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**CERTIFICATE OF COMPLIANCE**  
**FCC Part 15C Certification**

Dates of Tests: August 09 ~ 11, 2004  
 Test Report S/N:DR50110408A  
 Test Site : DIGITAL EMC CO., LTD.

FCC ID.

**E2XOMR6000K**

APPLICANT

**SAMSUNG Electro-Mechanics Co., Ltd.**

**FCC Classification** : **Low Power Communication Device Transmitter**  
**Device name** : 27MHz Wireless Multimedia Keyboard  
**Manufacturer** : Dongguan Samsung Electro-Mechanics Co., Ltd.  
 Quan-Tang Village, Liao-Bu Town, Dong-Guan City, Guang-Dong  
 Province P.R CHINA P.C:523425  
**Brand** :   
**Model name** : OMR6000K  
**Test Device Serial number** : Identical prototype  
**FCC Rule Part(s)** : FCC Part 15.227 Subpart C; ANSI C-63.4-2001  
**Frequency Range** : 27.045 MHz  
**Data of issue** : August 12, 2004

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.



NVLAP LAB CODE 200559-0

## TABLE OF CONTENTS

|                                                                                  |    |
|----------------------------------------------------------------------------------|----|
| 1. GENERAL INFORMATION'S .....                                                   | 3  |
| 2. INFORMATION'S ABOUT TEST ITEM .....                                           | 4  |
| 3. TEST REPORT .....                                                             | 5  |
| 3.1 SUMMARY OF TESTS .....                                                       | 5  |
| 3.2 TRANSMITTER REQUIREMENTS .....                                               | 6  |
| 3.2.1 RADIATED EMISSION .....                                                    | 6  |
| 3.2.2.1 THE FIELD STRENGTH OF ANY EMISSION WITHIN THE BAND 26.96–27.28 MHz. .... | 7  |
| 3.2.2.2 OUT OF BAND EMISSION .....                                               | 8  |
| 3.2.2 ADDITIONAL PROVISIONS THO THE GENERAL RADIATED EMISSION LIMITATIONS -      | 9  |
| ANNEX TEST EQUIPMENT USED FOR TESTS .....                                        | 10 |

## 1. General information's

This report contains the result of tests performed by:

DIGITAL EMC CO., LTD.

Address : 683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080

<http://www.digitalemc.com> E-mail : demc@unitel.co.kr

Tel: +82-31-321-2664 Fax: +82-31-321-1664

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competents of calibration and testing laboratory".

This laboratory is accredited by NVLAP for NVLAP Lab. Code : 200559-0.

**Test operator: engineer**

August 12, 2004

Won -Jong LEE



Data

Name

Signature

**Report Reviewed By: manager**

August 12, 2004

Dong -Min JUNG



Data

Name

Signature

Ordering party:

Company name : SAMSUNG Electro-Mechanics Co., Ltd.

Address : 314, Maethan-3Dong, Paldal-Ku,

City/town : Suwon City, Kyunggi Do

Country : Korea

Zip code : 442-743

Date of order : July 27, 2004

Att. : Mr. Jun-Hwan, Lim

## 2. Information's about test item

### E2XOMR6000K

#### 2.1 Equipment information

|                      |                                    |
|----------------------|------------------------------------|
| Equipment model name | OMR6000K                           |
| Type of equipment    | 27MHz Wireless Multimedia Keyboard |
| Frequency band       | 27.045 MHz                         |
| Type of Modulation   | FSK                                |
| Physical channel     | 1 CH                               |
| Power                | DC 3 V (By AA size Battery * 2EA)  |

#### 2.2 Tested environment

|                           |                                     |
|---------------------------|-------------------------------------|
| Temperature               | : 15 ~ 35 (°C)                      |
| Relative humidity content | : 20 ~ 75 %                         |
| Air pressure              | : 86 ~ 103 kPa                      |
| Details of power supply   | : DC 3 V (By AA size Battery * 2EA) |

#### 2.3 Ancillary Equipment

| Equipment      | Model No. | Serial No. | Manufacturer |
|----------------|-----------|------------|--------------|
| Notebook       | PP02X     | 8K493A01   | DELL         |
| Printer        | 2225C     | 3245S12493 | HP           |
| Receiver       | OMR6000R  | N/A        | Samsung      |
| Keyboard (EUT) | OMR6000K  | N/A        | Samsung      |
| Mouse          | OMR6000M  | N/A        | Samsung      |
| Mic            | N/A       | N/A        | N/A          |
| Earphone       | N/A       | N/A        | N/A          |

#### 2.4 EMI Suppression Device(s)/Modifications

None

### 3. Test Report

#### 3.1 Summary of tests

| FCC Part<br>Section(s)                                                       | Parameter                                                                                  | Status<br>(note 1) |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------|
| <b>Transmitter requirements</b>                                              |                                                                                            |                    |
| 15.227(a)                                                                    | Radiated Emission<br>- The field strength of any emission within the band 26.96–27.28 MHz. | C                  |
| 15.227(b) / 15.209                                                           | Radiated Emission<br>- Out of Band Emissions                                               | C                  |
| 15.215                                                                       | Additional provisions to the general radiated emission limitations.                        | C                  |
| 15.207                                                                       | Conducted Emissions Limits                                                                 | NA                 |
| Note 1: C= Complies    NC=Not Complies    NT=Not Tested    NA=Not Applicable |                                                                                            |                    |

The sample was tested according to the following specification:

FCC Parts 15.227, 15.215; ANSI C-63.4-2001

## 3.2 Transmitter requirements

### 3.2.1 Radiated Emission

#### Procedure:

The EUT was placed on a 0.8m high wooden table inside a shielded enclosure. An antenna was placed near the EUT and measurements of frequencies and amplitudes of field strengths were recorded for reference during final measurements. For final radiated testing, measurements were performed in a OATS. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

The spectrum analyzer is set to:

Frequency Range = 27 MHz ~ 10<sup>th</sup> harmonic.

RBW = 120 kHz ( 30MHz ~ 1 GHz)

= 1 MHz (1 GHz ~ 10<sup>th</sup> harmonic )

Trace = max hold

Sweep = auto

VBW ≥ RBW

Detector function = peak / Quasi-peak / average

#### Measurement Data:

- Refer to the Next page

#### Minimum Standard: FCC Part 15.227 / 15.209

| Frequency (MHz) | Limit (uV/m) @ 3m |
|-----------------|-------------------|
| 26.96–27.28     | < 10000           |
| 30 ~ 88         | 100 **            |
| 88 ~ 216        | 150 **            |
| 216 ~ 960       | 200 **            |
| Above 960       | 500               |

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

TEST EQUIPMENT USED: 02, 22, 30, 31, 33, 34, 39, 40, 41, 47, 49

### 3.2.1.1 The field strength of any emission within the band 26.96–27.28 MHz.

Measurement Data: **Complies**

#### 1. Test mode : Tx mode

| Frequency (MHz) | Pol. (H/V) | Read Level (dBuV) |      | Factor (dB) | Result Level (dBuV) |       | Limit (dBuV) |    | Margin (dB) |       |
|-----------------|------------|-------------------|------|-------------|---------------------|-------|--------------|----|-------------|-------|
|                 |            | PK                | AV   |             | PK                  | AV    | PK           | AV | PK          | AV    |
| 27.045          | H          | 60.0              | 44.0 | -8.73       | 51.27               | 35.27 | 100          | 80 | 48.73       | 44.73 |
| 27.045          | V          | 51.5              | 36.0 | -8.73       | 42.77               | 27.27 | 100          | 80 | 57.23       | 52.73 |

Remark :

1. Factor = Antenna Factor + Cable Loss - Preamp Factor

#### Minimum Standard: FCC Part 15.227

| Frequency (MHz) | Limit (uV/m) @ 3m / average detector |
|-----------------|--------------------------------------|
| 26.96–27.28     | < 10000                              |

## 3.2.1.2 Out of Band Emissions

Measurement Data: **Complies**

Remark: the other emission is less than 10dB.



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Kyunggi-Do, Korea. 463-080  
Tel: +82-31- 321 - 2664 Fax: +82-31- 321 - 1664  
demc@unitel.co.kr , www.digitalemcc.com

Tested by Mr.

Data#: 239

File#: C:\Program Files\3\DEMC-LWJ.emi

Date: 08-11-2004

Site : DIGITAL EMC Co., Ltd.

Condition : FCC CLASS-B 3m DEMC NEW 3(2003)

EUT : OMR6000K

Serial No. : N/A

MODE : Tx mode

|   | Freq    | Remark | Read<br>Level | Probe<br>Factor | Cable<br>Loss | Preamp<br>Factor | Factor | Level  | Limit<br>Line | Over<br>Limit |
|---|---------|--------|---------------|-----------------|---------------|------------------|--------|--------|---------------|---------------|
|   | MHz     |        | dBuV          | dB              | dB            | dB               | dB     | dBuV/m | dBuV/m        | dB            |
| 1 | 42.130  | H      | 49.69         | 13.77           | 1.77          | 28.19            | -12.65 | 37.04  | 40.00         | -2.96         |
| 2 | 54.250  | H      | 41.69         | 9.24            | 1.22          | 28.18            | -17.72 | 23.97  | 40.00         | -16.03        |
| 3 | 68.800  | H      | 44.16         | 6.15            | 1.94          | 28.16            | -20.07 | 24.09  | 40.00         | -15.91        |
| 4 | 68.800  | V      | 43.16         | 6.15            | 1.94          | 28.16            | -20.07 | 23.09  | 40.00         | -16.91        |
| 5 | 110.030 | H      | 47.09         | 11.02           | 2.00          | 28.09            | -15.07 | 32.02  | 43.50         | -11.48        |
| 6 | 122.150 | H      | 43.53         | 12.57           | 2.00          | 28.03            | -13.46 | 30.07  | 43.50         | -13.43        |
| 7 | 122.150 | V      | 39.53         | 12.57           | 2.00          | 28.03            | -13.46 | 26.07  | 43.50         | -17.43        |
| 8 | 136.700 | H      | 40.97         | 13.78           | 2.00          | 27.97            | -12.19 | 28.78  | 43.50         | -14.72        |

## Minimum Standard: FCC Part 15.209

| Frequency (MHz) | Limit (uV/m) @ 3m |
|-----------------|-------------------|
| 30 ~ 88         | 100 **            |
| 88 ~ 216        | 150 **            |
| 216 ~ 960       | 200 **            |
| Above 960       | 500               |

\*\* Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

### 3.2.2 Additional provisions to the general radiated emission limitations.

#### Procedure: Part 15.215

The transmitter is connected to the spectrum analyzer.

The spectrum analyzer is set to:

Frequency Range = 27.045MHz

RBW = 1 kHz

VBW  $\geq$  RBW

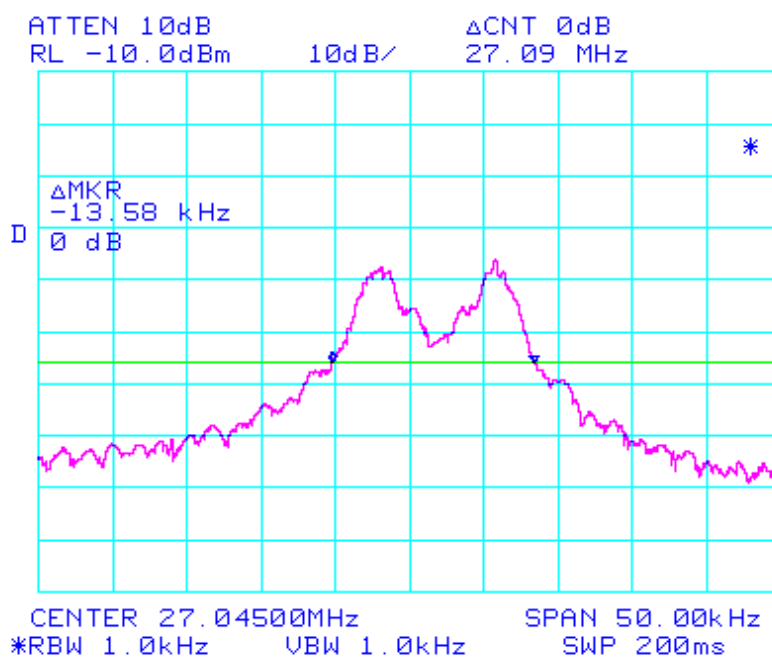
Trace = max hold

Detector function = peak

Sweep = auto

#### Measurement Result: **Complies**

The fundamental frequency be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.



APPENDIX

**TEST EQUIPMENT USED FOR TESTS**

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

|    | Type                         | Manufacturer               | Model    | Cal.Due.Date<br>(dd/mm/yy) | S/N           |
|----|------------------------------|----------------------------|----------|----------------------------|---------------|
| 01 | Spectrum Analyzer            | Agilent                    | E4404B   | 22/11/04                   | US41061134    |
| 02 | Spectrum Analyzer            | H.P                        | 8563E    | 25/09/04                   | 3551A04634    |
| 03 | Power Meter                  | H.P                        | EPM-442A | 15/07/05                   | GB37170413    |
| 04 | Power Sensor                 | H.P                        | 8481A    | 15/07/05                   | 3318A96332    |
| 05 | Frequency Counter            | H.P                        | 5342A    | 26/09/04                   | 2119A04450    |
| 06 | Multifunction Synthesizer    | H.P                        | 8904A    | 15/10/04                   | 3633A08404    |
| 07 | Signal Generator             | H.P                        | 8673D    | 26/09/04                   | 2844A00753    |
| 08 | Signal Generator             | H.P                        | E4421A   | 29/04/05                   | US37230529    |
| 09 | Signal Generator             | H.P                        | 8657A    | 05/06/05                   | 3430U02049    |
| 10 | Audio Analyzer               | H.P                        | 8903B    | 18/04/05                   | 3011A0944B    |
| 11 | Modulation Analyzer          | H.P                        | 8901B    | 21/04/05                   | 3028A03029    |
| 12 | Sensor Module                | H.P                        | 11722A   | 21/04/05                   | 3111A04665    |
| 13 | Oscilloscope                 | LeCroy                     | 9314A    | 27/08/04                   | 93144390      |
| 14 | CDMA Mobile Station Test Set | H.P                        | 8924C    | 09/09/04                   | US35360688    |
| 15 | Power Splitter               | WEINSCHL                   | 1593     | 23/04/05                   | 332           |
| 16 | BAND Reject Filter           | Microwave<br>circuits INC. | NO308372 | 22/12/04                   | 3125-01DC0312 |
| 17 | BAND Reject Filter           | Wainwright                 | WRCG1750 | 19/08/04                   | SN2           |
| 18 | AC Power supply              | DAEKWANG                   | 5KVA     | 03/04/05                   | N/A           |
| 19 | DC Power Supply              | H.P                        | 6622A    | 24/03/05                   | 465487        |
| 20 | Attenuator (30dB)            | H.P                        | 8498A    | 23/05/05                   | 50101         |
| 21 | Attenuator (10dB)            | WEINSCHL                   | 23-10-34 | 15/10/04                   | BP4387        |
| 22 | HORN ANT                     | EMCO                       | 3115     | 04/04/05                   | 6419          |
| 23 | HORN ANT                     | EMCO                       | 3115     | 10/01/05                   | 21097         |
| 24 | HORN ANT                     | A.H.Systems                | SAS-574  | 27/11/04                   | 154           |
| 25 | HORN ANT                     | A.H.Systems                | SAS-574  | 14/11/04                   | 155           |
| 26 | Dipole Antenna               | Schwarzbeck                | VHA9103  | 04/10/04                   | 2116          |

|    | Type                      | Manufacturer  | Model       | Cal.Due.Date<br>(dd/mm/yy) | S/N            |
|----|---------------------------|---------------|-------------|----------------------------|----------------|
| 27 | Dipole Antenna            | Schwarzbeck   | VHA9103     | 04/10/04                   | 2117           |
| 28 | Dipole Antenna            | Schwarzbeck   | UHA9105     | 04/10/04                   | 2261           |
| 29 | Dipole Antenna            | Schwarzbeck   | UHA9105     | 04/10/04                   | 2262           |
| 30 | RFI/FIELD Intensity Meter | Kyorits       | KNM-504D    | 07/07/05                   | SN-161-4       |
| 31 | Frequency Converter       | Kyorits       | KCV-604C    | 07/07/05                   | 4-230-3        |
| 32 | TEMP & HUMIDITY Chamber   | JISCO         | J-RHC2      | 14/09/04                   | 021031         |
| 33 | Log Periodic Antenna      | Schwarzbeck   | UHALP9108A1 | 23/10/04                   | 1098           |
| 34 | Biconical Antenna         | Schwarzbeck   | VHA9103     | 23/10/04                   | VHA91031946    |
| 35 | Digital Multimeter        | H.P           | 34401A      | 07/04/05                   | 3146A13475     |
| 36 | Attenuator (10dB)         | WEINSCHEL     | 23-10-34    | 15/10/04                   | BP4386         |
| 37 | High-Pass Filter          | ANRITSU       | MP526       | 12/05/05                   | M27756         |
| 38 | Attenuator (3dB)          | Agilent       | 8491B       | 15/10/04                   | 58177          |
| 39 | Amplifier (25dB)          | Agilent       | 8447D       | 21/06/05                   | 2944A10144     |
| 40 | Position Controller       | TOKIN         | 5901T       | N/A                        | 14173          |
| 41 | Driver                    | TOKIN         | 5902T2      | N/A                        | 14174          |
| 42 | Spectrum Analyzer         | H.P           | 8591E       | 23/05/05                   | 3649A05889     |
| 43 | RFI/FIELD Intensity Meter | Kyorits       | KNW-2402    | 07/07/05                   | 4N-170-3       |
| 44 | LISN                      | Kyorits       | KNW-407     | 29/08/04                   | 8-317-8        |
| 45 | LISN                      | Kyorits       | KNW-242     | 22/08/04                   | 8-654-15       |
| 46 | CVCF                      | NF Electronic | 4400        | N/A                        | 344536 4420064 |
| 47 | Software                  | ToYo EMI      | EP5/RE      | N/A                        | Ver 2.0.800    |
| 48 | Software                  | ToYo EMI      | EP5/CE      | N/A                        | Ver 2.0.801    |
| 49 | Software                  | AUDIX         | e3          | N/A                        | Ver 3.0        |
| 50 | Software                  | Agilent       | Benchlink   | N/A                        | A.01.09 021211 |