SAMSUNG ELECTRONICS

EMC TEST REPORT

According to FCC Part 15B Class B

Project NO. : LBE020676

Product : CD-RW/DVD DRIVE

Model No. : SM-348

Date of test : October 04, 2002 - October 08, 2002

Issued Date : October 09, 2002

Tested by:

Jin Hwan, JUNG / Test Engineer

Reviewed by:

Yang Soo, KIM / Technical Manager

Authorized by:

Kyu Baek, CHUNG / Chief of EMC Lab.

SAMSUNG ELECTRONICS Co., Ltd.
Suwon EMC Test Laboratory
416 Maetan-3 Dong, Paldal-Ku, Suwon City, Kyungki-Do, Korea,442-742
Tel. : 81-31-200-2185 Fax. : 81-31-200-2189

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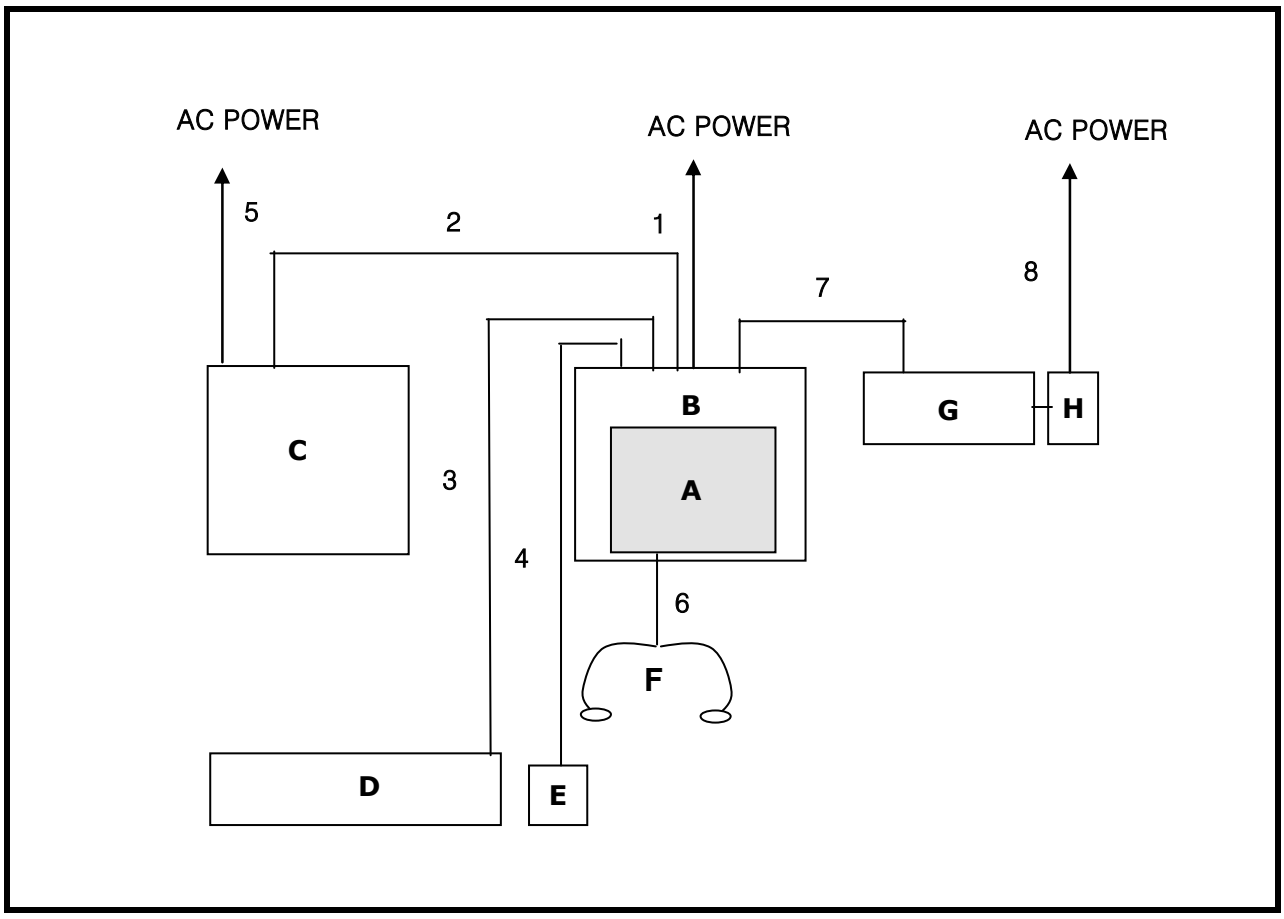
1. General Information

APPLICANT	:	SAMSUNG ELECTRONICS CO., LTD.
ADDRESS	:	416 Maetan 3 Dong, Paldal-Ku, Suwon City, Kyungki Do, Korea, 442-742
CONTACT ADDRESS	:	416 Maetan 3 Dong, Paldal-Ku, Suwon City, Kyungki Do, Korea, 442-742
CONTACT PERSON	:	Ki Ho,Kim
REGULATION(S)	:	FCC Part 15B Class B
MODEL NUMBER	:	SM-348
SERIAL NUMBER	:	-
KIND OF PRODUCT	:	CD-RW/DVD DRIVE
TESTED DATE	:	October 04, 2002 - October 08, 2002
TEST SITE	:	SAMSUNG EMC TEST LAB. FCC Registration Number : 873282 Anechoic Chamber #2

1.1 Product Description

Speed	CD READ: 48X, CD-R WRITE : 48X, CD-RW WRITE :24X DVD 16X
Access Time	CD 120ms, CD/RW 120ms
Buffer	2048KB
Interface	ATAPI BUS(IDE)
Size	148.2 * 42 * 184 mm

1.2 System Block Diagram of Test Configuration



2.5.2 Configuration of EUT and peripherals

Mark	Item	Model No.	Serial No.	Manufacturer	Remark
A	CD-RW/DVD Drive	SM-348	-	Samsung	EUT
B	Computer	HP Pavilion 8871	KR11106864	HP	
C	LCD Monitor	CX-151S C	N192H4NT319256	Samsung	
D	KeyBoard	RT7D00	TH-025PGG-37171-13A-5201	DELL	
E	Mouse	SMB-602	9EAE 22731	Samsung	
F	Ear Phone	MS-9	-	Samsung	
G	Printer	BJC-50	CLG 010600307	Canon	
H	AC Adapter	K30088	CLG 010600281	TABICHI	

2.5.3 Used Cable Description

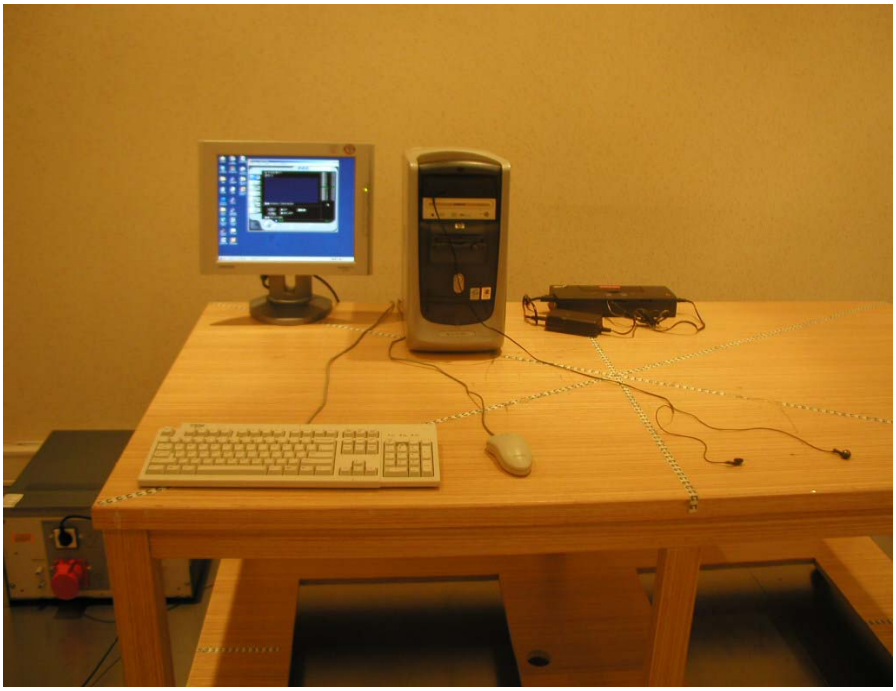
No.	Item	Length[m]	Shielded(Y/N)	Remark
1	AC Power Cable	1.7	N	
2	Video Cable	1.8	Y	
3	Keyboard Cable	2.0	N	
4	Mouse Cable	1.8	N	
5	AC Power Cable	1.7	N	
6	Ear Phone Cable	2.0	N	
7	Printer Parallel Cable	1.5	Y	
8	AC Power Cable	2	N	

2. System Test Configuration

2.1 Configuration of Radiated and Conducted Interference Measurement

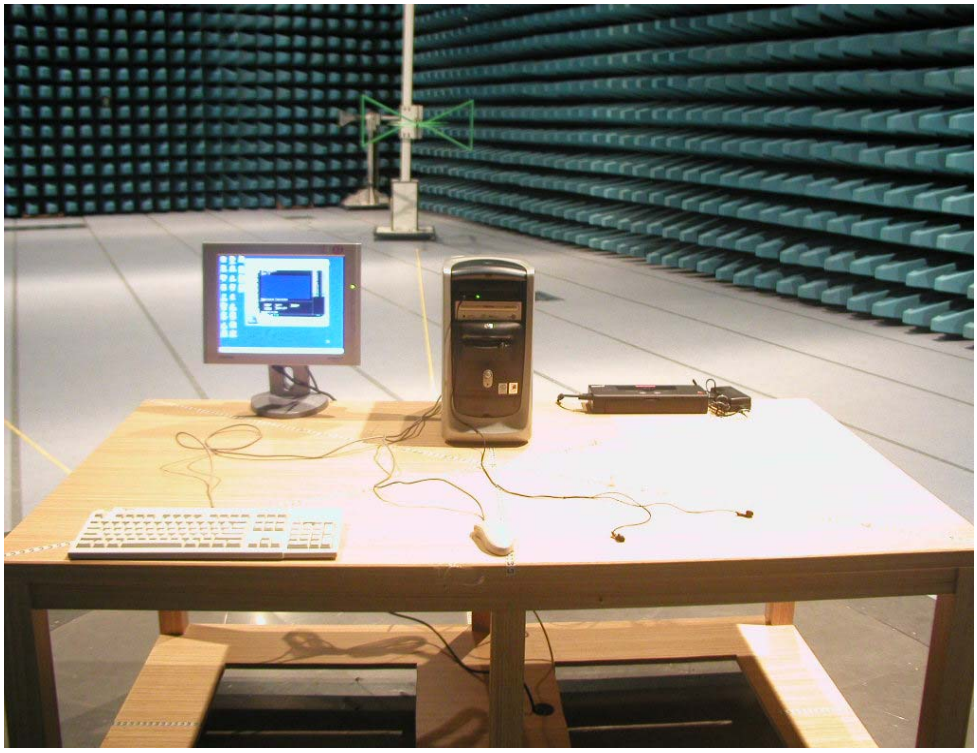
* Cabling was taken into consideration and test data was taken under worse case conditions.

1)Conduction(Front View)

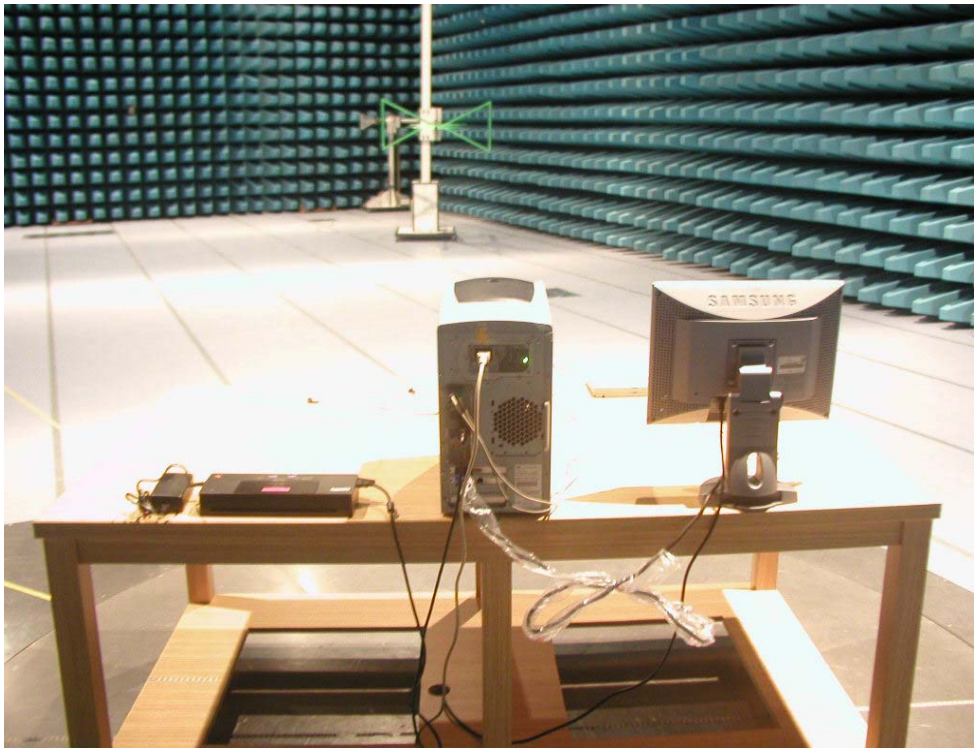


2)Conduction(Rear View)

3) Radiation(Front View)



4) Radiation(Rear View)



2.2 Operation Enviroment

	Conduction	Radiation
Temperature [centigrade] :	22.5	24
Humidity [%] :	53	35
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)		Phase	Total Loss	Limits		Result	
	QP	AV		(b)	QP	AV	QP	AV
[MHz]	[dBuV]			[dB]	[dBuV]		[dBuV]	
0.197	49.7		L1	0.6	**63.7**	**53.7**	**50.3**	
0.498	42.4		N	0.6	**56.0**	**46.0**	**43.1**	
0.599	44.5		N	0.6	**56.0**	**46.0**	**45.1**	
0.681	44.2		N	0.5	**56.0**	**46.0**	**44.7**	
0.697	43.5		N	0.5	**56.0**	**46.0**	**44.1**	
0.720	38.0		N	0.5	**56.0**	**46.0**	**38.5**	
0.798	43.6		L1	0.5	**56.0**	**46.0**	**44.1**	
12.568	43.4		N	1.2	**60.0**	**50.0**	**44.6**	

※Quasi-peak value is less 10dB than Average limits.

* 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	30.725	H	-3.4	18.4	161	273	15.0	**40.0**	25.0
	65.200	H	14.3	6.3	400	270	20.6	**40.0**	19.4
	69.045	H	17.4	6.6	400	276	24.0	**40.0**	16.0
	72.920	V	8.6	7.0	177	330	15.6	**40.0**	24.4
88 - 216	138.240	H	9.2	12.6	400	166	21.8	**43.5**	21.7
	168.900	H	13.6	11.1	400	16	24.7	**43.5**	18.8
216 - 960	626.095	V	-0.9	23.1	229	89	22.2	**46.4**	24.2
	859.685	V	0.8	25.0	308	30	25.8	**46.4**	20.6

** 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	100010	R & S	02/ 05/04, 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	02/ 08/06, 12Months
Bi-Log Antenna	CBL6112B	2804	Schaffner	02/04/23, 12Months