

## RF Exposure Report

**Report No.:** SA180108C15A

**FCC ID:** TOR-W118

**Test Model:** W-118

**Received Date:** Jan. 08, 2018

**Test Date:** Feb. 22 ~ Mar. 20, 2018

**Issued Date:** Apr. 17, 2018

**Applicant:** Mojo Networks, Inc.

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**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
SA180108C15A	Original release.	Apr. 17, 2018

## 1 Certificate of Conformity

**Product:** Wall Jack Access Point

**Brand:** Mojo

**Test Model:** W-118

**Sample Status:** Engineering sample

**Applicant:** Mojo Networks, Inc.

**Test Date:** Feb. 22 ~ Mar. 20, 2018

**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 RF characteristics under the conditions specified in this report.

**Prepared by :** Pettie Chen , **Date:** Apr. 17, 2018  
Pettie Chen / Senior Specialist

**Approved by :** Bruce Chen , **Date:** Apr. 17, 2018  
Bruce Chen / Project Engineer

## 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 23cm 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)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
Radio 1					
WLAN 2412~2462 (CDD mode)	26.09	7.32	23	0.330	1
WLAN 2412~2462 (Beamforming mode)	21.70	7.32	23	0.120	1
Radio 2					
WLAN 5180~5240 (CDD mode)	23.44	9	23	0.264	1
WLAN 5260~5320 (CDD mode)	22.83	9	23	0.229	1
WLAN 5500~5700 (CDD mode)	23.76	9	23	0.284	1
WLAN 5745~5825 (CDD mode)	26.63	9	23	0.550	1
WLAN 5180~5240 (Beamforming mode)	21.43	9	23	0.166	1
WLAN 5260~5320 (Beamforming mode)	19.82	9	23	0.115	1
WLAN 5500~5700 (Beamforming mode)	20.75	9	23	0.142	1
WLAN 5745~5825 (Beamforming mode)	23.62	9	23	0.275	1
Radio 3					
WLAN 2412~2462 (CDD mode)	18.80	7.84	23	0.069	1
WLAN 5180~5240 (CDD mode)	17.29	7.32	23	0.043	1
WLAN 5260~5320 (CDD mode)	17.31	7.32	23	0.044	1
WLAN 5500~5700 (CDD mode)	17.43	7.32	23	0.045	1
WLAN 5745~5825 (CDD mode)	17.09	7.32	23	0.042	1
BT LE/Zigbee					
BT LE 2402~2480	2.38	2.76	23	0.0005	1
Zigbee	2.36	2.76	23	0.0005	1

Note:

2.4GHz:

Radio 1: Directional gain =  $4.31\text{dBi} + 10\log(2) = 7.32\text{dBi}$

Radio 3: Directional gain =  $4.83\text{dBi} + 10\log(2) = 7.84\text{dBi}$

5.0GHz:

Radio 2: Directional gain =  $5.99\text{dBi} + 10\log(2) = 9\text{dBi}$

Radio 3: Directional gain =  $4.80\text{dBi} + 10\log(2) = 7.81\text{dBi}$

Frequency Band	Max. Power (dBm)				Total Power (dBm)	Power Limit (dBm)
	Radio 1	Radio 3 (WLAN 2.4GHz)	BT LE	Zigbee		
2.4GHz	26.09	18.80	2.38	-	26.85	30
2.4GHz	26.09	18.80	-	2.36	26.85	30

**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

The simultaneous operation mode was determined by client.

No	Mode
1	Radio 1 + Radio 2 + Radio 3(2.4GHz) + BT LE
2	Radio 1 + Radio 3(5GHz) + BT LE
3	Radio 1 + Radio 2 + Radio 3(2.4GHz)+ Zigbee
4	Radio 1 + Radio 3(5GHz) + Zigbee

\*The Radio 2 and Radio 3(5GHz) cannot transmit simultaneously.

Radio 1 + Radio 2 + Radio 3(2.4GHz) + BT LE =  $0.330 + 0.550 + 0.069 + 0.0005 = 0.95$

Radio 1 + Radio 3(5GHz) + BT LE =  $0.330 + 0.045 + 0.0005 = 0.376$

Radio 1 + Radio 2 + Radio 3(2.4GHz) + Zigbee =  $0.330 + 0.550 + 0.069 + 0.0005 = 0.95$

Radio 1 + Radio 3(5GHz) + Zigbee =  $0.330 + 0.045 + 0.0005 = 0.376$

Therefore the maximum calculations of above situations are less than the "1" limit.

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