Getting Started Guide

5020 Data
Collection PC™

/ntermec

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Contents

What Is the 5020 Data Collection PC?

The 5020 Data Collection PC™ incorporates Intermec's high-performance wireless LAN technology, bar code scanning, and power management features into a hand-held computer. The 5020 is engineered to take full advantage of the Microsoft Windows CE operating system.

The 5020 supports standard programming tools, such as Visual Basic, Visual C++, JScript, and HTML. From their desktops, support staff can remotely configure the 5020 by using a Web browser to access the 5020 device management software.

5020GSG008.eps
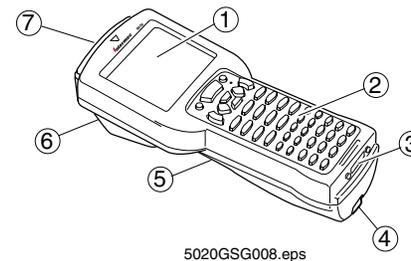
The 5020 is ergonomically designed for one-handed operation to make data collection easy and includes these features:

① 320 x 240 pixel grayscale screen, angled for easy viewing.

② Keypad with 43 keys to support data collection. The 5020 ships with a keypad to match the language you ordered.

③ IrDA (Infrared Data Association) port for serial or IrDA communications.

④ Handstrap for easy one-handed operation.

⑤ Rechargeable lithium-ion main battery pack (sold separately) for power.

⑥ Integrated scanner or tethered scanner port.

⑦ PC card slot for radio, serial communications, modem, Ethernet, or memory. The radio frequency (RF) version of the 5020 ships with the radio installed.

Models and Options

The 5020 family of Data Collection PCs includes these models:

Batch The basic 5020 has a Type II PC card slot and supports the use of Type I and Type II 16-bit memory and input/output (I/O) cards.

RF The RF version of the 5020 is available with a frequency hopping spread spectrum radio or a direct sequence radio.

These options are available for the 5020:

- Integrated scanner (standard, long-range, high density, or high performance) or tethered scanner port
- Keypads to support western European languages
- Asian character sets
- Compact flash memory card

Equipment You Need to Get Started

To use the 5020 Data Collection PC, you need this equipment:

- Lithium-ion main battery pack (Part No. 068537, sold separately)
- Z2400 battery charger
- (Optional) L5020 Serial Communications Adapter and power supply (Part No. 065236) or D5020 Communications Dock

Note: Intermec recommends that you keep at least two main battery packs on hand so that you can use one main battery pack while the other is being recharged. You should keep a main battery pack in the 5020 at all times to reduce the risk of data loss and to maximize the useful life of the 5020.

Getting the 5020 Up and Running

Follow these steps to start using your new 5020:

1 Unpack the 5020 and documentation.

2 Charge the main battery pack.

3 Install a charged main battery pack.

4 Wait for the bridge battery to become fully charged (about 72 hours).

5 Turn on the 5020.

6 Verify that the 5020 is operating correctly.

These steps are described in detail in the next sections.

1 Unpacking the 5020

When you remove the 5020 from its box, save the box and shipping material in case you need to ship or store the 5020. Check the contents of the box against the invoice for completeness, and contact your local Intermec service representative if there is a problem.

Information packet

5020 Data Collection PC

5020GSG009.eps
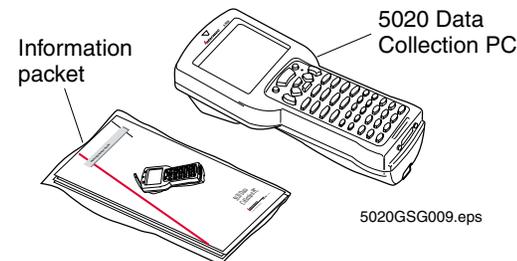
These items should be in the information packet:

- Getting Started Guide (this document)
- Handstrap
- Authorized Service Location sheet
- Safety supplement
- Microsoft software agreement
- Laser warning label set (5020s with integrated scanners only)
- Sheet of four PC card extraction tabs (batch 5020s only)

Charging the Main Battery Pack

The main power source for the 5020 is a 1500 mAh lithium-ion battery pack (Part No. 068537). Before you can use the 5020, you must fully charge the main battery pack. The 5020 will not operate without a main battery pack even when it is connected to an AC power source using a D5020 or an L5020.

To charge the main battery pack

- Place the main battery pack in an empty slot in the battery charger. The main battery pack is fully charged in about 3 hours. For help, see the documentation that came with your battery charger.

You can also use the D5020 Communications Dock or the L5020 Serial Communications Adapter with power supply to trickle-charge the main battery pack. For help, see the *D5020 Communications Dock Getting Started Guide* (Part No. 068976) or the *L5020 Serial Communications Adapter Quick Reference Guide* (Part No. 068978).

Replace the main battery pack with Part No. 068537 only. The use of any other battery pack may present a risk of fire or explosion. Contact your local Intermec sales representative for replacement main battery packs. DISPOSE OF USED MAIN BATTERY PACKS PROMPTLY. KEEP AWAY FROM CHILDREN.

Installing the Main Battery Pack

Install the fully-charged main battery pack into the 5020.

To install the main battery pack

1. The 5020 ships with the handstrap installed. Push the top clip of the handstrap down and forward to unhook it, and position the strap away from the battery compartment.
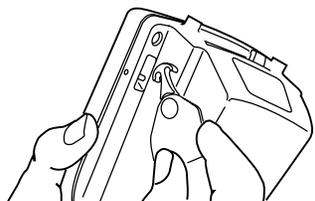
5020GSG016.eps

2. Open the battery door by pushing down on the battery door latch and sliding it toward the top end of the 5020. Lift up the top edge of the battery door and remove it.
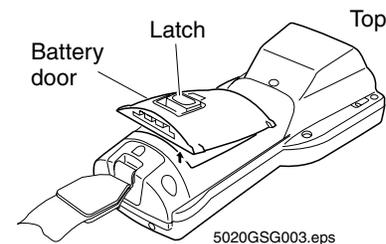
5020GSG003.eps

3. Place the main battery pack into the battery compartment with the contacts pointed toward the bottom end of the 5020.

4. Push the main battery pack down until it locks into the connectors on the bottom of the battery compartment.
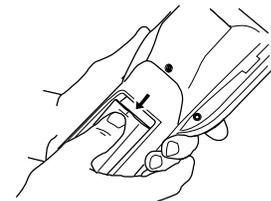
5020GSG004.eps

5. Insert the top edge of the battery door into the top of the battery compartment. Push the door down to close it over the compartment.

6. Push the battery door latch down and slide it toward the bottom end of the 5020 to lock the door in place.

   The 5020 initializes after you install a charged main battery pack. The green LED above the screen flashes until initialization is complete.
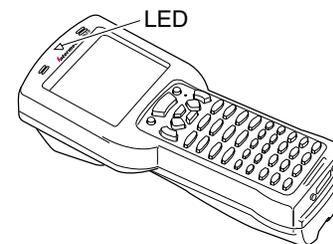
5020G027.eps

7. Hook the top clip of the handstrap over the dowel pin on the top of the 5020 and set it in place.

5020GSG016.eps
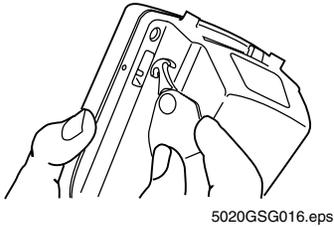
Note: The handstrap works best if it crosses the entire back of the hand and not just the fingers. The top end of the strap may be hooked on either the left or right side of the 5020 so you can use either hand.

4 | *Charging the Bridge Battery*

The 5020 comes with a rechargeable bridge battery that maintains the contents of RAM while the main battery pack is being replaced. For more information about the bridge battery, see the *5020 Data Collection PC User's Manual* (Part No. 068975).

IMPORTANT: The 5020 is shipped with a discharged bridge battery. Do not rely on the bridge battery to maintain the contents of RAM until it has been fully charged.

• The bridge battery recharges from the main battery pack or recharges from the AC power source. Wait until the bridge battery is fully charged before proceeding to the next section. It takes 72 hours at room temperature to charge a discharged bridge battery.

Note: You should always keep a charged main battery pack installed in the 5020 to maximize the life of the bridge battery.

5 | *Turning On the 5020*

The 5020's on/off key is the yellow ⌷I/O⌷ key in the lower right corner of the keypad.

5020G023.eps
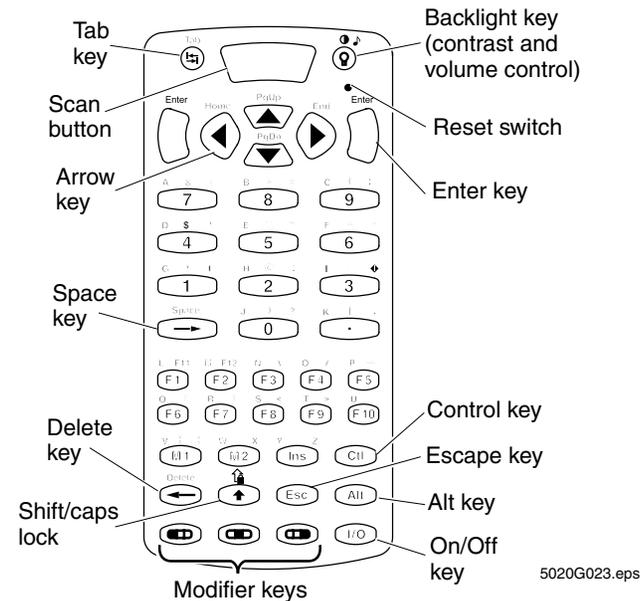
To turn on the 5020

• Press ⌷I/O⌷. The 5020 desktop appears.
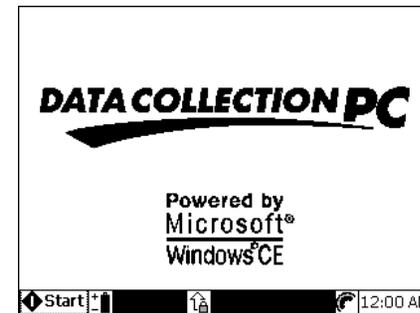
When you press ⏻ to turn off the 5020, the PC does not actually shut off, but goes into Suspend mode. In Suspend mode, the 5020 continues to power all memory but turns off the power to most of the hardware. This mode is referred to as "off" in the rest of this guide. When you press ⏻ to turn on the 5020, the PC resumes where it was when you turned it off.

The 5020 automatically turns off after 5 minutes if there is no activity. Press ⏻ to turn it back on. For more information on the Automatic Shutoff feature, see the *5020 Data Collection PC User's Manual.*

6 | *Verifying That the 5020 is Operating Correctly*

Verify that the 5020 is operating correctly by scanning a bar code label.

To scan a bar code label

1. Press ⏻ to turn on the 5020.

2. Press ⊟ ③ to open the Start menu.

```
Programs        ▶
Settings...
Run...
─────────────
Goto User Mode
Suspend
```

3. Press ▼ to select Programs, then press ▶ to select DCPC Demo, and press ◯ (Enter). The DCPC Demo screen appears.

```
DCPCDemo                    ✕
Part no:● |          |   Clear
Quantity: |          |
Location: |          |   Next
   Name:  |          |
Password: |          |   Exit
Accepts letters and digits.
```
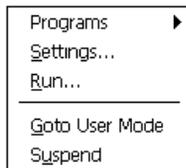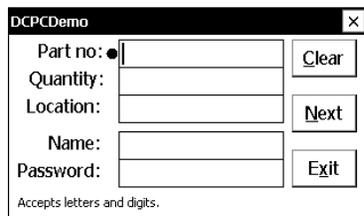
4. Hold the 5020 at a slight angle a few inches from the Test Bar Code, with the laser scan window pointing towards the bar code.

   Scan the Test Bar Code by pushing the Scan button on the keypad or by pulling the trigger on the handle if the optional handle is installed. If you have a tethered scanner, see your user's guide for directions. Direct the beam so that it falls across all bars in the bar code label.

Test Bar Code

‖|‖|‖|‖ ‖|‖|‖ ‖|‖ ‖‖|‖ ‖|‖ ‖‖

12345

   After successfully reading the label, the 5020 emits a high beep and the green LED lights for about a second.

5. To check that the 5020 decoded the bar code correctly, make sure 12345 appears in the Part Number field.

6. Press ⊟ to select the Exit button and press ◯ to exit DCPC Demo.

Connecting and Configuring the 5020

You can connect the 5020 to your network in several ways:

- Use the IrDA port to transfer data between the 5020 and a host computer.

- Use the radio on an RF 5020 to communicate with other RF devices in your network.

- Use an Ethernet or serial I/O PC card (purchased separately) to communicate with other devices in your network.

To use the IrDA port

- Use the D5020 Communications Dock or the L5020 Serial Communications Adapter. For help, see the *5020 Data Collection PC User's Manual* or the guide that shipped with your D5020 or L5020 accessory.

- Line up the 5020 IrDA port to the IrDA port on another device.

The 5020 can communicate over an RF or Ethernet network using either UDP Plus through the DCS 30X or TCP/IP to your host computer. Before connecting the 5020, you need to configure the network.

To configure your RF or Ethernet network

- For a TCP/IP network, configure the host computer.

- For a UDP Plus network, configure the DCS 30X. For help, see the manual that shipped with your server.

- If your 5020 has a radio, configure the access point. For help, see your access point user's manual.

To use an Ethernet or serial I/O card

- Install an Ethernet or serial I/O PC card in your 5020. For help, see "Using a PC Card" later in this guide. Connect your 5020 to the network with an appropriate cable.

Once your 5020 is connected to the network or device, you are ready to configure the basic parameters on the 5020. For help, see the next section.

Configuring the 5020

The next instructions explain how to configure the 5020 using the Fast Config application on the 5020. For other configuration methods, see the *5020 Data Collection PC User's Manual*.

> **Note:** Ask your network administrator if you have questions about your network's configuration.

To run the Fast Config application

1. Press ⌨ to turn on the 5020.

2. Press ▣ ③ to open the Start menu.

3. Press ▼ to select Programs and press ▶.

4. Press ◯ to start Fast Config. The Welcome screen appears.

5. Press ◯. The Date and Time dialog box appears.
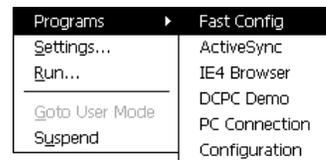
6. Press ⊜ to move from field to field. Set the correct date and time using the arrow keys.

7. Press ◯. A confirmation dialog box prompting you to apply changes appears.
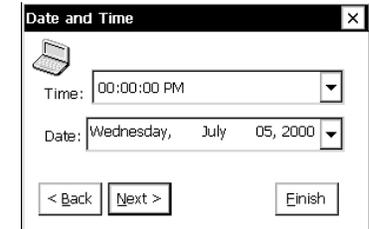
8. Press ◯ to continue. The Communications dialog box appears with the default baud rate (115200) selected.

> **Note:** If your 5020 is not connected to a D5020 Communications Dock or L5020 Serial Communications Adapter, a baud rate message appears. Press ◯. The Communications dialog box appears without a baud rate selected.

9. Press ◯. The Network dialog box appears.

> **Note:** If you are using a batch 5020 without an Ethernet or serial PC card, the Identification dialog box appears. Go to Step 15.
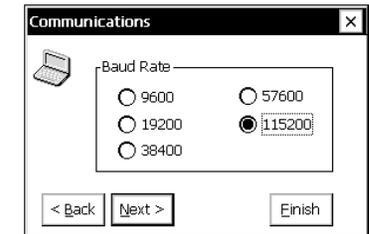
10. If you are using a DHCP server, press ◯. The WINS dialog box appears.

    If you are not using a DHCP server, press ➡ to clear the check mark from the box. You must enter values in the IP Address, Subnet Mask, and Default Router fields. Press ⊜ to move the cursor from field to field. Enter values with the number keys and use the arrow keys to move within a field. When finished, press ◯. The confirmation dialog box appears. Press ◯. The WINS dialog box appears.
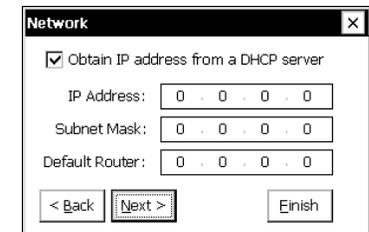
11. If your DHCP server is configured to automatically set the Primary and Secondary WINS addresses, press ⬭. The DNS dialog box appears.

    If your server will not automatically set the WINS addresses, enter them now. When finished, press ⬭. The confirmation dialog box appears. Press ⬭. The DNS dialog box appears.

12. If your DHCP server is configured to automatically set the Primary and Secondary DNS addresses, press ⬭.

    If your server will not automatically set the DNS addresses, enter them now. When finished, press ⬭. The confirmation dialog box appears. Press ⬭.

    Note: If your 5020 comes with a radio, the Radio dialog box (either OpenAir or 802.11) appears. Continue with Step 13. If your 5020 does not have a radio, the Identification dialog box appears. Go to Step 15.

13. Press ⬭ to move from field to field in the Radio dialog box. Enter information with the alphanumeric keys. For help, see "Entering Keypad Characters" later in this guide.

14. When finished, press ⬭. The confirmation dialog box appears. Press ⬭. The Identification dialog box appears.

15. Enter a name for the 5020 in the Device Name field. When finished, press ⬭. The confirmation dialog box appears. Press ⬭. An alert message appears.

    Note: You may not need to enter a name for your 5020. If this is true, press ⬭. An alert message appears.

16. The alert message reminds you that you must turn the 5020 off and back on to enable the changes. Press ⬭. The Congratulations message appears.

17. Press ⬭ to close Fast Config. Press ⬭ twice to turn the 5020 off and back on. Your 5020 is ready to use. For more help with Fast Config, see the *5020 Data Collection PC User's Manual*.

    Note: In a UDP Plus network, you still need to enable UDP Plus on the 5020. You must also warm boot the 5020 to enable UDP Plus. For help, see the *5020 Data Collection PC User's Manual*.

Developing Applications for the 5020

You can develop your own applications for the 5020. Use the following development tools to build your application:

- Intermec 5020 Software Development Kit (SDK, provided on CD-ROM, Part No. 069511)

- Microsoft Visual C++ Professional or Enterprise Edition 6.0 or newer with Microsoft Windows CE 2.1 Toolkit for Visual C++ 6.0

- Visual Basic with Microsoft Visual Studio 6.0 and Microsoft Windows CE 2.12 Toolkit for Visual Basic

- HTML 4.0 and JScript for Internet Explorer 4.0 and other Web-based applications

Using a PC Card

A PC card slot is provided on the batch 5020. You can use 3.3V and 5V Type I and Type II memory and I/O cards that comply with the PC Card Standard, February 1995 for 16-bit cards.

You can use the following types of PC cards in your 5020.

- Type I Flash Memory

- Type I SRAM Memory

- Type II ATA Flash Memory

- Type II Modem

- Type II Ethernet

You cannot use Type III PC cards in the 5020. For a complete list of supported PC cards, see your Intermec sales representative.

> **Note:** Make sure you attach an extraction tab to the PC card before installing the card into your 5020. Warm boot the 5020 after you install the card. For help, see "Booting the 5020" later in this guide.

Installing a PC Card

Card latch

Extraction tab

Single notch

5020GSG015.eps
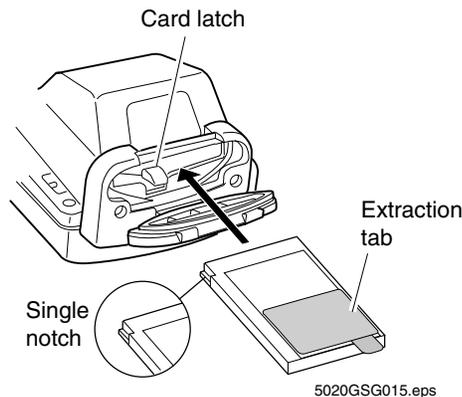
Using a Compact Flash Card

You can use Type I compact flash cards (3.3mm thick) to provide additional storage for your 5020. The compact flash slot is accessible through a compact flash card door located beneath the main battery pack.

You cannot use Type II compact flash cards (5mm thick) in the 5020.

Compact flash card ejector

Flash card

Flash card back edge

5020GSG013.eps
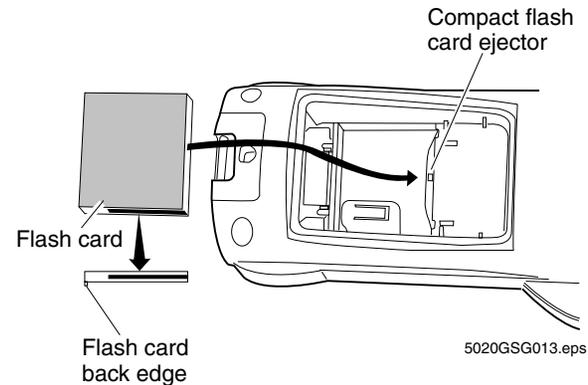
Booting the 5020

You can use the recessed Reset switch to warm boot or cold boot the 5020.

Reset switch

5020GSG006.eps
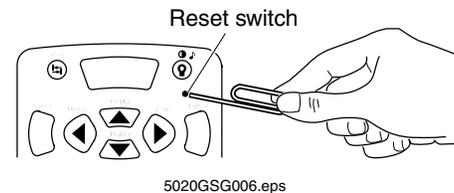
Warm boot The system reboots without changing the 5020 settings and files. During a warm boot, the 5020 exits or cancels any open applications, but the applications do not have to be reloaded. All configuration settings are saved when you warm boot the 5020.

Cold boot The settings revert to the default factory settings. Only the network and scanner settings are preserved and restored on a cold boot.

To warm boot the 5020

- Insert a small straightened paper clip in the Reset switch and press the switch. Hold it momentarily and then remove it from the Reset switch.

The red LED flashes until the warm boot is finished and the 5020 desktop appears.

To cold boot the 5020

- Press and hold ⌨, and insert a small straightened paper clip in the Reset switch. Press and hold the Reset switch momentarily and then remove the paper clip from the Reset switch. Release ⌨.

The green LED flashes until the cold boot is finished, which is about one minute after the 5020 desktop appears. The 5020 emits a series of beeps when the cold boot is complete.

> **Note:** After a cold boot, the date is set to January 1, 1999, and the time is set to 12:00 A.M.

Using the Keypad

The 5020 keypad is easy to use. Characters, symbols, and functions are printed in four places on or above the keys. The keys are also color-coded to make it easier to remember key combinations.

Entering Keypad Characters

Press a key to enter the character or function printed on the key. Use a modifier key to access characters or perform functions that do not have a physical key on the keypad.

Position on Keypad	Color	To Type the Character
Printed on the key		Press the key.
Left side above the key	Orange	Press ⬬, then the key.
Centered above the key	Lime	Press ⬬, then the key.
Right side above the key	Green	Press ⬬, then the key.

Adjusting the Backlight, Contrast, and Volume

Turn the 5020 screen backlight on or off to improve the visibility in different lighting conditions. You can also change the screen contrast and the audio signal volume.

Press	Action
⑨	Turns the backlight on or off.
⬬ ⑨	Changes the screen contrast level.
⬬ ⑨	Changes the audio volume.

Using the Pointer

Instead of using the ⬳ or arrow keys to select fields or buttons on the 5020 desktop, you can enable a pointer.
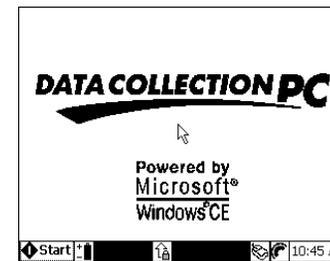
- To enable the pointer, press Alt Ctl.
- To disable the pointer, press Alt Ctl.
- To move the pointer around the screen, press ▲, ▼, ◀, or ▶.
- To select a field or button, move the pointer over it and press ⬭.
- To open a folder or an application, move the pointer over the icon and press ⬭ twice quickly (like double-clicking a mouse).

Learning About the Installed Software

The 5020 ships with the following software components installed.

Windows CE 2.12   Windows CE is a compact, efficient, multiplatform operating system designed for devices with limited resources.

ADC (Automatic Data Collection) Server   The ADC Server is the software interface to the 5020 bar code reader engine. It allows multiple applications to retrieve ADC data from the 5020 reader engine.

Internet Explorer 4.0   The IE4 browser is a client application that can be used for Web-based data collection applications.

Configuration   The Configuration application enables you to view and change the configuration of the 5020. The remote Unit Management application also provides a File Manager, Process Manager, Application Manager, and Event Viewer.

SNMP (Simple Network Management Protocol)   SNMP is an application-layer protocol designed to facilitate the exchange of management information between network devices. Use SNMP to control and configure the 5020 anywhere on an SNMP-enabled network.

Radio drivers   The radio drivers control the radio operation.

Language components   The language components consist of U.S. language components and international language fonts. International language fonts support western European languages including Danish, Dutch, Finnish, French, German, Italian, Norwegian, Portuguese, Spanish, and Swedish. If your 5020 includes the Asian font option, you can also display Chinese, Korean, or Japanese characters.

Programming environment support   The 5020 contains software components that support the use of COM/ActiveX, Visual Basic, C Runtime Libraries, Active Template Library, and Microsoft Foundation Classes.

Intermec Software Development Kit (SDK) library functions   The library functions are software components that support the use of the Intermec SDK. These components are required when applications use SDK functions.

HTTP server   The server software enables you to connect the 5020 with the Internet. The HTTP server supports server-side scripting.

Desktop   The desktop provides the user interface to the 5020. Key features of the desktop include a Start button, Notification Tray (instead of a Task bar) that displays 5020 status icons, and control panel applets.

Note: A README.TXT file is included on the 5020 in Unicode text (.TXT) format. This file provides complementary or late-breaking information not contained in this guide.

Specifications

Physical Dimensions

Width: 10.2 cm (4.0 in) at the screen
7.0 cm (2.75 in) at the grip

Length: 22.9 cm (9.0 in)

Depth: 7.1 cm (2.8 in) maximum
4.57 cm (1.8 in) at the grip

Weight (including batteries and handstrap):

5020 batch: 703.1 g (24.8 oz)
5020 RF: 748.4 g (26.4 oz)

Power Specifications

Operating: Rechargeable lithium-ion 1500 mAh battery pack

Memory Backup: Rechargeable lithium manganese dioxide 90 mAh bridge battery

Electrical Specifications

Electrical Rating: $\overline{\cdots}$ 7,4 to 12V; 750mA peak

Temperature and Environmental Specifications

Operating Temperature: -20°C to +50°C   -4°F to +122°F

Storage Temperature

less than 2 weeks: -20°C to +60°C   -4°F to +140°F
longer than 2 weeks: -20°C to +45°C   -4°F to +113°F

Relative Humidity: 0 to 95% non-condensing

Hardware Specifications

- Hitachi SH3 processor
- 8MB or 16MB (Optional) RAM
- 16MB or 32MB (Optional) flash
- Type I/II PC card slot for radio, serial, modem, and memory cards
- Type I compact flash card slot

Keypad Features

- Alphanumeric keypad with 43 keys and 10 function keys

- Four keypad overlays available: Simplified English, Full English, European 1, European 2

- European 1 keypad overlay supports British English, French, Italian, Spanish, and Portuguese languages

- European 2 keypad overlay supports British English, Danish, Dutch, Finnish, German, Norwegian, and Swedish languages

Screen Specifications

- 320 x 240 pixel monochrome screen

- 5.1 x 6.73 cm (2 x 2.65 in) screen size and 8.4 cm (3.3 in) diagonal

RF Communications

2.4 GHz OpenAir radio (frequency hopping spread spectrum)

- 100 mW maximum output power

- 1.6/0.8 Mbits per second data speed

- Coverage > 80 m (262.4 ft)

IEEE 802.11b HR (High Rate) DS (direct sequence spread spectrum)

- 100 mW maximum output power

- 11 Mbits per second data speed

- Coverage > 80 m (262.4 ft)

Connectivity Options

- Winsock 1.1

- TCP/IP, SLIP, IrDA, IRSOCK

- LAN using NDIS

- UDP Plus

Bar Code Scanning Options

- Standard-range integrated scanner with visible laser diode (670 nm)

- Long-range integrated scanner with visible laser diode (650 nm)

- High-density integrated scanner with visible laser diode (675 nm)

- High-performance integrated scanner with visible laser diode (675 nm)

- 10-pin modular scanner port for tethered input devices

Accessories

- Z2400 Battery Charger

- D5020 Communications Dock

- L5020 Serial Communications Adapter

- Powered Vehicle Mount Bracket (Part No. 070780)

- Vehicle Mount Bracket (Part No. 070407)

- Holster and belt (Part No. 069237)

- Handle with built-in trigger (Part No. 067802)

- Compact flash memory card

For more information, see your Intermec sales representative.

Where to Find Other Information

There are two places where you can get more information on using your 5020:

- The *5020 Data Collection PC User's Manual* (Part No. 068975). The manual includes two CD-ROMs: 5020 Data Collection PC Software Developer's Kit and Support Files (Part No. 069511), and Windows CE Services (Part No. 474-004-126).

- The Intermec Web site at www.intermec.com.

Part No. 068974-002

068974-002