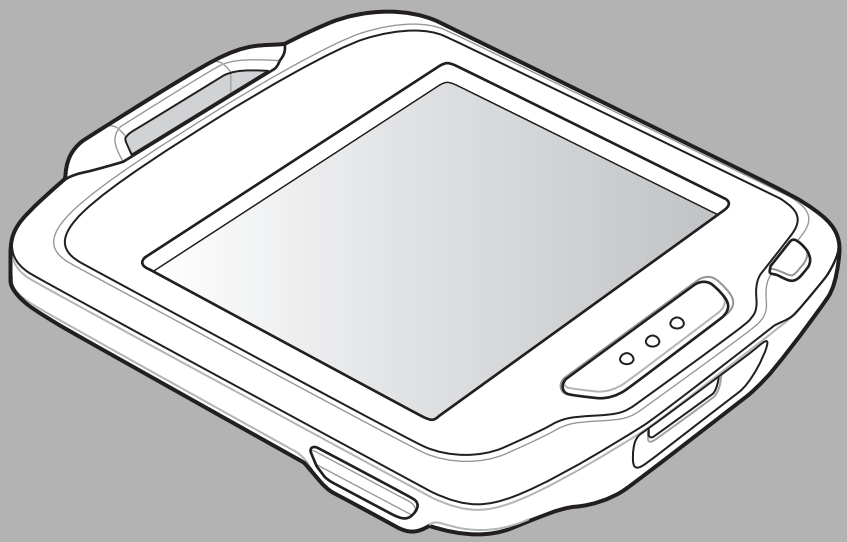
SB1
SMART BADGE
USER GUIDE



SB1 SMART BADGE USER GUIDE

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Rev. A

March 2015

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Revision History

Changes to the original guide are listed below:

Change	Date	Description
Rev. 060412	06/04/12	Draft.
Rev. 092612	09/26/12	Draft 2
Rev. A	03/2015	Zebra Rebranding

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ABOUT THIS GUIDE

Introduction

This guide provides information about using the SB1 smart badge and accessories.

NOTE Screens and windows pictured in this guide are samples and may differ from actual screens.

Documentation Set

The documentation set for the SB1 is divided into guides that provide information for specific user needs.

- **SB1 Regulatory Guide** - provides all regulatory and safety information.
- **SB1 User Guide** - describes how to use the SB1.
- **SB1 Integrator Guide** - describes how to set up and configure the SB1 and accessories.
- **SB1 Programmer's Guide** - Provides information for developing Rho-Elements based applications.

Configurations

This guide covers the following configurations:

Configuration	Radios	Display	Memory	Data Capture
SB1	WLAN: 802.11 b/g/n	E Ink® touch screen	128 MB RAM/ 128 MB Flash	Bar code reader

Software Versions

This guide covers various software configurations and references are made to software versions. To view the software versions:

1. Press the Home button.

2. Touch . The **Settings** screen appears.
3. Touch . The **More Settings** screen appears.
4. Touch **Software Version**. The **Software Version** screen lists the operating system (OS), RhoElements, application folder and SB1 Shell version numbers.

Chapter Descriptions

Topics covered in this guide are as follows:

- *Chapter 1, Getting Started*, describes the SB1's physical characteristics, how to charge the SB1 and start the SB1 for the first time.
- *Chapter 2, Operation*, provides basic instructions for using the SB1 and navigating the SB1 Shell.
- *Chapter 3, Data Capture* provides instructions for using the SB1 to capture data using the bar code reader.
- *Chapter 4, Accessories*, describes the accessories available for the SB1 and how to use the accessories with the SB1.
- *Chapter 5, Maintenance & Troubleshooting*, includes instructions on cleaning and storing and provides troubleshooting solutions for potential problems during SB1 operation.
- *Appendix A, Sample Applications* provides information on default sample applications installed on the SB1.
- *Appendix B, Specifications*, includes a table listing the technical specifications for the SB1.

Notational Conventions

The following conventions are used in this document:

- The term "SB1" refers to the Zebra SB1 smart badge.
- *Italics* are used to highlight the following:
  - Chapters and sections in this and related documents
  - Dialog box, window and screen names
  - Drop-down list and list box names
  - Check box and radio button names
  - Icons on a screen.
- **Bold** text is used to highlight the following:
  - Key names on a keypad
  - Button names on a screen.
- Bullets (•) indicate:
  - Action items
  - Lists of alternatives
  - Lists of required steps that are not necessarily sequential.
- Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.

Related Documents and Software

The following items provide more information about the SB1.

- *SB1 Regulatory Guide*, p/n 72-162415-xx
- *SB1 Integrator Guide*, p/n 72E-164712-xx
- *SB1 Programmer's Guide*, p/n 72E-170991-xx

For the latest version of this guide and all guides, go to: http://www.zebra.com/support

Service Information

If you have a problem with your equipment, contact Zebra Global Customer Support for your region. Contact information is available at: http://www.zebra.com/support.

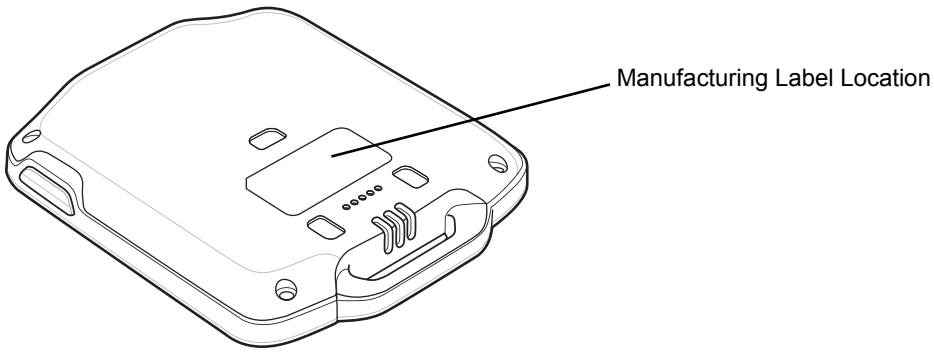
When contacting Zebra Global Customer Support, please have the following information available:

- Serial number of the unit
- Model number or product name
- Software type and version number (on SB1, see *Software Versions on page 1-ix*)

Zebra responds to calls by email, telephone or fax within the time limits set forth in support agreements.

If your problem cannot be solved by Zebra Global Customer Support, you may need to return your equipment for servicing and will be given specific directions. Zebra is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.

If you purchased your product from a Zebra business partner, contact that business partner for support.



CHAPTER 1 GETTING STARTED

Introduction

The SB1 is a brand new category of mobile device that employers can give to every retail associate. This truly smart badge is full of the features every associate needs to deliver the best customer experience, with the connectivity needed to keep them productive, every minute of every day. The badge each associate wears can allow associates to: access a personalized task list; accept tasks and acknowledge completion; scan a bar code to check price and inventory; and connect via push-to-talk (PTT) with other workers carrying practically any other PTT-enabled mobile device in use in the store. The result is a powerful always-connected workforce that can always access the people and information they need to maximize productivity and exceed customers' expectations on every visit.

This chapter describes the SB1 physical characteristics, how to charge the SB1.

Unpacking the SB1

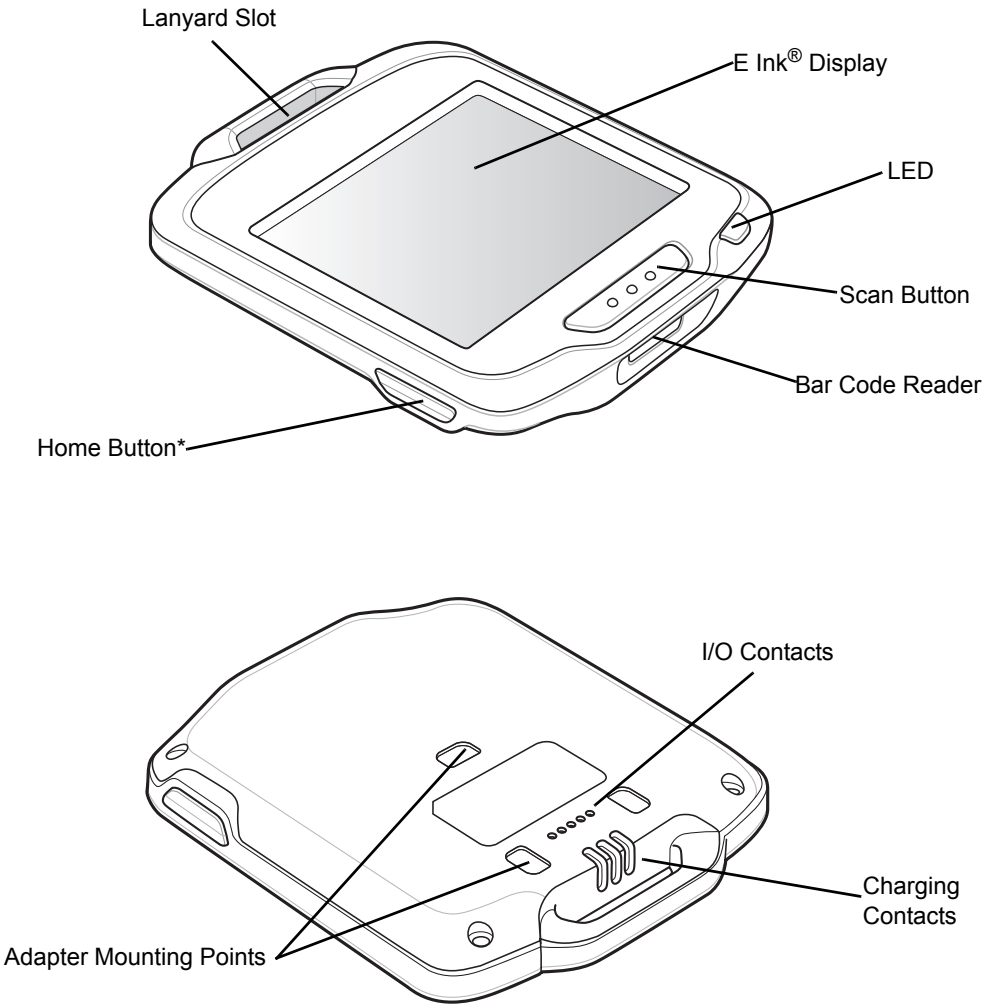
Carefully remove all protective material from around the SB1 and save the shipping container for later storage and shipping. Verify that the equipment listed below is included:

- SB1 (single unit or multi-unit)
- Regulatory Guide.

Inspect the equipment for damage. If any equipment is missing or damaged, contact the Zebra Global Customer Support immediately. See *Service Information on page xi* for contact information.

Features

The features of the SB1 are shown in *Figure 1-1*.



* The Home button can be programmed to add a pause button function. See the *SB1 Programmer's Guide*.

Figure 1-1 *SB1 smart badge*

Charging the SB1

CAUTION Follow the guidelines for battery safety described in *Battery Safety Guidelines on page 5-1*.

The SB1 must be charged within the 0 °C to +35 °C (32 °F to 95 °F) ambient temperature range.

When the SB1 is off it displays the Regulatory Label information screen.

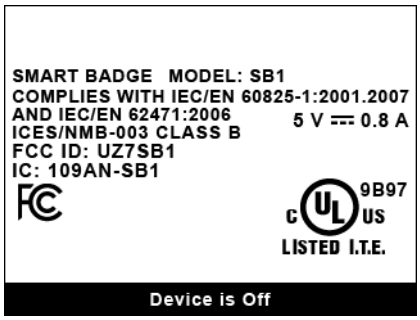


Figure 1-2 *Out of the Box Screen*

Use the Single Slot Charging cradle or Ten Slot Charge Only cradle to charge the SB1. To charge the SB1, slide it into the cradle slot with the Scan button facing up.

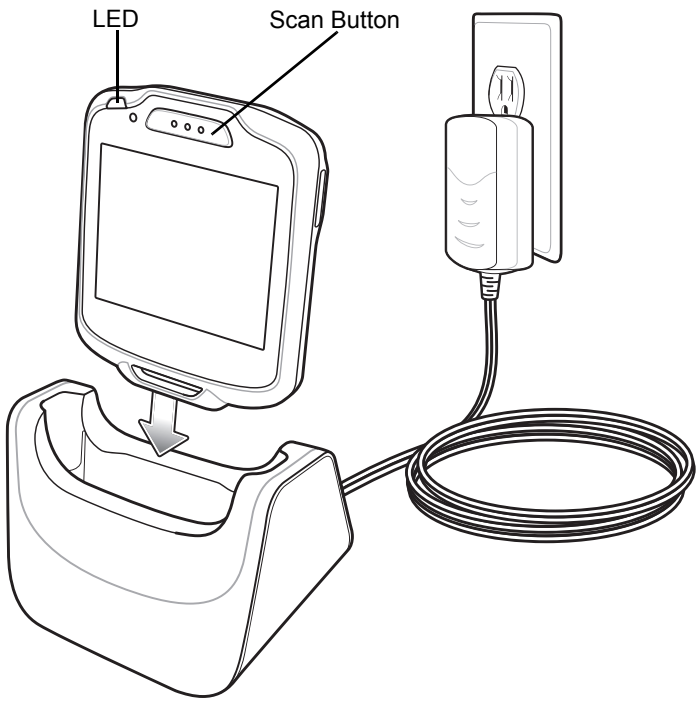


Figure 1-3 *Single Slot Charging Cradle*

NOTE If the battery is at a very low level due to the SB1 being left out overnight or stored for long periods, the SB1 might not power up immediately when placed in a cradle, although the LED will blink. When the SB1 is placed in the charging cradle, the SB1 boots normally after a few minutes.

When the SB1 powers up a beep sounds and the Calibration screen displays

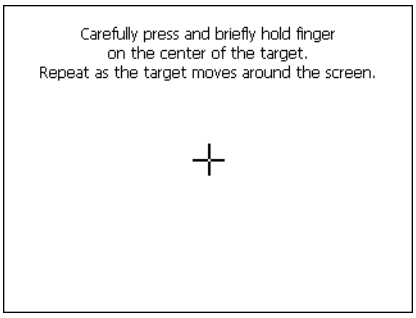


Figure 1-4 *Calibration Screen*

Leave the SB1 in the cradle until it is fully charged. The LED indicates the SB1 battery charging status. The battery fully charges in approximately four hours. See *Table 1-1 on page 1-4* for charging status indications. When the LED lights green remove the SB1 from the cradle.

Carefully press and briefly hold finger tip on the center of the **Calibration** screen target. Repeat the procedure as the target moves and stops at different locations on the screen. After the calibration settings are input, tap the screen to save the new calibration settings.

Table 1-1 *LED Indicator*

LED	Indication
Off	SB1 not placed correctly in the cradle. The cradle is not powered. SB1 is not functioning properly.
Slow Blinking Amber	SB1 is charging.
Solid Green	Charging is complete.
Fast Blinking Amber	Charging error.

When using the SB1, if the battery charge falls below a predetermine level, it shuts down and displays the Battery Discharged screen.

Figure 1-5 *Battery Discharged Screen*

When this occurs, recharge the SB1 battery by placing it into a charging cradle. The Battery Charging screen appears on the display indicating that the battery is charging.

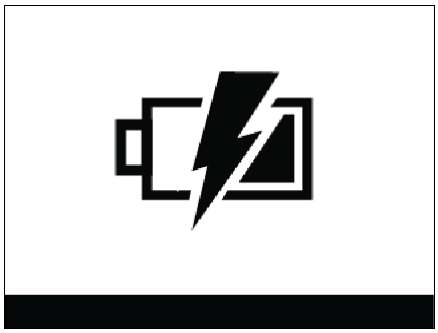


Figure 1-6 *Battery Charging Screen*

Resetting the SB1

If the SB1 stops responding to input, perform a reset. A reset stops all running applications and any unsaved data is lost. Simultaneously press and hold the Home and Scan buttons for five seconds. When the SB1 beeps release the buttons and then it resets.

Powering Off the SB1

Power off the SB1 when not using for long periods of time.

1. Press the Home button.
2. Touch . The **Settings** screen appears.
3. Touch . The **More Settings** screen appears.
4. Touch **Advanced Settings**.
5. If required, enter the Administrator PIN and touch ✓. The **Advanced Settings** screen appears.
6. Touch **Power Off Device**.
7. Touch **OK**. The SB1 shuts down and the Regulatory Information screen appears.

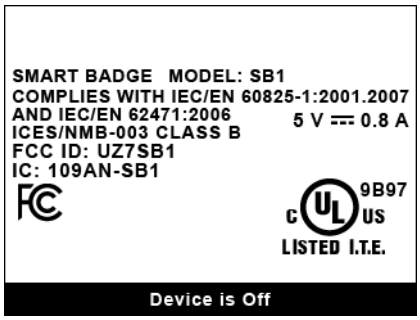


Figure 1-7 *Regulatory Information Screen*

To turn the SB1 back on, place the SB1 into a cradle.

CHAPTER 2 OPERATION

This chapter provides basic instructions for using the SB1.

Wearing the SB1

The SB1 can be worn on a lanyard around the neck, in a holster on the hip or on an armband.

Lanyard

The lanyard provides easy access to the SB1 and allows the SB1 to be used as an employee badge when not in use.

Figure 2-1 *SB1 on Lanyard*

The SB1 mounts onto the lanyard and can be removed and replaced with ease. An accelerometer instantly orients the screen 180° based on device position for easy viewing by customers and users.

The lanyard is adjustable allowing the user to position the SB1 to a comfortable height. See *Lanyard on page 4-13*.

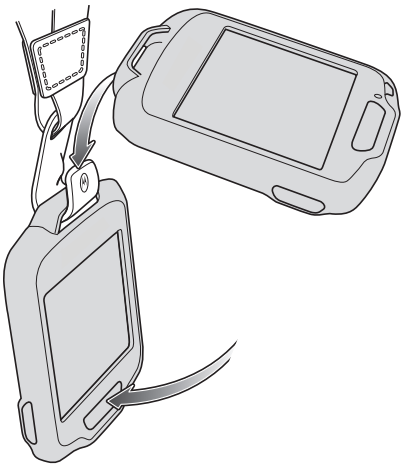


Figure 2-2 *Installing the SB1 onto the Lanyard*

Holster

NOTE The tether on the holster is for loss prevention. Do not allow the SB1 to hang from the holster and drop to the floor. Damage might occur.

The holster clips onto a belt or waistband and provides a tether to secure the SB1. See *Holster on page 4-9* for setup instructions.

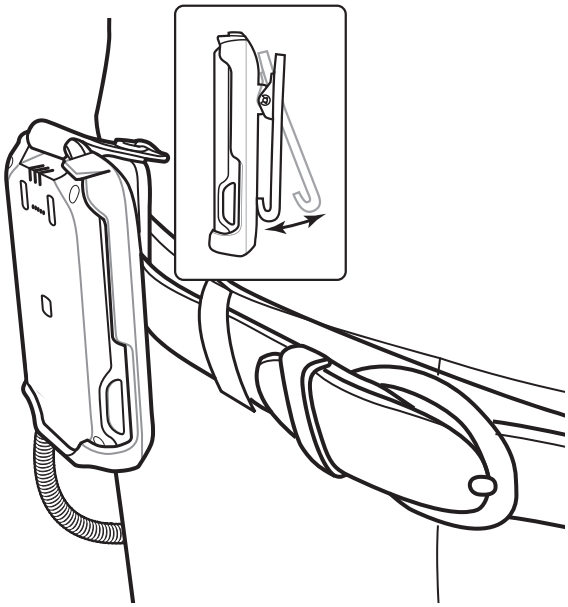


Figure 2-3 *Holster on Belt*

Armband

The armband attaches to the forearm or upper arm and provides mounting for the holster. See *Armband on page 4-11* for setup instructions.

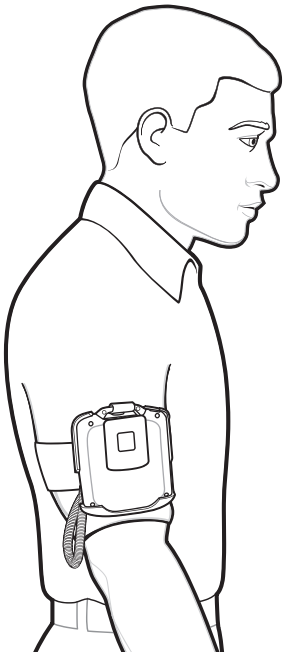


Figure 2-4 *Armband*

Entering Data

NOTE The user must only use a finger when touching the screen. Use of any other type of object could void the warranty.

The user uses the tip of their finger to select objects, enter text and accept notifications. Do not use a pen or any other object on the SB1 display. It is designed for finger friendly touch only.

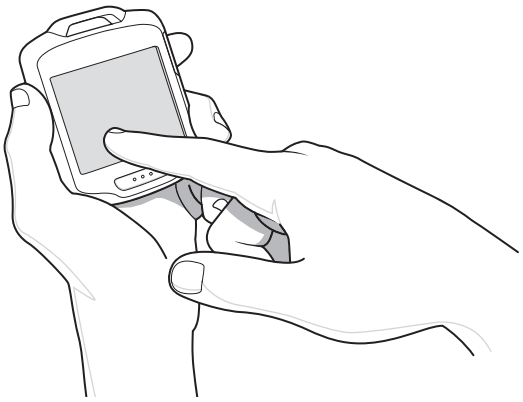


Figure 2-5 *Entering Data on Screen*

Using a Headset

One option for Push-to-Talk (PTT) communication is using a headset. Zebra offers two types of headset accessories; earbud headset and speaker headset. The Headset Adapter is required when using a headset. Connect the headset to the Headset Adapter when wearing the SB1 on the lanyard, holster or armband.

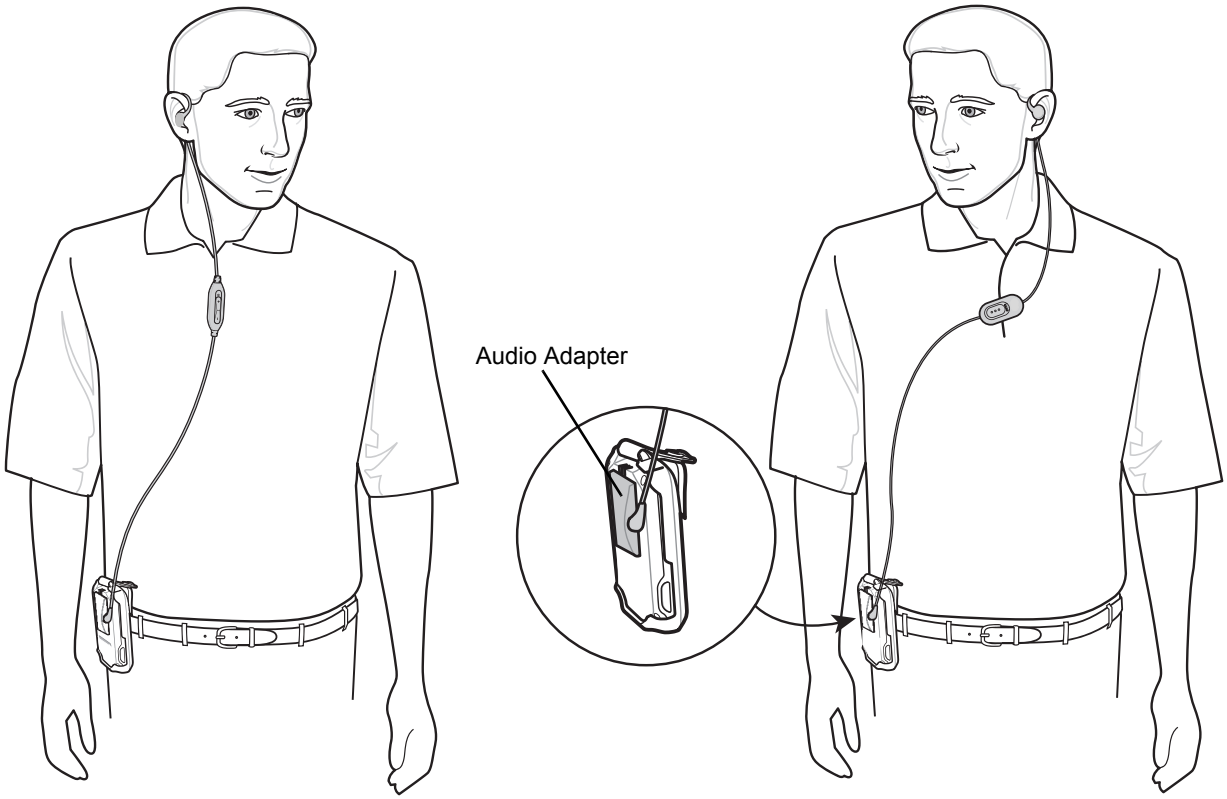


Figure 2-6 *Using Headset with SB1 in Holster*

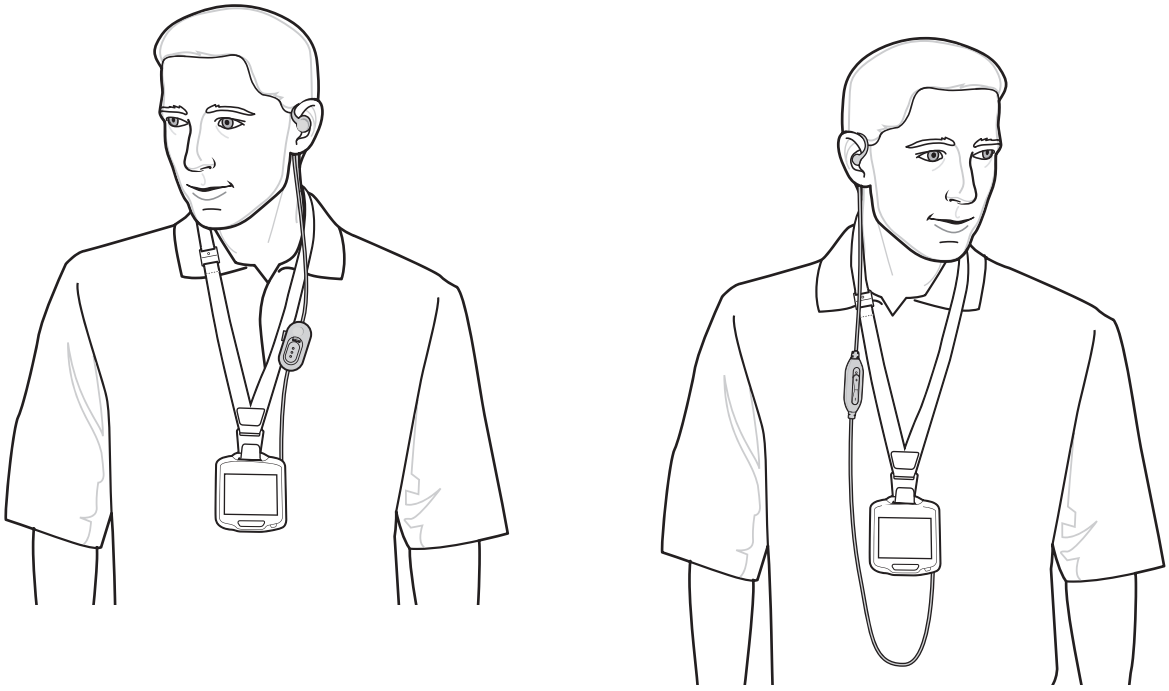


Figure 2-7 *Using Headset with SB1 on Lanyard*

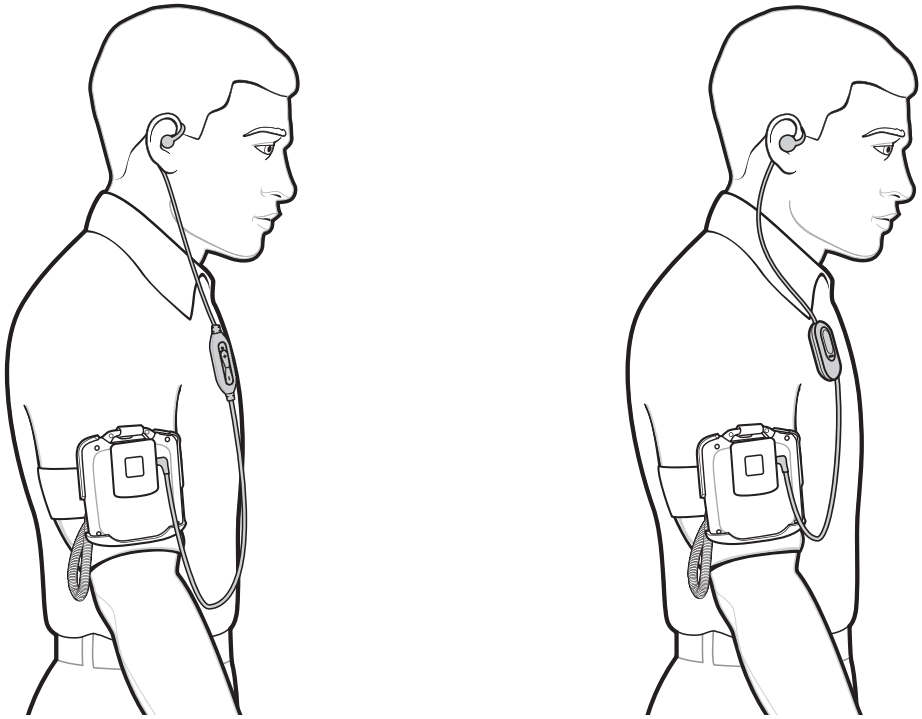


Figure 2-8 *Headset with SB1 on Armband*

Using the Speaker Adapter

The Speaker Adapter provides PTT communication. When receiving audio, the sound comes from the Speaker Adapter. When the user speaks, the microphone on the front of the SB1 captures the audio.

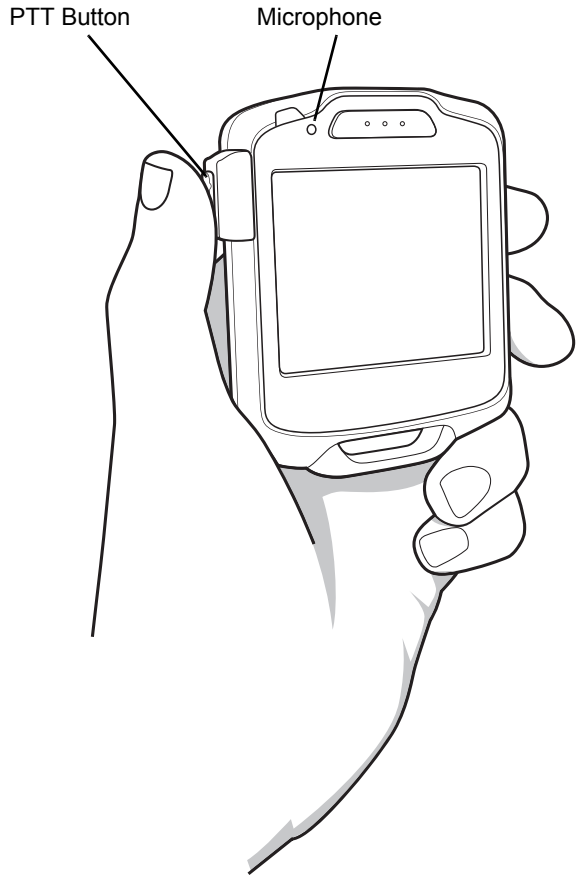


Figure 2-9 *Using the Speaker Adapter*

Home Screen

The Home screen provides the user access to SB1 configuration, applications, notifications and user profile settings.

Press and release the Home button on the side of the SB1 to display the Home screen.

NOTE When the SB1 is in a cradle, the Home screen does not display when the user presses the Home button.

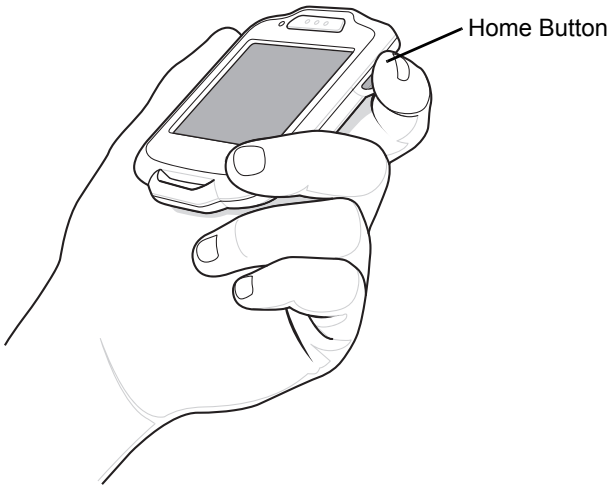


Figure 2-10 *Pressing Home Button*

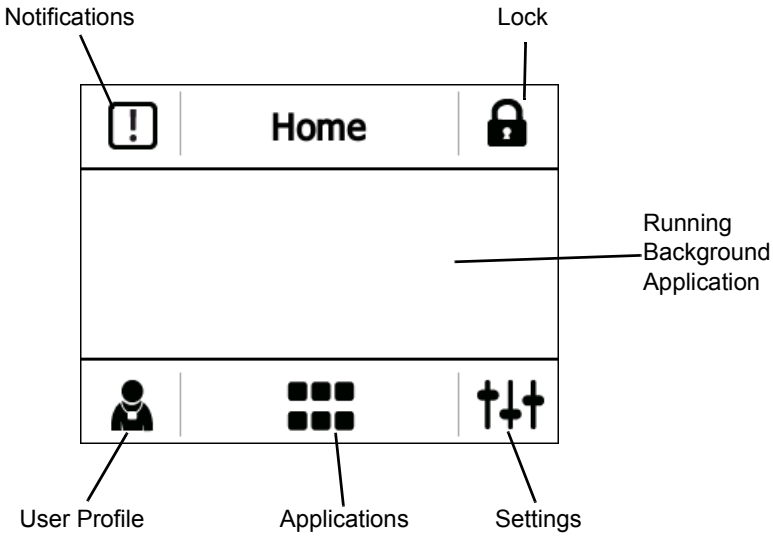


Figure 2-11 *Home Screen*

Table 2-1 *Home Screen Icons*

Icon	Description
	Notifications - Touch to open the **Notification** screen. A star on the icon indicates that new notifications are available.
	Lock - Touch to automatically lock the SB1 and displays the User screen.
	User Profile - Touch to set user profile.
	Applications - Touch to launch the Applications screen.
	Settings - Touch to configure SB1 settings.

Notifications

The SB1 displays notifications for system and application status. When a notification is received, a notification dialog box appears on the screen and a beep sounds. The user can act on the notification or dismiss it depending upon the notification.

Figure 2-12 *Sample Notification Dialog Box*

If multiple notifications are present, the SB1 displays a dialog box with each notification.

Figure 2-13 *Multiple Notifications*

Touch one of the notifications to display its notification dialog box. Touch ✕ to close the dialog box.

Notifications for Out of Network Coverage and Battery Low appear on the Home screen as icons. The user also hears a single beep as the notification changes.

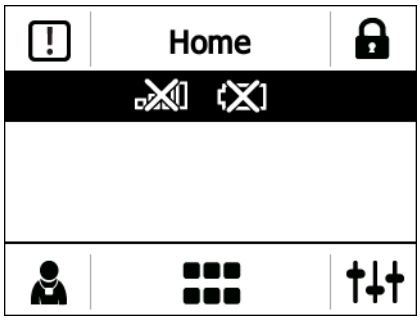


Figure 2-14 *Out of Network Coverage and Battery Low Notifications*

Locking the SB1

Touch the Lock icon to place the SB1 into badge mode. The screen automatically displays the user name and title set in the **Profile** screen. The SB1 also goes into badge mode when it is hanging upside from a lanyard. See *Figure 2-1 on page 2-1*.

Figure 2-15 *Lock Screen*

To return to the Home screen, press the Home button.

Setting User Profile

NOTE User settings may not be applicable for all applications. Check with system administrator.

Use the **Profile** screen to set the user name and user title, sign out of the SB1 and switch devices.

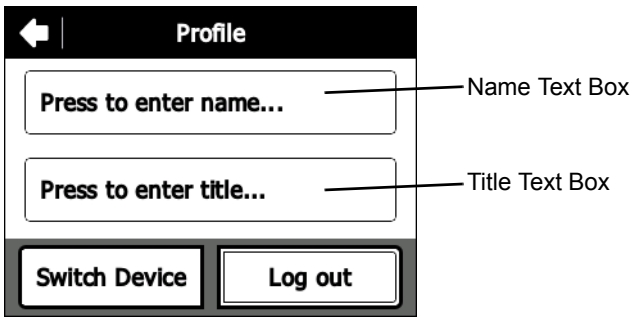


Figure 2-16 *Profile Screen*

Enter Name and Title

To enter user name:

1. In the **Profile** screen, touch the top text box. The **Enter Name** screen appears.

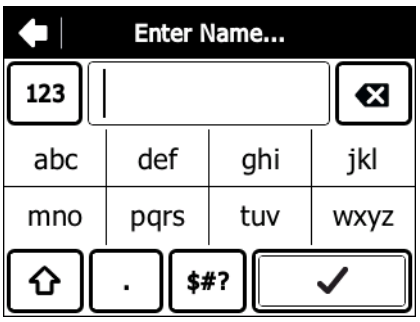


Figure 2-17 *Enter Name Screen*

2. Press the keypad keys to enter the user name.
   - Use ⇧ to create capital letter.
   - Touch 123 to display the numeric keypad.
   - Touch $#? to display special character keypad.
   - To create the letter c, quickly touch abc three times.
   - Use ⌫ to delete the last character in the text box.
3. Touch ✓ to save the name.

To enter user title:

1. In the **Profile** screen, touch the lower text box. The **Enter Title** screen appears.

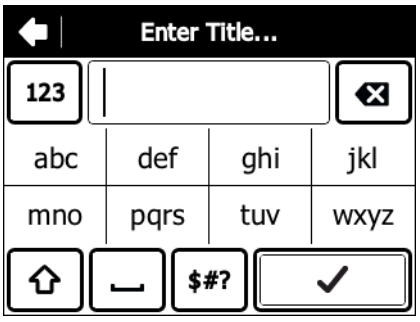


Figure 2-18 *Enter Title Screen*

2. Press keypad keys to enter the user title.
   - Use ⇧ to create capital letter.
   - Touch 123 to display the numeric keypad.
   - Touch $#? to display special character keypad.
   - To create the letter c, quickly touch abc three times.
   - Use ⌫ to delete the last character in the text box.

3. Touch ✓ to save the user title.

Log Out

This feature is dependant upon implementation.

Switch Device

This feature is dependant upon implementation.

Applications

All applications installed on the SB1 can be accessed by touching .

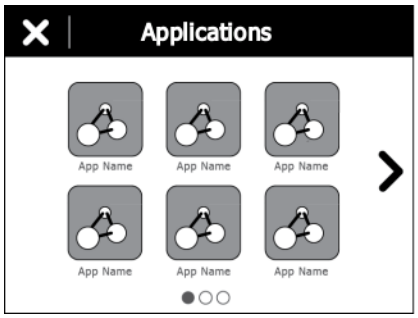


Figure 2-19 *Sample Applications Screen*

NOTE The SB1 from the factory contains a limited number of applications. Once configured the SB1 may have other applications installed.

The **Applications** screen displays an icon for each application. If more than six applications are installed, touch the arrow to move to the next page. Dots appear below the icons indicating the number of application pages available.

Touch an icon to launch that application.

When there is a running application, an ✕ appears in the title bar. Touch the ✕ to exit the **Applications** screen and return to the last running application.

An ✕ appears on the top corner of all running application icons. Touch the ✕ on the icon to stop that application.

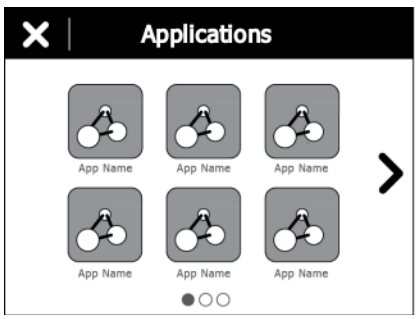


Figure 2-20 *Sample Applications Screen with Running Application*

Settings

Use the **Settings** screen to control SB1 functionality.

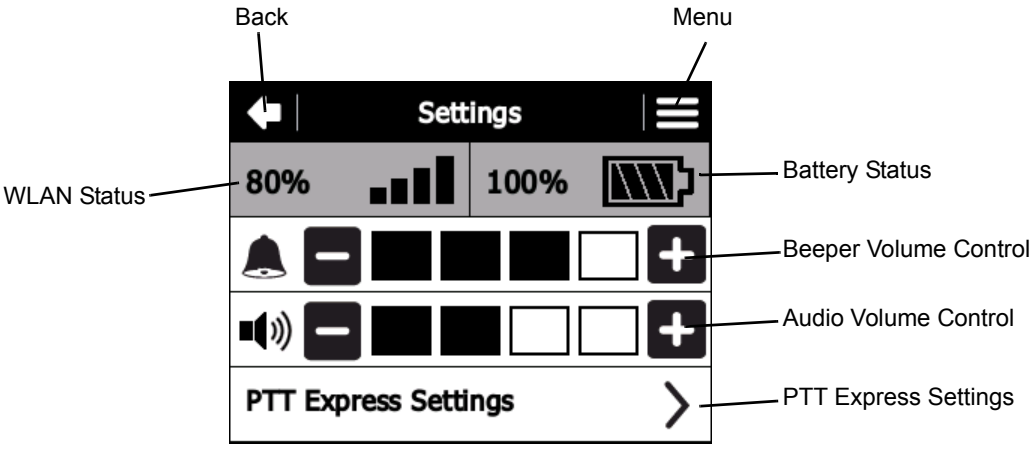


Figure 2-21 *Settings Screen*

- **WLAN Status** - Displays the signal strength for the WLAN signal. See *Table 2-2 on page 2-12*. Touch the icon to refresh the status.

NOTE After removing the SB1 from the cradle, it takes approximately 30 seconds for the battery status to update.

- **Battery Status** - Displays the battery charge level. See *Table 2-3 on page 2-13*. Touch the icon to refresh the status.
- **Beeper Volume Control** - Use to adjust the speaker volume. See *Adjusting the Volume on page 2-13*.
- **Audio Volume Control** - Use to control the audio volume through the Headset Adapter and the Speaker Adapter. See *Adjusting the Volume on page 2-13*. Note that when using a headset, the headset also has a volume control.
- **PTT Express Settings** - Touch to configure PTT Express for Push-to-Talk (PTT) settings. See *PTT Express Voice Client on page 2-15* for more information.
- **More Settings Menu** - Touch ☰ to display additional setting options for setting the date and time, screen calibration, provisioning and wireless LAN configuration.

Table 2-2 *WLAN Status*

Icon	Status	Action
	Excellent signal strength	WLAN network is ready to use.
	Very good signal strength	WLAN network is ready to use.

Table 2-2 *WLAN Status (Continued)*

Icon	Status	Action
	Good signal strength	WLAN network is ready to use.
	Poor signal strength	WLAN network is ready to use. Performance may not be optimum. Notify the network administrator that the signal strength is “Poor”.
	Out-of-network range (not associated)	No WLAN network connection. The SB1 beeps and this icon appears on the Home screen whenever it has lost or is out of range from the wireless network. Notify the network administrator. The SB1 beeps when it comes back in range of the wireless network.

Table 2-3 *Battery Status*

Icon	Description
	25%
	50%
	75%
	100%

Adjusting the Volume

To adjust the beeper volume and the audio volume on the SB1, touch to increase volume or to decrease volume. Note that when using a headset, the headset also has a volume control.

PTT Express Settings

Use the **PTT Express Setting** to enable PTT Express and select a channel. For information on using PTT Express see *PTT Express Voice Client on page 2-15*.

More Setting

Use the **More Settings** options to calibrate the screen, set beeper settings, view software versions and other advanced settings.

Screen Calibration

If when touching the screen misalignment is observed, the user can re-calibrate the screen.

1. On the **Settings** screen, touch .
2. Touch **Calibrate Screen**.
3. Carefully press and briefly hold finger tip on the center of the target. Repeat the procedure as the target moves and stops at different locations on the screen. This enters the new calibration settings.

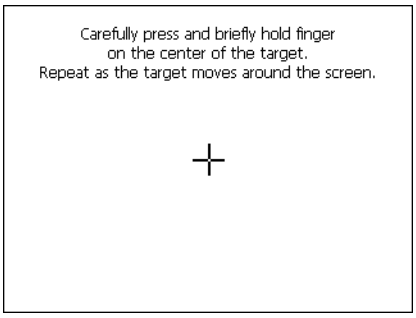


Figure 2-22 *Calibration Screen*

4. Once all of the new calibration settings are input, tap the screen to save the new calibration settings.

Beeper Settings

To set the alerts on the SB1. The user can select the type of notification that produces an audio alert:

1. Touch . The **Settings** screen appears.
2. Touch . The **Advanced Settings** screen appears.
3. Touch **Beeper Settings**.
4. Touch the **System**, **Server** or **Application** radio button to enable or disable the beeper sound when a notification occurs.
5. Touch to return to the Home screen.

Software Versions

To view the versions of various software applications on the SB1, touch **Software Versions**. The Software Version screen displays the version numbers for the operating system, RhoElements, App folder and the SB1 Shell.

Touch Back to return to the **More Settings** screen.

Advanced Setting

The **Advanced Settings** options provides settings that are configurable by a system administrator or integrator. Advanced Settings are detailed in the *SB1 Integrator Guide*.

PTT Express Voice Client

PTT Express Voice Client creates PTT communication capability between disparate enterprise devices. Leveraging existing Wireless Local Area Network (WLAN) infrastructure, PTT Express delivers simple PTT communication without the need of a voice communication server.

The Speaker Adapter or Headset Adapter and a Headset are required for PTT communication. See *Chapter 4, Accessories* for information on installing the adapters.

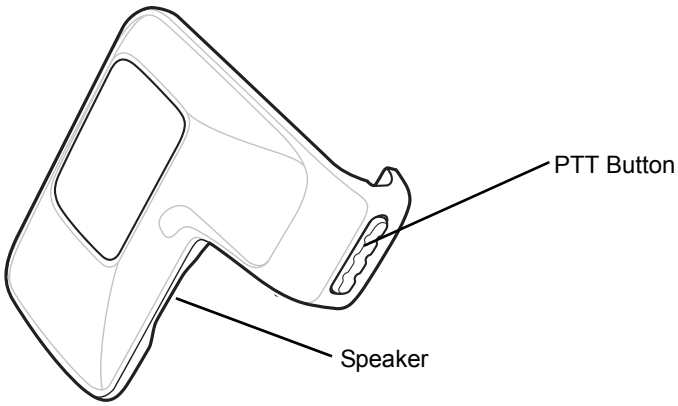


Figure 2-23 *Speaker Adapter*

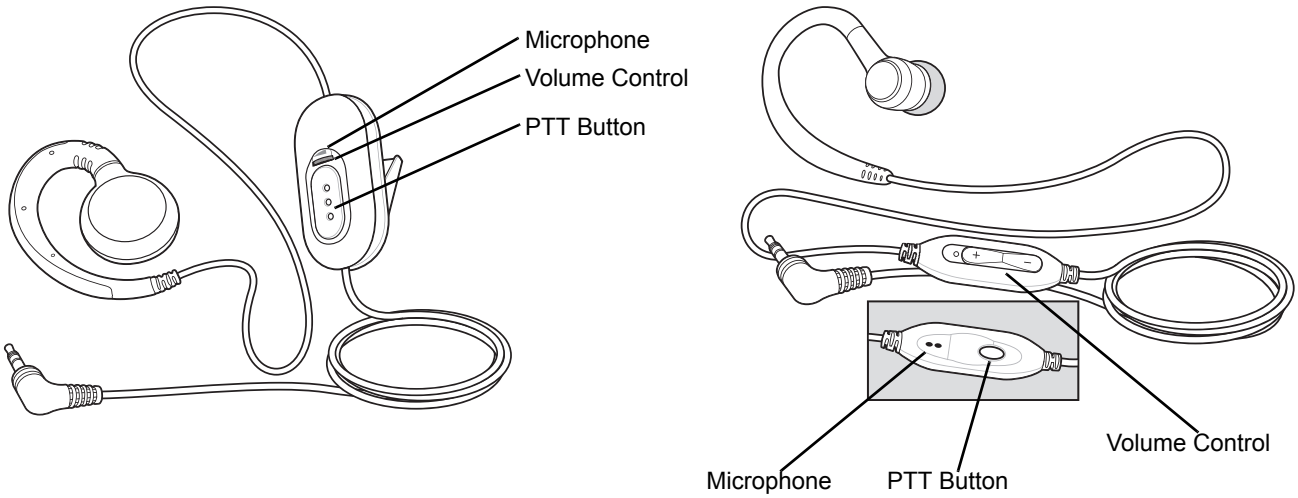


Figure 2-24 *Headsets*

PTT Audible Indicators

The following tones provide helpful cues when using the voice client.

- **Talk Tone**: Double chirp. Plays when the PTT button (broadcast or private calls) is depressed. This is a prompt for the user to start talking.
- **Access Tone**: Single beep. Plays when another user just finished a broadcast or response to the user. The user is now able to initiate a Group Broadcast or Private Response.
- **Busy Tone**: Continuous tone. Plays when the broadcast (or private) button is depressed and another user is already communicating on the same talkgroup.

- **Network Tone**:
  - Three increasing tones. Plays when PTT Express is acquiring the WLAN connection and ready for voice communication.
  - Three decreasing tones. Plays when PTT Express has lost the WLAN connection and is not ready for voice communication.

PTT Express Voice Client Configuration

Enable Voice Client Communication

To enable the PTT communication:

1. Press the Home button to display the Home screen.
2. Touch . The **Settings** screen appears.
3. Touch **PTT Express settings**. The **PTT Express** screen appears.

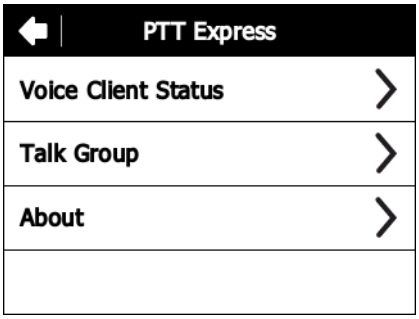


Figure 2-25 *PTT Express Screen*

4. Touch **Voice Client Status**.

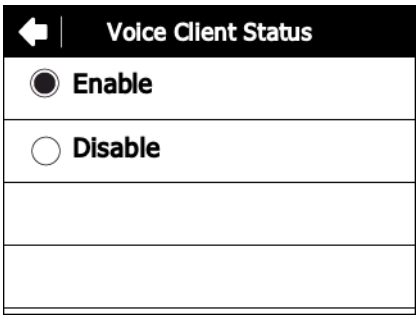


Figure 2-26 *Voice Client Status Screen*

5. Touch **Enable**.
6. Touch **Save**.
7. Touch .

Select a Talk Group

NOTE Upon reset, the talk group is set to **Talk Group 1**.

One of 32 talk groups can be selected by PTT Express users. However, only one talk group may be enabled at a time on the SB1.

1. Touch . The **Settings** screen appears.
2. Touch **PTT Express settings**. The **PTT Express** screen appears.
3. Touch **Talk Group**. The **Talk Group** screen appears.

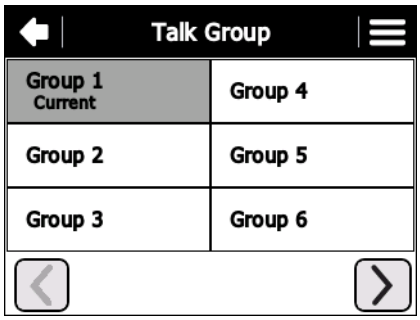


Figure 2-27 *Talk Group Screen*

4. Touch a **Talk Group** number. Use the arrow buttons to view additional Talk Groups.
5. Touch **Save**.
6. Touch to return to the **PTT Express** screen.
7. Press the Home button.

Disable PTT Express Voice Client Communication

To disable the PTT communication:

1. From the Home screen, touch . The **Settings** screen appears.
2. Touch **PTT Express settings**. The **PTT Express** screen appears.
3. Touch **Voice Client Status**.
4. Touch **Disable**.
5. Touch **Save**.
6. Touch to return to the **PTT Express** screen.
7. Press the Home button.

PTT Communication

NOTE By default, the Private Response feature is disabled. Specific applications may enabled this feature. Check with system administrator for more information.

PTT communication may be established as a Group Broadcast or Private Response.

Group Broadcast (One to Many)

1. Press and hold the PTT button on the Speaker Adapter or Headset and listen for the talk tone to play.

If a busy tone is heard, release the PTT button and wait a moment before making another attempt. Ensure that PTT Express and the WLAN are enabled.

2. Start talking immediately after the talk tone plays.

> ***NOTE*** If the user holds the PTT button for more than 60 seconds, the call is dropped and then restarted preventing others from making Group Broadcast calls. The user should release the Group Broadcast button when finished talking to allow others to make calls.

3. Release the PTT button when finished talking.

Response to a Group Broadcast

To respond to a Group Broadcast:

1. Wait until an access tone is heard.
2. Press and hold the PTT button and listen for the talk tone to play.

   If a busy tone is heard, release the PTT button and wait a moment before making another attempt. Ensure that PTT Express and the WLAN are enabled.
3. Start talking immediately after the talk tone plays.
4. Release the PTT button when finished talking.

Private Response (One to One)

> ***NOTE*** By default, the Private Response feature is disabled. Specific applications may enabled this feature. Check with system administrator for more information.

The Private Response can only be initiated once a Group Broadcast has been established.

The initial Private Response is made to the last talker on the Group Broadcast.

1. Wait until an access tone is heard.
2. Within 10 seconds, double press and hold the PTT button, and listen for the talk tone to play.

   If a busy tone is heard, release the PTT button and wait a moment before making another attempt. Ensure that PTT Express and the WLAN are enabled.
3. Start talking immediately after the talk tone plays.
4. Release the PTT button when finished talking.

CHAPTER 3 DATA CAPTURE

Introduction

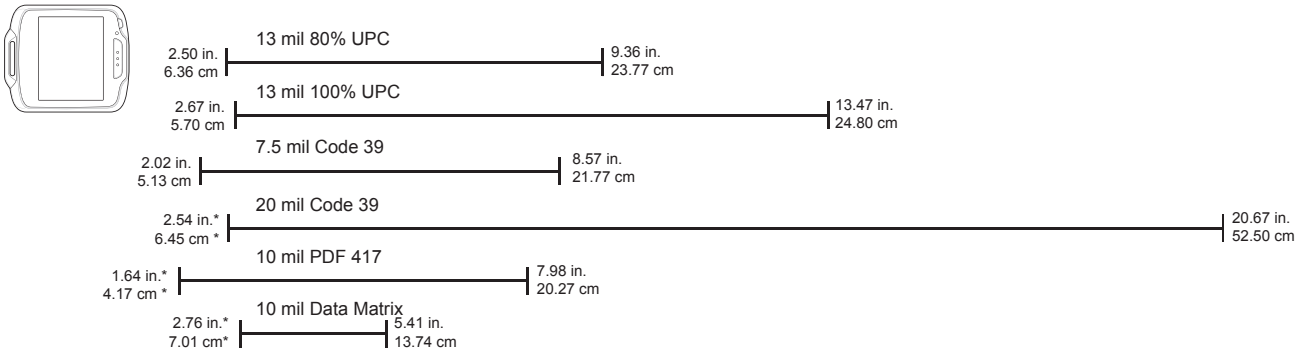
The SB1 contains a bar code reader with combined aimer and illumination for reading bar code data. The reader uses advanced camera technology to take a digital picture of a bar code, and executes state-of-the-art software decoding algorithms to extract the data from the image.

Scanning Considerations

Scanning consists of; aim, scan and decode. Scanning performance can be optimized by considering the range.

Any scanning device decodes well over a particular working range (minimum and maximum distances from the bar code). This range varies according to bar code density and scanning device optics.

Scanning within range brings quick and constant decodes; scanning too close or too far away prevents decodes. Move the SB1 closer and further away to find the right working range for the bar codes being scanned. The best way to specify the appropriate working range per bar code density is through a chart called a decode zone. A decode graph simply plots working range as a function of minimum element widths of bar code symbols. See the *SB1 Integrator Guide* for the detailed information.



* Dependent upon bar code width

Figure 3-1 *Bar Code Reader Decode Graph*

NOTE Contact the Zebra Global Customer Support if chronic scanning difficulties develop. Decoding of properly printed bar codes should be quick and effortless.

Bar Code Reading

To read bar codes:

1. Ensure that the SB1 is loaded with a scanning application.
2. Aim the exit window at the bar code.

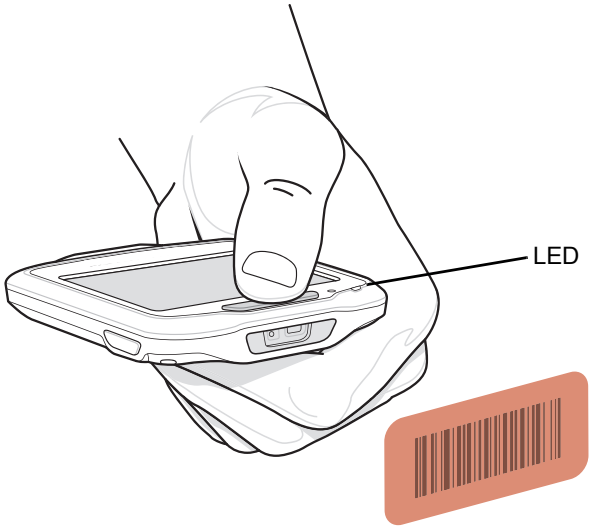


Figure 3-2 *Data Capture*

3. Press the Scan button. Ensure the red illumination covers the entire bar code. The LED Indicator illuminates red to indicate that the illumination is on. The LED Indicator turns green and a beep sounds to indicate a successful decode.

NOTE Scanning procedures depend on the application. An application may use different scanning procedures from the one listed above.

Chapter 4 Accessories

Introduction

The SB1 accessories provide a variety of product support capabilities. *Table 4-1* lists the SB1 accessories.

Table 4-1 *SB1 Accessories*

Accessory	Description
Cradles	
Single Slot Charging Cradle	Charges the battery within the SB1.
Ten Slot Charge Only Cradle	Charges up to ten SB1s.
Charging	
Power Supply (12 VDC, 4.16 A)	Provides power to the Ten Slot Charge Only Cradle.
Power Supply (5 VDC, 850 mA)	Provides power to the Single Slot Charging Cradle.
Miscellaneous	
Holster	Provides a clip-on holder for the SB1.
Armband	Provides a way to mount the holster for the SB1 on your arm.
Lanyard	Use to hold the SB1 around your neck.
Headset Adapter	Provides audio to a wired headset.
Speaker Adapter	Provides speaker for Push-To-Talk functionality.
Earbud Headset	Provides audio for hands-free PTT conversations. Contains ear fit speaker, PTT button and volume control.

Single Slot Charging Cradle

CAUTION Ensure to follow the guidelines for battery safety described in *Battery Safety Guidelines on page 5-1*.

Use the Single Slot Charging cradle to charge the SB1 battery. To charge the SB1 battery:

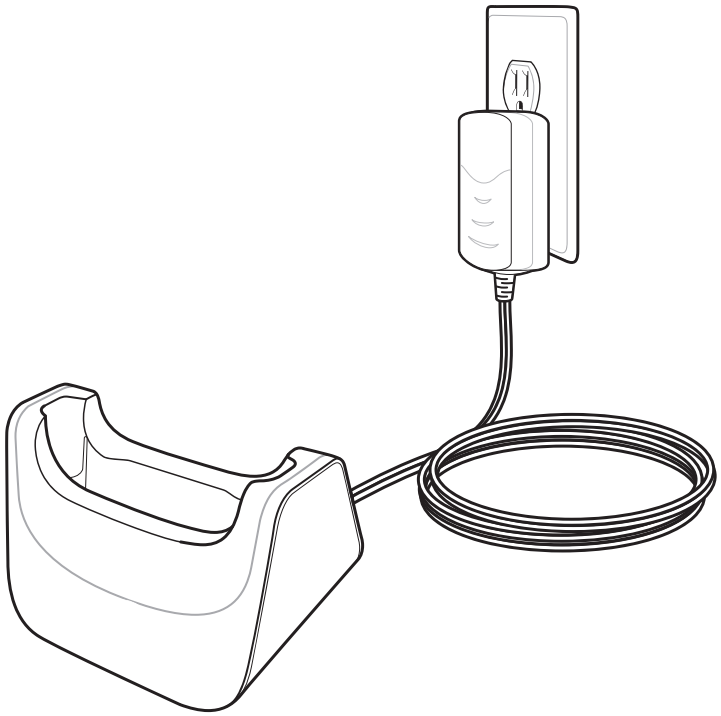


Figure 4-1 *Single Slot USB Cradle*

1. If attached, remove the SB1 from the lanyard or holster tether.
2. Slide the SB1 into the slot with the Scan button facing up and the display facing out.

NOTE If an Headset Adapter or Speaker Adapter is attached to the SB1 when placed into the cradle, the SB1 beeps indicating that the audio functionality has been disabled.

If the SB1 is playing audio when it is inserted into the cradle, the audio is muted and un-muted when the SB1 is removed from the cradle.

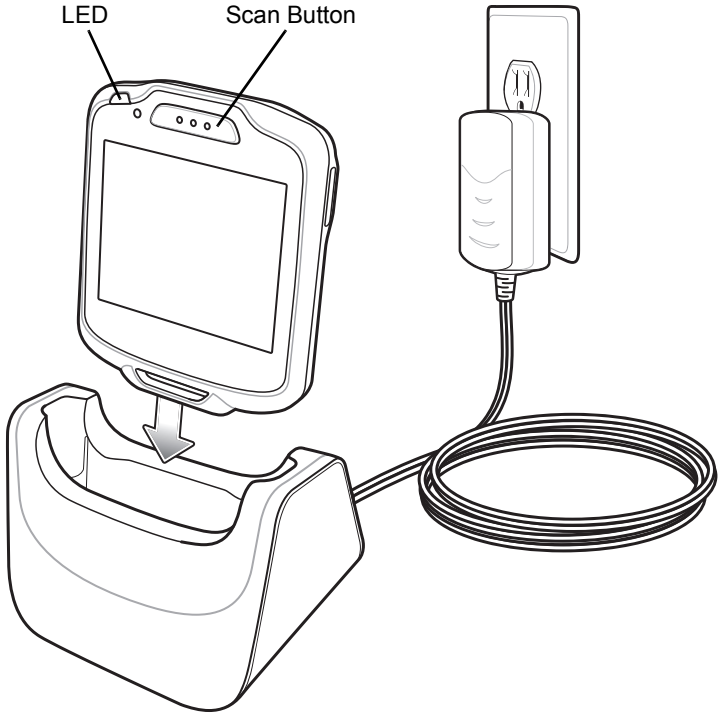


Figure 4-2 *Single Slot USB Cradle*

The Charging screen displays and the SB1 LED Indicator indicates the SB1 battery charging status. The battery charges in approximately four hours. See *Table 1-1 on page 1-4* for charging status indications.

3. When charging is complete, the SB1 may be removed from the cradle.

Ten Slot Charge Only Cradle

CAUTION Ensure that you follow the guidelines for battery safety described in *Battery Safety Guidelines on page 5-1*.

Use the Ten Slot Charge Only cradle to charge up to ten SB1s simultaneously. To charge the SB1:

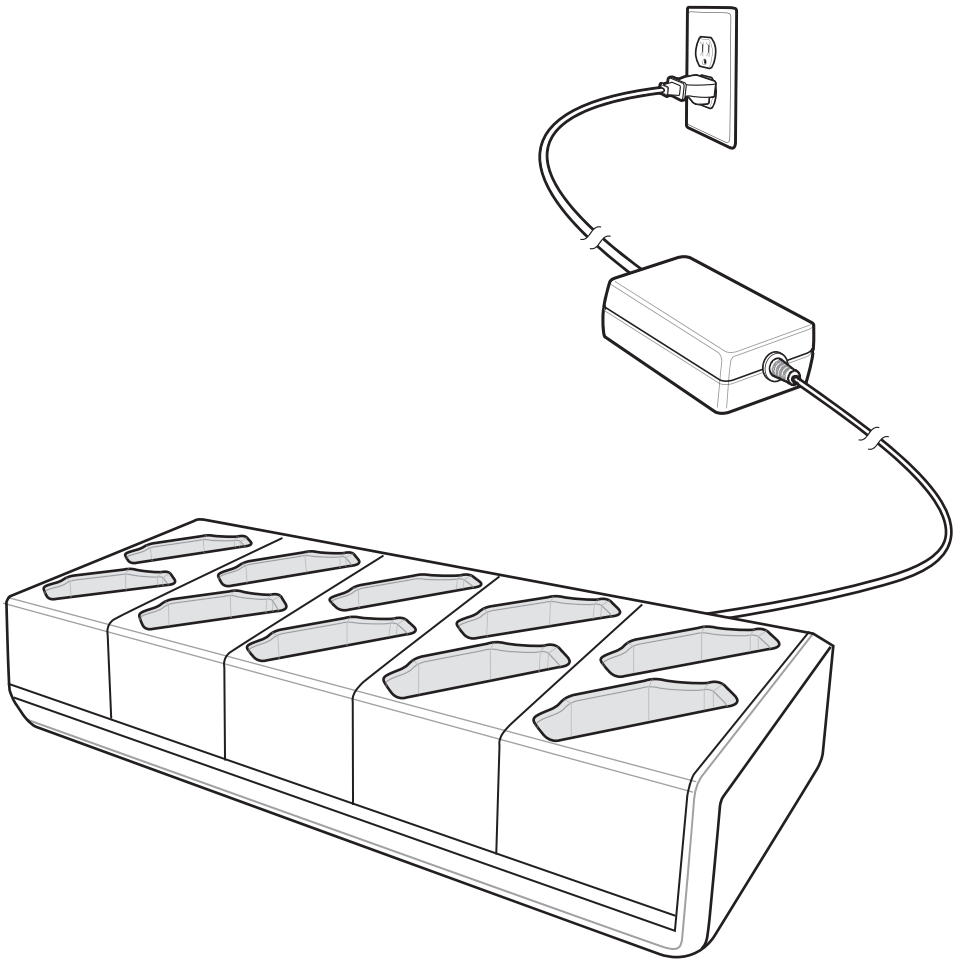


Figure 4-3 *Ten Slot Charge Only Cradle*

1. If attached, remove the SB1 from the lanyard or holster tether.
2. Slide the SB1 into the slot with the Scan button facing up.
3. Push down on the SB1 until it snaps into place. Verify the SB1 is secure in the slot.

NOTE If an Headset Adapter or Speaker Adapter is attached to the SB1 when placed into the cradle, the SB1 beeps indicating that the audio functionality has been disabled.

If the SB1 is playing audio when it is inserted into the cradle, the audio is muted and un-muted when the SB1 is removed from the cradle.

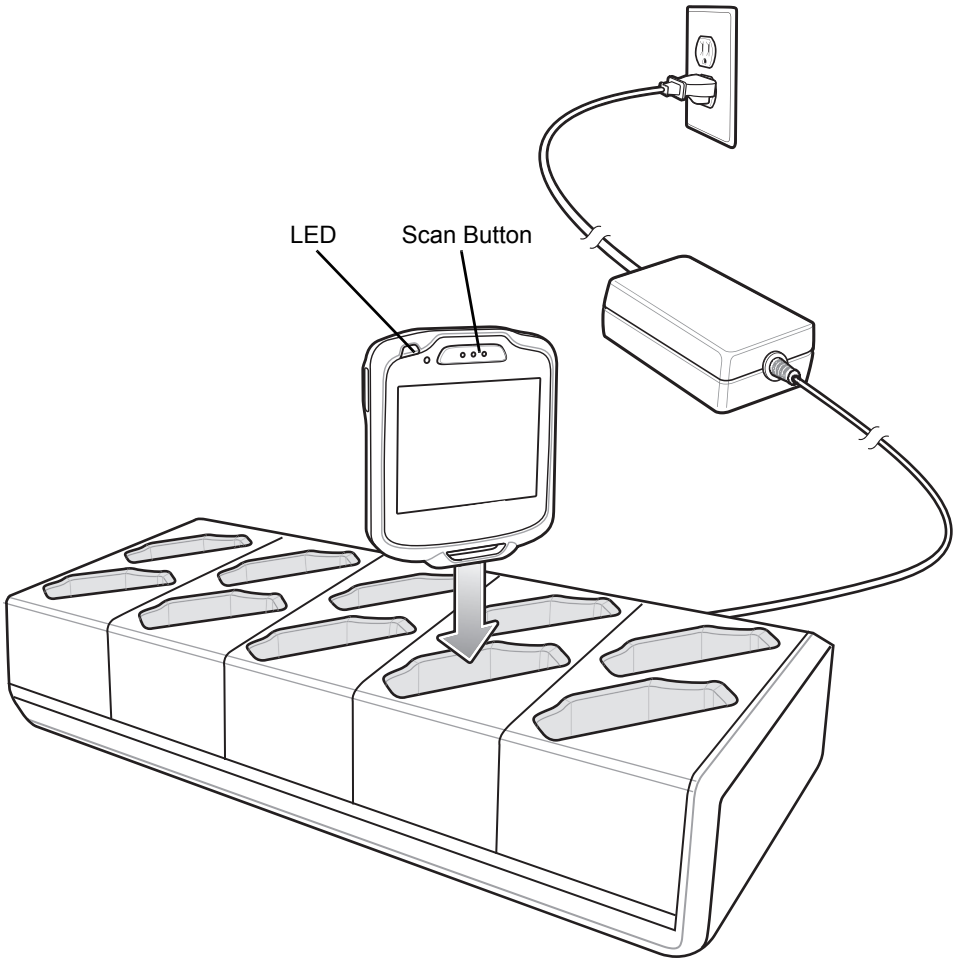


Figure 4-4 *Insert SB1 into Ten Slot Charge Only Cradle*

The Charging screen displays and the SB1 LED Indicator indicates the SB1 battery charging status. The battery charges in approximately four hours. See *Table 1-1 on page 1-4* for charging status indications.

4. When charging is complete, the SB1 may be removed from the cradle.

Headset Adapter

Use the Headset Adapter to add audio functionality to the SB1. To attach the Headset Adapter to the SB1:

1. Plug a headset plug into the headset jack on the Headset Adapter.

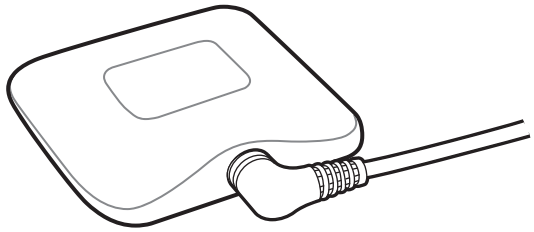


Figure 4-5 *Attach Headset Jack to Headset Adapter*

2. Align the Headset Adapter magnets with the adapter mounting points on the back of the SB1.

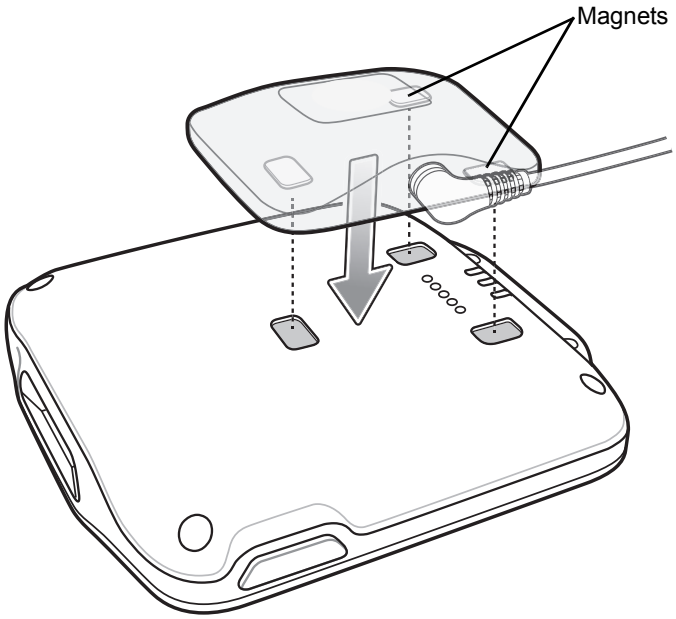


Figure 4-6 *Align Headset Adapter with SB1*

3. Lower the Headset Adapter onto the SB1. The Headset Adapter snaps onto the SB1. The SB1 sounds two beeps to indicate that the adapter is connected properly.
4. Ensure the adapter is laying flat on the SB1. If not, remove and re-attach.

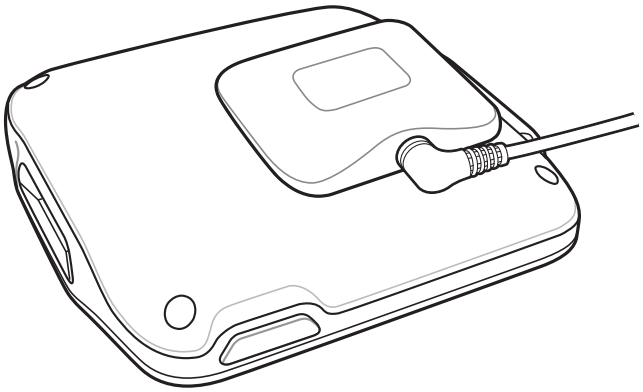


Figure 4-7 *Headset Adapter on SB1*

To remove the Headset Adapter from the SB1, grasp the edge of the Headset Adapter at the top edge of the SB1 and lift.

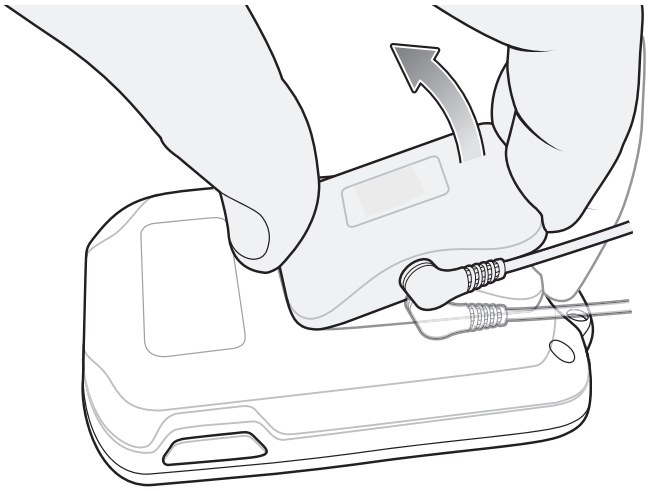


Figure 4-8 *Remove Headset Adapter*

Speaker Adapter

Use the Speaker Adapter to add audio and Push-to-Talk functionality.

To install the Speaker Adapter onto the SB1:

1. Slide the Speaker Adapter onto the SB1 from the side ensuring that the Home button wraps about the SB1.

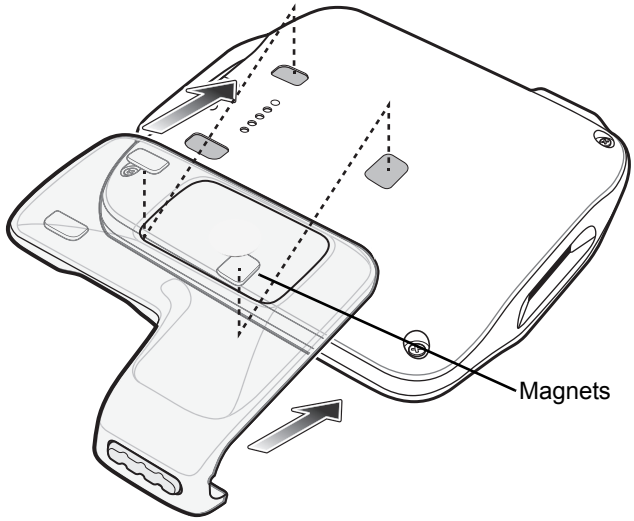


Figure 4-9 *Align Speaker Adapter*

2. Lower the Speaker Adapter onto the SB1. The Speaker Adapter snaps onto the SB1. The SB1 sounds three beeps to indicate that the adapter is connected properly.
3. Ensure the adapter is laying flat on the SB1. If not, remove and re-attach.

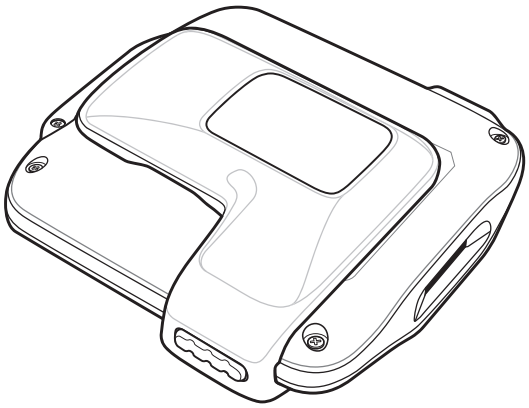


Figure 4-10 *Speaker Adapter Installed*

NOTE When removing the Speaker Adapter from the SB1, the SB1 beeps indicating that the Speaker Adapter has been removed from the SB1.

Holster

Use the holster to store the SB1 when not in use. The holster holds the SB1 on a belt or waist band and provides a tether to attach the SB1 to the holster.

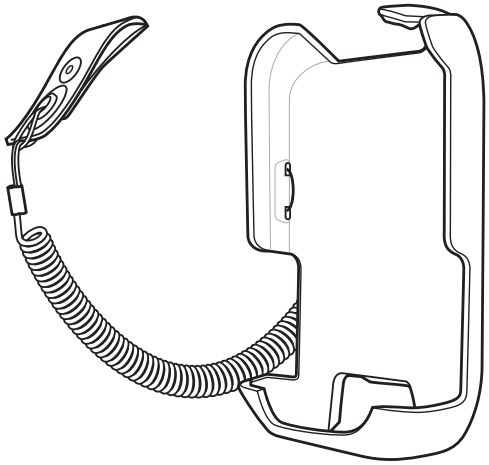


Figure 4-11 *Holster*

Feed the clip end through the lanyard slot and snap together.

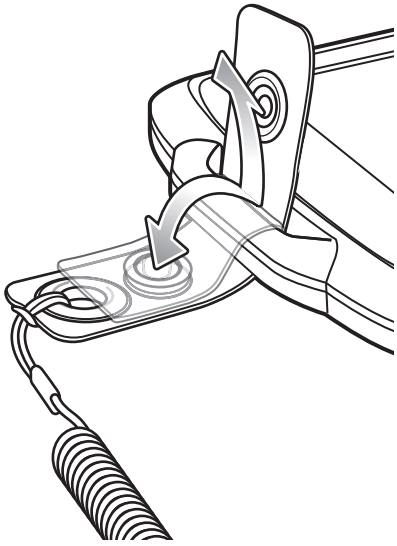


Figure 4-12 *Install Clip onto SB1*

Place the SB1 into the holster with the Scan button facing down and the screen facing the holster.

Push the SB1 into the holster until it snaps into place.

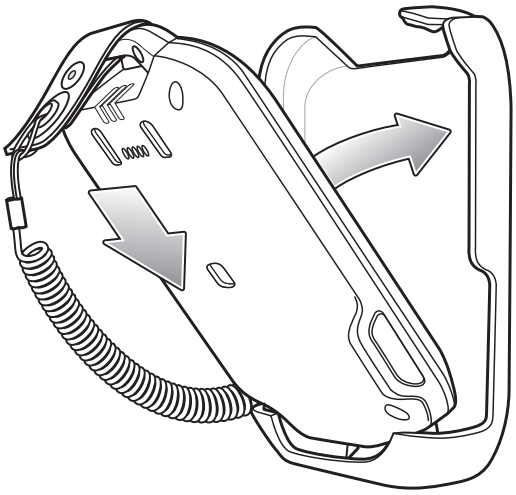


Figure 4-13 *Install SB1 onto Holster*

To remove the SB1 from the holster, pull on the top of the SB1 away from the body.

Armband

Use the Armband to wear the SB1 on the arm.

To install the armband:

Feed the end of the armband through the buckle ensuring that the rubber grip side is facing inside.

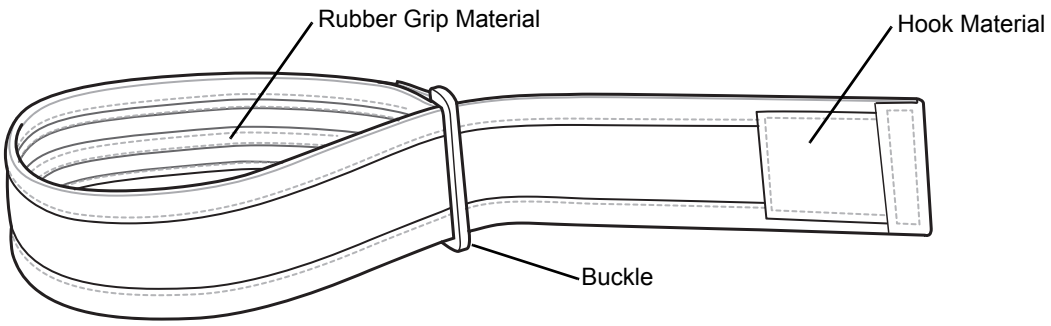


Figure 4-14 *Armband*

1. Slide the armband onto the arm to a comfortable location.
2. Pull the end of the armband and fold over so that the hook material attaches to the loop material.

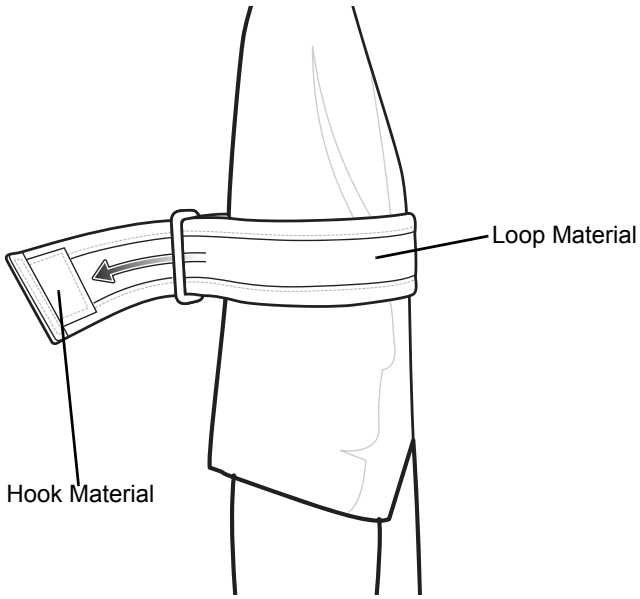


Figure 4-15 *Install Armband*

3. Insert the clip of the holster in between the two sections of the armband.

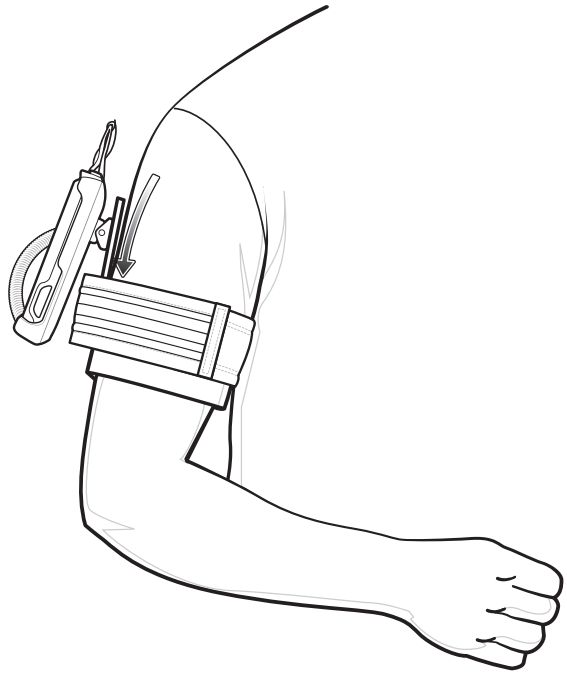


Figure 4-16 *Insert Holster*

4. Lift and then pull the end of the armband to tighten.

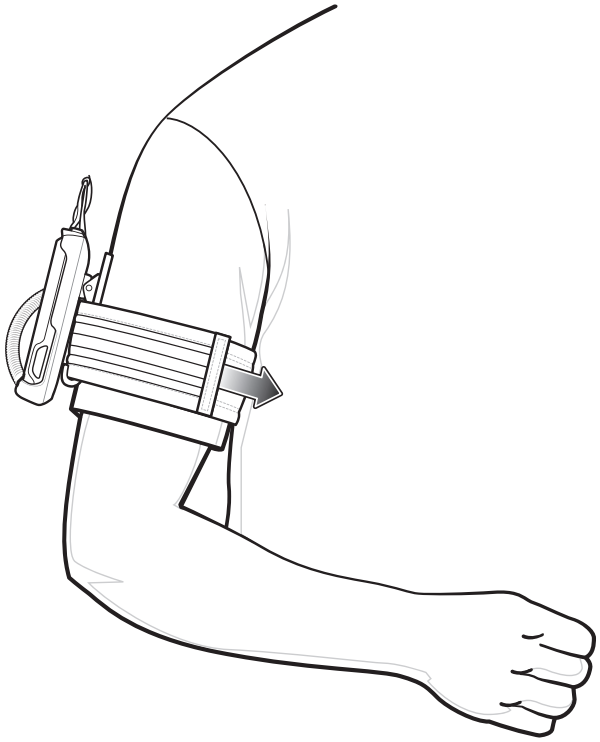


Figure 4-17 *Tighten Armband*

Lanyard

The lanyard provide a means to hold the SB1 around the neck.

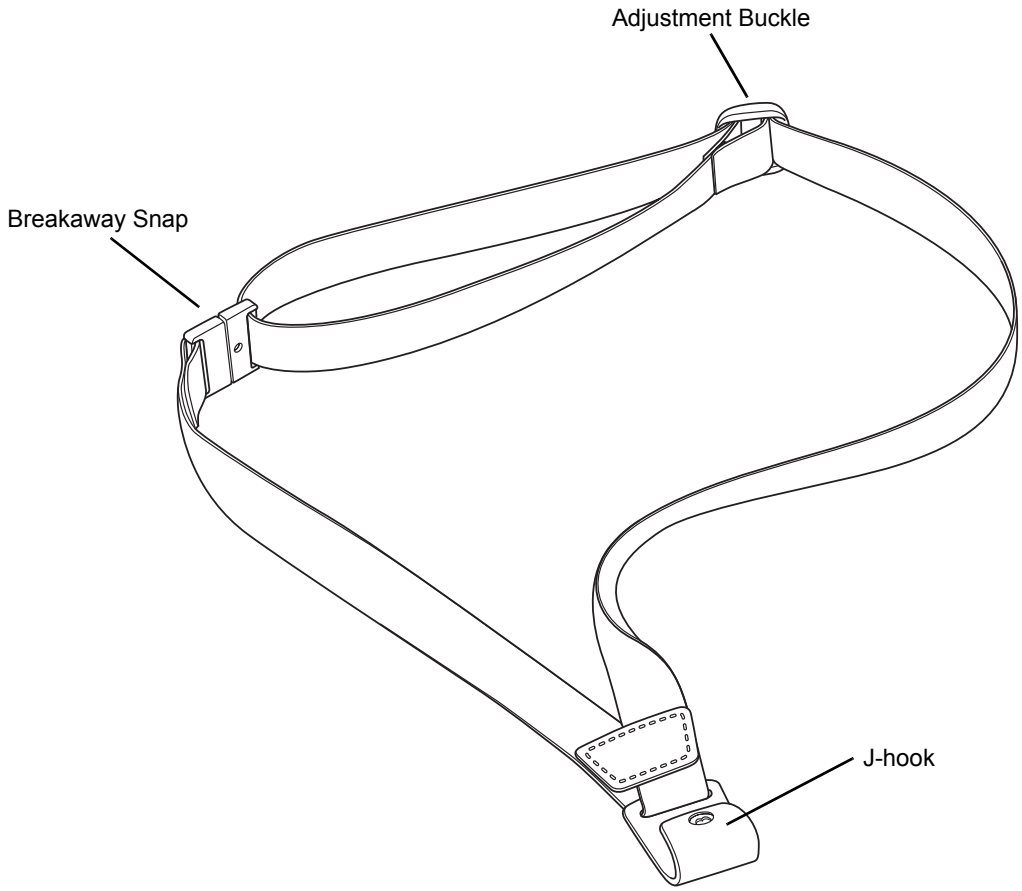


Figure 4-18 *Lanyard*

Slide the lanyard strap through the Adjustment Buckle to adjust the length of the lanyard. Moving the buckle closer to the Breakaway Snap lengthens the lanyard and moving it away from the Breakaway Snap shortens the lanyard.

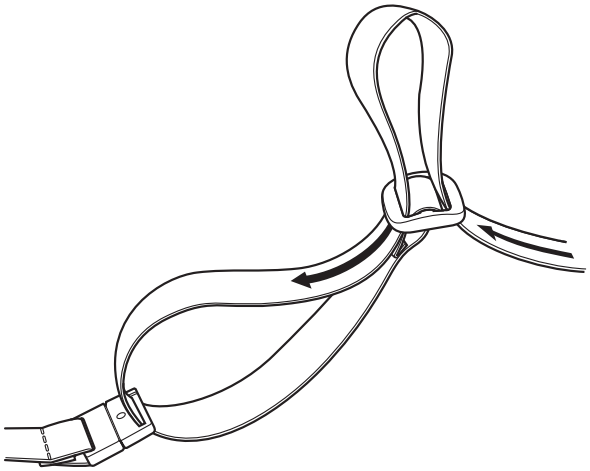


Figure 4-19 *Adjust Lanyard*

The SB1 mounts onto the lanyard and can be removed and replaced with ease. An accelerometer instantly orients the screen 180° based on device position for easy viewing by customers and users.

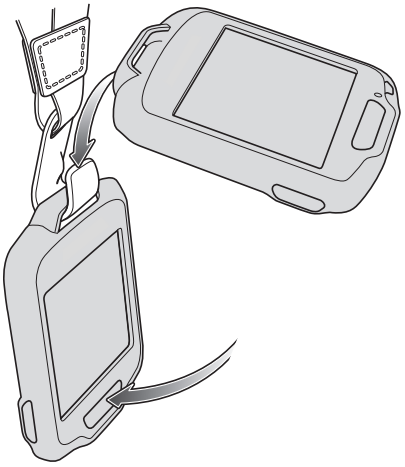


Figure 4-20 *Installing the SB1 onto the Lanyard*

Chapter 5 Maintenance & Troubleshooting

Introduction

This chapter includes instructions on cleaning and storing the SB1, and provides troubleshooting solutions for potential problems during SB1 operation.

Maintaining the SB1

For trouble-free service, observe the following tips when using the SB1:

- Do not scratch the screen of the SB1. When working with the SB1, use only your finger. Never use an actual pen, pencil, stylus or other sharp object on the surface of the SB1 screen.
- Although the SB1 is water and dust resistant, do not expose it to rain or moisture for an extended period of time. In general, treat the SB1 as a pocket calculator or other small electronic instrument.
- The screen of the SB1 is glass. Do not to drop the SB1 or subject it to strong impact.
- Protect the SB1 from temperature extremes. Do not leave it on the dashboard of a car on a hot day, and keep it away from heat sources.
- Do not store or use the SB1 in any location that is dusty, damp, or wet.
- Use a soft lens cloth to clean the SB1. If the surface of the SB1 screen becomes soiled, clean it with a soft cloth moistened with a diluted window-cleaning solution. See *Cleaning on page 5-2*.
- Do not place in pocket. Use holster or armband.

Battery Safety Guidelines

WARNING! Failure to follow these guidelines may result in fire, explosion, or other hazard.

- The area in which the units are charged should be clear of debris and combustible materials or chemicals. Particular care should be taken where the device is charged in a non commercial environment.

- Follow battery usage, storage, and charging guidelines found in this user guide.
- Improper battery use may result in a fire, explosion, or other hazard.
- To charge the mobile device battery, the battery and charger temperatures must be between +32 ºF and +95 ºF (0 ºC and +35 ºC)
- Do not use incompatible batteries and chargers. Use of an incompatible battery or charger may present a risk of fire, explosion, leakage, or other hazard. If you have any questions about the compatibility of a battery or a charger, contact Zebra Global Customer Support.
- Do not disassemble or open, crush, bend or deform, puncture, or shred.
- Severe impact from dropping any battery-operated device on a hard surface could cause the battery to overheat.
- Do not short circuit a battery or allow metallic or conductive objects to contact the battery terminals.
- Do not modify or remanufacture, attempt to insert foreign objects into the battery, immerse or expose to water or other liquids, or expose to fire, explosion, or other hazard.
- Do not leave or store the equipment in or near areas that might get very hot, such as in a parked vehicle or near a radiator or other heat source. Do not place battery into a microwave oven or dryer.
- Battery usage by children should be supervised.
- Please follow local regulations to properly dispose of used re-chargeable batteries.
- Do not dispose of batteries in fire.
- In the event of a battery leak, do not allow the liquid to come in contact with the skin or eyes. If contact has been made, wash the affected area with large amounts of water and seek medical advice.
- If you suspect damage to your equipment or battery, contact Zebra Global Customer Support to arrange for inspection.

Cleaning

CAUTION Always wear eye protection.

Read warning label on compressed air and alcohol product before using.

If you have to use any other solution for medical reasons please contact Zebra for more information.

WARNING! **Avoid exposing this product to contact with hot oil or other flammable liquids. If such exposure occurs, unplug the device and clean the product immediately in accordance with these guidelines.**

Approved Cleanser Active Ingredients

100% of the active ingredients in any cleaner must consist of one or some combination of the following: isopropyl alcohol, bleach/sodium hypochlorite, hydrogen peroxide or mild dish soap.

Harmful Ingredients

The following chemicals are known to damage the plastics on the SB1 and should not come in contact with the device: ammonia solutions, compounds of amines or ammonia; acetone; ketones; ethers; aromatic and

chlorinated hydrocarbons; acqueous or alcoholic alkaline solutions; ethanolamine; toluene; trichloroethylene; benzene; carbolic acid and TB-lysoform.

Cleaning Instructions

Do not apply liquid directly to the SB1. Dampen a soft cloth or use pre-moistened wipes. Do not wrap the device in the cloth or wipe, but gently wipe the unit. Be careful not to let liquid pool around the display window or other places. Allow the unit to air dry before use.

Special Cleaning Notes

Many vinyl gloves contain phthalate additives, which are often not recommended for medical use and are known to be harmful to the housing of the SB1. The SB1 should not be handled while wearing vinyl gloves containing phthalates, or before hands are washed to remove contaminant residue after gloves are removed. If products containing any of the harmful ingredients listed above are used prior to handling the SB1, such as hand sanitizer that contain ethanolamine, hands must be completely dry before handling the SB1 to prevent damage to the plastics.

Materials Required

- Alcohol wipes
- Lens tissue
- Cotton tipped applicators
- Isopropyl alcohol
- Can of compressed air with a tube.

Cleaning the SB1

Housing

Using the alcohol wipes, wipe the housing including buttons.

Display

The display can be wiped down with the alcohol wipes, but care should be taken not to allow any pooling of liquid around the edges of the display. Immediately dry the display with a soft, non-abrasive cloth to prevent streaking.

Reader Exit Window

Wipe the exit window periodically with a lens tissue or other material suitable for cleaning optical material such as eyeglasses.

Contacts

1. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
2. Rub the cotton portion of the cotton tipped applicator back-and-forth across the contacts. Do not leave any cotton residue on the contacts.
3. Repeat at least three times.
4. Use the cotton tipped applicator dipped in alcohol to remove any grease and dirt near the contacts.

5. Use a dry cotton tipped applicator and repeat steps 4 through 6.

CAUTION Do not point nozzle at yourself and others, ensure the nozzle or tube is away from your face.

6. Spray compressed air on the contact area by pointing the tube/nozzle about ½ inch away from the surface.
7. Inspect the area for any grease or dirt, repeat if required.

Cleaning Cradle Connectors

To clean the connectors on a cradle:

1. Remove the DC power cable from the cradle.
2. Dip the cotton portion of the cotton tipped applicator in isopropyl alcohol.
3. Rub the cotton portion of the cotton tipped applicator along the pins of the connector. Slowly move the applicator back-and-forth from one side of the connector to the other. Do not let any cotton residue on the connector.
4. All sides of the connector should also be rubbed with the cotton tipped applicator.

CAUTION Do not point nozzle at yourself and others, ensure the nozzle or tube is away from your face.

5. Spray compressed air in the connector area by pointing the tube/nozzle about ½ inch away from the surface.
6. Ensure that there is no lint left by the cotton tipped applicator, remove lint if found.
7. If grease and other dirt can be found on other areas of the cradle, use lint free cloth and alcohol to remove.
8. Allow at least 10 to 30 minutes (depending on ambient temperature and humidity) for the alcohol to air dry before applying power to cradle.

   If the temperature is low and humidity is high, longer drying time is required. Warm temperature and dry humidity requires less drying time.

Cleaning Frequency

The cleaning frequency is up to the customer's discretion due to the varied environments in which the mobile devices are used. They may be cleaned as frequently as required. However when used in dirty environments it may be advisable to periodically clean the scanner exit window to ensure optimum scanning performance.

Troubleshooting

SB1

Table 5-1 *Troubleshooting the SB1*

Problem	Cause	Solution
SB1 does not turn on.	Battery not charged.	Charge the SB1.
	SB1 was turned off.	Place the SB1 into a powered cradle. The SB1 turns on when power is applied.
	System error.	Perform a reset. If the SB1 still does not turn on, contact the system administrator. For more information see, *Resetting the SB1 on page 1-5*.
Battery did not charge.	Battery failed.	Perform a reset. For more information see, *Resetting the SB1 on page 1-5*.
	SB1 removed from cradle while battery was charging.	Place in cradle and begin charging. The battery requires up to four hours to recharge fully.
	Extreme battery temperature.	Battery does not charge if ambient temperature is below 0 °C (32 °F) or above 35 °C (95 °F).
	SB1 was placed in the cradle upside down.	Remove the SB1 from the cradle and insert with Scan button facing up.
SB1 does not emit sound.	Volume setting is low or turned off.	Increase the volume. See *Adjusting the Volume on page 2-13* for more information.
	Headset Adapter not installed properly.	Remove and replace Headset Adapter. When connected properly the SB1 emits two beeps.
	Headset not plugged into Adapter correctly.	Remove headset plug and insert into Headset Adapter audio jack.
	Speaker Adapter not installed properly.	Remove and replace Speaker Adapter. When connected properly the SB1 emits three beeps.
Tapping the screen buttons or icons does not activate the corresponding feature.	Touch screen not calibrated correctly.	Re-calibrate the screen. See *Screen Calibration on page 2-13*.
	Battery depleted.	Recharge the battery.

Table 5-1 *Troubleshooting the SB1 (Continued)*

Problem	Cause	Solution
Cannot capture bar code data.	Scanning application is not running.	Verify the SB1 a scanning application is running. See the system administrator.
	Unreadable bar code.	Ensure that the bar code is of good quality.
	Distance between SB1 and bar code is incorrect.	Ensure that the SB1 is within proper scanning range.
	SB1 is not programmed for the bar code type.	See system administrator.
	Battery is low.	Check the battery level. When the battery is low, the SB1 automatically goes into suspend mode.
	Bar Code Reader window is dirty.	Clean the window. See *Cleaning on page 5-2*.

Single Slot Charging Cradle

Table 5-2 *Troubleshooting the Single Slot Charging Cradle*

Problem	Cause	Solution
SB1 battery is not charging.	Cradle is not receiving power.	Ensure the power cable is connected securely to both the cradle and to AC power.
	The SB1 is not fully seated in the cradle.	Remove and re-insert the SB1 into the cradle, ensuring it is correctly seated.
	SB1 was placed in the cradle upside down.	Remove the SB1 from the cradle and insert with Scan button facing up.
	Battery is faulty.	Verify that other SB1 devices charge properly. If so, contact system administrator.

Ten Slot Charge Only Cradle

Table 5-3 *Troubleshooting the Four Slot Charge Only Cradle*

Problem	Cause	Solution
SB1 battery is not charging.	Cradle is not receiving power.	Ensure the power cable is connected securely to both the cradle and to AC power.
	The SB1 is not fully seated in the cradle.	Remove and re-insert the SB1 into the cradle, ensuring it is correctly seated.
	SB1 was placed in the cradle upside down.	Remove the SB1 from the cradle and insert with Scan button facing up.
	Battery is faulty.	Verify that other SB1 devices charge properly. If so, contact system administrator.

Headset Adapter

Table 5-4 *Troubleshooting the Headset Adapter*

Problem	Cause	Solution
Audio cannot be heard through headset.	Headset Adapter not connected properly.	Remove Headset Adapter and reinstall.
	Headset is not connected properly.	Remove headset from Headset Adapter and reinstall.
	Volume is too low.	Increase audio volume.

Speaker Adapter

Table 5-5 *Troubleshooting the Speaker Adapter*

Problem	Cause	Solution
Audio cannot be heard through Speaker Adapter.	Speaker Adapter not connected properly.	Remove Speaker Adapter and reinstall.
	Volume is too low.	Increase audio volume,

Appendix A Sample Applications

This appendix provides information on the sample applications loaded on the SB1:

- Demo-MVM
- Demo-Scan
- FTP.

Demo-MVM

The Demo-MVM application demonstrates using the SB1 is a workforce management application.

1. Touch > .
2. The splash screen appears followed by the Enter Password screen.

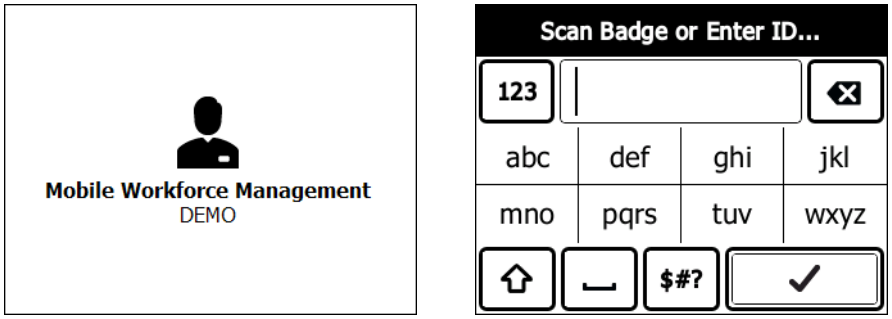


Figure A-1 *Splash Screen/Enter Password Screen*

3. Enter 123456 and then touch . The **Inbox** appears.

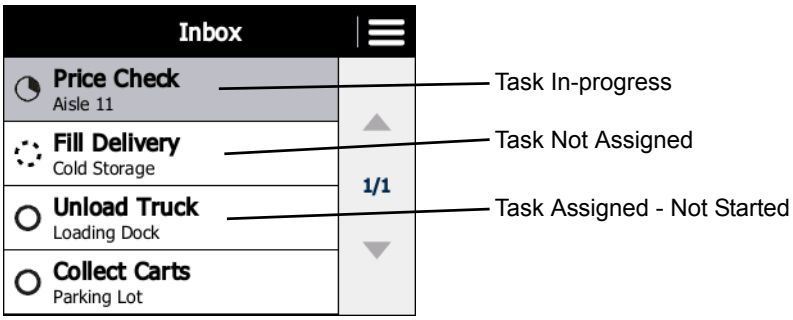


Figure A-2 *Inbox Screen*

Price Check Scenario

The Price Check scenario illustrates a task that has already been accepted by the user, the user has already started the task and the user completes the task.

1. Touch **Price Check**. The **Price Check** screen appears.

Figure A-3 *Price Check Task Screen*

2. Point the SB1 at a bar code on a product.
3. Press the Scan button. The SB1 reads the bar code and displays information about the product.

Figure A-4 *Product Data Screen*

Touch ✓ when the task is completed, ✕ to go back to the Inbox or ⏸ to pause the task and complete at a later time.

4. Touch ✓ to indicate that the task is complete.
5. Touch **OK** to confirm task completion.
6. Touch **OK**.

7. The **Inbox** re-displays.

Fill Delivery Scenario

The Fill Delivery scenario illustrates a task that has not been accepted by the user, the user accepts the task and then the user completes the task.

1. Touch **Fill Delivery**. The **Fill Delivery** screen appears.

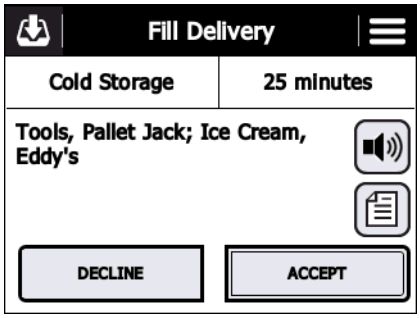


Figure A-5 *Fill Delivery Screen*

2. Touch **Accept** to accept the task.

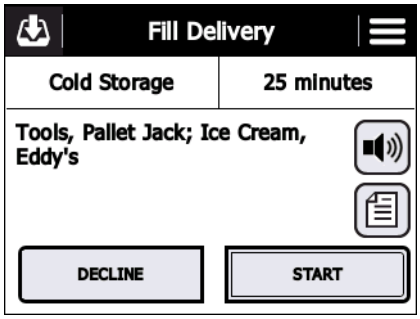


Figure A-6 *Task Accepted Screen*

3. Touch START to start the task.

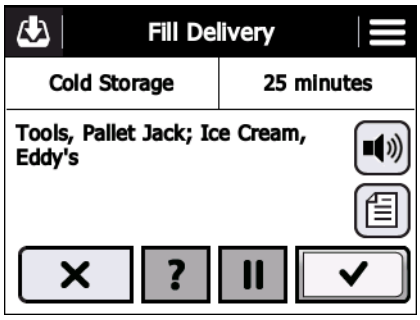


Figure A-7 *Task Started*

Touch ✓ when the task is completed, ✕ to go back to the Inbox or ⏸ to pause the task and complete at a later time.

4. Touch ✓ to indicate that the task is complete.
5. Touch **OK** to confirm task completion.

6. The Inbox re-displays with the task removed from the InBox.

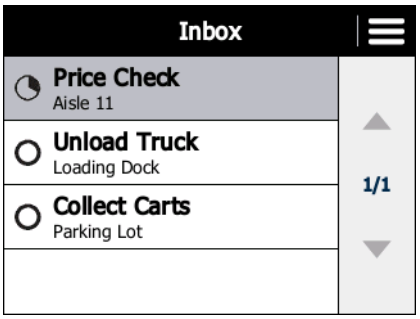


Figure A-8 *Fill Delivery Task Removed from Inbox*

Unload Truck Scenario

The Unload Truck scenario illustrates a task that has been accepted by the user and the user completes the task.

1. In the Inbox, touch **Unload Truck**. The **Unload Truck** screen appears.

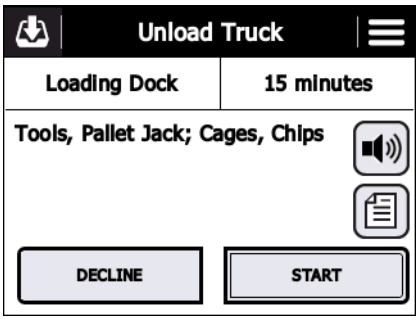


Figure A-9 *Accepted Task Screen*

2. Touch START to start the task.

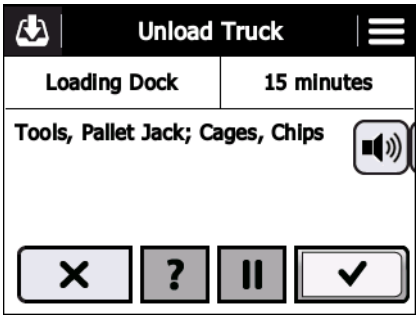


Figure A-10 *Task Started Screen*

Touch ✓ when the task is completed, ✕ to go back to the Inbox or ⏸ to pause the task and complete at a later time.

3. Touch ✓ to indicate that the task is complete.
4. Touch **OK** to confirm task completion.
5. The Inbox re-displays with the Unload Truck task removed from the InBox.

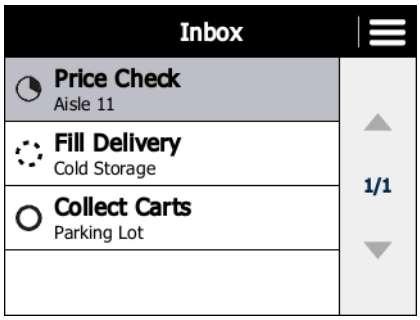


Figure A-11 *Unload Truck Removed from Inbox*

Collect Carts Scenario

The Collect Cart scenario illustrates a task that has been assigned to the user, the user pauses the task and then go back to complete the task.

1. In the Inbox, touch **Collect Carts**. The **Collect Carts** screen appears.

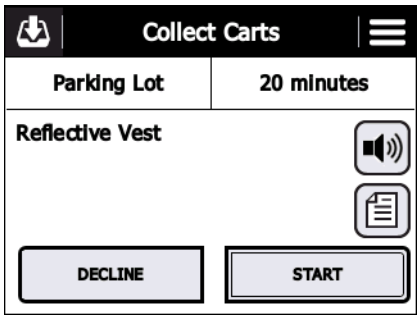


Figure A-12 *Accepted Task Screen*

2. Touch START to start the task.

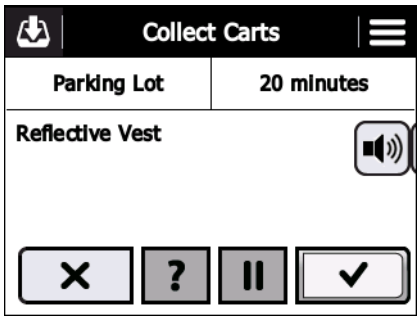


Figure A-13 *Collect Carts Task Started*

Touch ✓ when the task is completed, ✕ to cancel the task or ⏸ to pause the task and complete at a later time.

3. Touch ⏸.

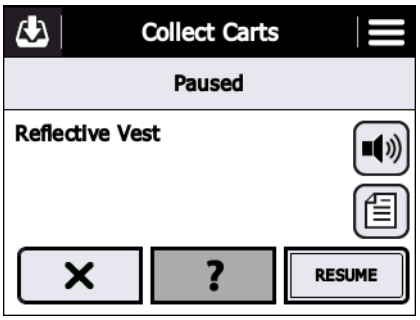


Figure A-14 *Collect Carts Task Paused*

4. Touch .

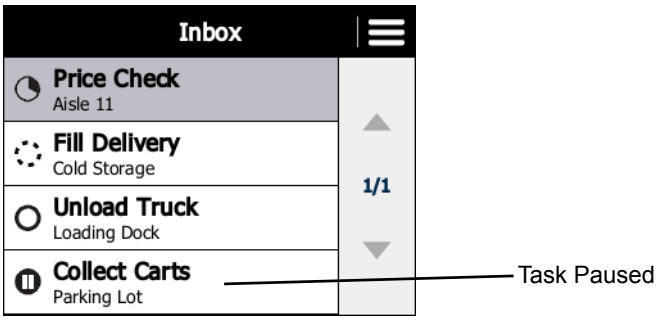


Figure A-15 *Inbox Collect Carts Task Paused*

5. Touch **Collect Carts**.
6. Touch **Resume**.
7. Touch to indicate that the task is complete.
8. Touch **OK** to confirm task completion.
9. Touch **OK**.
10. The Inbox re-displays with the task removed from the **InBox**.

Reset Sales Demo

While using the Sales Demo application, the data can be reset to its initial state.

1. From the Inbox, touch .
2. Touch **Reset demo**.
3. The Inbox appears with the data reset to the initial settings.

Exit Sales Demo

To exit the Sales Demo:

1. From the Inbox, touch .
2. Touch **Exit demo**.

Demo-Scan

Use the **Demo-Scan** application to demonstrate how a price look-up application functions.

1. Touch > . The **Price Check** screen appears.
2. Press the Scan button and scan one of the bar code below. Upon successful decode the corresponding product information screen displays.
3. Press the Back button to return to the main **Price Check** screen.

Figure A-16 *Crackers*

Figure A-17 *Cheese*

Figure A-18 *Wine*

Figure A-19 *Jeans - Size 14R*

Figure A-20 *Jeans - Size 3*

Figure A-21 *Camera*

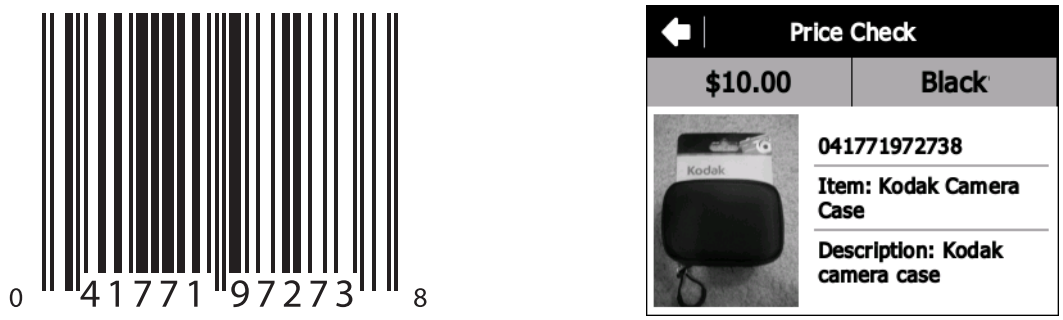


Figure A-22 *Camera Case*

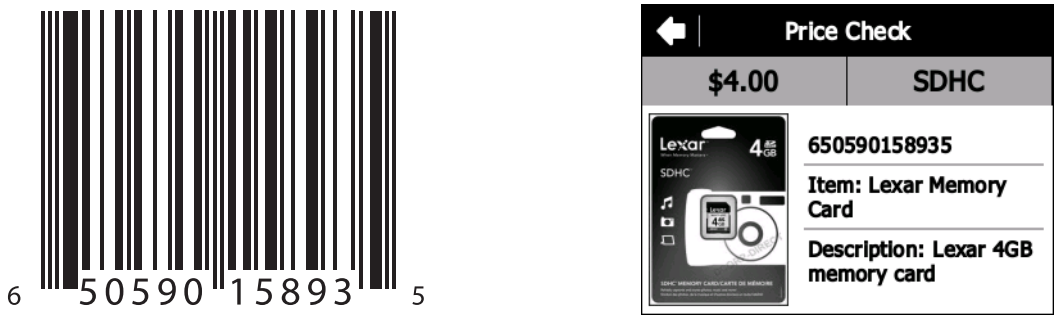


Figure A-23 *Memory Card*

FTP Client

Use the FTP application to transfer files between an ftp server to the SB1.

Touch > . The **FTP** screen appears.

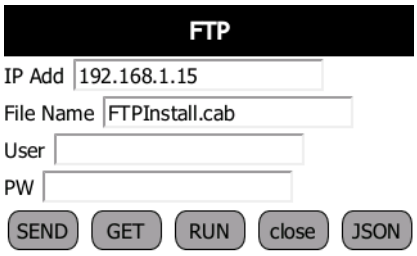


Figure A-24 *FTP Application Screen*

Required

- FTP server software
- SB1

Setup

Make sure the SB1 is connected to the network and has a valid IP Address on the same network as the FTP server.

NOTE The **Run** button should not be used.

There are 4 fields in the application:

- IP Address of the FTP server
- File to transfer
- User Name (leave blank if no credentials required)
- Password (leave blank if no credentials required).

To transfer a file to the SB1:

1. Fill in the applicable fields, including the file to transfer.
2. Press **Get**.
3. File is transferred to the root of the SB1 *UserDrive*.

To transfer a file from the SB1:

1) Fill in the applicable fields, including the file to transfer.

2) Press **Send**.

3) File is transferred from the root of the SB1 *UserDrive* to the ftp server.

Exit Application

To exit the FTP application, touch **Close**. The **Application launcher** screen appears.

Appendix B Specifications

This appendix provides specifications for the SB1 and accessories.

SB1 Technical Specifications

Table B-1 summarizes the SB1 technical specifications and intended operating environments.

Table B-1 *SB1 Technical Specifications*

Item	Description
Physical Characteristics	
Dimensions	92 mm L x 81 mm W x 14 mm D (3.62 in. L x 3.19 in. W x 0.55 in. D)
Weight	110 g (3.9 oz.)
Display	3.0” E Ink Pearl, 4-bit grayscale (16 shades). QVGA 320 x 240 resolution.
Touch Panel	Full screen resistive touch; finger operation (no stylus)
Battery	Rechargeable Lithium-ion 910 mAh
Network Connections	Wireless Local Area Network (WLAN)
Notification	Audio: beeper; Visual: multi-color LED
Audio	Integrated microphone; accessories include optional Speaker Adapter with push-to-talk and Headset Adapter.
Performance Characteristics	
CPU	IMX35 (532 MHz)
Applications	Supports thin client applications and HTML 5 with RhoElements extensions.
Memory	128 MB RAM/128 MB Flash

Table B-1 *SB1 Technical Specifications (Continued)*

Item	Description
User Environment	
Operating Temperature	0 °C to 40°C (32 °F to 104 °F)
Storage Temperature	-40 °C to 70 °C (-40 °C to 158 °F)
Charging Temperature	0 °C to 35 °C (32 °F to 95 °F)
Humidity	5 to 95% non-condensing
Drop Specification	Multiple 1.22 m (4 ft) drop to tile over concrete per MIL STD 810G specifications
Electrostatic Discharge (ESD)	+/-15 kV air discharge +/- 8 kV direct discharge
Sealing	IP54
Wireless LAN Data and Voice Communications	
WLAN radio	Wi-Fi IEEE® 802.11b/g/n (2.4 GHz only)
Data Rates Supported	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps and MCS0-7
Operating Channels	Channel 1-13 (2412-2472 MHz), Channel 14 (2484 MHz) Japan only; actual operating channels/frequencies depend on regulatory rules and certification agency
Security	**Security Modes:** Legacy, WPA and WPA2 **Encryption:** WEP (40 or 128 bit), TKIP and AES **Authentication:** TLS, TTLS (MS-CHAP), TTLS (MS-CHAP v2), TTLS (CHAP), TTLS (MD5), TTLS (PAP), PEAP-TLS, PEAP (MS-CHAP v2), PEAP (EAP-GTC), EAP-FAST-TLS, EAP-FAST (MS-CHAP v2), EAP-FAST (EAP-GTC) and LEAP
Spreading Technique	Direct Sequence Spread Spectrum (DSSS) and Orthogonal Frequency Division Multiplexing (OFDM)
Data Capture	
Bar Code Reader	Omni-directional bar code reader with integrated aiming and illumination.

GLOSSARY

Numeric

802.11bgn. A radio protocol that may be used by the SB1 radio.

A

Access Point. Access Point (AP) refers to Zebra's Ethernet Access Point. It is a piece of communications equipment that manages communications between the host computer system and one or more wireless terminals. An AP connects to a wired Ethernet LAN and acts as a bridge between the Ethernet wired network and IEEE 802.11 interoperable radio-equipped mobile units, such as a SB1. The AP allows a mobile user to roam freely through a facility while maintaining a seamless connection to the wired network.

B

Bar Code. A pattern of variable-width bars and spaces which represents numeric or alphanumeric data in machine-readable form. The general format of a bar code symbol consists of a leading margin, start character, data or message character, check character (if any), stop character, and trailing margin. Within this framework, each recognizable symbology uses its own unique format.

Bit. Binary digit. One bit is the basic unit of binary information. Generally, eight consecutive bits compose one byte of data. The pattern of 0 and 1 values within the byte determines its meaning.

Bits per Second (bps). Bits transmitted or received.

Byte. On an addressable boundary, eight adjacent binary digits (0 and 1) combined in a pattern to represent a specific character or numeric value. Bits are numbered from the right, 0 through 7, with bit 0 the low-order bit. One byte in memory is used to store one ASCII character.

boot or boot-up. The process a device goes through when it starts. During boot-up, the device can run self-diagnostic tests and configure hardware and software.

C

Cradle. A cradle is used for charging the terminal battery and for communicating with a host computer, and provides a storage place for the terminal when not in use.

D

Decode. To recognize a bar code symbology (e.g., UPC/EAN) and then analyze the content of the specific bar code scanned.

E

ESD. Electro-Static Discharge

F

Flash Memory. Flash memory is responsible for storing the system firmware and is non-volatile. If the system power is interrupted the data is not be lost.

H

Hz. Hertz; A unit of frequency equal to one cycle per second.

Host Computer. A computer that serves other terminals in a network, providing such services as computation, database access, supervisory programs and network control.

I

IP. Internet Protocol. The IP part of the TCP/IP communications protocol. IP implements the network layer (layer 3) of the protocol, which contains a network address and is used to route a message to a different network or subnetwork. IP accepts “packets” from the layer 4 transport protocol (TCP or UDP), adds its own header to it and delivers a “datagram” to the layer 2 data link protocol. It may also break the packet into fragments to support the maximum transmission unit (MTU) of the network.

IP Address. (Internet Protocol address) The address of a computer attached to an IP network. Every client and server station must have a unique IP address. A 32-bit address used by a computer on a IP network. Client workstations have either a permanent address or one that is dynamically assigned to them each session. IP addresses are written as four sets of numbers separated by periods; for example, 204.171.64.2.

L

LAN. Local area network. A radio network that supports data communication within a local area, such as within a warehouse of building.

LED Indicator. A semiconductor diode (LED - Light Emitting Diode) used as an indicator, often in digital displays. The semiconductor uses applied voltage to produce light of a certain frequency determined by the semiconductor's particular chemical composition.

P

Push-to-Talk PTT. a method of communicating over wireless network using a momentary button to switch from voice reception mode to transmit mode.

R

RAM. Random Access Memory. Data in RAM can be accessed in random order, and quickly written and read.

Reset. A reset restarts the SB1 by closing all running programs. All data that is not saved to flash memory is lost.

Resolution. The narrowest element dimension which is distinguished by a particular reading device or printed with a particular device or method.

RF. Radio Frequency.

Router. A device that connects networks and supports the required protocols for packet filtering. Routers are typically used to extend the range of cabling and to organize the topology of a network into subnets. See **Subnet**.

S

SB1. In this text, SB1 refers to the Zebra smart badge. It can be set up to run as a stand-alone device, or it can be set up to communicate with a network, using wireless radio technology.

Scan Area. Area intended to contain a symbol.

Scanner. An electronic device used to scan bar code symbols and produce a digitized pattern that corresponds to the bars and spaces of the symbol.

Scanning Mode. The bar code reader is energized, programmed and ready to read a bar code.

Subnet. A subset of nodes on a network that are serviced by the same router. See **Router**.

Subnet Mask. A 32-bit number used to separate the network and host sections of an IP address. A custom subnet mask subdivides an IP network into smaller subsections. The mask is a binary pattern that is matched up with the IP address to turn part of the host ID address field into a field for subnets. Default is often 255.255.255.0.

Symbol. A scannable unit that encodes data within the conventions of a certain symbology, usually including start/stop characters, quiet zones, data characters and check characters.

Symbology. The structural rules and conventions for representing data within a particular bar code type (e.g. UPC/EAN, Code 39, PDF417, etc.).

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