

**Radica (Macao Commercial Off-Shore) Ltd.**

Application  
For  
Certification  
**(FCC ID: OJJ75210)**

Computing Device Peripheral

Sample Description : PS2 Phoenix Pad  
Model : 75210-Grey/Orange/Blue

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [12-8-2003]

0508730  
WL/at  
July 8, 2005

- The test results reported in this report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
- This report shall not be reproduced except in full without prior authorization from Intertek Testing Services Hong Kong Limited.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

FCC ID : OJJ75210

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## INTERTEK TESTING SERVICES

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#### *INTRODUCTION*

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# INTERTEK TESTING SERVICES

## MEASUREMENT/TECHNICAL REPORT

Radica (Macao Commercial Off-Shore) Ltd.

MODEL: 75210-Grey/Orange/Blue

FCC ID: OJJ75210

July 8, 2005

This report concerns (check one:) Original Grant X Class II Change \_\_\_\_\_

Equipment Type: Computing Device Peripheral (example: computer, printer, modem, etc.) \_\_\_\_\_

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes \_\_\_\_\_ No X

If yes, defer until: \_\_\_\_\_  
date

Company Name agrees to notify the Commission by: \_\_\_\_\_  
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes \_\_\_\_\_ No X

If no, assumed Part 15, Subpart C for intentional radiator - the new 47 CFR [12-8-2003 Edition] provision.

Report prepared by:

Wilbur Ng  
Intertek Testing Services  
2/F., Garment Center,  
576, Castle Peak Road,  
HONG KONG  
Phone: 852-2173-8502  
Fax: 852-2742-9149

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# INTERTEK TESTING SERVICES

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### List of attached file

| Exhibit type          | File Description               | filename             |
|-----------------------|--------------------------------|----------------------|
| Test Report           | Test Report                    | report.pdf           |
| Operation Description | Technical Description          | descri.pdf           |
| Test Setup Photo      | Radiated Emission              | radiated photos.doc  |
| Test Setup Photo      | Conducted Emission             | conducted photos.doc |
| Test Report           | Conducted Emission Test Result | conducted.pdf        |
| External Photo        | External Photo                 | external photos.doc  |
| Internal Photo        | Internal Photo                 | internal photos.doc  |
| Block Diagram         | Block Diagram                  | block.pdf            |
| Schematics            | Circuit Diagram                | circuit.pdf          |
| ID Label/Location     | Label Artwork and Location     | label.pdf            |
| User Manual           | User Manual                    | manual.pdf           |

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## **EXHIBIT 1**

### **GENERAL DESCRIPTION**

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### 1.0 **General Description**

#### 1.1 Product Description

The equipment under test (EUT) is a Joypad for Sony Playstation 2. The EUT is powered by the Sony Playstation 2 which is connected to the 120V AC power lines. The EUT has an one eight way analogue directional pad, eight action buttons offering eight-bit analogue control, two analogue joysticks with two digital action buttons, two digital menu navigation buttons (select and start), an analogue and digital modes button, an invert switch and two vibrators inside the Joypad. In analogue mode, the vibrators are activated and the action buttons are pressure sensitive. In digital mode, the vibrators are activated and the action buttons are digital.

The brief circuit description is saved with filename : descri.pdf

#### 1.2 Related Submittal(s) Grants

This is a single application for certification of a Computing Device Peripheral.

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### 1.3 Test Methodology

The radiated emission measurements were performed according to the procedures in ANSI C63.4 (2001). All measurements were performed in Open Area Test Sites. Preliminary scans were performed in the Open Area Test Sites only to determine worst case modes. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

### 1.4 Test Facility

The open area test site and conducted measurement facility used to collect the emission data is located at Garment Centre, 576 Castle Peak Road, Kowloon, Hong Kong. This test facility and site measurement data have been fully placed on file with the FCC.

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### **EXHIBIT 2**

### **SYSTEM TEST CONFIGURATION**

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### 2.0 **System Test Configuration**

#### 2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2001).

The EUT was powered by the Sony Playstation 2 which is connected to the 120V AC power lines during test.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

For Conducted emission, the unit was operated as a system where the system consists of a television, a Sony Playstation 2 Game Console with game disk, two memory cards and original Playstation 2 game pad inserted.

For Radiated emission, the unit was operated as a system where the system consists of a television and a Sony Playstation 2 Game Console with game disk.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on a turn table, which enabled the engineer to maximize emissions.

#### 2.2 EUT Exercising Software

There was no special software to exercise the device.

#### 2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

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### 2.4 Equipment Modification

Any modifications installed previous to testing by Radica (Macao Commercial Off-Shore) Ltd. will be incorporated in each production model sold/leased in the United States.

No modifications were installed by Intertek Testing Services.

### 2.5 Support Equipment List and Description

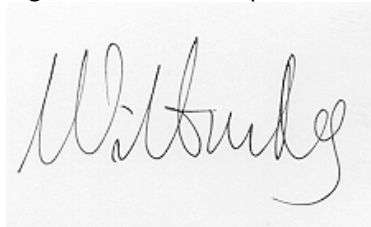
Support Equipment    1) TV: EW-1923 (For OATS)  
                                    EW-0579 (For Conducted emission)  
                                    2) Sony Playstation 2 Game Console: EW-1083  
                                    3) Sony Playstation 2 Game Disk-GT3: SCPS15009  
                                    4) Sony Playstation 2 Memory Card x 2 (8MB): HORI Co., Ltd.  
                                        - supplied by client  
                                    5) Sony Playstation 2 Game Pad: SCPH-10010  
                                        - supplied by client

This product was tested in a system configuration.

All the items listed under section 2.0 of this report are

*Confirmed by:*

*Wilbur Ng  
Manager  
Intertek Testing Services  
Agent for Radica (Macao Commercial Off-Shore) Ltd.*



\_\_\_\_\_  
Signature

July 8, 2005

\_\_\_\_\_  
Date

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 3**

### **EMISSION RESULTS**

### 3.0 **Emission Results**

Data is included worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

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### 3.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

where FS = Field Strength in dB $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

PD = Pulse Desensitization in dB

AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

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### 3.1 Field Strength Calculation (cont'd)

#### Example

Assume a receiver reading of 62.0 dB $\mu$ V is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0 dB, and the resultant average factor was -10 dB. The net field strength for comparison to the appropriate emission limit is 32 dB $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ V/m.

$$RA = 62.0 \text{ dB}\mu\text{V}$$

$$AF = 7.4 \text{ dB}$$

$$CF = 1.6 \text{ dB}$$

$$AG = 29.0 \text{ dB}$$

$$PD = 0 \text{ dB}$$

$$AV = -10 \text{ dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32 \text{ dB}\mu\text{V/m}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm} [(32 \text{ dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}$$

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### 3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission

125.089 MHz

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos.doc

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### 3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 9.1 dB

#### **TEST PERSONNEL:**



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*Signature*

Anthony K. M. Chan, Compliance Engineer  
*Typed/Printed Name*

July 8, 2005  
*Date*

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## INTERTEK TESTING SERVICES

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Applicant: Radica (Macao Commercial Off-Shore) Ltd.

Date of Test: May 12, 2005

Model: 75210-Grey/Orange/Blue

Worst-Case Operating Mode: Play Mode

Table 1

### Radiated Emissions

| Polarization | Frequency (MHz) | Net at 3m (dB $\mu$ V/m) | Limit at 3m (dB $\mu$ V/m) | Margin (dB) |
|--------------|-----------------|--------------------------|----------------------------|-------------|
| V            | 56.858          | 29.0                     | 40.0                       | -11.0       |
| H            | 119.350         | 28.8                     | 43.5                       | -14.7       |
| H            | 125.089         | 34.4                     | 43.5                       | -9.1        |
| H            | 164.818         | 31.6                     | 43.5                       | -11.9       |
| H            | 176.263         | 30.0                     | 43.5                       | -13.5       |
| H            | 204.683         | 30.1                     | 43.5                       | -13.4       |
| H            | 233.105         | 28.8                     | 46.0                       | -17.2       |

Notes: 1. Peak Detector Data unless otherwise stated.

2. All measurements were made at 3 meter. Harmonic emissions not detected at the 3 meter distance were measured at 0.3 meter and an inverse proportional extrapolation was performed to compare the signal level to the 3 meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3 meter.

3. Negative value in the margin column shows emission below limit.

Test Engineer: Anthony K. M. Chan

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### 3.4 Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration

At

Conducted Frequency 0.210 MHz (QP)

Conducted Frequency 0.200 MHz (AV)

For electronic filing, the worst case line-conducted configuration photograph are saved with filename: conducted photos.doc

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### 3.5 Conducted Emission Data

For electronic filing, the graph and data table of conducted emission is saved with filename: conducted.pdf.

Judgement: Passed by 9.8 dB (QP)

Judgement: Passed by 7.1 dB (AV)

#### **TEST PERSONNEL:**



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*Signature*

Anthony K. M. Chan, Compliance Engineer

*Typed/Printed Name*

July 8, 2005

*Date*

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**EXHIBIT 4**

**EQUIPMENT PHOTOGRAPHS**

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### 4.0 **Equipment Photographs**

For electronic filing, the photographs are saved with filename:  
external photos.doc and internal photos.doc

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**EXHIBIT 5**

**PRODUCT LABELLING**

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### 5.0 **Product Labelling**

For electronic filing, the FCC ID label artwork and the label location are saved with filename: label.pdf

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**EXHIBIT 6**

**TECHNICAL SPECIFICATIONS**

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### 6.0 **Technical Specifications**

For electronic filing, the block diagram and schematics are saved with filename:  
block.pdf and circuit.pdf

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**EXHIBIT 7**

**INSTRUCTION MANUAL**

## INTERTEK TESTING SERVICES

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### 7.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 8**

### **MISCELLANEOUS INFORMATION**

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## INTERTEK TESTING SERVICES

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### 8.1 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of Computing Device Peripheral operating under Part 15, Subpart B rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 - 2001.

The equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The antenna height and polarization are varied during the testing to search for maximum signal levels.

The EUT is warmed up for 15 minutes prior to the test.

For radiated emissions, the frequency range scanned is 30 MHz to 1000 MHz. For line conducted emissions, the frequency range scanned is 150 kHz to 30 MHz.

The IF bandwidth used for measurement of radiated signal strength was 10 kHz for emission below 30 MHz and 120 kHz for emission from 30 MHz to 1000 MHz.

When determining the test result, the Measurement Uncertainty of the test has been considered.