

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

Test Report No. : E14NR-027
AGR No. : A140A-221
Applicant : LG Innotek Co., Ltd.
Address : 978-1, Jangduk-dong, Gwangsan-gu, Gwangju, 506-731, Korea
Manufacturer : LG Innotek Co., Ltd.
Address : 978-1, Jangduk-dong, Gwangsan-gu, Gwangju, 506-731, Korea
Type of Equipment : Wireless Module for Lighting Control
FCC ID. : YZP-TWZTV001D
Model Name : TWZT-V001D
Serial number : N/A
Total page of Report : 6 pages (including this page)
Date of Incoming : November 01, 2014
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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.

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Revision History

Issued Report No.	Issued Date	Revisions	Effect Section
E14NR-027	November 06, 2014	Initial Issue	All

1. VERIFICATION OF COMPLIANCE

Applicant : LG Innotek Co., Ltd.
 Address : 978-1, Jangduk-dong, Gwangsan-gu, Gwangju, 506-731, Korea
 Contact Person : Jeong, Inchang / Director
 Telephone No. : +86-62-950-0332
 FCC ID : YZP-TWZTV001D
 Model Name : TWZT-V001D
 Serial Number : N/A
 Date : November 06, 2014

EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	Wireless Module for Lighting Control
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.10: 2009
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	3/10 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 LG Innotek Co., Ltd., Model TWZT-V001D (referred to as the EUT in this report) is a Wireless Module for Lighting Control. The product specification described herein was obtained from product data sheet or user's manual.

Device Type	Wireless Module for Lighting Control
Temperature Range	-20 °C ~ +85 °C
Operating Frequency	2 405 MHz ~ 2 480 MHz
RF Output Power	3.72 dBm
Number of Channel	39 Channel
Modulation Type	O-QPSK
Antenna Type	Inserted into the main board (PCB Pattern Antenna)
USED RF CHIP	Marker: Ember Corporation Model Name: EM357
Antenna Gain	4.38 dBi
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	24 MHz

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

-. None

3. EUT MODIFICATIONS

-. None

4. RADIO FREQUENCY EXPOSURE

4.1 RF Exposure Limit

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	Main Control Unit
Operating Frequency Band	<input type="checkbox"/> Wireless Microphone: 494.000 MHz ~ 501.000 MHz and 498.200 MHz ~ 505.200 MHz <input type="checkbox"/> WLAN: 2 412 MHz ~ 2 462 MHz <input type="checkbox"/> WLAN: 5 180 MHz ~ 5 320 MHz / 5 500 MHz ~ 5 700 MHz <input type="checkbox"/> WLAN: 5 745 MHz ~ 5 825 MHz <input type="checkbox"/> Bluetooth: 2 402 MHz ~ 2 480 MHz <input checked="" type="checkbox"/> Jigbee: 2 405 MHz , 2 440 MHz , 2 480 MHz
Device Category	<input type="checkbox"/> Portable (< 20 cm separation) <input type="checkbox"/> Mobile (> 20 cm separation) <input checked="" type="checkbox"/> Others
Max. Output Power	3.72 dBm
Used Antenna	PCB Pattern Antenna
Used Antenna Gain	4.38 dBi
Exposure Evaluation Applied	<input checked="" type="checkbox"/> MPE <input type="checkbox"/> SAR <input type="checkbox"/> N/A

4.3 Test Result

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

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

$$= [3.72/5] \times \sqrt{2.405} = 1.15$$

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