



**TEST REPORT NUMBER: (8522)307-0201(A)**

## TEST REPORT

|             |                                                                |         |     |
|-------------|----------------------------------------------------------------|---------|-----|
| Applicant:  | Jakks Pacific (HK) Ltd.                                        | Fax:    | --- |
|             |                                                                | E-mail: | --- |
| Address :   | 12/F., Wharf T&T Centre, 7 Canton Road. Tsim Sha Tsui Hongkong |         |     |
| Test Date : | 2022-11-14 to 2022-11-23                                       |         |     |

|                            |                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------|
| Manufacturer or Supplier : | Jakks Pacific, Inc.                                                                    |
| Address :                  | 22619 PCH<br>Malibu CA 90265 United States Of America (Excluding The States Of Alaska) |
| Sample Description:        | Super Mario Rumble RC                                                                  |
| Model number:              | 41822TX                                                                                |
| Additional Model :         | N/A                                                                                    |
| Rated Voltage:             | DC3.0V (AA*2)                                                                          |
| FCC ID :                   | OTA41822TX                                                                             |
| IC :                       | 7783A-41822TX                                                                          |

**The submitted sample of the above equipment has been tested according to following standard(s)**

47 CFR Part 1.1307

47 CFR Part 2.1093

KDB447498D01 General RF Exposure Guidance v06

RSS-102 Issue 5 March 2015

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Assistant Manager

Name: Nick Lung

Date: NOV 30,2022

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## 2 General Information

### 2.1 Client Information

|                          |                                                                                        |
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| Applicant:               | Jakks Pacific (HK) Ltd.                                                                |
| Address of Applicant:    | 12/F., Wharf T&T Centre, 7 Canton Road. Tsim Sha Tsui Hongkong                         |
| Manufacturer:            | Jakks Pacific, Inc.                                                                    |
| Address of Manufacturer: | 22619 PCH<br>Malibu CA 90265 United States Of America (Excluding The States Of Alaska) |
| Factory:                 | Dongguan L C Technology Co.,Ltd                                                        |
| Address of Factory:      | No. 408, Changhuang Road, Changping Town, Dongguan, Guangdong                          |

### 2.2 General Description of EUT

|                     |                       |
|---------------------|-----------------------|
| Name:               | Super Mario Rumble RC |
| Model No.:          | 41822TX               |
| Trade Mark :        | N/A                   |
| Serial No:          | ---                   |
| Software Version:   | 0x5326_V05            |
| Hardware Version:   | H2121-RC              |
| Frequency Range:    | 2420-2462MHz          |
| Modulation Type:    | GFSK                  |
| Number of Channels: | 21                    |
| Sample Type:        | Portable product      |
| Antenna Type:       | PCB antenna           |
| Antenna Gain:       | 4dBi                  |
| Power Supply:       | DC3.0V (AA*2)         |

Tested By: *Timo Le*

Reviewed By: *lewis zhou*

Date: November 23,2022

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### 3 SAR Evaluation

#### 3.1 IC RF Exposure Compliance Requirement

##### 3.1.1 Standard Requirement

IC: According to RSS-102 Issue 5 March 2015

##### 2.5.1 Exemption Limits for Routine Evaluation – SAR Evaluation

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

FCC:

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.

##### 3.1.2 Limits

FCC:

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:

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

$f(\text{GHz})$  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

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IC:

**Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance<sup>4,5</sup>**

| Frequency (MHz) | Exemption Limits (mW)                 |                                 |                                 |                                 |                                 |
|-----------------|---------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                 | At separation distance of $\leq 5$ mm | At separation distance of 10 mm | At separation distance of 15 mm | At separation distance of 20 mm | At separation distance of 25 mm |
| $\leq 300$      | 71 mW                                 | 101 mW                          | 132 mW                          | 162 mW                          | 193 mW                          |
| 450             | 52 mW                                 | 70 mW                           | 88 mW                           | 106 mW                          | 123 mW                          |
| 835             | 17 mW                                 | 30 mW                           | 42 mW                           | 55 mW                           | 67 mW                           |
| 1900            | 7 mW                                  | 10 mW                           | 18 mW                           | 34 mW                           | 60 mW                           |
| 2450            | 4 mW                                  | 7 mW                            | 15 mW                           | 30 mW                           | 52 mW                           |
| 3500            | 2 mW                                  | 6 mW                            | 16 mW                           | 32 mW                           | 55 mW                           |
| 5800            | 1 mW                                  | 6 mW                            | 15 mW                           | 27 mW                           | 41 mW                           |

| Frequency (MHz) | Exemption Limits (mW)           |                                 |                                 |                                 |                                        |
|-----------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|----------------------------------------|
|                 | At separation distance of 30 mm | At separation distance of 35 mm | At separation distance of 40 mm | At separation distance of 45 mm | At separation distance of $\geq 50$ mm |
| $\leq 300$      | 223 mW                          | 254 mW                          | 284 mW                          | 315 mW                          | 345 mW                                 |
| 450             | 141 mW                          | 159 mW                          | 177 mW                          | 195 mW                          | 213 mW                                 |
| 835             | 80 mW                           | 92 mW                           | 105 mW                          | 117 mW                          | 130 mW                                 |
| 1900            | 99 mW                           | 153 mW                          | 225 mW                          | 316 mW                          | 431 mW                                 |
| 2450            | 83 mW                           | 123 mW                          | 173 mW                          | 235 mW                          | 309 mW                                 |
| 3500            | 86 mW                           | 124 mW                          | 170 mW                          | 225 mW                          | 290 mW                                 |
| 5800            | 56 mW                           | 71 mW                           | 85 mW                           | 97 mW                           | 106 mW                                 |

Remakr: If the operating frequency of the device is between two frequencies located in Table 1, linear interpolation shall be applied for the applicable separation distance. For test separation distance less than 5 mm, the exemption limits for a separation distance of 5 mm can be applied to determine if a routine evaluation is required.

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### 3.1.3 EUT RF Exposure

#### Measurement Data

IC:

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

where:

$p_t$  = transmitter output power in watts,

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

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

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

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

The worst case refer to report (8522)307-0201 is below:

| Antenna polarization: Horizontal |                      |       |
|----------------------------------|----------------------|-------|
| Frequency (MHz)                  | Level (dB $\mu$ V/m) | Value |
| 2.462                            | 90.28                | Peak  |

For 2462MHz:

Field strength = 90.28dB  $\mu$  V/m @3m

Ant. gain 4dBi; so Ant numeric gain=2.512

$$\text{So } p_t = \{ [10^{(90.28/20)} / 10^6 \times 3]^2 / 30 / 2.512 \} \times 1000 \text{mW} = 0.1274 \text{mW}$$

$$0.1274 \text{mW} < 4.0 \text{mW}$$

So the SAR test is not required.



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The worst case refer to report (8522)307-0201 is below:

| Antenna polarization: Horizontal |                      |       |
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| Frequency (MHz)                  | Level (dB $\mu$ V/m) | Value |
| 2.462                            | 90.28                | Peak  |

For 2462MHz:

Field strength = 90.28dB  $\mu$  V/m @3m

Ant. gain 4dBi; so Ant numeric gain=2.512

So  $P_t = \{ [10^{(90.28/20)} / 10^6 \times 3]^2 / 30 / 2.512 \} \times 1000 \text{mW} = 0.1274 \text{mW}$

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

Calculated value =  $0.1274 / 5 \cdot \sqrt{2.462} = 0.04 < 3$

So the SAR test is not required.