Intermec®

SG20T
Tethered Scanner

User's Guide

Intermec Technologies Corporation

Worldwide Headquarters
6001 36th Ave.W.
Everett, WA 98203
U.S.A.

www.intermec.com

Document Change Record

This page records changes to this document. The document was originally released as Revision A.

Version Number	Date	Description of Change
B	4/2013	• Added SG20T2D and SG20T2DHP on list of models where needed.
		• Added flexible stand in accessories.
		• Took out DPM mode.
		• Added cell phone scanning to predefined imager modes 1d and 2D bar codes with reflective surface.
		• Updated 1D and HP reading distances with extended reading range activated.

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4 Configuring the SG20T Scanner 27

5 Troubleshooting and Maintaining the SG20T 33

A Specifications and Reading Distances

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.

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**.

Disclaimer of warranties: The sample code included in this document is presented for reference only. The code does not necessarily represent complete, tested programs. The code is provided "as is with all faults." All warranties are expressly disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.

Web Support

Visit the Intermec web site at **www.intermec.com** to download our current manuals (in PDF). To order printed versions of the Intermec manuals, contact your local Intermec representative or distributor.

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
Email: **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 guide is for the person who is responsible for installing, configuring, and maintaining the SG20T.

This guide provides you with information about the features of the SG20T, and how to install, configure, operate, maintain, and troubleshoot it.

Related Documents

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 CN3 computer product page, click **Computers** > **Handheld Computers** > **CN3**.

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.

Patent Information

Product is covered by one or more of the following patents:

4,882,476; 4,894,523; 4,953,113; 4,970,379; 4,988,852; 5,019,699;
5,021,642; 5,038,024; 5,081,343; 5,095,197; 5,144,119; 5,144,121;
5,182,441; 5,187,355; 5,187,356; 5,216,233; 5,216,550; 5,218,191;
5,233,172; 5,241,488; 5,243,602; 5,258,606; 5,288,985; 5,308,966;
5,342,210; 5,359,185; 5,389,770; 5,397,885; 5,414,251; 5,416,463;
5,442,167; 5,464,972; 5,468,947; 5,468,950; 5,477,044; 5,486,689;
5,500,516; 5,502,297; 5,504,367; 5,514,858; 5,534,684; 5,536,924;
5,539,191; 5,541,419; 5,548,108; 5,550,362; 5,550,364; 5,565,669;
5,572,007; 5,576,529; 5,594,230; 5,598,007; 5,608,578; 5,616,909;
5,619,027; 5,640,001; 5,659,431; 5,672,860; 5,684,290; 5,719,678;
5,729,003; 5,742,041; 5,761,219; 5,764,798; 5,777,308; 5,777,309;
5,777,310; 5,786,583; 5,798,509; 5,798,513; 5,804,805; 5,811,776;
5,811,777; 5,818,027; 5,821,523; 5,834,749; 5,837,987; 5,841,121;
5,842,070; 5,854,478; 5,862,267; 5,869,840; 5,873,070; 5,877,486;
5,878,395; 5,886,338; 5,895,906; 5,902,987; 5,902,988; 5,912,452;
5,923,022; 5,936,224; 5,949,056; 5,969,321; 5,969,326; 5,979,768;
5,987,192; 5,992,750; 6,003,775; 6,012,640; 6,016,960; 6,018,597;
6,024,289; 6,034,379; 6,036,093; 6,039,252; 6,064,763; 6,095,422;
6,097,839; 6,102,289; 6,102,295; 6,119,941; 6,128,414; 6,138,915;
6,149,061; 6,149,063; 6,152,370; 6,155,490; 6,158,661; 6,164,542;
6,164,545; 6,173,893; 6,195,053; 6,234,393; 6,234,395; 6,249,008;
6,328,214; 6,330,975; 6,345,765; 6,356,949; 6,367,699; 6,375,075;
6,375,076; 6,435,411; 6,484,944; 6,641,046; 6,669,087; 6,681,994;
6,688,523; 6,732,930; 6,879,428; 6,889,903; 6,974,085.

There may be other U.S. and foreign patents pending.

1

Introducing the SG20T Tethered Scanner

This chapter provides an overview of the SG20T Tethered Scanner. This chapter covers these topics:

- **What is the SG20T Tethered Scanner**
- **Supported Interfaces**
- **Powering the SG20T**
- **Connecting the Interface Cable**
- **Removing the Interface Cable**
- **Accessories**

What is the SG20T Tethered Scanner

The SG20T Tethered Scanner is a general purpose handheld scanner. The SG20T is lightweight, ergonomically designed, and it interfaces easily with Intermec computers and other host computers.

Scanner window   Status light

Intermec
Ready-to-Work
indicator™

Trigger
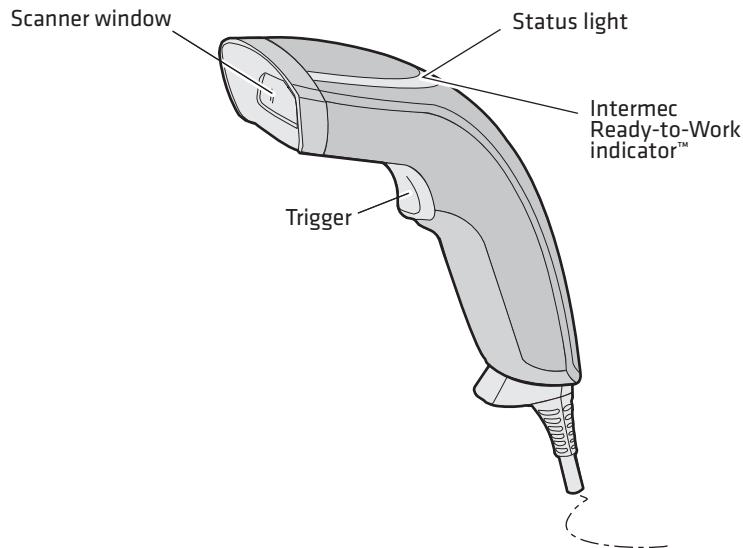
SG20T Tethered Scanner

The SG20T is available in the following models:

- 1D imager—SG20T1D-xxx
- 2D imager—SG20T2D-xxx
- Health Care 2D imager—SG20T2DHC-xxx
- High performance 2D imager—SG20THP-xxx
- High Performance Health Care 2D imager—SG20THPHC-xxx

Intermec Technologies Corp.
Everett, WA 98203
MODEL, 型号, 모델: SG20
规格 --- 5V 1.7A

IC: ICES-003 CLASS B

Made in Singapore
新加坡制造 제조국: 싱가포르

MFD 生产日期, 제조일: **YY/MM/DD**
CN: SG20T1D-XXXXXX
1258456321458 7

SG20T1D-XXXXXX
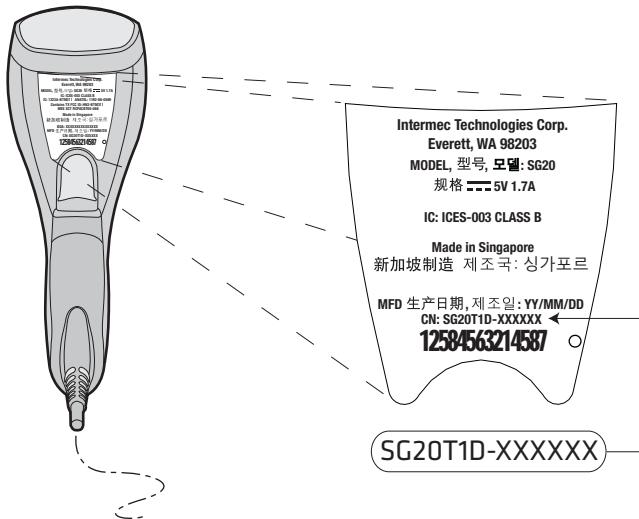
SG20T Scan Engine Option: *The scan engine option of your SG20T can be found in the first part of the configuration number. In this illustration, the scan engine option is SG20T1D for 1D imager.*

Supported Interfaces

The SG20T supports the following interfaces:

• USB—HID keyboard, virtual COM, IBM Sure POS, and HID POS

• Standard RS-232

• Keyboard wedge/Y-Cable

Powering the SG20T

The SG20T is powered through the accessory cable that connects it to the host computer. Depending on your connection, power for the SG20T comes from either the host computer or an external power supply connected to the interface cable.

Connecting the Interface Cable

The cable you use depends on the interface and host device. However all cables are connected to the scanner in the same way.

To connect the cable, insert it and press firmly until inserted all the way.
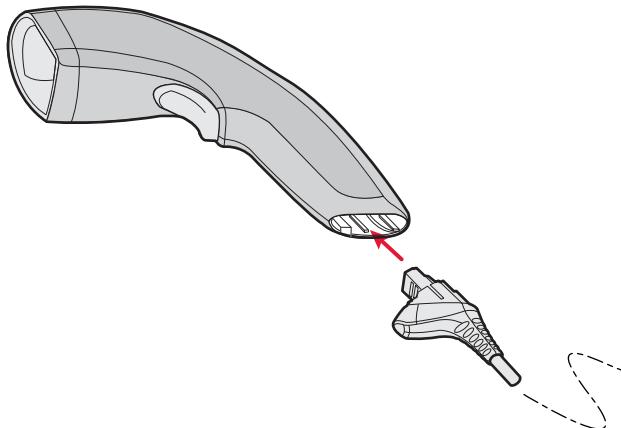
Removing the Interface Cable

To remove the cable follow these steps:

1 Insert a pin or straightened paper clip into the release hole.

2 Push on the pin or paper clip while pulling out the cable.
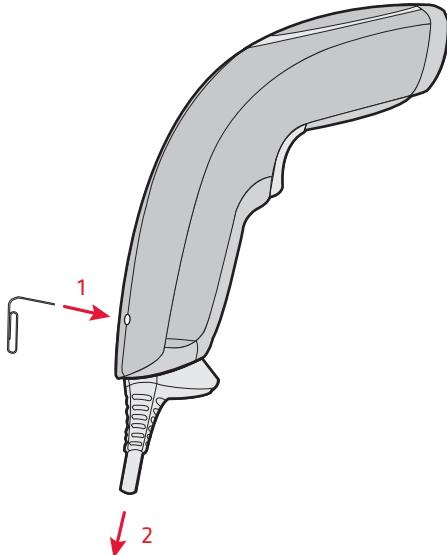
Accessories

There are several different accessories available. Here you will find a list of required and optional accessories.

Required Accessories

You will need one or more of the following cables for your SG20T.

SG20T Cable List

Cable	Part Number
USB cable (6 feet straight)	CAB-SG20-USBxxx
Keyboard wedge cable (6 feet "Y" straight)	CAB-SG20-KBWxxx
RS232 Cable, DB9 (6 feet straight)	CAB-SG20-SERxxx
Universal Intermec power supply 5V	851-089-xxx

Note: A power cord is also needed to plug in the power supply. The power cord needed depends on your country and is sold separately.

Optional Accessories

The following accessories are optional.

SG20T Optional Accessories

Cable	Part Number
Desktop / Wall Mount	Holder-SG20-xx
Desktop Adjustable Stand	Stand-SG20-xx

Desktop / Wall Mount

The desktop/wall mount holder can be used to store the SG20T when you are not using it. You can attach the holder with screws either to a desk or to a wall.
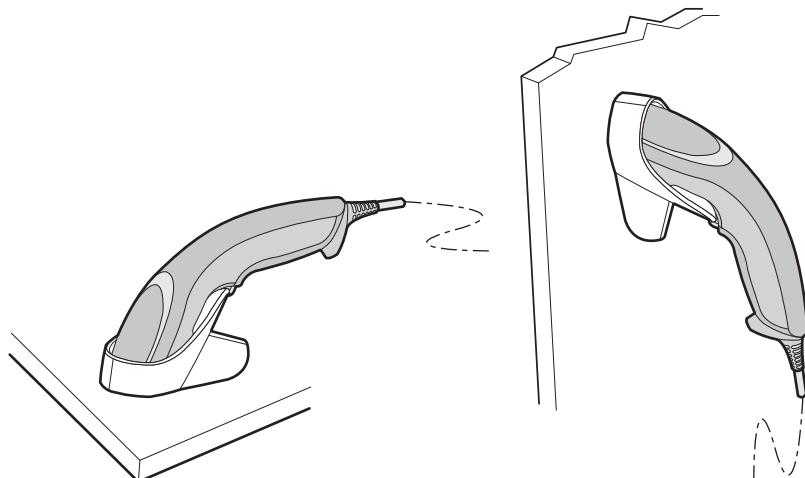
SG20T Desktop / Wall Mount Holder: *P/N Holder-SG20-xx*

Desktop Adjustable Stand

The desktop adjustable stand can be used to adjust the scanning angle when using the SG20T as a hands-free scanner (must change the default trigger setting) or to store it when you are not using it.

SG20T Desktop Adjustable Stand: *P/N Stand-SG20-xx*

Flexible Stand

SG20 Flexible Stand: P/N Flexstand-SG20-xx

2
Scanning with the SG20T

This chapter explains how to scan bar codes and includes the following sections:

- **Understanding the Lights**
- **Understanding the Beeps**
- **Scanning Bar Codes**

Understanding the Lights

The SG20T uses the Intermec Ready-to-Work™ light and Status light to communicate information about your scanner.

Intermec Ready-to-Work Indicator

The Intermec-Ready-to-Work indicator™ (blue LED) indicates that the scanner is ready to scan bar codes. This light stays on all the time when the scanner is ready to work however your scanner will also flash status information using green and red lights. See the Status Light information in the next section.

Blue Intermec Ready-to-Work Indicator

Light State	What it Means
Off	Scanner is not ready to scan bar codes.
On	The SG20T is ready to scan bar codes.

Note: By default the Intermec Ready-to-Work light is enabled however you can disable the light if desired. You can also change the color. See EasySet version 5. 6. 5. 1. for more information.

Status Light

The status light on the SG20T flashes red or green depending on the status of the scanner.

Default Status Light Description

Light State	What it Means
Series of green flashes (USB interface only)	Power-up At power-up the status light flashes to indicate the activated USB interface: —1 flash = Keyboard HID —3 flashes = Virtual COM —5 flashes = HID POS —6 flashes = IBM POS Hand Held —7 flashes = IBM POS Table Top The status light only flashes at power up for a USB interface. **Note:** When changing from one USB interface to another the scanner restarts and will also flash the current USB interface.
Green light on for 2 seconds	The scanner successfully decoded a bar code and sent the data to the host device.
Green light flashes 2 times	A configuration bar code was successfully read.
Red light on for 2 seconds	Transmission error OR Configuration bar code was not accepted

Understanding the Beeps

The SG20T also beeps to give you audio feedback when performing some functions. For example, you hear a beep each time you scan a valid bar code.

Default SG20T Beep Descriptions

Beep Sequence	What it Means
Two beeps	Power-up
Single beep	The scanner successfully scanned a bar code.
Two fast beeps	Configuration bar code successfully scanned
Six very fast beeps	Transmission error
	OR
	Configuration bar code was not accepted

Scanning Bar Codes

! **Warning** **For the SG20THP and SG20THPHC do not look directly into the window area or at a reflection of the laser framing beam while scanning. Long-term exposure to the laser framing beam can damage your vision.**

The SG20T contains either a 1D imager (SG20T1D), a 2D imager (SG20T2D or SG20T2DHC) or high performance 2D imager (SG20THP or SG20THC) to scan bar code data. The type of scan engine you are using and the type of bar code you are decoding determines the way you scan the bar code.

When you unpack the SG20T, these bar code symbologies are enabled:

- Code 39
- Code 128 / GS1-128
- EAN/UPC
- PDF417 (all models except SG20T1D)
- DataMatrix (all models except SG20T1D)

If you are using bar code labels that are encoded in a different symbology, you need to enable the symbology on your SG20T. Use EasySet version 5.6.5.1 or later to enable and disable symbologies for your scanner.

To scan with a 1D imager

1 Point the SG20T at the bar code label and hold the SG20T at a slight angle 15 to 25 cm (6 to 10 in) from the label.

2 Pull the trigger, and direct the red beam so that it falls across all bars in the bar code label.

Use this test bar code:

Code 39 Test Bar Code

|||||||| |||| |||||| |||| ||| |||||| ||||| |||
123456

Tip: Depending on your screen resolution, you can scan bar codes displayed on your computer screen.

By default, when the SG20T successfully reads a bar code label, the SG20T beeps one time, the status light briefly turns green, and the scanner beam turns off.

3 Release the trigger.
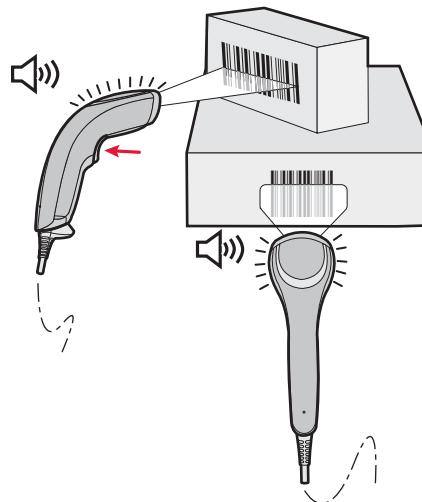
Scanning Bar Codes: *The aiming and scanner beams that you see depend on which SG20T model you are using.*

To scan with a 2D imager

1 Point the scanner window at the bar code label and hold the SG20T steady a few inches from the label.

2 Pull the trigger and use the laser framing or aiming beam to position the imager over the bar code or area to capture.
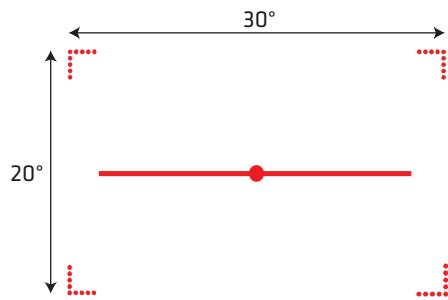
Example: SG20THP Laser Framing

When bar code labels are printed close to each other, try to frame or aim only the bar code you want to read, to avoid reading the wrong bar code.

By default, when the SG20T successfully reads a bar code label, the SG20T beeps one time, the status light briefly turns green, and the scanner lighting turns off.

3 Release the trigger.

Hands-Free Scanning

The SG20T is a handheld scanner however you can scan items without having to hold your scanner in your hand. To do hands-free scanning, you will need to change the triggering mode to Autostand. To activate, see **"Hands-Free Scanning" on page 29**.

Autostand Triggering Mode

Autostand mode is different depending on the scanner model. This section explains the difference between:

- Autostand for all models except SG20T1D

- Autostand for SG20T1D

Autostand For All Models Except SG20T1D

Autostand is a mix of Level and Presentation triggering modes. When in Level mode you simply pull the trigger to scan a bar code (hand held scanning). After a period of inactivity the scanner switches to Presentation mode (configurable timeout). In this mode the scanner turns on automatically when it detects movement in front of the scanner window. This allows you to use your scanner for hands-free scanning. To return to Level mode pull the trigger.

Autostand For SG20T1D

When using the 1D model Autostand is a mix of Level and Flashing triggering modes. When in Level mode you simply pull the trigger to scan a bar code (handheld scanning). After a period of inactivity the scanner switches to Flashing mode (configurable timeout). When the scanner is flashing you can present a bar code in front of the scanner window and it will be scanned. To return to Level mode pull the trigger.

3
SG20T Interfaces

This chapter explains the different interfaces available with the SG20T:

- **USB Interface**
- **RS-232 Interface**
- **Keyboard Wedge Y-Cable Interface**

USB Interface

The SG20T can be connected to a USB host using one of the USB cables. The SG20T is USB 2.0 and operates at full speed. Power is provided either by the host or by the external power supply connected to the USB cable. See the **"Accessories" on page 6** for a list of part numbers for the different cables.

Connecting a USB Cable

To connect with a USB cable

1 Connect the USB cable to your SG20T and to the host.

Standard USB cable

USB cable with power jack
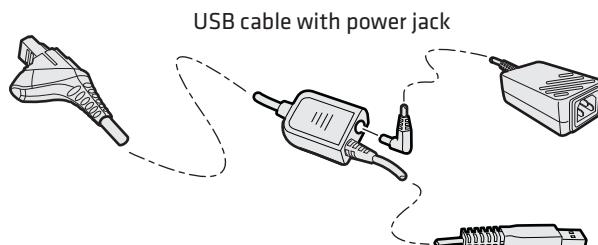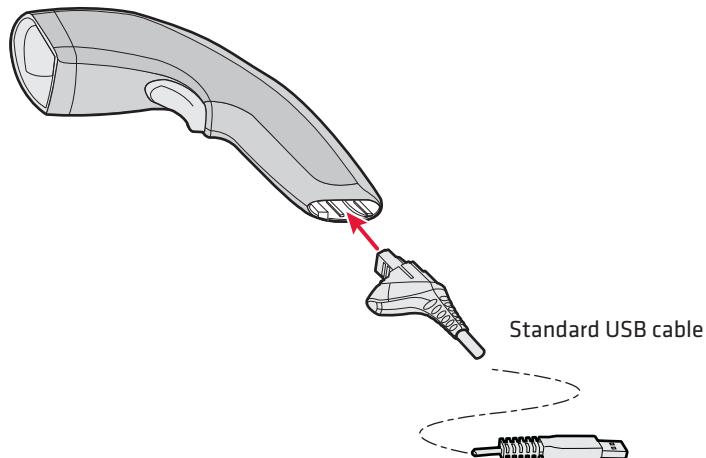
2 Connect the power supply to the cable and an AC power outlet if you are using the externally powered USB cable.

3 If your host device is off, turn it on. The scanner beeps twice and the green LED flashes to indicate the USB interface (see **"Status Light" on page 11**).

Note: If you are using a non-powered USB cable, you may get a message that the host does not provide enough power. For example when you connect the USB cable to a keyboard hub or if there are other USB devices connected. In this case use a different hub or disconnect other USB devices. Otherwise use a powered USB cable.

4 If necessary, use the configuration bar codes in the next section to configure your SG20T for an International keyboard. The default keyboard is North America.

Setting up the USB Interface

This section provides configuration bar codes for a basic USB interface setup. All bar codes marked with (*) indicate the default value. For more configuration options see **Chapter 4, "Configuring the SG20T Scanner" on page 27**.

International Keyboard

By default the SG20T uses a North American keyboard layout. Use these configuration bar codes to select the keyboard for your country. Additional keyboards are available in EasySet (see **"Configuring Your System with EasySet" on page 31**).

North American Windows (*)

French Windows

French Canadian Windows 95/98

French Canadian Windows XP/2000

German Windows

Spanish Windows

Italian Windows

Swedish Windows

UK English Windows

Japanese Windows

Brazilian Portuguese Windows

Czech Republic Windows

Slovakian Windows

Hungarian 101-Key

USB Cable Mode

By default the USB cable mode is set to keyboard HID. However you can also set up your scanner to use the following USB cable modes:

- HID POS
- IBM POS Hand Held
- IBM POS Table Top
- Virtual COM

USB Keyboard HID (*)

HID POS

IBM POS Hand Held

IBM POS Table Top

USB Virtual COM

Note: When scanning a USB Cable Mode configuration bar code, the scanner beeps twice then restarts. When it restarts it will beep twice and flash a series of green flashes to indicate the USB cable mode (see **"Status Light" on page 11**).

USB Virtual COM Driver

For a first time setup when using the virtual COM USB cable mode you will need to download and install the driver. You can download the driver from Knowledge Central on the Intermec web site.

To download the USB virtual COM driver:

1 Go to **http://intermec.custhelp.com.**

2 In the search box type "SG20T USB driver" and click **Search**.

3 Download the driver and instructions.

4 Follow the installation procedure provided in Knowledge Central.

Note: You can also install the virtual COM driver in EasySet version 5.6.5.4 or later by selecting **Virtual COM driver installation** in the **Options** menu.

RS-232 Interface

The SG20T can be connected to a host using one of the RS-232 cables. Power is provided by the external power supply connected to the RS-232 cable. See the **"Required Accessories" on page 6** for a list of part numbers for the different cables.

Connecting an RS-232 Cable

To connect with an RS-232 cable

1 Turn off your host device.

2 Connect the RS-232 cable to your SG20T and the host.

RS-232 cable with power jack
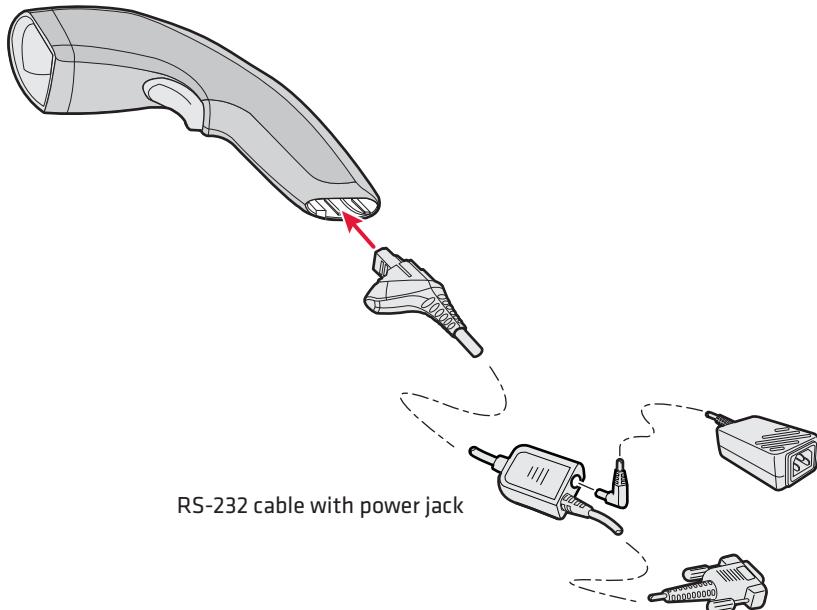
3 Connect the power supply to the cable and an AC power outlet.

4 Turn on the host device. The scanner beeps twice.

5 If necessary, use the configuration bar codes in the next section to configure your SG20T serial parameters to match the PC.

The default serial parameters for the SG20T are:

Serial Parameter	Default Setting
Baud rate	57600
Data bits	8
Parity	None
Stop bits	1

Setting up the RS-232 Interface

This section provides configuration bar codes for a basic setup. All bar codes marked with (*) indicate the default value. For more configuration options see **Chapter 4, "Configuring the SG20T Scanner" on page 27**.

Baud Rate
38400

57600 (*)

115200

128000

230400

256000

460800

||| ||| |||| ||| ||||| || |||||| || |

Data Bits

7

||| | ||||| ||| ||||||||| || |||

8 (*)

||| || ||||| || |||||||| |||||||

Parity

None (*)

||| || ||||| || ||||||||| || |||

Even

||| || ||||| || ||||||| ||||| ||

Odd

||| | ||||| || ||||| ||| |||| |||

Stop Bits

1 (*)

||| || ||||| || |||||||| ||| || ||

2

||| || ||||| || ||||||| ||||| ||

Keyboard Wedge Y-Cable Interface

The SG20T can be connected to a host using a keyboard wedge Y-cable. Power is provided either by the host or by the external power supply connected to the cable. See the **"Required Accessories" on page 6** for a list of part numbers for the different cables

Connecting a Keyboard Wedge Y-Cable

To connect with a keyboard wedge Y-cable

1 Turn off your host device.

2 Connect the Y-cable to your SG20T.

Y-cable with optional power supply
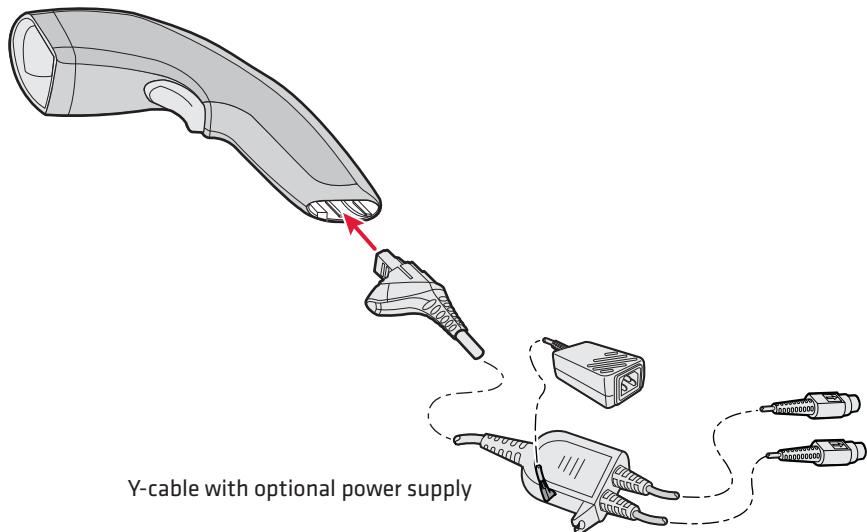
3 Connect one end of the Y-cable to your host device and the other end to a PS2 keyboard. If your host device does not provide enough power, connect the power supply to the Y-cable and an AC power outlet.

4 Turn on your host device. The scanner beeps twice.

5 If necessary, configure your SG20T for an International keyboard (see **"International Keyboard" on page 19**). The default keyboard is North America.

4

Configuring the SG20T Scanner

This chapter provides some basic configuration bar codes and information on how to configure the SG20T using the EasySet configuration application. This chapter includes:

- **Basic Setup with Configuration Bar Codes**
- **Hands-Free Scanning**
- **Optimizing Decoding**
- **Configuring Your System with EasySet**

Basic Setup with Configuration Bar Codes

This chapter provides you with configuration bar codes for a basic setup. For more configuration options, use EasySet (see **"Configuring Your System with EasySet" on page 31**).

Resetting Your Scanner

To reset your scanner, read the reset factory defaults configuration bar code.

Reset factory defaults

Configuring the Postamble

The default postamble is <CR> <LF>. For certain applications or when using USB Keyboard HID you may need to change this setting. Use the following configuration bar codes to change the default postamble in your scanner.

Carriage Return + Line Feed (*)

None

Carriage Return
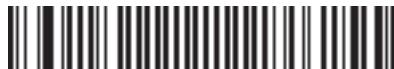
Enter

Hands-Free Scanning

For hands-free scanning as explained in **"Hands-Free Scanning" on page 15** activate Autostand triggering mode by scanning this configuration bar code:

Autostand Triggering Mode

Optimizing Decoding

Use the following barcodes to optimize your scanner reading performance.

Note: These configuration bar codes are only for the SG20THP and SG20THPHC models.

Damaged 1-Dimensional Bar Codes

If you are reading 1D bar codes that are damaged or badly printed, enable this setting to enhance the ability to read these types of bar codes.

Damaged 1D Codes - Enable

Damaged 1D Codes - Disable (*)

Configuring Predefined Imager Modes

When using a 2D model (SG20THP or SG20THC), you can optimize the reading performance of the scanner by adjusting certain parameters. Since there are many parameters that can be adjusted, we recommend using the pre-defined imager settings to quickly set up your imager for optimized reading. The pre-defined imager settings take in to account the type of bar code, environment and reading surface.

There are 4 pre-defined imager settings:

- 1D bar codes only
- Standard 1D and 2D bar codes
- 1D and 2D bar codes in a bright environment
- 1D and 2D bar codes with reflective surface (shiny labels and cell phone scanning)

Select the pre-defined imager setting that best suits your needs:

1D bar codes only

Standard 1D and 2D bar codes (*)

Standard 1D and 2D bar codes, bright environment

Standard 1D and 2D bar codes, reflective surface

Configuring Your System with EasySet

EasySet is an Intermec configuration application that provides you with two ways to configure your scanner.

- Online setup—send configuration commands from EasySet directly to the product.

- Offline setup—send configuration commands to a bar code setup sheet, print the setup sheet and use a connected scanner to scan the bar codes.

EasySet is available on the Intermec web site at **www.intermec.com/ EasySet.** Simply download and install.

Online Setup with EasySet

Online setup with EasySet is only available if you are using an RS-232 cable or a USB cable.

To configure your scanner online by sending commands from EasySet

1 Connect the scanner to a host PC using an RS-232 or USB cable and set connection parameters if necessary.

2 Start EasySet. The first time you start EasySet, the Select product dialog box appears.

If the Select product dialog box does not appear, choose **Product > Select** or click on the product icon in the upper left corner.

3 Select your product (SG20T).

4 Select **Communication > Select Communication Interface.** The **Device Selection** dialog box appears.

5 Select the communication interface that you are using for your system and click **OK**.

6 EasySet connects to your scanner and retrieves the current configuration. These configurations are indicated with a blue check mark or blue text. Open the folders to find the configuration commands needed. Double click each command to send it to the scanner.

> **Note:** The scanner does not beep when you send configuration commands online from EasySet.

Offline Setup with EasySet

To configure your scanner offline by scanning bar codes

1 Start EasySet. The first time you start EasySet, the Select product dialog box appears.

If the Select product dialog box does not appear, choose **Product > Select** or click on the product icon in the upper left corner.

2 Select your product.

3 Open the folders to find the configuration commands needed. Double-click each command to send each command to the setup sheet.

4 Click on the print icon to print out the setup sheet and scan the commands.

5

Troubleshooting and Maintaining the SG20T

Use this chapter to solve problems you may have while using the SG20T. This chapter contains these topics:

- **Troubleshooting the SG20T**
- **Maintaining the SG20T**

Troubleshooting the SG20T

If you have problems using the SG20T, use this chapter to find a possible solution.

Calling Product Support

To talk to an Intermec Product Support representative:

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

- Outside the U.S.A. and Canada, contact your local Intermec representative. For help, go to **www.intermec.com** > **About Us** > **Contact Us**.

Before you call Intermec Product Support, make sure you have the following information:

- SG20T firmware version

- SG20T decode version

There are two methods to get the firmware and decode version:

- by opening a data collection application and reading the Get firmware version and Get decode version bar codes - recommended when using a USB Keyboard HID or keyboard wedge interface, or

- by opening EasySet and retrieving the scanner current configuration - recommended when using an RS-232 or USB Virtual Com interface (but also possible with a USB Keyboard HID interface).

To get the firmware version and decode version by reading bar codes

1 Run an application that can accept bar code information from the SG20T (for example, Microsoft® Notepad).

2 Scan one of these bar codes:

Get firmware version

Get decode version

To get the firmware version and decode version in EasySet

1 Follow the procedure for an online setup with EasySet (see **"Online Setup with EasySet" on page 31**).

2 When the scanner is connected to EasySet, open the Configuration modes and utilities folder in EasySet. The default firmware and decodes versions appear in blue next to the Get firmware version and Get decode version entries.

Problems and Possible Solutions

Use this section to find possible solutions to problems you may have.

Problems and Possible Solutions

Problem	Possible Solution
You pull the trigger, but nothing happens.	The SG20T receives power from either a host or an external power supply through an accessory cable. Make sure: • You are using the appropriate cable. For more information, see **"Required Accessories" on page 6**. • The cable is connected to the appropriate port on the host computer. • The universal power supply (if necessary) is properly plugged in.

Problems and Possible Solutions (continued)

Problem	Possible Solution
You pull the trigger, the red scanning beam turns on, but you cannot successfully scan a bar code.	Try these possible solutions: • Make sure that the SG20T is configured for the symbology you are scanning. • Make sure that the SG20T is at the appropriate scanning distance from the bar code. Move the SG20T closer and farther away to find the appropriate distance. • Make sure that the SG20T is configured for the type (1D, 2D) of bar code you are scanning. • Make sure the bar code you are trying to scan is not poorly printed or too small. Scan a known good bar code to make sure that the SG20T is working properly. For more information, see **"Scanning Bar Codes" on page 12**.
You scan a bar code and the status light turns on, but the SG20T does not beep.	The beep duration, volume, frequency, and number may be configured so that the SG20T does not beep.
You scan a configuration bar code and the SG20T beeps six very fast beeps.	The SG20T does not recognize or support the configuration bar code you scanned.
You scan a bar code, the SG20T beeps once, and the status light blinks green once, but the data is not transmitted to the host computer.	Try these possible solutions: • Make sure that your data collection application is set up to receive data from the SG20T. • If you are using an RS-232 cable, make sure that the serial parameters on the SG20T match the serial parameters of the host computer. The default serial parameters for the SG20T are: 57600 baud, 8 data bits, no parity, and 1 stop bit.
You cannot scan the Firmware upgrade bar code on your computer screen.	Print out this bar code and scan it: Firmware upgrade

Maintaining the SG20T

To keep your SG20T in good working order, you may need to upgrade the SG20T firmware and clean the scanner window.

Upgrading the SG20T

You may need to upgrade the SG20T firmware if there is an update that incorporates changes to a feature or adds functionality to the scanner. When you upgrade your scanner the current settings are erased and replaced with the default settings. The process of upgrading the SG20T takes about 10 minutes to complete.

To upgrade the SG20T you need:

- An RS-232 or USB cable. For more information on cables, see **"Required Accessories" on page 6**.

- Minimum PC operating system requirements are Microsoft® Windows® XP with SP2 or Microsoft Windows 2000 with SP4 or higher versions.

- EasySet version 5.6.5.1 (see **"Configuring Your System with EasySet" on page 31**) or later.

- The firmware update file (.bin).

Note: Before you start the upgrade process, make sure that you are not using the selected COM port for any other application or you receive an error and cannot use the COM port.

To upgrade the SG20T firmware

1 Download the latest SG20T firmware update package from the Intermec web site at **www.intermec.com**.

   a Go to **Support** > **Downloads**.

   b From the **Product Category** drop-down list, choose **Bar Code Scanners.**

   c From the **Product Family** drop-down list, choose **General Duty Scanners**.

   **d** From the **Product** drop-down list, choose your SG20 product and click **Submit**.

    e Click the link to download the firmware upgrade package and save firmware upgrade file (.bin) to your PC.

2 Connect your SG20T to a host PC with the appropriate cable.

Note: If using a USB cable, you must use the USB Virtual Com USB cable mode.

3 Start EasySet version 5.6.5.1 or later.

4 From the **Tools** menu, select **Upgrade product firmware** to start WinFlash.

5 If WinFlash is not already installed you will be asked to install it. Click **Yes** and follow the installation instructions. After installing Winflash, start WinFlash from the **Tools** menu, select **Upgrade product firmware.**

6 Select the cable and click **Next**.
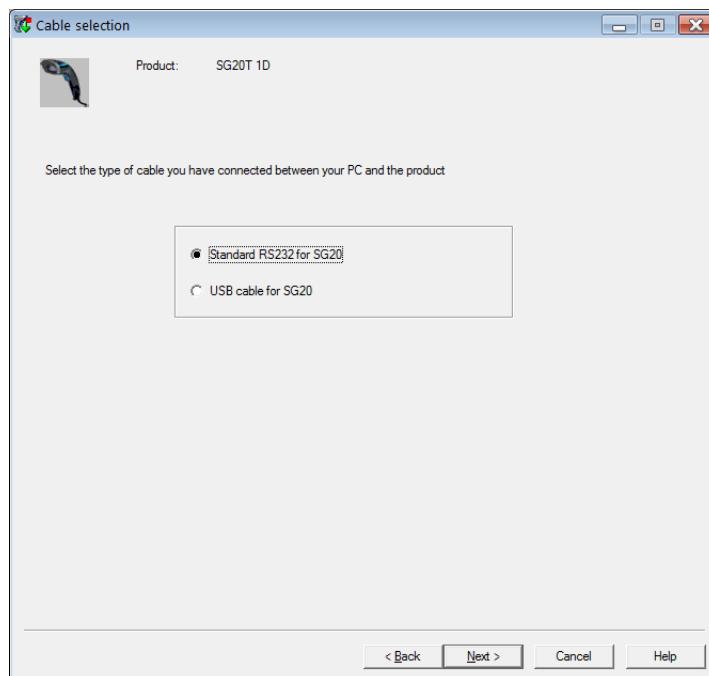
7 Use **Browse** to browse to the location of the firmware upgrade file (.bin), select the file, and click **Open**. Click **Next**.
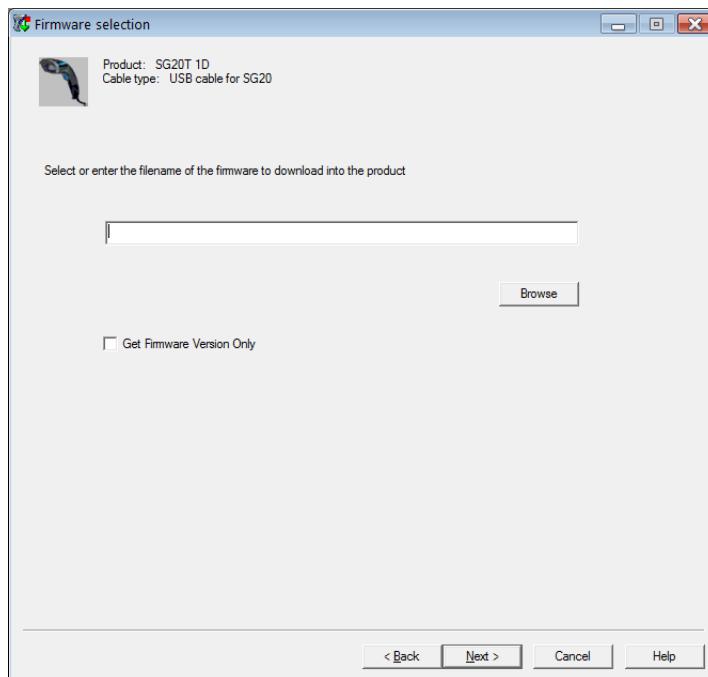
**8** For USB cables only, scan the **Firmware upgrade** bar code that appears on the screen. The scanner disconnects and reconnects (can take up to 4 or 5 seconds). Click **OK**. For other cables, go directly to the next step.

Note: If your scanner cannot scan the bar code on your computer screen see **"Problems and Possible Solutions" on page 35** to find the firmware upgrade bar code. Print the page out and scan the bar code.

9 Select the Com port and parameters (if necessary) and deselect the **Display help** check box. Click **Next**.
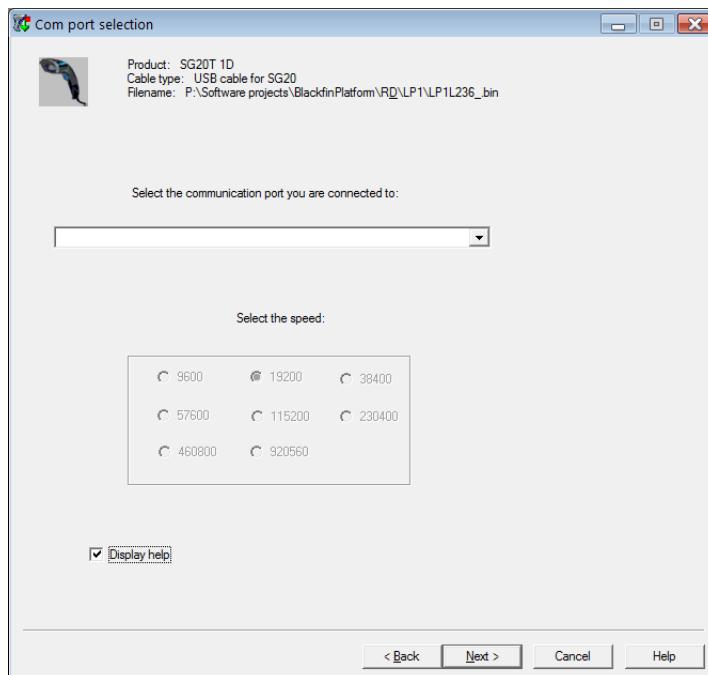

10 Click **Start download**.

For RS-232 cables only, scan the **Firmware upgrade** bar code that appears on the screen and click **OK.**

Note: If your scanner cannot scan the bar code on your computer screen see **"Problems and Possible Solutions" on page 35** to find the firmware upgrade bar code. Print the page out and scan the bar code.
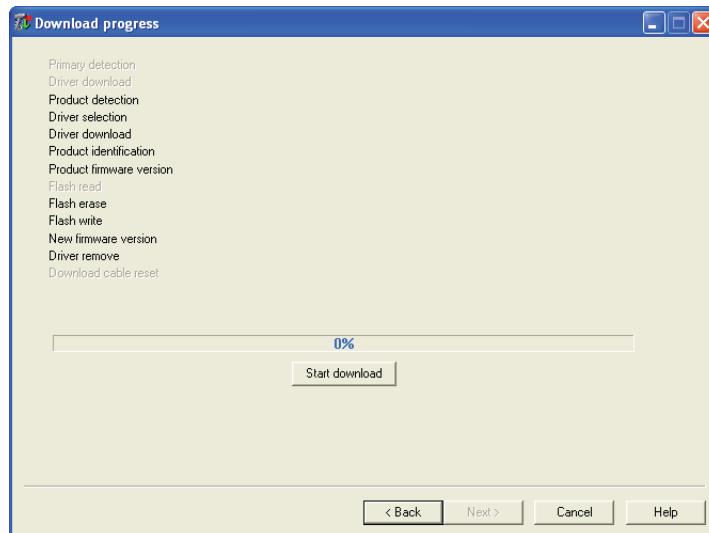
When the firmware download is complete, the "Operation successful" message appears.

11 Click **Finish**. You have successfully upgraded your scanner firmware.

Note: If the firmware download is not successful, you must restart the firmware download procedure.

Scanner Recovery

If something happens to your scanner and it does not turn on despite using the correct cables and power supply, the only way to recover the scanner is to reinstall the firmware. This is only possible with a download cable. Please contact your Intermec representative.

Cleaning the SG20T

Clean the scanner window as often as needed for the environment in which you are using the SG20T. To clean the scanner window, you can use soapy water or isopropyl alcohol.

⚠️
Caution

Opening the SG20T voids the warranty and may cause damage to the internal components.

To clean the scanner window

1 Dip a clean towel or rag in soapy water or isopropyl alcohol and wring out the excess. Wipe the scanner window. Do not allow any abrasive material to touch the window.

2 Wipe dry with a lint-free cloth.

A

Specifications and Reading Distances

This appendix contains the technical specifications and reading distances for each scanner model.

Specifications

Use this section to find technical information about the SG20T

Physical Dimensions	
Length	20 cm (7.9 in)
Height	6.5 cm (2.6 in)
Width	6.1 cm (2.4 in)
Weight	125 g (4.4 oz)

Electrical Specifications	
Electrical rating	--- 5V, 1.7 A

Typical Power Consumption–Continuous Scanning (5V power supply, ambient lighting, continuous scanning)	
SG20T1D	RS-232 = 120 mA
	USB = 120 mA
	Keyboard wedge = 120 mA
SG20T2D, SG20T2DHC	RS-232 = 340 mA
	USB = 360 mA
	Keyboard wedge = 370 mA
SG20THP, SG20THPHC	RS-232 = 300 mA
	USB = 320 mA
	Keyboard wedge = 330 mA

Typical Power Consumption (5V power supply, ambient lighting, idle after turning on, not scanning)	
SG20T1D	RS-232 = 60 mA
	USB = 70 mA
	Keyboard wedge = 60 mA

Typical Power Consumption (5V power supply, ambient lighting, idle after turning on, not scanning)	
SG20T2D, SG20T2DHC	RS-232 = 50 mA
	USB = 70 mA
	Keyboard wedge = 50 mA
SG20THP, SG20THPHC	RS-232 = 50 mA
	USB = 70 mA
	Keyboard wedge = 50 mA

Interfaces
RS-232, USB, Keyboard Wedge

Temperature and Environmental Specifications	
Operating temperature	0°C to 50°C (32°F to 122°F)
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Relative humidity	5 to 95% non-condensing
Shock	30 G, 11 ms half-sine, 3 directions
Vibrations	8G, from 10Hz to 500Hz, 2hr/axis, 3 axes
Environmental rating	IP30
Ambient light	0 to 100 000 lux
Artificial light	25 000 lux

Scanning Performance	
SG20T1D	Scan angle: 38°
	Minimum X dimension: 4mils (0.1 mm)
SG20T2D, SG20T2DHC	Scan angles: 39° horizontal, 25.5° vertical
	Min. X dimension 1D: 4 mils (0.1 mm)
	Min. X dimension 2D: 6.6 mils (0.17 mm)

Scanning Performance

SG20THP, SG20THPHC	Scan angles: 34.4° horizontal, 22.2° vertical
	Framing angles: 30° horizontal, 20° vertical
	Min. X dimension 1D: 4 mils (0.1 mm)
	Min. X dimension 2D: 6.6 mils (0.17 mm)

Bar Code Symbologies for 2D Models (SG20T2D, SG20T2DHC, SG20THP, SG20THC)

Australian Post	Infomail
Aztec	Intelligent mail
BPO	Interleaved 2 of 5
Canada Post	Japan Post
Codabar	Matrix 2 of 5
Codablock A	Maxicode
Codablock F	Micro PDF417
Code 11	MSI
Code 39	Multicode
Code 93/93i	PDF417
Code 128 / GS1-128	Planet
DataMatrix	Plessey
Dutch Post	Postnet
EAN/UPC	QR Code
GS1 Composite	Standard 2 of 5
GS1 DataBar Expanded	Sweden Post
GS1 DataBar Limited	Telepen
GS1 DataBar Omni-Directional	TLC 39
GS1 DataBar Stacked	

Bar Code Symbologies for 1D Model (SG20T1D)

Codabar	GS1 DataBar Limited

| Bar Code Symbologies for 1D Model (SG20T1D)	
Code 11	GS1 DataBar Omni-Directional
Code 39	Interleaved 2 of 5
Code 93/93i	Matrix 2 of 5
Code 128 / GS1-128	MSI
EAN/UPC	Plessey
GS1 Composite	Standard 2 of 5
GS1 DataBar Expanded	Telepen

Reading Distances

The reading distances for each scanner are typical distances measured from the front end of the scanner bezel in an office environment (200 lux) with extended reading range activated (except for 1D model). Extended reading range is available with software version BF4_254 and later.

SG20T1D
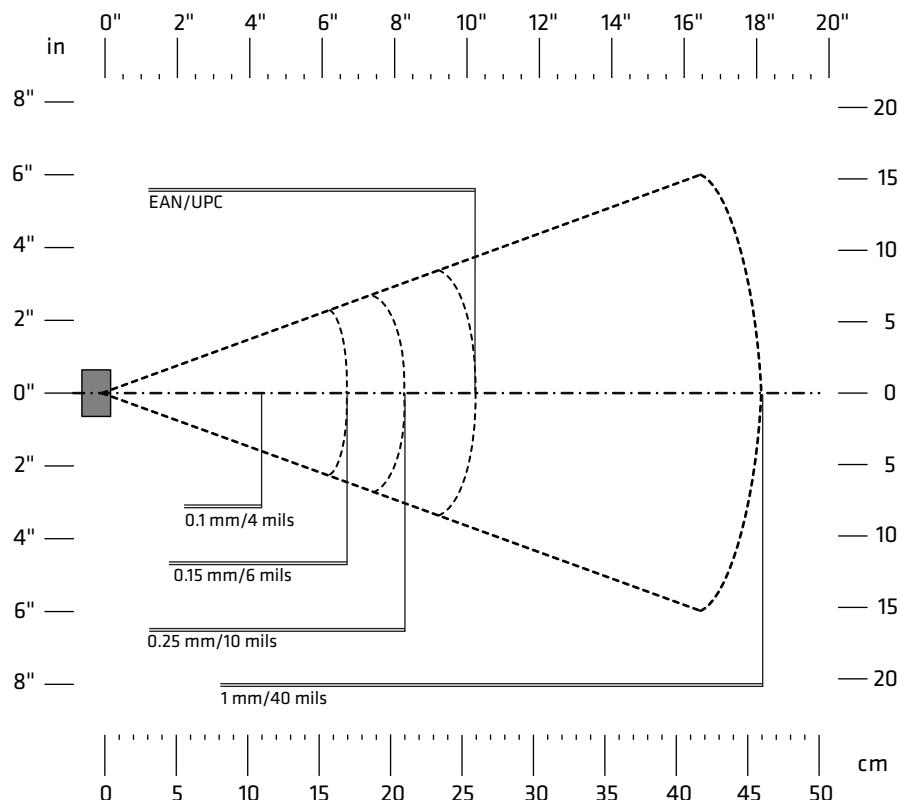
Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.1 mm (4 mils)	5.5 cm (2.17 in)	11 cm (4.33 in)
	0.15 mm (6 mils)	4.5 cm (1.77 in)	17 cm (6.69 in)
	0.25 mm (10 mils)	3 cm (1.18 in)	21 cm (8.26 in)
	1 mm (40 mils)	8 cm (3.15 in)	46 cm (18.11 in)
EAN/UPC	0.33 mm (13 mils)	3 cm (1.18 in)	25 cm (9.84 in)

SG20T2D, SG20T2DHC
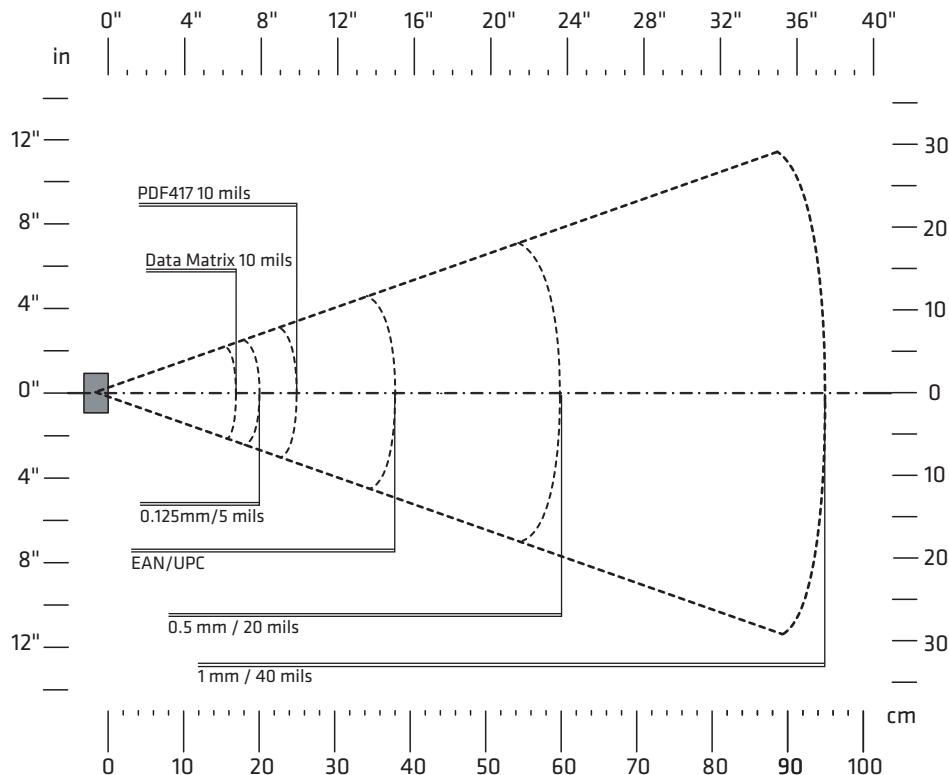
Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.1 mm (4 mils)	3.5 cm (1.38 in)	15.5 cm (6.10 in)
	0.125 mm (5 mils)	2 cm (0.79 in)	20 cm (7.87 in)
	0.5 mm (20 mils)	4 cm (1.57 in)	60 cm (23.62 in)
	1 mm (40 mils)	11 cm (4.33 in)	95 cm (37.40 in)
EAN/UPC	0.33 mm (13 mils)	3 cm (1.18 in)	38 cm (14.96 in)
PDF417	0.25 mm (10 mils)	2 cm (0.79 in)	25 cm (9.84 in)
	0.38 (15 mils)	3 cm (1.18 in)	35 cm (13.78 in)
DataMatrix	.025 mm (10 mils)	3 cm (1.18 in)	17 cm (6.69 in)

SG20THP, SG20THPHC
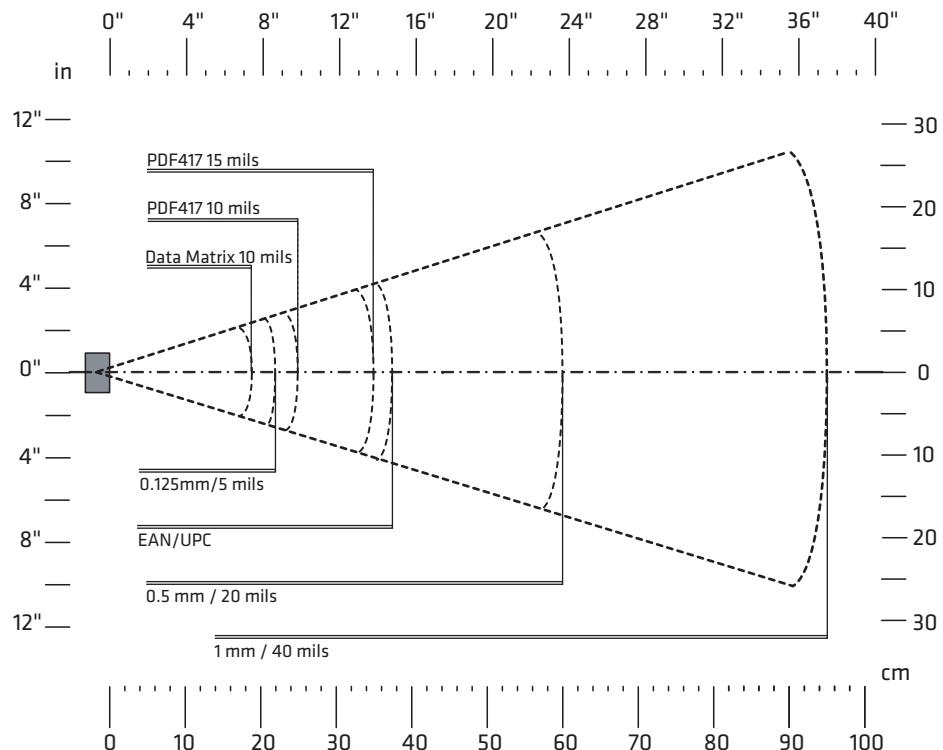
Symbology	Density	Minimum Distance	Maximum Distance
Code 39	0.1 mm (4 mils)	4.5 cm (1.77 in)	16.5 cm (6.50 in)
	0.125 mm (5 mils)	4 cm (1.57 in)	22 cm (8.66 in)
	0.5 mm (20 mils)	5 cm (1.97 in)	60 cm (23.62 in)
	1 mm (40 mils)	12 cm (4.72 in)	95 cm (37.40 in)
EAN/UPC	0.33 mm (13 mils)	3.5 cm (1.38 in)	37.5 cm (14.76 in)
PDF417	0.25 mm (10 mils)	3 cm (1.18 in)	25 cm (9.84 in)
	0.38 (15 mils)	3 cm (1.18 in)	35 cm (13.78 in)
DataMatrix	.025 mm (10 mils)	3 cm (1.18 in)	19 cm (7.48 in)

SG20T Tethered Scanner User's Guide

P/N DOC-SG20T-UG02