

# Test report

Number:	<b>T251-0411/20</b>	Project file:	<b>C20193276</b>
		Date:	<b>2020-06-17</b>
		Pages:	<b>5</b>
Product:	<b>Bluetooth item finder</b>		
Type reference:	<b>C19M</b>		
Ratings:	1 x Coin battery; CR2032; 3 V Protection class: III		
Trademark:	chipolo		
Applicant:	<b>Chipolo d.o.o. Gabrsko 12, SI-1420 Trbovlje, Slovenia</b>		
Manufacturer:	Chipolo d.o.o. Gabrsko 12, SI-1420 Trbovlje, Slovenia		
Place of manufacture:	Chipolo d.o.o. Gabrsko 12, SI-1420 Trbovlje, Slovenia		

## Summary of testing

Testing method: 47 CFR Part 2.1093,  
KDB 447498 D01 General RF Exposure Guidance v06

Testing location: SIQ Ljubljana, Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia

Remarks: Date of receipt of test items: 2020-06-18  
Number of items tested: 1  
Date of performance of tests: 2020-06-18  
The test results presented in this report relate only to the items tested.  
The product complies with the requirements of the testing methods.

Tested by: Luka Tosetto



Approved by: Marjan Mak



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## 1 GENERAL

History sheet			
Date	Report No.	Change	Revision
2020-06-18	T251-0411/20	Initial Test Report issued.	--

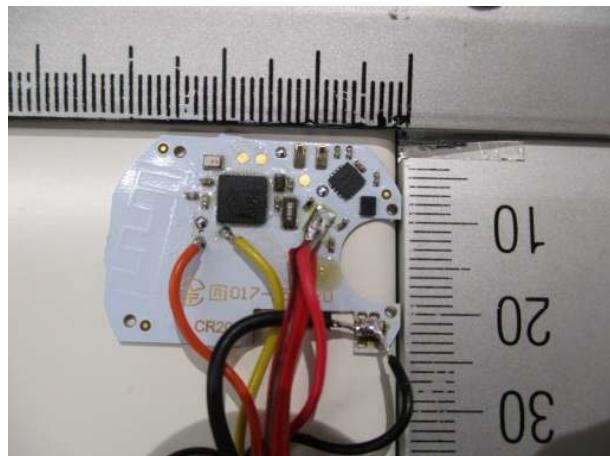
### 1.1 Equipment under test

#### Bluetooth item finder

Type: **C19M**

Device uses integral antenna with 0 dBi.

**Equipment falls under product for portable use.**



Samples photos

### 1.2 Reviewed / referenced documents

Reviewed documents:

- T251-0278/20 from SIQ Ljubljana

## 2 LIMITS

According to 47 CFR §2.1093:

The test separation distances required for a device to demonstrate SAR or MPE compliance must be sufficiently conservative to support the operational separation distances required by the device and its antennas and radiating structures. For devices used in close proximity to users, the test separation distance is determined by the smallest distance between the outer surface of the device and the user. When the test separation distance is specified as a “not to exceed” distance in the published RF exposure KDB procedures; for example,  $\leq 5$  mm, the operational separation distance of the host device cannot be less than the tested distance.

Test separation distances specified in the published RF exposure KDB publications as less than or equal to a threshold distance should be treated as a “not to exceed distance,” where smaller test distances may be necessary to satisfy more conservative exposure conditions.

Devices that are designed to operate on the body of users using lanyards and straps or without requiring additional body-worn accessories must be tested for SAR compliance using a conservative minimum test separation distance  $\leq 5$  mm to support compliance.

For 100 MHz to 6 GHz and test separation distances  $\leq 50$  mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})]^{1/2} f(\text{GHz}) \leq 3.0$  for 1-g SAR, and  $\leq 7.5$  for 10-g extremity SAR, where  $f(\text{GHz})$  is the RF channel transmit frequency in GHz.

### Maximum output power approximations for SAR Test Exclusion Threshold (in mW) at 5 mm distance:

Frequency (MHz)	150	300	450	835	900	1500	1900	2450	3600	5200	5400	5800
Power (mW)	39	27	22	16	16	12	11	10	8	7	6	6

### 3 ASSESSMENT PROCEDURE

#### SAR EVALUATION OF PORTABLE DEVICES

Human exposure to RF emissions from mobile devices (47 CFR §2.1093) may be evaluated based on the Clause 4.3 of the KDB 447498 D01 General RF Exposure Guidance v06 adopted by the FCC.

Procedure "Standalone SAR test exclusion consideration" used.

Standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

**Environment:** Uncontrolled / General Public

**Assessment distances:** < 5 mm; < 1 mm (approximation of separation used based on thickness of the enclosure material)

**Assessed frequency ranges:** 2,400 GHz to 2,4835 GHz

**Max power channel (2,402 GHz):**

**At normal test conditions:**

Max Burst ERP (dBm)	Max Burst EIRP (dBm / mW)
-2,4	-2,4 / 0,575

**At test conditions -15°C:**

Max Burst ERP (dBm)	Max Burst EIRP (dBm / mW)
-2,0	-2,0 / 0,631

**Calculation formula:**  $P_{max.} \cdot \sqrt{f} / SD \leq 3.0$

**Where:**

$P_{max.}$  = max. power of channel, including tune-up tolerance in mW

SD = min. test separation distance in mm

f = assessed RF channel frequency in GHz

**Calculated value of  $P_{max.} \cdot \sqrt{f} / SD$  at 5 mm distance:**

At normal test conditions	At test conditions -15°C
0,178	0,195

**Calculated value of  $P_{max.} \cdot \sqrt{f} / SD$  at 1 mm distance:**

At normal test conditions	At test conditions -15°C
0,89	0,976

**Conclusion:**

Device passes exclusion requirements of 47 CFR part 2.1093.