

# RD7950

## Integrated UHF RFID Reader

### Quick Start Guide

February 24, 2005      PN 8100056.A

# DRAFT



*ISO 9001 Certified  
Quality Management System*



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Psion Teklogix warrants a return-to-factory warranty for a period of one year. In some regions, the warranty exceeds this period. Please contact your local Psion Teklogix office for details. For a list of offices, refer to [“Support Services & Worldwide Offices” on page 13](#). The warranty on Psion Teklogix manufactured equipment does not extend to any product that has been tampered with, altered, or repaired by any person other than an employee of an authorized Psion Teklogix service organization. See Psion Teklogix terms and conditions of sale for full details.

## **Service**

When requesting service, please provide information concerning the nature of the failure and the manner in which the equipment was used when the failure occurred. Type, model, and serial number should also be provided. Before returning any products to Psion Teklogix, please call the Customer Services Group for a Return Authorization number.

## **Support Services**

Psion Teklogix provides a complete range of product support services to its customers. For detailed information, please refer to [“Support Services & Worldwide Offices” on page 13](#).

## **Disclaimer**

Every effort has been made to make this material complete, accurate, and up-to-date. Psion Teklogix Inc. reserves the right to make changes without notice and shall not be responsible for any damages, including but not limited to consequential damages, caused by reliance on the material presented, including but not limited to typographical errors.



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# FCC Interference Statement

This equipment complies with Class B, 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.

Changes or modifications not expressly approved by Psion Teklogix, the party responsible for compliance, may void the user's authority to operate the equipment.

## 1. FCC Information to Users

For Class B Unintentional Radiators:

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 instruction manual, 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 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.

## 2. Warning to Users

Changes or modifications not expressly approved by Psion Teklogix Inc. could void the user's authority to operate the equipment.

### **Emissions Information For Canada**

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

***Warning:***

***The antenna used for this transmitter must not be co-located in conjunction with any other antenna or transmitter.***

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## Safety

The RD7950 Integrated UHF RFID Reader is intended for use with the Psion Teklogix 7535 Hand-Held Computer.

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# 1. Introduction

The RD7950 Integrated UHF RFID Reader is an EPC-compliant 900MHz RFID reader available for use with the Psion Teklogix 7535 Hand-Held Computer. The RD7950 meets the EPC-compliance requirements of Wal-Mart and the U.S. Department of Defense, while leveraging existing hardware infrastructures. Multimedia data capture capabilities are delivered by combining RFID with existing technologies such as laser bar code scanning or imaging.

## 2. Features

### 2.1 Flexibility

Compatible with EPC Class 0, 0+, and Class 1, as well as the ISO 18000-6 B protocol, the RD7950 delivers outstanding flexibility. Delivers multimedia data capture capabilities since the RD7950, and laser bar code scanning or imaging capabilities, can be integrated into a single hand-held device.

### 2.2 Ruggedness

The rugged design of the RD7950 delivers overall system up-time for increased productivity even in harsh environments. The RD7950 is rated at IP54, protected against dust and water sprayed from all directions. Combined with a 1.22 m (4 ft.) drop rating to concrete, 26 times, the RD7950 will keep working even when subjected to harsh impacts.



## 2.3 Ergonomics

Well balanced, lightweight, and with an easy-to-handle pistol grip, the RD7950 is easy to use for a full shift.

## 3. Installation

To install the RD7950 Integrated UHF RFID Reader to the 7535 Hand-Held Computer, first attach the pistol grip.



Figure 3.1 RD7950 Installation Components

## Attaching The Pistol Grip

*Notes: A Phillips head screwdriver is required. Do not use adhesives such as Loctite to secure the screws on carrying accessories. These chemicals may damage the plastic casing.*

The pistol grip is attached to the back of the 7535 Hand-Held Computer using the four threaded inserts in the upper part of the 7535 casing.

Four black #4-40 Phillips head screws are provided with this accessory: two for insertion into the bottom holes, and two for insertion into the top holes through the RD7950 when attaching it to the 7535/ pistol grip assembly (see page 7).

*Note: Prior to installation, make sure the trigger mechanism is securely snapped into the pistol grip body and that the trigger operates properly.*

- Position the pistol grip so that it fits snugly over the back of the unit and the inserts on the back of the 7535 align with the holes in the pistol grip.
- Using a Phillips screwdriver, securely fasten the pistol grip to the two bottom holes on the back of the 7535. Tighten the screws to a torque of 3kgf-cm (3 lbs-in), or until finger-tight, to secure the pistol grip in place.

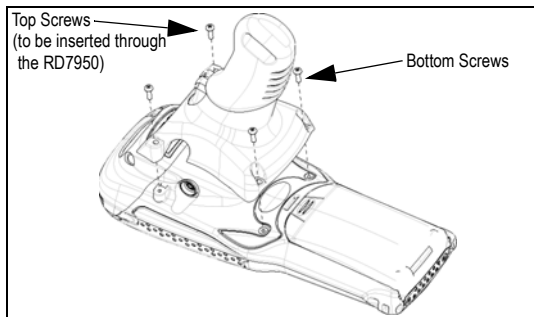


Figure 3.2 Pistol Grip Attachment To 7535 Hand-Held Computer

## Attaching The RD7950

- Push the plug through the pistol grip, with the hole in the plug towards the front.



Figure 3.3

- Attach the RD7950 to the 7535/pistol grip assembly by screwing it on with the top screws.

- Screw the long screw through the pistol grip.



Figure 3.4

- Plug the RD7950 into the tether port.



Figure 3.5



Figure 3.6 RD7950 Installed On 7535 Hand-Held Computer

### 3.1 Enabling The RD7950

- In the 7535 unit, when the trigger source is selected for **RFID usage**, pulling the trigger causes a Scanning icon to appear. While that icon is displayed, the RD7950 is powered on and actively probing for RFID tags.
- When the trigger is released, the image will disappear, and the RD7950 is powered down.



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## 4. Product Specifications

*\*Specifications subject to change.*

### 4.1 Standards Compliance

EPC Class 0, 0+ and Class 1  
ISO 18000-6 Type B (U-Code, HSL)  
Software upgradeable to UHF Gen 2  
BiStar, EM, Impinj Zuma

### 4.2 Terminal Interface

7535 Hand-Held Computer

### 4.3 Programming Environment

Windows<sup>®</sup> Win32 File API

### 4.4 RFID Applications

Psion Teklogix RFID File System

### 4.5 Technical Specifications

Frequency Range:	902 to 928MHz
Transmitter Power Output:	1Watt (30dBm)
Channel Spacing:	500kHz
Channel Bandwidth:	Class 0: 205kHz Class 1: 300kHz ISO18000-6: 70kHz

Number of Hops:	50
Data Rate:	57600
Input Voltage:	5V
Current Rating:	1.5A

## Read Distance

Class 0, 2x2 tag:	0 - 2.5 m (0 - 8 ft.)
Class 0, 11020:	0 - 3 m (0 - 10 ft.)
Class 0+ 4x4:	0 - 3.5 m (0 - 11 ft.)
Class 1 9238 Squiggle:	0 - 2.5 m (0 - 8 ft.)
Class 1 9338:	0 - 3.5 m (0 - 11 ft.)

Read distance is highly dependant upon tag configuration, material to which the tag is applied, and the presence of metal and water around the tag. Metal and water will decrease read ranges significantly.

## Write Distance

Write distance for Class 0+ and Class 1 tags is approximately 50% of the read distance referenced above.

## Weight

Less than 1400g

7535 is approximately 775g (27oz.) with pistol grip.

Integrated Reader is approximately 600g (21oz.).

## Environmental

Operating temp:	0°C to +50°C (32°F to 122°F)
Storage temp:	-25°C to +60°C (-13°F to 140°F)
Humidity:	5 - 95% RH, non-condensing
Rain/Dust:	IEC 529, classification IP54
Shock:	1.22 m (4 ft.) drop to polished concrete multiple times
Cradle vibration:	1.5g RMS PSD (4 Hz - 500 Hz)

## Approvals

Industry Canada RSS-210

FCC Part 15

Safety: UL 1950, CSA C22.2 No950, LVD EN60950

EMC: FCC Part 15 Class B, EMC Directive Class B



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## 5. Support Services & Worldwide Offices

Psion Teklogix provides a complete range of product support services to its customers worldwide. These services include technical support and product repairs.

### 5.1 Technical Support

Technical Support for Mobile Computing Products is provided via e-mail through the Psion Teklogix customer and partner extranets. To reach the website, go to *www.pSIONteklogix.com* and click on the appropriate Teknet link on the home page. Then click on the “Log-in” button or the “Register” button, depending on whether you have previously registered for Teknet. Once you have logged in, search for the “Support Request Form”.

### 5.2 Product Repairs

#### ***International***

For technical support outside of Canada or the U.S.A., please contact your local Psion Teklogix office listed on our worldwide website:

<http://www.pSIONteklogix.com>

Click on the heading labelled “Contacts” to choose a Psion Teklogix technical support representative closest to you.

#### ***Canada/U.S.A***

Canadian and U.S. customers can receive access to repair services, by calling the toll-free number below, or via our secure website (see *Technical Support*, above).

***Note:** Customers calling the toll-free number should have their Psion Teklogix customer number or trouble ticket number available.*

Voice: 1 800 387-8898 (press option “2”)

Fax: 1 905 812-6304

## 5.3 Worldwide Offices

### **COMPANY HEADQUARTERS AND CANADIAN SERVICE CENTRE**

#### **Psion Teklogix Inc.**

2100 Meadowvale Blvd.

Mississauga, Ontario

Canada L5N 7J9

Tel: +1 905 813 9900

Fax: +1 905 812 6300

E-mail: salescdn@psion.com

### **NORTH AMERICAN HEADQUARTERS AND U.S. SERVICE CENTRE**

#### **Psion Teklogix Corp.**

1810 Airport Exchange Boulevard

Suite 500

Erlanger, Kentucky

USA 41018

Tel: +1 859 371 6006

Fax: +1 859 371 6422

E-mail: salesusa@psion.com

**INTERNATIONAL SUBSIDIARIES (SEE ALSO [WWW.PSIONTEKLOGIX.COM](http://WWW.PSIONTEKLOGIX.COM))**

**Psion Teklogix S.A.**

La Duranne

135 Rue Rene Descartes

BP 421000

13591 Aix-En-Provence

Cedex 3; France

Tel: +33 4 42 90 88 09

Fax: +33 4 42 90 88 88

E-mail: [tekeuro@psion.com](mailto:tekeuro@psion.com)

