



# RADIO TEST REPORT


Test Report No. : 26GE0265-HO-A

Applicant : OMRON Corporation  
Type of Equipment : FOB  
Model No. : G8D-640M-KEY-N  
Test standard : FCC Part 15 Subpart C Section 15.231:2006  
FCC ID : OUCG8D-640M-KEY-N  
Test Result : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation.
4. The test results in this report are traceable to the national or international standards.

Date of test : April 26, 2006

Tested by :   
Hiroka Umeyama  
EMC Services

Approved by :   
Naoki Sakamoto  
Group Leader of EMC Services

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### **SECTION 3: Test specification, procedures & results**

#### **3.1 Test Specification**

Test Specification : FCC Part 15 Subpart C : 2006  
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators  
Section 15.231 Periodic operation in the band 40.66 - 40.70MHz  
and above 70MHz

#### **FCC 15.31 (e)**

This test was performed with the New Battery (DC 3.0V) and the constant voltage was supplied to the EUT during the tests. Therefore, the EUT complies with the requirement.

#### **FCC Part 15.203 Antenna requirement**

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

### 3.2 Procedures and results

No.	Item	Test Procedure	Specification	Deviation	Worst margin	Results
1	Automatically Deactivate	<FCC> ANSI C63.4:2003 13. Measurement of intentional radiators <IC> -	<FCC> Section 15.231(a)(1) <IC> RSS-210 A1.1.1	N/A	-	Complied
2	Electric Field Strength of Fundamental Emission	<FCC> ANSI C63.4:2003 13. Measurement of intentional radiators <IC> RSS-Gen 4.6	<FCC> Section 15.231(b) <IC> RSS-210 A1.1.2	N/A	0.5dB 315.05MHz Horizontal	Complied
3	Electric Field Strength of Spurious Emission	<FCC> ANSI C63.4:2003 13. Measurement of intentional radiators <IC> RSS-Gen 4.7	<FCC> Section 15.205 Section 15.209 Section 15.231(b) <IC> RSS-210 A1.1.2, 2.6, 2.7	N/A	2.3dB 2834.70MHz Horizontal	Complied
4	-20dB Bandwidth	<FCC> ANSI C63.4:2003 13. Measurement of intentional radiators <IC> -	<FCC> Section 15.231(c) <IC> Reference data	N/A	-	Complied
5	Conducted emission	<FCC> ANSI C63.4:2003 7. AC powerline conducted emission measurements <IC> RSS-Gen 7.2.2	<FCC> Section 15.207 <IC>RSS-Gen 7.2.2	-	N/A*1)	N/A

Note: UL Apex's EMI Work procedures No. QPM05 and QPM15

\*1) The test is not applicable since the EUT does not have AC Mains.

### 3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	<IC> RSS-Gen 4.4.1	<IC> RSS-210 A1.1.3	Conducted	N/A	N/A	N/A

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MF060b(24.05.06)

### 3.4 Uncertainty

#### **Radiated Emission Test**

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is  $\pm 4.59$ dB.  
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is  $\pm 4.62$ dB.  
The measurement uncertainty (with a 95% confidence level) for this test using Horn Antenna is  $\pm 5.27$ dB.  
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

### 3.5 Test Location

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	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	655103	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	IC4247A-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	IC4247A-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	-
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 shielded room	-	-	6.0 x 6.0 x 3.9m	N/A	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	N/A	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	N/A	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

\* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1, No.2, No.3 and No.4 semi-anechoic chambers and No.7 shielded room.

### 3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

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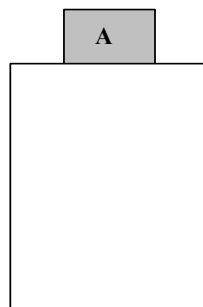
## **SECTION 4: Operation of E.U.T. during testing**

### **4.1 Operating Modes**

The mode is used : Transmitting mode

Justification : The system was configured in typical fashion (as a customer would normally use it) for testing.

### **4.2 Configuration and peripherals**



\* Test data was taken under worse case conditions.

#### **Description of EUT**

No	Item	Model number	Serial number	Manufacturer	Remarks
A	FOB	G8D-640M-KEY-N	KK0001 *1) KK0004 *2)	OMRON Corporation	EUT

\*1): Used for Automatically deactivate test

\*2): Used for other tests

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## **SECTION 5: Radiated emission (Fundamental and Spurious Emission)**

### **5.1 Operating environment**

Test place : No.3 semi anechoic chamber  
Temperature : See data  
Humidity : See data

### **5.2 Test configuration**

EUT was placed on a urethane platform of nominal size, 0.5m by 1.0m, raised 80cm above the conducting ground plane. The EUT was set on the center of the tabletop. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. A drawing of the set up is shown in the photos of APPENDIX 1.

### **5.3 Test conditions**

Frequency range : 30MHz-3200MHz  
Test distance : 3m  
EUT position : Top of Polyurethane  
EUT operation mode : Transmitting

### **5.4 Test procedure**

The Radiated Electric Field Strength intensity has been measured on No.3 semi anechoic chamber with a ground plane and at a distance of 3m. The measuring antenna height was varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization. The radiated emission measurements were made with the following detector function of the test receiver.

	Below or equal to 1GHz	Above 1GHz
Detector Type	QP or AV (=Peak with Duty factor)	Peak and AV(=Peak with Duty factor)
IF Bandwidth	120kHz	PK: S/A:RBW 1MHz, VBW:1MHz, AV: S/A:RBW 1MHz, VBW:1MHz with Duty factor

- The carrier level (or noise levels) was (or were) measured at each position of all three axes X, Y and Z, and the position that has the maximum noise was determined. With the position, the noise levels of all the frequencies were measured.

### **5.5 Results**

Summary of the test results: Pass

Date: April 26, 2006

Tested by: Hiroka Umeyama