

EXHIBIT B

Test Report

Report No.	U0615941
Specifications Test Method	FCC Part 15.109(g), Class B ANSI C63.4 1992
Applicant address	3F, No. 3, Lane 538, Chung Cheng Rd., Hsin Tien, Taipei, Taiwan, R.O.C.
Applicant Items tested Model No.	Unistar Technology, Inc. 1394 PCI CARD UT-0422 (Sample # U06941)
Results Sample received date	Compliance (As detailed within this report) 10/29/99 (month / day / year)
Prepared by	 project engineer
Authorized by	 General Manager (Frank Tsai)
Issue date	Nov. 03, 1999 (month / day / year)
Modifications	None
Tested by	Training Research Co., Ltd.
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★ FCC ID: NUO0422FW

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Chapter 1 Introduction

Description of EUT:

The EUT is a simple solution of PCI to IEEE1394 interface. It provides 3-port node in the cable-based IEEE1394 network. Each port incorporates two differential line transceivers. It works with serial bus data rates of 100M, 200M and 400M bits/s and has following features:

1. Fully compatible with PCI specifications 2.2, PCI power management compliant 1394 OHCI 1.00.
2. IEEE1394-1995 Compliant and compatible with proposal 1394A.
3. Internal control registers are memory mapped and non-prefetchable.
4. Physical write posting buffer for enhancing the serial bus performance.
5. Supports serial bus data rates of 100, 200, 400M bits/s.
6. Interoperable access 1394 cable with physical layers using 5V supplies.
7. Inactive ports disabled to save power.
8. Cable ports monitor line conditions for active connection to remote node.
9. Support Windows 98. Option for Apple machines.

Connections of EUT:

- (1) Put the EUT into a personal computer's PCI bus and screw it.
- (2) 1394 #1 port of EUT is connected with a digital camera.
- (3) 1394 #2, #3 port of EUT are each connected with a 1394 cable terminated.

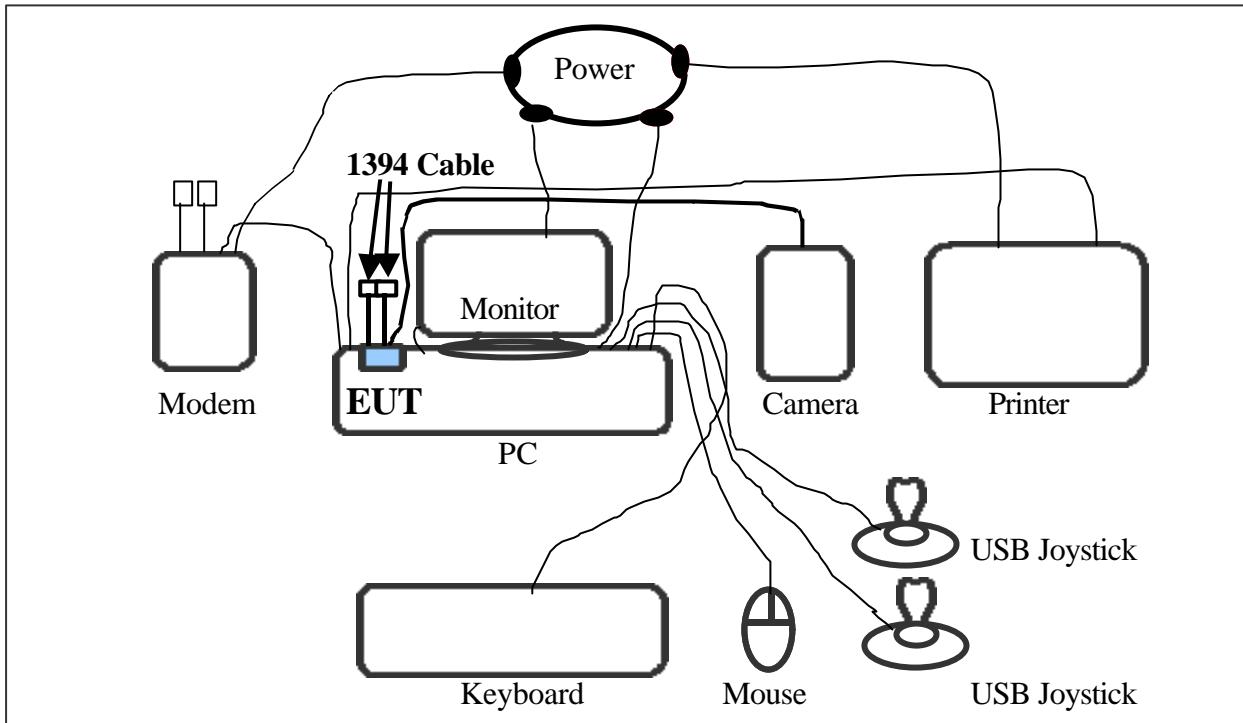
Test method:

Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

During testing, the EUT was operated at "receiving" and "transmitting" mode simultaneously. This means that the EUT is received the images that transmitted from the digital camera recorder, then transmitted to the PC.

The test placement as the photographs showed is the worst case emission placed. (If the emission is close to the ambient, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

The testing configuration of test setup is showing in the next page.

Configuration of test setup**Connections:****PC :**

- *Serial A port --- a external modem with 76 cm shielded RS-232 cable
- *Serial B port --- a shielded RS232 cable with 76cm long, no ferrite bead
- *USB ports --- two USB joysticks with 1.5m long, shielded, no ferrite bead data cable
- *Printer port --- a Printer with 1.2m length data cable
- *Keyboard port --- a Keyboard with 1m length data cable
- *Mouse port --- a Mouse with 0.7m long of data cable
- *Monitor port --- a monitor with 1.75 m shielded data cable with ferrite core.

(Each port on PC is connected with suitable device)

EUT:

- *1394 #1 Port --- via 4.5m long, shielded, no ferrite bead, 1394 cable to the camera
- *1394 #2, #3 port --- each port is connected with a 1394 cable with 4.5m long, shielded, no ferrite bead, terminated.

List of support equipment

Conducted (Radiated) test:

PC : **HP**
Model : VE6/350 SERIES 8
Serial No. : SG91002329
FCC ID : Doc Approval
Power type : AC 100~127 / 200~240 VAC, Switching
Power cord : Non-shielded, 1.7m long, Plastic, no ferrite core

Monitor : **HP**
Model No. : D2821
Serial No. : TW 73512262 (TW 73147163)
FCC ID : A3KMO64
Power type : AC 110~120 / 220~240 VAC, Switching
Power cord : Non-Shielded, 3m long, no ferrite core
Data cable : Shielded, 1.8m long, with ferrite core

Keyboard : **Digital**
Model No. : KB-5923
Serial No. : 9S74904837 (9S74904665)
FCC ID : E8HKB-5923
Power type : By PC
Data cable : Shielded, 1.8m long, with ferrite core

Mouse : **Hewlett Packard Mouse**
Model No. : C3751B
Serial No. : LCA52707170
FCC ID : DZL210582
Power type : Powered by PC
Power Cable : Non – shielded. 5.5' long, Plastic hoods, No ferrite bead

Modem : **ACEEX**
Model No. : XDM-9624
FCC ID : IFAXDM-9624
Power type : 220VAC, 50Hz / 9VAC, 1A
Power cord : Non-shielded, 1.9m long, no ferrite cord
Data cable : RS232, Shielded, 1.2m long, no ferrite core
 RJ11C x 2, 7' long non-shielded, no ferrite core

Printer : **HP**
Model No. : C2642A
Serial No. : SG69A196GV
FCC ID : B94C2642X
Power type : 220VAC, 50Hz
Power cord : Non-shielded, 2m long, no ferrite core
Data cable : Shielded, 1.84m long, no ferrite core

Camera : **SONY**
Model No. : DCR-TRV9
Serial No. : 99264
Power Type : 7.2VDC
Data cable : 4.5m long, Shielded, Metal hood, no ferrite core

USB Joystick : **Padix**
Model No. : QF-606U, QF-707U
Serial No. : N/A
FCC ID : N/A, Doc Approval
Power type : Powered by PC
Power Cable : Shielded, 1.5m long, no ferrite bead data cable

Chapter 2 Conducted emission test

Test condition and setup:

All the equipment is placed and setup according to the CISPR 22.

The EUT is assembled on a wooden table which is 80 cm high, is placed 40 cm from the back-wall which is a vertical conducting plane. One LISN is for EUT, the other LISN is for support equipment. They are all placed on the conductive ground. The EUT's LISN connect a line switch box for selecting L1 or L2, then connect to a preamplifier and spectrum.

The spectrum scans from 150KHz to 30MHz. Conducted emission levels are detected at max. peak mode. But if the max. peak mode failed or over average limit, it will be measured by average detection mode.

While testing, there is the worst-emission plot printed at peak detection mode, and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report.

List of test Instrument:

Instrument Name	Model No.	Brand	Serial No.	Calibration Date
				Last time
				Next time
Spectrum analyzer	8594EM	H P	3710A00279	01/07/99
	01/07/00			
LISN (EUT)	3825/2	EMCO	9411-2284	05/20/99
LISN (Support E.)	AC3-001	TRC	-----	05/20/99
Preamplifier	AC3-002	TRC	-----	05/20/99
Line switch box	AC3-003	TRC	-----	05/20/99

The level of confidence of 95% , the uncertainty of measurement of conducted emission is ± 2.4 dB.

Test Result: Pass (Appendix A)

Conducted Test Placement: (Photographs)



Chapter 3 Radiated emission test

Test condition and setup:

Pretest : Prior to the final test (OATS test) ,the EUT is placed in a shielded enclosure, and scan from 30MHz to 1GHz. This is done to ensure the radiation exactly emits from the EUT.

Final test: Final radiation measurements is made on a **10 - meter**, open-field test site. The EUT is placed on a nonconductive table which is 0.8 m height, the top surface is 1.0 x 1.5 meter. All the placement is according to CISPR 22.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The EMCO whole range Antenna is used to measure frequency from 30 MHz to 1GHz.The final test is used the spectrum analyzer.

Measure more than six top marked frequencies generated from pretest by computer step by step at each frequency. The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meters to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading. The spectrum analyzer's 6dB bandwidth is set to 120 KHz, and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the data will be rechecked by the tester and the corrected data will be written in the test data sheet. If the emission is just within the ambient , the data from shield room will be taken as the final data.

List of test Instrument:

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Calibration Date</u>	
Spectrum analyzer	8594EM	H P	3619A00198	11/17/98	11/17/99
RF Pre-selector	AC4-001	TRC	-----	05/20/99	05/20/00
Antenna (30M-1.5G Hz) VULB 9160		M.E.	3064	01/20/99	01/20/00
Open test side (Antenna, Amplify, cable calibrated together)				05/20/99	05/20/00

The level of confidence of 95%, the uncertainty of measurement of radiated emission is ± 4.96 dB.

Test Result: Pass (Appendix B)

Radiated Test Placement: (Photographs)



Appendix A**Conducted Emission Test Result:**

Testing room: Temperature : 23 ° C Humidity : 64 % RH

Line 1

Frequency (KHz)	READING AMPLITUDE			LIMIT		Margin (dB)
	Peak (dBmV/m)	Quasi-Peak (dBmV/m)	Average (dBmV/m)	Quasi-Peak (dBmV/m)	Average (dBmV/m)	
310.00	37.66	***.**	***.**	6143	51.43	-13.77
620.00	36.36	***.**	***.**	56.00	46.00	-9.64
769.00	35.16	***.**	***.**	56.00	46.00	-10.84
922.00	32.55	***.**	***.**	56.00	46.00	-13.45
1232.00	33.56	***.**	***.**	56.00	46.00	-12.44
1282.00	35.11	***.**	***.**	56.00	46.00	-10.89
1340.00	33.53	***.**	***.**	56.00	46.00	-12.47
1448.00	34.30	***.**	***.**	56.00	46.00	-11.70
1507.00	32.38	***.**	***.**	56.00	46.00	-13.62
2830.00	33.44	***.**	***.**	56.00	46.00	-12.56

Line 2

Frequency (KHz)	READING AMPLITUDE			LIMIT		Margin (dB)
	Peak (dBmV/m)	Quasi-Peak (dBmV/m)	Average (dBmV/m)	Quasi-Peak (dBmV/m)	Average (dBmV/m)	
461.00	35.08	***.**	***.**	57.11	47.11	-12.03
620.00	37.97	***.**	***.**	56.00	46.00	-8.03
769.00	35.89	***.**	***.**	56.00	46.00	-10.11
922.00	32.81	***.**	***.**	56.00	46.00	-13.19
1232.00	34.07	***.**	***.**	56.00	46.00	-11.93
1291.00	36.35	***.**	***.**	56.00	46.00	-9.65
1340.00	34.33	***.**	***.**	56.00	46.00	-11.67
1448.00	37.62	***.**	***.**	56.00	46.00	-8.38
1507.00	34.20	***.**	***.**	56.00	46.00	-11.80
2830.00	32.83	***.**	***.**	56.00	46.00	-13.17

* The reading amplitudes are all under average limit.

Appendix B

Radiated Emission Test Result: (Horizontal)

Test Conditions:

Testing room :	Temperature : 26 ° C	Humidity : 27 % RH
Testing site :	Temperature : 28 ° C	Humidity : 40 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	dB μ V	m	degree	dB/m	dB μ V/m	dB μ V/m	dB

147.470	41.66	4.01	233	-20.39	21.27	30.00	-8.73
196.630	51.03	4.01	65	-24.44	26.59	30.00	-3.41
589.840	47.79	0.99	337	-16.80	30.99	37.00	-6.01
594.000	40.99	0.99	118	-16.75	24.24	37.00	-12.76
702.040	41.31	0.99	59	-17.28	24.03	37.00	-12.97

Note:

1. Margin = Amplitude - limit, *if margin is minus means under limit.*
2. Corrected Amplitude = Reading Amplitude + Correction Factors
3. Correction factor = Antenna factor + (Cable Loss - Amplitude gain)

(For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

Radiated Emission Test Result: (Vertical)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	dB μ V	m	degree	dB/m	dB μ V/m	dB μ V/m	dB

147.480	45.68	0.99	196	-20.39	25.29	30.00	-4.71
196.640	46.78	2.52	298	-24.44	22.34	30.00	-7.66
213.020	38.87	2.52	81	-24.47	14.40	30.00	-15.60
216.010	38.97	2.53	291	-24.37	14.60	30.00	-15.40
221.010	35.97	0.99	130	-24.18	11.79	30.00	-18.21
245.790	45.85	0.99	16	-22.87	22.98	37.00	-14.02

Final statement:

This test report, measurements made by TRC are traceable to the NIST.