

L S 2 1 0 0 S e r i e s



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#### Patents

This product is covered by one or more of the following U.S. and foreign Patents:

U.S. Patent No. 4,593,186; 4,603,262; 4,607,156; 4,652,750; 4,673,805; 4,736,095;  
4,758,717; 4,760,248; 4,806,742; 4,816,660; 4,845,350; 4,896,026; 4,897,532; 4,923,281;  
4,933,538; 4,992,717; 5,015,833; 5,017,765; 5,021,641; 5,029,183; 5,047,617; 5,103,461;  
5,113,445; 5,130,520; 5,140,144; 5,142,550; 5,149,950; 5,157,687; 5,168,148; 5,168,149;  
5,180,904; 5,216,232; 5,229,591; 5,230,088; 5,235,167; 5,243,655; 5,247,162; 5,250,791;  
5,250,792; 5,260,553; 5,262,627; 5,262,628; 5,266,787; 5,278,398; 5,280,162; 5,280,163;  
5,280,164; 5,280,498; 5,304,786; 5,304,788; 5,306,900; 5,324,924; 5,337,361; 5,367,151;  
5,373,148; 5,378,882; 5,396,053; 5,396,055; 5,399,846; 5,408,081; 5,410,139; 5,410,140;  
5,412,198; 5,418,812; 5,420,411; 5,436,440; 5,444,231; 5,449,891; 5,449,893; 5,468,949;  
5,471,042; 5,478,998; 5,479,000; 5,479,002; 5,479,441; 5,504,322; 5,519,577; 5,528,621;  
5,532,469; 5,543,610; 5,545,889; 5,552,592; 5,557,093; 5,578,810; 5,581,070; 5,589,679;  
5,589,680; 5,608,202; 5,612,531; 5,619,028; 5,627,359; 5,637,852; 5,664,229; 5,668,803;  
5,675,139; 5,693,929; 5,698,835; 5,705,800; 5,714,746; 5,723,851; 5,734,152; 5,734,153;  
5,742,043; 5,745,794; 5,754,587; 5,762,516; 5,763,863; 5,767,500; 5,789,728; 5,789,731;  
5,808,287; 5,811,785; 5,811,787; 5,815,811; 5,821,519; 5,821,520; 5,823,812; 5,828,050;  
5,848,064; 5,850,078; 5,861,615; 5,874,720; 5,875,415; 5,900,617; 5,902,989; 5,907,146;  
5,912,450; 5,914,478; 5,917,173; 5,920,059; 5,923,025; 5,929,420; 5,945,658; 5,945,659;  
5,946,194; 5,959,285; 6,002,918; 6,021,947; 6,029,894; 6,031,830; 6,036,098; 6,047,892;  
6,050,491; 6,053,413; 6,056,200; 6,065,678; 6,067,297; 6,082,621; 6,084,528; 6,088,482;  
6,092,725; 6,101,483; 6,102,293; 6,104,620; 6,114,712; 6,115,678; 6,119,944; 6,123,265;  
6,131,814; 6,138,180; 6,142,379; 6,172,478; 6,176,428; 6,178,426; 6,186,400; 6,188,681;  
6,209,788; 6,209,789; 6,216,951; 6,220,514; 6,243,447; 6,244,513; 6,247,647; 6,308,061;  
6,250,551; 6,295,031; 6,308,061; 6,308,892; 6,321,990; 6,328,213; 6,330,244; 6,336,587;  
6,340,114; 6,340,115; 6,340,119; 6,348,773; 6,380,949; 6,394,355; D305,885; D341,584;  
D344,501; D359,483; D362,453; D363,700; D363,918; D370,478; D383,124; D391,250;  
D405,077; D406,581; D414,171; D414,172; D418,500; D419,548; D423,468; D424,035;  
D430,158; D430,159; D431,562; D436,104.  
Invention No. 55,358; 62,539; 69,060; 69,187, NI-068564 (Taiwan); No. 1,601,796; 1,907,875;  
1,955,269 (Japan); European Patent 367,299; 414,281; 367,300; 367,298; UK 2,072,832;  
France 81/03938; Italy 1,138,713  
rev. 06/02

## Introduction

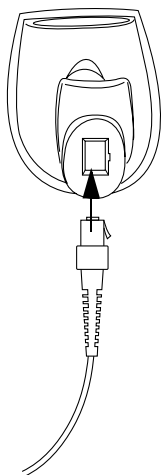
The LS 2100 Series scanners are lightweight laser scanners which combine the best in basic scanning performance and value. The 2100 series is made up of three versions of the scanner, which differ in their host interface capability. The three versions are as follows:

- LS 2100: the undecoded version
- LS 2104: the RS-232 and Synapse version
- LS 2106: the Keyboard Wedge and Synapse version

This *Quick Reference Guide* provides basic instruction on the set up and use of the scanner. Unless otherwise noted, the term LS 21xx refers to all versions of the scanner.

## Setting up the LS 21xx

To set up the scanner, you must first attach the interface cable to the bottom of the scanner, ensuring that the connection is secure.

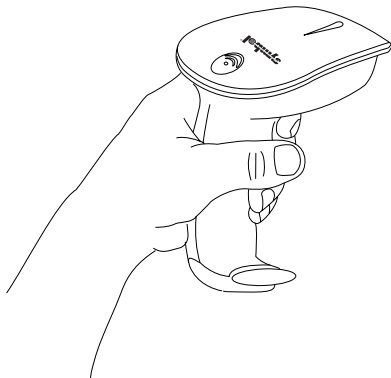




## Scanning with the LS 21xx

Before you can use the scanner, it should have already been installed and programmed. If not, consult the appropriate *LS 21xx Product Reference Guide* for your specific scanner. If you need assistance, contact your local supplier or Symbol Technologies.

1. Before you use the scanner, make sure all cable connections are secure.
2. Aim the scanner away from you. Press the trigger; the scan beam lights and an orange light illuminates at the rear of the scanner.
3. Make sure the bar code is in the correct scanning range. Aim and press the trigger. The scanner has read the symbol when:
  - You hear a beep.
  - The orange light turns green.
  - The red laser turns off.

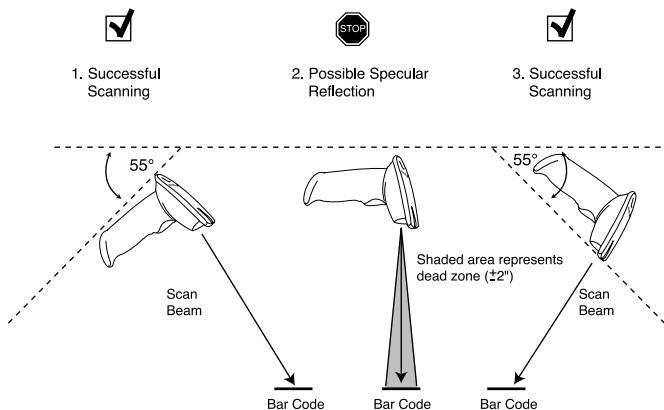


## Aiming

### Hold at an angle

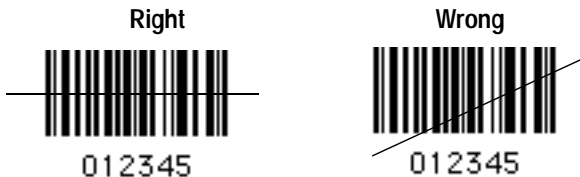
Do not hold the scanner directly over the bar code. Laser light reflecting *directly* back into the scanner from the bar code is known as specular reflection. This strong light can “blind” the scanner and make decoding difficult. The area where specular reflection occurs is known as a “dead zone”.

You can tilt the scanner up to 55° forward or back and achieve a successful decode. Simple practice quickly shows what tolerances to work within.



### Scan the Entire Symbol

- The scan beam must cross every bar and space on the symbol (as in the left bar code below).
- The larger the symbol, the farther away you should hold the scanner.
- Hold the scanner closer for symbols with bars that are close together.



## What Does The Beep Mean?

When you hear 1 beep (short high tone) it means data has been decoded successfully. If any other beeps are heard, contact the technical person in charge of scanning.

## Troubleshooting

If the scanner does not work after you've followed these operating instructions:

- Check the system power.
- Check for loose cable connections.
- Be sure the scanning system is programmed to read the type of bar code you are trying to scan.
- Check to be sure the symbol is not defaced.

## Cleaning

**Note:** LS 2100 series scanners require no user maintenance.

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

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**Caution:** Do not pour, spray or spill any liquid on the scanner.

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## Regulatory Information

All Symbol 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 Symbol Technologies equipment, not expressly approved by Symbol Technologies, could void the user's authority to operate the equipment.

## 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

Symbol devices using lasers comply with US 21CFR1040.10, and IEC825-1:1993, EN60825-1:1994+A11:1996. The laser classification is marked on one of the labels on the device.

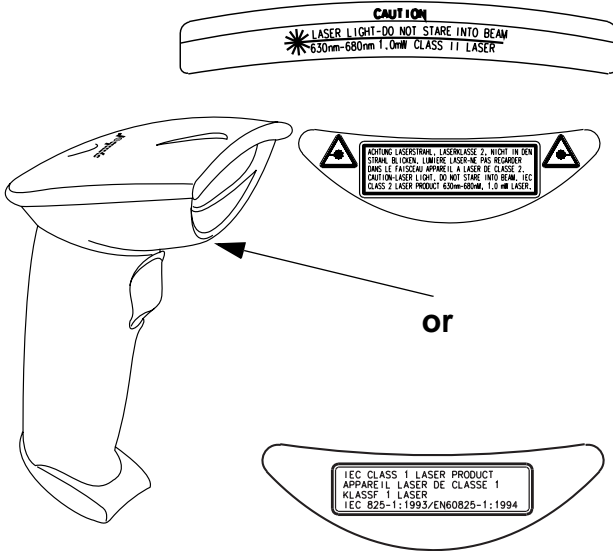
Class 1 Laser devices are not considered to be hazardous when used for their intended purpose. The following statement is required to comply with US and international regulations:

**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



The scanner will also be marked with the following certification label:

### Laser Bar Code Scanner

9B97



Listed Accessory ITE



# Q u i c k R e f e r e n c e

In accordance with Clause 5, IEC 825 and EN60825, the following information is provided to the user:



**ENGLISH**  
CLASS 1 CLASS 1 LASER PRODUCT  
CLASS 2 CLASS 2 LASER PRODUCT  
LASER LIGHT  
DO NOT STARE INTO BEAM

**HEBREW**

רמה 1 מוצר לייזר רמה 1  
רמה 2 אור לייזר  
אין להביט אל תוך הזרם  
מוצר לייזר רמה 2

**DANISH / DANSK**  
KLASSE 1 KLASSE 1 LASERPRODUKT  
KLASSE 2 LASERLYF  
SE IKKE IND I STRÅLEN  
KLASSE 2 LASERPRODUKT

**ITALIAN / ITALIANO**  
CLASSE 1 PRODOTTO AL LASER DI CLASSE 1  
CLASSE 2 LUCE LASER  
NON FISSARE IL RAGGIOPRODOTTO  
AL LASER DI CLASSE 2

**DUTCH / NEDERLANDS**  
KLASSE 1 KLASSE-1 LASERPRODUKT  
KLASSE 2 LASERLICHT  
NIET IN STRAAL STAREN  
KLASSE-2 LASERPRODUKT

**NORWEGIAN / NORSK**  
KLASSE 1 LASERPRODUKT, KLASSE 1  
KLASSE 2 LASERLYS IKKE STIRR INN I LYSSTRÅLEN  
LASERPRODUKT, KLASSE 2

**FINNISH / SUOMI**  
LUOKKA 1 LUOKKA 1 LASERTUOTE  
LUOKKA 2 LASERVALO  
ÄLÄ TUJOTA SÄDETTÄ  
LUOKKA 2 LASERTUOTE

**PORTUGUESE / PORTUGUÉS**  
CLASSE 1 PRODUTO LASER DA CLASSE 1  
CLASSE 2 LUZ DE LASER NÃO FIXAR O RAIO LUMINOSO  
PRODUTO LASER DA CLASSE 2

**FRENCH / FRANÇAIS**  
CLASSE 1 PRODUIT LASER DE CLASSE 1  
CLASSE 2 LUMIÈRE LASER  
NE PAS REGARDER LE RAYON FIXEMENT  
PRODUIT LASER DE CLASSE 2

**SPANISH / ESPAÑOL**  
CLASE 1 PRODUCTO LASER DE LA CLASE 1  
CLASE 2 LUZ LASER  
NO MIRE FIJAMENTE EL HAZ  
PRODUCTO LASER DE LA CLASE 2

**GERMAN / DEUTSCH**  
KLASSE 1 LASERPRODUKT DER KLASSE 1  
KLASSE 2 LASERSTRAHLEN  
NICHT DIREKT IN DEN LASERSTRAHL SCHAUEN  
LASERPRODUKT DER KLASSE 2

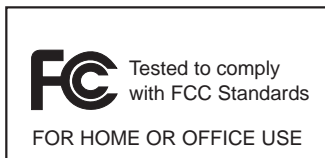
**SWEDISH / SVENSKA**  
KLASS 1 LASERPRODUKT KLASS 1  
KLASS 2 LASERLJUS STIRRA INTE MOT STRÅLEN  
LASERPRODUKT KLASS 2

## Power Supply

Note: Use only a Symbol-approved power supply 50-04000-083 output rated 5Vdc and minimum 1 A. The power supply is certified to EN60950 with SELV outputs.

Hinweis: Benutzen Sie nur eine Symbol Technologies genehmigt Stromversorgung 50-04000-083 in den Ausgabe: 5 Vdc und minimum 1 A. Die Stromversorgung ist bescheinigt nach EN60950 mit SELV Ausgaben.

## Radio Frequency Interference Requirements



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.

## 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.

## Statement of Compliance

Symbol Technologies, Inc., hereby declares that this device is in compliance with all the applicable Directives, 89/336/EEC, 73/23/EEC. A Declaration of Conformity may be obtained from <http://www2.symbol.com/doc/>.

## Warranty

(A) Seller's hardware Products are warranted against defects in workmanship and materials for a period of twelve (12) months from the date of shipment, provided the Product remains unmodified and is operated under normal and proper conditions. Warranty provisions and durations on software, integrated installed systems, Product modified or designed to meet specific customer specifications ("Custom Products"), remanufactured products, and reconditioned or upgraded products, shall be as provided in the applicable Product specification in effect at the time of purchase or in the accompanying software license. (B) Products may be serviced or manufactured with parts, components, or subassemblies that originate from returned products and that have been tested as meeting applicable specifications for equivalent new material and Products. The sole obligation of Seller for defective hardware Products is limited to repair or replacement (at Seller's option) on a "return to service depot" basis with prior Seller authorization. Shipment to and from Seller will be at Seller's expense, unless no defect is found. No charge will be made to Buyer for replacement parts for warranty repairs. Seller is not responsible for any damage to or loss of any software programs, data or removable data storage media, or the restoration or reinstallation of any software programs or data other than the software, if any, installed by Seller during manufacture of the Product. The aforementioned provisions do not extend the original warranty period of any Product that had either been repaired or replaced by Seller. (C) The above warranty provisions shall not apply to any Product (i) which has been repaired, tampered with, altered or modified, except by Seller's authorized service personnel; (ii) in which the defects or damage to the Product result from normal wear and tear, misuse, negligence, improper storage, water or other liquids, battery leakage or failure to perform operator handling and scheduled maintenance instructions supplied by Seller; (iii) which has been subjected to unusual physical or electrical stress, abuse, or accident, or forces or exposure beyond normal use within the specified operational and environmental parameters set forth in the applicable Product specification; nor shall the above warranty provisions apply to any expendable or consumable items, such as batteries, supplied with the Product. EXCEPT FOR THE WARRANTY OF TITLE AND THE EXPRESS WARRANTIES STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES ON PRODUCTS FURNISHED HERUNDER INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE. ANY IMPLIED WARRANTIES THAT MAY BE IMPOSED BY LAW ARE LIMITED IN DURATION TO THE LIMITED WARRANTY PERIOD. SOME STATES OR COUNTRIES DO NOT ALLOW A LIMITATION ON HOW LONG AN IMPLIED WARRANTY LASTS OR THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS. IN SUCH STATES OR COUNTRIES, FOR SUCH PRODUCTS, SOME EXCLUSIONS OR LIMITATIONS OF THIS LIMITED WARRANTY MAY NOT APPLY. The stated express warranties are in lieu of all obligations or liabilities on the part of Seller for damages, including but not limited to, special, indirect or consequential damages arising out of or in connection with the use or performance of the Product or service. Seller's liability for damages to Buyer or others resulting from the use of any Product or service furnished hereunder shall in no way exceed the purchase price of said Product or the fair market value of said service, except in instances of injury to persons or property.

## Service Information

Before you use the unit, it must be configured to operate in your facility's network and run your applications.

If you have a problem running your unit or using your equipment, contact your facility's Technical or Systems Support. If there is a problem with the equipment, they will contact the Symbol Support Center:

United States <sup>1</sup>	1-800-653-5350 1-631-738-2400	Canada	905-629-7226
United Kingdom	0800 328 2424	Asia/Pacific	337-6588
Australia	1-800-672-906	Austria/Österreich	1-505-5794-0
Denmark/Danmark	7020-1718	Finland/Suomi	9 5407 580
France	01-40-96-52-21	Germany/Deutschland	6074-49020
Italy/Italia	2-484441	Mexico/México	5-520-1835
Netherlands/Nederland	315-271700	Norway/Norge	+47 2232 4375
South Africa	11-8095311	Spain/España	91 324 40 00 Inside Spain
Sweden/Sverige	84452900		+34 91 324 40 00 Outside Spain
Latin America Sales Support	1-800-347-0178 Inside US +1-561-483-1275 Outside US		
Europe/Mid-East Distributor Operations	Contact local distributor or call +44 118 945 7360		

<sup>1</sup>Customer support is available 24 hours a day, 7 days a week.

For the latest version of this guide go to:<http://www.symbol.com/manuals>.



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