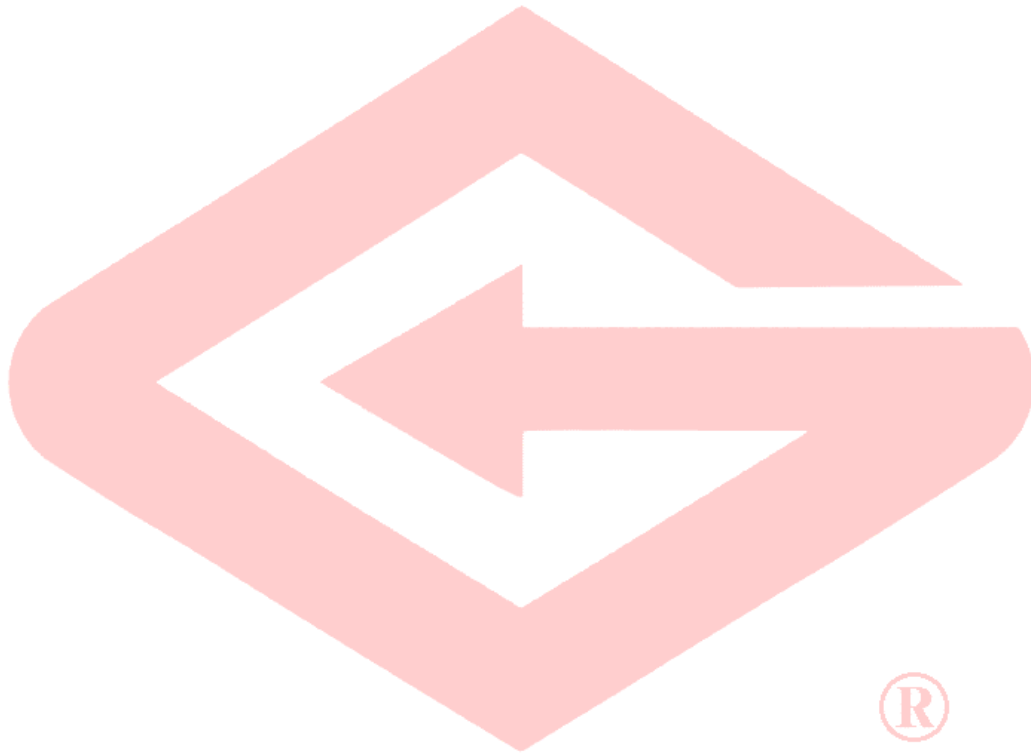




FCC TEST REPORT
for
Panasonic AKME-BC
900MHz Dual Force Controller
Model Controller Unit KX-CC2000H
Model Base Unit KX-CC2000B



EMC Measurement / Technical Report

FCC Test Specification : FCC Part 15, Subpart B - Class B (Verification)

Manufacturer : Panasonic AKME-BC

Equipment Under Test : 900MHz Dual Force Controller

Model Base Unit: KX-CC2000B

Model Controller Unit: KX-CC2000H

Test Report No. : 1503-3

Purchase Order No. : KC132

Document History

Revision	Issue Date	Affected Pages	Description of Modifications	Revised By	Approved By
N/C	September 19, 2000		Initial release		



EMC Measurement / Technical Report

Document No. FR1503-3

From

**Garwood Laboratories, Inc.
World Compliance Division**

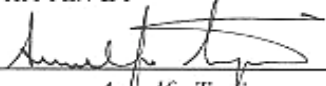
Test for

Panasonic AKME-BC

900MHz Dual Force Controller

Model Base Unit: KX-CC2000B

Model Controller Unit: KX-CC2000H

WRITTEN BY  <i>Arnulfo Tapia</i> EMC Sr. Technician	REVIEWED BY  <i>Lisa Anne Rodefeld</i> Quality Manager	REVIEWED BY  <i>Tien Vu</i> EMI Lab Manager
--	--	--

Test Personnel	Test Dates
Arnulfo Tapia – EMC Sr. Technician	August 15, 2000 & September 9, 2000

Test Facility Address City, State, Zip Code Phone Fax	Garwood Laboratories, Inc. 565 Porter Way Placentia, CA 92870 (714) 572-2027 (714) 572-2025
--	---

This report may be reproduced in full, partial reproduction may only be made with the written consent of the laboratory.
The results in this report apply only to the equipment tested.
This report may not be used to claim product endorsement by NVLAP or any agency of the U.S. government.



TABLE OF CONTENTS (This document contains a total of 23 pages [excluding] attachments.)

MEASUREMENT / TECHNICAL REPORT SUMMARY	4
1. GENERAL INFORMATION.....	5
1.1 Product Description.....	5
1.2 Related Submittal(s)/ Grant(s)	5
1.3 Tested System Description	5
1.4 Test Methodology.....	6
1.5 Test Facility.....	7
2. PRODUCT LABELING.....	8
2.1 FCC Compliance Label.....	8
2.2 Location of Label on EUT.....	8
2.3 Information to the User	9
3. SYSTEM TEST CONFIGURATION.....	10
3.1 Justification	10
3.2 EUT Exercise Software/Equipment.....	10
3.3 Special Accessories	10
3.4 Equipment Modifications	10
3.5 Configuration of Tested System	11
3.6 Details of Tested System.....	12
4. BLOCK DIAGRAM(S) OF EUT.....	13
5. TEST MEASUREMENT PHOTOS.....	14
6. TEST DATA.....	16
6.1 Conducted Emissions Limits	16
6.2 Summary Table for Highest Conducted Emissions Levels.....	16
6.3 Radiated Emissions Limits	18
6.4 Summary Table for Highest Radiated Emissions Levels.....	18
6.5 Field Strength Calculation.....	20
APPENDIX A - TEST EQUIPMENT USED	21
APPENDIX B - SUPPLEMENTAL TEST DATA	22
ATTACHMENTS	23



Garwood Laboratories, Inc. - World Compliance Division
Electromagnetic Compatibility

MEASUREMENT / TECHNICAL REPORT SUMMARY

Manufacturer Company Division Address City, State, Zip Country Contact Name Phone Fax	Panasonic AKME-BC Parque Industrial El Aguila Tijuana, B.C. 22580 Mexico Israel Sánchez 619-671-1940 Ext. 5427 619-671-1941
Type of Authorization	Verification
Applicable FCC Rules	PART 15 – RADIO FREQUENCY DEVICES Prepared in accordance with the requirements of FCC Rules and Regulations as listed in 47 CFR Ch.1 (10-1-98 Edition). The following subparts are applicable to the results in this test report: Part 15, Subpart B - Unintentional Radiators Paragraph 15.107 - Conducted limits Paragraph 15.109 - Radiated emission limits
Equipment Under Test	900MHz Dual Force Controller Model Base Unit: KX-CC2000B Model Controller Unit: KX-CC2000H
Summary of Data	The EUT complied with all the applicable FCC rules listed above.

Multiple Listing with the following Company

Company Address City, State, Zip Country Contact Name Phone Fax	Mad Catz, Inc. 11487 Woodside Avenue Santee, CA 92071 USA David Morelock (619) 258-6920 Ext 340 (619) 258-6929 900MHz Dual Force Controller Model Base Unit 8056B Model Controller Unit 8056H
--	--

EMC Test Laboratory Facility Address City, State, Zip Code Country Contact Name Title Phone Fax	Garwood Laboratories, Inc. World Compliance Division 565 Porter Way Placentia, CA 92870 USA Jason Armstrong General Manager (714) 572-2027 (714) 572-2025
--	---



1. GENERAL INFORMATION

1.1 Product Description

Equipment Under Test	900MHz Dual Force Controller
Model Number	Model Base Unit: KX-CC2000B Model Controller Unit: KX-CC2000H
Description	The 900MHz Dual Force Controller system is used as an accessory for the Sony Play Station I or Play Station II video game systems. The EUT consists of three units. The Base Unit Model KX-CC2000B that connects to the game controller port of the Play Station system, the Controller Unit Model KX-CC2000H, which is a wireless game controller and a Charge Dock which is used to charge the battery of the controller unit. The operating frequency band of the EUT is 913.0 – 917.6 MHz (4.6MHz). A total of 24-channels are used in this frequency band with channel spacing of 200kHz. The table below lists the channel and frequency assignments. The modulation technique used during transmission is digital FSK. The Base Unit derives its operating voltage from the controller port of the Play Station system. The Controller Unit derives its operating voltage from a 3.6VDC rechargeable Ni-Cd battery.
Clock Frequencies	Controller Unit Internal crystal frequencies – 4.0 MHz, 25.6MHz Base Unit Internal crystal frequencies – 12.0 MHz, 25.6MHz

The following tables list the channel and frequency assignments.

Channel	Frequency (MHz)
1	913.00
2	913.20
3	913.40
4	913.60
5	913.80
6	914.00
7	914.20
8	914.40
9	914.60
10	914.80
11	915.00
12	915.20

Channel	Frequency (MHz)
13	915.40
14	915.60
15	915.80
16	916.00
17	916.20
18	916.40
19	916.60
20	916.80
21	917.00
22	917.20
23	917.40
24	917.60

1.2 Related Submittal(s)/ Grant(s)

Peripherals tested with the EUT, if any, that contain FCC ID numbers can be located in the table in Section 3.6 of this report.



1.3 Tested System Description

The Tested System was configured with all typical peripherals (or terminations) and operated to generate the maximum emissions during the test. Refer to Section 3.5 and Section 3.6 for a list of the accessory/peripheral equipment used during testing of the EUT, if any, and cabling information.

1.4 Test Methodology

Conducted emissions tests were performed according to the general provisions of ANSI C63.4-1992 (American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz).

The Equipment Under Test (EUT) was set up in a shielded enclosure to perform the conducted emissions measurements in a typical installation configuration. The EUT was powered from the 50 μ H/50 Ω Line Impedance Stabilization Networks (LISN). The LISN's unused connections were terminated with a 50-ohm load. The amplitude level (dB μ V) of the emissions was maximized by varying the modes of operation of the EUT and its cables. The frequency range of 450 kHz to 30 MHz was measured with the receiver in peak detection. The peak measurements within 5 dB of the specification limits were re-measured with the receiver in either quasi-peak or average detection as required.

Radiated emissions tests were performed according to the general provisions of ANSI C63.4-1992 (American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz). Radiated emissions tests were performed at an antenna to EUT distance of 3 meters.

The preliminary radiated emissions scan was performed in the semi-ferrite and anechoic shielded enclosure at a distance of 3 meters. The amplitude level (dB μ V) of the emissions was maximized by varying the modes of operation of the EUT and its cables. The frequency range of 30 to 200 MHz was measured with a Biconical antenna, and a Log-Periodic antenna was used to measure the frequency range of 200 to 1000 MHz. The final radiated emissions test was performed at an EUT to receiving antenna distance of 3 meters in the Open Area Test Site. Rotating the turntable 360 degrees and varying the antenna height from 1 to 4 meters maximized the emissions. The frequency range of 30 to 1000 MHz was measured utilizing a BiLog antenna. Measurements were made in both vertical and horizontal antenna polarizations.



Garwood Laboratories, Inc. - World Compliance Division *Electromagnetic Compatibility*

1.5 TEST FACILITY

The Open Area Test Site (OATS) and measurement facilities used to collect the test data are located at Garwood Laboratories, Inc. World Compliance Division test facility in Placentia, CA. This facility has been fully described in a report submitted to the FCC and accepted in a letter dated 28 January 2000 (31040/SIT 1300F2) registration #90681.

The test facility is also recognized and accredited from following accreditation organizations:

NVLAP

Garwood Laboratories, Inc. is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST) for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. NVLAP Code: 200119-0, Effective through December 31, 2000.

FCC

This site has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Reference : 31040/SIT 1300F2, Registration #90681, January 28, 2000. With the above and NVLAP, Garwood Laboratories is an authorized test laboratory for the DoC process.

Technology International (I²T)

Garwood Laboratories, Inc. has been assessed in accordance with ISO Guide 25 and with ITI's assessment criteria. Based upon this assessment, Technology International (Europe), Ltd. Has granted approval for specifications implementing the EU Directive on EMC (89/336/EEC). The scope of the approval was provided on a Schedule of Assessment supplied with a certificate and is available upon request. Certificate #99-051, Dated: May 9, 2000.

ACA

Garwood Laboratories, Inc. can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation and the MRA (Mutual Recognition Agreement) between the US and Australia.

VCCI

Garwood Laboratories, Inc. has been accepted as a member to the VCCI. Our conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures. Registration C574, C575, C576, R561.

Industry Canada

Garwood Laboratories, Inc. is registered by Industry Canada for performance of measurements and complies with RSP 100. Reference IC 3298, Dated: March 11, 1999.

BSMI (Formerly known as BCIQ)

Garwood Laboratories, Inc. can perform testing for Taiwan to the CNS requirements. This is as a result of our NVLAP accreditation and the MRA (Mutual Recognition Agreement) between the US and Taiwan.

Nmi (Nederlands Meetinstituut)

Garwood Laboratories, Inc. has entered into a cooperative agreement with Nmi Certin B.V. of the Netherlands. There are a Notified Body for the RATTE Directive and Maritime Directive as well as a Competent Body for the EMC Directive.



2. PRODUCT LABELING

2.1 FCC Compliance Label

The manufacturer (or importer) is responsible for having the compliance label produced, and for having it affixed to each unit that is marketed or imported.

FCC Compliance Label:

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 including interference that may cause undesired operation.

2.2 Location of Label on EUT

As stated in §15.19, the label shall be located in a conspicuous location on the device. When the device is so small or for such use that it is not practicable to place the compliance label on it, the information required should be placed in a prominent location in the instruction manual or pamphlet supplied to the user. Alternatively, the label can be placed on the container in which the device is marketed.

2.3 Information to the User

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



3. SYSTEM TEST CONFIGURATION

3.1 Justification

The EUT was used in a system configured for testing in a typical fashion, as a customer would normally use it.

3.2 EUT Exercise Software/Equipment

The following operating mode was used during testing to exercise the functions of the EUT.

1. During testing, the EUT was continuously transmitting in half-duplex mode.

3.3 Special Accessories

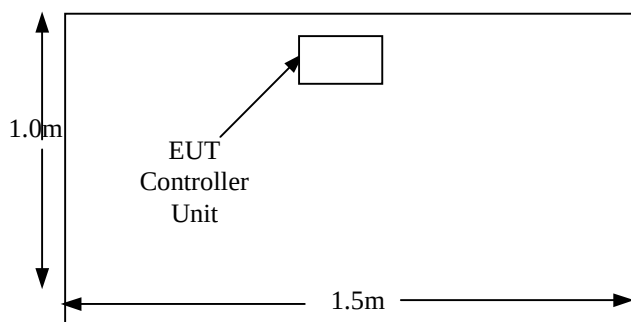
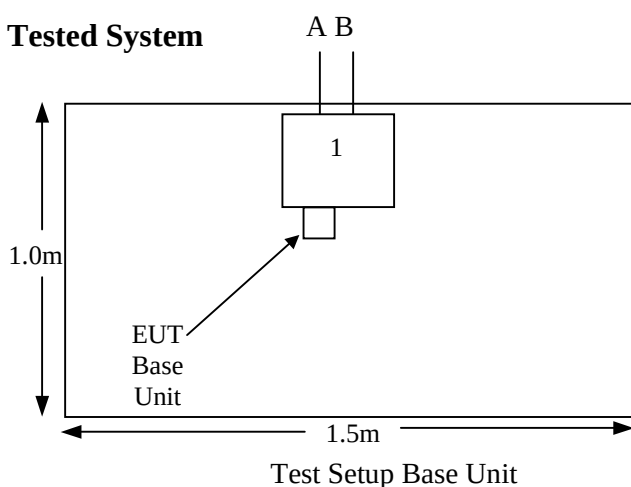
The EUT requires no special accessories to comply with the Class B limits.

3.4 Equipment Modifications

No modifications were made to achieve the required specification limit.



3.5 Configuration of Tested System



The Controller Unit was tested as a standalone system.

3.6 Details of Tested System

The following accessory/support equipment was used during testing of the EUT.

<i>Item No.</i>	<i>Manufacturer</i>	<i>Description</i>	<i>Identification Numbers</i>
1	Sony	Play Station System	Model No: Not Available Serial No.: Not Available

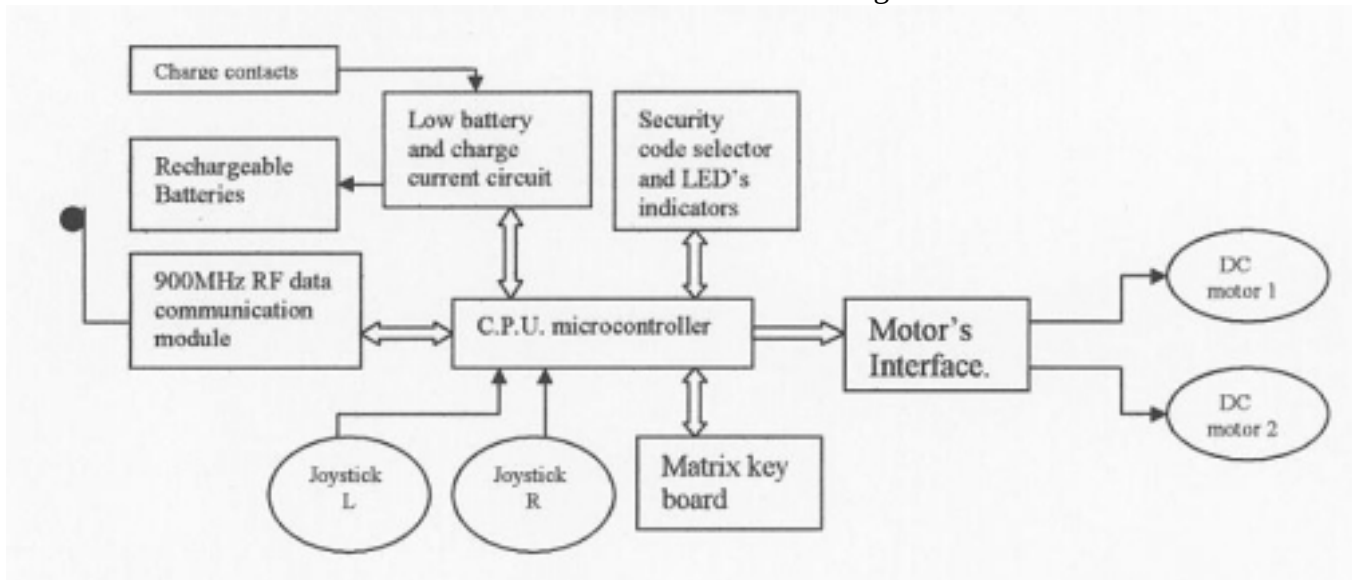
The following cables were used during testing of the EUT.

<i>Cabling of The Tested System</i>					
<i>Item No.</i>	<i>Description</i>	<i>Length (m)</i>	<i>Type Shielded-S Unshielded-US</i>	<i>Connected From</i>	<i>Connected To</i>
A	Two-wire Power Cord	1.2	US	Play Station	AC Power Source
B	Audio/Video RCA Cable	1.8	US	Play Station	Not Terminated

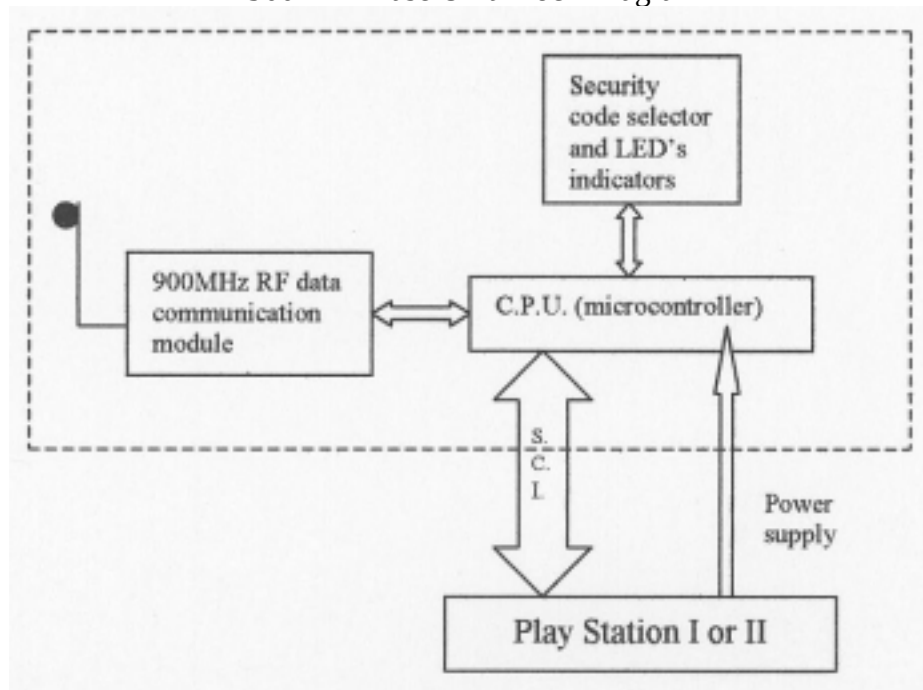


4. BLOCK DIAGRAM(S) OF EUT

900MHz Controller Unit Block Diagram



900MHz Base Unit Block Diagram





5. TEST MEASUREMENT PHOTOS



Photo: Conducted Emissions Base Unit (Front View)



Photo: Conducted Emissions Base Unit (Rear View)



Garwood Laboratories, Inc. - *World Compliance Division*
Electromagnetic Compatibility



Photo: Conducted Emissions Charge Dock/Controller Unit (Front View)



Photo: Conducted Emissions Charge Dock/Controller Unit (Rear View)



Garwood Laboratories, Inc. - *World Compliance Division*
Electromagnetic Compatibility



Photo: Radiated Emissions Base Unit (Front View)

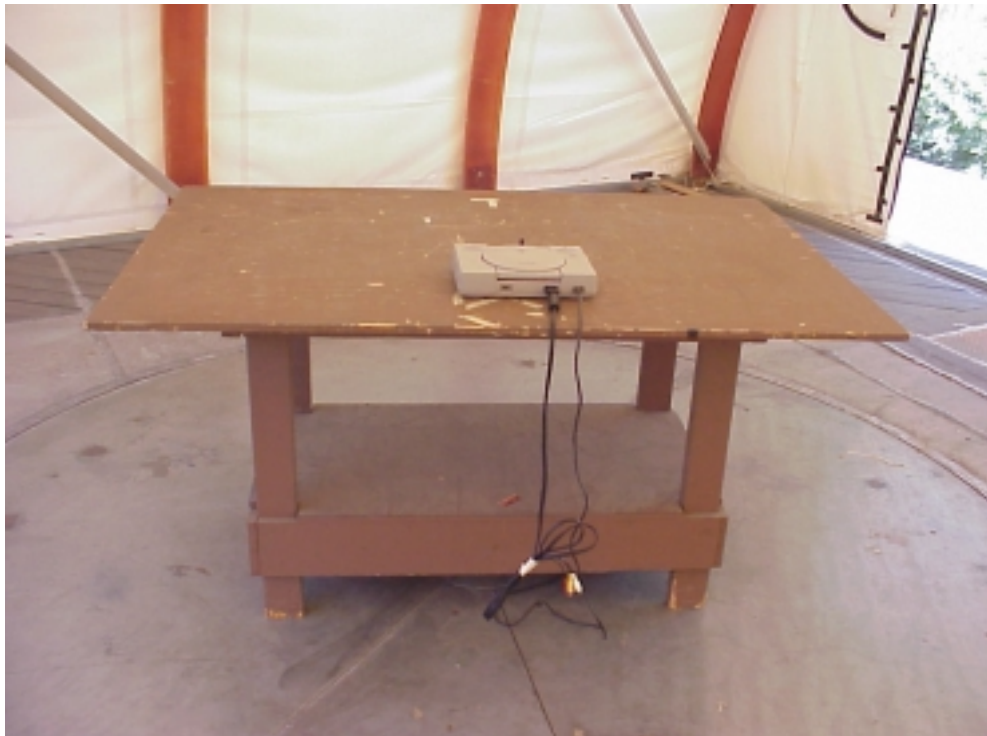


Photo: Radiated Emissions Base Unit (Rear View)



Garwood Laboratories, Inc. - *World Compliance Division*
Electromagnetic Compatibility



Photo: Radiated Emissions Charge Dock/Controller Unit (Front View)



Photo: Radiated Emissions Charge Dock/Controller Unit (Rear View)



6. TEST DATA

6.1 Conducted Emissions Limits

<i>FCC Part 15, Subpart B, Conducted Emissions Limits</i>	
<i>Frequency Range (MHz)</i>	<i>Class B Limit (dBμV)</i>
0.45 to 1.705	48
1.705 to 30.0	48

6.2 Summary Table for Highest Conducted Emissions Levels

The initial step in collecting data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the data page, and these signals are then quasi-peaked if necessary. Spectrum analyzer plots and additional tabulated data are included in Appendix B. The following data lists the significant emission frequencies and measured levels measured from the EUT.

Conducted Emission Test Results for the Base Unit Model KX-CC2000B

<i>Sensor Location</i>	<i>Frequency Band (MHz)</i>	<i>Measured* (dBμV)</i>	<i>Delta To Limit (dB)</i>
Line	0.4595	40.6	-7.4
	0.4812.	40.2	-7.8
	0.4673	39.3	-8.7
	0.4873	39.1	-8.9
	0.4977	38.8	-9.1
	0.5147	38.7	-9.3
Neutral	0.4557	40.2	-7.8
	0.4693	39.2	-8.6
	0.4812	38.9	-9.1
	0.4998	38.6	-9.4
	0.5367	38.5	-9.5
	0.5040	38.1	-9.6

- All readings are peak with specified CISPR bandwidth unless stated otherwise.

<i>Test Personnel:</i>
<i>Arnulfo Tapia – EMC Sr. Technician</i>



Summary Table for Highest Conducted Emission Levels – continued -

Conducted Emission Test Results for the Charge Dock with the Controller Unit Model KX-CC2000H

Sensor Location	Frequency Band (MHz)	Measured* (dBμV)	Delta To Limit (dB)
Line	28.17	23.4	-24.6
	20.14	16.3	-31.7
	26.23	14.5	-33.5
	22.18	13.0	-35.0
	16.12	11.5	-36.5
	24.22	10.8	-37.2
Neutral	20.14	23.0	-25.0
	28.17	22.8	-25.2
	5.15	19.2	-28.8
	16.12	18.6	-29.4
	22.18	16.8	-31.2
	18.13	14.7	-33.3

- All readings are peak with specified CISPR bandwidth unless stated otherwise.

Test Personnel:
Arnulfo Tapia – EMC Sr. Technician



6.3 Radiated Emissions Limits

<i>FCC Part 15, Subpart B, Class B Radiated Emissions Limits</i>	
<i>Frequency Range (MHz)</i>	<i>3 Meter Test Limit (dBμV)</i>
30 to 88	40.0
88 to 216	43.5
216 to 960	46.0
above 960	54.0

6.4 Summary Table for Highest Radiated Emissions Levels

The following table lists the significant emission frequencies, measured levels, correction factor (includes cable, preamplifier and antenna corrections), the corrected reading, plus the limit.

Radiated Emission Test Results for the Base Unit Model KX-CC2000B

Worst-Case Radiated Emissions from 30 – 1000MHz				
	Frequency (MHz)	Detection Mode	Corrected Reading (dBμV/m)	Delta to the 3m Limit (dB)
1.	862.198	Peak	40.9	-5.1
2.	902.714	Peak	40.8	-5.2
3.	948.295	Peak	37.7	-8.3
4.	67.749	Peak	31.3	-8.7
5.	846.658	Peak	36.7	-9.3
6.	836.602	Quasi-Peak	35.7	-10.3

- All readings are peak with specified CISPR bandwidth unless stated otherwise.

<i>Test Personnel:</i>
<i>Arnulfo Tapia - EMC Sr. Technician</i>



Summary Table for Highest Radiated Emissions Levels – continued –

Radiated Emission Test Results for the Charge Dock with the Controller Unit Model KX-CC2000H

Worst-Case Radiated Emissions from 30 – 1000MHz				
	Frequency (MHz)	Detection Mode	Corrected Reading (dBμV/m)	Delta to the 3m Limit (dB)
1.	52.366	Peak	30.7	-9.3
2.	42.297	Peak	29.5	-10.5
3.	50.352	Peak	29.5	-10.5
4.	48.337	Peak	28.3	-11.7
5.	53.366	Peak	23.9	-16.1
6.	54.376	Peak	23.5	-16.5

- All readings are peak with specified CISPR bandwidth unless stated otherwise.

<i>Test Personnel:</i>
<i>Arnulfo Tapia - EMC Sr. Technician</i>



6.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG$$

Where: FS = Field strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Attenuation Factor

AG = Amplifier gain

Example:

Assume a receiver reading of 52.5 dB μ V is obtained. The Antenna Factor of 7.4 and a Cable Factor of 1.1 is added. The Amplifier Gain of 29 dB is subtracted, giving a field strength of 32 dB μ V/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dB}\mu\text{V/m}$$



APPENDIX A - TEST EQUIPMENT USED

The absolute performance calibration of equipment requiring calibration is performed on an as needed basis in accordance with MIL-STD 45662A. However, calibration periods do not exceed one (1) year. The test equipment is capable of making measurements within tolerances of at least +/- 2dB amplitude and +/- 2% frequency deviation. Equipment certifications showing traceability to NIST (National Institute of Standards and Technology) are maintained on file at Garwood Laboratories, Inc. Placentia, CA. All equipment is checked and verified for proper operation before and after each series of tests.

A.1 Specific Equipment Used

<i>Test</i>	<i>Instrument</i>	<i>MFG / Model No.</i>	<i>Asset No.</i>	<i>CAL. Due Date</i>
Conducted Emission Test				
	EMI Receiver System	Hewlett Packard	System 1	02/25/01
	RF Coax Cable	Pasternack / RG 223	20170	03/05/01
	Line Impedance Stabilization Network	ISCI/3PH-20A	20071	03/16/01
Radiated Emission Test				
	EMI Receiver System	Hewlett Packard	System 3	02/25/01
	RF Coax Cable	Times Microwave / LMR 600	20180	03/05/01
	BiLog Antenna	Chase / CBL6111A	20062	07/09/01
	Pre-Amplifier	ISCI / RFPA/Z FL-2000	20007	02/24/01



APPENDIX B – SUPPLEMENTAL TEST DATA

<i>Test Type</i>	<i>Basic Standard</i>	<i>Details</i>	<i>Data Format</i>	<i>Page No.</i>
Conducted Emissions	FCC Pt.15 Class B	Base Unit Line	Plotted	B1
		Base Unit Neutral	Plotted	B1
		Charge Dock/Controller Unit Line	Plotted	B2
		Charge Dock/Controller Unit Neutral	Plotted	B2
Radiated Emissions		Base Unit	Tabulated	B3
		Charge Dock/Controller Unit	Tabulated	B4

hp

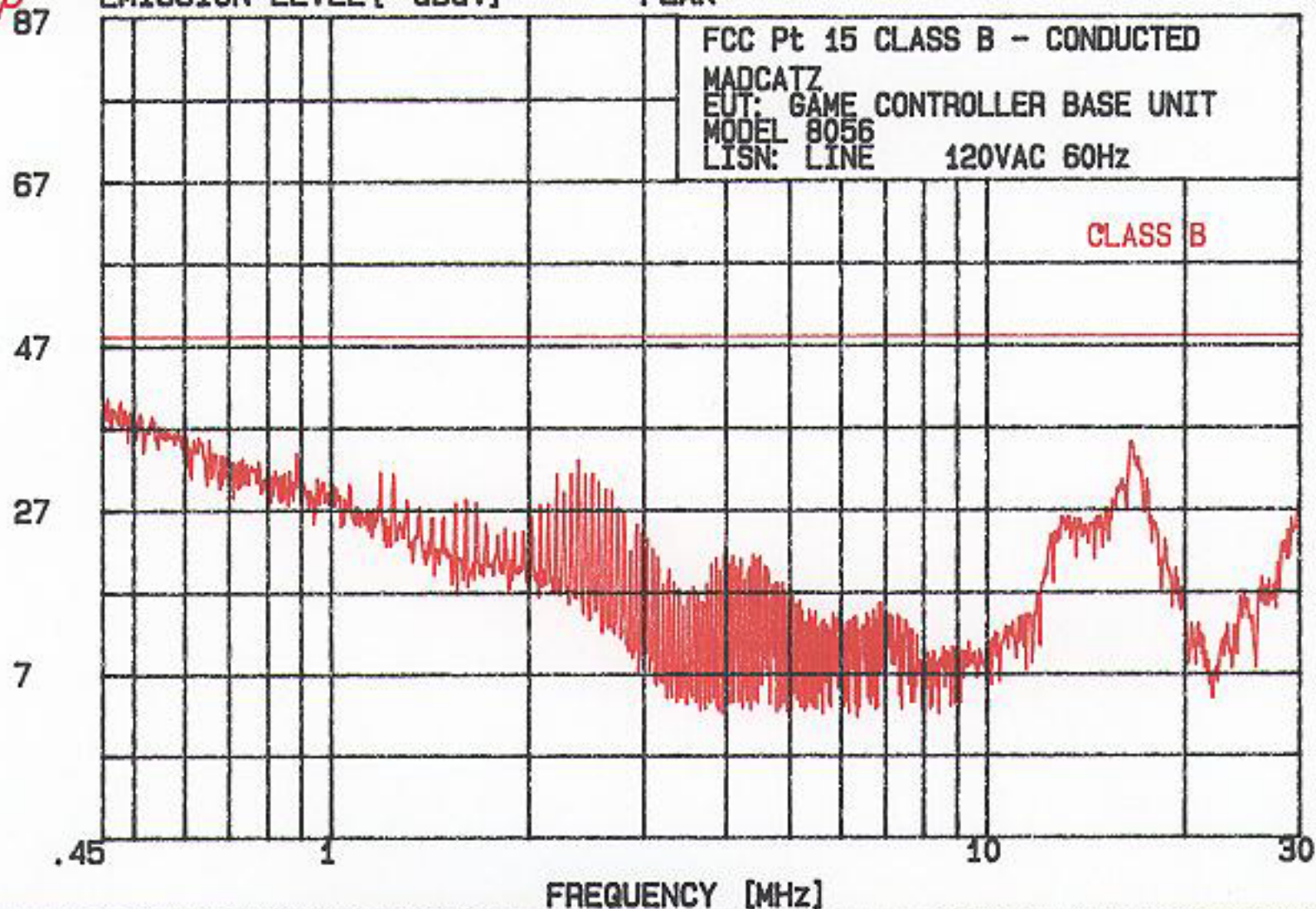
GARWOOD LABORATORIES INC.
EMISSION LEVEL [dBuV]

PEAK

8 Sep 2000 14:02:52

1

FCC Pt 15 CLASS B - CONDUCTED
MADCATZ
EUT: GAME CONTROLLER BASE UNIT
MODEL 8056
LISN: LINE 120VAC 60Hz



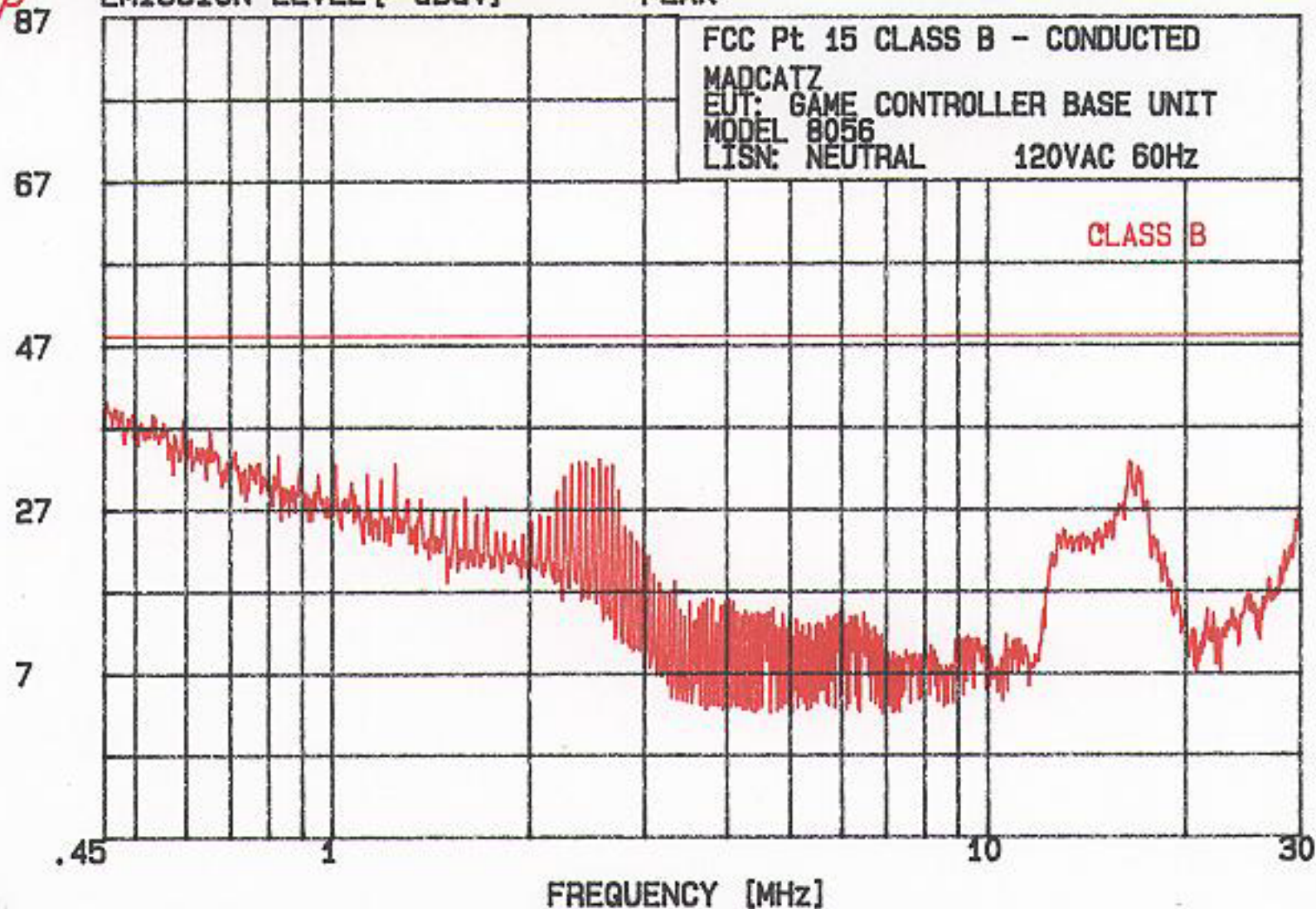
hp

GARWOOD LABORATORIES INC.
EMISSION LEVEL [dBuV]

PEAK

8 Sep 2000 14:20:56

FCC Pt 15 CLASS B - CONDUCTED
MADCATZ
EUT: GAME CONTROLLER BASE UNIT
MODEL 8056
LISN: NEUTRAL 120VAC 60Hz



hp
87

GARWOOD LABORATORIES INC.
EMISSION LEVEL [dBuV]

PEAK

17 Aug 2000 08:36:51

2

FCC Pt 15 - CONDUCTED
PANASONIC
CRADLE UNIT (CHARGER) FOR
900MHz DUAL FORCE CONTROLLER
LISN: LINE 120VAC 60Hz

CLASS B

67

47

27

7

.45

1

10

30

FREQUENCY [MHz]

hp
87

GARWOOD LABORATORIES INC.
EMISSION LEVEL [dBuV]

PEAK

17 Aug 2000 09:01:23

FCC Pt 15 - CONDUCTED
PANASONIC
CRADLE UNIT (CHARGER) FOR
900MHz DUAL FORCE CONTROLLER
LISN: NEUTRAL 120VAC 60Hz

CLASS B

67

47

27

7

.45

1

10

30

FREQUENCY [MHz]

GARWOOD LABORATORIES INC.
EMI TEST DATA

3

DATE: 8 SEPTEMBER 2000 TEST NO.:
TITLE OF TEST: FCC PT.15 CLASS B
CUSTOMER: MADCATZ
EUT DESCRIPTION: WIRELESS GAME CONTROLLER = BASE UNIT
MODEL NO.: SERIAL NO.:
TEST MODE: PLAYSTATION ON, BASE UNIT TRANSMITTING 913.4MHz
SENSOR LOCATION: 3 METERS SENSOR POL.: VERT AND HORZ
FREQUENCY RANGE: 30 - 1000MHz
TEST PERFORMED BY: A. TAPIA TEMP. 89.9FHUM. 25%
TEST RESULTS: COMPLIED
TEST CONDITIONS: 47uH INDUCTOR WAS ADDED IN SERIES WITH THE ANTENNA

PRODUCT EMISSIONS

FCC PT.15 CLASS B @ 3 METERS Data File: FINAL

No	EMISSION	SPEC	MEASUREMENTS			SITE			CORR	COMMENTS
	FREQUENCY MHz	LIMIT dBuV/m	ABS	ΔLIM	MODE	POL	HGT cm	AZM deg	FACTOR dB	
1	51.704	40.0	24.4	-15.6	PK	V	95	1	-15.1	
2	61.234	40.0	23.6	-16.4	PK	V	95	1	-17.1	
3	64.990	40.0	25.9	-14.1	PK	V	95	1	-17.	
4	67.749	40.0	31.3	-8.7	PK	V	95	1	-16.9	
5	73.611	40.0	23.4	-16.6	PK	V	95	1	-16.1	
6	135.444	43.5	28.9	-14.6	PK	V	95	1	-9.8	
7	169.304	43.5	26.1	-17.4	PK	V	95	1	-11.	
8	207.413	43.5	18.0	-25.5	PK	V	95	1	-11.7	
9	237.037	46.0	23.9	-22.1	PK	V	95	1	-10.8	
10	241.276	46.0	19.7	-26.3	PK	V	95	1	-10.8	
11	254.035	46.0	21.9	-24.1	PK	V	95	1	-10.4	
12	271.16	46.0	29.9	-16.1	PK	V	95	1	-8.9	
13	279.442	46.0	24.9	-21.1	PK	V	95	1	-8.2	
14	296.33	46.0	23.3	-22.7	PK	V	95	1	-7.1	
15	304.795	46.0	31.2	-14.8	PK	V	95	1	-6.8	
16	321.752	46.0	27.5	-18.5	PK	H	95	1	-6.4	
17	372.562	46.0	35.2	-10.8	PK	H	95	1	-4.8	
18	474.164	46.0	31.4	-14.6	PK	V	95	1	-1.7	
19	836.602	46.0	35.7	-10.3	QP	H	95	1	5.3	
20	846.658	46.0	36.7	-9.3	PK	H	95	1	5.1	
21	862.198	46.0	40.9	-5.1	PK	H	95	1	5.6	
22	902.714	46.0	40.8	-5.2	PK	H	95	1	6.5	
23	948.295	46.0	37.7	-8.3	PK	V	95	1	7.1	
24	964.647	54.0	42.5	-11.5	PK	H	95	1	7.4	

GARWOOD LABORATORIES INC.

EMI TEST DATA

DATE: 17 AUGUST 2000

TEST NO.:

TITLE OF TEST: FCC PT.15 CLASS B - RADIATED EMISSIONS

CUSTOMER: PANASONIC

EUT DESCRIPTION: 900MHZ DUAL FORCE CONTROLLER & CRADLE UNIT (CHARGER)

MODEL NO.:

SERIAL NO.:

TEST MODE: CONTROLLER WAS CHARGING

SENSOR LOCATION: 3 METERS

SENSOR POL.: VERTICAL & HORIZONTAL

FREQUENCY RANGE: 30 - 1000MHZ

TEST PERFORMED BY: A. TAPIA

TEMP. 86 F HUM. 10%

TEST RESULTS: COMPLIED

TEST CONDITIONS: TESTED AT 120VAC 60Hz

PRODUCT EMISSIONS

FCC PT.15 CLASS B @ 3m

Data File: FINAL CHARGER AND CONTROLLER

No	EMISSION	SPEC LIMIT	MEASUREMENTS			SITE			CORR FACTOR	COMMENTS
	FREQUENCY MHz		ABS	dLIM	MODE	POL	HGT cm	AZM deg		
				dB					dB	
1	42.297	40.0	29.5	-10.5	PK	V	95	1	-10.6	
2	48.337	40.0	28.3	-11.7	PK	V	95	1	-13.7	
3	50.352	40.0	29.5	-10.5	PK	V	95	1	-14.8	
4	52.366	40.0	30.7	-9.3	PK	V	95	1	-15.3	
5	53.366	40.0	23.9	-16.1	PK	V	95	1	-15.5	
6	54.376	40.0	23.5	-16.5	PK	V	95	1	-15.8	



ATTACHMENTS

INDEX OF ATTACHMENTS

<i>Description of Contents</i>	<i>Page No.</i>
No Attachments	-