

APPLICATION CERTIFICATION FCC Part 15C  
On Behalf of  
Chuango Security Technology Corporation

K1 SMARTHOMER DIY KIT

Model No.: K1

FCC ID: RJY-K1

Prepared for : Chuango Security Technology Corporation.  
Address : Room 6-17, Overseas Students Pioneer Park,  
No.108, Jiangbin East Road, Economic &  
Technological Development Zone, Fuzhou 350015,  
China.

Prepared by : ACCURATE TECHNOLOGY CO., LTD  
Address : F1, Bldg. A&D, Chan Yuan New Material Port,  
Keyuan Rd. Science & Industry Park, Nan Shan,  
Shenzhen, Guangdong P.R. China  
Tel: (0755) 26503290  
Fax: (0755) 26503396

Report No. : ATE20170747  
Date of Test : May 12, 2017-May 27, 2017  
Date of Report : May 27, 2017

## TABLE OF CONTENTS

Description	Page
Test Report Certification	
<b>1. GENERAL INFORMATION</b>	<b>5</b>
1.1. Description of Device (EUT).....	5
1.2. Carrier Frequency of Channels .....	6
1.3. Accessory and Auxiliary Equipment.....	6
1.4. Description of Test Facility .....	7
1.5. Measurement Uncertainty .....	7
<b>2. MEASURING DEVICE AND TEST EQUIPMENT</b>	<b>8</b>
<b>3. OPERATION OF EUT DURING TESTING</b>	<b>9</b>
3.1. Operating Mode .....	9
3.2. Configuration and peripherals .....	9
<b>4. TEST PROCEDURES AND RESULTS</b>	<b>10</b>
<b>5. POWER LINE CONDUCTED MEASUREMENT</b>	<b>11</b>
5.1. Block Diagram of Test Setup.....	11
5.2. Power Line Conducted Emission Measurement Limits.....	11
5.3. Configuration of EUT on Measurement .....	11
5.4. Operating Condition of EUT .....	11
5.5. Test Procedure .....	12
5.6. Power Line Conducted Emission Measurement Results .....	12
<b>6. 6DB BANDWIDTH MEASUREMENT</b>	<b>17</b>
6.1. Block Diagram of Test Setup.....	17
6.2. The Requirement For Section 15.247(a)(2).....	17
6.3. EUT Configuration on Measurement .....	17
6.4. Operating Condition of EUT .....	17
6.5. Test Procedure .....	17
6.6. Test Result .....	18
<b>7. DUTY CYCLE MEASUREMENT</b>	<b>25</b>
7.1. Block Diagram of Test Setup.....	25
7.2. EUT Configuration on Measurement .....	25
7.3. Operating Condition of EUT .....	25
7.4. Test Procedure .....	25
7.5. Test Result .....	26
<b>8. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER</b>	<b>33</b>
8.1. Block Diagram of Test Setup.....	33
8.2. The Requirement For Section 15.247(b)(3).....	33
8.3. EUT Configuration on Measurement .....	33
8.4. Operating Condition of EUT .....	33
8.5. Test Procedure .....	33
8.6. Test Result .....	34
<b>9. POWER SPECTRAL DENSITY MEASUREMENT</b>	<b>41</b>
9.1. Block Diagram of Test Setup.....	41
9.2. The Requirement For Section 15.247(e).....	41
9.3. EUT Configuration on Measurement .....	41

9.4.	Operating Condition of EUT .....	41
9.5.	Test Procedure .....	41
9.6.	Test Result .....	42
<b>10.</b>	<b>BAND EDGE COMPLIANCE TEST .....</b>	<b>50</b>
10.1.	Block Diagram of Test Setup.....	50
10.2.	The Requirement For Section 15.247(d) .....	50
10.3.	EUT Configuration on Measurement .....	50
10.4.	Operating Condition of EUT .....	50
10.5.	Test Procedure .....	50
10.6.	Test Result .....	51
<b>11.</b>	<b>RADIATED SPURIOUS EMISSION TEST .....</b>	<b>73</b>
11.1.	Block Diagram of Test Setup.....	73
11.2.	The Limit For Section 15.247(d) .....	74
11.3.	Restricted bands of operation .....	75
11.4.	Configuration of EUT on Measurement .....	75
11.5.	Operating Condition of EUT .....	76
11.6.	Test Procedure .....	76
11.7.	The Field Strength of Radiation Emission Measurement Results .....	77
<b>12.</b>	<b>99% OCCUPIED BANDWIDTH.....</b>	<b>108</b>
12.1.	Block Diagram of Test Setup.....	108
12.2.	EUT Configuration on Measurement .....	108
12.3.	Operating Condition of EUT .....	108
12.4.	Test Procedure .....	108
12.5.	Measurement Result .....	109
<b>13.</b>	<b>ANTENNA REQUIREMENT.....</b>	<b>116</b>
13.1.	The Requirement .....	116
13.2.	Antenna Construction .....	116

## Test Report Certification

Applicant : Chuango Security Technology Corporation.  
Address : Room 6-17, Overseas Students Pioneer Park, No.108, Jiangbin East Road, Economic & Technological Development Zone, Fuzhou 350015, China  
Manufacturer : Chuango Security Technology Corporation  
Address : Room 6-17, Overseas Students Pioneer Park, No.108, Jiangbin East Road, Economic & Technological Development Zone, Fuzhou 350015, China  
Product : K1 SMARTHOMER DIY KIT  
Model No. : K1  
Trade name : smanos

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247: 2016  
ANSI C63.10: 2013**

The EUT was tested according to DTS test procedure of Apr 05, 2017 KDB558074 D01 DTS Meas Guidance v04 for compliance to FCC 47CFR 15.247 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements. This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : May 12, 2017-May 27, 2017  
Date of Report: May 27, 2017

Prepared by : Tim Lang



Approved & Authorized Signer : Sean Liu  
(Sean Liu, Manager)

## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

EUT	:	K1 SMARTHOMEE DIY KIT
Model Number	:	K1
Frequency Range	:	802.11b/g/n(20MHz): 2412-2462MHz 802.11n(40MHz): 2422-2452MHz
Number of Channels	:	802.11b/g/n (20MHz):11 802.11n (40MHz): 7
Antenna Gain	:	2dBi
Type of Antenna	:	Integral Antenna
Power Supply	:	DC 12V(Powered by Adapter)
Adapter information	:	Model: SA-US12V Input: AC 100-240V~60Hz 0.3A Output: DC 12.0V 0.5A
Data Rate	:	802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: up to 150Mbps
Modulation Type	:	DSSS, OFDM
Applicant Address	:	Chuango Security Technology Corporation Room 6-17, Overseas Students Pioneer Park, No.108, Jiangbin East Road, Economic & Technological Development Zone, Fuzhou 350015, China.
Manufacturer Address	:	Chuango Security Technology Corporation Room 6-17, Overseas Students Pioneer Park, No.108, Jiangbin East Road, Economic & Technological Development Zone, Fuzhou 350015, China.
Date of sample received	:	May 12, 2017
Date of Test	:	May 12, 2017-May 27, 2017

## 1.2.Carrier Frequency of Channels

802.11b, 802.11g, 802.11n (20MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	---	---

802.11n (40MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
---	---	07	2442
---	---	08	2447
03	2422	09	2452
04	2427	---	---
05	2432	---	---
06	2437	---	---

## 1.3.Accessory and Auxiliary Equipment

PC

Manufacturer: LENOVO  
M/N: 4290-RT8  
S/N: R9-FW93G 11/08

## 1.4. Description of Test Facility

EMC Lab	: Accredited by TUV Rheinland Shenzhen
	Listed by FCC The Registration Number is 752051
	Listed by Industry Canada The Registration Number is 5077A-2
	Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193
Name of Firm	: ACCURATE TECHNOLOGY CO. LTD
Site Location	: F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

## 1.5. Measurement Uncertainty

Conducted Emission Expanded Uncertainty	= 2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	= 3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	= 4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	= 4.06dB, k=2

## 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment**

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 07, 2017	1 Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 07, 2017	1 Year
Spectrum Analyzer	Rohde&Schwarz	FSV-40	101495	Jan. 07, 2017	1 Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 07, 2017	1 Year
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 07, 2017	1 Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 13, 2017	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 13, 2017	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 13, 2017	1 Year
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 13, 2017	1 Year
Open Switch and Control Unit	Rohde&Schwarz	OSP120 + OSP-B157	101244 + 100866	Jan. 07, 2017	1 Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 07, 2017	1 Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 07, 2017	1 Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 07, 2017	1 Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 07, 2017	1 Year

### 3. OPERATION OF EUT DURING TESTING

#### 3.1. Operating Mode

The mode is used: **1.802.11b Transmitting mode**

Low Channel: 2412MHz  
Middle Channel: 2437MHz  
High Channel: 2462MHz

**2.802.11g Transmitting mode**

Low Channel: 2412MHz  
Middle Channel: 2437MHz  
High Channel: 2462MHz

**3.802.11n (20MHz) Transmitting mode**

Low Channel: 2412MHz  
Middle Channel: 2437MHz  
High Channel: 2462MHz

**4.802.11n (40MHz) Transmitting mode**

Low Channel: 2422MHz  
Middle Channel: 2437MHz  
High Channel: 2452MHz

#### 3.2. Configuration and peripherals

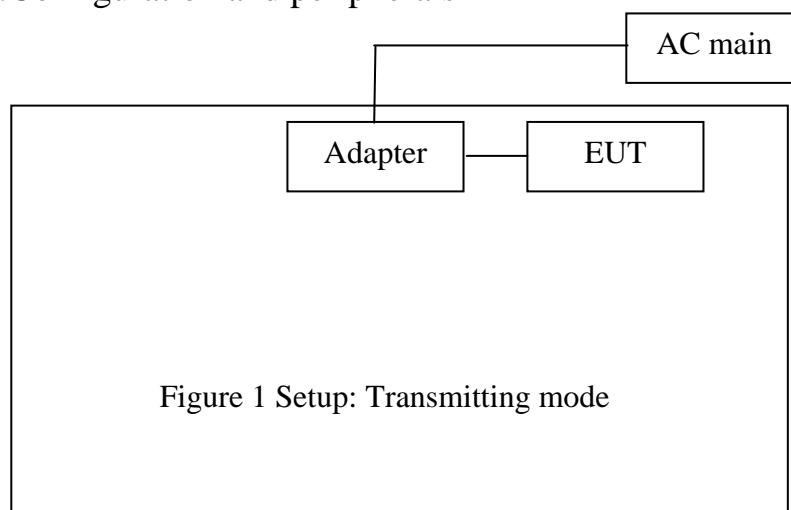


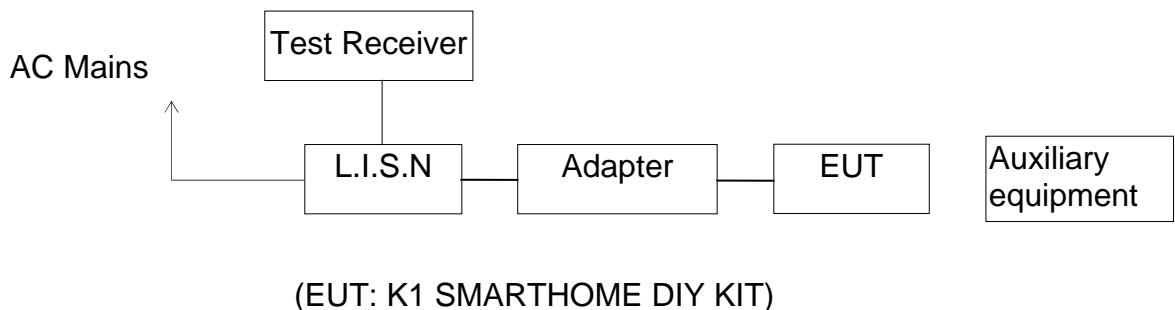
Figure 1 Setup: Transmitting mode

## 4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.207	Power Line Conducted Emission	Compliant
Section 15.247(a)(2)	6dB Bandwidth Test	Compliant
KDB558074 D01 DTS Meas Guidance v04	Duty cycle	Compliant
KDB558074 D01 DTS Meas Guidance v04	OBW	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.247(b)(3)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.247(d) Section 15.209	Radiated Spurious Emission Test	Compliant
Section 15.203	Antenna Requirement	Compliant

## 5. POWER LINE CONDUCTED MEASUREMENT

### 5.1. Block Diagram of Test Setup



### 5.2. Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB( $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

NOTE1: The lower limit shall apply at the transition frequencies.  
 NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

### 5.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

### 5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in test mode and measure it.

### 5.5. Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

### 5.6. Power Line Conducted Emission Measurement Results

**PASS.**

The frequency range from 150kHz to 30MHz is checked.

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

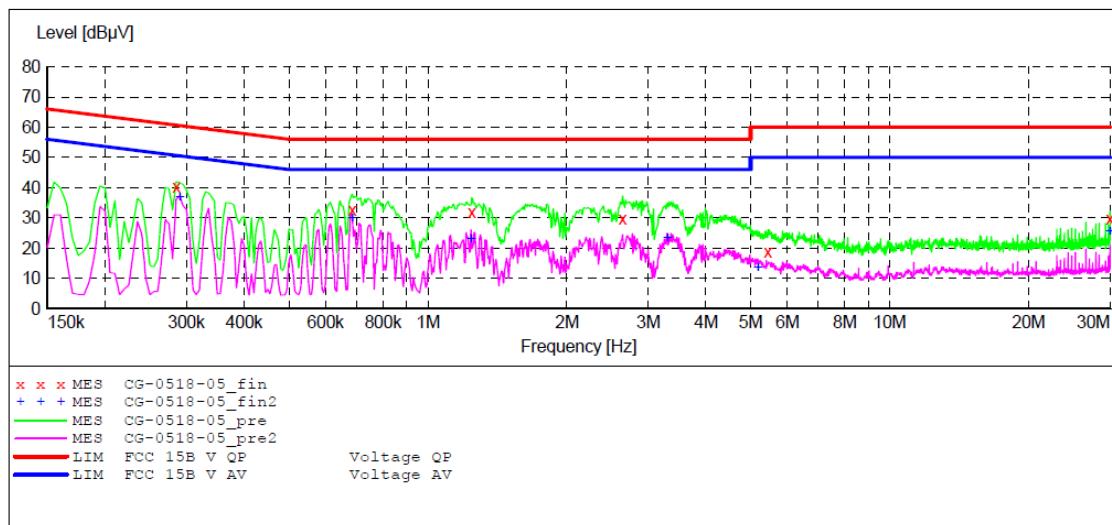
ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: K1 SMARTHOMEE DIY KIT M/N:K1  
 Manufacturer: CHUANGO  
 Operating Condition: WIFI OPERATION  
 Test Site: 1#Shielding Room  
 Operator: DING  
 Test Specification: L 240V/60Hz  
 Comment: Report NO.:ATE20170747  
 Start of Test: 5/18/2017 / 5:30:17PM

## SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
 Average  
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



## MEASUREMENT RESULT: "CG-0518-05\_fin"

5/18/2017 5:33PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.285000	40.10	10.6	60.7	20.6	QP	L1	GND
0.685000	32.50	10.8	56	23.5	QP	L1	GND
1.245000	31.70	10.9	56	24.3	QP	L1	GND
2.640000	29.80	11.0	56	26.2	QP	L1	GND
5.450000	18.90	11.2	60	41.1	QP	L1	GND
30.000000	29.80	11.5	60	30.2	QP	L1	GND

## MEASUREMENT RESULT: "CG-0518-05\_fin2"

5/18/2017 5:33PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.290000	37.10	10.6	50.5	13.4	AV	L1	GND
0.685000	30.00	10.8	46	16.0	AV	L1	GND
1.240000	23.00	10.9	46	23.0	AV	L1	GND
3.300000	23.60	11.1	46	22.4	AV	L1	GND
5.180000	13.70	11.2	50	36.3	AV	L1	GND
30.000000	25.60	11.5	50	24.4	AV	L1	GND

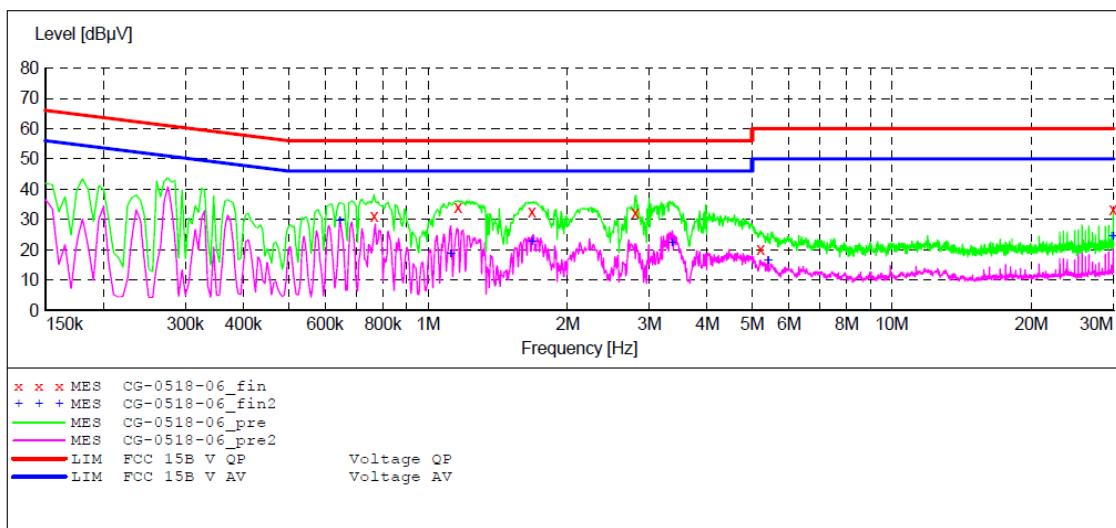
ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: K1 SMARTHOMIE DIY KIT M/N:K1  
 Manufacturer: CHUANGO  
 Operating Condition: WIFI OPERATION  
 Test Site: 1#Shielding Room  
 Operator: DING  
 Test Specification: N 240V/60Hz  
 Comment: Report NO.:ATE20170747  
 Start of Test: 5/18/2017 / 5:41:35PM

## SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
 Average  
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



## MEASUREMENT RESULT: "CG-0518-06\_fin"

5/18/2017 5:42PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.765000	31.00	10.8	56	25.0	QP	N	GND
1.160000	34.00	10.9	56	22.0	QP	N	GND
1.675000	32.70	10.9	56	23.3	QP	N	GND
2.800000	32.20	11.0	56	23.8	QP	N	GND
5.210000	20.20	11.2	60	39.8	QP	N	GND
30.000000	33.30	11.5	60	26.7	QP	N	GND

## MEASUREMENT RESULT: "CG-0518-06\_fin2"

5/18/2017 5:42PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.645000	29.80	10.8	46	16.2	AV	N	GND
1.120000	18.80	10.9	46	27.2	AV	N	GND
1.675000	22.80	10.9	46	23.2	AV	N	GND
3.360000	22.50	11.1	46	23.5	AV	N	GND
5.410000	16.50	11.2	50	33.5	AV	N	GND
30.000000	24.60	11.5	50	25.4	AV	N	GND

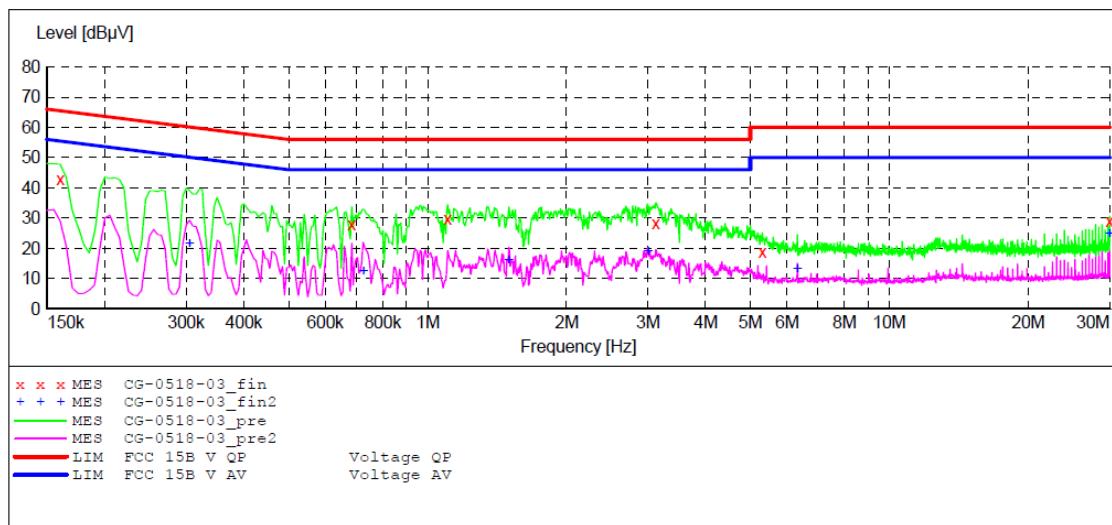
## ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: K1 SMARTHOMIE DIY KIT M/N:K1  
 Manufacturer: CHUANGO  
 Operating Condition: WIFI OPERATION  
 Test Site: 1#Shielding Room  
 Operator: DING  
 Test Specification: N 120V/60Hz  
 Comment: Report NO.:ATE20170747  
 Start of Test: 5/18/2017 / 5:13:43PM

## SCAN TABLE: "V 9K-30MHz fin"

Short Description: SUB STD VTERM2 1.70  
 Start Stop Step Detector Meas. IF Transducer  
 Frequency Frequency Width Time Bandw.  
 9.0 kHz 150.0 kHz 100.0 Hz QuasiPeak 1.0 s 200 Hz NSLK8126 2008  
 Average  
 150.0 kHz 30.0 MHz 5.0 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008  
 Average



## MEASUREMENT RESULT: "CG-0518-03\_fin"

5/18/2017 5:17PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.160000	42.90	10.5	65.5	22.6	QP	N	GND
0.685000	27.90	10.8	56	28.1	QP	N	GND
1.105000	29.80	10.9	56	26.2	QP	N	GND
3.120000	28.20	11.1	56	27.8	QP	N	GND
5.310000	18.90	11.2	60	41.1	QP	N	GND
30.000000	29.00	11.5	60	31.0	QP	N	GND

## MEASUREMENT RESULT: "CG-0518-03\_fin2"

5/18/2017 5:17PM

Frequency MHz	Level dB $\mu$ V	Transd dB	Limit dB $\mu$ V	Margin dB	Detector	Line	PE
0.305000	21.80	10.6	50.1	28.3	AV	N	GND
0.725000	12.50	10.8	46	33.5	AV	N	GND
1.500000	16.30	10.9	46	29.7	AV	N	GND
3.000000	19.00	11.1	46	27.0	AV	N	GND
6.320000	13.30	11.2	50	36.7	AV	N	GND
30.000000	25.00	11.5	50	25.0	AV	N	GND

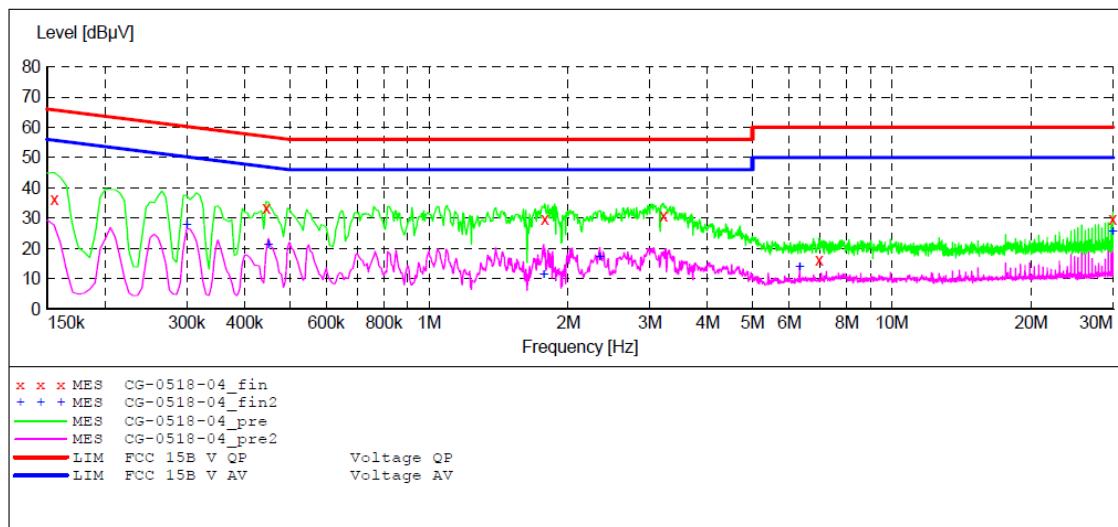
## ACCURATE TECHNOLOGY CO., LTD

## CONDUCTED EMISSION STANDARD FCC PART 15B

EUT: K1 SMARTHOMIE DIY KIT M/N:K1  
 Manufacturer: CHUANGO  
 Operating Condition: WIFI OPERATION  
 Test Site: 1#Shielding Room  
 Operator: DING  
 Test Specification: L 120V/60Hz  
 Comment: Report NO.:ATE20170747  
 Start of Test: 5/18/2017 / 5:18:00PM

## SCAN TABLE: "V 9K-30MHz fin"

Short Description:		SUB STD VTERM2 1.70				
Start Frequency	Stop Frequency	Step Width	Detector	Meas.	IF	Transducer
9.0 kHz	150.0 kHz	100.0 Hz	QuasiPeak	1.0 s	200 Hz	NSLK8126 2008
			Average			
150.0 kHz	30.0 MHz	5.0 kHz	QuasiPeak	1.0 s	9 kHz	NSLK8126 2008
			Average			



## MEASUREMENT RESULT: "CG-0518-04\_fin"

5/18/2017 5:21PM	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.155000	36.10	10.5	65.7	29.6	QP	L1	GND
	0.445000	33.40	10.7	57	23.6	QP	L1	GND
	1.780000	29.70	11.0	56	26.3	QP	L1	GND
	3.210000	30.80	11.1	56	25.2	QP	L1	GND
	6.960000	16.40	11.2	60	43.6	QP	L1	GND
	30.000000	29.80	11.5	60	30.2	QP	L1	GND

## MEASUREMENT RESULT: "CG-0518-04\_fin2"

5/18/2017 5:21PM	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dB $\mu$ V	dB	dB $\mu$ V	dB			
	0.300000	27.90	10.6	50.2	22.3	AV	L1	GND
	0.450000	21.40	10.7	47	25.5	AV	L1	GND
	1.770000	11.60	11.0	46	34.4	AV	L1	GND
	2.340000	17.40	11.0	46	28.6	AV	L1	GND
	6.320000	13.90	11.2	50	36.1	AV	L1	GND
	30.000000	25.80	11.5	50	24.2	AV	L1	GND

## 6. 6DB BANDWIDTH MEASUREMENT

### 6.1. Block Diagram of Test Setup



### 6.2. The Requirement For Section 15.247(a)(2)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

### 6.3. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

### 6.5. Test Procedure

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

## 6.6. Test Result

The test was performed with 802.11b

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	10.080	> 0.5MHz
Middle	2437	10.070	> 0.5MHz
High	2462	10.075	> 0.5MHz

The test was performed with 802.11g

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	16.560	> 0.5MHz
Middle	2437	16.555	> 0.5MHz
High	2462	16.560	> 0.5MHz

The test was performed with 802.11n (Bandwidth: 20 MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	17.630	> 0.5MHz
Middle	2437	17.625	> 0.5MHz
High	2462	17.625	> 0.5MHz

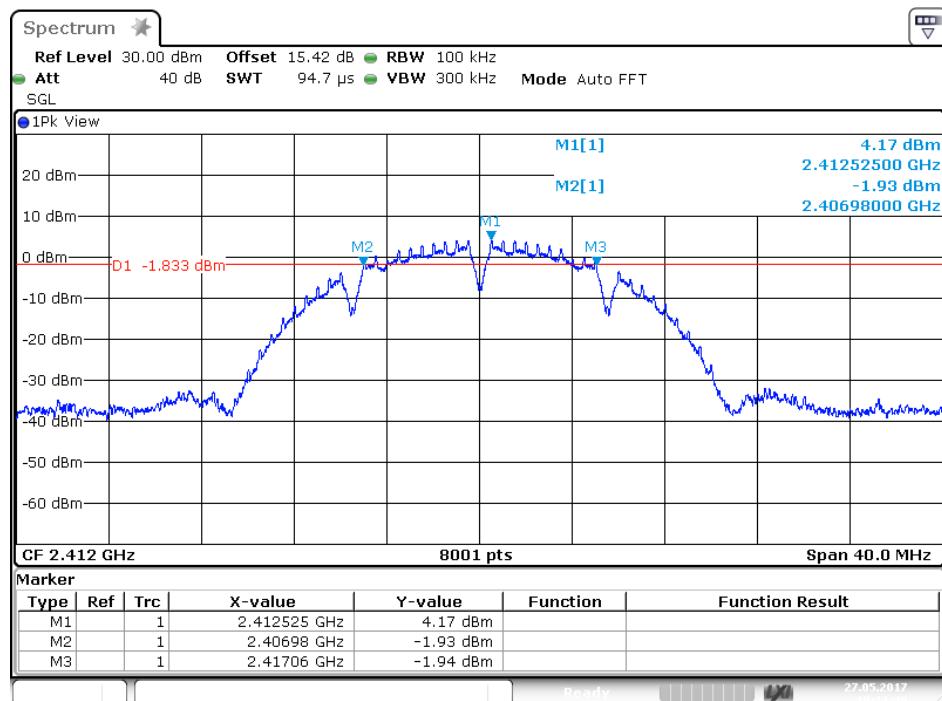
The test was performed with 802.11n (Bandwidth: 40 MHz)

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2422	36.410	> 0.5MHz
Middle	2437	36.430	> 0.5MHz
High	2452	36.410	> 0.5MHz

The spectrum analyzer plots are attached as below.

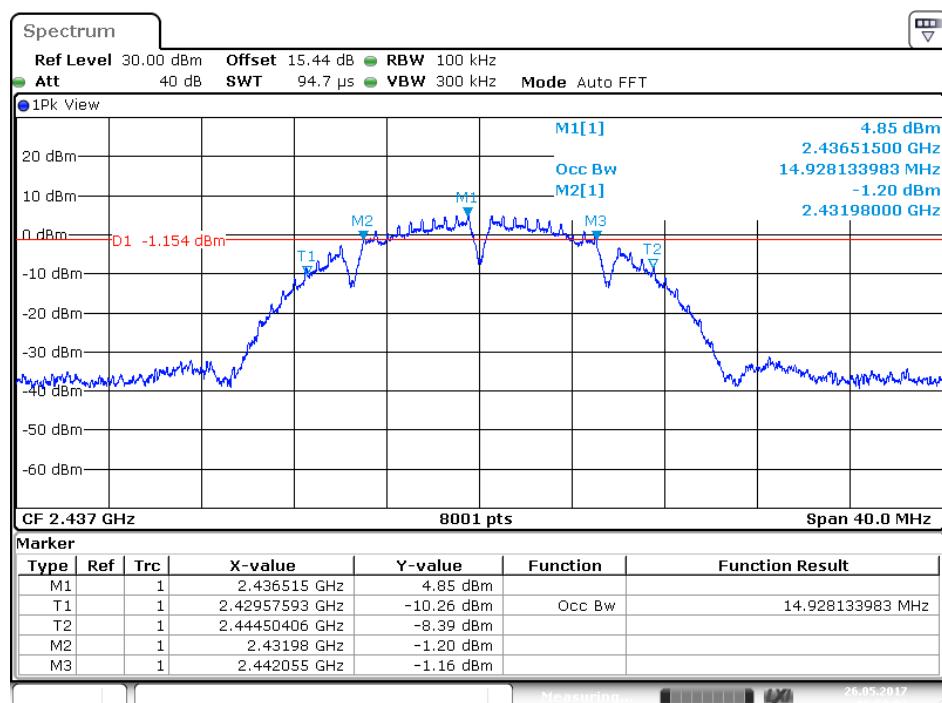
## 6dB Bandwidth

## 802.11b Channel Low 2412MHz



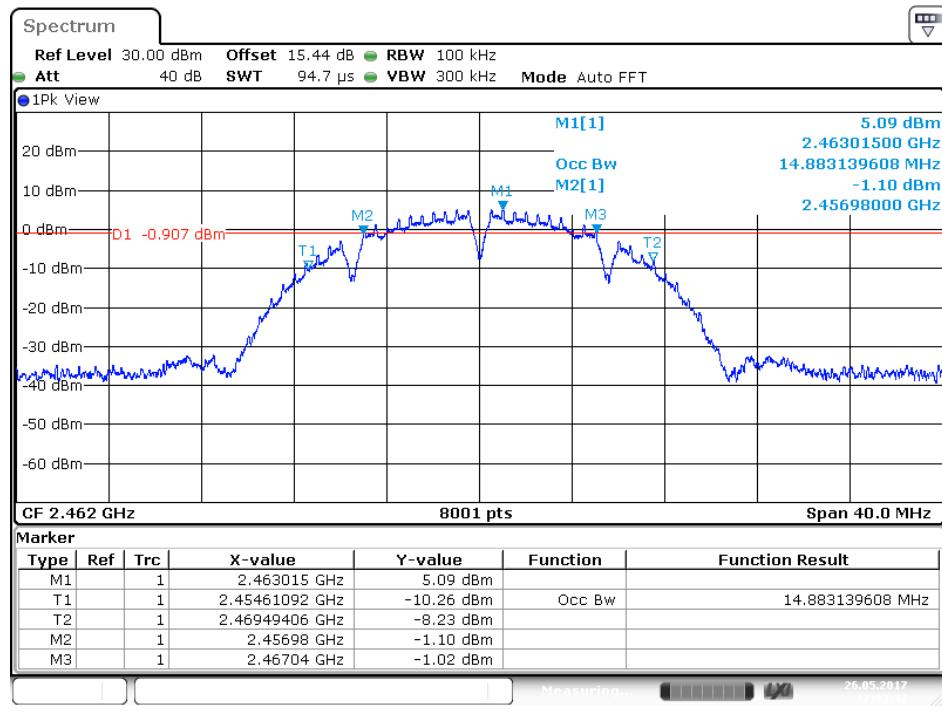
Date: 27.MAY.2017 10:11:41

## 802.11b Channel Middle 2437MHz

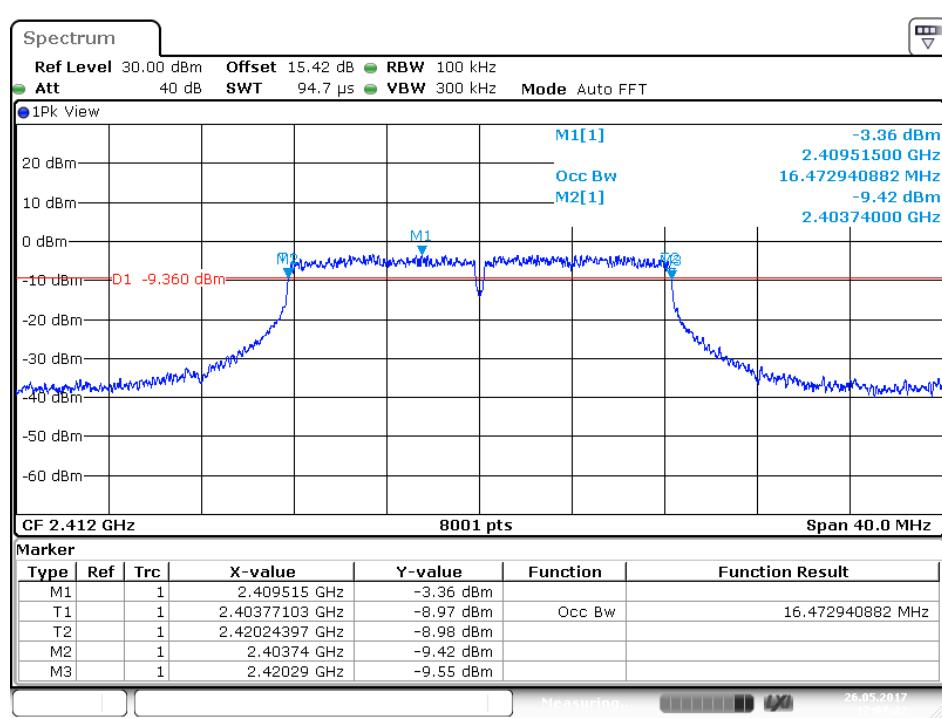


Date: 26.MAY.2017 16:59:02

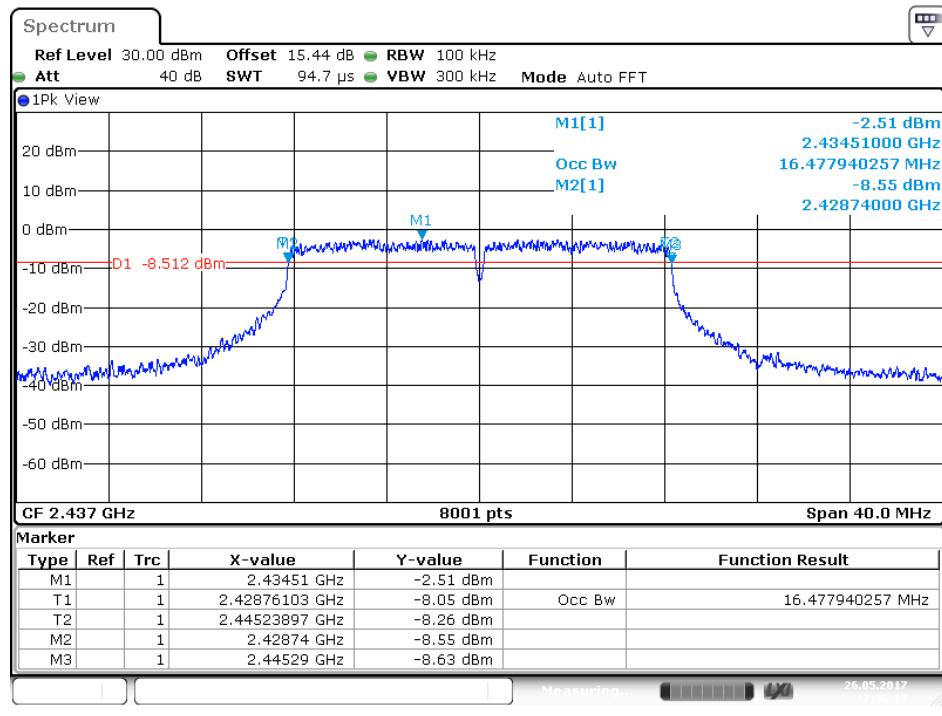
## 802.11b Channel High 2462MHz



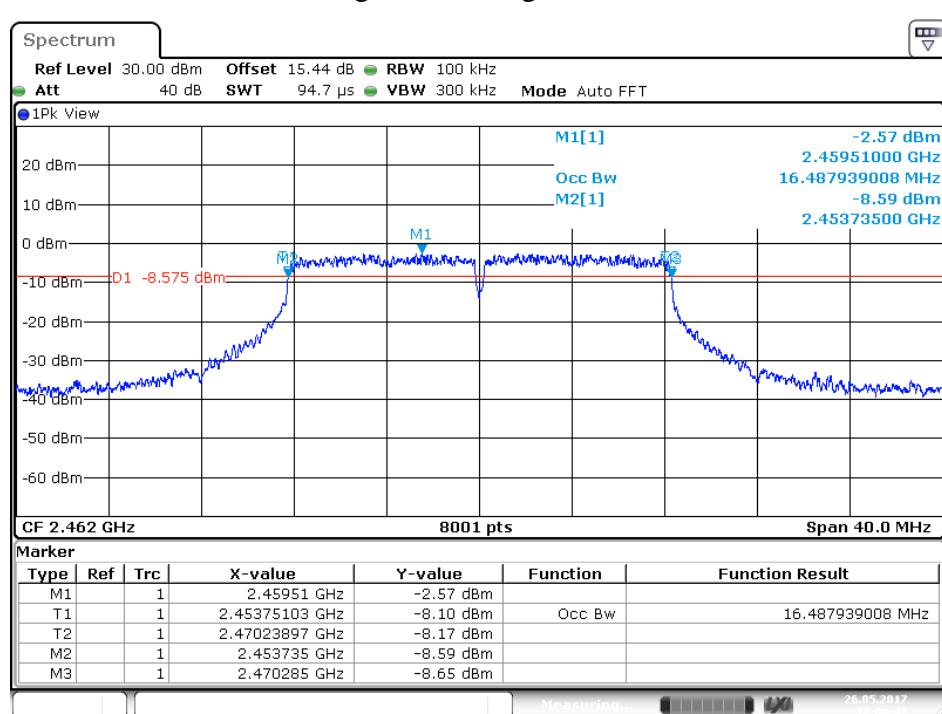
## 802.11g Channel Low 2412MHz



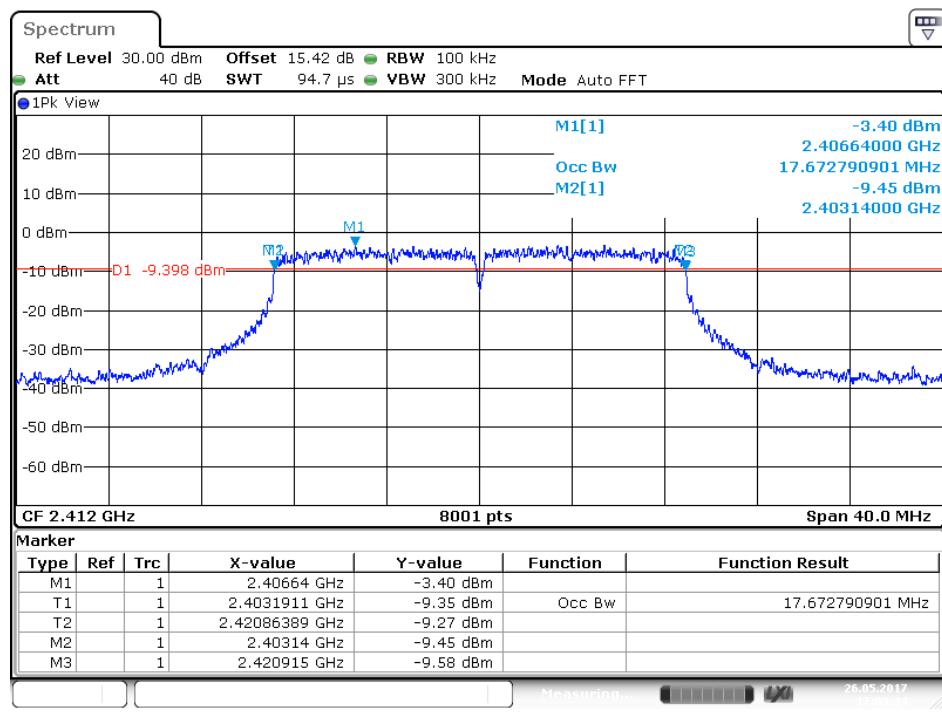
## 802.11g Channel Middle 2437MHz



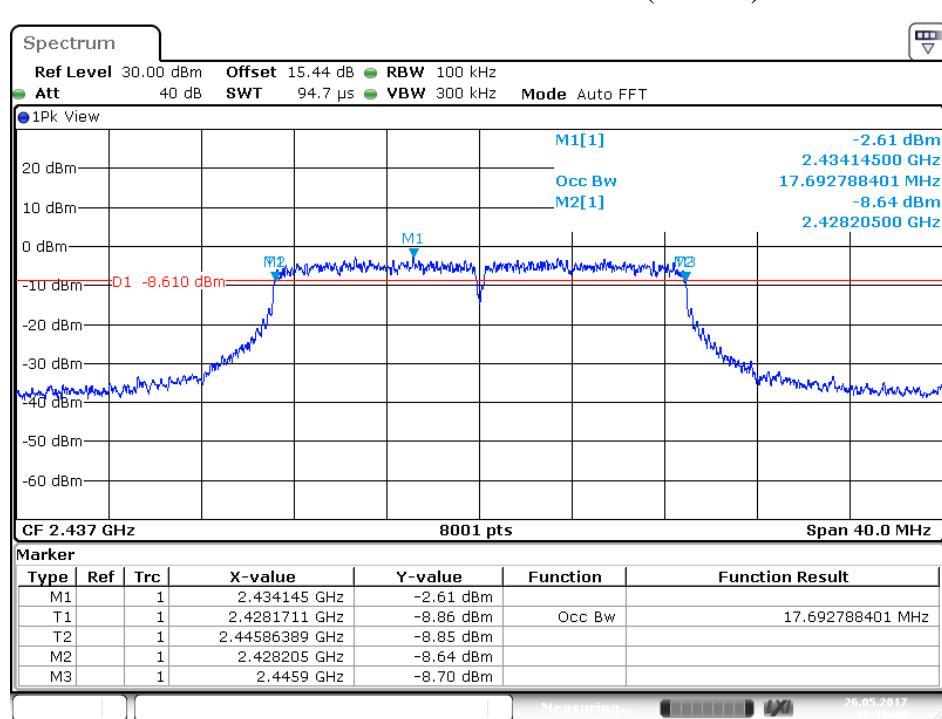
## 802.11g Channel High 2462MHz



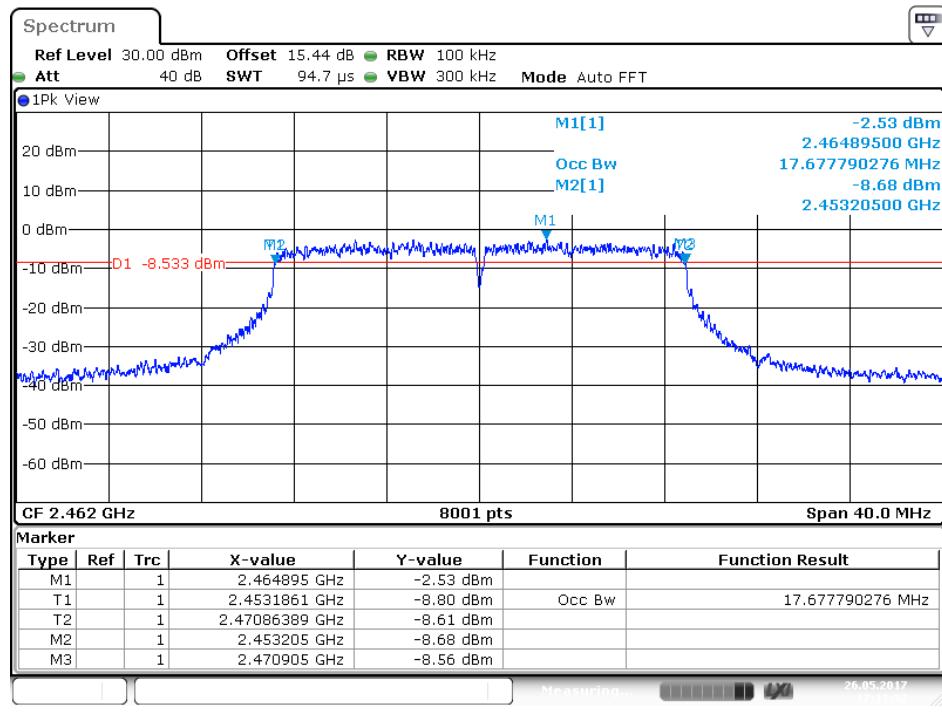
## 802.11n Channel Low 2412MHz (20MHz)



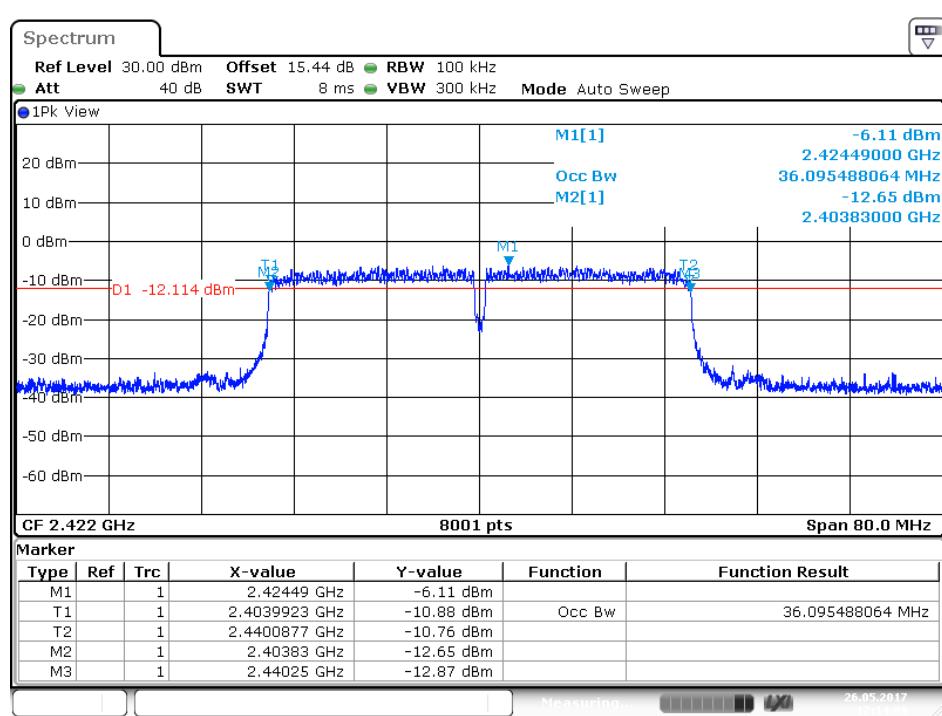
## 802.11n Channel Middle 2437MHz(20MHz)



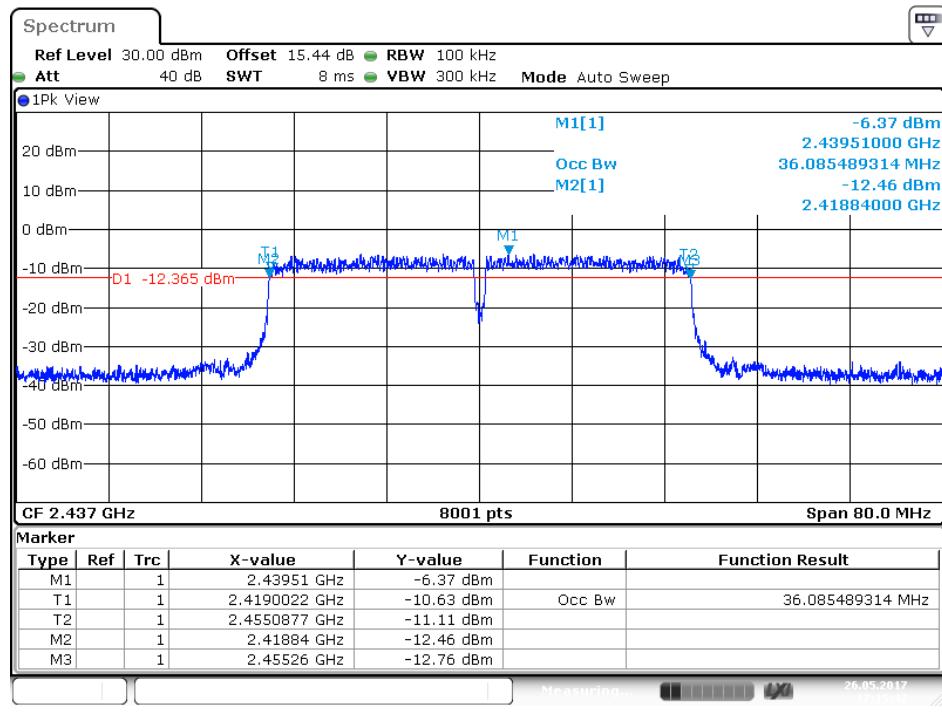
## 802.11n Channel High 2462MHz(20MHz)



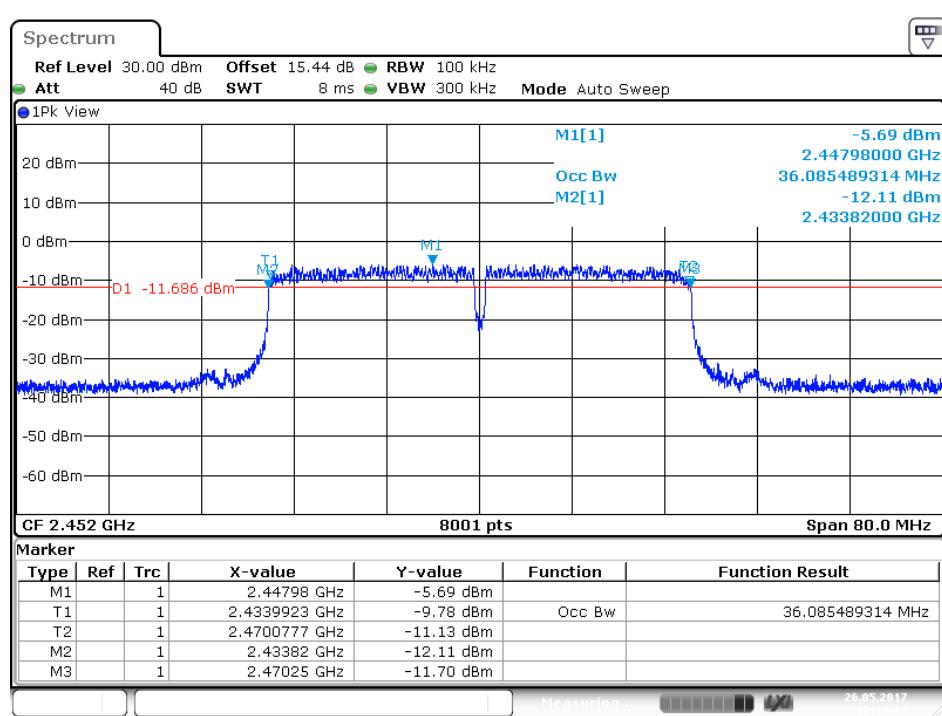
## 802.11n Channel Low 2422MHz (40MHz)



## 802.11n Channel Middle 2437MHz(40MHz)

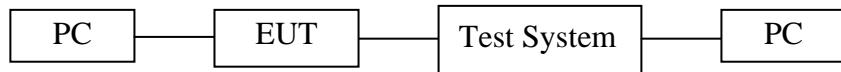


## 802.11n Channel High 2452MHz(40MHz)



## 7. DUTY CYCLE MEASUREMENT

### 7.1. Block Diagram of Test Setup



### 7.2. EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 7.3. Operating Condition of EUT

7.3.1. Setup the EUT and simulator as shown as Section 7.1.

7.3.2. Turn on the power of all equipment.

7.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

### 7.4. Test Procedure

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:

1. A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on- and off-times of the transmitted signal.
2. The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on- and off-times of the transmitted signal
  - a. Set the center frequency of the instrument to the centre frequency of the transmission
  - b. Set  $RBW \geq OBW$  if possible; otherwise, set  $RBW$  to the largest available value(10MHz).
  - c. Set detector = Peak or average.
- d. The zero-span measurement method shall not be used unless both  $RBW$  and  $VBW$  are  $> 50/T$  and the number of sweep points across duration  $T$  exceeds 100.  
(For example, if  $VBW$  and/or  $RBW$  are limited to 3MHz, then the zero-span method of measuring duty cycle shall not be used if  $T \leq 16.7$  microseconds.)

## 7.5. Test Result

The test was performed with 802.11b			
Channel	Frequency (MHz)	duty cycle(x)	10log(1/x)
Low	2412	100%	0
Middle	2437	100%	0
High	2462	100%	0

The test was performed with 802.11g			
Channel	Frequency (MHz)	duty cycle(x)	10log(1/x)
Low	2412	100%	0
Middle	2437	100%	0
High	2462	100%	0

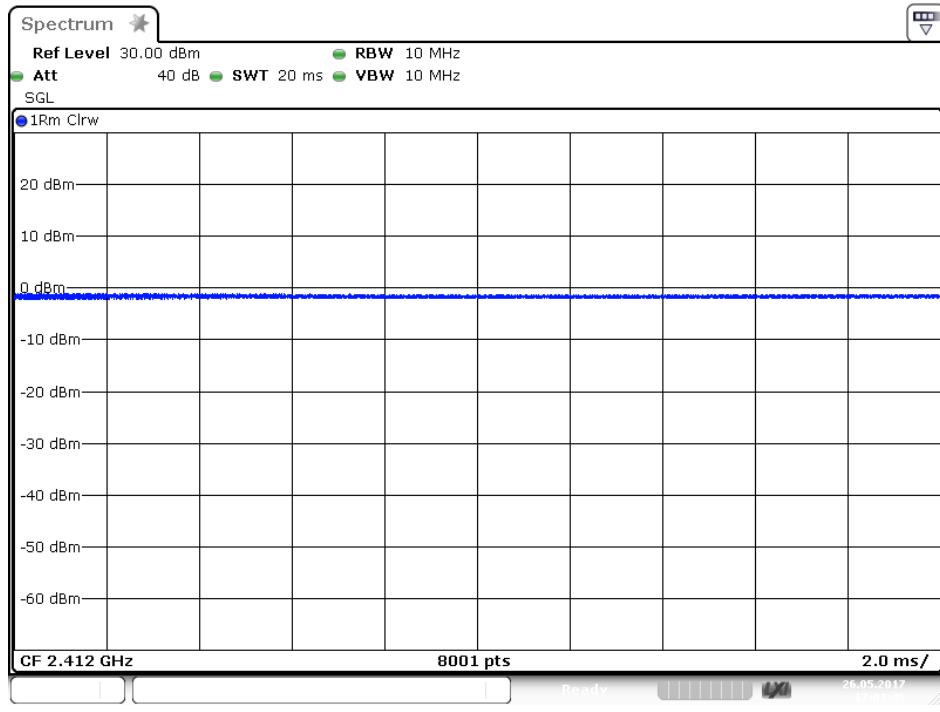
The test was performed with 802.11n (Bandwidth: 20 MHz)			
Channel	Frequency (MHz)	duty cycle(x)	10log(1/x)
Low	2412	100%	0
Middle	2437	100%	0
High	2462	100%	0

The test was performed with 802.11n (Bandwidth: 40 MHz)			
Channel	Frequency (MHz)	duty cycle(x)	10log(1/x)
Low	2422	100%	0
Middle	2437	100%	0
High	2452	100%	0

The spectrum analyzer plots are attached as below.

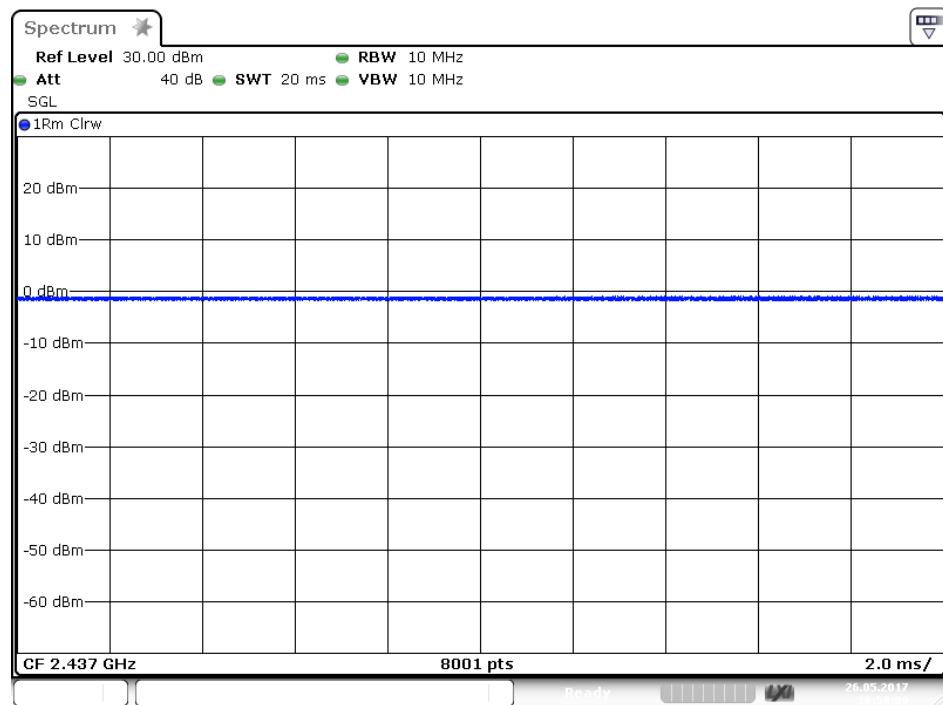
duty cycle

802.11b Channel Low 2412MHz



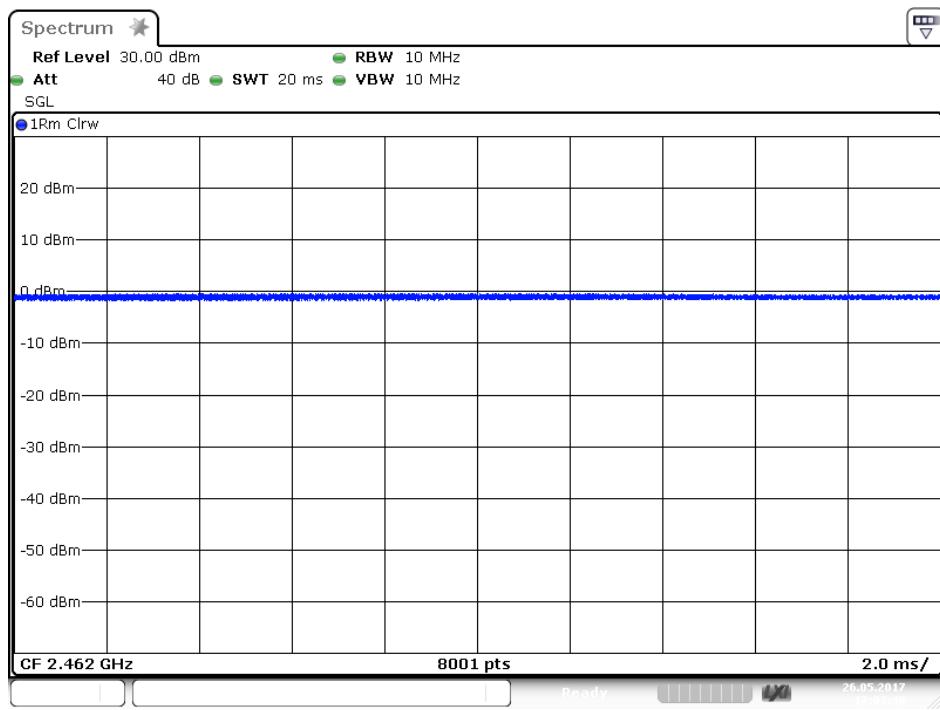
Date: 26.MAY.2017 17:01:46

802.11b Channel Middle 2437MHz

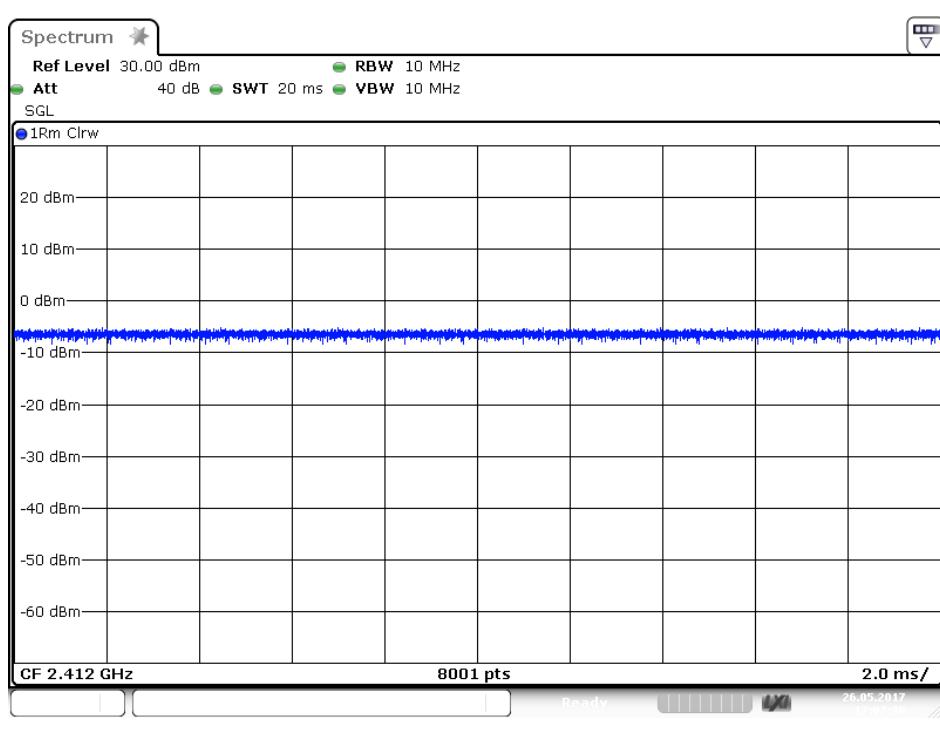


Date: 26.MAY.2017 16:59:10

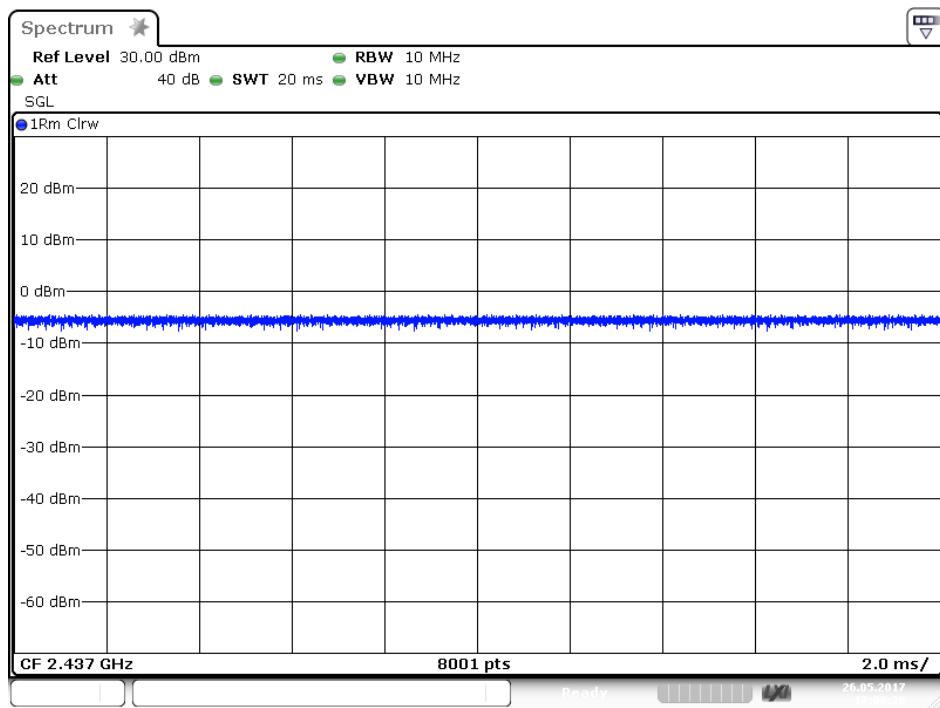
## 802.11b Channel High 2462MHz



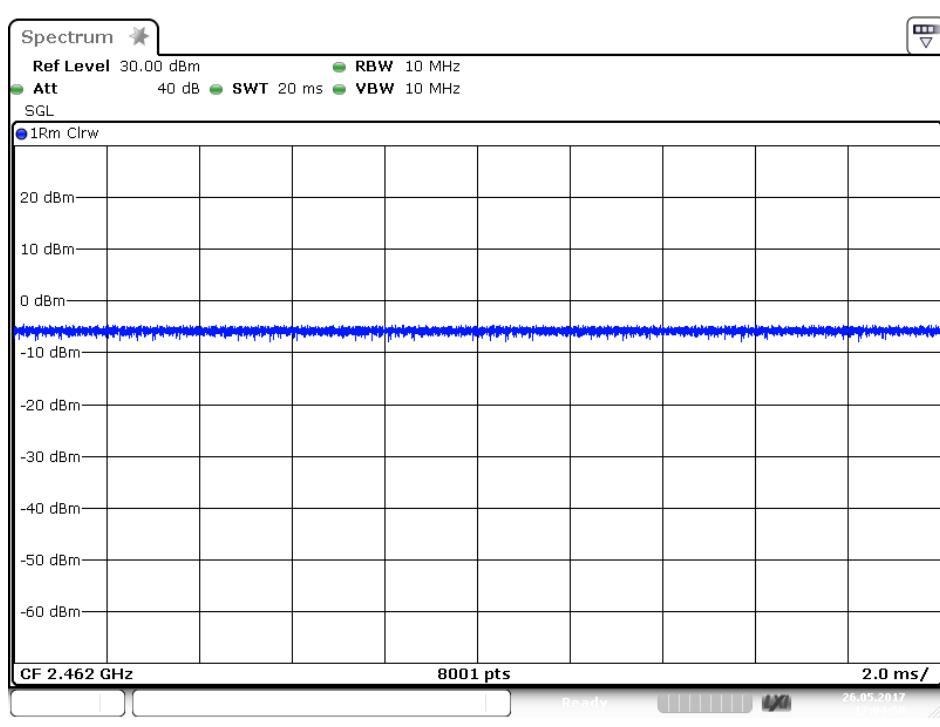
## 802.11g Channel Low 2412MHz



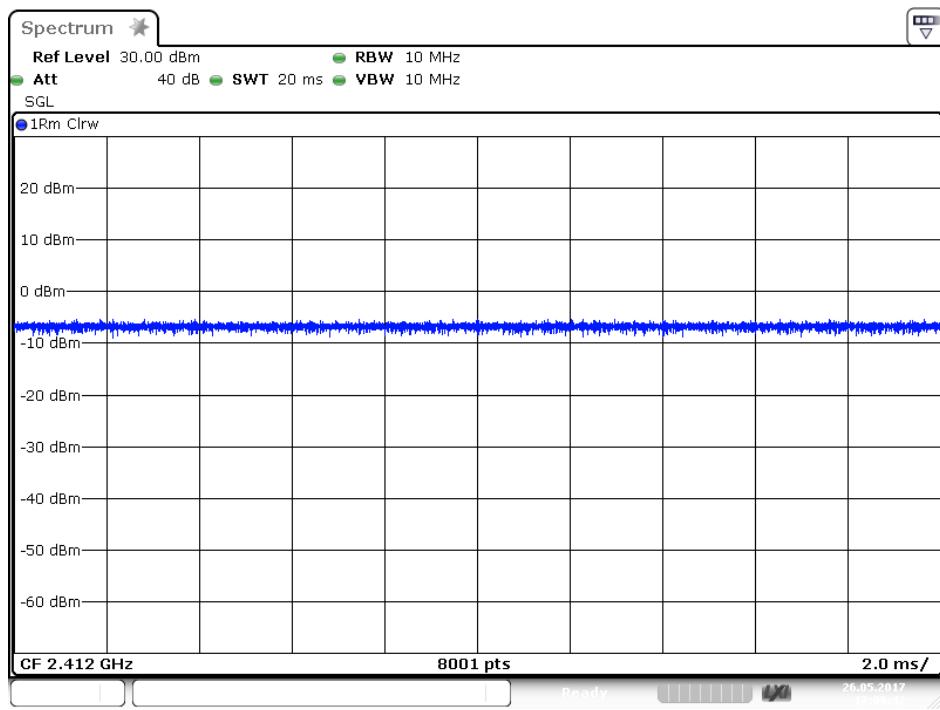
## 802.11g Channel Middle 2437MHz



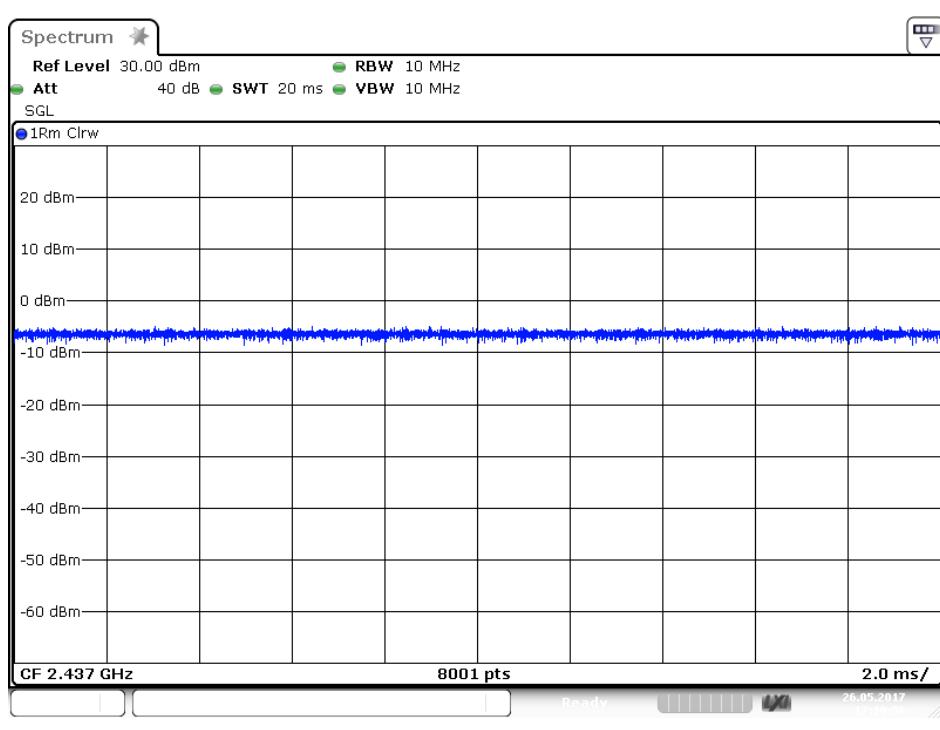
## 802.11g Channel High 2462MHz



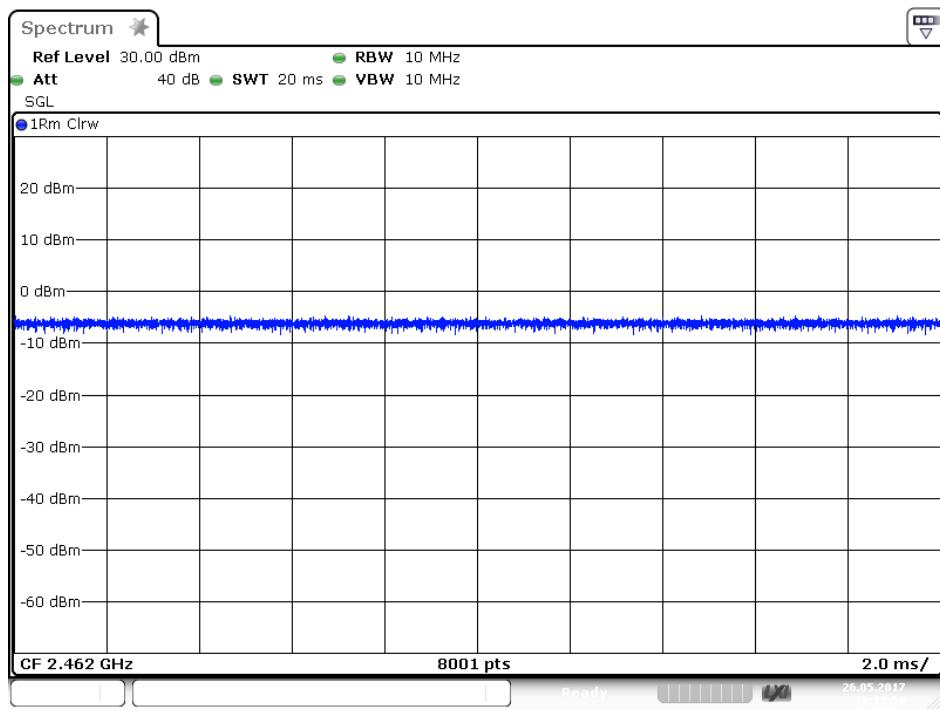
## 802.11n Channel Low 2412MHz (20MHz)



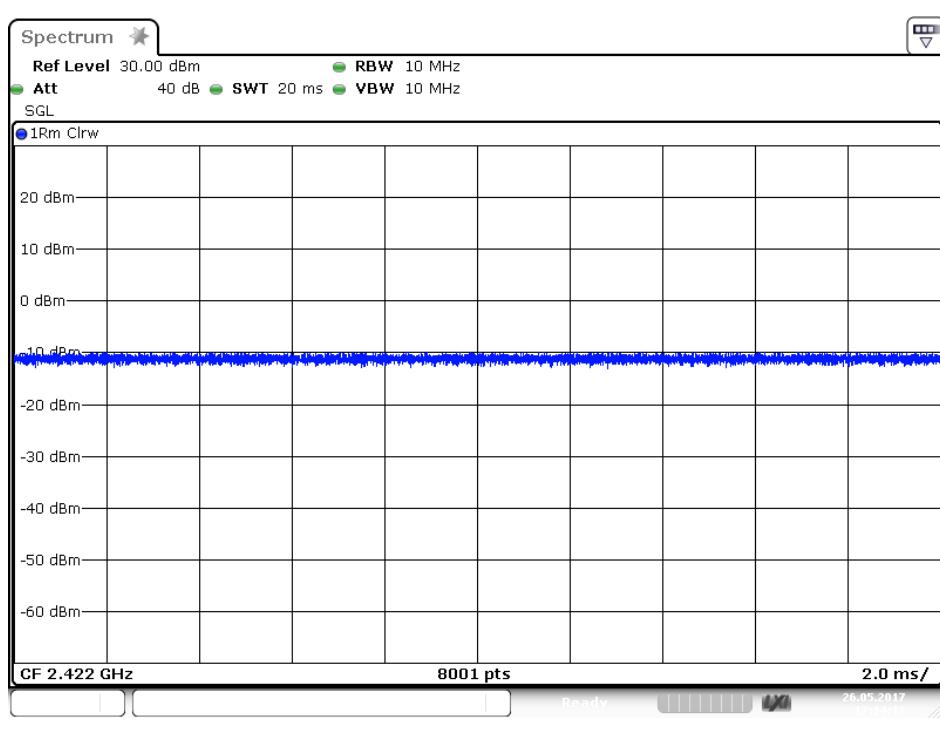
## 802.11n Channel Middle 2437MHz(20MHz)



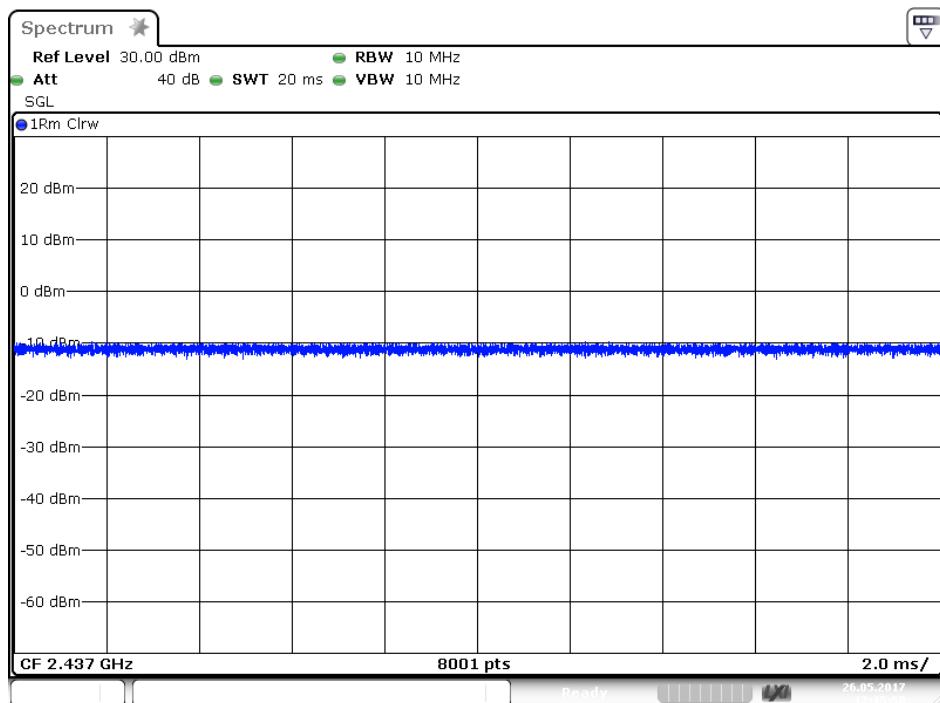
## 802.11n Channel High 2462MHz(20MHz)



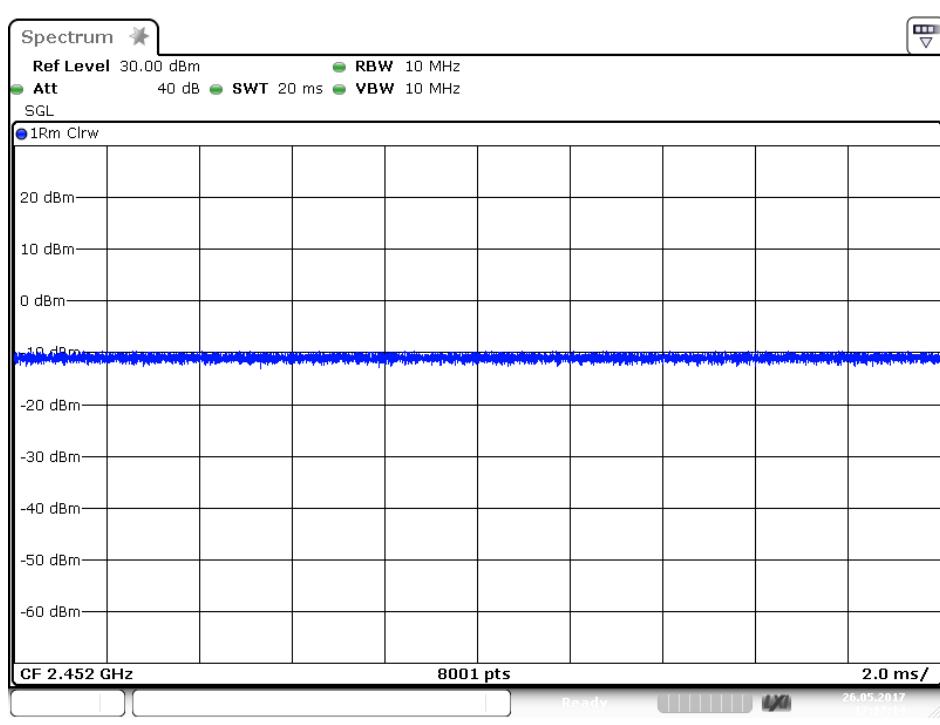
## 802.11n Channel Low 2422MHz (40MHz)



## 802.11n Channel Middle 2437MHz(40MHz)



## 802.11n Channel High 2452MHz(40MHz)



## 8. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER

### 8.1. Block Diagram of Test Setup



### 8.2. The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

### 8.3. EUT Configuration on Measurement

The equipment is installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 8.4. Operating Condition of EUT

8.4.1. Setup the EUT and simulator as shown as Section 8.1.

8.4.2. Turn on the power of all equipment.

8.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

### 8.5. Test Procedure

8.5.1. The EUT was tested according to DTS test procedure of Apr 05, 2017 KDB5580 74 D01 DTS Meas Guidance v04 for compliance to FCC 47CFR 15.247 requirements.

8.5.2. The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.3. Set RBW = 1-5% of the OBW, not to exceed 1 MHz, VBW  $\geq$  3 x RBW, Sweep time = auto, Set span to at least 1.5 times the OBW, Detector = RMS.

8.5.4. Measurement the Maximum conducted (average) output power.

## 8.6. Test Result

Final power= Ave output power+10log(1/ duty cycle)

The test was performed with 802.11b						
Channel	Frequency (MHz)	Ave output power (dBm)	10log(1/ duty cycle)	Final power (dBm)	Final power (mW)	Limits dBm / W
Low	2412	14.80	0	14.80	30.20	30 dBm / 1 W
Middle	2437	15.29	0	15.29	33.81	30 dBm / 1 W
High	2462	15.47	0	15.47	35.24	30 dBm / 1 W

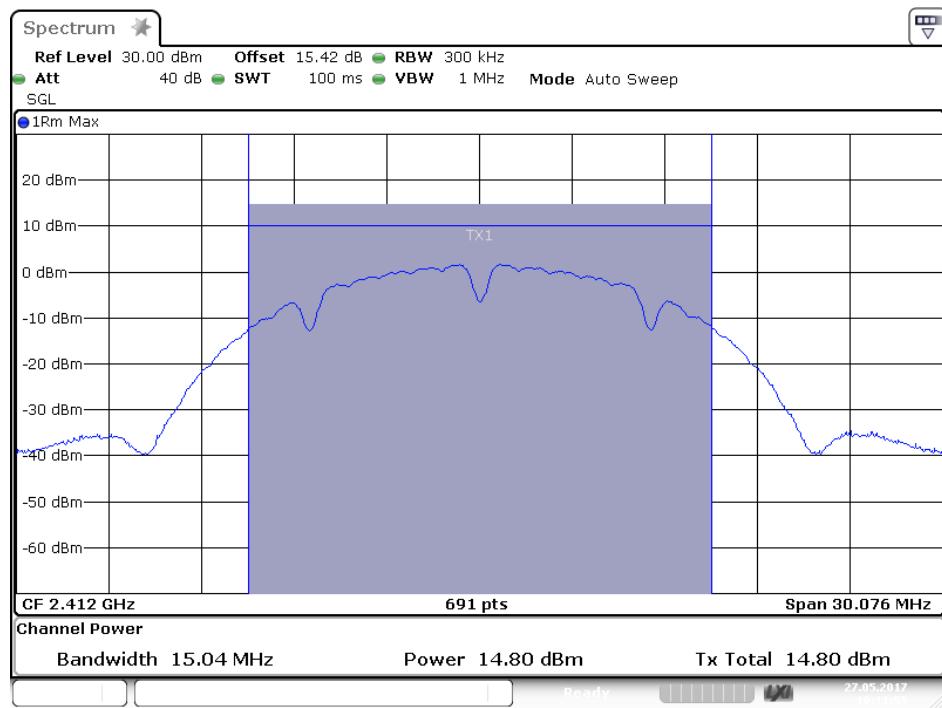
The test was performed with 802.11g						
Channel	Frequency (MHz)	Ave output power (dBm)	10log(1/ duty cycle)	Final power (dBm)	Final power (mW)	Limits dBm / W
Low	2412	10.67	0	10.67	11.67	30 dBm / 1 W
Middle	2437	11.16	0	11.16	13.06	30 dBm / 1 W
High	2462	11.15	0	11.15	13.03	30 dBm / 1 W

The test was performed with 802.11n (20MHz)						
Channel	Frequency (MHz)	Ave output power (dBm)	10log(1/ duty cycle)	Final power (dBm)	Final power (mW)	Limits dBm / W
Low	2412	10.67	0	10.67	11.67	30 dBm / 1 W
Middle	2437	11.12	0	11.12	12.94	30 dBm / 1 W
High	2462	11.30	0	11.30	13.49	30 dBm / 1 W

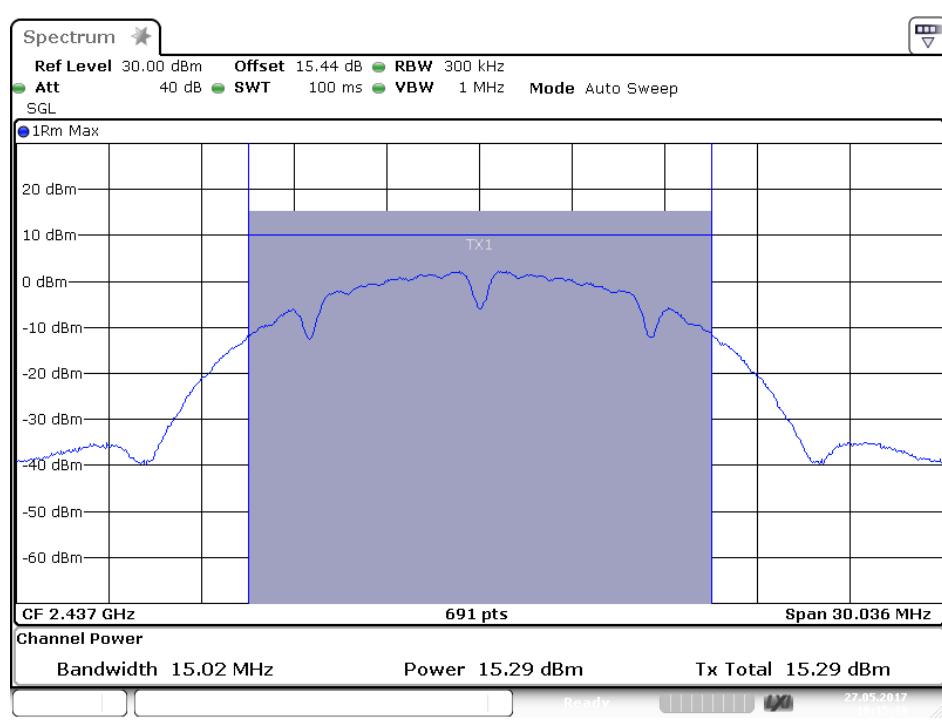
The test was performed with 802.11n (40MHz)						
Channel	Frequency (MHz)	Ave output power (dBm)	10log(1/ duty cycle)	Final power (dBm)	Final power (mW)	Limits dBm / W
Low	2422	9.14	0	9.14	8.20	30 dBm / 1 W
Middle	2437	9.40	0	9.40	8.71	30 dBm / 1 W
High	2452	9.18	0	9.18	8.28	30 dBm / 1 W

The spectrum analyzer plots are attached as below.

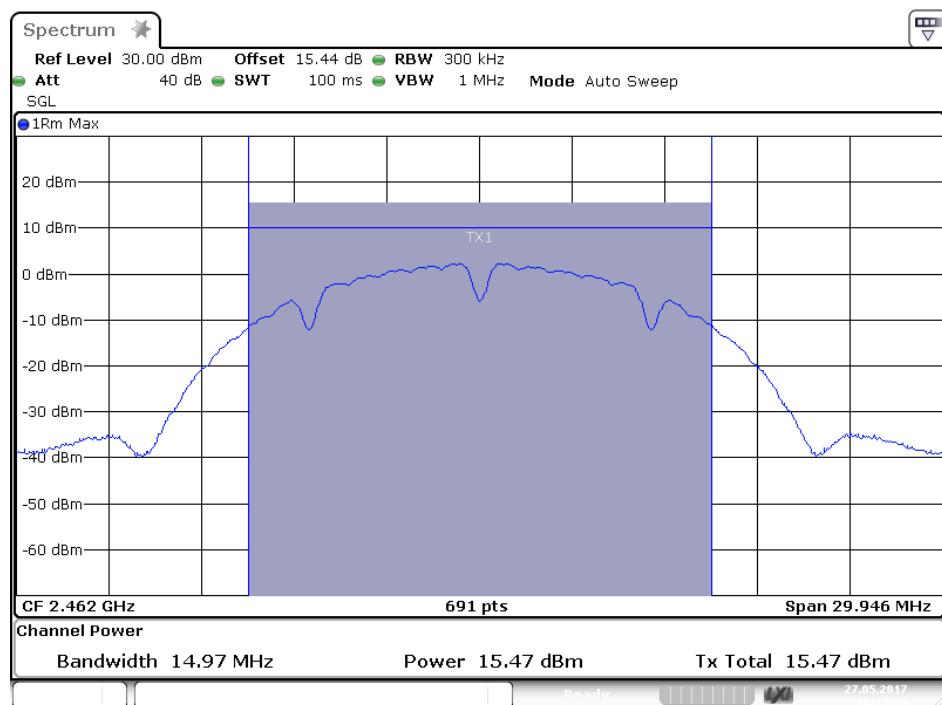
## 802.11b Channel Low 2412MHz



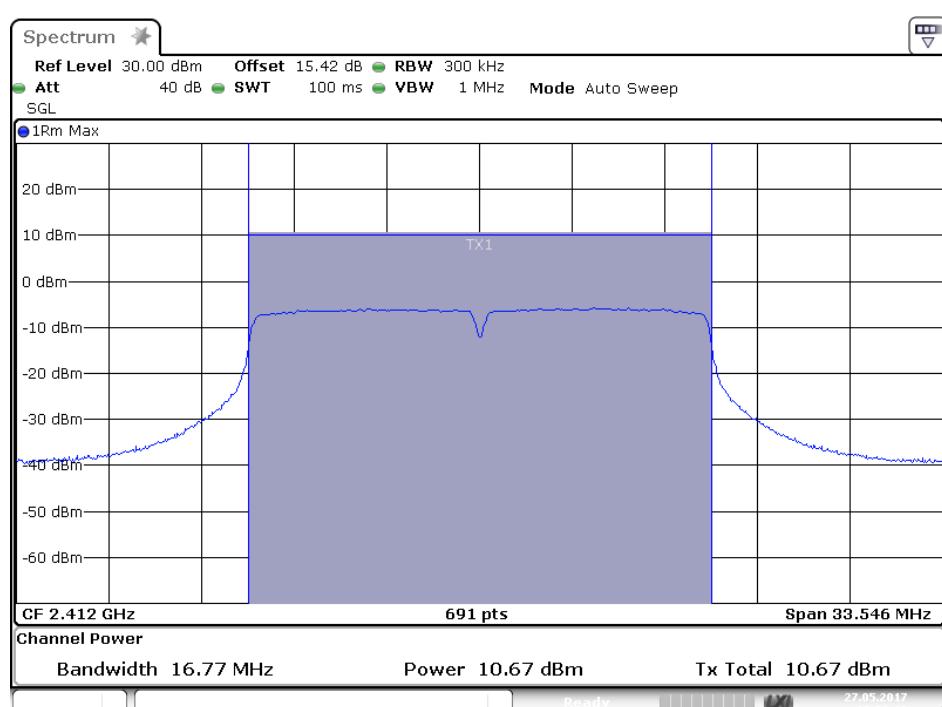
## 802.11b Channel Middle 2437MHz



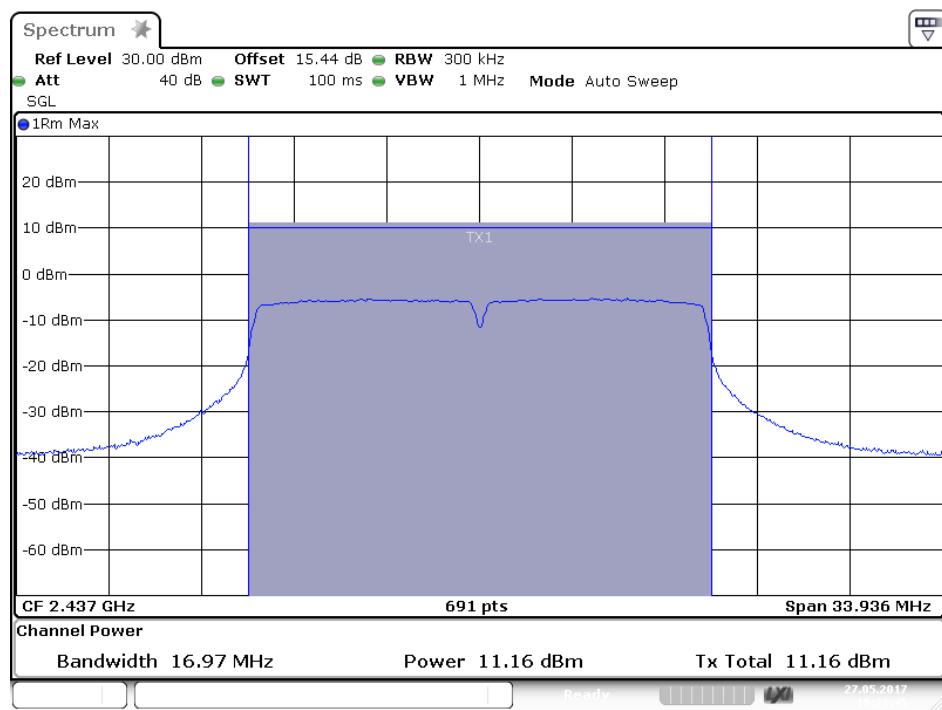
## 802.11b Channel High 2462MHz



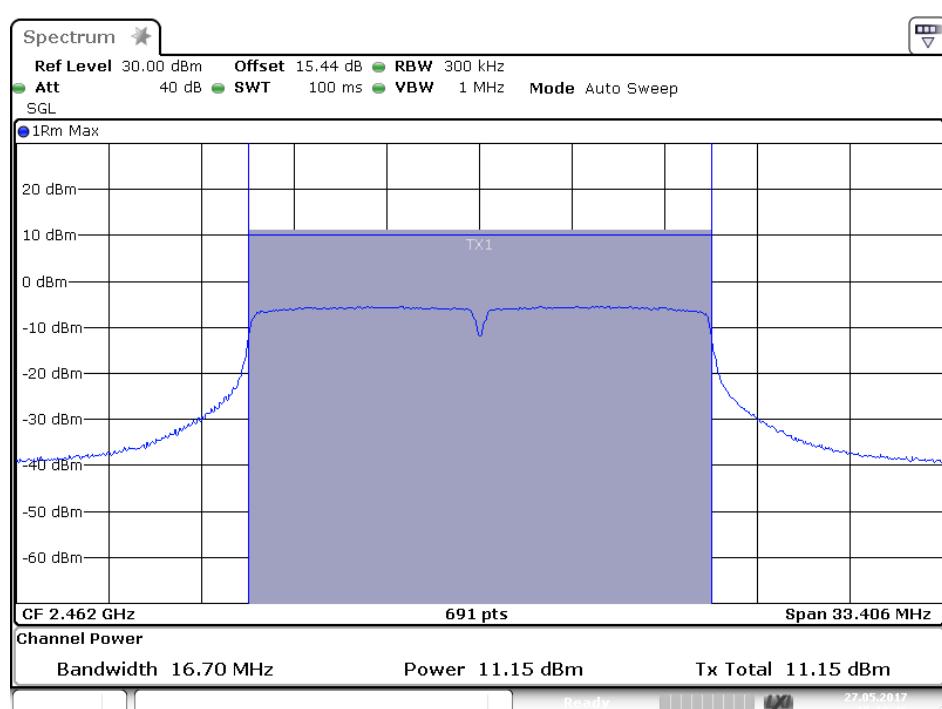
## 802.11g Channel Low 2412MHz



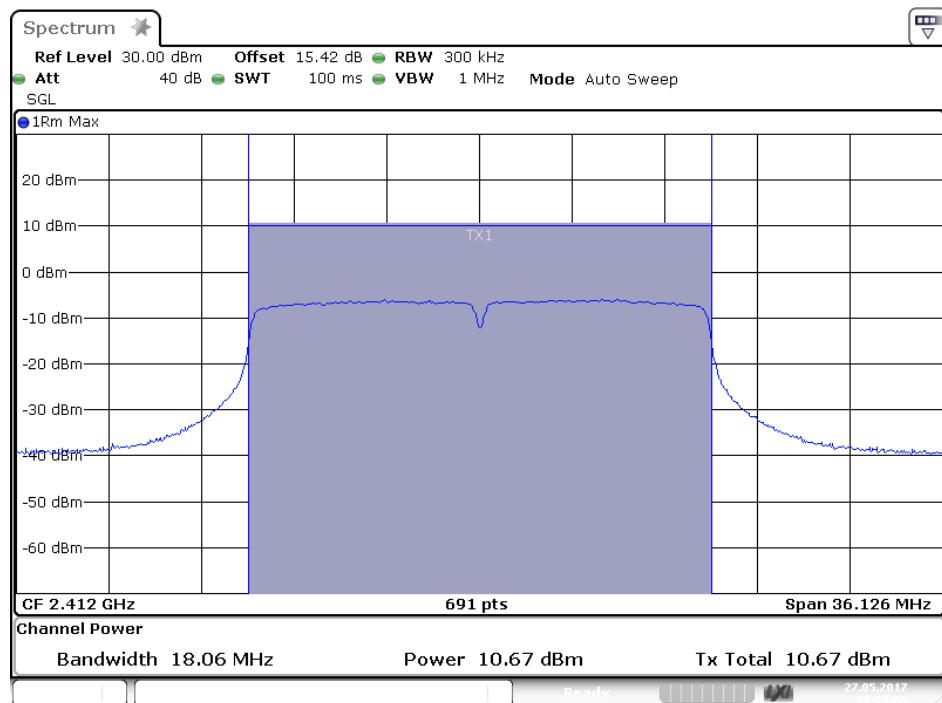
## 802.11g Channel Middle 2437MHz



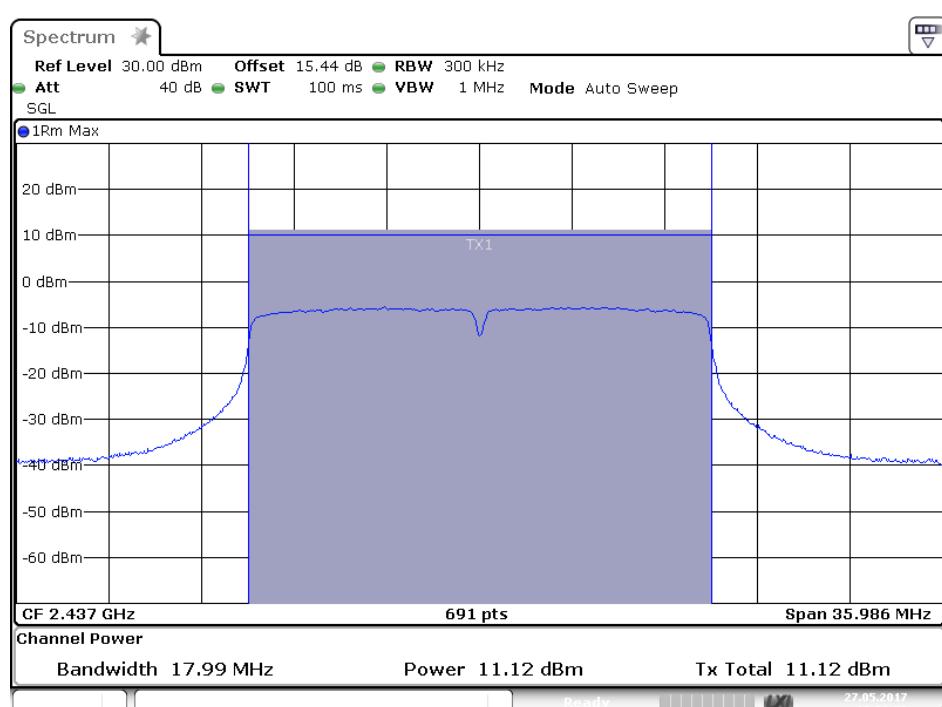
## 802.11g Channel High 2462MHz



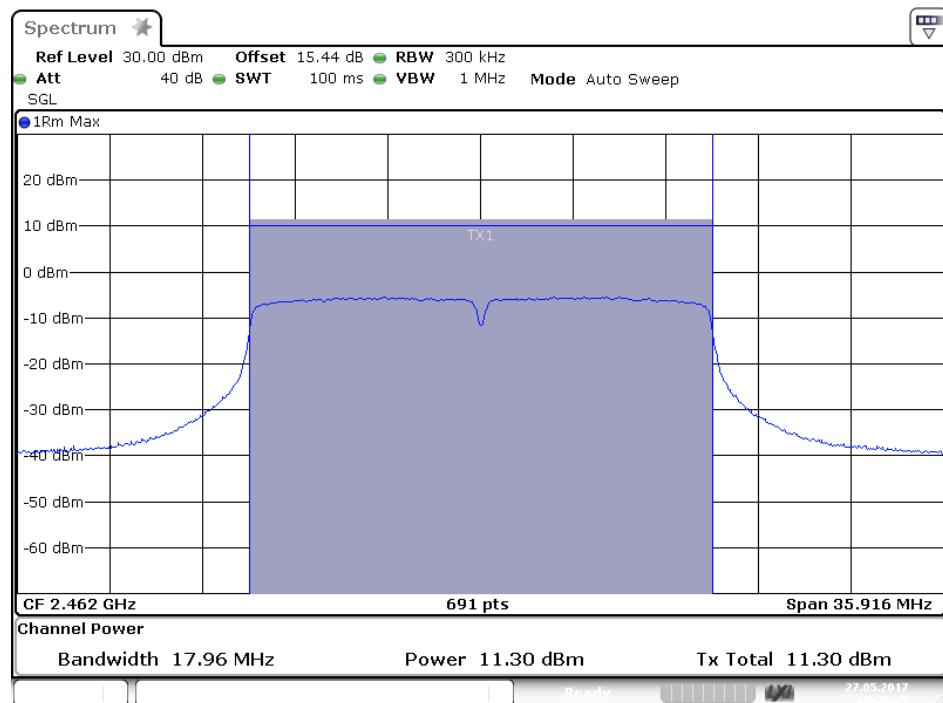
## 802.11n Channel Low 2412MHz (20MHz)



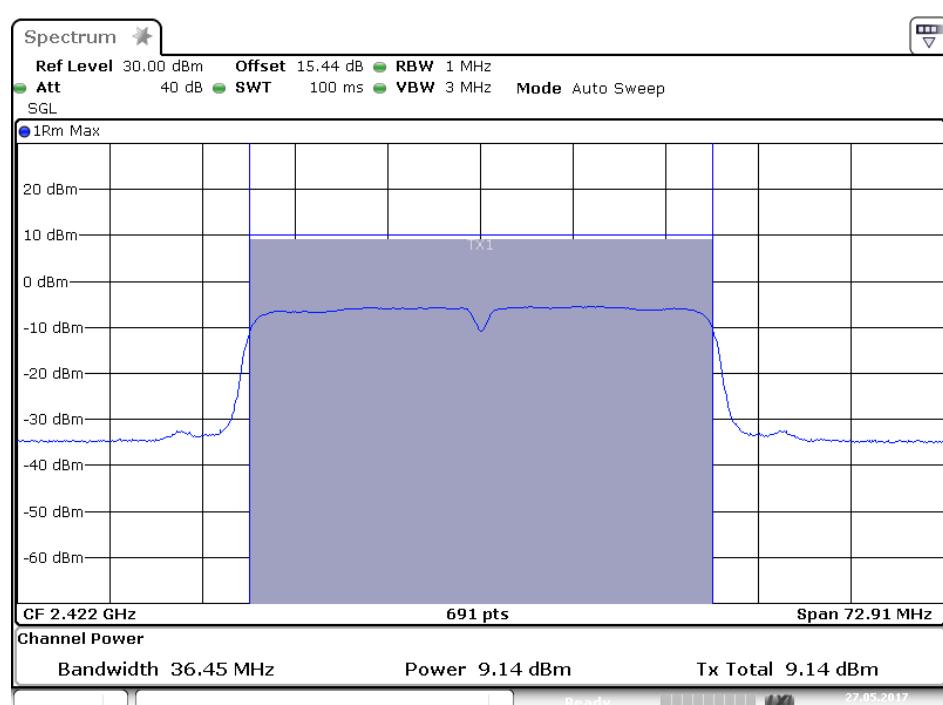
## 802.11n Channel Middle 2437MHz (20MHz)



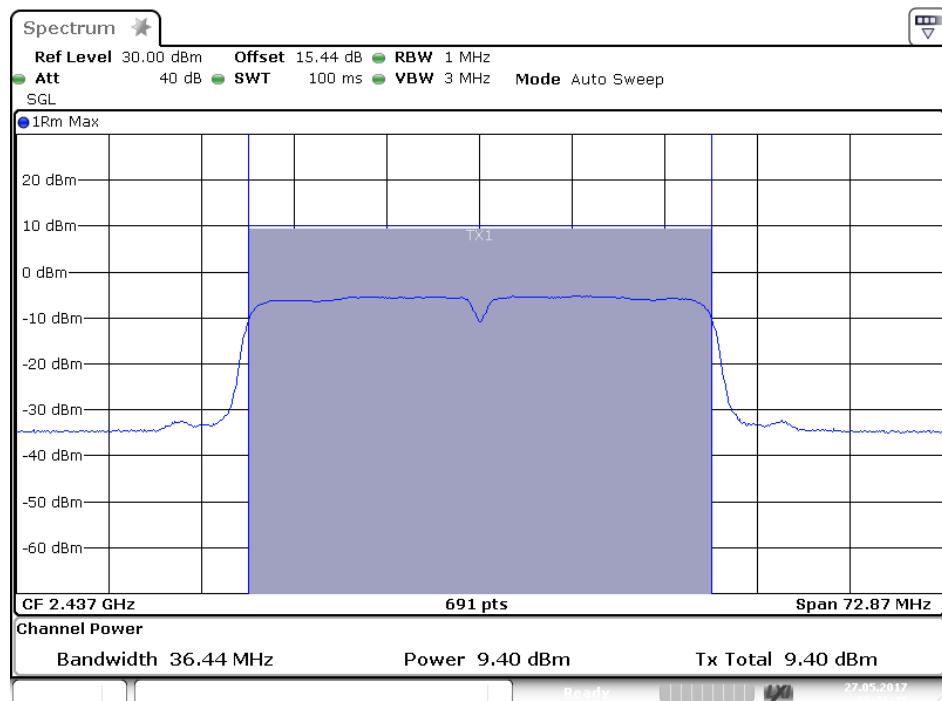
## 802.11n Channel High 2462MHz (20MHz)



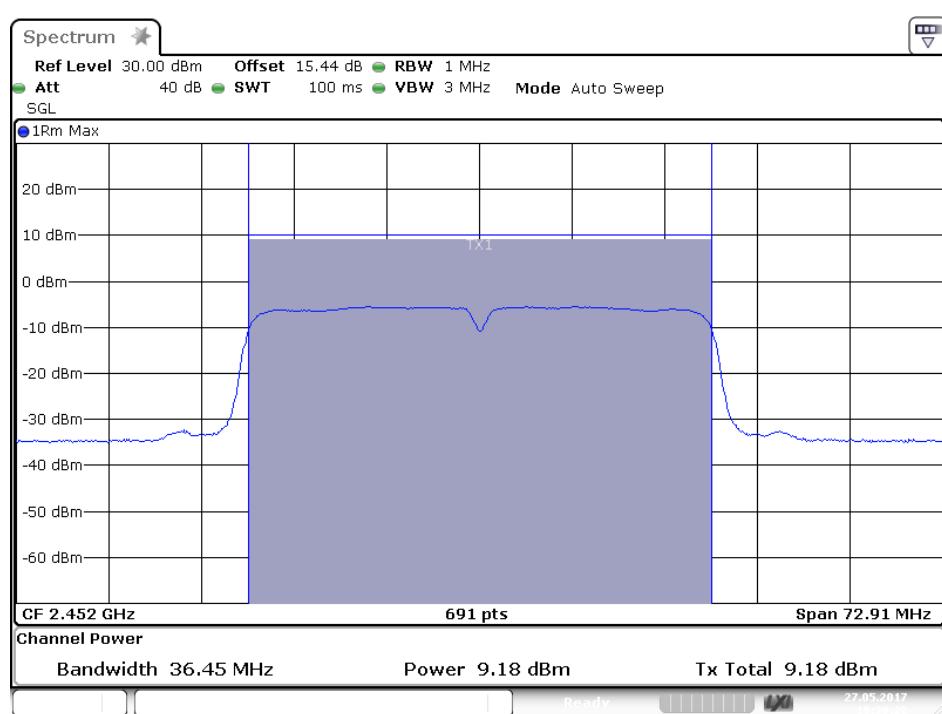
## 802.11n Channel Low 2422MHz (40MHz)



## 802.11n Channel Middle 2437MHz (40MHz)



## 802.11n Channel High 2452MHz (40MHz)



## 9. POWER SPECTRAL DENSITY MEASUREMENT

### 9.1. Block Diagram of Test Setup



### 9.2. The Requirement For Section 15.247(e)

Section 15.247(e): 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.

### 9.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 9.4. Operating Condition of EUT

9.4.1. Setup the EUT and simulator as shown as Section 9.1.

9.4.2. Turn on the power of all equipment.

9.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

### 9.5. Test Procedure

9.5.1. The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.2. Measurement Procedure AVGPSD-2:

This procedure is applicable when the EUT cannot be configured to transmit continuously(i.e., duty cycle<98%), and when sweep triggering/signal gating cannot be used to measure only when the EUT is transmitting at its maximum power control level, and when the transmission duty is constant(i.e., duty cycle variations are less than  $\pm 2\%$ ):

Measure the duty cycle(x) of the transmitter output signal as described in Section 6.0.

Set instrument center frequency to DTS channel center frequency.  
 Set span to at least  $1.5 \times \text{OBW}$ .  
 Set RBW to:  $3\text{kHz} \leq \text{RBW} \leq 100\text{kHz}$ .  
 Set  $\text{VBW} \geq 3 \times \text{RBW}$   
 Detector=power averaging(RMS) or sample detector(when RMS not available).  
 Ensure that the number of measurement points in sweep  $\geq 2 \times \text{span/RBW}$ .  
 Sweep time=auto couple.  
 Do not use sweep triggering. Allow sweep to “free run”.  
 Employ trace averaging(RMS) mode over a minimum of 100 traces.  
 Use the peak maker function to determine the maximum amplitude level.  
 Add  $10\log(1/x)$ , where x is the duty cycle measured in step(a, to the measured PSD to compute the average PSD during the actual transmission time.  
 If resultant value exceeds the limit, then reduce RBW(no less than 3kHz) and repeat(note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

## 9.6. Test Result

The test was performed with 802.11b

Channel	Frequency (MHz)	AVG Power Spectral Density (dBm)	$10\log(1/\text{duty cycle})$	Final Power Spectral Density (dBm)	Limits (dBm)
Low	2412	-16.55	0	-16.55	8 dBm
Middle	2437	-15.98	0	-15.98	8 dBm
High	2462	-15.84	0	-15.84	8 dBm

The test was performed with 802.11g

Channel	Frequency (MHz)	AVG Power Spectral Density (dBm)	$10\log(1/\text{duty cycle})$	Final Power Spectral Density (dBm)	Limits (dBm)
Low	2412	-19.19	0	-19.19	8 dBm
Middle	2437	-18.78	0	-18.78	8 dBm
High	2462	-18.66	0	-18.66	8 dBm

The test was performed with 802.11n (20MHz)

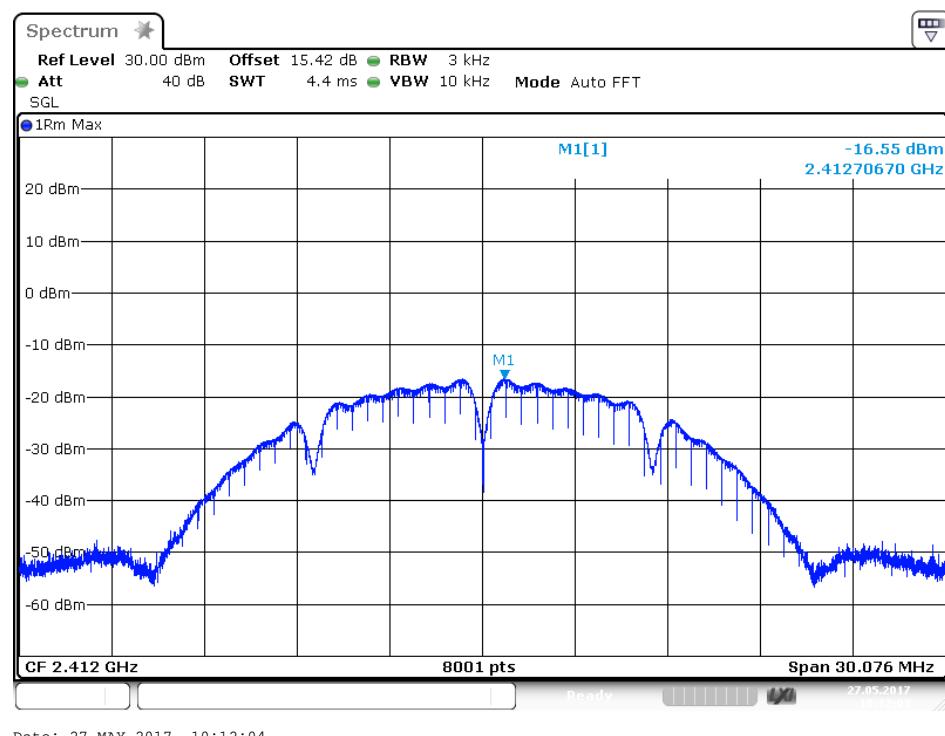
Channel	Frequency (MHz)	AVG Power Spectral Density (dBm)	$10\log(1/\text{duty cycle})$	Final Power Spectral Density (dBm)	Limits (dBm)
Low	2412	-18.88	0	-18.88	8 dBm
Middle	2437	-18.45	0	-18.45	8 dBm
High	2462	-18.55	0	-18.55	8 dBm

The test was performed with 802.11n (40MHz)

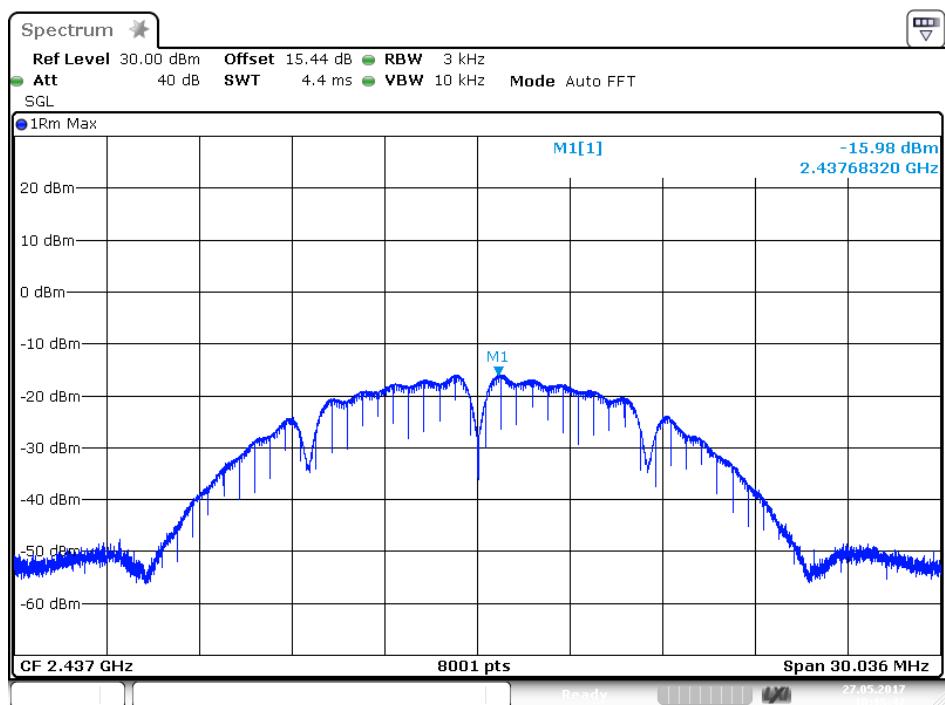
Channel	Frequency (MHz)	AVG Power Spectral Density (dBm)	10log(1/ duty cycle)	Final Power Spectral Density (dBm)	Limits (dBm)
Low	2422	-23.45	0	-23.45	8 dBm
Middle	2437	-23.09	0	-23.09	8 dBm
High	2452	-23.68	0	-23.68	8 dBm

The spectrum analyzer plots are attached as below.

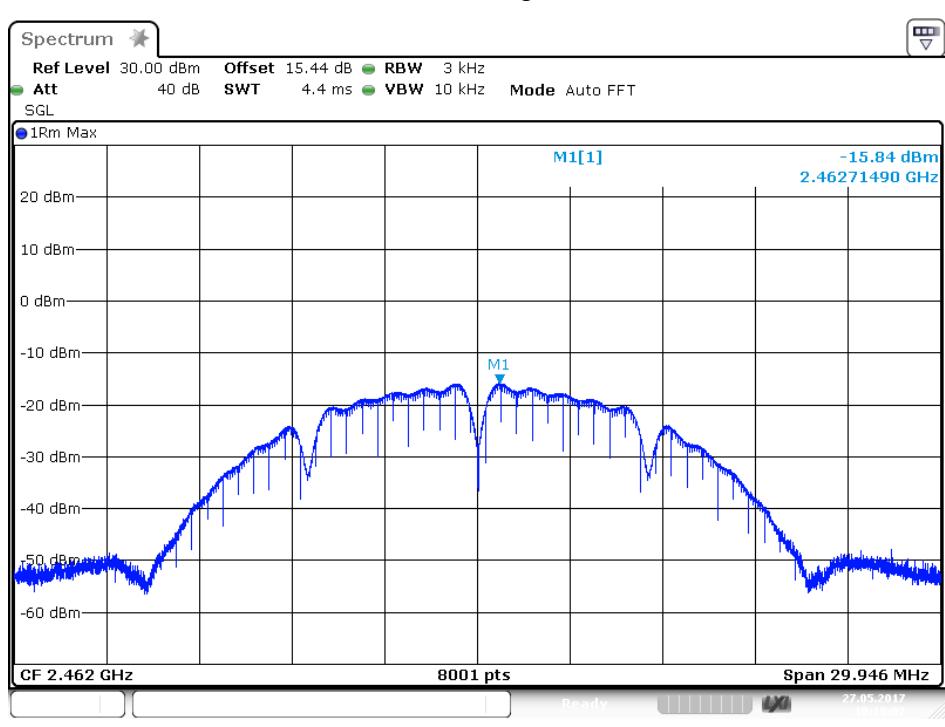
802.11b Channel Low 2412MHz



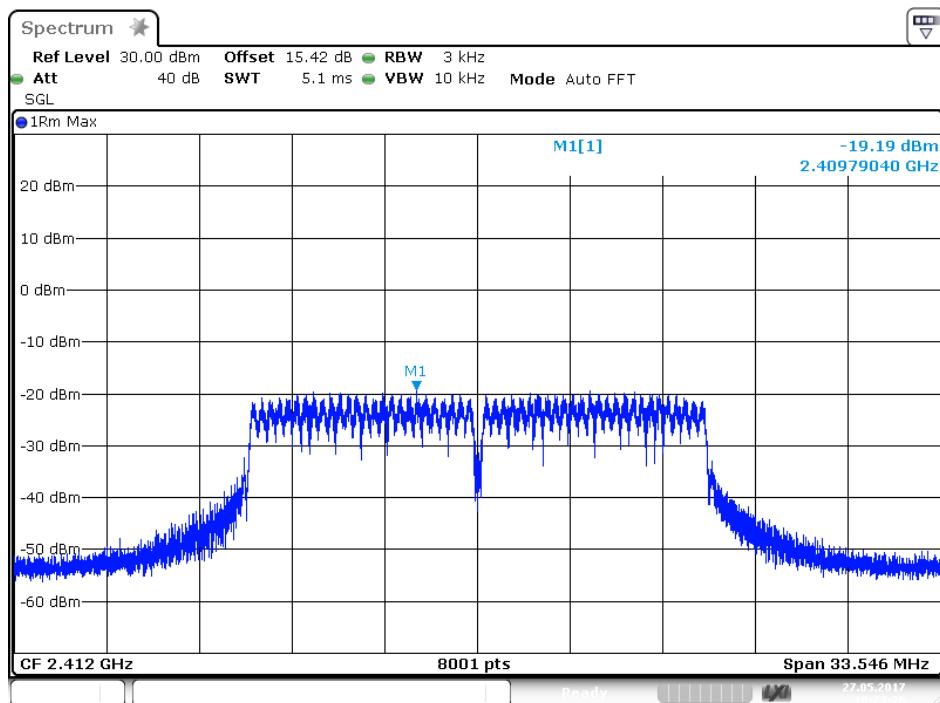
## 802.11b Channel Middle 2437MHz



## 802.11b Channel High 2462MHz

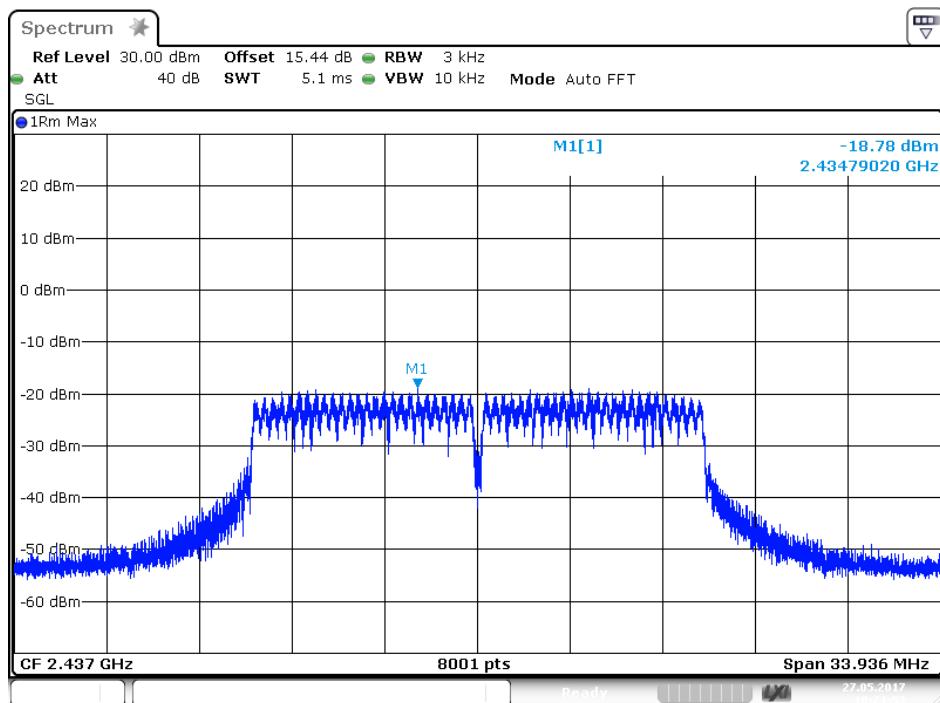


## 802.11g Channel Low 2412MHz



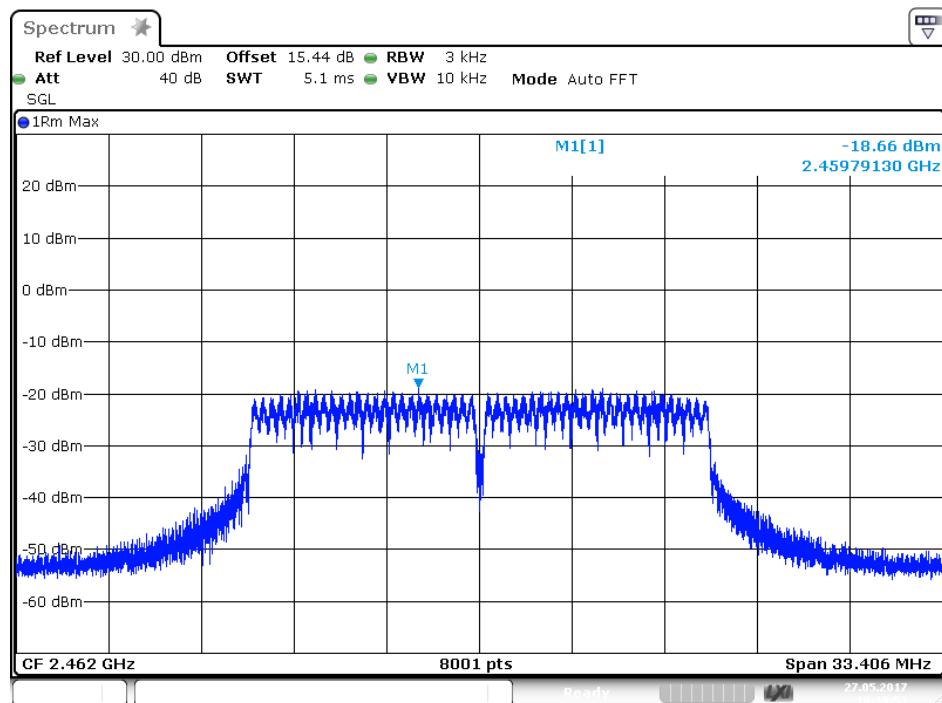
Date: 27.MAY.2017 10:23:26

## 802.11g Channel Middle 2437MHz

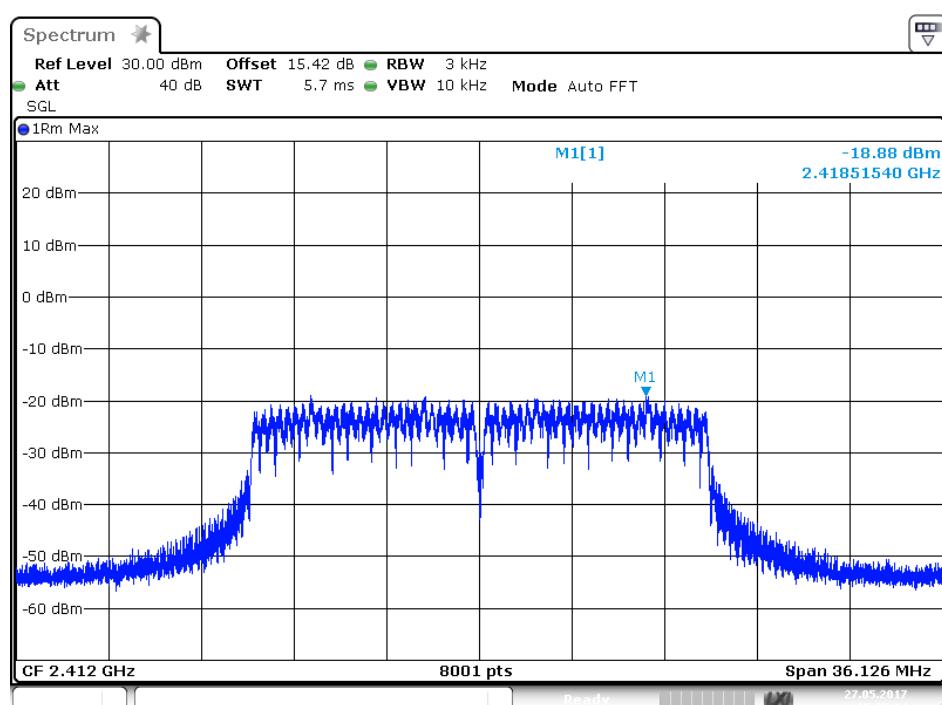


Date: 27.MAY.2017 10:21:53

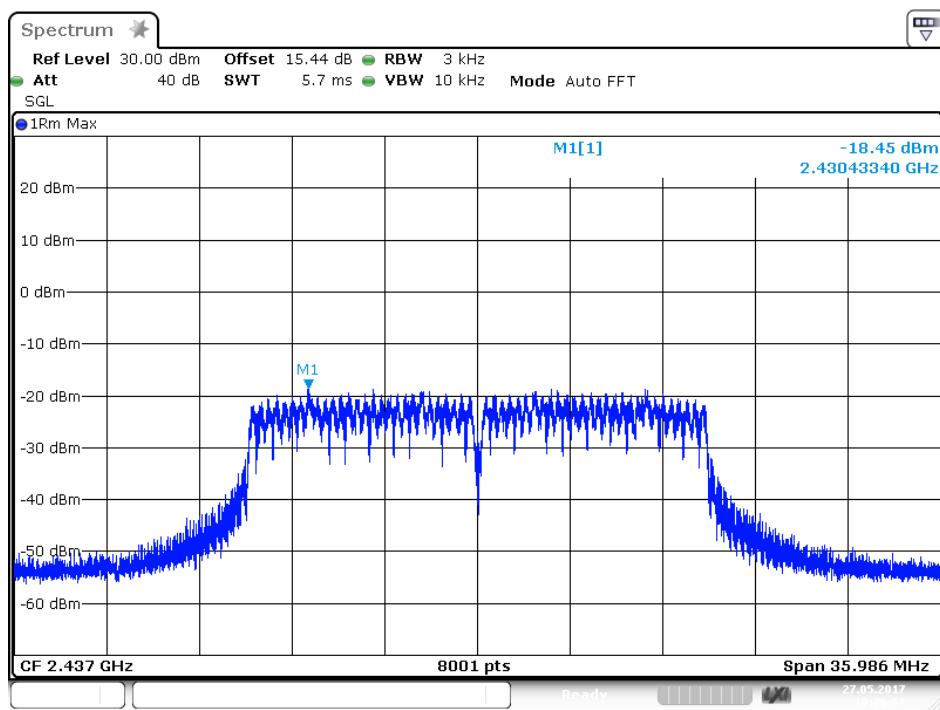
## 802.11g Channel High 2462MHz



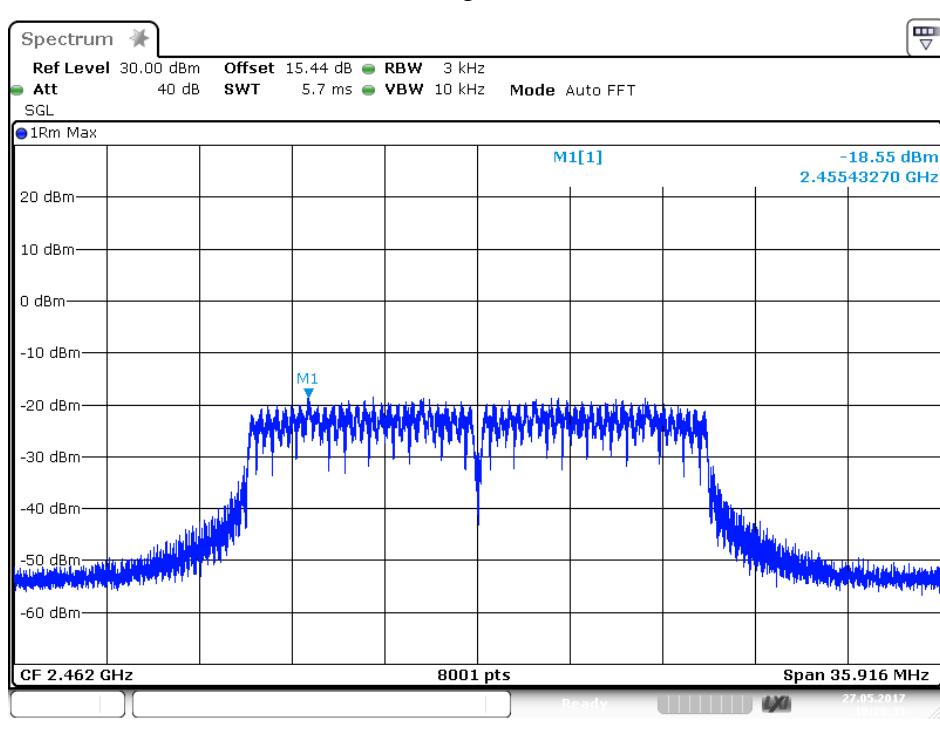
## 802.11n Channel Low 2412MHz (20MHz)



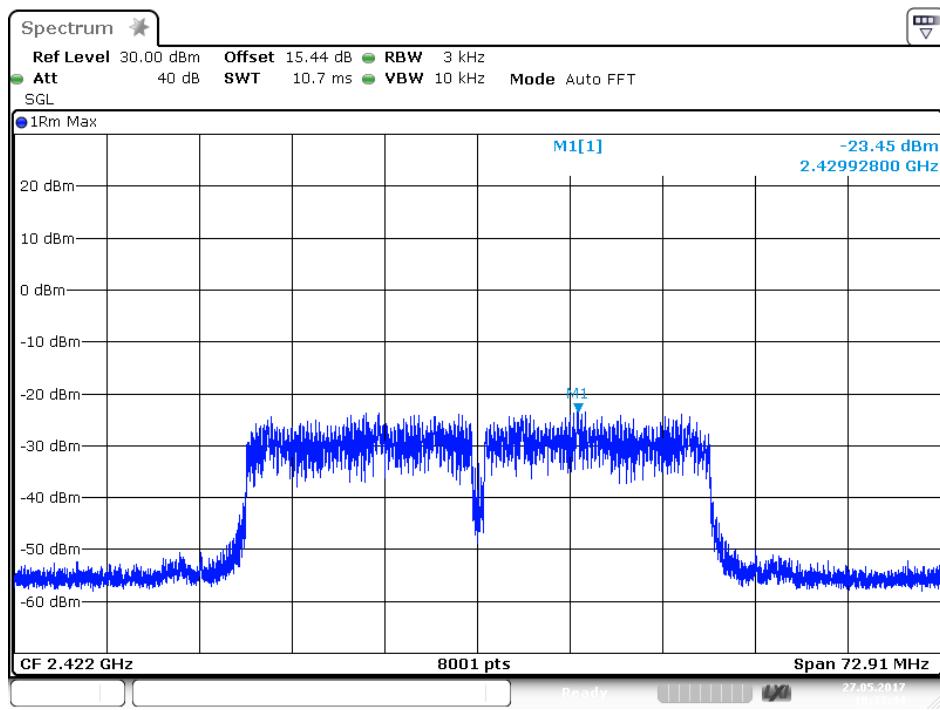
## 802.11n Channel Middle 2437MHz (20MHz)



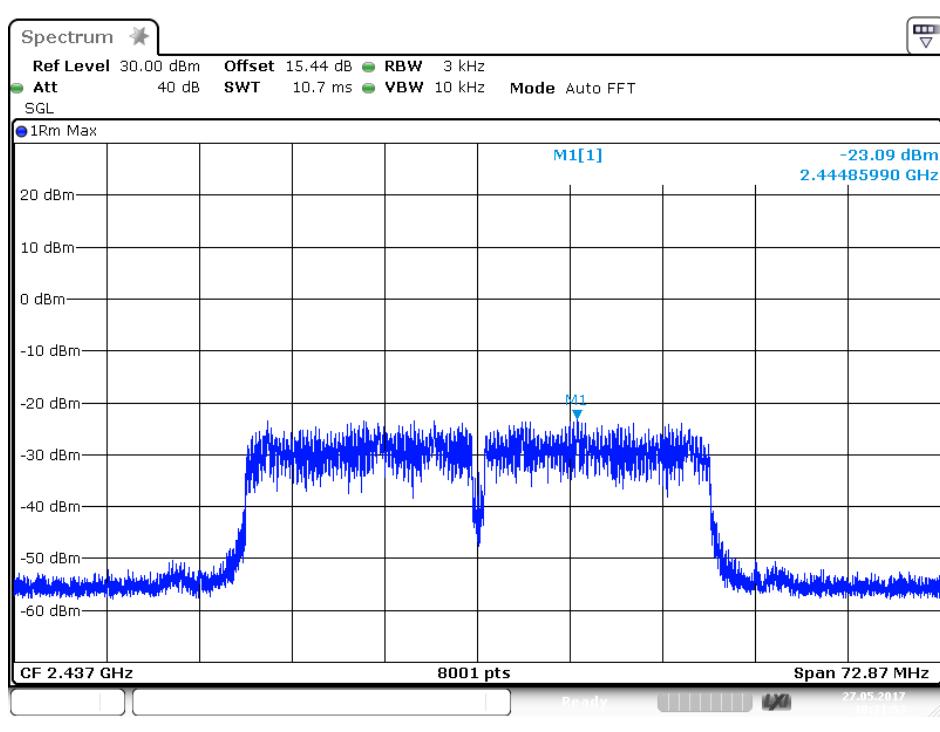
## 802.11n Channel High 2462MHz(20MHz)



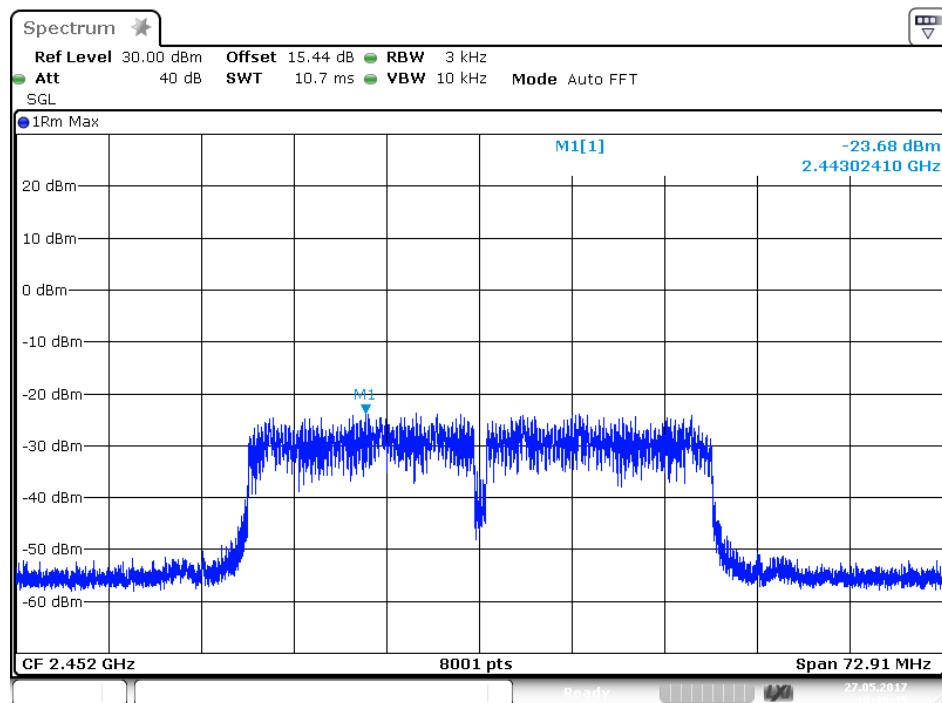
## 802.11n Channel Low 2422MHz (40MHz)



## 802.11n Channel Middle 2437MHz(40MHz)



## 802.11n Channel High 2452MHz(40MHz)



## 10. BAND EDGE COMPLIANCE TEST

### 10.1. Block Diagram of Test Setup



### 10.2. The Requirement For Section 15.247(d)

Section 15.247(d): 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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 10.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 10.4. Operating Condition of EUT

10.4.1. Setup the EUT and simulator as shown as Section 9.1.

10.4.2. Turn on the power of all equipment.

10.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHzMHz. We select 2412MHz, 2462MHz and 2422MHz, 2452MHz TX frequency to transmit.

### 10.5. Test Procedure

Conducted Band Edge:

10.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.

10.5.2. Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

Radiate Band Edge:

10.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

10.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

10.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

10.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

10.5.7. RBW=1MHz, VBW=1MHz

10.5.8. The band edges was measured and recorded.

## 10.6. Test Result

The test was performed with 802.11b

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2400	39.45	> 20dBc
2483.5	45.19	> 20dBc

The test was performed with 802.11g

Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2400	34.94	> 20dBc
2483.5	35.06	> 20dBc

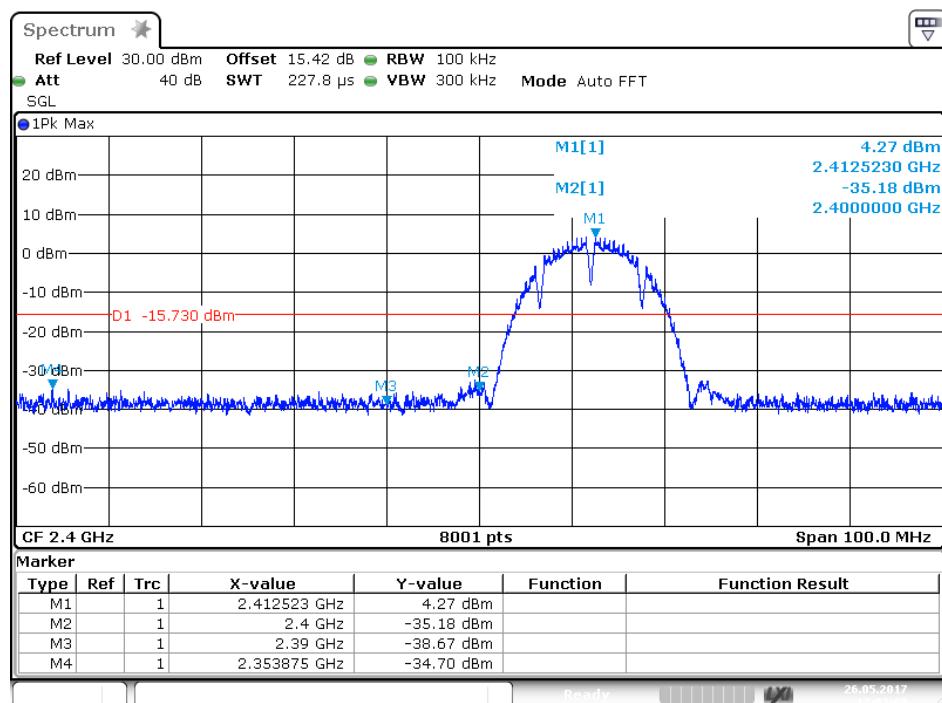
The test was performed with 802.11n (20MHz)

34.94	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
35.06	31.03	> 20dBc
2483.5	38.55	> 20dBc

The test was performed with 802.11n (40MHz)

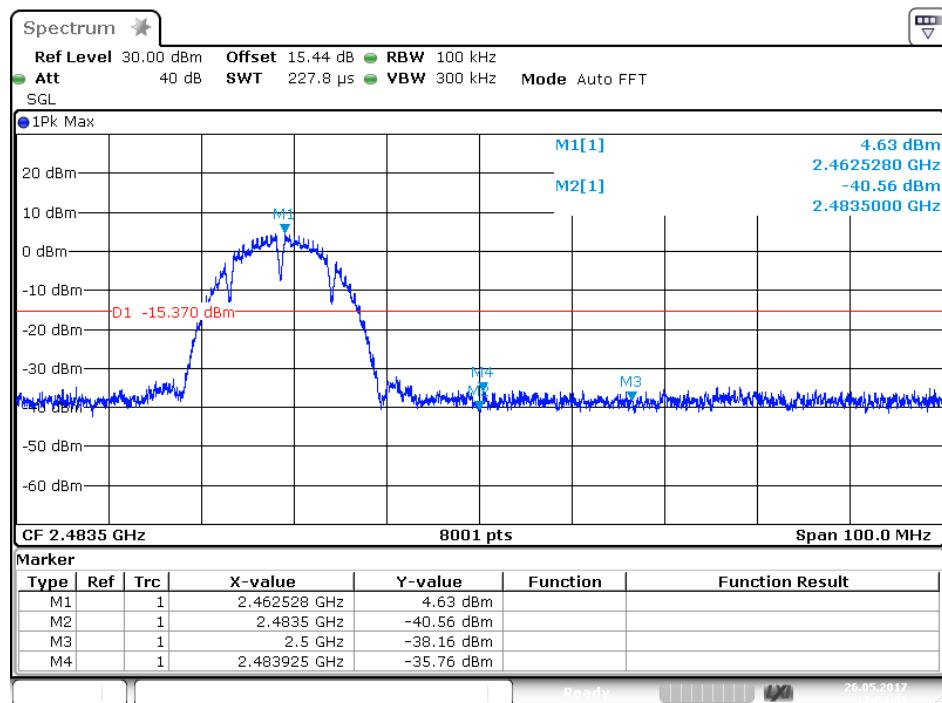
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2400	31.40	> 20dBc
2483.5	32.46	> 20dBc

## 802.11b Channel Low 2412MHz



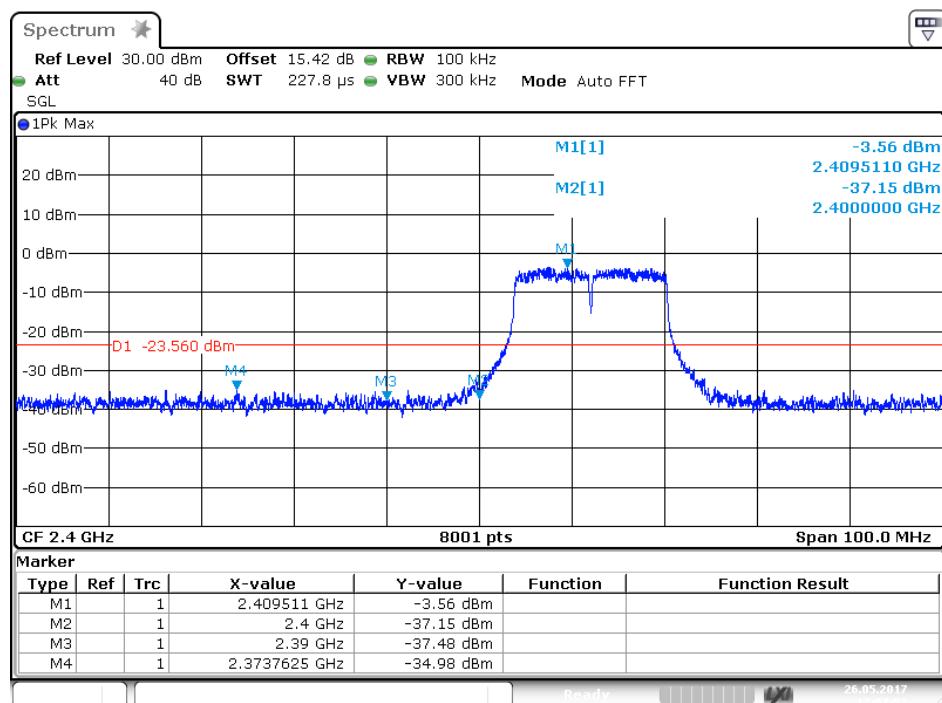
Date: 26.MAY.2017 17:02:09

## 802.11b Channel High 2462MHz



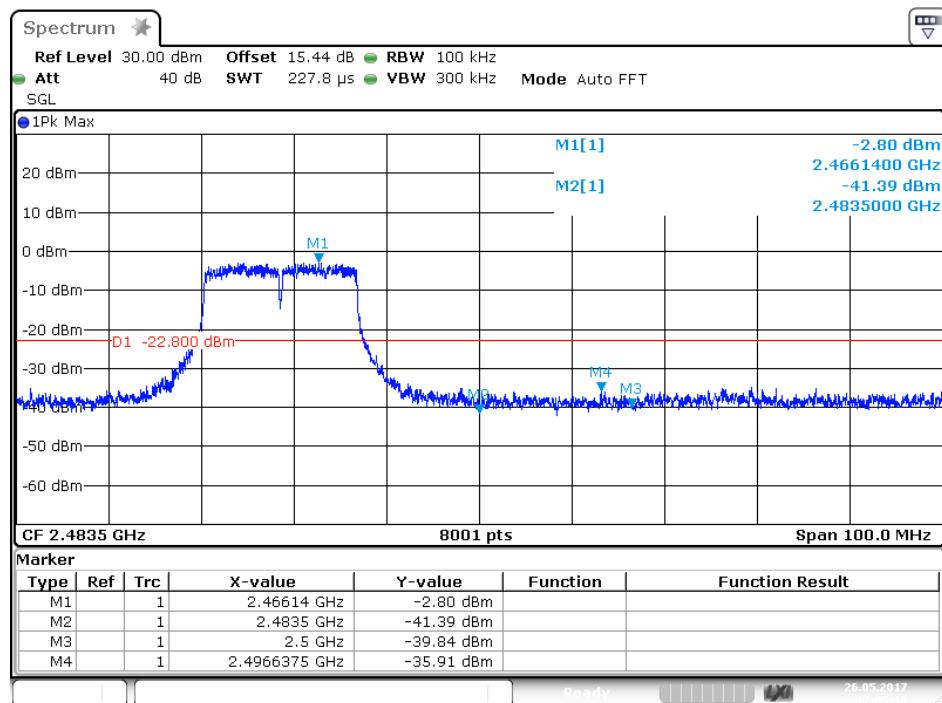
Date: 26.MAY.2017 17:04:03

## 802.11g Channel Low 2412MHz



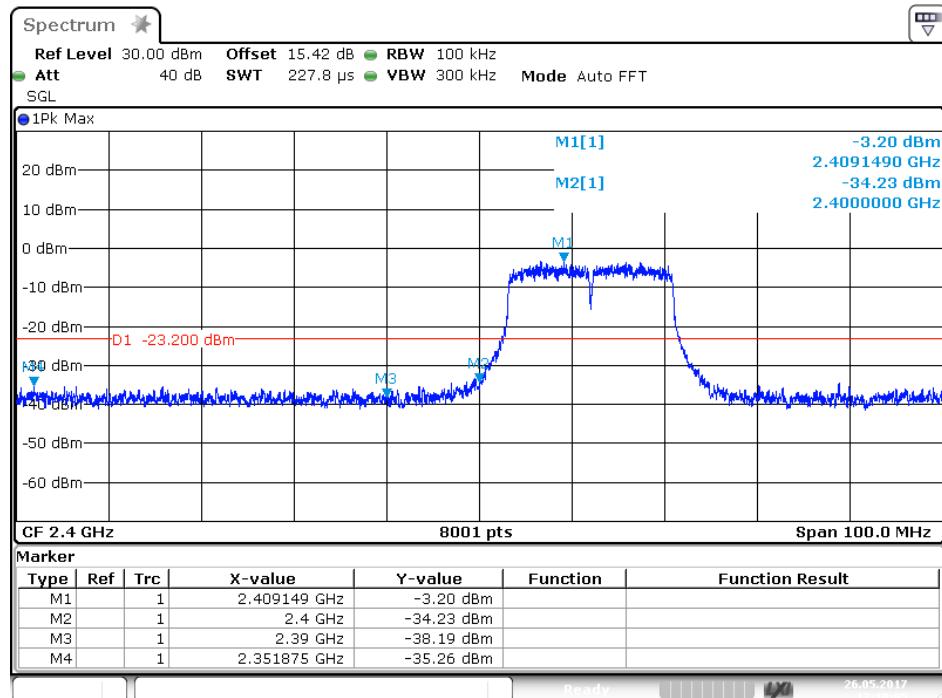
Date: 26.MAY.2017 17:07:53

## 802.11g Channel High 2462MHz



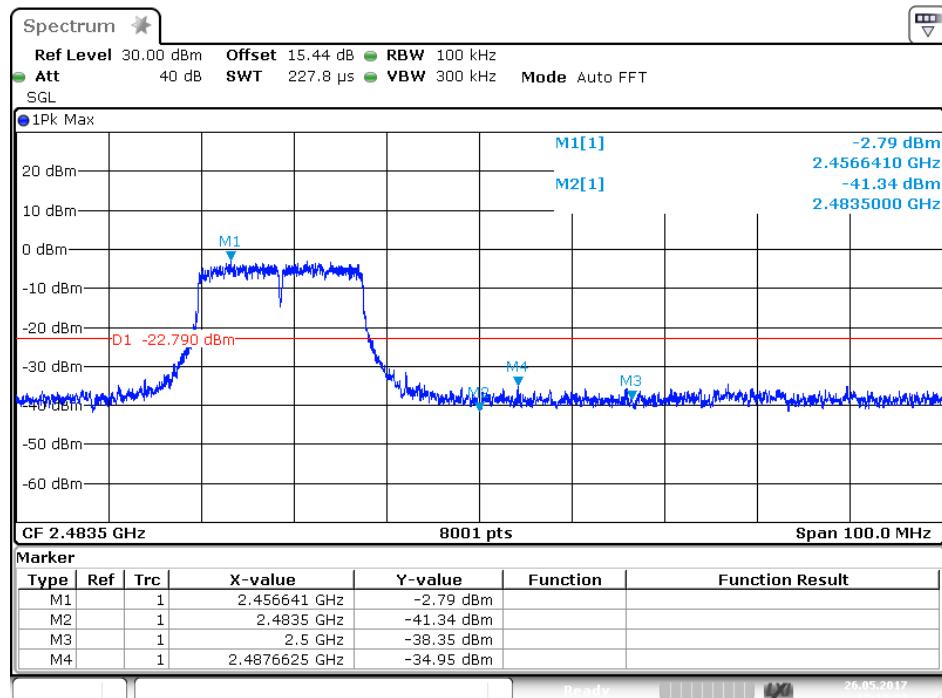
Date: 26.MAY.2017 17:05:13

## 802.11n Channel Low 2412MHz (20MHz)



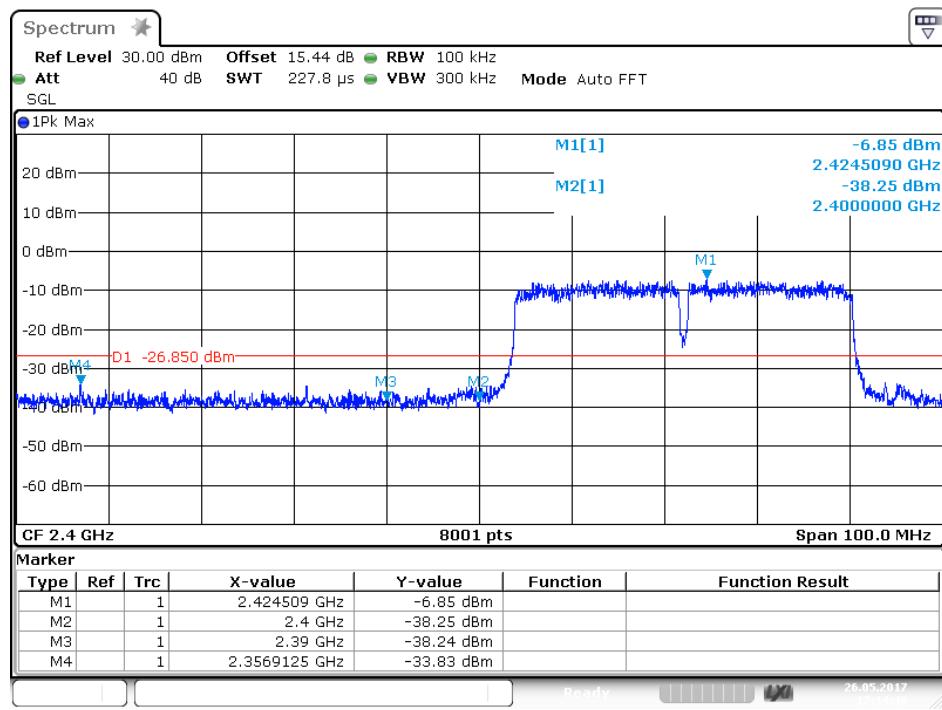
Date: 26.MAY.2017 17:10:05

## 802.11n Channel High 2462MHz (20MHz)



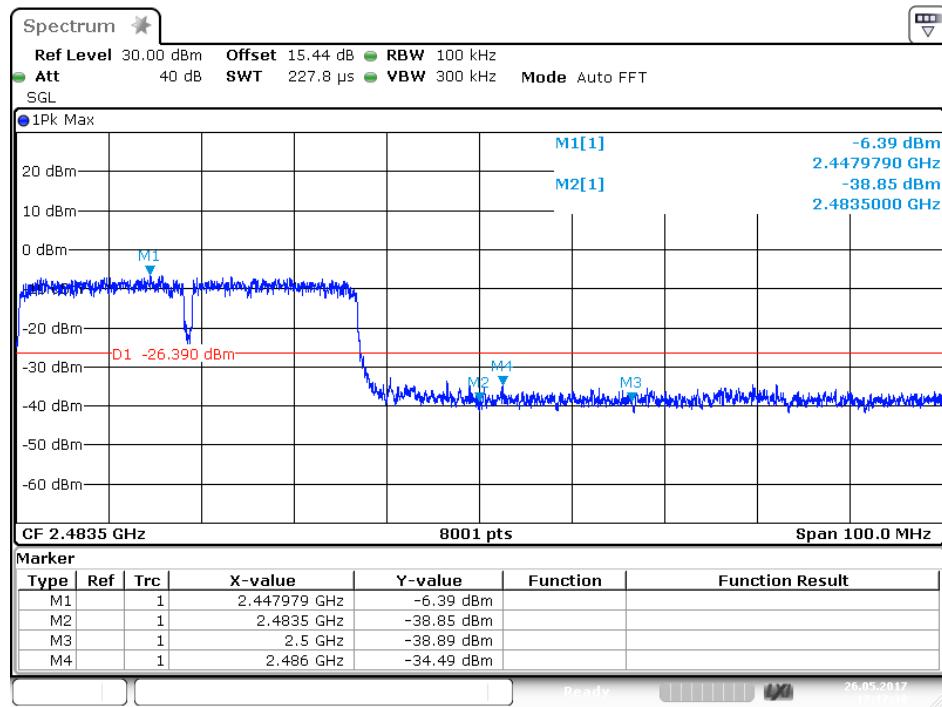
Date: 26.MAY.2017 17:12:23

## 802.11n Channel Low 2422MHz (40MHz)



Date: 26.MAY.2017 17:14:40

## 802.11n Channel High 2452MHz (40MHz)



Date: 26.MAY.2017 17:17:38

## Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Test Procedure:

The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

Let the EUT work in TX modes then measure it.

We select 2412MHz, 2462MHz TX frequency to transmit(802.11b/g/n20 mode).

We select 2422MHz, 2452MHz TX frequency to transmit(802.11n40 mode).

During the radiated emission test, the spectrum analyzer was set with the following configurations:

- 1.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
- 2.The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
- 3.All modes of operation were investigated and the worst-case emissions are reported.



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg.A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2016 #2044

Polarization: Horizontal

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp.( C)/Hum.(%) 23 C / 48 %

Time: 9/10/14

EUT: K1 SMARTHOME DIY KIT

Engineer Signature: star

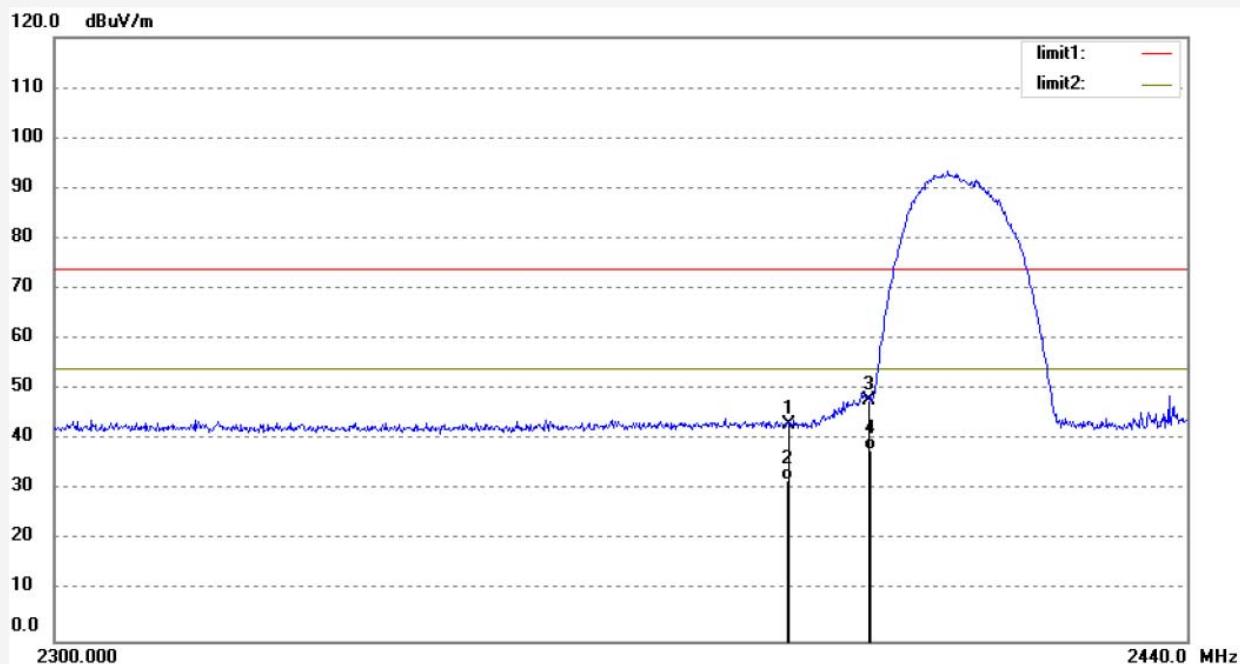
Mode: TX Channel 1(802.11b)

Distance: 3m

Model: K1

Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	6.26	36.73	42.99	74.00	-31.01	peak			
2	2390.000	-4.68	36.73	32.05	54.00	-21.95	AVG			
3	2400.000	10.99	36.78	47.77	74.00	-26.23	peak			
4	2400.000	1.27	36.78	38.05	54.00	-15.95	AVG			

Job No.: star2016 #2045

Standard: FCC PK

Test item: Radiation Test

Temp. ( C )/Hum.(%) 23 C / 48 %

EUT: K1 SMARTHOME DIY KIT

Mode: TX Channel 1(802.11b)

Model: K1

Manufacturer: Chuango

Polarization: Vertical

Power Source: AC 120V/60Hz

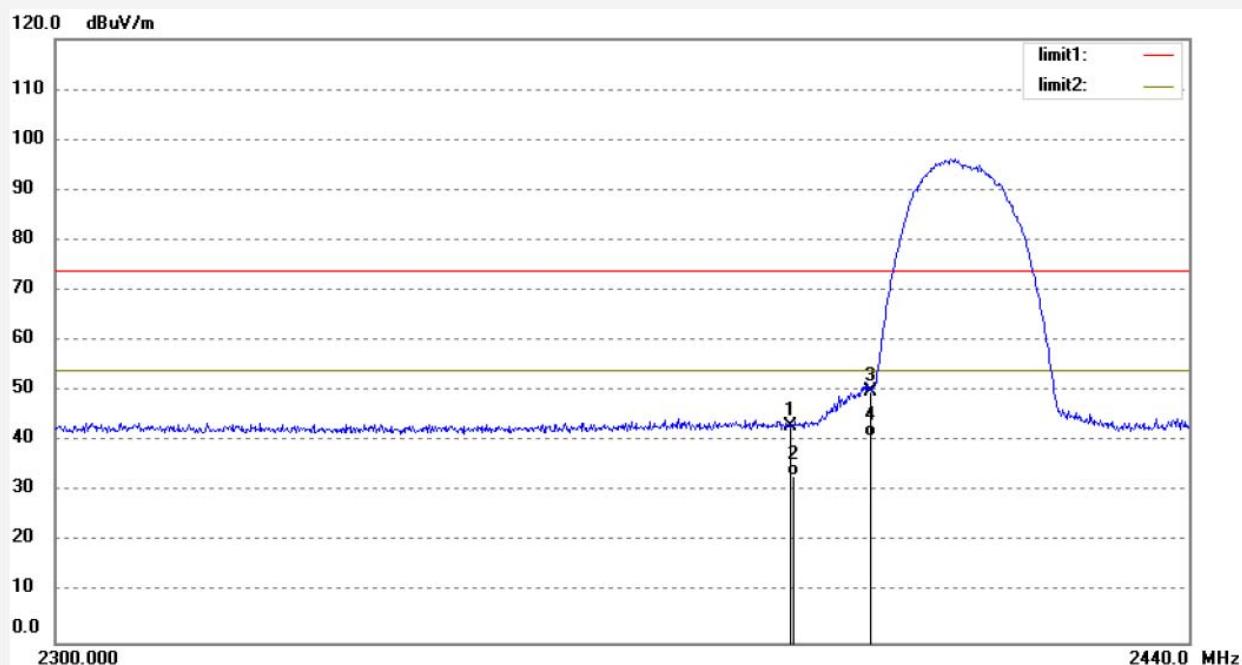
Date: 2017/05/18

Time: 9/11/14

Engineer Signature: star

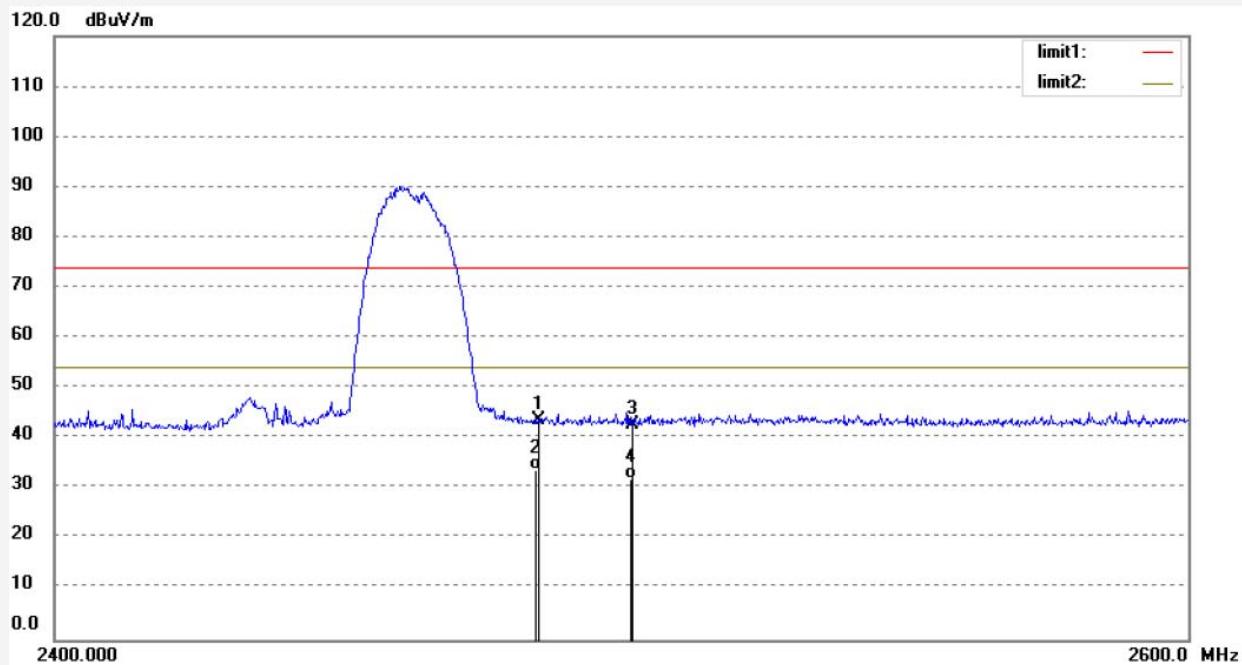
Distance: 3m

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	6.33	36.73	43.06	74.00	-30.94	peak			
2	2390.000	-3.49	36.73	33.24	54.00	-20.76	AVG			
3	2400.000	13.24	36.78	50.02	74.00	-23.98	peak			
4	2400.000	4.27	36.78	41.05	54.00	-12.95	AVG			

Job No.:	star2016 #2043	Polarization:	Horizontal
Standard:	FCC PK	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2017/05/18
Temp. ( C)/Hum.(%)	23 C / 48 %	Time:	9/08/32
EUT:	K1 SMARTHOMA DIY KIT	Engineer Signature:	star
Mode:	TX Channel 11(802.11b)	Distance:	3m
Model:	K1		
Manufacturer:	Chuango		
Note:	Report No.:ATE20170747		



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	6.66	37.13	43.79	74.00	-30.21	peak			
2	2483.500	-3.27	37.13	33.86	54.00	-20.14	AVG			
3	2500.000	5.68	37.20	42.88	74.00	-31.12	peak			
4	2500.000	-5.28	37.20	31.92	54.00	-22.08	AVG			

Job No.: star2016 #2042

Polarization: Vertical

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp. ( C) /Hum.(%) 23 C / 48 %

Time: 9/07/33

EUT: K1 SMARTHOME DIY KIT

Engineer Signature: star

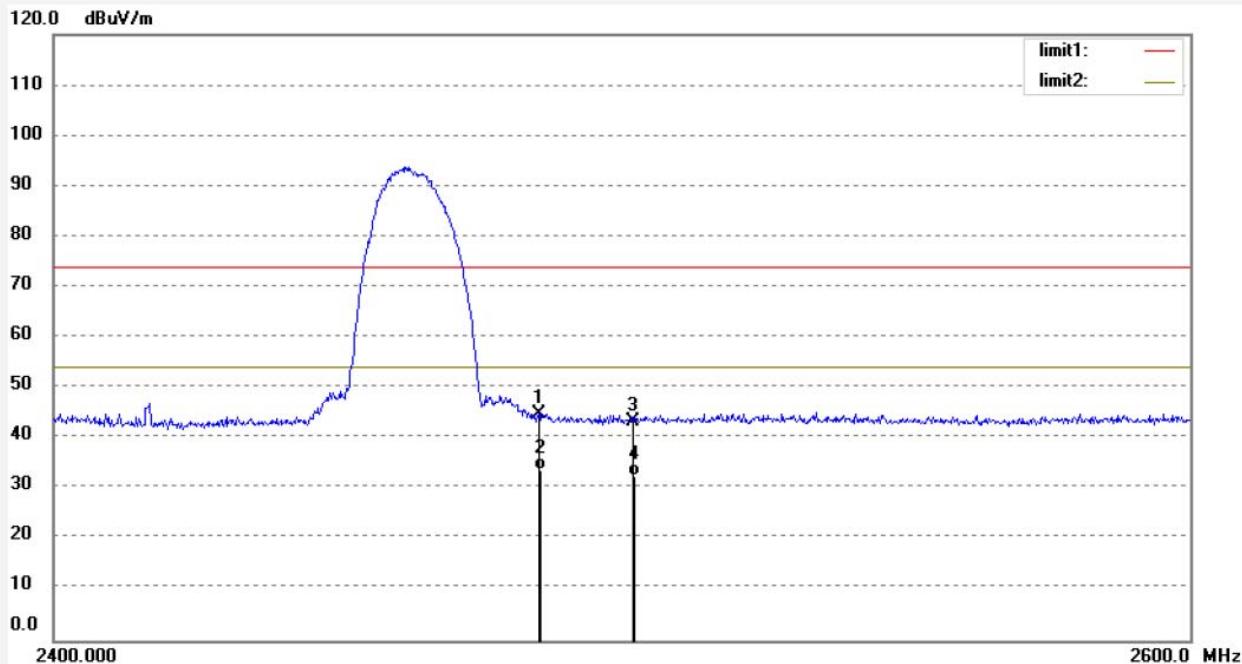
Mode: TX Channel 11(802.11b)

Distance: 3m

Model: K1

Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	7.65	37.13	44.78	74.00	-29.22	peak			
2	2483.500	-3.40	37.13	33.73	54.00	-20.27	AVG			
3	2500.000	6.04	37.20	43.24	74.00	-30.76	peak			
4	2500.000	-4.59	37.20	32.61	54.00	-21.39	AVG			



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: star2016 #2038

Polarization: Horizontal

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp.( C)/Hum.(%) 23 C / 48 %

Time: 8/58/43

EUT: K1 SMARTHOME DIY KIT

Engineer Signature: star

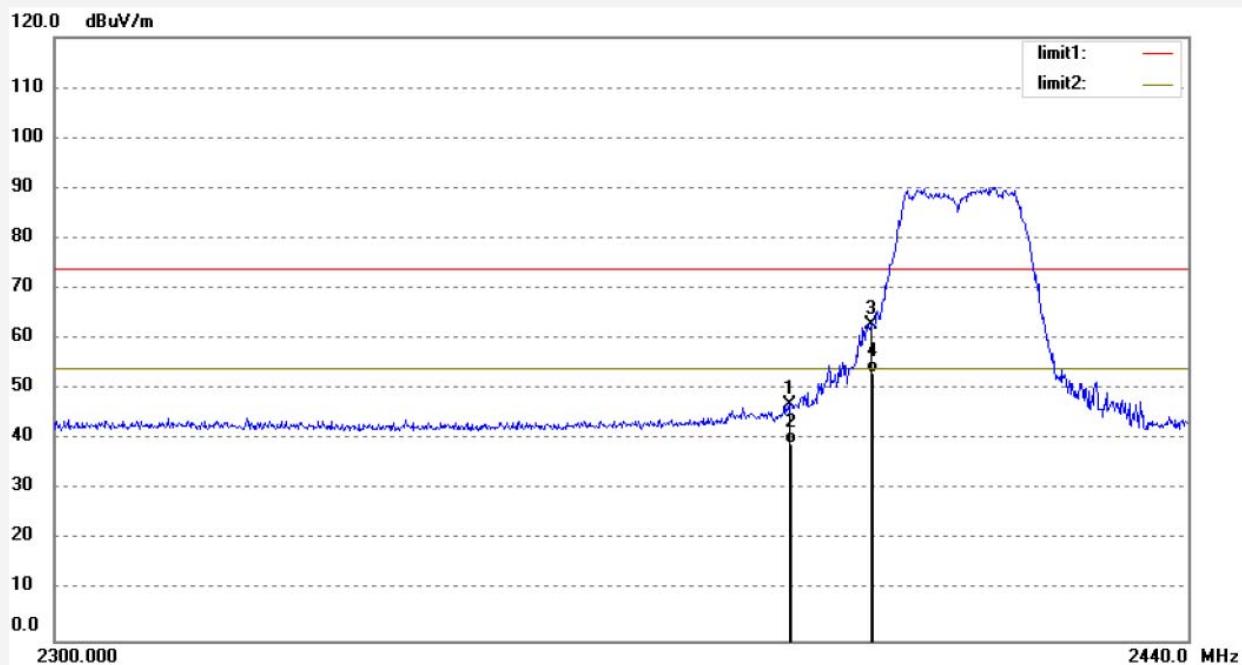
Mode: TX Channel 1(802.11g)

Distance: 3m

Model: K1

Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	10.32	36.73	47.05	74.00	-26.95	peak			
2	2390.000	2.39	36.73	39.12	54.00	-14.88	AVG			
3	2400.000	26.06	36.78	62.84	74.00	-11.16	peak			
4	2400.000	16.34	36.78	53.12	54.00	-0.88	AVG			

Job No.: star2016 #2037

Polarization: Vertical

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp. ( C)/Hum.(%) 23 C / 48 %

Time: 8/57/41

EUT: K1 SMARTHOMA DIY KIT

Engineer Signature: star

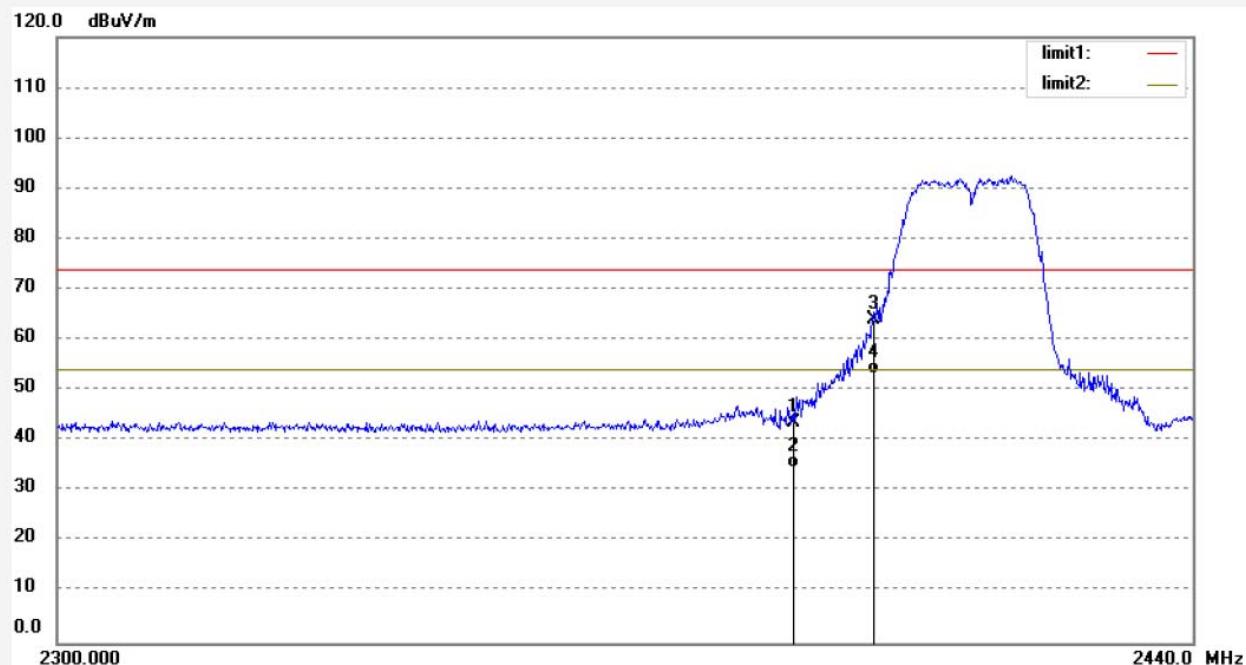
Mode: TX Channel 1(802.11g)

Distance: 3m

Model: K1

Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	6.88	36.73	43.61	74.00	-30.39	peak			
2	2390.000	-2.00	36.73	34.73	54.00	-19.27	AVG			
3	2400.000	27.35	36.78	64.13	74.00	-9.87	peak			
4	2400.000	16.47	36.78	53.25	54.00	-0.75	AVG			

Job No.: star2016 #2040

Polarization: Horizontal

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp.( C)/Hum.(%) 23 C / 48 %

Time: 9/03/09

EUT: K1 SMARTHOMER DIY KIT

Engineer Signature: star

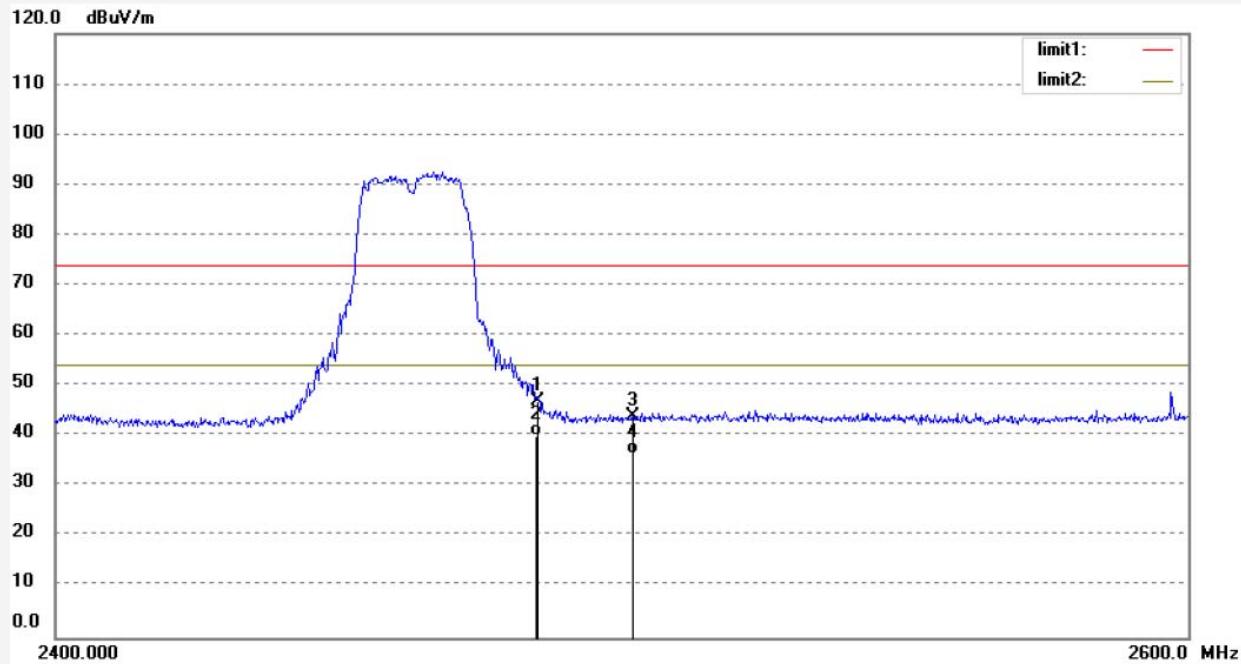
Mode: TX Channel 11(802.11g)

Distance: 3m

Model: K1

Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	9.88	37.13	47.01	74.00	-26.99	peak			
2	2483.500	2.81	37.13	39.94	54.00	-14.06	AVG			
3	2500.000	6.78	37.20	43.98	74.00	-30.02	peak			
4	2500.000	-0.83	37.20	36.37	54.00	-17.63	AVG			

Job No.: star2016 #2041

Standard: FCC PK

Test item: Radiation Test

Temp. ( C)/Hum.(%) 23 C / 48 %

EUT: K1 SMARTHOME DIY KIT

Mode: TX Channel 11(802.11g)

Model: K1

Manufacturer: Chuango

Polarization: Vertical

Power Source: AC 120V/60Hz

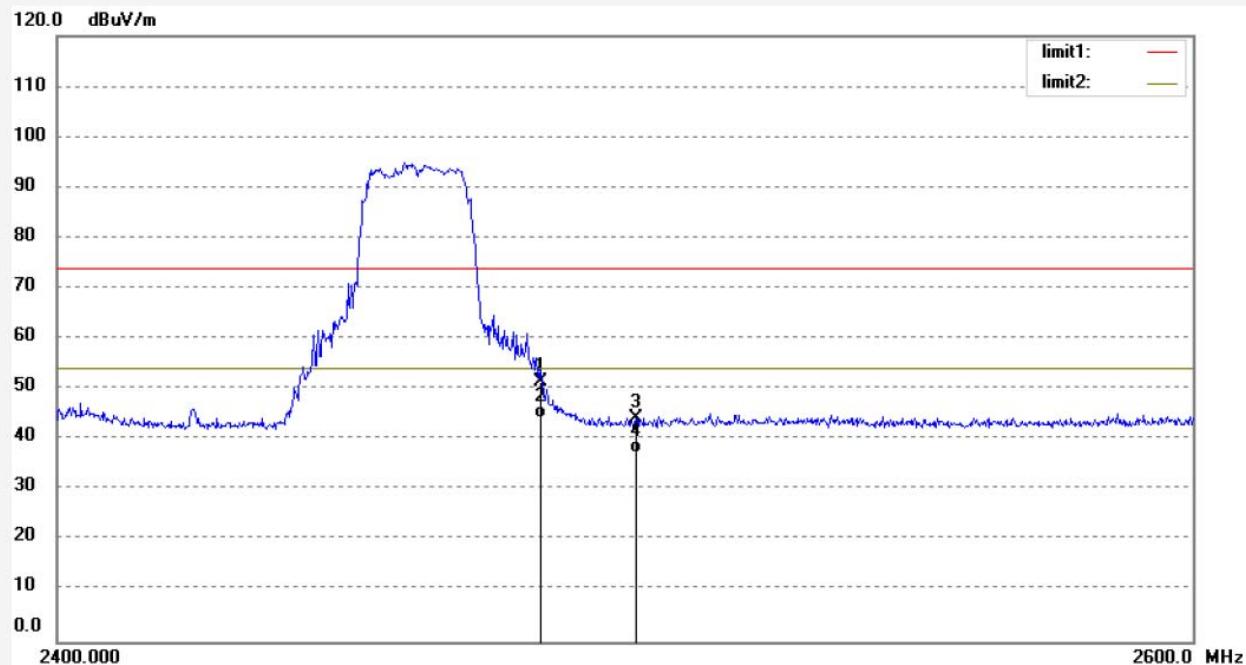
Date: 2017/05/18

Time: 9/04/10

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	14.31	37.13	51.44	74.00	-22.56	peak			
2	2483.500	7.14	37.13	44.27	54.00	-9.73	AVG			
3	2500.000	7.20	37.20	44.40	74.00	-29.60	peak			
4	2500.000	0.00	37.20	37.20	54.00	-16.80	AVG			

Job No.: star2016 #2047

Standard: FCC PK

Test item: Radiation Test

Temp. ( C)/Hum.(%) 23 C / 48 %

EUT: K1 SMARTHOME DIY KIT

Mode: TX Channel 1(802.11n) 20MHz

Model: K1

Manufacturer: Chuango

Polarization: Horizontal

Power Source: AC 120V/60Hz

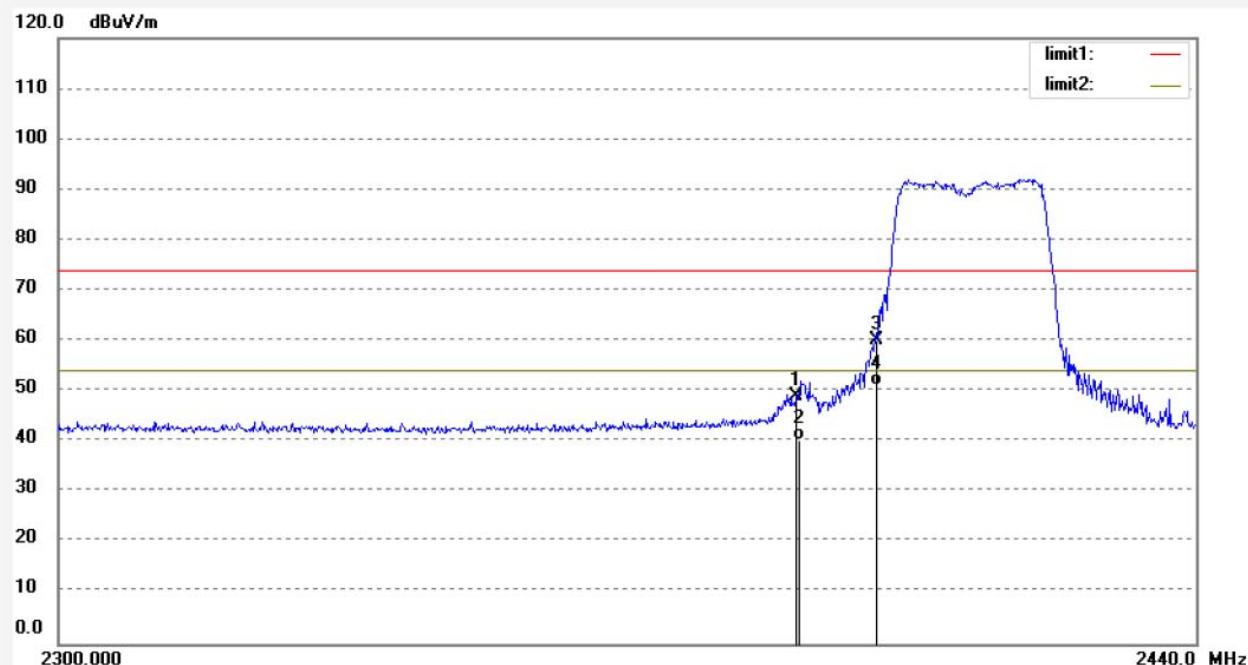
Date: 2017/05/18

Time: 9/14/55

Engineer Signature: star

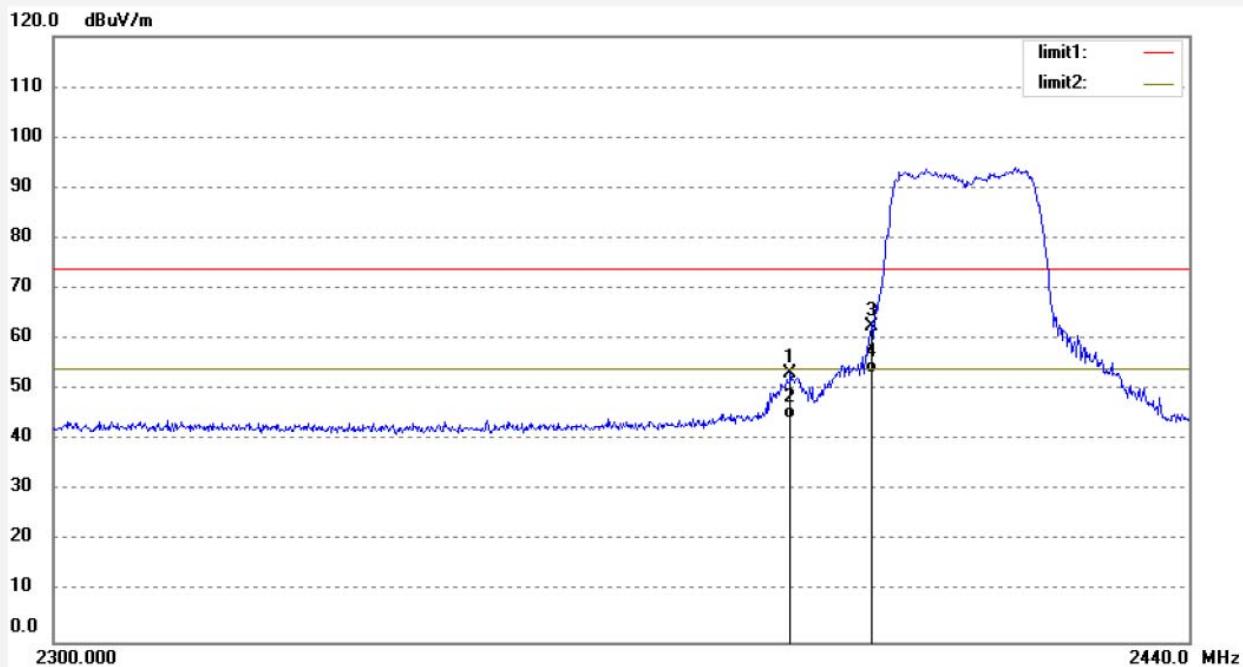
Distance: 3m

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	12.31	36.73	49.04	74.00	-24.96	peak			
2	2390.000	3.59	36.73	40.32	54.00	-13.68	AVG			
3	2400.000	23.29	36.78	60.07	74.00	-13.93	peak			
4	2400.000	14.27	36.78	51.05	54.00	-2.95	AVG			

Job No.: star2016 #2046	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2017/05/18
Temp. ( C)/Hum.(%) 23 C / 48 %	Time: 9/13/23
EUT: K1 SMARTHOME DIY KIT	Engineer Signature: star
Mode: TX Channel 1(802.11n) 20MHz	Distance: 3m
Model: K1	
Manufacturer: Chuango	
Note: Report No.:ATE20170747	



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	16.67	36.73	53.40	74.00	-20.60	peak			
2	2390.000	7.41	36.73	44.14	54.00	-9.86	AVG			
3	2400.000	25.64	36.78	62.42	74.00	-11.58	peak			
4	2400.000	16.47	36.78	53.25	54.00	-0.75	AVG			

Job No.: star2016 #2048

Standard: FCC PK

Test item: Radiation Test

Temp. ( C)/Hum.(%) 23 C / 48 %

EUT: K1 SMARTHOME DIY KIT

Mode: TX Channel 11(802.11n) 20MHz

Model: K1

Manufacturer: Chuango

Polarization: Horizontal

Power Source: AC 120V/60Hz

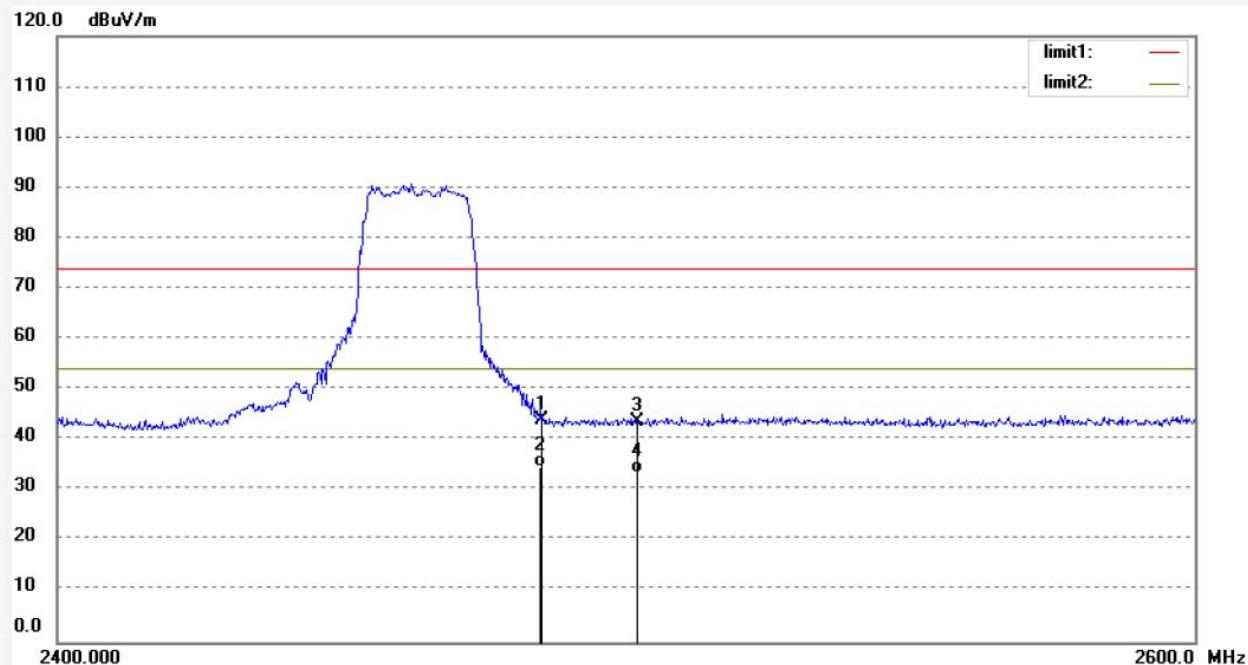
Date: 2017/05/18

Time: 9/17/20

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	6.68	37.13	43.81	74.00	-30.19	peak			
2	2483.500	-2.47	37.13	34.66	54.00	-19.34	AVG			
3	2500.000	6.53	37.20	43.73	74.00	-30.27	peak			
4	2500.000	-3.71	37.20	33.49	54.00	-20.51	AVG			

Job No.: star2016 #2049

Polarization: Vertical

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp. ( C)/Hum.(%) 23 C / 48 %

Time: 9/18/04

EUT: K1 SMARTHOME DIY KIT

Engineer Signature: star

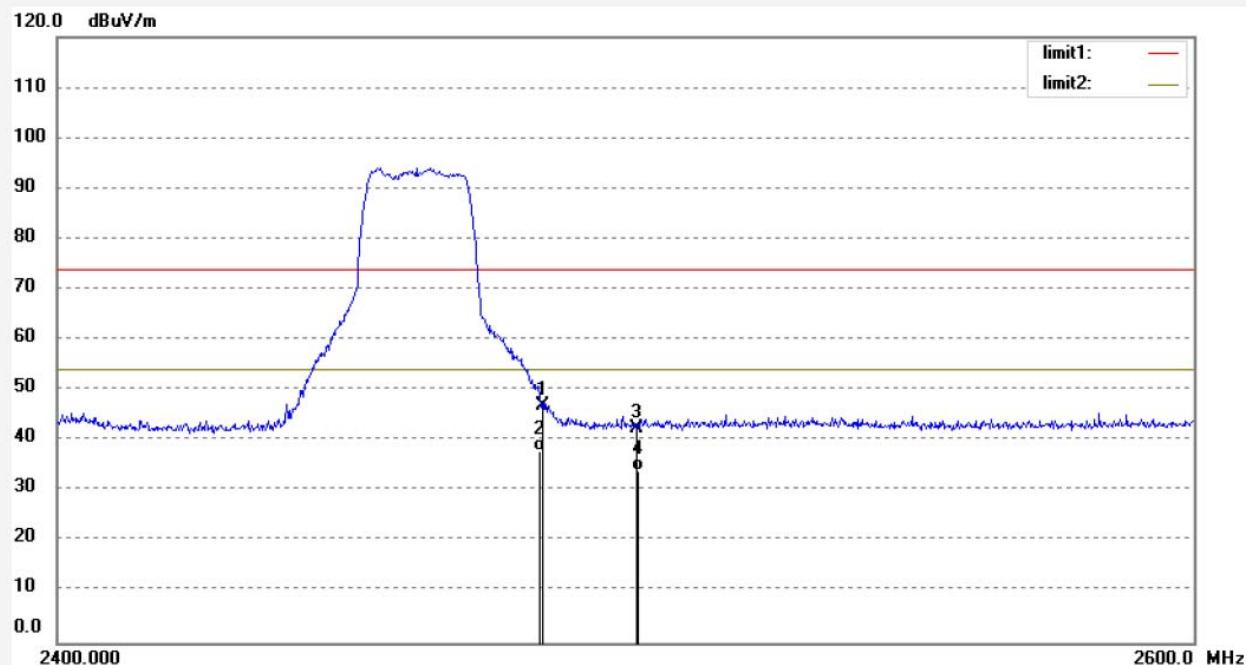
Mode: TX Channel 11(802.11n) 20MHz

Distance: 3m

Model: K1

Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	9.81	37.13	46.94	74.00	-27.06	peak			
2	2483.500	0.71	37.13	37.84	54.00	-16.16	AVG			
3	2500.000	5.33	37.20	42.53	74.00	-31.47	peak			
4	2500.000	-3.03	37.20	34.17	54.00	-19.83	AVG			

Job No.: star2016 #2052

Standard: FCC PK

Test item: Radiation Test

Temp. ( C)/Hum.(%) 23 C / 48 %

EUT: K1 SMARTHOME DIY KIT

Mode: TX Channel 3(802.11n)40MHz

Model: K1

Manufacturer: Chuango

Polarization: Horizontal

Power Source: AC 120V/60Hz

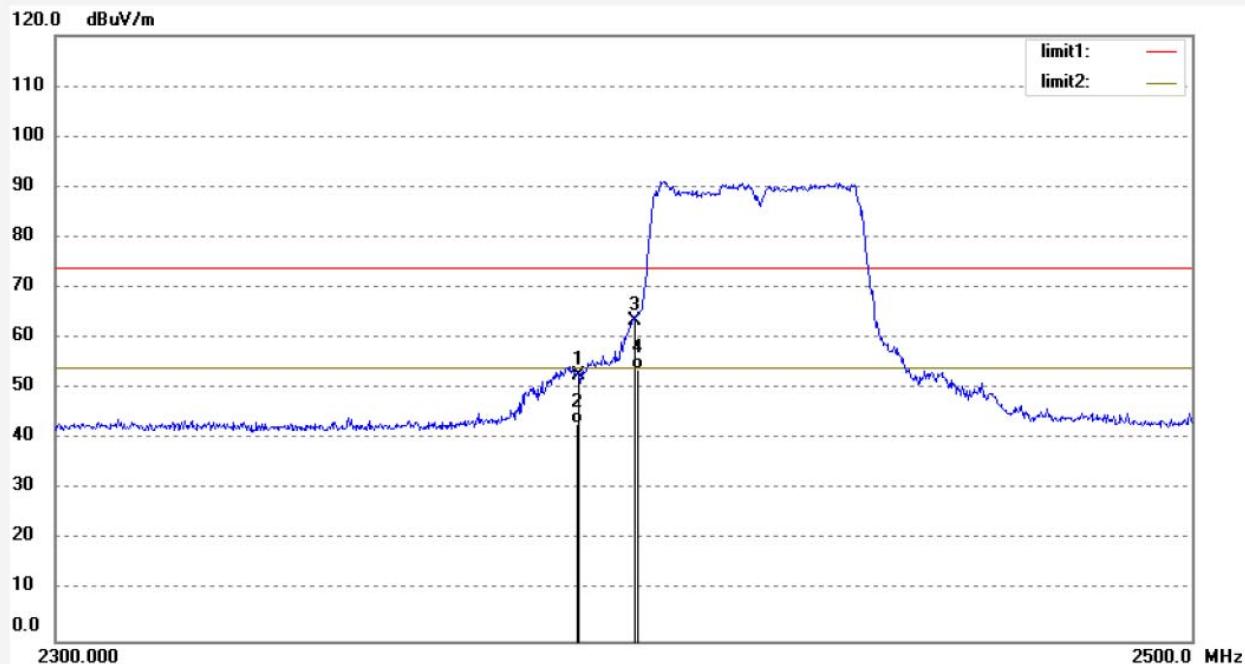
Date: 2017/05/18

Time: 9/30/29

Engineer Signature: star

Distance: 3m

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	15.91	36.73	52.64	74.00	-21.36	peak			
2	2390.000	6.29	36.73	43.02	54.00	-10.98	AVG			
3	2400.000	26.81	36.78	63.59	74.00	-10.41	peak			
4	2400.000	17.14	36.78	53.92	54.00	-0.08	AVG			



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star2016 #2053

Polarization: Vertical

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp.( C)/Hum.(%) 23 C / 48 %

Time: 9/31/24

EUT: K1 SMARTHOMER DIY KIT

Engineer Signature: star

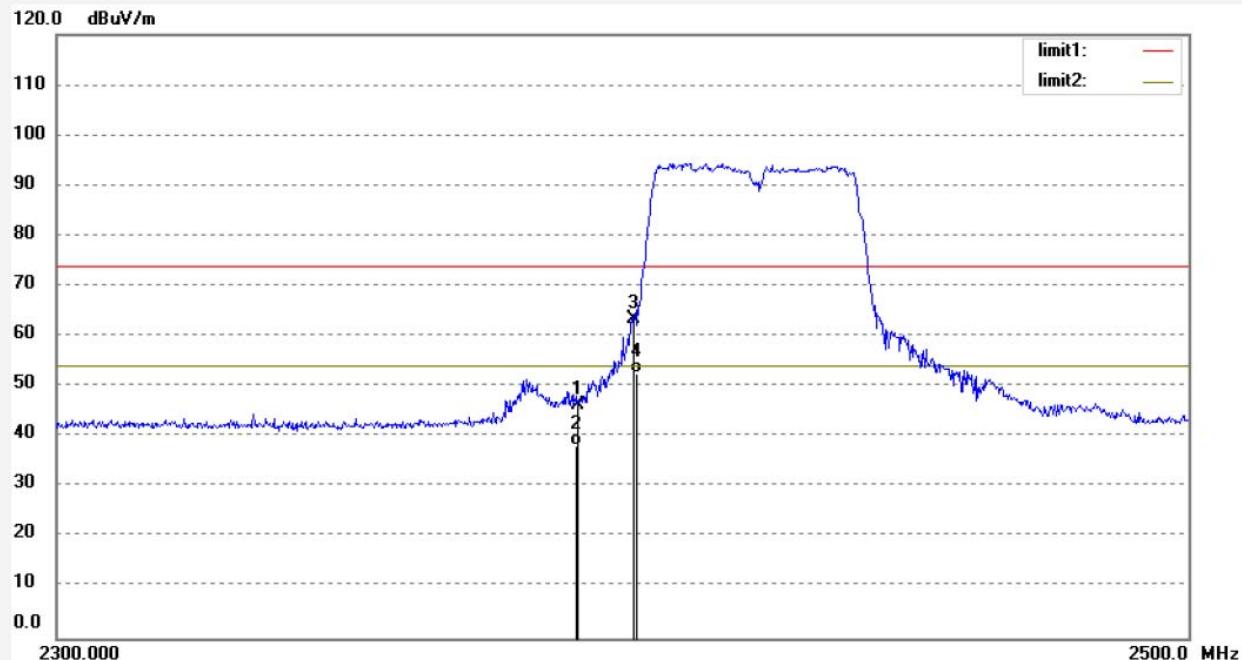
Mode: TX Channel 3(802.11n)40MHz

Distance: 3m

Model: K1

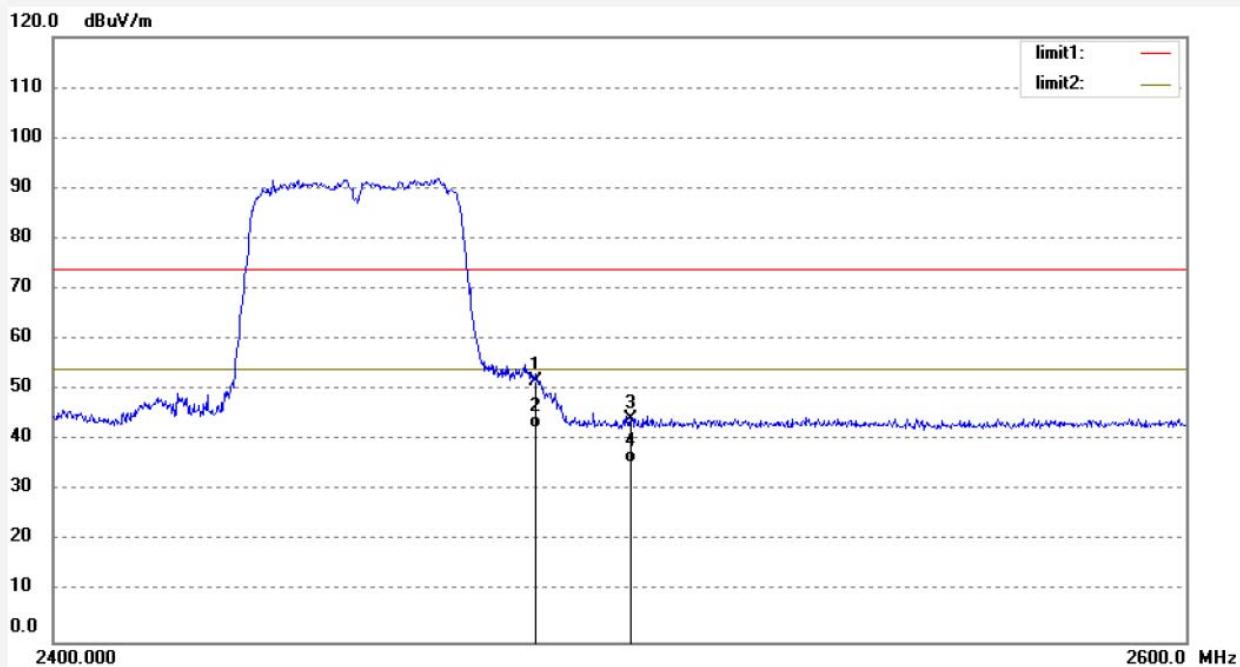
Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	9.58	36.73	46.31	74.00	-27.69	peak			
2	2390.000	1.55	36.73	38.28	54.00	-15.72	AVG			
3	2400.000	26.58	36.78	63.36	74.00	-10.64	peak			
4	2400.000	16.00	36.78	52.78	54.00	-1.22	AVG			

Job No.: star2016 #2055	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2017/05/18
Temp. ( C)/Hum.(%) 23 C / 48 %	Time: 9/34/01
EUT: K1 SMARTHOME DIY KIT	Engineer Signature: star
Mode: TX Channel 9(802.11n)40MHz	Distance: 3m
Model: K1	
Manufacturer: Chuango	
Note: Report No.:ATE20170747	



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	14.58	37.13	51.71	74.00	-22.29	peak			
2	2483.500	5.28	37.13	42.41	54.00	-11.59	AVG			
3	2500.000	7.01	37.20	44.21	74.00	-29.79	peak			
4	2500.000	-1.61	37.20	35.59	54.00	-18.41	AVG			



## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: star2016 #2054

Polarization: Vertical

Standard: FCC PK

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp. ( C)/Hum.(%) 23 C / 48 %

Time: 9/33/04

EUT: K1 SMARTHOME DIY KIT

Engineer Signature: star

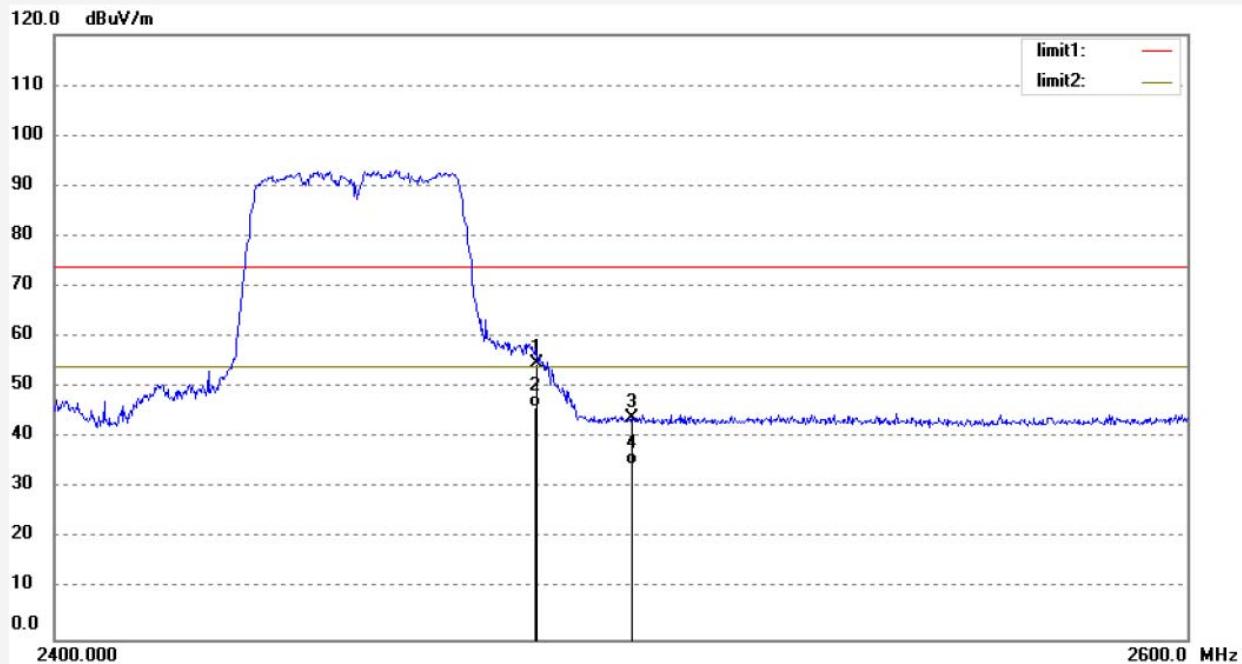
Mode: TX Channel 9(802.11n)40MHz

Distance: 3m

Model: K1

Manufacturer: Chuango

Note: Report No.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	17.54	37.13	54.67	74.00	-19.33	peak			
2	2483.500	8.91	37.13	46.04	54.00	-7.96	AVG			
3	2500.000	6.84	37.20	44.04	74.00	-29.96	peak			
4	2500.000	-2.54	37.20	34.66	54.00	-19.34	AVG			

## 11. RADIATED SPURIOUS EMISSION TEST

### 11.1. Block Diagram of Test Setup

#### 11.1.1. Block diagram of connection between the EUT and peripherals

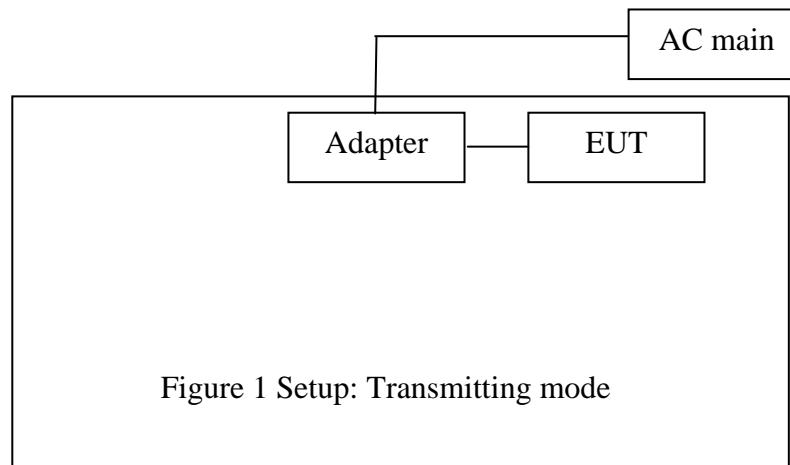
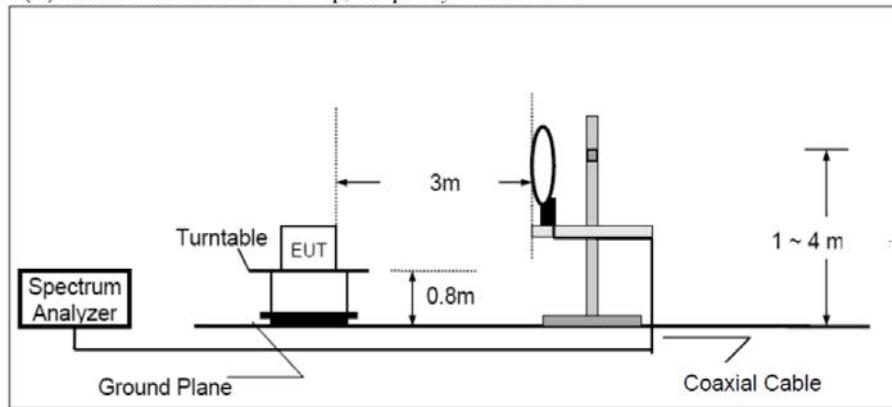


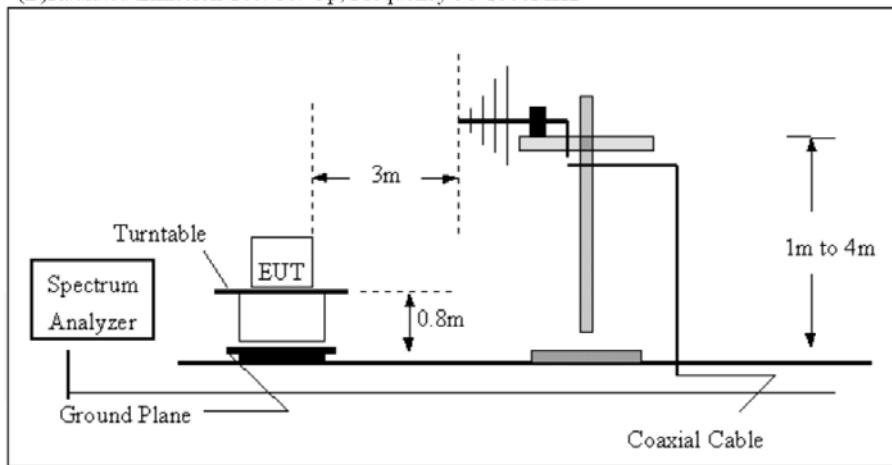
Figure 1 Setup: Transmitting mode

#### 11.1.2. Semi-Anechoic Chamber Test Setup Diagram

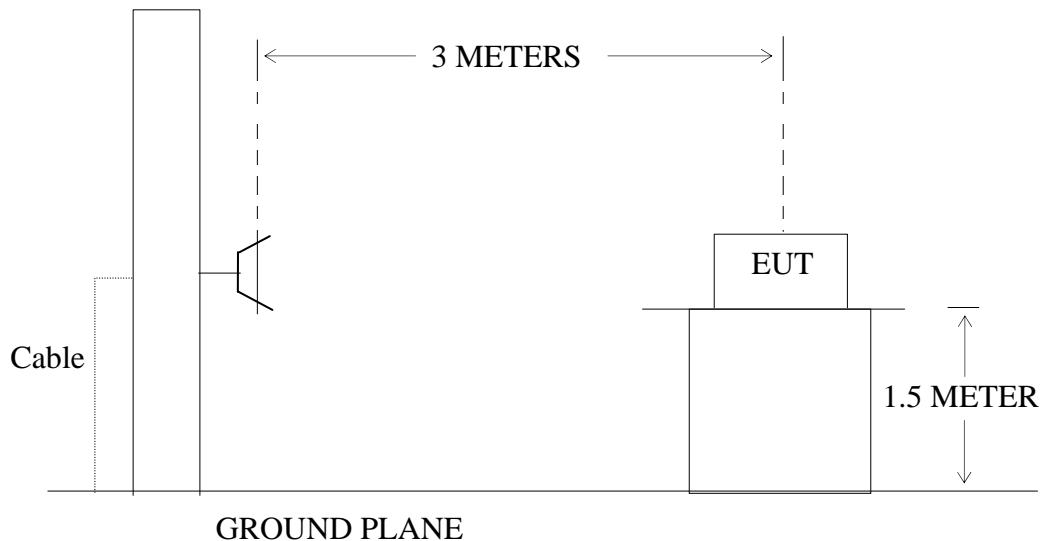
(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



## (C) Radiated Emission Test Set-Up, Frequency above 1GHz



## 11.2.The Limit For Section 15.247(d)

Section 15.247(d): 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 Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

### 11.3. Restricted bands of operation

#### 11.3.1. FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	( <sup>2</sup> )
13.36-13.41			

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

<sup>2</sup>Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

### 11.4. Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 11.5.Operating Condition of EUT

11.5.1.Setup the EUT and simulator as shown as Section 10.1.

11.5.2.Turn on the power of all equipment.

11.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

## 11.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The worst-case data rate for this channel to be 1Mbps for 802.11b mode and 6Mbps for 802.11g mode and 150Mbps for 802.11n mode, based on previous with 802.11 WLAN product design architectures.

The frequency range from 30MHz to 25000MHz is checked.

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.

## 11.7.The Field Strength of Radiation Emission Measurement Results

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. \*: Denotes restricted band of operation.
3. The EUT is tested radiation emission at each test mode (802.11 b/g/n) in three axes. The worst emissions are reported in all test mode and channels.
4. The radiation emissions from 18-25GHz and 9KHz-30MHz are not reported, because the test values lower than the limits of 20dB.
5. We tested 802.11b,g,n mode and recorded the worst case data(802.11b) for radiated emission test below 1GHz.

## Below 1G



ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: DING #3620

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp. ( C )/Hum.(%) 25 C / 55 %

Time: 18:51:24

EUT: K1 SMARTHOMA DIY KIT

Engineer Signature: DING

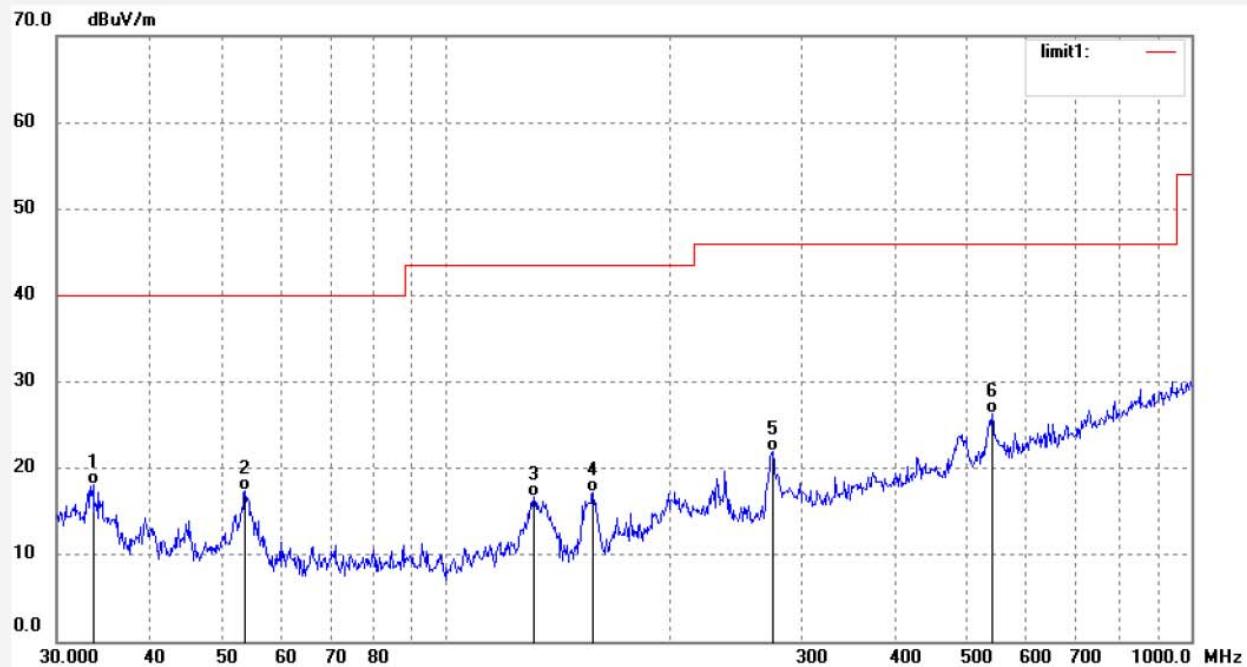
Mode: TX 2412MHz

Distance: 3m

Model: K1

Manufacturer: CHUANGO

Note: Report NO.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.5700	33.75	-15.59	18.16	40.00	-21.84	QP			
2	53.7559	38.80	-21.41	17.39	40.00	-22.61	QP			
3	131.2235	38.87	-22.16	16.71	43.50	-26.79	QP			
4	157.5290	38.93	-21.64	17.29	43.50	-26.21	QP			
5	274.4464	38.83	-16.92	21.91	46.00	-24.09	QP			
6	540.7072	36.35	-9.93	26.42	46.00	-19.58	QP			

Job No.: DING #3621

Polarization: Vertical

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp. ( C) / Hum. (%) 25 C / 55 %

Time: 18:52:22

EUT: K1 SMARTHOMA DIY KIT

Engineer Signature: DING

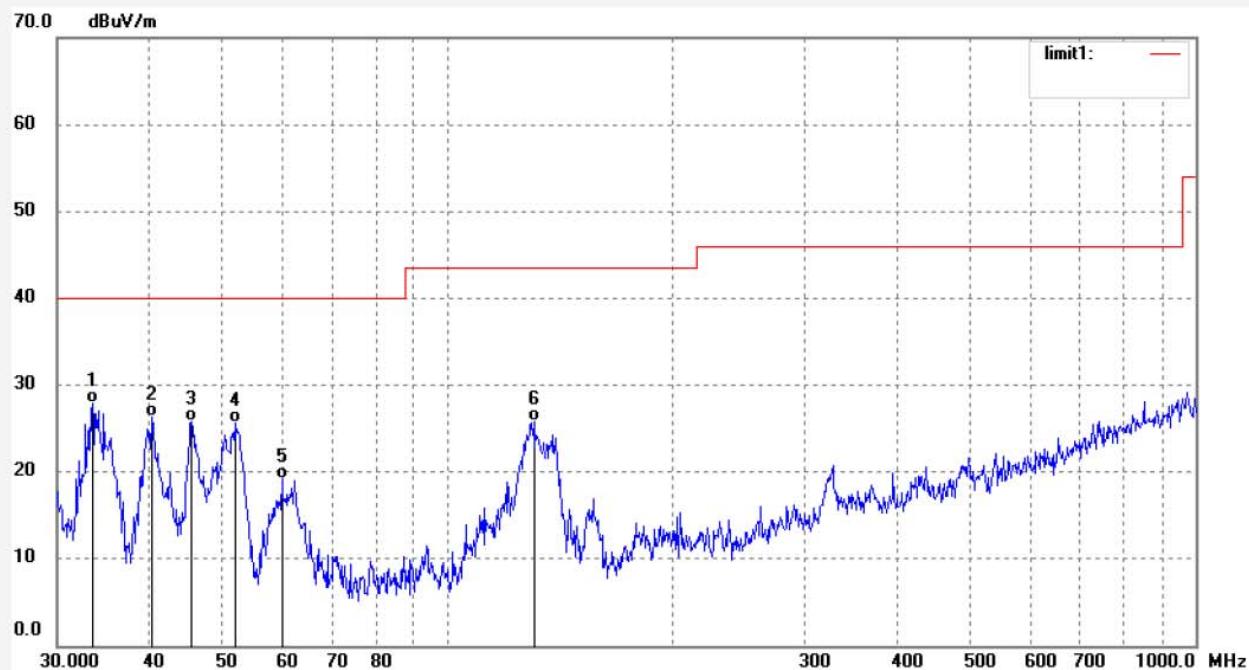
Mode: TX 2412MHz

Distance: 3m

Model: K1

Manufacturer: CHUANGO

Note: Report NO.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	33.4522	43.50	-15.56	27.94	40.00	-12.06	QP			
2	40.1581	44.41	-18.13	26.28	40.00	-13.72	QP			
3	45.4130	44.81	-19.07	25.74	40.00	-14.26	QP			
4	51.8998	46.68	-21.11	25.57	40.00	-14.43	QP			
5	59.9418	40.92	-21.80	19.12	40.00	-20.88	QP			
6	130.3048	47.94	-22.14	25.80	43.50	-17.70	QP			

Job No.: DING #3623

Polarization: Horizontal

Standard: FCC Class B 3M Radiated

Power Source: AC 120V/60Hz

Test item: Radiation Test

Date: 2017/05/18

Temp. ( C)/Hum.(%) 25 C / 55 %

Time: 18:54:55

EUT: K1 SMARTHOME DIY KIT

Engineer Signature: DING

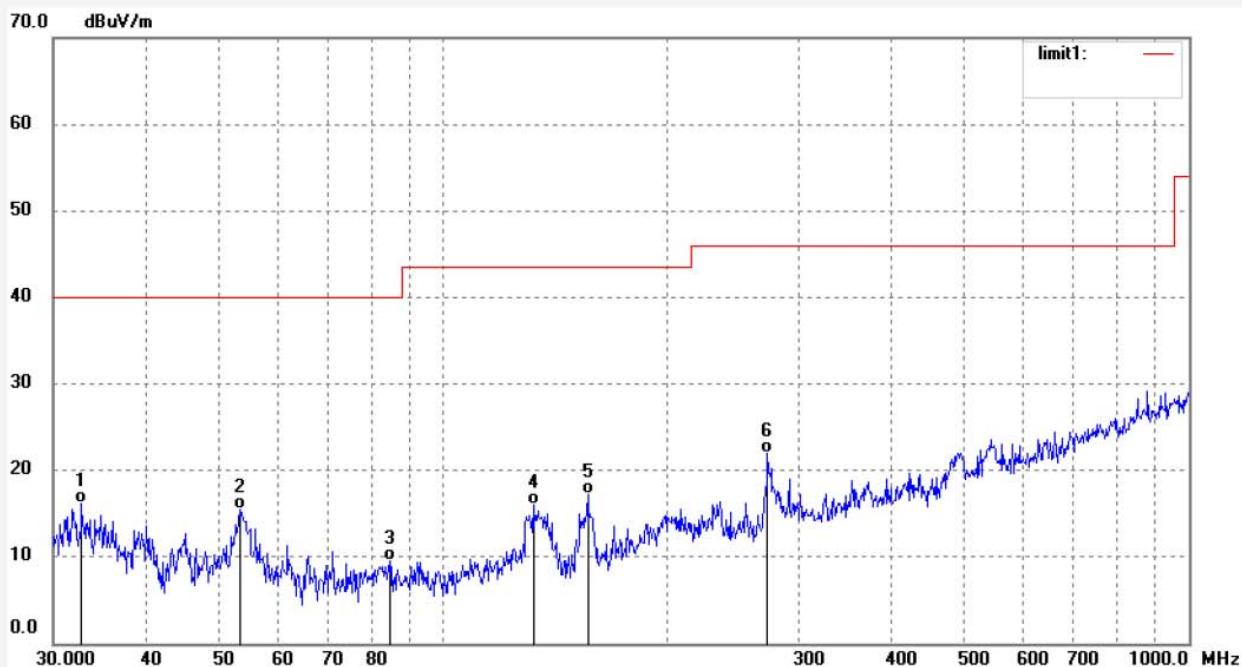
Mode: TX 2437MHz

Distance: 3m

Model: K1

Manufacturer: CHUANGO

Note: Report NO.:ATE20170747



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.7544	31.59	-15.39	16.20	40.00	-23.80	QP			
2	53.3794	36.80	-21.36	15.44	40.00	-24.56	QP			
3	84.8783	31.48	-21.96	9.52	40.00	-30.48	QP			
4	132.1489	38.23	-22.18	16.05	43.50	-27.45	QP			
5	156.4259	39.04	-21.76	17.28	43.50	-26.22	QP			
6	272.5246	38.92	-16.98	21.94	46.00	-24.06	QP			