CMA Testing and Certification Laboratories
廠商會檢定中心

TEST REPORT

Report No. : AD022693-1 Date : 2004 March 24

Applicant : AVC Technology Limited
Units 11-15, 11th Floor, Block A, Focal Ind. Ctr.,
21 Man Lok Street, Hunghom,
Kowloon, Hong Kong.

Sample Description : One(1) submitted sample stated to be :
Model Name : Digital Audio Player
Model No. : DFP3001 and DFP3002
Rating : 1 x 3.7 V Built-in Rechargeable battery pack
No. of sample(s) : Two(2) pieces ***

Date Received : 2003 December 24.
2004 February 26.

Test Period : 2003 December 24 – 2004 January 09.
2004 February 26 – 2004 March 03.

Test Requested : FCC Part 15 Certification

Test Method : FCC Rules and Regulations Part 15 – July 2003
ANSI C63.4 – 1992

Test Result : See attached sheet(s) from page 2 to 18.

Conclusion : The submitted sample was found to comply with requirement of FCC Part 15 Subpart B.

For and on behalf of
CMA Testing and Certification Laboratories

Authorized Signature : _____
Danny Chui
EMC Engineer - EL. Division

FCC ID : Q93-F006

Room 1401-3, Yan Hing Centre, 9-13 Wong Chuk Yeung St., Fo Tan, Shatin, Hong Kong.
Tel: (852) 2698 8198 Fax: (852) 2695 4177 E-mail: info@cmatcl.com **Web Site:** http://www.cmatcl.com

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1 General Information

1.1 General Description

The equipment under test (EUT) is a standalone multi-function product, powered by one 3.7 V build-in rechargeable battery pack, built-in 128 MB / 256 MB memory. The EUT has 4 different features:

1. Music Player (supports MP3, WMA and WAV)
2. FM Turner (with memory function – Preset channel)
3. Voice Recording
4. USB interface for PC uploading and downloading files

A brief circuit description is saved with filename : OpDes.pdf

1.2 Related Submittal Grants

This is a single application for certification of a computer peripheral product.

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1.3 Location of the test site

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 1992. An Open Area Testing Site is set up for investigation and located at :

Top of the Roof, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 1992. A double shielded room is located at :

Roof Floor, Yan Hing Centre,
9 – 13 Wong Chuk Yeung Street,
Fo Tan, Shatin,
New Territories,
Hong Kong.

Room 1401-3, Yan Hing Centre, 9-13 Wong Chuk Yeung St.., Fo Tan, Shatin, Hong Kong.
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1.4 List of measuring equipment

Equipment	Manufacturer	Model No.	Serial No.	Calibration Certification No.
EMI Test Receiver	R&S	ESCS30	100001	S21141
Broadband Antenna	Schaffner	CBL6113B	2718	AC1753
Signal Generator	IFR	2023B	202302/938	Nil
LISN	R&S	ESH3-Z5	100038	S21142
LISN	R&S	ESH3-Z5	100010	20-70405
Pulse Limiter	R&S	ESH3-Z2	100001	20-73194
Biconical Antenna	R&S	HK116	837414/004	4000.7752.02

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1.5 List of support equipment

1. Intel CPU PIII 800EB / 256 cache / 133MHz
   Model: L103A455-0041 SL4MB

2. Intel Mother Board
   Model: Intel Type: D815EEA

3. IBM Hard-disk
   Model: DTLA-30720, 20.5GB

4. Proview LCD Monitor
   Model: 568
   S/N: FYUJ240040133

5. IBM Mouse
   Model: 12J3618
   S/N: 23-005077

6. Acer Keyboard
   Model:6511-VA

7. Hewlett Packard LaserJet 2100TN
   Model: C4172A
   S/N: SGGS038577

8. PenPower Handwriting System
   Model: PP403N
   S/N: PT9122239

9. USB cable

10. Earphone

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2 Description of the radiated emission test

2.1 Test Procedure

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 1992.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

2.2 Test Result

All modes had been test. The measurement data based on measurements employing the CISPR qusai-peak detector were indicated in next page.

All other measurement were 20 dB below the 15.109 limits. Thus, those highest emissions were presented in next page (section 2.3).

It was found that the EUT meet the FCC requirement.

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : FM

Model : DFP3001

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
87.728	H	16.8	8.0	24.8	40.0	-15.2
98.017	H	15.4	10.0	25.4	43.5	-18.1
108.223	H	14.0	12.0	26.0	43.5	-17.5
175.456	H	26.9	10.7	37.6	43.5	-5.9
196.033	H	27.4	10.5	37.9	43.5	-5.6
216.445	H	31.3	10.7	42.0	46.0	-4.0
350.912	H	18.5	15.3	33.8	46.0	-12.2
392.065	H	18.9	15.3	34.2	46.0	-11.8
432.889	H	17.6	18.6	36.2	46.0	-9.8

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : Play Music

Model : DFP3001

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
136.686	H	11.0	13.2	24.2	43.5	-19.3
147.473	H	10.2	12.2	22.4	43.5	-21.1
173.547	H	25.5	11.0	36.5	43.5	-7.0
179.688	H	23.9	10.7	34.6	43.5	-8.9
270.306	H	17.2	13.9	31.1	46.0	-14.9
294.876	H	16.6	13.9	30.5	46.0	-15.5
319.448	H	20.9	15.3	36.2	46.0	-9.8
368.595	H	19.6	15.3	34.9	46.0	-11.1
589.750	H	11.8	20.6	32.4	46.0	-13.6
638.896	H	13.1	22.2	35.3	46.0	-10.7

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : Recording

Model : DFP3001

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
99.826	H	22.7	10.0	32.7	43.5	-10.8
158.190	H	25.2	11.5	36.7	43.5	-6.8
170.475	H	26.0	11.0	37.0	43.5	-6.5
196.581	H	17.5	10.5	28.0	43.5	-15.5
245.730	H	18.2	10.7	28.9	46.0	-17.1
368.595	H	18.7	15.3	34.0	46.0	-12.0
417.739	H	13.4	18.6	32.0	46.0	-14.0
589.750	H	11.9	20.6	32.5	46.0	-13.5
614.326	H	11.1	22.2	33.3	46.0	-12.7
638.896	H	10.2	22.2	32.4	46.0	-13.6

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : PC Connected

Model : DFP3001

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
73.721	H	16.9	6.3	23.2	40.0	-16.8
147.473	H	10.8	12.2	23.0	43.5	-20.5
170.475	H	28.2	11.0	39.2	43.5	-4.3
182.760	H	28.6	10.5	39.1	43.5	-4.4
196.581	H	24.1	10.5	34.6	43.5	-8.9
245.730	H	24.5	10.7	35.2	46.0	-10.8
319.448	H	20.2	15.3	35.5	46.0	-10.5
368.595	H	20.7	15.3	36.0	46.0	-10.0
589.750	H	12.7	20.6	33.3	46.0	-12.7
638.896	H	12.4	22.2	34.6	46.0	-11.4

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : FM

Model : DFP3002

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
87.731	H	17.6	8.0	25.6	40.0	-14.4
98.019	H	16.2	10.0	26.2	43.5	-17.3
108.225	H	16.8	10.0	26.8	43.5	-16.7
175.461	H	22.9	10.7	33.6	43.5	-9.9
196.038	H	28.3	10.5	38.8	43.5	-4.7
216.451	H	30.2	10.1	40.3	46.0	-5.7
350.921	H	16.9	15.6	32.5	46.0	-13.5
392.076	H	14.9	15.6	30.5	46.0	-15.5
432.902	H	10.0	18.7	28.7	46.0	-17.3

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : Play Music

Model : DFP3002

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
173.546	H	22.8	11.0	33.8	43.5	-9.7
179.689	H	23.5	10.7	34.2	43.5	-9.3
185.833	H	28.2	10.5	38.7	43.5	-4.8
210.405	H	21.0	10.1	31.1	43.5	-12.4
270.301	H	15.9	14.2	30.1	46.0	-15.9
307.161	H	16.6	15.6	32.2	46.0	-13.8
344.019	H	13.3	15.6	28.9	46.0	-17.1
431.560	H	9.1	18.7	27.8	46.0	-18.2
466.883	H	12.6	18.7	31.3	46.0	-14.7
618.928	H	7.0	22.0	29.0	46.0	-17.0

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : Recording

Model : DFP3002

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
158.186	H	15.4	11.8	27.2	43.5	-16.3
170.474	H	20.8	11.0	31.8	43.5	-11.7
179.689	H	21.6	10.7	32.3	43.5	-11.2
182.761	H	26.3	10.5	36.8	43.5	-6.7
185.833	H	28.7	10.5	39.2	43.5	-4.3
210.405	H	22.0	10.1	32.1	43.5	-11.4
288.732	H	11.7	14.2	25.9	46.0	-20.1
307.161	H	14.0	15.6	29.6	46.0	-16.4
344.019	H	11.1	15.6	26.7	46.0	-19.3
618.928	H	5.2	22.0	27.2	46.0	-18.8

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2.3 Radiated Emission Measurement Data

Radiated emission

pursuant to

the requirement of FCC Part 15 subpart B

Mode : PC Connected

Model : DFP3002

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
96.755	H	16.8	10.0	26.8	43.5	-16.7
170.473	H	26.9	11.0	37.9	43.5	-5.6
182.759	H	29.7	10.5	40.2	43.5	-3.3
185.831	H	29.6	10.5	40.1	43.5	-3.4
319.445	H	21.7	15.6	37.3	46.0	-8.7
344.018	H	18.2	15.6	33.8	46.0	-12.2
368.591	H	22.8	15.6	38.4	46.0	-7.6
416.200	H	20.7	18.7	39.4	46.0	-6.6
440.773	H	23.4	18.7	42.1	46.0	-3.9
465.346	H	15.6	18.7	34.3	46.0	-11.7

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3 Description of the Line-conducted Test

3.1 Test Procedure

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 1992. The EUT was setup as described in the procedures, and both lines were measured.

3.2 Test Result

The PC connected mode had been tested. The EUT connecting with an USB cable and earphone produced the maximum emission. The measurement data was indicated in next page.

The result showed that the EUT met the FCC requirement.

3.3 Graph and Table of Conducted Emission Measurement Data

For electronic filing, the document are saved with filename TestRpt2.pdf

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4 Photograph

4.1 Photographs of the Test Setup for Radiated Emission and Conduction Emission

For electronic filing, the photos are saved with filename TSup1.jpg to TSup5.jpg

4.2 Photographs of the External and Internal Configurations of the EUT

For electronic filing, the photos are saved with filename ExPho1 to ExPho2 and InPho1 to InPho2.

5 Supplementary document

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

Document	Filename
ID Label/Location	LabelSmp1.jpg
Block Diagram	BlkDia.pdf
Schematic Diagram	Schem.pdf
Users Manual	UserMan1.pdf to UserMan2.pdf
Operational Description	OpDes.pdf

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6 Appendices

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A2.	Photos of the set-up of Conducted Emissions	2 pages
A3.	Photos of External Configurations	1 page
A4.	Photos of Internal Configurations	1 page
A6.	ID Label/Location	1 page
A5.	Conducted Emission Measurement Data	4 pages
A7.	Block Diagram	1 page
A8.	Schematics Diagram	1 page
A9.	User Manual	14 pages
A10.	Operation Description	1 page

***** End of Report *****

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