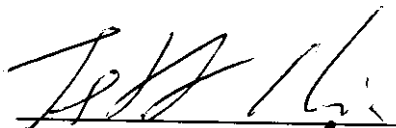
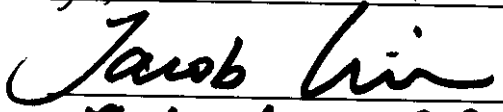


EXHIBIT B

Test Report

Report No.	U0615909
Specifications	FCC Part 15.109(g), Class B
Test Method	ANSI C63.4 1992
Applicant address	3F, No. 3, Lane 538, Chung Cheng RD., Hsin Tien, Taipei, Taiwan, R.O.C.
Applicant Items tested	Unixtar Technology, Inc. USB HUB
Model No.	UT-T71P (Sample # U06909)
Results	As detailed within this report
Sample received date	10/29/1998 (month / day / year)
Prepared by	 project engineer
Authorized by	 Vice General Manager (Jacob Lin)
Issue date	 (month / day / year)
Modifications	Appendix C
Tested by	Training Research Co., Ltd.
Office and Open site at	No. 15, Lane 530, Pa-Lian RD., Sec. 1, Hsi-Chih Town, Taipei Hsien, Taiwan, R.O.C.

Conditions of issue:

- (1) **This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.**
- (2) **This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.**

★ FCC ID: NUOUSBT71P

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Chapter 1 Introduction

Description of EUT:

The EUT is a Universal Serial Bus HUB, which is a USB cable concentrator and a bridge between PC USB host controller and USB devices. It has following features:

1. Compliant with Universal Serial Bus (USB) specification Rev1.0.
2. USB device bandwidth up to 12Mbps.
3. Two power source modes:
 - (1) Self-Power mode support seven downstream ports.
 - (2) Bus-Power mode support four downstream ports.
4. Support up to 127 devices.
5. Provide two fully compliant port at 1.5Mbps/12Mbps.
6. Supports Suspend and Resume operations.
7. Fully support of realtime dynamic insertion and removal of devices.

Connections of EUT:

- (1) Plug the adapter into the EUT from AC source.
- (2) Connect the upstream port of EUT to USB port of PC via A-to-B cable.
- (3) Plug five USB joysticks into five downstream ports of EUT.
- (1) The other downstream ports are plugged in two USB cables left unterminal.

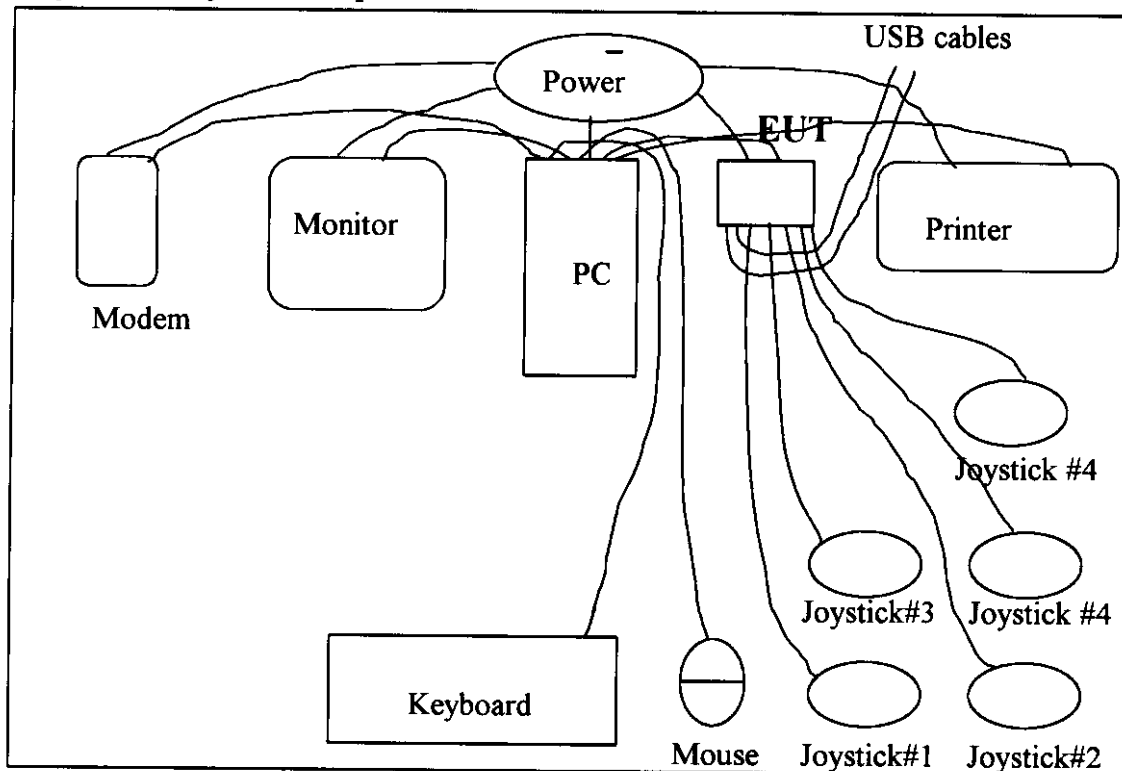
Test method:

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 "transmitting" and "receiving" mode simultaneously.

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
 - *Printer port --- a Printer
 - *Keyboard port --- a Keyboard
 - *Mouse port --- a Mouse
 - *USB port --- EUT
 - *Monitor port --- a monitor
- (Each port on PC is connected with suitable device)

EUT:

- *Upstream port --- shielded, 190cm length, with ferrite core
- *Downstream ports --- joystick: Non-shielded, 1m; The others: shielded, 1.2m
- *Power port --- non-shielded, 190cm

List of support equipment**Conducted (Radiated) test:****PC : HP**

Model : Brio 80xx (DoC Approval)

Serial No. : SG75150105

Power type : AC 110~120 / 220~240 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

Printer : HP

Model No. : C2642A

Serial No. : SG69A196GV

FCC ID : B94C2642X

Power type : 230VAC, 50Hz

Power cord : Non-shielded, 2m long, no ferrite core

Data cable : Shielded, 1.84m long ,no ferrite core (1.7m)

Modem : **ACEEX**
Model No. : XDM-9624
FCC ID : IFAXDM-9624
Power type : 230VAC, 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

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

Joystick : **Padix**
Model : QF-305U, QF-307U, QF-3U, QF-606U, QF-707U (DoC Approval)
Power Type : By PC

Chapter 2 Conducted emission test

Test condition and setup:

All the equipment is placed and setup according to the ANSI C63.4 - 1992.

The EUT is assembled on a wooden table that 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, it will be measured by CISPR's quasi-peak 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	8591A	H P	2919A00263	01/07/98	01/07/99
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/98	05/15/99
LISN (Support E.)	AC3-001	TRC	-----	05/15/98	05/15/99
Preamplifier	AC3-002	TRC	-----	05/15/98	05/15/99
Line switch box	AC3-003	TRC	-----	05/15/98	05/15/99

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

Test Result: Pass (Appendix A)

Chapter 3 Radiated emission test

Test condition and setup:

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

Final test: Final radiation measurements are made on a **3 - meter**, open-field test site. The EUT is placed on a nonconductive table that is 0.8m height, the top surface is 1.0 x 1.5 meter. The placement is according to ANSI C63.4 - 1992.

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 HP 8591EM.

Measure more than six top marked frequencies generated form 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 anechoic chamber will be taken as the final data.

List of test Instrument:

Instrument Name	Model No.	Brand	Serial No.	Calibration Date	
				Last	Next
Spectrum analyzer	8591EM	H P	3710A01203	10/22/97	12/22/98
RF Pre-selector	AC4-001	TRC	-----	05/15/98	05/15/99
Antenna (30M-2G Hz)	3141	EMCO	9711-1076	12/17/97	12/17/98
Open test side (Antenna, Amplify, cable calibrated together)				05/15/98	05/15/99

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

Test Result: Pass (Appendix B)

Appendix A**Conducted Emission Test Result:**

Testing room : Temperature : 24 ° C Humidity : 54 % RH

Line 1

Frequency (KHz)	Amplitude (dBuV)	Limit (dBuV/m)	Margin (dB)
411	34.63	48.54	-13.91
427	33.75	48.09	-14.34
628	32.89	46.00	-13.11
658	33.83	46.00	-12.17
688	33.31	46.00	-12.69
729	33.87	46.00	-12.13
749	33.64	46.00	-12.36
773	32.90	46.00	-13.10
793	31.48	46.00	-14.52
818	32.05	46.00	-13.95

Line 2

Frequency (KHz)	Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
641	34.38	46.00	-11.62
680	34.79	46.00	-11.21
705	35.55	46.00	-10.45
739	35.26	46.00	-10.74
788	34.79	46.00	-11.21
833	33.78	46.00	-12.22
4420	35.04	46.00	-10.96
4810	36.75	46.00	-9.25
4980	36.93	46.00	-9.07
5390	38.19	50.00	-11.81

* The reading amplitudes are all under average limit.

Appendix B**Radiated Emission Test Result: (Horizontal)**

Test Conditions:

Testing room : Temperature : 24 ° C Humidity : 75 % RH
 Testing site : Temperature : 27 ° C Humidity : 82 % RH

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

672.021	42.46	4.00	141	-15.51	26.95	37.00	-10.05
975.423	45.02	0.99	203	-16.23	28.79	37.00	-8.21

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	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB

47.990	44.69	0.99	217	-26.45	18.24	30.00	-11.76
65.050	49.69	0.99	17	-26.07	23.62	30.00	-6.38
96.040	51.07	0.99	11	-24.30	26.77	30.00	-3.23
119.970	49.63	2.49	5	-24.66	24.97	30.00	-5.03
144.010	50.00	0.99	8	-23.18	26.82	30.00	-3.18
156.610	39.46	0.99	93	-23.38	16.07	30.00	-13.93

Final statement:

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

Appendix C

Modification List:

1. There are two ferrite cores winded on the two ends of power cables at DC end of power adopter.
(Crown Ferrite Enterprise, CF-100(B)).

Statement of Applicant:

I acknowledge that the modifications made to the EUT for compliance during testing will be incorporated into mass production units.

Applicant : Unixtar Technology, Inc.

By : *Landy Lee* **LANDY LEE** **Date: FEB. 02, 1999**

Signature

Printed

Title: R&D Engineer