

EXHIBIT B

Test Report

Report No.	S3715982
Specifications	FCC Part 15 - Cerification
Test Method	ANSI C63.4 1992
Applicant address	UNIT F-J, 5/F, BLOCK 2, KWAI TAK IND. CENTRE, 15-33 KWAI TAK STREET, KWAI CHUNG, N.T., HONG KONG
Applicant Items tested Model No.	STD MANUFACTURING LTD. RF MODULATOR UNIT P-067F
Results	As detailed within this report
Sample received date	03 / 16 /1998 (month / day / year)
Prepared by	<u>Stephen Chen</u> project engineer
Authorized by	<u>Jacob Lin</u> Vice General Manager (Jacob Lin)
Issue date	<u>Apr. 29, 1998</u> (month / day / year)
Modifications	None
Tested by	Training Research Co., Ltd.
Office at	2F, No. 571, Chung Hsiao E. Road, Sec.7, Taipei, Taiwan
Open site at	No. 5-3, Lane 21, Yen Chiu Yuan Rd., Sec.4, Taipei Taiwan

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- (2). This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.

★ FCC ID : KYIP-067F

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Chapter 1 Introduction

Description of EUT :

This product is a RF modulator unit for Sony playstation game console . It is connected between N-64 game console and TV . There are two channels can be used : ch3 and ch4 . The video signal frequency of ch3 is 61.70 MHz and ch4 is 67.68 MHz. The audio signal frequency of ch3 is 65.85 MHz and ch4 is 71.87 MHz .The EUT contains a major unit and a transfer switch . This specification is according to FC part 15.115 .

Connection of EUT :

- (1)Connect the EUT's A/V port to the A/V multiout of Sony playstaion back .
- (2)Connect the TV port on the transfer switch to the antenna input of the TV with cable .
- (3)Connect the ANT port on the transfer switch to the outdoor antenna cable .

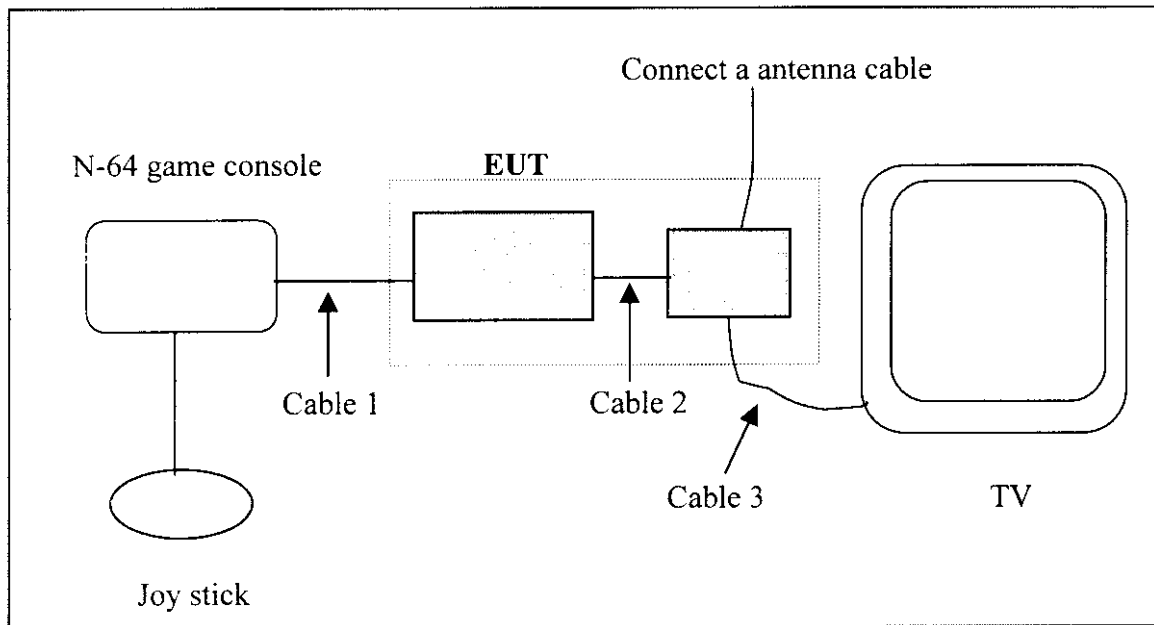
Test method :

Turn on the Sony playstation and TV . Make sure the screen of TV show the picture and can play the game . The ch3 and ch4 all be tested .

(If the emission is close to the ambient, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

The testing configuration of test setup is shown on the next page.

Configuration of test setup



Connections :

- Cable 1 is 30cm long with core which is mounted.
- Cable 2 is 3m long non-shielded.
- Cable 3 is 30cm long non-shielded .
- The antenna cable is 70cm long non-shielded.

List of support equipment

Conducted (Radiated) test :

N-64 game console : NINTENDO⁶⁴

Model No : NUS-001

Serial No : NUJ12363788

Power type : AC 110 60 Hz

Power cord : Non-shielded

Television : AOC

Model No : TV-14RT

Serial No : 00775

Power type : AC 110V 60 Hz

Power cord : Non-shielded

Chapter 2 Conducted emission test

Test condition and setup :

All the equipment is placed and setup according to the ANSI C63.4 - 1992 .
The EUT is assembled on a wooden table which is 80 cm high , is placed 40 cm from the back-wall which is a vertical conducting plane . One LISN is for EUT ,the other LISN is for support equipment. They are all placed on the conductive ground .The EUT's LISN connect a line switch box for selecting L1 or L2 ,then connect to a preamplifier and spectrum.

The spectrum scans from 450KHz to 30MHz . Conducted emission levels are detected at max. peak mode . But if the max. peak mode failed ,it will be measured by CISPR's quasi-peak detection mode .

While testing, there is a the worst-emission plot printed at peak detection mode ,and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report .

List of test Instrument :

Instrument Name	Model No.	Brand	Serial No.	<u>Calibration Date</u>	
				Last time	Next time
Spectrum analyzer	8591EM	H P	3619A00821	08/29/97	08/29/98
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/97	05/15/98
Preamplifier	8447F	H P	2944A03706	05/13/97	05/15/98
Line switch box	AC1-003	TRC	-----	05/15/97	05/15/98
Line selector	AC1-002	TRC	-----	05/15/97	05/15/98

The level of confidence of 95% ,the uncertainty of measurement of conducted emission is ± 2.4 dB .

Test Result : Pass (Appendix A)

Chapter 3 Radiated emission test

Test condition and setup :

Pretest : Prior to the final test (OATS test) ,the EUT is placed in a shielded enclosure ,GTEM, and scan from 30MHz to 1GHz.This is done to ensure the radiation exactly emits form the EUT.

Final test : Final radiation measurements is made on a **3 - meter**, open-field test site. The EUT is placed on a nonconductive table which is 0.8 m height, the top surface is 1.0 x 1.5 meter. All the placement is according to ANSI C63.4 - 1992.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The EMCO whole range Antenna is used to measure frequency from 30 MHz to 1GHz.The final test is used the spectrum HP 8594EM .

Measure more than six top marked frequencies generated form pretest by computer step by step at each frequency . The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meter to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading .The spectrum analyzer's 6dB bandwidth is set to 120 K Hz , and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient ,the data will be rechecked by the tester and the corrected data will be written in the test data sheet. If the emission is just within the ambient ,the data from GTEM will be taken as the final data.

List of test Instrument :

Instrument name	Model No.	Brand	Serial No.	<u>Calibration Date</u>	
				Last	Next
Spectrum analyzer	8568B	H P	3004A18617	05/15/97	05/15/98
Quasi-peak Adapter	85650A	H P	2521A00984	05/15/97	05/15/98
RF Pre-selector	85685A	H P	2947A01011	05/15/97	05/15/98
Spectrum analyzer	8594EM	H P	3619A00198	08/07/97	08/07/98
Antenna(30M-2G Hz)	3142	EMCO	9610-1094	10/30/97	10/30/98
Open test side (Antenna ,Amplify, cable calibrated together)				05/15/97	05/15/98

The level of confidence of 95% ,the uncertainty of measurement of radiated emission is ± 4.96 dB .

Test Result : Pass (Appendix B)

The test result of output signal :

Video signal :

CH	Frequency	Read Amplitude	Factor	Corrected Amplitude	Limit	Margin
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB
3	61.70	53.93	5.7	59.63	70	-10.37
4	67.68	55.20	5.7	60.90	70	-9.10

Audio Signal :

CH	Frequency	Read Amplitude	Factor	Corrected Amplitude	Limit	Margin
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB
3	65.858	41.11	5.7	46.81	56.5	-9.69
4	71.878	40.17	5.7	45.87	56.5	-10.63

Note :

1. The three pages of test plot follow this page is no page number.
2. Corrected Amplitude = Read Amplitude + Factor

Emission more than 4.6MHz blow or 7.4MHz above the carrier frequency:

CH	Total Amplitude	Limit	Margin
	dBuV/m	dBuV/m	dB
3	29.53	39.5	-9.97
4	24.79	39.5	-14.71

Note :

1. Total Amplitude = $20 \times \log \sqrt{(v_1^2 + v_2^2 + \dots + v_n^2)}$

Videc Signal

13:23:15 APR 21, 1998

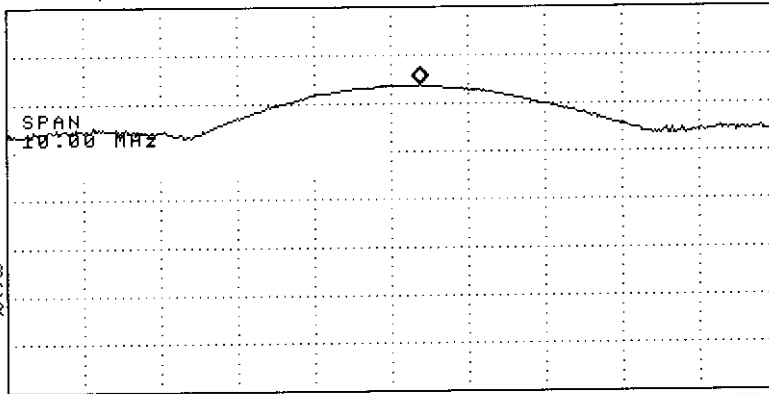
REF 70.0 dBμV AT 10 dB

MKR 61.70 MHz

53.93 dBμV

PEAK
LOG
10
dB/

MA SB
SC FC
ACORR



CENTER 61.32 MHz
L #RES BW 3.0 MHz

#VBW 1 MHz

SPAN 10.00 MHz
SWP 20.0 msec

MARKER
→ HIGH

MARKER
→ CF

NEXT
PEAK

NEXT PK
RIGHT

NEXT PK
LEFT

More
1 of 3

ch3

13:23:43 APR 21, 1998

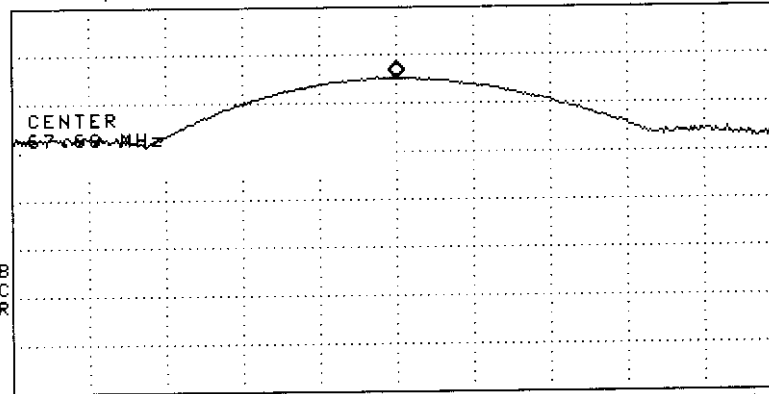
REF 70.0 dBμV AT 10 dB

MKR 67.68 MHz

55.20 dBμV

PEAK
LOG
10
dB/

MA SB
SC FC
ACORR



CENTER 67.68 MHz
L #RES BW 3.0 MHz

#VBW 1 MHz

SPAN 10.00 MHz
SWP 20.0 msec

CLEAR
WRITE A

MAX
HOLD A

VIEW A

BLANK A

Trace
A B C

More
1 of 4

ch4

Audio signal

13:25:11 APR 21, 1998

REF 70.0 dB μ V AT 10 dB

MKR 65.858 MHz
41.11 dB μ V

PEAK
LOG
10
dB/

AVERAGE BANDWIDTH
100 kHz

MA SB
SC FC
ACORR

MARKER
→ HIGH

MARKER
→ CF

NEXT
PEAK

NEXT PK
RIGHT

NEXT PK
LEFT

More
1 of 3

CENTER 65.798 MHz SPAN 1.000 MHz
L #RES BW 300 kHz #VBW 100 kHz SWP 20.0 msec

ch3

13:26:46 APR 21, 1998

REF 70.0 dB μ V AT 10 dB

MKR 71.878 MHz
40.17 dB μ V

PEAK
LOG
10
dB/

SPAN
1.000 MHz

MA SB
SC FC
ACORR

MARKER
→ HIGH

MARKER
→ CF

NEXT
PEAK

NEXT PK
RIGHT

NEXT PK
LEFT

More
1 of 3

CENTER 71.870 MHz SPAN 1.000 MHz
L #RES BW 300 kHz #VBW 100 kHz SWP 20.0 msec

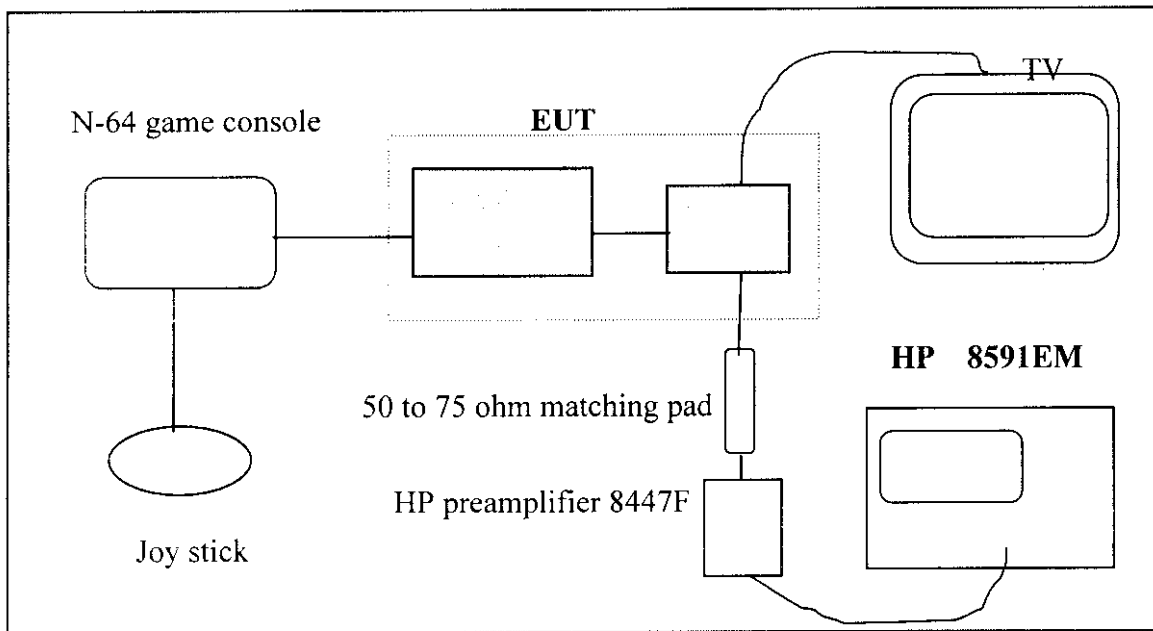
ch4

Chapter 5 Signal at antenna input test

Test condition and setup :

During test , the setup is as Chapter 1 . Connect the TV port of the transfer switch to a TV. The antenna port connect to the HP spectrum analyzer 8591EM . There is a 50 to 75 ohm matching pad and HP preamplifier 8447F used here . The insertion loss of matching pad is 5.7 dB . The gain of preamplifier is 25 dB.

The Configuration of Output Signal test :



Test result :

CH	Frequency	Read Amplitude	Factor	Corrected Amplitude	Limit	Margin
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB
3	61.320	20.97	-19.3	1.67	9	-7.33
4	67.360	22.63	-19.3	3.33	9	-5.67

Note :

1. The test plot follow this page is no page number .
2. Factor = match pad loss - preamplifier gain
3. Corrected Amplitude = Read Amplitude + Factor

Final statement :

This test report, measurements made by TRC are traceable to the NIST.

11:33:17 APR 23, 1998

REF LEVEL
29.8 dB μ V

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 61.320 MHz
20.97 dB μ V

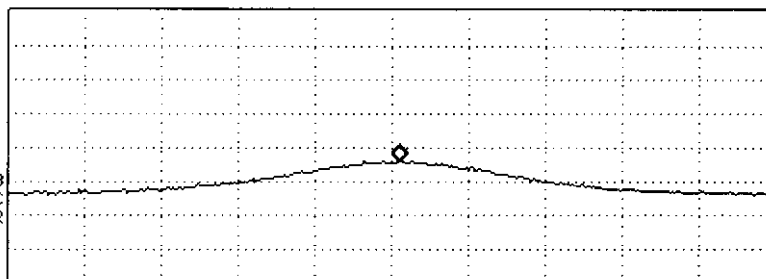
MARKER
+ HIGH

MARKER
+ CF

LOG REF 29.8 dB μ V

2
dB/
#ATN
0 dB

MA SB
SC FC
ACORR



NEXT
PEAK

NEXT PK
RIGHT

NEXT PK
LEFT

More
1 of 3

11:34:38 APR 23, 1998

CENTER
67.360 MHz

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 67.360 MHz
22.63 dB μ V

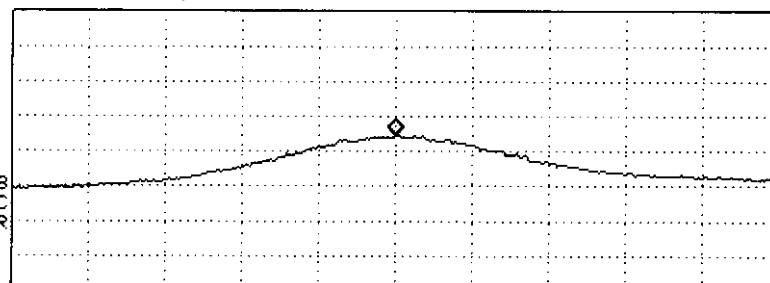
MARKER
+ HIGH

MARKER
+ CF

LOG REF 29.8 dB μ V

2
dB/
#ATN
0 dB

MA SB
SC FC
ACORR



NEXT
PEAK

NEXT PK
RIGHT

NEXT PK
LEFT

More
1 of 3

Appendix A

Conducted Emission Test Result (CH 3)

Testing room : Temperature : 24 ° C Humidity : 40 % RH

Line 1

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV/m)	Margin (dB)
3.550	33.89	48	-14.11
6.719	33.84	48	-14.16
7.675	40.77	48	-7.23
7.970	40.59	48	-7.41
8.632	34.48	48	-13.52
10.690	37.83	48	-10.17
11.204	42.73	48	-5.27
11.644	43.66	48	-4.34
12.305	41.86	48	-6.14
13.185	38.98	48	-9.02

Line 2

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
7.013	36.97	48	-11.03
7.749	41.73	48	-6.27
8.043	40.81	48	-7.19
10.690	38.29	48	-9.71
11.351	43.75	48	-4.25
11.718	43.27	48	-4.73
12.232	41.99	48	-6.01
12.965	39.41	48	-8.59
13.772	37.67	48	-10.33

Conducted Emission Test Result (CH 4)**Line 1**

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV/m)	Margin (dB)
3.329	34.77	48	-13.23
12.819	35.12	48	-12.88
13.406	36.07	48	-11.93
14.945	39.27	48	-8.73
16.557	42.18	48	-5.82
19.337	45.54	48	-2.46
19.775	44.11	48	-3.89
20.287	41.03	48	-6.97
21.017	38.74	48	-9.26
21.894	36.96	48	-11.04

Line 2

Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
13.479	34.15	48	-13.85
14.652	36.13	48	-11.87
15.751	38.45	48	-9.55
16.337	38.97	48	-9.03
18.606	43.43	48	-4.57
19.410	43.74	48	-4.26
19.775	43.13	48	-4.87
20.287	41.17	48	-6.83
21.163	37.01	48	-10.99

Appendix B

Radiated Emission Test Result :(CH3 Horizontal)

Test Conditions:

Testing room : Temperature : 23° C Humidity : 48% RH

Testing site : Temperature : 31 ° C Humidity : 54 % RH

Frequency	Reading	Ant.	Table	Correction	Corrected	Class B	Margin
	Amplitude	Height		Factors	Amplitude	limit	
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
46.730	36.28	1	23	-11.19	25.09	40	-14.91
61.335	43.43	1	20	-13.99	29.44	40	-10.56
122.607	40.70	1	7	-13.21	27.49	43.5	-16.01
184.004	46.03	1	21	-10.79	35.24	43.5	-8.26
250.004	40.52	1	218	-7.18	33.34	46	-12.66
750.084	40.73	1	6	-6.90	33.83	46	-12.17

Note:

- 1.Margin = Amplitude - limit, *if margin is minus means under limit.*
 - 2.Corrected Amplitude = Reading Amplitude - Correction Factors
 - 3.Correction factor = Antenna factor + (Cable Loss - Amplitude gain)
- (For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

Radiated Emission Test Result :(Vertical)

Frequency	Reading	Ant.	Table	Correction	Corrected	Class B	Margin
	Amplitude	Height		Factors	Amplitude	limit	
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
46.730	37.79	1	142	-11.19	26.60	40	-13.4
61.335	46.19	1	95	-13.99	32.20	40	-7.8
122.607	40.19	1	99	-13.21	26.98	43.5	-16.52
184.004	51.14	1	138	-10.79	40.35	43.5	-3.15
250.004	39.84	1	307	-7.18	32.66	46	-13.34
750.084	42.90	1	130	-6.90	36.00	46	-10.00

Radiated Emission Test Result :(CH4 Horizontal)

Frequency	Reading	Ant.	Table	Correction	Corrected	Class B	Margin
	Amplitude	Height		Factors	Amplitude	limit	
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
67.425	46.07	1	84	-14.38	31.69	40.00	-8.31
134.834	47.50	1	166	-13.07	34.43	43.5	-9.07
202.762	47.94	1	132	-9.67	38.27	43.5	-5.23
265.112	42.47	1	58	-6.62	35.85	46	-10.15
322.566	53.32	1	78	-18.80	34.52	46	-11.48
400.941	55.89	1	272	-16.66	39.23	46	-6.77

Note:

4.Margin = Amplitude - limit, *if margin is minus means under limit.*

5.Corrected Amplitude = Reading Amplitude - Correction Factors

6.Correction factor = Antenna factor + (Cable Loss - Amplitude gain)

(For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

Radiated Emission Test Result :(Vertical)

Frequency	Reading	Ant.	Table	Correction	Corrected	Class B	Margin
	Amplitude	Height		Factors	Amplitude	limit	
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
67.425	48.07	1	163	-14.38	33.69	40.00	-6.31
134.834	45.33	1	280	-13.07	32.26	43.5	-11.24
202.762	45.92	1	317	-9.67	36.25	43.5	-7.25
265.112	41.01	1	249	-6.62	34.39	46	-11.61
322.566	42.98	1	7	-18.80	24.18	46	-21.82
400.941	51.34	1	71	-16.66	34.68	46	-11.32

10:28:37 APR 15, 1998

MKR 50.56 MHz

REF 3.976 mV

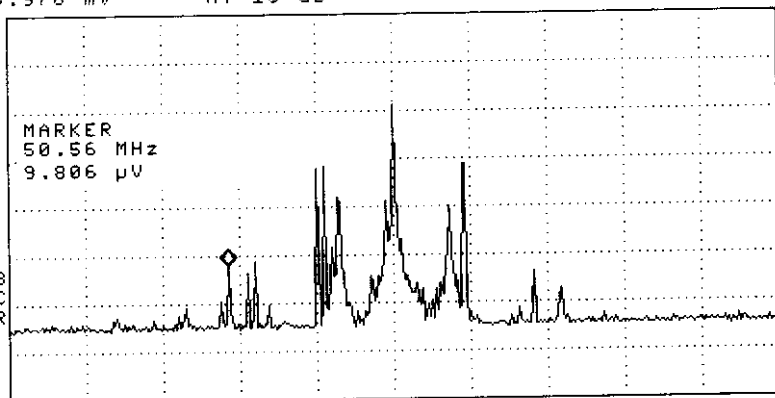
AT 10 dB

9.806 μ V

PEAK
LOG
10
dB/

MARKER
50.56 MHz
9.806 μ V

VA SB
SC FC
CORR



MARKER
NORMAL

MARKER
 Δ

MARKER
AMPTD

SELECT
1 2 3 4

MARKER 1
ON OFF

More
1 of 3

CENTER 61.31 MHz

#RES BW 10 kHz

#VBW 1 kHz

SPAN 50.00 MHz
SWP 15.0 sec

10:47:09 APR 15, 1998

MKR 67.37 MHz

REF 3.976 mV

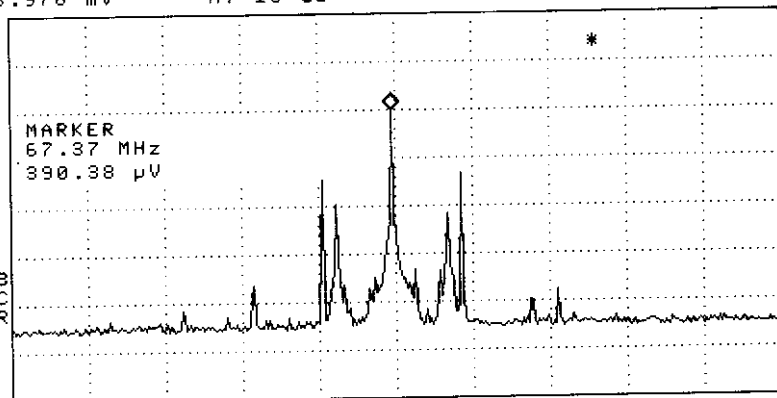
AT 10 dB

390.38 μ V

PEAK
LOG
10
dB/

MARKER
67.37 MHz
390.38 μ V

VA SB
SC FC
CORR



MARKER
NORMAL

MARKER
 Δ

MARKER
AMPTD

SELECT
1 2 3 4

MARKER 1
ON OFF

More
1 of 3

CENTER 67.62 MHz

#RES BW 10 kHz

#VBW 1 kHz

SPAN 50.00 MHz
SWP 15.0 sec

Chapter 4 Output Signal Test

Test condition and setup :

During test , the setup is as Chapter 1 . Connect the TV port of the transfer switch to the HP spectrum analyzer 8591EM . There is a 50 to 75 ohm matching pad used here . The insertion loss of matching pad is 5.7 dB .The video , audio signal and emissions more than 4.6 MHz below or 7.4 MHz above the video carrier frequency all be tested by max peak mode .

The Configuration of Output Signal test :

