



FCC CFR47 PART 15 SUBPART B

**TEST REPORT
FOR**

802.11 b/g/n WLAN MODULE

**MODEL NUMBER: SDGOB-0991
FCC ID: B94SDGOB0991**

REPORT NUMBER: 09U12655-2, Revision B

ISSUE DATE: AUGUST 07, 2009

Prepared for

**HEWLETT PACKARD COMPANY
3000 HANOVER STREET
PALO ALTO, CA 94304, U.S.A.**

Prepared by

**COMPLIANCE CERTIFICATION SERVICES
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888**



NVLAP LAB CODE 200065-0

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
---	07/31/09	Initial Issue	T. Chan
B	08/07/09	Added FCC ID to the report	A. Zaffar

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Hewlett Packard Company
3000 Hanover Street
Palo Alto, CA 94304, U.S.A.

EUT DESCRIPTION: 802.11 b/g/n WLAN MODULE

MODEL: SDGOB-0991

SERIAL NUMBER: 002265E08299A

DATE TESTED: JULY 28-29, 2009

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART B	Pass

Compliance Certification Services, Inc. (CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by CCS based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



THU CHAN
EMC MANAGER
COMPLIANCE CERTIFICATION SERVICES

CHIN PANG
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Power Line Conducted Emission	+/- 2.3 dB
Radiated Emission	+/- 3.4 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11 b/g/n WLAN Module

The radio module is manufactured by HONG FU JIN Precision Industry (Shenzhen) Co., Ltd, Foxconn Network System Group

5.2. PRELIMINARY TEST CONFIGURATIONS

The following configuration was investigated during testing:

EUT Configuration	Description
Typical Configuration	EUT connected to laptop via a USB cable with minimum configuration such as printer, USB mouse.

5.3. MODE(s) OF OPERATION

Mode	Description
EMC Test & TX	All I/O ports activate with H' patterns scrolling on the screen display with TX on.

5.4. DETAILS OF TESTED SYSTEM

SUPPORT EQUIPMENT & PERIPHERALS

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Printer	HP	2225C	2930S52614	DSI6XJ2225
Mouse	HP	M-S34	LZB74708572	DZL211029
Laptop	Dell	PP09S	27920070721	DoC
AC Adapter	Dell	PA-1650-06D3	CNODF263716156CGF8C9	DoC

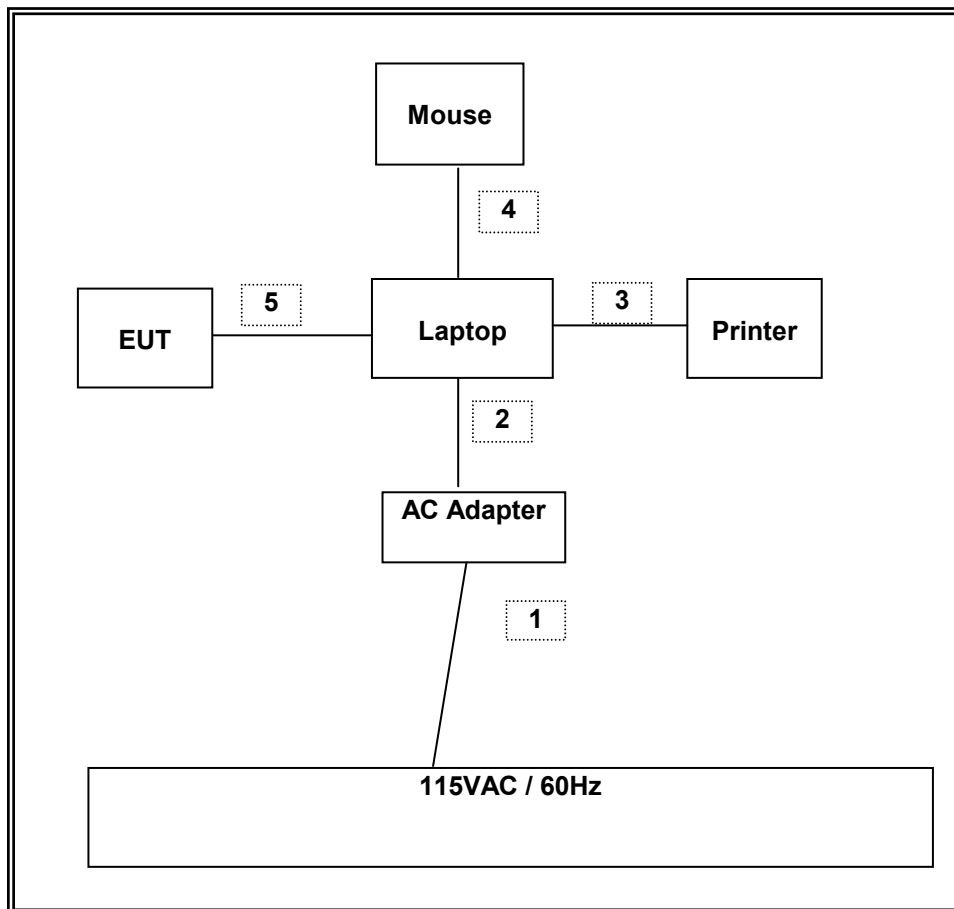
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	2m	NA
2	DC	1	DC	Un-shielded	2m	one ferrite at Laptop's end
3	USB	1	Printer	Un-shielded	2m	NA
4	USB	1	Mouse	Un-shielded	2m	NA
5	USB	1	WLAN Module	Un-shielded	2m	NA

TEST SETUP

The EUT connected to a Laptop via a USB Cable and with a typical configuration.

TEST SETUP DIAGRAM



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01171	01/14/10
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01161	08/06/09
Preamp, 1000MHz	Agilent / HP	8447D	C00558	03/31/10
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	10/29/09
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	02/06/10

7. APPLICABLE LIMITS AND TEST RESULTS

7.1. RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.4

The highest clock frequency generated or used in the EUT is 20 MHz; therefore the frequency range was investigated from 30 MHz to 1 GHz.

LIMIT

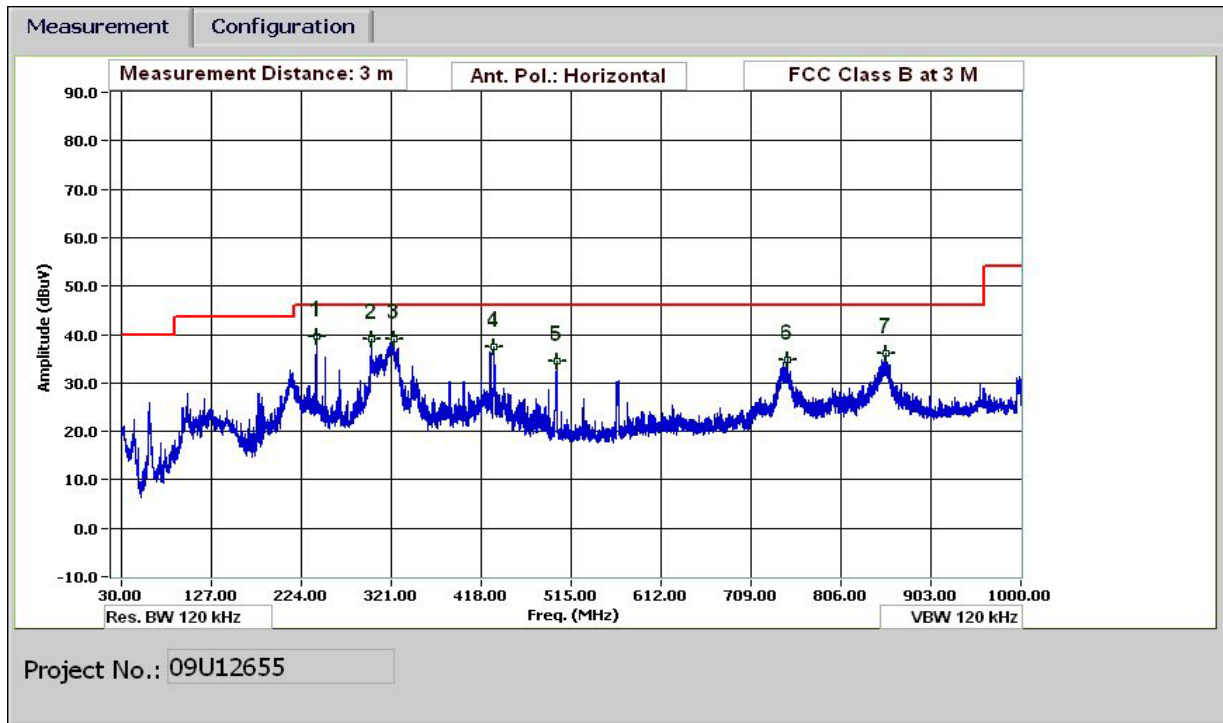
§15.109 (a) except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Limits for radiated disturbance of Class B ITE at measuring distance of 3 m	
Frequency range (MHz)	Quasi-peak limits (dB μ V/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960 MHz	54

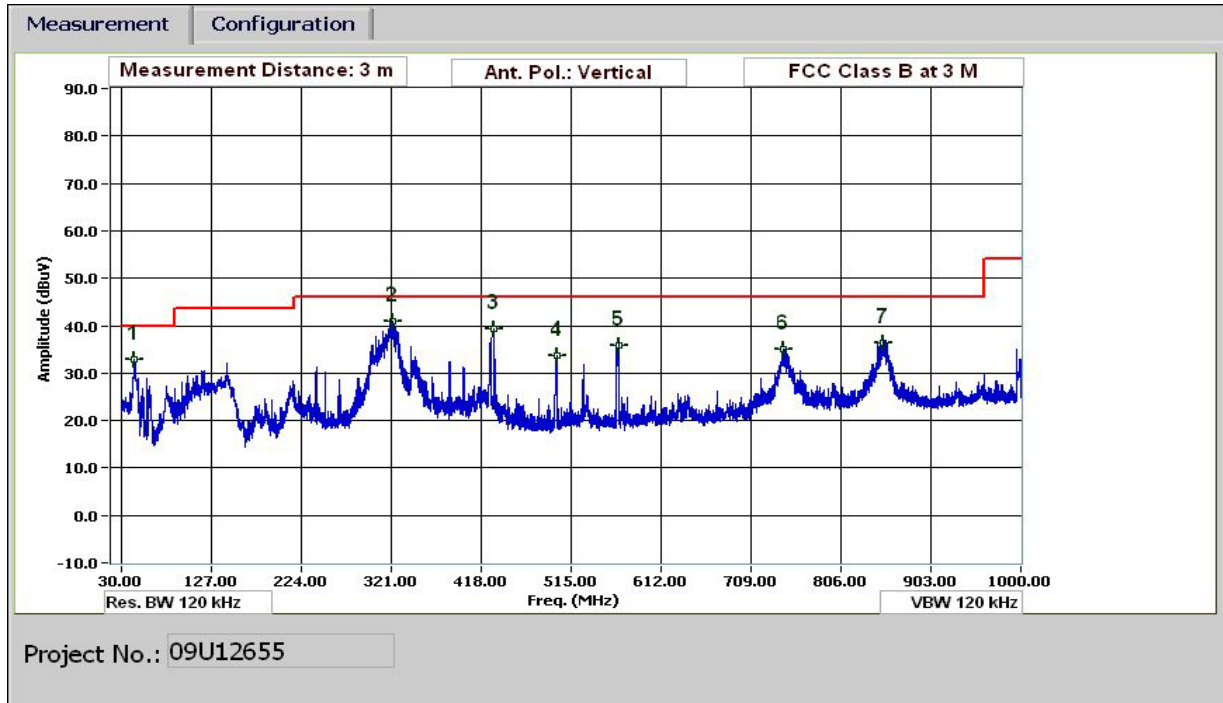
Note: The lower limit shall apply at the transition frequency.

RESULTS

HOIZONTAL PLOT



VERTICAL PLOT



7.2. AC MAINS LINE CONDUCTED EMISSIONS

TEST PROCEDURE

ANSI C63.4

LIMIT

§15.107 (a) Except for Class A digital devices, for equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dBµV)	
	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

Notes:

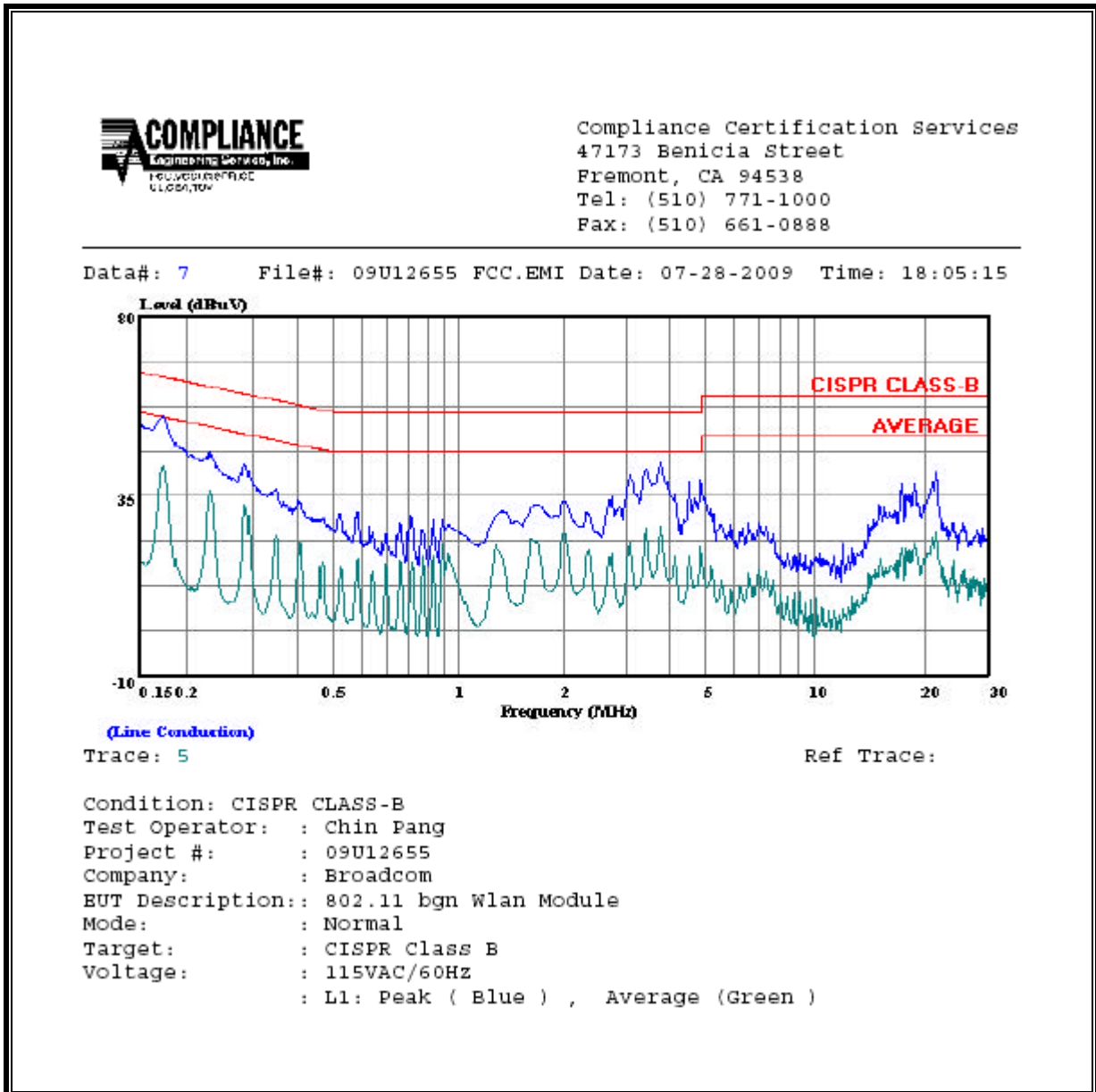
1. The lower limit shall apply at the transition frequencies
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

RESULTS

6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq. (MHz)	Reading			Class (dB)	Limit QP	EN B AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
0.17	55.12	--	42.55	0.00	64.77	54.77	-9.65	-12.22	L1
3.88	43.35	--	27.54	0.00	56.00	46.00	-12.65	-18.46	L1
21.60	41.12	--	25.77	0.00	60.00	50.00	-18.88	-24.23	L1
0.17	54.44	--	41.57	0.00	64.91	54.91	-10.47	-13.34	L2
4.01	44.73	--	28.08	0.00	56.00	46.00	-11.27	-17.92	L2
20.92	42.38	--	27.87	0.00	60.00	50.00	-17.62	-22.13	L2
6 Worst Data									

LINE 1 RESULTS

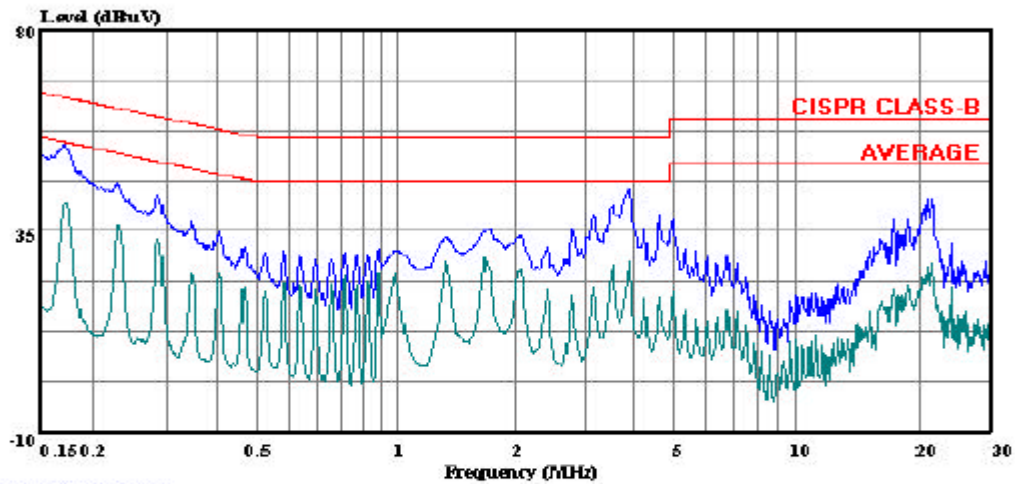


LINE 2 RESULTS



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 14 File#: 09U12655 FCC.EMI Date: 07-28-2009 Time: 18:14:54



(Line Conduction)

Trace: 12

Ref Trace:

Condition: CISPR CLASS-B
Test Operator: : Chin Pang
Project #: : 09U12655
Company: : Broadcom
EUT Description: : 802.11 bgn Wlan Module
Mode: : Normal
Target: : CISPR Class B
Voltage: : 115VAC/60HZ
: L2 Peak (Blue) , Average (Green)