© 2015 Symbol Technologies, Inc.

Zebra reserves the right to make changes to any product to improve reliability, function, or design.

Zebra does not assume any product liability arising out of, or in connection with, the application or use of any product, circuit, or application described herein.

No license is granted, either expressly or by implication, estoppel, or otherwise under any patent right or patent, covering or relating to any combination, system, apparatus, machine, material, method, or process in which Zebra products might be used. An implied license exists only for equipment, circuits, and subsystems contained in Zebra products.

Zebra and the Zebra head graphic are registered trademarks of ZIH Corp. The Symbol logo is a registered trademark of Symbol Technologies, Inc., a Zebra Technologies company.

Zebra Technologies Corporation
Lincolnshire, IL U.S.A.
http://www.zebra.com

Warranty

For the complete Zebra hardware product warranty statement, go to:

For Australia Only

For Australia Only. This warranty is given by Zebra Technologies Asia Pacific Pte. Ltd., 71 Robinson Road, #05-02/03, Singapore 068895, Singapore. Our goods come with guarantees that cannot be excluded under the Australia Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. Zebra Technologies Corporation Australia’s limited warranty above is in addition to any rights and remedies you may have under the Australian Consumer Law. If you have any queries, please call Zebra Technologies Corporation at +65 6858 0722. You may also visit our website: http://www.zebra.com for the most updated warranty terms.
Introduction

This guide is designed to assist during routine LS7808 operation. Detailed information about unpacking, installation, performance specifications, programming and troubleshooting can be found in the *LS7808 Product Reference Guide* (*p/n 72E-73952-XX*).

Product Description

The LS7808 horizontal slot scanner is a high performance, omni-directional scanner that supports high throughput applications at the point of sale (POS). The scanner reads all retail symbologies and has multi-interface capability to interface to all popular POS devices. The scanner is designed for horizontal in-counter mounting and allows slide-through scanning of items enhancing productivity and throughput. The scanner has an integrated Electronic Article Surveillance (EAS) antenna for use with Checkpoint® EAS systems.

The LS7808-SR20007TCR features standard tin oxide glass, and the LS7808-SR2X009SCR features scratch proof sapphire glass.

Configurations

The LS7808 is available in the following configurations.

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS7808-SR20007TCR</td>
<td>Standard (tin oxide) glass window; twilight black; Checkpoint® EAS; RoHS compliant.</td>
</tr>
<tr>
<td>LS7808-SR20009SCR</td>
<td>Scratch proof (sapphire) glass window; stainless steel bezel top; Checkpoint® EAS; RoHS compliant.</td>
</tr>
<tr>
<td>LS7808-SR22009SCR</td>
<td>Scratch proof (sapphire) glass window; stainless steel bezel top; Checkpoint® EAS; RoHS compliant; Remote Scanner Management (RSM) ready “out of the box.”</td>
</tr>
</tbody>
</table>

A stainless steel in-counter mounting kit (*p/n 12-17206-02R*) is required for all models. See the *Mounting Instructions and EAS Installation Guide* for mounting/installation instructions.
Operating the Scanner

Parts

Power

The LS7808 does not have an on/off switch. It is ready to scan when connected to a power supply.

Indicator Lights

The scanner employs an LED with a combination of red and green lights to indicate operation and decode status. See "LED Definitions on page 10" for the different light combinations and their meanings.

If the scanner is not operating normally, contact the technical person in charge of scanning, or call Zebra Support (see details on the back cover).
Sleep Mode

The scanner automatically enters Sleep mode when it has been inactive for a specified length of time. The scanner has two levels of sleep: laser and motor. In laser sleep mode, after ten seconds of inactivity the laser pulses at a 50% rate, and then drops to 3% after a specified time. In motor sleep mode, the scanner is programmed to turn off the motor and the laser.

To wake the scanner from sleep mode, present a bar code at the scanner window.

Beeper Volume

The scanner emits a short beep when it successfully reads a bar code. The volume of the beep is changed electronically by a command sent by the host, or by scanning one of the beeper volume bar codes in the LS7808 Product Reference Guide. See Beeper Definitions on page 8.

Connections

The scanner’s ports are at the lower edge of the scanner. Remove the connection cover to access the ports.
Routing the Cables

The scanner case has several channels to route the outgoing cables so that they are organized and don’t hinder the scanner’s placement. After placing the cable connectors in the appropriate scanner ports, route the cables through the nearest channel.

For a cable with a Y-connector (containing both power and interface connectors):

1. Connect the power and interface cables to the appropriate ports.
2. Route the cables according to the following diagram.

Installing the Scanner

The LS7808 mounts in the counter with the face of the scanner flush with the counter top. Refer to the LS7808 Product Reference Guide for detailed installation instructions.
Scanning Bar Codes

Install and program the scanner. Refer to the *LS7808 Product Reference Guide* for programming instructions. For assistance, contact the local supplier or Zebra Support (see details on the back cover).

To scan a bar code:

1. Ensure all cable connections are secure.
2. Orient the item with the bar code facing the scanner window.
3. Move the item through the active scan area (see page 8) in the direction of the scan arrow, or place the item in front of the scanner.

4. Upon successful decode, the scanner beeps and the green LED flashes momentarily.
Active Scan Area

The active scan area, in front of the scanner window, is optimized to scan items as they move in the direction of the scan arrow.

The dotted areas below represent the active scan area.

Beeper Definitions

The scanner communicates with the user by emitting different beeper sequences and patterns. See the Beeper Indications table below for beeper sequences that occur during both normal scanning and while programming the scanner.

<table>
<thead>
<tr>
<th>Beeper Sequence</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Use</strong></td>
<td></td>
</tr>
<tr>
<td>3 high beeps</td>
<td>Power up.</td>
</tr>
<tr>
<td>High beep</td>
<td>A bar code symbol was decoded (if decode beeper is enabled).</td>
</tr>
<tr>
<td>4 long low beeps</td>
<td>A transmission error was detected in a scanned symbol. The data is ignored. This occurs if the scanner is not properly configured. Check option setting.</td>
</tr>
<tr>
<td>5 low beeps</td>
<td>Conversion or format error.</td>
</tr>
<tr>
<td>High-high-high-low beeps</td>
<td>RS-232 receive error on RS-232 host or RS-232 auxiliary port.</td>
</tr>
</tbody>
</table>
### Beeper Sequence

<table>
<thead>
<tr>
<th>Beeper Sequence</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Code 39 Buffering</strong></td>
<td></td>
</tr>
<tr>
<td>High-low beep</td>
<td>New Code 39 data was entered into the buffer.</td>
</tr>
<tr>
<td>3 long high beeps</td>
<td>Code 39 buffer is full.</td>
</tr>
<tr>
<td>Low-high-low beeps</td>
<td>The Code 39 buffer was erased or there was an attempt to clear or transmit an empty buffer.</td>
</tr>
<tr>
<td>Low-high beeps</td>
<td>A successful transmission of buffered data.</td>
</tr>
</tbody>
</table>

#### Host Specific

**USB only**

<table>
<thead>
<tr>
<th>4 short high beeps</th>
<th>Scanner has not completed initialization. Wait several seconds and scan again.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scanner gives a power-up beep after scanning a USB Device Type.</td>
<td>Communication with the bus must be established before the scanner can operate at the highest power level.</td>
</tr>
<tr>
<td>This power-up beep occurs more than once.</td>
<td>The USB bus may put the scanner in a state where power to the scanner is cycled on and off more than once. This is normal and usually happens when the PC cold boots.</td>
</tr>
</tbody>
</table>

**RS-232 Host only**

| High beep | A `<BEL>` character is received and Beep on `<BEL>` is enabled. |

**RS-232 Auxiliary Port only**

<table>
<thead>
<tr>
<th>High beep</th>
<th>A complete block of data was received and sent to the host, either due to a carriage return or because the two-second serial response timeout has elapsed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 long low beeps</td>
<td>A data overrun condition has occurred. Abstain from scanning data from other ports when large amounts of data are sent to the RS-232 Auxiliary port.</td>
</tr>
</tbody>
</table>
LED Definitions

In addition to beeper sequences, the scanner communicates with the user via an LED display. The Standard LED Definitions table defines LED indications that display during scanning.

<table>
<thead>
<tr>
<th>LED</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No power is applied to the scanner.</td>
</tr>
<tr>
<td>Green</td>
<td>The scanner is on and ready to scan.</td>
</tr>
<tr>
<td>Momentary flash</td>
<td>A bar code was successfully decoded.</td>
</tr>
<tr>
<td>Slow continuous red flashing, green on</td>
<td>The scanner is in programming mode.</td>
</tr>
<tr>
<td>Fast continuous red flashing, green on</td>
<td>There is an internal problem; the laser is shut off for regulatory reasons.</td>
</tr>
<tr>
<td>Green on (and laser blinking)</td>
<td>Scanner is in low power blink mode.</td>
</tr>
<tr>
<td>Red and green on</td>
<td>Scanner is in low power (sleep) mode and laser shutdown mode.</td>
</tr>
</tbody>
</table>

Maintenance

Cleaning the exit window is the only maintenance required. A dirty or scratched window may affect scanning activity.

- Remove any dirt particles with a damp cloth.
- Wipe the window with a tissue moistened with ammonia or water.

To clean the exit window:
1. Insert a coin into the large screw heads on the front of the scanner and turn counter-clockwise.
2. Lift off the window.
3. Wipe clean the underside of the upper window.
4. Wipe clean the top surface of the lower window.
5. Re-install the top cover by tightening the two large screws.

To change the exit window:
1. Remove the window as described above.
2. Replace with a new window.
3. Reinstall the top cover by tightening the two large screws.
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Causes</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>The omni-line scan pattern does not display when you follow the directions for installing the host cable.</td>
<td>No power to the scanner.</td>
<td>Ensure the host has power, and is on. If the scanner uses a separate power supply, ensure it’s connected to a working AC outlet. Power-up sequence is incorrect. Refer to the <em>LS7808 Product Reference Guide</em> for more information.</td>
</tr>
<tr>
<td></td>
<td>Interface cable is not properly connected.</td>
<td>Check for loose cable connections.</td>
</tr>
<tr>
<td>Scan line(s) display, but bar code cannot be read.</td>
<td>Scanner is not programmed to read the bar code type.</td>
<td>Ensure scanner is programmed to read the bar code type you are scanning.</td>
</tr>
<tr>
<td></td>
<td>Bar code is damaged.</td>
<td>Try scanning other bar codes of the same bar code type.</td>
</tr>
<tr>
<td></td>
<td>Bar code is too far from scanner.</td>
<td>Move the bar code closer to the scanner.</td>
</tr>
<tr>
<td></td>
<td>The host has disabled scanning or overridden parameter settings.</td>
<td>See the technical person in charge of scanning.</td>
</tr>
<tr>
<td>Bar code is decoded, but not transmitted to the host.</td>
<td>Scanner is not programmed for the correct host type.</td>
<td>Scan the appropriate host type bar code.</td>
</tr>
<tr>
<td>Problem</td>
<td>Possible Causes</td>
<td>Possible Solutions</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Scanned data is incorrectly displayed on the host.</td>
<td>Scanner is not programmed to work with the host. Check scanner host type parameters or editing options.</td>
<td>Ensure proper host is selected. For RS-232, ensure the scanner’s communication parameters match the host’s settings. For keyboard wedge, ensure scanner is programmed with the correct country code and that the CAPS LOCK key is off. Ensure editing options (e.g., UPCE-to-UPCA Conversion) are properly programmed.</td>
</tr>
<tr>
<td>Although the green and red LEDs are on, the scanner does not produce the omni-directional scan pattern.</td>
<td>The scanner has gone into the low power “Motor Sleep” mode.</td>
<td>Move a bar coded item over the active scan area to awaken the unit.</td>
</tr>
<tr>
<td>USB or Synapse host not functioning properly.</td>
<td>Scanner does not recognize host.</td>
<td>Remove and reinsert external power supply to force cable to autodetect correct host.</td>
</tr>
</tbody>
</table>

**NOTE** If the symbol still does not scan, contact distributor or call Zebra Support. See the back cover for contact information.
Programming

Generally, the technical person in charge of scanning customizes the scanner for the particular application using programming bar codes found in the *LS7808 Product Reference Guide*, p/n 72E-73952-XX. If the user is programming the scanner, consult the *LS7808 Product Reference Guide* for more information.

Following are some frequently used programming bar codes.

![NOTE](image)


When scanning the desired bar code, cover the other bar code on the page.

Test

To confirm that your scanner is working properly, scan the UPC-A bar code below.

![Verify the Scanner Is Working](image)
Set Defaults

NOTE When scanning the desired bar code, cover other bar code on page.

Scanning this bar code sets all parameters to their factory default values.

Host Type Selection

If a Synapse cable (i.e., part number STIxx-xxxx) is used, the scanner autcodes the type of host, so there is no need to scan host type selection bar codes.

If a USB interface is used, the scanner autcodes the USB and defaults to the HID keyboard interface. See page 27 to select the IBM Hand-Held host type. Refer to the LS7808 Product Reference Guide, p/n 72-69531-XX, for additional USB host types.

If a Keyboard Wedge, RS-232, Wand Emulation or IBM 46XX host is used, select that host type from the programming bar codes that follow. If Keyboard Wedge is selected, also select a country keyboard type from the following pages.

Keyboard Wedge Host Type

IBM PC/AT & IBM PC Compatibles
Keyboard Wedge Host Type (continued)

NOTE When scanning the desired bar code, cover other bar code on page.

IBM PS/2 (Model 30)

IBM AT NOTEBOOK
Keyboard Wedge Host Type (continued)

NOTE When scanning the desired bar code, cover other bar code on page.

Country Keyboard Types (Country Codes)
Country keyboard options apply to the Keyboard Wedge interface only.
**Country Keyboard Types (continued)**

*NOTE* When scanning the desired bar code, cover other bar code on page.

![French Barcode](image1)

French

![French Canadian Win95/98 Barcode](image2)

French Canadian Win95/98
**Country Keyboard Types (continued)**

*NOTE*  When scanning the desired bar code, cover other bar code on page.

![Barcode for French Canadian XP/2000]

French Canadian XP/2000

![Barcode for German]

German
Country Keyboard Types (continued)

**NOTE** When scanning the desired bar code, cover other bar code on page.
Country Keyboard Types (continued)

NOTE When scanning the desired bar code, cover other bar code on page.

Swedish

UK English
Country Keyboard Types (continued)

NOTE When scanning the desired bar code, cover other bar code on page.

Japanese

Brazil Portuguese Windows
RS-232 Host Types

Standard RS-232

ICL RS-232
RS-232 Host Types (continued)

NOTE    When scanning the desired bar code, cover other bar code on page.

Wincor-Nixdorf RS-232 Mode A

Wincor-Nixdorf RS-232 Mode B
RS-232 Host Types (continued)

NOTE When scanning the desired bar code, cover other bar code on page.

Fujitsu RS-232

OPOS
RS-232 Host Types (continued)

NOTE When scanning the desired bar code, cover other bar code on page.

USB Host Types

NOTE When scanning the desired bar code, cover other bar code on page.

HID Keyboard Emulation (Common Keyboard Wedge Interfacing)
USB Host Types (continued)

NOTE When scanning the desired bar code, cover other bar code on page.
**USB Host Types (continued)**

*NOTE*  When scanning the desired bar code, cover other bar code on page.

---

**IBM 46XX Host Types**

* None Selected
IBM 46XX Host Types (continued)

NOTE When scanning the desired bar code, cover other bar code on page.
IBM 46XX Host Types (continued)

When scanning the desired bar code, cover other bar code on page.

Port 17
Regulatory Information

This guide applies to Model Number: LS7808

All Zebra devices are designed to be compliant with rules and regulations in locations they are sold and will be labeled as required.

Any changes or modifications to Zebra equipment, not expressly approved by Zebra, could void the user's authority to operate the equipment.

Local language translations are available at the following web site:
http://www.zebra.com/support.

Health & Safety Recommendations

Ergonomic Recommendations

Caution: In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company’s safety programs to prevent employee injury.

- Reduce or eliminate repetitive motion
- Maintain a natural position
- Reduce or eliminate excessive force
- Keep objects that are used frequently within easy reach
- Perform tasks at correct heights
- Reduce or eliminate vibration
- Reduce or eliminate direct pressure
- Provide adjustable workstations
- Provide adequate clearance
- Provide a suitable working environment
- Improve work procedures.
Laser Devices

COMPLIES WITH 21CFR1040.10 AND 1040.11 EXCEPT FOR
DEVIATIONS PURSUANT TO LASER NOTICE NO. 50, DATED JUNE

The laser classification is marked on one of the labels on the device.

Class 1 Laser devices are not considered to be hazardous when used for their intended purpose. The following statement is required to comply with US and international regulations:

CAUTION Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous laser light exposure.

Class 2 laser scanners use a low power, visible light diode. As with any very bright light source, such as the sun, the user should avoid staring directly into the light beam. Momentary exposure to a Class 2 laser is not known to be harmful.

Scanner Labeling
Laser Labels

In accordance with IEC60825-1 and EN60825, the following information is provided to the user:

**Power Supply**

Note: Use ONLY a LISTED, Type no. 50-14000 (5Vdc / 2A), or PWRS-14000 (5Vdc / 2A), Direct Plug-In Power supply, marked Class 2 or LPS (IEC60950-1, SELV). Use of Alternative Power Supply will invalidate any approvals given to this unit and may be dangerous.
Radio Frequency Interference Requirements-FCC

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna
• Increase the separation between the equipment and receiver
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
• Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Radio Frequency Interference Requirements - Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Marking and European Economic Area (EEA)

Statement of Compliance

Zebra hereby declares that this device is in compliance with all the applicable Directives, 2004/108/EC, 2006/95/EC and 2011/65/EU. A Declaration of Conformity may be obtained from http://www.zebra.com/doc.

Other Countries

Ukraine

Дане обладнання відповідає вимогам технічного регламенту №1057, № 2008 на обмеження щодо використання деяких небезпечних речовин в електричних та електронних пристроях.
Waste Electrical and Electronic Equipment (WEEE)

**English:** For EU Customers: All products at the end of their life must be returned to Zebra for recycling. For information on how to return product, please go to: http://www.zebra.com/weee.

**Bulgarian:** За клиенти от ЕС: След края на полезния им живот всички продукти трябва да се връщат на Zebra за рециклиране. За информация относно връщането на продукти, моля отидете на адрес: http://www.zebra.com/weee.

**Čeština:** Pro zákazníky z EU: Všechny produkty je nutné po skončení jejich životnosti vrátit společnosti Zebra k recyklaci. Informace o způsobu vrácení produktu najdete na webové stránce: http://www.zebra.com/weee.

**Dansk:** Til kunder i EU: Alle produkter skal returneres til Zebra til recirkulering, når de er udtjent. Læs oplysningerne om returnering af produkter på: http://www.zebra.com/weee.


**Ελληνικά:** Για πελάτες στην Ε.Ε.: Όλα τα προϊόντα, στο τέλος της διάρκειας ζωής τους, πρέπει να επιστρέφονται στην Zebra για ανακύκλωση. Για περισσότερες πληροφορίες σχετικά με την επιστροφή ενός προϊόντος, επισκεφθείτε τη διεύθυνση http://www.zebra.com/weee στο Διαδίκτυο.

**Eesti:** EL klientidele: kõik tooted peale kasutusel peavad tagastada taaskasutamise eesmärgil Zebra'ile. Lisainfot toote tagastamise kohta leiate: http://www.zebra.com/weee.

**Español:** Para clientes en la Unión Europea: todos los productos deberán entregarse a Zebra al final de su ciclo de vida para que sean reciclados. Si desea más información sobre cómo devolver un producto, visite: http://www.zebra.com/weee.

**Français :** Clients de l’Union Européenne : Tous les produits en fin de cycle de vie doivent être retournés à Zebra pour recyclage. Pour de plus amples informations sur le retour de produits, consultez : http://www.zebra.com/weee.

**Italiano:** per i clienti dell’UE: tutti i prodotti che sono giunti al termine del rispettivo ciclo di vita devono essere restituiti a Zebra al fine di consentirne il riciclaggio. Per informazioni sulle modalità di restituzione, visitare il seguente sito Web: http://www.zebra.com/weee.


**Lietuvių:** ES vartotojams: visi gaminiai, pasibaigus jų eksploatacijos laikui, turi būti grąžinti utilizuoti į kompaniją „Zebra“. Daugiau informacijos, kaip grąžinti gaminį, rasite: http://www.zebra.com/weee.

**Magyar:** Az EU-ban vásárlóknak: Minden tönkrement terméket a Zebra vállalathoz kell eljuttatni újrahasznosítás céljából. A termék visszajuttatásának módjával kapcsolatos tudnivalókért látogasson el a http://www.zebra.com/weee weboldalra.


**Nederlands:** Voor klanten in de EU: alle producten dienen aan het einde van hun levensduur naar Zebra te worden teruggestuurd voor recycling. Raadpleeg http://www.zebra.com/weee voor meer informatie over het terugzenden van producten.


**Românesc**: Pentru clienții din UE: Toate produsele, la sfârșitul duratei lor de funcționare, trebuie returnate la Zebra pentru reciclare. Pentru informații despre returnarea produsului, accesați: http://www.zebra.com/weee.


Service Information

If you have a problem using the equipment, contact your facility’s Technical or Systems Support. If there is a problem with the equipment, they will contact Zebra Support at: http://www.zebra.com/support.

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