

# **FCC Test Report**

FCC ID : PY314300286

Equipment : Wireless AC750 DSL Modem Router

Model No. : D6000, D6010 (for marketing purpose only.)

Brand Name : NETGEAR

Applicant : NETGEAR, Inc.

Address : 350 East Plumeria Drive, San Jose, California

95134, USA

Standard : 47 CFR FCC Part 15.247

Received Date : Jun. 17, 2014

Tested Date : Jun. 19 ~ Jul. 30, 2014

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:

Gary Chang / Manager

Iac-MRA



Report No.: FR462301AC Report Version: Rev. 01 Page: 1 of 63



# **Table of Contents**

1	GENERAL DESCRIPTION	5
1.1	Information	5
1.2	Local Support Equipment List	8
1.3	Test Setup Chart	
1.4	The Equipment List	9
1.5	Test Standards	10
1.6	Measurement Uncertainty	10
2	TEST CONFIGURATION	11
2.1	Testing Condition	11
2.2	The Worst Test Modes and Channel Details	11
3	TRANSMITTER TEST RESULTS	12
3.1	Conducted Emissions	12
3.2	6dB and Occupied Bandwidth	15
3.3	RF Output Power	18
3.4	Power Spectral Density	20
3.5	Unwanted Emissions into Restricted Frequency Bands	22
3.6	Emissions in Non-Restricted Frequency Bands	50
4	TEST LABORATORY INFORMATION	63



# **Release Record**

Report No.	Version	Description	Issued Date
FR462301AC	Rev. 01	Initial issue	Aug. 21, 2014

Report No.: FR462301AC Page: 3 of 63



# **Summary of Test Results**

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.484MHz 41.42 (Margin -4.85dB) - AV	Pass
15.247(d)	Radiated Emissions	[dBuV/m at 3m]: 2385.15MHz	Pass
15.209	INdulated Liffissions	53.83 (Margin -0.17dB) - AV	r ass
15.247(b)(3)	Fundamental Emission Output Power	Max Power [dBm]: 25.48	Pass
15.247(a)(2)	6dB Bandwidth	Meet the requirement of limit	Pass
15.247(e)	Power Spectral Density	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Report No.: FR462301AC Page: 4 of 63



# 1 General Description

# 1.1 Information

# 1.1.1 Specification of the Equipment under Test (EUT)

RF General Information							
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N <sub>TX</sub> )	Data Rate / MCS		
2400-2483.5	b	2412-2462	1-11 [11]	2	1-11 Mbps		
2400-2483.5	g	2412-2462	1-11 [11]	2	6-54 Mbps		
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	2	MCS 0-15		
2400-2483.5	n (HT40)	2422-2452	3-9 [7]	2	MCS 0-15		

Note 1: RF output power specifies that Maximum Peak Conducted Output Power.

Note 2: 802.11b uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.

Note 3: 802.11g/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.

### 1.1.2 Antenna Details

Ant. No.	Model	Туре	Connector	Gain (dBi)
1	90VEAA15 G06	dipole	N/A	3.59
2	90VEAA15 G07	dipole	N/A	3.53

## 1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	12Vdc from AC adapter
	·

Report No.: FR462301AC Page: 5 of 63



## 1.1.4 Accessories

	Accessories					
No.	No. Equipment Description					
		Brand Name: NETGEAR				
		Model Name: ML18-7120150-A1				
1	AC Adapter 1	P/N: 332-10653-01				
	. Conseptor	Power Rating: I/P: 120Vac, 60Hz, 0.5A O/P: 12Vdc, 1.5A				
		Power Line: 1.85m non-shielded cable w/o core				
	AC Adapter 2	Brand Name: NETGEAR				
		Model Name: AD817F10				
2		P/N: 332-10301-02				
		Power Rating: I/P: 100-120Vac, 50-60Hz, 0.56A O/P: 12Vdc, 1.5A				
		Power Line: 1.85m non-shielded cable w/o core				

## 1.1.5 Channel List

Frequency	band (MHz)	2400~2483.5		
802.11 b /	g / n HT20	802.11n HT40		
Channel	Frequency(MHz)	Channel	Frequency(MHz)	
1	2412	3	2422	
2	2417	4	2427	
3	2422	5	2432	
4	2427	6	2437	
5	2432	7	2442	
6	2437	8	2447	
7	2442	9	2452	
8	2447			
9	2452			
10	2457			
11	2462			

Report No.: FR462301AC Page: 6 of 63



# 1.1.6 Test Tool and Duty Cycle

Test Tool	MT7592, Version 0.0.0.41				
	Mode	Duty cycle (%)	Duty factor (dB)		
	11b	100.00%	0.00		
Duty Cycle and Duty Factor	11g	92.74%	0.33		
	HT20	91.11%	0.40		
	HT40	81.18%	0.91		

# 1.1.7 Power Setting

Modulation Mode	Test Frequency (MHz)	Power Set
11b	2412	28
11b	2437	26
11b	2462	26
11g	2412	1E
11g	2437	3B
11g	2462	20
HT20	2412	1D
HT20	2437	3B
HT20	2462	1F
HT40	2422	18
HT40	2437	22
HT40	2452	1A

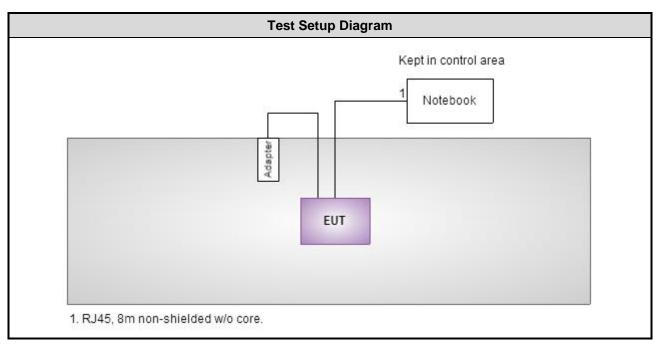
Report No.: FR462301AC Page: 7 of 63



# 1.2 Local Support Equipment List

	Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)	
1	Notebook	DELL	E6430		DoC	RJ45, 8m non-shielded w/o core.	

# 1.3 Test Setup Chart



Report No.: FR462301AC Page: 8 of 63



# 1.4 The Equipment List

Conducted Emission							
Conduction room 1 / (CO01-WS)							
Instrument Manufacturer Model No. Serial No. Calibration Date Calibr							
R&S	ESCS 30	100169	Oct. 15, 2013	Oct. 14, 2014			
SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 23, 2013	Nov. 22, 2014			
SCHWARZBECK	Schwarzbeck 8127	8127-666	Dec. 04, 2013	Dec. 03, 2014			
Woken	CFD200-NL	CFD200-NL-001	Apr. 23, 2014	Apr. 22, 2015			
NA	50	04	Apr. 18, 2014	Apr. 17, 2015			
	Conduction room 1 / (  Manufacturer  R&S  SCHWARZBECK  SCHWARZBECK  Woken	Conduction room 1 / (CO01-WS)  Manufacturer Model No.  R&S ESCS 30  SCHWARZBECK Schwarzbeck 8127  SCHWARZBECK Schwarzbeck 8127  Woken CFD200-NL	Manufacturer         Model No.         Serial No.           R&S         ESCS 30         100169           SCHWARZBECK         Schwarzbeck 8127         8127-667           SCHWARZBECK         Schwarzbeck 8127         8127-666           Woken         CFD200-NL         CFD200-NL-001	Conduction room 1 / (CO01-WS)           Manufacturer         Model No.         Serial No.         Calibration Date           R&S         ESCS 30         100169         Oct. 15, 2013           SCHWARZBECK         Schwarzbeck 8127         8127-667         Nov. 23, 2013           SCHWARZBECK         Schwarzbeck 8127         8127-666         Dec. 04, 2013           Woken         CFD200-NL         CFD200-NL-001         Apr. 23, 2014			

Test Item	Radiated Emission									
Test Site	966 chamber 2 / (03C	966 chamber 2 / (03CH02-WS)								
Instrument	Manufacturer	Calibration Date	Calibration Until							
Spectrum Analyzer	R&S	FSV40	101499	Feb. 08, 2014	Feb. 07, 2015					
Receiver	R&S	ESR3	101657	Jan. 18, 2014	Jan. 17, 2015					
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-524	Jan. 08, 2014	Jan. 07, 2015					
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Jan. 07, 2014	Jan. 06, 2015					
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Dec. 27, 2013	Dec. 26, 2014					
Preamplifier	Burgeon	BPA-530	100218	Dec. 09, 2013	Dec. 08, 2014					
Preamplifier	Agilent	83017A	MY39501309	Dec. 09, 2013	Dec. 08, 2014					
Preamplifier	WM	TF-130N-R1	923365	Oct. 23, 2013	Oct. 22, 2014					
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 17, 2013	Dec. 16, 2014					
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 17, 2013	Dec. 16, 2014					
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 17, 2013	Dec. 16, 2014					
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 17, 2013	Dec. 16, 2014					
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-004	Dec. 17, 2013	Dec. 16, 2014					
Note: Calibration Interval of instruments listed above is one year.										

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014		
Note: Calibration Interval of instruments listed above is two year.							

Test Item	RF Conducted									
Test Site	(TH01-WS)	(TH01-WS)								
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until					
Spectrum Analyzer	R&S	FSV40	101063	Feb. 17, 2014	Feb. 16, 2015					
Power Meter	Anritsu	ML2495A	1241002	Oct. 24, 2013	Oct. 23, 2014					
Power Sensor	Anritsu	MA2411B	1207366	Oct. 24, 2013	Oct. 23, 2014					
Signal Generator	R&S	SMB100A	175727	Jan. 07, 2014	Jan. 06, 2015					
Note: Calibration Interval of instruments listed above is one year.										

Report No.: FR462301AC Page: 9 of 63



### 1.5 Test Standards

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.247

ANSI C63.10-2009

FCC KDB 558074 D01 DTS Meas Guidance v03r02

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

Note: The EUT has been tested and complied with FCC part 15B requirement. FCC Part 15B test results are issued to another report.

# 1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty						
Parameters	Uncertainty					
Bandwidth	±34.134 Hz					
Conducted power	±0.808 dB					
Frequency error	±34.134 Hz					
Temperature	±0.6 °C					
Conducted emission	±2.670 dB					
AC conducted emission	±2.92 dB					
Radiated emission ≤ 1GHz	±3.26 dB					
Radiated emission > 1GHz	±4.94 dB					

Report No.: FR462301AC Page: 10 of 63



# 2 Test Configuration

# 2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By	
AC Conduction	CO01-WS	21°C / 63%	Skys Huang	
Radiated Emissions	03CH02-WS	25-26°C / 65%	Anderson Hong York Lin	
RF Conducted	TH01-WS	22°C / 64%	Felix Sung	

FCC site registration No.: 657002IC site registration No.: 10807A-2

## 2.2 The Worst Test Modes and Channel Details

Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11b	2412	6 Mbps	1
Radiated Emissions ≤1GHz	11b	2412	6 Mbps	2
Radiated Emissions >1GHz	11b	2412 / 2437 / 2462	1 Mbps	
Fundamental Emission Output Power	11g	2412 / 2437 / 2462	6 Mbps	0
6dB bandwidth	HT20	2412 / 2437 / 2462	MCS 0	2
Power spectral density	HT40	2422 / 2437 / 2452	MCS 0	

#### NOTE:

- 1. Adapter 1 & 2 had been had been covered during the pretest, and was selected as below configuration for final testing.
- 2. Test configurations are listed as below:
  - 1) Configuration 1: Adapter 1 (Model: ML18-7120150-A1)
  - 2) Configuration 2: Adapter 2 (Model: AD817F10)

Report No.: FR462301AC Page: 11 of 63



## 3 Transmitter Test Results

### 3.1 Conducted Emissions

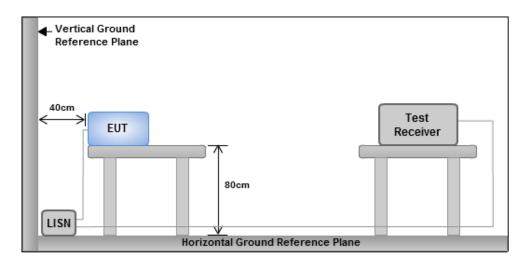
#### 3.1.1 Limit of Conducted Emissions

Conducted Emissions Limit						
Frequency Emission (MHz) Quasi-Peak Average						
0.15-0.5	66 - 56 *	56 - 46 *				
0.5-5	56	46				
5-30	60	50				
Note 1: * Decreases with the logarithm of the frequency.						

#### 3.1.2 Test Procedures

- 1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
- 2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels of AC power line conducted emission are across the 50  $\Omega$  LISN port.
- 3. AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz.
- 4. This measurement was performed with AC 120V / 60Hz.

### 3.1.3 Test Setup



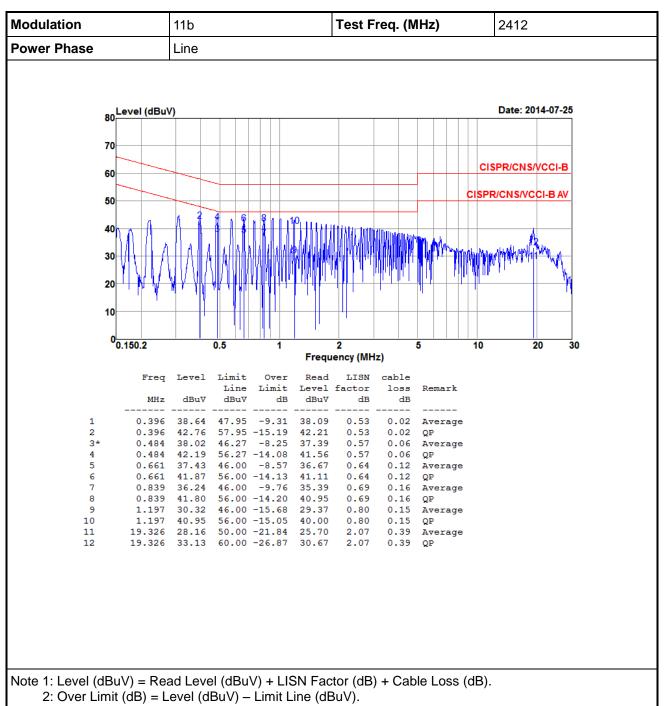
Note: 1. Support units were connected to second LISN.

Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

Report No.: FR462301AC Page: 12 of 63

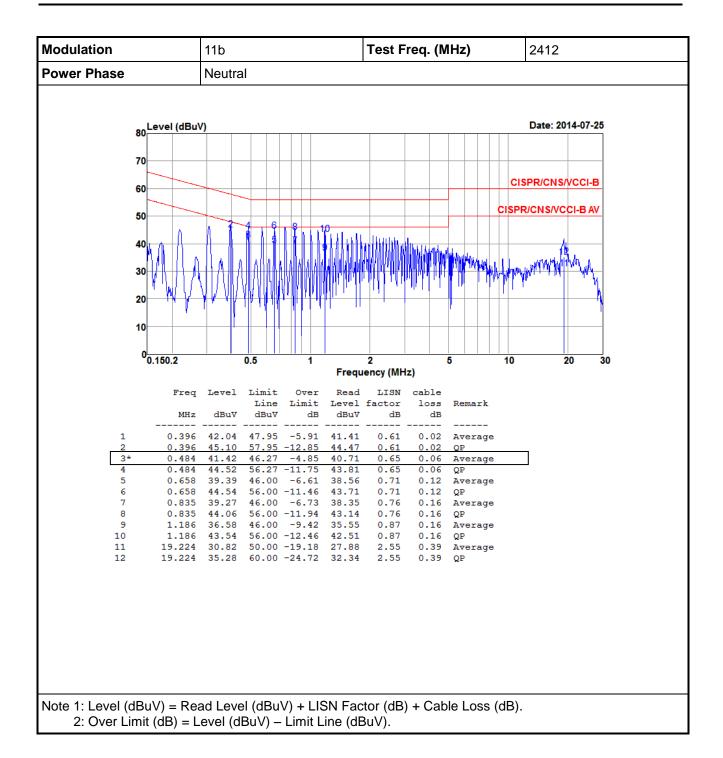


#### 3.1.4 Test Result of Conducted Emissions



Report No.: FR462301AC Page: 13 of 63





Report No.: FR462301AC Page: 14 of 63



# 3.2 6dB and Occupied Bandwidth

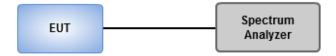
#### 3.2.1 Limit of 6dB Bandwidth

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

#### 3.2.2 Test Procedures

- 1. Set resolution bandwidth (RBW) = 100 kHz, Video bandwidth = 300 kHz.
- 2. Detector = Peak, Trace mode = max hold.
- 3. Sweep = auto couple, Allow the trace to stabilize.
- 4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6dB relative to the maximum level measured in the fundamental emission.

### 3.2.3 Test Setup

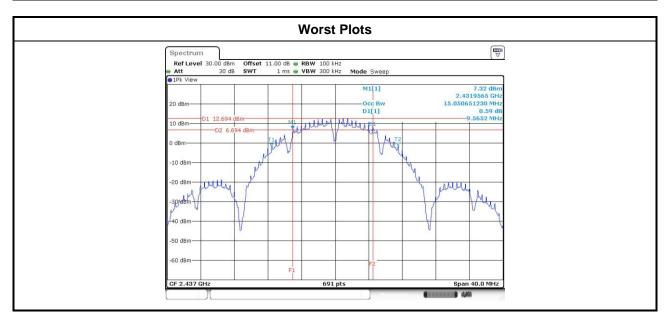


Report No.: FR462301AC Page: 15 of 63



# 3.2.4 Test Result of 6dB and Occupied Bandwidth

Modulation	NI.	Eron (MU=)	6dB Bandwidth (MHz)				Limit (ItU=)
Mode	N <sub>TX</sub>	Freq. (MHz)	Chain 0	Chain 1	Chain 2	Chain 3	Limit (kHz)
11b	2	2412	10.09	10.03			500
11b	2	2437	9.57	10.03			500
11b	2	2462	9.57	10.03			500
11g	2	2412	15.13	15.13			500
11g	2	2437	15.13	15.13			500
11g	2	2462	13.86	15.07			500
HT20	2	2412	15.13	15.71			500
HT20	2	2437	15.13	15.71			500
HT20	2	2462	13.86	15.13			500
HT40	2	2422	35.01	35.01			500
HT40	2	2437	35.01	35.01			500
HT40	2	2452	35.01	35.01			500



Report No.: FR462301AC Page: 16 of 63



Modulation	N.	Freq.		99% Occupied E	Bandwidth (MHz)	
Mode	N <sub>TX</sub>	(MHz)	Chain 0	Chain 1	Chain 2	Chain 3
11b	2	2412	15.27	15.01		
11b	2	2437	14.98	14.73		
11b	2	2462	14.69	14.51		
11g	2	2412	16.57	16.50		
11g	2	2437	17.73	17.19		
11g	2	2462	16.64	16.50		
HT20	2	2412	17.62	17.58		
HT20	2	2437	18.31	18.02		
HT20	2	2462	17.66	17.58		
HT40	2	2422	36.14	36.08		
HT40	2	2437	36.27	36.21		
HT40	2	2452	36.21	36.08		



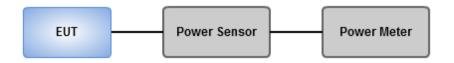
Report No.: FR462301AC Page: 17 of 63



#### **RF Output Power** 3.3

#### **Limit of RF Output Power** 3.3.1

Con	duct	ed po	ower shall not exceed 1Watt.								
$\boxtimes$	Ante	ntenna gain <= 6dBi, no any corresponding reduction is in output power limit.									
	Ante	enna	gain > 6dBi								
		The	Fixed, point to point operations. conducted output power from the intentional radiator shall be reduced by the amount in dB the directional gain of the antenna exceeds 6 dB								
		Sys Ope	ed, point to point operations tems operations tems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point erations, maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 hat the directional gain of the antenna exceeds 6 dBi.								
			tems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point rations ,no any corresponding reduction is in transmitter peak output power								
3.3.	2	Test	Procedures								
	Max	kimur	n Peak Conducted Output Power								
		Spe	ctrum analyzer								
		1.	Set RBW = 1MHz, VBW = 3MHz, Detector = Peak.								
		2.	Sweep time = auto, Trace mode = max hold, Allow trace to fully stabilize.								
		3.	Use the spectrum analyzer channel power measurement function with the band limits set equal to the DTS bandwidth edges.								
		Pov	ver meter								
		1.	A broadband Peak RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.								
$\boxtimes$	Max	kimur	n Conducted Output Power								
	$\boxtimes$	Pov	ver meter								
		1.	A broadband Average RF power meter is used for output power measurement. The video bandwidth of power meter is greater than DTS bandwidth of EUT. If duty cycle of test signal is not 100 %, trigger and gating function of power meter will be enabled to capture transmission burst for measuring output power.								
3.3.	3	Test	Setup								



Report No.: FR462301AC Page: 18 of 63



# 3.3.4 Test Result of Maximum Output Power

Modulation Mode	N <sub>TX</sub>	Freq.	Conduc	•	age) outpu Bm)	t power	Total Power		
Wode		(MHz)	Chain 0	Chain 1	Chain 2	Chain 3	(mW)	(dBm)	(dBm)
11b	2	2412	21.97	22.92			353.283	25.48	30.00
11b	2	2437	21.14	21.73			278.953	24.46	30.00
11b	2	2462	20.36	20.89			231.386	23.64	30.00
11g	2	2412	16.44	16.88			92.808	19.68	30.00
11g	2	2437	21.31	21.88			289.377	24.61	30.00
11g	2	2462	16.26	16.88			91.020	19.59	30.00
HT20	2	2412	15.68	16.31			79.739	19.02	30.00
HT20	2	2437	21.19	21.92			287.119	24.58	30.00
HT20	2	2462	16.50	16.26			86.935	19.39	30.00
HT40	2	2422	13.05	13.42			42.162	16.25	30.00
HT40	2	2437	17.87	18.33			129.312	21.12	30.00
HT40	2	2452	13.97	14.36			52.236	17.18	30.00

Report No.: FR462301AC Page : 19 of 63



## 3.4 Power Spectral Density

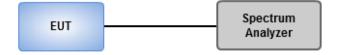
### 3.4.1 Limit of Power Spectral Density

Power spectral density shall not be greater than 8 dBm in any 3 kHz band.

#### 3.4.2 Test Procedures

- Maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit.
  - Set the RBW = 30kHz, VBW = 100kHz.
  - Detector = Peak, Sweep time = auto couple.
  - 3. Trace mode = max hold, allow trace to fully stabilize.
  - 4. Use the peak marker function to determine the maximum amplitude level.
- Maximum (average) conducted output power was used to demonstrate compliance to the fundamental output power limit.
  - Set the RBW = 100kHz, VBW = 300 kHz.
  - 2. Detector = RMS, Sweep time = auto couple.
  - 3. Set the sweep time to: ≥ 10 x (number of measurement points in sweep) x (maximum data rate per stream).
  - 4. Perform the measurement over a single sweep.
  - 5. Use the peak marker function to determine the maximum amplitude level.

## 3.4.3 Test Setup



Report No.: FR462301AC Page: 20 of 63

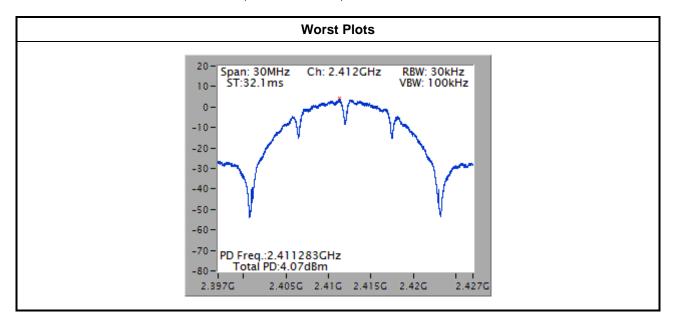


#### **Test Result of Power Spectral Density** 3.4.4

Modulation Mode	N <sub>TX</sub>	Freq. (MHz)	Total Power Spectral Density (dBm/30kHz)	Limit (dBm/3kHz)
11b	2	2412	4.07	7.43
11b	2	2437	1.98	7.43
11b	2	2462	1.24	7.43
11g	2	2412	-4.14	7.43
11g	2	2437	0.00	7.43
11g	2	2462	-4.61	7.43
HT20	2	2412	-4.54	7.43
HT20	2	2437	0.86	7.43
HT20	2	2462	-4.59	7.43
HT40	2	2422	-9.76	7.43
HT40	2	2437	-4.55	7.43
HT40	2	2452	-8.59	7.43

#### Note:

- Test result for HT20 / HT40 is bin-by-bin summing measured value of each TX port.
   Directional gain = 10 \* log((10<sup>3.59/20</sup>+10<sup>3.59/20</sup>)<sup>2</sup>/2) = 6.57 dBi > 6 dBi. Limit shall be reduced to 8 dBm (6.57 dBi 6 dBi) = 7.43 dBm.



Report No.: FR462301AC Page: 21 of 63



## 3.5 Unwanted Emissions into Restricted Frequency Bands

### 3.5.1 Limit of Unwanted Emissions into Restricted Frequency Bands

	Restricted Band	Emissions Limit	
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

#### Note 1:

Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit **Note 2:** 

Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

#### 3.5.2 Test Procedures

- Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at a height of 0.8 m test table above the ground plane.
- 2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
- 3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

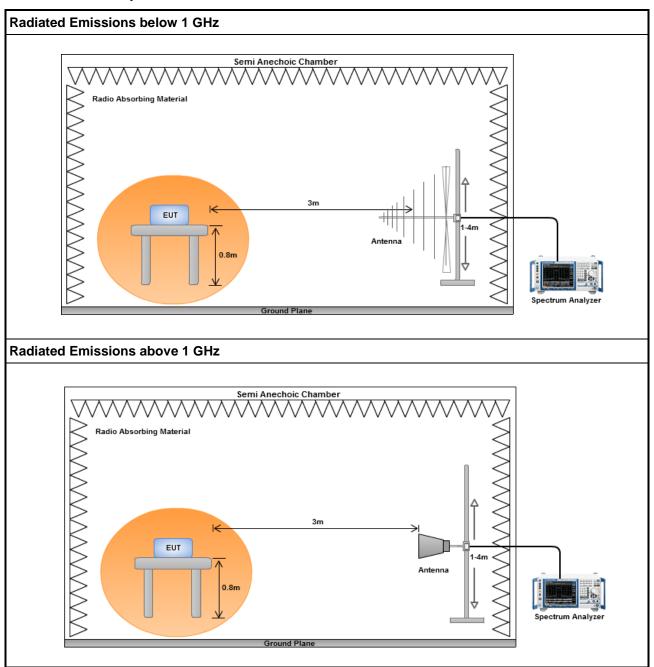
#### Note:

- 1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
- 2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
- 3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

Report No.: FR462301AC Page: 22 of 63



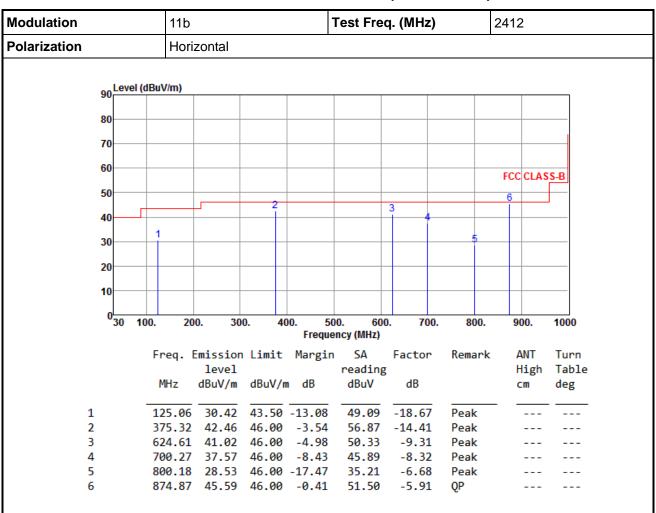
## 3.5.3 Test Setup



Report No.: FR462301AC Page: 23 of 63



## 3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)



Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

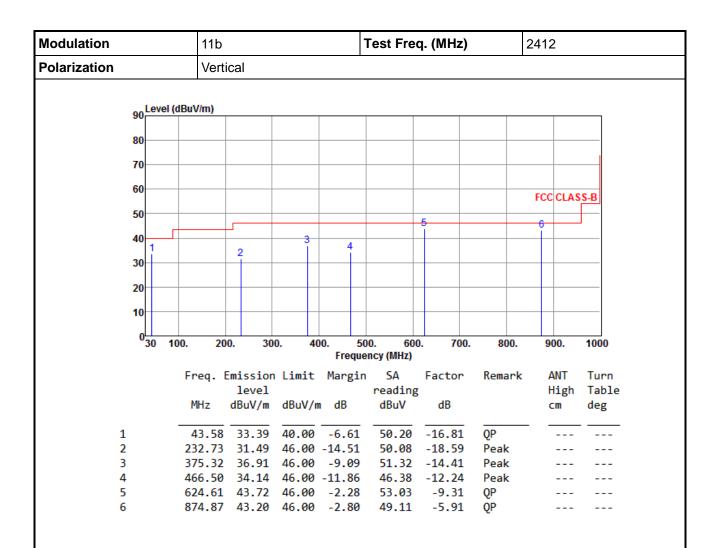
\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Report No.: FR462301AC Page: 24 of 63





\*Factor includes antenna factor, cable loss and amplifier gain

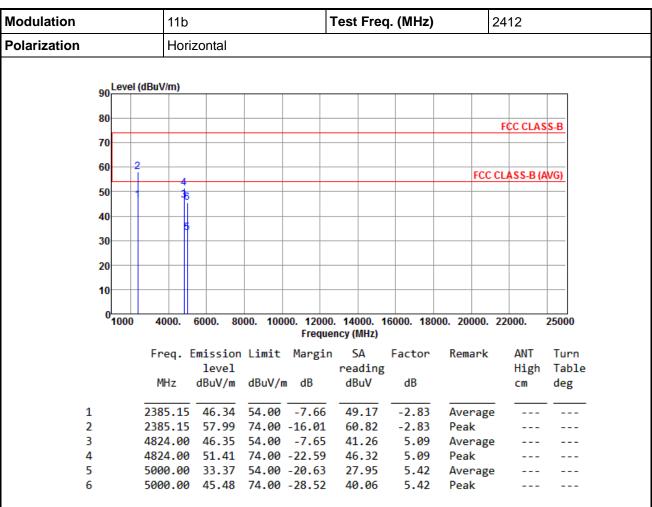
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Report No.: FR462301AC Page: 25 of 63



## 3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11b



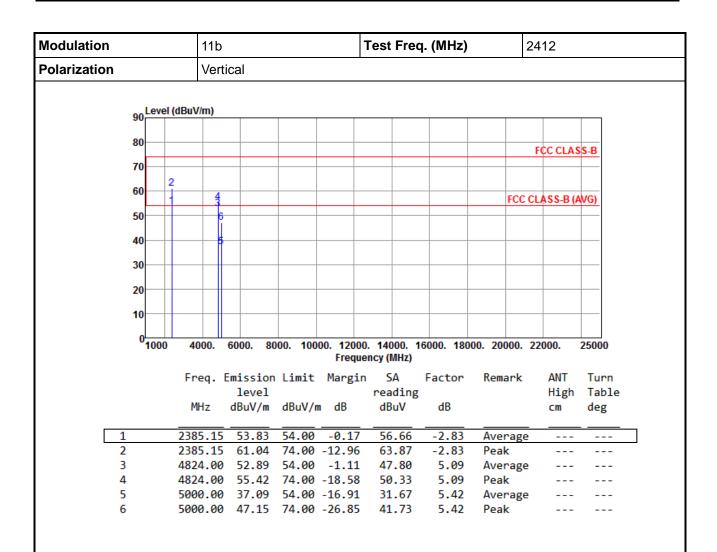
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report No.: FR462301AC Page: 26 of 63



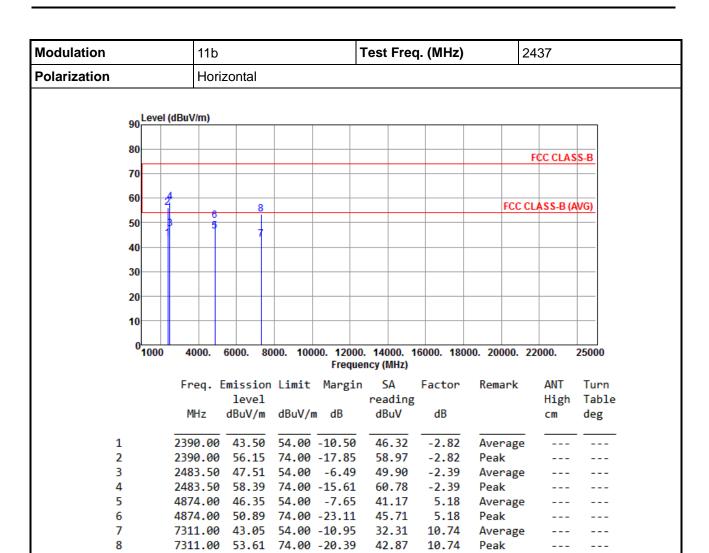


\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 27 of 63





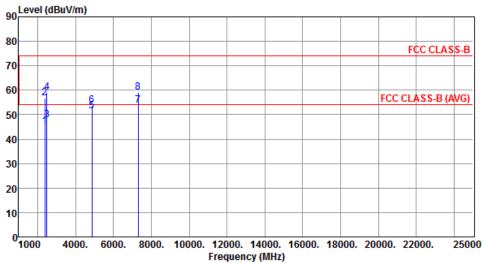
\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 28 of 63



Modulation	11b	Test Freq. (MHz)	2437
Polarization	Vertical		
90 Level (dB	uV/m)		

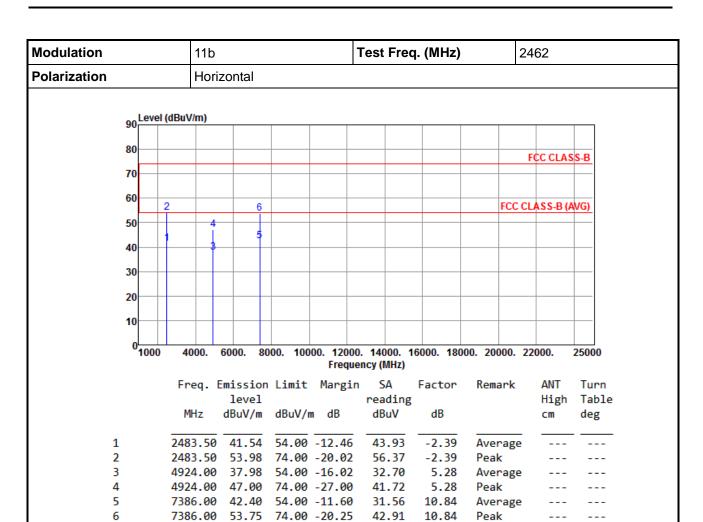


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	45.24	54.00	-8.76	48.06	-2.82	Average		
2	2390.00	56.63	74.00	-17.37	59.45	-2.82	Peak		
3	2483.50	47.74	54.00	-6.26	50.13	-2.39	Average		
4	2483.50	59.23	74.00	-14.77	61.62	-2.39	Peak		
5	4874.00	51.38	54.00	-2.62	46.20	5.18	Average		
6	4874.00	53.96	74.00	-20.04	48.78	5.18	Peak		
7	7311.00	53.73	54.00	-0.27	42.99	10.74	Average		
8	7311.00	59.04	74.00	-14.96	48.30	10.74	Peak		

\*Factor includes antenna factor, cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 29 of 63



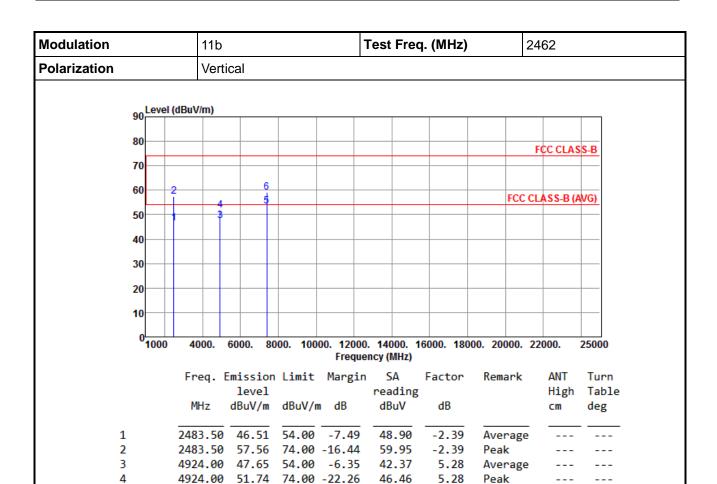


\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 30 of 63





Average

Peak

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB) \*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 31 of 63

Report Version: Rev. 01

5

6

7386.00

53.61

7386.00 59.21 74.00 -14.79

54.00 -0.39

42.77

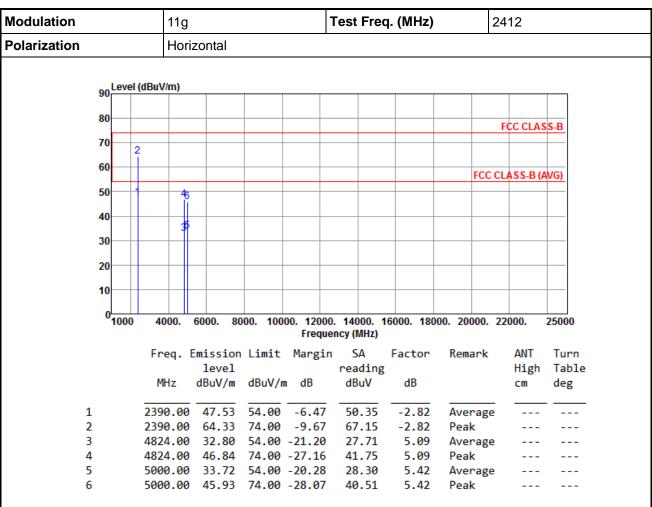
48.37

10.84

10.84



## 3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11g



Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report No.: FR462301AC Page: 32 of 63



Modulation		11g			7	Γest Fred	q. (MHz)	2	2412	
Polarization		Verti	ical		·			1		
9	90 Level (	dBuV/m)								
,	00									
•	80								FCC CLAS	S-B
1	70									
	60									
•	1	4						FCC (	CLASS-B (A	VG)
!	50	16								
	40									
•	30									
:	20									
	10									
	<b>'</b>									
	1000	4000.	6000. 80	00. 100			6000. 1800	00. 20000.	22000.	25000
						ncy (MHz)				
		Freq. [	mission	Limit	Margin		Factor	Remark	ANT	Turn
		MHz	level	JD. 377-	. JD	reading dBuV			High	Table
		MHZ	dBuV/m	abuv/n	i ab	abuv	dB		CM	deg
1		2390.00	53.40	54.00	-0.60	56.22	-2.82	Average		
2		2390.00			-2.74	74.08	-2.82	Peak		
3		4824.00			-17.88	31.03	5.09	Average		
4		4824.00			-23.49	45.42	5.09	Peak		
5		5000.00			-16.49	32.09	5.42	Average		
6		5000.00	47.82	74.00	-26.18	42.40	5.42	Peak		

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 33 of 63



Modulation			11g			-	Test Fred	q. (MHz)	2	2437	
Polarization			Hori	zontal					•		
	90L	evel (	dBuV/m)								
	80										
	80									FCC CLAS	S-B
	70	-									
	60	2	1								
	٧٧			8					FCC (	CLASS-B (A	VG)
	50		) <u>6</u>	$\perp$							
	40			1							
			9								
	30										
	20										
	10										
	0	200		2000	100		44000 4			2222	
	1	000	4000.	6000. 80	000. 100		. 14000. 1 ncy (MHz)	6000. 180	00. 20000.	22000.	25000
			Frea.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
				level			reading			High	Table
			MHz	dBuV/m	dBuV/	m dB	dBuV	dB		cm	deg
	1		2390.00				47.86	-2.82	Average		
	2 3		2390.00			-16.67 -6.24	60.15	-2.82	Peak		
	4		2483.50				50.15 63.68	-2.39 -2.39	Average Peak		
	-		2403.30	01.25	74.00	12.71	05.00	-2.55	, car		

5.18

5.18

10.74

10.74

Average

Average

---

Peak

Peak

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB) \*Factor includes antenna factor, cable loss and amplifier gain

4874.00 35.96 54.00 -18.04 30.78 4874.00 48.18 74.00 -25.82 43.00 7311.00 42.20 54.00 -11.80 31.46

7311.00 55.63 74.00 -18.37 44.89

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 34 of 63

Report Version: Rev. 01

5

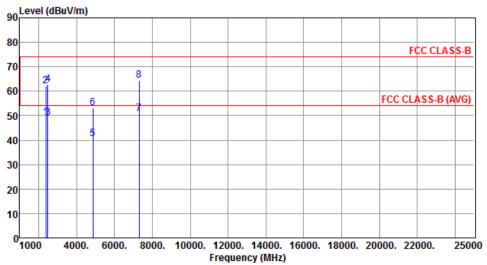
6

7

8



Modulation	11g	-	Test Freq.	(MHz)	24	37		
Polarization	Vertical							
Lovel (dDt)	(Im)							
90 Level (dBu)	//III)							



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	49.06	54.00	-4.94	51.88	-2.82	Average		
2	2390.00	62.08	74.00	-11.92	64.90	-2.82	Peak		
3	2483.50	49.18	54.00	-4.82	51.57	-2.39	Average		
4	2483.50	62.79	74.00	-11.21	65.18	-2.39	Peak		
5	4874.00	40.62	54.00	-13.38	35.44	5.18	Average		
6	4874.00	52.97	74.00	-21.03	47.79	5.18	Peak		
7	7311.00	50.68	54.00	-3.32	39.94	10.74	Average		
8	7311.00	64.44	74.00	-9.56	53.70	10.74	Peak		

\*Factor includes antenna factor, cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 35 of 63



Modulation	11g				Test F	req.	. (MHz)		246	2	
Polarization	Hori	zontal									
90 Level (	dBuV/m)										
80											
									FCC	CLAS	S-B
70 2											
60											
50	-						+	FC	C CLAS	SS-B (A	VG)
50	6										
40											
30											
30											
20											
10											
0 <mark>1000</mark>	4000.	6000. 80	00. 100		0. 1400 ency (Mi		000. 1800	00. 20000	. 2200	00.	25000
	Fred I	Emission	limit	_			Factor	Remark		ANT	Turn
	rreq.	level	LIMIT	i iui 61	read		i de coi	ricinar r	-		Tabl
	MHz	dBuV/m	dBuV/ı	m dB	dBu	_	dB			cm	deg
1	2483.50	50.72	54.00	-3.28	53.	11	-2.39	Averag			
2	2483.50		74.00		70.		-2.39	Peak	,-		
3	4924.00	33.60	54.00	-20.40	28.	32	5.28	Averag	ge		
4	4924.00						5.28	Peak			
5	5000.00	34.26	54.00	-19.74	28.	84	5.42	Averag	ge		

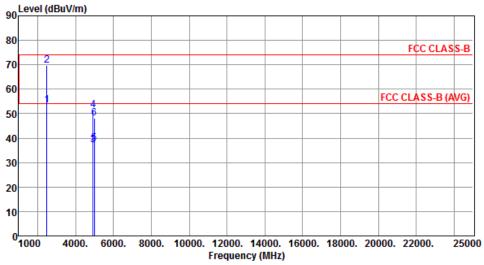
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 36 of 63



Modulation		11g			Test Freq	. (MHz)	)	24	62	
Polarization		Vertical	ical							
	Level (dBu\	//m)								



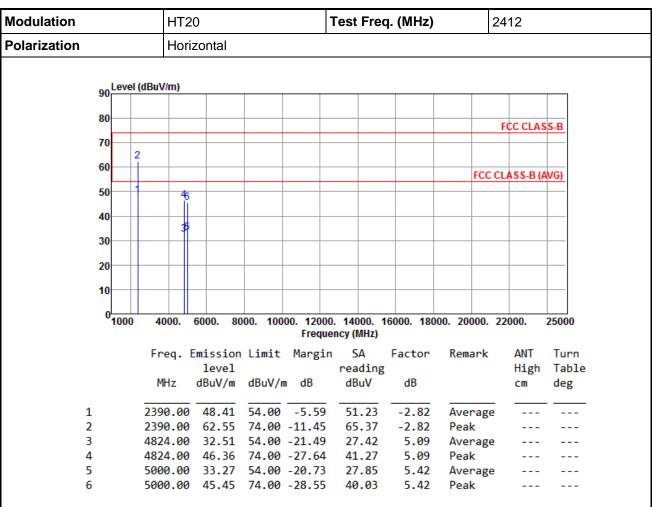
		Emission level		Ū	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
4	2402 50		<u></u>	0.45					
1	2483.50	53.55	54.00	-0.45	55.94	-2.39	Average		
2	2483.50	69.63	74.00	-4.37	72.02	-2.39	Peak		
3	4924.00	37.10	54.00	-16.90	31.82	5.28	Average		
4	4924.00	51.34	74.00	-22.66	46.06	5.28	Peak		
5	5000.00	37.72	54.00	-16.28	32.30	5.42	Average		
6	5000.00	48.26	74.00	-25.74	42.84	5.42	Peak		

\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 37 of 63



## 3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT20



Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

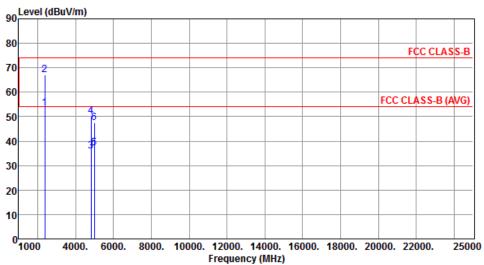
\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) - Limit (dBuV/m).

Report No.: FR462301AC Page: 38 of 63



Modulation	HT20	Test Freq. (MHz)	2412
Polarization	Vertical		
Lovel (dBu)	(Inn.)		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	53.55	54.00	-0.45	56.37	-2.82	Average		
2	2390.00	67.22	74.00	-6.78	70.04	-2.82	Peak		
3	4824.00	35.75	54.00	-18.25	30.66	5.09	Average		
4	4824.00	50.13	74.00	-23.87	45.04	5.09	Peak		
5	5000.00	37.27	54.00	-16.73	31.85	5.42	Average		
6	5000.00	47.50	74.00	-26.50	42.08	5.42	Peak		

\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 39 of 63



Modulation	HT20	-	Γest Freq. (MHz	) 24	437	
Polarization	Horizontal	1		•		
	·					
90 Level	(dBuV/m)					
80				ı	FCC CLASS-B	
70						
I 1.	4					
60				FCC CI	LASS-B (AVG)	
50	6 8					
40						
40	5					
30						
20						
10						
01000	4000. 6000. 8	000. 10000. 12000 Fregue	. 14000. 16000. 18 ncy (MHz)	000. 20000. 22	2000. 2500	0
	Freq. Emission	n Limit Margin	SA Factor	Remark	ANT Tur	rn
	level	0	reading		High Tab	ole
	MHz dBuV/m	dBuV/m dB	dBuV dB		cm deg	3
1	2390.00 45.42	54.00 -8.58	48.24 -2.82	Average		
2	2390.00 58.56		61.38 -2.82			
3	2483.50 48.06		50.45 -2.39			
4	2483.50 63.39	74.00 -10.61	65.78 -2.39	Peak		
5	4874.00 35.62		30.44 5.18	_		
6	4874.00 49.02	74.00 -24.98	43.84 5.18	Peak		

10.74

10.74

Peak

Average

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

\*Factor includes antenna factor, cable loss and amplifier gain

7311.00 41.88 54.00 -12.12 31.14 7311.00 45.62 74.00 -28.38 34.88

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

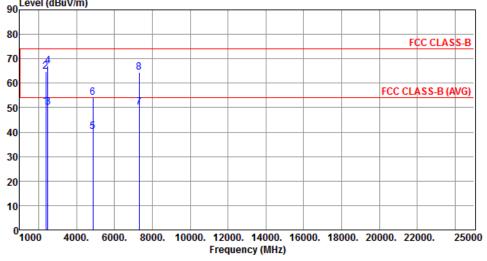
Report No.: FR462301AC Page: 40 of 63

Report Version: Rev. 01

7



Modulation		HT20	HT20			Test Freq. (MHz)				2437		
Polarization		Vertical										
90 Level (dBu												
90	Level (dBu\	//m)										
90		//m)										



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2390.00	50.52	54.00	-3.48	53.34	-2.82	Average		
2	2390.00		74.00	-9.20	67.62	-2.82	Peak		
3	2483.50	50.02	54.00	-3.98	52.41	-2.39	Average		
4	2483.50	67.12	74.00	-6.88	69.51	-2.39	Peak		
5	4874.00	40.33	54.00	-13.67	35.15	5.18	Average		
6	4874.00	54.02	74.00	-19.98	48.84	5.18	Peak		
7	7311.00	50.16	54.00	-3.84	39.42	10.74	Average		
8	7311.00	64.38	74.00	-9.62	53.64	10.74	Peak		

\*Factor includes antenna factor, cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 41 of 63



Modulation	HT2	20		-	Test Fre	q. (MHz)		2462	
Polarization	Hor	izontal		•			•		
90 Leve	l (dBuV/m)								
80								FCC CLAS	SS-B
70	2								
60									
00							FCC	CLASS-B (	AVG)
50	*								
40									
30									
20									
10									
0_1000	4000.	6000. 8	000. 100	000. 12000	. 14000.	16000. 180	00. 20000.	22000.	25000
					ncy (MHz)				
	Freq.	Emission	n Limit	Margin	SA	Factor	Remark	ANT	Turn
		level			reading			High	Tabl
	MHz	dBuV/m	dBuV/	m dB	dBuV	dB		cm	deg
1	2483.50	52.16	54.00	-1.84	54.55	-2.39	Average		
2	2483.50			-5.05	71.34	-2.39	Peak		
3	4924.00	33.26	54.00	-20.74	27.98	5.28	Average		
4				-26.72	42.00	5.28	Peak		
5				-20.04	28.54		Average		
6	5000.00	46.18	74.00	-27.82	40.76	5.42	Peak		

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

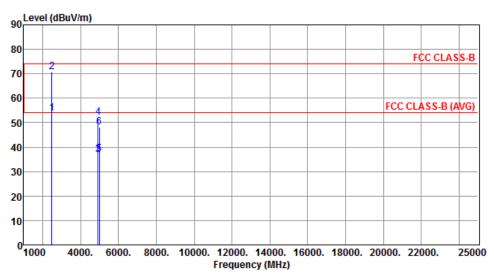
\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 42 of 63

Report Version: Rev. 01



Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Vertical		



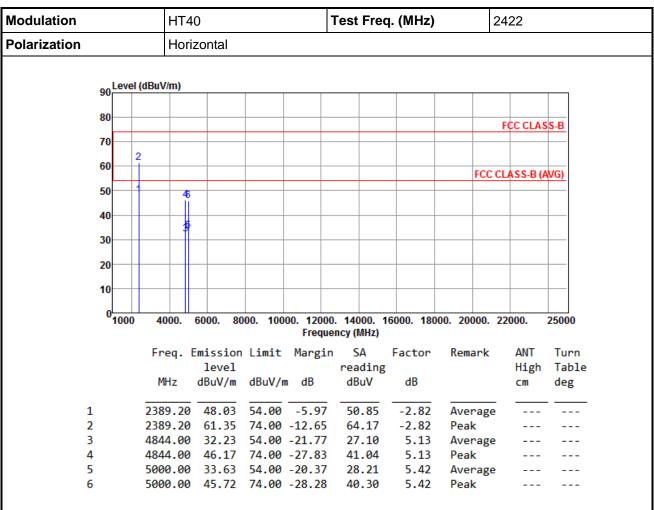
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2483.50	53.72	54.00	-0.28	56.11	-2.39	Average		
2	2483.50	70.75	74.00	-3.25	73.14	-2.39	Peak		
3	4924.00	36.71	54.00	-17.29	31.43	5.28	Average		
4	4924.00	52.18	74.00	-21.82	46.90	5.28	Peak		
5	5000.00	37.22	54.00	-16.78	31.80	5.42	Average		
6	5000.00	48.00	74.00	-26.00	42.58	5.42	Peak		

\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 43 of 63



## 3.5.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT40



Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

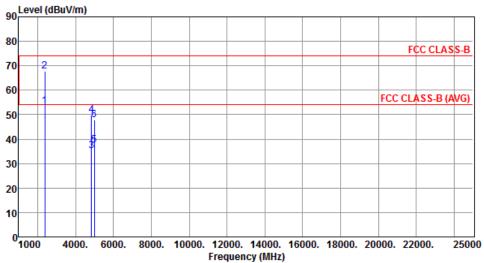
\*Factor includes antenna factor, cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 44 of 63



Modulation	HT40	Test Freq	. (MHz)	2422	
Polarization	Vertical				
90 Level (dBu	V/m)				1



	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	2389.20	53.52	54.00	-0.48	56.34	-2.82	Average		
2	2389.20	67.80	74.00	-6.20	70.62	-2.82	Peak		
3	4844.00	35.13	54.00	-18.87	30.00	5.13	Average		
4	4844.00	49.72	74.00	-24.28	44.59	5.13	Peak		
5	5000.00	37.51	54.00	-16.49	32.09	5.42	Average		
6	5000.00	47.86	74.00	-26.14	42.44	5.42	Peak		

\*Factor includes antenna factor, cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 45 of 63



Modulation Polarization			HT	HT40					Test Freq. (MHz)					2437		
			Но	Horizontal												
	90	Level	(dBuV/m)													
	80											F	CC CLAS	S-B		
	70				-											
	60	2	4													
	00										FC	C CL	ASS-B (A	VG)		
	50		₿ 6		8											
	40				<del>7</del>											
	40		5													
	30															
	20				Ш											
	10															
	0	1000	4000.	6000.	000	00 400	00 420	00 44	100 40	5000. <b>1</b> 80	00 2000		000	25000		
		1000	4000.	0000.	800	JU. 100		uency (		0000. 180	UU. 2000	J. ZZ	000.	25000		
			Freq.	Emissi	on	Limit	Marg	in S	Α	Factor	Remar	k	ANT	Turn		
				leve	1			rea	ding				High	Table		
			MHz	dBuV/	m	dBuV/ı	n dB	dB	uV	dB			cm	deg		
	1		2389.2	3 /8 /	1	5/ 00	-5.50	51	.23	-2.82	Avera					
	2		2389.2						.07	-2.82	Peak	8-				
	3		2483.50				-4.7		.66	-2.39	Avera	ge				
	4		2483.50	63.5	2	74.00	-10.48		.91	-2.39	Peak	_				
	5		4874.00						.08	5.18	Avera	ge				
	6		4874.00						.45	5.18	Peak					
	7		7311.00			54.00	-13.49		.81	10.74	Avera	ge				

7311.00 44.97 74.00 -29.03 34.23 10.74

Peak

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

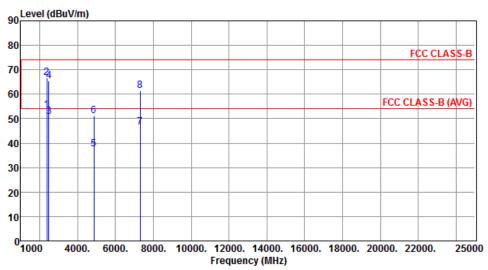
\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 46 of 63

Report Version: Rev. 01



Modulation	HT40	Test Freq. (MHz)	2437
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	2389.23	53.52	54.00	-0.48	56.34	-2.82	Average		
2	2389.23			-7.24	69.58	-2.82	Peak		
3	2483.50	50.85	54.00	-3.15	53.24	-2.39	Average		
4	2483.50	65.49	74.00	-8.51	67.88	-2.39	Peak		
5	4874.00	37.55	54.00	-16.45	32.37	5.18	Average		
6	4874.00	51.00	74.00	-23.00	45.82	5.18	Peak		
7	7311.00	46.62	54.00	-7.38	35.88	10.74	Average		
8	7311.00	61.47	74.00	-12.53	50.73	10.74	Peak		

\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 47 of 63



Modulation		HT4	0				Tes	t Fre	eq. (	(MHz)		2	2452	
Polarization		Hori	zontal				•					•		
90 <u>Le</u>	vel (dBu	V/m)												
00														
80													FCC CLAS	SS-B
70—	2			-					+			-		-
60														
	4											FCC (	CLASS-B (	AVG)
50		*												
40														
		\$												
30—									$\top$					
20									_					4
40														
10														
0 <mark>10</mark>	00 4	4000.	6000.	8000.	100		00. 1			00. 180	00. 20	0000.	22000.	25000
	_	noa l	Emissio	on Liu	mi+		_	SA		actor	Ron	nark	ANT	Tur
		req. i	level		III C	riai g		ading		ac coi	IXEII	iai K	High	Tab
		MHz	dBuV/r	n dB	uV/m	ı dB		BuV		dB			cm	deg
1	24	84.22	51.42	54	99	-2.5	<u> </u>	3.81	-	-2.39	Δνε	erage		
2			66.43		.00			8.82		-2.39	Pea	_		
3			33.10					7.86		5.24		erage		
4			46.89					1.65		5.24	Pea	k		
5			33.64					8.22		5.42		erage		
6	50	00.00	45.57	7 74	.00	-28.4	3 4	0.15		5.42	Pea	ık		

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor\* (dB)

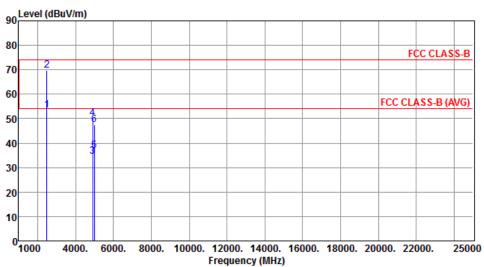
\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 48 of 63

Report Version: Rev. 01



Modulation	HT40	Test Freq. (MHz)	2452
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m		SA reading dBuV		Remark	ANT High cm	Turn Table deg
4	2494 22		<u></u>	0.47			A		
1	2484.22	53.53	54.00	-0.4/	55.92	-2.39	Average		
2	2484.22	69.76	74.00	-4.24	72.15	-2.39	Peak		
3	4904.00	34.55	54.00	-19.45	29.31	5.24	Average		
4	4904.00	50.07	74.00	-23.93	44.83	5.24	Peak		
5	5000.00	36.78	54.00	-17.22	31.36	5.42	Average		
6	5000.00	47.50	74.00	-26.50	42.08	5.42	Peak		

\*Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR462301AC Page: 49 of 63



# 3.6 Emissions in Non-Restricted Frequency Bands

## 3.6.1 Emissions in Non-Restricted Frequency Bands Limit

Peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum in-band peak PSD level in 100 kHz

## 3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

#### 3.6.3 Test Procedures

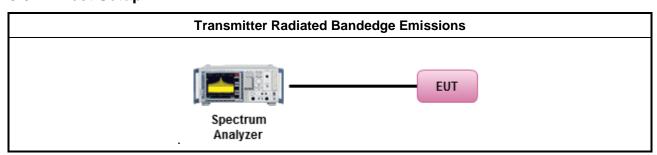
#### Reference level measurement

- 1. Set RBW=100kHz, VBW = 300kHz, Detector = Peak, Sweep time = Auto
- 2. Trace = max hold, Allow Trace to fully stabilize
- 3. Use the peak marker function to determine the maximum PSD level

#### **Emission level measurement**

- Set RBW=100kHz, VBW = 300kHz, Detector = Peak, Sweep time = Auto
- 2. Trace = max hold, Allow Trace to fully stabilize
- 3. Scan Frequency range is up to 25GHz
- 4. Use the peak marker function to determine the maximum amplitude level

### 3.6.4 Test Setup



## 3.6.5 Test Result of Emissions in non-restricted frequency bands

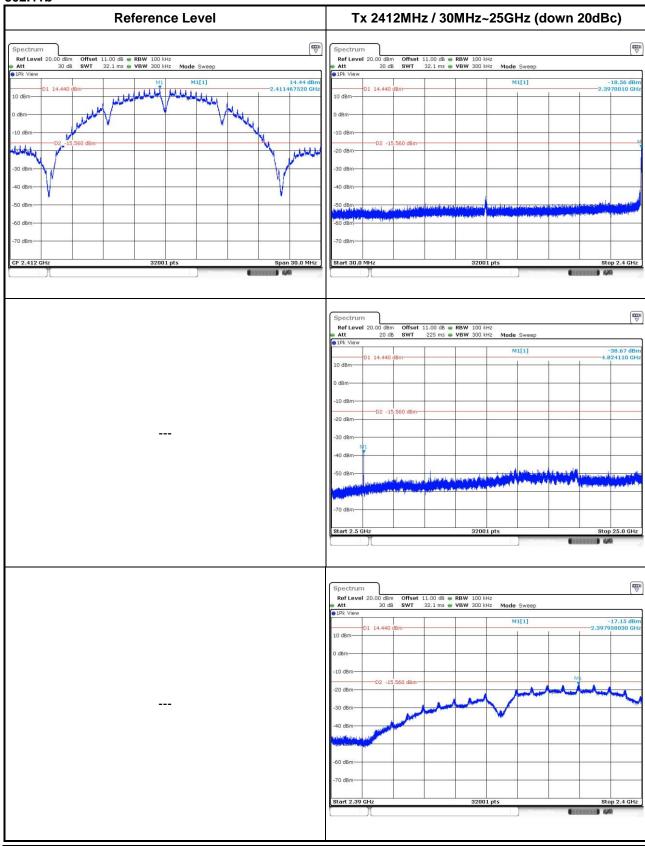
This test item is performed on each TX output individually without summing or adding 10  $log(N_{ANT})$  since measurements are made relative to the in-band emissions on the individual outputs. Only worst test result of each operating mode is presented.

Report No.: FR462301AC Page: 50 of 63



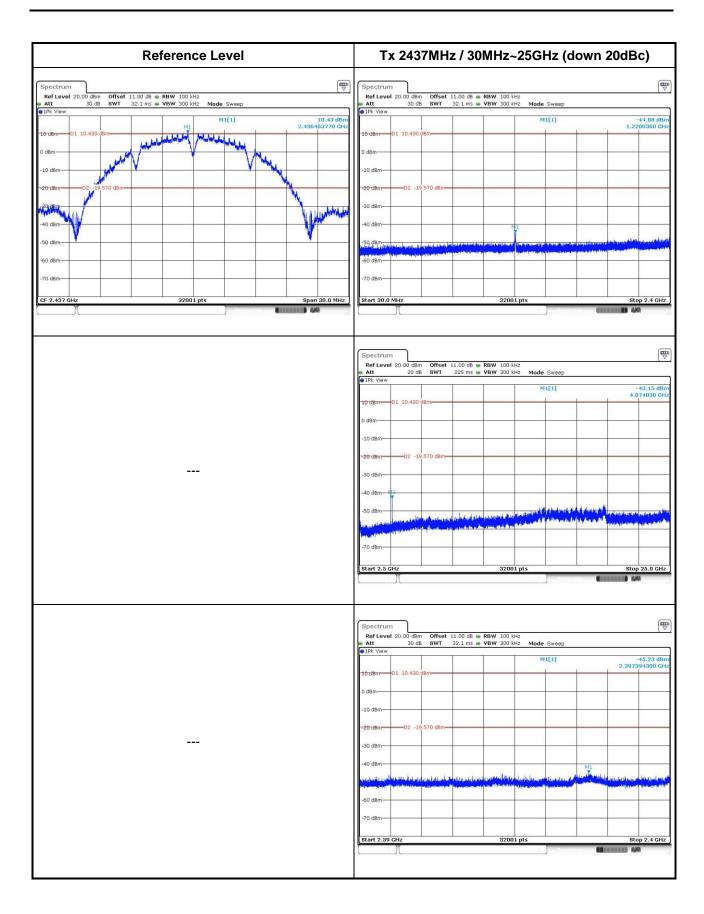
## 3.6.6 Unwanted Emissions into Non-Restricted Frequency Bands

### 802.11b



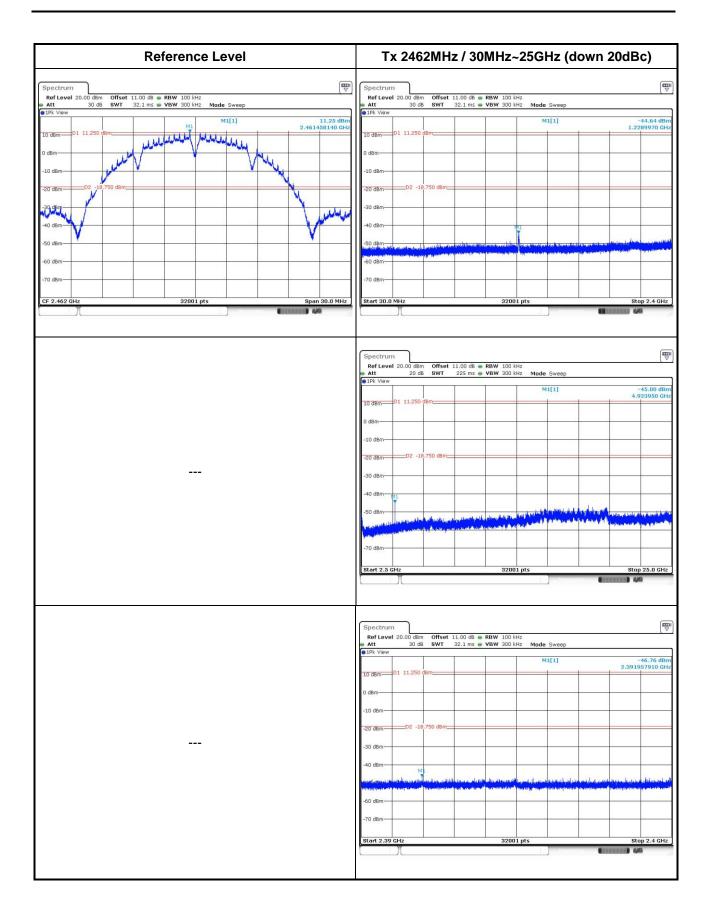
Report No.: FR462301AC Report Version: Rev. 01





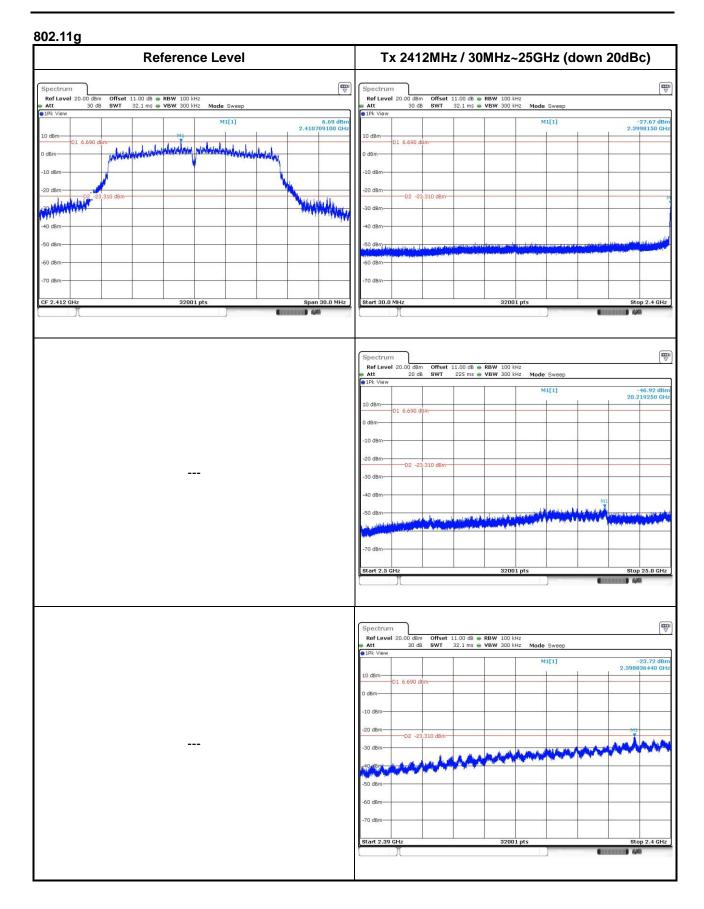
Report No.: FR462301AC Page: 52 of 63





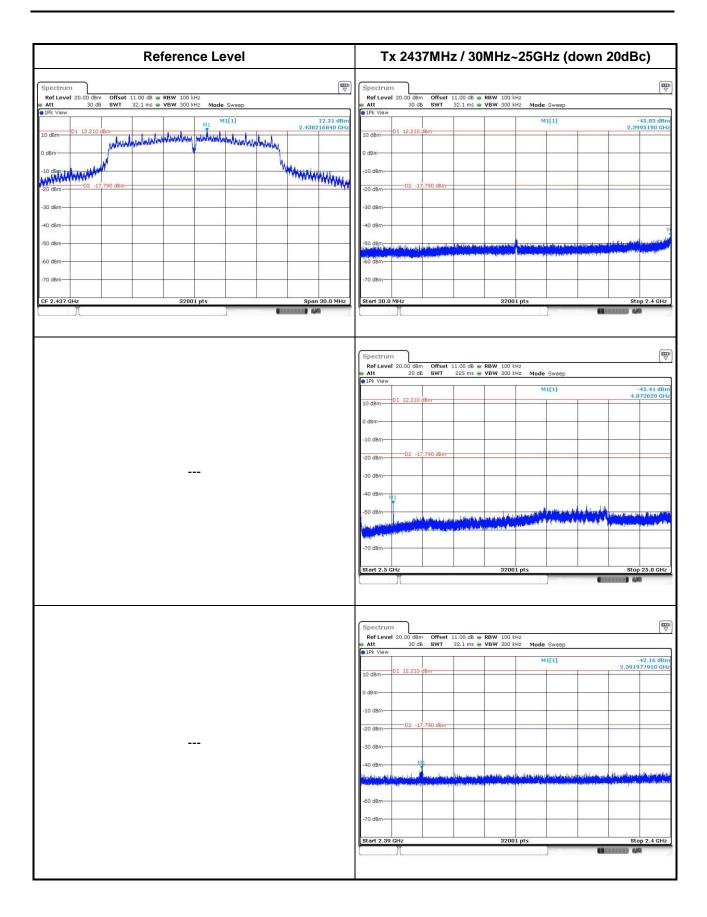
Report No.: FR462301AC Page: 53 of 63





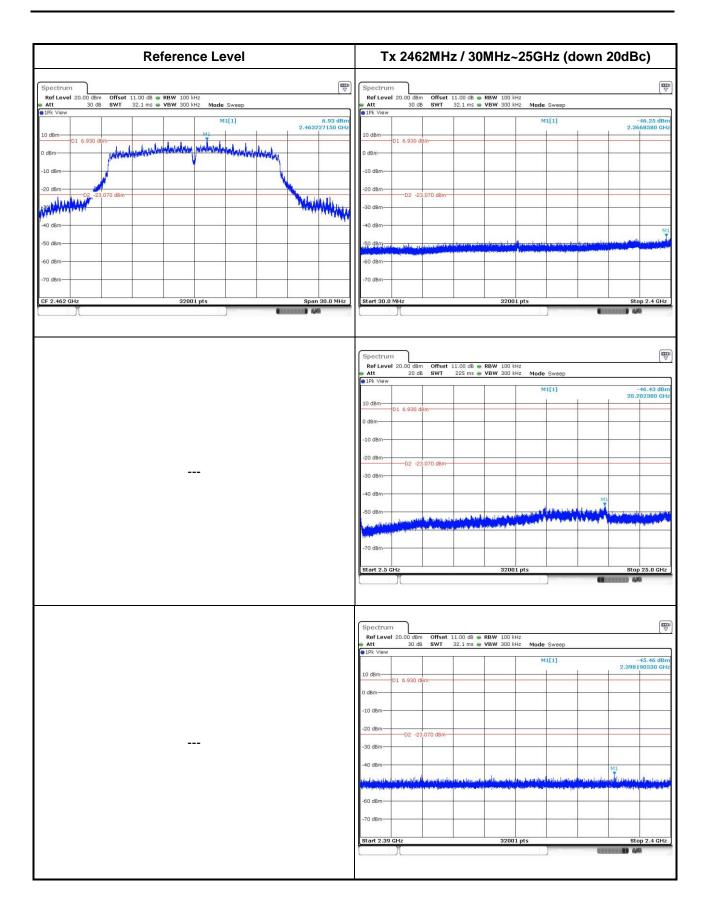
Report No.: FR462301AC Page: 54 of 63





Report No.: FR462301AC Page: 55 of 63

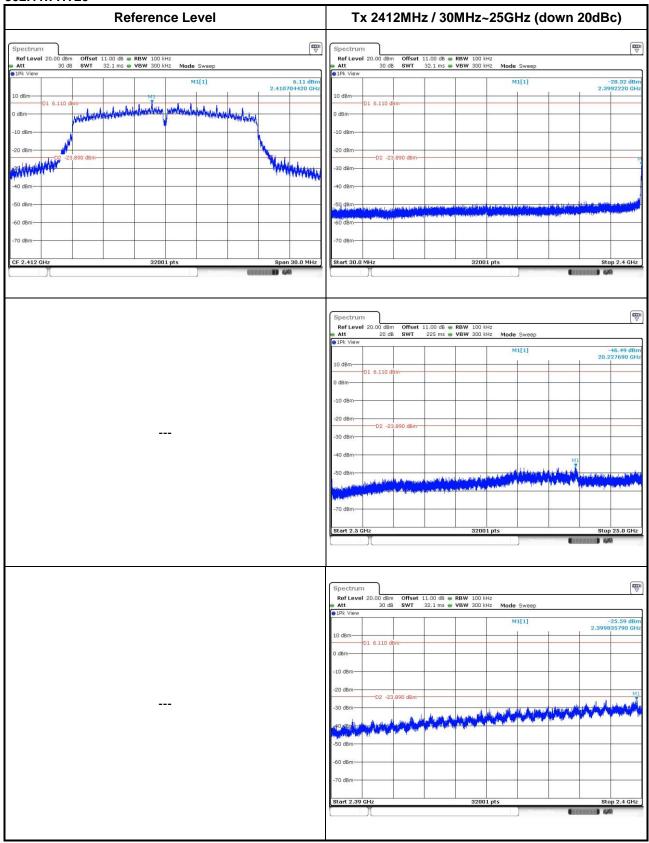




Report No.: FR462301AC Page: 56 of 63

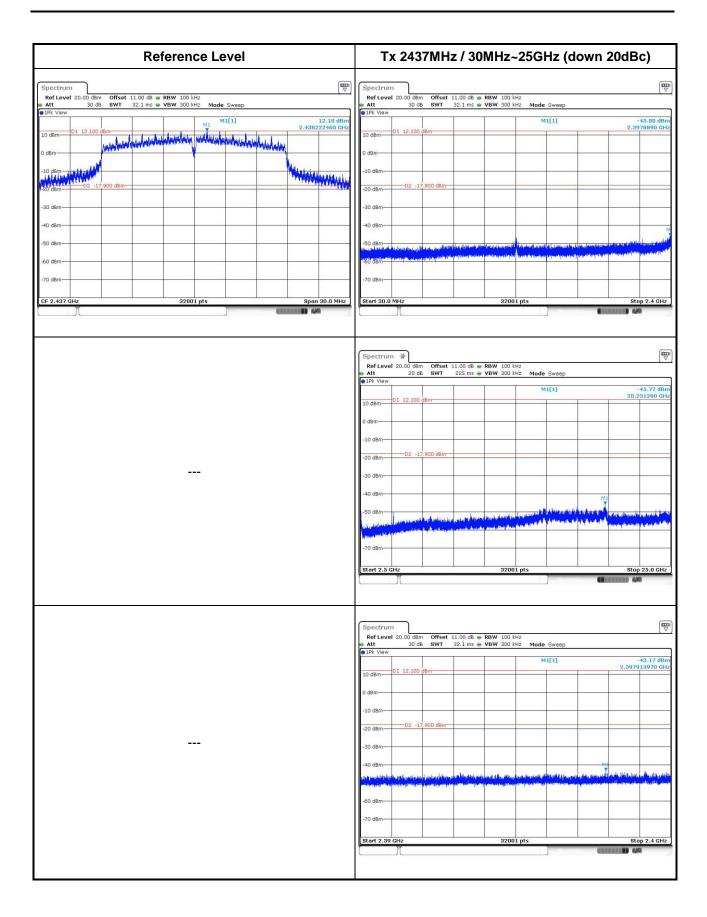


### 802.11n HT20



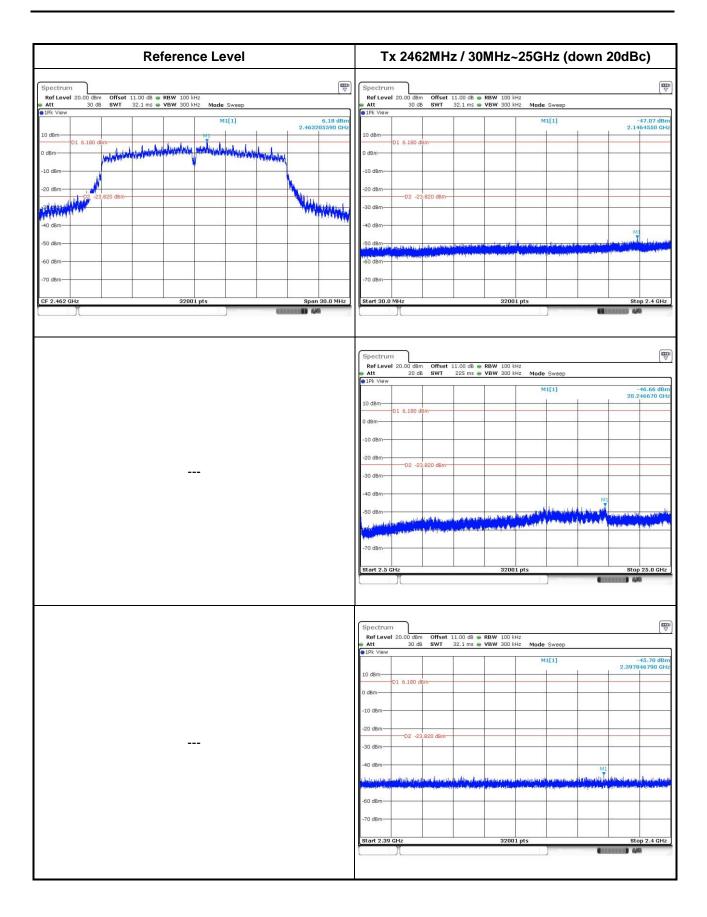
Report No.: FR462301AC Page: 57 of 63





Report No.: FR462301AC Page: 58 of 63

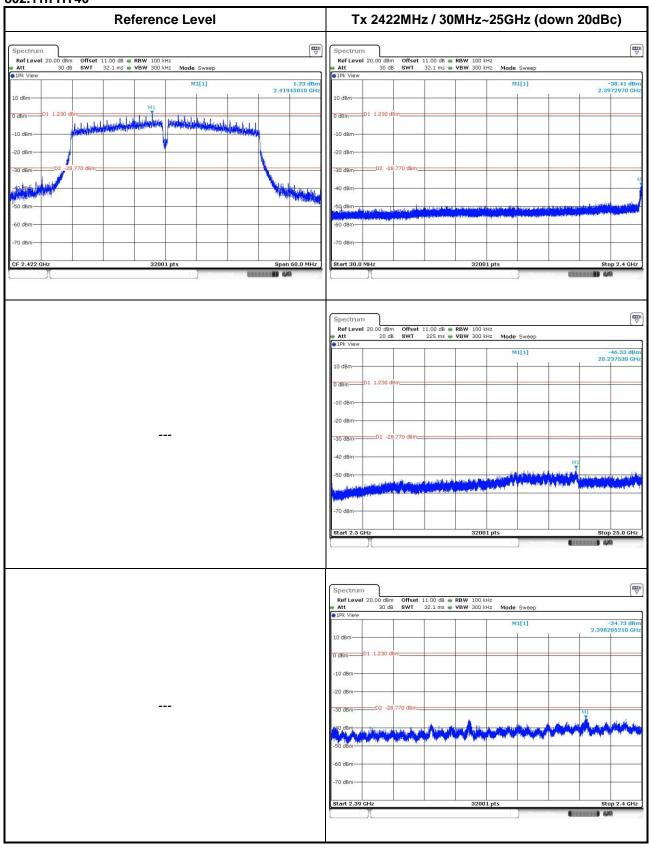




Report No.: FR462301AC Page: 59 of 63

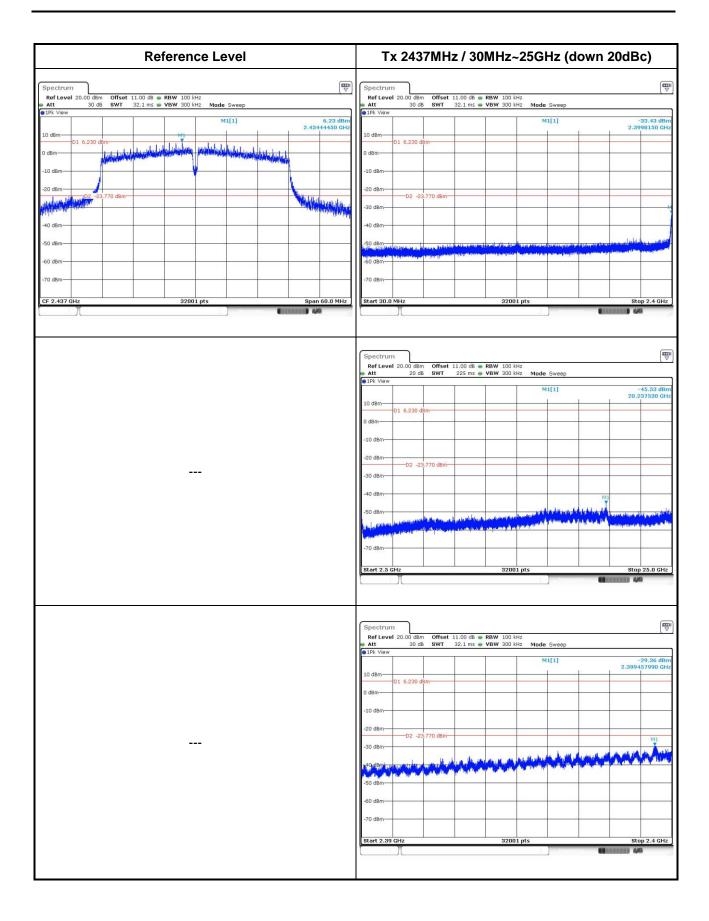


## 802.11n HT40



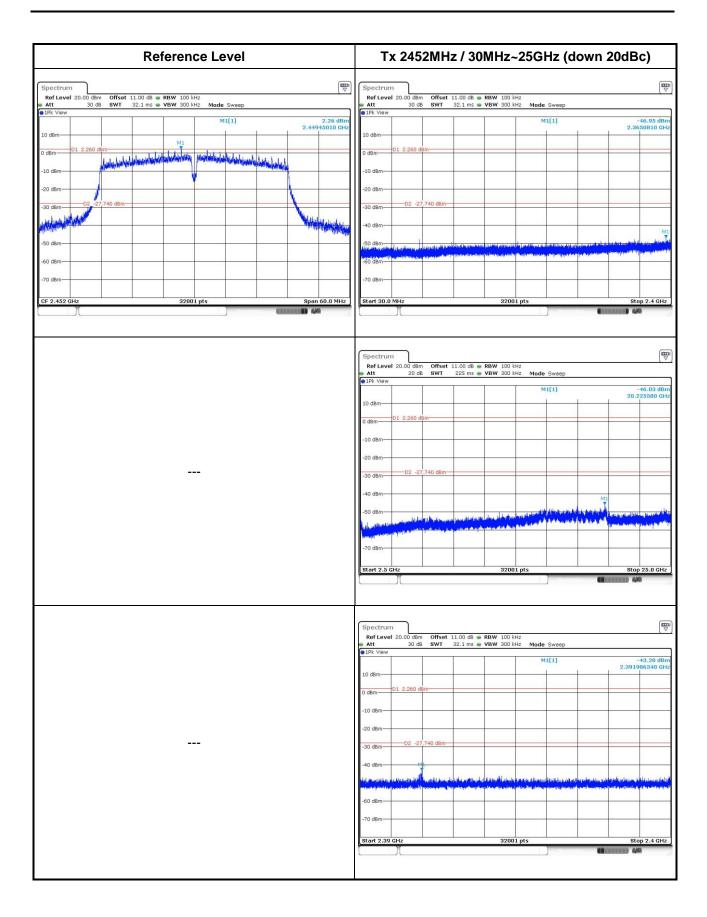
Report No.: FR462301AC Page: 60 of 63





Report No.: FR462301AC Page: 61 of 63





Report No.: FR462301AC Page: 62 of 63



# 4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp, it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan Hsiang. Location map can be found on our website <a href="http://www.icertifi.com.tw">http://www.icertifi.com.tw</a>.

#### Linkou

Tel: 886-2-2601-1640 No. 30-2, Ding Fwu Tsuen, Lin Kou District, New Taipei City,

Taiwan, R.O.C.

#### Kwei Shan

Tel: 886-3-271-8666 No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.

#### Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C.

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666 Fax: 886-3-318-0155

Email: ICC\_Service@icertifi.com.tw

<u>==END</u>==

Report No.: FR462301AC Page: 63 of 63