



## **EMI TEST REPORT**

JQA APPLICATION NO. : 441-31049  
Model No. : 444-59003  
Type of Equipment : RF-MODULE (RFID TAG Reader/Writer)  
Regulations Applied : CFR 47 FCC Rules and Regulations Part 15  
FCC ID : RPARFMHL00  
Applicant : RISO KAGAKU CORPORATION  
Address : 127-7, Taninosawa, Fukuda, Ami-machi, Inashiki-gun, Ibaraki-ken 300-1156, Japan  
Manufacture : RISO KAGAKU CORPORATION  
Address : 127-7, Taninosawa, Fukuda, Ami-machi, Inashiki-gun, Ibaraki-ken 300-1156, Japan  
Received date of EUT : February 9, 2004  
**Final Judgment** : **Passed**

**TEST RESULTS IN THIS REPORT** are obtained in use of equipment that is traceable to National Institute of Advanced Industrial Science and Technology (AIST) of Japan and Communication Research Laboratory (CRL) of Japan.

The **test results** only responds to the tested sample.  
**THIS REPORT** should not be reproduced, except in full, without the approval of the JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch.

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## 1 DOCUMENTATION

### 1.1 TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A andC (January 8 , 2004) Intentional Radiators

#### **Test procedure :**

AC power line conducted emission, radiated emission, frequency stability and occupied bandwidth tests were performed according to the procedures in ANSI C63.4-2001.

### 1.2 GENERAL INFORMATION

#### 1.2.1 Test facility :

1) Test Facility located at JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch:  
Open Site No.1, No.2, An Anechoic Chamber (3 m and 10 m, on common plane) and a Shielded Room

**FCC Registration Number: 90728 (Date of Listing : April 2, 2002)**

2) JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch 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 : 200192-0 (Effective through : June 30, 2004)**

#### 1.2.2 Description of the Equipment Under Test (EUT) :

1) Type of Equipment	:	RF-MODULE (RFID TAG Reader/Writer)
2) Product Type	:	Pre-production
3) Category	:	Low Power Communication Device
4) EUT Authorization	:	Certification
5) FCC ID	:	RPARFMHL00
6) Trade Name	:	RISO
7) Model No.	:	444-59003
8) Operating Frequency Range	:	13.56 MHz
9) Highest Frequency Used in the EUT	:	13.56 MHz
10) Serial No.	:	-
11) Date of Manufacture	:	-
12) Power Rating	:	5.0VDC*
13) EUT Grounding	:	None

\*:The EUT was operated by Duplicator.(Input: 120Vac 60Hz, Output: 5.0Vdc)

#### 1.2.3 Definitions for symbols used in this test report :

x - indicates that the listed condition, standard or equipment is applicable for this report.  
  - indicates that the listed condition, standard or equipment is not applicable for this report.

**1.3 TEST CONDITION****1.3.1 The measurement of the AC Power Line Conducted Emission**

- was performed in the following test site.  
 x - was not applicable.

**Test location :**

JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch  
2096 Ohata, Tsuru-shi Yamanashi-ken 402-0045, JAPAN

- Shielded Room A  
 - Shielded Room B  
 - Anechoic Chamber  
 - Open Site No.1  
 - Open Site No.2

**Used test instruments :**

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
<input type="checkbox"/> - Test Receiver(R-7)	ESI7	Rohde & Schwarz	100059	2003/10	1 Year
<input type="checkbox"/> - Test Receiver(R-8)	ESCS30	Rohde & Schwarz	100203	2003/2	1 Year
<input type="checkbox"/> - Test Receiver(R-1)	ESHS30	Rohde & Schwarz	842053/001	2003/11	1 Year
<input type="checkbox"/> - Test Receiver(R-3)	ESH3	Rohde & Schwarz	881460/016	2003/5	1 Year
<input type="checkbox"/> - LISN(L-1)	KNW-407	Kyoritsu Electrical	8-833-5	2003/8	1 Year
<input type="checkbox"/> - LISN(L-2)	KNW-407	Kyoritsu Electrical	8-680-14	2003/8	1 Year
<input type="checkbox"/> - LISN(L-3)	KNW-407	Kyoritsu Electrical	8-757-1	2003/6	1 Year
<input type="checkbox"/> - LISN(L-4)	KNW-242	Kyoritsu Electrical	8-755-1	2003/6	1 Year
<input type="checkbox"/> - LISN(L-5)	KNW-242C	Kyoritsu Electrical	8-837-14	2003/6	1 Year
<input type="checkbox"/> - LISN(L-9)	KNW-243C	Kyoritsu Electrical	8-831-2	2003/6	1 Year
<input type="checkbox"/> - LISN(L-7)	KNW-243C	Kyoritsu Electrical	8-831-3	2003/6	1 Year
<input type="checkbox"/> - LISN(L-8)	KNW-243C	Kyoritsu Electrical	8-831-4	2003/6	1 Year
<input type="checkbox"/> - LISN(L-6)	KNW-243C	Kyoritsu Electrical	8-692-5	2003/7	1 Year
<input type="checkbox"/> - RF Cable(C-9)	3D-2W	Fujikura	No.1	2003/5	1 Year
<input type="checkbox"/> - RF Cable(C-10)	3D-2W	Fujikura	No.2	2003/5	1 Year
<input type="checkbox"/> - RF Cable(C-11)	3D-2W	Fujikura	No.3	2003/5	1 Year
<input type="checkbox"/> - 50ohm Termination(TM-1)	-	TDC	15406501E1	2003/3	1 Year
<input type="checkbox"/> - 50ohm Termination(TM-2)	-	-	15406502E1	2003/3	1 Year

**1.3.2 The measurement of the Radiated Emission(9 kHz - 30 MHz)**

x - was performed in the following test site.  
   - was not applicable.

**Test location :**

JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch  
2096 Ohata, Tsuru-shi Yamanashi-ken 402-0045, JAPAN

   - Open Site No. 1 (3, 10 or 30 meters)  
X - Open Site No. 2 (3 or 10 meters)  
   - Anechoic Chamber(3 or 10 meters)

**Validation of Site Attenuation :**

1) Last Confirmed Date : N/A  
2) Interval : N/A

**Used test instruments :**

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
<u>  </u> - Test Receiver(R-7)	ESI7	Rohde & Schwarz	100059	2003/10	1 Year
<u>  </u> - Test Receiver(R-8)	ESCS30	Rohde & Schwarz	100203	2003/2	1 Year
<u>X</u> - Test Receiver(R-1)	ESHS30	Rohde & Schwarz	842053/001	2003/11	1 Year
<u>X</u> - Loop Antenna(A-17)	HFH2-Z2	Rohde & Schwarz	879284/14	2003/5	1 Year

**1.3.3 The measurement of the Radiated Emission(30 MHz - 1000 MHz)**

x - was performed in the following test site.  
   - was not applicable.

**Test location :**

JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch  
2096 Ohata, Tsuru-shi Yamanashi-ken 402-0045, JAPAN

   - Open Site No. 1 (3, 10 or 30 meters)  
X - Open Site No. 2 (3 or 10 meters)  
   - Anechoic Chamber(3 or 10 meters)

**Validation of Site Attenuation :**

1) Last Confirmed Date :May. 2003  
2) Interval :1 year

**Used test instruments :**

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
<u>  </u> - Test Receiver(R-7)	ESI7	Rohde & Schwarz	100059	2003/10	1 Year
<u>  </u> - Test Receiver(R-8)	ESCS30	Rohde & Schwarz	100203	2003/2	1 Year
<u>X</u> - Test Receiver(R-6)	ESVS10	Rohde & Schwarz	84231/004	2003/3	1 Year
<u>  </u> - Test Receiver(R-5)	ESVS10	Rohde & Schwarz	843744/018	2003/4	1 Year
<u>  </u> - Biconical Antenna(A-4)	BBA9106	Schwarzbeck	91031741	2003/5	1 Year
<u>X</u> - Biconical Antenna(A-2)	BBA9106	Schwarzbeck	91031516	2003/5	1 Year
<u>  </u> - Biconical Antenna(A-3)	BBA9106	Schwarzbeck	11905516	2003/5	1 Year
<u>  </u> - Log-Periodic Antenna(A-6)	UHALP9107	Schwarzbeck	9107915	2003/5	1 Year
<u>X</u> - Log-Periodic Antenna(A-8)	UHALP9107	Schwarzbeck	1357	2003/5	1 Year
<u>  </u> - Log-Periodic Antenna(A-9)	UHALP9108	Schwarzbeck	0278	2003/5	1 Year
<u>  </u> - Dipole Antenna(A-11)	KBA-511A	Kyoritsu Electrical	0-195-5	2003/8	1 Year
<u>  </u> - Dipole Antenna(A-12)	KBA-611	Kyoritsu Electrical	0-196-8	2003/8	1 Year
<u>  </u> - Dipole Antenna(A-13)	KBA-511A	Kyoritsu Electrical	0-228-13	2003/8	1 Year
<u>  </u> - Dipole Antenna(A-14)	KBA-611	Kyoritsu Electrical	0-230-6	2003/8	1 Year
<u>  </u> - RF Cable(C-1)	20D/5D-2W	Fujikura	No.1	2003/5	1 Year
<u>X</u> - RF Cable(C-2)	20D/5D-2W	Fujikura	No.2	2003/5	1 Year
<u>  </u> - RF Cable(C-3)	20D/5D-2W	Fujikura	No.3	2003/5	1 Year

**1.3.4 The measurement of the Radiated Emission(Above 1000 MHz)**

- was performed in the following test site.  
 x - was not applicable.

**Test location :**

JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch  
2096 Ohata, Tsuru-shi Yamanashi-ken 402-0045, JAPAN

- Open Site No. 1 (3, 10 or 30 meters)  
 - Open Site No. 2 (3 or 10 meters)  
 - Anechoic Chamber(3 or 10 meters)

**Validation of Site Attenuation :**

1) Last Confirmed Date : N/A  
2) Interval : N/A

**Used test instruments :**

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
<input type="checkbox"/> - Spectrum Analyzer(S-1)	8563E	Hewlett Packard	3438A00756	2003/4	1 Year
<input type="checkbox"/> - Spectrum Analyzer(S-3)	R3361C	Advantest	71720774	2003/5	1 Year
<input type="checkbox"/> - Log-Periodic Antenna(A-9)	UHALP9108	Schwarzbeck	0278	2003/5	1 Year
<input type="checkbox"/> - Log-Periodic Antenna(A-20)	USLP9143	Schwarzbeck	140	2003/5	1 Year
<input type="checkbox"/> - Log-Periodic Antenna(A-15)	94612-1	Eaton	-	2003/5	1 Year
<input type="checkbox"/> - Pre-Amplifier(PA-5)	WJ-6611-513	Watkins Johnson	0288	2003/5	1 Year
<input type="checkbox"/> - Pre-Amplifier(PA-6)	WJ-6682-834	Watkins Johnson	0052	2003/5	1 Year
<input type="checkbox"/> - Pre-Amplifier(PA-7)	WJ-6870-506	Watkins Johnson	0018	2003/5	1 Year
<input type="checkbox"/> - RF Cable(7m)(C-4)	SUCOFLEX 104	Suhner	52146/4	2003/5	1 Year
<input type="checkbox"/> - RF Cable(3m)(C-5)	SUCOFLEX 104	Suhner	52053/4	2003/5	1 Year
<input type="checkbox"/> - RF Cable(2m)(C-6)	SUCOFLEX 104	Suhner	39934/4	2003/5	1 Year
<input type="checkbox"/> - RF Cable(1m)(C-7)	SUCOFLEX 104	Suhner	35687/4	2003/5	1 Year

**1.3.5 The measurement of the Frequency Stability**       - was performed.x - was not applicable.**Used test instruments :**

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
<u>      </u> - Frequency Counter	53131A	Hewlett Packard	3546A11807	2003/05	1 Year
<u>      </u> - Oven	-	Ohnishi Co. Ltd.	-	2003/08	1 Year
<u>      </u> - DC Power Supply	6628A	Hewlett Packard	3224A00284	2003/07	1 Year

**1.3.6 The measurement of the Occupied Bandwidth**       - was performed.x - was not applicable.**Used test instruments :**

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
<u>      </u> - Spectrum Analyzer	8560E	Hewlett Packard	3240A00189	2003/9	1 Year
<u>      </u> - Spectrum Analyzer	8563E	Hewlett Packard	3221A00201	2003/5	1 Year
<u>      </u> - Spectrum Analyzer	8566B	Hewlett Packard	2140A01091	2003/4	1 Year
<u>      </u> - Spectrum Analyzer	8566B	Hewlett Packard	2747A05855	2003/5	1 Year
<u>      </u> - Function Generator	3325A	Hewlett Packard	2512A21776	2003/5	1 Year
<u>      </u> - FM Linear Detector	MS61A	Anritsu Corp.	M77486	2003/9	1 Year
<u>      </u> - Level Meter	ML422C	Anritsu Corp.	M87571	2003/6	1 Year

**1.4 EUT MODIFICATION / Deviation from Standard****1.4.1 EUT MODIFICATION**

x - No modifications were conducted by JQA to achieve compliance to Class B levels.  
   - To achieve compliance to Class B levels, the following changes were made by JQA during the compliance test.

The modifications will be implemented in all production models of this equipment.

Applicant : \_\_\_\_\_ Date : \_\_\_\_\_

Typed Name : \_\_\_\_\_ Position : \_\_\_\_\_

**1.4.2 Deviation from Standard:**

x - No deviations from the standard described in clause 1.1.  
   - The following deviations were employed from the standard described in clause 1.1:

\_\_\_\_\_

\_\_\_\_\_



JQA Application No. :441-31049

FCC ID : RPARFMHL00

Model No.

:444-59003

Issue Date :February 19, 2004

Standard

:CFR 47 FCC Rules Part 15

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## 1.5 TEST RESULTS

### AC Power Line Conducted Emission

- Applicable  - NOT Applicable

The requirements are

- PASSED  - NOT PASSED

Remarks :

### Radiated Emission [§15.225(a)(b)]

- Applicable  - NOT Applicable

The requirements are

- PASSED  - NOT PASSED

Remarks:

### Frequency Stability

- Applicable  - NOT Applicable

The requirements are

- PASSED  - NOT PASSED

Remarks:

### Occupied Bandwidth

- Applicable  - NOT Applicable

The requirements are

- PASSED  - NOT PASSED

Remarks:

**1.6 SUMMARY****General Remarks :**

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and C (January 8, 2004) under the test configuration, as shown in clause 1.7 to 1.10.

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

**Final Judgment :**

The "as received" sample;

- x - fulfill the test requirements of the regulation mentioned on clause 1.1.
- fulfill the test requirements of the regulation mentioned on clause 1.1, but with certain qualifications.
- doesn't fulfill the test regulation mentioned on clause 1.1.

Begin of testing : February 10, 2004

End of testing : February 10, 2004

**- JAPAN QUALITY ASSURANCE ORGANIZATION -**

Signatories:

Approved by:



Takaharu Hada

Director

TSURU EMC Branch

JQA EMC Engineering Dept.

Issued by:



Kazuya Hayashi

Assistant Manager

TSURU EMC Branch

JQA EMC Engineering Dept.

**1.7 TEST CONFIGURATION / OPERATION OF EUT****1.7.1 Test Configuration****The equipment under test (EUT) consists of :**

Symbol	Item	Manufacturer	Model No.	Serial No.
A	RFID reader/writer (with build in O-and D-shape type antennas)	RISO KAGAKU CORPORATION	444-59003	-
B	O-Shape Antenna	RISO KAGAKU CORPORATION	444-59006	-
C	D-Shape Antenna	RISO KAGAKU CORPORATION	444-59002	-

**The measurement was carried out with the following support equipment connected :**

Symbol	Item	Manufacturer	Model No.	Serial No.
D	Duplicator	RISO KAGAKU CORPORATION	RZ220UI	81380001
E	Exclusive Table	RISO KAGAKU CORPORATION	RISO STAND N TYPE	-
F	Automatic Document Feeder	RISO KAGAKU CORPORATION	AF Unit V	15063129
G	Printer Controller	RISO KAGAKU CORPORATION	Printer Control Board	-
H	Network Interface Card	RISO KAGAKU CORPORATION	RISORINC3n	-
I	Key/Card Counter	RISO KAGAKU CORPORATION	RISO PRINTER Network	-
J	Sorter	RISO KAGAKU CORPORATION	Interface Card	-
			RISORINC-NET-C	-
			Key/Card Counter IV	00000000
			Job Separator IV	17320006

**Type of Cable :**

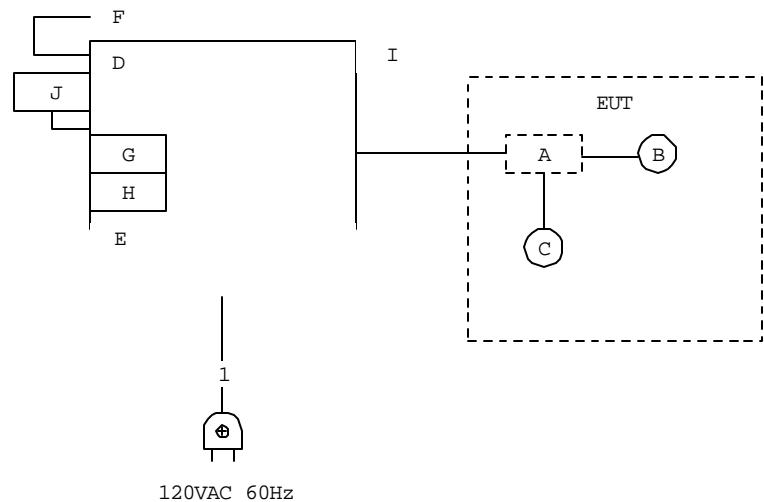
Symbol	Description	Identification (Manufacturer etc.)	Shielded YES / NO	Ferrite Core	Connector type Shielded YES / NO	Length (m)
1	AC Cable (EUT)	-	NO	NO	NO	3.0

**1.7.2 Operating condition**

Power Supply Voltage : 5.0VDC\*

\*: The EUT was operated by the Duplicator. (Input: 120Vac 60Hz, Output: 5.0Vdc)

The tests have been carried out under the Copy mode.

**1.8 EUT ARRANGEMENT (DRAWINGS)**

**1.9 PRELIMINARY TEST AND TEST-SETUP (DRAWINGS)****1.9.1 AC Power Line Conducted Emission ( 150 kHz - 30 MHz ) :**

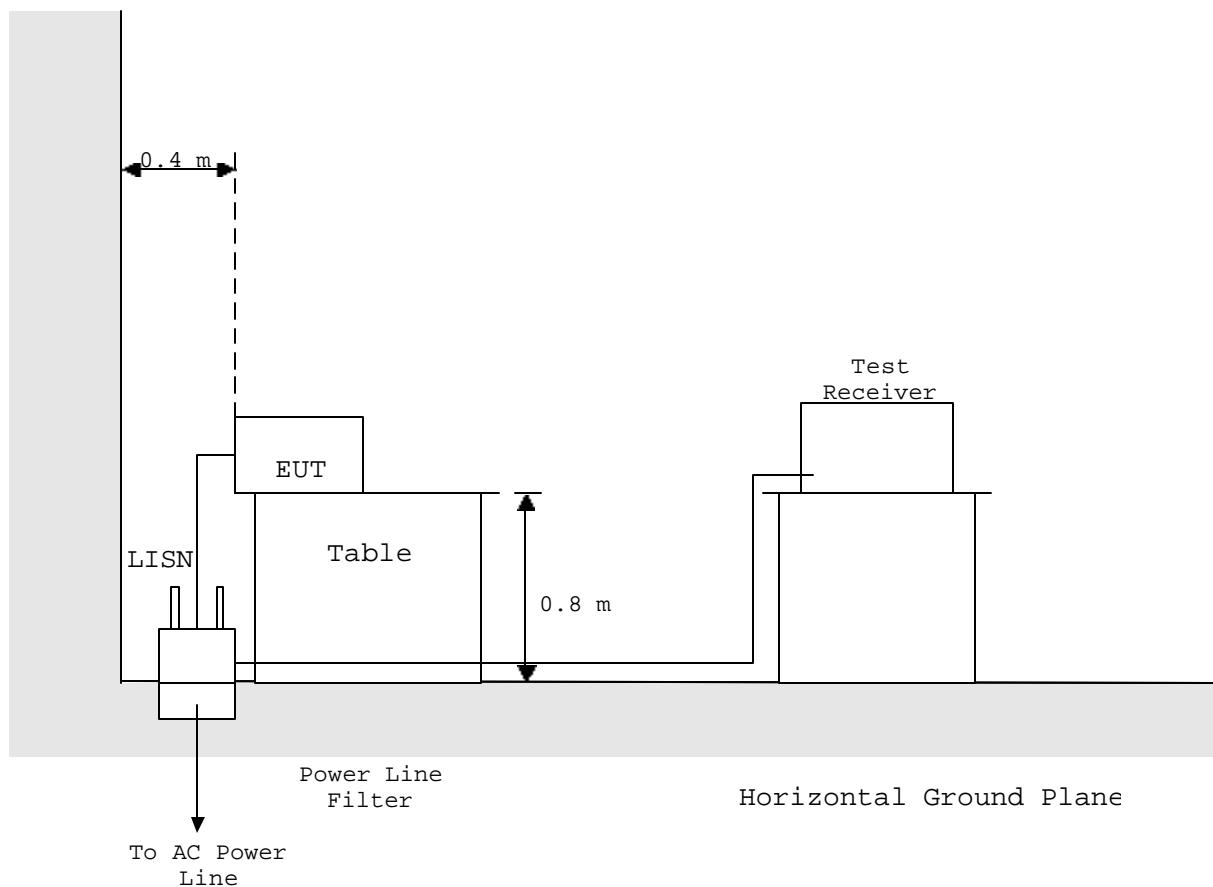
According to description of ANSI C63.4-1992 sec.13.1.3.1, the AC power line preliminary conducted emissions measurements were carried out.

The preliminary conducted measurements were performed using the spectrum analyzer to observe the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for final AC power line conducted emissions measurements.

**Shielded Enclosure****- Side View -**

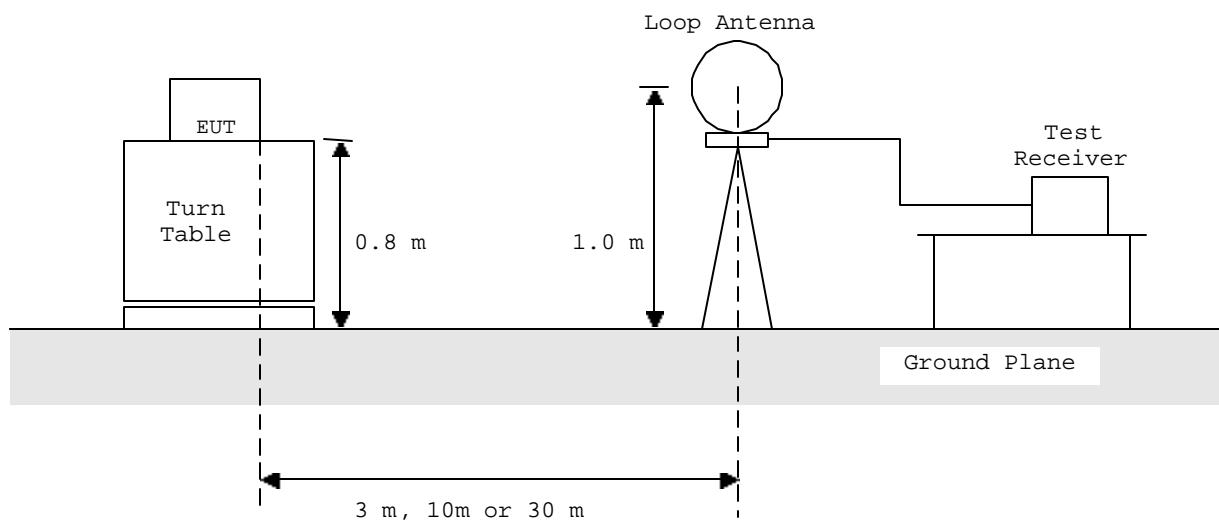
Vertical  
Ground  
Plane



**1.9.2 Radiated Emission ( 9 kHz - 30 MHz) :**

According to description of ANSI C63.4-1992 sec.13.1.4.1, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

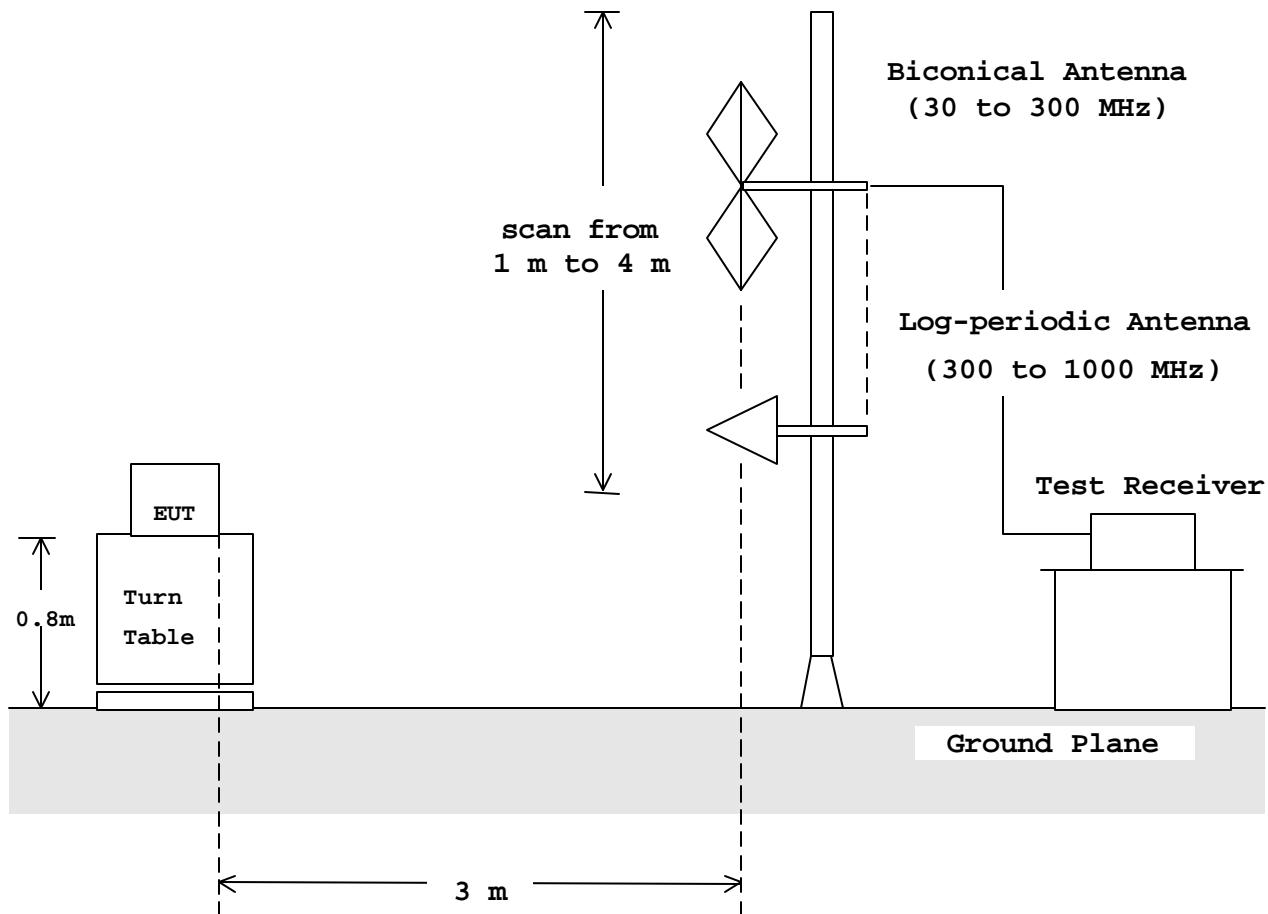
The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

**- Side View -**

**1.9.3 Radiated Emission ( 30 MHz - 1000 MHz) :**

According to description of ANSI C63.4-1992 sec.13.1.4.1, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

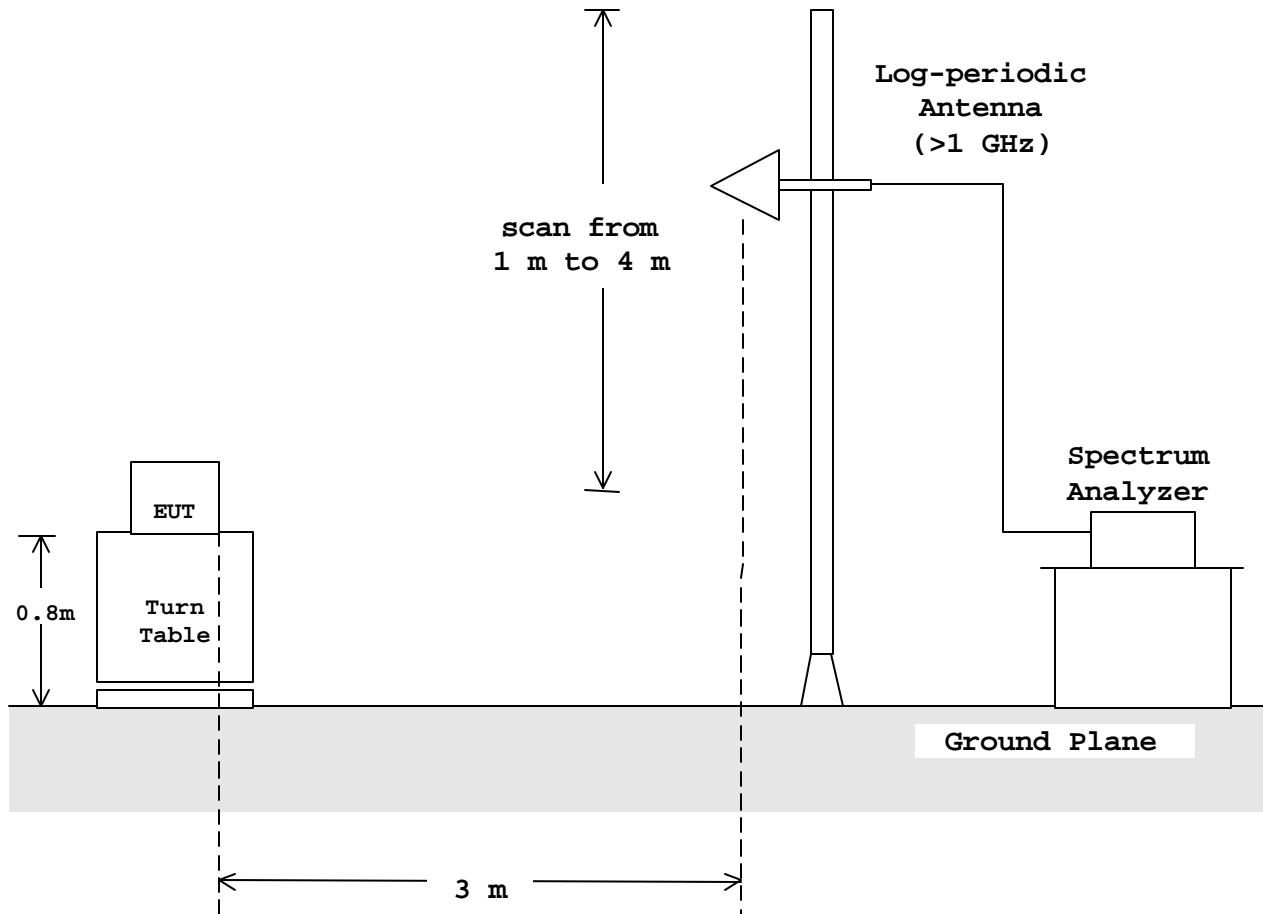
The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

**Anechoic Chamber****- Side View -**

**1.9.4 Radiated Emission (Above 1 GHz) :**

According to description of ANSI C63.4-1992 sec.13.1.4.1, the preliminary radiated emissions measurements were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

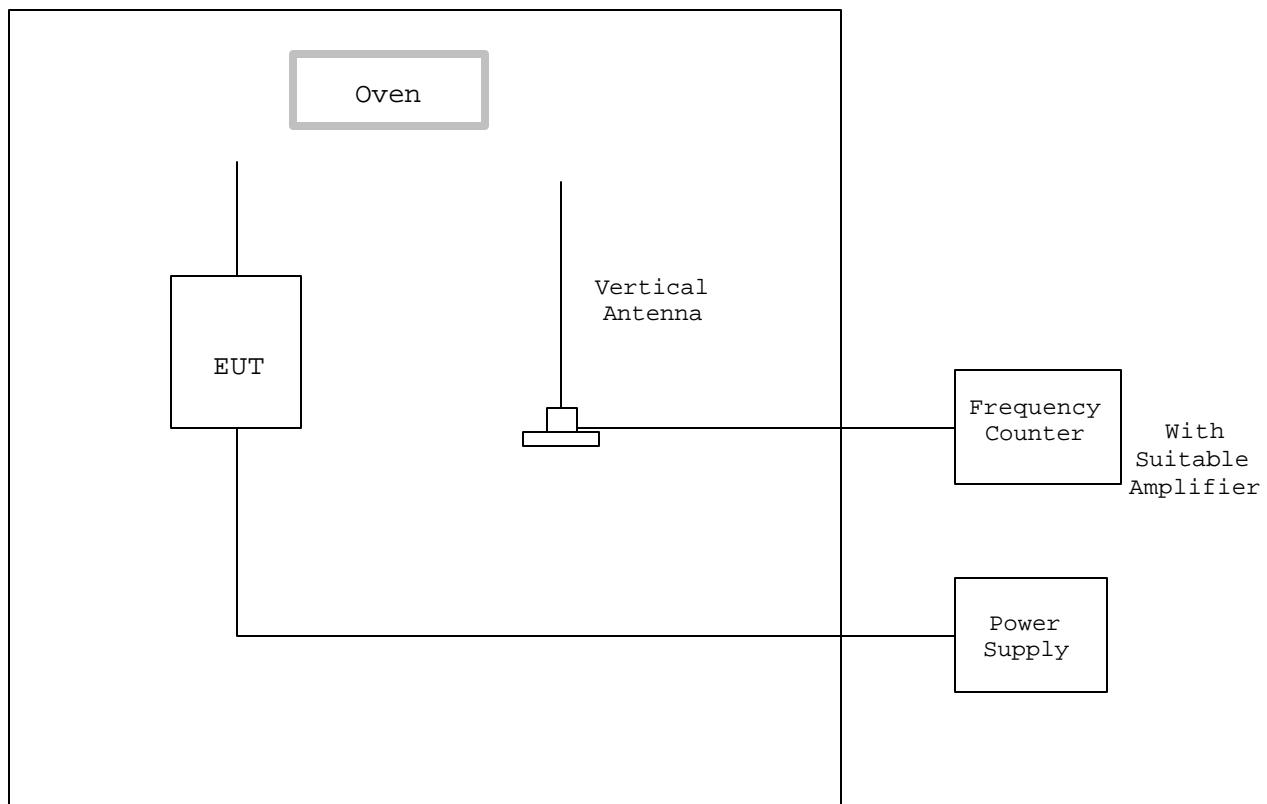
The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.

**Anechoic Chamber****- Side View -**

**1.9.5 Frequency Stability :**

According to description of ANSI C63.4-1992 sec.13.1.5 and sec.13.1.6, the frequency stability measurements were carried out. By using frequency counter with suitable RF amplifier, the carrier frequency of the transmitter under test was measured with a temperature variation of -20°C to +50°C at the normal supply voltage, and if required, with a variation in the primary voltage from 85 % to 115 % the rated supply voltage at the temperature of +20°C.

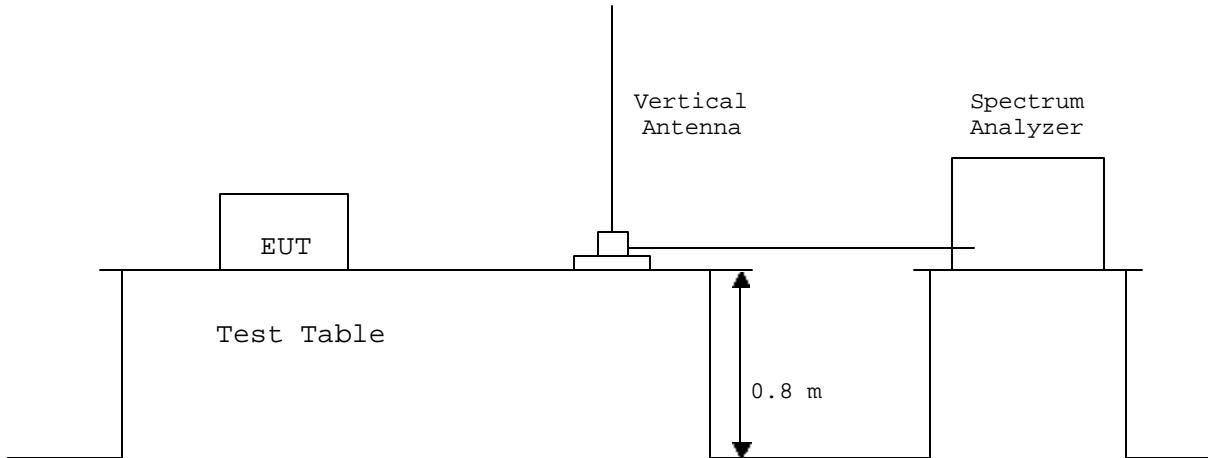
These measurements were carried out after allow sufficient time (approximately 1 hour) for the temperature of the chamber to stabilize.



**1.9.6 Occupied Bandwidth :**

According to description of ANSI C63.4-1992 sec.13.1.7, the occupied bandwidth measurements were carried out. By using a spectrum analyzer with a vertical antenna for picking up the signal, the measurements of the emission were made under the transmitting modes of the EUT.

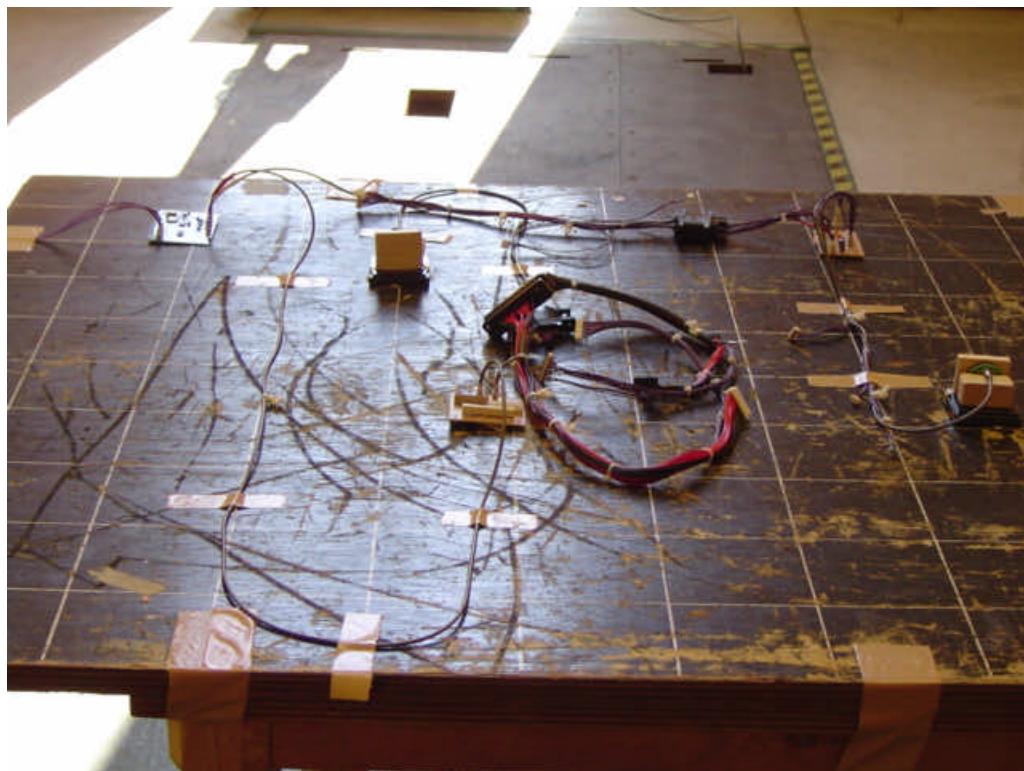
The resolution bandwidth of spectrum analyzer was set to the value specified in sec.13.1.7.



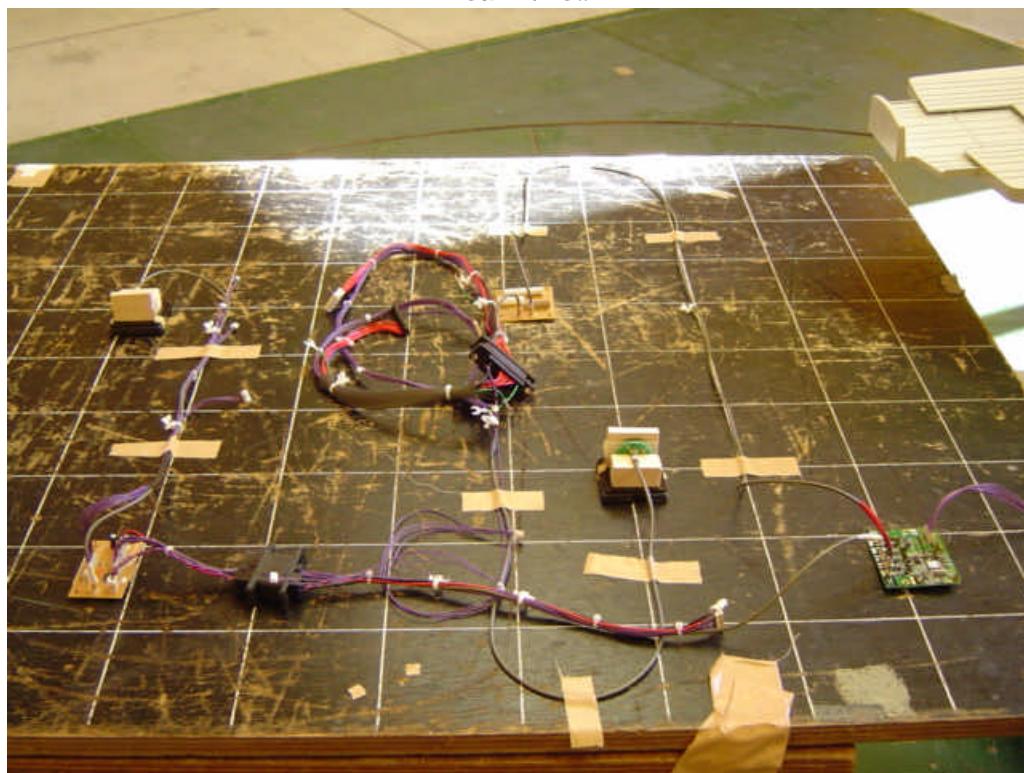
**1.10 TEST ARRANGEMENT (PHOTOGRAPHS)****PHOTOGRAPHS OF EUT CONFIGURATION FOR RADIATED EMISSIONS MEASUREMENT**

Photograph present configuration with maximum emission

- Front View -



- Rear View -



## 2. TEST DATA

### 2.1 AC Power Line Conducted Emission Measurement( 0.45 MHz - 30 MHz )

Note : This test was not applicable.

### 2.2 Radiated Emissions Measurement( 9 kHz - 30 MHz )

Date : February 10, 2004

Temp. : 6 °C Humi. : 44 %

**Operating Frequency** : 13.56 MHz  
**Distance of Measurement** : 1 meters

#### 1) D-shape Antenna

Frequency (MHz)	Meter Reading (dB $\mu$ V/m)	Field Strength (dB $\mu$ V/m)
Fundamental 13.56	52.9	-6.2
Harmonic Frequency 27.13	49.8	-9.3

#### 2) O-shape Antenna

Frequency (MHz)	Meter Reading (dB $\mu$ V/m)	Field Strength (dB $\mu$ V/m)
Fundamental 13.56	35.2	-23.9
Harmonic Frequency 27.13	29.4	-29.7

Note: 1. Meter reading value shows field strength, because the value includes antenna factor.  
2. The symbol of "<" means "or less".  
3. Measuring Instrument Setting:

Detector Function : CISPR Quasi-peak Peak  
IF Band width : 9 kHz

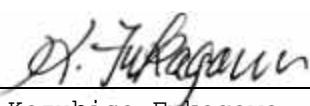
For fundamental, the measured field strength was extrapolated to distance 30 meters, using the formula that field strength varies as the inverse distance square(40 dB per decade of distance).

Calculation :

Fundamental:  $52.9 \text{ dB}\mu\text{V/m} - 20\log_{10}((30/1)^2) = 52.9 - 59.1 = -6.2 \text{ dB}\mu\text{V/m}$  at 30 meters  
Limits for fundamental(§15.225(a)) =  $20\log_{10}(15848) = 84.0 \text{ dB}\mu\text{V/m}$

Harmonic :  $49.8 \text{ dB}\mu\text{V/m} - 20\log_{10}((30/1)^2) = 49.8 - 59.1 = -9.3 \text{ dB}\mu\text{V/m}$  at 30 meters  
Limits for (§15.225(d)) =  $20\log_{10}(30) = 29.5 \text{ dB}\mu\text{V/m}$

Tested by :

  
Kazuhisa Fukagawa

Testing Engineer

**2.3 Radiated Emissions Measurement( 30 MHz - 1 GHz )**

Date : February 10, 2004

Temp. : 6°C Humi.: 46% Atom.: 960hPa

Frequency (MHz)	Antenna Factor (dB/m)	Meter Reading (dBuV)		Limits (dBuV/m)	Emission Level (dBuV/m)		Margin (dB)		Comment
		Horiz.	Ver.		Horiz.	Ver.	Horiz.	Ver.	
33.1	19.0	4.8	7.6	40.0	23.8	26.6	16.2	13.4	
34.4	18.5	8.9	15.2	40.0	27.4	33.7	12.6	6.3	
52.2	12.8	20.8	22.4	40.0	33.6	35.2	6.4	4.8	
85.0	9.4	17.8	16.1	40.0	27.2	25.5	12.8	14.5	
100.0	12.7	24.4	20.4	43.5	37.1	33.1	6.4	10.4	
118.0	15.0	12.2	11.4	43.5	27.2	26.4	16.3	17.1	
128.0	16.1	13.1	13.2	43.5	29.2	29.3	14.3	14.2	
147.7	17.7	9.3	12.8	43.5	27.0	30.5	16.5	13.0	
172.3	19.3	9.9	9.4	43.5	29.2	28.7	14.3	14.8	
200.0	20.0	14.0	11.4	43.5	34.0	31.4	9.5	12.1	
230.4	21.0	2.1	7.0	46.0	23.1	28.0	22.9	18.0	
270.1	22.6	9.1	2.5	46.0	31.7	25.1	14.3	20.9	
331.8	21.6	13.4	12.7	46.0	35.0	34.3	11.0	11.7	
530.9	26.9	4.7	5.7	46.0	31.6	32.6	14.4	13.4	
631.7	29.3	-0.8	-0.3	46.0	28.5	29.0	17.5	17.0	
796.3	32.1	2.3	2.6	46.0	34.4	34.7	11.6	11.3	
928.9	35.0	3.6	3.2	46.0	38.6	38.2	7.4	7.8	

Notes:

- 1) Test Location : Open Site No.2
- 2) Test Distance : 3 m
- 3) The spectrum was checked from 30 MHz to 1000 MHz.
- 4) Antenna factor includes the cable loss for 58 meter.
- 5) The symbol of "<" means "or less".
- 6) The symbol of ">" means "more than".
- 7) A sample calculation was made at 33.1 MHz  

$$Af + Mr = 19.0 + 7.6 = 26.6 \text{ dBuV/m}$$

Af : Antenna Factor   Mr : Meter Reading
- 8) Setting of measuring instrument :  

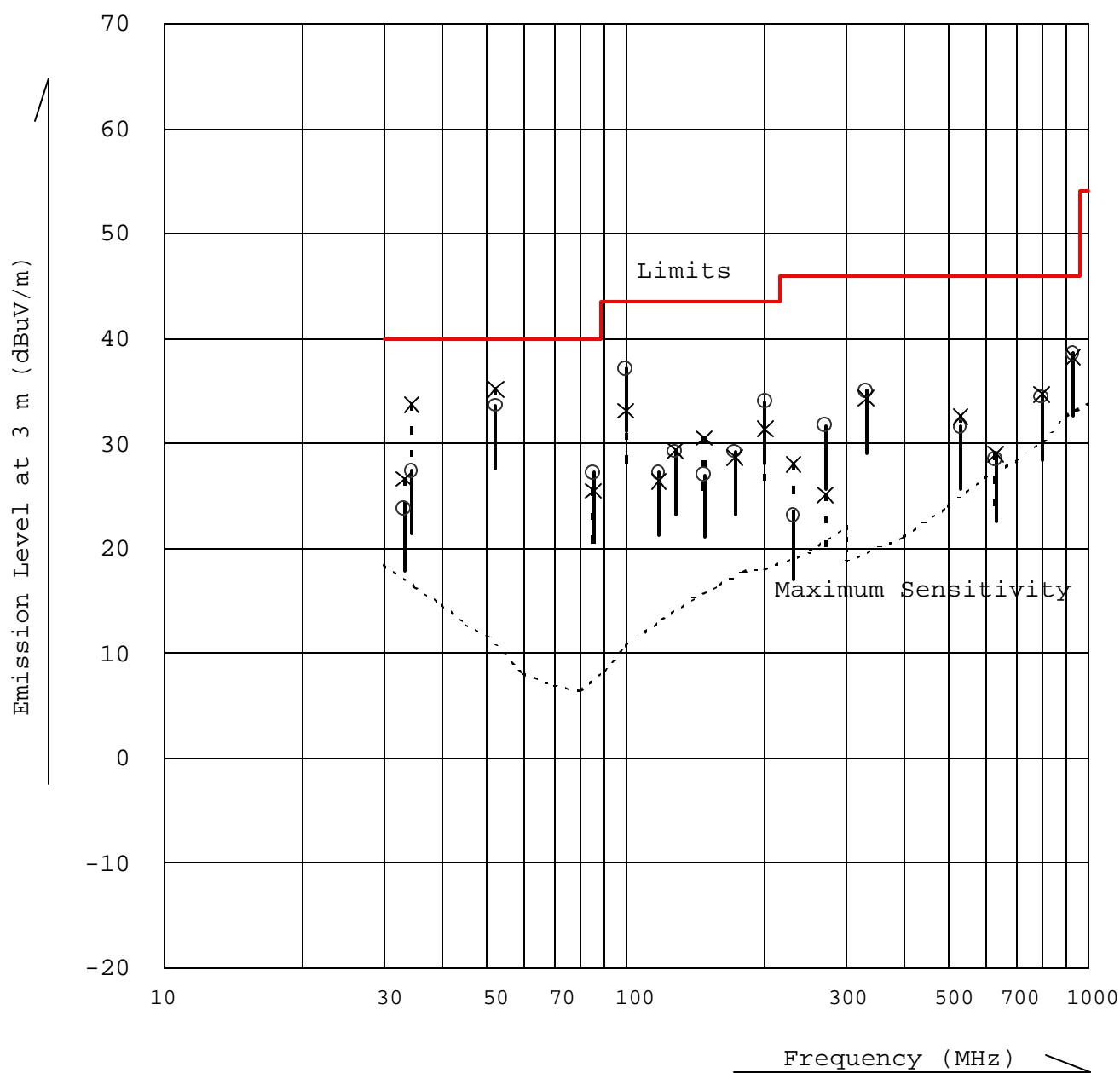
Detector Function : CISPR Quasi-Peak  
IF Bandwidth : 120 kHz

Tested by :

Kazuhisa Fukagawa

**Radiated Emissions Measurements (30 MHz - 1000 MHz)**

Measuring Distance : 3 m	⊖	Horizontal
Classifications : B	✗	Vertical





JQA Application No. : 441-31049

Model No. : 444-59003

Standard : CFR 47 FCC Rules Part 15

FCC ID : RPARFMHL00

Issue Date : February 19, 2004

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#### **2.4 Radiated Emissions Measurement( Above 1 GHz )**

Note : This test was not applicable.

#### **2.5 Frequency Stability Measurement**

Note : This test was not applicable.

#### **2.6 Occupied Bandwidth Measurement**

Note : This test was not applicable.