



## **EMI TEST REPORT**

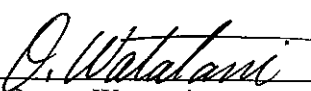
**Test Report No. : 24DE0265-YK-2**

**Applicant:** HORI CO., LTD.  
**Type of Equipment:** Game Controller  
**Model No.:** UHP2-109-A  
**FCC ID** RQZUHP2-109-A  
**Test standard:** FCC Part15 Subpart C, Section 15.249  
**Test Result:** Complied

1. This test report shall not be reproduced except in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.

**Date of test:** January 15 and 19, 2004

**Tested by:**   
Ichiro Isozaki

**Approved by:**   
Osamu Watatani  
Site Manager of Yamakita Lab.

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**UL Apex Co., Ltd.**

**YAMAKITA EMC LAB.**

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## 1 GENERAL INFORMATION

### Applicant

Company Name : HORI CO., LTD.  
Brand Name : HORI  
Address : 640 Saedo-cho, Tsuzuki-ku, Yokohama, 224-0054 Japan  
Telephone Number : +81 45 933 9611  
Facsimile Number : +81 45 933 9617  
Contact Person : Kazutoshi Kijima / kijima-k@hori.ne.jp  
Type of Equipment : Game Controller  
Model No. : UHP2-109-A  
Serial No. : S1  
Rating : DC3.3V  
Receipt Date of Sample : January 13, 2004  
Condition of EUT : Production prototype  
Regulation(s) : FCC Part15 Subpart C, Section 15.249  
Test Site : UL Apex No.1 Anechoic Chamber

### 1.1 Tested Methodology

The measurements were performed according to the procedures in ANSI C63.4 (2001).

### 1.2 Test Facility

This site has been fully described in a report submitted to FCC office, and accepted on November 28, 2002 (Registration No.: 95967).

NVLAP Lab. code : 200441-0

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## 2 PRODUCT DESCRIPTION

HORI CO., LTD. , Model: UHP2-109-A (referred to as the EUT in this report) is a Game Controller.  
The clock frequencies used in EUT : 14.7456MHz, 10MHz

|                                     |   |                                |
|-------------------------------------|---|--------------------------------|
| Frequency characteristics           | : | 903.018MHz through 926.3652MHz |
| Number of channels/ channel spacing | : | 8 channels/ 3MHz               |
| Modulation                          | : | Frequency modulation           |
| Antenna type                        | : | Monopole                       |
| Antenna Gain                        | : | -10dBi                         |
| Operating Voltage                   | : | DC3.3V                         |

### FCC Part15.31 (e)

The host device UHP2-109-A provides the Game Controller with stable power supply (DC3.3V), and the power is not changed when voltage of the Game Controller is varied.  
Therefore, the Game Controller complies power supply regulation.

### \*FCC Part15.203

The Game controller and its antenna comply with this requirement since this antenna is built in Game controller when they are put up for sale and they are used with a particular antenna connector.

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### 3 SYSTEM TEST CONFIGURATION

#### 3.1 Justification

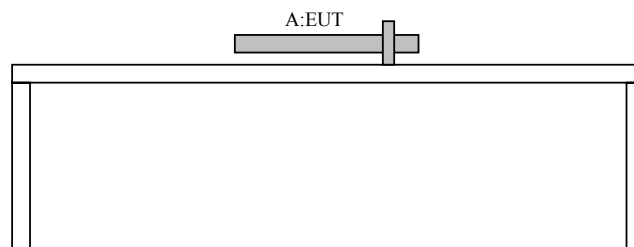
The system was configured in typical fashion (as a customer would normally use it) for testing.

Test mode: Transmitting mode  
Low channel : 903.0180MHz  
Middle channel : 912.8484MHz  
High channel : 926.3652MHz

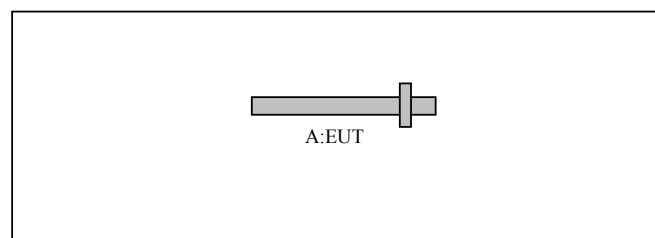
The EUT was tested in all three orthogonal planes in order to determine worst case emissions. Channels at 903.0180 MHz, 912.8484 MHz and 926.3652 MHz were tested and investigated from 30 MHz to 10 GHz. Data for all three channels are presented in this report.

#### 3.2 Configuration of Tested System

##### Front View



##### Top View



##### **Description of EUT and support equipment**

| No. | Item            | Model number | Serial number | Manufacturer   | FCC ID        | Remarks |
|-----|-----------------|--------------|---------------|----------------|---------------|---------|
| A   | Game Controller | UHP2-109-A   | S1            | HORI CO., LTD. | RQZUHP2-109-A | EUT     |

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## 4 MEASUREMENT UNCERTAINTY

### Radiated emission test

The measurement uncertainty (with 95% confidence level) for this test using Biconical antenna is  $\pm 4.8\text{dB}$ .

The measurement uncertainty (with 95% confidence level) for this test using Logperiodic antenna is  $\pm 5.2\text{dB}$ .

The measurement uncertainty (with 95% confidence level) for this test using Horn antenna is  $\pm 6.6\text{dB}$ .

The result is within Yamakita EMC lab's uncertainty.

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## 5 SUMMARY OF TESTS

### 5.1 § 15.249(a) & (d) Field Strength (Radiated Emissions)

#### **Test Procedure**

EUT was placed on a platform of nominal size, 1m by 1.8m, raised 80cm above the conducting ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. The Radiated Electric Field Strength intensity has been measured in an anechoic chamber with a ground plane and at a distance of 3m. The measuring antenna height was varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization. EUT emission levels were compared when the EUT antenna position was vertical polarization and horizontal polarization.

The equipment was also previously checked at each position of three axis X, Y and Z. At <1GHz, Z was worst in these positions under the horizontal antenna polarization and X was worst in these positions under the vertical antenna polarization. At >1GHz, Z was worst in these positions under the horizontal antenna polarization and Y was worst in these positions under the vertical antenna polarization. The position in which the maximum noise occurred was chosen to put into measurement. See the photographs in page 10 to 11.

#### **Maximum Filed Strength of Fundamental by §15.249 (a)**

Measurement range : CISPR QP Detector, IF BW 120kHz

Test data : APPENDIX Page 12 to 14  
Test result : Pass  
Test instruments : KAF-05, KAT6-01, KTR-01, KCC-A1/A3, KLA-03, KAEC-01

#### **Filed Strength of Spurious emissions by §15.249 (d)**

Measurement range : 30MHz to 1000MHz CISPR QP Detector, IF BW 120kHz  
: 1GHz to 10GHz PK and AV Detector, IF BW 1MHz

Test data : APPENDIX Page 15 to 20 (30 - 1000MHz)  
: APPENDIX Page 21 to 26 (1 - 10GHz)  
Test result : Pass  
Test instruments : KAF-02, KAF-05, KAT10-S1, KAT6-01, KBA-03, KTR-01, KFL-01  
KCC-A1/A3, KCC-D7, KCC-D13, KHA-01, KLA-03, KAEC-01, KSA-04  
Photographs of test setup : Page 9

### 5.2 26dB Bandwidth

#### **Test Procedure**

The minimum 26dB bandwidth was measured with a radiated condition.

26dB Bandwidth 903.018MHz:158.717kHz  
912.8484MHz:179.760kHz  
926.3652MHz:199.900kHz

Test data : APPENDIX Page 27  
Test result : Pass  
Test instruments : KAF-05, KAT6-01, KTR-01, KCC-A1/A3, KLA-03, KAEC-01

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### **APPENDIX 1: Photographs of test setup**

- 1. Page 9 : Radiated emission
- 2. Page 10 - 11 : Pre check of worse-case position

### **APPENDIX 2: Test Data**

- 1. Page 12 - 14 : Field strength of Fundamental(Radiated)
- 2. Page 15 - 26 : Field strength of Spurious emission(Radiated)
- 3. Page 27 : 26dB Bandwidth

### **APPENDIX 3: Test instruments**

- Page 28 : Test instruments

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## Radiated emission



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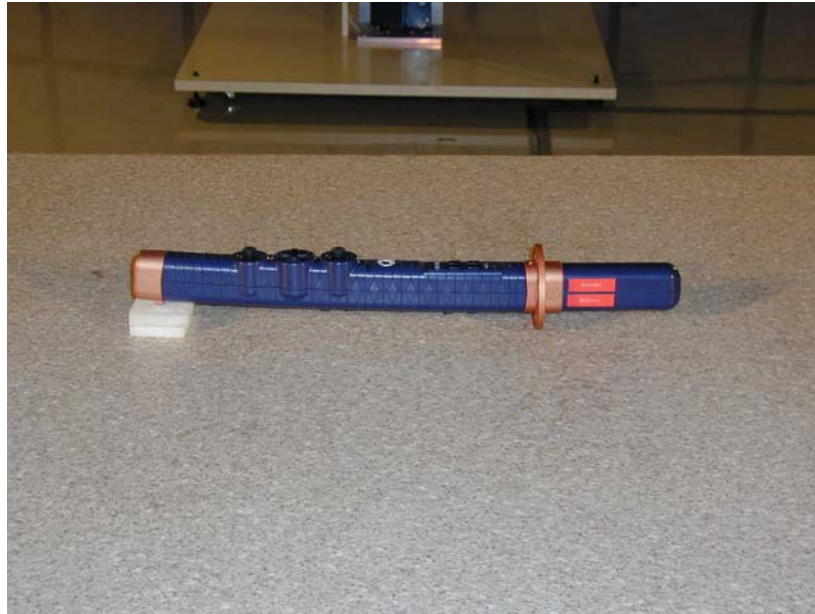
Telephone: +81 465 77 1011

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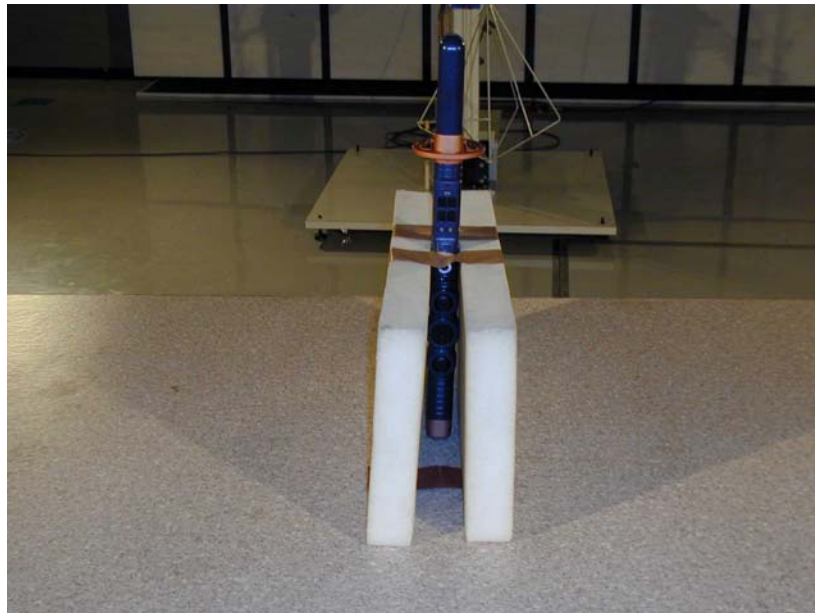
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**Pre check of worse-case position**

**X axis**



**Y axis**



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**Pre check of worse-case position**

**Z axis**



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# DATA OF RADIATION TEST

UL Apex Co.,Ltd.  
Yamakita No.1 Anechoic Chamber  
Report No. : 24DE0265-YK  $\infty$  2

Applicant : HORI CO.,LTD.  
Kind of Equipment : GAME CONTROLLER  
Model No. : UHP2-109-A  
Serial No. : S1  
Power : DC3.3V  
Mode : Transmitting CH1:903.0180MHz  
Remarks :  
Date : 1/15/2004  
Test Distance : 3 m  
Temperature : 20 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.249(a) Fundamental (D:3m)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING      |        | ANT<br>FACTOR | AMP<br>GAIN | CABLE<br>LOSS | ATTEN. | RESULT         |                | LIMITS | MARGIN |      |
|-----|----------------|-------------|--------------|--------|---------------|-------------|---------------|--------|----------------|----------------|--------|--------|------|
|     |                |             | HOR          | VER    |               |             |               |        | HOR            | VER            |        | HOR    | VER  |
|     |                |             | [dB $\mu$ V] | [dB/m] |               | [dB]        | [dB]          | [dB]   | [dB $\mu$ V/m] | [dB $\mu$ V/m] |        | [dB]   | [dB] |
| 1.  | 903.02         | BB          | 82.3         | 78.0   | 22.4          | 28.8        | 3.4           | 6.1    | 85.4           | 81.1           | 93.9   | 8.5    | 12.8 |

CALCULATION: READING[dB  $\mu$  V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz  
■ CABLE: KCC-A1/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.  
Yamakita No.1 Anechoic Chamber  
Report No. : 24DE0265-YK-2

Applicant : HORI CO.,LTD.  
Kind of Equipment : GAME CONTROLLER  
Model No. : UHP2-109-A  
Serial No. : S1  
Power : DC3.3V  
Mode : Transmitting CH6:912.8484MHz  
Remarks :  
Date : 1/15/2004  
Test Distance : 3 m  
Temperature : 20 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.249(a) Fundamental (D:3m)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING |        | ANT<br>FACTOR | AMP<br>GAIN | CABLE<br>LOSS | ATTEN.<br>[dB] | RESULT    |           | LIMITS | MARGIN |      |
|-----|----------------|-------------|---------|--------|---------------|-------------|---------------|----------------|-----------|-----------|--------|--------|------|
|     |                |             | HOR     | VER    |               |             |               |                | HOR       | VER       |        | HOR    | VER  |
|     |                |             | [dB μV] | [dB/m] |               | [dB]        | [dB]          |                | [dB μV/m] | [dB μV/m] |        | [dB]   | [dB] |
| 1.  | 912.85         | BB          | 83.6    | 77.9   | 22.5          | 28.8        | 3.4           | 6.1            | 86.8      | 81.1      | 93.9   | 7.1    | 12.8 |

CALCULATION:  $\text{READING}[\text{dB} \mu\text{V}] + \text{ANT. FACTOR}[\text{dB/m}] + \text{CABLE LOSS}[\text{dB}] - \text{AMP. GAIN}[\text{dB}] + \text{ATTEN}[\text{dB}]$ .

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz  
■ CABLE: KCC-A1/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK  $\Rightarrow$  2

Applicant : HORI CO.,LTD.  
Kind of Equipment : GAME CONTROLLER  
Model No. : UHP2-109-A  
Serial No. : S1  
Power : DC3.3V  
Mode : Transmitting CH8:926.3652MHz  
Remarks :  
Date : 1/15/2004  
Test Distance : 3 m  
Temperature : 20 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.249(a) Fundamental (D:3m)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING             |               | ANT<br>FACTOR | AMP<br>GAIN | CABLE<br>LOSS | ATTEN.<br>[dB] | RESULT                |                       | LIMITS | MARGIN      |             |
|-----|----------------|-------------|---------------------|---------------|---------------|-------------|---------------|----------------|-----------------------|-----------------------|--------|-------------|-------------|
|     |                |             | HOR<br>[dB $\mu$ V] | VER<br>[dB/m] |               |             |               |                | HOR<br>[dB $\mu$ V/m] | VER<br>[dB $\mu$ V/m] |        | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 926.37         | BB          | 83.4                | 79.1          | 22.6          | 28.7        | 3.5           | 6.1            | 86.9                  | 82.6                  | 93.9   | 7.0         | 11.3        |

CALCULATION: READING[dB  $\mu$  V] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-A1/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK = 2

Applicant : HORI CO.,LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH1:903.0180MHz  
 Remarks :  
 Date : 1/15/2004  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR | AMP<br>GAIN | CABLE<br>LOSS | ATTEN.<br>[dB] | RESULT           |                  | LIMITS | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|---------------|-------------|---------------|----------------|------------------|------------------|--------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |               |             |               |                | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |        | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 206.42         | BB          | 38.5           | 26.4           | 16.5          | 27.9        | 1.5           | 6.1            | 34.7             | 22.6             | 43.5   | 8.8         | 20.9        |
| 2.  | 213.79         | BB          | 38.8           | 27.7           | 16.6          | 27.8        | 1.5           | 6.1            | 35.2             | 24.1             | 43.5   | 8.3         | 19.4        |
| 3.  | 221.16         | BB          | 46.5           | 35.9           | 16.7          | 27.8        | 1.6           | 6.1            | 43.1             | 32.5             | 46.0   | 2.9         | 13.5        |
| 4.  | 250.65         | BB          | 40.6           | 30.8           | 17.1          | 27.6        | 1.7           | 6.1            | 37.9             | 28.1             | 46.0   | 8.1         | 17.9        |
| 5.  | 280.14         | BB          | 39.4           | 29.2           | 18.8          | 27.6        | 1.8           | 6.1            | 38.5             | 28.3             | 46.0   | 7.5         | 17.7        |
| 6.  | 309.64         | BB          | 46.4           | 34.2           | 14.7          | 27.7        | 1.9           | 6.1            | 41.4             | 29.2             | 46.0   | 4.6         | 16.8        |
| 7.  | 339.13         | BB          | 50.0           | 37.3           | 15.5          | 27.9        | 2.0           | 6.1            | 45.7             | 33.0             | 46.0   | 0.3         | 13.0        |
| 8.  | 368.62         | BB          | 44.4           | 34.0           | 16.3          | 28.1        | 2.0           | 6.1            | 40.7             | 30.3             | 46.0   | 5.3         | 15.7        |
| 9.  | 427.60         | BB          | 37.6           | 26.3           | 17.5          | 28.6        | 2.2           | 6.1            | 34.8             | 23.5             | 46.0   | 11.2        | 22.5        |
| 10. | 766.76         | BB          | 33.5           | 28.6           | 21.4          | 29.1        | 3.1           | 6.1            | 35.0             | 30.1             | 46.0   | 11.0        | 15.9        |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-A1/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

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Applicant : HORI CO., LTD.  
Kind of Equipment : GAME CONTROLLER  
Model No. : UHP2-109-A  
Serial No. : S1  
Power : DC3.3V  
Mode : Transmitting CH1:903.0180MHz  
Remarks :  
Date : 1/15/2004  
Test Distance : 3 m  
Temperature : 20 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

Emission Level [dB $\mu$ V/m]

□ Horizontal

× Vertical

70

60

50

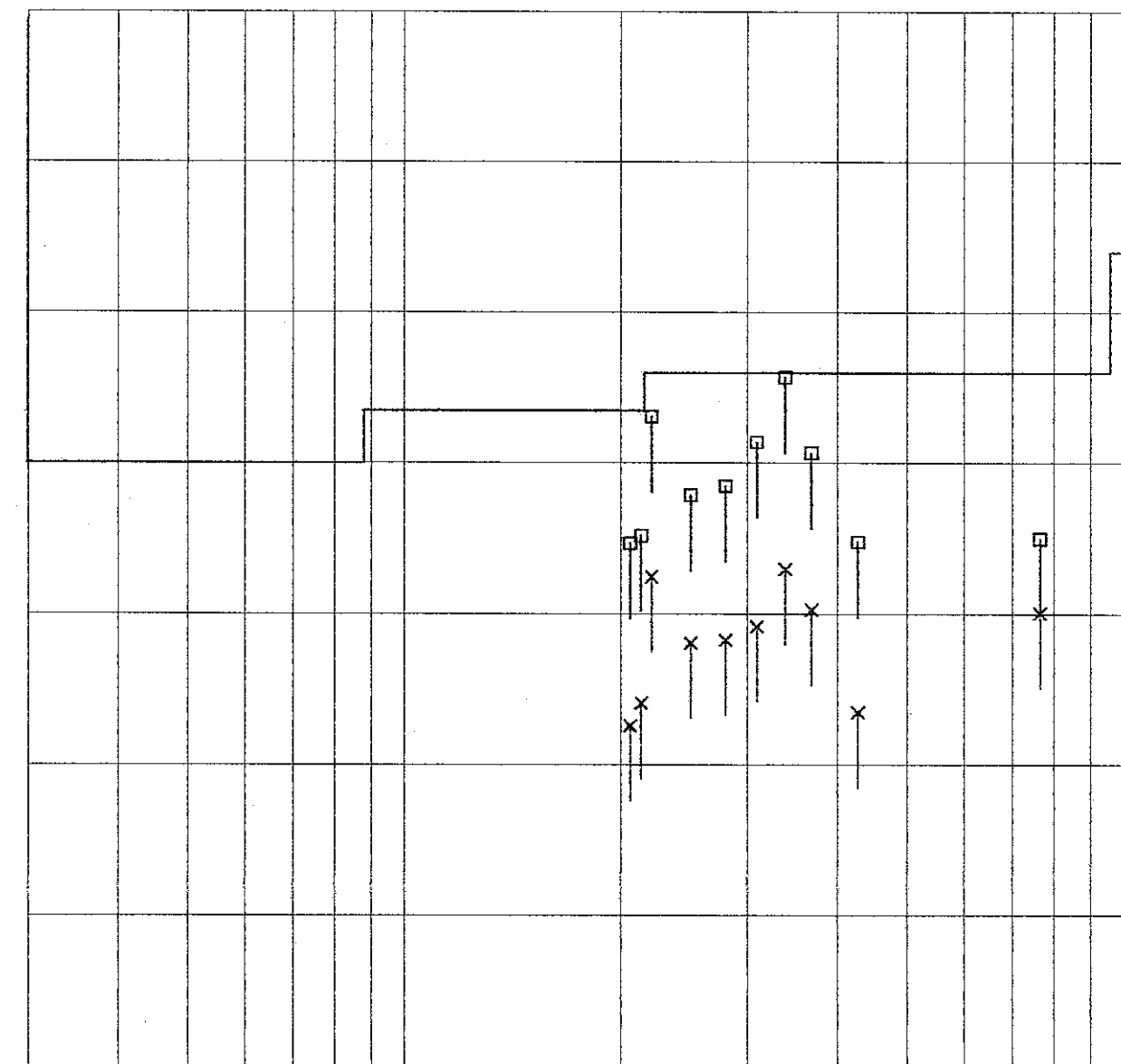
40

30

20

10

0



Frequency [MHz]

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 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH6:912.8484MHz  
 Remarks :  
 Date : 1/15/2004  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING |         | ANT<br>FACTOR | AMP<br>GAIN | CABLE<br>LOSS | ATTEN. | RESULT    |           | LIMITS    | MARGIN |      |
|-----|----------------|-------------|---------|---------|---------------|-------------|---------------|--------|-----------|-----------|-----------|--------|------|
|     |                |             | HOR     | VER     |               |             |               |        | HOR       | VER       |           | HOR    | VER  |
|     |                |             | [dB μV] | [dB μV] | [dB/m]        | [dB]        | [dB]          | [dB]   | [dB μV/m] | [dB μV/m] | [dB μV/m] | [dB]   | [dB] |
| 1.  | 206.42         | BB          | 37.3    | 27.5    | 16.5          | 27.9        | 1.5           | 6.1    | 33.5      | 23.7      | 43.5      | 10.0   | 19.8 |
| 2.  | 221.16         | BB          | 47.1    | 36.5    | 16.7          | 27.8        | 1.6           | 6.1    | 43.7      | 33.1      | 46.0      | 2.3    | 12.9 |
| 3.  | 250.65         | BB          | 39.0    | 29.7    | 17.1          | 27.6        | 1.7           | 6.1    | 36.3      | 27.0      | 46.0      | 9.7    | 19.0 |
| 4.  | 280.14         | BB          | 39.5    | 29.4    | 18.8          | 27.6        | 1.8           | 6.1    | 38.6      | 28.5      | 46.0      | 7.4    | 17.5 |
| 5.  | 309.63         | BB          | 46.6    | 33.7    | 14.7          | 27.7        | 1.9           | 6.1    | 41.6      | 28.7      | 46.0      | 4.4    | 17.3 |
| 6.  | 339.17         | BB          | 49.3    | 36.9    | 15.5          | 27.9        | 2.0           | 6.1    | 45.0      | 32.6      | 46.0      | 1.0    | 13.4 |
| 7.  | 368.62         | BB          | 44.7    | 35.1    | 16.3          | 28.1        | 2.0           | 6.1    | 41.0      | 31.4      | 46.0      | 5.0    | 14.6 |
| 8.  | 766.76         | BB          | 34.7    | 29.5    | 21.4          | 29.1        | 3.1           | 6.1    | 36.2      | 31.0      | 46.0      | 9.8    | 15.0 |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz / KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-A1/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK = 2

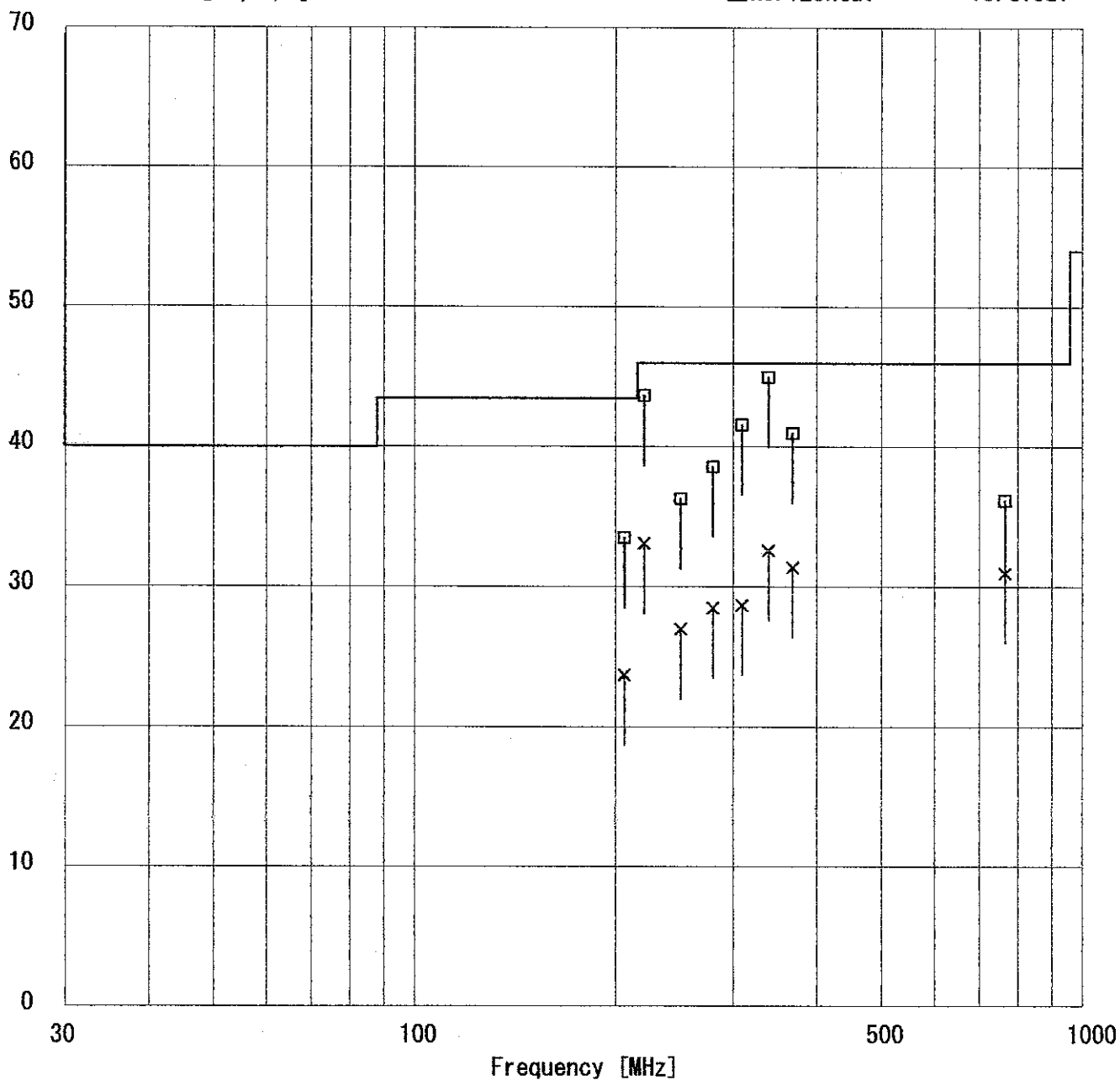
Applicant : HORI CO., LTD.  
Kind of Equipment : GAME CONTROLLER  
Model No. : UHP2-109-A  
Serial No. : S1  
Power : DC3.3V  
Mode : Transmitting CH6:912.8484MHz  
Remarks :  
Date : 1/15/2004  
Test Distance : 3 m  
Temperature : 20 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

Emission Level [dB $\mu$ V/m]

□Horizontal

×Vertical



# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK-2

Applicant : HORI CO.,LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH8:926.3652MHz  
 Remarks :  
 Date : 1/15/2004  
 Test Distance : 3 m  
 Temperature : 20 °C  
 Humidity : 38 %  
 Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR<br>[dB/m] | AMP<br>GAIN<br>[dB] | CABLE<br>LOSS<br>[dB] | ATTEN.<br>[dB] | RESULT           |                  | LIMITS<br>[dB μV/m] | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|-------------------------|---------------------|-----------------------|----------------|------------------|------------------|---------------------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |                         |                     |                       |                | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |                     | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 206.42         | BB          | 36.2           | 26.4           | 16.5                    | 27.9                | 1.5                   | 6.1            | 32.4             | 22.6             | 43.5                | 11.1        | 20.9        |
| 2.  | 213.79         | BB          | 31.4           | 23.4           | 16.6                    | 27.8                | 1.5                   | 6.1            | 27.8             | 19.8             | 43.5                | 15.7        | 23.7        |
| 3.  | 221.16         | BB          | 48.3           | 37.6           | 16.7                    | 27.8                | 1.6                   | 6.1            | 44.9             | 34.2             | 46.0                | 1.1         | 11.8        |
| 4.  | 250.65         | BB          | 38.4           | 29.2           | 17.1                    | 27.6                | 1.7                   | 6.1            | 35.7             | 26.5             | 46.0                | 10.3        | 19.5        |
| 5.  | 280.14         | BB          | 38.8           | 29.9           | 18.8                    | 27.6                | 1.8                   | 6.1            | 37.9             | 29.0             | 46.0                | 8.1         | 17.0        |
| 6.  | 309.63         | BB          | 45.6           | 33.5           | 14.7                    | 27.7                | 1.9                   | 6.1            | 40.6             | 28.5             | 46.0                | 5.4         | 17.5        |
| 7.  | 339.17         | BB          | 49.6           | 37.3           | 15.5                    | 27.9                | 2.0                   | 6.1            | 45.3             | 33.0             | 46.0                | 0.7         | 13.0        |
| 8.  | 368.62         | BB          | 44.1           | 34.6           | 16.3                    | 28.1                | 2.0                   | 6.1            | 40.4             | 30.9             | 46.0                | 5.6         | 15.1        |
| 9.  | 427.60         | BB          | 37.3           | 26.2           | 17.5                    | 28.6                | 2.2                   | 6.1            | 34.5             | 23.4             | 46.0                | 11.5        | 22.6        |
| 10. | 766.76         | BB          | 34.5           | 29.7           | 21.4                    | 29.1                | 3.1                   | 6.1            | 36.0             | 31.2             | 46.0                | 10.0        | 14.8        |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-A1/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK = 2

Applicant : HORI CO., LTD.  
Kind of Equipment : GAME CONTROLLER  
Model No. : UHP2-109-A  
Serial No. : S1  
Power : DC3.3V  
Mode : Transmitting CH8:926.3652MHz  
Remarks :  
Date : 1/15/2004  
Test Distance : 3 m  
Temperature : 20 °C  
Humidity : 38 %  
Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

Emission Level [dB $\mu$ V/m]

□Horizontal

×Vertical

70

60

50

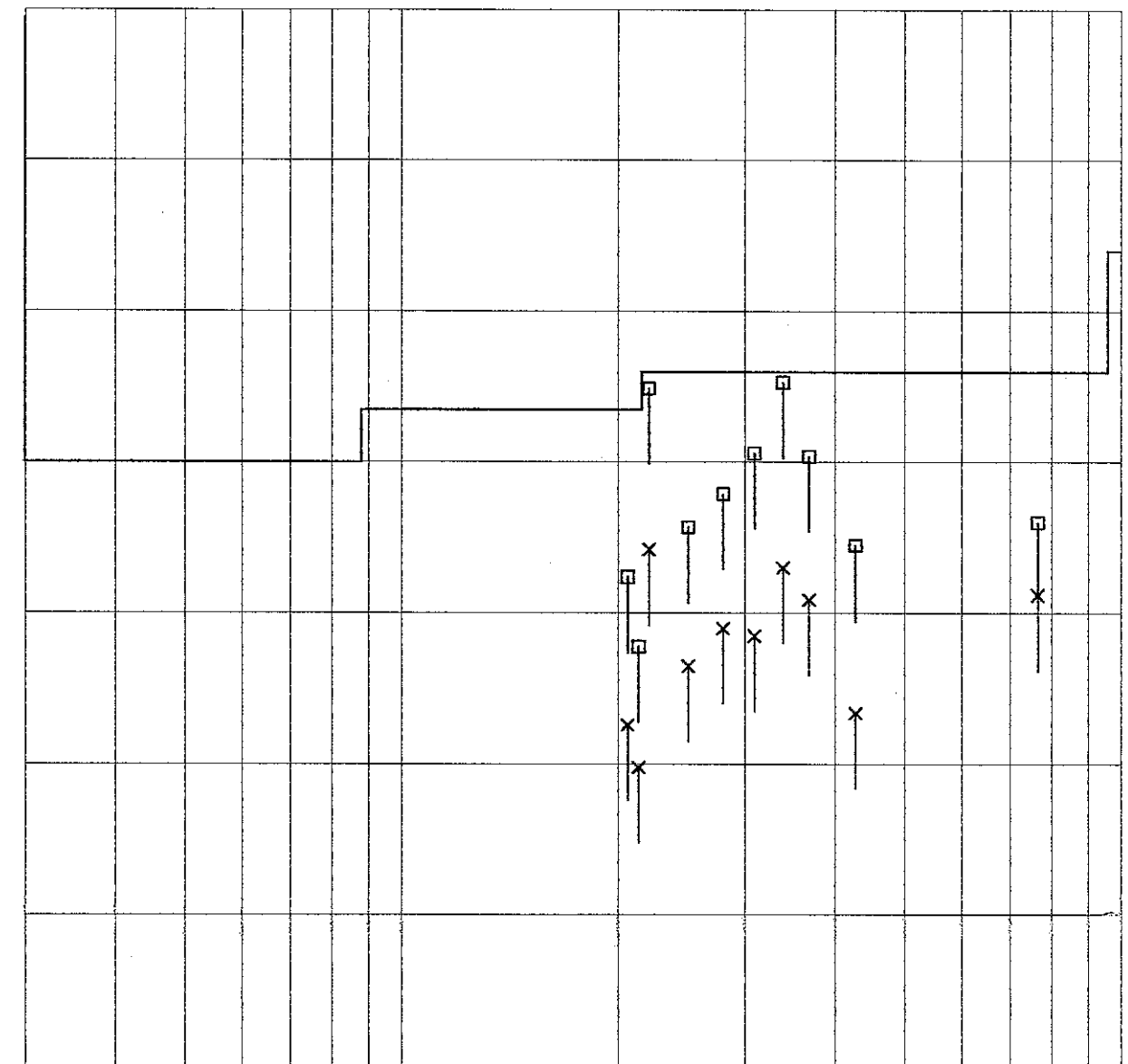
40

30

20

10

0



30

100

Frequency [MHz]

500

1000

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK-2

Applicant : HORI CO.,LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH1:903.0180MHz  
 Remarks :  
 Date : 1/19/2004  
 Test Distance : 3 m  
 Temperature : 21 °C  
 Humidity : 32 %  
 Regulation : FCC Part15C § 15.209(AV Detection)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR<br>[dB/m] | AMP<br>GAIN<br>[dB] | CABLE<br>LOSS<br>[dB] | ATTEN.<br>[dB] | RESULT           |                  | LIMITS<br>[dB μV/m] | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|-------------------------|---------------------|-----------------------|----------------|------------------|------------------|---------------------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |                         |                     |                       |                | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |                     | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 1806.04        | BB          | 42.7           | 46.7           | 29.0                    | 37.1                | 3.6                   | 10.0           | 48.2             | 52.2             | 54.0                | 5.8         | 1.8         |
| 2.  | 2709.05        | BB          | 40.9           | 39.1           | 30.7                    | 37.0                | 4.5                   | 10.0           | 49.1             | 47.3             | 54.0                | 4.9         | 6.7         |
| 3.  | 3612.07        | BB          | 49.6           | 48.9           | 32.1                    | 36.7                | 5.2                   | 1.0            | 51.2             | 50.5             | 54.0                | 2.8         | 3.5         |
| 4.  | 4515.09        | BB          | 34.8           | 35.1           | 33.8                    | 35.2                | 5.9                   | 0.7            | 40.0             | 40.3             | 54.0                | 14.0        | 13.7        |
| 5.  | 5418.11        | BB          | 33.2           | 33.2           | 35.9                    | 36.2                | 6.4                   | 0.8            | 40.1             | 40.1             | 54.0                | 13.9        | 13.9        |
| 6.  | 6321.13        | BB          | 43.4           | 35.8           | 37.3                    | 36.4                | 7.0                   | 0.3            | 51.6             | 44.0             | 54.0                | 2.4         | 10.0        |
| 7.  | 7224.14        | BB          | 32.9           | 33.6           | 38.2                    | 36.8                | 7.6                   | 0.5            | 42.4             | 43.1             | 54.0                | 11.6        | 10.9        |
| 8.  | 8127.16        | BB          | 32.6           | 33.1           | 37.9                    | 37.0                | 8.1                   | 0.5            | 42.1             | 42.6             | 54.0                | 11.9        | 11.4        |
| 9.  | 9030.18        | BB          | 32.8           | 33.3           | 39.4                    | 37.1                | 8.5                   | 0.5            | 44.1             | 44.6             | 54.0                | 9.9         | 9.4         |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ANTENNA:KHA-01(SAS-200 571)1-18GHz

■CABLE:KCC-D7/D13■PREAMP:KAF-02(8449B)■EMI RECEIVER:KTR-0(ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK - 2

Applicant : HORI CO.,LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH1:903.0180MHz  
 Remarks :  
 Date : 1/19/2004  
 Test Distance : 3 m  
 Temperature : 21 °C  
 Humidity : 32 %  
 Regulation : FCC Part15C § 15.209 (PK Detection)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR<br>[dB/m] | AMP<br>GAIN<br>[dB] | CABLE<br>LOSS<br>[dB] | ATTEN.<br>[dB] | RESULT           |                  | LIMITS<br>[dB μV/m] | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|-------------------------|---------------------|-----------------------|----------------|------------------|------------------|---------------------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |                         |                     |                       |                | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |                     | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 1806.04        | BB          | 48.3           | 50.8           | 29.0                    | 37.1                | 3.6                   | 10.0           | 53.8             | 56.3             | 74.0                | 20.2        | 17.7        |
| 2.  | 2709.05        | BB          | 48.2           | 46.5           | 30.7                    | 37.0                | 4.5                   | 10.0           | 56.4             | 54.7             | 74.0                | 17.6        | 19.3        |
| 3.  | 3612.07        | BB          | 51.8           | 52.2           | 32.1                    | 36.7                | 5.2                   | 1.0            | 53.4             | 53.8             | 74.0                | 20.6        | 20.2        |
| 4.  | 4515.09        | BB          | 45.1           | 46.2           | 33.8                    | 35.2                | 5.9                   | 0.7            | 50.3             | 51.4             | 74.0                | 23.7        | 22.6        |
| 5.  | 5418.11        | BB          | 44.1           | 43.6           | 35.9                    | 36.2                | 6.4                   | 0.8            | 51.0             | 50.5             | 74.0                | 23.0        | 23.5        |
| 6.  | 6321.13        | BB          | 48.6           | 46.0           | 37.3                    | 36.4                | 7.0                   | 0.3            | 56.8             | 54.2             | 74.0                | 17.2        | 19.8        |
| 7.  | 7224.14        | BB          | 44.4           | 45.4           | 38.2                    | 36.8                | 7.6                   | 0.5            | 53.9             | 54.9             | 74.0                | 20.1        | 19.1        |
| 8.  | 8127.16        | BB          | 44.3           | 45.5           | 37.9                    | 37.0                | 8.1                   | 0.5            | 53.8             | 55.0             | 74.0                | 20.2        | 19.0        |
| 9.  | 9030.18        | BB          | 44.9           | 45.2           | 39.4                    | 37.1                | 8.5                   | 0.5            | 56.2             | 56.5             | 74.0                | 17.8        | 17.5        |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ANTENNA:KHA-01 (SAS-200 571) 1-18GHz

■CABLE:KCC-D7/D13 ■PREAMP:KAF-02 (8449B) ■EMI RECEIVER:KTR-0 (ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK = 2

Applicant : HORI CO.,LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH6:912.8484MHz  
 Remarks :  
 Date : 1/19/2004  
 Test Distance : 3 m  
 Temperature : 21 °C  
 Humidity : 32 %  
 Regulation : FCC Part15C § 15.209(AV Detection)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR<br>[dB/m] | AMP<br>GAIN<br>[dB] | CABLE<br>LOSS<br>[dB] | ATTEN.<br>[dB] | RESULT           |                  | LIMITS<br>[dB μV/m] | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|-------------------------|---------------------|-----------------------|----------------|------------------|------------------|---------------------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |                         |                     |                       |                | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |                     | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 1825.70        | BB          | 45.4           | 48.2           | 29.1                    | 37.1                | 3.6                   | 10.0           | 51.0             | 53.8             | 54.0                | 3.0         | 0.2         |
| 2.  | 2738.55        | BB          | 45.3           | 42.9           | 30.7                    | 37.0                | 4.5                   | 10.0           | 53.5             | 51.1             | 54.0                | 0.5         | 2.9         |
| 3.  | 3651.39        | BB          | 50.6           | 49.6           | 32.3                    | 36.7                | 5.2                   | 0.9            | 52.3             | 51.3             | 54.0                | 1.7         | 2.7         |
| 4.  | 4564.24        | BB          | 35.0           | 35.5           | 34.0                    | 35.2                | 5.9                   | 0.7            | 40.4             | 40.9             | 54.0                | 13.6        | 13.1        |
| 5.  | 5477.09        | BB          | 32.5           | 33.6           | 35.9                    | 36.3                | 6.4                   | 0.9            | 39.4             | 40.5             | 54.0                | 14.6        | 13.5        |
| 6.  | 6389.94        | BB          | 37.8           | 37.2           | 37.3                    | 36.5                | 7.0                   | 0.2            | 45.8             | 45.2             | 54.0                | 8.2         | 8.8         |
| 7.  | 7302.79        | BB          | 32.9           | 33.0           | 38.4                    | 36.8                | 7.6                   | 0.5            | 42.6             | 42.7             | 54.0                | 11.4        | 11.3        |
| 8.  | 8215.64        | BB          | 32.5           | 32.9           | 38.0                    | 37.0                | 8.2                   | 0.6            | 42.3             | 42.7             | 54.0                | 11.7        | 11.3        |
| 9.  | 9128.48        | BB          | 32.6           | 32.9           | 39.3                    | 37.0                | 8.6                   | 0.4            | 43.9             | 44.2             | 54.0                | 10.1        | 9.8         |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ANTENNA:KHA-01(SAS-200 571)1-18GHz

■CABLE:KCC-D7/D13■PREAMP:KAF-02(8449B)■EMI RECEIVER:KTR-0(ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK = 2

Applicant : HORI CO.,LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH6:912.8484MHz  
 Remarks :  
 Date : 1/19/2004  
 Test Distance : 3 m  
 Temperature : 21 °C  
 Humidity : 32 %  
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR | AMP<br>GAIN | CABLE<br>LOSS | ATTEN. | RESULT           |                  | LIMITS | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|---------------|-------------|---------------|--------|------------------|------------------|--------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |               |             |               |        | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |        | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 1825.70        | BB          | 49.9           | 53.1           | 29.1          | 37.1        | 3.6           | 10.0   | 55.5             | 58.7             | 74.0   | 18.5        | 15.3        |
| 2.  | 2738.55        | BB          | 49.5           | 49.5           | 30.7          | 37.0        | 4.5           | 10.0   | 57.7             | 57.7             | 74.0   | 16.3        | 16.3        |
| 3.  | 3651.39        | BB          | 52.9           | 53.0           | 32.3          | 36.7        | 5.2           | 0.9    | 54.6             | 54.7             | 74.0   | 19.4        | 19.3        |
| 4.  | 4564.24        | BB          | 44.4           | 44.9           | 34.0          | 35.2        | 5.9           | 0.7    | 49.8             | 50.3             | 74.0   | 24.2        | 23.7        |
| 5.  | 5477.09        | BB          | 43.2           | 45.1           | 35.9          | 36.3        | 6.4           | 0.9    | 50.1             | 52.0             | 74.0   | 23.9        | 22.0        |
| 6.  | 6389.94        | BB          | 45.8           | 48.4           | 37.3          | 36.5        | 7.0           | 0.2    | 53.8             | 56.4             | 74.0   | 20.2        | 17.6        |
| 7.  | 7302.79        | BB          | 43.5           | 45.2           | 38.4          | 36.8        | 7.6           | 0.5    | 53.2             | 54.9             | 74.0   | 20.8        | 19.1        |
| 8.  | 8215.64        | BB          | 44.2           | 45.2           | 38.0          | 37.0        | 8.2           | 0.6    | 54.0             | 55.0             | 74.0   | 20.0        | 19.0        |
| 9.  | 9128.48        | BB          | 44.7           | 45.1           | 39.3          | 37.0        | 8.6           | 0.4    | 56.0             | 56.4             | 74.0   | 18.0        | 17.6        |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ANTENNA:KHA-01(SAS-200 571)1-18GHz

■CABLE:KCC-D7/D13■PREAMP:KAF-02(8449B)■EMI RECEIVER:KTR-0(ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK-2

Applicant : HORI CO.,LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH8:926.3652MHz  
 Remarks :  
 Date : 1/19/2004  
 Test Distance : 3 m  
 Temperature : 21 °C  
 Humidity : 32 %  
 Regulation : FCC Part15C § 15.209(AV Detection)

Engineer : Ichiro Isozaki

| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR<br>[dB/m] | AMP<br>GAIN<br>[dB] | CABLE<br>LOSS<br>[dB] | ATTEN.<br>[dB] | RESULT           |                  | LIMITS<br>[dB μV/m] | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|-------------------------|---------------------|-----------------------|----------------|------------------|------------------|---------------------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |                         |                     |                       |                | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |                     | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 1852.73        | BB          | 46.5           | 48.0           | 29.3                    | 37.0                | 3.6                   | 10.0           | 52.4             | 53.9             | 54.0                | 1.6         | 0.1         |
| 2.  | 2779.10        | BB          | 45.3           | 42.6           | 30.7                    | 37.0                | 4.6                   | 10.0           | 53.6             | 50.9             | 54.0                | 0.4         | 3.1         |
| 3.  | 3705.46        | BB          | 47.1           | 44.8           | 32.5                    | 36.6                | 5.3                   | 0.9            | 49.2             | 46.9             | 54.0                | 4.8         | 7.1         |
| 4.  | 4631.83        | BB          | 34.4           | 34.1           | 34.4                    | 35.2                | 6.0                   | 0.7            | 40.3             | 40.0             | 54.0                | 13.7        | 14.0        |
| 5.  | 5558.19        | BB          | 31.9           | 30.3           | 36.1                    | 36.3                | 6.5                   | 0.8            | 39.0             | 37.4             | 54.0                | 15.0        | 16.6        |
| 6.  | 6484.56        | BB          | 35.8           | 37.9           | 37.3                    | 36.5                | 7.1                   | 0.2            | 43.9             | 46.0             | 54.0                | 10.1        | 8.0         |
| 7.  | 7410.92        | BB          | 32.5           | 32.6           | 38.7                    | 36.9                | 7.6                   | 0.5            | 42.4             | 42.5             | 54.0                | 11.6        | 11.5        |
| 8.  | 8337.29        | BB          | 32.4           | 32.6           | 38.1                    | 37.0                | 8.2                   | 0.6            | 42.3             | 42.5             | 54.0                | 11.7        | 11.5        |
| 9.  | 9263.65        | BB          | 32.6           | 32.8           | 39.2                    | 37.0                | 8.6                   | 0.4            | 43.8             | 44.0             | 54.0                | 10.2        | 10.0        |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

■ANTENNA:KHA-01(SAS-200 571)1-18GHz

■CABLE:KCC-D7/D13■PREAMP:KAF-02(8449B)■EMI RECEIVER:KTR-0(ES140)

# DATA OF RADIATION TEST

UL Apex Co.,Ltd.

Yamakita No.1 Anechoic Chamber

Report No. : 24DE0265-YK-2

Applicant : HORI CO., LTD.  
 Kind of Equipment : GAME CONTROLLER  
 Model No. : UHP2-109-A  
 Serial No. : S1  
 Power : DC3.3V  
 Mode : Transmitting CH8:926.3652MHz  
 Remarks :  
 Date : 1/19/2004  
 Test Distance : 3 m  
 Temperature : 21 °C  
 Humidity : 32 %  
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Ichiro Isozaki

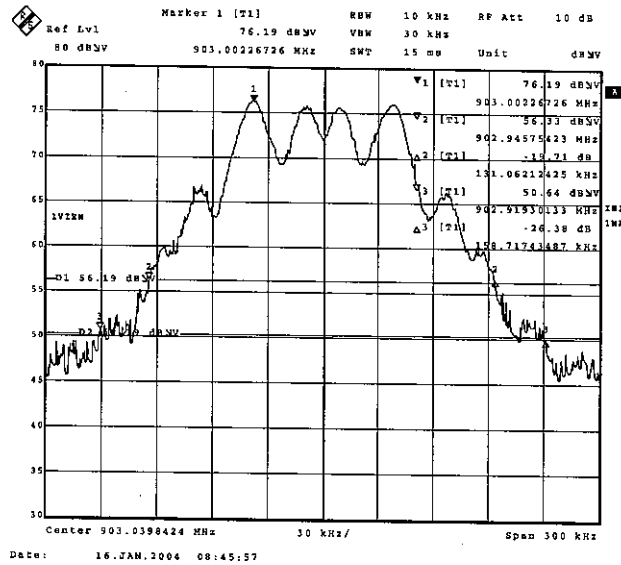
| No. | FREQ.<br>[MHz] | ANT<br>TYPE | READING        |                | ANT<br>FACTOR<br>[dB/m] | AMP<br>GAIN<br>[dB] | CABLE<br>LOSS<br>[dB] | ATTEN.<br>[dB] | RESULT           |                  | LIMITS<br>[dB μV/m] | MARGIN      |             |
|-----|----------------|-------------|----------------|----------------|-------------------------|---------------------|-----------------------|----------------|------------------|------------------|---------------------|-------------|-------------|
|     |                |             | HOR<br>[dB μV] | VER<br>[dB μV] |                         |                     |                       |                | HOR<br>[dB μV/m] | VER<br>[dB μV/m] |                     | HOR<br>[dB] | VER<br>[dB] |
| 1.  | 1852.73        | BB          | 51.6           | 53.3           | 29.3                    | 37.0                | 3.6                   | 10.0           | 57.5             | 59.2             | 74.0                | 16.5        | 14.8        |
| 2.  | 2779.10        | BB          | 50.2           | 48.7           | 30.7                    | 37.0                | 4.6                   | 10.0           | 58.5             | 57.0             | 74.0                | 15.5        | 17.0        |
| 3.  | 3705.46        | BB          | 50.9           | 49.6           | 32.5                    | 36.6                | 5.3                   | 0.9            | 53.0             | 51.7             | 74.0                | 21.0        | 22.3        |
| 4.  | 4631.83        | BB          | 43.8           | 44.0           | 34.4                    | 35.2                | 6.0                   | 0.7            | 49.7             | 49.9             | 74.0                | 24.3        | 24.1        |
| 5.  | 5558.19        | BB          | 44.0           | 42.2           | 36.1                    | 36.3                | 6.5                   | 0.8            | 51.1             | 49.3             | 74.0                | 22.9        | 24.7        |
| 6.  | 6484.56        | BB          | 45.1           | 46.8           | 37.3                    | 36.5                | 7.1                   | 0.2            | 53.2             | 54.9             | 74.0                | 20.8        | 19.1        |
| 7.  | 7410.92        | BB          | 44.5           | 44.3           | 38.7                    | 36.9                | 7.6                   | 0.5            | 54.4             | 54.2             | 74.0                | 19.6        | 19.8        |
| 8.  | 8337.29        | BB          | 43.7           | 45.3           | 38.1                    | 37.0                | 8.2                   | 0.6            | 53.6             | 55.2             | 74.0                | 20.4        | 18.8        |
| 9.  | 9263.65        | BB          | 44.5           | 44.8           | 39.2                    | 37.0                | 8.6                   | 0.4            | 55.7             | 56.0             | 74.0                | 18.3        | 18.0        |

CALCULATION: READING[dB μV] + ANT. FACTOR[dB/m] + CABLE LOSS[dB] - AMP. GAIN[dB] + ATTEN[dB].

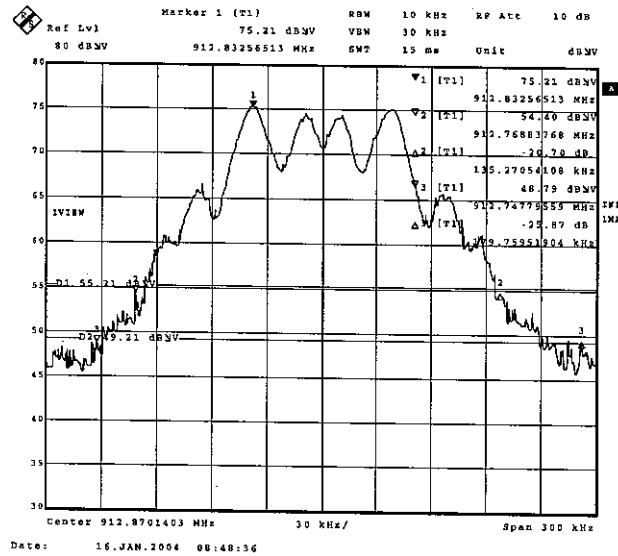
■ANTENNA:KHA-01(SAS-200 571)1-18GHz

■CABLE:KCC-D7/D13■PREAMP:KAF-02(8449B)■EMI RECEIVER:KTR-0(ES140)

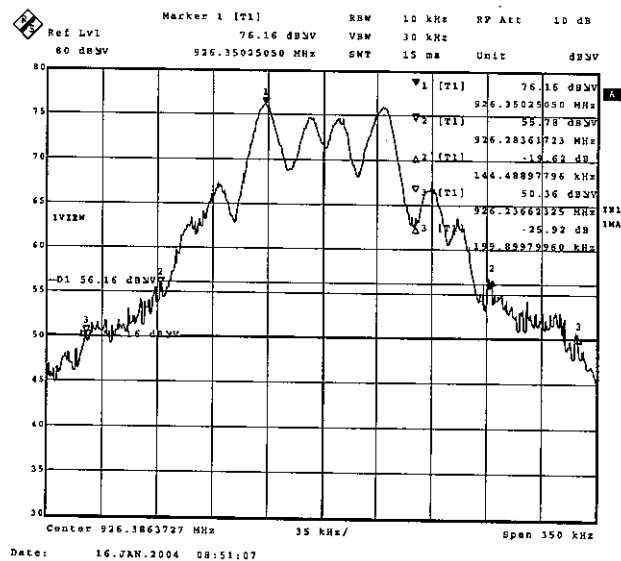
## 1. Ch Low:903.018MHz

*U. Suzuki*

## 2. Ch Mid:912.8484MHz



## 3. Ch High:926.3652MHz



Test Report No :24DE0265-YK-2

### APPENDIX 3 Test Instruments

#### EMI test equipment

| Control No.  | Instrument          | Manufacturer      | Model No               | Test Item | Calibration Date *<br>Interval(month) |
|--------------|---------------------|-------------------|------------------------|-----------|---------------------------------------|
| KAEC-01(NSA) | Anechoic Chamber    | JSE               | Semi 3m                | RE        | 2003/09/07 * 12                       |
| KAF-02       | Pre Amplifier       | Hewlett Packard   | 8449B                  | RE        | 2003/05/08 * 12                       |
| KAF-05       | Pre Amplifier       | Agilent           | 8447D                  | RE        | 2003/06/12 * 12                       |
| KAT10-S1     | Attenuator          | Agilent           | 8449D 010              | RE        | 2003/04/18 * 12                       |
| KAT6-01      | Attenuator          | INMET             | i8N-6dB                | RE        | 2003/05/12 * 12                       |
| KBA-03       | Biconical Antenna   | Schwarzbeck       | BBA9106                | RE        | 2003/02/06 * 12                       |
| KCC-A1/A3    | Coaxial Cable       | Fujikura          | 5D-2W                  | RE        | 2003/07/25 * 12                       |
| KFL-01       | Highpass Filter     | Hewlett Packard   | 84300 80038            | RE        | 2003/04/18 * 12                       |
| KHA-01       | Horn Antenna        | A.H.Systems       | SAS-200/571            | RE        | 2003/08/11 * 12                       |
| KLA-03       | Logperiodic Antenna | Schwarzbeck       | USLP9143               | RE        | 2003/02/06 * 12                       |
| KTR-01       | Test Receiver       | Rohde & Schwarz   | ESI40                  | RE        | 2003/07/25 * 12                       |
| KSA-04       | Spectrum Analyzer   | Advantest         | R3271A                 | RE        | 2003/09/17 * 12                       |
| KCC-D7/D13   | Coaxial cable       | Advantest/Suhuner | A01002/SUCOFLEX1<br>04 | RE        | 2003/04/18 * 12                       |
|              |                     |                   |                        |           |                                       |

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

RE: Radiated emission,