

## TEST REPORT

**APPLICANT** : Tokai Rika Co., Ltd.

**ADDRESS** : 260, Toyota 3-chome, Oguchi-cho, Niwa-gun,  
Aichi-ken 480-0195, Japan

**PRODUCTS** : Receiver

**MODEL No.** : B23RG

**SERIAL No.** : None

**FCC ID** : MOZB23RG

**TEST STANDARD** : CFR 47 FCC Rules and Regulations Part 15 Subpart A and B

**TESTING LOCATION** : Japan Quality Assurance Organization  
SAFETY & EMC CENTER  
EMC Engineering Department Testing Division  
1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan

**TEST RESULTS** : **Passed**

**DATE OF TEST** : December 2, 2009

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



NVLAP LAB CODE 200189-0

A handwritten signature in black ink, reading "Eiichi Saegusa".

Eiichi Saegusa  
Manager

Japan Quality Assurance Organization  
SAFETY & EMC CENTER  
EMC Engineering Dept. Testing Division  
1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan

- The measurement values stated in Test Report was made with traceable to National Institute of Advanced Industrial Science and Technology (AIST) of Japan and National Institute of Information and Communications Technology (NICT) of Japan.
- The applicable standard, testing condition and testing method which were used for the tests are based on the request of the applicant.
- The test results presented in this report relate only to the offered test sample.
- The contents of this test report cannot be used for the purposes, such as advertisement for consumers.
- This test report shall not be reproduced except in full without the written approval of JQA.

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**Definitions for Abbreviation and Symbols Used In This Test Report**

“EUT” means Equipment Under the Test.

“AE” means Associated Equipment.

“N/A” means that Not Applicable.

“N/T” means that Not Tested.

-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.

**Documentation****1 Test Regulation**

Applied Standard : CFR 47 FCC Rules and Regulations Part 15 Subpart A and B

Test Procedure : ANSI C63.4-2003.

**2 Test Location**

Japan Quality Assurance Organization  
SAFETY & EMC CENTER  
EMC Engineering Department Testing Division  
1-21-25, Kinuta, Setagaya-ku, Tokyo 157-8573, Japan

**3 Recognition of Test Laboratory**

Japan Quality Assurance Organization  
SAFETY & EMC CENTER  
EMC Engineering Dept. Testing Division  
is accredited under ISO/IEC 17025 by following accreditation bodies and the test facility of Testing Division is registered by the following bodies.

VLAC Code : VLAC-001-1 (Effective through : April 3, 2010)  
NVLAP Lab Code : 200189-0 (Effective through : June 30, 2010)  
VCCI Registration Number : R-002, R-003, C-002, C-966 (Effective through : April 3, 2010)  
FCC Registration Number : 349652 (Date of Listing : April 1, 2010)  
IC Registration Number : 2079A-1, 2079A-2 (Effective through : October 22, 2010)  
Accredited as conformity assessment body for Japan electrical appliances and material law by METI. (Effective through : February 22, 2010)

**4 Description of the Equipment Under Test**

- |    |  |   |   |
|----|--|---|---|
| 1  | Manufacturer                                       | : | Tokai Rika Co., Ltd.<br>260, Toyota 3-chome, Oguchi-cho, Niwa-gun,<br>Aichi-ken 480-0195, Japan |
| 2  | Products   | : | Receiver(Super Heterodyne)  |
| 3  | Trade Name   | : | Tokai Rika  |
| 4  | Model No.  | : | B23RG   |
| 5  | Serial No.   | : | None  |
| 6  | FCC ID   | : | MOZB23RG  |
| 7  | Product Type                                       | : | Pre-Production  |
| 8  | Date of Manufacture                                | : | None  |
| 9  | Power Rating                                       | : | 12.0 VDC  |
| 10 | EUT Grounding                                      | : | None  |
| 11 | Category   | : | All other receivers subject to part 15  |
| 12 | Received Date of EUT                               | : | December 1, 2009  |
| 13 | EUT Authorization                                  | : | Certification   |
| 14 | Fundamental Frequency<br>Generated/used in the EUT | : | 37.68125 MHz  |
| 15 | Tuning Range                                       | : | 312.15 MHz  |
| 16 | Tuning Frequency<br>(Local Oscillator)             | : | 312.15 MHz<br>(301.45 MHz)  |
| 17 | Intermediate Frequency                             | : | 10.7 MHz  |
| 18 | EUT Highest Frequency<br>Used/Generated            | : | 312.15 MHz (the part of Fundamental Frequency)<br>301.45 MHz (the part of Local Oscillator)     |

**5 Test Condition**

**5.1 Receiver**

**5.1.1 AC Powerline Conducted Emission**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

Test site & instruments :

Type	Number of test site & instruments (Refer to Appendix C)
Test Site	--
Test Receiver	--
Spectrum Analyzer	--
Cable	--
AMN(for EUT)	--
AMN(for Peripheral)	--
Pulse-Limiter	--
Termination	--
Thermo-Hygrometer	--

**5.1.2 Radiated Emission**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

Test site & instruments (for 30 MHz - 1000 MHz) :

Type	Number of test site & instruments (Refer to Appendix C)
Test Site	1
Test Receiver	13
Spectrum Analyzer	--
Antenna	167      168
Cable	38
Thermo-Hygrometer	204

Test site & instruments (for above 1 GHz) :

Type	Number of test site & instruments (Refer to Appendix C)
Test Site	--
Test Receiver	--
Spectrum Analyzer	--
Antenna	--
Cable	--
RF Amplifier	--
Band Reject Filter	--
High Pass Filter	--
Thermo-Hygrometer	--

**5.1.3 Antenna-Conducted Power**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

Test site & instruments :

Type	Number of test site & instruments (Refer to Appendix C)
Test Site	--
Test Receiver	--
Spectrum Analyzer	--
Antenna	--
Cable	--
Matching Pad	--
Attenuation Pad	--
Combining Network	--
Signal Generator	--
Thermo-Hygrometer	--

**5.2 Digital Device**

**5.2.1 AC Powerline Conducted Emission**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

Test site & instruments :

Type	Number of test site & instruments (Refer to Appendix C)
Test Site	--
Test Receiver	--
Spectrum Analyzer	--
Cable	--
AMN(for EUT)	--
AMN(for Peripheral)	--
Pulse-Limiter	--
Termination	--
Thermo-Hygrometer	--

**5.2.2. Radiated Emission**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

Test site & instruments (for 30 MHz - 1000 MHz) :

Type	Number of test site & instruments (Refer to Appendix C)
Test Site	--
Test Receiver	-- --
Spectrum Analyzer	--
Antenna	-- --
Cable	--
Thermo-Hygrometer	--

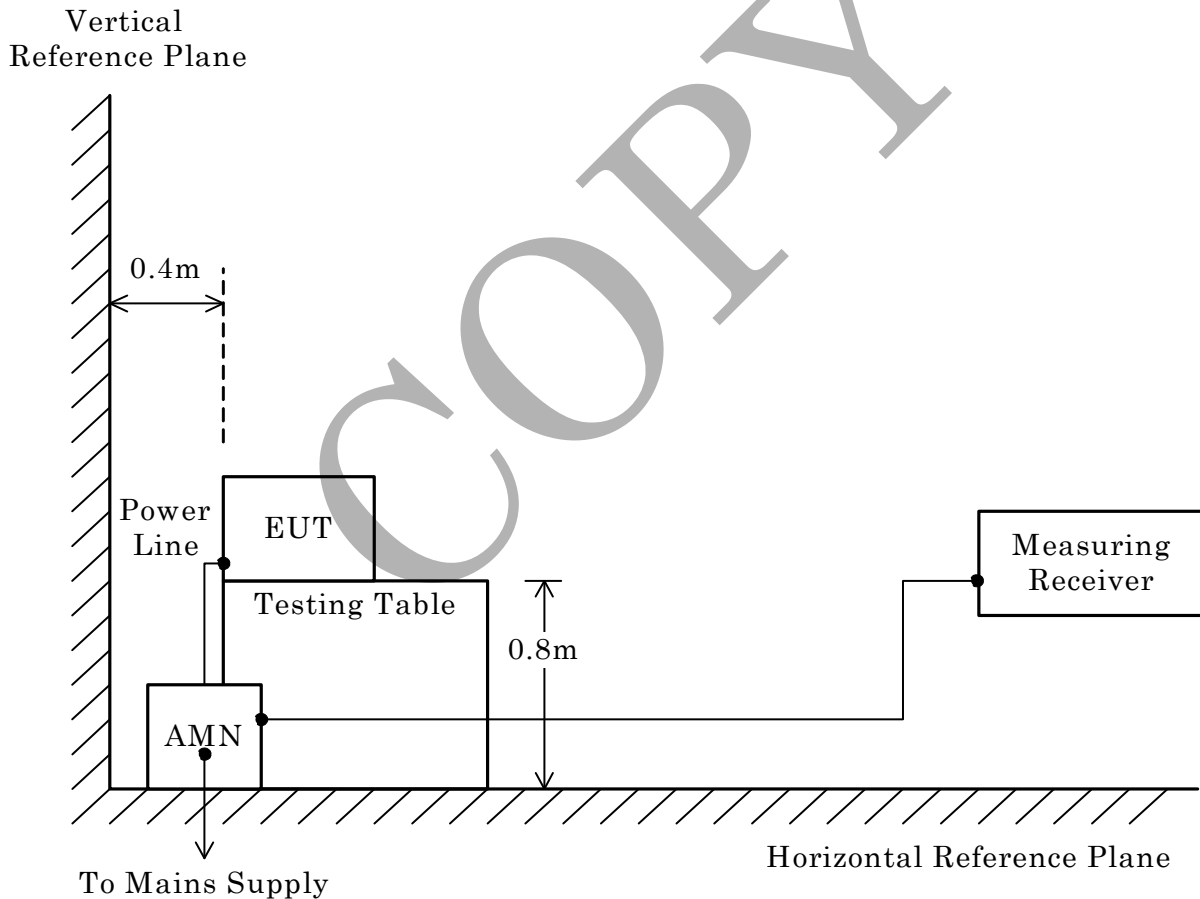
Test site & instruments (for above 1 GHz) :

Type	Number of test site & instruments (Refer to Appendix C)
Test Site	--
Test Receiver	--
Spectrum Analyzer	--
Antenna	--
Cable	--
RF Amplifier	--
Band Reject Filter	--
High Pass Filter	--
Thermo-Hygrometer	--

**6 Preliminary Test and Test Setup**  
**6.1 AC Powerline Conducted Emission**

The preliminary conducted disturbance at the mains ports measurements were carried out. The preliminary conducted disturbance at the mains ports were performed using the spectrum analyzer to observe the emissions characteristics of the EUT. The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. This configurations was used for final conducted disturbance at the mains ports measurements.

- Side View -



\* AMN : Artificial Mains Network

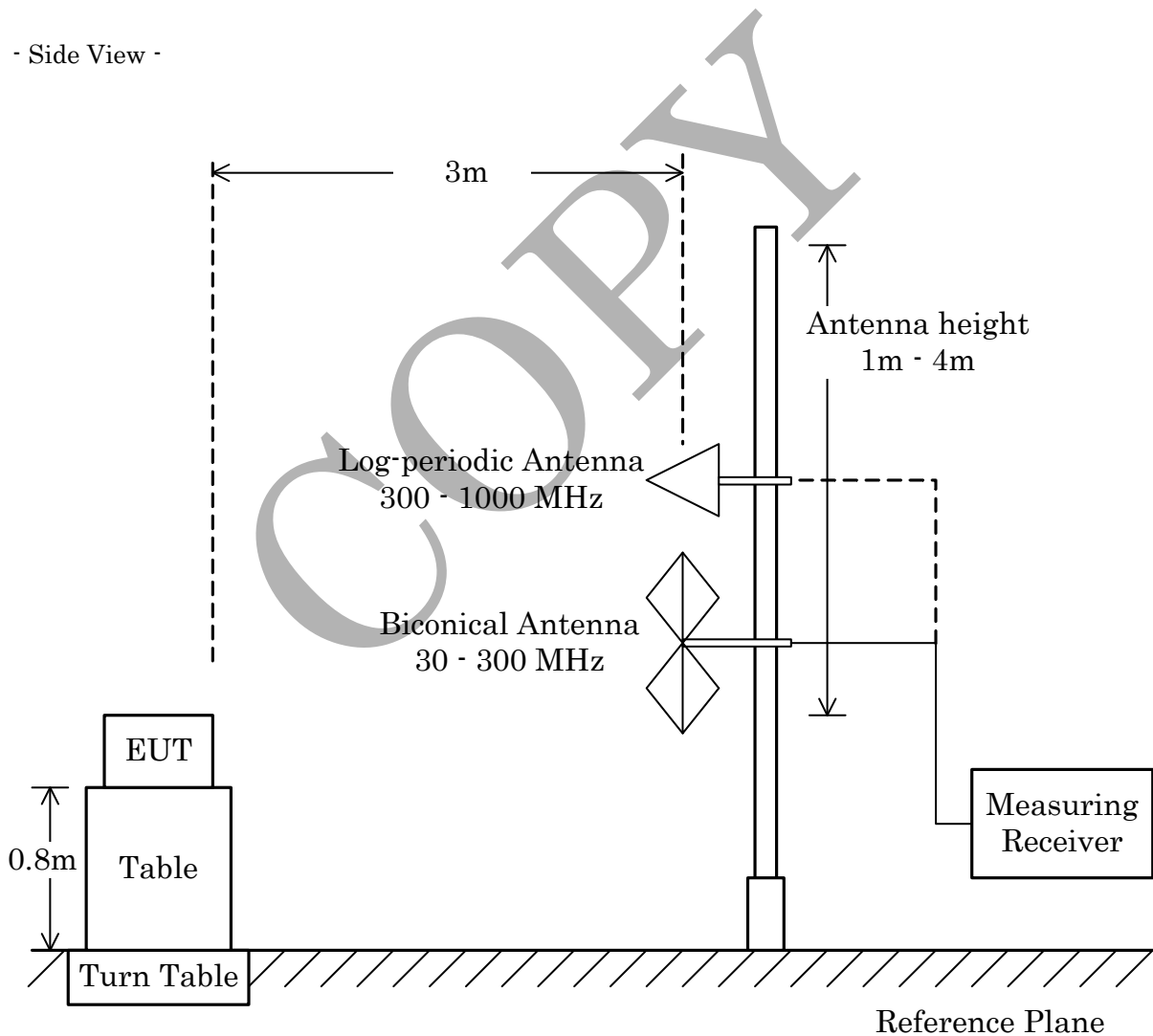


**6.2 Radiated Emission**

**6.2.1 Radiated Emission 30 MHz - 1000 MHz**

The preliminary radiated disturbance measurements were carried out.  
 The preliminary radiated disturbance 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.  
 This configurations was used for the final radiated disturbance measurements.

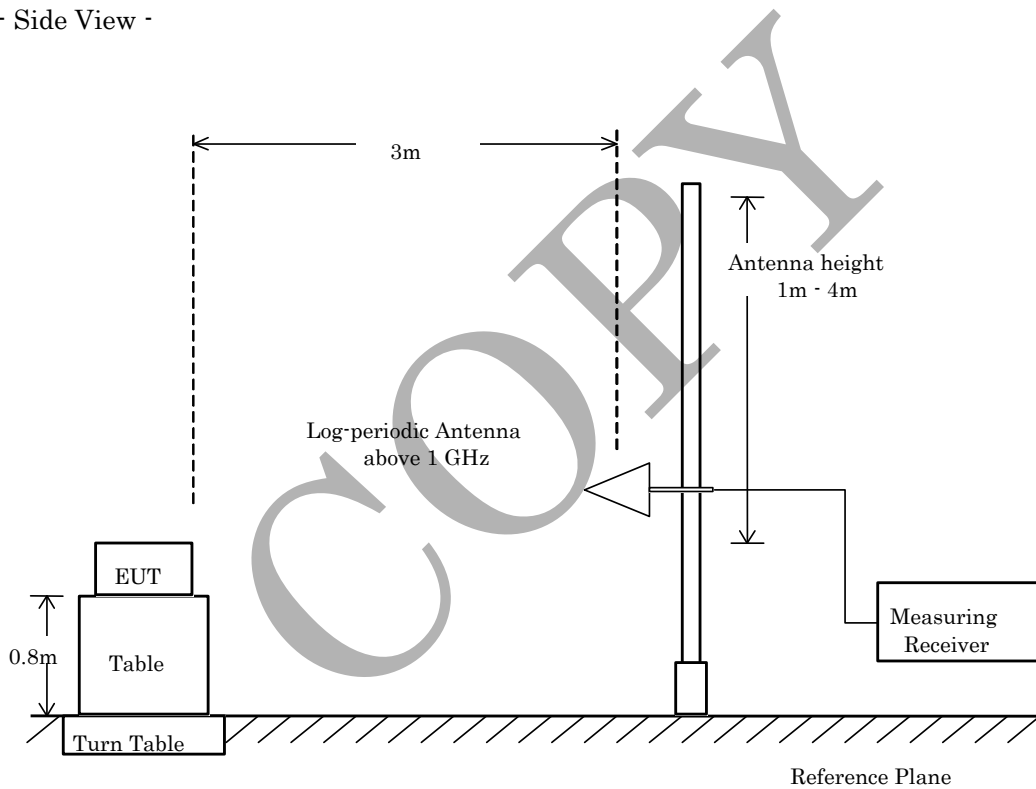
- Side View -



**6.2.2 Radiated Emission above 1 GHz**

The preliminary radiated emissions measurements were carried out.  
 The preliminary radiated emissions 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.  
 This configurations was used for the final radiated emissions measurements.

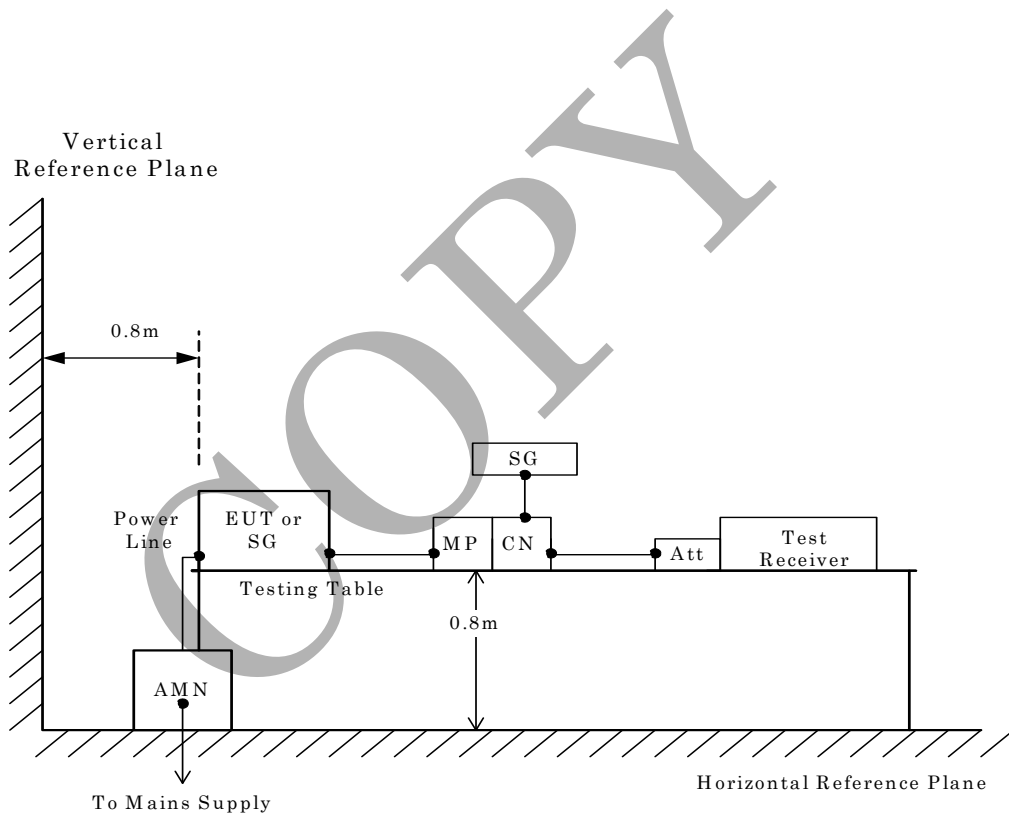
- Side View -



**6.3 Antenna-Conducted Power**

With the receiver tuned to one of the number of FM channels, antenna-conducted power was measured both the frequency and voltage present at the antenna input terminals over the frequency range. The measurement with the receiver tuned to another channel until the number of FM channel was repeated. Power on the receiver antenna terminals was the ratio of  $V^2/R$ , where V was the loss-corrected voltage measured at the antenna terminals, and R was the impedance of the measuring instrument.

— Side View —



- \* AMN : Artificial Mains Network
- \* MP : Matching Pad
- \* CN : Combining Network
- \* Att : Attenuation Pad
- \* SG : Signal Generator

**7 Equipment Under Test Modification**

- No modifications were conducted by JQA to achieve compliance to the limitations.  
 To achieve compliance to the limitations, the following changes were made by JQA during the compliance test.

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

Applicant : Not Applicable  
 Date : Not Applicable  
 Typed Name : Not Applicable  
 Position : Not Applicable

Signatory: Not Applicable

**8 Responsible Party****Responsible Party of Test Item (Product)**

Responsible Party :  Contact Person :	_____ Signatory
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**9 Deviation from Standard**

- No deviations from the standard described in clause 1.  
 The following deviations were employed from the standard described in clause 1.

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**10.1.3 Antenna-Conducted Power**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

-Passed -Failed -Not judged

Min. Limit Margin \_\_\_\_\_ dB at \_\_\_\_\_ MHz

Max. Limit Excess \_\_\_\_\_ dB at \_\_\_\_\_ MHz

Uncertainty of measurement results ± 2.1 dB(2σ)

Remarks : -  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**10.2 Digital Device****10.2.1 AC Powerline Conducted Emission**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

-Passed -Failed -Not judged

Min. Limit Margin (QP) \_\_\_\_\_ dB at \_\_\_\_\_ MHz

Min. Limit Margin (AVE) \_\_\_\_\_ dB at \_\_\_\_\_ MHz

Max. Limit Exceeding \_\_\_\_\_ dB at \_\_\_\_\_ MHz

Uncertainty of measurement results \_\_\_\_\_ ± 2.9 dB(2 $\sigma$ )

Remarks :

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**10.2.2 Radiated Emissions**

The requirements are -Applicable [-Tested -Not tested by applicant request.]  
-Not Applicable

-Passed -Failed -Not judged

Min. Limit Margin \_\_\_\_\_ dB at \_\_\_\_\_ MHz

Max. Limit Exceeding \_\_\_\_\_ dB at \_\_\_\_\_ MHz

Uncertainty of measurement results

30-300 MHz \_\_\_\_\_ ± 4.6 dB(2 $\sigma$ )

300-1000 MHz \_\_\_\_\_ ± 4.5 dB(2 $\sigma$ )

1-18 GHz \_\_\_\_\_ ± 5.0 dB(2 $\sigma$ )

18-40 GHz \_\_\_\_\_ ± 5.3 dB(2 $\sigma$ )

Remarks :

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**11 Summary****General Remarks :**

The EUT was tested according to the requirements of CFR 47 FCC Rules and Regulations Part 15 under the test configuration, as shown in clause 11 to 13.

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

Determining compliance with the limits in this report was based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

**Test Results :**

The "as received" sample;

- fulfill the test requirements of the regulation mentioned on clause 1.  
 doesn't fulfill the test requirements of the regulation mentioned on clause 1.

Reviewed by:



Kazuya Hayashi  
Deputy Manager  
SAFETY & EMC CENTER  
EMC Engineering Dept. Testing Division

Tested by:



Katsunori Miura  
Assistant Manager  
SAFETY & EMC CENTER  
EMC Engineering Dept. Testing Division



**12 Operating Condition**

Power Supply Voltage : 12.0 VDC(with TEST BOX)

The EUT was operated with the TEST BOX (Model: None)

Operation Mode :

The EUT is set with the test mode, the specification of the test mode is as following.

- Receiving condition

Used application to controlled :

The EUT was supplied the operating frequency by the match transmitter.

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**13 Test Configuration**

The equipment under test consists of :

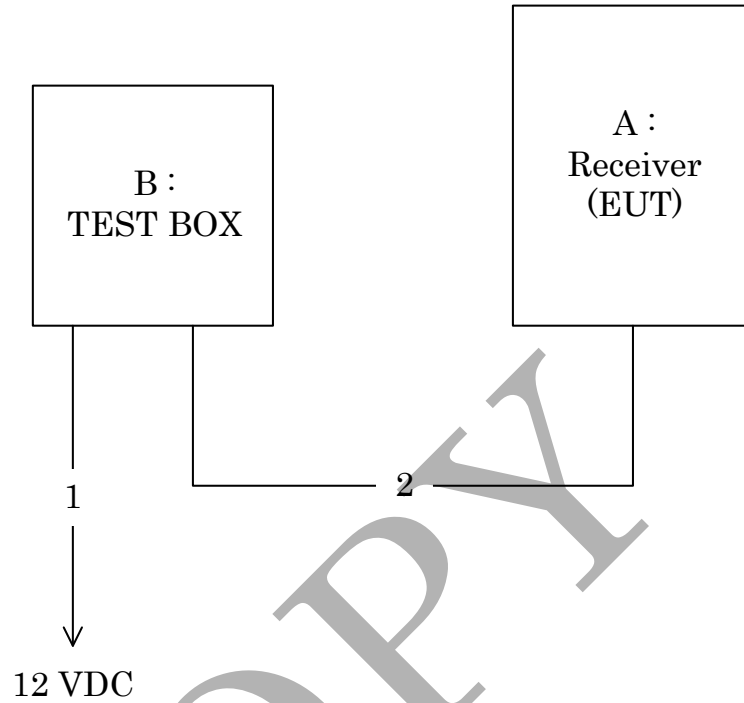
Sign	Item	Manufacturer	Model No.	Serial No.	FCC ID
A	Receiver	Tokai Rika Co., Ltd.	B23RG	None	MOZB23RG

The auxiliary equipment used for testing :

Sign	Item	Manufacturer	Model No.	Serial No.	FCC ID
B	TEST BOX	Tokai Rika Co., Ltd.	None	None	N/A

Type of Cable:

No.	Description	Identification (Manu. Etc.)	Connector Shielded	Cable Shielded	Ferrite Core	Length (m)
1	DC Cable(to TEST BOX)	--	No	No	No	0.30
2	DC Cable(to EUT)	--	No	No	No	1.95

**14 Equipment Under Test Arrangement (Drawings)****14.1 Receiver****14.2 Digital Device**

Not Applicable

**Appendix A: Test Data****A.1 Receiver****A.1.1 AC Powerline Conducted Emission**

Not Applicable

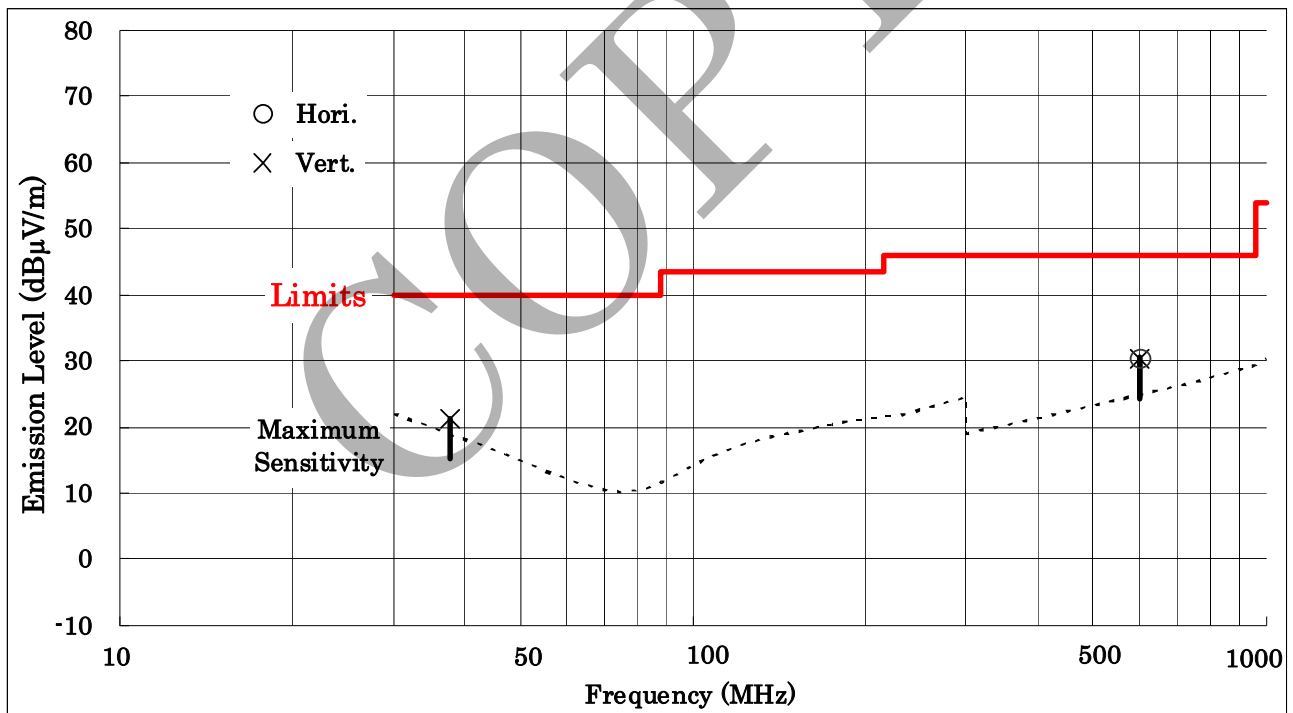
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## A.1.2 Radiated Emissions

Date : December 2, 2009  
 Temp. : 19 °C Humi. : 38 %

(1) for 30 MHz – 1000 MHz

Frequency (MHz)	Antenna Factor (dB/m)	Meter Reading (dB $\mu$ V)		Limits (dB $\mu$ V) Q.P	Emission Level (dB $\mu$ V/m)		Margin (dB)	
		Hori.	Vert.		Hori.	Vert.	Hori.	Vert.
37.67	19.3	< 0.0	1.9	40.0	< 19.3	21.2	> 20.7	18.8
100.00	14.2	< 0.0	< 0.0	43.5	< 14.2	< 14.2	> 29.3	> 29.3
120.00	17.2	< 0.0	< 0.0	43.5	< 17.2	< 17.2	> 26.3	> 26.3
150.00	19.2	< 0.0	< 0.0	43.5	< 19.2	< 19.2	> 24.3	> 24.3
200.00	21.3	< 0.0	< 0.0	43.5	< 21.3	< 21.3	> 22.2	> 22.2
300.00	24.6	< 0.0	< 0.0	46.0	< 24.6	< 24.6	> 21.4	> 21.4
500.00	23.5	< 0.0	< 0.0	46.0	< 23.5	< 23.5	> 22.5	> 22.5
602.88	25.2	5.3	5.2	46.0	30.5	30.4	15.5	15.6
1000.00	30.3	< 0.0	< 0.0	54.0	< 30.3	< 30.3	> 23.7	> 23.7



- Notes:
- 1) The testing location : Anechoic Chamber A Distance : 3 m
  - 2) The spectrum was checked from 30 MHz to 1000 MHz.
  - 3) Antenna factor includes the cable loss.
  - 4) Hori. : Horizontal polarization Vert. : Vertical polarization
  - 5) Q.P: Quasi-Peak Detector
  - 6) The symbol of "<" means "or less", ">" means "more than".
  - 7) A sample calculation was made at 37.67 MHz  
 (Antenna Factor) + (Meter Reading) = 19.3 + 1.9 = 21.2 dB $\mu$ V

(2) for above 1 GHz

Not Applicable

**A.1.3 Antenna-Conducted Power**

Not Applicable

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**A.2 Digital Device****A.2.1 AC Powerline Conducted Emissions**

Not Applicable

**A.2.2 Radiated Emissions**

Not Applicable

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**Appendix B : Test Arrangement (Photographs)****B.1 Receiver****B.1.1 AC Powerline Conducted Emission**

Not Applicable

COPY



**B.1.2 Radiated Emissions**



- X axis -



- Y axis -

Photograph present configuration with maximum emission



- Z axis -

Photograph present configuration with maximum emission

**B.1.3 Antenna-Conducted Power**

Not Applicable

COPY

**B.2 Digital Device****B.2.1 AC Powerline Conducted Emission**

Not Applicable

**B.2.2 Radiated Emissions**

Not Applicable

COPY

**Appendix C: Test Instruments**

30-Nov-2009

No	Type	Model	Manufacturer	Serial	ID	Last Cal.	Interval
<b>Test Facilities:</b>							
1	Anechoic Chamber A	-	TDK	-	800-01-502E0	Apr 2009	1 Year
2	Anechoic Chamber B	-	TDK	-	800-01-503E0	Apr 2009	1 Year
3	Shield Room A	-	TDK	-	800-01-501E0	-	-
4	Shield Room B	-	Ray Proof	-	800-01-010E0	-	-
5	Shield Room C	-	TDK	-	800-01-504E0	-	-
6	Shield Room D	-	Emerson	-	800-01-022E0	-	-
7	Shield Room E	-	TDK	-	800-01-505E0	-	-

**Measuring Instruments:**

10	Test Receiver	ESHS10	Rohde & Schwarz	835871/004	119-01-505E0	May 2009	1 Year
11	Test Receiver	ESVS10	Rohde & Schwarz	826148/002	119-03-504E0	Jun 2009	1 Year
12	Test Receiver	ESVS10	Rohde & Schwarz	832699/001	119-03-506E0	Sep 2009	1 Year
13	Test Receiver	ESI26	Rohde & Schwarz	100043	119-04-511E0	Oct 2009	1 Year
14	Spectrum Analyzer	R3182	Advantest	120600581	122-02-521E0	Mar 2009	1 Year
19	Spectrum Analyzer	R3132	Advantest	120500072	122-02-520E0	May 2009	1 Year
20	Spectrum Analyzer	R3132	Advantest	150400998	122-02-523E0	Jul 2009	1 Year
65	Power Meter	436A	Hewlett Packard	1725A01930	100-02-501E0	Apr 2009	1 Year
66	Power Sensor	8482A	Hewlett Packard	1551A01013	100-02-501E0	Apr 2009	1 Year
68	FM Linear Detector	MS61A	Anritsu	M77486	123-02-008E0	Oct 2009	1 Year
69	Level Meter	ML422C	Anritsu	M87571	114-02-501E0	Jun 2009	1 Year
70	Measuring Amplifier	2636	B & K	1614851	082-01-502E0	May 2009	1 Year
75	Frequency Counter	53131A	Hewlett Packard	3546A11807	102-02-075E0	May 2009	1 Year
83	FFT Analyzer	R9211C	Advantest	02020253	122-02-506E0	Jun 2009	1 Year
84	Noise Meter	MN-446	Meguro	53030478	082-01-144E0	Apr 2009	1 Year
163	Digital Oscilloscope	54502A	Hewlett Packard	2934A05573	121-02-502E0	May 2009	1 Year
165	Multimeter	VOAC7413	Iwatsu Electric	0267973	114-02-502E0	Apr 2009	1 Year
172	Test Receiver	ESCI	Rohde & Schwarz	100408	119-04-512E0	Oct 2009	1 Year
210	Peak Power Meter	ML2495A	Anritsu	0836023	100-02-507E0	Nov 2009	1 Year
211	Power Sensor	MA2491A	Anritsu	0811206	100-02-507E0	Nov 2009	1 Year
212	Power Sensor	MA2411B	Anritsu	0738312	100-02-507E0	Nov 2009	1 Year
230	Spectrum Analyzer	U3751	Advantest	150800116	122-02-003T	Feb 2009	1 Year
232	Digital Oscilloscope	TDS3052C	Tektronix, Inc.	C010708	121-02-504E0	Jun 2009	1 Year

**Antennas:**

21	Loop Antenna	HFH2-Z2	Rohde & Schwarz	881058/62	119-05-033E0	Jul 2009	1 Year
234	Dipole Antenna	KBA-511A	Kyoritsu	0-316-5	119-05-123E0	Nov 2009	2 Year
235	Dipole Antenna	KBA-611	Kyoritsu	0-317-3	119-05-124E0	Nov 2009	2 Year
27	Biconical Antenna	BBA9106	Schwarzbeck	-	119-05-078E0	Nov 2008	1 Year
28	Log-periodic Antenna	UHALP9107	Schwarzbeck	-	119-05-079E0	Nov 2008	1 Year
31	Horn Antenna	3115	EMC Test Systems	6442	119-05-514E0	Jan 2008	2 Year
32	Horn Antenna	3116	EMC Test Systems	2547	119-05-515E0	Jun 2009	2 Year
167	Biconical Antenna	BBA9106	Schwarzbeck	VHA91032325	119-05-520E0	Jun 2009	1 Year
168	Log-periodic Antenna	UHALP9108A	Schwarzbeck	0666	119-05-521E0	Jun 2009	1 Year
169	Biconical Antenna	BBA9106	Schwarzbeck	VHA91032399	119-05-522E0	Jun 2009	1 Year
170	Log-periodic Antenna	UHALP9108A	Schwarzbeck	0724	119-05-523E0	Jun 2009	1 Year
198	Log-periodic Antenna	HL050	Rohde & Schwarz	100251	119-05-524E0	Sep 2009	1 Year
225	Loop Sensor/Radiating Loop	F55103-2-0.13M	FCC	03018	119-05-516E0	-	-
236	Horn Antenna	3160-03	EMC Test Systems	00078687	119-05-525E0	Oct 2008	2 Year
237	Horn Antenna	3160-08	EMC Test Systems	00026081	119-05-517E0	Jan 2008	2 Year
238	Horn Antenna	3160-09	EMC Test Systems	00023883	119-05-518E0	May 2009	2 Year
239	Horn Antenna	3160-10	EMC Test Systems	00026026	119-05-519E0	Jul 2009	2 Year

30-Nov-2009

No	Type	Model	Manufacturer	Serial	ID	Last Cal.	Interval
<b><u>Cables:</u></b>							
38	RF Cable	5D-2W	Fujikura	-	155-21-001E0	Feb 2009	1 Year
39	RF Cable	5D-2W	Fujikura	-	155-21-002E0	Feb 2009	1 Year
40	RF Cable	3D-2W	Fujikura	-	155-21-005E0	Apr 2009	1 Year
41	RF Cable	3D-2W	Fujikura	-	155-21-006E0	Apr 2009	1 Year
42	RF Cable	3D-2W	Fujikura	-	155-21-007E0	Apr 2009	1 Year
43	RF Cable	RG213/U	Rohde & Schwarz	-	155-21-010E0	Apr 2009	1 Year
44	RF Cable(10m)	S 04272B	Suhner	-	155-21-011E0	May 2009	1 Year
45	RF Cable(1.5m 18GHz)	S 04272B	Suhner	-	155-21-012E0	May 2009	1 Year
46	RF Cable(1m 18GHz)	SUCOFLEX10	Suhner	-	155-21-013E0	May 2009	1 Year
47	RF Cable(1m N)	S 04272B	Suhner	-	155-21-015E0	Jun 2009	1 Year
48	RF Cable(1m 26GHz)	SUCOFLEX 104E	Suhner	14543/4E	155-21-016E0	Dec 2008	1 Year
49	RF Cable(4m 26GHz)	SUCOFLEX10	Suhner	190630	155-21-017E0	Dec 2008	1 Year
50	RF Cable(10m)	F130-S1S1-394	MEGA PHASE	10510	155-21-018E0	Dec 2008	1 Year
51	RF Cable(5m)	3D-2W	Fujikura	-	155-21-009E0	Apr 2009	1 Year
52	RF Cable(7m)	RG223/U	Suhner	-	155-21-021E0	May 2009	1 Year
195	RF Cable(10m)	F130-S1S1-394	MEGA PHASE	20051	155-21-020E0	Apr 2009	1 Year
240	RF Cable(3m 40GHz)	KPS-1501- 1181-KPS	Insulated Wire Inc.	11292001	155-21-019E0	Jan 2009	1 Year
241	RF Cable(6m 40GHz)	SUCOFLEX 102E	Suhner	6257/2E	155-21-024E0	Oct 2009	1 Year
<b><u>Networks:</u></b>							
33	LISN	KNW-407	Kyoritsu	8-833-6	149-04-052E0	Nov 2009	1 Year
34	LISN	KNW-407	Kyoritsu	8-855-2	149-04-055E0	May 2009	1 Year
35	LISN	KNW-407	Kyoritsu	8-1130-6	149-04-062E0	May 2009	1 Year
36	LISN	KNW-242C	Kyoritsu	8-837-13	149-04-054E0	Apr 2009	1 Year
37	Absorbing Clamp	MDS21	Luthi	03293	119-06-506E0	Aug 2009	1 Year
164	LISN	KNW-403D	Kyoritsu	8-1474-3	149-04-059E0	Apr 2009	1 Year
173	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	-	156-01-501E0	Apr 2009	1 Year
174	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	-	156-01-502E0	Apr 2009	1 Year
175	Pulse Limiter	ESH3-Z2	Rohde & Schwarz	-	156-01-503E0	Apr 2009	1 Year
194	High Impedance Probe	HP-2	JQA	001	149-06-503E0	Oct 2009	1 Year
<b><u>Amplifiers:</u></b>							
53	AF Amplifier	P-500L	Accuphase	BOY806	127-01-501E0	Feb 2009	1 Year
54	RF Amplifier	WJ-6882-814	Watkins-Johnson	0414	127-04-017E0	Jun 2009	1 Year
55	RF Amplifier	WJ-5315-556	Watkins-Johnson	106	127-04-006E0	Jun 2009	1 Year
56	RF Amplifier	WJ-5320-307	Watkins-Johnson	645	127-04-005E0	Jun 2009	1 Year
57	RF Amplifier	JS4-00102600- 28-5A	MITEQ	669167	127-04-502E0	Apr 2009	1 Year
226	Differential Amplifier	5303	NF	155726- 5305046	127-01-502E0	Apr 2009	1 Year



30-Nov-2009

No	Type	Model	Manufacturer	Serial	ID	Last Cal.	Interval
<b>Generators:</b>							
58	Function Generator	3325B	Hewlett Packard	2847A03284	118-08-124E0	Jul 2009	1 Year
59	Function Generator	VP-7422A	Matsushita Communication	050351E122	118-08-503E0	Jul 2009	1 Year
60	Signal Generator	8664A	Hewlett Packard	3035A00140	118-03-014E0	May 2009	1 Year
61	Signal Generator	8664A	Hewlett Packard	3438A00756	118-04-502E0	May 2009	1 Year
62	Signal Generator	6061A	Gigatronics	5130593	118-04-024E0	Mar 2009	1 Year
171	Signal Generator	SML03	Rohde & Schwarz	102651	118-04-509E0	Feb 2009	1 Year
222	Signal Generator	8673D	Hewlett Packard	2938A00988	118-04-015E0	Jul 2009	2 Year
<b>Others:</b>							
63	Termination(50)	-	Suhner	-	154-06-501E0	Jan 2009	1 Year
64	Termination(50)	-	Suhner	-	154-06-502E0	Jan 2009	1 Year
71	Microphone	4134	B & K	1253497	147-01-502E0	May 2009	1 Year
72	Preamplifier	2639	B & K	1268763	127-01-504E0	-	-
73	Pistonphone	4220	B & K	1165008	147-02-501E0	Mar 2009	1 Year
74	Artificial Mouth	4227	B & K	1274869	-	-	-
76	Oven	-	Ohnishi	-	023-02-018E0	-	-
77	DC Power Supply	6628A	Hewlett Packard	3224A00284	072-05-503E0	Jun 2009	1 Year
78	Band RejectFilter	BRM12294	Micro-tronics	003	149-01-501E0	Jan 2009	1 Year
79	High Pass Filter	F-100-4000-5-R	RLC Electronics	0149	149-01-502E0	Feb 2009	1 Year
80	Attenuator	43KC-10	Anritsu	-	148-03-506E0	Feb 2009	1 Year
81	Attenuator	43KC-20	Anritsu	-	148-03-507E0	Feb 2009	1 Year
82	Attenuator	355D	Hewlett Packard	219-10782	148-03-065E0	Apr 2009	1 Year
85	RF Detector	75KC-50	Anritsu	305002	100-02-506E0	Jul 2009	1 Year
200	Artificial Hand	AH-1	ES Factory	001	155-07-561E0	Jul 2009	1 Year
201	Barometer	TYPE6	Yanagi	16076	209-02-014E0	Feb 2008	2 Year
202	Thermo-Hygrometer	-	Empex	-	141-01-504E0	Mar 2008	2 Year
203	Thermo-Hygrometer	EX-2727	Empex	-	141-01-505E0	Mar 2008	2 Year
204	Thermo-Hygrometer	EX-2727	Empex	-	141-01-506E0	Mar 2008	2 Year
205	Thermo-Hygrometer	EX-2727	Empex	-	141-01-507E0	Mar 2008	2 Year
206	Low Pass Filter	LPM13323	Micro-tronics	001	149-01-505E0	Jul 2009	1 Year
207	High Pass Filter	HPM13321	Micro-tronics	001	149-01-506E0	Jul 2009	1 Year
208	High Pass Filter	HPM13322	Micro-tronics	001	149-01-507E0	Jul 2009	1 Year
242	Power Divider	1575	Aeroflex Weischel	1153	086-02-501E0	Oct 2009	1 Year
243	Power Divider	1575	Aeroflex Weischel	1157	086-02-502E0	Oct 2009	1 Year
244	Power Divider	1575	Aeroflex Weischel	1161	086-02-503E0	Oct 2009	1 Year