



**World Standardization Certification & Testing CO., LTD**  
**World Standardization Safety and EMC Testing Centre**

## **FCC ID TEST REPORT**

for

**AOC Tablet**

**MODEL: MW0922**

**Trade Mark: N/A**

**FCC ID: Y5VMW0922**

**Test Report Number: WSCT-12030161E\_wifi**

**Issued Date: March 19, 2012**

Issued for

**Fuzhou Smart Digital science & Technology Co., Ltd**  
**No.8 Building, Honshan science & Technology Zone, Gulou District,**  
**Fuzhou, Fujian, China**

Issued By:

**World Standardization Certification & Testing CO., LTD.**  
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**Revision History Of Report**

Rev.	Issue No.	Revisions	Effect Page	Revised By
00	WSCT-12030161E_wifi	Initial Issue	ALL	Kallen Wang



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## 1 TEST CERTIFICATION

**Product:** AOC Tablet  
**Model:** MW0922  
**Trade Mark** N/A  
**Applicant:** **Fuzhou Smart Digital Science & Technology Co., Ltd.**  
No.8 Building, Honshan science & Technology Zone, Gulou District, Fuzhou, Fujian, China  
**Factory:** **Fuzhou Smart Digital Science & Technology Co., Ltd.**  
No.8 Building, Honshan science & Technology Zone, Gulou District, Fuzhou, Fujian, China  
**Tested:** March 07, 2012 ~ March 19, 2012  
**Test Voltage:** DC 5V(PC Input AC 120V/60Hz)  
**Applicable Standards:** FCC Part 15 Subpart C: 2010  
ANSI C63.4:2003

### Deviation from Applicable Standard

None

The above equipment has been tested by World Standardization Certification & Testing Co., Ltd., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By: \_\_\_\_\_

(Jack Ma)

Date: March 19, 2012

Approved By: \_\_\_\_\_

(Kallen Wang)

Date: March 19, 2012



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## 2 TEST RESULT SUMMARY

### FCC 15 Subpart C, Paragraph 15.247

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Pass
§15.207 (a)	Conducted Emissions	Pass
§15.247(d)	Spurious Emissions at Antenna Port	Pass
§15.205	Restricted Bands	Pass
§15.209, §15.205, 1§15.247(d)	Spurious Emissions	Pass
§15.247 (a)(2)	6 dB Bandwidth	Pass
§15.247(b)(3)	Maximum Peak Output Power	Pass
§15.247(d)	100kHz Bandwidth of Frequency Band Edge	Pass
§15.247(e)	Power Spectral Density	Pass

#### Modifications:

No modification was made to the unit tested.



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### 3 EUT DESCRIPTION

Product	AOC Tablet
Trade Mark	N/A
Model	MW0922
Applicant	Fuzhou Smart Digital science & Technology Co., Ltd
EUT Type	<input checked="" type="checkbox"/> Engineering Sample. <input type="checkbox"/> Product Sample, <input type="checkbox"/> Mass Product Sample.
Serial Number	N/A
Antenna Type	PIFA Antenna
EUT Power Rating	AC 100-240V 50/60Hz 7W
Temperature Range(Operating)	-10 ~50°C
Type of the Equipment	Combined Equipment
Operating Frequency (WIFI)	2412MHz - 2462MHz
Number of Channels	11 Channels
Modulation type	DSSS And OFDM for IEEE 802.11b/g/n

*Note: N/A stand for no applicable.*

#### Model Differences

N/A



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## 4 SETUP OF EQUIPMENT UNDER TEST AND TEST EQUIPMENTS USED

EQUIPMENT/FACILITIES	MANUFACTURER	MODEL #	SERIAL NO.	DATE OF CAL.	CAL. INTERVAL
Cable	Resenberger	N/A	NO.1	Mar 10, 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10, 2012	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10, 2012	1 Year
LISN	Rohde & Schwarz	ESH3-Z5	100305	Mar 10, 2012	1 Year
50 $\Omega$ Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10, 2012	1 Year
EMI Test Receiver	Rohde & Schwarz	ESP13	100180	Oct.18,2011	1 Year
Spectrum Analyzer	Rohde & Schwarz	FSP40	100273	Sep.10,2011	1 Year
3m Semi-Anechoic Chamber	Albatross Projects	9m $\times$ 6m $\times$ 6m	N/A	Feb.20,2012	1 Year
Signal Generator	FLUKE	PM5418 + Y/C	LO747012	Feb.20,2012	1 Year
Signal Generator	FLUKE	PM5418TX	LO738007	Feb.20,2012	1 Year
Loop Antenna	SCHWARZBECK	FMZB1516	113	Jan.30,2012	1 Year
Trilog-Super Broadband Antenna	SCHWARZBECK	VULB9161	9161-4079	Sep.22,2011	1 Year
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-564	Sep.22,2011	1 Year
Ultra Broadband Antenna	Rohde & Schwarz	HL-562	100110	June.15,2011	1 Year
AMN	Rohde & Schwarz	ESH3-Z5	100196	Oct.11,2011	1 Year
AMN	Rohde & Schwarz	ESH3-Z5	100197	Oct.11,2011	1 Year
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
Power Meter	Rohde & Schwarz	NRVD	100041	Feb.20,2012	1 Year
EMI Test Receiver	Rohde & Schwarz	ESCS30	100003	Feb.20,2012	1 Year
Coaxial Cable with N-connectors	SCHWARZBECK	AK9515H	95549	Sep.22,2011	1 Year
Radio Communication Test Set	Rohde & Schwarz	CMS 54	846621/024	Feb.20,2012	1 Year
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.20,2012	1 Year
Absorbing clamp	Rohde & Schwarz	MDS-21	N/A	Oct.29,2011	1 Year

#### 4.1. DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Model No.	Serial No.	FCC ID	Trade Name	Data Cable	Power Cord
1							
2							
3							
4							
5							
6							

**Note:**

- 1) All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2) Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

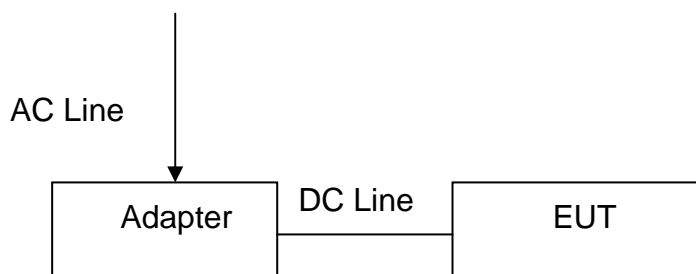
#### 4.2. Description of Test Configuration

For 802.11b and 802.11g & 802.11n mode, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

EUT was tested with Channel 1, 6 and 11.

### 4.3. CONFIGURATION OF SYSTEM UNDER TEST



(EUT: AOC Tablet)

### 4.4. Justification

1. Set up EUT with the relative support equipments.
  2. Make sure the EUT worked normally during the test.
- (as normally used by a typical user).

### 4.5. Configuration of Test Setup

Evaluation for “xyz” 3 directions.



## 5 FACILITIES AND ACCREDITATIONS

### 5.1. FACILITIES

All measurement facilities used to collect the measurement data are located at World Standardization Certification & Testing CO., LTD.

Building A, Baoshi Road, Baoshi Science & Technology Park, Bao'an District, Shenzhen, Guangdong, China

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

### 5.2. ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

#### USA

FCC (certificate registration number is 131628)

TIMCO (certificate registration number is Q2001)

#### Canada

INDUSTRY CANADA

(certificated registration number is 7700A-1)

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.wsct.org.cn>

### 5.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency		Uncertainty
Conducted emissions	150kHz~30MHz		+/- 3.59dB
Radiated emissions	Horizontal	30MHz ~ 200MHz	+/- 4.77dB
		200MHz ~1000MHz	+/- 4.93dB
		1000MHz~25000 MHz	+/- 5.01dB
	Vertical	30MHz ~ 200MHz	+/- 5.04dB
		200MHz ~1000MHz	+/- 4.93dB
		1000MHz~25000 MHz	+/- 5.01dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## **§15.203 - ANTENNA REQUIREMENT**

### **Standard Applicable**

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### **Antenna Connector Construction**

The EUT uses a inside jointing PIFA antenna, The Antenna is unique coupling antenna. The Antenna gain is 0dBi. please refer to the EUT internal photos.



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## §15.207 - CONDUCTED EMISSIONS

### Applicable Standard

The specification used was with the FCC Part 15.207 limits.

### Test Procedure

During the conducted emission test, the EUT was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

### Test Result

PASS

Test Mode: Operating

### Environmental Conditions

Temperature:	26 °C
Relative Humidity:	60%
ATM Pressure:	100.0kPa

### Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.

## Conducted Emission Measurement

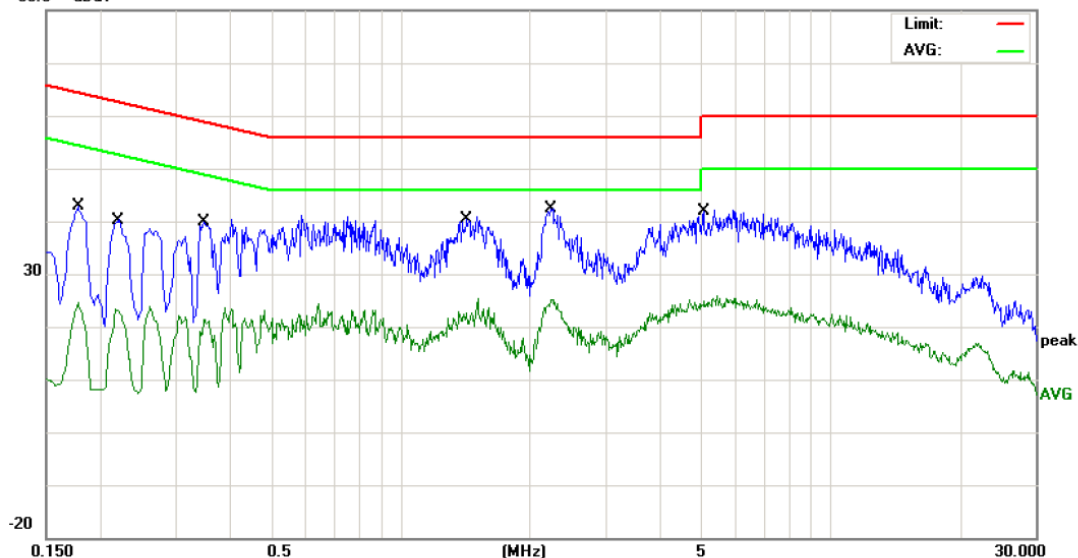
File : Smart

Data : #2

Date: 2012-3-12

Time: 18:08:27

80.0 dBuV



Site: 843 Shielded Room

Phase: L1

Temperature: 26

Limit: FCC Part15 B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 60 %

EUT: AOC Tablet

M/N: MW0922

Mode: Charging And Running

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.1787	31.99	10.36	42.35	64.54	-22.19	QP	
2		0.1787	13.78	10.36	24.14	54.54	-30.40	AVG	
3		0.2180	29.24	10.36	39.60	62.89	-23.29	QP	
4		0.2180	12.93	10.36	23.29	52.89	-29.60	AVG	
5		0.3520	28.84	10.57	39.41	58.91	-19.50	QP	
6		0.3520	10.39	10.57	20.96	48.91	-27.95	AVG	
7		1.4340	28.52	10.51	39.03	56.00	-16.97	QP	
8		1.4340	10.19	10.51	20.70	46.00	-25.30	AVG	
9	*	2.2500	31.63	10.53	42.16	56.00	-13.84	QP	
10		2.2500	14.50	10.53	25.03	46.00	-20.97	AVG	
11		5.0340	30.20	10.60	40.80	60.00	-19.20	QP	
12		5.0340	13.45	10.60	24.05	50.00	-25.95	AVG	

\*:Maximum data x:Over limit !:over margin

(Reference Only)

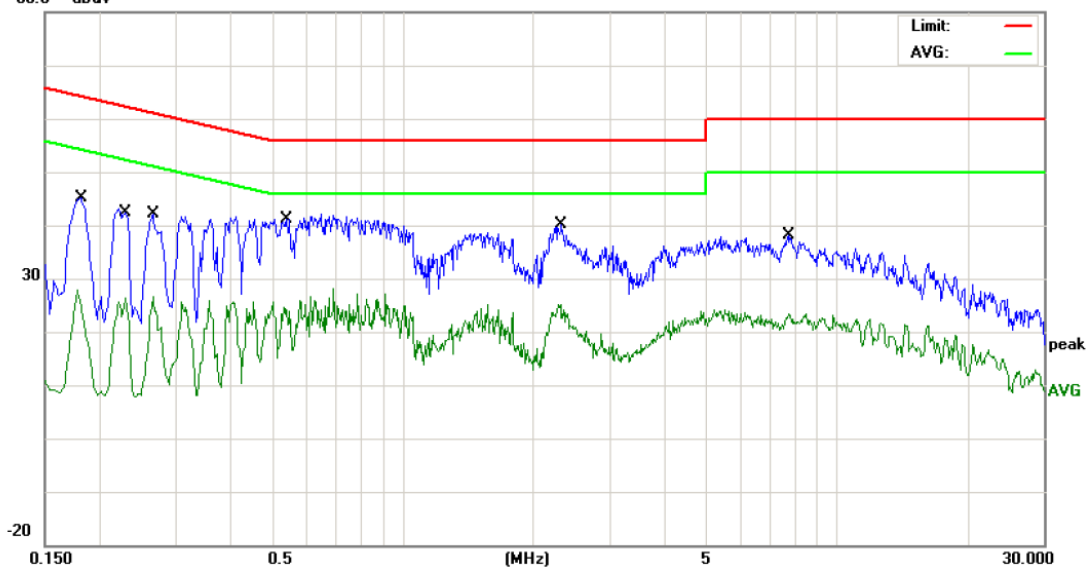
## Conducted Emission Measurement

File :Smart  
 80.0 dBuV

Data :#1

Date: 2012-3-12

Time: 18:03:32



Site 843 Shielded Room

Phase: **N**

Temperature: 26

Limit: FCC Part15 B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 60 %

EUT: AOC Tablet

M/N: MW0922

Mode: Charging And Running

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1796	34.60	10.36	44.96	64.50	-19.54	QP	
2		0.1796	16.25	10.36	26.61	54.50	-27.89	AVG	
3		0.2304	31.69	10.41	42.10	62.43	-20.33	QP	
4		0.2304	15.60	10.41	26.01	52.43	-26.42	AVG	
5		0.2672	30.42	10.54	40.96	61.20	-20.24	QP	
6		0.2672	15.25	10.54	25.79	51.20	-25.41	AVG	
7	*	0.5340	29.29	10.50	39.79	56.00	-16.21	QP	
8		0.5340	14.20	10.50	24.70	46.00	-21.30	AVG	
9		2.2900	28.91	10.53	39.44	56.00	-16.56	QP	
10		2.2900	14.61	10.53	25.14	46.00	-20.86	AVG	
11		7.8220	26.80	10.49	37.29	60.00	-22.71	QP	
12		7.8220	12.60	10.49	23.09	50.00	-26.91	AVG	

\*:Maximum data x:Over limit !:over margin

(Reference Only)

## §15.209, §15.205, §15.247(d) - SPURIOUS EMISSIONS

### Test Equipment

Please refer to section 4 this report.

### Test Procedure

The out of band emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part Subpart C limits.

### Environmental Conditions

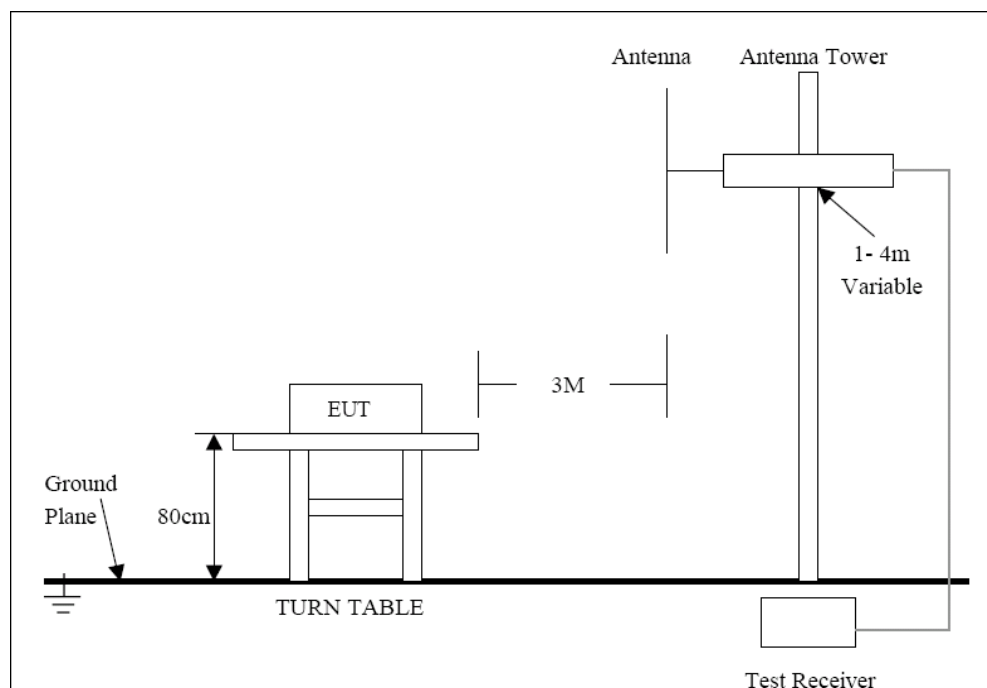
Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	100.0kPa

### Radiated Test Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	Detector
9KHz-30MHz	10 kHz	30 kHz	QP
30 MHz – 1000 MHz	100 kHz	300 kHz	QP
1000 MHz – 25 GHz	1 MHz	3 MHz	PK
1000 MHz – 25 GHz	1 MHz	10 Hz	Ave





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For the accrual test configuration, please refer to the related items-photos of Testing.

## Radiated Emission Limit

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

## Radiated Emission Test Result

*Test Mode:* Transmitting

NOTE:9KHz-30MHz the measurements were greater than 20dB below the limit.

## Radiated Emission Measurement

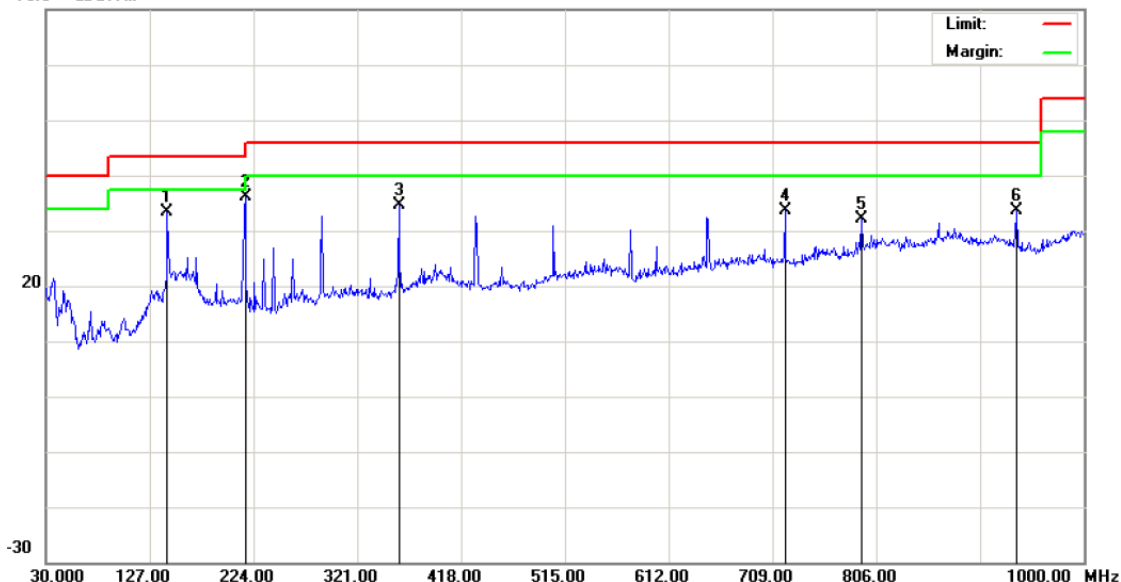
File :Smart

Data :#1

Date: 2012-3-7

Time: 17:52:21

70.0 dBuV/m



Site 966

Limit: FCC Part15B \_ RE 3M

EUT: AOC Tablet

M/N: MW0922

Mode: Charging and Playing

Note:

Polarization: **Vertical**

Power: AC 120V/60Hz

Distance:

Temperature: 26

Humidity: 55 %

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		143.4900	40.14	-6.79	33.35	43.50	-10.15	QP		
2	*	216.2400	43.75	-7.61	36.14	46.00	-9.86	QP		
3		359.8000	38.21	-3.67	34.54	46.00	-11.46	QP		
4		720.6400	31.58	1.96	33.54	46.00	-12.46	QP		
5		792.4200	27.75	4.34	32.09	46.00	-13.91	QP		
6		936.9500	28.85	4.76	33.61	46.00	-12.39	QP		

\*:Maximum data x:Over limit !:over margin

< Reference Only

## Radiated Emission Measurement

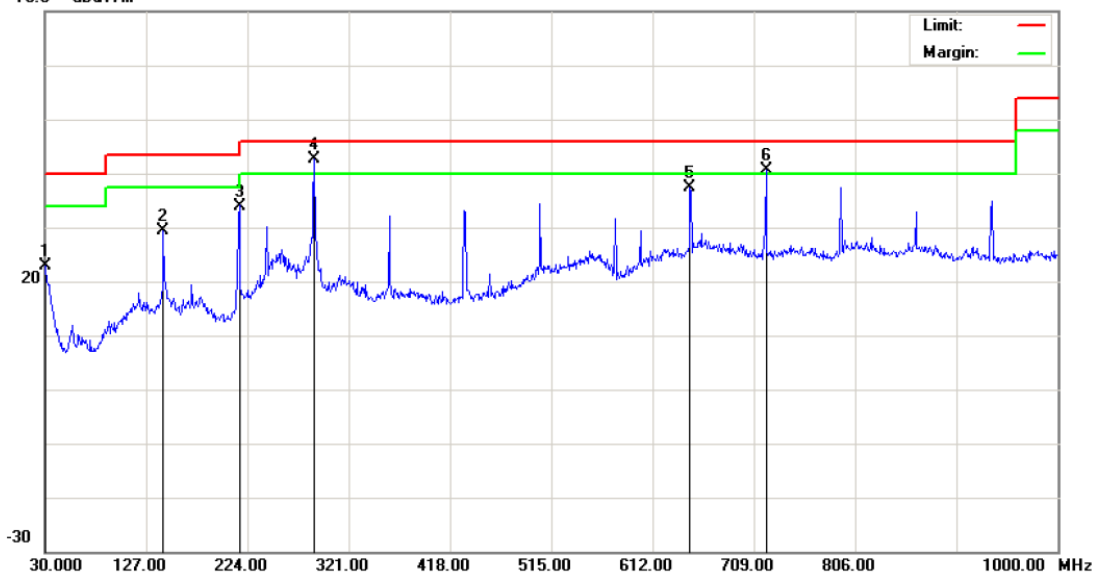
File :Smart

Data :#2

Date: 2012-3-7

Time: 17:54:53

70.0 dBuV/m



Site 966

Polarization: **Horizontal**

Temperature: 26

Limit: FCC Part15B \_ RE 3M

Power: AC 120V/60Hz

Humidity: 55 %

EUT: AOC Tablet

Distance:

M/N: MW0922

Mode: Charging and Playing

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		30.0000	21.86	0.96	22.82	40.00	-17.18	QP		
2		143.4900	37.84	-8.46	29.38	43.50	-14.12	QP		
3		216.2400	42.35	-8.35	34.00	46.00	-12.00	QP		
4	*	288.0200	47.57	-4.84	42.73	46.00	-3.27	QP		
5		647.8900	33.87	3.59	37.46	46.00	-8.54	QP		
6	!	720.6400	38.27	2.29	40.56	46.00	-5.44	QP		

\*:Maximum data x:Over limit !:over margin

(Reference Only)



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Above 1GHz:  
 802.11b

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
7236	37.5	AV	360	1.5	V	35.4	4.51	33.7	43.71	54	10.29
4824	39.3	AV	250	1.2	V	31.3	4.64	33.4	41.84	54	12.16
7236	35.2	AV	45	1.4	H	35.4	4.51	33.7	41.41	54	12.59
4824	38.6	AV	60	1.6	H	31.3	4.64	33.4	41.14	54	12.86
4824	53.6	PK	180	1.3	V	31.3	4.64	33.4	56.14	74	17.86
7236	48.6	PK	300	1.5	V	35.4	4.51	33.7	54.81	74	19.19
7236	47.7	PK	100	1.5	H	35.4	4.51	33.7	53.91	74	20.09
4824	49.9	PK	210	1.1	H	31.3	4.64	33.4	52.44	74	21.56
Middle Channel (2437MHz)											
7311	40.6	AV	180	1.5	V	35.4	4.75	33.7	47.05	54	6.95
7311	39.1	AV	185	1.3	H	35.4	4.75	33.7	45.55	54	8.45
4874	41.7	AV	200	1.5	V	31.3	4.64	33.4	44.24	54	9.76
4874	40.5	AV	360	1.5	H	31.3	4.64	33.4	43.04	54	10.96
7311	53.8	PK	120	1.2	V	35.4	4.75	33.7	60.25	74	13.75
4874	55.6	PK	75	1.5	V	31.3	4.64	33.4	58.14	74	15.86
7311	50.4	PK	220	1.4	H	35.4	4.75	33.7	56.85	74	17.15
4874	52.6	PK	0	1.1	H	31.3	4.64	33.4	55.14	74	18.86
High Channel (2462MHz)											
7386	42.0	AV	160	1.3	V	35.3	4.75	33.7	48.35	54	5.65
7386	41.9	AV	245	1.4	H	35.3	4.75	33.7	48.25	54	5.75
4924	43.8	AV	360	1.5	V	32.0	4.64	33.4	47.04	54	6.96
4924	42.4	AV	45	1.5	H	32.0	4.64	33.4	45.64	54	8.36
7386	52.2	PK	90	1.2	V	35.3	4.75	33.7	58.55	74	15.45
4924	55.1	PK	0	1.4	V	32.0	4.64	33.4	58.34	74	15.66
4924	54.6	PK	200	1.4	H	32.0	4.64	33.4	57.84	74	16.16
7386	51.3	PK	180	1.2	H	35.3	4.75	33.7	57.65	74	16.35



Report reference No.: WSCT-12030161E\_wifi  
 Issued: March 19, 2012  
 Revised: None

802.11g

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
7236	38.6	AV	1.24	1.3	V	35.4	4.51	33.7	44.81	54	9.19
7236	37.8	AV	200	1.4	H	35.4	4.51	33.7	44.01	54	9.99
4824	40.7	AV	90	1.5	V	31.3	4.64	33.4	43.24	54	10.76
4824	39.1	AV	45	1.5	H	31.3	4.64	33.4	41.64	54	12.36
7236	46.5	PK	165	1.4	V	35.4	4.51	33.7	52.71	74	21.29
4824	49.8	PK	320	1.2	V	31.3	4.64	33.4	52.34	74	21.66
4824	47.5	PK	0	1.5	H	31.3	4.64	33.4	50.04	74	23.96
7236	42.7	PK	120	1.2	H	35.4	4.51	33.7	48.91	74	25.09
Middle Channel (2437MHz)											
7311	38.6	AV	200	1.5	H	35.4	4.75	33.7	45.05	54	8.95
4874	40.5	AV	120	1.4	H	31.3	4.64	33.4	43.04	54	10.96
7311	35.9	AV	320	1.3	V	35.4	4.75	33.7	42.35	54	11.65
4874	36.7	AV	190	1.3	V	31.3	4.64	33.4	39.24	54	14.76
7311	44.2	PK	45	1.5	H	35.4	4.75	33.7	50.65	74	23.35
7311	43.2	PK	360	1.4	V	35.4	4.75	33.7	49.65	74	24.35
4874	46.8	PK	0	1.4	V	31.3	4.64	33.4	49.34	74	24.66
4874	45.3	PK	60	1.2	H	31.3	4.64	33.4	47.84	74	26.16
High Channel (2462MHz)											
7386	38.2	AV	160	1.3	V	35.3	4.75	33.7	44.55	54	9.45
4924	41.3	AV	360	1.5	V	32.0	4.55	33.4	44.45	54	9.55
4924	40.5	AV	45	1.5	H	32.0	4.55	33.4	43.65	54	10.35
7386	37.1	AV	245	1.4	H	35.3	4.75	33.7	43.45	54	10.55
4924	54.7	PK	0	1.4	V	32.0	4.55	33.4	57.85	74	16.15
7386	50.6	PK	90	1.2	V	35.3	4.75	33.7	56.95	74	17.05
7386	47.6	PK	180	1.2	H	35.3	4.75	33.7	53.95	74	20.05
4924	49.4	PK	200	1.4	H	32.0	4.55	33.4	52.55	74	21.45



Report reference No.: WSCT-12030161E\_wifi  
 Issued: March 19, 2012  
 Revised: None

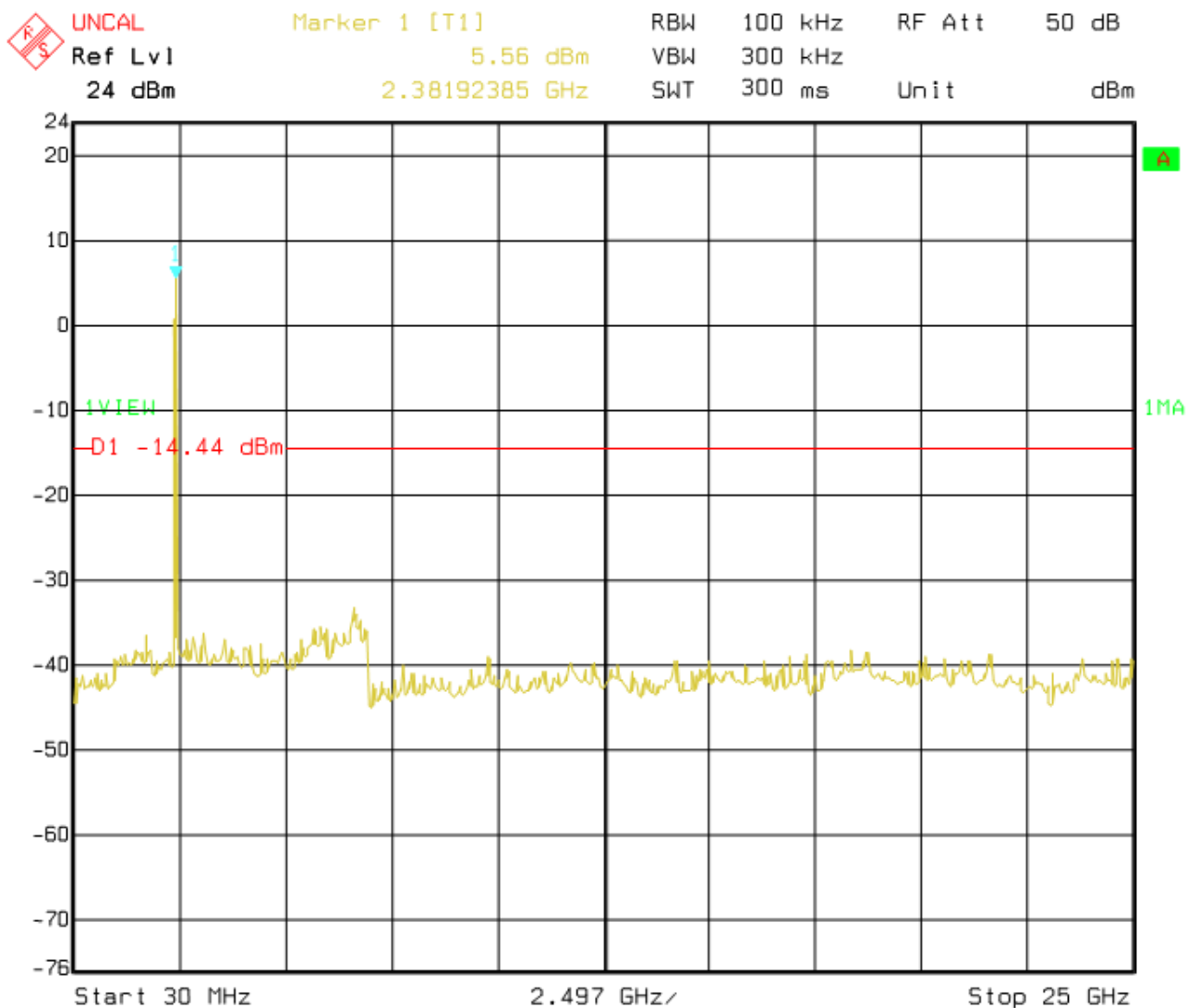
802.11n

Indicated		Detector (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz )											
7236	35.8	AV	355	1.3	V	41.3	8.90	34.1	51.9	54	2.10
4824	34.2	AV	120	1.3	H	41.3	8.90	34.1	50.3	54	3.70
7236	40.6	AV	100	1.4	H	36.1	6.38	34.2	48.88	54	5.12
4824	40.1	AV	90	1.5	V	36.1	6.38	34.2	48.38	54	5.62
4824	46.2	PK	165	1.2	V	41.3	8.90	34.1	62.3	74	11.70
7236	44.3	PK	45	1.4	H	41.3	8.90	34.1	60.4	74	13.60
7236	48.3	PK	210	1.5	V	36.1	6.38	34.2	56.58	74	17.42
4824	47.2	PK	200	1.2	H	36.1	6.38	34.2	55.48	74	18.52
Middle Channel (2437MHz )											
7311	34.7	AV	360	1.3	V	41.8	8.92	34.1	51.32	54	2.68
4874	34.1	AV	180	1.4	V	41.8	8.92	34.1	50.72	54	3.28
7311	52.9	PK	300	1.4	V	41.8	8.92	34.1	69.52	74	4.48
4874	38.4	AV	205	1.3	H	36.5	6.39	34.2	47.09	54	6.91
7311	48.5	PK	150	1.3	H	41.8	8.92	34.1	65.12	74	8.88
7311	36.1	AV	90	1.5	H	36.5	6.39	34.2	44.79	54	9.21
4874	53.4	PK	45	1.5	V	36.5	6.39	34.2	62.09	74	11.91
4874	50.6	PK	0	1.1	H	36.5	6.39	34.2	59.29	74	14.71
High Channel (2462MHz )											
7386	35.4	AV	210	1.5	H	42.0	8.90	34.3	52	54	2.00
4924	35.2	AV	0	1.3	V	42.0	8.90	34.3	51.8	54	2.20
4924	40.7	AV	115	1.4	H	36.4	6.39	34.2	49.29	54	4.71
7386	39.6	AV	45	1.4	V	36.4	6.39	34.2	48.19	54	5.81
4924	47.1	PK	180	1.4	V	42.0	8.90	34.3	63.7	74	10.30
7386	46.2	PK	95	1.4	H	42.0	8.90	34.3	62.8	74	11.20
7386	50.2	PK	360	1.5	V	36.4	6.39	34.2	58.79	74	15.21
4924	49.6	PK	265	1.1	H	36.4	6.39	34.2	58.19	74	15.81

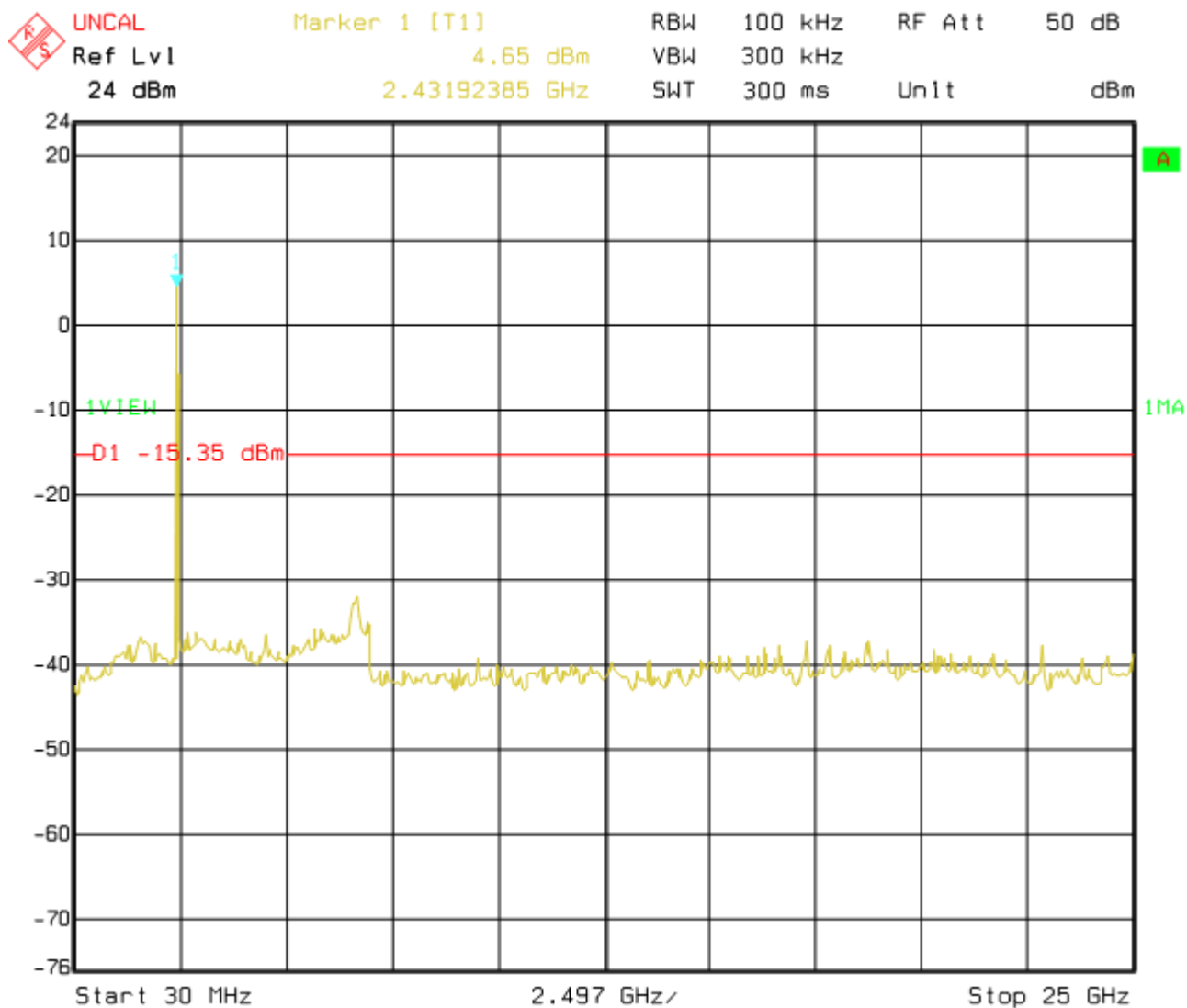
## Antenna port conducted spurious emissions

802.11b mode:

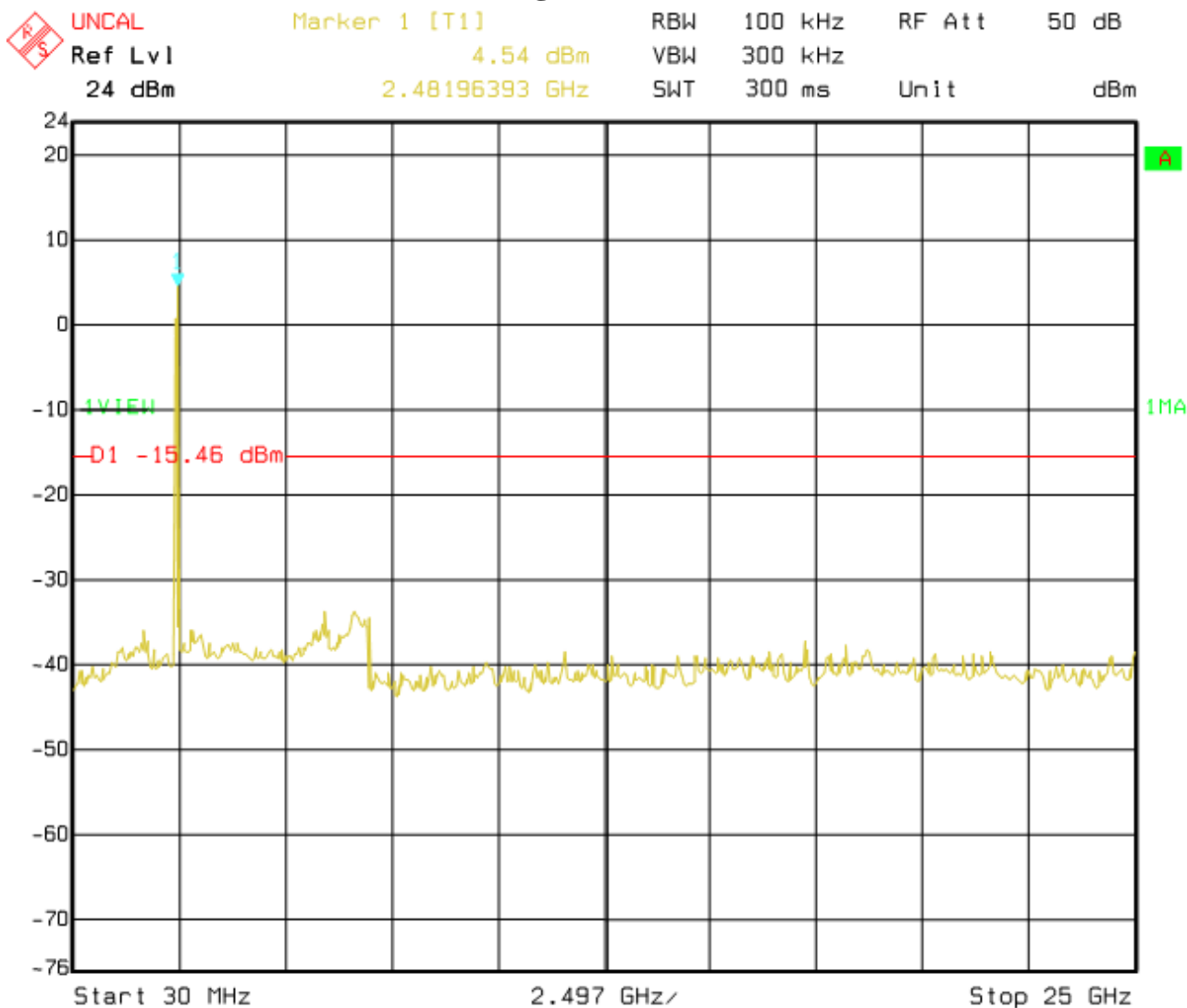
### Low channel



## Middle channel

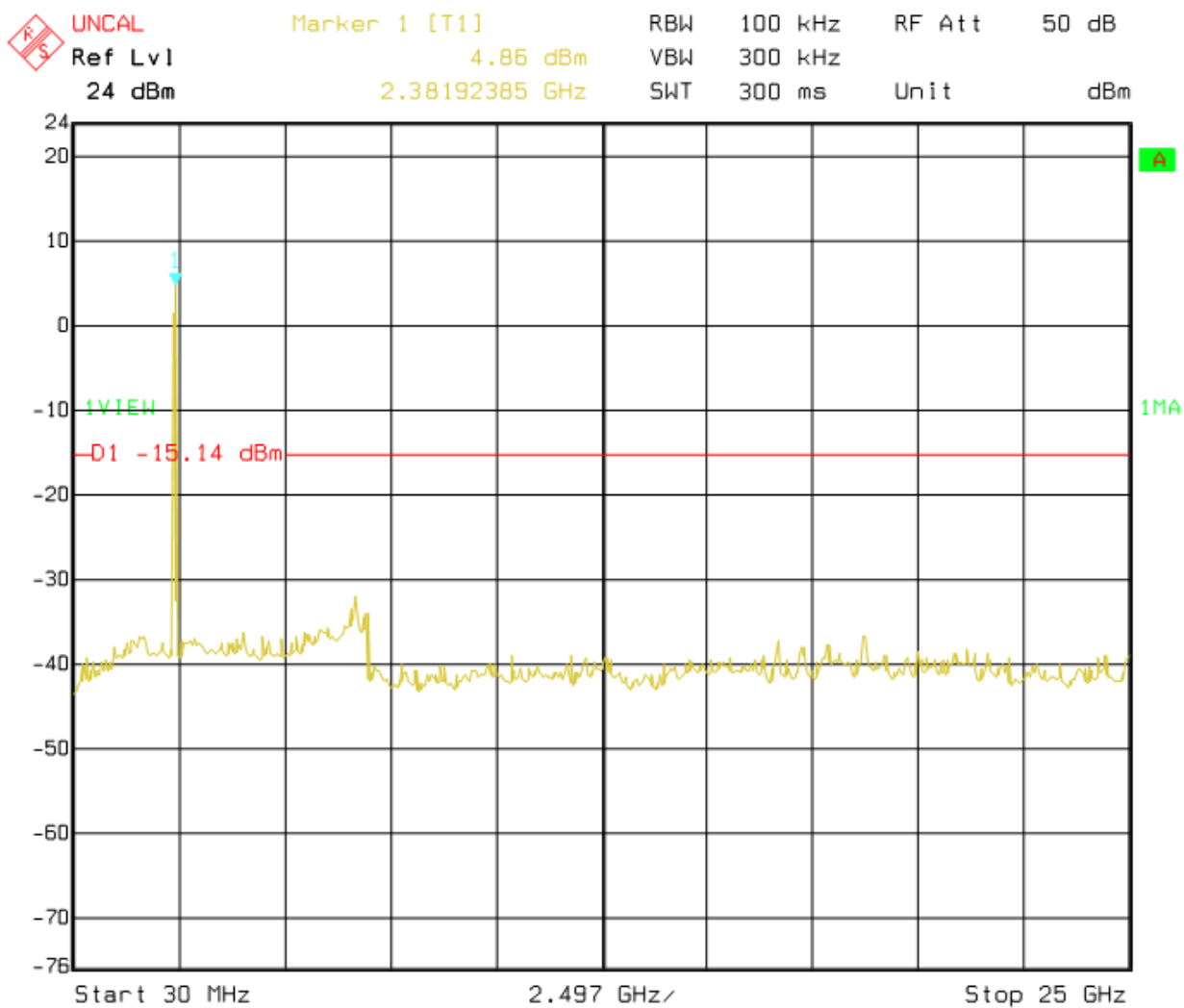


## High channel

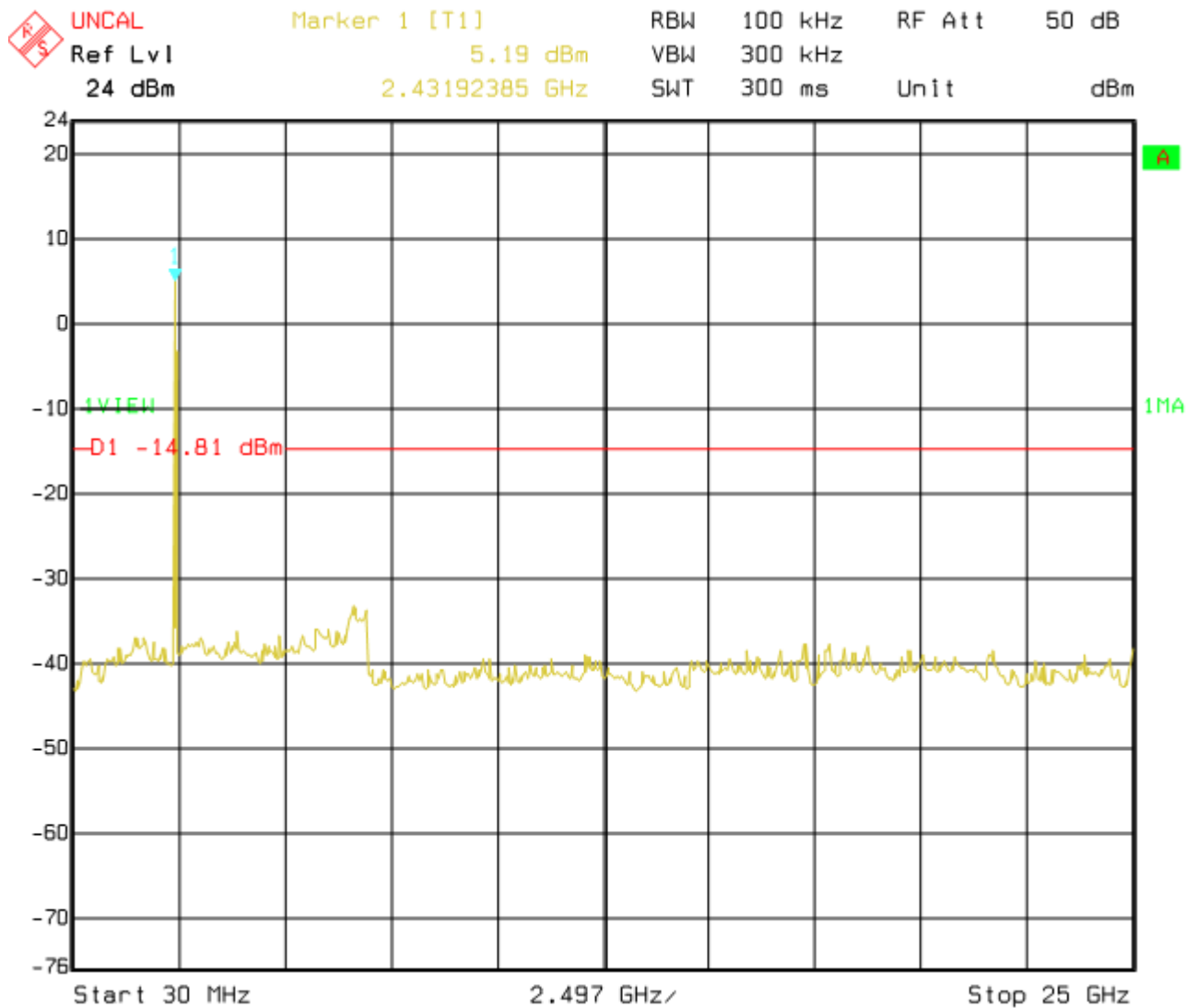


802.11g mode:

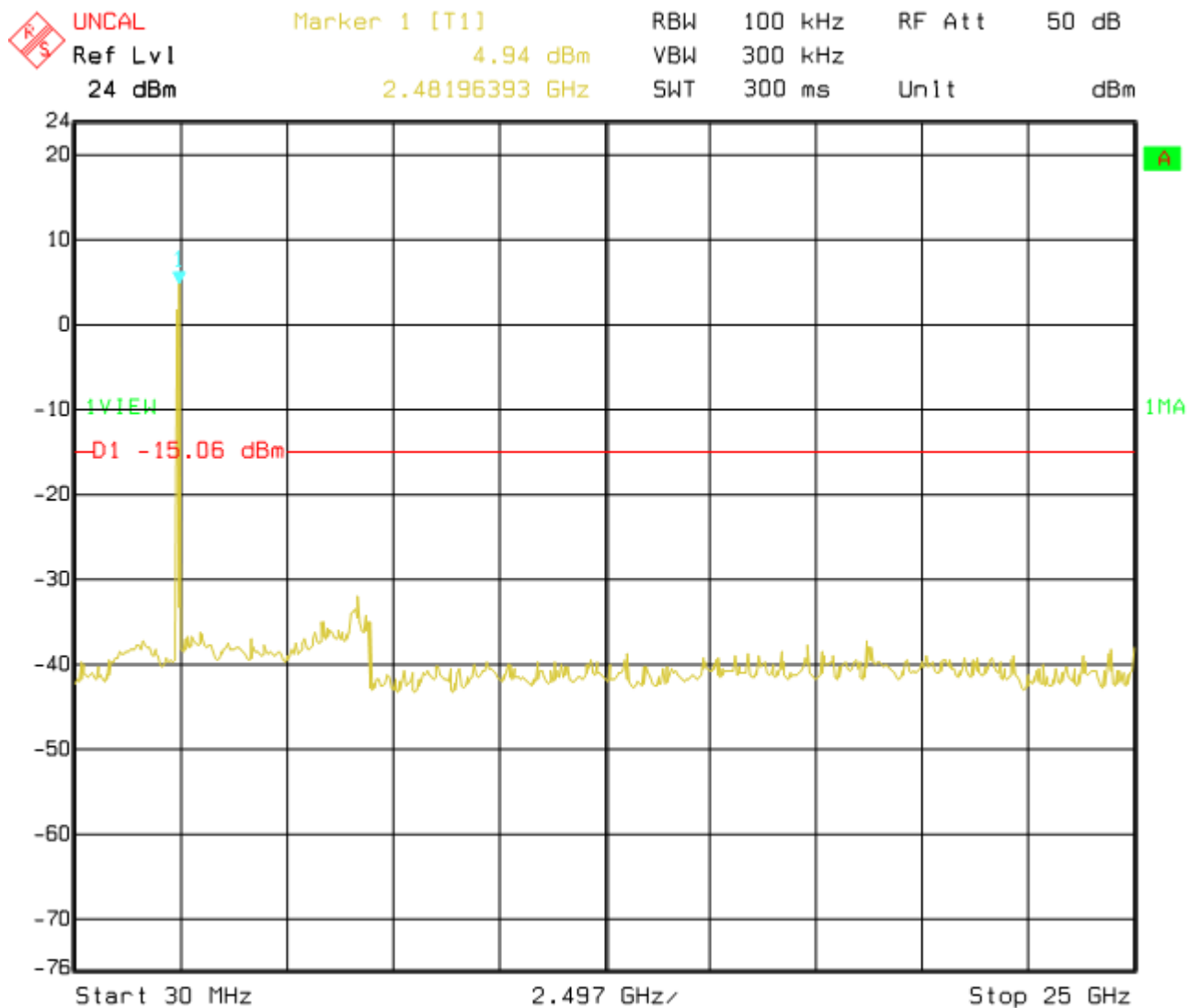
## Low channel



## Middle channel

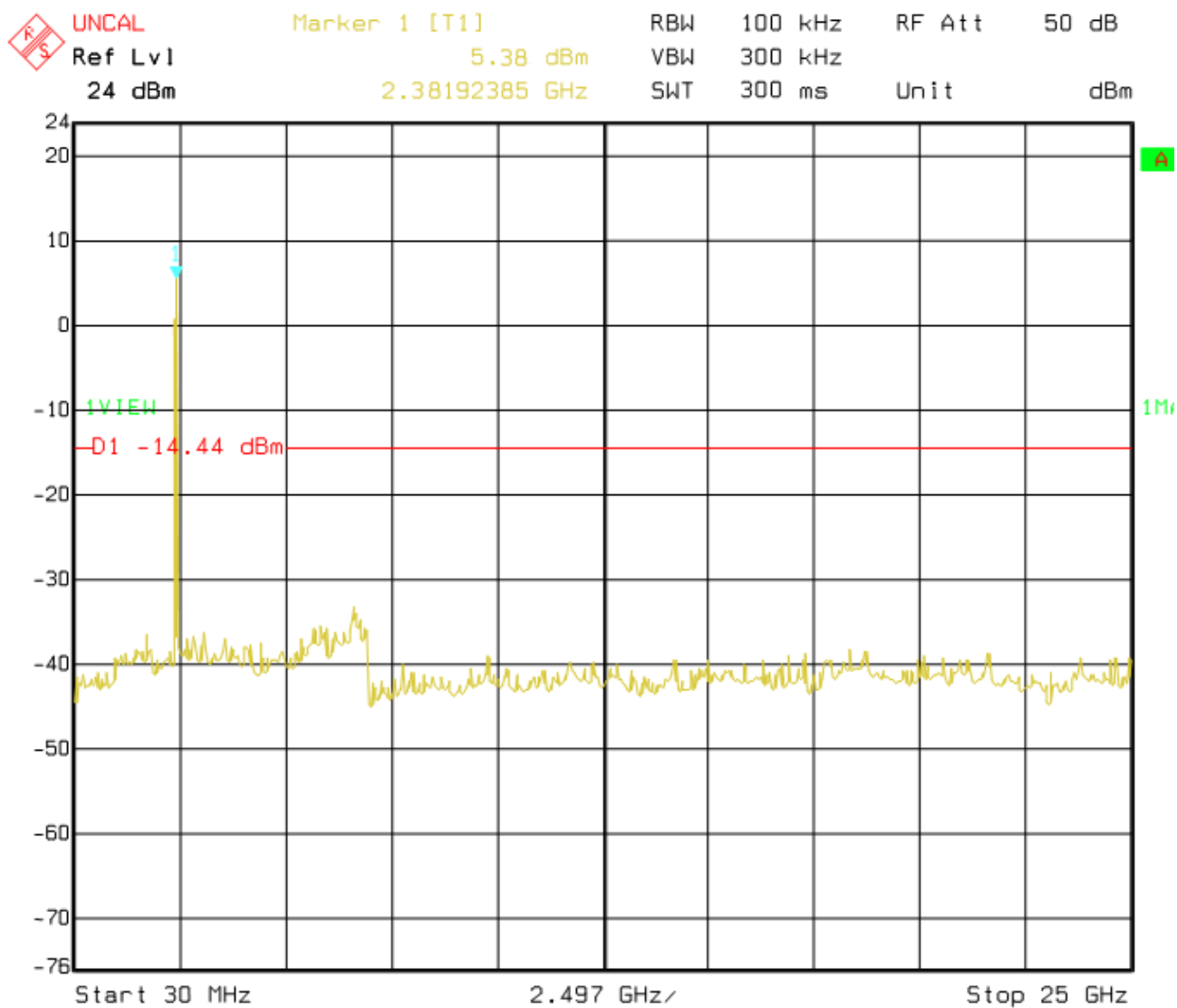


## High channel

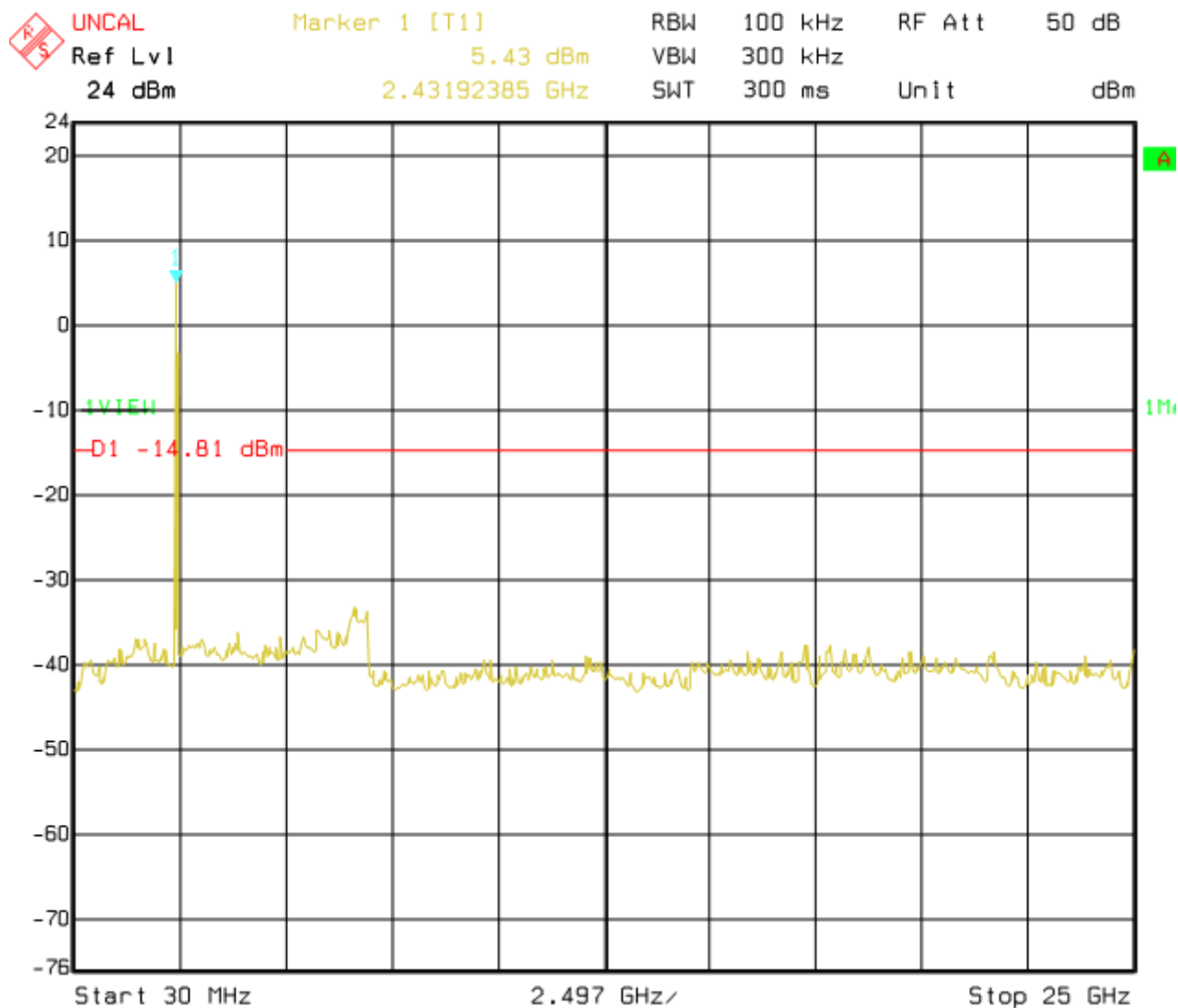


802.11n mode:

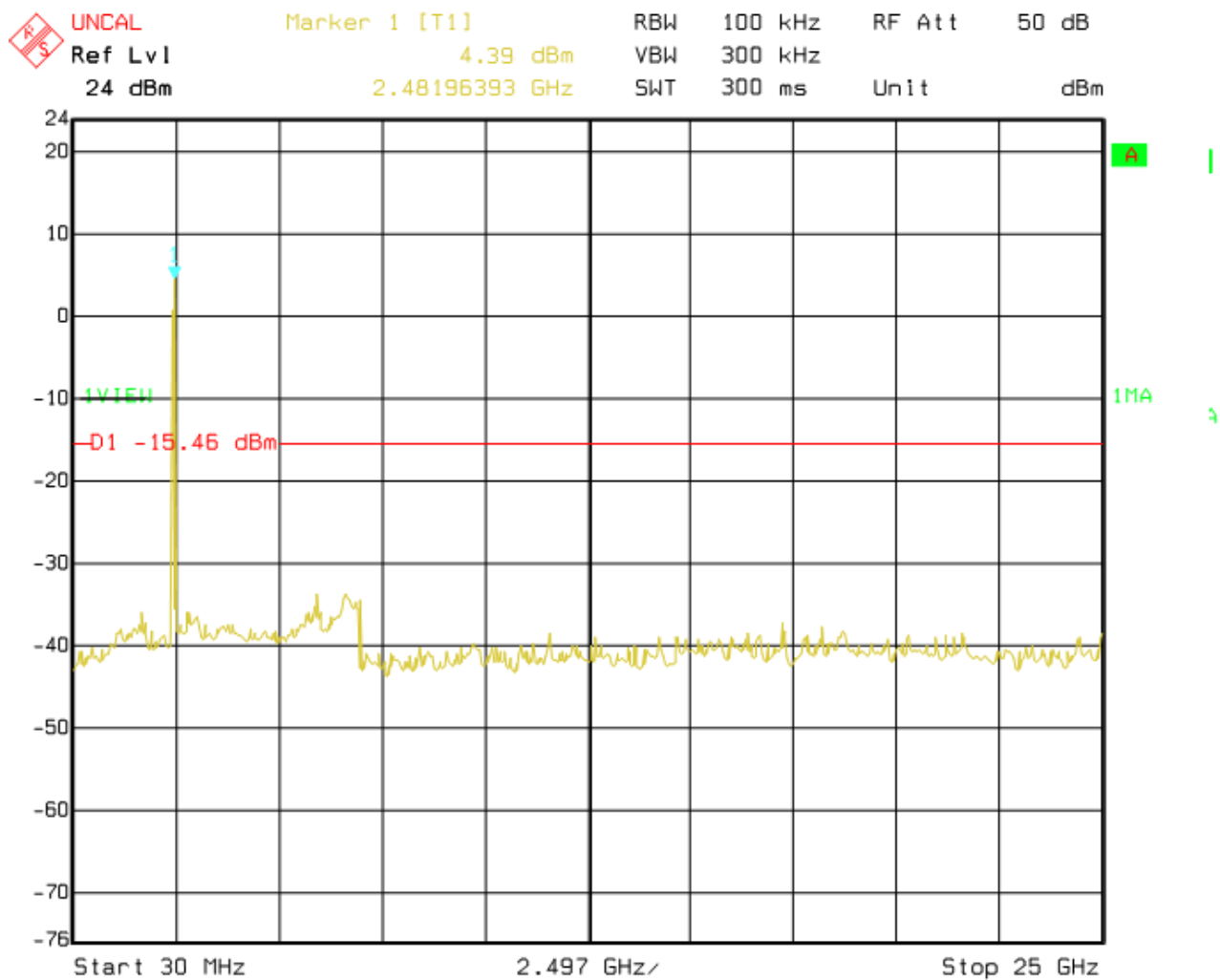
Low channel



## Middle channel



## High channel



## §15.247(a) (2) – 6dB BANDWIDTH TESTING

### Test Equipment

Please refer to Section 4 this report.

### Test Procedure

1. Set EUT in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100KHz, VBW $\geq$ RBW, Span=40MHz, Sweep=auto.
4. Mark the peak frequency and -6dB(upper and lower)frequency.
5. Repeat until all the rest channels are investigated.

### Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	100.0kPa

### Applicable Standard

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

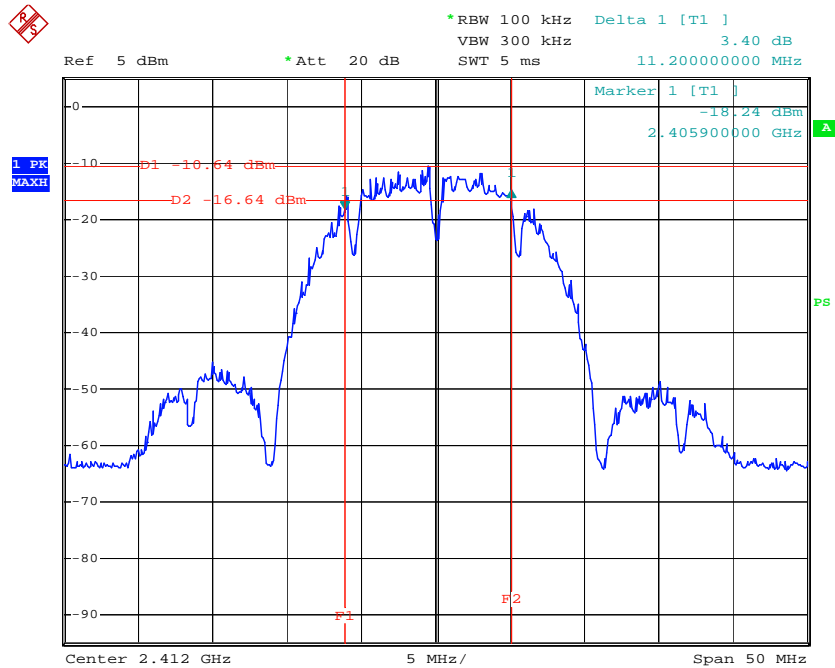
### Test Result: Pass.

Please refer to the following tables

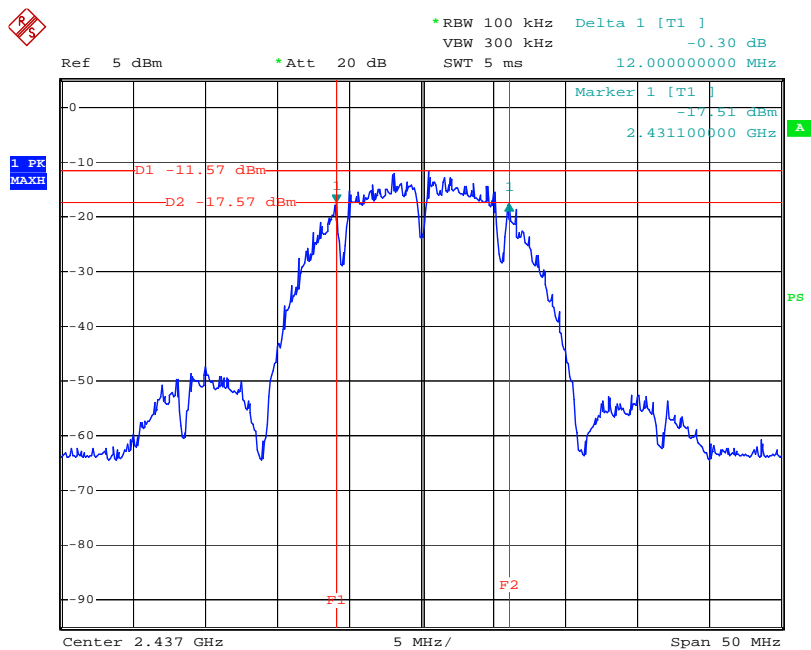
Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (kHz)	Limit (kHz)	Ref. Plot
<b>802.11b Mode</b>				
2412	1	11200	> 500	PLOT 1
2437	1	12000	> 500	PLOT 2
2462	1	11900	> 500	PLOT 3
<b>802.11g Mode</b>				
2412	6	16400	> 500	PLOT 4
2437	6	16500	> 500	PLOT 5
2462	6	16400	> 500	PLOT 6
<b>802.11n Mode</b>				
2412	6	16400	> 500	PLOT 7
2437	6	16500	> 500	PLOT 8
2462	6	16400	> 500	PLOT 9

## 802.11b Mode:

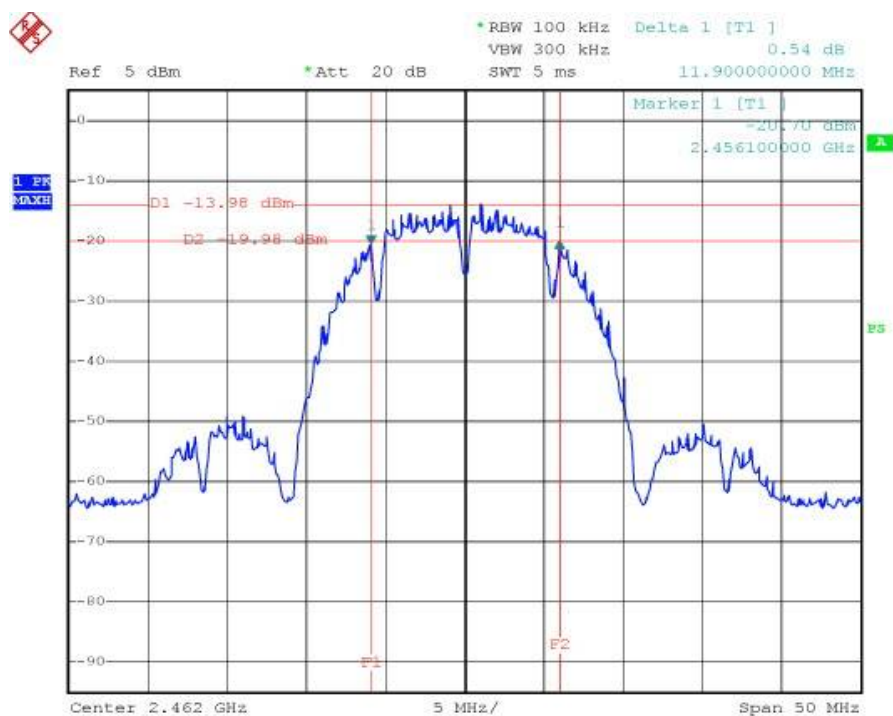
### Low Channel



### Middle Channel

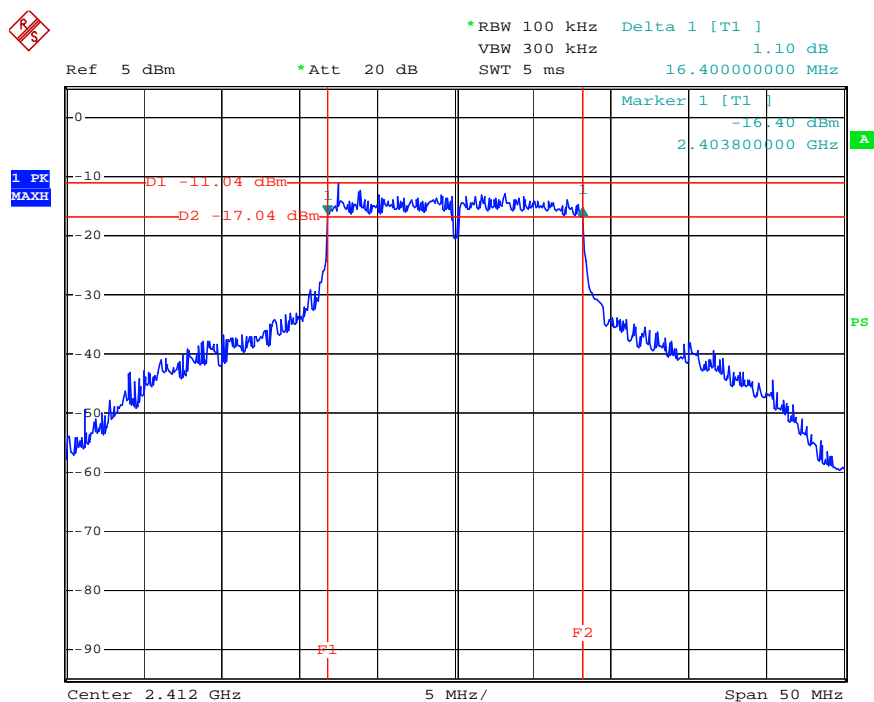


## High Channel

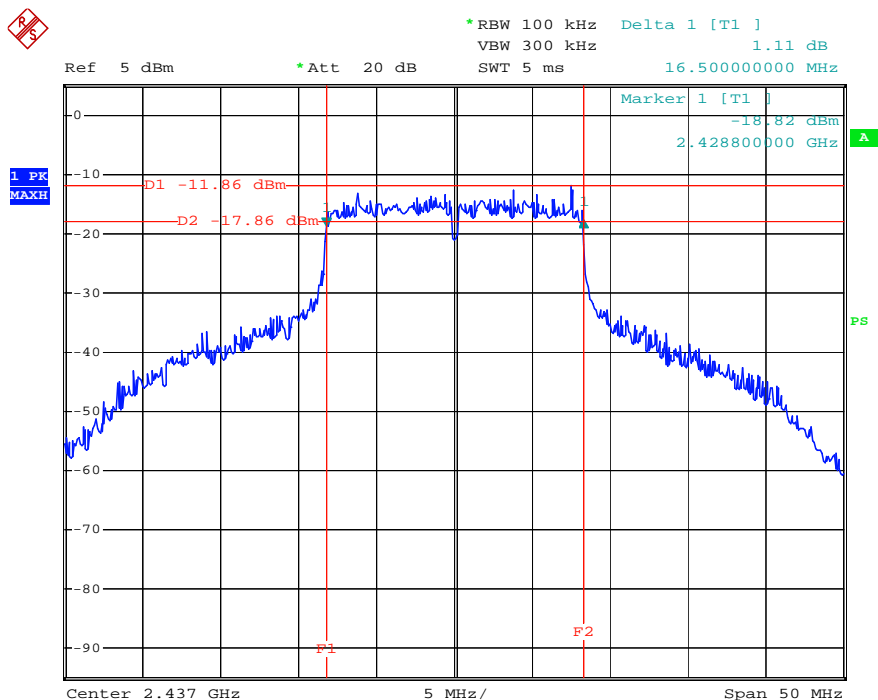


## 802.11g Mode:

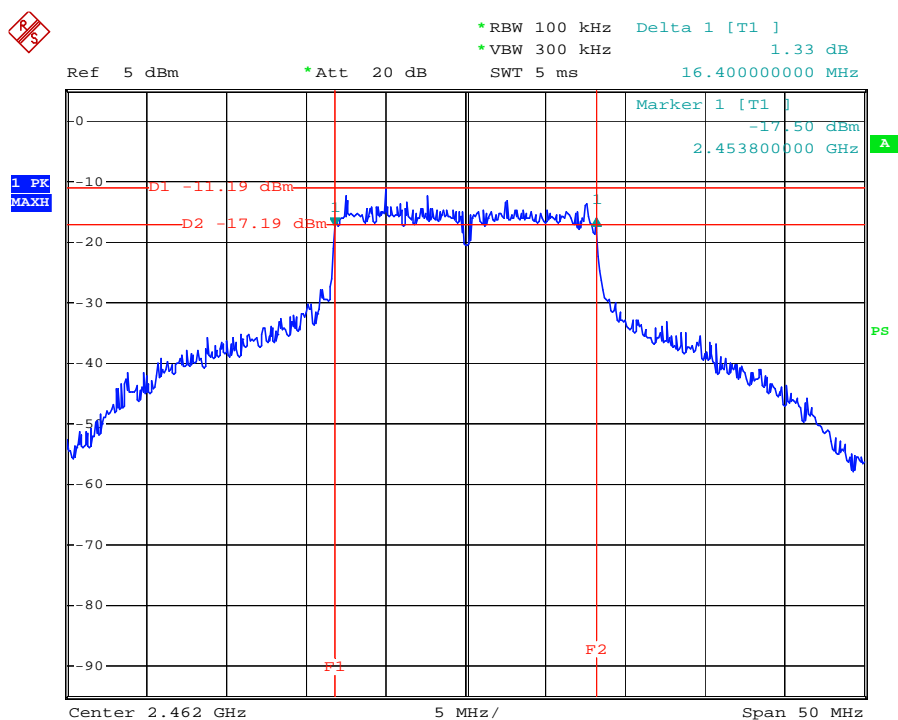
## Low Channel



## Middle Channel

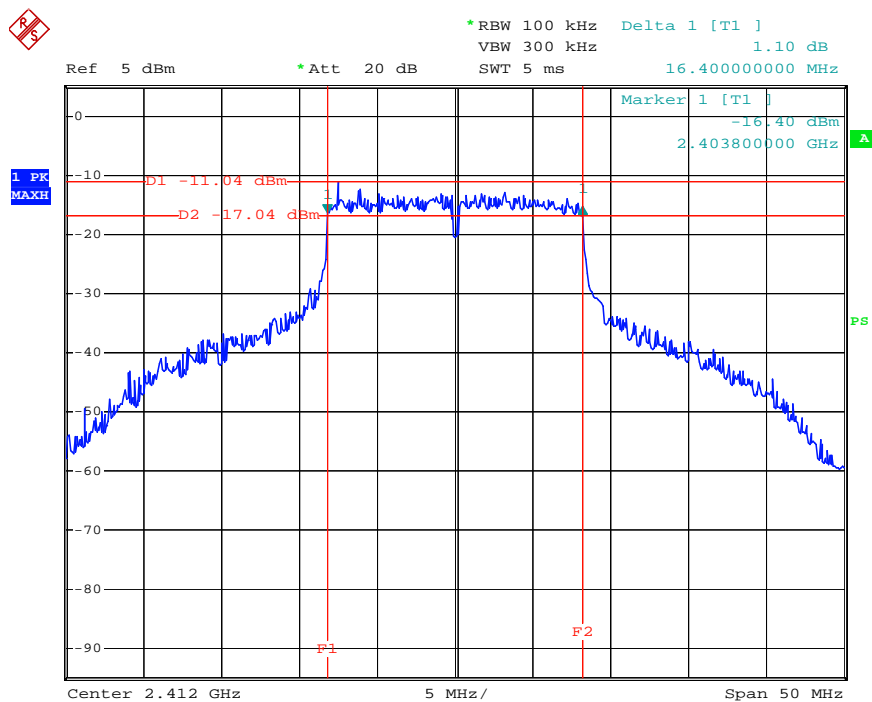


## High Channel

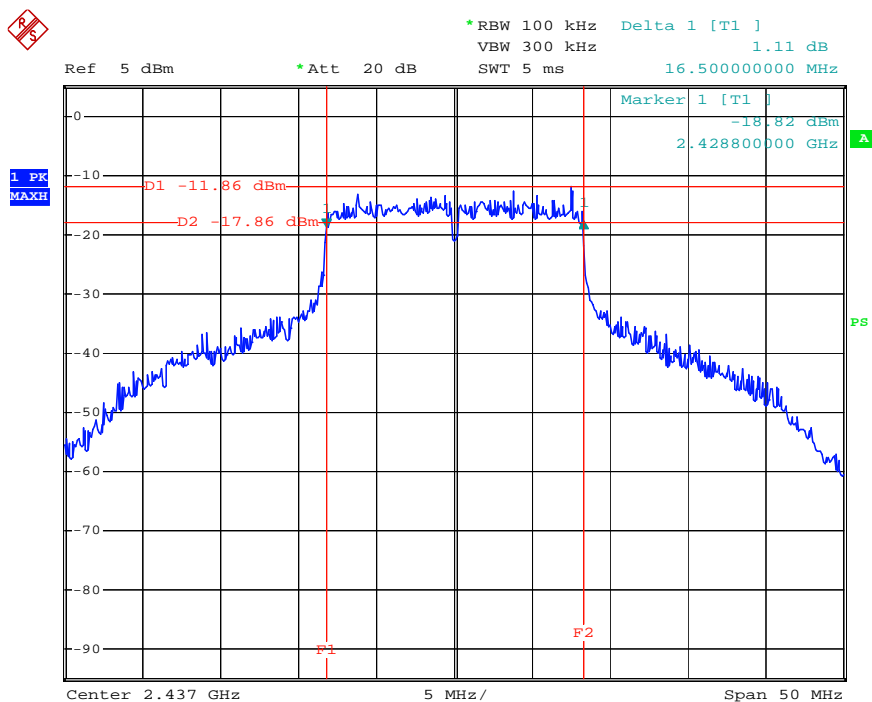


## 802.11n Mode:

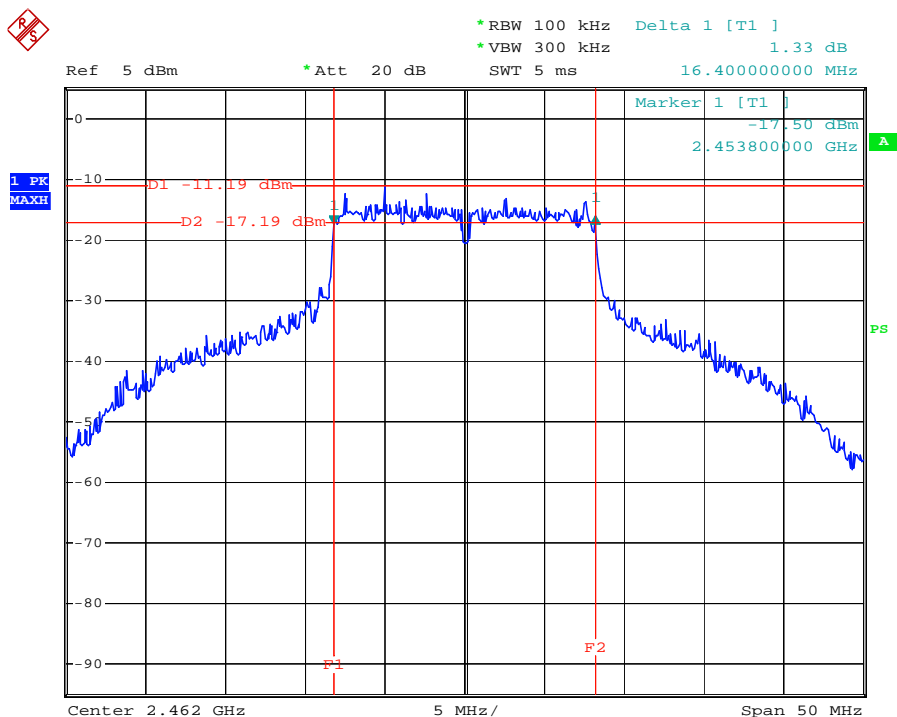
### Low Channel



## Middle Channel



## High Channel



## §15.247(b) (3) - MAXIMUM PEAK OUTPUT POWER

### Test Equipment

Please refer to Section 4 this report.

### Test Procedure

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1 MHz.
3. Set VBW  $\geq$  3 MHz.
4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display)  $<$  0.5 RBW. Otherwise use peak detector mode.
5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to “free run”.
6. Trace average 100 traces in power averaging mode.
7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

### Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	100.0kPa

### Applicable Standard

According to §15.247(b) (3), for systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.



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Revised: None

## Test Result

Pass

### 802.11b Mode:

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	1	11.96	30
Mid	2437	1	11.14	30
High	2462	1	11.48	30

### 802.11g Mode:

Channel	Frequency (MHz)	Data Rate (Mbps)	Conducted Power (dBm)	Limit (dBm)
Low	2412	6	12.24	30
Mid	2437	6	11.43	30
High	2462	6	12.10	30

### 802.11n Mode:

Channel	Channel Frequency (MHz)	Data Rate (Mbps)	Power Output (dBm)	Limit (dBm)
Low	2412	6	12.23	30
Mid	2437	6	11.44	30
High	2462	6	12.11	30



## §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

### Test Equipment

Please refer to Section 4 this report.

### Test Procedure

The out of band emission tests were performed in the 3-meter chamber test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part Subpart C limits.

### Environmental Conditions

Temperature:	26 °C
Relative Humidity:	55%
ATM Pressure:	100.0kPa

### Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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)).

### Test Result

PASS



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Issued: March 19, 2012  
Revised: None

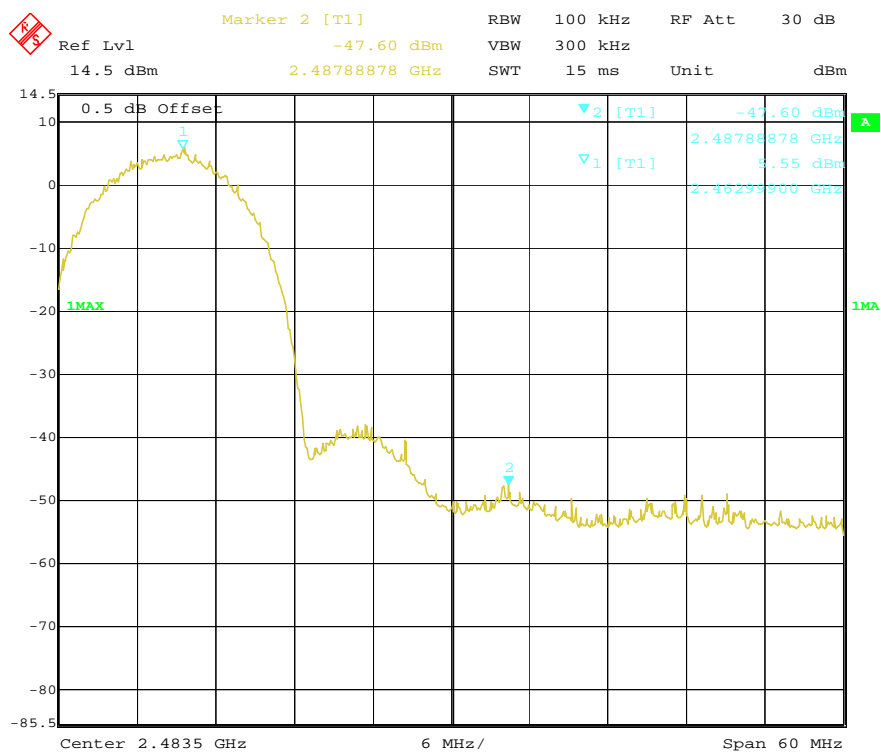
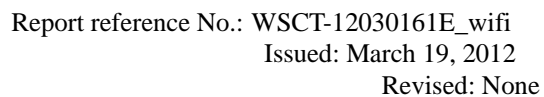
Above 1GHz:

802.11b

Remark: Emissions were searched from 30MHz to 2400MHz and from 2483.5MHz to 25000MHz. the 2389.54MHz and 2483.69MHz RESTRICTED BANDS is the worst case.

Indicated		result (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
2389.54	31.4	AV	250	1.2	V	30.3	4.1	33.1	32.7	54	21.3
2389.54	31.3	AV	60	1.6	H	30.3	4.1	33.1	32.6	54	31.4
2389.54	42.6	PK	180	1.3	V	30.3	4.1	33.1	43.9	74	30.1
2389.54	41.9	PK	210	1.1	H	30.3	4.1	33.1	43.2	74	30.8
HighChannel (2462MHz)											
2483.69	30.9	AV	360	1.5	V	31	4.4	32.7	33.6	54	20.4
2483.69	30.8	AV	45	1.5	H	31	4.4	32.7	33.5	54	20.5
2483.69	40.9	PK	0	1.4	V	31	4.4	32.7	43.6	74	30.4
2483.69	39.8	PK	200	1.4	H	31	4.4	32.7	42.5	74	31.5

Note: the BAND EDGE RESTRICTED BANDS emission is too low at least 20dB to the Fundamental.





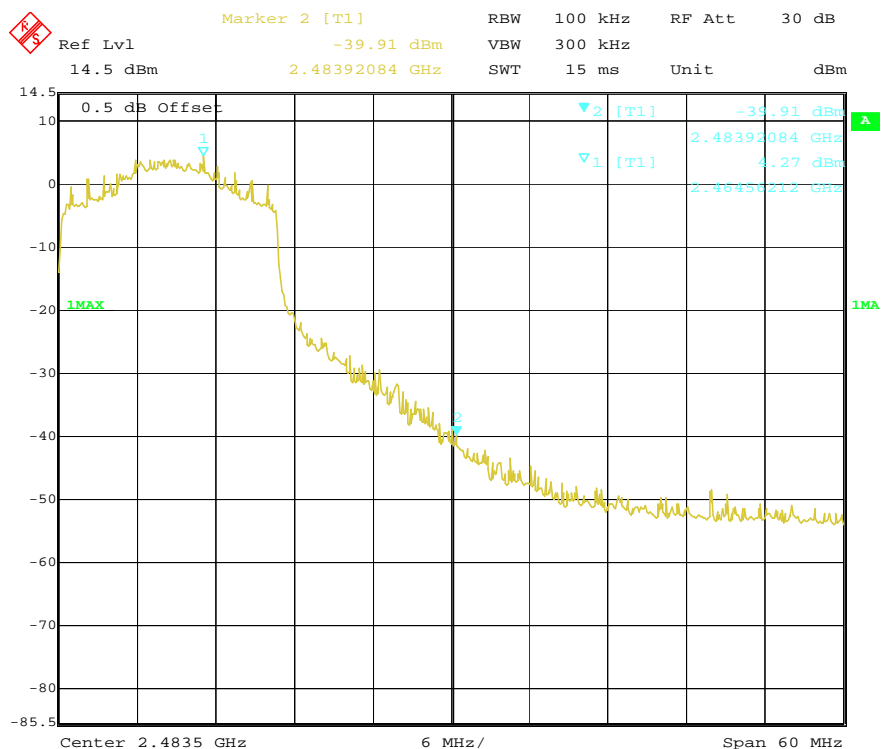
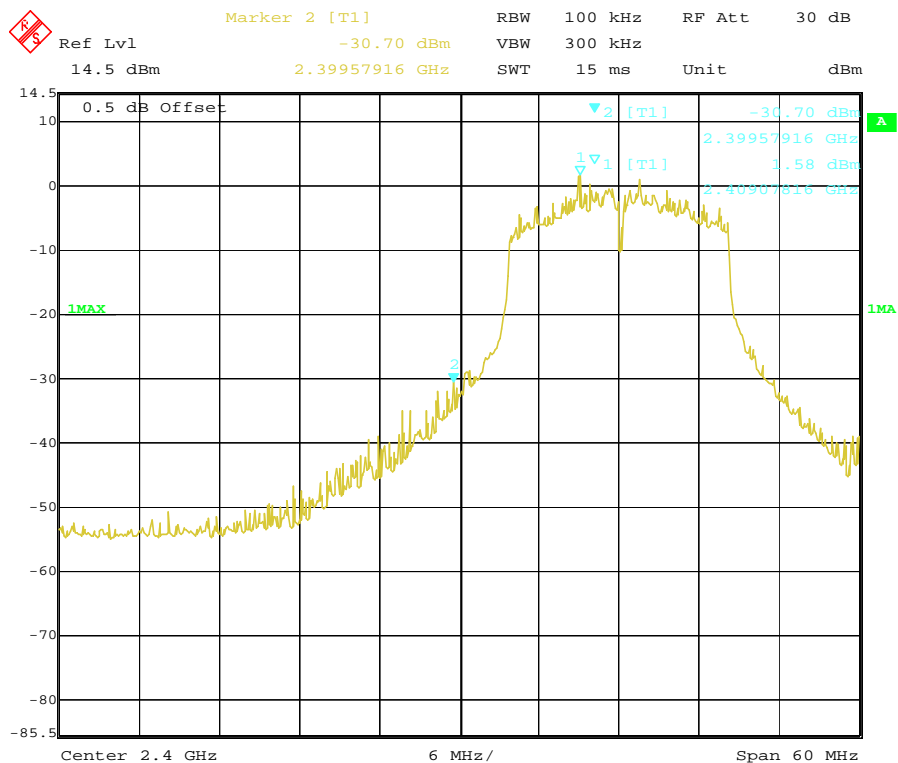
Report reference No.: WSCT-12030161E\_wifi  
 Issued: March 19, 2012  
 Revised: None

802.11g

Remark: Emissions were searched from 30MHz to 2400MHz and from 2483.5MHz to 25000MHz.the 2389.54MHz and 2483.69MHz RESTRICTED BANDS is the worst case.

Indicated		result (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
2389.54	31.2	AV	250	1.2	V	30.3	4.1	33.1	32.5	54	21.5
2389.54	31.1	AV	60	1.6	H	30.3	4.1	33.1	32.4	54	21.6
2389.54	419	PK	180	1.3	V	30.3	4.1	33.1	43.2	74	30.8
2389.54	41.6	PK	210	1.1	H	30.3	4.1	33.1	42.9	74	31.1
HighChannel (2462MHz)											
2483.69	29.9	AV	360	1.5	V	31	4.4	32.7	32.6	54	21.4
2483.69	29.8	AV	45	1.5	H	31	4.4	32.7	32.5	54	21.5
2483.69	39.9	PK	0	1.4	V	31	4.4	32.7	42.6	74	31.4
2483.69	39.4	PK	200	1.4	H	31	4.4	32.7	42.1	74	31.9

Note: the BAND EDGE RESTRICTED BANDS emission is too low at least 20dB to the Fundamental.





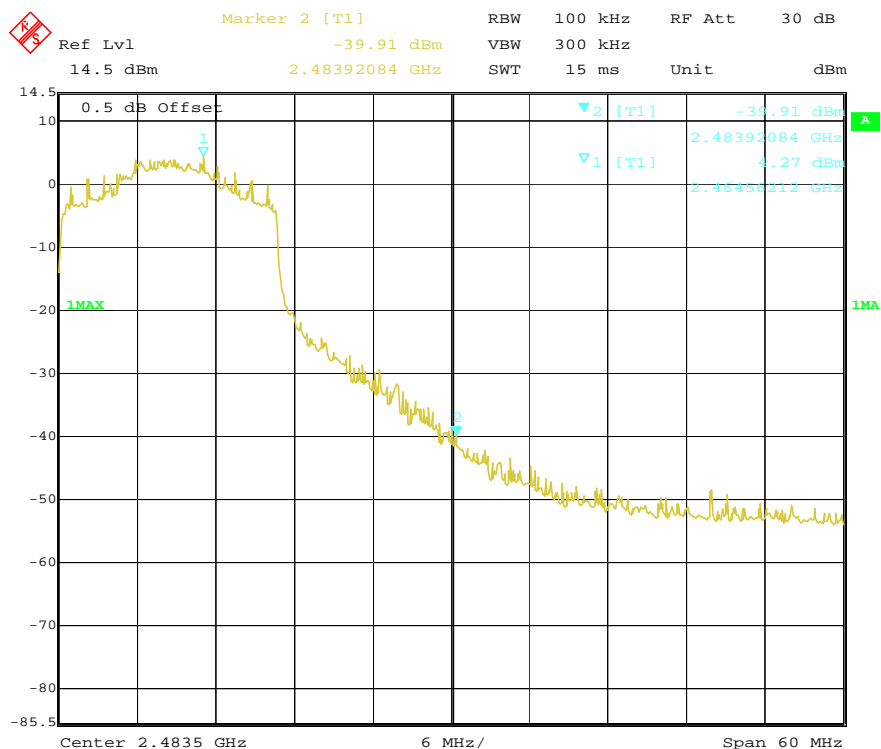
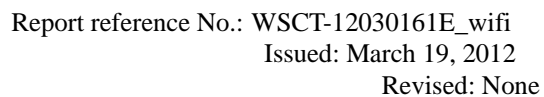
Report reference No.: WSCT-12030161E\_wifi  
Issued: March 19, 2012  
Revised: None

802.11N

Remark: Emissions were searched from 30MHz to 2400MHz and from 2483.5MHz to 25000MHz. the 2389.54MHz and 2483.69MHz RESTRICTED BANDS is the worst case.

Indicated		result (PK/AV)	Table Angle Degree	Antenna		Correction Factor			FCC Part 15.247		
Frequency (MHz)	Receiver Reading (dBμV/m)			Height (m)	Polar (H/V)	Ant. Factor (dB/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBμV/m)	Limit (dBμV/m)	Margin (dB)
Low Channel (2412MHz)											
2389.54	30.2	AV	250	1.2	V	30.3	4.1	33.1	31.5	54	22.5
2389.54	30.1	AV	60	1.6	H	30.3	4.1	33.1	31.4	54	22.6
2389.54	40.9	PK	180	1.3	V	30.3	4.1	33.1	42.2	74	31.8
2389.54	40.6	PK	210	1.1	H	30.3	4.1	33.1	41.9	74	32.1
HighChannel (2462MHz)											
2483.69	28.9	AV	360	1.5	V	31	4.4	32.7	31.6	54	22.4
2483.69	28.8	AV	45	1.5	H	31	4.4	32.7	31.5	54	22.5
2483.69	38.9	PK	0	1.4	V	31	4.4	32.7	41.6	74	32.4
2483.69	38.4	PK	200	1.4	H	31	4.4	32.7	41.1	74	32.9

Note: the BAND EDGE RESTRICTED BANDS emission is too low at least 20dB to the Fundamental.



## §15.247(e) - POWER SPECTRAL DENSITY

### Test Equipment

Please refer to Section 4 this report.

### Test Procedure

- 1, Set EUT in the transmitting mode.
- 2, Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3, Set the spectrum analyzer as RBW=3KHz, VBW=10KHz, Span=1.5MHz, Sweep=500S.
- 4, Record the max. reading
- 5, Repeat the above procedure until the measurements for all frequencies are completed.

### Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55%
ATM Pressure:	100.0kPa

### Applicable Standard

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.



Report reference No.: WSCT-12030161E\_wifi  
Issued: March 19, 2012  
Revised: None

## Test Result

PASS

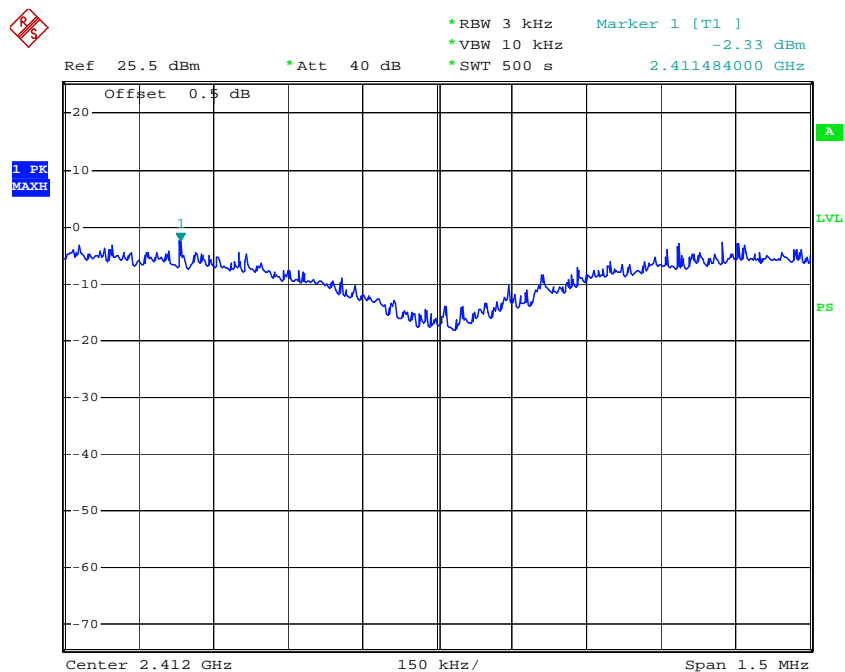
Channel Frequency (MHz)	Data Rate (Mbps)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	RESULT
<b>802.11b Mode</b>				
2412	1	-2.33	8	Compliant
2437	1	-2.40	8	Compliant
2462	1	-3.40	8	Compliant
<b>802.11g Mode</b>				
2412	6	-3.95	8	Compliant
2437	6	-4.07	8	Compliant
2462	6	-3.60	8	Compliant
<b>802.11n Mode</b>				
2412	6	-5.13	8	Compliant
2437	6	-4.52	8	Compliant
2462	6	-4.20	8	Compliant



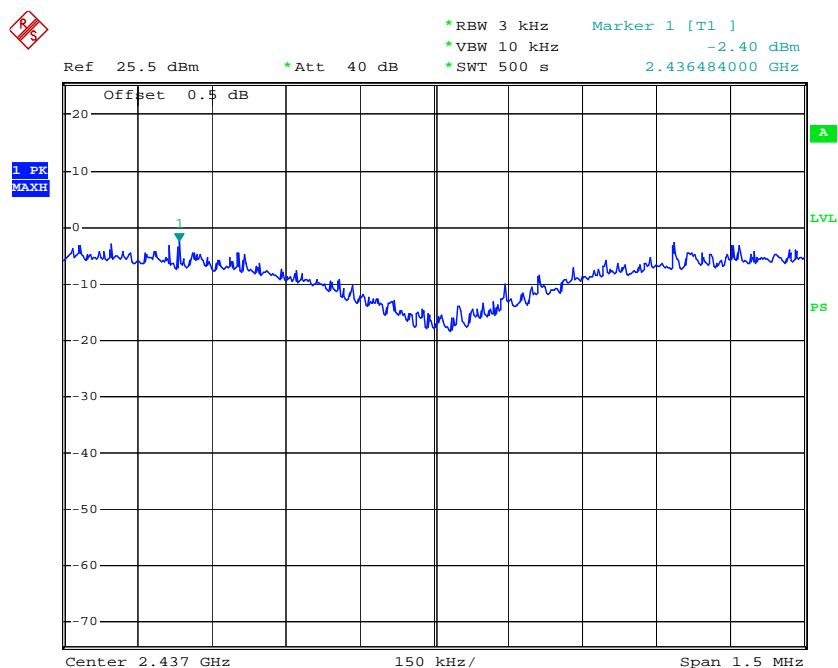
Report reference No.: WSCT-12030161E\_wifi  
Issued: March 19, 2012  
Revised: None

802.11b Mode:

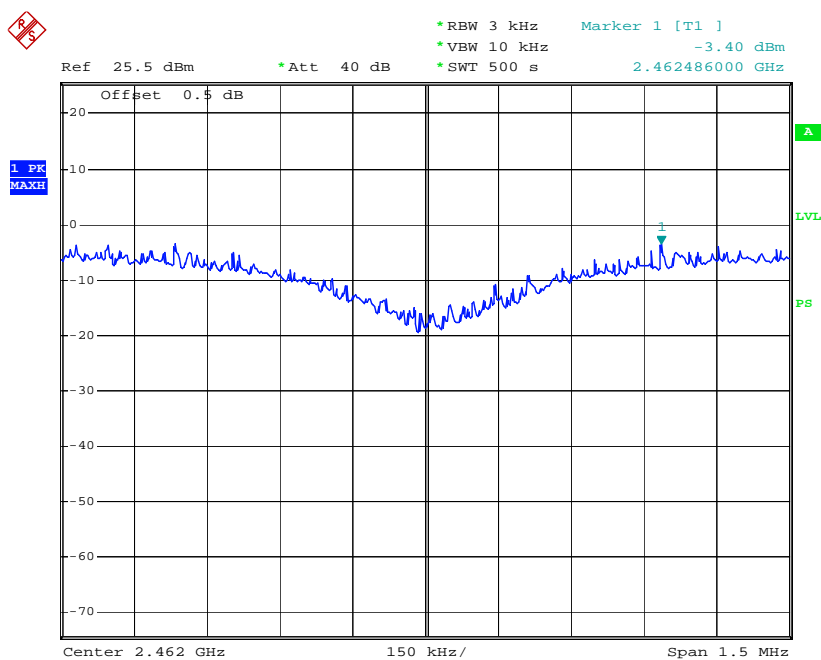
### Low Channel



### Middle Channel

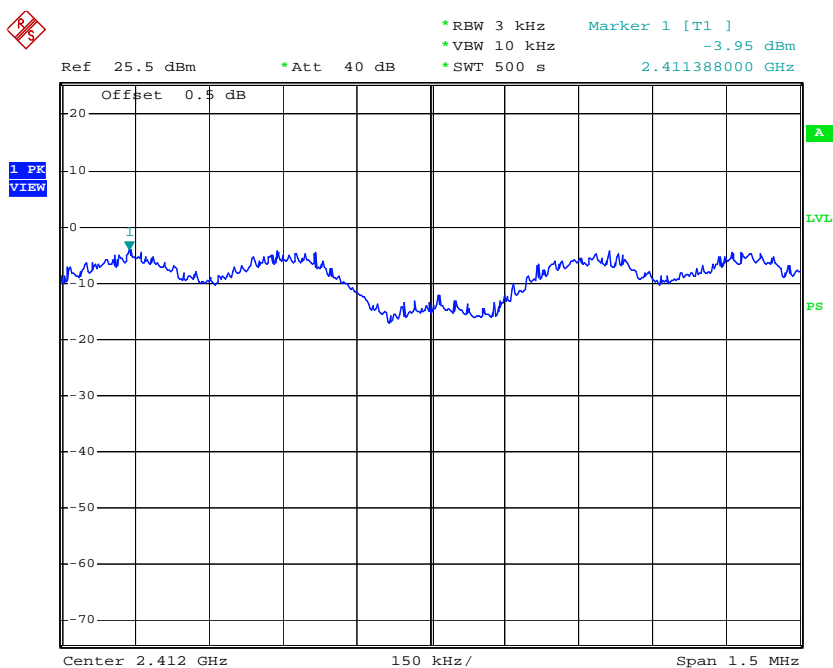


## High Channel

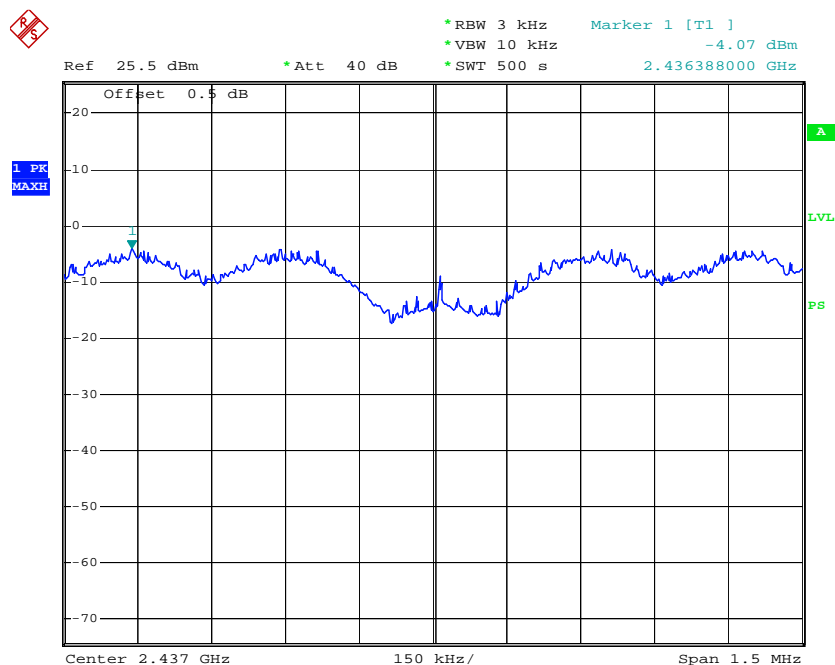


802.11g Mode:

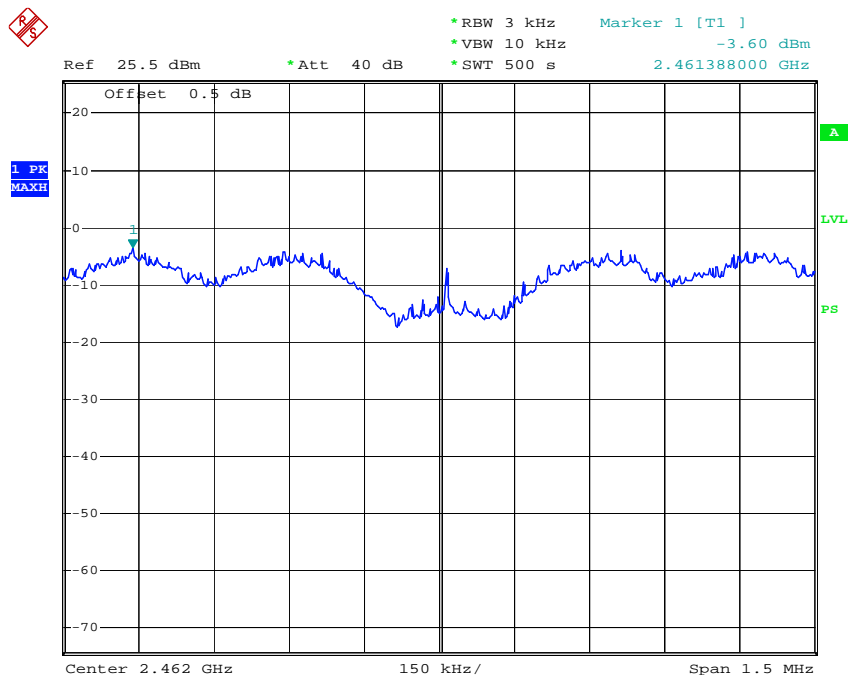
## Low Channel



## Middle Channel



## High Channel

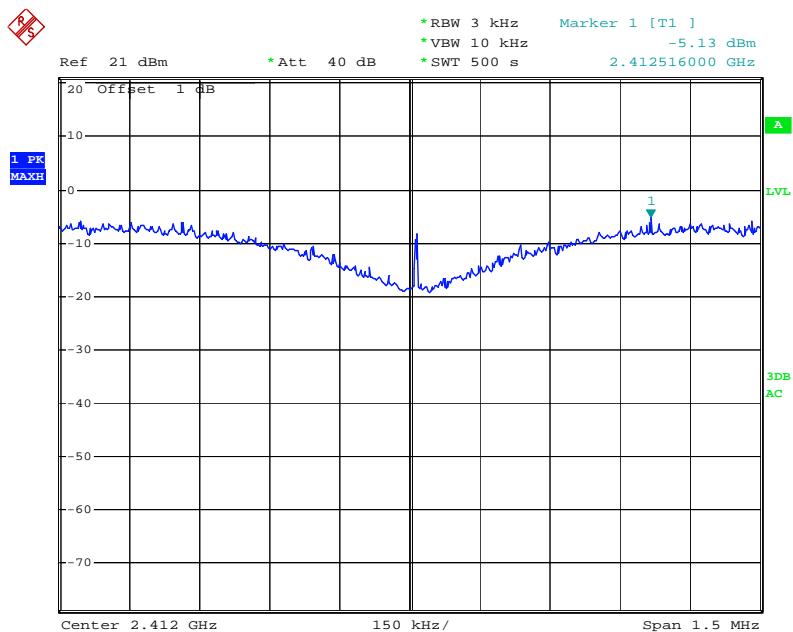




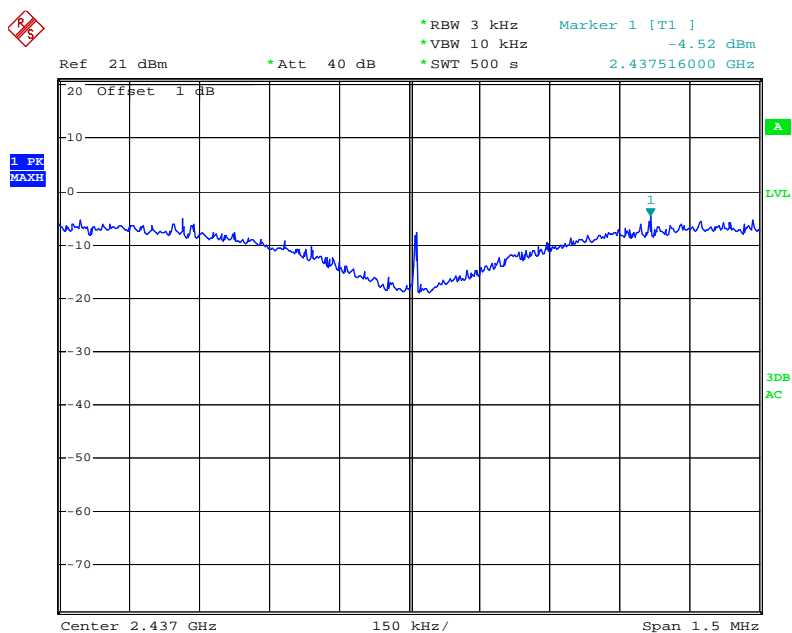
Report reference No.: WSCT-12030161E\_wifi  
Issued: March 19, 2012  
Revised: None

802.11n Mode:

### Low Channel



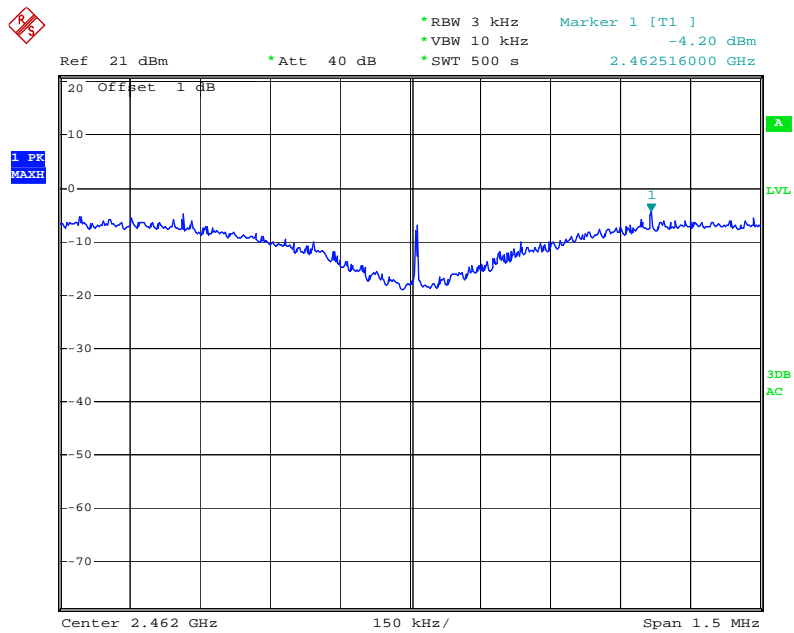
### Middle Channel





Report reference No.: WSCT-12030161E\_wifi  
Issued: March 19, 2012  
Revised: None

### High Channel



## PHOTOGRAPHS OF THE TEST CONFIGURATION

### CONDUCTED EMISSION TEST

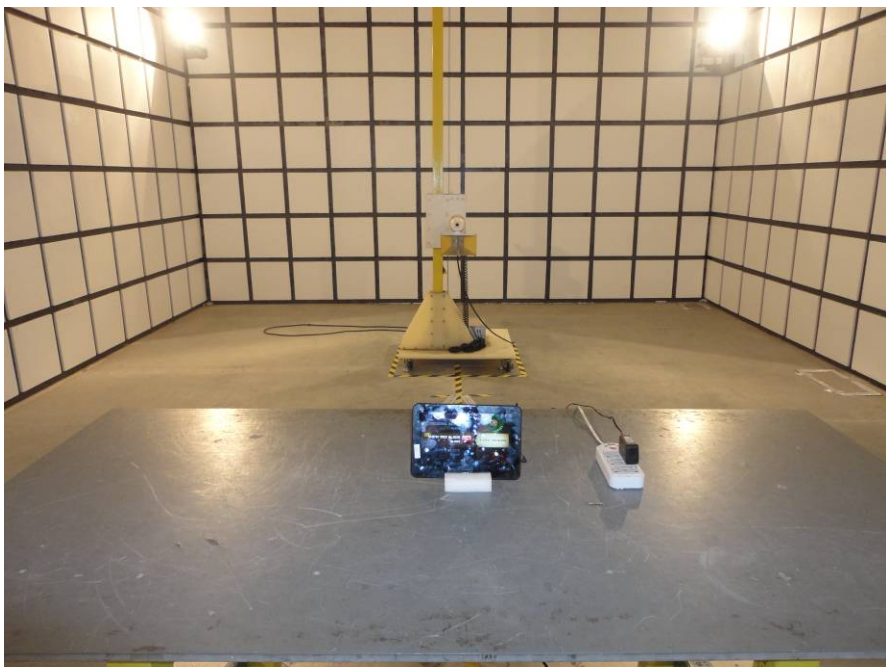


### RADIATED EMISSION TEST BELOW 1GHz





#### RADIATED EMISSION TEST ABOVE 1GHz



## PHOTOGRAPHS OF EUT

Appearance photograph of EUT



Appearance photograph of EUT



### Appearance photograph of EUT



### Appearance photograph of EUT



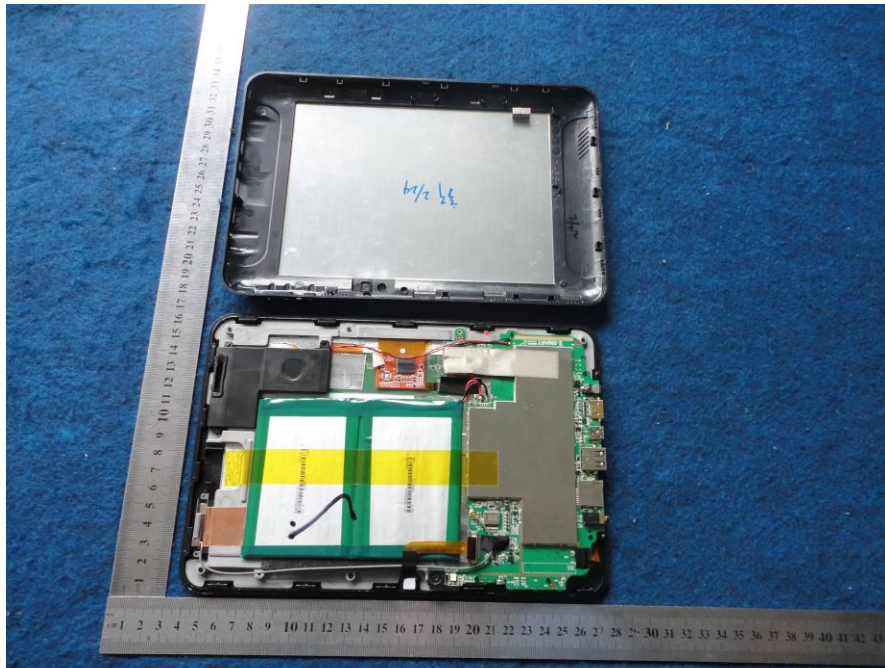
Appearance photograph of Adapter



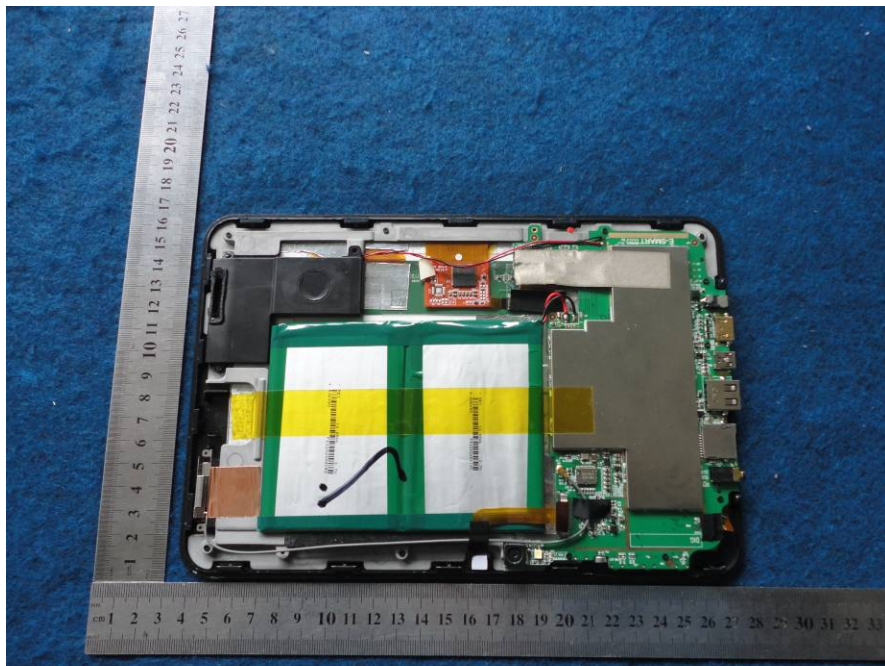
Appearance photograph of Adapter



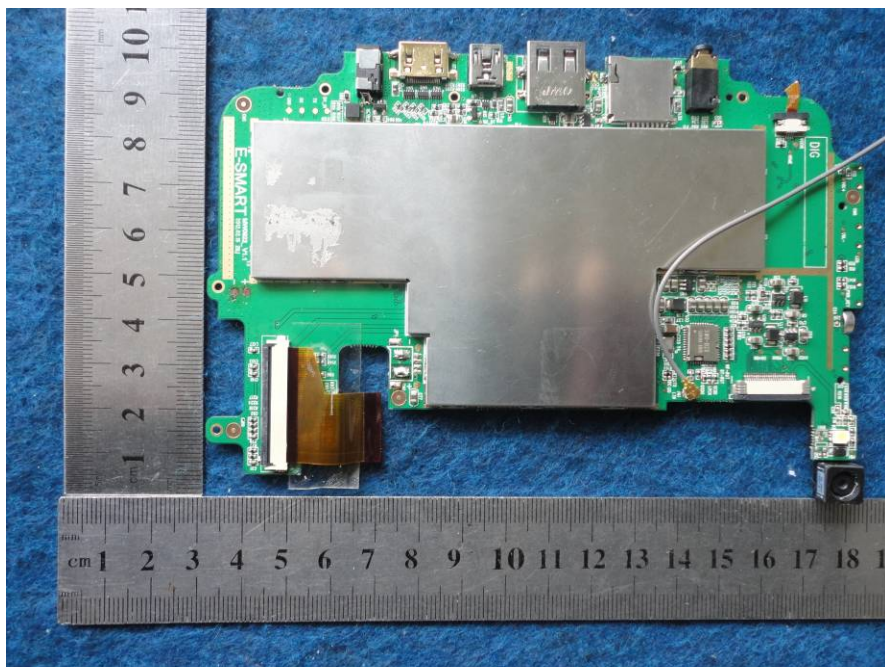
Internal photograph of EUT



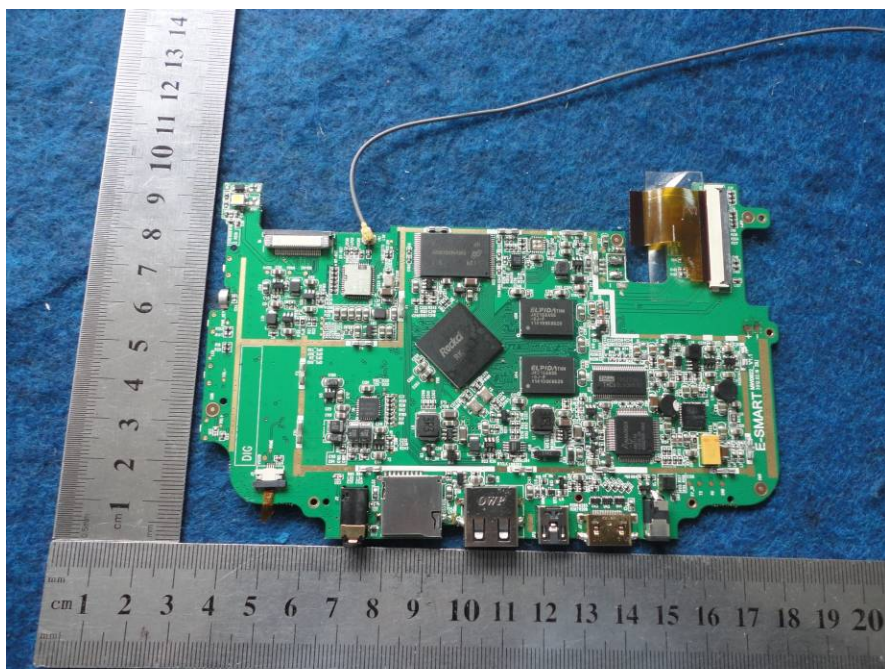
Internal photograph of EUT



Internal photograph of EUT



Internal photograph of EUT



PCB photograph of EUT

