




# FCC RADIO EXPOSURE TEST REPORT

**FCC ID** : TOR-C200  
**Equipment** : 802.11 a/n/ac/lax + b/g/n/lax Access Point  
**Brand Name** : ARISTA  
**Model Name** : C-200  
**Applicant** : Arista Networks, Inc.  
5453 Great America Parkway Santa Clara, CA  
95054 United States  
**Manufacturer** : Arista Networks, Inc.  
5453 Great America Parkway Santa Clara, CA  
95054 United States  
**Standard** : 47 CFR Part 2.1091

The product was received on Oct. 06, 2020, and testing was started from Oct. 07, 2020 and completed on Oct. 30, 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: Sam Chen

**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 Description .....5**

1.1 EUT General Information .....5

1.2 Antenna Information .....5

1.3 Table for Multiple Listing .....6

1.4 Table for EUT support function .....6

1.5 Table for Class II Change.....7

1.6 Testing Location .....7

**2 Maximum Permissible Exposure .....8**

2.1 Limit of Maximum Permissible Exposure .....8

2.2 MPE Calculation Method.....8

2.3 Calculated Result and Limit.....9

**Photographs of EUT v01**



### History of this test report

Report No.	Version	Description	Issued Date
FA000614-01	01	Initial issue of report	Feb. 26, 2021
FA000614-01	02	Update the information on section 1.6 Testing Location.	Sep. 08, 2021



### 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: **Wendy Pan**



# 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 Antenna Information

Ant.	Port	Brand	Model Name	Type	Connector	Antenna Gain (dBi)	
						WLAN 2.4GHz	WLAN 5GHz
1	1	WNC	C200	PIFA	I-PEX	2.74	-
2	2	WNC	C200	Printed	N/A	2.89	-
3	1	WNC	C200	PIFA	I-PEX	-	3.45
4	2	WNC	C200	Printed	N/A	-	5.09

Ant.	Port	Brand	Model Name	Type	Connector	Correlated Composite Gain (dBi)		
						WLAN 2.4GHz	WLAN 5GHz Band 1	WLAN 5GHz Band 4
1	1	WNC	C200	PIFA	I-PEX	3.27	-	-
2	2	WNC	C200	Printed	N/A		-	-
3	1	WNC	C200	PIFA	I-PEX	-	4.24	4.75
4	2	WNC	C200	Printed	N/A	-		



Ant.	Port	Brand	Model Name	Type	Connector	Correlated Composite Gain (dBi)	
						WLAN 5GHz Band 2	WLAN 5GHz Band 3
3	1	WNC	C200	PIFA	I-PEX	4.52	3.61
4	2	WNC	C200	Printed	N/A		

Note1: The above information was declared by manufacturer.

Note2: The EUT has four antennas.

WLAN 5GHz Band 2 / Band 3: Maximum Directional Gain following KDB662911 D03.

**For 2.4GHz WLAN function, 802.11b/g/n/VHT/ax mode (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

**For 5GHz WLAN function, 802.11a/n/ac/ax mode (2TX/2RX):**

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

### 1.3 Table for Multiple Listing

There are two EUTs and the difference as below.

EUT	5G FEM	
	Brand Name	Model Name
1	Qorvo	QPF4568
2	Qorvo	QM45868

Note: 1.The difference between them is the control voltage.

2.From the above EUT, EUT 1 was selected as representative EUT 1 for the test and its data was recorded in this report.

3.The above information was declared by manufacturer.

### 1.4 Table for EUT support function

Function	Support Band
AP	WLAN 2.4GHz/WLAN 5GHz Band 1~4
Mesh	WLAN 2.4GHz/WLAN 5GHz Band 1+4

Note: The above information was declared by manufacturer.



### 1.5 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FA000614

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

Modifications	Performance Checking
1. Adding 5GHz band 2 and band 3 (5250~5350 MHz, 5470~5725 MHz) for this device.	MPE
2. Adding mesh mode for WLAN 2.4GHz and WLAN 5GHz.	After evaluating, it doesn't affect the test results.

Note: Maximum Permissible Exposure of 2.4GHz and 5GHz band 1, 4 are based on original test report.

### 1.6 Testing Location

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.



## 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	*(100)	<6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	<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 20 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 <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
2.4G;G1D	2.89	26.77	29.66	0.50	30.16	1.03753	20	0.20641	1.00000
5.2G;D1D	5.09	24.95	30.04	0.50	30.54	1.13240	20	0.22528	1.00000
5.3G;D1D	5.09	23.77	28.86	0.50	29.36	0.86298	20	0.17168	1.00000
5.6G;D1D	5.09	23.97	29.06	0.50	29.56	0.90365	20	0.17978	1.00000
5.8G;D1D	5.09	26.94	32.03	0.50	32.53	1.79061	20	0.35623	1.00000

Simultaneous Transmission Analysis Mode: WLAN 2.4GHz + WLAN 5GHz

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )	Ratio (S/Limit)
2.4G;G1D	2.89	26.77	29.66	0.50	30.16	1.03753	20	0.20641	1.00000	0.20641
5.8G;D1D	5.09	26.94	32.03	0.50	32.53	1.79061	20	0.35623	1.00000	0.35623
									Sum Ratio	0.56264
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

—THE END—