JAPAN QUALITY ASSURANCE ORGANIZATION
KITA-KANSAI TESTING CENTER
7-7, Ishimaru 1-Chome, Minoh-shi, Osaka 562 Japan Phone +81-727-29-2243/Facsimile +81-727-28-6848

EMC EMISSION - TEST REPORT

JQA APPLICATION No. : KL8080404

Model/Type No. : SL2920

Name of Product : Video Cassette Recorder (TV Interface Device)

FCC ID : ADTU192920

Applicant : Funai Electric Co., Ltd.

Address : 7-1, 7-chome, Nakagaito, Daito-shi, Osaka, Japan

Manufacturer : Funai Electric Co., Ltd.

Address : 7-1, 7-chome, Nakagaito, Daito-shi, Osaka, Japan

Final Judgement : **Passed**

TEST RESULTS IN THIS REPORT are obtained in use of equipment that is traceable to Electro-technical Lab. of MITI Japan and Comminications Research Lab. of PTT Japan.

THE TEST RESULTS only responds to the test sample. This test report shall not be reproduced except in full.

JAPAN QUALITY ASSURANCE ORGANIZATION (JQA)
KITA-KANSAI TESTING CENTER
EMC DIVISION

NVLAP®

LAB CODE: 200191-0

DIRECTORY

TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A and B (April 17, 1997)

○ - Class A Digital Device
○ - Class B Digital Device
○ - TV Broadcast Receiver
● - TV Interface Device

Test procedure:

Conducted and radiated emission test were performed according to the procedures in ANSI C63.4-1992.

GENERAL INFORMATION

Test facility:

1) Test Facility located at Kita-Kansai : 1st and 2nd Open Sites (3 m Site)
Test Facility located at Kameoka Open Site (3, 10 and 30 m, on common plane)
FCC filing No. : 31040/SIT 1300F2

2) KITA-KANSAI TESTING CENTER is recognized under the National Voluntary Lavoratory Accreditation Program for satisfactory compliance established in Title 15, Part 285 Code of Federal Regurations.
NAVLAP Lab Code: 200191-0

Description of the Equipment Under Test (EUT):

1) Name	:	Video Cassette Recorder
2) Model/Type No.	:	SL2920
3) Brand Name	:	Symphonic
4) Product Type	:	Pre Production (S/N U38800001)
5) Category	:	TV Interface Device
6) EUT Authorization	:	○ - Verification ● - Certification ○ - D.o.C
7) Highest frequency used/generated	:	71.75 MHz
8) Power Rating	:	120V 60Hz

Definitions for symbols used in this test report:

● - Black box indicates that the listed condition, standard or equipment is applicable for this Report.
○ - Blank box indicates that the listed condition, standard or equipment is not applicable for this Report.

TEST CONDITIONS

The measurement of the Conducted Emission (Disturbance Voltage) was performed in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded room
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded room
○ - On metal plane of open site

Used test instruments and sites:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
○ - ESH 3	A - 1		
● - ESH 2	A - 2		
○ - ESH 2	A - 3	December, 1997	1 Year
○ - 8568B	A - 10		
○ - 8566B	A - 13		
○ - 8593A	A - 15		
● - KNW-407	D - 6	February, 1998	1 Year
○ - KNW-242	D - 7		
○ - KNW-341C	D - 13		
○ - KNW-408	D - 14		
○ - ESH2-Z5	D - 10		
○ - ESH3-Z5	D - 12		
○ - ESH2-Z3	D - 17		
○ - VG-40A	B - 13		
● - MG318A	B - 14	May, 1998	1 Year
● - 216/1	B - 16	May, 1998	1 Year
● - Cable	H - 8	February, 1998	1 Year

Environmental conditions:

Temperature: 24 °C Humidity: 60 %

The measurement of the Radiated Emission (Electric Field) was performed in horizontal and vertical polarization, in the frequency range of 30 MHz - 1000 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - 1st site (3 meters)
○ - 2nd site (3 meters)
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - 3 meters
○ - 10 meters

Validation of Site Attenuation:

1) Last Confirmed Date: November 21, 1997
2) Interval : 1 Year

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
● - ESV/ESV-Z3	A - 7 / A - 17	December, 1997	1 Year
○ - ESV/ESV-Z3	A - 6 / A - 18		
○ - ESV/ESV-Z3	A - 5 / A - 16		
○ - ESV/ESV-Z3	A - 4 / A - 20		
○ - ESV/ESV-Z3	A - 8 / A - 19		
● - KBA-511A	C - 12	December, 1997	1 Year
● - KBA-611	C - 22	December, 1997	1 Year
● - MG318A	B - 14	May, 1998	1 Year
● - 216/1	B - 16	May, 1998	1 Year
● - Cable	H - 5	November, 1997	1 Year

Environmental conditions:

Temperature: 24 °C Humidity: 90 %

The measurement of the Radiated Emission (Electric Field)
was performed in horizontal and vertical polarization, in the frequency range of 1 GHz - 2 GHz, in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
○ - 1st site (3 meters)
○ - 2nd site (3 meters)
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - 3 meters
○ - 10 meters

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
○ - 8566B	A - 13		
○ - 8593A	A - 15		
○ - ESV	A - 5		
○ - 4T-10	D - 73		
○ - 4T-10	D - 74		
○ - WJ-6611-513	A - 23		
○ - WJ-6882-824	A - 21		
○ - 91888-2	C - 41 - 1		
○ - 91889-2	C - 41 - 2		
○ - 94613-1	C - 41 - 3		
○ - 8494H/8595H	D - 76		
○ - Cable	H - 9		
○ - Cable	H - 10		

Setting of the spectrum analyzer:

RES B.W : Video B.W :
SCALE : Sweep Time:

Environmental conditions:

Temperature: _____ °C Humidity: _____ %

The measurement of the Output Signal Level
was performed in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded Room
○ - Anechoic Chamber
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded Room

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
● - 8568B	A - 10	May, 1998	1 Year
○ - 8566B	A - 13		
○ - 8593A	A - 15		
○ - 8447D	A - 25		
● - MG318A	B - 14	May, 1998	1 Year
● - 216/1	B - 16	May, 1998	1 Year
○ - MP614A	D - 56		
○ - 12B50/75	D - 55		
● - 12N50/75B	D - 72	June, 1998	1 Year
○ - 1-6	D - 32		
○ - 1-3	D - 34		
○ - 2-10	D - 40		
○ - 8201-3	D - 63		
○ - 8201-6	D - 64		
● - Cable	C - 41 - 9	June, 1998	1 Year

Environmental conditions:

Temperature: 27 °C Humidity: 70 %

The measurement of the Output Terminal Conducted Spurious Emission was performed in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded Room
○ - Anechoic Chamber
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded Room

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
● - 8568B	A - 10	May, 1998	1 Year
○ - 8566B	A - 13		
○ - 8593A	A - 15		
● - 8447D	A - 25	June, 1998	1 Year
● - MG318A	B - 14	May, 1998	1 Year
● - 216/1	B - 16	May, 1998	1 Year
○ - MP614A	D - 56		
○ - 12B50/75	D - 55		
● - 12N50/75B	D - 72	June, 1998	1 Year
○ - 1-6	D - 32		
○ - 1-3	D - 34		
○ - 2-10	D - 40		
○ - 8201-3	D - 63		
● - 8201-6	D - 64	June, 1998	1 Year
● - Cable	C - 41 - 9	June, 1998	1 Year

Environmental conditions:

Temperature: 27 °C Humidity: 70 %

The measurement of the Transfer Switch Isolation

was performed in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded Room
○ - Anechoic Chamber
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded Room

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
● - 8568B	A - 10	May, 1998	1 Year
○ - 8566B	A - 13		
○ - 8593A	A - 15		
● - 8447D	A - 25	June, 1998	1 Year
● - MG318A	B - 14	May, 1998	1 Year
● - 216/1	B - 16	May, 1998	1 Year
○ - MP614A	D - 56		
○ - 12B50/75	D - 55		
● - 12N50/75B	D - 72	June, 1998	1 Year
○ - 1-6	D - 32		
○ - 1-3	D - 34		
○ - 2-10	D - 40		
● - 8201-3	D - 63	June, 1998	1 Year
○ - 8201-6	D - 64		
● - Cable	C - 41 - 9	June, 1998	1 Year

Environmental conditions:

Temperature: 27 °C Humidity: 70 %

CONFIGURATION OF EUT

The Equipment Under Test (EUT) consists of:

Description	Applicant (Manufacturer)	Model No. (Serial No.)	FCC ID
Video Cassette Recorder	Funai Electric Co., Ltd. (Funai Electric Co., Ltd.)	SL2920 (U38800001)	ADTU192920

The measurement was carried out with the following equipment connected:

Description	Grantee/Distributor	Model No. (Serial No.)	FCC ID
None			

Type of Interference Cable(s) and the AC Power Cord used with the EUT:

No.	Cable	Shielded	Ferrite Core	Length
1	EUT (VIDEO INPUT) / 75Ω termination or VITS Generator	-- YES	-- NO	-- m 2.5m
2	EUT (VIDEO OUTPUT) / 75Ω termination	YES	NO	1.0m
3	EUT (AUDIO INPUT) / 75Ω termination	--	--	-- m
4	EUT (AUDIO OUTPUT) / 75Ω termination	YES	NO	1.0m
5	EUT (ANTENNA INPUT) / 75Ω termination or Colorbar Generator	-- YES	-- NO	-- m 2.5m
6	EUT (RF OUTPUT) / 75Ω termination	YES	NO	1.0m
7	AC Power Cord (EUT) with 2-pin plug	NO	NO	1.5m

Operation - mode of the EUT:

The equipment under test was operated under 3 modes shown as follows:

A) Playing the internal modulation sources (NTSC TV signal recording tape)

B) Recording the video modulation sources (VITS: 1Vp_p and 5Vp_p)

C) Recording the RF modulation sources (NTSC Colorbar: 70dB(uV) at 193.25 MHz)

Test system:

The EUT has ports shown as follows:

F-Type Plugs : ANTENNA IN, RF OUT
Pin Plugs : VIDEO IN, AUDIO IN, VIDEO OUT, AUDIO OUT

Special accessories:

None

The used (generated) frequency in the EUT:

Carrier Frequency
3ch Visual : 61.25 MHz
Aural : 56.75 MHz, 65.75 MHz
4ch Visual : 67.25 MHz
Aural : 62.75 MHz, 71.75 MHz

System Control : 14.3 MHz
Color Carrier : 3.58 MHz
Clock : 32 kHz

EUT Modification

● - No modifications were conducted by JQA to achive compliance to the applied levels.

○ - To achieve compliance to the applied levels, the following change(s) were made by JQA during the compliance test.

The modification(s) will be implemented in all production models of this equipment.

Applicant : _____ Date :

Typed Name : Position :

Responsible Party

Responsible Party of Test Item(Product)

Responsibe party :

Contact Person : _____
Signatory

TEST RESULTS

Conducted Emission 450 kHz - 30 MHz

The requirements are	● - KEPT		○ - NOT KEPT	
Min. limit margin	+ 3.1 dB	at	28.64	MHz
Max. limit exceeding	____ dB	at	____	MHz
Uncertainty of measurement results	+ 2.1 dB(2σ)		- 2.1	dB(2σ)

Remarks: _____

Radiated Emission (Electric Field) 30 MHz - 1000 MHz

The requirements are	● - KEPT		○ - NOT KEPT	
Min. limit margin	+ 3.4 dB	at	71.6	MHz
Max. limit exceeding	____ dB	at	____	MHz
Uncertainty of measurement results	+ 4.1 dB(2σ)		- 4.2	dB(2σ)

Remarks: _____

Radiated Emission (Electric Field) 1 GHz - 2 GHz

The requirements are	○ - KEPT		○ - NOT KEPT	
Min. limit margin	____ dB	at	____	MHz
Max. limit exceeding	____ dB	at	____	MHz
Uncertainty of measurement results	____ dB(2σ)		____	dB(2σ)

Remarks: Not Applicable

Output Signal Level

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin + 2.1 dB at 61.25 MHz

Max. limit exceeding _____ dB at _____ MHz

Uncertainty of measurement results + 2.3 dB(2σ) - 2.3 dB(2σ)

Remarks: _____

_____

Output Terminal Conducted Spurious Emission 30 MHz - 1000 MHz

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin +23.3 dB at 57.2 MHz

Max. limit exceeding _____ dB at _____ MHz

Uncertainty of measurement results + 2.3 dB(2σ) - 2.3 dB(2σ)

Remarks: _____

_____

Transfer Switch Isolation

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin + 6.2 dB at 67.25 MHz

Max. limit exceeding _____ dB at _____ MHz

Uncertainty of measurement results + 2.3 dB(2σ) - 2.3 dB(2σ)

Remarks: _____

_____

SUMMARY

GENERAL REMARKS :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and B (April 17, 1997) under the test configuration, as shown in page 16.

The conclusion for the test items of which are required by the applied regulation is indicated under the final judgement.

FINAL JUDGEMENT :

The "as received" sample;

● - fulfill the test requirements of the regulation mentioned on page 3.

○ - fulfill the test requirements of the regulation mentioned on page 3, but with certain qualifications.

○ - doesn't fulfill the test regulation mentioned on page 3.

Begin of testing : September 22, 1998

End of testing : September 28, 1998

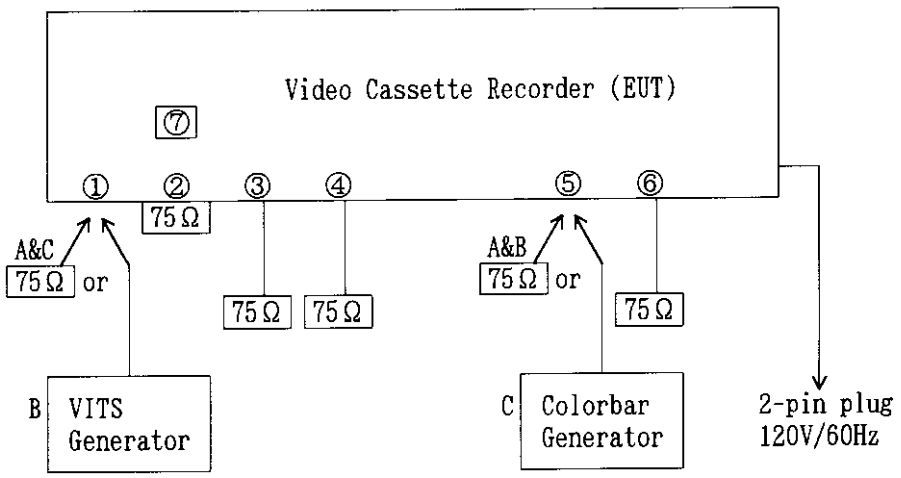
- JAPAN QUALITY ASSURANCE ORGANIZATION -

Takashi Yamanaka
Manager
EMC Div.
JQA KITA-KANSAI Testing Center

Approved Signatory :

Akio Hosoda
Project Manager
EMC Div.
JQA KITA-KANSAI Testing Center

Test System-Arrangement (Drawings)



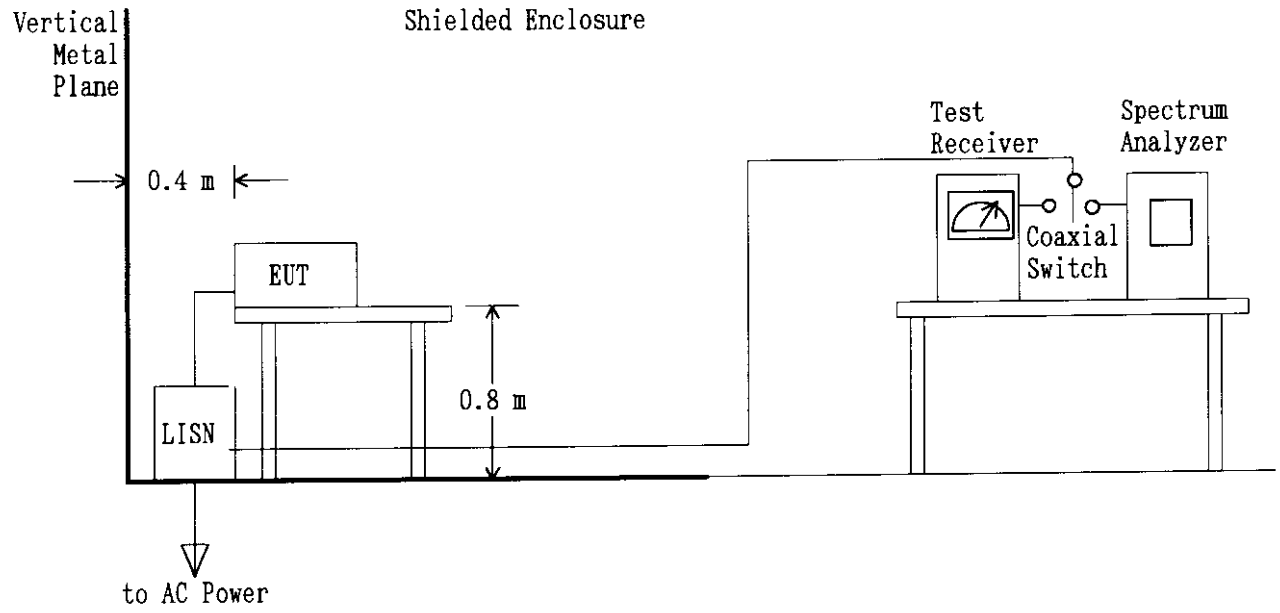
Note)
① - VIDEO INPUT
② - AUDIO INPUT
③ - VIDEO OUTPUT
④ - AUDIO OUTPUT
⑤ - ANTENNA INPUT
⑥ - RF OUTPUT
⑦ - Channel Selector Switch (3ch and 4ch)

A - Playing the internal modulation sources
B - Recording the video modulation sources
C - Recording the RF modulation sources

Preliminary Test and Test-setup(Drawings)

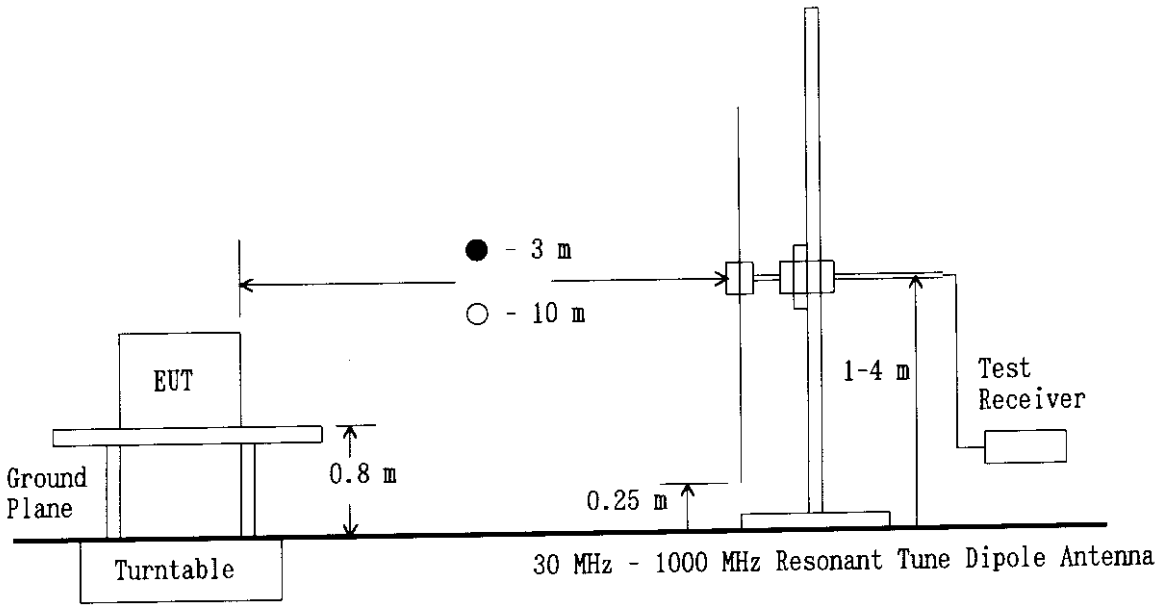
Conducted Emission 450 kHz - 30 MHz:

The preliminary test was performed according to the description of ANSI C63.4-1992 Sec.7.2.3 (Preliminary AC Powerline Emissions Tests) and Sec.11.2(Tabletop Systems), the preliminary test was carried out to investigate the frequency of the emission that has the highest amplitude relative to the limits within normal operating modes, cable positions, and a typical system configuration. In order to find out to the maximum emission, the preliminary test and a final test were performed in accordance with the following steps.
Step 1: One operation mode of the test system was setting.
Step 2: Using both of a spectrum analyzer and a test receiver, the emission's circumstance from the system was monitored in one of ten divided frequency bands of the specified frequency range(450 kHz - 30 MHz). The maximum emission in the band was found by changing the typical cable positions or cable manipulation under a typical system configuration and by selecting of current-carrying conductor. The level and the frequency at the one point which are regarded as relative high emission in the band was measured and recorded. This step was repeated until the ending frequency band.
Step 3: Return to step 1, if the other operation mode was possible to be setting.
Step 4: Based on the collected results, the operation mode produced the maximum emission was selected. The final test on the selected operation mode was performed. But if it was difficult to select the operation mode, the final tests on all operation modes were performed.
Step 5: Based on the same data, as result if the final measurement, at the worst point that has the highest amplitude relative to the limit the repeatability of the worst was reconfirmed. The photographs of the test system setup on the worst point were taken and recorded.



Radiated Emission (Electric Field) 30 MHz - 1000 MHz:

The preliminary test was performed according to the description of ANSI C63.4-1992 Sec.8.3.1.1 (Preliminary Radiated Emissions Tests) and Sec.11.2(Tabletop Systems), the preliminary test was carried out to investigate the frequency of the emission that has the highest amplitude relative to the limits within normal operating modes, cable positions and a typical system configuration. In order to find out to the maximum emission, the preliminary test and a final test were performed in accordance with the following steps.
Step 1: One operation mode of the test system was setting.
Step 2: Using a test receiver and a test antenna probe, the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded every one of 22 divided bands in the specified frequency band(30 MHz - 1000 MHz).
Step 3: Using a test receiver and a resonant tuned dipole antenna, the emission's circumstance from the test system was measured in according with ANSI C63.4-1992 Sec.8.3.1.2(Final Radiated Emissions Tests) at each frequency which was found the higher emission referred to level vs. frequency on the list and which was measured by the resonant tuned dipole antenna. The maximum emission was found by changing the cable positions or cable manipulation under a typical system configuration.
Step 4: Return to step 1, if the other operation mode was possible to be setting.
Step 5: The worst result was reported arranging data of which was obtained and performed by one or plural operation modes as the final test.
At the worst point that has the highest amplitude relative to the limit the repeatability of the level was reconfirmed. The photographs of the tests system setup on the worst point were take and recorded.



Mains terminal Disturbance Measurement

TV Interface Device

Testing Signal Sources : Internal Modulation Sources (NTSC TV Signal Recording Tape)
Operating Condition : Playing Mode

Test Date: September 22, 1998
RF Output Channels : #3 and #4
Temp.: 24 ℃ ; Humi.: 60 %

Frequency [MHz]	Correction Factor [dB]	Meter Readings dB(uV) VA-QP	VA-AV	VB-QP	VB-AV	Limits dB(uV)	Results dB(uV) QP	AV	Margin [dB]	Remarks (Note 2)
0.45	0.1	39.0	-	39.0	-	48.0	39.1	-	+ 8.9	A
0.54	0.1	36.0	-	36.0	-	48.0	36.1	-	+11.9	A
0.76	0.1	34.0	-	34.0	-	48.0	34.1	-	+13.9	A
1.30	0.2	39.0	-	35.0	-	48.0	39.2	-	+ 8.8	A
2.16	0.2	31.0	-	31.0	-	48.0	31.2	-	+16.8	A
3.00	0.3	23.0	-	24.0	-	48.0	24.3	-	+23.7	A
14.32	0.6	34.0	-	32.0	-	48.0	34.6	-	+13.4	A
21.48	0.8	27.0	-	25.0	-	48.0	27.8	-	+20.2	A
28.60	0.9	32.0	-	28.0	-	48.0	32.9	-	+15.1	A
28.64	0.9	44.0	-	41.0	-	48.0	44.9	-	+ 3.1	A

Sample of calculated result at 28.64 MHz, as the Minimum Margin point:
Cable Loss = 0.9 dB
+)Meter Reading = 44.0 dB(uV)
Result = 44.9 dB(uV)
Minimum Margin : 48.0 - 44.9 = 3.1(dB)
The point shown on "____ " is the Minimum Margin Point.

Note 1:
1.The correction factors includes the LISN insertion loss and the cable loss.

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	9 kHz
B	Average	10 kHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Testing Signal Sources : Video Modulation Sources (VITS: 1Vp_p and 5Vp_p)
Operating Condition : Recording Mode

RF Output Channels : #3 and #4

Test Date: September 22, 1998
Temp.: 24 ℃ ; Humi.: 60 %

Frequency [MHz]	Correction Factor [dB]	Meter Readings dB(uV) VA-QP	VA-AV	VB-QP	VB-AV	Limits dB(uV)	Results dB(uV) QP	AV	Margin [dB]	Remarks (Note 2)
0.45	0.1	39.0	-	39.0	-	48.0	39.1	-	+ 8.9	A
0.54	0.1	36.0	-	36.0	-	48.0	36.1	-	+11.9	A
0.75	0.1	30.0	-	30.0	-	48.0	30.1	-	+17.9	A
1.15	0.1	33.0	-	33.0	-	48.0	33.1	-	+14.9	A
5.60	0.4	31.0	-	31.0	-	48.0	31.4	-	+16.6	A
6.10	0.4	32.0	-	32.0	-	48.0	32.4	-	+15.6	A
7.16	0.4	26.0	-	25.0	-	48.0	26.4	-	+21.6	A
14.32	0.6	31.0	-	29.0	-	48.0	31.6	-	+16.4	A
21.48	0.8	27.0	-	25.0	-	48.0	27.8	-	+20.2	A
28.64	0.9	39.0	-	36.0	-	48.0	39.9	-	+ 8.1	A

Sample of calculated result at 28.64 MHz, as the Minimum Margin point:
Cable Loss = 0.9 dB
+)Meter Reading = 39.0 dB(uV)
Result = 39.9 dB(uV)
Minimum Margin : 48.0 - 39.9 = 8.1(dB)
The point shown on "___ " is the Minimum Margin Point.

Note 1:
1.The correction factors includes the LISN insertion loss and the cable loss.

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	9 kHz
B	Average	10 kHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Testing Signal Sources : RF Modulation Sources (NTSC Colorbar: 70dB(uV) at 193.25 MHz)
Operating Condition : Recording Mode

RF Output Channels : #3 and #4

Test Date: September 22, 1998
Temp.: 24 °C ; Humi.: 60 %

Frequency [MHz]	Correction Factor [dB]	Meter Readings dB(uV) VA-QP	VA-AV	VB-QP	VB-AV	Limits dB(uV)	Results dB(uV) QP	AV	Margin [dB]	Remarks (Note 2)
0.45	0.1	40.0	-	40.0	-	48.0	40.1	-	+ 7.9	A
0.52	0.1	37.0	-	37.0	-	48.0	37.1	-	+10.9	A
0.74	0.1	31.0	-	31.0	-	48.0	31.1	-	+16.9	A
1.15	0.1	33.0	-	32.0	-	48.0	33.1	-	+14.9	A
2.32	0.2	26.0	-	25.0	-	48.0	26.2	-	+21.8	A
7.16	0.4	21.0	-	20.0	-	48.0	21.4	-	+26.6	A
14.32	0.6	34.0	-	32.0	-	48.0	34.6	-	+13.4	A
19.07	0.7	22.0	-	20.0	-	48.0	22.7	-	+25.3	A
21.48	0.8	25.0	-	23.0	-	48.0	25.8	-	+22.2	A
28.64	0.9	28.0	-	25.0	-	48.0	28.9	-	+19.1	A

Sample of calculated result at 0.45 MHz, as the Minimum Margin point:
Cable Loss = 0.1 dB
+)Meter Reading = 40.0 dB(uV)
Result = 40.1 dB(uV)
Minimum Margin : 48.0 - 40.1 = 7.9(dB)
The point shown on "___ " is the Minimum Margin Point.

Note 1:
1.The correction factors includes the LISN insertion loss and the cable loss.

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	9 kHz
B	Average	10 kHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Electromagnetic Radiation Disturbance Measurement

TV Interface Device

Testing Signal Sources : Internal Modulation Sources (NTSC TV Signal Recording Tape)
Operating Condition : Playing Mode

RF Output Channels : #3 and #4

Test Date: September 24, 1998
Temp.: 24 ℃ ; Humi.: 90 %

Frequency [MHz]	Antenna Factor dB(1/m)	Cable Loss [dB]	Meter Readings dB(uV) Hori.	Meter Readings dB(uV) Vert.	Limits dB(uV/m)	Results dB(uV/m) Hori.	Results dB(uV/m) Vert.	Margin [dB]	Remarks (Note 2)
57.3	4.1	1.5	15.0	28.0	40.0	20.6	33.6	+ 6.4	A
64.4	5.1	1.5	17.0	16.0	40.0	23.6	22.6	+16.4	A
71.6	6.0	1.6	29.0	23.0	40.0	36.6	30.6	+ 3.4	A
85.9	7.6	1.8	24.0	18.0	40.0	33.4	27.4	+ 6.6	A
114.5	10.1	2.0	16.0	12.0	43.5	28.1	24.1	+15.4	A
143.2	12.0	2.3	18.0	16.0	43.5	32.3	30.3	+11.2	A
179.0	14.0	2.6	12.0	4.0	43.5	28.6	20.6	+14.9	A
200.5	14.9	2.8	13.0	5.0	43.5	30.7	22.7	+12.8	A
214.8	15.5	2.9	13.0	4.0	43.5	31.4	22.4	+12.1	A
257.7	17.1	3.3	12.0	4.0	46.0	32.4	24.4	+13.6	A

Sample of calculated result at 71.6 MHz, as the Minimum Margin point:

Antenna Factor	=	6.0 dB(1/m)
Cable Loss	=	1.6 dB
+)Meter Reading	=	29.0 dB(uV)
Result	=	36.6 dB(uV/m)

Minimum Margin : 40.0 - 36.6 = 3.4(dB)
The point shown on "___ " is the Minimum Margin Point.

Note 1:
1)The highest frequency generated or used in the EUT: 71.75 MHz
2)The upper frequency of measurement range : 1GHz

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 kHz
B	Average	120 kHz
C	Average	12 kHz
D	Average	7.5 kHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Testing Signal Sources : Video Modulation Sources (VITS: 1Vp_p and 5Vp_p)
Operating Condition : Recording Mode

RF Output Channels : #3 and #4

Test Date: September 24, 1998
Temp.: 24 °C ; Humi.: 90 %

Frequency [MHz]	Antenna Factor dB(1/m)	Cable Loss [dB]	Meter Readings dB(uV) Hori.	Meter Readings dB(uV) Vert.	Limits dB(uV/m)	Results dB(uV/m) Hori.	Results dB(uV/m) Vert.	Margin [dB]	Remarks (Note 2)
43.0	1.6	1.3	14.0	21.0	40.0	16.9	23.9	+16.1	A
50.1	2.9	1.4	15.0	26.0	40.0	19.3	30.3	+ 9.7	A
57.3	4.1	1.5	17.0	28.0	40.0	22.6	33.6	+ 6.4	A
71.6	6.0	1.6	29.0	24.0	40.0	36.6	31.6	+ 3.4	A
85.9	7.6	1.8	22.0	16.0	40.0	31.4	25.4	+ 8.6	A
143.2	12.0	2.3	21.0	17.0	43.5	35.3	31.3	+ 8.2	A
179.0	14.0	2.6	13.0	5.0	43.5	29.6	21.6	+13.9	A
200.5	14.9	2.8	17.0	7.0	43.5	34.7	24.7	+ 8.8	A
214.8	15.5	2.9	13.0	7.0	43.5	31.4	25.4	+12.1	A
257.7	17.1	3.3	11.0	3.0	46.0	31.4	23.4	+14.6	A

Sample of calculated result at 71.6 MHz, as the Minimum Margin point:

Antenna Factor	=	6.0 dB(1/m)
Cable Loss	=	1.6 dB
+)Meter Reading	=	29.0 dB(uV)
Result	=	36.6 dB(uV/m)

Minimum Margin : 40.0 - 36.6 = 3.4(dB)
The point shown on "____ " is the Minimum Margin Point.

Note 1:
1)The highest frequency generated or used in the EUT: 71.75 MHz
2)The upper frequency of measurement range : 1GHz

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 kHz
B	Average	120 kHz
C	Average	12 kHz
D	Average	7.5 kHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Testing Signal Sources : RF Modulation Sources (NTSC Colorbar: 70dB(uV) at 193.25 MHz)
Operating Condition : Recording Mode

RF Output Channels : #3 and #4

Test Date: September 28, 1998
Temp.: 22 ℃ ; Humi.: 84 %

Frequency [MHz]	Antenna Factor dB(1/m)	Cable Loss [dB]	Meter Readings dB(uV) Hori.	Meter Readings dB(uV) Vert.	Limits dB(uV/m)	Results dB(uV/m) Hori.	Results dB(uV/m) Vert.	Margin [dB]	Remarks (Note 2)
50.1	2.9	1.4	14.0	20.0	40.0	18.3	24.3	+15.7	A
57.3	4.1	1.5	18.0	28.0	40.0	23.6	33.6	+ 6.4	A
71.6	6.0	1.6	29.0	24.0	40.0	36.6	31.6	+ 3.4	A
85.9	7.6	1.8	22.0	21.0	40.0	31.4	30.4	+ 8.6	A
114.6	10.1	2.0	15.0	8.0	43.5	27.1	20.1	+16.4	A
143.2	12.0	2.3	20.0	14.0	43.5	34.3	28.3	+ 9.2	A
179.0	14.0	2.6	11.0	5.0	43.5	27.6	21.6	+15.9	A
200.5	14.9	2.8	17.0	10.0	43.5	34.7	27.7	+ 8.8	A
214.8	15.5	2.9	13.0	6.0	43.5	31.4	24.4	+12.1	A
257.7	17.1	3.3	12.0	4.0	46.0	32.4	24.4	+13.6	A

Sample of calculated result at 71.6 MHz, as the Minimum Margin point:

Antenna Factor	=	6.0 dB(1/m)
Cable Loss	=	1.6 dB
+)Meter Reading	=	29.0 dB(uV)
Result	=	36.6 dB(uV/m)

Minimum Margin : 40.0 - 36.6 = 3.4(dB)
The point shown on "___ " is the Minimum Margin Point.

Note 1:
1)The highest frequency generated or used in the EUT: 71.75 MHz
2)The upper frequency of measurement range : 1GHz

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 kHz
B	Average	120 kHz
C	Average	12 kHz
D	Average	7.5 kHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Output Signal Level Measurement

TV Interface Device

Test Date: September 27, 1998
Temp.: 27 ℃ ; Humi.: 70 %

Testing Signal Sources : Internal Modulation Sources (NTSC TV Signal Recording Tape)
Operating Condition : Playing Mode

RF Output Channel	Carrier Frequency [MHz]		Matching Pad Loss	Meter Readings [dBm]		Limits(※) [dBm]		Results [dBm]		Margin [dB]
	Visual	Aural	[dB]	Visual	Aural	Visual	Aural	Visual	Aural	
3	61.25	65.75	6.0	-47.6	-62.9	-39.2	-52.2	-41.6	-56.9	+ 2.4
4	67.25	71.75	6.0	-47.8	-63.0	-39.2	-52.2	-41.8	-57.0	+ 2.6

Testing Signal Sources : Video Modulation Sources (VITS: 1Vp_p and 5Vp_p)
Operating Condition : Recording Mode

RF Output Channel	Carrier Frequency [MHz]		Matching Pad Loss	Meter Readings [dBm]		Limits(※) [dBm]		Results [dBm]		Margin [dB]
	Visual	Aural	[dB]	Visual	Aural	Visual	Aural	Visual	Aural	
3	61.25	65.75	6.0	-47.3	-62.7	-39.2	-52.2	-41.3	-56.7	+ 2.1
4	67.25	71.75	6.0	-47.6	-63.1	-39.2	-52.2	-41.6	-57.1	+ 2.4

Testing Signal Sources : RF Modulation Sources (NTSC Colorbar: 70dB(uV) at 193.25 MHz)
Operating Condition : Recording Mode

RF Output Channel	Carrier Frequency [MHz]		Matching Pad Loss	Meter Readings [dBm]		Limits(※) [dBm]		Results [dBm]		Margin [dB]
	Visual	Aural	[dB]	Visual	Aural	Visual	Aural	Visual	Aural	
3	61.25	65.75	6.0	-47.6	-63.0	-39.2	-52.2	-41.6	-57.0	+ 2.4
4	67.25	71.75	6.0	-47.8	-63.2	-39.2	-52.2	-41.8	-57.2	+ 2.6

Sample of calculated result at 61.25 MHz, as the Minimum Margin point:

Matching Pad Loss	= 6.0 dB
+)Meter Reading	= -47.3 dBm
Result	= -41.3 dBm

Minimum Margin : -39.2 - (-41.3) = 2.1(dB)
The point shown on "___ " is the Minimum Margin Point.

※) Conversion of applied limits (refer to §15.115(b)(1)(ii))
Visual : SQR(75)×346.4 (uV) = -90 + 20log(346.4) (dBm)
Aural : SQR(75)× 77.5 (uV) = -90 + 20log(77.5) (dBm)

Remarks:

Detector Function	RES. B.W	V.B.W	Sweep Time	Span
Peak (Spectrum Analyzer)	100 kHz	300 kHz	20 msec	10 MHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Output Terminal Conducted Spurious Emission Measurement

TV Interface Device

Testing Signal Sources : Internal Modulation Sources (NTSC TV Signal Recording Tape)
Operating Condition : Playing Mode

Test Date: September 27, 1998
Temp.: 27 °C ; Humi.: 70 %

RF Output Channel	Frequency [MHz]	Matching Pad Loss [dB]	Pre-Amp. Gain [dB]	Attenuation Pad Loss [dB]	Meter Readings [dBm]	Limits (※) [dBm]	Results [dBm]	Margin [dB]
3	57.2	6.0	26.3	6.0	-78.5	-69.2	-92.8	+23.6
	122.5	6.0	26.0	6.0	<-80.0	-69.2	<-94.0	>+24.8
	183.8	6.0	25.8	6.0	<-80.0	-69.2	<-93.8	>+24.6
	245.0	6.0	25.5	6.0	<-80.0	-69.2	<-93.5	>+24.3
	306.3	6.0	25.7	6.0	<-80.0	-69.2	<-93.7	>+24.5
4	57.2	6.0	26.3	6.0	-78.2	-69.2	-92.5	+23.3
	134.5	6.0	26.0	6.0	<-80.0	-69.2	<-94.0	>+24.8
	201.8	6.0	25.7	6.0	<-80.0	-69.2	<-93.7	>+24.5
	269.0	6.0	25.4	6.0	<-80.0	-69.2	<-93.4	>+24.2
	336.3	6.0	25.9	6.0	<-80.0	-69.2	<-93.9	>+24.7

Sample of calculated result at 57.2 MHz, as the Minimum Margin point:

Matching Pad Loss	=	6.0 dB
Pre-Amp. Gain	=	-26.3 dB
Attenuation Pad Loss	=	6.0 dB
+)Meter Reading	=	-78.2 dBm
Result	=	-92.5 dBm

Minimum Margin : -69.2 - (-92.5) = 23.3(dB)
The point shown on "____ " is the Minimum Margin Point.

※) Conversion of applied limits (refer to §15.115(b)(2)(ii))
SQR(75)×10.95 (uV) = -90 + 20log(10.95) (dBm)

Remarks:

Detector Function	RES. B.W	V.B.W	Sweep Time	Span
Peak (Spectrum Analyzer)	100 kHz	300 kHz	20 msec	10 MHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Testing Signal Sources : Video Modulation Sources (VITS: 1Vp_p and 5Vp_p)
Operating Condition : Recording Mode

Test Date: September 27, 1998
Temp.: 27 ℃ ; Humi.: 70 %

RF Output Channel	Frequency [MHz]	Matching Pad Loss [dB]	Pre-Amp. Gain [dB]	Attenuation Pad Loss [dB]	Meter Readings [dBm]	Limits (※) [dBm]	Results [dBm]	Margin [dB]
3	57.2	6.0	26.3	6.0	-78.7	-69.2	-93.0	+23.8
	122.5	6.0	26.0	6.0	<-80.0	-69.2	<-94.0	>+24.8
	183.8	6.0	25.8	6.0	<-80.0	-69.2	<-93.8	>+24.6
	245.0	6.0	25.5	6.0	<-80.0	-69.2	<-93.5	>+24.3
	306.3	6.0	25.7	6.0	<-80.0	-69.2	<-93.7	>+24.5
4	57.2	6.0	26.3	6.0	-78.7	-69.2	-93.0	+23.8
	134.5	6.0	26.0	6.0	<-80.0	-69.2	<-94.0	>+24.8
	201.8	6.0	25.7	6.0	<-80.0	-69.2	<-93.7	>+24.5
	269.0	6.0	25.4	6.0	<-80.0	-69.2	<-93.4	>+24.2
	336.3	6.0	25.9	6.0	<-80.0	-69.2	<-93.9	>+24.7

Sample of calculated result at 57.2 MHz, as the Minimum Margin point:

Matching Pad Loss	= 6.0 dB
Pre-Amp. Gain	= -26.3 dB
Attenuation Pad Loss	= 6.0 dB
+)Meter Reading	= -78.7 dBm
Result	= -93.0 dBm

Minimum Margin : -69.2 - (-93.0) = 23.8(dB)
The point shown on "____ " is the Minimum Margin Point.

※) Conversion of applied limits (refer to §15.115(b)(2)(ii))
SQR(75)×10.95 (uV) = -90 + 20log(10.95) (dBm)

Remarks:

Detector Function	RES. B.W	V.B.W	Sweep Time	Span
Peak (Spectrum Analyzer)	100 kHz	300 kHz	20 msec	10 MHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Testing Signal Sources : RF Modulation Sources (NTSC Colorbar: 70dB(uV) at 193.25 MHz)
Operating Condition : Recording Mode

Test Date: September 27, 1998
Temp.: 27 ℃ ; Humi.: 70 %

RF Output Channel	Frequency [MHz]	Matching Pad Loss [dB]	Pre-Amp. Gain [dB]	Attenuation Pad Loss [dB]	Meter Readings [dBm]	Limits (※) [dBm]	Results [dBm]	Margin [dB]
3	57.2	6.0	26.3	6.0	-78.7	-69.2	-93.0	+23.8
	122.5	6.0	26.0	6.0	<-80.0	-69.2	<-94.0	>+24.8
	183.8	6.0	25.8	6.0	<-80.0	-69.2	<-93.8	>+24.6
	245.0	6.0	25.5	6.0	<-80.0	-69.2	<-93.5	>+24.3
	306.3	6.0	25.7	6.0	<-80.0	-69.2	<-93.7	>+24.5
4	57.2	6.0	26.3	6.0	-78.7	-69.2	-93.0	+23.8
	134.5	6.0	26.0	6.0	<-80.0	-69.2	<-94.0	>+24.8
	201.8	6.0	25.7	6.0	<-80.0	-69.2	<-93.7	>+24.5
	269.0	6.0	25.4	6.0	<-80.0	-69.2	<-93.4	>+24.2
	336.3	6.0	25.9	6.0	<-80.0	-69.2	<-93.9	>+24.7

Sample of calculated result at 57.2 MHz, as the Minimum Margin point:

Matching Pad Loss	=	6.0 dB
Pre-Amp. Gain	=	-26.3 dB
Attenuation Pad Loss	=	6.0 dB
+)Meter Reading	=	-78.7 dBm
Result	=	-93.0 dBm

Minimum Margin : -69.2 - (-93.0) = 23.8(dB)
The point shown on "___ " is the Minimum Margin Point.

※) Conversion of applied limits (refer to §15.115(b)(2)(ii))
SQR(75)×10.95 (uV) = -90 + 20log(10.95) (dBm)

Remarks:

Detector Function	RES. B.W	V.B.W	Sweep Time	Span
Peak (Spectrum Analyzer)	100 kHz	300 kHz	20 msec	10 MHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Transfer Switch Isolation Measurement

TV Interface Device

Test Date: September 27, 1998
Temp.: 27 °C ; Humi.: 70 %

Testing Signal Sources : Internal Modulation Sources (NTSC TV Signal Recording Tape)
Operating Condition : Playing Mode

RF Output Channel	Carrier Frequency [MHz]	Matching Pad Loss [dB]	Pre-Amp. Gain [dB]	Attenuation Pad Loss [dB]	Meter Readings [dBm]	Limits (※) [dBm]	Results [dBm]	Margin [dB]
3	61.25	6.0	26.3	3.0	-90.4	-99.2	-107.7	+ 8.5
4	67.25	6.0	26.3	3.0	-88.1	-99.2	-105.4	+ 6.2

Testing Signal Sources : Video Modulation Sources (VITS: 1Vp_p and 5Vp_p)
Operating Condition : Recording Mode

RF Output Channel	Carrier Frequency [MHz]	Matching Pad Loss [dB]	Pre-Amp. Gain [dB]	Attenuation Pad Loss [dB]	Meter Readings [dBm]	Limits (※) [dBm]	Results [dBm]	Margin [dB]
3	61.25	6.0	26.3	3.0	-90.5	-99.2	-107.8	+ 8.6
4	67.25	6.0	26.3	3.0	-88.2	-99.2	-105.5	+ 6.3

Sample of calculated result at 67.25 MHz, as the Minimum Margin point:

Matching Pad Loss	=	6.0 dB
Pre-Amp. Gain	=	-26.3 dB
Attenuation Pad Loss	=	3.0 dB
+)Meter Reading	=	-88.1 dBm
Result	=	-105.4 dBm

Minimum Margin : -99.2 - (-105.4) = 6.2(dB)
The point shown on "____ " is the Minimum Margin Point.

※) Conversion of applied limits (refer to §15.115(c)(1)(ii))
SQR(75)×0.346 (uV) = -90 + 20log(0.346) (dBm)

Remarks:

Detector Function	RES. B.W	V.B.W	Sweep Time	Span
Peak (Spectrum Analyzer)	10 kHz	10 kHz	30 msec	1 MHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

JAPAN QUALITY ASSURANCE ORGANIZATION
KITA-KANSAI TESTING CENTER
7-7, Ishimaru 1-Chome, Minoh-shi, Osaka 562 Japan Phone +81-727-29-2243/Facsimile +81-727-28-6848

EMC EMISSION - TEST REPORT

JQA APPLICATION No. : KL8080405

Model/Type No. : SL2920

Name of Product : Video Cassette Recorder (TV Broadcast Receiver)

FCC ID : ADTU192920

Applicant : Funai Electric Co., Ltd.

Address : 7-1, 7-chome, Nakagaito, Daito-shi, Osaka, Japan

Manufacturer : Funai Electric Co., Ltd.

Address : 7-1, 7-chome, Nakagaito, Daito-shi, Osaka, Japan

Final Judgement : **Passed**

TEST RESULTS IN THIS REPORT are obtained in use of equipment that is traceable to Electro-technical Lab. of MITI Japan and Comminications Research Lab. of PTT Japan.

THE TEST RESULTS only responds to the test sample. This test report shall not be reproduced except in full.

JAPAN QUALITY ASSURANCE ORGANIZATION (JQA)
KITA-KANSAI TESTING CENTER
EMC DIVISION

NVLAP®
LAB CODE: 200191-0

DIRECTORY

TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A and B (April 17, 1997)

○ - Class A Digital Device
○ - Class B Digital Device
● - TV Broadcast Receiver
○ - TV Interface Device

Test procedure:

1) Conducted Emission	: ANSI C63.4 (1992) and IEEE Std 213 (1987)
2) Radiated Emission	: ANSI C63.4 (1992)
3) Antenna Conducted Power	: ANSI C63.4 (1992)
4) Peak Picture Sensitivity	: 60 IRE 17.S1
5) UHF Noise Figure	: FCC/OST MP-2 (1982)

GENERAL INFORMATION

Test facility:

1) Test Facility located at Kita-Kansai : 1st and 2nd Open Sites (3 m Site)
Test Facility located at Kameoka Open Site (3, 10 and 30 m, on common plane)
FCC filing No. : 31040/SIT 1300F2

2) KITA-KANSAI TESTING CENTER is recognized under the National Voluntary Lavoratory Accreditation Program for satisfactory compliance established in Title 15, Part 285 Code of Federal Regurations.
NAVLAP Lab Code: 200191-0

3) Average Measurement Method
FCC filing No. : 950523A 1300F2

Description of the Equipment Under Test (EUT):

1) Name	: Video Cassette Recorder
2) Model/Type No.	: SL2920
3) Brand Name	: Symphonic
4) Product Type	: Pre Production (S/N U38800001)
5) Category	: TV Broadcast Receiver
6) EUT Authorization	: ● - Verification ○ - Certification ○ - D.o.C
7) Highest frequency used/generated	: 847 MHz
8) Power Rating	: 120V 60Hz

Definitions for symbols used in this test report:

● - Black box indicates that the listed condition, standard or equipment is applicable for this Report.
○ - Blank box indicates that the listed condition, standard or equipment is not applicable for this Report.

TEST CONDITIONS

The measurement of the Conducted Emission (Disturbance Voltage) was performed in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded room
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded room
○ - On metal plane of open site

Used test instruments and sites:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
○ - ESH 3	A - 1		
● - ESH 2	A - 2		
○ - ESH 2	A - 3	December, 1997	1 Year
○ - 8568B	A - 10		
○ - 8566B	A - 13		
○ - 8593A	A - 15		
● - KNW-407	D - 6	February, 1998	1 Year
○ - KNW-242	D - 7		
○ - KNW-341C	D - 13		
○ - KNW-408	D - 14		
○ - ESH2-Z5	D - 10		
○ - ESH3-Z5	D - 12		
○ - ESH2-Z3	D - 17		
● - VG-40A	B - 13	February, 1998	1 Year
● - Cable	H - 8	February, 1998	1 Year

Environmental conditions:

Temperature: 24 °C Humidity: 60 %

The measurement of the Radiated Emission (Electric Field)
was performed in horizontal and vertical polarization, in the frequency range of 30 MHz - 1000 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
○ - 1st site (3 meters)
● - 2nd site (3 meters)
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - 3 meters
○ - 10 meters

Validation of Site Attenuation:

1) Last Confirmed Date: December 8, 1997
2) Interval : 1 Year

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
○ - ESV/ESV-Z3	A - 7 / A - 17		
● - ESV/ESV-Z3	A - 6 / A - 18	December, 1997	1 Year
○ - ESV/ESV-Z3	A - 5 / A - 16		
○ - ESV/ESV-Z3	A - 4 / A - 20		
○ - ESV/ESV-Z3	A - 8 / A - 19		
● - KBA-511A	C - 13	December, 1997	1 Year
● - KBA-611	C - 19	December, 1997	1 Year
● - Cable	H - 6	November, 1997	1 Year

Environmental conditions:

Temperature: 20 °C Humidity: 85 %

The measurement of the Radiated Emission (Electric Field)

was performed in horizontal and vertical polarization, in the frequency range of 1000 MHz - 1694 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
○ - 1st site (3 meters)
● - 2nd site (3 meters)
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - 3 meters
○ - 10 meters

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
● - 8566B	A - 13	September, 1997	1 Year
○ - 8593A	A - 15		
○ - ESV	A - 5		
● - 4T-10	D - 73	May, 1998	1 Year
● - 4T-10	D - 74	May, 1998	1 Year
● - WJ-6611-513	A - 23	May, 1998	1 Year
○ - WJ-6882-824	A - 21		
● - 91888-2	C - 41 - 1	May, 1998	1 Year
○ - 91889-2	C - 41 - 2		
○ - 94613-1	C - 41 - 3		
○ - 8494H/8595H	D - 76		
● - Cable	H - 9	May, 1998	1 Year
● - Cable	H - 10	May, 1998	1 Year

Setting of the spectrum analyzer:

RES B.W : 1 MHz Video B.W : 1 MHz
SCALE : LIN Sweep Time: 20 msec.

Environmental conditions:

Temperature: 20 °C Humidity: 85 %

The measurement of the Antenna Conducted Power
was performed in the frequency range of 1000 MHz - 1694 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded Room
○ - Anechoic Chamber
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded Room

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
○ - ESV/ESV-Z3	A - 7 / A - 17		
○ - ESV/ESV-Z3	A - 6 / A - 18		
● - ESV/ESV-Z3	A - 5 / A - 16	December, 1997	1 Year
○ - ESV/ESV-Z3	A - 4 / A - 20		
○ - ESV/ESV-Z3	A - 8 / A - 19		
○ - 8568B	A - 10		
● - 8566B	A - 13	September, 1997	1 Year
○ - 8593A	A - 15		
○ - LSG-221	B - 15		
○ - 216/1	B - 16		
○ - MP614A	D - 56		
○ - 12B50/75	D - 55		
● - 12N50/75B	D - 72	June, 1998	1 Year
● - 2-10	D - 40	June, 1998	1 Year
○ - 1506A	D - 21		
● - Cable	C - 41 - 9	June, 1998	1 Year

Environmental conditions:

Temperature: 27 °C Humidity: 30 %

The measurement of the Peak Picture Sensitivity

was performed in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded Room
○ - Anechoic Chamber
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded Room

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
● - 8656A	B - 1	August, 1998	1 Year
○ - MG645A	B - 4		
● - MN-4461	B - 23	November, 1997	1 Year
● - 852	B - 42	May, 1998	1 Year
○ - MP614A	D - 56		
○ - 12B50/75	D - 55		
● - 12N50/75B	D - 72	June, 1998	1 Year

Environmental conditions:

Temperature: 23 °C Humidity: 56 %

The measurement of the UHF Noise Figure
was performed in the following test site.

Test location:

KITA-KANSAI Testing Center
7-7, Ishimaru, 1-Chome, Minoh-Shi, Osaka, 562-0027, Japan
● - Shielded Room
○ - Anechoic Chamber
KAMEOKA EMC Branch
9-1, Ozaki, Inukanno, Nishibetsuin-Cho, Kameoka-Shi, Kyoto, 621-0126, Japan
○ - Shielded Room

Used test instruments:

Model No.	Device I.D No.	Last Cal. Date	Cal. Interval
● - 8568B	A - 10	May, 1998	1 Year
○ - 8566B	A - 13		
○ - 8593A	A - 15		
● - 8656A	B - 1	August, 1998	1 Year
○ - MG645A	B - 4		
● - 7512C-003	B - 19	August, 1998	1 Year
● - 7615	B - 20	August, 1998	1 Year
● - MP614A	D - 56	June, 1998	1 Year
● - 12B50/75	D - 55	June, 1998	1 Year
● - 12N50/75B	D - 72	June, 1998	1 Year

Environmental conditions:

Temperature: 23 °C Humidity: 56 %

CONFIGURATION OF EUT

The Equipment Under Test (EUT) consists of:

Description	Applicant (Manufacturer)	Model No. (Serial No.)	FCC ID
Video Cassette Recorder	Funai Electric Co., Ltd. (Funai Electric Co., Ltd.)	SL2920 (U38800001)	ADTU192920

The measurement was carried out with the following equipment connected:

Description	Grantee/Distributor	Model No. (Serial No.)	FCC ID
None			

Type of Interference Cable(s) and the AC Power Cord used with the EUT:

No.	Cable	Shielded	Ferrite Core	Length
1	AC Power Cord (EUT) with 2-pin plug	NO	NO	1.5m

Operation - mode of the EUT:

The equipment under test was operated during the measurement under "TV receiving" mode with the antenna terminals terminated with a 75Ω termination.

Test system:

The EUT has ports shown as follows:

F-Type Plugs : ANTENNA IN, RF OUT
Pin Plugs : VIDEO IN, AUDIO IN, VIDEO OUT, AUDIO OUT

Special accessories:

None

The used (generated) frequency in the EUT (except for receiver portion):

Local Oscillator VHF : 101 MHz - 257 MHz
UHF : 517 MHz - 847 MHz
CATV : 101 MHz - 845 MHz
Intermediate Frequency : 45.75 MHz

System Control : 14.3 MHz
Color Carrier : 3.58 MHz
Clock : 32 kHz

Detailed receiver portion:

1) Frequency bands tuned by the receiver

VHF : 54 - 216 MHz (Ch# 2 - 13)
UHF : 470 - 806 MHz (Ch# 14 - 69)
CATV : 54 - 804 MHz (Ch# 5A, A-5 - A-1, A - W, W+1 - W+84)

2) Intermediate Frequency : 45.75 MHz (Upper Side)

3) Generating Highest Frequency : 847 MHz (69ch)

4) Type of Antenna : External 75 ohms (Unbalanced)

5) Cabinet Material : Nonmetallic

6) RF Channel Selector Switch : 3ch and 4ch

The length of the UHF lead, from antenna input terminals to the tuner is N/A inches.

The name of all manufacturing source for the VHF and UHF tuners as well as the tuner manufacture's part nos. :

ALPS ELECTRIC CO., LTD. / UTUNNTUAL020

VHF and UHF tuners part numbers assigned by the receiver manufacturer:

UTUNNTUAL020

EUT Modification

● - No modifications were conducted by JQA to achive compliance to the applied levels.

○ - To achieve compliance to the applied levels, the following change(s) were made by JQA during the compliance test.

The modification(s) will be implemented in all production models of this equipment.

Applicant : _____ Date :

Typed Name : Position :

Responsible Party

Responsible Party of Test Item(Product)

Responsibe party :

Contact Person : _____
Signatory

TEST RESULTS

Conducted Emission 450 kHz - 30 MHz

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin + 8.9 dB at 0.45 MHz

Max. limit exceeding _____ dB at _____ MHz

Uncertainty of measurement results + 2.1 dB(2σ) - 2.1 dB(2σ)

Remarks: _____

Radiated Emission (Electric Field) 30 MHz - 1694 MHz

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin + 5.0 dB at 1690 MHz (W+84ch)

Max. limit exceeding _____ dB at _____ MHz

Uncertainty of measurement results (below 1000 MHz) + 4.9 dB(2σ) - 5.0 dB(2σ)

Uncertainty of measurement results (above 1000 MHz) + 3.1 dB(2σ) - 3.2 dB(2σ)

Remarks: _____

Antenna Conducted Power 30 MHz - 1694 MHz

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin + 5.2 dB at 1598 MHz (61ch)
and 1558 MHz (W+73ch)
and 1630 MHz (W+79ch)

Max. limit exceeding _____ dB at _____ MHz

Uncertainty of measurement results + 2.3 dB(2σ) - 2.3 dB(2σ)

Remarks: _____

Peak Picture Sensitivity

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin + 3.2 dB

Max. limit exceeding _____ dB

Uncertainty of measurement results + 2.8 dB(2σ) - 2.8 dB(2σ)

Remarks: _____

UHF Noise Figure

The requirements are ● - KEPT ○ - NOT KEPT

Min. limit margin + 2.4 dB at 14 ch

Max. limit exceeding _____ dB at _____ ch

Uncertainty of measurement results + 0.6 dB(2σ) - 0.6 dB(2σ)

Remarks: _____

SUMMARY

GENERAL REMARKS :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and B (April 17, 1997) under the test configuration, as shown in page 17.

The conclusion for the test items of which are required by the applied regulation is indicated under the final judgement.

FINAL JUDGEMENT :

The "as received" sample;

● - fulfill the test requirements of the regulation mentioned on page 3.

○ - fulfill the test requirements of the regulation mentioned on page 3, but with certain qualifications.

○ - doesn't fulfill the test regulation mentioned on page 3.

Begin of testing : September 27, 1998

End of testing : September 29, 1998

- JAPAN QUALITY ASSURANCE ORGANIZATION -

T. Yamanaka

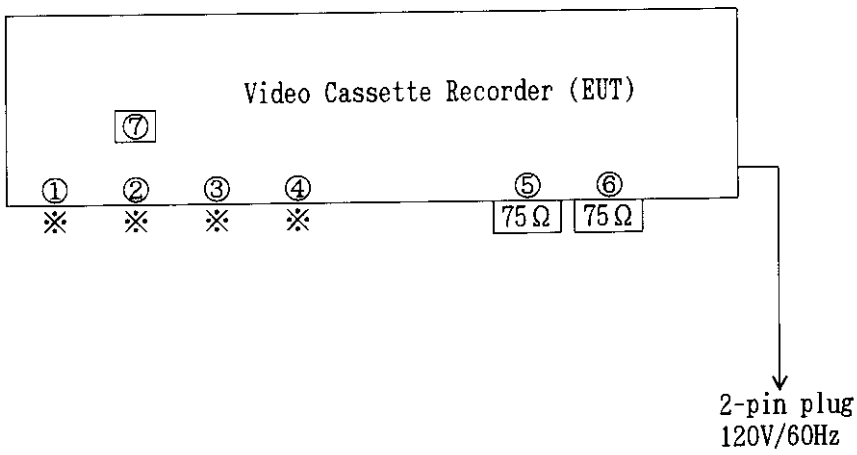
Takashi Yamanaka
Manager
EMC Div.
JQA KITA-KANSAI Testing Center

Approved Signatory :

A. Hosoda

Akio Hosoda
Project Manager
EMC Div.
JQA KITA-KANSAI Testing Center

Test System-Arrangement (Drawings)

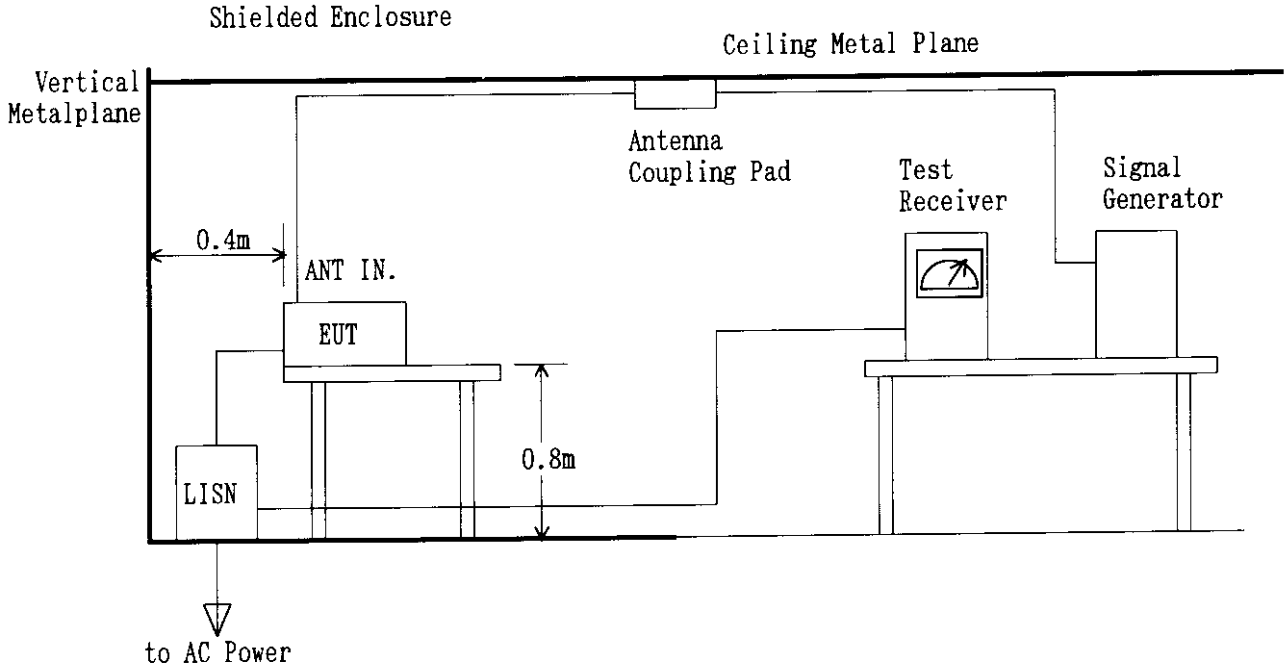


Note)
※ - No termination
① - VIDEO INPUT
② - AUDIO INPUT
③ - VIDEO OUTPUT
④ - AUDIO OUTPUT
⑤ - ANTENNA INPUT
⑥ - RF OUTPUT
⑦ - Channel Selector Switch (3ch and 4ch)

Preliminary Test and Test-setup(Drawings)

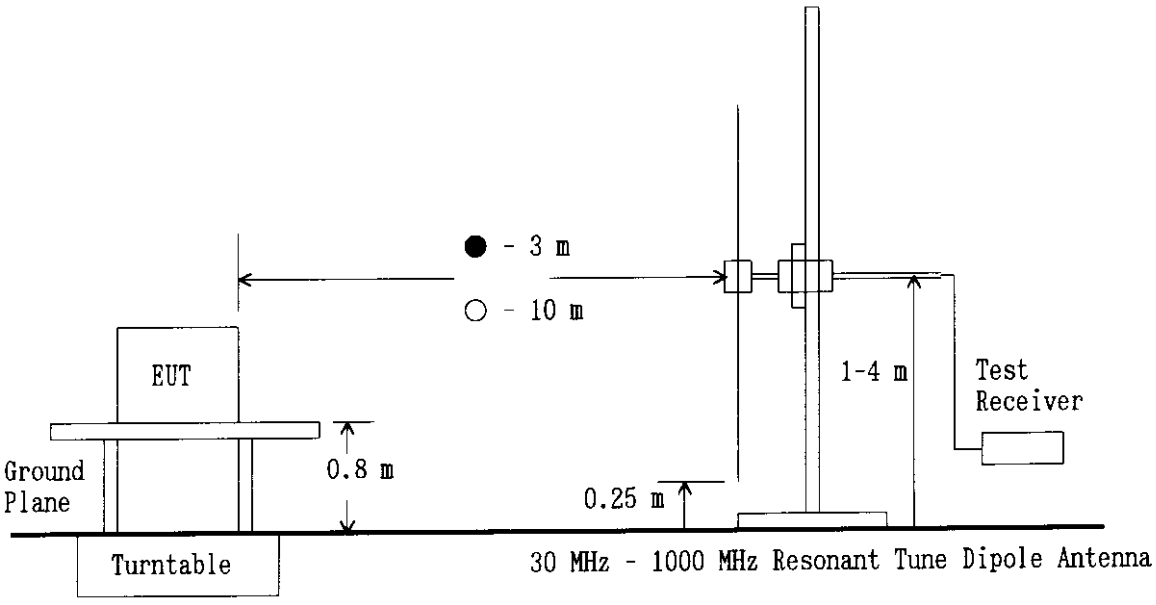
Conducted Emission 0.45 MHz - 30 MHz:

Measurement Procedure: IEEE 213(1987) & ANSI C63.4(1992)



Radiated Emission (Electric Field) 30 MHz - 1000 MHz:

The preliminary test was performed according to the description of ANSI C63.4-1992 Sec.8.3.1.1 (Preliminary Radiated Emissions Tests) and Sec.11.2(Tabletop Systems), the preliminary test was carried out to investigate the frequency of the emission that has the highest amplitude relative to the limits within normal operating modes, cable positions and a typical system configuration. In order to find out to the maximum emission, the preliminary test and a final test were performed in accordance with the following steps.
Step 1: One operation mode of the test system was setting.
Step 2: Using a test receiver and a test antenna probe, the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded every one of 22 divided bands in the specified frequency band(30 MHz - 1000 MHz).
Step 3: Using a test receiver and a resonant tuned dipole antenna, the emission's circumstance from the test system was measured in according with ANSI C63.4-1992 Sec.8.3.1.2(Final Radiated Emissions Tests) at each frequency which was found the higher emission referred to level vs. frequency on the list and which was measured by the resonant tuned dipole antenna. The maximum emission was found by changing the cable positions or cable manipulation under a typical system configuration.
Step 4: Return to step 1, if the other operation mode was possible to be setting.
Step 5: The worst result was reported arranging data of which was obtained and performed by one or plural operation modes as the final test.
At the worst point that has the highest amplitude relative to the limit the repeatability of the level was reconfirmed. The photographs of the tests system setup on the worst point were take and recorded.



Radiated Emission (Electric Field) 1000 MHz - 1694 MHz:

The preliminary test was performed according to the description of ANSI C63.4-1992 Sec.8.3.1.1 (Preliminary Radiated Emissions Tests) and Sec.11.2(Tabletop Systems), the preliminary test was carried out to investigate the frequency of the emission that has the highest amplitude relative to the limits within normal operating modes, cable positions and a typical system configuration. In order to find out to the maximum emission, the preliminary test and a final test were performed in accordance with the following steps.

Step 1: One operation mode of the test system was setting.

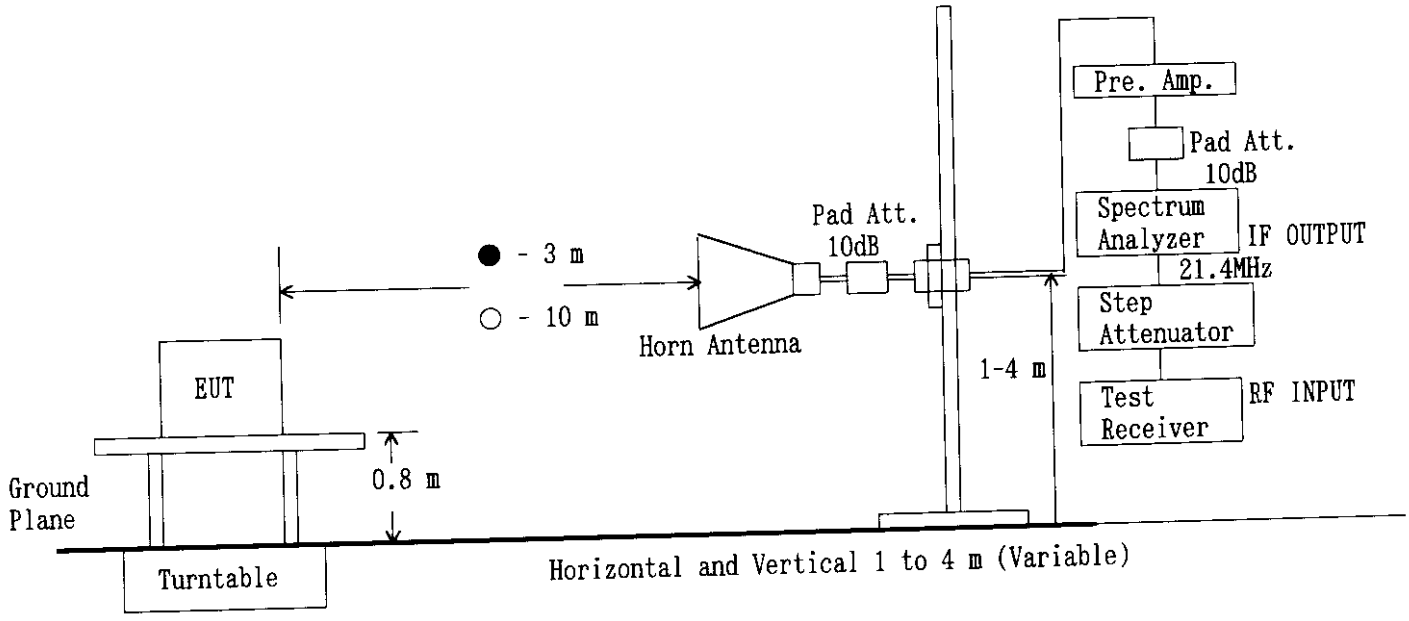
Step 2: In order to investigate the frequencies of maximum emissions, the horn antenna position was approached to the EUT and the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded in the specified frequency band (1000 MHz - 1694 MHz).

Step 3: The emission's circumstance from the test system was measured in accordance with ANSI C63.4-1992, Sec.8.3.1.2(Final Radiated Emissions Tests) at each frequency which was found higher emission referred to level vs. frequency on the list and which was measured in the specified distance using the horn antenna.

Step 4: Return to step 1, if the other operation mode was possible to be setting.

Step 5: The worst result was reported arranging data of which was obtained and performed by one or plural operation modes as the final test.

At the worst point that has the highest amplitude relative to the limit the repeatability of the level was reconfirmed. The photographs of the tests system setup on the worst point were taken and recorded.



Spectrum Analyzer Setting:

SCALE	LIN
RBW	3 MHz
VBW	3 MHz
SPAN	0 Hz

Test Receiver Setting:

SCALE	LIN
I.F.B.W.	1 MHz
Detector	AVE

Mains terminal Disturbance Measurement

TV Broadcast Receiver

Test Date: September 29, 1998
Temp.: 24 ℃ ; Humi.: 60 %

Frequency [MHz]	Correction Factor [dB]	Meter Readings dB(uV) VA-QP	VA-AV	VB-QP	VB-AV	Limits dB(uV)	Results dB(uV) QP	AV	Margin [dB]	Remarks (Note 2)
0.45	0.1	39.0	-	39.0	-	48.0	39.1	-	+ 8.9	A
0.50	0.1	37.0	-	37.0	-	48.0	37.1	-	+10.9	A
0.61	0.1	33.0	-	33.0	-	48.0	33.1	-	+14.9	A
1.22	0.2	30.0	-	30.0	-	48.0	30.2	-	+17.8	A
2.00	0.2	26.0	-	26.0	-	48.0	26.2	-	+21.8	A
9.53	0.5	24.0	-	24.0	-	48.0	24.5	-	+23.5	A
14.32	0.6	35.0	-	34.0	-	48.0	35.6	-	+12.4	A
21.48	0.8	25.0	-	23.0	-	48.0	25.8	-	+22.2	A
28.64	0.9	30.0	-	28.0	-	48.0	30.9	-	+17.1	A
29.98	0.9	25.0	-	23.0	-	48.0	25.9	-	+22.1	A

Sample of calculated result at 0.45 MHz, as the Minimum Margin point:
Cable Loss = 0.1 dB
+)Meter Reading = 39.0 dB(uV)
Result = 39.1 dB(uV)
Minimum Margin : 48.0 - 39.1 = 8.9(dB)
The point shown on "___ " is the Minimum Margin Point.

Note 1:
1.The correction factors includes the LISN insertion loss and the cable loss.

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	9 kHz
B	Average	10 kHz

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Electromagnetic Radiation Disturbance Measurement

TV Broadcast Receiver

Test Date: September 28, 1998
Temp.: 20 °C ; Humi.: 85 %

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(uV/m)]	Polarity	Limits [dB(uV/m)]	Results [dB(uV/m)]	Remarks (Note 2)
2	55.25	101	10.4	< 0.0	-	43.5	< 10.4	A
		202	17.1	< 0.0	-	43.5	< 17.1	A
		303	21.0	< 0.0	-	46.0	< 21.0	A
		404	24.1	< 0.0	-	46.0	< 24.1	A
		505	26.6	< 0.0	-	46.0	< 26.6	A
		606	28.6	< 0.0	-	46.0	< 28.6	A
		707	30.3	< 0.0	-	46.0	< 30.3	A
		808	31.9	< 0.0	-	46.0	< 31.9	A
		909	33.5	< 0.0	-	46.0	< 33.5	A
		1010	-4.7	<30.0	-	54.0	< 25.3	B
		1111	-4.7	<30.0	-	54.0	< 25.3	B
		1212	-4.5	36.0	V	54.0	31.5	B
		1313	-3.3	<30.0	-	54.0	< 26.7	B
		1414	-2.6	<30.0	-	54.0	< 27.4	B
		1515	-4.1	<30.0	-	54.0	< 25.9	B
		1616	-5.5	35.0	V	54.0	29.5	B
3	61.25	107	10.9	< 0.0	-	43.5	< 10.9	A
		214	17.6	< 0.0	-	43.5	< 17.6	A
		321	21.6	< 0.0	-	46.0	< 21.6	A
		428	24.8	< 0.0	-	46.0	< 24.8	A
		535	27.2	< 0.0	-	46.0	< 27.2	A
		642	29.2	< 0.0	-	46.0	< 29.2	A
		749	30.9	< 0.0	-	46.0	< 30.9	A
		856	32.6	< 0.0	-	46.0	< 32.6	A
		963	34.3	< 0.0	-	54.0	< 34.3	A
		1070	-4.9	34.0	H	54.0	29.1	B
		1177	-4.7	<30.0	-	54.0	< 25.3	B
		1284	-3.7	34.0	V	54.0	30.3	B
		1391	-2.4	<30.0	-	54.0	< 27.6	B
		1498	-3.8	38.0	V	54.0	34.2	B
		1605	-5.4	<30.0	-	54.0	< 24.6	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(uV/m)]	Polarity	Limits [dB(uV/m)]	Results [dB(uV/m)]	Remarks (Note 2)
4	67.25	113	11.5	< 0.0	-	43.5	< 11.5	A
		226	18.2	< 0.0	-	46.0	< 18.2	A
		339	22.3	< 0.0	-	46.0	< 22.3	A
		452	25.4	< 0.0	-	46.0	< 25.4	A
		565	27.8	< 0.0	-	46.0	< 27.8	A
		678	29.8	< 0.0	-	46.0	< 29.8	A
		791	31.7	< 0.0	-	46.0	< 31.7	A
		904	33.4	< 0.0	-	46.0	< 33.4	A
		1017	-4.8	<30.0	-	54.0	< 25.2	B
		1130	-4.7	<30.0	-	54.0	< 25.3	B
		1243	-4.2	<30.0	-	54.0	< 25.8	B
		1356	-2.7	<30.0	-	54.0	< 27.3	B
		1469	-3.4	<30.0	-	54.0	< 26.6	B
		1582	-5.2	<30.0	-	54.0	< 24.8	B
5	77.25	123	12.2	< 0.0	-	43.5	< 12.2	A
		246	19.0	< 0.0	-	46.0	< 19.0	A
		369	23.2	< 0.0	-	46.0	< 23.2	A
		492	26.3	< 0.0	-	46.0	< 26.3	A
		615	28.8	< 0.0	-	46.0	< 28.8	A
		738	30.8	< 0.0	-	46.0	< 30.8	A
		861	32.8	< 0.0	-	46.0	< 32.8	A
		984	34.6	< 0.0	-	54.0	< 34.6	A
		1107	-4.7	<30.0	-	54.0	< 25.3	B
		1230	-4.3	37.0	V	54.0	32.7	B
		1353	-2.8	<30.0	-	54.0	< 27.2	B
		1476	-3.4	<30.0	-	54.0	< 26.6	B
		1599	-5.3	<30.0	-	54.0	< 24.7	B
6	83.25	129	12.7	< 0.0	-	43.5	< 12.7	A
		258	19.4	< 0.0	-	46.0	< 19.4	A
		387	23.7	< 0.0	-	46.0	< 23.7	A
		516	26.8	< 0.0	-	46.0	< 26.8	A
		645	29.3	< 0.0	-	46.0	< 29.3	A
		774	31.4	< 0.0	-	46.0	< 31.4	A
		903	33.4	< 0.0	-	46.0	< 33.4	A
		1032	-4.9	34.0	H	54.0	29.1	B
		1161	-4.7	<30.0	-	54.0	< 25.3	B
		1290	-3.6	35.0	V	54.0	31.4	B
		1419	-2.6	<30.0	-	54.0	< 27.4	B
		1548	-4.6	34.0	H	54.0	29.4	B
		1677	-6.0	<30.0	-	54.0	< 24.0	B
7	175.25	221	18.0	< 0.0	-	46.0	< 18.0	A
		442	25.1	< 0.0	-	46.0	< 25.1	A
		663	29.6	< 0.0	-	46.0	< 29.6	A
		884	33.1	< 0.0	-	46.0	< 33.1	A
		1105	-4.7	<30.0	-	54.0	< 25.3	B
		1326	-3.1	38.0	V	54.0	34.9	B
		1547	-4.6	<30.0	-	54.0	< 25.4	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(uV/m)]	Polarity	Limits [dB(uV/m)]	Results [dB(uV/m)]	Remarks (Note 2)
8	181.25	227	18.2	8.0	H	46.0	26.2	A
		454	25.5	< 0.0	-	46.0	< 25.5	A
		681	29.8	< 0.0	-	46.0	< 29.8	A
		908	33.5	< 0.0	-	46.0	< 33.5	A
		1135	-4.7	<30.0	-	54.0	< 25.3	B
		1362	-2.7	36.0	V	54.0	33.3	B
		1589	-5.2	<30.0	-	54.0	< 24.8	B
9	187.25	233	18.4	8.0	H	46.0	26.4	A
		466	25.7	< 0.0	-	46.0	< 25.7	A
		699	30.2	< 0.0	-	46.0	< 30.2	A
		932	33.8	< 0.0	-	46.0	< 33.8	A
		1165	-4.7	<30.0	-	54.0	< 25.3	B
		1398	-2.3	35.0	V	54.0	32.7	B
		1631	-5.7	<30.0	-	54.0	< 24.3	B
10	193.25	239	18.7	8.0	H	46.0	26.7	A
		478	25.9	< 0.0	-	46.0	< 25.9	A
		717	30.5	< 0.0	-	46.0	< 30.5	A
		956	34.2	< 0.0	-	46.0	< 34.2	A
		1195	-4.6	<30.0	-	54.0	< 25.4	B
		1434	-2.8	34.0	H	54.0	31.2	B
		1673	-6.0	<30.0	-	54.0	< 24.0	B
11	199.25	245	19.0	8.0	H	46.0	27.0	A
		490	26.3	< 0.0	-	46.0	< 26.3	A
		735	30.8	< 0.0	-	46.0	< 30.8	A
		980	34.6	< 0.0	-	54.0	< 34.6	A
		1225	-4.3	<30.0	-	54.0	< 25.7	B
		1470	-3.4	34.0	H	54.0	30.6	B
12	205.25	251	19.2	9.0	H	46.0	28.2	A
		502	26.5	< 0.0	-	46.0	< 26.5	A
		753	31.1	< 0.0	-	46.0	< 31.1	A
		1004	-4.7	40.0	H	54.0	35.3	B
		1255	-4.0	<30.0	-	54.0	< 26.0	B
		1506	-4.0	37.0	H	54.0	33.0	B
13	211.25	257	19.4	10.0	H	46.0	29.4	A
		514	26.7	< 0.0	-	46.0	< 26.7	A
		771	31.3	< 0.0	-	46.0	< 31.3	A
		1028	-4.9	40.0	H	54.0	35.1	B
		1285	-3.6	<30.0	-	54.0	< 26.4	B
		1542	-4.5	39.0	H	54.0	34.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(uV/m)]	Polarity	Limits [dB(uV/m)]	Results [dB(uV/m)]	Remarks (Note 2)
15	477.25	523	26.9	1.0	H	46.0	27.9	A
		1046	-5.0	49.0	H	54.0	44.0	B
		1569	-4.9	<30.0	-	54.0	< 25.1	B
20	507.25	553	27.5	3.0	H	46.0	30.5	A
		1106	-4.7	48.0	H	54.0	43.3	B
		1659	-5.9	<30.0	-	54.0	< 24.1	B
28	555.25	601	28.4	2.0	H	46.0	30.4	A
		1202	-4.6	48.0	V	54.0	43.4	B
36	603.25	649	29.4	1.0	H	46.0	30.4	A
		1298	-3.4	46.0	V	54.0	42.6	B
45	657.25	703	30.2	< 0.0	-	46.0	< 30.2	A
		1406	-2.4	40.0	V	54.0	37.6	B
53	705.25	751	31.1	1.0	H	46.0	32.1	A
		1502	-3.9	44.0	H	54.0	40.1	B
61	753.25	799	31.8	1.0	H	46.0	32.8	A
		1598	-5.3	51.0	V	54.0	45.7	B
69	801.25	847	32.5	2.0	H	46.0	34.5	A
		1694	-6.1	53.0	V	54.0	46.9	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(uV/m)]	Polarity	Limits [dB(uV/m)]	Results [dB(uV/m)]	Remarks (Note 2)
5A	73.25	119	11.9	< 0.0	-	43.5	< 11.9	A
		238	18.6	< 0.0	-	46.0	< 18.6	A
		357	22.9	< 0.0	-	46.0	< 22.9	A
		476	25.9	< 0.0	-	46.0	< 25.9	A
		595	28.3	< 0.0	-	46.0	< 28.3	A
		714	30.4	< 0.0	-	46.0	< 30.4	A
		833	32.3	< 0.0	-	46.0	< 32.3	A
		952	34.1	< 0.0	-	46.0	< 34.1	A
		1071	-4.9	<30.0	-	54.0	< 25.1	B
		1190	-4.6	<30.0	-	54.0	< 25.4	B
		1309	-3.3	<30.0	-	54.0	< 26.7	B
		1428	-2.7	<30.0	-	54.0	< 27.3	B
		1547	-4.6	<30.0	-	54.0	< 25.4	B
		1666	-6.0	<30.0	-	54.0	< 24.0	B
A-5	91.25	137	13.2	< 0.0	-	43.5	< 13.2	A
		274	20.1	< 0.0	-	46.0	< 20.1	A
		411	24.3	< 0.0	-	46.0	< 24.3	A
		548	27.5	< 0.0	-	46.0	< 27.5	A
		685	30.0	< 0.0	-	46.0	< 30.0	A
		822	32.1	< 0.0	-	46.0	< 32.1	A
		959	34.2	< 0.0	-	46.0	< 34.2	A
		1096	-4.7	<30.0	-	54.0	< 25.3	B
		1233	-4.2	<30.0	-	54.0	< 25.8	B
		1370	-2.6	<30.0	-	54.0	< 27.4	B
		1507	-4.0	<30.0	-	54.0	< 26.0	B
		1644	-5.8	<30.0	-	54.0	< 24.2	B
A-1	115.25	161	14.8	2.0	H	43.5	16.8	A
		322	21.7	< 0.0	-	46.0	< 21.7	A
		483	26.0	< 0.0	-	46.0	< 26.0	A
		644	29.3	< 0.0	-	46.0	< 29.3	A
		805	31.8	< 0.0	-	46.0	< 31.8	A
		966	34.4	< 0.0	-	54.0	< 34.4	A
		1127	-4.7	<30.0	-	54.0	< 25.3	B
		1288	-3.6	38.0	V	54.0	34.4	B
		1449	-3.0	<30.0	-	54.0	< 27.0	B
		1610	-5.5	38.0	V	54.0	32.5	B
A	121.25	167	15.2	0.0	H	43.5	15.2	A
		334	22.1	< 0.0	-	46.0	< 22.1	A
		501	26.5	< 0.0	-	46.0	< 26.5	A
		668	29.6	< 0.0	-	46.0	< 29.6	A
		835	32.4	< 0.0	-	46.0	< 32.4	A
		1002	-4.6	35.0	H	54.0	30.4	B
		1169	-4.7	<30.0	-	54.0	< 25.3	B
		1336	-3.0	35.0	V	54.0	32.0	B
		1503	-3.9	<30.0	-	54.0	< 26.1	B
		1670	-5.9	39.0	V	54.0	33.1	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(uV/m)]	Polarity	Limits [dB(uV/m)]	Results [dB(uV/m)]	Remarks (Note 2)
E	145.25	191	16.5	< 0.0	-	43.5	< 16.5	A
		382	23.5	< 0.0	-	46.0	< 23.5	A
		573	28.0	< 0.0	-	46.0	< 28.0	A
		764	31.2	< 0.0	-	46.0	< 31.2	A
		955	34.2	< 0.0	-	46.0	< 34.2	A
		1146	-4.7	38.0	H	54.0	33.3	B
		1337	-3.0	<30.0	-	54.0	< 27.0	B
		1528	-4.3	35.0	V	54.0	30.7	B
I	169.25	215	17.6	7.0	H	43.5	24.6	A
		430	24.8	< 0.0	-	46.0	< 24.8	A
		645	29.3	< 0.0	-	46.0	< 29.3	A
		860	32.8	< 0.0	-	46.0	< 32.8	A
		1075	-4.9	<30.0	-	54.0	< 25.1	B
		1290	-3.6	38.0	V	54.0	34.4	B
		1505	-3.9	<30.0	-	54.0	< 26.1	B
J	217.25	263	19.7	11.0	H	46.0	30.7	A
		526	27.1	< 0.0	-	46.0	< 27.1	A
		789	31.6	< 0.0	-	46.0	< 31.6	A
		1052	-5.0	36.0	H	54.0	31.0	B
		1315	-3.2	<30.0	-	54.0	< 26.8	B
		1578	-5.0	42.0	V	54.0	37.0	B
N	241.25	287	20.6	< 0.0	-	46.0	< 20.6	A
		574	28.0	< 0.0	-	46.0	< 28.0	A
		861	32.8	< 0.0	-	46.0	< 32.8	A
		1148	-4.7	41.0	H	54.0	36.3	B
		1435	-2.8	<30.0	-	54.0	< 27.2	B
R	265.25	311	21.3	8.0	H	46.0	29.3	A
		622	28.9	< 0.0	-	46.0	< 28.9	A
		933	33.8	< 0.0	-	46.0	< 33.8	A
		1244	-4.1	46.0	V	54.0	41.9	B
		1555	-4.8	<30.0	-	54.0	< 25.2	B
W	295.25	341	22.3	3.0	H	46.0	25.3	A
		682	29.9	< 0.0	-	46.0	< 29.9	A
		1023	-4.8	<30.0	-	54.0	< 25.2	B
		1364	-2.7	39.0	V	54.0	36.3	B
W+1	301.25	347	22.5	3.0	H	46.0	25.5	A
		694	30.1	< 0.0	-	46.0	< 30.1	A
		1041	-5.0	<30.0	-	54.0	< 25.0	B
		1388	-2.4	38.0	V	54.0	35.6	B
W+7	337.25	383	23.5	1.0	H	46.0	24.5	A
		766	31.3	< 0.0	-	46.0	< 31.3	A
		1149	-4.7	<30.0	-	54.0	< 25.3	B
		1532	-4.3	38.0	H	54.0	33.7	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(uV/m)]	Polarity	Limits [dB(uV/m)]	Results [dB(uV/m)]	Remarks (Note 2)
W+13	373.25	419	24.6	0.0	H	46.0	24.6	A
		838	32.4	< 0.0	-	46.0	< 32.4	A
		1257	-4.0	<30.0	-	54.0	< 26.0	B
		1676	-6.0	47.0	V	54.0	41.0	B
W+19	409.25	455	25.5	< 0.0	-	46.0	< 25.5	A
		910	33.5	< 0.0	-	46.0	< 33.5	A
		1365	-2.7	<30.0	-	54.0	< 27.3	B
W+25	445.25	491	26.3	0.0	H	46.0	26.3	A
		982	34.6	< 0.0	-	54.0	< 34.6	A
		1473	-3.4	<30.0	-	54.0	< 26.6	B
W+31	481.25	527	27.1	2.0	H	46.0	29.1	A
		1054	-5.0	45.0	H	54.0	40.0	B
		1581	-5.2	<30.0	-	54.0	< 24.8	B
W+37	517.25	563	27.7	3.0	H	46.0	30.7	A
		1126	-4.7	48.0	H	54.0	43.3	B
		1689	-6.0	<30.0	-	54.0	< 24.0	B
W+43	553.25	599	28.4	1.0	H	46.0	29.4	A
		1198	-4.6	48.0	V	54.0	43.4	B
W+49	589.25	635	29.1	2.0	H	46.0	31.1	A
		1270	-3.9	49.0	V	54.0	45.1	B
W+55	625.25	671	29.7	0.0	H	46.0	29.7	A
		1342	-3.0	43.0	V	54.0	40.0	B
W+61	661.25	707	30.3	1.0	H	46.0	31.3	A
		1414	-2.6	39.0	V	54.0	36.4	B
W+67	697.25	743	30.9	0.0	H	46.0	30.9	A
		1486	-3.6	44.0	V	54.0	40.4	B
W+73	733.25	779	31.4	0.0	H	46.0	31.4	A
		1558	-4.8	49.0	V	54.0	44.2	B
W+79	769.25	815	32.0	< 0.0	-	46.0	< 32.0	A
		1630	-5.7	54.0	V	54.0	48.3	B
W+84	799.25	845	32.5	2.0	V	46.0	34.5	A
		1690	-6.0	55.0	V	54.0	49.0	B

Sample of calculated result at 1690 MHz (W+84 ch), as the Minimum Margin point:

Corretion Factor	=	-6.0 dB(1/m)
+)Meter Reading	=	55.0 dB(uV/m)
Result	=	49.0 dB(uV/m)

Minimum Margin : 54.0 - 49.0 = 5.0(dB)
The point shown on "____ " is the Minimum Margin Point.

Note 1:
1)The highest frequency generated or used in the EUT: 847 MHz
2)The upper frequency of measurement range : 1694 MHz
3)The spectrum was scanned 30 MHz to 1694 MHz and all emissions not reported were more than 20dB below the applied limits.
4)Correction Factor (below 1GHz) : Antenna Factor(dB) + Cable Loss(dB)
Correction Factor (above 1GHz) : Antenna Factor(dB) + Cable Loss(dB) + 20dB Pad Attenuator(dB) - Pre-Amplifier Gain(dB)

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 KHz

Note 2	Detector Function	RES. B.W	V.B.W	Sweep T	Span
B	Peak (SP)	1 MHz	1 MHz	20 msec	0 Hz
C	Peak (SP)	100 kHz	100 kHz	20 msec	0 Hz
*) D	Average (ESV)	1 MHz (3 MHz)	3 MHz	20 msec	0 Hz

( ):Setting of spectrum analyzer
*)For the average measurement method, it is made measurement using a test receiver, a step attenuater and a spectrum analyzer.

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Antenna Terminal Disturbance Voltage Measurement

TV Broadcast Receiver

Test Date: September 27, 1998
Temp.: 27 °C ; Humi.: 30 %

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(uV)]	Limits at 75Ω [dB(uV)]	Results [dB(uV)]	Remarks (Note 2)
2	55.25	101	7.5	16.0	< 10.0	51.7	< 33.5	A
		202	7.5	16.0	< 10.0	51.7	< 33.5	A
		303	7.5	16.0	< 10.0	51.7	< 33.5	A
		404	7.5	16.0	< 10.0	51.7	< 33.5	A
		505	7.5	16.0	< 10.0	51.7	< 33.5	A
		606	7.5	16.0	< 10.0	51.7	< 33.5	A
		707	7.5	16.0	< 10.0	51.7	< 33.5	A
		808	7.5	16.0	< 10.0	51.7	< 33.5	A
		909	7.5	16.0	< 10.0	51.7	< 33.5	A
		1010	7.5	16.0	< 10.0	51.7	< 33.5	B
		1111	7.5	16.0	< 10.0	51.7	< 33.5	B
		1212	7.5	16.0	< 10.0	51.7	< 33.5	B
		1313	7.5	16.0	< 10.0	51.7	< 33.5	B
		1414	7.5	16.0	< 10.0	51.7	< 33.5	B
		1515	7.5	16.0	< 10.0	51.7	< 33.5	B
		1616	7.5	16.0	< 10.0	51.7	< 33.5	B
3	61.25	107	7.5	16.0	< 10.0	51.7	< 33.5	A
		214	7.5	16.0	< 10.0	51.7	< 33.5	A
		321	7.5	16.0	< 10.0	51.7	< 33.5	A
		428	7.5	16.0	< 10.0	51.7	< 33.5	A
		535	7.5	16.0	< 10.0	51.7	< 33.5	A
		642	7.5	16.0	< 10.0	51.7	< 33.5	A
		749	7.5	16.0	< 10.0	51.7	< 33.5	A
		856	7.5	16.0	< 10.0	51.7	< 33.5	A
		963	7.5	16.0	< 10.0	51.7	< 33.5	A
		1070	7.5	16.0	< 10.0	51.7	< 33.5	B
		1177	7.5	16.0	< 10.0	51.7	< 33.5	B
		1284	7.5	16.0	< 10.0	51.7	< 33.5	B
		1391	7.5	16.0	< 10.0	51.7	< 33.5	B
		1498	7.5	16.0	< 10.0	51.7	< 33.5	B
		1605	7.5	16.0	< 10.0	51.7	< 33.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(uV)]	Limits at 75Ω [dB(uV)]	Results [dB(uV)]	Remarks (Note 2)
4	67.25	113	7.5	16.0	< 10.0	51.7	< 33.5	A
		226	7.5	16.0	< 10.0	51.7	< 33.5	A
		339	7.5	16.0	< 10.0	51.7	< 33.5	A
		452	7.5	16.0	< 10.0	51.7	< 33.5	A
		565	7.5	16.0	< 10.0	51.7	< 33.5	A
		678	7.5	16.0	< 10.0	51.7	< 33.5	A
		791	7.5	16.0	< 10.0	51.7	< 33.5	A
		904	7.5	16.0	< 10.0	51.7	< 33.5	A
		1017	7.5	16.0	< 10.0	51.7	< 33.5	B
		1130	7.5	16.0	< 10.0	51.7	< 33.5	B
		1243	7.5	16.0	< 10.0	51.7	< 33.5	B
		1356	7.5	16.0	< 10.0	51.7	< 33.5	B
		1469	7.5	16.0	< 10.0	51.7	< 33.5	B
		1582	7.5	16.0	< 10.0	51.7	< 33.5	B
5	77.25	123	7.5	16.0	< 10.0	51.7	< 33.5	A
		246	7.5	16.0	< 10.0	51.7	< 33.5	A
		369	7.5	16.0	< 10.0	51.7	< 33.5	A
		492	7.5	16.0	< 10.0	51.7	< 33.5	A
		615	7.5	16.0	< 10.0	51.7	< 33.5	A
		738	7.5	16.0	< 10.0	51.7	< 33.5	A
		861	7.5	16.0	< 10.0	51.7	< 33.5	A
		984	7.5	16.0	< 10.0	51.7	< 33.5	A
		1107	7.5	16.0	< 10.0	51.7	< 33.5	B
		1230	7.5	16.0	< 10.0	51.7	< 33.5	B
		1353	7.5	16.0	< 10.0	51.7	< 33.5	B
		1476	7.5	16.0	< 10.0	51.7	< 33.5	B
		1599	7.5	16.0	< 10.0	51.7	< 33.5	B
6	83.25	129	7.5	16.0	< 10.0	51.7	< 33.5	A
		258	7.5	16.0	< 10.0	51.7	< 33.5	A
		387	7.5	16.0	< 10.0	51.7	< 33.5	A
		516	7.5	16.0	< 10.0	51.7	< 33.5	A
		645	7.5	16.0	< 10.0	51.7	< 33.5	A
		774	7.5	16.0	< 10.0	51.7	< 33.5	A
		903	7.5	16.0	< 10.0	51.7	< 33.5	A
		1032	7.5	16.0	< 10.0	51.7	< 33.5	B
		1161	7.5	16.0	< 10.0	51.7	< 33.5	B
		1290	7.5	16.0	< 10.0	51.7	< 33.5	B
		1419	7.5	16.0	< 10.0	51.7	< 33.5	B
		1548	7.5	16.0	< 10.0	51.7	< 33.5	B
		1677	7.5	16.0	< 10.0	51.7	< 33.5	B
7	175.25	221	7.5	16.0	< 10.0	51.7	< 33.5	A
		442	7.5	16.0	< 10.0	51.7	< 33.5	A
		663	7.5	16.0	< 10.0	51.7	< 33.5	A
		884	7.5	16.0	< 10.0	51.7	< 33.5	A
		1105	7.5	16.0	< 10.0	51.7	< 33.5	B
		1326	7.5	16.0	< 10.0	51.7	< 33.5	B
		1547	7.5	16.0	< 10.0	51.7	< 33.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(uV)]	Limits at 75Ω [dB(uV)]	Results [dB(uV)]	Remarks (Note 2)
8	181.25	227	7.5	16.0	< 10.0	51.7	< 33.5	A
		454	7.5	16.0	< 10.0	51.7	< 33.5	A
		681	7.5	16.0	< 10.0	51.7	< 33.5	A
		908	7.5	16.0	< 10.0	51.7	< 33.5	A
		1135	7.5	16.0	< 10.0	51.7	< 33.5	B
		1362	7.5	16.0	10.0	51.7	33.5	B
		1589	7.5	16.0	< 10.0	51.7	< 33.5	B
9	187.25	233	7.5	16.0	< 10.0	51.7	< 33.5	A
		466	7.5	16.0	< 10.0	51.7	< 33.5	A
		699	7.5	16.0	< 10.0	51.7	< 33.5	A
		932	7.5	16.0	< 10.0	51.7	< 33.5	A
		1165	7.5	16.0	< 10.0	51.7	< 33.5	B
		1398	7.5	16.0	14.0	51.7	37.5	B
		1631	7.5	16.0	< 10.0	51.7	< 33.5	B
10	193.25	239	7.5	16.0	< 10.0	51.7	< 33.5	A
		478	7.5	16.0	< 10.0	51.7	< 33.5	A
		717	7.5	16.0	< 10.0	51.7	< 33.5	A
		956	7.5	16.0	< 10.0	51.7	< 33.5	A
		1195	7.5	16.0	< 10.0	51.7	< 33.5	B
		1434	7.5	16.0	14.0	51.7	37.5	B
		1673	7.5	16.0	< 10.0	51.7	< 33.5	B
11	199.25	245	7.5	16.0	< 10.0	51.7	< 33.5	A
		490	7.5	16.0	< 10.0	51.7	< 33.5	A
		735	7.5	16.0	< 10.0	51.7	< 33.5	A
		980	7.5	16.0	< 10.0	51.7	< 33.5	A
		1225	7.5	16.0	< 10.0	51.7	< 33.5	B
		1470	7.5	16.0	21.0	51.7	44.5	B
12	205.25	251	7.5	16.0	< 10.0	51.7	< 33.5	A
		502	7.5	16.0	< 10.0	51.7	< 33.5	A
		753	7.5	16.0	< 10.0	51.7	< 33.5	A
		1004	7.5	16.0	< 10.0	51.7	< 33.5	B
		1255	7.5	16.0	< 10.0	51.7	< 33.5	B
		1506	7.5	16.0	< 10.0	51.7	< 33.5	B
13	211.25	257	7.5	16.0	< 10.0	51.7	< 33.5	A
		514	7.5	16.0	< 10.0	51.7	< 33.5	A
		771	7.5	16.0	< 10.0	51.7	< 33.5	A
		1028	7.5	16.0	< 10.0	51.7	< 33.5	B
		1285	7.5	16.0	< 10.0	51.7	< 33.5	B
		1542	7.5	16.0	10.0	51.7	33.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(uV)]	Limits at 75Ω [dB(uV)]	Results [dB(uV)]	Remarks (Note 2)
15	477.25	523	7.5	16.0	< 10.0	51.7	< 33.5	A
		1046	7.5	16.0	< 10.0	51.7	< 33.5	B
		1569	7.5	16.0	< 10.0	51.7	< 33.5	B
20	507.25	553	7.5	16.0	< 10.0	51.7	< 33.5	A
		1106	7.5	16.0	10.0	51.7	33.5	B
		1659	7.5	16.0	< 10.0	51.7	< 33.5	B
28	555.25	601	7.5	16.0	< 10.0	51.7	< 33.5	A
		1202	7.5	16.0	< 10.0	51.7	< 33.5	B
36	603.25	649	7.5	16.0	< 10.0	51.7	< 33.5	A
		1298	7.5	16.0	< 10.0	51.7	< 33.5	B
45	657.25	703	7.5	16.0	< 10.0	51.7	< 33.5	A
		1406	7.5	16.0	16.0	51.7	39.5	B
53	705.25	751	7.5	16.0	< 10.0	51.7	< 33.5	A
		1502	7.5	16.0	21.0	51.7	44.5	B
61	753.25	799	7.5	16.0	< 10.0	51.7	< 33.5	A
		1598	7.5	16.0	23.0	51.7	46.5	B
69	801.25	847	7.5	16.0	< 10.0	51.7	< 33.5	A
		1694	7.5	16.0	17.0	51.7	40.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(uV)]	Limits at 75Ω [dB(uV)]	Results [dB(uV)]	Remarks (Note 2)
5A	73.25	119	7.5	16.0	< 10.0	51.7	< 33.5	A
		238	7.5	16.0	< 10.0	51.7	< 33.5	A
		357	7.5	16.0	< 10.0	51.7	< 33.5	A
		476	7.5	16.0	< 10.0	51.7	< 33.5	A
		595	7.5	16.0	< 10.0	51.7	< 33.5	A
		714	7.5	16.0	< 10.0	51.7	< 33.5	A
		833	7.5	16.0	< 10.0	51.7	< 33.5	A
		952	7.5	16.0	< 10.0	51.7	< 33.5	A
		1071	7.5	16.0	< 10.0	51.7	< 33.5	B
		1190	7.5	16.0	< 10.0	51.7	< 33.5	B
		1309	7.5	16.0	< 10.0	51.7	< 33.5	B
		1428	7.5	16.0	< 10.0	51.7	< 33.5	B
		1547	7.5	16.0	< 10.0	51.7	< 33.5	B
		1666	7.5	16.0	11.0	51.7	34.5	B
A-5	91.25	137	7.5	16.0	< 10.0	51.7	< 33.5	A
		274	7.5	16.0	< 10.0	51.7	< 33.5	A
		411	7.5	16.0	< 10.0	51.7	< 33.5	A
		548	7.5	16.0	< 10.0	51.7	< 33.5	A
		685	7.5	16.0	< 10.0	51.7	< 33.5	A
		822	7.5	16.0	< 10.0	51.7	< 33.5	A
		959	7.5	16.0	< 10.0	51.7	< 33.5	A
		1096	7.5	16.0	< 10.0	51.7	< 33.5	B
		1233	7.5	16.0	< 10.0	51.7	< 33.5	B
		1370	7.5	16.0	< 10.0	51.7	< 33.5	B
		1507	7.5	16.0	< 10.0	51.7	< 33.5	B
		1644	7.5	16.0	12.0	51.7	35.5	B
A-1	115.25	161	7.5	16.0	< 10.0	51.7	< 33.5	A
		322	7.5	16.0	< 10.0	51.7	< 33.5	A
		483	7.5	16.0	< 10.0	51.7	< 33.5	A
		644	7.5	16.0	< 10.0	51.7	< 33.5	A
		805	7.5	16.0	< 10.0	51.7	< 33.5	A
		966	7.5	16.0	< 10.0	51.7	< 33.5	A
		1127	7.5	16.0	< 10.0	51.7	< 33.5	B
		1288	7.5	16.0	< 10.0	51.7	< 33.5	B
		1449	7.5	16.0	< 10.0	51.7	< 33.5	B
		1610	7.5	16.0	< 10.0	51.7	< 33.5	B
A	121.25	167	7.5	16.0	< 10.0	51.7	< 33.5	A
		334	7.5	16.0	< 10.0	51.7	< 33.5	A
		501	7.5	16.0	< 10.0	51.7	< 33.5	A
		668	7.5	16.0	< 10.0	51.7	< 33.5	A
		835	7.5	16.0	< 10.0	51.7	< 33.5	A
		1002	7.5	16.0	< 10.0	51.7	< 33.5	B
		1169	7.5	16.0	< 10.0	51.7	< 33.5	B
		1336	7.5	16.0	< 10.0	51.7	< 33.5	B
		1503	7.5	16.0	< 10.0	51.7	< 33.5	B
		1670	7.5	16.0	< 10.0	51.7	< 33.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(uV)]	Limits at 75Ω [dB(uV)]	Results [dB(uV)]	Remarks (Note 2)
E	145.25	191	7.5	16.0	< 10.0	51.7	< 33.5	A
		382	7.5	16.0	< 10.0	51.7	< 33.5	A
		573	7.5	16.0	< 10.0	51.7	< 33.5	A
		764	7.5	16.0	< 10.0	51.7	< 33.5	A
		955	7.5	16.0	< 10.0	51.7	< 33.5	A
		1146	7.5	16.0	11.0	51.7	34.5	B
		1337	7.5	16.0	< 10.0	51.7	< 33.5	B
		1528	7.5	16.0	< 10.0	51.7	< 33.5	B
I	169.25	215	7.5	16.0	< 10.0	51.7	< 33.5	A
		430	7.5	16.0	< 10.0	51.7	< 33.5	A
		645	7.5	16.0	< 10.0	51.7	< 33.5	A
		860	7.5	16.0	< 10.0	51.7	< 33.5	A
		1075	7.5	16.0	< 10.0	51.7	< 33.5	B
		1290	7.5	16.0	13.0	51.7	36.5	B
		1505	7.5	16.0	< 10.0	51.7	< 33.5	B
J	217.25	263	7.5	16.0	< 10.0	51.7	< 33.5	A
		526	7.5	16.0	< 10.0	51.7	< 33.5	A
		789	7.5	16.0	< 10.0	51.7	< 33.5	A
		1052	7.5	16.0	< 10.0	51.7	< 33.5	B
		1315	7.5	16.0	< 10.0	51.7	< 33.5	B
		1578	7.5	16.0	18.0	51.7	41.5	B
N	241.25	287	7.5	16.0	< 10.0	51.7	< 33.5	A
		574	7.5	16.0	< 10.0	51.7	< 33.5	A
		861	7.5	16.0	< 10.0	51.7	< 33.5	A
		1148	7.5	16.0	10.0	51.7	33.5	B
		1435	7.5	16.0	< 10.0	51.7	< 33.5	B
R	265.25	311	7.5	16.0	< 10.0	51.7	< 33.5	A
		622	7.5	16.0	< 10.0	51.7	< 33.5	A
		933	7.5	16.0	< 10.0	51.7	< 33.5	A
		1244	7.5	16.0	< 10.0	51.7	< 33.5	B
		1555	7.5	16.0	< 10.0	51.7	< 33.5	B
W	295.25	341	7.5	16.0	< 10.0	51.7	< 33.5	A
		682	7.5	16.0	< 10.0	51.7	< 33.5	A
		1023	7.5	16.0	< 10.0	51.7	< 33.5	B
		1364	7.5	16.0	11.0	51.7	34.5	B
W+1	301.25	347	7.5	16.0	< 10.0	51.7	< 33.5	A
		694	7.5	16.0	< 10.0	51.7	< 33.5	A
		1041	7.5	16.0	< 10.0	51.7	< 33.5	B
		1388	7.5	16.0	13.0	51.7	36.5	B
W+7	337.25	383	7.5	16.0	< 10.0	51.7	< 33.5	A
		766	7.5	16.0	< 10.0	51.7	< 33.5	A
		1149	7.5	16.0	< 10.0	51.7	< 33.5	B
		1532	7.5	16.0	22.0	51.7	45.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(uV)]	Limits at 75Ω [dB(uV)]	Results [dB(uV)]	Remarks (Note 2)
W+13	373.25	419	7.5	16.0	< 10.0	51.7	< 33.5	A
		838	7.5	16.0	10.0	51.7	33.5	A
		1257	7.5	16.0	< 10.0	51.7	< 33.5	B
		1676	7.5	16.0	22.0	51.7	45.5	B
W+19	409.25	455	7.5	16.0	< 10.0	51.7	< 33.5	A
		910	7.5	16.0	< 10.0	51.7	< 33.5	A
		1365	7.5	16.0	< 10.0	51.7	< 33.5	B
W+25	445.25	491	7.5	16.0	< 10.0	51.7	< 33.5	A
		982	7.5	16.0	< 10.0	51.7	< 33.5	A
		1473	7.5	16.0	< 10.0	51.7	< 33.5	B
W+31	481.25	527	7.5	16.0	< 10.0	51.7	< 33.5	A
		1054	7.5	16.0	10.0	51.7	33.5	B
		1581	7.5	16.0	< 10.0	51.7	< 33.5	B
W+37	517.25	563	7.5	16.0	< 10.0	51.7	< 33.5	A
		1126	7.5	16.0	13.0	51.7	36.5	B
		1689	7.5	16.0	< 10.0	51.7	< 33.5	B
W+43	553.25	599	7.5	16.0	< 10.0	51.7	< 33.5	A
		1198	7.5	16.0	10.0	51.7	33.5	B
W+49	589.25	635	7.5	16.0	< 10.0	51.7	< 33.5	A
		1270	7.5	16.0	< 10.0	51.7	< 33.5	B
W+55	625.25	671	7.5	16.0	< 10.0	51.7	< 33.5	A
		1342	7.5	16.0	< 10.0	51.7	< 41.5	B
W+61	661.25	707	7.5	16.0	< 10.0	51.7	< 33.5	A
		1414	7.5	16.0	18.0	51.7	41.5	B
W+67	697.25	743	7.5	16.0	< 10.0	51.7	< 33.5	A
		1486	7.5	16.0	15.0	51.7	38.5	B
W+73	733.25	779	7.5	16.0	< 10.0	51.7	< 33.5	A
		1558	7.5	16.0	23.0	51.7	46.5	B
W+79	769.25	815	7.5	16.0	< 10.0	51.7	< 33.5	A
		1630	7.5	16.0	23.0	51.7	46.5	B
W+84	799.25	845	7.5	16.0	< 10.0	51.7	< 33.5	A
		1690	7.5	16.0	19.0	51.7	42.5	B

Sample of calculated result at 1598 MHz (61 ch), as the Minimum Margin point:

Matching Pad Loss	=	7.5 dB
Attenuation Pad Loss	=	16.0 dB
+)Meter Reading	=	23.0 dB(uV)
Result	=	46.5 dB(uV)

Minimum Margin : 51.7 - 46.5 = 5.2(dB)
The point shown on "___ " is the Minimum Margin Point.

Conversion of applied limits (refer to § 15.111(a))
2 (nW) = 10log(2×75×1000) [dB(uV)]

Note 1:
1)The highest frequency generated or used in the EUT: 847 MHz
2)The upper frequency of measurement range : 1694 MHz
3)The spectrum was scanned 30 MHz to 1694 MHz and all emissions not reported were more than 20dB below the applied limits.

Remarks:

Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 KHz

Note 2	Detector Function	RES. B.W	V.B.W	Sweep T	Span
B	Peak (SP)	1 MHz	1 MHz	20 msec	0 Hz
C	Peak (SP)	100 kHz	100 kHz	20 msec	0 Hz
*) D	Average (ESV)	1 MHz (3 MHz)	3 MHz	20 msec	0 Hz

( ):Setting of spectrum analyzer
*)For the average measurement method, it is made measurement using a test receiver, a step attenuater and a spectrum analyzer.

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

Peak Picture Sensitivity Measurement

TV Broadcast Receiver

Test Date: September 29, 1998
Temp.: 23 ℃ ; Humi.: 56 %

VHF (CH)	Picture RF [MHz]	Matching Pad Loss [dB]	Meter Reading [dB(uV)]	Results [dB(uV)]	UHF (CH)	Picture RF [MHz]	Matching Pad Loss [dB]	Meter Reading [dB(uV)]	Results [dB(uV)]
2	55.25	-4.0	24.0	20.0	14	471.25	-5.2	31.0	25.8
3	61.25	-4.0	20.0	16.0	20	507.25	-5.2	31.0	25.8
4	67.25	-4.0	19.0	15.0	26	543.25	-5.2	29.0	23.8
5	77.25	-4.0	20.0	16.0	32	579.25	-5.2	28.0	22.8
6	83.25	-4.0	19.0	15.0	38	615.25	-5.6	27.0	21.4
7	175.25	-4.0	21.0	17.0	44	651.25	-5.6	27.0	21.4
8	181.25	-4.0	22.0	18.0	50	687.25	-5.6	24.0	18.4
9	187.25	-4.0	20.0	16.0	56	723.25	-5.6	22.0	16.4
10	193.25	-4.0	20.0	16.0	62	759.25	-5.6	21.0	15.4
11	199.25	-4.0	17.0	13.0	69	801.25	-5.4	22.0	16.6
12	205.25	-4.0	19.0	15.0					
13	211.25	-4.0	19.0	15.0					
		Average		16.0			Average		20.8

Calculated result, as the Minimum Margin point:

	Averaged for UHF channels between 14 and 69 =	20.8 dB(uV)
−)	Averaged for VHF channels between 2 and 13 =	16.0 dB(uV)
	Result =	4.8 dB

Minimum Margin : 8.0 - 4.8 = 3.2(dB)

Tester Signature : A. Hosoda

Type Name : Akio Hosoda

UHF Noise Figure Measurement

TV Broadcast Receiver

Test Date: September 29, 1998
Temp.: 23 °C ; Humi.: 56 %

UHF Channels (CH)	Picture RF [MHz]	Meter Reading [dB]	Balun Loss [dB]	IF Amp. Contribution [dB]	Noise Figures [dB]
14	471.25	15.8	0.7	0.50	11.6
20	507.25	15.2	0.8	0.70	11.1
26	543.25	15.2	0.9	0.90	11.2
32	579.25	15.0	0.9	0.50	10.6
38	615.25	14.5	1.0	0.40	9.9
44	651.25	13.7	1.0	0.40	9.1
50	687.25	12.8	1.0	0.28	7.8
56	723.25	12.0	1.1	0.17	6.9
62	759.25	11.6	1.1	0.24	6.5
69	801.25	11.5	1.1	0.30	6.7
Worst channel of the range, ch# 14 - ch# 69					
14	471.25	15.8	0.7	0.50	11.6

Sample of calculated result at 14 ch, as the Minimum Margin point:

Meter Reading	=	15.8 dB
Balun Loss	=	- 0.7 dB
IF Amp. Contribution	=	0.5 dB
+)Power Splitter uses	=	- 4.0 dB(uV)
Result	=	11.6 dB(uV)

Minimum Margin : 14.0 - 11.6 = 2.4(dB)

Note: 1) 4.0 dB substracted for power splitter with video recorder.
2) If the IF Contribution is less than 0.3 dB, the value is not including in the NF value.
3) TV receiver is designed to meet a UHF noise figure of 14.0 dB.

Tester Signature : A. Hosoda

Type Name : Akio Hosoda