



FCC RADIO EXPOSURE TEST REPORT

FCC ID : UIDW11

Equipment : Wi-Fi Extender

Brand Name : ARRIS

Model Name : W11

Applicant : ARRIS
3871 Lakefield Drive Suite 300, Suwanee, Georgia,
30024 United States

Manufacturer : ARRIS
3871 Lakefield Drive Suite 300, Suwanee, Georgia,
30024 United States

Standard : 47 CFR Part 2.1091

The product was received on Jun. 11, 2020, and testing was started from Jun. 11, 2020 and completed on Aug. 26, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this variant 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.


Approved by: Cliff Chang

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

History of this test report.....3

Summary of Test Result.....4

1 General Description5

1.1 EUT General Information5

1.2 Table for Radio function5

1.3 Table for Class II Change.....5

1.4 Testing Location6

2 Maximum Permissible Exposure7

2.1 Limit of Maximum Permissible Exposure7

2.2 MPE Calculation Method.....7

2.3 Calculated Result and Limit.....8

Photographs of EUT v01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: **Sam Chen**

Report Producer: **Viola Huang**



1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) VHT: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
5GHz WLAN	5150-5250 5250-5350 5470-5725 5725-5850	5180-5240 5260-5320 5500-5720 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)

1.2 Table for Radio function

Radio	2.4GHz	5GHz Band 1	5GHz Band 2	5GHz Band 3	5GHz Band 4
1	V	V	V	-	-
2	-	-	-	V	V

1.3 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FA071418

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Adding Band 2~Band 3 and Band 4 beamforming function (5250~5350 MHz, 5470~5725 MHz, 5725-5850 MHz) for this device. 2. Adding 160MHz bandwidth.	RF Exposure Evaluation

Note: RF Exposure Evaluation of 5GHz Band 1, 4 (non beamforming function) and 2.4GHz Band are based on original test report.



1.4 Testing Location

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.



2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	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

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	F/1500	30
1500-100,000	-	-	1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

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:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
2.4G;G1D	4.06	27.09	31.15	0.50	31.65	1.46218	30	0.12928	1.00000
5.2G;D1D	4.94	27.67	32.61	0.50	33.11	2.04644	30	0.18094	1.00000
5.3G;D1D	4.94	23.81	28.75	0.50	29.25	0.84140	30	0.07440	1.00000
5.6G;D1D	7.00	22.89	29.89	0.10	29.99	0.99770	30	0.08822	1.00000
5.8G;D1D	7.88	28.10	35.98	0.01	35.99	3.97192	30	0.35119	1.00000

Simultaneous Transmission Analysis Mode: WLAN 2.4GHz + WLAN 5GHz Band 1 + WLAN 5GHz Band 4

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)	Ratio (S/Limit)
2.4G;G1D	4.06	27.09	31.15	0.50	31.65	1.46218	30	0.12928	1.00000	0.12928
5.2G;D1D	4.94	27.67	32.61	0.50	33.11	2.04644	30	0.18094	1.00000	0.18094
5.8G;D1D	7.88	28.10	35.98	0.01	35.99	3.97192	30	0.35119	1.00000	0.35119
									Sum Ratio	0.66141
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

————THE END————