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Report Template Version: V03

Report Template Revision Date: Mar.1st, 2017

# RF Exposure Evaluation Report

**Report No. :** CQASZ20210400430E-02  
**Applicant:** ODYSSEY TOYS  
**Address of Applicant:** 20855 NE 16 AVE, C-22, MIAMI, FL 33179, MIAMI Florida, United States  
**Manufacturer:** ODYSSEY TOYS  
**Address of Manufacturer:** 20855 NE 16 AVE, C-22, MIAMI, FL 33179, MIAMI Florida, United States  
**Equipment Under Test (EUT):**  
**Product:** DRONE  
**Model No.:** ODY-1964  
**Brand Name:** N/A  
**FCC ID:** 2ANNB-ODY-1964  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Test:** 2021-04-9 to 2021-4-19  
**Date of Issue:** 2021-4-19  
**Test Result :** **PASS\***

**Tested By:**

*Jun Li*

(Jun Li)

**Reviewed By:**

*Ares Liu*

(Ares Liu)

**Approved By:**

*Sheek Luo*

(Sheek Luo)



\* In the configuration tested, the EUT complied with the standards specified above.

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

## 1 Version

### Revision History Of Report

| Report No.           | Version | Description    | Issue Date |
|----------------------|---------|----------------|------------|
| CQASZ20210400430E-02 | Rev.01  | Initial report | 2021-4-19  |

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### 3 General Information

#### 3.1 Client Information

|                          |  |
|--------------------------|--|
| Applicant:               | ODYSSEY TOYS   |
| Address of Applicant:    | 20855 NE 16 AVE, C-22, MIAMI, FL 33179, MIAMI Florida, United States |
| Manufacturer:            | ODYSSEY TOYS   |
| Address of Manufacturer: | 20855 NE 16 AVE, C-22, MIAMI, FL 33179, MIAMI Florida, United States |
| Factory:                 | Shantou Chenghai Zhangbo toys factory                                |
| Address of Factory:      | Chenghai District,Shantou City,Guangdong Province, China             |

#### 3.2 General Description of EUT

|                     |   |
|---------------------|---|
| Name:               | DRONE                                   |
| Model No.:          | ODY-1964                                |
| Trade Mark :        | N/A                                     |
| Hardware Version:   | V1.0                                    |
| Software Version:   | V1.0                                    |
| Frequency Range:    | 2408MHz ~ 2474MHz                       |
| Modulation Type:    | FSK                                     |
| Number of Channels: | 34 (declared by the client)             |
| Sample Type:        | Portable product                        |
| Antenna Type:       | PCB antenna                             |
| Antenna Gain:       | -1.2dBi                                 |
| Power Supply:       | EUT is powered by 2*AAA size batteries. |

## 4 SAR Evaluation

### 4.1 FCC RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

##### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### 4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot \sqrt{f(\text{GHz})}}{\sqrt{f(\text{GHz})}} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$  is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion

#### 4.1.3 EUT RF Exposure

$$e_{irp} = p_t \times g_t = (E \times d)^2 / 30$$

where:

$p_t$  = transmitter output power in watts,

$g_t$  = numeric gain of the transmitting antenna (unitless),

$E$  = electric field strength in V/m,  $10^{((dB\mu V/m)/20)/10^6}$ ,

$d$  = measurement distance in meters (m)---3m,

$$\text{So } p_t = (E \times d)^2 / 30 / g_t$$

The worst case (refer to report CQASZ20210400430E-01) is below:

| Antenna polarization: Horizontal |                      |       |
|----------------------------------|----------------------|-------|
| Frequency (MHz)                  | Level (dB $\mu$ V/m) | Value |
| 2474                             | 93.12                | Peak  |

For 2474MHz:

Field strength = 93.12dB $\mu$ V/m @3m

Ant. gain 0dBi; so Ant numeric gain=1.0So  $p_t = \{ [10$

$(93.12/20)/10^6 \times 3]^2 / 30 / 1.0 \} \times 1000 \text{mW} = 0.615 \text{So}$

$(0.615 \text{mW} / 5 \text{mm}) \times \sqrt{2.474 \text{GHz}} = 0.1934,$

$0.1934 < 3.0$  for 1-g SARSo the SAR test is not

required.