IF4

Fixed Reader

User's Guide

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Document Change Record

This page records changes to this document. The document was originally released as P/N 962-054-118A.

Version Number	Revision Letter	Date	Description of Change
-001	N/A	01/2011	Separated content into a quick reference guide and a user's guide (online only).
962-054-118B	B	12/2004	Revised to support software release 1.4.

Contents

Before You Begin

This section provides you with safety information, technical support information, and sources for additional product information.

Safety Information

Your safety is extremely important. Read and follow all warnings and cautions in this document before handling and operating Intermec equipment. You can be seriously injured, and equipment and data can be damaged if you do not follow the safety warnings and cautions.

This section explains how to identify and understand warnings, cautions, and notes that are in this document. You may also see icons that tell you when to follow ESD procedures and when to take special precautions for handling optical parts.

A warning alerts you of an operating procedure, practice, condition, or statement that must be strictly observed to avoid death or serious injury to the persons working on the equipment.

A caution alerts you to an operating procedure, practice, condition, or statement that must be strictly observed to prevent equipment damage or destruction, or corruption or loss of data.

Note: Notes either provide extra information about a topic or contain special instructions for handling a particular condition or set of circumstances.

Global Services and Support

Warranty Information

To understand the warranty for your Intermec product, visit the Intermec web site at **www.intermec.com** and click **Support** > **Returns and Repairs** > **Warranty**.

Web Support

Visit the Intermec web site at **www.intermec.com** to download our current manuals (in PDF).

Visit the Intermec technical knowledge base (Knowledge Central) at **www.intermec.com** and click **Support** > **Knowledge Central** to review technical information or to request technical support for your Intermec product.

Telephone Support

In the U.S.A. and Canada, call **1-800-755-5505**.

Outside the U.S.A. and Canada, contact your local Intermec representative. To search for your local representative, from the Intermec web site, click **About Us** > **Contact Us**.

Service Location Support

For the most current listing of service locations, go to **www.intermec.com** and click **Support** > **Returns and Repairs** > **Repair Locations.**

For technical support in South Korea, use the after service locations listed below:

AWOO Systems
102-1304 SK Ventium
522 Dangjung-dong
Gunpo-si, Gyeonggi-do Korea, South 435-776
Contact: Mr. Sinbum Kang
Telephone: +82-31-436-1191
E-mail: **mjyun@awoo.co.kr**

IN Information System PTD LTD
6th Floor
Daegu Venture Center Bldg 95
Shinchun 3 Dong
Donggu, Daegu City, Korea
E-mail: **jmyou@idif.co.kr** or **korlim@gw.idif.co.kr**

Who Should Read This Manual

This document is for the person who is responsible for installing, configuring, and maintaining the IF4 Fixed Reader.

This document provides you with information about the features of the IF4, and how to install, configure, and operate it.

Before you work with the IF4, you should be familiar with your network.

Related Documents

Here is a related Intermec document that you may need:

- *Basic Reader Interface Programmer's Reference Manual*

The Intermec web site at **www.intermec.com** contains our documents (as .pdf files) that you can download for free.

To download documents

1. Visit the Intermec web site at **www.intermec.com**.
2. Click the **Products** tab.
3. Using the **Products** menu, navigate to your product page. For example, to find the IF4 product page, click **RFID** > **Fixed Readers** > **IF4**.
4. Click the **Manuals** tab.

If your product does not have its own product page, click **Support** > **Manuals**. Use the **Product Category** field, the **Product Family** field, and the **Product** field to help you locate the documentation for your product.

About the IF4 Fixed Reader

The IF4 is an RFID reader designed to work with applications in which an edge server or host PC is used for process control. Your RFID application resides on the server and controls the IF4 via a serial connection. The reader can be configured to read EPC Class 1, EPC Gen 2, and ISO tags.

These instructions explain the ports and LEDs on the IF4, and how to connect the reader to a host PC and RFID antennas.

Government regulatory agencies require that this RFID reader only use approved antennas. Therefore, this reader uses a custom antenna connector. Do not use antennas not approved for use with this reader.

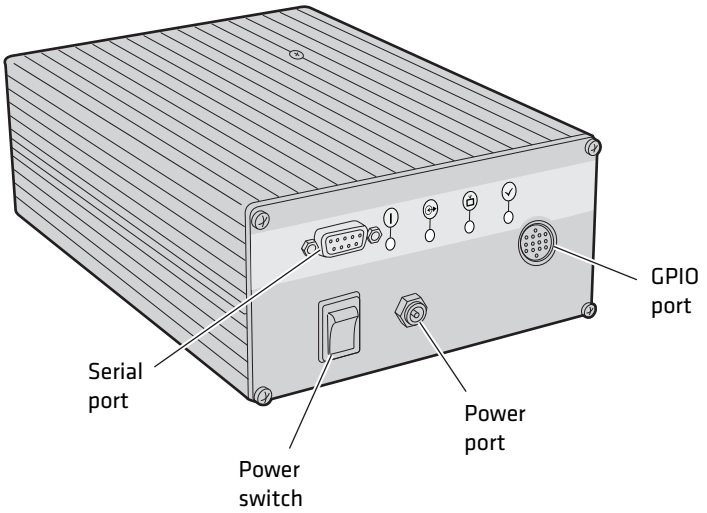
What You Need

To install and connect the IF4, you need these items:

- Appropriate AC power cord
- Intermec Model AE34 power supply (P/N 851-091-xxx)
- Appropriate RFID antennas and cables
- Serial cable (P/N 236-072-001)

For more information on power cords, power supplies, antennas and cables, or other accessories, contact your local Intermec representative.

Understanding the Front Panel



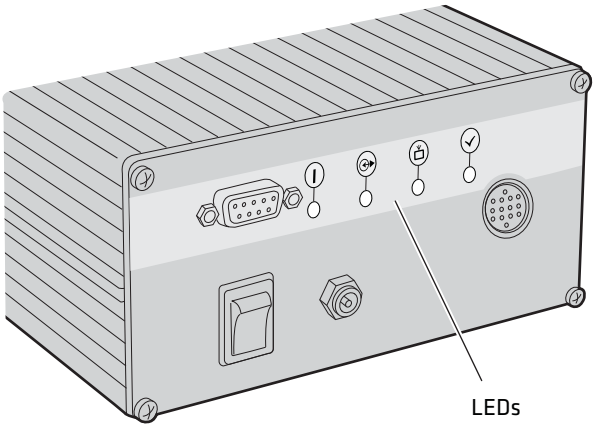
IF4 Front Panel (Switches/Ports)

IF4 Switches/Ports Descriptions

Feature	Description
Power switch	Turns IF4 main power on and off.
Serial port	RS-232 serial port. Use a DB9 null-modem cable to connect the IF4 to a host PC.
Power port	Connection to AC power supply. Use only Intermec Model AE34 (P/N 851-091-xxx).
GPIO port	General purpose input/output interface. Use a 13-pin DIN connector to connect the IF4 to external accessories. For more information, see **"Understanding the GPIO Interfaces" on page 16**.

Understanding the LEDs

The front panel of the IF4 includes four LEDs that indicate status.



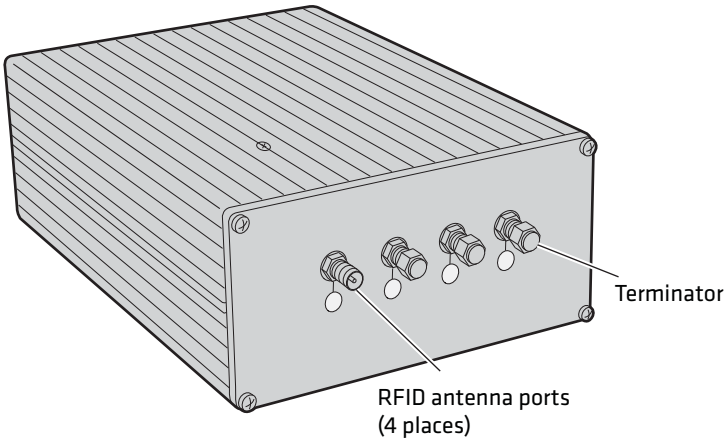
IF4 Front Panel (LEDs)

IF4 LED Descriptions

Icon	LED Name	Description
	Power	Remains on after the IF4 boots.
	Host communication	Flashes when tag data is sent to the host.
	RFID Transmit	Flashes when the IF4 is transmitting.
✓	Tag ID	Flashes when an RFID tag ID is successfully read or written to.

Understanding the Rear Panel

The IF4 rear panel includes four ports for RFID antennas.



IF4 Rear Panel

Note: The IF4 ships with antenna terminators installed on antenna ports 2, 3, and 4. Do not remove the terminator from any port unless you are installing an antenna or antenna cable on that port.

Installing the IF4

1. Place the IF4 in its mounting location.
2. Connect a serial cable from the IF4 to the COM port on the host PC.
3. Attach at least one and up to four RFID antennas to the RFID antenna ports, starting with port 1. Do not remove the terminators from unused antenna ports.

   Warning

   Each port must have an antenna or terminator connected. Do not apply power to the reader unless an antenna or terminator is installed on each antenna port.

4. (Optional) Connect GPIO devices to the GPIO port.
5. Connect the power supply to the Power port and to AC power.

6 Press the **Power** switch to turn on the IF4. The Power LED turns on.

Antenna Locations and Safety

Your local regulatory agency may require a minimum distance between the RF antennas used with the IF4 and any personnel that may pass within the RF path. When choosing a location for RFID antennas, you need to ensure that this distance is easily maintained so your installation is in compliance with those regulations. For more information, see the compliance insert that shipped with your IF4.

Sending Commands to the IF4

An RFID application running on a host PC sends commands to the IF4 using the Basic Reader Interface (BRI) protocol. For more information on BRI commands, see the ***Basic Reader Interface Programmer's Reference Manual***.

To develop RFID applications, you can use the Intermec RFID Resource Kit, which is part of the Intermec Developer Library. This Resource Kit includes C# and Java tools for application development, including reader control and data manipulation. For more information, visit **www.intermec.com** and choose **Products** > **Software and Tools** > **Developer Library** > **Developer Resource Kits**.

Understanding the GPIO Interfaces

The IF4 has four input and four output interfaces. You can connect external controls to the GPIO interfaces, which can then trigger GPIO operations.

All GPIO interfaces should be restricted to a maximum operating input voltage of +5 VDC. To use higher input voltages, you need to use an external voltage conditioning network, such as resistor dividers or active regulators.

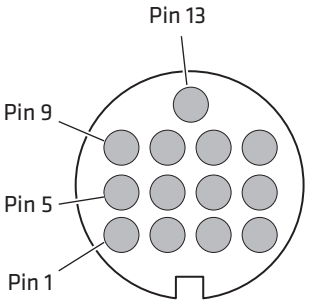
Although all interfaces include transient protection, the interfaces are not protected from continuous over voltage or over current conditions. The IF4 will be damaged if a low impedance source greater than +6.5 VDC is connected directly to either the inputs or the outputs.

GPIO Interface Specifications

Interface	DC Voltage	Maximum Current
Input	0 to +5 VDC	10 mA per input 40 mA for all inputs combined
Output	0 to +5 VDC	50 mA for all outputs combined

You can access the GPIO interfaces through the GPIO port. For pin assignments, see the next section.

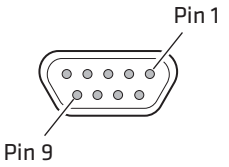
Port Pin Assignments



GPIO Port

GPIO Port Pin Assignments

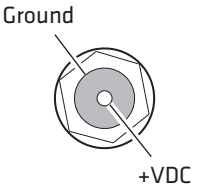
Pin	Description	Pin	Description	Pin	Description
1	IN0	5	OUT0	9 - 13	Ground
2	IN1	6	OUT1		
3	IN2	7	OUT2		
4	IN3	8	OUT3		



Serial Port

Serial Port Pin Assignments

Pin	Description
2	TXD to host
3	RXD from host
5	Ground
7	CTS from host
8	RTS to host



Power Port

Use only Intermec power supply Model AE34 (P/N 851-091-xxx).

Specifications

Dimensions	21 cm x 13.5 cm x 7.4 cm (8.25 in x 5.3 in x 2.9 in)
Weight	1.1 kg (38.4 oz)
DC electrical rating	⎓ 9V, 3.3A
Operating temperature	-20°C to +50°C (-4°F to +122°F)
Storage temperature	-35°C to +70°C (-31°F to +158°F)
Humidity	95% relative

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