

FCC COMPLIANCE REPORT

Order No. : STR-05-0004/E
Reference No. : F690501/LF-EMC000847
Applicant : Daesung Electric Co., Ltd.
Address of Applicant : 8-27B/L, 743-5, Wonsi-Dong, Danwon-Gu, Ansan-Si,
Gyeonggi-Do, Korea
Manufacturer : Daesung Electric Co., Ltd.
Address of Manufacturer : 8-27B/L, 743-5, Wonsi-Dong, Danwon-Gu, Ansan-Si,
Gyeonggi-Do, Korea

Equipment Under Test (EUT) :

Name : RX ASSY-KEYLESS ENTRY
Model No. : 223004362

Standards : FCC Part 15, Subpart B, Class B
ANSI C63.4:2003

Date of Receipt : 14 January 2005
Date of Test : 21 January 2005
Date of Issue : 31 January 2005

Test Result :	PASS
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In the configuration tested, the EUT complied with the standards specified above.

Remarks :

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report shall not be reproduced except in full, without the written approval of the laboratory. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.



Kew-Seung, Lim
EMC DIV. Manager
SGS Testing Korea Co., Ltd.

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1. General Information

1.1 Applicant & Manufacturer Information

Applicant : Daesung Electric Co., Ltd.
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 Gyeonggi-Do, Korea
 Manufacturer : Daesung Electric Co., Ltd.
 Address of Manufacturer : 8-27B/L, 743-5, Wonsi-Dong, Danwon-Gu, Ansan-Si,
 Gyeonggi-Do, Korea

1.2 General Description of EUT

Product Name : RX ASSY-KEYLESS ENTRY
 Model Name : 223004362
 Serial No : None

1.3 Details of EUT

Tested Power Supply : DC 12V
 Port : DC IN
 Description of Operating : Receiving the wireless signal from the transmitter and
 Control lock or unlock of the car door.
 Modulation : FSK

1.4 Description of Support Units

Product	Model No.	Serial No.	Manufacturer
TX ASSY KEYLESS ENTRY	N/A	N/A	N/A
Battery	DF90L	N/A	Delkor

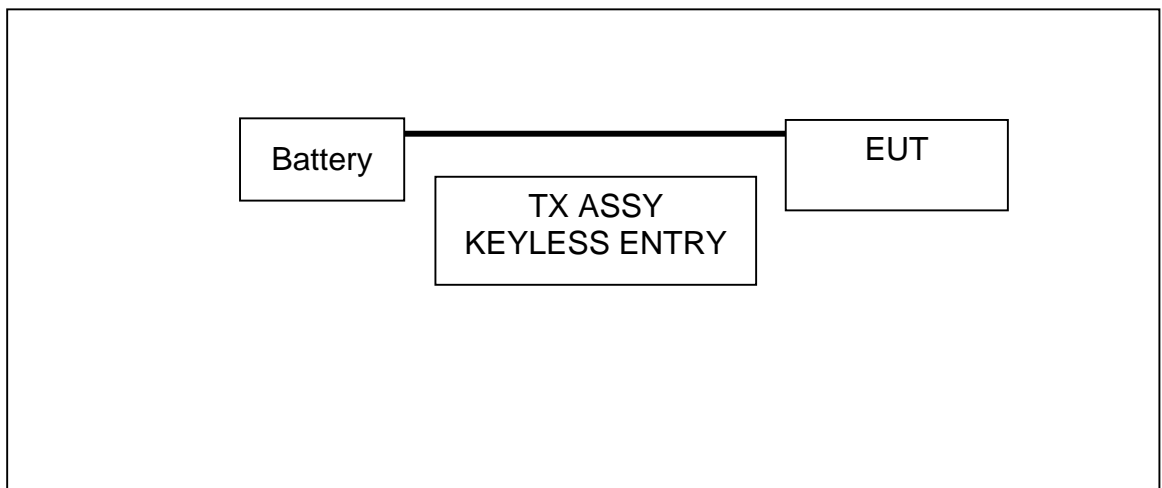
1.5 Cable List

Start		END		Cable Spec.	
Name	I/O Port	Name	I/O Port	Length	Shield
EUT	DC IN	Battery	-	1.2	Unshielded

1.6 System Configuration

Description	Model	Serial No.	Manufacturer
Main Board	IK030000/30/BO M/F	N/A	DELPHI
SUB Board	PE126964-03	N/A	N/A
Control Board	VQ_RX	N/A	N/A

1.7 Test Set-Up Configuration



1.8 Measurement Procedure

Conducted Emission Testing was performed according to ANSI C63.4:2003 in a shielded room with peripherals placed on a table, 0.8m high over a metal floor. It was located more than required distance away from the shielded room wall.

Radiated Emission Testing was performed according to ANSI C63.4:2003 at the open field test site. The EUT was placed in a 0.8m high table along with the peripherals. The turn table was separated from the antenna distance 10meters. Cables were placed in a position to produce maximum emissions as determined by experimentation, and operation mode was selected for maximum.

The frequencies and amplitudes of maximum emission were measured at varying azimuths, antenna heights and antenna polarities. Reported are maximized emission levels.

1.9 Standards Applicable for Testing

Table of tests to be carried out under FCC Part 15, Subpart B, CLASS B

Test Standards	Status
FCC Part 15,Subpart B, Class B	Applicable
Deviation from Standard	No Deviation

1.10 Summary of Results

The data collected shows that Model **223004362** complies with of the FCC Part 15, Subpart B Rules. The highest emission level observed was at 142.51MHz radiated emission with a Result of 19.97dBuV/m.

Radio Disturbance

2.1 Test Results

	Results
Conducted Emission	N/A
Radiated Emission	PASS

2.2 Frequency Range

Conducted Emission : 150 kHz - 30 MHz

Radiated Emission : 30 MHz - 1000 MHz

2.3 Limits Of Conducted And Radiated Emission

2.3.1 Limit Of Conducted Emission Of FCC Part 15, Subpart B

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi - peak	Average	Quasi - peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note : (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz.

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected there to, shall not exceed the level of field strengths specified above.

2.3.2 Limit Of Radiated Emission Of FCC Part 15, Subpart B

FREQUENCY (MHz)	Class A (at 10m)*	Class B (at 10m)*
	dBuV/m	dBuV/m
30-230	40	30
230-1000	47	37

* Detector Function : Quasi - Peak

2.4. Test of Conducted Emission**2.4.1 Test Equipments**

Equipment	Manufacturer	Model No.	Date of Calibration
Test Receiver	R & S	ESPC	Nov. 2004
LISN	EMCO	3825/2	Dec. 2004
LISN	EMCO	3825/2	Nov. 2004
Pulse Limiter	PMM	PL-01	Jul. 2004
Shielded Room	N/A	N/A	-

2.4.2 Test Site**Name and address : SGS Testing Korea Co., Ltd.**

18-34, Sanbon-dong, Gunpo, Gyeonggi-do, Korea, 435-041

2.4.3 Operating Environment

Temperature : degree C Humidity : %RH

Atmospheric Pressure : mBar

2.4.4 Measurement Data**Measurement Bandwidth : 9kHz****Date of Test :**

FREQ. (MHz)	LEVEL(dB μ V)		LINE	LIMIT(dB μ V)		MARGIN(dB)	
	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average
			N/A				

* Measurements using CISPR quasi-peak mode


See - Ho, Lee / Test Engineer

2.5 Test of Radiated Emission**2.5.1 Test Instruments**

Description	Manufacturer	Model No.	Date of Calibration
Test Receiver	R & S	ESVS30	Jan. 2004
Spectrum Analyzer	H.P	E4411A	Oct. 2004
RF Amplifier	H.P	8447F	May. 2004
Bilog Antenna	Schaffner	CBL6111C	Apr. 2004
RF Select s/w	CS201	DAIWA	Apr. 2004
Open Site	10 m	Dail EMC	Sep. 2004

2.5.2 Test Site**Name and address : SGS Testing Korea Co., Ltd.**

18-34, Sanbon-dong, Gunpo, Gyeonggi-do, Korea, 435-041

2.5.3 Operating Environment

Temperature : 2.2 degree C

Humidity : 22.0 %RH

Atmospheric Pressure : 1003 mBar

2.5.4 Measurement Data**Measurement Bandwidth : 120kHz****Date of Test : January 21, 2005**

FREQ. (MHz)	LEVEL (dB μ V)	POL (H/V)	AF (dB)	CL (dB)	F/S (dB μ V/m)	LIMIT (dB μ V/m)	MARGIN (dB μ V)
45.61	3.5	H	10.24	1.32	15.06	30.0	14.94
142.51	4.2	H	11.75	3.13	19.07	30.0	10.93
162.97	3.6	H	10.43	3.34	17.38	30.0	12.62
186.76	4.5	H	8.96	3.60	17.06	30.0	12.94
203.15	4.4	H	9.08	3.63	17.11	30.0	12.89
228.51	4.8	H	10.94	3.83	19.57	30.0	10.43
45.61	6.5	V	10.24	1.32	18.06	30.0	11.94
142.51	5.1	V	11.75	3.13	19.97	30.0	10.03
162.97	3.8	V	10.43	3.34	17.58	30.0	12.42
186.76	4.7	V	8.96	3.60	17.26	30.0	12.74
203.15	4.1	V	9.08	3.63	16.81	30.0	13.19
228.51	4.3	V	10.94	3.83	19.07	30.0	10.93

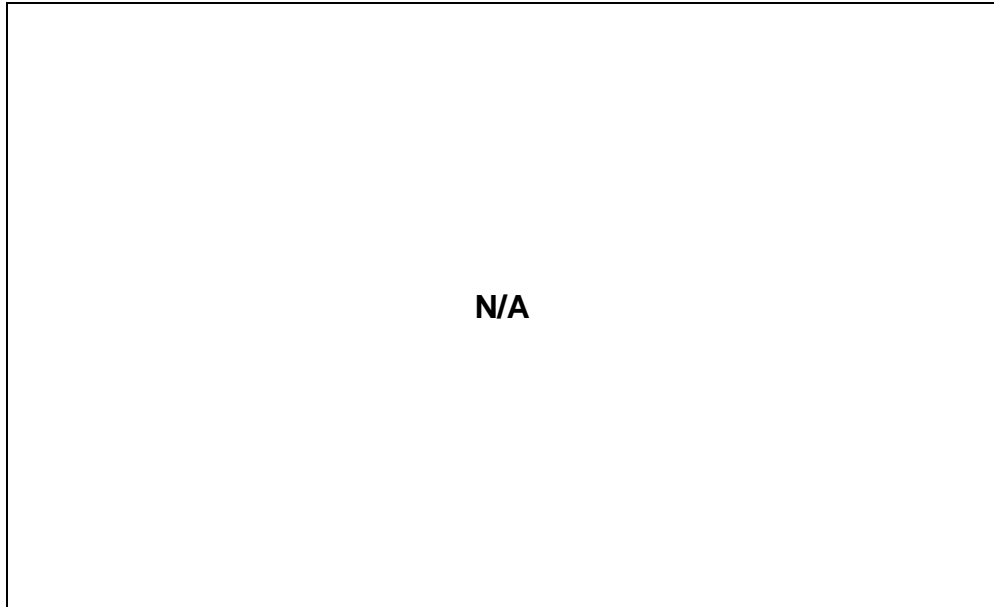
* AF = Antenna Factor. ** CL = Cable Loss.

*** Margin=Each Frequency Limit Level(dBuV) - (Level+AF+CL)

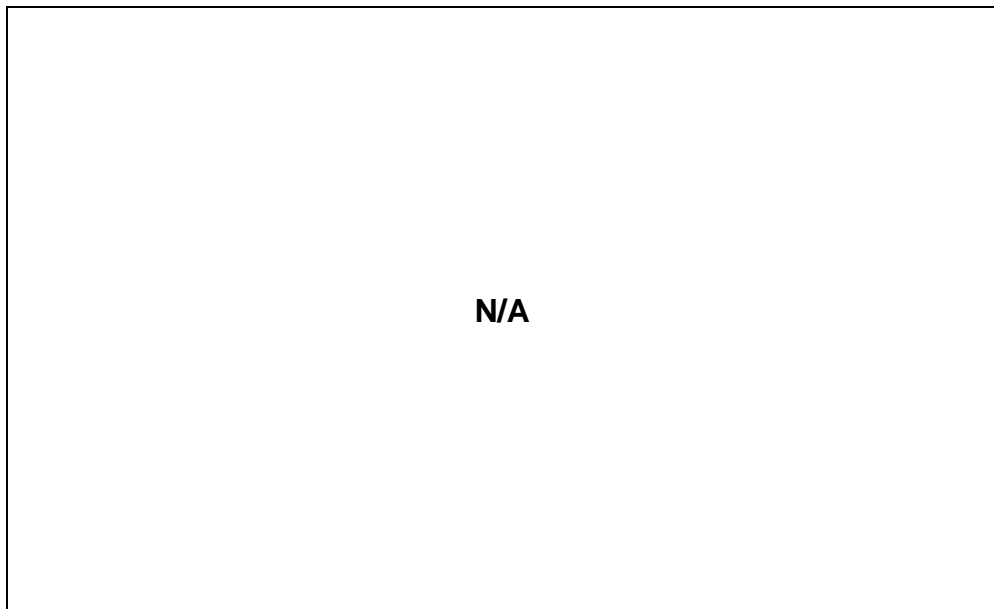

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3. Photographs of Test

- **Front View of Conducted Emission**



- **Rear View of Conducted Emission**



- Front View of Radiated Emission



- Rear View of Radiated Emission



4. Photographs of Product

- Front View of Product



- Rear View of Product



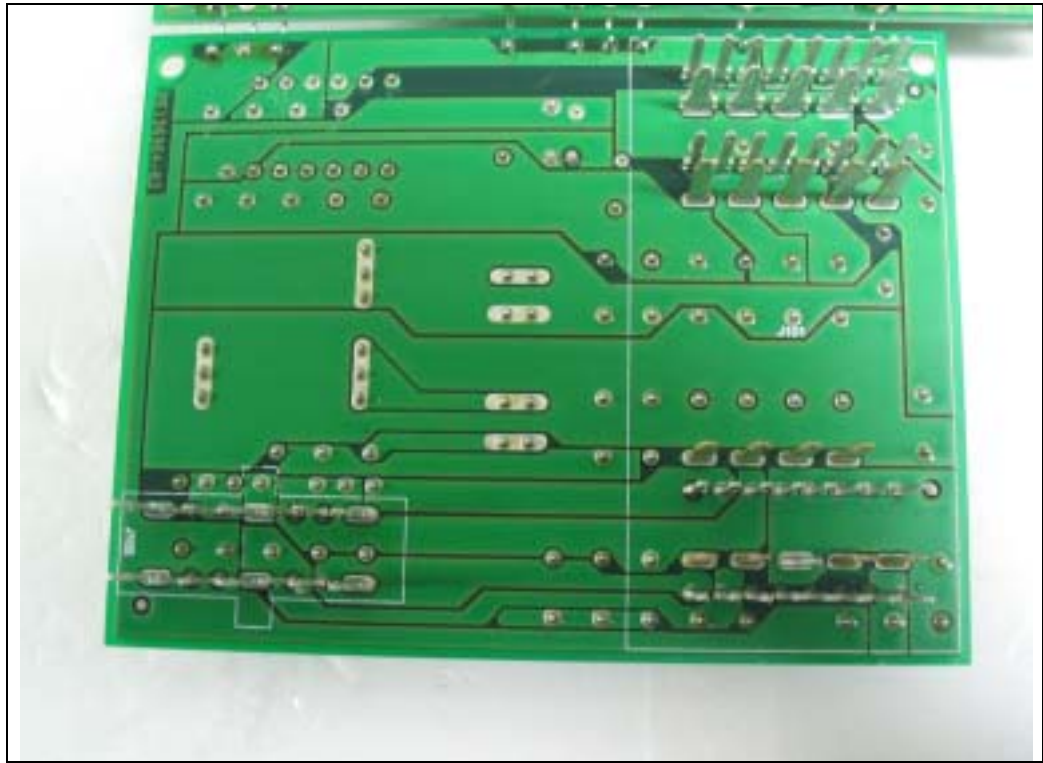
- Inside View of Product



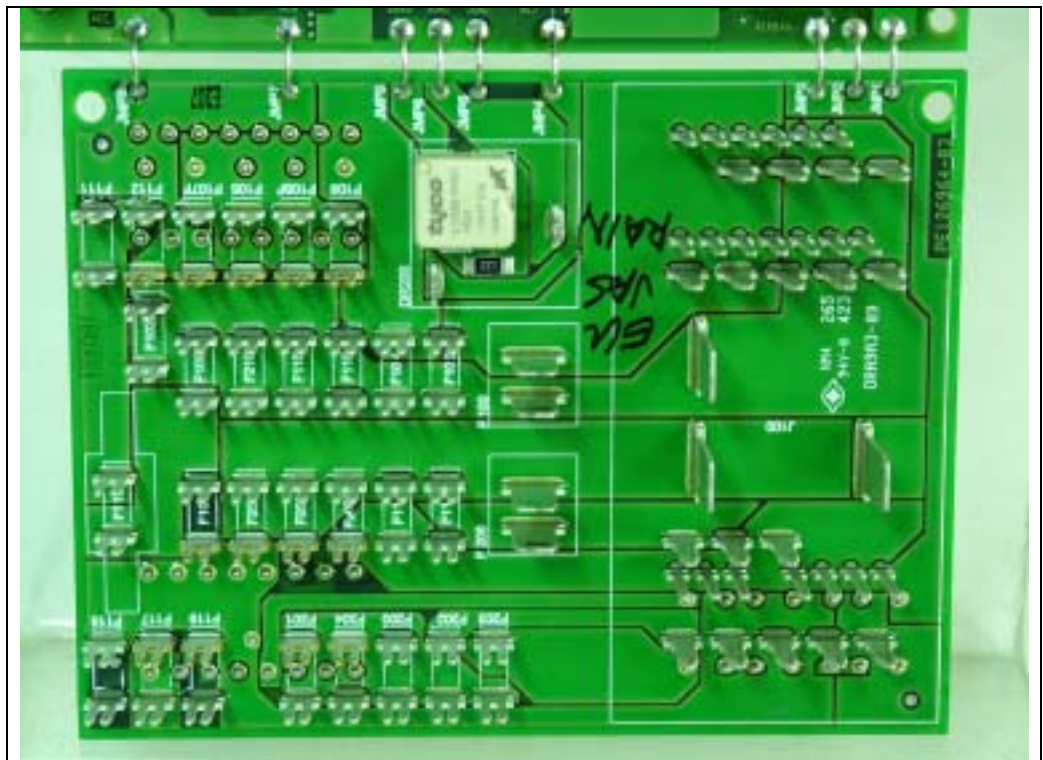
- Front View of Main Board



- Rear View of SUB Board



- Front View of SUB Board



- Rear View of Main Board



- Front View of Control Board



- Rear View of Control Board

