



# The Hong Kong Standards and Testing Centre Ltd.

Date: 1998-08-31

## TEST REPORT

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No.: KM0041/504

APPLICANT: (CODE : 021789)

QUICKSHOT LTD.

Unit 7, 7/F, Blk B, Hoplite Industrial Centre, 3-5 Wang Tai Road, Kowloon Bay, Kowloon.

DATE OF SAMPLES RECEIVED: 1998.08.21.

DATE OF TESTING: 1998.08.27. & 1998.08.28.

### DESCRIPTION OF SAMPLE(S):

A sample of product said to be:

Product: Speaker System

Manufacturer: Quickshot Ltd

Model Number: QS7900

Brand Name: Quickshot

Rating: 120V a.c. 0.429A 51.5W 60Hz

Origin: China

The AC/AC adaptor used for the tests was supplied by the applicant, the details of adapter as follows:

GS AC power adaptor

Model Number: GS - 143000 adaptor.

Input: 120V AC 60Hz Output: 14V AC 3A

### INVESTIGATIONS REQUESTED:

Measurement to the relevant clauses of F.C.C. Rules and Regulations Part B - Unintentional Radiators". The results obtained are to compare with the class B digital device limit.

RESULTS: Please see attached sheet(s).

REMARK: This product was tested as a system using the Ancillary Equipment listed in Appendix B.

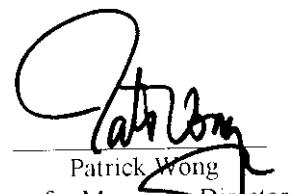
### CONCLUSION:

From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirement for the relevant clauses of Federal Communications Commission Rules for Class B digital device.

TEST EQUIPMENT AUDIT: Please see Appendix A

Testing Engineer

Verify by

  
Patrick Wong  
for Managing Director

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### TEST SUMMARY

(A) Measurement of Radiated Emission

Result -- Satisfactory

Data -- See the attached data

(B) Measurement of Line-Conducted Voltage Test

Result -- Satisfactory

Data -- See the attached data



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### (A) Measurement of Radiated Interference

TEST REFERENCE: FCC Rules Part 15 Subpart B Section 15.109(a)  
(Class B)

TEST CONDITION: Normal

TEST DATE: 1998.08.31.

Emission Frequency	Meter Reading	Polarization (including antenna factor)	Field Strength (at 3m)	FCC Limit
MHz	dB(µV)		µV/m	µV/m
48.201	22.8	V	13.8	100
48.203	26.1	H	20.2	100
112.777	20.0	H	10.0	150
112.786	18.8	V	8.7	150

- End -

### SUMMARY

All data is within limits

Broad-band Antennas were used and both polarizations of emissions were measured.  
polarizations at highest reading indicated as:

H -- Horizontal    V -- Vertical



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### NOTES FOR THE RADIATION MEASUREMENT

#### (1) Test site facility:

Open field test site located at Taipo (Hong Kong) with a metal ground plane in compliance with the requirements of ANSI C63.4:1992.

#### (2) Test Equipment

HP 8572A EMI receiver was set to CISPR quasi-peak mode and the bandwidth of the receiver was set to 100KHz or 1MHz depending on the type of signal. A biconical log-periodic antenna was used for frequency range from 30MHz to 1000MHz.

#### (3) Test Set-Up:

The EUT and support equipment are placed in accordance with ANSI C63.4.

#### (4) Measuring Procedure:

An initial pre-scan measurement was performed in a semi-anechoic chamber using a 25dB gain pre-amplifier. The receive antenna in the chamber was 1.5m above the groundplane and 3m from the sample. The sample was placed 0.8m above the groundplane.

Measurements in both horizontal and vertical polarities were performed. All emissions recorded during the prescan were subsequently remeasured on the open field test site (described in 1 above) using the following procedure: The ambient noise scanning was made before powering on the EUT and support equipment to identify the emissions from the environment. During the test, each emission was maximized by: having the EUT continuously working, arranging, rotating turntable and manipulating interconnecting cables, rotating turntable and varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The frequency range tested is from 30MHz to 1000MHz and the worst-case emissions are shown in Test Results.

#### (5) Measuring Uncertainty:

The calculated uncertainty for measurement performed at 3M test distance are:-  
30MHz to 200MHz =  $\pm 3.7$ dB, 200MHz to 1000MHz =  $+ 3.0$ dB/-2.7dB.



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### (B) Measurement of Line-Conducted Voltage onto AC Power Line

TEST REFERENCE : FCC Rules Part 15 Subpart B Section 15.107(a)  
(Class B)

TEST CONDITION : Normal

TEST DATE : 1998.08.27.

#### (1) Between "Live" and "Ground"

Frequency Range of Emission		Maximum Measured Radio Noise	FCC Limit (Class B)	
MHz	MHz	dB(µV)	µV	µV
0.45	-	0.8	0.00	1.00
0.8	-	1.6	0.00	1.00
1.6	-	3.0	0.00	1.00
3.0	-	5.0	0.00	1.00
5.0	-	7.0	0.00	1.00
7.0	-	9.0	16.32	6.55
9.0	-	11.0	< 19.51	9.45
11.0	-	13.0	16.52	6.70
13.0	-	15.0	0.00	1.00
15.0	-	17.0	0.00	1.00
17.0	-	19.0	28.37	26.21
19.0	-	21.0	24.51	16.81
21.0	-	23.0	0.00	1.00
23.0	-	25.0	0.00	1.00
25.0	-	27.0	0.00	1.00
27.0	-	30.0	0.00	1.00

- End -

#### ----- SUMMARY -----

All data is within limits



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### (B) Measurement of Line-Conducted Voltage onto AC Power Line

TEST REFERENCE : FCC Rules Part 15 Subpart B Section 15.107(a)  
(Class B)

TEST CONDITION : Normal

TEST DATE : 1998.08.27.

#### (1) Between "Neutral" and "Ground"

Frequency Range of Emission		Maximum Measured Radio Noise		FCC Limit (Class B)	
	MHz		dB(µV)	µV	µV
0.45	-	0.8	0.00	1.00	250.00
0.8	-	1.6	0.00	1.00	250.00
1.6	-	3.0	0.00	1.00	250.00
3.0	-	5.0	0.00	1.00	250.00
5.0	-	7.0	0.00	1.00	250.00
7.0	-	9.0	18.28	8.20	250.00
9.0	-	11.0	19.51	9.45	250.00
11.0	-	13.0	18.71	8.62	250.00
13.0	-	15.0	0.00	1.00	250.00
15.0	-	17.0	0.00	1.00	250.00
17.0	-	19.0	26.86	22.03	250.00
19.0	-	21.0	23.14	14.35	250.00
21.0	-	23.0	0.00	1.00	250.00
23.0	-	25.0	0.00	1.00	250.00
25.0	-	27.0	0.00	1.00	250.00
27.0	-	30.0	0.00	1.00	250.00

- End -

#### ----- SUMMARY -----

All data is within limits



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### NOTES FOR THE CONDUCTED POWER-LINE MEASUREMENT

#### (1) LISN (Line Impedance Stabilization Network) used :

50  $\mu$ H LISN in accordance with Section of ANSI C63.4:1992.

#### (2) Measurement Instrumentations:

CISPR quasi-peak type radio noise meter (9 KHz - 30 MHz), 6 dB bandwidth set at 9 KHz for measurement between 150 KHz & 30MHz.

#### (3) Frequency range scanned :

The frequency range form 450 KHz to 30 MHz had been searched. Reading of the highest emissions relating to the limit were reported as above.

#### (4) Configuration of EUT

Connection of equipment and operation conditions were same as those in the Radiation measurement.

#### (5) Measurement procedure :

In accordance with the relevant sections of ANSI C63.4:1992 "FCC Methods of measurement of Radio Noise Emissions from Computing Devices".

#### (6) Measuring Uncertainty:

The calculated uncertainty for conducted power-line measurement is =  $\pm 2.3$ dB.

\*\* End of document \*\*



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## APPENDIX A

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### TEST EQUIPMENT AUDIT

#### Pre-scan

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EM131	PORTABLE SPECTRUM ANALYSER	HEWLETT PACKARD	8595EM	3710A00155	27/10/97
EM16	ANTENNA	ARA INC	LPB-2513 A	1047	05/08/98
EM064	PRE-AMPLIFIER	HP	8447F OPT 1664	2944A04240	25/06/98
EM082	ANERCHOC CHAMBER	FELIAS & MASSON	N/A	N/A	05/06/98

#### Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EM007	SPECTRUM ANALYZER	HP	HP85660B	3144A21192	29/05/98
EM008	SPECTRUM ANALYZER DISPLAY	HP	HP85662A	3144A20514	29/05/98
EM009	QUASI PEAK ADAPTOR	HP	HP85650A	3503A01702	29/05/98
EM010	RF PRESELECTION	HP	HP85685A	3221A01410	29/05/98
EM011	ATTENUATOR SWITCH	HP	HP11713A	2508A10595	29/05/98
EM012	PRE-AMPLIFIER	HP	HP8449B	3008A00262	29/05/98
EM013	CONTROLLER, COMPUTER, COLOR MONITOR, KEYBOARD & IMPULSE FLOPPY DRIVE	HP	HP9000	6226A60314	CM
		HP	HPA1097C	3151J39517	
		HP	HP9133L	2623A02468	
EM017	ANTENNA	ARA INC	LPB-2513 A	1069	31/12/97
EM072	SIGNAL GENERATOR	HP	8640B	1948A11892	30/03/98
EM083	HKSTC OPEN AREA TEST SITE	HKSTC	N/A	N/A	16/02/98

#### Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EM003	SIGNAL GENERATOR	R & S	SMS	871603/529	CM
EM017	IMPULSE LIMITER	R & S	ESH3Z2	0357 8810/52	05/02/98
EM002	LISN	EMCO	3825-2	9005-1657	20/06/98
EM120	EMI TEST RECEIVER	R & S	ESIHS10	1004 0401/10	02/07/98
EM081	SMALL SCREENED ROOM	MIKO INST HK	N/A	N/A	TBD

#### ABBREVIATIONS:

CM = Corrective Maintenance

N/A = Not Applicable

TBD = To Be Determined



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### ANCILLARY EQUIPMENT

ITEM NO.	DESCRIPTION	MODEL NO.	FCC ID	REMARK
1	AST COMPUTER	AST PREMIUM II 486 33	DJKASTPH486-33	1.92m SVT SHIELDED CABLE
2	SVGA MONITOR	CM6P	GDRCM6P	RESOLUTION: 720*400 (DURING TESTING) 1.0M UNSHIELDED POWER CORD CONNECTED TO THE COMPUTER 1.8M SHIELDED CABLE CONNECTED TO THE COMPUTER
3	AST KEYBOARD	KB-101	AQ6MEMB-74004	1.8 SHIELDED COILED CABLE CONNECTED TO THE COMPUTER
4	MOUSE	PS12	FSUGMZC8	2.4M UNSHIELDED CABLE CONNECTED TO THE COMPUTER
5	SERIAL PROGRAM PAD (EUT)	SV-284	KY1SV-284	2.6M SHIELDED CABLE CONNECTED TO COMPUTER KEYBOARD SOCKET 2.3M SHIELDED CABLE CONNECTED TO SOUND CARD SOCKET OF THE COMPUTER
6	PARALLEL PRINTER	DMP3000	DE2850CDMP3000	1.8M UNSHIELDED POWER CORD 2.8M SHIELDED CABLE (BUNDLED TO 1M) CONNECTED TO THE COMPUTER
7	SERIAL PRINTER	N/A	N/A	SAME AS PARALLEL PRINTER