

# RF Exposure Evaluation

## of

E.U.T. : Handheld Wireless Remote Control for  
Searchlight  
Model No. : TX-SL017  
Serial Model :  
FCC ID : V78TXSL017

## for

APPLICANT : Allremote Wireless Technology Co., Ltd  
ADDRESS : 2F., No.8, Aly. 16, Ln. 235, Baoqiao Rd.,  
Xindian Dist. New Taipei City 23145,  
Taiwan

Test Performed by

### **ELECTRONICS TESTING CENTER, TAIWAN**

NO. 34. LIN 5. DINGFU VIL., LINKOU DIST.,  
NEW TAIPEI CITY, TAIWAN, 24442, R.O.C.

Tel : (02)26023052 Fax : (02)26010910

<http://www.etc.org.tw> ; e-mail: [emc@etc.org.tw](mailto:emc@etc.org.tw)

Report Number : 20-07-RBF-032-01

# TEST REPORT CERTIFICATION

Applicant : Carilex Medical Inc.  
No.77, Keji 1<sup>st</sup> Road, Guishan District, Taoyuan City 33383,  
Taiwan(R.O.C)

Manufacturer : Carilex Medical Inc.  
No.77, Keji 1<sup>st</sup> Road, Guishan District, Taoyuan City 33383,  
Taiwan(R.O.C)

## Description of EUT

- a) Type of EUT : Handheld Wireless Remote Control for Searchlight
- b) Trade Name : Allremote
- c) Model No. : TX-SL017
- d) Serial Model :
- e) Power Supply : 3Vdc Battery
- f) Frequency Range : 2404-2463.5 MHz

Regulation Applied : FCC KDB447498 D01. The equipment fulfills the requirements on power density for general population/uncontrolled exposure and therefore fulfills the requirements of section 1.1310 of FCC 47 CFR Part 1.

Note: 1. The result of the testing report relate only to the item tested.

2. The testing report shall not be reproduced expect in full, without the written approval of ETC

*Date Test Item Received* : 7/28/2020  
*Date Test Campaign Completed* : 5/26/2021  
*Date of Issue* : 7/14/2021

*Test Engineer* : Kazuma Ho  
(Kazuma Ho, Engineer)

*Approve & Authorized* : Vincent Chang  
Vincent Chang, Supervisor  
EMC Dept. II of ELECTRONICS  
TESTING CENTER, TAIWAN



## Product Information:

Type of EUT: Handheld Wireless Remote Control for Searchlight

FCC ID: V78TXSL017

Model: TX-SL017

Serial Model:

Description: Turn on the power of the remote.

Maximum Field Strength (measured) :

**99.38** dBuV/m

EIRP (calculated) :

**4.180** dBm or **2.618** mW

Below is an example of the RF Exposure Statement:

**IMPORTANT NOTE:** To comply with the FCC RF exposure compliance requirements, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 0.5 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. No change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

## Relative Requirement for Compliance

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following:

TABLE 1 – LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0 .....	614	1.63	*(100)	6
3-30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300 .....	61.4	0.163	1.0	6
300-1500 .....	.....	.....	f/300	6
1500-100,000 .....	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34 .....	614	1.63	*(100)	30
1.34-30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30-300 .....	27.5	0.073	0.2	30
300-1500 .....	.....	.....	f/1500	30
1500-100,000 .....	.....	.....	1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

## RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the highest EIRP possible from the system, considering maximum power and antenna gain, and considering a 1.0 mW/cm<sup>2</sup> uncontrolled exposure limit. The formula shown in OET Bulletin 65 is used in the calculation.

Equation from page 19 of OET Bulletin 65, Edition 97-01 is:

$$S = PG / 4 \pi R^2$$

where: S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)  
 P = power input to the antenna (in appropriate units, e.g., mW)  
 G = power gain of the antenna in the direction of interest relative to an isotropic radiator  
 R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

hence

$$R = (PG / 4 \pi S)^{1/2}$$

For our device

PG = 2.618 mW

R = 0.5 cm

S = (2.618) / (4 \* π \* 0.5<sup>2</sup>) = 0.26526 mW/cm<sup>2</sup> < 1.0 mW/cm<sup>2</sup>

For complying the FCC limits for general population/uncontrolled exposure, the power density limit is 1.0 mW/cm<sup>2</sup>. The calculation result of the power density at a distance of 0.5 cm of our device is less than the limit.

This means that according to OET Bulletin 65 (Edition 97-01), Supplement C (Edition 01-01), the equipment fulfills the requirements on power density for general population/uncontrolled exposure and therefore fulfills the requirements of section 1.1310 of FCC 47 CFR Part 1.

## Radiated Test Equipment:

Equipment	Manufacturer	Model No.	Calibration Date	Next Cal. Date
EMI Test Receiver	Rohde & Schwarz	ESU40 (13054416-001)	2021/03/25	2022/03/24
Horn Antenna	ETS-Lindgren	3117 (13059211-002)	2021/3/16	2022/3/15
Amplifier	HP	8449B (13052901-001)	2020/10/6	2021/10/5

## Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Uncertainty
Radiated emissions / Effective Radiated Power	30MHz ~ 1GHz	$\pm 4.2\text{dB}$ ( $30\text{MHz} \leq f \leq 300\text{MHz}$ )
		$\pm 4.44\text{dB}$ ( $300\text{MHz} < f \leq 1\text{GHz}$ )
	Above 1GHz	$\pm 4.44\text{dB}$ ( $1\text{GHz} \leq f \leq 18\text{GHz}$ )
		$\pm 3.02\text{dB}$ ( $18\text{GHz} \leq f \leq 40\text{GHz}$ )

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

The test result(s) does not consider the uncertainty of measurement when the test standard(s) and/or test method which refer by the labs has the limit or judgments for the test result(s).