

# FCC COMPLIANCE REPORT

**Order No.** : STR-05-0021/E  
**Reference No.** : F690501/LF-EMC000981  
**Applicant** : Siemens Automotive Systems Corporation  
**Address of Applicant** : 403-2, Saeum-Dong, Ichon-City, Kyungki-Do, Korea

**Equipment Under Test (EUT) :**

**Name** : Remote Keyless Entry System (Receiver)  
**Model No.** : 5WY8230  
**ID** : SY55WY8230

**Standards** : FCC Part 15, Subpart B, Class B  
ANSI C63.4:1992

**Date of Receipt** : 20 January 2005

**Date of Test** : 15 April 2005

**Date of Issue** : 18 April 2005

<b>Test Result :</b>	<b>PASS</b>
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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.



**Carl Lee**  
**EMC DIV. Manager**  
**SGS Testing Korea CO., LTD.**

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## 1. General Information

### 1.1 Manufacturer Information

Manufacturer : Siemens Automotive Systems Corporation  
 Address : 403-2, Saeum-Dong, Ichon-City, Kyungki-Do, Korea

### 1.2 General Description of EUT

Name : Remote Keyless Entry System (Receiver)  
 Model No. : 5WY8230  
 FCC ID : SY55WY8230  
 Serial No : None

### 1.3 Details of EUT

Operating Frequency : 315 MHz  
 Tested Power Supply : DC 12V  
 Port : DC IN  
 Description of Operating : Operate it continually.  
 Type of Modulation : FSK  
 Modifications to the EUT : None

### 1.4 Description of Support Units

Product	Model No.	Serial No.	Manufacturer
Antenna	N/A	N/A	N/A
Battery	DF90L	N/A	Delkor
Transmitter	N/A	N/A	N/A

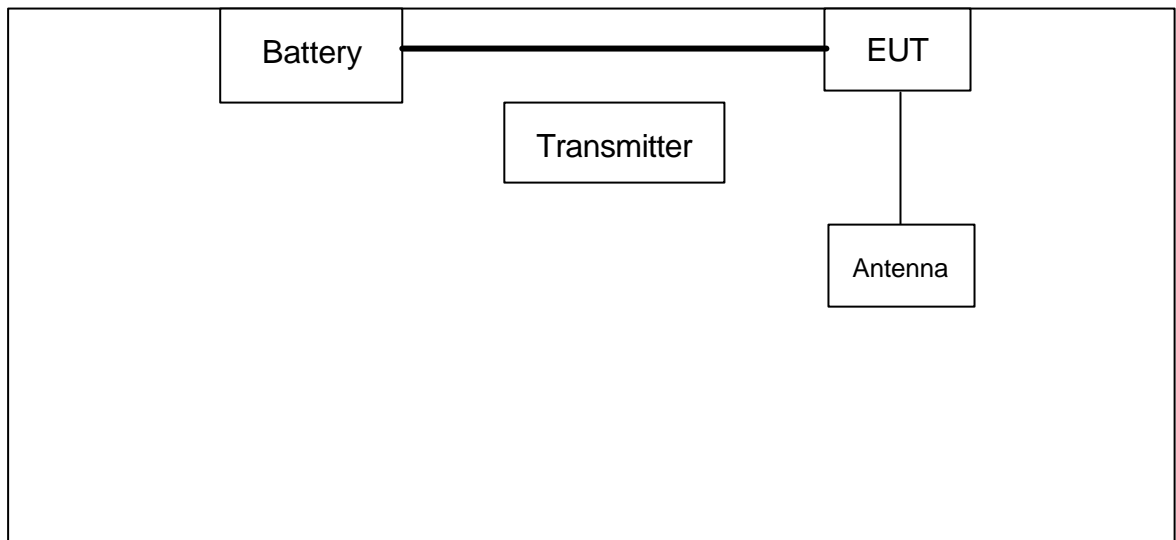
### 1.5 Cable List

Start		END		Cable Spec	
Name	I/O Port	Name	I/O Port	Length	Shield
EUT	DC IN	Battery	-	1.2	Unshielded
	Ant.	Antenna	-	0.2	Shielded

### 1.6 System Configuration

Description	Model	Serial No.	Manufacturer
-	-	-	-

### 1.7 Test Set-Up Configuration



### 1.8 Measurement Procedure

Conducted Emission Testing was performed according ANSI C63.4:1992 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 C63.4:1992 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 **5WY8230** complies with Part 15.109 of FCC Technical Rules. The Level of frequency 141.59MHz is 20.71dB  $\mu\text{V}/\text{m}$  as worst one for radiated emission.

# Radio Disturbance

## 2.1 Test Results

	Results
Conducted Emission	<b>N/A</b>
Radiated Emission	<b>PASS</b>

## 2.2 Frequency Range

Conducted Emission : 150 kHz - 30 MHz

Radiated Emission : 30 MHz - 1000 MHz, Above 1000MHz

## 2.3 Limits Of Conducted And Radiated Emission

### 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
Above 1GHz	49.5 (at 10m)	54 (at 3m)

\* Detector Function : Quasi - Peak

**2.4. Test of Conducted Emission**

**2.4.1 Test Equipments**

Equipment	Model No.	Manufacturer	Date of Calibration
Test Receiver	ESPC	R/S	Nov. 2004
LISN	3825/2	EMCO	Dec. 2004
Pulse Limiter	PL-01	PMM	Jul. 2004
Shield Room	3.0*6.0*2.5	Dail EMC	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 $\mu$ V)		LINE	LIMIT(dB $\mu$ V)		MARGIN(dB $\mu$ V)	
	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average

**Note : This test item is not applied because this product is supplied DC**

**Power from Car Battery.**



**See - Ho, Lee / Test Engineer**

**2.5 Test of Radiated Emission**

**2.5.1 Test Instruments**

Description	Model No.	Manufacturer	Date of Calibration
Test Receiver	ESVS 30	R & S	Jan. 2005
Horn Antenna	BBHA 9120D	Scaffner	Apr. 2005
Bilog Antenna	CBL6111C	Scaffner	Apr. 2004
RF Select s/w	CS201	DAIWA	-
Open Site	N/A	N/A	Feb. 2005
Spectrum Analyzer	8593E	Scaffner	Aug. 2004
RF Amplifier	8449B	H.P	May. 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 : 12.2 degree C

Humidity : 36 %RH

Atmospheric Pressure : 1004 mBar

**2.5.4 Measurement Data**

**Measurment Bandwidth : 100kHz**

**Date of Test : April 15, 2005**

FREQ. (MHz)	LEVEL (dB $\mu$ V)	POL (H/V)	AF (dB)	CL (dB)	F/S (dB $\mu$ V/m)	LIMIT (dB $\mu$ V/m)	MARGIN (dB $\mu$ V)
41.20	6.7	H	12.66	1.30	20.66	30.0	9.34
51.52	6.1	H	7.91	1.42	15.42	30.0	14.58
72.68	5.6	H	6.73	1.53	13.86	30.0	16.14
132.67	6.7	H	11.77	1.73	20.19	30.0	9.81
141.59	7.1	H	11.80	1.81	20.71	30.0	9.29
185.67	5.9	H	8.96	2.07	16.94	30.0	13.06

Note : • AF = Antenna Factor  
• POL H = Horizontal

• CL = Cable Loss  
• POL V = Vertical

• F/S = Field Strength

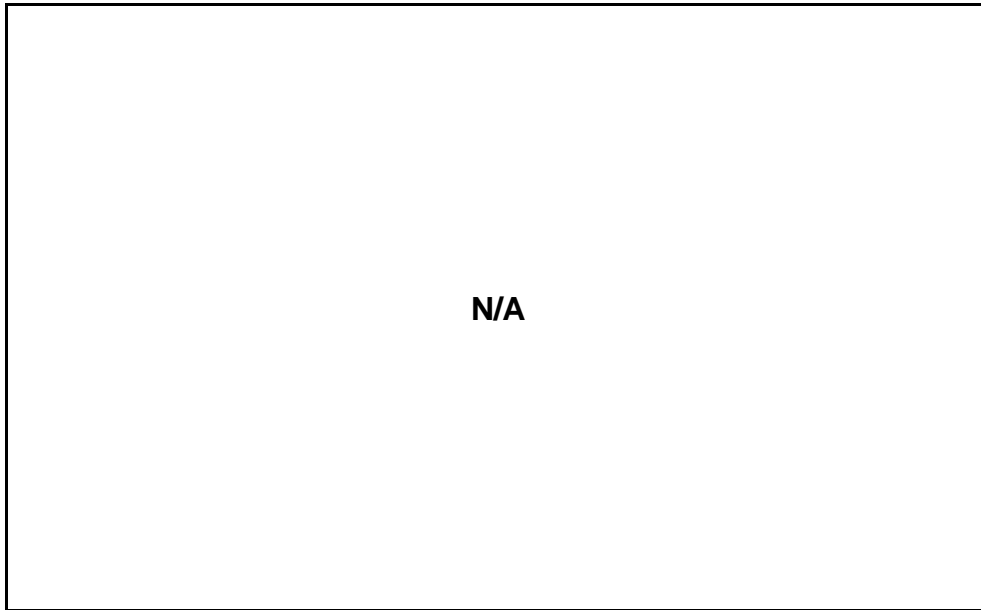


**See – Ho, Lee / Test Engineer**

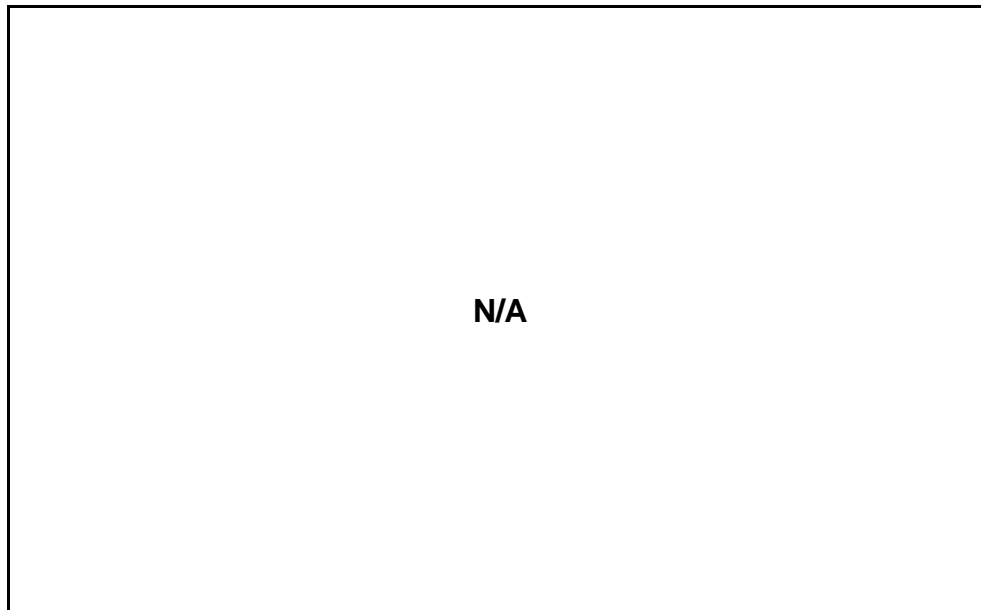


### 3. Photographs of Test

- Front View of Conducted Emission



- Rear View of Conducted Emission



- Front View of Radiated Emission



- Rear View of Radiated Emission

