





**Korea Technology Institute Co., Ltd.**

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## Test Report

Test Report No.:	KT101E-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.:	KT120010910	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      Date      Signature      Date      Signature      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.



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## 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  $U=Kuc$

$K = 2$

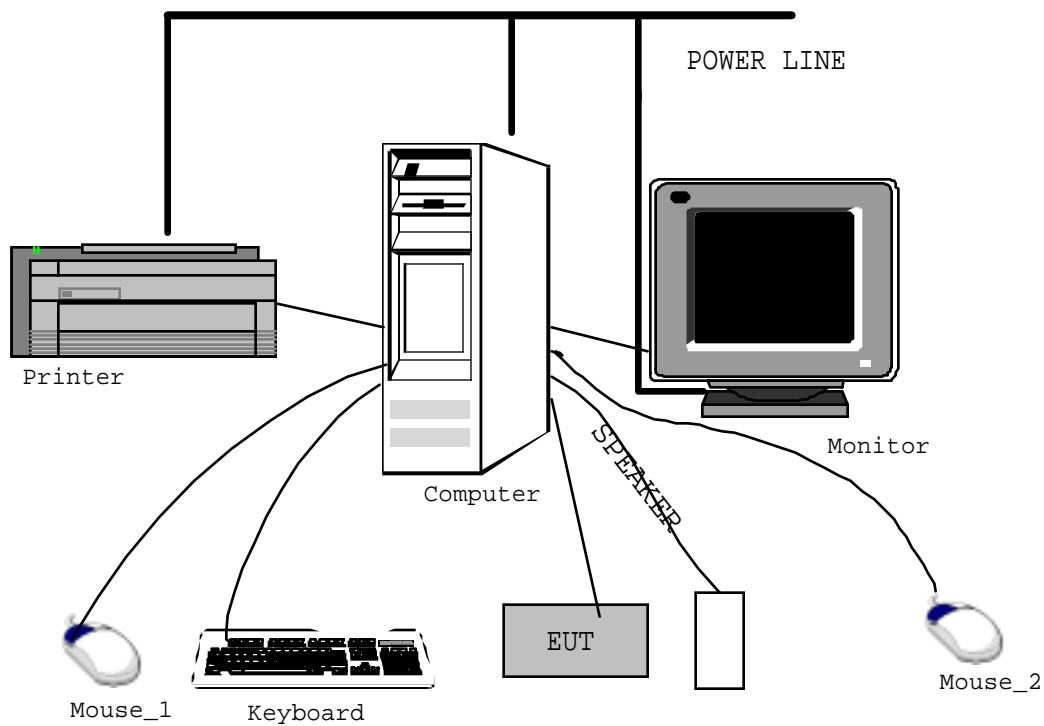
$4 U = \pm 3.6\text{dB}$

#### 2) Conducted disturbance

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



## 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**