



JAPAN QUALITY ASSURANCE ORGANIZATION
2096, OHHATA, TSURU-SHI, YAMANASHI 402-0045, JAPAN
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JQA APPLICATION NO.: 441-00225

Issue Date : August 8, 2000

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FCC ID: BGBX1T143IMB12202

EMI TEST REPORT

JQA APPLICATION NO. : 441-00225

Model No. : IMB122-02

Type of Equipment : Immobilizer

Regulations Applied : CFR 47 FCC Rules and Regulations Part 15

Applicant : MITSUBISHI ELECTRIC CORPORATION HIMEJI WORKS

Address : 840 Chiyoda-machi, Himeji-shi
Hyogo-ken 670-8677, Japan

Manufacture : MITSUBISHI ELECTRIC CORPORATION HIMEJI WORKS

Address : 840 Chiyoda-machi, Himeji-shi
Hyogo-ken 670-8677, Japan

Received date of EUT : July 4, 2000

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 C (June 23, 1989) 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 -1992.

1.2 GENERAL INFORMATION

1.2.1 Test facility :

- 1) Test Facility located at JQA SAFTY TESTING CENTER EMC ENGINEERING DEPT.
TSURU EMC BRANCH:

Open Site No.1, No.2, An Anechoic Chamber (3 m and 10 m, on common plane) and a Shielded Room

Date of Listing : March 30, 1999

- 2) JQA SAFTY TESTING CENTER EMC ENGINEERING DEPT. 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, 2001)

1.2.2 Description of the Equipment Under Test (EUT) :

- | | |
|------------------------------|---|
| 1) Type of Equipment | : Immobilizer |
| 2) Product Type | : Pre-Production |
| 3) Category | : Low Power Communication Device
Transmitter |
| 4) EUT Authorization | : Declaration of Conformity |
| 5) Trade Name | : - |
| 6) Model No. | : IMB122-02 |
| 7) Operating Frequency Range | : 125.0 kHz |
| 8) Frequency used in the EUT | : 4.0 MHz |
| 9) Serial No. | : - |
| 10) Date of Manufacture | : - |
| 11) Power Rating | : 12.0 VDC |
| 12) 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. Tsuru EMC Branch
2096 Ohhata, Tanbozawa, Tsuru-shi Yamanashi-ken 402-0045, JAPAN

___ - Shielded Room No.1

___ - Shielded Room No.2

___ - Anechoic Chamber

___ - Open Site No.1

___ - Open Site No.2

Used test instruments :

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
___ - Test Receiver	ESH-3	Rohde & Schwarz	872992/047	May. 2000	1 Year
___ - Test Receiver	ESH-3	Rohde & Schwarz	881460/016	May. 2000	1 Year
___ - LISN(for Peripheral)	KNW-407	Kyoritsu Electrical	8-833-5	May. 2000	1 Year
___ - LISN(for EUT)	KNW-407	Kyoritsu Electrical	8-680-14	May. 2000	1 Year
___ - LISN	KNW-243C	Kyoritsu Electrical	8-831-1	May. 2000	1 Year
___ - LISN	KNW-243C	Kyoritsu Electrical	8-831-2	May. 2000	1 Year
___ - LISN	KNW-243C	Kyoritsu Electrical	8-831-3	May. 2000	1 Year
___ - LISN	KNW-243C	Kyoritsu Electrical	8-831-4	May. 2000	1 Year
___ - LISN	ESH 2-Z5	Rohde & Schwarz	879341/007	May. 2000	1 Year
___ - RF Cable	3D-2W	Fujikura	No.1	May. 2000	1 Year
___ - RF Cable	3D-2W	Fujikura	No.2	May. 2000	1 Year
___ - RF Cable	3D-2W	Fujikura	No.3	May. 2000	1 Year
___ - 50ohm Termination	-	TDC	15406501E1	Feb. 2000	1 Year
___ - 50ohm Termination	-	-	15406502E1	Feb. 2000	1 Year

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

- ☒ - was performed in the following test site.
☐ - was not applicable.

Test location :

Safety Testing Center EMC Engineering Dept. Tsuru EMC Branch
2096 Ohhata, 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
☒ - Test Receiver	ESH-3	Rohde & Schwarz	872992/047	May. 2000	1 Year
☐ - Test Receiver	ESH-3	Rohde & Schwarz	881460/016	May. 2000	1 Year
☒ - Loop Antenna	HFH2-Z2	Rohde & Schwarz	872994/043	May. 2000	1 Year
☐ - Loop Antenna	6502	EMCO	8905-2347	May. 2000	1 Year
☒ - RF Cable	5D-2W	Fujikura	155-21-002E0	Feb. 2000	1 Year

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

- ☒ - was performed in the following test site.
☐ - was not applicable.

Test location :

Safety Testing Center EMC Engineering Dept. Tsuru EMC Branch
2096 Ohhata, 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 :May, 2000
2) Interval :1 year

Used test instruments :

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
☒ - Test Receiver	ESV	Rohde & Schwarz	863796/015	May. 2000	1 Year
☐ - Test Receiver	ESVS10	Rohde & Schwarz	843744/018	May. 2000	1 Year
☐ - Test Receiver	ESVS10	Rohde & Schwarz	84231/004	May. 2000	1 Year
☒ - Biconical Antenna	BBA9106	Schwarzbeck	11905065-2	May. 2000	1 Year
☐ - Biconical Antenna	BBA9106	Schwarzbeck	11905065-3	May. 2000	1 Year
☐ - Biconical Antenna	BBA9106	Schwarzbeck	G4397001	May. 2000	1 Year
☒ - Log-Periodic Antenna	UHALP9107	Schwarzbeck	91071212	May. 2000	1 Year
☐ - Log-Periodic Antenna	UHALP9107	Schwarzbeck	9107915	May. 2000	1 Year
☐ - Log-Periodic Antenna	UHALP9107	Schwarzbeck	G43597003	May. 2000	1 Year
☐ - Dipole Antenna	KBA-511A	Kyoritsu Electrical	0-195-5	May. 2000	1 Year
☐ - Dipole Antenna	KBA-511A	Kyoritsu Electrical	0-230-6	May. 2000	1 Year
☐ - Dipole Antenna	KBA-611	Kyoritsu Electrical	0-196-8	May. 2000	1 Year
☐ - Dipole Antenna	KBA-611	Kyoritsu Electrical	0-228-13	May. 2000	1 Year
☒ - RF Cable	20D/5D-2W	Fujikura	No.1	May. 2000	1 Year
☐ - RF Cable	20D/5D-2W	Fujikura	No.2	May. 2000	1 Year
☐ - RF Cable	20D/5D-2W	Fujikura	No.3	May. 2000	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 :

Safety Testing Center EMC Engineering Dept. Tsuru EMC Branch
2096 Ohhata, 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
___ - Spectrum Analyzer	8563E	Hewlett Packard	3438A00756	May. 2000	1 Year
___ - Spectrum Analyzer	R4131C	Advantest	717201249	May. 2000	1 Year
___ - Log-Periodic Antenna	94612-1	Rohde & Schwarz	97062301	May. 2000	1 Year
___ - RF Amplifier	WJ-6611-513	Watkins-Johnson	0288	May. 2000	1 Year
___ - RF Amplifier	WJ-6682-834	Watkins-Johnson	0052	May. 2000	1 Year
___ - RF Amplifier	WJ-6870-506	Watkins-Johnson	0018	May. 2000	1 Year
___ - RF Cable(7m)	SUCOFLEX 104	Suhner	52146/4	May. 2000	1 Year
___ - RF Cable(3m)	SUCOFLEX 104	Suhner	52053/4	May. 2000	1 Year
___ - RF Cable(2m)	SUCOFLEX 104	Suhner	39934/4	May. 2000	1 Year
___ - RF Cable(1m)	SUCOFLEX 104	Suhner	35687/4	May. 2000	1 Year

1.3.5 The measurement of the Frequency Stability

☐ - was performed.

☒ - was not applicable.

Used test instruments :

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
☐ - Frequency Counter	53131A	Hewlett Packard	3546A11807	May 2000	1 Year
☐ - Oven	-	Ohnishi Co. Ltd.	-	Aug. 1999	1 Year
☐ - DC Power Supply	6628A	Hewlett Packard	3224A00284	July 2000	1 Year

1.3.6 The measurement of the Occupied Bandwidth

☐ - was performed.

☒ - was not applicable.

Used test instruments :

Type	Model No.	Manufacturer	Serial No.	Last Cal.	Interval
☐ - Spectrum Analyzer	8560E	Hewlett Packard	3240A00189	Sep. 1999	1 Year
☐ - Spectrum Analyzer	8563E	Hewlett Packard	3221A00201	May. 2000	1 Year
☐ - Spectrum Analyzer	8566B	Hewlett Packard	2140A01091	Apr. 2000	1 Year
☐ - Spectrum Analyzer	8566B	Hewlett Packard	2747A05855	May. 2000	1 Year
☐ - Function Generator	3325A	Hewlett Packard	2512A21776	May. 2000	1 Year
☐ - FM Linear Detector	MS61A	Anritsu Corp.	M77486	Sep. 1999	1 Year
☐ - Level Meter	ML422C	Anritsu Corp.	M87571	June 2000	1 Year

1.4 EUT MODIFICATION / Deviation from Standard

1.4.1 EUT MODIFICATION

- ☒ -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:

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

1.5 TEST RESULTS

AC Power Line Conducted Emission ☐ - Applicable ☒ - NOT Applicable

The requirements are ☐ - PASSED ☐ - NOT PASSED

Remarks :

Radiated Emission [\$15.209(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 (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;

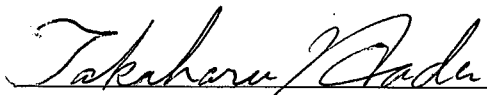
- ☒ - fulfill the test requirements of the regulation mentioned on clause 1.1.
- ☐ - fulfill the test requirements of the regulation mentioned on clause 1.1, but with certain qualifications.
- ☐ - doesn't fulfill the test regulation mentioned on clause 1.1.

Begin of testing : July 7, 2000

End of testing : July 12, 2000

- JAPAN QUALITY ASSURANCE ORGANIZATION -
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