TEST REPORT

FCC RULES Part 15 Subpart C

Equipment Under Test	:	Remote Keyless Entry System(Transmitter)
Model No.	:	5WY8412
Serial No.	:	-
Applicant	:	Siemens Automotive Systems Corporation
Manufacturer	:	Siemens Automotive Systems Corporation
Date of Test(s)	:	2006-04-16 ~ 2006-04-19
Date of Issue	:	2006-04-19

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 may only be reproduced and distributed in full. 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. Any mention of SGS Testing Korea Co., Ltd. or testing done by SGS Testing Korea Co., Ltd. in connection with distribution or use of the product described in this report must be approved by SGS Testing Korea Co., Ltd. in writing.

VERIFICATION OF COMPLIANCE

Applicant :	Siemens Automotive Systems Corporation
Kind of Product :	Remote Keyless Entry system(Transmitter)
Brand Name :	-
Model Name :	5WY8412
Model Difference :	-
Report File No. :	STROR-06-035
Date of test :	2006-04-16 ~ 2006-04-19
Receiver EUT :	-

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
Part 15 Subpart C§15.231	Complied

The above equipment was tested by SGS Testing Korea Co., Ltd. for compliance with the requirements set forth in the FCC RULES Part 15 Subpart §15.209& §15.231. The results of testing in this report apply to the product system that was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Tested By:  ***Date*** **19 Apr. 2006**

Feel Jeong

Approved By  ***Date*** **19 Apr. 2006**

Albert Lim

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1. GENERAL DESCRIPTION OF EUT

Remote Keyless Entry:
The RKE transmitter transmits at 315MHz for NA an FSK modulated data signal to the SRx.
The RF system of SRx receives this encrypted RF signal. The SRx send the signal to corresponding the host Body Control Module through single wired K-line bus then the host module broadcasts the requested remote commands to the appropriate control modules in the vehicle through CAN-communication line. In general the following functions are provided:
-Lock the car
-Unlock the car
-Unlock the trunk of the car
-Panic

2. General Information of EUT

Transmitter

Power Supply	DC3V (Lithium)
Operating Frequency	315 MHz
Modulation	FSK
Operating Temperature	-20℃ ~ +60℃
Frequency Generation	X-Tal
Communication method	One - Way
Size	35 mm(W) x 50 mm(L) x 10 mm(H)
Antenna Type	Integrated PCB Pattern

Details of Modification

- L1 is changed from 270 nH to 220 nH.

3. Test Procedure

The test procedures are performed following the test stands ANSI C.63.4-2003, if applicable.

3.1 Conducted Emission

Testing was performed according ANSI C.63.4-2003 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 shield room wall.

3.2 Radiated Emission

Testing was performed according ANSI C.63.4-2003 at 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 3 meters. 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 vary azimuths, antenna heights and antenna polarities. Reported are maximized emission levels.

4. Test Condition

4.1 Test Configuration

The device was configured for testing in a typical fashion (as a customer would normally use it). During the tests, the EUT and the supported equipments were installed to meet FCC requirement and operated in a manner, which tends to maximize its emission level in a typical application.

Conducted Emission Test

It's not applicable, because the EUT supplies from a DC battery.

Radiated Emission Test

Preliminary radiated emission tests were conducted using the procedure in ANSI C63.4-2003 clause 8.3.1.1. to determine the worst operating condition. Final radiated emission tests were measured at 3 meter open field test site. To complete the test configuration required by the FCC, the EUT was tested in all three orthogonal planes.

4.2 EUT Operation

EUT was tested according to the following operation modes provided by the specifications given by the manufacturer, and reported the worst emissions.

4.3 Peripherals / Support Equipment Used

Following peripheral devices and interface cables were connected during the measurement.

Type of Peripheral Equipment Used:

Description	Model Name	Serial NO	Manufacturer
-	-	-	-

5. Field Strength FCC Part 15, Subpart C, Section 15.231(b)

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 50 % Temperature: 23 ?

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dBuV/m)	Detect Mode	Pol.	Ant. (dB/m)	Cable (dB)	Actual (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
315.003	53.32	Peak	H	15.93	1.85	71.10	75.62	4.52

Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Test Receiver	Rohde & Schwarz	ESVS10	Mar. 2007
Log-periodic Antenna	Rohde & Schwarz	UHALP9107	May 2006
Anechoic Chamber	Seo Young EMC	-	-

6. Spurious Emission FCC Part 15, Subpart C, Section 15.231(b)

The following table shows the highest levels of radiated emissions on both polarizations of horizontal and vertical.

Humidity Level : 50 % Temperature: 23 ?

Radiated Emissions			Ant	Correction Factors		Total	FCC Limit	
Frequency (MHz)	Reading (dBuV/m)	Detect Mode	Pol.	Ant. (dB/m)	Cable (dB)	Actual (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
630.160	28.10	Peak	H	21.75	2.64	52.49	55.62	3.13
945.376	22.72	Peal	H	25.19	3.33	51.24	55.62	4.38
1260.320	20.01	Peak	H	24.50	4.72	49.23	55.62	6.39
1575.400	17.80	Peak	H	25.55	5.26	48.61	54.00	5.39
Not Found								

Remark: Other spurious frequencies were not found up to 4000 MHz
To get a maximum emission level from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes.

Notes :

1. H: Horizontal polarization, V: Vertical polarization
2. Emission Level =Reading +Antenna Factor + Cable Loss
3. A peak limit is 20 dB above the average limit

Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Test Receiver	Rohde & Schwarz	ESVS 10	Mar. 2007
Log-periodic Antenna	Rohde & Schwarz	UHALP9107	May 2006
Horn Antenna	Electro-Metrics	RGA-60	Apr.2007
Biconical Antenna	EMCO	3104C	Mar.2007
Spectrum Analyzer	Agilent	E4440A	May 2006
Anechoic Chamber	Seo Young EMC	-	-

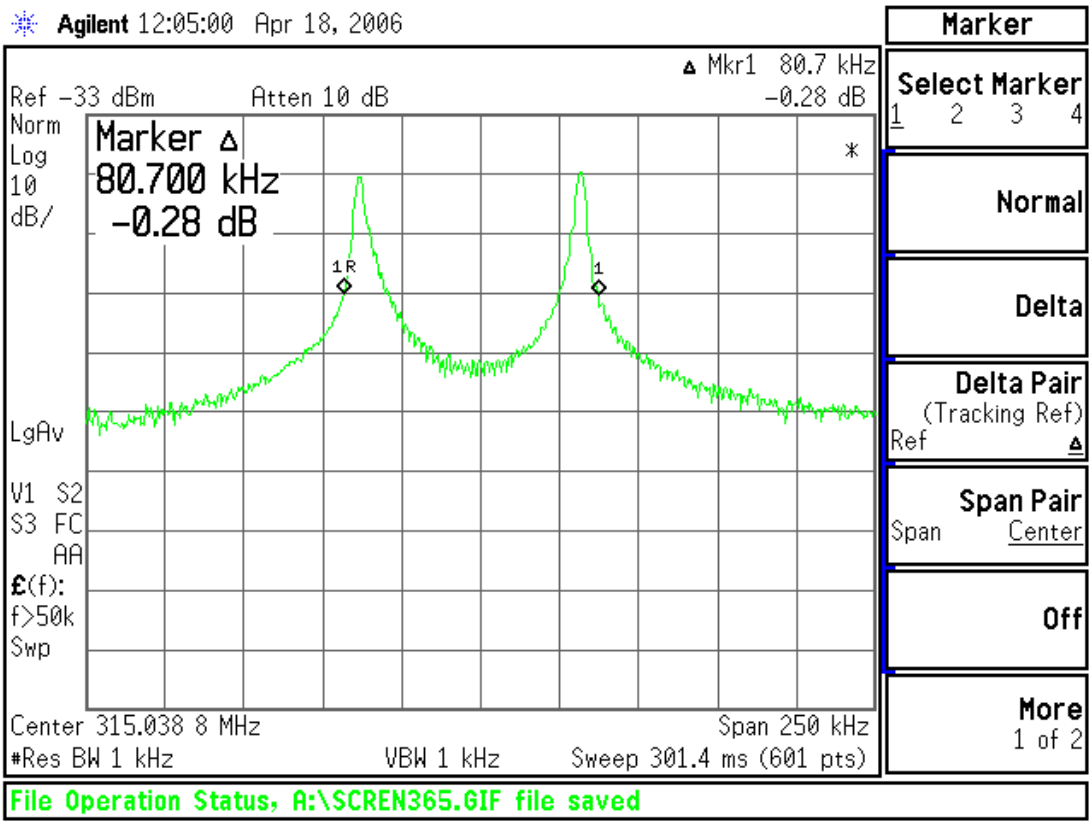
7. Bandwidth of Operation Frequency FCC Part 15, Subpart C, Section 15.231(c)

Humidity Level : 50 % Temperature: 23 ℃

Limit of 20 dB Bandwidth : 315 MHz*0.0025= 787.5 kHz

Frequency (MHz)	Bandwidth of the emission. (kHz)	Limit (kHz)	Remark
315	80.70	787.5	The point 20 dB down from the modulated carrier

The plot of test result is attached as below



Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Spectrum Analyzer	Agilent	E4440A	May 2006

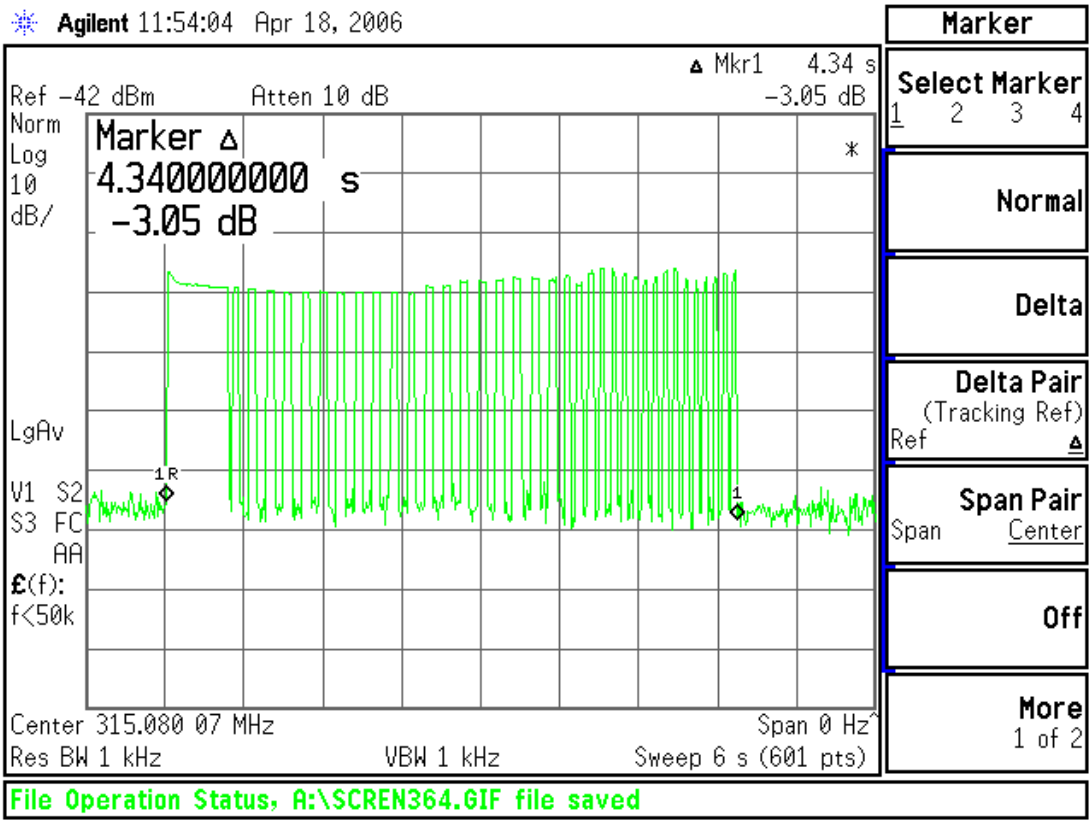
8. Transmission Time FCC Part 15, Subpart C, Section 15.231(a) (1)

Humidity Level : 50 % Temperature: 23 ℃

Limit of Transmission Time : A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

Frequency (MHz)	Transmission Time (sec)	Limit (sec)	Pass/Fail
315	4.34	5	Pass

The plot of test result is attached as below



Test Equipment Used

EQUIPMENT	MANUFACTURER	MODEL	CAL DUE.
Spectrum Analyzer	Agilent	E4440A	May 2006

9. Attachment A – Photo of the test set up