APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

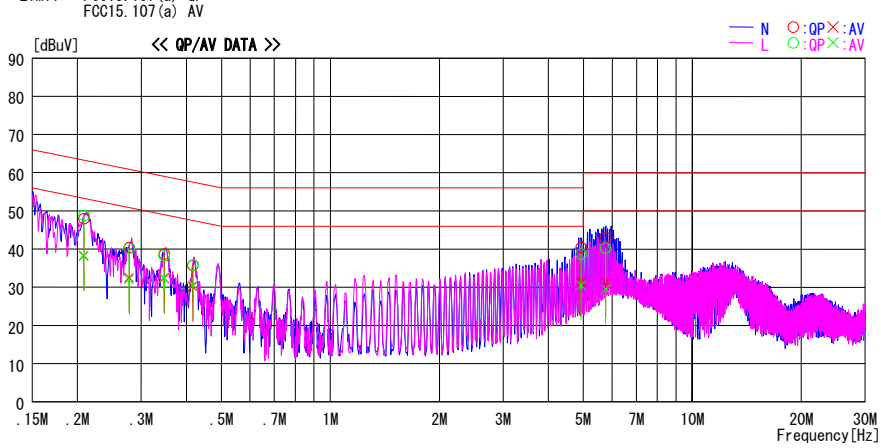
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2009/10/24

Report No. : 29LE0211-HO-05

Temp./Humi. : 21deg.C. / 53%
Engineer : Keisuke Kawamura

Mode / Remarks : Communication mode

LIMIT : FCC15.107(a) QP
FCC15.107(a) AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.20816	47.7	37.9	0.3	48.0	38.2	63.3	53.3	15.3	15.1	N	
0.27803	40.2	32.2	0.3	40.5	32.5	60.9	50.9	20.4	18.4	N	
0.34729	38.4	32.0	0.3	38.7	32.3	59.0	49.0	20.3	16.7	N	
0.41624	35.4	29.9	0.3	35.7	30.2	57.5	47.5	21.8	17.3	N	
4.92663	39.8	30.8	0.7	40.5	31.5	56.0	46.0	15.5	14.5	N	
5.76213	42.2	30.5	0.8	43.0	31.3	60.0	50.0	17.0	18.7	N	
0.20821	48.5	38.1	0.3	48.8	38.4	63.3	53.3	14.5	14.9	L	
0.27731	39.9	31.7	0.3	40.2	32.0	60.9	50.9	20.7	18.9	L	
0.34677	38.1	32.2	0.3	38.4	32.5	59.0	49.0	20.6	16.5	L	
0.41714	35.5	30.3	0.3	35.8	30.6	57.5	47.5	21.7	16.9	L	
4.92615	38.0	29.8	0.7	38.7	30.5	56.0	46.0	17.3	15.5	L	
5.75903	39.5	28.7	0.8	40.3	29.5	60.0	50.0	19.7	20.5	L	

CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

*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

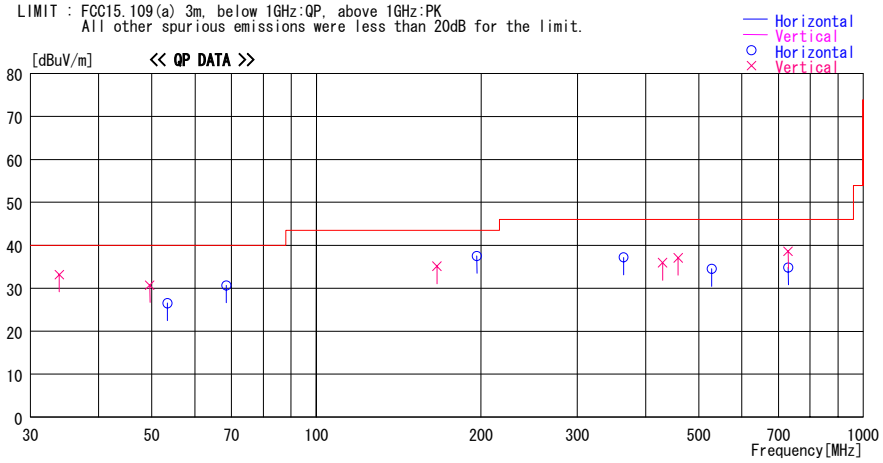
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2009/10/24

Report No. : 29LE0211-HO-05

Temp./Humi. : 21deg.C. / 53%
Engineer : Keisuke Kawamura

Mode / Remarks : Communication mode Worst-Axis(Hori:X , Vert:X)

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
33.860	41.8	QP	16.4	-25.0	33.2	108	100	Vert.	40.0	6.8
49.610	45.0	QP	10.4	-24.7	30.7	91	100	Vert.	40.0	9.3
53.440	41.9	QP	9.3	-24.7	26.5	119	400	Hori.	40.0	13.5
68.420	48.7	QP	6.4	-24.5	30.6	85	397	Hori.	40.0	9.4
166.149	43.1	QP	15.3	-23.3	35.1	204	100	Vert.	43.5	8.4
196.604	44.0	QP	16.5	-23.0	37.5	107	168	Hori.	43.5	6.0
364.504	42.5	QP	16.4	-21.7	37.2	289	113	Hori.	46.0	8.8
429.615	39.4	QP	17.7	-21.2	35.9	110	127	Vert.	46.0	10.1
458.449	40.1	QP	18.1	-21.1	37.1	163	120	Vert.	46.0	8.9
527.972	36.3	QP	18.9	-20.7	34.5	213	100	Hori.	46.0	11.5
729.018	37.4	QP	20.6	-19.4	38.6	269	100	Vert.	46.0	7.4
729.018	33.6	QP	20.6	-19.4	34.8	340	100	Hori.	46.0	11.2

CHART:WITH FACTOR ANT TYPE: -30MHz:LOOP, 30-300MHz:BICONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz-:HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS(CABLE+ATTEN.+D-Factor) - 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-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2009/02/02 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE	2009/02/06 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2009/08/25 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE	2009/06/30 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2009/01/19 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2009/01/10 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2009/07/02 * 12
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2008/11/14 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2009/03/18 * 12
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	CE	2009/02/03 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	CE	2009/02/06 * 12
MJM-07	Measure	PROMART	SEN1955	-	CE	-
MSA-05	Spectrum Analyzer	Advantest	R3273	160400285	CE	2009/06/29 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	CE	2009/10/23 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2009/02/18 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(AE)	2009/02/18 * 12
MTA-07	Terminator	MCL	BTRM-50	1 9944	CE	2009/02/17 * 12
MCC-113	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(5m)/421-010(1m)/sucoform141-PE(1m)/RFM-E121(Switcher)	-/04178	CE	2009/07/01 * 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:
CE: Conducted emission
RE: Radiated emission