

## RF Exposure Report

**Report No.:** SA160718E04

**FCC ID:** ACQ-VIP4402W

**Test Model:** VIP4402W

**Received Date:** June 18, 2016

**Test Date:** July 21, 2016

**Issued Date:** July 28, 2016

**Applicant:** ARRIS GROUP, INC.

**Address:** 6450 Sequence Drive, San Diego, CA USA, 92121

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

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Taiwan R.O.C.

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### Release Control Record

Issue No.	Description	Date Issued
SA160718E04	Original release.	July 28, 2016

## 1 Certificate of Conformity

**Product:** IP SET TOP BOX

**Brand:** ARRIS

**Test Model:** VIP4402W

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** ARRIS GROUP, INC.

**Test Date:** July 21, 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.

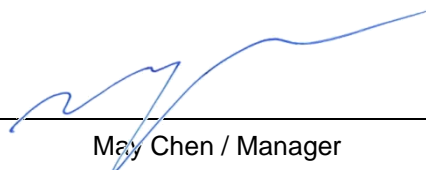
**Prepared by :**



**Date:** July 28, 2016

Claire Kuan / Specialist

**Approved by :**



**Date:** July 28, 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 <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<sup>2</sup>

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 20 away from the body of the user. So, this device is classified as **Mobile Device**.

### 2.4 Antenna Gain

Gain (dBi)	Frequency range	Antenna Type	Antenna Connector
4.31	2400MHz	printed	NA
4.38	2450MHz		
3.12	2500MHz		

## 2.5 Calculation Result Of Maximum Conducted Power

### BT-EDR

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	3.304	4.38	20	0.00180	1

### BT-LE

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2402-2480	4.55	4.38	20	0.00248	1

### WLAN (WiFi Wireless Module, FCC ID: ACQ-MT76125G)

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
5180-5240 5745-5825	76.831	6.58	20	0.06954	1

### Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

Bluetooth + WLAN 5GHz =  $0.00248 / 1 + 0.06954 / 1 = 0.07202$

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

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