

**APPENDIX 2: Data of EMI test**

**Radiated Emission**

**DATA OF RADIATED EMISSION TEST**

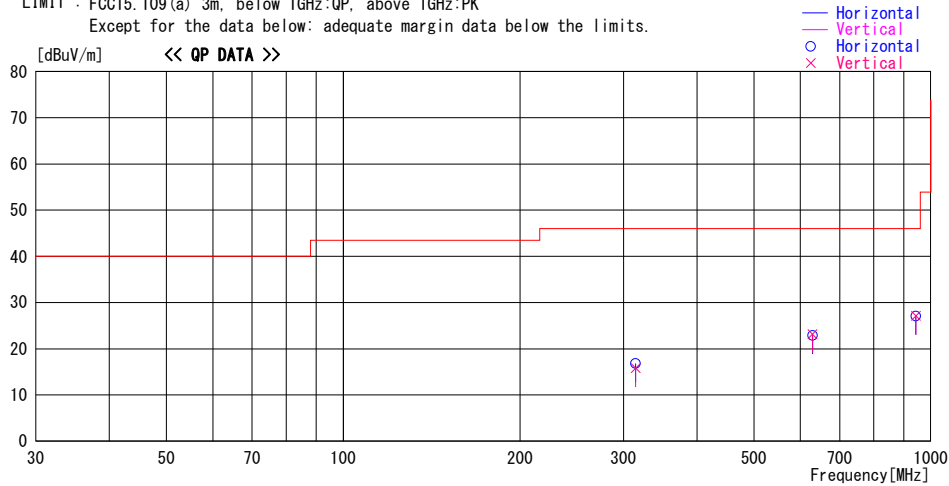
UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber  
Date : 2010/05/13

Report No. : 32FE0237-HO-01  
Temp./Humi. : 22deg. C / 35%  
Operator : Satofumi Matsuyama

Mode / Remarks : Rx 314.35MHz, Worst-axis, Hor:X-axis Ver:X-axis

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain					[dBuV/m]	[dB]	
314.570	23.7	QP	14.8	-21.7	16.8	174	100	Hori.	46.0	29.2	
314.570	22.7	QP	14.8	-21.7	15.8	326	100	Vert.	46.0	30.2	
629.140	23.1	QP	19.8	-20.0	22.9	55	167	Hori.	46.0	23.1	
629.140	23.4	QP	19.8	-20.0	23.2	209	100	Vert.	46.0	22.8	
943.710	21.6	QP	22.8	-17.3	27.1	0	100	Hori.	46.0	18.9	
943.710	21.6	QP	22.8	-17.3	27.1	0	100	Vert.	46.0	18.9	

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

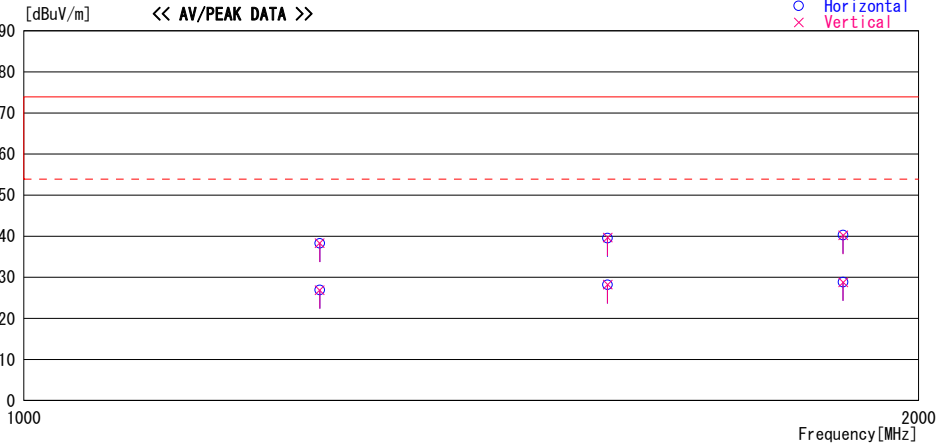
### DATA OF RADIATED EMISSION TEST

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Mode / Remarks : Rx 314.35MHz, Worst-axis, Hor:X-axis Ver:X-axis

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above: 1GHz:PK  
FCC15.109(a) 3m, below 1GHz:QP, above: 1GHz:AV



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]							
1257.400	44.8	PK	26.0	-32.5	38.3	0	100	Hori.	73.9	35.6	
1257.400	44.8	PK	26.0	-32.5	38.3	0	100	Vert.	73.9	35.6	
1257.400	33.4	AV	26.0	-32.5	26.9	0	100	Hori.	53.9	27.0	
1257.400	33.4	AV	26.0	-32.5	26.9	0	100	Vert.	53.9	27.0	
1571.750	44.0	PK	27.1	-31.5	39.6	0	100	Hori.	73.9	34.3	
1571.750	44.1	PK	27.1	-31.5	39.7	0	100	Vert.	73.9	34.2	
1571.750	32.6	AV	27.1	-31.5	28.2	0	100	Hori.	53.9	25.7	
1571.750	32.6	AV	27.1	-31.5	28.2	0	100	Vert.	53.9	25.7	
1886.100	42.9	PK	28.0	-30.6	40.3	0	100	Hori.	73.9	33.6	
1886.100	42.8	PK	28.0	-30.6	40.2	0	100	Vert.	73.9	33.7	
1886.100	31.4	AV	28.0	-30.6	28.8	0	100	Hori.	53.9	25.1	
1886.100	31.4	AV	28.0	-30.6	28.8	0	100	Vert.	53.9	25.1	

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)

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\*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	2010/02/01 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE	2010/02/09 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	RE	2010/02/03 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE	2009/06/30 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2010/01/23 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2010/01/23 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2009/07/02 * 12
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2009/11/12 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2010/03/23 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2010/05/07 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	174410(1m) / 284655(5m)	RE	2010/01/25 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2010/03/03 * 12

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

All equipment is calibrated with valid calibrations. Each measurement data 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**

**UL Japan, Inc.**

**Head Office EMC Lab.**

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