

TEST CONDITIONS AND DATA

Radiated Emissions

[Applicable]

Test Equipment Used

The test equipment used is calibrated in regular for every year.

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>	<u>Calibration Date</u>	<u>Serial Number</u>
ESVP	Rohde & Schwarz	Test Receiver	Jul. 15, 2004	861744/004
VULB 9160	Schwarzbeck	Antenna	Jul. 19, 2004	3048
PM5418	FLUKE	Pattern Generator	May. 10, 2004	LO 796009

Auxiliary Equipment Used

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>
14C5NT	Daewoo Electronics.	Color TV Receiver

Accessories including cables

<u>Name</u>	<u>Length</u>	<u>Port and Descriptions</u>
RCA	1.5m	Video / Audio
S-Video	-	

Environmental Conditions

Temperature	14
Humidity	48 %
Atmosphere pressure	1002mbar

Test Program	RF Receiving during VCR REC
	RF Receiving during DVD REC
	VCR Playback during DVD REC
	DVD Playback during VCR REC

Test Area Open Area Test Site #2

Test Date March 08, 2005

Note :

Radiated Emissions

(Disturbance Radiation)

[Applicable]

Tuner : TCMN0682PA20B4 (Samsung)

System	Freq. (MHz)	Pol. (H/V)	Limits (dBuV/m)	Result (dBuV/m)	Margin (dB)
RF Receiving during DVD record	71.62	V	40.0	22.6	17.4
	76.95	V	40.0	22.0	18.0
	216.01	H	46.0	41.8	4.2
	230.45	H	46.0	30.2	15.8
	297.00	H	46.0	38.1	7.9
	328.78	H	46.0	33.8	12.2
	343.64	H	46.0	40.8	5.2
	445.50	H	46.0	38.3	7.7
	474.17	H	46.0	36.8	9.2
593.04	H	46.0	36.5	9.5	
RF Receiving during VCR record	216.01	H	46.0	36.2	9.8
	297.00	H	46.0	36.5	9.5
	343.60	H	46.0	39.8	6.2
	445.50	H	46.0	35.6	10.4
	593.00	H	46.0	34.3	11.7
DVD Playback during VCR record	45.30	V	40.0	22.0	18.0
	216.01	H	46.0	35.2	10.8
	328.70	H	46.0	36.3	9.7
	445.50	H	46.0	37.6	8.4
	593.02	V	46.0	34.5	11.5
VCR Playback during DVD record	76.95	V	40.0	21.0	19.0
	216.01	H	46.0	41.8	4.2
	230.50	H	46.0	29.9	16.1
	297.01	H	46.0	37.7	8.3
	328.80	H	46.0	33.7	12.3
	343.64	H	46.0	38.5	7.5
	445.50	H	46.0	37.7	8.3
	465.00	H	46.0	36.8	9.2
	593.01	H	46.0	36.9	9.1

End of data

Note :

Radiated Emissions

(Disturbance Radiation)

[Applicable]

Tuner : TADM-H201F (LG)

System	Freq. (MHz)	Pol. (H/V)	Limits (dBuV/m)	Result (dBuV/m)	Margin (dB)
RF Receiving during DVD record	76.95	V	40.0	22.3	17.7
	216.01	V	46.0	38.6	7.4
	298.06	H	46.0	37.3	8.7
	343.62	V	46.0	37.0	9.0
	445.53	V	46.0	36.3	9.7
	593.98	V	46.0	37.6	8.4
RF Receiving during VCR record	216.00	H	46.0	39.9	6.1
	298.05	H	46.0	29.7	16.3
	594.00	V	46.0	42.4	3.6
DVD Playback during VCR record	216.00	H	46.0	40.9	5.1
	298.05	H	46.0	30.2	15.8
	328.13	H	46.0	33.2	12.8
	445.50	H	46.0	37.3	8.7
	593.97	V	46.0	42.7	3.3
VCR Playback during DVD record	76.90	V	40.0	22.6	17.4
	216.01	H	46.0	38.7	7.3
	298.00	H	46.0	37.0	9.0
	343.60	V	46.0	37.3	8.7
	445.46	V	46.0	35.4	10.6
	593.76	V	46.0	41.0	5.0

End of data

Note :

Radiated Emissions

(Disturbance Radiation)

[Applicable]

Tuner : TMZH2-030A (ALPS)

System	Freq. (MHz)	Pol. (H/V)	Limits (dBuV/m)	Result (dBuV/m)	Margin (dB)
RF Receiving during DVD record	216.01	V	46.0	33.3	12.7
	297.06	H	46.0	39.1	6.9
	321.31	H	46.0	38.6	7.4
	343.62	H	46.0	36.2	9.8
	445.49	H	46.0	39.6	6.4
	449.57	H	46.0	38.3	7.7
	524.99	H	46.0	35.6	10.4
	533.45	V	46.0	36.4	9.6
RF Receiving during VCR record	594.00	V	46.0	40.6	5.4
	216.01	V	46.0	36.4	9.6
	297.04	H	46.0	38.7	7.3
	321.30	H	46.0	39.1	6.9
	343.59	H	46.0	36.0	10.0
	445.42	H	46.0	39.3	6.7
	449.60	H	46.0	37.6	8.4
	524.97	H	46.0	37.8	8.2
DVD Playback during VCR record	533.42	V	46.0	38.2	7.8
	594.00	V	46.0	41.4	4.6
	216.01	V	46.0	35.9	10.1
	297.01	H	46.0	38.0	8.0
	321.63	H	46.0	37.8	8.2
	343.45	H	46.0	35.5	10.5
	445.16	H	46.0	38.7	7.3
	449.76	H	46.0	38.0	8.0
VCR Playback during DVD record	524.90	H	46.0	37.6	8.4
	533.46	V	46.0	37.4	8.6
	594.00	V	46.0	42.2	3.8
	216.01	V	46.0	33.4	12.6
	297.00	H	46.0	37.3	8.7
	321.33	H	46.0	38.4	7.6
	343.72	H	46.0	35.9	10.1
	445.44	H	46.0	37.9	8.1
End of data	449.63	H	46.0	38.1	7.9
	524.99	V	46.0	35.3	10.7
	533.42	H	46.0	35.9	10.1
	594.00	V	46.0	39.1	6.9

End of data

Note :

TEST CONDITIONS AND DATA

Output Signal Level Measurements

[Applicable]

Test Equipment Used

The test equipment used is calibrated in regular for every year.

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>	<u>Calibration Date</u>	<u>Serial Number</u>
8566B	Hewlett Packard	Spectrum Analyzer	Dec. 01, 2004	3014A07159
85685A	Hewlett Packard	RF preselector	Dec. 01, 2004	2817A00760
RAM	Rohde & Schwarz	50/75ohms matching pad	-	836625/033
PM5418	FLUKE	Pattern Generator	May. 10, 2004	LO 796009

Auxiliary Equipment Used

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>
14C5NT	Daewoo Electronics.	Color TV Receiver

Accessories including cables

<u>Name</u>	<u>Length</u>	<u>Port and Descriptions</u>
RCA	1.5m	Video / Audio

Environmental Conditions

Temperature	15
Humidity	48 %
Atmosphere pressure	1002mbar

Test Program Playback and Record mode

Test Area Compact Chamber

Test Date March 07, 2005

Note : Limit Calculations

For Video Signal

$$346.4 \times 75^{1/2} = 2999\mu\text{V} = 69.54\text{dBuV} = -37.46 \text{ dBm}$$

For Audio Signal

$$77.5 \times 75^{1/2} = 671.17\mu\text{V} = 56.53\text{dBuV} = -50.46 \text{ dBm}$$

The test were performed with RF receiving as VITS. The VITS signals, 1V and 5V peak-to-peak, were used for channel 3 and channel 4 with alternate. The above test program were employed for each channel.

Output Signal Level Measurements

TV CH.	Freq. (MHz)	Level (dBuV)	Limit (dBuV)	Mode	Margin (dB)
3 (Pix)	61.29	57.60	69.54	Playback	11.94
3 (Aud)	65.81	42.00	56.53	Playback	14.53
3 (Pix)	61.29	57.60	69.54	Record	11.94
3 (Aud)	65.83	41.90	56.53	Record	14.63
4 (Pix)	67.28	57.20	69.54	Playback	12.34
4 (Aud)	62.75	41.40	56.53	Playback	15.13
4 (Pix)	67.28	57.20	69.54	Record	12.34
4 (Aud)	62.76	41.50	56.53	Record	15.03

Output Signal Tabulated Data with Tuner

(Samsung Model: **TCMN0682PA20B4**)

TV CH.	Freq. (MHz)	Level (dBuV)	Limit (dBuV)	Mode	Margin (dB)
3 (Pix)	61.29	58.10	69.54	Playback	11.44
3 (Aud)	65.82	42.30	56.53	Playback	14.23
3 (Pix)	61.29	58.20	69.54	Record	11.34
3 (Aud)	65.81	42.30	56.53	Record	14.23
4 (Pix)	67.28	57.90	69.54	Playback	11.64
4 (Aud)	62.76	41.90	56.53	Playback	14.63
4 (Pix)	67.28	57.80	69.54	Record	11.74
4 (Aud)	62.75	41.80	56.53	Record	14.73

Output Signal Tabulated Data with Tuner

(LG Model: **TADM-H201F**)

Output Signal Level Measurements

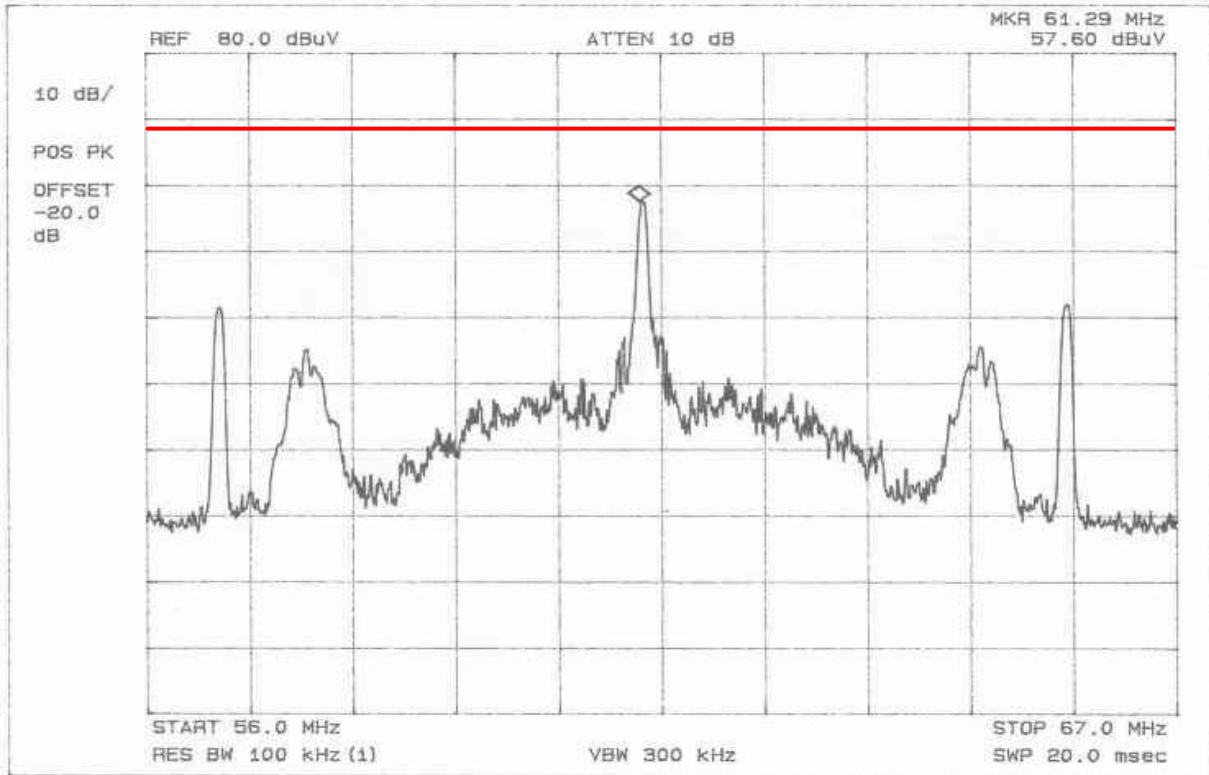
TV CH.	Freq. (MHz)	Level (dBuV)	Limit (dBuV)	Mode	Margin (dB)
3 (Pix)	61.28	55.90	69.54	Playback	13.64
3 (Aud)	56.74	40.80	56.53	Playback	15.73
3 (Pix)	61.27	55.70	69.54	Record	13.84
3 (Aud)	65.80	41.60	56.53	Record	14.93
4 (Pix)	67.27	56.40	69.54	Playback	13.14
4 (Aud)	62.74	41.30	56.53	Playback	15.23
4 (Pix)	67.27	56.20	69.54	Record	13.34
4 (Aud)	62.74	41.30	56.53	Record	15.23

Output Signal Tabulated Data with Tuner

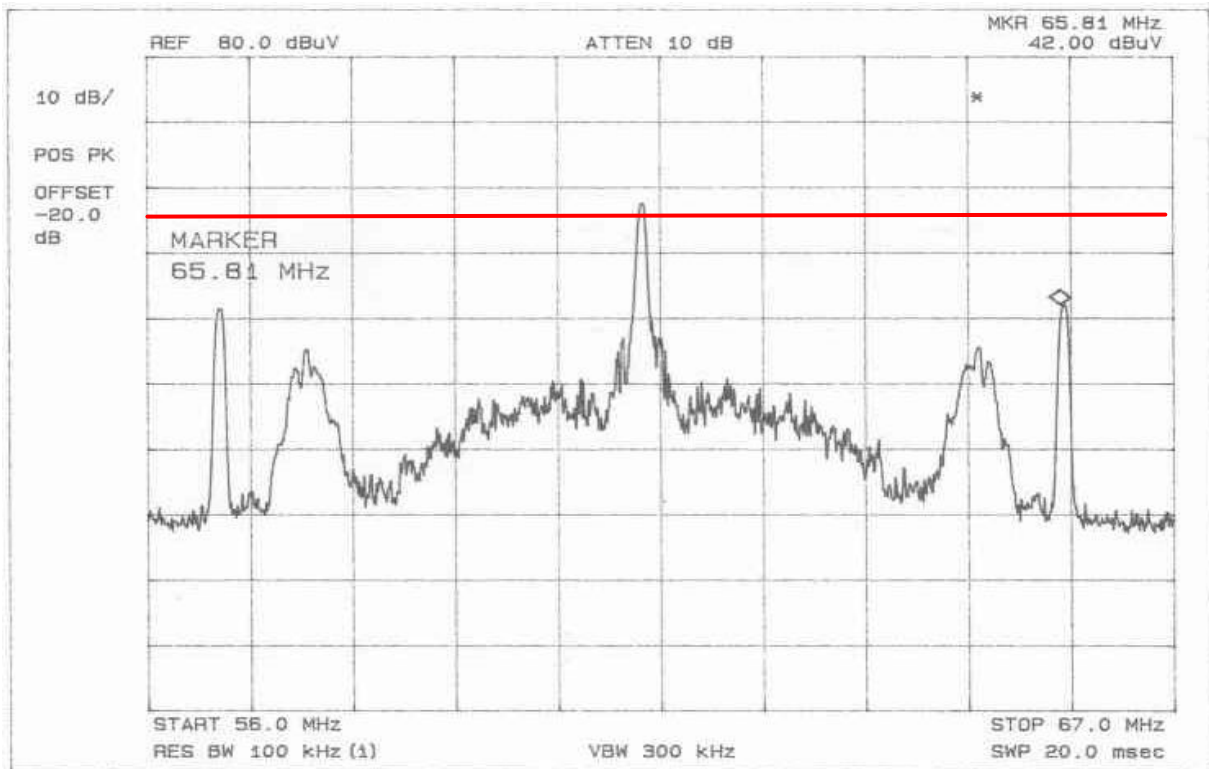
(Alps Model: TMZH2-030A)

Output Signal Level Measurements

Tuner: TCMN0682PA20B4 (Samsung)



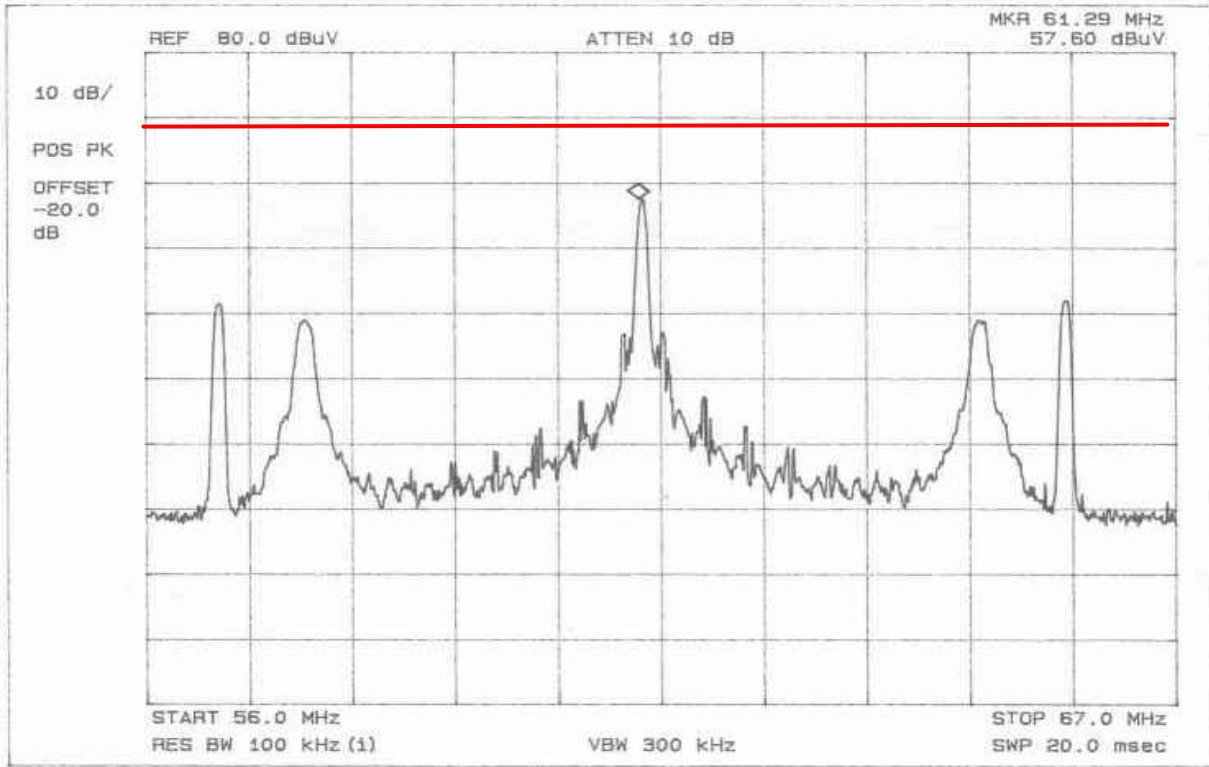
CH3 Playback (Pix)



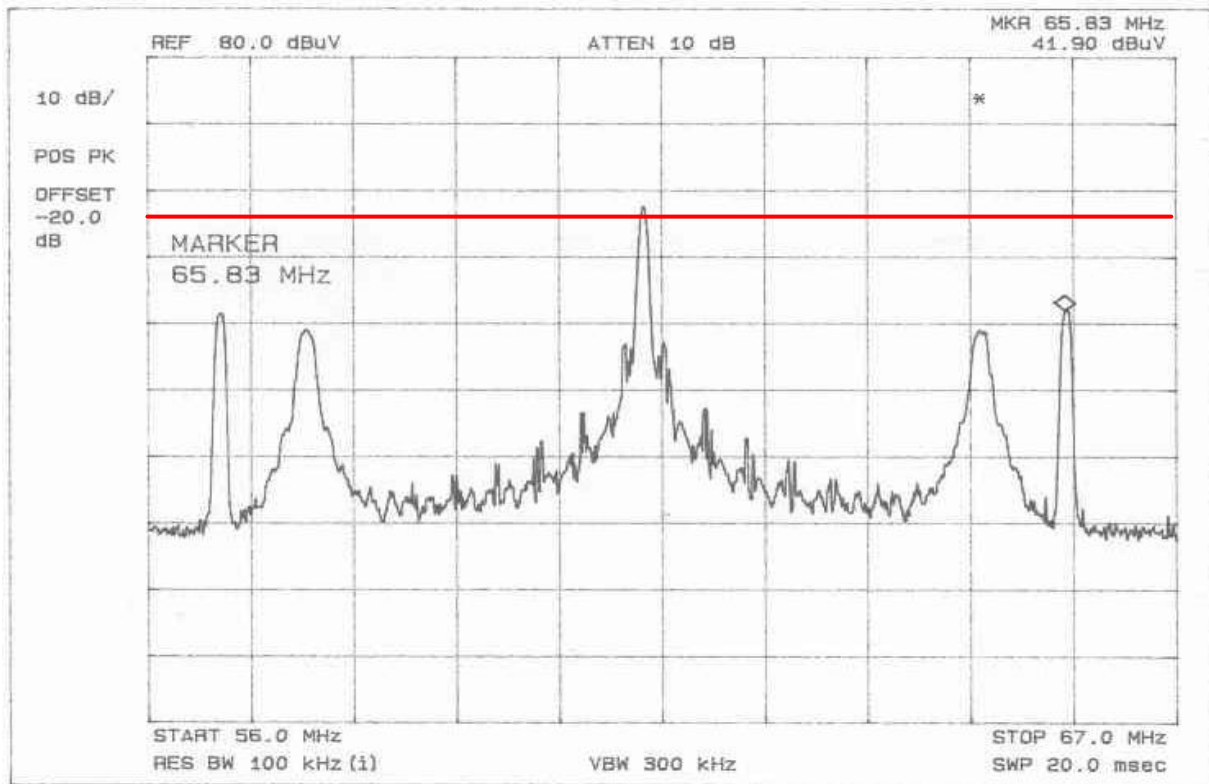
CH3 Playback (Aud)

Output Signal Level Measurements

Tuner: TCMN0682PA20B4 (Samsung)



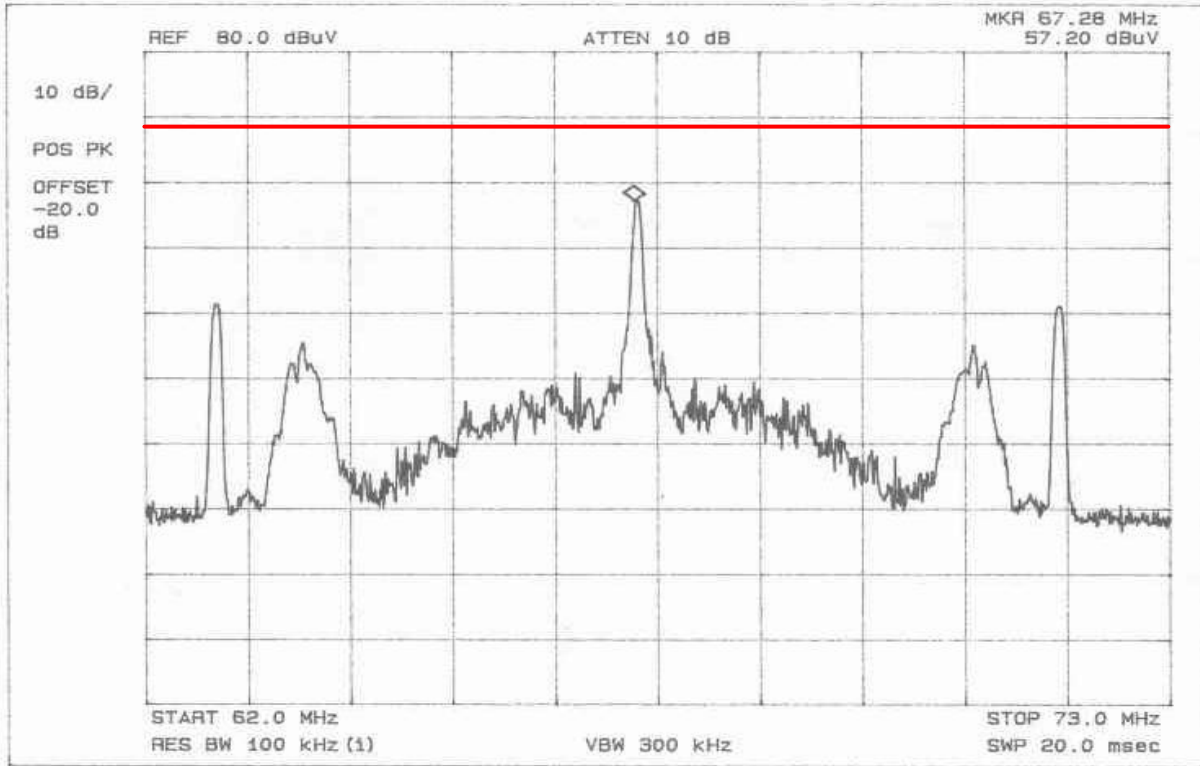
CH3 Record (Pix)



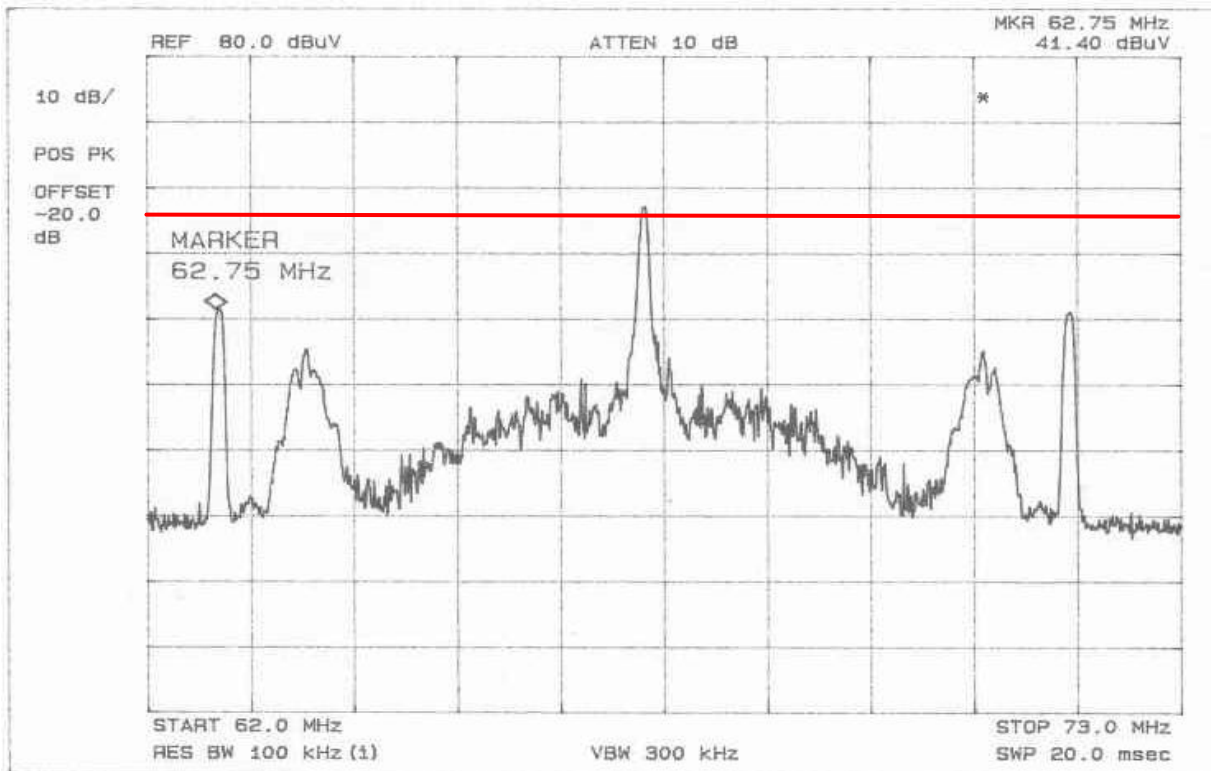
CH3 Record (Aud)

Output Signal Level Measurements

Tuner: TCMN0682PA20B4 (Samsung)



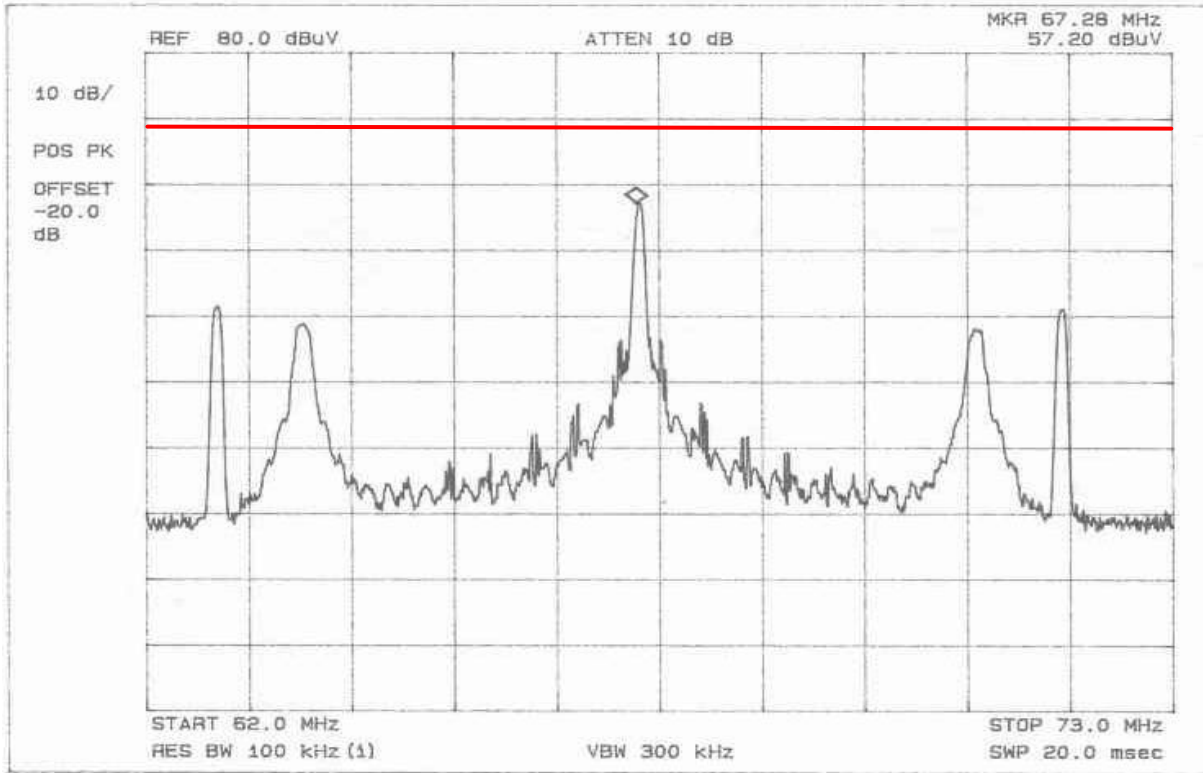
CH4 Playback (Pix)



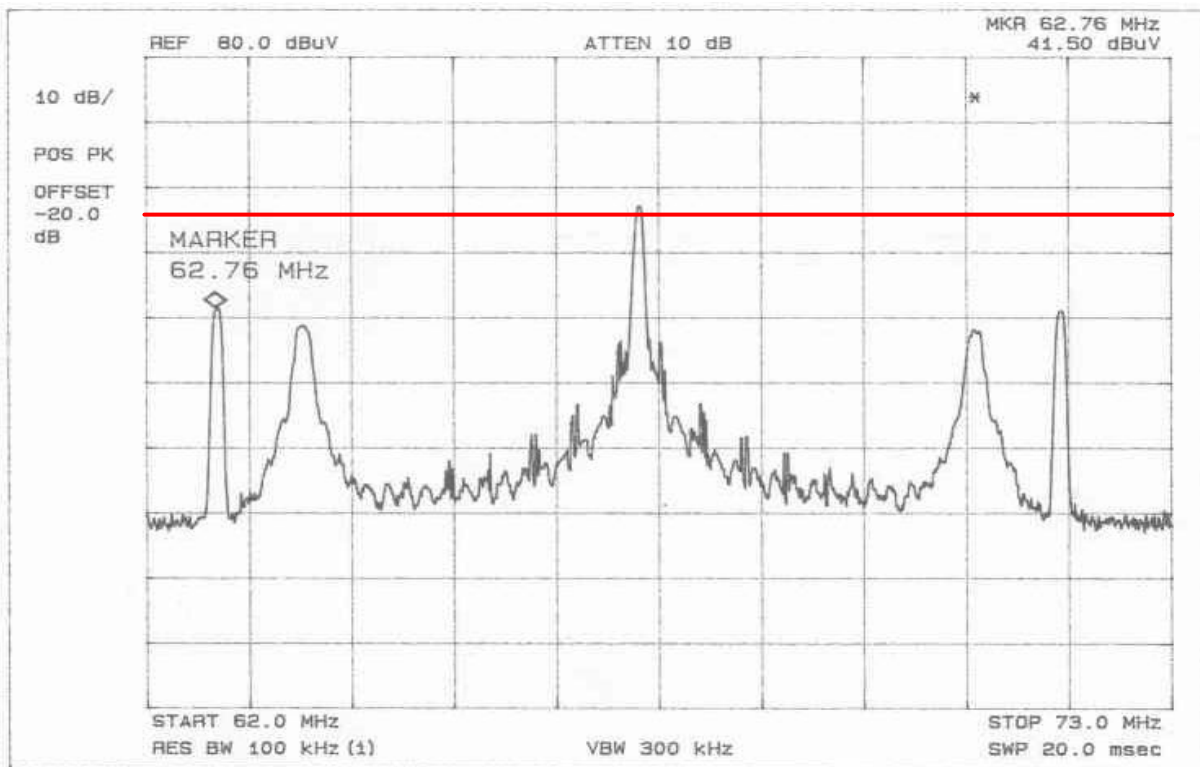
CH4 Playback (Aud)

Output Signal Level Measurements

Tuner: TCMN0682PA20B4 (Samsung)



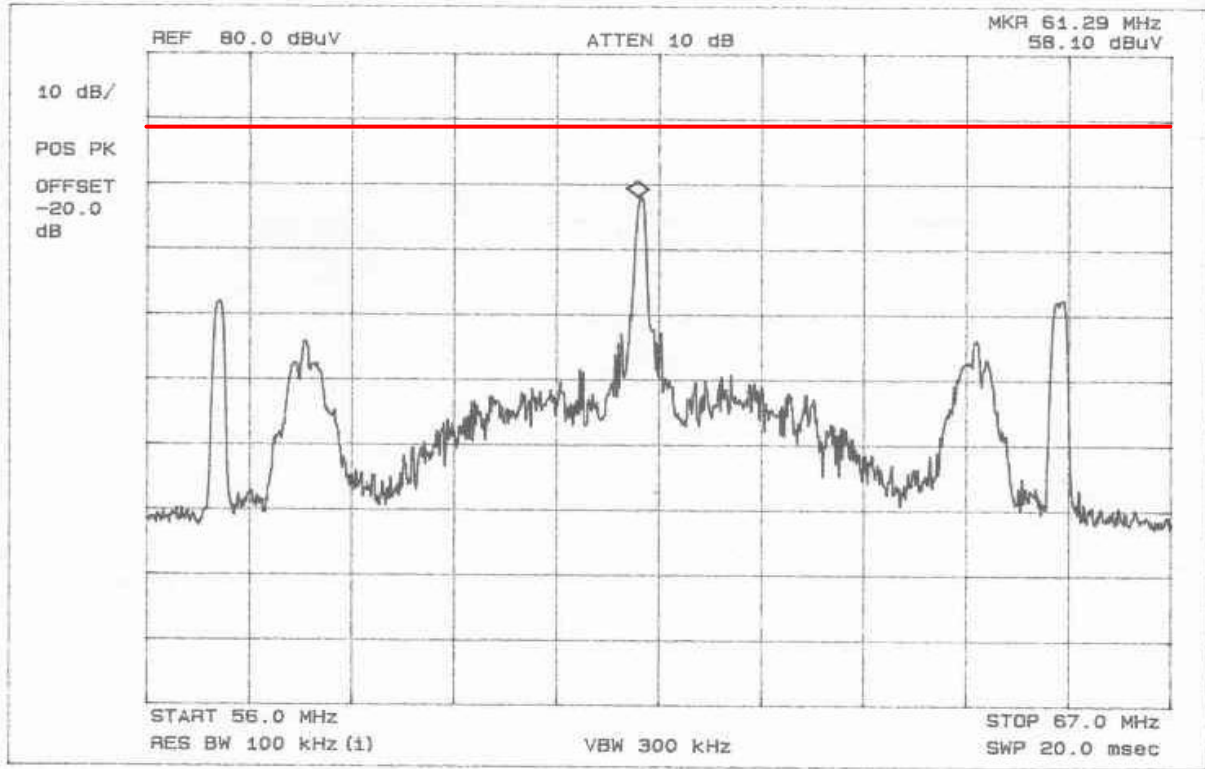
CH4 Record (Pix)



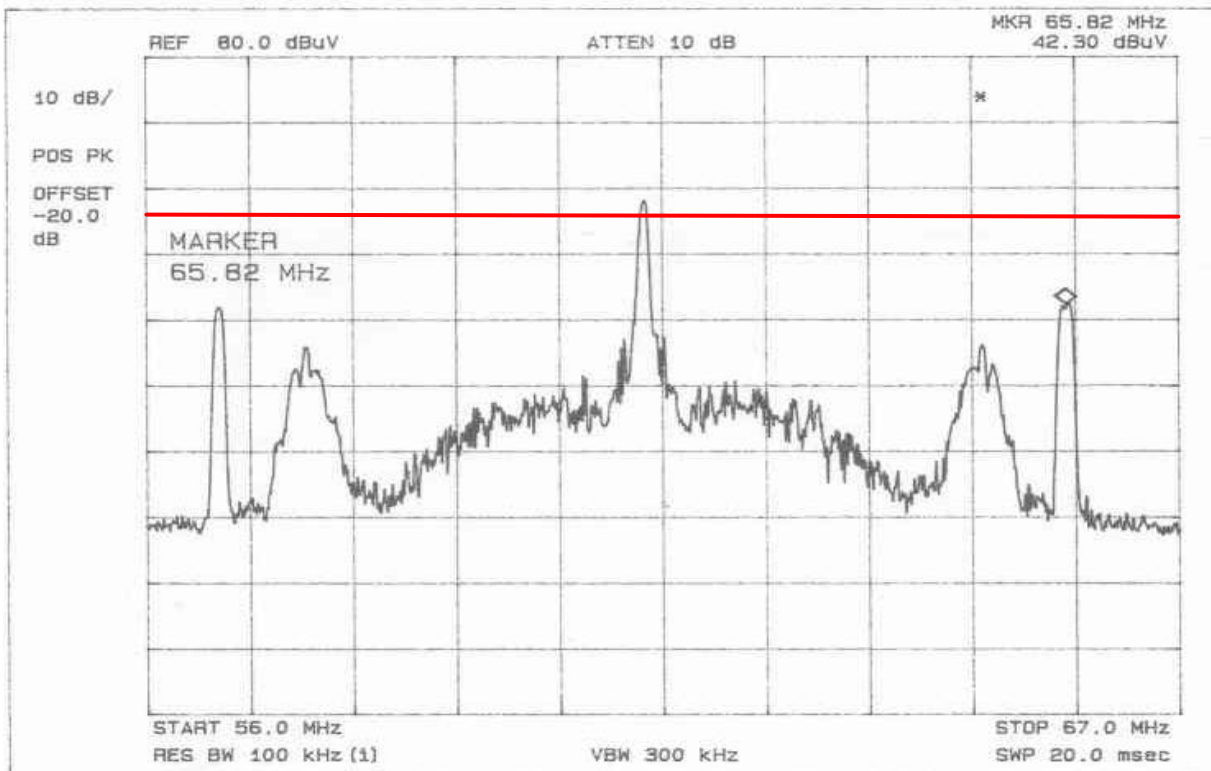
CH4 Record (Aud)

Output Signal Level Measurements

Tuner: TADM-H201F (LG)



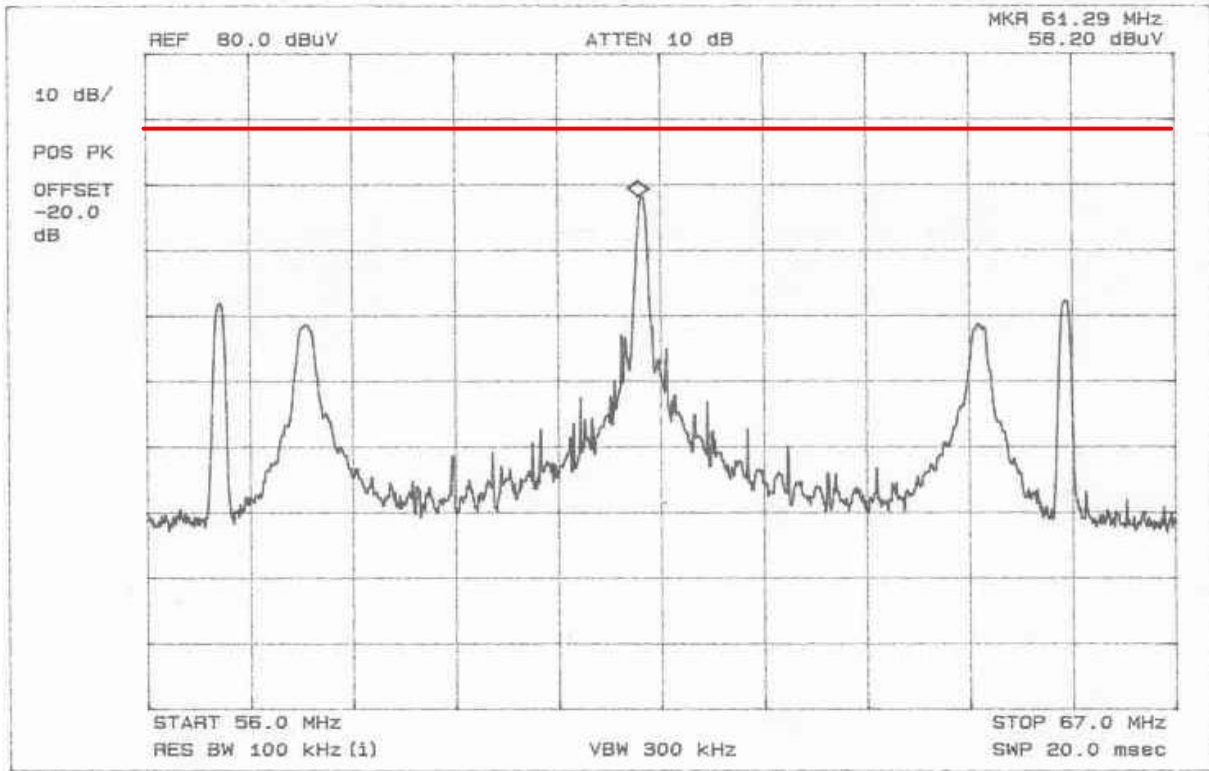
CH3 Playback (Pix)



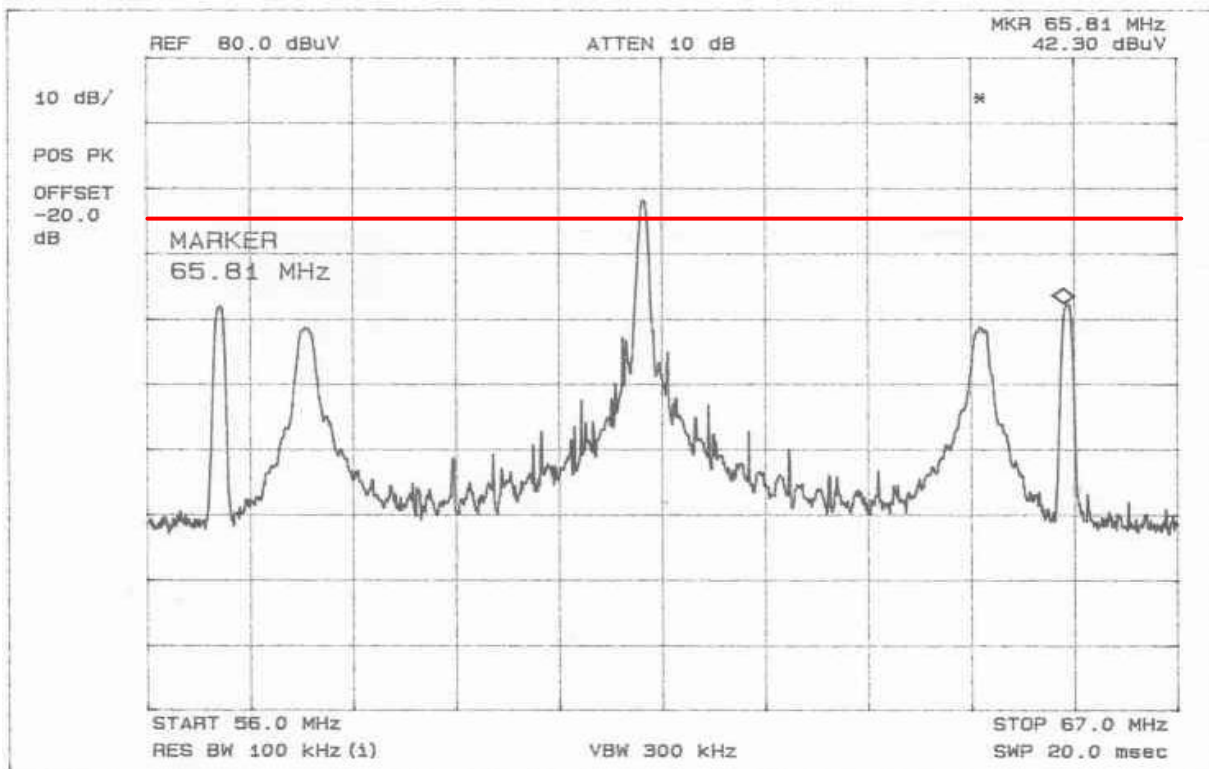
CH3 Playback (Aud)

Output Signal Level Measurements

Tuner: TADM-H201F (LG)



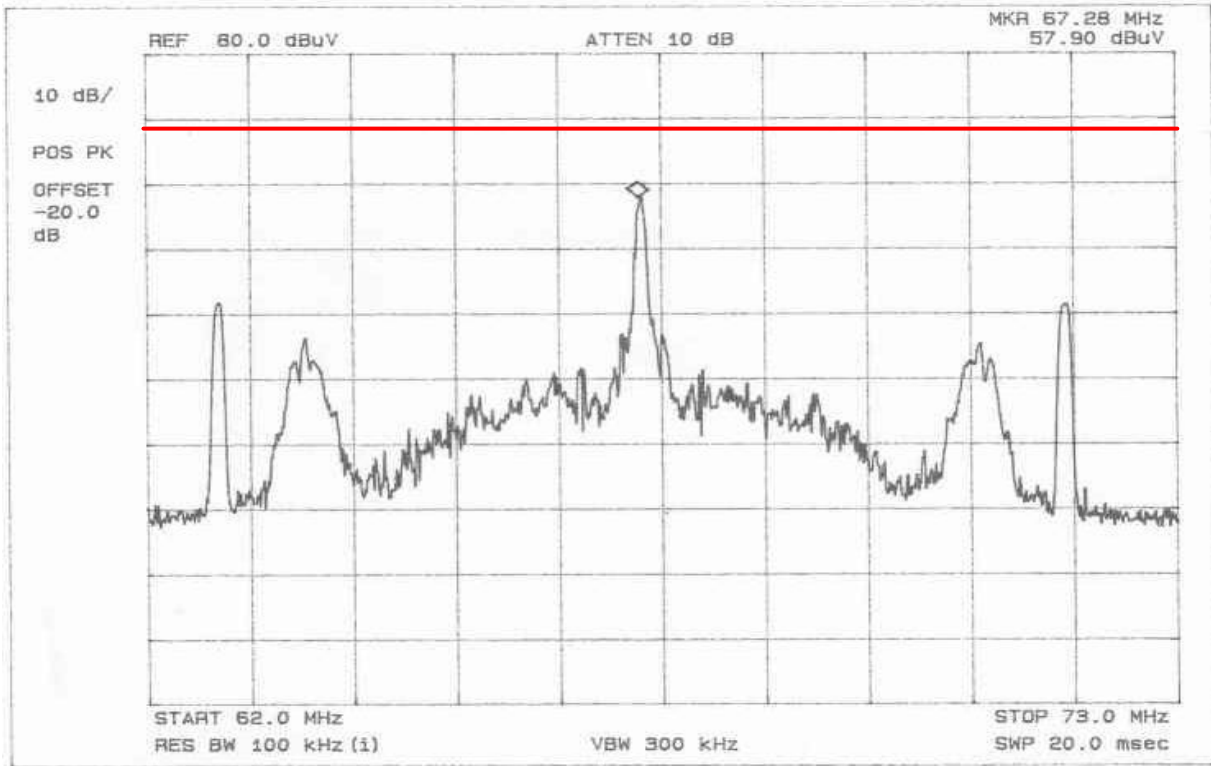
CH3 Record (Pix)



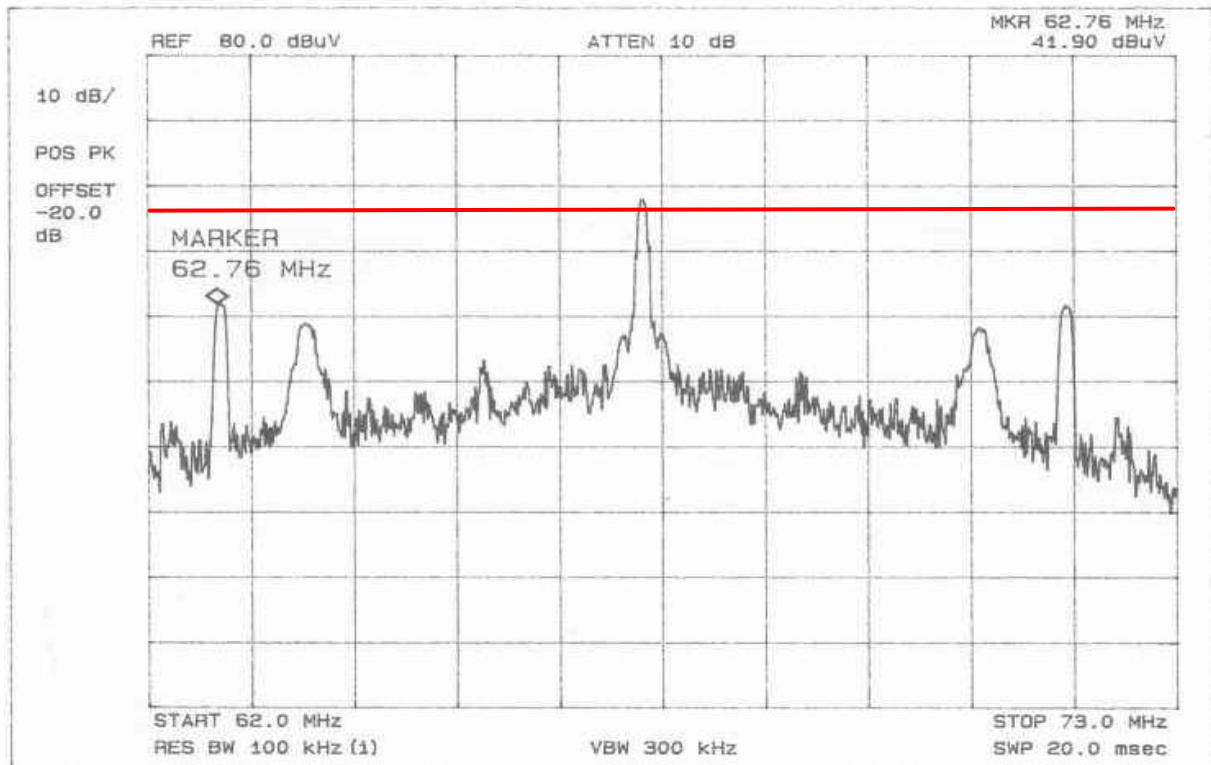
CH3 Record (Aud)

Output Signal Level Measurements

Tuner: TADM-H201F (LG)



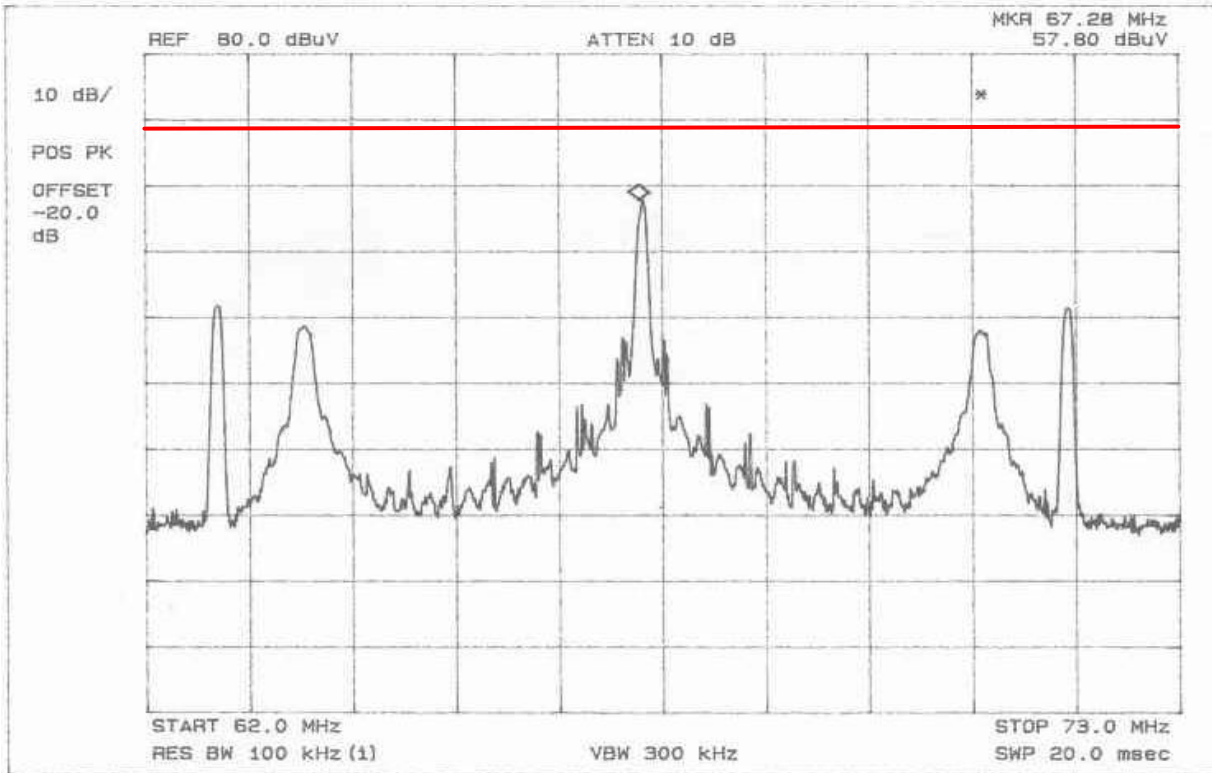
CH4 Playback (Pix)



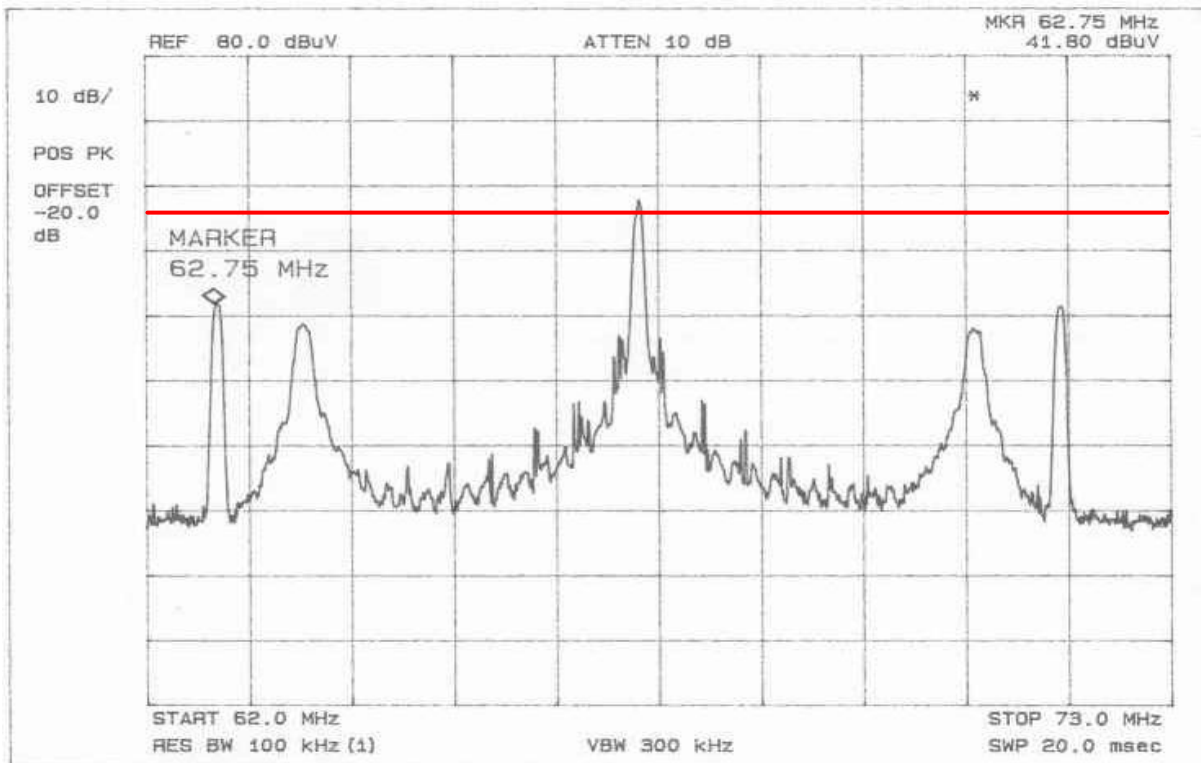
CH4 Playback (Aud)

Output Signal Level Measurements

Tuner: TADM-H201F (LG)



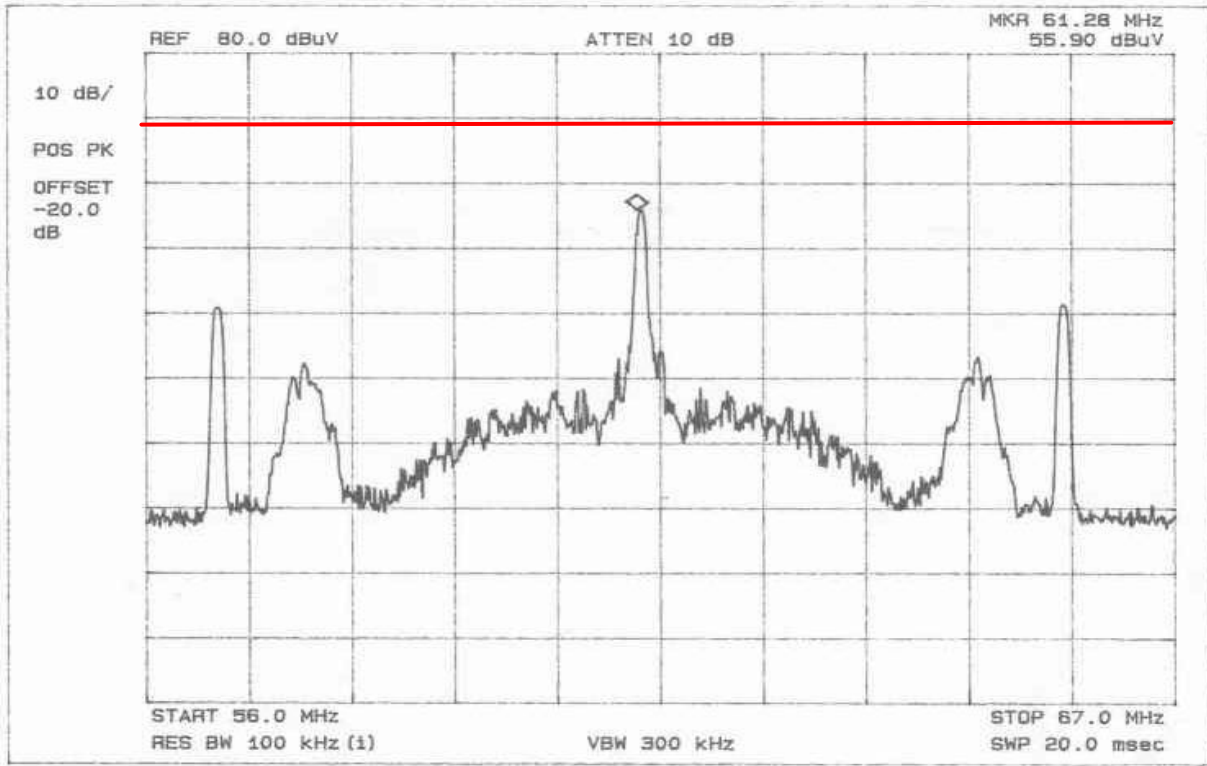
CH4 Record (Pix)



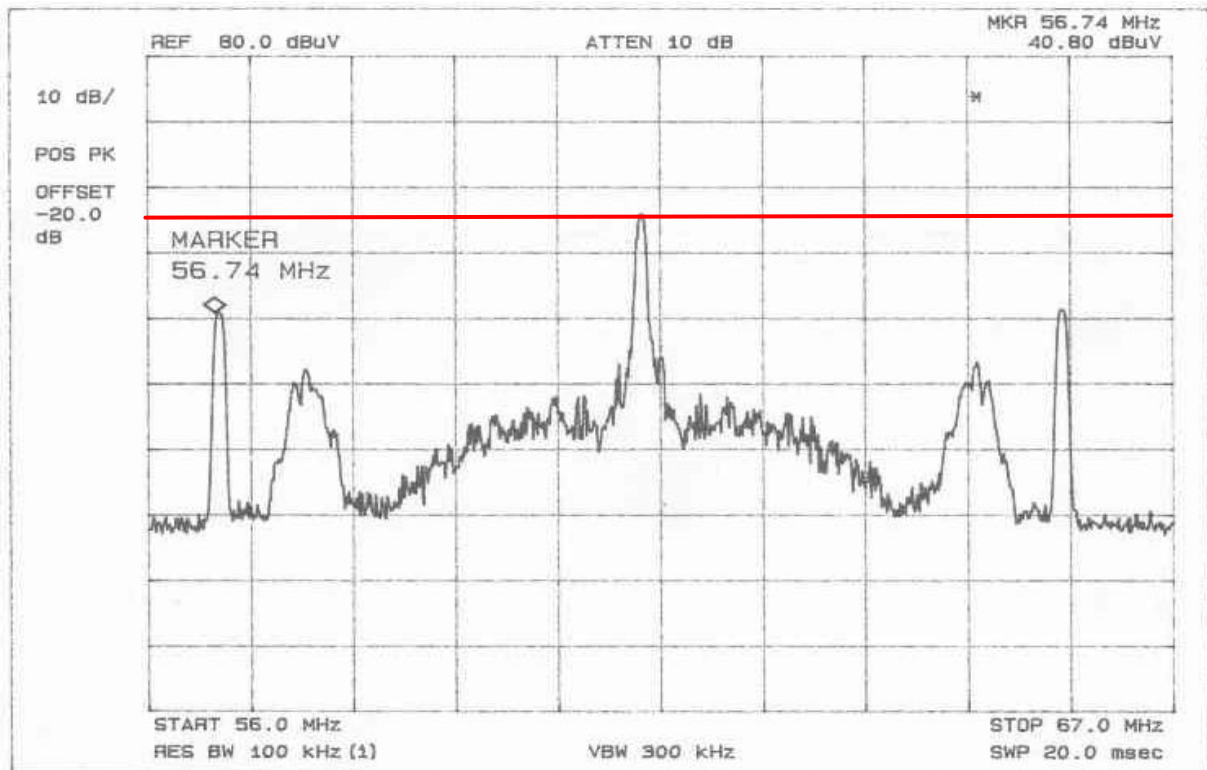
CH4 Record (Aud)

Output Signal Level Measurements

Tuner: TMZH2-030A (ALPS)



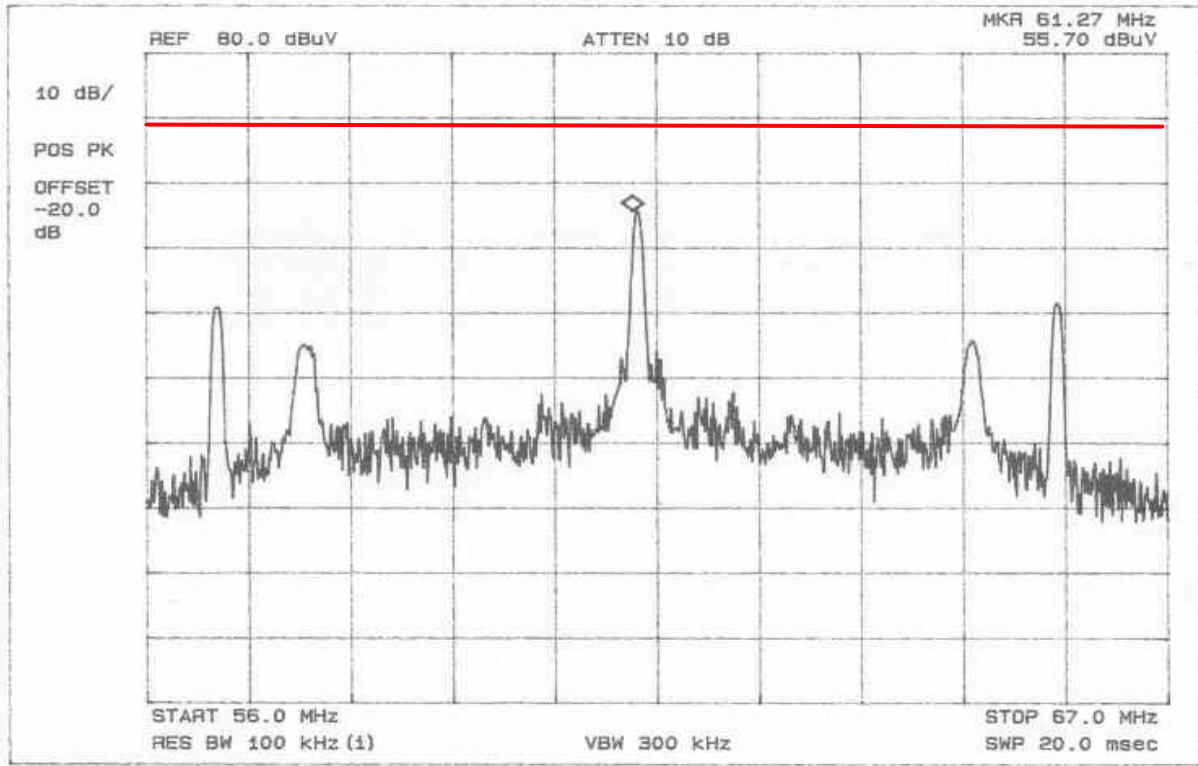
CH3 Playback (Pix)



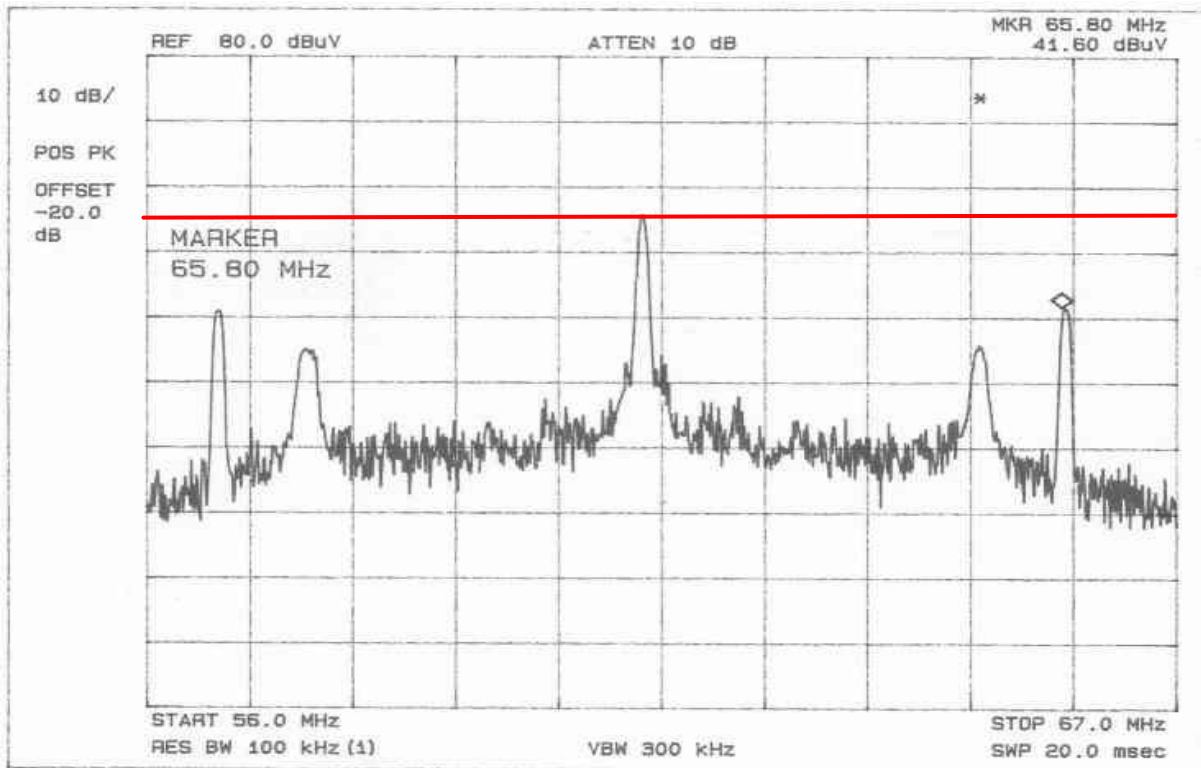
CH3 Playback (Aud)

Output Signal Level Measurements

Tuner: TMZH2-030A (ALPS)



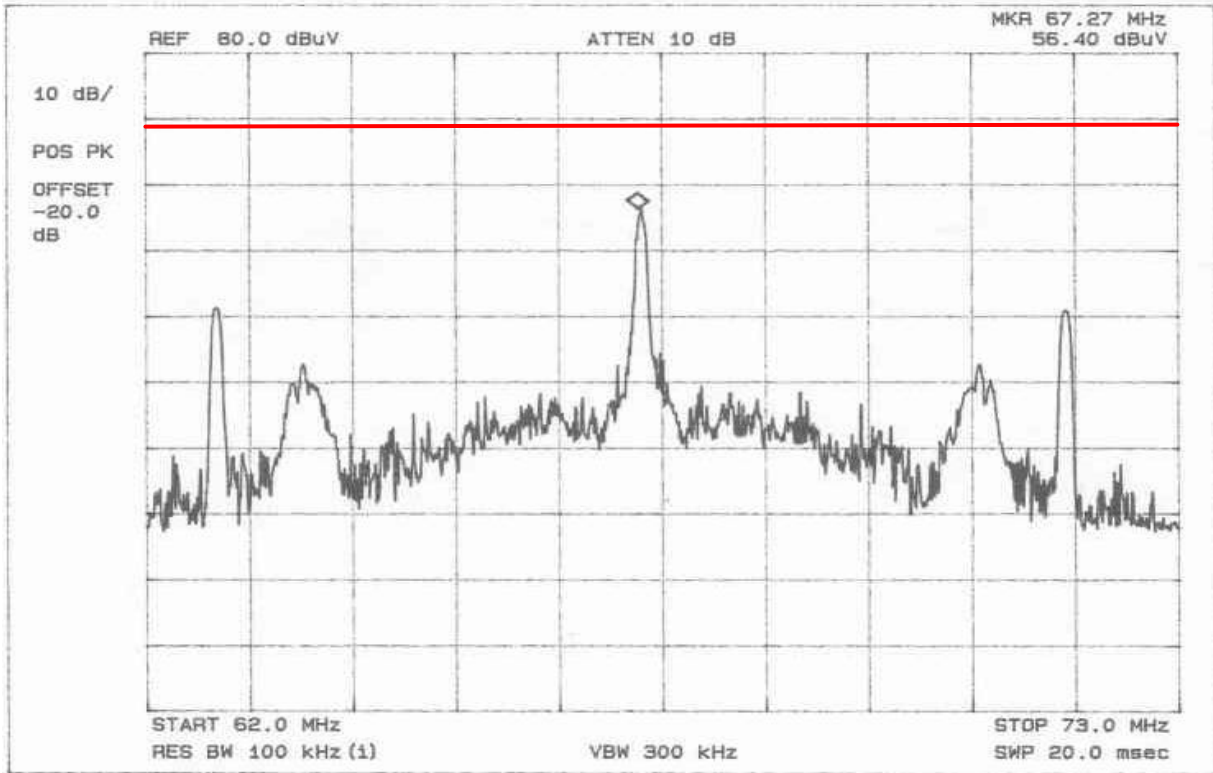
CH3 Record (Pix)



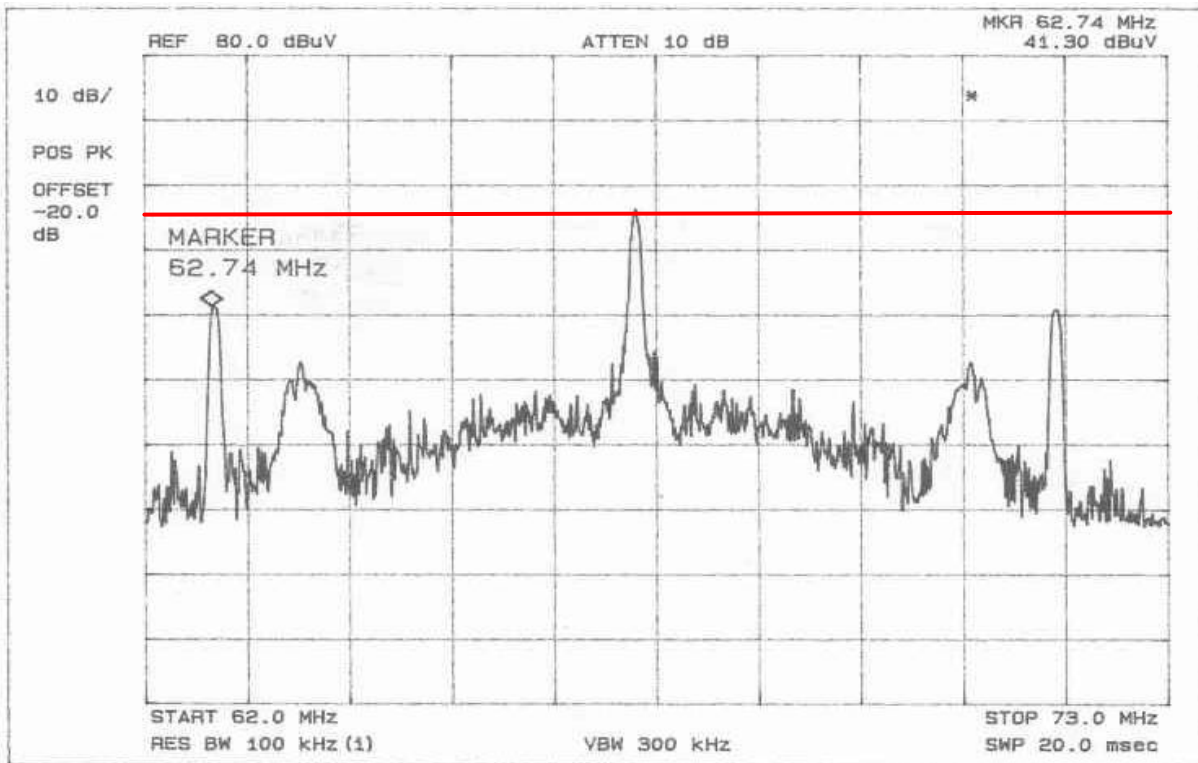
CH3 Record (Aud)

Output Signal Level Measurements

Tuner: TMZH2-030A (ALPS)



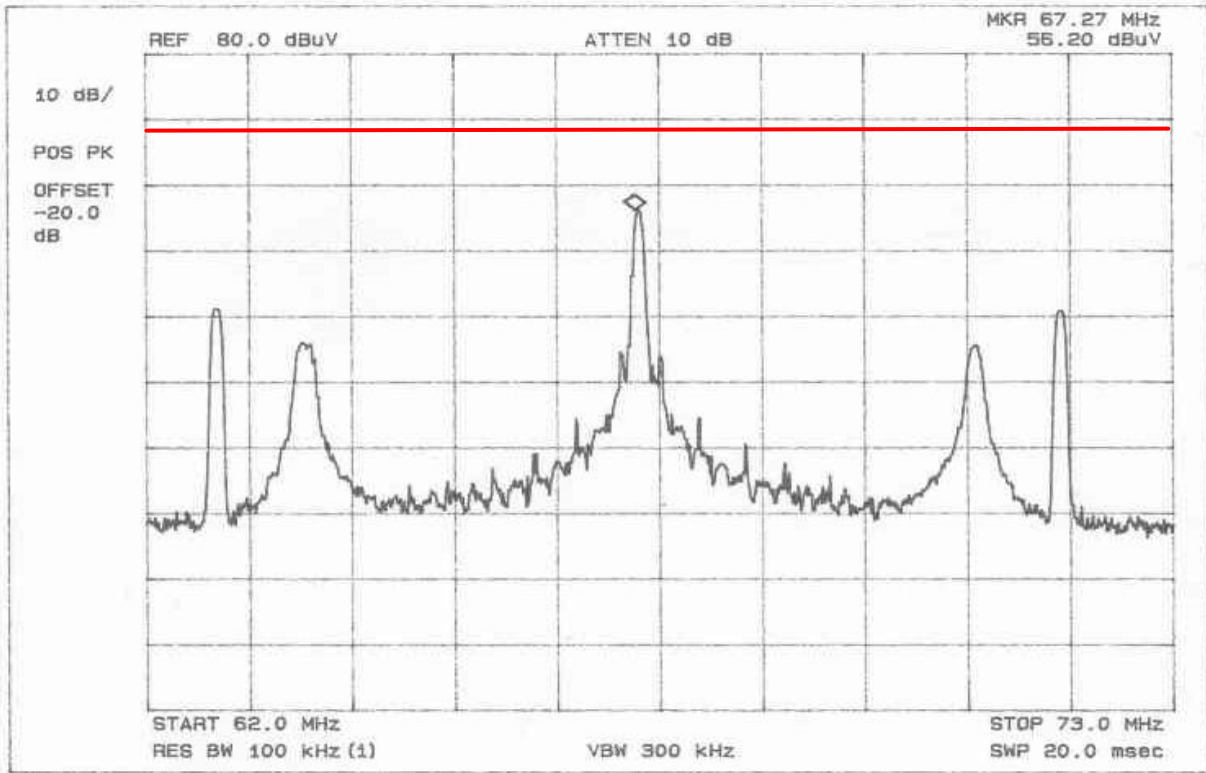
CH4 Playback (Pix)



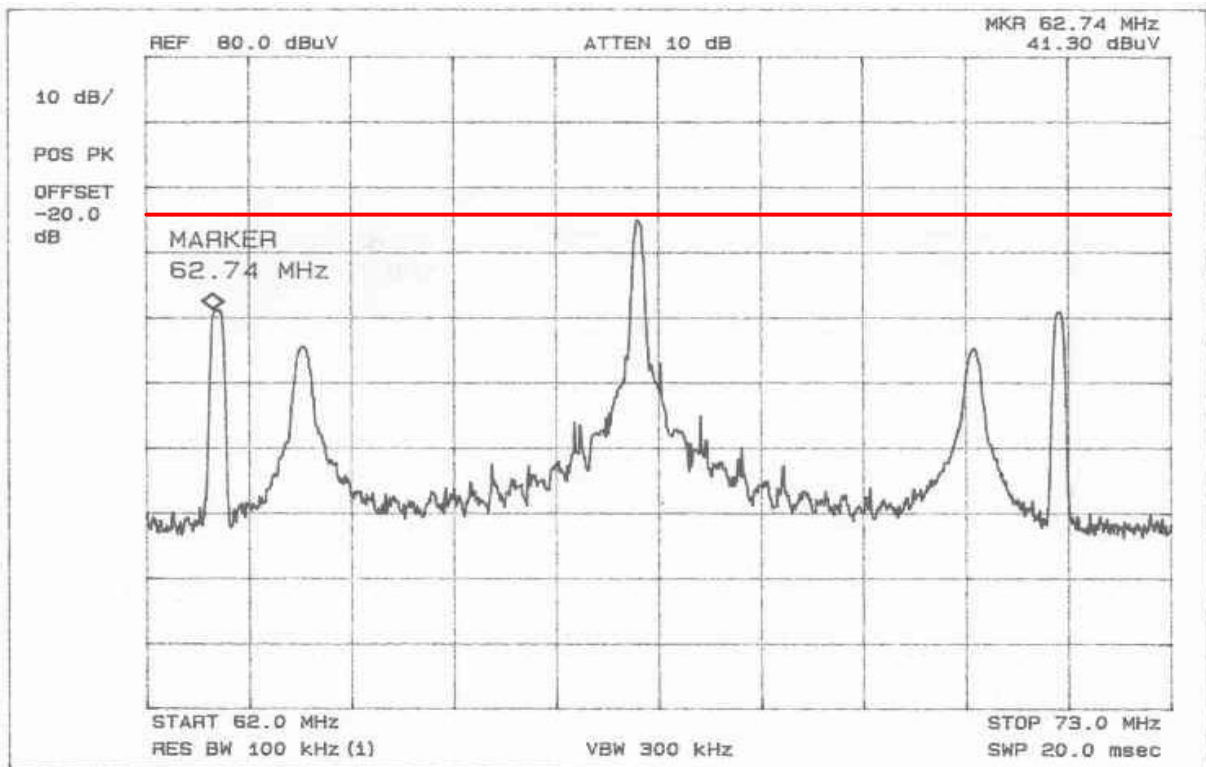
CH4 Playback (Aud)

Output Signal Level Measurements

Tuner: TMZH2-030A (ALPS)



CH4 Record (Pix)



CH4 Record (Aud)

TEST CONDITIONS AND DATA

Output Terminal Conducted Spurious Emission

[Applicable]

Test Equipment Used

The test equipment used is calibrated in regular for every year.

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>	<u>Calibration Date</u>	<u>Serial Number</u>
8566B	Hewlett Packard	Spectrum Analyzer	Dec. 01, 2004	3014A07159
85685A	Hewlett Packard	RF preselector	Dec. 01, 2004	2817A00760
RAM	Rohde & Schwarz	50/75ohms matching pad	-	836625/033
PM5418	FLUKE	Pattern Generator	May. 10, 2004	LO 796009

Auxiliary Equipment Used

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>
14C5NT	Daewoo Electronics.	Color TV Receiver

Accessories including cables

<u>Name</u>	<u>Length</u>	<u>Port and Descriptions</u>
RCA	1.5m	Video / Audio

Environmental Conditions

Temperature	15
Humidity	48 %
Atmosphere pressure	1002mbar

Test Program Playback and Record mode

Test Area Compact Chamber

Test Date March 07, 2005

Note : Limit Calculation (Sec 15.115(b)(2)(ii))

$$10.95 \times 75^{1/2} \mu V = 95 \mu V = 39.55 \text{ dBuV}$$

$$\text{plus } 30\text{dB} = 69.55\text{dBuV} = -37.45\text{dBm}$$

Above plus 30dB means the test result(Plots) include the modulated video and audio signal. You can see there was no significant emission more than 39.55dBuV in following test plots except the modulated signals.

The test were performed with color bar as VITS. The VITS signals, 1V and 5V peak-to-peak, were used for channel 3 and channel 4 with alternate. The above test program were employed for each channel.

Output Terminal Conducted Spurious Emission

TV CH	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Mode	Margin(dB)
3	61.00	56.10	69.55	Playback	13.45
3	61.00	56.30	69.55	Record	13.25
4	66.90	55.70	69.55	Playback	13.85
4	66.90	55.70	69.55	Record	13.85

Spurious Emission Tabulated Data with Tuner

(Samsung Model: **TCMN0682PA20B4**)

TV CH	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Mode	Margin(dB)
3	61.00	56.70	69.55	Playback	12.85
3	61.00	58.70	69.55	Record	10.85
4	66.90	56.30	69.55	Playback	13.25
4	66.90	56.40	69.55	Record	13.15

Spurious Emission Tabulated Data with Tuner

(LG Model: **TADM-H201F**)

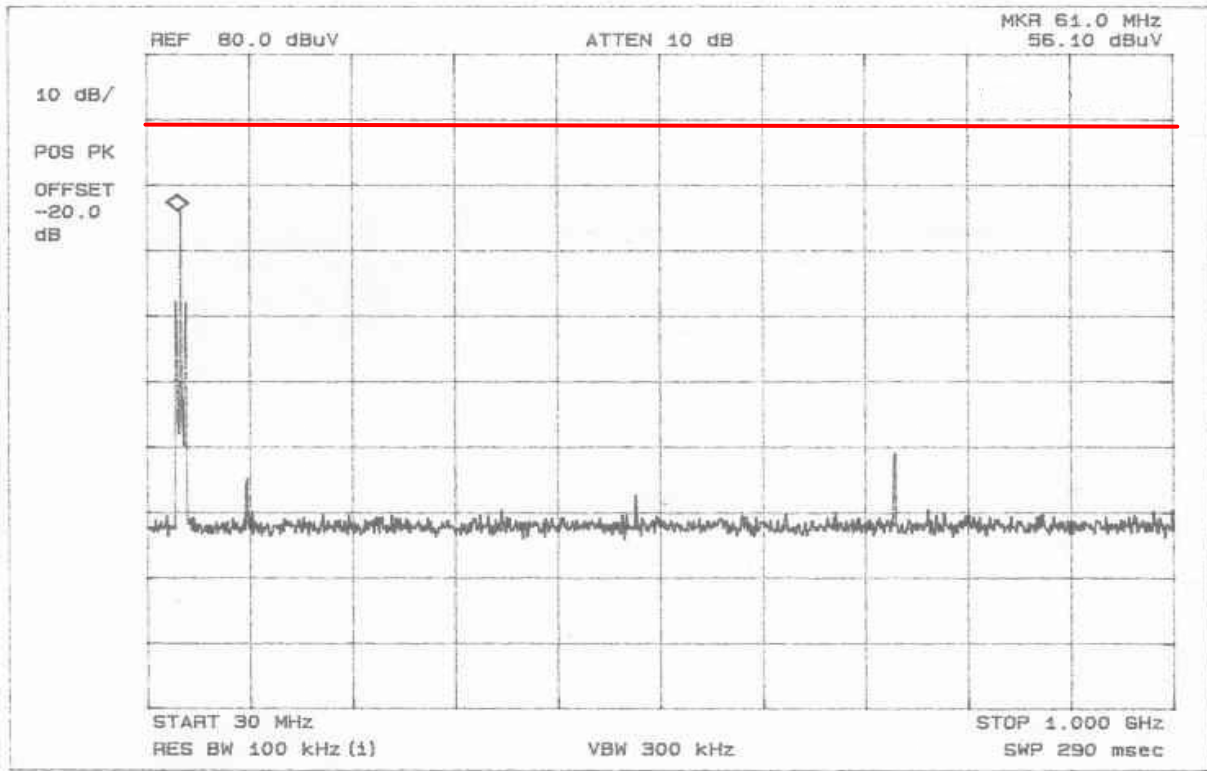
TV CH	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Mode	Margin(dB)
3	61.00	54.50	69.55	Playback	15.05
3	61.00	54.80	69.55	Record	14.75
4	66.90	54.70	69.55	Playback	14.85
4	66.90	54.60	69.55	Record	14.95

Spurious Emission Tabulated Data with Tuner

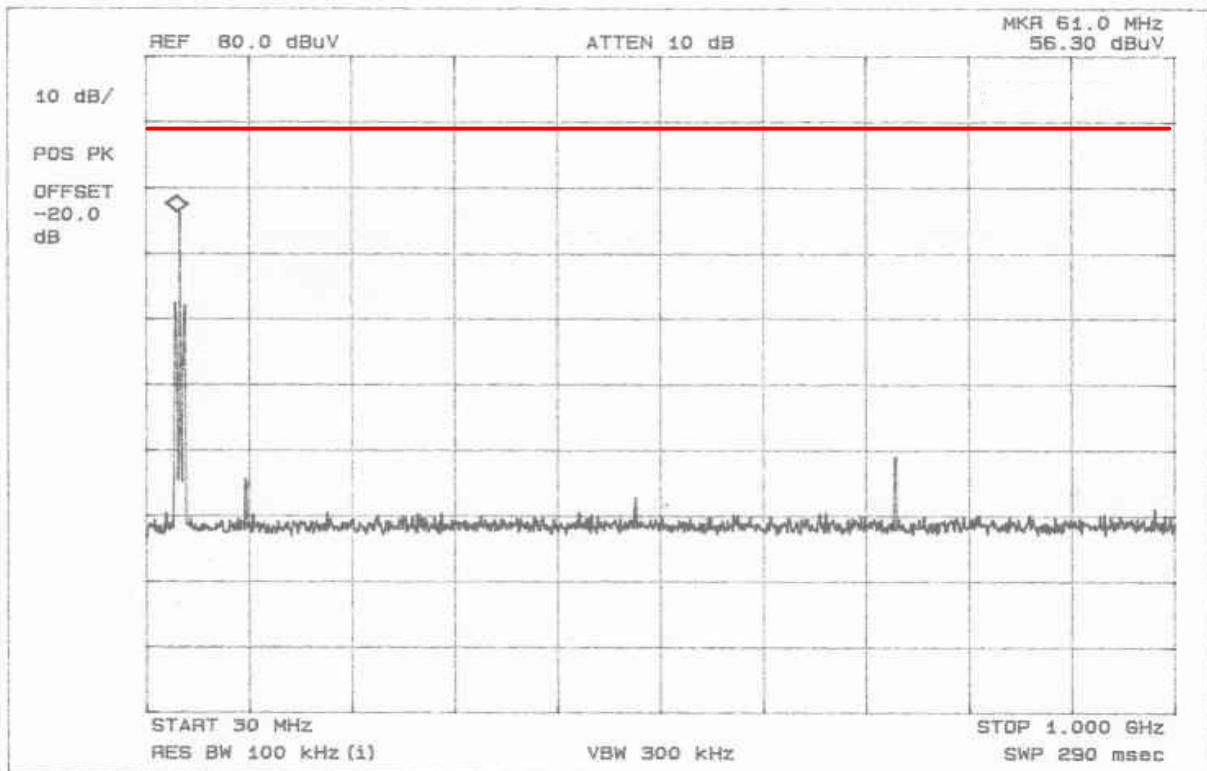
(Alps Model: **TMZH2-030A**)

Output Terminal Conducted Spurious Emission

Tuner: TCMN0682PA20B4 (Samsung)



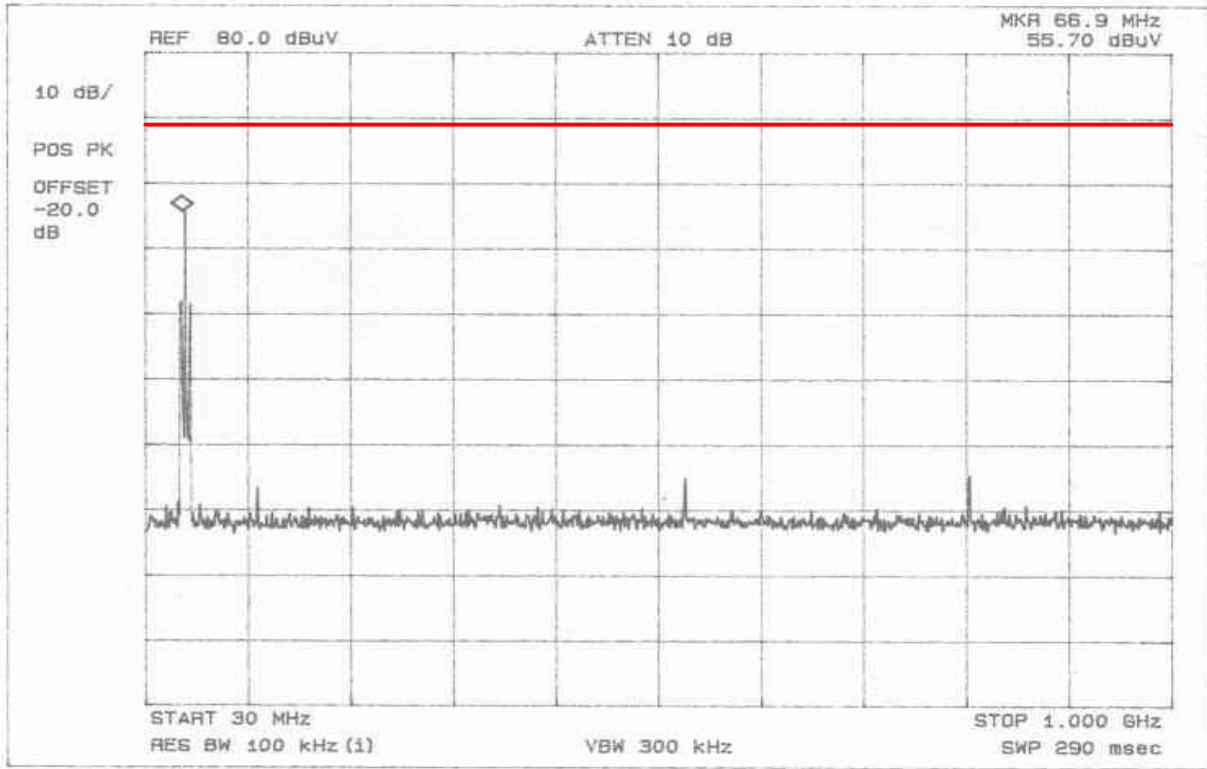
CH3 Playback



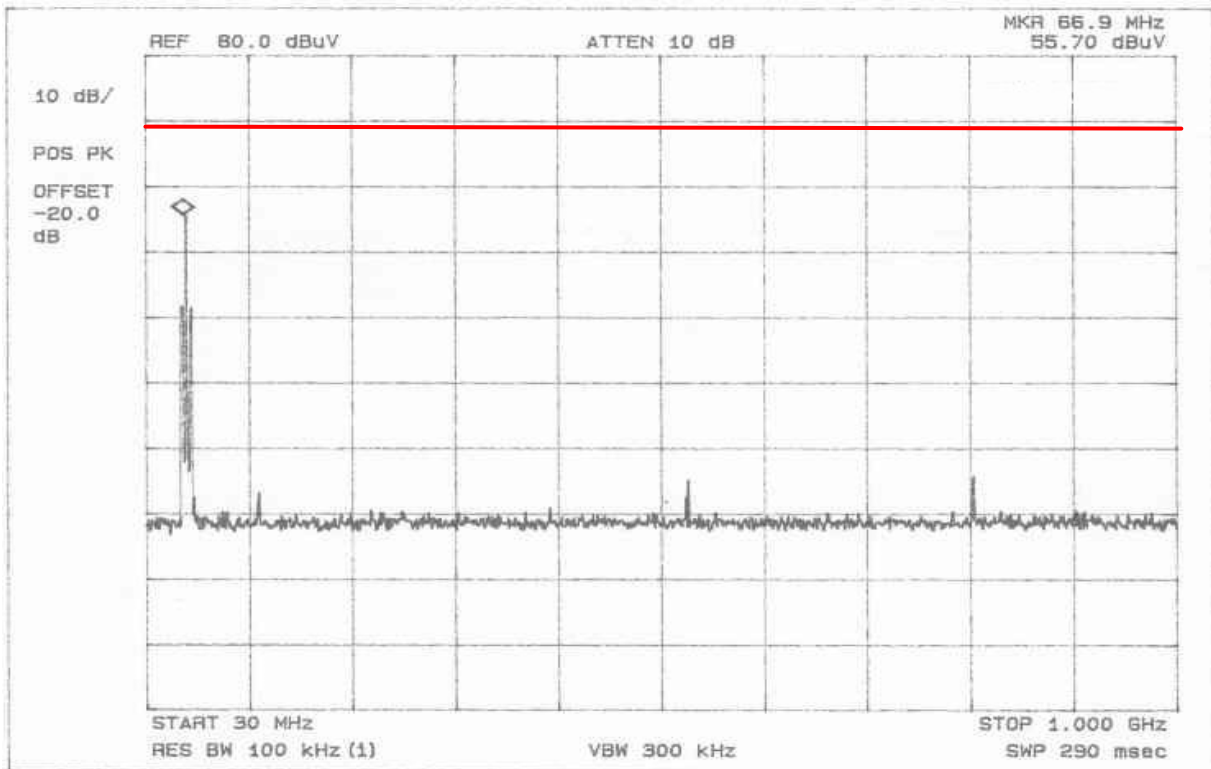
CH3 Record

Output Terminal Conducted Spurious Emission

Tuner: TCMN0682PA20B4 (Samsung)



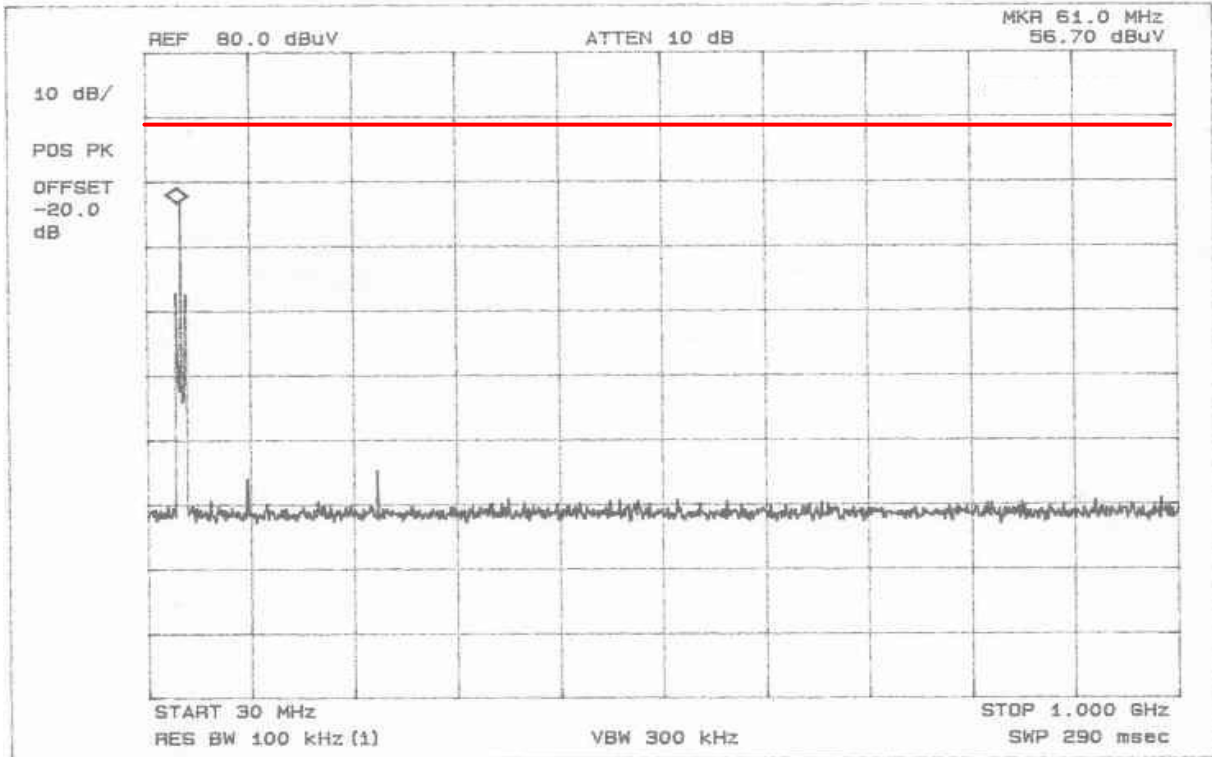
CH4 Playback



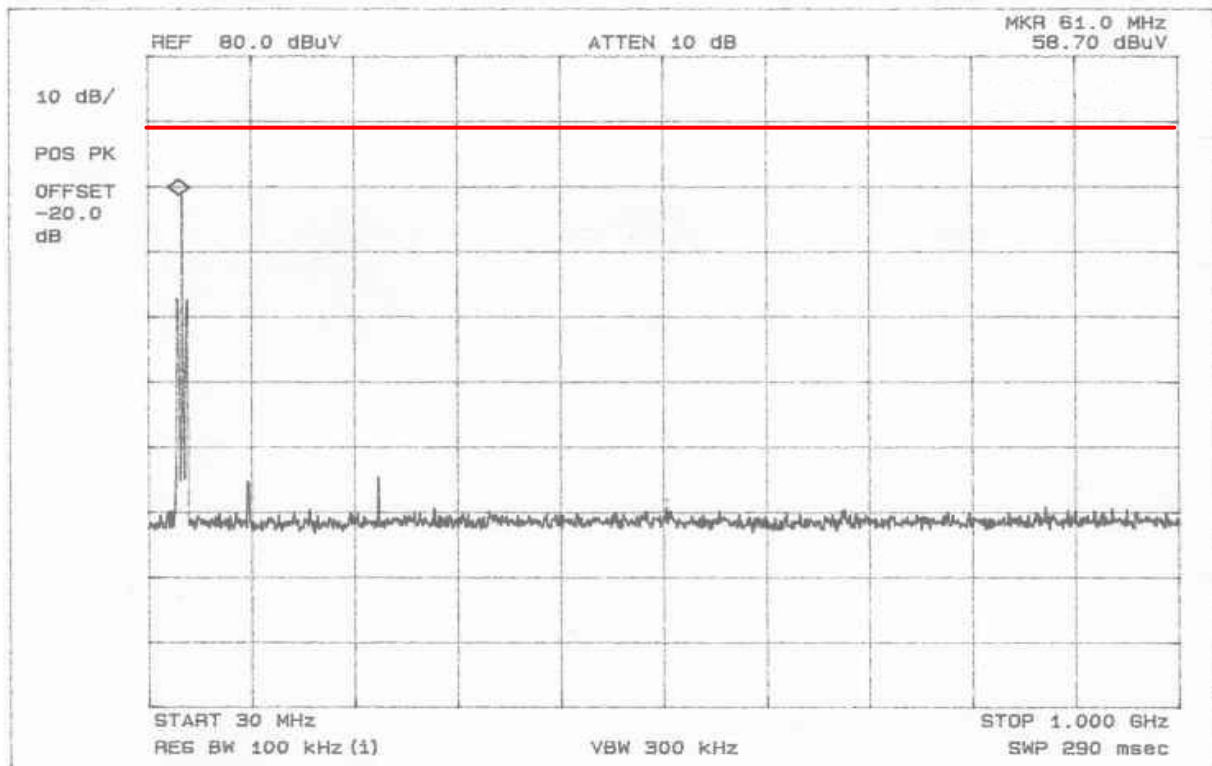
CH4 Record

Output Terminal Conducted Spurious Emission

Tuner: TADM-H201F (LG)



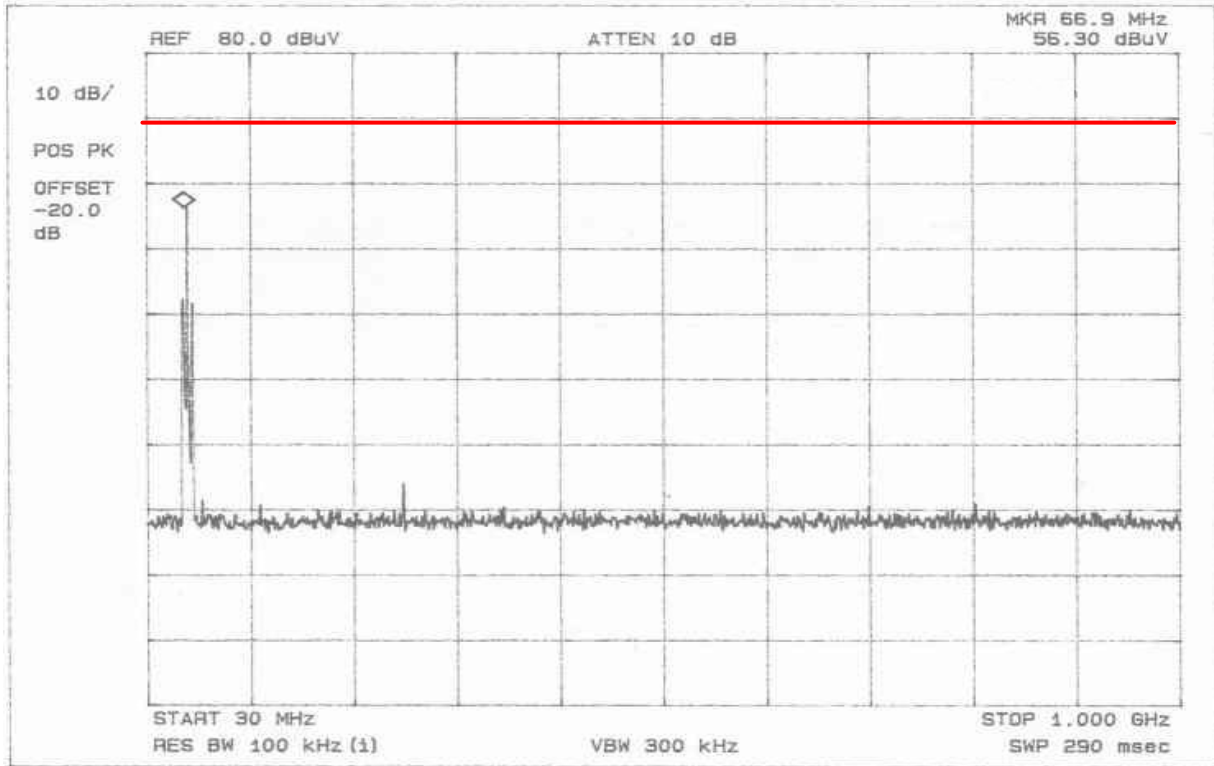
CH3 Playback



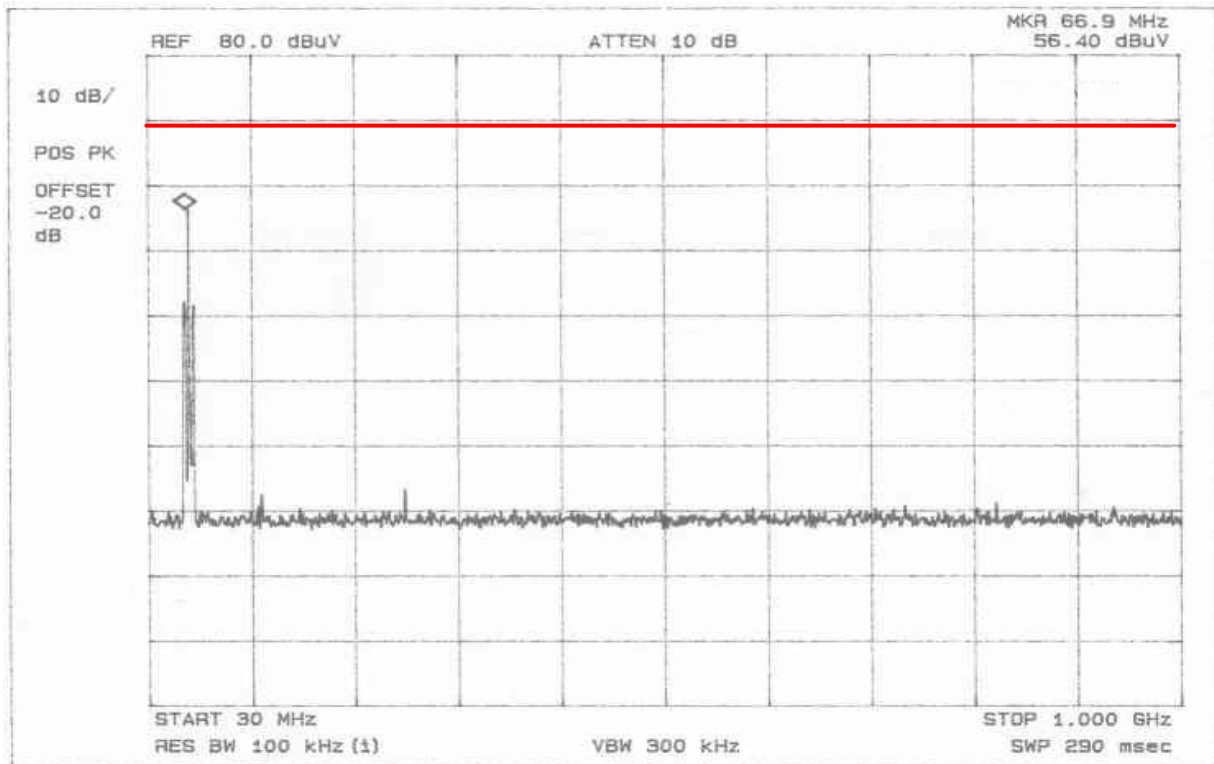
CH3 Record

Output Terminal Conducted Spurious Emission

Tuner: TADM-H201F (LG)



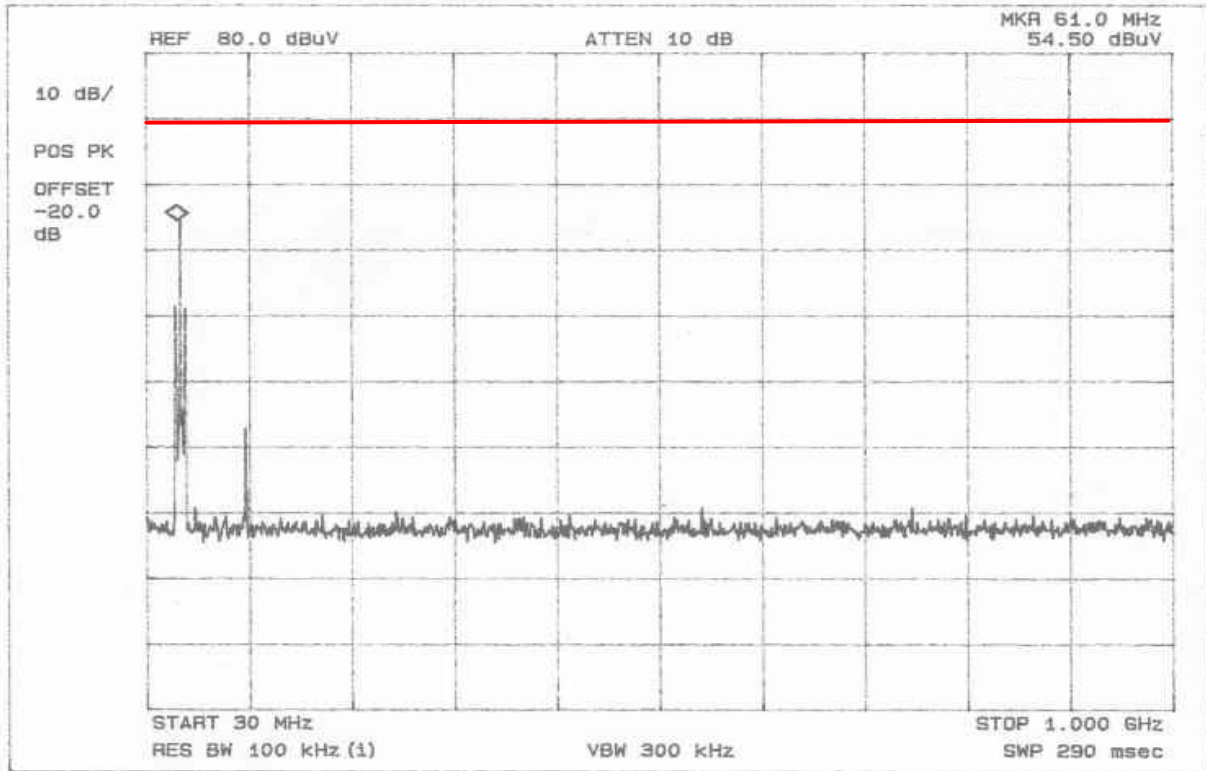
CH4 Playback



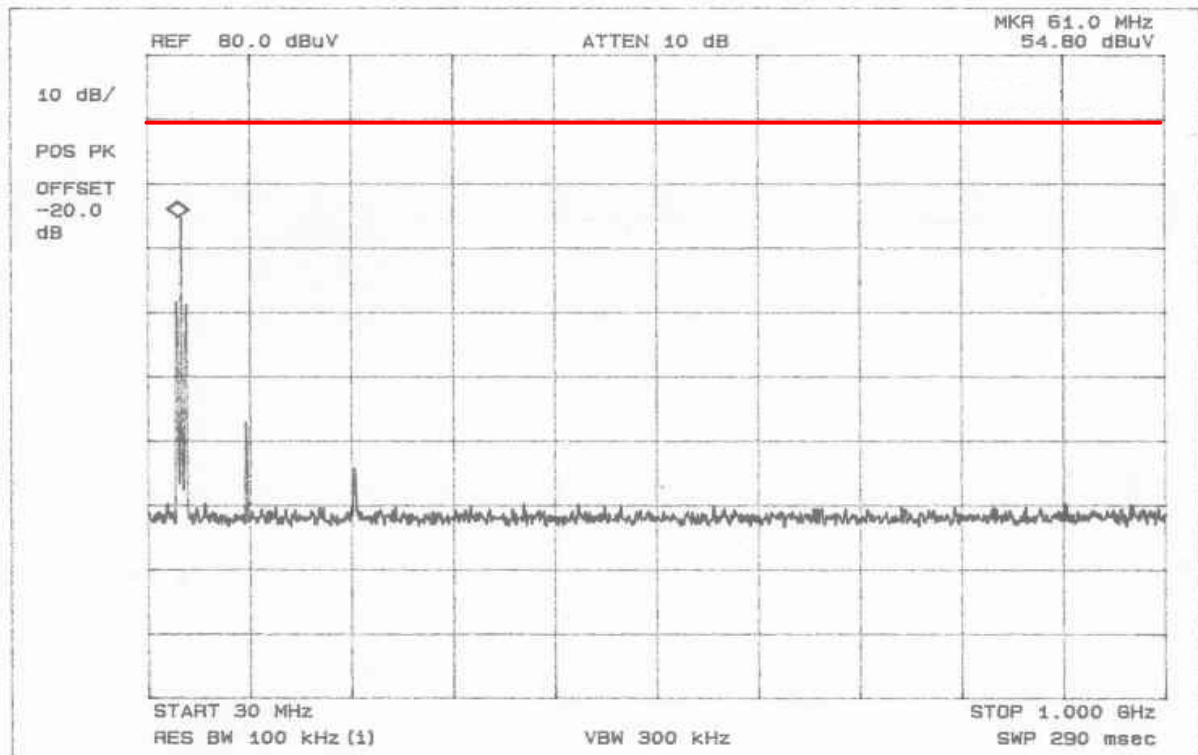
CH4 Record

Output Terminal Conducted Spurious Emission

Tuner: TMZH2-030A (ALPS)



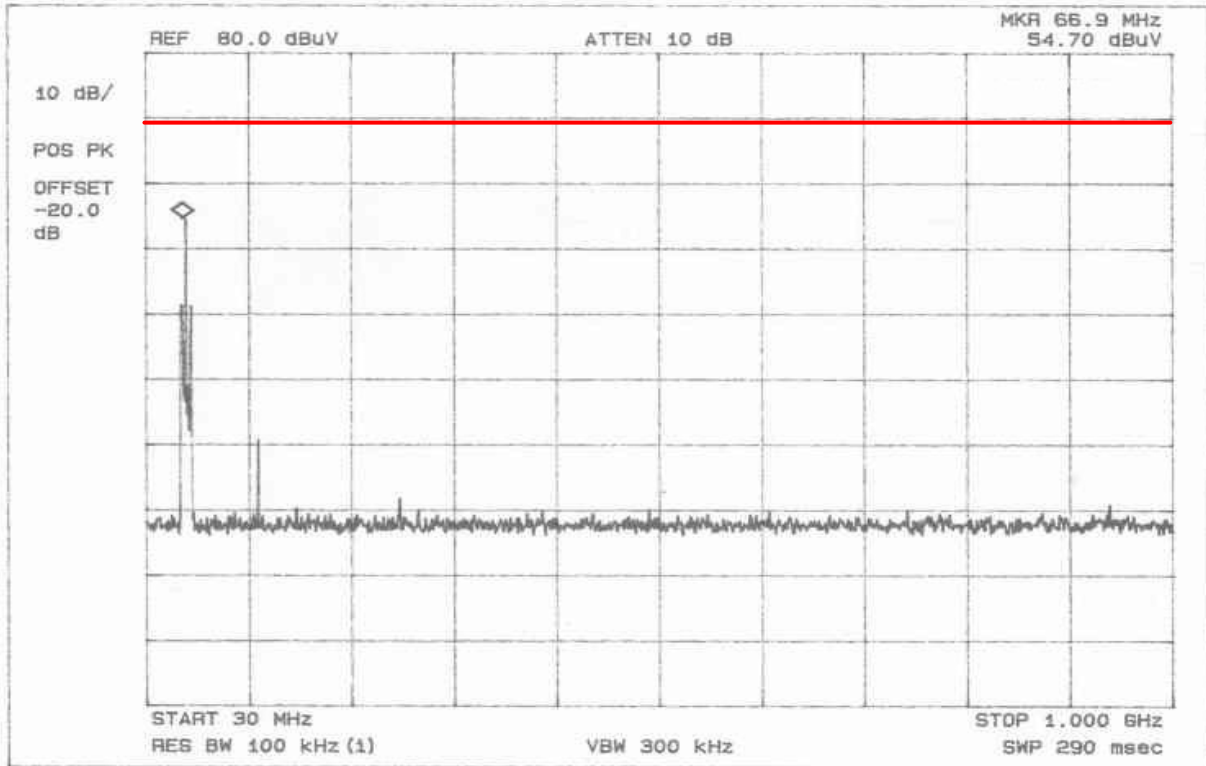
CH3 Playback



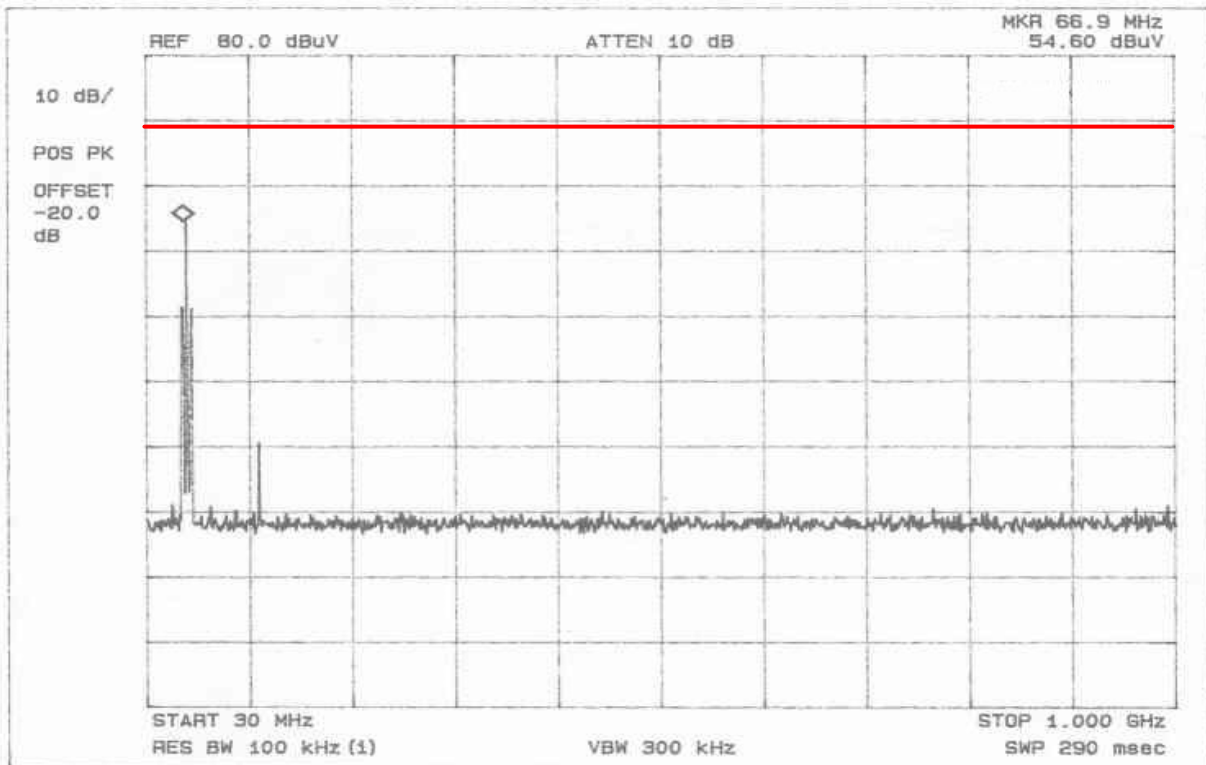
CH3 Record

Output Terminal Conducted Spurious Emission

Tuner: TMZH2-030A (ALPS)



CH4 Playback



CH4 Record

TEST CONDITIONS AND DATA

Transfer Switch Isolation Measurement

[Applicable]

Test Equipment Used

The test equipment used is calibrated in regular for every year.

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>	<u>Calibration Date</u>	<u>Serial Number</u>
8566B	Hewlett Packard	Spectrum Analyzer	Dec. 01, 2004	3014A07159
85685A	Hewlett Packard	RF preselector	Dec. 01, 2004	2817A00760
RAM	Rohde & Schwarz	50/75ohms matching pad	-	836625/033
PM5418	FLUKE	Pattern Generator	May. 10, 2004	LO 796009

Auxiliary Equipment Used

<u>Model Name</u>	<u>Manufacturer</u>	<u>Descriptions</u>
14C5NT	Daewoo Electronics.	Color TV Receiver

Accessories including cables

<u>Name</u>	<u>Length</u>	<u>Port and Descriptions</u>
RCA	1.5m	Video / Audio

Environmental Conditions

Temperature	15
Humidity	48 %
Atmosphere pressure	1002mbar

Test Program Playback and record mode

Test Area Compact Chamber

Test Date March 28, 2005

Note : Transfer switch isolation measurements were made on the Channel 3 and 4 video output frequencies of 61.25 and 67.25 MHz and both position of the transfer switch.

Limit calculation(Sec 15.115 (c)(1)(ii))

$$0.346 \times 75^{1/2} = 2.996\mu V = 9.53dBuV = -97.46dBm$$

The test were performed with color bar as VITS. The VITS signals, 1V and 5V peak-to-peak, were used for channel 3 and channel 4 with alternate. The above test program were employed for each channel.

Transfer Switch Isolation Measurement

TV CH	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Mode	Margin(dB)
3	61.25	5.28	9.53	Playback	4.25
3	61.25	5.10	9.53	Record	4.43
4	67.25	4.98	9.53	Playback	4.55
4	67.25	5.10	9.53	Record	4.43

Transfer Switch Tabulated Data with Tuner

(Samsung Model: **TCMN0682PA20B4**)

TV CH	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Mode	Margin(dB)
3	61.25	5.38	9.53	Playback	4.15
3	61.25	5.67	9.53	Record	3.86
4	67.25	5.25	9.53	Playback	4.28
4	67.25	4.80	9.53	Record	4.73

Transfer Switch Tabulated Data with Tuner

(LG Model: **TADM-H201F**)

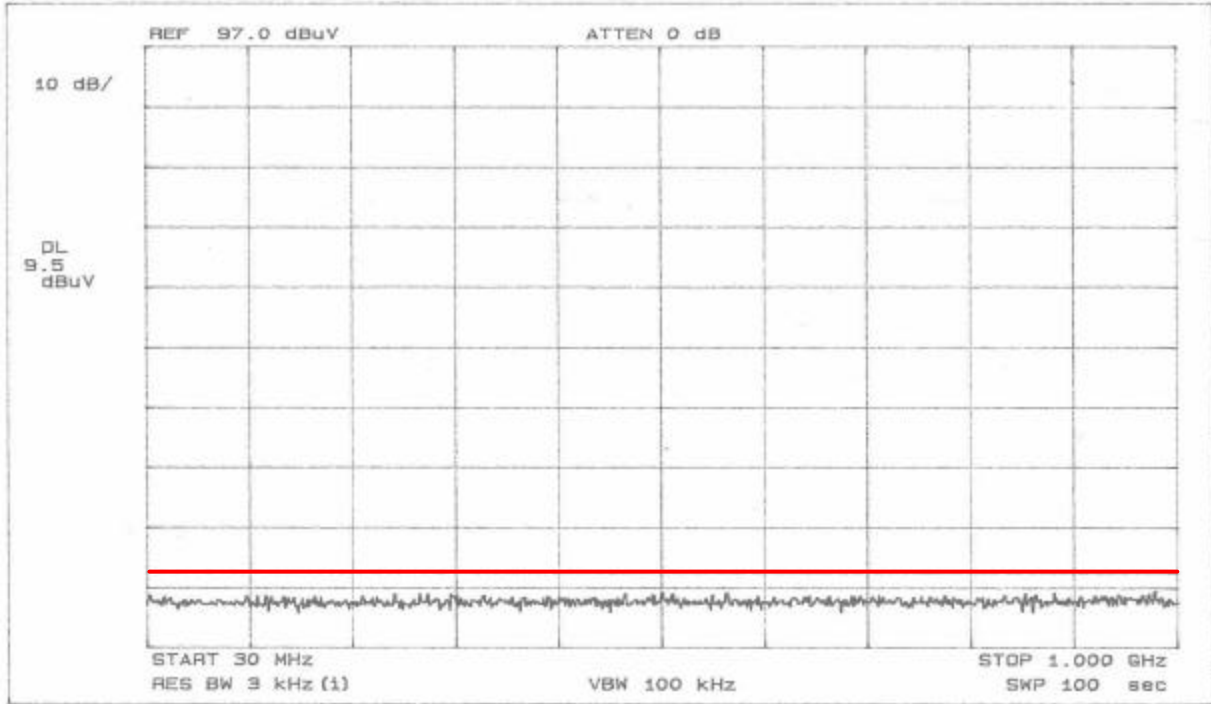
TV CH	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Mode	Margin(dB)
3	61.25	5.35	9.53	Playback	4.18
3	61.25	5.15	9.53	Record	4.38
4	67.25	5.73	9.53	Playback	3.80
4	67.25	5.30	9.53	Record	4.23

Transfer Switch Tabulated Data with Tuner

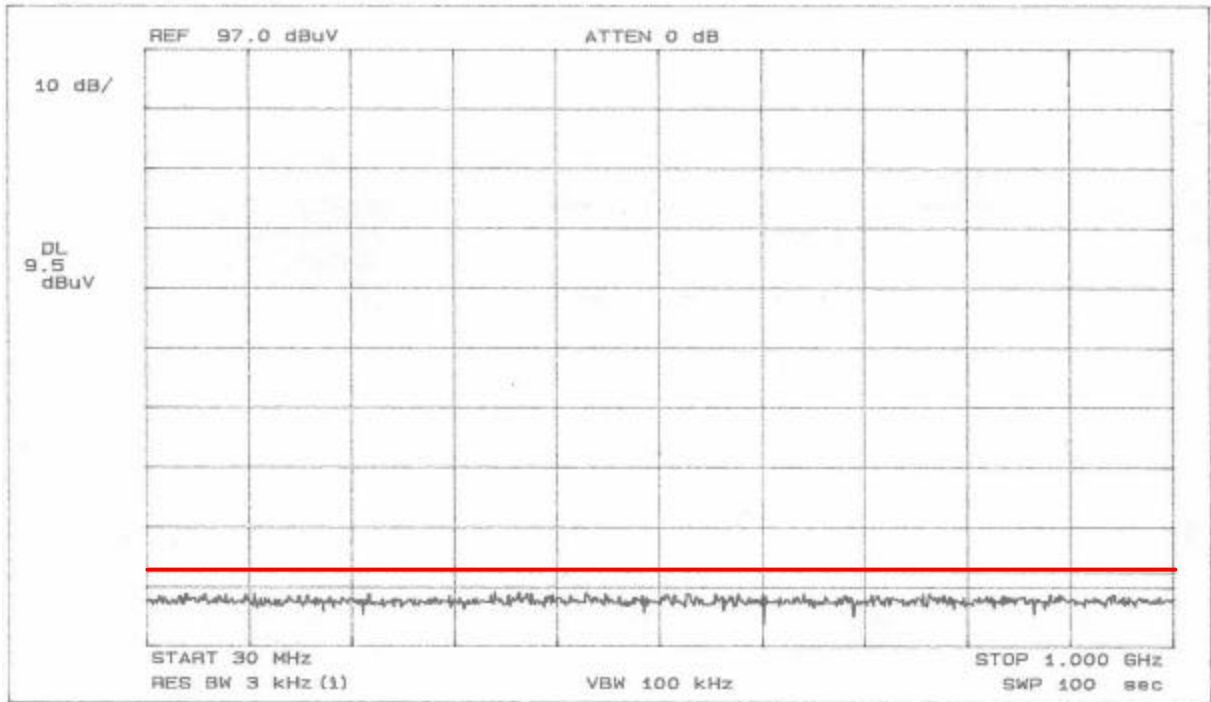
(ALPS Model: **TMZH2-030A**)

Transfer Switch Isolation Measurement

Tuner: TCMN0682PA20B4 (Samsung)



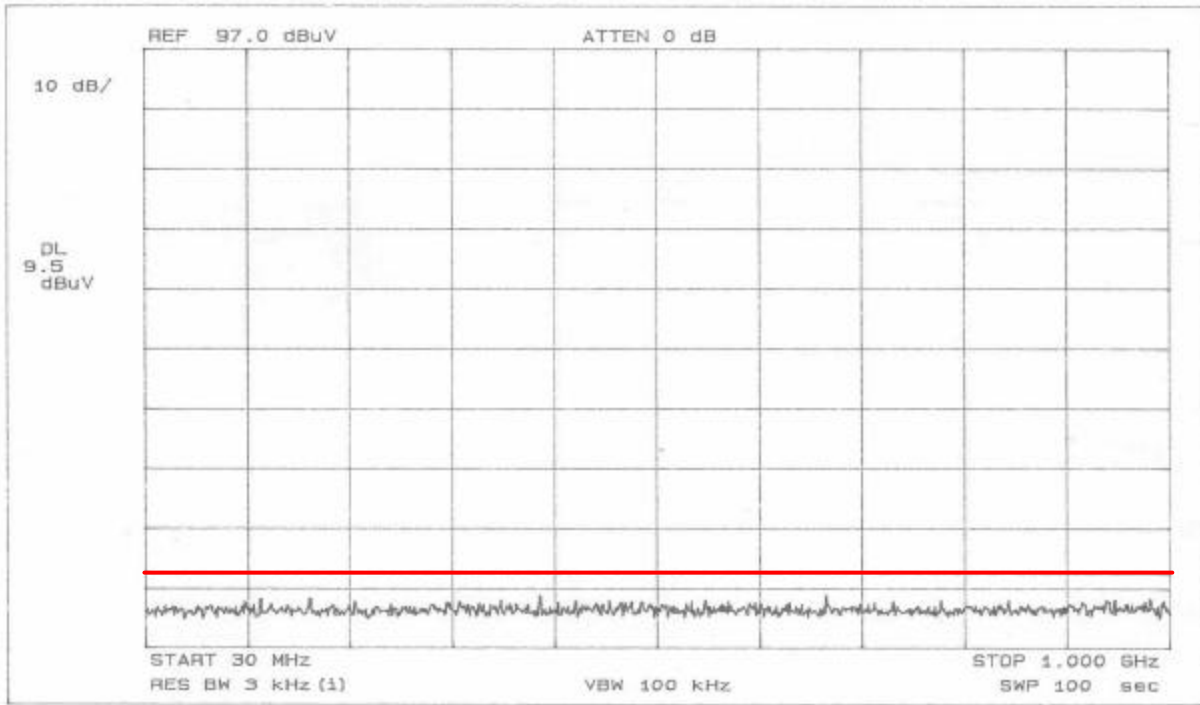
CH3 Playback



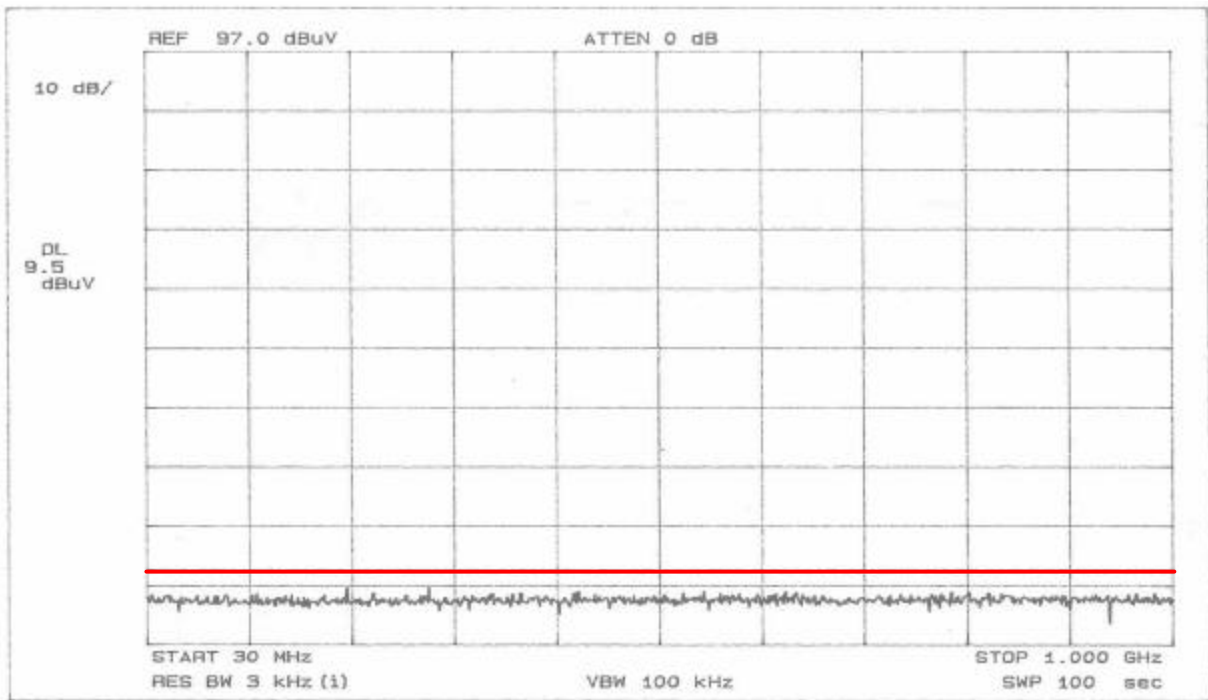
CH3 Record

Transfer Switch Isolation Measurement

Tuner: TCMN0682PA20B4 (Samsung)



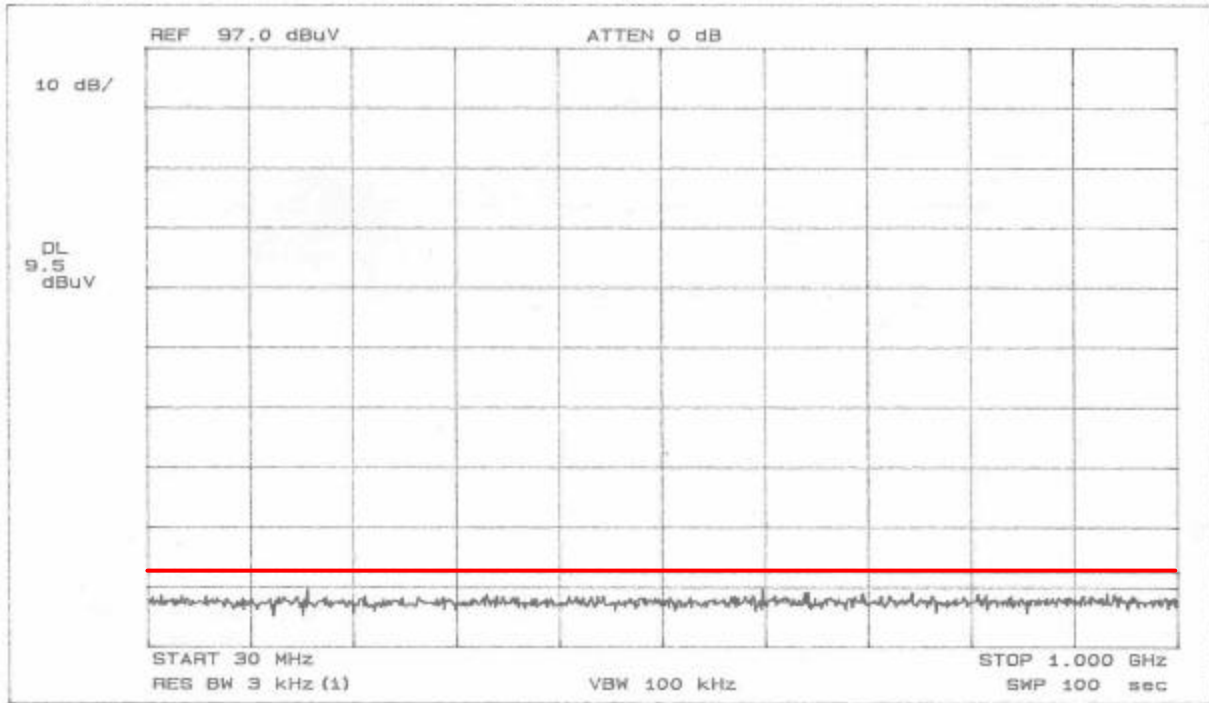
CH4 Playback



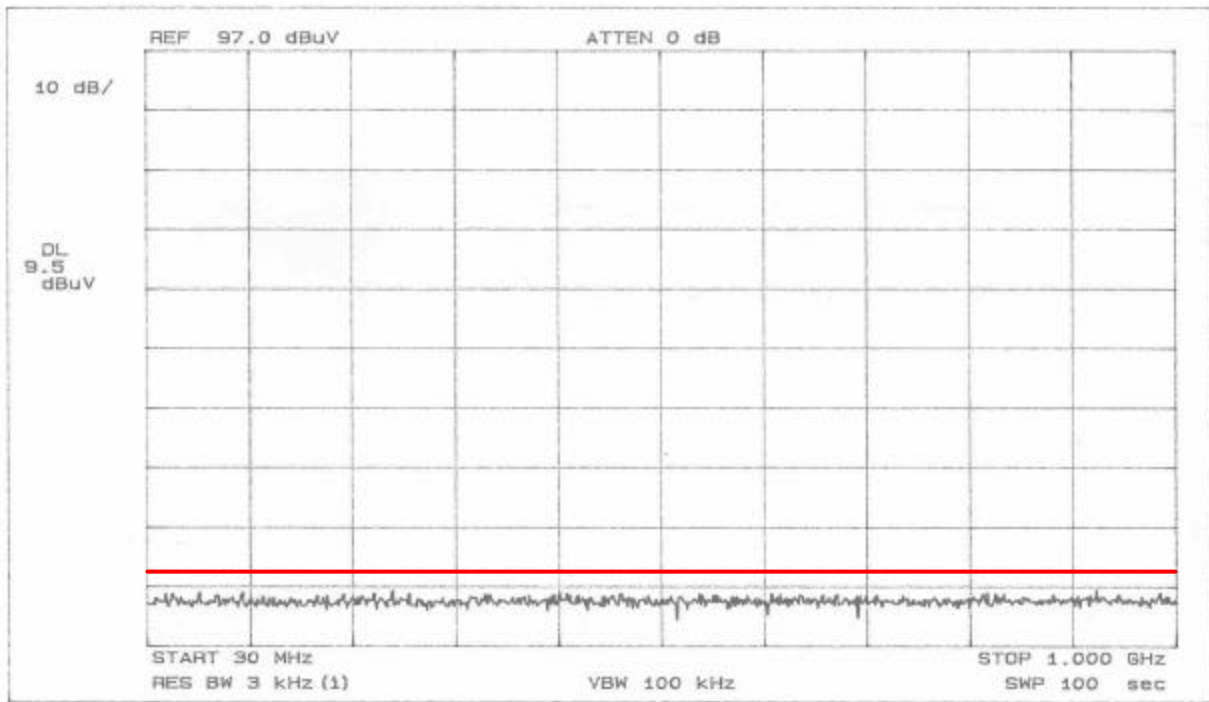
CH4 Record

Transfer Switch Isolation Measurement

Tuner: TADM-H201F (LG)



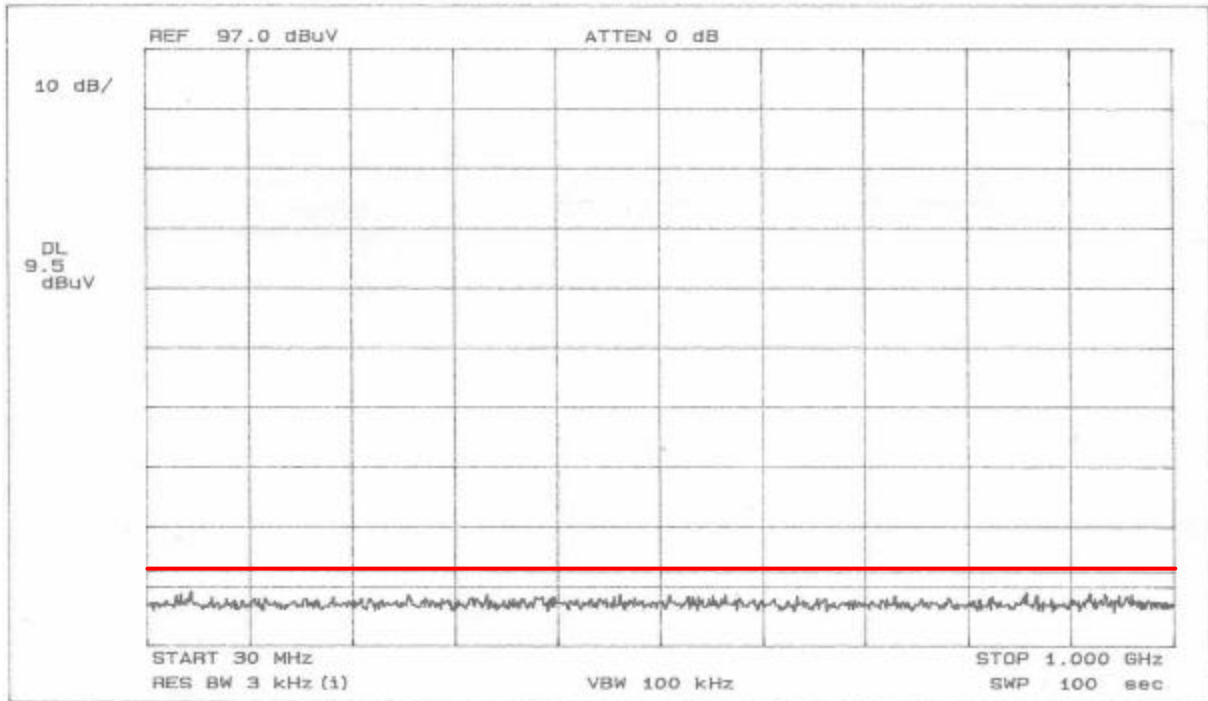
CH3 Playback



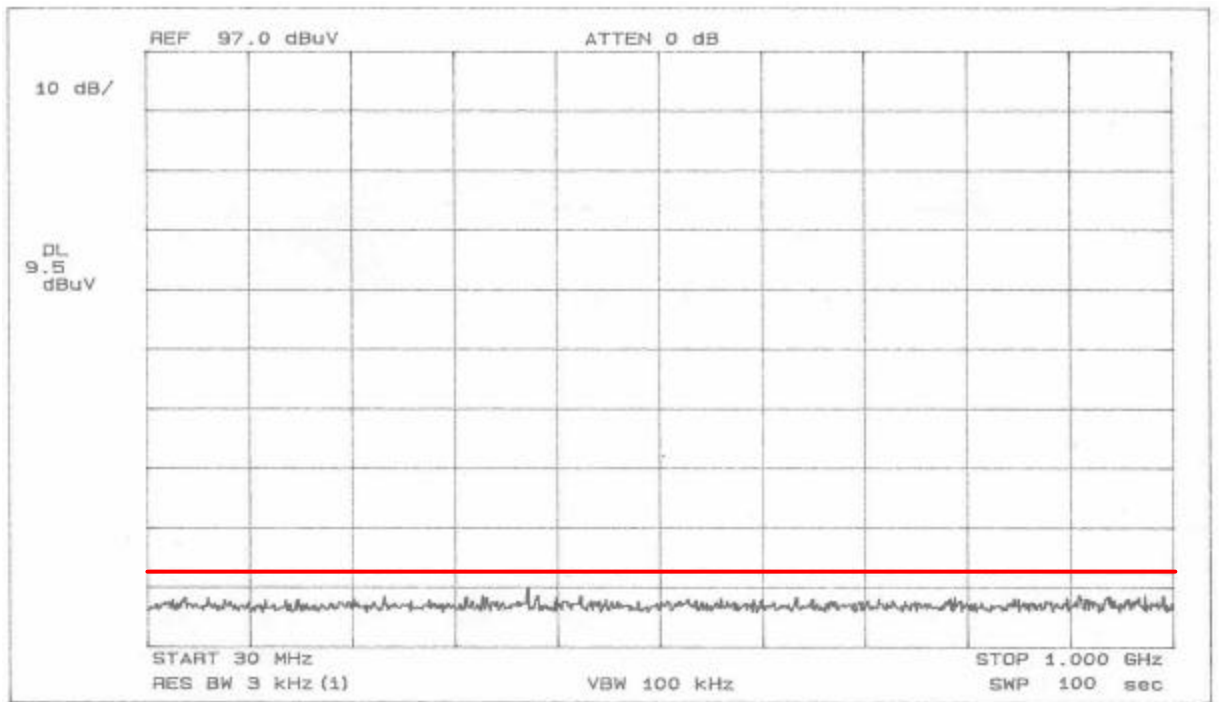
CH3 Record

Transfer Switch Isolation Measurement

Tuner: TADM-H201F (LG)



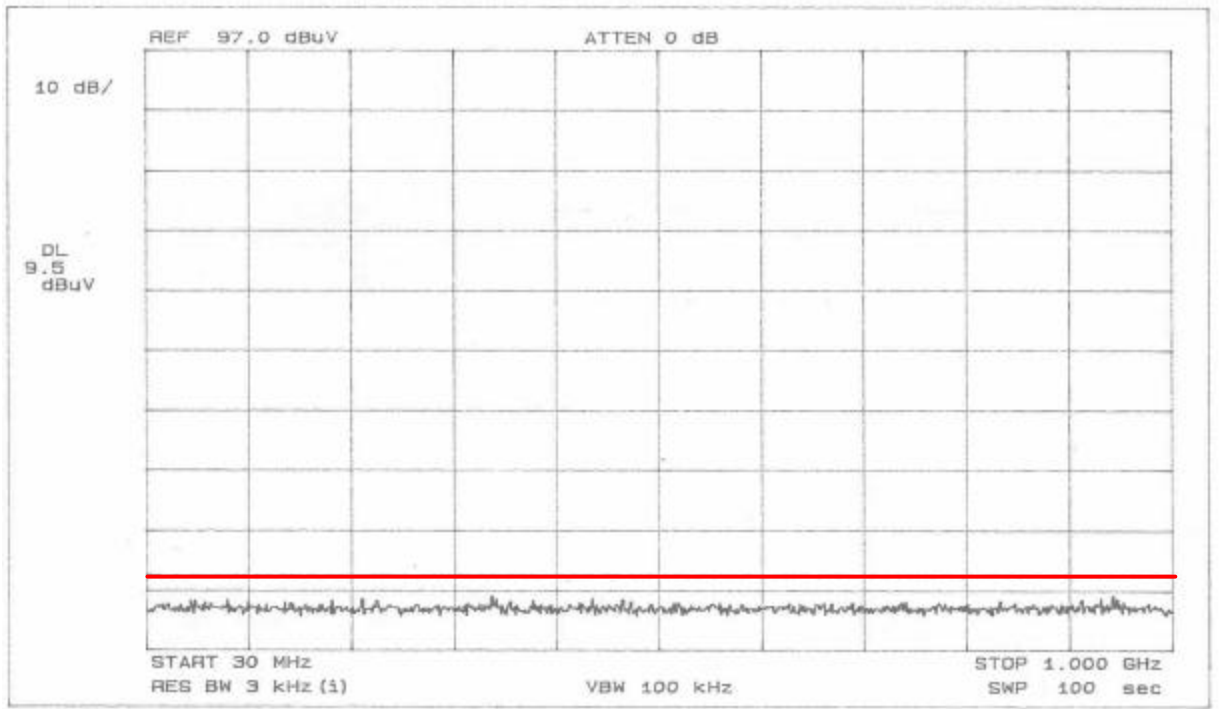
CH4 Playback



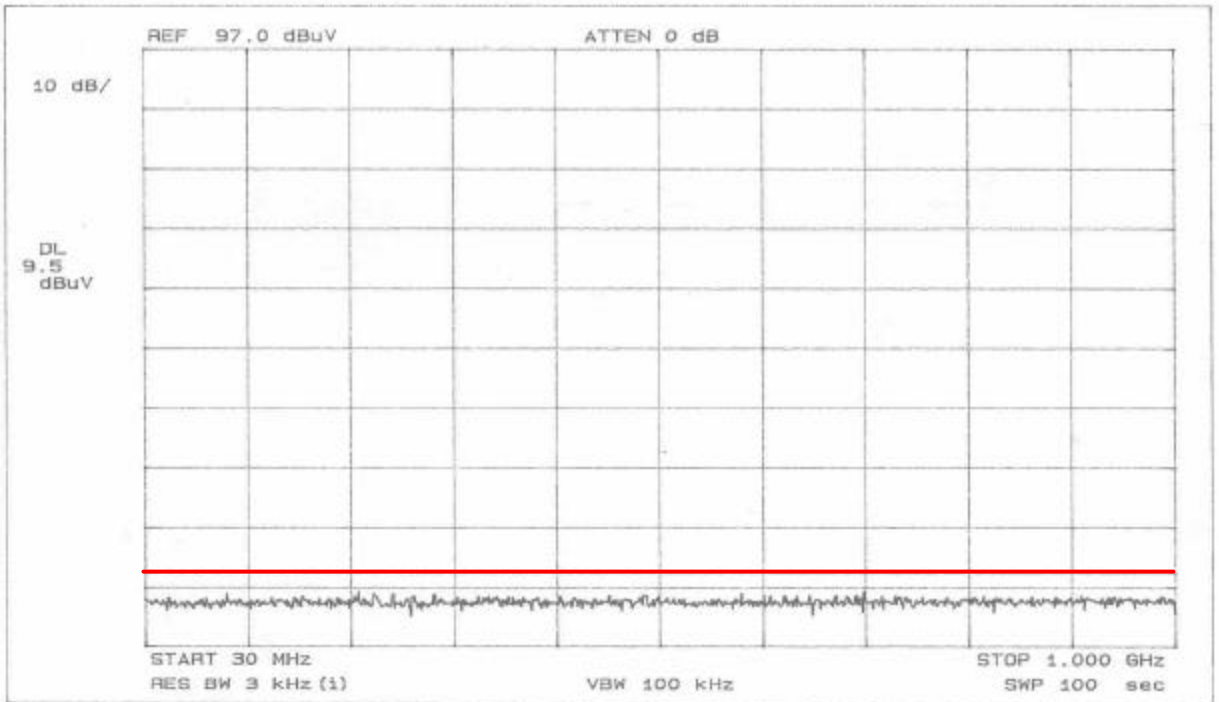
CH4 Record

Transfer Switch Isolation Measurement

Tuner: TMZH2-030A (ALPS)



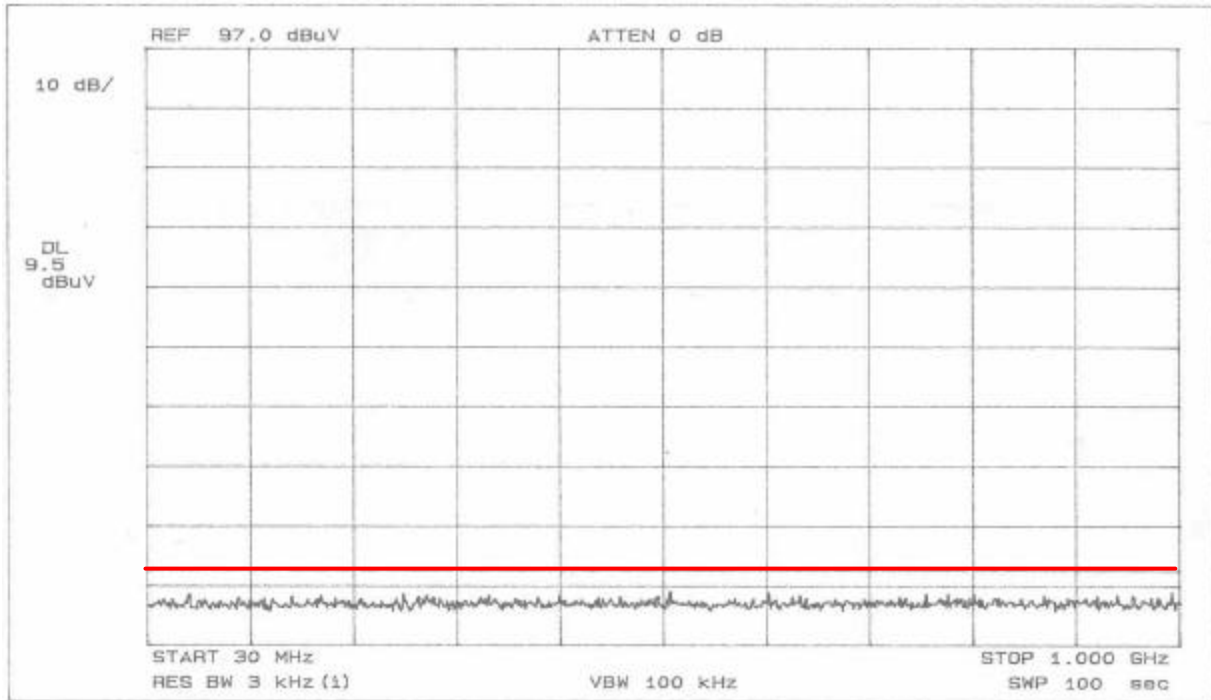
CH3 Playback



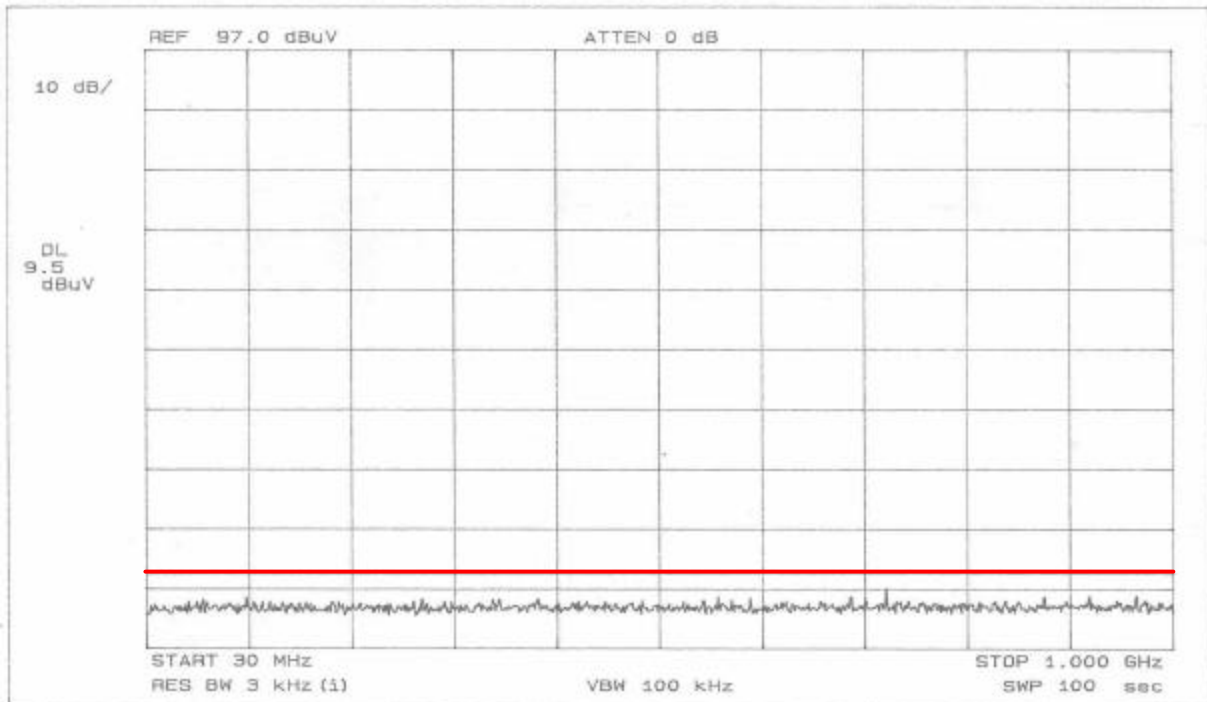
CH3 Record

Transfer Switch Isolation Measurement

Tuner: TMZH2-030A (ALPS)



CH4 Playback



CH4 Record