

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi Anechoic Chamber
Date : 2009/09/04

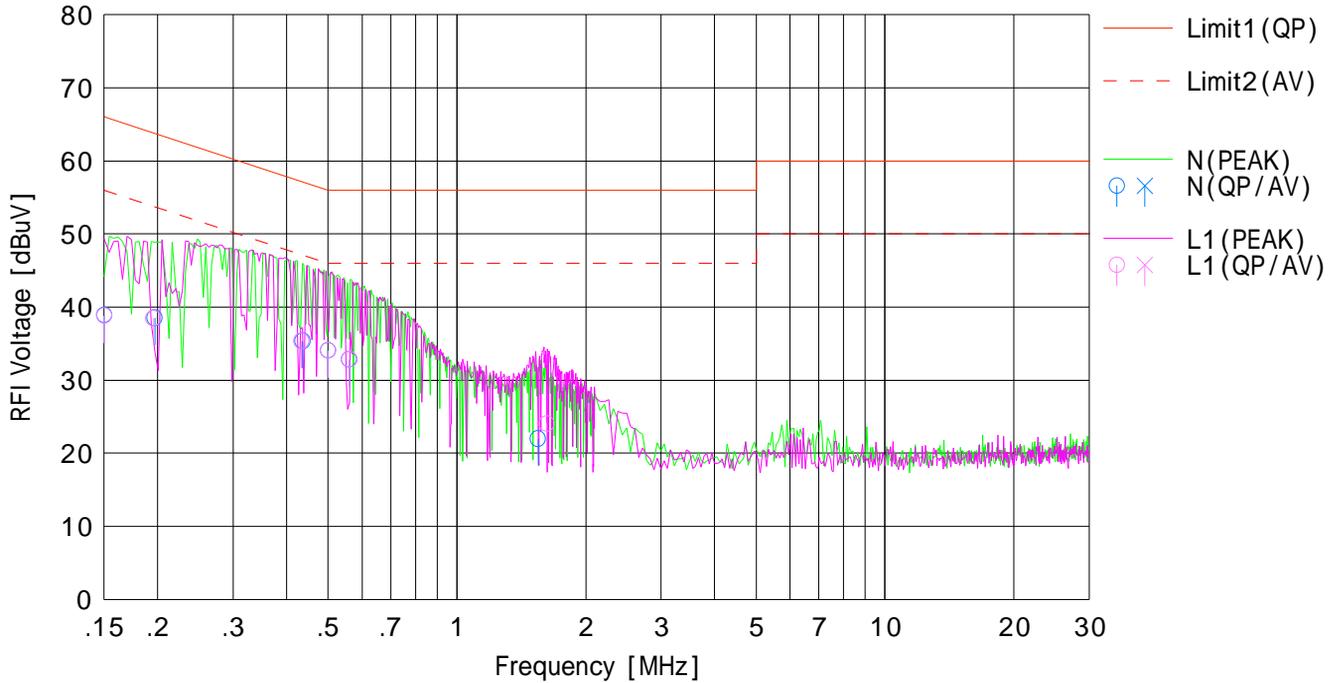
Company : Sony EMCS Corporation Tokai TEC
Kind of EUT : IC Recording Media
Model No. : MS - JX8G
Serial No. : R1 - 191

Mode : Transmitting
Report No. : 29LE0256 - SH - 01 - R1
Power : DC3.3V (AC100V / 50Hz)
Temp./Humi. : 24 / 59%

Remarks :

Limit1 : FCC 15C(15.207) QP
Limit2 : FCC 15C(15.207) AV

Engineer : Tatsuya Arai



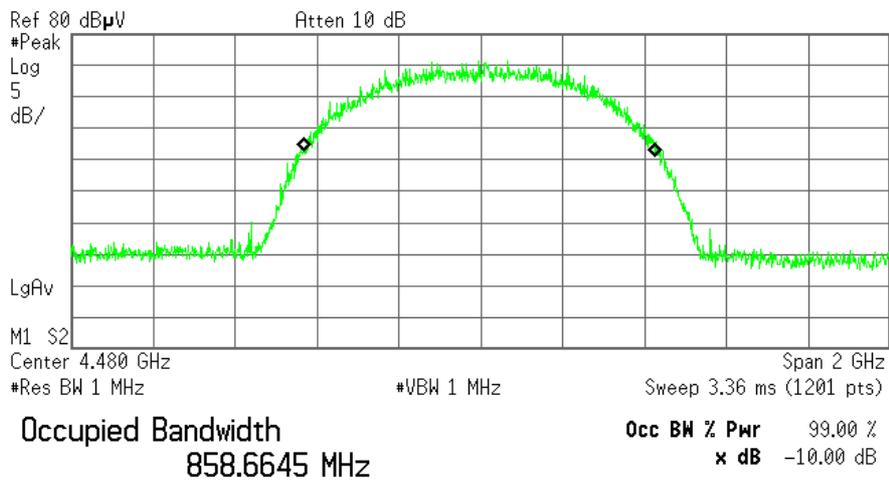
No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15000	29.2	---	9.7	38.9	---	66.0	56.0	27.1	---	N	
2	0.19705	28.8	---	9.7	38.5	---	63.7	53.7	25.2	---	N	
3	0.43644	25.6	---	9.7	35.3	---	57.1	47.1	21.8	---	N	
4	0.50000	24.4	---	9.7	34.1	---	56.0	46.0	21.9	---	N	
5	0.56113	23.1	---	9.7	32.8	---	56.0	46.0	23.2	---	N	
6	1.54676	12.3	---	9.7	22.0	---	56.0	46.0	34.0	---	N	
7	0.15000	29.1	---	9.7	38.8	---	66.0	56.0	27.2	---	L1	
8	0.19572	28.8	---	9.7	38.5	---	63.8	53.8	25.4	---	L1	
9	0.43334	25.7	---	9.7	35.4	---	57.2	47.2	21.8	---	L1	
10	0.50000	24.4	---	9.7	34.1	---	56.0	46.0	22.0	---	L1	
11	0.56152	23.1	---	9.7	32.8	---	56.0	46.0	23.2	---	L1	
12	1.62102	14.4	---	9.7	24.1	---	56.0	46.0	32.0	---	L1	

Bandwidth (Regulation: FCC 15.503(d) 519(b))

<p>COMPANY : Sony EMCS Corporation Tokai TEC</p> <p>Equipment : IC Recording Media</p> <p>MODEL NUMBER: MS-JX8G</p> <p>SERIAL NUMBER: R1-191</p> <p>POWER : DC3.3V</p> <p>Remarks : -</p>	<p style="text-align: right;">UL Japan, Inc. SHONAN No.3 Shield Room</p> <p>REPORT No. : 29KE0256-SH-01-A-R1</p> <p>REGULATION : FCC Part15SubpartF 503(d) 519(b)</p> <p>DATE : 2009/9/4</p> <p>TEMP./HUMI : 24°C/59%</p> <p>TEST MODE : Transmitting</p> <p>ENGINEER : Tatsuya Arai</p>
---	---

10dB Bandwidth: 775.7MHz (LIMIT: >500MHz)
Occupied Bandwidth (99%) : 858.7MHz

※ Agilent



Transmit Freq Error -2.690 MHz
x dB Bandwidth 775.741 MHz

Start Frequency: 3480MHz
Stop Frequency: 5480MHz

DATA OF RADIATION TEST (Regulation: FCC 15.519(c))

UL Japan, Inc.
 SHONAN NO.3 ANECHOIC CHAMBER
 Report No. : 29LE0256-SH-01-A-R1

Company : Sony EMCS Corporation Tokai TEC
 Equipment : IC Recording Media
 Model : MS-JX8G
 Sample No. : R1-191
 Power : DC3.3V
 Mode : Transmitting

Regulation : FCC Part15F Section 15.519(c)
 Test Distance : 0.5m / 0.3m / 0.1m
 Date : 2009/9/4
 Temperature : 24deg.C
 Humidity : 59%
 ENGINEER : Tatsuya Arai

Horizontal (RBW: 1MHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT [dBm]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	1608.00	36.1	25.2	39.6	1.6	15.6	7.7	-87.5	-75.3	12.2	RMS
2	1988.00	36.4	26.4	39.9	1.8	15.6	9.1	-86.1	-63.3	22.8	RMS
3	3076.00	37.0	28.6	40.2	2.2	15.6	12.0	-83.2	-61.3	21.9	RMS
4	4686.00	46.5	30.3	39.6	2.7	15.6	24.3	-70.9	-41.3	29.6	RMS
5	8960.00	38.7	37.3	37.3	3.9	15.6	27.0	-68.2	-41.3	26.9	RMS
6	13440.00	35.6	40.9	36.9	4.6	20.0	24.2	-71.0	-61.3	9.7	RMS
7	17920.00	38.0	46.8	37.7	5.7	20.0	32.8	-62.4	-61.3	1.1	RMS
8	22400.00	35.9	40.1	44.9	6.2	20.0	17.3	-77.9	-61.3	16.6	RMS
9	26880.00	58.1	43.5	68.2	7.5	29.5	11.3	-83.9	-61.3	22.6	RMS
10	31360.00	53.4	43.8	64.2	8.6	29.5	12.1	-83.1	-61.3	21.8	RMS
11	35840.00	60.8	43.2	70.6	8.9	29.5	12.8	-82.4	-61.3	21.1	RMS

No1-5 0.5m, No.6-8: 0.3m, No9-11: 0.1m

Vertical (RBW: 1MHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT [dBm]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	1606.60	36.2	25.2	39.6	1.5	15.6	7.7	-87.5	-75.3	12.2	RMS
2	1986.00	36.5	26.4	39.9	1.8	15.6	9.2	-86.0	-63.3	22.7	RMS
3	3078.00	37.0	28.6	40.2	2.2	15.6	12.0	-83.2	-61.3	21.9	RMS
4	4200.00	44.2	29.3	40.2	2.7	15.6	20.4	-74.8	-41.3	33.5	RMS
5	8960.00	36.4	37.3	37.3	3.9	15.6	24.7	-70.5	-41.3	29.2	RMS
6	13440.00	35.7	40.9	36.9	4.6	20.0	24.3	-70.9	-61.3	9.6	RMS
7	17920.00	37.6	46.8	37.7	5.7	20.0	32.4	-62.8	-61.3	1.5	RMS
8	22400.00	36.0	40.1	44.9	6.2	20.0	17.4	-77.8	-61.3	16.5	RMS
9	26880.00	57.8	43.5	68.2	7.5	29.5	11.1	-84.1	-61.3	22.8	RMS
10	31360.00	53.2	43.8	64.2	8.6	29.5	11.9	-83.3	-61.3	22.0	RMS
11	35840.00	61.2	43.2	70.6	8.9	29.5	13.2	-82.0	-61.3	20.7	RMS

No1-5 0.5m, No.6-8: 0.3m, No9-11: 0.1m

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Loss (Cable + ATT) - Distance Factor

Distance Factor calculation 0.5m: $20 \cdot \log(3.0[m]/0.5[m]) = 15.6[\text{dB}]$

0.3m: $20 \cdot \log(3.0[m]/0.3[m]) = 20.0[\text{dB}]$

0.1m: $20 \cdot \log(3.0[m]/0.1[m]) = 29.5[\text{dB}]$

RESULT (EIRP) = RESULT (3m field strength) - 95.2

Emissions from digital circuitry (limits in Section 15.209)

Horizontal

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT 3m [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	Detector
1	560.02	27.1	18.3	31.9	9.3	0.0	22.8	46.0	23.2	QP
2	720.01	25.0	20.3	31.7	9.8	0.0	23.4	46.0	22.6	QP

Vertical

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT 3m [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	Detector
1	560.01	28.4	18.3	31.9	9.3	0.0	24.1	46.0	21.9	QP
2	720.01	26.7	20.3	31.7	9.8	0.0	25.0	46.0	21.0	QP

DATA OF RADIATION TEST (Regulation: FCC 15.519(d))

UL Japan, Inc.
 SHONAN NO.3 ANECHOIC CHAMBER
 Report No. : 29LE0256-SH-01-A-R1

Company : Sony EMCS Corporation Tokai TEC
 Equipment : IC Recording Media
 Model : MS-JX8G
 Sample No. : R1-191
 Power : DC3.3V
 Mode : Transmitting

Regulation : FCC Part15F Section 15.519(d)
 Test Distance : 0.5m
 Date : 2009/9/4
 Temperature : 24deg.C
 Humidity : 59%

ENGINEER : Tatsuya Arai

Horizontal (RBW: 1kHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT [dBuV/m]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	1237.19	14.8	24.3	39.7	1.4	15.6	-14.8	-110.0	-85.3	24.7	RMS
2	1608.06	15.2	25.2	39.6	1.6	15.6	-13.2	-108.4	-85.3	23.1	RMS

Vertical (RBW: 1kHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT [dBuV/m]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	1239.32	15.1	24.3	39.7	1.4	15.6	-14.6	-109.8	-85.3	24.5	RMS
2	1609.69	15.5	25.2	39.6	1.6	15.6	-12.9	-108.1	-85.3	22.8	RMS

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Loss (Cable + ATT) - Distance Factor

Distance Factor calculation: $20 \cdot \log(3.0[m]/0.5[m]) = 15.6[dB]$

RESULT (EIRP) = RESULT (3m field strength) - 95.2

DATA OF RADIATION TEST (Regulation: FCC 15.519(e))

UL Japan, Inc.
 SHONAN NO.3 ANECHOIC CHAMBER
 Report No. : 29LE0256-SH-01-A-R1

Company : Sony EMCS Corporation Tokai TEC
 Equipment : IC Recording Media
 Model : MS-JX8G
 Sample No. : R1-191
 Power : DC3.3V
 Mode : Transmitting

Regulation : FCC Part15F Section 15.519(e)
 Test Distance : 0.5m
 Date : 2009/9/4
 Temperature : 24deg.C
 Humidity : 59%

ENGINEER : Tatsuya Arai

Horizontal (RBW: 3MHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT EIRP [dBm]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	4620.00	62.6	30.1	39.7	2.7	15.6	40.1	-30.6	0.0	30.6	Peak

Vertical (RBW: 3MHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT EIRP [dBm]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	4246.00	60.1	29.4	40.1	2.7	15.6	36.5	-34.2	0.0	34.2	Peak

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Loss (Cable + ATT) - Distance Factor

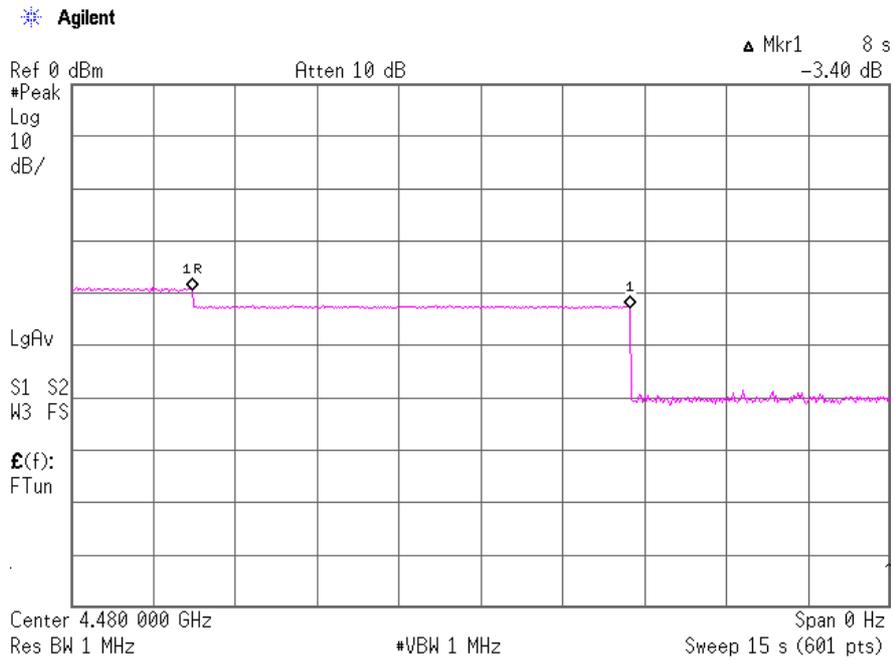
Distance Factor calculation: $20 \cdot \log(3.0[m]/0.5[m]) = 15.6[dB]$

RESULT (EIRP) = RESULT (3m field strength) - 95.2 - $20 \log(RBW/50)$

Transmitter Timeout (Regulation: FCC 15.519(a)(1))

COMPANY : Sony EMCS Corporation Tokai TEC Equipment : IC Recording Media MODEL NUMBER : MS-JX8G SERIAL NUMBER : R1-191 POWER : DC3.3V Remarks : -	UL Japan, Inc. SHONAN No.3 Shield Room REPORT No. : 29KE0256-SH-01-A-R1 REGULATION : FCC Part15SubpartF 519(a)(1) DATE : 2009/9/4 TEMP./HUMI : 24°C/59% TEST MODE : Transmitting ENGINEER : Tatsuya Arai
--	---

Transmitter Timeout: 8 s (LIMIT: <10s)



APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE 1-18GHz	2009/08/23 * 12
SCC-G12	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	RE 1-40GHz/B W/TO	2009/03/11 * 12
SCC-G13	Coaxial Cable	Suhner	SUCOFLEX 102	31599/2	RE 1-40GHz/B W/TO	2009/03/11 * 12
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE 1-18GHz/B W/TO	2009/03/26 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2009/02/04 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE 1-40GHz/B W/TO	2009/02/12 * 12
SJM-03	Measure	KOMELON	KMC-36	-	RE/CE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	1	RE/CE	-
SHA-05	Horn Antenna	ETS LINDGREN	3160-09	LM4210	RE 18-26.5GHz	2009/04/09 * 12
SAF-09	Pre Amplifier	TOYO Corporation	HAP18-26W	00000018	RE 18-26.5GHz	2009/03/27 * 12
SHA-06	Horn Antenna	ETS LINDGREN	3160-10	LM3459	RE 26.5-40GHz	2009/04/30 * 12
SAF-10	Pre Amplifier	TOYO Corporation	HAP26-40W	00000010	RE 26.5-40GHz	2009/06/29 * 12
SCC-C6/C7/C8/C10/SRSE-03	Coaxial Cable&RF Selector	Suhner/Fujikura/Suhner/Suhner/TOYO	141PE/12DSFA/141PE/141PE/NS4906	-/0901-271(RF Selector)	CE	2009/04/06 * 12
SLS-05	LISN	Rohde & Schwarz	ENV216	100516	CE	2009/02/25 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	CE/RE30-1000MHz	2009/04/08 * 12
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE30-1000MHz	2009/02/13 * 12
SAT6-05	Attenuator	JFW	50HF-006N	-	RE30-1000MHz	2009/02/13 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE30-300MHz	2009/03/20 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE30-1000MHz	2009/04/06 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A0901	RE300-1000MHz	2009/03/20 * 12
SAEC-03(NSA)	Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2009/03/19 * 12

The expiration date of the calibration is the end of the expired month .
As for some calibrations performed after the tested dates , those test equipment have been controlled by means of an unbroken chains of calibrations .

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,
BW: Band Width
TO: Transmitter Timeout