



Test Report

Test Report No.:	KTI01E-F1037		
Registration No.:	99058		
Applicant:	Leadingedge Co., Ltd.		
Applicant Address:	#501, Daerung Techno Town•, 569-21 Kasan-dong, Kumchun-ku, Seoul, 153-803, Korea		
Product:	Intelligent Toy		
FCC ID:	PVOCHARIANTT1	Model No.	Charian TT1
Receipt No.:	KTI20010910	Date of receipt:	Sep, 10, 2001
Date of Issue:	Oct, 10, 2001		
Testing location	Korea Technology Institute Co., Ltd. 51-19, Sanglim3-Ri, Docheok-Myeun, Gwangju-Shi, Gyeongki-Do, Korea		
Test Standards:	ANSI. C63.4 : 1992		
Rule Parts:	FCC Part 15, Subpart B		
Equipment Class:	JBP		
Test Result:	The above mentioned product has been tested and passed.		
Prepare by: J. H. Lee	Tested by: S. B. Kim/ Engineer	Approved by: G. C. Min/ President	
			
Signature _____	Signature _____	Signature _____	Signature _____
Date _____	Date _____	Date _____	Date _____
Other Aspects :			
Abbreviations :	OK, Pass=passed Fail=failed N/A=not applicable		

- ♣ This test report is not permitted to copy partly without our permission.
- ♣ This test result is dependent on only equipment to be used.
- ♣ This test result is based on a single evaluation of one sample of the above mentioned.
- ♣ This test report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S Government.
- ♣ We certify this test report has been based on the measurement standards that is traceable to the national or international standards.



Contents

	Contents	2
	List of Tables	2
	List of Figures	2
	List of Photographs	3
1.	General	3
2.	Test Site	3
	2.1 Location	4
	2.2 List of Test and Measurement Instruments	4
	2.3 Test Data	4
	2.4 Test Environment	5
3.	Description of the tested samples	5
	3.1 Rating and Physical characteristics	5
	3.2 Submitted documents	6
4.	Measurement conditions	6
	4.1 Modes of operation	6
	4.2 Additional equipments	6
	4.3 Uncertainty	6
	4.4 Test Setup	7
5.	Emission Test	8
	5.1 Conducted Emissions	11
	5.2 Radiated Emissions	12
6.	Photographs of the Test Set-up	14
Annex1	Label	15
Annex2	Photographs of EUT	16~19

List of Tables

Table 1	List of test and measurement equipment	4
Table 2	Test Data. Conducted Emissions	11
Table 3	Test Data. Radiated Emissions	13

List of Figures

Figure 1	Spectral Diagram, LINE-PE	9
Figure 2	Spectral Diagram, Neutral-PE	10

List of Photographs

Photograph 1	Setup for Conducted Emissions	16
Photograph 2	Setup for Radiated Emissions	17



1. General

This equipment has been shown to be capable of compliance with the applicable technical standards and was tested in accordance with the measurement procedures as indicated in this report.

We attest to the accuracy of data. All measurements reported herein were performed by Korea Technology Institute Co., Ltd. And were made under Chief Engineer's supervision. We assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

2. Test Site

Korea Technology Institute Co., Ltd.

2.1 Location

51-19, Sanglim3-Ri, Docheok-Myeun, Gwangju-Shi, Gyeongki-Do, Korea

The Test Site is in compliance with ANSI C63.4/1992 for measurement of radio Interference.



2.2 List of Test and Measurement Instruments

Table 1 : List of Test and Measurement Equipment

• Conducted Emissions

Kind of Equipment
Type
S/N

Calibrated until

Spectrum Analyzer
R3261C
61720427
11.2001

Field Strength Meter
ESPC
832827/011
11.2001

LISN
ESH3-Z5
8254601019
5.2002

LISN
KNW407
8-1097-7
11.2001

Pulse limiter
ESH3Z2
357.8810.52
11.2001

Conducted Cable
N/A
N/A
11.2001

• Radiated Emissions

Kind of Equipment
Type
S/N

Calibrated until

Field Strength Meter
ESPC
832827/011
11.2001

Spectrum Analyzer
R3261C
61720427
11.2001

Pre Amplifier
8447D
2944A06874
11.2001



3. Description of the tested samples

The EUT is Toy.

3.1 Rating and Physical Characteristics

SYSTEM: PENTIUM300-MHZ ABOVE OPERATING SYSTEM: MICROSOFT
WINDOW/98/ME/2000 MEMORY: RAM32MB VIDEO CARD SVGA SUPPORTING
VGA CARD ABOVE 4M ABOVE DIRECT X 7.0 ENOUGH WORK SPACE SOUND CARD ENOUGH
WORK SPACE

3.2 Submitted Documents

User's Guide
Block Diagram



4. Measurement Conditions

Testing Input Voltage: DC 16V.

4.1 Modes of Operation

The EUT was in the following operating mode during all testing;

4.2 Additional Equipment

DEVICE TYPE

Manufacturer

M/N

S/N

FCC ID

PC

COMPAQ COMPUTER CORPORATION

Deskpro EXM

6F13JC8JN619

-

Monitor

Samsung Electronics

750S

P223HVAR502035

-

Keyboard

COMPAQ COMPUTER CORPORATION

KB-9963

B26960GBUKKOWW

-

Mouse

logitech

M-S48a

None

JNZ201213

Mouse

SEJIN ELECTRON INC.

SMB-400

0CIM004047

GJJS965M3

Printer

Hewlett Packard

C4569A

SG78M1H0CF

-

Speaker

Taekwang

None

None

-

4.3 Uncertainty

1) Radiated disturbance

UC (Combined standard Uncertainty) = $\pm 1.8\text{dB}$

Expanded uncertainty $U=Kuc$

$K = 2$

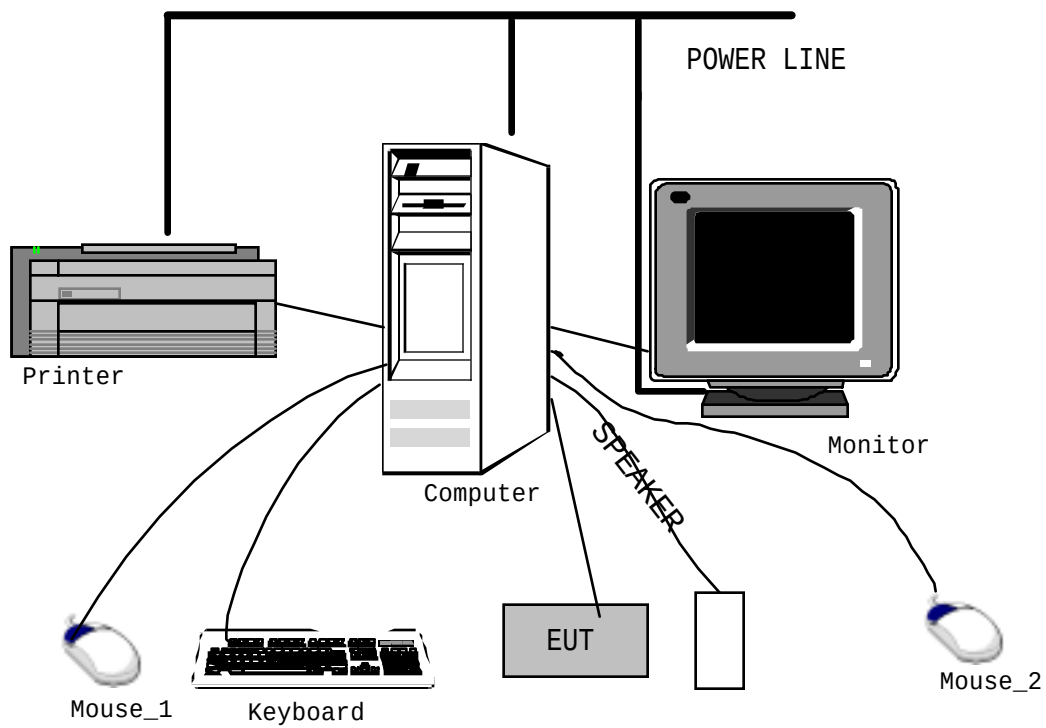
$4 U = \pm 3.6\text{dB}$

2) Conducted disturbance

UC = $\pm 0.88\text{dB}$



4.4 Test setup





5. EMISSION Test

5.1 Conducted Emissions

Result : **Pass**

The line-conducted facility is located inside a 2.3M x 3.5M x 5.5M shielded closure.

The shielding effectiveness of the shielded room is in accordance with MIL-Std-285 or NSA 605-05.

A 1m x 1.5m wooden table 80cm. High is placed 80cm away from the vertical wall and 1.5m away from the side wall of the shielded room. R&S Model ESH3-Z5(10kHz-30MHz)

50ohm/50 uH line-Impedance Stabilization Networks(LISN) are bonded to the shielded room.

The EUT is powered from the R&S LISN and the support equipment is powered from the Kyoritsu LISN. Power to the LISN are filtered by a high-current high-insertion loss shield enclosures power line filters(100dB 14kHz-1Ghz).

The purpose of the filter is to attenuate ambient signal interference and this filter is also bonded to the shielded enclosure.

All electrical cables are shielded by braided tinned copper zipper tubing with inner diameter of 1/2".

If the EUT is a DC-Powered device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the Kyoritsu LISN.

All interconnecting cables more than 1 meter were shortened by non-inductive bundling (serpentine fashion) to a 1-meter length.

Sufficient time for the EUT, Support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT.

The spectrum was scanned from 450kHz to 30MHz with 100sec. sweep time.

The frequency producing the maximum level was reexamined using EMI field Intensity meter (ESPC). The detector function was set to CISPR Q.P. mode.

The bandwidth of the receiver was set to 10kHz. The EUT, support equipment, and interconnecting each emission was maximized by: switching power lines; varying the mode of operation or resolution; clock or data exchange speed; if applicable; whichever determined the worst-case emission.

Photographs of the worst-case emission can be seen in photograph of conducted test.

Each EME reported was calibrated using self-calibrating mode.



Figure 1 : Spectral Diagram, LINE – PE