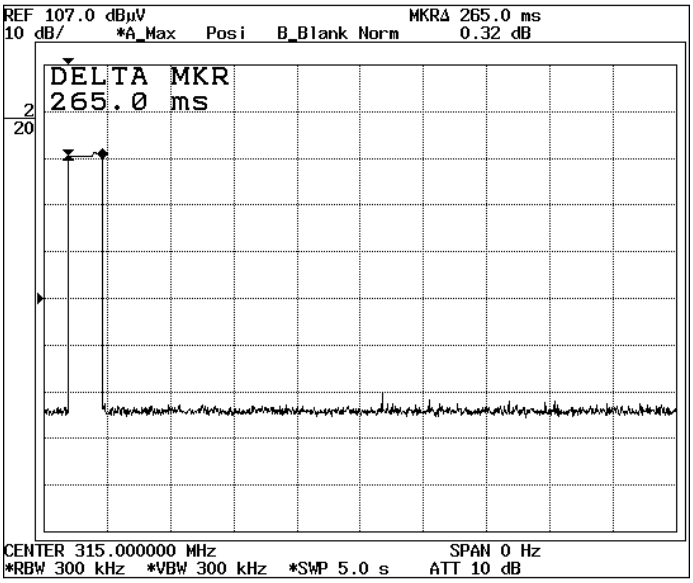
APPENDIX 2: Data of EMI test

Automatically deactivate

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

COMPANY	: Mitsubishi Erectric Corporation Himeji Works	REPORT NO	: 28GE0141-HO-01
EQUIPMENT	: SMART KEYLESS SYSTEM (TRANSMITTER)	REGULATION	: FCC15.231(a)(1)
MODEL	: SKE11A-04	TEST DISTANCE	: -
S/N	: 20080327-02	DATE	: 03/31/2008
POWER	: DC 3.0V	TEMPERATURE	: 24 deg.C.
Mode	: Normal use mode	HUMIDITY	: 41%
Axis	: -	ENGINEER	: Shinya Watanabe

Time of Transmitting [sec]	Limit [sec]	Result
0.27	5.00	Pass



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

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

COMPANY	: Mitsubishi Electric Coporation Himeji Works	REPORT NO	: 28GE0141-HO-01
EQUIPMENT	: SMART KEYLESS SYSTEM (TRANSMITTER)	REGULATION	: FCC Part15 Subpart C 15.231(b) / 15.205 / 15.209
MODEL	: SKE11A-04	TEST DISTANCE	: 3m
S/N	: 20080327-05	DATE	: 03/31/2008
POWER	: DC 3.0V	TEMPERATURE	: 24 deg.C.
Mode	: Transmitting mode	HUMIDITY	: 41%
EUT Axis	: Hor.: X-axis , Ver.: Z-axis	ENGINEER	: Shinya Watanabe

QP DETECT

No.	FREQ	T/R READING		ANT	AMP	LOSS	Duty	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN		Factor	HOR	VER		HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
1	315.00	78.9	74.3	16.9	32.0	10.0	-	73.8	69.2	75.6	1.8	6.4
2	630.00	23.2	23.7	20.5	32.1	12.0	-	23.6	24.1	55.6	32.0	31.5
3	945.00	22.2	22.3	25.1	31.0	13.5	-	29.8	29.9	55.6	25.8	25.7

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

No.	FREQ	S/A READING		ANT	AMP	LOSS	Duty	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN		Factor	HOR	VER		HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
5	1575.00	50.2	55.3	25.6	33.2	2.4	-	45.0	50.1	73.9	28.9	23.8
7	2205.00	53.6	52.0	26.5	32.3	2.7	-	50.5	48.9	73.9	23.4	25.0
9	2835.00	50.9	48.4	27.8	31.9	3.1	-	49.9	47.4	73.9	24.0	26.5

AV (PK DETECT) Result = Reading (RBW: 1MHz , VBW: 10Hz) (Inside Restricted bands)

No.	FREQ	S/A READING		ANT	AMP	LOSS	Duty	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN		Factor	HOR	VER		HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
5	1575.00	45.6	49.5	25.6	33.2	2.4	-	40.4	44.3	53.9	13.5	9.6
7	2205.00	51.2	48.7	26.5	32.3	2.7	-	48.1	45.6	53.9	5.8	8.3
9	2835.00	46.3	42.1	27.8	31.9	3.1	-	45.3	41.1	53.9	8.6	12.8

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

No.	FREQ	S/A READING		ANT	AMP	LOSS	Duty	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN		Factor	HOR	VER		HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
4	1260.00	46.9	50.9	25.1	33.9	2.2	-	40.3	44.3	75.6	35.3	31.3
6	1890.00	46.2	42.9	25.9	32.7	2.6	-	42.0	38.7	75.6	33.6	36.9
8	2520.00	53.1	51.5	27.3	32.1	2.9	-	51.2	49.6	75.6	24.4	26.0
10	3150.00	49.2	48.7	28.2	31.7	3.2	-	48.9	48.4	75.6	26.7	27.2

AV (PK DETECT) Result = Reading (RBW: 1MHz , VBW: 10Hz) (Outside Restricted bands)

No.	FREQ	S/A READING		ANT	AMP	LOSS	Duty	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN		Factor	HOR	VER		HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
4	1260.00	38.2	46.6	25.1	33.9	2.2	-	31.6	40.0	55.6	24.0	15.6
6	1890.00	37.4	44.1	25.9	32.7	2.6	-	33.2	39.9	55.6	22.4	15.7
8	2520.00	50.5	47.1	27.3	32.1	2.9	-	48.6	45.2	55.6	7.0	10.4
10	3150.00	44.1	41.8	28.2	31.7	3.2	-	43.8	41.5	55.6	11.8	14.1

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 : 0.0 dB

*The test above 1GHz was performed with PK DETECT (RBW: 1MHz, VBW: 1MHz) and AV (PK DETECT [RBW: 1MHz, VBW: 10Hz]).
*Duty Factor was calculated with the assumption of the worst condition in 100msec.
* 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.

The carrier level (or, noise levels) was (or were) measured at each position of all three axes X, Y and Z, and the position that has the maximum noise was determined. With the position, the noise levels of all the frequencies was measured.

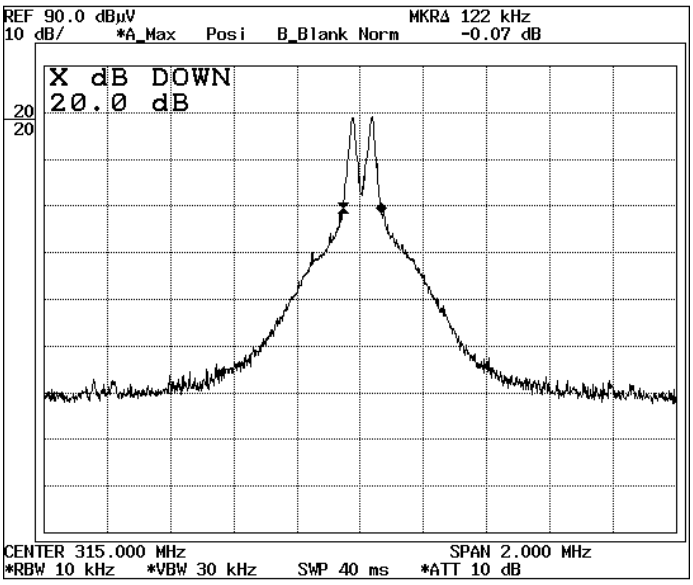
-20dB Bandwidth

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

COMPANY	: Mitsubishi Electric Coporation Himeji Works	REPORT NO	: 28GE0141-HO-01
EQUIPMENT	: SMART KEYLESS SYSTEM (TRANSMITTER)	REGULATION	: FCC15.231(c)
MODEL	: SKE11A-04	TEST DISTANCE	: 3m
S/N	: 20080327-05	DATE	: 03/31/2008
POWER	: DC 3.0V	TEMPERATURE	: 24 deg.C.
Mode	: Transmitting mode	HUMIDITY	: 41%
Axis	: Hol.: X-axis	ENGINEER	: Shinya Watanabe

Bandwidth Limit : Fundamental Frequency 315 MHz X 0.25% = 787.50 kHz

-20dB Bandwidth [kHz]	Bandwidth Limit [kHz]	Result
122.00	787.50	Pass



UL Japan, Inc.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

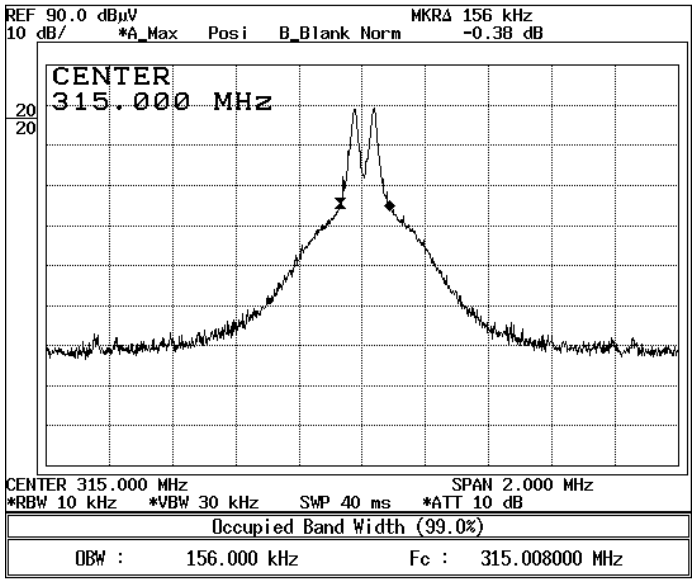
99% Occupied Bandwidth

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

COMPANY	: Mitsubishi Electric Coporation Himeji Works	REPORT NO	: 28GE0141-HO-01
EQUIPMENT	: SMART KEYLESS SYSTEM (TRANSMITTER)	REGULATION	: RSS-210 A1.1.3
MODEL	: SKE11A-04	TEST DISTANCE	: 3m
S/N	: 20080327-05	DATE	: 03/31/2008
POWER	: DC 3.0V	TEMPERATURE	: 24 deg.C.
Mode	: Transmitting mode	HUMIDITY	: 41%
Axis	: Hol.: X-axis	ENGINEER	: Shinya Watanabe

Bandwidth Limit : Fundamental Frequency 315 MHz X 0.25% = 787.5 kHz

99% Occupied Bandwidth [kHz]	Bandwidth Limit [kHz]	Result
156.00	787.50	Pass



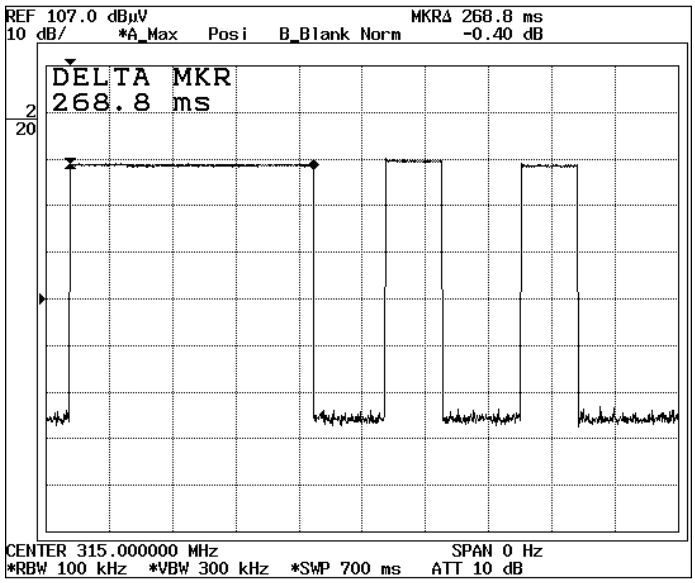
Duty Cycle(Fundamental)

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

COMPANY	: Mitsubishi Electric Coporation Himeji Works	REPORT NO	: 28GE0141-HO-01
EQUIPMENT	: SMART KEYLESS SYSTEM (TRANSMITTER)	REGULATION	: FCC 15.231(b) / 15.35(c)
MODEL	: SKE11A-04	TEST DISTANCE	: -
S/N	: 20080327-02	DATE	: 03/31/2008
POWER	: DC 3.0V	TEMPERATURE	: 24 deg.C
Mode	: Transmitting mode	HUMIDITY	: 41%
Axis	: Hol.: X-axis	ENGINEER	: Shinya Watanabe

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

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



Receiver Spurious Emission
(Reference data)

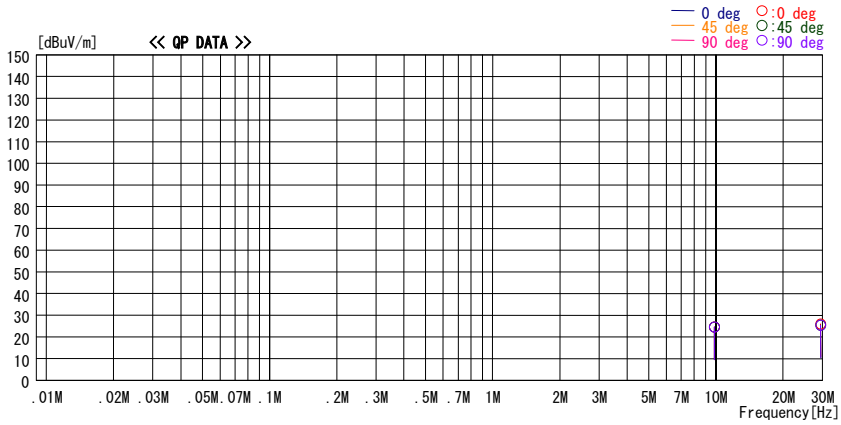
-

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/04/14

Company	: Mitsubishi Electric Corporation Himeji Works	Report No.	: 28GE0141-HO-01
Kind of EUT	: SMART KEYLESS SYSTEM (TRANSMITTER)	Power	: DC 3V
Model No.	: SKE11A-04	Temp. / Humi.	: 22deg.C / 53%
Serial No.	: 20080327-06	Operator	: Shinya Watanabe

Mode / Remarks : LF Receiving Mode



Freq. [MHz]	Reading [dBuV]	DET	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna	Table [deg]	Comment
9.84400	41.5	QP	20.3	1.0	38.2	24.6	-	-	0deg	0	
9.84400	41.5	QP	20.3	1.0	38.2	24.6	-	-	45deg	0	
9.84400	41.5	QP	20.3	1.0	38.2	24.6	-	-	90deg	0	
29.53130	41.4	QP	21.1	1.8	38.2	26.1	-	-	0deg	0	
29.53130	40.8	QP	21.1	1.8	38.2	25.5	-	-	45deg	0	
29.53130	40.7	QP	21.1	1.8	38.2	25.4	-	-	90deg	0	

CHART : WITH FACTOR , ANT TYPE : LOOP , Except for the data below : adequate margin data below the limits.
CALCULATION : READING + ANT FACTOR + LOSS(CABLE + ATTEN.-AMP.)

*The test result is rounded off to one or two decimal places, so some differences might be observed.

UL Japan, Inc.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

Receiver Spurious Emission

DATA OF RADIATED EMISSION TEST

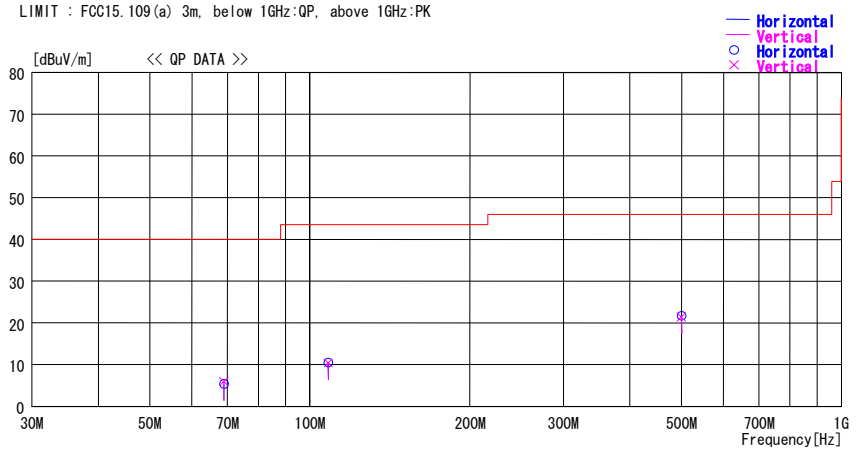
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/04/14

Company : Mitsubishi Electric Corporation Himeji Works
Kind of EUT : Smart Keyless System (Transmitter)
Model No. : SKE11A-04
Serial No. : 20080327-06

Report No. : 28GE0141-HO-01
Power : DC 3V
Temp./Humi. : 22eg.C. / 53%
Operator : Shinya Watanabe

Mode / Remarks : LF Receiving mode

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Polar.	Limit [dBuV/m]	Margin [dB]
68.906	22.9	QP	6.8	-24.3	5.4	Hori.	40.0	34.6
68.906	23.4	QP	6.8	-24.3	5.9	Vert.	40.0	34.1
108.281	23.0	QP	11.2	-23.7	10.5	Hori.	43.5	33.0
108.281	22.9	QP	11.2	-23.7	10.4	Vert.	43.5	33.1
500.000	23.1	QP	19.4	-20.8	21.7	Hori.	46.0	24.3
500.000	22.8	QP	19.4	-20.8	21.4	Vert.	46.0	24.6

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 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	Test Item	Calibration Date * Interval(month)
MAEC-04	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2008/03/27 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	RE	2007/09/14 * 12
MSA-05	Spectrum Analyzer	Advantest	R3273	RE	2007/06/01 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	RE	2008/01/12 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	RE	2008/01/12 * 12
MAT-31	Attenuator(6dB)	TME	UFA-01	RE	2008/03/10 * 12
MCC-50	Coaxial cable	UL Japan	-	RE	2008/03/17 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	RE	2008/03/06 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2007/08/16 * 12
MCC-57	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2008/03/05 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	RE	2008/03/13 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	RE	2008/01/10 * 12
MJM-09	Measure	KDS	E19-55	RE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE	-
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE	2007/11/23 * 12
MLPA-01	Loop Antenna	Rohde & Schwarz	HFH2-Z2	RE	2007/11/06 * 12
MCC-30	Coaxial cable	UL Japan	-	RE	2007/06/04 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/Agilent/TSJ	-	RE	2007/12/27 * 12
MPA-19	Pre Amplifier	MITEQ	MLA-10K01-B01-35	RE	2008/02/13 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE	2007/10/19 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	RE	2007/11/12 * 12
MJM-01	Measure	KDS	ES19-55	RE	-
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/10/21 * 12
MLA-09	Logperiodic Antenna	Schwarzbeck	USLP9143B	RE	2008/01/12 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2007/11/14 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/TSJ	-	RE	2008/02/29 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2007/07/11 * 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.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124