

RF Exposure Report

Report No.: SA170222C39A

FCC ID: ACQ-DSR830

Test Model: DSR830

Received Date: Feb. 22, 2017

Test Date: Mar. 15 ~ Jun. 16, 2017

Issued Date: Jun. 22, 2017

Applicant: ARRIS Group, Inc.

Address: 101 Tournament Drive, Horsham, Pennsylvania, United States, 19044

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

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Test Location: No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN (R.O.C.)



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Release Control Record

Issue No.	Description	Date Issued
SA170222C39A	Original release.	Jun. 22, 2017

1 Certificate of Conformity

Product: Satellite Set-Top Box

Brand: ARRIS Group, Inc.

Test Model: DSR830

Sample Status: Engineering sample

Applicant: ARRIS Group, Inc.

Test Date: Mar. 15 ~ Jun. 16, 2017

Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

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 : Celine Chou , **Date:** Jun. 22, 2017
Celine Chou / Specialist

Approved by : Ken Liu , **Date:** Jun. 22, 2017
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 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

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

where

Pd = power density in mW/cm²

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 20cm 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)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode						
WLAN 2412~2462	1TX	20.80	2.97	20	0.047	1
	2TX	22.47	5.88	20	0.136	1
WLAN 5180~5240	1TX	20.11	4.79	20	0.061	1
	2TX	22.63	7.19	20	0.191	1
WLAN 5260~5320	1TX	19.72	5.08	20	0.060	1
	2TX	20.35	7.35	20	0.117	1
WLAN 5500~5720	1TX	19.97	4.79	20	0.060	1
	2TX	20.56	7.00	20	0.113	1
WLAN 5745~5825	1TX	19.26	4.79	20	0.051	1
	2TX	22.39	7.00	20	0.173	1
Beamforming Mode						
Frequency Band (MHz)	TX Function	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
WLAN 2412~2462	2TX	21.60	5.88	20	0.111	1
WLAN 5180~5240	2TX	22.52	7.19	20	0.186	1
WLAN 5260~5320	2TX	18.02	7.35	20	0.069	1
WLAN 5500~5720	2TX	18.48	7.00	20	0.070	1
WLAN 5745~5825	2TX	22.39	7.00	20	0.173	1

Note:

2412~2462MHz directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2/N]$ = 5.88dBi

5180~5240MHz directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2/N]$ = 7.19dBi

5260~5320MHz directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2/N]$ = 7.35dBi

5500~5720MHz directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2/N]$ = 7.00dBi

5745~5825MHz directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2/N]$ = 7.00dBi

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