23

### Conducted Spurious Emissions 30-1000MHz (Ch 157)



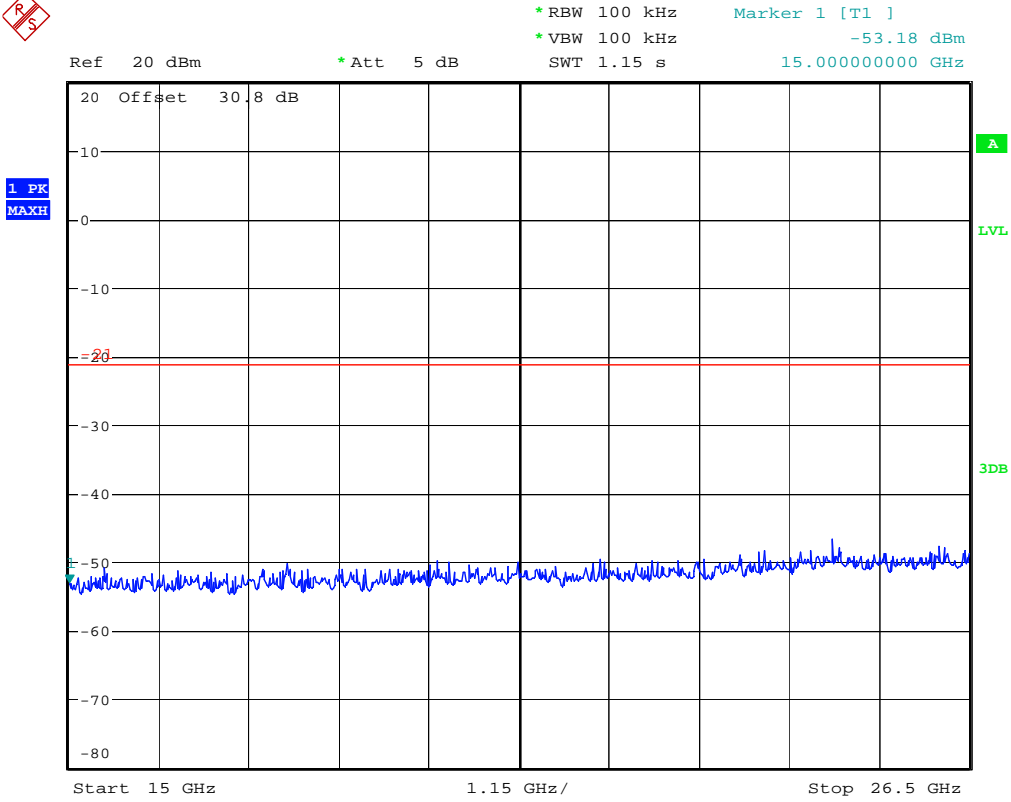
Date: 17.AUG.2012 10:33:09

### Conducted Spurious Emissions 1-6GHz (Ch 157)



Date: 17.AUG.2012 10:33:41

### Conducted Spurious Emissions 6-15GHz (Ch 157)



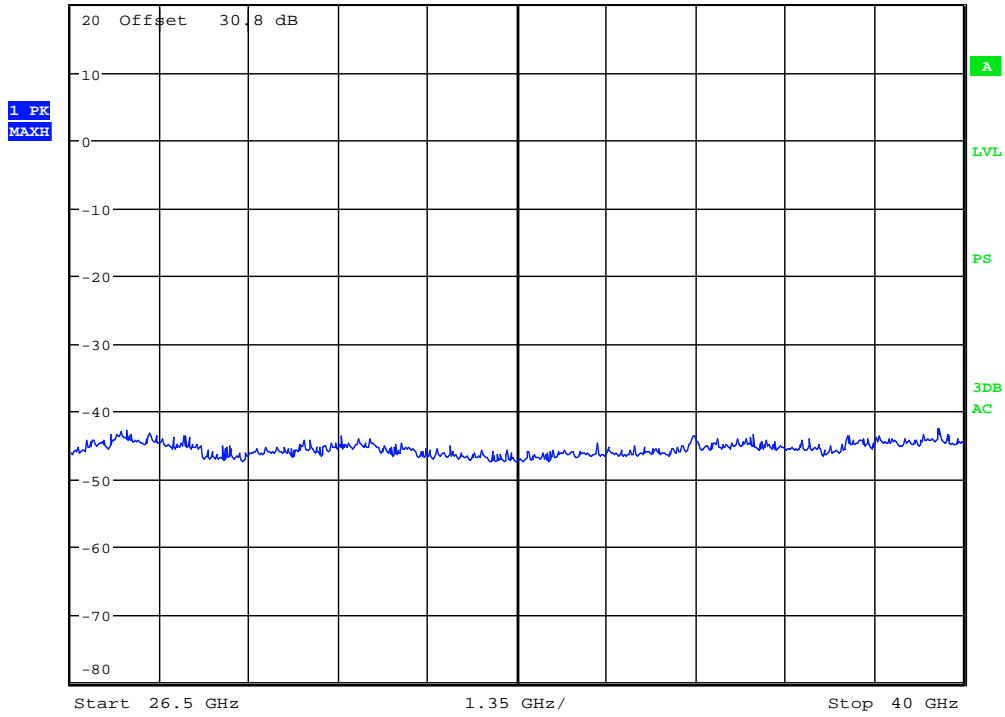
Date: 17.AUG.2012 10:33:57

### Conducted Spurious Emissions 15-26.5GHz (Ch 157)



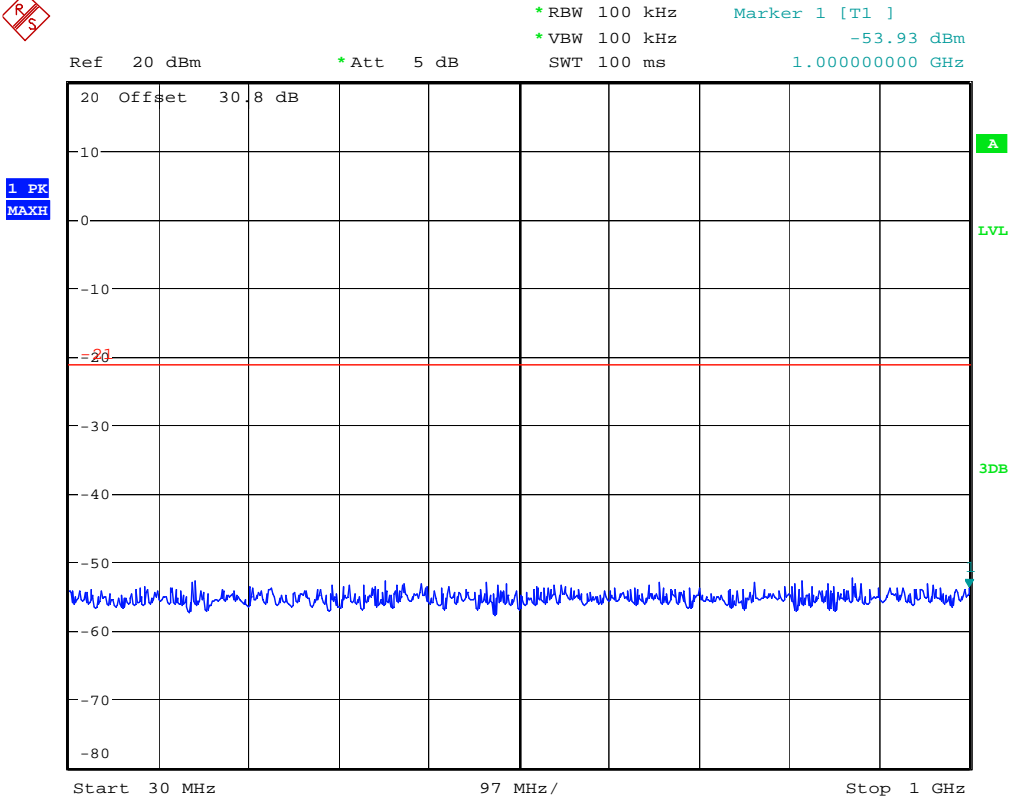
\* RBW 100 kHz  
\* VBW 100 kHz

Ref 20 dBm \* Att 5 dB SWT 1.35 s



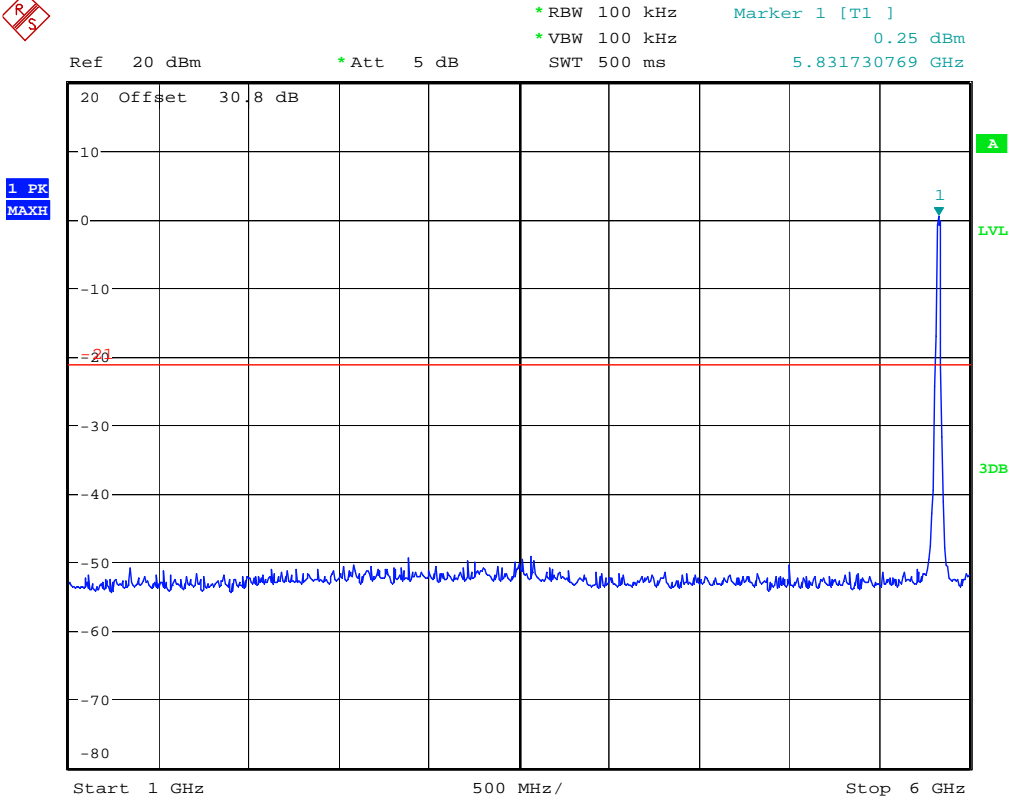
Date: 20.AUG.2012 11:05:45

### Conducted Spurious Emissions 26.5-40GHz (Ch 157)



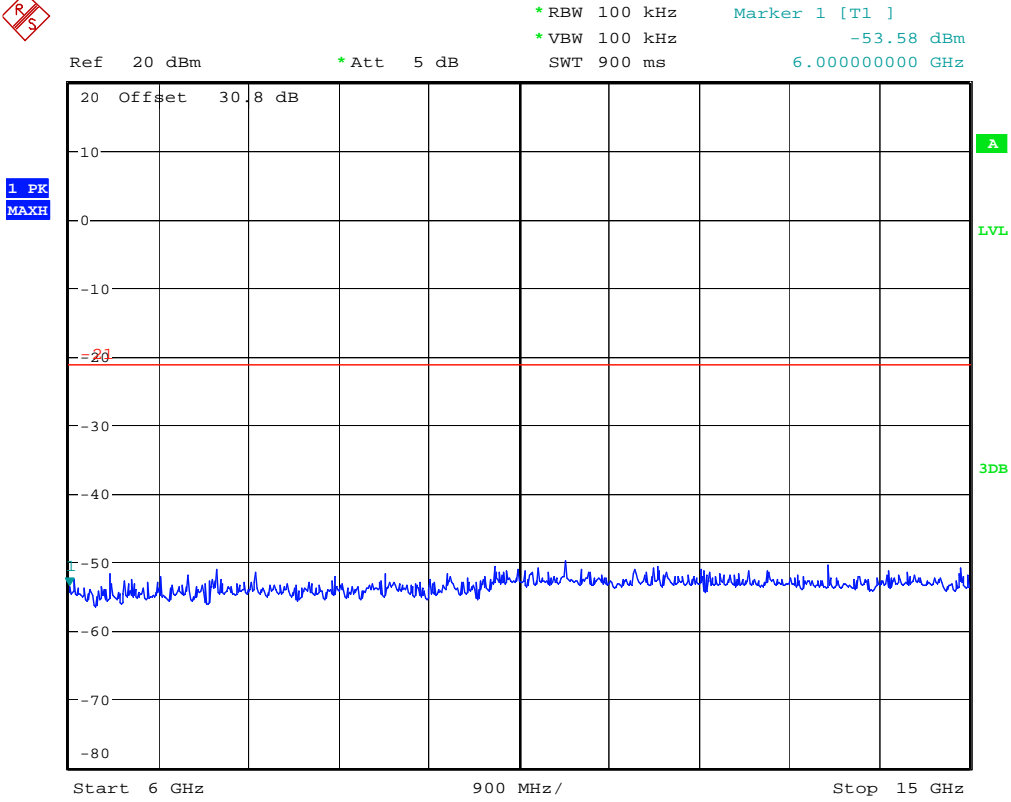
Date: 17.AUG.2012 10:34:58

### Conducted Spurious Emissions 30-1000MHz (Ch 165)



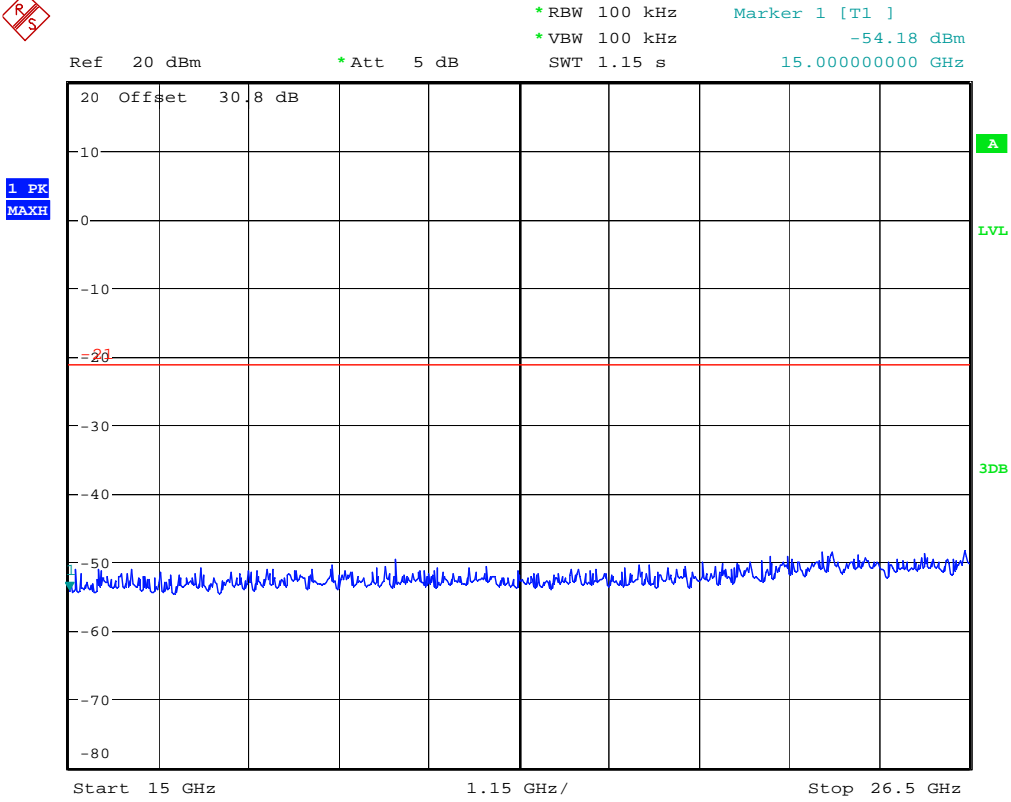
Date: 17.AUG.2012 10:34:43

### Conducted Spurious Emissions 1-6GHz (Ch 165)



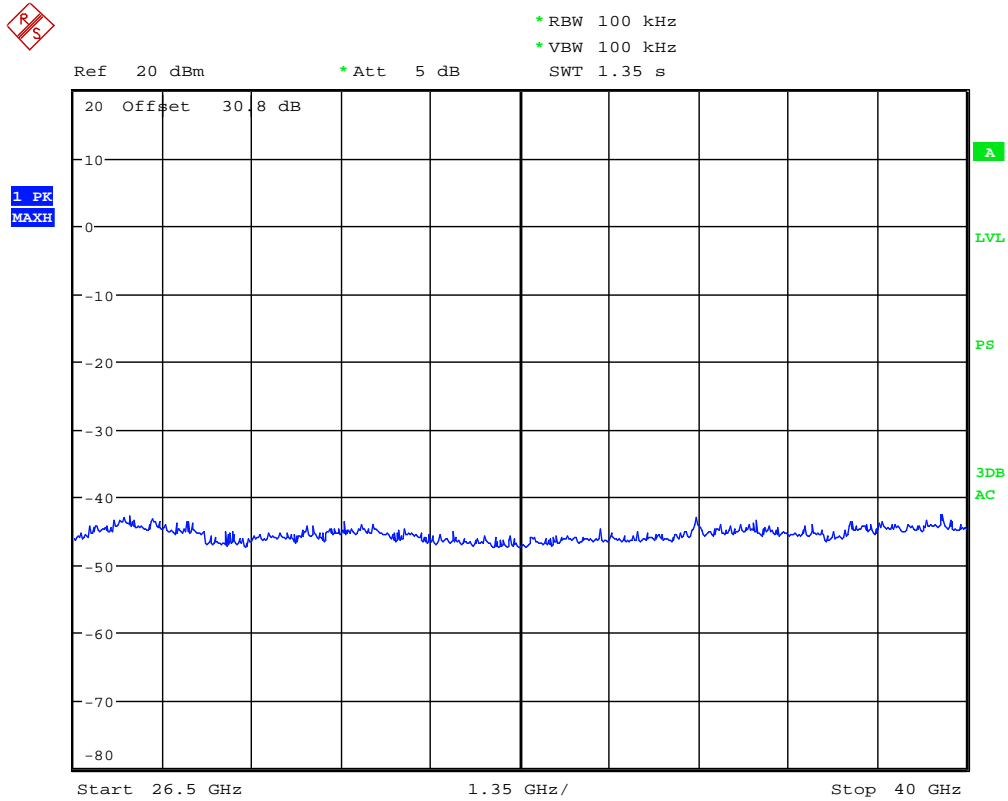
Date: 17.AUG.2012 10:35:10

### Conducted Spurious Emissions 6-15GHz (Ch 165)



Date: 17.AUG.2012 10:35:20

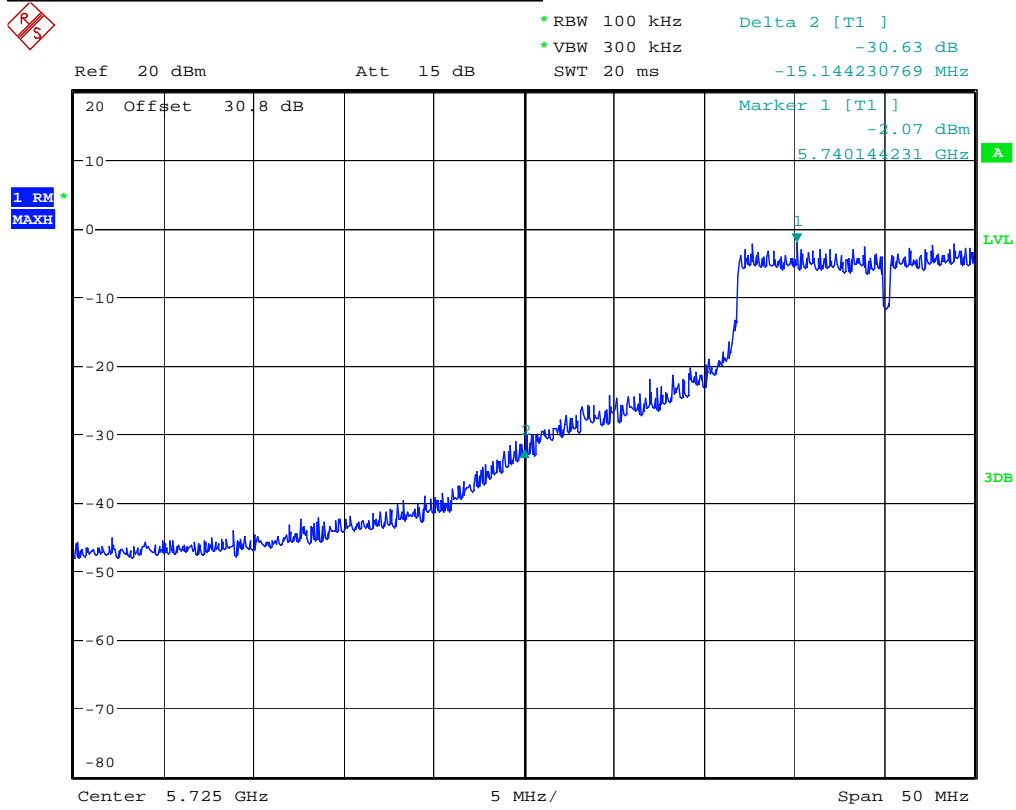
### Conducted Spurious Emissions 15-26.5GHz (Ch 165)



Date: 20.AUG.2012 11:06:11

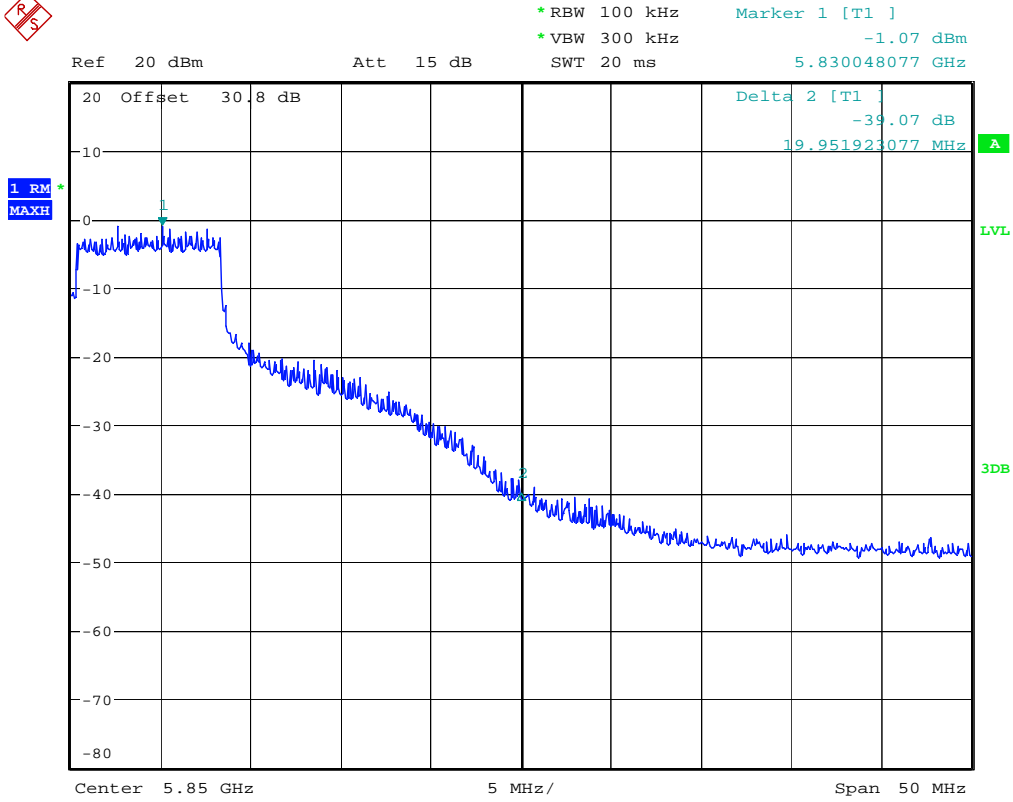
### Conducted Spurious Emissions 26.5-40GHz (Ch 165)

**802.11a 5G @ 6 Mbps Band Edge**



Date: 16.AUG.2012 16:46:45

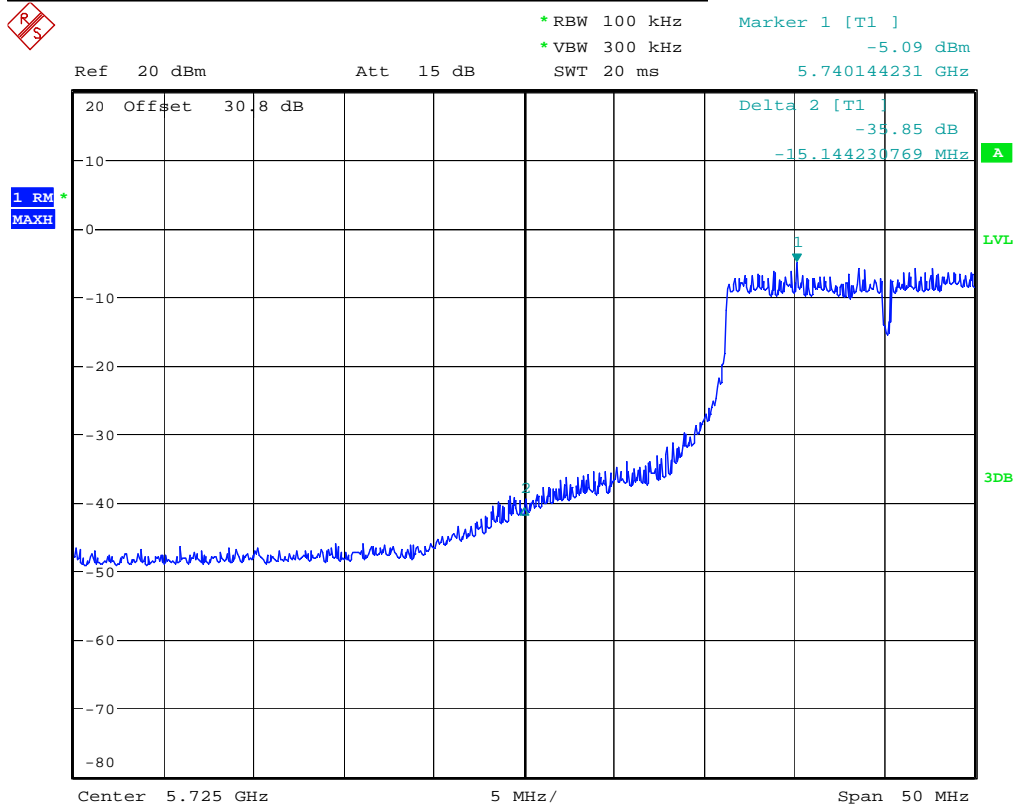
**Channel 149 – Lower Band Edge**



Date: 16.AUG.2012 16:47:54

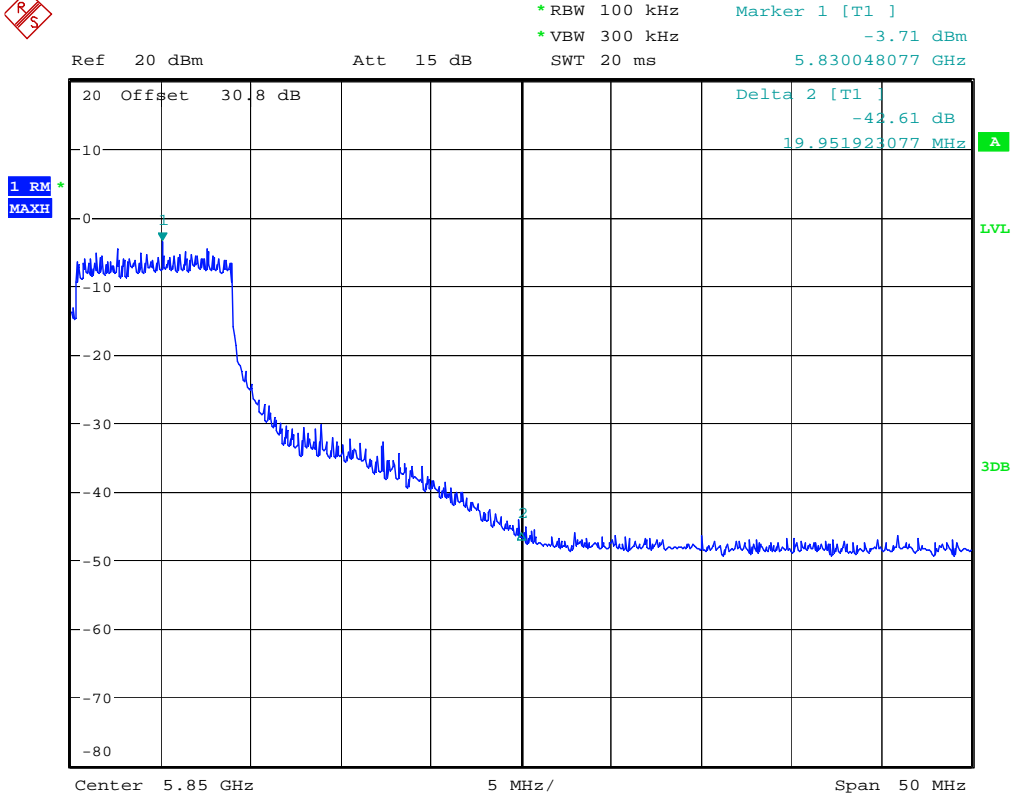
### Channel 165 – Upper Band Edge

**802.11n 5G 20M BW @ 13Mbps Band Edge**



Date: 16.AUG.2012 16:50:17

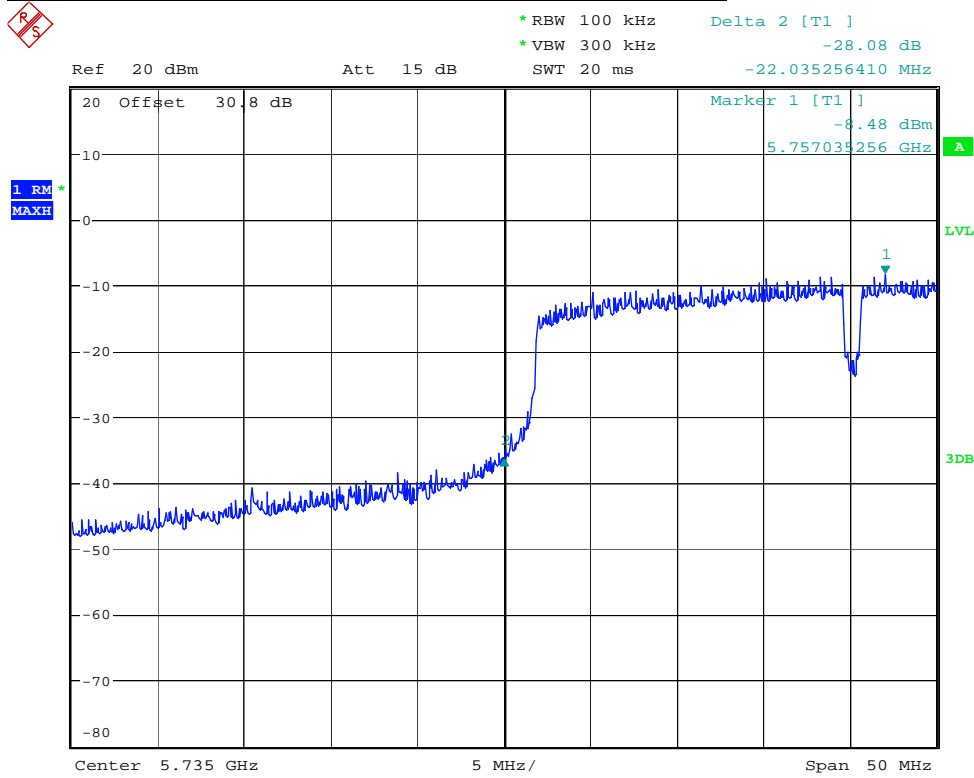
**Channel 149 – Lower Band Edge**



Date: 16.AUG.2012 16:51:28

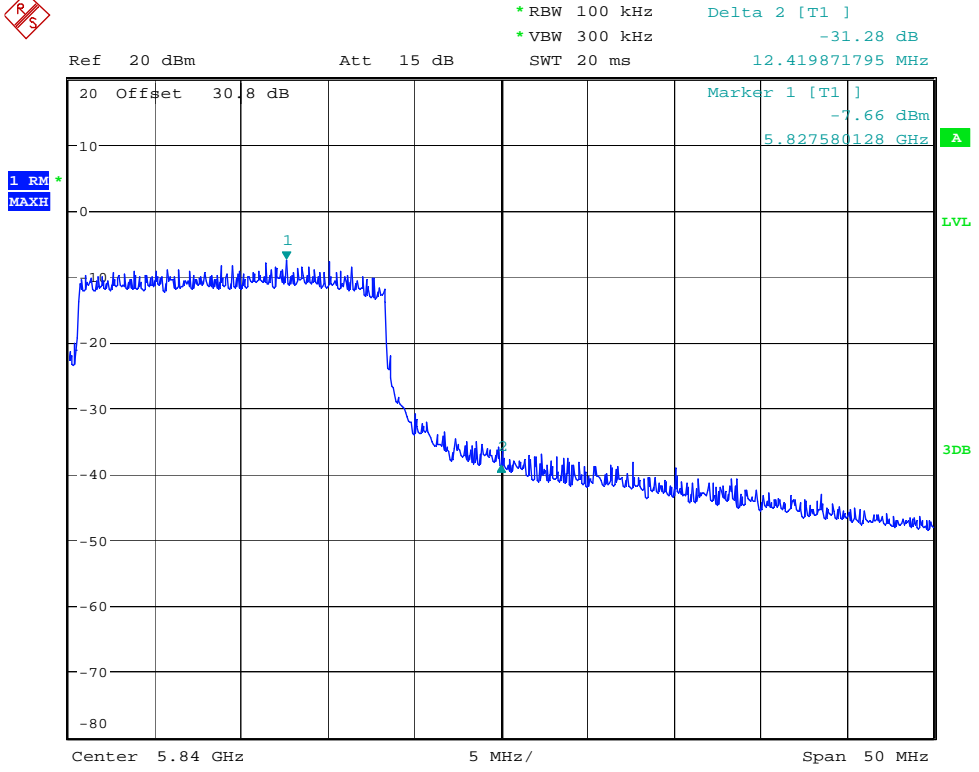
### Channel 165 – Upper Band Edge

**802.11n 5G 40M BW @ 6.5 Mbps Band Edge**



Date: 24.AUG.2012 09:19:29

**Channel 151 – Lower Band Edge**



Date: 24.AUG.2012 09:21:19

### Channel 163 – Upper Band Edge



**AC LINE CONDUCTED EMISSIONS**

CFR 47 Part 15.207

**Measurement Procedure**

Measured levels of ac power line conducted emission shall be the radio-noise voltage from the line probe or across the 50  $\Omega$  LISN port, where permitted, terminated into a 50  $\Omega$  noise meter, or where permitted or required, the radio-noise current on the power line sensed by a current probe.

All radio-noise voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord or calibrated extension cord by the use of mating plugs and receptacles on the EUT and LISN. Equipment shall be tested with power cords that are normally supplied using an LISN, the 50  $\Omega$  measuring port is terminated by a 50  $\Omega$  radio-noise meter or a 50  $\Omega$  resistive load. All other ports are terminated in 50  $\Omega$ .

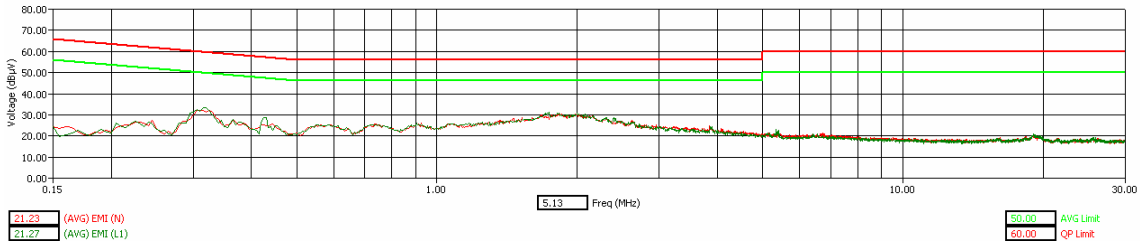
Detectors – Peak and Average Detector.

All modes of operation and data rates were investigated. The test results shown below represent the worst case condition.

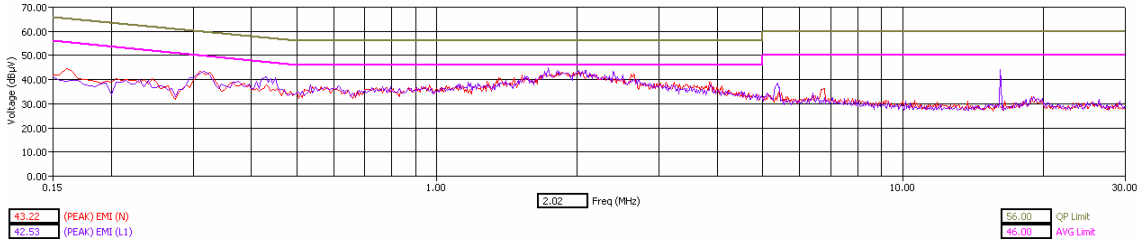
**Measurement Results**

See attached:

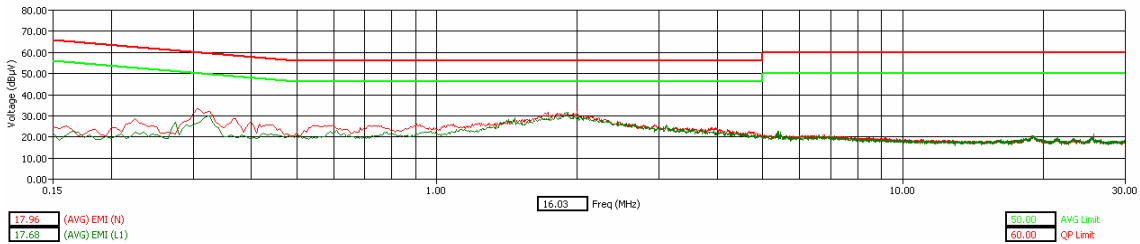
**802.11 a @ 6 Mbps**



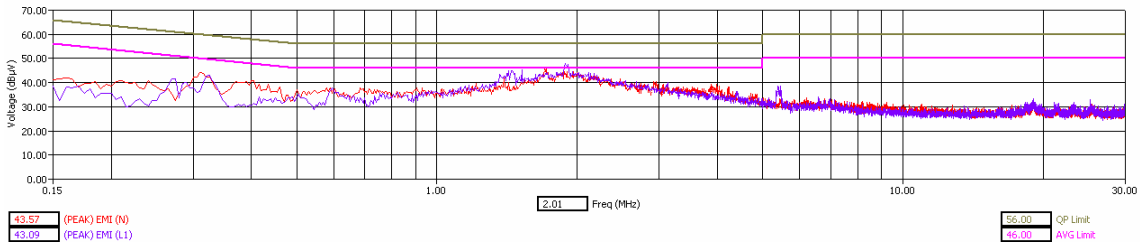
**WLAN Channel 149 - Tx Mode - AVG Detector**



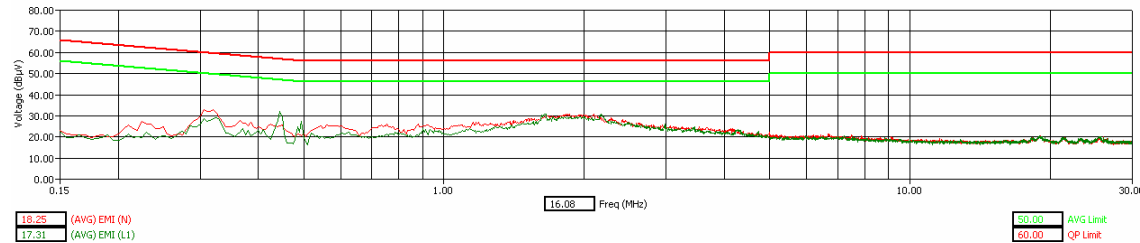
**WLAN Channel 149 - Tx Mode - Peak Detector**



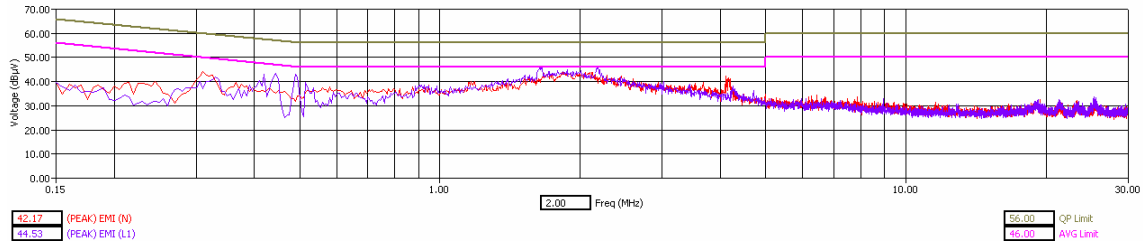
**WLAN Channel 157 - Tx Mode - AVG Detector**



**WLAN Channel 157 - Tx Mode - Peak Detector**

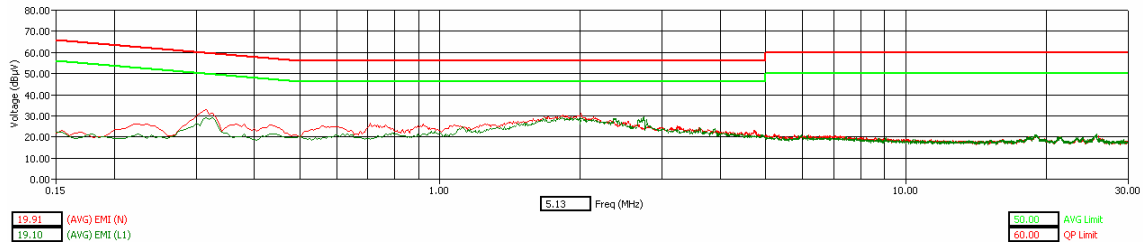


**WLAN Channel 165 - Tx Mode - AVG Detector**

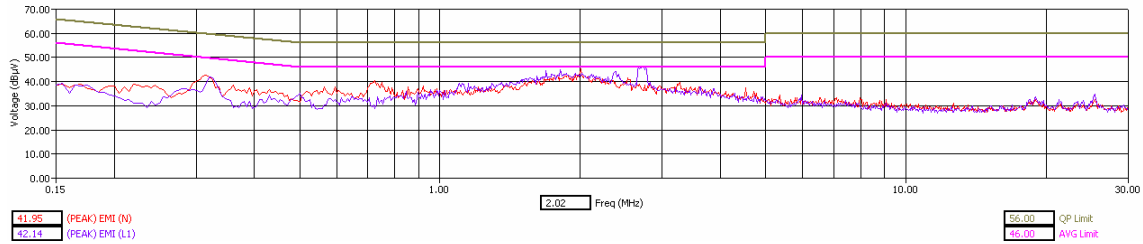


### WLAN Channel 165 - Tx Mode - Peak Detector

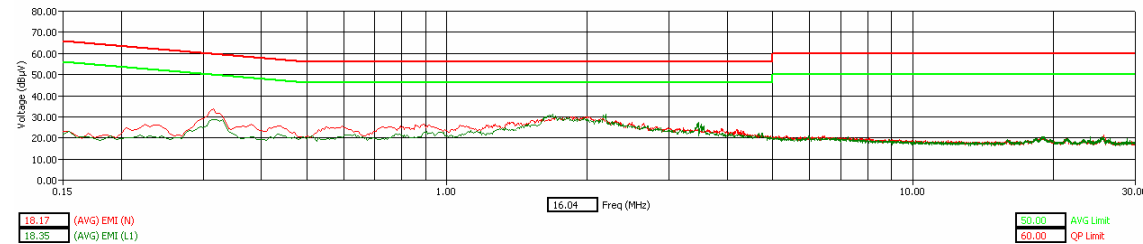
### 802.11 n 20MHz BW @ 13 Mbps



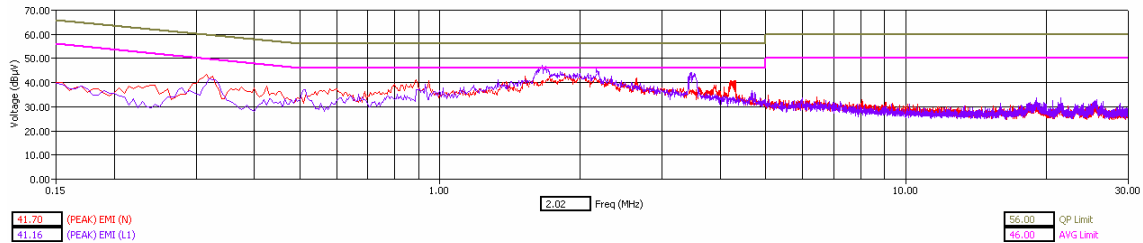
### WLAN Channel 149 - Tx Mode - AVG Detector



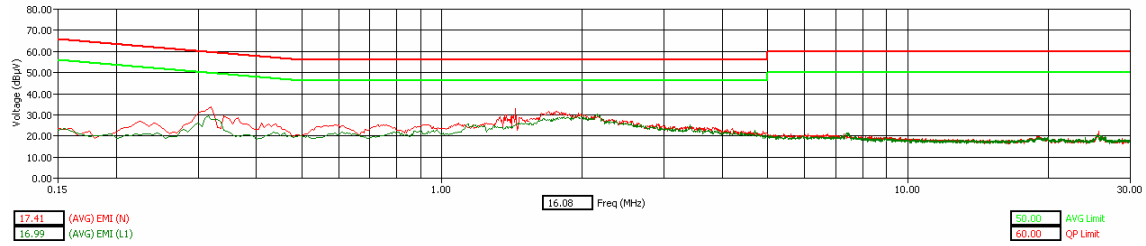
### WLAN Channel 149 - Tx Mode - Peak Detector



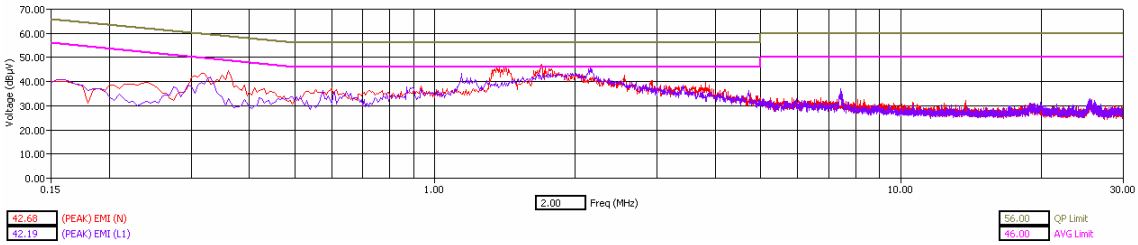
### WLAN Channel 157 - Tx Mode - AVG Detector



### WLAN Channel 157 - Tx Mode - Peak Detector

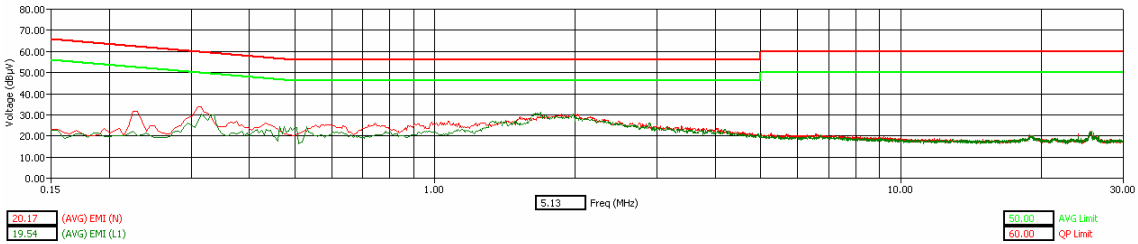


**WLAN Channel 165 - Tx Mode - AVG Detector**

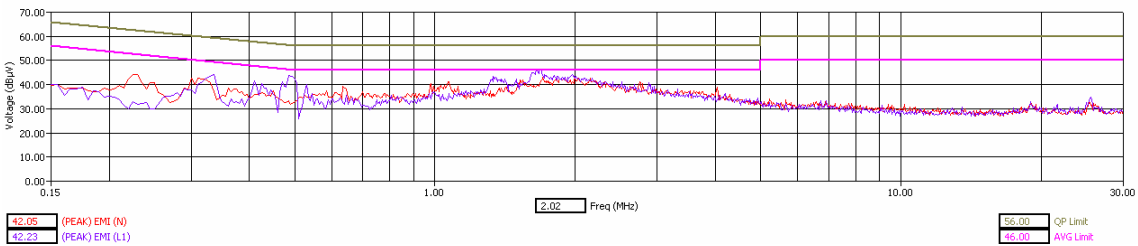


**WLAN Channel 165 - Tx Mode - Peak Detector**

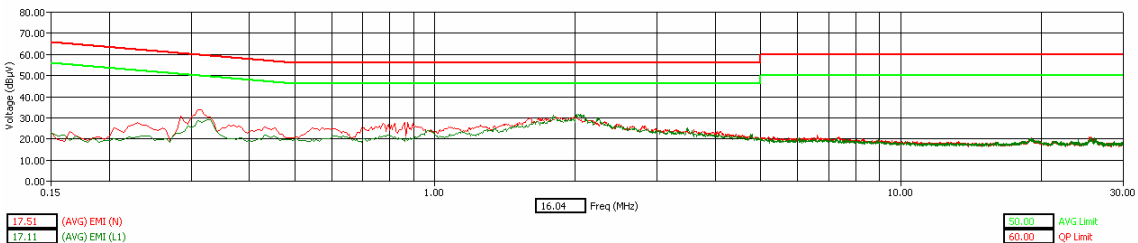
**802.11 n 40MHz BW @ 6.5 Mbps**



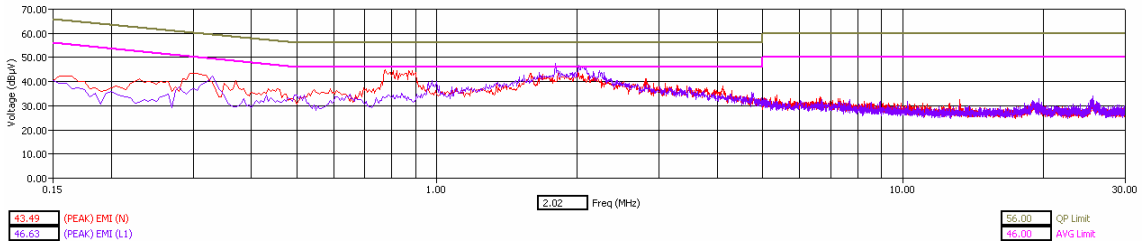
**WLAN Channel 151 - Tx Mode - AVG Detector**



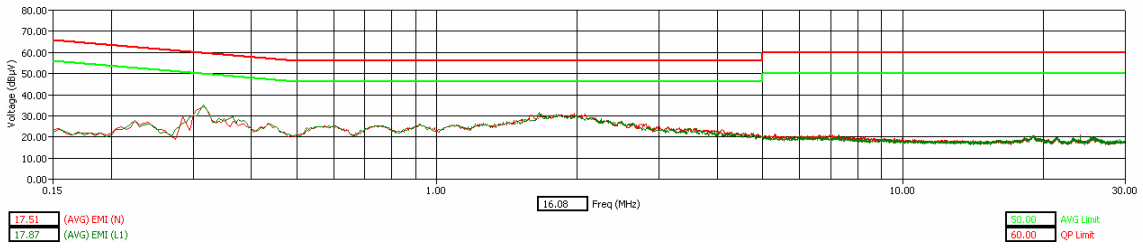
**WLAN Channel 151 - Tx Mode - Peak Detector**



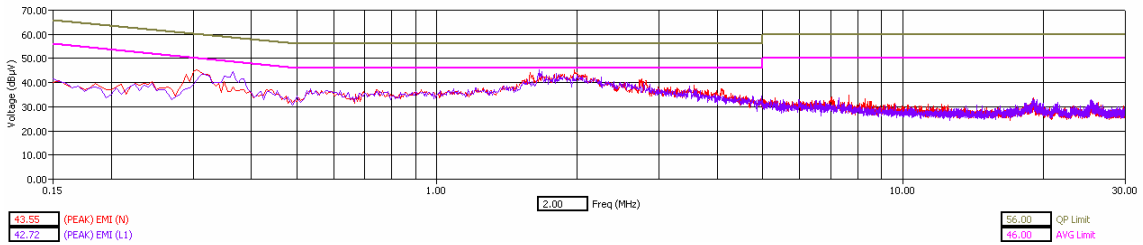
### WLAN Channel 155 - Tx Mode - AVG Detector



### WLAN Channel 155 - Tx Mode - Peak Detector



### WLAN Channel 163 - Tx Mode - AVG Detector



### WLAN Channel 163 - Tx Mode - Peak Detector

**End of Test Report**