


# TEST REPORT



Applicant	Particle Industries, Inc
Address	325 9th St, San Francisco, CA 94103 USA, 415-319-1553

Manufacturer or Supplier	Particle Industries, Inc	
Address	325 9th St, San Francisco, CA 94103 USA, 415-319-1553	
Product	Tracker One LTE CAT1/3G/2G	
Brand Name	Particle	
Model	ONE523M	
Additional Models & Model Difference	ONE524M, ONE523M-NB, ONE524M-NB, see section 1.1 note	
Date of tests	Aug. 18, 2020 ~ Sep. 10, 2020	

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

- EN 62479:2010
- EN 50663:2017

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

Tested by Lucas Chen Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	  Date: Sep. 02, 2022

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/>, and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.



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Test Report No.: SE2208WDG0101-2

## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SE2008WDG0083-2	Original release	Dec. 21, 2020
SE2208WDG0101-2	Based on the original report SE2008WDG0083-2 changed the address about the applicant and manufacturer, but it doesn't need to be retested.	Sep. 02, 2022

## 1. GENERAL INFORMATION

### 1.1. GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	Tracker One LTE CAT1/3G/2G
<b>MODEL NO.</b>	ONE523M
<b>ADDITIONAL MODELS</b>	ONE524M, ONE523M-NB, ONE524M-NB
<b>NOMINAL VOLTAGE</b>	LI+ pin: DC+3.6V--4.2V or Vusb PIN: DC+4.5V--5.5V or Vin PIN: DC 6V--30V
<b>MODULATION TECHNOLOGY</b>	DTS
<b>MODULATION TYPE</b>	BT-LE, ASK
<b>OPERATING FREQUENCY</b>	2402MHz -2480MHz for BT-LE(GFSK), 13.56MHz for NFC receiving
<b>EIRP POWER (MAX.)</b>	9.00dBm for BT-LE
<b>ANTENNA TYPE</b>	FPCB Antenna, 1.71dBi Gain For BT-LE, or Ceramic Antenna, 0dBi Gain For BT-LE, Loop Antenna for NFC receiving

#### 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.: 2208WDG0101) for detailed product photo
4. Additional models ONE524M, ONE523M-NB, ONE524M-NB are identical with the test model ONE523M except the model number for marketing purpose.
5. BT-LE has two antenna were tested, but there are can't transmitting at the same time, FPCB antenna may be connect to EUT with ANT connector.
6. The EUT has two version: V1.0 and V1.1, the V1.1 version sample based on V1.0 version sample added GPIO isolation and LDO, the difference test in 2208WDG0101 report.

## 2. RF EXPOSURE MEASUREMENT

### 2.1 INTRODUCTION

This International Standard provides simple conformity assessment methods for low-power electronic and electrical equipment to an exposure limit relevant to electromagnetic fields (EMF). If such equipment cannot be shown to comply with the applicable EMF exposure requirements using the methods included in this standard for EMF assessment, then other standards, including IEC 62311 or other (EMF) product standards, may be used for conformity assessment. This European Standard supersedes EN 50371:2002.

### 2.2 COMPLIANCE CRITERIA

Compliance of electromagnetic emissions from electronic and electrical equipment with the basic restrictions usually is determined by measurements and, in some cases, calculation of the exposure level. If the electrical power used by or radiated by the equipment is sufficiently low, the electromagnetic fields emitted will be incapable of producing exposures that exceed the basic restrictions. This standard provides simple EMF assessment procedures for this low power equipment.

Any relevant compliance assessment procedure which is consistent with the state of the art, reproducible and gives valid results can be used.

For transmitters intended for use with more than one antenna configuration option, the combination of transmitter and antenna(s) which generates the highest available antenna power and/or average total radiated power shall be assessed.

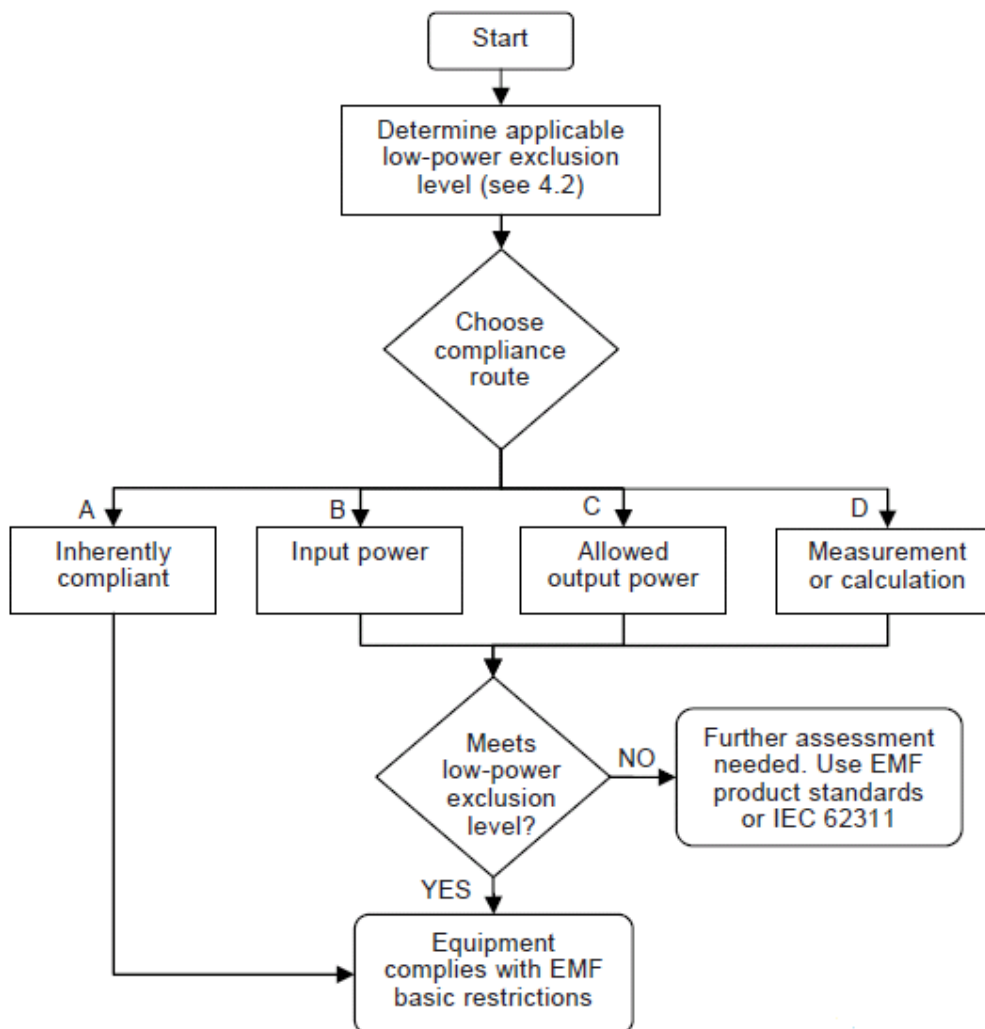
### 2.3 NORMATIVE REFERENCE

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Publication	Year	Title	EN/HD	Year
IEC 62311 (mod)	-	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz -300 GHz)	EN 62311: 2008	-

**NOTE:** When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

## 2.4 ROUTES TO SHOW COMPLIANCE WITH LOW-POWER EXCLUSION LEVEL



## 2.5 TEST RESULTS

### CALCULATION FOR MAXIMUM EIRP:

AV Power (EIRP)(dBm)	Power (EIRP)(mW)	Low-power exclusion level (mW)
9.00	7.943	20