EMC TEST REPORT

Project No. : LBE031244

Product : Digital Camcorder

Model No. : SCD99

Date of test : May 21 ~ 29, 2003

Issued Date : June 4, 2003

Tested by:
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1. Introduction & Summary

1.1 Description of the EUT

Applicant	SAMSUNG ELECTRONICS Co., Ltd.
Project Number	LBE031244
Equipment Under Test	Digital Camcorder
Trade Name	SAMSUNG
Model Number	SCD99
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.

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1.3 Test mode

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

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

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

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

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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.

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3) Test Results

A) Operating Mode : play

Frequency [MHz]	Meter reading(a) LISN Port	Total Loss(b) [dB]	Results (a) + (b) [dBuV]	Limits [dBuV]	Margin [dB]
0.180	52.4	0.2	52.6	**64.5**	11.9
0.185	48.2	0.2	48.4	**64.3**	15.9
0.235	43.8	0.1	43.9	**62.3**	18.4
0.300	42.8	0.1	42.9	**60.2**	17.3
0.360	42.7	0.1	42.8	**58.7**	15.9
1.915	33.3	0.2	33.5	**56.0**	22.5
1.980	33.0	0.2	33.2	**56.0**	22.8
2.875	33.4	0.1	33.5	**56.0**	22.5
4.435	32.9	0.1	33.0	**56.0**	23.0

* Margin = Limits - Results

B) Operating Mode : rec

Frequency [MHz]	Meter reading(a) LISN Port	Total Loss(b) [dB]	Results (a) + (b) [dBuV]	Limits [dBuV]	Margin [dB]
0.170	42.5	0.2	42.7	**65.0**	22.3
0.180	53.6	0.2	53.8	**64.5**	10.7
0.235	44.9	0.1	45.0	**62.3**	17.3
0.295	42.4	0.1	42.5	**60.4**	17.9
0.360	43.9	0.1	44.0	**58.7**	14.7
0.480	33.1	0.1	33.2	**56.3**	23.1
0.780	34.4	0.2	34.6	**56.0**	21.4
0.840	34.6	0.2	34.8	**56.0**	21.2
0.900	34.3	0.2	34.5	**56.0**	21.5
1.980	34.4	0.2	34.6	**56.0**	21.4
2.040	34.4	0.1	34.5	**56.0**	21.5
2.100	33.9	0.2	34.1	**56.0**	21.9

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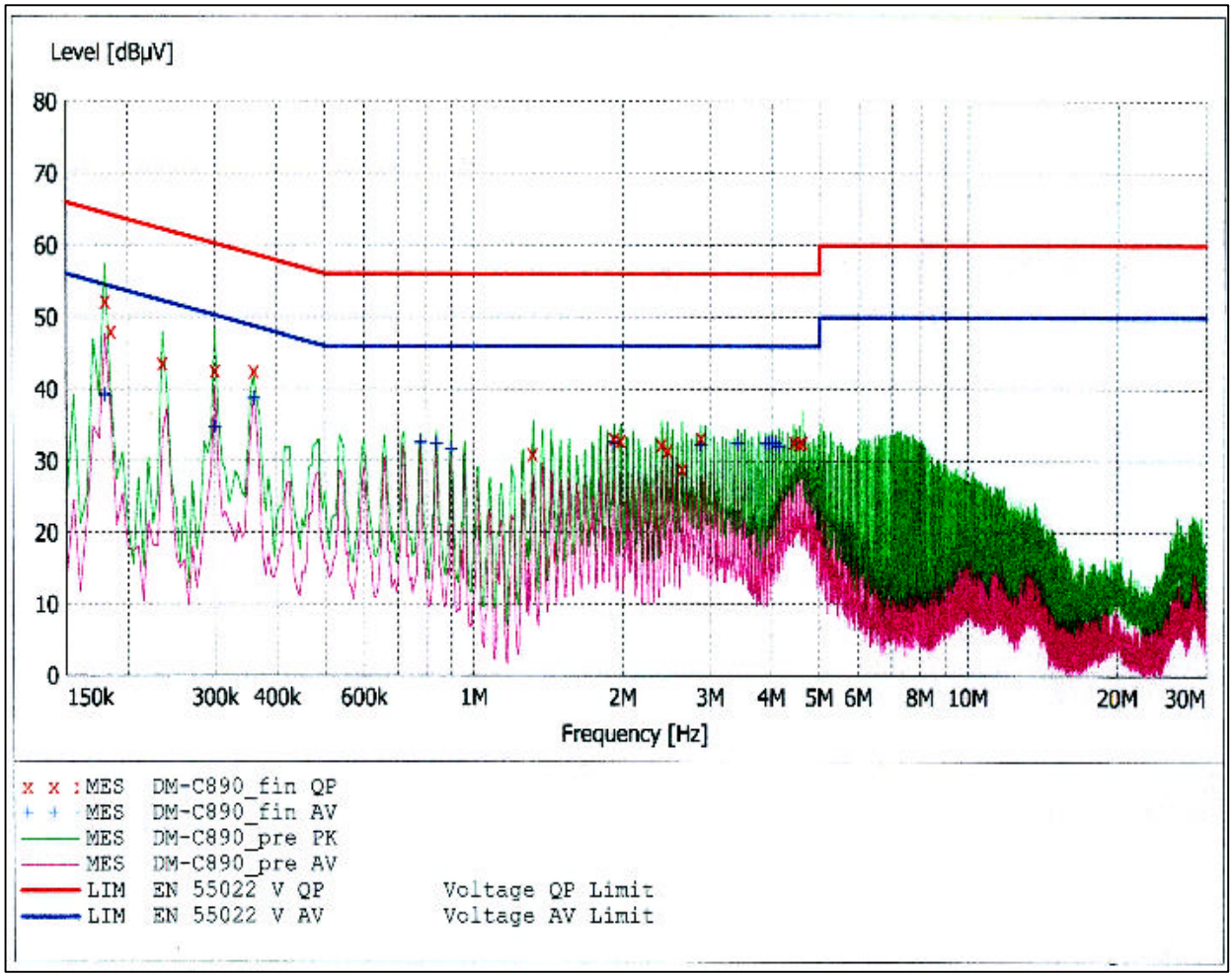
4) Graph

O play mode , LISN Mode : Live & Neutral



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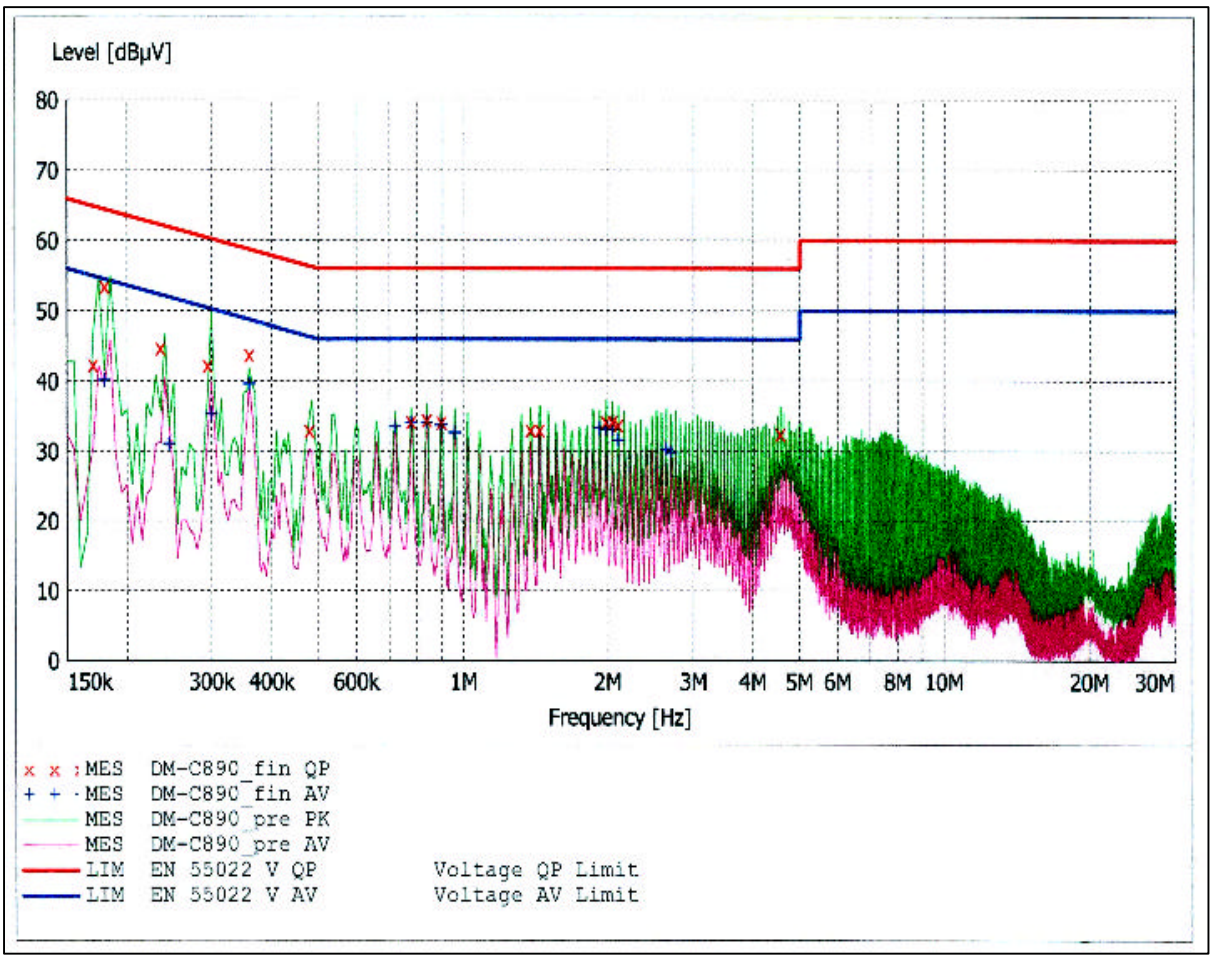
O rec mode , LISN Mode : Live & Neutral



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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.

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3) Test Results

A) Operating Mode : play

Frequency [MHz]	Meter reading (a) [dBμV]	Antenna Pol. [H, V]	Total Loss(b) [dB]	Results (a) + (b) [dBμV/m]	Limits [dBμV/m]
50.200	13.4	V	8.1	21.5	**30.0**
58.200	14.6	V	5.9	20.5	**30.0**
174.800	11.2	V	10.8	22	**30.0**
192.600	12.4	V	10.5	22.9	**30.0**
540.000	10.1	H	23.0	33.1	**37.0**
865.300	8.0	V	26.0	34.0	**37.0**

B) Operating Mode : rec

Frequency [MHz]	Meter reading (a) [dBμV]	Antenna Pol. [H, V]	Total Loss(b) [dB]	Results (a) + (b) [dBμV/m]	Limits [dBμV/m]
71.160	10.9	V	6.0	16.9	**30.0**
179.430	15.0	H	10.8	25.8	**30.0**
209.010	13.6	V	11.1	24.7	**30.0**
227.330	12.7	H	12.1	24.8	**30.0**
289.150	13.7	H	15.5	29.2	**37.0**
334.310	10.5	H	17.0	27.5	**37.0**
397.040	11.3	H	19.2	30.5	**37.0**
576.010	10.3	V	23.0	33.3	**37.0**

*Antenna Polarization : H: Horizontal, V: Vertical

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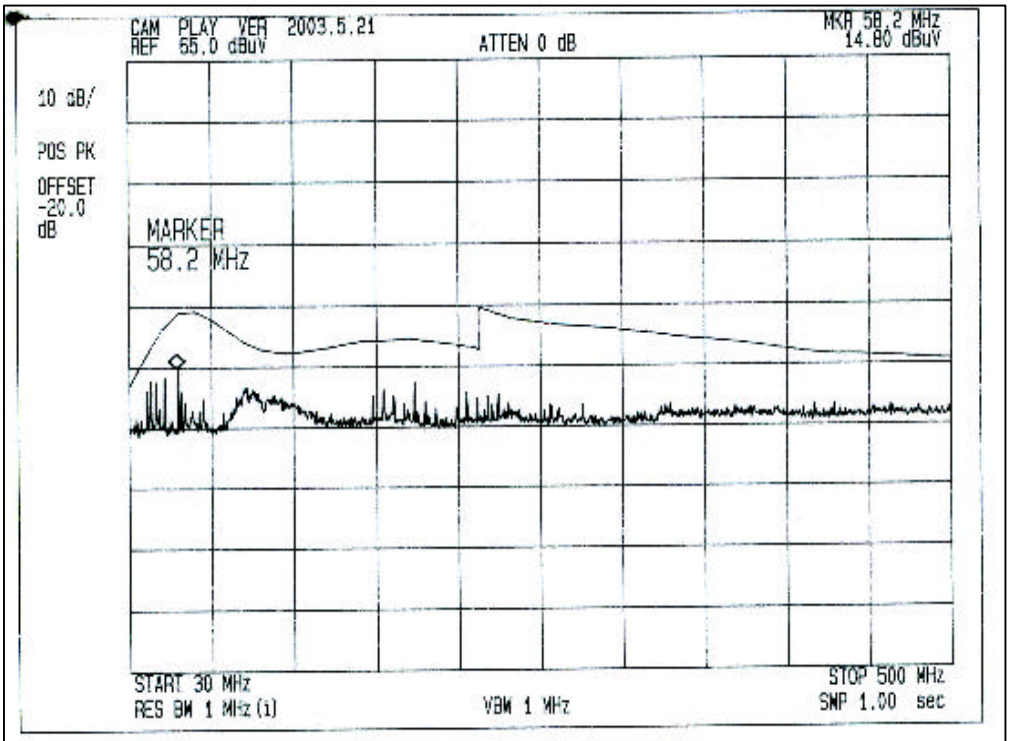
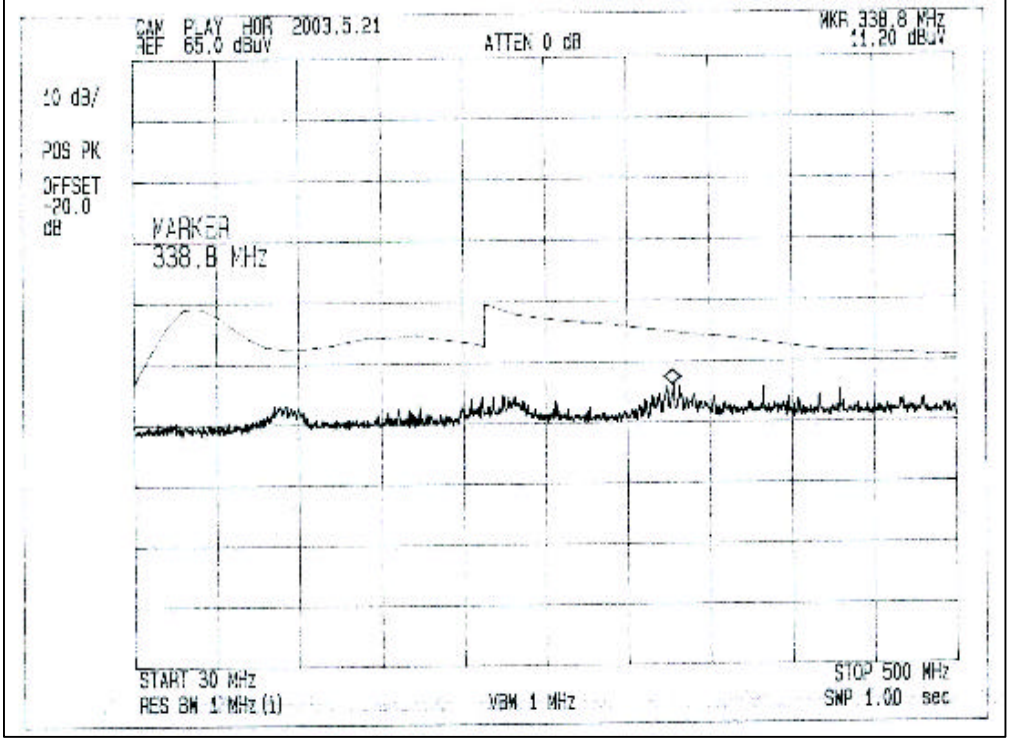
4) Graph

O Operating Mode : play

[Test range : 30 - 500MHz]





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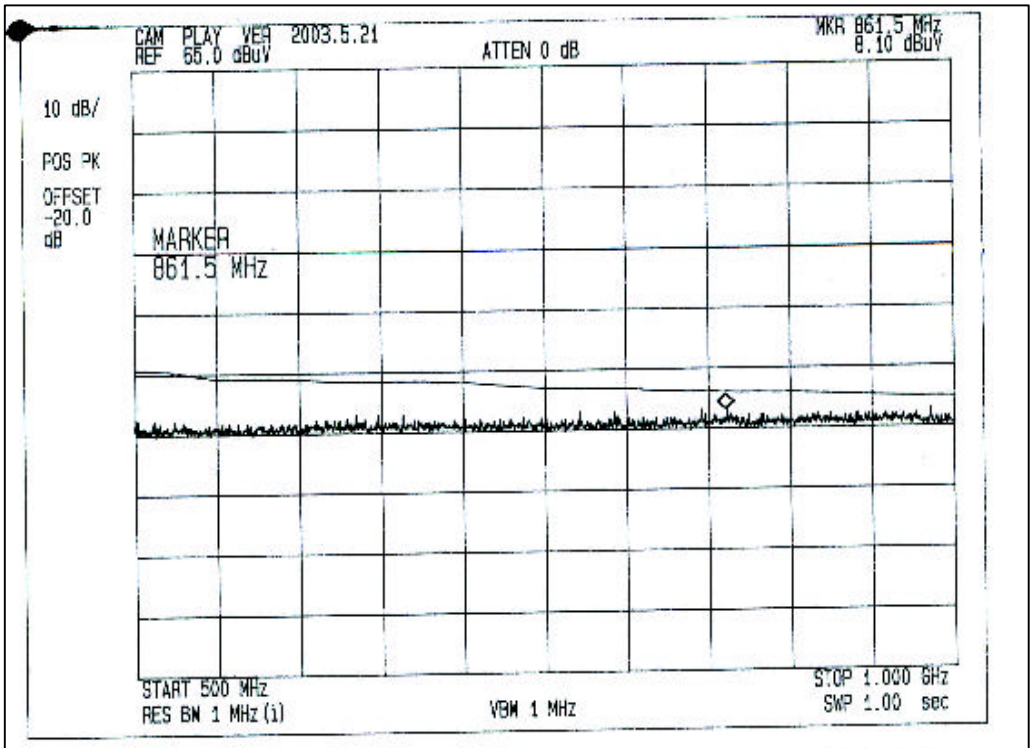
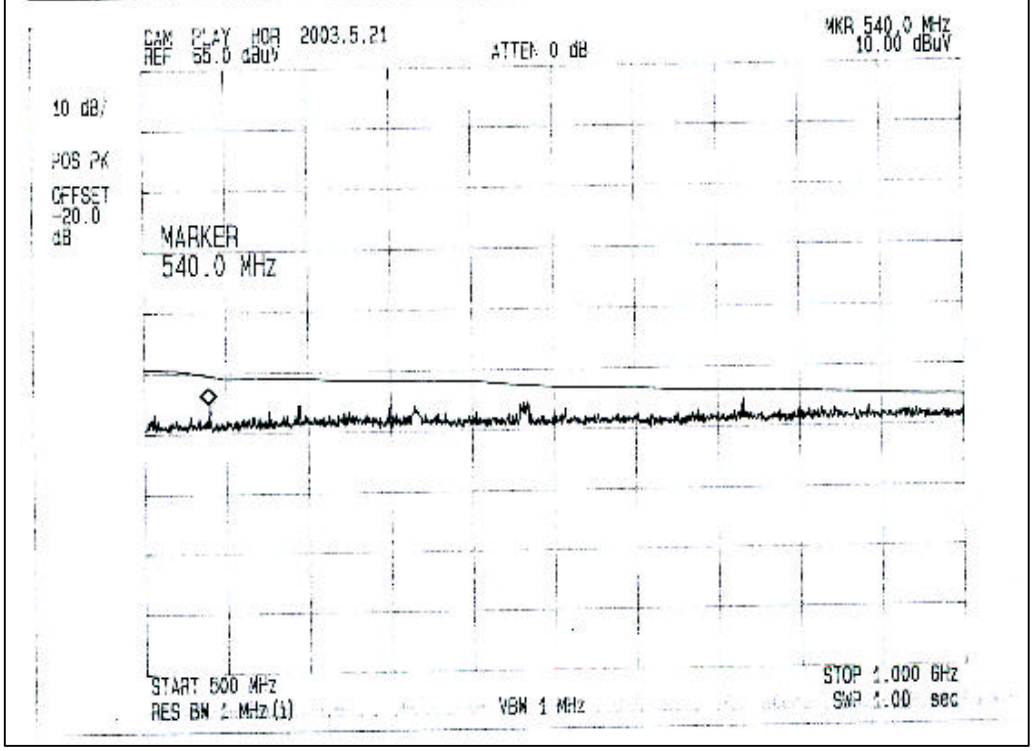
[Test range : 500 - 1000MHz]





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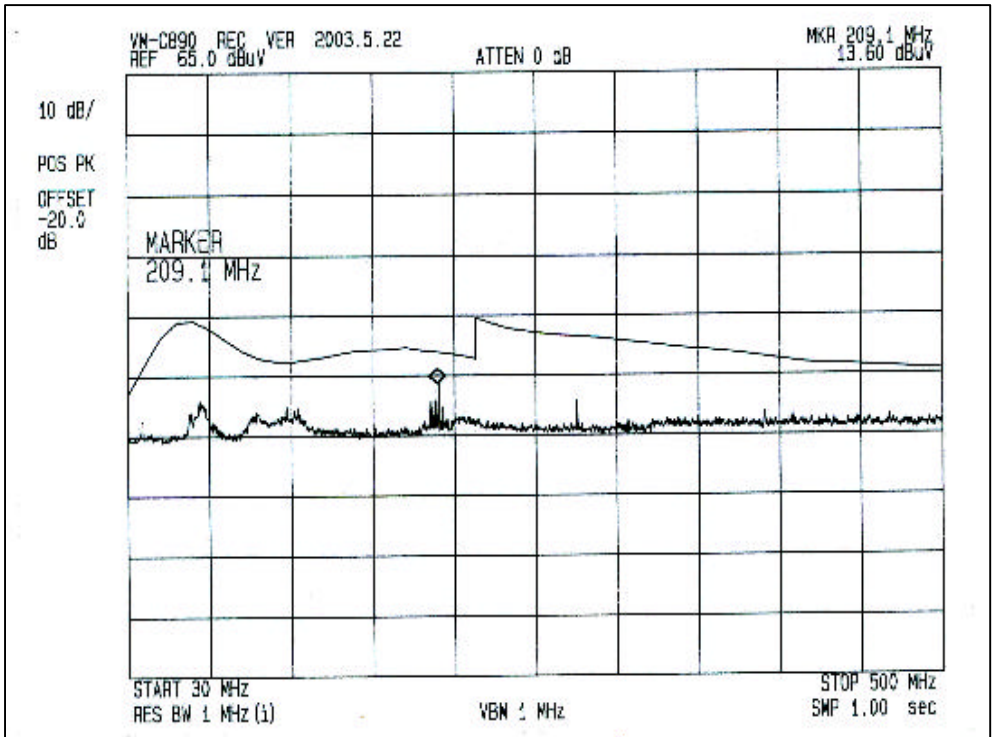
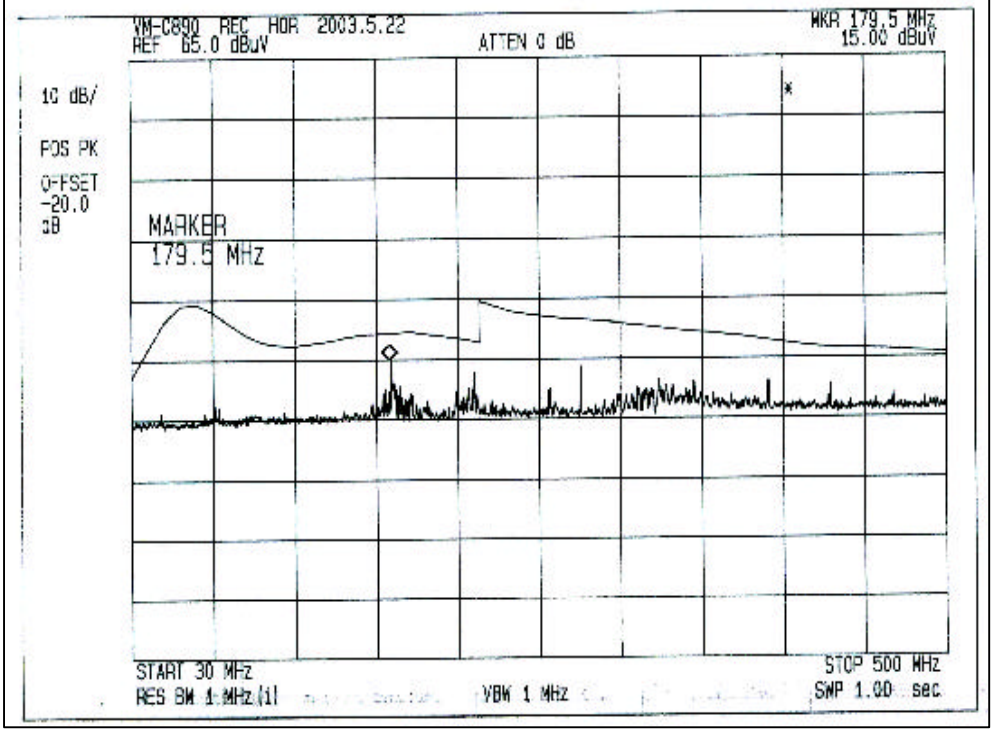
O Operating Mode : rec
[Test range : 30 - 500MHz]





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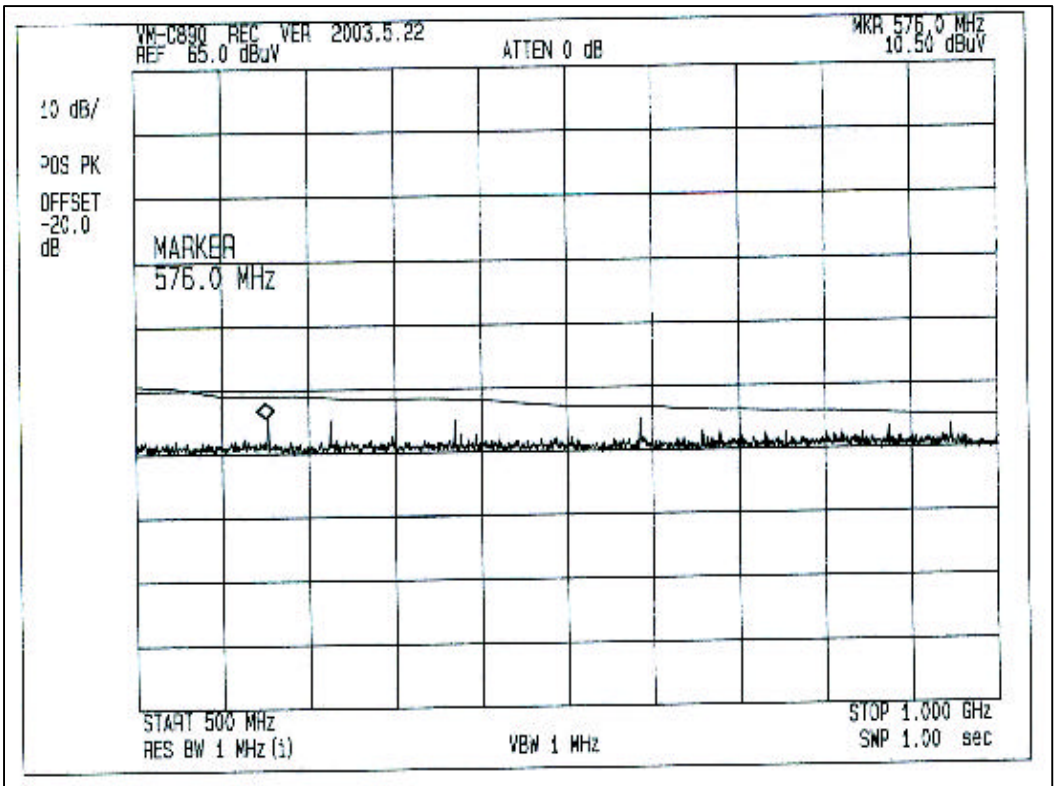
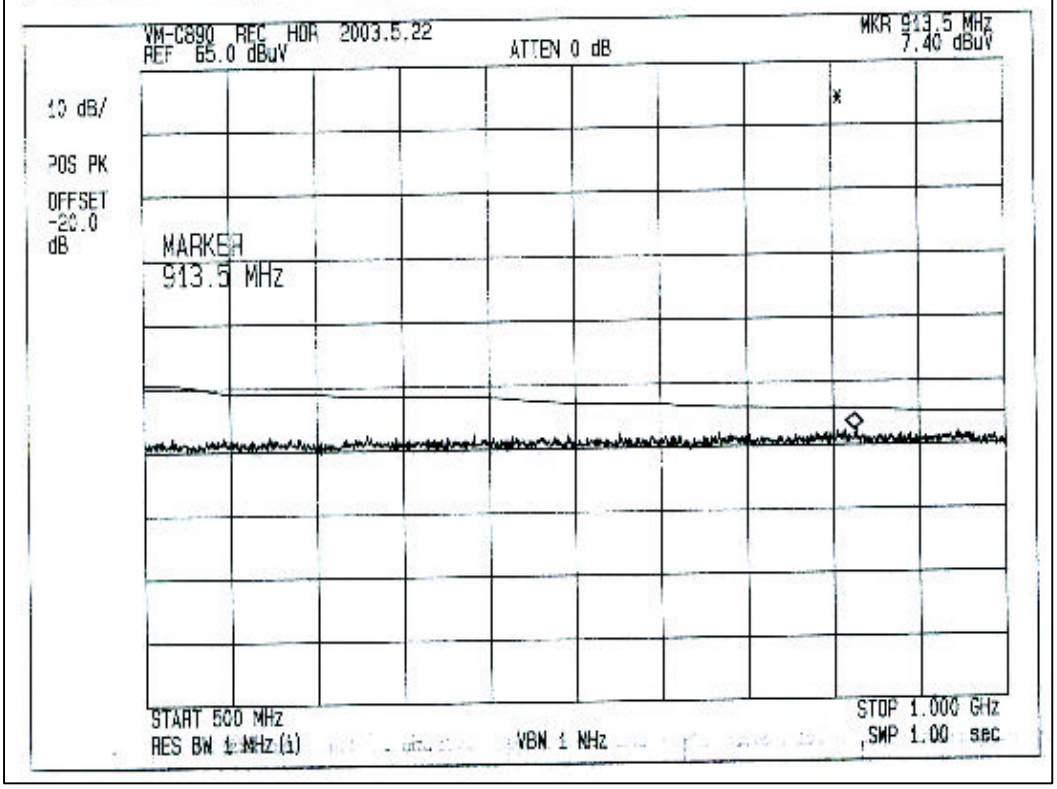
[Test range : 500 - 1000MHz]





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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

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