



FCC TEST REPORT

REPORT NO.: 070516FIA01

MODEL NO.: FM1790

KT2C-0201 / KT2C-0202 / KT2C-0203

RECEIVED: May. 28, 2007

TESTED: May. 28 ~ Jun. 28, 2007

ISSUED: Jul. 10, 2007

APPLICANT: MADCOW INTERNATIONAL GROUP LIMITED

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ISSUED BY: ADT (Shanghai) Corporation

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ADT (Shanghai) Corporation.



V 1.1.1

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1 CERTIFICATION

PRODUCT: SONY Playstation 2 & Playstation Wireless Controller
MODEL NO.: FM1790
KT2C-0201 / KT2C-0202 / KT2C-0203
APPLICANT: MADCOW INTERNATIONAL GROUP LIMITED
TESTED: May. 28 ~ Jun. 28, 2007
TEST ITEM: Engineering Sample
STANDARDS: FCC Part 15, Subpart C (Section 15.249),
ANSI C63.4-2003

The above equipment has been tested by **ADT (Shanghai) Corporation**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**TECHNICAL
ACCEPTANCE :**

A handwritten signature in black ink, appearing to read 'Vivian Hsu', written over a horizontal line.

DATE: Jul. 10, 2007

Vivian Hsu
Engineering Supervisor

APPROVED BY :

A handwritten signature in black ink, appearing to read 'Wallace Pan', written over a horizontal line.

DATE: Jul. 10, 2007

Wallace Pan
Director of Operations

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Paragraph	Test Type	Result	Remark
15.207	Conducted Emission Test	N/A	Refer to 4.1.2
15.249	Radiated Emission Test	PASS	Minimum passing margin is -13.79 dB at 12345.98 MHz
15.249 (d)	Band Edge Measurement	PASS	Meet the requirement of limit

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	3.04 dB
Radiated emissions	30MHz ~ 200MHz (Horizontal)	4.42 dB
	30MHz ~ 200MHz (Vertical)	4.62 dB
	200MHz ~ 1000MHz (Horizontal)	4.06 dB
	200MHz ~ 1000MHz (Vertical)	4.16 dB

Note: The measurement uncertainty is factored into the compliance determination. The additional information is listed on APPENDIX B of this report.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	SONY Playstation 2 & Playstation Wireless Controller
MODEL NO.	FM1790 KT2C-0201 / KT2C-0202 / KT2C-0203
POWER SUPPLY	4.5Vdc from batteries (3*AAA)
MODULATION TYPE	MSK
FREQUENCY RANGE	2410 ~ 2469.1957 MHz
CHANNEL SEPARATION	0.8109 MHz
NUMBER OF CHANNEL	74
ANTENNA TYPE	Soldered on PCB
DATA CABLE	N/A
I/O PORTS	Refer to User's Manual

NOTE: 1. EUT "SONY Playstation 2 & Playstation Wireless Controller" has got three kinds of colors, which are black, blue and silver. Model FM1790 is with the applicant of "MADCOW INTERNATIONAL GROUP LIMITED" and this model name represents all the three kinds of colors. Model KT2C-0201, KT2C-0202 & KT2C-0203 bear the brand name "SONY", and model KT2C-0201 is black, model KT2C-0202 is blue, model KT2C-0203 is silver.

Please refer to the following table for the relationship between the model name and the applicant / brand name:

Model No.	Color	Applicant / Brand Name
FM1790	Black, Blue, Silver	MADCOW INTERNATIONAL GROUP LIMITED
KT2C-0201	Black	SONY
KT2C-0202	Blue	SONY
KT2C-0203	Silver	SONY

2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 DESCRIPTION OF TEST MODES

74 channels are provided to this EUT:

CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)	CHANNEL	FREQ. (MHz)
1	2410.0000	26	2430.2725	51	2450.5450
2	2410.8109	27	2431.0834	52	2451.3559
3	2411.6218	28	2431.8943	53	2452.1668
4	2412.4327	29	2432.7052	54	2452.9777
5	2413.2436	30	2433.5161	55	2453.7886
6	2414.0545	31	2434.3270	56	2454.5995
7	2414.8654	32	2435.1379	57	2455.4104
8	2415.6763	33	2435.9488	58	2456.2213
9	2416.4872	34	2436.7597	59	2457.0322
10	2417.2981	35	2437.5706	60	2457.8431
11	2418.1090	36	2438.3815	61	2458.6540
12	2418.9199	37	2439.1924	62	2459.4649
13	2419.7308	38	2440.0033	63	2460.2758
14	2420.5417	39	2440.8142	64	2461.0867
15	2421.3526	40	2441.6251	65	2461.8976
16	2422.1635	41	2442.4360	66	2462.7085
17	2422.9744	42	2443.2469	67	2463.5194
18	2423.7853	43	2444.0578	68	2464.3303
19	2424.5962	44	2444.8687	69	2465.1412
20	2425.4071	45	2445.6796	70	2465.9521
21	2426.2180	46	2446.4905	71	2466.7630
22	2427.0289	47	2447.3014	72	2467.5739
23	2427.8398	48	2448.1123	73	2468.3848
24	2428.6507	49	2448.9232	74	2469.1957
25	2429.4616	50	2449.7341		

**Test Mode Applicability AND TESTED CHANNEL DETAIL:**

EUT configure mode	Applicable to					Description
	PLC	RE<1G	RE≥1G	APM	BE	
A	-	√	√	-	√	Working normally.

Where PLC: Power Line Conducted Emission

RE<1G RE: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APM: Antenna Port Measurement

BE: Band Edge Measurement

Radiated Emission Test (Below 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, and X.Y.Z. axis.

☒ Following channel(s) was (were) selected for the final test as listed below.

Test Mode	Available Channel	Tested Channel	Modulation Type	Axis
A	1 ~ 74	1	MSK	X

Radiated Emission Test (Above 1 GHz):

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, and X.Y.Z. axis.

☒ Following channel(s) was (were) selected for the final test as listed below.

Test Mode	Available Channel	Tested Channel	Modulation Type	Axis
A	1 ~ 74	1, 38, 74	MSK	X

Band Edge Measurement

☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, and X.Y.Z. axis.

☒ Following channel(s) was (were) selected for the final test as listed below.

Test Mode	Available Channel	Tested Channel	Modulation Type	Axis
A	1 ~ 74	1, 74	MSK	X

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a SONY Playstation 2 & Playstation Wireless Controller. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

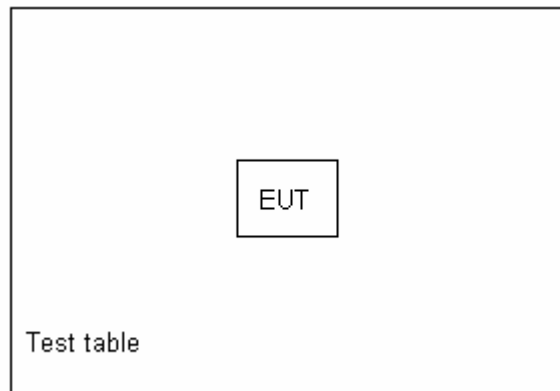
47 CFR Part 15, Subpart C (Section 15.249)
ANSI C63.4: 2003

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.

For test mode A



4 EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTES: 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.1.2 TEST RESULTS

Since the EUT does not have AC port, the test item is not applicable.



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.249 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (dBuV/m)	
	Peak	Average
2400 ~ 2483.5	113.98	93.98

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	$2400/F(\text{kHz})$	300
0.490-1.705	$24000/F(\text{kHz})$	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1001	Apr. 19, 2008
BILOG Antenna SCHWARZBECK	VULB9168	E1A1001	Sept. 26, 2007
Preamplifier Agilent	8447D	E1A2001	Jan. 27, 2008
Preamplifier Agilent	8449B	E1A2002	Jan. 27, 2008
Double Ridged Broadband Horn Antenna Schwarzbeck	BBHA 9120D	E1A1002	Feb. 15, 2008
Spectrum Analyzer Agilent	E4403B	E1S1001	Jan. 13, 2008
*Spectrum Analyzer ROHDE & SCHWARZ	FSP	E1S1002	May. 15, 2008
RF signal cable Woken	RG-402	E1CBH01	May. 30, 2008
RF signal cable Woken	RG-402	E1CBH16	May. 30, 2008
RF signal cable Woken	RG-402	E1CBH20	May. 30, 2008
RF signal cable Woken	RG-412	E1CBL02	May. 30, 2008
RF signal cable Woken	RG-412	E1CBL03	May. 30, 2008
RF signal cable Woken	RG-412	E1CBL04	May. 30, 2008
Software ADT	ADT_Radiated_V7.5	N/A	N/A

- NOTE:**
1. The calibration interval of the above test instruments is 12 months.
 2. "*" = These equipment are used for the final measurement.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The Spectrum Analyzer (model: FSP) and RF signal cable (SERIAL: E1CBH05&E1CBH07) are used only for the measurement of emission frequency above 1GHz if tested.



4.2.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

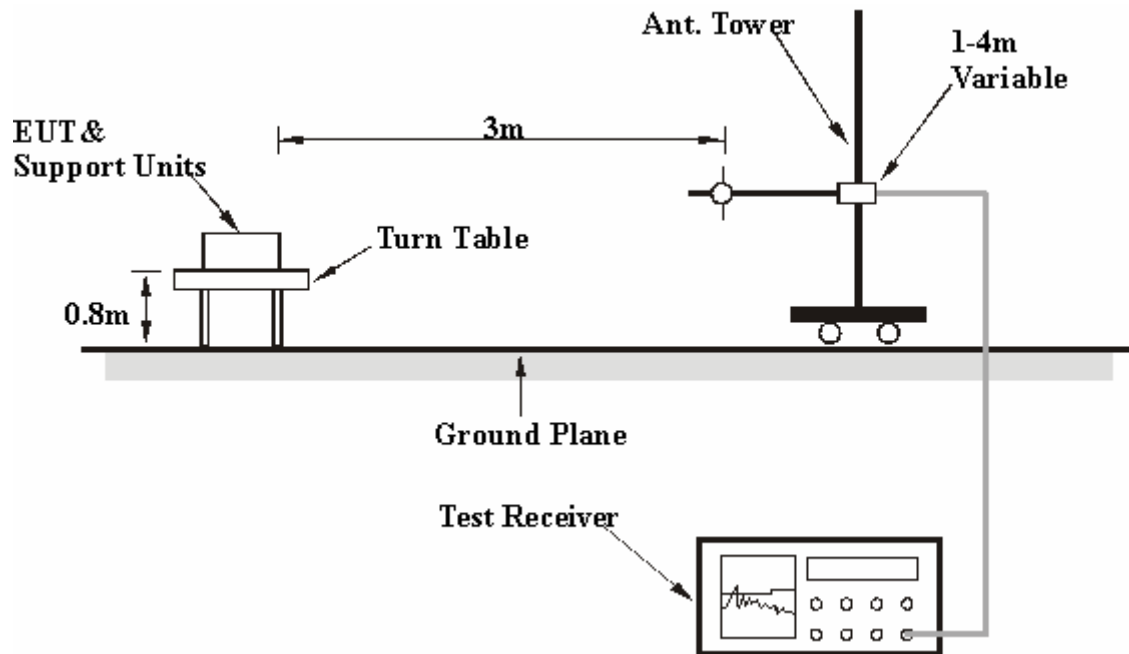
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection & Average detection at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation.

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Set the EUT under transmission condition continuously at specific channel frequency.

4.2.7 TEST RESULTS

Below 1 GHz Worst Case

EUT	SONY Playstation 2 & Playstation Wireless Controller	MEASUREMENT DETAIL	
MODEL	FM1790 KT2C-0201 / KT2C-0202 / KT2C-0203	FREQUENCY RANGE	Below 1000MHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Quasi-Peak
MODULATION TYPE	MSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001mbar
TEST MODE	A	INPUT POWER	4.5Vdc from batteries
TESTED BY	REBECCA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	151.250	16.98	-1.43	15.56	43.50	-27.90	191.00	87.00
2	352.520	17.54	-0.63	16.92	46.00	-29.08	271.00	152.00
3	502.870	20.93	-1.04	19.89	46.00	-26.11	109.00	216.00
4	692.020	24.45	-1.71	22.74	46.00	-23.61	156.00	129.00
5	822.980	26.32	-2.84	23.47	46.00	-22.53	272.00	228.00
6	956.350	27.79	-1.50	26.29	46.00	-19.71	264.00	40.00

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1	153.680	17.01	-2.58	14.43	43.50	-29.07	100.00	302.00
2	328.270	17.18	-1.49	15.69	46.00	-30.31	100.00	61.00
3	434.980	19.74	-2.03	17.71	46.00	-28.29	100.00	195.00
4	595.020	23.03	-2.70	20.33	46.00	-25.67	100.00	138.00
5	796.300	25.79	-3.24	22.55	46.00	-23.45	100.00	120.00
6	949.080	27.81	-2.82	24.99	46.00	-21.01	100.00	226.00

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

**Above 1 GHz**

EUT	SONY Playstation 2 & Playstation Wireless Controller	MEASUREMENT DETAIL	
MODEL	FM1790 KT2C-0201 / KT2C-0202 / KT2C-0203	FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	MSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001mbar
TEST MODE	A	INPUT POWER	4.5Vdc from batteries
TESTED BY	REBECCA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1*	2410.16 PK	32.61	60.10	92.71	114	-21.29	199	19
1*	2410.16 AV	32.61	40.10	72.71	94	-21.29	199	19
2	4820 PK	38.11	11.21	49.32	74	-24.68	99	0
2	4820 AV	38.11	-8.79	29.32	54	-24.68	99	0
3	7230 PK	45.22	11.18	56.40	74	-17.60	99	0
3	7230 AV	45.22	-8.82	36.40	54	-17.60	99	0
4	9640 PK	47.99	9.13	57.12	74	-16.88	99	0
4	9640 AV	47.99	-10.87	37.12	54	-16.88	99	0
5	12050 PK	49.07	9.84	58.91	74	-15.09	99	0
5	12050 AV	49.07	-10.16	38.91	54	-15.09	99	0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
1*	2409.98 PK	32.61	54.01	86.62	114	-27.38	199	19
1*	2409.98 AV	32.61	30.89	66.62	94	-27.38	199	19
2	4820 PK	38.11	13.49	51.60	74	-22.40	99	0
2	4820 AV	38.11	-6.51	31.60	54	-22.40	99	0
3	7230 PK	45.22	11.17	56.40	74	-17.60	99	0
3	7230 AV	45.22	-8.83	36.40	54	-17.60	99	0
4	9640 PK	47.99	9.91	57.90	74	-16.10	99	0
4	9640 AV	47.99	-10.09	37.90	54	-16.10	99	0
5	12050 PK	49.07	10.24	59.31	74	-14.69	99	0
5	12050 AV	49.07	-9.76	39.31	54	-14.69	99	0

- NOTE:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
 2. Correction Factor (dB) = Antenna Factor (dB) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. "*" = Fundamental frequency
 6. The other emission levels were very low against the limit.



EUT	SONY Playstation 2 & Playstation Wireless Controller	MEASUREMENT DETAIL	
MODEL	FM1790 KT2C-0201 / KT2C-0202 / KT2C-0203	FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 38	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	MSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001mbar
TEST MODE	A	INPUT POWER	4.5Vdc from batteries
TESTED BY	REBECCA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
*1	2440.02 PK	32.65	59.74	92.41	114	-21.59	199	19
*1	2440.02 AV	32.65	39.74	72.41	94	-21.59	199	19
2	4880.01 PK	38.34	12.22	50.56	74	-23.44	99	0
2	4880.01 AV	38.34	-7.78	30.56	54	-23.44	99	0
3	7320.01 PK	45.26	10.9	56.16	74	-17.84	99	0
3	7320.01 AV	45.26	-9.10	36.16	54	-17.84	99	0
4	9760.01 PK	48.31	9.01	57.32	74	-16.68	99	0
4	9760.01 AV	48.31	-10.99	37.32	54	-16.68	99	0
5	12200.02 PK	49.15	9.81	58.97	74	-15.03	99	0
5	12200.02 AV	49.15	-10.19	38.97	54	-15.03	99	0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
*1	2440.10 PK	32.67	53.31	85.98	114	-28.02	199	19
*1	2440.10 PK	32.67	33.31	65.98	94	-28.02	199	19
2	4880.01 PK	38.34	12.18	50.52	74	-23.48	99	0
2	4880.01 AV	38.34	-7.82	30.52	54	-23.48	99	0
3	7320.01 PK	45.26	10.49	55.75	74	-18.25	99	0
3	7320.01 AV	45.26	-9.51	35.75	54	-18.25	99	0
4	9760.01 PK	48.31	9.13	57.44	74	-16.56	99	0
4	9760.01 AV	48.31	-10.87	37.44	54	-16.56	99	0
5	12200.02 PK	49.15	10.50	59.66	74	-14.34	99	0
5	12200.02 AV	49.15	-9.50	39.66	54	-14.34	99	0

NOTE:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
2. Correction Factor (dB) = Antenna Factor (dB) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. “*” = Fundamental frequency
6. The other emission levels were very low against the limit.



EUT	SONY Playstation 2 & Playstation Wireless Controller	MEASUREMENT DETAIL	
MODEL	FM1790 KT2C-0201 / KT2C-0202 / KT2C-0203	FREQUENCY RANGE	Above 1GHz
CHANNEL	Channel 74	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	MSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 1001mbar
TEST MODE	A	INPUT POWER	4.5Vdc from batteries
TESTED BY	REBECCA		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
*1	2470.06 PK	32.73	60.81	87.64	114	-26.36	199	19
*1	2470.06 AV	32.73	40	67.64	94	-26.36	199	19
2	4938.39 PK	38.57	12.41	50.97	74	-23.03	99	0
2	4938.39 AV	38.57	-7.59	30.97	54	-23.03	99	0
3	7407.59 PK	45.24	10.78	56.02	74	-17.98	99	0
3	7407.59 AV	45.24	-9.22	36.02	54	-17.98	99	0
4	9876.78 PK	48.49	9.27	57.77	74	-16.23	99	0
4	9876.78 AV	48.49	-10.73	37.77	54	-16.23	99	0
5	12345.98 PK	49.24	10.55	59.79	74	-14.21	99	0
5	12345.98 AV	49.24	-9.45	39.79	54	-14.21	99	0

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Frequency MHz	Factor dB	Reading dBuV/m	Emission dBuV/m	Limit dBuV/m	Margin dB	Tower cm	Table deg
*1	2470.26 PK	32.73	60.81	93.54	114	-20.46	199	19
*1	2470.26 AV	32.73	40.81	73.54	94	-20.46	199	19
2	4938.39 PK	38.57	11.64	50.20	74	-23.80	99	0
2	4938.39 AV	38.57	-8.36	30.20	54	-23.80	99	0
3	7407.59 PK	45.24	10.15	55.39	74	-18.61	99	0
3	7407.59 AV	45.24	-9.85	35.39	54	-18.61	99	0
4	9876.78 PK	48.49	9.40	57.90	74	-16.10	99	0
4	9876.78 AV	48.49	-10.60	37.90	54	-16.10	99	0
5	12345.98 PK	49.24	10.97	60.21	74	-13.79	99	0
5	12345.98 AV	49.24	-9.03	40.21	54	-13.79	99	0

- NOTE:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB)
 2. Correction Factor (dB) = Antenna Factor (dB) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. “*” = Fundamental frequency
 6. The other emission levels were very low against the limit.



4.3 BAND EDGES MEASUREMENT

4.3.1 LIMITS OF BAND EDGES MEASUREMENT

Below -50dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SIGNAL ANALYZER Rohde & Schwarz	FSP30	E1S1002	May. 16. 2008

4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 EUT OPERATING CONDITION

Enable the EUT to transmit data at lowest and highest channel frequencies individually.

4.3.6 TEST RESULTS

For Emissions outside of the specified frequency bands (Radiated), please refer to report section 4.2.7 which met the requirement of the general radiated emission limits in § 15.209.



5 PHOTOGRAPHS OF THE TEST CONFIGURATION

RE



6 PHOTOGRAPHS OF THE EUT

7 APPENDIX A- INFORMATION ON THE TESTING LABORATORY

We, ADT (Shanghai) Corp., was founded in 2003 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratory is accredited and approved by the following approval agencies according to ISO / IEC 17025 (2005).

The client should not use it to claim product endorsement by CNAS, A2LA, or any government agency.

Japan	VCCI
USA	FCC, A2LA
Norway	DNV
China	CNAS



Copies of accreditation certificates of our laboratory obtained from approval agencies can be downloaded from our web site: www.cnadt.com

If you have any comments, please feel free to contact us at the following:

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8 APPENDIX B – UNCERTAINTY IN EMC MEASUREMENT

As specified in CISPR 16-4-2, measurement instrumentation uncertainty shall be taken into account when determining compliance or non-compliance with a disturbance limit. A disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} in table 1, then:

- ✘ Compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- ✘ Non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

If U_{lab} is greater than or equal to U_{cispr} in table 1, then:

- ✘ Compliance is deemed to occur if no measured disturbance, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- ✘ Non-compliance is deemed to occur if any measured disturbance, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

Table 1 – Values of U_{cispr}

Measurement		U_{cispr}
Conducted disturbance (mains port)	(9kHz – 150kHz) (150kHz – 30MHz)	4,0 dB 3,6 dB
Disturbance power	(30MHz – 300MHz)	4,5 dB
Radiated disturbance (electric field strength on an open area test site or alternative test site)	(30MHz – 1000MHz)	5,2 dB
Other		Under consideration

ADT Shanghai hereby declare the U_{lab} value are as the following:

Conducted test performed at SR1 shielded room with U_{lab} values: +/- 3.04 dB

Radiated test performed at SAC Chamber with U_{lab} values: +/- 4.62 dB

Based on the above specification, the U_{lab} values of our sites are less than U_{cispr} in table 1 and compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.