

RF Exposure Report

Report No.: SA160119C37

FCC ID: GZ5NVG3XXX

Test Model: NVG348BQR2

Series Model: NVG343QR2, NVG343BQR2, NVG348QR2, NVG363Q, NVG368Q

Received Date: Jan. 19, 2016

Test Date: Mar. 04, 2016

Issued Date: Apr. 21, 2016

Applicant: ARRIS GROUP, INC.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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Taiwan R.O.C.

Test Location (1): E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300,
Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
SA160119C37	Original release.	Apr. 21, 2016

1 Certificate of Conformity

Product: VDSL Gateway

Brand: **ARRIS**

Test Model: NVG348BQR2

Series Model: NVG343QR2, NVG343BQR2, NVG348QR2, NVG363Q, NVG368Q

Sample Status: ENGINEERING SAMPLE

Applicant: ARRIS GROUP, INC.

Test Date: Mar. 04, 2016


Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment 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:** Apr. 21, 2016
Claire Kuan / Specialist

Approved by : , **Date:** Apr. 21, 2016
May Chen / 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 30cm away from the body of the user.

So, this device is classified as **Mobile Device**.

3 Calculation Result Of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2412-2462	514.08	5.52	30	0.16202	1
5180-5240	264.883	11.76	30	0.35124	1
5745-5825	599.069	11.76	30	0.79437	1

NOTE:

2.4GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20})^2 / 2] = 5.52\text{dBi}$

5GHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / 4] = 11.76\text{dBi}$

Conclusion:

The formula of calculated the MPE is:

$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz = $0.16202 / 1 + 0.79437 / 1 = 0.95639$

Therefore the maximum calculations of above situations are less than the “1” limit.

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