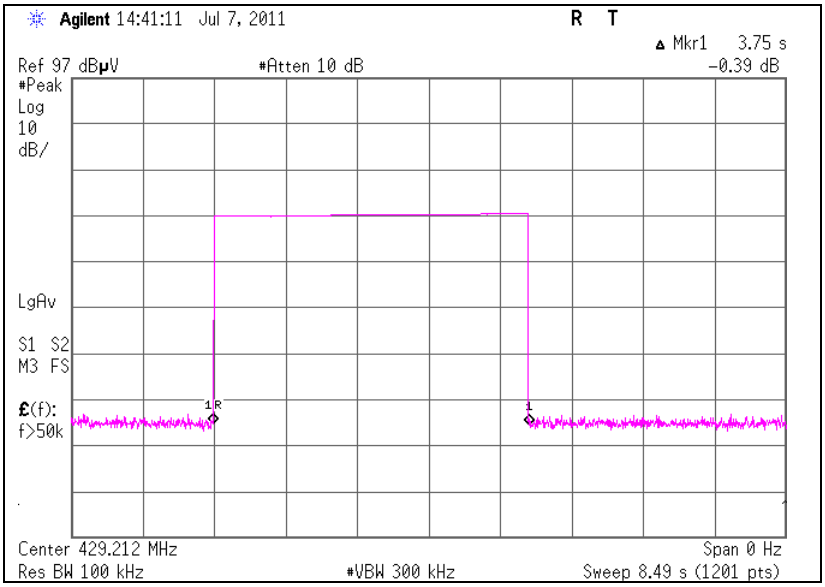
APPENDIX 2: Data of EMI test

Automatically deactivate

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31KE0202-HO-01
Date	07/07/2011
Temperature/ Humidity	23 deg. C / 60 % RH
Engineer	Motoya Imura
Mode	Normal use mode

Time of Transmitting [sec]	Limit [sec]	Result
3.75	5.00	Pass



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

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31KE0202-HO-01
Date	07/07/2011
Temperature/ Humidity	23 deg. C / 60 % RH
Engineer	Motoya Imura
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
429.213	QP	78.5	77.4	17.6	10.7	32.0	-	74.8	73.7	80.6	5.8	6.9	Carrier
858.425	QP	22.3	23.3	22.0	13.0	31.2	-	26.1	27.1	60.6	34.5	33.5	Outside
1287.637	PK	44.4	44.4	24.8	1.8	34.5	-	36.5	36.5	80.6	44.1	44.1	Outside
1716.850	PK	45.7	47.5	25.7	2.1	33.5	-	40.0	41.8	80.6	40.6	38.8	Outside
2146.063	PK	43.2	42.4	26.1	2.4	32.8	-	38.9	38.1	80.6	41.7	42.5	Outside
2575.275	PK	42.6	43.3	26.7	2.6	32.5	-	39.4	40.1	80.6	41.2	40.5	Outside
3004.488	PK	42.2	42.2	27.8	2.8	32.3	-	40.5	40.5	80.6	40.1	40.1	Outside
3433.700	PK	43.2	44.0	28.4	3.1	32.1	-	42.6	43.4	80.6	38.0	37.2	Outside
3862.913	PK	41.4	42.1	28.1	3.3	32.0	-	40.8	41.5	73.9	33.1	32.4	Inside
4292.125	PK	41.1	41.1	29.1	3.5	31.9	-	41.8	41.8	73.9	32.1	32.1	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
1287.637	PK	44.4	44.4	24.8	1.8	34.5	0.0	36.5	36.5	60.6	24.1	24.1	Outside
1716.850	PK	45.7	47.5	25.7	2.1	33.5	0.0	40.0	41.8	60.6	20.6	18.8	Outside
2146.063	PK	43.2	42.4	26.1	2.4	32.8	0.0	38.9	38.1	60.6	21.7	22.5	Outside
2575.275	PK	42.6	43.3	26.7	2.6	32.5	0.0	39.4	40.1	60.6	21.2	20.5	Outside
3004.488	PK	42.2	42.2	27.8	2.8	32.3	0.0	40.5	40.5	60.6	20.1	20.1	Outside
3433.700	PK	43.2	44.0	28.4	3.1	32.1	0.0	42.6	43.4	60.6	18.0	17.2	Outside
3862.913	PK	41.4	42.1	28.1	3.3	32.0	0.0	40.8	41.5	53.9	13.1	12.4	Inside
4292.125	PK	41.1	41.1	29.1	3.5	31.9	0.0	41.8	41.8	53.9	12.1	12.1	Inside

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

*It was confirmed by a search coil that there was no noise for spurious emission below 30MHz.

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

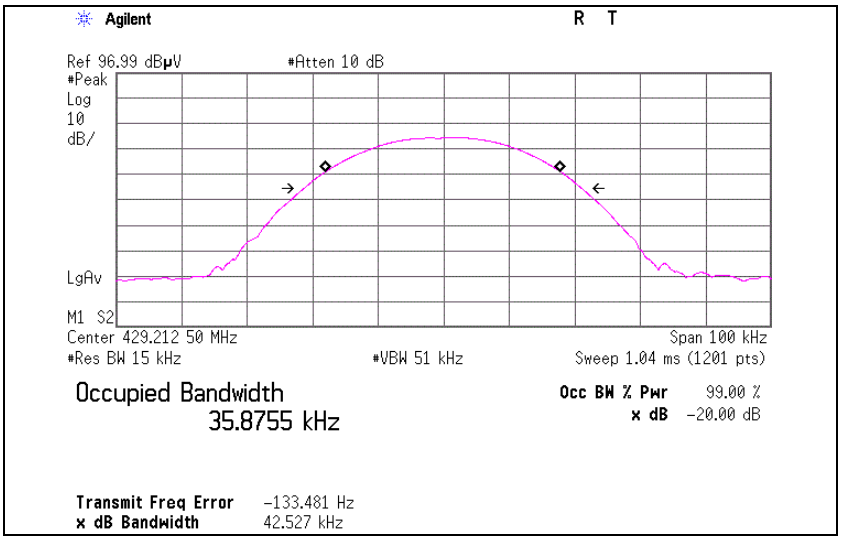
* The test above 1GHz was performed with PK detect. Average emission measurements were not calculated with PK detect and Duty cycle factor since the PK measurement value did not exceed the AV limit.

-20dB Bandwidth

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31KE0202-HO-01
Date	07/07/2011
Temperature/ Humidity	23 deg. C / 60 % RH
Engineer	Motoya Imura
Mode	Normal use mode

Bandwidth Limit : Fundamental Frequency **429.212** MHz x 0.25% = 1073.03 kHz

-20dB Bandwidth [kHz]	Bandwidth Limit [kHz]	Result
42.53	1073.03	Pass

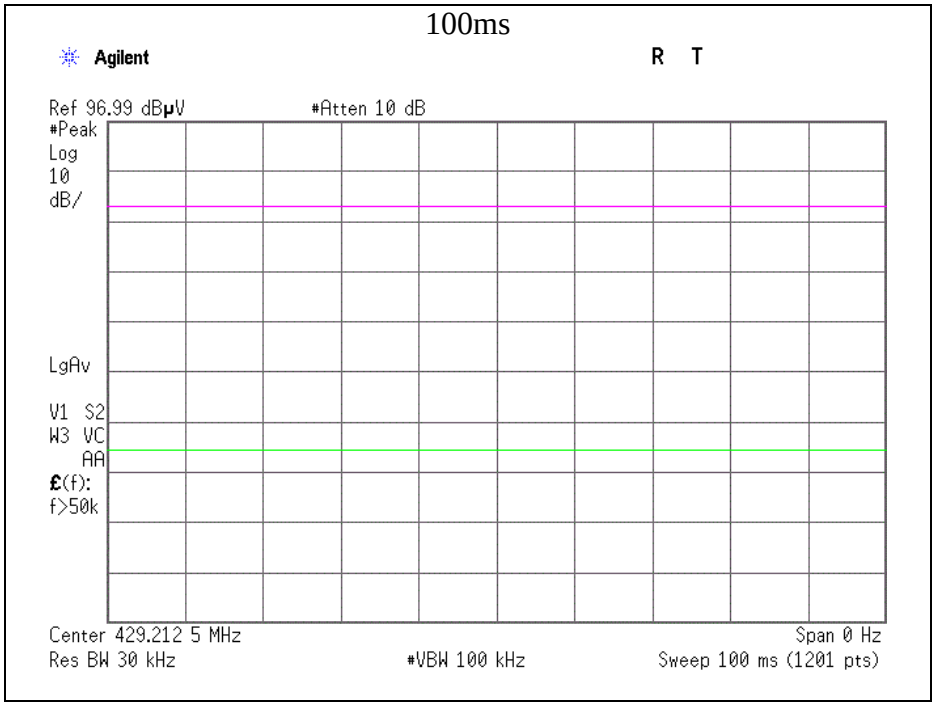


***RBW was set at 1 to 5% of Bandwidth Limit (1073.03kHz) (RBW=15kHz).**
Span was set at 2 to 3.5 times Occupied Bandwidth (Span=100kHz), because this equipment is a narrowband equipment.

Duty Cycle

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31KE0202-HO-01
Date	07/07/2011
Temperature/ Humidity	23 deg. C / 60 % RH
Engineer	Motoya Imura
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-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2011/02/22 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE	2011/02/23 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE	
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MRENT-95	Spectrum Analyzer	Agilent	E4440A	MY45305081	RE	2011/06/30 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE	2010/08/23 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2010/10/11 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2010/10/11 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2010/07/06 * 12
MAT-09	Attenuator(6dB)	Weinschel Corp	2	BK7973	RE	2010/11/05 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2011/03/04 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2011/05/23 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	270875/4(1m) / 284655(5m)	RE	2011/03/02 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2011/03/10 * 12
MLPA-06	Loop Antenna	UL Japan	-	-	RE	Pre Check

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, -20dB bandwidth, Automatically deactivate and Duty cycle tests