

Date: 2016-07-15 No.: DM124239		Page 1 of 55			
Applicant:	Chenghai Udirc T Dengfeng Industr Guangdong	°oys Co., Ltd. ial Zone, Chenghai District, Shantou,			
Manufacturer:	Chenghai Udirc T Dengfeng Industr Guangdong	<sup>°</sup> oys Co., Ltd. ial Zone, Chenghai District, Shantou,			
Description of Sample(s):	Submitted sample Product: Brand Name: Model Number: FCC ID:	e(s) said to be WiFi Camera Dron UDIRC U818A WIFI ZKWWIFI1607121			
Date Sample(s) Received:	2016-06-28				
Date Tested:	2016-07-06 to 20	16-07-12			
Investigation Requested:	Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2015 and ANSI C63.10:2013 for FCC Certification.				
Conclusion(s):	The submitted product <u>COMPLIED</u> with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.				
Remark(s):	For additional mo	02.11g, 802.11n20) del(s) details, see page 3. LONG Yun Jian, Hongy Authorized Signatory ectroMagnetic Compatibility Department For and on behalf of			

STC (Dongguan) Company Limited

STC (Dongguan) Company Limited

68 Fumin Nan Road, Dalang, Dongguan, China. (Zip Code : 523 770) Tel : (86 769) 8111 9888 Fax : (86 769) 8111 6222 E-mail : dgstc@dgstc.org Homepage : www.dgstc.org



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#### 1.0 General Details

### 1.1 Test Laboratory

STC (Dongguan) Company LimitedEMC Laboratory68 Fumin Nan Road, Dalang, Dongguan, Guangdong, ChinaTelephone:(86 769) 81119888Fax:(86 769) 81116222

#### 1.2 Equipment Under Test [EUT] Description of Sample(s)

Product:	WiFi Camera Dron
Manufacturer:	Chenghai Udirc Toys Co., Ltd.
	Dengfeng Industrial Zone, Chenghai District, Shantou,
	Guangdong
Brand Name:	UDIRC
Model Number:	U818A WIFI
Additional Model Number:	U842Wifi, U845Wifi, U28W, U31W, U829A WiFi, U841W,
	U42W, U42HW, U30W, U28W, U29W, U30W, U31W,
	U34W, U35W, U36-1, U37W, U40HW, U45W, U46W,
	U47HW, U48HW, U49HW, U50HW, U51HW, U52HW,
	U53HW, U54HW, U55HW, U56HW, U57HW, U58HW,
	U59HW, U60HW
Rating:	3.7Vd.c. Li-Po Battery

#### **1.2.1 Description of EUT Operation**

The Equipment Under Test (EUT) is a WiFi Camera , the transmission signal is digital modulated with channel frequency range 2412-2462MHz.

#### 1.3 Date of Order

2016-06-28

#### **1.4** Submitted Sample(s):

1 Sample

#### 1.5 Test Duration

2016-07-06 to 2016-07-12

#### 1.6 Country of Origin

China

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### 2.0 <u>Technical Details</u>

### 2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2015 Regulations and ANSI C63.10:2013 for FCC Certification.

#### 2.2 Test Standards and Results Summary Tables

EMISSION Results Summary								
Test Condition	Test Requirement	Test Method	Class /	Te	est Resi	ılt		
			Severity	Pass	Fail	N/A		
Output Power of Fundamental Emissions	FCC 47CFR 15.247(b)(3)	ANSI C63.10:2013	N/A					
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.10:2013	N/A					
Conducted Emissions	FCC 47CFR 15.207	ANSI C63.10:2013	N/A			$\boxtimes$		
Power Spectral Density	FCC 47CFR 15.247(e)	N/A	N/A	$\boxtimes$				
6dB Bandwidth	FCC 47CFR 15.247(a)(2)	N/A	N/A	$\boxtimes$				
Band Edge Emissions	FCC 47CFR 15.247(d)	N/A	N/A	$\boxtimes$				
RF Exposure	FCC 47CFR 15.247(i)	N/A	N/A	$\square$				

Note: N/A - Not Applicable

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### 3.0 Test Results

#### 3.1 Emission

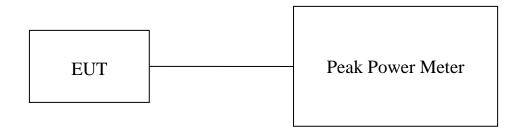
#### 3.1.1 Maximum Peak Output Power

Test Requirement:	FCC 47CFR 15.247(b)(3)
Test Method:	N/A
Test Date:	2016-07-12
Mode of Operation:	WiFi mode

#### **Test Method:**

The RF output of the EUT was connected to the peak power meter. All the attenuation or cable loss will be added to the measured maximum output power. The results are recorded in mW.

### **Test Setup:**



Note: a temporary antenna connector was soldered to the RF output.

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#### Limits for Peak Output Power of Fundamental & Harmonics Emissions [FCC 47CFR 15.247]:

For Digital Transmission systems in 2400-2483.5 MHz Band: 1 Watt (30dBm)

Results of WiFi mode 802.11 b, (2412MHz to 2462MHz) : Pass (TX Unit) Maximum conducted output power								
ChannelFrequency (MHz)Result (dBm)Antenna Gain (dBi)Output Power 								
Low	2412	12.11		14.61	0.028907			
Middle	2437	11.82	2.5	14.32	0.027040			
High	2462	11.64		14.14	0.025942			

### Results of WiFi mode 802.11 g, (2412MHz to 2462MHz) : Pass (TX Unit) Maximum conducted output power

Low	2412	14.90		17.40	0.054954
Middle	2437	14.56	2.5	17.06	0.050816
High	2462	14.21		16.71	0.046881

Results of WiFi mode 802.11 n20, (2412MHz to 2462MHz) : Pass (TX Unit) Maximum conducted output power									
Low	Low 2412 14.38 16.88 0.048753								
Middle	Middle 2437 14.09 2.5 16.59 0.045604								
High	2462	13.75		16.25	0.042170				

Calculated measurement uncertainty

: 30MHz to 1GHz 1.7dB 1GHz to 26GHz 1.7dB

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#### 3.1.2 **Radiated Emissions**

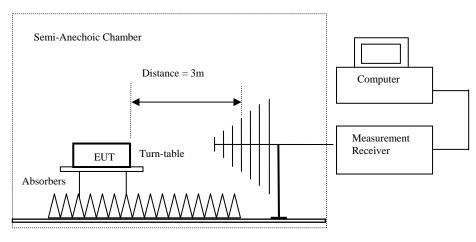
Test Requirement:	FCC 47CFR 15.209
Test Method:	ANSI C63.10:2013
Test Date:	2016-07-08
Mode of Operation:	Tx mode/ WiFi mode

#### **Test Method:**

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber\*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

\* Semi-anechoic chamber located on the G/F of "STC (Dongguan) Company Limited" with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 629686.

#### **Test Setup:**



Ground Plane

Absorbers placed on top of the ground plane are for measurements above 1000MHz only.

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#### Limits for Radiated Emissions [FCC 47 CFR 15.247 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [µV/m]	
0.009-0.490	2400/F (kHz)	
0.490-1.705	24000/F (kHz)	
1.705-30	30	
30-88	100	
88-216	150	
216-960	200	
Above960	500	

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

#### Result of Wifi mode (2412.0 MHz) (802.11b) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions							
Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field	
	Level	Factor	Strength	Strength		Polarity	
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m		
	Emissions	detected are r	nore than 20	dB below the	FCC Limits		

#### Result of Wifi mode (2412.0 MHz) (802.11b) (Above 1GHz): Pass

	Field Strength of Spurious Emissions							
	Peak Value							
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
4824.0	14.1	41.5	55.6	74.0	18.4	Vertical		
4824.0	14.1	42.4	56.5	74.0	17.5	Horizontal		
7236.0	9.6	45.1	54.7	74.0	19.3	Vertical		
7236.0	7.9	46.2	54.1	74.0	19.9	Horizontal		
9648.0	7.8	48	55.8	74.0	18.2	Vertical		
9648.0	5.8	48.8	54.6	74.0	19.4	Horizontal		
12060.0	3.9	51.5	55.4	74.0	18.6	Vertical		
12060.0	2.9	52.4	55.3	74.0	18.7	Horizontal		

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	Field Strength of Spurious Emissions								
		A	verage Valu	e					
Frequency	Measured	Correction	Field	Limit	Margin	E-Field			
	Level @3m	Factor	Strength	@3m		Polarity			
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m				
4824.0	2.0	41.5	43.5	54.0	10.5	Vertical			
4824.0	-0.2	42.4	42.2	54.0	11.8	Horizontal			
7236.0	-2.7	45.1	42.4	54.0	11.6	Vertical			
7236.0	-5.2	46.2	41.0	54.0	13.0	Horizontal			
9648.0	-6.7	48	41.3	54.0	12.7	Vertical			
9648.0	-7.3	48.8	41.5	54.0	12.5	Horizontal			
12060.0	-9.9	51.5	41.6	54.0	12.4	Vertical			
12060.0	-10.2	52.4	42.2	54.0	11.8	Horizontal			

#### Result of Wifi mode (2412.0 MHz) (802.11b) (Above 1GHz): Pass

#### Result of Wifi mode (2437.0 MHz) (802.11b) (9kHz - 30MHz): Pass

	Field Strength of Spurious Emissions							
	Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field		
	Level	Factor	Strength	Strength		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
	Emissions detected are more than 20 dB below the FCC Limits							

### Result of Wifi mode (2437.0 MHz) (802.11b) (Above 1GHz): Pass

	Field Strength of Spurious Emissions Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m					
4874.0	15.7	41.6	57.3	74.0	16.7	Vertical				
4874.0	14.7	42.5	57.2	74.0	16.8	Horizontal				
7311.0	11.0	45.2	56.2	74.0	17.8	Vertical				
7311.0	9.8	46.3	56.1	74.0	17.9	Horizontal				
9748.0	7.1	48.1	55.2	74.0	18.8	Vertical				
9748.0	7.0	48.9	55.9	74.0	18.1	Horizontal				
12185.0	3.9	51.6	55.5	74.0	18.5	Vertical				
12185.0	2.9	52.5	55.4	74.0	18.6	Horizontal				

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	Field Strength of Spurious Emissions									
		A	verage Valu	e						
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m					
4874.0	1.5	41.6	43.1	54.0	10.9	Vertical				
4874.0	0.4	42.5	42.9	54.0	11.1	Horizontal				
7311.0	-3.3	45.2	41.9	54.0	12.1	Vertical				
7311.0	-4.2	46.3	42.1	54.0	11.9	Horizontal				
9748.0	-6.3	48.1	41.8	54.0	12.2	Vertical				
9748.0	-6.6	48.9	42.3	54.0	11.7	Horizontal				
12185.0	-10.2	51.6	41.4	54.0	12.6	Vertical				
12185.0	-10.4	52.5	42.1	54.0	11.9	Horizontal				

#### Result of Wifi mode (2437.0 MHz) (802.11b) (Above 1GHz): Pass

#### Result of Wifi mode (2462.0 MHz) (802.11b) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions								
	Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field		
	Level	Factor	Strength	Strength		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m	-		
	Emissions detected are more than 20 dB below the FCC Limits							

### Result of Wifi mode (2462.0 MHz) (802.11b) (Above 1GHz): Pass

	Field Strength of Spurious Emissions Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m					
4924.0	16.0	41.4	57.4	74.0	16.6	Vertical				
4924.0	13.7	42.7	56.4	74.0	17.6	Horizontal				
7386.0	10.9	45.6	56.5	74.0	17.5	Vertical				
7386.0	9.4	46.5	55.9	74.0	18.1	Horizontal				
9848.0	7.3	48.6	55.9	74.0	18.1	Vertical				
9848.0	5.2	49.7	54.9	74.0	19.1	Horizontal				
12310.0	3.5	51.7	55.2	74.0	18.8	Vertical				
12310.0	2.8	52.7	55.5	74.0	18.5	Horizontal				

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	Field Strength of Spurious Emissions									
		A	verage Valu	e						
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m					
4924.0	0.9	41.4	42.3	54.0	11.7	Vertical				
4924.0	-0.2	42.7	42.5	54.0	11.5	Horizontal				
7386.0	-4.3	45.6	41.3	54.0	12.7	Vertical				
7386.0	-5.3	46.5	41.2	54.0	12.8	Horizontal				
9848.0	-6.3	48.6	42.3	54.0	11.7	Vertical				
9848.0	-8.2	49.7	41.5	54.0	12.5	Horizontal				
12310.0	-9.9	51.7	41.8	54.0	12.2	Vertical				
12310.0	-10.8	52.7	41.9	54.0	12.1	Horizontal				

#### Result of Wifi mode (2462.0 MHz) (802.11b) (Above 1GHz): Pass

#### Result of Wifi mode (2412.0 MHz) (802.11g) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions							
Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field	
	Level	Factor	Strength	Strength		Polarity	
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m		
	Emissions	detected are r	nore than 20	dB below the	FCC Limits		

#### Result of Wifi mode (2412.0 MHz) (802.11g) (Above 1GHz): Pass

		Field Streng	th of Spuriou	is Emissions					
	Peak Value								
Frequency	Measured	Correction	Field	Limit	Margin	E-Field			
	Level @3m	Factor	Strength	@3m		Polarity			
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m				
4824.0	15.4	41.5	56.9	74.0	17.1	Vertical			
4824.0	14.2	42.4	56.6	74.0	17.4	Horizontal			
7236.0	11.7	45.1	56.8	74.0	17.2	Vertical			
7236.0	9.5	46.2	55.7	74.0	18.3	Horizontal			
9648.0	7.9	48	55.9	74.0	18.1	Vertical			
9648.0	5.6	48.8	54.4	74.0	19.6	Horizontal			
12060.0	3.9	51.5	55.4	74.0	18.6	Vertical			
12060.0	3.2	52.4	55.6	74.0	18.4	Horizontal			

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	Field Strength of Spurious Emissions									
		A	verage Valu	e						
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m					
4824.0	1.8	41.5	43.3	54.0	10.7	Vertical				
4824.0	-0.9	42.4	41.5	54.0	12.5	Horizontal				
7236.0	-3.0	45.1	42.1	54.0	11.9	Vertical				
7236.0	-4.3	46.2	41.9	54.0	12.1	Horizontal				
9648.0	-6.9	48	41.1	54.0	12.9	Vertical				
9648.0	-7.2	48.8	41.6	54.0	12.4	Horizontal				
12060.0	-9.5	51.5	42.0	54.0	12.0	Vertical				
12060.0	-9.9	52.4	42.5	54.0	11.5	Horizontal				

#### Result of Wifi mode (2412.0 MHz) (802.11g) (Above 1GHz): Pass

#### Result of Wifi mode (2437.0 MHz) (802.11g) (9kHz - 30MHz): Pass

	Field Strength of Spurious Emissions							
	Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field		
	Level	Factor	Strength	Strength		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
	Emissions detected are more than 20 dB below the FCC Limits							

### Result of Wifi mode (2437.0 MHz) (802.11g) (Above 1GHz): Pass

	Field Strength of Spurious Emissions Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m					
4874.0	15.6	41.6	57.2	74.0	16.8	Vertical				
4874.0	14.4	42.5	56.9	74.0	17.1	Horizontal				
7311.0	11.5	45.2	56.7	74.0	17.3	Vertical				
7311.0	10.1	46.3	56.4	74.0	17.6	Horizontal				
9748.0	7.6	48.1	55.7	74.0	18.3	Vertical				
9748.0	6.3	48.9	55.2	74.0	18.8	Horizontal				
12185.0	4.0	51.6	55.6	74.0	18.4	Vertical				
12185.0	3.5	52.5	56.0	74.0	18.0	Horizontal				

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	Field Strength of Spurious Emissions								
		A	verage Valu	e					
Frequency	Measured	Correction	Field	Limit	Margin	E-Field			
	Level @3m	Factor	Strength	@3m		Polarity			
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m				
4874.0	2.1	41.6	43.7	54.0	10.3	Vertical			
4874.0	0.6	42.5	43.1	54.0	10.9	Horizontal			
7311.0	-3.3	45.2	41.9	54.0	12.1	Vertical			
7311.0	-4.6	46.3	41.7	54.0	12.3	Horizontal			
9748.0	-6.5	48.1	41.6	54.0	12.4	Vertical			
9748.0	-6.4	48.9	42.5	54.0	11.5	Horizontal			
12185.0	-10.2	51.6	41.4	54.0	12.6	Vertical			
12185.0	-10.4	52.5	42.1	54.0	11.9	Horizonta			

#### Result of Wifi mode (2437.0 MHz) (802.11g) (Above 1GHz): Pass

#### Result of Wifi mode (2462.0 MHz) (802.11g) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions								
	Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field		
	Level	Factor	Strength	Strength		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m	-		
	Emissions detected are more than 20 dB below the FCC Limits							

### Result of Wifi mode (2462.0 MHz) (802.11g) (Above 1GHz): Pass

	Field Strength of Spurious Emissions Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBµV	dB/m	dBµV/m	dBµV/m	$dB\mu V/m$					
4924.0	16.2	41.4	57.6	74.0	16.4	Vertical				
4924.0	13.9	42.7	56.6	74.0	17.4	Horizontal				
7386.0	11.5	45.6	57.1	74.0	16.9	Vertical				
7386.0	10.0	46.5	56.5	74.0	17.5	Horizontal				
9848.0	7.2	48.6	55.8	74.0	18.2	Vertical				
9848.0	5.6	49.7	55.3	74.0	18.7	Horizontal				
12310.0	3.7	51.7	55.4	74.0	18.6	Vertical				
12310.0	2.2	52.7	54.9	74.0	19.1	Horizontal				

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		Field Streng	th of Spuriou	is Emissions		
		A	verage Valu	e		
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m	
4924.0	1.2	41.4	42.6	54.0	11.4	Vertical
4924.0	-0.8	42.7	41.9	54.0	12.1	Horizontal
7386.0	-4.3	45.6	41.3	54.0	12.7	Vertical
7386.0	-5.3	46.5	41.2	54.0	12.8	Horizontal
9848.0	-6.2	48.6	42.4	54.0	11.6	Vertical
9848.0	-8.2	49.7	41.5	54.0	12.5	Horizontal
12310.0	-9.8	51.7	41.9	54.0	12.1	Vertical
12310.0	-11.5	52.7	41.2	54.0	12.8	Horizontal

#### Result of Wifi mode (2462.0 MHz) (802.11g) (Above 1GHz): Pass

### Result of Wifi mode (2412.0 MHz) (802.11n20) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions								
	Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field		
	Level	Factor	Strength	Strength		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
	Emissions	detected are r	nore than 20	dB below the	FCC Limits			

### Result of Wifi mode (2412.0 MHz) (802.11n20) (Above 1GHz): Pass

		Field Streng	th of Spuriou	is Emissions					
	Peak Value								
Frequency	Measured	Correction	Field	Limit	Margin	E-Field			
	Level @3m	Factor	Strength	@3m		Polarity			
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m				
4824.0	15.4	41.5	56.9	74.0	17.1	Vertical			
4824.0	15.3	42.4	57.7	74.0	16.3	Horizontal			
7236.0	11.3	45.1	56.4	74.0	17.6	Vertical			
7236.0	11.0	46.2	57.2	74.0	16.8	Horizontal			
9648.0	7.9	48	55.9	74.0	18.1	Vertical			
9648.0	5.7	48.8	54.5	74.0	19.5	Horizontal			
12060.0	4.6	51.5	56.1	74.0	17.9	Vertical			
12060.0	3.0	52.4	55.4	74.0	18.6	Horizontal			

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	Field Strength of Spurious Emissions								
		A	verage Valu	e					
Frequency	Measured	Correction	Field	Limit	Margin	E-Field			
	Level @3m	Factor	Strength	@3m		Polarity			
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m				
4824.0	2.1	41.5	43.6	54.0	10.4	Vertical			
4824.0	-0.3	42.4	42.1	54.0	11.9	Horizontal			
7236.0	-2.6	45.1	42.5	54.0	11.5	Vertical			
7236.0	-4.5	46.2	41.7	54.0	12.3	Horizontal			
9648.0	-6.3	48	41.7	54.0	12.3	Vertical			
9648.0	-7.8	48.8	41.0	54.0	13.0	Horizontal			
12060.0	-9.5	51.5	42.0	54.0	12.0	Vertical			
12060.0	-10.1	52.4	42.3	54.0	11.7	Horizontal			

#### Result of Wifi mode (2412.0 MHz) (802.11n20) (Above 1GHz): Pass

### Result of Wifi mode (2437.0 MHz) (802.11n20) (9kHz - 30MHz): Pass

Field Strength of Spurious Emissions							
		A	verage Valu	e			
Frequency	Measured	Correction	Field	Field	Limit	E-Field	
	Level	Factor	Strength	Strength		Polarity	
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m		
	Emissions	detected are r	nore than 20	dB below the	FCC Limits		

### Result of Wifi mode (2437.0 MHz) (802.11n20) (Above 1GHz): Pass

	Field Strength of Spurious Emissions Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m					
4874.0	15.8	41.6	57.4	74.0	16.6	Vertical				
4874.0	14.3	42.5	56.8	74.0	17.2	Horizontal				
7311.0	11.6	45.2	56.8	74.0	17.2	Vertical				
7311.0	11.1	46.3	57.4	74.0	16.6	Horizontal				
9748.0	7.8	48.1	55.9	74.0	18.1	Vertical				
9748.0	7.2	48.9	56.1	74.0	17.9	Horizontal				
12185.0	3.7	51.6	55.3	74.0	18.7	Vertical				
12185.0	3.8	52.5	56.3	74.0	17.7	Horizontal				

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		<b>Field Streng</b>	th of Spuriou	ıs Emissions				
	Average Value							
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@ 3m		Polarity		
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m			
4874.0	2.1	41.6	43.7	54.0	10.3	Vertical		
4874.0	0.4	42.5	42.9	54.0	11.1	Horizontal		
7311.0	-3.6	45.2	41.6	54.0	12.4	Vertical		
7311.0	-4.2	46.3	42.1	54.0	11.9	Horizontal		
9748.0	-6.1	48.1	42.0	54.0	12.0	Vertical		
9748.0	-6.5	48.9	42.4	54.0	11.6	Horizontal		
12185.0	-10.0	51.6	41.6	54.0	12.4	Vertical		
12185.0	-10.8	52.5	41.7	54.0	12.3	Horizontal		

#### Result of Wifi mode (2437.0 MHz) (802.11n20) (Above 1GHz): Pass

### Result of Wifi mode (2462.0 MHz) (802.11n20) (9kHz - 30MHz): Pass

	Field Strength of Spurious Emissions							
	Average Value							
Frequency	Measured	Correction	Field	Field	Limit	E-Field		
	Level	Factor	Strength	Strength		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
	Emissions detected are more than 20 dB below the FCC Limits							

### Result of Wifi mode (2462.0 MHz) (802.11n20) (Above 1GHz): Pass

	Field Strength of Spurious Emissions Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field				
	Level @3m	Factor	Strength	@3m		Polarity				
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m					
4924.0	15.7	41.4	57.1	74.0	16.9	Vertical				
4924.0	14.9	42.7	57.6	74.0	16.4	Horizontal				
7386.0	11.1	45.6	56.7	74.0	17.3	Vertical				
7386.0	9.6	46.5	56.1	74.0	17.9	Horizontal				
9848.0	7.2	48.6	55.8	74.0	18.2	Vertical				
9848.0	5.1	49.7	54.8	74.0	19.2	Horizontal				
12310.0	3.5	51.7	55.2	74.0	18.8	Vertical				
12310.0	2.7	52.7	55.4	74.0	18.6	Horizontal				

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	Field Strength of Spurious Emissions					
		A	verage Valu	e	-	-
Frequency	Measured	Correction	Field	Limit	Margin	E-Field
	Level @3m	Factor	Strength	@3m		Polarity
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dBuV/m	
4924.0	1.8	41.4	43.2	54.0	10.8	Vertical
4924.0	-0.3	42.7	42.4	54.0	11.6	Horizontal
7386.0	-4.3	45.6	41.3	54.0	12.7	Vertical
7386.0	-5.6	46.5	40.9	54.0	13.1	Horizontal
9848.0	-6.7	48.6	41.9	54.0	12.1	Vertical
9848.0	-8.6	49.7	41.1	54.0	12.9	Horizontal
12310.0	-10.3	51.7	41.4	54.0	12.6	Vertical
12310.0	-11.0	52.7	41.7	54.0	12.3	Horizontal

#### Result of Wifi mode (2462.0 MHz) (802.11n20) (Above 1GHz): Pass

Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30  $\,$  MHz  $\,$ 

\* Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty	:	9kHz-30MHz	3.3dB
		30MHz -1GHz	4.6dB
		1GHz -26GHz	4.4dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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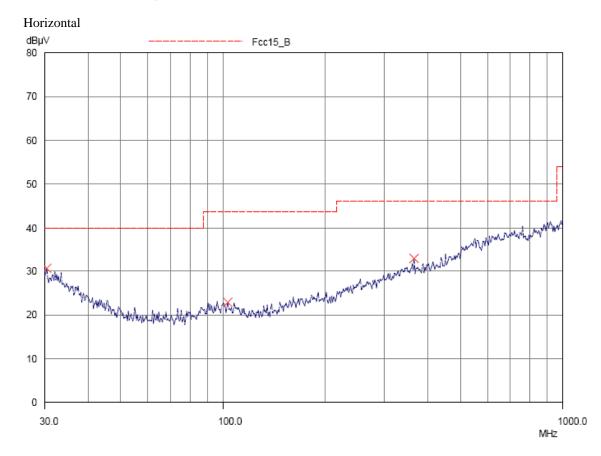
#### Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	[µV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

#### Result of WiFi mode (2412MHz, 802.11b) (30MHz - 1GHz): Pass

Please refer to the following table for result details



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### Result of WiFi mode (2412MHz, 802.11b) (30MHz – 1GHz): Pass

Radiated Emissions						
	Quasi-Peak					
Emission	E-Field	Level	Limit	Level	Limit	
Frequency	Polarity	@3m	@3m	@3m	@3m	
MHz		$dB\mu V/m$	dBµV/m	dBµV/m	$dB\mu V/m$	
30.2	Horizontal	30.7	40.0	34.3	100	
103.5	Horizontal	22.9	43.5	14.0	150	
363.4	Horizontal	32.9	46.0	44.2	200	

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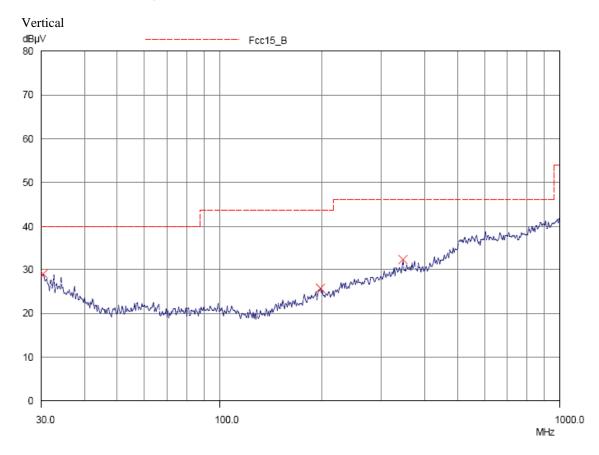
#### Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	$[\mu V/m]$
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

#### Result of WiFi mode (2412MHz, 802.11b) (30MHz - 1GHz): Pass

Please refer to the following table for result details



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#### Result of WiFi mode (2412MHz, 802.11b) (30MHz - 1GHz): Pass

	Radiated Emissions Quasi-Peak					
Emission	E-Field	Level	Limit	Level	Limit	
Frequency	Polarity	@3m	@3m	@3m	@3m	
MHz		dBµV/m	dBµV/m	$dB\mu V/m$	$dB\mu V/m$	
30.3	Vertical	29.1	40.0	28.5	100	
197.3	Vertical	25.7	43.5	19.3	150	
344.4	Vertical	32.2	46.0	40.7	200	

Remarks:

Calculated measurement uncertainty (30MHz - 1GHz): 4.9dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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#### 3.1.3 Power Spectral Density

FCC 47CFR 15.247(e)
ANSI C63.10:2013
2016-07-05
WiFi mode

#### **Test Method:**

The RF output of the EUT was connected to the spectrum analyzer. Set the fundamental frequency as the center frequency of the spectral analyzer. Use RBW=3kHz, VBW=10KHz, Set the span to 1.5 times the DTS channel bandwidth. Detector = peak, Sweep time = auto couple, Trace mode = max hold. Measure the Power Spectral Density (PSD) and record the results in dBm.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

#### **Test Limit:**

The maximum power spectral density (PSD) shall not exceeded 8dBm in any 3kHz band.

Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF=10log (3 kHz/100 kHz=-15.2dB)

#### Results of WiFi Mode 802.11 b (Tx:2412MHz to 2462MHz) : Pass (TX Unit) Maximum power spectral density

Transmitter Frequency (MHz)	Maximum Power spectral density level / 3kHz band (dBm)	Maximum Power spectral density / 3kHz band limit
2412.0	-15.78	8dBm
2437.0	-16.51	8dBm
2462.0	-16.90	8dBm

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#### Results of WiFi Mode 802.11 g (Tx:2412MHz to 2462MHz) : Pass (TX Unit) Maximum power spectral density

Transmitter Frequency (MHz)	Maximum Power spectral density level / 3kHz band (dBm)	Maximum Power spectral density / 3kHz band limit
2412.0	-18.95	8dBm
2437.0	-19.30	8dBm
2462.0	-19.77	8dBm

#### Results of WiFi Mode 802.11 n20 (Tx:2412MHz to 2462MHz) : Pass (TX Unit) Maximum power spectral density

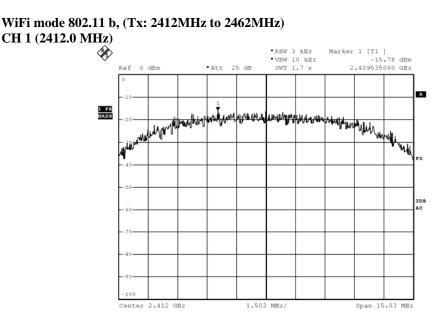
Transmitter Frequency (MHz)	Maximum Power spectral density level / 3kHz band (dBm)	Maximum Power spectral density / 3kHz band limit
2412.0	-20.31	8dBm
2437.0	-20.36	8dBm
2462.0	-19.74	8dBm

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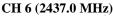


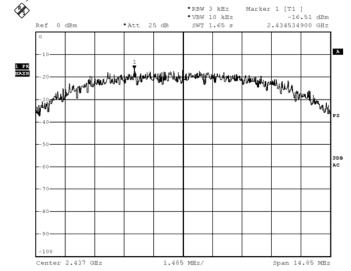
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Date: 5.JUL.2016 17:30:02





BMP Date: 5.JUL.2016 17:31:38

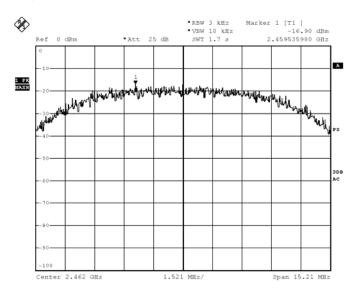
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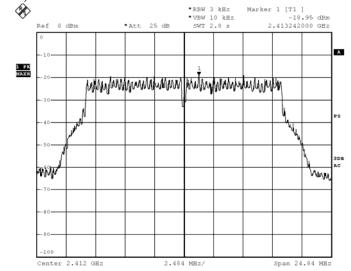
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CH 11 (2462.0 MHz)



BMP Date: 5.JUL.2016 17:37:42

#### WiFi mode 802.11 g, (Tx:2412MHz to 2462MHz) Ch 1 (2412.0 MHz)



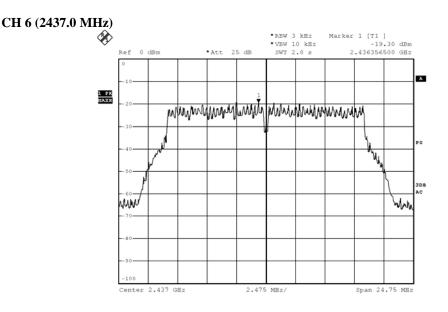
BMP Date: 5.JUL.2016 17:20:25

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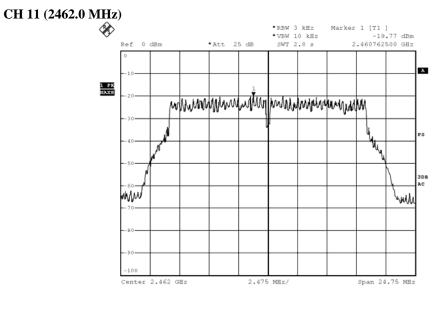
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BMP Date: 5.JUL.2016 17:24:01



BMP Date: 5.JUL.2016 17:27:43

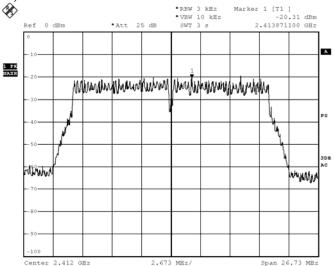
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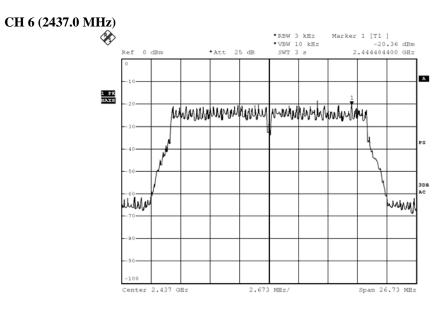


Date: 2016-07-15 No.: DM124239

WiFi mode 802.11 n20, (Tx: 2412MHz to 2462MHz) CH 1 (2412.0 MHz)



BMP Date: 5.JUL.2016 17:15:59



BMP Date: 5.JUL.2016 17:12:39

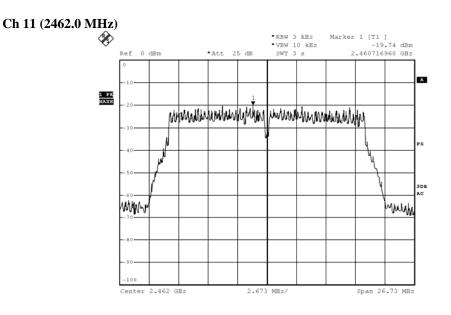
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#### 3.1.4 6dB Spectrum Bandwidth Measurement

Test Requirement:	FCC 47CFR 15.247(a)(2)
Test Method:	ANSI C63.10:2013
Test Date:	2016-07-05
Mode of Operation:	WiFi mode

#### **Test Method:**

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

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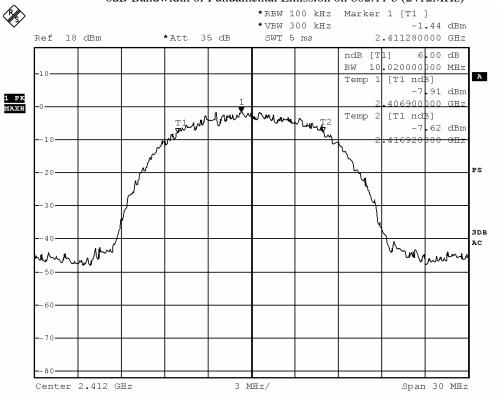


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#### Limits for 6dB Spectrum Bandwidth Measurement:

Center Frequency	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2412.0	10.02	> 500



### 6dB Bandwidth of Fundamental Emission on 802.11 b (2412MHz)

BMP Date: 5.JUL.2016 16:44:54

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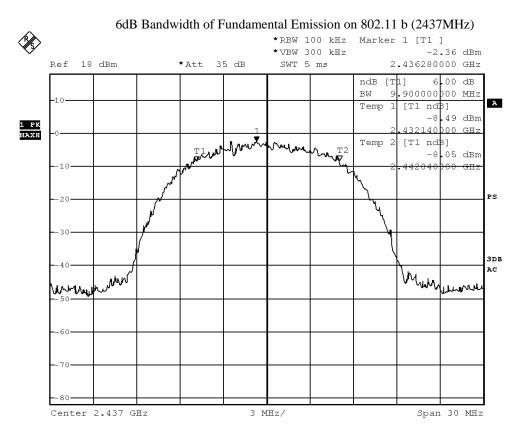


### Page 31 of 55

### Date: 2016-07-15 No.: DM124239

#### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2437.0	9.90	> 500



BMP Date: 5.JUL.2016 16:43:28

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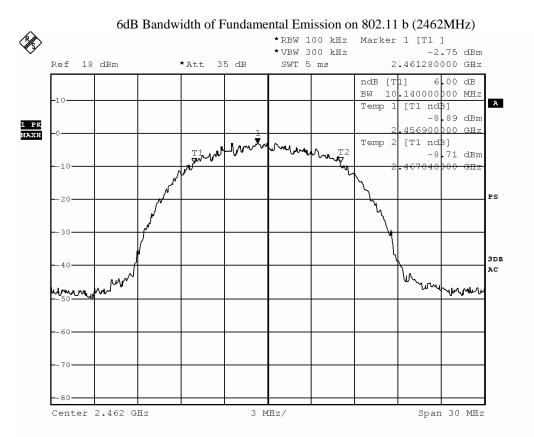


### Date: 2016-07-15 No.: DM124239

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#### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2462.0	10.14	> 500



BMP Date: 5.JUL.2016 16:41:47

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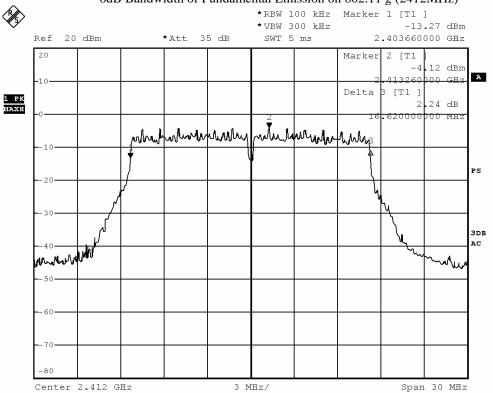


### Date: 2016-07-15 No.: DM124239

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#### Limits for 6dB Spectrum Bandwidth Measurement:

Center Frequency	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2412.0	16.62	> 500



### 6dB Bandwidth of Fundamental Emission on 802.11 g (2412MHz)

BMP Date: 5.JUL.2016 16:47:36

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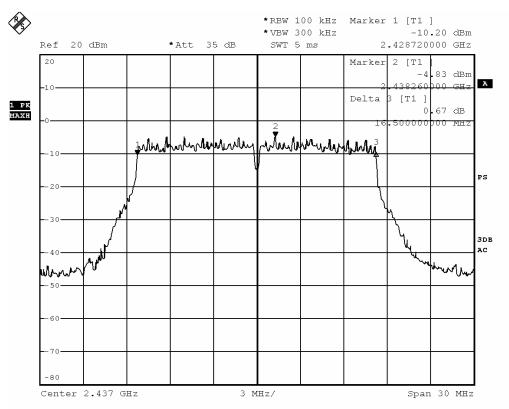
### Date: 2016-07-15 No.: DM124239

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#### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2437.0	16.50	> 500

### 6dB Bandwidth of Fundamental Emission on 802.11 g (2437MHz)



BMP Date: 5.JUL.2016 16:50:01

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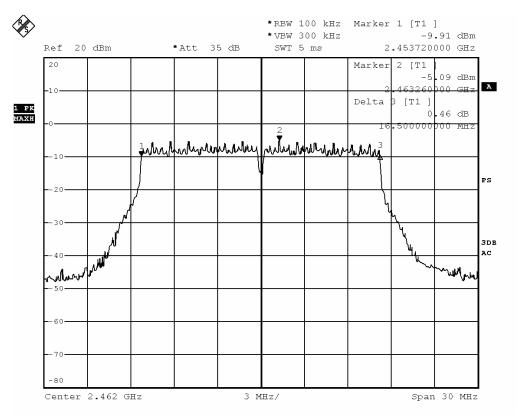
### Date: 2016-07-15 No.: DM124239

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#### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2462.0	16.50	> 500

#### 6dB Bandwidth of Fundamental Emission on 802.11 g (2462MHz)



BMP Date: 5.JUL.2016 16:52:48

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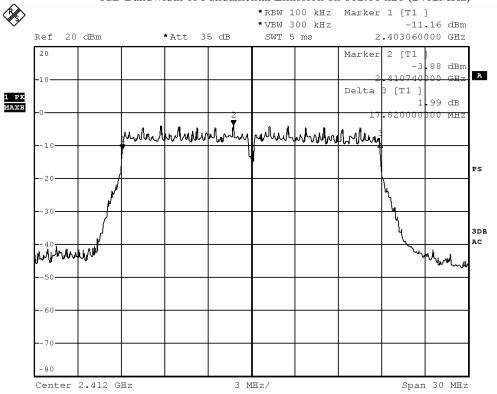


### Date: 2016-07-15 No.: DM124239

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#### Limits for 6dB Spectrum Bandwidth Measurement:

Center Frequency	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2412.0	17.82	> 500



### 6dB Bandwidth of Fundamental Emission on 802.11 n20 (2412MHz)

BMP Date: 5.JUL.2016 16:56:32

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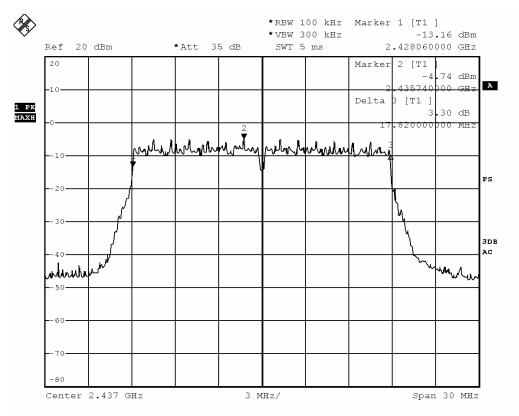
### Date: 2016-07-15 No.: DM124239

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#### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2437.0	17.82	> 500

### 6dB Bandwidth of Fundamental Emission on 802.11 n20 (2437MHz)



BMP Date: 5.JUL.2016 17:00:51

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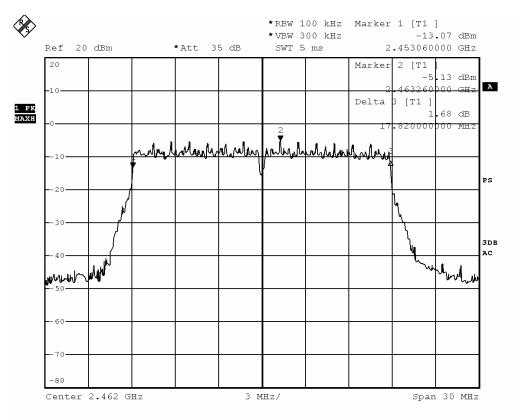
### Date: 2016-07-15 No.: DM124239

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#### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range	6dB Bandwidth	FCC Limits
[MHz]	[MHz]	[kHz]
2462.0	17.82	> 500

#### 6dB Bandwidth of Fundamental Emission on 802.11 n20 (2462MHz)



BMP Date: 5.JUL.2016 17:03:04

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#### 3.1.5 Band Edges Measurement

Test Requirement:	FCC 47CFR 15.247
Test Method:	ANSI C63.10:2013
Test Date:	2016-07-05
Mode of Operation:	WiFi mode

#### **Test Method:**

The band edge is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. The RBW and VBW are set to 100kHz for this measurement.

#### **Test Setup:**

As Test Setup of clause 3.1.2 in this test report.

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Date: 2016-07-15 No.: DM124239 Page 40 of 55

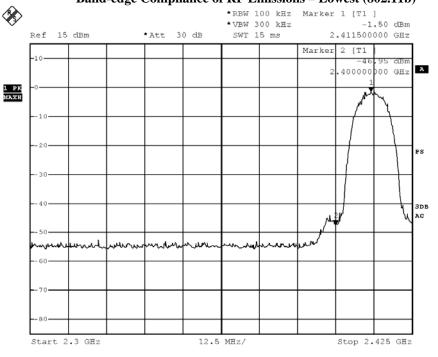
#### Band-edge Compliance of RF Conducted Emissions Measurement:

#### Limit :

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. Attenuation below the general limits specified in Section 15.209(a) is not required.

Remark: Emissions under the fixed frequency mode and hopping mode have been investigated, the worst-case measurement results were recorded in the test report

Frequency Range	Radiated Emission Attenuated below the		
Fundamental			
[MHz]	[dB]		
2400 – Lowest Fundamental (2412)	45.45		



### Band-edge Compliance of RF Emissions – Lowest (802.11b)

BMP

Date: 5.JUL.2016 17:56:56

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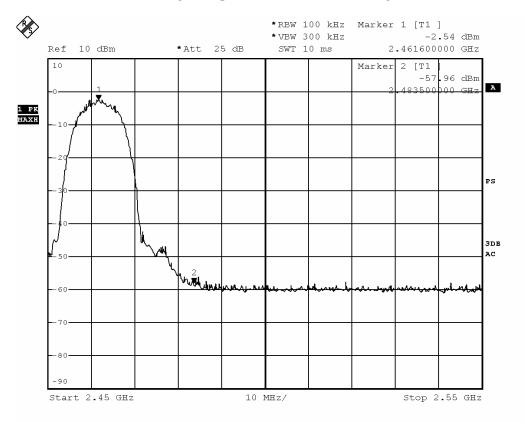


### Date: 2016-07-15 No.: DM124239

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#### Band-edge Compliance of RF Conducted Emissions Measurement:

Frequency Range	Radiated Emission Attenuated below the		
	Fundamental		
[MHz]	[dB]		
2483.5 - Highest Fundamental (2462)	55.42		



#### Band-edge Compliance of RF Emissions – Highest (802.11b)

BMP

Date: 5.JUL.2016 17:54:38

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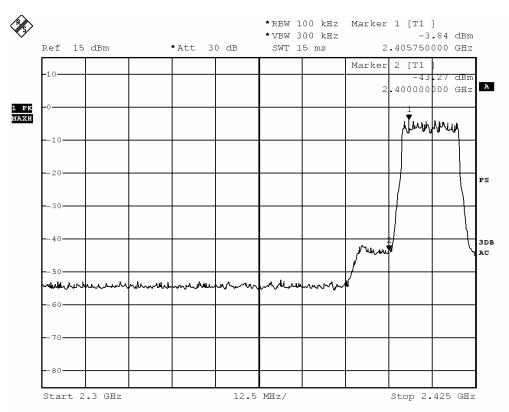
### Date: 2016-07-15 No.: DM124239

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#### Band-edge Compliance of RF Conducted Emissions Measurement:

Frequency Range	Radiated Emission Attenuated below the
	Fundamental
[MHz]	[dB]
2400 – Lowest Fundamental (2412)	39.43

#### Band-edge Compliance of RF Emissions – Lowest (802.11g)



BMP Date: 5.JUL.2016 18:00:26

STC (Dongguan) Company Limited

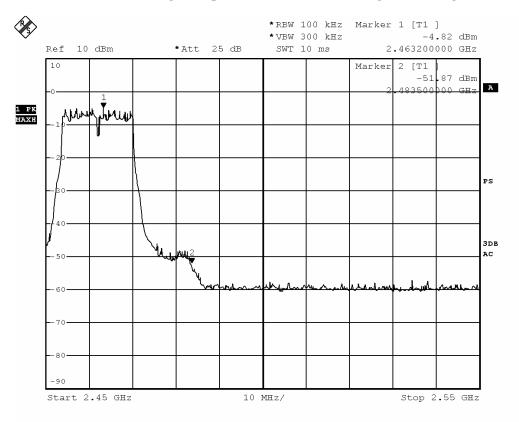
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#### Band-edge Compliance of RF Conducted Emissions Measurement:

Frequency Range	Radiated Emission Attenuated below the
	Fundamental
[MHz]	[dB]
2483.5 - Highest Fundamental (2462)	47.05



#### Band-edge Compliance of RF Emissions – Highest (802.11g)

BMP

Date: 5.JUL.2016 17:51:26

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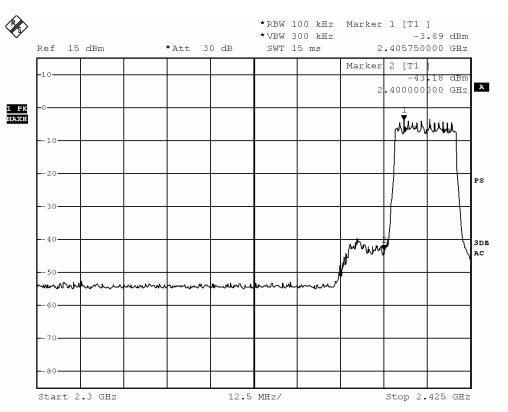


### Date: 2016-07-15 No.: DM124239

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#### Band-edge Compliance of RF Conducted Emissions Measurement:

Frequency Range	Radiated Emission Attenuated below the		
	Fundamental		
[MHz]	[dB]		
2400 – Lowest Fundamental (2412)	39.29		



#### Band-edge Compliance of RF Emissions – Lowest (802.11n20)

BMP Date: 5.JUL.2016 18:06:28

STC (Dongguan) Company Limited

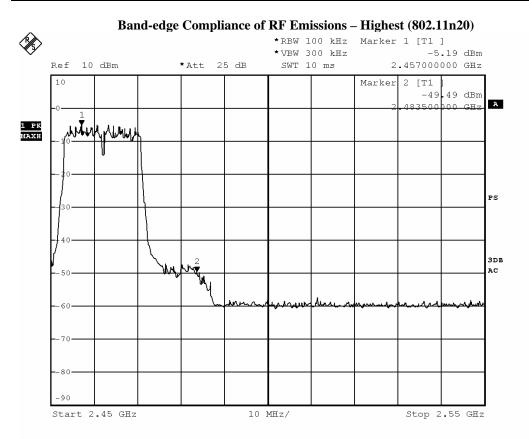
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Date: 2016-07-15 No.: DM124239 Page 45 of 55

#### Band-edge Compliance of RF Conducted Emissions Measurement:

Frequency Range	Radiated Emission Attenuated below the
	Fundamental
[MHz]	[dB]
2483.5 - Highest Fundamental (2462)	44.30



BMP Date: 5.JUL.2016 17:47:07

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#### Band-edge Compliance of RF Radiated Emissions Measurement:

#### Limit :

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. 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) (see Section 5.205(c)).

### Result: Band-edge Compliance of RF Radiated Emissions (Lowest)-802.11b

Field Strength of Band-edge Compliance Peak Value								
Frequency Measured Correction Field Limit Margin E-Field								
MHz	$\begin{array}{c c c c c c c c c c c c c c c c c c c $							
2390.0	20.1	36.8	56.9	74.0	17.1	Vertical		

Field Strength of Band-edge Compliance Average Value								
Frequency	Frequency Measured Correction Field Limit Margin E-Field							
	Level @3m Factor Strength @3m Polarity							
MHz	MHz $dB\mu V$ $dB/m$ $dB\mu V/m$ $dB\mu V/m$ $dB\mu V/m$							
2390.0	2.7	36.8	39.5	54.0	14.5	Vertical		

#### Result: Band-edge Compliance of RF Radiated Emissions (Highest) -802.11b

Field Strength of Band-edge Compliance								
Peak Value								
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m Factor Strength @3m Polarity							
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
2483.5	13.2	36.4	49.6	74.0	24.4	Horizontal		

Field Strength of Band-edge Compliance								
Average Value								
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
2483.5	2.9	36.4	39.3	54.0	14.7	Horizontal		

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### Result: Band-edge Compliance of RF Radiated Emissions (Lowest)-802.11g

	Field Strength of Band-edge Compliance							
Peak Value								
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
2390.0	25.3	36.8	62.1	74.0	11.9	Vertical		

Field Strength of Band-edge Compliance Average Value							
Frequency	Measured	Correction	Field	Limit	Margin	E-Field	
	Level @3m	Factor	Strength	@3m		Polarity	
MHz	dBµV	dB/m	dBµV/m	dBµV/m	$dB\mu V/m$		
2390.0	4.9	36.8	41.7	54.0	12.3	Vertical	

#### Result: Band-edge Compliance of RF Radiated Emissions (Highest) -802.11g

	Field Strength of Band-edge Compliance								
Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field			
	Level @3m	Factor	Strength	@3m		Polarity			
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m				
2483.5	20.2	36.4	56.6	74.0	17.4	Horizontal			

Field Strength of Band-edge Compliance								
		A	verage Valu	e				
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
2483.5	3.0	36.4	39.4	54.0	14.6	Horizontal		

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### Result: Band-edge Compliance of RF Radiated Emissions (Lowest)-802.11n20

	Field Strength of Band-edge Compliance							
Peak Value								
Frequency	Measured	Correction	Field	Limit	Margin	E-Field		
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
2390.0	26.3	36.8	63.1	74.0	10.9	Vertical		

Field Strength of Band-edge Compliance Average Value							
Frequency	Measured	Correction	Field	Limit	Margin	E-Field	
	Level @3m	Factor	Strength	@3m		Polarity	
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m		
2390.0	5.5	36.8	42.3	54.0	11.7	Vertical	

#### Result: Band-edge Compliance of RF Radiated Emissions (Highest) -802.11n20

	Field Strength of Band-edge Compliance								
Peak Value									
Frequency	Measured	Correction	Field	Limit	Margin	E-Field			
	Level @3m	Factor	Strength	@3m		Polarity			
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m				
2483.5	20.5	36.4	56.9	74.0	17.1	Horizontal			

Field Strength of Band-edge Compliance								
		A	verage Valu	e				
Frequency	Measured	Measured Correction Field Limit Margin E-						
	Level @3m	Factor	Strength	@3m		Polarity		
MHz	dBµV	dB/m	dBµV/m	dBµV/m	dBµV/m			
2483.5	4.3	36.4	40.7	54.0	13.3	Horizontal		

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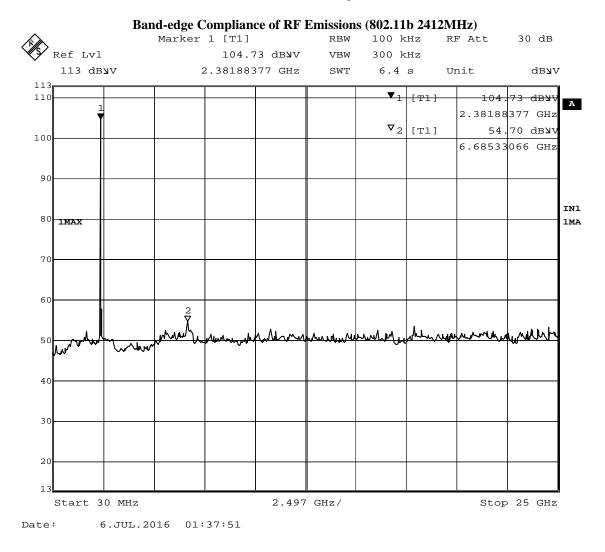
Date: 2016-07-15 No.: DM124239 Page 49 of 55

#### Band-edge Compliance of RF Conducted Emissions Measurement:

#### Limit :

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. Attenuation below the general limits specified in Section 15.209(a) is not required.

Remark: Emissions under the fixed frequency mode and hopping mode have been investigated, the worst-case measurement results were recorded in the test report

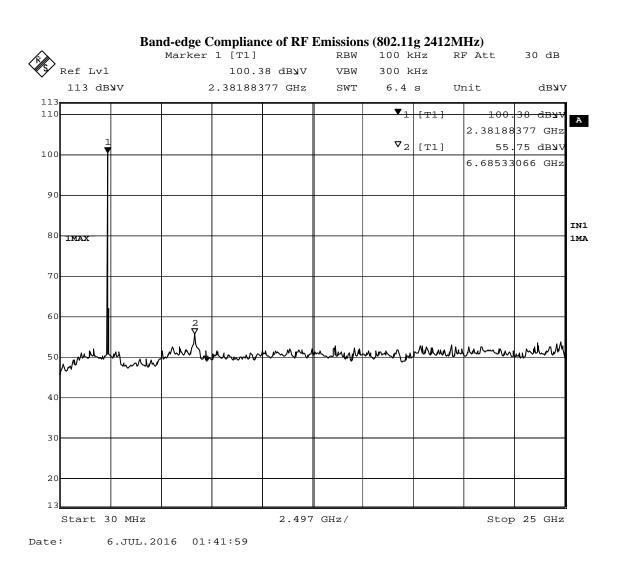


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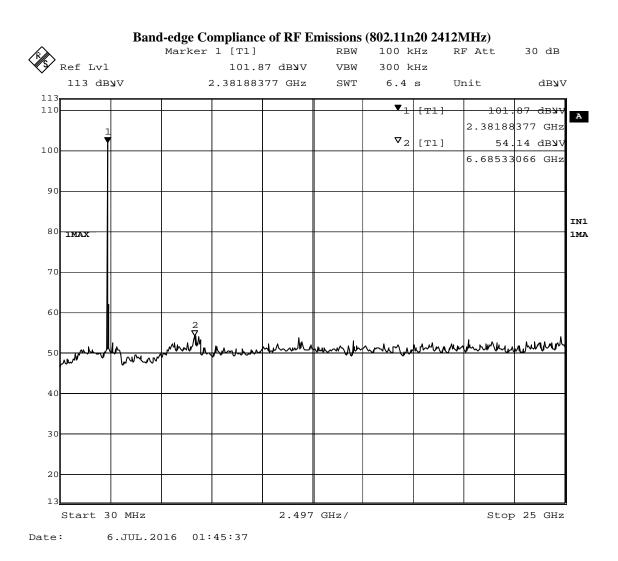


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3.1.6 RF Exposure

Test Requirement: Test Date: Mode of Operation: FCC 47CFR 15.247(i) 2016-07-08 WiFi mode

#### **Test Method:**

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

#### **Test Results:**

The EUT complied with the requirement(s) of this section. EUT meets the requirements of these sections as proven through MPE calculation The MPE calculation for EUT @ 20cm Based on the highest P = 54.954 mW

 $Pd = PG/4pi*R^{2} = (54.954x 1.78)/12.566* (20)^{2}$ = (97.818)/12.566x 400= 97.818 /5026.4 = 0.0195mW/cm^{2}

where:

\*Pd = power density in mW/cm2

\* G = Antenna numeric gain (1.78); Log G = g/10 (g = 2.5dBi).

\* P = Conducted RF power to antenna (54.954 mW).

\* R = Minimum allowable distance.(20 cm)

\*The power density  $Pd = 0.0195 \text{mW/cm}^2$  is less than 1 mW/cm<sup>2</sup> (listed MPE limit)

\*The SAR evaluation is not needed ( this is a desk top device, R>20 cm )

\* The EUT( antenna ) must be 0.2 meters away from the General Population.

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### Date: 2016-07-15 No.: DM124239

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#### Appendix A

#### List of Measurement Equipment

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EMD004	LISN	ROHDE & SCHWARZ	ESH3-Z5	100102	2016.3.29	2017.3.29
EMD022	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100314	2016.3.29	2017.3.29
EMD035	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100441	2016.3.29	2017.3.29
EMD036	EMI Test Receiver	ROHDE & SCHWARZ	ESIB 26	100388	2016.3.29	2017.3.29
EMD041	TWO-LINE V- NETWORK	ROHDE & SCHWARZ	ENV216	100261	2016.3.29	2017.3.29
EMD061	Biconilog Antenna	ETS.LINDGREN	3142C	00060439	2014.11.29	2016.11.29
EMD062	Double-Ridged Waveguide (1GHz – 18GHz)	ETS.LINDGREN	3117	00075933	2014.11.15	2016.11.15
EMD084	MULTI-DVICE CONTROLLER	ETS.LINDGREN	2090	00060107	N/A	N/A
EMD088	Video Contol Unit	ETS.LINDGREN	Y21953A	2601073	N/A	N/A
EMD093	Monitor	ViewSonic	VA9036	Q8X064201876	N/A	N/A
EMD102	Intelligent Frequency	Ainuo Instrument Co., Ltd	AN97005SS	79707454	N/A	N/A
EMD103	Intelligent Frequency	Ainuo Instrument Co., Ltd	AN97005SS	79707455	N/A	N/A
EMD105	FACT-3 EMC Chamber	ETS.LINDGREN	FACT-3	3803	N/A	N/A
EMD106	Shielding Room #1	ETS.LINDGREN	RFD-100	3802	N/A	N/A
EMD111	Power meter	ROHDE & SCHWARZ	NRVD	102051	2016.3.29	2017.3.29
	100V Insertion Unit	ROHDE & SCHWARZ	URV5-Z4	100464	2016.3.29	2017.3.29
EMD113	Pre-Amplifier	ROHDE & SCHWARZ	N/A	1129588	2016.3.29	2017.3.29
EMD124	Loop Antenna	ETS-Lindgren	6502	00104905	2016.05.23	2017.05.23
EMD131	Standard Gain Horn Antenna (18GHz – 26.5GHz)	Chengdu AINFO Inc.	JXTXLB-42- 15-C-KF	J2021100721001	2015.04.09	2017.04.09
RE01	RF cable	N/A	N/A	N/A	2014-9-28	2016-9-27
RE02	RF cable	N/A	N/A	N/A	2014-9-28	2016-9-27

Remarks:-

N/A Not Applicable or Not Available

STC (Dongguan) Company Limited

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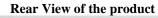
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Appendix B

Photographs of EUT



Inside View of the product





**Inner Circuit Top View** 



**Inner Circuit Bottom View** 





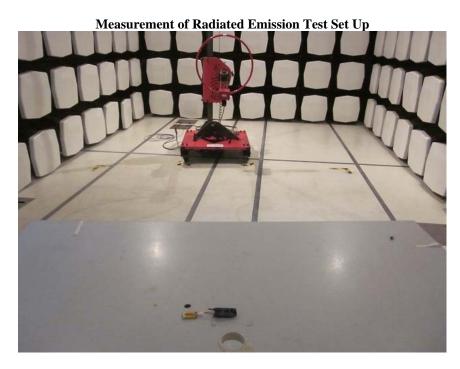
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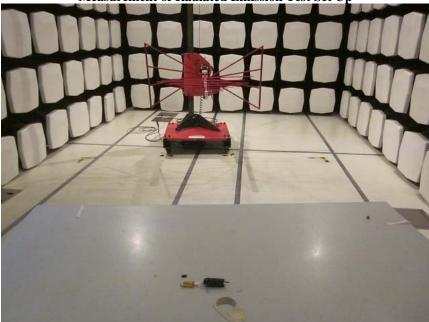


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Photographs of EUT



Measurement of Radiated Emission Test Set Up



\*\*\*\*\* End of Test Report \*\*\*\*\*

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