



**ESTECH Co., Ltd.**  
3rd Fl., Chungdam Bldg.,  
119-1 Chungdam-dong,  
Kangnamgu, Seoul



**Electromagnetic  
Interference  
Test Report**

## Compliance Test Report for FCC

Report Number		ESTF150208-001				
Applicant	Company name	SAMEUI ELECTRONIC CORPORATION				
	Address	192-11, CHUNEUI-DONG, WONMI-KU, BUCHEN CITY, KYUNGGI-DO, KOREA				
	Telephone	82-32-679-8855				
Product	Product name	FM MODULATOR				
	Model No.	SEFM 700	Manufacturer	SAMEUI ELECTRONIC CORPORATION		
	Serial No.	NONE	Country of origin	KOREA		
Test date	2002-07-29	~	2002-07-29	Date of issue 2002-08-01		
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea					
Standard	FCC PART 15 2001 , ANSI C 63.4 2001					
Test item	<input type="checkbox"/> Conducted Emission	<input type="checkbox"/> Class A	<input type="checkbox"/> Class B	Test result N/A		
	<input checked="" type="checkbox"/> Radiated Emission	<input type="checkbox"/> Class A	<input checked="" type="checkbox"/> Class B	Test result OK		
Measurement facility registration number		94696				
Tested by	Senior Engineer J.M. Yang		(Signature)			
Reviewed by	Director T.K. Lee		(Signature)			
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable					
<p>* Note</p> <ul style="list-style-type: none"> <li>- This test report is not permitted to copy partly without our permission</li> <li>- This test result is dependent on only equipment to be used</li> <li>- This test result based on a single evaluation of one sample of the above mentioned</li> </ul>						



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Appendix 1. Photographs of EUT in side PCB

Appendix 2. Block diagram of EUT

Appendix 3. Circuit Diagram



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## 1. Laboratory Information

### 1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report.

ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.

ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

### 1.2 Test Lab.

Corporation Name : ESTECH Co. Ltd

Head Office : 3 rd Fl., Chungdam Bldg., 119-1 Chungdam-dong Kangnam-gu , Seoul, Korea  
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea  
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

Branch Office : USA-ESTECH INC.  
21801 Stevens Creek Blvd. Suite 2A Cupertino, CA95014

### 1.3 Official Qualification(s)

MIC : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecommunication

KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CENELEC requirements

FCC : Filed Laboratory at Federal Communications Commission

VCCI : Granted Accreditation from Voluntary Control Council for Interference from ITE

## 2. Description of EUT

### 2.1 Summary of Equipment Under Test

Product : FM MODULATOR  
 Model Number : SEFM 700  
 Serial Number : NONE  
 Manufacturer : SAMEUI ELECTRONIC CORPORATION  
 Country of origin : KOREA  
 Rating : Using Car Power (DC 12V)  
 Receipt Date : 2002-07-19

### 2.2 General descriptions of EUT

- The transmission frequency is stable because it has PLL system FM transmiiter circuit
- ‘– Built-in the Pilot-ton system FM stereo modulator circuit
- ‘– Transmission Frequency : 106.7, 106.9, 107.3, 107.7, 107.9MHz (7channel-200KHz Step )
- ‘– Audio input Frequency 20Hz ~ 15KHz
- ‘– It is possible to attempt to improve a timbre because it has the Pre-emphasis circuit, limiter circuit and low-pass filter circuit.
- ‘– Dimensions : 86W \* 29H \* 46D mm



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### 3. Test Standards

**Test Standard : FCC PART 15 (2001)**

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

**Test Method : ANSI C 63.4 (2001)**

This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain devices that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment. These methods apply to the measurement of individual units or systems comprised of multiple units.



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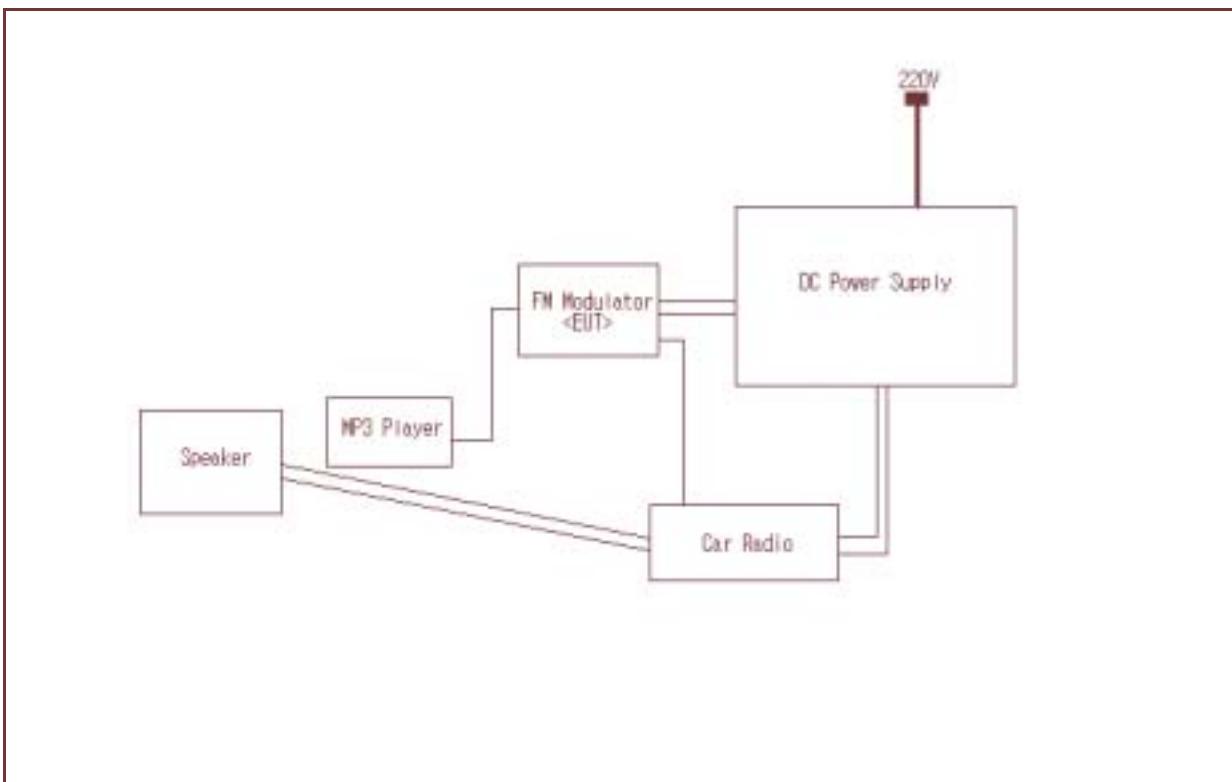
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## 4. Measurement Condition

### 4.1 EUT Operation.

- \* The EUT was in the following operation mode during all testing
- \* The operational conditions of the EUT was determined by the manufacturer according to the typical use of the EUT with respect to the expected highest level of emission
- \* After Receiving/modulating signal of MP3 Play, transmitter at Car Radio and then speaker output

### 4.2 Configuration and Peripherals



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### 4.3 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
FM MODULATOR	SEFM 700	NONE	SAMEUI ELECTRONIC CORPORATION	EUT
Speaker	AS-510	NONE	Weconic	-
Car Audio	NONE	1081	SANSUI	-
MP3 Player	HAN-14XS(USB)	ADC10620157AA	AMAC	-
DC Power Supply	DC Power Supply	2108009	HANIL T&M CO.	-

### 4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
FM MODULATOR	DC +12V	DC Power Supply	DC +12V	2	N	
FM MODULATOR	RF INPUT	Car Audio	-	2	N	
FM MODULATOR	DVD INPUT	MP3 Player	-	1	N	
Car Audio	DV +12V	DC Power Supply	DV +12V	2	N	
Car Audio	Speaker	Speaker	-	3	N	

## 5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2001) & ANSI C 63.4 (2001). The test setup was made according to FCC Part 15 (2001) & ANSI C 63.4 (2001) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test set-up.

### 5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Receiver	ESPC	Rohde & Schwarz	845296/021	2003.6.21
Spectrum Analyzer	R3261B	ADVANTEST	1720302	2002.9.3
LogBicon Antenna	VULB 9160	S/B	3107	2003.6.7
Turn Table	2087	EMCO	2129	–
Antenna Mast	2070-01	EMCO	9702-203	–
Amplifier	310N	Sonoma Instrument	185817	2002.11.13
ANT Mast Controller	2090	EMCO	1535	–
Turn Table Controller	2090	EMCO	1535	–

### 5.2 Environmental Condition

Test Place : Open Site (3m)  
 Temperature (°C) : 38 °C  
 Humidity (%) : 36 %



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### 5.3 Test data

Measurement Distance : 3 m

## 6. Antenna Power Conduction Measurements

Frequency to which trned		Result(dBuV)	Limit(dBuV)
Channel	(Mhz)	48	
1	106.7	47.8	
2	106.9	47.6	
3	107.1	48.1	
4	107.3	48	
5	107.5	48.3	
6	107.7	47.5	
7	107.9	20 Under	51.8
8	213.4	20 Under	
9	213.8	20 Under	
10	214.2	20 Under	
11	214.6	20 Under	
12	215	20 Under	
13	215.4	20 Under	
14	215.8	20 Under	