

# **RF Exposure Report**

Report No.: SA150204C08

FCC ID: GZ5NVG34NX4

Test Model: NVG348BQ

Series Model: NVG348Q, NVG343BQ

Received Date: Feb. 04, 2015

Test Date: Feb. 07 ~ Mar. 04, 2015

Issued Date: Mar. 09, 2015

Applicant: ARRIS Group, Inc.

Address: 2500 Walsh Ave. Santa Clara, CA 95051 USA

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

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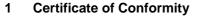


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Release Control Record					
Issue No.	Description	Date Issued			
SA150204C08	Original release.	Mar. 09, 2015			



Product:	NVG34X Series VDSL2 Gateway	
Brand:	ARRIS	
Test Model:	NVG348BQ	
Series Model:	NVG348Q, NVG343BQ	
Sample Status:	Engineering sample	
Applicant:	ARRIS Group, Inc.	
Test Date:	Feb. 07 ~ Mar. 04, 2015	
Standards:	FCC Part 2 (Section 2.1091)	
	KDB 447498 D03	
	IEEE C95.1	

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 :

Pettie Chen / Senior Specialist

**Date:** Mar. 09, 2015

Approved by :

Date: Mar. 09, 2015

Ken Liu / Senior 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 <sup>2</sup> )	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

 $Pd = (Pout^{*}G) / (4^{*}pi^{*}r^{2})$ 

where

 $Pd = power density in mW/cm^{2}$ 

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 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 24cm 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 (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
Beamform off					
2412-2462	26.74	7.38	24	0.357	1
5180-5240	24.88	10.04	24	0.429	1
5745-5825	25.53	10.86	24	0.602	1
Beamform on					
5180-5240	23.46	10.04	24	0.309	1
5745-5825	23.43	10.86	24	0.371	1

NOTE:

2.4GHz:

Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/2] = 7.38 \text{ dBi}$ 

5.0GHz:

5180-5240MHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4] = 10.04 dBi$ 5745-5825MHz: Directional gain =  $10 \log[(10^{G1/20} + 10^{G2/20} + ... + 10^{GN/20})^2/4] = 10.86 dBi$ 

### CONCULSION:

Both of the WLAN 2.4G & WLAN 5G can transmit simultaneously, the formula of calculated the MPE is: CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4G + WLAN 5.0G = 0.357 + 0.602 = 0.959

Therefore, the maximum calculation of this situation is 0.959, which is less than the "1" limit.

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