: 28IE0193-HO-03-A Test report No.

: 12 of 14 Page **Issued date** : July 18, 2008

: WAZX1T530SKE11A03 FCC ID

## **APPENDIX 2: Data of EMI test**

#### **Radiated Emission**

## DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 2 Semi Anechoic Chamber Date : 2008/06/03

Mitsubishi Electric Corporation Himeji Works

Power Temp./Humi. Engineer

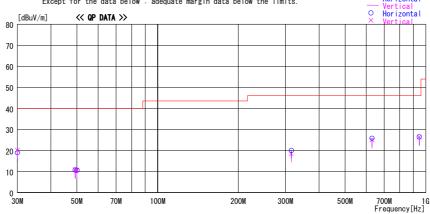
SMART KEYLESS SYSTEM (Receiver) SKE11A-03 20080512-R1

281E0193-H0-03 DC 3.0V 22 deg.C. / 68 % Akio Hayashi

Mode / Remarks : Continuous Receiving 315MHz mode, Worst(Hor: Z / Ver: Z) LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV

Except for the data below: adequate margin data below the limits.

- Horizontal O Horizontal



MHz1		Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle He	Height	Polar.	Limit	Margin	Comment
30.001   23.2   0P   18.9   -22.0   20.1   162   100   Vert.   40.0   19.9     49.253   22.0   0P   10.4   -21.7   10.7   0   300   Hori.   40.0   29.3     49.253   22.1   0P   10.4   -21.7   10.8   0   100   Vert.   40.0   29.3     50.000   22.1   0P   10.2   -21.7   10.6   0   300   Hori.   40.0   29.4     50.000   22.1   0P   10.2   -21.7   10.6   0   100   Vert.   40.0   29.4     315.220   24.2   0P   14.9   -19.1   20.0   212   100   Hori.   46.0   26.0     315.220   22.6   0P   14.9   -19.1   18.4   272   100   Hori.   46.0   27.6     630.440   24.7   0P   19.7   -18.6   25.8   142   100   Hori.   46.0   20.2     630.440   23.9   0P   19.7   -18.6   25.0   97   130   Vert.   46.0   21.0     945.660   20.4   0P   22.4   -16.4   26.4   293   100   Hori.   46.0   21.0	İ	[MHz]	[dBuV]				[dBuV/m]	[Deg]			[dBuV/m]	[dB]	Commerce
49.253         22.0         OP         10.4         -21.7         10.7         O         300         Hori.         40.0         29.3           49.253         22.1         OP         10.4         -21.7         10.8         O         100         Vert.         40.0         29.2           50.000         22.1         OP         10.2         -21.7         10.6         O         300         Hori.         40.0         29.4           50.000         22.1         OP         10.2         -21.7         10.6         O         100         Vert.         40.0         29.4           315.220         24.2         OP         14.9         -19.1         20.0         212         100         Hori.         46.0         26.0           315.220         22.6         OP         14.9         -19.1         18.4         272         100         Vert.         46.0         26.0           630.440         23.9         OP         19.7         -18.6         25.8         142         100         Hori.         46.0         20.2           945.660         20.4         OP         22.4         -16.4         26.4         293         100         Hori.         46		30.000	22. 0	QP	18.9	-22. 0	18. 9	0	300	Hori.	40.0	21. 1	
49.253   22.1   QP   10.4   -21.7   10.8   0   100   Vert.   40.0   29.2   50.000   22.1   QP   10.2   -21.7   10.6   0   300   Hori.   40.0   29.4   50.000   22.1   QP   10.2   -21.7   10.6   0   100   Vert.   40.0   29.4   315.220   22.6   QP   14.9   -19.1   20.0   212   100   Hori.   46.0   26.0   315.220   22.6   QP   14.9   -19.1   18.4   272   100   Hori.   46.0   27.6   630.440   24.7   QP   19.7   -18.6   25.8   142   100   Hori.   46.0   20.2   630.440   23.9   QP   19.7   -18.6   25.0   97   130   Vert.   46.0   21.0   945.660   20.4   QP   22.4   -16.4   26.4   293   100   Hori.   46.0   21.0		30. 001	23. 2	QP	18.9	-22.0	20. 1	162	100	Vert.	40.0	19.9	
50.000         22.1         QP         10.2         -21.7         10.6         0         300         Hori.         40.0         29.4           50.000         22.1         QP         10.2         -21.7         10.6         0         100         Vert.         40.0         29.4           315.220         24.2         QP         14.9         -19.1         20.0         212         100         Hori.         46.0         26.0           315.220         22.6         QP         14.9         -19.1         18.4         272         100         Vert.         46.0         27.6           630.440         23.9         QP         19.7         -18.6         25.8         142         100         Hori.         46.0         20.2           945.660         20.4         QP         22.4         -16.4         26.4         293         100         Hori.         46.0         21.0		49. 253	22. 0	QP	10.4	-21.7	10. 7	0	300	Hori.	40.0	29. 3	
50.000   22.1   QP   10.2   -21.7   10.6   0   100   Vert.   40.0   29.4     315.220   24.2   QP   14.9   -19.1   20.0   212   100   Hori.   46.0   26.0     315.220   22.6   QP   14.9   -19.1   18.4   272   100   Vert.   46.0   27.6     630.440   24.7   QP   19.7   -18.6   25.8   142   100   Hori.   46.0   20.2     630.440   23.9   QP   19.7   -18.6   25.0   97   130   Vert.   46.0   21.0     945.660   20.4   QP   22.4   -16.4   26.4   293   100   Hori.   46.0   19.6		49. 253	22. 1	QP	10.4	-21.7	10.8	0	100	Vert.	40.0	29. 2	
315.220 24.2 QP 14.9 -19.1 20.0 212 100 Hori. 46.0 26.0 315.220 22.6 QP 14.9 -19.1 18.4 272 100 Vert. 46.0 27.6 630.440 24.7 QP 19.7 -18.6 25.8 142 100 Hori. 46.0 20.2 630.440 23.9 QP 19.7 -18.6 25.0 97 130 Vert. 46.0 21.0 945.660 20.4 QP 22.4 -16.4 26.4 293 100 Hori. 46.0 19.6		50.000	22. 1	QP	10. 2	-21.7	10.6	0	300	Hori.	40.0	29. 4	
315.220 22.6 QP 14.9 -19.1 18.4 272 100 Vert. 46.0 27.6 630.440 23.9 QP 19.7 -18.6 25.0 142 100 Hori. 46.0 20.2 94.5 660 20.4 QP 22.4 -16.4 26.4 293 100 Hori. 46.0 19.6		50.000	22. 1	QP	10.2	-21.7	10. 6	0	100	Vert.	40.0	29. 4	
630.440 24.7 QP 19.7 -18.6 25.8 142 100 Hori. 46.0 20.2 630.440 23.9 QP 19.7 -18.6 25.0 97 130 Vert. 46.0 21.0 945.660 20.4 QP 22.4 -16.4 26.4 293 100 Hori. 46.0 19.6		315. 220	24. 2	QP	14.9	-19.1	20. 0	212	100	Hori.	46.0	26. 0	
630.440 23.9 QP 19.7 -18.6 25.0 97 130 Vert. 46.0 21.0 945.660 20.4 QP 22.4 -16.4 26.4 293 100 Hori. 46.0 19.6		315. 220	22. 6	QP	14.9	-19.1	18. 4	272	100	Vert.	46.0	27. 6	
945. 660   20. 4   QP   22. 4   -16. 4   26. 4   293   100   Hori.   46. 0   19. 6		630. 440	24. 7	QP	19.7	-18.6	25. 8	142	100	Hori.	46.0	20. 2	
		630. 440	23. 9	QP	19.7	-18.6	25. 0			Vert.	46.0	21.0	
945, 660 20.4 QP 22.4 -16.4 26.4 0 100 Vert. 46.0 19.6		945. 660	20. 4	QP	22. 4	-16.4	26. 4	293	100	Hori.	46.0	19.6	
		945. 660	20. 4	QP	22. 4	-16.4	26. 4	0	100	Vert.	46.0	19.6	
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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.

## UL Japan, Inc. **Head Office EMC Lab.**

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: WAZX1T530SKE11A03 FCC ID

#### **Radiated Emission**

# DATA OF RADIATED EMISSION TEST UL Japan, Inc. Head Office EMC

EMC Lab. No.2 Semi Anechoic Chamber Date: 2008/06/03 Mitsubishi Electric Corporation Himeji Works

28|E0193-H0-03 DC 3.0V 22 deg.C. / 68 % Akio Hayashi Report No. Power Temp./Humi. Engineer Company Kind of EUT Model No. Serial No. SMART KEYLESS SYSTEM (Receiver) SKE11A-03 20080512-R1

Mode / Remarks: Continuous Receiving 315MHz mode, Worst(Hor: Z / Ver: Z)

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV — Horizontal << AV/PEAK DATA >> [dBuV/m]



Frequency	Reading	DET	Antenna Factor	Loss& Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]	52.	[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]	. oran	[dBuV/m]	[dB]	00111110111
1260.880	43. 0	PK	24. 8	-31.2	36. 6	0	100	Hori.	73.9	37.3	
1260.880	31.0	AV	24. 8	-31.2	24. 6	0	100	Hori.	53.9	29.3	
1260.880	41. 9	PK	24.8	-31.2	35. 5		100	Vert.	73.9	38. 4	
1260.880	31. 4	AV	24.8	-31.2	25. 0		100	Vert.	53.9	28. 9	
1576.100	29. 9	AV	25. 2	-30.6	24. 5	0	100	Hori.	53.9	29.4	
1576.100		PK	25. 2	-30. 6	34. 7	0	100	Hori.	73.9		
1576.100		PK	25. 2	-30. 6	35. 0		100	Vert.	73.9		
1576. 100		AV	25. 2	-30. 6	24. 9		100	Vert.	53.9		
1891. 320		AV	25. 7	-30.1	25. 3		100	Hori.	53.9		
1891. 320		PK	25. 7	-30.1	36. 2	0	100	Hori.	73.9		
1891. 320	43. 4	PK	25. 7	-30.1	39. 0		100	Vert.	73.9		
1891. 320	30. 1	ΑV	25. 7	-30.1	25. 7	0	100	Vert.	53.9	28. 2	
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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)

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

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## **APPENDIX 3: Test instruments**

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2008/04/17 * 12
MOS-02	Digital Humidity Indicator	N.T	NT-1800	RE	-
MJM-05	Measure	PROMART	SEN1955	RE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE	-
MRENT-62	Spectrum Analyzer	Agilent	E4448A	RE	2007/11/27 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	RE	2008/04/02 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/10/21 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/10/21 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2008/02/15 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2007/11/13 * 12
MPA-09	Pre Amplifier	Agilent	8447D	RE	2007/09/13 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2008/01/19 * 12
MCC-47	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2008/05/12 * 12
MPA-10	Pre Amplifier	Agilent	8449B	RE	2007/09/27 * 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** 

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