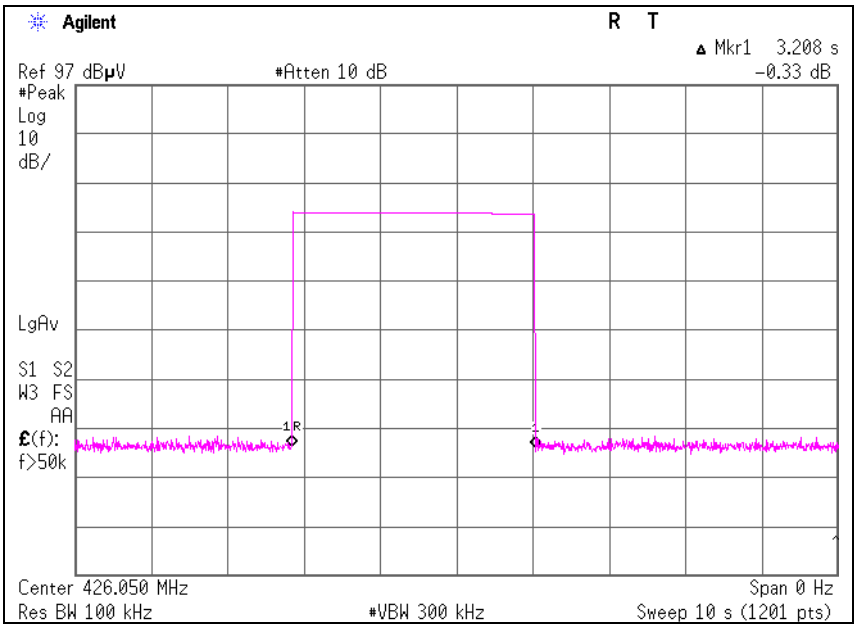
APPENDIX 2: Data of EMI test

Automatically deactivate

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30IE0281-HO-01
Date	06/10/2010
Temperature/ Humidity	23 deg.C./ 60%
Engineer	Keisuke Kawamura
Mode	Normal use mode

Time of Transmitting [sec]	Limit [sec]	Result
3.208	5.00	Pass



Radiated Emission (Electric Field Strength of Fundamental and Spurious Emission)

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30IE0281-HO-01
Date	06/10/2010
Temperature/ Humidity	23 deg.C./ 60%
Engineer	Keisuke Kawamura
Mode	Transmitting mode

QP or PK

Frequency	Detector	Reading [dBuV]		Ant Factor	Loss	Gain	Duty Factor	Result [dBuV/m]		Limit	Margin [dB]		Remark Inside or Outside
[MHz]		Hor	Ver	[dB/m]	[dB]	[dB]	[dB]	Hor	Ver	[dBuV/m]	Hor	Ver	of Restricted Bands
426.050	QP	78.2	77.4	18.0	10.5	31.9	-	74.8	74.0	80.5	5.7	6.5	Carrier
852.100	QP	25.1	25.1	23.4	12.7	31.5	-	29.7	29.7	60.5	30.8	30.8	Outside
1278.150	PK	43.6	45.1	24.6	2.3	33.9	-	36.6	38.1	80.5	43.9	42.4	Outside
1704.200	PK	45.9	48.4	25.6	2.5	32.9	-	41.1	43.6	73.9	32.8	30.3	Inside
2130.250	PK	42.5	43.1	26.2	2.8	32.3	-	39.2	39.8	80.5	41.3	40.7	Outside
2556.300	PK	42.2	42.3	27.0	3.0	32.1	-	40.1	40.2	80.5	40.4	40.3	Outside
2982.350	PK	42.4	41.5	28.0	3.2	31.9	-	41.7	40.8	80.5	38.8	39.7	Outside
3408.400	PK	45.0	44.5	29.0	3.4	31.7	-	45.7	45.2	80.5	34.8	35.3	Outside
3834.450	PK	41.9	41.4	29.2	3.6	31.6	-	43.1	42.6	73.9	30.8	31.3	Inside
4260.500	PK	41.3	41.2	29.5	3.7	31.5	-	43.0	42.9	73.9	30.9	31.0	Inside

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

PK with Duty factor

Frequency	Detector	Reading [dBuV]		Ant Factor	Loss	Gain	Duty Factor	Result [dBuV/m]		Limit	Margin [dB]		Remark Inside or Outside
[MHz]		Hor	Ver	[dB/m]	[dB]	[dB]	[dB]	Hor	Ver	[dBuV/m]	Hor	Ver	of Restricted Bands
1278.150	PK	43.6	45.1	24.6	2.3	33.9	0.0	36.6	38.1	60.5	23.9	22.4	Outside
1704.200	PK	45.9	48.4	25.6	2.5	32.9	0.0	41.1	43.6	53.9	12.8	10.3	Inside
2130.250	PK	42.5	43.1	26.2	2.8	32.3	0.0	39.2	39.8	60.5	21.3	20.7	Outside
2556.300	PK	42.2	42.3	27.0	3.0	32.1	0.0	40.1	40.2	60.5	20.4	20.3	Outside
2982.350	PK	42.4	41.5	28.0	3.2	31.9	0.0	41.7	40.8	60.5	18.8	19.7	Outside
3408.400	PK	45.0	44.5	29.0	3.4	31.7	0.0	45.7	45.2	60.5	14.8	15.3	Outside
3834.450	PK	41.9	41.4	29.2	3.6	31.6	0.0	43.1	42.6	53.9	10.8	11.3	Inside
4260.500	PK	41.3	41.2	29.5	3.7	31.5	0.0	43.0	42.9	53.9	10.9	11.0	Inside

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier) + Duty factor (Refer to Duty factor data sheet)

*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

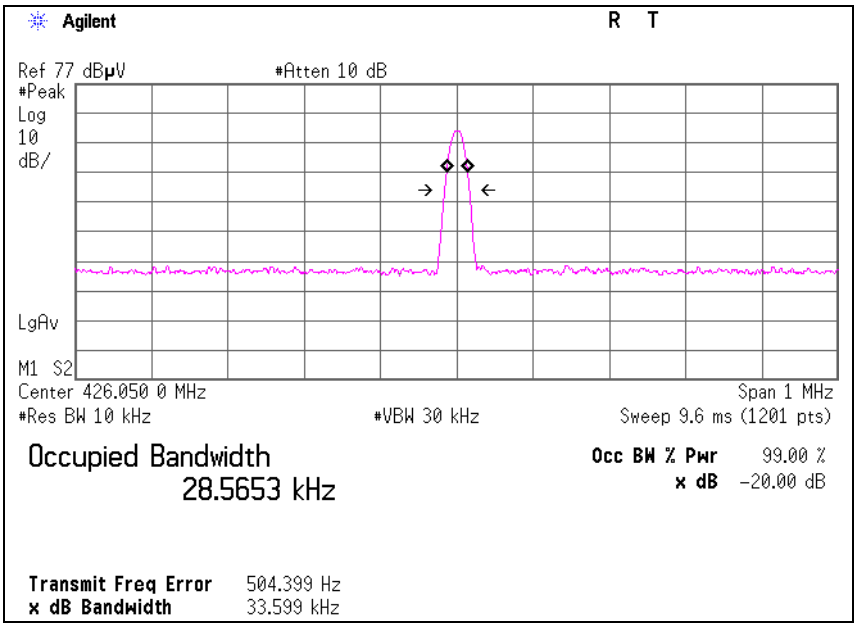
* The test above 1GHz was performed with PK detect. Average emission measurements were not calculated with PK detect and Duty cycle factor since the PK measurement value did not exceed the AV limit.

-20dB Bandwidth

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30IE0281-HO-01
Date	06/10/2010
Temperature/ Humidity	23 deg.C./ 60%
Engineer	Keisuke Kawamura
Mode	Normal use mode

Bandwidth Limit : Fundamental Frequency **426.05** MHz x 0.25% = 1065.13 kHz

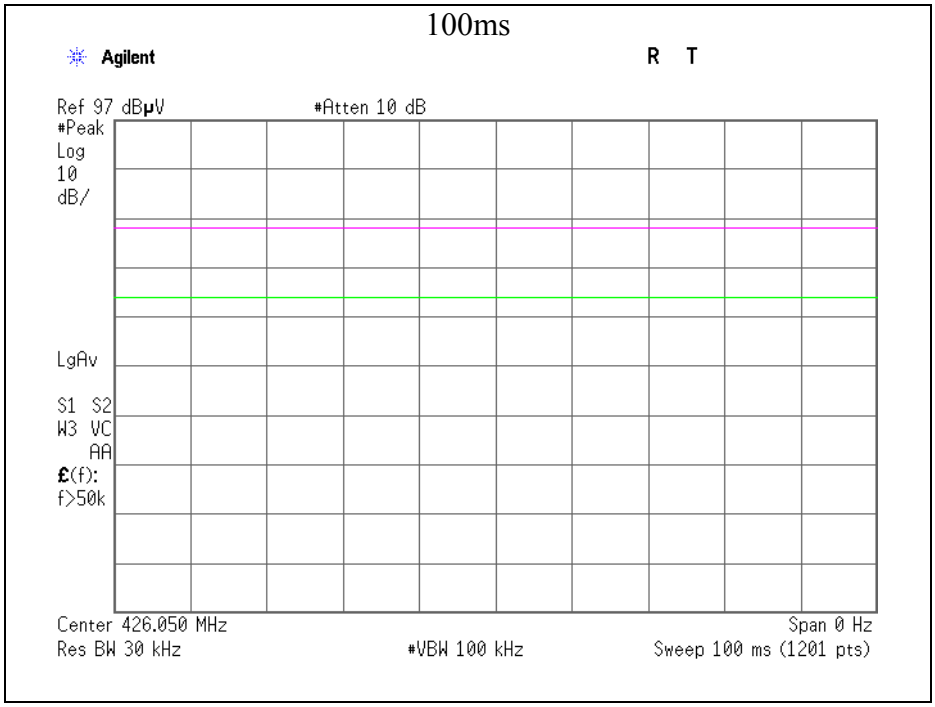
-20dB Bandwidth [kHz]	Bandwidth Limit [kHz]	Result
33.60	1065.13	Pass



Duty Cycle

Test place	Head Office EMC Lab. No.4 Semi Anechoic Chamber
Report No.	30IE0281-HO-01
Date	06/10/2010
Temperature/ Humidity	23 deg.C./ 60%
Engineer	Keisuke Kawamura
Mode	Normal use mode

ON time [ms]	Cycle [ms]	Duty (On time/Cycle)	Duty [dB]
100.00	100.00	1.00	0.0



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-08	Measure	PROMART	SEN1955	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2009/08/25 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	RE	2009/10/23 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2010/03/22 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	N/A	RE	2010/01/23 * 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
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2009/08/10 * 12
MCC-57	Microwave Cable	Suhner	SUCOFLEX104	246769(1m) / 292411(5m)	RE	2009/11/17 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2010/03/16 * 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, -20dB bandwidth, Automatically deactivate and Duty cycle tests