

APPENDIX 2: Data of EMI test

Radiated Emission

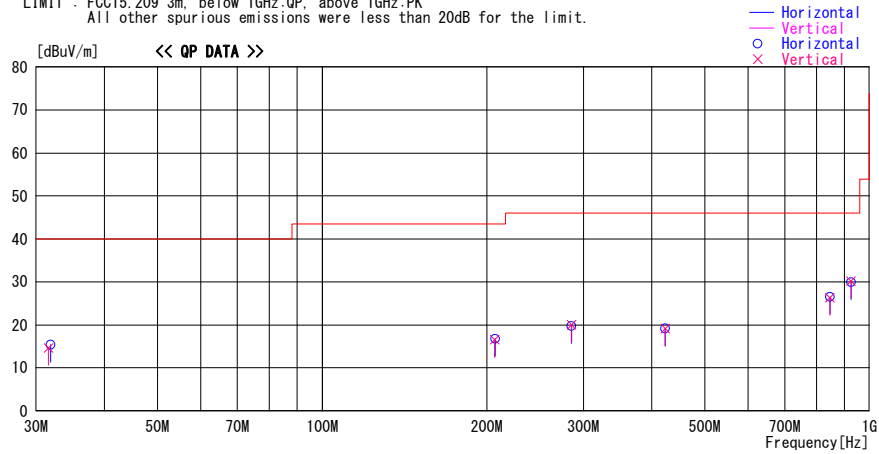
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 4 Semi Anechoic Chamber
Date : 2010/12/07

Report No. : 31DE0293-HO-02
Temp. / Humi. : 22deg. C / 39%
Engineer : Tomotaka Sasagawa

Mode / Remarks : Receiving mode

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss& Gain [dB]							
31.620	22.3	QP	17.4	-25.1	14.6	353	100	Vert.	40.0	25.4	
31.890	23.1	QP	17.4	-25.1	15.4	107	100	Hori.	40.0	24.6	
206.581	22.7	QP	16.8	-23.0	16.5	2	100	Vert.	43.5	27.0	
207.121	22.8	QP	16.8	-22.9	16.7	356	100	Hori.	43.5	26.8	
285.150	23.1	QP	18.9	-22.3	19.7	278	100	Hori.	46.0	26.3	
285.420	23.4	QP	18.9	-22.3	20.0	254	100	Vert.	46.0	26.0	
423.220	22.7	QP	17.9	-21.4	19.2	327	100	Hori.	46.0	26.8	
423.220	22.6	QP	17.9	-21.4	19.1	132	100	Vert.	46.0	26.9	
846.440	21.9	QP	23.5	-18.9	26.5	218	100	Hori.	46.0	19.5	
846.440	21.7	QP	23.5	-18.9	26.3	165	100	Vert.	46.0	19.7	
925.111	23.4	QP	24.8	-18.3	29.9	115	100	Hori.	46.0	16.1	
925.111	23.7	QP	24.8	-18.3	30.2	3	100	Vert.	46.0	15.8	

CHART: WITH FACTOR ANT TYPE: -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz--: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

*The limit is rounded down to one decimal place.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2010/12/07

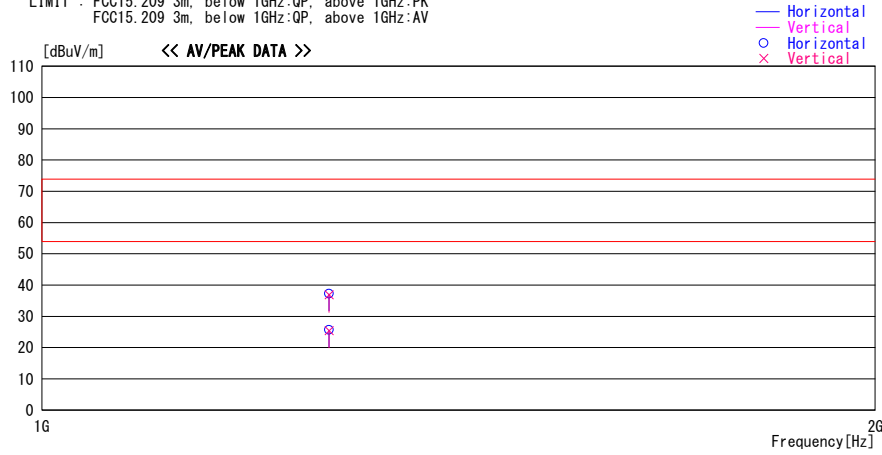
Report No. : 31DE0293-HO-02

Temp. / Humi. : 23deg. C / 42%

Engineer : Tomotaka Sasagawa

Mode / Remarks : Receiving mode

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK
FCC15.209 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
1269.660	43.9	PK	24.9	-31.6	37.2	223	100	Hori.	73.9	36.7	
1269.660	43.5	PK	24.9	-31.6	36.8	312	100	Vert.	73.9	37.1	
1269.660	32.4	AV	24.9	-31.6	25.7	223	100	Hori.	53.9	28.2	
1269.660	32.1	AV	24.9	-31.6	25.4	312	100	Vert.	53.9	28.5	

CHART: WITH FACTOR ANT TYPE: -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

*The limit is rounded down to one decimal place.

*The test result is rounded off to one or two decimal places, so some differences might be observed.

APPENDIX 3: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2010/02/02 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE	2010/02/09 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	RE	2010/11/18 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	RE	2010/10/27 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2010/10/11 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	N/A	RE	2010/10/11 * 12
MCC-50	Coaxial cable	UL Japan	-	-	RE	2010/03/18 * 12
MAT-51	Attenuator(6dB)	Weinschel	2	AS3557	RE	2010/01/20 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	260833	RE	2010/03/05 * 12
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE	2010/09/01 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	RE	2010/02/09 * 12
MJM-05	Measure	PROMART	SEN1955	-	RE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	RE	2010/11/30 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2010/01/19 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2010/09/30 * 12

The expiration date of the calibration is the end of the expired month.

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

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item:

RE: Radiated emission

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