

FCC COMPLIANCE REPORT

Order No. : SKE-04-0505/E
Reference No. : F690501/LF-EMC000494
Applicant : CHUNGLAM DIGITAL CO., LTD.
Address of Applicant : #453-4, Yongdu-ri, Kongdo-eup, Kyunggi-do, Korea

Equipment Under Test (EUT) :

Name : Satellite Receiver
Model No. : America SR - 04
FCC ID :

Standards : FCC Part 2 & Part 15, Subpart C, Subpart B
ANSI C63.4:2001

Date of Receipt : 11 June 2004

Date of Test : 16 June 2004

Date of Issue : 18 June 2004

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 KES CO., LTD. EMC Laboratory

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1. General Information

1.1 Applicant & Manufacturer Information

Applicant : CHUNGLAM DIGITAL CO., LTD.
 Address : #453-4, Yongdu-ri, Kongdo-eup, Kyunggi-do, Korea
 Manufacturer : CHUNGLAM DIGITAL CO., LTD.
 Address : #453-4, Yongdu-ri, Kongdo-eup, Kyunggi-do, Korea

1.2 General Description of EUT

Name : Satellite Receiver
 Model No. : America SR-04
 FCC ID :

1.3 Details of EUT

Operating Frequency : Receiving Mode : 2.3GHz
 Transmitting Mode : 88MHz ~ 108MHz
 Tested Power Supply : DC 6V
 Port : DC 6V, ANT, AUDIO
 Description of Operating : Receive satellite Radio Broadcast and transmit
 FM Frequencies to a car radio receiver.
 Modifications to the EUT : None

1.4 Description of Support Units

Product	Model No.	Serial No.	Manufacturer
DC Power Supply	M5P60-10A	864420	TET Electronics Corp.
Speaker	N/A	N/A	N/A

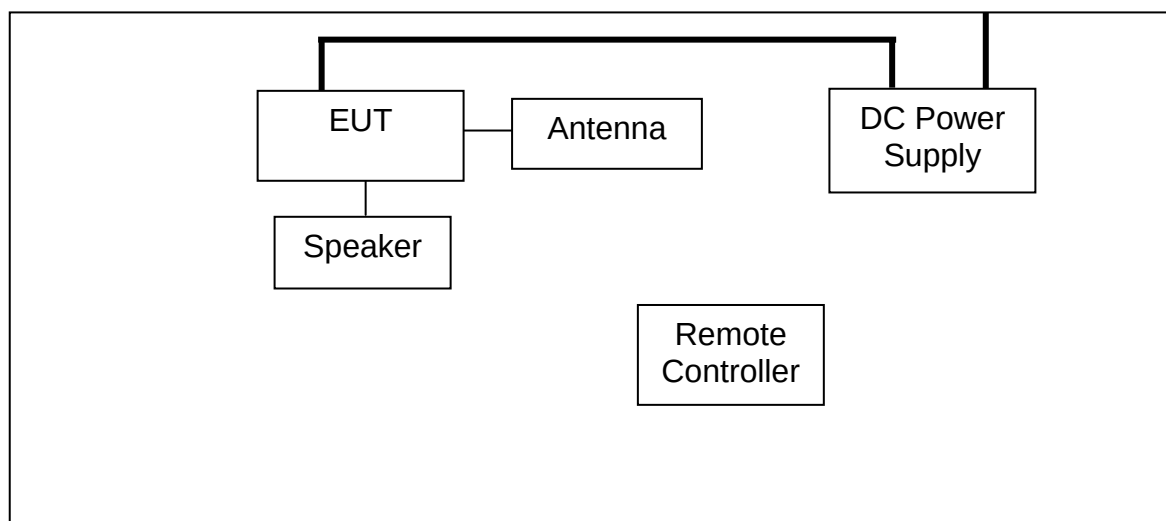
1.5 Cable List

Start		END		Cable Spec	
Name	I/O Port	Name	I/O Port	Length	Shield
EUT	DC 6V	DC Power Supply	DC Out	2.0	Unshielded
	ANT	Antenna	-	5.2	Unshielded
	Audio	Speaker	-	2.0	Unshielded

1.6 System Configuration

Description	Model	Serial No.	Manufacturer
Tuner Board	N/A	N/A	N/A
LCD Board	N/A	N/A	N/A
Remote Controller	RS-SIR1	N/A	N/A

1.7 Test Set-Up Configuration



1.8 Measurement Procedure

Conducted Emission Testing was performed according ANSI C63.4:2001 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 C63.4:2001 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 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 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 C, Subpart B

Test Standards	Status
FCC Part 15.109 & 15.209 & 15.239	Applicable
Deviation from Standard	No Deviation

1.10 Summary of Results

The data collected shows that Model **America SR-04** complies with Part 15.109, Part 15.209 and 15.239 of FCC Technical Rules. The highest emission level observed was at 88.1MHz radiated emission with a margin of 1.71dB.

Emissions from the intentional radiator is confined within a band 200 kHz wide centered on the operating frequency. The 200kHz band lies wholly within the frequency range of 88-108 MHz

The field strength of any emissions within the permitted 200kHz band is not Exceed 250 μ V/m(48dBuV) at 3 meters with average detector and 68 dB μ V with peak detector.

Radio Disturbance

2.1 Test Results

	Results
Conducted Emission	N/A
Radiated Emission	PASS

Not applied because it is powered from an automobile 12VDC System.

2.2 Frequency Range

Conducted Emission : 450 kHz - 30 MHz

Radiated Emission : 0kHz – 1000 MHz

2.3 Limits Of Radiated Emission

2.3.1 Limit Of Radiated Emission Of FCC Part 15.109 Class B

FREQUENCY (MHz)	Class A (at 10m)*	Class B (at 3m)*
	uV/m(dBuV/m)	uV/m(dBuV/m)
30 - 88	90(39)	100(40)
88 - 216	150(43.5)	150(43.5)
216 - 960	210(46.5)	200(46)
Above 960	300(49.0)	500(54)

2.3.2 Limit Of Radiated Emission Of FCC Part 15.209

FREQUENCY (MHz)	Field Strength*	Measurement Distance
	Microvolts/Meter	Meters
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	2400/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 – 216	150**	3
216 - 960	200**	3
Above 960	500	3

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

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) "F" Means Frequency

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

Equipment	Manufacturer	Model No.	Date of Calibration
Test Receiver	R&S	ESPC	Nov. 2003
LISN	3825/2	EMCO	Nov. 2003
LISN	3825/2	EMCO	Dec. 2003
Pulse Limiter	PMM	PL-01	Jul. 2003
Shielded Room	Daeil	N/A	Aug 2003

2.4.2 Test Site

Name and address : SGS Testing Korea Co., Ltd.
 705, Dongchun-Dong, Yongin, Korea 449-840

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 μ V)	
	Q-Peak	Average		Q-Peak	Average	Q-Peak	Average

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

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. 2003
Biconical Antenna	EMCO	3110	Jan. 2004
Log Periodic Antenna	EMCO	3146	Feb. 2004
RF Select s/w	DAIWA	CS201	Apr. 2004
Open Site	N/A	N/A	-

2.5.2 Test Site

Name and address : SGS Testing Korea Co., Ltd.

705, Dongchun-Dong, Yongin, Korea 449-840

2.5.3 Operating Environment

Temperature : 16 degree C

Humidity : 26%RH

Atmospheric Pressure : 1015mBar

2.5.4 Measurement Data

Measurment Bandwidth : 120kHz employing average detector

Date of Test : June 16 2004

Part 15.239 for FM Transmitting Mode**Operating Frequency in 3 Channels from 12 Channels****Radiated Emission at 3m**

FREQ. (kHz)	LEVEL (dB μ V)	POL (H/V)	AF (dB)	CL (dB)	F/S (dB μ V/m)	LIMIT (dB)	MARGIN (dB)
CH1 88.1MHz							
88.10	36.1	H	7.81	2.38	46.29	48.0	1.71
176.20	10.6	H	1.37	3.40	15.37	43.5	28.13
264.43	16.3	H	17.16	4.17	37.63	46.0	8.37
CH2 88.9MHz							
88.90	34.6	H	7.81	2.38	44.79	48.0	3.21
177.79	11.8	H	15.53	3.40	30.73	43.5	12.77
266.70	14.0	H	17.35	4.19	35.54	46.0	10.46
CH3 107.9MHz							
107.90	30.0	H	12.80	2.67	45.47	48.0	2.53
215.80	21.8	H	15.36	3.79	40.95	43.5	2.55
323.70	15.3	H	14.66	4.74	34.69	46.0	11.31
539.50	14.6	H	19.56	6.21	40.37	46.0	5.63

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

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

See – Ho, Lee / Test Engineer

Part 15.109 for Satellite Radio Receiving Mode**Radiated Emission at 10m**

FREQ. (kHz)	LEVEL (dB μ V)	POL (H/V)	AF (dB)	CL (dB)	F/S (dB μ V/m)	LIMIT (dB)	MARGIN (dB)
177.08	5.2	H	15.53	3.40	24.13	30.0	5.87
240.00	14.4	H	15.44	3.94	33.78	37.0	3.22
300.00	3.4	V	20.20	4.60	28.20	37.0	8.80
360.00	12.4	V	14.55	4.96	31.91	37.0	5.09
420.00	5.5	V	15.60	5.34	26.44	37.0	10.56
480.00	12.2	H	16.92	5.76	34.88	37.0	2.12
540.00	8.5	V	19.62	6.22	34.34	37.0	2.66
600.00	7.9	V	19.00	6.70	33.60	37.0	3.40

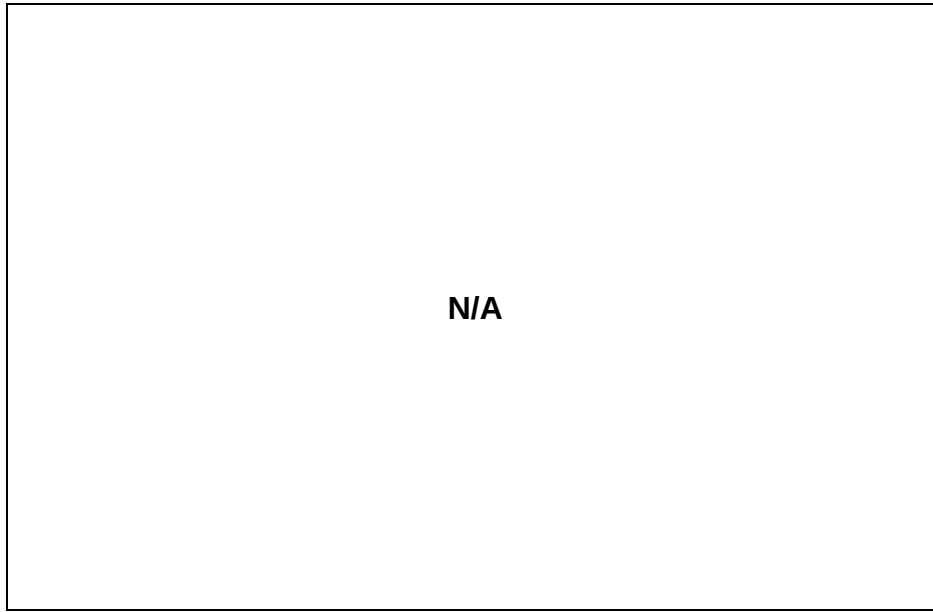
* AF = Antenna Factor. ** CL = Cable Loss.

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

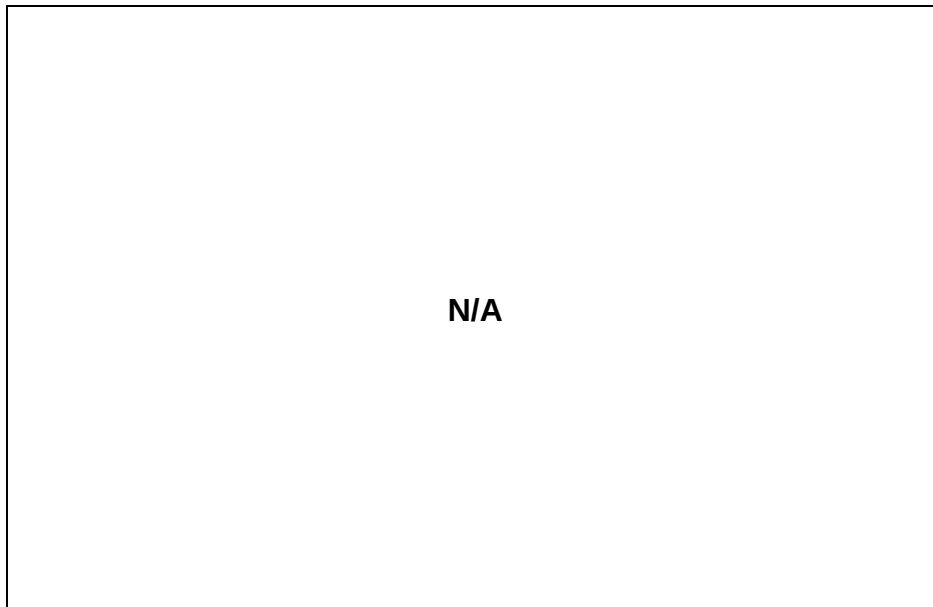
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3. Photographs of Test

- **Front View of Conducted Emission**



- **Rear View of Conducted Emission**



- Front View of Radiated Emission (Transmitting Mode)



- Rear View of Radiated Emission



- Front View of Radiated Emission (Receiving Mode)



- Rear View of Radiated Emission



4. Measured Emission Bandwidth

