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**WOOJEON&HANDAN**

Dates of Tests: June 03 ~ July 04, 2013

Test Report S/N: LR500111306I

Test Site : LTA Co., Ltd.

## CERTIFICATION OF COMPLIANCE

FCC ID.

**2AALH-AQUACAM**

APPLICANT

**WOOJEON&HANDAN CO.,LTD.**

<b>Equipment Class</b>	:	Digital Transmission System (DTS)
<b>Manufacturing Description</b>	:	CAMCORDER (WLAN Embedded)
<b>Manufacturer</b>	:	DA SUONG TECHNOLOGY INC.
<b>Model name</b>	:	AQUA CAM
<b>Varient Model name</b>	:	SPORTS CAM, SPORTS CAM I, SPORTS CAM II, ACTION CAM, AQUA CAM(WHE), AQUA CAM(BLK), AQUA CAM(BLU), AQUA CAM(RED)
<b>Test Device Serial No.:</b>	:	Identical prototype
<b>Rule Part(s)</b>	:	FCC Part 15.247 Subpart C; ANSI C-63.4-2003
<b>Frequency Range</b>	:	2412MHz ~ 2462MHz
<b>Max. Output Power</b>	:	Max 12.67dBm - Conducted (802.11b) Max 12.65dBm - Conducted (802.11g)
<b>Data of issue</b>	:	July 05, 2013

This test report is issued under the authority of:

Jae-Ho Lee, Manager

The test was supervised by:

Young-Jin Lee, Test Engineer

**This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. This report must not be used by the applicant to claim product endorsement by any agency.**

**NVLAP**<sup>®</sup>

NVLAP LAB Code.: 200723-0

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## 1. General information's

### **1-1 Test Performed**

Company name : LTA Co., Ltd.  
 Address : 243, Jubug-ri, Yangji-Myeon, Youngin-Si, Kyunggi-Do, Korea. 449-822  
 Web site : <http://www.ltalab.com>  
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 Facsimile : +82-31-323-6010

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competents of calibration and testing laboratory”.

### **1-2 Accredited agencies**

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2013-09-30	ECT accredited Lab.
RRA	KOREA	KR0049	2015-03-06	EMC accredited Lab.
FCC	U.S.A	610755	2014-04-27	FCC filing
FCC	U.S.A	649054	Updating	FCC CAB
VCCI	JAPAN	R2133(10m), C2307	2014-06-21	VCCI registration
VCCI	JAPAN	T-2009	2013-12-23	VCCI registration
VCCI	JAPAN	G-563	2015-05-28	VCCI registration
IC	CANADA	5799A-1	2015-06-21	IC filing

## 2. Information's about test item

### 2-1 Client

Company name : WOOJEON&HANDAN CO.,LTD.  
 Address : 569-12, Gasan-dong, Geumcheon-gu, Seoul, Korea  
 Tel / Fax : Tel : +82-2-2105-0709 / Fax : +82-2-830-7225

### 2-2 Manufacturer

Company name : DA SUONG TECHNOLOGY INC.  
 Address : 713, Wonsi-dong, Danwon-gu Ansan-si, Gyeonggi-do, 425-851, Korea  
 Tel : +82-31-493-8844

### 2-3 Equipment Under Test (EUT)

Trade name	: <b>WOOJEON&amp;HANDAN</b>
Model name	: AQUA CAM
Varient Model name	: SPORTS CAM, SPORTS CAM I , SPORTS CAM II, ACTION CAM, AQUA CAM(WHE), AQUA CAM(BLK), AQUA CAM(BLU), AQUA CAM(RED)
Serial number	: Identical prototype
Date of receipt	: May 14, 2013
EUT condition	: Pre-production, not damaged
Antenna type	: Chip antenna with Max. -1.58 dBi gain
Frequency Range	: 2412MHz ~ 2462MHz (DSSS)
RF output power	: Max 12.67dBm - Conducted (802.11b) Max 12.65dBm - Conducted (802.11g)
Number of channels	: 11
Type of Modulation	: CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Transfer Rate	: 11/5.5/2/1Mbps for 802.11b 54/48/36/24/18/12/9/6Mbps for 802.11g
Power Source for Batt.	: DC 3.7V by Battery
Firmware Version	: V 1.0.0

### 2-4 Tested frequency

	LOW	MID	HIGH
Frequency (MHz) for 802.11b/g	2412	2437	2462

### 3. Test Report

#### 3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
15.247(a)	6 dB Bandwidth	> 500kHz	Conducted	C
15.247(b)	Transmitter Peak Output Power	< 1Watt		C
15.247(d)	Transmitter Power Spectral Density	< 8dBm @ 3kHz		C
15.247(d)	Band Edge & Spurious	> 20 dBc		C
15.209	Field Strength of Harmonics	Emission	Radiated	C
15.207	AC Conducted Emissions	Emissions	Conducted	C
15.203	Antenna requirement	-	-	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

#### → Antenna Requirement

The WOOJEON&HANDAN CO.,LTD. FCC ID: 2AALH-AQUACAM unit complies with the requirement of §15.203. The antenna is connected to inside of EUT. And type is PIFA antenna.

The sample was tested according to the following specification:

\*FCC Parts 15.247; ANSI C-63.4-2003

\*FCC KDB Publication No. 558074 D01 DTS Meas. Guidance V02

\*FCC TCB Workshop 2012, April

### 3.2 Technical Characteristics Test (802.11b/g)

#### 3.2.1 6 dB Bandwidth

##### Procedure:

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.

The bandwidth at 6dB below the highest in-band spectral density was measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 6dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is ( as close as possible to ) even with the reference marker level. The marker-delta reading at this point is the 6 dB bandwidth of the emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz Span = 30 MHz

VBW = 100 kHz (VBW  $\geq$  RBW) Sweep = auto

Trace = max hold Detector function = peak

##### Measurement Data:

Mode	Frequency (MHz)	Channel No.	Test Results	
			Measured Bandwidth (MHz)	Result
802.11b	2412	1	2.41	Complies
	2437	6	2.44	Complies
	2462	11	2.46	Complies
802.11g	2412	1	16.45	Complies
	2437	6	16.45	Complies
	2462	11	16.50	Complies

- See next pages for actual measured spectrum plots.

##### Minimum Standard:

6 dB Bandwidth  $>$  500kHz

##### Measurement Setup

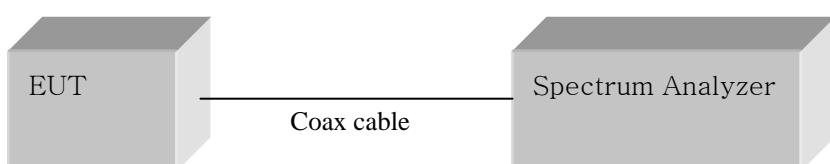
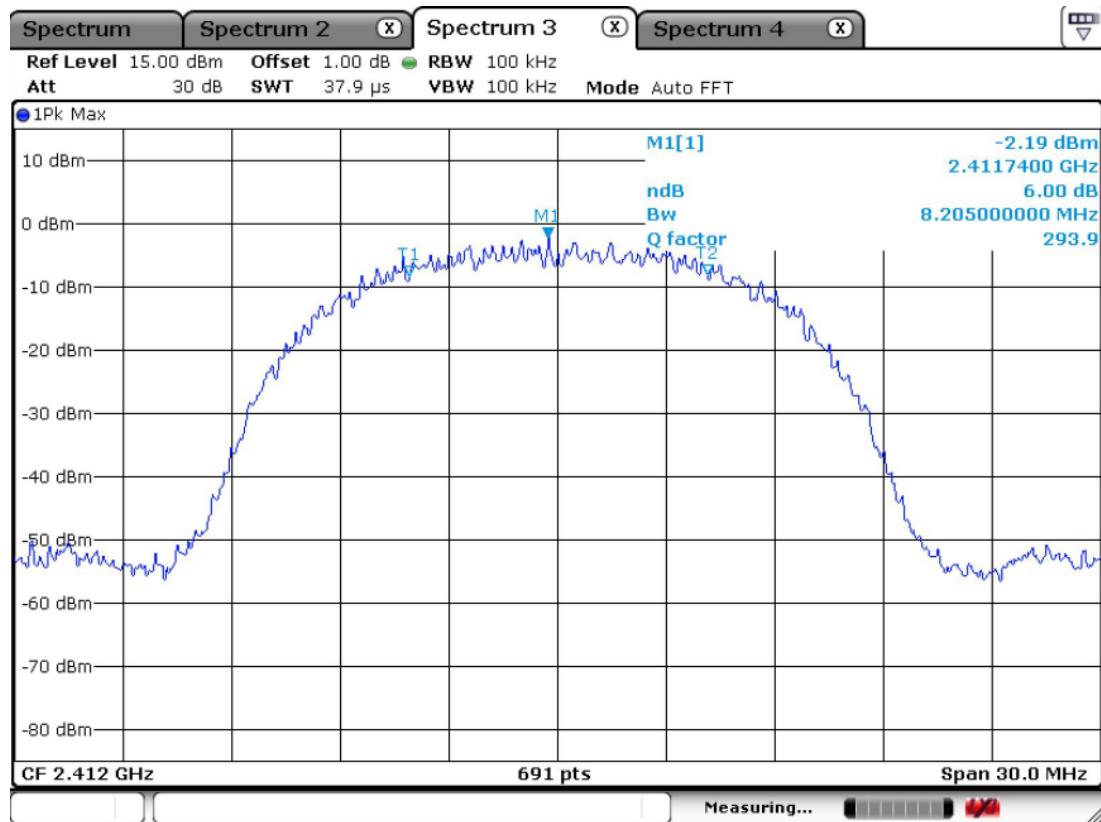
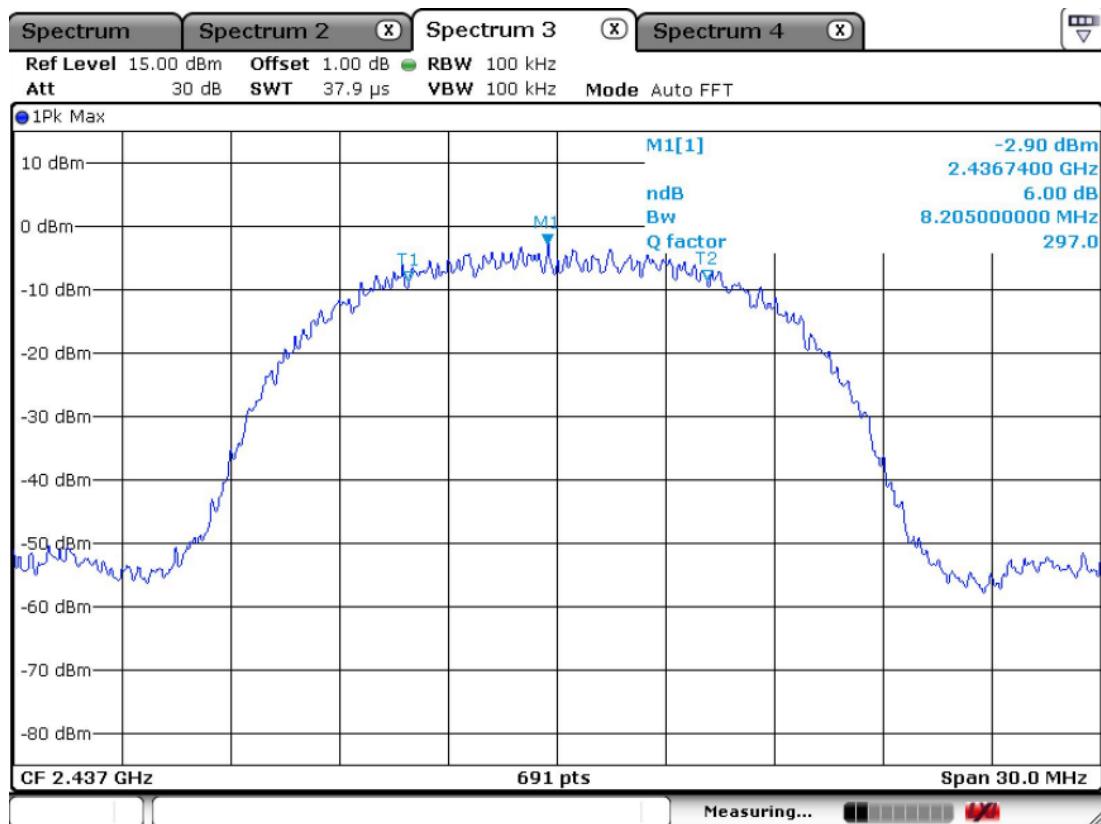
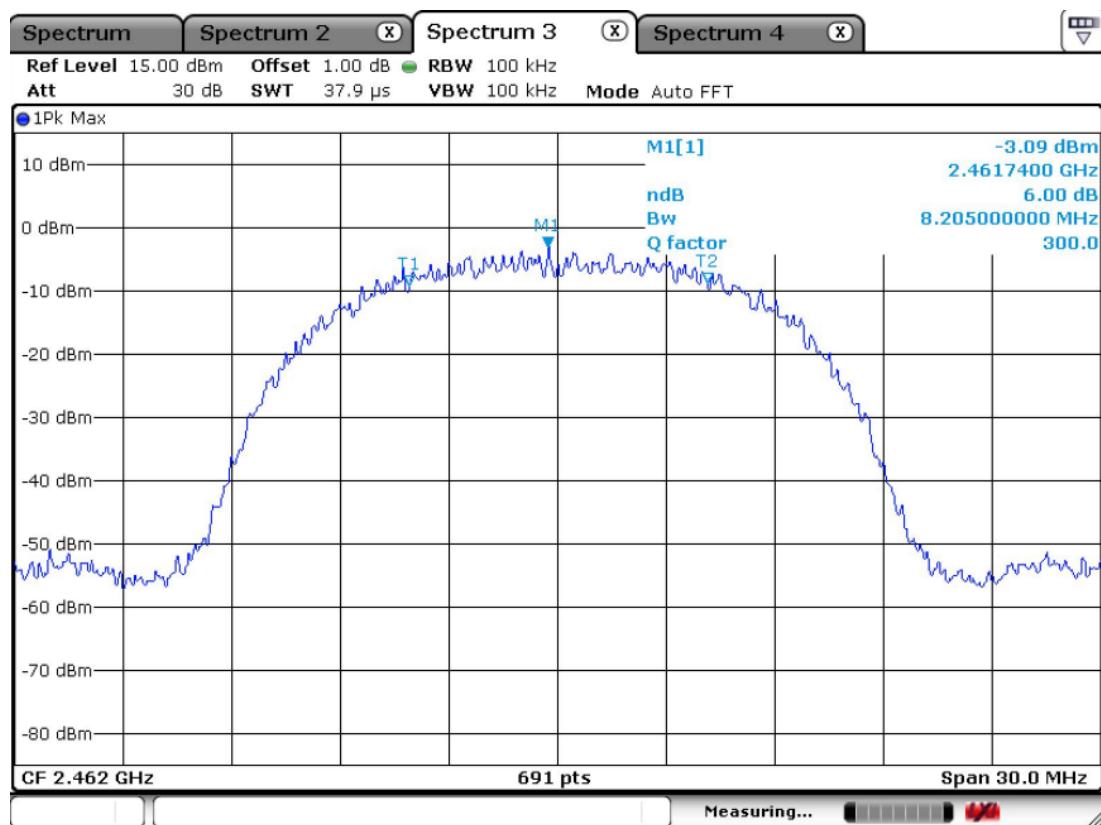


Figure 1: Measurement setup for the carrier frequency separation

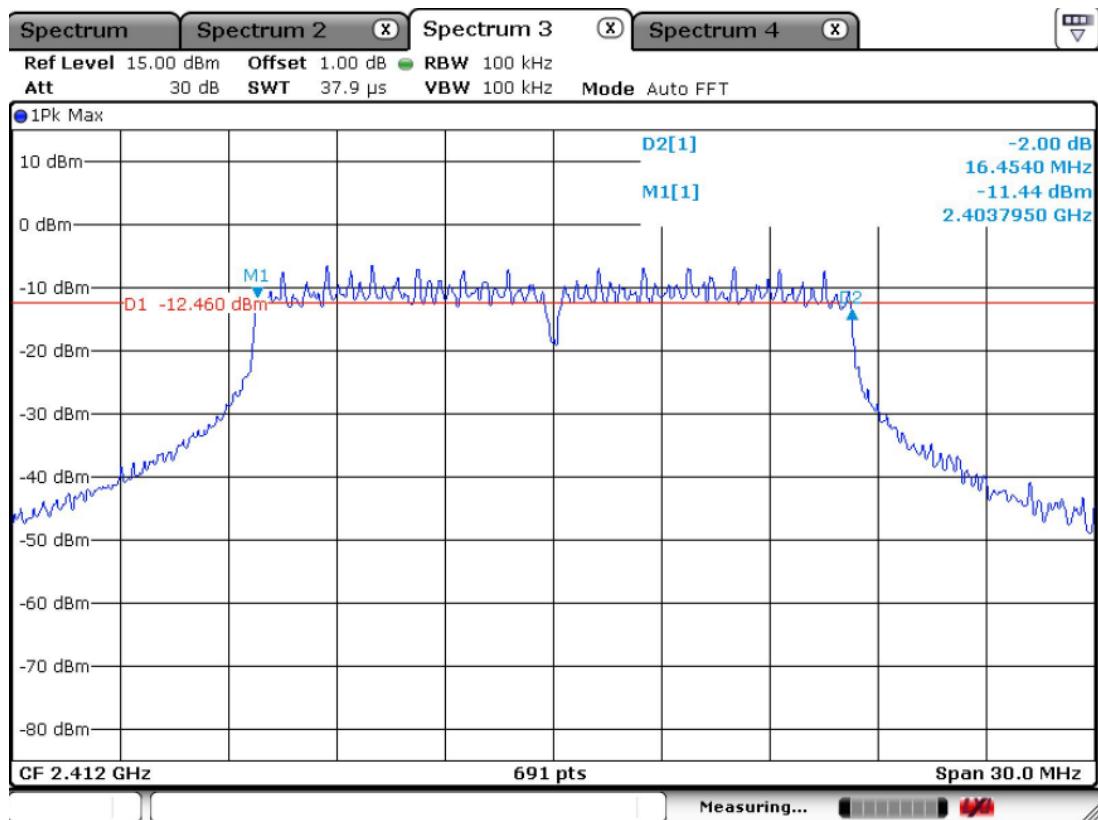
**802.11b****CH 1****CH 6**

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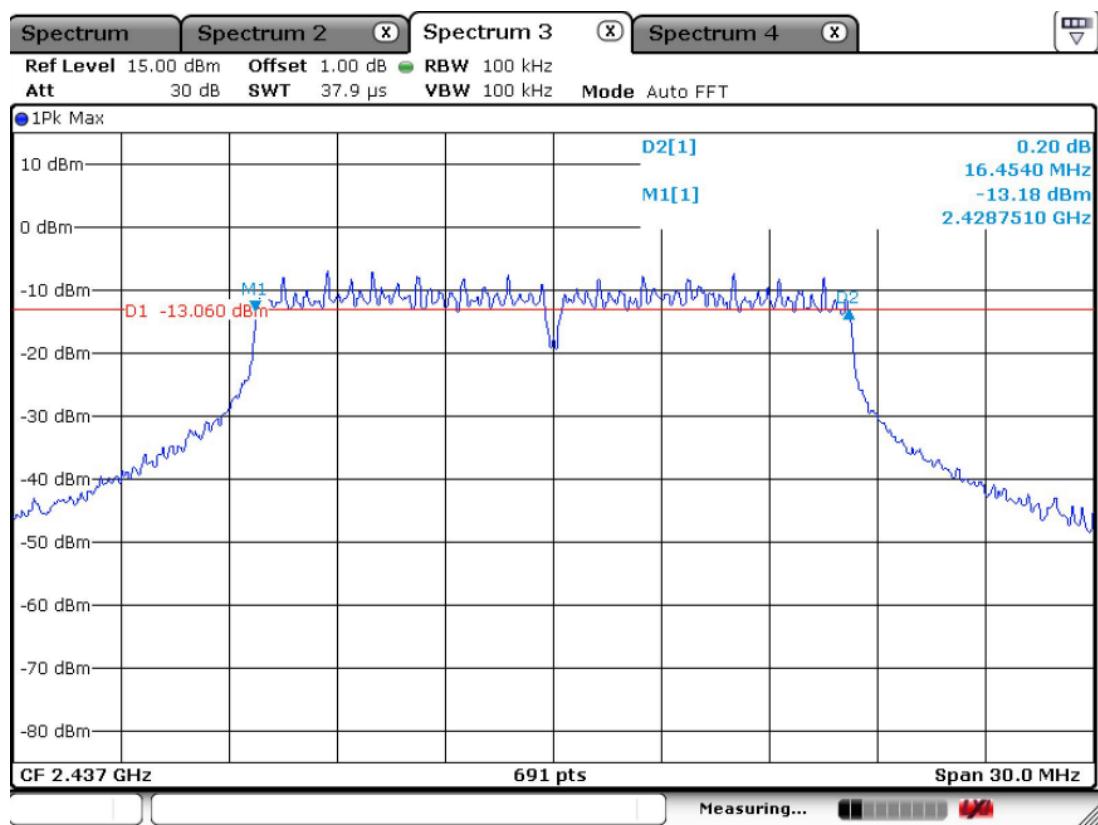


## 802.11g

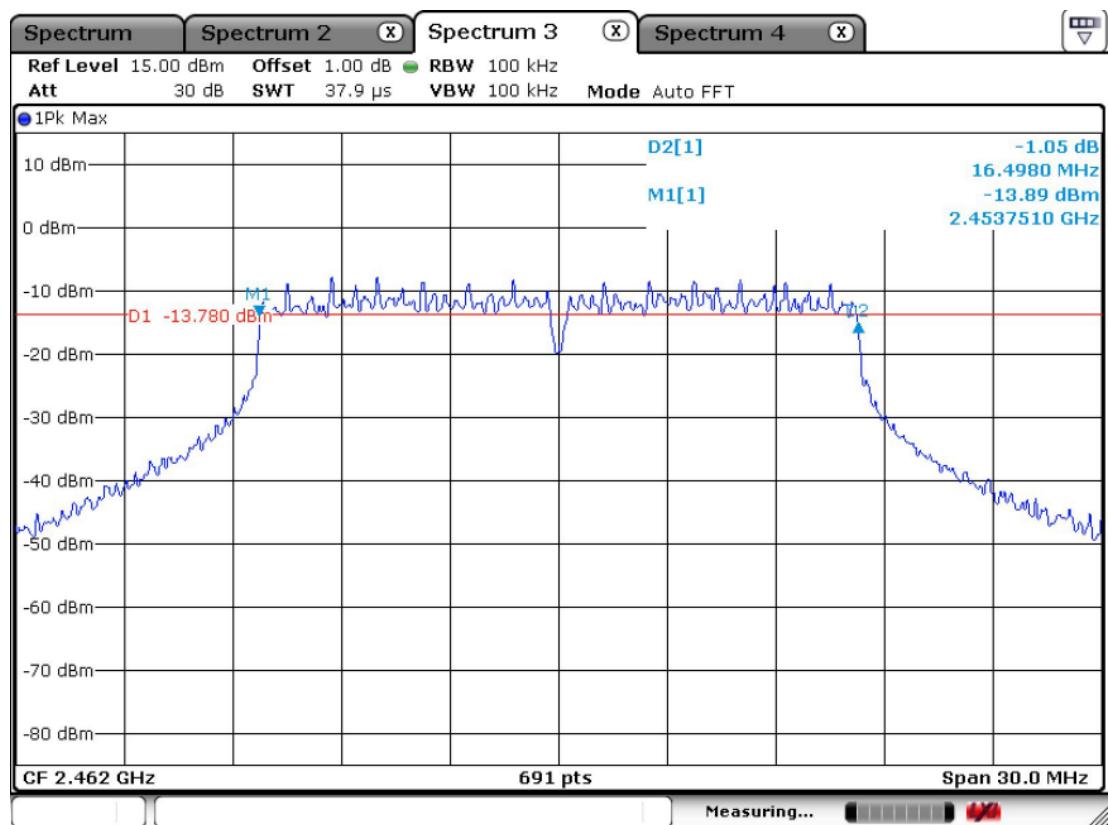
CH 1



CH 6



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### 3.2.2 Peak Output Power Measurement

#### Procedure:

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.

The maximum peak output power was measured with the spectrum analyzer connected to the antenna output of the EUT. The spectrum analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth. The EUT was operating in transmit mode at the appropriate center frequency.

#### The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 1MHz

Span = auto

VBW = 1MHz (VBW  $\geq$  RBW)

Sweep = auto

Detector function = peak

#### Measurement Data:

Mode	Frequency (MHz)	Channel No.	Test Results	
			Measured Data (dBm)	Result
802.11b	2412	1	12.67	Complies
	2437	6	12.20	Complies
	2462	11	11.82	Complies
802.11g	2412	1	12.65	Complies
	2437	6	11.82	Complies
	2462	11	11.32	Complies

- See next pages for actual measured spectrum plots.

#### Minimum Standard:

Peak output power	< 1W
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#### Measurement Setup

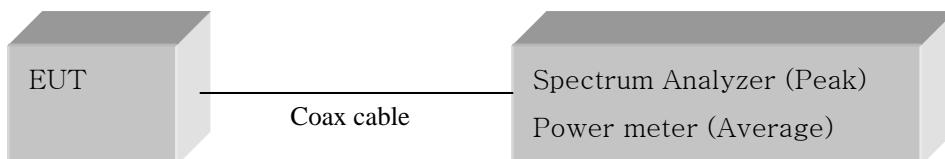
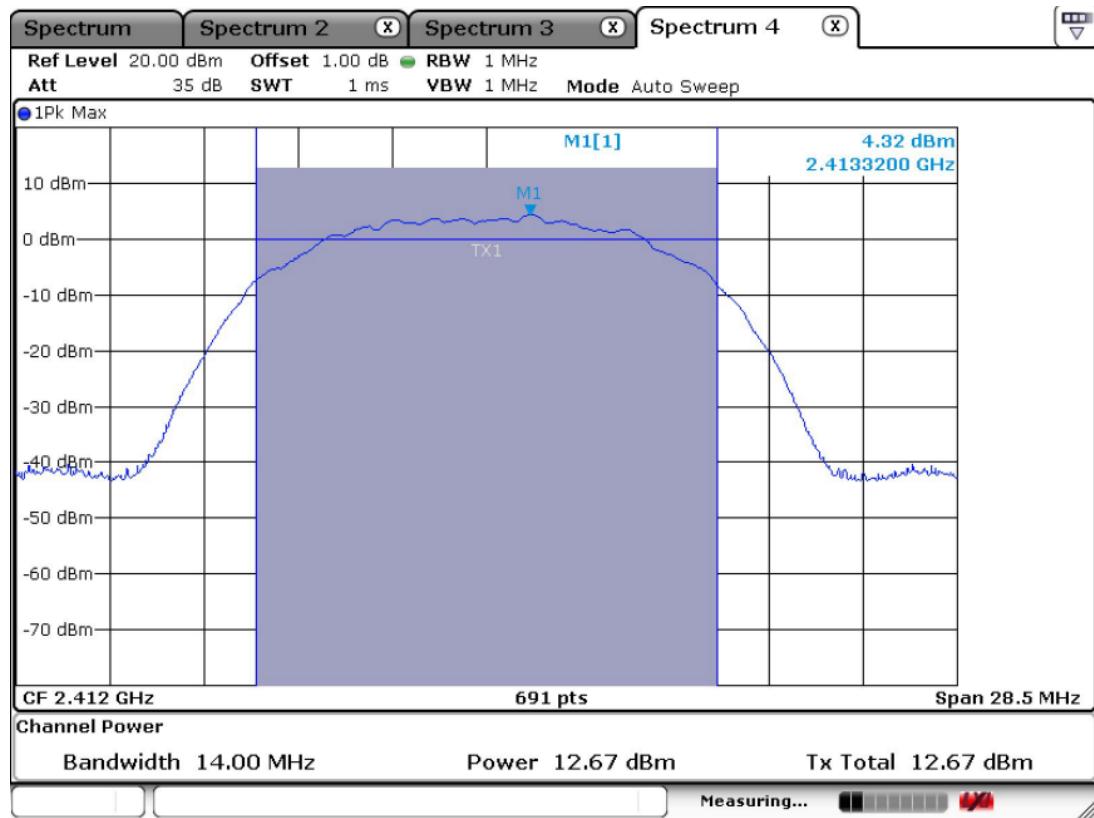


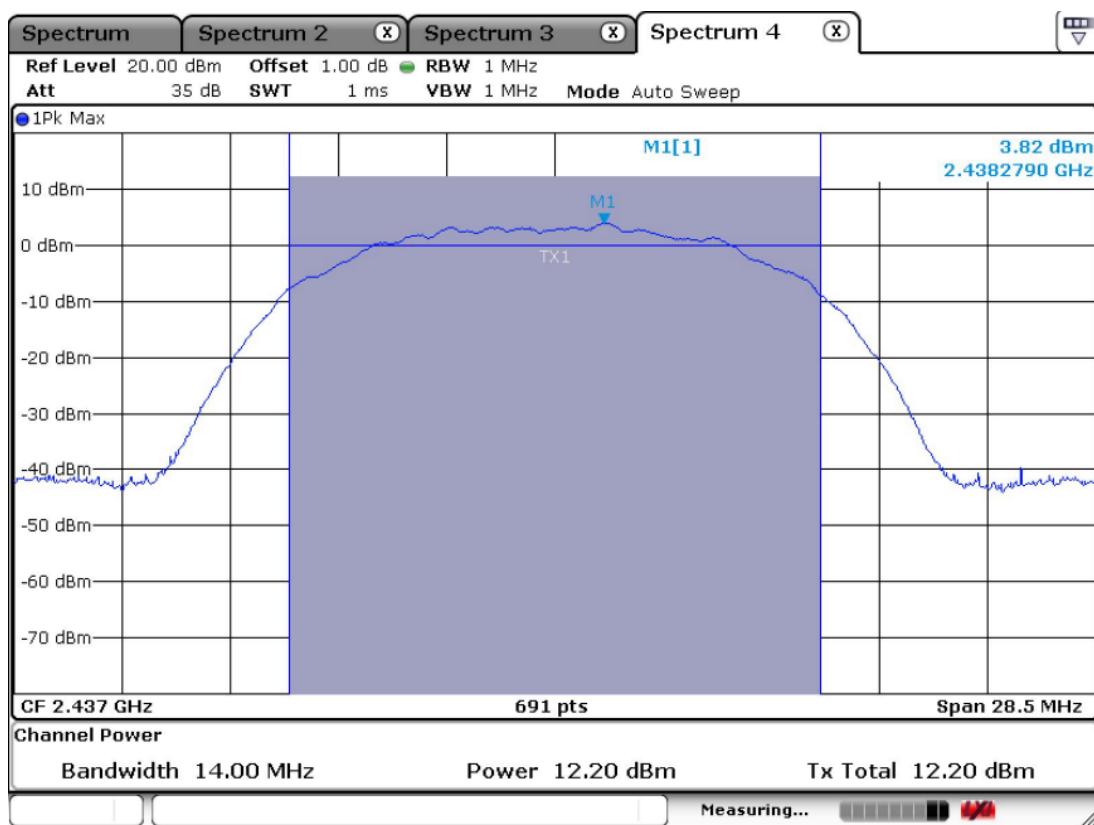
Figure 1: Measurement setup for the carrier frequency separation

## 802.11b

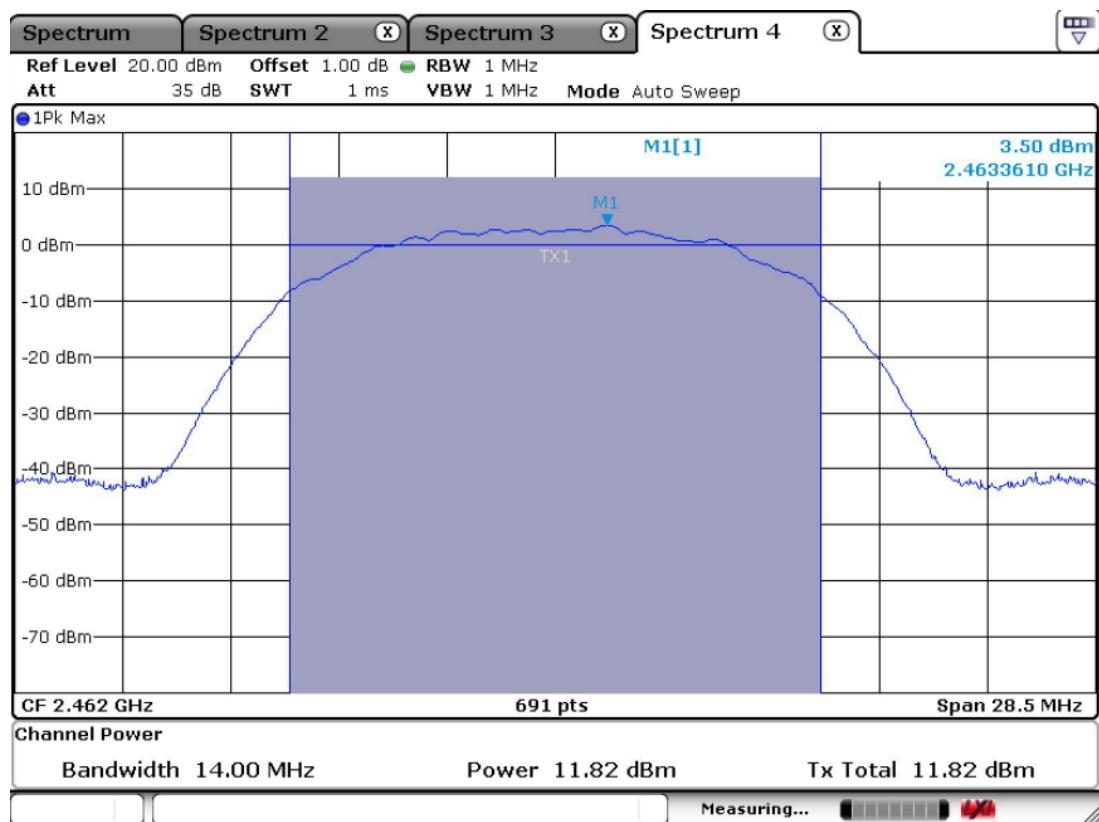
## CH 1

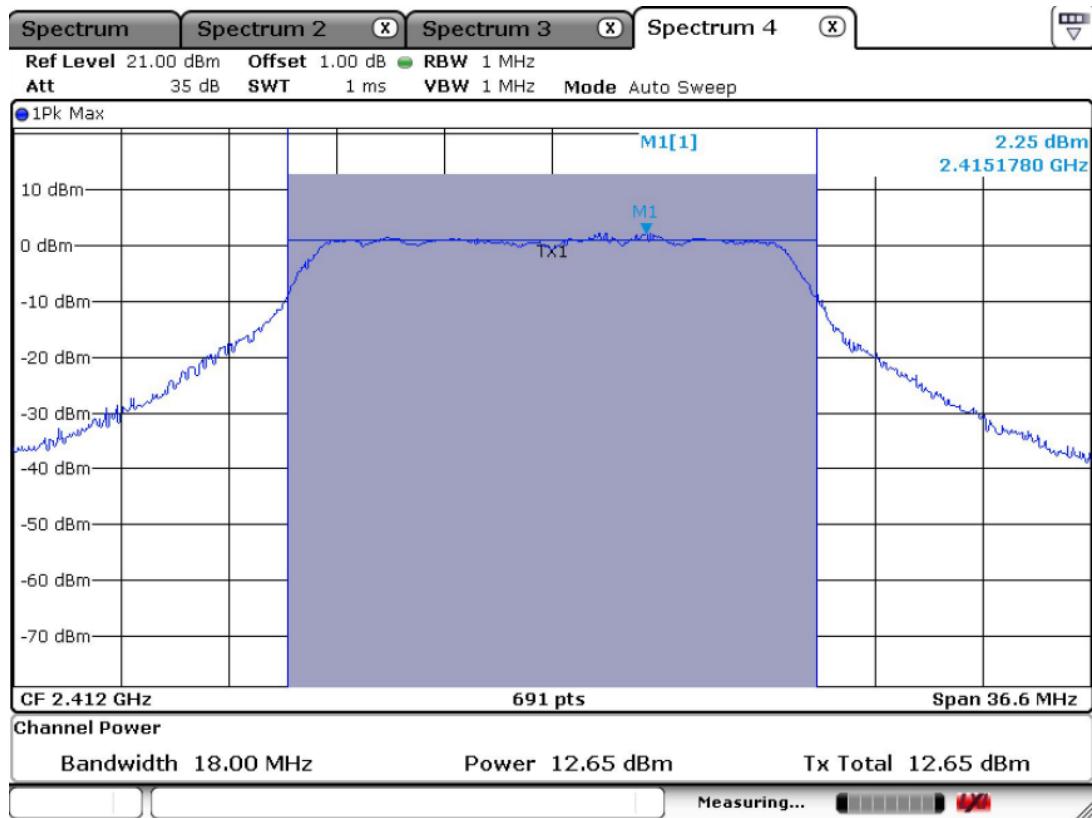
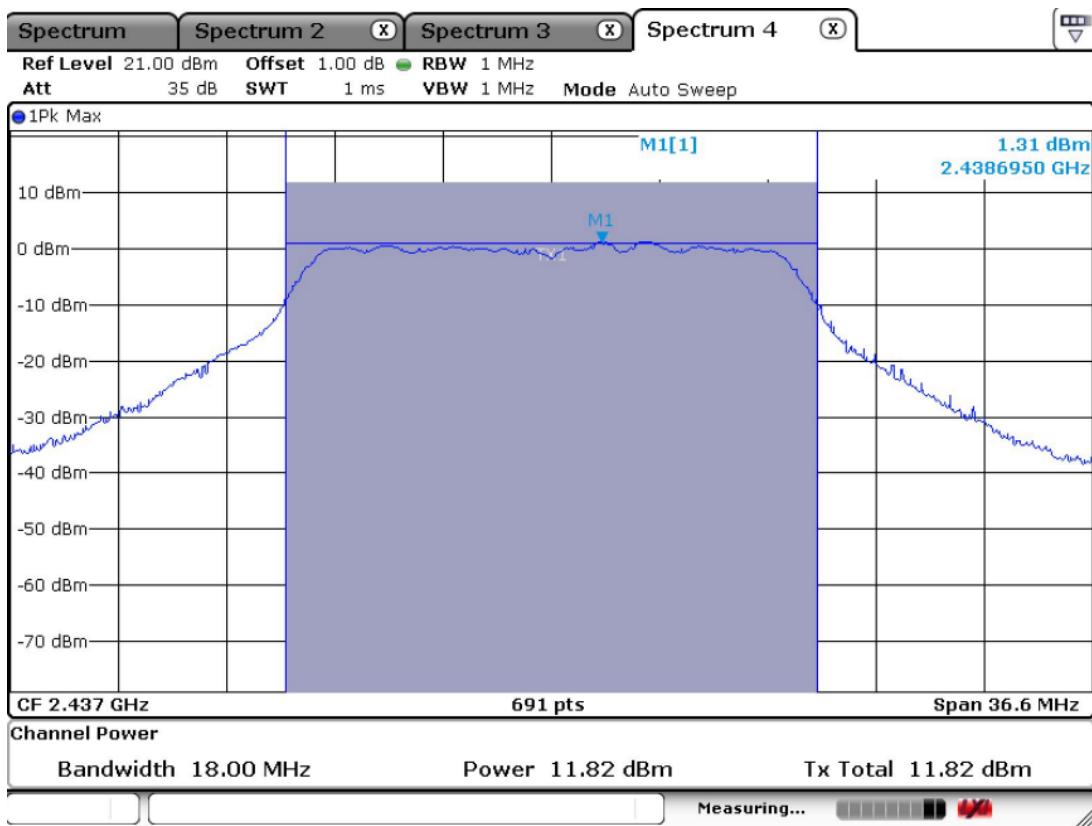


## CH 6

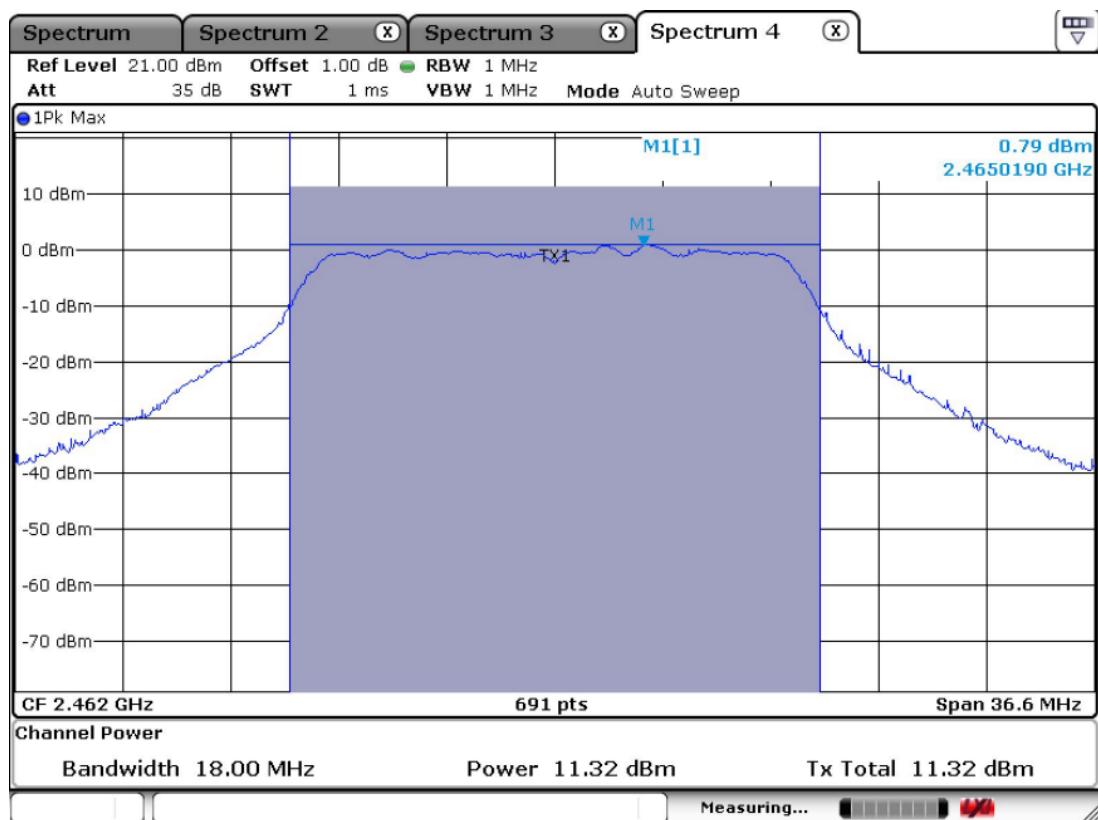


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**802.11g****CH 1****CH 6**

## CH 11



### 3.2.3 Power Spectral Density

#### Procedure:

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The spectrum analyzer is set to:

RBW = 3 kHz Span = 300 kHz

VBW = 10 kHz Sweep = 100 sec

Detector function = peak Trace = max hold

#### Measurement Data:

Mode	Frequency (MHz)	Ch.	Test Results	
			dBm	Result
802.11b	2412	1	-16.57	Complies
	2437	6	-17.59	Complies
	2462	11	-17.55	Complies
802.11g	2412	1	-20.72	Complies
	2437	6	-21.73	Complies
	2462	11	-21.63	Complies

- See next pages for actual measured spectrum plots.

#### Minimum Standard:

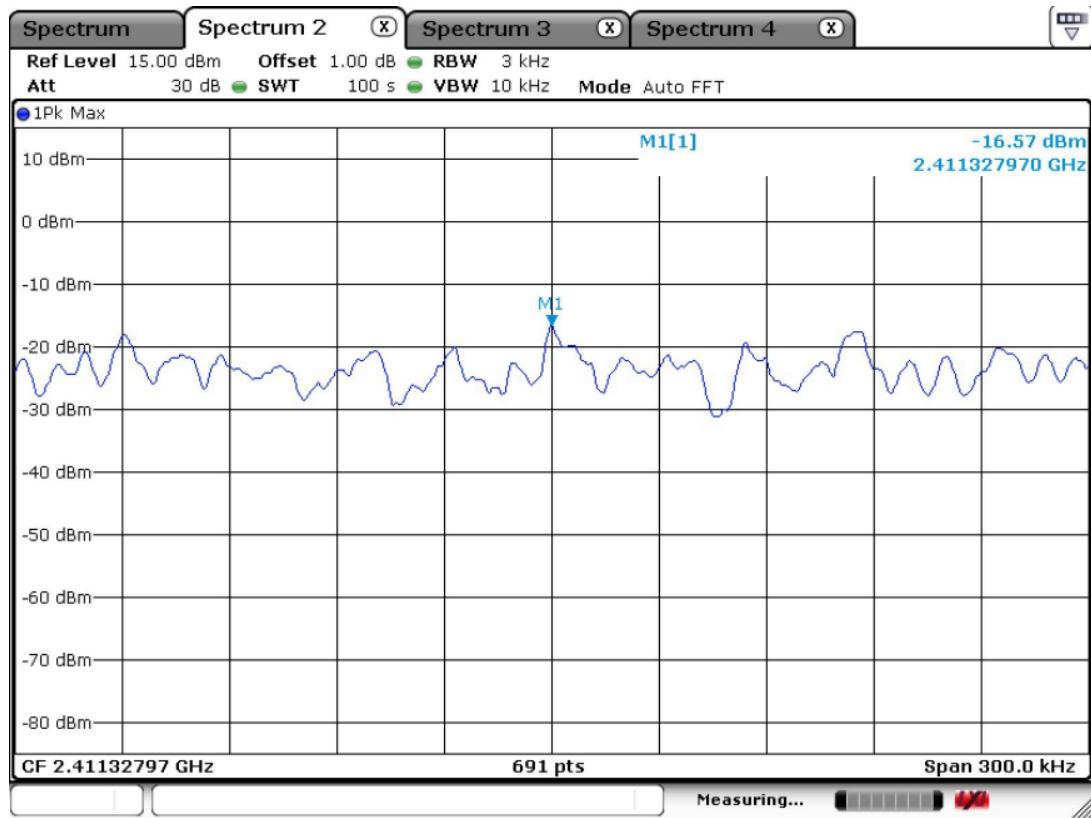
Power Spectral Density	< 8dBm @ 3kHz BW
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#### Measurement Setup

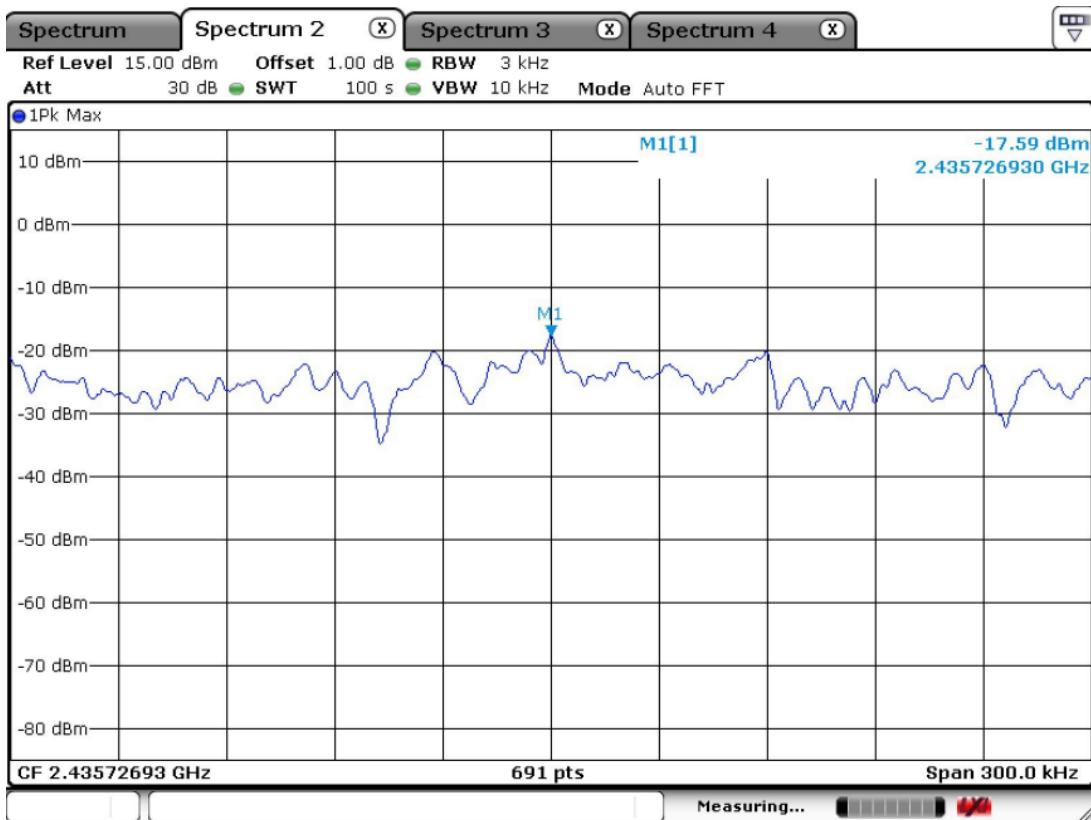
Same as the Chapter 3.2.1 (Figure 1)

## 802.11b Power Density Measurement

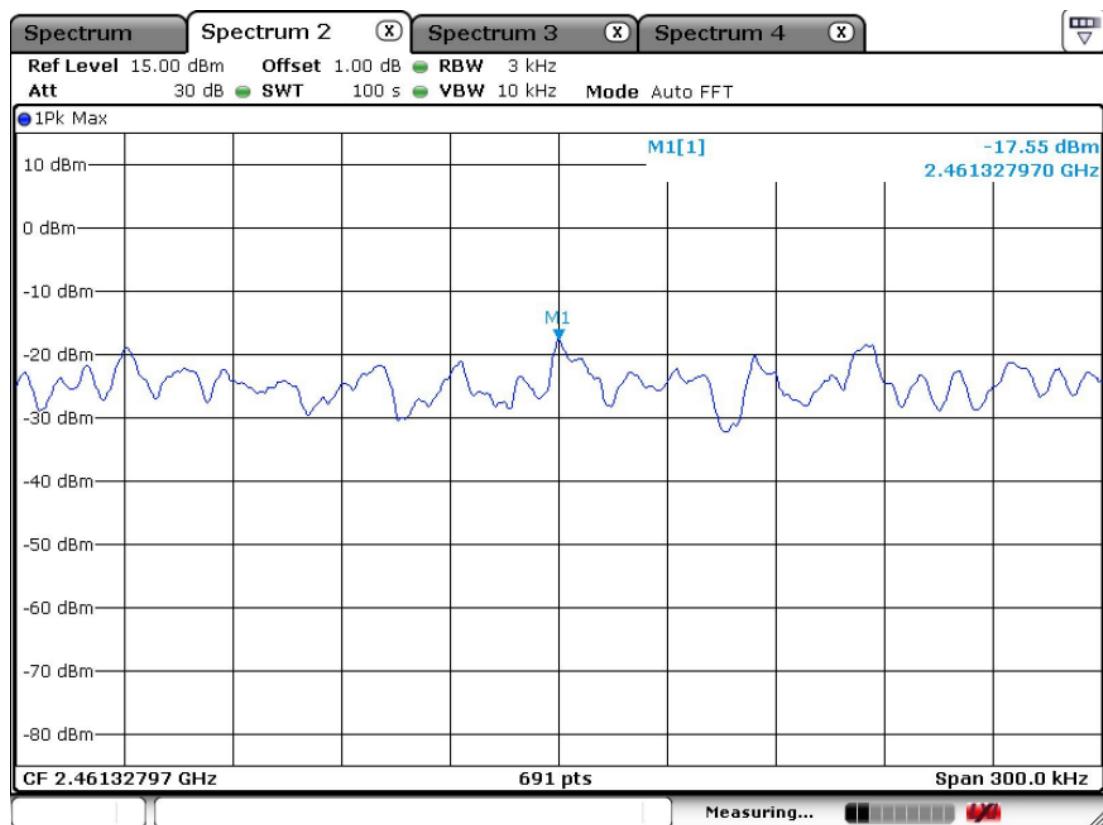
CH 1

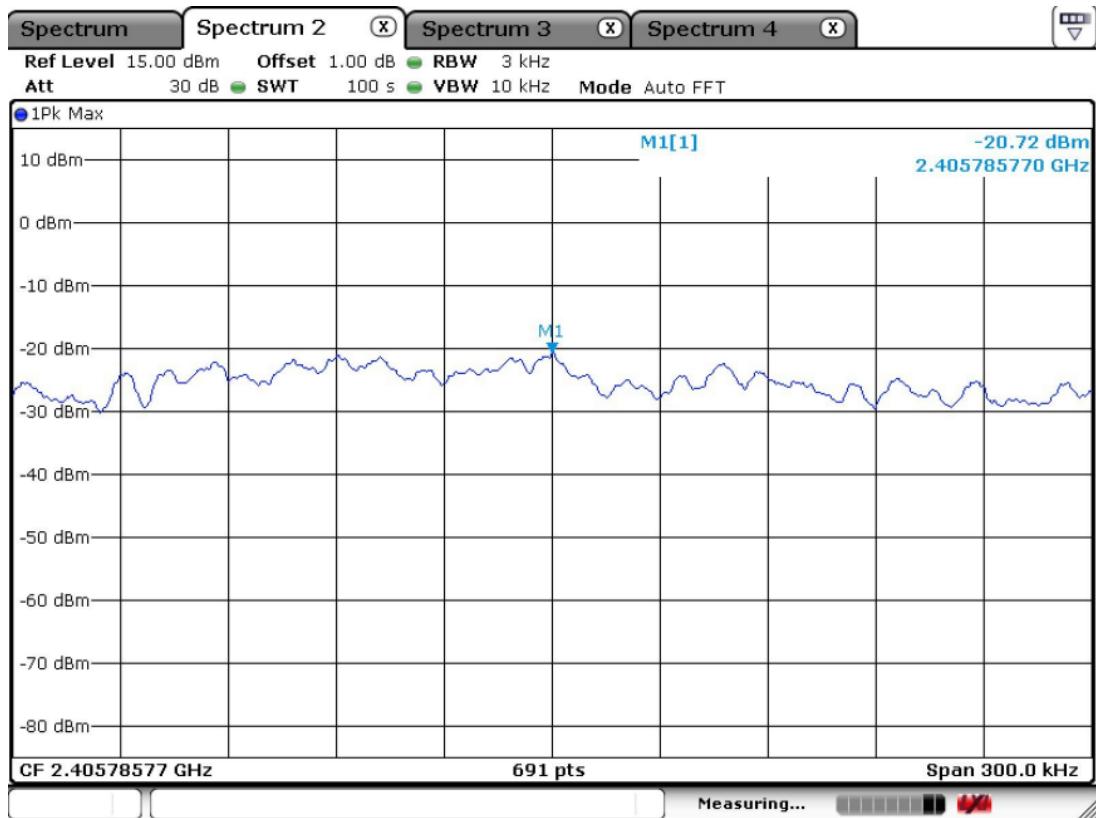
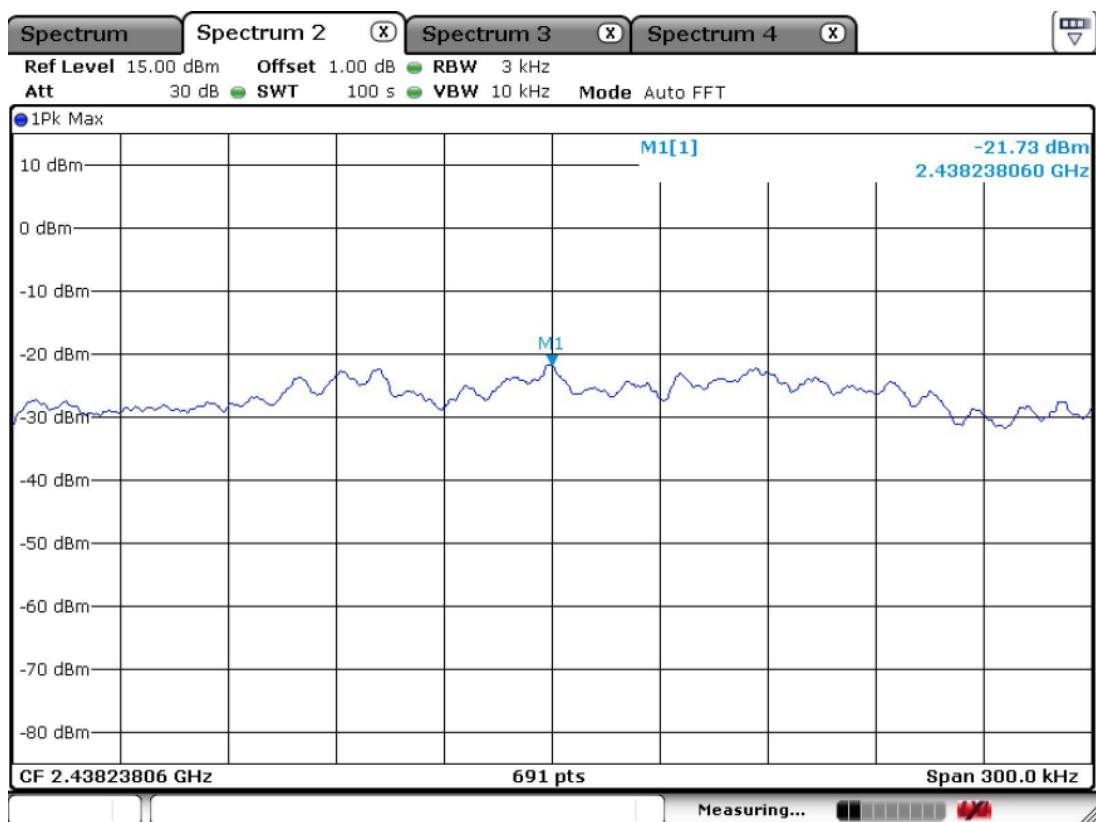


CH 6

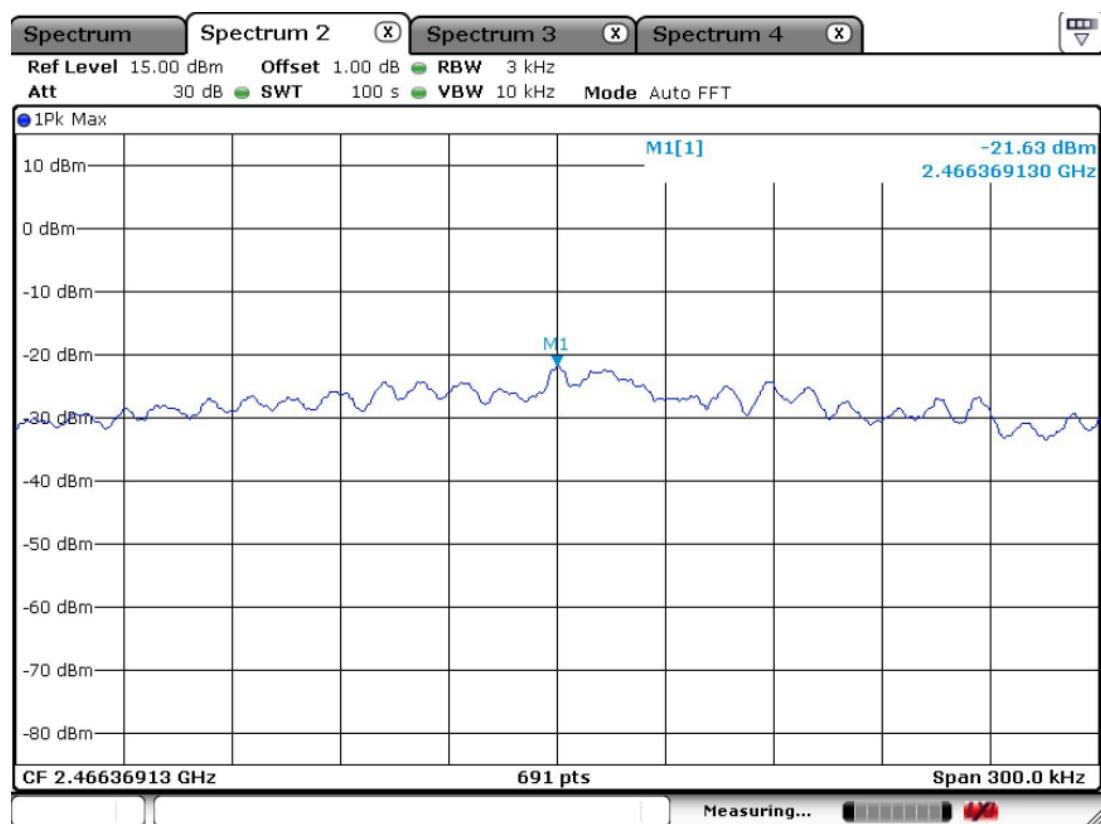


## CH 11



**802.11g Power Density Measurement****CH 1****CH 6**

## CH 11



### 3.2.4 Band - edge

**Procedure:**

\*The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance and TCB Workshop 2012, April.

The bandwidth at 20dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate frequencies.

After the trace being stable, Use the marker-to-peak function to measure 20 dB down both sides of the intentional emission.

The spectrum analyzer is set to:

Center frequency = the highest, middle and the lowest channels

RBW = 100 kHz                          VBW = 100 kHz

Span = 80 MHz                            Detector function = peak

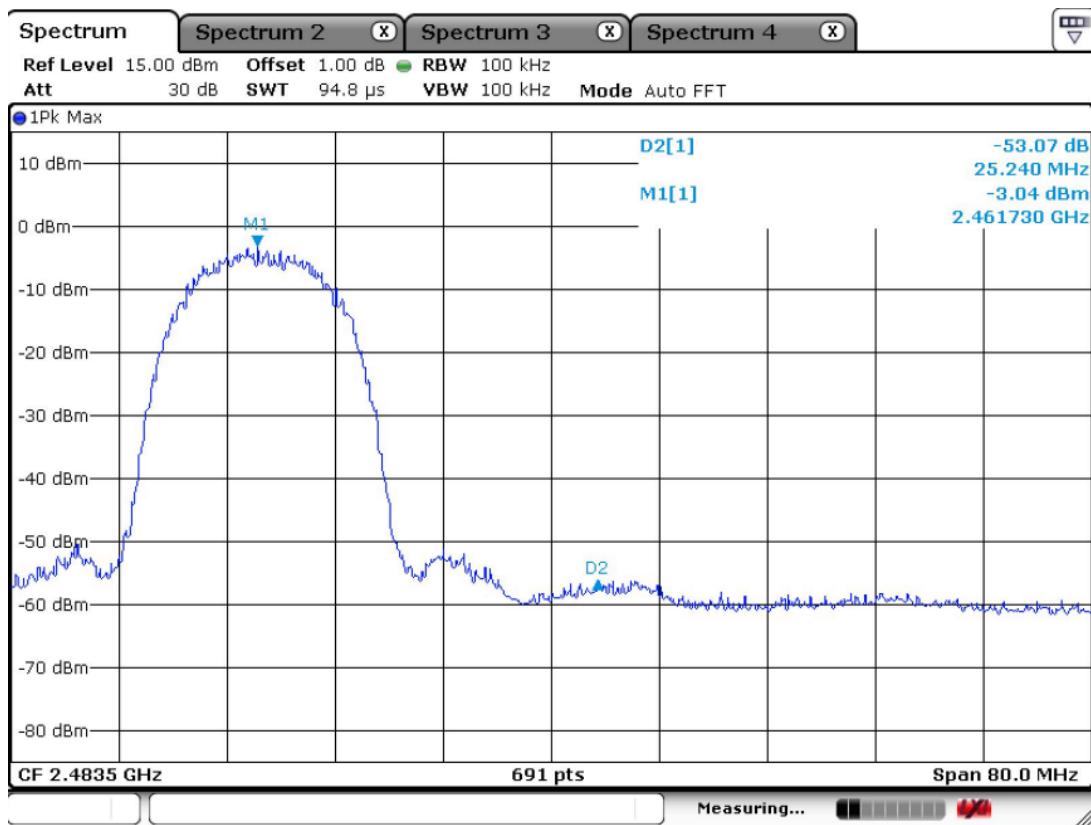
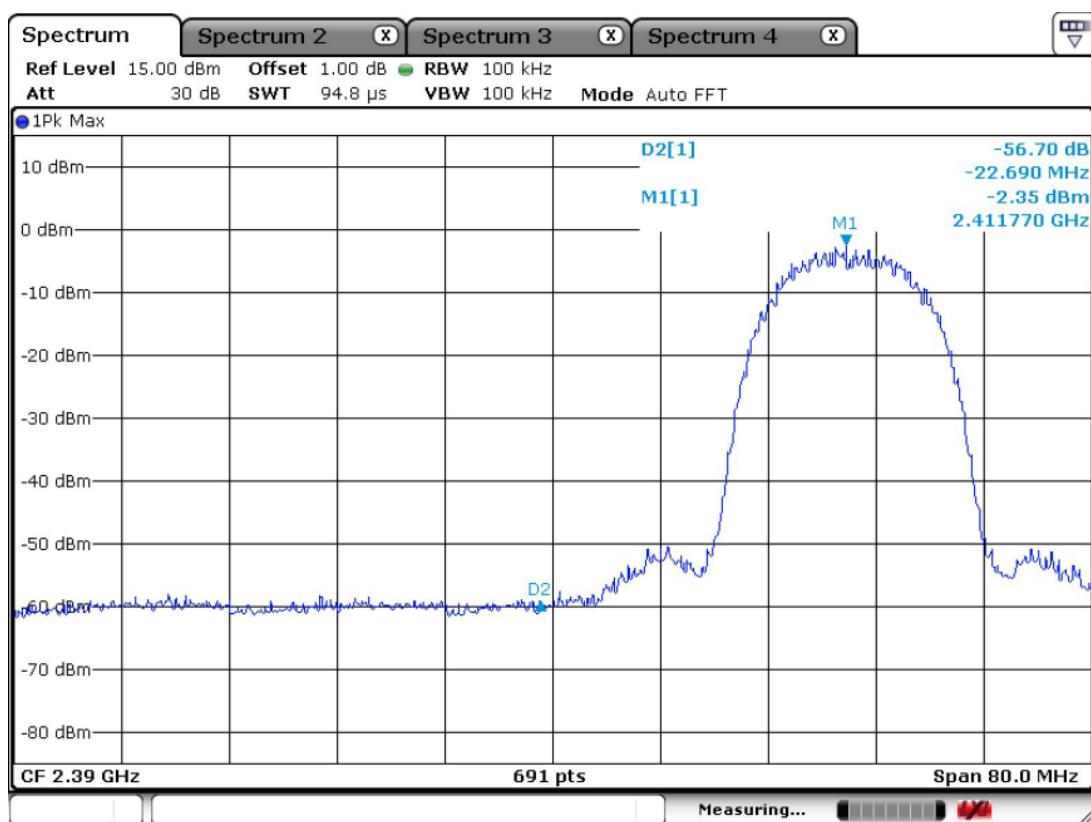
Trace = max hold                        Sweep = auto

**Measurement Data: Complies**

- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest inband spectral density. Therefore the applying equipment meets the requirement.
- See next pages for actual measured spectrum plots.

<b>Minimum Standard:</b>	> 20 dBc
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## 802.11b Band-edge : Conducted Measurements



**Band-edges in the restricted band 2310-2390 MHz measurement**

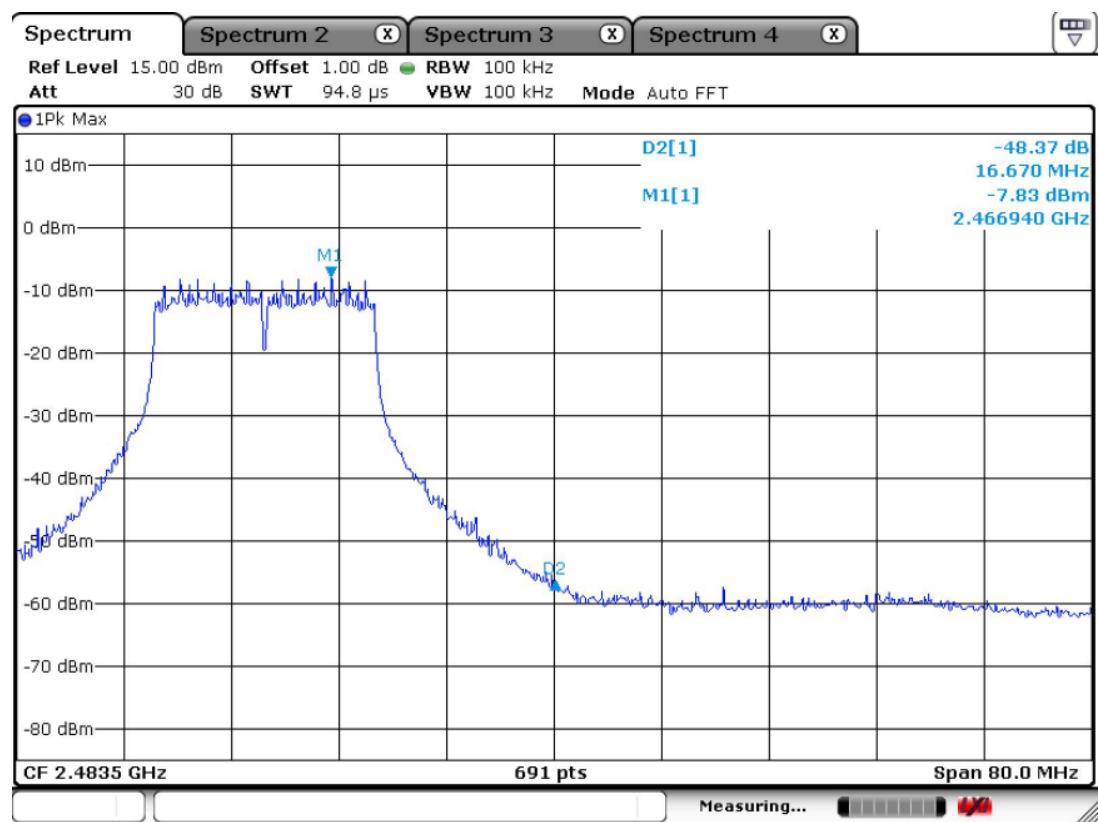
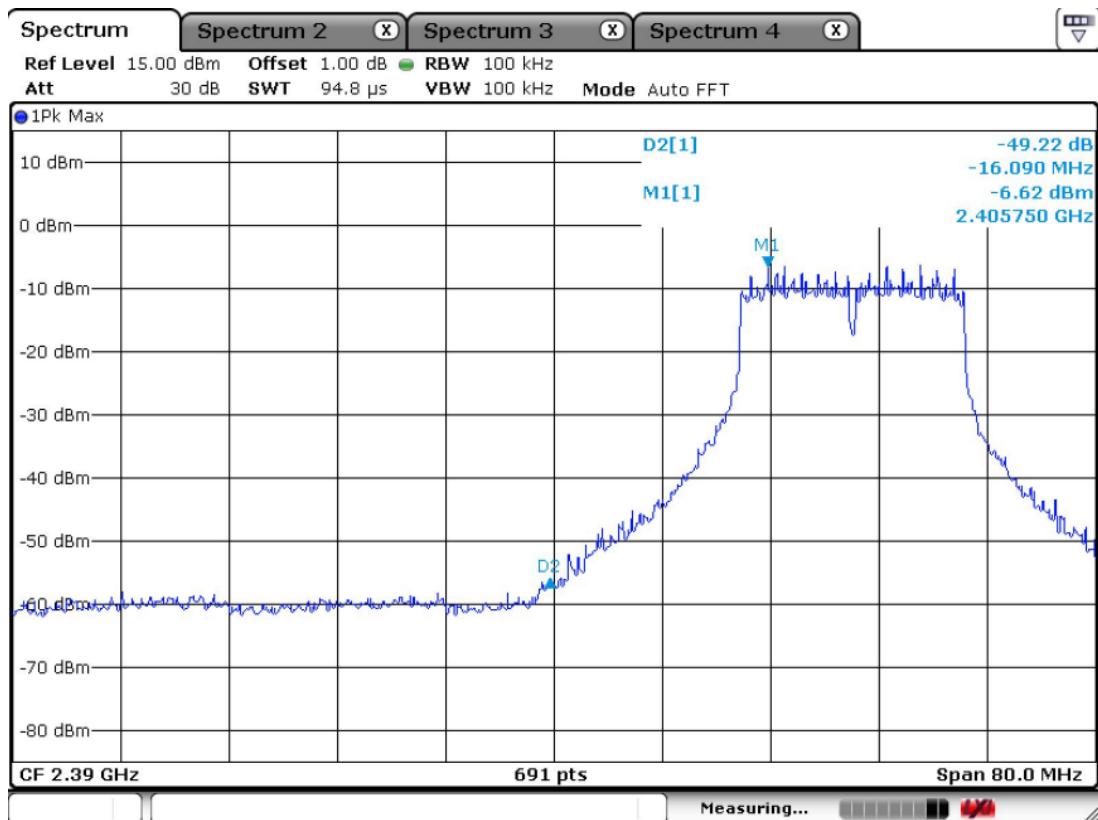
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp. Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2381.4	34.1	47.5	V	28.2	33.5	54.0	74.0	28.8	42.2	25.2	31.8

**Band-edges in the restricted band 2483.5-2500 MHz measurement**

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp. Gain+Cable	AV	Peak	AV	Peak	AV	Peak
2486.7	34.3	47.7	V	28.2	33.5	54.0	74.0	29.0	42.4	25.0	31.6

**Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented**

## 802.11g Band-edge : Conducted Measurements



**Band-edges in the restricted band 2310-2390 MHz measurement**

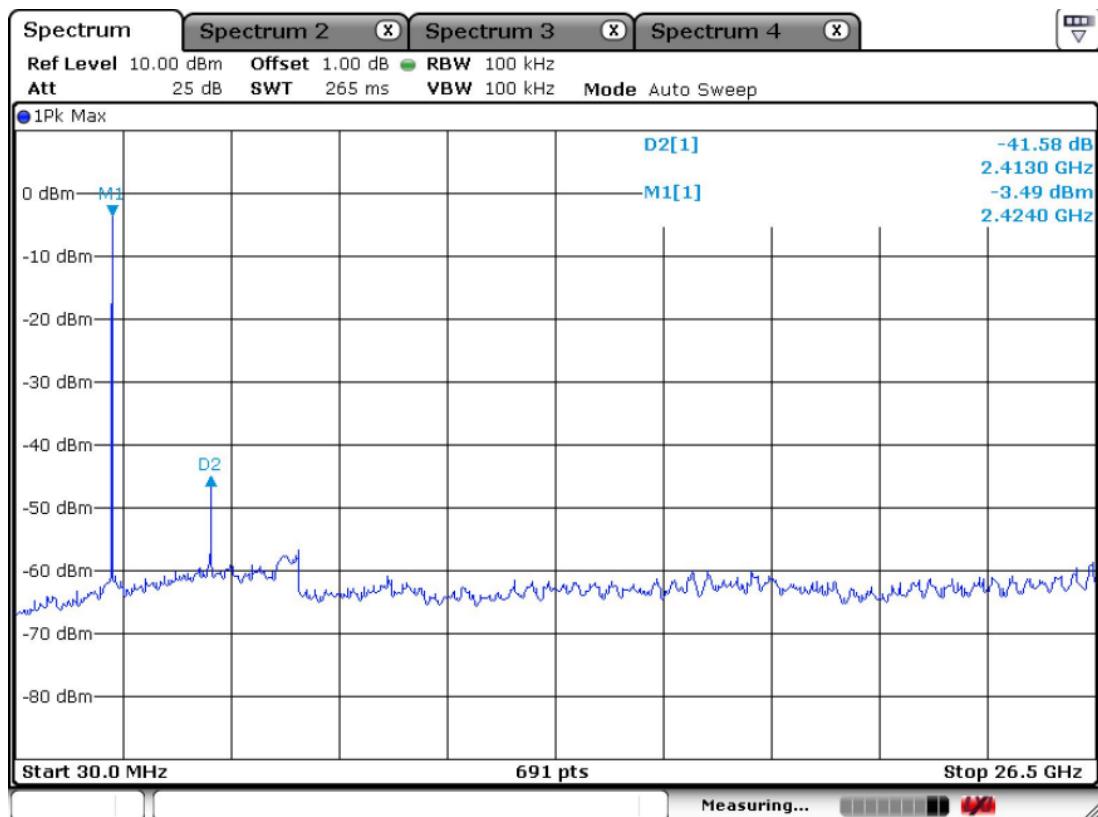
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
				Factor							
	Antenna	Amp. Gain+Cable		AV / Peak		AV / Peak		AV / Peak		AV / Peak	
2389.9	37.1	52.6	V	28.2	33.5	54.0	74.0	31.8	47.3	22.2	26.7

**Band-edges in the restricted band 2483.5-2500 MHz measurement**

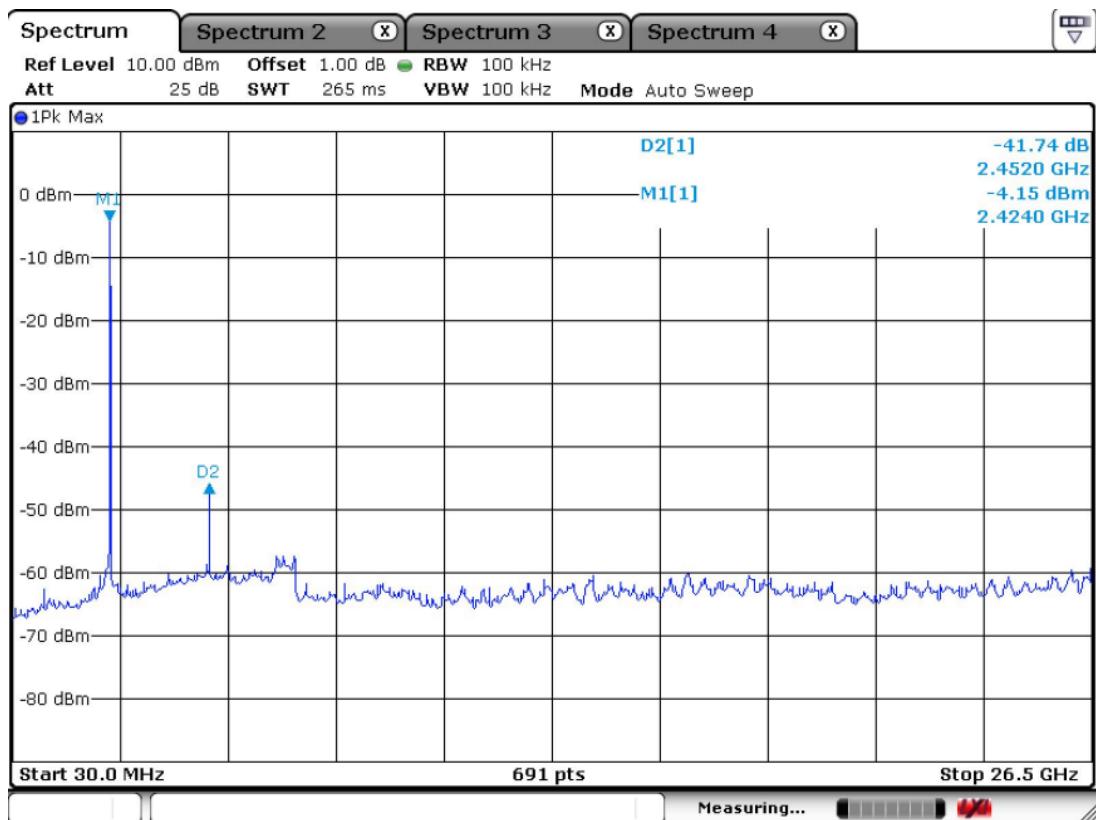
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
				Factor							
	Antenna	Amp. Gain+Cable		AV / Peak		AV / Peak		AV / Peak		AV / Peak	
2483.6	36.9	50.8	V	28.2	33.5	54.0	74.0	31.6	45.5	22.4	28.5

**Note : This EUT was tested in 3 orthogonal positions and the worst-case data was presented**

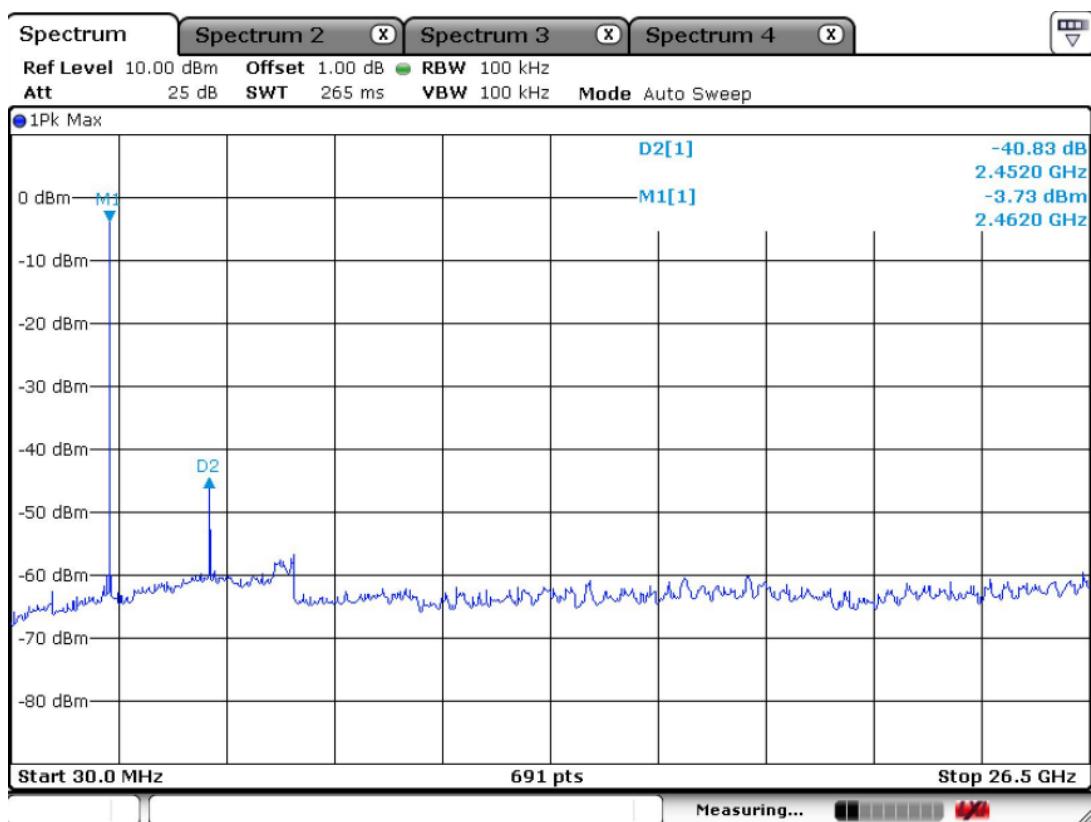
**802.11b - Low channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



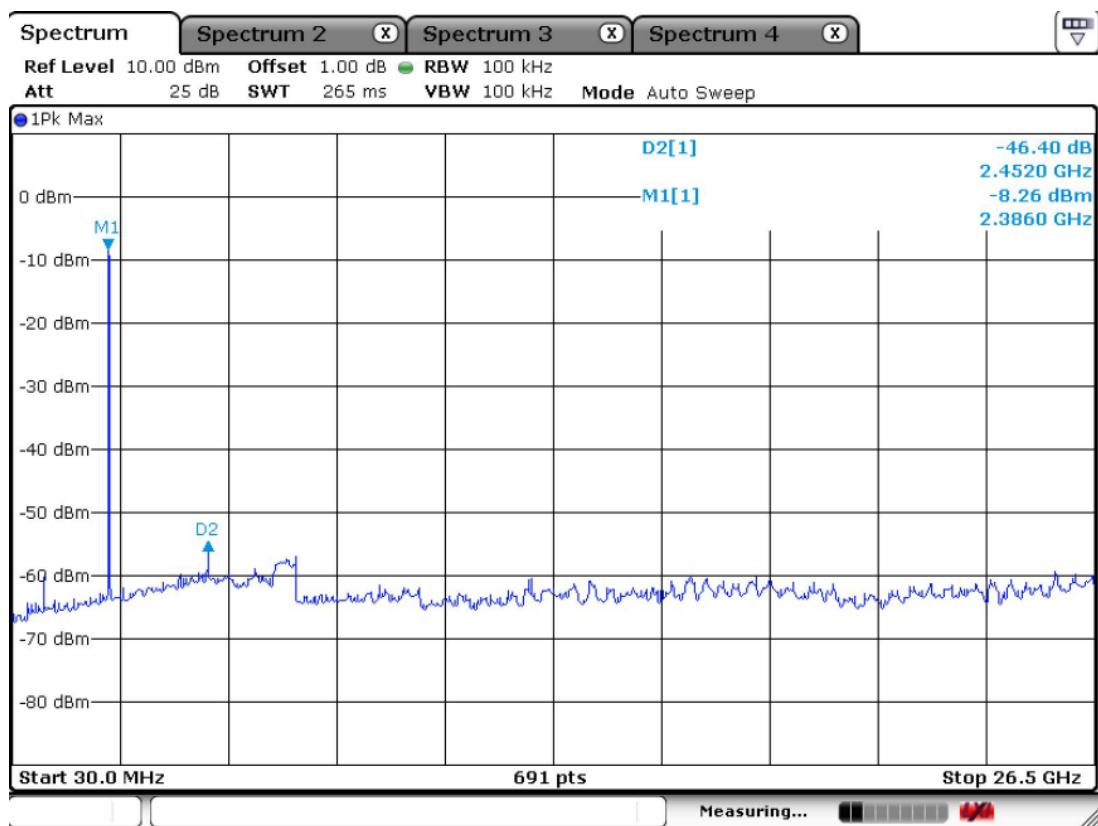
**802.11b - Mid channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



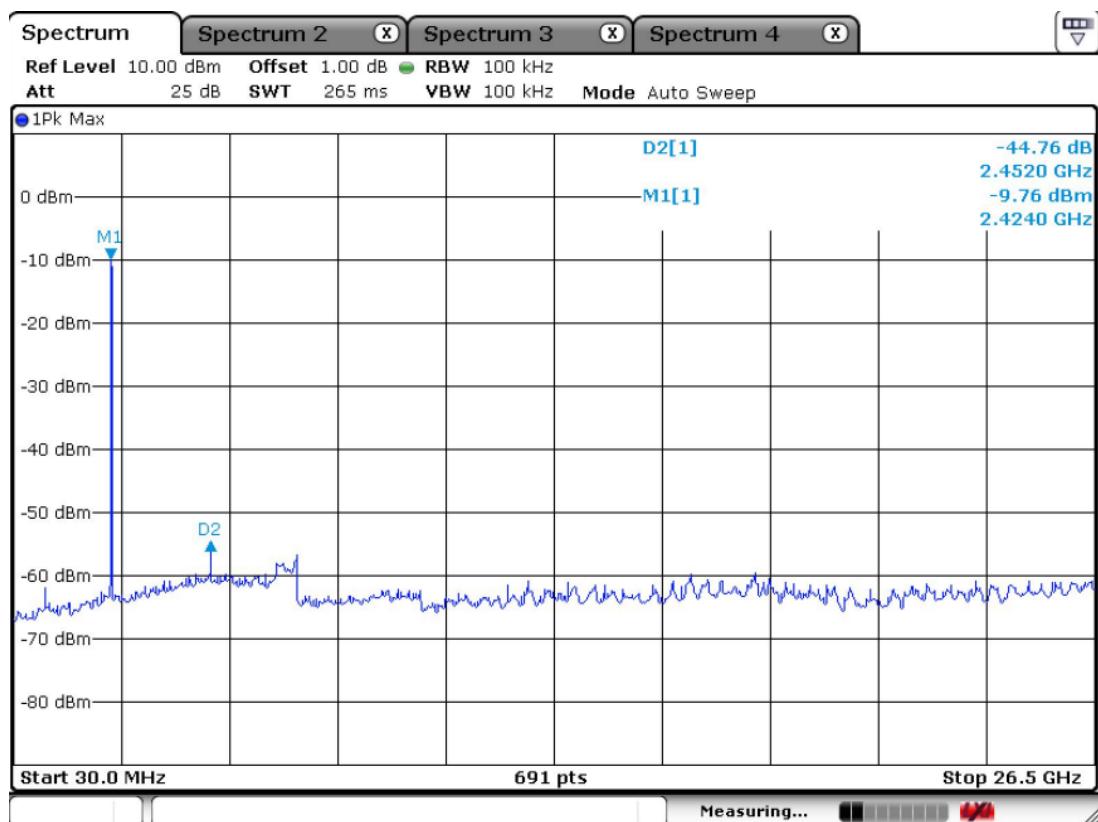
**802.11b – High channel  
Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



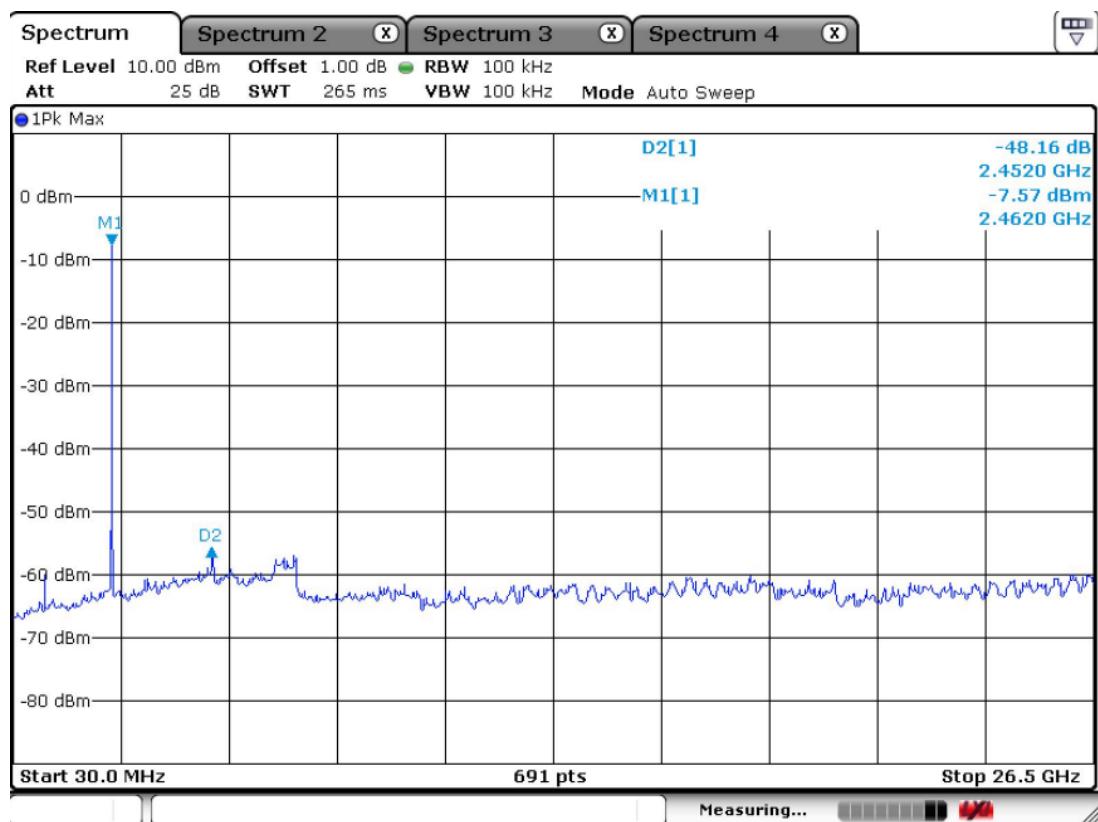
**802.11g - Low channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



**802.11g - Mid channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



**802.11g – High channel**  
**Frequency Range = 30 MHz ~ 10<sup>th</sup> harmonic.**



### 3.2.5 Field Strength of Harmonics

#### Procedure:

\* The testing follows TCB Workshop 2012, April and fulfills ANSI C63.4-2003 and the guidelines in ANSI C63.10-2009 test requirement. The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

#### The spectrum analyzer is set to:

Center frequency = the worst channel

Frequency Range = 9 KHz ~ 10<sup>th</sup> harmonic.

RBW = 120 kHz ( 30 MHz ~ 1 GHz)

Peak:VBW ≥ RBW

= 1 MHz ( 1 GHz ~ 10<sup>th</sup> harmonic )

Average:VBW=10Hz

Span = 100 MHz

Detector function = Peak and Average

Trace = max hold

Sweep = auto

#### Measurement Data: Complies

- See next pages for actual measured data.
- No other emissions were detected at a level greater than 20dB below limit.
- The three antennas were used with this EUT during the Testing.

#### Minimum Standard: FCC Part 15.209(a)

Frequency (MHz)	Limit (uV/m) @ 3m
0.009 ~ 0.490	2400/F(kHz) (@ 300m)
0.490 ~ 1.705	24000/F(kHz) (@ 30m)
1.705 ~ 30	30(@ 30m)
30 ~ 88	100 **
88 ~ 216	150 **
216 ~ 960	200 **
Above 960	500

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

**802.11b Measurement Data: (above 1GHz)**

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp. Gain+Cable	AV	Peak	AV	Peak	AV	Peak
4824	36.8	49.7	V	37.1	31.1	54.0	74.0	42.8	55.7	11.2	18.3
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp. Gain+Cable	AV	Peak	AV	Peak	AV	Peak
4874	36.5	48.9	V	37.1	31.1	54.0	74.0	42.5	54.9	11.5	19.1
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp. Gain+Cable	AV	Peak	AV	Peak	AV	Peak
4921	35.8	47.5	V	37.1	31.1	54.0	74.0	41.8	53.5	12.2	20.5
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

No other emissions were detected at a level greater than 20dB below limit.

**802.11b Measurement Data: (9kHz - 30MHz)**

Frequency [MHz]	Reading [dBuV/m]		Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
	AV	Peak		Antenna	Amp. Gain+Cable	AV	Peak	AV	Peak	AV	Peak
-	-	-	-	-	-	-	-	-	-	-	-
No emissions were detected at a level greater than 20dB below limit.											
-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-

\*No emissions were detected at a level greater than 20dB below limit.

**802.11g Measurement Data: (above 1GHz)**

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain+Cable	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
-	-	-	-	-	-	-	-	-	-	-
No emissions were detected at a level greater than 20dB below limit.										
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain+Cable	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
-	-	-	-	-	-	-	-	-	-	-
No emissions were detected at a level greater than 20dB below limit.										
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain+Cable	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
-	-	-	-	-	-	-	-	-	-	-
No emissions were detected at a level greater than 20dB below limit.										
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

No other emissions were detected at a level greater than 20dB below limit.

**802.11g Measurement Data: (9kHz - 30MHz)**

Frequency [MHz]	Reading [dBuV/m] AV / Peak	Pol.	Correction Factor		Limits [dBuV/m]		Result [dBuV/m]		Margin [dB]	
			Antenna	Amp. Gain+Cable	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak	AV / Peak
-	-	-	-	-	-	-	-	-	-	-
No emissions were detected at a level greater than 20dB below limit.										
-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-

\*No emissions were detected at a level greater than 20dB below limit.

Radiated Emissions – Wi-Fi mode

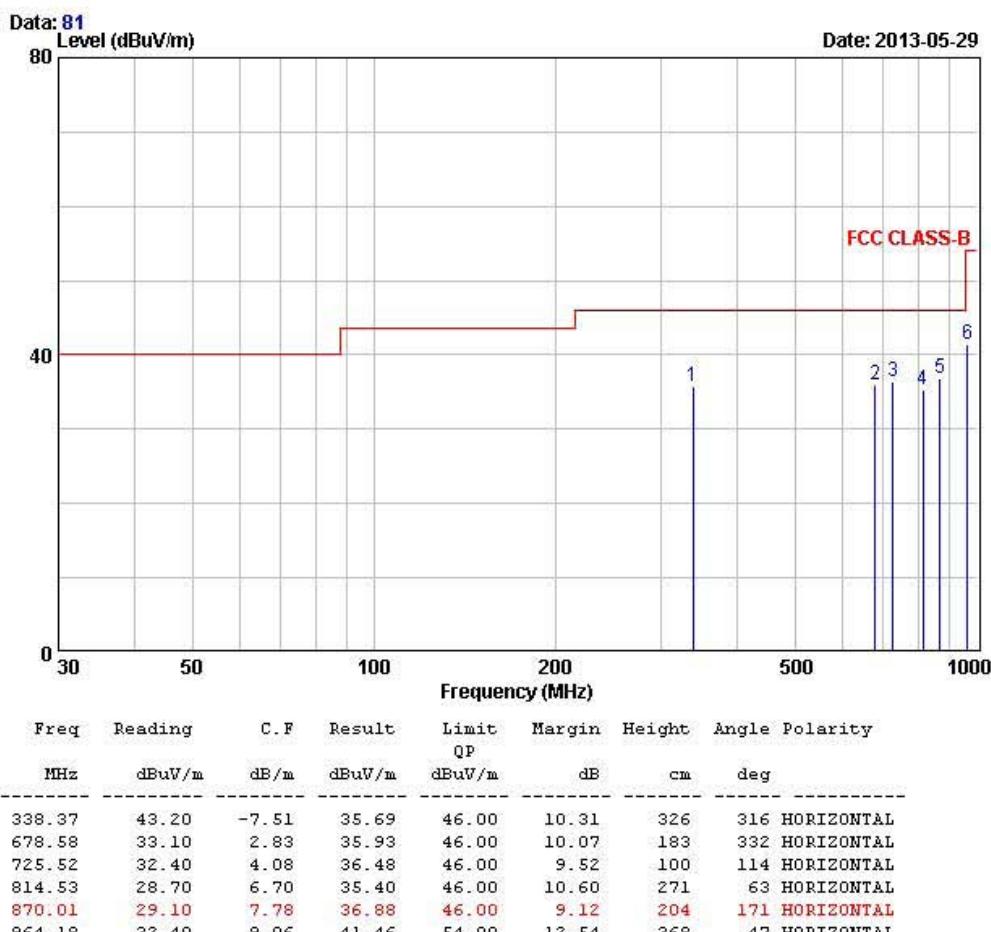
243 Jibug-ri, yangji-Myeon, Youngin-si,  
Gyeonggi-do 449-822 Korea  
Tel. +82-31-3236008,9  
Fax.+82-31-3236010

EUT/Model No.: AQUA CAM

TEST MODE: WI-FI mode

Temp Humi : 26 / 56

Tested by: Ko Gun



Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

Radiated Emissions – Charging mode

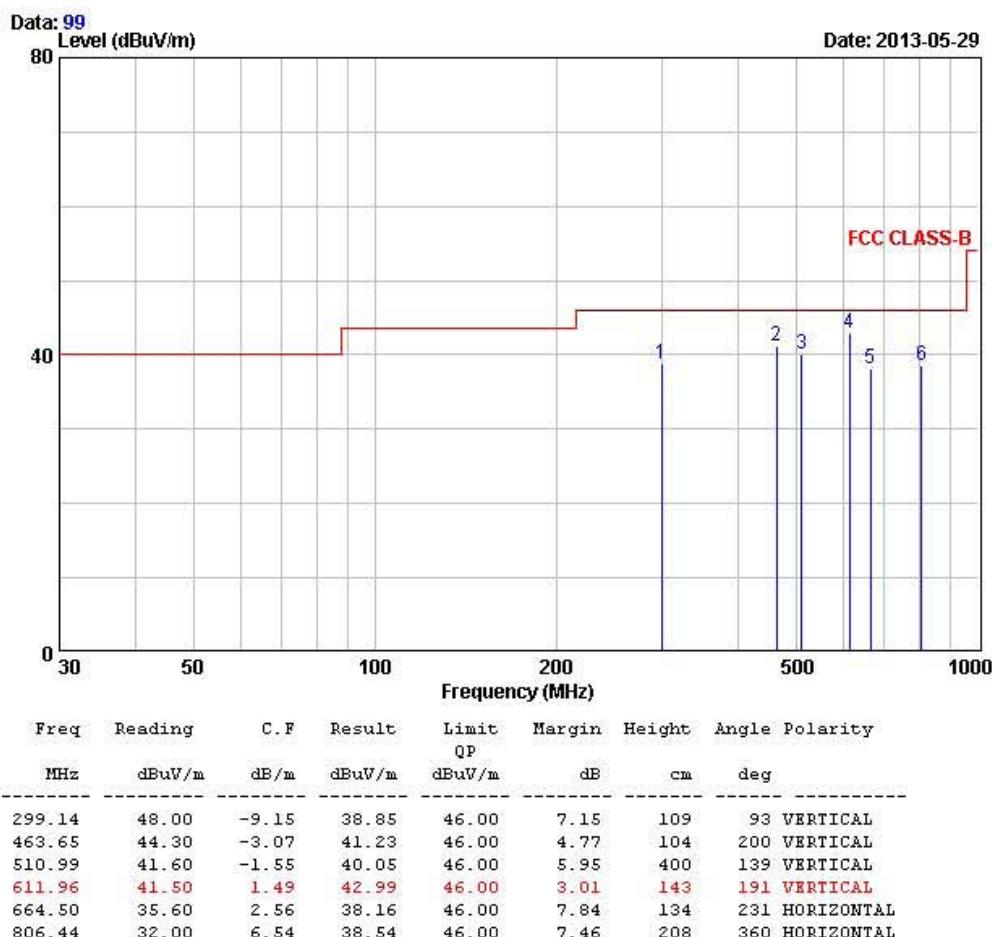
243 Jibug-ri, yangji-Myeon, Youngin-si,  
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EUT/Model No.: AQUA CAM

TEST MODE: Charging mode

Temp Humi : 26 / 56

Tested by: Ko Gun



Remarks: C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

### 3.2.6 AC Conducted Emissions

**Procedure:**

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.31(m). Emissions closest to the limit are measured in the quasi-peak mode (QP) with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

**Measurement Data: Complies**

- Refer to the next page.
- No other emissions were detected at a level greater than 20dB below limit
- It gave the worse case emissions

**Minimum Standard: FCC Part 15.207(a)/EN 55022**

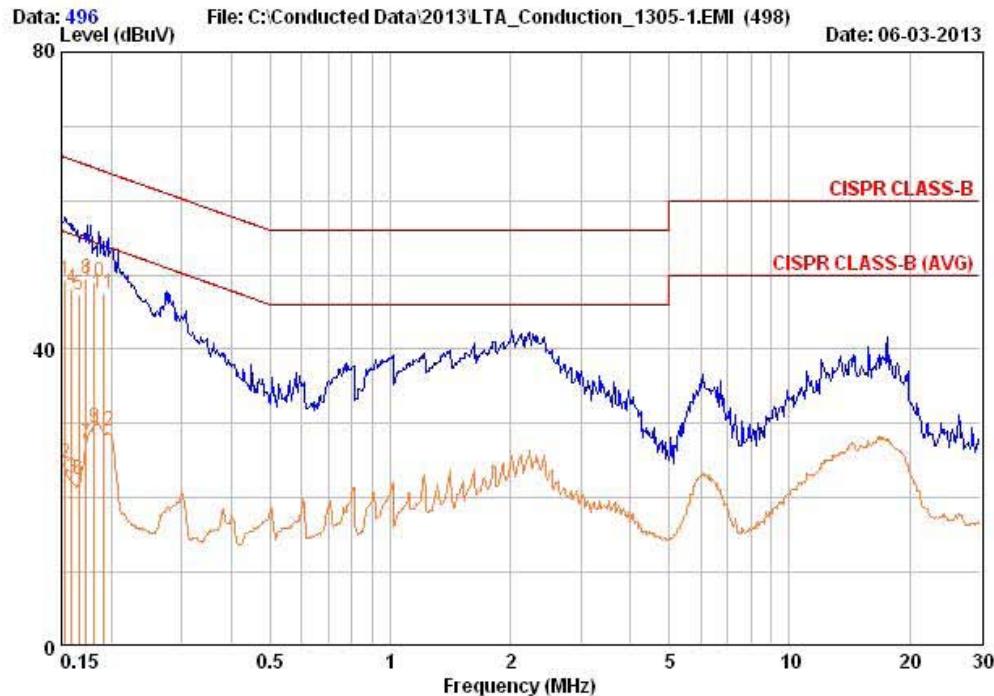
Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

\* Note: The limits will decrease with the frequency logarithmically within 0.15MHz to 0.5MHz

Radiated Emissions – Charging mode - LINE

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Tel :+82-31-3236008,9  
Fax :+82-31-3236010

EUT / Model No. : AQUA CAM Phase : LINE  
 Test Mode : Charging mode Test Power : 120 / 60  
 Temp./Humi. : 22 / 51 Test Engineer : Ko Gun



Freq MHz	RD QP		RD AV		C. F dB	Result dBuV	Result QP		Result AV		Limit QP	Limit AV	Margin dB	Margin dB
	dBuV	dBuV	dBuV	dBuV			dBuV	dBuV	dBuV	dBuV				
0.153	39.64	15.04	9.58	49.22	24.62	65.84	55.84	16.61	31.21					
0.159	38.64	13.14	9.58	48.22	22.72	65.52	55.52	17.29	32.79					
0.166	37.74	12.94	9.58	47.32	22.52	65.16	55.16	17.83	32.63					
0.173	39.94	17.64	9.58	49.52	27.22	64.82	54.82	15.29	27.59					
0.181	39.45	19.95	9.58	49.03	29.53	64.44	54.44	15.41	24.91					
0.191	38.05	19.45	9.58	47.63	29.03	63.99	53.99	16.36	24.96					

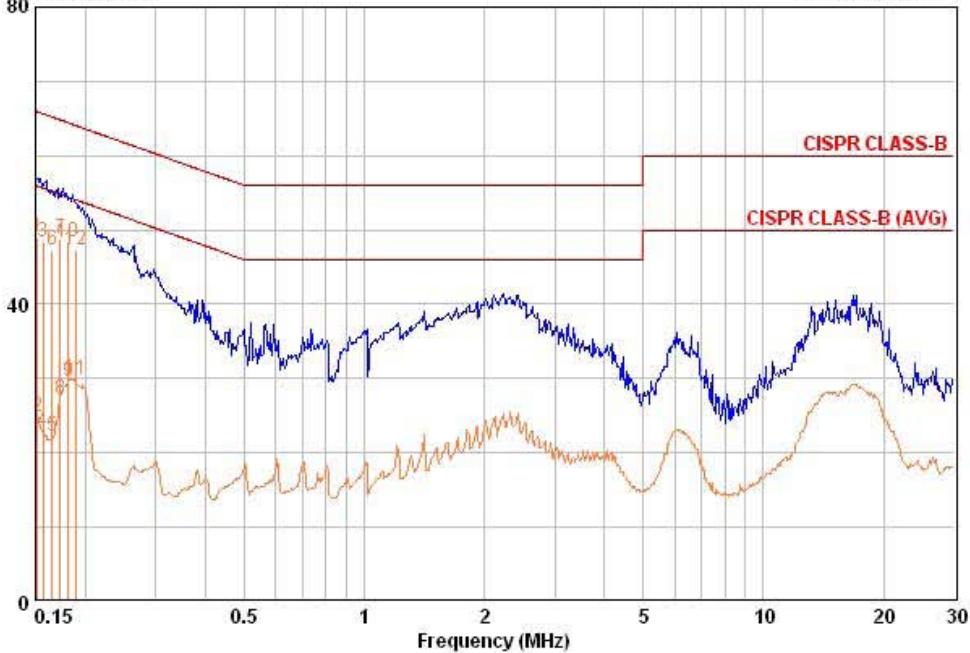
Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

Radiated Emissions – Charging mode - NEUTRAL

243 Jubug-ri, yangji-Myeon, Youngin-si,  
Gyeonggi-do 449-822 Korea  
Tel :+82-31-3236008,9  
Fax :+82-31-3236010

EUT / Model No. :	AQUA CAM	Phase :	NEUTRAL
Test Mode :	Charging mode	Test Power :	120 / 60
Temp./Humi. :	22 / 51	Test Engineer :	Ko Gun

Data: 498 File: C:\Conducted Data\2013\LTA\_Conduction\_1305-1.EMI (498) Date: 06-03-2013  
Level (dBuV)



Freq MHz	RD QP dBuV		RD AV dBuV		C. F dB	Result QP dBuV	Result AV dBuV	Limit QP dBuV	Limit AV dBuV	Margin QP dB	Margin AV dB
	QP	AV	QP	AV							
0.152	39.44	15.34	9.62	49.06	24.96	65.89	55.89	16.83	30.93		
0.157	38.74	13.34	9.61	48.35	22.95	65.62	55.62	17.27	32.67		
0.165	37.64	12.64	9.61	47.25	22.25	65.21	55.21	17.96	32.96		
0.173	39.14	17.74	9.60	48.74	27.34	64.82	54.82	16.07	27.47		
0.181	38.75	20.05	9.59	48.34	29.64	64.44	54.44	16.10	24.80		
0.189	37.65	20.35	9.58	47.23	29.93	64.08	54.08	16.85	24.15		

Remarks: C.F (Correction Factor) = Insertion loss + Cable loss

## APPENDIX

### TEST EQUIPMENT USED FOR TESTS

	Description	Model No.	Serial No.	Manufacturer	Expiration date of Calibration
1	Spectrum Analyzer	FSV-30	100757	R&S	2014-01-15
2	Spectrum Analyzer	8594E	3649A03649	HP	2014-03-26
3	Spectrum Analyzer	8563E	3425A02505	HP	2014-03-26
4	VECTOR SIGNAL GENERATOR (~6GHz)	8648C	3623A02597	HP	2014-03-25
5	Signal Generator	83711B	US34490456	HP	2014-03-25
6	Attenuator (3dB)	8491A	37822	HP	2014-09-22
7	Attenuator (10dB)	8491A	63196	HP	2014-09-22
8	Test Receiver	ESHS10	828404/009	R&S	2014-03-25
9	EMI Test Receiver	ESCI7	100722	R&S	2013-09-22
10	RF Amplifier	8447D OPT 010	2944A07684	HP	2014-09-22
11	RF Amplifier	8449B	3008A02126	HP	2014-03-25
12	Horn Antenna (1~18GHz)	3115	114105	ETS	2014-01-26
13	DRG Horn (Small) (18~40GHz)	3116B	81109	ETS-Lindgren	2014-03-15
14	DRG Horn (Small) (18~40GHz)	3116B	133350	ETS-Lindgren	2014-03-15
15	TRILOG Antenna	VULB 9160	9160-3172	SCHWARZBECK	2014-09-20
16	Hygro-Thermograph	THB-36	0041557-01	ISUZU	2013-10-12
17	Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-
18	Power Divider	11636A	06243	HP	2014-09-22
19	DC Power Supply	6674A	3637A01657	Agilent	-
20	Frequency Counter	5342A	2826A12411	HP	2014-03-25
21	Power Meter	EPM-441A	GB32481702	HP	2014-03-25
22	Power Sensor	8481A	US41030291	HP	2013-09-22
23	Audio Analyzer	8903B	3729A18901	HP	2013-09-22
24	Modulation Analyzer	8901B	3749A05878	HP	2013-09-22
25	TEMP & HUMIDITY Chamber	YJ-500	LTAS06041	JinYoung Tech	2013-09-22
26	Stop Watch	HS-3	601Q09R	CASIO	2014-03-26
27	LISN	ENV216	100408	R&S	2013-09-22
28	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	106243	R&S	2014-06-27
29	Highpass Filter	WHKX1.5/15G-10SS	74	Wainwright Instruments	-
30	Highpass Filter	WHKX3.0/18G-10SS	118	Wainwright Instruments	-
31	Active Loop Antenna	FMZB 1519	1519-031	SCHWARZBECK	2014-12-14