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

Test Report No.	**: OT-188-RWD-024**
AGR No.	**: A187A-274**
Applicant	**: AISOLUTION Co., LTD.**
Address	**: 01194 28-4, Samyang-ro 29-gil, Gangbuk-gu, Seoul, 01194, South Korea**
Manufacturer	**: AISOLUTION Co., LTD.**
Address	**: 01194 28-4, Samyang-ro 29-gil, Gangbuk-gu, Seoul, 01194, South Korea**
Type of Equipment	**: KDC BLE USB Dongle**
FCC ID.	**: VH9KBLED41**
Model Name	**: KBLED41**
Serial number	**: N/A**
Total page of Report	**: 7 pages (including this page)**
Date of Incoming	**: July 19, 2018**
Date of issue	**: August 17, 2018**

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: Jae-Ho Lee / Chief Engineer
ONETECH Corp.

Approved by: Keun-Young, Choi / Vice President
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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Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-188-RWD-024	August 17, 2018	Initial Issue	All

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1. VERIFICATION OF COMPLIANCE

Applicant : AISOLUTION Co., LTD.

Address : 01194 28-4, Samyang-ro 29-gil, Gangbuk-gu, Seoul, 01194, South Korea

Contact Person : Hyun Su Cho / Assistant Manager

Telephone No. : +82-2-2201-3731

FCC ID : VH9KBLED41

Model Name : KBLED41

Brand Name : -

Serial Number : N/A

Date : August 17, 2018

EQUIPMENT CLASS	***DTS – PART 15 DIGITAL TRNSMISSION SYSTEM***
E.U.T. DESCRIPTION	KDC BLE USB Dongle
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.

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2. GENERAL INFORMATION

2.1 Product Description

The AISOLUTION Co., LTD., Model KBLED41 (referred to as the EUT in this report) is a KDC BLE USB Dongle. The product specification described herein was obtained from product data sheet or user's manual.

Device Type	KDC BLE USB Dongle
Operating Frequency	2 402 MHz ~ 2 480 MHz
RF Output Power	-1.88 dBm
Number of Channel	40 Channels
Modulation Type	GFSK
Antenna Type	Chip Antenna
Antenna Gain	4.08 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	16 MHz
Rated Supply Voltage	DC 5.0 V

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 RF Exposure Calculation

According to the FCC rule §1.1310, the limit for General Population/Uncontrolled exposure is 1 mW/cm² for the device operating 1 500 ~ 100 000 MHz.

4.2 EUT Description

Kind of EUT	KDC BLE USB Dongle
Operating Frequency Band	☐ Wireless Microphone: 494.000 MHz ~ 501.000 MHz and 498.200 MHz ~ 505.200 MHz ☐ WLAN: 2 412 MHz ~ 2 462 MHz ☐ WLAN: 5 180 MHz ~ 5 240 MHz ☐ WLAN: 5 745 MHz ~ 5 825 MHz ☐ Bluetooth: 2 402 MHz ~ 2 480 MHz ■ Bluetooth BLE: 2 402 MHz ~ 2 480 MHz
MAX. RF OUTPUT POWER	-1.88 dBm
Antenna Gain	4.08 dBi
Exposure Evaluation Applied	■ MPE ☐ SAR ☐ N/A

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4.3 3 Calculated MPE Safe Distance

According to above equation, the following result was obtained.

Operating Mode	Operating Freq. (MHz)	Target Power W/tolerance	Max tune up power		Antenna Gain		Safe Distance	Power Density (mW/cm²) @ 20 cm Separation	Limit (mW/cm²)
		(dBm)	(dBm)	(mW)	Log	Linear			
LE	2 480.00	-2.38 ± 0.5	-1.88	0.65	4.08	2.559	0.36	0.000 33	1.00

According to above table, for 2 402 MHz ~ 2 480 MHz Band, safe distance,

D = 0.282 * $\sqrt{}$ (0.65 * 2.559) / 1.00 = 0.36 cm

For getting power density at 20 cm separation in above table, following formula was used.

S = P * G / (4π * R²) = 0.65 * 2.559 / (4 * 3.14 * 20^2) = 0.000 33

Where:

S = Power Density,

P = Power input to the external antenna (Output power from the EUT antenna port (dBm) – cable loss (dB)),

G = Gain of Transmit Antenna (linear gain), R = Distance from Transmitting Antenna

Tested by: Min-Gu Ji / Assistant Manager

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