

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

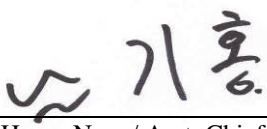
Test Report No. : W172R-D019
AGR No. : A168A-287
Applicant : UNIQON Inc.
Address : 22-7, Bugok-dong, Geumjeong-gu, Busan, 46253, South Korea
Manufacturer : UNIQON Inc.
Address : 22-7, Bugok-dong, Geumjeong-gu, Busan, 46253, South Korea
Type of Equipment : Bluetooth LE Module
FCC ID. : 2AJNABITLE1
Model Name : BITLE1
Serial number : N/A
Total page of Report : 6 pages (including this page)
Date of Incoming : February 02, 2017
Date of issue : February 16, 2017

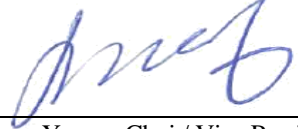
SUMMARY

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: 
 Ki-Hong, Nam / Asst, Chief Engineer
 ONETECH Corp.

Approved by: 
 Keun-Young, Choi / Vice President
 ONETECH Corp.

CONTENTS

PAGE

1. VERIFICATION OF COMPLIANCE	4
2. GENERAL INFORMATION	5
2.1 PRODUCT DESCRIPTION.....	5
2.2 ALTERNATIVE TYPE(S)/MODEL(S); ALSO COVERED BY THIS TEST REPORT.....	5
3. EUT MODIFICATIONS.....	5
4. MAXIMUM PERMISSIBLE EXPOSURE	6
4.1 RF EXPOSURE CALCULATION	6
4.2 EUT DESCRIPTION.....	6
4.3 TEST RESULT	6

Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
W172R-D019	February 16, 2017	Initial Issue	All

1. VERIFICATION OF COMPLIANCE

Applicant : UNIQON Inc.
Address : 22-7, Bugok-dong, Geumjeong-gu, Busan, 46253, South Korea
Contact Person : Sungmyung, Lee / Co-president
Telephone No. : +82-10-5550-5849
FCC ID : 2AJNABITLE1
Model Name : BITLE1
Brand Name : -
Serial Number : N/A
Date : February 16, 2017

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	Bluetooth LE Module
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 UNIQON Inc., Model BITLE1 (referred to as the EUT in this report) is a Bluetooth LE Module. The product specification described herein was obtained from product data sheet or user's manual.

Device Type	Bluetooth LE Module
Temperature Range	-20 °C to 75 °C
Operating Frequency	2 402 MHz ~ 2 480 MHz
RF Output Power	5.12 dBm
Number of Channel	40 Channel
Modulation Type	GFSK
Antenna Type	PCB Antenna
USED RF CHIP	Marker: Qualcomm Technologies International, Ltd. Model Name: CSR1012
Antenna Gain	1.67 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	32.768 kHz, 16 MHz

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

-. None

3. EUT MODIFICATIONS

-. None

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	Bluetooth LE Module
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	5.12 dBm
Antenna Gain	1.67 dBi
Exposure Evaluation Applied	☐ MPE ☐ SAR ☒ N/A

4.3 Test Result

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

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

$$= (3.55/5) \times \sqrt{2.480} = 1.12$$

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

	Frequency (MHz)	Target Power W/tolerance (dBm)	Max tune up power (dBm)	Max tune up power (mW)	Separation distance (mm)	RF exposure
BLE (GFSK)	2 480	5.0 ± 0.5	5.5	3.55	5	1.12