

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

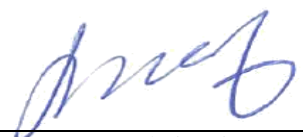
Test Report No. : OT-18O-RWD-065
AGR No. : A189A-026
Applicant : ELRETRON INC.
Address : 1206, 16, Digital-ro 32gil, Guro-gu, Seoul, Republic of Korea
Manufacturer : SUNNY-TECH ENTERPRISES CO., LIMITED
Address : 305-307, Jinmantang Bldg., liutang Road, Bao'an District, shenzhen, China. 518102
Type of Equipment : PENNA RF Mouse
FCC ID. : 2AQWK-PENNAMOUSE
Model Name : PENNA Mouse
Multiple Model Name : N/A
Serial number : N/A
Total page of Report : 6 pages (including this page)
Date of Incoming : August 31, 2018
Date of issue : October 26, 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.

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Revision History

| Rev. No. | Issue Report No. | Issued Date | Revisions | Section Affected |
|----------|------------------|------------------|---------------|------------------|
| 0 | OT-18O-RWD-065 | October 26, 2018 | Initial Issue | All |
| | | | | |
| | | | | |

1. VERIFICATION OF COMPLIANCE

Applicant : ELRETRON INC.
 Address : 1206, 16, Digital-ro 32gil, Guro-gu, Seoul, Republic of Korea
 Contact Person : Da Geun Lee / CTO
 Telephone No. : +82-10-4716-1720
 FCC ID : 2AQWK-PENNAMOUSE
 Model Name : PENNA Mouse
 Serial Number : N/A
 Date : October 26, 2018

| | |
|--|--------------------------------------|
| EQUIPMENT CLASS | DTS – DIGITAL TRNSMISSION SYSTEM |
| E.U.T. DESCRIPTION | PENNA RF Mouse |
| 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 ELRETRON INC., Model PENNA Mouse (referred to as the EUT in this report) is a PENNA RF Mouse. Product specification information described herein was obtained from product data sheet or user's manual.

| | |
|--|-----------------------------|
| DEVICE TYPE | PENNA RF Mouse |
| OPERATING FREQUENCY | 2 402.85 MHz ~ 2 480.85 MHz |
| RF OUTPUT POWER | -21.35 dBm |
| NUMBER OF CHANNEL | 3 Channels |
| MODULATION TYPE | GFSK |
| ANTENNA TYPE | PCB Antenna |
| ANTENNA GAIN | 2.75 dBi |
| LIST OF EACH OSC. OR CRYSTAL. FREQ.(FREQ.>=1 MHz) | 16 MHz |
| RATED SUPPLY VOLTAGE | DC 1.5 V (AA battery) |

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

-. None

3. EUT MODIFICATIONS

-. None

4. MAXIMUM PERMISSIBLE EXPOSURE

4.1 EUT Description

| | |
|-----------------------------|--|
| Kind of EUT | PENNA RF Mouse |
| 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 ~ 5 240 MHz <input type="checkbox"/> WLAN: 5 745 MHz ~ 5 825 MHz <input type="checkbox"/> Bluetooth: 2 402 MHz ~ 2 480 MHz <input type="checkbox"/> Bluetooth BLE: 2 402 MHz ~ 2 480 MHz |
| MAX. RF OUTPUT POWER | -21.35 dBm |
| Antenna Gain | 2.75 dBi |
| Exposure Evaluation Applied | <input type="checkbox"/> MPE <input type="checkbox"/> SAR <input checked="" type="checkbox"/> N/A |

4.2 Calculated MPE Safe Distance

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

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

$$= (0.01/5) \times \sqrt{2.441.85} = 0.005$$

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 |
|------|-----------------|--------------------------------|-------------------------|------------------------|--------------------------|-------------|
| GFSK | 2 441.85 | -22.85 ± 0.5 | -21.35 | 0.01 | 5 | 0.005 |



Tested by: Min-Gu, Ji / Assistant Manager