ELECTROMAGNETIC RESEARCH INSTITUTE

EMI TEST REPORT

Emission of electromagnetic disturbance

Test Report No. : ERI-FCC03-0049

Equipment : MP3 Player

Name of basic model : iFP-599T

Family model : iFP-595T, iFP-590T

Manufacturer : AV CHASEWAY MFG.FTY.

Applicant : iRiver CO., LTD.

Tested date : 2003. 7. 16 – 7. 18

Issued date : 2003. 7. 21

Test results : PASS

Test Standards : FCC Part 15 Subpart B (Class B) / Verification

/digital devices & peripherals

Test Procedure and Items:

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

Tested by: YOUNG-SIK, KIM **Approved by: UK-CHO, RIM**

CONTENTS

1. CLIENT INFORMATION

The EUT has been tested by request of :

Company : iRiver CO., LTD.

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

Model name : iFP-599T

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	Remark
iFP-599T (1GB)	iFP-595T	Flash memory	512MB
	iFP-590T	Flash memory	256MB

3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT.

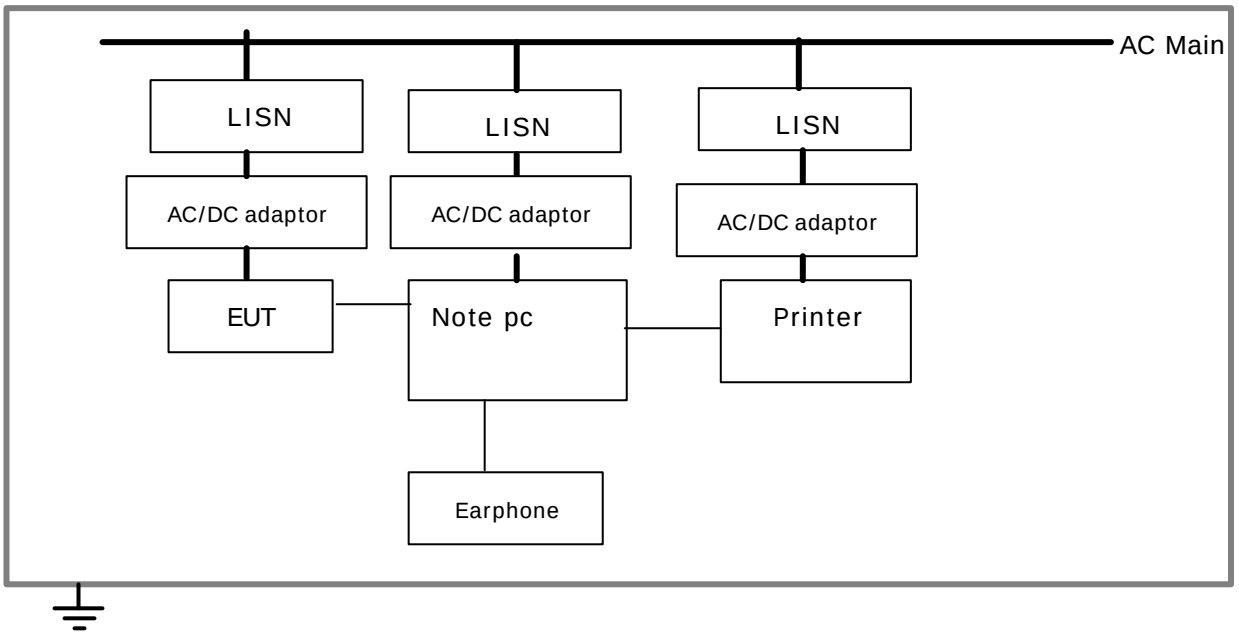
Description	Model No.	Serial No.	Manufacture
AC/DC adaptor	SEA60N2-16.0	03502395C	PT SANKEN INDONESIA
Note PC	P5010	464307211682	FUJITSU
Printer	C6427A	CN13V1B1SZ	HP
AC/DC power supply	SA41-521K	-	-
Earphone	-	-	-

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

4.1 Operating environment

Temperature : 22.0 ℃
Relative Humidity : 52.0 %

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.

Operation condition: During the test, we played on the record file.

4.3 Test instrument

Instrument	Model No	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	2004. 1. 24	x
L.I.S.N.	ESH3-Z5	827246/008	R&S	2004. 3. 19	x
	ESH3-Z5	831887/018	R&S	2004. 3. 19	x
Shield room	8 × 6 × 3.3m/H	-	-	-	x

4.4 Test results

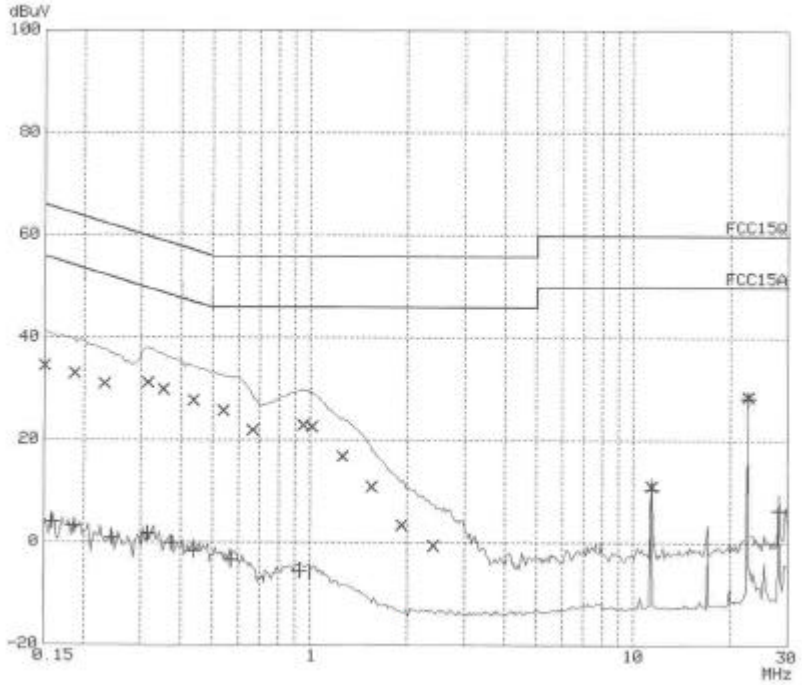
Date of test: Jul 18, 2003.

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

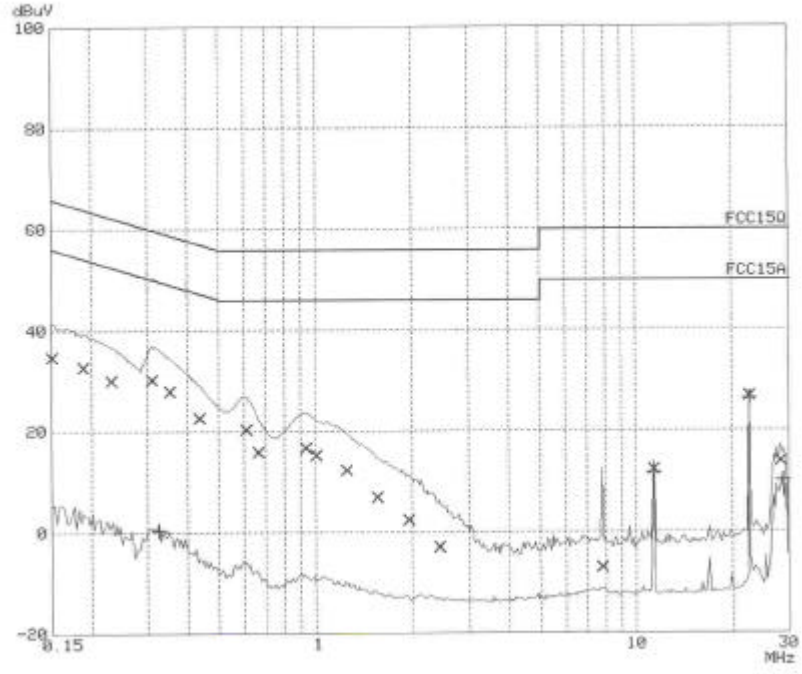
Frequency Range	Tested Freq.	LISN	Meter Reading		Limits		Margin	
			QP	AV	QP	AV	QP	AV
[MHz]	[MHz]		[dBuV]		[dBuV]		[dBuV]	
0.15-30	0.156	H	43.9	30.5	65.7	55.7	21.8	25.2
	0.189	H	55.5	44.2	63.7	53.7	8.2	9.5
	0.252	H	47.4	36.8	61.1	51.1	13.7	14.3
	0.315	H	42.2	30.9	59.3	49.3	17.1	18.4
	0.504	H	41.8	34.1	56.0	46.0	14.2	11.9
	5.180	H	38.3	26.0	60.0	50.0	21.7	24
	5.560	H	40.6	28.0	60.0	50.0	19.4	22
	12.360	H	43.1	34.4	60.0	50.0	16.9	15.6
	12.960	H	43.4	35.1	60.0	50.0	16.6	14.9

* <5 : mean less than 5dB

* Other frequency keep over 20dB margin.



[Hot line]



[Neutral line]

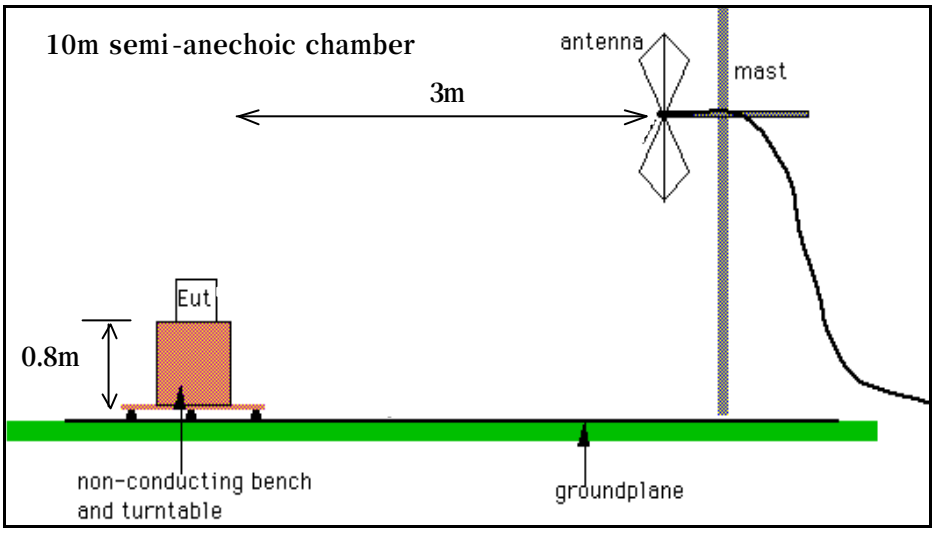
5. RADIATED DISTURBANCE
: 30MHz – 1000MHz

5.1 Operating environment

Temperature : 22.0 ℃
Relative Humidity : 55.0 %

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

During the test, we played on the record file.

5.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	2004. 1. 24	x
L.I.S.N.	ESH3-Z5	827246/008	R&S	2004. 3. 19	x
	ESH3-Z5	831887/018	R&S	2004. 3. 19	x

5.5 Test results(Test mode: Play mode)

Date of test: Jul 18, 2003.

Freq (MHz)	Reading (dBuV)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
94.80	14.15	H	8.62	2.20	24.97	46.00	21.0
97.50	11.78	H	9.22	2.30	23.30	46.00	22.7
158.30	6.58	V	15.30	2.90	24.78	46.00	21.2
159.60	8.80	V	15.30	2.90	27.00	46.00	19.0
161.60	5.55	H	15.59	2.90	24.04	46.00	22.0
225.10	5.80	H	16.70	3.50	26.00	46.00	20.0
262.90	2.80	H	17.70	3.50	24.00	46.00	22.0
266.30	1.18	V	17.70	3.50	22.38	46.00	23.6
271.00	1.54	V	18.00	3.60	23.14	46.00	22.9
288.50	0.10	V	18.45	3.70	22.25	46.00	23.8
330.00	9.87	V	13.85	0.90	24.62	46.00	21.4
435.00	10.31	V	16.27	4.30	30.88	46.00	15.1

* 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.

5.6Test results(Test mode: FM Tuner)

Date of test: Jul 18, 2003.

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	98.2	-	-	43.5	-	-
	196.4	-	-	43.5	-	-
	294.6	-	-	46.0	-	-
	392.8	-	-	46.0	-	-
	491.0	-	-	46.0	-	-
	589.2	-	0.5	46.0	-	45.5
	687.4	-	-	46.0	-	-
	785.6	-	-	46.0	-	-
	883.8	-	-	46.0	-	-
	982.0	-	-	54.0	-	-
98.0	108.7	-	-	43.5	-	-
	217.4	-	-	46.0	-	-
	326.1	-	-	46.0	-	-
	434.8	-	-	46.0	-	-
	543.5	0.5	-	46.0	45.5	-
	652.2	-	-	46.0	-	-
	760.9	-	-	46.0	-	-
	869.6	-	-	46.0	-	-
	978.3	-	-	54.0	-	-
108.0	118.7	-	-	43.5	-	-
	237.4	-	-	46.0	-	-
	356.1	-	-	46.0	-	-
	474.8	-	-	46.0	-	-
	593.5	-	-	46.0	-	-
	712.2	-	-	46.0	-	-
	830.9	-	-	46.0	-	-
	949.6	-	-	46.0	-	-

* Meter reading: ***Loss include***
* Margins : ***[Limits] – [meter reading]***
* Receiving Antenna Mode: ***Horizontal, Vertical***
* 10m chamber
* <5 : mean less than 5dB
*** Measurement uncertainty** (K=2)
30-300MHz : +3.96dB / -4.04dB
300-1000MHz : +3.04dB / -3.00dB

Result: Pass

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