



EMC RESEARCH INSTITUTE

# EMI TEST REPORT

## Emission of electromagnetic disturbance

**Test Report No.** : ERI-FCC05-0021

**Equipment** : Data Management Server

**Name of basic model** : AIM-D00

**Family model** : None

**Manufacturer** : Samsung Electronics Co., Ltd.

**Applicant** : Samsung Electronics Co., Ltd..

**Tested date** : 2005. 3. 17

**Issued date** : 2005. 3. 29

**Test results** : PASS

**Test Standards** : FCC Part 15 Subpart B (Class B)  
/ Class B digital devices, peripherals

### Test Procedure and Items:

- AC Power line Conducted emissions measurement : ANSI C63.4-2003
- Radiated emissions measurement : ANSI C63.4-2003

A handwritten signature in black ink, appearing to be 'KIM YOUNG-SIK', written over a horizontal line.

**Tested by: KIM, YOUNG-SIK**

A handwritten signature in black ink, appearing to be 'CHOI KEE-HO', written over a horizontal line.

**Approved by: CHOI, KEE-HO**

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

### 2. LABORATORY INFORMATION

### 3. EQUIPMENT UNDER TEST INFORMATION (EUT)

#### 3.1 Identification of the EUT

#### 3.2 Additional information about the EUT

#### 3.3 Peripheral equipment

### 4. CONTINUOUS DISTURBANCE Voltages, MAIN TERMINAL

#### 4.1 Operating environment

#### 4.2 Test set-up and test procedures

#### 4.3 Test instrument

#### 4.4 Test results

### 5. RADIATED DISTURBANCE

#### 5.1 Operating environment

#### 5.2 Test set-up

#### 5.3 Test conditions

#### 5.4 Test instrument

#### 5.5 Test results

### 6. PRODUCT PHOTOGRAPHS

#### 6.1 Front Photograph of EUT

#### 6.2 Rear Photograph of EUT

#### 6.3 Inner Photograph of EUT

### APPENDIX.

<None>

## 1. CLIENT INFORMATION

The EUT has been tested by request of :

Company : Samsung Electronics Co., Ltd  
Address : 416, Maetan-3 dong, Youngtong-Gu, Suwon-city,  
Kyungki-do, Korea  
Telephone : +82-31-218-5279  
Contact : Kim, Min-chang / Assistant Engineer  
S/W Group  
System Appliance Division / Digital Appliance Business

## 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 : DMS(Data Management server)  
Model name : AIM-D00  
Brand name : NONE  
Company : Samsung Electronics Co., Ltd  
Address : 416, Maetan-3 dong, Youngtong-Gu, Suwon-city,  
Kyungki-do, Korea  
Telephone : +82-31-218-5279  
Country of origin : KOREA  
Rating : 120V, 60Hz

### 3.2 Additional information about the EUT

Class B

### 3.3 Peripheral equipment

Defined as equipment needed for correct operation of the EUT.

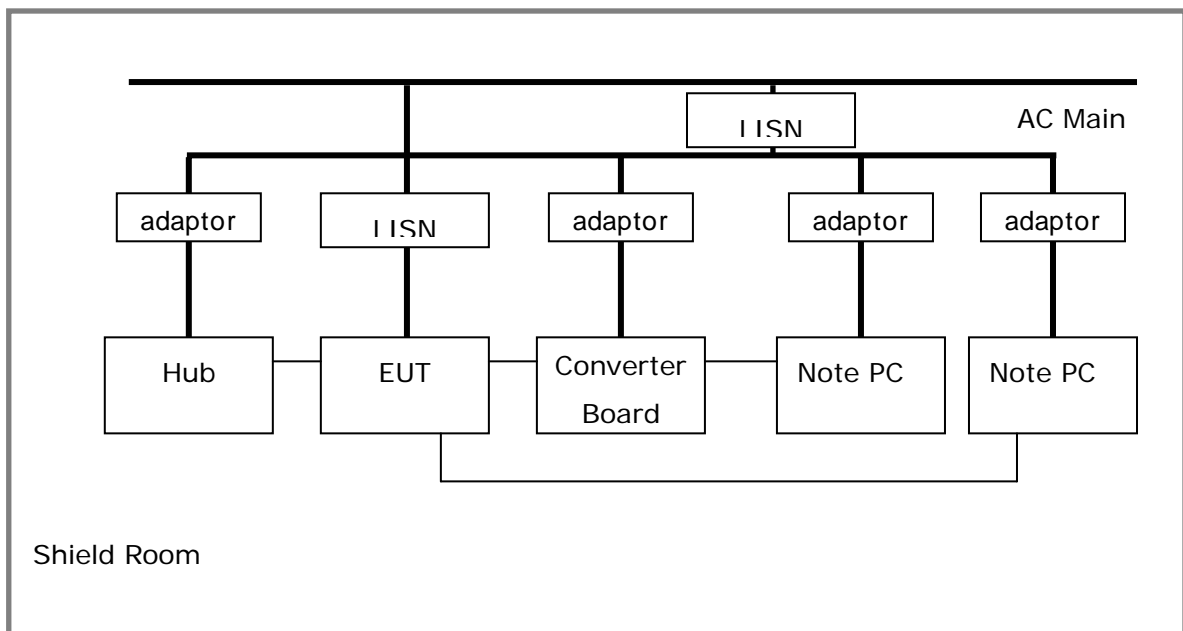
Description	Model No.	Serial No.	Manufacture
Note PC	S640	625991DR200269	Samsung
AC/DC adapter	AD-6019	none	"
Note PC	S640	625991CR200169	"
AC/DC adapter	AD-6019	none	"
Hub	RNSH500	RNSH5004BC0801 804	Reenet
Converter Board	none	none	Samsung
AC/DC adapter	AD-1005	none	"

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

**4.1 Operating environment**

Temperature : 18.3  
 Relative Humidity : 42.0 %

**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 0.8m above the metallic, grounded floor. The distance to other metallic surface was at least 0.4m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

#### Test configuration

1. If cables cannot be shortened to appropriate length, the excess shall be folded back and forth a bundle 30Cm to 40Cm long. If bundling is not possible, the cables shall be arranged in a serpentine fashion.
2. Excess mains cord shall be bundled in the centre or shortened to appropriate length.
3. EUT and cables shall be insulated ( up to 15Cm ) from the horizontal metal ground plane.

Operation condition: Normal operated

#### 4.3 Test instrument

Instrument	Model No	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	830986-015	R&S	2005. 04. 08	
L.I.S.N.	ESH3-Z5	82746/008	R&S	2005. 03. 31	
	ESH3-Z5	831887/018	R&S	2005. 03. 31	
Shield room	8 x 6 x 3.3m/H	-	-	-	

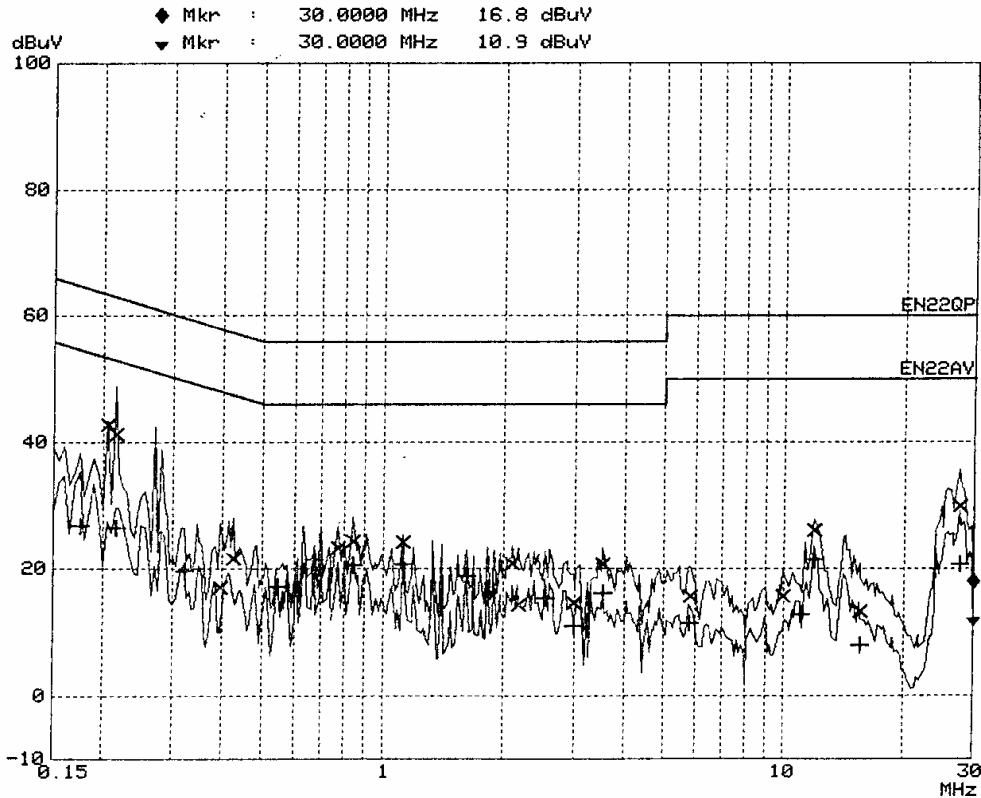
#### 4.4 Test results

Date of test: Mar 17, 2005.

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

#### Result: Pass

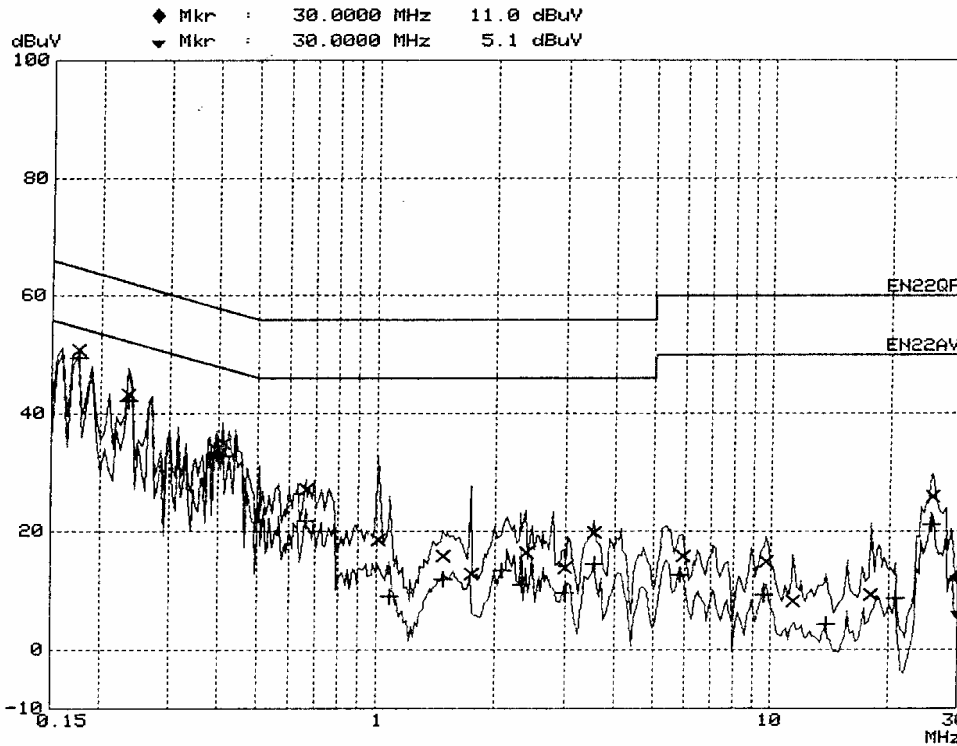
The measured emissions level of the EUT have found the below of the specified limit.



Frequency MHz	QP Level dBuV	Delta dB	Limit dB	Phase	PE
0.20500	42.8	-36.1		L1	gnd
0.21500	41.3	-37.6		L1	gnd
0.39500	17.0	-61.9		L1	gnd
0.42500	21.7	-57.2		L1	gnd
0.77000	23.4	-49.5		N	gnd
0.84000	24.4	-48.5		N	gnd
1.12000	24.2	-48.7		N	gnd
2.10000	20.9	-52.1		L1	gnd
2.17500	14.3	-58.6		N	gnd
2.98000	14.7	-58.2		L1	gnd
3.51000	20.8	-52.1		L1	gnd
5.82000	15.7	-57.2		N	gnd
9.90000	15.8	-57.1		L1	gnd
11.86500	26.0	-46.9		L1	gnd
15.51000	13.3	-59.6		N	gnd
27.55500	29.8	-43.1		N	gnd

Frequency MHz	AV Level dBuV	Delta dB	Limit dB	Phase	PE
0.17500	26.8	-39.1		L1	gnd
0.21500	26.6	-39.3		L1	gnd
0.32000	19.7	-46.2		N	gnd
0.54500	17.3	-42.6		N	gnd
0.67000	21.5	-38.4		N	gnd
0.84000	20.6	-39.3		N	gnd
1.12000	20.8	-39.1		N	gnd
1.61000	19.0	-41.0		L1	gnd
2.52500	15.4	-44.5		L1	gnd
2.98000	11.0	-48.9		N	gnd
3.51000	16.2	-43.7		L1	gnd
5.80500	11.4	-48.5		N	gnd
10.90500	12.9	-47.0		N	gnd
11.86500	21.5	-38.4		N	gnd
15.51000	8.0	-51.9		N	gnd
27.55500	20.8	-39.1		N	gnd

[Live line]



Frequency MHz	QP Level dBuV	Delta Limit dB	Phase	PE
0.17500	50.9	-13.8	N	gnd
0.23500	43.2	-19.0	L1	gnd
0.39500	33.9	-24.0	N	gnd
0.41000	34.9	-22.8	N	gnd
0.66000	27.2	-28.8	L1	gnd
1.01000	18.7	-37.2	N	gnd
1.47500	15.9	-40.0	N	gnd
1.73000	12.9	-43.1	N	gnd
2.38000	16.4	-39.5	L1	gnd
2.99000	14.0	-41.9	L1	gnd
3.54000	19.8	-36.1	N	gnd
5.94000	15.9	-44.0	N	gnd
9.69000	15.0	-44.9	L1	gnd
11.37000	8.3	-51.6	L1	gnd
17.91000	9.3	-50.6	L1	gnd
25.60500	25.9	-34.0	N	gnd

Frequency MHz	AV Level dBuV	Delta Limit dB	Phase	PE
0.17500	49.5	-5.2	L1	gnd
0.23500	42.2	-10.0	N	gnd
0.39500	33.2	-14.7	N	gnd
0.41000	32.8	-14.9	N	gnd
0.66000	21.8	-24.1	N	gnd
1.08000	9.1	-36.8	N	gnd
1.47000	11.9	-34.0	L1	gnd
2.07000	13.5	-32.4	L1	gnd
2.32000	11.0	-34.9	L1	gnd
2.99000	9.7	-36.2	L1	gnd
3.54000	14.5	-31.4	L1	gnd
5.83500	12.7	-37.2	N	gnd
9.58500	9.3	-40.6	L1	gnd
13.78500	4.4	-45.5	N	gnd
20.76000	8.7	-41.2	L1	gnd
25.47000	21.3	-28.6	N	gnd

[Neutral line]

## 5. RADIATED DISTURBANCE

### 5.1 Operating environment

Temperature : 21.0  
Relative Humidity : 43.0 %

### 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

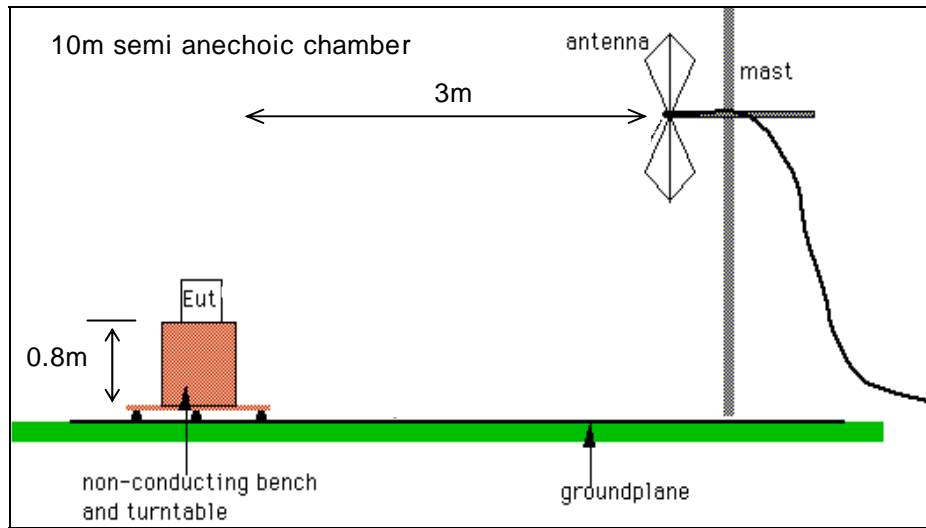
and stopped at the azimuth or height producing the maximum emission.

And this device(EUT) was tested in 3 orthogonal planes.

The antenna measured both horizontal and vertical polarization.



**Radiated Disturbance**



<General test set-up for radiated emissions>

### 5.3 Operation Conditions

Networking mode

### 5.4 Test instrument

Instrument	Model No.	Serial No.	Makers	Next cal.date	Used
Test receiver	ESCS30	100022	R&S	2005. 05.30	
Biconical Antenna	VHA9103	91031951	Schwarzbeck	2005. 06.01	
Log-Periodic Antenna	UHALP9108A	393	Schwarzbeck	2005. 05.31	
Antenna Mast	MA240	N/A	HD	-	
Turn Table	DT430S	N/A	HD	-	

## 5.5 Test results

Date of test: Mar 17, 2005.

Freq (MHz)	Reading (dBuV/m)	Ant	AF (dB)	CL (dB)	Result (dBuV/m)	Limit (dB)	Margin (dB)
56.32	45.67	V	9.67	1.50	34.50	40.00	5.50
108.30	48.40	V	11.00	2.00	35.40	43.50	8.10
200.10	53.19	V	16.29	2.80	34.10	43.50	9.40
406.00	51.67	V	15.87	4.20	31.60	46.00	14.40
433.32	55.07	V	16.27	4.20	34.60	46.00	11.40
467.20	55.34	H	16.64	4.20	34.50	46.00	11.50
860.00	63.71	H	21.51	6.10	36.10	46.00	9.90

\* 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)

## 6. PRODUCT PHOTOGRAPHS

### 6.1 Front Photograph of EUT



### 6.2 Rear Photograph of EUT



### 6.3 Inner Photograph of EUT

