Korea Technology Institute Co., Ltd.

Test Report

Test Report No.:	KTI01E-F1038		
Registration No.:	99058		
Applicant:	Digital Device, Inc.		
Applicant Address:	4th FL.,HanWha B/D 78-1 Karakdong Songpagu Seoul,Korea		
Product:	Digital Voice Recorder		
FCC ID:	PQZDIR-908S	Model No.	DIR-908S
Receipt No.:	KTI20010906	Date of receipt:	Sep, 6, 2001
Date of Issue:	Sep, 24, 2001		
Testing location	Korea Technology Institute Co., Ltd. 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 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 Digital Voice Recorder

3.1 Rating and Physical Characteristics

Model name
DIR -908S

Available recording Time
SP : 240min / LP : 540 min

Maximum No. of recording
99 messages each folder(Total : 396 messages)

Recording Device
Built-in 16MB Flash memory

Microphone
Built-in omni directional condenser microphone(mono)

Input
Built-in microphone

Output
External earphone /built-in speaker

Speaker
Built-in speaker (16 Ohm)

Operation
Temperature 0∨ C ~ 40∨ C

Frequency range
400Hz ~ 3600 Hz

Maximum Output
80mWat (16Ohm built-in speaker)

Battery life
About 10hr. during recording , About 8hr .during speaker playback.

Power requirements
DC 3V, two "AAA" size alkaline batteries.

Dimensions
25mm * 129* 18mm

Weight
35g(without batteries)

Accessories
Earphone, Battery, External microphone, External connecting cable, Manual

3.2 Submitted Documents

User's Guide
Block Diagram

4. Measurement Conditions

Testing Input Voltage: DC 3V.

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	DELL COMPUTER CORPORATION	MMP	1HKZ31S	-
Monitor	Samsung Electronics	750S	P223HVAR502035	-
Keyboard	DELL COMPUTER CORPORATION	SK-8000	MY-0970WY-38843-0BR-9608	-
Mouse	logitech	M-S48a	None	JNZ201213
Mouse	SEJIN ELECTRON INC.	SMB-400	0CIM004047	GJJS965M3
Printer	Hewlett Packard	C4569A	SG78M1H0CF	-

4.3 Uncertainty

1) Radiated disturbance

UC (Combined standard Uncertainty) = ± 1.8dB

Expanded uncertainty U=Kuc

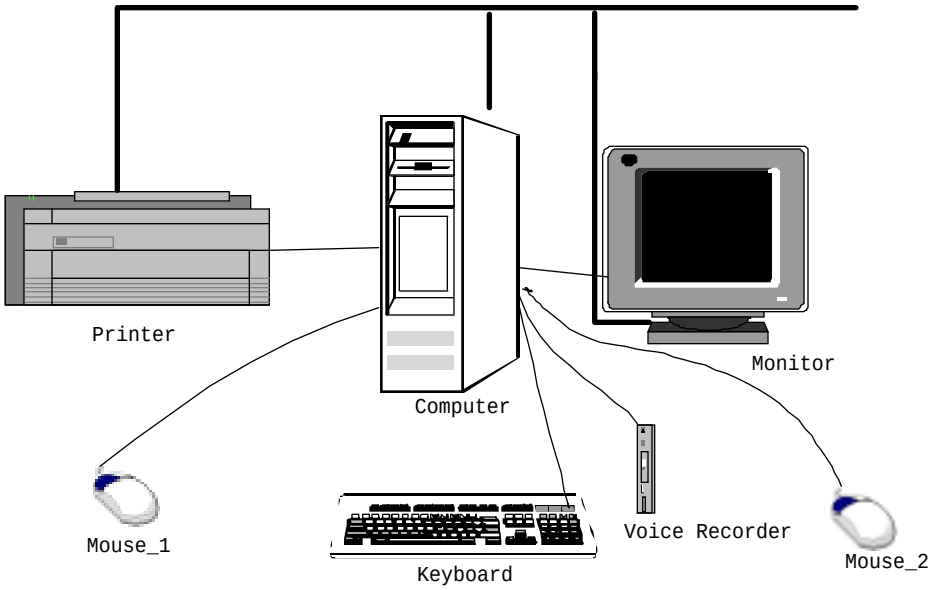
K = 2

4 U = ± 3.6dB

2) Conducted disturbance

UC = ± 0.88dB

U = Kuc=2xUc = ± 1.8dB



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