

Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 1 of 128

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT AND INDUSTRY CANADA RSS 210

OF

Product Name: Tablet (Pad) Computer

Brand Name: Lenovo

Model: ThinkPad Tablet

Canadian Model Number: TP00028AS

Model Difference: N/A

FCC ID: GKR-TP00028AS

IC: 2533B-TP00028AS

Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

FCC Rule Part: §15.247

IC Rule Part: RSS-210 issue 8 :2010, Annex 8

Compal Electronics, Inc.

Prepared for: No. 581, Ruiguang, Neihu District,

Taipei City 11492, Taiwan (R. O. C)

SGS Taiwan Ltd.

Prepared by:

Electronics & Communication Laboratory

No. 134, Wu Kung Rd., Wuku Industrial

Zone, Taipei County, Taiwan.





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Issue Date: Aug. 22, 2011

Page: 2 of 128

VERIFICATION OF COMPLIANCE

Compal Electronics, Inc.

Applicant: No. 581, Ruiguang, Neihu District,

Taipei City 11492, Taiwan (R. O. C)

Product Name: Tablet (Pad) Computer

Brand Name: Lenovo

FCC ID: GKR-TP00028AS

IC: 2533B-TP00028AS

Model: ThinkPad Tablet

Canadian Model Number: TP00028AS

Model Difference: N/A

File Number: EF/2011/60004-04

Date of test: June 9, 2011 ~ June 20, 2011

Date of EUT Received: June 9, 2011

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and RSS-Gen. issue 3 the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247 and IC RSS 210 issue 8: 2010 Annex 8. The test results of this report relate only to the tested sample identified in this report.

Test By:	Lion Wang	Date	Aug. 22, 2011	
_	Lion Wang / Engineer			
Prepared By:	Celine Chou	Date	Aug. 22, 2011	
Approved By:	Celine Chou/Clerk Tim Chang	Date	Aug. 22, 2011	
	Jim Chang / Supervisor			

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 3 of 128

Version

Version No.	Date	Description
00	Aug. 22, 2011	Initial creation of document



Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 4 of 128

Table of Contents

1	GEN	ERAL INFORMATION	6
	1.1	Product Description	6
	1.2	Related Submittal(s) / Grant (s)	7
	1.3	Test Methodology	7
	1.4	Test Facility	7
	1.5	Special Accessories	7
	1.6	Equipment Modifications.	7
2	SYS	TEM TEST CONFIGURATION	8
	2.1	EUT Configuration	8
	2.2	EUT Exercise	8
	2.3	Test Procedure	8
	2.4	Configuration of Tested System.	9
3	SUM	MARY OF TEST RESULTS	10
4	DES	CRIPTION OF TEST MODES	10
5	CON	DUCTED EMISSION TEST	11
	5.1.	Standard Applicable:	11
	5.2.	Measurement Equipment Used:	11
	5.3.	EUT Setup:	11
	5.4.	Measurement Procedure:	12
	5.5.	Measurement Result:	12
6	PEA:	K OUTPUT POWER MEASUREMENT	15
	6.1	Standard Applicable:	15
	6.2	Measurement Equipment Used:	16
	6.3	Test Set-up:	17
	6.4	Measurement Procedure:	17
	6.5	Measurement Result:	18
7	6dB	BANDWIDTH	29
	7.1	Standard Applicable:	29
	7.2	Measurement Equipment Used:	29
	7.3	Test Set-up:	29
	7.4	Measurement Procedure:	29
	75	Measurement Result	30

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Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 5 of 128

8	100K	Hz BANDWIDTH OF BAND EDGES MEASUREMENT	36
	8.1	Standard Applicable:	36
	8.2	Measurement Equipment Used:	36
	8.3	Test SET-UP:	37
	8.3.1	Conducted Emission at antenna port:	37
	8.3.2	Radiated emission:	37
	8.4	Measurement Procedure:	38
	8.5	Field Strength Calculation:	38
	8.6	Measurement Result:	38
9	SPUR	RIOUS RADIATED EMISSION TEST	48
	9.1	Standard Applicable	48
	9.2	Measurement Equipment Used:	48
	9.3	Test SET-UP:	48
	9.4	Measurement Procedure:	49
	9.5	Field Strength Calculation	49
	9.6	Measurement Result:	49
10	PEAF	K POWER SPECTRAL DENSITY	113
	10.1	Standard Applicable:	113
	10.2	Measurement Equipment Used:	113
	10.3	Test Set-up:	113
	10.4	Measurement Procedure:	113
	10.5	Measurement Result:	114
11	ANTI	ENNA REQUIREMENT	120
	11.1.	Standard Applicable:	120
	11.2.	Antenna Connected Construction:	121
12	99%]	BANDWIDTH MEASUREMENT	122
	12.1.	Standard Applicable:	122
	12.2.	Measurement Equipment Used:	122
	12.3.	Test Set-up:	122
	12.4.	Measurement Procedure:	122
	12.5.	Measurement Result:	123
PH	OTOG	RAPHS OF SET UP	129
		RAPHS OF EUT	

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 6 of 128

1 GENERAL INFORMATION

1.1 Product Description

General:

Product Name:	Tablet (Pad) Computer				
Brand Name:	Lenovo				
Model:	ThinkPad Tablet				
Canadian Model Number:	: TP00028AS				
Model difference:	N/A				
USB Cable:	Model No	.: N/A, Supplier: N/A			
	7.4Vdc Li-ion battery or 5.35Vdc from AC/DC adapter				
Power Supply	Battery:	Model No.: 42T4965 (FRU), 42T4966 (ASM), Supplier: LGC Model No.: 42T4963 (FRU), 42T4964 (ASM), Supplier: Sanyo			
	Adapter:	Adapter: Model No.: PSAI10R-050Q(C1)-R, Supplier: PHIHONG			

WLAN: 802.11 b/g/n

Frequency Range:	2412 – 2462 MHz
Channel number:	11 channels
Max. Output Power:	802.11 b: 16.95 dBm (Peak) 802.11 g: 16.72 dBm (Peak) 802.11 n _20MHz: 16.03dBm (Peak)
Modulation Technology:	DSSS, OFDM
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 65Mbps
Antenna Designation:	Whayu / DC33000XZ320 (C435-520112-A) (Main) → PIFA Antenna, Gain: -0.97 Whayu / DC33000XZ330 (C435-520113-A) (Aux) → PIFA Antenna, Gain: -1.12 ACON / DC33000W320 (APP6P-700587) (Main) → PIFA Antenna, Gain: -1.01 ACON / DC33000W330 (APP6P-700588) (Aux) → PIFA Antenna, Gain: -2.01
Type of Emission:	17M7G1D

This test report applies for WLAN 802.11 b/g/n.

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Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 7 of 128

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID:** <u>GKR-TP00028AS</u> filing to comply with Section 15.247 of the FCC Part 15C, Subpart C Rules. And **IC:** <u>2533B-TP00028AS</u> filing to comply with Industry Canada RSS-210 issue 8: 2010 Annex 8. The composite system (digital device) is compliance with Subpart B is authorized under a DoC procedure.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003) and RSS-Gen: 2010. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-4.

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

1.5 Special Accessories

Not available for this EUT intended for grant.

1.6 Equipment Modifications

Not available for this EUT intended for grant.

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Report No.: EF/2011/60004-04 **Issue Date: Aug. 22, 2011**

Page: 8 of 128

SYSTEM TEST CONFIGURATION

2.1 **EUT Configuration**

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

2.2 **EUT Exercise**

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3 **Test Procedure**

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna. according to the requirements in Section 8 and 13 of ANSI C63.4-2003.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 9 of 128

Configuration of Tested System

Fig. 2-1 Configuration of Tested System

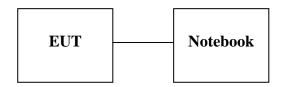


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	Notebook	Dell	E5400	3704625136	shielding	Un-shielding

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 10 of 128

SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a)/	AC Power Line Conducted Emission	Compliant
RSS-Gen §7.2.4		
§15.247(b)/	Peak Output Power	Compliant
RSS-210 §A8.4(4)		
§15.247(b)/	6dB Bandwidth	Compliant
RSS-210 §A8.4(4)		
§15.247(c)/	100 KHz Bandwidth Of	Compliant
RSS-210 §A8.4(4)	Frequency Band Edges	
§15.247(c)/	Spurious Emission	Compliant
RSS-210 §A8.4(4)		
§15.247/	Peak Power Density	Compliant
RSS-210 §A8.2(b)		
§15.203/	Antenna Requirement	Compliant
RSS-GEN §7.1.2,		
RSS-Gen §4.6.1	99% Power Bandwidth	Compliant

DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Test program used to control the EUT for staying in continuous transmitting is programmed.

802.11 b mode: Channel low (2412MHz), mid (2437MHz) and high (2462MHz) with 1Mbps data rate are chosen for above testing.

802.11 g mode: Channel low (2412MHz), mid (2437MHz) and high (2462MHz) with 6Mbps data rate are chosen for above testing.

802.11 n_20MHz mode: Channel low (2412MHz), mid (2437MHz) and high (2462MHz) with 6.5Mbps data rate are chosen for above testing.

In comparison with which EUT deposits on the surface of turned table. The X plane is found to be the worst case.

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Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 11 of 128

CONDUCTED EMISSION TEST

5.1. Standard Applicable:

According to §15.207 and RSS-Gen §7.2.4, frequency range within 150KHz to 30MHz shall not exceed the Limit table as below.

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

Note

- 1. The lower limit shall apply at the transition frequencies
- 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

5.2. Measurement Equipment Used:

	AC Power	Line Conducted E	mission Test S	ite	
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
EMI Test Receiver	R&S	ESCS30	828985/004	09/15/2010	09/14/2011
LISN	Rolf-Heine	NNB-2/16Z	99012	02/02/2011	02/01/2012
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/02/2011	02/01/2012
Coaxial Cables	N/A	WK CE Cable	N/A	11/28/2010	11/27/2011

5.3. EUT Setup:

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2003.
- 2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
- 3. The LISN was connected with 120Vac/60Hz power source.

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Report No.: EF/2011/60004-04 **Issue Date: Aug. 22, 2011**

Page: 12 of 128

5.4. Measurement Procedure:

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

5.5. Measurement Result:

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

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



Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

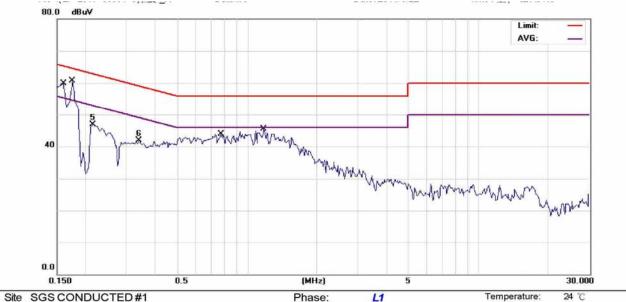
Page: 13 of 128

Humidity: Air Pressure:

hpa

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	Operation			Test Date:	June 17, 2011
Temperature:	24	Humidity:	58 %	Test By:	Lion



Power:

Distance:

AC 120V/60Hz

Site SGS CONDUCTED#1

Limit: FCC Class B Conduction(QP)

EUT: Tablet(Pad) Computer

M/N: ThinkPad Tablet Note: WLANmode

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dΒ	dBuV	dBuV	dВ	Detector	Comment
1		0.1594	55.62	0.13	55.75	65.50	-9.75	QP	
2		0.1594	39.80	0.13	39.93	55.50	-15.57	AVG	
3	*	0.1748	56.46	0.13	56.59	64.73	-8.14	QP	
4		0.1748	35.12	0.13	35.25	54.73	-19.48	AVG	
5		0.2150	46.85	0.12	46.97	63.01	-16.04	peak	
6		0.3400	41.86	0.11	41.97	59.20	-17.23	peak	
7		0.7673	39.79	0.12	39.91	56.00	-16.09	QΡ	
8		0.7673	28.87	0.12	28.99	46.00	-17.01	AVG	
9		1.1792	39.82	0.13	39.95	56.00	-16.05	QP	
10		1.1792	30.79	0.13	30.92	46.00	-15.08	AVG	

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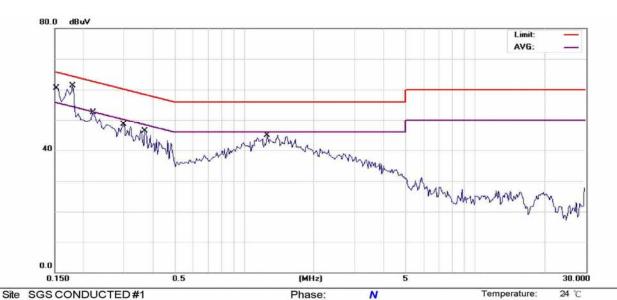
Issue Date: Aug. 22, 2011

Page: 14 of 128

Humidity:

Air Pressure:

hpa



Power:

Distance:

AC 120V/60Hz

Limit: FCC Class B Conduction(QP)

EUT: Tablet(Pad) Computer M/N: ThinkPad Tablet Note: WLANmode

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dВ	dBuV	dBuV	dВ	Detector	Comment
1		0.1543	53.90	0.14	54.04	65.77	-11.73	QP	
2		0.1543	34.82	0.14	34.96	55.77	-20.81	AVG	
3	*	0.1795	55.21	0.13	55.34	64.51	-9.17	QР	
4		0.1795	28.00	0.13	28.13	54.51	-26.38	AVG	
5		0.2195	44.53	0.12	44.65	62.84	-18.19	QP	
6		0.2195	27.93	0.12	28.05	52.84	-24.79	AVG	
7		0.2986	39.48	0.12	39.60	60.28	-20.68	QP	
8		0.2986	26.75	0.12	26.87	50.28	-23.41	AVG	
9		0.3692	33.14	0.12	33.26	58.52	-25.26	QР	
10		0.3692	19.20	0.12	19.32	48.52	-29.20	AVG	
11		1.2524	40.08	0.13	40.21	56.00	-15.79	QР	
12		1.2524	31.39	0.13	31.52	46.00	-14.48	AVG	

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 15 of 128

PEAK OUTPUT POWER MEASUREMENT

6.1 Standard Applicable:

According to $\S15.247(a)(2)$, (b)

5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna

(3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and

elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its

maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a

reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods),

the maximum conducted output power is the highest total transmit power occurring in any mode.

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c)

of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted

output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1),

(b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(c) Operation with directional antenna gains greater than 6 dBi.

(1) Fixed point-to-point operation:

(i) Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

(ii) Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted output power.

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Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 16 of 128

According to RSS-210 issue 8,§A8.4(4), for systems employing digital modulation techniques operating in the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, the maximum peak conducted output power shall not exceed 1 W. Except as provided in Section A8.4 (5), the e.i.r.p. shall not exceed 4 W.

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

6.2 Measurement Equipment Used:

Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
ТҮРЕ		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2010	04/18/2012				
Spectrum Analyzer	Agilent	E4440A	MY45304525	01/25/2011	01/24/2012				
DC Block	Agilent	BLK-18	155452	07/05/2010	07/04/2011				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2011	01/04/2012				
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2011	07/04/2012				
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2011	07/04/2012				
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2011	07/04/2012				
Splitter	Agilent	11636B	N/A	07/05/2011	07/04/2012				
Power Meter	Anritsu	ML2495A	1005007	02/17/2010	02/16/2012				

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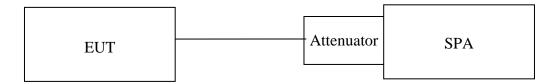


Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 17 of 128

6.3 Test Set-up:



6.4 Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum.
- 3. Record the max. reading.
- 4. Repeat above procedures until all frequency measured were complete.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 18 of 128

6.5 Measurement Result:

802.11b

	Cable loss = 0	Peak Power Output					
СП	Eroguanov (MHz)		Data	Dogwined Limit			
СН	Frequency (MHz)	1	2	5.5	11	Required Limit	
1	2412	16.95	16.81	16.66	16.49	1 Watt = 30 dBm	
6	2437	16.49	16.32	16.15	16.02	1 Watt = 30 dBm	
11	2462	16.63	16.49	16.31	16.16	1 Watt = 30 dBm	
(Cable $loss = 0$	Average Power Output					
СН	Frequency (MHz)		Data 1	Required Limit			
CII	Frequency (WIIIZ)	1	2	5.5	11	Kequired Limit	
1	2412	14.40	14.28	14.1	13.89	1 Watt = 30 dBm	
6	2437	13.96	13.78	13.55	13.37	1 Watt = 30 dBm	
11	2462	14.21	14.02	13.88	13.65	1 Watt = 30 dBm	

802.11g

	002.11g										
Cab	le loss = 0	Peak Power Output									
СН	Frequency	Data Rate							D		
Сп	(MHz)	6	9	12	18	24	36	48	54	Required Limit	
1	2412	15.23	15.11	14.98	14.72	14.61	14.49	14.26	14.11	1 Watt =	
		10.20	10.11	1					11.20	1 1111	30 dBm
6	2437	16.57	16.42	16.34	16.19	16.05	15.89	15.76	15.58	1 Watt =	
U	2437	10.57	10.42	10.54	10.19	10.03 13.89	10.03 13.89	13.70	3.69 13.70	13.36	30 dBm
11	2462	16.72	16.61	16.46	16.32	16.19	16.05	15.88	15.74	1 Watt =	
11	2402	10.72	10.01	10.40	10.32	10.19	10.03	13.00	13.74	30 dBm	
Cab	le loss = 0		Average Power Output								
СН	Frequency	Data Rate							Doguinod I imit		
Сп	(MHz)	6	9	12	18	24	36	48	54	Required Limit	
1	2412	12.06	11.89	11.68	11.51	11.38	11 16	11.02	10.89	1 Watt =	
1	2412	12.06	11.89	11.08	11.31	11.38	11.16	11.02	10.89	30 dBm	
6	2437	13.07	12.89	12.77	12.61	12.47	12.32	12.11	11.95	1 Watt =	
U	2431	13.07	12.09	12.//	12.01	12.4/	12.32	12.11	11.93	30 dBm	
11	2462	13.24	13.11	12.95	12.82	12.69	12.55	12.37	12.18	1 Watt =	
11	<i>2</i> 40 <i>2</i>	13.24	13.11	12.93	12.02	12.09	12.33	12.37	12.18	30 dBm	

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 19 of 128

802.11n_20M

Cab	ole loss = 0		Peak Power Output							
СН	Frequency		Data Rate							Required Limit
	(MHz)	6.5	13	19.5	26	39	52	58.5	65	Required Emili
1	2412	15.09	14.88	14.67	14.46	14.28	14.11	13.99	13.78	1 Watt = 30 dBm
6	2437	16.03	15.91	15.78	15.62	15.46	15.31	15.19	15.05	1 Watt = 30 dBm
11	2462	15.48	15.25	15.08	14.91	14.78	14.66	14.49	14.37	1 Watt = 30 dBm
Cab	ole loss = 0	Average Power Output								
СН	Frequency	Data Rate							Required Limit	
CH	(MHz)	6.5	13	19.5	26	39	52	58.5	65	Required Limit
1	2412	11.57	11.38	11.18	11.01	10.89	10.68	10.49	10.33	1 Watt = 30 dBm
6	2437	12.62	12.55	12.38	12.22	12.10	11.92	11.76	11.56	1 Watt = 30 dBm
11	2462	12.12	12.01	11.88	11.69	11.55	11.39	11.21	11.08	1 Watt = 30 dBm

*Note: Offset 6.5 dB = Attenuator 6.0 dB + Cable loss 0.5dB

Note: Refer to next page for plots.

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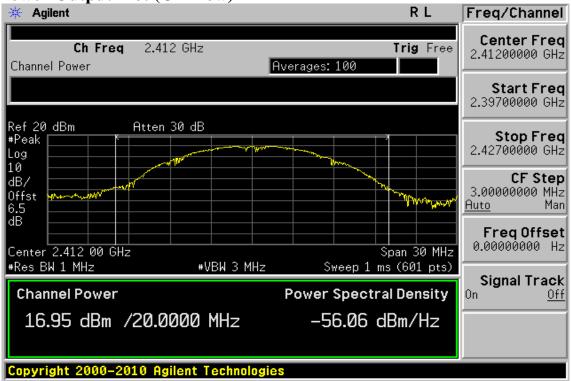
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Issue Date: Aug. 22, 2011

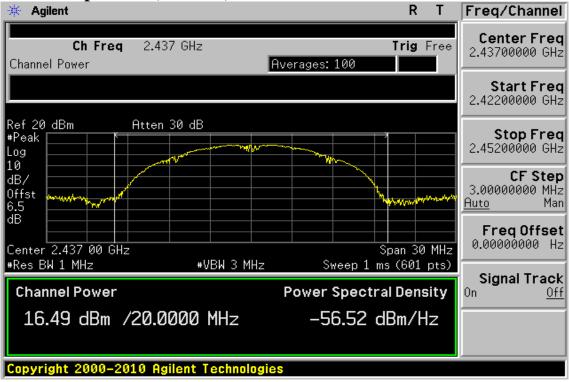
Page: 20 of 128

802.11b, 1Mbps

Peak Power Output Plot (CH Low)



Peak Power Output Plot (CH Mid)



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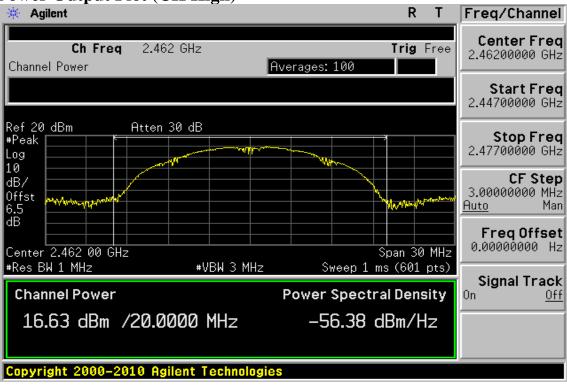
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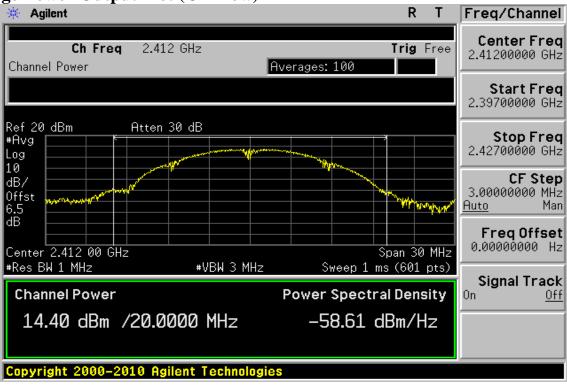
Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 21 of 128

Peak Power Output Plot (CH High)



Average Power Output Plot (CH Low)



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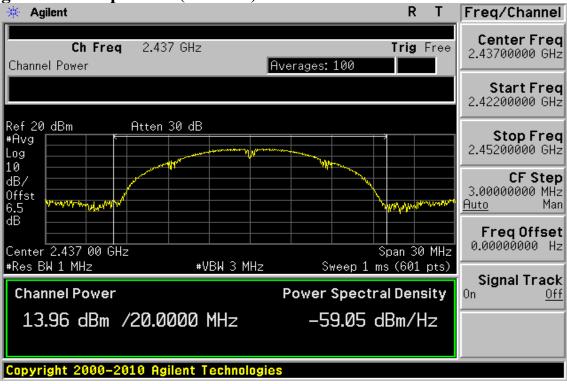
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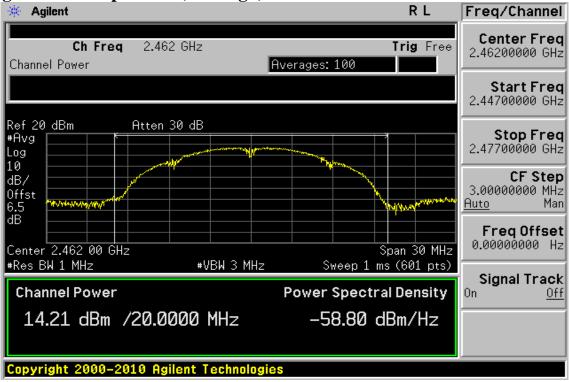
Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 22 of 128

Average Power Output Plot (CH Mid)



Average Power Output Plot (CH High)



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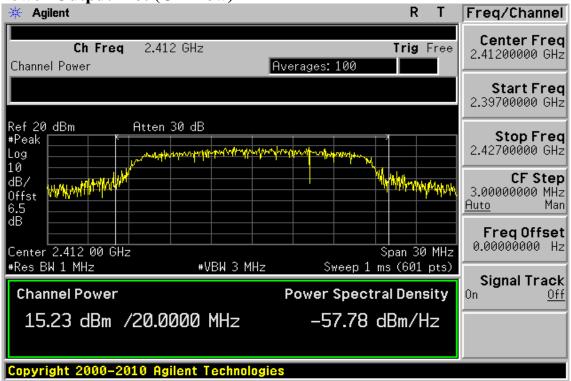


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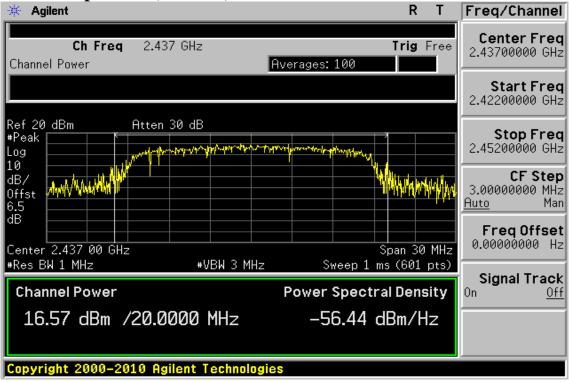
Issue Date: Aug. 22, 2011 Page: 23 of 128

802.11g, 6Mbps

Peak Power Output Plot (CH Low)



Peak Power Output Plot (CH Mid)



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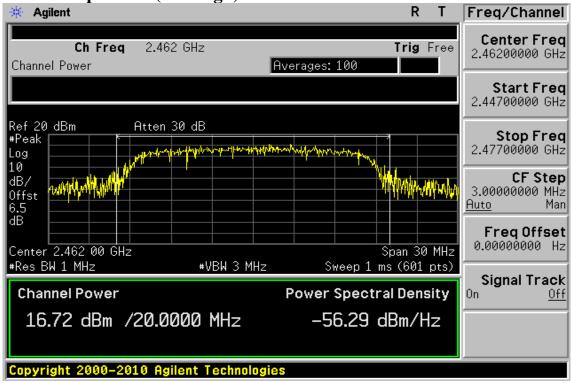


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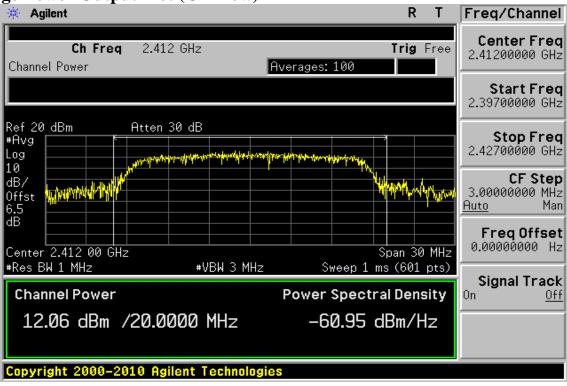
Issue Date: Aug. 22, 2011

Page: 24 of 128

Peak Power Output Plot (CH High)



Average Power Output Plot (CH Low)



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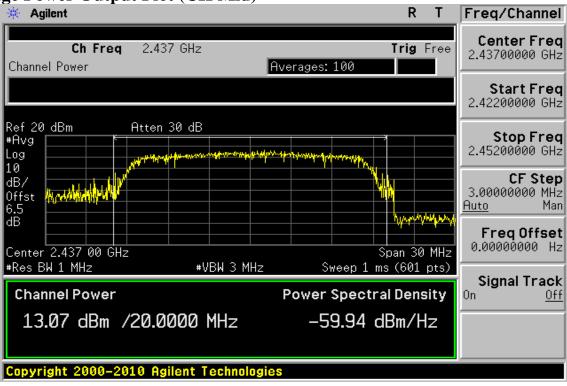
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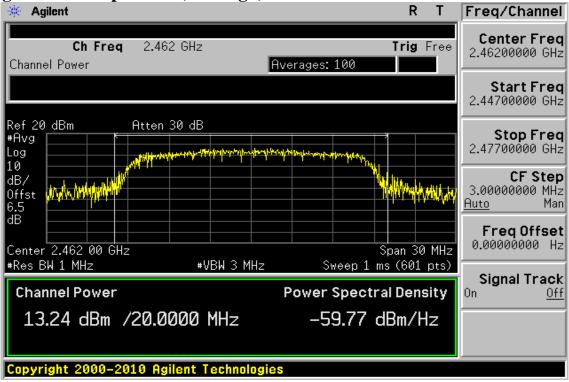
Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 25 of 128

Average Power Output Plot (CH Mid)



Average Power Output Plot (CH High)



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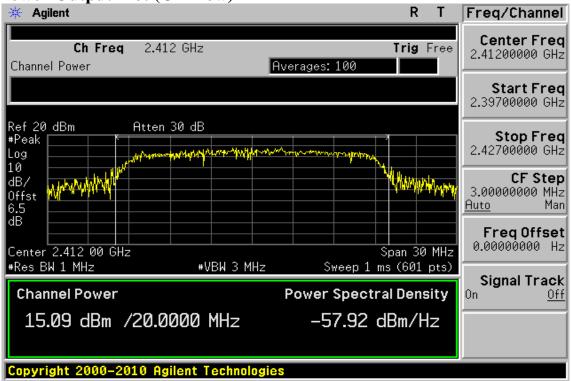
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Issue Date: Aug. 22, 2011

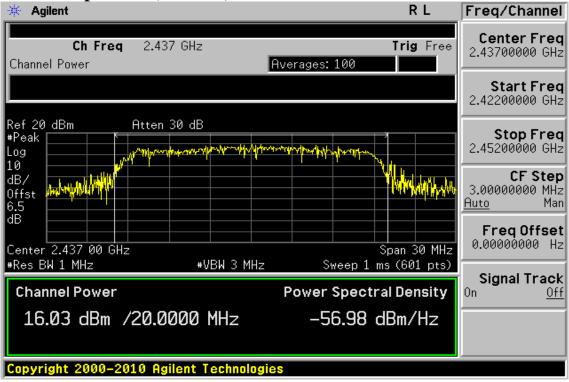
Page: 26 of 128

802.11n_20M, 6.5Mbps

Peak Power Output Plot (CH Low)



Peak Power Output Plot (CH Mid)



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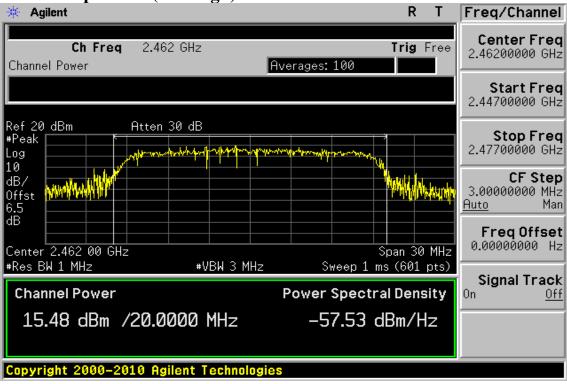


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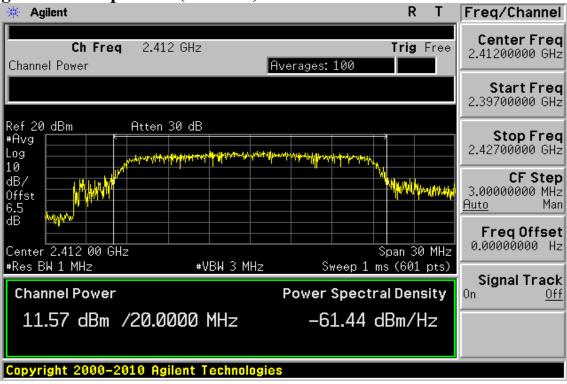
Issue Date: Aug. 22, 2011

Page: 27 of 128

Peak Power Output Plot (CH High)



Average Power Output Plot (CH Low)



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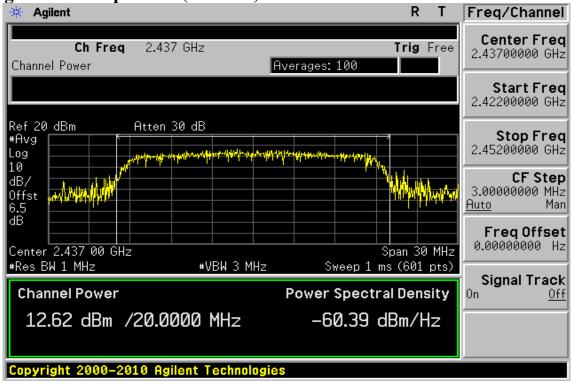


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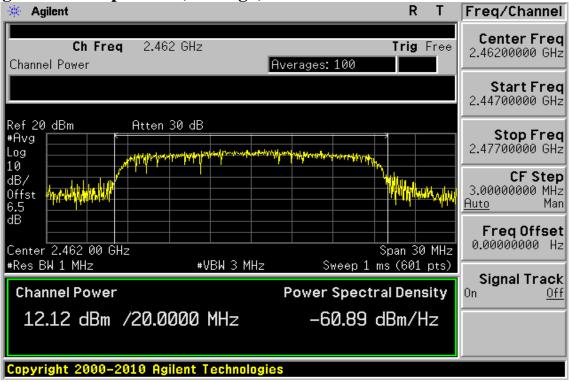
Issue Date: Aug. 22, 2011

Page: 28 of 128

Average Power Output Plot (CH Mid)



Average Power Output Plot (CH High)



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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 29 of 128

6dB BANDWIDTH

7.1 Standard Applicable:

According to §15.247(a)(2), Systems using digital modulation techniques may operate in the 902 - 928 MHz,2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500kHz.

According to RSS 210 issue 8: 2010Annex 8.2. Systems employing digital modulation techniques (which includes direct sequence) can now be certified under RSS-210 provided they comply with the following requirements: The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2 Measurement Equipment Used:

Refer to section 6.2 for details.

7.3 Test Set-up:

Refer to section 6.3 for details.

7.4 Measurement Procedure:

- 1.Place the EUT on the table and set it in transmitting mode.
- 2.Remove the antenna from the EUT and then connect a low loss RF cable from the 3.antenna port to the spectrum analyzer.
- 3.Set the spectrum analyzer as RBW=100KHz, VBW = 3*RBW, Span= 50MHz, Sweep=auto
- 4. Mark the peak frequency and –6dB (upper and lower) frequency.
- 5. Repeat above procedures until all frequency measured were complete.



Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 30 of 128

7.5 Measurement Result:

802.11b

Frequency	Bandwidth	Bandwidth	Dogult	
(MHz)	(MHz)	(KHz)	Result	
2412	8.155	> 500	PASS	
2437	8.072	> 500	PASS	
2462	8.102	> 500	PASS	

802.11g

Frequency	Bandwidth	Bandwidth	Doggal4	
(MHz)	(MHz)	(KHz)	Result	
2412	15.355	> 500	PASS	
2437	15.149	> 500	PASS	
2462	15.167	> 500	PASS	

802.11n 20M

Frequency	Bandwidth	Bandwidth	Result	
(MHz)	(MHz)	(KHz)	Kesuit	
2412	15.336	> 500	PASS	
2437	15.086	> 500	PASS	
2462	15.748	> 500	PASS	

offset: 6.5dB



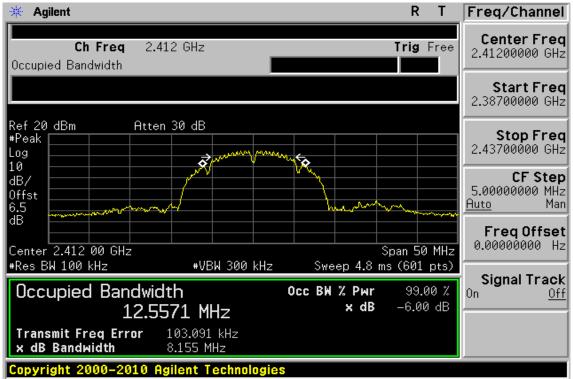
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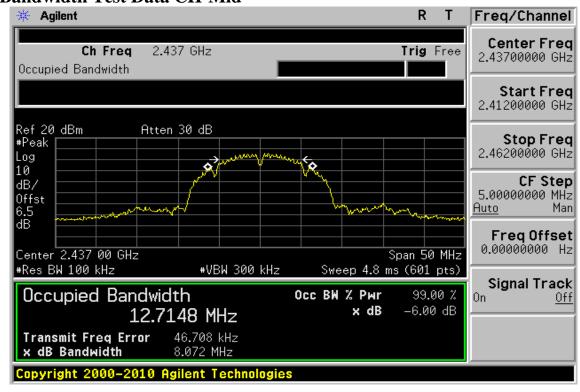
Page: 31 of 128

802.11b

6dB Bandwidth Test Data CH-Low



6dB Bandwidth Test Data CH-Mid



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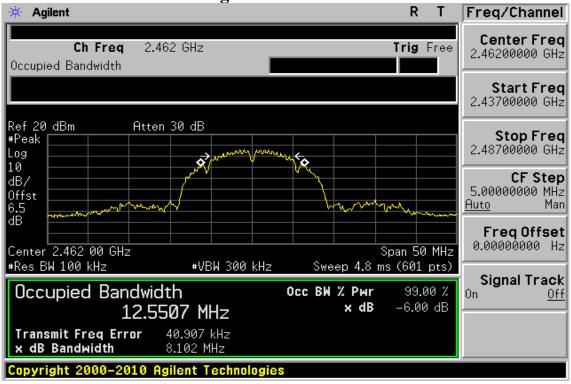
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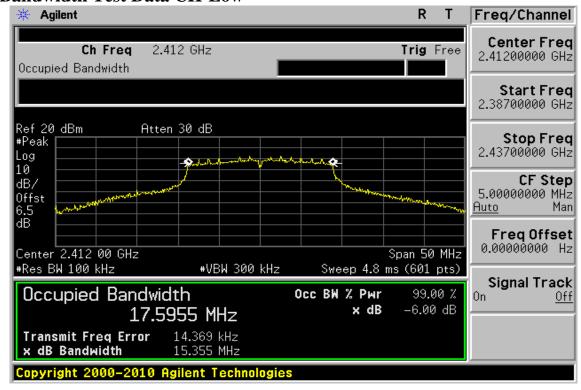
Issue Date: Aug. 22, 2011 Page: 32 of 128

6dB Bandwidth Test Data CH-High



802.11g

6dB Bandwidth Test Data CH-Low



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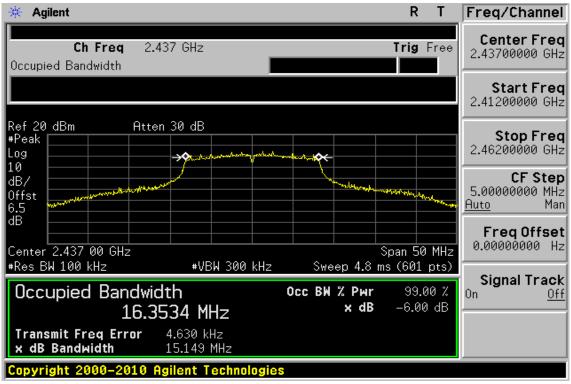


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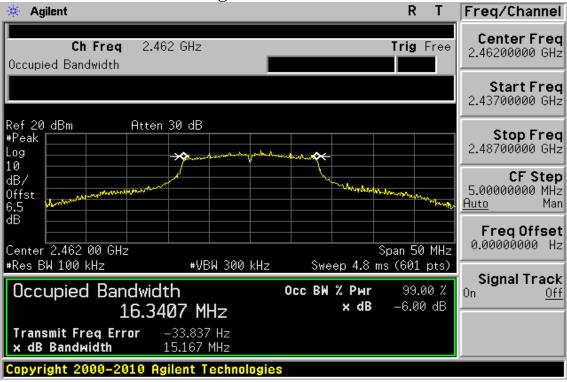
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Page: 33 of 128

6dB Bandwidth Test Data CH-Mid



6dB Bandwidth Test Data CH-High



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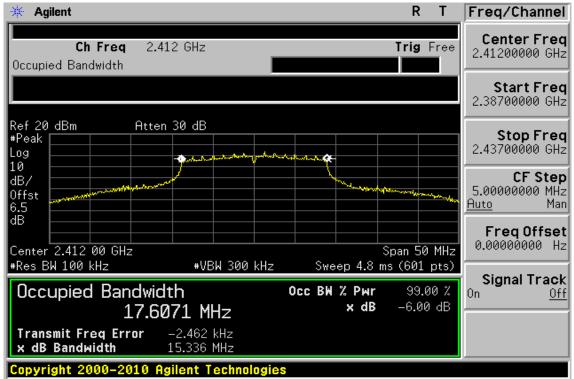
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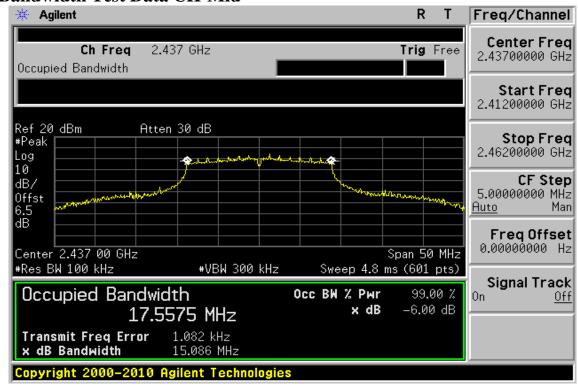
Page: 34 of 128

802.11n 20M

6dB Bandwidth Test Data CH-Low



6dB Bandwidth Test Data CH-Mid



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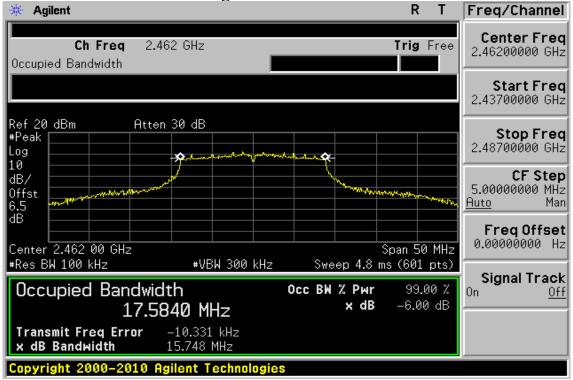


Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 35 of 128

6dB Bandwidth Test Data CH-High



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Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 36 of 128

8 100KHz BANDWIDTH OF BAND EDGES MEASUREMENT

8.1 Standard Applicable:

According to §15.247(c), in any 100 KHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100KHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in15.209(a).

According to RSS-210 issue 8,§A8.5, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required. In addition, radiated emissions which fall in the restricted bands of Table 1 must also comply with the radiated emission limits specified in Tables 2 and 3.

8.2 Measurement Equipment Used:

8.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

8.2.2. Radiated emission:

Conducted Emission Test Site									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2010	04/18/2012				
Spectrum Analyzer	Agilent	E7405A	US41160416	12/25/2009	12/24/2011				
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2011	02/11/2012				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	01/05/2011	01/04/2012				
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2010	07/04/2011				
Software	Audix	Ver 6.2009 – 23B	N/A	N/A	N/A				

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Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 37 of 128

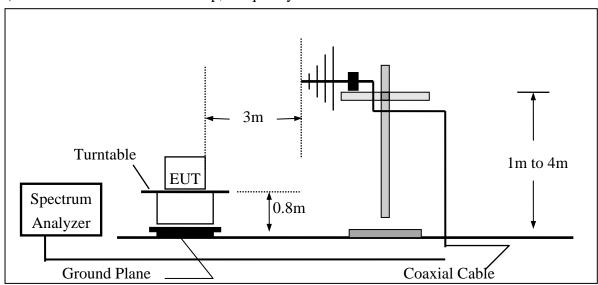
8.3 Test SET-UP:

8.3.1 Conducted Emission at antenna port:

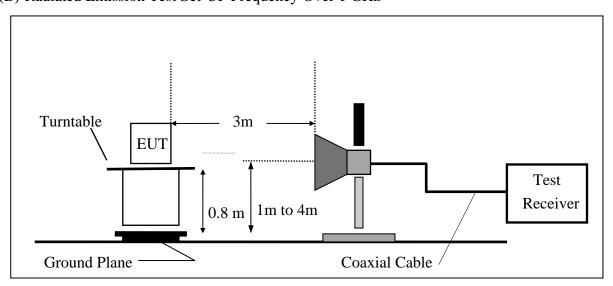
Refer to section 6.3 for details.

8.3.2 Radiated emission:

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 38 of 128

8.4 Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set center frequency of spectrum analyzer = operating frequency.
- 4. Set the spectrum analyzer as RBW, VBW=100KHz, Span=100MHz, Sweep = auto
- 5. Mark Peak, 2.310GHz 2.390GHz and 2.4835GHz 2.500GHz and record the max. level.
- 6. Repeat above procedures until all frequency measured were complete.

8.5 Field Strength Calculation:

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

$$FS = RA + AF + CL - AG$$

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

8.6 Measurement Result:

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

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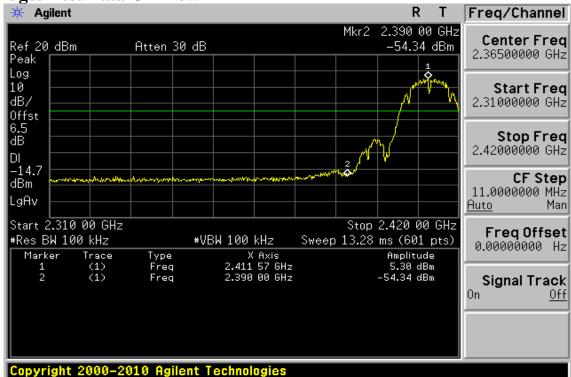
Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 39 of 128

802.11b

Band Edges Test Data CH-Low



Band Edges Test Data CH-High



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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 40 of 128

Radiated Emission: 802.11 b mode

Operation Mode TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412 MHz Test By Lion Pol **Tmperature** 27 °C Ver.

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m) (dBuV/m)	(dBuV/m)	(dB)	
2390.00	50.22		-1.06	49.16		74.00	54.00	-4.84	Peak

Operation Mode June 17, 2011 TX CH Low Test Date

Fundamental Frequency 2412 MHz Test By Lion Temperature Pol Hor. 27

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Lim it	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m) (dBuV/m)	(dBuV/m)	(dB)	
2390.00	50.94		-1.06	49.88		74.00	54.00	-4.12	Peak

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (3) Spectrum Peak Setting: 1GHz-26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 41 of 128

Operation Mode TX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Pol Temperature Ver. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)) (dBuV/m)((dBuV/m)	(dB)	
2483.56	52.26	43.52	-0.59	51.67	42.93	74.00	54.00	-11.07	AV

Operation Mode TX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Temperature Pol Hor. 27

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m	(dB)	
2483.50	58.33	41.79	-0.59	57.74	41.20	74.00	54.00	-12.80	AV

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (4) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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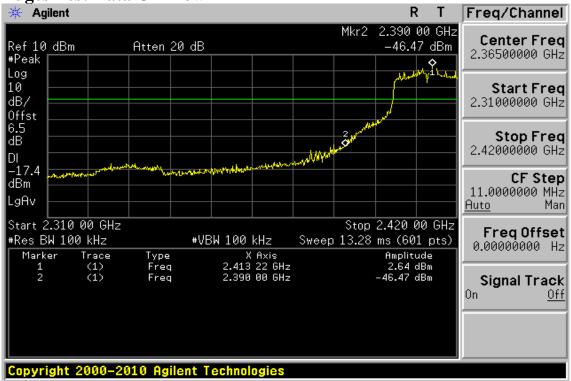


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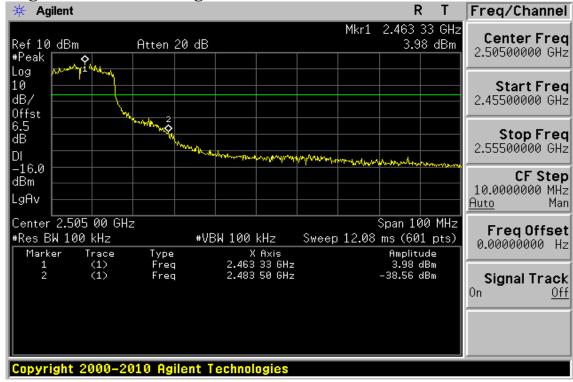
Issue Date: Aug. 22, 2011 Page: 42 of 128

802.11g

Band Edges Test Data CH-Low



Band Edges Test Data CH-High



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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 43 of 128

Radiated Emission: 802.11 g mode

Operation Mode TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412 MHz Test By Lion **Tmperature** Pol 27°C Ver.

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)) (dBuV/m)	(dBuV/m)	(dB)	
2390.00	71.82	40.74	-1.06	70.76	39.68	74.00	54.00	-14.32	AV

Operation Mode June 17, 2011 TX CH Low Test Date

Fundamental Frequency 2412 MHz Test By Lion Temperature Pol Hor. 27 °C

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dRuV)	$(d\mathbf{R}_{\mathbf{H}}\mathbf{V})$	CF(dR)	(dRuV/m)	(dRuV/m)	(d Ru V/m	(dBuV/m)	(dB)	
(MIIIZ)	(ubu v)	(ubuv)	CF(ub)	(ubu v/iii)	(uDu v /III)	(aba 17iii)(ub u 17111,	(uD)	

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (3) Spectrum Peak Setting: 1GHz-26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (4) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 44 of 128

Radiated Emission: 802.11 g mode

Operation Mode TX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Pol Temperature 27 °C Ver.

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m) (dBuV/m)	(dBuV/m)	(dB)	
2483.50	73.39	52.41	-0.59	72.80	51.82	74.00	54.00	-2.18	AV

Operation Mode TX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Temperature Pol Hor. 27 °C

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
/ \	/ III III		OT (IT)	(TT TT)	(ID 57/	(ID 37/	(ID X7/)	(1D)	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)) (a Bu V/m ,)(dBu V/m _,	(dB)	

Remark:

- (1) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (3) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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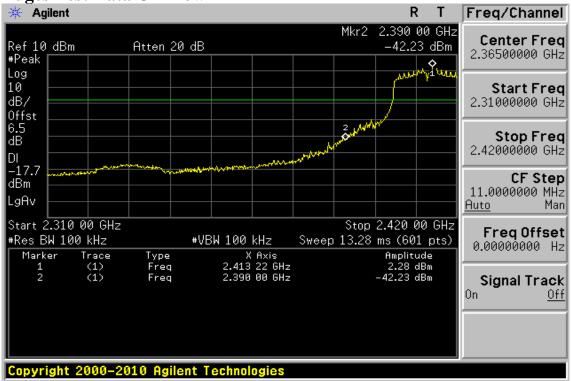


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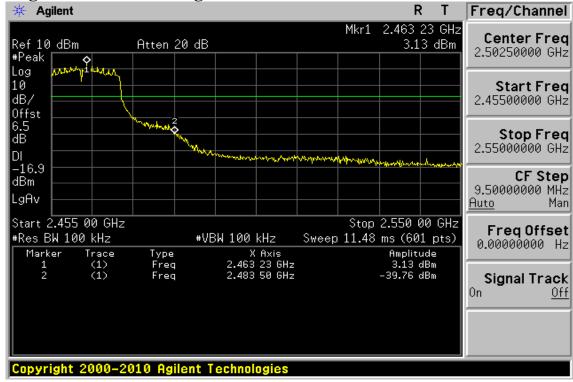
Issue Date: Aug. 22, 2011 Page: 45 of 128

802.11n 20M

Band Edges Test Data CH-Low



Band Edges Test Data CH-High



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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 46 of 128

Radiated Emission: 802.11n 20M mode

Operation Mode TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412 MHz Test By Lion Temperature Pol 27 °C Ver.

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Lim it	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
2390.00	71.65	48.69	-1.06	70.59	47.63	74.00	54.00	-6.37	AV

Operation Mode June 17, 2011 TX CH Low Test Date

Fundamental Frequency 2412 MHz Test By Lion Temperature Pol Hor. 27 °℃

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
	` ,	()	- ()	(== == : : ===)	(=====)	()	,	()	

Remark:

- Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (2) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (3) Spectrum Peak Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz-40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 47 of 128

Radiated Emission: 802.11 n 20M mode

Operation Mode TX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Pol Temperature 27°C Ver.

66 % Humidity

		Peak	\mathbf{AV}		Actu	al FS	Peak	AV		
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
_	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
	2483.50	72.43	49.36	-0.59	71.84	48.77	74.00	54.00	-5.23	AV

Operation Mode TX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Temperature 27 °C Pol Hor.

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	$\mathbf{A}\mathbf{V}$		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)(dBuV/m	(dB)	
2483.50	72.67	49.88	-0.59	72.08	49.29	74.00	54.00	-4.71	AV

Remark:

- Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (3) Spectrum Peak Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200 ms.
- (4) Spectrum AV Setting: 1GHz- 40GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04 **Issue Date: Aug. 22, 2011**

Page: 48 of 128

SPURIOUS RADIATED EMISSION TEST

9.1 Standard Applicable

According to §15.247(c), all other emissions outside these bands shall not exceed the general radiated emission limits specified in §15.209(a). And according to §15.33(a)(1), for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

According to RSS-210 issue 8,§A8.5, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the radio frequency power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under section A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Tables 2 and 3 is not required. In addition, radiated emissions which fall in the restricted bands of Table 1 must also comply with the radiated emission limits specified in Tables 2 and 3.

9.2 Measurement Equipment Used:

9.2.1. Conducted Emission at antenna port:

Refer to section 6.2 for details.

9.2.2. Radiated emission:

Refer to section 7.2 for details.

9.3 Test SET-UP:

9.3.1. Conducted Emission at antenna port:

Refer to section 6.3 for details.

9.3.2. Radiated emission:

Refer to section 7.3 for details.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 49 of 128

9.4 Measurement Procedure:

Radiated Emission:

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 4. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.
- 5. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 6. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 7. Repeat above procedures until all frequency measured were complete.

Conducted Emission:

- To connect Antenna Port of EUT to Spectrum.
- 2. Set RBW = 100K & VBW = 100K on Spectrum.
- Sweep the frequency to determine spurious emission as seen on spectrum from span of 30 to 3G, 3. 3G to 8G, 8G to 13G, 13G to 18G and 18G to 26.5GHz
- 4. Via Software, combine 5 spans of frequency range into one plot

9.5 Field Strength Calculation

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

$$FS = RA + AF + CL - AG$$

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

9.6 Measurement Result:

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

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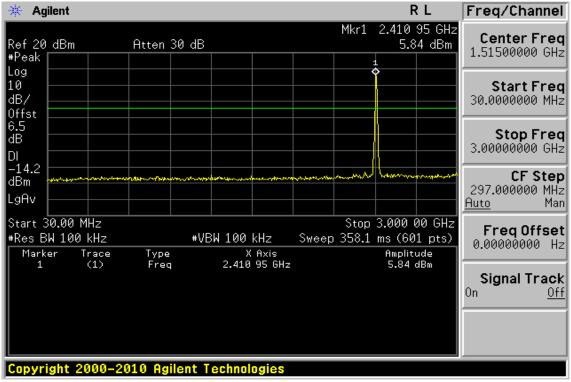
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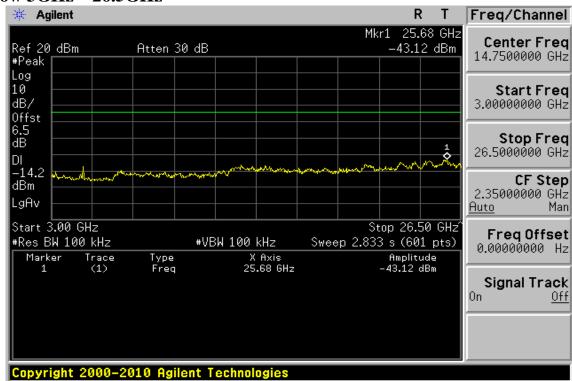
Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 50 of 128

Conducted Spurious Emission Measurement Result (802.11b) Ch Low 30MHz - 3GHz



Ch Low 3GHz – 26.5GHz



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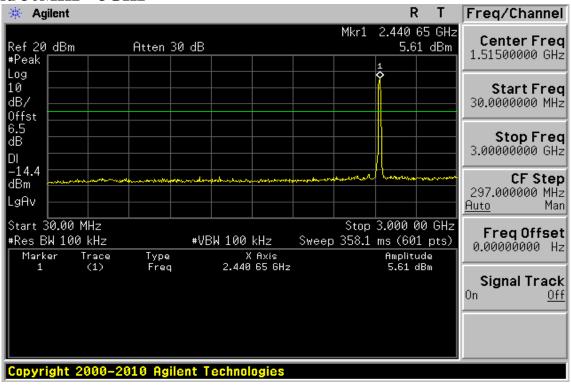


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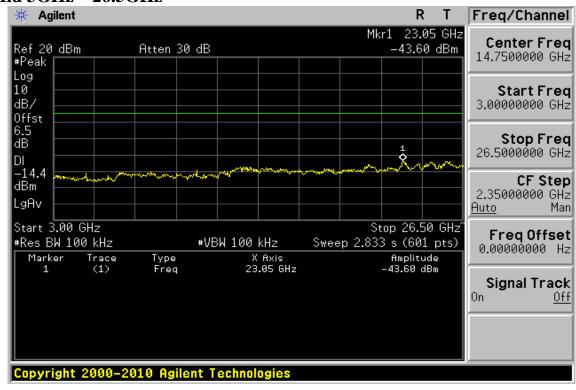
Issue Date: Aug. 22, 2011

Page: 51 of 128

Ch Mid 30MHz – 3GHz



Ch Mid 3GHz – 26.5GHz



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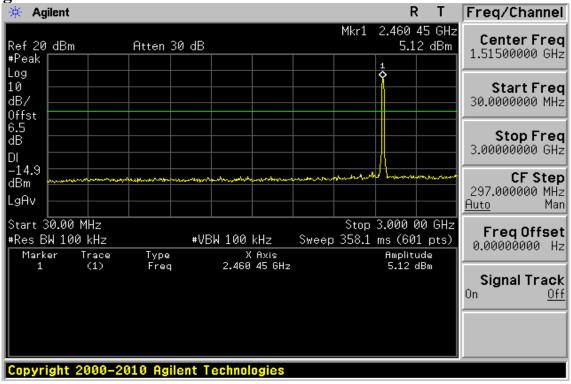


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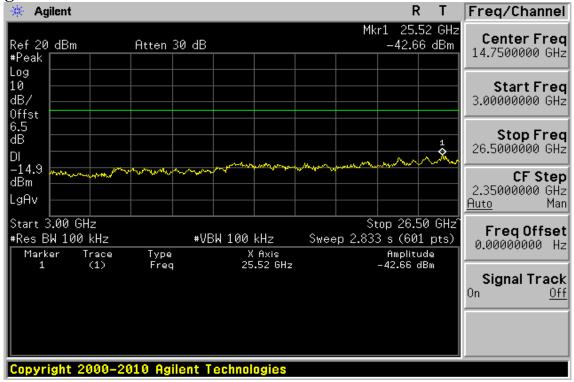
Issue Date: Aug. 22, 2011

Page: 52 of 128

Ch High 30MHz - 3GHz



Ch High 3GHz – 26.5GHz



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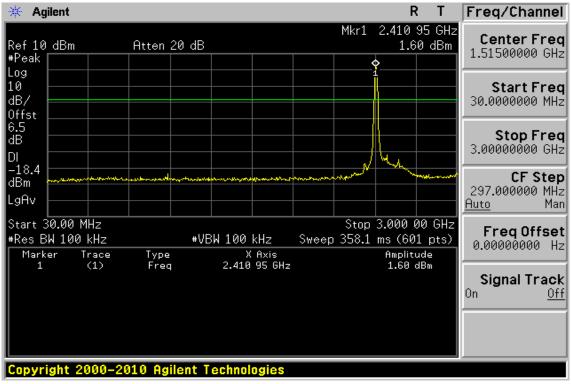
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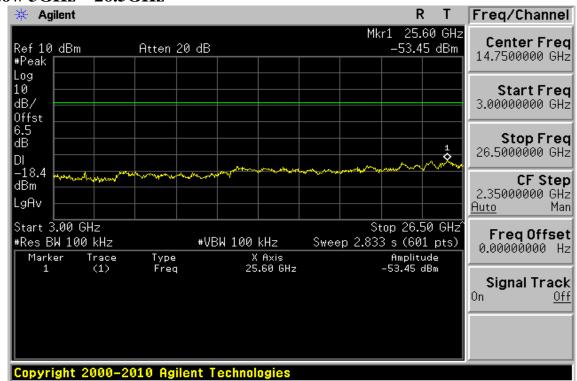
Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 53 of 128

Conducted Spurious Emission Measurement Result (802.11g) Ch Low 30MHz - 3GHz



Ch Low 3GHz – 26.5GHz



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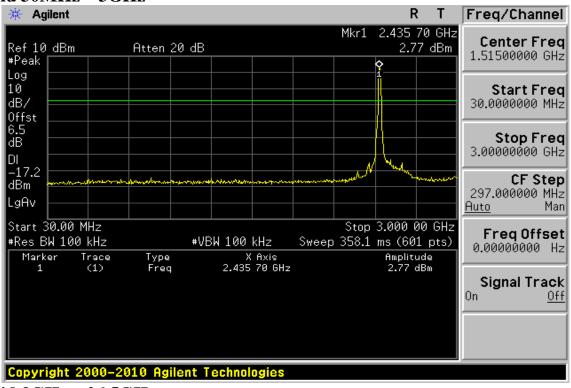


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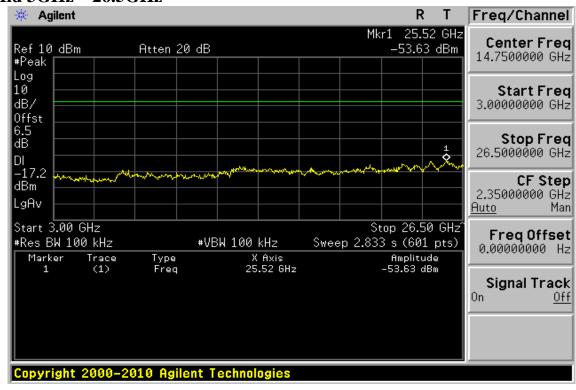
Issue Date: Aug. 22, 2011

Page: 54 of 128

Ch Mid 30MHz – 3GHz



Ch Mid 3GHz – 26.5GHz



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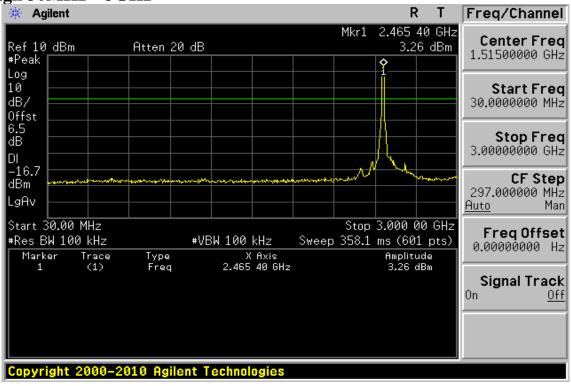


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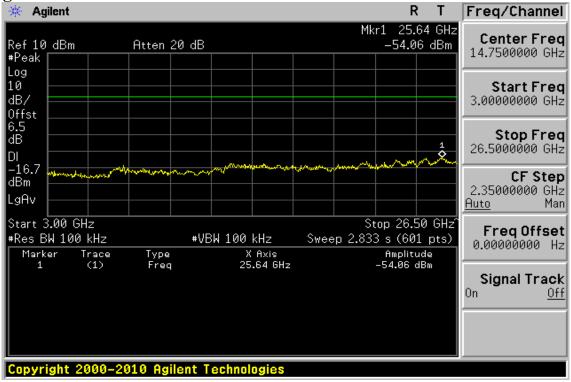
Issue Date: Aug. 22, 2011

Page: 55 of 128

Ch High 30MHz - 3GHz



Ch High 3GHz – 26.5GHz



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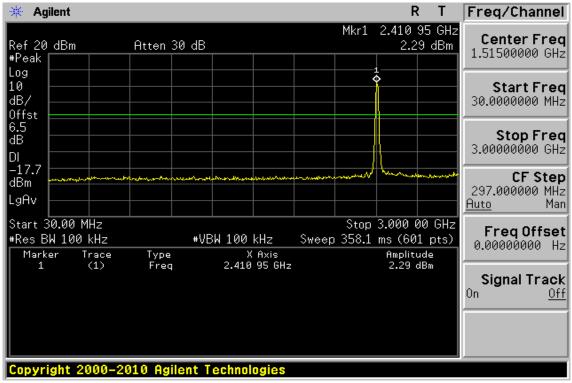


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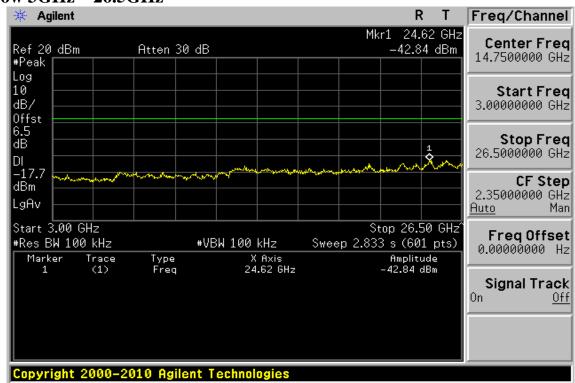
Issue Date: Aug. 22, 2011

Page: 56 of 128

Conducted Spurious Emission Measurement Result (802.11n_20M) Ch Low 30MHz - 3GHz



Ch Low 3GHz – 26.5GHz



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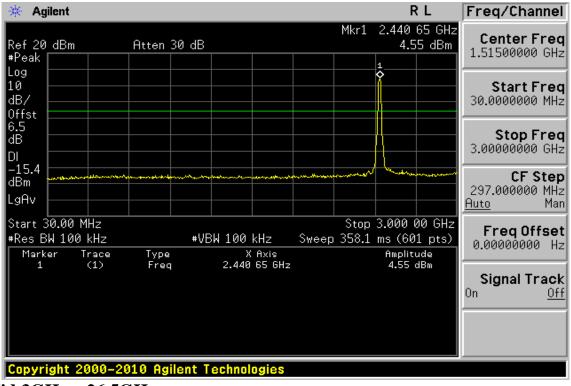


Report No.: EF/2011/60004-04

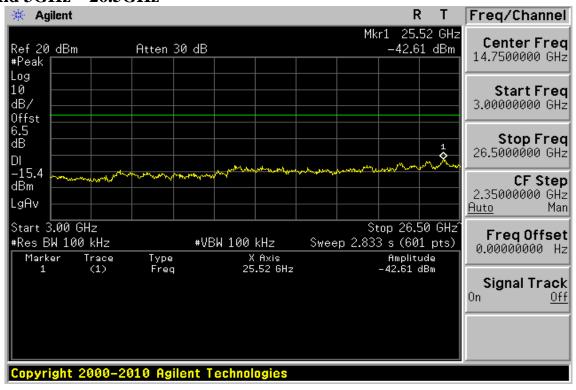
Issue Date: Aug. 22, 2011

Page: 57 of 128

Ch Mid 30MHz – 3GHz



Ch Mid 3GHz – 26.5GHz



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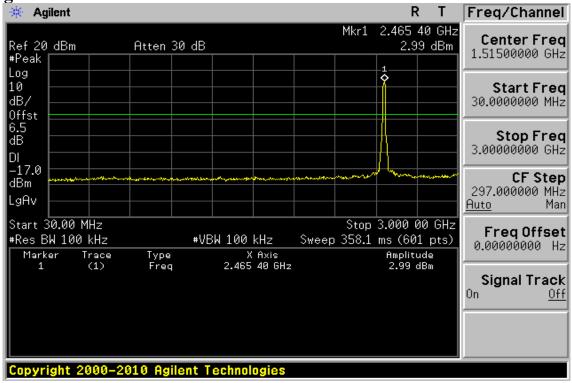


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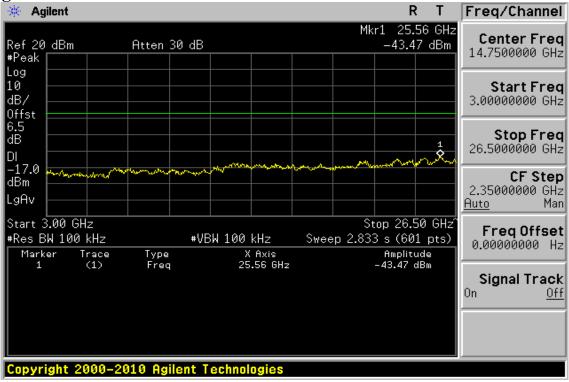
Issue Date: Aug. 22, 2011

Page: 58 of 128

Ch High 30MHz - 3GHz



Ch High 3GHz – 26.5GHz



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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 59 of 128

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode 802.11b TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol Ver./Hor. Temperature

Humidity 66 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	31.00	-14.08	16.92	40.00	-23.08
99.84	V	Peak	32.81	-16.70	16.11	43.50	-27.39
274.44	V	Peak	27.93	-13.06	14.87	46.00	-31.13
378.23	V	Peak	28.09	-11.13	16.96	46.00	-29.04
460.68	V	Peak	28.99	-9.66	19.33	46.00	-26.67
870.99	V	Peak	28.43	-2.86	25.57	46.00	-20.43
44.55	Н	Peak	27.47	-13.62	13.85	40.00	-26.15
148.34	Н	Peak	28.50	-12.36	16.14	43.50	-27.36
286.08	Н	Peak	29.18	-12.81	16.37	46.00	-29.63
394.72	Н	Peak	30.59	-10.97	19.62	46.00	-26.38
500.45	Н	Peak	27.82	-9.09	18.73	46.00	-27.27
889.45	Н	Peak	28.87	-2.56	26.31	46.00	-19.69

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 60 of 128

Operation Mode 802.11b TX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Temperature Pol Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	31.15	-14.08	17.07	40.00	-22.93
158.04	V	Peak	27.37	-12.00	15.37	43.50	-28.13
296.75	V	Peak	27.42	-12.49	14.93	46.00	-31.07
385.99	V	Peak	27.99	-11.06	16.93	46.00	-29.07
498.51	V	Peak	28.71	-9.16	19.55	46.00	-26.45
785.63	V	Peak	29.18	-3.80	25.38	46.00	-20.62
37.76	Н	Peak	28.23	-13.73	14.50	40.00	-25.50
149.31	Н	Peak	28.26	-12.35	15.91	43.50	-27.59
286.08	Н	Peak	30.95	-12.81	18.14	46.00	-27.86
393.75	Н	Peak	31.38	-11.00	20.38	46.00	-25.62
492.69	Н	Peak	28.93	-9.24	19.69	46.00	-26.31
891.36	Н	Peak	28.45	-2.53	25.92	46.00	-20.08

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 61 of 128

Operation Mode 802.11b TX CH High Test Date June 17, 2011

Fundamental Frequency 2462MHz Test By Lion Pol **Temperature** Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	30.53	-14.08	16.45	40.00	-23.55
152.22	V	Peak	28.42	-12.19	16.23	43.50	-27.27
269.59	V	Peak	27.85	-13.23	14.62	46.00	-31.38
397.63	V	Peak	27.52	-10.92	16.60	46.00	-29.40
498.51	V	Peak	29.08	-9.16	19.92	46.00	-26.08
897.18	V	Peak	27.94	-2.42	25.52	46.00	-20.48
40.67	Н	Peak	28.30	-13.38	14.92	40.00	-25.08
152.22	Н	Peak	27.91	-12.19	15.72	43.50	-27.78
286.08	Н	Peak	29.41	-12.81	16.60	46.00	-29.40
393.75	Н	Peak	31.36	-11.00	20.36	46.00	-25.64
496.57	Н	Peak	28.38	-9.19	19.19	46.00	-26.81
889.42	Н	Peak	28.05	-2.56	25.49	46.00	-20.51

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 62 of 128

Operation Mode 802.11g TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol Temperature Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
99.84	V	Peak	32.43	-16.70	15.73	43.50	-27.77
154.16	V	Peak	27.59	-12.18	15.41	43.50	-28.09
278.32	V	Peak	27.94	-13.01	14.93	46.00	-31.07
373.38	V	Peak	28.56	-11.18	17.38	46.00	-28.62
495.60	V	Peak	28.03	-9.21	18.82	46.00	-27.18
883.60	V	Peak	27.86	-2.66	25.20	46.00	-20.80
43.58	Н	Peak	27.80	-13.62	14.18	40.00	-25.82
157.07	Н	Peak	28.06	-12.00	16.06	43.50	-27.44
286.08	Н	Peak	30.03	-12.81	17.22	46.00	-28.78
394.72	Н	Peak	30.49	-10.70	19.79	46.00	-26.21
499.48	Н	Peak	28.18	-9.16	19.02	46.00	-26.98
874.87	Н	Peak	28.77	-2.81	25.96	46.00	-20.04

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 63 of 128

Operation Mode 802.11g TX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Pol Temperature Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	30.84	-14.08	16.76	40.00	-23.24
151.25	V	Peak	28.03	-12.20	15.83	43.50	-27.67
297.72	V	Peak	28.03	-12.49	15.54	46.00	-30.46
389.87	V	Peak	27.99	-11.03	16.96	46.00	-29.04
467.47	V	Peak	28.71	-9.61	19.10	46.00	-26.90
886.51	V	Peak	28.00	-2.61	25.39	46.00	-20.61
43.58	Н	Peak	29.15	-13.62	15.53	40.00	-24.47
162.89	Н	Peak	28.34	-12.16	16.18	43.50	-27.32
286.08	Н	Peak	29.56	-12.81	16.75	46.00	-29.25
393.75	Н	Peak	30.47	-11.00	19.47	46.00	-26.53
498.51	Н	Peak	28.36	-9.16	19.20	46.00	-26.80
802.12	Н	Peak	28.83	-3.64	25.19	46.00	-20.81

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Ver./Hor.

Issue Date: Aug. 22, 2011

Page: 64 of 128

Pol

Operation Mode 802.11g TX CH High Test Date June 17, 2011 Fundamental Frequency 2462MHz Test By Lion

Temperature 27 66 % Humidity

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
99.84	V	Peak	32.03	-16.70	15.33	43.50	-28.17
161.92	V	Peak	27.76	-12.16	15.60	43.50	-27.90
296.75	V	Peak	26.86	-12.49	14.37	46.00	-31.63
381.14	V	Peak	27.86	-11.11	16.75	46.00	-29.25
491.72	V	Peak	29.70	-9.26	20.44	46.00	-25.56
843.83	V	Peak	28.89	-3.31	25.58	46.00	-20.42
45.52	Н	Peak	28.07	-13.75	14.32	40.00	-25.68
160.95	Н	Peak	28.45	-11.98	16.47	43.50	-27.03
286.08	Н	Peak	29.69	-12.81	16.88	46.00	-29.12
394.72	Н	Peak	30.53	-10.97	19.56	46.00	-26.44
471.35	Н	Peak	28.43	-9.58	18.85	46.00	-27.15
838.01	Н	Peak	28.90	-3.34	25.56	46.00	-20.44

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 65 of 128

Operation Mode 802.11n 20M TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Temperature Pol Ver./Hor 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	29.73	-14.08	15.65	40.00	-24.35
143.49	V	Peak	29.13	-12.80	16.33	43.50	-27.17
292.87	V	Peak	28.54	-12.59	15.95	46.00	-30.05
394.72	V	Peak	27.72	-10.97	16.75	46.00	-29.25
430.61	V	Peak	30.22	-10.25	19.97	46.00	-26.03
888.45	V	Peak	27.87	-2.57	25.30	46.00	-20.70
43.58	Н	Peak	28.09	-13.62	14.47	40.00	-25.53
152.22	Н	Peak	28.71	-12.19	16.52	43.50	-26.98
286.08	Н	Peak	29.74	-12.81	16.93	46.00	-29.07
394.72	Н	Peak	31.79	-10.97	20.82	46.00	-25.18
496.57	Н	Peak	29.83	-9.19	20.64	46.00	-25.36
853.53	Н	Peak	28.67	-3.16	25.51	46.00	-20.49

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 66 of 128

Operation Mode 802.11n 20M TX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Temperature Pol Ver./Hor 27 66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
99.84	V	Peak	32.72	-16.70	16.02	43.50	-27.48
154.16	V	Peak	29.12	-12.18	16.94	43.50	-26.56
293.84	V	Peak	27.70	-12.58	15.12	46.00	-30.88
363.68	V	Peak	28.59	-11.37	17.22	46.00	-28.78
495.60	V	Peak	28.52	-9.21	19.31	46.00	-26.69
891.36	V	Peak	28.23	-2.53	25.70	46.00	-20.30
41.64	Н	Peak	27.84	-13.51	14.33	40.00	-25.67
159.98	Н	Peak	26.95	-11.98	14.97	43.50	-28.53
286.08	Н	Peak	29.49	-12.81	16.68	46.00	-29.32
393.75	Н	Peak	31.61	-11.00	20.61	46.00	-25.39
455.83	Н	Peak	29.24	-9.73	19.51	46.00	-26.49
872.93	Н	Peak	29.35	-2.84	26.51	46.00	-19.49

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 67 of 128

Operation Mode 802.11n_20M TX CH High Test Date June 17, 2011

Fundamental Frequency 2462MHz Test By Lion Temperature Pol Ver./Hor 27 66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	29.68	-14.08	15.60	40.00	-24.40
128.94	V	Peak	30.47	-13.97	16.50	43.50	-27.00
289.96	V	Peak	27.43	-12.68	14.75	46.00	-31.25
377.26	V	Peak	28.15	-11.15	17.00	46.00	-29.00
458.74	V	Peak	29.76	-9.68	20.08	46.00	-25.92
886.51	V	Peak	28.46	-2.61	25.85	46.00	-20.15
51.34	Н	Peak	27.76	-13.93	13.83	40.00	-26.17
145.43	Н	Peak	28.81	-12.65	16.16	43.50	-27.34
286.08	Н	Peak	29.15	-12.81	16.34	46.00	-29.66
393.75	Н	Peak	30.88	-11.00	19.88	46.00	-26.12
465.53	Н	Peak	28.67	-9.63	19.04	46.00	-26.96
895.24	Н	Peak	28.10	-2.45	25.65	46.00	-20.35

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 68 of 128

Radiated Spurious Emission Measurement Result (above 1GHz)

802.11b TX CH Low Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2412MHz Test By Lion Pol **Temperature** Ver. 27

Humidity 66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3216.5	31.71		0.77	32.48		74.00	54.00	-21.52	Peak
4822.0	31.67		5.30	36.97		74.00	54.00	-17.03	Peak
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		
14472.0						74.00	54.00		
16884.0						74.00	54.00		
19296.0						74.00	54.00		
21708.0						74.00	54.00		
24120.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 69 of 128

802.11b TX CH Low Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2412MHz Test By Lion Pol **Temperature** Hor. 27

66 % Humidity

	Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3216.5	25.63		0.77	26.40		74.00	54.00	-27.60	Peak
4822.0	26.37		5.30	31.67		74.00	54.00	-22.33	Peak
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		
14472.0						74.00	54.00		
16884.0						74.00	54.00		
19296.0						74.00	54.00		
21708.0						74.00	54.00		
24120.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 70 of 128

802.11b TX CH Mid Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2437MHz Test By Lion Pol **Temperature** Ver. 27

Humidity 66 %

	Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3249.0	33.26		0.65	33.91		74.00	54.00	-20.09	Peak
4874.0	29.53		5.43	34.96		74.00	54.00	-19.04	Peak
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		
14622.0						74.00	54.00		
17059.0						74.00	54.00		
19496.0						74.00	54.00		
21933.0						74.00	54.00		
24370.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 71 of 128

Operation Mode 802.11b TX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Pol Temperature Hor. 27

66 % Humidity

		Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
_	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
	3249.0	26.82		0.65	27.47		74.00	54.00	-26.53	Peak
	4874.0	26.24		5.43	31.67		74.00	54.00	-22.33	Peak
	7311.0						74.00	54.00		
	9748.0						74.00	54.00		
	12185.0						74.00	54.00		
	14622.0						74.00	54.00		
	17059.0						74.00	54.00		
	19496.0						74.00	54.00		
	21933.0						74.00	54.00		
	24370.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Report No.: EF/2011/60004-04

June 17, 2011

Lion

Ver.

Issue Date: Aug. 22, 2011

Page: 72 of 128

Test Date

802.11b TX CH High Operation Mode

Fundamental Frequency 2462MHz Test By Pol **Temperature**

27 66 % Humidity

	Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3281.5	32.92		0.49	33.41		74.00	54.00	-20.59	Peak
4926.0	35.67		5.56	41.23		74.00	54.00	-12.77	Peak
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		
14772.0						74.00	54.00		
17234.0						74.00	54.00		
19696.0						74.00	54.00		
22158.0						74.00	54.00		
24620.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 73 of 128

802.11b TX CH High Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2462MHz Test By Lion Pol **Temperature** Hor. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3281.5	27.48		0.49	27.97		74.00	54.00	-26.03	Peak
4926.0	30.80		5.56	36.36		74.00	54.00	-17.64	Peak
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		
14772.0						74.00	54.00		
17234.0						74.00	54.00		
19696.0						74.00	54.00		
22158.0						74.00	54.00		
24620.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 74 of 128

Operation Mode 802.11g TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol **Temperature** Ver. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3216.5	32.34		0.77	33.11		74.00	54.00	-20.89	Peak
4824.0						74.00	54.00		
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		
14472.0						74.00	54.00		
16884.0						74.00	54.00		
19296.0						74.00	54.00		
21708.0						74.00	54.00		
24120.0						74.00	54.00		

Remark:

- Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental (1) frequency
- Data of measurement within this frequency range shown " " in the table above means (2) the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 (5) ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 75 of 128

802.11g TX CH Low Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2412MHz Test By Lion Pol **Temperature** Hor. 27

66 % Humidity

	Peak	\mathbf{AV}		Actual FS		Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3216.5	26.85		0.77	27.62		74.00	54.00	-26.38	Peak
4824.0						74.00	54.00		
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		
14472.0						74.00	54.00		
16884.0						74.00	54.00		
19296.0						74.00	54.00		
21708.0						74.00	54.00		
24120.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 76 of 128

802.11g TX CH Mid Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2437MHz Test By Lion Pol **Temperature** Ver. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3249.0	32.44		0.65	33.09		74.00	54.00	-20.91	Peak
4874.0						74.00	54.00		
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		
14622.0						74.00	54.00		
17059.0						74.00	54.00		
19496.0						74.00	54.00		
21933.0						74.00	54.00		
24370.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 77 of 128

802.11g TX CH Mid Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2437MHz Test By Lion Pol **Temperature** Hor. 27

66 % Humidity

		Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
_	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
	3249.0	24.92		0.65	25.57		74.00	54.00	-28.43	Peak
	4874.0						74.00	54.00		
	7311.0						74.00	54.00		
	9748.0						74.00	54.00		
	12185.0						74.00	54.00		
	14622.0						74.00	54.00		
	17059.0						74.00	54.00		
	19496.0						74.00	54.00		
	21933.0						74.00	54.00		
	24370.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 78 of 128

802.11g TX CH High Operation Mode

Fundamental Frequency 2462MHz

Temperature 27 66 % Humidity

Test Date June 17, 2011

Test By Lion Pol Ver.

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3281.5	31.99		0.49	32.48		74.00	54.00	-21.52	Peak
4924.0						74.00	54.00		
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		
14772.0						74.00	54.00		
17234.0						74.00	54.00		
19696.0						74.00	54.00		
22158.0						74.00	54.00		
24620.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 79 of 128

802.11g TX CH High Test Date June 17, 2011 Operation Mode

Fundamental Frequency 2462MHz Test By Lion Pol **Temperature** Hor. 27

66 % Humidity

		Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
	Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
_	(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
	3281.5	26.01		0.49	26.50		74.00	54.00	-27.50	Peak
	4924.0						74.00	54.00		
	7386.0						74.00	54.00		
	9848.0						74.00	54.00		
	12310.0						74.00	54.00		
	14772.0						74.00	54.00		
	17234.0						74.00	54.00		
	19696.0						74.00	54.00		
	22158.0						74.00	54.00		
	24620.0						74.00	54.00		

Remark:

- (1) Measuring frequencies scanned from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- (4) Spectrum Peak Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 3MHz, Sweep time= 200
- (5) Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 80 of 128

Operation Mode 802.11n 20M TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol Temperature Ver. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3216.5	31.15		0.77	31.92		74.00	54.00	-22.08	Peak
4824.0						74.00	54.00		
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		
14472.0						74.00	54.00		
16884.0						74.00	54.00		
19296.0						74.00	54.00		
21708.0						74.00	54.00		
24120.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 81 of 128

Operation Mode 802.11n 20M TX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol Temperature Hor 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3216.5	27.21		0.77	27.98		74.00	54.00	-26.02	Peak
4824.0						74.00	54.00		
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		
14472.0						74.00	54.00		
16884.0						74.00	54.00		
19296.0						74.00	54.00		
21708.0						74.00	54.00		
24120.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04 **Issue Date: Aug. 22, 2011**

Page: 82 of 128

Operation Mode 802.11n 20M TX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Pol Temperature Ver 27

66 % Humidity

Remark
Peak
-

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 83 of 128

Operation Mode 802.11n 20M TX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Pol Temperature Hor 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3249.0	24.90		0.65	25.55		74.00	54.00	-28.45	Peak
4874.0						74.00	54.00		
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		
14622.0						74.00	54.00		
17059.0						74.00	54.00		
19496.0						74.00	54.00		
21933.0						74.00	54.00		
24370.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 84 of 128

Operation Mode 802.11n 20M TX CH High Test Date June 17, 2011

Fundamental Frequency 2462MHz Test By Lion Pol Temperature Ver 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3281.5	32.40		0.49	32.89		74.00	54.00	-21.11	Peak
4924.0						74.00	54.00		
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		
14772.0						74.00	54.00		
17234.0						74.00	54.00		
19696.0						74.00	54.00		
22158.0						74.00	54.00		
24620.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 85 of 128

Operation Mode 802.11n 20M TX CH High Test Date June 17, 2011

Fundamental Frequency 2462MHz Test By Lion Pol Temperature Hor 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
3281.5	28.00		0.49	28.49		74.00	54.00	-25.51	Peak
4924.0						74.00	54.00		
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		
14772.0						74.00	54.00		
17234.0						74.00	54.00		
19696.0						74.00	54.00		
22158.0						74.00	54.00		
24620.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 86 of 128

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode 802.11b RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol **Temperature** Ver./Hor. 27

Humidity 66 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	29.87	-14.08	15.79	40.00	-24.21
153.19	V	Peak	27.81	-12.18	15.63	43.50	-27.87
256.01	V	Peak	27.96	-13.76	14.20	46.00	-31.80
332.64	V	Peak	28.82	-11.83	16.99	46.00	-29.01
500.45	V	Peak	29.15	-9.09	20.06	46.00	-25.94
899.12	V	Peak	29.37	-2.33	27.04	46.00	-18.96
49.40	Н	Peak	28.04	-13.93	14.11	40.00	-25.89
164.83	Н	Peak	27.87	-12.34	15.53	43.50	-27.97
286.08	Н	Peak	29.42	-12.81	16.61	46.00	-29.39
395.69	Н	Peak	32.13	-10.94	21.19	46.00	-24.81
496.57	Н	Peak	28.57	-9.19	19.38	46.00	-26.62
896.21	Н	Peak	28.55	-2.42	26.13	46.00	-19.87

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 87 of 128

Operation Mode 802.11b RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Temperature Pol Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
99.84	V	Peak	33.46	-16.70	16.76	43.50	-26.74
152.22	V	Peak	28.95	-12.19	16.76	43.50	-26.74
295.78	V	Peak	29.02	-12.54	16.48	46.00	-29.52
395.69	V	Peak	28.36	-10.94	17.42	46.00	-28.58
462.62	V	Peak	28.88	-9.65	19.23	46.00	-26.77
877.78	V	Peak	28.16	-2.77	25.39	46.00	-20.61
45.52	Н	Peak	28.15	-13.75	14.40	40.00	-25.60
156.10	Н	Peak	27.72	-12.01	15.71	43.50	-27.79
286.08	H	Peak	30.06	-12.81	17.25	46.00	-28.75
395.69	H	Peak	31.28	-10.94	20.34	46.00	-25.66
495.60	Н	Peak	28.17	-9.21	18.96	46.00	-27.04
841.89	Н	Peak	29.41	-3.33	26.08	46.00	-19.92

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

June 17, 2011

Issue Date: Aug. 22, 2011

Page: 88 of 128

Operation Mode 802.11b RX CH High Test Date

Fundamental Frequency 2462MHz Test By Lion Pol **Temperature** Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
99.84	V	Peak	32.31	-16.70	15.61	43.50	-27.89
168.71	V	Peak	28.47	-12.72	15.75	43.50	-27.75
299.66	V	Peak	27.16	-12.45	14.71	46.00	-31.29
387.93	V	Peak	27.74	-11.04	16.70	46.00	-29.30
498.51	V	Peak	28.20	-9.16	19.04	46.00	-26.96
889.42	V	Peak	28.92	-2.56	26.36	46.00	-19.64
39.70	Н	Peak	27.74	-13.38	14.36	40.00	-25.64
148.34	Н	Peak	28.31	-12.36	15.95	43.50	-27.55
286.08	Н	Peak	30.14	-12.81	17.33	46.00	-28.67
393.75	Н	Peak	30.87	-11.00	19.87	46.00	-26.13
499.48	Н	Peak	28.55	-9.16	19.39	46.00	-26.61
894.27	Н	Peak	27.44	-2.46	24.98	46.00	-21.02

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 89 of 128

Operation Mode 802.11g RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol **Temperature** Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	29.72	-14.08	15.64	40.00	-24.36
145.43	V	Peak	29.11	-12.65	16.46	43.50	-27.04
293.84	V	Peak	27.13	-12.58	14.55	46.00	-31.45
385.99	V	Peak	28.07	-11.06	17.01	46.00	-28.99
491.72	V	Peak	29.78	-9.26	20.52	46.00	-25.48
873.90	V	Peak	28.46	-2.83	25.63	46.00	-20.37
52.31	Н	Peak	28.88	-13.92	14.96	40.00	-25.04
153.19	Н	Peak	27.55	-12.18	15.37	43.50	-28.13
286.08	Н	Peak	29.89	-12.81	17.08	46.00	-28.92
394.72	Н	Peak	31.35	-10.97	20.38	46.00	-25.62
464.56	Н	Peak	29.04	-9.63	19.41	46.00	-26.59
893.30	Н	Peak	28.67	-2.49	26.18	46.00	-19.82

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 90 of 128

Operation Mode 802.11g RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Pol **Temperature** Ver./Hor. 27 66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
99.84	V	Peak	32.20	-16.70	15.50	43.50	-28.00
154.16	V	Peak	28.09	-12.18	15.91	43.50	-27.59
294.81	V	Peak	27.06	-12.54	14.52	46.00	-31.48
393.75	V	Peak	27.45	-11.00	16.45	46.00	-29.55
491.72	V	Peak	28.23	-9.26	18.97	46.00	-27.03
887.48	V	Peak	27.85	-2.60	25.25	46.00	-20.75
48.43	Н	Peak	28.50	-13.85	14.65	40.00	-25.35
156.10	Н	Peak	27.94	-12.01	15.93	43.50	-27.57
286.08	Н	Peak	29.53	-12.81	16.72	46.00	-29.28
391.81	Н	Peak	30.81	-11.01	19.80	46.00	-26.20
484.93	Н	Peak	28.95	-9.35	19.60	46.00	-26.40
897.18	Н	Peak	28.07	-2.42	25.65	46.00	-20.35

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

June 17, 2011

Issue Date: Aug. 22, 2011

Page: 91 of 128

Operation Mode 802.11g RX CH High Test Date

Fundamental Frequency 2462MHz Test By Lion Pol **Temperature** Ver./Hor. 27

66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
99.84	V	Peak	32.72	-16.70	16.02	43.50	-27.48
153.19	V	Peak	27.68	-12.18	15.50	43.50	-28.00
291.90	V	Peak	27.40	-12.64	14.76	46.00	-31.24
373.38	V	Peak	28.14	-11.18	16.96	46.00	-29.04
494.63	V	Peak	28.74	-9.21	19.53	46.00	-26.47
884.57	V	Peak	28.23	-2.64	25.59	46.00	-20.41
30.00	Н	Peak	29.04	-14.25	14.79	40.00	-25.21
154.16	Н	Peak	28.30	-12.18	16.12	43.50	-27.38
286.08	Н	Peak	31.12	-12.81	18.31	46.00	-27.69
395.69	Н	Peak	32.19	-10.94	21.25	46.00	-24.75
491.72	Н	Peak	28.31	-9.26	19.05	46.00	-26.95
882.63	H	Peak	27.64	-2.67	24.97	46.00	-21.03

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 92 of 128

Operation Mode 802.11n 20M RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Temperature Pol Ver./Hor 27

66 % Humidity

Freq.	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
53.28	V	Peak	31.16	-14.08	17.08	40.00	-22.92
154.16	V	Peak	28.47	-12.18	16.29	43.50	-27.21
283.17	V	Peak	27.25	-12.86	14.39	46.00	-31.61
386.96	V	Peak	28.07	-11.07	17.00	46.00	-29.00
460.68	V	Peak	29.12	-9.66	19.46	46.00	-26.54
888.45	V	Peak	27.95	-2.57	25.38	46.00	-20.62
60.07	Н	Peak	29.05	-14.52	14.53	40.00	-25.47
160.95	Н	Peak	28.50	-11.98	16.52	43.50	-26.98
286.08	Н	Peak	29.45	-12.81	16.64	46.00	-29.36
391.81	Н	Peak	30.31	-11.01	19.30	46.00	-26.70
500.45	Н	Peak	29.05	-9.09	19.96	46.00	-26.04
885.54	Н	Peak	27.89	-2.64	25.25	46.00	-20.75

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 93 of 128

Operation Mode 802.11n 20M RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion **Temperature** Pol Ver./Hor 27 66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	29.69	-14.08	15.61	40.00	-24.39
148.34	V	Peak	28.67	-12.36	16.31	43.50	-27.19
296.75	V	Peak	27.43	-12.49	14.94	46.00	-31.06
373.38	V	Peak	27.90	-11.18	16.72	46.00	-29.28
492.69	V	Peak	28.60	-9.24	19.36	46.00	-26.64
878.75	V	Peak	28.69	-2.74	25.95	46.00	-20.05
31.94	Н	Peak	28.85	-14.19	14.66	40.00	-25.34
157.07	Н	Peak	27.84	-12.00	15.84	43.50	-27.66
286.08	Н	Peak	28.85	-12.81	16.04	46.00	-29.96
393.75	Н	Peak	32.04	-11.00	21.04	46.00	-24.96
495.60	Н	Peak	28.12	-9.21	18.91	46.00	-27.09
884.57	Н	Peak	28.37	-2.64	25.73	46.00	-20.27

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

June 17, 2011

Issue Date: Aug. 22, 2011

Page: 94 of 128

Operation Mode 802.11n_20M RX CH High Test Date

Fundamental Frequency 2462MHz Test By Lion Pol **Temperature** Ver./Hor 27 66 % Humidity

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
53.28	V	Peak	31.96	-14.08	17.88	40.00	-22.12
149.31	V	Peak	28.55	-12.35	16.20	43.50	-27.30
285.11	V	Peak	27.70	-12.81	14.89	46.00	-31.11
378.23	V	Peak	28.50	-11.13	17.37	46.00	-28.63
464.56	V	Peak	28.99	-9.63	19.36	46.00	-26.64
892.33	V	Peak	28.26	-2.50	25.76	46.00	-20.24
39.70	Н	Peak	28.43	-13.38	15.05	40.00	-24.95
154.16	Н	Peak	27.86	-12.18	15.68	43.50	-27.82
286.08	Н	Peak	30.02	-12.81	17.21	46.00	-28.79
394.72	Н	Peak	30.53	-10.97	19.56	46.00	-26.44
482.02	Н	Peak	29.02	-9.40	19.62	46.00	-26.38
835.10	Н	Peak	28.40	-3.35	25.05	46.00	-20.95

Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz_o
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/QP detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 95 of 128

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode 802.11b RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412 MHz Test By Lion Pol **Temperature** Ver. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0						74.00	54.00		
4991.0	23.70		5.70	29.40		74.00	54.00	-24.60	Peak
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time= 200 ms.
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 96 of 128

Operation Mode 802.11b RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412 MHz Test By Lion Pol Temperature Hor. 27 66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0						74.00	54.00		
4984.5	23.92		5.66	29.58		74.00	54.00	-24.42	Peak
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 97 of 128

Operation Mode 802.11b RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437 MHz Test By Lion Pol Temperature Ver. 27 66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4874.0						74.00	54.00		
4900.0	24.17		5.44	29.61		74.00	54.00	-24.39	Peak
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 98 of 128

Operation Mode 802.11b RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437 MHz Test By Lion Pol Temperature Hor. 27 66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4744.0	24.43		5.02	29.45		74.00	54.00	-24.55	Peak
4874.0						74.00	54.00		
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 99 of 128

Operation Mode 802.11b RX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Pol Temperature Ver. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4770.0	25.31		5.10	30.41		74.00	54.00	-23.59	Peak
4924.0						74.00	54.00		
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 100 of 128

Operation Mode 802.11b RX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Pol Temperature Hor. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4924.0						74.00	54.00		
4991.0	24.58		5.70	30.28		74.00	54.00	-23.72	Peak
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 101 of 128

Operation Mode 802.11g RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412 MHz Test By Lion Pol Temperature Ver. 27 66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4562.0	24.74		4.56	29.30		74.00	54.00	-24.70	Peak
4824.0						74.00	54.00		
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 102 of 128

Operation Mode 802.11g RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412 MHz Test By Lion Pol Temperature Hor. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0						74.00	54.00		
4919.5	24.59		5.50	30.09		74.00	54.00	-23.91	Peak
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 103 of 128

Operation Mode 802.11g RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437 MHz Test By Lion Pol Temperature Ver. 27 66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4828.5	24.93		5.24	30.17		74.00	54.00	-23.83	Peak
4874.0						74.00	54.00		
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 104 of 128

Operation Mode 802.11g RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437 MHz Test By Lion Pol Temperature Hor. 27 66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4828.5	24.56		5.24	29.80		74.00	54.00	-24.20	Peak
4874.0						74.00	54.00		
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 105 of 128

Operation Mode 802.11g RX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Pol Temperature Ver. 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4737.5	24.57		5.00	29.57		74.00	54.00	-24.43	Peak
4924.0						74.00	54.00		
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		

Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 106 of 128

Operation Mode 802.11g RX CH High Test Date June 17, 2011

Fundamental Frequency 2462 MHz Test By Lion Pol Temperature Hor. 27

66 %

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4924.0						74.00	54.00		
4965.0	23.40		5.61	29.01		74.00	54.00	-24.99	Peak
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		

Remark:

Humidity

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- (2) Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column_o
- (4) Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=
- (5) Spectrum AV Setting: 1GHz-26GHz, RBW=1MHz, VBW=10Hz, Sweep time= 200 ms.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 107 of 128

Operation Mode 802.11n 20M RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol Temperature Ver. 27 66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4809.0	23.99		5.19	29.18		74.00	54.00	-24.82	Peak
4824.0						74.00	54.00		
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04 **Issue Date: Aug. 22, 2011**

Page: 108 of 128

Operation Mode 802.11n 20M RX CH Low Test Date June 17, 2011

Fundamental Frequency 2412MHz Test By Lion Pol Temperature Hor 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4824.0						74.00	54.00		
4854.5	23.82		5.33	29.15		74.00	54.00	-24.85	Peak
7236.0						74.00	54.00		
9648.0						74.00	54.00		
12060.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 109 of 128

Operation Mode 802.11n 20M RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Pol Temperature Ver 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4588.0	24.83		4.60	29.43		74.00	54.00	-24.57	Peak
4874.0						74.00	54.00		
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 110 of 128

Operation Mode 802.11n 20M RX CH Mid Test Date June 17, 2011

Fundamental Frequency 2437MHz Test By Lion Pol Temperature Hor 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4757.0	24.29		5.05	29.34		74.00	54.00	-24.66	Peak
4874.0						74.00	54.00		
7311.0						74.00	54.00		
9748.0						74.00	54.00		
12185.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- 3 Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
- 4 Spectrum Peak Setting: 1GHz-26GHz, RBW=1MHz, VBW=3MHz, Sweep time=200
- 5 Spectrum AV Setting: 1GHz- 26GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 111 of 128

Operation Mode 802.11n 20M RX CH High Test Date June 17, 2011

Fundamental Frequency 2462MHz Test By Lion Pol Temperature Ver 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4841.5	24.01		5.28	29.29		74.00	54.00	-24.71	Peak
4924.0						74.00	54.00		
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Data of measurement within this frequency range shown " " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 112 of 128

Operation Mode 802.11n 20M RX CH High Test Date June 17, 2011

Fundamental Frequency 2462MHz Test By Lion Pol Temperature Hor 27

66 % Humidity

	Peak	\mathbf{AV}		Actu	al FS	Peak	\mathbf{AV}		
Freq.	Reading	Reading	Ant./CL	Peak	\mathbf{AV}	Limit	Limit	Margin	Remark
(MHz)	(dBuV)	(dBuV)	CF(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
4588.0	24.58		4.60	29.18		74.00	54.00	-24.82	Peak
4924.0						74.00	54.00		
7386.0						74.00	54.00		
9848.0						74.00	54.00		
12310.0						74.00	54.00		

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 113 of 128

10 PEAK POWER SPECTRAL DENSITY

10.1 Standard Applicable:

According to §15.247(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

According to RSS-210 issue 8, §A8.2(b) The transmitter power spectral density (into the antenna) shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission or over 1.0 second if the transmission exceeds 1.0 second duration.

10.2 Measurement Equipment Used:

Refer to section 6.2 for details.

10.3 Test Set-up:

Refer to section 6.3 for details.

10.4 Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW = 3KHz, VBW = 10KHz, Span = 300KHz, Sweep=100s
- 4. Record the max. reading.
- 5. Repeat above procedures until all frequency measured were complete.

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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 114 of 128

10.5 **Measurement Result:**

802.11b

Frequency	RF Power Density	RF Power Density	Maximum Limit
MHz	Reading (dBm)	Level (dBm)	(dBm)
2412	-9.40	-9.40	8
2437	-6.48	-6.48	8
2462	-7.45	-7.45	8

802.11g

Frequency	RF Power Density	RF Power Density	Maximum Limit
MHz	Reading (dBm)	Level (dBm)	(dBm)
2412	-11.20	-11.20	8
2437	-9.56	-9.56	8
2462	-8.58	-8.58	8

802.11n 20M

Frequency MHz	RF Power Density Reading (dBm)	RF Power Density Level (dBm)	Maximum Limit (dBm)
2412	-11.34	-11.34	8
2437	-10.14	-10.14	8
2462	-10.09	-10.09	8

*Note: Offset 6.5 dB = Attenuator 6.0 dB + Cable loss 0.5dB

Note: Refer to next page for plots.

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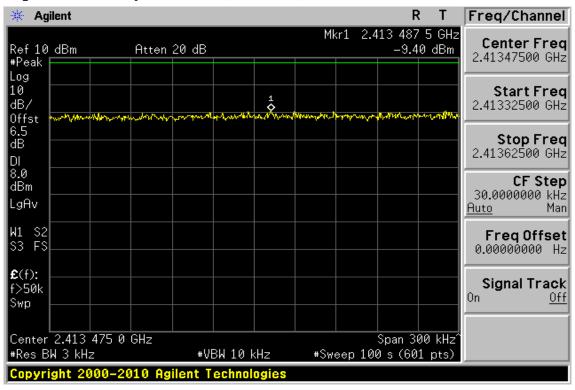
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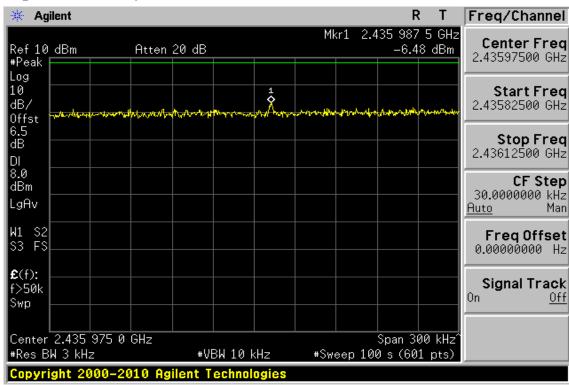
Page: 115 of 128

802.11b

Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)



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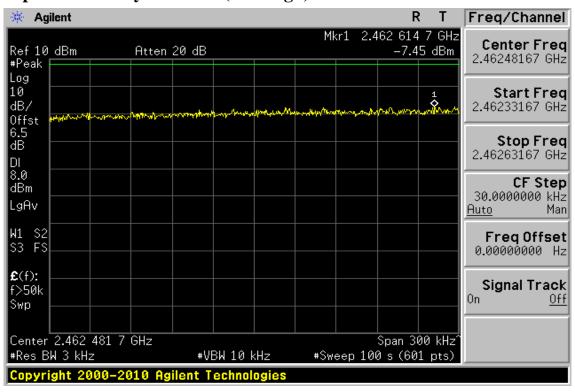


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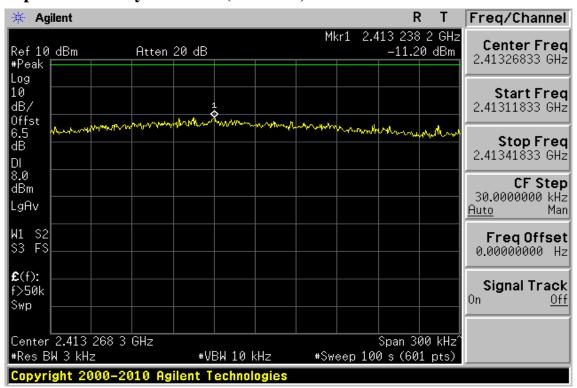
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Page: 116 of 128

Power Spectral Density Test Plot (CH-High)



802.11g **Power Spectral Density Test Plot (CH-Low)**



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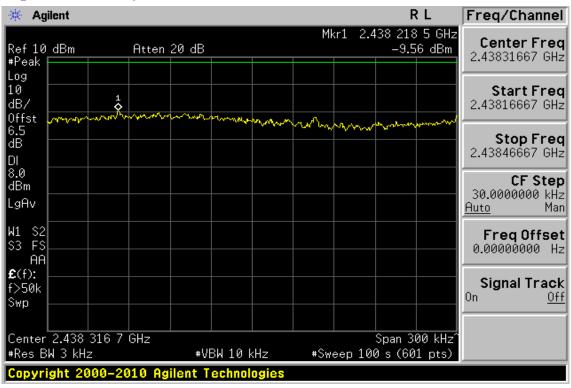


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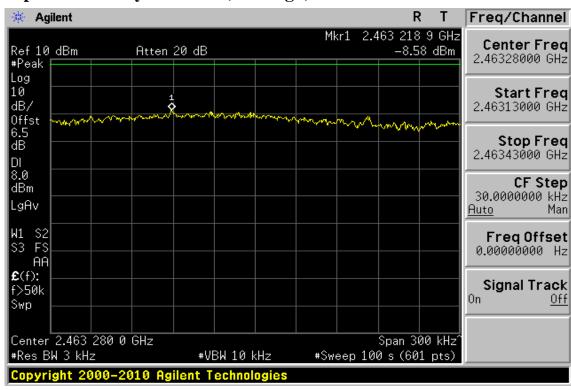
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Page: 117 of 128

Power Spectral Density Test Plot (CH-Mid)



Power Spectral Density Test Plot (CH-High)



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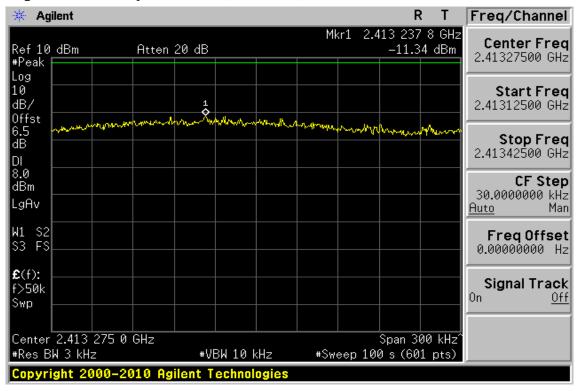
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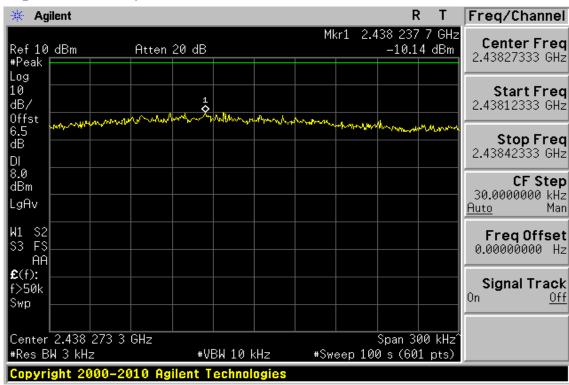
Page: 118 of 128

802.11n_20M

Power Spectral Density Test Plot (CH-Low)



Power Spectral Density Test Plot (CH-Mid)



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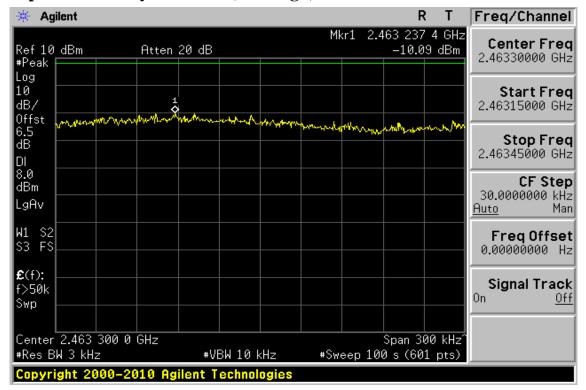


Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 119 of 128

Power Spectral Density Test Plot (CH-High)



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Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 120 of 128

11 ANTENNA REQUIREMENT

11.1. Standard Applicable:

According to §15.203, Antenna requirement.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be

replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some

field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the

proper antenna is employed so that the limits in this Part are not exceeded.

According to RSS-GEN 7.1.2, a transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

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Report No.: EF/2011/60004-04 Issue Date: Aug. 22, 2011

Page: 121 of 128

When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. Any antenna gain in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power before using the power limits specified in RSS-210 or RSS-310 for devices of RF output powers of 10 milliwatts or less. For devices of output powers greater than 10 milliwatts, except devices subject to RSS-210 Annex 8 (Frequency Hopping and Digital Modulation Systems Operating in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz Bands) or RSS-210 Annex 9 (Local Area Network Devices), the total antenna gain shall be added to the measured RF output power before using the specified power limits. For devices subject to RSS-210 Annex 8 or Annex 9, the antenna gain shall not be added.

11.2. Antenna Connected Construction:

The directional gains of antenna used for transmitting is -0.97 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Please see EUT photo for details.



Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011 Page: 122 of 128

12 99% BANDWIDTH MEASUREMENT

12.1. Standard Applicable:

RSS-Gen §4.6.1, the transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.

The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

The span between the two recorded frequencies is the occupied bandwidth.

12.2. Measurement Equipment Used:

Refer to section 6.2 for details.

12.3. Test Set-up:

Refer to section 6.3 for details.

12.4. Measurement Procedure:

- 1. Place the EUT on the table and set it in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW=1% of the approximate emission bandwidth, VBW = 3 times RBW, Span= 50
- 4. Turn on the 99% bandwidth function, max reading...
- 5. Repeat above procedures until all frequency measured were complete.



Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 123 of 128

12.5. Measurement Result:

802.11b

Frequency	99%Bandwidth
MHz	(MHz)
2412	13.8650
2437	13.9547
2462	13.9515

802.11g

Frequency MHz	99%Bandwidth (MHz)
2412	16.4476
2437	16.4567
2462	16.4544

802.11n_20M

Frequency	99%Bandwidth
MHz	(MHz)
2412	17.6182
2437	17.6518
2462	17.6401

Note: Refer to next page for plots.

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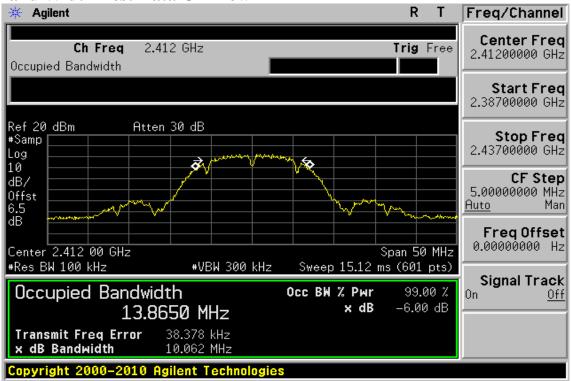
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Issue Date: Aug. 22, 2011

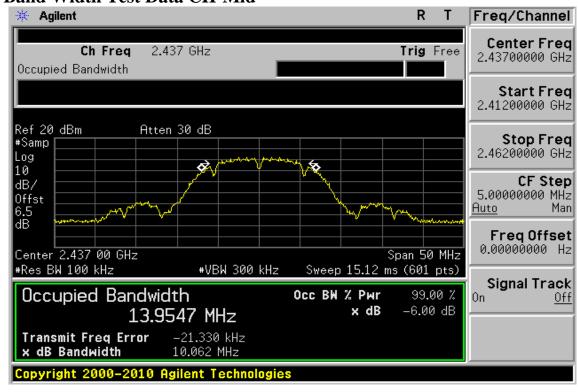
Page: 124 of 128

802.11b

99% Band Width Test Data CH-Low



99% Band Width Test Data CH-Mid



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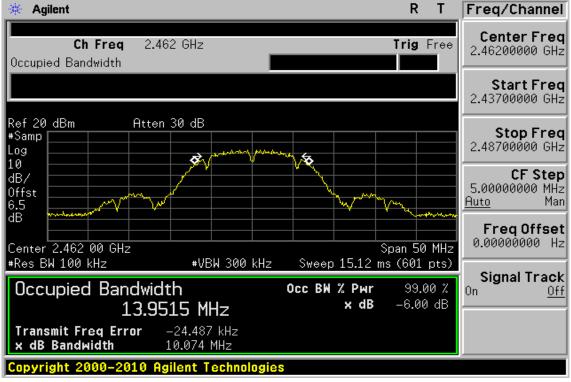


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Issue Date: Aug. 22, 2011

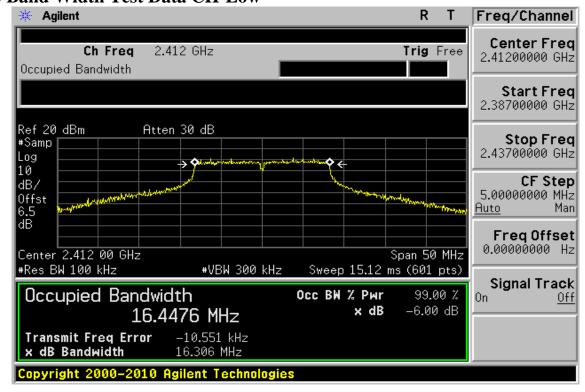
Page: 125 of 128

99% Band Width Test Data CH-High



802.11g

99% Band Width Test Data CH-Low



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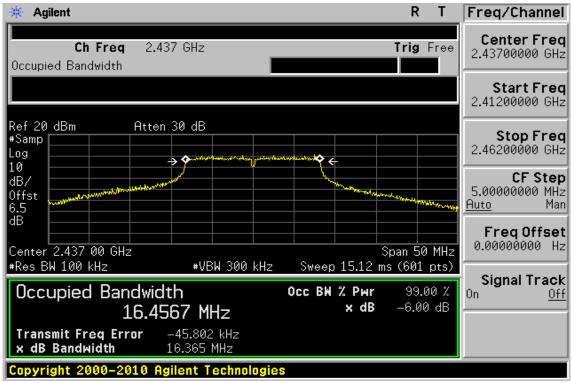


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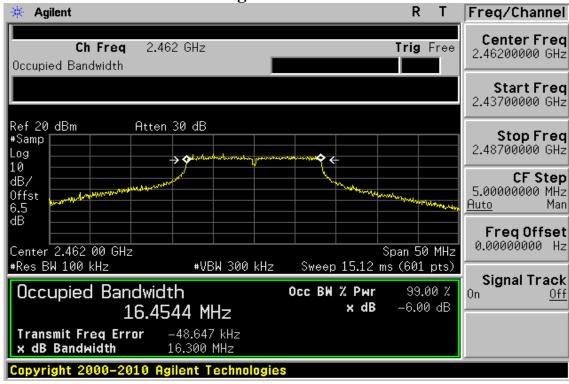
Issue Date: Aug. 22, 2011

Page: 126 of 128

99% Band Width Test Data CH-Mid



99% Band Width Test Data CH-High



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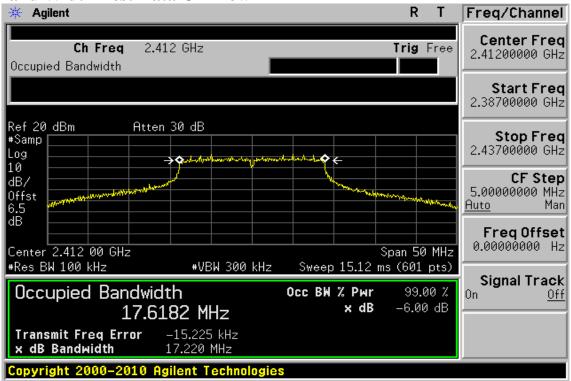
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Issue Date: Aug. 22, 2011

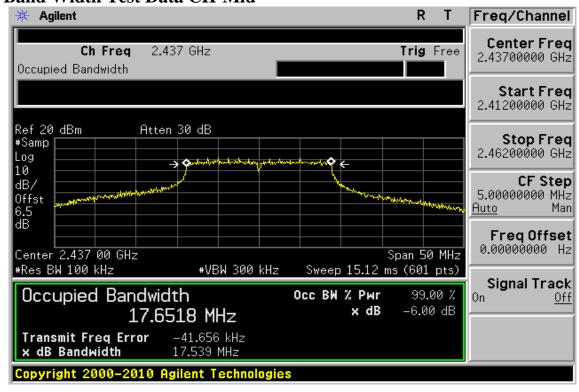
Page: 127 of 128

802.11n 20M

99% Band Width Test Data CH-Low



99% Band Width Test Data CH-Mid



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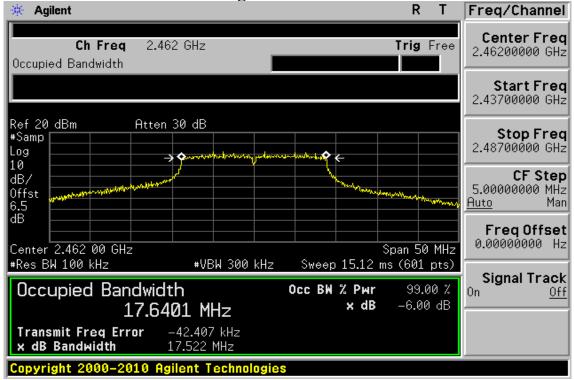


Report No.: EF/2011/60004-04

Issue Date: Aug. 22, 2011

Page: 128 of 128

99% Band Width Test Data CH-High



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