

EMI TEST REPORT

According to FCC Part 15B Class B

FCC ID: A3LSW248

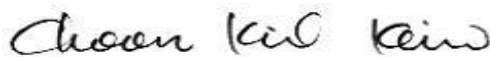
Product : CD-RW Drive

Model No. : SW-248 (VER:F)

Date of test : September 14, 2002 - September 14, 2002

Issued Date : September 16, 2002

Tested by:



Choon Kil, Kim / Test Engineer

Reviewed by:



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Authorized by:



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This laboratory is registered by the NIST/NVLAP, U.S.A
The test report herein have been performed in accordance
with its terms of registration.



NVLAP Code: 200447

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1. General Information

APPLICANT : SAMSUNG ELECTRONICS CO., LTD.

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REGULATION(S) : FCC Part 15B Class B

MODEL NUMBER : SW-248(VER:F)

FCC ID.: : A3LSW248

KIND OF PRODUCT : CD-RW Drive

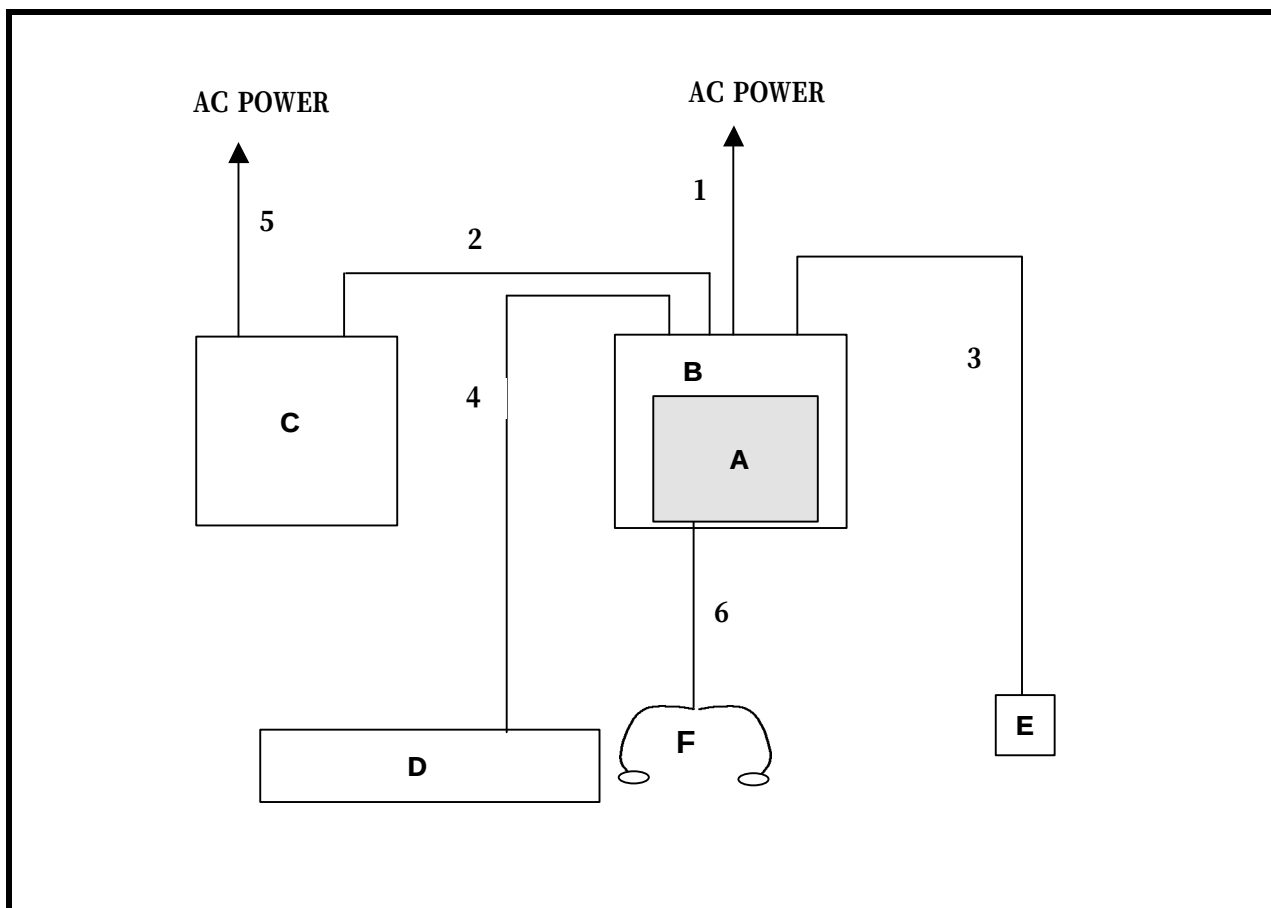
TESTED DATE : September 14, 2002 - September 14, 2002

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

1.1 Product Description

Speed	CD-R : 48X, CD-RW : 16X, CD-ROM:48X
Access Time	CD-RW(110ms)
Buffer	8MB
Interface	ATAPI (E-IDE)
Size	146(W) * 42(H) * 184(D) 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-Rom Drive	SW-248(VER:F)	-	Samsung	EUT
B	Computer	DHS	N192H4LT105171	BQ08411	
C	LCD Monitor	CX-151S	N192H4LT105171	Samsung	
D	KeyBoard	RT7D00	025PGG	DELL	
E	Mouse	M-S34	LNA10104642	Logitech	
F	Ear Phone	-	-	-	

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	Mouse Cable	2.0	N	
4	Keyboard Cable	1.8	N	
5	AC Power Cable	1.7	N	
6	Ear Phone Cable	1.5	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.

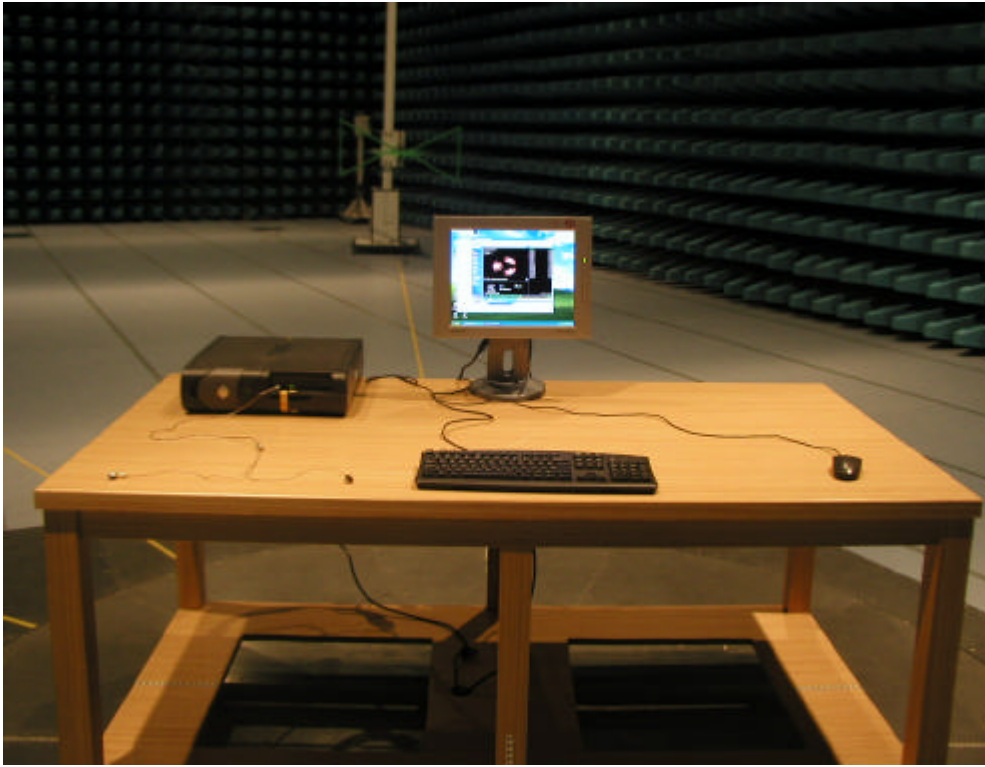
1)Conduction(Front View)



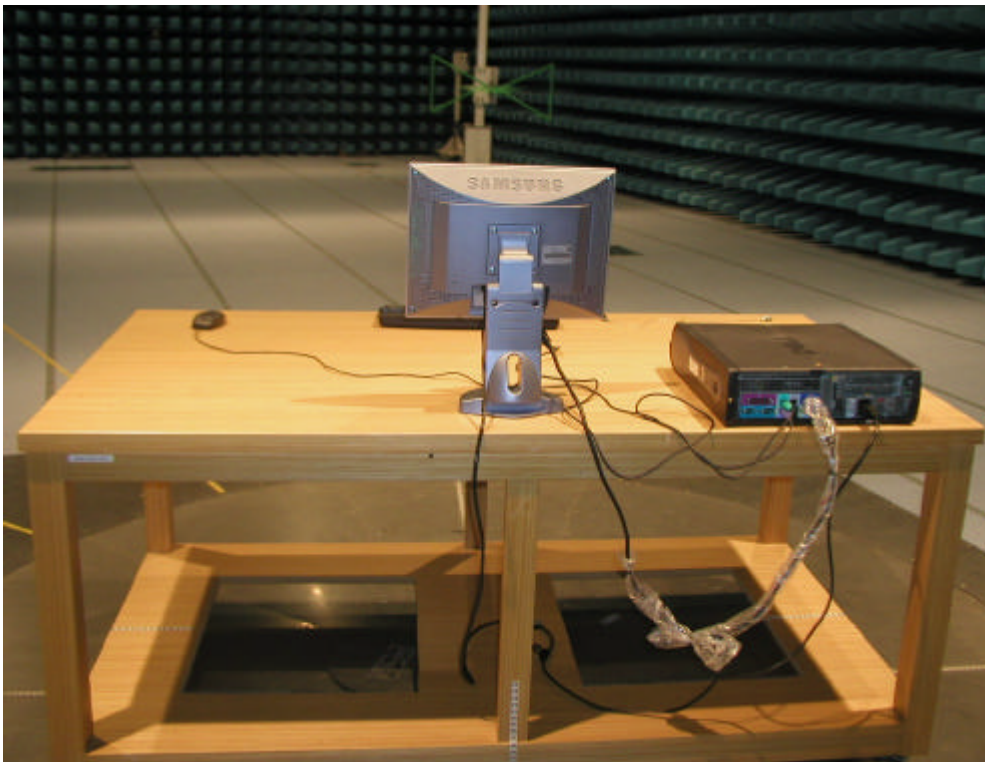
2)Conduction(Rear View)



3) Radiation(Front View)



4) Radiation(Rear View)



2.2 Operation Enviroment

	Conduction	Radiation
Temperature [centigrade] :	21.5	20.5
Humidity [%] :	55	52
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.

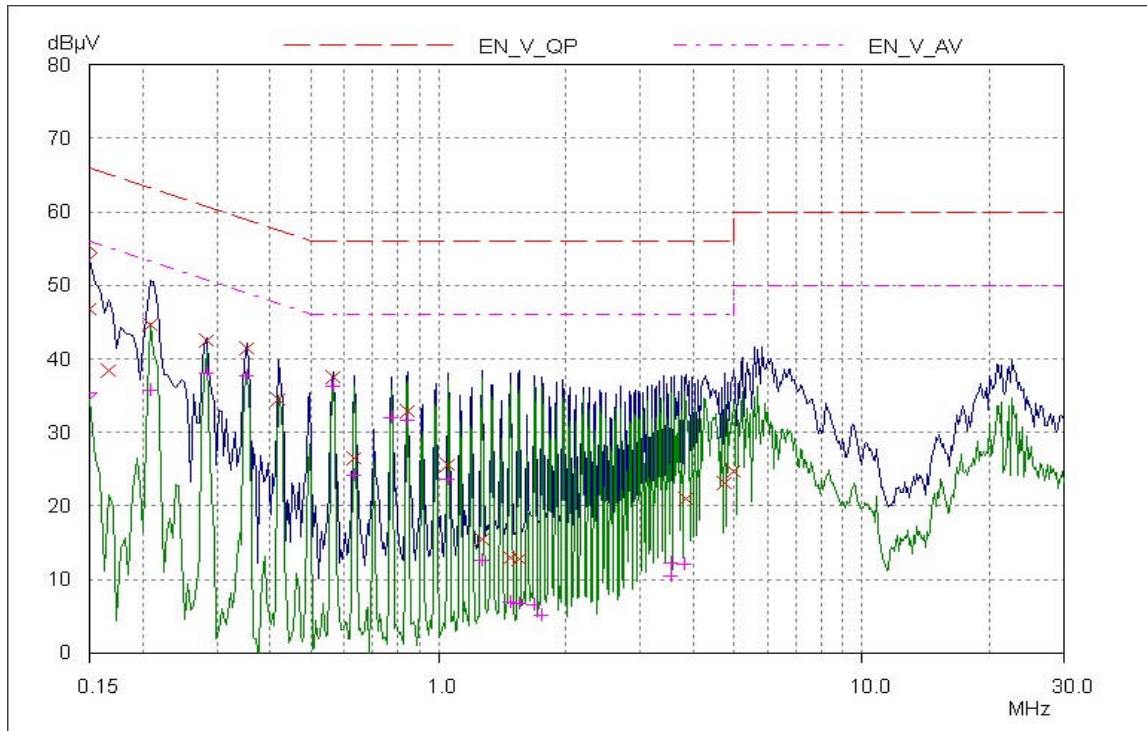
O Test Mode : L1 & N

Frequency [MHz]	Meter reading(a)		Total Loss(b) [dB]	Results (a)+(b)		Limits		Margin (Limits-Results)	
	QP	AV		QP	AV	QP	AV	QP	AV
	[dBuV]			[dBuV]		[dBuV]		[dB]	
0.423	25.5	25.1	0.5	26.0	25.6	57.3	47.3	31.3	21.7
0.849	23.0	21.5	0.5	23.5	22.0	56.0	46.0	32.5	24.0
9.090	30.0	19.3	1.1	31.1	20.4	56.0	46.0	24.9	25.6
9.228	32.1	29.5	1.1	33.2	30.6	56.0	46.0	22.8	15.4
9.345	33.2	29.3	1.1	34.3	30.4	56.0	46.0	21.7	15.6
10.013	32.0	22.9	0.8	32.8	23.7	60.0	50.0	27.2	26.3
18.505	19.6	21.2	1.7	21.3	22.9	60.0	50.0	38.7	27.1
24.692	22.6	11.22	2.1	24.7	13.3	60.0	50.0	35.3	36.7

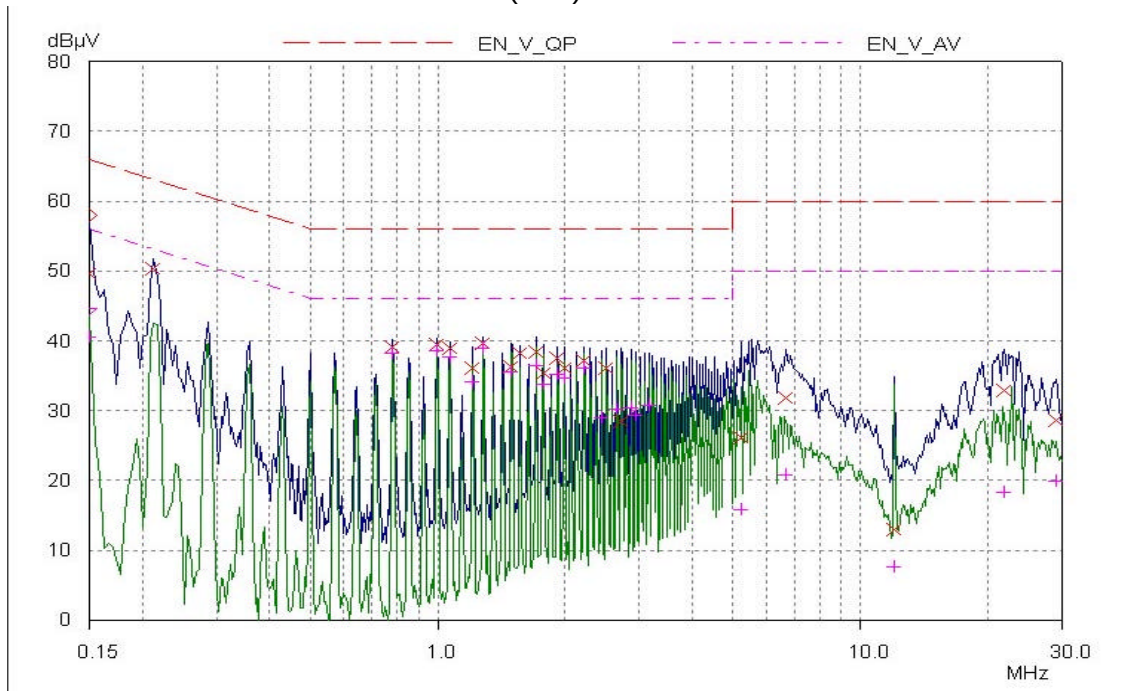
* Results = Meter Reading(QP) + Total Loss(LISN Insertion loss + Cable loss)

* Margin = Limits - Result

3.1 Conducted Emission Test Graph



(Live)



(Netural)

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

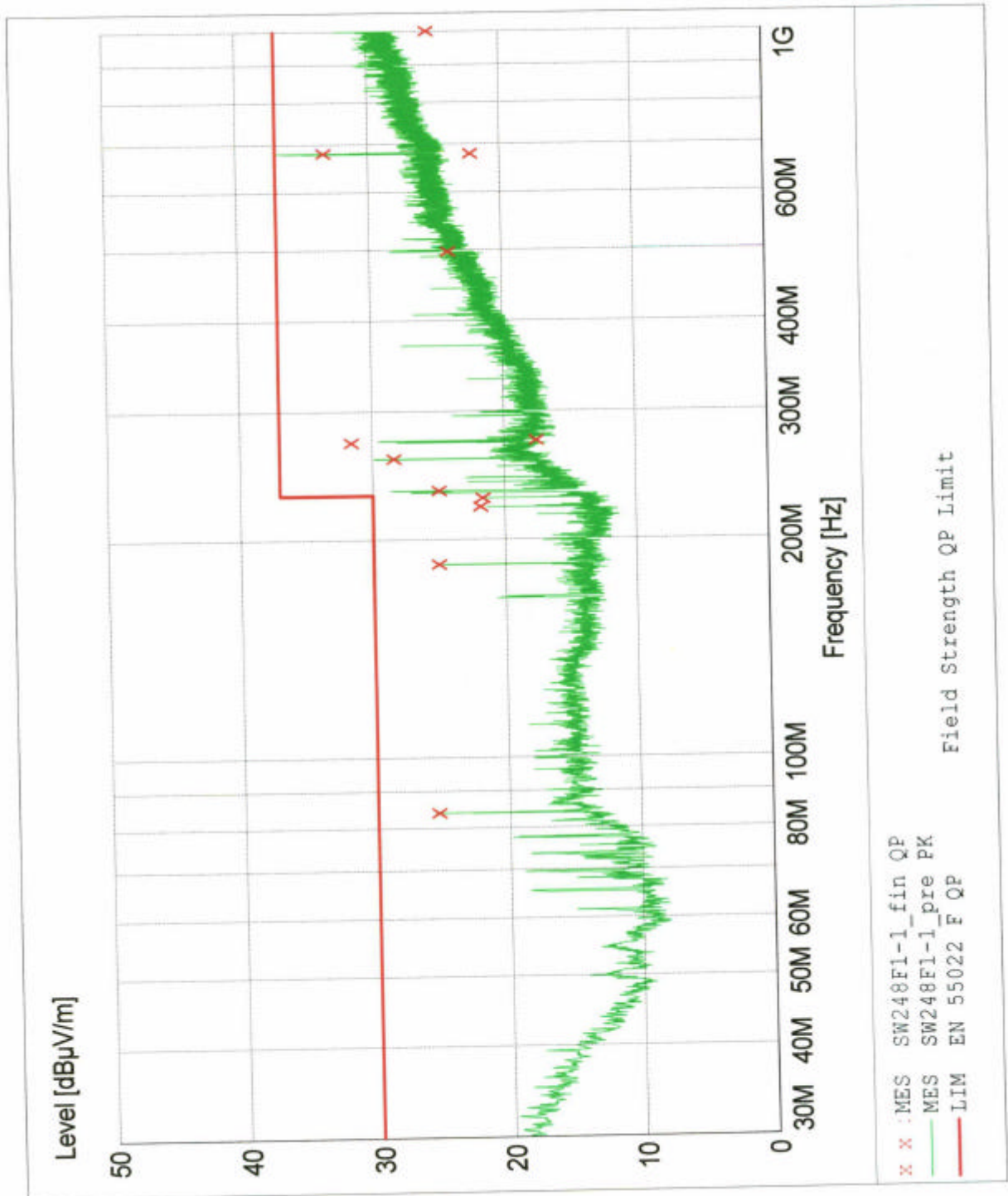
Frequency Range [MHz]	Tested Frequency [MHz]	ANT Pol.	Meter Reading [A] [dBuV/m]	Total Loss [B] [dB]	Antenna Height [Cm]	Turn table Degree [Deg]	Results [A+B] [dBuV/m]	Limits at 3m [dBuV/m]	Margin (Limit-Result) [dB]
30 - 88	83.900	V	16.2	9.0	150	49	25.2	30.0	4.8
88 - 216	184.500	V	14.8	10.4	100	52	25.2	30.0	4.8
216 - 960	221.420	V	11.2	10.8	118	200	22.0	30.0	8.0
	233.245	H	12.7	12.4	400	179	25.1	37.0	11.9
	258.315	V	13.2	15.3	137	30	28.5	37.0	8.5
	271.920	H	16.6	15.1	350	149	31.7	37.0	5.3
	679.805	V	10.3	23.2	250	2	33.5	37.0	3.5
	999.660	H	-0.4	26.0	350	35	25.6	37.0	11.4

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

* Test distance : 10m

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

4.1 Radiated Emission Test Graph



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	02/ 11/20, 12Months
L.I.S.N	ESH3-Z5	831887/0004	R & S	02/ 07/27, 12Months
Bi-Log Antenna	CBL6112B	2804	SCHAFFNER	02/04/19, 12Months