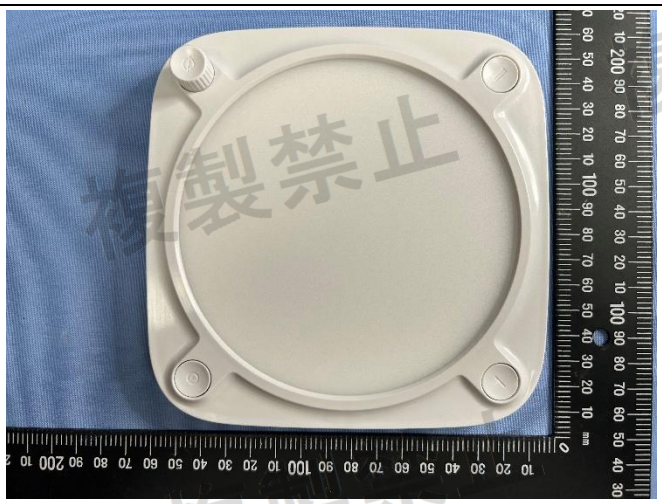
Prüfbericht-Nr.: *Test report no.:*	CN237GG0 (JRF-WiFi2.4Gb14) 001	**Auftrags-Nr.:** *Order no.*:	48224542	Seite 1 von 20 *Page 1 of 20*
Kunden-Referenz-Nr.: *Client reference no.:*	N/A	**Auftragsdatum:** *Order date:*	2023-10-03	
Auftraggeber: *Client:*	Corsair Memory, Inc. 115 North McCarthy Blvd, Milpitas, CA 95035, USA			
Prüfgegenstand: *Test item:*	Key Light Neo			
Bezeichnung / Typ-Nr.: *Identification / Type no.:*	Key Light Neo / 20LAJ9901			
Auftrags-Inhalt: *Order content*:	Test Report for JP compliance (802.11b CH14)			
Prüfgrundlage: *Test specification:*	RCR STD-33 (V5.4), MIC notice 88 Appendix 44 Article 2-1-19-2 of the Certification Ordinance			

Wareneingangsdatum: *Date of sample receipt:*	2023-10-05
Prüfmuster-Nr.: *Test sample no:*	A003574581-019
Prüfzeitraum: *Testing period:*	2023-10-13 - 2023-10-16
Ort der Prüfung: *Place of testing:*	EMC/RF Taipei Testing Site
Prüflaboratorium: *Testing laboratory:*	Taipei Testing Laboratories
Prüfergebnis*: *Test result*:*	Pass



zusammengestellt von: *compiled by:*		**genehmigt von:** authorized by:	
Datum: *Date:* 2023-11-09		**Ausstellungsdatum:** *Issue date:* 2023-11-09	
Stellung / *Position:*	Ryan Chen Senior Project Manager	**Stellung** / *Position:*	Brenda Chen Senior Project Manager

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

TEST SUMMARY

Report Section	Test Item	Result
5.1	Frequency Tolerance	Pass
5.2	Occupied Bandwidth	Pass
5.3	Spreading Bandwidth	Pass
5.4	Spurious Emissions of Transmitter	Pass
5.5	Antenna Power	Pass
5.6	Spurious Emissions of Receiver	Pass
5.7	Carrier Sense	Pass
5.8	Interference Prevention Function	Pass

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

Contents

APPENDIX A - TEST RESULT OF CONDUCTED

APPENDIX EP - PHOTOGRAPHS OF EUT

HISTORY OF THIS TEST REPORT

Revision	Description	Date Issued
R01	Original Release	2023-11-09

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:
Appendix A - Test Result of Conducted
Appendix EP - Photographs of EUT

Applied Standard and Test Levels

Radio
RCR STD-33 (V5.4), MIC notice 88 Appendix 44 Article 2-1-19-2 of the Certification Ordinance

1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing Laboratories

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244
Taiwan (R.O.C.)

2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

2.5 Measurement Uncertainty

All measurement uncertainty values are shown with a coverage factor of k=2 to indicate a 95% level of confidence.

Emission Measurement Uncertainty

Parameter	Uncertainty
Occupied Bandwidth	± 5 %
RF power, conducted	± 1.5 dB
unwanted emissions, conducted	± 3 dB
Temperature	± 1 ºC
Humidity	± 5 %
DC and low frequency voltages	± 3 %

3. General Product Information

3.1 Product Function and Intended Use

The EUT is an Key Light Neo. It contains a WLAN compatible module enabling the user to communicate data through a Wireless interface.
For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Technical Specification of EUT

Item	EUT information
Kind of Equipment/Test Item	Key Light Neo
Type Identification	Key Light Neo / 20LAJ9901
Operating Frequency	2484 MHz
Operation Voltage	Adaptor input 100-240 Vac, output 5 Vdc USB 5 Vdc Tested at USB 5Vdc
Modulation	DSSS (DBPSK, DQPSK, CCK)
Rated RF Power Density	0.0090 W/MHz
Conducted RF Output Power Density	8.83 mW
Antenna Gain	2.55 dBi
Accessory Device	Refer to 4.4

3.3 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Table for Parameters of Test Software Setting

802.11b	
Frequency (MHz)	Power Setting
2484	110

4.2 Carrier Frequency and Channel

Modes	Channel	Frequency (MHz)
802.11b	14	2484

4.3 Test Operation and Test Software

Setup for testing: Test samples are provided with USB interface which makes it possible to control them through a test software installed on a notebook computer.
This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed as below.

Test Software	mptool

When the input voltage from the external power supply to the EUT varied by ±10%, the variation of the input voltage to the circuitry of the RF section was confirmed to be ±1% or less.

The samples were used as follows:
A003574581-019

Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Frequency Tolerance	23.7-24.1 °C	50.6-56.2 %	Blake Wang
Occupied Bandwidth	23.7-24.1 °C	50.6-56.2 %	Blake Wang
Spread Bandwidth	23.7-24.1 °C	50.6-56.2 %	Blake Wang
Spurious Emissions	23.7-24.1 °C	50.6-56.2 %	Blake Wang
Antenna Power	23.7-24.1 °C	50.6-56.2 %	Blake Wang
Receiver Spurious Emissions	23.7-24.1 °C	50.6-56.2 %	Blake Wang
Carrier Sense	23.7-24.1 °C	50.6-56.2 %	Blake Wang

4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Accessory of EUT

None

Support Unit

None

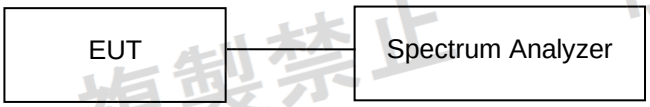
5. Test Results

5.1 Frequency Tolerance Measurement

Limit Tolerance of frequency shall be +/- 50 ppm

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manu-facturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date		Cal. Unit	Cal. Method
						From	Until		
Spectrum Analyzer	R&S	FSV40	101513	2023/5/10	2024/5/9	2023/10/13	2023/10/16	ITRI	C
Power Meter	Anritsu	ML2495A	1901008	2023/3/17	2024/3/16	2023/10/13	2023/10/16	ETC	C
Power Sensor	Aniritsu	MA2411B	1725269	2023/3/17	2024/3/16	2023/10/13	2023/10/16	ETC	C
True RMS Multimeter	Pro'sKit	MT1706	19007158	2022/12/1	2023/11/30	2023/10/13	2023/10/16	ETC	C
Signal Generator	R&S	SMB100A	181334	2023/2/22	2024/2/21	2023/10/13	2023/10/16	ETC	C

Note: Calibration Method

a) Calibration conducted by the National Institute of Information and Communications Technology(NICT) or a designated calibration agency under Article 102-18 paragraph (1) of the Radio Law.
b) Calibration conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992) Japan Calibration Service System.
c) Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).
d) Calibration conducted by using other equipment that listed above from a) to c).

Test Result

Please refer to Appendix A.

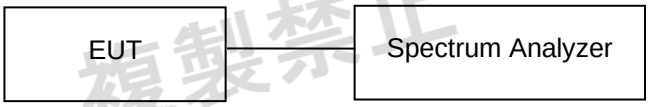
5.2 Occupied Bandwidth Measurement (99% Power Bandwidth)

Limit

Item	Limit	Remark
Occupied Bandwidth	< 26 MHz	802.11b, g & 802.11n/ac/ax 20MHz

Kind of Test Site Shielded room

Test Setup



Test Instruments

Refer to 5.1 Test Instruments

Test Result

Please refer to Appendix A.

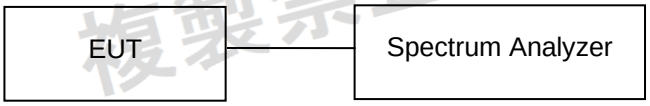
5.3 Spreading Bandwidth Measurement (90% Power Bandwidth)

Limit

Item	Limit	Remark
Spreading Bandwidth	≧500 kHz	(For DSSS, FHSS)
Spreading Factor	≧10	Operating Frequency 2471 to 2497 MHz

Kind of Test Site Shielded room

Test Setup



Test Instruments

Refer to 5.1 Test Instruments

Test Result

Please refer to Appendix A.

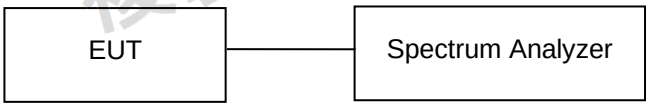
5.4 Spurious Emissions for Transmitter Measurement

Limit

Frequencies (MHz)	Limit
Operating Frequency 2471 to 2497 MHz	
30 to 2458 MHz	≦ 2.5 uW/MHz
2458 to 2471 MHz	≦ 25 uW/MHz
2497 to 2510 MHz	≦ 25 uW/MHz
2510 to 12500 MHz	≦ 2.5 uW/MHz

Kind of Test Site Shielded room

Test Setup



Test Instruments

Refer to 5.1 Test Instruments

Test Result

Please refer to Appendix A.

5.5 Antenna Power Measurement

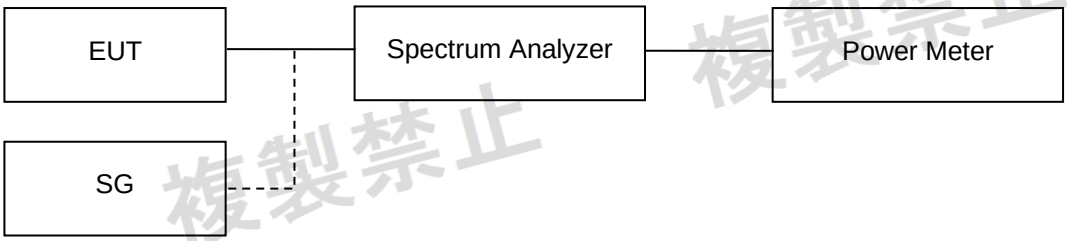
Limit

Modulation System	Frequency Band Used	Antenna Power (Max.)	EIRP (Max.)	
			Omni-Directional Case	Directional Case
DS	2471 – 2497 MHz	10 mW/MHz	12.14 dBm/MHz (16.37 mW/MHz)	22.14 dBm/MHz (163.68 mW/MHz)

Note:
1. The half-power beam width for directional antenna shall be 360/A degrees or less, where A is a ratio which causes the EIRP concerned to exceed the omni-directional EIRP upper limit.
2. Tolerance of antenna power shall be +20% (upper value) and -80% (lower value).

Kind of Test Site Shielded room

Test Setup



Test Instruments

Refer to 5.1 Test Instruments

Test Result

Please refer to Appendix A.

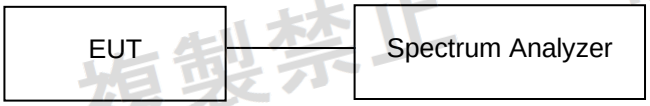
5.6 Spurious Emissions for Receiver Measurement

Limit

Frequencies (MHz)	Limit
Below 1 GHz	≦4 nW (-54 dBm)
Above 1 GHz	≦20 nW (-47 dBm)

Kind of Test Site Shielded room

Test Setup



Test Instruments

Refer to 5.1 Test Instruments

Test Result

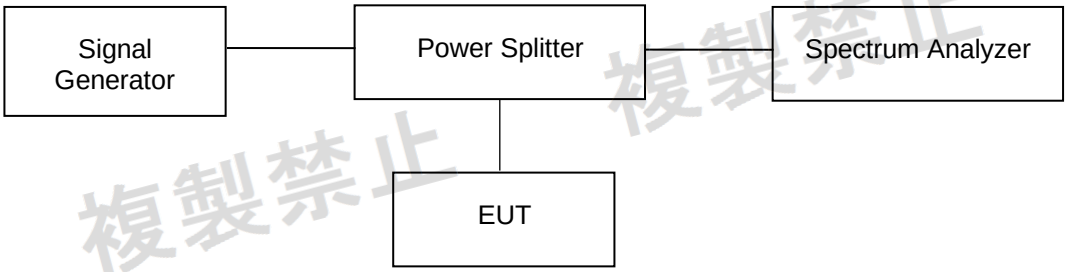
Please refer to Appendix A.

5.7 Carrier Sense Measurement

Limit EUT stop RF transmission signal after carrier inject to EUT.

Kind of Test Site Shielded room

Test Setup



Test Instruments

Refer to 5.1 Test Instruments

Test Result

<802.11b >

Frequency	MHz	2484
Cable Loss	dB	12
Min. Antenna Gain	dBi	2.52
SG Level	dBm	-40
Carrier Level Limit	dBm	-42.59
Carrier Level Result	dBm	-52.00
Result	Pass / Fail	PASS

Note:
Pcs (dBm) = 22.79 + Gr – 20log(F)
Gr: Antenna Gain
F: Transmission Frequency (MHz)
CF = Distributor loss + cable loss

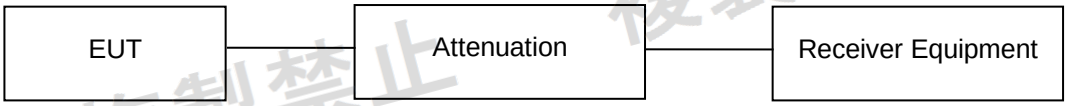
5.8 Interference Prevention Function

Limit

Radio equipment used mainly on the same premises and automatically transmits or receives identification code.

Kind of Test Site Shielded room

Test Setup



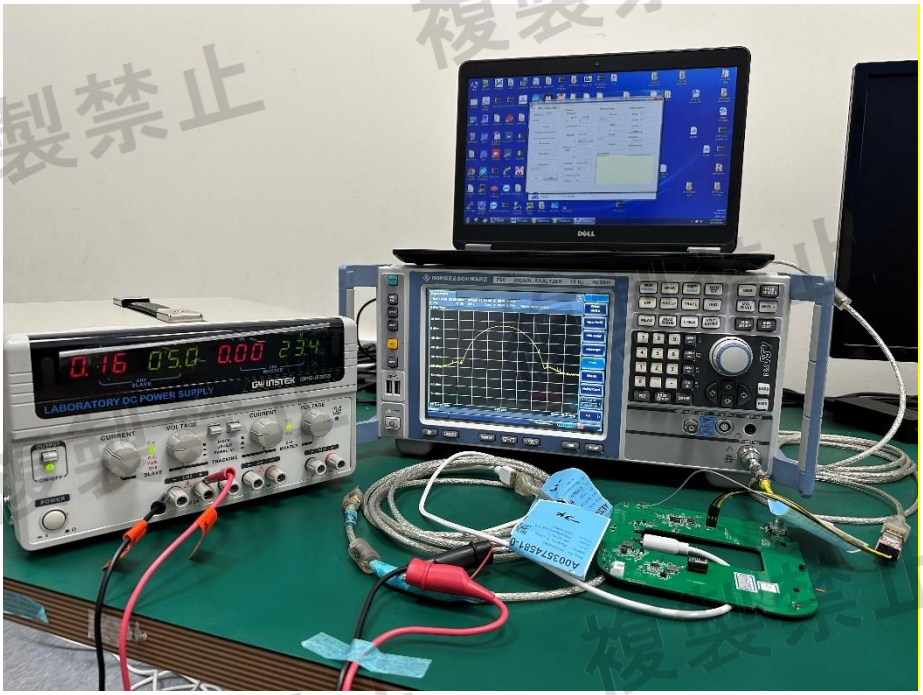
Test Instruments

Refer to 5.1 Test Instruments

Test Result

WiFi 2.4 GHz	Test Result
	Pass

6. Photographs of the Test Setup



WiFi 2.4G Test Data CN237GG0 (JRF-WiFi2.4Gb14) 001

Appendix A: Test Results of Conducted Test

Test Result of 802.11b(ch 14)

Test Result		Unit	Limit	DC 5 V (normal)				DC 5.5 V (high)				DC 4.5 V (low)					Notes
	Test Voltage	V		DC 5 V (normal)				DC 5.5 V (high)				DC 4.5 V (low)					
	Test Frequency	MHz		2484				2484				2484					Antenna Gain = 2.55dBi
Frequency Error		ppm	50	19.24												ok	Number of Stream = 1
Occupied Bandwidth		MHz	26.0	19.57												ok	
Spreading Bandwidth		MHz	0.5	14.02												ok	
Spreading Factor		-	10	10.20												ok	
Spurious Emissions	30.0 ~ 2458.0 MHz	uW/MHz	2.5	0.45												ok	
		MHz	-	2455.57												ok	
	2458.0 ~ 2471.0 MHz	uW/MHz	25.0	16.54												ok	
		MHz	-	2470.82												ok	
	2497.0 ~ 2510.0 MHz	uW/MHz	25.0	14.24												ok	
		MHz	-	2497.03												ok	
	2510.0 ~ 12500.0 MHz	uW/MHz	2.5	0.42												ok	
		MHz	-	2510.00												ok	
Antenna Power		mW/MHz	10.0	8.83												ok	
		%	-80	-1.89												ok	
		%	20													ok	
Collateral Emissions	30.0 ~ 1000.0 MHz	nW	4.0	0.002												ok	
		MHz	-	978.54												ok	
	1000.0 ~ 12500.0 MHz	nW	20.0	0.09												ok	
		MHz	-	6934.74												ok	
Interference Protection			yes	Complies												ok	
Carrier Sense			yes	Complies												ok	
Allowed Antenna Gain: 2.60 dBi																	

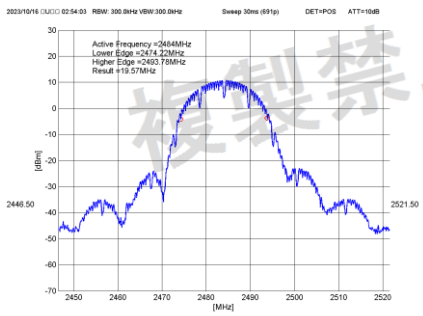
Test Plots of Frequency Error

802.11b(ch 14)

Normal Voltage		
2484MHz		
		

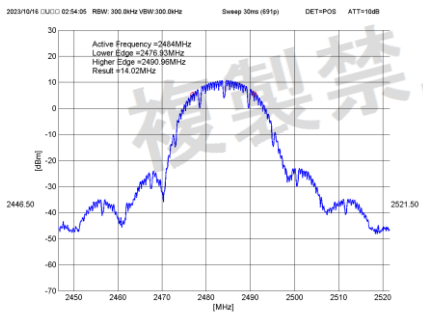
Test Plots of Occupied Bandwidth (99% Power Bandwidth)

802.11b(ch 14)

Normal Voltage		
2484MHz		
		

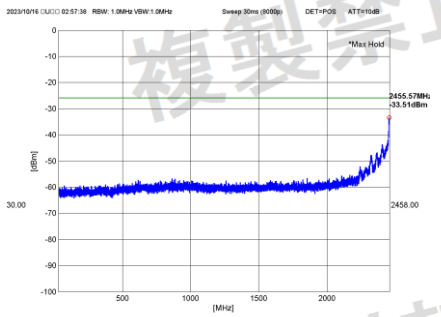
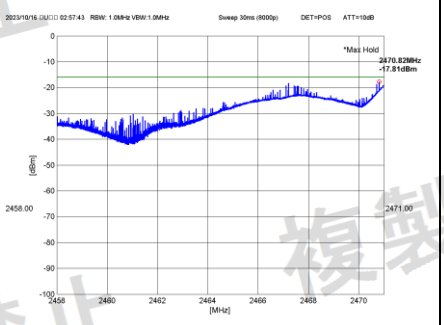
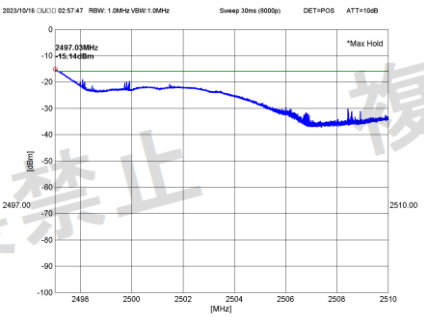
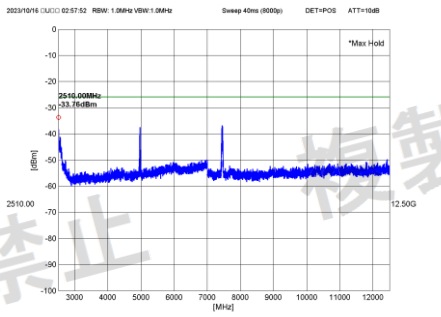
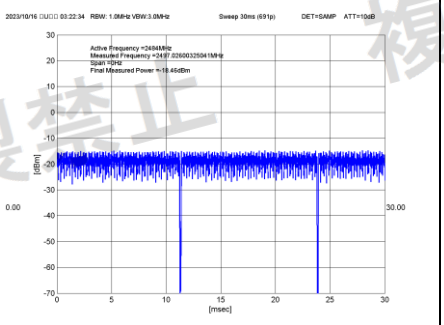
Test Plots of Occupied Bandwidth (90% Power Bandwidth)

802.11b(ch 14)

Normal Voltage		
2484MHz		
		

Test Plots of Transmitter Spurious Emissions

802.11b(ch 14)

Normal Voltage		
2484MHz		
30.0 ~ 2458.0 MHz	2458.0 ~ 2471.0 MHz	2497 ~ 2510 MHz
		
2510 ~ 12500.0 MHz	2497 ~ 2510 MHz (Zero Span)	
		

Test Plots of Receiver Spurious Emissions

802.11b(ch 14)

Normal Voltage		
2484MHz		
30.0 ~ 1000.0 MHz	1000.0 ~ 12500.0 MHz