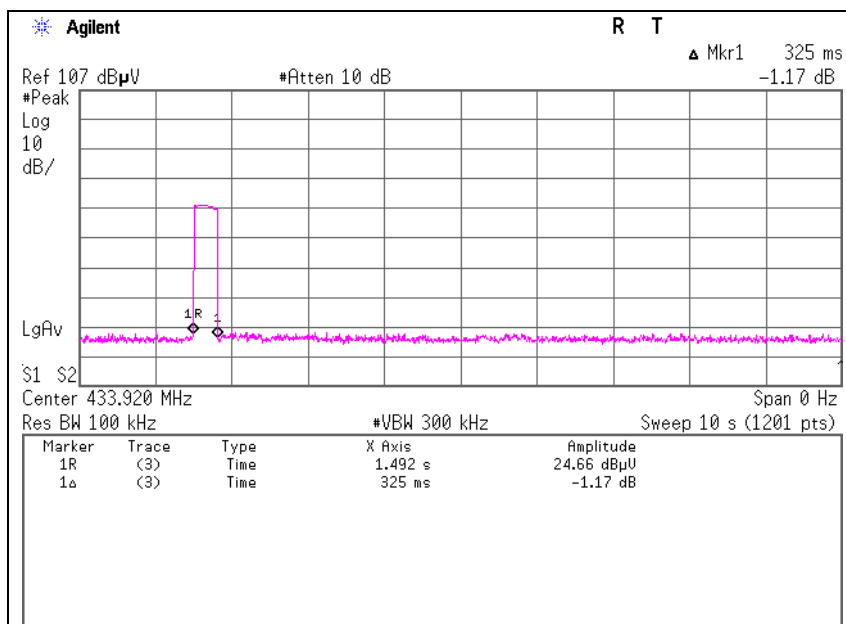


APPENDIX 2: Data of EMI test

Automatically deactivate

Test place Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No. 31DE0293-HO-01
Date 12/06/2010
Temperature/ Humidity 21 deg.C./ 37%
Engineer Keisuke Kawamura
Mode Normal use mode

Time of Transmitting [sec]	Limit [sec]	Result
0.325	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.	31DE0293-HO-01	
Date	12/07/2010	12/08/2010
Temperature/ Humidity	23 deg.C./ 41%	23 deg.C./ 39%
Engineer	Tomotaka Sasagawa	Tomotaka Sasagawa
	(Below 1GHz)	(Above 1GHz)
Mode	Transmitting mode	

PK

Frequency [MHz]	Detector	Reading [dBuV]		Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]		Limit [dBuV/m]	Margin [dB]		Remark Inside or Outside of Restricted Bands
		Hor	Ver					Hor	Ver		Hor	Ver	
433.920	PK	81.4	80.9	18.1	10.5	31.9	-	78.1	77.6	100.8	22.7	23.2	Carrier
867.840	PK	30.1	28.9	23.8	12.7	31.5	-	35.1	33.9	80.8	45.7	46.9	Outside
1301.760	PK	48.5	50.1	25.1	2.4	33.8	-	42.2	43.8	73.9	31.7	30.1	Inside
1735.680	PK	47.2	47.9	26.5	2.7	32.8	-	43.6	44.3	80.8	37.2	36.5	Outside
2169.600	PK	45.9	48.2	27.2	2.9	32.2	-	43.8	46.1	80.8	37.0	34.7	Outside
2603.520	PK	49.2	49.2	27.4	3.2	32.0	-	47.8	47.8	80.8	33.0	33.0	Outside
3037.440	PK	46.4	46.9	28.1	3.4	31.9	-	46.0	46.5	80.8	34.8	34.3	Outside
3471.360	PK	46.8	46.2	29.3	3.6	31.7	-	48.0	47.4	80.8	32.8	33.4	Outside
3905.280	PK	46.0	44.3	29.5	3.9	31.6	-	47.8	46.1	73.9	26.1	27.8	Inside
4339.200	PK	47.6	42.7	29.8	4.1	31.5	-	50.0	45.1	73.9	23.9	28.8	Inside

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

PK with Duty factor

Frequency [MHz]	Detector	Reading [dBuV]		Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]		Limit [dBuV/m]	Margin [dB]		Remark
		Hor	Ver					Hor	Ver		Hor	Ver	
433.920	PK	81.4	80.9	18.1	10.5	31.9	-4.2	73.9	73.4	80.8	6.9	7.4	Carrier
867.840	PK	30.1	28.9	23.8	12.7	31.5	-4.2	30.9	29.7	60.8	29.9	31.1	Outside
1301.760	PK	48.5	50.1	25.1	2.4	33.8	-4.2	38.0	39.6	53.9	15.9	14.3	Inside
1735.680	PK	47.2	47.9	26.5	2.7	32.8	-4.2	39.4	40.1	60.8	21.4	20.7	Outside
2169.600	PK	45.9	48.2	27.2	2.9	32.2	-4.2	39.6	41.9	60.8	21.2	18.9	Outside
2603.520	PK	49.2	49.2	27.4	3.2	32.0	-4.2	43.6	43.6	60.8	17.2	17.2	Outside
3037.440	PK	46.4	46.9	28.1	3.4	31.9	-4.2	41.8	42.3	60.8	19.0	18.5	Outside
3471.360	PK	46.8	46.2	29.3	3.6	31.7	-4.2	43.8	43.2	60.8	17.0	17.6	Outside
3905.280	PK	46.0	44.3	29.5	3.9	31.6	-4.2	43.6	41.9	53.9	10.3	12.0	Inside
4339.200	PK	47.6	42.7	29.8	4.1	31.5	-4.2	45.8	40.9	53.9	8.1	13.0	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).

Duty Cycle

Test place	Head Office EMC Lab. No.3 Semi Anechoic Chamber
Report No.	31DE0293-HO-01
Date	12/06/2010
Temperature/ Humidity	21 deg.C./ 37%
Engineer	Keisuke Kawamura
Mode	Normal use mode

Type	Times	ON time(One pulse) [ms]	ON time(in 50ms) [ms]	ON time(in 100ms) [ms]
A	78	0.317	24.7026	49.4052
B	8	0.567	4.5336	9.0672
C	1	1.567	1.567	3.134

*1)ON time(in 50ms) = Times * ON time(One pulse)

*2)ON time(in 100ms) = ON time(in 50ms) * 2

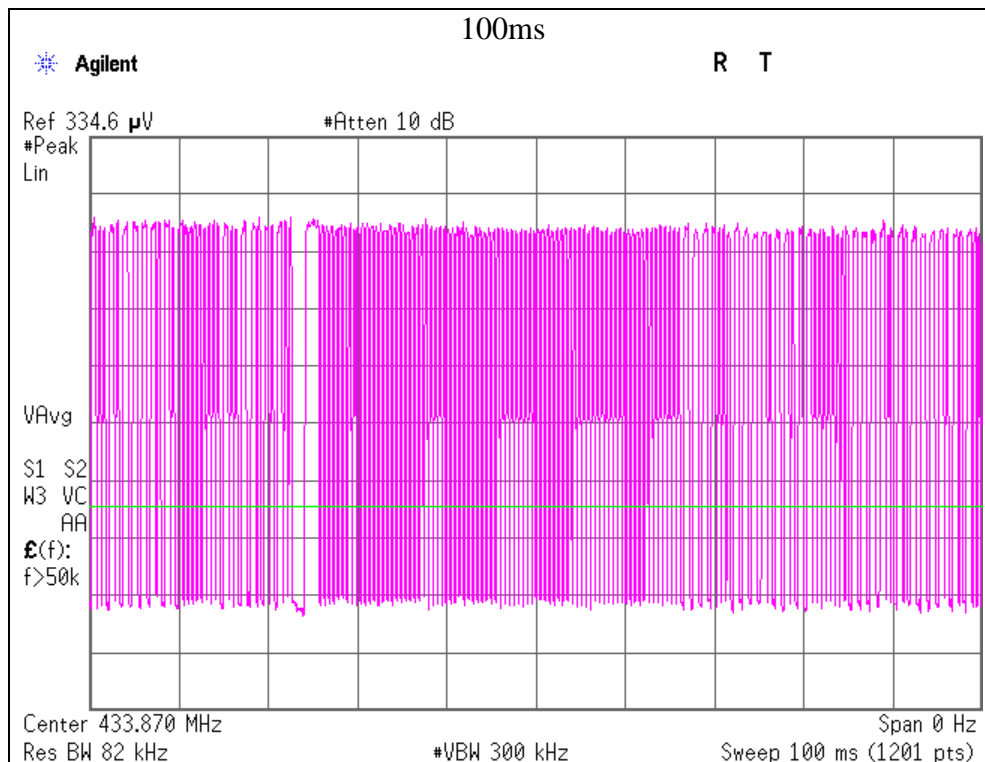
*3)The train of pulses was exceeding 100msec, and that sampled 100msec was the worst case against the pulse train

(Total)

ON time [ms]	Cycle [ms]	Duty (On time/Cycle)	Duty [dB]
61.61	100.00	0.62	-4.2

*3)ON time = Type A's ON time (in 100ms) + Type B's ON time (in 100ms) + Type C's ON time (in 100ms)

*4)Duty = 20log₁₀(ON time/Cycle)



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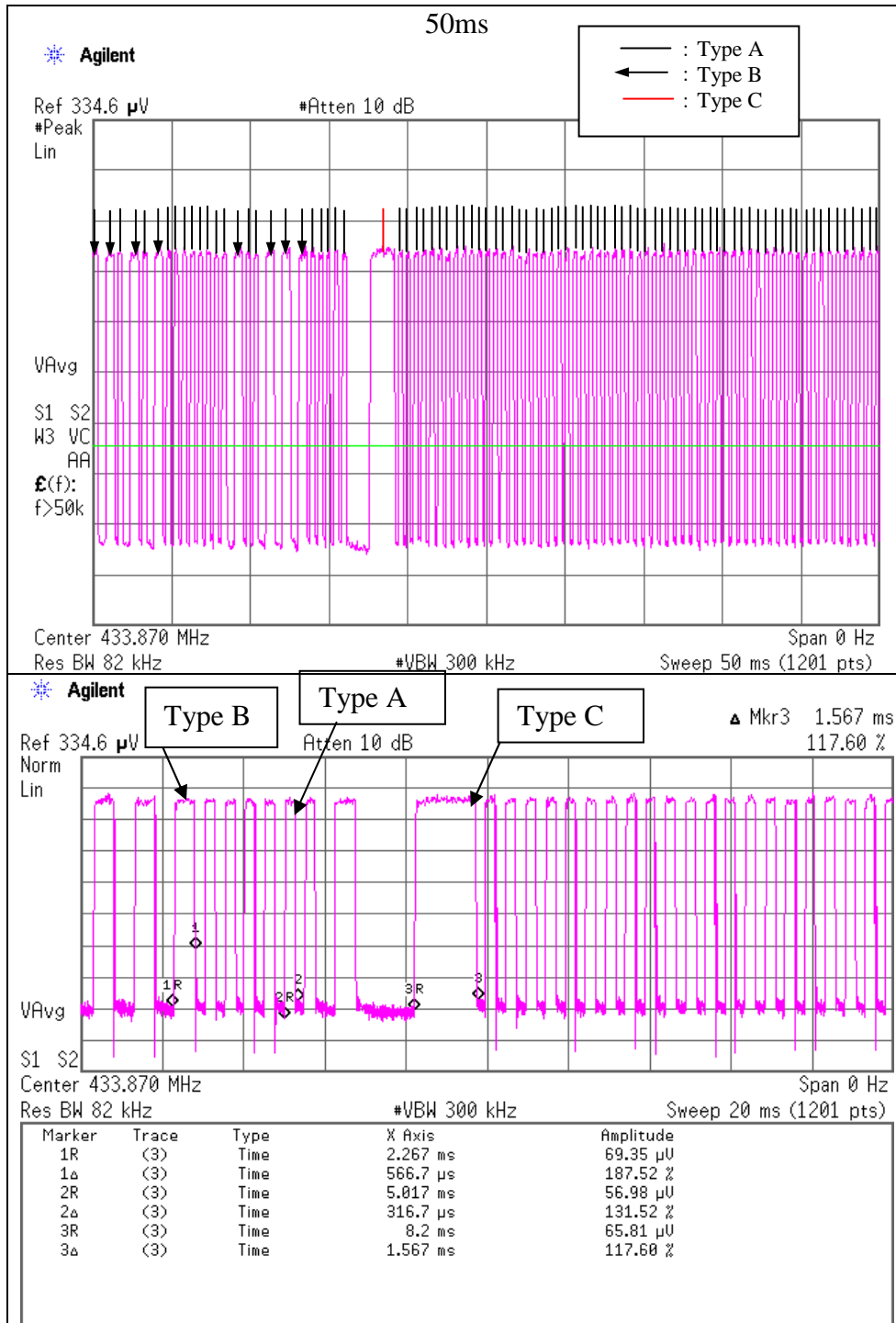
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Duty Cycle



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
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	RE	2010/02/03 * 12
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
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2010/08/08 * 12
MCC-57	Microwave Cable	Suhner	SUCOFLEX104	267195/4(0.6m) / 292411(5m)	RE	2010/11/26 * 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

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