

## Introduction

This *Quick Reference Guide (QRG)* provides the required information for all product models in the RF1XXX Series of RFID readers. The user documents use the RF1000-FL model number to generically reference all of the RFID readers in the series.

The QRG includes LED definitions, port descriptions, and mounting information. For details, refer to the *RF1000-FL Integrator Guide P/N 72E-XXXXX-XX*, available at: <http://www.symbol.com/manuals>

## Product Description

The RF1000-FL is an intelligent, multi-protocol UHF RFID reader with RFID read performance that provides real-time, seamless EPC-compliant tags processing.

Features:

- UHF Generation 2 support
- EPC Class 0 and Class 1
- Intel XScale® processor with Windows® CE
- Support for custom or third-party applications
- Feature set for event and tag management.

## Firmware Updates

The RF1000-FL is shipped with the current firmware version. To install the latest upgrade refer to the *RF1000-FL Integrator Guide P/N 72E-XXXXX-XX*, available from: <http://www.symbol.com/manuals>

## Installation/Mounting

For details on the required procedures and detailed installation instructions refer to the *RF1000-FL Integrator Guide P/N 72E-XXXXX-XX*, available from: <http://www.symbol.com/manuals>

Prior to installation/mounting the following procedures must be performed:

- The mounting brackets (or mounting platform) must be secured.
- The LAN administrator must configure the RF1000-FL to communicate with the local LAN network and must set up the application interface software for the local LAN environment.
- The battery must be fully charged.

## Mounting

1. Insert the rubber shock mounts into the mounting holes.
2. Position the RF1000-FL on the mounting brackets (or mounting platform). Ensure the clearance on all sides.
3. Insert the mounting bolts through the rubber shock mounts and through the bracket holes.
4. Attach the nuts onto the mounting bolts and tighten to 2.8 ft.-lbs to secure the RF1000-FL to the mounting brackets.

## Operation

Press power button to toggle power on/off. The battery LED lights green to indicate the battery is good. If the Error LED flashes red, remove the unit and return to the network administrator.

## Regulatory Information

All Symbol devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required.

If local language translations are available, they are provided at: <http://www.symbol.com/services/manuals>. Any changes or modifications to Symbol Technologies equipment, not expressly approved by Symbol Technologies, could void the user's authority to operate the equipment.

Antennas: Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could cause damage and may violate regulations

**Caution:** Only use Symbol approved and UL Listed accessories, battery packs and battery chargers. Do NOT attempt to charge damp/wet units or batteries. All components must be dry before connecting to an external power source.

## Products Equipped with Bluetooth® Wireless Technology

This device can contain the following Bluetooth® qualified subsystems:

- BTID: B01825
- BTID: B02413.

## Country Approvals

Regulatory markings are applied to the device signifying country approvals, see notes 1 and 2 Please refer to the Symbol Declaration of Conformity (DoC) for details. This is available at <http://www2.symbol.com/doc/>.

**Note 1:** The use of 5GHz RLAN's have varying restrictions of use; please refer to the Symbol Declaration of Conformity (DoC) for details.

**Note 2:** The use of RFID Devices have varying restrictions of use; please refer to the Symbol Declaration of Conformity (DoC) for details.

**!** Operation of the device without regulatory approval is illegal.



Contact information is provided on the Symbol contact web site: <http://www.symbol.com/contactsupport>

## Service Information

For the complete Symbol hardware product warranty statement, go to: <http://www.symbol.com/warranty>

## Warranty

This product is covered by one or more of the patents listed on the web site: <http://www.symbol.com/patents>

## Patents

<http://devzone.symbol.com>

Software updates, SDKs, development support and related documents are available from the Symbol Devzone web site:

documentation web site: <http://www.symbol.com/manuals>

Supporting documents, including the latest version of this guide are available for viewing/download from the Symbol

## Reference Documents

<http://www.symbol.com>

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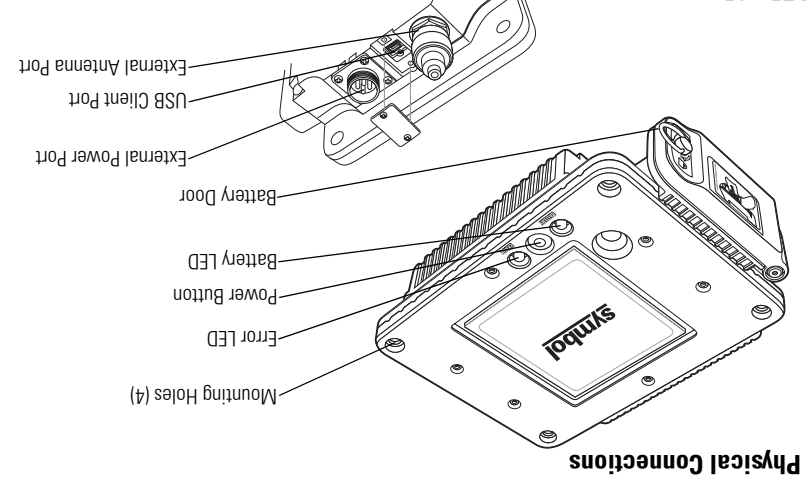
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Symbol reserves the right to make changes to any product to improve reliability, function, or design.

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LED / Ports	Description
Battery LED	<b>Green</b> - Battery charge is good <b>Amber Flash</b> - Battery is charging <b>Solid Amber</b> - Battery needs charging <b>Flash Red</b> - Battery is fully charged
Error LED	<b>Flash Red</b> - Error, replace unit
External Antenna Port	RF1000-FL - Supports up to one external antenna.
USB Client Port	USB client connection.
External Power Port	See <i>Power Supply</i> for the Symbol approved power supply information.

## LEDs / Ports



## Health and Safety Recommendations

### **Warning for Use of Wireless Devices**

Please observe all warning notices with regard to the usage of wireless devices.

### **Potentially Hazardous Atmospheres**

You are reminded of the need to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or particles (such as grain, dust, or metal powders) and any other area where you would normally be advised to turn off your vehicle engine.

### **Hearing Aids**

The wireless device may interfere with some hearing aids. In the event of interference you may want to consult your hearing aid supplier to discuss solutions.

### **Other Medical Devices**

Please consult your physician or the manufacturer of the medical device, to determine if the operation of your wireless product may interfere with the medical device.

### **FCC / EU RF Exposure Guidelines**

### **Safety Information**

#### **Reducing RF Exposure - Use Properly**

It is advisable to use the device only in the normal operating position.

The device complies with Internationally recognized standards covering Specific Absorption Rate (SAR) related to human exposure to electromagnetic fields from radio devices.

### **Remote and Standalone Antenna Configurations.**

To satisfy FCC RF exposure requirements, a mobile transmitting device must operate with a minimum separation distance of 25cm or more from a person's body.

### **Power Supply**

Use only a Symbol approved power supply output rated 12 Vdc and minimum 3.33 A. The power supply is certified to EN60950-1 with SELV outputs. Use of alternative power supply will invalidate any approval given to this device and may be dangerous.

### **Batteries**

Please follow the local regulations when disposing of re-chargeable batteries.

### Taiwan - Recycling

EPA (Environmental Protection Administration) requires dry battery producing or importing firms in accordance with Article 15 of the Waste Disposal Act are required to indicate the recycling marks on the batteries used in sales, giveaway or promotion. Contact a qualified Taiwanese recycler for proper battery disposal.



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#### Wireless Devices - Countries

#### Country Roaming

This device incorporates the International Roaming feature (IEEE802.11d) which will ensure the product operates on the correct channels for the particular country of use.

#### Ad-Hoc Operation (802.11a Only)

Ad-Hoc operation is limited to Channels 36-48 (5150-5250 MHz). Use of this band is restricted to Indoor Use Only, any other use will make the operation of this device illegal.

### Frequency of Operation - FCC and IC (US/Canada versions)

The use in the UNII (Unlicensed National Information Infrastructure) band 1 5150-5250 MHz band is restricted to Indoor Use Only; any other use will make the operation of this device illegal.

The available channels for 802.11 b/g operation in the US are Channels 1 to 11. The range of channels is limited by firmware.

#### Radio Frequency Interference Requirements - FCC



Note: 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 or more 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.

#### Radio Transmitters (Part 15)

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.

#### Radio Frequency Interference Requirements - Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

## Radio Transmitters

This device complies with RSS 210 of Industry & Science Canada. 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.

Label Marking: The Term "IC." before the radio certification only signifies that Industry Canada technical specifications were met.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that permitted for successful communication.

This device has been designed to operate with the antennas listed below, and having a maximum gain of **(x)** dBi. Antennas not included in this list or having a gain greater than **(x)** dBi are strictly prohibited for use with this device. The required antenna impedance is **(y)** ohms.

### Marking and European Economic Area (EEA)

The use of 2.4GHz RLAN's, for use through the EEA, have the following restrictions:

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400 -2.4835 GHz
- France, outside usage is restricted to 2.4 - 2.454 GHz.
- Italy requires a user license for outside usage.

The use of 5GHz RLAN's has varying restrictions for use within the EEA; please refer to the Symbol Declaration of Conformity (DoC) for details at http://www2.symbol.com/doc/

Bluetooth® Wireless Technology for use through the EEA has the following restrictions:

- Maximum radiated transmit power of 100mW EIRP in the frequency range 2.400 -2.4835 GHz
- France, outside usage is restricted to 10mW EIRP
- Italy requires a user license for outside usage.

RFID devices for use through the EEA have the following restrictions:

- Maximum radiated transmit power of 2W ERP in the frequency range 865.6-867.6MHz

The use of RFID Devices has varying restrictions for use within the EEA; please refer to the Symbol

Declaration of Conformity (DoC) for details at http://www2.symbol.com/doc/

### Statement of Compliance

Symbol Technologies, Inc., hereby, declares that this device is in compliance with the essential requirements and other relevant provisions of Directives 1999/5/EC, 89/336/EEC and 73/23/EEC. Declaration of Conformities may be obtained from http://www2.symbol.com/doc/.

### Other Countries

Mexico - Restrict Frequency Range to: 2.450 - 2.4835 GHz.
Sri Lanka- Restrict Frequency Range to: 2.400 - 2.430 GHz.

### Battery Information

Symbol rechargeable battery packs are designed and constructed to the highest standards within the industry. However, there are limitations to how long a battery can operate or be stored before needing replacement. Many factors affect the actual life cycle of a battery pack, such as heat, cold, harsh environmental conditions and severe drops.

When batteries are stored over six (6) months, some irreversible deterioration in overall battery quality may occur. Store batteries discharged in a dry, cool place, removed from the equipment to prevent loss of capacity, rusting of metallic parts and electrolyte leakage. When storing batteries for one year or longer, they should be charged and discharged at least once a year. If an electrolyte leakage is observed, avoid any contact with affected area and properly dispose of the battery. Batteries must be charged within the 32° to 104° F (0° to +40° C) ambient temperature range.

Replace the battery when a significant loss of run time is detected. Standard warranty period for all Symbol batteries is 30 days, regardless if the battery was purchased separately or included as part of the mobile computer or bar code scanner. For more information on Symbol batteries, please visit: http://mysymbolcare.symbol.com/battery/batbasics1.html

## Waste Electrical and Electronic Equipment (WEEE)



**English:** For EU Customers: All products at the end of their life must be returned to Symbol for recycling. For information on how to return product, please go to: http://www.symbol.com/environmental\_compliance.

**Čeština:** Pro zákazníky z EU: Všechny produkty je nutné po skončení jejich životnosti vrátit společnosti Symbol k recyklaci. Informace o způsobu vrácení produktu najdete na webové stránce: http://www.symbol.com/environmental\_compliance.

**Dansk:** Til kunder i EU: Alle produkter skal returneres til Symbol til recirkulering, når de er udtjent. Læs oplysningerne om returnering af produkter på: http://www.symbol.com/environmental\_compliance.

**Deutsch:** Für Kunden innerhalb der EU: Alle Produkte müssen am Ende ihrer Lebensdauer zum Recycling an Symbol zurückgesandt werden. Informationen zur Rücksendung von Produkten finden Sie unter http://www.symbol.com/environmental\_compliance.

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**Nederlands:** Voor klanten in de EU: alle producten dienen aan het einde van hun levensduur naar Symbol te worden teruggezonden voor recycling. Raadpleeg http://www.symbol.com/environmental\_compliance voor meer informatie over het terugzenden van producten.

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