

QRG

P 4 7 0 / 3 7 0 R F S c a n n e r



symbol[®]

© 1997-2002 SYMBOL TECHNOLOGIES, INC. All rights reserved.

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

Symbol 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 Symbol products might be used. An implied license exists only for equipment, circuits, and subsystems contained in Symbol products.

Symbol and the Symbol logo are registered trademarks of Symbol Technologies, Inc. Other product names mentioned in this manual may be trademarks or registered trademarks of their respective companies and are hereby acknowledged.

Symbol Technologies, Inc.
One Symbol Plaza
Holtsville, N.Y. 11742-1300
<http://www.symbol.com>

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 P470/370 cordless RF scanners bring new flexibility and economy to data capture and data management in both industrial and retail operations. The scanner communicates with your host computer through radio transmission instead of through a cable. With the RF scanner, you are free to scan and transmit without a physical cable, from as far away as 100 feet (30.5 meters) even without a direct line of sight. This lets you take the scanner to where the work is, whether on the loading dock, the plant floor, the warehouse, or the POS checkout area. There are several versions available:

- P470: cordless retail scanner
- P370: cordless industrial scanner
- P370 ALR: cordless industrial ALR scanner.

Refer to *PL 370/470 RF Cradle Quick Reference Guide* (p/n 72-38494-xx) for information on setting up the PL 370/470 RF cradle.

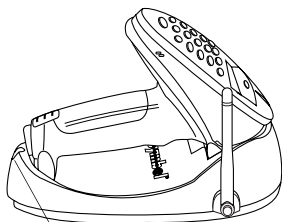
To quickly get you started with your new scanner:

1. Charge the scanner in the cradle (see page 2).
2. Power up the scanner (see page 2).
3. Follow the Quick Startup Instructions (see page 6).
4. Use the test bar codes to ensure the scanner is working properly (see page 7).

Charging the Scanner in the Cradle

To charge the scanner, insert the scanner into the cradle so the nose of the scanner and tip of the handle seat into the receptacles. The scanner displays “UNIT CRADLED” when properly inserted in the cradle.

The battery charges automatically. A full charge of a depleted battery takes approximately 3-1/2 hours. The charge status indicator light on the back of the cradle blinks then becomes solid when the battery is fully charged.



Charge Status Indicator Light

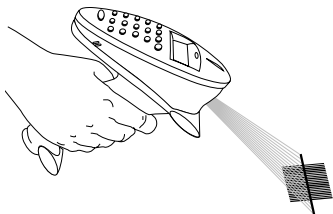
Powering Up the Scanner

To turn the scanner on, press the “Enter” key or pull the trigger. The scanner is brought out of sleep mode and into scanning mode.

Scanning

Consult the *P470/P370 RF Scanners Product Reference Guide* (p/n 72-38495-xx) for programming instructions. If you need assistance, contact your local supplier or the Symbol Support Center.

1. Ensure the battery is charged.
2. Make sure the bar code is in the correct scanning range. Aim and press the trigger. When the scanner has read the symbol:
 - You hear a beep.
 - The LED above the display turns green.



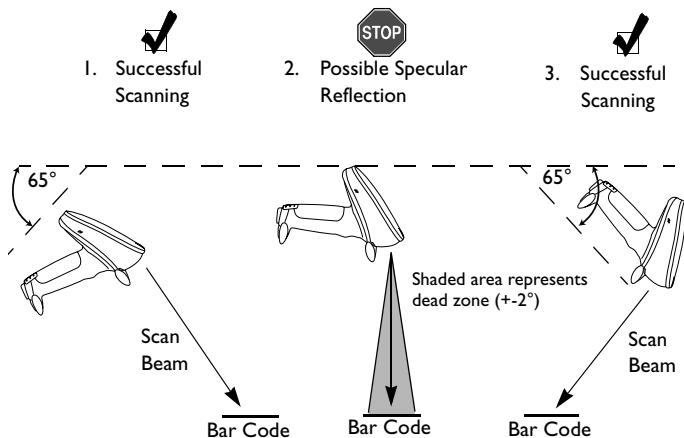
Q u i c k R e f e r e n c e

- The red laser turns off.

Hold at an angle

Do not hold the scanner directly perpendicular to the bar code. Laser light reflecting *directly* back into the scanner from the bar code is known as specular reflection. This strong light can temporarily “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 65° forward or backward 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.

Right



Wrong

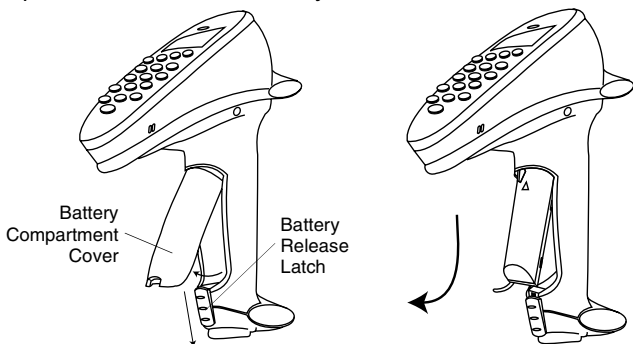


Changing the Battery

Once a battery is fully charged, it will generally last up to 10 hours without being returned to the cradle. By returning it to the cradle during the day, you extend this time.

Removing the Battery

1. Slide the battery release latch down using center indent and remove the battery compartment cover.
2. Slide the battery toward the bottom of the scanner and then pull the bottom of the battery back and out of the scanner.



Replacing the Battery

1. Place the top portion of the battery (curved side up, contacts toward top) into the scanner and then slide it up the handle.
2. Replace the battery compartment cover.
3. Slide the release latch up to secure the cover in place.



Quick Startup Instructions

Below is an index of Quick Startup Instructions to help get you started quickly. The index is listed in a step by step order beginning with step 1, Setting up the System. This index references the pages from the *P470/P370 RF Scanners Product Reference Guide* (p/n 72-38495-xx). The Product Reference Guide is included on the CD shipped with your scanner. It is also available on the Symbol Web Site <http://www.symbol.com/manuals>, or can be purchased in hard copy by contacting Symbol Technologies.

Mandatory steps are designated by an asterisk (*). If an item has multiple pages referenced, the most important reference is in bold.

	PRG Page
1. Setting Up the System	
• Connecting the cradle to a host *	2-1
- RS-232 connection	2-2
- Synapse connection (keyboard wedge, USB, etc.)	2-3
• Charging the battery *	1-3, 2-8
• Pairing the scanner with the cradle *	2-6
- RF channel	3-8 , 5-13, C-1
- Coexisting in Spectrum24 environments	2-7
2. Using the Default Applications	
• Overview of Scan and Transmit application*	3-2
• Keypad operation	3-2, 3-3, 3-22
• Eliminating repetitive scanning	3-4
• Selecting the host communication protocol	3-2, 3-8, 5-8
- RS-232 baud rate	5-81
3. Programming an Advanced Data Formatting Rule Using 123Scan	3-17
4. Troubleshooting Problems	
• Troubleshooting table	3-24
• Communication errors	3-5, D-2
• Beeper indications and default application error codes	4-7
• Cradle LED indications	4-3

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

Test Symbols



Code 128

5012345248



EAN-8

0000 3001



0

13 Mil UPC

12345 67890



Code 39

01234567



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.

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.



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 device complies with RSS 210 of Industry & Science Canada. 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.

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

Symbol Technologies, Inc., hereby, declares that this device is in compliance with the essential requirements and other relevant provisions of Directives 1999/5/EC, 89/336/EEC and 73/23/EEC. Declaration of Conformities may be obtained from <http://www2.symbol.com/doc/>



Laser Devices

Symbol products 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 product.

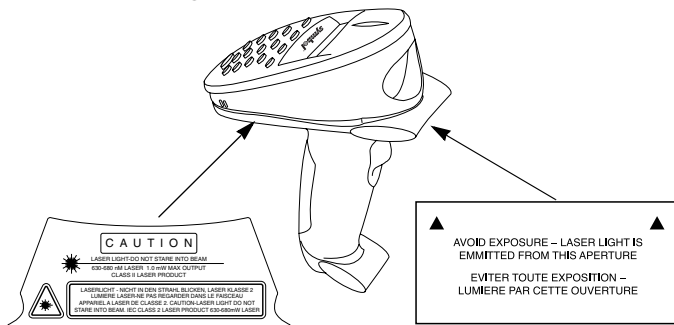
Class 1 Laser devices are not considered to be hazardous when used for their intended purpose. The following statement is required to comply with US and international regulations:

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



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
LASER LIGHT
DO NOT STARE INTO BEAM
CLASS 2 LASER PRODUCT

HEBREW

מוצר לייזר רמה 1 רמה 1
אור לייזר רמה 2
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 TUIJOTA SÄDETTÄ
LUOKKA 2 LASERTUOTE

PORTUGUESE / PORTUGUÉS

CLASSE 1 PRODUTO LASER DA CLASSE 1
CLASSE 2 LUZ DE LASER NÃO FIXAR O RAIOS LUMINOSOS
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 / DEUTCH

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

RF Devices

Symbol's RF products are designed to be compliant with the rules and regulations in the locations into which they are sold and will be labeled as required. The majority of Symbol's RF devices are type approved and do not require the user to obtain license or authorization before using the equipment. Any changes or modifications to Symbol Technologies equipment not expressly approved by Symbol Technologies could void the user's authority to operate the equipment.

The Spectrum24 equipment is intended for use throughout the European Economic Area, but its authorization for use in France is restricted as follows:

- **PAN European Frequency Range:** 2.400 - 2.4835 GHz, identified by -EU suffix to the model number found on the product label
- **France - Restrict Frequency Range for use in France:** 2.4465 - 2.4835 GHz, identified on [Product mmmm] by the -FR suffix to the model number found on the product label



- **Belgium** - Operation in an out of doors environment in Belgium must be restricted to 2.460 - 2.4835 GHz band
 - **Italy** - Operation in Italy requires a user license
 - **Mexico** - Restrict Frequency Range for use in Mexico: 2.450 - 2.4835 GHz
 - **Chile** - Restricted Power Output for use in Chile: 50 mW
-

Caution: Handheld Devices: FCC RF Exposure Guidelines

To satisfy FCC RF exposure compliance requirements for a mobile transmitting device, this device should be used in hand-held, hand-operated configurations only. The device and its antenna should generally maintain a separation distance of 20 cm or more from a person's body; except for the hands and wrists because of higher exposure limit for extremities. This device is designed to be used in a person's hands and its operating configurations, generally do not support normal transmissions while it is carried in pockets or holsters next to a person's body.

Caution: Remote and Standalone Antenna Configurations: FCC RF Exposure Guidelines

To comply with FCC RF exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktop of similar configurations must operate with a minimum separation distance of 20 cm from all persons.

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 ¹	1-800-653-5350 1-631-738-2400	Canada	905-629-7226
United Kingdom	0800 328 2424	Asia/Pacific	+65-6796-9600
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		

¹Customer 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>.



72-38493-01
Revision C — November 2002