# A Test Lab Techno Corp.

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## MPE Report

| | | |
|---|---|---|
| Test Report No. | ： | 1609FS18-01 |
| Applicant | ： | Shenzhen Longing Innovative Aviation Technology Co., Ltd. |
| Product Type | ： | Radio Control Quadcopter |
| Trade Name | ： | LONGING |
| Model Number | ： | LY-250 |
| Date of Received | ： | Jul. 06, 2016 |
| Test Period | ： | Jul. 14, 2016 |
| Date of Issued | ： | Nov. 09, 2016 |
| Test Specification | ： | ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013 |
| | | 47 CFR § 2.1091 |
| | | 47 CFR § 1.1310 |
| Location of Test Lab. | ： | Chang-an Lab. |

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
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Approved By ： (Bill Hu)　　Tested By ： (Mark Duan)

# Contents

# 1. Description of Equipment under Test (EUT)

| | | | |
|---|---|---|---|
| Applicant | Shenzhen Longing Innovative Aviation Technology Co., Ltd.<br>A206 Industrialization Base of Virtual University Yuexing 3rd Rd. Nanshan District, Shenzhen 581001, China | | |
| Manufacturer | Shenzhen Longing Innovative Aviation Technology Co., Ltd.<br>A206 Industrialization Base of Virtual University Yuexing 3rd Rd. Nanshan District, Shenzhen 581001, China | | |
| Product Type | Radio Control Quadcopter | | |
| Trade Name | LONGING | | |
| Model Number | LY-250 | | |
| FCC ID | 2AIWS1601250 | | |
| Frequency Range | 2.4GHz - GFSK: 2408- 2475 MHz<br>5GHz - OFDM: 5740 - 5840 MHz | | |
| Antenna information | Type | Max. Gain (dBi) | |
| | Fixed Antenna | 2.4GHz | 1.7 |
| | | 5GHz | 2.15 |
| Antenna Delivery | 2.4GHz - GFSK: 1TX + 1RX<br>5GHz - OFDM: 1TX + 1RX | | |
| RF Evaluation | 0.033 mW/cm$^2$ | | |

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties

## 2. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled “Radiofrequency radiation exposure limits”, generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as “a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter’s radiating structure(s) and the body of the user or nearby persons. ” This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: “IMPORTANT: To meet the FCC’s RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna”. Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a “mobile device” as defined in section § 2.1091 paragraph (b).

| Exposure evaluation |
| --- |
| $$S = \frac{PG}{4\pi R^2}$$<br>Where<br>S: power density<br>P: power input to the antenna<br>G: power gain of the antenna in the direction of interest relative to an isotropic radiator.<br>R: distance to the center of radiation of the antenna. |

## 3. RF Output Power

The conducted power turn-up tolerance reference manufacturer specification.

| Band | Frequency (MHz) | Average Conducted power (dBm) | |
|---|---|---|---|
| | | ANT-1 | ANT-2 |
| 2.4GHz - GFSK | 2408.0 | 10.13 | 10.07 |
| | 2440.0 | 9.86 | 9.51 |
| | 2475.0 | 9.14 | 9.06 |
| 5GHz - OFDM | 5740.0 | 18.43 | --- |
| | 5800.0 | 18.51 | --- |
| | 5840.0 | **18.89** | --- |

## 4. Test Result

| Band | Frequency (MHz) | Limit (mw) | Distance [R] (cm) | Max tune-up Power (upper limit) [P] (dBm) | ANT Gain (dBi) | Numeric Gain [G] | Duty Cycle | [P] x [G] with Duty cycle [TP] (mW) | Power Density [S] ($mw/cm^2$) |
|---|---|---|---|---|---|---|---|---|---|
| 2.4GHz - GFSK ANT-1 | 2408.0 | 1 | 20 | 11.00 | 1.70 | 1.48 | 1 | 18.630 | 0.004 |
| | 2440.0 | 1 | 20 | 11.00 | 1.70 | 1.48 | 1 | 18.630 | 0.004 |
| | 2475.0 | 1 | 20 | 11.00 | 1.70 | 1.48 | 1 | 18.630 | 0.004 |
| 2.4GHz - GFSK ANT-2 | 2408.0 | 1 | 20 | 11.00 | 1.70 | 1.48 | 1 | 18.630 | 0.004 |
| | 2440.0 | 1 | 20 | 11.00 | 1.70 | 1.48 | 1 | 18.630 | 0.004 |
| | 2475.0 | 1 | 20 | 11.00 | 1.70 | 1.48 | 1 | 18.630 | 0.004 |
| 5GHz - OFDM | 5740.0 | 1 | 20 | 20.00 | 2.15 | 1.64 | 1 | 164.000 | 0.033 |
| | 5800.0 | 1 | 20 | 20.00 | 2.15 | 1.64 | 1 | 164.000 | 0.033 |
| | 5840.0 | 1 | 20 | 20.00 | 2.15 | 1.64 | 1 | 164.000 | 0.033 |

**Note:**

1. The Numeric Gain calculated by 10^(ant. Gain(dBi) /10).
2. Each band max power which perform MPE of any configurations.
3. The device operating 2.4GHz - GFSK is transmits signals to 1TX.
4. The device 2.4GHz - GFSK and 5GHz - OFDM cannot transmit simultaneously.