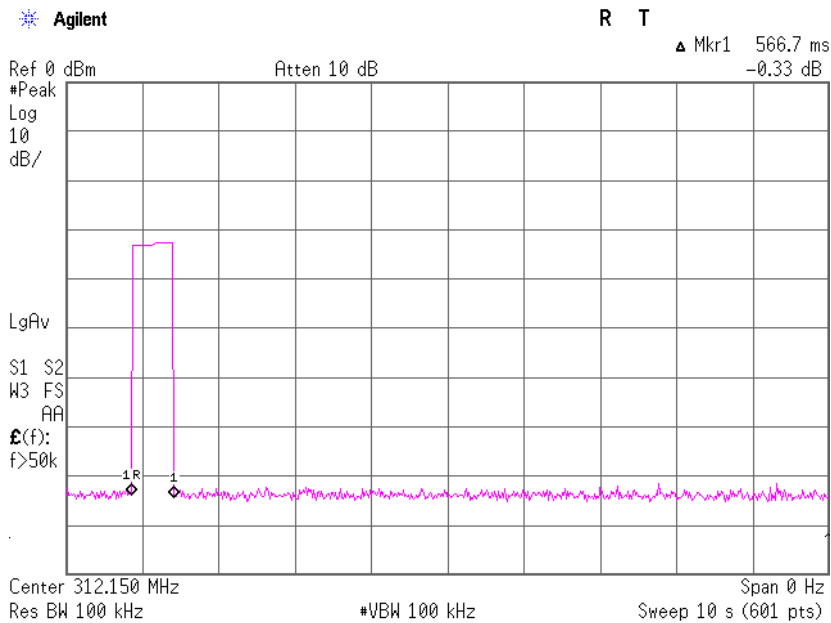


APPENDIX 2: Data of EMI test

Automatically deactivate

		UL Japan, Inc.
		Head Office EMC Lab. No.3 Semi Anechoic Chamber
COMPANY	: DENSO CORPORATION	TEST REPORT NO. : 29KE0082-HO-01
EQUIPMENT	: Electronic Key	REGULATION : FCC Part 15.231(a)(1) / RSS-210 A.1.1.1(a)
MODEL	: 14AEH	TEST DISTANCE : -
S/N	: 002	DATE : 06/16/2009
POWER	: DC 3.0V	TEMPERATURE : 25deg.C.
Mode	: Normal use mode	HUMIDITY : 56%
		ENGINEER : Takayuki Shimada

Time of Transmitting [sec]	Limit [sec]	Result
0.57	5.00	Pass



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

UL Japan, Inc.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

COMPANY : DENSO CORPORATION TEST REPORT NO. : 29KE0082-HO-01
EQUIPMENT : Electronic Key REGULATION : FCC Part 15.231(b) / 15.205 / 15.209 / RSS-210 A.1.1.2
MODEL : 14AEH TEST DISTANCE : 3m
S/N : 001 DATE : 06/16/2009
POWER : DC 3.0V TEMPERATURE : 25deg.C.
Mode : Transmitting mode HUMIDITY : 56%
Axis : Hor.: X-axis , Ver.: Y-axis ENGINEER : Takayuki Shimada

Peak with Duty factor (BW: 120kHz)

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
1	312.15	75.6	71.7	15.0	32.0	10.0	-4.0	64.6	60.7	75.4	10.8	14.7
2	624.30	36.5	35.5	19.8	32.0	12.0	-4.0	32.3	31.3	55.4	23.1	24.1
3	936.45	35.5	34.1	22.7	30.8	13.5	-4.0	36.9	35.5	55.4	18.5	19.9

PK DETECT (RBW: 1MHz, VBW: 1MHz) (Inside Restricted bands)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
5	1560.75	45.7	47.1	25.6	33.4	2.3	-	40.2	41.6	73.9	33.7	32.3
8	2497.20	45.1	43.3	27.3	32.2	2.8	-	43.0	41.2	73.9	30.9	32.7
9	2809.35	42.7	41.0	27.7	32.1	3.0	-	41.3	39.6	73.9	32.6	34.3

Peak with Duty factor (RBW: 1MHz, VBW: 1MHz) (Inside Restricted bands)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
5	1560.75	45.7	47.1	25.6	33.4	2.3	-4.0	36.2	37.6	53.9	17.7	16.3
8	2497.20	45.1	43.3	27.3	32.2	2.8	-4.0	39.0	37.2	53.9	14.9	16.7
9	2809.35	42.7	41.0	27.7	32.1	3.0	-4.0	37.3	35.6	53.9	16.6	18.3

PK DETECT (RBW: 1MHz, VBW: 1MHz) (Outside Restricted bands)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
4	1248.60	43.7	45.3	25.0	34.2	2.1	-	36.6	38.2	75.4	38.8	37.2
6	1872.90	47.5	47.7	26.6	32.8	2.5	-	43.8	44.0	75.4	31.6	31.4
7	2185.05	44.8	45.8	27.1	32.4	2.6	-	42.1	43.1	75.4	33.3	32.3
10	3121.50	41.9	41.8	28.2	31.9	3.1	-	41.3	41.2	75.4	34.1	34.2

Peak with Duty factor (RBW: 1MHz, VBW: 1MHz) (Outside Restricted bands)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
4	1260.00	43.7	45.3	25.0	34.2	2.1	-4.0	32.6	34.2	55.4	22.8	21.2
6	1890.00	47.5	47.7	26.6	32.8	2.5	-4.0	39.8	40.0	55.4	15.6	15.4
7	2185.05	44.8	45.8	27.1	32.4	2.6	-4.0	38.1	39.1	55.4	17.3	16.3
10	3121.50	41.9	41.8	28.2	31.9	3.1	-4.0	37.3	37.2	55.4	18.1	18.2

REMARKS ANTENNA TYPE:30-300MHz Biconical / 300-1000MHz Logperiodic / 1-3.2GHz Horn

CALCULATION RESULT=Reading + ANT Factor - Amp Gain + LOSS (Cable+ ATTEN.)+Duty factor^{*)}

Duty cycle Factor Measurement : -4.0 dB *See data of "Duty Cycle"

^{*)} Duty factor is used only for the tests with "Peak with Duty factor".

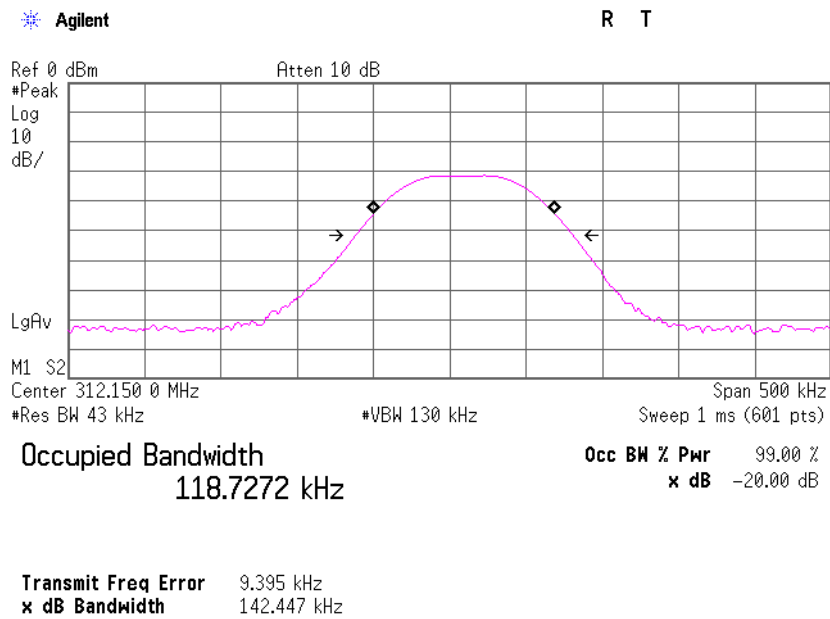
- *The test below and above 1GHz was performed with PK DETECT. Average emission measurements were calculated with PK DETECT and Duty cycle factor.
- *Duty Factor was calculated with the assumption of the worst condition in 100msec.
- *All the measured noise was pulse emission.
- *The result is rounded off to the second decimal place, so some differences might be observed.
- *The limit was converted from V to dBuV, and it is rounded off to the second decimal place.
- *Except for the above table : All other spurious emissions were less than 20dB for the limit.

-20dB Bandwidth

	UL Japan, Inc.
COMPANY : DENSO CORPORATION	Head Office EMC Lab. No.3 Semi Anechoic Chamber
EQUIPMENT : Electronic Key	TEST REPORT NO. : 29KE0082-HO-01
MODEL : 14AEH	REGULATION : FCC Part 15.231(c)
S/N : 001	TEST DISTANCE : 3m
POWER : DC 3.0V	DATE : 06/16/2009
Mode : Transmitting mode	TEMPERATURE : 25deg.C.
	HUMIDITY : 56%
	ENGINEER : Takayuki Shimada

Bandwidth Limit : Fundamental Frequency **312.15 MHz X 0.25% =** 780.38 kHz

-20dB Bandwidth	Bandwidth Limit	Result
[kHz]	[kHz]	
142.45	780.38	Pass

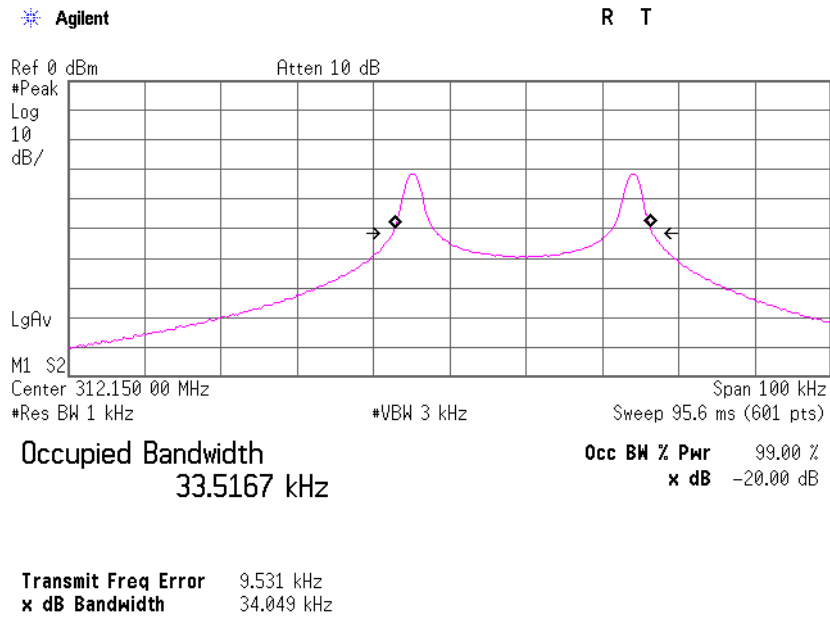


99% Occupied Bandwidth

	UL Japan, Inc.
	Head Office EMC Lab. No.3 Semi Anechoic Chamber
COMPANY : DENSO CORPORATION	TEST REPORT NO. : 29KE0082-HO-01
EQUIPMENT : Electronic Key	REGULATION : RSS-210 A.1.1.3
MODEL : 14AEH	TEST DISTANCE : 3m
S/N : 001	DATE : 06/16/2009
POWER : DC 3.0V	TEMPERATURE : 25deg.C.
Mode : Transmitting mode	HUMIDITY : 56%
	ENGINEER : Takayuki Shimada

Bandwidth Limit : Fundamental Frequency **312.15 MHz** X 0.25% = 780.38 kHz

99% Occupied Bandwidth	Bandwidth Limit	Result
[kHz]	[kHz]	
33.52	780.38	Pass



Duty Cycle (Fundamental)

UL Japan, Inc.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

COMPANY	: DENSO CORPORATION	TEST REPORT NO.	: 29KE0082-HO-01
EQUIPMENT	: Electronic Key	REGULATION	: FCC Part 15.231(b) / 15.35 (c)
MODEL	: 14AEH	TEST DISTANCE	: -
S/N	: 002	DATE	: 06/16/2009
POWER	: DC 3.0V	TEMPERATURE	: 25deg.C.
Mode	: Normal use mode	HUMIDITY	: 56%
		ENGINEER	: Takayuki Shimada

Type	Times	ON time(One pulse) [ms]	ON time(in 100ms) [ms]
A	22	1.600	35.20
B	28	1.000	28.00

*1)ON time(in 100ms) = Times * ON time(One pulse)

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

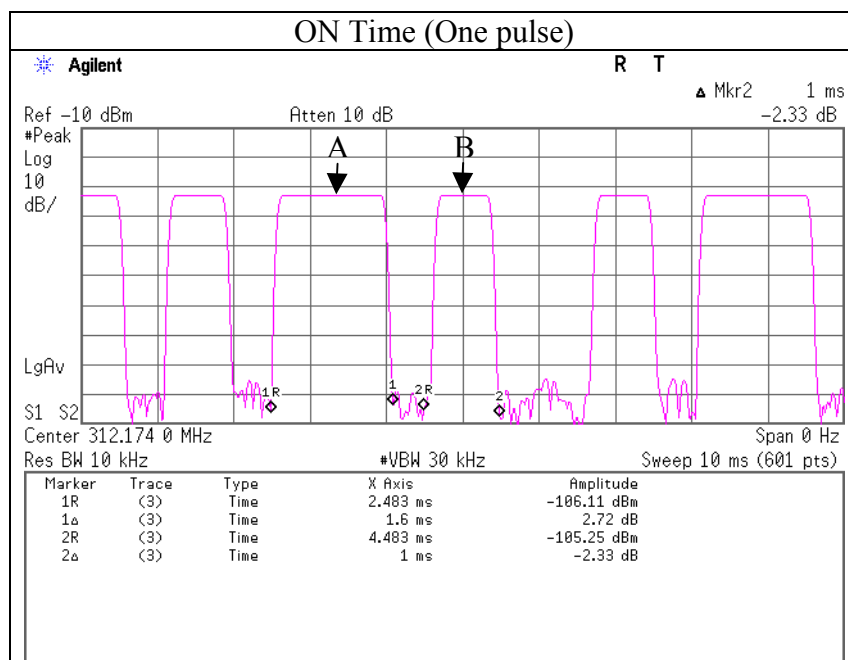
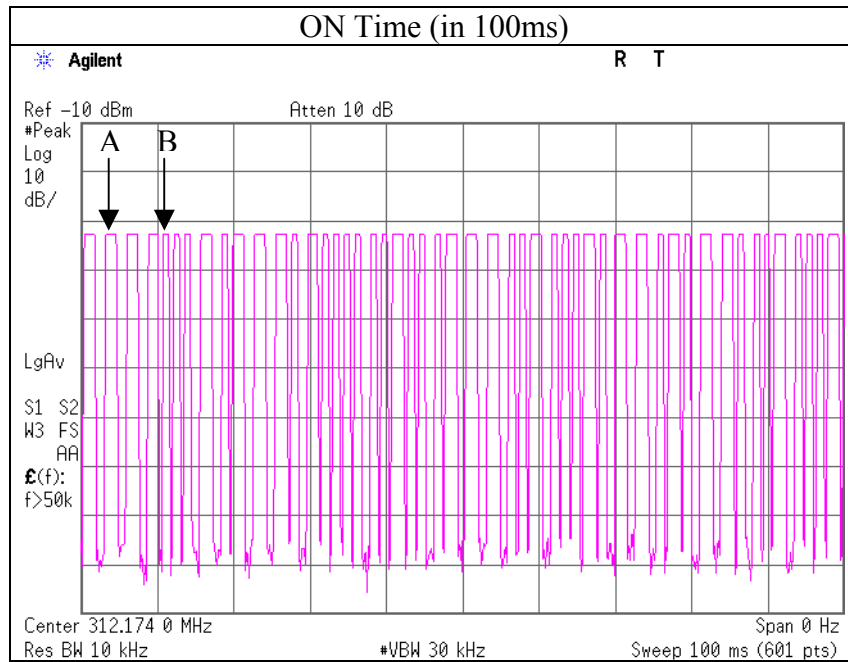
(Total)

ON time [ms]	Cycle [ms]	Duty (On time/Cycle)	Duty [dB]
63.20	100.00	0.63	-4.0

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

*4)Duty = $20\log_{10}(\text{ON time/Cycle})$

Duty Cycle (Fundamental)



APPENDIX 3:Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-03	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	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2008/08/18 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE	2008/06/12 * 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	2008/07/18 * 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
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2009/04/30 * 12
MCC-56	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	174410(1m) / 284655(5m)	RE	2009/01/07 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2009/03/19 * 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

UL Japan, Inc.

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