



## **TEST REPORT**

Report No. : AE001675-1 Date : 2004 February 27

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

Sample Description : One(1) submitted sample stated to be Digital Audio Player.  
Model No. : DFP5500, DFP5501, DFP5502, MMP3731  
and MMP3731A  
Rating : 1 x 1.5 V AAA size battery  
Testing Voltage : AC120V  
No. of sample(s) : Two (2) sets \*\*\*

Date Received : 2004 February 09.  
2004 February 18.

Test Period : 2004 February 09 – 2004 February 13.  
2004 February 18 – 2004 February 25.

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.

Remark : All five models are the same in circuitry and components; and therefore  
model DFP5500 and DFP5502 was chosen to be the representative of the  
test sample.

*For and on behalf of*  
CMA Testing and Certification Laboratories

Authorized Signature : \_\_\_\_\_

Danny Chui  
EMC Engineer - EL. Division

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FCC ID : Q93-F013

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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@cmactl.com](mailto:info@cmactl.com) Web Site: <http://www.cmactl.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 1.5V “AAA” size battery, 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 (Through an USB connection cable)

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.



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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: SGG5038577
8. PenPower Handwriting System  
Model: PP403N  
S/N: PT9122239
9. USB cable
10. Ear phone



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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 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 : PC connected

Model : DFP5500 (128 MB)

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)
107.504	H	18.6	11.8	30.4	43.5	-13.1
115.182	H	18.7	11.8	30.5	43.5	-13.0
130.537	H	23.0	13.1	36.1	43.5	-7.4
138.222	H	19.2	13.1	32.3	43.5	-11.2
145.899	H	19.8	12.4	32.2	43.5	-11.3
152.041	H	22.9	11.8	34.7	43.5	-8.8
162.793	H	23.4	11.0	34.4	43.5	-9.1
191.969	H	22.5	10.5	33.0	43.5	-10.5
222.687	H	20.1	10.1	30.2	46.0	-15.8
245.724	H	25.8	10.1	35.9	46.0	-10.1





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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 : DFP5500 (128 MB)

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)
98.290	H	5.5	10.0	15.5	43.5	-28.0
109.041	H	9.3	11.8	21.1	43.5	-22.4
118.256	H	8.1	11.8	19.9	43.5	-23.6
196.580	H	20.9	10.5	31.4	43.5	-12.1
218.082	H	13.1	10.1	23.2	46.0	-22.8
236.512	H	8.0	10.1	18.1	46.0	-27.9
294.870	H	7.1	14.2	21.3	46.0	-24.7
327.123	H	7.9	15.6	23.5	46.0	-22.5
354.768	H	6.9	15.6	22.5	46.0	-23.5



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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 : DFP5500 (128 MB)

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)
147.461	H	9.2	12.4	21.6	43.5	-21.9
170.388	H	8.8	11.0	19.8	43.5	-23.7
196.580	H	17.6	10.5	28.1	43.5	-15.4
210.401	H	17.0	10.1	27.2	43.5	-16.3
247.183	H	16.9	10.1	27.0	46.0	-19.0
319.415	H	16.6	15.6	32.2	46.0	-13.8
368.575	H	15.2	15.6	30.8	46.0	-15.2
451.415	H	14.8	18.7	33.5	46.0	-12.5
491.450	H	15.3	18.7	34.0	46.0	-12.0
589.681	H	15.1	20.6	35.7	46.0	-10.3



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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 : DFP5500 (128 MB)

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
99.826	H	8.3	10.0	18.3	43.5	-25.2
158.185	H	9.3	11.8	21.1	43.5	-22.4
170.472	H	17.2	11.0	28.2	43.5	-15.3
196.581	H	15.7	10.5	26.2	43.5	-17.3
210.402	H	18.0	10.1	28.1	43.5	-15.4
245.727	H	9.9	10.1	20.0	46.0	-26.0
368.587	H	6.2	15.6	21.8	46.0	-24.2
417.732	H	7.7	18.7	26.4	46.0	-19.6
419.450	H	7.8	18.7	26.5	46.0	-19.5
589.744	H	7.3	20.6	27.9	46.0	-18.1



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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 : DFP5502 (256 MB)

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
107.505	H	20.5	11.8	32.3	43.5	-11.2
138.222	H	24.1	13.1	37.2	43.5	-6.3
145.900	H	25.5	12.4	37.9	43.5	-5.6
153.579	H	26.4	11.8	38.2	43.5	-5.3
161.258	H	27.8	11.0	38.8	43.5	-4.7
184.295	H	21.7	10.5	32.2	43.5	-11.3
191.974	H	20.7	10.5	31.2	43.5	-12.3
238.048	H	28.1	10.1	38.2	46.0	-7.8
245.727	H	27.7	10.1	37.8	46.0	-8.2
253.406	H	18.6	14.2	32.8	46.0	-13.2



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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 : DFP5502 (256 MB)

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)
98.288	H	6.2	10.0	16.2	43.5	-27.3
109.037	H	9.5	11.8	21.3	43.5	-22.2
118.254	H	8.3	11.8	20.1	43.5	-23.4
196.576	H	21.0	10.5	31.5	43.5	-12.0
218.074	H	13.5	10.1	23.6	46.0	-22.4
236.508	H	8.5	10.1	18.6	46.0	-27.4
294.864	H	7.3	14.2	21.5	46.0	-24.5
327.111	H	8.6	15.6	24.2	46.0	-21.8
354.762	H	7.1	15.6	22.7	46.0	-23.3



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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 : DFP5502 (256 MB)

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dB $\mu$ V/m)	Antenna and Cable factor (dB)	Field Strength (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
147.459	H	9.5	12.4	21.9	43.5	-21.6
170.387	H	9.6	11.0	20.6	43.5	-22.9
196.578	H	18.0	10.5	28.5	43.5	-15.0
210.400	H	17.7	10.1	27.8	43.5	-15.7
247.181	H	17.4	10.1	27.5	46.0	-18.5
319.413	H	16.8	15.6	32.4	46.0	-13.6
368.572	H	15.4	15.6	31.0	46.0	-15.0
451.412	H	15.1	18.7	33.8	46.0	-12.2
491.447	H	15.5	18.7	34.2	46.0	-11.8
589.677	H	15.7	20.6	36.3	46.0	-9.7



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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 : DFP5502 (256 MB)

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)
99.825	H	9.2	10.0	19.2	43.5	-24.3
158.183	H	10.1	11.8	21.9	43.5	-21.6
170.470	H	18.1	11.0	29.1	43.5	-14.4
196.579	H	17.1	10.5	27.6	43.5	-15.9
210.400	H	18.7	10.1	28.8	43.5	-14.7
245.725	H	11.8	10.1	21.9	46.0	-24.1
368.584	H	6.8	15.6	22.4	46.0	-23.6
417.729	H	8.5	18.7	27.2	46.0	-18.8
419.447	H	8.7	18.7	27.4	46.0	-18.6
589.740	H	7.9	20.6	28.5	46.0	-17.5



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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 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.jpg to ExPho2.jpg and InPho1.jpg to InPho2.jpg.

### **5 Supplementary document**

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

<b>Document</b>	<b>Filename</b>
ID Label/Location	LabelSmp1.jpg and LabelSmp2.jpg
Block Diagram	BlkDia.pdf
Schematic Diagram	Schem1.pdf and Schem2.pdf
Users Manual	UserMan.pdf
Operational Description	OpDes.pdf



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### **6 Appendices**

A1.	Photos of the set-up of Radiated Emissions	1 page
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
A5.	ID Label/Location	1 page
A6.	Conducted Emission Test Result	4 pages
A7.	Block Diagram	1 page
A8.	Schematics Diagram	7 pages
A9.	User Manual	19 pages
A10.	Operation Description	1 page

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