

RFI / EMI TEST REPORT

APPLICANT : CHARM WINNER CO., LTD.

E. U. T. : JOYSTICK

TRADE NAME : N/A

FCC ID : K5MRF-520U27F

REGULATION : CFR 47 , Part 15 Subpart C , **Class B**

TEST SITE : PEP Testing Laboratory

TEST ENGINEER : Michael Wang

TEST DATE : 03 02 2001

ISSUED DATE : MAR. 05, 2001

REPORT No. : E900083

VERIFICATION**WE HEREBY VERIFY THAT:**

The E. U. T. listed below has completed RFI testing by PEP Testing Laboratory and the interference emissions can pass **FCC Class B** limitations .

The tested configurations and the facility complies with the radiated and AC line conducted test site criteria in ANSI C63 . 4 - 1992 .

Any data in this RFI report is “ **reference** ” only .

APPLICANT : CHARM WINNER CO., LTD. *

PRODUCT : JOYSTICK *

FCC ID : K5MRF-520U27F *

MODEL : RF-520U *



M. Y. TSUI / Manager

PEP Testing Laboratory

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1. GENERAL

1.1 GENERAL INFORMATION:

APPLICANT : CHARM WINNER CO., LTD.

18F-3, NO. 75, SEC. 1, HSIN TAI WU RD.,
HSI-CHIH, TAIPEI, TAIWAN, R. O. C.

MANUFACTURER : ZHONGSHAN CHARM WINNER ELECTRONIC
LTD.

FIRST INDUSTRIAL DISTRICT TAN ZHOU
TOWN ZHONGSHAN GUANGDONG CHINA

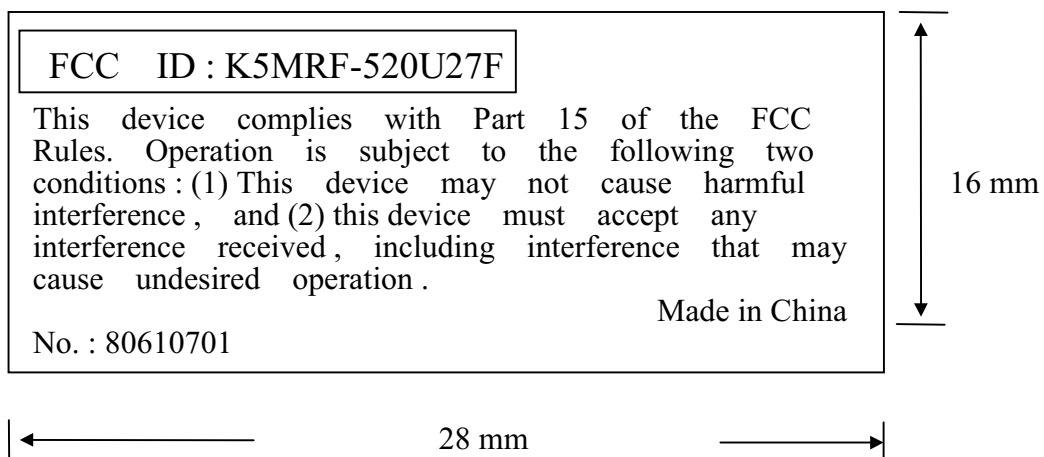
MEASUREMENT PROCEDURE : ANSI C63 , 4 - 1992

TESTED FOR COMPLIANCE WITH : Title 47 of CFR
Part 15 , Subpart C , Class B

1.2 PLACE OF MEASUREMENT PEP Testing Laboratory

1.3 LABELING REQUIREMENT

A FCC ID label shall be permanently attached and conspicuously located on the equipment :



1.4 INFORMATION TO THE USER

The following FCC statement should be declared in a conspicuous location in the user's manual.

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

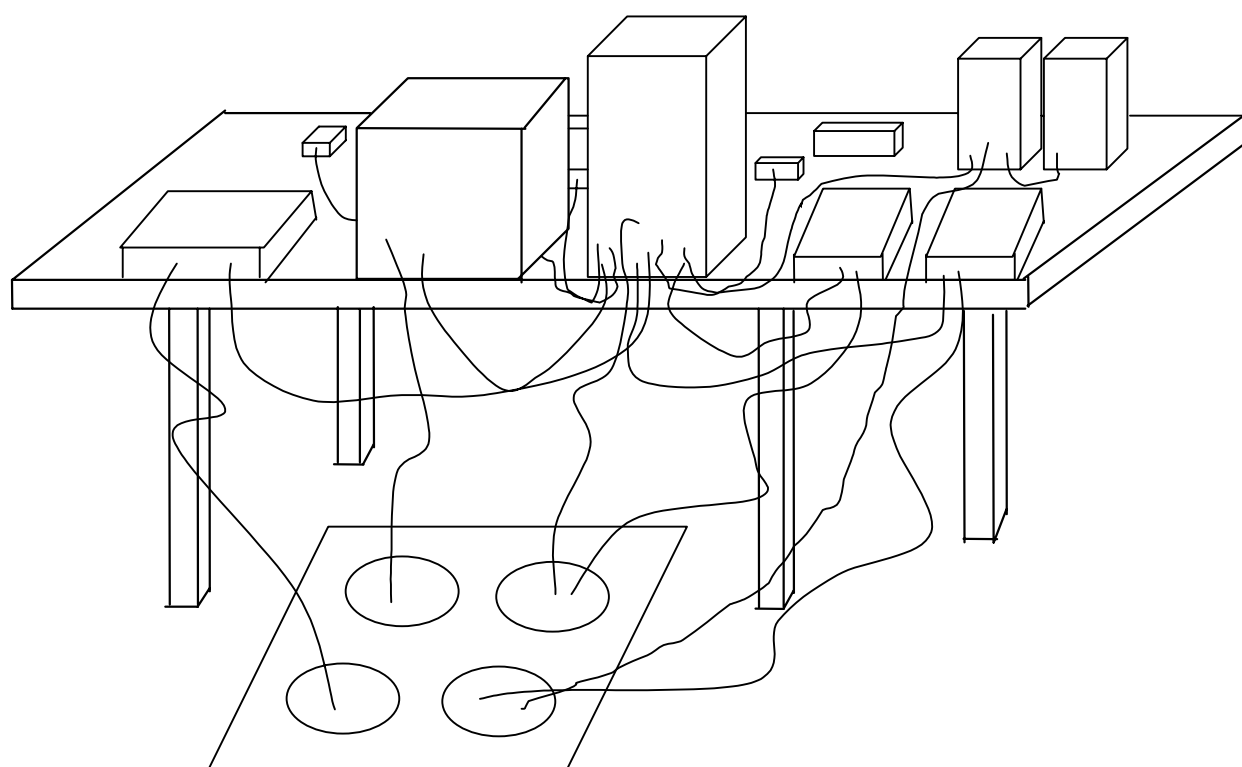
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

Use only shielded cables to connect I/O devices to this equipment.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

2. RADIATED EMISSIONS TEST

2.1 GENERAL SETUP OF THE FACILITIES



2.2 TEST PROCEDURES

Radiated emissions test was carried out by **PEP Testing Laboratory** at the open field test site authorized by FCC .

The EUT and supporting equipments were setup with the EMI diagnostic software .

- a. setting up the EUT under normally position , and scanning it from 30 MHz to 1000 MHz , then recording those narrow band noises which cannot be 6 dBuV below lower bound . Both horizontal and vertical antenna are measured from 1 meter height to 4.0 meter height , and turntable rotate 360 degrees .
- b. fixing the EUT rear face to antenna and antenna 1.0 meter height . We adjusted I/O cables to find the highest coupling noise and moved the height of antenna from 1 to 4 meters , then rotated the turntable simultaneously .
- c. checking following step b. all points which were recorded in step a.
- d. changing the peripherals position , and routine steps a. b. c.

The highest emissions were recorded in the RFI test report .

3. DESCRIPTION FOR EUT TESTING CONFIGURATION

**** TEST PROCEDURE ----**

- (A)The EUT is joystick, FCC ID: K5MRF-520U27F, the components of EUT are one joystick transmitter and one receiver connected to PC with USB interface, the transmitting frequencies are 27.145MHz and 27.045MHz, we tested the two frequencies and the worst case testing data of them was provided in this report. Concern of the transmitting range of EUT is within 3m, we located both transmitter and receiver on turntable under test. For more detail information about the EUT, please refer to the user's manual.
- (B)Test method: We located EUT, PC, and peripheral devices on turn table. The receiver of EUT connected to PC with the USB connector plug into USB port behind PC, the PC operating system was setup to detect and enable every peripheral devices including EUT. Then, we ran PC game to proceeded with EMI test, and the worst case testing data as the ANSI C63.4 requirement was recorded and provided in this report.
- (C) At the frequencies where the peak values of the emission exceeded the quasi-peak limit, the emissions were also measured with the quasi-peak detectors. The average detector also measured the emission either (A) quasi-peak values were under quasi-peak limit but exceeded average limit, or (B) peak values were under quasi-peak limit but exceeded average limit.
- (D) For FCC Certification on this Joystick Transmitter, we just provided the worst radiated emission test data for final reviewing; Due to this EUT is supplied from battery only which can't connect to the AC power lines.

4. SUPPORTING DEVICES TO TEST

1. Personal Computer (PC1)	CPU : Intel P III 500 MHz FCC ID : Declaration of Conformity(DoC) Manufacturer : ASUS INC. Model Number : P2-99 Power Supply : Switching Power Cord : Non-Shielded, Detachable, 1.8m Data Cable : 1 > Shielded , Detachable, 1.2m 2 > Back Shell : Metal
2. Keyboard (KBS1 PS/2)	FCC ID : E5XKB5121WTH0110 Manufacturer : BTC Model Number : 5121W Power Supply : +5Vdc from PS2 of PC Power Cord : N/A Data Cable : 1 > Shielded , Non-detachable, 1.6m 2 > Back Shell : Metal
3. Monitor (MON1 15")	FCC ID : Declaration of Conformity(DoC) Manufacturer : SAMSUNG Model Number : 550S Power Supply : Switching Power Cord : Non-Shielded, Detachable, 1.8m Data Cable : 1 > Shielded , Non-detachable, 1.2m 2 > Back Shell : Metal
4. Printer (PRN1)	FCC ID : B94C2642X Manufacturer : Hewlett-Packard Model Number : HP400 Power Supply : Linear, 30Vdc O/P Power Cable : Non-Shielded , Detachable, 1.8m Data Cable : 1 > Shielded , Detachable, 1.2m 2 > Back Shell : Metal

- #### **4. SUPPORTING DEVICES TO TEST**
- | | |
|-----------------------------------|--|
| 1. Personal Computer (PC1) | CPU : Intel P III 500 MHz
FCC ID : Declaration of Conformity(DoC)
Manufacturer : ASUS INC.
Model Number : P2-99
Power Supply : Switching
Power Cord : Non-Shielded, Detachable, 1.8m
Data Cable : 1 > Shielded , Detachable, 1.2m
2 > Back Shell : Metal |
| 2. Keyboard (KBS1 PS/2) | FCC ID : E5XKB5121WTH0110
Manufacturer : BTC
Model Number : 5121W
Power Supply : +5Vdc from PS2 of PC
Power Cord : N/A
Data Cable : 1 > Shielded , Non-detachable, 1.6m
2 > Back Shell : Metal |
| 3. Monitor (MON1 15") | FCC ID : Declaration of Conformity(DoC)
Manufacturer : SAMSUNG
Model Number : 550S
Power Supply : Switching
Power Cord : Non-Shielded, Detachable, 1.8m
Data Cable : 1 > Shielded , Non-detachable, 1.2m
2 > Back Shell : Metal |
| 4. Printer (PRN1) | FCC ID : B94C2642X
Manufacturer : Hewlett-Packard
Model Number : HP400
Power Supply : Linear, 30Vdc O/P
Power Cable : Non-Shielded , Detachable, 1.8m
Data Cable : 1 > Shielded , Detachable, 1.2m
2 > Back Shell : Metal |

5. Modem (MOD1) × 2**FCC ID : IFAXDM1414****Manufacturer : ACEEX****Model Number : 1414****Power Supply : Linear, 9Vac O/P****Power Cable : Non-Shielded , Detachable,1.7****Data Cable : 1 > Shielded , Detachable,1m****2 > Back Shell : Metal****6. Mouse (MOUS/1 PS/2)****FCC ID : DZL211106****Manufacturer : LOGITECH****Model Number : M-S43****Power Supply : +5Vdc from PS2 of PC****Power Cord : N/A****Data Cable : 1 > Shielded , Non-detachable,1.8m****2 > Back Shell : Metal****7. Sound Card (SC1)****FCC ID : M4170830192404****Manufacturer : BLASTER****Model Number : CT-4170****Power Supply : N/A****Power Cord : N/A****Data Cable : 1 > N/A****2 > Back Shell : N/A****8. Speaker (SPK1)****FCC ID : N/A****Manufacturer : SANYO****Model Number : SYSP-204****Power Supply : Linear****Power Cord : Non-Shielded , Detachable,1.8m****Data Cable : 1 > Shielded , Detachable,1.6m****2 > Back Shell : N/A**

9. Joystick Receiver

FCC ID : N/A , Declaration of Conformity

Manufacturer : Padix Company Ltd.

Model Number : RF-520U

Power Supply : 5Vdc from USB of PC

Power Cord : N/A

Data Cable : **1** > Shielded , Non-detachable,1.8m

2 > Back Shell : Metal

5. TEST CONFIGURATION

Radiated emission detector function :

(1) 30MHZ~1GHZ : Quasi-Peak Value

Resolution BW : 120KHZ Video BW : 300KHZ

(2) above 1GHZ : Quasi-Peak value and Average Value

Resolution BW : 1MHZ Video BW : 1MHZ

*** either Q. P. or average value will be recorded
in the report**

The else descriptions : N/A

Radiated Emission Test Photo. : Page 14

Test Data : Horizontal 15

Vertical 16

RADIATED TEST CONFIGURATION PHOTO.

< FRONT VIEW >



< REAR VIEW >



RADIATED EMISSIONS TEST DATA**Transmitter On Mode****Antenna polarization : HORIZONTAL ; Test distance : 3 m ;**

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)
27.148	49.65	-30.35	80.00	49.80	18.10	0.80	19.05
54.292	18.49	-21.51	40.00	30.81	6.31	1.24	19.87
81.437	23.88	-16.12	40.00	35.19	7.02	1.54	19.87
108.582	26.91	-16.59	43.50	33.32	11.31	1.91	19.63
135.738	19.45	-24.05	43.50	26.09	10.78	2.20	19.62
162.883	18.85	-24.65	43.50	26.85	9.20	2.50	19.70
217.173	27.40	-18.60	46.00	35.67	8.36	2.97	19.60
325.806	22.30	-23.70	46.00	24.32	13.71	3.88	19.61
407.188	28.61	-17.39	46.00	27.48	16.50	4.73	20.10
461.531	24.84	-21.16	46.00	23.05	16.73	5.00	19.94

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

RADIATED EMISSIONS TEST DATA**Transmitter On Mode****Antenna polarization : VERTICAL ; Test distance : 3 m ;**

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)
27.148	52.81	-27.19	80.00	51.30	18.50	0.90	17.89
54.295	25.25	-13.21	40.00	38.10	7.02	1.54	19.87
81.440	26.79	-13.21	40.00	38.10	11.31	1.90	19.63
108.585	29.83	-13.67	43.50	36.24	11.31	1.91	19.63
135.730	22.72	-20.78	43.50	29.36	10.78	2.20	19.62
162.875	26.03	-17.47	43.50	34.03	9.20	2.50	19.70
217.165	24.69	-21.31	46.00	32.96	8.36	2.97	19.60
325.745	26.14	-19.86	46.00	28.16	13.71	3.88	19.61
407.180	30.70	-15.30	46.00	29.57	16.50	4.73	20.10
461.470	24.15	-21.85	46.00	22.36	16.73	5.00	19.94

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

APPENDIX A.
PHOTOS OF EUT APPEARANCE
<EUT FRONT VIEW>



<EUT REAR VIEW>



APPENDIX B.
List of Test Equipment

Emission	Instrument	Model No.	Serial No.	Next Cal. Date	Cal. Interval
Conduction (No.1)	R & S Receiver	ESHS10	830223/008	Nov. 14, 2001	1Year
	Rolf Heine LISN	NNB-4/63TL	98008	Aug. 28, 2001	1Year
	R & S LISN	ESH3-Z5	844982/039	Jul. 30, 2001	1Year
	Spectrum Analyzer	R3261A	91720076	Apr. 24, 2001	1Year
	RF Cable	Rg400	N/A	Apr. 15, 2001	1Year
Radiation (O.P 1)	R & S Receiver	ESVS30	863342/012	Apr. 17, 2001	1Year
	Anritsu Pre-Amp.	MH648A	M15080	Apr. 14, 2001	1Year
	R & S Pre-Amp.	ESMI-Z7	612278/011	Jun. 01, 2001	1Year
	Schaffner Antenna	CBL6112B	2655	Jun. 01, 2001	1Year
	COM-Power Horn Ant.	AH-118	10056	Aug. 24, 2001	1Year
	EMCO RF Clable	175series	NO. 1	Apr. 15, 2001	1Year
	EMCO Dipole Ant	3121C	9202-813	Sep.06, 2001	3Year
	R & S Signal Generator	SMY01	841104/037	Aug. 26, 2001	1Year