

# **ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT**

# INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C AND RSS 247 REQUIREMENT

OF

**Product Name:** TH 24/7 YOU

**Brand Name: Tommy Hilfiger** 

Model No.: TH 24/7 YOU

**Model Difference:** N/A

FCC ID: 2ALO3TH247YOU

IC: 22570-TH247YOU

**Report No.:** ER/2017/40027

**Issue Date:** Apr. 28, 2017

**FCC Rule Part:** §15.247, Cat: DTS

IC Rule: RSS-247 issue 2 Feb. 2017

MOVADO GROUP INC. **FCC Prepared for:** 

29th floor, Citicorp Center; 18 Whitfield Road, North

Point, Hong Kong.

Prepared by: SGS Taiwan Ltd.

**Electronics & Communication Laboratory** 

No.134, Wu Kung Road, New Taipei Industrial Park,

Wuku District, New Taipei City, Taiwan 24803





lesting Laboratory 0513

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SGS Taiwan Ltd.

t (886-2) 2299-3279

f (886-2) 2298-0488



# **VERIFICATION OF COMPLIANCE**

**FCC Applicant:** MOVADO GROUP INC.

29th floor, Citicorp Center; 18 Whitfield Road, North Point, Hong

Kong.

**Product Name:** TH 24/7 YOU **Brand Name:** Tommy Hilfiger Model No.: TH 24/7 YOU

**Model Difference:** N/A

FCC ID: 2ALO3TH247YOU IC: 22570-TH247YOU **Report Number:** ER/2017/40027

Date of test: Feb. 16, 2017 ~ Apr. 14, 2017

Date of EUT Received: Feb. 16, 2017

# We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

Test By: Date: Apr. 28, 2017

Louis Chen / Engineer

Apr. 28, 2017 Date:

Stefanie Yu / Clerk

Approved By: Apr. 28, 2017 Date:

Jim Chang / Asst. Manager

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# **Revision History**

Report Number	Revision	Description	Issue Date
ER/2017/40027	Rev.00	Initial creation of document	Apr. 28, 2017

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#### **GENERAL INFORMATION**

#### 1.1 Product description

#### General:

Jeneral.			
Product Name:	TH 24/7 YOU		
Brand Name:	Tommy F	Hilfiger	
Model No.:	TH 24/7	YOU	
Model Difference:	N/A		
Product SW/HW version:	N/A / HW1000		
Radio SW/HW version:	N/A / N/A		
Test SW Version:	N/A		
RF power setting in TEST SW:	N/A		
Wireless Charger:	Model No.: N/A, Supplier: N/A		
Power Supply:	3.8Vdc Rechargeable Li-ion Battery or 5Vdc from Wireless Charger		
117	Battery:	Model No.: APP00206, Supplier: APACK	

#### WLAN 2.4GHz:

Wi-Fi	Frequency Range	Channels	Rated Power	Type of Emission 99%	Modulation Technology		
11b/g	2412-2462	11	b: 18.63dBm g: 18.33dBm	b:12M5G1D g:16M6D1D	DSSS, OFDM		
11n	HT20 2412-2462	11	HT20:18.27dBm	HT20:17M7D1D	OFDM		
Antenna Designation:		Loop Antenna, Gain: -8.9dBi					
Modulation type:		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM					
Transition Rate:		802.11 g:	1/2/5.5/11 Mbps 6/9/12/18/24/36/48/54 Mbp _20MHz: 6.5 – 72.2Mbps	S			

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# 1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247

FCC KDB 558074 D01 DTS Meas. Guidance

Canada RSS-247 issue 2 Feb. 2017

Canada RSS-Gen issue 4 Nov. 2014

ANSI C63.10:2013

Note: All test items have been performed and record as per the above standards.

### 1.3 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory

No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803 (TAF code 0513)

FCC Registration Numbers are: 509634

Canada Registration Number: 4620A-5

## 1.4 Special Accessories

There are no special accessories used while test was conducted.

#### 1.5 Equipment Modifications

There was no modification incorporated into the EUT.

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#### SYSTEM TEST CONFIGURATION

# 2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### 2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

#### 2.3 Test Procedure

#### 2.3.1 **Conducted Emissions**

The EUT is a placed on as turn table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz,. The CISPR Quasi-Peak and Average detector mode is employed according to §15.207. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

#### **Radiated Emissions** 2.3.2

The EUT is a placed on as turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission. the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

#### 2.4 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

### Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor. Following shows an offset computation example with cable loss 0.45dB.

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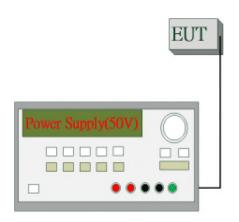
# 2.5 Configuration of Tested System Fig. 2-1 Radiated Emission Configuration



Fig. 2-2 Conduction Emission (AC Power Line) Configuration



Fig.2-3 Conducted Emission (Antenna Port) Configuration



**Table 2-1 Equipment Used in Tested System** 

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	Bluetooth Test Software	N/A	N/A	N/A	N/A	N/A
2.	DC Power Supply	Agilent	E3640A	KR93300208	N/A	Unshielded
3.	Notebook	Lenovo	L420	LR-7HXZA	Shielded	Unshielded

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#### SUMMARY OF TEST RESULTS

FCC Rules	IC Rules	Description Of Test	Result
§15.207(a)	RSS-Gen §8.8	AC Power Line Conducted Emission	Compliant
§15.247(b)(3)	RSS-247 §5.4(4)	RSS-247 §5.4(4) Peak Output Power	
§15.247(a)(2)	RSS-247 §5.2 (1) RSS-Gen §6.6 6dB & 99% Emission Bandwid		Compliant
§15.247(d)	RSS-247 §5.5	Conducted Band Edge and Spurious Emission	Compliant
§15.247(d)	RSS-247 §5.5	RSS-247 §5.5 Radiated Band Edge and Spurious Emission	
§15.247(e)	RSS-247 §5.2(2)	S-247 §5.2(2) Power Spectral Density	
§15.203 §15.247(b)	RSS- Gen §8.3	Antenna Requirement	Compliant

#### **DESCRIPTION OF TEST MODES**

### 4.1 Operated in 2400 ~ 2483.5MHz Band

11 channels are provided for 802.11b, 802.11g and 802.11n\_HT20

<u> </u>	·		
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

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#### 4.2 The Worst Test Modes and Channel Details

- 1. The EUT has been tested under operating condition.
- 2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
- 3. Investigation has been done on all the possible configurations for searching the worst case.

#### **RADIATED EMISSION TEST:**

RADIATED EMISSION TEST (BELOW 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	
802.11g	1 to 11	1,6,11	OFDM	6	

RADIATED EMISSION TEST (ABOVE 1 GHz)					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)	
802.11b	1 to 11	1, 6, 11	DSSS	1	
802.11g	1 to 11	1, 6, 11	OFDM	6	
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	MCS 0	

#### Note:

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11b/g/n WLAN Transmitter for channel Low, Mid and High, the worst case H position was reported.

#### ANTENNA PORT CONDUCTED MEASUREMENT:

	CONDUCTED TEST					
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)		
802.11b	1 to 11	1, 6, 11	DSSS	1		
802.11g	1 to 11	1, 6, 11	OFDM	6		
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	MCS 0		

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#### **MEASUREMENT UNCERTAINTY**

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
Peak Output Power	+/- 0.84 dB
6dB Bandwidth	+/- 51.33 Hz
100 KHz Bandwidth Of Frequency Band Edges	+/- 0.84 dB
Peak Power Density	+/- 1.3 dB
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC= +/- 0.2%

#### Radiated Spurious Emission:

	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 180MHz: +/- 3.37dB
Measurement uncertainty	180MHz -417MHz: +/- 3.19dB
(Polarization : <b>Vertical</b> )	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : <b>Horizontal</b> )	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

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

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#### CONDUCTED EMISSION TEST

#### 6.1 Standard Applicable

Frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

Frequency range	Lin dB(	nits uV)
MHz	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

#### Note

#### 6.2 Measurement Equipment Used

Conducted Emission Test Site										
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.					
TYPE		NUMBER	NUMBER	CAL.						
<b>EMI Test Receiver</b>	R&S	ESCI7	100760	05/10/2016	05/09/2017					
LISN	SCHWARZBECK	NSLK 8127	8127-649	05/16/2016	05/15/2017					
LISN	MESS TEC	FCC-LISN-50/250-25-2-01	4034	05/16/2016	05/15/2017					
Coaxial Cables	N/A	WK CE Cable	N/A	11/26/2016	11/25/2017					

#### 6.3 EUT Setup

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI 63.10:2013.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
- 3. The LISN was connected with 120Vac/60Hz power source.

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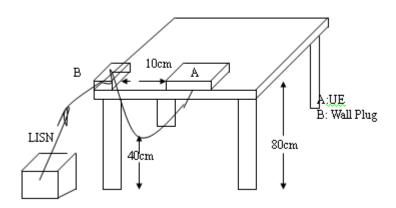
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<sup>1.</sup> The lower limit shall apply at the transition frequencies

<sup>2.</sup>The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.



### 6.4 Test SET-UP (Block Diagram of Configuration)



#### **6.5 Measurement Procedure**

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all phases of power being supplied by given UE are completed

#### 6.6 Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The \* reveals the worst-case results that closet to the limit

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SGS Taiwan Ltd.

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f (886-2) 2298-0488

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#### AC POWER LINE CONDUCTED EMISSION TEST DATA

Monaration Mada: Magazian mada - Tact Rv: Tin				1
Operation Mode: Operation mode Test By: Tin	Operation Mode:	Operation mode	Test By:	Tin

Site Conduction Room

Phase:

Temperature:

Limit: FCC Class B Conduction(QP)

AC 120V/60Hz Power:

L1

Humidity: 58 %

20 ℃

Mode: Operation mode

Note:

# Conducted Emission File:仁寶DAW3 Data :#3 Date: 2017/4/17 Time: 上午 09:34:50 80.0 dBu√ FCC Class B Conduction(QP) FCC Class B Conduction(AVG) 0.0 0.150 0.5 (MHz) 5 30.000

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1540	48.07	0.07	48.14	65.78	-17.64	peak	
2	0.1860	46.94	0.08	47.02	64.21	-17.19	peak	
3	0.2060	46.62	0.08	46.70	63.37	-16.67	peak	
4 *	0.5100	39.75	0.10	39.85	56.00	-16.15	peak	
5	4.6260	29.29	0.27	29.56	56.00	-26.44	peak	
6	25.0180	32.89	0.46	33.35	60.00	-26.65	peak	

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Site Conduction Room

Limit: FCC Class B Conduction(QP)

Mode: Operation mode

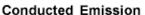
Note:

Phase: N

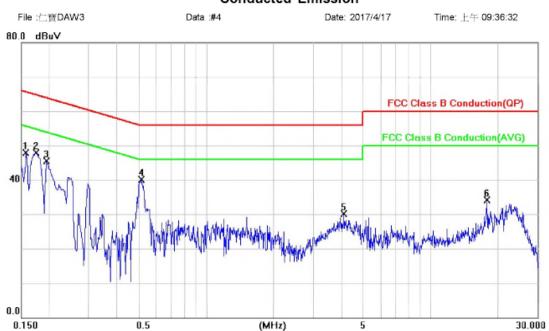
AC 120V/60Hz

Temperature: 20 ℃

Humidity: 58 %



Power:



MHz         dBuV         dB         dBuV         dBuV         dB         Detector         Comment           1         0.1580         47.93         0.07         48.00         65.57         -17.57         peak           2         0.1740         47.86         0.07         47.93         64.77         -16.84         peak           3         0.1940         45.52         0.08         45.60         63.86         -18.26         peak           4         0.5140         39.93         0.10         40.03         56.00         -15.97         peak           5         4.1300         29.92         0.24         30.16         56.00         -25.84         peak           6         17.9340         33.74         0.44         34.18         60.00         -25.82         peak	No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
2 0.1740 47.86 0.07 47.93 64.77 -16.84 peak 3 0.1940 45.52 0.08 45.60 63.86 -18.26 peak 4 * 0.5140 39.93 0.10 40.03 56.00 -15.97 peak 5 4.1300 29.92 0.24 30.16 56.00 -25.84 peak		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
3 0.1940 45.52 0.08 45.60 63.86 -18.26 peak 4 * 0.5140 39.93 0.10 40.03 56.00 -15.97 peak 5 4.1300 29.92 0.24 30.16 56.00 -25.84 peak	1	0.1580	47.93	0.07	48.00	65.57	-17.57	peak	
4 * 0.5140 39.93 0.10 40.03 56.00 -15.97 peak 5 4.1300 29.92 0.24 30.16 56.00 -25.84 peak	2	0.1740	47.86	0.07	47.93	64.77	-16.84	peak	
5 4.1300 29.92 0.24 30.16 56.00 -25.84 peak	3	0.1940	45.52	80.0	45.60	63.86	-18.26	peak	
	4 *	0.5140	39.93	0.10	40.03	56.00	-15.97	peak	
6 17.9340 33.74 0.44 34.18 60.00 -25.82 peak	5	4.1300	29.92	0.24	30.16	56.00	-25.84	peak	
	6	17.9340	33.74	0.44	34.18	60.00	-25.82	peak	

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#### **DUTY CYCLE OF TEST SIGNAL**

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

#### Formula:

Duty Cycle = Ton / (Ton+Toff)

#### **Measurement Procedure:**

- 1. Set span = Zero
- 2. RBW = 8MHz
- 3. VBW = 8MHz,
- Detector = Peak

#### **Duty Cycle:**

	Duty Cycle (%)	Duty Factor (dB)
802.11b	97.63	0.10
802.11g	87.24	0.59
802.11n_20	86.64	0.62

Duty Cycle Factor:  $10 * \log(1/0.9763) = 0.1$ Duty Cycle Factor:  $10 * \log(1/0.8724) = 0.59$ Duty Cycle Factor:  $10 * \log(1/0.8664) = 0.62$ 

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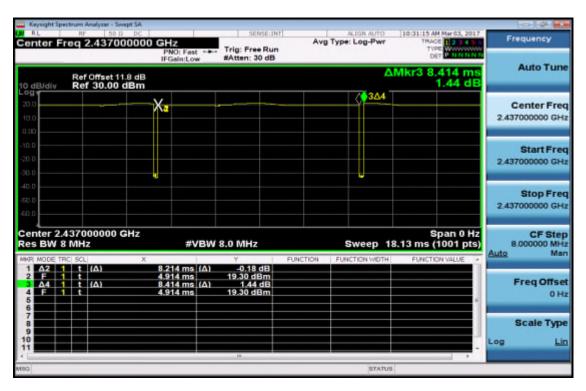
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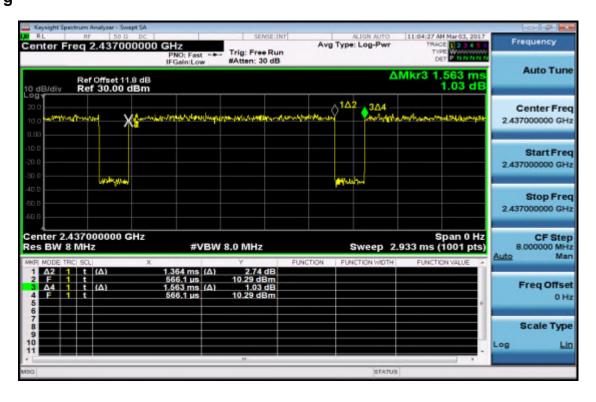
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# 7.1 DUTY CYCLE TEST SIGNAL Measurement Result 802.11 b



#### 802.11 g



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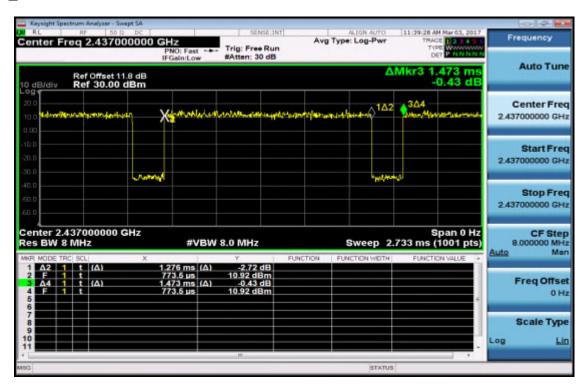
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#### 802.11 n\_20 MHz



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#### PEAK OUTPUT POWER MEASUREMENT

#### 8.1 Standard Applicable

For systems using digital modulation in the 2400-2483.5 MHz bands, the limit for peak output power is 1Watt.

If the transmitting antenna of directional gain greater than 6dBi are used the peak output power form the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6dBi.

In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of Antenna exceeds 6dBi.

### 8.2 Measurement Equipment Used

	Conducted Emission Test Site										
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.						
TYPE		NUMBER	NUMBER	CAL.							
Power Meter	Anritsu	ML2495A	1005007	12/15/2016	12/14/2017						
Power Sensor	Anritsu	MA2411B	917032	12/15/2016	12/14/2017						
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2017	01/04/2018						
Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	23670/2	01/05/2017	01/04/2018						
Splitter	Agilent	11636B	N/A	01/05/2017	01/04/2018						
DC Power Supply	Agilent	E3640A	MY52410006	11/21/2016	11/20/2017						
Attenuator	WOKEN	218FS-10	RF23	12/12/2016	12/11/2017						
DC Power Supply	Agilent	E3640A	MY53140006	05/04/2016	05/03/2017						

#### 8.3 Test Set-up

Power Meter:

#### 8.4 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.

#### **Power Meter:**

It is used as the auxiliary test equipment to conduct the output power measurement.

4. Record the max. Reading as observed from Spectrum or Power Meter.

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#### 8.5 Measurement Result

802.1	1b Main					
СН	Freq. (MHz)	Data Rate	Peak Output Power (dBm)	Peak Output Power (mW)	Limit	RESULT
1	2412	1	18.46	70.15	1 Watt = 30.00 dBm	PASS
6	2437	1	18.63	72.95	1 Watt = 30.00 dBm	PASS
11	2462	1	18.45	69.98	1 Watt = 30.00 dBm	PASS
802.1	1b Main					
СН	Freq. (MHz)	Data Rate	Max. Output include tune up tolerance Power (dBm)	Max. Output include tune up tolerance Power (mW)	Limit	RESULT
1	2412	1	15.52	35.65	1 Watt = 30.00 dBm	PASS
1 6	2412 2437	1	15.52 <b>15.67</b>	35.65 <b>36.90</b>	1 Watt = 30.00 dBm 1 Watt = 30.00 dBm	PASS PASS

802.1	1g Main					
СН	Freq. (MHz)	Data Rate	Peak Output Power (dBm)	Peak Output Power (mW)	Limit	RESULT
1	2412	6	18.33	68.08	1 Watt = 30.00 dBm	PASS
6	2437	6	18.29	67.45	1 Watt = 30.00 dBm	PASS
11	2462	6	18.12	64.86	1 Watt = 30.00 dBm	PASS
802.1	1g Main					
СН	Freq. (MHz)	Data Rate	Max. Output include tune up tolerance Power (dBm)	Max. Output include tune up tolerance Power (mW)	Limit	RESULT
1	2412	6	9.22	8.36	1 Watt = 30.00 dBm	PASS
6	2437	6	9.13	8.18	1 Watt = 30.00 dBm	PASS
11	2462	6	8.84	7.66	1 Watt = 30.00 dBm	PASS

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802.1	802.11n_HT20M Main										
СН	Freq. (MHz)	Data Rate	Peak Output Power (dBm)	Peak Output Power (mW)	Limit	RESULT					
1	2412	MCS0	18.23	66.53	1 Watt = 30.00 dBm	PASS					
6	2437	MCS0	18.27	67.14	1 Watt = 30.00 dBm	PASS					
11	2462	MCS0	18.09	64.42	1 Watt = 30.00 dBm	PASS					
802.1	1n_HT20	M Main									
СН	Freq. (MHz)	Data Rate	Max. Output include tune up tolerance Power (dBm)	Max. Output include tune up tolerance Power (mW)	Limit	RESULT					
1	2412	MCS0	9.2	8.32	1 Watt = 30.00 dBm	PASS					
6	2437	MCS0	9.11	8.15	1 Watt = 30.00 dBm	PASS					
11	2462	MCS0	8.83	7.64	1 Watt = 30.00 dBm	PASS					

Note:

11.80 offset dΒ

\* Note: The duty cycle factor is compensated to obtain the maximum value of measurement in average.

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#### 6dB & 99% BANDWIDTH MEASUREMENT

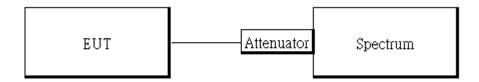
# 9.1 Standard Applicable

The minimum 6 dB bandwidth shall be at least 500 kHz.

### 9.2 Measurement Equipment Used

Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
EXA Spectrum Analyzer	Agilent	N9030A	MY53120760	02/25/2017	02/24/2018				
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2017	01/04/2018				
Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	23670/2	01/05/2017	01/04/2018				
DC Power Supply	Agilent	E3640A	MY52410006	11/21/2016	11/20/2017				

#### 9.3 Test Set-up



#### 9.4 Measurement Procedure

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. For 6dB Bandwidth:
  - Set the spectrum analyzer as RBW = 100 kHz, VBW = 3\*RBW, Span = 30M/50MHz, Detector=peak, Sweep=auto.
- 5. Mark the peak frequency and –6dB (upper and lower) frequency.
- 6. For 99% Bandwidth:
  - Set the spectrum analyzer as RBW=1%, VBW = 3\*RBW, Span = 30M/50MHz, Detector=Sample, Sweep=auto.
- 7. Turn on the 99% bandwidth function, max reading.
- 8. Repeat above procedures until all frequency of interest measured was complete.

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#### 9.5 Measurement Result

#### 802.11b Main

# 802.11g Main

Freq.	req. 6dB BW L		Desult		
(MHz)	(kHz)	(kHz)	Result		
2412	7575	> 500	PASS		
2437	7120	> 500	PASS		
2462	7120	> 500	PASS		

OULT IN MAIN					
Freq.	6dB BW	6dB BW Limit			
(MHz)	(kHz)	(kHz)	Result		
2412	16440	> 500	PASS		
2437	16380	> 500	PASS		
2462	16400	> 500	PASS		

#### 802.11 n HT20 Main

	_			
Freq.	6dB BW	Limit	Daguilé	
(MHz)	(kHz)	(kHz)	Result	
2412	17610	> 500	PASS	
2437	17610	> 500	PASS	
2462	17620	> 500	PASS	

802.11b Main			
Freq. (MHz)	99% BW (MHz)		
2412	12.348		
2437	12.247		
2462	12.461		

802.11g Main				
Freq. (MHz)	99% BW (MHz)			
2412	16.459			
2437	16.435			
2462	16.592			

802.11n_HT20M Main			
Freq. (MHz)	99% BW (MHz)		
_ ` ′	` ,		
2412	17.687		
2437	17.702		
2462	17.703		

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<sup>\*</sup>Refer to next page for plots



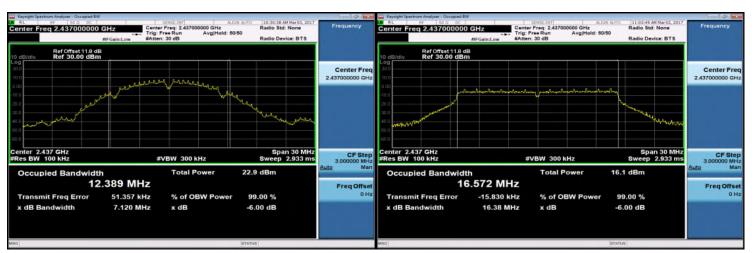
### 6dB BW 802.11b CH-Low

# 6dB BW 802.11g CH-Low



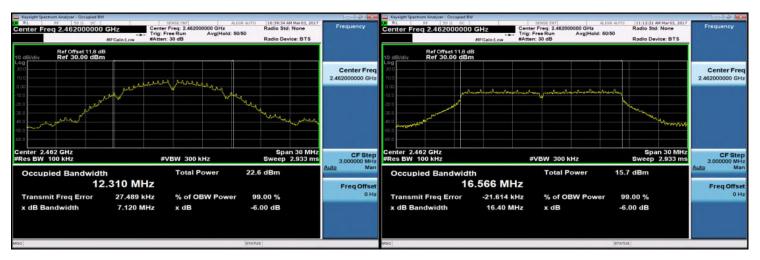
### 6dB BW 802.11b CH-Mid

# 6dB BW 802.11g CH-Mid



## 6dB BW 802.11b CH-High

# 6dB BW 802.11g CH-High



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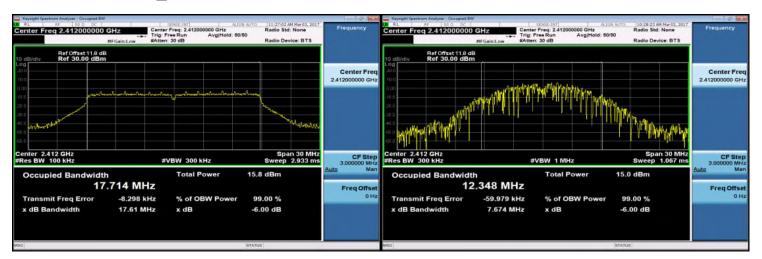
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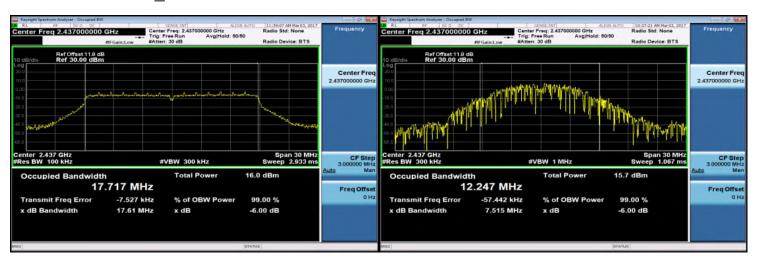
# 6dB BW 802.11n\_HT20M CH-Low

#### 99% BW 802.11b CH-Low



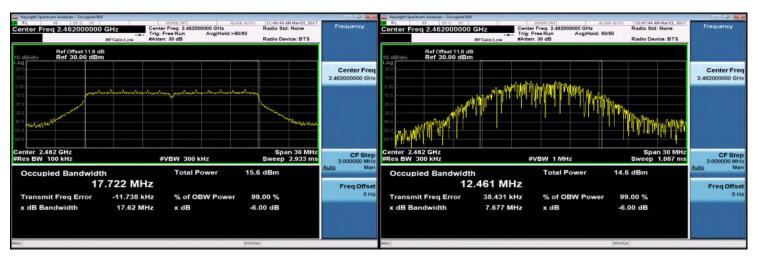
## 6dB BW 802.11n HT20M CH-Mid

### 99% BW 802.11b CH-Mid



# 6dB BW 802.11n\_HT20M CH-High

# 99% BW 802.11b CH-High



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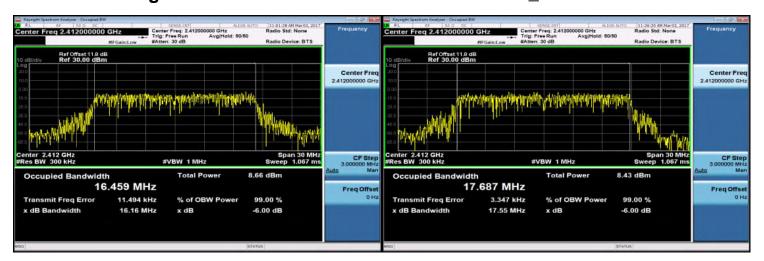
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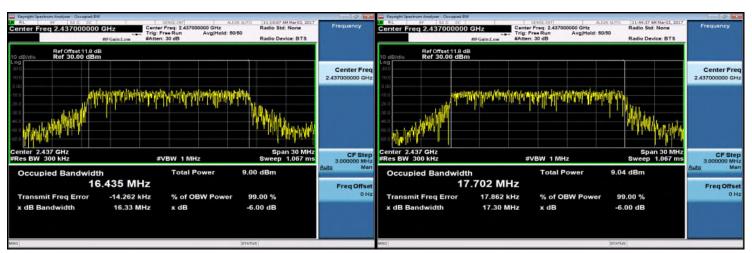
# 99% BW 802.11g CH-Low

# 99% BW 802.11n HT20M CH-Low



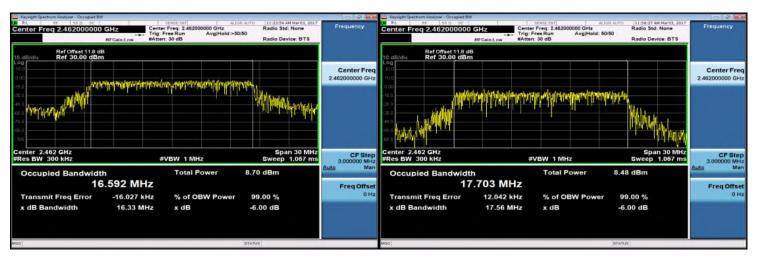
# 99% BW 802.11g CH-Mid

# 99% BW 802.11n HT20M CH-Mid



# 99% BW 802.11g CH-High

# 99% BW 802.11n HT20M CH-High



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#### 10 CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT

#### 10.1 Standard Applicable

As per KDB 558074 D01 11.1 a)

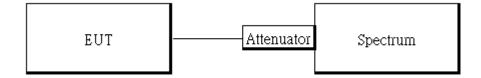
If the maximum peak conducted output power procedure was used to demonstrate compliance as described in 9.1, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz (i.e., 20 dBc).

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. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a) & RSS-Gen §8.10 Table 6, must also comply with the radiated emission limits specified in §15.209(a) & RSS-Gen §8.9 Table4 &5.

#### 10.2 **Measurement Equipment Used**

Conducted Emission Test Site								
EQUIPMENT TYPE	MFR MODEL NUMBER		SERIAL NUMBER	LAST CAL.	CAL DUE.			
EXA Spectrum Analyzer	Agilent	N9030A	MY53120760	_	02/24/2018			
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2017	01/04/2018			
Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	23670/2	01/05/2017	01/04/2018			
DC Power Supply	Agilent	E3640A	MY52410006	11/21/2016	11/20/2017			
Attenuator	Mini-Circuit	BW-S10W2+	2	01/05/2017	01/04/2018			

#### **Test SET-UP** 10.3



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#### 10.4 Measurement Procedure

#### **Band Edge Limit Calculation:**

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
- 3. Set the span to 1.5 times the DTS channel bandwidth.
- Set the RBW = 100kHz & VBW = 300 kHz.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.

#### **Conducted Band Edge:**

- 1. To connect Antenna Port of EUT to Spectrum.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance.
- 3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 4. Set start to edge frequency, and stop frequency of spectrum analyzer so as to encompass the spectrum to be examined.
- 5. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Detector = Peak, Sweep = auto
- 6. Mark the highest reading of the emission as the reference level measurement.
- 7. Set DL as the limit = reading on marker 1 20dBm
- 8. Marker on frequency, 2.3999GHz and 2.4836GHz, and examine shall 100 kHz immediately outside the authorized (2400~2483.5) be attenuated by 20dB at least relative to the maximum emission of power.
- 9. Repeat above procedures until all default test channel (low, middle, and high) was complete.

#### **Conducted Spurious Emission:**

- 1. To connect Antenna Port of EUT to Spectrum
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
- 3. Set RBW = 100 kHz & VBW = 300 kHz, Detector = Peak, Sweep = Auto.
- 4. Allow trace to fully stabilize.
- 5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
- 6. Repeat above procedures until all default test channel measured were complete.

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#### 10.5 Measurement Result

Bandedge Limit 802.11b MODE		Bandedge Limit 802.11g MODE		Bandedge Limit 802.11n20 MODE				
Freq.	PSD	Bandedge Limit	Freq.	PSD	Bandedge Limit	Freq.	PSD	Bandedge Limit
(MHz)	(dBm)	(dBm)	(MHz)	(dBm)	(dBm)	(MHz)	(dBm)	(dBm)
2412	7.08	-12.92	2412	-2.48	-22.48	2412	-2.47	-22.47
2462	7.68	-12.32	2462	-2.68	-22.68	2462	-2.92	-22.92

#### 802.11b PSD for Bandedge limit(CH-Low)



# 802.11b PSD FOR BANDEDGE LIMIT (CH-High)



## 802.11g PSD FOR BANDEDGE LIMIT(CH-Low)



# 802.11g PSD FOR BANDEDGE LIMIT (CH-High)



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802.11n\_HT20 PSD FOR BANDEDGE LIMIT (CH-Low)



802.11n HT20 PSD FOR BANDEDGE LIMIT (CH-High)



802.11b Band Edges Test Data CH-Low



Band Edges Test Data CH-High



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802.11g Band Edges Test Data CH-Low

RL NF S0 0 DC

Center Freq 2.370000000 GHz

PNO: Feet Attention and Attention 30 dB

Ref Offset 11.8 dB Ref 30.00 dBm

802.11n HT20 Band Edges Test Data CH-Low

Center Fre

CF Ste

Freq Offse Scale Typ



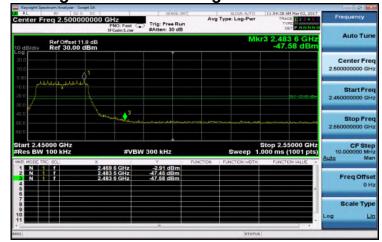
Band Edges Test Data CH-High

2.419 44 GHz 2.399 90 GHz 2.390 00 GHz

-2.53 dBm -39.26 dBm -48.40 dBm



Band Edges Test Data CH-High



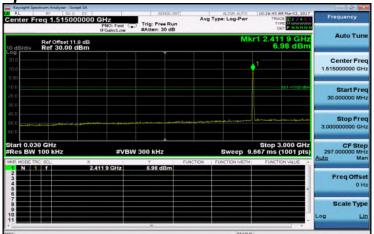
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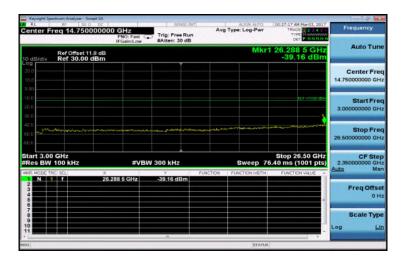
Offices otherwise stated the results shown in this test report retier only to the samplets) tested and such samplets) are retained for 90 days only. 

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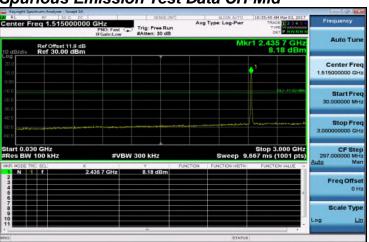


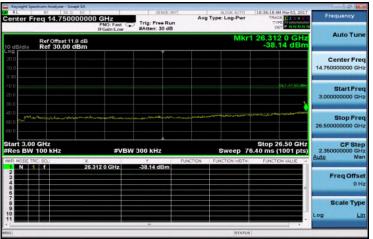
## 802.11b Spurious Emission Test Data CH-Low





### Spurious Emission Test Data CH-Mid





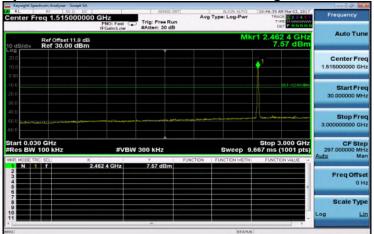
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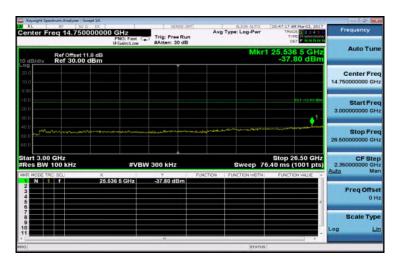
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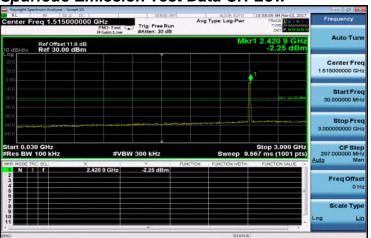


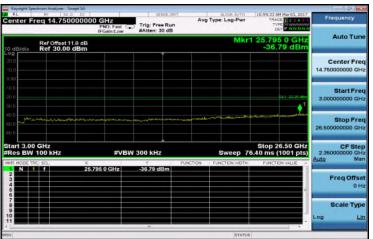
## Spurious Emission Test Data CH-High





# 802.11g Spurious Emission Test Data CH-Low





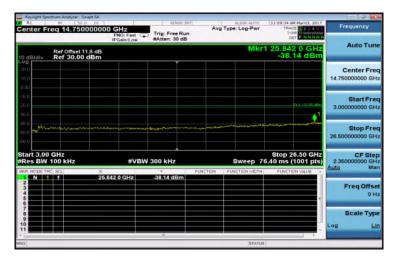
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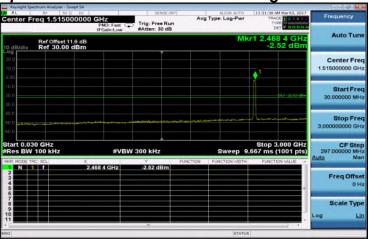


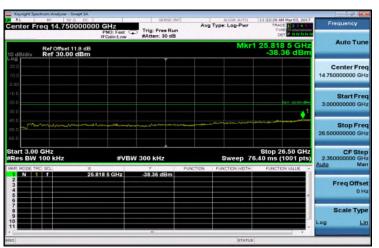
### Spurious Emission Test Data CH-Mid





### Spurious Emission Test Data CH-High





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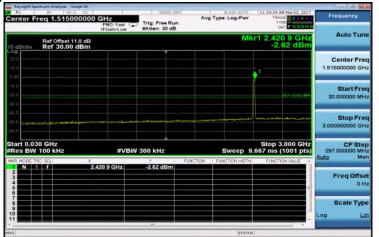
Offices otherwise stated the results shown in this test report retier only to the sample(s) tested and such sample(s) tes sibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of

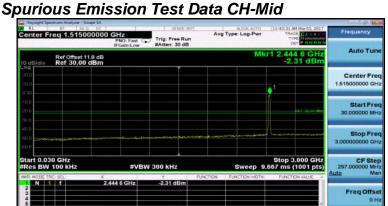
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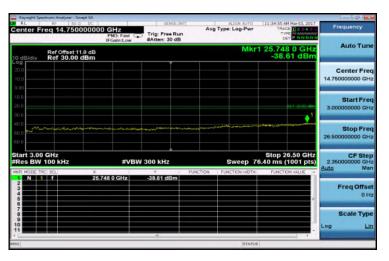


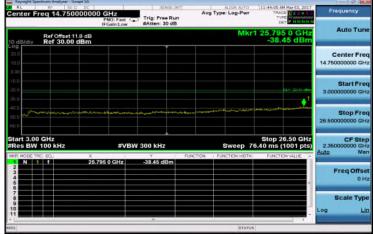
### 802.11n HT20

#### Spurious Emission Test Data CH-Low







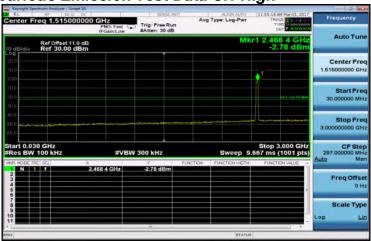


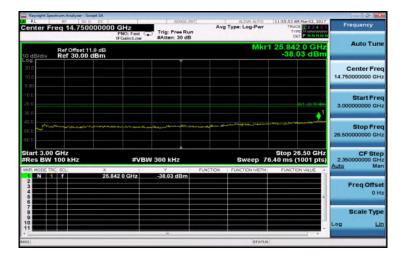
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Spurious Emission Test Data CH-High





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## 11 RADIATED BANDEDGE AND SPURIOUS EMISSION MEASUREMENT

## 11.1 Standard Applicable

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. In addition, radiated emissions which fall in the restricted bands must also comply with the §15.209 & RSS-Gen §8.10 Table 6 limit as below.

And according to §15.33(a) (1) & RSS-Gen §8.9 Table 4 & 5, for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

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

#### Note:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level  $(dB\mu V/m) = 20 \log Emission level (dB\mu V/m)$

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## 11.2 Measurement Equipment Used:

966 Chamber										
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.					
EMI Test Receiver	R&S	ESCI7	100760	05/10/2016	05/09/2017					
Spectrum Analyzer	Agilent	E4446A	MY51100003	04/25/2017	04/24/2018					
Loop Antenna	ETS-Lindgren	6502	148045	09/20/2016	09/19/2017					
Bilog Antenna	SCHWAZBECK	VULB9168	378	12/19/2016	12/18/2017					
Horn Antenna	Schwarzbeck	BBHA9120D	1441	08/01/2016	07/31/2017					
Pre-Amplifier	Agilent	8447D	2944A07676	01/05/2017	01/04/2018					
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/05/2017	01/04/2018					
Turn Table	HD	DT420	N/A	N.C.R	N.C.R					
Antenna Tower	ChamPro	AM-BS-4500-B	060776-ABS	N.C.R	N.C.R					
Controller	ChamPro	EM1000	60776	N.C.R	N.C.R					
Low Loss Cable	Huber Suhner	966_RX	9	01/05/2017	01/04/2018					
3m Site NSA	SGS	966 chamber	N/A	07/01/2016	06/30/2017					
Low Loss Cable	Huber Suhner	966 TX	1	01/05/2017	01/04/2018					
Horn Antenna	Schwarzbeck	BBHA9170	184	12/12/2016	12/11/2017					
Pre-Amplifier	EMC Instruments Corp.	EMC184045	980135	01/05/2017	01/04/2018					

NOTE: N.C.R refers to Not Calibrated Required.

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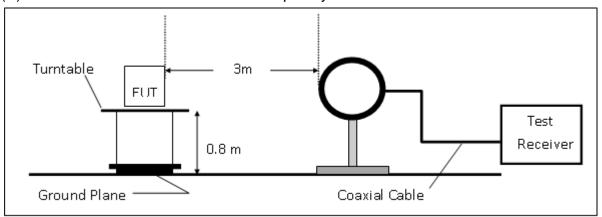
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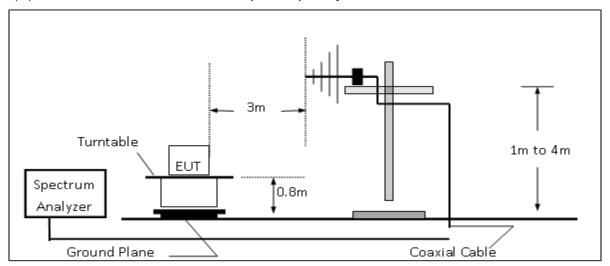


## 11.3 Test SET-UP

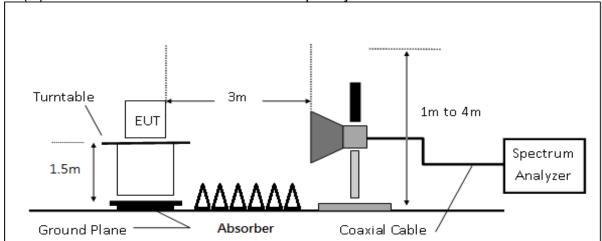
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



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



(C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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#### 11.4 Measurement Procedure

- 1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance.
- 2. The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plane.
- 3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 5. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.
- 6. Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
- 7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
- 8. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
- 9. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- 10. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 11. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. On spectrum, change spectrum mode in linear display mode, and reduce VBW = 10Hz if average reading is measured.
- 12. Repeat above procedures until all default test channel measured were complete.

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#### 11.5 **Field Strength Calculation**

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

Actual FS(dB $\mu$ V/m) = SPA. Reading level(dB $\mu$ V) + Factor(dB)

Factor(dB) = Antenna Factor(dBµV/m) + Cable Loss(dB) - Pre\_Amplifier Gain(dB)

## Note:

"F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

## Test Results of Radiated Spurious Emissions form 9 kHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) was not reported.

#### 11.7 **Measurement Result**

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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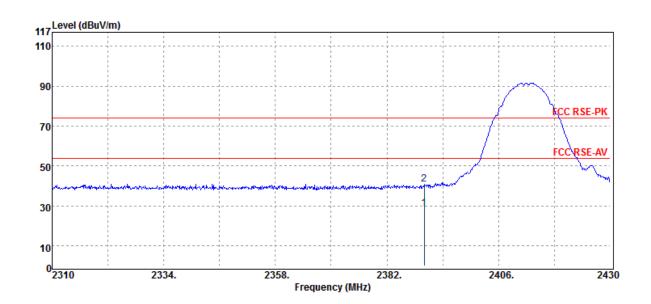
# 11.7.1 Radiated Band Edge Measurement Result (With WPC)

Operation Band :802.11b Test Date :2017-04-17

Fundamental Frequency :2412 MHz Temp./Humi. :23 deg\_C / 62 RH

Operation Mode :Bandedge CH LOW Engineer :Mike

EUT Pol. :H Plane Measurement Antenna Pol. :VERTICAL



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμ̈V	dB	dBµV/m	dBµV/m	dB
2390.00	Е	Average	30.52	-1.74	28.78	54.00	-25.22
2390.00	Е	Peak	42.69	-1.74	40.95	74.00	-33.05

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:802.11b :2412 MHz :Bandedge CH LOW

**Operation Mode** EUT Pol.

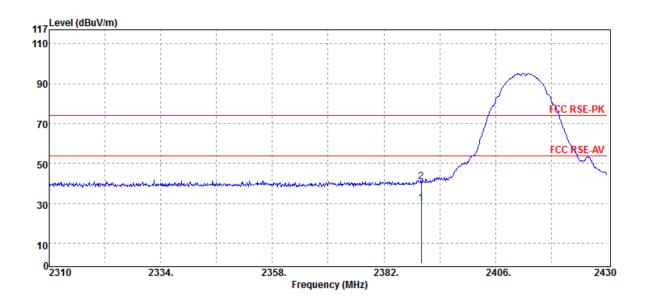
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	31.58	-1.74	29.84	54.00	-24.16
2390.00	Е	Peak	42.48	-1.74	40.74	74.00	-33.26

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EUT Pol.

**Operation Mode** 

:802.11b :2462 MHz

:Bandedge CH HIGH

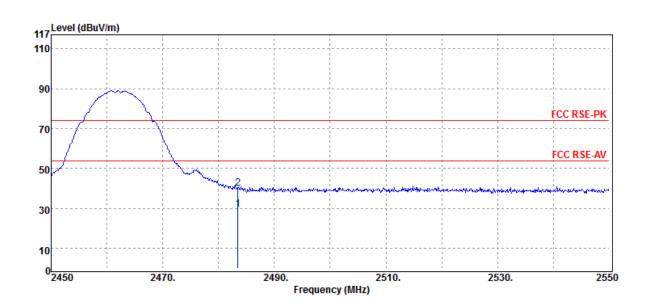
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	31.05	-1.62	29.43	54.00	-24.57
2483.50	E	Peak	41.59	-1.62	39.97	74.00	-34.03

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f (886-2) 2298-0488



**Operation Mode** 

EUT Pol.

:802.11b :2462 MHz

:Bandedge CH HIGH

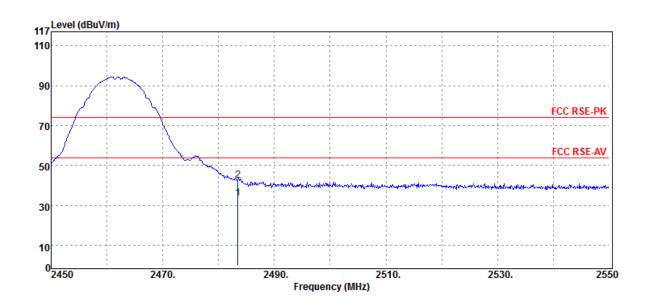
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	Е	Average	35.19	-1.62	33.57	54.00	-20.43
2483.50	Е	Peak	43.98	-1.62	42.36	74.00	-31.64

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**Operation Band** 

:802.11g Fundamental Frequency :2412 MHz **Operation Mode** :Bandedge CH LOW

EUT Pol.

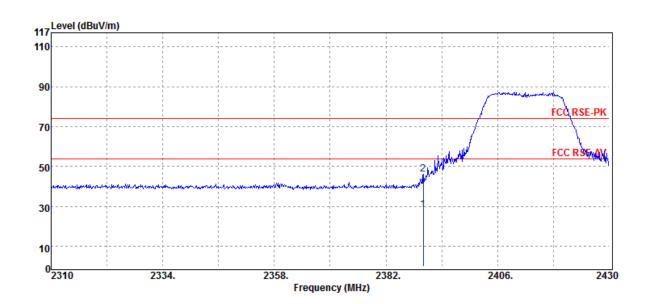
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	30.24	-1.74	28.50	54.00	-25.50
2390.00	Е	Peak	47.85	-1.74	46.11	74.00	-27.89

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:802.11g :2412 MHz :Bandedge CH LOW

**Operation Mode** EUT Pol.

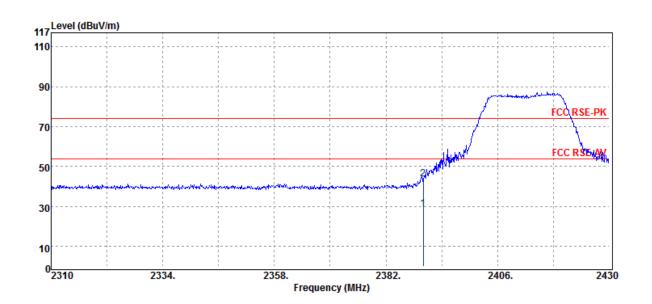
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	30.35	-1.74	28.61	54.00	-25.39
2390.00	Е	Peak	45.39	-1.74	43.65	74.00	-30.35

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**Operation Mode** EUT Pol.

:802.11g :2462 MHz

:Bandedge CH HIGH

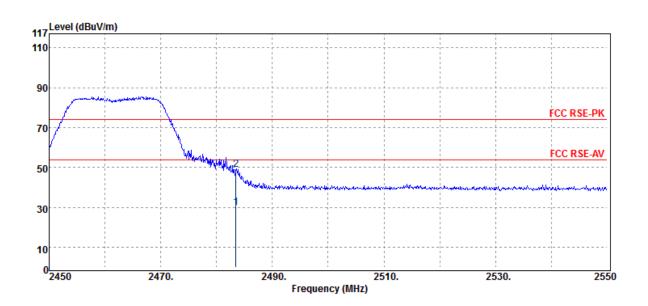
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	31.54	-1.62	29.92	54.00	-24.08
2483.50	Е	Peak	50.52	-1.62	48.90	74.00	-25.10

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**Operation Mode** 

EUT Pol.

:802.11g :2462 MHz

:Bandedge CH HIGH

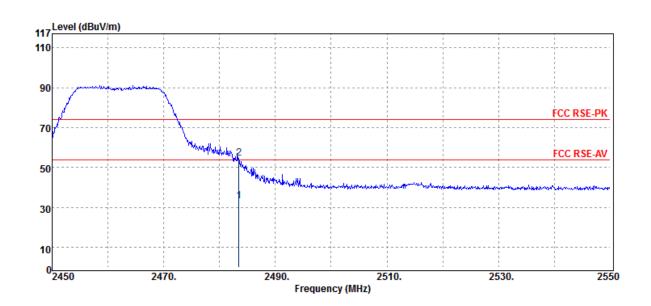
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	34.65	-1.62	33.03	54.00	-20.97
2483.50	Е	Peak	56.25	-1.62	54.63	74.00	-19.37

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**Operation Band** 

Fundamental Frequency **Operation Mode** 

EUT Pol.

:802.11n20 :2412 MHz

:Bandedge CH LOW

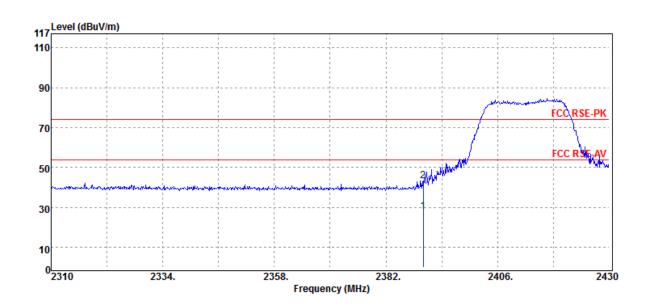
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	29.85	-1.74	28.11	54.00	-25.89
2390.00	E	Peak	45.23	-1.74	43.49	74.00	-30.51

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**Operation Mode** EUT Pol.

:802.11n20 :2412 MHz

:Bandedge CH LOW

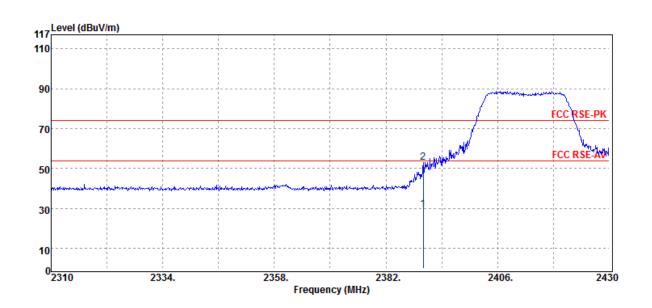
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	31.15	-1.74	29.41	54.00	-24.59
2390.00	Е	Peak	54.67	-1.74	52.93	74.00	-21.07

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**Operation Mode** EUT Pol.

:802.11n20 :2462 MHz

:Bandedge CH HIGH

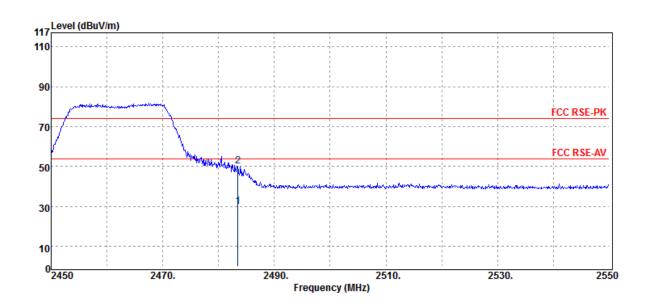
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	31.68	-1.62	30.06	54.00	-23.94
2483.50	Е	Peak	51.92	-1.62	50.30	74.00	-23.70

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**Operation Mode** EUT Pol.

:802.11n20 :2462 MHz

:Bandedge CH HIGH

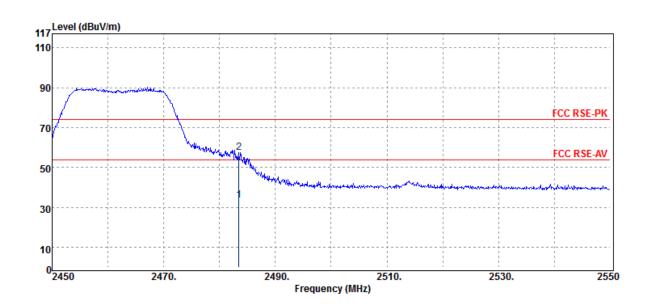
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBμV/m	dB
2483.50	Е	Average	35.12	-1.62	33.50	54.00	-20.50
2483.50	Е	Peak	59.00	-1.62	57.38	74.00	-16.62

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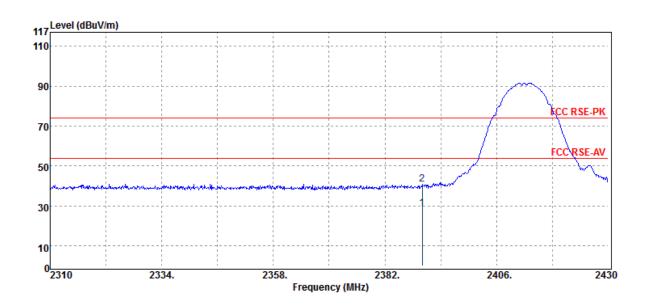
# 11.7.2 Radiated Band Edge Measurement Result (Without WPC)

**Operation Band** :802.11b **Test Date** :2017-04-13

Fundamental Frequency :2412 MHz Temp./Humi. :23 deg\_C / 62 RH

Operation Mode :Bandedge CH LOW Engineer :Mike

EUT Pol. :H Plane :VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	30.49	-1.74	28.75	54.00	-25.25
2390.00	Ε	Peak	42.67	-1.74	40.93	74.00	-33.07

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台灣檢驗科技股份有限公司

SGS Taiwan Ltd.

f (886-2) 2298-0488



:802.11b :2412 MHz :Bandedge CH LOW

**Operation Mode** EUT Pol.

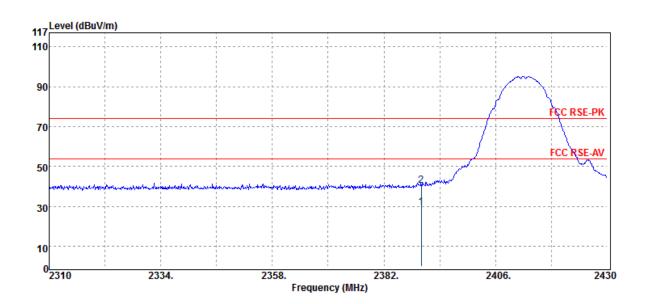
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	31.43	-1.74	29.69	54.00	-24.31
2390.00	Е	Peak	42.38	-1.74	40.64	74.00	-33.36

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**Operation Mode** 

EUT Pol.

:802.11b :2462 MHz

:Bandedge CH HIGH

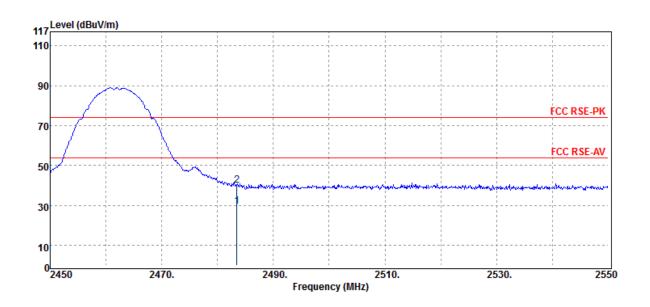
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	31.15	-1.62	29.53	54.00	-24.47
2483.50	Ε	Peak	41.53	-1.62	39.91	74.00	-34.09

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**Operation Mode** 

EUT Pol.

:802.11b :2462 MHz

:Bandedge CH HIGH

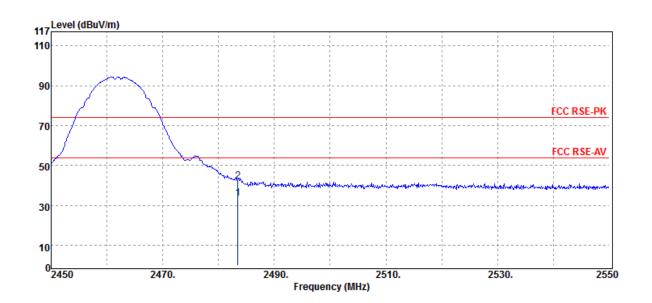
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	35.12	-1.62	33.50	54.00	-20.50
2483.50	Е	Peak	43.91	-1.62	42.29	74.00	-31.71

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**Operation Mode** 

EUT Pol.

:802.11g :2412 MHz

:Bandedge CH LOW

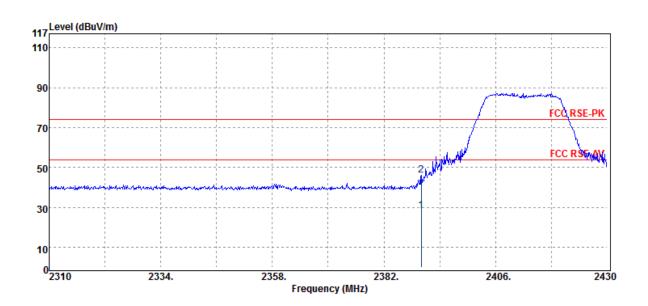
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	30.17	-1.74	28.43	54.00	-25.57
2390.00	Е	Peak	47.78	-1.74	46.04	74.00	-27.96

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:802.11g :2412 MHz :Bandedge CH LOW

**Operation Mode** EUT Pol.

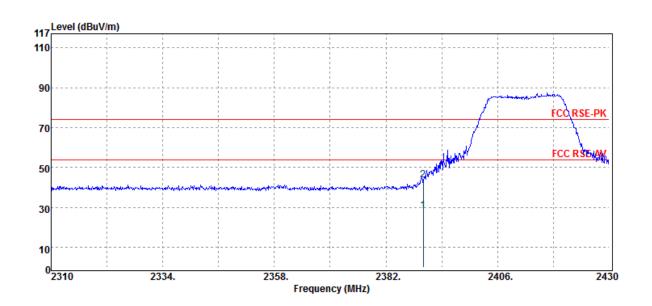
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	30.27	-1.74	28.53	54.00	-25.47
2390.00	E	Peak	45.33	-1.74	43.59	74.00	-30.41

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**Operation Mode** 

EUT Pol.

:802.11g :2462 MHz

:Bandedge CH HIGH

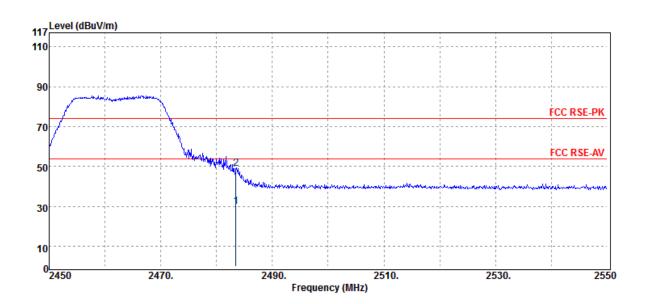
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	31.48	-1.62	29.86	54.00	-24.14
2483.50	Е	Peak	50.47	-1.62	48.85	74.00	-25.15

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**Operation Mode** 

EUT Pol.

:802.11g :2462 MHz

:Bandedge CH HIGH

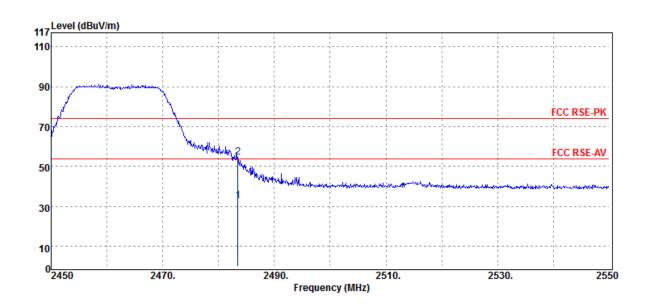
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	34.44	-1.62	32.82	54.00	-21.18
2483.50	Е	Peak	56.11	-1.62	54.49	74.00	-19.51

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**Operation Mode** 

EUT Pol.

:802.11n20 :2412 MHz

:Bandedge CH LOW

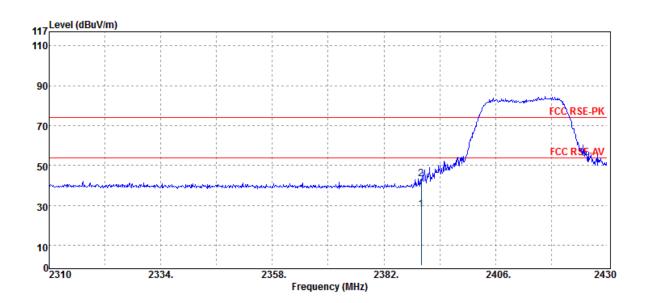
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	29.76	-1.74	28.02	54.00	-25.98
2390.00	E	Peak	45.15	-1.74	43.41	74.00	-30.59

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**Operation Mode** 

EUT Pol.

:802.11n20 :2412 MHz

:Bandedge CH LOW

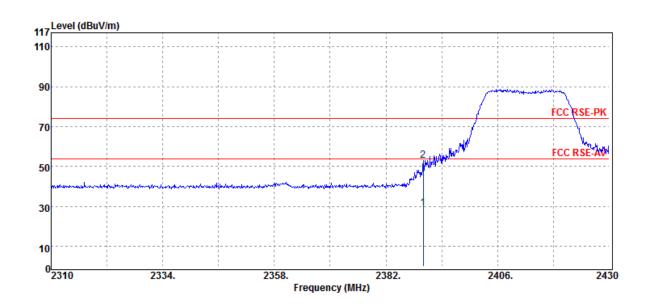
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2390.00	E	Average	31.04	-1.74	29.30	54.00	-24.70
2390.00	Е	Peak	54.58	-1.74	52.84	74.00	-21.16

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EUT Pol.

**Operation Mode** 

:802.11n20 :2462 MHz

:Bandedge CH HIGH

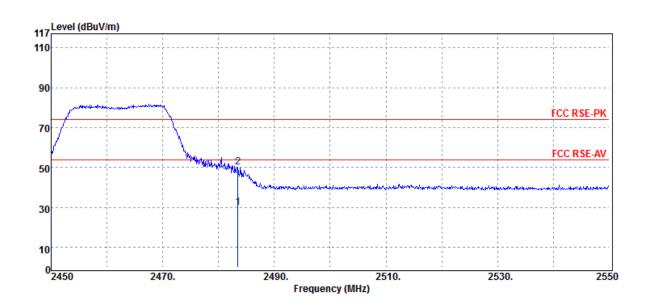
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	31.58	-1.62	29.96	54.00	-24.04
2483.50	Е	Peak	52.01	-1.62	50.39	74.00	-23.61

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f (886-2) 2298-0488



**Operation Mode** EUT Pol.

:802.11n20 :2462 MHz

:Bandedge CH HIGH

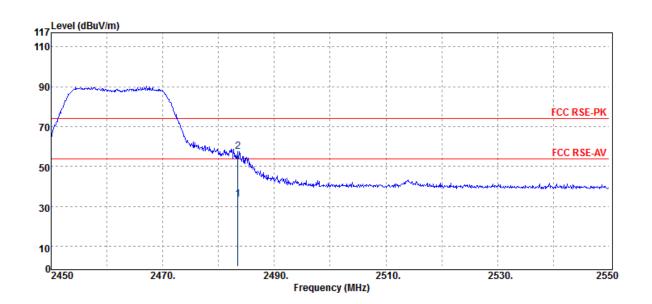
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
2483.50	E	Average	35.17	-1.62	33.55	54.00	-20.45
2483.50	Е	Peak	59.04	-1.62	57.42	74.00	-16.58

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## 11.7.3 Below 1GHz Worst-Case Data:

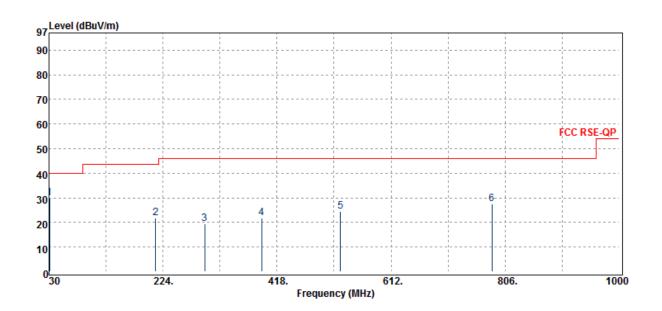
## Radiated Spurious Emission Measurement Result (802.11 g) (With WPC)

Operation Band :802.11g Test Date :2017-04-14

Fundamental Frequency :2412 MHz Temp./Humi. :23 deg\_C / 62 RH

Operation Mode :Tx CH LOW Engineer :Mike

EUT Pol. :H Plane Measurement Antenna Pol. :VERTICAL



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
30.97	S	Peak	39.69	-9.74	29.95	40.00	-10.05
211.39	S	Peak	33.16	-11.24	21.92	43.50	-21.58
294.81	S	Peak	27.22	-7.78	19.44	46.00	-26.56
391.81	S	Peak	28.06	-6.16	21.90	46.00	-24.10
525.67	S	Peak	28.87	-4.25	24.62	46.00	-21.38
783.69	S	Peak	27.46	-0.06	27.40	46.00	-18.60

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**Operation Mode** EUT Pol.

:802.11g :2412 MHz :Tx CH LOW

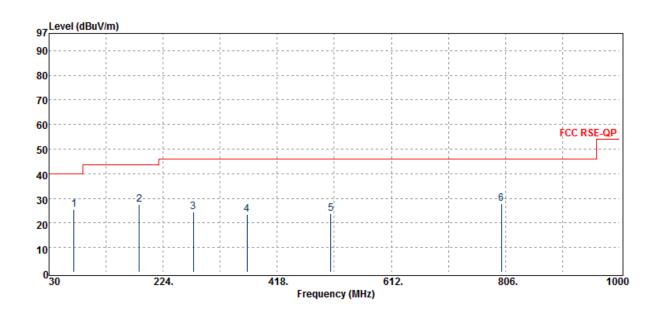
:H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
72.68	S	Peak	37.24	-11.68	25.56	40.00	-14.44
183.26	S	Peak	37.80	-10.27	27.53	43.50	-15.97
275.41	S	Peak	32.99	-8.39	24.60	46.00	-21.40
366.59	S	Peak	30.08	-6.68	23.40	46.00	-22.60
509.18	S	Peak	28.25	-4.44	23.81	46.00	-22.19
799.21	S	Peak	27.88	0.04	27.92	46.00	-18.08

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**Operation Mode** EUT Pol.

:802.11g :2437 MHz :Tx CH MID

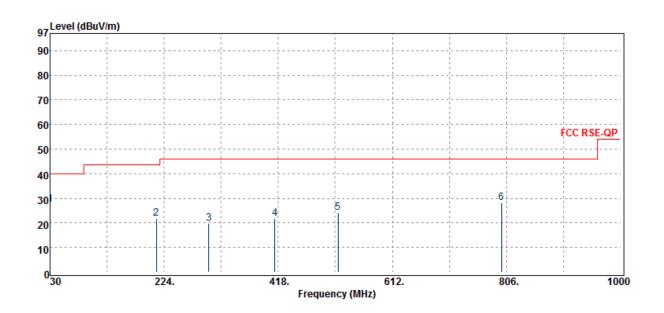
:H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
30.00	S	Peak	37.37	-9.77	27.60	40.00	-12.40
210.42	S	Peak	33.19	-11.29	21.90	43.50	-21.60
299.66	S	Peak	27.40	-7.71	19.69	46.00	-26.31
412.18	S	Peak	27.70	-5.78	21.92	46.00	-24.08
519.85	S	Peak	28.48	-4.35	24.13	46.00	-21.87
797.27	S	Peak	28.35	0.01	28.36	46.00	-17.64

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**Operation Mode** EUT Pol.

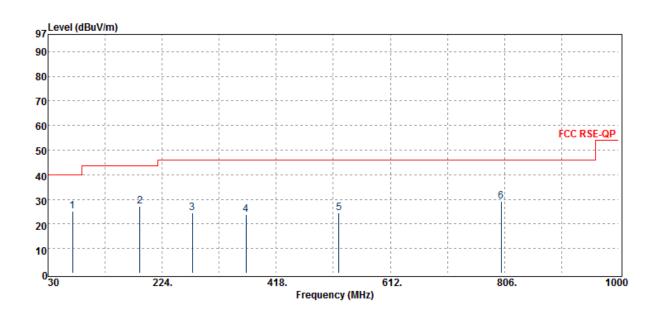
:802.11g :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBμV/m	dB
71.71	S	Peak	36.82	-11.50	25.32	40.00	-14.68
186.17	S	Peak	37.82	-10.48	27.34	43.50	-16.16
275.41	S	Peak	32.82	-8.39	24.43	46.00	-21.57
366.59	S	Peak	30.46	-6.68	23.78	46.00	-22.22
524.70	S	Peak	28.68	-4.29	24.39	46.00	-21.61
800.18	S	Peak	29.26	0.04	29.30	46.00	-16.70

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**Operation Mode** EUT Pol.

:802.11g :2462 MHz :Tx CH HIGH

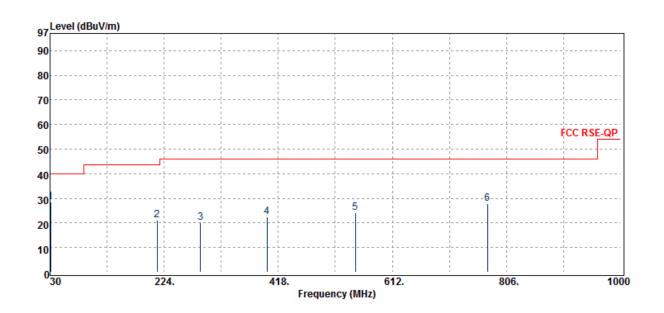
:H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
30.97	S	Peak	38.20	-9.74	28.46	40.00	-11.54
212.36	S	Peak	32.44	-11.19	21.25	43.50	-22.25
286.08	S	Peak	28.03	-8.02	20.01	46.00	-25.99
398.60	S	Peak	28.57	-6.04	22.53	46.00	-23.47
548.95	S	Peak	28.24	-4.14	24.10	46.00	-21.90
773.99	S	Peak	27.90	-0.10	27.80	46.00	-18.20

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**Operation Mode** EUT Pol.

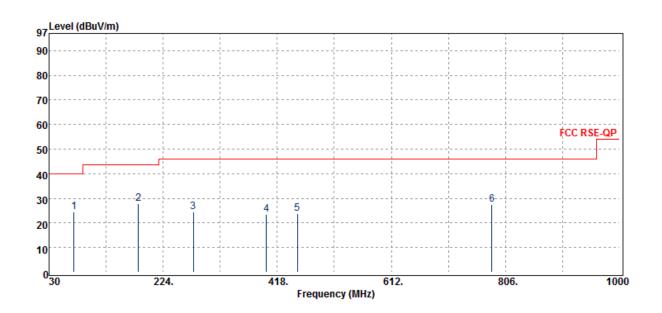
:802.11g :2462 MHz :Tx CH HIGH :H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBμV/m	dBµV/m	dB
72.68	S	Peak	36.32	-11.68	24.64	40.00	-15.36
182.29	S	Peak	38.05	-10.19	27.86	43.50	-15.64
275.41	S	Peak	32.88	-8.39	24.49	46.00	-21.51
399.57	S	Peak	29.44	-6.01	23.43	46.00	-22.57
451.95	S	Peak	28.71	-5.04	23.67	46.00	-22.33
782.72	S	Peak	27.68	-0.04	27.64	46.00	-18.36

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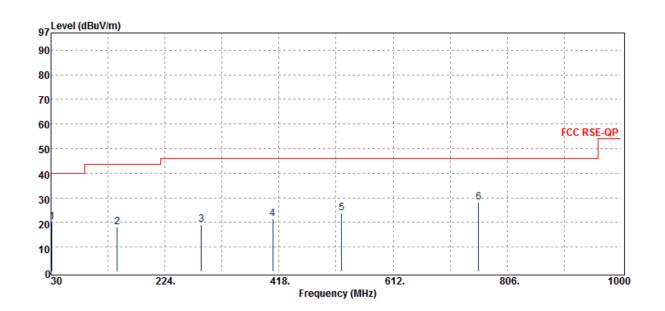
## 11.7.4 Below 1GHz Worst-Case Data:

# Radiated Spurious Emission Measurement Result (802.11 g) (Without WPC)

Test Date :2017-04-14 **Operation Band** :802.11g

:2412 MHz Fundamental Frequency Temp./Humi. :23 deg\_C / 62 RH Operation Mode :Tx CH LOW Engineer :Mike

EUT Pol. :H Plane Measurement Antenna Pol. :VERTICAL



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
31.94	S	Peak	29.72	-9.71	20.01	40.00	-19.99
142.52	S	Peak	27.47	-9.37	18.10	43.50	-25.40
286.08	S	Peak	27.15	-8.02	19.13	46.00	-26.87
407.33	S	Peak	27.40	-5.87	21.53	46.00	-24.47
524.70	S	Peak	28.25	-4.29	23.96	46.00	-22.04
757.50	S	Peak	28.44	-0.37	28.07	46.00	-17.93

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**Operation Mode** 

EUT Pol.

:802.11g

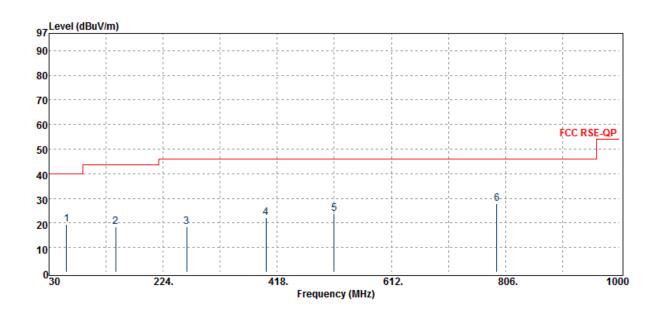
:2412 MHz :Tx CH LOW :H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
60.07	S	Peak	28.38	-8.90	19.48	40.00	-20.52
143.49	S	Peak	27.79	-9.31	18.48	43.50	-25.02
263.77	S	Peak	27.38	-8.82	18.56	46.00	-27.44
398.60	S	Peak	28.03	-6.04	21.99	46.00	-24.01
515.00	S	Peak	28.03	-4.36	23.67	46.00	-22.33
791.45	S	Peak	28.07	-0.05	28.02	46.00	-17.98

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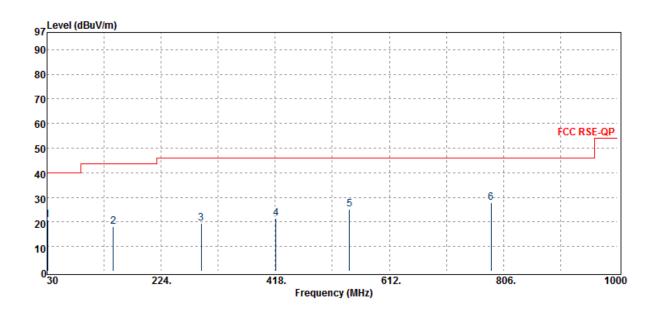
:802.11g :2437 MHz **Operation Mode** :Tx CH MID EUT Pol. :H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dΒμV/m	dBµV/m	dB
30.97	S	Peak	30.61	-9.74	20.87	40.00	-19.13
142.52	S	Peak	27.45	-9.37	18.08	43.50	-25.42
291.90	S	Peak	27.39	-7.85	19.54	46.00	-26.46
418.97	S	Peak	27.26	-5.69	21.57	46.00	-24.43
544.10	S	Peak	29.34	-4.04	25.30	46.00	-20.70
784.66	S	Peak	27.86	-0.06	27.80	46.00	-18.20

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**Operation Mode** EUT Pol.

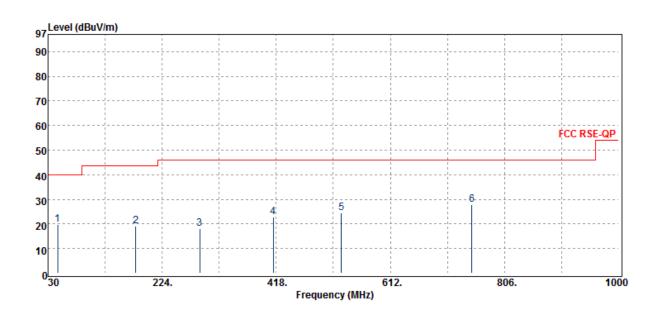
:802.11g :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBμV/m	dB
46.49	S	Peak	28.44	-8.62	19.82	40.00	-20.18
179.38	S	Peak	28.97	-9.95	19.02	43.50	-24.48
288.02	S	Peak	26.20	-7.94	18.26	46.00	-27.74
413.15	S	Peak	28.40	-5.74	22.66	46.00	-23.34
528.58	S	Peak	28.79	-4.13	24.66	46.00	-21.34
750.71	S	Peak	28.47	-0.51	27.96	46.00	-18.04

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**Operation Mode** EUT Pol.

:802.11g :2462 MHz :Tx CH HIGH

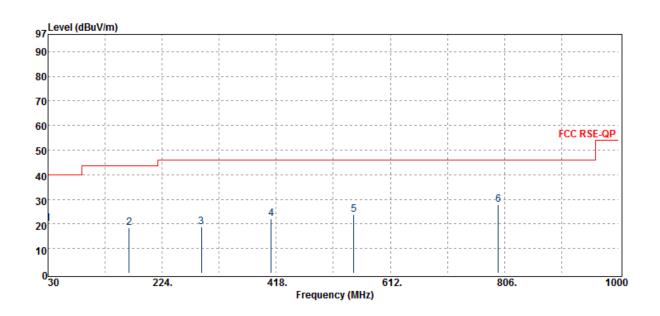
:H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
30.00	S	Peak	29.90	-9.77	20.13	40.00	-19.87
167.74	S	Peak	27.38	-8.95	18.43	43.50	-25.07
290.93	S	Peak	26.76	-7.86	18.90	46.00	-27.10
409.27	S	Peak	28.10	-5.86	22.24	46.00	-23.76
549.92	S	Peak	28.04	-4.08	23.96	46.00	-22.04
795.33	S	Peak	27.99	-0.01	27.98	46.00	-18.02

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**Operation Mode** EUT Pol.

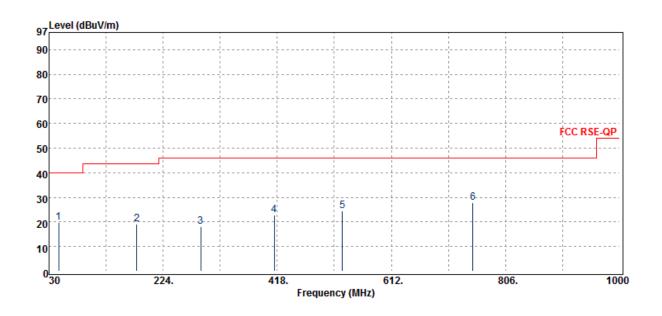
:802.11g :2462 MHz :Tx CH HIGH :H Plane

**Test Date** :2017-04-14

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
50.37	S	Peak	27.35	-8.43	18.92	40.00	-21.08
150.28	S	Peak	27.05	-8.96	18.09	43.50	-25.41
289.96	S	Peak	26.18	-7.87	18.31	46.00	-27.69
412.18	S	Peak	27.55	-5.78	21.77	46.00	-24.23
508.21	S	Peak	28.95	-4.45	24.50	46.00	-21.50
779.81	S	Peak	27.98	-0.01	27.97	46.00	-18.03

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## 11.7.5 Above 1GHz Data:

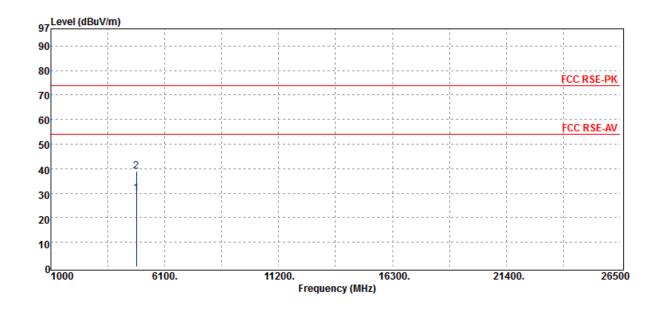
## Radiated Spurious Emission Measurement Result (With WPC)

Operation Band :802.11b Test Date :2017-04-17

Fundamental Frequency :2412 MHz Temp./Humi. :23 deg\_C / 62 RH

Operation Mode :Tx CH LOW Engineer :Mike

EUT Pol. :H Plane Measurement Antenna Pol. :VERTICAL



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Safe Margin	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB	
4824.00	Н	Average	24.88	4.93	29.81	54.00	-24.19	
4824.00	Н	Peak	34.13	4.93	39.06	74.00	-34.94	

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EUT Pol.

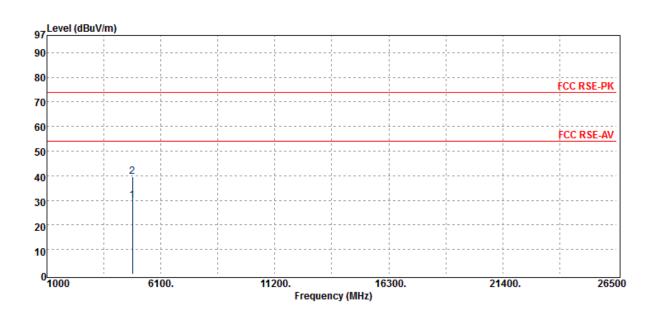
:802.11b :2412 MHz :Tx CH LOW :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
							_
4824.00	Н	Average	24.82	4.93	29.75	54.00	-24.25
4824.00	Н	Peak	34.63	4.93	39.56	74.00	-34.44



EUT Pol.

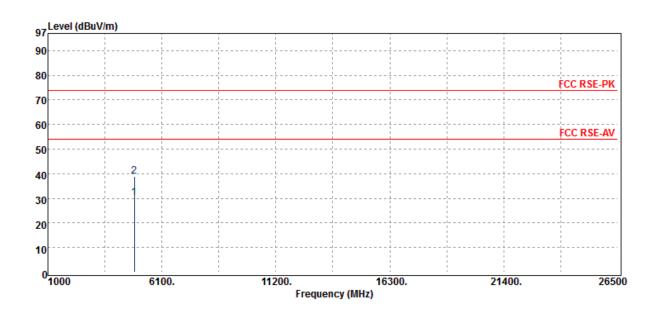
:802.11b :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4874.00	Н	Average	25.04	5.13	30.17	54.00	-23.83
4874.00	Н	Peak	33.89	5.13	39.02	74.00	-34.98

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**Operation Mode** EUT Pol.

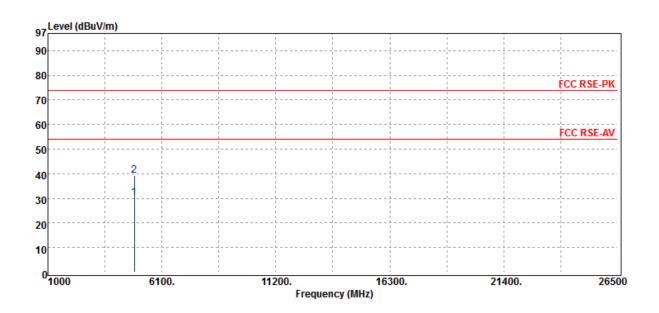
:802.11b :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Safe Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dΒμV/m	dBµV/m	dB
4874.00	Н	Average	25.12	5.13	30.25	54.00	-23.75
4874.00	Н	Peak	34.09	5.13	39.22	74.00	-34.78

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**Operation Mode** 

EUT Pol.

:802.11b :2462 MHz :Tx CH HIGH

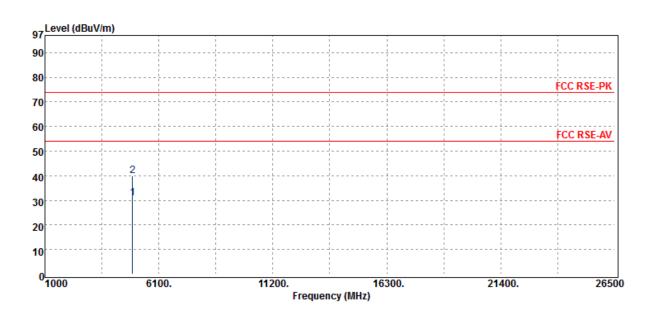
:H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Safe Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4924.00	Н	Average	25.63	5.25	30.88	54.00	-23.12
4924.00	Н	Peak	34.67	5.25	39.92	74.00	-34.08

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**Operation Mode** EUT Pol.

:802.11b :2462 MHz :Tx CH HIGH

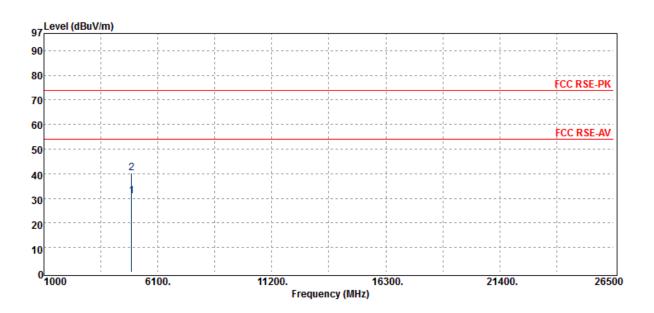
:H Plane

**Test Date** Temp./Humi. :2017-04-17

:23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4924.00	Н	Average	25.61	5.25	30.86	54.00	-23.14
4924.00	Н	Peak	35.14	5.25	40.39	74.00	-33.61

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EUT Pol.

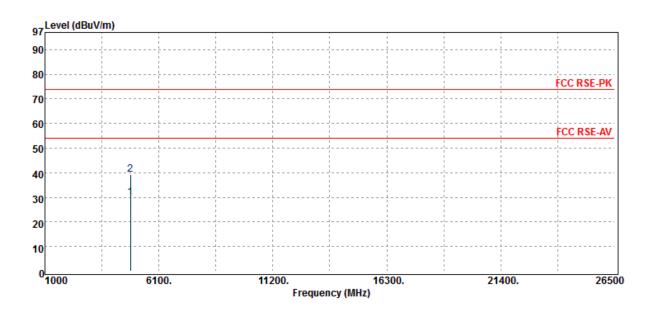
:802.11g :2412 MHz :Tx CH LOW :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4824.00	Н	Average	24.94	4.93	29.87	54.00	-24.13
4824.00	Н	Peak	34.37	4.93	39.30	74.00	-34.70

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EUT Pol.

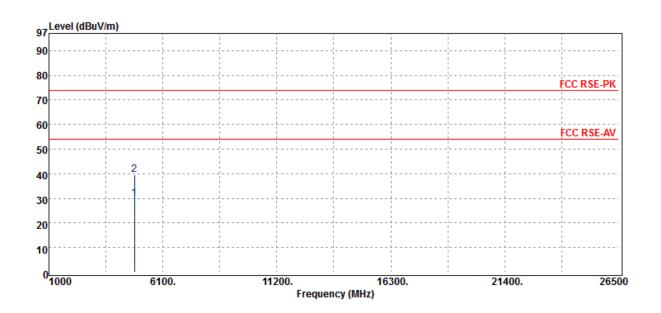
:802.11g :2412 MHz :Tx CH LOW :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4824.00	Н	Average	24.98	4.93	29.91	54.00	-24.09
4824.00	Н	Peak	34.53	4.93	39.46	74.00	-34.54

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EUT Pol.

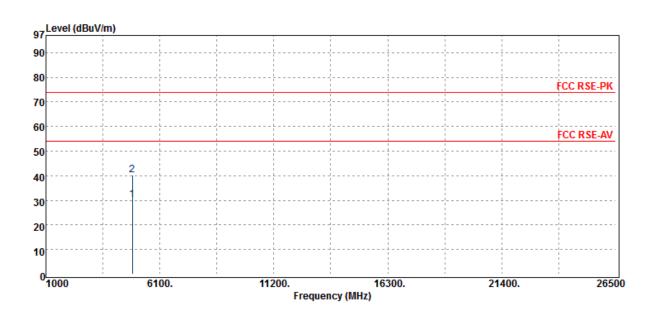
:802.11g :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4874.00	Н	Average	25.22	5.13	30.35	54.00	-23.65
4874.00	Н	Peak	35.08	5.13	40.21	74.00	-33.79



EUT Pol.

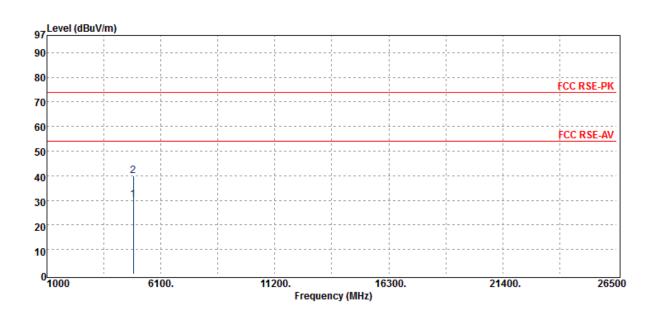
:802.11g :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4874.00	Н	Average	25.11	5.13	30.24	54.00	-23.76
4874.00	Н	Peak	34.67	5.13	39.80	74.00	-34.20



**Operation Mode** 

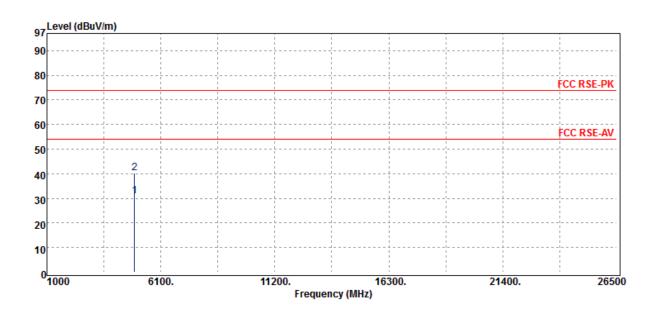
EUT Pol. :H Plane

:802.11g :2462 MHz :Tx CH HIGH **Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
							_
4924.00	Н	Average	25.71	5.25	30.96	54.00	-23.04
4924.00	Н	Peak	35.12	5.25	40.37	74.00	-33.63



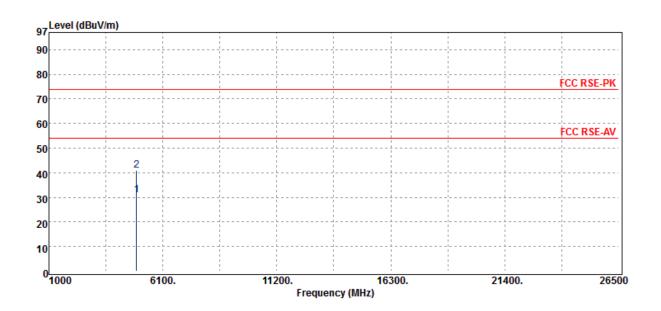
**Operation Mode** EUT Pol.

:802.11g :2462 MHz :Tx CH HIGH :H Plane

**Test Date** :2017-04-17 Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Safe Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4924.00	Н	Average	25.74	5.25	30.99	54.00	-23.01
4924.00	Н	Peak	35.83	5.25	41.08	74.00	-32.92



**Operation Mode** 

:Tx CH LOW EUT Pol. :H Plane

:802.11n20

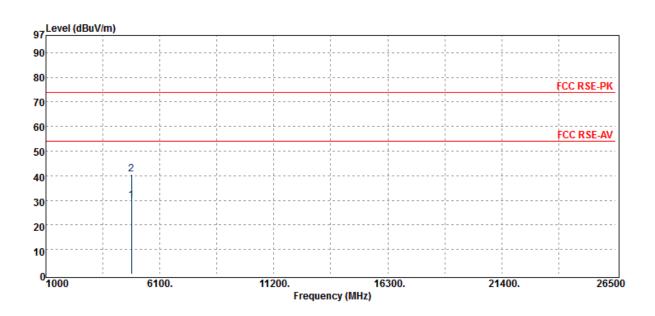
:2412 MHz

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4824.00	Н	Average	24.99	4.93	29.92	54.00	-24.08
4824.00	Н	Peak	35.57	4.93	40.50	74.00	-33.50



**Operation Mode** 

:Tx CH LOW EUT Pol. :H Plane

:802.11n20

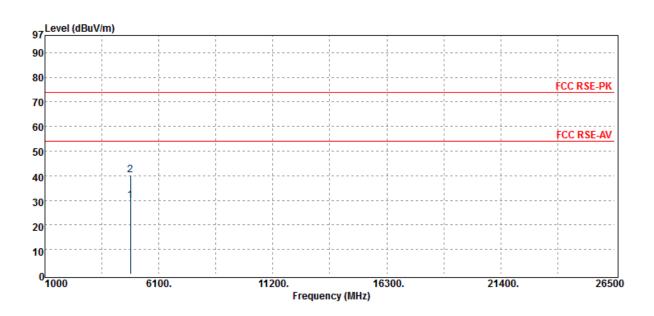
:2412 MHz

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4824.00	Н	Average	24.89	4.93	29.82	54.00	-24.18
4824.00	Н	Peak	35.30	4.93	40.23	74.00	-33.77



EUT Pol.

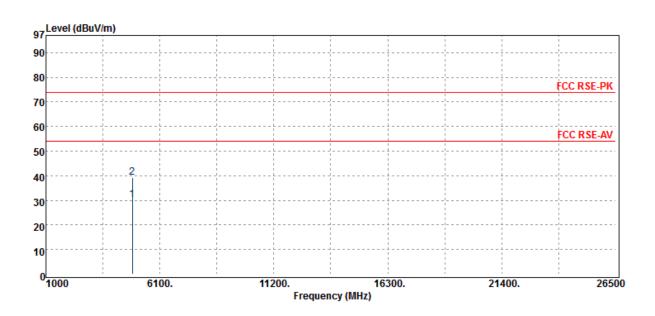
:802.11n20 :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
							_
4874.00	Н	Average	25.16	5.13	30.29	54.00	-23.71
4874.00	Н	Peak	34.08	5.13	39.21	74.00	-34.79



**Operation Mode** 

EUT Pol.

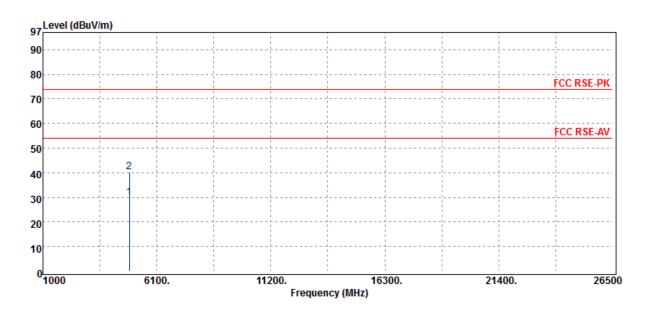
:802.11n20 :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Safe Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
							_
4874.00	Н	Average	25.13	5.13	30.26	54.00	-23.74
4874.00	Н	Peak	35.02	5.13	40.15	74.00	-33.85

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**Operation Mode** EUT Pol.

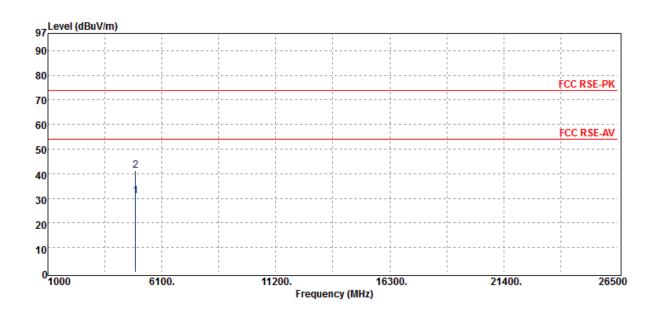
:802.11n20 :2462 MHz :Tx CH HIGH :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4924.00	Н	Average	25.69	5.25	30.94	54.00	-23.06
4924.00	Н	Peak	36.12	5.25	41.37	74.00	-32.63



**Operation Mode** EUT Pol.

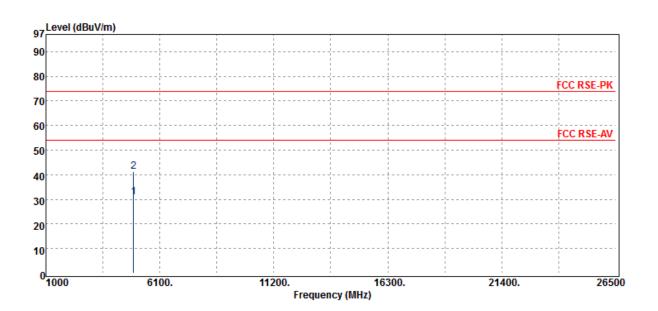
:802.11n20 :2462 MHz :Tx CH HIGH :H Plane

**Test Date** :2017-04-17

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4924.00	Н	Average	25.74	5.25	30.99	54.00	-23.01
4924.00	Н	Peak	35.97	5.25	41.22	74.00	-32.78

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## 11.7.6 Above 1GHz Data:

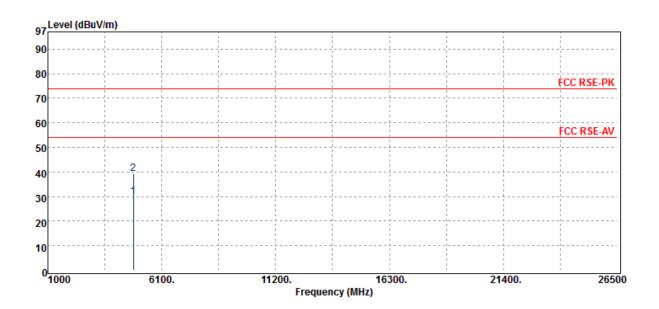
## Radiated Spurious Emission Measurement Result (Without WPC)

Operation Band :802.11b Test Date :2017-04-13

Fundamental Frequency :2412 MHz Temp./Humi. :23 deg\_C / 62 RH

Operation Mode :Tx CH LOW Engineer :Mike

EUT Pol. :H Plane Measurement Antenna Pol. :VERTICAL



Freq.	Note	Detector Mode	Spectrum Reading Level	Factor	Actual FS	Limit @3m	Safe Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBμV/m	dBµV/m	dB
4824.00	Н	Average	24.82	4.93	29.75	54.00	-24.25
4824.00	Н	Peak	34.17	4.93	39.10	74.00	-34.90

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**Operation Mode** EUT Pol.

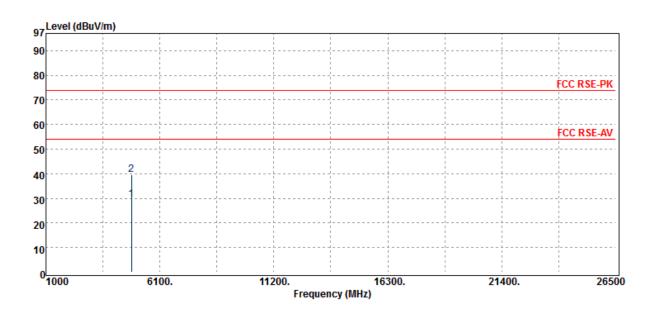
:802.11b :2412 MHz :Tx CH LOW :H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4824.00	Н	Average	24.77	4.93	29.70	54.00	-24.30
4824.00	Н	Peak	34.67	4.93	39.60	74.00	-34.40

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**Operation Mode** EUT Pol.

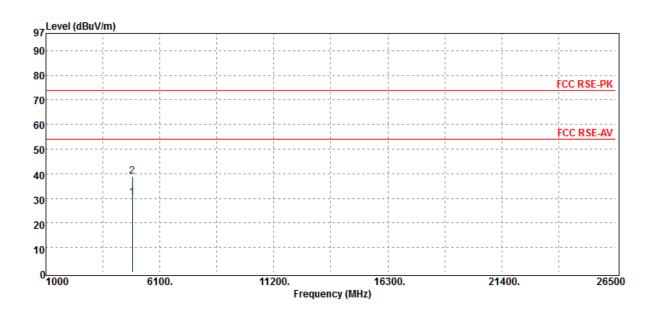
:802.11b :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4874.00	Н	Average	25.01	5.13	30.14	54.00	-23.86
4874.00	Н	Peak	33.80	5.13	38.93	74.00	-35.07

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**Operation Mode** EUT Pol.

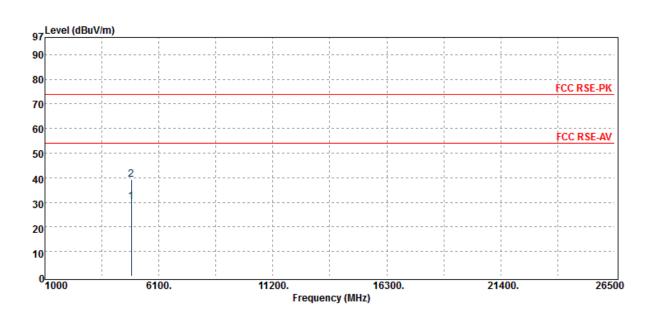
:802.11b :2437 MHz :Tx CH MID :H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4874.00	Н	Average	25.07	5.13	30.20	54.00	-23.80
4874.00	Н	Peak	34.02	5.13	39.15	74.00	-34.85

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**Operation Mode** EUT Pol.

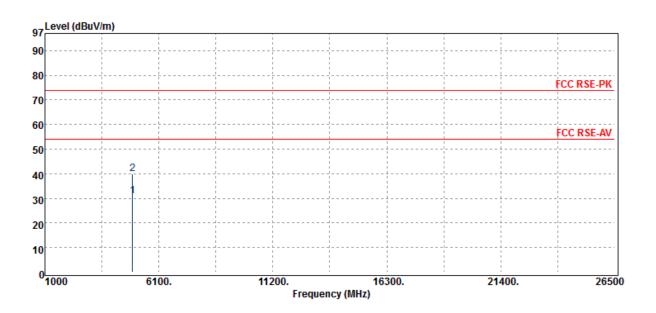
:802.11b :2462 MHz :Tx CH HIGH :H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4924.00	Н	Average	25.57	5.25	30.82	54.00	-23.18
4924.00	Н	Peak	34.58	5.25	39.83	74.00	-34.17

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**Operation Mode** EUT Pol.

:802.11b :2462 MHz :Tx CH HIGH

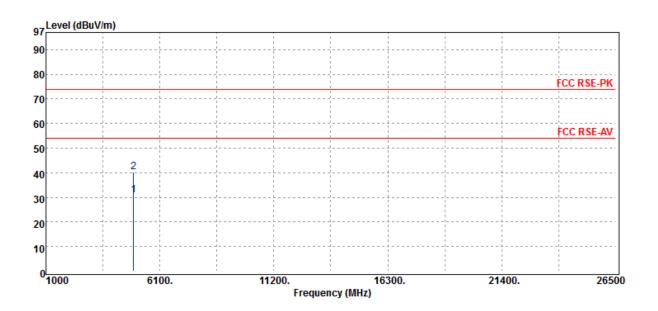
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4924.00	Н	Average	25.46	5.25	30.71	54.00	-23.29
4924.00	Н	Peak	35.07	5.25	40.32	74.00	-33.68

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**Operation Mode** EUT Pol.

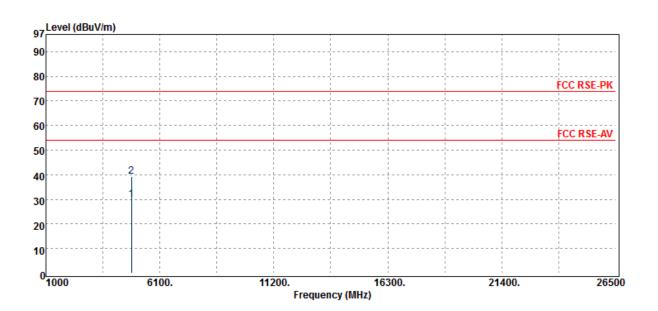
:802.11g :2412 MHz :Tx CH LOW :H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4824.00	Н	Average	24.88	4.93	29.81	54.00	-24.19
4824.00	Н	Peak	34.28	4.93	39.21	74.00	-34.79

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**Operation Mode** EUT Pol.

:802.11g :2412 MHz :Tx CH LOW

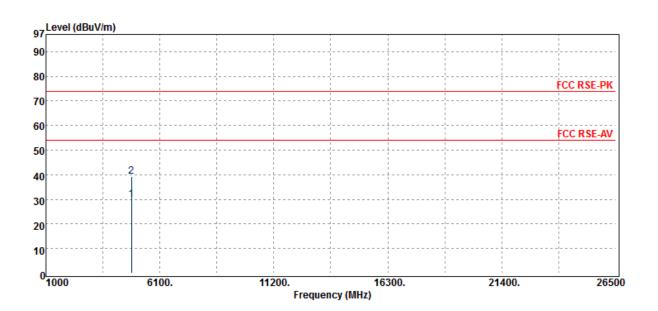
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4824.00	Н	Average	24.92	4.93	29.85	54.00	-24.15
4824.00	Н	Peak	34.49	4.93	39.42	74.00	-34.58

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**Operation Mode** EUT Pol.

:802.11g :2437 MHz :Tx CH MID

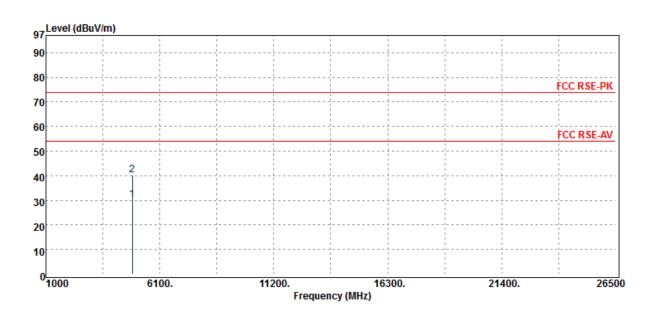
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4874.00	Н	Average	25.12	5.13	30.25	54.00	-23.75
4874.00	Н	Peak	35.01	5.13	40.14	74.00	-33.86

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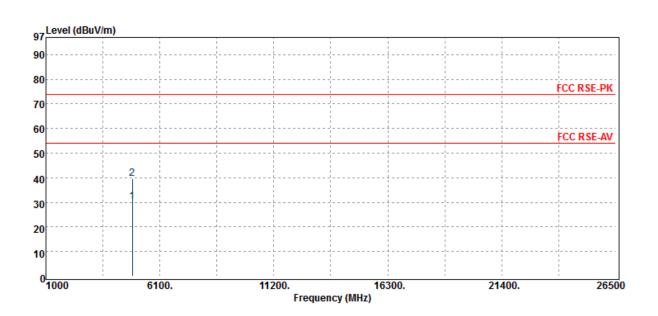
:802.11g :2437 MHz :Tx CH MID

:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4874.00	Н	Average	25.06	5.13	30.19	54.00	-23.81
4874.00	Н	Peak	34.59	5.13	39.72	74.00	-34.28

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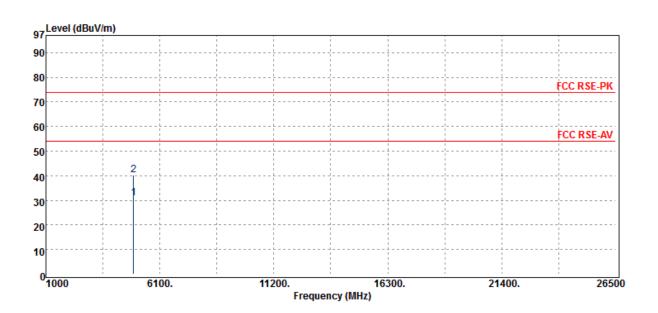
:802.11g :2462 MHz :Tx CH HIGH :H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4924.00	Н	Average	25.64	5.25	30.89	54.00	-23.11
4924.00	Н	Peak	35.08	5.25	40.33	74.00	-33.67

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:802.11g :2462 MHz :Tx CH HIGH

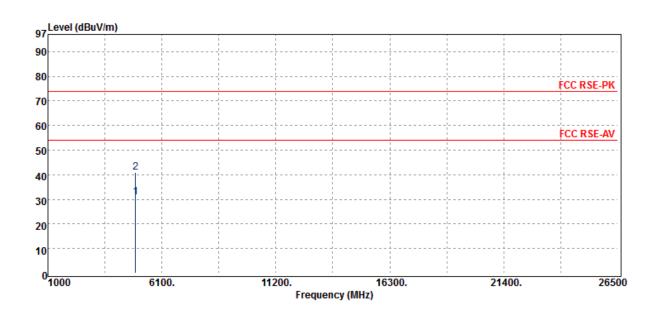
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4924.00	Н	Average	25.69	5.25	30.94	54.00	-23.06
4924.00	Н	Peak	35.79	5.25	41.04	74.00	-32.96

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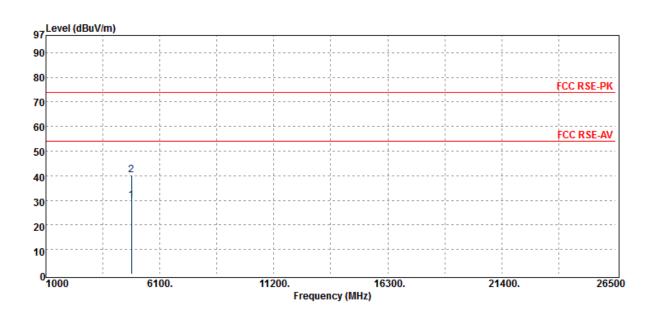
:802.11n20 :2412 MHz :Tx CH LOW :H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4824.00	Н	Average	24.92	4.93	29.85	54.00	-24.15
4824.00	Н	Peak	35.51	4.93	40.44	74.00	-33.56

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**Operation Mode** 

EUT Pol.

:802.11n20 :2412 MHz :Tx CH LOW

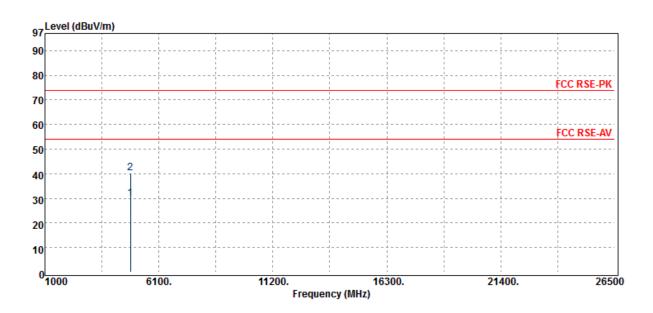
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4824.00	Н	Average	24.85	4.93	29.78	54.00	-24.22
4824.00	Н	Peak	35.26	4.93	40.19	74.00	-33.81

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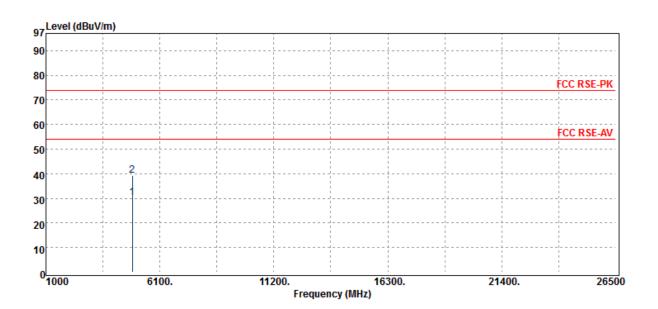
**Operation Mode** EUT Pol. :H Plane

:802.11n20 :2437 MHz :Tx CH MID **Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBµV/m	dBµV/m	dB
4874.00	Н	Average	25.12	5.13	30.25	54.00	-23.75
4874.00	Н	Peak	34.16	5.13	39.29	74.00	-34.71

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**Operation Mode** 

:Tx CH MID EUT Pol. :H Plane

:802.11n20

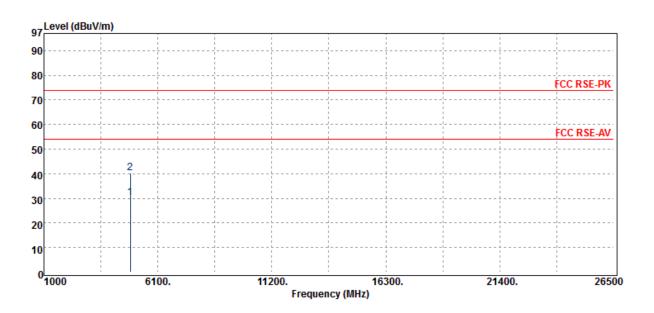
:2437 MHz

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4874.00	Н	Average	25.19	5.13	30.32	54.00	-23.68
4874.00	Н	Peak	35.06	5.13	40.19	74.00	-33.81

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**Operation Mode** EUT Pol.

:802.11n20 :2462 MHz :Tx CH HIGH

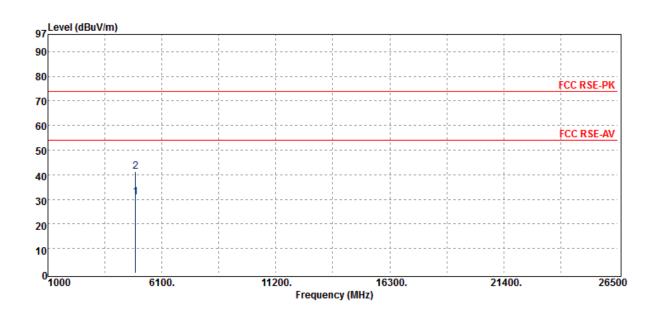
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:VERTICAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4924.00	Н	Average	25.64	5.25	30.89	54.00	-23.11
4924.00	Н	Peak	36.04	5.25	41.29	74.00	-32.71

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**Operation Mode** EUT Pol.

:802.11n20 :2462 MHz :Tx CH HIGH

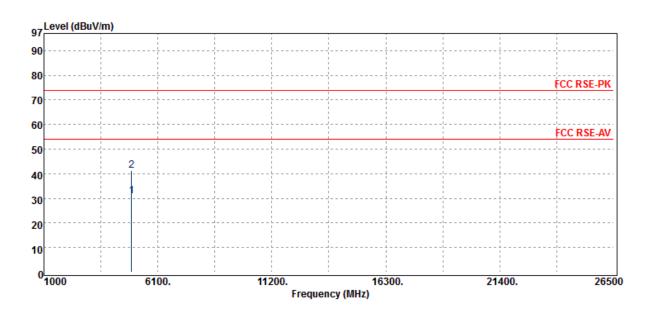
:H Plane

**Test Date** :2017-04-13

Temp./Humi. :23 deg\_C / 62 RH

Engineer :Mike

:HORIZONTAL Measurement Antenna Pol.



Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Safe
		Mode	Reading Level		FS	@3m	Margin
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
4924.00	Н	Average	25.67	5.25	30.92	54.00	-23.08
4924.00	Н	Peak	35.94	5.25	41.19	74.00	-32.81

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## 12 PEAK POWER SPECTRAL DENSITY

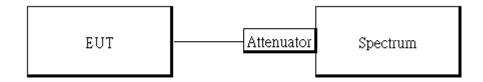
#### **Standard Applicable** 12.1

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

#### 12.2 **Measurement Equipment Used**

Conducted Emission Test Site										
EQUIPMENT TYPE	MFR	_		SERIAL LAST NUMBER CAL.						
EXA Spectrum Ana- lyzer	Agilent	N9030A	MY53120760		02/24/2018					
DC Block	Mini-Circuits	BLK-18-S+	1	01/05/2017	01/04/2018					
Coaxial Cable	HUBER+SUHNER	SUCOFLEX 102	23670/2	01/05/2017	01/04/2018					
DC Power Supply	Agilent	E3640A	MY52410006	11/21/2016	11/20/2017					
Attenuator	Mini-Circuit	BW-S10W2+	2	01/05/2017	01/04/2018					

### 12.3 Test Set-up



#### 12.4 **Measurement Procedure**

- 10. Set analyzer center frequency to DTS channel center frequency.
- 11. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance.
- 12. Set the span to 1.5 times the DTS channel bandwidth.
- 13. Set the RBW = 3 kHz & VBW = 10 kHz.
- 14. For defining Restricted Band Edge Limit: Set the RBW = 100kHz & VBW = 300 kHz
- 15. Detector = peak.
- 16. Sweep time = auto couple.
- 17. Trace mode = max hold.
- 18. Allow trace to fully stabilize.
- 19. Use the peak marker function to determine the maximum amplitude level.

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#### 12.5 **Measurement Result**

POWER DENSITY 802.11b MODE				POWER DENSITY 802.11g MODE				POWER DENSITY 802.11n HT20 MOD			
Freq. (MHz)	PSD (dBm)	Limit (dBm)	Result	Freq. (MHz)	PSD (dBm)	Limit (dBm)	Result	Freq. (MHz)	PSD (dBm)	Limit (dBm)	Result
2412	-5.81	8.00	PASS	2412	-15.11	8.00	PASS	2412	-15.30	8.00	PASS
2437	-4.86	8.00	PASS	2437	-14.99	8.00	PASS	2437	-15.04	8.00	PASS
2462	-5.26	8.00	PASS	2462	-15.09	8.00	PASS	2462	-15.74	8.00	PASS

<sup>\*</sup>Refer to next page for plots

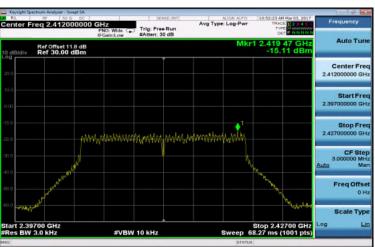
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### 802.11b CH-Low



# 802.11g CH-Low



### 802.11b CH-Mid



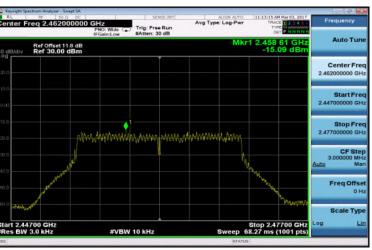
# 802.11g CH-Mid



### 802.11b CH-High



## 802.11g CH-High



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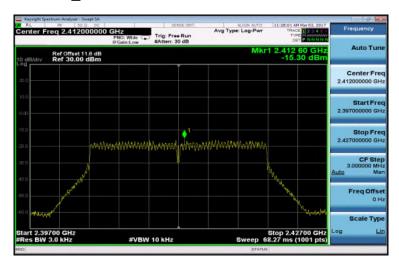
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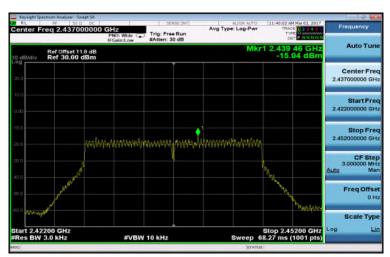
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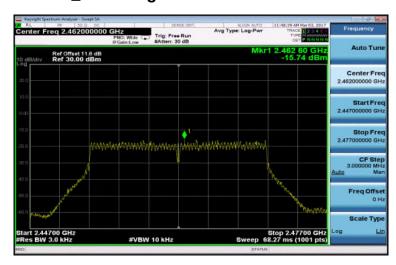
## 802.11n 20 CH-Low



## 802.11n 20 CH-Mid



## 802.11n 20 CH-High



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## 13 ANTENNA REQUIREMENT

#### 13.1 **Standard Applicable**

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

If the transmitting antenna is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

#### 13.2 **Antenna Connected Construction**

An embedded-in antenna design is used.

The antenna connector is designed as permanently attached and no consideration of replacement. Please see EUT photo and antenna spec. for details.

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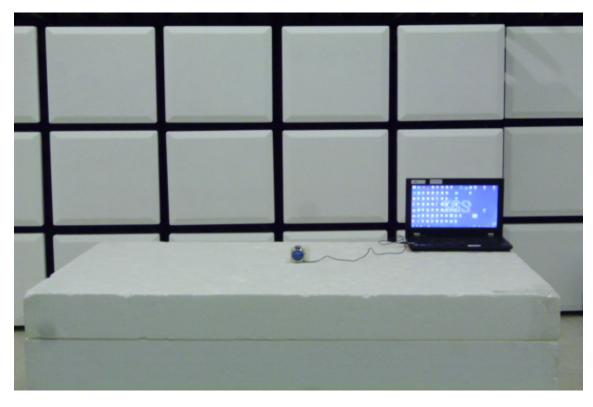
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## PHOTOGRAPHS OF SET UP

# Radiated Emission Set up Photos (Below 1GHz)(With WPC)





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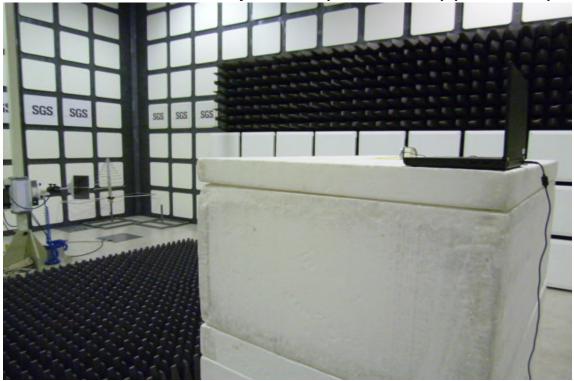
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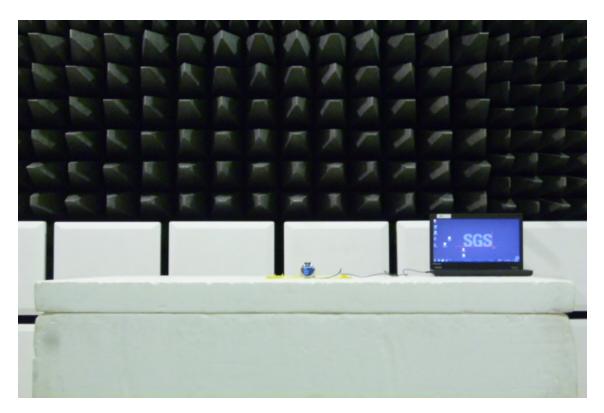
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# Radiated Emission Set up Photos (Above 1GHz) (With WPC)





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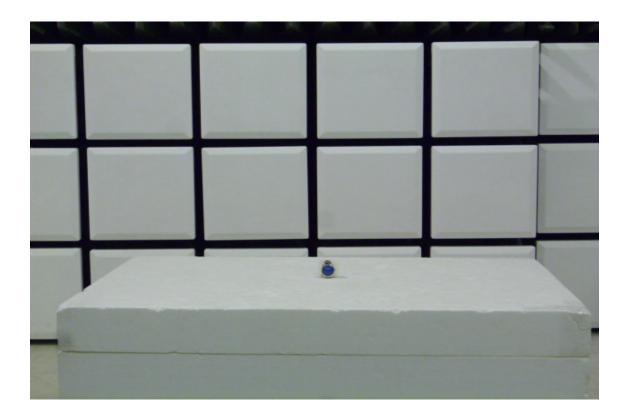
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# Radiated Emission Set up Photos (Below 1GHz)(Without WPC)





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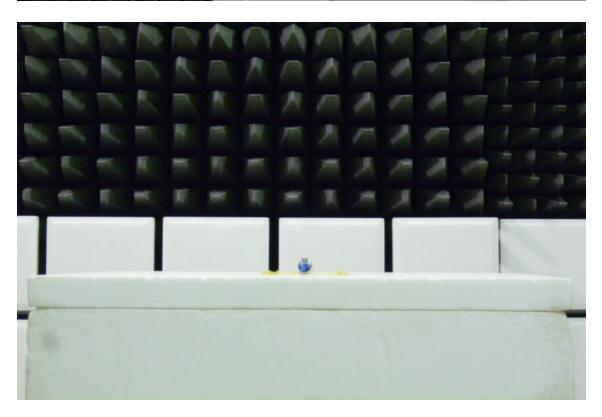
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# Radiated Emission Set up Photos (Above 1GHz) (Without WPC)





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No.134, WuKungRoad, New Taipei Industrial Park, WukuDistrict, New Taipei City, Taiwan 24803/新北市五股區新北產業園區五工路 134 號 SGS Taiwan Ltd.

台灣檢驗科技股份有限公司



Conduction Setup Photo (Measurement at AC Power Line )





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No.134, WuKungRoad, NewTaipeilndustrialPark, WukuDistrict, NewTaipeiCity, Taiwan24803/新北市五股區新北產業園區五工路 134 號

台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488



# **Conducted Setup Photo (Measurement at Antenna Port)**



## PHOTOGRAPHS OF EUT

Please refer to the attached file(EUT Photo)

~ End of Report ~

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No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號 f (886-2) 2298-0488