

EMC TEST REPORT

According to FCC Part 15B Class B

Project NO. : E2-02-0089

Product : CD-R/RW ROM Drive

Model No. : SW-240 (VER:B)

Date of test : April 24, 2002 - May 02, 2002

Issued Date : May 03, 2002

Tested by:

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Table of Contents

1. General Information

- 1.1 Product Description
- 1.2 System Block Diagram of Test Configuration

2. System Test Configuration

- 2.1 Configuration of Radiated and Conducted Interference Measurement
- 2.2 Operation Environment
- 2.3 Justification
- 2.4 EUT Exercise Software
- 2.5 Test Procedure

3. Conducted Emission Test Data

4. Radiated Emission Test Data

5. Test Equipment Used

1. General Information

APPLICANT : SAMSUNG ELECTRONICS CO., LTD.

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REGULATION(S) : FCC Part 15B Class B

MODEL NUMBER : SW-240 (VER:B)

SERIAL NUMBER : -

KIND OF PRODUCT : CD-R/RW ROM Drive

TESTED DATE : April 24, 2002 - May 02, 2002

TEST SITE : SAMSUNG EMC TEST LAB.
FCC Registration Number : 98856
Anechoic Chamber #1

2.5.2 Configuration of EUT and peripherals

Mark	Item	Model No.	Serial No.	Manufacturer	Remark
A	CD-R/RW Drive	SW-240 (B)	-	Samsung	EUT
B	Computer	Netvista	1S6841EA623A5618	IBM	
C	Monitor	CX151S-AZ	N192H4NT319256	Samsung	
D	Printer	DocuprintP8ex	JC68-30927F	Xerox	
E	KeyBoard	IBM	1S37L25141366363B	IBM	
F	Ear phone	-	-	SONY	
G	Mouse	M-S35	LZB05162649	Logitech	

2.5.3 Used Cable Description

No.	Item	Length[m]	Shielded(Y/N)	Remark
1	AC Power cable	1.7	N	
2	USB cable	2.0	Y	
3	Video cable	1.8	Y	
4	Mouse cable	2.0	N	
5	Keyboard Cable	1.8	N	
6	AC Power cable	1.7	N	
7	AC Power cable	1.7	N	
8	Centronics cable	2.0	Y	

2. System Test Configuration

2.1 Configuration of Radiated and Conducted Interference Measurement

* Cabling was taken into consideration and test data was taken under worse case conditions.

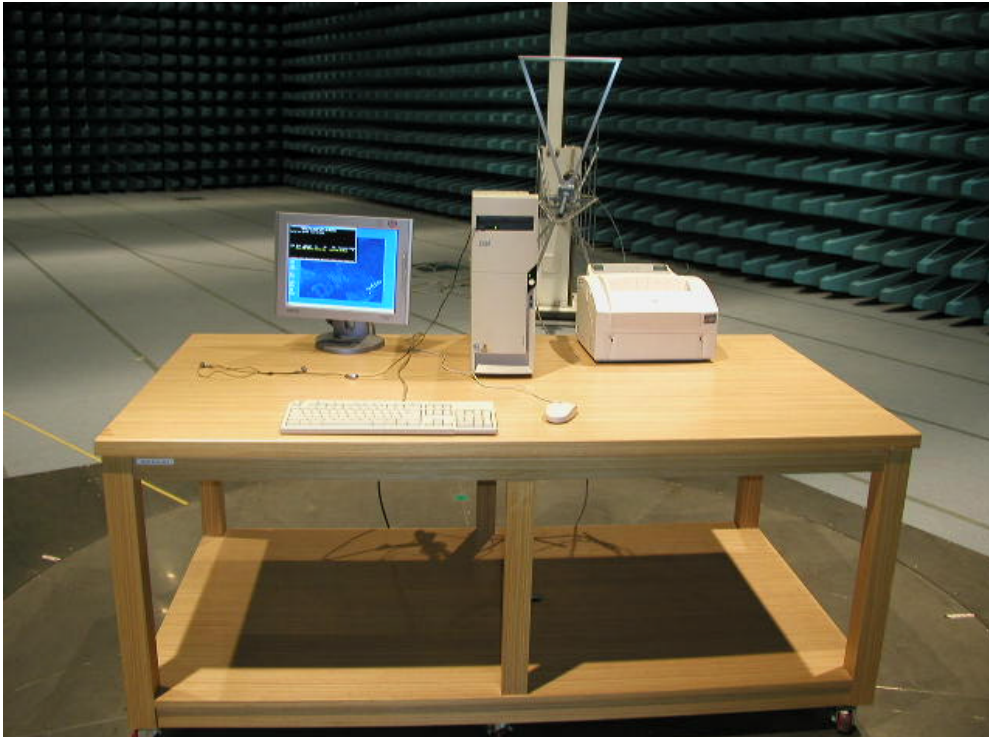
1)Conduction(Front View)



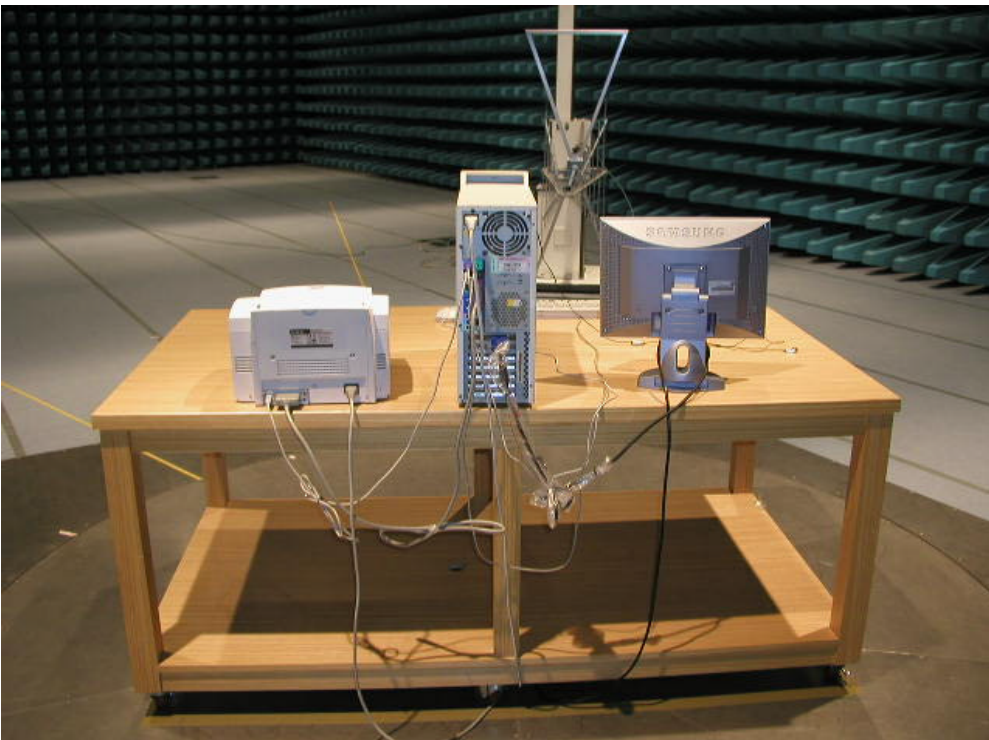
2)Conduction(Rear View)



3) Radiation(Front View)



4) Radiation(Rear View)



2.2 Operation Enviroment

	Conduction	Radiation
Temperature [centigrade] :	21.5	23
Humidity [%] :	41	43
Power supply :	AC120V/60Hz	AC120V/60Hz

2.3 Justification

The system was configured in typical fashion(as a customer would normally use it) for testing.

2.4 EUT Exercise Soft ware

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

2.5 Test Procedure

2.5.1 Conducted Emissions

Eut was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting ground plane.

The rear of EUT,including peripherals was aligned and flush with rear of tabletop. All other surfaces of tabletop was at least 80cm from any other grounded conducting surface. I/O cables and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

Each EUT current-carrying power lead,except the ground(safety) lead, were individually connected through a LISN to the input power source.

All unused 50 ohm connectors of the LISN were resistively terminated in 50 ohm when not connected to the measuring equipment.

2.5.2 Radiated Emissions

Eut was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

The rear of EUT, including peripherals was aligned and flush with rear of tabletop. I/O cables that were connected to the peripherals were bundle in center.

They were folded back and forth forming a bundle 30cm to 40cm long and were hanged 40cm height to the ground plane.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

3. Conducted Emission Test Data

The initial step in collecting conducted data was to perform a quasi-peak scan over the measurement range using a receiver.

The final data represents worst-case emissions.

O Test Mode :

Frequency	Meter reading(a)	Total	Results	Limits	Margin
[MHz]	Line(L1)	Loss(b)	(a) + (b)	[dBuV]	[dB]
		[dB]	[dBuV]		
0.587	31.6	0.5	32.1	48.0	15.9
0.880	31.4	0.5	31.9	48.0	16.1
15.000	16.9	1.0	17.9	48.0	30.1
16.493	18.1	0.6	18.7	48.0	29.3
16.978	18.7	0.8	19.5	48.0	28.5
17.185	16.9	1.5	18.4	48.0	29.6
17.372	16.7	1.0	17.7	48.0	30.3
25.000	34.0	1.1	35.1	48.0	12.9

* Results = Meter Reading(QP) + Total Loss(LISN Insertion loss + Cable loss)

* Margin = Limits - Result

4. Radiated Emission Test Data

The initial step in collecting radiated data was to perform a quasi-peak scan over the measurement range using a receiver.

All modes of operation were investigated and the worst-case emission are reported.

All other emission are non-significant.

The minimum margin to the limit is as follows :

O Test Mode : Random Read

Frequency Range [MHz]	Tested Frequency [MHz]	ANT Pol.	Meter Reading [A] [dBuV/m]	Total Loss [B] [dB]	Antenna Height [Cm]	Turn table Degree [Deg]	Results [A+B] [dBuV/m]	Limits at 3m [dBuV/m]	Margin (Limit-Result) [dB]
30 - 88	34.080	V	15.4	19.2	125	235	34.6	40.0	5.4
	35.550	V	14.5	18.5	110	142	33.0	40.0	7.0
	58.250	V	17.9	8.9	118	158	26.8	40.0	13.2
	65.300	H	20.3	9.9	114	124	30.2	40.0	9.8
88 - 216	96.070	V	24.6	10.5	105	162	35.1	43.5	8.4
	140.050	V	18.5	11.1	116	150	29.6	43.5	13.9
	165.800	V	16.4	8.9	124	120	25.3	43.5	18.2
	201.460	V	12.7	8.7	111	54	21.4	43.5	22.1
216 - 960	671.700	V	0.8	22.4	127	40	23.2	46.4	23.2
	799.440	V	0.6	24.2	100	48	24.8	46.4	21.6
	800.100	V	1.5	24.4	103	223	25.9	46.4	20.5
	930.420	V	0.1	24.7	120	63	24.8	46.4	21.6

* Receiving Antenna Mode : **Horizontal, Vertical**

* Test distance : 3m

* Results = Meter Reading + Total Loss(Antenna factor + Cable loss)

5. Test Equipment Used

Equipment	Model No.	Serial No.	Makers	Calibration Last calibration and Interval
Field strength meter	ESCS30	830986/004	R & S	02/ 02/15, 12Months
	Firmware versions : Main 1.08, OTP 02.01, GRA 02.03			
Field strength meter	ESI	100019	R & S	01/ 05/19, 12Months
L.I.S.N	ESH2-Z5	831886/006	R & S	01/ 11/20, 12Months
L.I.S.N	ESH3-Z5	831887/0004	R & S	01/ 07/27, 12Months
Bi-Log Antenna	HL562	100005	R & S	01/08/02, 12Months
Bi-Log Antenna	CBL6112B	2767	SCHAFFNER	01/05/23, 12Months