RF EXPOSURE EVALUATION REPORT

FCC ID	:	**PGR-WMD3M91QTA**
Equipment	:	**CBRS GW WITH DUAL BAND 11AC WIFI AND VOIP**
Brand Name	:	**ARRIS**
Model Name	:	**NVG558CH**
Applicant	:	**ARRIS** **2500 Walsh Avenue, Santa Clara, California, United States 95051**
Manufacturer	:	**ARRIS** **2500 Walsh Avenue, Santa Clara, California, United States 95051**
Standard	:	**47 CFR Part 2.1091**

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1091 and it complies with applicable limit.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

Cona Huang

Approved by: Cona Huang / Deputy Manager

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FA9O0819	Rev. 01	Initial issue of report	Jul. 13, 2020

1. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	CBRS GW WITH DUAL BAND 11AC WIFI AND VOIP
Brand Name	ARRIS
Model Name	NVG558CH
FCC ID	PGR-WMD3M91QTA
Wireless Technology and Frequency Range	LTE Band 48: 3550 MHz ~ 3700 MHz
Mode	LTE: QPSK, 16QAM, 64QAM
EUT Stage	Identical Prototype

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Reviewed by: Jason Wang

Report Producer: Daisy Peng

Product Specification subjective to this standard	
Antenna Type/Antenna Gain	Internal CBRS Antenna/5.1 dBi External CBRS Antenna/3.5 dbi

2. Maximum RF average output power among production units

Mode		Maximum Average power(dBm)
LTE	Band 48	18.0

3. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 30 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:
S = Power Density
P = Output Power at Antenna Terminals
G = Gain of Transmit Antenna (linear gain)
R = Distance from Transmitting Antenna

4. Radio Frequency Radiation Exposure Evaluation

4.1. Standalone Power Density Calculation

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Maximum EIRP (W)	Average EIRP (mW)	Power Density at 30cm (mW/cm^2)	Limit (mW/cm^2)	Power Density / Limit
LTE Band 48	5.10	18.00	23.100	0.204	204.174	0.018	1.000	0.018

4.2. Collocated Power Density Calculation

WWAN Power Density / Limit	2.4GHz WLAN Power Density / Limit	5GHz WLAN Power Density / Limit	∑(Power Density / Limit) of WWAN+ 2.4GHz WLAN+5GHz WLAN
0.018	0.146	0.348	0.512

Note:

1. The WLAN operation is arrange in a group with the WWAN opeariton, the WLAN power density / limit result refer to Sporton RF exposue report, FCC ID: GZ5NVG588, Report No.: FA190926002, and used for Sim-Tx analysis.
2. For colocation analysis, LTE Band 13 is chosen for summation due to the highest (power density/limit) among all WWAN wireless modes.
3. ∑(Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + 2.4GHz WLAN + 5GHz WLAN.
4. Considering the WWAN module collocation with the 2.4GHz WLAN and 5GHz WLAN transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.