ELECTROMAGNETIC RESEARCH INSTITUTE

EMI COMPLIANCE REPORT

Emission of electromagnetic disturbance

Test Report No. : ERI-FCC03-0013

Equipment : MP3 Player

FCC ID : QDMIFP399T

Name of basic model : iFP-399T

Family model : iFP-399, iFP-395T, iFP-395, iFP-390T, iFP-390, iFP-380T, iFP-380, iFP-340T, iFP-340

Manufacturer : iRiver CO., LTD.

Applicant : H.J. Mun

Tested date : 2003. 2. 24 - 2. 25

Issued date : 2003. 2. 26

Test results : PASS

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

Test Procedure and Items :

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

Tested by: GWEON, HUR

Approved by: UK-CHO, RIM

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

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 : Gi-Yeon, Lee

Telephone : +82-2-3019-1723

Facsimile : +82-2-3019-1746

2. LABORATORY INFORMATION

The 10m semi-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-399T

Brand name : N/A

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 : DC 1.5V

3.2 Additional information about the EUT

Class B, Family Models List:

Basic Model	Variant Model	Differential point	Remark
iFP-399T (1GB)	iFP-399	Flash memory	1GB
	iFP-395T	Flash memory	512MB
	iFP-395	Flash memory	512MB
	iFP-390T	Flash memory	256MB
	iFP-390	Flash memory	256MB
	iFP-380T	Flash memory	128MB
	iFP-380	Flash memory	128MB
	iFP-340T	Flash memory	64MB
	iFP-340	Flash memory	64MB

3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT.

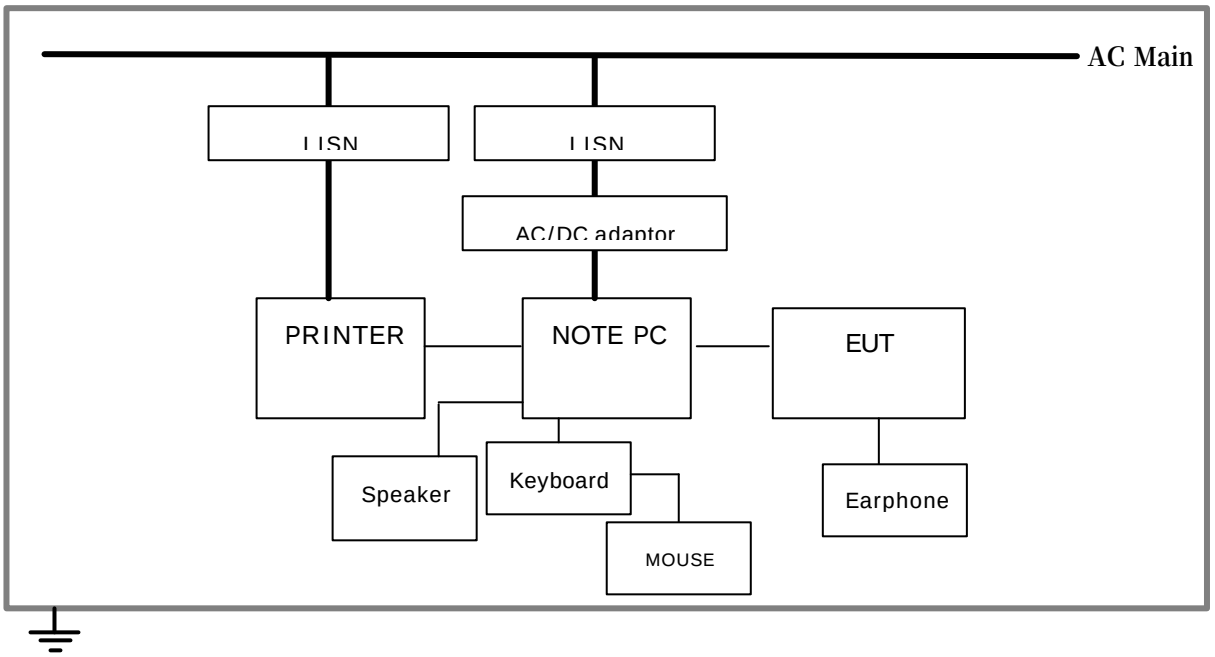
Description	Model No.	Serial No.	Manufacture
NOTE PC	E-6585	144IM85031902	Fujitsu LTD.
AC/DC ADAPTOR	SEA60N2	01261909B	SANKEN Electric Co., Ltd.
PRINTER	C6427A	CN13V1B1SZ	HP
KEYBOARD	SDM4510UH	4M020619	Samsung electronics Co., Ltd.
MOUSE	MOSXUB	N/A	N/A
EARPHONE	N/A	N/A	N/A

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

4.1 Operating environment

Temperature : 22.0 ℃
Relative Humidity : 30.0 %

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 : Play and data download mode

4.3 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100022	R&S	2003. 3. 25	x
L.I.S.N.	ESH3-Z5	827246/008	R&S	2003. 3. 12	x
	ESH3-Z5	831887/018	R&S	2003. 3. 12	
Shield room	8 × 6 × 3.3m/H	-	-	-	x

4.4 Test results

Date of test : Feb 24, 2003.

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

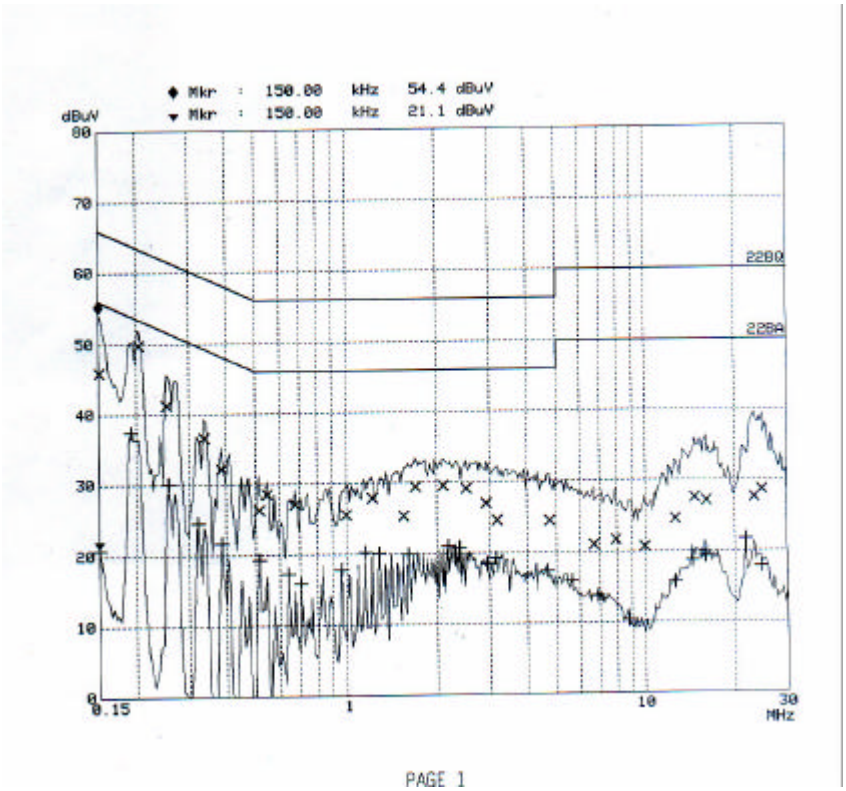
Frequency Range [MHz]	Tested Freq. [MHz]	LISN	Meter Reading [dBuV]		Limits [dBuV]		Margin [dBuV]	
			QP	AV	QP	AV	QP	AV
0.15-30	0.150	N	46.0	20.8	66.0	56.0	20.0	35.2
	0.204	N	49.8	37.6	63.4	53.4	13.6	15.8
	0.252	N	41.3	30.1	61.6	51.6	20.3	21.5
	0.336	N	36.6	24.6	59.3	49.3	22.7	24.7
	1.218	H	30.2	23.5	56.0	46.0	25.8	22.5
	1.353	H	30.5	23.4	56.0	46.0	25.5	22.6
	1.698	N	29.5	19.9	56.0	46.0	26.5	26.1
	2.097	N	29.5	21.1	56.0	46.0	26.5	24.9
	2.499	N	29.1	20.8	56.0	46.0	26.9	25.2
	23.310	H	28.4	18.5	60.0	50.0	31.6	31.5
	24.920	H	29.3	18.0	60.0	50.0	30.7	32.0

* <5 : mean less than 5dB

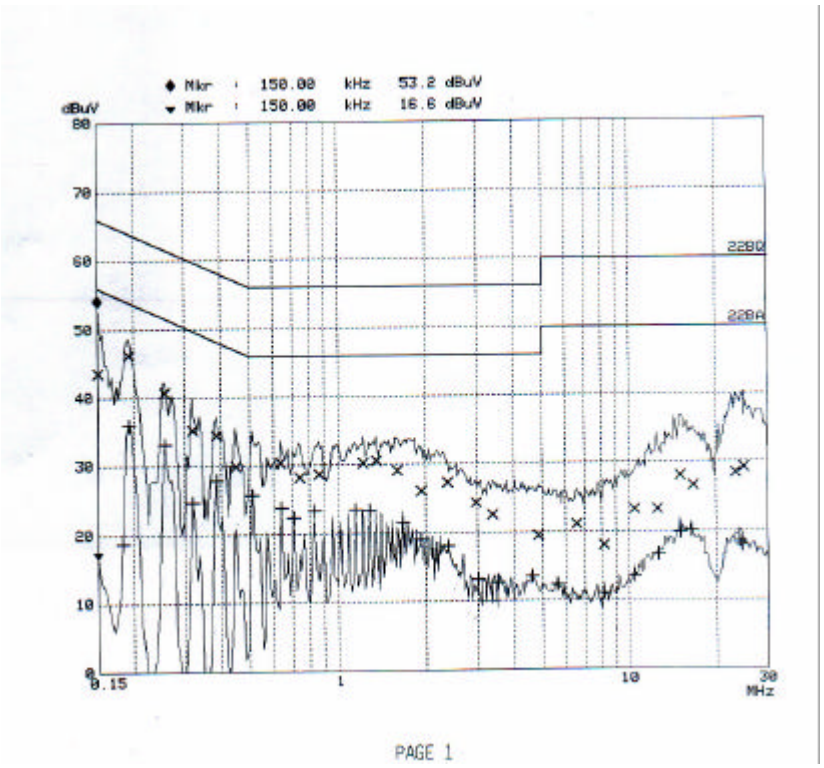
* other frequency keep over 20dB margin.

Result: Pass

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



[Neutral line]



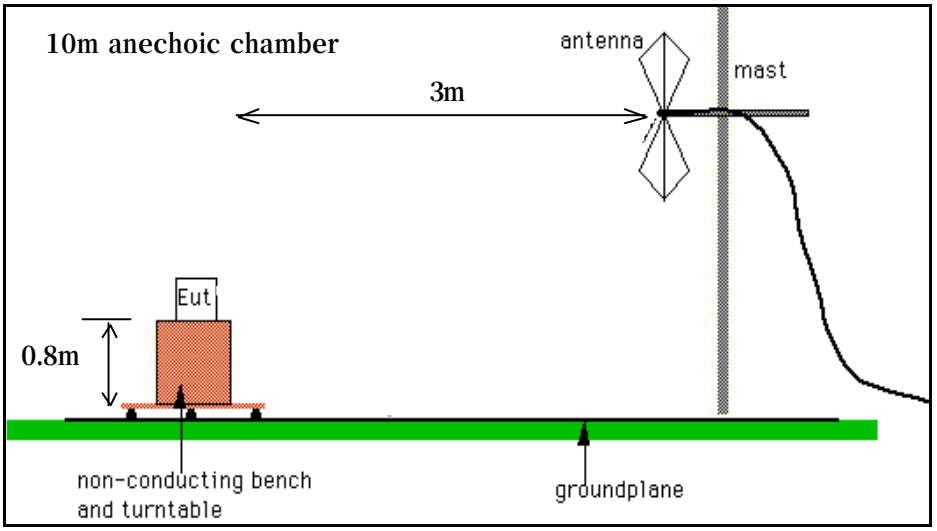
[Hot line]

5. RADIATED DISTURBANCE
: 30MHz – 1000MHz

5.1 Operating environment

Temperature : 22.0 ℃
Relative Humidity : 30.0 %

5.2 Test set-up



<General test set-up for radiated emissions>

The frequency range investigated was 30 MHz to 1000 MHz.
All readings are quasi-peak unless stated otherwise.
Judgment: Passed by ___ dBuV/m
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. The antenna measured both horizontal and vertical polarization.

5.3 Operation Conditions

Download and recording mode

5.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100022	R&S	2003. 3. 25	x
L.I.S.N.	ESH3-Z5	827246/008	R&S	2003. 3. 12	x
	ESH3-Z5	831887/018	R&S	2003. 3. 12	
Anechoic chamber	8 ×6 × 3.3m/H	-	Daetong shield	-	x

5.5 Test results(Download mode)

Date of test: Feb 17, 2003.

Freq (MHz)	Reading <Quasi-Peak> (dBuV)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
86.70	19.00	H	8.06	2.00	29.06	40.0	10.94
113.70	18.50	H	11.69	2.00	32.19	43.5	11.31
163.01	14.60	H	15.59	2.50	32.69	43.5	10.81
210.20	12.40	H	16.50	2.80	31.70	43.5	11.80
212.24	13.20	H	16.50	2.80	32.50	43.5	11.00
242.60	15.30	H	17.10	3.10	35.50	46.0	10.50
321.25	21.20	H	13.80	3.70	38.70	46.0	7.30
351.34	18.70	H	14.31	3.80	36.81	46.0	9.19
585.90	16.30	V	18.16	5.00	39.46	46.0	6.54
641.10	14.70	V	18.80	5.20	38.70	46.0	7.30

* 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(Recording mode)

Date of test: Feb 17, 2003.

Freq (MHz)	Reading <Quasi-Peak> (dBuV)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
195.10	15.40	H	16.35	2.70	34.45	43.5	9.05
258.34	12.50	H	17.35	3.20	33.05	46.0	12.95
352.10	21.60	H	14.31	3.80	39.71	46.0	6.29
384.24	17.90	H	14.31	3.80	36.01	46.0	9.99
450.14	15.80	H	16.64	4.20	36.64	46.0	9.36

* 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(FM tuner)

T.	Tested	Meter Reading <Quasi-Peak>	Total	Results	Margins	Limits
Frequency	Frequency	[dBuV/m]	Loss	[dBuV/m]	[dBuV/m]	
[MHz]	[MHz]	[A]	[B]	[A+B]	[C]-[A+B]	[C]
87.5	98.20	<5	12.31	<17.31	-	43.5
	196.40	<5	19.05	<24.05	-	43.5
	294.60	<5	22.53	<27.53	-	46.0
	392.80	<5	20.07	<25.07	-	46.0
	491.00	<5	21.64	<26.64	-	46.0
	589.20	<5	23.72	<28.72	-	46.0
	687.40	<5	25.19	<30.19	-	46.0
	785.60	<5	26.39	<31.39	-	46.0
	883.80	<5	27.28	<32.28	-	46.0
	982.00	<5	29.15	<34.65	-	54.0
98.0	108.70	<5	13.69	<18.69		43.5
	217.40	<5	19.60	<24.63	-	46.0
	326.10	<5	17.55	<25.55	-	46.0
	434.80	<5	18.11	<23.11	-	46.0
	543.50	<5	23.16	<28.16	-	46.0
	652.20	<5	24.70	<29.70	-	46.0
	760.90	<5	25.98	<30.98	-	46.0
	869.60	<5	27.61	<32.61	-	46.0
	978.30	<5	29.15	<34.15	-	54.0
108.0	118.70	<5	14.52	<19.52	-	43.5
	237.40	<5	20.20	<25.20	-	46.0
	356.10	<5	18.11	<23.11	-	46.0
	474.80	<5	21.36	<26.36	-	46.0
	593.50	<5	24.08	<29.08	-	46.0
	712.20	<5	25.56	<30.56	-	46.0
	830.90	<5	27.28	<32.28	-	46.0
	949.60	<5	28.70	<33.70	-	54.0

* Receiving Antenna Mode : ***Horizontal, Vertical***
* 10m chamber, Total Loss: Antenna factor[dB]+Cable loss[dB]
* <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.