



EMI TEST REPORT

Test Report No. : 24CE0254-HO-1

Applicant : Sony Corporation
Type of Equipment : Handheld Computer Organizer Set
Model No. : CSK-003/U
Test standard : FCC Part 15 Subpart C
Section 15.207, Section 15.247
FCC ID : AK8CSK003
Test Result : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.
5. This test report does not constitute an endorsement by NIST/NVLAP or U.S. Government.

Date of test : December 03, 05, 06 and 07, 2003

Tested by :

Hiroka Umeyama
EMC Service

Approved by :

Hironobu Shimoji
Group Leader of EMC Service

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

CONTENTS	PAGE
SECTION 1: Client information	3
SECTION 2: Equipment under test (E.U.T.).....	3
SECTION 3: Test specification, procedures & results	5
SECTION 4: Operation of E.U.T. during testing.....	7
SECTION 5: Conducted Emission, Section 15.207	9
SECTION 6: 6dB Bandwidth, Section 15.247(a)(2)	9
SECTION 7: Maximum Peak Output Power, Section 15.247(b)(3)	9
SECTION 8: Out of Band Emission, Section 15.247 (c)	10
SECTION 9: Peak Power Density, Section 15.247 (c).....	10
APPENDIX 1: Photographs of test setup.....	11
Conducted Emission	11
Worst Case Position (X-axis:Horizontal / Z-axis:Vertical).....	12
Spurious Emission (Radiated)	13
APPENDIX 2:Test instruments	14
APPENDIX 3: Data of EMI test.....	15
Conducted Emission	15
6dB Bandwidth (Conducted)	20
Maximum Peak OutPut Power (Conducted).....	22
Out of Band Emission : Radiated Emission	23
Out of Band Emission : Restricted Band Edges (Conducted).....	35
Power Density (Conducted)	36
99 % Occupied Bandwidth	38

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

SECTION 1: Client information

Company Name : Sony Corporation
Brand name : SONY
Address : 6-7-35, Kitashinagawa, Shinagawa-ku, Tokyo, 141-0001 Japan
Telephone Number : +81-3-5795-8716
Facsimile Number : +81-3-5795-8981
Contact Person : Takumi Ozawa

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : Handheld Computer Organizer Set
Model No. : CSK-003/U
Serial No. : 299(Spurious emission (Radiated) and Conducted emission)
304(Except for Spurious emission (Radiated) and Conducted emission)
Country of Manufacture : JAPAN
Rating : DC 5.2V/1A, AC100 - 240V/0.26A
Internal Battery 3.9V (3.7 - 4.2V)
Receipt Date of Sample : December 03, 2003
Condition of EUT : Engineering prototype

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

2.2 Product Description

Sony Corporation, Model No: CSK-003/U is the Handheld Computer Organizer Set.

The intended use is to connect to the Internet and to access the homepages and to exchange mails via Internet access point.

OS: Palm OS ver. 5.2
CPU: Sony CXD2230 123MHz
Memory 32MB (Flash ROM), 32MB (SDRAM)
Display TFT color LCD with backlight 320x480 dots, 65536 colors
USB, IrDA Memory Stick Slot, Bluetooth, Wireless LAN
IEEE802.11b.

Equipment Type	:	Transceiver
Frequency band	:	Lower limit: 2400MHz Upper limit: 2483.5MHz
Type of modulation	:	DSSS
Bandwidth & Channel spacing	:	50MHz & 5MHz
Channel number	:	11
Duty Cycle	:	50%
Mode of Operation	:	Simplex
Frequency of operation	:	2412-2462MHz
Intermediate frequency	:	No IF because this equipment employs direct conversion
Other Clock Frequency	:	CPU:122.88MHz, 96MHz Camera: 24MHz Memory Stick: 38.4MHz/19.2MHz Audio: 22.5792MHz
Antenna Type	:	Chip antenna
Antenna Gain	:	2.14dBi
Antenna connector Type	:	SWD
Method of Frequency Generation	:	Synthesizer
ITU code	:	G1D
Operating voltage	:	DC3.7V – 4.2V (internal battery), DC5.2V(AC adaptor)
Temperature of operation	:	5 deg. C. to +35 deg. C.
Power & Signal Cable Length	:	≤ 3m

FCC 15.31 (e)

This EUT provides stable voltage(DC5.2V or DC3.9V) constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

*FCC Part 15.203 Antenna requirement

Since the antenna used is a type of chip component and is permanently mounted by soldering on a printed circuit board in EUT, it is impossible for end users to replace it without assistance of professionals. Therefore, the equipment complies with the requirement of 15.203.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

3.2 Procedures and results

[IEEE802.11b]

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	Conducted Emission	ANSI C63.4:2001	Section 15.207	-	N/A	15.9dB 0.1611MHz (N)	Complied
2	6dB Bandwidth	ANSI C63.4:2001	Section 15.247(a)(2)	Conducted	N/A	-	Complied
3	Maximum Peak Output Power	ANSI C63.4:2001	Section 15.247(b)(3)	Conducted	N/A	-	Complied
4	Out of Band Emission	ANSI C63.4:2001	Section 15.247 (c)	Conducted/ Radiated	N/A	1.2dB 245.75MHz Horizontal	Complied
5	Restricted Band Edges	ANSI C63.4:2001	Section 15.247 (c)	Conducted	N/A	-	Complied
6	Power Density	ANSI C63.4:2001	Section 15.247 (d)	Conducted	N/A	-	Complied

*These tests were also referred to "Guidance on Measurement for Digital Transmission Systems Section15.247."

3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS210(issue 5) + Amendment	RSS210(issue 5) + Amendment	Conducted	N/A	N/A	N/A

3.4 Confirmation

UL Apex Co., Ltd. hereby confirms that E.U.T., in the configuration tested, complies with the specifications FCC Part 15 Subpart C Section 15.207 and 15.247.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

3.5 Uncertainty

Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is $\pm 1.3\text{dB}$.
The data listed in this test report has enough margin.

Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is $\pm 4.5\text{dB}(3\text{m})$.
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is $\pm 5.2\text{dB}(3\text{m})$.
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is $\pm 6.6\text{dB}$.
The result is within Head Office EMC lab's uncertainty.

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is $\pm 3.0\text{dB}$.
The data listed in this test report has enough margin.

3.6 Test Location

UL Apex Co., Ltd. Head Office EMC Lab.

No.1 semi anechoic chamber.

No.2 semi anechoic chamber.

No.3 Measurement room.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

No.1 semi anechoic chamber has been fully described in a report submitted to FCC office, and listed on February 01, 2002. (Registration number: No.1:313583 Industry Canada: No.1: IC4247)

No.2 semi anechoic chamber has been fully described in a report submitted to FCC office, and listed on June 05, 2002. (Registration number: No.2:846015 Industry Canada: No.2: IC4247-2)

*NVLAP Lab. code: 200572-0

3.7 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

SECTION 4: Operation of E.U.T. during testing

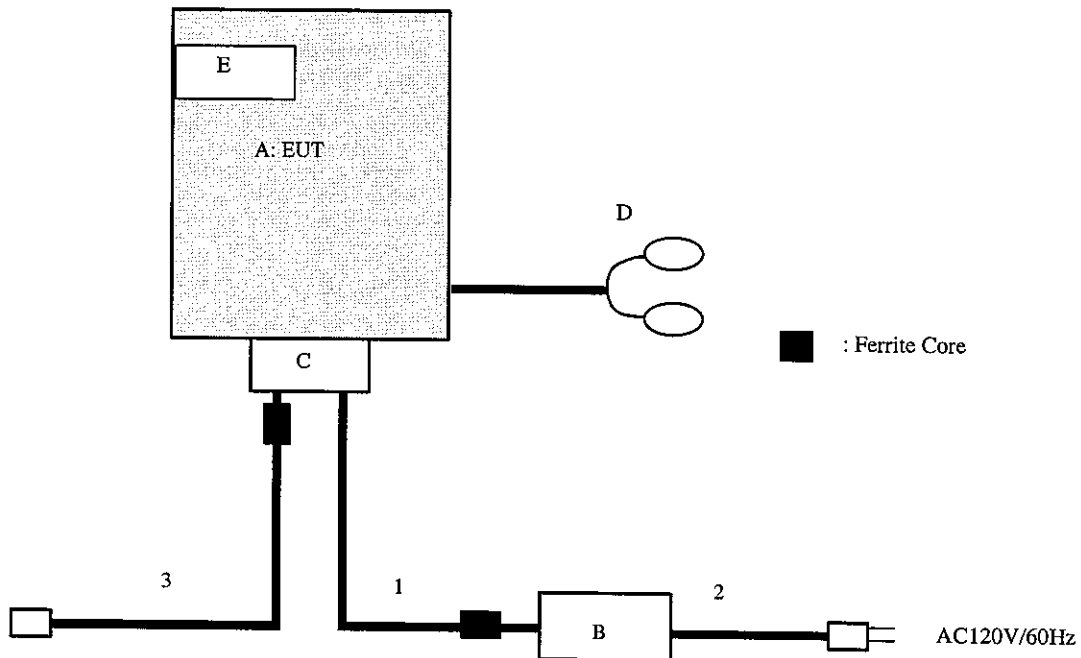
4.1 Operating Modes

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

Test mode : 1) IEEE 802.11b (DSSS)
Low channel : 2412MHz
Middle channel : 2437MHz
High channel : 2462MHz

Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals



*Cabling was taken into consideration and test data was taken under worse case conditions

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID	Remark
A	Handheld Computer Organizer Set	CSK-003/U	299 *1 304 *2	SONY	AK8CSK003	EUT
B	AC Power Adaptor	PEGA-AC10	C103271	SONY	-	-
C	Plug Adaptor	N/A	N/A	SONY	-	-
D	Headphone	LT-100	N/A	Panasonic	-	-
E	Memory Stick	N/A	N/A	SONY	-	-

*1: Spurious emission (Radiated) and Conducted emission

*2: Except for Spurious emission (Radiated) and Conducted emission

List of cables used

No.	Name	Length (m)	Shield	Backshell Material
1	DC cable	1.8	N	Polyvinyl chloride
2	AC cable	0.8	N	Polyvinyl chloride
3	USB Cable	1.5	Y	Polyvinyl chloride
4	Headphone cable	2.5	N	Polyvinyl chloride

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

SECTION 5: Conducted Emission, Section 15.207

Test Procedure

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from LISN and excess AC cable was bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane. Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN to the input power source. All unused 50ohm connectors of the LISN were resistively terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT on a reference ground plane 7.0 x 6.0m in a No.1 / 4.0 x 4.0m in a No.2 semi Anechoic Chamber.

The EUT was connected to a Line Impedance Stabilization Network (LISN).

An overview sweep with peak detection has been performed.

The measurements have been performed with a CISPR quasi-peak detector (IF BW 9 kHz).

Measurement range: 0.15-30MHz

Test data : APPENDIX 3
Test result : Pass

SECTION 6: 6dB Bandwidth, Section 15.247(a)(2)

Test Procedure

The minimum 6dB bandwidth was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 7: Maximum Peak Output Power, Section 15.247(b)(3)

Test Procedure

The Maximum Peak Output Power was measured with a Power Meter connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

SECTION 8: Out of Band Emission, Section 15.247 (c)

[Conducted] Test Procedure

The Out of Band Emission (Conducted) was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

[Radiated] Test Procedure

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The Radiated Electric Field Strength intensity has been measured in No.1 semi anechoic chamber (19.2x11.2x7.7m) / No.2 semi anechoic chamber (7.5x5.8x5.2m) with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz). The measuring antenna height was varied between 1 to 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization. In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement. The result was also satisfied the general limits specified in section 15.209(a).

Test data : APPENDIX 3
Test result : Pass

SECTION 9: Peak Power Density, Section 15.247 (c)

[Conducted] Test Procedure

The Peak Power Density was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

APPENDIX 1: Photographs of test setup

Conducted Emission

Front



Rear



Worst Case Position (X-axis:Horizontal / Z-axis:Vertical)

X-axis



Y-axis

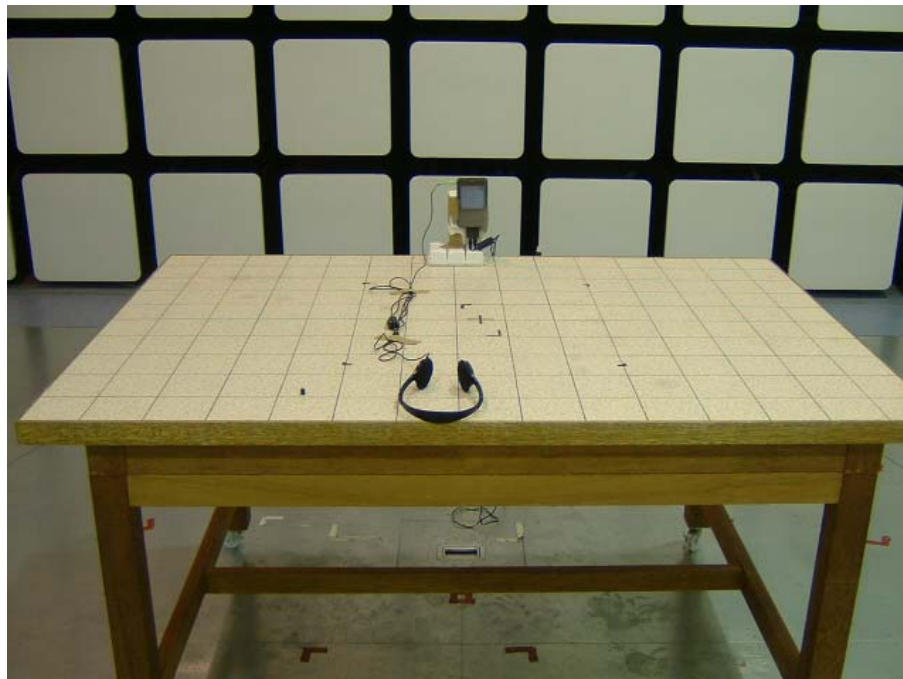


Z-axis



Spurious Emission (Radiated)

Front



Rear



APPENDIX 2:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2003/04/11 * 12
MRENT-06	Spectrum Analyzer	Advantest	R3273	EX	2003/10/31 * 12
MRENT-07	Spectrum Analyzer	Advantest	R3273	RE	2003/10/31 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2003/01/11 * 12
MHA-02	Horn Antenna	EMCO	3160-09	RE	2003/01/11 * 12
MCC-04	Microwave Cable	Storm	421-011	RE	2003/01/14 * 12
MCC-24	Microwave Cable	Storm	-	RE	2003/04/30 * 12
MCC-11	Microwave coaxial cable	Suhner	SUCOFLEX 104	RE	2003/03/27 * 12
MAT-22	Attenuator	Orient Microwave.	BX10-0476- 00	EX,PO	2003/03/31 * 12
MCC-21	Microwave Cable	Storm	-	EX,PO	2003/04/30 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2003/02/08 * 12
MBF-01	SHF Bandpass Filter	M-City	5GHz BPF	RE	2003/04/24 * 12
MBF-02	SHF Bandpass Filter	M-City	8GHz BPF	RE	2003/04/24 * 12
MBF-03	SHF Bandpass Filter	M-City	13GHz BPF	RE	2003/04/24 * 12
MPM-04	Power Meter	Agilent	E4416A	PO	2003/03/13 * 12
MPSE-04	Power sensor	Agilent	E9327A	PO	2003/03/18 * 12
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE / CE	2002/12/28 * 12
MLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2003/10/15 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2003/10/15 * 12
MCC-01	Coaxial Cable	Suhner/storm/Agilent/ TSJ	-	RE	2002/12/19 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2003/03/13 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE / CE	2003/11/12 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/Agilen t/TSJ	-	CE	2002/12/19 * 12
MPL-01	Pulse Limiter	Rohde & Schwarz	ESH3Z2	CE	2003/01/07 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2003/11/10 * 12
MCP-52	Headphone	Panasonic	LT-100	CE/RE	Pre Check

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

CE: Conducted emission,
RE: Radiated emission,
PO: Peak Output Power
EX: Except for CE, RE and PO

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

APPENDIX 3: Data of EMI test

Conducted Emission

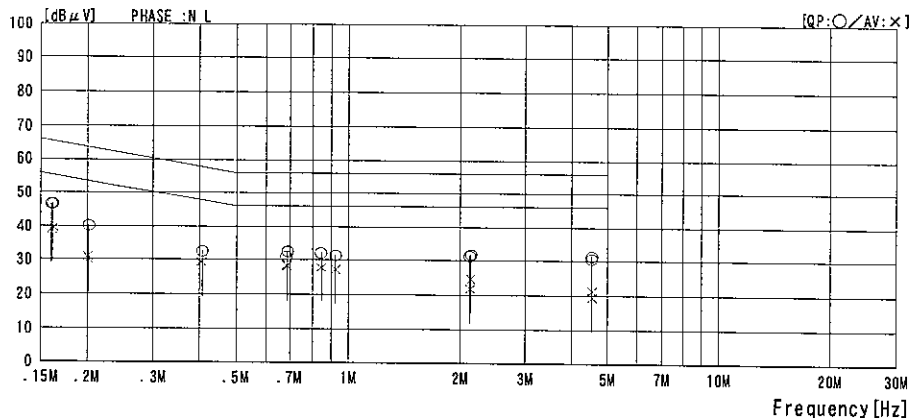
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/07 15:25:46

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299
Report No. : 24DE0031-HO
Power : AC120V/60Hz
Temp/C/Humi% : 22 / 36
Operator : Hiroka Uneyama

Mode / Remarks : Ch11 Continuous Tx mode, 802.11b 11Mbps

LIMIT : FCC15C § 15.207 (QP)
FCC15C § 15.207 (AV)



NO	FREQ [MHz]	READING		C. F [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dB μV]	AV [dB μV]		QP [dB μV]	AV [dB μV]	QP [dB μV]	AV [dB μV]	QP [dB]	AV [dB]	
1	0.1611	36.7	29.7	9.8	46.5	39.5	65.4	55.4	18.9	15.9	N
2	0.2009	30.2	21.1	10.0	40.2	31.1	63.6	53.6	23.4	22.5	N
3	0.4038	22.3	19.0	10.3	32.6	29.3	57.8	47.8	25.2	18.5	N
4	0.6860	22.0	17.8	10.5	32.5	28.3	56.0	46.0	23.5	17.7	N
5	0.8466	21.8	17.5	10.5	32.3	28.0	56.0	46.0	23.7	18.0	N
6	2.1358	21.3	13.8	10.8	32.1	24.6	56.0	46.0	23.9	21.4	N
7	4.5435	20.2	10.1	11.2	31.4	21.3	56.0	46.0	24.6	24.7	N
8	0.1600	36.6	29.1	9.8	46.4	39.9	65.5	55.5	19.1	16.6	L
9	0.2011	30.3	20.4	10.0	40.3	30.4	63.6	53.6	23.3	23.2	L
10	0.6830	20.6	18.0	10.5	31.1	28.5	56.0	46.0	24.9	17.5	L
11	0.9272	20.9	16.8	10.7	31.6	27.5	56.0	46.0	24.4	18.5	L
12	2.1244	20.7	11.0	10.8	31.5	21.8	56.0	46.0	24.5	24.2	L
13	4.5514	19.8	8.4	11.2	31.0	19.6	56.0	46.0	25.0	26.4	L

CHART:WITHOUT FACTOR, Peak hold data. Data is uncorrected.
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/07 14:51:52

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299

Report No. : 24DE0031-HO
Power : AC120V/60Hz
Temp°C/Humi% : 22 / 36
Operator : Hiroka Umeyama

Mode / Remarks : CH1 Continuous Tx mode, 802.11b 11Mbps

LIMIT : FCC15C § 15.207 (QP)
FCC15C § 15.207 (AV)

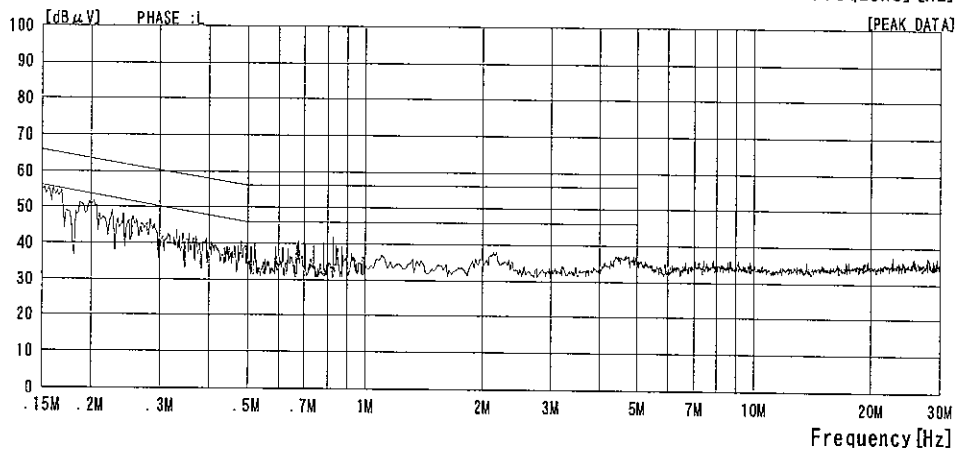
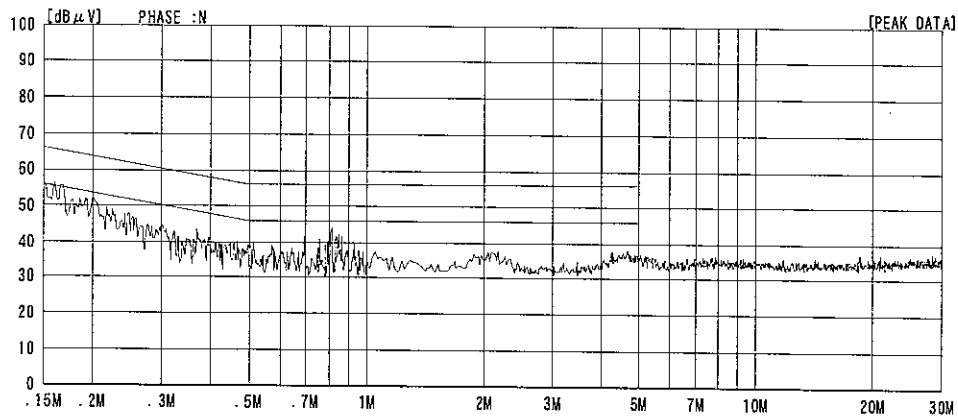


CHART:WITHOUT FACTOR. Peak hold data. Data is uncorrected.
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/07 15:27:44

Applicant : Sony corporation
Kind of EUT : Mandheld Computer Organize
Model No. : CSK-003
Serial No. : 299

Report No. : 24DE0031-HO
Power : AC120V/60Hz
Temp°C/Humi% : 22 / 36
Operator : Hiroka Umeyama

Mode / Remarks : Ch6 Continuous Tx mode, 802.11b 11Mbps

LIMIT : FCC15C § 15.207 (QP)
FCC15C § 15.207 (AV)

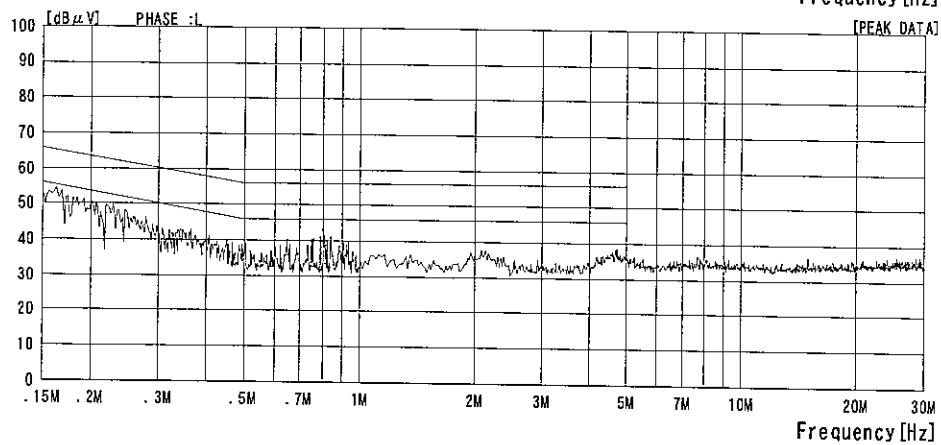
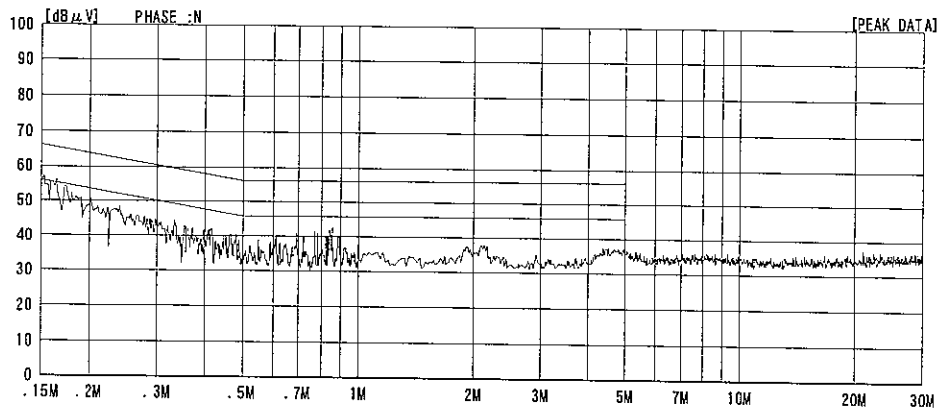


CHART: WITHOUT FACTOR. Peak hold data. Data is uncorrected.
Except for the above table : adequate margin data below the limits.

Test report No. : 24CE00254-HO-1
Page : 18 of 38
Issued date : December 15, 2003
FCC ID : AK8CSK003

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/07 15:26:35

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299

Report No. : 24DE0031-HO
Power : AC120V/60Hz
Temp°C/Humi% : 22 / 36
Operator : Hiroka Umeyama

Mode / Remarks : Ch11 Continuous Tx mode, 802.11b 11Mbps

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)

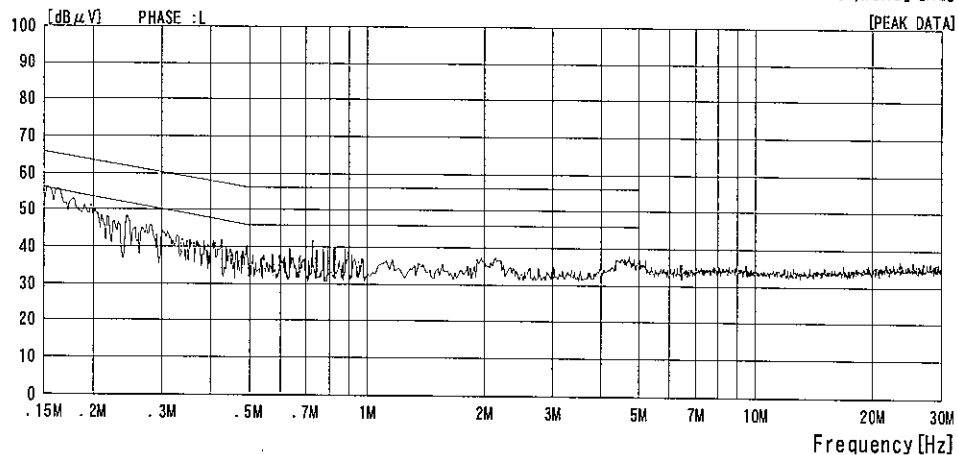
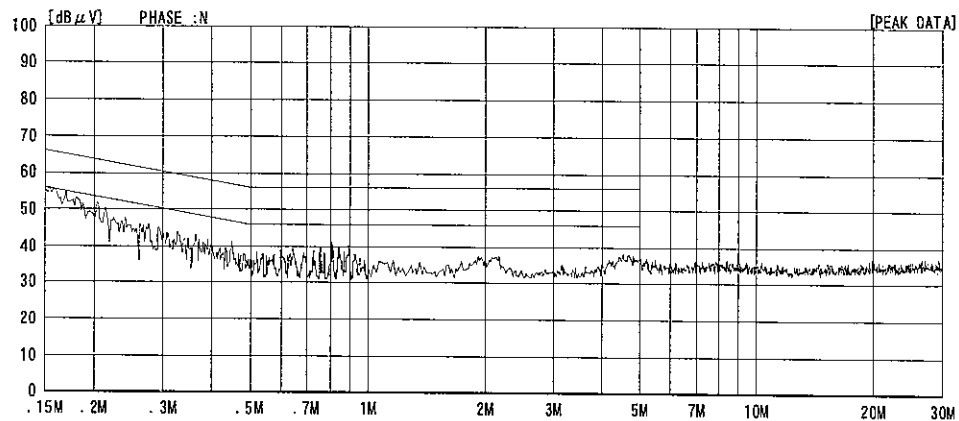


CHART: WITHOUT FACTOR. Peak hold data. Data is uncorrected.
Except for the above table : adequate margin data below the limits.

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

MF060b(10.04.03)

Test report No. : 24CE00254-HO-1
Page : 19 of 38
Issued date : December 15, 2003
FCC ID : AK8CSK003

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/07 15:34:48

Applicant : Sony corporation
Kind of EUT : Mandheld Computer Organize
Model No. : CSK-003
Serial No. : 299

Report No. : 24DE0031-HO
Power : AC120V/60Hz
Temp°C/Humi% : 22 / 36
Operator : Hiroka Umeyama

Mode / Remarks : Standby

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)

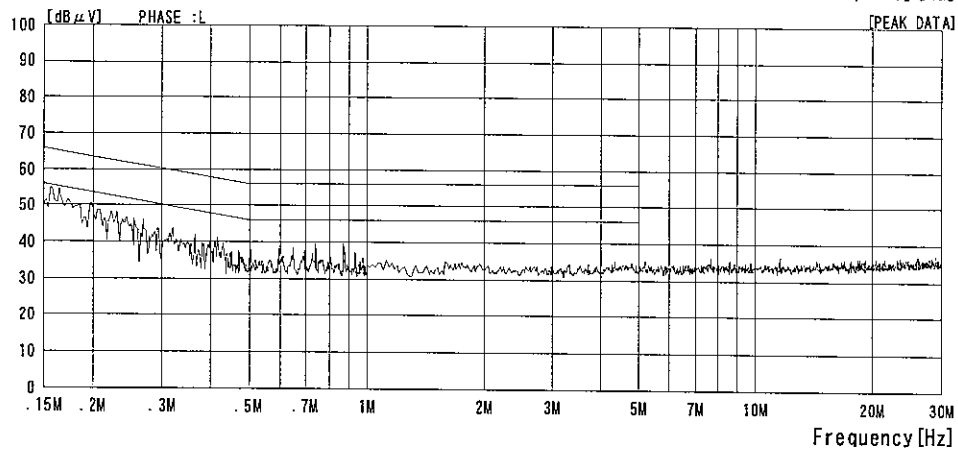
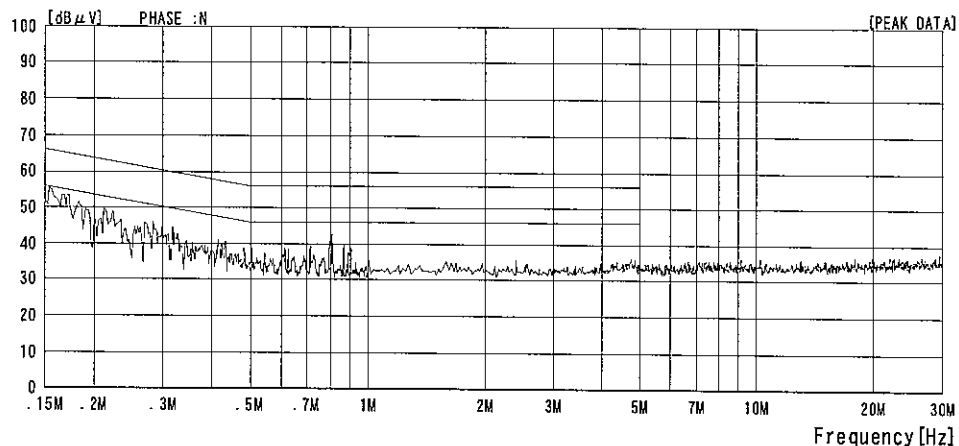


CHART:WITHOUT FACTOR. Peak hold data. Data is uncorrected.
Except for the above table : adequate margin data below the limits.

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

MF060b(10.04.03)

Test report No. : 24CE00254-HO-1
Page : 20 of 38
Issued date : December 15 , 2003
FCC ID : AK8CSK003

6dB BANDWIDTH (Conducted)
DATA OF 6dB BANDWIDTH (CONDUCTED)

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement room

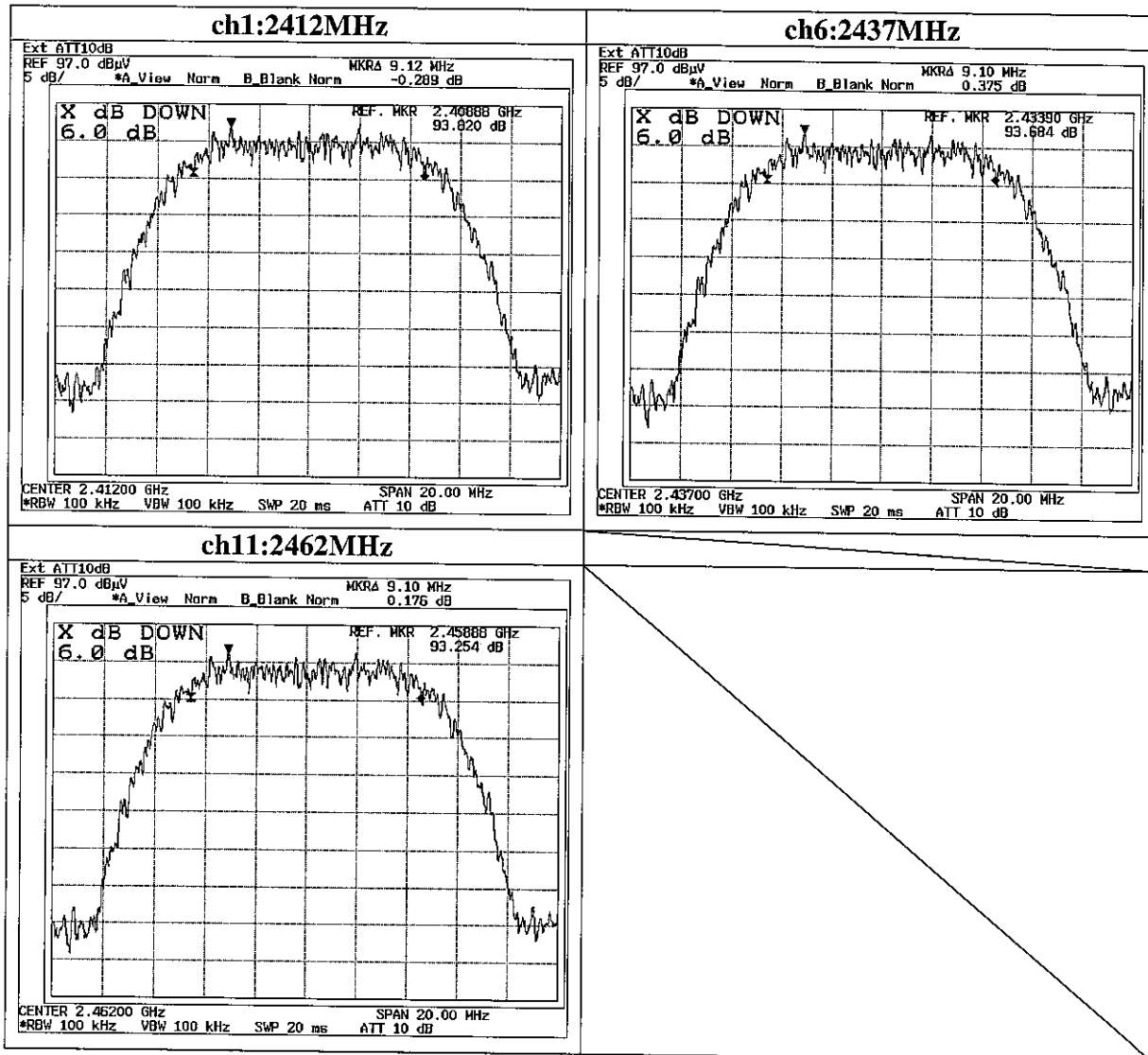
COMPANY	: Sony Corporation	REPORT NO	: 24CE0254-HO
EQUIPMENT	: Handheld Computer Organizer Set	REGULATION	: Fcc Part15 Subpart C 15.247(a)(2)
MODEL	: CSK-003	TEST DISTANCE	: -
S/ N	: 304	DATE	: 12/03/2003
POWER	: AC120V/60Hz	TEMPERATURE	: 26deg.C
MODE	: IEEE 802.11b, 11Mbps, Tx (ch1,6,11)	HUMIDITY	: 31%
FCC ID	: AK8CSK003	ENGINEER	: Hiroka Umeyama
IC No.	: 409B-CSK003		

CH	FREQ	6dB Bandwidth	Limit
	[MHz]	[kHz]	[kHz]
ch1	2412.0	9120.0	500.0
ch6	2437.0	9100.0	500.0
ch11	2462.0	9100.0	500.0

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

MF060b(10.04.03)

6dB Bandwidth (Conducted)



Maximum Peak OutPut Power (Conducted)
DATA OF PEAK OUTPUT POWER (CONDUCTED)

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement room

COMPANY	: Sony Corporation	REPORT NO	: 24CE0254-HO
EQUIPMENT	: Handheld Computer Organizer Set	REGULATION	: Fcc Part15 Subpart C 15.247(a)(2)
MODEL	: CSK-003	TEST DISTANCE	: -
S/N	: 304	DATE	: 12/03/2003
POWER	: AC120V/60Hz	TEMPERATURE	: 23deg.C
MODE	: IEEE 802.11b, 11Mbps, Tx (ch1,6,11)	HUMIDITY	: 34%
FCC ID	: AK8CSK003	ENGINEER	: Hiroka Umeyama
IC No.	: 409B-CSK003		

ch	FREQ [MHz]	P/M Reading [dBm]	Cable Loss [dB]	ATTEN. [dB]	Result [dBm]	Limit (1W) [dBm]	Margin [dB]
ch1	2412.0	-0.10	2.1	10.0	12.0	30.0	18.0
ch6	2437.0	-0.10	2.2	10.0	12.1	30.0	18.0
ch11	2462.0	-0.30	2.2	10.0	11.9	30.0	18.2

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

Out of Band Emission : Radiated Emission

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/06 13:07:31

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299

Report No. : 24CE0254-HO
Power : AC 120V / 60Hz
Temp/C/Humi% : 25 / 45
Operator : Hiroka Uneyama

Mode / Remarks : Ch1 Continuous Tx mode, 11Mbps / EUT position X-axis

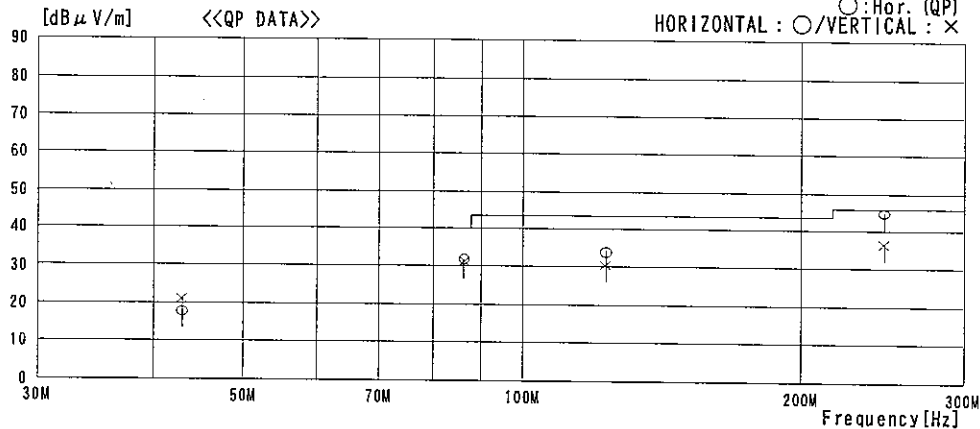
LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

×:Ver. (QP)

○:Hor. (QP)

HORIZONTAL : ○/VERTICAL : ×



No.	FREQ [MHz]	READING QP [dB μV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dB μV/m]	LIMIT [dB μV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	42.936	26.1	12.5	7.2	27.9	17.9	40.0	22.1	193	247
2	86.386	44.2	7.2	7.9	27.3	32.0	40.0	8.0	205	265
3	122.865	39.3	13.2	8.4	26.8	34.1	43.5	9.4	261	204
4	245.745	44.5	17.4	9.5	26.6	44.8	46.0	1.2	137	100
----- Vertical -----										
5	42.940	29.3	12.5	7.2	27.9	21.1	40.0	18.9	230	270
6	86.391	43.6	7.2	7.9	27.3	31.4	40.0	8.6	104	167
7	122.868	35.7	13.2	8.4	26.8	30.5	43.5	13.0	100	209
8	245.748	36.1	17.4	9.5	26.6	36.4	46.0	9.6	102	331

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

Test report No. : 24CE00254-HO-1
Page : 24 of 38
Issued date : December 15, 2003
FCC ID : AK8CSK003

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/06 11:59:58

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299
Report No. : 24CE00254-HO
Power : AC 120V / 60Hz
Temp/C/Humi% : 25 / 45
Operator : Hiroka Umeyama

Mode / Remarks : CH1 Continuous Tx mode, 11Mbps / EUT position X-axis

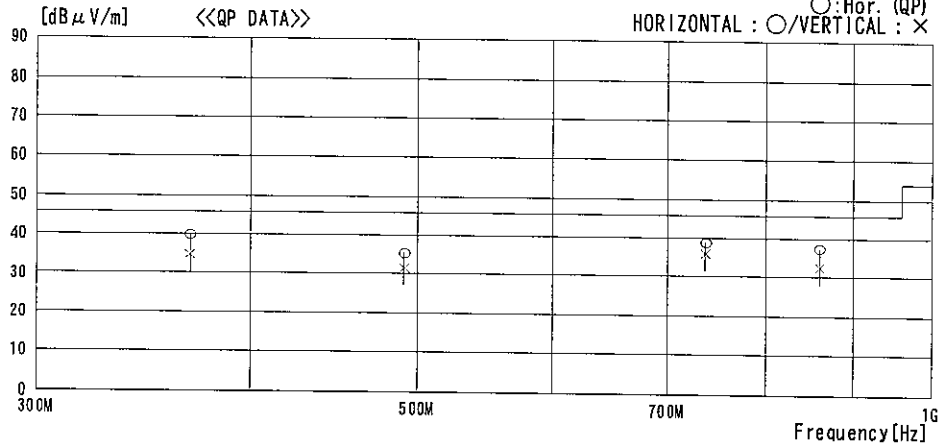
LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

×:Ver. (QP)

○:Hor. (QP)

HORIZONTAL : ○/VERTICAL : ×



No.	FREQ [MHz]	READING QP [dB μV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dB μV/m]	LIMIT [dB μV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	368.626	39.8	17.0	10.3	27.1	40.0	46.0	6.0	101	18
2	491.503	35.0	17.9	10.9	28.2	35.6	46.0	10.4	175	177
3	737.270	34.9	20.8	12.1	28.8	39.0	46.0	7.0	110	207
4	860.144	32.0	21.4	12.7	28.5	37.6	46.0	8.4	111	254
----- Vertical -----										
5	368.638	34.8	17.0	10.3	27.1	35.0	46.0	11.0	124	136
6	491.500	31.1	17.9	10.9	28.2	31.7	46.0	14.3	109	268
7	737.251	32.0	20.8	12.1	28.8	36.1	46.0	9.9	105	138
8	860.140	27.1	21.4	12.7	28.5	32.7	46.0	13.3	100	354

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

MF060b(10.04.03)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 1 Semi Anechoic Chamber
Date : 2003/12/06 15:59:31

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299
Report No. : 24CE0254-HO
Power : AC 120V / 60Hz
Temp/C/Humi% : 25 / 45
Operator : Hiroka Umeyama

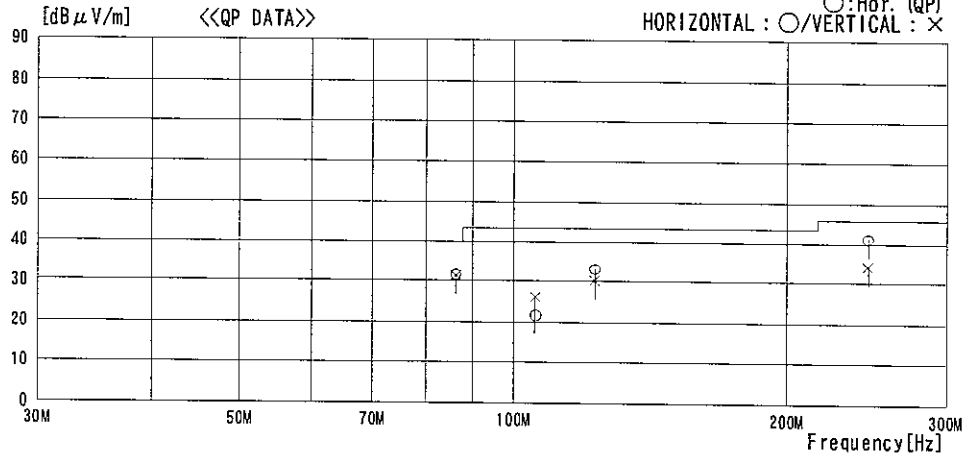
Mode / Remarks : Ch6 Continuous Tx mode, 11Mbps / EUT position X-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

×:Ver. (QP)

○:Hor. (QP)



No.	FREQ [MHz]	READING QP [dB μ V]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dB μ V/m]	LIMIT [dB μ V/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	86.386	43.7	7.2	7.9	27.3	31.5	40.0	8.5	341	85
2	105.586	29.2	11.0	8.2	26.6	21.8	43.5	21.7	287	185
3	122.868	38.5	13.2	8.4	26.8	33.3	43.5	10.2	272	209
4	245.746	41.0	17.4	9.5	26.6	41.3	46.0	4.7	136	110
----- Vertical -----										
5	86.389	43.5	7.2	7.9	27.3	31.3	40.0	8.7	125	181
6	105.588	33.6	11.0	8.2	26.6	26.2	43.5	17.3	106	110
7	122.863	35.6	13.2	8.4	26.8	30.4	43.5	13.1	202	240
8	245.744	33.7	17.4	9.5	26.6	34.0	46.0	12.0	103	202

CHART:WITHOUT FACTOR ANT TYPE : 30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/06 15:14:18

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299

Report No. : 24CE0254-HO
Power : AC 120V / 60Hz
Temp/C/Humi% : 25 / 45
Operator : Hiroka Umeyama

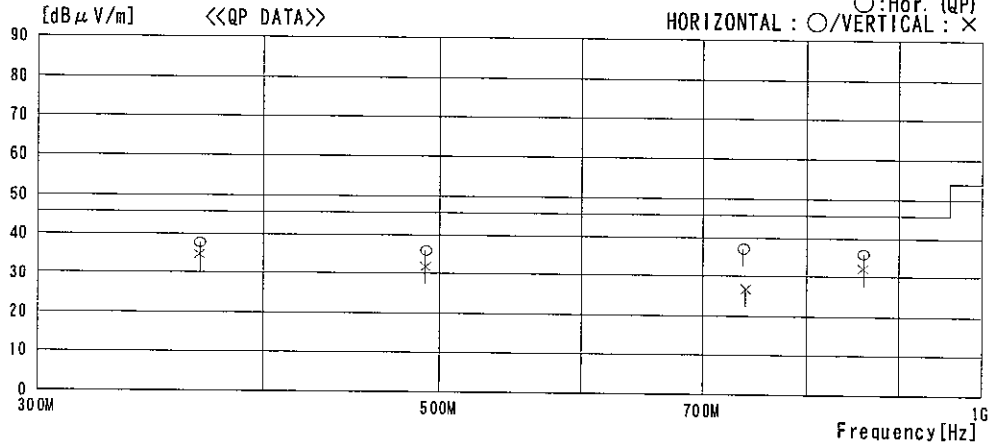
Mode / Remarks : Ch6 Continuous Tx mode, 11Mbps / EUT position X-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

×:Ver. (QP)

○:Hor. (QP)



No.	FREQ [MHz]	READING QP [dB μ V]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dB μ V/m]	LIMIT [dB μ V/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	368.622	37.7	17.0	10.3	27.1	37.9	46.0	8.1	100	282
2	491.505	35.6	17.9	10.9	28.2	36.2	46.0	9.8	184	82
3	737.260	33.3	20.8	12.1	28.8	37.4	46.0	8.6	118	212
4	860.070	30.8	21.4	12.7	28.5	36.4	46.0	9.6	104	230
----- Vertical -----										
5	368.625	34.7	17.0	10.3	27.1	34.9	46.0	11.1	133	137
6	491.503	31.4	17.9	10.9	28.2	32.0	46.0	14.0	117	230
7	739.772	22.9	20.8	12.1	28.9	26.9	46.0	19.1	317	115
8	860.072	26.8	21.4	12.7	28.5	32.4	46.0	13.6	100	351

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

Test report No. : 24CE00254-HO-1
Page : 27 of 38
Issued date : December 15, 2003
FCC ID : AK8CSK003

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/06 16:39:22

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299

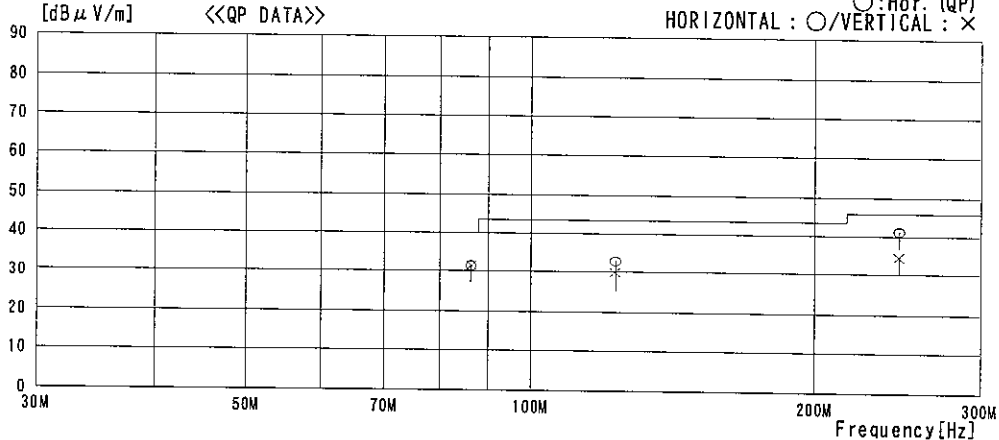
Report No. : 24CE0254-HO
Power : AC 120V / 60Hz
Temp/C/Humi% : 25 / 45
Operator : Hiroka Umeyama

Mode / Remarks : CH11 Continuous Tx mode, 11Mbps / EUT position X-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

×:Ver. (QP)
○:Hor. (QP)



No.	FREQ [MHz]	READING QP [dB μ V]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dB μ V/m]	LIMIT [dB μ V/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	86.384	43.9	7.2	7.9	27.3	31.7	40.0	8.3	217	261
2	122.867	38.4	13.2	8.4	26.8	33.2	43.5	10.3	259	207
3	245.738	41.1	17.4	9.5	26.6	41.4	46.0	4.6	134	108
----- Vertical -----										
4	86.380	44.0	7.2	7.9	27.3	31.8	40.0	8.2	107	179
5	122.868	35.1	13.2	8.4	26.8	29.9	43.5	13.6	209	232
6	245.742	34.5	17.4	9.5	26.6	34.8	46.0	11.2	100	211

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

MF060b(10.04.03)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2003/12/06 17:20:34

Applicant : Sony corporation
Kind of EUT : Handheld Computer Organize
Model No. : CSK-003
Serial No. : 299
Report No. : 24CE0254-HO
Power : AC 120V / 60Hz
Temp/C/Humi% : 25 / 45
Operator : Hiroka Umeyama

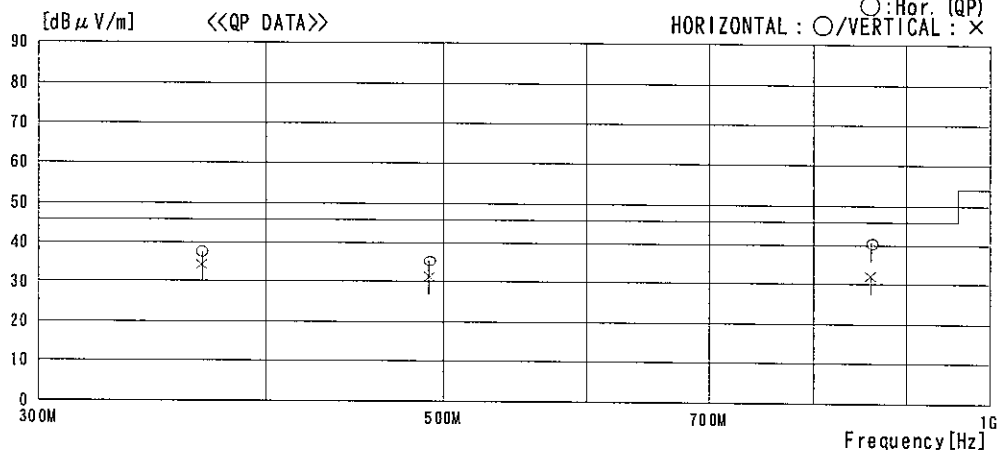
Mode / Remarks : Ch11 Continuous Tx mode, 11Mbps / EUT position X-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

×:Ver. (QP)

○:Hor. (QP)



No.	FREQ [MHz]	READING QP [dB μ V]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dB μ V/m]	LIMIT [dB μ V/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	368.627	37.6	17.0	10.3	27.1	37.8	46.0	8.2	100	291
2	491.509	35.0	17.9	10.9	28.2	35.6	46.0	10.4	189	82
3	861.128	35.0	21.4	12.7	28.5	40.6	46.0	5.4	100	263
----- Vertical -----										
4	368.612	34.2	17.0	10.3	27.1	34.4	46.0	11.6	128	159
5	491.500	30.8	17.9	10.9	28.2	31.4	46.0	14.6	118	202
6	860.118	26.4	21.4	12.7	28.5	32.0	46.0	14.0	102	351

CHART: WITHOUT FACTOR ANT. TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

Out of Band Emission : Radiated Emission

COMPANY : Sony corporation
EQUIPMENT : Handheld Computer Organizer Set
MODEL : CSK-003
S/N : 299
POWER : AC120V/60Hz
MODE : Transmitting (IEEE 802.11b)
: Continuous Tx mode, 11Mbps
: CH1: 2412MHz

REPORT NO : 24CE0254-HO
REGULATION : Fcc Part15 Subpart C 15.247(b)(3)
TEST DISTANCE: 3/1m
DATE : Dec. 3, 2003
TEMPERATURE : 22deg.C
HUMIDITY : 35%
ENGINEER : Hiroka Umeyama

EUTPOSITION: HOR:X-axis/VER:Z-axis

PK DETECT RBW/VBW:1MHz

No.	FREQ	S/A READING		ANT Factor	AMP GAIN	CABLE LOSS	Band-Pass Filter	RESULT		Limit PK	MARGIN		
	[MHz]	HOR	VER					[dBuV/m]	[dB/m]		[dB]	[dB]	HOR
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass													
1	1105.9	50.9	52.5	22.1	37.7	4.3	0.0	39.6	41.2	74.0	34.4	32.8	
2	2390.0	48.3	46.1	30.5	36.9	6.3	0.0	48.2	46.0	74.0	25.8	28.0	
3	2400.0	72.0	66.5	30.5	36.9	6.3	0.0	71.9	66.4	80.6	8.7	14.2	
4	4824.0	49.4	46.4	35.7	36.8	9.3	0.7	58.3	55.3	74.0	15.7	18.7	
5	7236.0	42.2	42.1	37.7	36.5	11.3	0.2	54.9	54.8	74.0	19.1	19.2	
6	9648.0	43.0	42.9	37.2	37.2	13.3	0.3	56.6	56.5	74.0	17.4	17.5	
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac													
7	12060.0	42.3	42.4	40.7	36.8	14.6	0.5	51.8	51.9	74.0	22.2	22.1	
8	14472.0	41.7	41.2	42.9	35.4	16.3	0.4	56.4	55.9	74.0	17.6	18.1	
9	16884.0	42.8	42.4	45.3	36.4	17.6	0.0	59.8	59.4	74.0	14.2	14.6	
10	19296.0	43.5	42.9	40.9	35.9	18.9	0.0	57.9	57.3	74.0	16.1	16.7	
11	21708.0	43.9	43.3	40.9	36.6	19.6	0.0	58.3	57.7	74.0	15.7	16.3	
12	24120.0	43.5	43.7	40.3	36.5	20.9	0.0	58.7	58.9	74.0	15.3	15.1	

AV DETECT RBW:1MHz/VBW:10Hz

No.	FREQ	S/A READING		ANT Factor	AMP GAIN	CABLE LOSS	Band-Pass Filter	RESULT		Limit AV	MARGIN	
	[MHz]	HOR	VER					[dBuV/m]	[dB]		[dB]	HOR
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1105.9	43.9	41.6	22.1	37.7	4.3	0.0	32.6	30.3	54.0	21.4	23.7
2	2390.0	37.7	32.9	30.5	36.9	6.3	0.0	37.6	32.8	54.0	16.4	21.2
3	2400.0	63.0	54.7	30.5	36.9	6.3	0.0	62.9	54.6	74.5	11.7	19.9
4	4824.0	35.3	30.5	35.7	36.8	9.3	0.7	44.2	39.4	54.0	9.8	14.6
5	7236.0	31.1	30.5	37.7	36.5	11.3	0.2	43.8	43.2	54.0	10.2	10.8
6	9648.0	31.1	30.7	37.2	37.2	13.3	0.3	44.7	44.3	54.0	9.3	9.7
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
7	12060.0	30.5	30.5	40.7	36.8	14.6	0.5	40.0	40.0	54.0	14.0	14.0
8	14472.0	29.0	29.4	42.9	35.4	16.3	0.4	43.7	44.1	54.0	10.3	9.9
9	16884.0	31.1	31.5	45.3	36.4	17.6	0.0	48.1	48.5	54.0	5.9	5.5
10	19296.0	31.9	31.5	40.9	35.9	18.9	0.0	46.3	45.9	54.0	7.7	8.1
11	21708.0	31.8	31.8	40.9	36.6	19.6	0.0	46.2	46.2	54.0	7.8	7.8
12	24120.0	31.9	31.9	40.3	36.5	20.9	0.0	47.1	47.1	54.0	6.9	6.9

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

*The limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below lower

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

Out of Band Emission : Radiated Emission

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY : Sony corporation
EQUIPMENT : Handheld Computer Organizer Set
MODEL : CSK-003
S/N : 299
POWER : AC120V/60Hz
MODE : Transmitting (IEEE 802.11b)
: Continuous Tx mode, 11Mbps
: CH6: 2437MHz

REPORT NO : 24CE0254-HO
REGULATION : Fcc Part15 Subpart C 15.247(b)(3)
TEST DISTANCE : 3/1m
DATE : Dec. 3, 2003
TEMPERATURE : 22deg.C
HUMIDITY : 35%
ENGINEER : Hiroka Umeyama

EUTPOSITION: HOR:X-axis/VER:Z-axis

PK DETECT RBW/VBW:1MHz

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1105.9	47.4	45.9	22.1	37.7	4.3	0.0	36.1	34.6	74.0	37.9	39.4
2	4874.0	49.7	41.2	36.0	36.8	9.3	0.7	58.9	50.4	74.0	15.1	23.6
3	7311.0	40.7	41.6	37.8	36.6	11.4	0.3	53.6	54.5	74.0	20.4	19.5
4	9748.0	41.2	43.4	36.9	37.2	13.5	0.3	54.7	56.9	74.0	19.3	17.1
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
5	12185.0	42.5	42.2	41.0	36.7	15.0	0.4	52.7	52.4	74.0	21.3	21.6
6	14622.0	41.8	40.7	43.2	35.5	16.4	0.4	56.8	55.7	74.0	17.2	18.3
7	17059.0	43.6	42.8	44.8	36.2	17.4	0.0	60.1	59.3	74.0	13.9	14.7
8	19496.0	43.3	43.3	40.5	36.0	18.7	0.0	57.0	57.0	74.0	17.0	17.0
9	21933.0	43.2	43.6	40.6	36.0	19.8	0.0	58.1	58.5	74.0	15.9	15.5
10	24370.0	42.3	43.7	40.3	36.9	21.0	0.0	57.2	58.6	74.0	16.8	15.4

AV DETECT RBW:1MHz/VBW:10Hz

No.	FREQ [MHz]	S/A READING HOR VER [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT HOR VER [dBuV/m]		Limit AV [dBuV/m]	MARGIN HOR VER [dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1105.9	34.3	39.6	22.1	37.7	4.3	0.0	23.0	28.3	54.0	31.0	25.7
2	4874.0	34.4	30.8	36.0	36.8	9.3	0.7	43.6	40.0	54.0	10.4	14.0
3	7311.0	30.5	30.6	37.8	36.6	11.4	0.3	43.4	43.5	54.0	10.6	10.5
4	9748.0	30.9	31.2	36.9	37.2	13.5	0.3	44.4	44.7	54.0	9.6	9.3
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
5	12185.0	30.3	30.7	41.0	36.7	15.0	0.4	40.5	40.9	54.0	13.5	13.1
6	14622.0	29.2	30.0	43.2	35.5	16.4	0.4	44.2	45.0	54.0	9.8	9.0
7	17059.0	31.5	31.2	44.8	36.2	17.4	0.0	48.0	47.7	54.0	6.0	6.3
8	19496.0	31.5	31.6	40.5	36.0	18.7	0.0	45.2	45.3	54.0	8.8	8.7
9	21933.0	31.8	31.9	40.6	36.0	19.8	0.0	46.7	46.8	54.0	7.3	7.2
10	24370.0	31.7	31.6	40.3	36.9	21.0	0.0	46.6	46.5	54.0	7.4	7.5

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

Out of Band Emission : Radiated Emission

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY : Sony corporation
EQUIPMENT : Handheld Computer Organizer Set
MODEL : CSK-003
S/N : 299
POWER : AC120V/60Hz
MODE : Transmitting (IEEE 802.11b)
: Continuous Tx mode, 11Mbps
: CH11: 2462MHz

REPORT NO : 24CE0254-HO
REGULATION : Fcc Part15 Subpart C 15.247(b)(3)
TEST DISTANCE : 3/1m
DATE : Dec. 3, 2003
TEMPERATURE : 22deg.C
HUMIDITY : 35%
ENGINEER : Hiroka Urneyama

EUTPOSITION: HOR:X-axis/VER:Z-axis

PK DETECT

RBW/VBW:1MHz

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1105.9	44.7	48.8	22.1	37.7	4.3	0.0	33.4	37.5	74.0	40.6	36.5
2	2483.5	44.8	47.0	30.6	36.9	6.4	0.0	44.9	47.1	74.0	29.1	26.9
3	4924.0	50.6	42.6	36.3	36.8	9.4	0.8	60.3	52.3	74.0	13.7	21.7
4	7386.0	42.9	42.5	37.9	36.6	11.4	0.3	55.9	55.5	74.0	18.1	18.5
5	9848.0	40.9	41.4	36.6	37.3	13.5	0.3	54.0	54.5	74.0	20.0	19.5
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
6	12310.0	41.3	41.4	41.6	36.6	15.0	0.3	52.1	52.2	74.0	21.9	21.8
7	14772.0	41.9	42.0	43.3	35.6	16.5	0.4	57.0	57.1	74.0	17.0	16.9
8	17234.0	43.3	43.4	45.4	36.2	17.5	0.0	60.5	60.6	74.0	13.5	13.4
9	19696.0	42.8	42.7	40.6	36.0	18.8	0.0	56.7	56.6	74.0	17.3	17.4
10	22158.0	43.2	42.6	40.6	35.7	19.8	0.0	58.4	57.8	74.0	15.6	16.2
11	24620.0	42.8	42.8	40.4	36.9	21.0	0.0	57.8	57.8	74.0	16.2	16.2

AV DETECT

RBW:1MHz/VBW:10Hz

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Band-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	1105.9	36.7	42.5	22.1	37.7	4.3	0.0	25.4	31.2	54.0	28.6	22.8
2	2483.5	33.8	35.8	30.6	36.9	6.4	0.0	33.9	35.9	54.0	20.1	18.1
3	4924.0	32.8	32.7	36.3	36.8	9.4	0.8	42.5	42.4	54.0	11.5	11.6
4	7386.0	30.7	30.5	37.9	36.6	11.4	0.3	43.7	43.5	54.0	10.3	10.5
5	9848.0	31.0	31.9	36.6	37.3	13.5	0.3	44.1	45.0	54.0	9.9	9.0
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
6	12310.0	31.6	30.7	41.6	36.6	15.0	0.3	42.4	41.5	54.0	11.6	12.5
7	14772.0	29.8	29.9	43.3	35.6	16.5	0.4	44.9	45.0	54.0	9.1	9.0
8	17234.0	31.5	31.7	45.4	36.2	17.5	0.0	48.7	48.9	54.0	5.3	5.1
9	19696.0	31.8	31.7	40.6	36.0	18.8	0.0	45.7	45.6	54.0	8.3	8.4
10	22158.0	31.4	31.4	40.6	35.7	19.8	0.0	46.6	46.6	54.0	7.4	7.4
11	24620.0	31.8	32.1	40.4	36.9	21.0	0.0	46.8	47.1	54.0	7.2	6.9

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

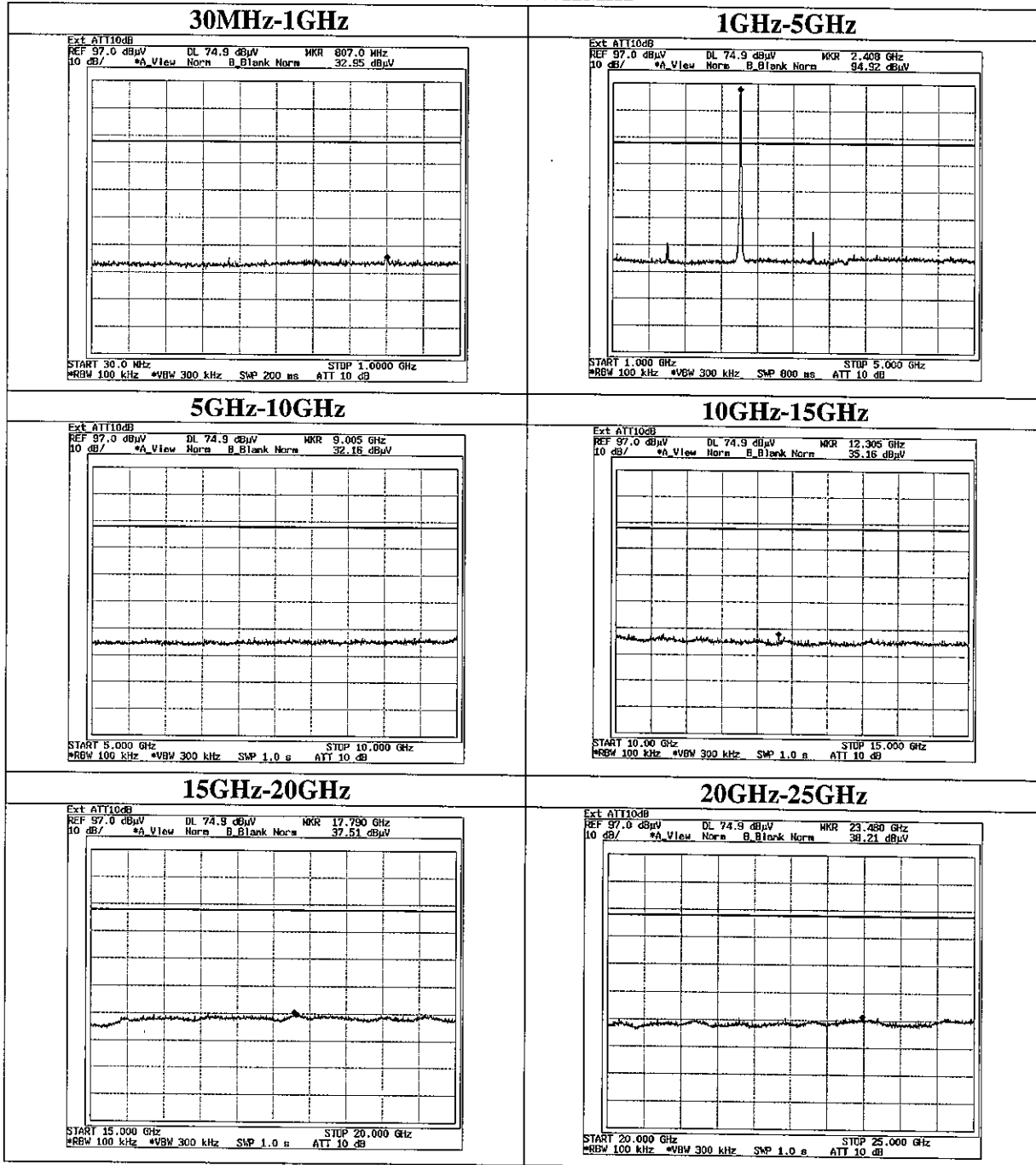
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

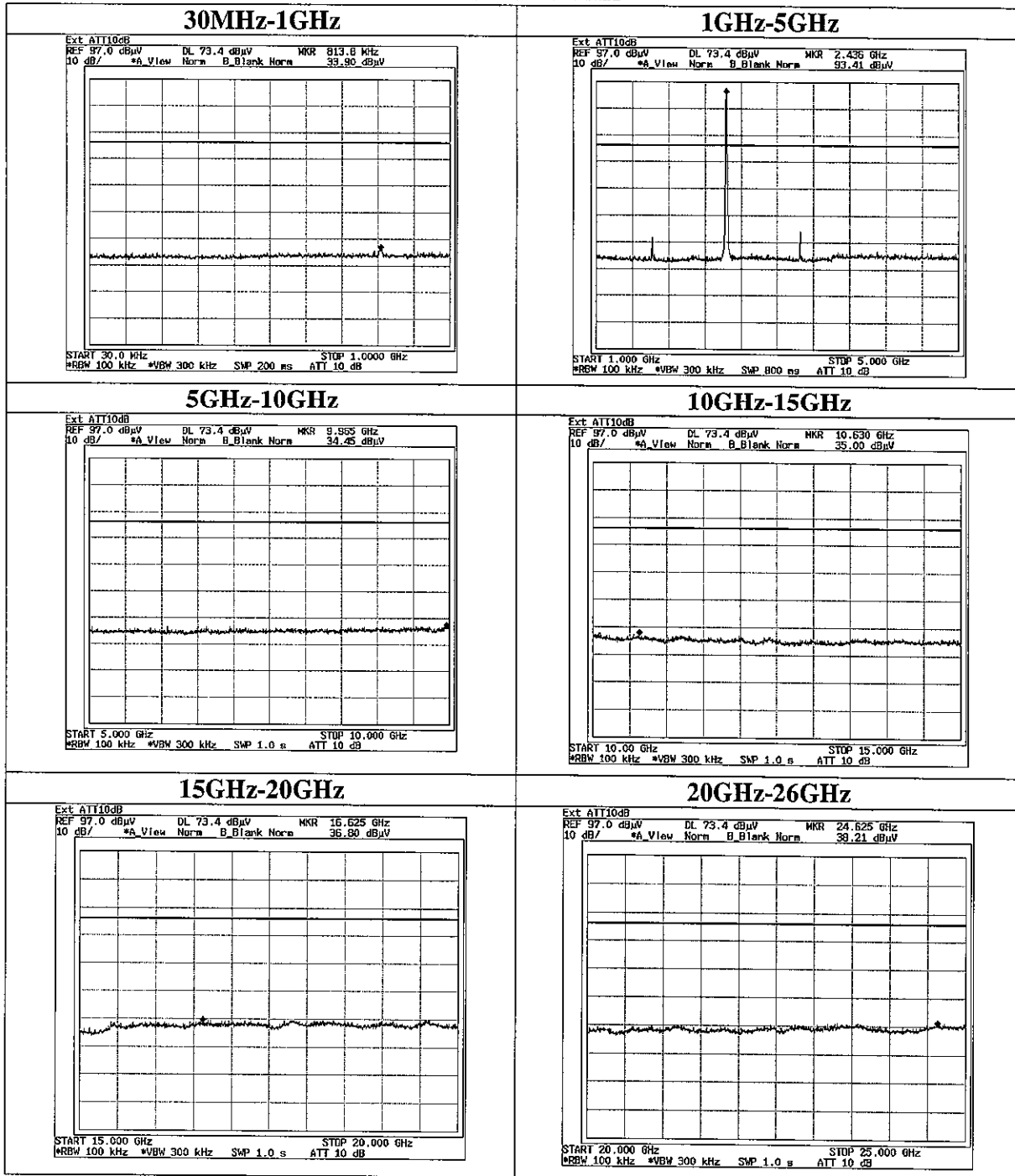
Out of Band Emission : Conducted

Ch1 : 2412MHz



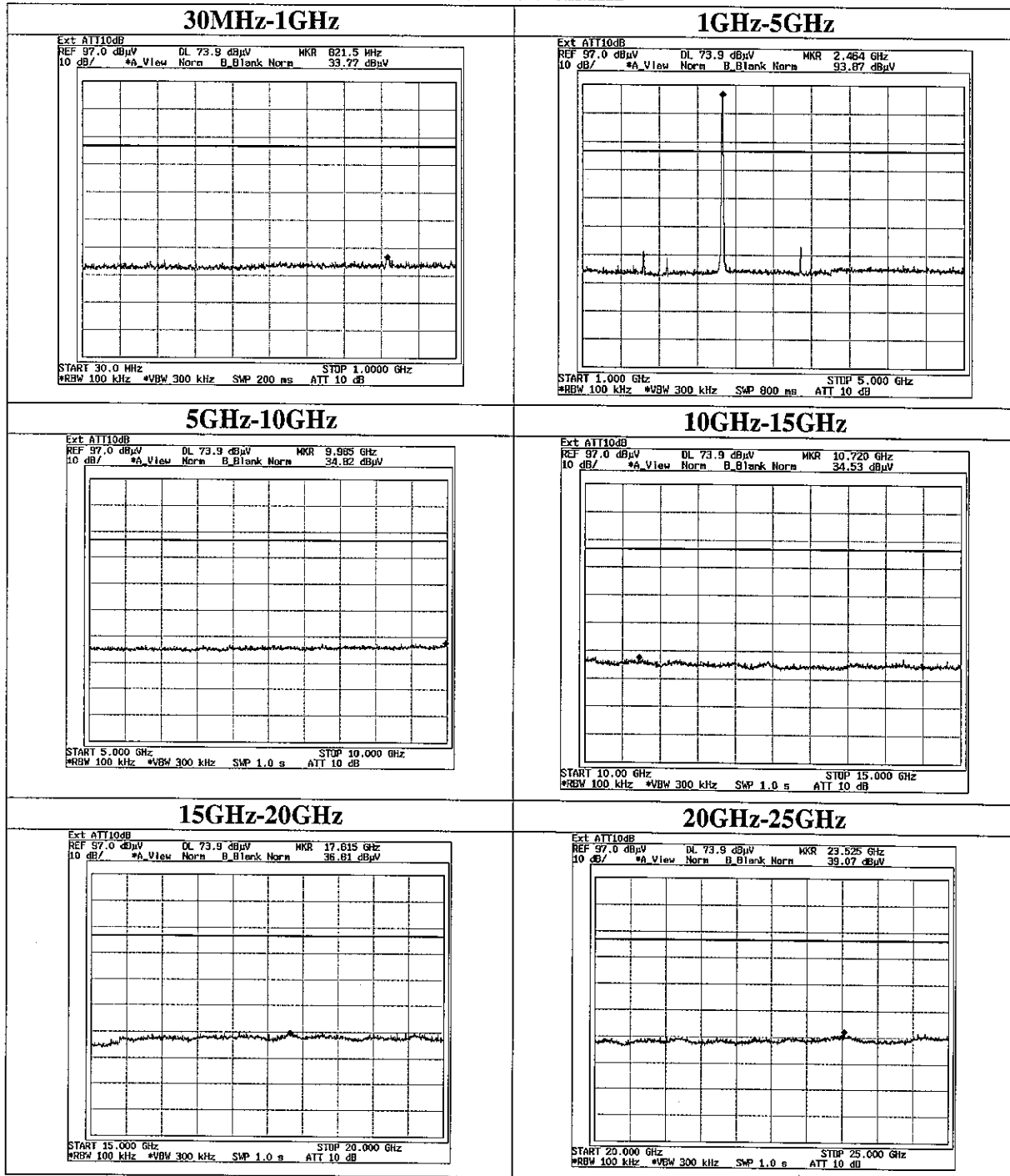
Out of Band Emission : Conducted

Ch6 : 2437MHz

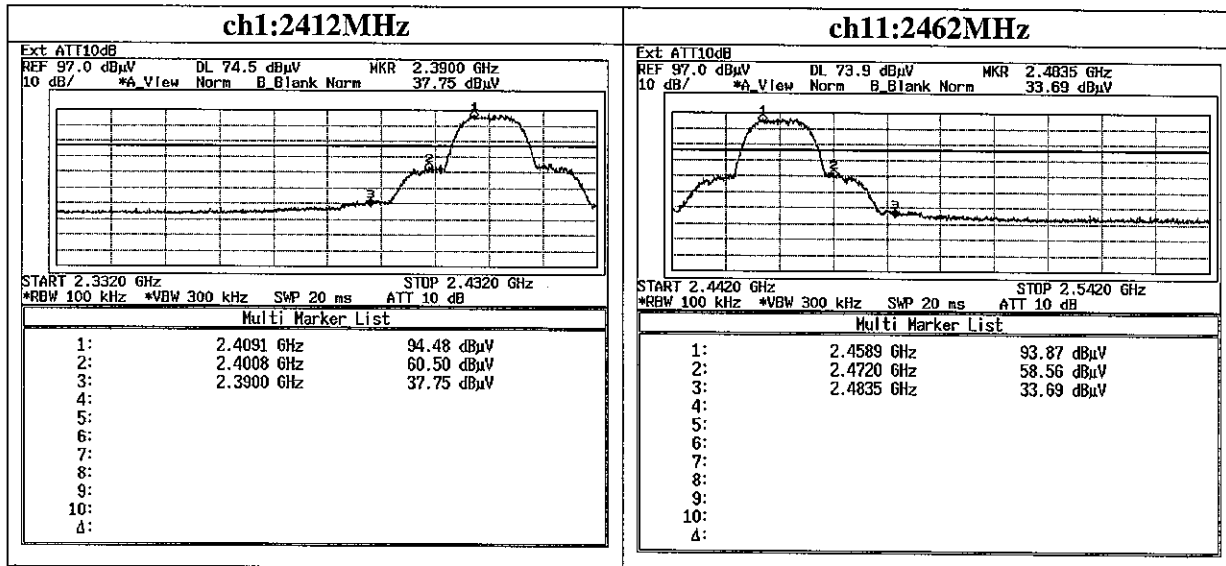


Out of Band Emission : Conducted

Ch11 : 2462MHz



Out of Band Emission : Restrictd Band Edges (Conducted)



Power Density (Conducted)
DATA OF POWER DENSITY(CONDUCTED)

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement room

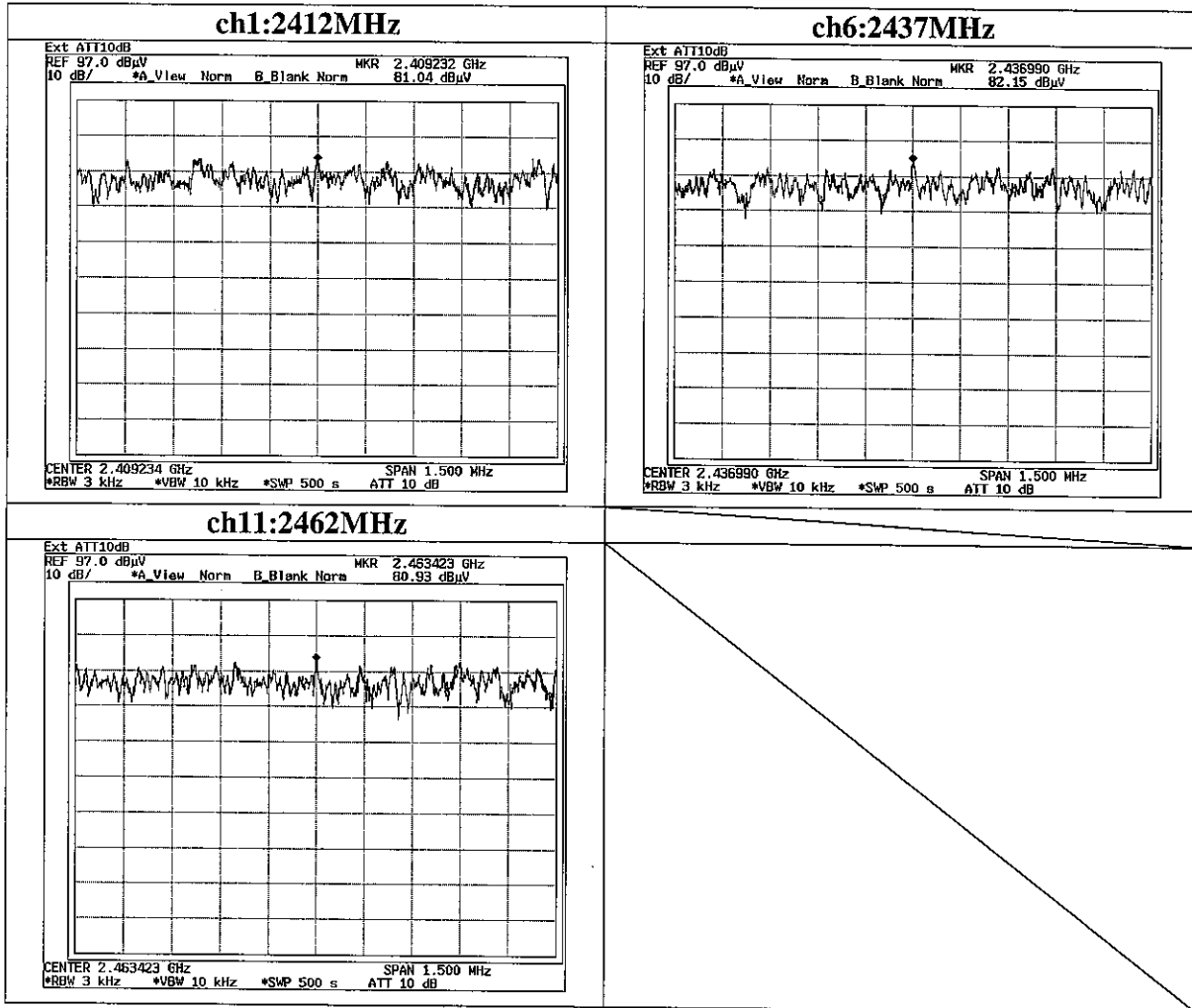
COMPANY	: Sony Corporation	REPORT NO	: 24CE0254-HO
EQUIPMENT	: Handheld Computer Organizer Set	REGULATION	: Fcc Part15 Subpart C 15.247(a)(2)
MODEL	: CSK-003	TEST DISTANCE	: -
S/ N	: 304	DATE	: 12/02/2003
POWER	: AC120V/60Hz	TEMPERATURE	: 26deg.C
MODE	: IEEE 802.11b, 11Mbps, Tx (ch1,6,11)	HUMIDITY	: 31%
FCC ID	: AK8CSK003	ENGINEER	: Hiroka Umeyama
IC No.	: 409B-CSK003		

ch	FREQ [MHz]	S/A Reading [dBm]	Cable Loss [dB]	ATTEN. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
ch1	2412.2	-25.96	2.1	10.0	-13.8	8.0	21.8
ch6	2436.4	-24.85	2.2	10.0	-12.7	8.0	20.7
ch11	2461.4	-26.07	2.2	10.0	-13.9	8.0	21.9

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

Power Density (Conducted)



99 % Occupied Bandwidth

