

# **URM-SK010**

# **User's Manual**

**FCC ID : NLMURM-SK010**

**Samsung Techwin**

# 1. Overview and Configuration

## 1-1. Overview

Samsung Techwin Mobile Reader URM-SK010 is a UHF RFID Reader that uses 900Mhz frequency bandwidth. It can read or record information stored in tags on products, animals, and people.

## 2. Configuration

This device consists of:

- RFID Reader (URM-SK010)
- External Cable (Serial Cable)



<Fig> URM-SK010

### Target Application

- PDA type RFID Reader
- OEM Module
- Other application

## **3. Specifications**

### **3-1. General Information**

- 1) Frequency Range: 902.75Mhz ~ 927.25Mhz
- 2) Output Impedance: 50ohm
- 3) Transmission Type: A1D
- 4) Number of Channels: 50Channels
- 5) Communication Type: Short Signal
- 6) Voltage: DC 4.2V
- 7) Environment: -10°- +50°, 95%
- 8) Dimensions: 40mm(W) x 70mm(H) x 8.5mm(D)
- 9) Weight: 23g

### **3-2. Electrical Characteristics**

#### **3-2-1. Transmitter**

- 1) Output power: Max 1W
- 2) Frequency Bandwidth: Up to 200KHz
- 3) Frequency Error Allowance:  $\pm 20 \times 10^{-6}$
- 4) Output Power Deviation: Up to  $\pm 1$ dB
- 5) Output Power Control Range: 16dBm ~ 30dBm
- 6) Stationary Wave Ratio: Max 1:1.3
- 7) Maximum Stay Time in Single Channel: Less than 400ms
- 8) Maximum Continual Transmission Time: Total Number of Channels x Less than 400ms
- 9) Minimum Rest Time after Continual Transmission: 100ms or higher
- 10) Number of RF Output Port: 1 port
- 12) RF Output Connector: MMCX
- 13) LED indicators: Power, Operating, Fail LED
- 14) Reading Distance Range: 0.05m ~ 3m
- 15) Writing Distance Range: 0.05m ~ 1m

### 3-2-2. Power

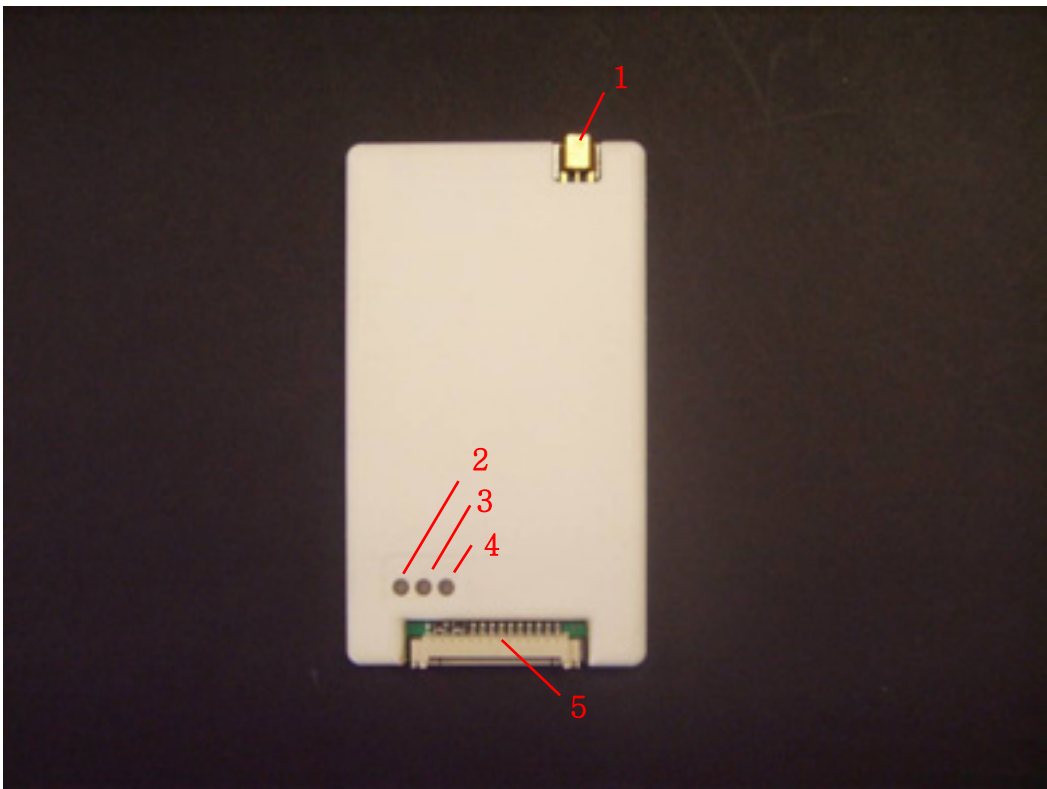
Main power is DC 4.2V. It is designed not to pass 1.0W even if voltage is higher than rated voltage.

## 4. Operation Instructions

### 4-1. Preparation

- A. Read the handling instructions before use.
- B. Check whether main power is connected.
- C. Check whether RFID Reader is operating (power LED must be on.)

### 4-2. Names of Parts



Appearance and Function

1. **Antenna Port (1 port, MMCX TYPE)**
2. **POWER Indicator LED**
3. **FAIL Indicator LED**
4. **OPERATING Indicator LED**
5. **14 Pin Connector**

### 4-3. Operation Manual

#### 4-3-1. Power

After connecting power, check whether Power LED turns on.

#### 4-3-2. Reset

Disconnect and reconnect power to reset the device.

#### I/O PIN MAP

|        |       |          |          |       |        |        |        |
|--------|-------|----------|----------|-------|--------|--------|--------|
| PIN NO | 1     | 2        | 3        | 4     | 5      | 6      | 7      |
| DESC   | VCC   | VCC      | GND      | GND   | 232_RX | 232_TX | GPIO1  |
| PIN NO | 8     | 9        | 10       | 11    | 12     | 13     | 14     |
| DESC   | GPIO0 | DEBUG_RX | DEBUG_TX | RESET | GND    | TTL_TX | TTL_RX |

## Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**FCC Caution:** To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

### **IMPORTANT Safety Instruction:**

#### **CAUTION**

To reduce the risk of electric shock, do not remove the top cover (or the rear section). No user serviceable parts inside, refer servicing to qualified personnel.



This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.



This symbol, wherever it appears, alerts you to the important operating and maintenance instructions in the accompanying literature. Please read the manual.

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this equipment near water.
- 6) Do not use near any heat sources such as radiators, heat resistors, stove, or other equipment that produce heat.

**CAUTION**  
**RISK OF EXPLOSION IF BATTERY IS REPLACED**  
**BY AN INCORRECT TYPE.**  
**DISPOSE OF USED BATTERIES ACCORDING**  
**TO THE INSTRUCTIONS**

## **SAFETY INFORMATION FOR RF EXPOSURE**

### **IMPORTANT NOTE:**

#### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance.

This device is intended only for OEM integrators under the following conditions:

1. The antenna must be installed such that 20cm is maintained between the antenna and users;  
  
and
2. The transmitter module may not be co-located with any other transmitter or antenna.

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

#### **End Product Labeling**

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in visible area with the following:

**Contains FCC ID : NLMURM-SK010**

#### **End Product Manual Information**

The user manual for end users must include the following information in a prominent location:

**"IMPORTANT NOTE:**

To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter."