

## FCC RF EXPOSURE REPORT

*For*

**FCC EUT NAME: PAC-MANIA™ LEGACY WITH RISER ARCADE1UP /BANDAI  
NAMCO ENTERTAINMENT LEGACY ARCADE GAME Pac-Man Edition with  
WIFI/DIG DUG™ LEGACY WITH RISER ARCADE1UP /PAC-MAN LEGACY WITH  
RISER ARCADE1UP/Ms.PAC-MAN™ LEGACY WITH RISER ARCADE1UP/ BANDAI  
NAMCO ENTERTAINMENT LEGACY ARCADE Ms. PAC-MAN EDITION WITH WIFI /  
BANDAI NAMCO ENTERTAINMENT PAC-MAN™ DELUXE EDITION / BANDAI  
NAMCO ENTERTAINMENT MISS PAC-MAN DELUXE EDITION / BANDAI NAMCO  
ENTERTAINMENT CLASS OF 81 DELUXE EDITION / BANDAI NAMCO  
ENTERTAINMENT PAC-MAN CLASSIC ARCADE1UP, BANDAI NAMCO  
ENTERTAINMENT Ms.PAC-MAN CLASSIC ARCADE1UP, BANDAI NAMCO  
ENTERTAINMENT PAC-MAN PLUS DELUXE EDITION**

**MODEL NUMBER: PAC-A-200110, PAC-A-200114, DIG-A-213310 , PAC-A-206211,  
MSP-A-202210, MSP-A-202214, PAC-A-302111, MSP-A-300511, MSP-A-303611,  
PAC-A-301320, MSP-A-300520, PAC-A-405411**

**REPORT NUMBER: 4790284007-16**

**ISSUE DATE: September 2, 2024**

**FCC ID: 2APXHPABALE**

*Prepared for*

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## Revision History

| Rev. | Issue Date | Revisions                             | Revised By  |
|------|------------|---------------------------------------|-------------|
| V0   | 6/6/2022   | Initial Issue                         | Dean Hua    |
| V1   | 2/8/2023   | Added the new EUT name and model name | Kebo Zhang  |
| V2   | 9/2/2024   | Added the new EUT name and model name | Fanny Huang |

Note for V1: The new model PAC-A-302111, MSP-A-300511, MSP-A-303611, PAC-A-301320, MSP-A-300520 have the same RF technical construction including circuit diagram, PCB Layout, components, component layout and RF performance with PAC-A-200110, PAC-A-200114, DIG-A-213310, PAC-A-206211, MSP-A-202210, MSP-A-202214. Only different to LCD, games & appearance. The difference lies are the non-RF technical construction. The manufacturer declares that it complies the requirements of Class I permissive changes. Therefore, the new model will be reconsidered testing for SPURIOUS EMISSIONS (30 MHz ~ 18 GHz), and we select "PAC-A-302111" as the representative model for compliance test. For the other data, please refer to the original report.

Note for V2: The new model PAC-A-405411 has the same RF technical construction including circuit diagram, PCB Layout, components, component layout and RF performance with MSP-A-303611. Only different to LCD, Control deck & appearance. The difference lies are the non-RF technical construction. Therefore, the new model will be reconsidered spot check testing for SPURIOUS EMISSIONS (30 MHz ~ 18 GHz).

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## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

**Company Name:** WF TASTEMAKERS TRADING LIMITED  
**Address:** Unit 05 and unit 06, 6th Floor, Greenfield Tower Concordia Plaza, 1 Science Museum Road, TST East, Hong Kong

### Manufacturer Information

**Company Name:** WF TASTEMAKERS TRADING LIMITED  
**Address:** Unit 05 and unit 06, 6th Floor, Greenfield Tower Concordia Plaza, 1 Science Museum Road, TST East, Hong Kong

### EUT Information

**EUT Name:** PAC-MANIA™ LEGACY WITH RISER ARCADE1UP / BANDAI NAMCO ENTERTAINMENT LEGACY ARCADE GAME Pac-Man Edition with WIFI/DIG DUG™ LEGACY WITH RISER ARCADE1UP / PAC-MAN LEGACY WITH RISER ARCADE1UP/Ms.PAC-MAN™ LEGACY WITH RISER ARCADE1UP/ BANDAI NAMCO ENTERTAINMENT LEGACY ARCADE Ms. PAC-MAN EDITION WITH WIFI / BANDAI NAMCO ENTERTAINMENT PAC-MAN™ DELUXE EDITION / BANDAI NAMCO ENTERTAINMENT MISS PAC-MAN DELUXE EDITION / BANDAI NAMCO ENTERTAINMENT CLASS OF 81 DELUXE EDITION / BANDAI NAMCO ENTERTAINMENT PAC-MAN CLASSIC ARCADE1UP, BANDAI NAMCO ENTERTAINMENT Ms.PAC-MAN CLASSIC ARCADE1UP, BANDAI NAMCO ENTERTAINMENT PAC-MAN PLUS DELUXE EDITION

**Model:** PAC-A-200110

**Series Model:** PAC-A-200114, DIG-A-213310, PAC-A-206211, MSP-A-202210, MSP-A-202214, PAC-A-302111, MSP-A-300511, MSP-A-303611, PAC-A-301320, MSP-A-300520, PAC-A-405411

**Model Difference:** Please refer to clause 5.1. Description of EUT

**Brand:** ARCADE 1 UP

**Sample Received Date for V0:** Feb. 10, 2022

**Sample Received Date for V1:** December 7, 2022

**Sample Received Date for V2:** June 18, 2024

**Sample Status:** Normal

**Sample ID for V0:** 4662428

**Sample ID for V1:** 5617297

**Sample ID for V2:** 7374968

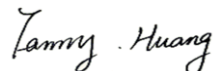
**Date of Tested for V0:** Feb. 11 ~ June 6, 2022

**Date of Tested for V1:** December 7, 2022 ~ February 8, 2023

**Date of Tested for V2:** September 2, 2024

| APPLICABLE STANDARDS                                |              |
|-----------------------------------------------------|--------------|
| STANDARD                                            | TEST RESULTS |
| 447498 D04 Interim General RF Exposure Guidance v01 | PASS         |

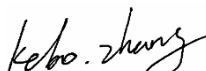
Prepared By:



Fanny Huang

Engineer Project Associate

Checked By:



Kebo Zhang

Senior Project Engineer

Approved By:



Stephen Guo

Operations Manager

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 47 CFR FCC Part 1 Subpart I, section 1.1307 and KDB 447498 D04 Interim General RF Exposure Guidance v01.

## 3. FACILITIES AND ACCREDITATION

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Accreditation Certificate | <p><b>A2LA (Certificate No.: 4102.01)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1187)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules</p> <p><b>ISED (Company No.: 21320)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046.</p> <p><b>VCCI (Registration No.: G-20192, C-20153, T-20155 and R-20202)</b><br/>UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793.<br/>Facility Name:<br/>Chamber D, the VCCI registration No. is G-20192 and R-20202<br/>Shielding Room B, the VCCI registration No. is C-20153 and T-20155</p> |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Note 1: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

Note 2: The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3: For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OFS.

#### 4. DESCRIPTION OF EUT

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EUT Name            | PAC-MANIA™ LEGACY WITH RISER ARCADE1UP / BANDAI NAMCO ENTERTAINMENT LEGACY ARCADE GAME Pac-Man Edition with WIFI/DIG DUG™ LEGACY WITH RISER ARCADE1UP /PAC-MAN LEGACY WITH RISER ARCADE1UP/Ms.PAC-MAN™ LEGACY WITH RISER ARCADE1UP/ BANDAI NAMCO ENTERTAINMENT LEGACY ARCADE Ms. PAC-MAN EDITION WITH WIFI / BANDAI NAMCO ENTERTAINMENT PAC-MAN™ DELUXE EDITION / BANDAI NAMCO ENTERTAINMENT MISS PAC-MAN DELUXE EDITION / BANDAI NAMCO ENTERTAINMENT CLASS OF 81 DELUXE EDITION / BANDAI NAMCO ENTERTAINMENT PAC-MAN CLASSIC ARCADE1UP, BANDAI NAMCO ENTERTAINMENT Ms.PAC-MAN CLASSIC ARCADE1UP, BANDAI NAMCO ENTERTAINMENT PAC-MAN PLUS DELUXE EDITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Model:              | PAC-A-200110                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Serial Model:       | PAC-A-200114, DIG-A-213310 , PAC-A-206211, MSP-A-202210, MSP-A-202214, PAC-A-302111, MSP-A-300511, MSP-A-303611, PAC-A-301320, MSP-A-300520, PAC-A-405411                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Model Difference:   | <p>PAC-A-200114, DIG-A-213310 , PAC-A-206211, MSP-A-202210 have the same technical construction including circuit diagram, PCB Layout, components and component layout, only the color, product name and model name are different. We select "PAC-A-200110" as the representative model for compliance test.</p> <p>MSP-A-202214 has the same technical construction including circuit diagram, PCB Layout, components and component layout, only the outlook are different. We select "PAC-A-200110" as the representative model for compliance test.</p> <p>PAC-A-302111, MSP-A-300511, MSP-A-303611, PAC-A-301320, MSP-A-300520 have the same RF technical construction including circuit diagram, PCB Layout, components, component layout and RF performance with PAC-A-200110, PAC-A-200114, DIG-A-213310 , PAC-A-206211, MSP-A-202210, MSP-A-202214. Only different to LCD, games &amp; appearance.</p> <p>PAC-A-405411 has the same RF technical construction including circuit diagram, PCB Layout, components, component layout and RF performance with MSP-A-303611. Only different to LCD, Control deck &amp; appearance.</p> |
| Radio Technology    | IEEE802.11b/g/n HT20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Operation frequency | IEEE 802.11b: 2412 MHz-2462 MHz<br>IEEE 802.11g: 2412 MHz-2462 MHz<br>IEEE 802.11n HT20: 2412 MHz-2462 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Modulation          | IEEE 802.11b: DSSS (CCK)<br>IEEE 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Rated Input         | AC 120 V,60 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## 5. REQUIREMENT

### LIMIT AND CALCULATION METHOD

According to 447498 D04 Interim General RF Exposure Guidance v01,

#### 2.1.4 MPE-Based Exemption

An alternative to the SAR-based exemption is provided in § 1.1307(b)(3)(i)(C), for a much wider frequency range, from 300 kHz to 100 GHz, applicable for separation distances greater or equal to  $\lambda/2\pi$ , where  $\lambda$  is the free-space operating wavelength in meters. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power.<sup>10</sup> For this case, a RF source is an RF exempt device if its ERP (watts) is no more than a frequency-dependent value, as detailed tabular form in Appendix B. These limits have been derived based on the basic specifications on Maximum Permissible Exposure (MPE) considered for the FCC rules in § 1.1310(e)(1).

#### MPE-based Exemption

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

and  $f$  is in GHz,  $d$  is the separation distance (cm), and  $ERP_{20\text{cm}}$  is per Formula (B.1).

**CALCULATED RESULTS**

| Operating Mode | Max. Tune up Power | Antenna Gain | EIRP  | ERP   | ERP    | Distance | Limit Threshold |
|----------------|--------------------|--------------|-------|-------|--------|----------|-----------------|
|                | (dBm)              | (dBi)        | (dBm) | (dBm) | (mW)   | (cm)     | (mW)            |
| WIFI2.4G       | 14                 | 6.4          | 20.4  | 18.25 | 66.834 | 20       | 3060            |

Note:

1. The calculated distance is 20 cm.
2. The power comes from operation description.

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**END OF REPORT**