

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

**Test Report No.** : OT-18O-RWD-051  
**AGR No.** : A189A-123  
**Applicant** : ELRETRON INC.  
**Address** : 1206, 16, Digital-ro 32gil, Guro-gu, Seoul, Republic of Korea  
**Manufacturer** : ELRETRON INC.  
**Address** : 1206, 16, Digital-ro 32gil, Guro-gu, Seoul, Republic of Korea  
**Type of Equipment** : PENNA RF Pointer  
**FCC ID.** : 2AQWK-PENNAPOINTER  
**Model Name** : PENNA Pointer  
**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 25, 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.

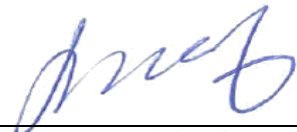
It is not a generally valid assessment of the features of the respective products of the mass-production.

Reviewed by:



Jae-Ho Lee / Chief Engineer  
ONETECH Corp.

Approved by:



Keun-Young, Choi / Vice President  
ONETECH Corp.

**CONTENTS**

	<b>PAGE</b>
<b>1. VERIFICATION OF COMPLIANCE .....</b>	<b>4</b>
<b>2. GENERAL INFORMATION.....</b>	<b>5</b>
<b>2.1 PRODUCT DESCRIPTION.....</b>	<b>5</b>
<b>2.2 ALTERNATIVE TYPE(S)/MODEL(S); ALSO COVERED BY THIS TEST REPORT. ....</b>	<b>5</b>
<b>3. EUT MODIFICATIONS.....</b>	<b>5</b>
<b>4. MAXIMUM PERMISSIBLE EXPOSURE.....</b>	<b>6</b>
<b>4.1 EUT DESCRIPTION.....</b>	<b>6</b>
<b>4.2 CALCULATED MPE SAFE DISTANCE.....</b>	<b>6</b>

### Revision History

Rev. No.	Issue Report No.	Issued Date	Revisions	Section Affected
0	OT-18O-RWD-051	October 25, 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-PENNAPOINTER  
 Model Name : PENNA Pointer  
 Serial Number : N/A  
 Date : October 25, 2018

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

DEVICE TYPE	PENNA RF Pointer
OPERATING FREQUENCY	2 445 MHz ~ 2 455 MHz
RF OUTPUT POWER	-5.20 dBm
NUMBER OF CHANNEL	3 Channels
MODULATION TYPE	GFSK
ANTENNA TYPE	PCB Antenna
ANTENNA GAIN	3.63 dBi
LIST OF EACH OSC. OR CRYSTAL. FREQ.(FREQ.>=1 MHz)	32 MHz
RATED SUPPLY VOLTAGE	DC 3.7 V

### 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 Pointer
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	-5.20 dBm
Antenna Gain	3.63 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

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

$$= (0.30/5) \times \sqrt{2.445} = 0.09$$

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	2 445	-4.70 ± 0.5	-5.20	0.30	5	0.09



**Tested by: Min-Gu, Ji / Assistant Manager**