

FCC COMPLIANCE REPORT

Order No. : SKR-03-132/R
Reference No. : F690501/LF-EMC000302
Applicant : BKM Co., Ltd.
Address of Applicant : #506, Owners Tower, 16-5 Sunae-dong, Bundang-gu,
Seongnam-city, Kyunggi-do, Korea

Equipment Under Test (EUT) :

Name : FM Modulator

Brand Name : IPOP

Model No. : BP-10017F

FCC ID : RQVBP-10017F

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

Date of Receipt : 23 December 2003

Date of Test : 29 December 2003

Date of Issue : 10 January 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 Manufacturer Information

Manufacturer : BKM Co., Ltd.

Address : #506, Owners Tower, 16-5 Sunae-dong, Bundang-gu,
Seongnam-city, Kyunggi-do, Korea

1.2 General Description of EUT

Name : FM Modulator

Brand Name : IPOP

Model No. : BP-10017F

FCC ID : RQVBP-10017F

1.3 Details of EUT

Fundamental Frequency : 88.3MHz, 88.7MHz, 88.9MHz

Tested Power Supply : DC 12V

Port : DC IN

Description of Operating : Receiving MP3 Audio Signal from MP3 Player and
transmitting it the FM Receiver

Modifications to the EUT : None

1.4 Description of Support Units

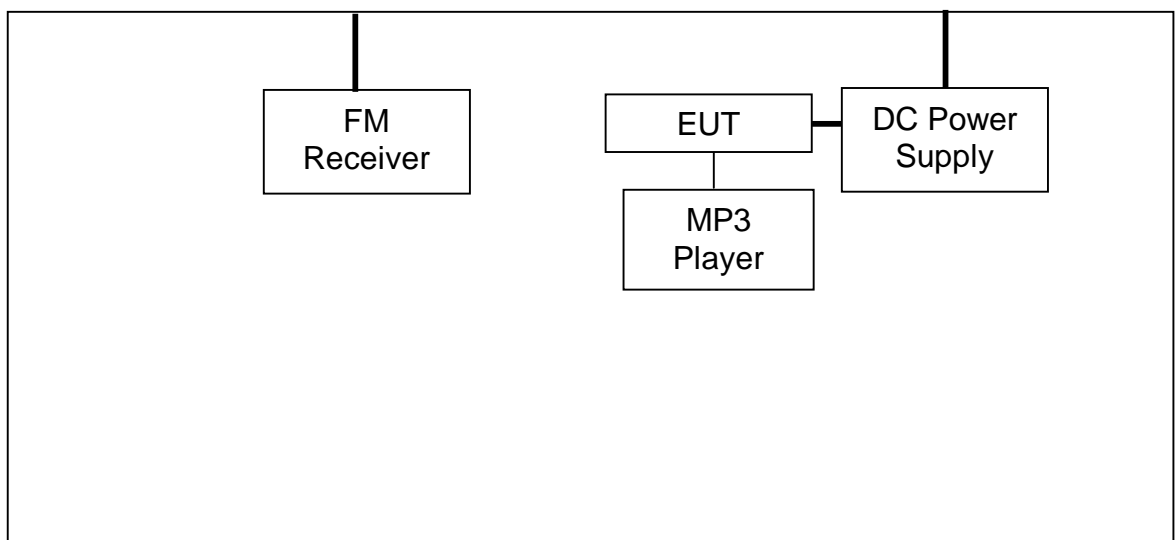
Product	Model No.	Serial No.	Manufacturer
MP3 Player	SM-320VH1	N/A	PINE TECH
DC Power Supply	3003	9401892	Protek
FM Receiver	RX-DS15	CN4JA11609	Panasonic

1.5 Cable List

Start		END		Cable Spec	
Name	I/O Port	Name	I/O Port	Length	Shield
EUT	DC LINE IN	DC Power Supply MP3 Player	DC Out Line Out	1.2	Unshielded
				1.2	Unshielded

1.6 System Configuration

Description	Model	Serial No.	Manufacturer
Main Board	N/A	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

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

1.10 Summary of Results

The data collected shows that Model **BP-10017F** complies with Part 15.209 and 15.239 of FCC Technical Rules. The highest emission level observed was at 88.8MHz radiated emission with a margin of 8.88dB.

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 200vV/m(48dBuV) at 3 meters.

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) *Detector Function : Peak

(2) The lower limit shall apply at the transition frequencies.

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

(4) "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 SiteName and address : **SGS KES 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

Measurment 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 from a Battery.**

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2.5 Test of Radiated Emission

2.5.1 Test Instruments

Description	Manufacturer	Model No.	Date of Calibration
Test Receiver	R & S	ESVS30	Nov. 2003
Spectrum Analyzer	H.P	E4411A	Oct. 2003
RF Amplifier	H.P	8447F	May. 2003
Loop Antenna	EMCO	6502	Jul. 2003
RF Select s/w	DAIWA	CS201	Oct. 2003

2.5.2 Test Site

Name and address : SGS KES Co., Ltd.

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

2.5.3 Operating Environment

Temperature : 4degree C

Humidity : 30%RH

Atmospheric Pressure : 993mBar

2.5.4 Measurement Data

Measurment Bandwidth : 120kHz

Date of Test : December 29 2003

Operating Frequency in Each Channel(with Average Detector)

FREQ. (kHz)	LEVEL (dB μ V)	POL (H/V)	AF (dB)	CL (dB)	F/S (dB μ V/m)	LIMIT (dB)	MARGIN (dB)
CH1 88.3MHz							
88.30	28.3	V	8.56	2.26	39.12	48.0	8.88
176.60	10.5	H	9.05	4.48	24.03	43.5	19.47
264.90	5.3	H	12.67	4.81	22.78	46.0	23.22
353.20	4.6	H	15.65	5.62	25.87	46.0	20.13
441.50	3.2	H	17.15	6.47	26.82	46.0	19.18
529.80	4.1	H	18.19	7.43	29.73	46.0	16.27
CH2 88.7MHz							
88.70	24.3	V	8.56	2.26	35.12	48.0	12.88
177.40	2.7	V	8.98	4.46	16.14	43.5	27.36
266.10	3.2	H	12.71	4.83	20.74	46.0	25.26
354.80	5.3	H	15.66	5.63	26.59	46.0	19.41
443.50	4.9	H	17.20	6.49	28.58	46.0	17.42
532.20	2.3	V	18.05	7.46	27.81	46.0	18.19
CH3 88.9MHz							
88.90	22.4	V	8.56	2.26	33.22	48.0	14.78
177.80	8.3	H	8.98	4.46	21.74	43.5	21.76
266.70	5.2	H	12.71	4.83	22.74	46.0	23.26
355.60	5.6	H	15.67	5.64	26.91	46.0	19.09
444.50	6.3	H	17.22	6.50	30.02	46.0	15.98
533.40	4.6	H	18.00	7.46	30.07	46.0	15.93

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

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

See – Ho, Lee / Test Engineer

Operating Frequency in Each Channel(with Peak Detector)

FREQ. (kHz)	LEVEL (dB μ V)	POL (H/V)	AF (dB)	CL (dB)	F/S (dB μ V/m)	LIMIT (dB)	MARGIN (dB)
CH1 88.3MHz							
88.30	29.6	V	8.56	2.26	40.42	68.0	27.58
176.60	12.6	H	9.05	4.48	26.13	63.5	37.37
264.90	12.3	H	12.67	4.81	29.78	66.0	36.22
353.20	6.3	H	15.65	5.62	27.57	66.0	38.43
441.50	5.2	H	17.15	6.47	28.82	66.0	37.18
529.80	5.2	H	18.19	7.43	30.83	66.0	35.17
CH2 88.7MHz							
88.70	25.6	V	8.56	2.26	36.42	68.0	31.58
177.40	15.3	H	8.98	4.46	28.74	63.5	34.76
266.10	13.4	H	12.71	4.83	30.94	66.0	35.06
354.80	5.2	H	15.66	5.63	26.49	66.0	39.51
443.50	5.6	H	17.20	6.49	29.28	66.0	36.72
532.20	4.9	H	18.05	7.46	30.41	66.0	35.59
CH3 88.9MHz							
88.90	26.8	H	8.56	2.26	37.62	68.0	30.38
177.80	14.3	H	8.98	4.46	27.74	63.5	35.76
266.70	11.9	H	12.71	4.83	29.44	66.0	36.56
355.60	6.4	H	15.67	5.64	27.71	66.0	38.29
444.50	6.3	H	17.22	6.50	30.02	66.0	35.98
533.40	5.9	H	18.00	7.46	31.37	66.0	34.63

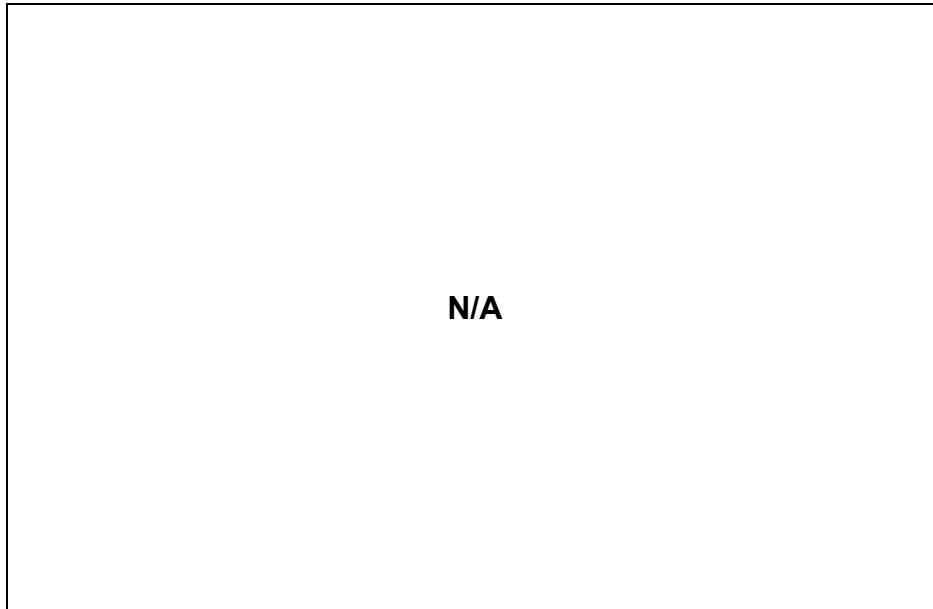
* AF = Antenna Factor. ** CL = Cable Loss.

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

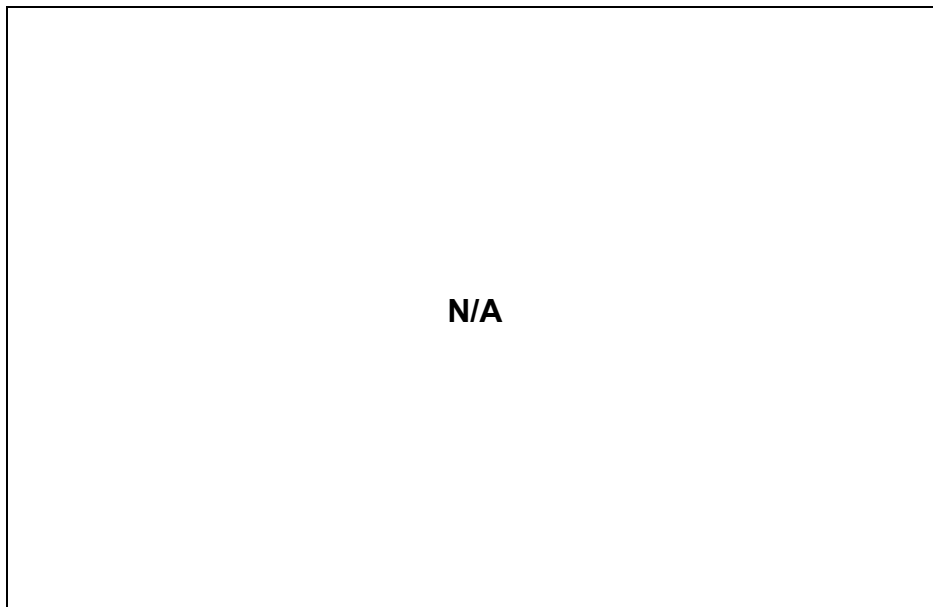
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3. Photographs of Test

- **Front View of Conducted Emission**



- **Rear View of Conducted Emission**



- Front View of Radiated Emission



- Rear View of Radiated Emission



4. Measured Emission Bandwidth

