

EMF TEST REPORT

Test Report No. : OT-239-RWD-034

Reception No. : 2307002349

Applicant : LG Electronics USA, Inc.

Address : 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey, 07632, United

States

Manufacturer : LG Electronics Inc.

Address : 84, Wanam-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do, Republic of Korea

Type of Equipment : Wired Remote Controller

FCC ID. : BEJ-PREMTA201

Model Name : PREMTA201

Serial number : N/A

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

Date of Incoming : August 09, 2023

Date of issue : September 25, 2023

SUMMARY

The equipment complies with the regulation; FCC CFR 47 PART 1.1310

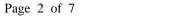
This test report only contains the result of a single test of the sample supplied for the examination.

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 Ha-Ram, Lee / Sr. Engineer ONETECH Corp. Reviewed by Tae-Ho, Kim / Chief Engineer 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-239-RWD-034 September 25, 2023		Initial Release	All	





1. VERIFICATION OF COMPLIANCE

Applicant : LG Electronics USA, Inc.

Address : 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey, 07632, United States

Contact Person: Eunk yung Lee

Telephone No. : +82-10-8353-2260

FCC ID : BEJ-PREMTA201

Model Name : PREMTA201

Brand Name : Serial Number : N/A

Date : September 25, 2023

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EQUIPMENT CLASS	DTS – DIGITAL TRNSMISSION SYSTEM
E.U.T. DESCRIPTION	Wired Remote Controller
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	KDB 447498 D01 General RF Exposure Guidance v06
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
Modifications on the Equipment to Achieve Compliance	None

^{-.} 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 Electronics USA, Inc., Model PREMTA201 (referred to as the EUT in this report) is a Wired Remote Controller. The product specification described herein was obtained from product data sheet or user's manual.

DEVICE TYPE	Wired Remote Controller				
Temperature Range	0 °C ~ 40 °C				
OPERATING FREQUENCY	2 412 MHz ~ 2 462 MHz (802.11b/g/n(HT20))				
MODULATION TYPE	802.11b: DSSS Modulation(DBPSK/DQPSK/CCK)				
	802.11g/n(HT20): OFDM Modulation(BPSK/QPSK/16QAM/64QAM) 14.71 dBm(802.11b)				
RF OUTPUT POWER	13.98 dBm(802.11g)				
	12.78 dBm(802.11n_HT20)				
ANTENNA TYPE	Chip Antenna				
ANTENNA GAIN	3.0 dBi				
List of each Osc. or crystal Freq.(Freq. >= 1 MHz)	24 MHz, 32 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 table 1B, the limit for the maximum permissible RF exposure for an uncontrolled environment are f/1500 mW/cm² for the frequency range between 300 MHz and 1 500 MHz and 1.0 mW/cm² for the frequency range between 1 500 MHz and 100 000 MHz.

The electric field generated for a 1 mW/cm² exposure is calculated as follows:

$$E = \sqrt{(30 * P * G)} / d$$
, and $S = E^2 / Z = E^2 / 377$, because 1 mW/cm² = 10 W/m²

Where

S = Power density in mW/cm², Z = Impedance of free space, 377 Ω

E = Electric filed strength in V/m, G = Numeric antenna gain, and d = distance in meter

Combing equations and rearranging the terms to express the distance as a function of the remaining variable

$$d = \sqrt{(30 * P * G) / (377 * 10 S)}$$

Changing to units of mW and cm, using P(mW) = P(W) / 1000, d(cm) = 0.01 * d(m)

$$d = 0.282 * \sqrt{(P * G) / S}$$

Where

d = distance in cm, P = Power in mW, G = Numeric antenna gain, and S = Power density in mW/cm²

4.2 EUT Description

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



4.3 Calculated MPE Safe Distance for WLAN

According to above equation, the following result was obtained.

Operating Freq. Band	Operating Mode	Target Power W/tolerance	Antenna Gain		Safe Distance	Power Density (mW/cm²) @ 20 cm	Limit (mW/cm²)		
(MHz)	(MHz)	(dBm)	(dBm)	(mW)	Log	Linear	(cm)	Separation	
	802.11b	14.71 ± 1.0	15.71	37.24			2.431	0.014 78	1.00
2 400	802.11g	13.98 ± 1.0	14.98	31.48	3.00	1.995	2.235	0.012 49	1.00
~ 2 483.5	802.11n_ HT20	12.77 ± 1.0	13.77	23.88			1.946	0.009 48	1.00

According to above table, for 2 400 ~ 2483.5 MHz Band(802.11 b), safe distance,

$$D = 0.282 * \sqrt{(37.24 * 1.995)/1.00} = 2.431 \text{ cm}.$$

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

$$S = P * G / (4\pi * R^2) = 37.24 * 1.995 / (4 * \pi * 20^2) = 0.014 \ 78$$

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