



EMC RESEARCH INSTITUTE

EMI TEST REPORT

Emission of electromagnetic disturbance

Test Report No. : ERI-FCC04-0015
Equipment : MP3 PLAYER/FM TUNER
Name of basic model : iFP-799
Family model : iFP-780, iFP-790, iFP-795
Manufacturer : AV CHASEWAY MFG.FTY.
Applicant : ReignCom Limited.
Tested date : 2004. 3. 9 – 3. 10
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 'G. Hur'.

Tested by: GWEON, HUR

A handwritten signature in black ink, appearing to be 'S. K. 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-799
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-799 (1GB)	iFP-780	Model name and Memory size	128MB
	iFP-790	Model name and Memory size	256MB
	iFP-795	Model name and Memory size	512MB

3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT.

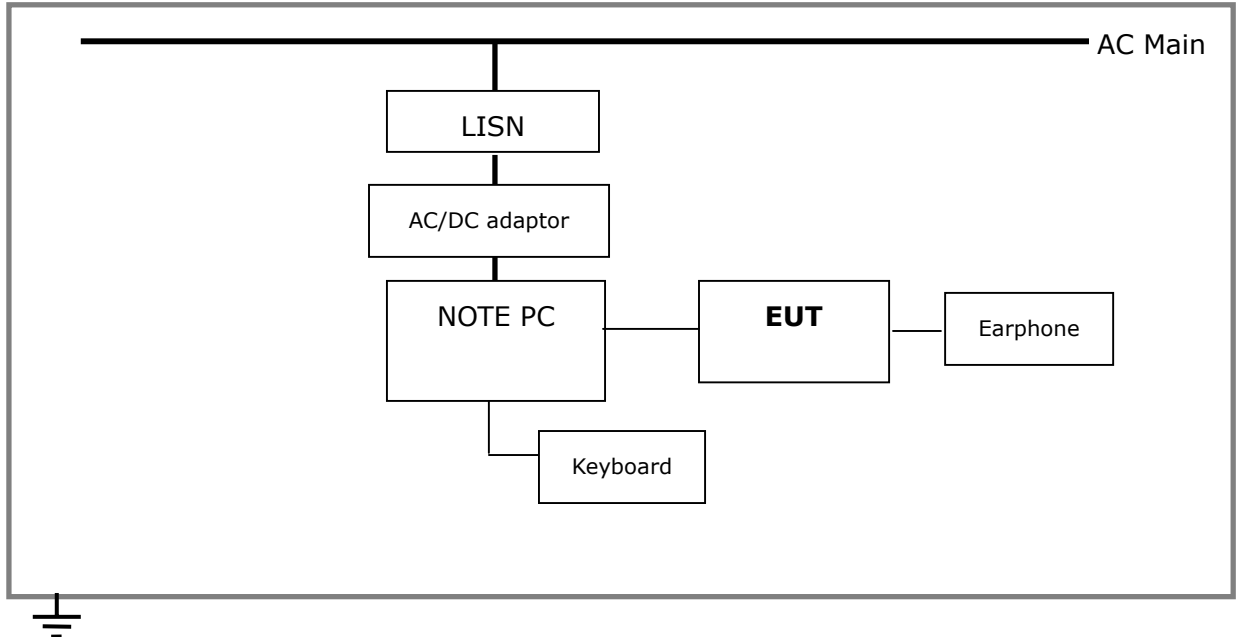
Description	Model No.	Serial No.	Manufacture
AC/DC adaptor	SEA60N2-16.0	03502395C	SANKEN ELECTRIC CO., LTD.
Note PC	P5010	464307211682	FUJITSU LIMITED
Keyboard	SDM4510UH	4M030902	-
Earphone	-	-	-

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)

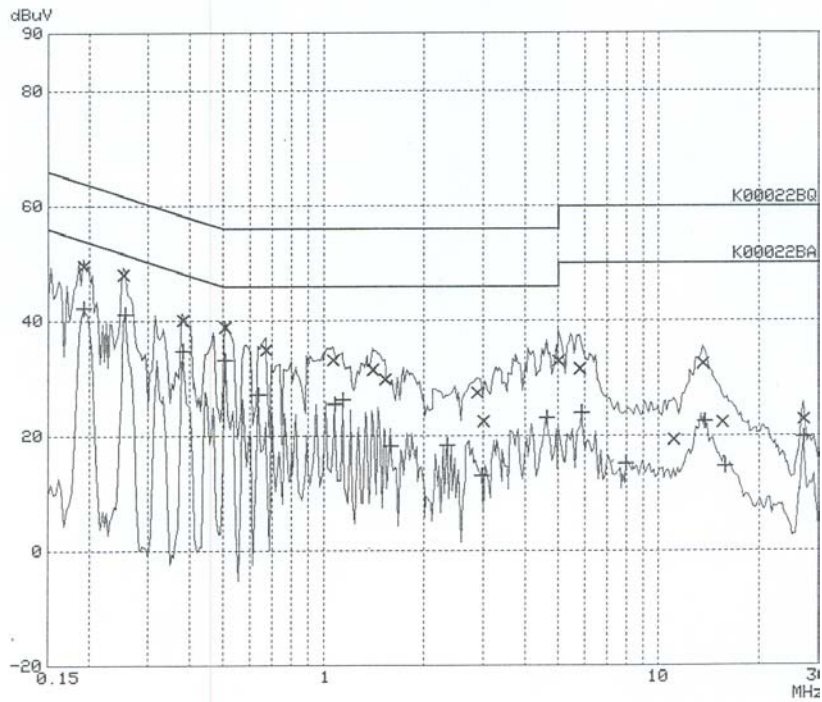
Date of test: Mar 10, 2004.

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	0.192	H	49.6	42.2	64.0	54.0	14.4	11.8
	0.201	N	52.9	43.5	63.5	53.5	10.6	10.0
	0.252	H	48.0	41.2	61.6	51.6	13.6	10.4
	0.381	H	40.1	34.8	58.9	48.9	18.8	14.1
	0.507	H	38.8	33.2	56.0	46.0	17.2	12.8
	0.669	H	35.0	27.2	56.0	46.0	21.0	18.8
	1.068	H	33.2	25.6	56.0	46.0	22.8	20.4
	1.404	H	31.4	18.3	56.0	46.0	24.6	27.7
	5.810	H	31.7	24.1	60.0	50.0	28.3	25.9
13.530	H	32.5	22.5	60.0	50.0	27.5	27.5	

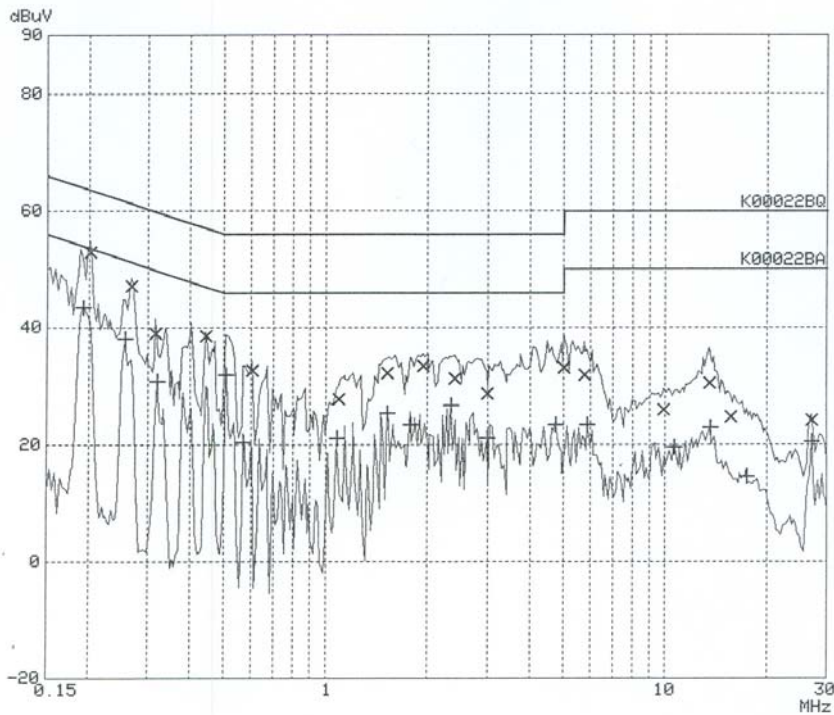
* <5 : mean less than 5dB

* 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.

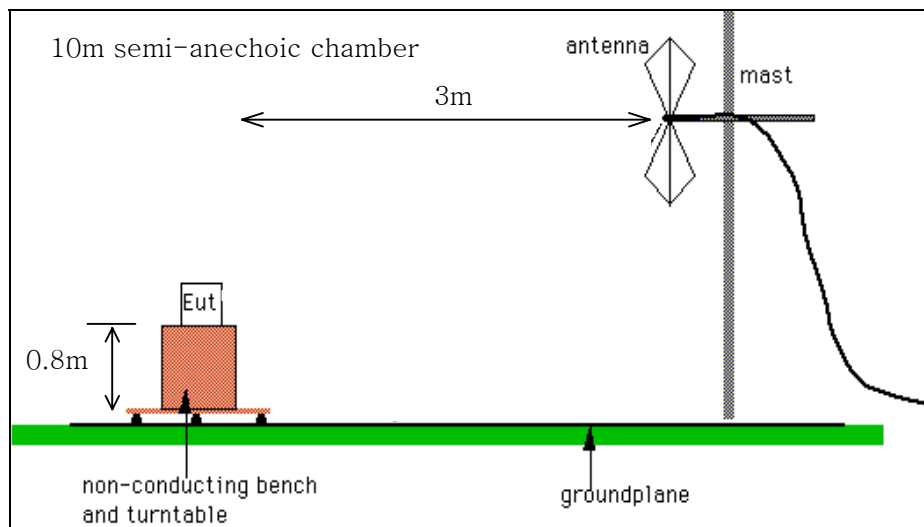
The half-wave dipole antenna was tuned to the frequency found during Preliminary radiated measurements. The EUT, support equipment and Interconnecting cables were re-configured to the set-up to the producing the Maximum emission for the frequency and were placed on top of a 0.8 meter High non-metallic 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)
103.00	22.38	H	10.31	2.00	34.69	43.50	8.81
234.00	13.84	H	16.90	3.00	33.74	46.00	12.26
258.20	17.10	H	17.35	3.20	37.65	46.00	8.35
300.00	16.56	H	19.82	3.50	39.88	46.00	6.12
400.00	19.04	V	15.87	4.20	39.11	46.00	6.89
433.00	17.67	V	15.87	4.20	37.74	46.00	8.26
769.00	14.02	H	20.28	5.70	40.00	46.00	6.00
853.00	11.19	H	21.51	6.10	38.80	46.00	7.20

* 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)
175.00	14.76	H	15.90	2.50	33.16	43.50	10.34
259.50	12.18	H	17.35	3.20	32.73	46.00	13.27
452.00	11.52	V	16.64	4.20	32.36	46.00	13.64
881.00	12.90	H	21.51	6.10	40.51	46.00	5.49
892.00	13.11	H	21.51	6.10	40.72	46.00	5.28
914.00	12.87	H	21.86	6.40	41.13	46.00	4.87

* 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.

5.7 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)
295.30	9.61	H	19.13	3.40	32.14	46.00	13.86
829.00	12.56	H	20.84	6.10	39.50	46.00	6.50
878.00	10.95	H	21.51	6.10	38.56	46.00	7.44
893.00	10.79	H	21.51	6.10	38.40	46.00	7.60

* 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	96.01	-	14.91	43.5	-	28.59
	191.94	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
98.0	959.67	29.70	-	54.0	16.30	-
	107.26	-	15.50	43.5	-	28.00
	214.51	-	21.10	43.5	-	22.40
	321.77	32.60	-	46.0	13.40	-
	429.03	29.50	-	46.0	16.50	-
	536.29	-	26.40	46.0	-	19.60
	643.54	-	29.60	46.0	-	16.40
	750.80	-	30.28	46.0	-	15.72
	858.06	35.40	-	46.0	10.60	-
108.0	965.31	31.20	-	54.0	20.80	-
	118.55	-	17.10	43.5	-	26.40
	237.58	27.00	-	46.0	19.00	-
	355.65	34.00	-	46.0	12.00	-
	474.18	25.36	-	46.0	20.64	-
	592.73	26.18	-	46.0	19.82	-
	711.28	28.60	-	46.0	17.40	-
	829.83	34.38	-	46.0	11.62	-
	948.38	31.70	-	46.0	14.30	-
Others	196.70	31.49	-	43.5	12.01	-
	240.00	31.68	-	46.0	14.32	-
	393.00	37.18	-	46.0	8.82	-
	848.00	-	34.52	46.0	-	11.48
	871.00	34.39	-	46.0	11.61	-
	881.00	-	34.69	46.0	-	11.31

* 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.