



FCC PART 15 SUBPART C
IC RSS-210, ISSUE 8, DEC 2010

TEST AND MEASUREMENT REPORT

For

NVIDIA Corporation

2701 San Tomas Expressway, Santa Clara, CA 95050, USA

FCC ID: VOB-P1761WX
IC: 7361A-P1761W

Report Type: Original Report	Product Type: 802.11a/b/g/n WLAN+BT Combo Radio Tablet PC
Prepared By: <u>Cipher Chu</u> 	
Report Number: <u>R1410015-247 DSS</u>	
Report Date: <u>2015-03-04</u>	
Reviewed By: <u>Engineering Manager</u> 	
Suhaila Khushzad Bay Area Compliance Laboratories Corp. 1274 Anvilwood Avenue, Sunnyvale, CA 94089, USA Tel: (408) 732-9162 Fax: (408) 732-9164	

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report must not be used by the customer to claim product certification, approval, or endorsement by A2LA* or any agency of the Federal Government. * This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "*" (Rev-3)

TABLE OF CONTENTS

1	GENERAL DESCRIPTION.....	4
1.1	PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	4
1.2	MECHANICAL DESCRIPTION OF EUT	4
1.3	OBJECTIVE.....	4
1.4	RELATED SUBMITTAL(S)/GRANT(S)	4
1.5	TEST METHODOLOGY	4
1.6	MEASUREMENT UNCERTAINTY	4
1.7	TEST FACILITY	5
2	SYSTEM TEST CONFIGURATION.....	6
2.1	JUSTIFICATION.....	6
2.2	EUT EXERCISE SOFTWARE.....	6
2.3	EQUIPMENT MODIFICATIONS	6
2.4	LOCAL SUPPORT EQUIPMENT	6
2.5	EUT INTERNAL CONFIGURATION DETAILS.....	6
2.6	POWER SUPPLY AND LINE FILTERS.....	6
2.7	INTERFACE PORTS AND CABLING	6
3	SUMMARY OF TEST RESULTS.....	7
4	EXHIBIT A - FCC & IC EQUIPMENT LABELING REQUIREMENTS.....	8
4.1	FCC ID LABEL REQUIREMENTS	8
4.2	IC LABEL REQUIREMENTS	8
4.3	FCC ID & IC LABEL CONTENTS AND LOCATION.....	9
5	EXHIBIT B - TEST SETUP PHOTOGRAPHS	10
5.1	RADIATED EMISSION BELOW 1 GHz FRONT VIEW AT 3 METERS.....	10
5.2	RADIATED EMISSION BELOW 1 GHz REAR VIEW AT 3 METERS.....	10
5.3	RADIATED EMISSION ABOVE 1 GHz FRONT VIEW AT 3 METERS	11
5.4	RADIATED EMISSION ABOVE 1 GHz REAR VIEW AT 3 METERS	11
5.5	AC LINE CONDUCTED EMISSION FRONT VIEW.....	12
5.6	AC LINE CONDUCTED EMISSION SIDE VIEW	12
6	EXHIBIT C - EUT PHOTOGRAPHS.....	13
6.1	EUT – FRONT VIEW	13
6.2	EUT – REAR VIEW	13
6.3	EUT – RIGHT SIDE VIEW.....	14
6.4	EUT – LEFT SIDE VIEW.....	14
6.5	EUT – TOP VIEW.....	15
6.6	EUT – BOTTOM VIEW	15
6.7	EUT – OPEN CASE VIEW.....	16
6.8	EUT – PCB TOP VIEW	16
6.9	EUT – PCB BACK VIEW.....	17
6.10	EUT – BATTERY VIEW	17
6.11	EUT – AC/DC ADAPTER.....	18

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1410015-247 DSS	Original Report	2015-03-04

1 General Description

1.1 Product Description for Equipment Under Test (EUT)

This test and measurement report has been compiled on behalf of NVIDIA Corporation, and their product, FCC ID: VOB-P1761WX, IC: 7361A-P1761W, model number: P1761W, which henceforth is referred to as the EUT (Equipment Under Test.), The EUT is a Tablet PC with BT+WLAN operates in 2.4 GHz and 5 GHz bands.

1.2 Mechanical Description of EUT

The EUT measures approximately 218 mm (L) x 123 mm (W) x 8 mm (H) and weighs approximately 350 g.

The data gathered are from a typical production sample provided by the manufacturer with serial number: 0411414000303

1.3 Objective

This report is prepared on behalf of *NVIDIA Corporation* in accordance with Part 2, Subpart J, and Part 15, Subparts B and C of the Federal Communication Commission's rules and IC RSS-210 Issue 8, Dec 2010.

The objective is to determine compliance with FCC Part 15.247 and IC RSS-210 rules.

1.4 Related Submittal(s)/Grant(s)

FCC ID: VOB-P1761WX, BACL report R1405121-247 DSS Rev A

1.5 Test Methodology

All measurements contained in this report were conducted in accordance with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR16-4-2:2011, The Treatment of Uncertainty in EMC Measurements, the values ranging from ± 2.0 dB for Conducted Emissions tests and ± 4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

1.7 Test Facility

Bay area compliance Laboratories Corp. (BACL) is:

1- An independent Commercial Test Laboratory accredited to **ISO 17025: 2005** by **A2LA**, in the fields of: Electromagnetic Compatibility & Telecommunications covering Emissions, Immunity, Radio, RF Exposure, Safety and Telecom. This includes NEBS (Network Equipment Building System), Wireless RF, Telecommunications Terminal Equipment (TTE); Network Equipment; Information Technology Equipment (ITE); Medical Electrical Equipment; Industrial, Commercial, and Medical Test Equipment; Professional Audio and Video Equipment; Electronic (Digital) Products; Industrial and Scientific Instruments; Cabled Distribution Systems and Energy Efficiency Lighting.

2- An ENERGY STAR Recognized Laboratory, for the LM80 Testing, a wide variety of Luminaires and Computers.

3- A NIST Designated Phase-I and Phase-II CAB including: ACMA (Australian Communication and Media Authority), BSMI (Bureau of Standards, Metrology and Inspection of Taiwan), IDA (Infocomm Development Authority of Singapore), IC(Industry Canada), Korea (Ministry of Communications Radio Research Laboratory), NCC (Formerly DGT; Directorate General of Telecommunication of Chinese Taipei) OFTA (Office of the Telecommunications Authority of Hong Kong), Vietnam, VCCI - Voluntary Control Council for Interference of Japan and a designated EU CAB (Conformity Assessment Body) (Notified Body) for the EMC and R&TTE Directives.

4- A Product Certification Body accredited to **ISO Guide 65:1996** by **A2LA** to certify:

1- Unlicensed, Licensed radio frequency devices and Telephone Terminal Equipment for the FCC. Scope A1, A2, A3, A4, B1, B2, B3, B4 & C.

2. Radio Standards Specifications (RSS) in the Category I Equipment Standards List and All Broadcasting Technical Standards (BETS) in Category I Equipment Standards List for Industry Canada.

3. Radio Communication Equipment for Singapore.

4. Radio Equipment Specifications, GMDSS Marine Radio Equipment Specifications, and Fixed Network Equipment Specifications for Hong Kong.

5. Japan MIC Telecommunication Business Law (A1, A2) and Radio Law (B1, B2 and B3).

6. Audio/Video, Battery Charging Systems, Computers, Displays, Enterprise Servers, Imaging Equipment, Set-Top Boxes, Telephony, Televisions, Ceiling Fans, CFLs (Including GU24s), Decorative Light Strings, Integral LED Lamps, Luminaires, Residential Ventilating Fans.

The test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at its facility in Sunnyvale, California, USA.

The test site at BACL Corp. has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997, and Article 8 of the VCCI regulations on December 25, 1997. The test site also complies with the test methods and procedures set forth in CISPR 22:2008 §10.4 for measurements below 1 GHz and §10.6 for measurements above 1 GHz as well as ANSI C63.4-2009, ANSI C63.4-2009, TIA/EIA-603 & CISPR 24:2010.

The Federal Communications Commission and Voluntary Control Council for Interference have the reports on file and they are listed under FCC registration number: 90464 and VCCI Registration No.: A-0027. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL Corp. is an American Association for Laboratory Accreditation (A2LA) accredited laboratory (Lab Code 3297-02). The current scope of accreditations can be found at

<http://www.a2la.org/scopepdf/3297-02.pdf?CFID=1132286&CFTOKEN=e42a3240dac3f6ba-6DE17DCB-1851-9E57-477422F667031258&jsessionid=8430d44f1f47cf2996124343c704b367816b>

2 System Test Configuration

2.1 Justification

The EUT was configured for testing according to ANSI C63.4-2009.

The EUT was tested in a testing mode to represent worst-case results during the final qualification test.

2.2 EUT Exercise Software

N/A

2.3 Equipment Modifications

No modifications were made to the EUT.

2.4 Local Support Equipment

Manufacturer	Description	Model No.	Serial No.
Lenovo	Laptop	G560-0679	CB08585694
DELL	Monitor	U2410f FP63	-
-	Headset	-	-

2.5 EUT Internal Configuration Details

Manufacturer	Description	Type	Serial Number
NVIDIA	Main PCB Board	P1761	-
Yuko	Battery	YOKU 3574152	AR14060940006167

2.6 Power Supply and Line Filters

Manufacturer	Description	Model	Part Number
NVIDIA Corporation	Switching Power Adapter	SPA011AU5W2	N/A

2.7 Interface Ports and Cabling

Cable Description	Length (m)	To	From
RF Cable	<1.0	PSA	EUT
USB Cable	1.5	Laptop	EUT

3 Summary of Test Results

FCC & IC Rules	Description of Test	Results
FCC §15.247(i), §2.1093 IC RSS-102	RF Exposure	Compliant ¹
FCC §15.203 IC RSS-Gen §7.1.2	Antenna Requirements	Compliant ¹
FCC §15.207 (a) IC RSS-Gen §7.2.4	AC Line Conducted Emissions	Compliant ¹
FCC §15.247(d) IC RSS-210 §A8.5	Spurious Emissions at Antenna Port	Compliant ¹
FCC §15.205, §15.209, §15.247(d) IC RSS-210 §2.2, §A8.5	Restricted Bands, Spurious Radiated Emissions	Compliant ¹
FCC §15.247 (a)(1) IC RSS-210 §A8.1	20 dB Channel Bandwidth	Compliant ¹
FCC §15.247(a) IC RSS-210 §A8.4	Maximum Peak Output Power	Compliant ¹
FCC §15.247(d) IC RSS-210 §A8.5	Band Edge	Compliant ¹
FCC §15.247 (a)(1) IC RSS-210 §A8.1(b)	Hopping Channel Separation	Compliant ¹
FCC §15.247 (a)(1) IC RSS-210 §A8.1(d)	Dwell Time	Compliant ¹
FCC §15.247(b)(1) IC RSS-210 §A8.1	Number of Hopping Channels	Compliant ¹

Note: Compliant¹: Please refer to FCC ID: VOB-P1761W (BACL report R1405121-247 DSS) for testing data.