

EMC EMISSION - TEST REPORT

JQA APPLICATION No. : KL8080615

Model/Type No. : VRA671AT21

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

FCC ID : ADTVRA671

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 Communications 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



LAB CODE: 200191-0

DIRECTORY

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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 Laboratory Accreditation Program for satisfactory compliance established in Title 15, Part 285 Code of Federal Regulations.
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. : VRA671AT21
- 3) Brand Name : PHILIPS
- 4) Product Type : Pre Production (S/N 00003)
- 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	December, 1998	1 Year
- ESH 2	A - 3		
- 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: 19 Humidity: 34 %

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 27, 1998

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, 1998	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	November, 1998	1 Year
- KBA-611	C - 22	November, 1998	1 Year
- KBA-511A	C - 13		
- KBA-611	C - 19		
- KBA-511A	C - 11		
- KBA-611	C - 21		
- Cable	H - 5	November, 1998	1 Year

Environmental conditions:

Temperature: 20 Humidity: 36 %

The measurement of the Radiated Emission (Electric Field)

was performed in horizontal and vertical polarization, in the frequency range of 1000 MHz - 1700 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	October, 1998	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		
- TRA-603D	D - 24		
- 8494H/8595H	D - 76		
- Cable	C - 40 - 11	May, 1998	1 Year
- Cable	C - 40 - 12	May, 1998	1 Year

Setting of the spectrum analyzer:

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

Environmental conditions:

Temperature: 20 Humidity: 36 %

The measurement of the Antenna Conducted Power

was performed in the frequency range of 30 MHz - 1700 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	A - 5	December, 1998	1 Year
- 8568B	A - 10		
- 8566B	A - 13	October, 1998	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: 23 Humidity: 32 %

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		
- MG645A	B - 4	April, 1998	1 Year
- MN-4461	B - 23	November, 1998	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: 21 Humidity: 35 %

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	April, 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: 21 Humidity: 35 %

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.)	VRA671AT21 (00003)	ADTVRA671

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 (Rear)) / 75 termination	--	--	-- m
2	EUT (VIDEO INPUT (Front)) / 75 termination	--	--	-- m
3	EUT (VIDEO OUTPUT) / 75 termination	YES	NO	1.0m
4	EUT (AUDIO INPUT L/R (Rear)) / No termination	--	--	-- m
5	EUT (AUDIO INPUT L/R (Front)) / No termination	--	--	-- m
6	EUT (AUDIO OUTPUT L/R) / No termination	YES	NO	1.0m
7	EUT (ANTENNA INPUT) / 75 termination	--	--	-- m
8	EUT (RF OUTPUT) / 75 termination	YES	NO	1.0m
9	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 75 termination.

Test system:

The EUT has ports shown as follows:

F-Type Plugs : ANTENNA IN, RF OUT
Pin Plugs : VIDEO IN (Front/Rear), AUDIO IN L/R (Front/Rear), VIDEO OUT, AUDIO OUT L/R

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 achieve 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) _____

Responsible party :

Contact Person :

Signatory

TEST RESULTS

Conducted Emission 450 kHz - 30 MHz

The requirements are	- KEPT	- NOT KEPT
Min. limit margin	<u>+ 6.9</u> dB at <u>0.45</u> MHz	
Max. limit exceeding	_____ dB at _____ MHz	
Uncertainty of measurement results	<u>+ 2.1</u> dB(2)	<u>- 2.1</u> dB(2)

Remarks: _____

Radiated Emission (Electric Field) 30 MHz - 1700 MHz

The requirements are	- KEPT	- NOT KEPT
Min. limit margin	<u>+ 5.7</u> dB at <u>707.0</u> MHz (W+61ch)	
Max. limit exceeding	_____ dB at _____ MHz	
Uncertainty of measurement results (below 1000 MHz)	<u>+ 4.1</u> dB(2)	<u>- 4.2</u> dB(2)
Uncertainty of measurement results (above 1000 MHz)	<u>+ 3.1</u> dB(2)	<u>- 3.2</u> dB(2)

Remarks: _____

Antenna Conducted Power 30 MHz - 1700 MHz

The requirements are	- KEPT	- NOT KEPT
Min. limit margin	<u>+ 9.2</u> dB at <u>1558.0</u> MHz (W+73ch)	
Max. limit exceeding	_____ dB at _____ MHz	
Uncertainty of measurement results	<u>+ 2.3</u> dB(2)	<u>- 2.3</u> dB(2)

Remarks: _____

Peak Picture Sensitivity

The requirements are	- KEPT	- NOT KEPT
Min. limit margin	<u>+ 5.5</u> dB	
Max. limit exceeding	_____ dB	
Uncertainty of measurement results	<u>+ 2.8</u> dB(2)	<u>- 2.8</u> dB(2)

Remarks: _____

UHF Noise Figure

The requirements are	- KEPT	- NOT KEPT
Min. limit margin	<u>+ 4.7</u> dB	at <u>69</u> ch
Max. limit exceeding	_____ dB	at _____ ch
Uncertainty of measurement results	<u>+ 0.6</u> dB(2)	<u>- 0.6</u> dB(2)

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 : December 28, 1998

End of testing : January 7, 1999

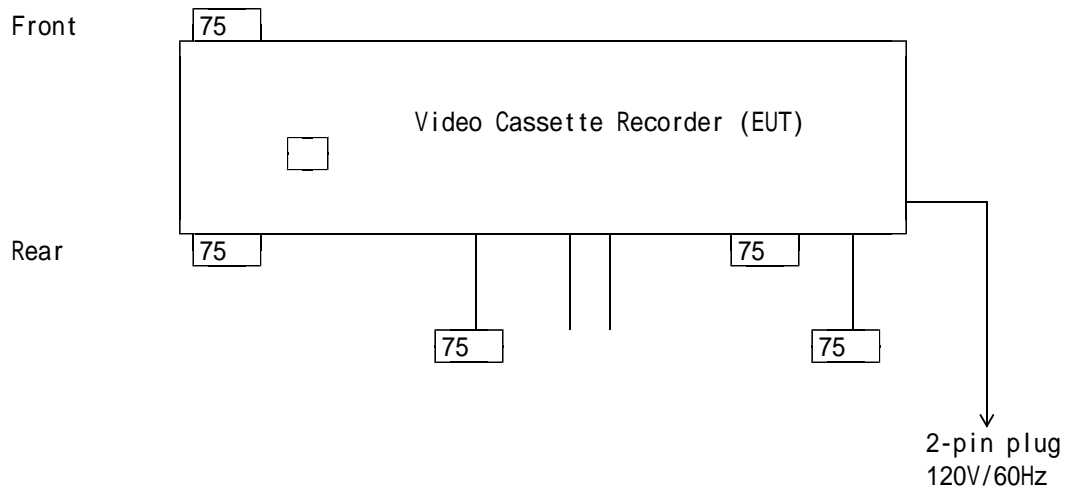
- JAPAN QUALITY ASSURANCE ORGANIZATION -

Approved Signatory :

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

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

Test System-Arrangement (Drawings)



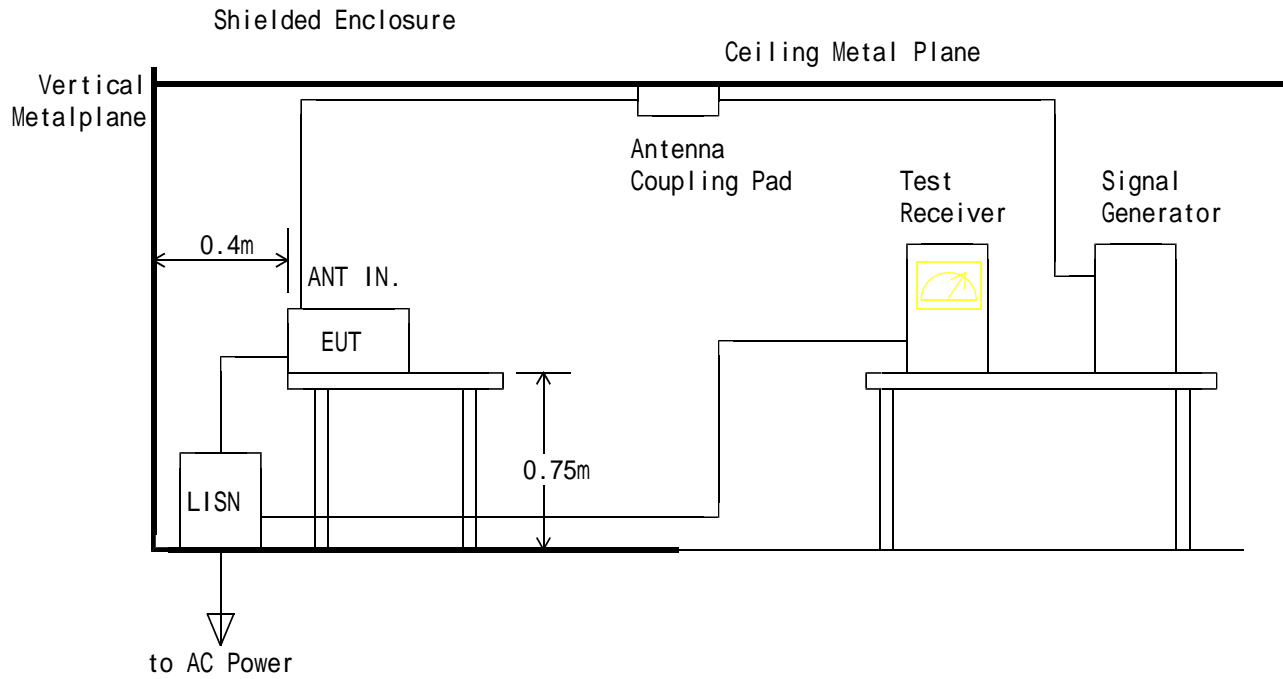
Note)

- No termination
- VIDEO INPUT
- AUDIO INPUT L/R
- VIDEO OUTPUT
- AUDIO OUTPUT L/R
- ANTENNA INPUT
- RF OUTPUT
- Channel Selector Switch (3ch and 4ch)

Preliminary Test and Test-setup(Drawings)

Conducted Emission 450 kHz - 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.6.2.1 (Tabletop Equipment Tests).

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.

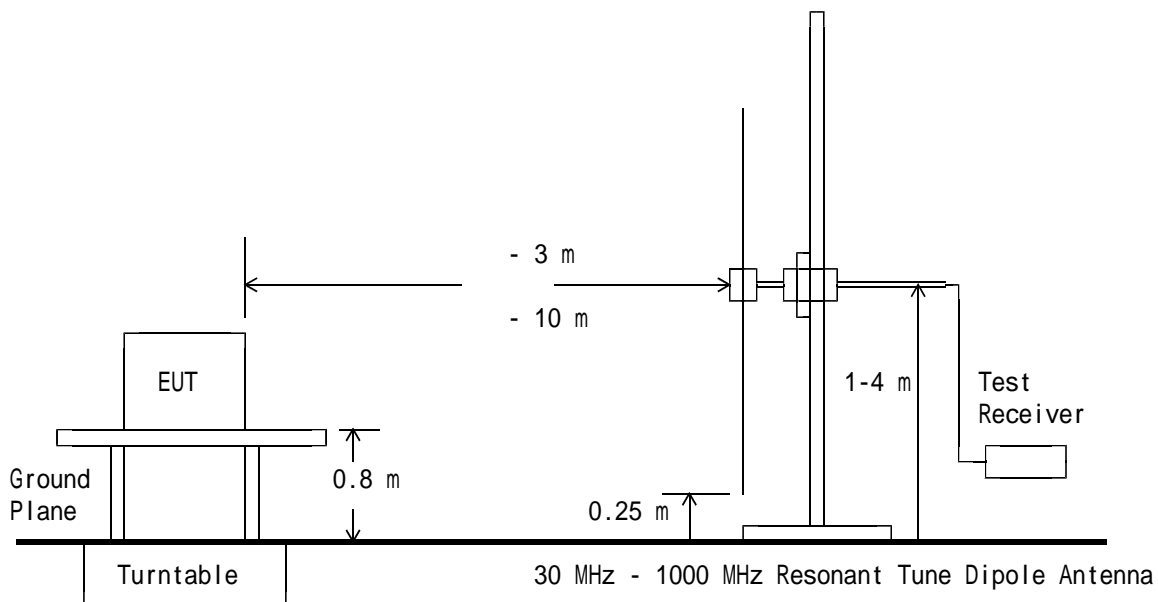
Step 2: Using a test receiver and a test antenna probe, the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded every one of 22 divided bands in the specified frequency band (30 MHz - 1000 MHz).

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 taken and recorded.



Radiated Emission (Electric Field) 1000 MHz - 1700 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.6.2.1 (Tabletop Equipment Tests).

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.

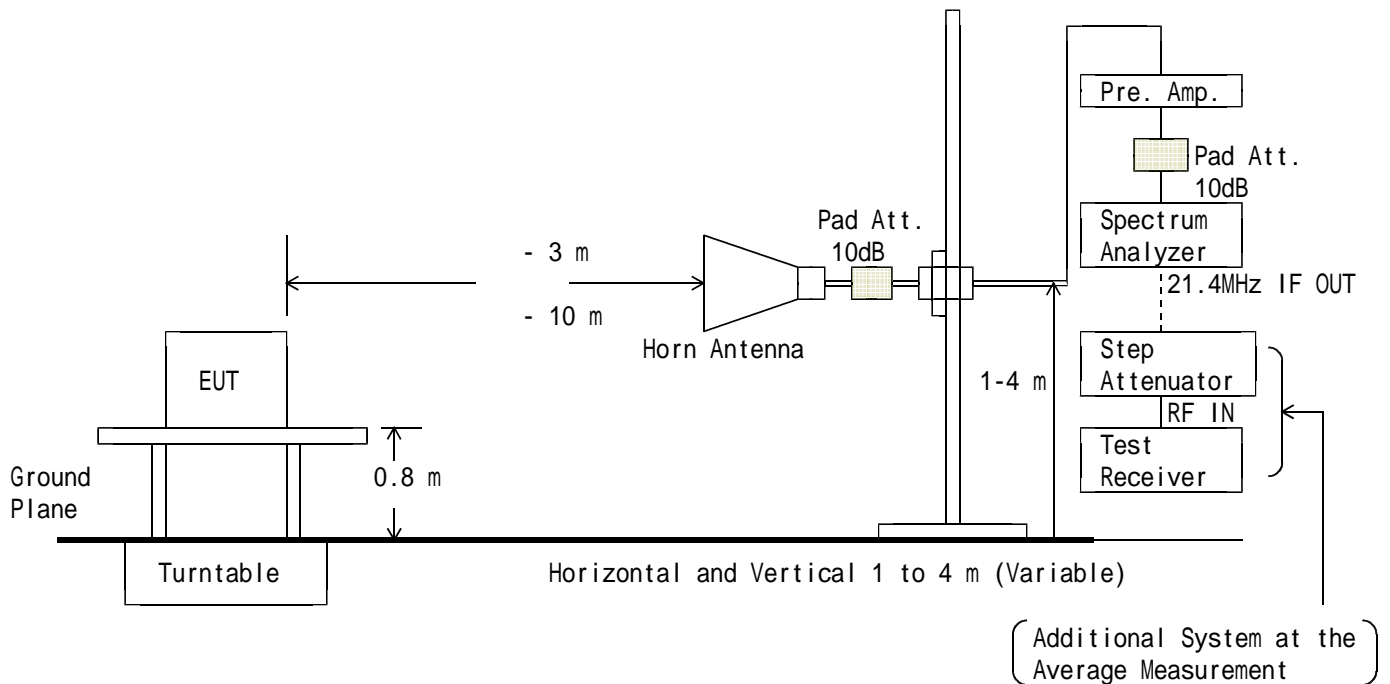
Step 2: In order to investigate the frequencies of maximum emissions, the horn antenna position was approached to the EUT and the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded in the specified frequency band (1000 MHz - 1700 MHz).

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:

Detector	Peak	*)Average
RES BW	1 MHz	3 MHz
VIDEO BW	1 MHz	3 MHz
SPAN	0 Hz	0 Hz

Test Receiver Setting:

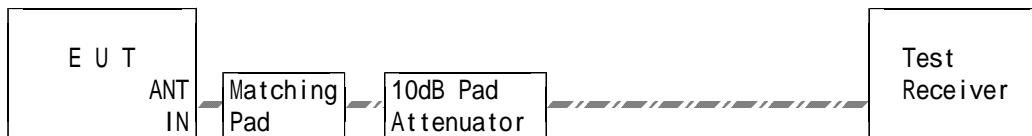
SCALE	LINEAR
I.F.B.W.	1 MHz
Detector	Average

*) For the average measurement, it is made using a test receiver and a step attenuator.

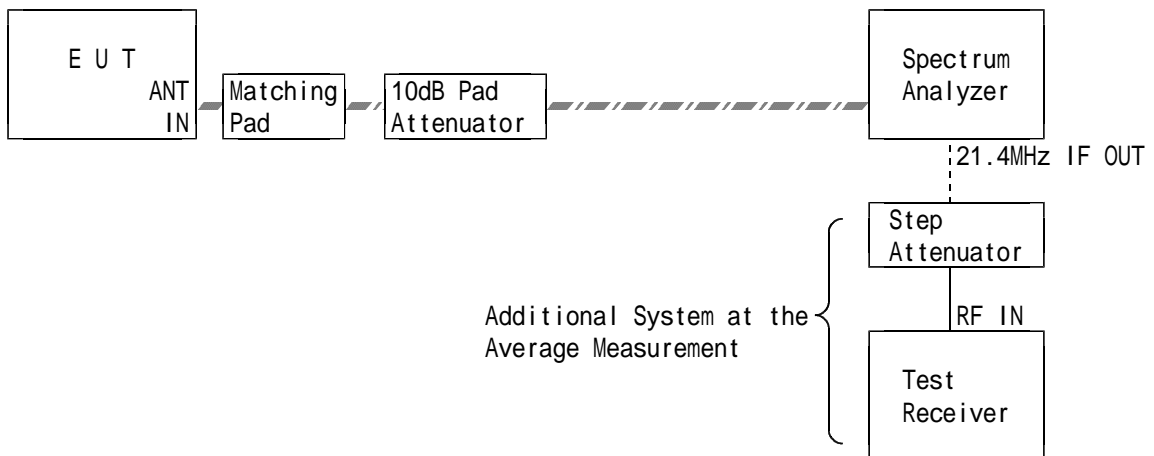
Antenna Conducted Power 30 MHz - 1700 MHz:

The test was performed according to the description of ANSI C63.4-1992 Sec.12.1.5 (Antenna-Conducted Power Measurements).

1. Frequency range 30 MHz - 1000 MHz



2. Frequency range 1000 MHz - 1700 MHz



Spectrum Analyzer Setting:

Detector	Peak	*)Average
RES BW	1 MHz	3 MHz
VIDEO BW	1 MHz	3 MHz
SPAN	0 Hz	0 Hz

Test Receiver Setting:

SCALE	LINEAR
I.F.B.W.	1 MHz
Detector	Average

*) For the average measurement, it is made using a test receiver and a step attenuator.

JQA Application No. : KL8080615
Model No. : VRA671AT21
FCC ID : ADTVRA671

Regulation : CFR 47 FCC Rules Part 15
Issue Date : January 14, 1999

Mains terminal Disturbance Measurement
 TV Broadcast Receiver

Test Date: December 28, 1998
 Temp.: 19 ; Humi.: 34 %

Frequency [MHz]	Correction Factor [dB]	Meter Readings dB(μV)				Limits dB(μV)	Results dB(μV)		Margin [dB]	Remarks (Note 2)
		VA-QP	VA-AV	VB-QP	VB-AV		QP	AV		
0.45	0.1	41.0	-	41.0	-	48.0	41.1	-	+ 6.9	A
0.80	0.1	33.0	-	33.0	-	48.0	33.1	-	+14.9	A
1.25	0.2	30.0	-	30.0	-	48.0	30.2	-	+17.8	A
3.00	0.3	17.0	-	19.0	-	48.0	19.3	-	+28.7	A
4.30	0.3	20.0	-	20.0	-	48.0	20.3	-	+27.7	A
7.16	0.4	27.0	-	27.0	-	48.0	27.4	-	+20.6	A
14.32	0.6	23.0	-	22.0	-	48.0	23.6	-	+24.4	A
23.00	0.8	11.0	-	< 10.0	-	48.0	11.8	-	+36.2	A
28.64	0.9	27.0	-	24.0	-	48.0	27.9	-	+20.1	A
29.87	0.9	15.0	-	12.0	-	48.0	15.9	-	+32.1	A

Sample of calculated result at 0.45 MHz, as the Minimum Margin point:

$$\begin{aligned} \text{Cable Loss} &= 0.1 \text{ dB} \\ + \text{) Meter Reading} &= 41.0 \text{ dB}(\mu\text{V}) \\ \hline \text{Result} &= 41.1 \text{ dB}(\mu\text{V}) \end{aligned}$$

Minimum Margin : 48.0 - 41.1 = 6.9(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 : _____

Type Name : Akio Hosoda

Electromagnetic Radiation Disturbance Measurement
 TV Broadcast Receiver

Test Date: January 5, 1999
 Temp.: 20 ; Humi.: 36 %

Frequency to which tuned CH [MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(μV/m)]	Pola- rity	Limits [dB(μV/m)]	Results [dB(μV/m)]	Remarks (Note 2)	
2	55.25	101	10.9	< 0.0	-	43.5	< 10.9	A
		202	17.8	< 0.0	-	43.5	< 17.8	A
		303	22.1	< 0.0	-	46.0	< 22.1	A
		404	25.4	< 0.0	-	46.0	< 25.4	A
		505	28.2	< 0.0	-	46.0	< 28.2	A
		606	30.3	< 0.0	-	46.0	< 30.3	A
		707	32.3	< 0.0	-	46.0	< 32.3	A
		808	34.1	< 0.0	-	46.0	< 34.1	A
		909	35.7	< 0.0	-	46.0	< 35.7	A
		1010	-5.2	34.0	H	54.0	28.8	B
		1111	-5.4	<30.0	-	54.0	< 24.6	B
		1212	-5.2	37.0	H	54.0	31.8	B
		1313	-4.0	<30.0	-	54.0	< 26.0	B
		1414	-3.1	<30.0	-	54.0	< 26.9	B
		1515	-4.7	<30.0	-	54.0	< 25.3	B
		1616	-4.7	<30.0	-	54.0	< 25.3	B
3	61.25	107	11.5	< 0.0	-	43.5	< 11.5	A
		214	18.4	< 0.0	-	43.5	< 18.4	A
		321	22.7	< 0.0	-	46.0	< 22.7	A
		428	26.1	< 0.0	-	46.0	< 26.1	A
		535	28.8	< 0.0	-	46.0	< 28.8	A
		642	31.1	< 0.0	-	46.0	< 31.1	A
		749	33.0	< 0.0	-	46.0	< 33.0	A
		856	34.9	< 0.0	-	46.0	< 34.9	A
		963	36.6	< 0.0	-	54.0	< 36.6	A
		1070	-5.5	32.0	H	54.0	26.5	B
		1177	-5.2	<30.0	-	54.0	< 24.8	B
		1284	-4.4	36.0	V	54.0	31.6	B
		1391	-3.0	<30.0	-	54.0	< 27.0	B
		1498	-4.3	<30.0	-	54.0	< 25.7	B
		1605	-5.0	<30.0	-	54.0	< 25.0	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(μV/m)]	Pola- rity	Limits [dB(μV/m)]	Results [dB(μV/m)]	Remarks (Note 2)
4	67.25	113	12.0	< 0.0	-	43.5	< 12.0	A
		226	19.0	< 0.0	-	46.0	< 19.0	A
		339	23.4	< 0.0	-	46.0	< 23.4	A
		452	26.8	< 0.0	-	46.0	< 26.8	A
		565	29.4	< 0.0	-	46.0	< 29.4	A
		678	31.8	< 0.0	-	46.0	< 31.8	A
		791	33.8	< 0.0	-	46.0	< 33.8	A
		904	35.6	< 0.0	-	46.0	< 35.6	A
		1017	-5.3	<30.0	-	54.0	< 24.7	B
		1130	-5.3	35.0	H	54.0	29.7	B
		1243	-4.8	<30.0	-	54.0	< 25.2	B
		1356	-3.4	33.0	V	54.0	29.6	B
		1469	-3.9	<30.0	-	54.0	< 26.1	B
		1582	-5.2	<30.0	-	54.0	< 24.8	B
5	77.25	123	12.8	< 0.0	-	43.5	< 12.8	A
		246	19.9	< 0.0	-	46.0	< 19.9	A
		369	24.4	< 0.0	-	46.0	< 24.4	A
		492	27.8	< 0.0	-	46.0	< 27.8	A
		615	30.6	< 0.0	-	46.0	< 30.6	A
		738	32.9	< 0.0	-	46.0	< 32.9	A
		861	35.0	< 0.0	-	46.0	< 35.0	A
		984	36.9	< 0.0	-	54.0	< 36.9	A
		1107	-5.4	<30.0	-	54.0	< 24.6	B
		1230	-5.0	39.0	H	54.0	34.0	B
		1353	-3.6	<30.0	-	54.0	< 26.4	B
		1476	-4.1	<30.0	-	54.0	< 25.9	B
		1599	-5.2	<30.0	-	54.0	< 24.8	B
		6	83.25	129	13.3	< 0.0	-	43.5
258	20.4			< 0.0	-	46.0	< 20.4	A
387	24.9			< 0.0	-	46.0	< 24.9	A
516	28.4			< 0.0	-	46.0	< 28.4	A
645	31.1			< 0.0	-	46.0	< 31.1	A
774	33.5			< 0.0	-	46.0	< 33.5	A
903	35.6			< 0.0	-	46.0	< 35.6	A
1032	-5.4			35.0	H	54.0	29.6	B
1161	-5.2			<30.0	-	54.0	< 24.8	B
1290	-4.3			37.0	V	54.0	32.7	B
1419	-3.2			<30.0	-	54.0	< 26.8	B
1548	-5.2			33.0	V	54.0	27.8	B
1677	-4.3			<30.0	-	54.0	< 25.7	B
7	175.25			221	18.8	< 0.0	-	46.0
		442	26.5	< 0.0	-	46.0	< 26.5	A
		663	31.5	< 0.0	-	46.0	< 31.5	A
		884	35.3	< 0.0	-	46.0	< 35.3	A
		1105	-5.4	32.0	H	54.0	26.6	B
		1326	-3.9	39.0	V	54.0	35.1	B
		1547	-5.2	<30.0	-	54.0	< 24.8	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(μV/m)]	Pola- rity	Limits [dB(μV/m)]	Results [dB(μV/m)]	Remarks (Note 2)
8	181.25	227	19.0	7.0	H	46.0	26.0	A
		454	26.9	< 0.0	-	46.0	< 26.9	A
		681	31.8	< 0.0	-	46.0	< 31.8	A
		908	35.7	< 0.0	-	46.0	< 35.7	A
		1135	-5.3	<30.0	-	54.0	< 24.7	B
		1362	-3.4	39.0	V	54.0	35.6	B
		1589	-5.2	<30.0	-	54.0	< 24.8	B
9	187.25	233	19.3	7.0	H	46.0	26.3	A
		466	27.1	< 0.0	-	46.0	< 27.1	A
		699	32.2	< 0.0	-	46.0	< 32.2	A
		932	36.1	< 0.0	-	46.0	< 36.1	A
		1165	-5.2	<30.0	-	54.0	< 24.8	B
		1398	-3.0	36.0	V	54.0	33.0	B
		1631	-4.4	<30.0	-	54.0	< 25.6	B
10	193.25	239	19.6	7.0	H	46.0	26.6	A
		478	27.4	< 0.0	-	46.0	< 27.4	A
		717	32.5	< 0.0	-	46.0	< 32.5	A
		956	36.5	< 0.0	-	46.0	< 36.5	A
		1195	-5.3	<30.0	-	54.0	< 24.7	B
		1434	-3.5	35.0	H	54.0	31.5	B
		1673	-4.3	<30.0	-	54.0	< 25.7	B
11	199.25	245	19.9	6.0	H	46.0	25.9	A
		490	27.8	< 0.0	-	46.0	< 27.8	A
		735	32.8	< 0.0	-	46.0	< 32.8	A
		980	36.9	< 0.0	-	54.0	< 36.9	A
		1225	-5.1	<30.0	-	54.0	< 24.9	B
		1470	-3.9	37.0	V	54.0	33.1	B
		12	205.25	251	20.1	5.0	H	46.0
502	28.0			< 0.0	-	46.0	< 28.0	A
753	33.1			< 0.0	-	46.0	< 33.1	A
1004	-5.2			38.0	H	54.0	32.8	B
1255	-4.7			<30.0	-	54.0	< 25.3	B
1506	-4.5			39.0	V	54.0	34.5	B
13	211.25			257	20.3	4.0	H	46.0
		514	28.3	< 0.0	-	46.0	< 28.3	A
		771	33.4	< 0.0	-	46.0	< 33.4	A
		1028	-5.3	40.0	H	54.0	34.7	B
		1285	-4.4	<30.0	-	54.0	< 25.6	B
		1542	-5.0	40.0	V	54.0	35.0	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(μV/m)]	Pola- rity	Limits [dB(μV/m)]	Results [dB(μV/m)]	Remarks (Note 2)
15	477.25	523	28.5	< 0.0	-	46.0	< 28.5	A
		1046	-5.4	44.0	H	54.0	38.6	B
		1569	-5.2	<30.0	-	54.0	< 24.8	B
20	507.25	553	29.2	1.0	H	46.0	30.2	A
		1106	-5.4	44.0	H	54.0	38.6	B
		1659	-4.1	<30.0	-	54.0	< 25.9	B
28	555.25	601	30.2	3.0	H	46.0	33.2	A
		1202	-5.3	51.0	H	54.0	45.7	B
36	603.25	649	31.2	3.0	H	46.0	34.2	A
		1298	-4.3	49.0	V	54.0	44.7	B
45	657.25	703	32.2	5.0	H	46.0	37.2	A
		1406	-3.0	45.0	H	54.0	42.0	B
53	705.25	751	33.1	1.0	H	46.0	34.1	A
		1502	-4.4	49.0	V	54.0	44.6	B
61	753.25	799	34.0	2.0	H	46.0	36.0	A
		1598	-5.1	40.0	H	54.0	34.9	B
69	801.25	847	34.7	5.0	H	46.0	39.7	A
		1694	-4.6	50.0	V	54.0	45.4	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(μ V/m)]	Pola- rity	Limits [dB(μ V/m)]	Results [dB(μ V/m)]	Remarks (Note 2)		
5A	73.25	119	12.5	< 0.0	-	43.5	< 12.5	A		
		238	19.5	< 0.0	-	46.0	< 19.5	A		
		357	24.0	< 0.0	-	46.0	< 24.0	A		
		476	27.4	< 0.0	-	46.0	< 27.4	A		
		595	30.1	< 0.0	-	46.0	< 30.1	A		
		714	32.4	< 0.0	-	46.0	< 32.4	A		
		833	34.5	< 0.0	-	46.0	< 34.5	A		
		952	36.4	< 0.0	-	46.0	< 36.4	A		
		1071	-5.5	<30.0	-	54.0	< 24.5	B		
		1190	-5.3	38.0	H	54.0	32.7	B		
		1309	-4.2	<30.0	-	54.0	< 25.8	B		
		1428	-3.3	<30.0	-	54.0	< 26.7	B		
		1547	-5.2	<30.0	-	54.0	< 24.8	B		
		1666	-4.2	34.0	V	54.0	29.8	B		
A-5	91.25	137	13.9	< 0.0	-	43.5	< 13.9	A		
		274	21.1	< 0.0	-	46.0	< 21.1	A		
		411	25.6	< 0.0	-	46.0	< 25.6	A		
		548	29.2	< 0.0	-	46.0	< 29.2	A		
		685	31.9	< 0.0	-	46.0	< 31.9	A		
		822	34.3	< 0.0	-	46.0	< 34.3	A		
		959	36.5	< 0.0	-	46.0	< 36.5	A		
		1096	-5.4	<30.0	-	54.0	< 24.6	B		
		1233	-5.0	<30.0	-	54.0	< 25.0	B		
		1370	-3.3	33.0	V	54.0	29.7	B		
		1507	-4.5	<30.0	-	54.0	< 25.5	B		
		1644	-4.1	32.0	H	54.0	27.9	B		
		A-1	115.25	161	15.5	1.0	V	43.5	16.5	A
				322	22.8	< 0.0	-	46.0	< 22.8	A
483	27.5			< 0.0	-	46.0	< 27.5	A		
644	31.1			< 0.0	-	46.0	< 31.1	A		
805	34.0			< 0.0	-	46.0	< 34.0	A		
966	36.7			< 0.0	-	54.0	< 36.7	A		
1127	-5.3			32.0	H	54.0	26.7	B		
1288	-4.3			40.0	V	54.0	35.7	B		
1449	-3.6			<30.0	-	54.0	< 26.4	B		
1610	-4.9			<30.0	-	54.0	< 25.1	B		
A	121.25			167	15.9	2.0	V	43.5	17.9	A
		334	23.2	< 0.0	-	46.0	< 23.2	A		
		501	28.0	< 0.0	-	46.0	< 28.0	A		
		668	31.5	< 0.0	-	46.0	< 31.5	A		
		835	34.5	< 0.0	-	46.0	< 34.5	A		
		1002	-5.2	35.0	H	54.0	29.8	B		
		1169	-5.2	<30.0	-	54.0	< 24.8	B		
		1336	-3.7	37.0	V	54.0	33.3	B		
		1503	-4.4	<30.0	-	54.0	< 25.6	B		
		1670	-4.3	36.0	V	54.0	31.7	B		

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(μV/m)]	Pola- rity	Limits [dB(μV/m)]	Results [dB(μV/m)]	Remarks (Note 2)
E	145.25	191	17.2	< 0.0	-	43.5	< 17.2	A
		382	24.8	< 0.0	-	46.0	< 24.8	A
		573	29.7	< 0.0	-	46.0	< 29.7	A
		764	33.3	< 0.0	-	46.0	< 33.3	A
		955	36.5	< 0.0	-	46.0	< 36.5	A
		1146	-5.2	39.0	H	54.0	33.8	B
		1337	-3.7	<30.0	-	54.0	< 26.3	B
		1528	-4.8	37.0	V	54.0	32.2	B
I	169.25	215	18.4	7.0	H	43.5	25.4	A
		430	26.2	< 0.0	-	46.0	< 26.2	A
		645	31.1	< 0.0	-	46.0	< 31.1	A
		860	35.0	< 0.0	-	46.0	< 35.0	A
		1075	-5.5	32.0	H	54.0	26.5	B
		1290	-4.3	42.0	V	54.0	37.7	B
		1505	-4.5	<30.0	-	54.0	< 25.5	B
J	217.25	263	20.6	2.0	H	46.0	22.6	A
		526	28.7	< 0.0	-	46.0	< 28.7	A
		789	33.7	< 0.0	-	46.0	< 33.7	A
		1052	-5.5	39.0	H	54.0	33.5	B
		1315	-4.0	<30.0	-	54.0	< 26.0	B
		1578	-5.2	34.0	V	54.0	28.8	B
N	241.25	287	21.6	4.0	H	46.0	25.6	A
		574	29.7	< 0.0	-	46.0	< 29.7	A
		861	35.0	< 0.0	-	46.0	< 35.0	A
		1148	-5.2	42.0	H	54.0	36.8	B
		1435	-3.5	<30.0	-	54.0	< 26.5	B
R	265.25	311	22.3	4.0	H	46.0	26.3	A
		622	30.7	< 0.0	-	46.0	< 30.7	A
		933	36.1	< 0.0	-	46.0	< 36.1	A
		1244	-4.8	44.0	H	54.0	38.2	B
		1555	-5.1	<30.0	-	54.0	< 24.9	B
W	295.25	341	23.4	3.0	H	46.0	26.4	A
		682	31.8	< 0.0	-	46.0	< 31.8	A
		1023	-5.3	<30.0	-	54.0	< 24.7	B
		1364	-3.4	42.0	V	54.0	38.6	B
W+1	301.25	347	23.7	3.0	H	46.0	26.7	A
		694	32.1	< 0.0	-	46.0	< 32.1	A
		1041	-5.4	30.0	V	54.0	24.6	B
		1388	-3.1	39.0	V	54.0	35.9	B
W+7	337.25	383	24.8	< 0.0	-	46.0	< 24.8	A
		766	33.4	< 0.0	-	46.0	< 33.4	A
		1149	-5.2	35.0	H	54.0	29.8	B
		1532	-4.9	42.0	V	54.0	37.1	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB(1/m)]	Meter Readings [dB(μ V/m)]	Pola- rity	Limits [dB(μ V/m)]	Results [dB(μ V/m)]	Remarks (Note 2)
W+13	373.25	419	25.9	< 0.0	-	46.0	< 25.9	A
		838	34.6	< 0.0	-	46.0	< 34.6	A
		1257	-4.7	<30.0	-	54.0	< 25.3	B
		1676	-4.3	43.0	V	54.0	38.7	B
W+19	409.25	455	26.9	< 0.0	-	46.0	< 26.9	A
		910	35.7	< 0.0	-	46.0	< 35.7	A
		1365	-3.4	<30.0	-	54.0	< 26.6	B
W+25	445.25	491	27.8	< 0.0	-	46.0	< 27.8	A
		982	36.9	< 0.0	-	54.0	< 36.9	A
		1473	-4.0	<30.0	-	54.0	< 26.0	B
W+31	481.25	527	28.7	< 0.0	-	46.0	< 28.7	A
		1054	-5.5	45.0	H	54.0	39.5	B
		1581	-5.2	<30.0	-	54.0	< 24.8	B
W+37	517.25	563	29.4	< 0.0	-	46.0	< 29.4	A
		1126	-5.3	47.0	H	54.0	41.7	B
		1689	-4.5	33.0	V	54.0	28.5	B
W+43	553.25	599	30.2	2.0	H	46.0	32.2	A
		1198	-5.3	50.0	H	54.0	44.7	B
W+49	589.25	635	31.0	1.0	H	46.0	32.0	A
		1270	-4.6	52.0	V	54.0	47.4	B
W+55	625.25	671	31.6	2.0	H	46.0	33.6	A
		1342	-3.7	48.0	V	54.0	44.3	B
W+61	661.25	707	32.3	8.0	H	46.0	40.3	A
		1414	-3.1	44.0	H	54.0	40.9	B
W+67	697.25	743	33.0	3.0	H	46.0	36.0	A
		1486	-4.2	47.0	H	54.0	42.8	B
W+73	733.25	779	33.6	2.0	H	46.0	35.6	A
		1558	-5.2	46.0	V	54.0	40.8	B
W+79	769.25	815	34.1	5.0	H	46.0	39.1	A
		1630	-4.4	39.0	H	54.0	34.6	B
W+84	799.25	845	34.7	3.0	H	46.0	37.7	A
		1690	-4.5	50.0	V	54.0	45.5	B

Sample of calculated result at 707 MHz (W+61 ch), as the Minimum Margin point:

$$\begin{aligned} \text{Corretion Factor} &= 32.3 \text{ dB(1/m)} \\ + \text{)Meter Reading} &= 8.0 \text{ dB}(\mu\text{V/m)} \\ \hline \text{Result} &= 40.3 \text{ dB}(\mu\text{V/m)} \end{aligned}$$

Minimum Margin : 46.0 - 40.3 = 5.7(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 1700 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 : _____

Type Name : Akio Hosoda

Antenna Terminal Disturbance Voltage Measurement
 TV Broadcast Receiver

Test Date: January 6, 1999
 Temp.: 23 ; Humi.: 32 %

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 75W [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
2	55.25	101	7.5	10.0	< 10.0	51.7	< 27.5	A
		202	7.5	10.0	< 10.0	51.7	< 27.5	A
		303	7.5	10.0	< 10.0	51.7	< 27.5	A
		404	7.5	10.0	< 10.0	51.7	< 27.5	A
		505	7.5	10.0	< 10.0	51.7	< 27.5	A
		606	7.5	10.0	< 10.0	51.7	< 27.5	A
		707	7.5	10.0	< 10.0	51.7	< 27.5	A
		808	7.5	10.0	< 10.0	51.7	< 27.5	A
		909	7.5	10.0	< 10.0	51.7	< 27.5	A
		1010	7.5	10.0	< 10.0	51.7	< 27.5	B
		1111	7.5	10.0	< 10.0	51.7	< 27.5	B
		1212	7.5	10.0	< 10.0	51.7	< 27.5	B
		1313	7.5	10.0	< 10.0	51.7	< 27.5	B
		1414	7.5	10.0	< 10.0	51.7	< 27.5	B
		1515	7.5	10.0	< 10.0	51.7	< 27.5	B
1616	7.5	10.0	< 10.0	51.7	< 27.5	B		
3	61.25	107	7.5	10.0	< 10.0	51.7	< 27.5	A
		214	7.5	10.0	< 10.0	51.7	< 27.5	A
		321	7.5	10.0	< 10.0	51.7	< 27.5	A
		428	7.5	10.0	< 10.0	51.7	< 27.5	A
		535	7.5	10.0	< 10.0	51.7	< 27.5	A
		642	7.5	10.0	< 10.0	51.7	< 27.5	A
		749	7.5	10.0	< 10.0	51.7	< 27.5	A
		856	7.5	10.0	< 10.0	51.7	< 27.5	A
		963	7.5	10.0	< 10.0	51.7	< 27.5	A
		1070	7.5	10.0	< 10.0	51.7	< 27.5	B
		1177	7.5	10.0	< 10.0	51.7	< 27.5	B
		1284	7.5	10.0	12.0	51.7	29.5	B
		1391	7.5	10.0	< 10.0	51.7	< 27.5	B
		1498	7.5	10.0	< 10.0	51.7	< 27.5	B
		1605	7.5	10.0	< 10.0	51.7	< 27.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 75W [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)	
4	67.25	113	7.5	10.0	< 10.0	51.7	< 27.5	A	
		226	7.5	10.0	< 10.0	51.7	< 27.5	A	
		339	7.5	10.0	< 10.0	51.7	< 27.5	A	
		452	7.5	10.0	< 10.0	51.7	< 27.5	A	
		565	7.5	10.0	< 10.0	51.7	< 27.5	A	
		678	7.5	10.0	< 10.0	51.7	< 27.5	A	
		791	7.5	10.0	< 10.0	51.7	< 27.5	A	
		904	7.5	10.0	< 10.0	51.7	< 27.5	A	
		1017	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1130	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1243	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1356	7.5	10.0	< 10.0	12.0	51.7	29.5	B
		1469	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1582	7.5	10.0	< 10.0	51.7	< 27.5	B	
5	77.25	123	7.5	10.0	< 10.0	51.7	< 27.5	A	
		246	7.5	10.0	< 10.0	51.7	< 27.5	A	
		369	7.5	10.0	< 10.0	51.7	< 27.5	A	
		492	7.5	10.0	< 10.0	51.7	< 27.5	A	
		615	7.5	10.0	< 10.0	51.7	< 27.5	A	
		738	7.5	10.0	< 10.0	51.7	< 27.5	A	
		861	7.5	10.0	< 10.0	51.7	< 27.5	A	
		984	7.5	10.0	< 10.0	51.7	< 27.5	A	
		1107	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1230	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1353	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1476	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1599	7.5	10.0	< 10.0	51.7	< 27.5	B	
		6	83.25	129	7.5	10.0	< 10.0	51.7	< 27.5
258	7.5			10.0	< 10.0	51.7	< 27.5	A	
387	7.5			10.0	< 10.0	51.7	< 27.5	A	
516	7.5			10.0	< 10.0	51.7	< 27.5	A	
645	7.5			10.0	< 10.0	51.7	< 27.5	A	
774	7.5			10.0	< 10.0	51.7	< 27.5	A	
903	7.5			10.0	< 10.0	51.7	< 27.5	A	
1032	7.5			10.0	< 10.0	51.7	< 27.5	B	
1161	7.5			10.0	< 10.0	51.7	< 27.5	B	
1290	7.5			10.0	< 10.0	10.0	51.7	27.5	B
1419	7.5			10.0	< 10.0	51.7	< 27.5	B	
1548	7.5			10.0	< 10.0	51.7	< 27.5	B	
1677	7.5			10.0	< 10.0	51.7	< 27.5	B	
7	175.25			221	7.5	10.0	< 10.0	51.7	< 27.5
		442	7.5	10.0	< 10.0	51.7	< 27.5	A	
		663	7.5	10.0	< 10.0	51.7	< 27.5	A	
		884	7.5	10.0	< 10.0	51.7	< 27.5	A	
		1105	7.5	10.0	< 10.0	51.7	< 27.5	B	
		1326	7.5	10.0	< 10.0	17.0	51.7	34.5	B
		1547	7.5	10.0	< 10.0	51.7	< 27.5	B	

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 75W [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
8	181.25	227	7.5	10.0	< 10.0	51.7	< 27.5	A
		454	7.5	10.0	< 10.0	51.7	< 27.5	A
		681	7.5	10.0	< 10.0	51.7	< 27.5	A
		908	7.5	10.0	< 10.0	51.7	< 27.5	A
		1135	7.5	10.0	< 10.0	51.7	< 27.5	B
		1362	7.5	10.0	17.0	51.7	34.5	B
		1589	7.5	10.0	< 10.0	51.7	< 27.5	B
9	187.25	233	7.5	10.0	< 10.0	51.7	< 27.5	A
		466	7.5	10.0	< 10.0	51.7	< 27.5	A
		699	7.5	10.0	< 10.0	51.7	< 27.5	A
		932	7.5	10.0	< 10.0	51.7	< 27.5	A
		1165	7.5	10.0	< 10.0	51.7	< 27.5	B
		1398	7.5	10.0	16.0	51.7	33.5	B
		1631	7.5	10.0	< 10.0	51.7	< 27.5	B
10	193.25	239	7.5	10.0	< 10.0	51.7	< 27.5	A
		478	7.5	10.0	< 10.0	51.7	< 27.5	A
		717	7.5	10.0	< 10.0	51.7	< 27.5	A
		956	7.5	10.0	< 10.0	51.7	< 27.5	A
		1195	7.5	10.0	< 10.0	51.7	< 27.5	B
		1434	7.5	10.0	15.0	51.7	32.5	B
		1673	7.5	10.0	< 10.0	51.7	< 27.5	B
11	199.25	245	7.5	10.0	< 10.0	51.7	< 27.5	A
		490	7.5	10.0	< 10.0	51.7	< 27.5	A
		735	7.5	10.0	< 10.0	51.7	< 27.5	A
		980	7.5	10.0	< 10.0	51.7	< 27.5	A
		1225	7.5	10.0	< 10.0	51.7	< 27.5	B
		1470	7.5	10.0	13.0	51.7	30.5	B
12	205.25	251	7.5	10.0	< 10.0	51.7	< 27.5	A
		502	7.5	10.0	< 10.0	51.7	< 27.5	A
		753	7.5	10.0	< 10.0	51.7	< 27.5	A
		1004	7.5	10.0	< 10.0	51.7	< 27.5	B
		1255	7.5	10.0	< 10.0	51.7	< 27.5	B
		1506	7.5	10.0	< 10.0	51.7	< 27.5	B
13	211.25	257	7.5	10.0	< 10.0	51.7	< 27.5	A
		514	7.5	10.0	< 10.0	51.7	< 27.5	A
		771	7.5	10.0	< 10.0	51.7	< 27.5	A
		1028	7.5	10.0	< 10.0	51.7	< 27.5	B
		1285	7.5	10.0	< 10.0	51.7	< 27.5	B
		1542	7.5	10.0	< 10.0	51.7	< 27.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 75W [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
15	477.25	523	7.5	10.0	< 10.0	51.7	< 27.5	A
		1046	7.5	10.0	< 10.0	51.7	< 27.5	B
		1569	7.5	10.0	< 10.0	51.7	< 27.5	B
20	507.25	553	7.5	10.0	< 10.0	51.7	< 27.5	A
		1106	7.5	10.0	< 10.0	51.7	< 27.5	B
		1659	7.5	10.0	< 10.0	51.7	< 27.5	B
28	555.25	601	7.5	10.0	< 10.0	51.7	< 27.5	A
		1202	7.5	10.0	14.0	51.7	31.5	B
36	603.25	649	7.5	10.0	< 10.0	51.7	< 27.5	A
		1298	7.5	10.0	15.0	51.7	32.5	B
45	657.25	703	7.5	10.0	< 10.0	51.7	< 27.5	A
		1406	7.5	10.0	17.0	51.7	34.5	B
53	705.25	751	7.5	10.0	< 10.0	51.7	< 27.5	A
		1502	7.5	10.0	23.0	51.7	40.5	B
61	753.25	799	7.5	10.0	12.0	51.7	29.5	A
		1598	7.5	10.0	23.0	51.7	40.5	B
69	801.25	847	7.5	10.0	16.0	51.7	33.5	A
		1694	7.5	10.0	16.0	51.7	33.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 75W [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)		
5A	73.25	119	7.5	10.0	< 10.0	51.7	< 27.5	A		
		238	7.5	10.0	< 10.0	51.7	< 27.5	A		
		357	7.5	10.0	< 10.0	51.7	< 27.5	A		
		476	7.5	10.0	< 10.0	51.7	< 27.5	A		
		595	7.5	10.0	< 10.0	51.7	< 27.5	A		
		714	7.5	10.0	< 10.0	51.7	< 27.5	A		
		833	7.5	10.0	< 10.0	51.7	< 27.5	A		
		952	7.5	10.0	< 10.0	51.7	< 27.5	A		
		1071	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1190	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1309	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1428	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1547	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1666	7.5	10.0	< 10.0	51.7	< 27.5	B		
A-5	91.25	137	7.5	10.0	< 10.0	51.7	< 27.5	A		
		274	7.5	10.0	< 10.0	51.7	< 27.5	A		
		411	7.5	10.0	< 10.0	51.7	< 27.5	A		
		548	7.5	10.0	< 10.0	51.7	< 27.5	A		
		685	7.5	10.0	< 10.0	51.7	< 27.5	A		
		822	7.5	10.0	< 10.0	51.7	< 27.5	A		
		959	7.5	10.0	< 10.0	51.7	< 27.5	A		
		1096	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1233	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1370	7.5	10.0	< 10.0	12.0	51.7	29.5	B	
		1507	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1644	7.5	10.0	< 10.0	51.7	< 27.5	B		
		A-1	115.25	161	7.5	10.0	< 10.0	51.7	< 27.5	A
				322	7.5	10.0	< 10.0	51.7	< 27.5	A
483	7.5			10.0	< 10.0	51.7	< 27.5	A		
644	7.5			10.0	< 10.0	51.7	< 27.5	A		
805	7.5			10.0	< 10.0	51.7	< 27.5	A		
966	7.5			10.0	< 10.0	51.7	< 27.5	A		
1127	7.5			10.0	< 10.0	51.7	< 27.5	B		
1288	7.5			10.0	< 10.0	51.7	< 27.5	B		
1449	7.5			10.0	< 10.0	51.7	< 27.5	B		
1610	7.5			10.0	< 10.0	51.7	< 27.5	B		
A	121.25			167	7.5	10.0	< 10.0	51.7	< 27.5	A
		334	7.5	10.0	< 10.0	51.7	< 27.5	A		
		501	7.5	10.0	< 10.0	51.7	< 27.5	A		
		668	7.5	10.0	< 10.0	51.7	< 27.5	A		
		835	7.5	10.0	< 10.0	51.7	< 27.5	A		
		1002	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1169	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1336	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1503	7.5	10.0	< 10.0	51.7	< 27.5	B		
		1670	7.5	10.0	< 10.0	51.7	< 27.5	B		

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 75W [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
E	145.25	191	7.5	10.0	< 10.0	51.7	< 27.5	A
		382	7.5	10.0	< 10.0	51.7	< 27.5	A
		573	7.5	10.0	< 10.0	51.7	< 27.5	A
		764	7.5	10.0	< 10.0	51.7	< 27.5	A
		955	7.5	10.0	< 10.0	51.7	< 27.5	A
		1146	7.5	10.0	< 10.0	51.7	< 27.5	B
		1337	7.5	10.0	< 10.0	51.7	< 27.5	B
		1528	7.5	10.0	< 10.0	51.7	< 27.5	B
I	169.25	215	7.5	10.0	< 10.0	51.7	< 27.5	A
		430	7.5	10.0	< 10.0	51.7	< 27.5	A
		645	7.5	10.0	< 10.0	51.7	< 27.5	A
		860	7.5	10.0	< 10.0	51.7	< 27.5	A
		1075	7.5	10.0	< 10.0	51.7	< 27.5	B
		1290	7.5	10.0	17.0	51.7	34.5	B
		1505	7.5	10.0	< 10.0	51.7	< 27.5	B
J	217.25	263	7.5	10.0	< 10.0	51.7	< 27.5	A
		526	7.5	10.0	< 10.0	51.7	< 27.5	A
		789	7.5	10.0	< 10.0	51.7	< 27.5	A
		1052	7.5	10.0	< 10.0	51.7	< 27.5	B
		1315	7.5	10.0	< 10.0	51.7	< 27.5	B
		1578	7.5	10.0	< 10.0	51.7	< 27.5	B
N	241.25	287	7.5	10.0	< 10.0	51.7	< 27.5	A
		574	7.5	10.0	< 10.0	51.7	< 27.5	A
		861	7.5	10.0	< 10.0	51.7	< 27.5	A
		1148	7.5	10.0	< 10.0	51.7	< 27.5	B
		1435	7.5	10.0	< 10.0	51.7	< 27.5	B
R	265.25	311	7.5	10.0	< 10.0	51.7	< 27.5	A
		622	7.5	10.0	< 10.0	51.7	< 27.5	A
		933	7.5	10.0	< 10.0	51.7	< 27.5	A
		1244	7.5	10.0	12.0	51.7	29.5	B
		1555	7.5	10.0	< 10.0	51.7	< 27.5	B
W	295.25	341	7.5	10.0	10.0	51.7	27.5	A
		682	7.5	10.0	< 10.0	51.7	< 27.5	A
		1023	7.5	10.0	< 10.0	51.7	< 27.5	B
		1364	7.5	10.0	< 10.0	51.7	< 27.5	B
W+1	301.25	347	7.5	10.0	10.0	51.7	27.5	A
		694	7.5	10.0	< 10.0	51.7	< 27.5	A
		1041	7.5	10.0	< 10.0	51.7	< 27.5	B
		1388	7.5	10.0	< 10.0	51.7	< 27.5	B
W+7	337.25	383	7.5	10.0	11.0	51.7	28.5	A
		766	7.5	10.0	< 10.0	51.7	< 27.5	A
		1149	7.5	10.0	< 10.0	51.7	< 27.5	B
		1532	7.5	10.0	17.0	51.7	34.5	B

Frequency to which tuned CH	[MHz]	Measured Frequency [MHz]	Correction Factor [dB]	Attenuation Pad Loss [dB]	Meter Readings [dB(μV)]	Limits at 75W [dB(μV)]	Results [dB(μV)]	Remarks (Note 2)
W+13	373.25	419	7.5	10.0	< 10.0	51.7	< 27.5	A
		838	7.5	10.0	12.0	51.7	29.5	A
		1257	7.5	10.0	< 10.0	51.7	< 27.5	B
		1676	7.5	10.0	< 10.0	51.7	< 27.5	B
W+19	409.25	455	7.5	10.0	< 10.0	51.7	< 27.5	A
		910	7.5	10.0	< 10.0	51.7	< 27.5	A
		1365	7.5	10.0	< 10.0	51.7	< 27.5	B
W+25	445.25	491	7.5	10.0	< 10.0	51.7	< 27.5	A
		982	7.5	10.0	< 10.0	51.7	< 27.5	A
		1473	7.5	10.0	< 10.0	51.7	< 27.5	B
W+31	481.25	527	7.5	10.0	< 10.0	51.7	< 27.5	A
		1054	7.5	10.0	< 10.0	51.7	< 27.5	B
		1581	7.5	10.0	< 10.0	51.7	< 27.5	B
W+37	517.25	563	7.5	10.0	< 10.0	51.7	< 27.5	A
		1126	7.5	10.0	10.0	51.7	27.5	B
		1689	7.5	10.0	< 10.0	51.7	< 27.5	B
W+43	553.25	599	7.5	10.0	< 10.0	51.7	< 27.5	A
		1198	7.5	10.0	14.0	51.7	31.5	B
W+49	589.25	635	7.5	10.0	< 10.0	51.7	< 27.5	A
		1270	7.5	10.0	16.0	51.7	33.5	B
W+55	625.25	671	7.5	10.0	< 10.0	51.7	< 27.5	A
		1342	7.5	10.0	14.0	51.7	31.5	B
W+61	661.25	707	7.5	10.0	< 10.0	51.7	< 27.5	A
		1414	7.5	10.0	18.0	51.7	35.5	B
W+67	697.25	743	7.5	10.0	< 10.0	51.7	< 27.5	A
		1486	7.5	10.0	23.0	51.7	40.5	B
W+73	733.25	779	7.5	10.0	10.0	51.7	27.5	A
		1558	7.5	10.0	25.0	51.7	42.5	B
W+79	769.25	815	7.5	10.0	14.0	51.7	31.5	A
		1630	7.5	10.0	21.0	51.7	38.5	B
W+84	799.25	845	7.5	10.0	16.0	51.7	33.5	A
		1690	7.5	10.0	16.0	51.7	33.5	B

Sample of calculated result at 1558 MHz (W+73 ch), as the Minimum Margin point:

Matching Pad Loss = 7.5 dB
 Attenuation Pad Loss = 10.0 dB
 +) Meter Reading = 25.0 dB(μV)
 Result = 42.5 dB(μV)

Minimum Margin : 51.7 - 42.5 = 9.2(dB)

The point shown on "____" is the Minimum Margin Point.

Conversion of applied limits (refer to §15.111(a))

$$51.7 \text{ [dB(uV)]} = 20\log\{\sqrt{2}[\text{nW}] \times 10^{-9} \times 75[\Omega] \times 10^6\}$$

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 1700 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 attenuator and a spectrum analyzer.

Tester Signature : _____

Type Name : Akio Hosoda

Peak Picture Sensitivity Measurement
 TV Broadcast Receiver

Test Date: January 7, 1999
 Temp.: 21 ; Humi.: 35 %

VHF (CH)	Picture RF [MHz]	Matching Pad Loss [dB]	Meter Reading [dB(μV)]	Results [dB(μV)]	UHF (CH)	Picture RF [MHz]	Matching Pad Loss [dB]	Meter Reading [dB(μV)]	Results [dB(μV)]
2	55.25	-4.0	20.9	16.9	14	471.25	-5.2	28.9	23.7
3	61.25	-4.0	20.0	16.0	20	507.25	-5.2	27.5	22.3
4	67.25	-4.0	21.0	17.0	26	543.25	-5.2	27.6	22.4
5	77.25	-4.0	21.5	17.5	32	579.25	-5.2	26.2	21.0
6	83.25	-4.0	21.5	17.5	38	615.25	-5.6	25.4	19.8
7	175.25	-4.0	21.0	17.0	44	651.25	-5.6	23.7	18.1
8	181.25	-4.0	20.5	16.5	50	687.25	-5.6	21.5	15.9
9	187.25	-4.0	20.8	16.8	56	723.25	-5.6	19.9	14.3
10	193.25	-4.0	20.2	16.2	62	759.25	-5.6	20.7	15.1
11	199.25	-4.0	19.9	15.9	69	801.25	-5.4	24.0	18.6
12	205.25	-4.0	20.5	16.5					
13	211.25	-4.0	20.0	16.0					
Average				16.6	Average				19.1

Calculated result, as the Minimum Margin point:

Averaged for UHF channels between 14 and 69 = 19.1 dB(μV)
 -)Averaged for VHF channels between 2 and 13 = 16.6 dB(μV)
 Result = 2.5 dB
 Minimum Margin : 8.0 - 2.5 = 5.5(dB)

Tester Signature : _____

Type Name : Akio Hosoda

UHF Noise Figure Measurement TV Broadcast Receiver

Test Date: January 7, 1999
Temp.: 21 ; Humi.: 35 %

UHF Channels (CH)	Picture RF [MHz]	Meter Reading [dB]	Balun Loss [dB]	IF Amp. Contribution [dB]	Noise Figures [dB]
14	471.25	11.7	0.7	0.70	7.7
20	507.25	12.5	0.8	1.10	8.8
26	543.25	13.0	0.9	1.10	9.2
32	579.25	13.3	0.9	0.80	9.2
38	615.25	13.3	1.0	0.60	8.9
44	651.25	13.2	1.0	0.40	8.6
50	687.25	13.1	1.0	0.30	8.4
56	723.25	13.1	1.1	0.26	8.0
62	759.25	13.4	1.1	0.26	8.3
69	801.25	14.4	1.1	0.19	9.3

Worst channel of the range, ch# 14 - ch# 69

69	801.25	14.4	1.1	0.19	9.3
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Sample of calculated result at 69 ch, as the Minimum Margin point:

Meter Reading	=	14.4 dB
Balun Loss	=	- 1.1 dB
IF Amp. Contribution	=	--- dB (Note 2)
+) Power Splitter uses	=	- 4.0 dB
Result	=	9.3 dB

Minimum Margin : 14.0 - 9.3 = 4.7(dB)

- Note: 1) 4.0 dB subtracted 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 : _____

Type Name : Akio Hosoda