RF EXPOSURE 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	Tracker One LTE M1
Brand Name	Particle
Model	ONE402M
Additional Model & Model Difference	ONE404M
Date of tests	Aug. 18, 2020 ~ Sep. 10, 2020

☒ **FCC Part 2 (Section 2.1091)**

☒ **KDB 447498 D01**

☒ **IEEE C95.1**

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

Tested by Breeze Jiang Senior Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	 Date: Sep. 23, 2020

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TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM2008WDG0081	Original release	Sep. 23, 2020

1. CERTIFICATION

FCC ID:	2AEMI-ONE40X
PRODUCT:	Tracker One LTE M1
BRAND NAME:	Particle
MODEL NO.:	ONE402M
ADDITIONAL NO.:	ONE404M
TEST SAMPLE:	Engineering Sample
APPLICANT:	Particle Industries, Inc
STANDARDS:	FCC Part 2 (Section 2.1091)
	KDB 447498 D01
	IEEE C95.1

Note: Additional model ONE404M is identical with the test model ONE402M except the model number for marketing purpose.

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm^2)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

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

4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Transmitter Circuit	Peak Gain (dBi)	Antenna Type
BT-LE	1.71	FPCB Antenna
	0	Ceramic Antenna
WIFI	1.71	FPCB Antenna

6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
BT-LE (GFSK)	2402-2480MHz	8	+-1	7	9
802.11b	2412-2462MHz	16	+-1	15	17
802.11g	2412-2462MHz	16	+-1	15	17
802.11n HT20	2412-2462MHz	16	+-1	15	17
802.11n HT40	2422-2452MHz	16	+-1	15	17

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
BT-LE (GFSK)	2440	7.81
802.11b	2462	16.60
802.11g	2462	15.97
802.11n HT20	2422	15.99
802.11n HT40	2462	15.93

FREQUENCY BAND(MHz)	MAX AVERAGE POWER(dBm)	ANTENNA GAIN(dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm^2)	LIMIT (mW/cm^2)
BT 2402-2480	9	1.71	20	0.002343	1.0
WiFi 2412-2462	17	1.71	20	0.014782	1.0

CONCLUSION:

The BT and WLAN can transmit simultaneously, the formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

(0.002343/1)+(0.014782/1) = 0.017125<1, which is less than the “1” limit.

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