

FCC TEST REPORT

for

PART 15, SUBPART B CLASS B

EQUIPMENT : JOYSTICK

MODEL NO. : USB G-07

F C C I D : FSUGUSBG07

FILING TYPE : Original Grant

APPLICANT : **KYE SYSTEMS CORP.**

No. 492, Sec. 5, Chung Hsin Rd

San Chung., Taipei Hsin, 241, Taiwan, R.O.C.

- The test result refers exclusively to the test presented test model / sample.
- Without the written authorization of the test lab., the Test Report may not be copied.

SPORTON INTERNATIONAL INC.

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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CERTIFICATE NO. : F841104

CERTIFICATE OF COMPLIANCE

for

FCC PART 15, SUBPART B CLASS B

EQUIPMENT : JOYSTICK

MODEL NO. : USB G-07

F C C I D : FSUGUSBG07

FILING TYPE : Original Grant

APPLICANT : KYE SYSTEMS CORP.

No. 492, Sec, 5, Chung Hsin Rd

San Chung., Taipei Hsin, 241, Taiwan, R.O.C.

I HEREBY CERTIFY THAT :

The measurement shown in this report were made in accordance with the procedures given in **ANSI C63.4 -1992** and the energy emitted by this equipment was **passed** both radiated and conducted emissions **Class B** limits. Testing was carried out on **April 21, 1998** at **SPORTON International Inc.**


W. L. Huang
General Manager

SPORTON INTERNATIONAL INC.

6F, No. 106, Hsin Tai Wu Rd., Sec. 1, Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. GENERAL DESCRIPTION OF EQUIPMENT UNDER TEST**1.1. APPLICANT :**

KYE SYSTEMS CORP.

No. 492, Sec, 5, Chung Hsin Rd

San Chung., Taipei Hsin, 241, Taiwan, R.O.C.

1.2. MANUFACTURER :

Same as 1.1

1.3. BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

EQUIPMENT	: JOYSTICK
MODEL NO.	: USB G-07
FCC ID	: FSUGUSBG07
TRADE NAME	: Genius
DATA CABLE	: Shielded
POWER SUPPLY TYPE	: N/A
POWER CORD	: N/A

1.4. FEATURE OF EQUIPMENT UNDER TEST

- The direction button has eight directions, you can use this button to control the direction in game.
- The left, right buttons and the six buttons on the panel all are function buttons, the function setting depend on the software of game.

2. TEST CONFIGURATION OF EQUIPMENT UNDER TEST

2.1. TEST MANNER

- a. The EUT has been associated with personal computer and peripherals pursuant to ANSI C63.4-1992 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The DELL keyboard, HP mouse, ACEEX modem, HP printer, and SONY monitor were connected to the FIC PC for EMI test.
- c. Frequency range investigated: Conduction 450 KHz to 30 MHz, Radiation 30 MHz to 1000MHz.

2.2. DESCRIPTION OF TEST SYSTEM

SUPPORT UNIT 1. -- KEYBOARD (DELL)

FCC ID : GYUM92SK
Model No. : AT101
Serial No. : SP1009
Data Cable : Shielded, 360 degree via metal backshells

SUPPORT UNIT 2. -- MONITOR (SONY)

FCC ID : AK8GDM17SE2T
Model No. : GDM-17SE2T
Serial No. : SP1006
Data Cable : Shielded, 360 degree via metal backshells
Power Cord : Non-shielded
Power Supply Type : Switching

SUPPORT UNIT 3. -- MODEM (ACEEX)

FCC ID : IFAXDM1414
Model No. : DM1414
Serial No. : SP1019
Data Cable : Shielded, 360 degree via metal backshells
Power Cord : N/A
Power Supply Type : Linear

SUPPORT UNIT 4. -- MOUSE (HP)

FCC ID : DZL210582
Model No. : 210582
Serial No. : SP1011
Data Cable : Shielded, 360 degree via metal backshells

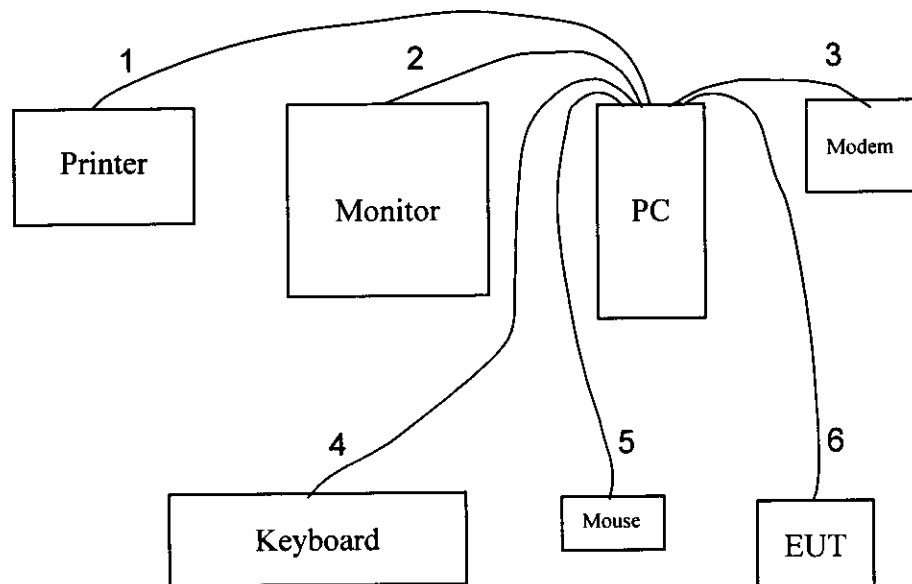
SUPPORT UNIT 5. -- PC (FIC)

FCC ID : N/A
Model No. : P2L97
Serial No. : SP1005
Power Cord : Non-shielded
Power Supply Type : Switching
Data Cable : Shielded, 360 degree via metal backshells

Remark : This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

SUPPORT UNIT 6. -- PRINTER (HP)

FCC ID : B94C2642X
Model No. : Dsek Jet 400
Serial No. : SP1038
Data Cable : Shielded, 360 degree via metal backshells
Power Cord : N/A
Power Supply Type : Linear

2.3. CONNECTION DIAGRAM OF TEST SYSTEM

1. The I/O cable is connected to the support device 6.
2. The I/O cable is connected to the support device 2.
3. The I/O cable is connected to the support device 3.
4. The I/O cable is connected to the support device 1.
5. The I/O cable is connected to the support device 4.
6. The I/O cable is connected to the EUT.

4. GENERAL INFORMATION OF TEST

4.1. TEST FACILITY

This test was carried out by SPORTON INTERNATIONAL INC. in an openarea test site.

Openarea Test Site Location : No. 30-1, Lin 6, Diing-Fwu Tsuen, Lin-Kou-Hsiang,
Taipei Hsien, Taiwan, R.O.C.

TEL : 886-2-2601-1640

FAX : 886-2-2601-1695

4.2. STANDARD FOR METHODS OF MEASUREMENT

ANSI C63.4-1992

4.3 .TEST IN COMPLIANCE WITH

FCC PART 15, SUBPART B CLASS B

4.4. FREQUENCY RANGE INVESTIGATED

- a. Conduction : from 450 KHz to 30 MHz
- b. Radiation : from 30 MHz to 1000 MHz.

4.5. TEST DISTANCE

The test distance of radiated emission from antenna to EUT is 3M.

5. TEST OF CONDUCTED POWERLINE

Conducted Emissions were measured from 450 KHz to 30 MHz with a bandwidth of 9 KHz on the 115 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-1992 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in Figure 5-3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

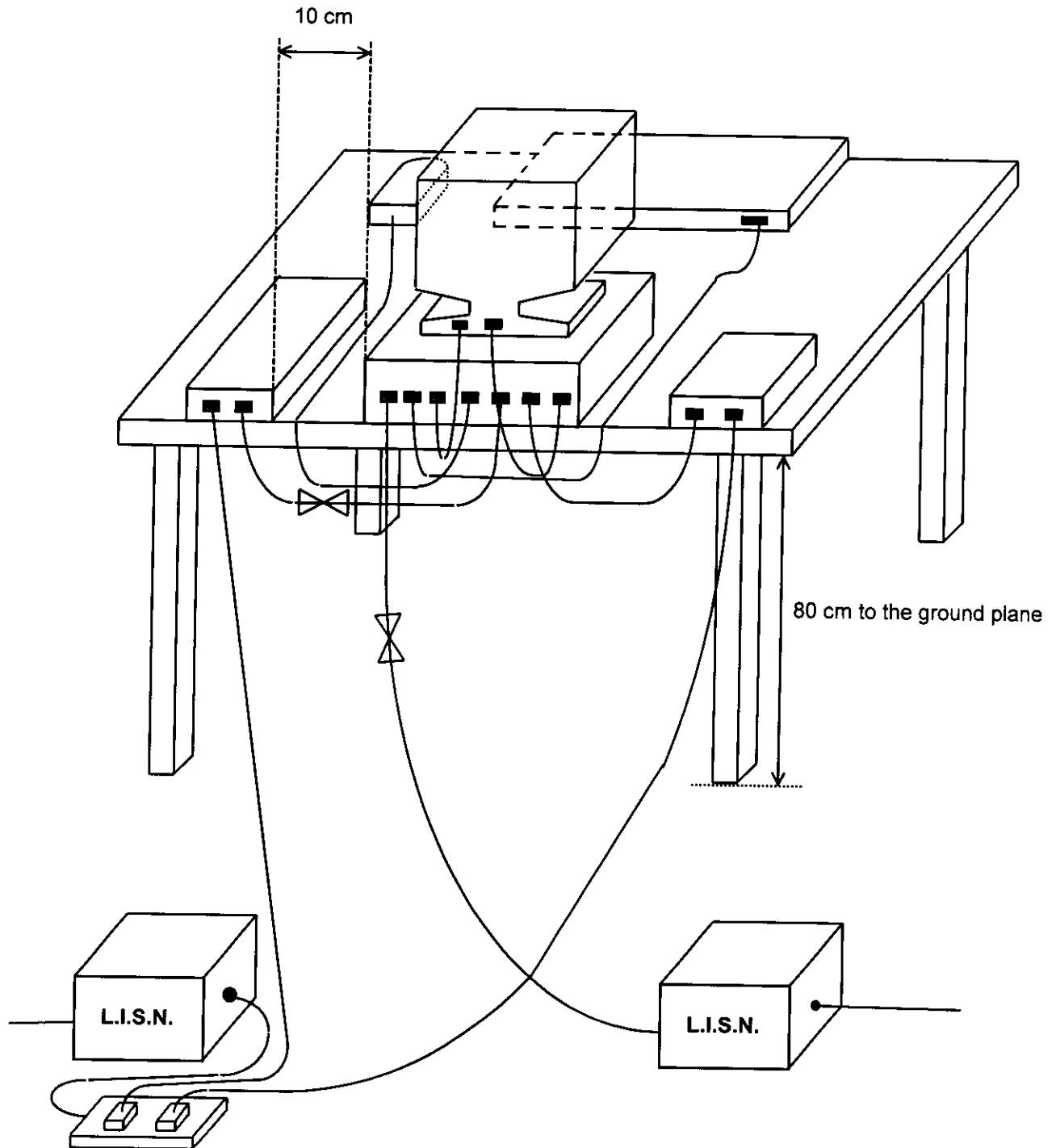
5.1. MAJOR MEASURING INSTRUMENTS

• Test Receiver	(HP 85462A)
Attenuation	0 dB
Start Frequency	0.45 MHz
Stop Frequency	30 MHz
Step MHz	0.007 MHz
IF Bandwidth	9 KHz

5.2. TEST PROCEDURES

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room and was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm , 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 450 KHz to 30 MHz was searched.
- h. Set the test-receiver system (HP receiver 85462A) to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- i. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported otherwise the emissions which do not have 6 dB margin will be retested on by one using the quasi-peak method and reported.

5.3. TYPICAL TEST SETUP LAYOUT OF CONDUCTED POWERLINE



6. TEST OF RADIATED EMISSION

Radiated emissions from 30 MHz to 1000 MHz were measured with a bandwidth of 120 KHz according to the methods defines in ANSI C63.4-1992. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane, as shown in Figure 6-3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

6.1. MAJOR MEASURING INSTRUMENTS

- RF Preselector

Attenuation	0 dB
RF Gain	20 dB
Signal Input	Input 2 (for 20 MHz to 2 GHz)

- Spectrum Analyzer

8568B

Attenuation	0 dB
Start Frequency	30 MHz
Stop Frequency	1000 MHz
Resolution Bandwidth	1 MHz
Video Bandwidth	1 MHz
Signal Input	Input 1 (for 100 KHz to 1.5 GHz)

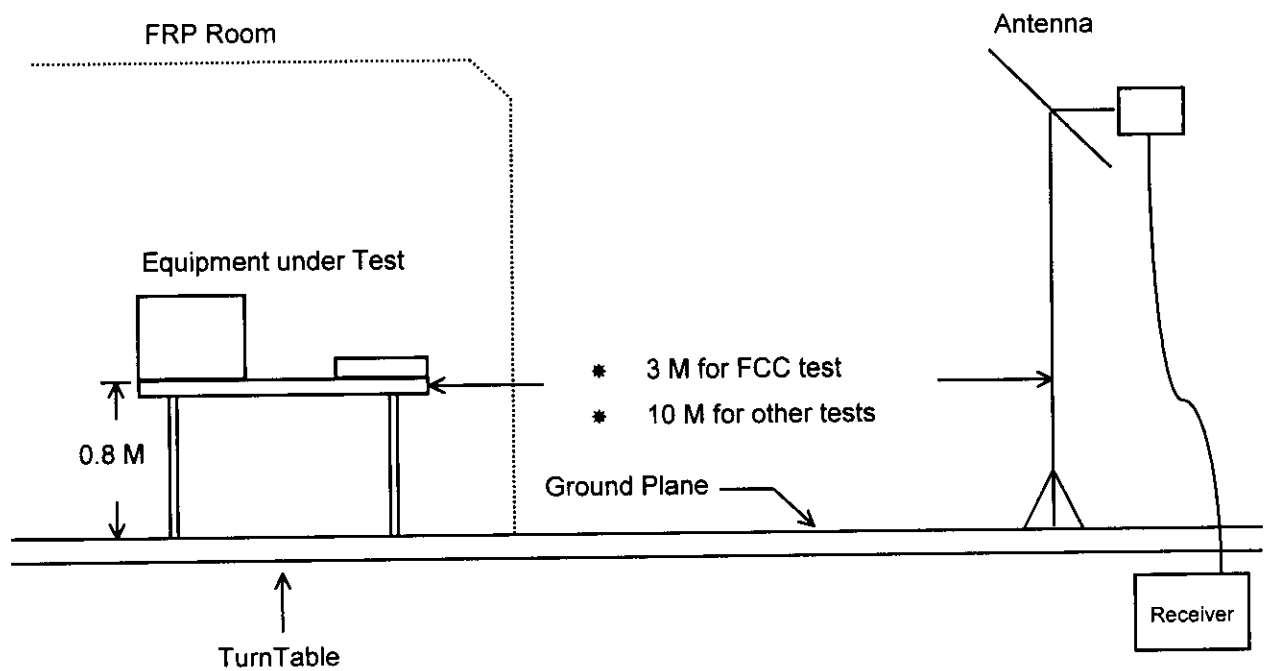
- Quasi-Peak Adapter

Resolution Bandwidth	120 KHz
Frequency Band	30 MHz to 1 GHz
Quasi-Peak Detector	ON for Quasi-Peak Mode OFF for Peak Mode

6.2. TEST PROCEDURES

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system (HP 8568B) to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported otherwise the emissions which do not have 6 dB margin will be repeated one by one using the quasi-peak method and reported.

6.3. TYPICAL TEST SETUP LAYOUT OF RADIATED EMISSION



6.4. TEST RESULT OF RADIATED EMISSION

- Equipment meets the technical specifications of 15.109
- Frequency Range of Test : from 30 MHz to 1000 MHz
- Test Distance : 3 M
- Temperature : 25 °C
- Relative Humidity : 63 % RH
- Test Date : Mar. 27, 1998
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Sample Calculation at 84.30 MHz
Corrected Reading = 7.47 + 1.40 + 27.95 = 36.82 (dBuV/m)


The Radiated Emission test was passed at

Horizontal 84.30 MHz / 36.82 dBuV

Antenna Height 2 Meter , Turntable Degree 168 °.

Frequency (MHz)	Polarity	Antenna Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Limits (dBuV)	(uV)	Emission (dBuV)	Level (uV)	Margin (dB)
84.30	H	7.47	1.40	27.95	40.00	100	36.82	69.34	-3.18
112.60	V	10.19	1.63	22.09	43.50	150	33.90	49.55	-9.60
32.20	H	-1.54	0.81	34.41	40.00	100	33.68	48.31	-6.32
60.40	V	4.46	1.20	27.48	40.00	100	33.10	45.39	-6.86
132.60	V	10.92	1.83	20.68	43.50	150	33.03	46.94	-10.07
39.69	V	0.43	0.93	31.27	40.00	100	32.64	42.85	-7.36

Test Engineer :



7. ANTENNA FACTOR AND CABLE LOSS

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	-1.91	0.90
35	-0.50	0.92
40	0.61	1.04
45	1.40	1.28
50	2.39	1.10
55	3.54	1.11
60	4.40	1.30
65	4.84	1.40
70	5.59	1.37
75	6.21	1.24
80	7.60	1.51
85	7.73	1.60
90	8.22	1.60
95	8.90	1.70
100	9.36	1.70
110	10.01	1.70
120	10.41	1.90
130	10.84	1.90
140	11.42	1.91
150	11.91	2.01
160	12.25	2.11
170	12.72	2.21
180	13.02	2.30
190	13.50	2.30
200	14.05	2.40
220	15.11	2.50
240	16.81	2.60
260	17.51	2.71
280	17.70	2.90
300	17.89	2.91
320	18.00	3.10
340	18.33	3.20
360	19.44	3.30
380	20.31	3.40
400	21.19	3.50
450	21.10	3.70
500	22.21	4.10
550	23.42	4.30
600	24.01	4.50
650	25.11	4.70
700	26.00	4.90
750	26.41	5.11
800	27.10	5.50
850	27.51	5.60
900	27.90	5.80
950	28.01	5.90

8. LIST OF MEASURING EQUIPMENT USED

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Receiver RF Section	HP	85462A	3325A00108	9 KHz - 6.5 GHz	Oct. 22, 1997	Conduction
RF Filter Section	HP	85460A	3308A00104	9 KHz - 6.5 GHz	Oct. 22, 1997	Conduction
LISN	EMCO	3850/2	1035	50 ohm / 50 uH	Oct. 27, 1997	Conduction
LISN	KYORITSU	KNW-407	8-693-10	50 ohm / 50 uH	Oct. 04, 1997	Conduction
EMI Filter	CORCOM	MRI-2030	N/A	480 VAC / 30 A	N/A	Conduction
Quasi-Peak Adapter (site 1)	HP	85650A	2811A01116	9KHz - 1000KHz	Jun 17, 1997	Radiation
Spectrum Analyzer (site 1)	HP	8568B	2732A04100	100Hz - 1500KHz	Jun 17, 1997	Radiation
Spectrum Analyzer display (site 1)	HP	N/A	2816A16464	100Hz - 1500KHz	Jun 17, 1997	Radiation
Bilog Antenna (Site 1)	CHASE	CBL6111	1378	30MHz -1 GHz	Aug. 12, 1997	Radiation
Half-wave dipole antenna (site 1)	EMCO	3121C	9705-1285	28 M - 1GHz	May 19, 1997	Radiation
Turn Table (site 1)	EMCO	1060-1.211	9507-1805	0 ~ 360 degree	N/A	Radiation
Antenna Mast (site 1)	EMCO	1051-1.2	9502-1868	1 m - 4 m	N/A	Radiation