

RF EXPOSURE REPORT

REPORT NO.: SA111227C09A

MODEL NO.: APL22-09E

FCC ID: QWU-09E

RECEIVED: Jan. 04, 2012

TESTED: Feb. 24 ~ May 11, 2012

ISSUED: May 15, 2012

APPLICANT: SonicWALL, Inc.

ADDRESS: 2001 Logic Drive San Jose, CA 95124, USA

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch

LAB ADDRESS: No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist.,
New Taipei City, Taiwan (R.O.C)

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei
Shan Hsiang, Taoyuan Hsien 333, Taiwan,
R.O.C.

This test report consists of 6 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced, except in full, without the written approval of our laboratory. The client should not use it to claim product, certification, approval, or endorsement by any government agency. The test results in the report only apply to the tested sample.

TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1. CERTIFICATION	4
2. RF EXPOSURE.....	5
2.1 LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE).....	5
2.2 MPE CALCULATION FORMULA	5
2.3 CLASSIFICATION	5
2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER.....	6



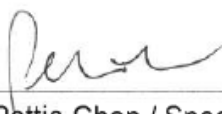
RELEASE CONTROL RECORD

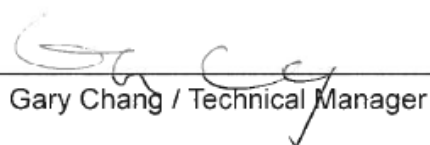
ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA111227C09A	Original release	May 15, 2012

1. CERTIFICATION

PRODUCT: Wireless 802.11 abgn Device
MODEL: APL22-09E
BRAND: SonicWALL
APPLICANT: SonicWALL, Inc.
TESTED: Feb. 24 ~ May 11, 2012
TEST SAMPLE: ENGINEERING SAMPLE
STANDARDS: **FCC Part 2 (Section 2.1091)**
FCC OET Bulletin 65, Supplement C (01-01)
IEEE C95.1

The above equipment (Model: APL22-09E) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE:** May 15, 2012
Pettie Chen / Specialist

APPROVED BY :  , **DATE:** May 15, 2012
Gary Chang / Technical Manager

2. RF EXPOSURE

2.1 LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm ²)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

2.2 MPE CALCULATION FORMULA

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

2.3 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

FREQUENCY BAND (MHz)	MODULATION MODE	MAX POWER (dBm)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5260-5320	802.11a	18.110	8.8	20	0.098	1
	802.11n (20MHz)	20.943	4	20	0.062	1
	802.11n (40MHz)	22.241	4	20	0.084	1
5500-5700	802.11a	17.759	8.8	20	0.090	1
	802.11n (20MHz)	17.838	4	20	0.030	1
	802.11n (40MHz)	14.749	4	20	0.015	1

For 802.11a: Directional gain = 4dBi + 10log(3) = 8.8dBi

FREQUENCY BAND	MAX POWER (W)	MAX POWER (dBm)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
5GHz Band	0.065	18.110	45	0.019	1

DEVICE	MAX EIRP (W)	MAX EIRP (dBm)	DISTANCE (cm)	POWER DENSITY (mW/cm ²)	LIMIT (mW/cm ²)
3G/4G USB DONGLE	11.48	40.6	45	0.451	0.549

This product can operate with a plug-in 3G/4G USB device which has maximum of 7W ERP(11.48W EIRP) output power. 2.4GHz and 5GHz cannot transmit at the same time.

Co-located mode is as below

$$\text{Wi-Fi 5GHz} + \text{3G/4G dongle} = 0.019/1 + 0.451/0.549 = 0.840$$

Note: The product normally operates at 20cm from user. However, when an external 3G/4G dongle is incorporated with the product, the manual has warning to instruct the user for keeping longer (45cm) safety distance.