Quick Reference

Introduction
The FL-370-1000CC RF Forklift base is a communication conduit between the Phaser RF scanner and forklift mounted terminal. It is a sealed device designed to be mounted on a forklift. The RF Forklift base receives data from the scanner via radio frequency (RF) transmissions through its antenna, then transmits that data to the forklift vehicle mounted terminal through an attached cable. This Quick Reference Guide provides basic instruction on the set up and use of the RF Forklift base.

Unpacking the Radio Base
The shipping box includes the following:

- Fully sealed RF Forklift base
- Four screws (see page 3 for mounting)
- This Quick Reference Guide (p/n 72-52373-xx)
- Radio Base mounting template (page 13)
  
  Note: The Interface cable must be purchased separately.

Save the shipping container for storing or shipping. Inspect all your equipment for damage. If anything is damaged or missing, call your authorized Customer Support Representative immediately.

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About This Guide
This guide provides instructions for the following:

- “Mounting the Radio Base” on page 3
- “Connecting to the Host” on page 3
- “Connector Pinout” on page 5
- “Pairing” on page 6
- “Spectrum 24 Environment” page 6
- “LED Indicator” on page 8
- “Cleaning the Base” on page 8
- “Troubleshooting” on page 8
- “Service Information” on page 14
- “Warranty” on page 12
- “Mounting Template” on page 13.
Mounting the Base
1. Mount the RF Forklift base on a flat surface free of dirt and oil and three feet or more from an RF terminal’s radio antenna.
2. Fasten the four screws provided through the RF Forklift base and into the mounting area. A mounting template is provided for you on page 13.
3. Install the cable by aligning the alignment tab and firmly pushing the cable into the connector.

Connecting to the Host
Note: The RF Forklift base power consumption is 200mA maximum.
Symbol Vehicle Mounted Terminals

To connect the radio base to a forklift vehicle mounted terminal:

1. Install the appropriate interface cable between the host computer and the RF Forklift base connector.
   
   Note: Commonly used cables which include RS232 and scanner emulation cables are available.

2. Communication between the scanner and the RF Forklift base is established through the pairing procedure (see page 6).

3. The VRC terminal supplies power to the RF Forklift base using the appropriate interface cable.

Other Vehicle Mounted Terminals

1. Install the appropriate interface cable between the host computer and the base’s connector.

2. The terminal or a separately sold Symbol external power supply provides power to the RF Forklift base using the appropriate interface cable.
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Connector Pinout

<table>
<thead>
<tr>
<th>Pin Number</th>
<th>Function</th>
<th>Pin Number</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Command Mode</td>
<td>7</td>
<td>Transmit Data (TXD)</td>
</tr>
<tr>
<td>2</td>
<td>5 Volt Supply</td>
<td>8</td>
<td>Data Terminal Ready (DTR)</td>
</tr>
<tr>
<td>3</td>
<td>Ground (When Using 5 Volt Supply)</td>
<td>9</td>
<td>Clear to Send (CTS)</td>
</tr>
<tr>
<td>4</td>
<td>Synapse Data</td>
<td>10</td>
<td>Request to Send (RTS)</td>
</tr>
<tr>
<td>5</td>
<td>Synapse Clock</td>
<td>11</td>
<td>Ground (When Using 9 Volt Supply)</td>
</tr>
<tr>
<td>6</td>
<td>Receive Data (RXD)</td>
<td>12</td>
<td>9-12 Volt Supply</td>
</tr>
</tbody>
</table>
Pairing
The scanner and RF Forklift base must be paired for communication to occur.

Note: If a new host is connected to the RF Forklift base, rescan the pairing bar code on the top of the unit again.

To pair the scanner with the RF Forklift base:
1. Scan the pairing bar code on the top or bottom of the RF Forklift base.
2. The scanner may briefly display the “pairing search for channel” message while the scanner searches for the base. Once the base is detected, information is exchanged (addressing, RF channels, etc.) between the scanner and the cradle.

Note: It may take up to 30 seconds for the scanner to search for the base during over-the-air pairing.

3. After the exchange is complete, the scanner and cradle are paired. Successful pairing is indicated by a warble beep and the base’s LED will flash; failure, or an unsuccessful link, is indicated by a Lo Hi beep.

The pairing of a scanner to a cradle is one-to-one. Only one scanner can be paired to a cradle at any point in time. If you pair a second scanner to an in use cradle, the cradle’s connection to the first scanner will be broken and the connection re-established with the second scanner.
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To pair a scanner to a different cradle, scan its pairing bar code located on the top of the cradle.

Coexistence in Spectrum24 Environments
If you operate your scanner or cradle in close proximity to a Spectrum24 device, maintain a buffer of 3 feet or greater between the transmitters. A Spectrum24 device includes but is not limited to a terminal with a Spectrum24 radio, PC with a Spectrum24 card, or a Spectrum24 Access Point. If a scanner or cradle is less than 3 ft. from a 2.4 GHz Spectrum24 transmitter (antenna), especially an Access Point, your communication performance may degrade significantly.

Select a Channel Outside the Spectrum24 band
In the unlikely event that S24 radio traffic does cause interference between the scanner and radio base, you can change the base’s radio channel to one that minimizes or eliminates interference.

Phaser cordless scanners have three channels that are not within the Spectrum24 band, 81, 82, and 83*. As a rule of thumb, the Cordless systems closest to Spectrum24 devices should use these channels.

In applications with low scanning / data transmission duty cycles, you may assign the same channel to more than one Phaser.

After channels 81, 82 and 83, the next best channels to use are 60 through 80; the higher the channel the better.

* Not available in some countries.
Increase the number of RF Retries

If the scanner transmission is not received by the RF Forklift base or the base acknowledgment response is not received by the scanner, the scanner retransmits the lost or corrupted data. The scanner attempts 4 RF Retries (default) but can be programmed to attempt up to 8.

Depending on your particular RF environment, additional retries may cause your scanner transaction time to increase in the presence of heavy Spectrum24 traffic.

Radio Base LED Indicator.

<table>
<thead>
<tr>
<th>LED Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>No scan signal received by base.</td>
</tr>
<tr>
<td>On</td>
<td>Radio Base receiving scan signal.</td>
</tr>
</tbody>
</table>

Cleaning

The RF Forklift base meets IP 65 specifications and is sealed against dust and water. The RF Forklift base can be washed down along with the forklift using a low pressure water source.

Troubleshooting

If the RF Forklift base does not work after you’ve followed these operating instructions:

- Check the system power.
- Check for loose cable connections.
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Regulatory Information

Radio Frequency Interference Requirements

This device has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the Federal Communications Commission's Rules and Regulations. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

However, there is no guarantee that interference will not occur in a particular installation. If the 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:

- Re-orient 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 which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with FCC Part 15. 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 A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la Classe A respecte toutes les exigences du Reglement sur le Materiel Brouilleur du 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.

European Economic Area

The European variant is intended for use throughout the European Economic Area, however authorization for use is restricted to as follows:

- European Economic Area - Frequency Range 2.400 - 2.4835 GHz.
- France - Frequency Range 2.4465 - 2.454 GHz.
- Belgium (outside) - Frequency Range 2.460 - 2.4835 GHz.
- Italy - Operation requires a user license.

CE Marking and European Union Compliance

Products intended for sale within the European Union are marked with the CE Mark which indicates compliance to applicable Directives and European Norms (EN), as follows. Amendments to these Directives or ENs are included:

Applicable Directives
- Low Voltage Directive 73/23/EEC
DECLARATION OF CONFORMITY

We, Symbol Technologies, Inc.
of One Symbol Plaza, Holtsville, NY 11742-1300, USA

declare under our sole responsibility that the product(s)
FL370 RF Forklift Base

to which this declaration relates, is in conformity with the following standards and/or other normative documents.
I-ETS 300 440 (December 1995)
ETS 300 683 (June 1997)
EN 60950: 1992 Incl Amdt 1-4, 11

We hereby declare that all essential radio test suites have been carried out and that the above named product(s) is in conformity with all the essential requirements of Directive 1999/5/EC.
The conformity assessment procedure referred to in Article 10(5) and detailed in Annex IV of Directive 1999/5/EC has been followed with the involvement of the following Notified Body(ies):
BABT, Claremont House, 34 Molesey Road, Walton-on-Thames, KT12 4RQ

Identification mark: 0168

The equipment will also carry the Class 2 equipment identifier

The technical documentation relevant to the above equipment can be made available for inspection on application to:
Symbol Technologies EMEA, Symbol Place, Winnersh Triangle, Berkshire, RG 41 5TP, UK

Dornu Narnor
(name)
Director, Regulatory and Technical Sales
(title)

(signature of authorized person) 3. May 2000
(date)
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Applicable Standards
- ETS 300 683: 1997 - Radio Equipment and System (RES); Electromagnetic Compatibility (EMC) Standard for Short Range Devices (SRD) Operating on Frequencies between 9kHz and 25 GHz.
- EN 61000-4-3: 1997 - Electromagnetic Compatibility (EMC); Part 4 Testing and Measurement Techniques; Section 3: Radiated, Radio Frequency, Electromagnetic Field Immunity Test.

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.

Caution: 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 or similar configurations must operate with a minimum separation distance of 20 cm from all persons.
Warranty
Symbol Technologies, Inc. (“Symbol”) manufactures its hardware products in accordance with industry-standard practices. Symbol warrants that for a period of twelve (12) months from date of shipment, products will be free from defects in materials and workmanship. This warranty is provided to the original owner only and is not transferable to any third party. It shall not apply to any product (i) which has been repaired or altered unless done or approved by Symbol, (ii) which has not been maintained in accordance with any operating or handling instructions supplied by Symbol, (iii) which has been subjected to unusual physical or electrical stress, misuse, abuse, power shortage, negligence or accident or (iv) which has been used other than in accordance with the product operating and handling instructions. Preventive maintenance is the responsibility of customer and is not covered under this warranty.

Wear items and accessories having a Symbol serial number, will carry a 90-day limited warranty. Non-serialized items will carry a 30-day limited warranty.

Warranty Coverage and Procedure
During the warranty period, Symbol will repair or replace defective products returned to Symbol’s manufacturing plant in the US. For warranty service in North America, call the Symbol Support Center at 1-800-653-5350. International customers should contact the local Symbol office or support center. If warranty service is required, Symbol will issue a Return Material Authorization Number. Products must be shipped in the original or comparable packaging, shipping and insurance charges prepaid. Symbol will ship the repaired or replacement product freight and insurance prepaid in North America. Shipments from the US or other locations will be made F.O.B. Symbol’s manufacturing plant.

Symbol will use new or refurbished parts at its discretion and will own all parts removed from repaired products. Customer will pay for the replacement product in case it does not return the replaced product to Symbol within 3 days of receipt of the replacement product. The process for return and customer’s charges will be in accordance with Symbol’s Exchange Policy in effect at the time of the exchange. Customer accepts full responsibility for its software and data including the appropriate backup thereof.

Repair or replacement of a product during warranty will not extend the original warranty term.
Symbol’s Customer Service organization offers an array of service plans, such as on-site, depot, or phone support, that can be implemented to meet customer’s special operational requirements and are available at a substantial discount during warranty period.

General
Except for the warranties stated above, Symbol disclaims all warranties, express or implied, on products furnished hereunder, including without limitation implied warranties of merchantability and fitness for a particular purpose. The stated express warranties are in lieu of all obligations or liabilities on part of Symbol for damages, including without limitation, special, indirect, or consequential damages arising out of or in connection with the use or performance of the product. Seller’s liability for damages to buyer or others resulting from the use of any product, shall in no way exceed the purchase price of said product, except in instances of injury to persons or property. Some states (or jurisdictions) do not allow the exclusion or limitation of incidental or consequential damages, so the proceeding exclusion or limitation may not apply to you.
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Mounting Dimensions

Not to actual size.
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 1-800-653-5350
- Canada 905-629-7226
- United Kingdom 0800 328 2424
- Asia/Pacific 337-6588
- Australia 1-800-672-906
- Austria 1-505-5794
- Denmark 7020-1718
- Finland 9 5407 580
- France 01-40-956-52-21
- Germany 6074-9020
- Italy 2-484441
- Mexico 5-520-1835
- Netherlands 315-271700
- Norway 66810600
- South Africa 11-4405688
- Spain 913244000
- Sweden 84452900
- 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 +44 208 945 7360