

EMC TEST REPORT

According to FCC Part 15B Class B

Project NO. : SE-01-0493

Product : **CD-ReWritable ROM DRIVE**

Model No. : **SW-224**

FCC ID. : **A3LSW224**

Date of test : October 10, 2001

Issued Date : October 18, 2001

Tested by:

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1. General Information

APPLICANT : SAMSUNG ELECTRONICS CO., LTD.

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REGULATION(S) : FCC Part 15 Class B

MODEL NUMBER : SW-224 (Trade Name "SAMSUNG")

VARIANT MODEL NUMBER : -

SERIAL NUMBER : -

KIND OF PRODUCT : CD-ReWritable ROM DRIVE

TESTED DATE : October 10, 2001

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

1.1 Product Description

Speed	CD : 40X, CD-R : 24X, CD/RW : 10X
Access Time	CD 120ms, CD/RW 120ms
Buffer	2048KB
Interface	ATAPI BUS(IDE)
Size	148.2(W) x 42(H) x 184(D)mm

1.2 Tested System Details

	Makers Model	FCC ID	Product Serial Number	Remarks
(1)	SAMSUNG M/N : SW-224	A3LSW224	CD-ReWritable ROM DRIVE S/N : -	EUT
(2)	SAMSUNG M/N : AQ19LS	DOC	External Monitor S/N : AQ19H3NR4001	Unshielded AC Power Cable
(3)	LOGITECH M/N : M-S34	DZL211029	PS/2 Mouse S/N : LZB74453426	Shielded Mouse Cable
(4)	SAMSUNG M/N : SEM-DC8H	E2XSEM-DC8H	PS/2 Keyboard S/N : 85000144	Shielded Keyboard Cable
(5)	COMPAQ M/N : 7000	DOC	Personal Computer S/N : 14921-013	Unshielded AC Power Cable
(6)	HP M/N :2225C+	DSI6XU2225	Printer S/N : 2810S08375	Shielded Printer Cable
(7)	SONY M/N : -		Ear Phone S/N : -	Shielded Ear Phone Cable

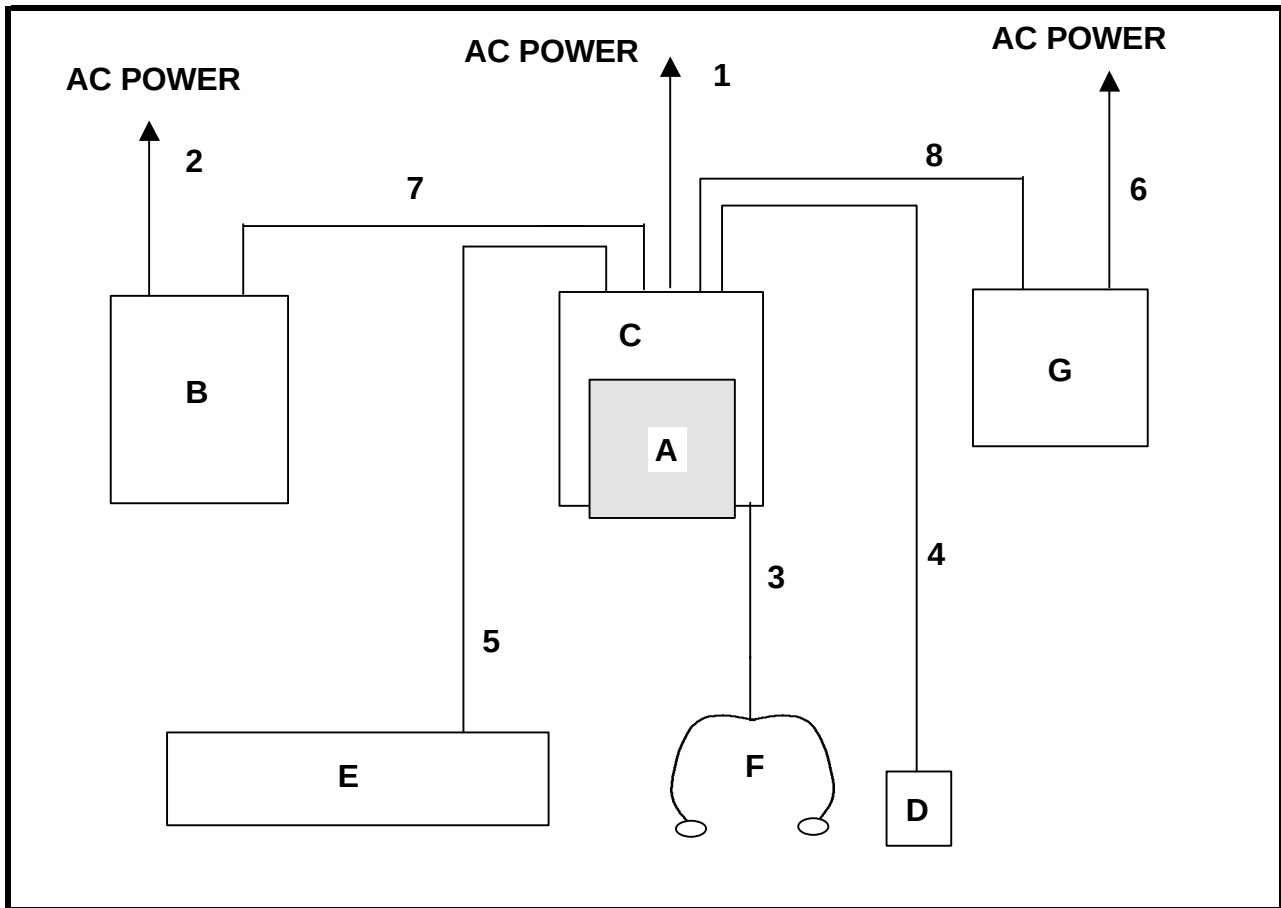
1.3 Configuration of EUT and peripherals

Mark	Item	Model No.	Serial No.	Manufacturer	Remark
A	CD-ReWritable ROM DRIVE	SW-224	-	Samsung	EUT
B	External Monitor	AQ19LS	AQ19H3NR4001	Samsung	
C	Personal Computer	7000	14921-013	COMPAQ	
D	PS/2 Mouse	M-S34	LZB74453426	LOGITECH	
E	PS/2 Keyboard	SEM-DC8H	85000144	SAMSUNG	
F	Ear phone	-	-	SONY	
G	Printer	2225C+	2810S08375	H/P	

1.4 Used Cable Description

No.	Item	Length[m]	Shielded(Y/N)	Remark
1	AC Power Cable	1.5	N	
2	AC Power Cable	1.5	N	
3	Earphone Cable	1.5	Y	
4	Mouse Cable	1.5	Y	
5	Keyboard Cable	1.5	Y	
6	AC Power Cable	1.5	N	
7	Monitor Cable	1.2	Y	
8	Printer Cable	1.5	Y	

1.5 System Block Diagram of Test Configuration



2.2 Operation Environment

	Conduction	Radiation
Temperature [centigrade] :	24.5	24
Humidity [%] :	42	41
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 Software

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.

* Test Data Sheet

Frequency [MHz]	Meter reading(a)		Total Loss(b) [dB]	Results (a) + (b) [dBuV]	Limits [dBuV]	Margin [dB]
	LISN Port					
	L1	L2				
0.646	23.8	19.7	0.1	23.9	48	24.1
0.968	24.8	26.3	0.1	26.4	48	21.6
1.829	18.5	18.7	0.1	18.8	48	29.2
2.802	26.7	29.1	0.1	29.2	48	18.8
4.195	25.4	23.3	0.1	25.5	48	22.5
7.541	30.1	28.1	0.1	30.2	48	17.8
10.985	25.8	24.9	0.4	26.2	48	21.8
14.002	22.9	20.1	0.8	23.7	48	24.3
16.109	40.7	40.9	0.9	41.8	48	6.2
24.166	40.1	39.9	1.7	41.8	48	6.2

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

* Margin = Limits-Result

* IF Bandwidth = 9kHz * Detecting Mode : Quasi-Peak

* Used receiver : ESCS30 (Rohde & Schwarz)

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 :

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	48.31	V	14.1	12.6	207	352	26.72	40	13.28
	56.36	H	22.2	10.9	301	271	33.10	40	6.90
	56.38	V	21.4	10.9	211	360	32.30	40	7.70
	59.30	H	16.4	10.1	318	9	26.50	40	13.50
88 - 216	100.44	H	22.2	10.4	271	268	32.60	43.5	10.90
	133.78	V	17.9	10.3	100	120	28.20	43.5	15.30
	144.04	H	16.9	10.7	231	60	27.60	43.5	15.90
	201.02	H	14.4	12.8	163	360	27.20	43.5	16.30
	203.38	V	16.1	12.9	276	360	29.00	43.5	14.50
216 - 960	259.94	V	13.3	15.2	182	240	28.50	46	17.50
	264.87	H	19.9	15.3	100	104	35.20	46	10.80
	322.06	H	18.9	17.7	100	254	36.60	46	9.40
	372.90	V	16.9	18.8	127	360	35.70	46	10.30
	711.92	V	14.1	25.7	235	120	39.80	46	6.20
960-	1198.3	V	14.1	14.1	312	235	28.20	54	25.80

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

* Test distance : 3m

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

* IF Bandwidth = 120kHz

* Detecting Mode : Quasi-Peak

* Used receiver : ESVP (Rohde & Schwarz)

5. Test Equipment Used

Equipment	Model No.	Serial No.	Makers	Calibration Last calibration and Interval
Spectrum analyzer	8566B	3340A21744	H.P	01/ 3/20, 12Months
Quasi-peak adapter	85650A	3303A01784	H.P	01/ 1/27, 12Months
RF Preselector	85685A	2602A00224	H.P	01/10/10, 12Months
Field strength meter	ESVP	860688/015	R & S	01/ 3/20, 12Months
L.I.S.N	3825-2	1981	EMCO	01/ 3/25, 12Months
Field strength meter	ESCS30	839809/002	R & S	01/ 6/18, 12Months
Biconilog Antenna	3142	1237	EMCO	01/1/ 2, 12Months