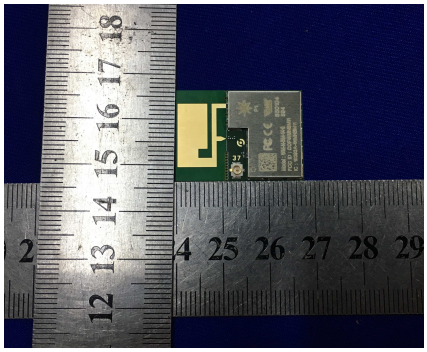
Certificate # 2951.01

TEST REPORT

Applicant	Particle Industries, Inc
Address	126 Post St, 4th floor, San Francisco, CA 94108 USA

Manufacturer or Supplier	Particle Industries, Inc
Address	126 Post St, 4th floor, San Francisco, CA 94108 USA
Product	802.11b/g/n WICED Module
Brand Name	Particle
Model	P1
Additional Model & Model Difference	WM-N-BM-14-S



Date of tests	Jun. 17, 2021 ~ Aug. 04, 2021

The submitted sample of the above equipment has been tested according to the requirements of the following standard:

☒ **EN IEC 62311:2020**
☒ **EN 50665:2017**

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Andy Zhu Supervisor / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
Andy	Date: Aug. 25, 2021

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SE2106WDG0248	Original release	Aug. 25, 2021

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF EUT

PRODUCT	802.11b/g/n WICED Module
MODEL NO.	P1
ADDITIONAL MODEL	WM-N-BM-14-S
NOMINAL VOLTAGE	DC 3.3V
OPERATING TEMPERATURE RANGE	-40 ~ + 85℃
MODULATION TECHNOLOGY	DSSS, OFDM
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
OPERATING FREQUENCY	2.400GHz-2.4835GHz for 11b/g/n(HT20)
EIRP (Max.)	19.76dBm (Measured Max.)
ANTENNA TYPE	PCB Antenna, with 3.88dBi gain

NOTES:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions, but only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.:2106WDG0248) for detailed product photo.
4. The EUT have SISO function, provides 1 completed transmitter and 1 receiver.

MODULATION MODE	TX FUNCTION
802.11b	1TX/1RX
802.11g	1TX/1RX
802.11n (HT20)	1TX/1RX

5. Additional model WM-N-BM-14-S is identical with the test model P1 except the model no. for trading purpose.

2. RF EXPOSURE MEASUREMENT

2.1 INTRODUCTION

This International Standard applies to electronic and electrical equipment for which no dedicated product- or product family standard regarding human exposure to electromagnetic fields applies.

The frequency range covered is 0 Hz to 300 GHz.

The object of this generic standard is to provide assessment methods and criteria to evaluate such equipment against basic restrictions or reference levels on exposure of the general public related to electric, magnetic and electromagnetic fields and induced and contact current.

2.2 LIMIT

According to EN IEC 62311, the criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified 1999/519/EC.

FREQUENCY RANGE (GHz)	E-FIELD STRENGTH (V/m)
2 ~ 300	61

2.3 CLASSIFICATION OF THE ASSESSMENT METHODS

The antenna of the product, under normal use condition is at least 20 cm away from the body of the user. Warning statement to the user for keeping at least 20cm separation distance and the prohibition of operating to a person has been printed on the WLAN easy install sheet. So, this product under normal use is located on electromagnetic far field between the human body.

Far Field Calculation Formula

$$E = \eta_0 H = \frac{\sqrt{30PG(\theta,\phi)}}{r}$$

G = antenna gain relative to an isotropic antenna
θ,ϕ = elevation and azimuth angles to point of investigation
r = distance from observation point to the antenna
η_0 = Characteristic impedance of free space

2.4 TEST RESULTS

CALCULATION FOR MAXIMUM E.I.R.P.

Output Power E.I.R.P. (dBm)	Output Power E.I.R.P. (mW)	E-Field Strength (V/m)	E-Field Strength Limit (V/m)	PASS / FAIL
19.76	94.624	8.424	61.00	PASS