# Korea Technology Institute Co., Ltd.



# Test Report

| | | | |
|---|---|---|---|
| Test Report No.: | KTI01E-F1042 | | |
| Registration No.: | 99058 | | |
| Applicant: | SystemBase Co., Ltd. | | |
| Applicant Address: | 475-22, Bangbae2-dong,Seoul,Korea | | |
| Product: | Converter | | |
| FCC ID: | PROCS-428 | Model No. | CS-428 |
| Receipt No.: | KTI20010928 | Date of receipt: | Sep, 28, 2001 |
| Date of Issue: | Oct, 15, 2001 | | |
| Testing location | Korea Technology Institute Co., Ltd.<br>51-19, Sanglim3-Ri, Docheok-Myeun, Gwangju-Shi, Gyeungki-Do, Korea | | |
| Test Standards: | ANSI. C63.4 : 1992 | | |
| Rule Parts: | FCC Part 15, Subpart B | | |
| Equipment Class: | Class B | | |
| Test Result: | The above mentioned product has been tested and passed. | | |

Prepare by: J. H. Lee

**Signature Date**

Tested by: S. B. Kim/ Engineer

**Signature Date**

Approved by: G. C. Min/ President

G C Min

**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, Gyeungki-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**<br>**Type**<br>**S/N**<br>**Calibrated until** |
|---|
| Spectrum Analyzer<br>R3261C<br>61720427<br>11.2001 |
| Field Strength Meter<br>ESPC<br>832827/011<br>11.2001 |
| LISN<br>ESH3-Z5<br>8254601019<br>5.2002 |
| LISN<br>KNW407<br>8-1097-7<br>11.2001 |
| Pulse limiter<br>ESH3Z2<br>357.8810.52<br>11.2001 |
| Conducted Cable<br>N/A<br>N/A<br>11.2001 |

- **Radiated Emissions**

| **Kind of Equipment**<br>**Type**<br>**S/N**<br>**Calibrated until** |
|---|
| Field Strength Meter<br>ESPC<br>832827/011<br>11.2001 |
| Spectrum Analyzer<br>R3261C<br>61720427<br>11.2001 |
| Pre Amplifier<br>8447D<br>2944A06874<br>11.2001 |

# 3. Description of the tested samples

The EUT is Converter.

## 3.1 Rating and Physical Characteristics

Communication Type
Asynchronous serial communication

Transmission Speed
Up to 115.2K BPS

Maximum Distance
1.2Km

Connector
Terminal block to communication cable (RS422/485side)
DB9/25 female to RS232 device(RS232side)

Power supply
Without power supply: DTR signal from RS232 connector
With power supply: DC power adapter (DC7V-12V)

Internal Connection
DTR-DSR-DCD
RTS-CTS

Circuit Connection
Surge protector inside

Slide Switch
RS422-Point to point, Multi-drop

RS-485-Echo,Non Echo

## 3.2 Submitted Documents

User's Guide
Block Diagram

# 4. Measurement Conditions

Testing Input Voltage: AC 220V.

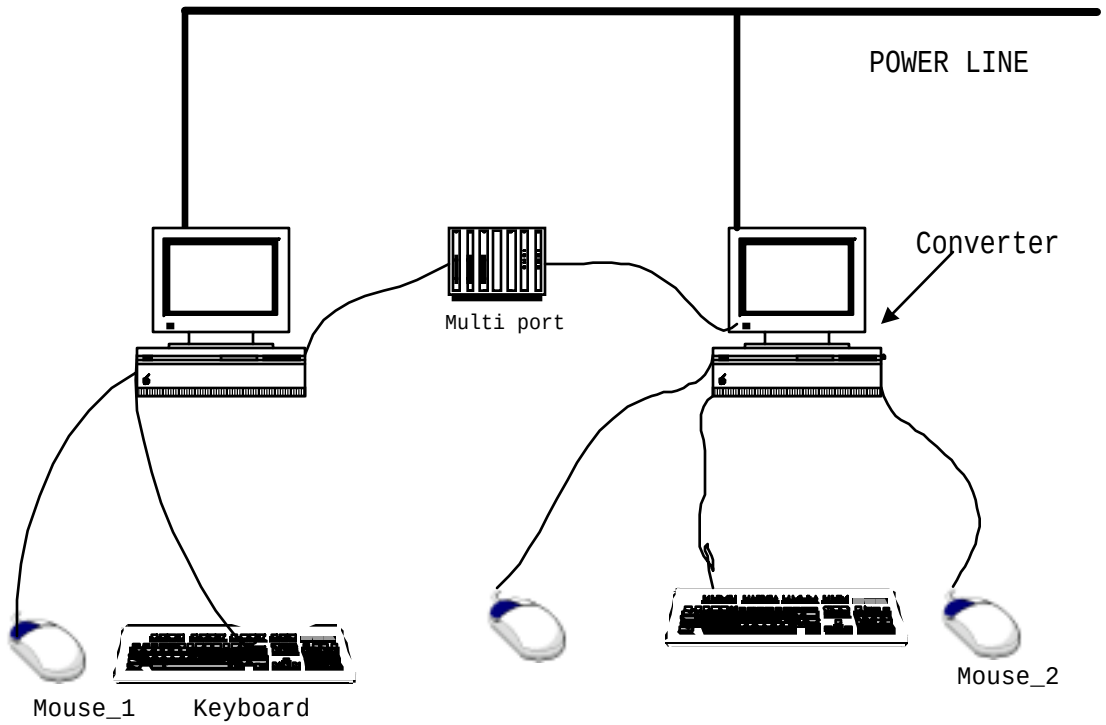
## 4.1 Modes of Operation

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

## 4.2 Additional Equipment

| DEVICE TYPE | Manufacturer | M/N | S/N | FCC ID |
|---|---|---|---|---|
| PC | COMPAQ COMPUTER CORPORATION | Deskpro EXM | 6F13JC8JN619 | - |
| PC | Atech Co., Ltd. | Att | None | - |
| Monitor | Samsung Electonics | 750P(T) | P015H2GN503475 | - |
| Monitor | Samsung Electronics | 750S | P223HVAR502035 | - |
| Keyboard | Solid Year Co., Ltd | TRI-270 | 910090345 | - |
| Keyboard | COMPAQ COMPUTER CORPORATION | KB-9963 | B26960GBUKKOVW | - |
| Mouse | Microsoft | ITE78CJ | 1048611-5 | - |
| Mouse | Sejin | SMB-400 | 0CIM004047 | - |
| Mouse | | | | |

## 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**