FCC Test Report

FCC ID : VQK-F01F

Equipment: Mobile Phone

Model No. : F-01F

Brand Name : FUJITSU

Applicant : FUJITSU LIMITED

Address : 1-1, Kamikodanaka 4-chome, Nakahara-ku,

Kawasaki 211-8588, Japan

Standard : 47 CFR FCC Part 15.247

Received Date : Jul. 01, 2013

Tested Date : Aug. 15 ~ Aug. 24, 2013

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

Testing Laboratory

Report No.: FR370110AC Report Version: Rev. 01 Page: 1 of 50



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information	
1.2	Local Support Equipment List	
1.3	Test Setup Chart	
1.4	The Equipment List	
1.5	Test Standards	
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	Unwanted Emissions into Non-Restricted Frequency Bands	44



Release Record

Report No.	Version	Description	Issued Date
FR370110AC	Rev. 01	Initial issue	Sep. 03, 2013

Report No.: FR370110AC Page: 3 of 50

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 3.881MHz 36.89 (Margin -9.11dB) - AV	Pass
15.247(d) 15.209	Radiated Emissions	[dBuV/m at 3m]: 4874.00 46.56 (Margin -7.44dB) - AV	Pass
15.247(b)(3)	Fundamental Emission Output Power	Power [dBm]: 11b: 16.86 11g: 20.96 HT20: 19.92	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.: FR370110AC Page: 4 of 50



General Description 1

1.1 Information

1.1.1 **Product Details**

Product Name	Mobile Phone
Brand Name	FUJITSU
Model Name	F-01F
IMEI Code	357611050019929 & 357611050023293
H/W Version	V2.1.0
S/W Version	R19.8e

1.1.2 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 _{TX})	Data Rate / MCS	
2400-2483.5	b	2412-2462	1-11 [11]	1	1-11 Mbps	
2400-2483.5	g	2412-2462	1-11 [11]	1	6-54 Mbps	
2400-2483.5	n (HT20)	2412-2462	1-11 [11]	1	MCS 0-7	

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.

1.1.3 Antenna Details

Ant. No.	Туре	Gain (dBi)	Connector	Remark
1	λ/4 Monopole	-1.5		

1.1.4 EUT Operational Condition

Supply Voltage		□ DC	
Type of DC Source	☐ Internal DC supply		□ Battery

1.1.5 Accessories

Accessories				
No.	Equipment	Description		
		Brand Name: Fujitsu limited		
1	Battery	Model Name: CA54310-0052		
		Power Rating: O/P: 3.75Vdc, 3200mA, 12Wh		

Report No.: FR370110AC Page: 5 of 50

1.1.6 Channel List

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

1.1.7 Test Tool and Duty Cycle

Test Tool	QRCT, Ver 3.0.6.0				
	Mode	Duty cycle (%)	Duty factor (dB)		
Duty Cycle and Duty Footer	11b	98.28%	0.08		
Duty Cycle and Duty Factor	11g	88.43%	0.53		
	HT20	87.69%	0.57		

1.1.8 Power Setting

Channel	Frequency(MHz)	11b	11g	HT20
1	2412	13	12.5	11
6	2437	13	12.5	11
11	2462	13	12.5	11

Report No.: FR370110AC Page : 6 of 50

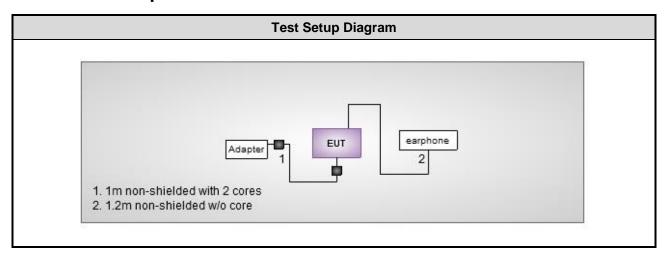
Tel: 886-3-271-8666 Fax: 886-3-318-0155

1.2 Local Support Equipment List

	Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)	
1	Adapter	NTT docomo	AC Adaptor 04			1m non-shielded with 2 cores	
2	Earphone	APPLE	MD827FE/A			1.2m non-shielded w/o core	

Note: Item 1 was provided by client.

1.3 Test Setup Chart



Report No.: FR370110AC Page: 7 of 50

The Equipment List 1.4

Test Item	Conducted Emission							
Test Site	Conduction room 1 / (C	room 1 / (CO01-WS)						
Instrument	Manufacturer	Model No. Serial No.		Calibration Date	Calibration Until			
EMC Receiver	R&S	ESCS 30	100169	Oct. 02, 2012	Oct. 01, 2013			
LISN	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-667	Dec. 04, 2012	Dec. 03, 2013			
LISN (Support Unit)	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-666	Dec. 04, 2012	Dec. 03, 2013			
ISN	TESEQ	ISN T800	34406	Apr. 08, 2013	Apr. 07, 2014			
ISN	TESEQ	ISN T200A	30494	Apr. 09, 2013	Apr. 08, 2014			
ISN	TESEQ	ISN T8-Cat6	27262	Sep. 17, 2012	Sep. 16, 2013			
ISN	TESEQ	ISN ST08	22589	Jan. 24, 2013	Jan. 23, 2014			
RF Current Probe	FCC	F-33-4	121630	Dec. 04, 2012	Dec. 03, 2013			
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Dec. 25, 2012	Dec. 24, 2013			
ESH3-Z6 V-Network(+)	R&S	ESH3-Z6	100920	Nov. 21, 2012	Nov. 20, 2013			
ESH3-Z6 V-Network(-)	R&S	ESH3-Z6	100951	Jan. 30, 2013	Jan. 29, 2014			
Two-Line V-Network	R&S	ENV216	101579	Jan. 07, 2013	Jan. 06, 2014			
50 ohm terminal	NA	50	01	Apr. 22, 2013	Apr. 21, 2014			
50 ohm terminal	NA	50	02	Apr. 22, 2013	Apr. 21, 2014			
50 ohm terminal	NA	50	03	Apr. 22, 2013	Apr. 21, 2014			
50 ohm terminal (Support Unit)	NA	50	04	Apr. 22, 2013	Apr. 21, 2014			

Test Item	RF Conducted	RF Conducted							
Test Site	(TH01-WS)	·H01-WS)							
Instrument	Manufacturer	Manufacturer Model No. Serial No. Calibration Date Calibration U							
Spectrum Analyzer	R&S	FSV 40	101063	Feb. 18, 2013	Feb. 17, 2014				
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 29, 2012	Nov. 28, 2013				
Power Meter	Anritsu	ML2495A	1241002	Oct. 15, 2012	Oct. 14, 2013				
Power Sensor	Anritsu	MA2411B	1027366	Oct. 24, 2012	Oct. 23, 2013				
Note: Calibration Interval of instruments listed above is one year.									

Report No.: FR370110AC Page: 8 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Test Item	Radiated Emission above 1GHz							
Test Site	966 chamber1 / (03Ch	H01-WS)						
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until			
3m semi-anechoic chamber	CHAMPRO I SAC-03		03CH01-WS	Jan. 04, 2013	Jan. 03, 2014			
Spectrum Analyzer	R&S	FSV40	101498	Jan. 24, 2013	Jan. 23, 2014			
Receiver	R&S	ESR3	101658	Jan. 28, 2013	Jan. 27, 2014			
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jan. 11, 2013	Jan. 10, 2014			
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Feb. 18, 2013	Feb. 17, 2014			
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Jan. 14, 2013	Jan. 13, 2014			
Amplifier	Burgeon	BPA-530	100219	Nov. 28, 2012	Nov. 27, 2013			
Amplifier	Agilent	83017A	MY39501308	Dec. 18, 2012	Dec. 17, 2013			
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 25, 2012	Dec. 24, 2013			
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 25, 2012	Dec. 24, 2013			
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 25, 2012	Dec. 24, 2013			
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-001	Dec. 25, 2012	Dec. 24, 2013			
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-002	Dec. 25, 2012	Dec. 24, 2013			
control	EM Electronics	EM1000	60612	N/A	N/A			

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014				
Amplifier	MITEQ	AMF-6F-260400 9121372		Apr. 19, 2013	Apr. 18, 2015				
Note: Calibration Interval of instruments listed above is two year.									

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 v03r01

FCC KDB 662911 D01 Multiple Transmitter Output v02

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

Report No.: FR370110AC Page: 9 of 50

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	±35.286 Hz					
Conducted power	±0.536 dB					
Frequency error	±35.286 Hz					
Temperature	±0.3 °C					
Conducted emission	±2.946 dB					
AC conducted emission	±2.43 dB					
Radiated emission	±2.49 dB					

Report No.: FR370110AC Page: 10 of 50

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	22°C / 66%	Skys Huang
Radiated Emissions	03CH01-WS	24°C / 65%	Aska Huang Mark Liao
RF Conducted	TH01-WS	24°C / 61%	Brad Wu

FCC site registration No.: 657002IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

Test item	Mode	Test channel
Conducted Emissions	11g	2412
Radiated Emissions < 1GHz	11g	2412
Radiated Emissions > 1GHz	11b 11g HT20	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462
Fundamental Emission Output Power	11b 11g HT20	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462
6dB Bandwidth	11b 11g HT20	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462
Power Spectral Density	11b 11g HT20	2412 / 2437 / 2462 2412 / 2437 / 2462 2412 / 2437 / 2462

NOTE:

Report No.: FR370110AC Page: 11 of 50

^{1.} The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.

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

Transmitter Test Results 3

3.1 **Conducted Emissions**

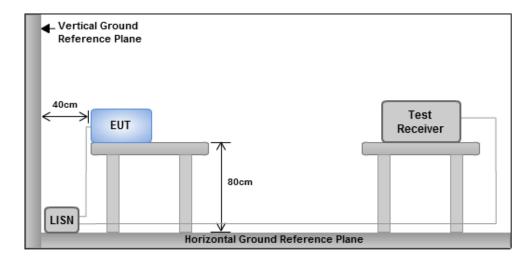
3.1.1 **Limit of Conducted Emissions**

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

- 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.
- 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 Ω LISN port.
- AC conducted emission measurements is made over frequency range from 150 kHz to 30 MHz. 3.
- This measurement was performed with AC 120V/60Hz

3.1.3 Test Setup



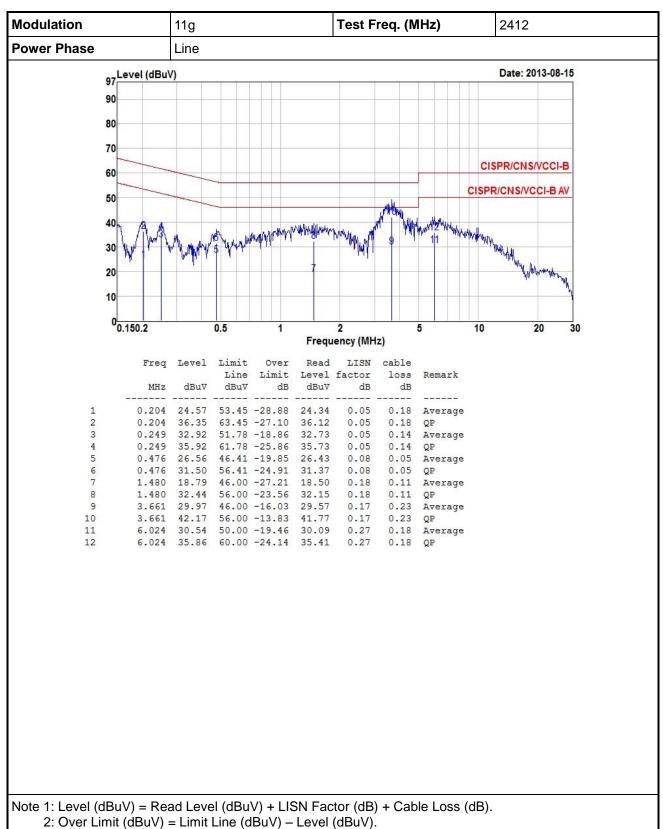
Note: 1. Support units were connected to second LISN.

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

Report No.: FR370110AC Page: 12 of 50

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

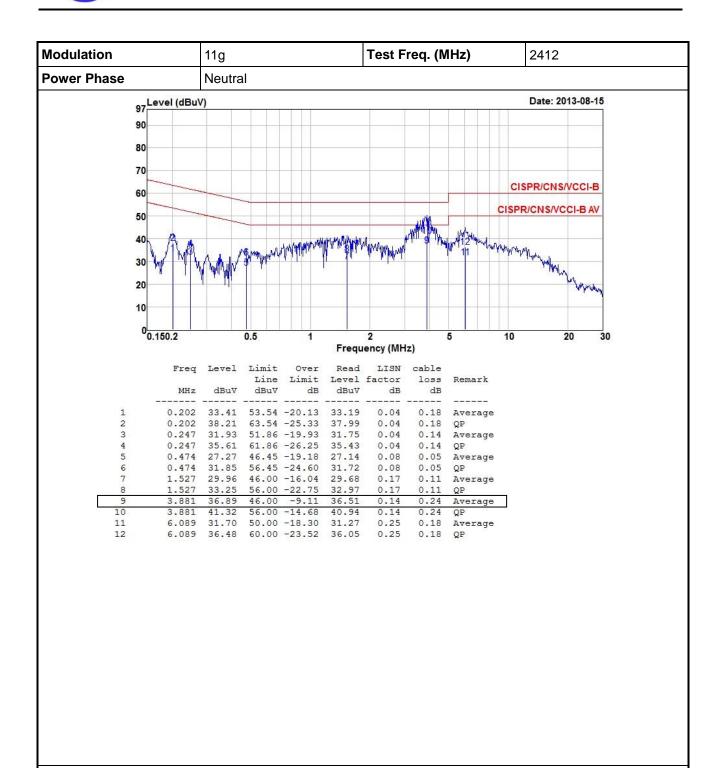
3.1.4 Test Result of Conducted Emissions



Report No.: FR370110AC Page: 13 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155



Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB).

2: Over Limit (dBuV) = Limit Line (dBuV) - Level (dBuV).

Report No.: FR370110AC Page: 14 of 50

3.2 6dB and Occupied Bandwidth

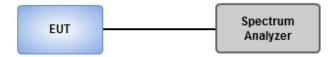
3.2.1 Limit of 6dB Bandwidth

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

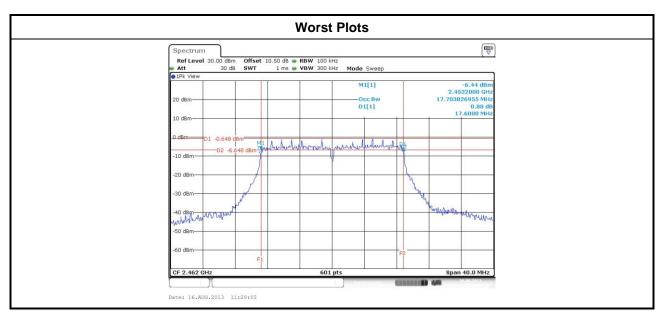


Report No.: FR370110AC Page: 15 of 50

No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

3.2.4 Test Result of 6dB and Occupied Bandwidth

Modulation	N	Eros (MU=)	6dB Bandwidth (MHz)					
Mode	N _{TX}	Freq. (MHz)	Chain 0	Chain 1	Chain 2	Chain 3	Limit (kHz)	
11b	1	2412	7.60				500	
11b	1	2437	8.07				500	
11b	1	2462	9.07				500	
11g	1	2412	16.40				500	
11g	1	2437	16.40				500	
11g	1	2462	16.33				500	
HT20	1	2412	17.33				500	
HT20	1	2437	17.60				500	
HT20	1	2462	17.60				500	



Report No.: FR370110AC Page: 16 of 50

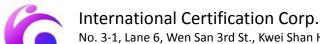


No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Modulation	From (MIII-)	99% Occupied Bandwidth (MHz)						
Mode	Freq. (MHz)	Chain 0 Chain 1		Chain 2	Chain 3			
11b	2412	13.31						
11b	2437	13.38						
11b	2462	13.18						
11g	2412	17.24						
11g	2437	17.50						
11g	2462	17.17						
HT20	2412	18.10						
HT20	2437	18.24						
HT20	2462	18.24						



Report No.: FR370110AC Page: 17 of 50



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

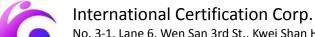
3.3 RF Output Power

3.3.1 Limit of RF Output Power

Cor	duct	ed p	ower shall not exceed 1Watt.		
\boxtimes	Ant	enna	gain <= 6dBi, no any corresponding reduction is in output power limit.		
	Ant	enna	gain > 6dBi		
		The	n Fixed, point to point operations. e 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 stems operations. The same 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 that the directional gain of the antenna exceeds 6 dBi.		
			stems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point erations ,no any corresponding reduction is in transmitter peak output power		
3.3.	2	Tes	t Procedures		
\boxtimes	Max	kimui	m Peak Conducted Output Power		
	☐ Spectrum 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.		
	\boxtimes	Pov	wer 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	kimui	m Conducted Output Power (For reference only)		
	☐ Spectrum analyzer		ectrum analyzer		
		1.	Set RBW = 1MHz, VBW = 3MHz, Detector = RMS.		
		2.	Set the sweep time to: $\geq 10 \text{ x}$ (number of measurement points in sweep) x (maximum data rate per stream).		
		3.	Perform the measurement over a single sweep.		
		4.	Use the spectrum analyzer's band power measurement function with band limits set equal to the EBW(26dBc) band edges.		

 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.

Report No.: FR370110AC Page: 18 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

3.3.3 Test Setup



3.3.4 Test Result of Maximum Output Power

Modulation	Freq.		Peak Power (dBm)				Total	Total	Limit
Mode	N _{TX}	(MHz)	Chain 0	Chain 1	Chain 2	Chain 3	Power (mW)	Power (dBm)	(dBm)
11b	1	2412	16.86				48.53	16.86	30
11b	1	2437	16.52				44.87	16.52	30
11b	1	2462	15.95				39.36	15.95	30
11g	1	2412	20.96				124.74	20.96	30
11g	1	2437	20.42				110.15	20.42	30
11g	1	2462	20.11				102.57	20.11	30
HT20	1	2412	19.92				98.17	19.92	30
HT20	1	2437	19.13				81.85	19.13	30
HT20	1	2462	19.05				80.35	19.05	30

Modulation		Freq.	A	verage Po	ower (dBm	Total	Total	Limit	
Mode	N _{TX}	(MHz)	Chain 0	Chain 1	Chain 2	Chain 3	Power (mW)	Power (dBm)	(dBm)
11b	1	2412	14.16				26.06	14.16	30
11b	1	2437	13.82				24.10	13.82	30
11b	1	2462	13.25				21.13	13.25	30
11g	1	2412	13.26				21.18	13.26	30
11g	1	2437	12.72				18.71	12.72	30
11g	1	2462	12.41				17.42	12.41	30
HT20	1	2412	11.92				15.56	11.92	30
HT20	1	2437	11.13				12.97	11.13	30
HT20	1	2462	11.05				12.74	11.05	30

Note: Average power is for reference only

Report No.: FR370110AC Page: 19 of 50

3.4 Power Spectral Density

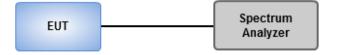
3.4.1 Limit of Power Spectral Density

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

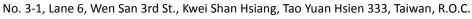
3.4.2 Test Procedures

- 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

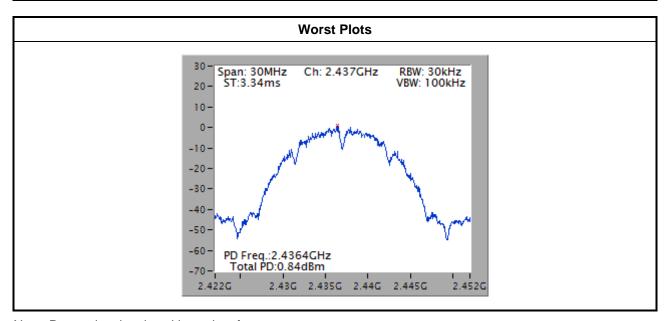


Report No.: FR370110AC Page: 20 of 50



3.4.4 Test Result of Power Spectral Density

Modulation Mode	N _{TX}	Freq. (MHz)	Total Power Spectral Density (dBm/30kHz)	Limit (dBm/3kHz)
11b	1	2412	0.30	8
11b	1	2437	0.84	8
11b	1	2462	0.54	8
11g	1	2412	-3.47	8
11g	1	2437	-3.23	8
11g	1	2462	-3.92	8
HT20	1	2412	-5.51	8
HT20	1	2437	-5.79	8
HT20	1	2462	-5.43	8



Note: Power density plot without duty factor

Report No.: FR370110AC Page: 21 of 50

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

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:

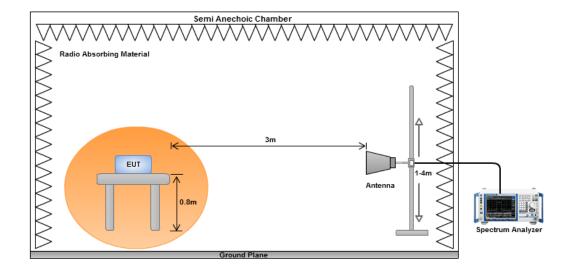
- 1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
- 2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
- 3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission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

Report No.: FR370110AC Page: 22 of 50



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

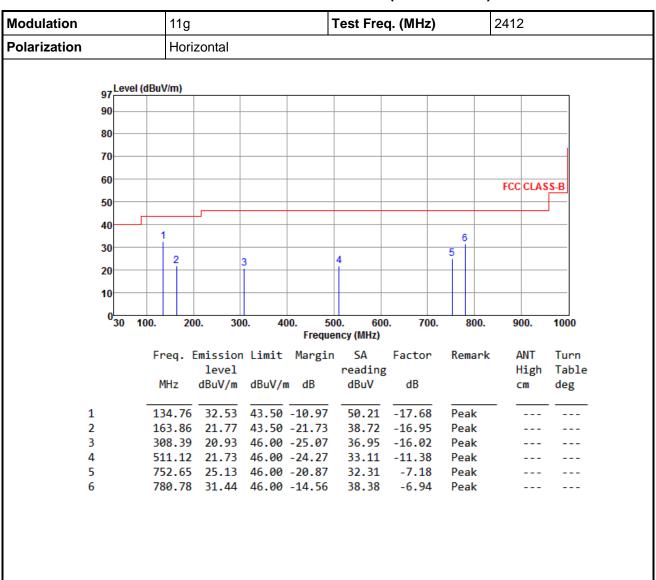
3.5.3 Test Setup



Report No.: FR370110AC Page: 23 of 50

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

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

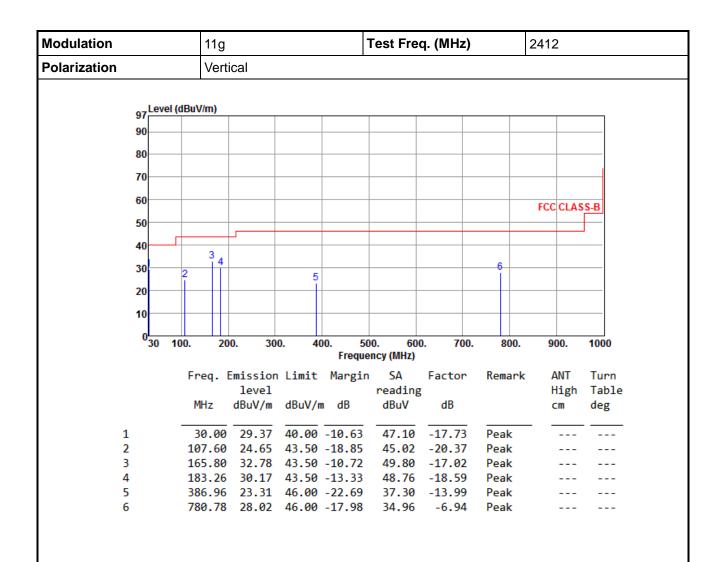
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Report No.: FR370110AC Page: 24 of 50



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

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



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

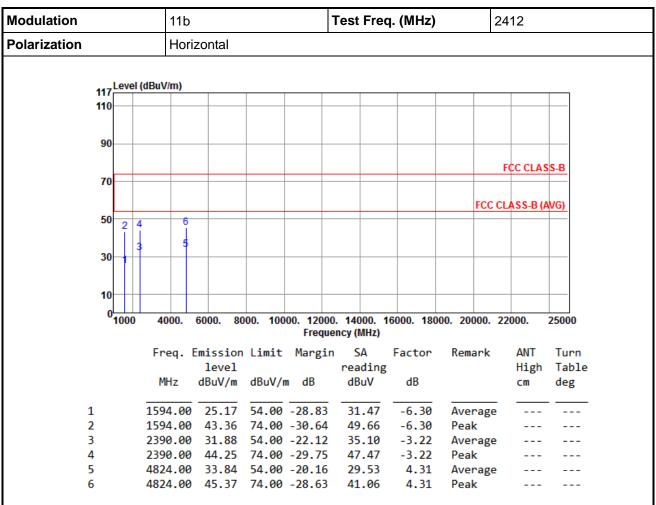
*Factor includes antenna factor, cable loss and amplifier gain

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

Report No.: FR370110AC Page: 25 of 50

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

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



Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

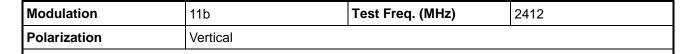
Report No.: FR370110AC Page: 26 of 50

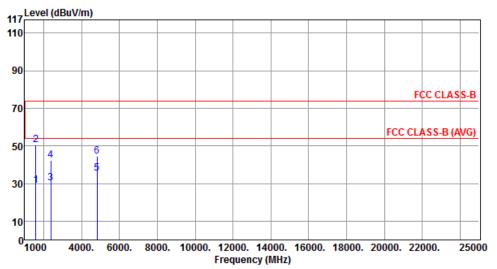
Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.



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

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





	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1594.00	29.13	54.00	-24.87	35.43	-6.30	Average		
2	1594.00	50.63	74.00	-23.37	56.93	-6.30	Peak		
3	2390.00	30.32	54.00	-23.68	33.54	-3.22	Average		
4	2390.00	42.22	74.00	-31.78	45.44	-3.22	Peak		
5	4824.00	35.47	54.00	-18.53	31.16	4.31	Average		
6	4824.00	44.59	74.00	-29.41	40.28	4.31	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

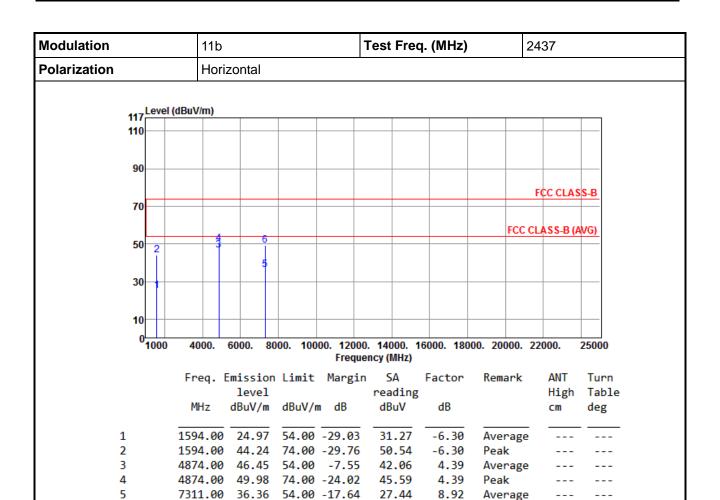
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 27 of 50



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

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



Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

7311.00 49.15 74.00 -24.85 40.23

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

8.92

Peak

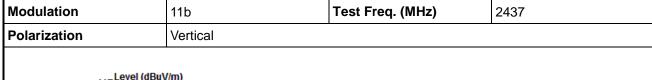
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

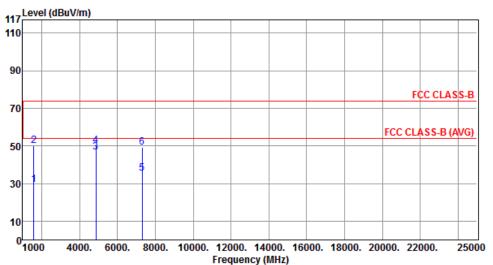
Report No.: FR370110AC Page: 28 of 50



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

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





		mission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	29.20	54.00	-24.80	35.50	-6.30	Average		
2	1594.00	50.27	74.00	-23.73	56.57	-6.30	Peak		
3	4874.00	46.56	54.00	-7.44	42.17	4.39	Average		
4	4874.00	50.19	74.00	-23.81	45.80	4.39	Peak		
5	7311.00	35.53	54.00	-18.47	26.61	8.92	Average		
6	7311.00	49.08	74.00	-24.92	40.16	8.92	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

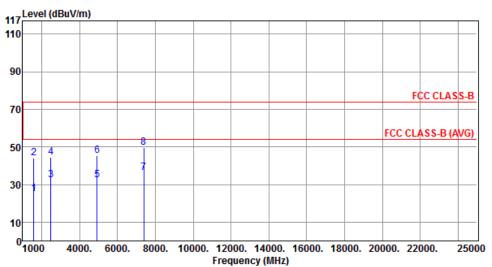
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 29 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Modulation 11b		Test Freq. (MHz)	2462
Polarization	Horizontal		



				-					
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1594.00	25.17	54.00	20.02	31.47		A		
1	1594.00	25.17	54.00	-20.00	31.4/	-6.30	Average		
2	1594.00	43.96	74.00	-30.04	50.26	-6.30	Peak		
3	2483.50	32.23	54.00	-21.77	35.06	-2.83	Average		
4	2483.50	44.40	74.00	-29.60	47.23	-2.83	Peak		
5	4924.00	32.39	54.00	-21.61	27.91	4.48	Average		
6	4924.00	45.30	74.00	-28.70	40.82	4.48	Peak		
7	7386.00	36.31	54.00	-17.69	27.33	8.98	Average		
8	7386.00	49.50	74.00	-24.50	40.52	8.98	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

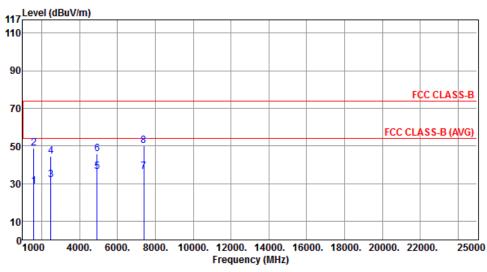
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 30 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Modulation11bTest Freq. (MHz)2462PolarizationVertical



				_					
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1594.00	28.28	54.00	-25.72	34.58	-6.30	Average		
2	1594.00	48.66	74.00	-25.34	54.96	-6.30	Peak		
3	2483.50	32.07	54.00	-21.93	34.90	-2.83	Average		
4	2483.50	44.40	74.00	-29.60	47.23	-2.83	Peak		
5	4924.00	36.33	54.00	-17.67	31.85	4.48	Average		
6	4924.00	45.70	74.00	-28.30	41.22	4.48	Peak		
7	7386.00	36.42	54.00	-17.58	27.44	8.98	Average		
8	7386.00	49.93	74.00	-24.07	40.95	8.98	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

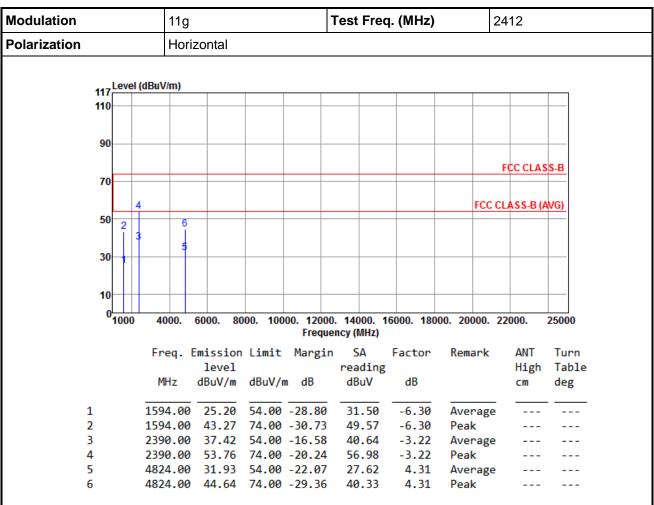
Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 31 of 50

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

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



Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

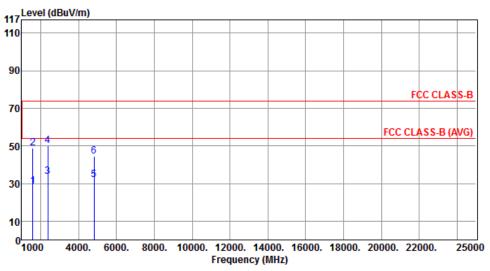
Report No.: FR370110AC Page: 32 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

 Modulation
 11g
 Test Freq. (MHz)
 2412

 Polarization
 Vertical



	Freq.	Emission level		Ū	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
	4504.00								
1	1594.00	28.34	54.00	-25.66	34.64	-6.30	Average		
2	1594.00	48.97	74.00	-25.03	55.27	-6.30	Peak		
3	2390.00	33.71	54.00	-20.29	36.93	-3.22	Average		
4	2390.00	49.99	74.00	-24.01	53.21	-3.22	Peak		
5	4824.00	31.97	54.00	-22.03	27.66	4.31	Average		
6	4824.00	44.68	74.00	-29.32	40.37	4.31	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

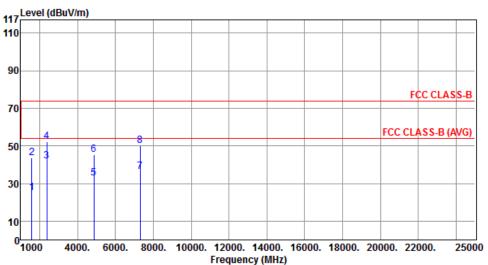
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 33 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Modulation	11g	Test Freq. (MHz)	2437
Polarization	Horizontal		



				•					
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1594.00	25.16	54.00	-28.84	31.46	-6.30	Average		
2	1594.00	43.65	74.00	-30.35	49.95	-6.30	Peak		
3	2385.00	41.77	54.00	-12.23	45.01	-3.24	Average		
4	2385.00	52.03	74.00	-21.97	55.27	-3.24	Peak		
5	4874.00	32.87	54.00	-21.13	28.48	4.39	Average		
6	4874.00	45.36	74.00	-28.64	40.97	4.39	Peak		
7	7311.00	36.34	54.00	-17.66	27.42	8.92	Average		
8	7311.00	49.90	74.00	-24.10	40.98	8.92	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

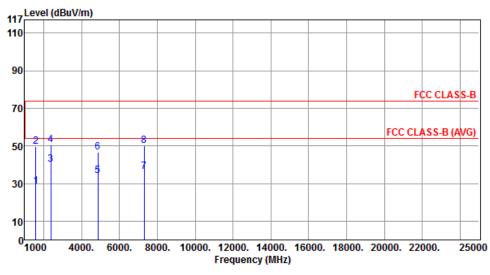
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 34 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Modulation11gTest Freq. (MHz)2437PolarizationVertical



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	28.28	54.00	-25.72	34.58	-6.30	Average		
2	1594.00	49.50	74.00	-24.50	55.80	-6.30	Peak		
3	2385.00	40.30	54.00	-13.70	43.54	-3.24	Average		
4	2385.00	50.39	74.00	-23.61	53.63	-3.24	Peak		
5	4874.00	34.25	54.00	-19.75	29.86	4.39	Average		
6	4874.00	46.49	74.00	-27.51	42.10	4.39	Peak		
7	7311.00	36.34	54.00	-17.66	27.42	8.92	Average		
8	7311.00	49.95	74.00	-24.05	41.03	8.92	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

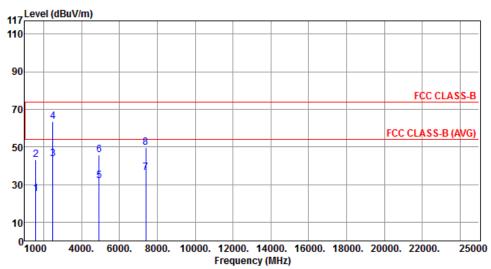
Report No.: FR370110AC Page: 35 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

 Modulation
 11g
 Test Freq. (MHz)
 2462

 Polarization
 Horizontal



	Freq.	Emission level dBuV/m	Limit dBuV/m		SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	24.93	54.00	-29.07	31.23	-6.30	Average		
2	1594.00	43.36	74.00	-30.64	49.66	-6.30	Peak		
3	2483.50	43.50	54.00	-10.50	46.33	-2.83	Average		
4	2483.50	63.45	74.00	-10.55	66.28	-2.83	Peak		
5	4924.00	32.13	54.00	-21.87	27.65	4.48	Average		
6	4924.00	45.86	74.00	-28.14	41.38	4.48	Peak		
7	7386.00	36.42	54.00	-17.58	27.44	8.98	Average		
8	7386.00	49.84	74.00	-24.16	40.86	8.98	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

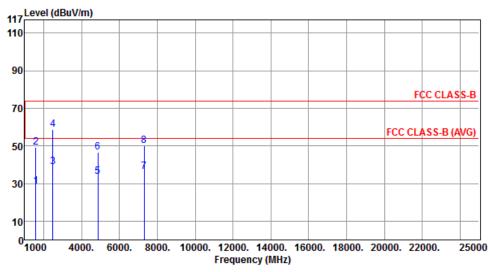
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 36 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Modulation11gTest Freq. (MHz)2462PolarizationVertical



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Ū	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	1594.00	28.68	54.00	-25.32	34.98	-6.30	Average		
2	1594.00	49.40	74.00	-24.60	55.70	-6.30	Peak		
3	2483.50	38.83	54.00	-15.17	41.66	-2.83	Average		
4	2483.50	58.55	74.00	-15.45	61.38	-2.83	Peak		
5	4874.00	33.83	54.00	-20.17	29.44	4.39	Average		
6	4874.00	46.60	74.00	-27.40	42.21	4.39	Peak		
7	7311.00	36.40	54.00	-17.60	27.48	8.92	Average		
8	7311.00	49.87	74.00	-24.13	40.95	8.92	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

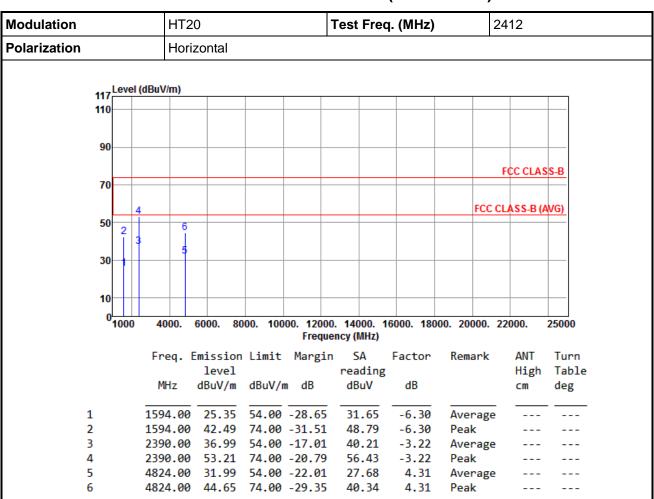
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 37 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

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



Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

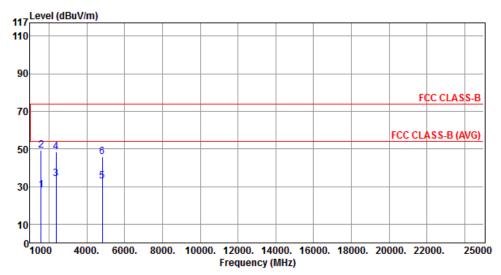
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 38 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

ModulationHT20Test Freq. (MHz)2412PolarizationVertical



	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1594.00	28.16	54.00	-25.84	34.46	-6.30	Average		
2	1594.00	49.27	74.00	-24.73	55.57	-6.30	Peak		
3	2390.00	34.25	54.00	-19.75	37.47	-3.22	Average		
4	2390.00	48.14	74.00	-25.86	51.36	-3.22	Peak		
5	4824.00	32.99	54.00	-21.01	28.68	4.31	Average		
6	4824.00	45.58	74.00	-28.42	41.27	4.31	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

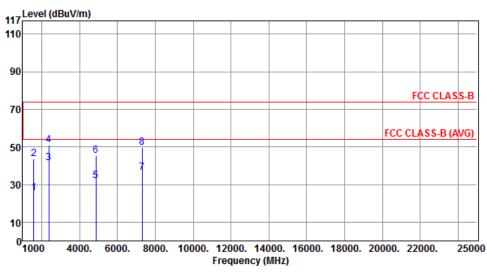
Report No.: FR370110AC Page: 39 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

 Modulation
 HT20
 Test Freq. (MHz)
 2437

 Polarization
 Horizontal



			_					
Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1594.00	25.28	54.00	-28.72	31.58	-6.30	Average		
1594.00	43.82	74.00	-30.18	50.12	-6.30	Peak		
2385.00	41.61	54.00	-12.39	44.85	-3.24	Average		
2385.00	51.02	74.00	-22.98	54.26	-3.24	Peak		
4874.00	32.02	54.00	-21.98	27.63	4.39	Average		
4874.00	45.15	74.00	-28.85	40.76	4.39	Peak		
7311.00	36.43	54.00	-17.57	27.51	8.92	Average		
7311.00	49.75	74.00	-24.25	40.83	8.92	Peak		
	MHz 1594.00 1594.00 2385.00 2385.00 4874.00 4874.00 7311.00	1evel MHz dBuV/m 1594.00 25.28 1594.00 43.82 2385.00 41.61 2385.00 51.02 4874.00 32.02 4874.00 45.15 7311.00 36.43	1evel dBuV/m dBuV/m 1594.00 25.28 54.00 1594.00 43.82 74.00 2385.00 41.61 54.00 2385.00 51.02 74.00 4874.00 32.02 54.00 4874.00 45.15 74.00 7311.00 36.43 54.00	MHz dBuV/m dBuV/m dB 1594.00 25.28 54.00 -28.72 1594.00 43.82 74.00 -30.18 2385.00 41.61 54.00 -12.39 2385.00 51.02 74.00 -22.98 4874.00 32.02 54.00 -21.98 4874.00 45.15 74.00 -28.85 7311.00 36.43 54.00 -17.57	1evel reading dBuV/m dB dBuV 1594.00 25.28 54.00 -28.72 31.58 1594.00 43.82 74.00 -30.18 50.12 2385.00 41.61 54.00 -12.39 44.85 2385.00 51.02 74.00 -22.98 54.26 4874.00 32.02 54.00 -21.98 27.63 4874.00 45.15 74.00 -28.85 40.76 7311.00 36.43 54.00 -17.57 27.51	1evel reading dBuV/m dB dBuV dB 1594.00 25.28 54.00 -28.72 31.58 -6.30 1594.00 43.82 74.00 -30.18 50.12 -6.30 2385.00 41.61 54.00 -12.39 44.85 -3.24 2385.00 51.02 74.00 -22.98 54.26 -3.24 4874.00 32.02 54.00 -21.98 27.63 4.39 4874.00 45.15 74.00 -28.85 40.76 4.39 7311.00 36.43 54.00 -17.57 27.51 8.92	NHz NHZ	level MHz reading dBuV/m dBuV/m dBuV/m dBuV dBuV dBuV High cm 1594.00 25.28 54.00 -28.72 31.58 -6.30 Average 1594.00 43.82 74.00 -30.18 50.12 -6.30 Peak 2385.00 41.61 54.00 -12.39 44.85 -3.24 Average 2385.00 51.02 74.00 -22.98 54.26 -3.24 Peak 4874.00 32.02 54.00 -21.98 27.63 4.39 Average 4874.00 45.15 74.00 -28.85 40.76 4.39 Peak 7311.00 36.43 54.00 -17.57 27.51 8.92 Average

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

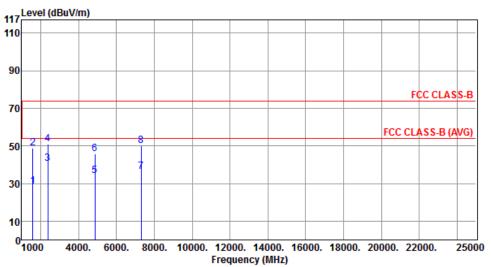
Report No.: FR370110AC Page: 40 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

 Modulation
 HT20
 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	1594.00	28.51	54.00	-25.49	34.81	-6.30	Average		
2	1594.00	48.67	74.00	-25.33	54.97	-6.30	Peak		
3	2387.00	40.41	54.00	-13.59	43.64	-3.23	Average		
4	2387.00	51.12	74.00	-22.88	54.35	-3.23	Peak		
5	4874.00	34.03	54.00	-19.97	29.64	4.39	Average		
6	4874.00	45.77	74.00	-28.23	41.38	4.39	Peak		
7	7311.00	36.47	54.00	-17.53	27.55	8.92	Average		
8	7311.00	50.15	74.00	-23.85	41.23	8.92	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

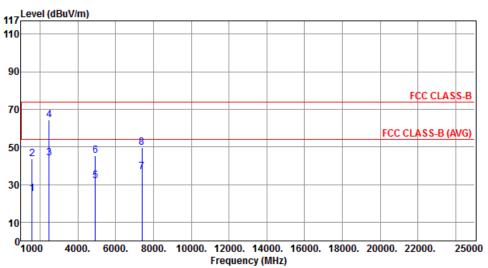
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 41 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

Modulation	HT20	Test Freq. (MHz)	2462
Polarization	Horizontal		



				-					
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1594.00	25.21	54.00	-28.79	31.51	-6.30	Average		
2	1594.00	43.51	74.00	-30.49	49.81	-6.30	Peak		
3	2483.50	43.84	54.00	-10.16	46.67	-2.83	Average		
4	2483.50	64.26	74.00	-9.74	67.09	-2.83	Peak		
5	4924.00	31.81	54.00	-22.19	27.33	4.48	Average		
6	4924.00	45.33	74.00	-28.67	40.85	4.48	Peak		
7	7386.00	36.62	54.00	-17.38	27.64	8.98	Average		
8	7386.00	49.70	74.00	-24.30	40.72	8.98	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

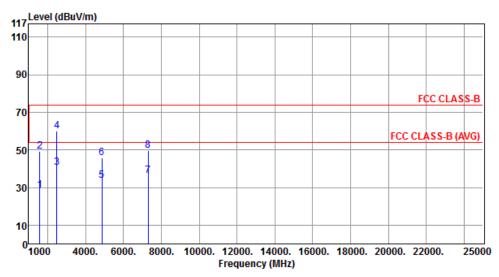
Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 42 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155

ModulationHT20Test Freq. (MHz)2462PolarizationVertical



	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	1594.00	28.42	54.00	-25.58	34.72	-6.30	Average		
2	1594.00	49.23	74.00	-24.77	55.53	-6.30	Peak		
3	2483.50	40.66	54.00	-13.34	43.49	-2.83	Average		
4	2483.50	60.21	74.00	-13.79	63.04	-2.83	Peak		
5	4874.00	33.85	54.00	-20.15	29.46	4.39	Average		
6	4874.00	45.77	74.00	-28.23	41.38	4.39	Peak		
7	7311.00	36.46	54.00	-17.54	27.54	8.92	Average		
8	7311.00	49.58	74.00	-24.42	40.66	8.92	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

Note 3: For un-restricted bands, unwanted emissions shall be attenuated by at least 20 dB relative to the maximum measured in-band level.

Report No.: FR370110AC Page: 43 of 50

3.6 Unwanted Emissions into Non-Restricted Frequency Bands

3.6.1 Limit of Unwanted Emissions into Non-Restricted Frequency Bands

\boxtimes	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.
П	The peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be

The 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 Test Procedures

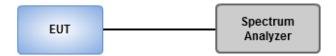
Reference Level Measurement

- 1. Set the RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
- 2. Set Sweep time = auto couple, Trace mode = max hold.
- 3. Allow trace to fully stabilize.
- 4. Use the peak marker function to determine the maximum amplitude level.

Unwanted Emissions Level Measurement

- 1. Set RBW = 100 kHz, VBW = 300 kHz, Detector = peak.
- 2. Trace Mode = max hold, Sweep = auto couple.
- 3. Allow the trace to stabilize.
- 4. Use peak marker function to determine maximum amplitude of all unwanted emissions within any 100 kHz bandwidth.

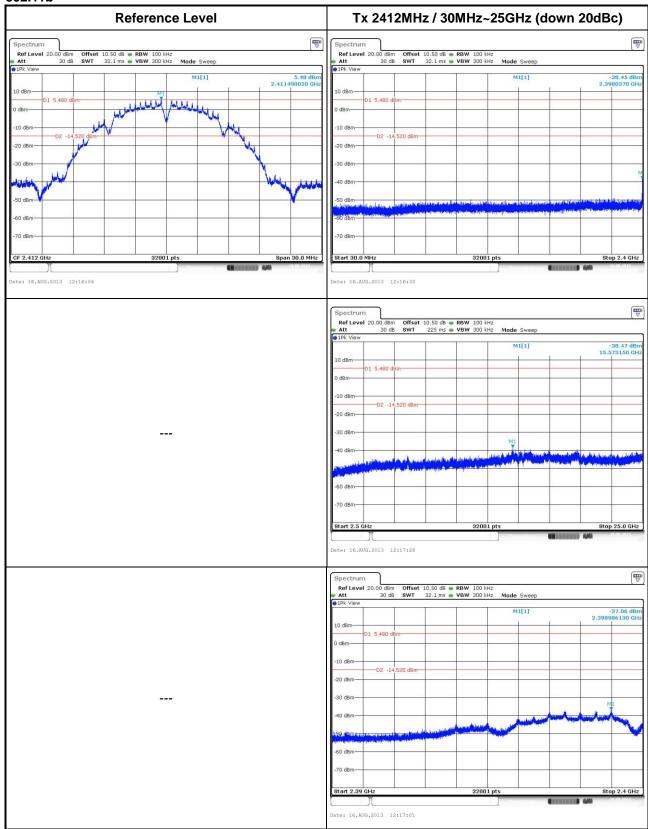
3.6.3 Test Setup



Report No.: FR370110AC Page: 44 of 50

3.6.4 Unwanted Emissions into Non-Restricted Frequency Bands

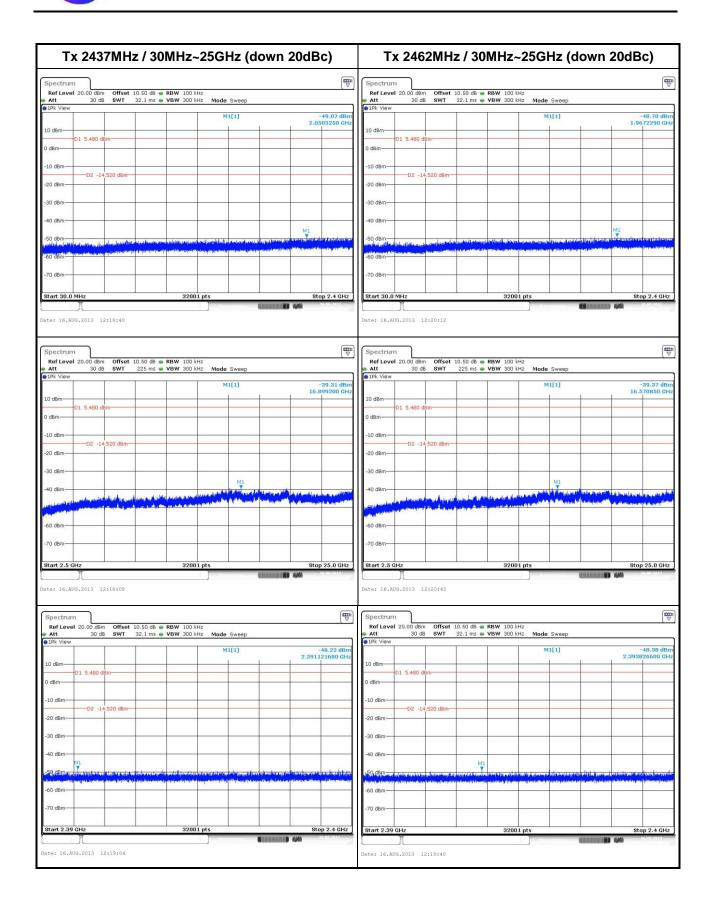
802.11b



Report No.: FR370110AC Page: 45 of 50 Report Version: Rev. 01



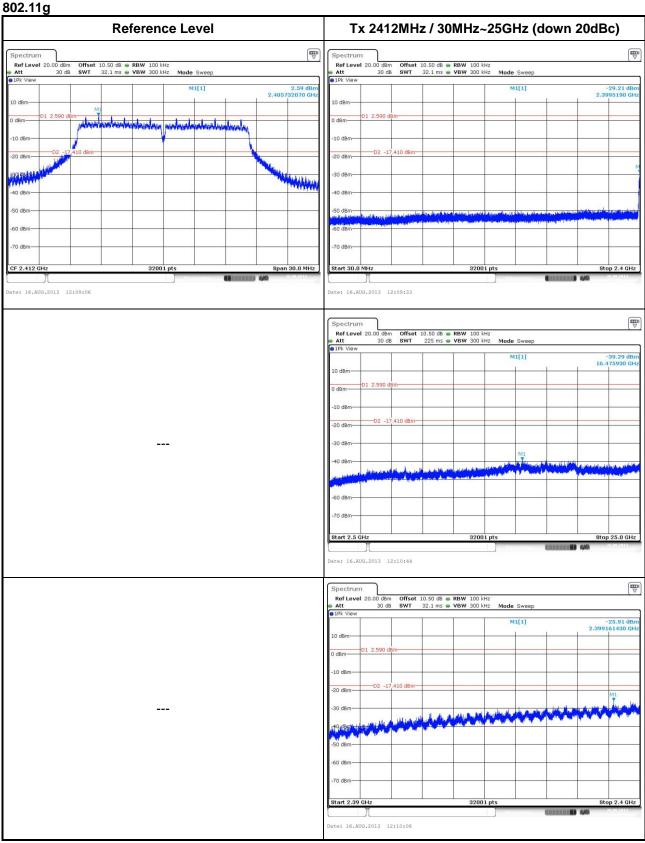
No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155



Report No.: FR370110AC Page: 46 of 50



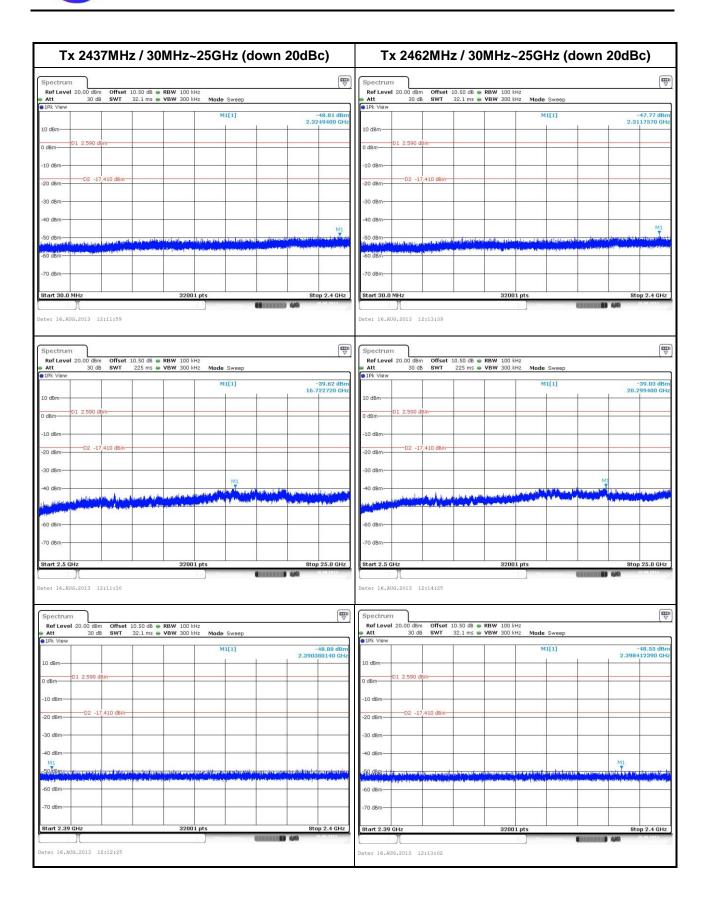
No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Fax: 886-3-318-0155



Report No.: FR370110AC Page: 47 of 50



No. 3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsien 333, Taiwan, R.O.C. Tel: 886-3-271-8666 Fax: 886-3-318-0155



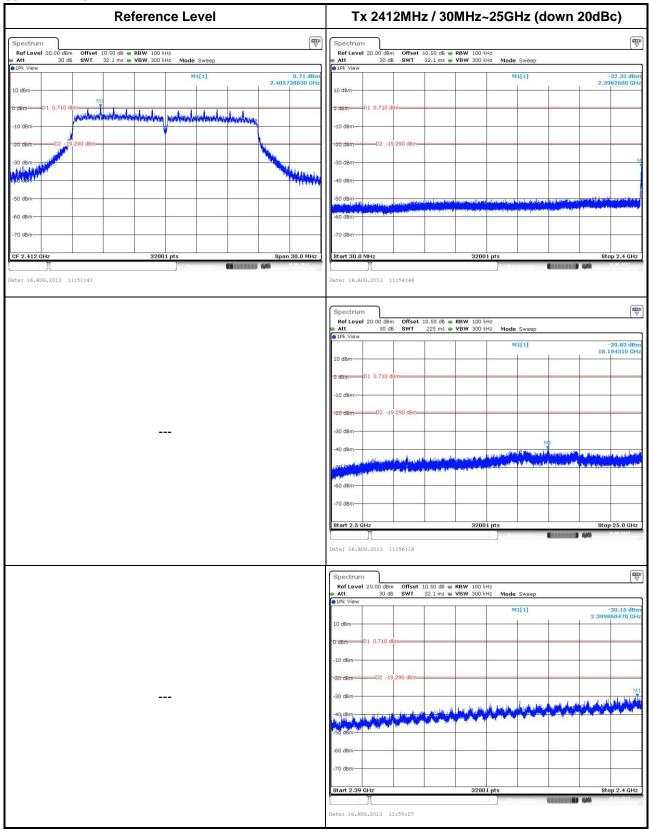
Report No.: FR370110AC Page: 48 of 50



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

Fax: 886-3-318-0155

802.11n HT20

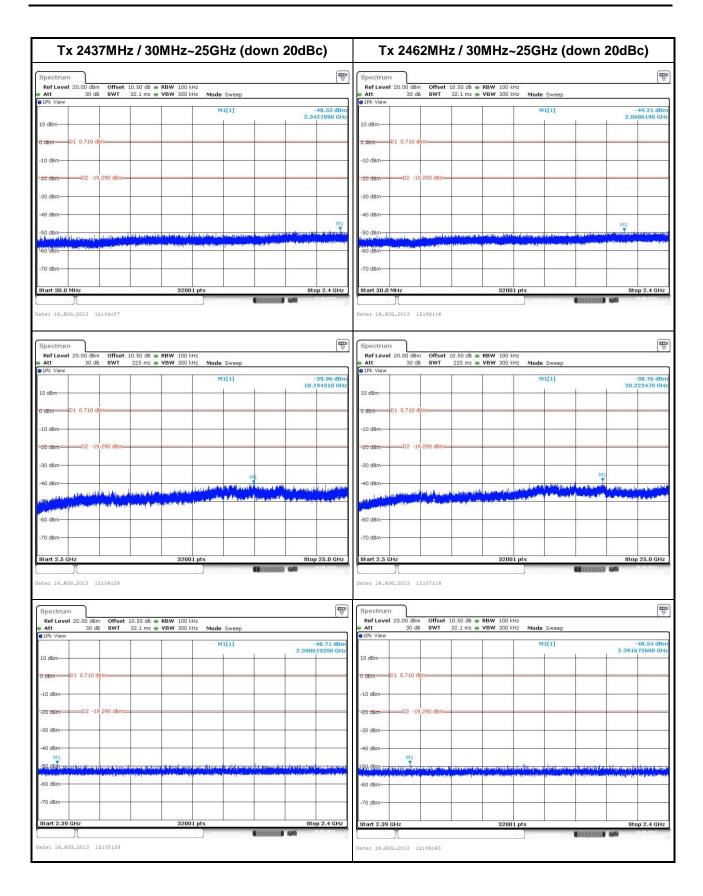


Report No.: FR370110AC Page: 49 of 50



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

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



==END==

Report No.: FR370110AC Page: 50 of 50