

ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR LOW-POWER, NON-LICENSED TRANSMITTER

Test Report No. : OT-198-RWD-022
AGR No. : A194A-422R
Applicant : Cufit Inc.
Address : 705, HumanTeco, 57, Achasan17gil, Seongdong-gu, Seoul 04799, Republic of Korea
Manufacturer : InfosTechnology
Address : 2F Gubo bldg, 133 Nonhyun-ro, Seocho-gu, Seoul, 137-890, Korea
Type of Equipment : OPENRIDER R1
FCC ID. : 2AUADR1-200-GE
Model Name : R1-200-GE
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 8 pages (including this page)
Date of Incoming : January 23, 2019
Date of issue : August 08, 2019

SUMMARY

The equipment complies with the regulation; **FCC PART 15 SUBPART C Section 15.247**

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.

Reviewed by:


Yu-Seog Sim / Assistant Manager
ONETECH Corp.

Approved by:


Jae-Ho Lee / Chief Engineer
ONETECH Corp.

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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-198-RWD-022	August 08, 2019	Initial Issue	All

1. VERIFICATION OF COMPLIANCE

Applicant : Cufit Inc.

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Contact Person : Haeng-ro Choi / Senior Manager

Telephone No. : +82-10-6316-0364

FCC ID : 2AUADR1-200-GE

Model Name : R1-200-GE

Brand Name : OPENRIDER

Serial Number : N/A

Date : August 08, 2019

EQUIPMENT CLASS	DSS – PART 15 SPREAD SPECTRUM TRANSMITTER
E.U.T. DESCRIPTION	OPENRIDER R1
KIND OD EQUIPMENT	Modular Transmitter
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2013
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
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.

2. GENERAL INFORMATION

2.1 Product Description

The Cufit Inc., Model R1-200-GE (referred to as the EUT in this report) is a OPENRIDER R1. The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	OPENRIDER R1	
OPERATING FREQUENCY	Bluetooth LE	2 402 MHz ~ 2 480 MHz
	ANT+	2 402 MHz ~ 2 480 MHz
	NFC	860 ~960 MHz (Rx Only)
RF OUTPUT POWER	Bluetooth LE	0.57 dBm
	ANT+	-1.18 dBm
NUMBER OF CHANNEL	Bluetooth LE	40 Channels
	ANT+	79 Channels
MODULATION TYPE	Bluetooth LE	GFSK
	ANT+	
	NFC	DSB-ASK, SSB-ASK, or PR-ASK
ANTENNA TYPE	Bluetooth LE	MULTILAYER CERAMIC ANTENNA
	ANT+	
	NFC	Combination of loop and dipole(Blade antenna) Antenna
ANTENNA GAIN	2.12 dBi	
LIST OF EACH OSC. OR CRYSTAL. FREQ.(FREQ.>=1 MHz)	16 MHz, 32.768 kHz	
RATED SUPPLY VOLTAGE	DC 3.0 V	

Note: Bluetooth and ANT+ do not operate simultaneously.

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

- . None

3. EUT MODIFICATIONS

- . None

4. RF Exposure Evaluation

4.1 Standard Applicable

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.

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

$[(\text{Max. Power of channel, including tune-up tolerance, mW}) / (\text{Min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] < 3$

4.2 EUT Description

Kind of EUT	OPENRIDER R1
Operating Frequency Band	<input type="checkbox"/> Wireless Microphone: 494.000 MHz ~ 501.000 MHz <input type="checkbox"/> and 498.200 MHz ~ 505.200 MHz <input type="checkbox"/> WLAN: 2 412 MHz ~ 2 462 MHz <input type="checkbox"/> WLAN: 5 180 MHz ~ 5 240 MHz <input type="checkbox"/> WLAN: 5 745 MHz ~ 5 825 MHz <input checked="" type="checkbox"/> ANT+ (GFSK) : 2 402 MHz ~ 2 480 MHz <input type="checkbox"/> Bluetooth BLE: 2 402 MHz ~ 2 480 MHz
MAX. RF OUTPUT POWER	-1.18 dBm
Antenna Gain	2.12 dBi
Exposure Evaluation Applied	<input type="checkbox"/> MPE <input type="checkbox"/> SAR <input checked="" type="checkbox"/> SAR Test Exclusion Evaluation

Note : It was calculated as SAR Test Exclusion Evaluation because it can be installed on the bicycle panel in the manual.

4.3 Test Result of SAR Exclusion for Devices

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

$$[(\text{Max. Power of channel, including tune-up tolerance, mW}) / (\text{Min. test separation distance, mm})] \times [\sqrt{f(\text{GHz})}] < 3$$
$$= (-0.68 / 5) \times \sqrt{2.402} = 0.27$$

Conclusion: The SAR test exclusion threshold is less than 3, so the device meets the RF Exposure Requirement and excluded SAR Test.

Mode	Frequency (MHz)	Target Power W/tolerance (dBm)	Max tune up power (dBm)	Max tune up power (mW)	Separation distance (mm)	RF exposure
ANT+ (GFSK)	2 402	-1.18 ± 0.5	-0.68	0.86	5	0.27



Tested by: Ha-Ram Lee / Assistant Manager