EMC RESEARCH INSTITUTE

EMI TEST REPORT

Emission of electromagnetic disturbance

Test Report No.	: ERI-FCC04-0042
Equipment	: MP3 Player
Name of basic model	: iFP-999
Family model	: iFP-995, iFP-990
Family ID	: QDMIFP999
Manufacturer	: AV CHASEWAY MFG.FTY.
Applicant	: ReignCom Limited.
Tested date	: 2004. 6. 12 – 6. 14
Issued date	: 2004. 6. 14
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

Tested by: YOUNG-SIK, KIM

Approved by: SANG-KYU, LEE

CONTENTS

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
Model name	: iFP-999
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-999 (1G)	iFP-995	HDD size	512M
	iFP-990	HDD size	256M

3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT.

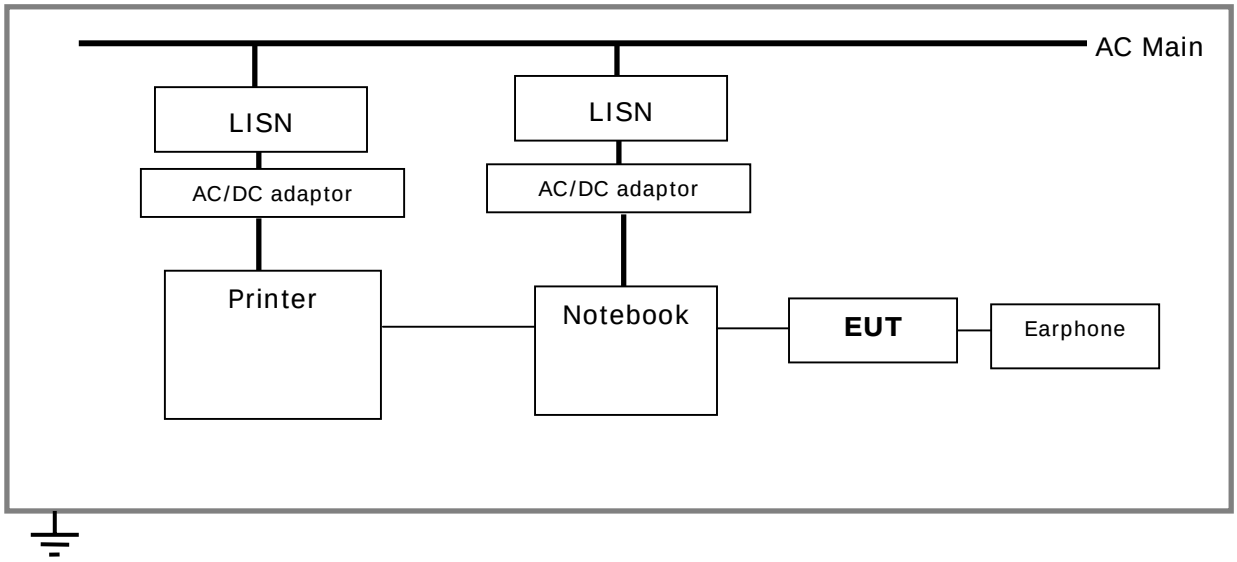
Description	Model No.	Serial No.	Manufacture
Notebook	Life Book P Series	464307 211 682	FUJITSU LIMITED.
AC/DC adaptor	CA01007-0750	03502395C	PT SANKEN INDONESIA
AC/DC adaptor	SA41-521k	-	Dongguan Qiaozi Santai Electrical Appliances Co., Ltd.
Printer	C6247A	CN13V1B1RY	HP

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

4.1 Operating environment

Temperature : 22.0 ℃
Relative Humidity : 46.0 %

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

Upload mode, play mode

4.4 Test instrument

Instrument	Model No	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100022	R&S	2004. 06. 16	x
L.I.S.N.	ESH3-Z5	100029	R&S	2004. 11. 11	x
	ESH3-Z5	100031	R&S	2005. 01. 06	x
Shield room	8 × 6 × 3.3m/H	-	-	-	x

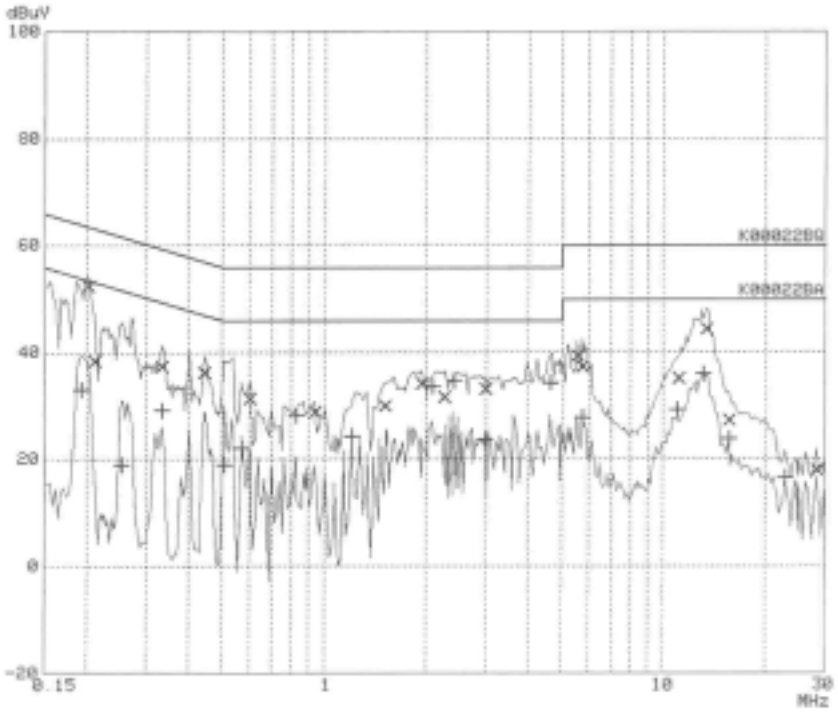
4.5 Test results (Upload mode)

Date of test: Jun 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
[MHz]	[MHz]		[dBuV]		[dBuV]		[dBuV]	
0.15-30	0.189	N	53.8	43.4	64.1	54.1	10.3	10.7
	0.201	H	52.5	33.1	63.5	53.5	11.0	20.4
	0.210	H	38.4	19.0	63.2	53.2	24.8	34.2
	0.255	N	46.0	41.2	61.5	51.5	15.5	10.3
	0.315	N	40.1	30.9	59.7	49.7	19.6	18.8
	0.333	H	37.5	29.3	59.4	49.4	21.9	20.1
	0.507	N	40.6	40.0	56.0	46.0	15.4	6.0
	0.603	N	36.2	34.2	56.0	46.0	19.8	11.8
	0.867	N	34.8	28.4	56.0	46.0	21.2	17.6
	1.449	N	33.3	33.1	56.0	46.0	22.7	12.9

* <5 : mean less than 5dB

* Other frequency keep over 20dB margin.



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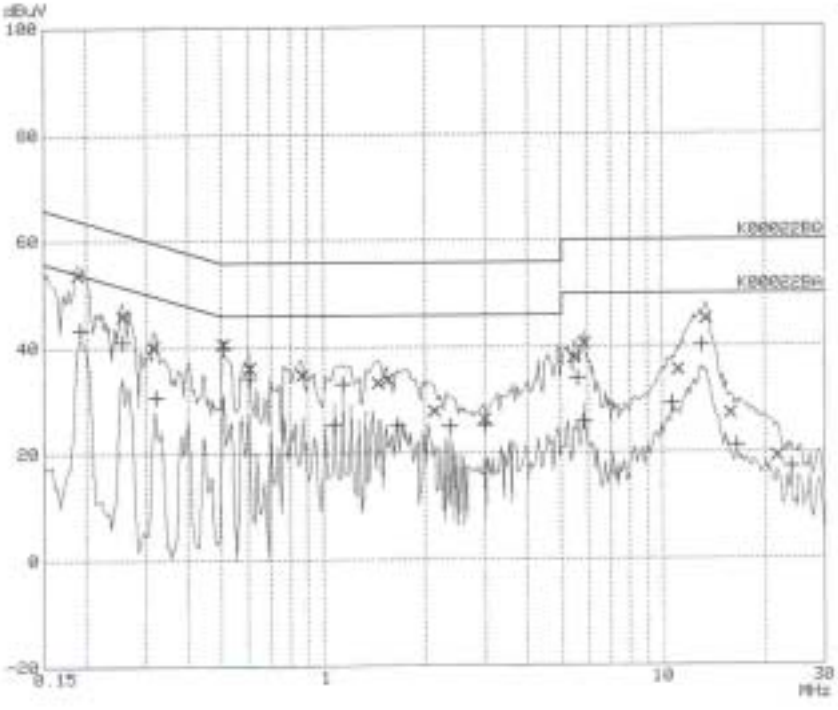
[Live line]



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[Neutral line]

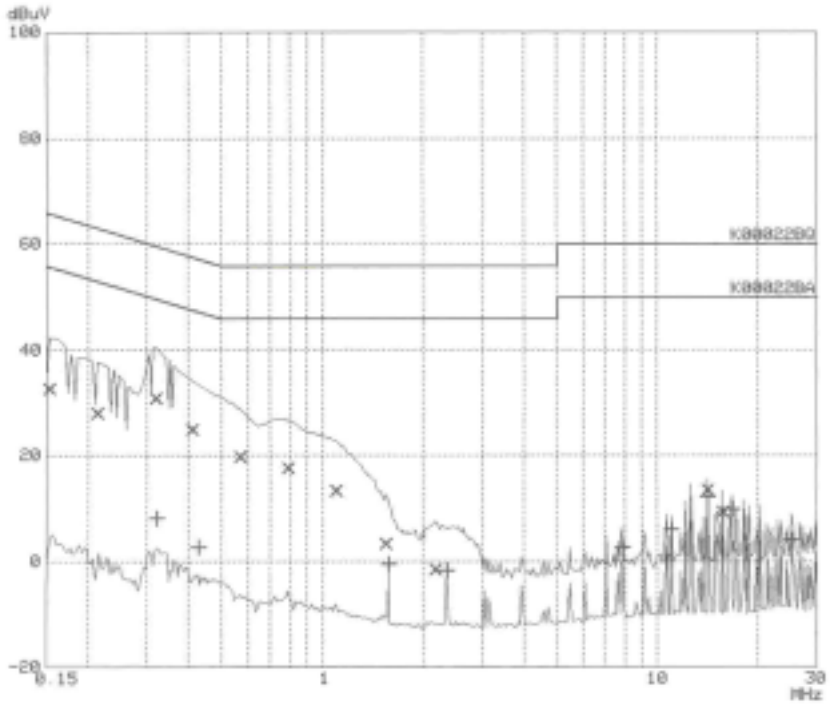
4.6 Test results (Play mode)

Date of test: Jun 12, 2004.
An overview sweep performed with peak detector & average detector are included in the report **as test reports.**

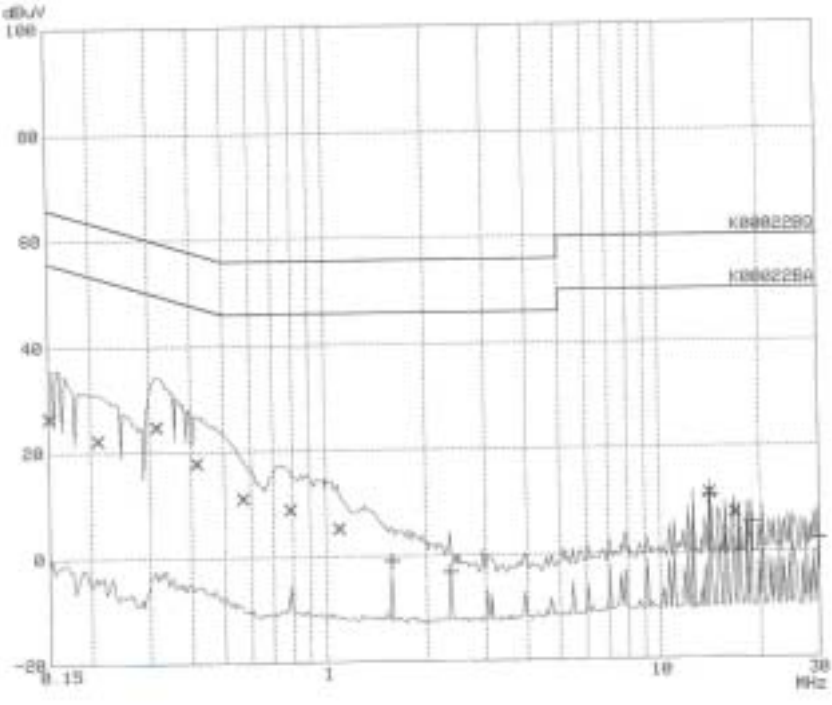
Frequency Range	Tested Freq.	LISN	Meter Reading		Limits		Margin	
			QP	AV	QP	AV	QP	AV
[MHz]	[MHz]		[dBuV]		[dBuV]		[dBuV]	
0.15-30	0.150	N	26.7	<5	66.0	56.0	39.3	-
	0.210	N	22.3	<5	63.1	53.1	40.8	-
	0.315	N	24.8	<5	59.7	49.7	34.9	-
	0.414	N	17.8	<5	57.5	47.5	39.7	-
	0.567	N	11.1	<5	56.0	46.0	44.9	-
	0.786	N	9.0	<5	56.0	46.0	47.0	-
	1.098	N	5.3	<5	56.0	46.0	50.7	-
	14.140	N	11.3	10.7	60.0	50.0	48.7	39.3
	16.740	N	7.5	5.7	60.0	50.0	52.5	44.3

* <5 : mean less than 5dB

* Other frequency keep over 20dB margin.



[Live line]



[Neutral line]

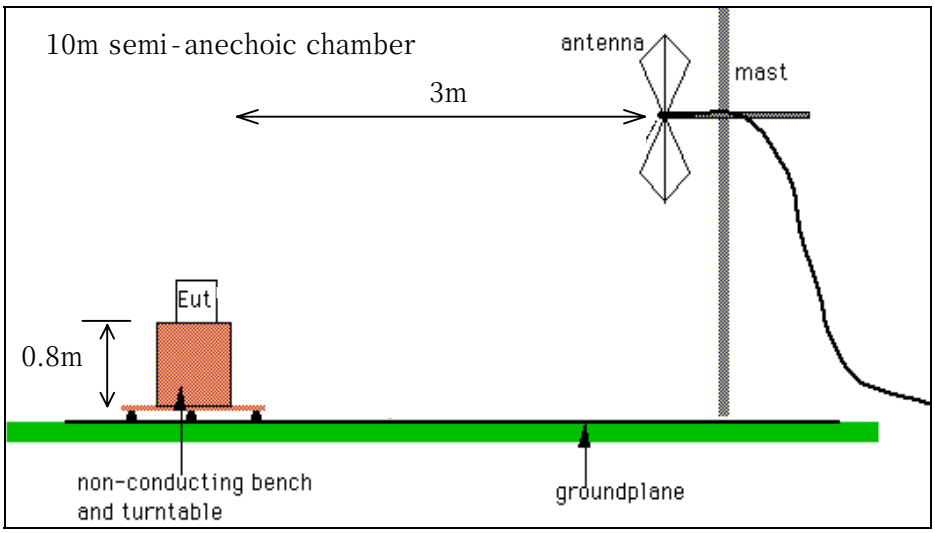
5. RADIATED DISTURBANCE
: 30MHz – 1000MHz

5.1 Operating environment

Temperature : 23.0 ℃
Relative Humidity : 48.0 %

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 load mode, play mode, tuner mode

5.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100021	R&S	2005. 02.06	x
Biconical Antenna	VHA9103	91031950	Schwarzbeck	2005. 02.04	x
Log-Periodic Antenna	UHALP9108A	0392	Schwarzbeck	2005. 02.04	x
Antenna Mast	MA240	N/A	HD	-	x
Turn Table	DT430S	N/A	HD	-	x

5.5 Test results (Test mode: Upload mode)

Date of test: Jun 14, 2004.

Freq (MHz)	Reading (dBuV/m)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
100.20	10.29	V	10.31	2.00	22.60	43.50	20.90
287.90	8.85	H	18.45	3.50	30.80	46.00	15.20
328.10	14.85	H	13.85	3.70	32.40	46.00	13.60
400.23	14.53	V	15.87	4.20	34.60	46.00	11.40
410.40	13.33	H	15.87	4.20	33.40	46.00	12.60
432.10	16.13	V	16.27	4.20	36.60	46.00	9.40
451.20	11.76	H	16.64	4.20	32.60	46.00	13.40

* 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: Jun 14, 2004.

Freq (MHz)	Reading (dBuV/m)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
346.20	11.05	H	13.85	3.70	28.60	46.00	17.40
356.40	11.90	H	14.31	3.80	30.01	46.00	15.99
367.10	10.29	H	14.31	3.80	28.40	46.00	17.60
379.60	8.03	H	15.17	4.00	27.20	46.00	18.80

* 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: FM tuner >

Date of test: Jun 14, 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	99.8	-	13.8	43.5	-	29.7
	198.6	-	19.1	43.5	-	24.4
	297.4	-	-	46.0	-	-
	396.2	-	-	46.0	-	-
	495.0	-	-	46.0	-	-
	593.8	-	-	46.0	-	-
	692.6	-	-	46.0	-	-
	791.4	-	-	46.0	-	-
	890.2	-	-	46.0	-	-
	989.0	-	-	46.0	-	-
98.0	108.8	-	14.7	43.5	-	28.8
	217.6	-	20.3	46.0	-	25.8
	326.4	-	-	46.0	-	-
	435.2	-	-	46.0	-	-
	544.0	-	-	46.0	-	-
	652.8	-	-	46.0	-	-
	761.6	-	-	46.0	-	-
	870.4	-	-	46.0	-	-
	979.2	-	-	46.0	-	-
108.0	118.4	-	15.8	43.5	-	27.6
	236.8	-	20.5	46.0	-	25.6
	355.2	-	-	46.0	-	-
	473.6	-	-	46.0	-	-
	592.0	-	-	46.0	-	-
	710.4	-	-	46.0	-	-
	828.8	-	-	46.0	-	-
	947.2	-	-	46.0	-	-
Others	178.5	34.2	-	43.5	9.3	-
	346.2	29.2	-	40.0	16.8	-
	356.1	30.2	-	46.0	15.8	-
	367.2	29.3	-	46.0	16.7	-

* 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.