TEST REPORT

Per

FCC PART 15 SUBPART B TECHNICAL REQUIREMENT

GAME PROCESSOR

MODEL NAME: SIMCYCLE GAME BOX
MODEL NUMBER: 710XXX

FCC ID NUMBER: PWM01SCGAMEBOX1

Prepared For
REALBITZ.COM, INC.
1625 HIGHWAY 88
MINDEN; NV 89423
USA

Prepared By
Compliance Certification Services
561F Monterey Road
Morgan Hill CA 95037
USA

Report No :01U0919-1
Revision No:A
Date:9/28/01

Total number of pages: 32

REPORT REVISION HISTORY

Date	Revision	Page No

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ATTACHMENT

EUT Photographs
Proposed FCC ID Label
Schematic & Block Diagram
User's Manual

Verification Of Compliance

GENERAL INFORMATION	
Applicant	REALBITZ.COM, INC. 1625 HIGHWAY 88, MINDEN, NV 89423, USA
Manufacturer	REALBITZ

PRODUCT DESCRIPTION	
EUT Description	GAME PROCESSOR
Model Name	SIMCYCLE GAME BOX MODEL NUMBER: 710XXX
Product Family	N/A
Serial No	01

Technical Standard	*Class*	*Result*
FCC Part 15 Subpart B	B	Passed

MEASUREMENT FACILITIES	
Laboratory Name	Accreditation
Compliance Certification Services 561F Monterey Road, Morgan Hill CA 95037 USA TEL: (408)463-0885 FAX: (408)463-0888	NVLAP, NEMKO, VCCI, BSMI and Industry Canada

*This device has been shown to be in compliance with and was tested in accordance with the measurement procedures specified in the Standards & Specifications listed above and as indicated in the measurement report number :**01U0919-1***
This Verification of Compliance is hereby issued to the above named company and is only valid for the type of equipment which is identical mechanically and electronically with the unit tested under Compliance Certification Services' supervision.

Tested By: Hue Ly Vang – Associate EMC Engineer Signature Dated

Reviewed By: Thu Chan – Senior EMC Engineer Signature Dated

SECTION 1: LABORATORY INFORMATION

1.1 General Condition:

This report contains an assessment of an apparatus against Electromagnetic Interference Technical Requirements based upon tests carried out on the samples submitted.

With regard to this assessment, the following points should be noted:

a) The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties. ent reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section.

b) The apparatus was set up and exercised using the configurations, modes of operation and arrangements defined in this report only.

c) Where relevant, the apparatus was only assessed using the susceptibility criteria defined in this report .

d) All testing was performed under the following environmental conditions:

·	Temperature	15ºC to 35ºC (54°F to 95°F)
·	Atmospheric Pressure	860mbar to 1060mbar (25.4" to 31.3")
·	Humidity	10% to 75*%

1.2 Measurement Facilities

Compliance Certification Services
561F Monterey Road
Morgan Hill CA 95037
USA
Tel: (408)463-0885, Fax: (408)463-0888

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1.3 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	NVLAP*	FCC Part 15, CISPR 22, AS/NZS 3548,IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11, CNS 13438	NVLAP® 200065-0
USA	FCC	3/10 meter Open Area Test Sites to perform FCC Part 15/18 measurements	FC 1300
Japan	VCCI	CISPR 22 Two OATS and one conducted Site	VCCI R-1014, R-619, C-640
Norway	NEMKO	EN50081-1, EN50081-2, EN50082-1, EN50082-2, IEC61000-6-1, IEC61000-6-2, EN50083-2, EN50091-2, EN50130-4, EN55011, EN55013, EN55014-1, EN55104, EN55015, EN61547, EN55022, EN55024, EN61000-3-2, EN61000-3-3, EN60945, EN61326-1	N ELA 117
Norway	NEMKO	EN60601-1-2 and IEC 60601-1-2, the Collateral Standards for Electro-Medical Products. MDD, 93/42/EEC, AIMD 90/385/EEC	N ELA-171
Taiwan	BSMI	CNS 13438	SL2-IN-E-1012
Canada	Industry Canada	RSS210 Low Power Transmitter and Receiver	Canada IC2324 A,B,C, and F

*No part of this report may be used to claim or imply product endorsement by NVLAP or any agency of the US Government

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1.4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Radiated Emission	
30MHz – 200 MHz	+/- 3.3dB
200MHz – 1000MHz	+4.5/-2.9dB
1000MHz – 2000MHz	+4.6/-2.2dB
Power Line Conducted Emission	
150kHz – 30MHz	+/-2.9

Any results falling within the above values are deemed to be marginal.

1.5 Deviation from measurement specification

Not Applicable

1.6 Measurement Instrument Calibration

The measuring equipment which was utilized in performing the tests documented herein has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment which is traceable to recognized national standards.

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SECTION 2: PRODUCT INFORMATION

2.1 Product Description:

The EUT is a Eaton game box. The game box can be plugged into the PC MIDI/JOYSTICK game port. There are two ports on the game box. One is for the SimCycle and the other is for a joystick.

2.2 Power Requirements

DC	**Internal 5VDC**

2.3 Local Osc. Or Crystal:

Board Name	**Local Osc. / Crystal (MHz)**
Microcontroller	**4 MHz**

2.4 Serial Number

The serial number for the EUT is 01.

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SECTION 3. TEST SUMMARY

3.1 Applicable Electromagnetic Interference Requirements:

Radiated Emission Technical Requirements For Class B Device		
Frequency (MHz)	**FCC limits @ 3 meter Quasi-Peak/dBuV/m**	**Cisper 22 limits @10 meter Quasi-Peak/dBuV/m**
30 –88	40.0	30.0
88-216	43.5	30.0
216-230	46.0	30.0
230-960	46.0	37.0
960-1000	54.0	37.0
Above 1000	54.0	Not Applicable

Conducted Emission Technical Requirements For Class B Device			
Frequency Range	**FCC limits Quasi-Peak/dBuV**	**Cisper 22 limits Quasi-Peak/dBuV**	**Cisper 22 limits Average/dBuV**
450kHz-0.5 MHz	48	---	---
150kHz –0.5MHz	---	66-56	56-46
0.5MHz-5MHz	48	56	46
5MHz- 30MHz	48	60	50

3.2 Engineering Justification:

Not Applicable

3.3 Sample Received date and Test Period

Sample received date	**8/10/01**
Test Period	**From 8/13/01 To 8/13/01**

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SECTION 4 ELECTROMAGNETIC INTERFERENCE TEST

	Temperature	Humidity
Radiated Emission	22 ° C	71 %
Conducted Emission	20 ° C	69 %

Test Configuration:

Software Used During The Tests			
File Name	☐ EMCTEST	☐ Pinging	☐ Read & Write
	☐ Terminal	☐ Music	☐ Joy-Stick
	☒ Other:		
Program Sequence	1)config joystick, -y axis 2)config simcycle, +y axis 3)open game		

Mode of Operational Investigated:

Worse Case Emission Levels			
	Mode of Operation	Radiated Emission	Conducted Emission
1	Active	☒	☒
2		☐	☐
3		☐	☐

Frequency Range Investigated:

	From	To
Radiated Emissions	30MHz	1GHz
Conducted Emissions	450KHz	30MHz

Test Personnel

	Name	Signature
Radiated Emissions	Hue Ly Vang	
Conducted Emissions	Hue Ly Vang	

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Test Peripherals

TEST PERIPHERALS				
Device Type	**Manufacturer**	**Model Number**	**Serial Number**	**FCC ID**
PC	WYLE INT.	SR440BX	CCS# 01357	DoC
MONITOR	SAMSUNG	CSF9839	CCS # 01354	A3LCSF983
MOUSE	HP	M-S34	LZA83553892	DZL211029
KEYBOARD	HP	SK-2502	HR805273595	G4UR415
PRINTER	HP	2225C	2930S52614	DSI6XU2225
MODEM	ACEEX	1414	9013537	IFAXDM1414
JOYSTICK	GARVIS	10501	B9950001920	DoC
CYCLE	EATON	SIM CYCLE	29	N/A

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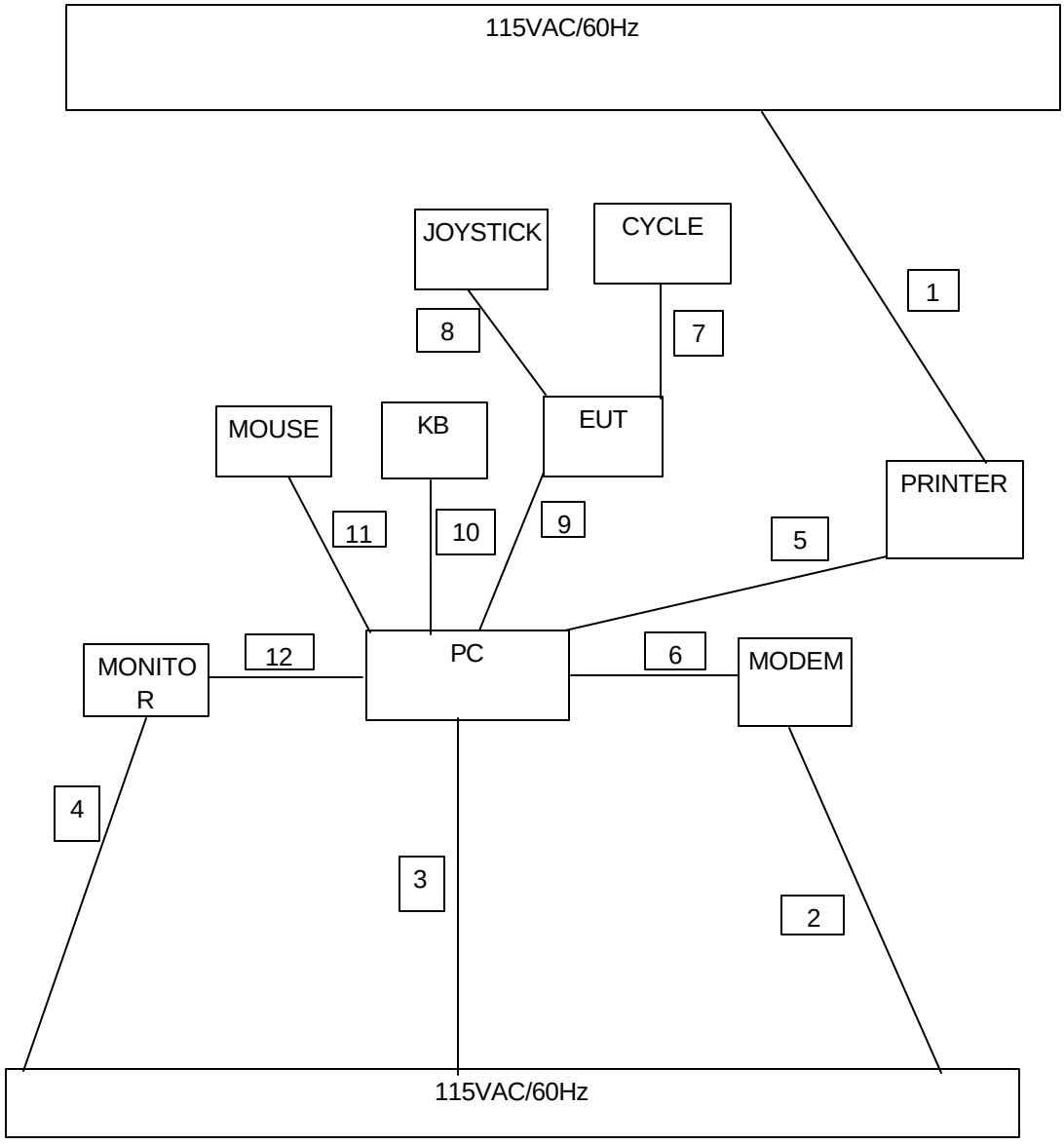
Test Configuration Diagram



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I/O Cable Configuration

TEST I / O CABLES								
Cable No	I/O Port	# of I/O Port	Connector Type	Type of Cable	Cable Length	Data Traffic	Bundled	Remark
1	AC	1	US 115V	Un-shielded	2m	No	No	N/A
2	AC	1	US 115V	Un-shielded	2m	No	No	N/A
3	AC	1	US 115V	Un-shielded	2m	No	No	YES, IN LC TEST
4	AC	1	US 115V	Un-shielded	2m	No	No	N/A
5	Parallel	1	DB25	Shielded	2m	Yes	No	N/A
6	Serial	1	DB9	Shielded	1m	Yes	Yes	N/A
7	Simcycle	1	DB15	Un-shielded	1m	Yes	No	N/A
8	Joystick	1	DB15	Un-shielded	1m	Yes	No	N/A
9	Joystick	1	BD15	Un-shielded	1m	Yes	No	N/A
10	KB	1	PS/2	Shielded	2m	Yes	No	N/A
11	Mouse	1	PS/2	Un-shielded	2m	Yes	No	N/A
12	Video	1	DB9	Un-shielded	2m	Yes	Yes	Torroid on both ends

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4.1 Radiated Emission Test Procedures

The EUT and all other support equipment were placed on a wooden table 80 cm above the ground screen. The antenna to EUT distance was 3 meters During the test, the table was rotated 360 degrees to maximize emissions and the antenna was positioned from 1 to 4 meters above the ground screen to further maximize emissions. Measurements were made with the antenna polarized in both the vertical and the horizontal positions.

The EUT test configuration was according to Section 8 of ANSI C63.4/1992.

The following procedure was used to make the measurements: The frequency range of interest was monitored at a fixed antenna height and EUT azimuth. The Frequency span was set small enough to easily differentiate between broadcast stations, intermittent ambient signals and EUT emissions. The EUT was rotated through 360 degrees to maximize emissions received. During the rotation if emission increased by more than 1 dB, or if another emission appeared that was greater by 1 dB, the EUT was returned to the azimuth where the maximum occurred, and additional cable manipulation was performed to further maximize received emissions.

The antenna was moved up and down to further maximize the suspected highest amplitude signal. If the emission increased by 1 dB or more, or if another emission appeared that was greater by 1dB or more, the antenna was returned to the height where maximum signal was observed, and, cables were manipulated to produce highest emissions, noting frequency and amplitude.

4.1.1 Instrument Setting

Frequency Range	Instrument	Detector Function	Resolution Bandwidth	Video Bandwidth
30 - 1000 MHz	EMI Receiver	Quasi-Peak	120kHz	N/A
30 – 1000 MHz	Spectrum Analyzer	Peak	100kHz	100kHz
Above 1000 MHz	Spectrum Analyzer	Peak	1 MHz	1 MHz

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4.1.2 Measurement Instrument Configuration

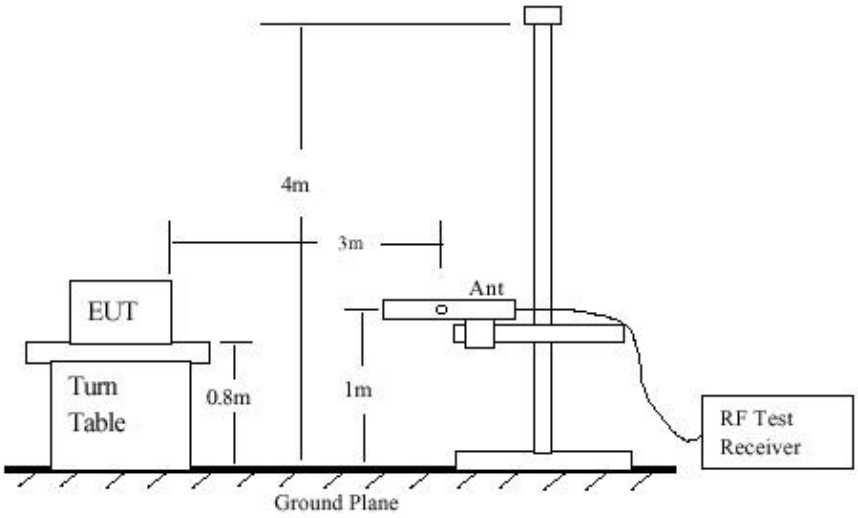

Fig 1: Radiated Emission Measurement 30 to 1000 MHz

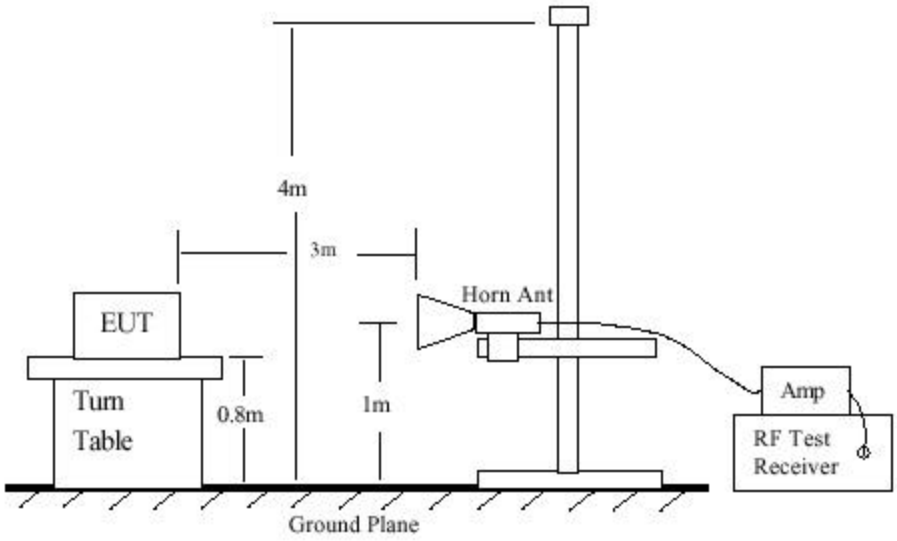

Fig 2: Radiated Emission Above 1000 MHz

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4.1.3 Measurement Equipment Used

TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Spectrum Analyzer	HP100Hz - 1.5GHz	8568B	2841A04227	1/18/02
Spectrum Display	HP	85662A	2810A15728	1/18/02
Quasi-Peak Detector	HP9K - 1GHz	85650A	2521A01038	1/18/02
Pre-Amplifier,25 dB	HP0.1 - 1300MHz	8447D (P8)	2944A06589	9/19/01
Antenna, Bilog	Chase 30 - 2000MHz	CBL6112B	2586	12/11/01
LISN	Fisher Cus. Comm.	LISN-50/250-25-	2023	8/5/02
EMI Test Receiver	Rohde & Schwarz	ESHS 20	827129/006	2/28/02

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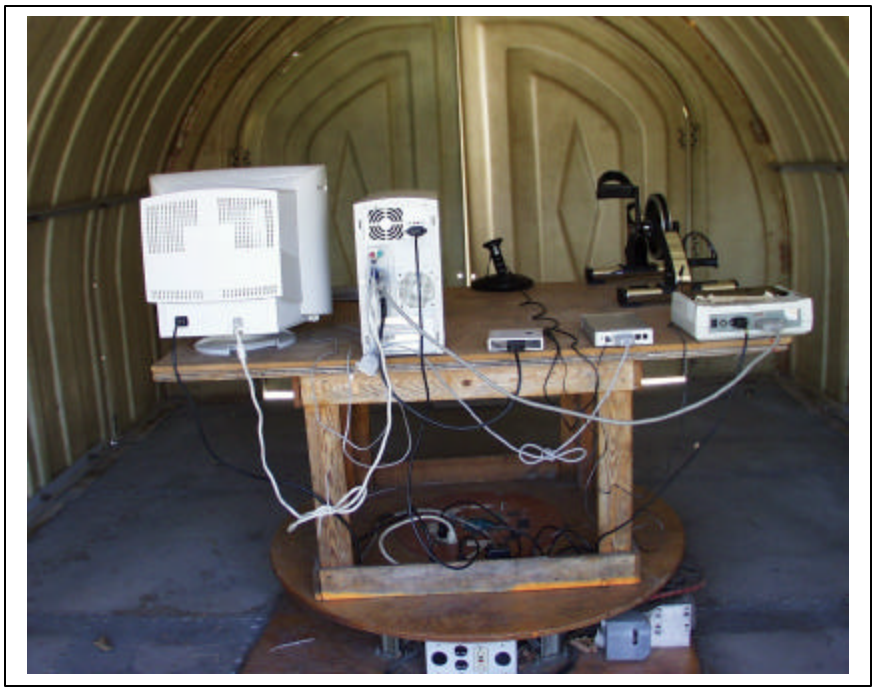
4.1.4 Radiated Emission Test Setup Photos



Radiated Emission Test Setup

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4.1.5 Radiated Emission Test Result

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FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

561F MONTEREY ROAD, SAN JOSE, CA 95037-9001
PHONE: (408) 463-0885 FAX: (408) 463-0888

Project #: 01U0919-1
Report #: 010813b
Date& Time: 08/13/01 10:11 AM
Test Engr: Hue Ly Vang

Company: Realbitz
EUT Description: Game Processor
Test Configuration : EUT/joystick/cyclepad/monitor/PC/mouse/KB/printer/modem
Type of Test: FCC Class B
Mode of Operation: Active

○ A-Site ◉ B-Site ○ C-Site ○ F-Site 6 Worst Data Descending

Freq. (MHz)	Reading (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Level (dBuV/m)	Limit FCC_B	Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)	Mark (P/Q/A)
240.00	47.00	11.96	3.62	28.70	33.88	46.00	-12.12	3mV	90.00	1.00	P
332.00	46.60	14.36	4.45	28.67	36.75	46.00	-9.25	3mV	90.00	1.00	P
336.00	50.00	14.47	4.48	28.69	40.27	46.00	-5.73	3mV	90.00	1.00	P
366.00	41.00	15.28	4.72	28.82	32.18	46.00	-13.82	3mV	180.00	1.00	P
450.00	43.00	17.00	5.39	29.16	36.23	46.00	-9.77	3mV	180.00	1.00	P
165.00	45.00	9.90	2.94	29.11	28.73	43.50	-14.77	3mH	90.00	1.00	P

Total data #: 6
V.2b

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4.2 Conducted Emission Test Procedures

The EUT was setup and located so that the distance between the boundary of the EUT and the closest surface to the LISN was 0.8m or more.

EUT test configuration was according to Section 7 of ANSI C63.4/1992.

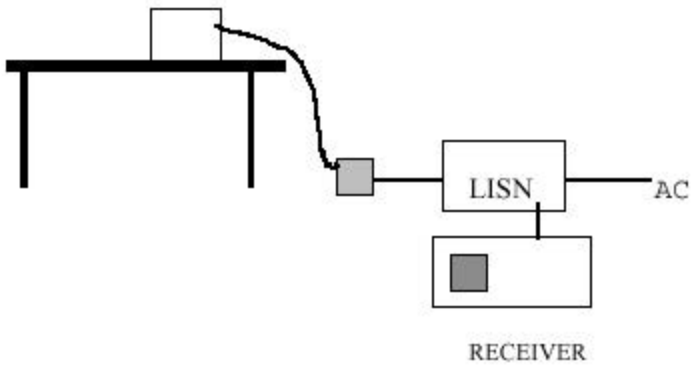
Conducted disturbance was measured between the phase lead and the ground, and between the neutral lead and the ground. The frequency 0.150 - 30 MHz was investigated.

The EMI receiver was set to PEAK detector setting, and swept continuously over the frequency range to be investigated. The resolution bandwidth was set to 9kHz minimum. The EMI receiver input cable was connected to LINE 1 RF measurement connection on the LISN. A 50ohm terminator was connected to the unused RF port on the LISN. For each mode of EUT operation, emissions readings were maximized by manipulating cable and wire positions. The configuration for each EUT power cord which produced emissions closest to the limit was recorded. The same procedure was repeated for LINE 2 of each EUT power cord.

4.2.1 Instrument Settings

Frequency Range	Peak	Quasi-Peak	Average
0.15 – 30 MHz	10 kHz	9 kHz	10 kHz

4.2.2 Measurement Instrument Configuration



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4.2.3 Measurement Equipment Used

TEST EQUIPMENTS LIST				
Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
Spectrum Analyzer	HP100Hz - 1.5GHz	8568B	2841A04227	1/18/02
Spectrum Display	HP	85662A	2810A15728	1/18/02
Quasi-Peak Detector	HP9K - 1GHz	85650A	2521A01038	1/18/02
Pre-Amplifier,25 dB	HP0.1 - 1300MHz	8447D (P8)	2944A06589	9/19/01
Antenna, Bilog	Chase 30 - 2000MHz	CBL6112B	2586	12/11/01
LISN	Fisher Cus. Comm.	LISN-50/250-25-	2023	8/5/02
EMI Test Receiver	Rohde & Schwarz	ESHS 20	827129/006	2/28/02

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4.2.4 Conducted Emission Test Setup Photos

Conducted Emission Test Setup

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4.2.5 Conducted Emission Test Result

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	FCC B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.59	42.68	--	--	0.00	48.00	--	-5.32	--	L1
0.68	42.88	--	--	0.00	48.00	--	-5.12	--	L1
1.19	40.66	--	--	0.00	48.00	--	-7.34	--	L1
0.59	41.82	--	--	0.00	48.00	--	-6.18	--	L2
0.67	41.74	--	--	0.00	48.00	--	-6.26	--	L2
1.18	41.01	--	--	0.00	48.00	--	-6.99	--	L2
6 Worst Data									

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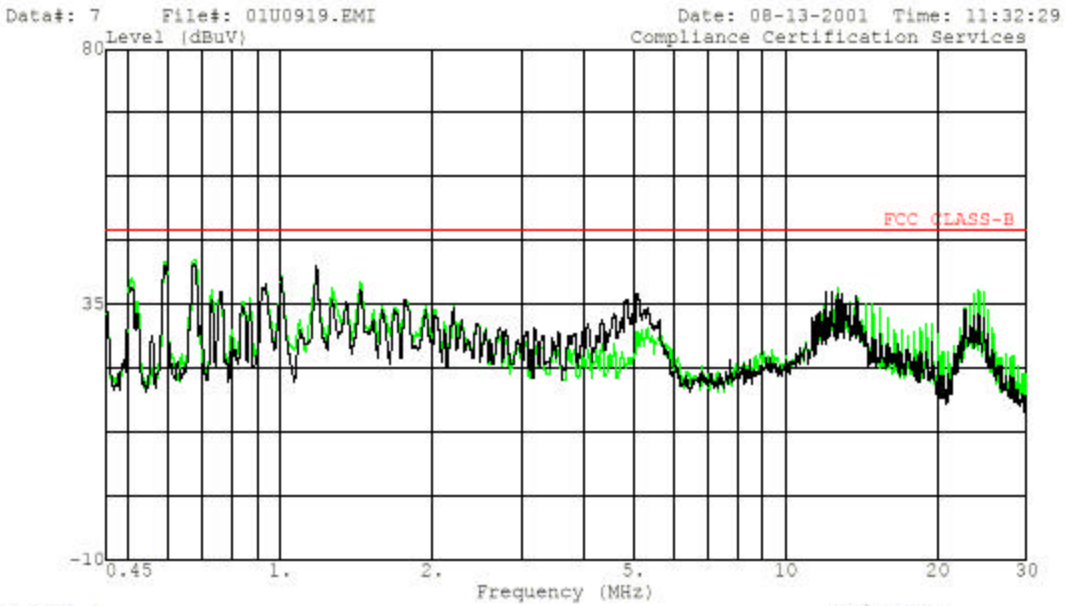
COMPLIANCE Engineering Services, Inc.
561 F Monterey Road, Route 2
Morgan Hill, CA 95037-9001 USA
Tel: (408) 463-0885
Fax: (408) 463-0888



Trace: 3 Ref Trace:

Project No.	: 01u0919-1
Report No.	: 010813
Test Engr	: HUE LY VANG
Company	: Realbitz
EUT Description	: Game Processor
Model	: 1
EUT Config.	: EUT/PC/joystick/cyclepad/monitor
	: mouse/KB/printer/modem
Type of Test	: FCC Class B
Mode of Operation	: AUTO
	: PEAK: L1(Green), L2(Black)
	: 115Vac,60Hz

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ATTACHMENT

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EUT PHOTOGRAPHS

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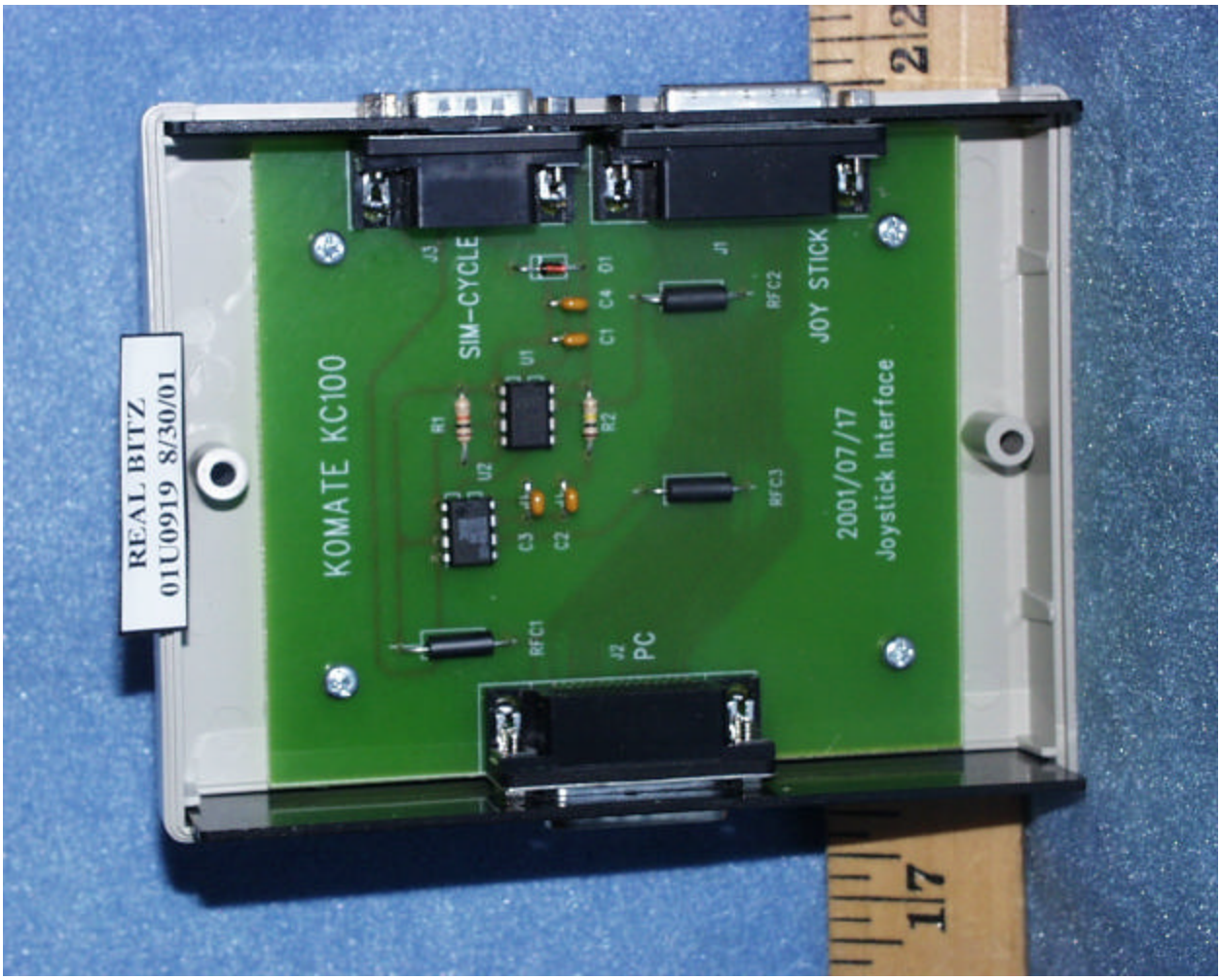

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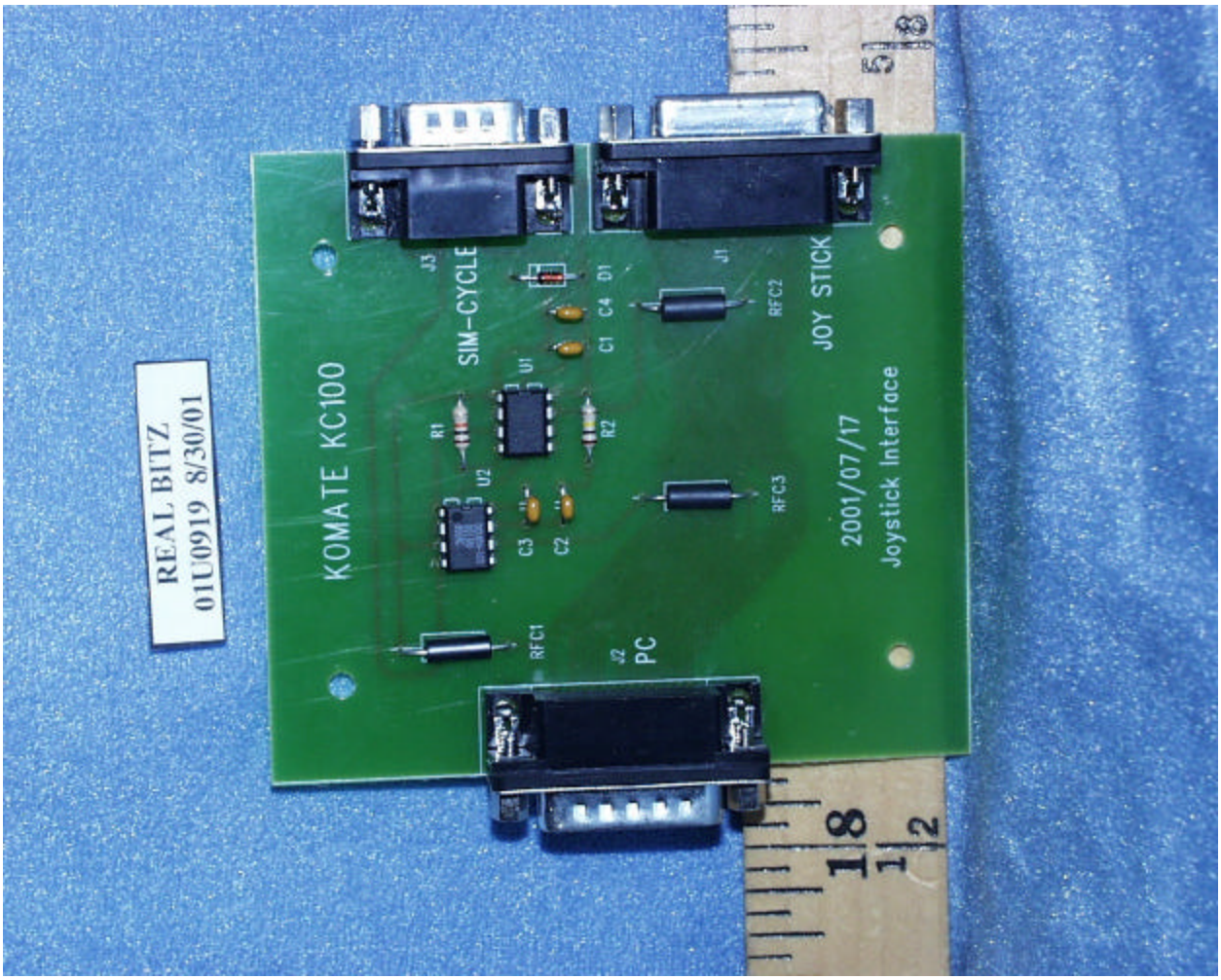

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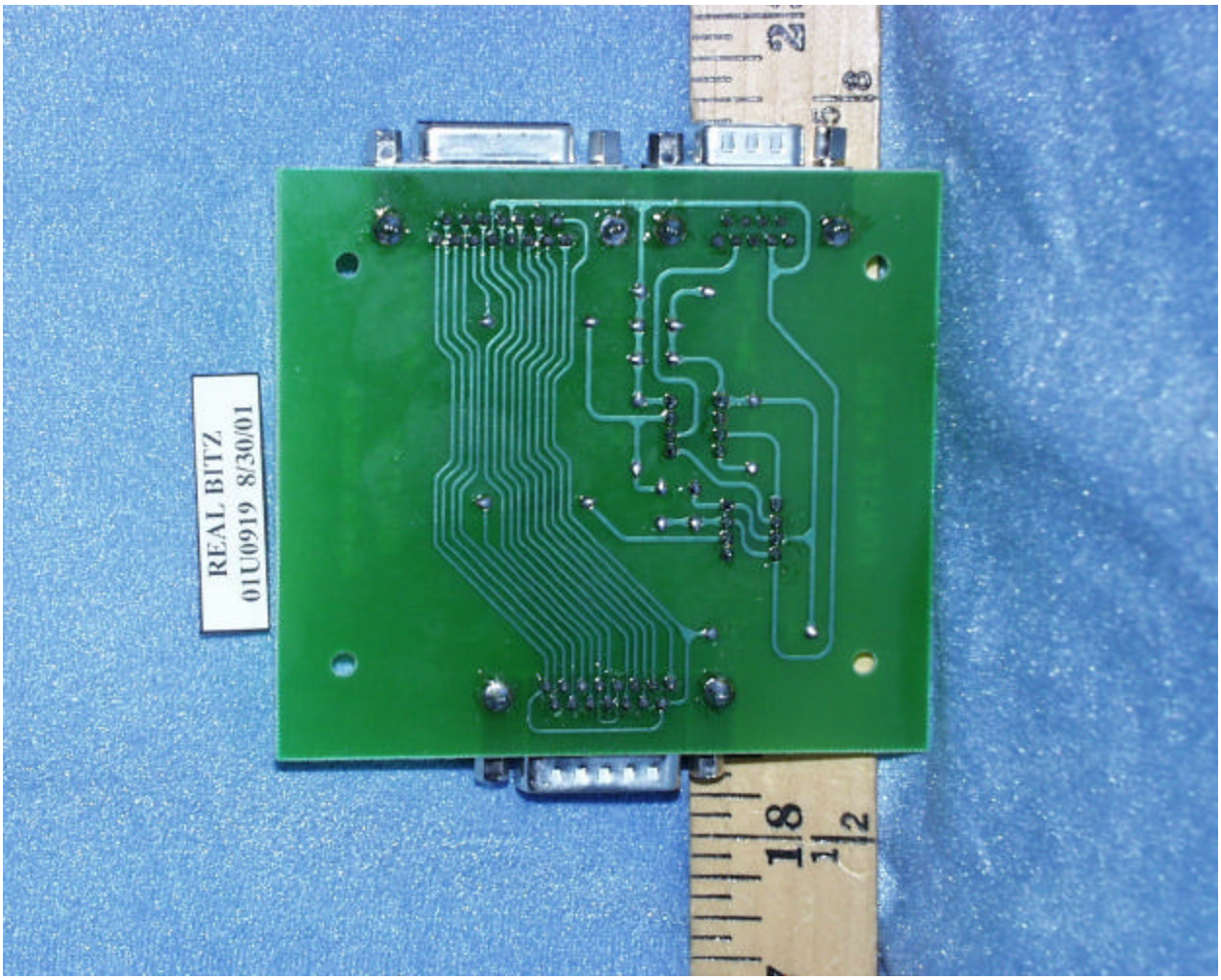

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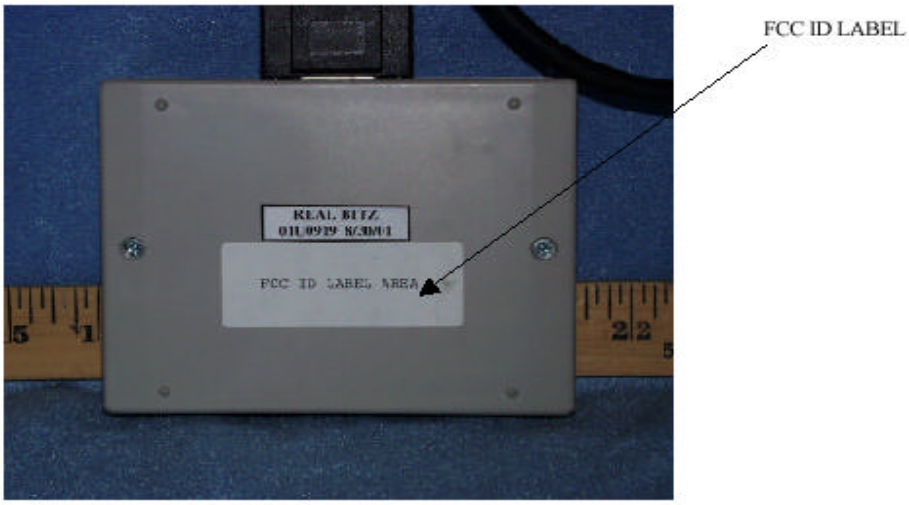
PROPOSED FCC ID LABEL AND LOCATION

REALBITZ.COM, INC

FCC ID: PWM01SCGAMEBOX1

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



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SCHEMATIC & BLOCK DIAGRAM

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USER'S MANUAL

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