Test report

Number:	**T251-0564/22**	Project file:	C20221548
		Date:	2022-08-29
		Pages:	5
Product:	**IOT Module**		
Type reference:	**Master V10**		
Ratings:	Externally powered from 12 Vdc bike system (charging) or powered via internal battery 3,6 Vdc, 2500 mAh Protection class: III		
Trademark:	COMODULE		
Applicant:	**COMODULE OÜ** **Dunkri 9, 10123 Tallinn, Estonia**		
Manufacturer:	COMODULE OÜ Dunkri 9, 10123 Tallinn, Estonia		
Place of manufacture:	COMODULE OÜ Dunkri 9, 10123 Tallinn, Estonia		

Summary of testing

Testing method:	47 CFR FCC Part 1.1307(b)(1)(A), 1.1307(b)(3)(i)(B), 2.1091(c)(1) and KDB 447498 D01 General RF Exposure Guidance v06 Clause 4.3.1
Testing location:	SIQ Ljubljana, Mašera-Spasićeva ulica 10, SI-1000 Ljubljana, Slovenia
Remarks:	Date of receipt of test items: 2022-05-18 Number of items tested: 1 Date of performance of tests: 2022-07-19 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
2022-08-29	T251-0564/22	Initial Test Report issued.	--

1.1 Equipment under test

IOT Module
Type: **Master V10**
Environment: Uncontrolled / General Public
Assessment distance: >20 cm

FCC ID**: 2AQHS420012**

Reviewed test report T251-0521/22 from SIQ Ljubljana.

2 ASSESSMENT PROCEDURE

According to 1.1307(b)(1)(A):
Determine that they qualify for an exemption pursuant to § 1.1307(b)(3).

According to 1.1307(b)(3)(i)(B) and 2.1091(c)(1):
The available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^x & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

d = the separation distance (cm);

KDB 447498 D01 General RF Exposure Guidance v06 Clause 4.3.1. Standalone SAR test exclusion considerations
SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition(s), listed below, is (are) 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.

For frequencies below 100 MHz, the following may be considered for SAR test exclusion:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] ·
[$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where

- $f_{(GHz)}$ is the RF channel transmit frequency in GHz

{[Power allowed at numeric threshold for 50 mm in step above)] + [(test separation distance – 50 mm)·($f_{(MHz)}$/150)]} mW

3 MEASUREMENTS / CALCULATIONS

According to 1.1307(b)(3)(i)(B) and 2.1091(c)(1):

Frequency (MHz)	Maximum* power with tune-up (dBm)	Maximum* power with tune-up (mW)	EA Test Exclusion Threshold (mW)
2402-2480	9.6	14.97	3060

KDB 447498 D01 General RF Exposure Guidance v06 Clause 4.3.1:

Frequency (MHz)	Maximum* power with tune-up (dBm)	Maximum* power with tune-up (mW)	SAR Test Exclusion Threshold (mW)
2402-2480	9.6	14.97	1918

* Gated power with Duty Cycle calculated in
** maximum tolerance provided from manufacturer is ±2dB.

Conclusion: PASS; EA and SAR Evaluation are not required due to Test Exclusion Thresholds are met.

There is no simultaneous transmission between any other transmitter.