ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

Test Report No.	**: E117R-064**
AGR No.	**: A111A-067R**
Applicant	**: Shinchang Electrics Co., Ltd.**
Address	**: 734-2, Wonshi-dong, Danwon-gu, Ansan-si, Kyungki-do, 425-090, Korea**
Manufacturer	**: Shinchang Electrics Co., Ltd.**
Address	**: 734-2, Wonshi-dong, Danwon-gu, Ansan-si, Kyungki-do, 425-090, Korea**
Type of Equipment	**: Remote Keyless Entry System**
FCC ID	**: NYOSEKS-FS10APM**
IC Certification No.	**: 3109A-SEKSFS10APM**
Model No.	**: SEKSFS10APM**
Serial number	**: N/A**
Total page of Report	**: 9 pages (including this page)**
Date of Incoming	**: June 17, 2011**
Date of issuing	**: July 26, 2011**

SUMMARY

The equipment complies with the regulation; ***FCC CFR 47 PART 15 SUBPART B, Section 15.101 and IC RSS-210 Issue 8 and RSS-Gen Issue 3.***

This test report contains only the result of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

Prepared by:

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EMC Testing Dept : 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do 464-862 Korea (TEL: 82-31-765-8289 FAX: 82-31-766-2904)

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1. VERIFICATION OF COMPLIANCE

APPLICANT	: Shinchang Electrics Co., Ltd.
ADDRESS	: 734-2, Wonshi-dong, Danwon-gu, Ansan-si, Kyungki-do, 425-090, Korea
CONTACT PERSON	: Mr. Hak-Su, Khim
TELEPHONE NO	: +82-41-901-0487
FCC ID	: NYOSEKS-FS10APM
IC Certification No.	: 3109A-SEKSFS10APM
MODEL NAME	: SEKSFS10APM
BRAND NAME	: KIA
SERIAL NUMBER	: N/A
DATE	: July 26, 2011

EQUIPMENT CLASS	CYY - Communications Receiver used w/ Pt 15 Tx UNINTENTIONAL RADIATOR
E.U.T. DESCRIPTION	Remote Keyless Entry System - All Other Receivers Subject to Part 15
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.4: 2009 and RSS-Gen Issue 3
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15 § 15.101 and RSS-210 Issue 8, RSS-Gen Issue 3
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 m open area test site

The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC and IC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

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2. GENERAL INFORMATION

2.1 Product Description

The SHINCHANG ELECTRICS CO., LTD., Model SEKSFS10APM (referred to as the EUT in this report) is a receiver that is fixed inside the vehicle and receives the signal from the transmitter, Model: SEKS-TF10ATx FCC ID: NYOSEKS-TF10ATX, which was manufactured by Shingchang Electrics Co., Ltd. and then decided locking and unlocking the door of the vehicle. The product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic
RECEIVING FREQUENCY	315.00 MHz
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>= 1 MHz)	8 MHz
ANTENNA TYPE	External Antenna
RATED SUPPLY VOLTAGE	DC 12 V
OPERATING VOLTAGE	DC 9 V ~ 16 V
NUMBER OF LAYERS	2 Layers

2.2 Model Differences:

-. None

2.3 Related Submittal(s) / Grant(s)

Original submittal only

2.4 Purpose of the test

To determine whether the equipment under test fulfills the FCC requirements of the regulation stated in section 15.101 and the IC requirements stated in section 6 of the regulation, RSS-Gen Issue 3.

2.5 Test Methodology

Radiated testing was performed according to the procedures in ANSI C63.4: 2009 and RSS-210, Issue 8 & RSS-Gen Issue 3 at a distance of 3 m from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 307-51 Daessangnyeong-ri, Chowol-eup, Gwangju-si, Gyeonggi-do, 464-862, Korea. Description details of test facilities were submitted to the Commission on August 21, 2008. (Registration Number: 340658) and were submitted to the Industry Canada on April 14, 2009. (Registration Number: IC 3736A-2)

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3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
Main Board	Shingchang Electrics Co., Ltd.	RFM_T_V1.0	N/A
Interface Board	Shingchang Electrics Co., Ltd.	FS IPM V1.0	N/A

3.2 Peripheral equipment

The EUT was tested with the following all equipment used in the tested systems are:

Model	Manufacturer	FCC ID	Description	Connected to
SEKSFS10APM	Shinchang Electrics Co., Ltd.	NYOSEKS-FS10APM	Receiver (EUT)	Battery
N/A	N/A	N/A	Battery	EUT
N/A	N/A	N/A	Jig Box	EUT
SEKS-TF10ATx	Shinchang Electrics Co., Ltd.	NYOSEKSTF10ATX	Transmitter	N/A

3.3 Mode of operation during the test

-. To get a maximum radiated emission level from the EUT, the button on the transmitter was continuously pressed to transmit the signal.

3.4 Equipment Modifications

-. None

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3.5 Configuration of Test System

Line Conducted Emission Test:

It is not need to test this requirement, because the power of the EUT is supplied from a car battery.

Radiated Emission Test:

Preliminary radiated emission test was conducted using the procedure in ANSI C63.4: 2009, 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 m open area test site.

Coherent Test:

During Radiated Emission Test, use a transmitter, Model SEKS-TF10ATx, to emit a frequency of 315.00 MHz to touch off the EUT. Then take down the highest readings.

Antenna Power Conduction Test:

This equipment was only with a permanently attached antenna, so the radiated emission measurement was performed with the antenna attached.

4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Tests, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
It is not need to test this requirement, because the power of the EUT is supplied from a car battery.	

4.2 Radiated Emission Test

During Preliminary Tests, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
RX mode	X

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5. FINAL RESULT OF MEASURMENT

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Radiated Emission Test

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

Humidity Level : 43 % R.H. Temperature: 24 °C
Limits apply to : FCC CFR 47, Part 15, Subpart B (Section: 15.109) and IC RSS-Gen Issue 3 Section 6
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
Type of Test : Unintentional Radiator
Result : PASSED BY –6.34 dB at 825.00 MHz

EUT : Remote Keyless Entry System Date: July 20, 2011
Operating Condition : RX mode
Distance : 3 m

Frequency (MHz)	Reading (dBµV)	Ant. Pol. (H/V)	Ant. Height (m)	Angle (°)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dBµV/m)	Limits (dBµV/m)	Margin (dB)
57.20	17.44	V	1.00	250.00	9.80	1.54	28.78	40.00	-11.22
114.00	18.00	V	1.00	210.00	12.64	2.48	33.12	43.52	-10.40
451.62	15.36	H	1.20	160.00	18.45	4.50	38.31	46.02	-7.71
510.00	15.00	H	1.00	100.00	19.42	4.68	39.10	46.02	-6.92
778.21	11.00	H	1.00	230.00	22.30	6.09	39.39	46.02	-6.63
825.00	10.50	H	1.00	315.00	22.48	6.70	39.68	46.02	-6.34
Other frequencies were not observed any emissions up to 2 GHz.									

Radiated Emission Tabulated Data

Tested by: Dong-Wook, Park / Project Engineer

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6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+	Meter reading	(dBμV)
+	Cable Loss	(dB)
+	Antenna Factor (Loss)	(dB/m)
=	Corrected Reading	(dBμV/m)
-	Specification Limit	(dBμV/m)
=	dB Relative to Spec	(± dB)

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7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVD	838453/018	OCT/10	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	MAY/11	12MONTH	
3.	Spectrum analyzer	HP	8566B	3407A08547	JUN/11	12MONTH	■
4.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163-202	MAY/10	24MONTH	
5.	Biconical antenna	EMCO	3110	9003-1121	FEB/10	24MONTH	■
		Schwarzbeck	VHA9103	91031852	MAR/10		
6.	Log Periodic antenna	EMCO	3146	9001-2614	FEB/10	24MONTH	■
		Schwarzbeck	9108-A(494)	62281001	MAR/10		
7.	LISN	EMCO	3825/2	9109-1867	JUN/11	12MONTH	
				9109-1869	JUN/11		
		Schwarzbeck	NSLK 8128	8128-216	JUN/11		
8.	Position Controller	HD GmbH	HD100	N/A	N/A	N/A	■
9.	Turn Table	HD GmbH	DS420S	N/A	N/A	N/A	■
10.	Antenna Master	HD GmbH	MA240	N/A	N/A	N/A	■
11.	RF Amplifier	HP	8447D	2944A06539	JUN/11	12MONTH	■
12.	Horn Antenna	Schwarzbeck	BBHA9120D	BBHA9120D294	JUN/11	24MONTH	■
13.	Spectrum Analyzer	HP	8564E	3650A00756	JUN/11	12MONTH	■
14.	Isolation Transformer	Digitek Power	DPT	DPF-22027	N/A	N/A	■
15.	Isolation Transformer	Digitek Power	DPT	DPF-22028	N/A	N/A	■
16.	Frequency Converter	Digitek Power	VFS/DEFC	N/A	N/A	N/A	■

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