



## FCC 47 CFR PART 15 Subpart C

### TEST REPORT

For

**Asoka Incorporation**

**RF PS2 1 TO 1 Game Controller**

**Model Number: N/A**

**Trade Name: N/A**

*Prepared for*

**Asoka Corporatation  
5F., No.9, Kuang Fu N.Rd., Taipei, Taiwan**

*Prepared by*

**COMPLIANCE CERTIFICATION SERVICES (KUNSHAN) INC.**

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Lab. Code: 200581-0

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## 1. TEST RESULT CERTIFICATION

**Applicant:** Asoka Incorporation  
5F, No.9, Kuang Fu N. Rd., Taipei, Taiwan

**Equipment Under Test:** RF PS2 1 TO 1 Game Controller

**Trade Name:** N/A

**Model Number:** N/A

**Date of Test:** From January 24 ~ 27, 2005

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC Part 15 Subpart C	No non-compliance noted

### We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements emission limits of FCC Rules Part 15.107, 15.109, 15.207, 15.209 and 15.249.

The test results of this report relate only to the tested sample identified in this report.

*Approved by:*

Denny Yang  
Vice General Manager of Laboratory  
Compliance Certification Services Inc.

*Reviewed by:*

Eric Lin  
Section Manager of Laboratory  
Compliance Certification Services Inc.



## 2. EUT DESCRIPTION

<b>Product</b>	RF PS2 1 TO 1 Game Controller
<b>Trade Name</b>	N/A
<b>Model Number</b>	N/A
<b>Model Discrepancy</b>	N/A
<b>Power Supply</b>	Controller: Powered by AA battery (1.5Vdc x 2)
<b>Frequency Range</b>	2402MHz - 2481 MHz
<b>Modulation Technique</b>	GFSK Modulation
<b>Antenna Gain</b>	3dBi (Max)
<b>Antenna Designation</b>	Monopole Antenna

**Note:** This submittal(s) (test report) is intended for FCC ID: SXJRFPS1TO1 filing to comply with Section 15.107 & 15.109 (FCC Part 15, Subpart B) and Section 15.207, 15.209, 15.249 (FCC Part 15, Subpart C Rules.)



### 3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.249.

#### 3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

#### 3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.107 and 15.109 under the FCC Rules Part 15 Subpart B and Section 15.207, 15.209, 15.249 under the FCC Rules Part 15 Subpart C.

#### 3.3 GENERAL TEST PROCEDURES

##### Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

##### Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4.

### 3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41	322 - 335.4		

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

### 3.5 DESCRIPTION OF TEST MODES

The EUT has been tested under engineering test mode condition and the EUT staying in continuous operating mode.

Since the EUT is intended for the handheld use, preliminary scan for all the possible axis of uses (namely x/y/z-axis) have been made. Final observation and data reported with the worst-case (x-axis) found in the preliminary scan.



## **4. INSTRUMENT CALIBRATION**

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.



## **5. FACILITIES AND ACCREDITATIONS**

### **5.1 FACILITIES**

All measurement facilities used to collect the measurement data are located at CCS China Kunshan Lab at 10# Weiye Rd, Innovation Park Eco. & Tec. Development Zone Kunshan City JiangSu, (215300).

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

### **5.2 EQUIPMENT**

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, “Radio Interference Measuring Apparatus and Measurement Methods.”

### **5.3 LABORATORY ACCREDITATIONS AND LISTING**

The test facilities used to perform radiated and conducted emissions tests are accredited by National Voluntary Laboratory Accreditation Program for the specific scope of accreditation under Lab Code: 200581-0 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government.

## 5.4 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	NVLAP	EN 55022, EN 61000-3-2, EN 61000-3-3, EN550024, EN 61000-4-2, EN 61000-4-3, EN61000-4-4, EN 61000-4-5, EN 61000-4-6, IEC 61000-4-8, EN 61000-4-11 ANSI C63.4, CISPR16-1, IEC61000-3-2, IEC61000-3-3, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11	 Lab. Code: 200581-0 ----
USA	FCC	3/10 meter Sites to perform FCC Part 15/18 measurements	 93105, 90471
Japan	VCCI	3/10 meter Sites and conducted test sites to perform radiated/conducted measurements	 R-1600 C-1707
Norway	NEMKO	EN61000-6-1/2/3/4, EN 50082-1/2, IEC 61000-6-1/2/3/4, EN 50091-2, EN 55011, EN 55022, EN 55024, EN 61000-3-2/3, EN 61000-11, IEC 61000-4-2/3/4/5/6/8/11, CISPR16-1/2/3/4	 ELA 105

\* No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government.



## 6. SETUP OF EQUIPMENT UNDER TEST

### 6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### 6.2 SUPPORT EQUIPMENT

Device Type	Brand	Model	FCC ID	Series No.	Data Cable	Power Cord
Nil						

**Notes:**

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

## 7. FCC PART 15.249 REQUIREMENTS

### 7.1 SPURIOUS EMISSION

#### LIMIT

1. In the section 15.249(a):

Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental Field Strength (mV/m)	Field Strength of Harmonics (μV/m)
902-928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

1. Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

*Note: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

2. In the above emission table, the tighter limit applies at the band edges.

Frequency (Hz)	Field Strength (μV/m at 3-meter)	Field Strength (dBμV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

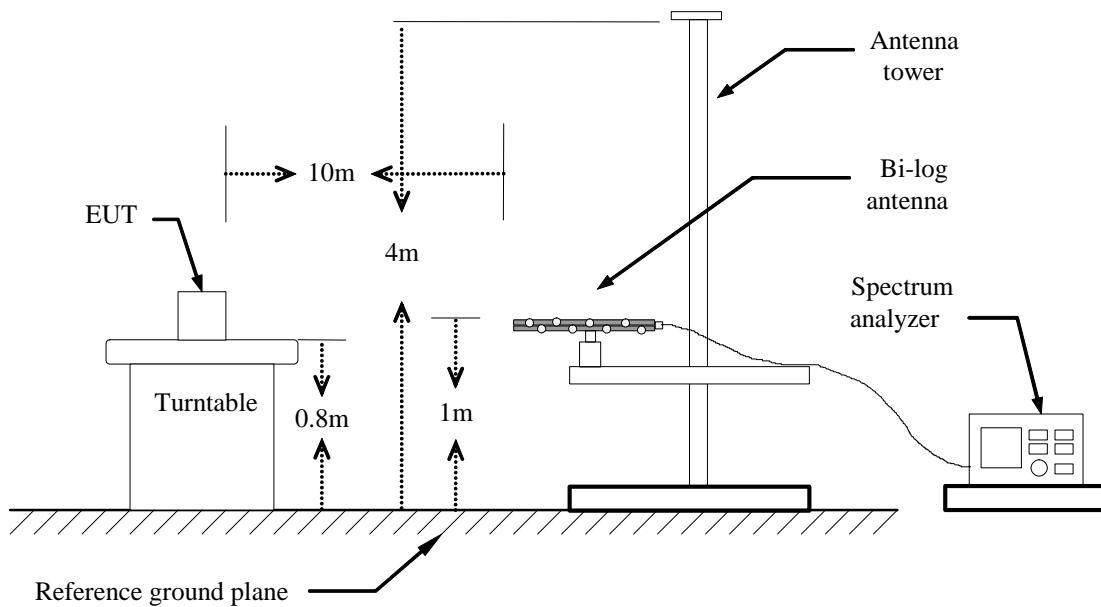
## MEASUREMENT EQUIPMENT USED

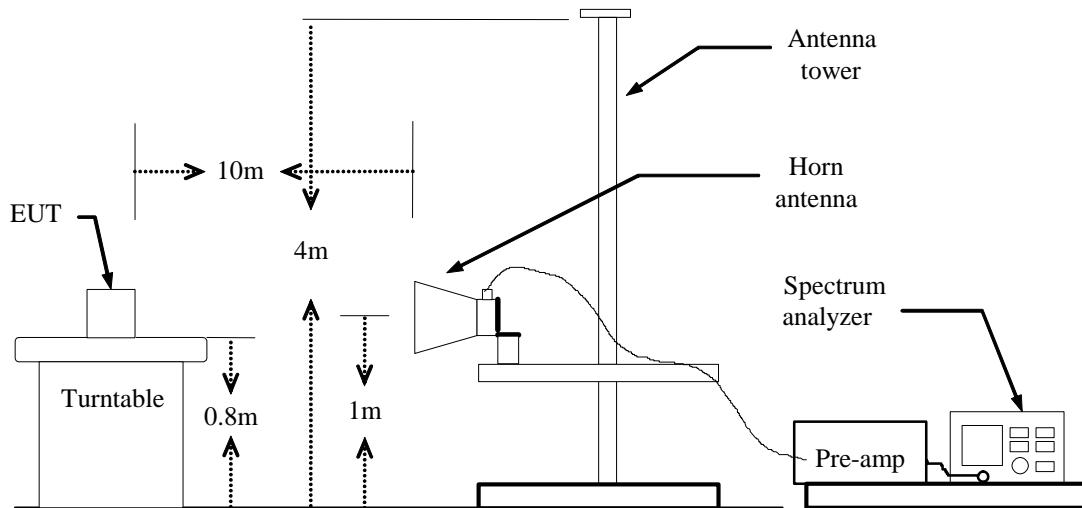
Test Site A (10m chamber)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESI26	100068	02/11/2005
EMC Analyzer	Agilent	E7402A	US41160329	02/11/2005
LISN	FCC	FCC-LISN-50-50-2-M	01067	02/11/2005
LISN (EUT)	FCC	FCC-LISN-50-50-2-M	01068	02/11/2005
4-WIRE ISN	R&S	ENY41	830663/024	04/09/2005
Double 2-Wire ISN	R&S	ENY22	830661/027	04/09/2005
EMI Monitor control box	FCC	0-SVDC	N/A	N/A

*Remark: Each piece of equipment is scheduled for calibration once a year.*

## Test Configuration

### **Below 1 GHz**



**Above 1 GHz****TEST PROCEDURE**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 10m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.



## TEST RESULTS

### Below 1 GHz

**Operation Mode:** Controller (CH Low)

**Test Date:** January 24, 2005

**Temperature:** 23°C

**Tested by:** Spring

**Humidity:** 68% RH

**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
144.07	V	Peak	39.53	-16.95	22.58	43.50	-20.92
167.70	V	Peak	43.85	-18.36	25.49	43.50	-18.01
216.30	V	Peak	42.70	-16.25	26.45	46.00	-19.55
239.92	V	Peak	43.93	-16.26	27.67	46.00	-18.33
433.00	V	Peak	36.93	-10.82	26.11	46.00	-19.89
452.25	V	Peak	38.17	-10.54	27.63	46.00	-18.37
167.70	H	Peak	49.94	-18.36	31.58	43.50	-11.92
216.30	H	Peak	48.62	-16.25	32.37	46.00	-13.62
239.92	H	Peak	48.79	-16.26	32.53	46.00	-13.47
361.25	H	Peak	44.96	-12.80	32.16	46.00	-13.84
408.50	H	Peak	43.05	-11.18	31.87	46.00	-14.13
433.00	H	Peak	43.17	-10.82	32.35	46.00	-13.65

**Notes:**

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.

**Operation Mode:** Controller (CH Mid)**Test Date:** January 24, 2005**Temperature:** 23°C**Tested by:** Spring**Humidity:** 68% RH**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
119.77	V	Peak	38.55	-16.56	21.99	43.50	-21.51
144.07	V	Peak	38.88	-16.95	21.93	43.50	-21.57
167.70	V	Peak	43.10	-18.36	24.74	43.50	-18.76
316.30	V	Peak	42.73	-16.25	26.48	46.00	-19.52
239.92	V	Peak	42.74	-16.26	26.48	46.00	-19.52
408.50	V	Peak	33.28	-11.18	22.10	46.00	-23.90
167.70	H	Peak	49.63	-18.36	31.27	43.50	-12.23
192.00	H	Peak	46.24	-18.09	28.15	43.50	-15.35
216.30	H	Peak	48.57	-16.25	32.32	46.00	-13.68
239.92	H	Peak	50.90	-16.26	34.64	46.00	-11.36
361.25	H	Peak	43.94	-12.80	31.14	46.00	-14.86
433.00	H	Peak	42.78	-10.82	31.96	46.00	-14.04

**Notes:**

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.

**Operation Mode:** Controller (CH High)**Test Date:** January 24, 2005**Temperature:** 23°C**Tested by:** Spring**Humidity:** 68% RH**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)
119.77	V	Peak	37.53	-16.56	20.97	43.50	-22.53
144.07	V	Peak	38.43	-16.95	21.48	43.50	-22.02
167.70	V	Peak	43.79	-18.36	25.43	43.50	-18.07
216.30	V	Peak	42.96	-16.25	26.71	46.00	-19.29
239.92	V	Peak	42.12	-16.26	25.86	46.00	-20.14
947.50	V	Peak	33.73	-4.88	28.58	46.00	-17.15
167.70	H	Peak	49.60	-18.36	31.24	43.50	-12.26
216.30	H	Peak	48.87	-16.25	32.62	46.00	-13.38
239.92	H	Peak	50.51	-16.26	34.25	46.00	-11.75
361.25	H	Peak	43.79	-12.80	30.99	46.00	-15.01
408.50	H	Peak	43.22	-11.18	32.04	46.00	-13.96
433.00	H	Peak	42.70	-10.82	31.88	46.00	-14.12

**Notes:**

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak detector mode.
3. Data of measurement within this frequency range shown “ --- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.

**Above 1 GHz****Operation Mode:** Controller (CH Low)**Test Date:** January 27, 2005**Temperature:** 23°C**Tested by:** Spring**Humidity:** 68% RH**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
2402.02	V	82.66	---	6.36	76.30	---	---	93.97	-17.67	Peak
4800.00	V	56.76	---	15.79	40.97	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-13.03	Peak
7802.00	V	50.40	---	18.26	32.14	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-21.86	Peak
N/A										
N/A										
N/A										
<hr/>										
2402.02	H	85.04	---	6.41	78.63	---	---	93.97	-15.34	Peak
4800.00	H	60.76	---	15.31	45.45	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-8.55	Peak
7802.00	H	46.47	---	17.38	29.09	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-24.91	Peak
N/A										
N/A										
N/A										

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
  - a. Peak Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 1MHz, Sweep time = 200 ms.
  - b. AV Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 10Hz, Sweep time = 200 ms.
5. Limit applied to the fundamental:  
① -  $50,000 \mu V = 20 \log 50,000 = 93.97 \text{ dBuV}$
- Limit applied to the emission except fundamental:  
\* - attenuated by at least 50 dB below the level of the fundamental; or  
# - general radiated emission limits in Section 15.209

**Operation Mode:** Controller (CH Mid)**Test Date:** January 27, 2005**Temperature:** 23°C**Tested by:** Spring**Humidity:** 68% RH**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
2440.02	V	76.05	---	6.64	69.41	---	---	93.97	-24.56	Peak
4883.00	V	56.53	---	15.83	40.70	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-13.30	Peak
N/A										
N/A										
N/A										
N/A										
<hr/>										
2440.02	H	82.25	---	6.26	75.99	---	---	93.97	-17.98	Peak
4883.00	H	59.01	---	15.92	43.09	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-10.91	Peak
N/A										
N/A										
N/A										
N/A										

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin >20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
  - a. Peak Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 1MHz, Sweep time = 200 ms.
  - b. AV Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 10Hz, Sweep time = 200 ms.
5. Limit applied to the fundamental (harmonic):  
@ -  $50,000\mu\text{V} = 20\log 50,000 = 93.97\text{dBuV}$
- Limit applied to the emission except fundamental (harmonic):  
\* - attenuated by at least 50 dB below the level of the fundamental; or  
# - general radiated emission limits in Section 15.209

**Operation Mode:** Controller (CH High)**Test Date:** January 27, 2005**Temperature:** 23°C**Tested by:** Spring**Humidity:** 68% RH**Polarity:** Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
2481.02	V	76.15	---	6.74	69.41	---	---	93.97	-24.56	Peak
4958.00	V	56.33	---	16.42	39.91	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-14.09	Peak
N/A										
N/A										
N/A										
N/A										
2481.02	H	80.11	---	6.45	73.66	---	93.97	---	-20.31	Peak
4958.00	H	58.65	---	10.45	48.20	---	74.00 <sup>#</sup>	54.00 <sup>#</sup>	-5.80	Peak
N/A										
N/A										
N/A										
N/A										

**Notes:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Measurements above show only up to 6 maximum emissions noted, or would be lesser if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
3. Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column.
4. Spectrum setting:
  - a. Peak Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 1MHz, Sweep time = 200 ms.
  - b. AV Setting 1GHz - 26GHz, RBW = 1MHz, VBW = 10Hz, Sweep time = 200 ms.
5. Limit applied to the fundamental (harmonic):  
@ -  $50,000\mu V = 20 \log 50,000 = 93.97 \text{ dBuV}$

*Limit applied to the emission except fundamental (harmonic):*

- \* - attenuated by at least 50 dB below the level of the fundamental; or
- <sup>#</sup> - general radiated emission limits in Section 15.209

## 7.2 POWERLINE CONDUCTED EMISSIONS

### LIMIT

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range is listed as follows:

Frequency Range (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

Compliance with this provision shall be based on the measurement of the radio frequency voltage between each power line (LINE and NEUTRAL) and ground at the power terminals.

### MEASUREMENT EQUIPMENT USED

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESCS30	845552/030	03/14/2005
LISN	R&S	ESH2-Z5	843285/010	01/08/2006
LISN	EMCO	3825/2	9003-1628	07/27/2005
Spectrum Analyzer	ADVANTEST	R3261C	81720301	N.C.R
ISN	FCC	FCC-TLISN-T4	20065	05/08/2005
ISN	FCC	FCC-TLISN-T8-02	20148	02/06/2005

*Remark: Each piece of equipment is scheduled for calibration once a year.*

### Test Configuration

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

### TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

### TEST RESULTS

*Not applicable (The EUT is a battery-powered-only device)*

**APPENDIX 1**  
**PHOTOGRPHS OF TEST SETUP****Radiated Emission Set up Photos (Controller)**