EMC TEST REPORT

Project No. : LBE031059

Product : Digital Camcorder

Model No. : SCD5000

Date of test : May 7 ~ 9, 2003

Issued Date : May 9, 2003

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1. Introduction & Summary

1.1 Description of the EUT

Applicant	SAMSUNG ELECTRONICS Co., Ltd.
Project Number	LBE031059
Equipment Under Test	Digital Camcorder
Trade Name	SAMSUNG
Model Number	SCD5000
Variant Model	None
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

Test Planning and Test Mode
In each measurement were performed under following three EUT operation modes.

1) Camera play mode
Playback the video tape that is recorded NTSC Color pattern signal.

2) Camera rec mode
A 1V peak-to-peak VITS signal was supplied through the video input connector for recording.

3) Camcorder play mode
Playback the video tape that is recorded NTSC Color pattern signal.

1.4 Test rule and Procedure

FCC Rule Part 15, Subpart B : Unintentional Radiators
TV Interface Devices.
Test Procedure : ANSI C63.4-1992

1.5 Test Summary

Test item	Applied Standards	Result
AC POWERLINE CONDUCTED EMISSION	ANSI C63.4-1992	Pass
RADIATED EMISSION	ANSI C63.4-1992	Pass

* N/A : Test not applicable

2. Test Results

2.1 AC POWERLINE CONDUCTED EMISSION MEASUREMENT

1) Reference Rule and Specification

FCC Rule Part 15, Section 15.107(a)

2) Test Procedure

2-1) Configurate the EUT System in accordance with ANSI C63.4-1992 section 7 and 12.2. See also the block diagram of tested device configuration in this report. Connect the EUT's AC line cord to the EUT port of LISN.

2-2) 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.

2-3) Activates the EUT system
Using a calibrated coaxial cable, the TEST RECEIVER is connected to the measuring port of the LISN for EUT.

2-4) To the find out an EUT condition procedures the maximum emission, the position of cables, EUT operations mode are checked under normal usage of EUT. Then, the emission are scanned from 0.15MHz to 30MHz relative to the limit are recorded.

3) Test Results

A) EUT Mode : Digital Camera REC mode

Frequency [MHz]	Meter reading(a) LISN Port	Total Loss(b) [dB]	Results (a) + (b) [dBuV]	Limits [dBuV]	Margin [dB]
0.180	51.7	0.20	51.9	**64.5**	12.6
0.245	47.8	0.10	47.9	**61.9**	14.0
0.305	45.1	0.10	45.2	**60.1**	14.9
4.630	34.3	0.10	34.4	**56.0**	21.6
5.180	32.5	0.20	32.7	**60.0**	27.3
6.945	32.5	-0.10	32.4	**60.0**	27.6
7.250	32.9	0.00	32.9	**60.0**	27.1

* Margin = Limits - Results

B) EUT Mode : Digital Camera play mode

Frequency [MHz]	Meter reading(a) LISN Port	Total Loss(b) [dB]	Results (a) + (b) [dBuV]	Limits [dBuV]	Margin [dB]
0.185	53.3	0.20	53.5	**64.3**	10.8
0.245	48.4	0.10	48.5	**61.9**	13.4
0.305	44.5	0.10	44.6	**60.1**	15.5
0.335	40.7	0.10	40.8	**59.3**	18.5
0.915	31.0	0.10	31.1	**56.0**	24.9
2.080	30.0	0.10	30.1	**56.0**	25.9
5.250	29.8	0.20	30.0	**60.0**	30.0
5.495	29.6	0.10	29.7	**60.0**	30.3

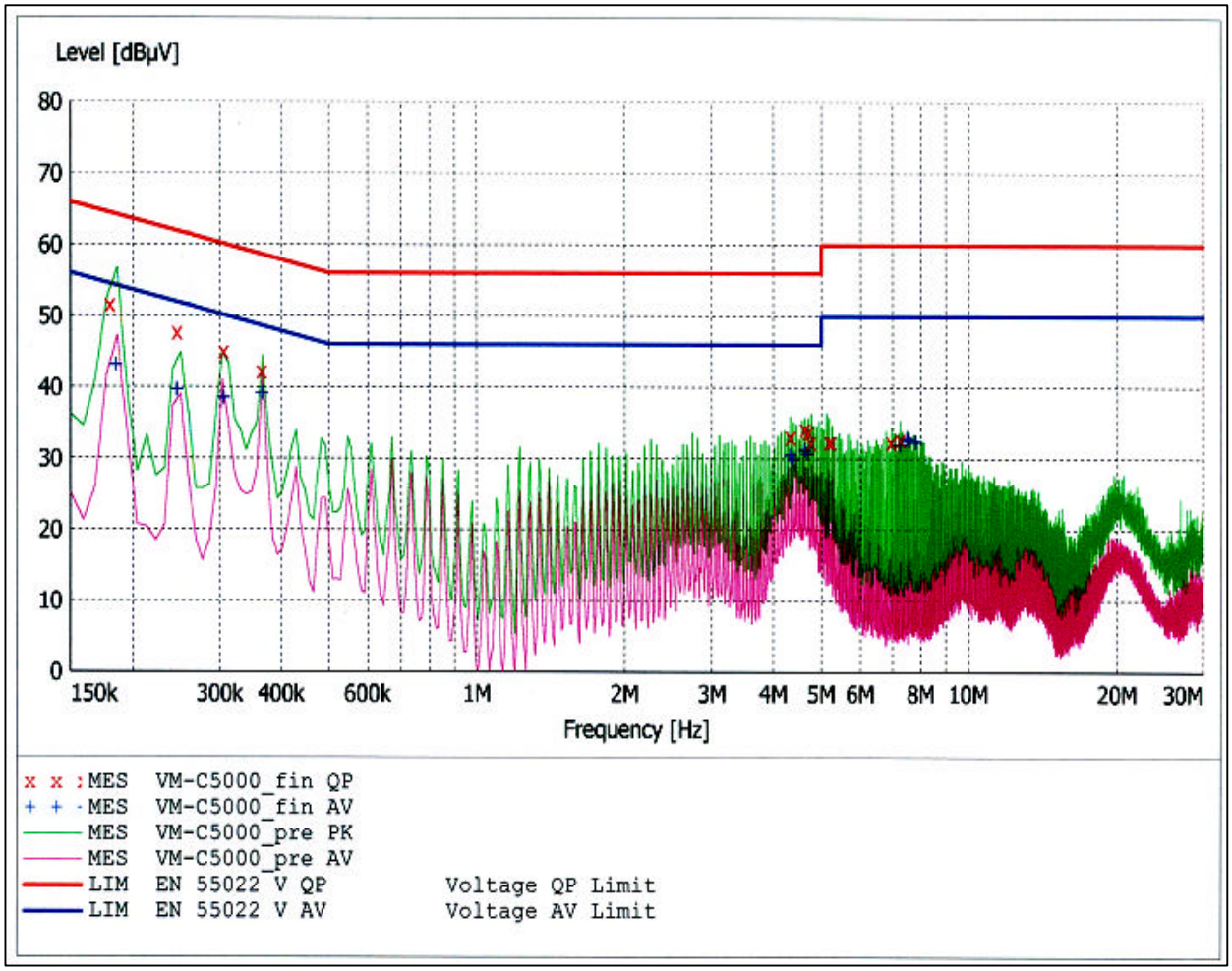
C) EUT Mode : Digital Camcorder play mode

Frequency [MHz]	Meter reading(a) LISN Port	Total Loss(b) [dB]	Results (a) + (b) [dBuV]	Limits [dBuV]	Margin [dB]
0.180	50.6	0.20	50.8	**64.5**	13.7
0.245	46.2	0.10	46.3	**61.9**	15.6
0.305	44.3	0.10	44.4	**60.1**	15.7
0.365	43.0	0.10	43.1	**58.6**	15.5
4.330	32.9	0.10	33.0	**56.0**	23.0
5.245	32.6	0.20	32.8	**60.0**	27.2
5.305	32.1	0.10	32.2	**60.0**	27.8
6.765	32.4	-0.10	32.3	**60.0**	27.7
7.135	31.3	-0.10	31.2	**60.0**	28.8

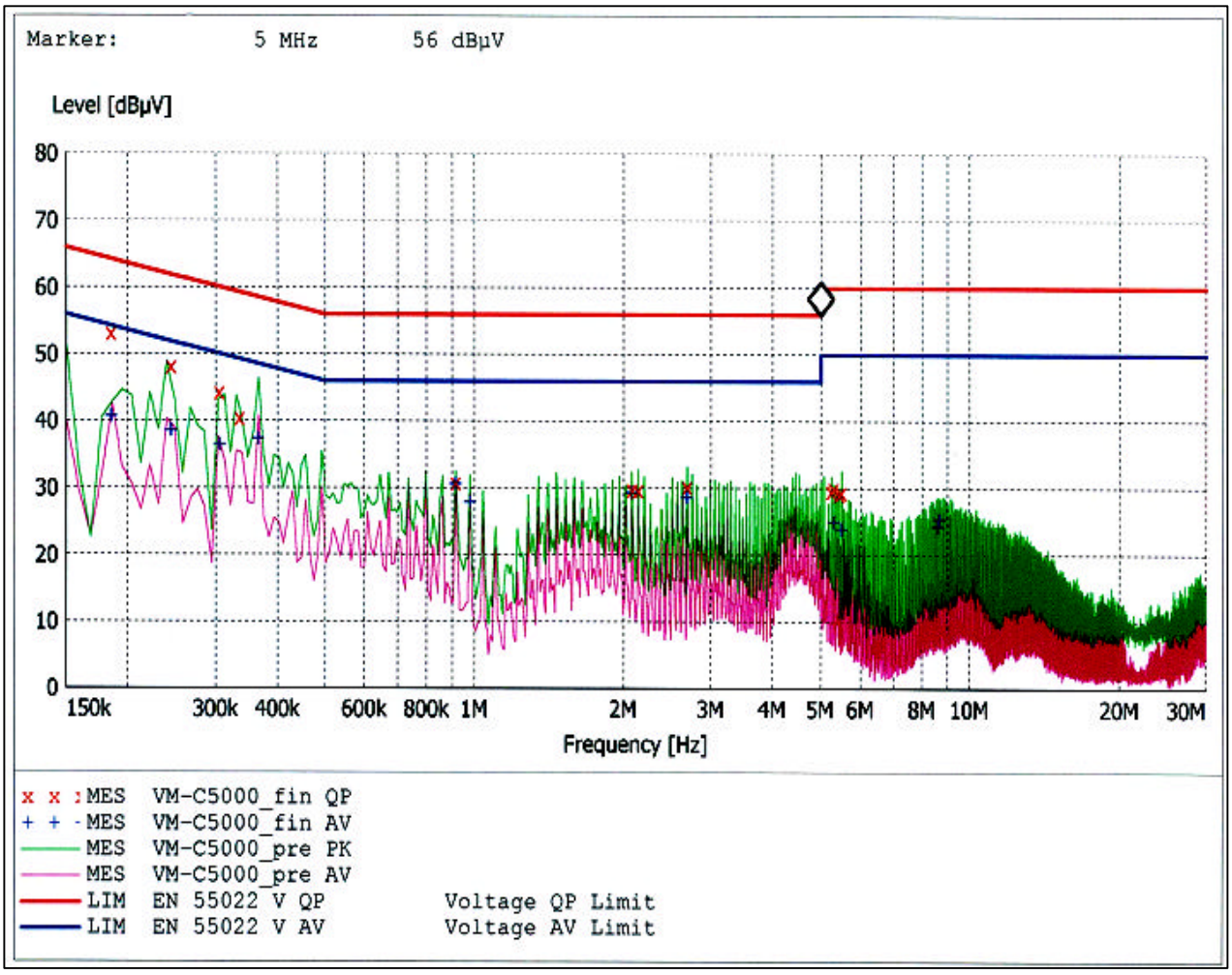
* Margin = Limits - Results

4) Graph

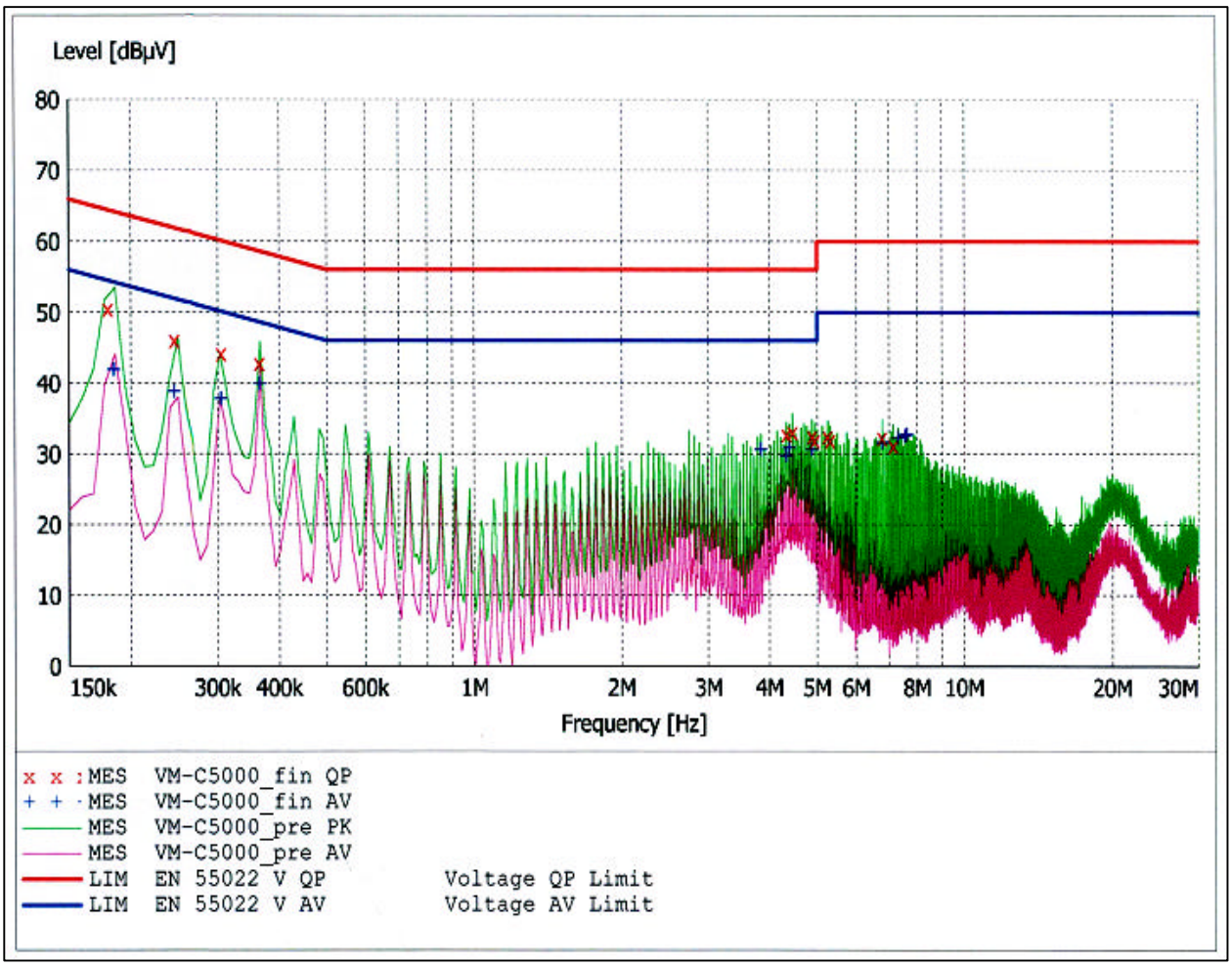
O EUT Mode : Digital Camera REC mode , LISN Mode : Live & Neutral



O EUT Mode : Digital Camera play mode , LISN Mode : Live & Neutral



O EUT Mode :Digital Camcorder play mode , LISN Mode : Live & Neutral



2.2 RADIATED EMISSION MEASUREMENT

1) Reference Rule and Specification
FCC Rule Part 15, Section 15.109(a) and (c)

2) Test Procedure

2-1) Configurate the EUT System in accordance with ANSI C63.4-1992section 8 and 12.2. See also the block diagram and photographs of tested configuration for radiated emission measurement in this report.

2-2) 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.

2-3) Activates the EUT system. To find out the emission of the EUT system, preliminary radiated measurement are performed at a closer distance than that specified for final radiated measurement.

2-4) To determine the EUT condition produces the maximum emission, the cable positions are checked under normal usage. In final compliance test, the maximum emissions recorded above are measured at the specified distance.

3) Test Results

A) EUT Mode : Digital Camera play mode

Frequency [MHz]	Meter reading (a) [dBμV]	Antenna Pol. [H, V]	Total Loss(b) [dB]	Results (a) + (b) [dBμV/m]	Limits [dBμV/m]
38.900	12.7	V	13.5	26.2	**30.0**
54.000	12.8	V	6.9	19.7	**30.0**
84.500	11.4	H	8.4	19.8	**30.0**
96.700	11.5	H	11.6	23.1	**30.0**
162.500	13.0	H	10.9	23.9	**30.0**
230					
-		Margin > 10dBuV			
1000					

B) EUT Mode : Digital Camcorder REC mode

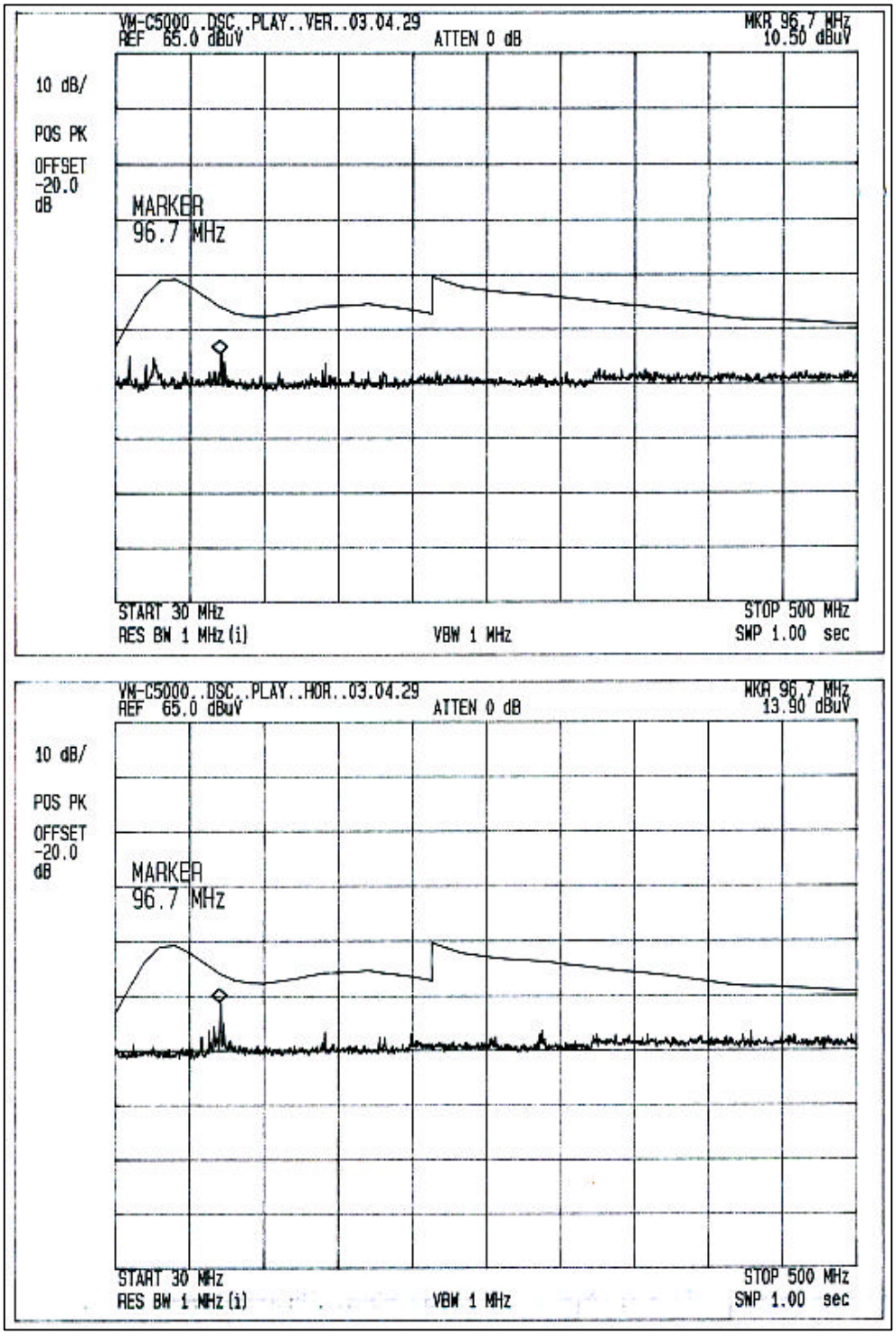
Frequency [MHz]	Meter reading (a) [dBμV]	Antenna Pol. [H, V]	Total Loss(b) [dB]	Results (a) + (b) [dBμV/m]	Limits [dBμV/m]
54.000	16.1	V	6.9	23.0	**30.0**
162.500	11.0	V	10.9	21.9	**30.0**
189.300	9.0	H	10.4	19.4	**30.0**
189.800	9.9	V	10.4	20.3	**30.0**
230					
-		Margin > 10dBuV			
1000					

*Antenna Polarization : H: Horizontal, V: Vertical

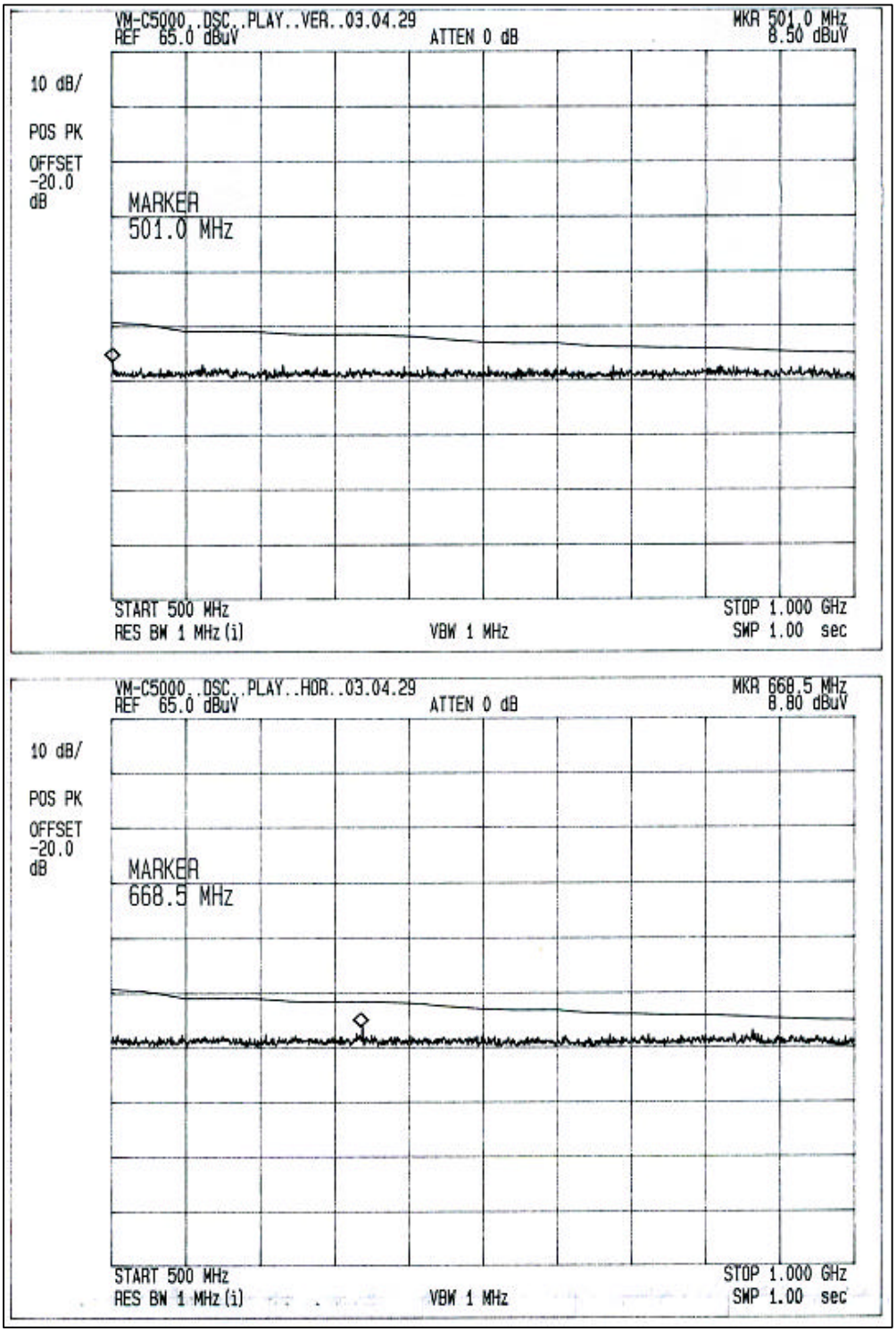
4) Graph

O EUT Mode : Digital Camera play mode

[Test range : 30 - 500MHz]

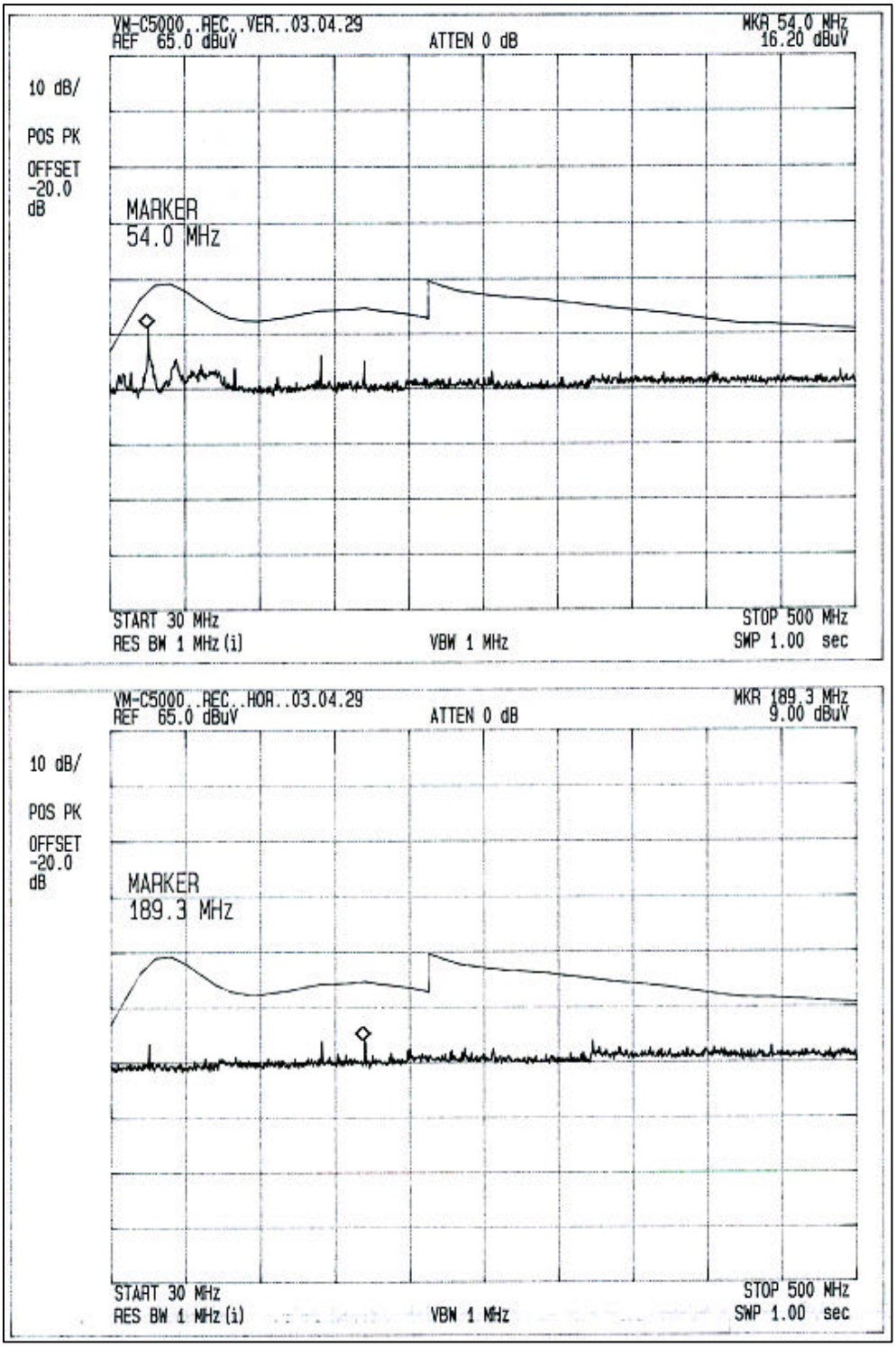


[Test range : 500 - 1000MHz]

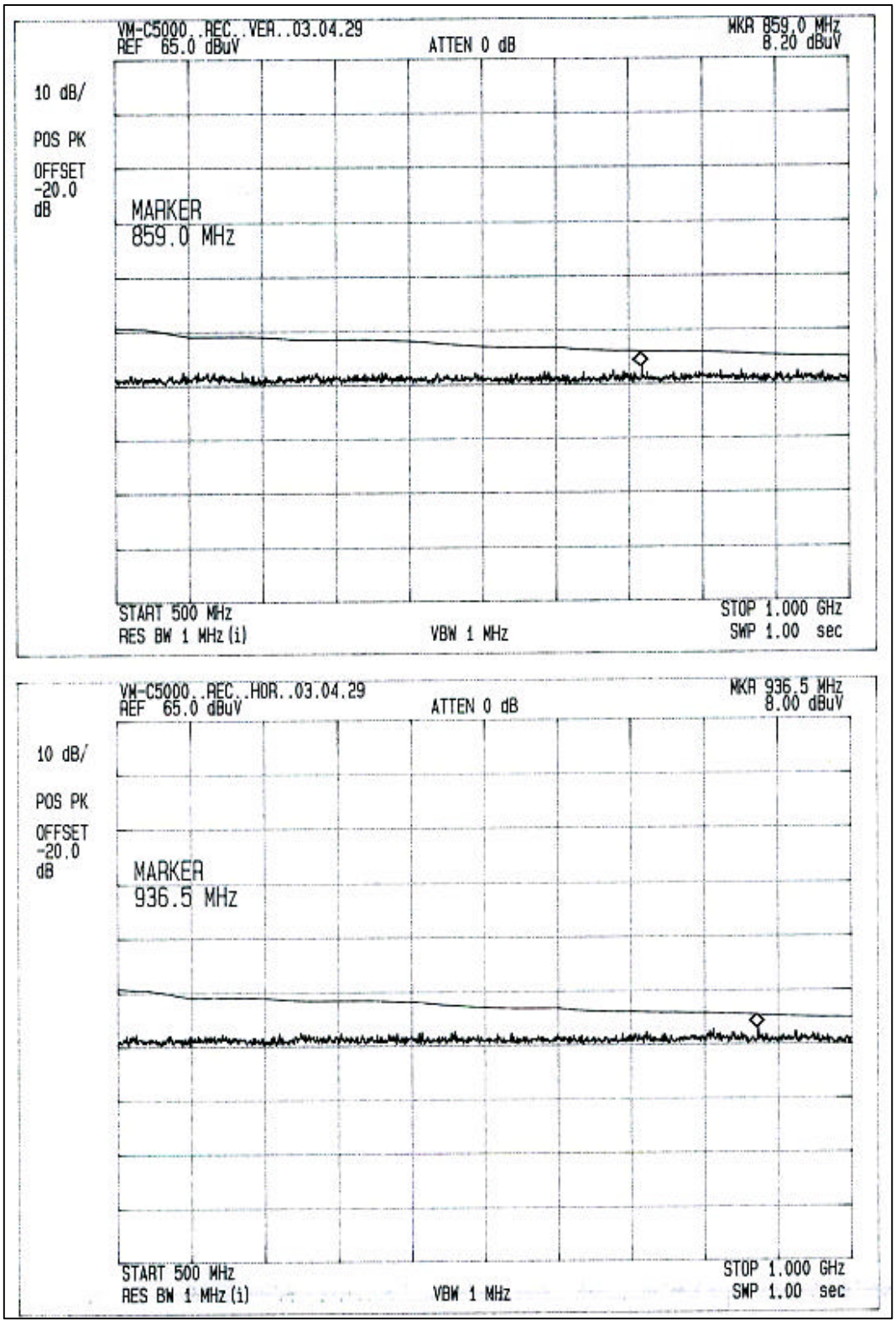


O EUT Mode : Digital Camcorder REC mode

[Test range : 30 - 500MHz]



[Test range : 500 - 1000MHz]



3. Test equipment

Equipment	Model No.	Serial No.	Makers	Calibration Last calibration
Spectrum analyzer	8566B	3340A21744	H.P	03/03/04, 12Months
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	839809/002	R & S	02/06/27, 12Months
	Firmware versions : Main 1.08, OTP 02.01, GRA 02.03			
L.I.S.N	KNW-404	8-507-5	Kyoritsu	03/03/23, 12Months
Bi-Log Antenna	CBL6112B	2767	SCHAFFNER	N/A