Report No.	G2815147T
Specifications Test Method	FCC Part 15, Class B ANSI C63.4 1992
Applicant address	2Fl., No. 101, Feenliau Street, Nei-Hu 114, Taipei, Taiwan
Applicant	GLOBLINK TECHNOLOGY INC.
Items tested Model No.	Free board 1B GL2000 (Sample # G28147T)
Results Date	**Compliance** (As detailed within this report) 03/20/2001 (month / day / year) (Sample received) 04/04/2001 (month / day / year) (Test)
Prepared by	Project Engineer
Authorized by	General Manager (Frank Tsai)
Issue date	*July 20, 2001* (month / day / year)
Modifications	**None**
Tested by	Training Research Co., Ltd.
Office at	2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan
Chamber at	2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan

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: OR7GL2000***

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Chapter 1 Introduction

Description of EUT:

EUT	**:**	Free bard 1B
Model No.	**:**	GL2000
FCC ID	**:**	OR7GL2000
Frequency Range	**:**	26.96 – 27.28 MHz
Power Type	**:**	Powered by two 1.5VDC batteries

This wireless keyboard use advanced transmission technology to allow comfortable use. However, occasionally outside sources may cause interference.

Test method:

All measurements contained in this report were performed according to the techniques described in Measurement procedure ANSI C63.4 – 1992.

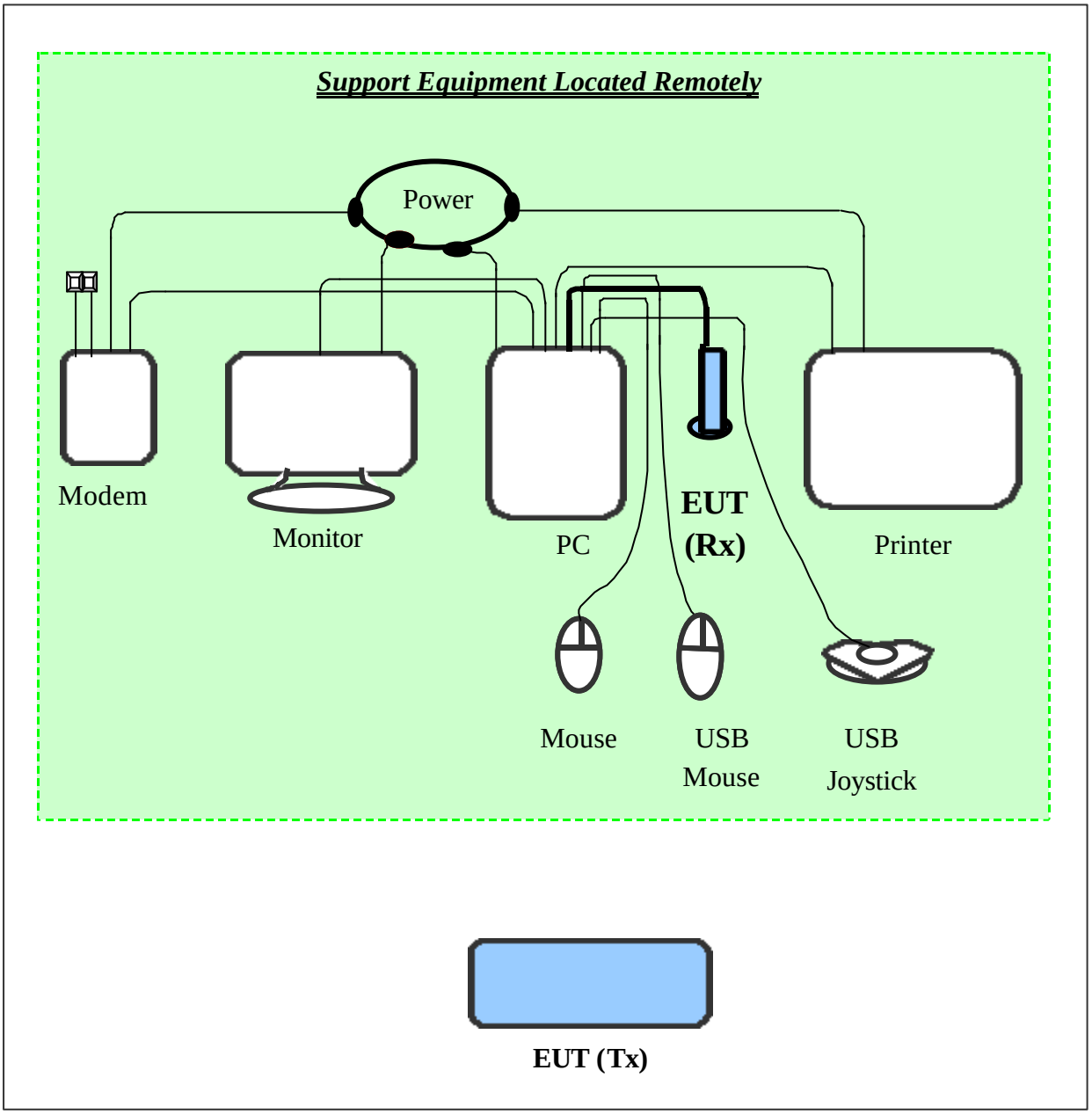
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

While testing, the EUT was made to transmit continuously and adjusted at a position, which transmitted the maximum emission.

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:

EUT:

Put two UM-3 AA size, 1.5V battery into the battery cell of EUT, powers the subject device. The EUT does not be connected with any product.

List of Support Equipment:

Conducted (Radiated) test:

PC	**:**	**HP Brio 85xx 6/350**
Model No.	:	D6928A
Serial No.	:	SG91801552
FCC ID	:	N/A, Doc Approved
檢磁	:	3872H013
Power type	:	100 ~ 230VAC / 50 ~ 60Hz, 5A, Switching
Power cord	:	Non-shielded, 2.33m long, Plastic, No ferrite core

Monitor	**:**	**HP 15' Color Monitor**
Model No.	:	D2827A
Serial No.	:	KR91379759
FCC ID	:	C5F7NFCMC1518X
檢磁	:	3872B039
Power type	:	100 ~ 240 VAC / 50 ~ 60 Hz, Switching
Power cord	:	Shielded, 1.80m long, No ferrite core
Data cable	:	Shielded, 1.50m long, with two ferrite cores

Rx	**:**	**GLOBLINK TECHNOLOGY INC.**
Model No.	:	GL2000
FCC ID	:	N/A, Doc Approved
Power type	:	Powered by PC
Data cable	:	Non-shielded, 1.40m long, no ferrite core

Printer	**:**	**HP**
Model No.	:	C2184A
Serial No.	:	SG55T1P1KY
FCC ID	:	N/A, Doc Approved
Power type	:	Linear
Power cord	:	Non-shielded, 1.90m long, No ferrite core
Data cable	:	Shielded, 1.8m long, No ferrite core

Modem	**:**	**ACEEX**
Model No.	:	XDM41414
Serial No.	:	964111217
FCC ID	:	IFAXDM1414
Power type	:	Linear
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

USB Mouse	**:**	**Logitech**
Model No.	:	M-BA47
Serial No.	:	LZE92250027
FCC ID	:	N/A, Doc Approved
檢磁	:	4872A220
Power type	:	Powered by PC
Power Cable	:	Shielded, 1.5m long, Plastic hoods, No ferrite bead

USB Joystick	**:**	**Padix**
Model No.	:	QF-305U
Serial No.	:	8100848
FCC ID	:	N/A, Doc Approval
Power type	:	Powered by PC
Power Cable	:	Shielded, 1.5m long, No ferrite bead data cable

Mouse	**:**	**HP**
Model No.	:	M-S34
Serial No.	:	LZB90910464
FCC ID	:	DZL211029
檢磁	:	4862A011
Power type	:	By PC
Power cord	:	Non-shielded, 1.88m long, No ferrite core

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, 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:

				Calibration Date	
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
EMI Receiver	8546A	H P	3520A00242	10/01/00	10/01/01
RF Filter Section	85460A	H P	3448A00217	10/01/00	10/01/01
LISN (EUT)	LISN-01	TRC	9912-03,04	12/09/00	12/09/01
LISN (Support E.)	LISN-01	TRC	9912-05	01/04/01	01/04/02
Switch/Control Unit (< 30MHz)	3488A	HP	N/A	11/20/00	11/20/01
Auto Switch Box (< 30MHz)	ASB-01	TRC	9904-01	11/20/00	11/20/01

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

Test Result: N/A

Chapter 3 Radiated Emission Test

Test Condition and Setup:

Pretest : Prior to the final test ,the EUT is placed in an anechoic chamber, and scan from 30MHz to 1GHz. The devices rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission relative to the limit. This is done to ensure the radiation exactly emits form the EUT.

Final test: Final radiation measurements is made on a **3 – meter** anechoic chamber.. The EUT's maximum emission of radiation is placed on a nonconductive table, which is 0.8m height, the top surface is 1.0 x 1.5 meter. All placement is according to ANSI C63.4 - 1992.

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

The whole range Antenna is used to measure frequency from 30 MHz to 2 GHz. The final test is used the spectrum analyzer.

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 tester will recheck the data 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:

				Calibration Date	
Instrument Name	Model No.	Brand	Serial No.	Last time	Next time
EMI Receiver	8546A	H P	3520A00242	10/01/00	10/01/01
RF Filter Section	85460A	H P	3448A00217	10/01/00	10/01/01
Bi-log Antenna	VULB 9160	M.E.	3064	07/13/01	07/13/02
Switch/Control Unit (> 30MHz)	3488A	HP	N/A	11/20/00	11/20/01
Auto Switch Box (> 30MHz)	ASB-01	TRC	9904-01	11/20/00	11/20/01
Anechoic Chamber (cable calibrated together)				05/20/01	05/20/02

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

Test Result : Pass (Appendix A)

Radiated Test Placement: (Photographs)

Appendix A

Radiated Emission Test Result: (Horizontal)

Test Conditions:

Testing room : Temperature : 26 ° C Humidity : 73 % RH

Testing site : Temperature : 31 ° C Humidity : 75 % RH

Frequency	**Reading Amplitude**	**Ant. Height**	**Table**	**Correction Factors**	**Corrected Amplitude**	**Class B Limit**	**Margin**
MHz	dBμV	m	degree	dB/m	dBμV/m	dBμV/m	dB
109.056	16.32	2.43	20	-13.28	29.60	43.50	-13.90
136.317	13.36	2.43	87	-14.75	28.11	43.50	-15.39
190.855	20.37	1.00	71	-12.79	33.16	43.50	-10.34
218.043	21.30	1.00	51	-15.19	36.49	46.00	-9.51
272.654	24.18	1.00	40	-15.54	39.72	46.00	-6.28
299.916	14.51	1.00	42	-16.57	31.08	46.00	-14.92
654.320	9.34	1.00	51	-24.58	33.92	46.00	-12.08
***							

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	dBμV	m	degree	dB/m	dBμV/m	dBμV/m	dB
81.726	0.63	1.00	101	-9.92	10.55	40.00	-29.45
136.317	6.62	2.43	83	-14.04	20.66	43.50	-22.84
190.855	12.85	2.43	0	-12.91	25.76	43.50	-17.74
218.043	10.00	2.43	114	-14.97	24.97	46.00	-21.03
272.654	7.17	1.00	120	-15.96	23.13	46.00	-22.87
299.916	1.66	1.00	142	-17.52	19.18	46.00	-26.82
***							

Radiated Emission Test Result:

Frequency: 27.000 MHz (CH 1)					
Antenna Polarity	**Reading Amplitude**	**Correction Factors**	**Corrected Amplitude**	**Limit**	**Margin**
H / V	dBμV	dB/m	dBμV/m	dBμV/m	dB
Horizontal	32.80	-25.23	58.03	80	-21.97

Horizontal > Vertical

Radiated Emission Test Result:

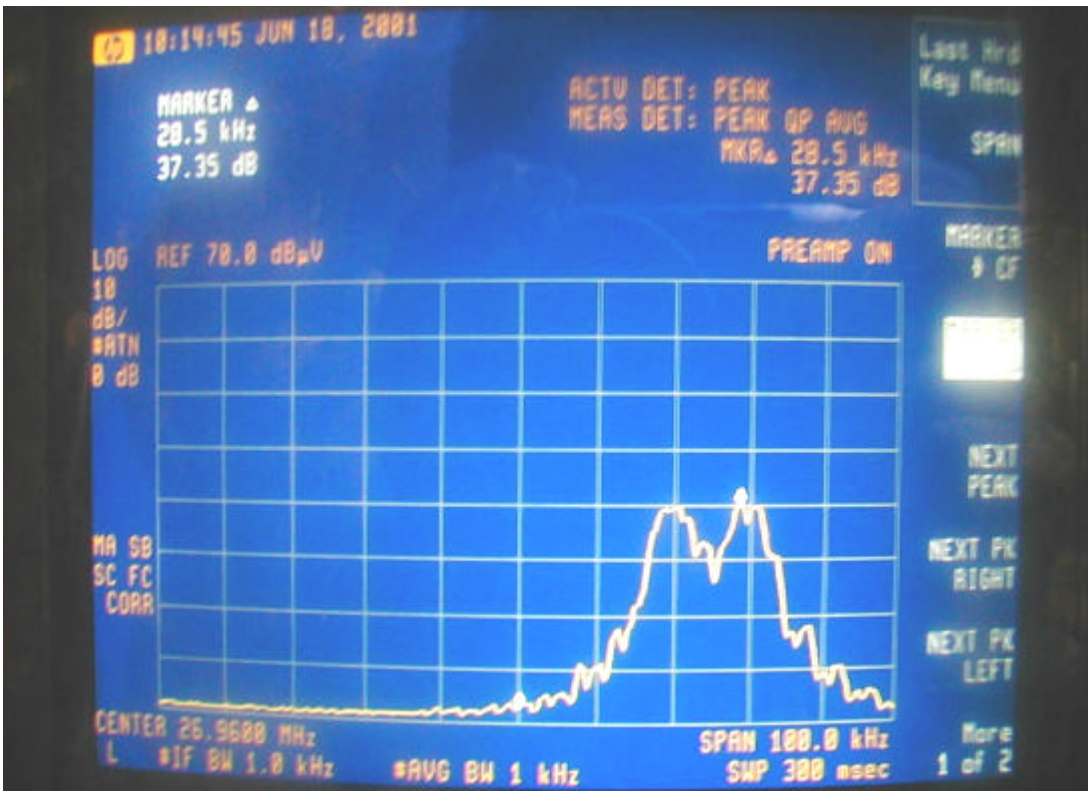
Frequency: 27.259 MHz (CH 6)					
Antenna Polarity	**Reading Amplitude**	**Correction Factors**	**Corrected Amplitude**	**Limit**	**Margin**
H / V	dBμV	dB/m	dBμV/m	dBμV/m	dB
Horizontal	33.40	-25.23	58.63	80	-21.37

Horizontal > Vertical

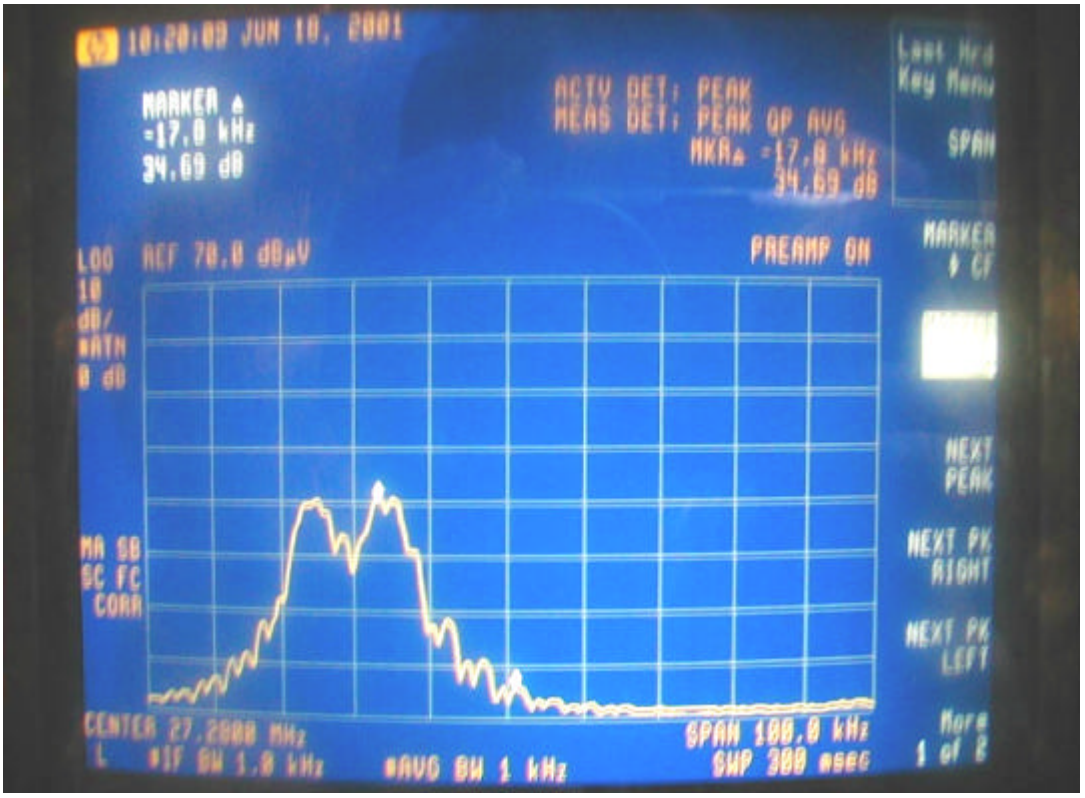
Appendix B

Band Edge of Measurement: (Frequency Band: 26.96 ~ 27.28)

Channel 1



Channel 6


10:20:09 JUN 10, 2001
MARKER
-17.0 kHz
34.69 dB
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR -17.0 kHz
34.69 dB
SPAN
REF 70.0 dBµV
PREAMP ON
MARKER
CF
NEXT PEAK
NEXT PK RIGHT
NEXT PK LEFT
More 1 of 2
CENTER 27.2000 MHz
#IF BW 1.0 kHz
#AVG BW 1 kHz
SPAN 100.0 kHz
SWP 300 msec