RADIO PERFORMANCE TEST REPORT

Test Report No. : **OT-229-RWD-004**

Reception No. : **2208002666**

Applicant : **ROBOTIS**

Address : **37, Magokjungang 5-ro 1-gil, Gangseo-gu, Seoul, South Korea**

Manufacturer : **ROBOTIS**

Address : **37, Magokjungang 5-ro 1-gil, Gangseo-gu, Seoul, South Korea**

Type of Equipment : **RC-300**

FCC ID. : **SOD-RC-300**

Model Name : **RC-300**

Multiple Model Name : **N/A**

Serial number : **N/A**

Total page of Report : **7 pages (including this page)**

Date of Incoming : **August 08, 2022**

Date of issue : **September 02, 2022**

SUMMARY

The equipment complies with the regulation; ***FCC 47 CFR Part 1, 1.1310***

This test report only contains the result of a single test of the sample supplied for the examination.

It is not a generally valid assessment of the features of the respective products of the mass-production.

This report is not correlated with the "KS Q ISO/IEC 17025 and KOLAS accreditation" of Korean Laboratory Accreditation Scheme.

Tested by	Reviewed by	Approved by
Yun-Bok, Wi / Engineer	Tae-Ho, Kim / General Manager	Ki-Hong, Nam / General Manager
ONETECH Corp.	ONETECH Corp.	ONETECH Corp.

ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

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ONETECH Corp.: 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea (TEL: 82-31-799-9500, FAX: 82-31-799-9599)

Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-229-RWD-004	September 02, 2022	Initial Release	All

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1. VERIFICATION OF COMPLIANCE

Applicant : ROBOTIS

Address : 37, Magokjungang 5-ro 1-gil, Gangseo-gu, Seoul, South Korea

Contact Person : Eunsung Lee / Research Engineer

Telephone No. : +82-70-8671-2600

FCC ID : SOD-RC-300

Model Name : RC-300

Brand Name : -

Serial Number : N/A

Date : September 02, 2022

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	RC-300
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2020
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 SUBPART C Section 15.247 KDB 558074 D01 15.247 Meas Guidance v05r02
Modifications on the Equipment to Achieve Compliance	None
Final Test was Conducted On	3 m, Semi Anechoic Chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. GENERAL INFORMATION

2.1 Product Description

The ROBOTIS, Model RC-300 (referred to as the EUT in this report) is a RC-300. The product specification described herein was obtained from product data sheet or user's manual.

Device Type	RC-300
Temperature Range	-20 °C ~ 50 °C
Operating Frequency	2 402 MHz ~ 2 480 MHz
RF Output Power	-9.18 dBm
Number of Channel	40 Channel
Modulation Type	DSSS Modulation(GFSK)
Antenna Type	PCB Antenna
Antenna Gain	-0.09 dBi
Electrical Rating	DC 3.0 V
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	16 MHz

2.2 Alternative type(s)/model(s); also covered by this test report.

-. None

3. EUT MODIFICATIONS

-. None

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4. MAXIMUM PERMISSIBLE EXPOSURE

4.1 Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Portable device with its physical nature to be used nearby, the distance between radiating structure and human is less than 20 cm.

As per KDB 447498 D01, The 1-g and 10-g SAR test exclusion thesholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are detrmined by:

[(Max. Power of channel, including tune-up tolerance, mW)/(Mim. test separation distance, mm)] X [√ 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 and distance are rounded to the nearest mW and mm before calculation
The result is rounded to one decimal place for comparison.

4.2 EUT Description

Kind of EUT	RC-300
Device Category	■ Portable (< 20 cm separation) ☐ Mobile (> 20 cm separation) ☐ Others
Exposure Evaluation Applied	■ MPE ☐ SAR ☐ N/A

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4.3 Calculated RF Exposure

According to the procedure, KDB 447498 D01, the standalone SAR test exclusion threshold is

[(Max. Power of channel, including tune-up tolerance, mW)/(Mim. test separation distance, mm)] X [√ f(GHz)] < 3

= (0.14/5) X √ 2.402 = 0.042

Frequency (MHz)	Target Power W/tolerance (dBm)	Max tune up power (dBm)	Max tune up power (mW)	Separation distance (mm)	RF exposure
2 402.00	-9.18 ± 0.5	-8.68	0.14	5	0.042

Conclusion:

SAR evaluation for general population exposure conditions by measurement or numerical simulation is not required.

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