



EMC RESEARCH INSTITUTE

EMI TEST REPORT

Emission of electromagnetic disturbance

Test Report No. : ERI-FCC04-0016

Equipment : MP3 PLAYER/FM TUNER

Name of basic model : iFP-899

Family model : iFP-880, iFP-890, iFP-895

Manufacturer : AV CHASEWAY MFG.FTY.

Applicant : ReignCom Limited.

Tested date : 2004. 3. 9 – 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**.

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(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/FM TUNER

Model name : iFP-899

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-899 (1GB)	iFP-880	Model name and Memory size	128MB
	iFP-890	Model name and Memory size	256MB
	iFP-895	Model name and Memory size	512MB

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	-	-	-

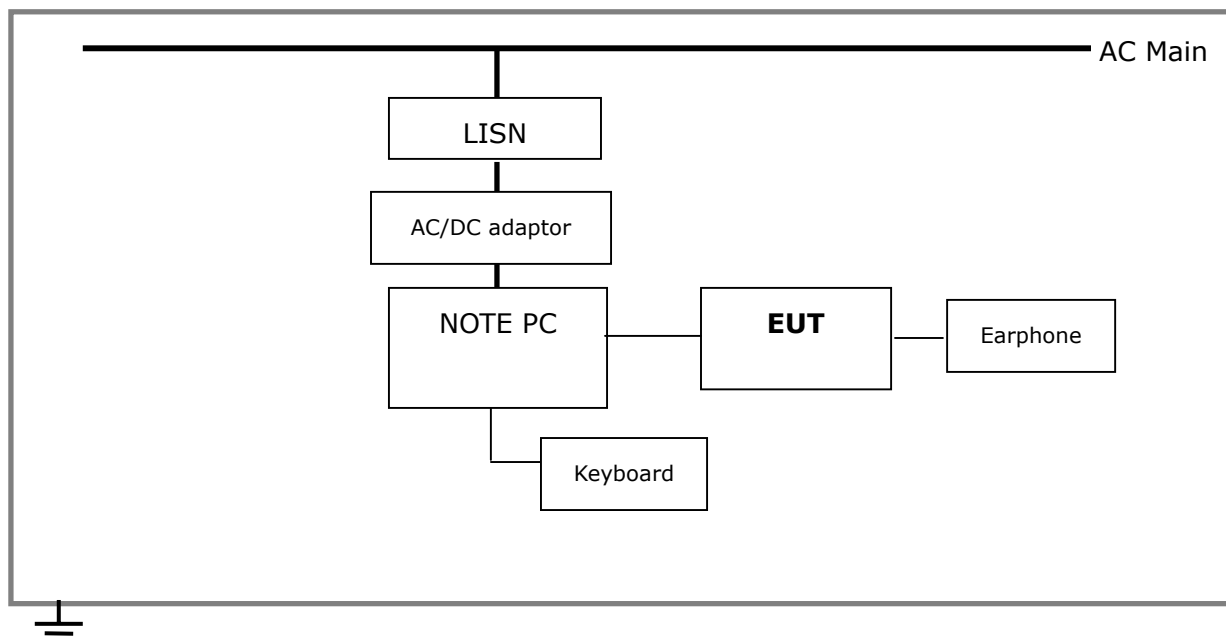
4. CONTINUOUS DISTURBANCE VOLTAGE, MAIN TERMINAL : Frequency range 0.15 MHz to 30 MHz

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)

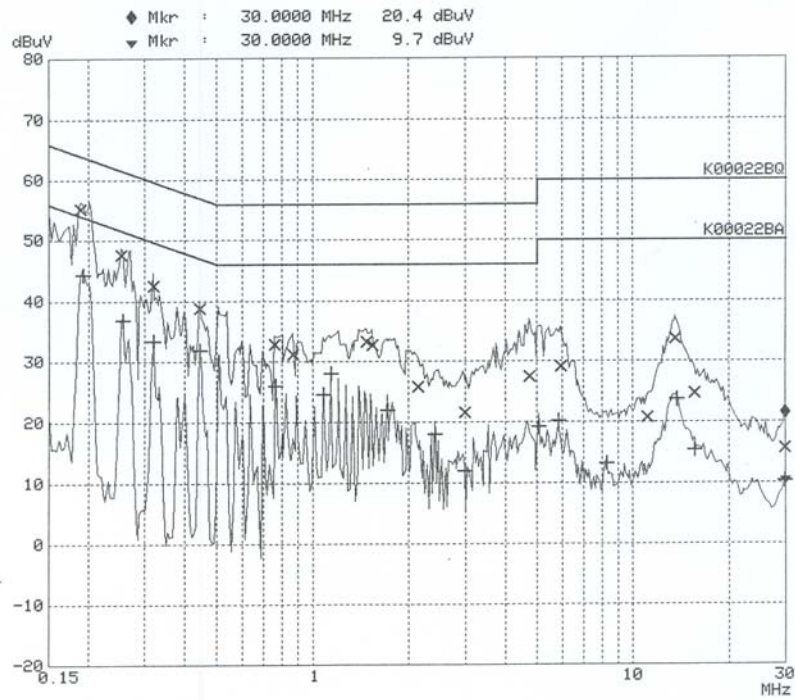
Date of test: Mar 12, 2004.

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

Frequency Range	Tested Freq.	LISN	Meter Reading		Limits		Margin	
			QP	AV	QP	AV	QP	AV
			[dBuV]		[dBuV]		[dBuV]	
0.15-30	0.189	N	55.2	44.3	64.0	54.0	8.8	9.7
	0.252	N	47.6	36.9	61.6	51.6	14.0	14.7
	0.318	N	42.5	33.4	59.8	49.8	17.3	16.4
	0.444	N	38.8	31.9	57.0	47.0	18.2	15.1
	0.759	N	32.8	25.9	56.0	46.0	23.2	20.1
	0.864	N	31.2	24.6	56.0	46.0	24.8	21.4
	1.473	N	33.2	28.0	56.0	46.0	22.8	18.0
	1.539	N	32.7	22.0	56.0	46.0	23.3	24.0
	5.930	N	29.1	20.2	60.0	50.0	30.9	29.8
	13.560	N	33.7	23.7	60.0	50.0	26.3	26.3

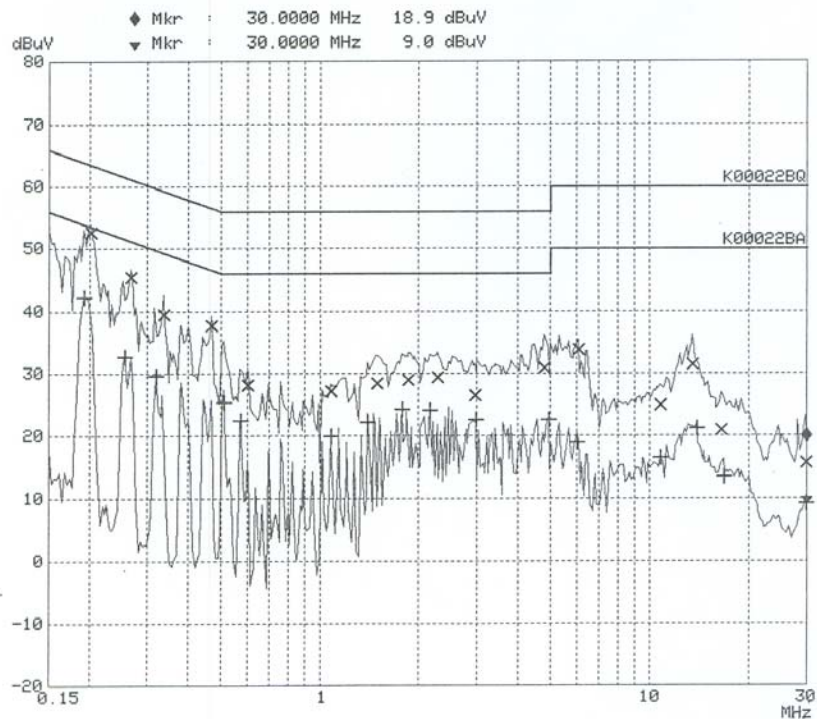
* <5 : mean less than 5dB

* 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.

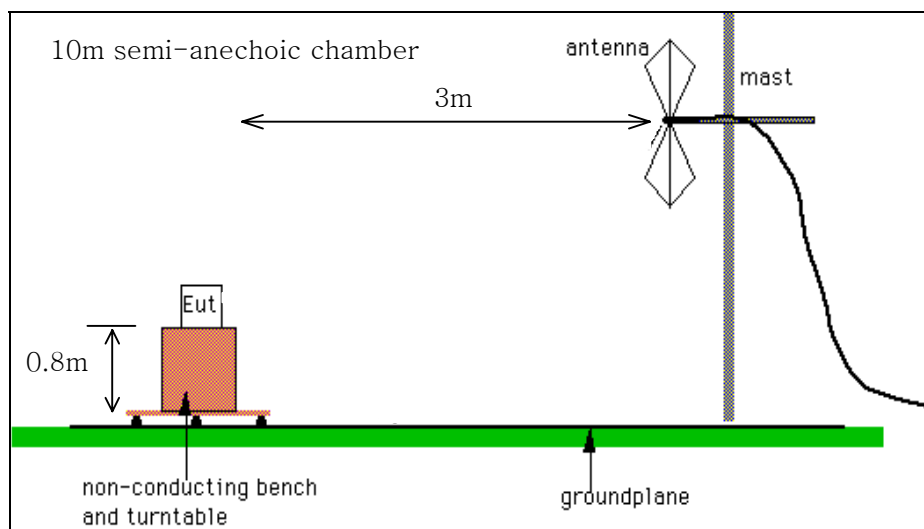
The half-wave dipole antenna was tuned to the frequency found during Preliminary radiated measurements. The EUT, support equipment and Interconnecting cables were re-configured to the set-up to the producing the Maximum emission for the frequency and were placed on top of a 0.8 meter High non-metallic 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)
293.90	15.37	H	19.13	3.40	37.90	46.00	8.10
299.17	20.37	H	19.13	3.40	42.90	46.00	3.10
305.12	22.68	H	13.69	3.60	39.97	46.00	6.03
312.10	18.81	H	13.69	3.60	36.10	46.00	9.90
316.25	22.21	H	13.69	3.60	39.50	46.00	6.50
328.70	21.65	H	13.85	3.70	39.20	46.00	6.80
339.50	22.68	H	13.85	3.70	37.05	46.00	8.95
402.10	16.35	H	15.87	4.20	36.42	46.00	9.58
816.01	10.19	H	20.84	6.10	37.13	46.00	8.87

* 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)
287.20	9.94	H	18.45	3.50	31.89	46.00	14.11
295.30	10.51	H	19.13	3.40	33.04	46.00	12.96
300.00	10.94	H	19.82	3.50	34.26	46.00	11.74
307.00	16.67	H	13.80	3.60	34.07	46.00	11.93
662.00	9.56	H	19.50	5.20	34.26	46.00	11.74

* 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)
262.20	10.73	H	17.70	3.30	31.73	46.00	14.27
278.00	11.74	H	18.00	3.30	33.04	46.00	12.96
295.00	11.73	H	19.13	3.40	34.26	46.00	11.74
312.00	15.90	H	13.80	3.70	33.40	46.00	12.60
326.00	15.75	H	13.80	3.70	33.25	46.00	12.75
332.00	6.75	V	13.80	3.70	24.25	46.00	21.75
622.21	11.00	H	18.80	5.20	35.00	46.00	11.00

* 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	97.52	-	14.91	43.5	-	28.59
	195.35	23.70	-	43.5	19.80	-
	287.90	23.50	-	46.0	22.50	-
	384.02	26.30	-	46.0	19.70	-
	479.84	-	29.11	46.0	-	16.89
	575.79	-	28.35	46.0	-	17.65
	671.76	-	28.51	46.0	-	17.49
	767.76	-	29.00	46.0	-	17.00
	863.69	-	33.70	46.0	-	12.30
	959.67	29.70	-	54.0	16.30	-
98.0	105.65	-	26.80	43.5	-	16.70
	210.62	-	22.50	43.5	-	23.50
	320.60	31.70	-	46.0	14.30	-
	422.38	30.50	-	46.0	15.50	-
	532.08	-	30.00	46.0	-	16.00
	641.04	-	30.50	46.0	-	15.50
	760.48	-	31.20	46.0	-	14.80
	850.86	36.50	-	46.0	9.50	-
	955.31	30.20	-	54.0	15.80	-
108.0	118.00	-	19.40	43.5	-	24.10
	237.58	30.50	-	46.0	15.50	-
	355.67	33.87	-	46.0	12.13	-
	475.18	24.77	-	46.0	21.23	-
	593.33	26.50	-	46.0	19.50	-
	711.59	29.60	-	46.0	16.40	-
	830.03	35.28	-	46.0	10.72	-
	949.22	33.78	-	46.0	12.22	-
Others	196.15	30.20	-	43.5	13.30	-
	239.20	34.00	-	46.0	12.00	-
	393.25	37.56	-	46.0	8.44	-
	847.85	-	33.18	46.0	-	12.82
	870.00	34.59	-	46.0	11.41	-
	881.13	-	33.58	46.0	-	12.42

* 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.