JAPAN QUALITY ASSURANCE ORGANIZATION
21-25, KINUTA 1-CHOME, SETAGAYA-KU, TOKYO 157-8573 JAPAN
PHONE (03) 3416-0111, TELEX 242-2531 JQA J FAX (03) 3416-9691

EMI TEST REPORT

JQA APPLICATION NO.	: 80-90449
Model No.	: KBRGSTU10
Type of Equipment	: Keyless Entry System (Receiver)
Regulations Applied	: CFR 47 FCC Rules and Regulations Part 15
FCC ID	: KBRGSTU10
Applicant	: KANSEI Corporation
Address	: 2-1910 Nisshin-cho, Omiya, Saitama 331-0044, Japan
Manufacture	: KANSEI Corporation
Address	: 2-1910 Nisshin-cho, Omiya, Saitama 331-0044, Japan
Final Judgment	: **Passed**

TEST RESULTS IN THIS REPORT are obtained in use of equipment that is traceable to Electrotechnical Lab. of MITI Japan and Communications Research Lab. of MPT Japan.

The test results only respond to the tested sample. It is not allowed to copy this report even partly without the allowance of the JQA EMC Engineering Dept. Testing Div.

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1 DOCUMENTATION

1.1 TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A and B (June 23, 1989) Superregenerative Receiver

Test procedure :

AC power line conducted emission and radiated emission tests were performed according to the procedures in ANSI C63.4-1992.

1.2 GENERAL INFORMATION

1.2.1 Test facility :

1) Test Facility located at EMC Engineering Dept. Testing Div. : No.2 and 3 Anechoic Chambers(3 meters Site)
FCC filing No. : 31040/SIT 1300F2

2) EMC Engineering Dept. Testing Div. 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 : 200189-0 (Effective through : June 30, 2000)

1.2.2 Description of the Equipment Under Test (EUT) :

1)	Type of Equipment	: Keyless Entry System(Receiver)
2)	Product Type	: Pre-Production
3)	Category	: Low Power Communication Device Receiver
4)	EUT Authorization	: Certification
5)	FCC ID	: KBRGSTU10
6)	Trade Name	: NISSAN
7)	Model No.	: KBRGSTU10
8)	Tuning Frequency Range	: 315 MHz
9)	Highest Frequency Used in the EUT	: 304.3
10)	Serial No.	: None
11)	Date of Manufacture	: -
12)	Power Rating	: DC 12V
13)	EUT Grounding	: None

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 :

Safety Testing Center EMC Engineering Dept. Testing Div.
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

___ - Shielded Enclosure
___ - Anechoic Chamber No. 2 (portable Type)

Used test instruments :

	Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
___ -	Field Strength Meter	ESH-2	Rohde & Schwarz	880370/016	May 1999	1 Year
___ -	Field Strength Meter	ESH-3	Rohde & Schwarz	881460/016	May 1999	1 Year
___ -	Field Strength Meter	ESH-3	Rohde & Schwarz	881460/030	Nov 1999	1 Year
___ -	LISN	KNW-407	Kyoritsu Electrical	8-833-6	Apr. 1999	1 Year
___ -	LISN	KNW-407	Kyoritsu Electrical	8-855-2	Apr. 1999	1 Year
___ -	LISN	KNW-407	Kyoritsu Electrical	8-757-1	Apr. 1999	1 Year
___ -	RF Cable	3D-2W	Fujikura	155-21-005	Apr. 1999	1 Year
___ -	RF Cable	3D-2W	Fujikura	155-21-006	Apr. 1999	1 Year

1.3.2 The measurement of the Radiated Emission(30 MHz – 1000 MHz)

_x_ - was performed in the following test site.
___ - was not applicable.

Test location :

Safety Testing Center EMC Engineering Dept. Testing Div.
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

_x_ - Anechoic Chamber No. 2 (3 meters)
___ - Anechoic Chamber No. 3 (3 meters)

Validation of Site Attenuation :

1) Last Confirmed Date :March, 1999
2) Interval :1 year

Used test instruments :

	Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
___	Field Strength Meter	ESV	Rohde & Schwarz	872148/039	May 1999	1 Year
___	Field Strength Meter	ESVP	Rohde & Schwarz	879783/030	May 1999	1 Year
_x_	Field Strength Meter	ESVP	Rohde & Schwarz	881478/004	May 1999	1 Year
___	Field Strength Meter	ESVP	Rohde & Schwarz	881478/005	May 1999	1 Year
___	Antenna	KBA-511A	Kyoritsu Electrical	0-201-13	Nov. 1998	1 Year
_x_	Antenna	KBA-511A	Kyoritsu Electrical	0-170-1	Nov. 1998	1 Year
___	Antenna	KBA-611	Kyoritsu Electrical	0-210-5	Nov. 1998	1 Year
_x_	Antenna	KBA-611	Kyoritsu Electrical	0-147-14	Nov. 1998	1 Year
_x_	RF Cable	5D-2W	Fujikura	155-21-001	Feb. 1999	1 Year
___	RF Cable	5D-2W	Fujikura	155-21-002	Feb. 1999	1 Year

1.3.3 The measurement of the Radiated Emission(Above 1000 MHz)

___ - was performed in the following test site.
_x_ - was not applicable.

Test location :

Safety Testing Center EMC Engineering Dept. Testing Div.
21-25, Kinuta 1-chome, Setagaya-ku, Tokyo 157-8573, Japan

___ - No. 2 site (3 meters)
___ - No. 3 site (3 meters)

Validation of Site Attenuation :

1) Last Confirmed Date :March, 1999
2) Interval :1 year

Used test instruments :

	Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
___ -	Spectrum Analyzer	8566B	Hewlett Packard	2140A01091	Apr. 1999	1 Year
___ -	Spectrum Analyzer	8566B	Hewlett Packard	2747A05855	May 1999	1 Year
___ -	Log-Periodic Antenna	HL 025	Rohde & Schwarz	340182/015	Nov. 1998	1 Year
___ -	RF Cable	S 04272B	Suhner	155-21-011	May 1999	1 Year

1.4 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 :

1.5 TEST RESULTS / UNCERTAINTY

AC Power Line Conducted Emission ___ **- Applicable** _x_ **- NOT Applicable**

The requirements are ___ **- PASSED** ___ **- NOT PASSED**

Min. Limit Margin		dB at	MHz
Max. Limit Exceeding		dB at	MHz
Uncertainty of Measurement Results	+ 2.3 dB		- 2.3 dB

Remarks :

Radiated Emission [§15.109(a)] _x_ **- Applicable** ___ **- NOT Applicable**

The requirements are _x_ **- PASSED** ___ **- NOT PASSED**

Min. Limit Margin	greater than 13.6 dB	at	912.900 MHz
Max. Limit Exceeding		dB at	MHz
Uncertainty of Measurement Results	+ 3.2 dB		- 3.2 dB

Remarks:

1.6 SUMMARY

General Remarks :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and B (June 23, 1989) 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 : October 7, 1999

End of testing : October 7, 1999

- JAPAN QUALITY ASSURANCE ORGANIZATION - Signatories:

Masaaki Takahashi
Manager
JQA EMC Engineering Dept.

Shigeru Osawa
Assistant Manager
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.	FCC ID	Serial No.
A	Keyless Entry System (Receiver)	KANSEI Corporation	KBRGSTU10	KBRGSTU10	-

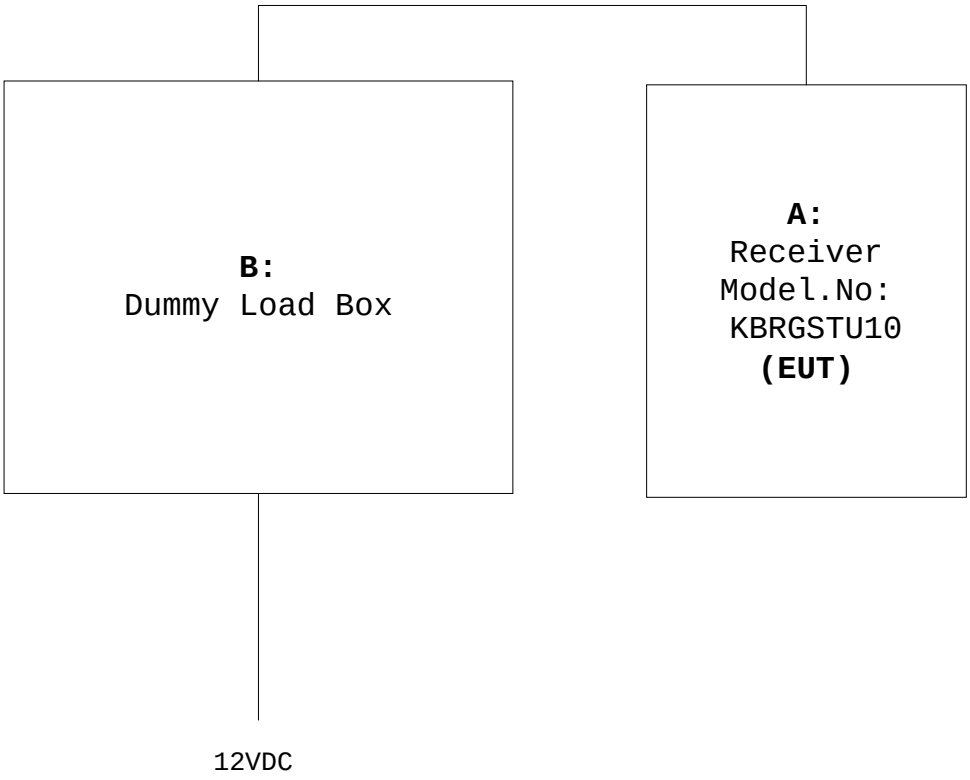
The measurements was carried out with the following supported connected :

Symbol	Item	Manufacturer	Model No.	Serial No.
B	Dummy Load Box	KANSEI Corporation	-	-

1.7.2 Operating condition

Power supply Voltage : 12 VDC
The tests have been carried out under the receiving condition.

1.8 EUT ARRANGEMENT (DRAWINGS)



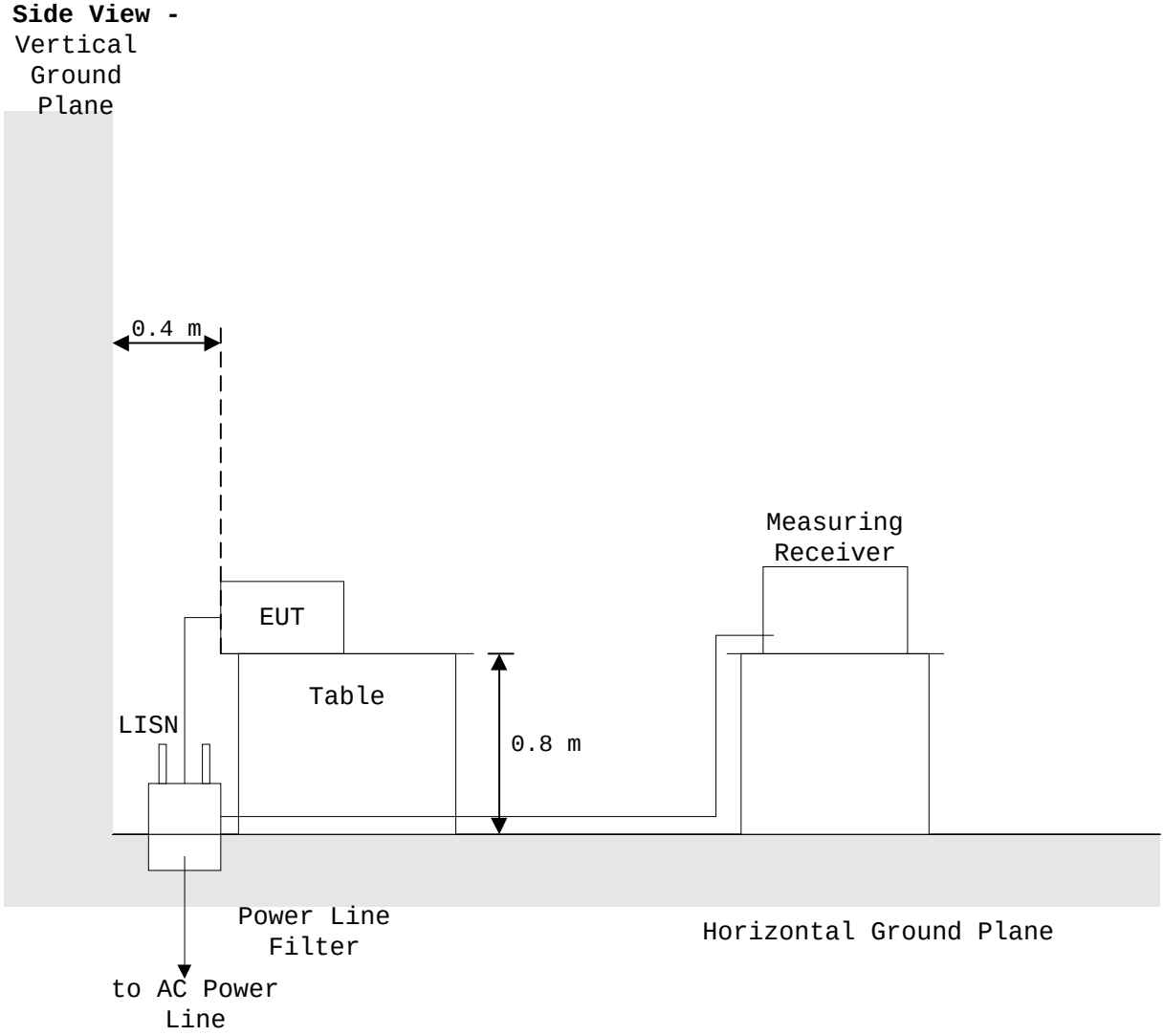
1.9 PRELIMINARY TEST AND TEST-SETUP (DRAWINGS)

1.9.1 AC Power Line Conducted Emission (450 kHz – 30 MHz) :

According to description of ANSI C63.4-1992 sec.7.2.3, 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 -

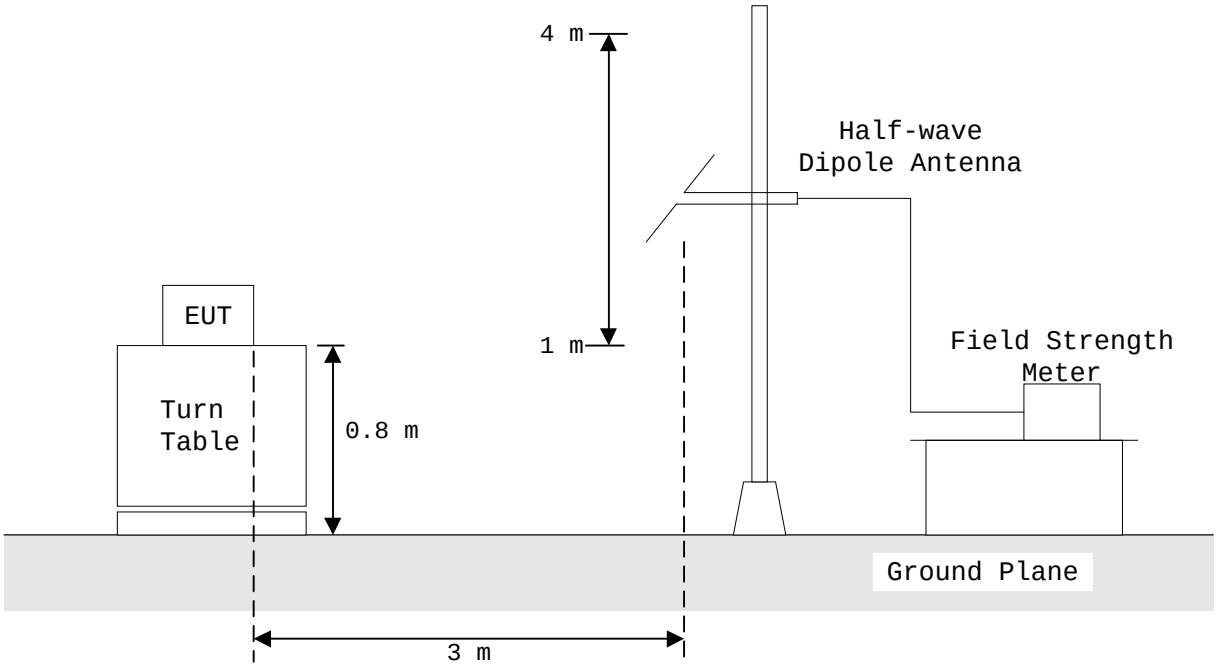


1.9.2 Radiated Emission (30 MHz – 1000 MHz) :

According to description of ANSI C63.4-1992 sec.8.3.1.1, 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 -

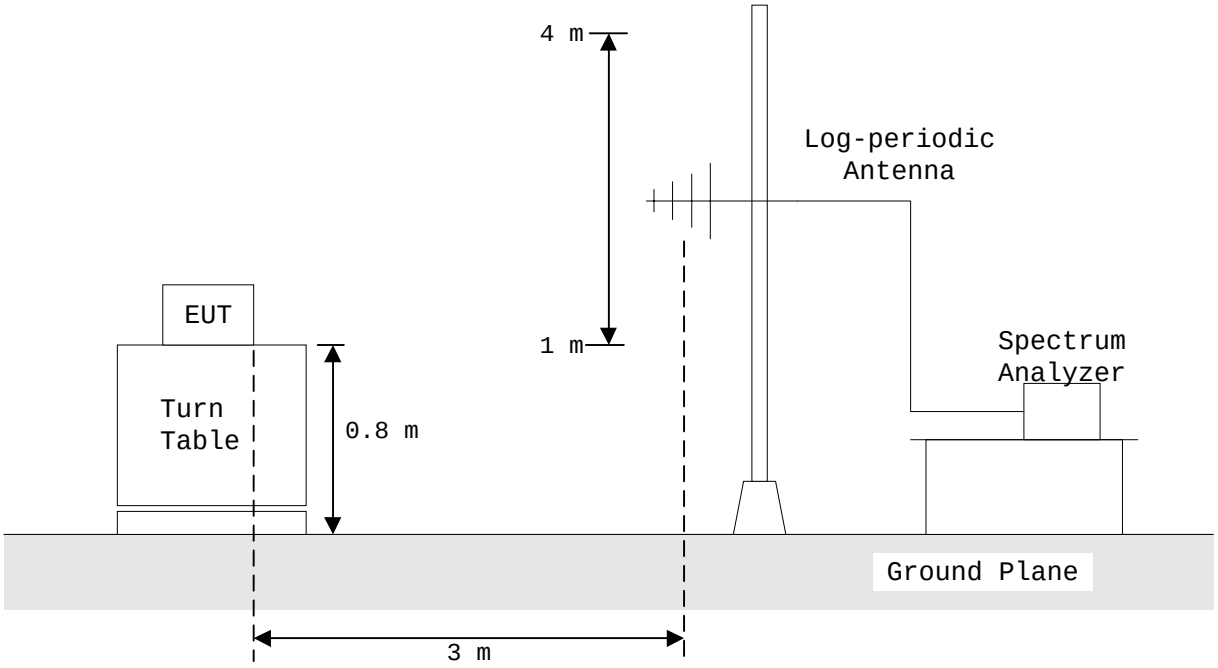


1.9.3 Radiated Emission (Above 1 GHz) :

According to description of ANSI C63.4-1992 sec.8.3.1.1, 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

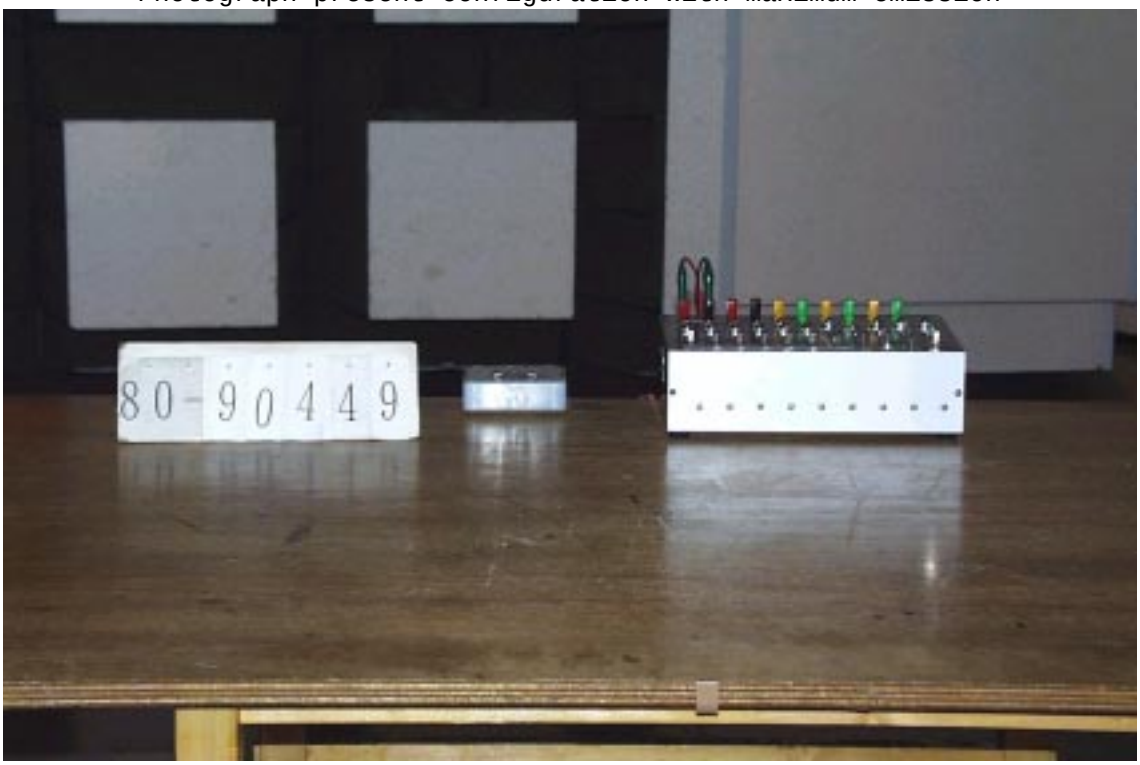
- Side View -

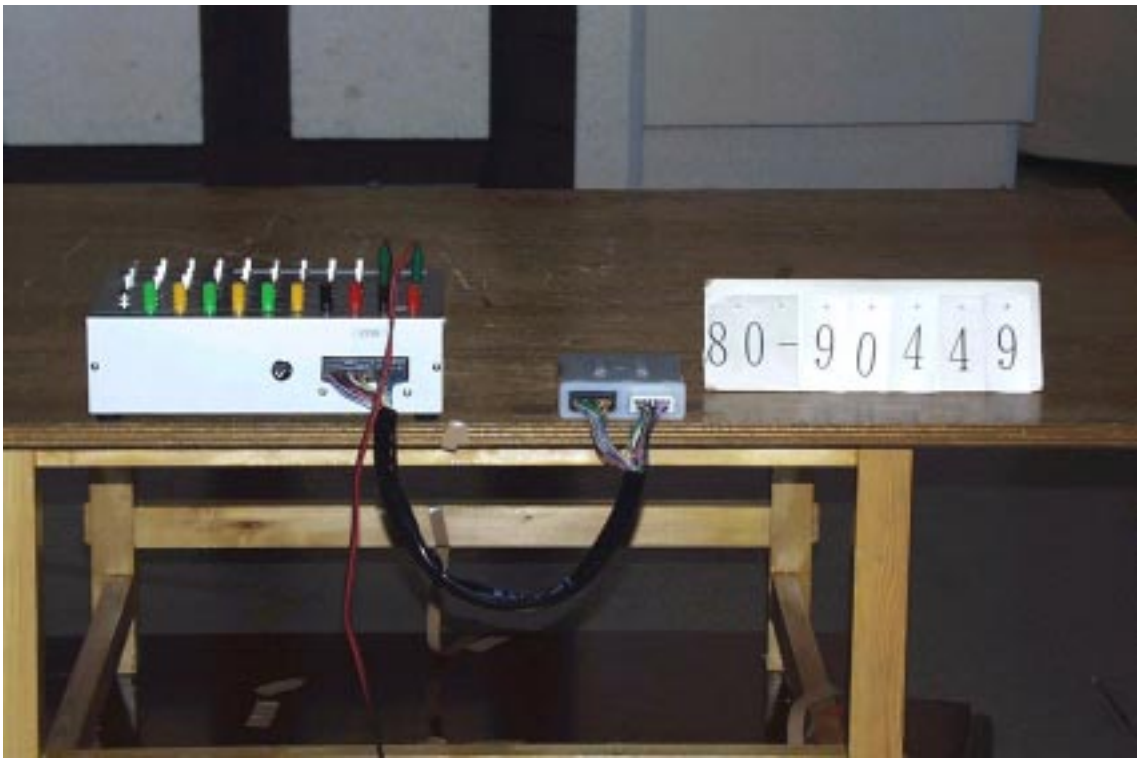


1.10 TEST ARRANGEMENT (PHOTOGRAPHS)

PHOTOGRAPHS OF EUT CONFIGURATION FOR RADIATED EMISSIONS MEASUREMENT

Photograph present configuration with maximum emission





TEST DATA

2.2 Radiated Emissions Measurement(30 MHz – 1000 MHz)

Date : October 7, 1999
Temp.: 23 °C Humi.: 63 %

Tuning Frequency : 315 MHz
Distance of Measurement : 3.0 meters

	Antenna	Meter Reading			Field Strength at 3 m		Margins	
Frequency	Factor	Horiz.	Vert.	Limits	Horiz.	Vert.	Horiz.	Vert.
(MHz)	(dB/m)	(dBμV)	(dBμV)	(dBμV/m)	(dBμV/m)	(dBμV/m)	(dB)	(dB)
30.060	-1.0	4.8	16.8	40.0	3.8	15.8	36.2	24.2
304.300	20.5	< 0.0	< 0.0	46.0	< 20.5	< 20.5	> 25.5	> 25.5
608.600	27.4	< 0.0	< 0.0	46.0	< 27.4	< 27.4	> 18.6	> 18.6
912.900	32.4	< 0.0	< 0.0	46.0	< 32.4	< 32.4	> 13.6	> 13.6

Note: 1. The spectrum was checked from 30 MHz to 1000 MHz.
All emissions not listed were found to be more than 20 dB below the limits.

2. The symbol of “<” means “or less”.

3. The cable loss was included in the antenna factor.

4. Sample calculation :
at 30.060 MHz
Af + Mr = -1.0 + 16.8 = 15.8 dBμV/m
Where,
Af = Antenna Factor including the cable loss.
Mr = Meter Reading

5. Measuring Instrument Setting:
Detector function : CISPR quasi-peak
IF Bandwidth : 120 kHz

Tested by : Shigeru Osawa
Shigeru Osawa
Testing Engineer

Radiated Spurious Emissions

FCC ID : KBRGSTU10
Tuning Frequency : 315 MHz
Test Condition :