

EMC TEST REPORT

Project No. :LBE031085

Product : Video Cassette Recorder

Model No. : SLV-D500P

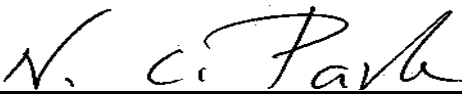
Date of test : May 12 ~ 14, 2003

Issued Date : May 14, 2003

Tested by:


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Reviewed by:


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EMC Test Laboratory

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1. Introduction & Summary

1.1 Description of the EUT

Applicant	SAMSUNG ELECTRONICS Co., Ltd.	
Project Number	LBE031085	
Equipment Under Test	Video Cassette Recorder	
Trade Name	SAMSUNG	
Model Number	SLV-D500P	
Variant Model	None	
Type of RF Output Connector	Type "F" Connector 75ohm(Unbalanced)	
FCC ID Number	A3LDIVA500P	
Operating(RF Modulator) Frequency	CH.3	Visual Carrier 61.25MHz Aural Carrier 65.75MHz
	CH.4	Visual Carrier 67.25MHz Aural Carrier 71.75MHz
Mains input	120V 60Hz	

1.2 Test facility

The EMI/EMS measurement facilities used to collect the tested data are located at 416 Maetan 3 Dong, Paldal-Ku, Suwon City, Kyungki Do, Korea.

The sites are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1 & 16-2.

SAMSUNG Electronics Co.,Ltd is accredited by Korea Laboratory Accreditation Scheme(KOLAS) which signed the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the above test item(s) and test method(s).

Measured in Semi-anechoic chamber #1 that is FCC Registration Number 98856.

1.3 Test mode

The EUT was tested in the following operating modes(at both channel 3 and 4) for the tests mention in this report:

1) Playback mode [VHS Play]

A video tape recorded with VITS signal was played on the EUT.

2) Record mode [NTSC Signal Input]

A NTSC signal(Color bar with grea lines) was supplied at ch. 5(77.25MHz) through the Ant. input connector for recording.

3) Record mode [1V VITS Signal Input]

A 1V peak-to-peak VITS signal was supplied through the video input connector for recording.

4) Record mode [5V VITS Signal Input]

A 5V peak-to-peak VITS signal was supplied through the video input connector for recording.

5) Play mode [DVD Play]

Note: The NTSC TV signal input record mode is not applicable to the antenna transfer switch test.

1.4 Measuring instrument setup

The explanation of measuring instrument setup when respective function is used in any frequency band is as following:

Frequency Band [MHz]	Instrument	Detector function	Resolution Bandwidth	Video Bandwidth
30 to 1000	Spectrum analyzer	Peak	100kHz (1MHz)	1MHz
	EMI Test receiver	Quasi-Peak	120kHz	-
Above 1000	EMI Test receiver	Average	1MHz	-

1.5 Test rule and Procedure

FCC Rule Part 15, Subpart B : Unintentional Radiators

TV Interface Devices.

Test Procedure : ANSI C63.4-1992

1.6 Test Summary

Test item	Applied Standards	Result
AC POWERLINE CONDUCTED EMISSION	ANSI C63.4-1992	Pass
RADIATED EMISSION	ANSI C63.4-1992	Pass
OUTPUT SIGNAL LEVEL	ANSI C63.4-1992	Pass
OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION	ANSI C63.4-1992	Pass
ANTENNA TRANSFER SWITCH ISOLATION	ANSI C63.4-1992	Pass

* N/A : Test not applicable

2. Test equipment

Equipment	Model No.	Serial No.	Makers	Last calibration and Interval
Spectrum analyzer	8566B	3340A21744	H.P	03/03/04, 12Months
	Firmware versions : Rev.29.9.86			
Quasi-peak adapter	85650A	2521A00687	H.P	02/10/09, 12Months
RF Preselector	85685A	2602A00224	H.P	02/10/09, 12Months
Field strength meter	ESCS30	839809/022	R & S	02/06/18, 12Months
	Firmware versions : Main 1.08, OTP 02.01, GRA 02.03			
Field strength meter	ESVP	860688/015	R & S	03/02/28, 12Months
L.I.S.N	ESH3-Z5	847265/028	R & S	02/12/03, 12Months
Pattern Generator	PM5418-TDSI	LO627116	PHILIPS	03/12/07, 12Months
VITS Generator	MG318A	M08643	ANRITSU	03/02/18, 12Months
Matching PAD	RAM	829712/026	R & S	-
Test Receiver	ESI26	882692/002	R & S	02/10/25, 12Months
Bi-Log Antenna	CBL6112B	2766	SCHAFFNER	03/ 04/26, 12Months

3. Test Results

3.1 RADIATED EMISSION MEASUREMENT

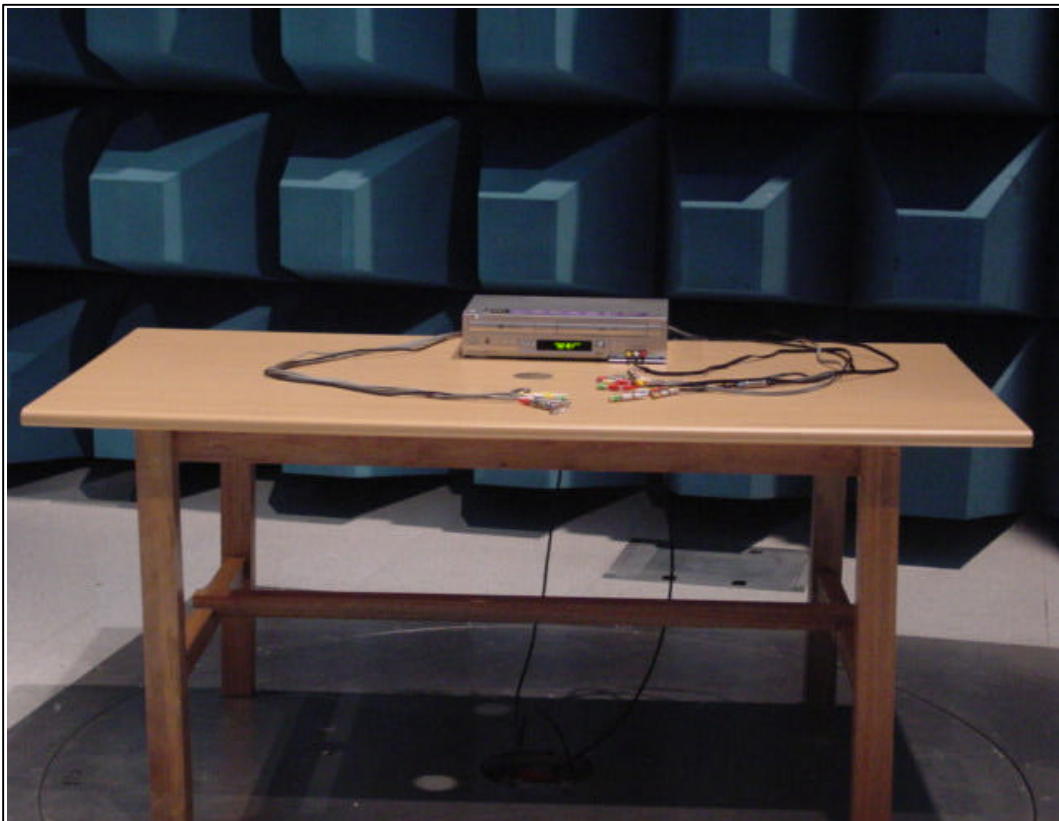
3.1.1 Test Procedure

Configure the EUT System in accordance with ANSI C63.4-1992 section 8 and 12.2. Power cords for the EUT System are connected the receptacle on the ground plane. The output ports are connected to the cable provided with the device and the ending port of the cable are terminated in the proper impedance.

To find out the maximum emission, change the position of the cable, and the EUT operation mode under normal usage of the EUT.

The spectrum analyzer are scanned from 30MHz to 1,000MHz in channel 3 and 4.

3.1.2 Setup Photograph



3.1.3 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 other emission are non-significant.

The minimum margin to the limit is as follows :

Eut Mode : VHS Playback at CH3 and CH4

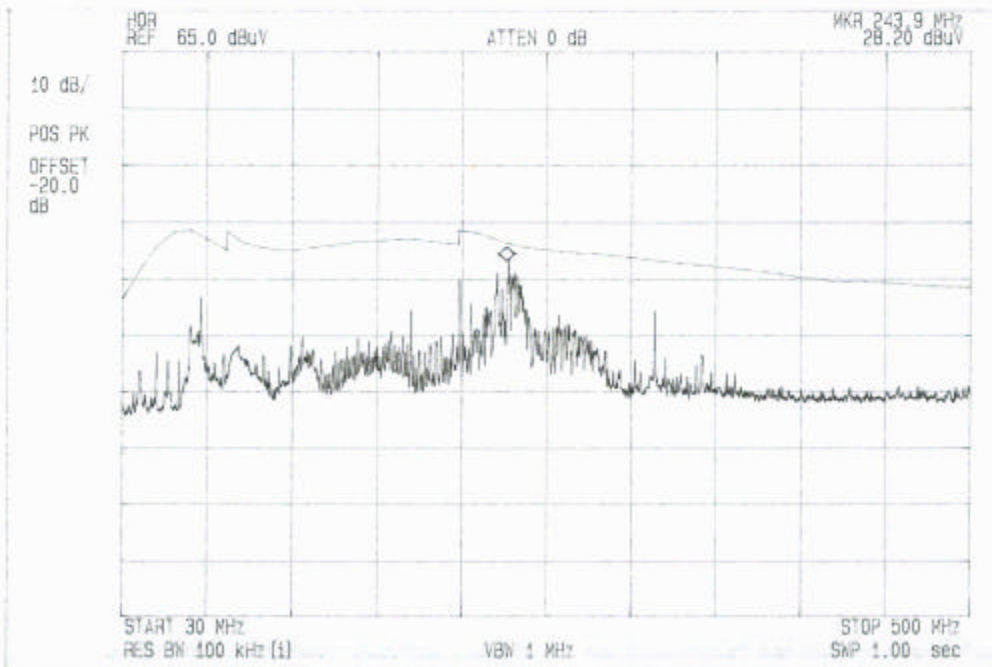
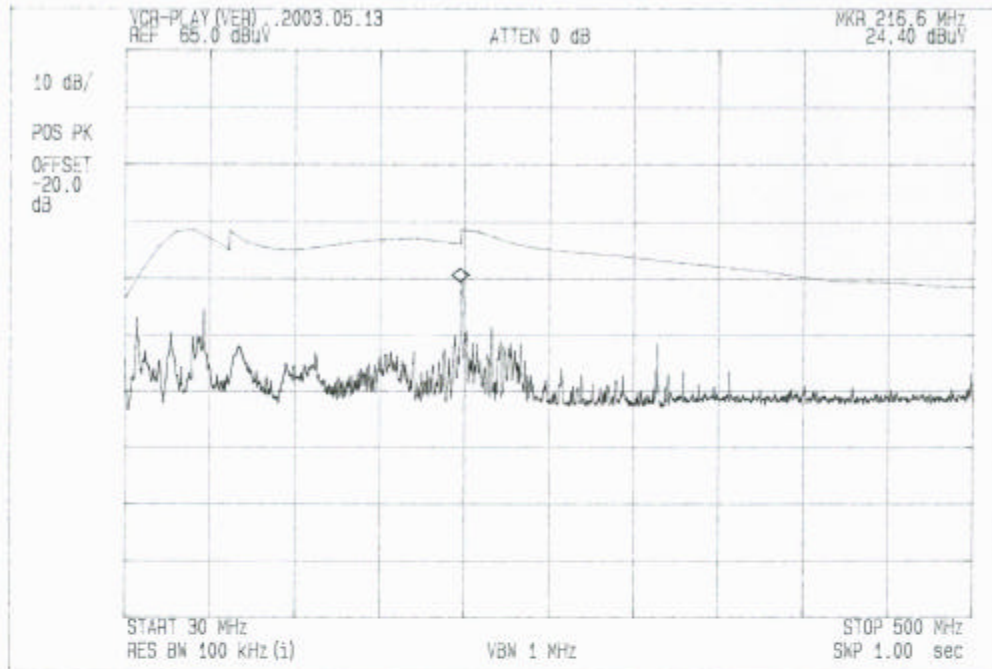
Frequency Range [MHz]	Tested Frequency [MHz]	ANT Pol.	Meter Reading [A] [dBuV/m]	Total Loss [B] [dB]	Antenna Height [Cm]	Turn table Degree [Deg]	Results [A+B] [dBuV/m]	Limits at 3m [dBuV/m]	Margin (Limit-Result) [dB]
30 - 88	36.070	V	12.3	15.4	108	190	27.7	40.0	12.3
	55.290	H	10.9	7.2	302	260	18.1	40.0	21.9
	73.720	H	22.7	7.2	294	260	29.9	40.0	10.2
88 - 216	134.990	H	15.6	13.1	223	160	28.7	43.5	14.8
	188.990	H	21.8	11.4	168	200	33.2	43.5	10.4
	215.990	H	25.8	12.0	159	300	37.8	44.5	6.7
216 - 960	242.990	H	20.1	14.7	100	20	34.8	46.0	11.2
	539.990	V	18.5	24.3	144	230	42.8	46.0	3.3
	756.000	V	11.0	26.8	100	100	37.8	46.0	8.2

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

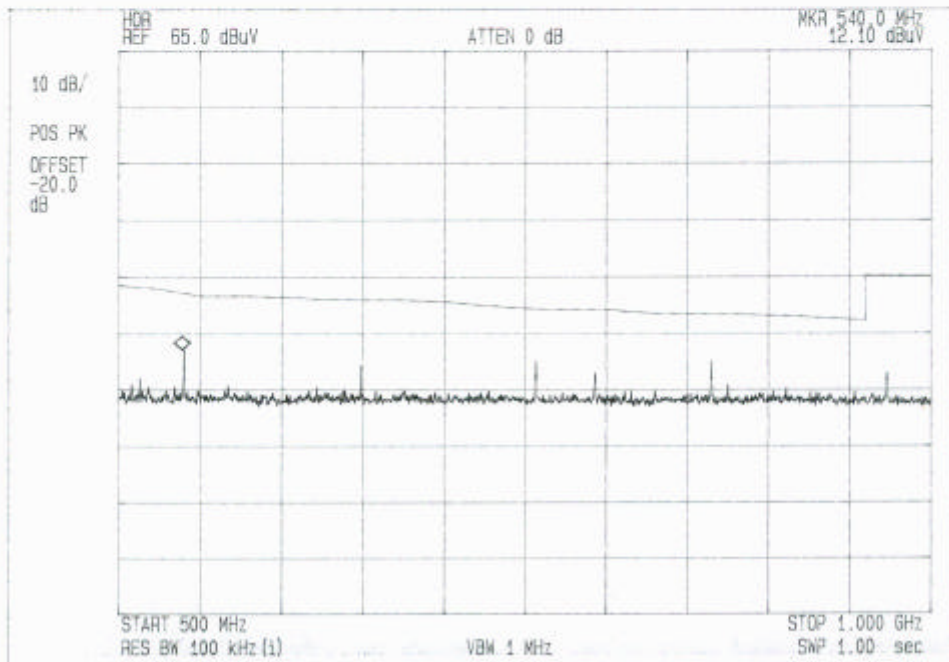
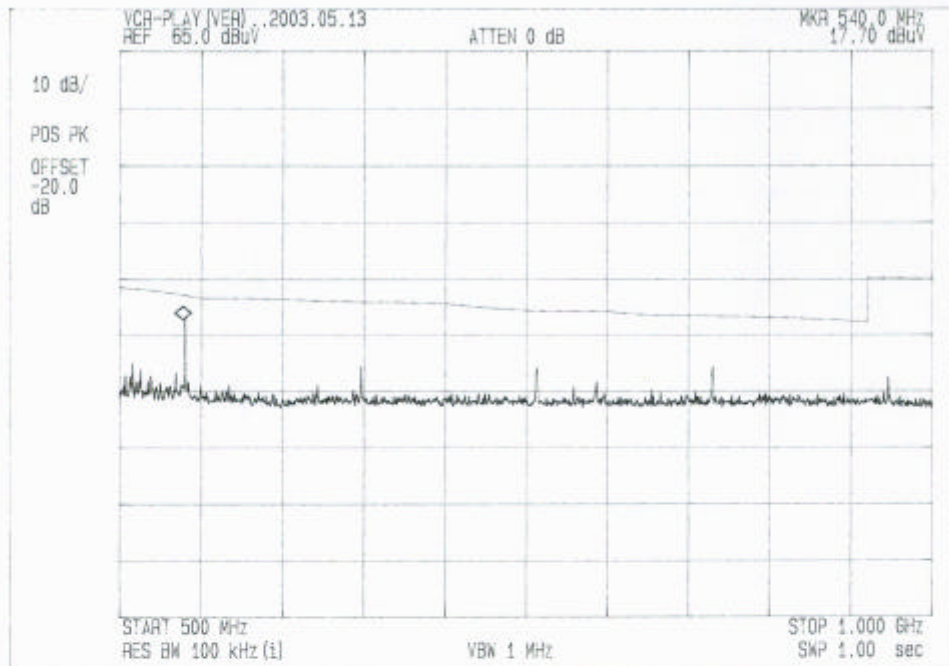
* Test distance : 3m (Semi-Anechoic Chamber)

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

Eut Mode : VHS Playback at CH3 and CH4



Eut Mode : VHS Playback at CH3 and CH4



Eut Mode : Recording(NTSC) at CH3 and CH4

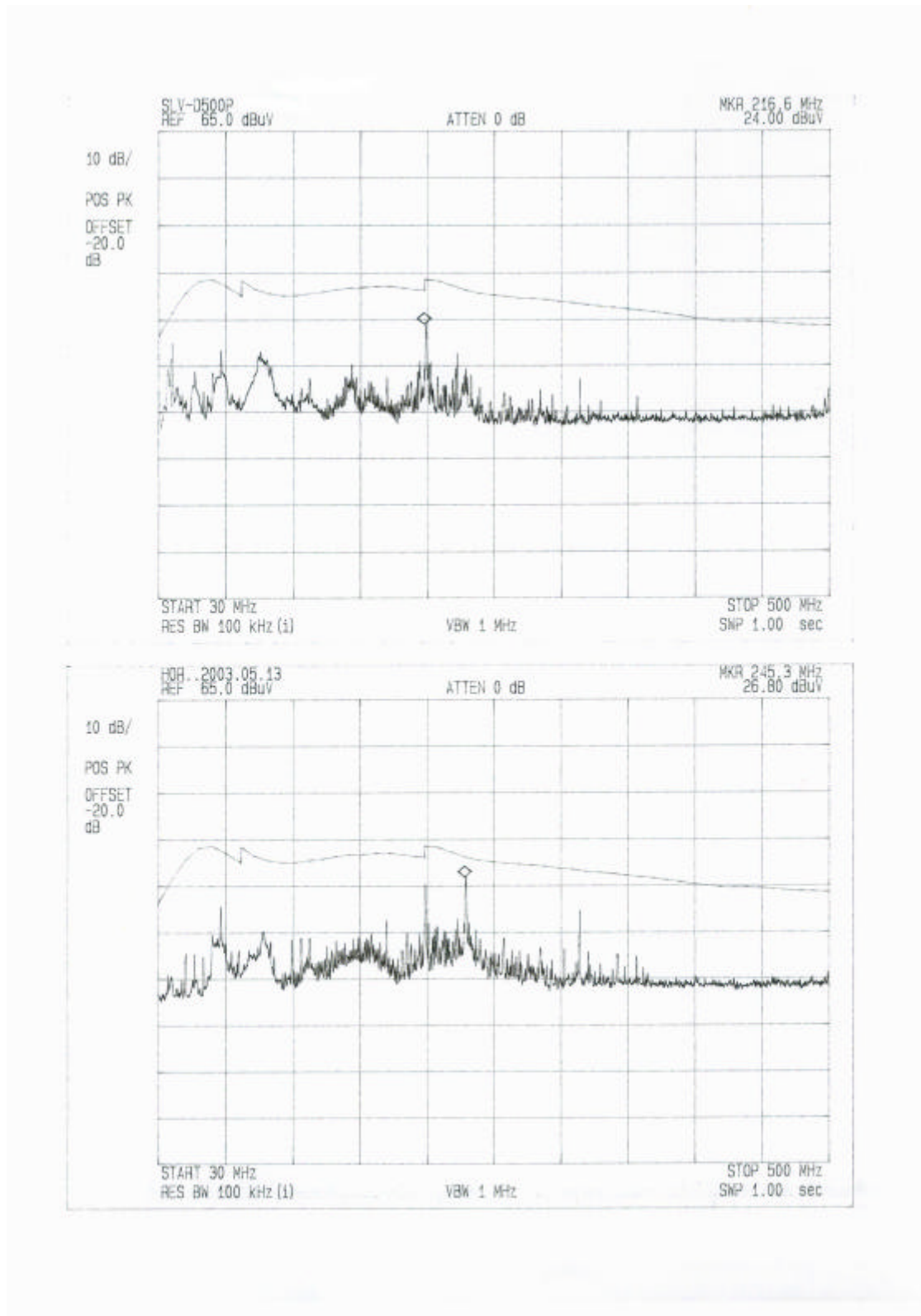
Frequency Range [MHz]	Tested Frequency [MHz]	ANT Pol.	Meter Reading [A] [dBuV/m]	Total Loss [B] [dB]	Antenna Height [Cm]	Turn table Degree [Deg]	Results [A+B] [dBuV/m]	Limits at 3m [dBuV/m]	Margin (Limit-Result) [dB]
30 - 88	49.150	H	8.8	9.2	400	220	18.0	40.0	22.0
	55.290	H	10.2	7.2	400	260	17.4	40.0	22.6
	73.720	H	22.1	7.2	270	280	29.3	40.0	10.8
88 - 216	134.990	H	16.8	13.1	227	140	29.9	43.5	13.6
	188.990	H	19.8	11.4	191	220	31.2	43.5	12.4
	215.990	H	25.0	12.0	147	70	37.0	44.5	7.5
216 - 960	245.330	H	16.9	15.0	118	360	31.9	46.0	14.2
	540.000	V	18.5	24.3	125	230	42.8	46.0	3.3
	756.000	V	8.7	26.8	116	20	35.5	46.0	10.5

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

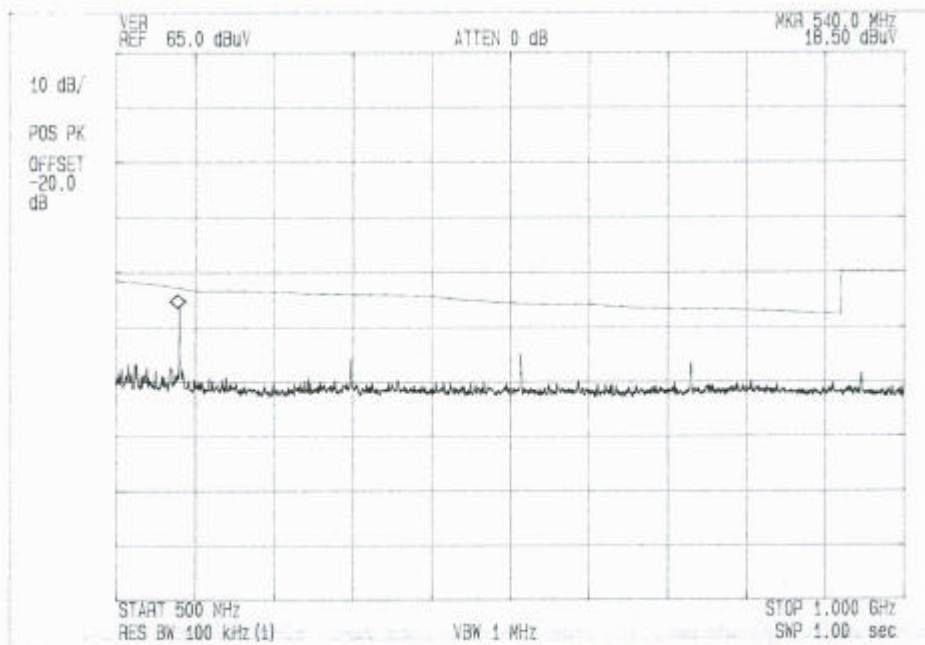
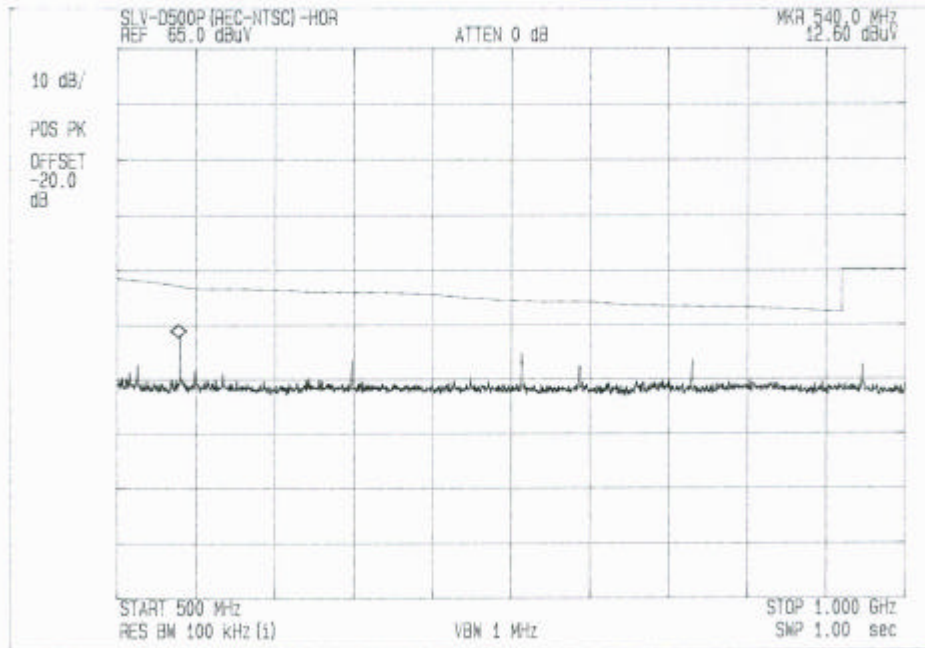
* Test distance : 3m (Semi-Anechoic Chamber)

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

Eut Mode : Recording(NTSC) at CH3 and CH4



Eut Mode : Recording(NTSC) at CH3 and CH4



Eut Mode : Recording(1V & 5V VITS Signal) at CH3 and CH4

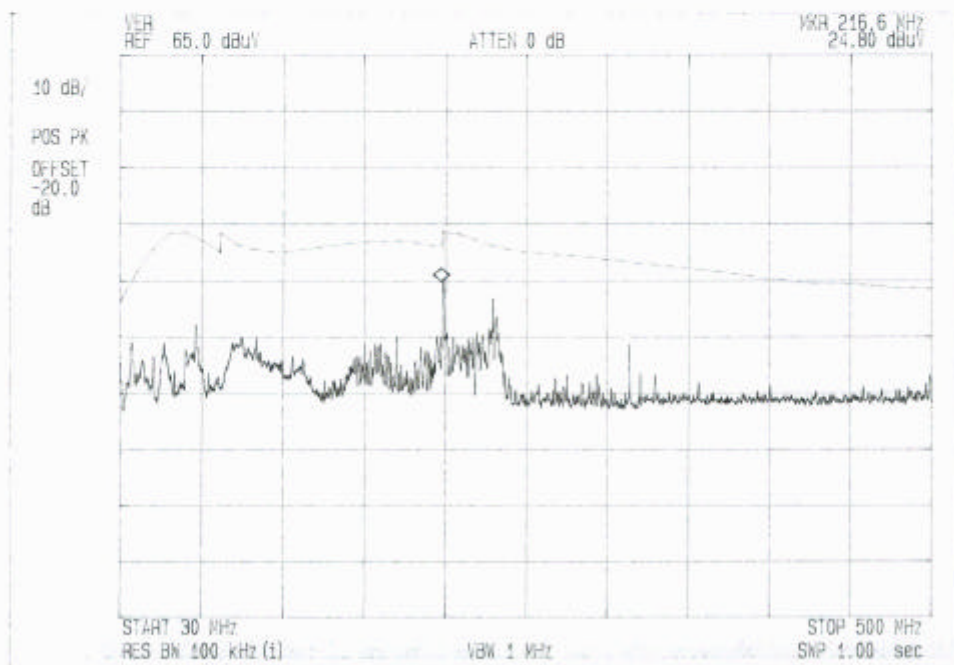
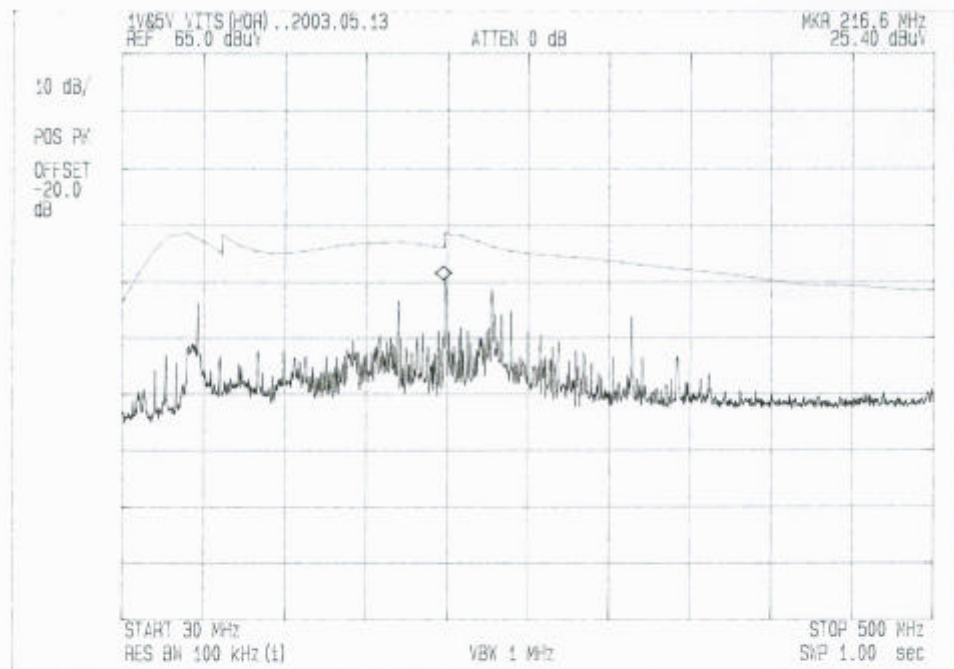
Frequency Range [MHz]	Tested Frequency [MHz]	ANT Pol.	Meter Reading [A] [dBuV/m]	Total Loss [B] [dB]	Antenna Height [Cm]	Turn table Degree [Deg]	Results [A+B] [dBuV/m]	Limits at 3m [dBuV/m]	Margin (Limit-Result) [dB]
30 - 88	36.070	V	7.5	15.4	100	200	22.9	40.0	17.1
	55.290	H	12.2	7.2	331	210	19.4	40.0	20.6
	73.720	H	23.0	7.2	272	290	30.2	40.0	9.9
88 - 216	134.990	H	12.6	13.1	243	310	25.7	43.5	17.8
	188.990	H	23.6	11.4	177	230	35.0	43.5	8.6
	215.990	H	26.8	12.0	162	80	38.8	44.5	5.7
216 - 960	242.990	H	19.8	14.7	136	360	34.5	46.0	11.5
	539.990	H	18.7	24.3	115	230	43.0	46.0	3.1
	756.000	H	11.4	26.8	155	90	38.2	46.0	7.8

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

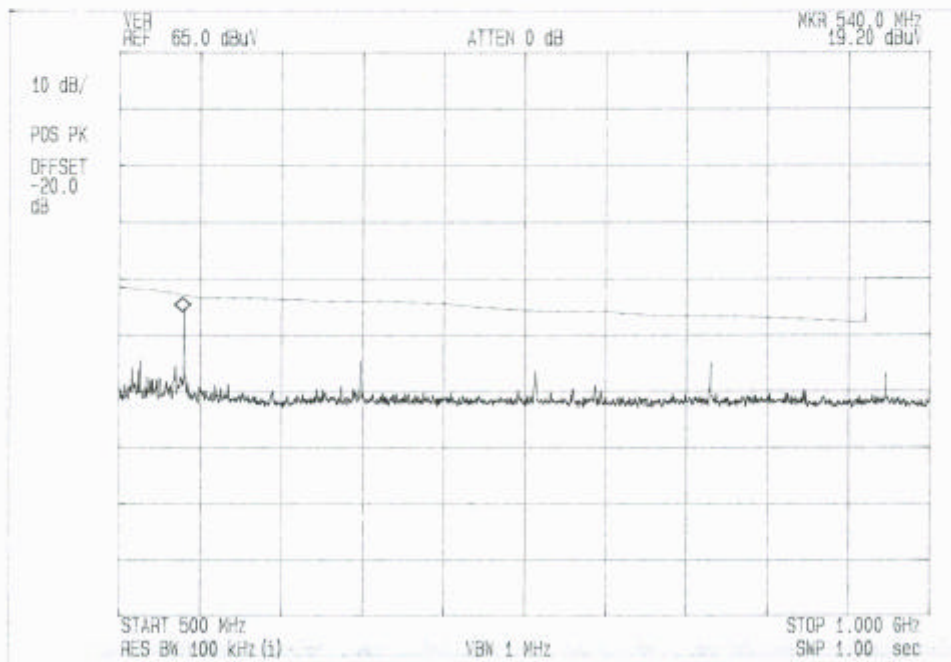
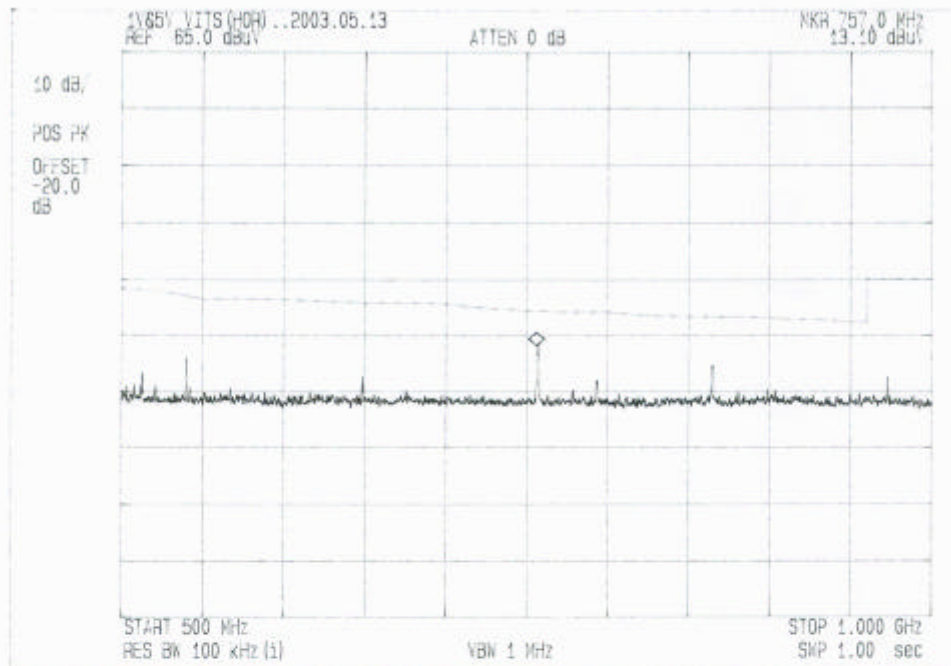
* Test distance : 3m (Semi-Anechoic Chamber)

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

Eut Mode : Recording(1V & 5V VITS Signal) at CH3 and CH4



Eut Mode : Recording(1V & 5V VITS Signal) at CH3 and CH4



Eut Mode : DVD PLAY at CH 3 & CH 4

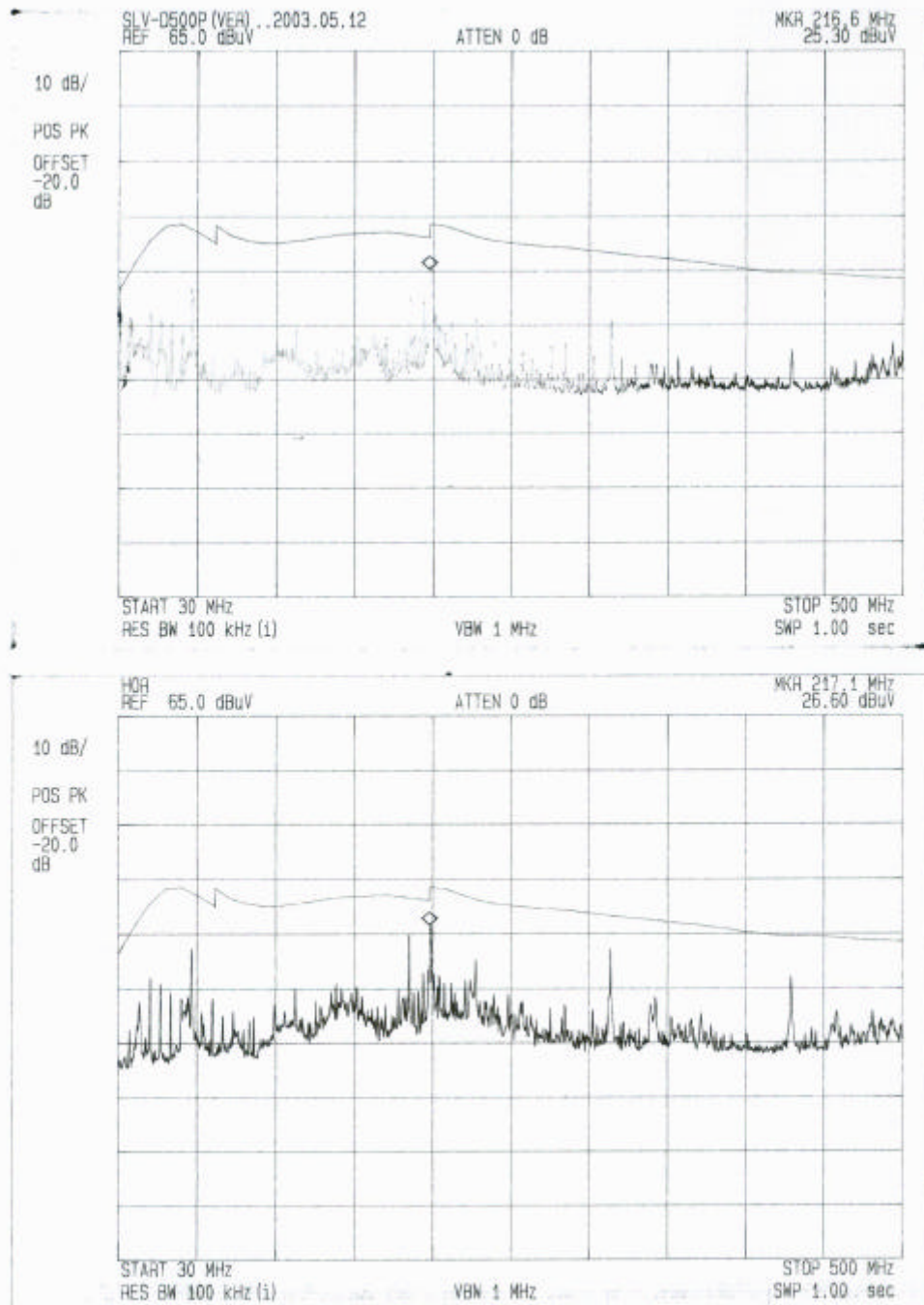
Frequency Range [MHz]	Tested Frequency [MHz]	ANT Pol.	Meter Reading [A] [dBuV/m]	Total Loss [B] [dB]	Antenna Height [Cm]	Turn table Degree [Deg]	Results [A+B] [dBuV/m]	Limits at 3m [dBuV/m]	Margin (Limit-Result) [dB]
30 - 88	55.290	H	15.6	7.2	349	360	22.8	40.0	17.2
	61.430	H	15.0	6.3	334	150	21.3	40.0	18.7
	73.700	H	22.4	7.1	350	360	29.5	40.0	10.5
88 - 216	203.190	H	24.9	12.0	123	240	36.9	43.5	6.6
	215.990	V	27.4	12.0	128	360	39.4	43.5	4.1
216 - 960	324.000	H	24.4	17.8	100	200	42.2	46.0	3.8
	432.010	H	20.4	21.6	100	280	42.0	46.0	4.0
	540.000	H	16.0	24.3	249	90	40.3	46.0	5.8
	756.010	V	13.3	26.8	141	360	40.1	46.0	5.9

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

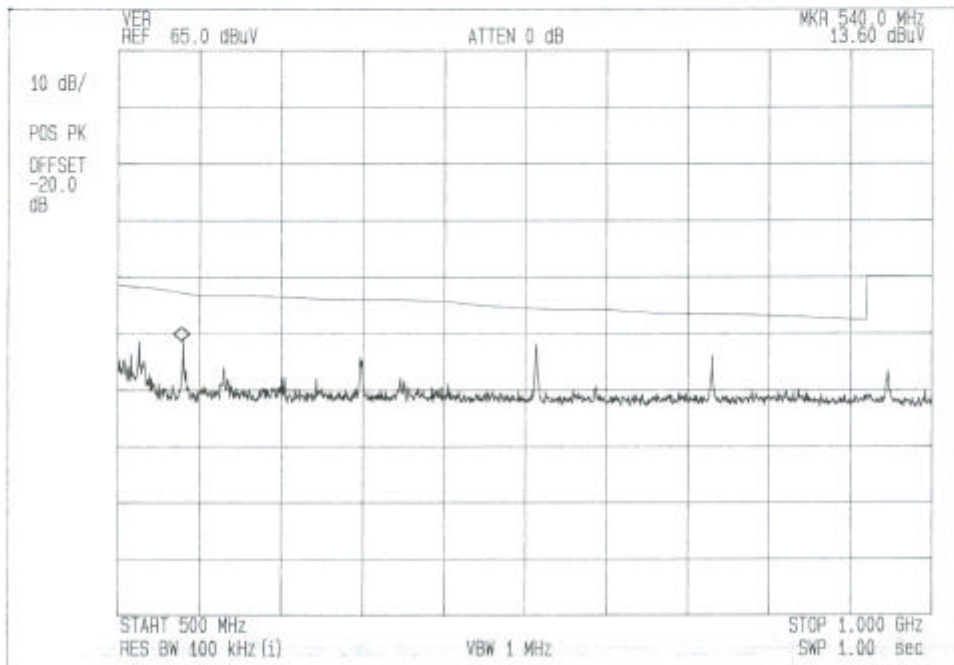
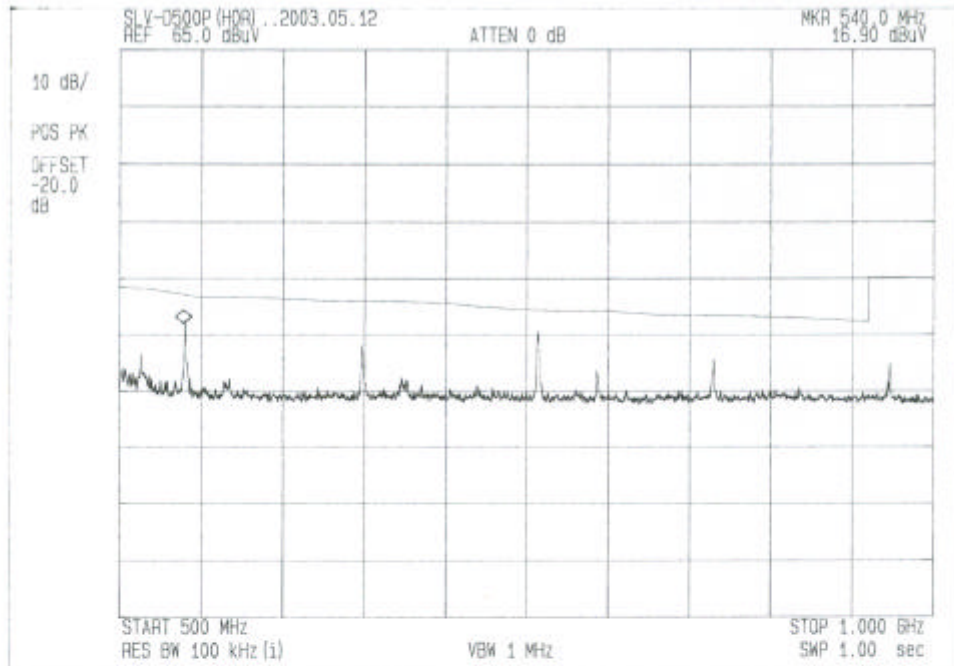
* Test distance : 3m (Semi-Anechoic Chamber)

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

Eut Mode : DVD PLAY at CH 3 & CH 4



Eut Mode : DVD PLAY at CH 3 & CH 4



3.2 AC POWERLINE CONDUCTED EMISSION MEASUREMENT

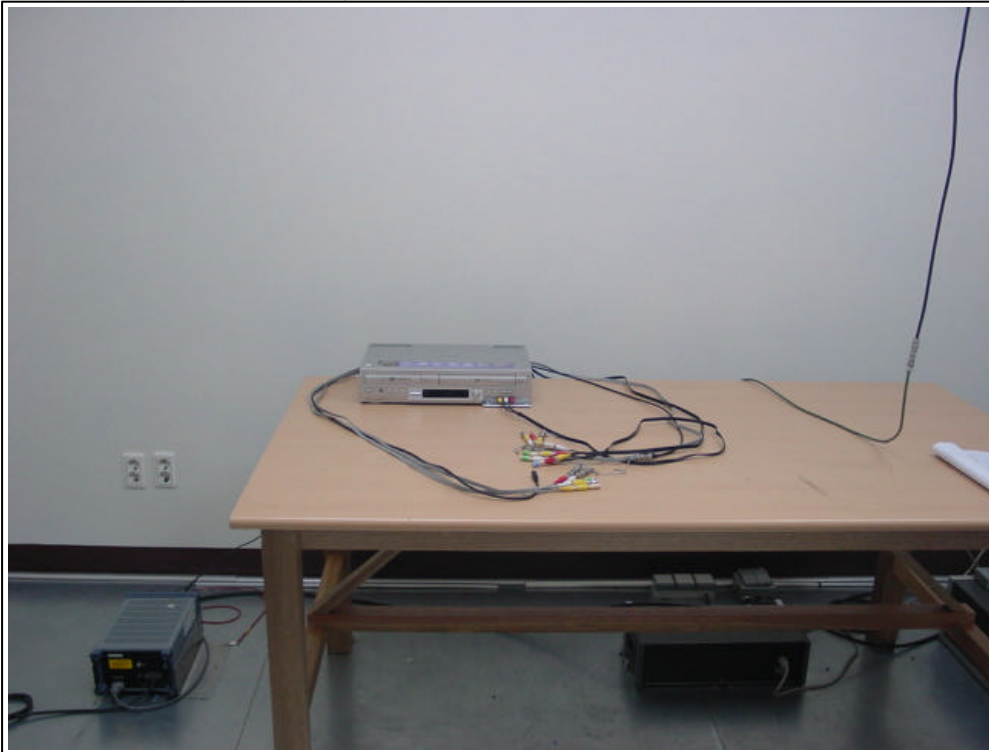
3.2.1 Reference Rule and Specification

FCC Rule Part 15, Section 15.107(a)

3.2.2 Test Procedure

- 1) Configure the EUT System in accordance with ANSI C63.4-1992 section 7 and 12.2. Connect the EUT's AC line cord to the EUT port of LISN.
- 2) All input terminals are terminated in the proper impedance.
The output ports are connected to the cable provided with the device and the ending port are terminated in the proper impedance.
- 3) Using a calibrated coaxial cable, the TEST RECEIVER is connected to the measuring port of the LISN for EUT. To find out an EUT condition procedures the maximum emission, the position of cables, EUT operations mode are the position of cables, EUT operations mode are checked under normal usage of EUT.
Then, the emission are scanned from 0.45MHz to 30MHz relative to the limit are recorded.

3.2.3 Setup Photograph



3.2.4 Test Results

1) EUT Mode : VCR Playback mode [VHS Play]

Frequency [MHz]	Line	Meter reading (a)	Total Loss (b) [dB]	Results (a) + (b)	Limits	Margin
		QP		QP	QP	QP
		[dBuV]		[dBuV]	[dBuV]	[dB]
0.471	Live	42.5	0.2	42.7	48.0	5.3
0.807	Live	43.3	0.2	43.5	48.0	4.5
1.409	Live	42.9	0.2	43.1	48.0	4.9
1.815	Live	41.0	0.2	41.2	48.0	6.8
2.284	Live	41.8	0.2	42.0	48.0	6.0
4.167	Live	39.3	0.1	39.4	48.0	8.6
6.449	Live	36.1	0.1	36.2	48.0	11.8
11.020	Live	28.7	0.4	29.1	48.0	18.9
14.317	Live	28.3	1.0	29.3	48.0	18.7
21.163	Live	25.0	1.2	26.2	48.0	21.8
29.962	Live	33.1	0.7	33.8	48.0	14.2

* QP : Quasi-peak

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

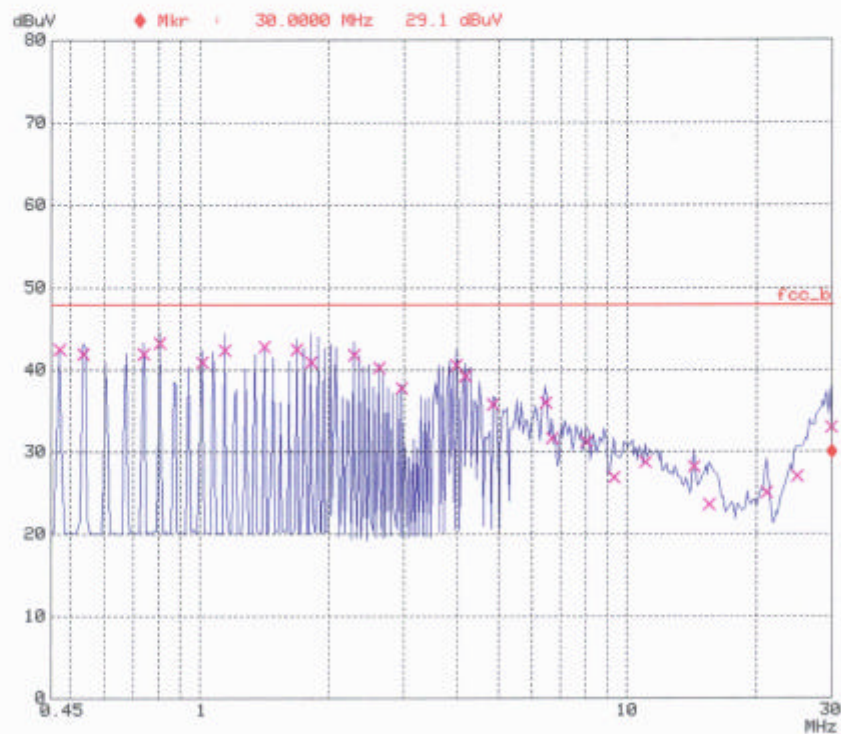
EUT Mode : VCR Playback mode [VHS Play]**LISN Mode : L1****Conduction**

QP
EUT: SLV_D500P
Manuf: SAMSUNG
Op Cond: VCR_PLAY
Operator: K.C.MIN
Test Spec: FCC_OLD
Comment: L1
Date: 01. Feb 03 04:16

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
450k	30M	7k	9k	PK	1ms	10dB	LN OFF

Final Measurement: x QP
Meas Time: 1 s
Subranges: 25
Acc Margin: 30dB



PAGE 1

EUT Mode : VCR Playback mode [VHS Play]**LISN Mode : L2****Conduction**

QP

EUT: SLV_D500P

Manuf: SAMSUNG

Op Cond: VCR PLAY

Operator: K.C.MIN

Test Spec: FCC_QLD

Comment: L2

Date: 01. Feb 03 04:24

Scan Settings (1 Range)

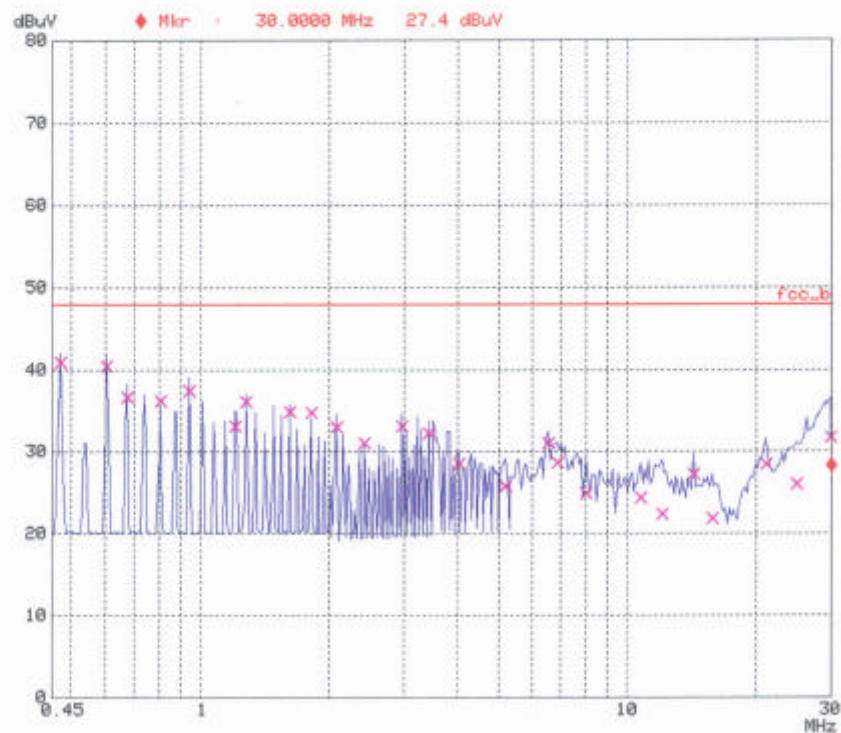
Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
450k	30M	7k	9k	PK	1ms	10dBLN OFF

Final Measurement: x QP

Meas Time: 1 s

Subranges: 25

Acc Margin: 30dB



PAGE 1

2) EUT Mode : Recording(NTSC) mode

Frequency [MHz]	Line	Meter reading (a)	Total Loss (b) [dB]	Results (a) + (b)	Limits	Margin
		QP		QP	QP	QP
		[dBuV]		[dBuV]	[dBuV]	[dB]
0.471	Live	42.3	0.2	42.5	48.0	5.5
0.807	Live	42.5	0.2	42.7	48.0	5.3
1.745	Live	42.6	0.3	42.9	48.0	5.1
2.081	Live	40.5	0.2	40.7	48.0	7.4
2.620	Live	39.6	0.1	39.7	48.0	8.3
4.097	Live	39.2	0.1	39.3	48.0	8.7
6.113	Live	34.7	0.1	34.8	48.0	13.2
7.723	Live	31.4	0.1	31.5	48.0	16.5
14.317	Live	28.1	1.1	29.2	48.0	18.8
24.530	Neutral	28.7	0.3	29.0	48.0	19.0
29.164	Neutral	37.2	0.1	37.3	48.0	10.7

* QP : Quasi-peak

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

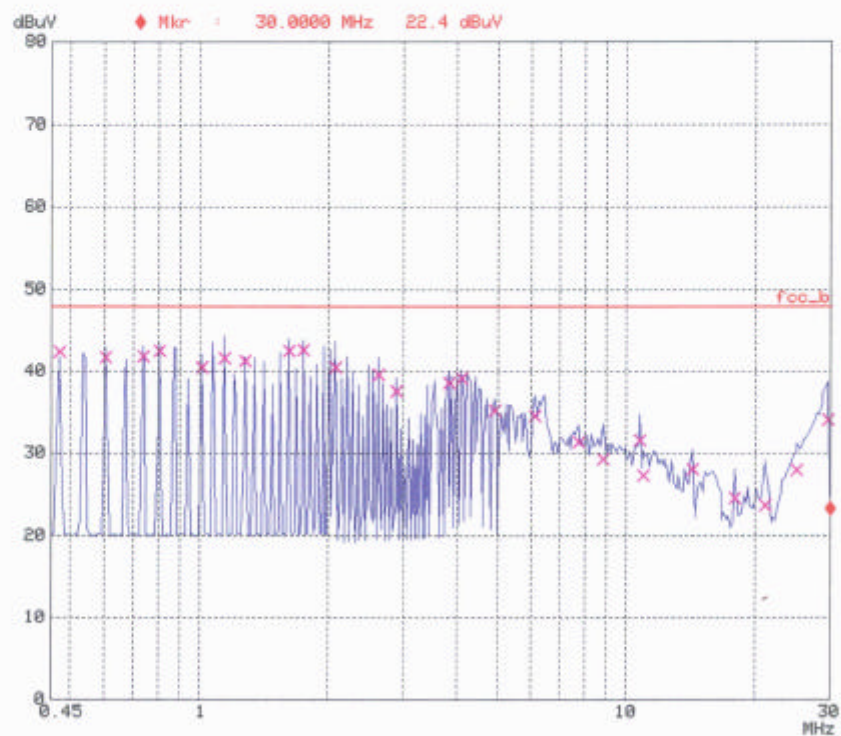
EUT Mode : Recording(NTSC) mode**LISN Mode : L1****Conduction**

QP
EUT: SLV_D500P
Manuf: SAMSUNG
Op Cond: REC_NTSC
Operator: K.C.MIN
Test Spec: FCC_OLD
Comment: L1
Date: 01. Feb 03 04:00

Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
450k	30M	7k	9k	PK	1ms	10dBLN OFF

Final Measurement: x QP
Meas Time: 1 s
Subranges: 25
Acc Margin: 30dB



PAGE 1

EUT Mode : Recording(NTSC) mode

LISN Mode : L2

Conduction

QP

EUT: SLV_D500P

Manuf: SAMSUNG

Op Cond: REC_NTSC

Operator: K.C.MIN

Test Spec: FCC_OLD

Comment: L2

Date: 31. Jan 03 11:33

Scan Settings (1 Range)

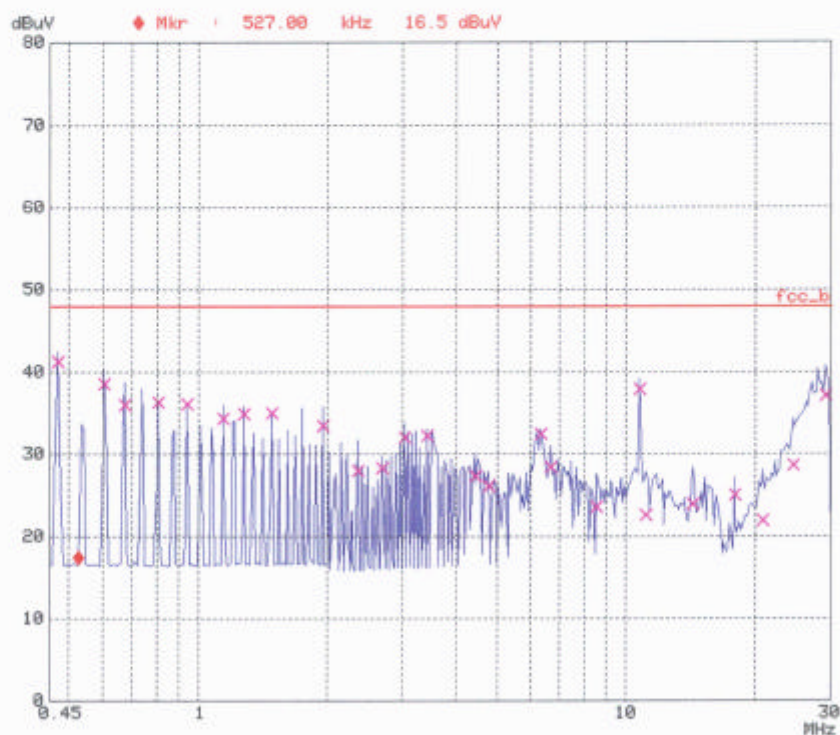
Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
450k	30M	7k	9k	PK	1ms	10dB	LN OFF

Final Measurement: x QP

Meas Time: 1 s

Subranges: 25

Acc Margin: 30dB



PAGE 1

3) EUT Mode : Recording(1V VITS) mode

Frequency [MHz]	Line	Meter reading (a)	Total Loss (b) [dB]	Results (a) + (b)	Limits	Margin
		QP		QP	QP	QP
		[dBuV]		[dBuV]	[dBuV]	[dB]
0.471	Live	42.6	0.2	42.8	48.0	5.2
0.807	Live	43.0	0.2	43.2	48.0	4.8
1.073	Live	42.4	0.2	42.6	48.0	5.4
1.948	Live	43.4	0.2	43.6	48.0	4.5
2.620	Live	40.2	0.1	40.3	48.0	7.7
3.628	Live	40.2	0.1	40.3	48.0	7.7
6.113	Live	35.3	0.1	35.4	48.0	12.6
10.740	Live	31.4	0.4	31.8	48.0	16.3
14.317	Live	29.7	1.0	30.7	48.0	17.3
25.062	Neutral	28.6	0.3	28.9	48.0	19.1
29.969	Neutral	34.7	0.1	34.8	48.0	13.2

* QP : Quasi-peak

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

EUT Mode : Recording(1V VITS) mode**LISN Mode : L1****Conduction**

QP

EUT: SLV_D500P

Manuf: SAMSUNG

Op Cond: REC_VITS

Operator: K.C.MIN

Test Spec: FCC_OLD

Comment: L1

Date: 01. Feb 03 04:49

Scan Settings (1 Range)

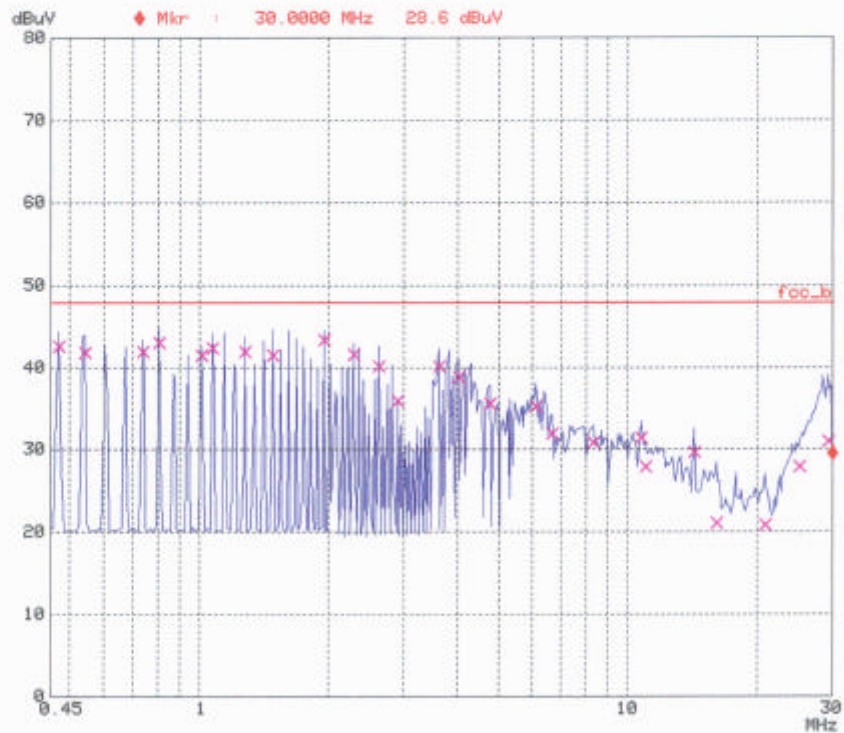
Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preampl
450k	30M	7k	9k	PK	1ms	10dBLN	OFF

Final Measurement: x QP

Meas Time: 1 s

Subranges: 25

Acc Margin: 30dB



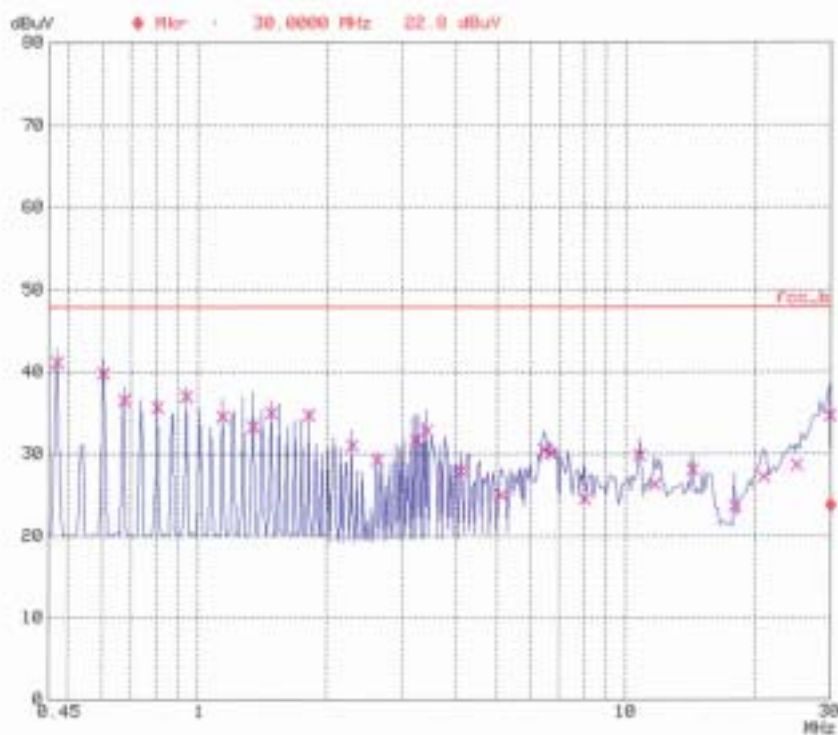
EUT Mode : Recording(1V VITS) mode**LISN Mode : L2****Conduction**

QP
EUT: SLV_0500P
Manuf: SAMSUNG
Op Cond: REC_VITS
Operator: K.C.MIN
Test Spec: FCC_OLD
Comment: L2
Date: 01. Feb 03 04:37

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
450k	30M	7k	9k	PK	1ms	10dB	LN OFF

Final Measurement: x QP
Meas Time: 1 s
Subranges: 25
Acc Margin: 30dB



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4) EUT Mode : Recording(5V VITS) mode

Frequency [MHz]	Line	Meter reading (a)	Total Loss (b) [dB]	Results (a) + (b)	Limits	Margin
		QP		QP	QP	QP
		[dBuV]		[dBuV]	[dBuV]	[dB]
0.471	Live	42.7	0.2	42.9	48.0	5.1
0.807	Live	42.9	0.2	43.1	48.0	4.9
1.612	Live	43.3	0.3	43.6	48.0	4.4
1.948	Live	43.4	0.2	43.6	48.0	4.5
3.831	Live	40.7	0.8	41.5	48.0	6.5
4.167	Live	39.5	0.1	39.6	48.0	8.4
5.980	Live	35.5	0.1	35.6	48.0	12.4
6.652	Live	31.7	0.1	31.8	48.0	16.2
8.066	Live	30.1	0.1	30.2	48.0	17.8
14.317	Live	30.2	1.0	31.2	48.0	16.8
29.563	Neutral	32.9	0.1	33.0	48.0	15.0

* QP : Quasi-peak

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

EUT Mode : Recording(5V VITS) mode**LISN Mode : L1****Conduction**

QP

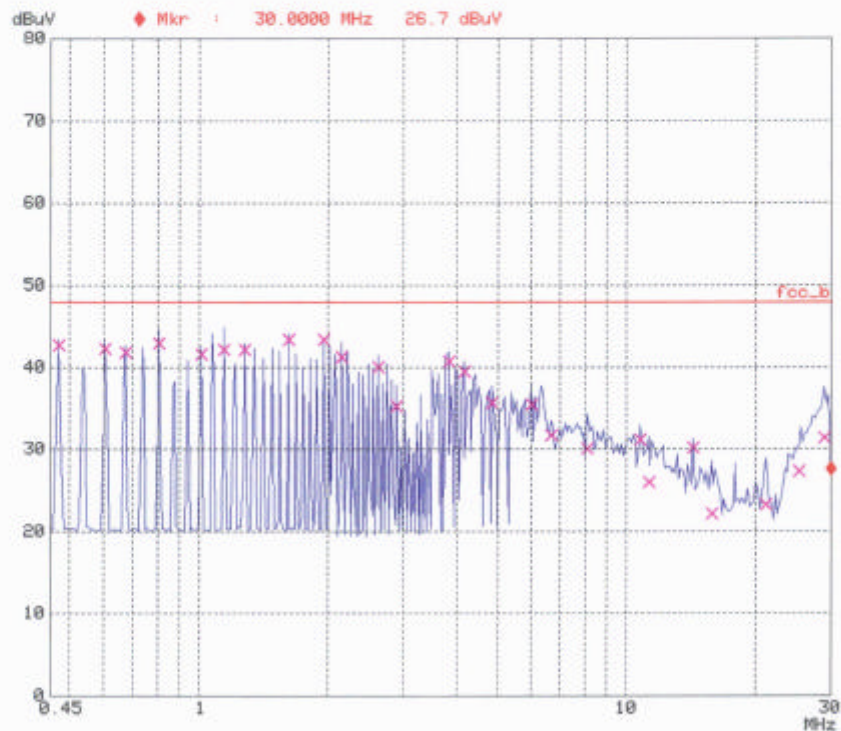
EUT: SLV_D500P
Manuf: SAMSUNG
Op Cond: REC_5V VITS
Operator: K.C.MIN
Test Spec: FCC_OLD
Comment: L1
Date: 01. Feb 03 04:59

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
450k	30M	7k	9k	PK	1ms	10dBLN	OFF

Final Measurement: x QP

Meas Time: 1 s
Subranges: 25
Acc Margin: 30dB



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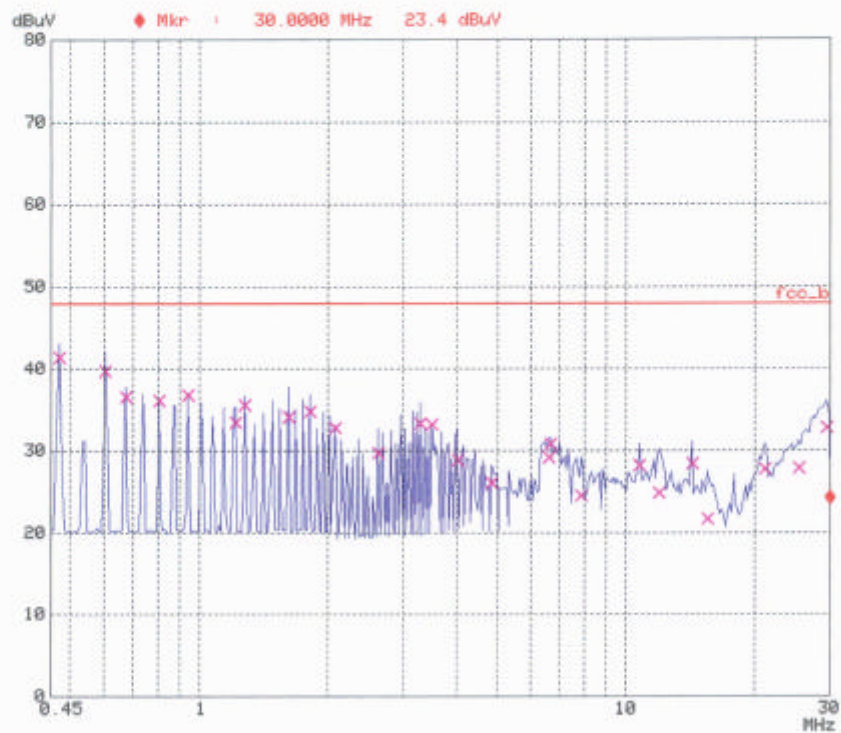
EUT Mode : Recording(5V VITS) mode**LISN Mode : L2****Conduction**

QP
EUT: SLV_D500P
Manuf: SAMSUNG
Op Cond: REC_5V VITS
Operator: K.C.MIN
Test Spec: FCC_OLD
Comment: L2
Date: 01. Feb 03 05:21

Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten Preamp
450k	30M	7k	9k	PK	1ms	10dBLN OFF

Final Measurement: x QP
Meas Time: 1 s
Subranges: 25
Acc Margin: 30dB



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5) EUT Mode : DVD Play mode

Frequency [MHz]	Line	Meter reading (a)	Total Loss (b) [dB]	Results (a) + (b)	Limits	Margin
		QP		QP	QP	QP
		[dBuV]		[dBuV]	[dBuV]	[dB]
0.471	Neutral	40.9	0.2	41.1	48.0	6.9
0.737	Live	42.2	0.2	42.4	48.0	5.6
1.010	Live	41.5	0.2	41.7	48.0	6.4
1.346	Live	42.0	0.2	42.2	48.0	5.8
1.612	Live	43.8	0.3	44.1	48.0	3.9
3.964	Live	40.1	0.1	40.2	48.0	7.8
6.113	Live	36.3	0.1	36.4	48.0	11.6
7.457	Live	31.2	0.1	31.3	48.0	16.7
10.544	Live	31.1	0.3	31.4	48.0	16.6
24.656	Neutral	31.7	0.4	32.1	48.0	15.9
28.821	Live	38.0	0.7	38.7	48.0	9.3

* QP : Quasi-peak

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

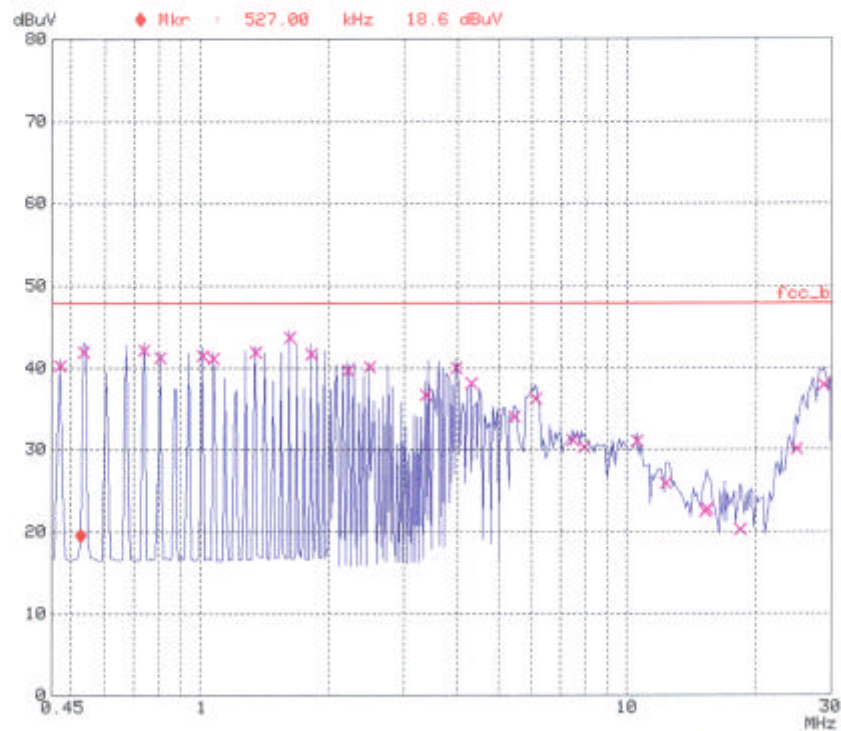
EUT Mode : DVD Play mode**LISN Mode : L1****Conduction**

QP
EUT: SLV_D500P
Manuf: SAMSUNG
Op Cond: DVD_PLAY
Operator: K.C.MIN
Test Spec: FCC_OLD
Comment: L!
Date: 31. Jan 03 10:59

Scan Settings (1 Range)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
450k	30M	7k	9k	PK	1ms	10dBLN	OFF

Final Measurement: x QP
Meas Time: 1 s
Subranges: 25
Acc Margin: 30dB



PAGE 1

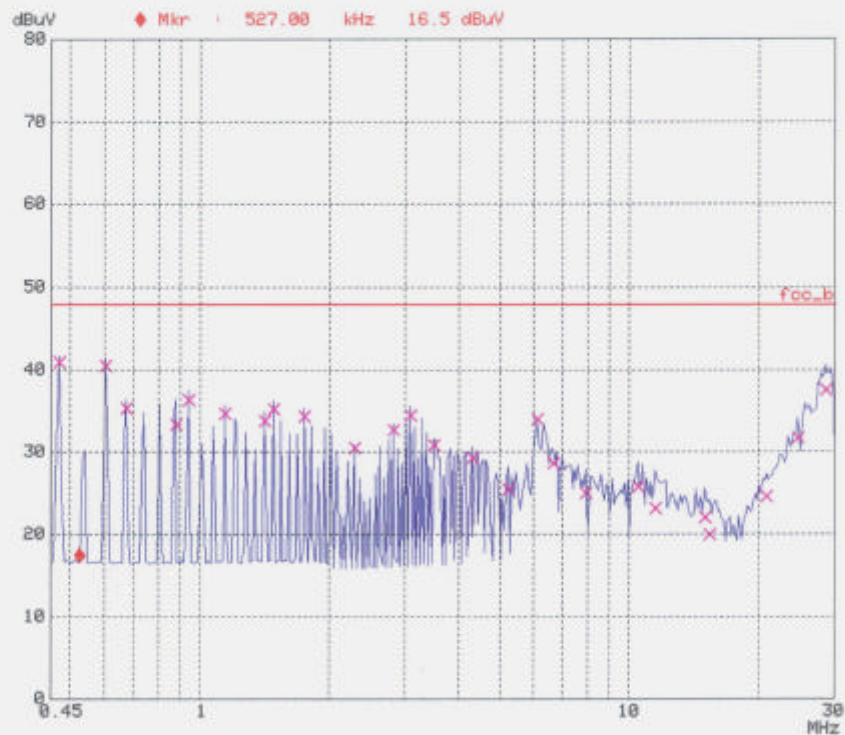
EUT Mode : DVD Play mode

LISN Mode : L2

Conduction
QP
EUT: SLV_D500P
Manuf: SAMSUNG
Op Cond: DVD_PLAY
Operator: K.C.MIN
Test Spec: FCC_OLD
Comment: L2
Date: 31. Jan 03 11:17

Scan Settings (1 Range)
|----- Frequencies -----| |----- Receiver Settings -----|
Start Stop Step IF BW Detector M-Time Atten Preamp
450k 30M 7k 9k PK 1ms 10dBLN OFF

Final Measurement: x QP
Meas Time: 1 s
Subranges: 25
Acc Margin: 30dB



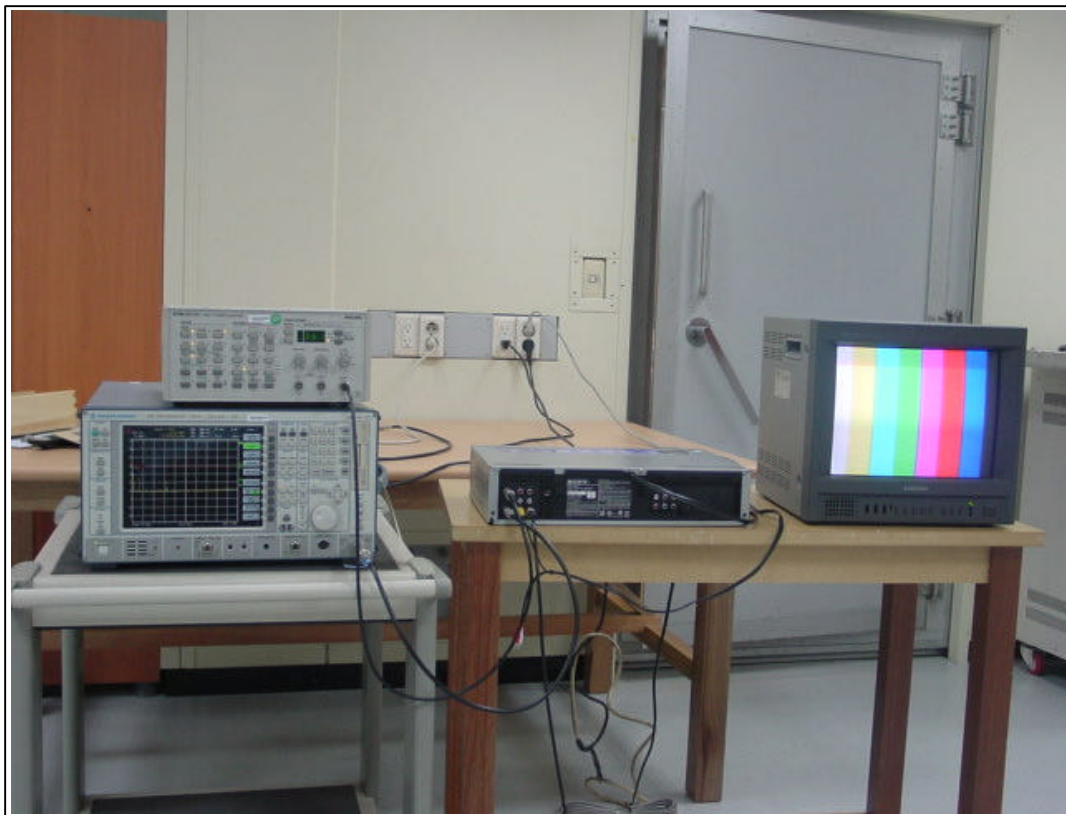
PAGE 1

3.3 OUTPUT SIGNAL LEVEL MEASUREMENT

3.3.1 Test Procedure

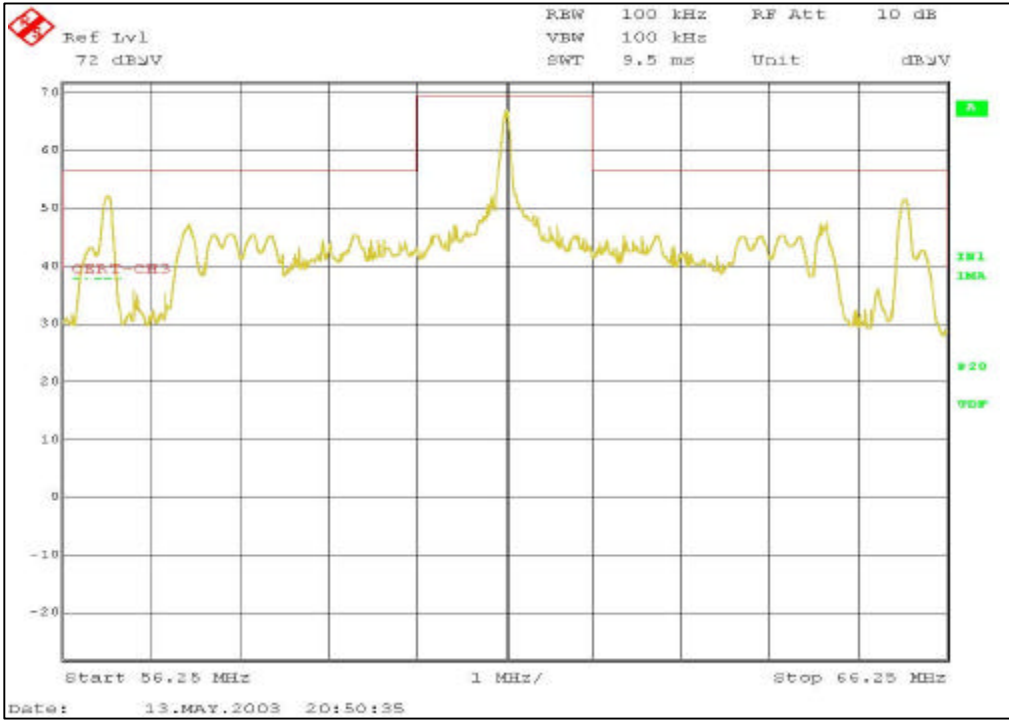
Configure the EUT System in accordance with ANSI C63.4-1992 section 12.2. The RF output terminal is connected to the spectrum analyzer through the matching transformer with a calibrated 75 ohms coaxial cable. Then, the RF output signal level is measured under the EUT condition produces the maximum signal level.

3.3.2 Setup Photograph

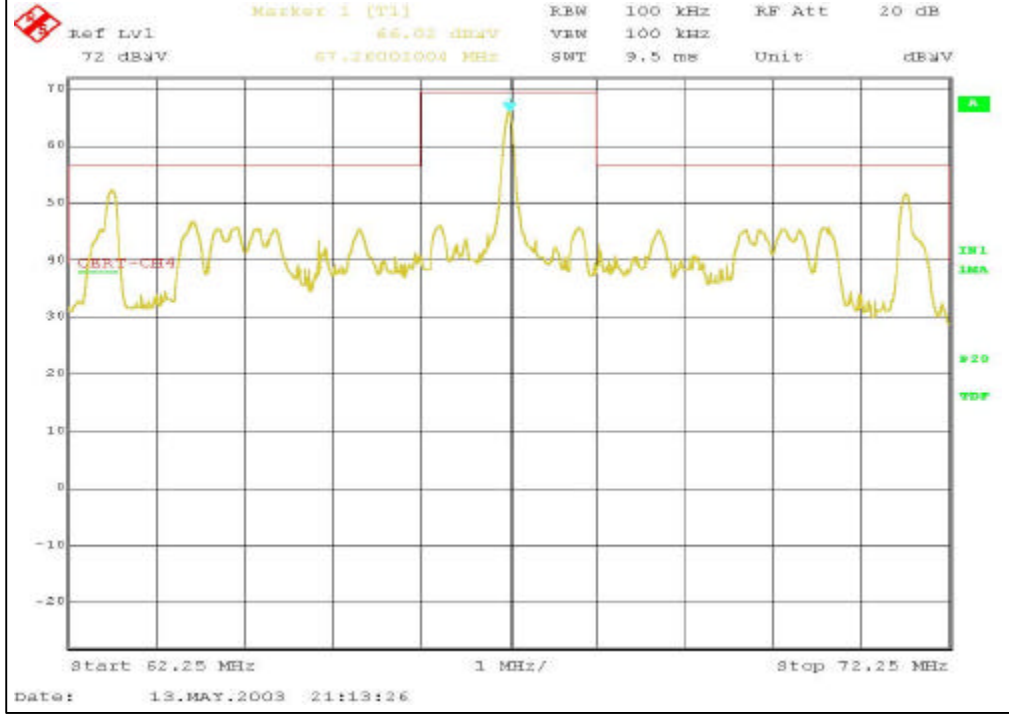


3.3.3 Test Results

Test channel : CH.3



Test channel : CH.4



1) EUT Mode : Playback[VHS Play]

RF Output channel	Measured carrier frequency[MHz]		Matching Pad [dB]	Meter reading [dBuV/50ohm]		RF Output signal level [dBuV/75ohm]			
	Visual	Aural		Visual	Aural	Visual	Limit	Aural	Limit
3	61.28	65.79	-	64.11	51.44	64.11	69.54	51.44	56.53
4	67.26	71.77	-	63.77	49.8	63.77	69.54	49.8	56.53

* Matching Pad Loss is included in Meter reading

2) EUT Mode : Recording / VITS 1Vp-p

RF Output channel	Measured carrier frequency[MHz]		Matching Pad [dB]	Meter reading [dBuV/50ohm]		RF Output signal level [dBuV/75ohm]			
	Visual	Aural		Visual	Aural	Visual	Limit	Aural	Limit
3	61.28	65.79	-	64.25	50.58	64.25	69.54	50.58	56.53
4	67.26	71.77	-	63.85	49.96	63.85	69.54	49.96	56.53

* Matching Pad Loss is included in Meter reading

3) EUT Mode : Recording / VITS 5Vp-p

RF Output channel	Measured carrier frequency[MHz]		Matching Pad [dB]	Meter reading [dBuV/50ohm]		RF Output signal level [dBuV/75ohm]			
	Visual	Aural		Visual	Aural	Visual	Limit	Aural	Limit
3	61.28	65.789	-	63.94	50.53	63.94	69.54	50.53	56.53
4	67.26	71.77	-	63.86	50.14	63.86	69.54	50.14	56.53

* Matching Pad Loss is included in Meter reading

4) EUT Mode : Recording / NTSC TV Signal

RF Output channel	Measured carrier frequency[MHz]		Matching Pad [dB]	Meter reading [dBuV/50ohm]		RF Output signal level [dBuV/75ohm]			
	Visual	Aural		Visual	Aural	Visual	Limit	Aural	Limit
3	61.28	65.79	-	64.27	51.54	64.27	69.54	51.54	56.53
4	67.26	71.77	-	64.16	50.74	64.16	69.54	50.74	56.53

* Matching Pad Loss is included in Meter reading

5) EUT Mode : DVD Play

RF Output channel	Measured carrier frequency[MHz]		Matching Pad [dB]	Meter reading [dBuV/50ohm]		RF Output signal level [dBuV/75ohm]			
	Visual	Aural		Visual	Aural	Visual	Limit	Aural	Limit
3	61.28	65.79	-	64.2	50.61	64.2	69.54	50.61	56.53
4	67.26	71.77	-	63.91	49.92	63.91	69.54	49.92	56.53

* Matching Pad Loss is included in Meter reading

3.4 OUTPUT TERMINAL CONDUCTED SPURIOUS EMISSION MEASUREMENT

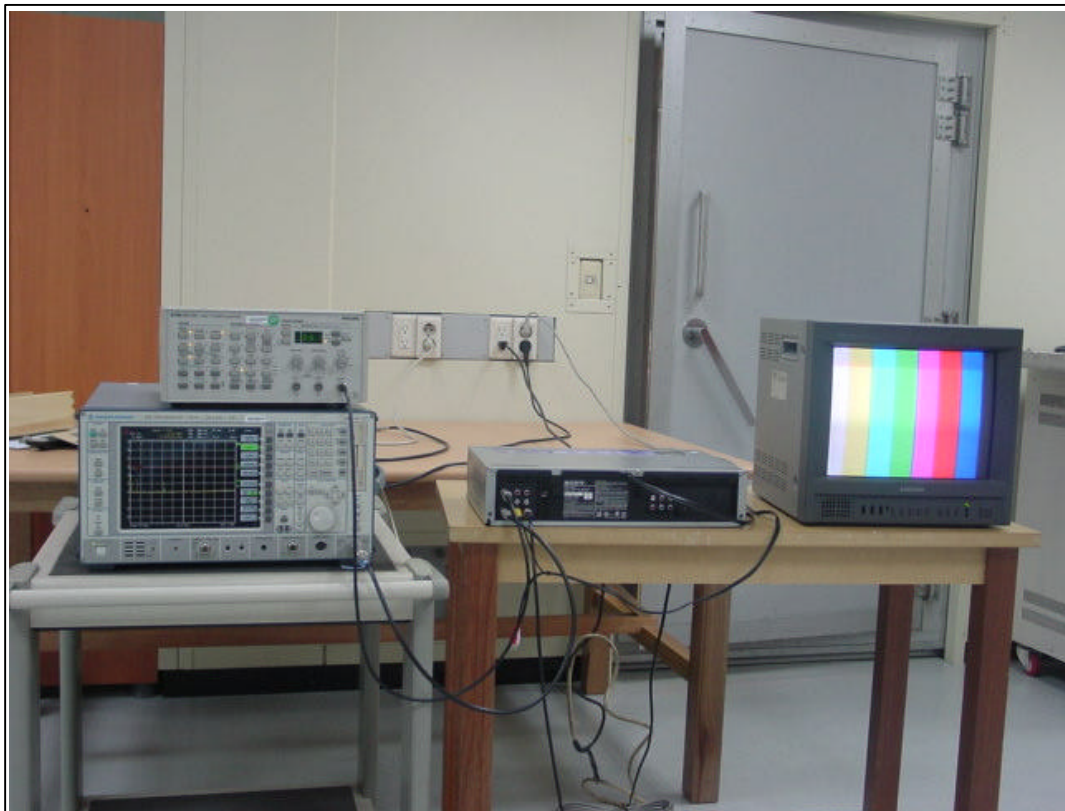
3.4.1 Test Procedure

The EUT system and measuring instrument are set up in the same manner of the output signal measurement.

The spectrum was scanned from 30MHz to more than 4.6MHz below the visual carrier frequency, and from more than 7.4MHz above the visual carrier frequency to 1000MHz.

Then, the significant spurious emissions are measured at the output terminal.

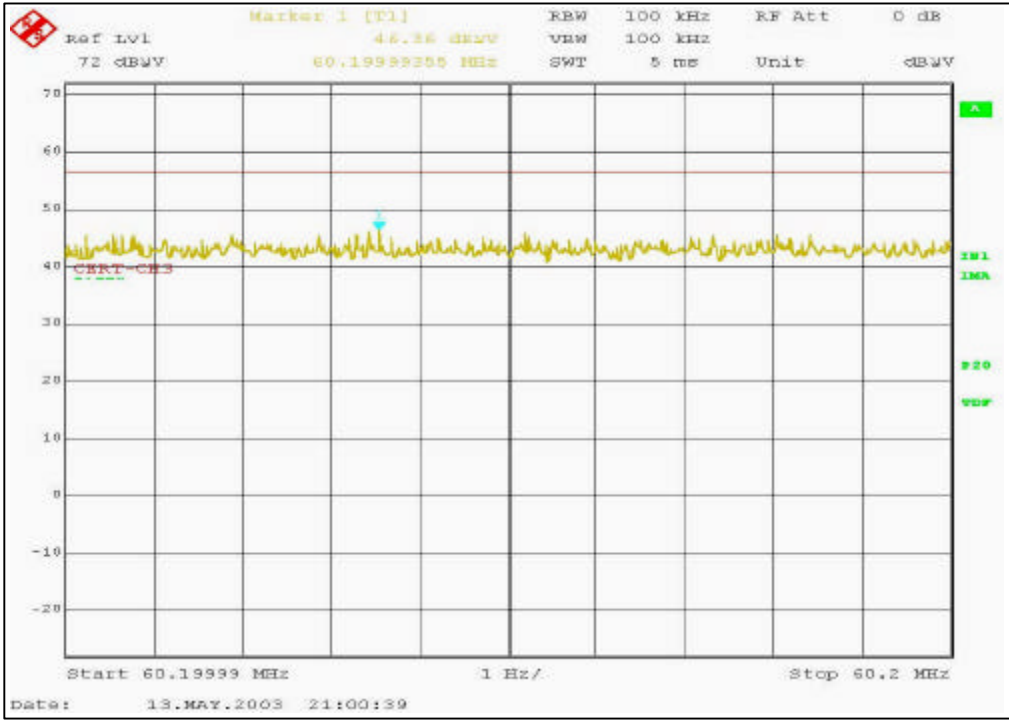
3.4.2 Setup Photograph



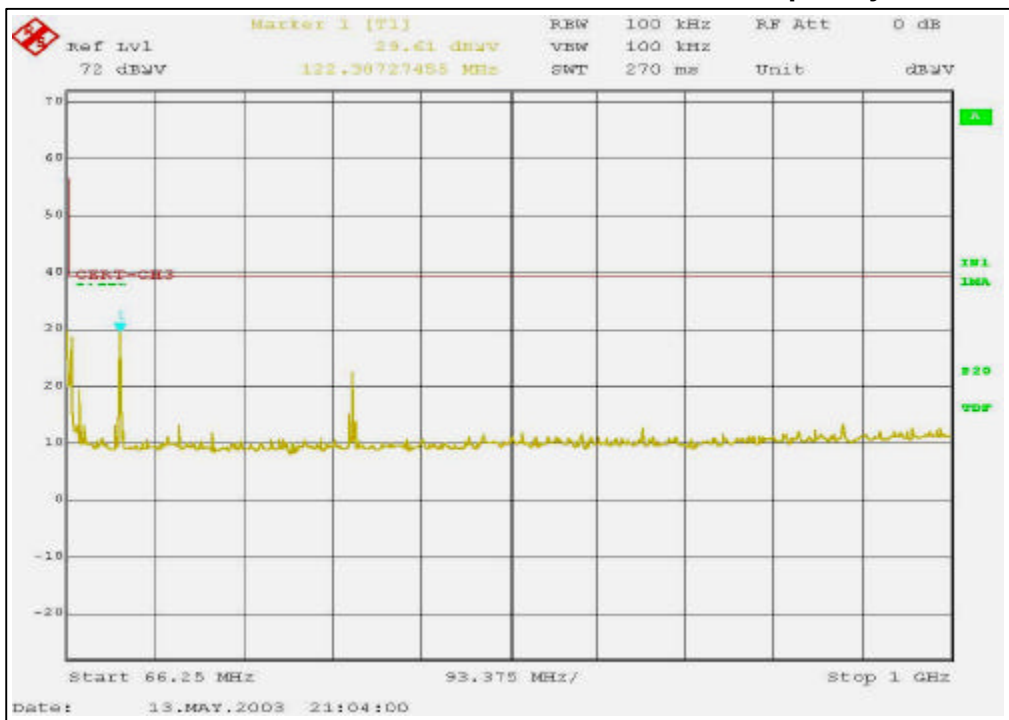
3.4.3 Test Results

Test channel : 3

**EUT mode : Playback / VITS 1Vp-p / VITS 5Vp-p / NTSC TV Signal
From 30MHz to more than 4.6MHz below the visual carrier frequency**



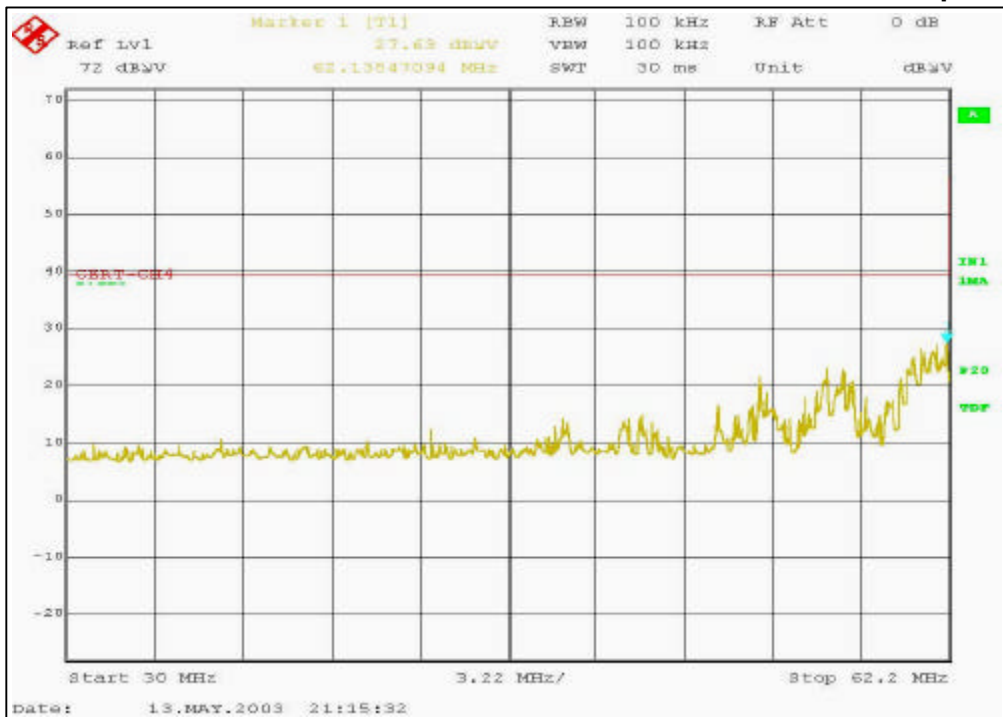
From more than 7.4MHz above the visual carrier frequency



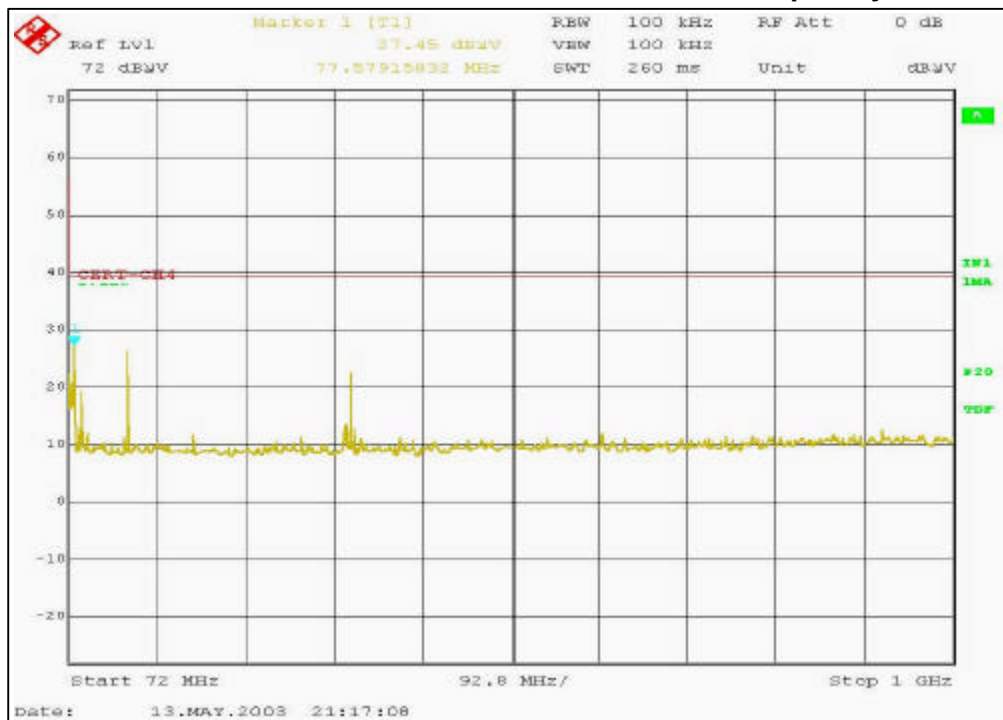
Test channel : 4

EUT mode : Playback / VITS 1Vp-p / VITS 5Vp-p / NTSC TV Signal

From 30MHz to more than 4.6MHz below the visual carrier frequency



From more than 7.4MHz above the visual carrier frequency



3.5 ANTENNA TRANSFER SWITCH ISOLATION MEASUREMENT

3.5.1 Test Procedure

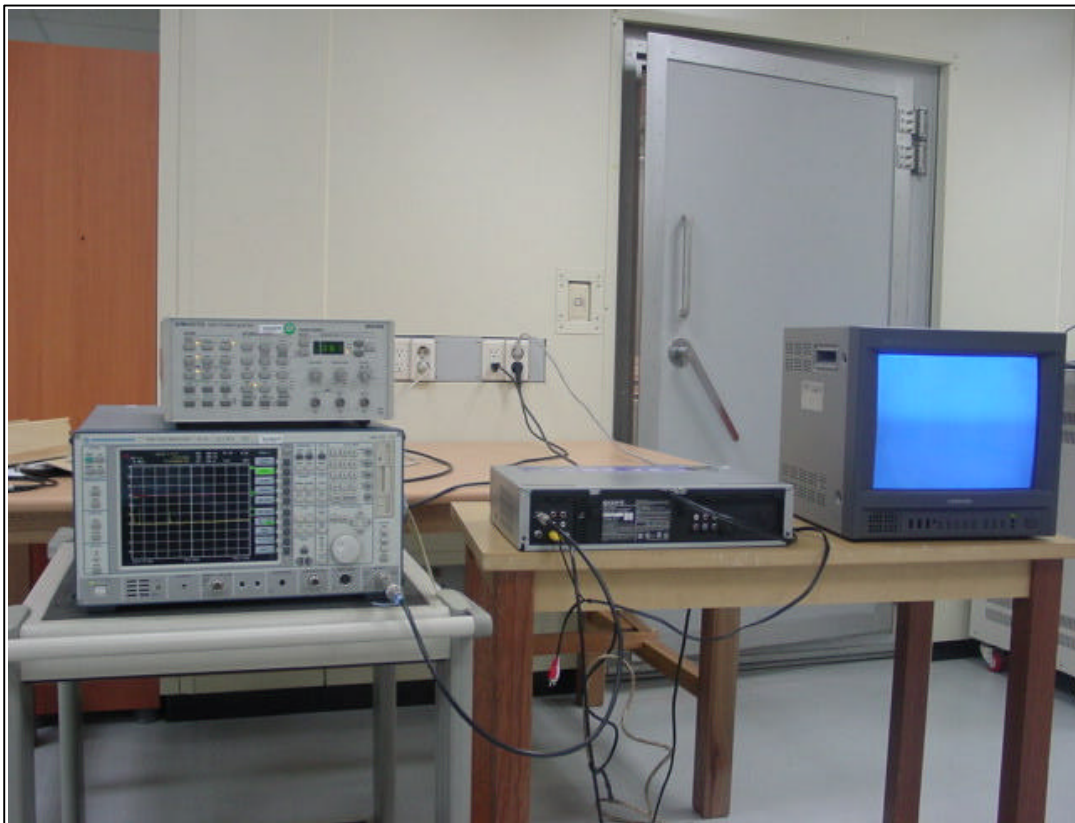
Configure the EUT System in accordance with ANSI C63.4-1992 section 12.2.

The RF output terminal is terminated in the proper impedance.

The ANT input terminal is connected to the spectrum analyzer through the matching transformer with a calibrated 75 ohms coaxial cable.

Then, the RF output leakage level is measured under the EUT condition produces the maximum signal level.

3.5.2 Setup Photograph



3.5.3 Test Results

1) EUT Mode : Playback[VHS Play]

RF Output channel	Measured frequency [MHz]	Meter reading [dBuV/50ohm]	Matching Pad [dB]	Results [dBuV/75ohm]	Limits [dBuV/75ohm]
3	61.28	-1.16	7.5	6.34	9.5
4	67.26	-1.22	7.5	6.28	9.5

2) EUT Mode : Recording / VITS 1Vp-p

RF Output channel	Measured frequency [MHz]	Meter reading [dBuV/50ohm]	Matching Pad [dB]	Results [dBuV/75ohm]	Limits [dBuV/75ohm]
3	61.28	-1.11	7.5	6.39	9.5
4	67.26	-1.38	7.5	6.12	9.5

3) EUT Mode : Recording / VITS 5Vp-p

RF Output channel	Measured frequency [MHz]	Meter reading [dBuV/50ohm]	Matching Pad [dB]	Results [dBuV/75ohm]	Limits [dBuV/75ohm]
3	61.28	-1.1	7.5	6.4	9.5
4	67.26	-1.32	7.5	6.18	9.5

4) EUT Mode : DVD Play

RF Output channel	Measured frequency [MHz]	Meter reading [dBuV/50ohm]	Matching Pad [dB]	Results [dBuV/75ohm]	Limits [dBuV/75ohm]
3	61.28	-0.9	7.5	6.7	9.5
4	67.26	-1.01	7.5	6.49	9.5