

***EMC* EMISSION - TEST REPORT**

JQA APPLICATION No. : KL8090720

Name of Product : Facsimile with Cordless Telephone (900 MHz) - Base Unit

Model/Type No. : KX-FPC91

FCC ID : ACJKM7KX-FPC91

Applicant : Kyushu Matsushita Electric Co., Ltd.

Address : 1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka, Japan

Manufacturer : Kyushu Matsushita Electric Co., Ltd.

Address : 1-62, 4-chome, Minoshima, Hakata-ku, Fukuoka, Japan

Receive date of EUT : February 17, 2000

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.

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TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A, B and C (April 16, 1999)

- Class A Digital Device
- Class B Digital Device
- Intentional Radiator
- Receiver (employing superheterodyne techniques)

Test procedure:

Conducted emission 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 Laboratory Accreditation Program for satisfactory compliance established in Title 15, Part 285 Code of Federal Regulations.
NVLAP Lab Code: 200191-0
- 3) Average Measurement Method
FCC filing No. : 950523A 1300F2

Description of the Equipment Under Test (EUT):

- 1) Name : Facsimile with Cordless Telephone (900 MHz) - Base Unit
- 2) Model/Type No. : KX-FPC91
- 3) Product Type : Prototype
- 4) Category : Intentional Radiator and Receiver
(employing superheterodyne techniques)
- 5) EUT Authorization : - Verification - Certification - D.o.C.
- 6) Transmitting Frequency : 902.100 MHz - 903.550 MHz
- 7) Receiving Frequency : 926.100 MHz - 927.550 MHz
- 8) Power Rating : AC 120V 60Hz 1 ϕ 3-pin plug

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

AC Powerline Conducted Emission Measurement

was performed in the following test site.

Test location:

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Mino-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 ID	Last Cal. Date	Cal. Interval
○ - ESH 3	A - 1		
● - ESH 2	A - 2	May, 1999	1 Year
○ - ESH 2	A - 3		
● - KNW-407	D - 6	January, 2000	1 Year
○ - KNW-408	D - 11		
○ - KNW-242	D - 7		
○ - ESH3-Z5	D - 12		
○ - KNW-341C	D - 13		
○ - KNW-408	D - 14		
○ - KNW-244C	D - 77		
○ - KNW-408	D - 78		
○ - ESH2-Z5	D - 10		
○ - ESH2-Z3	D - 17		
○ - 8568B	A - 10		
○ - 8566B	A - 13		
○ - 8593A	A - 15		
○ - 65 BNC-50-0-1	H - 26		
○ - 65 BNC-50-0-1	H - 27		
○ - Cable	H - 7		
● - Cable	H - 8	January, 2000	1 Year

Environmental conditions:

Temperature: 22 °C Humidity: 40 %

Magnetic Field Radiated Emission Measurement

was performed in the frequency range of 9 kHz - 30 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Mino-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

○ - Open test site ○ - 3 m ○ - 10 m ○ - 30 m

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
○ - ESH 3	A - 1		
● - ESH 2	A - 2	May, 1999	1 Year
○ - ESH 2	A - 3		
● - HFH2-Z2	C - 2	February, 1999	1 Year
○ - HFH2-Z2	C - 3		

Environmental conditions:

Temperature: 21 °C Humidity: 33 %

Electromagnetic Field Radiated Emission Measurement

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, Mino-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

○ - Open test site ○ - 3 m ○ - 10 m ○ - 30 m

Validation of Site Attenuation:

1) Last Confirmed Date : October 28, 1999

2) Interval : 1 Year

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
● - ESV/ESV-Z3	A - 7 / A - 17	December, 1999	1 Year
○ - ESV/ESV-Z3	A - 6 / A - 18		
○ - ESV/ESV-Z3	A - 4 / A - 20		
○ - ESV/ESV-Z3	A - 8 / A - 19		
● - KBA-511A	C - 12	November, 1999	1 Year
● - KBA-611	C - 22	November, 1999	1 Year
○ - KBA-511A	C - 13		
○ - KBA-611	C - 19		
○ - KBA-511A	C - 11		
○ - KBA-611	C - 21		
○ - Cable	H - 1		
○ - Cable	H - 2		
● - Cable	H - 5	November, 1999	1 Year
○ - Cable	H - 6		

Environmental conditions:

Temperature: 21 °C Humidity: 33 %

Electromagnetic Field Radiated Emission Measurement

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, Mino-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

○ - Open test site ○ - 3 m ○ - 10 m ○ - 30 m

Used test instruments:

Model No.	Device ID	Last Cal. Date	Cal. Interval
● - 8566B	A - 13	November, 1999	1 Year
○ - 8593A	A - 15		
○ - ESV	A - 4		
● - 4T-10	D - 73	May, 1999	1 Year
○ - 4T-10	D - 74		
● - WJ-6611-513	A - 23	May, 1999	1 Year
● - WJ-6882-824	A - 21	May, 1999	1 Year
● - DBL-0618N515	A - 33	October, 1999	1 Year
● - 91888-2	C - 41 - 1	May, 1999	1 Year
● - 91889-2	C - 41 - 2	May, 1999	1 Year
● - 94613-1	C - 41 - 3	May, 1999	1 Year
● - 91891-2	C - 41 - 4	May, 1999	1 Year
○ - 94614-1	C - 41 - 5		
○ - 3160-09	C - 48		
○ - 355C	D - 22		
○ - 355D	D - 23		
○ - 8494H/8595H	D - 76		
○ - MZ5010C	D - 81		
● - Cable	C - 40 - 11	May, 1999	1 Year
● - Cable	C - 40 - 12	May, 1999	1 Year

Environmental conditions:

Temperature: 21 °C Humidity: 33 %

Emission within the Frequency Band Measurement

was performed in the frequency range of 902 MHz - 928 MHz, in the following test site.

Test location:

KITA-KANSAI Testing Center

7-7, Ishimaru, 1-Chome, Mino-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:

Model No.	Device ID	Last Cal. Date	Cal. Interval
○ - 8568B	A - 10		
● - 8566B	A - 13	November, 1999	1 Year
○ - 8593A	A - 15		
● - TR5212	B - 30	March, 1999	1 Year
○ - KBA-511A	C - 16		
● - KBA-611	C - 18	November, 1999	1 Year
○ - 2-10	D - 40		
● - 355C	D - 22	March, 1999	1 Year
● - 355D	D - 23	March, 1999	1 Year
○ - 8494H/8595H	D - 76		

Environmental conditions:

Temperature: 18 °C Humidity: 45 %

CONFIGURATION OF EUT

The Equipment Under Test (EUT) consists of:

Description	Applicant (Manufacturer)	Model No. (Serial No.)	FCC ID
Facsimile with Cordless Telephone (900 MHz) - Base Unit	Kyushu Matsushita Electric Co., Ltd. (Kyushu Matsushita Electric Co., Ltd.)	KX-FPC91 (--)	ACJKM7KX-FPC91

The measurement was carried out with the following equipment connected:

Description	Grantee/Distributor	Model No. (Serial No.)	FCC ID
External Telephone	Matsushita Electric Industrial Co., Ltd.	KX-TS5-B (--)	ACJMLA-32464-TE-E
Telephone Line Simulator	--	-- (--)	N/A

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

	Description	Port	Shielded Cable	Shell Material	Ferrite Core	Cable Length
1	EUT	TEL	NO	Nonmetal	NO	2.1 m
	External Telephone	LINE		Nonmetal		
2	EUT	LINE	NO	Nonmetal	NO	2.1 m
	Telephone Line Simulator	TEL		Nonmetal		
3	AC Power Cord (EUT) ----- 1φ-3Pin Plug	--	NO	--	NO	1.7 m

Operation - mode of the EUT:

The test was performed under following specification:

- 1) Conducted emission and radiated emission measurement
Communicate (transmit and receive) with the Handset.
- 2) Measurement with the emission within the frequency band
Input the 2.5 kHz sine wave from a telephone line terminal.

Test system:

The EUT has a telephone line terminal (LINE) and an external telephone terminal (TEL).
The LINE terminal was connected to the telephone line simulator, and the TEL terminal was connected to the external telephone.

Special accessories:

None

The used (generated) frequencies in the EUT:

Transmitting Frequency : 902.100 MHz - 903.550 MHz

1st Local Frequency : 936.800 MHz - 938.250 MHz
(Receiving Frequency : 926.100 MHz - 927.550 MHz)

2nd Local Frequency : 10.25 MHz

1st IF : 10.7 MHz (upper)
2nd IF : 450 kHz (lower)

Other : 32.256 MHz, 24.576 MHz, 3.992 MHz, 32.768 kHz

EUT Modification

- - No modifications were conducted by JQA to achieve compliance to applied levels.
- - To achieve compliance to 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 : N/A Date : N/A
Typed Name : N/A Position : N/A

Responsible Party

Responsible Party of Test Item(Product)

Responsible party :

Contact Person :

Signatory

Deviation from standard

- - No deviations from the standard described in page 3.
- - The following deviations were employed from the standard described in page 3.

TEST RESULTS

Transmitter Portion :

AC Powerline Conducted Emission 450 kHz - 30 MHz

The requirements are	● - Passed	○ - Not Passed
Min. limit margin	<u>10.9</u> dB at <u>0.55</u> MHz	
Max. limit exceeding	<u> </u> dB at <u> </u> MHz	
Uncertainty of measurement results	<u>+ 2.1</u> dB(2 σ)	<u>- 2.1</u> dB(2 σ)

Remarks: _____

Electromagnetic Field Radiated Emission 9 kHz - 10 GHz

The requirements are	● - Passed	○ - Not Passed
Min. limit margin	<u>5.4</u> dB at <u>903.550</u> MHz	
Max. limit exceeding	<u> </u> dB at <u> </u> MHz	
Uncertainty of measurement results (≤ 30 MHz)	<u>+ 2.5</u> dB(2 σ)	<u>- 2.5</u> dB(2 σ)
Uncertainty of measurement results (30 MHz - 1000 MHz)	<u>+ 4.1</u> dB(2 σ)	<u>- 4.2</u> dB(2 σ)
Uncertainty of measurement results (≥ 1000 MHz)	<u>+ 3.1</u> dB(2 σ)	<u>- 3.2</u> dB(2 σ)

Remarks: _____

Emission within the Frequency Band 902 MHz - 928 MHz

The requirements are	● - Passed	○ - Not Passed
Results		Refer to <u>26 - 27</u> pages
Uncertainty of measurement results		<u>± 0.05</u> ppm

Remarks: _____

Receiver Portion :

AC Powerline Conducted Emission 450 kHz - 30 MHz

The requirements are	● - Passed	○ - Not Passed
Min. limit margin	<u>5.1</u> dB at <u>24.56</u> MHz	
Max. limit exceeding	<u> </u> dB at <u> </u> MHz	
Uncertainty of measurement results	<u>+ 2.1</u> dB(2σ)	<u>- 2.1</u> dB(2σ)

Remarks: _____

Electromagnetic Field Radiated Emission 30 MHz - 2 GHz

The requirements are	● - Passed	○ - Not Passed
Min. limit margin	More than <u>19.8</u> dB at <u>936.800</u> MHz and <u>938.550</u> MHz	
Max. limit exceeding	<u> </u> dB at <u> </u> MHz	
Uncertainty of measurement results (≤ 1000 MHz)	<u>+ 4.1</u> dB(2σ)	<u>- 4.2</u> dB(2σ)
Uncertainty of measurement results (≥ 1000 MHz)	<u>+ 3.1</u> dB(2σ)	<u>- 3.2</u> dB(2σ)

Remarks: _____

SUMMARY

GENERAL REMARKS :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A, B and C (April 16, 1999) under the test configuration, as shown in page 15.

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.

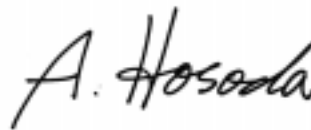
Begin of testing : February 29, 2000

End of testing : March 4, 2000

- JAPAN QUALITY ASSURANCE ORGANIZATION -

Approved by :

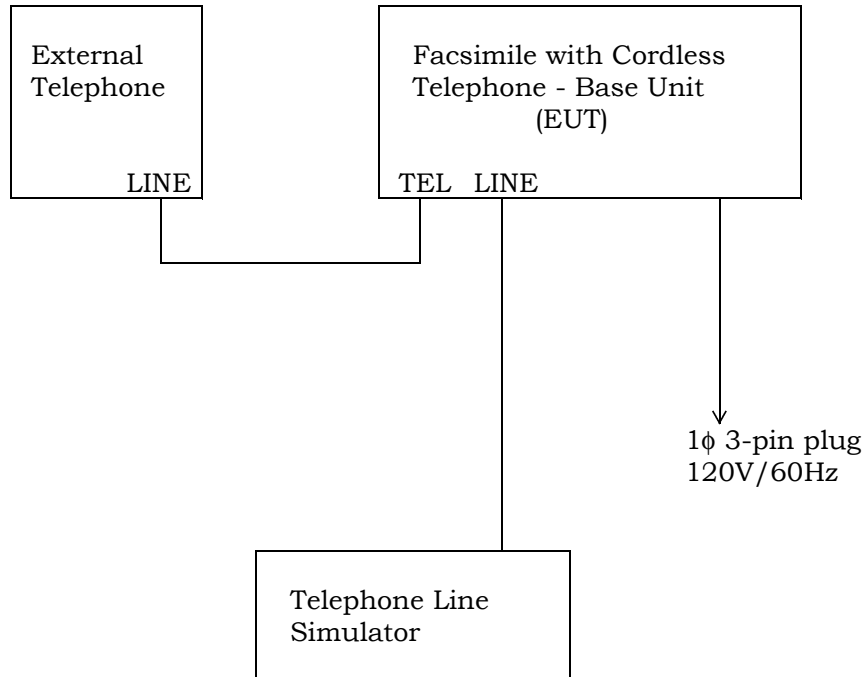
Issued by :



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)



Preliminary Test and Test-setup(Drawings)

AC Powerline 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 Conducted 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.

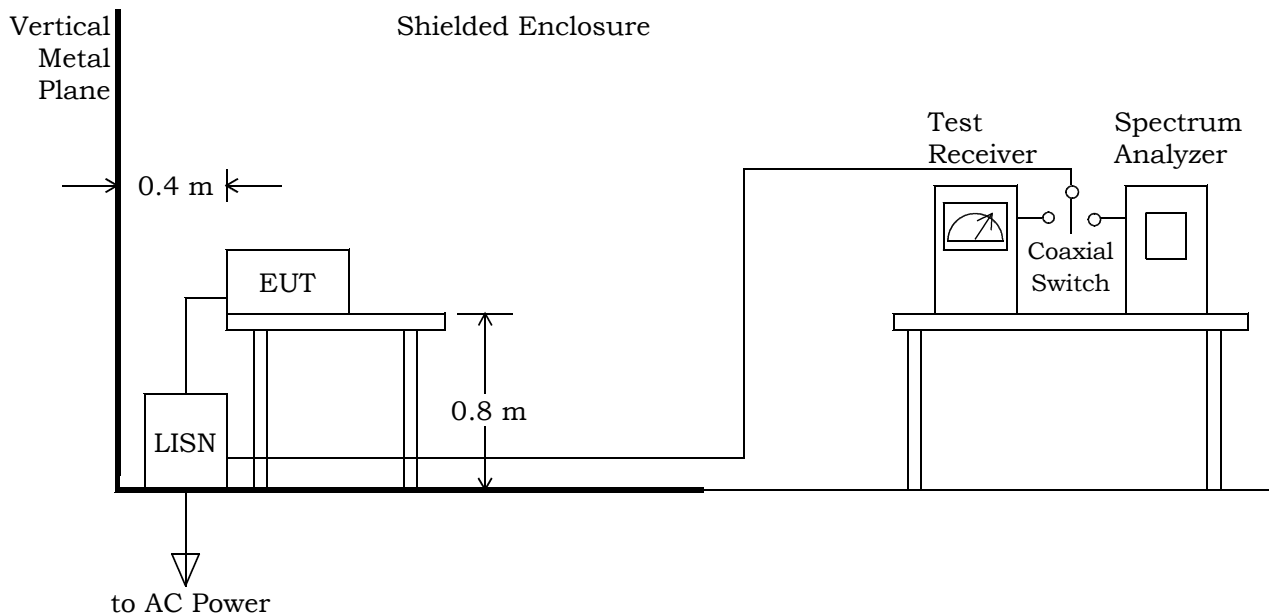
Step 2: Using both of a spectrum analyzer and a test receiver, the emission's circumstance from the system was monitored in one of ten divided frequency bands of the specified frequency range (450 kHz - 30 MHz). The maximum emission in the band was found by changing the typical cable positions or cable 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 (Magnetic Field) 9 kHz - 30 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.

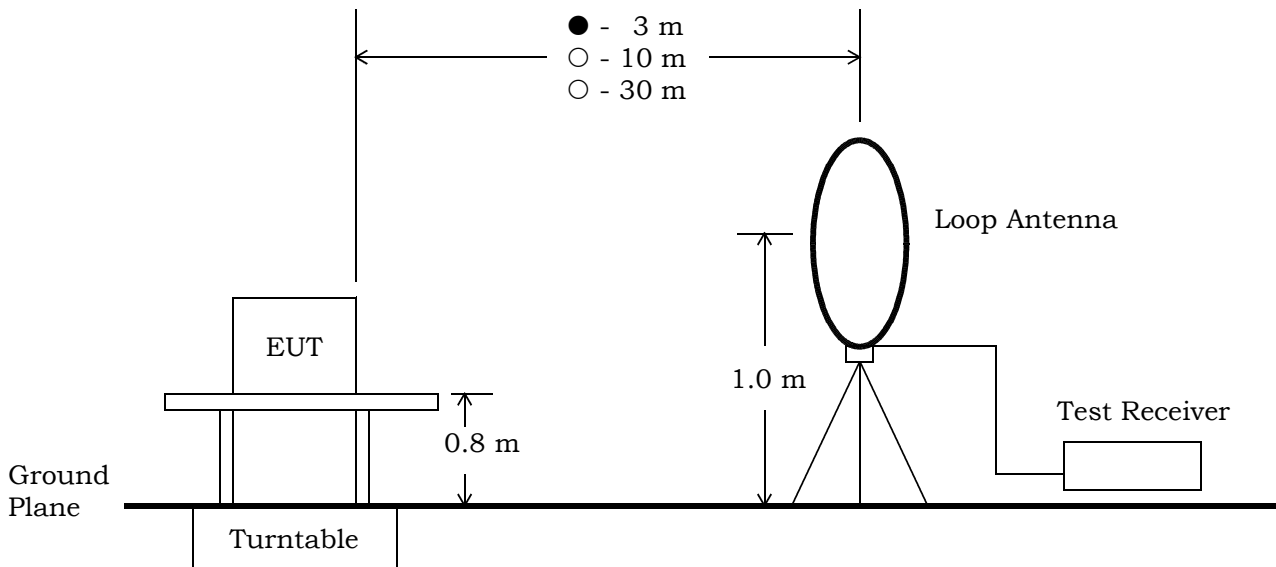
Step 2: In order to investigate the frequencies of maximum emissions, the loop antenna position was approached to the EUT and the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded in the specified frequency band (9 kHz - 30 MHz).

Step 3: Using a test receiver and a loop 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 loop 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.



Electromagnetic Field Radiated Emission 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.

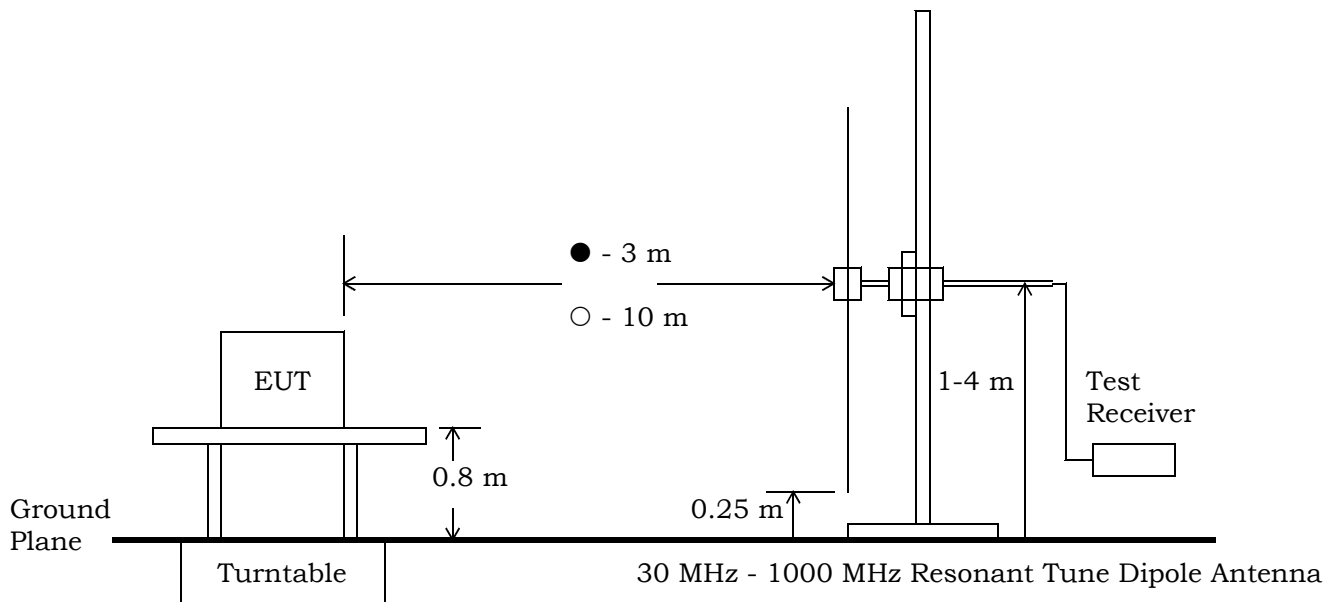
Step 2: Using a test receiver and a test antenna probe, the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded every one of 22 divided bands in the specified frequency band (30 MHz - 1000 MHz).

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 the worst point were taken and recorded.



Electromagnetic Field Radiated Emission 1 GHz - 10 GHz:

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.

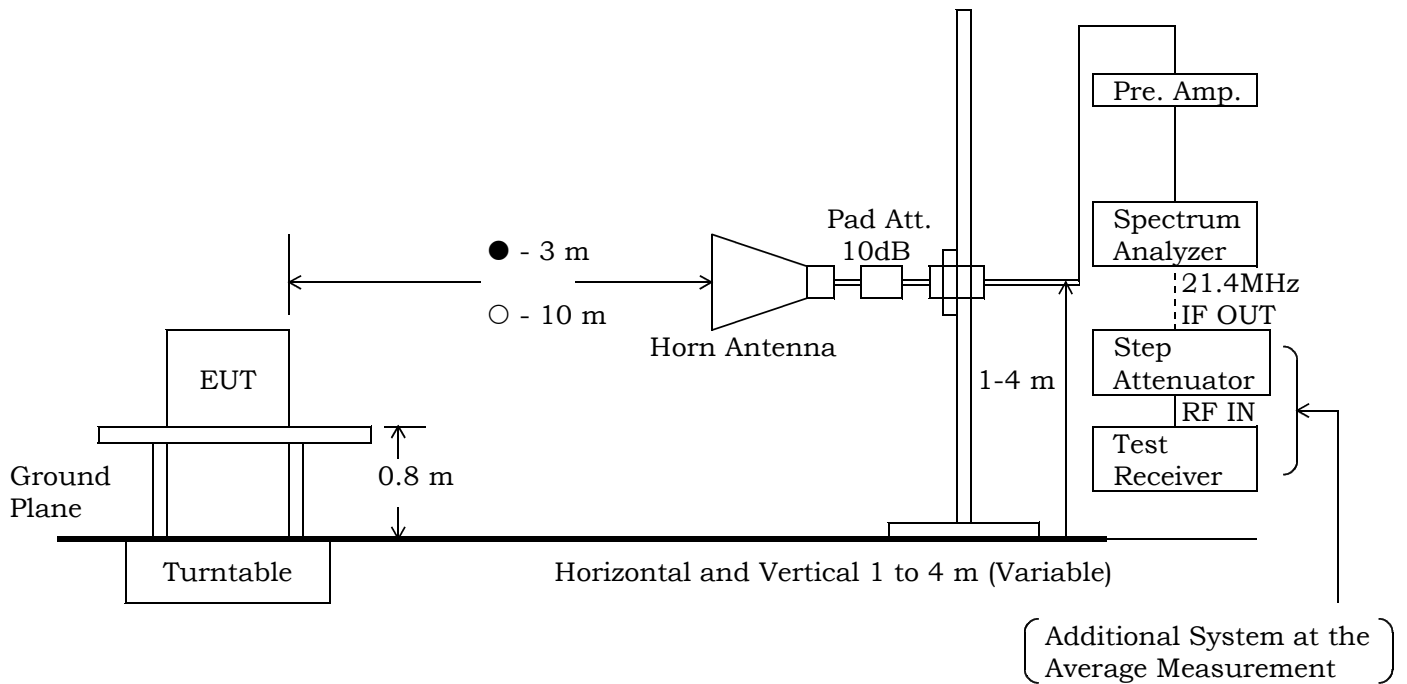
Step 2: In order to investigate the frequencies of maximum emissions, the horn antenna position was approached to the EUT and the significant frequency of the emission's circumstance from the test system were investigated. These data were recorded in the specified frequency band (1 GHz - 10 GHz).

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:

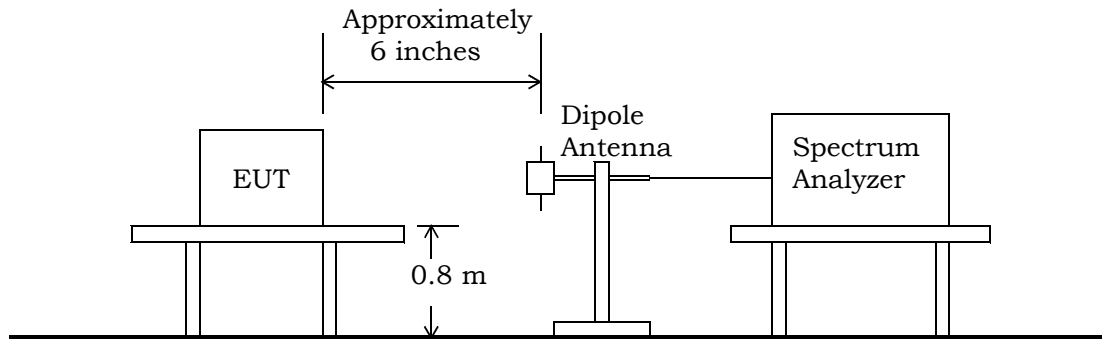
SCALE	LINEAR
I.F.B.W.	1 MHz
Detector	Average

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

Emission within the Frequency Band 902 MHz - 928 MHz:

The measurement of emission within the band 902 MHz - 928 MHz were made by a spectrum analyzer with a resonant tuned dipole antenna under the following modulation conditions of the transmitter under test.

Input Terminal : Telephone line
Input Signal : 2.5 kHz sine wave
Input Level : 0.0 dBV



Test-Setup (Photographs) at worst case

Conducted Emission 450kHz - 30MHz:



Front View

Radiated Emission 9kHz - 10GHz:



Front View



Side View



Rear View

AC Powerline Conducted Emission Measurement
 Intentional Radiator

Test Date: March 4, 2000
 Temp.: 22 °C ; Humi.: 40 %

Transmitting Frequency : 902.100 MHz (1 ch)

Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]				Limits [dB(μV)]	Results [dB(μV)]		Margin [dB]	Remarks (Note 2)
		VA		VB			QP	AV		
		QP	AV	QP	AV		QP	AV		
0.55	0.1	35.0	-	37.0	-	48.0	37.1	-	+10.9	A
1.36	0.2	23.0	-	24.0	-	48.0	24.2	-	+23.8	A
12.01	0.6	23.0	-	23.0	-	48.0	23.6	-	+24.4	A
18.80	0.7	25.0	-	25.0	-	48.0	25.7	-	+22.3	A
20.02	0.8	34.0	-	34.0	-	48.0	34.8	-	+13.2	A
24.58	0.9	30.0	-	33.0	-	48.0	33.9	-	+14.1	A
28.03	0.9	32.0	-	32.0	-	48.0	32.9	-	+15.1	A

Sample of calculated result at 0.55 MHz, as the Minimum Margin point:

$$\begin{aligned} \text{Correction Factor} &= 0.1 \text{ dB} \\ +) \text{ Meter Reading} &= 37.0 \text{ dB}(\mu\text{V}) \\ \hline \text{Result} &= 37.1 \text{ dB}(\mu\text{V}) \end{aligned}$$

Minimum Margin : 48.0 - 37.1 = 10.9(dB)

The point shown on “ ” is the Minimum Margin Point.

Note 1:

1)The correction factor 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 Field Radiated Emission Measurement
 Intentional Radiator

Test Date: February 29, 2000
 Temp.: 21 °C ; Humi.: 33 %

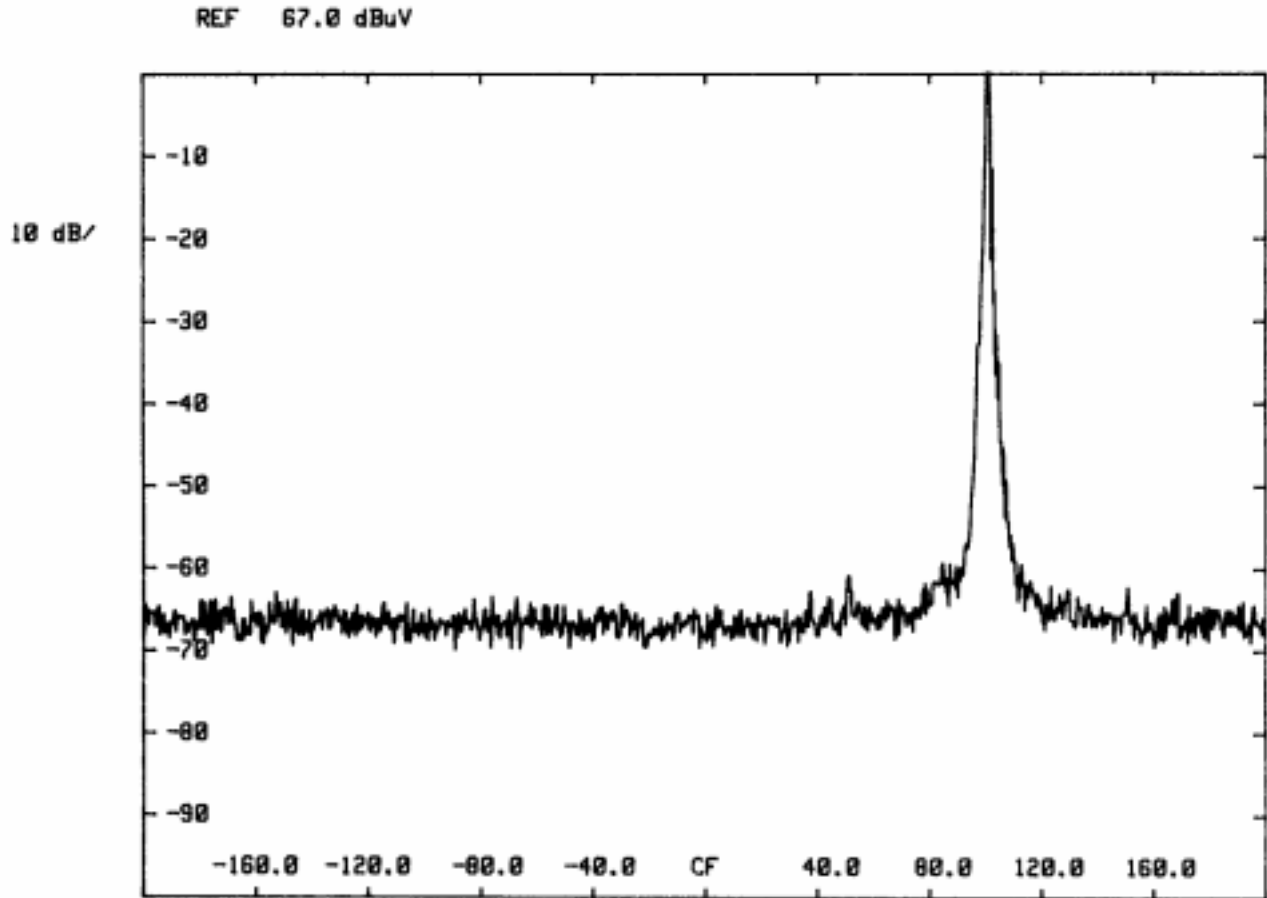
Transmitting Frequency : 902.100 MHz (1 ch)

Frequency [MHz]	Antenna Factor [dB(1/m)]	Corr. Factor [dB]	Meter Readings [dB(μV)]		Limits [dB(μV/m)]	Results [dB(μV/m)]		Margin [dB]	Remarks (Note 2)
			Hori.	Vert.		Hori.	Vert.		
Fundamental									
902.100	28.9	6.7	52.0	52.0	94.0	87.6	87.6	+ 6.4	C
Harmonics									
1804.200	21.4	-38.9	48.0	49.0	54.0	30.5	31.5	+22.5	D
2706.300	21.4	-31.6	<20.0	<20.0	54.0	< 9.8	< 9.8	>+44.2	D
3608.400	34.3	-30.9	<20.0	<20.0	54.0	<23.4	<23.4	>+30.6	D
4510.500	36.3	-31.0	<20.0	<20.0	54.0	<25.3	<25.3	>+28.7	D
5412.600	37.0	-31.1	<20.0	<20.0	54.0	<25.9	<25.9	>+28.1	D
6314.700	36.4	-30.1	<20.0	<20.0	54.0	<26.3	<26.3	>+27.7	D
7216.800	36.6	-29.7	<20.0	<20.0	54.0	<26.9	<26.9	>+27.1	D
8118.900	40.9	-28.7	<20.0	<20.0	54.0	<32.2	<32.2	>+21.8	D
9021.000	40.7	-27.7	<20.0	<20.0	54.0	<33.0	<33.0	>+21.0	D
Spurious									
451.050	22.3	4.5	< 8.0	< 8.0	46.0	<34.8	<34.8	>+11.2	C
1353.150	21.4	-35.1	48.0	46.0	54.0	34.3	32.3	+19.7	D
2255.250	21.4	-31.8	37.0	38.0	54.0	26.6	27.6	+26.4	D
3157.350	21.8	-31.2	32.0	32.0	54.0	22.6	22.6	+31.4	D
4059.450	34.8	-30.8	<20.0	<20.0	54.0	<24.0	<24.0	>+30.0	D
4961.550	36.9	-31.4	<20.0	<20.0	54.0	<25.5	<25.5	>+28.5	D
5863.650	37.0	-30.5	<20.0	<20.0	54.0	<26.5	<26.5	>+27.5	D
6765.750	36.6	-30.0	<20.0	<20.0	54.0	<26.6	<26.6	>+27.4	D
7667.850	40.8	-28.8	<20.0	<20.0	54.0	<32.0	<32.0	>+22.0	D
8569.950	40.6	-28.2	<20.0	<20.0	54.0	<32.4	<32.4	>+21.6	D

Transmitting Frequency : 903.550 MHz (30 ch)

Frequency [MHz]	Antenna Factor [dB(1/m)]	Corr. Factor [dB]	Meter Readings [dB(μV)]		Limits [dB(μV/m)]	Results [dB(μV/m)]		Margin [dB]	Remarks (Note 2)
			Hori.	Vert.		Hori.	Vert.		
Fundamental									
903.550	28.9	6.7	52.0	53.0	94.0	87.6	88.6	+ 5.4	C
Harmonics									
1807.100	21.4	-38.9	46.0	48.0	54.0	28.5	30.5	+23.5	D
2710.650	21.4	-31.6	<20.0	<20.0	54.0	< 9.8	< 9.8	>+44.2	D
3614.200	34.3	-30.9	<20.0	<20.0	54.0	<23.4	<23.4	>+30.6	D
4517.750	36.3	-31.0	<20.0	<20.0	54.0	<25.3	<25.3	>+28.7	D
5421.300	37.0	-31.1	<20.0	<20.0	54.0	<25.9	<25.9	>+28.1	D
6324.850	36.4	-30.1	<20.0	<20.0	54.0	<26.3	<26.3	>+27.7	D
7228.400	36.6	-29.7	<20.0	<20.0	54.0	<26.9	<26.9	>+27.1	D
8131.950	40.9	-28.7	<20.0	<20.0	54.0	<32.2	<32.2	>+21.8	D
9035.500	40.6	-27.7	<20.0	<20.0	54.0	<32.9	<32.9	>+21.1	D
Spurious									
451.775	22.3	4.5	0.0	< 0.0	46.0	<26.8	<26.8	+19.2	C
1355.325	21.4	-35.1	47.0	45.0	54.0	33.3	31.3	+20.7	D
2258.875	21.4	-31.8	37.0	41.0	54.0	26.6	30.6	+23.4	D
3162.425	21.8	-31.2	32.0	33.0	54.0	22.6	23.6	+30.4	D
4065.975	34.9	-30.8	<20.0	<20.0	54.0	<24.1	<24.1	>+29.9	D
4969.525	36.9	-31.4	<20.0	<20.0	54.0	<25.5	<25.5	>+28.5	D
5873.075	37.0	-30.4	<20.0	<20.0	54.0	<26.6	<26.6	>+27.4	D
6776.625	36.6	-30.0	<20.0	<20.0	54.0	<26.6	<26.6	>+27.4	D
7680.175	40.8	-28.8	<20.0	<20.0	54.0	<32.0	<32.0	>+22.0	D
8583.725	40.6	-28.2	<20.0	<20.0	54.0	<32.4	<32.4	>+21.6	D

EMISSION LIMITATION



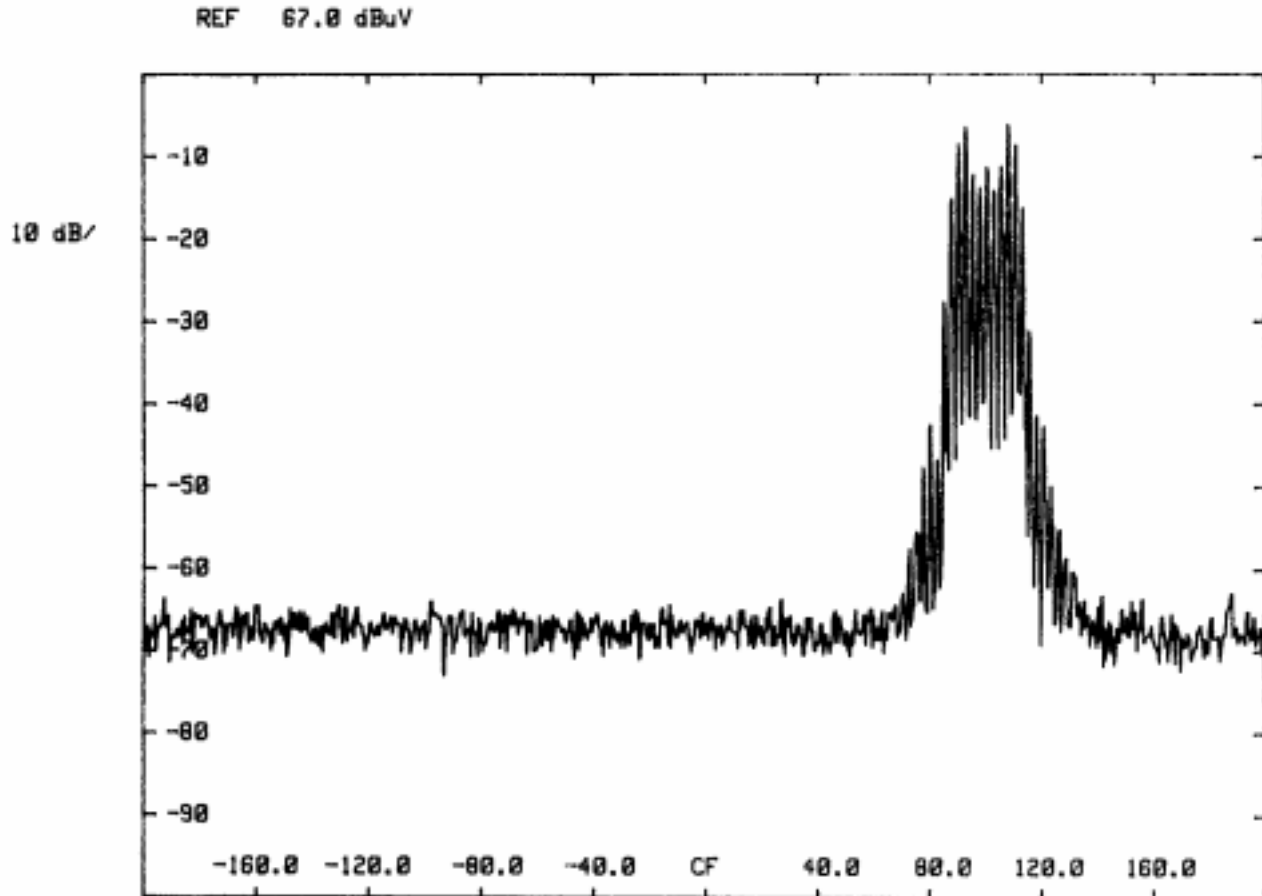
CENTER 902.0000 MHz
RES BW .3 kHz

VBW 1 kHz

SPAN 400.0 kHz
SWP 10.0 sec

Reference Carrier Level

EMISSION LIMITATION



CENTER 902.0000 MHz

SPAN 400.0 kHz

RES BW .3 kHz

VBW 1 kHz

SMP 10.0 sec

Modulation: External Sine Wave from Telephone Line

AC Powerline Conducted Emission Measurement
 Receiver (employing superheterodyne techniques)

Test Date: March 4, 2000
 Temp.: 22 °C ; Humi.: 40 %

Receiving Frequency : 926.100 MHz (1 ch)

Frequency [MHz]	Correction Factor [dB]	Meter Readings [dB(μV)]				Limits [dB(μV)]	Results [dB(μV)]		Margin [dB]	Remarks (Note 2)
		VA		VB			QP	AV		
		QP	AV	QP	AV		QP	AV		
0.45	0.1	32.0	-	34.0	-	48.0	34.1	-	+13.9	A
0.54	0.1	32.0	-	35.0	-	48.0	35.1	-	+12.9	A
1.53	0.2	22.0	-	22.0	-	48.0	22.2	-	+25.8	A
8.75	0.5	22.0	-	21.0	-	48.0	22.5	-	+25.5	A
12.01	0.6	24.0	-	24.0	-	48.0	24.6	-	+23.4	A
16.02	0.7	24.0	-	21.0	-	48.0	24.7	-	+23.3	A
20.02	0.8	24.0	-	24.0	-	48.0	24.8	-	+23.2	A
24.56	0.9	42.0	-	42.0	-	48.0	42.9	-	+ 5.1	A
28.03	0.9	35.0	-	35.0	-	48.0	35.9	-	+12.1	A

Sample of calculated result at 24.56 MHz, as the Minimum Margin point:

Correction Factor = 0.9 dB
 +) Meter Reading = 42.0 dB(μV)
 Result = 42.9 dB(μV)

Minimum Margin : 48.0 - 42.9 = 5.1(dB)

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

Note 1:

1)The correction factor 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 Field Radiated Emission Measurement
 Receiver (employing superheterodyne techniques)

Test Date: March 1, 2000
 Temp.: 18 °C ; Humi.: 36 %

Receiving Frequency : 926.100 MHz (1 ch)

Frequency [MHz]	Antenna Factor [dB(1/m)]	Corr. Factor [dB]	Meter Readings [dB(μV)]		Limits [dB(μV/m)]	Results [dB(μV/m)]		Margin [dB]	Remarks (Note 2)
			Hori.	Vert.		Hori.	Vert.		
468.400	22.7	4.6	<-5.0	<-5.0	46.0	<22.3	<22.3	>+23.7	A
936.800	29.3	6.9	<-10.0	<-10.0	46.0	<26.2	<26.2	>+19.8	A
1405.200	21.4	-34.7	<30.0	<30.0	54.0	<16.7	<16.7	>+37.3	B
1873.600	21.5	-38.5	<30.0	<30.0	54.0	<13.0	<13.0	>+41.0	B

Receiving Frequency : 927.550 MHz (30 ch)

Frequency [MHz]	Antenna Factor [dB(1/m)]	Corr. Factor [dB]	Meter Readings [dB(μV)]		Limits [dB(μV/m)]	Results [dB(μV/m)]		Margin [dB]	Remarks (Note 2)
			Hori.	Vert.		Hori.	Vert.		
469.125	22.7	4.6	<-5.0	<-5.0	46.0	<22.3	<22.3	>+23.7	A
938.250	29.3	6.9	<-10.0	<-10.0	46.0	<26.2	<26.2	>+19.8	A
1407.375	21.4	-34.8	<30.0	<30.0	54.0	<16.6	<16.6	>+37.4	B
1876.500	21.5	-38.5	<30.0	<30.0	54.0	<13.0	<13.0	>+41.0	B

Sample of calculated result at 936.800 MHz, as the Minimum Margin point:

Antenna Factor = 29.3 dB(1/m)
 Corr. Factor = 6.9 dB
 +) Meter Reading = <-10.0 dB(μV)
 Result = <26.2 dB(μV/m)

Minimum Margin : 46.0 - <26.2 = >19.8(dB)

The point shown on “ ___ ” is the Minimum Margin Point.

Note 1:

- 1)The highest frequency generated or used in the EUT : 938.250 MHz
- 2)The upper frequency of measurement range : 1876.500 MHz
- 3)The spectrum was scanned 30 MHz to 2 GHz and all emissions not reported were more than 20 dB below the applied limits.
- 4)Corr. Factor [dB] (below 1 GHz) = Cable Loss [dB]
 Corr. Factor [dB] (above 1 GHz) = Cable Loss [dB] + 10 dB Pad Attenuator [dB] - Pre-Amplifier Gain [dB]

Remarks:

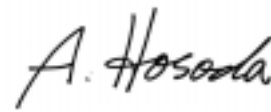
Note 2	Detector Function	IF Bandwidth
A	CISPR QP	120 kHz

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 attenuator or and a spectrum analyzer(950523A).

Tester Signature : _____



Type Name : Akio Hosoda