



EMC RESEARCH INSTITUTE

EMI TEST REPORT

Emission of electromagnetic disturbance

Test Report No. : ERI-FCC04-0017

Equipment : MP3 PLAYER/DIGITAL CAMERA/FM TUNER

Name of basic model : iFP-1095

Family model : iFP-1090

Manufacturer : AV CHASEWAY MFG.FTY.

Applicant : ReignCom Limited.

Tested date : 2004. 3. 8 – 3. 12

Issued date : 2004. 3. 19

Test results : PASS

Test Standards : FCC Part 15 Subpart B (Class B)
/Digital devices & peripherals

Test Procedure and Items:

- AC Power line Conducted emissions measurement : ANSI C63.4-1992
- Radiated emissions measurement : ANSI C63.4-1992

A handwritten signature in black ink, appearing to be 'GWEON, HUR'.

Tested by: GWEON, HUR

A handwritten signature in black ink, appearing to be 'SANG-KYU, LEE'.

Approved by: SANG-KYU, LEE

The results in this report apply only to the sample tested.
This test report shall not be reproduced except in full, without the written approval of **ERI Laboratory**.

CONTENTS

1. CLIENT INFORMATION
2. LABORATORY INFORMATION
3. EQUIPMENT UNDER TEST INFORMATION(EUT)
 - 3.1 Identification of the EUT
 - 3.2 Additional information about the EUT
 - 3.3 Peripheral equipment
4. CONTINUOUS DISTURBANCE VOLTAGE, MAIN TERMINAL
 - 4.1 Operating environment
 - 4.2 Test set-up and test procedures
 - 4.3 Operation Conditions
 - 4.4 Test instrument
 - 4.5 Test results (Test mode: Up & Download mode)
5. RADIATED DISTURBANCE : 30MHz – 1000MHz
 - 5.1 Operating environment
 - 5.2 Test set-up
 - 5.3 Test conditions
 - 5.4 Test instrument
 - 5.5 Test results (Test mode: Up & Download mode)
 - 5.6 Test results (Test mode: Play mode)
 - 5.7 Test results (Test mode: Recode mode)
 - 5.8 Test results (Test mode : FM Tuner)

APPENDIX

(None)

1. CLIENT INFORMATION

The EUT has been tested by request of :

Company : ReignCom Limited.
Address : 8F Posgen VentureTower, 1586-7 Seocho-dong, Seocho-gu,
Seoul, Korea
Name of contact : H.J. Mun
Telephone : +82-2-3019-1723
Facsimile : +82-2-3019-1746

2. LABORATORY INFORMATION

The 10m full-anechoic chamber and/or EMC facilities are used for these testing.
These facilities were accredited by KOLAS, EK, MIC of Korea and FCC of USA.

Address

ELECTROMAGNETIC RESEARCH INSTITUTE.
66-6, JEIL-RI, YANGJI-MYUN, YOUNGIN-CITY, KYUNGGI-DO, KOREA
Telephone No. : +82-31-336-1186~7
Facsimile No. : +82-31-336-1184

Registered No.

KOLAS : 111
EK : J
MIC : KR0030
FCC Filing No. : 302567

3. EQUIPMENT UNDER TEST INFORMATION(EUT)

3.1 Identification of the EUT

Type of equipment : MP3 PLAYER/DIGITAL CAMERA/FM TUNER
Model name : iFP-1095
Brand name : -
Manufacturer : AV CHASEWAY MFG.FTY.
Address : Langang Village, Chongguang Town, Baoan District,
Shenzhen City, Guangdong, China
Telephone : +86-755-708-4671
Facsimile : +86-755-708-5490
Country of origin : CHINA
Rating : 120V, 60Hz

3.2 Additional information about the EUT

Class B,

Family Models List:

Basic Model	Variant Model	Differential point	Memory size
iFP-1095 (512MB)	iFP-1090	Model name and Memory size	256MB

3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT.

Description	Model No.	Serial No.	Manufacture
AC/DC adaptor	SEA60N2-16.0	03502395C	SANKEN ELECTRIC CO., LTD.
Note PC	P5010	464307211682	FUJITSU LIMITED
Keyboard	SDM4510UH	4M030902	-
Earphone	-	-	-

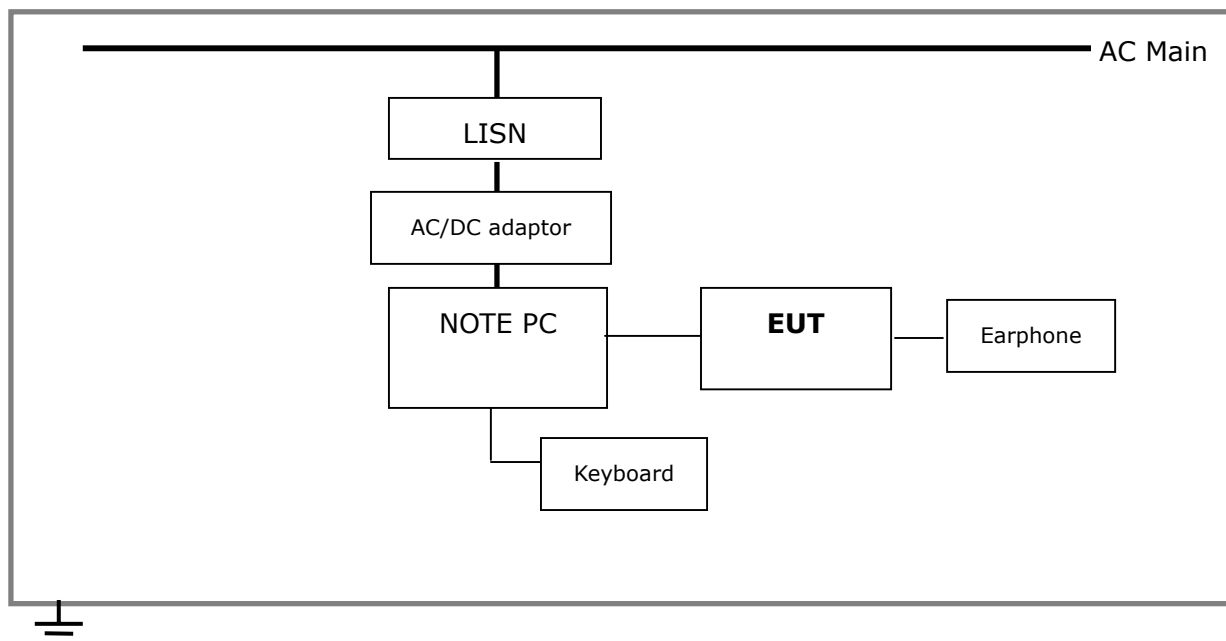
4. CONTINUOUS DISTURBANCE VOLTAGE, MAIN TERMINAL : Frequency range 0.15 MHz to 30 MHz

4.1 Operating environment

Temperature : 20.0 °C

Relative Humidity : 36.0 %

4.2 Test set-up and test procedures



The mains terminal disturbance voltage was measured with the equipment under test(EUT) in a shield room. The EUT was connected to an artificial mains network(LISN) placed on the floor. The EUT was placed on non-metallic table 0.4m above the metallic, grounded floor. The distance to other metallic surface was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

4.3 Operation Conditions

Up & download mode, play mode, recording mode, tuner mode

4.4 Test instrument

Instrument	Model No	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100020	R&S	2004. 3. 25	x
L.I.S.N.	ESH3-Z5	827246/008	R&S	2004. 3. 19	x
	ESH3-Z5	831887/018	R&S	2004. 3. 19	
Shield room	8 × 6 × 3.3m/H	-	-	-	x

4.5 Test results (Up & download mode)

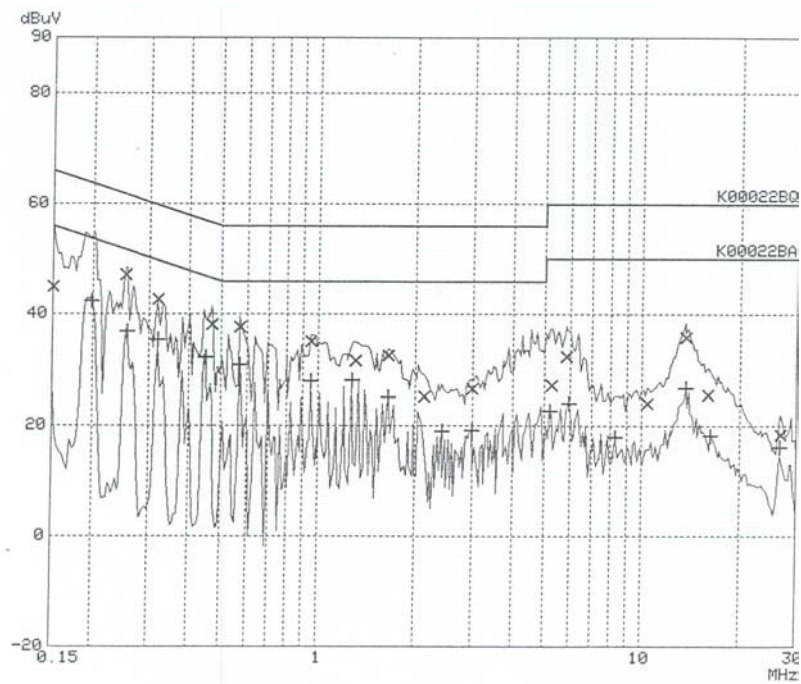
Date of test: Mar 10, 2004.

An overview sweep performed with peak detector & average detector are included in the report **as test reports**.

Frequency Range [MHz]	Tested Freq. [MHz]	LISN	Meter Reading		Limits		Margin	
			QP	AV	QP	AV	QP	AV
			[dBuV]		[dBuV]		[dBuV]	
0.15-30	0.186	N	50.4	43.7	64.1	54.1	13.7	10.4
	0.267	N	47.0	35.7	61.2	51.2	14.2	15.5
	0.318	N	40.2	31.6	59.7	49.7	19.5	18.1
	0.471	N	35.6	30.4	56.4	46.4	20.8	16.0
	0.600	N	31.3	25.7	56.0	46.0	24.7	20.3
	1.509	N	31.1	26.1	56.0	46.0	24.9	19.9
	1.896	N	30.8	25.3	56.0	46.0	25.2	20.7
	4.880	N	33.3	21.3	56.0	46.0	22.7	24.7
	6.080	N	35.2	22.2	60.0	50.0	24.8	27.8
	13.680	N	32.9	23.6	60.0	50.0	27.1	26.4

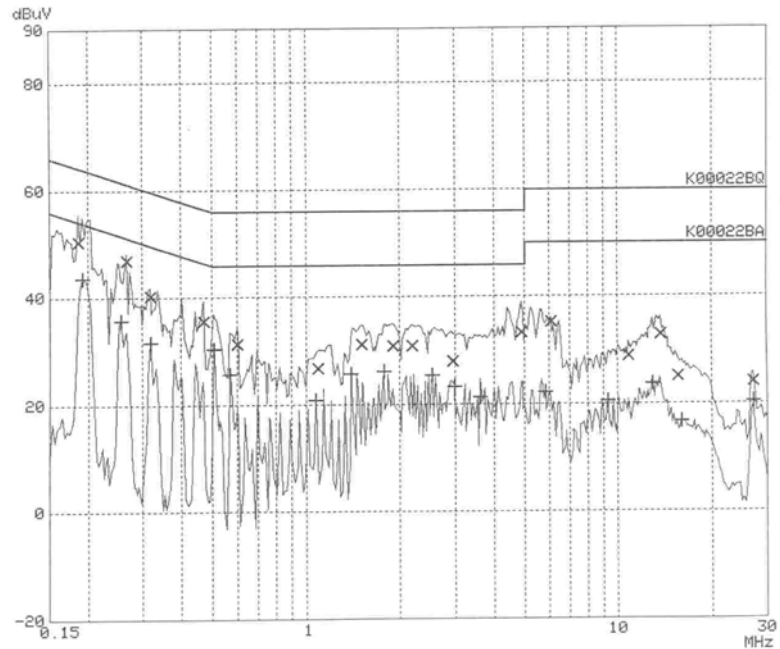
* <5 : mean less than 5dB

* Other frequency keep over 20dB margin.



PAGE 1

[Live line]



PAGE 1

[Neutral line]

5. RADIATED DISTURBANCE : 30MHz – 1000MHz

5.1 Operating environment

Temperature : 23.0 °C
Relative Humidity : 38.0 %

5.2 Test set-up

The frequency range investigated was 30 MHz to 1000 MHz.

All readings are quasi-peak unless stated otherwise.

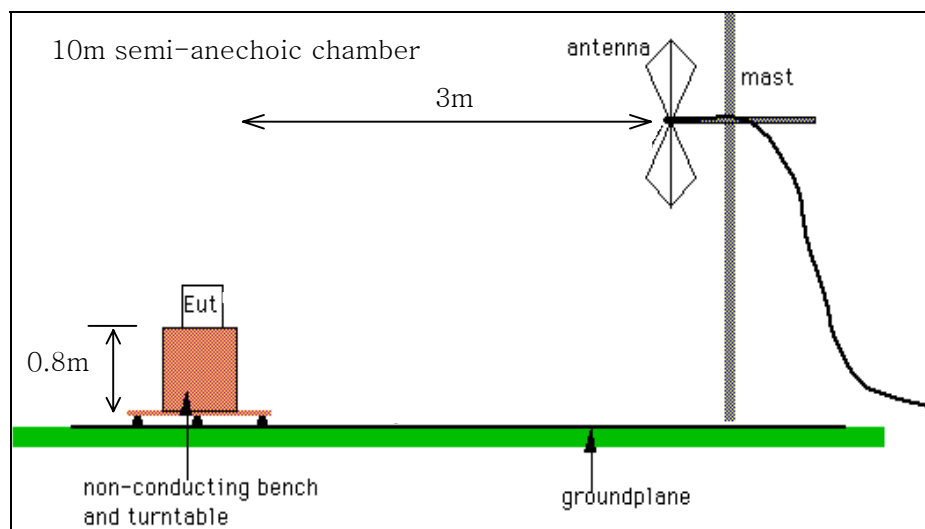
The half-wave dipole antenna was tuned to the frequency found during Preliminary radiated measurements. The EUT, support equipment and Interconnecting cables were re-configured to the set-up to the producing the Maximum emission for the frequency and were placed on top of a 0.8 meter High non-metallic 1 X 1.5 meter table. The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission.

The turntable containing the system was rotated the antenna height was varied 1 to 4 meters

and stopped at the azimuth or height producing the maximum emission.

And this device(EUT) was tested in 3 orthogonal planes.

The antenna measured both horizontal and vertical polarization.



<General test set-up for radiated emissions>

5.3 Operation Conditions

Up & download mode, play mode, recording mode, tuner mode

5.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	2005. 1. 24	x
L.I.S.N.	ESH3-Z5	827246/008	R&S	2004. 3. 19	
	ESH3-Z5	831887/018	R&S	2004. 3. 19	
Biconical Antenna	VHA9103	91031950	Schwarzbeck	2005.01.24	x
Log-Periodic Antenna	UHALP9108A	0392	Schwarzbeck	2005.01.23	x
Antenna Mast	MA240	N/A	HD	-	x
Turn Table	DT430S	N/A	HD	-	x

5.5 Test results (Test mode: Up & download mode)

Date of test: Mar 09, 2004.

Freq (MHz)	Reading (dBuV/m)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
47.60	18.77	V	12.50	1.40	32.67	40.00	7.33
142.70	18.13	H	14.42	2.30	34.85	43.50	8.65
300.00	17.99	H	19.82	3.50	41.31	46.00	4.69
433.00	19.38	V	15.87	4.20	39.45	46.00	6.55
797.00	16.12	H	20.28	5.70	42.10	46.00	3.90
808.00	15.63	H	20.84	6.10	42.57	46.00	3.43
820.00	14.97	H	20.84	6.10	41.91	46.00	4.09

* Receiving Antenna Mode : **Horizontal, Vertical**

* <5 : mean less than 5dB

Note : Reading = Test Receiver meter, P= Polarization → POL H = Horizontal POL V = Vertical A = Angle, AF = Antenna Factor CL = Cable Loss Result = Field Strength(AF + CL+ Reading)

Result: Pass

The measured emissions level of the EUT have found the below of the specified limit.

5.6 Test results (Test mode: Play mode)

Date of test: Mar 09, 2004.

Freq (MHz)	Reading (dBuV/m)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
167.00	4.81	H	15.70	2.50	23.01	43.50	20.49
278.40	4.61	H	18.00	3.30	25.91	46.00	20.09
811.00	10.14	H	20.84	6.10	37.08	46.00	8.92
829.00	10.90	H	20.84	6.10	37.84	46.00	8.16
836.00	10.14	H	20.84	6.10	37.08	46.00	8.92
844.00	9.87	H	20.84	6.10	36.81	46.00	9.19

* Receiving Antenna Mode : **Horizontal, Vertical**

* <5 : mean less than 5dB

Note : Reading = Test Receiver meter, P= Polarization → POL H = Horizontal POL V = Vertical A = Angle, AF = Antenna Factor CL = Cable Loss Result = Field Strength(AF + CL+ Reading)

Result: Pass

The measured emissions level of the EUT have found the below of the specified limit.

5.7 Test results (Test mode: Record mode)

Date of test: Mar 09, 2004.

Freq (MHz)	Reading (dBuV/m)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
234.00	6.36	H	16.90	3.00	26.26	46.00	19.74
337.00	18.83	H	13.80	3.70	36.33	46.00	9.67
811.00	10.95	H	20.84	6.10	36.66	46.00	9.34
820.00	9.72	H	20.84	6.10	37.89	46.00	8.11
829.00	10.26	H	20.84	6.10	37.20	46.00	8.80
844.00	9.54	H	20.84	6.10	36.48	46.00	9.52

* Receiving Antenna Mode : **Horizontal, Vertical**

* <5 : mean less than 5dB

Note : Reading = Test Receiver meter, P= Polarization → POL H = Horizontal POL V = Vertical A = Angle, AF = Antenna Factor CL = Cable Loss Result = Field Strength(AF + CL+ Reading)

Result: Pass

The measured emissions level of the EUT have found the below of the specified limit.

5.8 Test results < Test mode: FM tuner >

Date of test: Mar 09, 2004.

T.	Tested	Meter Reading (quasi-peak)		Limits	Margins	
Frequency	Frequency	H	V		H	V
[MHz]	[MHz]	[dBuV/m]	[dBuV/m]		[dBuV/m]	[dBuV/m]
87.5	99.96	-	14.91	43.5	-	28.59
	198.34	-	-	43.5	-	-
	294.92	24.06	-	46.0	21.94	-
	393.23	21.70	-	46.0	24.30	-
	491.89	22.54	-	46.0	23.46	-
	590.27	36.48	-	46.0	9.52	-
	688.15	30.15	-	46.0	15.85	-
	784.94	32.10	-	46.0	13.90	-
	884.76	34.10	-	46.0	11.90	-
	983.07	30.60	-	54.0	21.40	-
98.0	104.96	16.50	-	43.5	27.00	-
	208.90	20.51	-	43.5	22.99	-
	313.86	-	-	46.0	-	-
	420.02	21.17	-	46.0	24.83	-
	524.97	23.49	-	46.0	22.51	-
	733.21	33.10	-	46.0	12.90	-
	839.69	34.30	-	46.0	11.70	-
	946.19	34.40	-	46.0	11.60	-
	-	-	-	54.0	-	-
108.0	118.79	-	-	43.5	-	-
	237.58	27.50	-	46.0	18.50	-
	356.35	26.26	-	46.0	19.74	-
	475.14	-	-	46.0	-	-
	593.93	30.80	-	46.0	15.20	-
	712.72	31.40	-	46.0	14.60	-
	831.51	34.10	-	46.0	11.90	-
	950.30	31.30	-	46.0	14.70	-
Others	254.10	26.49	-	46.0	19.51	-
	820.00	37.07	-	46.0	8.93	-
	823.00	36.93	-	46.0	9.07	-
	829.00	38.13	-	46.0	7.87	-
	860.00	37.04	-	46.0	8.96	-
	869.00	37.54	-	46.0	8.46	-

* Meter reading: **Loss include**
 * Margins : **[Limits] - [Meter reading]**
 * Receiving Antenna Mode: **Horizontal, Vertical**
 * 10m chamber
 * <5 : mean less than 5dB

Result: Pass

The measured emissions level of the EUT have found the below of the specified limit.